

SECTION 9 - BATTERY (40:13)

9.1 FUNDAMENTALS (40:13)

Long life and reliable performance are two qualities expected of batteries in power equipment. The methods used to activate and place batteries in service are crucial in preparing the battery for reliable, long-term use.

Batteries for Scag products are shipped without electrolyte. Battery electrolyte is a very strong acid, and can cause injury or property damage if handled incorrectly. Always follow these rules during battery service.

Wear protective clothing, gloves and safety glasses to minimize the exposure of skin. Make sure there is a source of clean water available within reach to rinse acid off your skin if a spill should occur. If running water is not available, a container with water is sufficient. If possible, handle electrolyte only if there are other workers available to assist you if a spill occurs.

Remove the battery cell cover. Open the electrolyte container, and fill each cell up to the bottom of the split ring in the cell opening. Recheck each cell after filling and top off as necessary.

Slow charge the battery at a rate of 3-5 amps for 2 hours after activating to prepare the battery for use. A fast charge of 5 amps or more can generate heat in the battery which can warp the cell components, shortening the life of the battery. Avoid fast charging at any time for longest battery life. A battery should have 12.0 to 12.8 volts when fully charged. While under a load such as engine cranking, the battery should not drop to below 9.0 volts.

Check the electrolyte level in the battery every two weeks during use. Water is consumed by the battery through normal charging cycles.

Refill only with clean, distilled water to maintain the correct fluid level in the cells.

Corrosion will sometimes form on battery terminals as the acid in the battery and battery gasses react with the terminal material. Remove the cables, and clean with a baking soda paste, brushing the paste onto the terminals, then rinsing with clean water. Use care to prevent soda from getting into the cells, where it would damage the battery by neutralizing the acid.

WARNING:

Severe chemical burns can result from battery electrolyte. Always wear protective eyewear, clothing, and gloves when handling batteries. Always keep a source of fresh water available to flush skin should contact occur.

WARNING:

Severe chemical burns can result from improper handling of battery electrolyte. When handling batteries, wear protective clothing and safety glasses. Always have a fresh source of water available at all times.

IN CASE OF EXTERNAL CONTACT AND/OR EYE CONTACT: Flush with water for at least 15 minutes and get immediate medical attention.

IN CASE OF INTERNAL CONTACT: Drink large quantities of water, followed by Milk of Magnesia, beaten egg, or vegetable oil. CALL A PHYSICIAN IMMEDIATELY! DO NOT give fluids that induce vomiting.

WARNING:

Lead-acid batteries produce flammable and explosive gases. To avoid personal injury when checking, testing, or charging batteries, DO NOT use smoking materials near batteries, keep arcs and flames away from batteries, provide proper ventilation and wear safety glasses.

Dry the terminals before re-connecting to the battery. After the cable bolts are tightened, coat the terminals with non-conductive grease to prevent future corrosion.

9.2 JUMP-STARTING (42:48)

Occasionally, there may be a need to jump start a machine with jumper cables. The correct procedure is important for your personal safety, and to prevent damage to the machines' electrical systems.

After gaining access to the battery terminals, connect the color coded cable to the positive terminal on the dead battery, then to the positive terminal on the good battery. Connect the black cable to the negative terminal on the dead battery, and complete the circuit by connecting to a good ground on the chassis of the machine with the good battery. Do not make the final connection on or close to the battery, as sparks could ignite hydrogen gas which is given off by the battery while charging. A good ground is preferably on the engine block or frame where the heavy ground cable will carry the current through the jumper cable circuit. See Figure 9-1.

After the machine with the dead battery is started, remove cable in the reverse of installation. Recoat the terminals with grease if it was disturbed, and re-install the battery terminal boots and covers.

Using the correct procedures for battery service, maintenance and jump starting will extend battery life, and make your job safer.

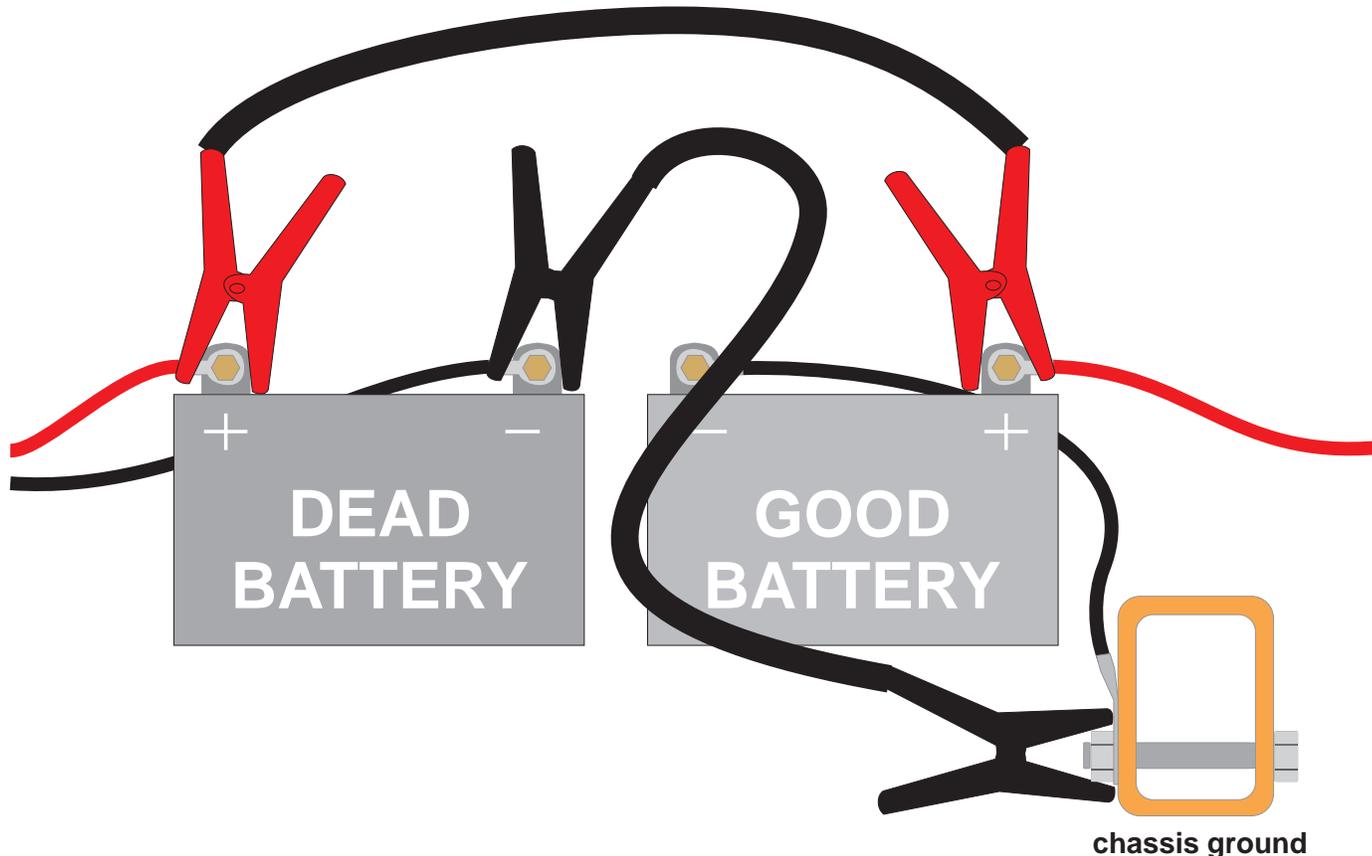


Figure 9-1 Battery Jump Start