2008 CHEVROLET SILVERADO 1500 LS

DEVIN TROWBRIDGE REPAIR MANUAL

VIN 1GCEC19C58Z150516

QUICK SECTION INDEX

Click any section. Verify configuration and fitment before repair.

VIN-SPECIFIC DIAGNOSTIC AND REPAIR GUIDE

2008 SILVERADO 1500 LS · VIN 1GCEC19C58Z150516

Document Index

Click a section to jump directly to the corresponding repair-guide page.

Configuration varies. Confirm engine, drivetrain, emissions label, RPO codes, dimensions, torque values and fitment before repair.

VIN-SPECIFIC DIAGNOSTIC + REPAIR PLAN

2008 Chevrolet Silverado 1500 LS Complete DTC Repair Guide

P0171 • P0174 • P0420 • P0451 • P1133

repair order, factory tests, illustrated procedures, parts, costs, videos, FAQs, and verification

VIN	1GCEC19C58Z150516
VIN-derived vehicle	2008 Chevrolet Silverado 1500 LS; 4.8L LY2 V8; gasoline; 4×2; extended-cab VIN descriptor
Scan snapshot	August 5, 2026; 178,349 miles; emissions readiness: NOT READY
Prepared	August 6, 2026

Most important conclusion

Do **not** begin with the catalytic converter or oxygen sensor. P0171 and P0174 occurred together with both long-term trims at **+29.7%**. Find and repair the shared lean cause first, then retest P1133 and P0420. P0451 has its own EVAP-pressure diagnostic branch.

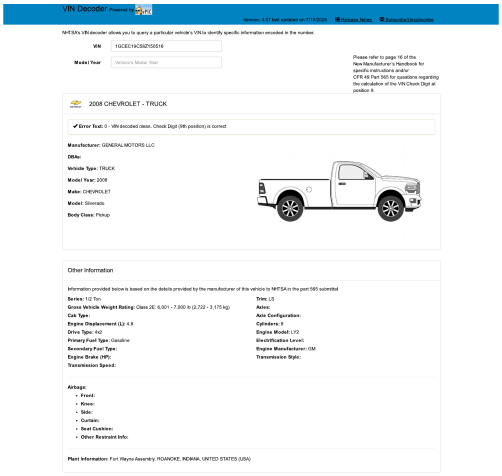
Manual-fit warning

The supplied ZIP is titled 4WD 5.3L, while the VIN identifies a 2WD 4.8L truck. This guide uses only procedures stated for the 4.8L or shared GMT900 systems. Confirm the underhood emissions label, RPO codes, bed/tank configuration, connector, and full VIN before ordering parts.

Safety

Fuel-tank and exhaust work involve gasoline vapor, fire, hot components, rusted fasteners, and lifting hazards. Use approved support and fuel-handling equipment. If raw fuel is visible or smelled, or if the exhaust is leaking into the cab, stop driving and arrange professional repair.

1. Vehicle identity and code map


VIN Decoder

NHTSA's VIN decoder allows you to query a particular vehicle's VIN to identify specific information encoded in the number.

VIN 1GCEC19C58Z155516

Model Year

Please refer to page 16 of the New Manufacturer's Handbook for specific instructions and/or CFR 49 Part 565 for questions regarding the calculation of the VIN Check Digit at position 9.

2008 CHEVROLET - TRUCK

✔ Error Text: 0 - VIN decoded clean. Check Digit (9th position) is correct

Manufacturer: GENERAL MOTORS LLC
DBAs:
Vehicle Type: TRUCK
Model Year: 2008
Make: CHEVROLET
Model: Silverado
Body Class: Pickup

Other Information

Information provided below is based on the details provided by the manufacturer of this vehicle to NHTSA in the part 565 submittal

Series: 1/2 Ton
Gross Vehicle Weight Rating: Class 2E: 6,001 - 7,000 lb (2,722 - 3,175 kg)
Cab Type:
Engine Displacement (L): 4.8
Drive Type: 4x2
Primary Fuel Type: Gasoline
Secondary Fuel Type:
Engine Brake (HP):
Transmission Speed:
Trim: LS
Axles:
Axle Configuration:
Cylinders: 8
Engine Model: LY2
Electrification Level:
Engine Manufacturer: GM
Transmission Style:

Airbags:
- Front:
- Knee:
- Side:
- Curtain:
- Seat Cushion:
- Other Restraint Info:

Plant Information: Fort Wayne Assembly, ROANOKE, INDIANA, UNITED STATES (USA)

Owner-supplied NHTSA VIN lookup, page 1. The report identifies a 2008 Silverado, LS trim, 4.8L LY2 V8, gasoline, 4×2. The NHTSA cab-type field is blank; the extended-cab statement comes from the VIN descriptor.

Code / status	Meaning	Priority
P0171 — confirmed	System too lean, Bank 1	1 — diagnose with P0174
P0174 — confirmed	System too lean, Bank 2	1 — shared-cause diagnosis
P0451 — confirmed + pending	Fuel Tank Pressure Sensor Performance	2 — separate EVAP branch
P1133 — pending	HO2S insufficient switching, Bank 1 Sensor 1	3 — retest after lean repair
P0420 — confirmed + pending	Catalyst system low efficiency, Bank 1	4 — last, after every upstream fault

Correct repair order

1) Preserve freeze-frame data. 2) Diagnose P0171/P0174. 3) Diagnose P0451 separately. 4) Clear trims/codes and complete verification drive. 5) If P1133 returns, test the upstream sensor and circuits. 6) Only if P0420 returns with normal fuel control and no exhaust leaks, evaluate the converter.

