CarMD® 2016 VEHICLE HEALTH INDEX™

MAKE AND MODEL RELIABILITY RANKINGS

CARMD.COM CORPORATION, A LEADING PROVIDER OF CAR REPAIR DATA AND SOLUTIONS, IS PLEASED TO RELEASE ITS 2016 CARMD® VEHICLE HEALTH INDEX™ MAKE AND MODEL RELIABILITY RANKINGS.

This is the only Index to offer an annual ranking of manufacturers and vehicles using actual in-use, statistically-based check engine-related failures and repair costs – unlike other industry reports and rankings that often rely on subjective survey data.

NEW THIS YEAR

Over the past five years CarMD has ranked parent manufacturers and vehicles on a combined average rating of fewest check engine-related problems and lowest repair costs. Based on feedback from the industry and our customers, this year we have decided to dive deeper into how the individual makes rank by breaking them away from their parent manufacturers where applicable. With this 2016 Index we rank vehicles for frequency of check engine light problems and then separately on average cost of repairs. This Index also ranks the 100 vehicles with fewest repair incidents, 100 vehicles with lowest repair cost, top vehicles by category and lists the most common repairs by make. Historical rankings are not necessarily indicative of future vehicle reliability.

More than 4 million model year 1996 to 2016 vehicles reporting in-use repairs were analyzed to prepare this Index. CarMD reports on these findings to help consumers and fleet managers identify the vehicles with a tendency toward lower upkeep. This Index has also been shown to help vehicle manufacturers; OE and aftermarket parts manufacturers and providers stay abreast of year-over-year trends and identify common failures and parts needs for improved reliability, service and bottom line.

Recognizing that today's consumers want personalized, real-time information, CarMD recently added a free, real-time lookup so vehicle owners can see the top check engine light culprits by visiting this link: www.carmd.com/wp/lp/check-engine-light/, and inputting their car's year, make and model.

MORE ABOUT CarMD

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 nearly 90 percent of the vehicles in the U.S. today, including newer model hybrids and diesels. The system triggers the check engine light when a problem is found; alerting drivers and fleet managers to an issue that may affect emissions output, fuel economy, drivability and cost of ownership. CarMD has been compiling a robust database of information from in-use vehicles from a range of sources that tap into this OBD2 data. Recommended repairs are validated by CarMD's nationwide network of Automotive Service Excellence (ASE)-certified technicians.

CURRENT & ARCHIVED INDICES ARE AVAILABLE AT

www.carmd.com/wp/vehicle-health-index-introduction/list-of-indexes

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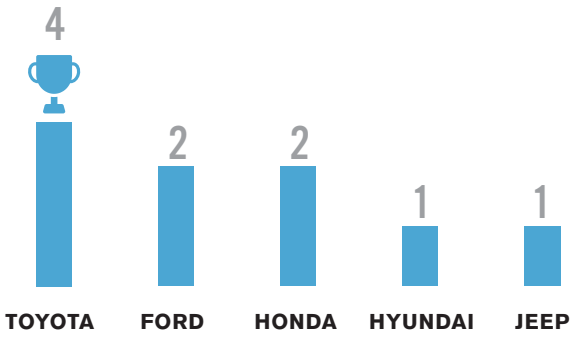
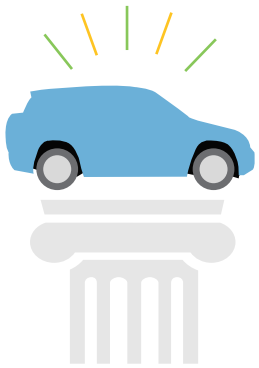
FINDINGS AT A GLANCE



4 OF THE 10 VEHICLES with **fewest** check engine light issues are Toyota



2012 HONDA CR-V **lowest** average repair cost + **fewest** repair issues = **most reliable**

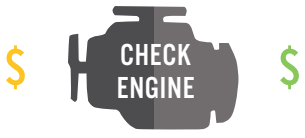
HYUNDAI is the make with the **lowest** average check engine repair cost.

