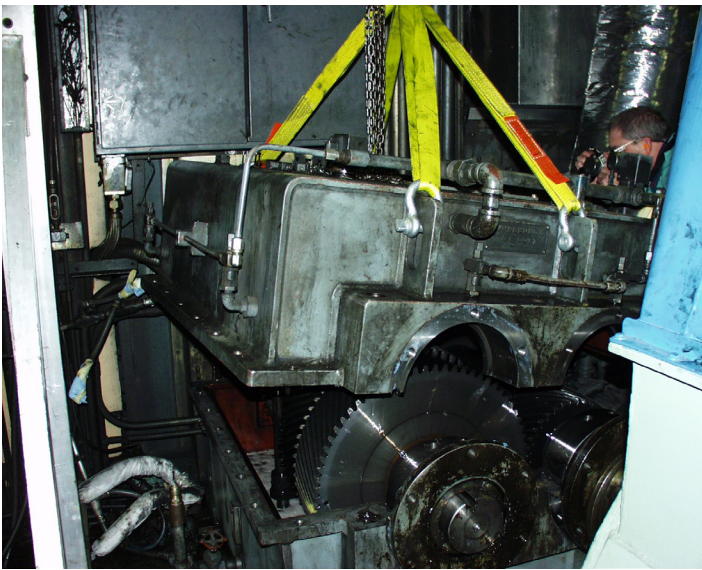




HORSBURGH & SCOTT
GEAR UP™

FIELD SERVICE

At Horsburgh & Scott we understand the need for on-site support. We have a dedicated field service team that has more than 30 years of experience in the gearing industry. We offer a variety of services in order to meet our customers' needs.

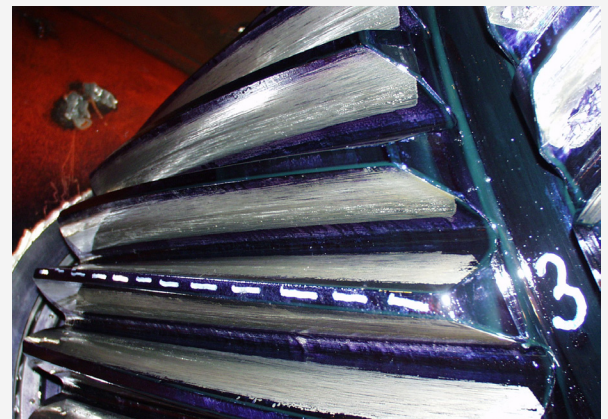


- Detailed inspections (w/borescope)
- Failure analysis
- Lubrication system evaluation
- Gear alignment
- On-site machining
- Emergency breakdown services
- Installation & startup supervision
- Preventative maintenance
- Remote condition monitoring and assessment
- Dynamic modeling and machine optimization recommendations



Field Service Experience:

- Steel & Aluminum - hot/cold mills, BOF drives, rolling mills, etc.
- Mining - conveyors, pulverizers, etc.
- Rubber - mixers, extruders, etc.
- Power Gen - conveyors, vertical spindle mills, rotary dumpers, limestone mills, etc.
- Wind Turbines - main drive, yaw, etc.
- Pump Drives - process, slurry, FGDs, dewatering, etc.
- Sugar - crushing rolls, etc.
- Infrastructure - dredges, agitators, clarifiers, tunnel boring, movable bridges, etc.



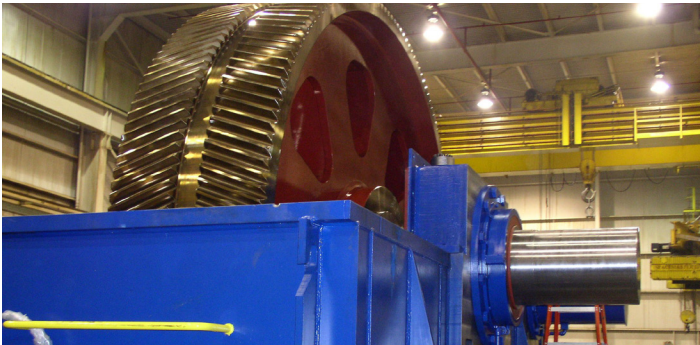
*Available to service
our customers' needs
whenever they arise*



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

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 preventive 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



www.horsburgh-scott.com