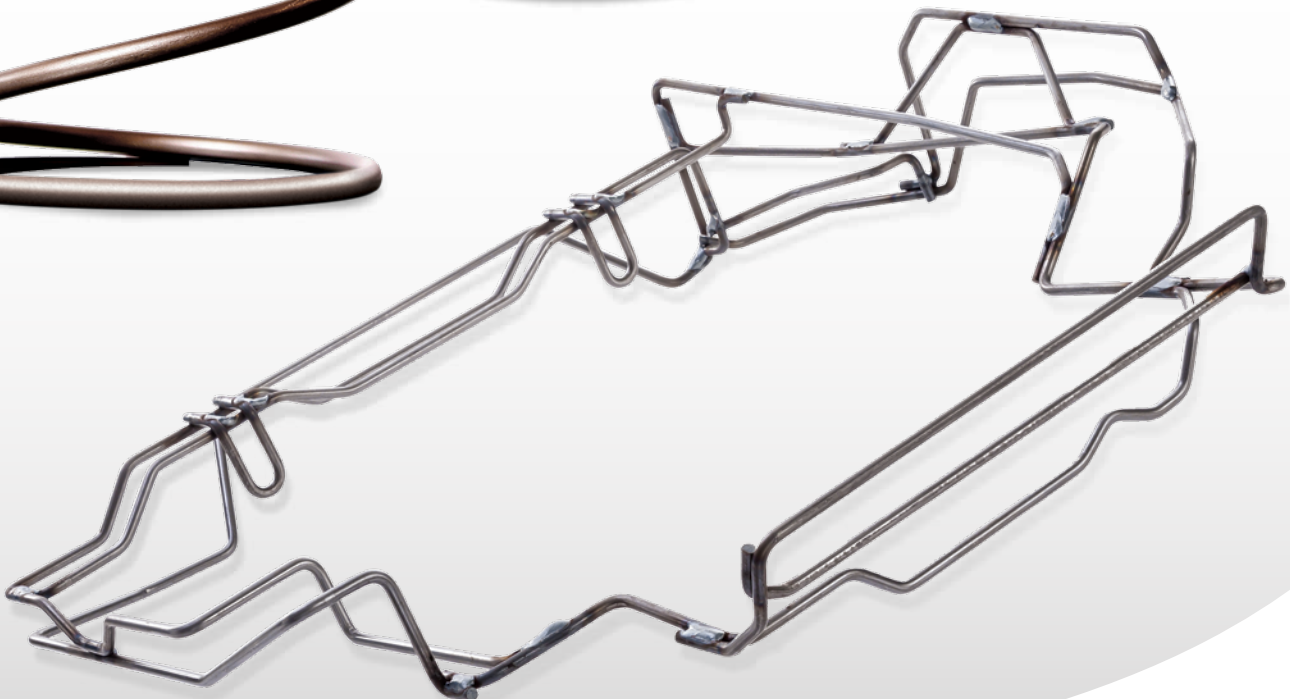
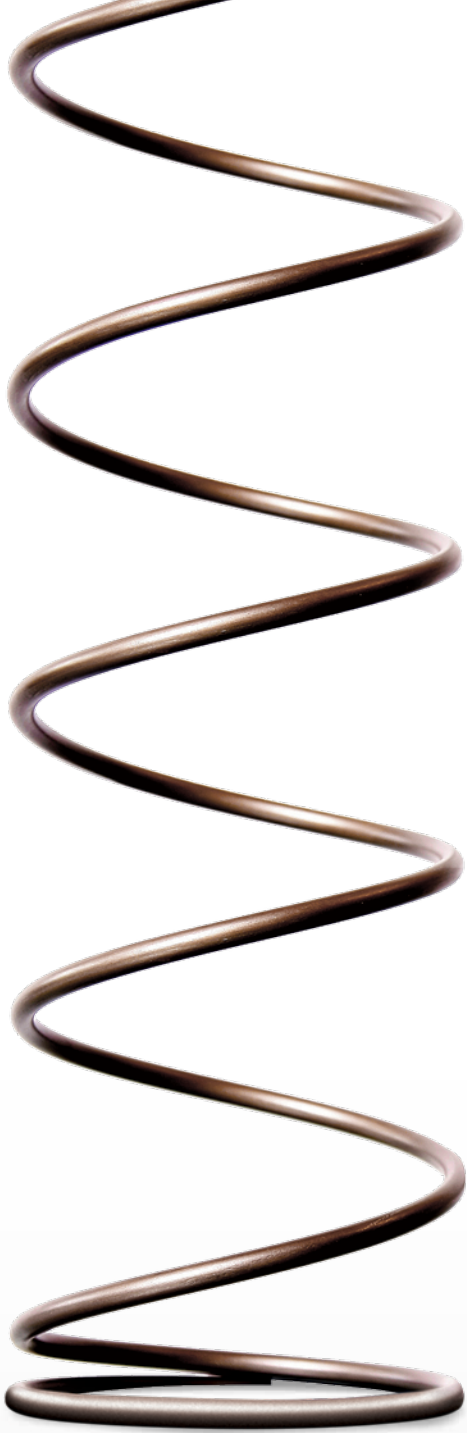


