Bevel Gear Cutting

Spiral Bevel and Hypoid Gear Cutting
(1) Gleason Phoenix II 600 HC CNC Spiral Gear Cutter
(2) Gleason Phoenix 450 HC CNC Spiral Gear Cutters
(3) Gleason Phoenix 250 HC CNC Spiral Gear Cutters
(1) Gleason Phoenix 175 HC CNC Spiral Gear Cutter
(1) #645 Gleason Hypoid Gear Generator
(1) #116 Gleason Generator
(1) #26 Gleason Spiral Bevel Generator
(3) #2 Gleason Spiral Bevel Generators

Straight Bevel Gear Cutting
(1) #104 Gleason Straight Coniflex Gear Generators
(1) #24A Gleason Straight Bevel Coniflex Generators
(2) #14 Gleason Straight Bevel Coniflex Generators
(2) #2A Gleason Coniflex Gear Generators
(1) Cincinnati CNC Gear Gasher

Arrow produces bevel gears up to 30 inches in diameter at quality levels of Q13
Bevel Gear Grinding, Lapping and Testing

Bevel Gear Grinding
(1) Gleason Phoenix II 600 PG CNC Spiral Gear Grinder
(1) Gleason Phoenix 450 PG CNC Spiral Gear Grinder
(1) Gleason Phoenix 400 PG CNC Spiral Gear Grinder
(1) Gleason Phoenix II 275 PG CNC Spiral Gear Grinder
(1) Gleason Phoenix 200 PG CNC Spiral Gear Grinder
(2) #463 Gleason Spiral Grinders 3-18" Wheel

Bevel Gear Grinding

Bevel Gear Lapping
(2) #19 Gleason Bevel Gear Lappers
(1) 138/504 Gleason Bevel Gear Lapper 36"
(1) Oerlikon SL3 Lapper

Bevel Gear Testing
(1) #552 Gleason Bevel Gear Tester
(1) #523 Gleason Bevel Gear Tester
(5) #104 Gleason Angular Hypoid Testers (14000 RPM)
(4) #27 Gleason Bevel Gear Testers
(1) #17 Gleason Bevel Gear Testers
(15) #13 Gleason Bevel Gear Testers
(13) #6 Gleason Bevel Gear Testers
(2) #4 Gleason Bevel Gear Testers
Parallel Axis Gear Cutting, Grinding and Finishing

**Spur & Helical Gear Cutting**

1. Gleason Phoenix 400 GH CNC Hobber  
2. Gleason Phoenix 200GH CNC Hobber  
3. Gleason Phoenix 125 GH CNC Hobber  
4. Lorenz Model LS-426 CNC Gear Shaper  
5. Lorenz Model LS-424 CNC Gear Shaper  
6. Lorenz Model LS-152 CNC Gear Shaper  
7. P403 Pfauter Gear Hobber  
8. 16 x 16 Barber-Colman Hobber  
9. #6-10 Barber-Colman Hobber

**Spur & Helical Gear Grinding**

1. Hofler Rapid 800 Spur & Helical Grinder  
2. Hofler Helix 400 SK CNC Gear Grinder  
3. Kapp CNC Internal Gear Grinders  
4. Kapp CNC External Gear Grinder

**Spur Gear Finishing**

1. Vinco Spline Lapper  
2. GHD Red Ring Gear Honer

Arrow is capable of producing parallel axis gears up to 36 inches in diameter.
Heat Treat and Metallurgical Inspection

Heat Treat Equipment
(2) Sunbeam 30” x 48” x 24” Automatic Carburizing Hardening & Quench Furnaces
(1) Blue M Oven
(5) Super System 2 Bench 3 Gas Analyzers
(3) L&N 25” x 48” Pit Carburizing Furnaces (updated with latest controls)
(1) Lindberg Heavy Duty Pit Furnace 28” x 48”
(1) Lindberg 24” x 48” x 20” Box Furnace
(1) Lindberg 36” x 48” x 24” Box Furnace
(3) JL Becker 30” x 48” x 24” Draw Furnaces
(2) Sunbeam 30” x 48” x 24” Draw Furnaces
(1) Sunbeam 30” x 54” x 16” Box Furnace
(1) Sunbeam 30” x 48” x 24” Multi-Stage Washer & Dryer
(2) Surface Combustion 2400 CFH Endothermic Gas Generators
(1) Wisconsin Oven - Walk-in (4’ x 6’ x 6’ Ht.)
(2) Grieve Ovens SC-350 - Stress Relieve
(1) Grieve Oven SA-550 - Stress Relieve
(2) Grieve Ovens 333 - Stress Relieve
(3) Webber LT25 48” x 30” x30”

