TECH LINK

July 2023, Volume 25, No. 13

2024 Battery Ratings Chart

AND BATTERY MAINTENANCE UPDATE

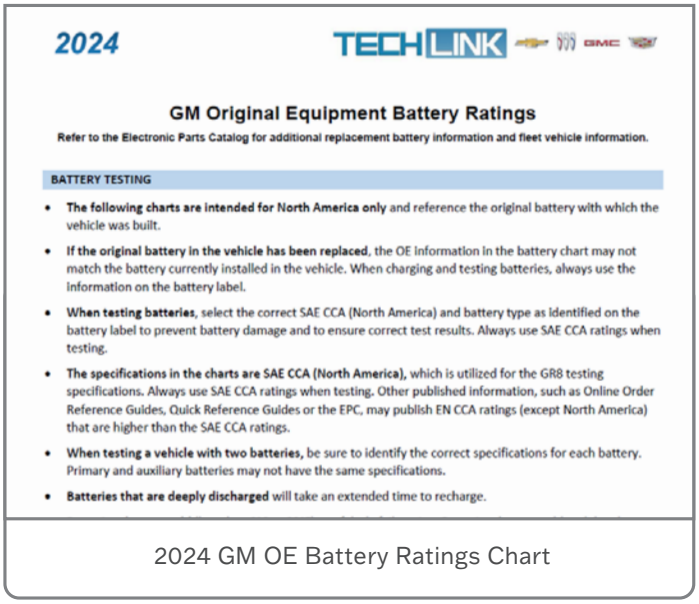
The latest Original Equipment (OE) Battery Ratings chart for the 2024 model year is now available under the Reference Charts menu for use when testing OE batteries.

Diagnosing Road Force

see page 6

2024 Battery Ratings Chart and Battery Maintenance Update

The 2024 battery ratings chart includes SAE cold cranking amperage (CCA), amp hours (AH) and reserve capacity (RC) ratings along with battery type specifications. The 2024 model year chart as well as charts for earlier model years can be easily printed using the browser's print function.



2024 TECHLINK

GM Original Equipment Battery Ratings

Refer to the Electronic Parts Catalog for additional replacement battery information and fleet vehicle information.

BATTERY TESTING

- **The following charts are intended for North America only** and reference the original battery with which the vehicle was built.
- **If the original battery in the vehicle has been replaced,** the OE information in the battery chart may not match the battery currently installed in the vehicle. When charging and testing batteries, always use the information on the battery label.
- **When testing batteries,** select the correct SAE CCA (North America) and battery type as identified on the battery label to prevent battery damage and to ensure correct test results. Always use SAE CCA ratings when testing.
- **The specifications in the charts are SAE CCA (North America),** which is utilized for the GR8 testing specifications. Always use SAE CCA ratings when testing. Other published information, such as Online Order Reference Guides, Quick Reference Guides or the EPC, may publish EN CCA ratings (except North America) that are higher than the SAE CCA ratings.
- **When testing a vehicle with two batteries,** be sure to identify the correct specifications for each battery. Primary and auxiliary batteries may not have the same specifications.
- **Batteries that are deeply discharged** will take an extended time to recharge.

2024 GM OE Battery Ratings Chart

Entering the correct battery CCA ratings and battery type when using the EL-52800 Diagnostic Charge Battery Station (DCBS) or the EL-50313 Midtronics GR8 Battery Tester/Charger is critical for proper test results. If the original/factory battery has been replaced, access the current battery label to view the battery type and CCA, as it may not match the OE specifications. Selecting the incorrect battery type or CCA rating when using the DCBS or GR8 may result in battery damage or a "Battery is bad" result on a good battery, leading to a good battery being replaced unnecessarily.

For more information on replacement batteries, refer to the Electronic Parts Catalog.

For more details on proper battery testing, refer to the appropriate Service Information. Go to General Information > General Information > Specifications > 12 Volt Battery Usage for battery specs on 2019 and later model years.

BATTERY TESTING REQUIREMENTS

Keep in mind the following tips to ensure the proper processes are completed to support battery replacement and successful warranty claim submission.