NO. 1 FIX BY BRAND

ACURA	AUDI	VW
REPLACE OXYGEN SENSOR	REPLACE VACUUM HOSE	REPLACE MASS AIRFLOW SENSOR
O_2		

DIFFERENT VEHICLE MAKES tend to have a **unique set of problems** and **common failures**. The CarMD vehicle health index points out common problems by manufacturer, which is important for car owners to recognize in their maintenance and repair routines.

TOYOTA has the **lowest** repair frequency.



BUICK, HYUNDAI & JEEP are the only brands that **appeared on both** the CarMD Vehicle Health Index Repair Frequency and Lowest Average Repair Cost Top 10 lists.

Vehicle **most likely** to have a CHECK ENGINE light on in the U.S.?

2004 FORD F-150

Want to know the most common **CHECK ENGINE LIGHT REPAIRS FOR YOUR VEHICLE?**

Input the year, make and model into CarMD's new real-time Check Engine lookup.

TOP 10 MAKES WITH LOWEST REPAIR FREQUENCY

At least 10 percent of the cars and trucks on the road in the U.S. have a check engine light on at any given time, so chances are good that most vehicle owners will experience the hassle of needing a check engine light-related repair at some point. But which vehicle makes are least likely to need check engine repairs? Which vehicle owners have fewer trips to the repair shop or parts store? To rank these vehicles, CarMD developed a formula that accounts for those with the lowest percentage of repair incidents per percentage of vehicle population. Based on this data, an Index frequency score is assigned. The lower the score the higher the vehicle make ranking.

CarMD found that when it comes to repair frequency Toyota ranks no. 1 followed by Honda (no. 2), Nissan (no. 3), Audi (no. 4) and Volkswagen (no 5.). Rounding out the top 10 vehicle makes with low repair frequency are BMW (no. 6), Mercury (no. 7), Buick (no. 8), Jeep (no. 9) and Hyundai (no 10).

RANK	VEHICLE MAKE	CarMD INDEX FREQUENCY SCORE*
1	TOYOTA	0.72
2	HONDA	0.79
3	NISSAN	0.85
4	AUDI	0.86
5	VOLKSWAGEN	0.90
6	BMW	0.92
7	MERCURY	0.96
8	BUICK	0.96
9	JEEP	0.97
10	HYUNDAI	1.01

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

(Top 10 vehicle makes by repair frequency based on model year 1996-2016 vehicles inspected between Oct. 1, 2015 and Sept. 30, 2016, and determined to have the fewest percentage of CarMD repair incidents, per vehicle population. Sources: CarMD.com Corp., with vehicle population data provided by R.L. Polk.)

TOP 10 VEHICLES WITH LOWEST REPAIR FREQUENCY

Any given brand can have a mix of very reliable vehicles along with some that are inherently known to have more frequent issues. For this reason, our Index drills down to rank vehicles by year, make and model. Four SUVs, two sedans, two trucks, one compact and one hybrid comprise this list of 10 vehicles with the lowest repair frequency among the 8,500 different types of model year 1996 to 2016 vehicles on the road today.

