

# INTRODUCTION TO MINI GEARS

incorporating COMPONENTS WORLDWIDE

Mini Gears, probably best known for manufacturing and sourcing medium to high volume batches of commercial gears and racks for a wide range of industries, has recently diversified into additional new markets including low volume and very high precision machined parts, plus an extensive range of high precision gear products including CNC gear grinding.

New markets include producing a wide range of precision valve components for both topside and subsea applications from various exotic materials. Also included are complete sets of painted aluminium machined 'kits' for 1st class aircraft seating. We have also invested in 2 x CNC gear grinding machines for markets such as Autosport, Classic Cars and Rotor Pumps.

## Competitive Advantage

As a subcontract engineering company we manufacture to your bespoke requirements. With over 100 machines and 80 staff Mini Gears is at the forefront of UK manufacturing for gear components and specialist machined parts.

Established in 1966 Mini Gears has continued to invest millions of pounds over the years but more importantly we have a dedicated long serving workforce that continually produces quality products. Also, back in 2000 many of our larger international customers were setting up factories overseas, in particular China and India, for higher volume production. In 2002 we set up our own overseas buying office to be able to source parts at prices that cannot be met with European manufacturing costs and we bring in and export a vast range of components.

## Award Winning Team

With over 17 major industry awards to our name, Mini Gears has grown to be one of the largest and most respected gear companies in the UK and with our innovative approach and friendly team we look forward to receiving your valued enquiries for a very competitive quote.



Double winners at the 2014 MWP  
Advanced Manufacturing Awards:  
Best Subcontractor - Machining &  
Best Supply Chain Partner



Mini Gears Team at its  
manufacturing facility in the UK

35,000  
square foot facility



**MINI GEARS**  
Components worldwide

UK & Global manufacture

OVER  
100  
machines



GLOBAL  
customer base

17  
major industry  
AWARDS



### Manufacturing to diverse industries

Mini Gears has a worldwide customer base with main accounts all over Europe, the USA and even as far afield as Australia.



Subsea industry - safety critical valve applications

Our newer low volume specialist markets tend to be nearer to home and include autosport, specialist high end valve applications, aircraft seating, power take off units, diesel engines, earth moving equipment, vacuum pumps, marine leisure, medical, plus many other diverse markets.



We supply parts for classic & performance cars

Our medium to high volume include the stairlift industry, valve actuators, gears for motor gearboxes, portable drills, heavy duty winches, motor brake systems for forklift trucks and passenger lifts plus many other industries.

With over 100 machines available in our UK factory we can manufacture gears and machined components up to 600mm diameter and gear racks up to 3 metres long. Our precision range for gear grinding is up to 400mm diameter.

#### OUR PRODUCT RANGE INCLUDES:

- Precision Machined Parts
- Spur Gears
- Helical Gears
- Ground Gears
- Gear Racks
- Steering Racks
- Flywheels
- Worm Wheels
- Worm Shafts
- Splined Shafts
- Lay Shafts
- Pinions
- Chain Sprockets
- Timing Pulleys



Various gears & machined parts for all types of industries



Various parts for stairlifts & aircraft seating



Painted aluminium machined 'kits' for 1st class aircraft seating



Precision machined parts made from specialist exotic materials, typically for the valve industry



A range of parts for the high performance / classic car market



Precision ground gears & shafts for high accuracy & low noise

## Quality products using the latest CNC equipment and production methods

Innovation has always been a great part of the culture since the company was founded in 1966; winning more than 17 major industry awards stands testament to this.

With continual investment and over 48 years of machining excellence, components are produced on the latest hi-tech CNC machine tools. We have a large range of CNC machines including powerful multitasking twin chucked machine tools for 'one-hit' machining, semi-manned turning centres, larger CNC lathes to turn blanks up to 600mm, CNC gear cutting, hobbing and shaping machines, CNC gear grinding and CNC gear checking up to 350mm.

In addition we have capacity for milling, broaching, gear shaving, slotting of keyways and bore honing, plus many auxiliary operations.

We can cut standard commercial gears up to 600mm dia., high precision and ground gears up to 400mm diameter.

## Award Winning Company

Continual investment, working with our customers and always looking for new ways of doing things with a friendly go-ahead approach has resulted in over 17 major awards for machining excellence, supply chain partnerships and innovation.



