

A Worker was replacing the battery of a Diesel Engine in a Company Facility when suddenly it exploded. Luckily the Worker escaped from serious injuries and was discharged from hospital after being administered First Aid.



**Why it happened:** Instead of removing the ground (negative, black color) cable first, the Worker was removing the positive (red) cable with a wrench that simultaneously touched some other conductor and a **SPARK** occurred in the vicinity where **FLAMMABLE HYDROGEN GAS** was coming out of the battery. In the presence of **Air**, the three elements of a Fire Triangle i.e. 1. Fuel, 2. Source of Ignition, and 3. Air combined and an explosion occurred.



**Safety Precautions:** Only trained and authorized personnel should handle such lead-acid batteries. Precautions are:

- Wear hand gloves and safety goggles
- Remove rings, watches, other jewelry
- Never use spark-producing tools, flames, burning cigarettes and other ignition sources near a battery
- Never put any tools or metallic objects on the battery. Insulate all tools used while working on batteries.
- Keep the top of the battery clean and dry to prevent ground short circuits and corrosion.
- Always release any static electricity buildup on your body before touching or servicing batteries to prevent sparks
- When removing cables, always remove the GROUND (Negative) cable first
- When connecting cables, always connect the GROUND (Negative) cable last
- Never connect or disconnect cables with the charger turned ON. Carefully connect the cables in proper polarity to the battery
- Do not use the battery ground terminal when checking for ignition spark
- Do not lean over the battery
- Be careful not to get electrolyte in your eyes or on your skin and clothing
- Batteries can weigh about 14 to 27 kg, so practice safe lifting and carrying procedures to prevent back injuries

**Be Very Careful While Carrying Out Maintenance of Batteries**

*Please consult your Battery Supplier for additional information on safety, maintenance, charging of batteries*

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