SPRINGS

& WIRE FORMS



Everything is Possible

ESTABLISHED 1790
WILLIAM HUGHES
LIMITED

A TRADITIONAL INDUSTRY

It's always springtime at [William Hughes](#), and has been for over 225 years. With an engineering heritage that stretches back to before the industrial revolution began, [William Hughes'](#) experience and expertise in springs and wire forms is almost certainly unique.



At our 5,800 sq metre factory in Dorset, set in extensive grounds, we employ well over 100 people, many of whom have been with the company for upwards of 10 years. Direct access to ports, channel-links and the UK motorway network serviced by our own transport fleet gives us complete control over service and delivery.



Design, Development and Prototyping



Our design and application engineers enjoy state-of-the-art facilities for the in-house design of products and machine tools.

Modern materials and new technologies have impacted on traditional product development but [William Hughes'](#) basic philosophy of bringing a product to market in the most cost effective and timely way remains the same. Such techniques as simultaneous engineering are regularly employed and the involvement of our engineering team at an early stage will lead to economies of production and handling as well as fast prototyping and early functional testing.

Our heritage

Throughout the past two centuries, our success has been based on the traditional virtues of a family firm – commitment to its customers, concern for quality and service – allied to continual improvements in production and technology to meet the [precise specification](#) of each individual requirement in the most appropriate and cost-effective way.

Our resources

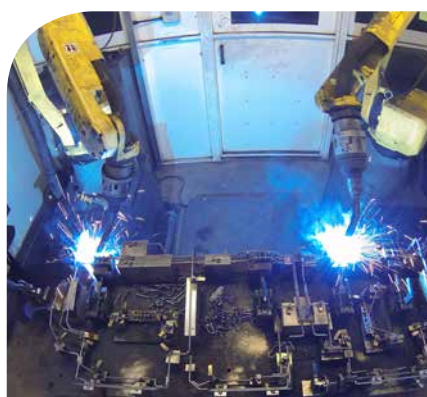
Today, our resources are amongst the [most extensive and sophisticated in Europe](#), with the capability of fulfilling orders – however large or small – with equal facility, and an established administration and distribution function that ensures continuity of supply, [rapid delivery](#) and [competitive prices](#) on every single item.

Our wire stocks

In addition to the manufacture of springs and wire forms, we also stock a comprehensive range of fine wires. We have been stockists of Webster & Horsfall for over 50 years and can supply 1800 different wire types in various weights and finishes packaged to suit your particular requirements.

Our non-ferrous wire from Little Falls Alloys includes Beryllium Copper, Phosphor Bronze, Nickel Grade, Cupro Nickel, Copper, Nickel Silver, Brass, Zirconium Copper, Cadmium and Chromium-Copper in round, square, flat and shaped formats, coiled, on spools and in straight lengths.

For applications demanding high fatigue properties we also stock Suzuki-Garphyttan stainless steel wire.



Investment In Technology

Consistent investment in the most advanced equipment, much of it CNC based, combined with our own in-house engineering initiatives, ensures a technical capability at the front end of what is possible in wire today.

in a modern World.

Bend it like William Hughes

Compression

- 0.1 - 8.0mm diameters
- Open and closed ended
- Ground or unground
- Conical, parallel or barrel
- Constant or variable pitch



Work wonders with Wire

Wire bending, forming and assembly is our speciality. William Hughes is at the forefront of the UK wire industry, able to manufacture just about anything which can be made out of wire.

From jack handles to cooker ranges. From car seat handles to baskets. From torsion bars to trim wires.

So if you have a 2D or 3D wire form that involves twists, turns, spirals, protrusions, indentations – or just plain bends – we have both the expertise and the state-of-the-art automation to provide exactly what you need.

