

OVERVIEW



CarMD.COM CORPORATION, A LEADING PROVIDER OF CAR REPAIR DATA AND SOLUTIONS, IS PLEASED TO RELEASE ITS 2015 CarMD® VEHICLE HEALTH INDEX™ MANUFACTURER & VEHICLE RELIABILITY RANKINGS.

Unlike other industry reports and rankings that rely on subjective survey data, this is the only Index to offer an annual ranking of manufacturers and vehicles using statistically-based “check engine”-related failures and repair costs. These rankings are based on a combined average rating of fewest “check engine”-related problems and lowest repair costs for vehicles needing repairs over the past year. More than 251,000 reported in-use repairs that apply to an estimated 192 million Model Year 1996-2015 were analyzed to prepare this Index. CarMD recognizes that car maintenance and repairs are part of car ownership and reports on these findings to help consumers identify the vehicles with lower upkeep, while helping the industry stay abreast of year-over-year trends. This Index also ranks the top 100 vehicles overall, top vehicles by category and lists the most common repairs by make. Historical rankings are not necessarily indicative of future vehicle reliability.

CarMD has compiled and maintained the industry's most comprehensive database of “check engine” light-related problems and repairs. The database is procured from CarMD's nationwide network of Automotive Service Excellence (ASE)-certified technicians, who recommend, validate and upload repairs and costs to the database on a daily basis for 1996 vehicles to present. Thus, CarMD is uniquely able to provide statistics on a wide range of vehicles and manufacturers. By offering this unbiased and unprecedented repair and reliability information over time, CarMD is able to present an unparalleled view of reliability over the lifecycle of vehicles, enabling consumers and the industry to compare and contrast makes based on facts, and not just opinion surveys.

Each spring, the company also releases its CarMD® Vehicle Health Index™ of statistical information covering the most common “check engine” light-related car repairs and associated costs, on a national basis. Each summer, CarMD shares state-by-state rankings of car repairs and costs to help motorists better understand how geography and climate play a role in car maintenance and repairs. Current and archived indices are available at <http://www.carmd.com/wp/vehicle-health-index-introduction/list-of-indices/>.



Beginning in 1996, the U.S. government mandated that On-Board Diagnostics (OBD2) be included on all foreign and domestic cars, light trucks, vans and SUVs driven in the U.S. This system provides vital health and safety information for roughly 80 percent of a vehicle's systems, and is installed on more than 85 percent of the vehicles in the U.S. today.

SUMMARY: TOP MANUFACTURERS

Returning to the top spot after a one-year hiatus, Hyundai ranks no. 1, edging out Toyota (no. 2). Rounding out the top 10 vehicle manufacturers of 2015 are no. 3 Honda, no. 4 Ford and no. 5 Chrysler, no. 6 Kia, no. 7 General Motors, no. 8 Mazda and no. 9 Nissan. New to this year's list of the 10 most reliable manufacturers is Volkswagen (no. 10), which ranks just above BMW, which is not on this year's list.

TOP 10 MANUFACTURERS – 2015 (SOURCE: CarMD)

Rank	Manufacturer	% CarMD Problems Seen	Average Repair Cost (Parts & Labor)	Overall CarMD 2015 Index Rating*	Year-Over-Year Comparison
1.	Hyundai	2.93%	\$316.16	0.63	Up from no. 2
2.	Toyota	12.89%	\$411.71	0.69	Up from no. 3
3.	Honda	8.66%	\$408.69	0.84	Down from no. 1
4.	Ford	18.63%	\$309.55	0.88	Up from no. 5
5.	Chrysler	13.41%	\$316.76	0.89	Up from no. 6
6.	Kia	2.00%	\$369.75	0.90	Up from no. 7
7.	General Motors	25.84%	\$340.15	0.99	Down from no. 4
8.	Mazda	1.63%	\$335.05	1.39	Up from no. 9
9.	Nissan	7.10%	\$430.83	1.41	Down from no. 8
10.	VW	2.03%	\$373.78	1.54	New to list

*The lower the Index rating, the higher reliability ranking.

(Top 10 vehicle manufacturers based on model year 1996-2015 vehicles needing repairs between Oct. 1, 2014 and Sept. 30, 2015, and determined by the manufacturers whose vehicles had the fewest percentage of CarMD repair incidents combined with the lowest cost per repair, per number of registered vehicles on the road. Sources: CarMD.com Corp., with vehicle population data provided by R.L. Polk.)



HYUNDAI RANKS NO.1

helped by an average repair cost and low repair frequency, meaning Hyundai owners had fewer trips to the repair shop as compared with other manufacturers.

SUMMARY: TOP VEHICLES

Five sedans, two compacts, one crossover, one minivan and one hybrid comprise this year's top 10 list of most reliable vehicles, according to CarMD. The top 100 vehicles represent the best vehicles out of more than 3,800 different types of model year 1996 to 2015 vehicles on the road today. It is important to remember that even the 99th or 100th ranked vehicle on the list is a significant achievement, as this puts it in the top 2 percent of all vehicles being ranked.

TOP 10 VEHICLES – 2015 (SOURCE: CarMD)

