

CAT® BATTERIES – QUICK REFERENCE

Cat Batteries

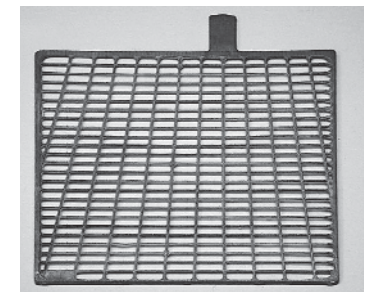
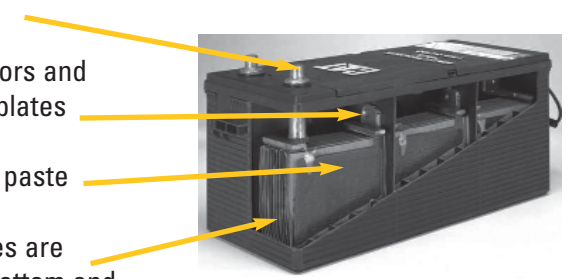
- **Premium High Output (PHO):** Built to stringent Caterpillar® specifications to meet 5 demanding performance tests. Recommended for the toughest applications. Industry's highest CCA ratings (8D/4D/31). Vibration resistance is 5-times the Industry standard. Standard equipment in Cat machines and engine gen-sets.
- **General Service Line (GSL):** Premium batteries ideal for automotive, light truck, recreational and commercial applications. Do not have extensive plate/grid anchoring, reinforced case, 100-hour vibration resistance and SAE 2185 life cycle capability of a PHO battery.



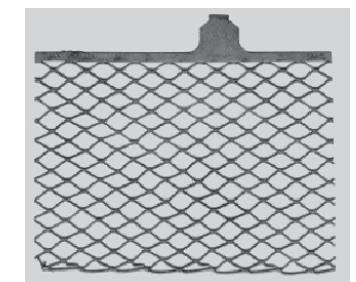
- **Maintaining Battery Inventory:** Utilize first-in, first-out system to ensure fresh batteries. Shelf life for Maintenance Free batteries is approximately 1-year from ship date, can be **doubled** if charged at the end of the one-year period. GSL wet batteries with vent caps, have a shelf life of six months which can be **doubled** if charged at end of 6-month period. Only one recharge is recommended.
- **Dry Batteries:** Have indefinite shelf life, but if stored over one year, boost charging may be needed after filling. Dry batteries "self-activate" when filled with electrolyte, which is recommended only at the time of sale. Secure Vent caps to prevent entry of debris or moisture.

Cat Premium High Output Features

- Vibration is the number one cause of battery failure in earth-moving or off-highway applications. PHO batteries meet stringent 100-hour vibration and post vibration discharge tests, with no damaged internal/external components or loss of capacity or electrolyte.
- Thicker posts
- Thicker/heavier connectors and straps are cast into the plates
- Thicker and more dense paste
- Positive & negative plates are anchored to container bottom and locked at the top.
- **Heavy-Duty Grids: Full-frame power path design**
 - No sharp edges – eliminates short circuits
 - Maintenance free calcium/lead alloy grids – less gassing & minimal water loss
 - Higher paste density – active material stays on longer – longer life
 - High technology grid design requires less plates while providing Industry's highest cold cranking amp capability



Cat



Competitors



Always wear proper eye protection when working around batteries

Battery Ratings

- Cold Cranking Amps (CCA):** Discharge load in amperes which a new fully charged battery at 0° F (-18° C) can deliver as power for 30-seconds and maintain a minimum voltage of 7.2 volts. CCA Rating is the universal way to rate and compare batteries. Rating is stamped in bold lettering on hazardous warning label.
- Cranking Amp (CA):** Is at a warmer temperature of 32° F (-1.1° C)
- Marine Cranking Amps (MCA):** Discharge load in amperes which a new fully charged battery at 32° F (-1.1° C) can deliver for 30 seconds and maintain at least 1.2 volts per cell (7.2 volts for 12-volt battery) [MCA=Cold Cranking Amp (CCA) rating divided by 0.8.]
- DIN CCA:** Discharge load in amperes which a new fully charged battery at 0° F (-18° C) can deliver as power for 30-seconds and maintain minimum voltage of 9.0 volts.
- IEC CCA:** Discharge load in amperes which a new fully charged battery at 0° F (-18° C) can deliver as power for 60-seconds and maintain minimum voltage of 8.4 volts.
- Reserve Capacity Minutes (RC):** Number of minutes a new fully charged battery at 80°F (27°C) can be discharged at 25 amperes and maintain a minimum voltage of 10.5 volts. Reserve capacity provides emergency power for the ignition, lights, etc., if the battery recharging system fails.
- Amp Hour Rating at 20 hours:** Battery's electrical storage capacity. A 100 amp/hr capacity battery delivers 5 amperes for 20 hours (amp/hr divided by 20 = amps per hour)

