

BATTERIES TIPS

Fast starts every time start with these guidelines.

Count on your equipment to start up fast, every time, no matter the conditions — so you can get to work and earn a profit. These tips will help you choose the correct battery for the job and treat it right, keeping unplanned maintenance and downtime to a minimum. Need more advice on selecting, installing, storing or charging batteries? Your local Cat® dealer is here to help.



SAFETY FIRST

- Protect your eyes — always wear safety glasses and a face shield when working on or near batteries.
- Keep sparks, flames and cigarettes away from batteries — which can generate explosive hydrogen gas — at all times.
- Avoid creating dangerous sparks by always 1) turning charging and testing equipment OFF before attaching or removing clamps and 2) disconnecting the grounded cable first and connecting it last.
- Perform all work in a well-ventilated area.
- Never lean directly over a battery while boosting, testing or charging it.
- Neutralize acid spills with a paste made of baking soda and water. Batteries contain corrosive sulfuric acid that can destroy clothing and burn the skin.
- Never use compressed air for cleaning near a battery. Rapid air movement combined with dust and dirt creates static electricity, which may lead to an explosion.



SELECTION TIPS

Choose plenty of power: Always select a battery with enough cranking power, reserve capacity and vibration resistance for the job. A machine with a lot of electrical accessories needs a more powerful battery for optimum performance. Temperature matters, too. Equipment working in extremely hot or cold climates may need a battery with a higher CCA (cold cranking amps) rating.

Higher rating = longer life: In general, a higher-rated battery lasts longer than a lesser-rated one. That's because a premium battery starts the engine more easily using less of its capacity. The battery cycles less, so it's in a fully charged state more often. While a half-charged lower-rated battery probably won't start your engine, a half-charged high-rated battery likely will.

Wet or dry? It depends: Wet batteries are ready for use right off your dealer's shelf. Plus, they're usually cheaper, often outperform dry batteries and are more tolerant of extreme temperatures and conditions like overcharging. Dry batteries have a longer shelf life and are easier to transport by boat, airplane or truck because they're not considered hazardous material.

Side or top posts — it's your preference: Side terminals are less prone to corrosion and need less frequent cleaning. Top terminal batteries are easier to boost start because there's more for the jumper cables to clamp onto.



STORAGE TIPS

Keep it cool: Store batteries in a cool, dry area — always above freezing for maximum life. A constant 40-50°F (5-10°C) temperature is ideal. If you store equipment in an unheated area during the winter, remove the batteries and move them inside.

Stack with care: Only stack batteries if they're in cartons or on shipping pallets protected by corrugated packaging. Even then, don't stack them more than two high (three high for automotive batteries). It is okay to place batteries directly on concrete floors — their polypropylene containers are highly insulative and prevent discharging onto the floor.

Extended means disconnected: If you're planning to store a battery for an extended period — four weeks or more — disconnect the cables. Left connected, the battery may discharge and freeze.

Remember FIFO, not FISH: Always rotate your battery stock using the FIFO (First In, First Out) method — not FISH (First In, Still Here). Cat batteries include a date code on the battery cover. The letter indicates the month shipped (A for January, B for February and so on). The number indicates the year. For example: E9 = May 2019 ship date.



CHARGING TIPS

Go slow: Slow charging is always preferred. Fast charging runs the risk of overheating the battery, which can boil out the water and buckle the plates.

Trickle to maintain, not charge: A trickle charger is a very slow charger, usually in the range of 1-2 amps output. Use it anytime you want to maintain a state of charge for a battery stored over a long period of time. Don't try to use it to recharge a dead battery.

A refill is worth a try: If a battery dries out in storage, you can attempt to refill it with water and recharge it. (This only works on accessible batteries.) Recharge very slowly, 8 amps or less over a 24-hour period. Chances are it will not come back to full-rated power.

Thaw it first: Never attempt to charge a frozen battery. Allow it to warm up to room temperature before placing it on a charge.

MAINTENANCE
FREE
153-5710.



KEY BATTERY TERMS, DEFINED

CCA: Cold cranking amps (sometimes called cranking power or starting power) measures how well a battery will start your engine. A CCA rating indicates the discharge rate in amperes that a fully charged battery will maintain for 30 seconds at 0°F (-17.8°C) without the terminal voltage falling. Generally, the higher the CCA, the faster the machine will start.

CA: Cranking amps is not the same as CCA. CA measures starting power at a higher temperature: 32°F (0°C). By using CA, distributors can artificially inflate their ratings by 20%.

RC: Reserve capacity measures the number of minutes that a fully charged battery at 80°F (27°C) will supply power for ignition, lights and accessories if the charging system fails. The greater the number, the longer you can operate your machine if your alternator or alternator belt fails.



6 STEPS TO PROPER BATTERY INSTALLATION

- 1 Before removing the old battery, mark the positive and negative cables for proper connection to the new battery.
- 2 Always disconnect the ground cable (usually negative) first to avoid any sparking around the battery. Then disconnect the positive cable and carefully remove the old battery.
- 3 Clean and inspect the battery tray. Replace the tray, hold-down assembly and battery cables if needed. Cable ends MUST be clean and corrosion free.
- 4 Put corrosion protection washers on the battery terminals, install the new battery in the same position as the old one, and tighten the hold-down. Be sure the terminals will clear the hood, fender, box lid, etc.
- 5 Connect the positive cable first and the ground cable last. To tighten side terminal cables without damage, use a special side terminal torque tool. Never over-tighten or hammer cables onto terminals.
- 6 Coat the terminals and cable connection with a corrosion-protection spray.



8 STEPS FOR A SAFE, SUCCESSFUL JUMP START

- 1 Confirm that both machines' batteries are the same voltage — never mix voltages.
- 2 Ensure any vent caps are tight and level, then place a damp rag over the vent caps of both batteries.
- 3 Make sure the two machines do not touch each other.
- 4 Connect one end of the positive booster cable to the positive terminal of the discharged battery, wired to the starter or solenoid.
- 5 Connect the other end of the positive booster cable to the positive terminal of the assisting battery.
- 6 Connect one end of the negative booster cable to the negative terminal of the assisting battery, wired to the ground.
- 7 Complete the hook-up by connecting the other end of the negative booster cable to the engine block of the stalled machine as far away from the battery as possible — away from moving fan and fuel lines.
- 8 Start both machines and remove the cables in the reverse order of connection. Discard the rag.



? **Do you have more questions about Cat Batteries?**
Your local Cat dealer is here to help.