Design & Support

- In-house design team
- CAD facility
- Simultaneous engineering
- Electronic Data Interchange (EDI)

Involve us at an early stage and we will ensure that your wire form or assembly is both practicable and economic to produce. We can also advise on materials, coatings and finish.

Tension

- 0.1 – 7.0mm diameters
- Open or closed wound
- Zero to high pre-tension
- Conical, parallel or barrel
- Loop ends include: English centre, German, half extended, necked and swivel



Torsion

- 0.1 – 7.0mm diameters
- Open or closed wound
- Conical or parallel
- Double torsion
- Automated production for bulk supply of multiple bends



Capability

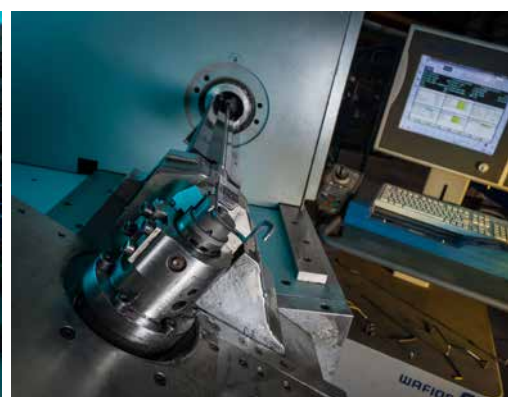
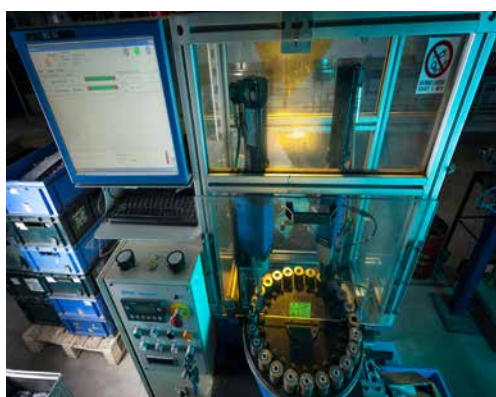
- Small to high volume batches
- Wire from 1mm up to 10mm

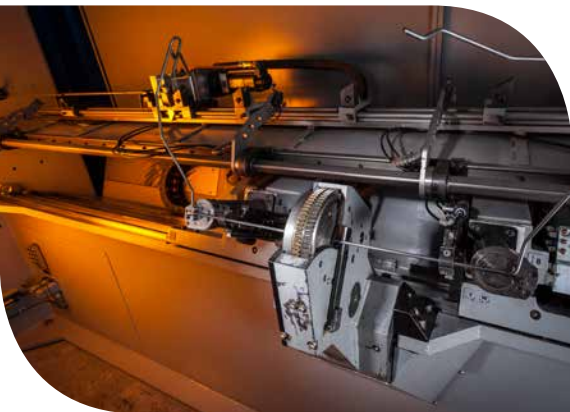
Our investment in the latest CNC bending and coiling centres allows us to produce complicated wire forms as one-offs or for volume production with equal ease. Our computerised processes ensure that the quality of the prototype is maintained over long production runs.

Our multi-axis computer controlled Wafius FMU 2.7 allows rapid set-ups for tension springs, torsion springs and wire forms.

For non-standard requirements, we can provide a bespoke solution, building a machine dedicated to the production of a particular part.

Computerisation allows the production of highly intricate shapes in modest volumes where once such an activity would have been unviable.





And finally... finishing

A range of processes that can be applied to springs and wire forms includes the following:

- Welding
- Painting
- Plastic coating
- Threading
- Pointing
- Chamfering
- Nibbing
- Clip application
- Electrophoretic Paint Line
- Deltatone® Finishing
- Delta Seal
- Steel and Glass Shot Peening
- Injection Overmoulding

Assemblies

William Hughes can simplify inventory and streamline manufacturing processes by supplying assemblies of metal components, for example, metal pressed parts with riveted threaded inserts. This provides significant savings in assembly costs through simplification of the supply chain and a reduced number of in-house operations.

Fully computerised coiling machines suitable for high volume production of extremely intricate wire parts from 0.1 - 5.0mm



“

William Hughes has become one of our principal spring suppliers by demonstrating superior service and quality, while their rate of investment has enabled them to provide parts to the increasingly stringent standard demanded by both ourselves and our own customers.”