2. What the scan data says

Freeze-frame item	Reported value	Interpretation
Operating state	Closed loop; 181°F; 572 rpm	Warm idle; useful lean snapshot
LTFT Bank 1 / Bank 2	+29.7% / +29.7%	Both banks adding nearly 30% fuel — shared cause is likely
STFT Bank 1 / Bank 2	–1.6% / –0.8%	Short-term correction was near zero at that instant; learned correction remained extreme
MAF	0.96 lb/min ≈ 7.3 g/s	Manual idle guide is 2–6 g/s; RPM/load/context and sensor accuracy must be checked
Fuel-pressure scan PID	44 psi	Not a substitute for the manual 50–60 psi mechanical-gauge test
Commanded EVAP purge	0%	A commanded-closed valve can still leak mechanically
FTP / fuel level	–1.42 in H2O / 60.4%	Supports separate FTP/EVAP testing; not proof of a failed sensor
Catalyst temperatures	889°F / 891°F	Temperature alone does not prove catalyst efficiency

Evidence-based inference

Nearly identical high trims on both banks make one-bank sensor failure less likely. Start with anything shared by both banks: unmetered air, purge flow, intake duct/MAF error, fuel quality/pressure/volume, or injector restriction. This is an inference from the scan plus the factory diagnostic tree—not a final diagnosis.

3. Master diagnostic sequence

1. Save all codes, freeze frames, readiness monitors, fuel trims at idle and 2,500 rpm, MAF, MAP, O2 voltages, commanded purge, and FTP voltage.
2. Perform a careful visual inspection: air duct after MAF, clamps, PCV hoses, brake-booster hose, vacuum ports, intake gaskets, EVAP hoses, exhaust before front O2 sensors, wiring, grounds, and evidence of oil/coolant consumption.
3. Smoke-test the intake with the purge line isolated. Command purge closed and prove the valve seals physically.
4. Measure fuel pressure with CH-48027 or equivalent: key ON/engine OFF 50–60 psi; watch retention and delivery under load.
5. Repair the proven lean cause. Reset fuel trims with a capable scan tool; clear codes with engine OFF; key off at least 60 seconds.
6. Diagnose P0451 using cap-off voltage, ground, 5 V reference, signal, vent/reference-port and response tests.
7. Drive and retest. If P1133 returns, perform its circuit/switching test. If P0420 returns last, perform exhaust/catalyst diagnosis.

Gate	Pass requirement before moving on
Lean repair gate	Warm LTFT/STFT trend near 0 and normally within ±10%; no P0171/P0174
P1133 gate	B1S1 switches below 200 mV and above 800 mV and responds to commanded fueling
P0420 gate	No mixture/misfire/O2 codes; no upstream exhaust leaks; correct sensor operation
Inspection gate	All required monitors complete and no DTCs return

4. P0171 + P0174 — meaning, symptoms, likely causes

P0171 means Bank 1 is being corrected lean; **P0174** means Bank 2 is being corrected lean. Together, they usually point upstream to a shared condition. The ECM has reached a high learned fuel correction, but the code does not identify which component caused it.

Common cause	Why it fits / how to prove it
Vacuum or intake leak	Often affects both banks, especially at idle. Smoke test; compare trims idle vs 2,500 rpm.
Purge valve leaking while commanded closed	Introduces unmetered vapor/air. Isolate hose or flow-test the valve; command 0% is not enough.
Air duct / MAF contamination or bias	Inspect for cracks/clamps; compare grams/second and calculated load; clean only with approved MAF cleaner if contamination is confirmed.
Low fuel pressure/volume	Mechanical gauge must read 50–60 psi KOEO and hold. Check under load, not just scan PID.
Restricted/dirty injectors or fuel contamination	Balance/flow test; check fuel quality. Both banks can be affected.
Upstream exhaust leak	Can draw oxygen and falsely report lean; smoke/listen cold and inspect flanges.
Engine mechanical / PCV / brake booster	Use vacuum, compression/leak-down and isolation tests as indicated.

Possible symptoms

- Check-engine light or failed emissions readiness
- Rough idle, hesitation, surge, weak acceleration, or hard start
- Reduced fuel economy from large positive correction
- Spark knock or elevated combustion temperature if genuinely lean
- Sometimes no obvious symptom despite +29.7% learned correction

> **Pro tip**
>
> Compare trims at warm idle and about 2,500 rpm. A vacuum leak often improves as airflow rises; a fuel-delivery problem can worsen under load. This pattern is diagnostic guidance—not a substitute for pressure, smoke, and circuit testing.