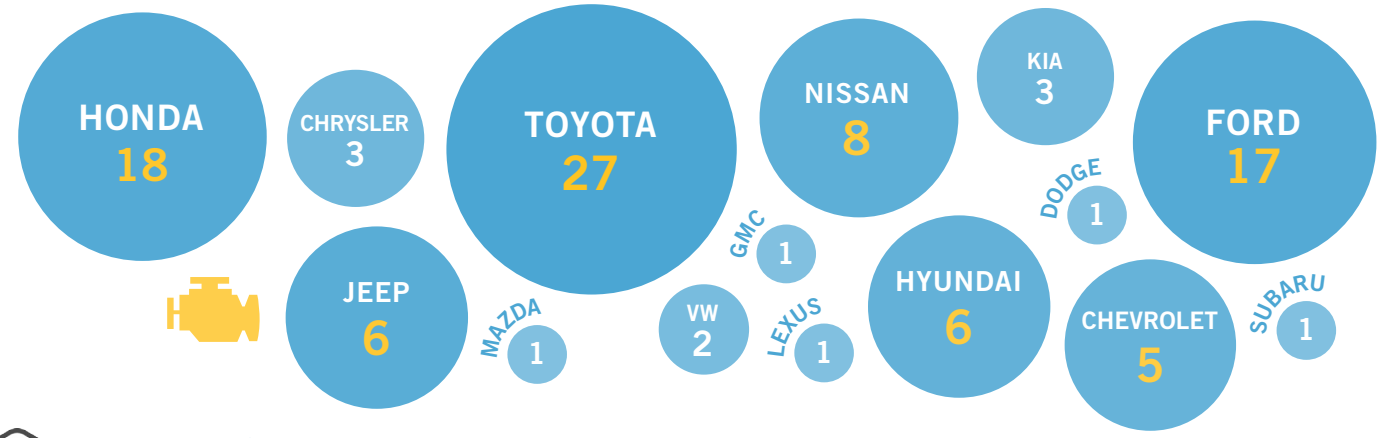
You can see the 100 vehicles with the lowest repair frequency in our full report. It is important to remember that even the 99th or 100th ranked vehicle on the list is a significant achievement, as this puts it in the top 1 percent of all vehicles being ranked.

RANK	YEAR	BRAND/MAKE	MODEL
1	2012	HONDA	CR-V
2	2014	TOYOTA	TUNDRA
3	2015	TOYOTA	CAMRY
4	2015	TOYOTA	COROLLA
5	2014	FORD	EXPLORER
6	2015	JEEP	GRAND CHEROKEE
7	2013	HONDA	PILOT
8	2015	FORD	F250
9	2010	TOYOTA	PRIUS
10	2015	HYUNDAI	SONATA

WANT TO SEE MORE? The list of the 100 vehicles with the lowest average repair frequency is in the full Vehicle Health Index, available online at www.carmd.com/wp/vehicle-health-index-introduction/2016-carmd-manufacturer-vehicle-rankings/

LOWEST AVERAGE FREQUENCY

15 BRANDS REPRESENTED ON LIST OF 100 VEHICLES



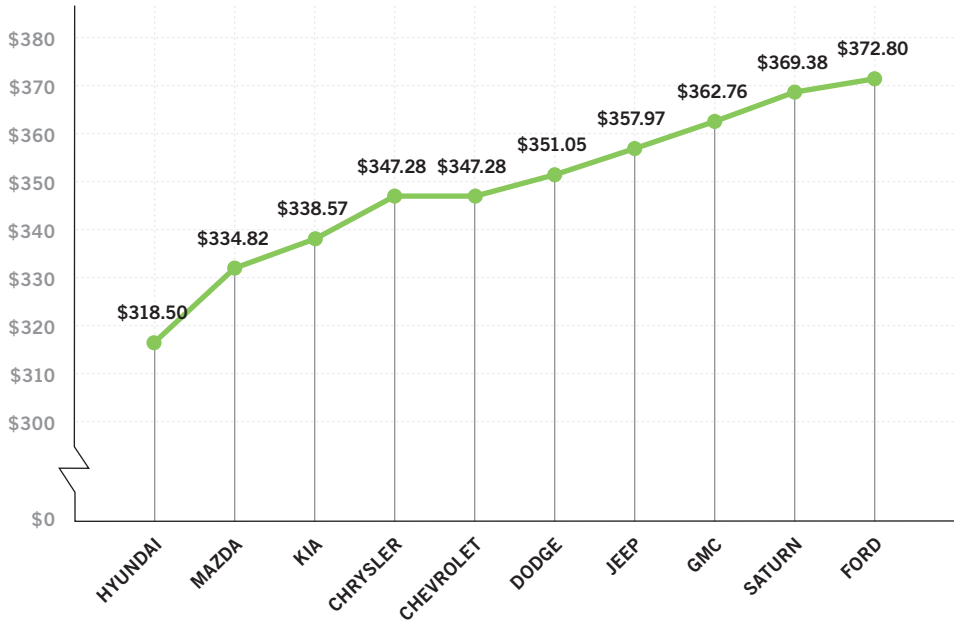
$ TOP 10 MAKES WITH LOWEST AVERAGE REPAIR COST

