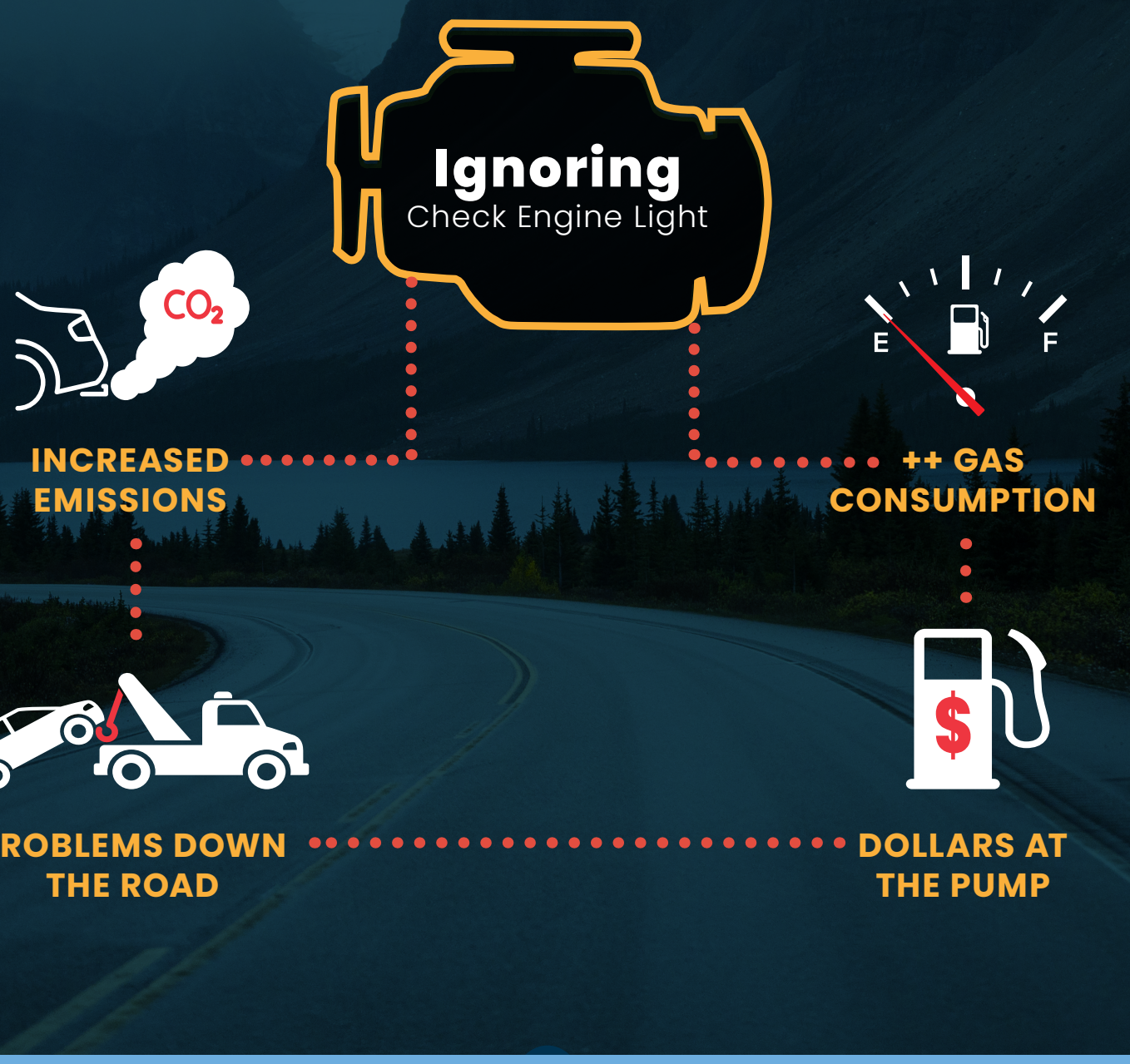
Vehicle Health Index™

2023

CarMD® 2023 Vehicle Health Index™

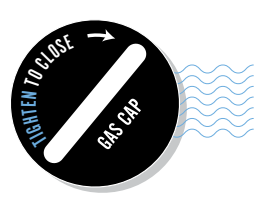
Here's what you need to know:

The **Check Engine Light** is designed to come on when a vehicle's computer sees a problem that impacts emissions or drivetrain issues.