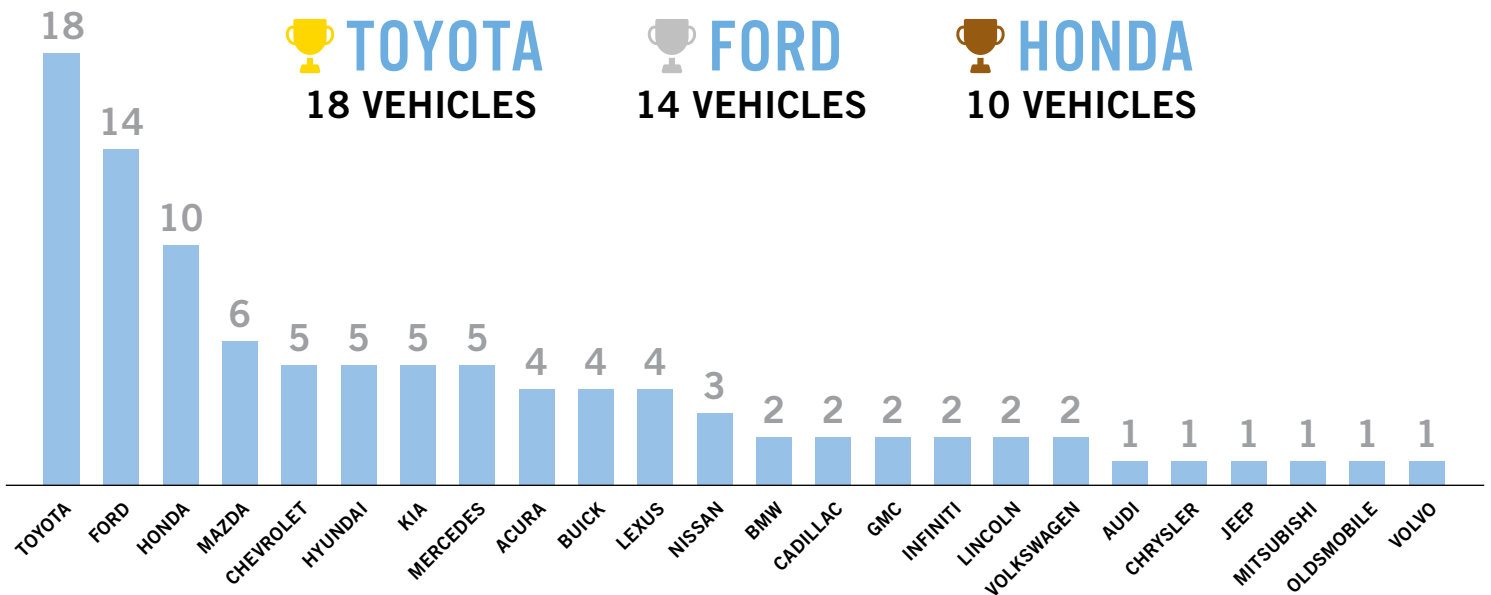
Rank	Year	Brand / Make	Model	Overall CarMD 2015 Index Rating Score*
1	2015	TOYOTA	COROLLA	0.013
2	2013	LEXUS	ES	0.013
3	2014	TOYOTA	PRIUS	0.016
4	2013	TOYOTA	AVALON	0.016
5	2013	HONDA	FIT	0.016
6	2014	VOLKSWAGEN	PASSAT	0.017
7	2014	HYUNDAI	SONATA	0.017
8	2014	FORD	EDGE	0.018
9	2015	CHRYSLER	TOWN & COUNTRY	0.018
10	2014	KIA	OPTIMA	0.018

***The lower the Index rating, the higher reliability ranking.**

(Top 10 vehicles based on model year 1996-2015 vehicles needing repairs in the U.S. between Oct. 1, 2014 and Sept. 30, 2015, and determined by the manufacturers whose vehicles had the fewest number of CarMD repair incidents combined with the lowest cost per repair, per number of registered vehicles on the road. Sources: CarMD.com Corp., with vehicle population data provided by R.L. Polk)

FINDINGS AT A GLANCE

NUMBER OF VEHICLES IN THE TOP 100 – 2015 (SOURCE: CarMD)



TOYOTA
18 VEHICLES

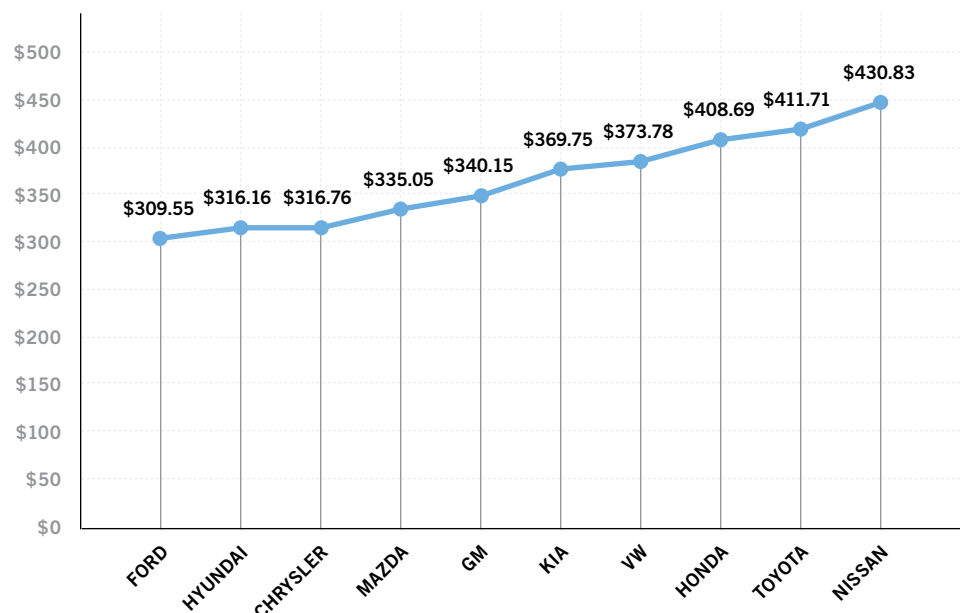
FORD
14 VEHICLES

HONDA
10 VEHICLES

AVERAGE REPAIR COST BY VEHICLE MAKE – 2015 (SOURCE: CarMD)

Ford had the lowest average repair cost among the top 10-ranked manufacturers (\$309).

The manufacturer with the highest overall repair cost was Nissan (\$430).



FINDINGS AT A GLANCE

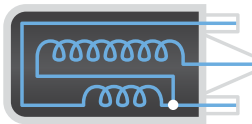
ELECTRIC MEETS RELIABILITY

This marks the first year that any electric vehicle made CarMD's list of 100 most reliable vehicles. Three electric vehicles are on the list, including the 2013 Ford C-Max (no. 33), 2014 Nissan Leaf (no. 50) and 2014 Ford C-Max (no. 82). Not all electric-only vehicles have OBD2 Data Link Connectors, but CarMD reports on those that do. While electric vehicles do not have emissions codes to retrieve, they can still have transmission and electrical codes, and related repairs.

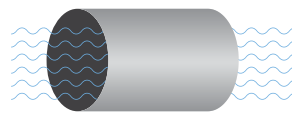


COMMON FAULTS BY MANUFACTURER

Different vehicle makes tend to have unique sets of problems and common failures. The CarMD Vehicle Health Index points out common problems by manufacturer, providing a helpful resource for vehicle owners as they maintain and repair their vehicles.



