

Automotive Axle Manufacturer Implements ZGF Maggie Technology - Improves Productivity & Quality, Reduces Total Operating Cost

The Most Advanced, Automatic,
Non-Disposable Liquid Filtration System



Metalworking/Lapping



ZGF Maggie MG300
Rated at up to 25 gpm on lapping slurry



Internal View of Maggie shows steel fines
captured by the powerful magnets

Customer Challenge

The primary contaminant generated in the lapping of steel gears is small steel particles. The lapping system was originally fitted with magnets on the gravity return line from the lapping machine to the lapping slurry pot / tank. Cleaning these magnets was a manual operation and it could not be done during production. Another way to control the contamination was to discharge a portion of the lapping slurry and refill with fresh slurry after a specific number of gear sets were processed through the lapping operation. The current methods were not effective and wasteful. Engineering and maintenance needed a better way to remove the metal fines from the lapping slurry.

ZGF Solution

Zero Gravity Filters (ZGF) installed its patented Maggie MG300 automatic magnetic separator. The Maggie's are installed in-line on each lapping machine. Maggie is designed to remove steel fines on a continuous basis from the lapping slurry with virtually no operator involvement. After a specific number of gear sets have been processed, the lapping machine sends a signal to Maggie initiating a purge (i.e. automatic, self-cleaning process). Maggie MG300's magnetic separators are installed on 4 lapping machines in one department.

Results

- 3-month payback
- Annual lapping slurry savings of ~\$27,000
- Reduced annual lapping slurry disposal costs by ~\$2,000.
- 10 second improvement in OEE (i.e. productivity) resulting in annual savings of ~\$50,000.
- 5.62% improvement in First Time Quality (FTQ) resulting in annual savings of ~\$50,000.
- Significantly minimized direct operator interface, providing a more consistent and reliable operation, and a safer work environment

Implementation of ZGF Maggie technology in gear lapping operations reduces operating costs, improves quality and process reliability, provides a safer workplace, and reduces environmental impact.