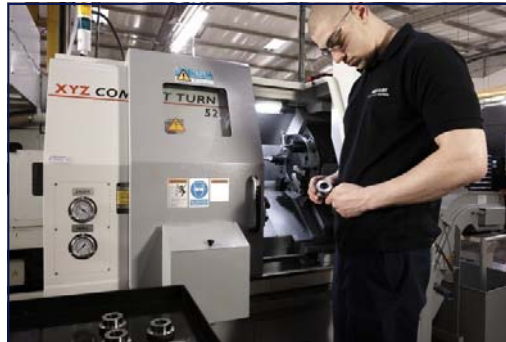
Please ask for a copy of some of our most recent customer testimonials



**3 Mazak Integrex 5 axis machining / turning centres that complete operations in 'one hit' suitable for lower volume**



**The latest investment, 2 new Doosan milling and turning machines for high precision machined parts**



**Low volume cell manufacture for CNC Turning & Milling**



**The latest CNC Gear Grinding technology**



**CNC Gear cutting for medium volume**



**Mini Gears' 35,000sq.ft UK manufacturing facility**

**Gear Grinding up to 400mm diameter at our UK facility**

The gear grinding operation is a final finishing process that removes any small deviation on a gear tooth and is widely regarded as the most accurate way of finishing a high precision gear.

This process is widely used in industries such as automotive, marine, pump manufacture, printing equipment plus many other uses where noise, accuracy and high performance are critical to the finished product.

**Small / Medium volume batches with low tooling cost**

Mini Gears has invested in 2 Höfler CNC gear grinding machines as the Höfler machine is one of the most accurate available on the market and, under the correct set up, accuracy of grades up to DIN 5 can be achieved on a production basis and even more accurate for special applications.

What makes the machine unique is that the grinding wheel can be trimmed / dressed on the CNC controlled machine to achieve a huge range of gear pitches without having to order specific grinding wheels associated with high volume production machines.



Also special gear forms can be programmed and tested which is very helpful with new designs or enhancing the performance in such industries as autosport.

We can produce all types of spur and helical gears including splines up to 400mm diameter and our newly installed Gleason 350GMS will measure gears up to 350mm in our own in house facility.

**Ground gears are graphed on a Gleason 350GMS CNC Gear Tester to verify the correct grade**

**Gear Shaving**

We have recently added this finishing process to our range of services for those customers requiring gears with a much higher accuracy than standard gear hobbing, in such applications as high speed pumps and power take-off units.



Gear shaving gives an enhanced surface finish. The process removes tiny particles of metal from the lead of the tooth, increasing the gear's load capacity and reduces noise.



**The newly installed Höfler Helix 400K & Höfler Promat 400 CNC Gear Grinding Machines**



**The brand new Gleason 350GMS CNC Gear Checking machine**



**A large range of gears and shafts can be ground on the Höflers**



**Spur & helical gears can be ground up to 400mm dia (and checked up to 350mm on our CNC testing machine)**



**Set up times on the Höflers are vastly reduced compared to high production machines**



**Gear grades are checked quickly and accurately on the Gleason 350GMS tester**

**Large Gear Racks - up to 3 metres long**

Mini Gears' speciality is the manufacture of gear racks for all types of industries including stairlifts, commercial aircraft seating, steering racks for cars, lifts and lifting equipment, drilling machines, valves, switchgear units, linear motion, plus many other diverse applications.

With our innovative engineers dedicated to improving the performance of our customers' products, our specialist way of cutting racks now sees us producing over 700,000 metres (2.25 million feet) of gear rack per annum.

Our rack division is extensive and has a range of machinery to cut, mill and drill gear racks which can be supplied up to 3 metres long with a pitch of up to 6DP (4 mod) maximum.

All gear racks are finish cut on our specialist machines to a commercial tolerance.

**New Market:**  
**Helical steering racks for cars -**  
**manufactured on our CNC**  
**Rack Milling & Drilling machines**



**Small Gear Racks – up to 350mm long**

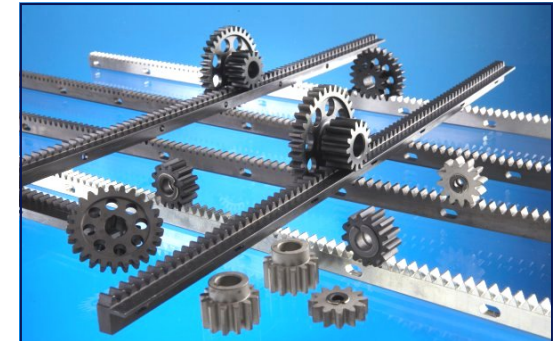


We also have a dedicated rack machine for small pitch racking from 1mod (24DP) up to 2.5 mod (10DP).

