SAC
Springfield Auto Care EXAMPLE SHOP
service@springfield-auto-care.example

2001 Jeep Wrangler at 125,000 mi

1J4FA49S11P123456

MODEL / CHASSIS	ENGINE	MILEAGE	DRIVETRAIN
Wrangler · TJ (1997–2006)	AMC/Chrysler 4.0L inline-six (PowerTech; 242 cu in)	125,000 mi	4WD
BUILD MONTH	**REPORT DATE**	**MODE**	**PREPARED FOR**
Not entered (door jamb)	October 28, 2026	Shop	Sample Owner

VIN check: check digit valid; model-year code '1' = 2001, matches the year entered. The VIN doesn't record the build month. Sample report: synthetic VIN.

1 · SUMMARY

What this car needs, in order

Each item compares this car's mileage with when owners and shops report the part failing. It is not an inspection: our technician decides what the car actually needs.

2
jobs recommended now

0
to plan in the next 30,000 miles

3
to watch or check at each service

Safety recalls NHTSA lists for this model year (2 of 3)

- **02V-104** · Engine · debris at the #3 cylinder between the manifolds: Debris such as leaves can collect at the #3 cylinder next to the fuel injector and hot exhaust manifold and catch fire. Dealers install a manifold shield.
- **02V-075** · Electrical · ignition switch: Water and dirt can get into the ignition switch and short it, which could start a fire.

A model-year list, not a VIN check. The full report lists the others. Repairs are free at a Jeep dealer if open. On a car over 15 years old, ask the dealer whether a newer recall is still repaired free. Check this VIN at nhtsa.gov/recalls.

Step 0 · Free: run the VIN at nhtsa.gov/recalls and ask a Jeep dealer for a campaign printout, including 02V-104. Read the build month (MM/YY) on the driver's door-jamb label.

Recommended now at the next service — $140

Inspection: check now, while it's cheaper to fix — $140

inspection EXAMPLE

Cracked cylinder head (0331 casting): coolant in the oil: Inside the range (Mostly 2000–2001 engines with the 0331 head; about 80,000–150,000 miles per one estimate site) · if it fails: $1,800–$3,200

Known weak point for this engine, not a finding on your car. The inspection shows whether yours has early signs.

Debris at the #3 cylinder between the manifolds (fire risk, recall 02V-104)

Free if open

Recall 02V-104 is listed for this model year. Check the VIN; the repair is free at a Jeep dealer if it is open.

Next 12 months up to about 137,000 mi

Nothing scheduled here.

Within the next 30,000 miles up to 155,000 mi

Nothing else enters its reported range in this window.

Watch inspect at each service, fix on condition, or optional

Cracked exhaust manifold and broken studs — $1,050

Any mileage · Inspect at each service; fix at the first sign

our price EXAMPLE

Crankshaft or camshaft sensor faults (stalling, no-start) — $165

Any mileage (recall 04V-112 covers the 2004 Grand Cherokee 4.0L sensor wiring) · Inspect at each service; fix at the first sign

our price EXAMPLE

Rear main seal and oil filter adapter leaks — Ask us for a quote

Any mileage (Chrysler bulletin for 2000–2005 Wranglers) · Inspect at each service; fix at the first sign

Recommended now

$140

Springfield Auto Care prices (example)

Planned through 155,000 mi

$140

Nothing else on the list before 155,000 mi. Now + next 12 months + next 30,000 miles. Excludes “watch” and optional items.

Prices are Springfield Auto Care's estimates for typical parts and labor. They don't include tax, shop supplies or disposal fees, and may change after inspection or if part prices change. Not a written repair estimate: Springfield Auto Care confirms the price and gets your OK before any work.

Bundled jobs are priced together because the labor overlaps. Routine service (oil, brakes, tires) isn't included; factory fluid and spark plug intervals are listed below.

FACTORY MAINTENANCE

The maker's maintenance schedule isn't on this report

This report doesn't include the maker's scheduled maintenance for this car yet, so brake fluid, spark plugs, coolant and transmission fluid aren't listed even when they're due. Check the service records and the maker's schedule for this car.

