



NELSON

ENGINEERING Inc.



Manufacturers of Precision Machined Parts and Assemblies

Mission Statement

It is the mission of Nelson Engineering to be recognized and respected by our customers as a world-class supplier of precision machined products and assemblies. Together we will achieve our customer's expectations while maintaining a reasonable profit. Our commitment to excellence, dedication and continuous improvement is the foundation of Nelson Engineering's business plan.

At a Glance...

Nelson Engineering is a leader in the machined parts industry. Since 1986 we have provided our customers with quality machined components and engineering services of the highest caliber. It is our commitment to continuous improvement in both our processes and employees that truly defines us as a world class supplier. These efforts have directly benefited our customers in price, delivery and quality. Whether we design and manufacture a custom gear box or machine your most complex parts we guarantee our professionalism will shine.

Don Nelson



President

Modern Horizontal and Vertical Machining Centers

Vertical and Horizontal High Speed 4-axis Machining Centers
Complex Geometries, Specifications, and Contours
Extremely Modern Equipment



Modern Lathes

Unique High Speed Twin Spindle, Twin Turret Lathes With Milling
Combination Lathe/Mill Machining Centers
Specializing in Complex Turned Parts up to 60" in Length



Spur and Helical Gear Grinding and Hobbing

High Volume Gear Grinding (AGMA 14) and Hobbing (AGMA 10)
Experts in Gear Manufacturing and Design
Manufacturers of Certified Master Gears



Precision Mechanical Assemblies and Gear Boxes

Custom Gear and Gear Box Designs
Specializing in Complex Mechanical Assemblies
Serving all Industries



Complex Processing and Project Management

Experts at handling large projects
Specializing in Complex Parts with Many Special Processing Needs
Our Engineering can Help Select the Right Processing for You



Unparalleled Metrology and Inspection Capabilities

CMM That Repeats to .00002" @ 3" and .00016" @ 59"
Boeing BQMS D6-82479 "A" Approved
ISO 9002, ANSI/ASQC Q9002, Compliant



Horizontal and Vertical Machining



Complex Geometry

Whether you need extremely complex parts with contours and profiles or have tough tolerance requirements, Nelson Engineering has the equipment to get the job done right. All our machines are equipped with four axis capabilities and our rigorous in process inspections assure you accurate parts.



Cost Effective

Our commitment to the latest technology and a philosophy of continuous improvement in both people and processes means our savings get passed on to you. With high speed machining technology your parts are made in less time and at a lower cost when compared to older technology.



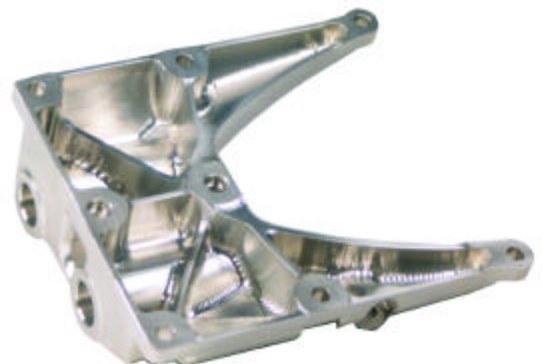
High Volume

With 3 high speed horizontal machining centers and 5 vertical mills running 2 shifts per day, our company is ideally suited for high volume production runs on tough materials. We can run parts up to 24.0" x 22.3" x 20.0" on our horizontals' and 60.0" x 25.6" x 25.6 on our vertical mills.



High Speed Machining

Three state of the art high speed milling centers allows us to remove materials at 800ipm with better surface finishes. With this technology we can remove a great deal of material in a short amount of time.



Turned Parts



Unique Capabilities

Let our dual spindle/dual turret lathe with bar feeder, milling capabilities and robotic gantry make your turned parts in one step. If you have long tube-like parts with tight concentricity tolerances our large dual turret lathe with a steady rest is ideally suited for these types of applications.



Intricate Combination Parts

We pride ourselves on accurately producing parts that require milling, turning, gear cutting and processing all in one part. With our state of the art lathes many turned parts that also require milling operations can be done on our lathes with live tooling in one step.



Large Parts

Our dual turret lathes mean twice the material removal rates over conventional CNC lathes. With turning capabilities ranging up to 21.3" diameter and 49.2" long with a 4.2" through spindle, our company is ideally suited to turn your largest orders. Go ahead and put our 6 modern CNC lathes to work for you today.



Accuracy

Before we make your first part our engineers rigorously study your specifications. Next our statistical process control (SPC) and in process inspections ensure repeatable and accurate parts. Our state of the art high quality machines ensure that tolerances of $\pm .0002$ are met every time.



Spur & Helical Gear Grinding and Hobbing



AGMA 14 Quality

Our Reishauer gear grinder can produce AGMA 14 gears in production quantities up to 13" diameter and 28.3" in length from 4-48DP. Being one of only a handful of companies in the Western United States to offer production gear grinding at AGMA 14 specifications truly separates Nelson Engineering from the rest.



Large Quantities

Using one of the fastest gear grinders and hobbers in the industry coupled with our advanced lathe department means no middle men like other suppliers. We can hob your AGMA 10 gears up to 16" in diameter and 18" in length from 3-48DP.



Master Gears

We are fully capable of creating and documenting master gears for your in-house inspection requirements with our Brown & Sharpe CMM and Reishauer Gear Grinder. Our precision measurement machine can check AGMA 15 spur and helical gears up to 30" in diameter and 20" tall.