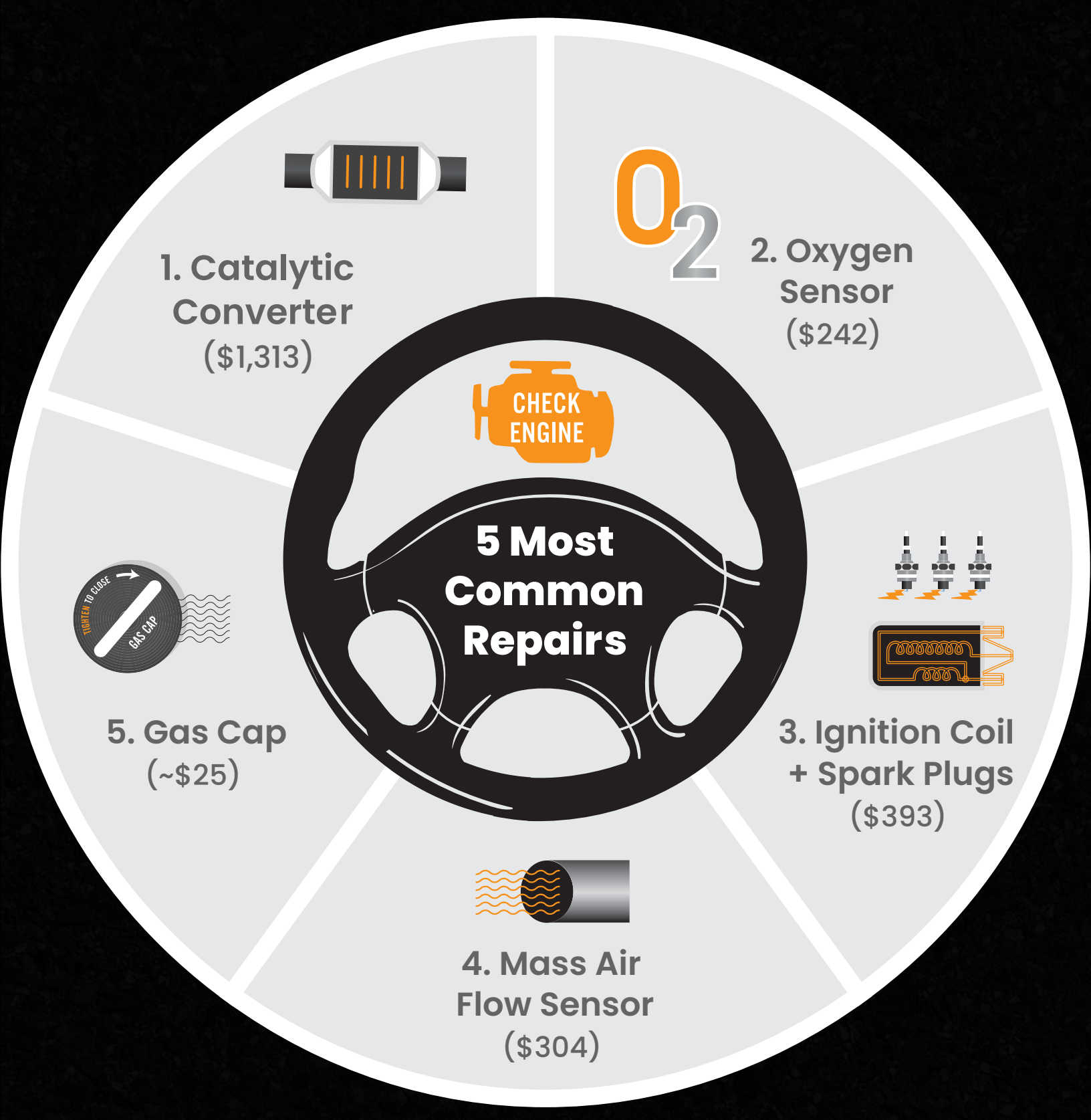
Don't Panic!

It might be something serious like a failing engine, but it's more likely to be a **loose gas cap**.



Cha Ching at the Pump!

If ignored, driving with the check engine light on will hurt your car's fuel economy – even if it seems like the car is driving fine.



SOURCE: 2023 CarMD Vehicle Health Index

2022

The 10 Most Common Check Engine Vehicle Repairs in the U.S.

For the fourth consecutive year, "replace catalytic converter" was the most common check engine repair. Catalytic converters are costly parts that don't often fail unless maintenance and other repairs are ignored, or a vehicle is up there in age. This can be partially explained by the all-time-high average vehicle age of 12.1 years in 2022 as more people opt to purchase vehicles at the end of the lease rather than trade in for a new car at lease end. As people keep their vehicles longer, the aftermarket will need to adjust parts forecasts and car owners will need to budget for more expensive repairs.

RANK	VEHICLE REPAIR	TOTAL AVERAGE REPAIR COST (PARTS & LABOR)	% 2022 REPAIRS	CHANGE IN RANK SINCE 2021
1	Replace Catalytic Converter(s)	$1,313.46	**6.10%**	No change
2	Replace Oxygen Sensor(s) (O2S)	$242.34	**5.38%**	No change
3	Replace Ignition Coil(s) and Spark Plug(s)	$392.65	**4.78%**	No change
4	Replace Mass Air Flow (MAF) Sensor	$303.61	**4.63%**	No Change
5	Inspect for Loose Fuel Tank Cap and Tighten or Replace as Necessary	$24.84	**4.06%**	No Change
6	Replace Evaporative Emissions (EVAP) Canister Purge Control Valve	$137.47	**3.93%**	Up from no. 8
7	Replace Ignition Coil(s)	$213.70	**3.72%**	Down from no. 6
8	Replace Fuel Injector(s)	$423.71	**2.54%**	Down from no. 7
9	Replace Thermostat	$238.58	**2.21%**	No change
10	Reprogram Powertrain Control Module (PCM)	$109.22	**1.94%**	New to list

(10 most common vehicle repairs are based on 17,728,913 repairs recommended in calendar year 2022 on 1996-2022 model year vehicles. This data applies to > 85% of cars, light trucks, minivans, SUVs and hybrids on the road in the U.S. – foreign and domestic. Source: CarMD.com Corp.)