WHERE 125K SITS FOR EACH WEAK POINT

#	WEAK POINT	REPORTED RANGE	THIS CAR
1	Cracked exhaust manifold and broken studs	Any mileage FORUM/BLOG	Any mileage
2	Debris at the #3 cylinder between the manifolds (fire risk, recall 02V-104)	2000–2001 Cherokee, 1999–2002 Grand Cherokee and 2000–2002 Wrangler with the 4.0L (recall 02V-104) OFFICIAL	Any mileage
3	Cracked cylinder head (0331 casting): coolant in the oil	Mostly 2000–2001 engines with the 0331 head; about 80,000–150,000 miles per one estimate site FORUM/BLOG	Inside the range
4	Crankshaft or camshaft sensor faults (stalling, no-start)	Any mileage; recall 04V-112 covers the 2004 Grand Cherokee 4.0L sensor wiring OFFICIAL	Any mileage
5	Rear main seal and oil filter adapter leaks	Any mileage; Chrysler bulletin for 2000–2005 Wranglers OFFICIAL	Any mileage

Colors compare mileage with reported failures, not the car's condition. Red: past the range. Amber: inside or approaching. Green: below, or not listed for a recall.

2 · RECALLS AND BULLETINS

Recalls to check for this 2001 Jeep Wrangler

Safety recall repairs are free at Jeep dealers. On a car over 15 years old, ask the dealer whether a newer recall is still repaired free. Nothing here can tell whether a recall is open or already done on this VIN; only the official VIN lookup or a dealer can.

Official VIN check (2 minutes)

1. Go to nhtsa.gov/recalls and enter 1J4FA49S11P123456.
2. Note every recall shown as “Recall incomplete” and keep a screenshot.
3. Ask a Jeep dealer for a campaign printout; it also lists completed campaigns.

4.0L INLINE-SIX (POWERTECH) RECALLS WE TRACK

02V-104 · Debris can collect at the #3 cylinder between the manifolds (4.0L)

NHTSA lists this model and year: check by VIN

On 4.0L Cherokee, Grand Cherokee and Wrangler models, debris can build up at the #3 cylinder between the intake and exhaust manifolds, a fire risk. Dealers install a manifold shield. Free repair. OFFICIAL [2]

☐ VIN checked ☐ Open: booked with dealer ☐ Completed (printout kept)

04V-112 · Crankshaft sensor wiring insulation can crack (2004 Grand Cherokee 4.0L)

Not listed for MY2001

The crankshaft position sensor wiring insulation can crack and expose the wire. Dealers replace the sensor. Free repair. OFFICIAL [2]

Other 4.0L inline-six (PowerTech) recalls we track, not listed by NHTSA for this model and year: 06V-199 (cooling fan blades can break off (2000–2002 Grand Cherokee)).

EVERY RECALL NHTSA LISTS FOR THE 2001 JEEP WRANGLER (3)

RECALL	COMPONENT	WHAT CAN HAPPEN (NHTSA, SHORTENED)
02V-104 4.0L inline-six (PowerTech) tracked	Engine · debris at the #3 cylinder between the manifolds	Debris such as leaves can collect at the #3 cylinder next to the fuel injector and hot exhaust manifold and catch fire. Dealers install a manifold shield. Details
02V-075	Electrical · ignition switch	Water and dirt can get into the ignition switch and short it, which could start a fire. Details
00V-366	Child seat anchors · owner's manual	The owner's manual may be missing the steps for attaching a child seat to the anchors, so a child seat may not be attached properly. Details

Source: NHTSA recalls API, fetched 2026-10-28 and combined across NHTSA model names: WRANGLER. Safety categories (air bags, fire, brakes, stalling, roll-away and loss of control) are listed first; listings whose NHTSA text names another engine, or an aftermarket part, go last. OFFICIAL

Left out of this list (WRANGLER): 06E-026 (Pro-A replacement lamps), 06E-022 (aftermarket brake master cylinders), 06E-011 (Airtex replacement fuel pumps) and 04E-041 (Bestop roof rack) cover aftermarket parts, not the factory Jeep, and are left out of this sample; a VIN check would show any that applied.