LINCOLN
**REPLACE IGNITION
COIL (33%)**



PORSCHE
**REPLACE MASS
AIR FLOW SENSOR (19%)**



MITSUBISHI
**REPLACE O₂
SENSOR (15%)**

TOP THREE VEHICLES BY CATEGORY

The following is a list of the top three vehicles by category in 2015 according to CarMD, which based its ranking on the vehicles with the combined fewest and lowest cost "check engine"-related problems:

Compact

1. 2015 Toyota Corolla
2. 2013 Honda Fit
3. 2014 Ford Fusion



Minivan

1. 2015 Chrysler Town & Country
2. 2014 Honda Odyssey
3. 2011 Nissan Quest



Sedan

1. 2013 Toyota Avalon
2. 2014 Volkswagen Passat
3. 2014 Hyundai Sonata



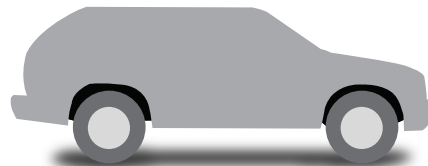
Luxury

1. 2013 Lexus ES
2. 2011 Mercedes-Benz C
3. 2011 Mercedes-Benz E



Full-Sized SUV

1. 2008 Volvo XC70
2. 2011 Acura MDX
3. 2015 Chevrolet Tahoe



Wagon / Crossover SUV

1. 2014 Ford Edge
2. 2014 Honda CR-V
3. 2014 Cadillac SRX



Truck

1. 2014 Ford F-150
2. 2015 Toyota Tacoma
3. 2015 Ford F-250



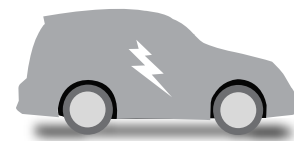
Hybrid

1. 2014 Toyota Prius
2. 2012 Toyota Prius
3. 2013 Toyota Prius



Electric

1. 2013 Ford C-Max
2. 2014 Nissan Leaf
3. 2014 Ford C-Max



DETAILED FINDINGS

TOP 10 VEHICLE MANUFACTURERS

1 HYUNDAI

No. 1-ranked **Hyundai's** ranking is credited to a lower than average repair cost and very low repair frequency, meaning Hyundai owners had fewer trips to the repair shop as compared with other manufacturers.

- Hyundai's Vehicle Health Index rating score (0.63) is just slightly better than Toyota (0.69).
- Hyundai has five vehicles on the top 100 list: 2014 Sonata (no. 7), 2013 Tucson (no. 40), 2014 Elantra (no. 64), 2014 Accent (no. 72) and the 2012 Tucson (no. 89).

2 TOYOTA

Toyota, no. 2, had the third lowest repair incident rating and a 15 percent drop in year-over-year repair cost from \$480 to \$411, but is edged out by Hyundai's slightly better overall score.

- Toyota, which includes the Lexus, Scion and Toyota brands, has 22 vehicles listed in the top 100, led by the 2015 Toyota Corolla (no. 1).
- Four Lexus ES vehicles are on the top 100 list, including the 2013 ES (no.2), 2011 ES (no. 31), 2014 ES (no. 58) and 2008 ES (no. 91). For the first time since the CarMD Vehicle Health Index has been published, a Scion made the top 100 with the 2010 Scion (no. 44). The 2015 Toyota Tacoma (no. 55 overall) is listed as a reliability leader in the truck category. Last year marked the first time a hybrid made this list and this year's list now includes six Prius vehicles.

3 HONDA

Honda, which includes Acura and Honda makes, drops to no. 3 from its no. 1 ranking a year ago partially due to a 5 percent uptick in average repair cost from \$388 in 2014 to \$408 in 2015. Honda, which scored a 0.84 Index rating, edged out Ford, which has a 0.88 Index rating.

- The top 100 list includes 10 Hondas and four Acuras. The top-ranked Acura is the 2011 MDX (no. 30). The best-ranked Honda is the 2013 Fit (no. 5).
- Honda has a presence as a top three vehicle in the compact, minivan and crossover categories with the 2013 Fit, 2014 Odyssey and 2014 CR-V respectively.

4 FORD

Ranked no. 4, **Ford** moves up one spot from its no. 5 ranking in 2014.

- Ford has the third lowest average repair cost (\$309).
- Ford has the second most vehicles in the top 100 with 14 Fords on the list. Two Lincoln vehicles also made the list this year, including the 2013 MKX (no. 61) and 2009 MKZ (no. 68).
- Ford has vehicles in the top 3 compact, crossover, electric and truck categories. The 2014 Ford Fusion is among the most reliable compacts; the 2014 F-150 and 2014 Edge top the truck and crossover categories respectively. The 2013 and 2014 Ford C-Max are among the most reliable electric vehicles on the road, according to CarMD.

5 CHRYSLER

Chrysler, no. 5, moves up one spot from its no. 6 ranking in 2014 helped by a decrease in "check engine" light repair incidents and a lower than average repair cost (\$316) – the U.S. average is \$390, according to CarMD.

- Chrysler only has one vehicle on CarMD's 2015 100 list – the 2015 Town & Country, which ranks no. 9 overall and earns the top spot in the minivan category. The 2003 Jeep Wrangler (no. 92) also made the list.
- There are no Dodge or RAM vehicles on this year's top 100 list.

DETAILED FINDINGS

TOP 10 VEHICLE MANUFACTURERS

6 KIA

Kia, ranked no. 6, continues to improve having moved from no. 8 in 2013 to no. 7 in 2014. Kia is helped by a low frequency of repair needs with only Hyundai and Toyota having fewer repairs per vehicle population.

- Kia's repair costs rose only marginally (1 percent) from \$365 in 2014 to \$369 on average in 2015.
- Kia has five vehicles in the top 100 including: the 2015 Optima (no. 11), 2014 Soul (no. 54), 2015 Soul (no. 59), 2015 Sorento (no. 74) and 2014 Sorento (no. 90).

7 GENERAL MOTORS

No. 7-ranked **General Motors** drops three spots from no. 4 in 2014.

- GM's drop in ranking is partially due to another 3 percent increase in average repair costs from \$329 to \$340.
- This year GM has 14 vehicles on the top 100 list, including one Oldsmobile, two GMCs, two Cadillacs, four Buicks and five Chevrolet makes. The 2015 Chevrolet Tahoe is among the three best large SUVs.
- GM boasts the two oldest vehicles on the top 100 list – the 2001 Oldsmobile Intrigue (no. 62) and the 2005 Chevrolet SSR (no. 81), demonstrating that as vehicles age they can still be reliable.

8 MAZDA

No 8, **Mazda** moves up one spot from its no. 9 ranking in 2014.

- Mazda is helped by a lower than average repair cost (\$335), despite a 10 percent increase from \$302 on in 2014.
- Mazda has six vehicles on the 2015 list of most reliable vehicles with bright spots being the 2014 and 2015 CX-5 compact SUV ranking no. 41 and no. 76 respectively. The Mazda 6 midsized sedan also made this year's list with the 2014 6 (no. 82) and the 2015 Mazda 6 coming in at no. 85. Also listed are the 2013 Mazda 2 (no. 94) and 2013 Mazda 5 (no.96).