FUTURE WATCH

While CarMD tracks the top 10 repairs, our statisticians monitor deep datasets for developing trends. Of note is the increase in hybrid and EV battery-related fixes. Although electric vehicles are Zero Emission Vehicles (ZEV) and are not required to comply with OBD2 standards, Hybrid and Plug-in Hybrids are equipped with Internal Combustion Engines (ICE). Because these powertrains produce emissions, they are equipped with OBD2 diagnostics. In 2022 "replace hybrid or EV high voltage battery" ranked no. 170. In 2021 it was no. 348. And in 2020 EV batteries weren't even on the list of common repairs, while hybrid batteries ranked no. 428.

2022
10 Most Common Check Engine Light Repairs

1. Replace Catalytic Converter

The most diagnosed, "replace catalytic converter(s)," accounted for 6.10% of repairs in 2022. A catalytic converter usually won't fail unless a related root cause – like a faulty spark plug – is ignored. As consumers keep their cars longer, vehicles will outlast parts like catalytic converters.

SYMPTOMS
Failing catalytic converters may cause the vehicle to experience reduced acceleration, sluggish engine performance, dark exhaust smoke and heat under the engine.

REPAIR COST
The average cost to replace a catalytic converter in 2022 was $1,313 because they contain precious metals. No wonder catalytic converter thefts have been in the news.

2. Replace Oxygen Sensor

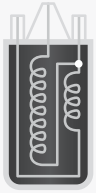
The 2nd most common repair was "replace oxygen sensor(s)," totaling 5.38% of check engine light repairs.

SYMPTOMS
O2 sensors can fail prematurely due to lack of maintenance like neglecting oil changes. Many drivers ignore the O2 sensor because their car often seems like it's driving fine, but it's reducing your fuel economy and slowly doing more damage to your car.

REPAIR COST
The average cost to replace an O2 sensor in 2022 was $242.

3. Replace Ignition Coil(s) and Spark Plug(s)

The 3rd most common repair was "replace ignition coil(s) and spark plug(s)," accounting for 4.78% of repairs. This is an example of how ignoring a smaller problem like a spark plug can snowball into the need for more than one repair, adding ignition coil-related costs to the total repair bill.

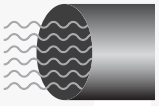


SYMPTOMS
Spark plugs and ignition coils work together to help the engine start and keep running. Faulty spark plugs can trigger ignition coil failure, which is why they are often replaced simultaneously. Symptoms include slow acceleration, loss of power, poor fuel economy, engine misfires and trouble starting the car.

REPAIR COST
The average cost to replace ignition coil(s) and spark plug(s) in 2022 was $392.

4. Replace Mass Air Flow Sensor

The 4th most common repair in 2022 was "replace Mass Air Flow (MAF) Sensor" (4.63%).



SYMPTOMS
The MAF sensor meters the air coming into a car's engine and determines how much fuel to inject into the engine. Some of the symptoms are stalling and hesitation during acceleration. When malfunctioning, it can lower fuel economy by as much as 25%.

REPAIR COST
The average cost to replace a MAF sensor in 2022 was $303.

5. Tighten or Replace Fuel Cap

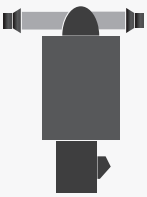
The 5th most common repair was "tighten or replace fuel cap," comprising 4.06% of repairs in 2022. Although this fix didn't change in rank year over year, it continues to trend down in percentage of repairs as more vehicles have capless gas tanks and plug-in hybrid options.

SYMPTOMS
Missing or damaged gas caps can cost time and money, triggering the check engine light and a repair shop visit. If left unchecked, a gas cap problem can reduce fuel economy and harm the environment.

REPAIR COST
The average cost to replace a gas cap in 2022 was $25. Tightening it is free.

6. Replace Evaporative Emissions (EVAP) Purge Control Valve

The 6th most common check engine-related repair in 2022 was "replace evaporative emissions (EVAP) purge control valve", which comprised 3.93% of recommended repairs in 2022.

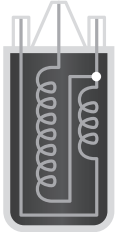


SYMPTOMS
This valve is part of the car's EVAP system, which prevents fuel vapors from escaping into the atmosphere. When the engine is warmed up, its computer opens the purge valve to allow fuel vapor to be moved from the charcoal canister to be burned in the engine. A faulty valve or corroded connector can cause EVAP purge control valve problems. If the purge flow is less or more than expected, the car may idle roughly and see decreased gas mileage. Since many of the most common problems share similar symptoms, it's important to diagnose check engine light issues.

REPAIR COST
The average cost to replace an EVAP purge control valve in 2022 was $137.

7. Replace Ignition Coil(s)

The 7th most common repair in 2022 was "replace Ignition Coil(s)," comprising 3.72% of repairs.



SYMPTOMS
Ignition coils help the engine start and keep running. They take the battery's 12-volt current and step it up to ignite the spark plugs. Your car may have only one ignition coil, or as many as it has cylinders. Symptoms may include rough idling – often at low speeds – or trouble starting the car, high under hood temperatures and age. A driver should pay attention to possible symptoms surrounding engine coil failure as it will soon affect other vehicle systems, such as the costly catalytic converter, and can leave them stranded by the roadside.

REPAIR COST
The average cost to replace ignition coil(s) in 2022 was $214.

8. Replace Fuel Injector(s)

The 8th most common repair in 2022 (2.54%) was "replace fuel injector(s)."

SYMPTOMS

Fuel injectors help make sure the car's fuel comes out as a fine mist so it can mix with the air passing into the cylinder. Some vehicles have more than one fuel injector, which is called muti-point fuel injection. A failing fuel injector can cause engine performance issues, poor idling, engine misfires and reduced fuel economy.

