



HORSBURGH & SCOTT
GEAR UP™

Re-shelling

Half the cost. Half the leadtime!

Horsburgh & Scott has perfected the process for re-shelling your old integral pinions. Aimed primarily at mining and steel mill applications, re-shelling can provide you with a pinion that meets or exceeds OEM specifications.



New pinions can also be designed and manufactured using this process, providing you with savings on material and heat treating versus an integral shaft. It also allows us to vary the material of the shaft and the shell for different hardness combinations that will best meet your needs. Whether carburized or through hardened, the shell on shaft combination will be an upgrade to your present pinions.

As an added benefit, you can re-shell after the 10 to 15 year working life of a pinion. This will provide cost savings over the long haul as you won't have to buy a new shaft, just the new shell.

How the re-shelling process works:

- You provide us the drawing, HP, RPM and service life of your integral pinion and we'll determine if re-shelling is possible.
- The number of teeth in the mating gear and center distance of the set will also be used to make this determination.
- We can also perform repairs to keyways, bearing and seal journals. This will be quoted upon inspection after we take delivery of your pinion. (Damaged seal journals can be built up even with .250" wear from seal rubbing in abrasive environments.)
- Magnetic particle testing and dimensional inspection are performed on the shaft to ensure that it is suitable for re-shelling.
- The old teeth are turned off and the shell journal is finish ground.
- The new shell is manufactured with finished grind stock on the teeth.
- The shell is heated to the appropriate temperature to shrink onto the renovated shaft.
- Finally, the teeth are finish ground concentric to the finish bearing journals.



For additional information or a quote, please contact us at 800.424.6514 or inquiry@horsburgh-scott.com.

www.horsburgh-scott.com

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

<i>Main Plant</i>	<i>Heat Treat Facility</i>	<i>Repair Center</i>	<i>H&S Canada</i>
5114 Hamilton Ave. Cleveland, OH 44114 216.431.3900	4629 Hamilton Ave. Cleveland, OH 44114 216.432.5804	1441 Chardon Rd. Euclid, OH 44117 216.865.0550	868 Falconbridge Rd. Unit 14 Sudbury, ON, P3A 5K7 705.566.7575

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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