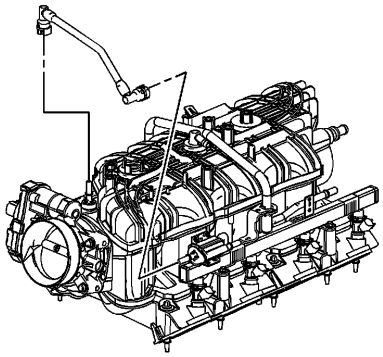
5. P0171/P0174 — factory-style test checklist

Test	Expected / target	Action if abnormal
Warm STFT and LTFT	Each normally within ±10%; near 0 is best	Use pattern by RPM/load to choose leak vs delivery branch
KOEO MAP / barometric check	Should agree with local barometric pressure/altitude	Diagnose MAP input if implausible
MAF at warm idle	Manual guide: 2–6 g/s	Inspect intake, wiring, contamination; evaluate against RPM/load
Intake smoke test	No smoke downstream of MAF	Repair hose, gasket, PCV, booster, injector-seal or manifold leak
Purge seal test at 0%	No unintended flow	Replace valve only if it leaks or fails electrical/flow test
Fuel pressure KOEO	50–60 psi, steady for 5 min	Check pump circuit/module, filter/regulator arrangement, lines, fuel quality
Pressure retention	Drop ≤5 psi in 1 min; after relief to 10 psi, ≤2 psi in 5 min	Isolate injector, pump check valve, or regulator/leak source
Exhaust before B1S1/B2S1	No leak	Repair leak and retest trims/sensors
Injector balance/flow	Even pressure drop/flow	Clean/repair/replace only confirmed restricted injector(s)

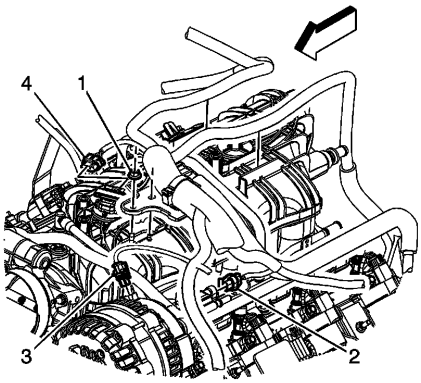
The 44 psi scan value

The scan report's 44 psi is a clue, but it was captured at idle and may be a calculated/electronic PID. The manual decision uses a mechanical gauge and a 50–60 psi KOEO specification. Do not order a pump until that test fails and power/ground/fuel quality are checked.

6. P0171/P0174 — purge-valve inspection and replacement



Factory illustration: purge solenoid area and connections.



Factory illustration: disconnect the EVAP quick-connect and harness carefully.

Replace the purge solenoid only if it fails a seal, actuation, circuit, or flow test. The scan report's automated "most likely fix" is not proof.

1. Remove the air-cleaner outlet duct.
2. Clean the connection areas; disconnect the EVAP line quick-connect.
3. Disconnect the electrical harness connector.
4. Disconnect the chassis EVAP quick-connect.
5. Disengage the solenoid retainer from the fuel rail and remove the solenoid.
6. Install in reverse order; fully seat both quick-connects, tug-test, reinstall duct, clear trims/codes, and verify.

Conditional part	Manufacturer / part no.	Local snapshot	Buy when
Canister purge valve/solenoid	Standard Ignition CP471	$48.99; in stock, pickup today / ~1 hour	Valve leaks or fails electrical/flow test
Purge valve pipe/hose	ACDelco 12658354	$34.99; in stock	Pipe/hose is cracked, restricted, or connector damaged

O'Reilly store snapshot: 2317 Bob Wallace Ave SW, Huntsville, AL; observed August 6, 2026. Price and availability can change. Verify full VIN, 4.8L application, connector, and emissions package before purchase.

O'Reilly Silverado purge-valve search

1A Auto: 2007–2014 Silverado EVAP purge-solenoid replacement video

7. P0171/P0174 — costs, FAQs, and pro tips

Repair path	Parts planning range	Typical installed planning range*
Diagnosis / smoke / pressure test	—	$120–$350
Vacuum hose, clamp, duct or small leak	$10–$180	$80–$350
Purge valve (verified failure)	$48.99 local example	$150–$350
Intake-manifold gasket repair	$40–$180	$400–$900
Injector cleaning / service	Varies	$150–$450
Fuel-pump module (verified failure)	$250–$650+	$550–$1,200+

*Planning ranges only, not quotes. Rust, tank configuration, shop rate, tax, diagnostic time, and exact part grade can change totals.

Frequently asked questions

Should I replace both front oxygen sensors? No. Equal +29.7% trims point first to a shared cause. Test the sensors after the mixture fault is corrected.

Can the purge valve cause both lean codes? Yes, if it leaks when commanded closed, but the 0% command alone does not prove it is sealed.

Can I clean the MAF? Only after inspecting the duct and confirming contamination or biased readings. Use dedicated MAF cleaner; do not touch the sensing elements.

Can clogged injectors cause both codes? Yes. The manual references injector restriction bulletins, but balance/flow and fuel-quality tests should precede replacement.

Is it safe to keep driving? Short diagnostic travel may be possible if it runs normally, but sustained lean operation can overheat/damage valves or the converter. Stop for misfire, flashing MIL, severe hesitation, fuel odor, or overheating.

Video search: 2008 Silverado P0171/P0174 smoke-test diagnosis

Video search: 2007–2013 Silverado 50–60 psi fuel-pressure test

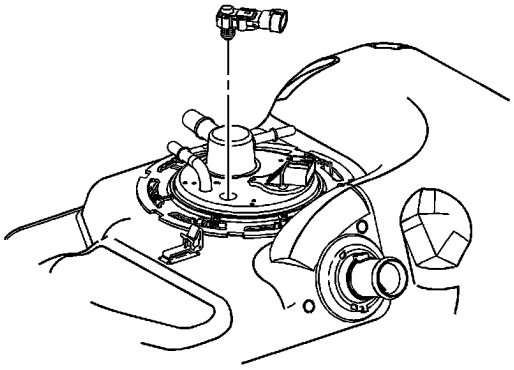
8. P0451 — diagnosis before tank removal

P0451 means the fuel-tank-pressure signal is implausible or did not respond as expected. It does not prove the sensor is bad. First test the vent path/reference port, three circuits, connector, and live response.