- Validate whether the battery in the vehicle is the OE battery or a replacement battery, and then proceed with warranty handling accordingly.
- Accurately enter job card and vehicle information using the DCBS or GR8 battery tester.
  - 6-digit BAC
  - Last 8 or Full VIN (use VIN scan feature on the DCBS)
  - Job card number
    - Leading zero(s) must be added to job card numbers if needed in order to achieve the 5-digit minimum for the DCBS or 6-digit minimum character limit for the GR8. Do not enter leading spaces or letters. Example: If the job card number is 1234, the input would be 01234 in the DCBS or 001234 in the GR8.
    - For job card numbers with a leading prefix, input only the values after the prefix and add leading zero(s) to achieve the minimum character limit of the job card field. Example: If the job card number is 01-2345, the input would be 02345 in the DCBS or 002345 in the GR8.
- Select the correct battery information (located on the label of the battery being tested).
  - Battery Type (Flooded or AGM)
  - Rated CCA
- Perform the battery test in Diagnostic Mode only, connecting directly to the battery posts.
  - GR8 – Select Charging > Diagnostic > In Vehicle; and perform Out of Vehicle test.
  - DCBS – Select Diagnostic > Trolley; and perform Battery Terminals test.
- Verify that the test result shows a 15-digit Warranty Code (GR8) or 20-digit Warranty Code (DCBS) prior to warranty battery replacement. Attach the printout to the job card.

CONTINUED ON PAGE 3

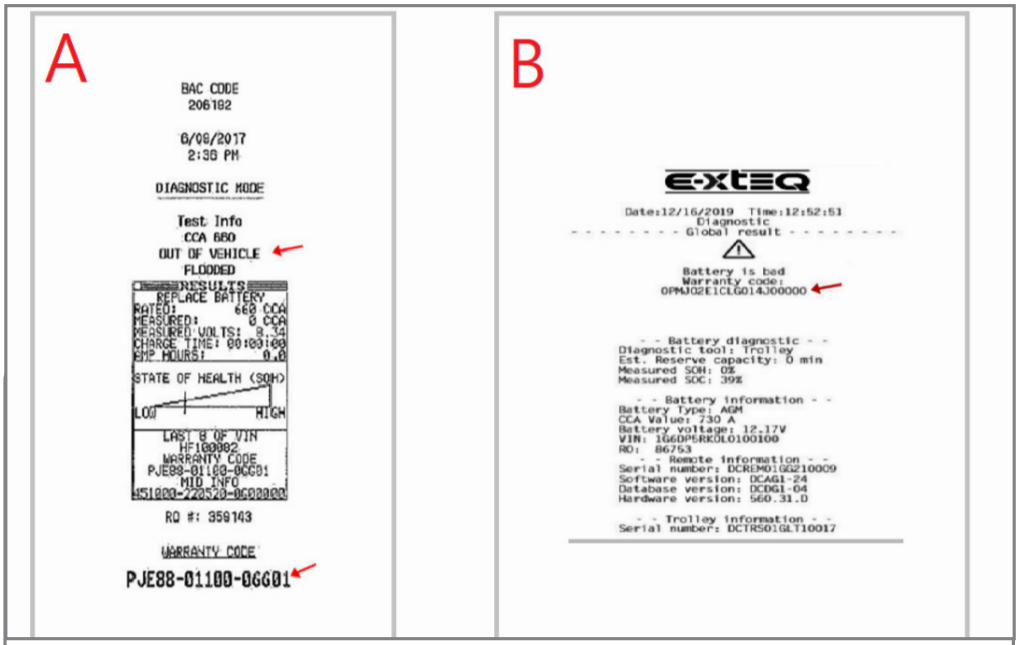
For more information on battery testing and warranty replacement requirements, refer to Bulletin #20-NA-132.

BATTERY MAINTENANCE REPORT

U.S. dealerships should refer the Battery Maintenance Report to identify new vehicles in dealer inventory that require attention. The report, which is updated every day, indicates if a battery charge is needed or if a vehicle has remained dormant for an extended period and is no longer transmitting battery state of health (SOC) information. The report will identify the specific vehicles in dealer inventory that require action be taken — "Charge 12V Battery," "Plug in High Voltage Charger," or "Start and Move."

GM recommends that dealerships monitor the report once per week, such as every Monday. The report is available through the Dealer Maxis application in GlobalConnect. In the app, select the Battery Maintenance Report tile. After taking action on a particular vehicle, it may take up to five days for the vehicle to be removed from the report.

