

# 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.
- Information on the number of teeth in the mating gear and center distance of the set will also be required.
- We will also perform repairs to keyways, bearing and seal journals as necessary. 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  
216.431.3900  
OR inquiry@  
horsburgh-scott.com**



# ADVANCED GEARING CAPABILITIES



## KEY CAPABILITIES

- 237,000 sq. ft. of manufacturing
- 35,000 sq. ft. of heat treating
- 6,500 sq. ft. — H&S Canada (Lively, ON)

## ENGINEERING EXPERTISE

- Over 25,000 hours/year
- Drawings for over 90 different gearbox brands and spare parts

## INNOVATIVE EQUIPMENT

- Fellows 65-16 Shaper with full CNC controls
- Giddings & Lewis VTC 2000 vertical turning
- Gleason-Pfauter P1600/2000 hobber/gasher
- Gleason-Pfauter P2000G form grinder
- Gleason-Pfauter P2006 form grinder
- Gleason-Pfauter P2400/3000 hobber/gasher
- Hofler R1600/2000 form grinder
- Hofler R6000 form grinder
- Hofler 1600 form grinder
- Schiess horizontal boring mill
- G&L 3500 vertical turning center
- Farrel 50 ft. vertical turning center
- Aichlin pit furnace (2)



The **Gleason-Pfauter Hobber/Gasher** improves productivity with a **7x Reduction in Hobbing Time.**

**THE COMPANY MOST QUALIFIED TO HANDLE ALL YOUR GEARING NEEDS.**

## TURNKEY GEARING SOLUTIONS

- Design to Manufacturing
- Repair & Rebuild
- Field Service
- Reverse Engineering and Performance Upgrades
- Gears up to 24 ft. (7.3m) in diameter and 287 in.
- Gearbox Types: Planetary, Parallel Shaft, Split Shaft, Right Angle, Multi-Speed
- In-house Heat Treating and Carburizing up to 50,000 lbs. (22,000 kg)
- Induction Hardening to 5m in diameter or 30,000 lbs. (13,000 kg)
- Inspection and Testing

## GEAR & SHAFT GRINDING SPECIFICATIONS

- External: outside diameter to 6.0m (237 in.)
- Internal: outside diameter to 3.5m (138 in.)
- Face width: up to 2.0m (79 in.)
- Module: up to 40 (0.63 DP)
- ISO grade: up to 4 (AGMA quality 14)

## GEAR TOOTH CUTTING SPECIFICATIONS

- Spur, helical, double helical, herringbone, internal and worm gears
- External: outside diameter to 7.3m (287 in.)
- Internal: outside diameter to 4.8m (189 in.)
- Face width: up to 1.3m (50 in.)
- Module: up to 70 (.375 DP)
- ISO grade: up to 8 (AGMA quality 10)

**MOST TRUSTED NAME IN GEARING FOR OVER 130 YEARS**

**WE'VE REBUILT THOUSANDS OF GEARBOXES, MORE THAN 120 DIFFERENT BRANDS**



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canadian plant 705.692.1414



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**DELIVERING THE DIFFERENCE**



**HORSBURGH & SCOTT**