Test	Factory target	If it fails
Cap removed, key ON/engine OFF	FTP 1.3–1.7 V	Inspect vent/reference-port restriction; then circuits/sensor
Low reference to ground	<5 ohms	Repair open/high resistance
5 V reference	4.8–5.2 V	Repair reference circuit/supply fault
Sensor unplugged; scan FTP	<0.2 V	Diagnose signal short-to-voltage/module input
3 A fused jumper: signal to 5 V	Scan FTP >4.7 V	Repair signal circuit or diagnose ECM input
Regulated pressure/vacuum response	Smooth, repeatable change	Replace sensor only if circuits/vent pass and response is biased/erratic

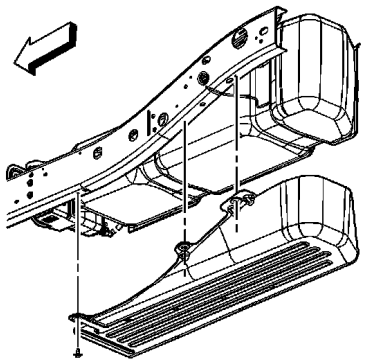
Avoid connector damage

Use proper terminal adapters or careful back-probing. The manual calls for a **3-amp fused** jumper. Never force probes into connector terminals or use an unfused jumper.

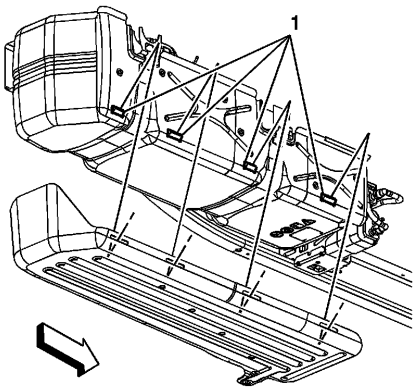


Factory illustration: FTP sensor on top of the fuel-pump module; pull straight upward while gently rocking. Manual page 10310.

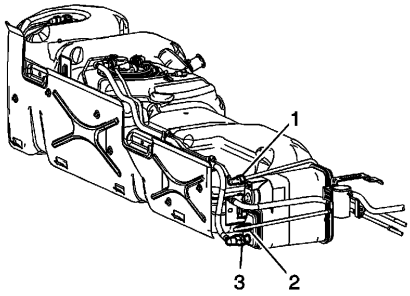
9. P0451 — factory tank-lowering overview



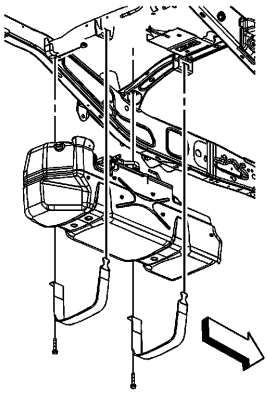
Remove the tank-shield bolts if equipped.



Release shield tabs and remove the shield.



Clean, disconnect and cap the fuel-feed quick-connect.

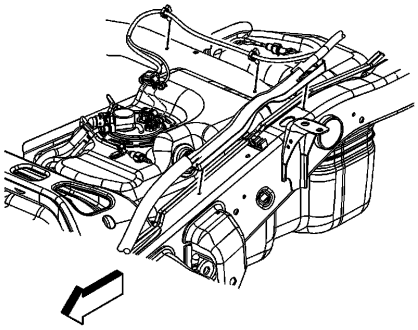


Disconnect and cap the EVAP line at the canister.

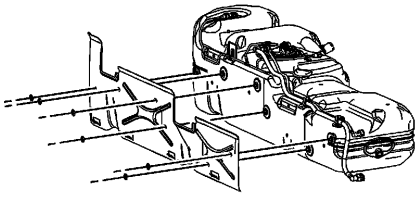
Factory method only

Do not cut an access opening in the bed. A drill, saw, grinder, or torch above a gasoline tank can ignite vapors or damage lines/wiring. The manual method is to drain, support, and lower/remove the tank.

10. P0451 — replacement steps and torques



Support tank with a broad-pad adjustable jack; remove straps.



Lower partway and separate filler pipe without tearing hose.

1. Relieve fuel pressure; drain fuel into approved equipment; raise/support truck.
2. Remove shield if equipped; disconnect/cap fuel and EVAP quick-connects.
3. Support the tank; remove strap bolts/straps; lower partway.
4. Disconnect filler hose, harness clip, FTP connector, and fuel-module connector; lower with an assistant.
5. Clean the module top. Release FTP connector; pull sensor straight up while gently rocking.
6. Compare seal, port, indexing and terminals. Press verified new sensor fully into place.
7. Reconnect wiring/hoses without pinching. Torque tank-strap bolts to **40 N·m (30 lb-ft)**; shield bolts to **18 N·m (13 lb-ft)**.
8. Tug-test fittings. Leak check: key ON 2 seconds, OFF 10 seconds, ON again; inspect before starting.