9 NISSAN

Nissan, which includes Nissan and Infiniti makes, no. 9, moves down one spot from its no. 8 ranking last year.

- While Nissan does have the highest repair cost (\$430), this is an 8.5 percent decrease from its \$480 average repair cost in 2014.
- Nissan has three vehicles on the top 100 list this year, including the 2014 Nissan Leaf (no. 43), 2011 Nissan Quest (no. 52) and the 2014 Quest (no. 95). The Leaf is also listed among the top three electric vehicles in terms of reliability in 2015, which is the first time any electric vehicle earned a spot on the CarMD Vehicle Health Index Vehicle Rankings. Infiniti has two vehicles on the list: 2014 Q50 (no. 51) and 2013 G37 (no. 57).

10 VOLKSWAGEN

No. 10 is **Volkswagen**, returning to the top 10 after a one-year hiatus. helped by a slightly lower than average repair cost (\$373).

- Volkswagen has two vehicles on the top 100 list for 2015, including: 2014 Passat (no. 6) and the 2014 Jetta (no. 19). Audi has one vehicle on the list: the 2014 Q5, which ranks no. 20 overall and is a top compact SUV.
- This Index reports on in-use vehicle failures and repairs as reported by each vehicle's warning lights, self-diagnosis and corroboration of recommended repairs by professional technicians. While many OBD2-related repairs affect emissions output, this Index does not currently account for manufacturer recalls or shortcomings.

DETAILED INDEX DATA

TOP 100 VEHICLE RANKINGS & LISTS

The Top 100 Vehicles in the U.S. with the lowest overall CarMD Index ranking based on the combined fewest and lowest cost “check engine”-related problems (Model Year 1996-2015) from Oct. 1, 2014 and Sept. 30, 2015

Rank	Year	Brand / Make	Model	Average Repair Cost	Index Rating (Repair Incidents)	Index Rating (Repair Costs)	Overall CarMD Index Rating Score* (Repairs & Costs)
1	2015	TOYOTA	COROLLA	\$22.00	0.024	0.001	0.013
2	2013	LEXUS	ES	\$130.00	0.021	0.005	0.013
3	2014	TOYOTA	PRIUS	\$24.00	0.030	0.001	0.016
4	2013	TOYOTA	AVALON	\$24.00	0.031	0.001	0.016
5	2013	HONDA	FIT	\$40.00	0.031	0.002	0.016
6	2014	VOLKSWAGEN	PASSAT	\$356.00	0.018	0.017	0.017
7	2014	HYUNDAI	SONATA	\$78.00	0.028	0.007	0.017
8	2014	FORD	EDGE	\$154.00	0.025	0.010	0.018
9	2015	CHRYSLER	TOWN & COUNTRY	\$292.00	0.020	0.015	0.018
10	2014	HONDA	ACCORD	\$323.25	0.026	0.014	0.020
11	2015	KIA	OPTIMA	\$216.00	0.027	0.017	0.022
12	2011	MERCEDES-BENZ	C	\$187.00	0.029	0.015	0.022
13	2014	FORD	ESCAPE	\$205.33	0.029	0.016	0.022
14	2014	HONDA	CR-V	\$40.00	0.043	0.003	0.023
15	2014	FORD	FUSION	\$153.78	0.038	0.015	0.027
16	2011	MERCEDES-BENZ	E	\$286.00	0.031	0.024	0.028
17	2015	CHEVROLET	TAHOE	\$205.00	0.037	0.020	0.029
18	2015	HONDA	FIT	\$236.00	0.042	0.017	0.029
19	2014	VOLKSWAGEN	JETTA	\$40.75	0.058	0.006	0.032
20	2014	AUDI	Q5	\$217.00	0.041	0.024	0.032

DETAILED INDEX DATA TOP 100 VEHICLE RANKINGS & LISTS

Rank	Year	Brand / Make	Model	Average Repair Cost	Index Rating (Repair Incidents)	Index Rating (Repair Costs)	Overall CarMD Index Rating Score* (Repairs & Costs)
21	2013	BUICK	ENCLAVE	\$164.00	0.045	0.020	0.032
22	2014	GMC	TERRAIN	\$225.00	0.042	0.025	0.033
23	2014	FORD	FOCUS	\$325.63	0.037	0.031	0.034
24	2012	TOYOTA	PRIUS C	\$323.00	0.042	0.027	0.034
25	2014	HONDA	ODYSSEY	\$235.67	0.050	0.020	0.035
26	2008	VOLVO	XC70	\$123.00	0.053	0.017	0.035
27	2013	TOYOTA	PRIUS	\$23.00	0.070	0.003	0.037
28	2015	FORD	MUSTANG	\$108.00	0.058	0.016	0.037
29	2013	FORD	C-MAX	\$316.50	0.042	0.034	0.038
30	2011	ACURA	MDX	\$249.00	0.054	0.023	0.038
31	2011	LEXUS	ES	\$436.00	0.042	0.036	0.039
32	2014	FORD	F150	\$355.56	0.041	0.038	0.039
33	2014	CADILLAC	SRX	\$307.67	0.045	0.037	0.041
34	2015	CHEVROLET	CRUZE	\$213.50	0.055	0.031	0.043
35	2013	TOYOTA	RAV4	\$23.00	0.082	0.004	0.043
36	2009	ACURA	TL	\$109.00	0.073	0.014	0.043
37	2013	HONDA	ACCORD	\$290.79	0.059	0.029	0.044
38	2014	FORD	EXPLORER	\$221.56	0.056	0.032	0.044
39	2013	HONDA	CR-V	\$120.25	0.073	0.015	0.044
40	2013	HYUNDAI	TUCSON	\$108.00	0.066	0.023	0.044

(Top 100 vehicles based on CarMD diagnostic reports generated from Oct. 1, 2014 – Sept. 30, 2015, representing an estimated 192 million model year 1996 – 2015 vehicles on the road in the U.S., and determined by those that had the fewest number of CarMD repair incidents combined with the lowest cost per repair, per number of registered vehicles on the road. Sources: CarMD.com Corp., with vehicle population data provided by R.L. Polk)



