



An Introduction to Reliance Precision Manufacturing (Ireland) Limited





ENGINEERING SPECIALISTS

Introducing Reliance Precision

Reliance Precision Limited

Welcome to Reliance Precision, an independent family-owned company offering tailored engineering services for the design, manufacture and test of precision mechanical components and assemblies. We are a specialist engineering company, unique in our offering of both catalogue products and fully bespoke solutions.

Founded in 1920, we maintain a programme of investment to keep at the forefront of modern manufacturing and precision engineering. Our close working relationship with our customers continues to be an important factor in helping us understand how our equipment is used in their particular fields, allowing us to be continually innovative in our manufacturing processes and development of unique technical capabilities.



Reliance Precision Manufacturing (Ireland) Limited

Reliance Precision was set up in Bandon in 1970. At the time it was specifically established for the manufacture of high precision racks. The factory space has quadrupled in size and the workforce has also increased from an initial 9 people to its current 36 people.

While continuing to manufacture high precision racks, the site supports the Reliance group with its unique methods of machining gears, ceramic components and couplings. Multi spindle CNC lathes also add to its capabilities.



Technology and Capabilities

Ground racks for medical and laboratory applications

Ground racks have always been one of the main products of Reliance. Our unique method of grinding the tooth profile has enabled Reliance to become a world leader in the production of high accuracy racks, which are used in medical devices and high accuracy positioning systems.

Clean assembly for scientific, analytical and medical devices

High precision clean components are assembled in Class 100 laminar flow cabinets. These assemblies can be supplied to a diverse range of markets including aerospace, scientific, medical and semiconductor industries. A fully qualified ESD assembly area also allows handling of components sensitive to electrostatic discharge.

Standard products and assemblies

To complement the racks, precision gears and couplings that are produced in Reliance, a catalogue offering a range of leadscrews, precision slides, motors and associated hardware is also available. This gives Reliance the capability to supply fully integrated electro-mechanical assemblies and accurate geared components.

Ceramic grinding for the mass spectrometry industry

Reliance use jig boring machines in a controlled environment to machine ceramic components to an accuracy of 0.002 mm. These precision components are then built into a quadrupole for use in mass spectrometers and residual gas analysers.



Coupling inspection



CMM inspection



Gear cutting



CNC turning



Ceramic grinding

Facilities

Manufacture

- Nakamura tome WT150II multi-axis CNCs
- Miyano ABX64 TH3
- Tornos deco M/C 26A
- Hardinge 10/65 quest
- Bridgeport VMC 800/30 XP
- Matrix thread grinding
- Mikron 132 gear hobbers
- Moore NO.2 jig grinders
- Cincinnati 150 lathe
- Range of grinding machines

Inspection

- Vertex video measuring system
- DEA Global Performance CMM
- Mitutoyo ceramic roundness tester

Cleaning and coating

- Alochrome cell
- Kerry ultra sonic cleaning line

Part marking

- FOBA M1000 laser marking machine

Home of Reliance's Standard Product Range

Standard products

The Reliance catalogue provides a one-stop-shop for components and assemblies for rotary and linear motion, such as XY positioning stages, leadscrew actuators, motorised rotary drive systems, bespoke geared systems and opto-mechanical assemblies.

Precision anti-backlash and standard gears

These components are manufactured mainly in steel and aluminium but are also available in brass, PEEK and Acetal. The gears can be manufactured to a pitch accuracy of 0.007 mm with total composite error and a tooth to tooth error of 0.003 mm. Diameters range from 6 mm to 100 mm. They can be customer specific or from the Reliance catalogue in batches varying from 1 off to 10,000 off.

High accuracy racks

The racks can be manufactured to a pitch accuracy of 0.005 mm over a distance of 300 mm, in lengths up to 1 metre. They are available mainly in stainless steel or aluminium and can be rectangular or round, or the teeth can be ground on an extruded shape.

Reli-a-Flex® flexible shaft couplings

Manufactured in one operation, the Reli-a-Flex® range of couplings has an aluminium alloy, one piece configuration, which has been designed in-house at Reliance to provide very smooth transmission of motion, high torsional stiffness, low bearing loads, and long life.