SERVICE ACTIONS, BULLETINS AND WARRANTY PROGRAMS

Manufacturer bulletins and warranty programs for this engine are cited on each weak point in section 4, where they apply.

4 · THE 5 WEAK POINTS

Each weak point, one card each

Every figure carries its source. Retailer part numbers are shown only when the retailer lists them for this chassis (TJ).

1 Cracked exhaust manifold and broken studs

Any mileage

Severity: Medium: leaks and wear · 8 mentions in counted NHTSA complaints

COMPUTED FROM NHTSA DATA

Reports cover a wide mileage span (Any mileage), so mileage doesn't say much here. Range: Any mileage FORUM/BLOG [6]

WHAT FAILS FORUM/BLOG [6][7]

The cast exhaust manifold cracks from repeated heating and cooling. The leak is loudest on a cold engine and can fade as the metal warms and the crack closes. Studs can break off in the head, which makes the job bigger.

SYMPTOMS

- Ticking or puffing noise at cold start that fades when warm
- Exhaust smell under the hood or in the cabin
- Soot at the manifold or head joint

IF IT'S LEFT TOO LONG

A growing leak can burn nearby wiring and hoses and upsets the oxygen sensor readings.

IS IT WORTH DOING EARLY? OUR ESTIMATE

Fix it when the tick first appears, before more studs break.

ESTIMATED REPAIR COST

Exhaust manifold replacement, Jeep Wrangler (RepairPal)	**Our price is in the plan above** ask us for a written quote
Same job; broken studs add labor	**$942–$1,151** SHOP/RETAILER [8] reported range for the bill after a failure

PARTS FOR TJ

- Ask your parts supplier for the OE part number for this VIN.

QUESTIONS TO ASK US

- Any tick at cold start?
- Manifold ever replaced?

2 Debris at the #3 cylinder between the manifolds (fire risk, recall 02V-104)

Any mileage

Severity: Critical: rare, but can badly damage the engine · 6 mentions in counted NHTSA complaints

COMPUTED FROM NHTSA DATA

Reports cover a wide mileage span (2000–2001 Cherokee, 1999–2002 Grand Cherokee and 2000–2002 Wrangler with the 4.0L (recall 02V-104)), so mileage doesn't say much here. Range: 2000–2001 Cherokee, 1999–2002 Grand Cherokee and 2000–2002 Wrangler with the 4.0L (recall 02V-104) OFFICIAL [2]

WHAT FAILS OFFICIAL [2]

ESTIMATED REPAIR COST

The intake and exhaust manifold design can let debris such as leaves collect at the #3 cylinder, next to the fuel injector and the hot exhaust manifold. Chrysler recalled about 1.1 million 4.0L Jeeps; dealers fit a manifold shield. Owners report under-hood fires near the injectors.

SYMPTOMS

- Leaves or debris on top of the engine near the injectors
- Burning smell after a drive
- Smoke from under the hood

IF IT'S LEFT TOO LONG

Debris on the hot manifold can catch fire.

IS IT WORTH DOING EARLY? OUR ESTIMATE

Yes. Check the VIN for 02V-104 and make sure the shield is in place.

Free under recall 02V-104	**Free if covered** OFFICIAL [2] published independent-shop range
No published price outside the recall	**No published price** reported range for the bill after a failure

PARTS FOR TJ

- Ask your parts supplier for the OE part number for this VIN.

QUESTIONS TO ASK US

- Recall 02V-104 done?
- Any under-hood fire or smoke?

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3 Cracked cylinder head (0331 casting): coolant in the oil

Inside the range

Severity: High: overheating, stalls, limp mode or a big bill · 212 mentions in counted NHTSA complaints COMPUTED FROM NHTSA DATA

At 125,000 mi this car is inside the reported range (Mostly 2000–2001 engines with the 0331 head; about 80,000–150,000 miles per one estimate site), 45,000 miles past where reports start. Range: Mostly 2000–2001 engines with the 0331 head; about 80,000–150,000 miles per one estimate site FORUM/BLOG [7]



WHAT FAILS FORUM/BLOG [7][11][1][5]

The 0331-casting cylinder head used on 2000–2001 engines can crack in the water jacket between cylinders 3 and 4. Coolant then leaks into the oil, and the engine can lose coolant without a visible leak. Coolant in the oil can damage the main bearings. Owners also report the crack between cylinders 3 and 4 in NHTSA complaints, and a Chrysler bulletin covers high coolant temperatures on 2000–2001 Wranglers.