DETAILED INDEX DATA

TOP 100 VEHICLE RANKINGS & LISTS

Rank	Year	Brand / Make	Model	Average Repair Cost	Index Rating (Repair Incidents)	Index Rating (Repair Costs)	Overall CarMD Index Rating Score* (Repairs & Costs)
41	2014	MAZDA	CX-5	\$223.13	0.057	0.033	0.045
42	2012	TOYOTA	PRIUS	\$264.25	0.061	0.032	0.046
43	2014	NISSAN	LEAF	\$108.00	0.081	0.015	0.048
44	2010	TOYOTA	SCION	\$22.00	0.092	0.004	0.048
45	2012	HONDA	CR-V	\$59.43	0.088	0.009	0.048
46	2013	CADILLAC	SRX	\$182.67	0.065	0.032	0.049
47	2014	TOYOTA	COROLLA	\$64.00	0.087	0.011	0.049
48	2015	BUICK	LACROSSE	\$268.00	0.057	0.041	0.049
49	2010	ACURA	TL	\$141.00	0.080	0.019	0.050
50	2013	TOYOTA	HIGHLANDER	\$108.00	0.085	0.018	0.052
51	2014	INFINITI	Q50	\$249.00	0.073	0.031	0.052
52	2011	NISSAN	QUEST	\$250.00	0.073	0.031	0.052
53	2001	OLDSMOBILE	INTRIGUE	\$157.00	0.074	0.031	0.053
54	2014	KIA	SOUL	\$282.00	0.058	0.048	0.053
55	2014	TOYOTA	TACOMA	\$22.00	0.104	0.004	0.054
56	2014	TOYOTA	RAV4	\$294.00	0.069	0.040	0.055
57	2013	INFINITI	G37	\$208.40	0.081	0.029	0.055
58	2010	LEXUS	ES	\$322.50	0.069	0.044	0.056
59	2015	KIA	SOUL	\$336.67	0.057	0.056	0.057
60	2011	TOYOTA	AVALON	\$362.50	0.067	0.048	0.057

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DETAILED INDEX DATA TOP 100 VEHICLE RANKINGS & LISTS

Rank	Year	Brand / Make	Model	Average Repair Cost	Index Rating (Repair Incidents)	Index Rating (Repair Costs)	Overall CarMD Index Rating Score* (Repairs & Costs)
61	2013	LINCOLN	MKX	\$247.50	0.070	0.045	0.058
62	2011	MERCEDES-BENZ	GL	\$488.00	0.050	0.065	0.058
63	2015	FORD	F250	\$308.67	0.064	0.052	0.058
64	2014	HYUNDAI	ELANTRA	\$213.50	0.070	0.047	0.059
65	2014	TOYOTA	CAMRY	\$33.12	0.112	0.007	0.060
66	2013	FORD	EDGE	\$216.00	0.077	0.043	0.060
67	2011	BUICK	LUCERNE	\$349.50	0.062	0.059	0.060
68	2009	LINCOLN	MKZ	\$54.00	0.107	0.015	0.061
69	2013	GMC	ACADIA	\$109.00	0.095	0.028	0.061
70	2014	ACURA	MDX	\$40.00	0.116	0.008	0.062
71	2008	TOYOTA	CAMRY SOLARA	\$223.00	0.087	0.038	0.062
72	2014	HYUNDAI	ACCENT	\$30.50	0.115	0.011	0.063
73	2014	FORD	C-MAX	\$108.00	0.099	0.028	0.063
74	2015	KIA	SORENTO	\$202.00	0.082	0.048	0.065
75	2012	HONDA	CIVIC	\$208.93	0.096	0.034	0.065
76	2015	MAZDA	CX-5	\$234.57	0.081	0.050	0.065
77	2010	MERCEDES-BENZ	E	\$427.00	0.062	0.070	0.066
78	2015	CHEVROLET	SUBURBAN	\$203.57	0.085	0.047	0.066
79	2014	FORD	TAURUS	\$238.33	0.082	0.051	0.066
80	2005	CHEVROLET	SSR	\$108.00	0.103	0.030	0.067

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DETAILED INDEX DATA TOP 100 VEHICLE RANKINGS & LISTS

Rank	Year	Brand / Make	Model	Average Repair Cost	Index Rating (Repair Incidents)	Index Rating (Repair Costs)	Overall CarMD Index Rating Score* (Repairs & Costs)
81	2014	CHEVROLET	CAPTIVA	\$188.86	0.088	0.045	0.067
82	2014	MAZDA	6	\$171.33	0.095	0.042	0.068
83	2011	MERCEDES-BENZ	GLK	\$457.00	0.062	0.076	0.069
84	2011	FORD	EXPLORER	\$233.20	0.086	0.052	0.069
85	2015	MAZDA	6	\$563.00	0.056	0.083	0.069
86	2015	HONDA	CR-V	\$198.00	0.104	0.035	0.070
87	2011	TOYOTA	PRIUS	\$383.75	0.079	0.060	0.070
88	2015	FORD	ESCAPE	\$271.00	0.082	0.058	0.070
89	2012	HYUNDAI	TUCSON	\$167.00	0.092	0.048	0.070
90	2014	KIA	SORENTO	\$295.75	0.077	0.066	0.072
91	2008	LEXUS	LS	\$266.00	0.094	0.049	0.072
92	2003	JEEP	WRANGLER	\$121.67	0.110	0.035	0.073
93	2011	TOYOTA	4RUNNER	\$225.67	0.101	0.045	0.073
94	2013	MAZDA	MAZDA2	\$108.00	0.115	0.032	0.073
95	2014	NISSAN	QUEST	\$279.00	0.100	0.048	0.074
96	2013	MAZDA	5	\$143.50	0.109	0.041	0.075
97	2011	BMW	528	\$339.00	0.078	0.072	0.075
98	2014	BUICK	ENCORE	\$196.67	0.099	0.052	0.076
99	2014	BMW	428	\$204.00	0.097	0.054	0.076
100	2013	TOYOTA	PRIUS C	\$120.33	0.124	0.029	0.077

(Top 100 vehicles based on CarMD diagnostic reports generated from Oct. 1, 2014 – Sept. 30, 2015, representing an estimated 192 million model year 1996 – 2015 vehicles on the road in the U.S., and determined by those that had the fewest number of CarMD repair incidents combined with the lowest cost per repair, per number of registered vehicles on the road. Sources: CarMD.com Corp., with vehicle population data provided by R.L. Polk)



COMMON REPAIRS BY BRAND/MAKE

MODEL YEARS 1996-2015

Different vehicle makes tend to have a unique set of problems and common failures. The CarMD Vehicle Health Index points out common “check engine” light-related problems and repairs by brand, providing a helpful resource for owners as they maintain and repair their vehicles.

For instance “Replace Oxygen Sensor” accounted for 15 percent of Mitsubishi repairs over the past year. Earlier this year, CarMD revealed that the no. 1 most common repair on vehicles in the U.S. is “replace O2 sensor,” accounting for 7.10 percent of all “check engine”-related repairs last year. O2 sensors measure the amount of unburned oxygen in the exhaust and tell a car’s computer when there is either too much or not enough fuel as compared with oxygen for ideal operation. If a faulty O2 sensor is not repaired, the car’s gas mileage can drop by as much as 40 percent.

