



Product

Worm Gear Sets

Application

Screwdown Mill Stands

Highlights

- Reverse-engineered worm gear sets
- Aluminum bronze gear material used for enhanced durability
- Carburize hardened, ground and polished alloy steel worm

Screwdown mill stands gear drives at a major steel mill in Ohio were failing prematurely causing extensive downtime. The worm gear teeth were wearing and breaking down at an accelerated rate due to improper meshing at the contact zone. The problem created excessive pressure at the gear's pitch line/contact zone.

Delroyd engineers met with the hot mill managers to conduct an on-site inspection and short-term mill stand monitoring period. Through these efforts, it was determined that the cause of the drive failures was that three different gearing manufacturers had supplied gearing, all with different thread designs, which were being mixed and matched over time.

A spare worm and gear sample was sent to the Delroyd facility so that a new gearing solution could be reverse-engineered to ensure that all gear sets installed on the hot mill stands would have a matching thread/tooth design. The new Delroyd gearing solution extended the gearing life from 6 months to more than 6 years.

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