Labor guide

Factory guide: 2.5 hours for 26/27-gallon tank; 2.9 hours for 35-gallon tank; +0.2 hour for shield. Drain/refill is additional. Confirm this truck’s tank size and RPO before quoting.

11. P0451 — parts, costs, videos, FAQs

Part	Part no.	Price / stock snapshot	Note
Fuel tank pressure sensor — Standard Ignition	AS302	$53.99; in stock, pickup today / ~1 hour	Historical OE/casting reference 16196060; verify connector
Fuel tank pressure sensor — Autotecnica	GM1316398	$34.99; pickup unavailable / special order	Budget option; verify exact fit
3-terminal repair connector — Standard	S656	$46.99; in stock	Only if terminals/pigtail are damaged; verify indexing

O'Reilly Bob Wallace Ave snapshot observed August 6, 2026; prices/stock change. Full-VIN verification is required.

O'Reilly Silverado FTP-sensor catalog

Cost item	Planning range
Diagnosis / circuit and vent testing	$120–$300
Sensor and small supplies	$55–$130
Installed total with tank lowering	$375–$850+

Ranges are estimates, not quotes; tank fuel level, corrosion, tank size, shield, labor rate and wiring repair matter.

TRO: Silverado fuel-tank-pressure sensor replacement video

Alternate crew-cab visual reference (not this exact VIN; do not cut bed)

FAQ — Will a gas cap fix P0451? A cap can cause EVAP leak codes, but P0451 specifically requires pressure-signal performance diagnosis.

FAQ — Is the sensor on the bottom of the tank? No. It is on top of the fuel-pump module; the factory reaches it by lowering/removing the tank.

Pro tip: Diagnose the circuits at the accessible connector before tank removal whenever the exact harness layout allows it.

12. P1133 — insufficient B1S1 oxygen-sensor switching

P1133 indicates insufficient switching of the heated oxygen sensor before the converter on Bank 1 (Sensor 1). It is pending in the scan. A lean mixture, exhaust leak, contamination, wiring fault, or sensor fault can all reduce switching. Retest only after P0171/P0174 are repaired.

Circuit	Short to Ground	High Resistance	Open	Short to Voltage	Signal Performance
HO2S High Signal	P0131, P0132, P0137, P0140, P0151, P0152, P0157, P0158, P1133, P2A01, P2A04	P0131, P0132, P0133, P0134, P0137, P0140, P0151, P0152, P0153, P0154, P0157, P0160, P1133, P1153, P2A01, P2A04	P0131, P0132, P0133, P0134, P0137, P0140, P0151, P0152, P0153, P0154, P0157, P0160, P1133, P1153, P2A01, P2A04	P0132, P0134, P0138, P0140, P0152, P0154, P0158, P0160, P1133, P1153, P2A01, P2A04	P0133, P0134, P0140, P0153, P0154, P0160, P1133, P1153, P2A01, P2A04, P2270, P2271
HO2S Low Signal	P2A01, P2A04	P0131, P0132, P0133, P0134, P0138, P0140, P0151, P0152, P0153, P0154, P0158, P0160, P1133, P2A01, P2A04	P0131, P0132, P0133, P0134, P0138, P0140, P0151, P0152, P0153, P0154, P0158, P0160, P1133, P1153, P2A01, P2A04	P0134, P0138, P0140, P0154, P0158, P0160, P1133, P1153, P2A01, P2A04	P2A01, P2A04

Factory diagnostic illustration for B1S1 circuits.

HO2S Sensor 1 Voltage			
Circuit	**Short to Ground**	**Open**	**Short to Voltage**
Parameter Normal Range: 200-800 mV			
HO2S High Signal	0 mV	Approximately 470 mV	Approximately 1,100 mV
HO2S Low Signal	455 mV	Approximately 450 mV	Approximately 445 mV

Factory diagnostic connector/circuit reference; use proper terminal adapters.

Check	Factory expectation / action
Live signal	A healthy pre-catalyst sensor should repeatedly move below 200 mV and above 800 mV and respond to fueling changes.
Contamination	Inspect for silicone, oil consumption, coolant ingestion, or fuel contamination; correct source before sensor replacement.
Exhaust	Repair leaks ahead of/near B1S1 before judging signal.
Harness	Inspect heat damage, chafing, corrosion, terminal tension, grounds, and heater circuit.

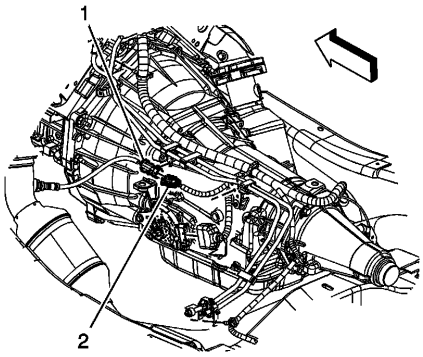
13. P1133 — factory circuit test

> **Power-down precaution**
>
> Before resistance/jumper testing, power modules down, disconnect the scan tool, and wait at least 60 seconds. Use a 3 A fused jumper and correct terminal adapters.