Cars and trucks will need repairs from time to time. Of the 4.7 million vehicles reported to CarMD as needing repairs this past year, which makes cost their owners the least? CarMD found that the make with the lowest average check engine light-related repair cost was Hyundai ($318), followed by Mazda ($334) then Kia ($338). Chevrolet and Chrysler rounded out the top five, ranking fourth and fifth respectively in a virtual dead heat at $347 and change.

RANK	VEHICLE MAKE	AVERAGE CHECK ENGINE LIGHT REPAIR COST
1	HYUNDAI	$318.50
2	MAZDA	$334.82
3	KIA	$338.57
4	CHEVROLET	$347.28
5	CHRYSLER	$347.86
6	DODGE	$351.05
7	JEEP	$357.97
8	GMC	$362.76
9	FORD	$372.80
10	BUICK	$373.07

(Top 10 vehicle manufacturers based on model year 1996-2016 vehicles inspected by CarMD's network, found to need repairs and receiving parts and labor estimates between Oct. 1, 2015 and Sept. 30, 2016.)

The make with **the lowest average repair cost** for CHECK ENGINE problems? **Hyundai,** which had an average recommended parts & labor estimate of $318.



TOP 10 VEHICLES WITH LOWEST AVERAGE REPAIR COST

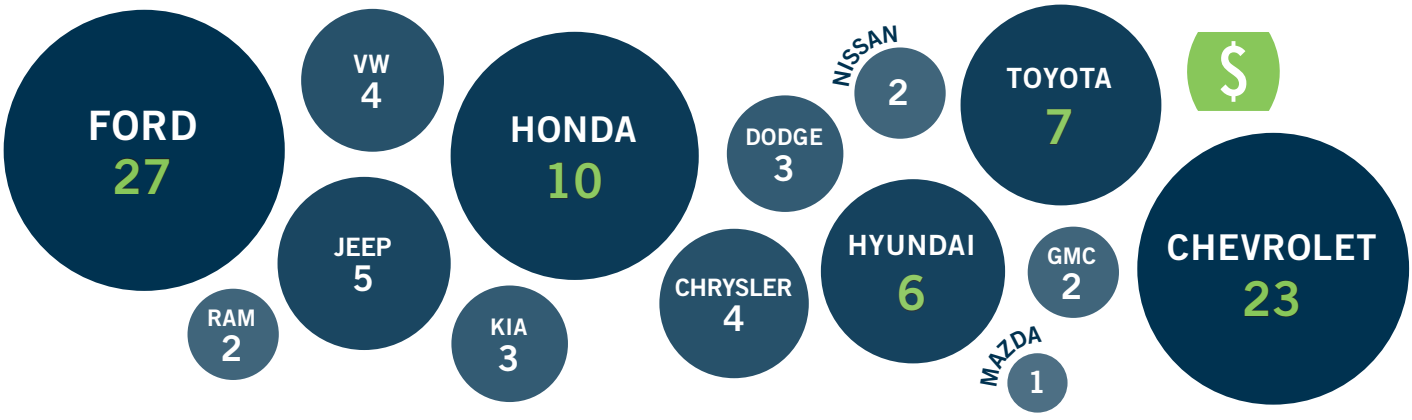
The following are the 10 vehicles with the lowest average repair cost among the 8,500 different types of model year 1996 to 2016 vehicles on the road today. You can see the 100 vehicles with the lowest repair costs in our full report.