If the battery SOC is less than 50% of its full capacity — approximately 12.1 volts — the VIN will appear on the report. Vehicles on the report that require a battery charge should be charged using the DCBS or GR8 battery tester/charger in the Diagnostic Trolley mode on the DCBS or the Diagnostic Charge mode on the GR8. Do not use the PDI mode to charge the battery. It will only charge for 20 minutes and will not provide enough charge.



Warranty code from the GR8 (A) and DCBS (B).

Select the correct battery information located on the label of the battery being tested.

TIP: GM recommends cycling the ignition every time after charging a vehicle to reset OnStar's timeout counter. Without resetting the counter, OnStar will go into sleep mode after 30 days, which prevents battery SOC information from being transmitted to GM.

Vehicles with Stop/Start auxiliary batteries must be charged separately from the main battery while in dealer inventory. The auxiliary battery is not connected in a manner that will allow both batteries to be charged at the same time and must be charged individually, which will result in two battery test printouts.

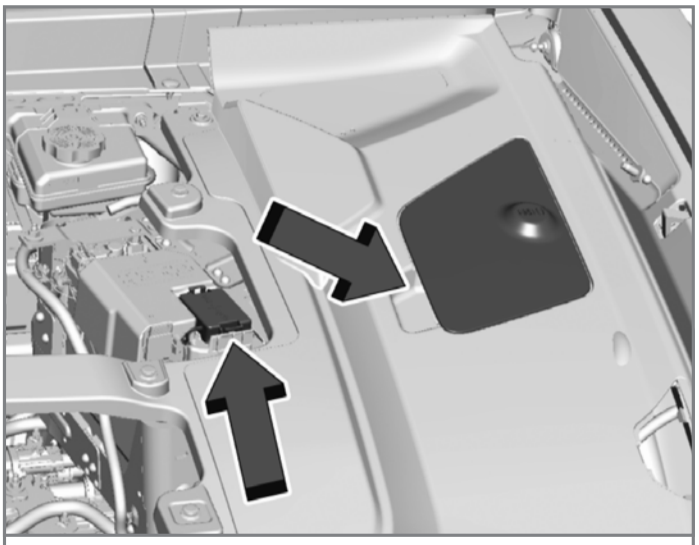
Additional information about the Battery Maintenance Report and 12V battery charging can be found in Bulletin #22-NA-115.

▶ **Thanks to Brett Holsworth, Marco Salcedo and Patti Marino**

Battery Testing in EVs

Absorbent Glass Mat (AGM) 12V batteries are used in GM Electric Vehicles (EVs), including the 2017-2023 Bolt EV; 2022-2023 Bolt EUV; 2023-2024 LYRIQ and HUMMER EV, due to their light weight, long life and maintenance-free design. The 12V system is used to power various control modules, electrical accessories, the instrument cluster and infotainment system, and other low-voltage components, which are not powered by the high-voltage propulsion battery.

AGM batteries are similar to lead acid flooded batteries, except they use glass mats that absorb electrolytes that are pressed between the plates instead of immersing the plates in electrolytes, allowing for a smaller, lighter battery with the same amount of power that is less susceptible to heat.



LYRIQ 12V battery location

HIGH-VOLTAGE BATTERY STATE OF CHARGE

The high-voltage battery in EVs provides maintenance of the vehicle's 12V battery as long as the high-voltage battery is above 10% state of charge (SOC). Dealerships should ensure the high-voltage battery system is kept above this level to maintain support of the 12V battery. The high-voltage battery should be fully charged to the factory pre-set charge level prior to completing the PDI.

EVS ON THE BATTERY MAINTENANCE REPORT

An EV in the dealership's new vehicle inventory will be added to their Battery Maintenance Report if the high-voltage battery SOC falls below 15% or the 12V battery SOC is below 50%. The EV will not be removed from the report until the high-voltage battery SOC is above 30% and the 12V battery SOC is above 65%.

When an EV appears on the Battery Maintenance Report, stating "Plug in High Voltage Charger," GM recommends charging the high-voltage battery with a Level 2 or DC Fast Charger. All new EVs should have the high-voltage battery charged to 80% SOC upon receipt of the vehicle from the factory prior to PDI. The high-voltage system is designed to maintain the 12V battery SOC, but it may not prevent an unexpected large parasitic draw from depleting the 12V battery.