SYMPTOMS

- Coolant level dropping with no outside leak
- Milky or light-brown oil
- Overheating or check-gauges light

IF IT'S LEFT TOO LONG

ESTIMATED REPAIR COST

Oil and coolant check (no published price)	**Our price is in the plan above** ask us for a written quote
Cylinder head replacement (Open Labor Project estimate)	**$1,800–$3,200** FORUM/BLOG [7] reported range for the bill after a failure

PARTS FOR TJ

- Ask your parts supplier for the OE part number for this VIN.

Coolant in the oil wipes out the bearings; a cracked head means a new head.

IS IT WORTH DOING EARLY? OUR ESTIMATE

Check oil and coolant condition before buying a 2000–2001 4.0L; ask whether the head was replaced.

QUESTIONS TO ASK US

- Any coolant loss or overheating?
- Head ever replaced?

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4 Crankshaft or camshaft sensor faults (stalling, no-start)

Any mileage

Severity: High: overheating, stalls, limp mode or a big bill · 60 mentions in counted NHTSA complaints

COMPUTED FROM NHTSA DATA

Reports cover a wide mileage span (Any mileage; recall 04V-112 covers the 2004 Grand Cherokee 4.0L sensor wiring), so mileage doesn't say much here. Range: Any mileage; recall 04V-112 covers the 2004 Grand Cherokee 4.0L sensor wiring OFFICIAL [2]

WHAT FAILS OFFICIAL [1][2][4]

Owners report the engine dying at highway speed and not restarting until a failed crankshaft position sensor is replaced, sometimes more than once. Chrysler recalled 2004 Grand Cherokees with the 4.0L because the crankshaft sensor wiring insulation could crack (04V-112), and a 2000 bulletin covers a camshaft sensor that can touch its tone wheel and lose its signal.

SYMPTOMS

- Engine dies while driving
- Cranks but will not start, then starts after cooling
- Check-engine light with sensor codes

IF IT'S LEFT TOO LONG

A stall at speed costs power steering and brake assist.

IS IT WORTH DOING EARLY? OUR ESTIMATE

Replace a sensor that sets codes; check the VIN for 04V-112 on a 2004 Grand Cherokee.

ESTIMATED REPAIR COST

Crankshaft position sensor replacement, Wrangler (YourMechanic average)	**Our price is in the plan above** ask us for a written quote
No owner-reported bill	**No published price** reported range for the bill after a failure

PARTS FOR TJ

- Ask your parts supplier for the OE part number for this VIN.

QUESTIONS TO ASK US

- Any stalling or no-starts?
- Crank or cam sensor ever replaced?

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5 Rear main seal and oil filter adapter leaks

Any mileage

Severity: Medium: leaks and wear · 11 mentions in counted NHTSA complaints

COMPUTED FROM NHTSA DATA

Reports cover a wide mileage span (Any mileage; Chrysler bulletin for 2000–2005 Wranglers), so mileage doesn't say much here. Range: Any mileage; Chrysler bulletin for 2000–2005 Wranglers OFFICIAL [3]

WHAT FAILS FORUM/BLOG [3][6][10]

Oil leaks are a common complaint on the 4.0L. A Chrysler bulletin covers dirt and debris building up at the rear main seal on 2000–2005 Wranglers. Owners also find that the oil filter adapter O-rings crack and leak heavily, a leak often mistaken for the rear main seal.

SYMPTOMS

- Oil drips at the back of the engine or around the oil filter
- Oil on the exhaust or skid plate
- Oil level dropping between changes

IF IT'S LEFT TOO LONG

Low oil can damage the engine; oil on hot exhaust parts can smoke or catch fire.