RANK	YEAR	BRAND/MAKE	MODEL	AVERAGE CHECK ENGINE LIGHT-RELATED CAR REPAIR COST
1	2012	HONDA	CR-V	$100.53
2	2015	TOYOTA	CAMRY	$169.48
3	2014	JEEP	PATRIOT	$181.14
4	2013	HYUNDAI	SONATA	$186.26
5	2013	CHRYSLER	200	$198.83
6	2012	HONDA	CIVIC	$201.10
7	2012	HYUNDAI	SONATA	$203.04
8	2014	TOYOTA	CAMRY	$208.20
9	2013	FORD	EDGE	$211.73
10	2011	KIA	SORENTO	$213.56

WANT TO SEE MORE? The list of the 100 vehicles with the lowest repair cost is in the full Vehicle Health Index, available online at www.carmd.com/wp/vehicle-health-index-introduction/2016-carmd-manufacturer-vehicle-rankings/.

LOWEST AVERAGE REPAIR COST

14 BRANDS REPRESENTED ON LIST OF 100 VEHICLES



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TOP THREE VEHICLES BY CATEGORY

The following is a list of the top three vehicles by category in 2016 according to CarMD, which based its ranking on the vehicles with the fewest and those with the lowest cost check engine-related problems reported by or to our network:

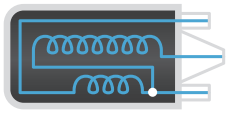
LOWEST REPAIR INCIDENTS BY CATEGORY		LOWEST AVERAGE REPAIR COSTS BY CATEGORY
1. 2015 Toyota Corolla **2.** 2011 Honda Civic **3.** 2014 Ford Fusion	COMPACT 	**1.** 2012 Honda Civic ($201) **2.** 2011 Honda Civic ($233) **3.** 2013 Ford Fusion ($234)
1. 2011 Toyota Sienna **2.** 2008 Toyota Sienna **3.** 2007 Honda Odyssey	MINIVAN 	**1.** 2010 Chrysler Town&Country ($285) **2.** 2008 Chrysler Town&Country ($322) **3.** 2008 Honda Odyssey ($367)
1. 2015 Toyota Camry **2.** 2015 Hyundai Sonata **3.** 2015 Chevrolet Cruze	SEDAN 	**1.** 2015 Toyota Camry ($169) **2.** 2013 Hyundai Sonata ($186) **3.** 2012 Hyundai Sonata ($203)
1. 2014 Chevrolet Equinox **2.** 2014 Kia Soul **3.** 2012 Toyota RAV4	COMPACT SUV 	**1.** 2014 Jeep Patriot ($181) **2.** 2013 Kia Optima ($223) **3.** 2013 Chevrolet Equinox ($257)
1. 2014 Ford Explorer **2.** 2015 Jeep Grand Cherokee **3.** 2013 Honda Pilot	FULL-SIZED SUV 	**1.** 2013 Ford Explorer ($234) **2.** 2014 Ford Explorer ($248) **3.** 2011 Honda Pilot ($252)
1. 2012 Honda CR-V **2.** 2011 Honda CR-V **3.** 2011 Subaru Outback	WAGON / CROSSOVER SUV 	**1.** 2012 Honda CR-V ($100) **2.** 2013 Ford Edge ($211) **3.** 2013 Kia Soul ($227)
1. 2014 Toyota Tundra **2.** 2015 Ford F-250 **3.** 2015 Chevrolet Silverado	TRUCK 	**1.** 2011 Ford Ranger ($234) **2.** 2002 Ford Ranger ($240) **3.** 2014 RAM 1500 ($257)
1. 2010 Toyota Prius **2.** 2008 Toyota Prius **3.** 2007 Toyota Prius	HYBRID 	**1.** 2010 Toyota Prius ($445) **2.** 2012 Toyota Prius ($457) **3.** 2008 Toyota Prius ($520)

COMMON REPAIRS BY BRAND/MAKE (MY 1996-2016)

Different vehicle makes tend to have a unique set of problems and common failures. The CarMD Vehicle Health Index points out common check engine-related problems and repairs by brand.

