



Company Name: _____ Job Site Location: _____
 Date: _____ Start Time: _____ Finish Time: _____ Foreman/Supervisor: _____

Topic 403: Jump Starting Vehicles

Introduction: Many drivers have had the experience of being stranded with a dead battery. Though it is a common problem, and relatively easy to remedy, jump starting a dead battery does present some hazards. Following are guidelines for safety when jump starting a vehicle:

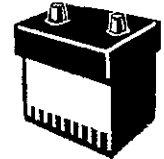
A battery may go "dead" for several reasons:

- The battery cables which complete the charging circuit may have corroded or loosened and lost contact.
- The alternator may not be operating properly to sufficiently recharge the battery.
- The battery may have deteriorated to where it will no longer accept a charge.
- Electrical equipment such as headlights were mistakenly left on, draining the battery (we've all done it).



Methods to avoid the above problems:

- Service your battery whenever you change your vehicle's oil. Check fluid levels if it is not a sealed battery, and clean your terminal connections (posts and cable ends). Ensure that all connections to and from the battery are secure.
- If your dashboard alternator (battery) light comes on, or if your vehicle is equipped with an alternator gauge and the gauge shows a - (negative) reading, have your alternator checked as soon as possible.
- Batteries will lose the ability to accept or hold a charge over time. Replace your battery every three years or as needed.
- Pay attention to your dash lights whenever you park your vehicle. If your dash lights are on, your head lights are on. Develop the habit of glancing back at your vehicle whenever you park and leave it.



If you try to start your vehicle and it will not turn over, it may not be a dead battery. If the vehicle does not make any noise, such as a slow turn over or clicking, you may have a bad connection (a loose or corroded terminal end). Turn off your ignition, check your battery connections – if you can wiggle or move them at all they are too loose. Tighten them, or clean and tighten them, and try to start the vehicle again. **If your battery is "dead" and will not start your vehicle, you may need to jump start it. Follow these procedures to safely jump start a vehicle:**

- **Turn off your ignition** and all electrical equipment such as lights, radio, heater or a/c fan which may run with the ignition off.
- **Open your hood** and allow the engine compartment to air out for several minutes. Vehicle batteries produce a hydrogen and sulfur gas mixture which is highly flammable or even explosive, this gas may accumulate under the hood and must be allowed to dissipate before jump starting.
- **Connect the jumper cables** to the battery of the disabled vehicle first. Cables are colored to keep from cross connecting batteries and causing a short. Always connect the red (or other brightly colored) cable to the positive (+) terminal of the battery, and the black cable to the negative (-) terminal. Ensure that the clamps on the free end of the cables do not touch before you connect your end of the cables to your vehicle. The positive (+) and negative (-) terminals of your battery will be marked on the battery next to the terminal, or on the terminal posts themselves.
- **Shut off the engine** to the running vehicle and connect the cables to the vehicle which will be giving the jump. Ensure that you have the same color cable hooked to the proper terminal on both vehicles. Connect the positive (+) cable to the battery terminal first, then connect the negative (-) cable to a grounded piece of equipment (such as a bolt on the manifold or vehicle frame) *away from the battery*.
- **The negative (-) or ground cable** will typically emit a small spark upon connection, this is normal, however, it may ignite battery gases and cause a fire or explosion of the battery. This is why it is advisable to connect to a ground *away from the battery*. If the cable produces a large spark or arc of electricity, disconnect immediately and ensure that you have the cable connected properly (positive to positive, negative to grounded equipment).
- **Ensure that you have** a good connection of the cables by wiggling them. The metal clamping jaws of the cable ends must be in firm contact with the metal of the battery terminal clamps and grounded equipment. If your vehicle has side post terminals this may be difficult to accomplish and some jumper cables have jaws with special attachments for this purpose. If your battery cable terminal ends have rubber coverings over the metal clamp, they will need to be pulled back to expose and allow access to the metal clamp.
- **Once you have a good connection** with the cables, start the vehicle giving the jump. Allow the vehicle giving the jump to run for several minutes and then attempt to start the disabled vehicle. If the disabled vehicle does not respond by starting, slowly turning over, or even producing a clicking sound, check your cable connections and attempt to start again. An extremely drained battery may need to set with the jumper cables attached for up to twenty minutes to charge sufficiently to start the disabled vehicle. Slightly revving the engine of the vehicle giving the jump may increase the charge to the dead battery and decrease the charging time. However, do not over rev the engine.
- **After the engine starts**, carefully disconnect the jumper cables ensuring that the clamps do not touch until both vehicles are disconnected. Use extreme caution around moving engine parts such as the cooling fan, belts, and pulleys when jump starting a vehicle.

Conclusion: Follow the above guidelines for safely jump starting vehicles. If battery acid (electrolyte) gets in your eyes, immediately flush with water for 15 minutes and seek medical attention. If battery acid gets on your skin, flush thoroughly with water, If irritation persists seek medical attention.

Work Site Review

Work-Site Hazards and Safety Suggestions: _____

Personnel Safety Violations: _____

Employee Signatures:

(My signature attests and verifies my understanding of and agreement to comply with, all company safety policies and regulations, and that I have not suffered, experienced, or sustained any recent job-related injury or illness.)

Foreman/Supervisor's Signature: _____

These guidelines do not supercede local, state, or federal regulations and must not be construed as a substitute for, or legal interpretation of, any OSHA regulations.