Other examples: “Replace Ignition Coil” accounted for 33 percent of Lincoln vehicles and “Replace Mass Air Flow Sensor” comprised 19 percent of Porsche’s check engine-related trips to the shop.

ACURA: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Acura Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Oxygen Sensor(s) (O2S)	\$108.36	\$270.05	\$378.41	12.18%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$142.56	\$708.72	\$851.28	10.92%
3	Replace Exhaust Gas Recirculation (EGR) Valve and Clean All EGR ports	\$280.26	\$278.06	\$558.32	5.56%
4	Adjust Valves to OE settings	\$376.63	\$0.00	\$376.63	4.17%
5	Replace Ignition Coil(s) and Spark Plug(s)	\$263.85	\$395.46	\$659.31	3.98%

AUDI: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Audi Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Faulty Vacuum Hose(s) and Repair as Necessary	\$108.36	\$0.00	\$108.36	13.74%
2	Replace Mass Air Flow (MAF) Sensor	\$118.23	\$255.56	\$373.79	8.77%
3	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$0.00	\$0.00	8.64%
4	Replace Ignition Coil(s)	\$108.77	\$37.48	\$146.25	6.94%
5	Replace Ignition Coil(s) and Spark Plug(s)	\$167.84	\$162.75	\$330.59	6.15%

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BMW: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% BMW Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Vacuum Leak and Repair as Necessary	\$111.22	\$0.21	\$111.43	12.87%
2	Replace Ignition Coil(s)	\$119.61	\$98.51	\$218.12	11.96%
3	Replace Mass Air Flow (MAF) Sensor	\$108.91	\$448.90	\$557.81	9.09%
4	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$2.12	\$2.01	\$4.13	7.79%
5	Replace Ignition Coil(s) and Spark Plug(s)	\$165.62	\$372.87	\$538.49	7.79%

BUICK: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Buick Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$118.47	\$628.69	\$747.16	8.49%
2	Replace Evaporative Emissions (EVAP) Purge Solenoid	\$108.42	\$47.06	\$155.48	8.19%
3	Replace Oxygen Sensor(s) (O2S)	\$109.65	\$100.06	\$209.71	6.91%
4	Replace Thermostat	\$156.14	\$51.03	\$207.17	4.53%
5	Replace Spark Plug Wires and Spark Plugs	\$220.28	\$139.73	\$360.01	4.42%

CADILLAC: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Cadillac Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$156.81	\$1,144.10	\$1,300.91	7.75%
2	Clean Fuel Injector(s)	\$121.78	\$26.87	\$148.65	6.78%
3	Replace Spark Plug(s)	\$278.66	\$73.87	\$352.53	6.31%
4	Replace Fuel Injector(s)	\$244.15	\$189.70	\$433.85	6.26%
5	Replace Evaporative Emissions (EVAP) Purge Control Valve	\$109.35	\$67.40	\$176.75	6.13%



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CHEVROLET: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Chevy Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Oxygen Sensor(s) (O2S)	\$111.70	\$120.03	\$231.73	6.71%
2	Replace Evaporative Emissions (EVAP) Purge Control Valve	\$110.60	\$50.74	\$161.34	5.22%
3	Replace Evaporative Emissions (EVAP) Canister Vent Solenoid	\$115.95	\$105.47	\$221.42	4.67%
4	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$138.87	\$881.20	\$1,020.07	4.05%
5	Replace Fuel Injector(s)	\$255.71	\$324.01	\$579.73	3.62%

CHRYSLER: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Chrysler Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$5.87	\$5.87	7.85%
2	Replace Oxygen Sensor(s) (O2S)	\$111.56	\$125.65	\$237.22	7.05%
3	Replace Leak Detection Pump (LDP)	\$143.16	\$49.07	\$192.23	5.69%
4	Replace Camshaft Position Sensor (CMP)	\$108.36	\$62.68	\$171.04	5.61%
5	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$165.40	\$864.32	\$1,029.72	4.25%

DODGE: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Dodge Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$4.52	\$4.52	13.88%
2	Replace Ignition Coil(s) and Spark Plug(s)	\$179.72	\$135.95	\$315.67	9.77%
3	Replace Oxygen Sensor(s) (O2S)	\$127.54	\$97.75	\$225.29	8.34%
4	Replace Spark Plug Wires and Spark Plugs	\$203.40	\$125.42	\$328.82	6.24%
5	Replace Exhaust Gas Recirculation (EGR) Valve and Clean All EGR ports	\$116.21	\$123.10	\$239.31	5.42%



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FORD: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Ford Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Ignition Coil(s) and Spark Plug(s)	\$287.19	\$160.30	\$447.49	13.98%
2	Replace Ignition Coil(s)	\$135.72	\$119.10	\$254.82	6.33%
3	Replace Oxygen Sensor(s) (O2S)	\$111.16	\$102.21	\$213.37	5.91%
4	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$179.62	\$1,382.84	\$1,562.46	4.93%
5	Replace Spark Plug Wires and Spark Plugs	\$196.30	\$161.93	\$358.23	4.84%

GMC: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% GMC Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Oxygen Sensor(s) (O2S)	\$113.51	\$108.98	\$222.49	6.63%
2	Replace Evaporative Emissions (EVAP) Canister Vent Solenoid	\$108.36	\$133.64	\$242.00	5.16%
3	Replace Evaporative Emissions (EVAP) Purge Solenoid	\$122.24	\$72.33	\$194.57	4.58%
4	Replace Knock Sensor(s)	\$309.34	\$130.17	\$439.51	4.21%
5	Replace Fuel Tank Pressure (FTP) Sensor	\$295.54	\$94.00	\$389.54	3.85%

HONDA: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Honda Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$147.61	\$917.62	\$1,065.23	9.23%
2	Replace Oxygen Sensor(s) (O2S)	\$108.66	\$215.34	\$324.00	8.51%
3	Replace Exhaust Gas Recirculation (EGR) Valve and Clean All EGR ports	\$173.78	\$221.13	\$394.91	4.97%
4	Replace Air/Fuel Ratio Sensor (AFR)	\$110.08	\$260.67	\$370.75	4.18%
5	Adjust Valves to OE Settings and Replace Spark Plug(s)	\$316.89	\$83.74	\$400.63	3.41%