REPAIR COST

The average cost to replace fuel injector(s) in 2021 was $424.

9. Replace Thermostat

The 9th most common repair in 2022 was "replace thermostat" (2.21%).

SYMPTOMS

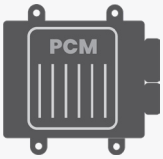
The car's thermostat regulates the engine coolant temperature to warm and cool to ideal "operating temperature." It opens and closes as needed to regulate temperature. When a thermostat fails, it often gets stuck open. If the vehicle's computer doesn't see the engine coolant temperature rise to "operating temperature" within a fixed amount of time, it will set the check engine light and overheat. A vehicle's thermostat can rust and fail if the coolant is not changed at recommended mileage intervals, or the vehicle is subjected to extreme temperatures.

REPAIR COST

The average cost to replace a thermostat in 2022 was $238.

10. Reprogram Powertrain Control Module (PCM)

Rounding out the 10 most common repairs: "reprogram powertrain control module (PCM)" making the list for the first time. It accounted for 1.94% of recommended repairs.



SYMPTOMS

Reprogramming the PCM is rarely needed as a stand-alone fix. Reprogramming or resetting the PCM is usually required after a module is replaced or needs to have adaptations reset to accommodate the changing condition of new parts in operation. This procedure is often recommended in TSBs or factory repair manuals.

REPAIR COST

The average cost to reprogram the PCM in 2022 was $109, basically an hour of labor.

How Does Age Affect Frequency and Type of Repairs?

At what age are vehicles most likely to experience a check engine light problem? Is the model year (MY) vehicle you drive likely to need a repair soon? CarMD found that MY 2007 vehicles were most likely to need a check engine light-related repair in the past year, with brand new (still under warranty) 2022 cars and trucks least likely to have issues.

Model Year	% of CEL Repairs in 2022	Most Common Check Engine Repair
1996	0.50%	Replace O2 sensor(s)
1997	0.70%	Replace catalytic converter(s)
1998	1.00%	Replace O2 sensor(s)
1999	1.20%	Replace O2 sensor(s)
2000	1.70%	Replace O2 sensor(s)
2001	2.40%	Replace O2 sensor(s)
2002	2.90%	Replace O2 sensor(s)
2003	3.70%	Replace O2 sensor(s)
2004	4.70%	Replace O2 sensor(s)
2005	5.90%	Replace catalytic converter(s)
2006	6.40%	Replace catalytic converter(s)
2007	7.20%	Replace catalytic converter(s)
2008	7.00%	Replace catalytic converter(s)
2009	4.80%	Replace catalytic converter(s)
2010	5.40%	Replace catalytic converter(s)
2011	5.80%	Replace catalytic converter(s)
2012	6.30%	Replace catalytic converter(s)
2013	6.70%	Replace catalytic converter(s)
2014	6.30%	Replace catalytic converter(s)
2015	6.10%	Replace EVAP canister purge control valve
2016	5.00%	Replace EVAP canister purge control valve
2017	4.10%	Replace EVAP canister purge control valve
2018	2.50%	Replace EVAP canister purge control valve
2019	1.40%	Replace EVAP Canister Purge Control Valve
2020	0.30%	Replace MAF sensor
2021	0.10%	Tighten or replace fuel cap
2022	0.10%	Tighten or replace fuel cap

2009 - 2022

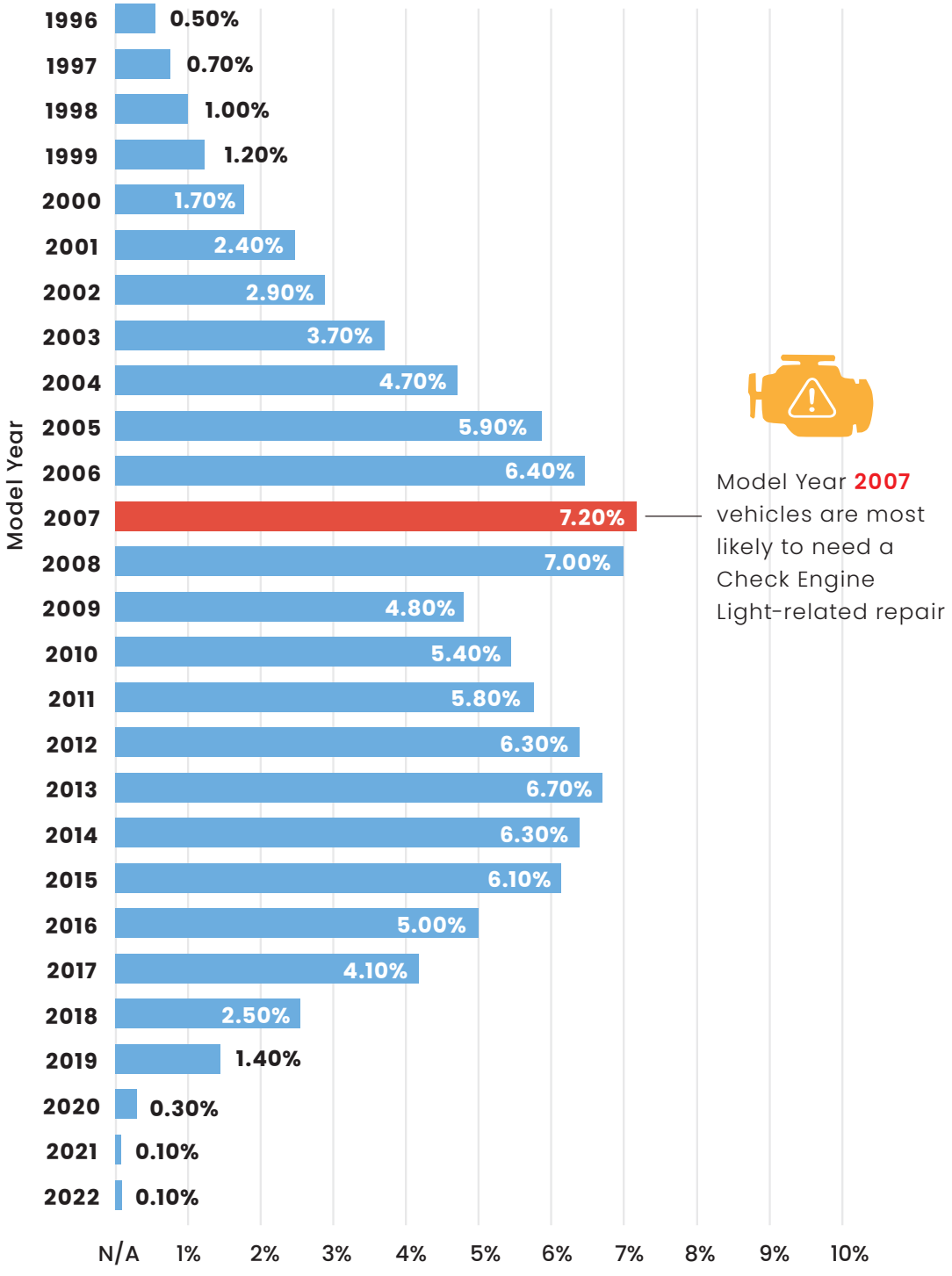
U.S. Average Check Engine Light Repair Cost Trends

