Quad Plus®

The Auto Shredding Industry

Quad Plus is an industry leading system integrator providing **motors**, **transformers**, and **controls** for car shredders. We offer complete solutions, from meeting with the power company and designing a high-voltage layout for your site to supplying AC or DC shredder drive systems.

✓ The Refurbishing Process: Locomotive Generator to Prime Mover

The refurbishment of locomotive electrical generators into prime movers is a unique and intricate process in which we upcycle an otherwise scrap piece of equipment (generator) + transform it into a PRIME MOVER for use in other applications, such as the auto shredding industry.

A **prime mover** is something that provides motion/rotation or mechanical power to move a shaft; converts energy from source energy into mechanical energy. In locomotives, the prime mover is the source of power for its propulsion forward. **Prime movers** can be utilized for many industrial applications. We focus largely on the recycling industry but refurbish these generators for us in other such applications such as car shredders, mixers, pumps, and more.

✓ For Restoration and Refurbishing

1. The locomotive generator core is sent to Joliet Electric.
2. The core is then separated from the armature. We pull it apart and complete a full disassembly and inventory of all the specifics pieces internally and externally.
3. The core is added to a “bake out” oven. This oven, operating at around 325 degrees Fahrenheit, bakes the core. This is to:
    - Bake off varnish + contaminants
    - Bake out moisture, get to cleanest version
4. The core then cools for however long is needed.
5. The technicians then check the measurements + make sure things are moving in the right direction.
6. If approved, the pieces will now either go through a process called **vacuum pressure impregnation** OR be dipped in the smaller dip tank (if small).
7. During **VPI**, a 9-foot dip tank is used.
8. Pieces are added to the tank and then vacuumed sealed for 90 minutes.
9. Resin is added under the vacuum, the tank is then vacuumed sealed for an additional 90 minutes. After the time is done, the pieces are removed from the tank.
10. Pieces are set out to try/cure.
11. Mechanical assembly starts.
12. Then, the commutator is cut/trimmed on the laithe for a smooth and even curve.
13. After trimming, a spinning test for balance is performed.
14. While the spinning test is being performed the technicians are simultaneously fabricating our own design for the best shaft.
15. Finally, a full assembly and check of entire thing.
16. SENT OFF FOR ITS APPLICATION + NEW USE