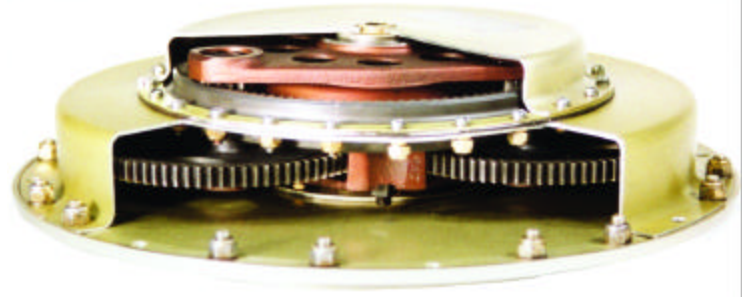


Design Engineering

We don't just stop with manufacturing capabilities. We offer gear and gearbox design engineering and consulting services by engineers who specialize in gear design and gear manufacturing. Let us help you design your gears and gear boxes to be both cost effective and functional and you won't be disappointed.



Mechanical Assemblies and Gear Boxes



Precision

We have over 15 years of experience in making complex mechanical assemblies and gear boxes. We understand that precise mechanical assemblies start with accurate machined parts and gears, and nobody makes precision components better than Nelson Engineering.



Vertically Integrated

With gear grinding, hobbing, turning and milling capabilities, Nelson Engineering controls the mission critical parts that make your assemblies precision instruments. By sourcing just one vendor your assemblies will be of a higher quality and you remove the headaches of managing multiple vendors.



Elaborate Requirements

Nelson Engineering specializes in sophisticated mechanical assemblies that need a high degree of project management. We understand the unique requirements and extraordinary coordination needed to deliver complex assemblies on time and to print.



Large Projects

We regularly manage large projects requiring a high degree of commitment. Many complex assemblies require large material, labor and processing investments, all of which we handle on a regular basis. We will also work with you on your just in time (JIT) requirements.



Processing and Project Management



Engineering

Let Nelson Engineering help you choose the plating operations that best suit your needs. We specialize in handling parts with extreme plating requirements and are considered experts in the field.



The Highest Standards

Some of the most demanding companies in the world use Nelson Engineering to make their complex parts. We respect your requirements and rigorously enforce your specifications throughout the entire manufacturing process.



Complex Requirements

From specialized material removal processes to complex plating operations, Nelson Engineering has the experience and know-how to get your demanding parts made to print. We will also work with your specified vendors, when necessary, to ensure accurate parts.



Nerve Center

Machining is just the beginning with most parts. We are experts at handling parts that need many outside processes. We are constantly in communication with our vendors so your parts get made correctly. We also utilize source inspections and on-site surveys to ensure that your parts are made properly at every step.



Equipment List

4-Axis Horizontals'

1998 Toyoda FA 450	60 Tools	23.6" x 23.6" x 22"	High Speed , Twin Pallets
2000 Mori Seiki SH 500	110 Tools	24" x 20" x 20"	High Speed Machining, 3 Pallets
1996 Kitamura H400	100 Tools	24" x 20" x 20"	High Speed, Twin Pallets

4-Axis Mills

1997 Mori Seiki SV-50	40 Tools	31.5" x 20.1" x 20.1"	High Speed Machining, 30Hp
1990 Mori Seiki MV65	30 Tools	60.0" x 25.6" x 25.6"	Hard Materials, 50 Taper, 40Hp
2000 Mori Seiki SV40	30 Tools	31.5" x 20.1" x 20.1"	High Speed Machining, 30Hp, 10,000rpm
1995 Mori Seiki MV-40B	20 Tools	31.5"x 16.1" x 20.1"	Super Accurate, 8,000rpm
1990 Mori Seiki MV-40B	20 Tools	31.5" x 16.1" x 20.0"	Super Accurate, 8,000rpm

Lathes

2000 Mori Seiki ZL-200SML	24 Tools	7.1" OD x 16.1"	Dual Turret & Spindle, Bar Feed Milling, High Speed, Parts Catcher 2" Thru Spindle
1988 Mori Seiki SL25A	12 Tools	10" OD x 36"	2" Thru Spindle
1987 Mori Seiki SL25B	10 Tools	10" OD x 36"	3.1" Thru Spindle
1998 Femco WNCL 35/110	8 Tools	21.25" OD x 49.2"	3.2" Thru Spindle
1993 Femco Durga 25E	24 Tools	10" OD x 16"	Parts Catcher, High Volume
1994 Mori Seiki ZL-35	20 Tools	15.4" OD x 60"	Dual Turret, 50Hp, Steady Rest For Precision Tubing, High Speed

Spur and Helical Gears

1998 Reishauer RZ-301S CNC Gear Grinder		13" OD x 28.3" x 7" Face, 4-48Dp, 10-600 Teeth AGMA 14, High Speeds Grinding
1995 Phauter P-400 CNC Hobber		16" OD x 18" x 12" Face, 3-48Dp 5-Axis AGMA10, High Speed Hobbing

Metrology

2003 Brown & Sharpe PMM-C 700		47.3" x 39.4" x 27.6"	AGMA 15 Gear Inspection, High Speed Inspection, Repeatable to .00002" at 3" and .00016" at 59"
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