For instance "replace oxygen sensor" accounted for 13 percent of Hyundai repairs over the past year at an average cost of $259 for parts and labor. 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 percent of all check engine-related repairs last year and costing on average $279 across all makes. 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 nearly 24 percent of Lincoln vehicle repairs; "replace ignition coil and/or spark plugs(s) accounted for nearly 19 percent of Mini repairs; and just under 18 percent of recommended Subaru check engine light repairs were "replace catalytic converter(s) with new OE catalytic converter(s)." It should be pointed out; however, that while catalytic converters are an expensive part that can cost upwards of $1,100 to replace, it is more commonly seen on vehicles as they age. Subaru vehicles ages 10-20 years old accounted for 71 percent of Subaru vehicles in CarMD's database, telling us owners often keep their Subarus longer than the average vehicle age of 11.5 years.

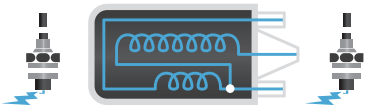


LINCOLN

REPLACE IGNITION COIL (24%)

SUBARU

REPLACE CATALYTIC CONVERTER (18%)



MINI

REPLACE IGNITION COIL AND/OR SPARK PLUGS (18%)

HYUNDAI

REPLACE O_2 SENSOR (13%)

WANT TO SEE MORE? To see the complete Index of the five most common check engine light repairs for each vehicle make, visit www.carmd.com/wp/vehicle-health-index-introduction/2015-carmd-manufacturer-vehicle-rankings/.

To see the most common check engine problems for your car, visit www.carmd.com/wp/lp/check-engine-light/.

2016 CARMD® VEHICLE HEALTH INDEX™ METHODOLOGY

CarMD has compiled the industry's most comprehensive database of expert repairs for check engine-related problems provided by automotive technicians and vehicle owners since 1996.
Each CarMD® Vehicle Health Index™ draws from this database and CarMD's network of Automotive Service Excellence (ASE)-certified technicians who have input and validated failures and fixes into this database. Outputs are based on the input received from CarMD's customers and network.

The number of vehicles included in each Index report varies by quantity of vehicle incidents and repairs reported for each given Index report period. 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. Repair costs are based on original equipment retail MSRP. Labor rates are procured from several sources as well as the average amount of time required for each repair. Both are updated annually.

The 2016 Index statistically analyzes more than 4 million model year 1996 to 2016 vehicles reporting in-use repairs that apply to an estimated vehicle population of 228 million vehicles, taking place in the United States during the Oct. 1, 2015 to Sept. 30, 2016 date period. The data for the 2016 CarMD® Vehicle Health Index was pulled, analyzed and validated between Sept. 30, 2016 and Nov. 7, 2016, by CarMD's internal team.

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For the 2016 Vehicle Health Index Make and Model Reliability Rankings, CarMD included model year 1996-2016 vehicles. In determining the Top 10 makes and Top 100 vehicles per category, 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. The data in the Index is applicable to nearly 90 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 make/brand from Oct. 1, 2015 - Sept. 30, 2016.

In past CarMD Index calculations, CarMD grouped individual makes under their parent manufacturer. For this year's report, CarMD ranked makes separately. For instance, in years past Audi and Volkswagen would fall under the parent brand VW; this year we ranked them separately. The same goes for GM, Nissan, Toyota and so on. However, like in years past, this Index uniquely ranks vehicles based on unbiased, real-life data equally weighting how often the vehicle needed repairs with what the repair cost.

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 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 make) divided by the total number of vehicles in the population. Vehicles and makes are separately ranked based on average repair cost for vehicles needing OBD2-related repairs during the Index period.
On a daily basis, 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 sampling of expert fixes and repair costs.