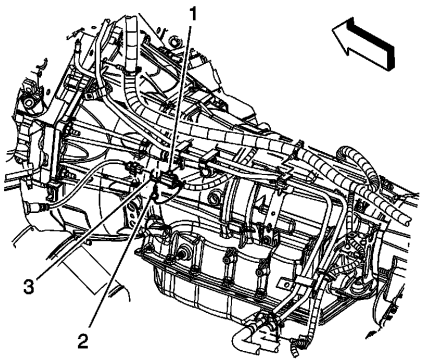
1. Correct the lean codes and any exhaust leak; clear and confirm P1133 returns.
2. Unplug B1S1. Measure low-signal terminal A to ground: target is **less than 5 ohms**. Repair high resistance/open.
3. Ignition ON with sensor unplugged: scan-tool HO2S should be about **450 mV**. Diagnose signal bias if not.
4. Using a **3 A fused** jumper at the harness, toggle high-signal terminal B between low-signal terminal A and battery positive.
5. The scan value should toggle between about **0 mV** and **1,000 mV**. If it does not, repair the signal circuits or diagnose the ECM input.
6. If circuits, heater, fueling, exhaust, and contamination checks pass but the sensor does not switch, replace B1S1.

> **Do not use a test light on signal circuits**
>
> A conventional incandescent test light can overload low-current sensor/module circuits. Follow the manual's meter and fused-jumper procedure.

14. P1133 — B1S1 replacement, parts and video



Factory illustration: locate and disconnect the upstream sensor harness.



Unclip the harness and remove the sensor with an O2-sensor socket.

1. Allow exhaust to cool; raise and support the 2WD truck. Ignore any 4WD prop-shaft step in the supplied manual.
2. Release CPA/connector as equipped and unclip the harness from heat shields/brackets.
3. Remove B1S1 with a 22 mm (7/8 in) oxygen-sensor socket.
4. New sensors normally include anti-seize on threads. If reusing a sensor, use GM 12377953 or equivalent only on threads; keep it off the tip.
5. Install and torque to **42 N·m (31 lb-ft)**. Route harness exactly away from exhaust and moving parts.
6. Clear codes, complete drive verification, and confirm switching and trims.

Example local part	Price / stock	Fit note
Bosch Direct Fit oxygen sensor 15200	$139.99; in stock, pickup today / ~1 hour	Catalog explicitly listed upstream, quantity 1; 4-wire heated, 17 in lead, M18×1.5. Verify full VIN/connector/emissions.

O'Reilly Bosch 15200 product page

Silverado/Tahoe B1S1 replacement video — visual supplement; verify 4.8L/2WD differences

Cost item	Planning range
Circuit/signal diagnosis	$120–$300
Sensor part	$90–$180
Installed total if sensor proven faulty	$220–$500

15. P1133 — FAQs and known pitfalls

Does P1133 always mean a bad oxygen sensor? No. A persistent lean mixture, upstream exhaust leak, wiring/heater problem, contamination, or an ECM input fault can create insufficient switching.

Which sensor is it? Bank 1 Sensor 1 is the pre-catalyst sensor on Bank 1. Confirm the connector and physical location against the vehicle before removal.

Should both upstream sensors be replaced together? Not automatically. Replace the component that fails testing; age-related paired replacement is an owner preference, not the code's diagnostic conclusion.

Why correct oil/coolant consumption first? Contamination can quickly damage a replacement sensor and converter.

Can P1133 cause P0420? A faulty or misleading front sensor and the mixture problem associated with it can compromise the catalyst monitor. That is why P0420 is last.

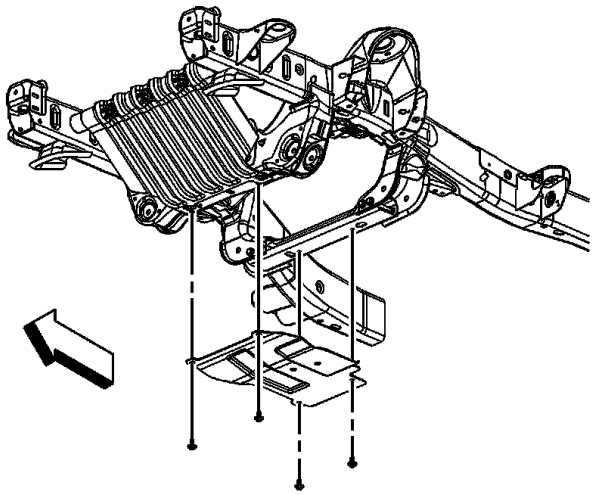
Pro tip: Graph B1S1, B2S1, short-term trims and RPM together. Compare banks and gently move the harness during an intermittent check while staying clear of hot/moving parts.

Video search: GM P1133 oxygen-sensor switching diagnosis

16. P0420 — catalyst efficiency is the final branch

Do not replace the converter yet

The manual directs correction of other DTCs first. A lean condition, misfire, oil/coolant consumption, incorrect spark, exhaust leak, damaged O2 sensor/wiring, or aftermarket calibration can produce or accelerate P0420. Replacing a converter before fixing the cause can waste the part and damage the replacement.



Factory exhaust/catalyst illustration. Exact assembly shape and legal certification depend on wheelbase, bed, emissions label and RPO; verify before ordering.