In 2022 car repair costs were up 2.8% overall, comprised of $142.66 in labor costs and $261.05 in parts costs, totaling just over $403 on average – an all-time high since CarMD began tracking check engine light-related car repair costs.

Labor costs were down half a percent, which CarMD partially attributes to more DIYers doing their own repairs and competition among auto repair shops. In a continuing upward trajectory, parts costs were up nearly 5%. Factors that likely played a role in this increase include continued supply chain issues along with an increase in costly car parts failing as consumers hold onto their cars and trucks longer than ever before.

Year	Labor	Parts	Total Average Repair Cost
2009	$138.37	$221.13	$359.50
2010	$143.61	$212.44	$356.05
2011	$118.61	$215.32	$333.93
2012	$138.96	$228.88	$367.84
2013	$157.23	$235.26	$392.49
2014	$161.61	$228.77	$390.38
2015	$155.15	$232.16	$387.31
2016	$162.46	$235.41	$397.87
2017	$141.16	$216.29	$357.45
2018	$157.04	$223.81	$380.85
2019	$148.26	$236.64	$384.90
2020	$144.09	$234.68	$378.77
2021	$143.35	$249.22	$392.57
2022	$142.66	$261.05	$403.71

% of Check Engine Light Repairs in Calendar Year 2022 by Model Year



Regional Repair Costs

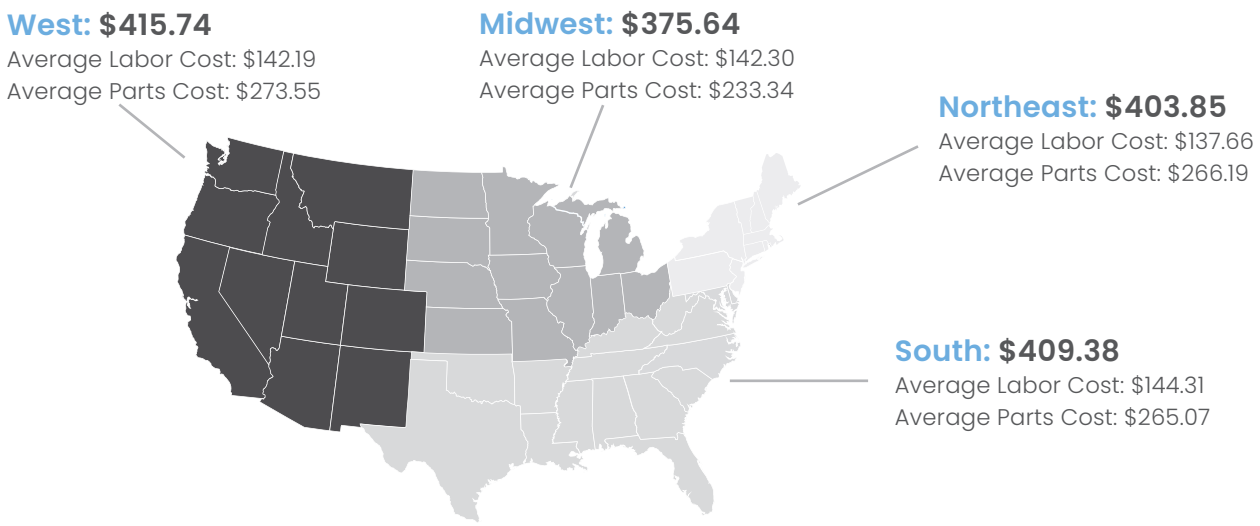
Repair costs were up in all four regions of the U.S. in calendar year 2022, with drivers in the Northeast seeing the biggest increase – up 3.7%.