IS IT WORTH DOING EARLY? OUR ESTIMATE

Find the real leak point first; the filter adapter O-rings are a cheap fix.

ESTIMATED REPAIR COST

No published price	**Our price is in the plan above** ask us for a written quote
No published price	**No published price** reported range for the bill after a failure

PARTS FOR TJ

- Ask your parts supplier for the OE part number for this VIN.

QUESTIONS TO ASK US

- Any oil top-ups between changes?
- Rear main seal or adapter ever resealed?

5 · ALSO REPORTED, NOT RANKED

Other themes in 4.0L inline-six (PowerTech) owner complaints

Every NHTSA complaint theme with 10 or more counted reports is either a weak point above or explained here.

THEME	COMPLAINTS	WHY IT ISN'T A WEAK POINT
Steering / brakes / air bags	3,635	Chassis and safety-equipment complaints (many covered by recalls); not engine faults.
Transmission	543	Automatic and manual transmission complaints; not engine faults.
Stalling / loss of power	444	Mixed causes in the complaint text: crank and cam sensors, fuel pumps and ignition parts; see the crank sensor item.

How this report is built

Inputs. VIN, model year, model, mileage and build month (if entered). Model and engine are checked with NHTSA's vPIC decoder.

Mileage positions. Below: more than 10,000 miles before the reported range. Approaching: within 10,000. Inside: in the range, or past the start of an open-ended range. Past: beyond the top of the range. These bands are our rules, not an industry standard.

The plan. Critical items inside or past their range go first; high-severity items follow, and jobs that share labor are bundled. At most three jobs land in “Recommended now”. Leaks that are cheap to watch are fixed on condition; inspections are asked for at each service.

Costs. Published independent-shop ranges from shop quotes, retailer prices and owner reports. Shop prices come from the issuing shop. The worst-case cost of every item failing is not shown: it isn't an expected cost.

Labels. `OFFICIAL` NHTSA/Stellantis documents · `SHOP/RETAILER` parts prices and shop articles · `FORUM/BLOG` owner forums and blogs · `COMPUTED FROM NHTSA DATA` our analysis of NHTSA data · `OUR ESTIMATE` ours.

NHTSA complaint data. Pulled Oct 27, 2026 from NHTSA's complaints API for 2000–2006 Wrangler complaints that do not mention a four-cylinder, 2000–2001 Cherokee complaints that do not mention the 2.5L, and 2000–2004 Grand Cherokee (and Laredo) complaints that do not mention the 4.7L V8: 8,945 complaints. Some of these nameplates were sold with other engines too; for those we left out complaints whose text names another engine or a hybrid, so a few complaints about other engines can remain. Themes are keyword matches on the complaint text. About 8,900 complaints, but most are about brakes, air bags and steering; the engine-specific counts are small. NHTSA complaint data starts with 2000 model years, so earlier Cherokee, Wrangler and Grand Cherokee 4.0L models are not in the counts.
`COMPUTED FROM NHTSA DATA`

THEME	COMPLAINTS	IN THIS REPORT
Steering / brakes / air bags	3,635	Also reported
Transmission	543	Also reported
Stalling / loss of power	444	Also reported
Cracked head / coolant in oil	212	Item 3
Crank / cam sensor	60	Item 4
Oil leaks	11	Item 5
Exhaust manifold	8	Item 1
Under-hood fire near injectors	6	Item 2

Limits: complaints are self-reported and not adjusted for cars sold; keyword matching over- and under-counts; owners rarely file safety complaints about oil seeps, so leaks look rarer than they are.

