



HORSBURGH & SCOTT

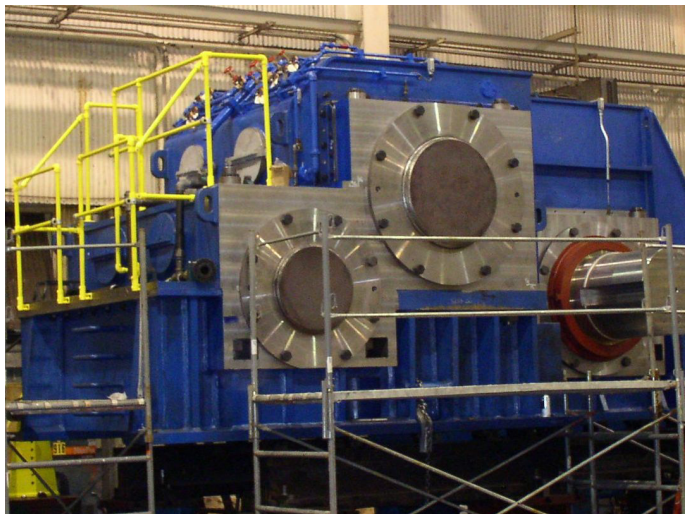
STEEL

More than 100 years of experience providing gearing and gearbox solutions to the largest steel producing companies in the world.

- US Steel
- ArcelorMittal
- AK Steel
- Nucor
- Severstal
- Gerdau
- Allegheny Ludlum
- AHMSA
- SSAB
- IN/Tek - IN/Kote
- Essar Steel
- Northstar Bluescope

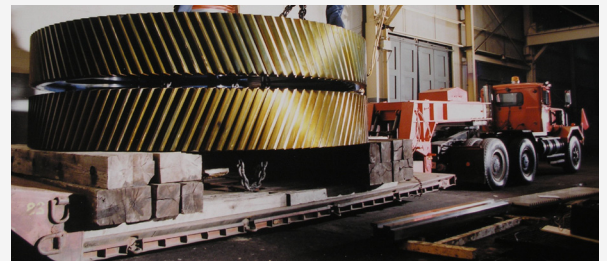
Custom Designed Gearing and Drives for Upgrades or New Installations:

- Increased service factors within existing dimensional constraints
- Increased hardness and strength for longer gear life
- Hot mill drive designs in excess of 40 million in-lbs of output torque



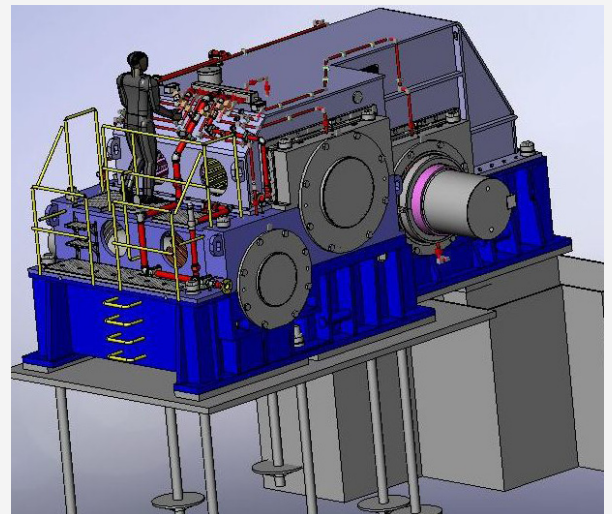
Superior Service to Meet Demanding Needs of Steel Mills:

- Dedicated repair and rebuild facility centrally located in Cleveland, OH
- Trucks available to pick-up gearboxes in emergency breakdown situations
- Preventative maintenance and service
- Remote condition monitoring technology



Gearing Solutions for Numerous Applications in the Steel Industry:

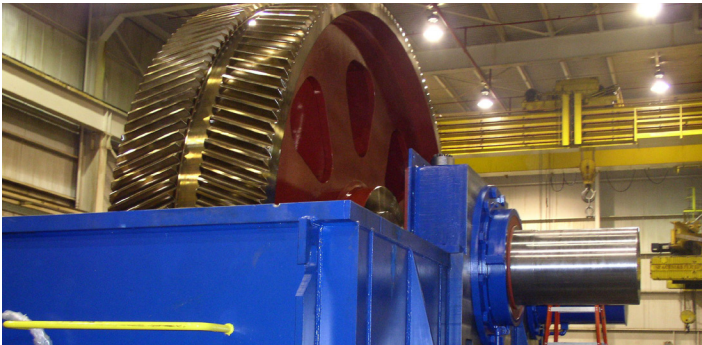
- Hot mill reduction gearing, drives & stands
- Cold mill reduction gearing, drives & stands
- Pickling line drives
- Crop shears & edger drives
- Coilers and uncoilers
- Scrap chopping drives
- BOF drives
- Crane & winch drives
- Run-out table drives
- Walking beam furnace drives



COMPANY OVERVIEW

Manufacturing Capabilities:

- Gear cutting, including hobbing, shaping, Sykes herringbone, flycutting, Maag shaping (conventional and hardcutting), up to 7.3m
- Form grinders to 6m; AGMA class 14 with internal grinding to 3.5m OD
- Vertical turning to 15.2m with live spindle, shaft turning to 2m diameter, OD grinding to 1.8m diameter. Keyseating to 1.5m stroke with indexable table
- Large welded gear blanks to 6m diameter with furnace stress relieving
- Horizontal Boring Mills to 229mm spindles, 7 axis CNC floor mill with 6.1m index table



Heat Treat:

- New Aichelin carburizing and hardening line:
 - 2.0m diameter x 2.5m depth
 - 2.5m diameter x 2.0m depth
- New Saet CNC induction hardening machine up to 5.3m diameter
- Effective case depths for carburizing and induction hardening to 6.4mm
- Stress relieving of component weights to 100,000 lbs
- Process components to 50,000 lbs

Main Plant
5114 Hamilton Avenue
Cleveland, OH 44114
216.431.3900

Heat Treat Facility
4629 Hamilton Avenue
Cleveland, OH 44114
216.432.5804

Repair Center
1441 Chardon Road
Euclid, OH 44117
216.865.0550

Engineering and Quality Assurance:

- Engineering analysis and upgrades
- Reverse engineering
- Sophisticated tools and practices to follow rigorous standards, including AGMA, ISO 9001:2008, AASHTO and API
- Zeiss Coordinate Measuring Machine (4 x 4 x 2m)



Comprehensive Industrial Gearing Repair and Service:

- Engineering analysis, gearbox evaluations, reverse engineering
- Disassembly and reassembly
- Gear inspection
- Gearbox no-load spin testing
- Global field service
- Installation supervision
- Predictive and preventative maintenance
- Detailed borescope inspections
- Non-destructive testing
- Condition monitoring (vibration, torque, load, temperature, pressure, etc.)
- Real time, remote and networked
- Alarm notification
- Root cause analysis
- Condition assessment & dynamic modeling

Solutions for Many End Markets and Applications:

- Metals
- Mining
- Pumps
- Sugar
- Oil & Gas
- Wind Energy
- Tire & Rubber
- Power Generation
- Transportation
- Infrastructure
- General Industrial



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