Heat Treat Metallurgical Lab
(1) Struers Rotopol II Polishing Machine
(1) Struers Unitoms Cutoff Saw
(1) Struers Labo Press - 3
(1) Struers DuroScan-70 Hardness Checker
(1) Struers Duramin-A300 Micro Hardness Checker
(1) Zeiss Axiovert 40 Mat Microscope
(1) Nikon Inverted Microscope
(1) Nikon Stereo Microscope (with digital camera and computer)
(3) Rockwell Hardness Testers
(2) New Age Computerized Micro Hardness Testers
(1) Portable Rockwell Hardness Tester
(2) Leco Automatic Carbon Determinators
(2) SSI Dewpoint Hygrometer
(1) Lapmaster Model 150 Super Finisher
Heat Treat Quenching and Straightening

(1) Gleason #Q 140R Rolling Quench Press
(2) Gleason #537 Quench Presses
(1) Gleason #529 Quench Press
(1) Dixitech DQ914 Quench Press 36” (equal to Gleason 36”)
(1) Eitel RP-40 44 Ton Straightening Press
(1) Oil Gear 100 Ton Hydraulic Straightening Press
(1) Greenwood C-France Straightening Press

Blasting

(1) Blast-it-All Automatic Blaster
(1) Bronco Double Door Swing Table Blast Machine
(1) Ruemelin Hand Blaster
(4) Uni-Hone Dry Honer Blasters
(1) Universal 4836 Dry Honer Blaster
(1) Uni-Blast 6 Station Indexing and Turntable Blaster
(1) Zero Blast 6 Station Indexing and Turntable Blaster
(1) Micro Blast Blaster

Arrow’s Heat Treat facility is Nadcap certified.
Multi Function Machining Center

(1) Mori Seiki NT4300 Multi Axis Machining Center for
Turning, Milling, Gear Cutting, Shaping, and Hobbing

Turning

(1) Doosan VT900 Vertical Turning Lathe - 32" Chuck
(2) DMG-Mori NLX 400AY/1500 CNC Lathes
(1) Mori Seiki NL 3000/1250 CNC Lathe
(1) Mori Seiki NL 3000/700 CNC Lathe
(2) Mori Seiki NL2500/700 CNC Lathes
(2) Mori Seiki SL 253BMCS00 CNC Lathes
(2) Giddings & Lewis CNC 2-Axis Vertical 18" Chuckers
(1) Okuma & Howa 2SP-3L Twin Spindle Lathes
(2) Mazak CNC Slant Turn 30 Lathe
(1) Bridgeport/Romi CNC 20M Lathe
(1) LeBlond 15" Makino 19 Regal Lathe
(1) South Bend 16" Lathe
(1) Harrison Alpha 460T CNC Automated Lathe

ID / OD / Surface Grinding

(1) Okuma G1-20N/4W (4 spindle) CNC Internal Grinder
(1) Okuma GL-20N CNC Internal Grinder
(1) Bryant LL3-50 CNC Internal Grinders
(2) Bryant LL3-55 CNC Internal Grinding
(1) Toyoda GU4-100 CNC Universal Grinder
(1) Toyoda GL6A CNC Angle Wheel O.D. Grinder
(2) Toyoda GL4A CNC Angle Wheel O.D. Grinders
(1) Model 171 CNC Heald Internal Grinder
Retrofitted with Allen Bradley Controls
(1) Model 271 CNC Heald Internal Grinder
(1) Matrix 1600 CNC Thread Grinder
(1) Okamoto 12" x 24" Precision Surface Grinder
(1) Bryant Center Grinding Machines
(3) Ex-Cell-O Center Lappers
(1) 361 Heald Rotary Surface Grinder - 24"
(1) 361 Heald Rotary Surface Grinder - 30"
(1) Springfield 25 CNC Vertical Grinder