We can cut racks up to 350mm and the maximum material section is 25mm square.



**Racks, Gears and Machined Parts  
for the stairlift industry**



**Racks & Pinions for  
Aircraft Seating**



**Rack Cutting**



**CNC Rack Milling & Drilling  
Including steering racks for cars**



**Drilling & Milling Racks**

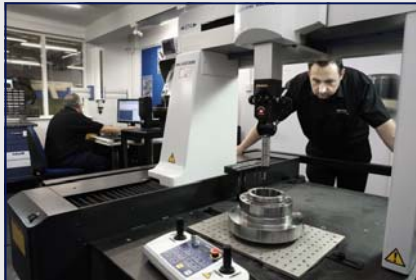


**Extensive rack division**

## Quality products and the training of our employees are a critical part of ensuring our company's long term future

At Mini Gears we take the quality of our products very seriously especially as our parts are delivered worldwide and we cannot afford any major disruptions to our customers.

We continually invest in both new equipment for measuring and updated systems but most important is the training of our staff, including 4 apprentices, to fully understand the new procedures and keep them maintained.



Dedicated inspection department with 2 new Mitutoyo CMM Measuring Machines



New Gleason 350GMS Gear checking machine



Mini Gears is training 4 apprentices for our future company needs



The Mini Gears team during a recent 'Lean Manufacturing' course

## Quality is planned into every job



We have a dedicated team of Technical and Administrative staff who will work with you to ensure we meet your exact requirements.

The factory has recently undergone a huge investment and has completely altered its production methods to include lean manufacturing and '5S' philosophy to ensure standard operations, visual controls and flow production. The results have been astounding and even some of our customers have adapted a few of our ideas to great results themselves in their own factories.

### Our quality procedures include:

- Planning meeting to establish all requirements for materials, tooling, jigs and fixtures.
- Quality Plan to aid the job through the production process – indicated on route card to ensure each process is done correctly.
- Dedicated Setting Sheet per job and by machine to reduce set up times.
- ISIR (Initial Sample Inspection Report) for all new jobs to ensure tooling and planning information is correct.
- '5S' – Housekeeping procedures for a systemized, disciplined and organized workplace. All tooling and gauges identified and stored in a specific place.
- Dedicated inspection department with CNC checking machines.



## Working together for a better future

### Sponsoring Students



Mini Gears has sponsored Oxford Brookes University for their ground breaking 'V' Twin engine design - we are helping to encourage our new engineers of the future

### TV Appearance



Mini Gears was chosen to feature on a TV Programme 'Manufacturing - A Modern Day Approach' highlighting the importance of UK manufacturing to our economy

### Industry Award



A very happy Mini Gears Team the day after winning a National Award at the NEC Birmingham where we regularly exhibit at trade shows

### Best Factory Practice



Mini Gears was chosen along with Jaguar Land Rover to host a showcase of best factory practice to visitors from 15 countries hosted by the UKTI

## Why choose Mini Gears / Components Worldwide?

- We are a very focused and successful family owned company who can continually adapt to our customer needs whether at home or abroad.
- We remain competitive by continually investing in our UK plant and workforce and have our overseas division for costings that cannot be matched with European manufacturing costs.
- We have a very strong financial background which ensures stability in today's market and guarantees on time delivery of products to your factory.
- We have added many new areas of business to our range but if you have any further ideas concerning where we could fit into your business please contact us to arrange an open discussion.
- Our UK factory and extensive base of world-wide suppliers are approved to at least ISO 9001 Standard and our long term reputation for quality products stands testament to this.



Mini Gears 35,000sq.ft (3252m<sup>2</sup>) factory ideally located near Manchester Airport with good transport links to all major cities and ports



**We look forward to receiving your valued enquiries for our wide range of products**

Please refer to our Technical Sales Team contact details on next page

## CONTACT DETAILS

### Main Sales Contacts



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To arrange a visit  
please contact Nigel

### Quotations

If you would like our Technical Sales Team to quote for your production parts please send us your drawings with a note of batch / annual quantities either by email, fax or post.

Email:  
enquiries@minigears.co.uk

Tel: + 44 (0) 161 432 0222  
Fax: + 44 (0) 161 432 0444

Visit our website:  
[www.minigears.co.uk](http://www.minigears.co.uk)

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