For more information about EVs on the Battery Maintenance Report, refer to Bulletin #22-NA-115.

▶ Thanks to Brett Holsworth and Marco Salcedo

Multifunction Inner Tailgate Disabling Procedure

The Chevrolet Multi-Flex Tailgate and GMC MultiPro Tailgate (RPO QK2) available on the 2022-2024 Silverado 1500, Silverado 2500/3500, Sierra 1500 and Sierra 2500/3500 offers enhanced access to the cargo box with a primary gate and inner gate, both of which are released using the buttons on the tailgate.

The multifunction tailgate offers a disabling procedure to prevent the inner gate from being lowered. If the inner gate disabling procedure is inoperative, check that the vehicle is equipped with Passive Entry (RPO AVJ). If it is not equipped with RPO AVJ, it will not have the rear bumper antenna that allows disabling of the inner gate.

DISABLING THE INNER GATE

Do not lower the inner gate with the primary gate open (easy access or step positions) if a hitch ball or trailer is attached. This may damage the tailgate due to the amount of clearance between the hitch receiver and the lowered inner gate.

To disable the inner gate from opening, press and hold the upper button on the tailgate for 3 seconds. The key fob must be within 3 feet (1 meter) of the rear bumper.

The tail lamps will flash when the inner gate has been disabled. The inner and outer gates can still be operated like a traditional tailgate, but the inner gate will not be able to be opened alone.

To enable the inner gate function, press and hold the upper button on the tailgate for 3 seconds until the tail lamps flash. The inner gate can then be opened separately from the outer gate.

To disable the inner gate from opening, press and hold the upper button on the tailgate for 3 seconds

For more information, refer to #PIT5895B and PIT6054.

Thanks to Jamie Hedrick

Diagnosing Road Force

The design of today's modern vehicles — and the proper operation of many new components and systems — has led to the critical importance of properly balanced and low Road Force tires. Advanced braking and stability systems, along with stricter fuel economy requirements, have led to the increased use of lower rolling resistance tires with a decreased contact patch. Suspension systems and tires also are getting stiffer. In addition, many modern tire/wheel assemblies can weigh as much as 80 lbs. as common wheel sizes have grown to 20-inches and more.

Any part that rotates can produce a vibration (such as tires, prop shafts, differentials, etc.), which makes diagnosis difficult. The CH-51450-A Oscilloscope Diagnostic Kit (PicoScope) can help in diagnosing vibration conditions. In some cases, the repair might require part replacement. But if the vibration is coming from the tire/wheel assemblies, the Hunter Road Force Balancer Generation 5 can help make the correct repair and ensure that the tire/wheel assembly meets GM specifications.

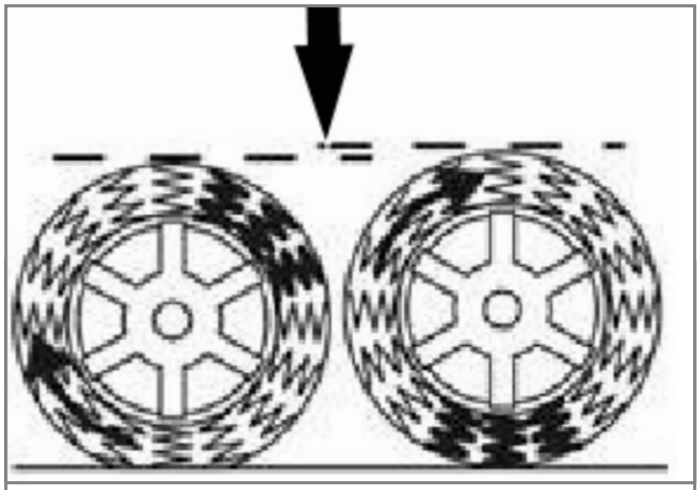
The Hunter Road Force Balancer is Essential Equipment and required to be used for all repairs requiring balance and Road Force measurement.

Hunter Road Force Balancer

WHAT PRODUCES ROAD FORCE?

In the past, tire/wheel assemblies were measured for "static balance," which allowed for weights to be placed on the inside and outside of the wheel flange/rim surface. While this is the first step in correcting a vibration condition, vehicles also need the Road Force checked. Road Force is a measurement of both sidewall stiffness and how much the assembly is "egg shaped."