Vehicle owners in the West paid the most for check engine-related car repairs ($416). Vehicle owners in the Midwest paid the least on average ($376).

The region with the highest average labor expense for check engine light repairs was the South ($144.31). The region with the lowest average labor expense for a check engine light repair was the Northeast ($137.66). This is not hourly rate, but the average amount of labor time charged for a related repair. This can be impacted by regional labor rates, what an individual shop charges to do the repair, and how difficult the repairs are.

The region with the highest average parts cost for check engine repairs was the West ($273.55), while vehicle owners in the Midwest saw the lowest average parts costs ($233.34). This can partially be explained by the type of repair. The most common fix on cars in the West was "replace catalytic converter" while in the Midwest the much more affordable "replace O2 sensor" was most common.

2022 Average Cost to Repair a Check Engine Light Issue - By Region



Yearly Comparison of Regional Average Check Engine-Related Repair Costs

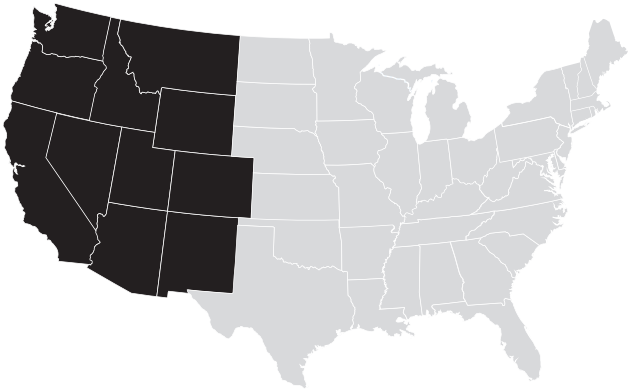
Source: CarMD.com Corp.

Region	Total Average Repair Costs (2020)	Total Average Repair Costs (2021)	Total Average Repair Costs (2022)	Percentage Change from 2021 to 2022
South	$381.87	$396.02	**$409.38**	**Up 3.4%**
West	$396.82	$406.79	**$415.74**	**Up 2.2%**
Midwest	$354.88	$366.35	**$375.64**	**Up 2.5%**
Northeast	$375.68	$389.55	**$403.85**	**Up 3.7%**

2022
Western Repair Costs & Data

The 10 Most Common Check Engine Vehicle Repairs in the Western U.S.

Rank	Vehicle Repair	Total Average Repair Cost (Parts & Labor)	% 2022 Western U.S. Repairs	Change In Rank Since 2021
1	**Replace Catalytic Converter(s) with new OE Catalytic Converter(s)**	**$1,387.22**	5.97%	No Change
2	**Replace Oxygen Sensor(s) (O2S)**	**$253.53**	5.21%	No Change
3	**Replace Mass Air Flow (MAF) Sensor**	**$320.74**	4.91%	No Change
4	**Replace Ignition Coil(s) and Spark Plug(s)**	**$392.53**	4.49%	No Change
5	**Inspect for Loose Fuel Tank Cap and Tighten or Replace as Necessary**	**$25.35**	4.45%	No Change
6	**Replace Ignition Coil(s)**	**$217.20**	3.83%	No Change
7	**Replace Evaporative Emissions (EVAP) Canister Purge Control Valve**	**$139.59**	3.56%	Up from no. 9
8	**Replace Fuel Injector(s)**	**$450.10**	2.38%	Down from no. 7
9	**Replace Thermostat**	**$239.03**	2.24%	Down from no. 8
10	**Reprogram Powertrain Control Module (PCM)**	**$108.39**	2.05%	No Change



2.2%

$415.74

Average cost to repair a vehicle's check engine light problem in the Western U.S. in 2022.

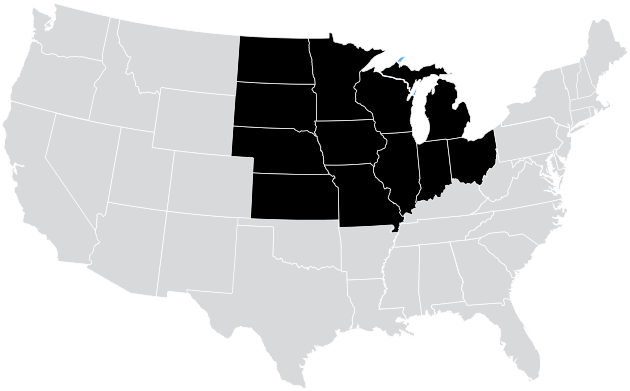
(10 most common vehicle repairs in the Western U.S. are based on 5,095,033 diagnosed repairs in 2022 in AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA and WY. This data applies to roughly 85% of cars, light trucks, minivans and SUVs on the road in the U.S. – foreign and domestic. Source: CarMD.com Corp.)

2022

Midwestern Repair Costs & Data

The 10 Most Common Check Engine Vehicle Repairs in the midwestern U.S.