Inspect / test	What to look for
Fuel control and misfire	No P0171/P0174/P1133; normal trims; no active or history misfire pattern
Oil/coolant consumption	Fouling, smoke, coolant loss, internal leak evidence
Exhaust	Leaks, missing hardware, restriction, improper O2 torque, dents, discoloration, road damage, internal rattle
O2 sensors/wiring	Correct locations; no grounded/chafed harness; normal front switching and stable downstream behavior
Fuel	High-sulfur fuel can temporarily reduce efficiency; manual suggests about 10 minutes highway operation and retest
Calibration	If modified, confirm correct/OEM-compatible calibration before condemning converter

17. P0420 — diagnostic gate and replacement criteria

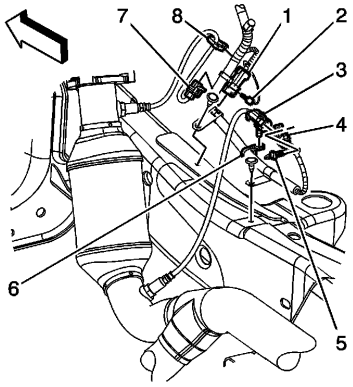
Gate	Required evidence
Prerequisite codes	All mixture, misfire, and oxygen-sensor codes repaired and remain absent
Running conditions	ECT and catalyst temperature in monitor range; fuel trims stable; monitor enabled
Leak/restriction check	No exhaust leak ahead of or near sensors/converter; no restriction or physical damage
Sensor comparison	Front and rear O2 signals respond as expected; circuits and heater operation pass
Repeatability	P0420 returns after a complete drive cycle under correct conditions
Replacement decision	Only then is converter replacement supported

> **New converter note**
>
> The manual notes that a converter with fewer than about 100 miles can set P0420 because of outgassing; roughly one hour of highway operation may correct the condition. Do this only when the vehicle is safe and all other faults are corrected.

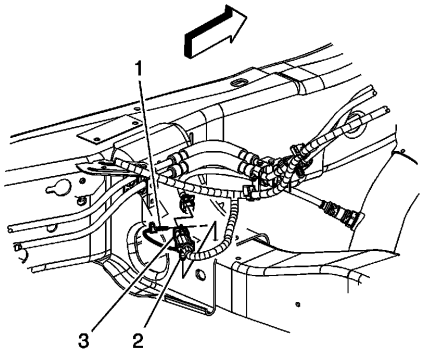
Catalyst replacement is professional-level work

The factory procedure requires lifting the truck, dealing with hot/rusted exhaust fasteners, disconnecting multiple O2 sensors, and removing the transmission crossmember. Use penetrant only on a cool exhaust, support the transmission/crossmember correctly, and use new seals/hardware as specified.

18. P0420 — factory replacement overview and torques



Factory illustration: catalytic assembly fasteners and interfaces.



Factory illustration: support/remove related crossmember components as directed.

1. Raise and safely support the truck; remove skid plate if equipped.
2. Support as required and remove the transmission crossmember per the exact 2WD procedure.
3. Label, disconnect and unclip all affected oxygen-sensor connectors/harnesses.
4. Remove catalytic-converter-to-muffler nuts and exhaust-manifold nuts; separate and remove the assembly.
5. Inspect mating flanges and install new exhaust seals; transfer only verified good sensors with anti-seize kept off tips.
6. Install assembly without forcing alignment. Torque manifold nuts to **50 N·m (37 lb-ft)**; converter-to-muffler nuts to **45 N·m (33 lb-ft)**.
7. Torque oxygen sensors to **42 N·m (31 lb-ft)**; skid bolts, if equipped, to **28 N·m (21 lb-ft)**.
8. Start cold, check for leaks, clear codes, complete monitor drive, and verify no return.

19. P0420 — parts, costs, videos, FAQs

Needed only after diagnosis	Part-number / fit rule	Price / availability
Catalytic converter assembly	Must match full VIN, 4.8L, 2WD, wheelbase/bed, Federal vs CARB/California certification, and underhood label	Not safely determined from the available catalog session; call the selected store with VIN + emissions label
Exhaust flange seals/gaskets	Match selected legal converter assembly	Confirm with converter
Nuts/bolts/clamps as required	Use corrosion-resistant, correct-grade hardware	Inspect before ordering
O2 sensors	Reuse if tests pass; do not replace automatically	See P1133 chapter for B1S1 example

Why no exact converter part number is printed

Catalytic converters are emissions-controlled parts. A wrong certification or wheelbase/exhaust configuration can be illegal, physically incompatible, or rejected for warranty/registration. The VIN lookup alone does not supply the underhood emissions family or bed/wheelbase.

Cost item	Planning range
Diagnosis / exhaust and sensor testing	$150–$350
Converter assembly	$700–$2,000+
Installed total	$1,100–$3,000+

Broad planning ranges only; not an O'Reilly quote. Legal-grade direct-fit assemblies, rust, crossmember hardware, welding, and shop rate vary greatly.

Video search: 2008 Silverado P0420 catalyst diagnosis

Video search: 2007–2013 Silverado 4.8L catalytic-converter replacement

FAQ — Will an O2 spacer fix it? It does not repair a failed converter or root cause and may violate emissions law. Use correct diagnosis and a compliant converter.

FAQ — Can I use a universal converter? Only if legal for the vehicle's certification and professionally installed. Direct-fit, application-approved units reduce fit and compliance risk.

20. Bulletins, recalls, and known issues

The supplied manual includes the following service information relevant to the symptoms. A bulletin is diagnostic guidance, not a recall and not proof that it applies to this VIN. Verify current applicability by VIN with a GM dealer or NHTSA before authorizing work.