At Time of Delivery

- Battery Voltage:** Check with voltmeter (part #4C6600). A fully-charged 12-volt battery has an open circuit voltage of between 12.6 and 12.75 voltage (8-volt is 8.27 & above. 6-volt is 6.20 & above). Recharge a 12-volt battery if below 12.4 volts.
- AGM and GEL Batteries:** **Important alternator and charging instructions:** 12-volt GEL Batteries charge to **13.8 volts but no more than 14.1 volts at 68°F (20°C)**. AGM batteries charge to **14.4 volts but no more than 14.6 volts at 68°F (20°C)**
- Filling a Dry Battery:** Fill batteries to the proper levels. Typically 1/2" (12.7mm) above the plates. Don't under or over fill.
- Cat Digital Battery Analyzer (part #177-2330):** Determines within 20-seconds whether a 12 or 6-volt battery is bad or in need of a recharge. No need to remove battery from machine, engine or vehicle. Checks percentage of state of charge, condition of battery and battery voltage.

Battery Accessories

4C5637 – Group 31 charging posts for stud terminals 4C5638—screw in charging posts for side terminals
 7N0060 – Extra Vent Caps for dry batteries. Booster Cables: 4C4933 12' (3,658 mm) 4C4937 20' (6,096 mm)
 Heavy Duty Commercial Fast Chargers: 4C4921 (110V) 4C4910 (220V) Battery Cable Repair Kit: 6V3025

Selecting a New Battery for Replacement

- Battery should meet or exceed OEM's CCA requirements. Check Cat Cross Reference Manual (PEGP7801-05 – also available on cat.com batteries web site) or vehicle operator's manual.
- Sell a Maintenance Free Battery, if battery installed in a seasonal piece of equipment.
- Make sure cables and battery tray are clean and in good condition. Battery should rest level in tray with no debris underneath. Use proper battery hold-downs, tightened until snug. Do not tightened to the point it will distort or crack battery cover or case. Properly torque cables and ground strap.
- Check that vehicle electrical system (starter/alternator and voltage regulator) is operating within specifications. Make sure battery terminals will clear hood or cover, before closing.

If battery installed in a deep cycle and/or marine application, select a **Deep Cycle battery:**

| BCI Group Size | Deep Cycle Batteries Cat Part No. | Cold Cranking Amps (CCA) | Marine Cranking Amps (MCA) | Description |
|----------------|-----------------------------------|--------------------------|----------------------------|--|
| 8D | 153-5720 PHO | 1500 | 1875 | Maintenance Free-No Vent Caps |
| 8D * | 152-7242 | 1150 | 1438 | Valve Regulated Lead Acid Gel Cell Sealed Battery-Maintenance Free |
| 4D | 153-5710 PHO | 1400 | 1750 | Maintenance Free-No Vent Caps |
| 4D * | 152-8006 | 970 | 1213 | Valve Regulated Lead Acid Gel Cell Sealed Battery-Maintenance Free |
| 31 | 175-4360 PHO | 710 | 888 | Maintenance Free. Stud Terminals. Deep Cycle-Starting |
| 31 | 175-4370 PHO | 825 | 1031 | Maintenance Free. Stud Terminals Dual Purpose Starting/Deep Cycle |
| 31 | 250-0480 PHO | 710 | 888 | Maintenance Free. Dual Top Mounted Terminals. Stud & SAE. Deep Cycle |
| 24M | 8C3638 | 650 | 812 | Maintenance Free. Dual Terminal. Marine Starting |
| 27M | 8C3639 | 625 | 781 | Deep Cycle Antimony Grids. Dual Terminals |
| 8V | 8C3640 | 980 | 1225 | 8 Volt. Low Maintenance, Low Antimony Grids. Shipped Dry |

* Valve Regulated batteries. One a UL Recognized Component and one I.C.C.O., I.M.D.E., I.A.T.A., and D.O.T. Air Transportable Approved