Rank	Vehicle Repair	Total Average Repair Cost (Parts & Labor)	% 2020 Midwestern U.S. Repairs	Change In Rank Since 2019
1	**Replace Oxygen Sensor(s) (O2S)**	**$228.09**	5.69%	No Change
2	**Replace Catalytic Converter(s) with new OE Catalytic Converter(s)**	**$1,267.69**	5.66%	No Change
3	**Replace Evaporative Emissions (EVAP) Canister Purge Control Valve**	**$134.37**	4.51%	Up from no. 7
4	**Replace Ignition Coil(s) and Spark Plug(s)**	**$394.22**	4.31%	Down from no. 3
5	**Replace Mass Air Flow (MAF) Sensor**	**$279.43**	4.20%	No Change
6	**Inspect for Loose Fuel Tank Cap and Tighten or Replace as Necessary**	**$24.60**	3.98%	Down from no. 4
7	**Replace Ignition Coil(s)**	**$213.44**	3.05%	Down from no. 6
8	**Replace Fuel Injector(s)**	**$409.24**	2.73%	No Change
9	**Replace Thermostat**	**$234.17**	2.25%	No Change
10	**Replace Evaporative Emissions (EVAP) Purge Solenoid**	**$140.13**	2.08%	No Change



2.5%

$375.64

Average cost to repair a vehicle's check engine light problem in the Midwestern U.S. in 2022

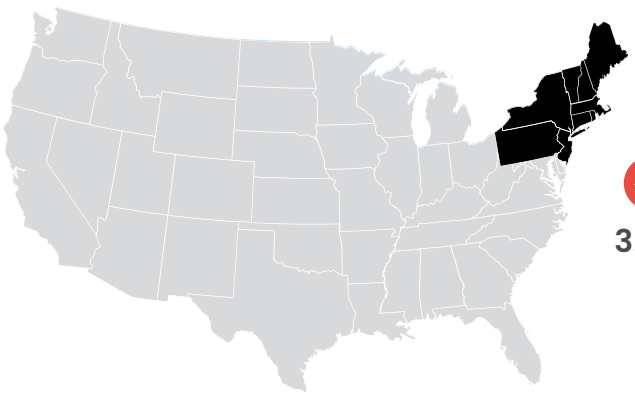
(10 most common vehicle repairs in the Midwestern U.S. are based on 2,965,769 repairs in 2021 in IA, IL, IN, KS, MI, MN, MO, ND, NE, OH, SD and WI. This data applies to roughly 85% of cars, light trucks, minivans and SUVs on the road in the U.S. – foreign and domestic. Source: CarMD.com Corp.)

2022

Northeastern Repair Costs & Data

The 10 Most Common Check Engine Vehicle Repairs in the Northeastern U.S.

Rank	Vehicle Repair	Total Average Repair Cost (Parts & Labor)	% 2020 Northeast U.S. Repairs	Change In Rank Since 2019
1	**Replace Catalytic Converter(s) with new OE Catalytic Converter(s)**	**$1,298.78**	6.56%	No Change
2	**Replace Oxygen Sensor(s) (O2S)**	**$260.21**	5.97%	No Change
3	**Inspect for Loose Fuel Tank Cap and Tighten or Replace as Necessary**	**$23.86**	5.38%	No Change
4	**Replace Ignition Coil(s) and Spark Plug(s)**	**$388.69**	4.51%	No Change
5	**Replace Mass Air Flow (MAF) Sensor**	**$309.55**	4.48%	No Change
6	**Replace Evaporative Emissions (EVAP) Canister Purge Control Valve**	**$140.10**	4.20%	Up from no. 7
7	**Replace Ignition Coil(s)**	**$216.86**	3.82%	Down from no. 6
8	**Replace Fuel Injector(s)**	**$427.77**	2.15%	No Change
9	**Replace Thermostat**	**$241.58**	2.06%	No Change
10	**Reprogram Powertrain Control Module (PCM)**	**$108.53**	2.04%	New to Ranking



3.7%

$403.85

Average cost to repair a vehicle's check engine light problem in the Northeastern U.S. in 2022.

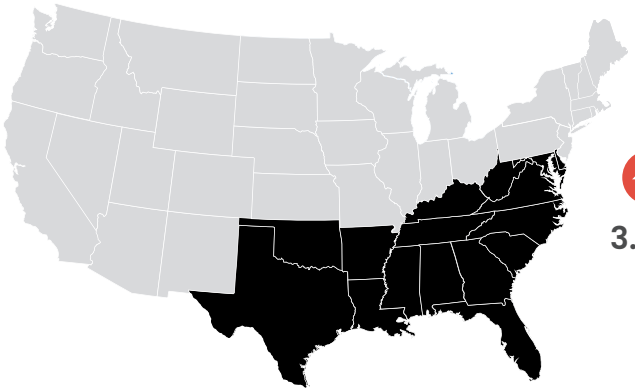
(10 most common vehicle repairs in the Northeastern U.S. are based on 1,675,646 repairs in 2021 in CT, MA, ME, NH, NJ, NY, PA, RI and VT. This data applies to roughly 85% of cars, light trucks, minivans and SUVs on the road in the U.S. – foreign and domestic. Source: CarMD.com Corp.)

2022

Southern Repair Costs & Data

The 10 Most Common Check Engine Vehicle Repairs in the Southern U.S.