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HYUNDAI: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Hyundai Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$0.00	\$0.00	12.66%
2	Replace Oxygen Sensor(s) (O2S)	\$115.01	\$151.59	\$266.60	10.60%
3	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$134.13	\$1,066.96	\$1,201.09	6.89%
4	Replace Spark Plug Wires and Spark Plugs	\$212.89	\$124.32	\$337.21	6.22%
5	Replace Evaporative Emissions (EVAP) Purge Control Valve	\$108.36	\$73.98	\$182.34	6.07%

INFINITI: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Infiniti Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Camshaft Position Sensor (CMP)	\$108.49	\$124.80	\$233.29	9.15%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$209.56	\$1,009.17	\$1,218.74	8.99%
3	Replace Evaporative Emissions (EVAP) Vent Control Valve	\$108.36	\$138.21	\$246.57	8.33%
4	Replace Variable Valve Timing (VVT) Solenoid	\$108.36	\$278.37	\$386.73	6.92%
5	Replace Ignition Coil(s)	\$124.61	\$184.33	\$308.94	5.99%

JEEP: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Jeep Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$3.11	\$0.36	\$3.47	10.48%
2	Replace Oxygen Sensor(s) (O2S)	\$112.76	\$107.72	\$220.48	9.77%
3	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$168.61	\$1,075.16	\$1,243.77	5.91%
4	Replace Ignition Coil(s) and Spark Plug(s)	\$168.62	\$107.35	\$275.97	5.61%
5	Replace Emission System Integrity Monitor (ESIM)	\$118.50	\$51.74	\$170.24	5.57%



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KIA: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Kia Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Oxygen Sensor(s) (O2S)	\$111.51	\$221.34	\$332.85	9.70%
2	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$0.45	\$0.45	9.17%
3	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$153.38	\$962.46	\$1,115.84	7.11%
4	Replace Ignition Coil(s)	\$116.67	\$138.20	\$254.87	6.11%
5	Replace Spark Plug Wires and Spark Plugs	\$248.04	\$110.73	\$358.77	5.68%

LAND ROVER: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Land Rover Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Spark Plug Wires and Spark Plugs	\$415.18	\$406.66	\$821.84	13.74%
2	Replace Mass Air Flow (MAF) Sensor	\$108.36	\$273.38	\$381.74	10.94%
3	Replace Oxygen Sensor(s) (O2S)	\$108.62	\$208.82	\$317.44	10.69%
4	Replace Fuel Filler Tube	\$200.83	\$432.44	\$633.27	7.63%
5	Replace Evaporative Emissions (EVAP) Purge Control Valve	\$108.36	\$135.08	\$243.44	5.34%

LEXUS: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Lexus Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Oxygen Sensor(s) (O2S)	\$127.68	\$209.57	\$337.25	10.54%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$203.27	\$1,315.13	\$1,518.40	9.51%
3	Replace Ignition Coil(s) and Spark Plug(s)	\$251.43	\$221.39	\$472.82	9.28%
4	Replace Mass Air Flow (MAF) Sensor	\$112.37	\$269.26	\$381.63	8.36%
5	Replace Air/Fuel Ratio Sensor (AFR)	\$125.06	\$254.47	\$379.53	7.62%



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LINCOLN: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Lincoln Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Ignition Coil(s) and Spark Plug(s)	\$247.46	\$165.87	\$413.33	23.30%
2	Replace Ignition Coil(s)	\$121.73	\$94.17	\$215.90	9.57%
3	Replace Oxygen Sensor(s) (O2S)	\$109.14	\$98.32	\$207.46	6.60%
4	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$169.74	\$1,276.63	\$1,446.37	4.76%
5	Replace Thermostat	\$113.15	\$33.74	\$146.89	4.31%

MAZDA: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Mazda Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Ignition Coil(s)	\$136.93	\$123.87	\$260.80	7.27%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$162.64	\$936.76	\$1,099.40	6.84%
3	Replace Oxygen Sensor(s) (O2S)	\$112.09	\$169.53	\$281.62	6.66%
4	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$24.08	\$11.97	\$36.05	5.90%
5	Replace Mass Air Flow (MAF) Sensor	\$108.40	\$266.97	\$375.37	5.90%

MERCEDES: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Mercedes Repairs Oct. 1, 2014–Sept. 30, 2015
1	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$1.22	\$1.22	10.21%
2	Replace Mass Air Flow (MAF) Sensor	\$111.63	\$427.90	\$539.53	9.78%
3	Replace Spark Plug Wires and Spark Plugs	\$295.92	\$296.84	\$592.76	6.04%
4	Replace Ignition Coil(s) and Spark Plug(s)	\$215.65	\$476.84	\$692.49	5.82%
5	Replace Exhaust Gas Recirculation (EGR) Valve and Clean All EGR ports	\$119.91	\$190.99	\$310.90	5.46%



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MERCURY: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Mercury Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Ignition Coil(s) and Spark Plug(s)	\$255.34	\$153.30	\$408.64	14.11%
2	Replace Spark Plug Wires and Spark Plugs	\$203.08	\$210.71	\$413.79	8.09%
3	Replace Oxygen Sensor(s) (O2S)	\$111.97	\$90.77	\$202.74	6.86%
4	Replace Positive Crankcase Ventilation (PCV) Valve and Hose	\$108.36	\$20.58	\$128.94	5.56%
5	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$189.22	\$1,286.36	\$1,475.58	5.07%

MINI: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Mini Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Ignition Coil(s) and Spark Plug(s)	\$134.13	\$185.15	\$319.28	14.12%
2	Replace Oxygen Sensor(s) (O2S)	\$108.36	\$276.97	\$385.33	13.36%
3	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$0.00	\$0.00	12.98%
4	Replace Spark Plug(s)	\$121.90	\$119.41	\$241.31	6.11%
5	Replace Thermostat and Housing Assembly	\$323.41	\$150.10	\$473.51	4.96%

MITSUBISHI: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Mitsubishi Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Oxygen Sensor(s) (O2S)	\$119.28	\$242.76	\$362.05	14.85%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$151.54	\$945.63	\$1,097.17	10.72%
3	Replace Spark Plug Wires and Spark Plugs	\$257.79	\$170.13	\$427.92	7.74%
4	Replace Mass Air Flow (MAF) Sensor	\$108.36	\$597.16	\$705.52	5.68%
5	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$1.63	\$3.78	\$5.41	5.28%



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NISSAN: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Nissan Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$235.43	\$719.02	\$954.45	13.44%
2	Replace Mass Air Flow (MAF) Sensor	\$108.37	\$372.61	\$480.98	6.16%
3	Replace Oxygen Sensor(s) (O2S)	\$119.85	\$237.14	\$356.99	5.00%
4	Replace Ignition Coil(s)	\$142.42	\$143.01	\$285.43	4.79%
5	Replace Camshaft Position Sensor (CMP)	\$110.35	\$114.19	\$224.54	4.56%