To understand the effects of radial force variation, imagine the tire as a collection of springs between the rim and the tire tread. If the "springs" are not of uniform stiffness, a varied force is exerted on the axle as the tire rotates and flexes. This force creates a vibration in the vehicle. The Hunter Road Force Balancer has the ability to measure this variation.



Road force can create vibration in the vehicle.

Excessive Road Force can be produced by incorrect tire mounting or improper bead seating to the rim. Both of these conditions will provide a low and/or high spot in that area of the tire. It can occur on either the inside or outside flange.

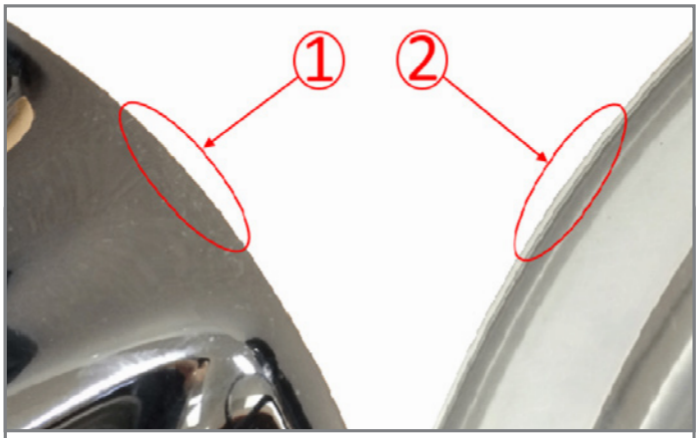
FLANGELESS WHEEL DESIGNS

Flangeless wheel designs do not have a machined flange, which previously allowed for traditional "clip on" weights. Modern balancers need to account for this change by allowing wheel weights to be placed on the inside of the wheel. The previous method of "vectoring" or "Match Mounting" a tire cannot be used since the starting point is to measure the wheel runout using measurement arms.

Hunter's "Force Matching 180" process addresses this concern and allows a more precise measurement and correction to the tire/wheel assembly by using the Road Force measurements to determine proper alignment of the tire to the wheel.

The roller of the Hunter Road Force Balancer Generation 5 mimics how a tire/wheel assembly performs under the load of a vehicle. Force Matching locates the stiffest area of a tire and the lowest spot on a wheel to be marked and match-mounted to cancel radial force vibration.

CONTINUED ON PAGE 7



Flangeless wheel designs (#1) do not have a machined flange (#2).

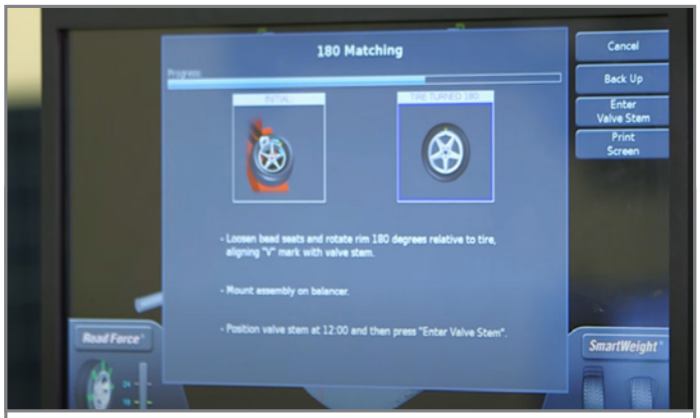
Road Force measurements are used to determine proper alignment of the tire to the wheel.

TIP: Tires can sometimes become temporarily flat-spotted, which will affect force variation, so it is important that the vehicle be driven at least 15 miles (24 km) at 55 mph (89 km) or more prior to measuring. Tire pressure must also be adjusted to the recommended pressure listed on the vehicle's tire placard prior to measuring.