SOURCES

1. NHTSA owner complaints for 2000–2006 Wrangler complaints that do not mention a four-cylinder, 2000–2001 Cherokee complaints that do not mention the 2.5L, and 2000–2004 Grand Cherokee complaints that do not mention the 4.7L V8, pulled Oct 27, 2026 (ODI numbers in the cost notes) `OFFICIAL`
https://www.nhtsa.gov/report-a-safety-problem#complaints

2. NHTSA recall records: 02V-104 (4.0L debris at the #3 cylinder between the manifolds), 04V-112 (2004 Grand Cherokee 4.0L crankshaft sensor wiring) and 06V-199 (2000–2002 Grand Cherokee cooling fan blades), checked Oct 27, 2026 `OFFICIAL`
https://www.nhtsa.gov/recalls?nhtsaId=02V104000

3. DaimlerChrysler TSB 09-010-04: Dirt and debris accumulation at the rear main seal (2000–2005 Wrangler) (2004-10-01), filed with NHTSA OFFICIAL
https://www.nhtsa.gov/?nhtsaId=10006452

4. DaimlerChrysler TSB 08-022-00: Lower than expected engine performance from loss of the camshaft position sensor signal; the sensor can physically contact the tone wheel (2000 models) (2000-06-16), filed with NHTSA OFFICIAL
https://www.nhtsa.gov/?nhtsaId=614159

5. DaimlerChrysler TSB 07-004-01: Engine coolant temperature may rise high enough to light the check-gauges lamp (2000–2001 Wrangler) (2001-07-20), filed with NHTSA OFFICIAL
https://www.nhtsa.gov/?nhtsaId=620917

6. 8020 Automotive: Jeep 4.0 engine reliability, problems, specs (exhaust manifold cracks, oil leaks), via search extract Oct 28, 2026 FORUM/BLOG
https://8020automotive.com/jeep-4-0-straight-six-engine/

7. Open Labor Project: 2001 Jeep Wrangler 4.0L I6 (0331 cylinder head cracks between cylinders 3 and 4 at about 80,000–150,000 miles, 8–12 h) — AI-assisted site, not independently verified, via search extract Oct 28, 2026 FORUM/BLOG
https://openlaborproject.com/portal/jeep/wrangler/2001/4.0l-i6/

8. RepairPal: Jeep Wrangler exhaust manifold replacement estimate (all model years, engine not specified), via search extract Oct 28, 2026 SHOP/RETAILER
https://repairpal.com/estimator/jeep/wrangler/exhaust-manifold-replacement-cost

9. YourMechanic: Jeep Wrangler crankshaft position sensor replacement, via search extract Oct 28, 2026 SHOP/RETAILER
https://www.yourmechanic.com/estimates/jeep/wrangler/crankshaft-position-sensor-replacement

10. CherokeeForum: oil filter adapter fix thread (adapter O-rings crack and leak; owners mistook it for a rear main seal leak), via search extract Oct 28, 2026 FORUM/BLOG
https://www.cherokeeforum.com/f2/oil-filter-adapter-fix-4338/index6/

11. Bob Is The Oil Guy forum: 4.0L I6 Jeep thread (2000–2001 "331" head crack lets coolant into the oil and can damage the main bearings), via search extract Oct 28, 2026 FORUM/BLOG
https://bobistheoilguy.com/forums/threads/4-0l-i6-jeep.160300/page-3

This report contains no affiliate links; retailer prices are quoted as price sources only. Found an error? Email hello@repairahead.com.

PLEASE READ

Important

Based on public records and published repair costs. Not a diagnosis or a guarantee. Your technician's inspection decides what your car needs. Confirm recalls with a dealer using your VIN.

Informational only. This report is not a mechanical inspection, a diagnosis, or professional, legal or financial advice. It was issued by Springfield Auto Care using RepairAhead data; the inspection findings and prices are the shop's.

Reported ranges and estimates, not predictions

Failure mileages are reported ranges compiled from public owner complaints, manufacturer bulletins, recalls and repair-shop reports. Costs are estimates. Parts can fail earlier, later or not at all, and other problems can occur. Statistics from owner complaints describe past reports to NHTSA; NHTSA has not reviewed or endorsed this analysis.

Safety issues go to a dealer

If you notice overheating, a burning or fuel smell, smoke, a brake-assist problem, stalling or loss of power, pull over when it's safe and contact a Jeep dealer or qualified shop. Safety recall repairs are free at Jeep dealers. Confirm recalls for this VIN at nhtsa.gov/recalls.

No warranty

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Based on public records and published repair costs. Not a diagnosis or a guarantee. Your technician's inspection decides what your car needs. Confirm recalls with a dealer using your VIN.