Reference	Subject / relevance	How to use it
PIP5341 (Nov. 2015)	SES with P0171/P0174	Ask a GM-capable technician to check the bulletin's exact applicability and diagnostic direction.
03-06-04-030F/G/H	Clogged/restricted injectors	Supports injector cleaning/flow diagnosis after fuel quality and pressure checks.
08-06-04-016	Lean codes after brake-master-cylinder replacement	Relevant only if symptoms began after related brake/booster work.
05-06-04-035C	E85 usage and lean concerns	VIN lookup says gasoline; confirm flex-fuel RPO/cap/label before applying.
09-06-04-026B	Aftermarket V8 calibrations	Check calibration history before major engine/converter replacement if tuning is suspected.

Recall status

No open-recall conclusion is made in this report. Recall status is VIN- and date-specific. Check the VIN at NHTSA and Chevrolet/GM or ask a dealer to print the current VIN history.

NHTSA VIN recall lookup

Chevrolet recall and warranty lookup

21. Choosing parts and brands

Category	Preferred decision rule	Avoid
Sensors	OE/ACDelco or established direct-fit supplier with correct connector, calibration/application, warranty and emissions listing	Universal/splice-in sensor when a correct direct-fit unit exists
Purge valve	Correct flow direction, connector, ports and mounting; Standard/ACDelco or equivalent reputable brand	Choosing only by price or appearance
Catalytic converter	EPA/CARB-compliant for exact emissions family and state; direct-fit preferred; written warranty	Unapproved “fits-all,” used converter, hollowing, spacers, or emissions defeat
Connectors	Replace only for proven damage; use sealed automotive-grade splice method and correct terminal indexing	Twist-and-tape, household connectors, unsealed butt splices
Gaskets/hardware	New seals and correct high-temperature hardware where disturbed	Reusing crushed seals or mixing grades

Best-value rule

The least expensive successful repair is the one supported by a failed test. Buying an O2 sensor, purge valve, FTP sensor and converter together would bypass the factory diagnostic sequence and could exceed $2,000 without correcting the root cause.

22. Final verification and emissions readiness

1. After the proven repairs, use a capable scan tool to reset fuel trims; clear DTCs with engine OFF.
2. Turn ignition off for at least 60 seconds; restart and inspect live data for immediate faults.
3. At warm idle and 2,500 rpm, record STFT/LTFT both banks, MAF, MAP, B1S1/B2S1 switching, rear sensor behavior, commanded purge, and FTP voltage.
4. Verify fuel and exhaust connections for leakage. Never use a flame; repair any fuel seepage immediately.
5. Repeat the conditions that originally set each code. Do not judge success only because the MIL is off immediately after clearing.
6. Complete an appropriate GM drive cycle until required I/M monitors run. The original scan said NOT READY, so a code-free start alone does not equal an inspection-ready truck.
7. Rescan confirmed, pending, permanent (if supported), and history DTCs. Save final evidence and readiness status.

Final record	Bank 1	Bank 2 / other
Warm idle STFT	_____ %	_____ %
Warm idle LTFT	_____ %	_____ %
2,500 rpm STFT	_____ %	_____ %
2,500 rpm LTFT	_____ %	_____ %
Upstream O2 range	_____ to _____ mV	_____ to _____ mV
FTP cap-off KOEO	_____ V	Target 1.3–1.7 V
Fuel pressure KOEO	_____ psi	Target 50–60 psi
Monitors / DTCs	_____	_____

Completion standard

Repairs are complete only when the truck has no returning confirmed/pending faults, fuel control and sensor responses are normal, no fuel/exhaust leaks exist, and required emissions monitors are ready.

23. Sources and limitations

Owner-supplied sources

- REPORT.pdf: scan results, status, freeze-frame data, mileage and readiness.
- VIN Lookup.pdf: 2008 Chevrolet Silverado LS, 4.8L LY2 V8, gasoline, 4×2 and related VIN decode.
- Repair-manual ZIP: DTC pages P0171/P0174 (8999/9001), P0420 (9068), P0451 (9074), P1133 (9304); fuel diagnosis (11062/11063); purge replacement (14733); B1S1 replacement (10401); catalyst replacement (914); FTP replacement (10310–10312); tank removal (1410); FTP labor (24434); repair verification (9460).

Online sources and visual supplements

- O'Reilly catalog and selected store snapshot, 2317 Bob Wallace Ave SW, Huntsville, Alabama, observed August 6, 2026. Availability and pricing are time-sensitive.
- Linked 1A Auto and YouTube videos are visual supplements. Some cover nearby model years/configurations rather than this exact 4.8L 2WD VIN; the manual and on-vehicle verification control.
- NHTSA and Chevrolet/GM recall lookup links are provided because recall status changes and must be checked by VIN.

Limitations

This document is a diagnosis and repair-planning aid, not a hands-on inspection or guarantee. The supplied manual archive is labeled for a 4WD 5.3L truck; this report excludes clearly incompatible 4WD-only steps and flags part/configuration decisions that require the actual emissions label, RPO list, wheelbase/bed and tank size. Prices are planning snapshots or ranges, not quotes. No component is declared failed solely because its DTC appears.

> **Recommended shop instruction**
>
> Ask the technician to document the failing measurement for each replaced part and to preserve before/after fuel trims, fuel pressure, FTP voltage, O2 switching and readiness status. This prevents guesswork and protects the replacement converter.