Rank	Vehicle Repair	Total Average Repair Cost (Parts & Labor)	% 2020 Southern U.S. Repairs	Change In Rank Since 2019
1	**Replace Catalytic Converter(s) with new OE Catalytic Converter(s)**	**$1,295.87**	6.29%	No Change
2	**Replace Oxygen Sensor(s) (O2S)**	**$239.95**	5.32%	No Change
3	**Replace Ignition Coil(s) and Spark Plug(s)**	**$392.93**	5.23%	No Change
4	**Replace Mass Air Flow (MAF) Sensor**	**$301.04**	4.69%	No Change
5	**Replace Ignition Coil(s)**	**$211.35**	3.99%	Up from no. 6
6	**Replace Evaporative Emissions (EVAP) Canister Purge Control Valve**	**$137.04**	3.80%	New to Ranking
7	**Inspect for Loose Fuel Tank Cap and Tighten or Replace as Necessary**	**$24.85**	3.56%	Down from no. 5
8	**Replace Fuel Injector(s)**	**$419.34**	2.66%	Down from no. 7
9	**Replace Thermostat**	**$239.31**	2.15%	No change
10	**Reprogram Powertrain Control Module (PCM)**	**$109.09**	1.93%	No change



3.4%

$409.38

Average cost to repair a vehicle's check engine light problem in the Southern U.S. in 2022.

(10 most common vehicle repairs in the Southern U.S. are based on 8,287,105 repairs in 2021 in AL, AR, DC, DE, FL, GA, KY, LA, MD, MS, NC, OK, TN, VA, SC, TX and WV. This data applies to roughly 85% of cars, light trucks, minivans and SUVs on the road in the U.S. – foreign and domestic. Source: CarMD.com Corp.)

Who can benefit from CarMD's data?

+ **AUTOMOTIVE AFTERMARKET** – The CarMD Index can inform B2B parts manufacturers and aftermarket retail buyers to see year-over-year parts failure trends for parts quantity forecasting.
+ **REPAIR SHOPS** – Provide insight to repair professionals on the type of parts most likely to be needed when a car rolls into the service bay and see if their pricing is in line with average repair costs in their region.
+ **VEHICLE OWNERS** – Educate drivers about the importance of addressing check engine lights for better fuel economy and vehicle reliability. When used with resources such as CarMD Garage, it can help owners understand and budget for repairs.

What is distinctive about CarMD's Index?

Published annually since 2011, the CarMD Vehicle Health Index is the first and most comprehensive industry report to provide consumers and the automotive aftermarket with year-over-year check engine light repair insight.

Since 1996, every car, light truck, SUV, minivan and hybrid sold in the United States has been required to have an on-board diagnostic (OBDII) system. The OBD2 diagnostic program is in the vehicle's main computer and is designed to trigger the check engine light and alert drivers about issues related to emissions, fuel economy, and drivability.

CarMD is uniquely qualified to provide unbiased data on repair costs and trends having built the most dynamic database of failures and repairs related to vehicle on-board diagnostic systems. The data comes directly from each vehicle's OBDII system, reported by millions of vehicle owners and the professionals who service them. The failure and fix data are validated by CarMD's network of Automotive Service Excellence (ASE)-certified technicians.

The 2023 CarMD Vehicle Health Index statistically analyzes more than 17.7 million failures and recommended repairs for vehicles in the U.S., over the past calendar year. The year's Index and historical reports are available here.

ADDITIONAL, CUSTOMIZED REPORTS ARE AVAILABLE UPON REQUEST

For more information, please visit : www.carmd.com/big-data/

Index Methodology

CarMD has compiled the industry's most comprehensive database of OBD2-related problems and associated fixes uploaded by automotive technicians and vehicle owners since 1996.

The data for the 2022 CarMD® Vehicle Health Index™ was procured from repairs uploaded to the CarMD diagnostic database from Jan. 1, 2022 to Dec. 31, 2022. This year's index also reviewed past indices for a historical look at 10 years of data. The data comes directly from the vehicles themselves to the CarMD database without any human interface. This database is also used to support products such as CarMD PRO SCAN, an automated network inspection solution for technicians.

The data was collected and analyzed between Feb. 2, 2023 and Mar. 16, 2023.

Virtually all makes and models of cars, light trucks, minivans, SUVs and hybrids made since 1996 – foreign and domestic – with on board diagnostic second generation (OBD2) technology are included in the Index. Those makes and models with more registered vehicles on the road may have a larger statistical weighting in the Index findings, as will vehicles that experience more failures or whose owners seek guidance from sources that report to the CarMD database.

Each recommended repair has also been reviewed and validated by CarMD's team of ASE-certified Master Technicians and then output based on a probability algorithm that considers the vehicle's year, make, model, mileage, postal code, DTCs and similar vehicle problems to produce a most likely repair. Because the data stems from those U.S. vehicle owners and automotive technicians who elected to use the diagnostic devices and/or upload data into the CarMD database; no estimates of theoretical sampling error can be calculated.

All 50 U.S. states, plus the District of Columbia, are represented in this Index. The states with larger registered vehicle populations and participating ASE-certified technicians may have a larger quantity of logged repairs; however, all have been averaged into the overall Index findings. For regional data, CarMD used the U.S. Census Bureau Regions and Division Map to define regions.

Repair costs are based on parts and dealer list plus 10% markup. Labor rates are procured from several sources, including the Undercar Digest National and Regional Hourly Shop Labor Rate reports, as well as the average amount of time required for each repair. Both are updated annually.

CarMD has contracted with an independent consulting company to create and maintain the database for compiling and generating this Index.

Daily, CarMD's nationwide network of thousands of automotive service excellence (ASE)-certified technicians recommend, confirm and upload repairs and costs by region to the CarMD database. As a result, subsequent CarMD Vehicle Health Index reports will draw from an updated sampling of diagnostic trouble codes, expert fixes and repair costs.

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