HUNTER INSTRUCTIONAL VIDEOS

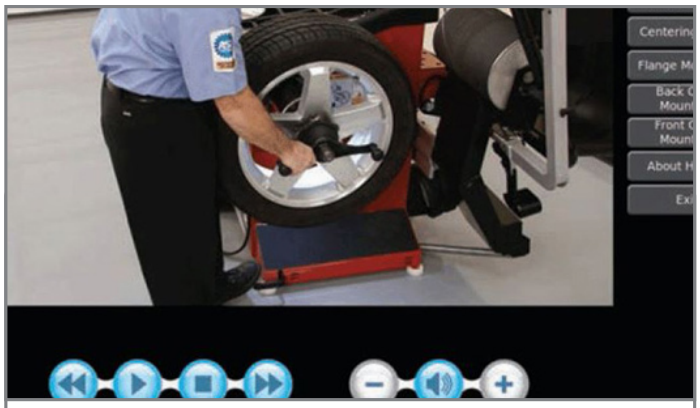
The Hunter Learning Channel on YouTube has a number of instructional videos covering the use of the Hunter Road Force Balancer as well as other common wheel/tire service procedures, including a Force Matching 180 video following OEM specifications. Additional Hunter videos cover topics such as Weight Placement, Auto Weight Mode, Collet Mounting, Tire Stack and Bead Massage.

In addition to the online resources, there are several on-demand videos that can be viewed on the Road Force Balancer touchscreen. To view the videos, touch the Help button on the main screen and then select the Launch Video Player button. The main video menu screen will be displayed along with a list of video topics.



Force Matching can cancel radial force vibration

Force Matching 180 video



Several on-demand videos can be viewed on the Road Force Balancer touchscreen.

For additional information on the Hunter Road Force Balancer and diagnosing wheel/tire vibrations, refer to Bulletin #17-NA-170 and Bulletin #00-03-10-006O. Detailed diagnostic steps for Tire and Wheel Vibration Analysis also can be found in the Service Information.

▶ Thanks to Joshua Shuck

Front-view Grille Camera Washer Nozzle

The front-view camera washer nozzle may be leaking washer fluid on some 2022-2023 Silverado 1500 and Sierra 1500 models.

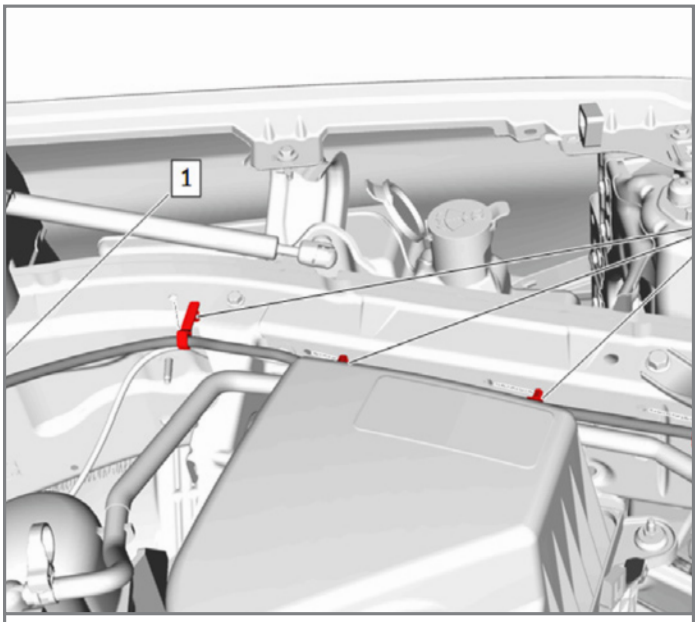
Service Information or the Electronic Parts Catalog does not show that there is a one-way check valve built into the windshield washer hose that connects to the washer pump. The check valve is designed to prevent washer fluid from leaking.

If no other cause is found, replace the windshield washer hose, which will include a new check valve.

For additional information, refer to #PIT6053.

▶ Thanks to Scott Fibranz

Front-view camera and washer



Windshield washer pump hose

TECH LINK

GM TechLink is published for all GM retail technicians and service consultants to provide timely information to help increase knowledge about GM products and improve the performance of the service department.

Publisher:
Rick Miller
GM Customer Care and Aftersales

Editor:
Paul Bielecki
GM Customer Care and Aftersales

Technical Editor:
Mark Spencer
mspencer@gpstrategies.com

Production Manager:
Marie Meredith

Creative Design:
5by5 Design LLC
dkelly@5by5dzign.com

Write to:
TechLink
PO Box 500, Troy, MI 48007-0500

GM TechLink on the Web:
GM GlobalConnect