The patented slot pattern was developed after many months of analysis and test to provide the best balance between zero backlash, torsional stiffness and low bearing load, whilst attaining an operational life in excess of 50,000,000 cycles at rated load and 80% offset. With two sets of identical slots, the Reli-a-Flex® coupling is constant velocity by design and handles angular, parallel and axial offset.



Leadscrews

Reliance leadscrew and nut assemblies provide a flexible, integrated solution for linear motion. Available in a wide choice of leadscrew sizes and nut styles, they are available in a range of materials and coatings with a choice of standard or custom machined interfaces.

Integrated solutions

Our gears and leadscrews provide motorised actuation for the fingers and thumb of The Steeper Group's *bebionic* prosthetic hand. This is a demanding application requiring high efficiency, high gripping force and low noise, to be achieved under tight space and weight constraints in order to give the patient the necessary dexterity, strength and practical wearability.



Precise Industrial Automation, Prosthetics and advanced DNA Sequencing



Precise industrial automation

We are an accredited supplier to global OEMs and product developers, covering a wide variety of markets and applications.

Tubular round racks provide a space saving solution for laboratory automation, locating fluid tubes and fibre optic cables inside the rack to give a more compact instrument. In the UK over 5,000 syringe drive mechanisms, using our motors and lead screws, are in operation in drug dispensing systems.

Electro mechanical assemblies

Design, manufacture and assembly of mechanical and electro-mechanical systems for high performance applications.

Space and sub-sea

Our precision anti-backlash gears are used in bespoke measurement and actuation mechanisms for servos, instrumentation, scientific and aerospace systems.

Our innovative, two piece gear design is ideal for high reliability applications.

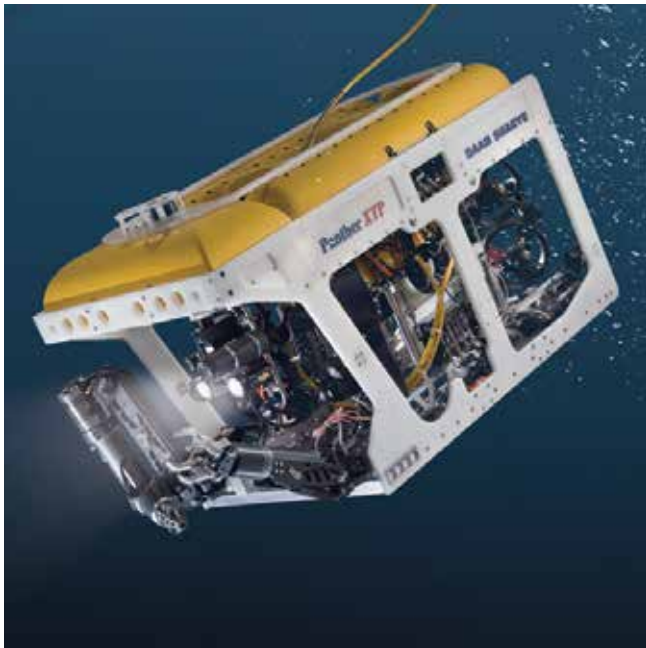


Image courtesy of ESA

Specialist in quadrupole manufacture

Our ability to manufacture, assemble and undertake mechanical and functional testing of quadrupole mass filters for use in mass spectrometers has allowed us to become one of the world leaders in this technology. The Reliance standard quadrupole provides a proven cost effective solution right through to the production stage.

Semiconductor industry

Reliance has developed a specialised manufacturing method for the production of heatsinks which are used during the implantation process of silicon wafers.



Integrated Solutions

Hybrid linear actuators and intelligent motors

(High vacuum compliant actuators available)

Leadscrew and nut assemblies

(High vacuum compliant leadscrews available)

Precision screws

Linear slides and guides

(High vacuum compliant linear slides available)

Bearings



ONE MANUFACTURING
PARTNER,
COUNTLESS BENEFITS



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