Drills / Mills / Broach / Saws

(1) Hurco VMx64 CNC Machining Center with 4th Axis
(1) Toyoda FV1165 CNC Vertical Machining Center with 4th Axis
(1) Brother TC-SZC-CTS CNC Tapping & Drilling Center with 4th Axis
(1) Cincinnati Milacron VMC 750 CNC with 4th Axis
(1) DAH-LIH Vertical Machining Centers with 4th Axis
(1) Trak CNC Milling Machine w/indexer
(2) Drill Presses Multi-Spindle - Leland Gifford
(1) Cincinnati Bickford Drill Press
(2) Bridgeport Milling Machines
(2) Automatic Horizontal Drill Presses
(1) Cincinnati Bickford Drill Press
(1) Custom Gun Drill
(1) Portable Centering Tool
(1) Defiance Drill Press
(1) Sundstrand Centering Machine
(1) 25 Ton x 90" Broach - Colonial
(1) 20 Ton x 60" Broach - American
(1) 3 Ton x 36" Broach - Colonial
(1) 5 Ton Tymiles Broach1 Marvel 15A8 Band Saw
(2) Marvel 15A4 Band Saw

Doosan Vertical Turning Lathe
2 Climate Controlled Gear Labs

(1) Wenzel WGT500 CNC Gear Checker
(1) Wenzel WGT850 CNC Gear Checker (Fall 2013)
(1) Gleason M&M Sigma 5 CNC Inspection System
(1) Hofler EMZ 632 CNC Gear Checker
(1) M&M 3515 Gear Inspection System
(1) M&M 2025-4 QC System Gear Checker
(2) Hommelwerke Contour Tracers
(1) Fellows 8M Redline Checker
(2) Fellows 20M Redline Checkers
(2) Model 12 Fellows Involute Checkers
(1) Illinois Composite Checker
(7) Fellows Spacing Checkers - #12-C

Inspection Equipment

(1) Zeiss CMM 900/1800/700
(1) Faro Platinum 6 Axis 8ft Arm
(1) OGP Optical Comparator
(1) J & L Optical Comparator
(1) Schenck HM20BU Balancer
(1) Magnaflux Magnaglow - 6000Amps - TypeH-810-R
(1) Magwerks MV3436 Tri-Vector Magnaflux Machine
(1) Magwerks FM-2225X Demagnetizer
(1) 5600 Pneumo-Centric Roundness Checker
(9) Trimos Vertical Height Gages
(2) ST Industries 30" Optical Comparators
(2) Mitutoyo Optical Comparators
(1) Mitutoyo CMM Retrofitted to Zeiss Controller
(4) Mitutoyo Vertical Height Checkers
(1) Nital Etch Line
(1) Beta Lasermic
(1) Trimos Lab Concept
(1) Hommelwerke T8000 Contour Tracer
(1) Jenoptik Opticline
(2) Mitutoyo Optical Comparators

Deburr / Polishing / Part Marking

(1) Sweco Vibratory Deburring Machine - 3 cu.ft.
(1) Lenze Gratomat Deburring Machines
(6) Polishing & Finishing Machines
(3) REM Isotropic Superfinishing Systems
(1) Trumpf VWS 1200/VMC1Laser Marker with 2D Data Matrix Capability
(1) Schmidt Marking Machine
(2) Robotic CNC Gear Chamfering Machines
(1) Telesis TMP6000 Pin Marker
(1) Telesis TMP6100 Pin Marker with 2D Data Matrix Capability
(1) Dapra Techno Mark Pin Marker with 2D Data Matrix Capability
(1) Redin #36 Gear Deburring Machine
Cutter and Tool Sharpening

(1) Gleason #300 Cutter Grinder
(1) Gleason #107 Cutter Grinder
(5) Gleason #13 Cutter Grinders
(2) Gleason #12 Cutter Grinder
(1) Gleason #2 Cutter Grinder
(3) Drill sharpeners
(1) #232 Christian Tool & Cutter Grinders
(2) #528 Gleason Cutter Truing Stands
(1) Micro-Collette Shaper Cutter Sharpener
(3) #2 Cincinnati Universal Tool & Cutter Grinders
(1) Star Model VHS Hob Sharpener
(1) Kapp Hob Checking Instrument
(1) Norton Surface Grinder

Misc. Equipment

(1) Caterpillar #150 Inertia Welder
(1) Sullair 100HP Air Compressor
(2) Sullair 50HP Air Compressors
(1) Copper Strip Tank Line
(1) DeVilbiss Paint Booth
(2) Better Engineering Water Washes
(1) Roto Wash
(2) Solvent Spray Booths
(1) Vapor Degreaser Part Cleaner