PONTIAC: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Pontiac Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$157.39	\$819.27	\$976.66	9.54%
2	Replace Oxygen Sensor(s) (O2S)	\$109.04	\$121.93	\$230.97	6.87%
3	Replace Fuel Injector(s)	\$242.33	\$408.75	\$651.08	6.39%
4	Replace Thermostat	\$145.90	\$50.59	\$196.49	5.55%
5	Replace Fuel Tank Pressure (FTP) Sensor	\$176.01	\$95.31	\$271.32	3.93%

PORSCHE: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Porsche Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Mass Air Flow (MAF) Sensor	\$176.33	\$689.79	\$866.11	18.64%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$189.99	\$1,716.68	\$1,906.67	12.71%
3	Replace Oxygen Sensor(s) (O2S)	\$122.29	\$344.32	\$466.61	11.86%
4	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$1.64	\$1.64	8.47%
5	Replace Ignition Coil(s) and Spark Plug(s)	\$201.24	\$236.86	\$438.10	5.93%



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SUBARU: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Subaru Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$126.19	\$859.14	\$985.33	14.34%
2	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$1.04	\$0.37	\$1.41	13.20%
3	Replace Spark Plug Wires and Spark Plugs	\$208.75	\$105.75	\$314.50	11.04%
4	Replace Oxygen Sensor(s) (O2S)	\$174.90	\$190.19	\$365.09	9.90%
5	Replace Knock Sensor(s)	\$129.61	\$131.95	\$261.56	6.60%

SUZUKI: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Suzuki Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$127.04	\$959.46	\$1,086.50	11.24%
2	Replace Oxygen Sensor(s) (O2S)	\$108.74	\$271.35	\$380.09	11.16%
3	Replace Spark Plug(s)	\$108.36	\$52.83	\$161.19	5.97%
4	Replace Evaporative Emissions (EVAP) Purge Control Valve	\$108.36	\$113.80	\$222.16	5.66%
5	Replace Transmission Range Sensor	\$108.36	\$75.19	\$183.55	4.88%

TOYOTA: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% Toyota Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$135.40	\$1,140.10	\$1,275.50	11.41%
2	Replace Oxygen Sensor(s) (O2S)	\$118.44	\$192.02	\$310.46	9.43%
3	Replace Mass Air Flow (MAF) Sensor	\$119.50	\$265.07	\$384.57	6.80%
4	Replace Ignition Coil(s)	\$116.03	\$116.94	\$232.97	6.35%
5	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$4.18	\$23.22	\$27.40	5.95%



VOLKSWAGEN: 5 MOST COMMON “CHECK ENGINE” LIGHT REPAIRS (OCT. 1, 2014 - SEPT. 30, 2015)

Rank	Repair	Labor	Parts	Total Repair Cost (Parts & Labor)	% VW Repairs Oct. 1, 2014–Sept. 30, 2015
1	Replace Mass Air Flow (MAF) Sensor	\$110.12	\$259.60	\$369.72	9.18%
2	Replace Catalytic Converter(s) with new OE Catalytic Converter(s)	\$196.62	\$1,030.19	\$1,226.81	7.94%
3	Inspect for Faulty Vacuum Hose(s) and Repair as Necessary	\$108.36	\$0.00	\$108.36	7.57%
4	Inspect for Loose Fuel Cap and Tighten or Replace as Necessary	\$0.00	\$0.00	\$0.00	6.78%
5	Replace Ignition Coil(s)	\$115.05	\$94.42	\$209.47	6.48%

INDEX METHODOLOGY

CarMD HAS COMPILED THE INDUSTRY'S MOST COMPREHENSIVE DATABASE OF DIAGNOSTIC TROUBLE CODES AND REPAIRS FOR "CHECK ENGINE" – RELATED PROBLEMS DOWNLOADED BY AUTOMOTIVE TECHNICIANS AND VEHICLE OWNERS SINCE 1996.

The data for the 2015 CarMD® Vehicle Health Index™ Manufacturer & Vehicle Rankings was procured from CarMD's network of thousands of independent and original equipment Automotive Service Excellence (ASE)-certified technicians who have input and validated failures and fixes into the CarMD diagnostic database.

The 2015 Index statistically analyzes more than 251,000 specific repairs that apply to roughly 192 million model year 1996 to 2015 vehicles, taking place in the United States during the Oct. 1, 2014 to Sept. 30, 2015 date period. The data for the 2015 CarMD® Vehicle Health Index was pulled, analyzed and validated between Oct. 1, 2015 and Nov. 12, 2015, by CarMD's internal team. The Index is based on downloaded information from each vehicle's government-mandated onboard diagnostic computer, combined with uploaded repair information from CarMD's network of automotive technicians.

For the 2015 Vehicle Health Index, CarMD expanded its coverage to include 1996-2015 vehicles, to ensure all vehicles with on-board diagnostics were included, and because average vehicle age is now 11 years old. In determining the Top 10 manufacturers and Top 100 vehicles, CarMD included all makes and models that were listed among the U.S. vehicle population, according to R.L. Polk data, and had a visit or repair need logged by a member of CarMD's professional repair technicians. In determining the Top 10 manufacturers, brands were grouped under their parent manufacturer (i.e. Lexus and Scion under Toyota; Acura under

Honda; Buick, Chevrolet, Cadillac, GMC, Hummer, Oldsmobile, Pontiac and Saturn under GM; Audi under Volkswagen; etc.) The data in the Index is applicable to roughly 85 percent of the vehicles on the road, giving a unique perspective on vehicles driven and repaired in the U.S. In determining the most common repairs by manufacturer, this Index looked at the entire OBD2 vehicle population (1996-current) vehicles for each manufacturer from Oct. 1, 2014 - Sept. 30, 2015.

CarMD contracted with a third party web-based project management company to program a formula that factored in the number of registered vehicles on the road for each manufacturer, make, model and year. A CarMD Vehicle Health Index rating was then assigned using the total number of red reports (or failures) per vehicle (or manufacturer) divided by the total number of vehicles in the population. Percentage of problems and average repair costs have been equally weighted in the CarMD Overall Index rating. The overall Index ranking for the Top Ranked Manufacturers and Vehicles were derived by the average of the Index and cost ranking and reliability scores.

CarMD's nationwide network of thousands of factory-trained OE (original equipment) and independent automotive repair 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 a larger and varied sampling of diagnostic trouble codes, expert fixes and repair costs.

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