Lear Corporation

“

The consistent level of quality, flexibility and design support spanning many years has led to our total satisfaction. So much so, we have single-sourced William Hughes Ltd for 90% of our requirements.”

Solartron Metrology

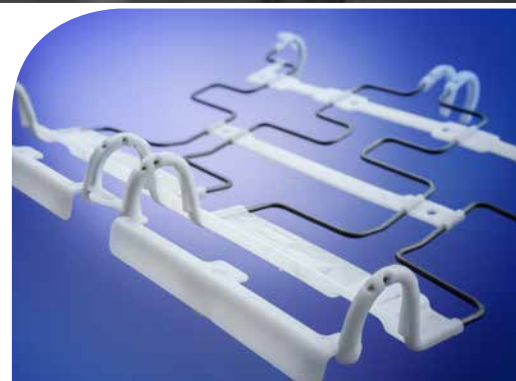
“

With over 30 years experience of supplying to our company, William Hughes Ltd is one of our major 'grade A' suppliers, a strategic partner enthusiastically integrated and committed to our system of J.I.T manufacture.”

Delphi Diesel System

Overmoulding

Overmoulding for wire parts and assemblies is a versatile process, often dispensing with the need for metal retaining clips and allowing for the incorporation of such items as connectors and cabling.



FLYING HIGH

High performance precision springs for the aerospace industry

Facilities for the Aerospace Industry Include:

- High Temperature exotic materials
- Small quantities for prototype use
- Detailed specifications and tight manufacturing tolerances
- Cleanliness including ultrasonic cleaning
- Bespoke labelling and packaging
- Bent wire components
- Assemblies

Springs manufactured by **William Hughes** are used in vital items of aerospace equipment including oxygen systems, access hatches and the solenoid valves used to control the hydraulic and cabin pressure systems.

William Hughes is an approved supplier to many leading companies in the aerospace industry and is an audited and approved supplier to Honeywell. Other customers include BAE, Eaton Aerospace, Lockheed Martin, Meggitt and M.E.L. Aviation.

High Temperature Exotic Materials

To meet the specifications for high temperature performance, many springs for the aerospace industry are manufactured in exotic materials such as Nimonic, Inconel and Ni-span. These expensive materials are more difficult to work than conventional materials and **William Hughes** has the machinery and expertise to use these materials with high accuracy and minimum wastage.

Small Quantities For Prototype Use

The company has many years of design and manufacturing experience and can offer its customers a rapid design and prototyping service in a range of materials. This service is particularly suited to the aerospace industry where small quantities are required for test and evaluation with the capability to move to volume production once a final design is agreed.

Passivation, Heat Treatment and Ultrasonic Cleaning

For top end service, **William Hughes** has installed a state-of-the-art passivation plant earning the company a Chemical Processing Nadcap accreditation and recognition as a Honeywell approved processing supplier.

Other Nadcap accreditations include heat treatment and room temperature tensile testing. We hold AS9100 Rev C, NADCAP for Heat Treatment, Room Temperature Tensile Testing and Chemical Processing (Passivation).

Completing the process facilities available is ultrasonic cleaning, meeting aerospace standards for cleanliness.



Detailed Specifications & Tight Manufacturing Tolerances

To check that the required specifications and manufacturing tolerances are being met, springs can be inspected and measured instantly and accurately using the latest high technology camera/PC based measuring system. This machine is used to determine the length, outside diameter, end coil profile, 'squareness' and parallelism of the spring when it is stood on its ground end face.



Our place in PLOVDIV, BULGARIA

Well-placed in Europe

Sensing the growing need to provide off-shore manufacturing facilities, **William Hughes** opened its Bulgaria factory in 2004.

Today, **William Hughes Bulgaria** employs over 160 staff in its 5,500 square metre factory located near Plovdiv, Bulgaria's second city.

Current manufacturing facilities include 34 CNC wire bending machines capable of bending wire from 1.5-8.0mm. There are 2 nylon plastic coating lines and multiple spot and MIG welding stations including 6-axis robotic welding.

We also have an office in Berlin to service our European Operations.



Berlin

Our office in this centralised European location facilitates day-to-day co-ordination of all elements of mainstream European manufacture.

All part of our Service

Bespoke Labelling & Packaging

Springs can be individually packed and labelled to meet customers' requirements, in sealed bags where appropriate to ensure they do not get contaminated before use.

Delivery

- All automated delivery systems
- Just-in-time (JIT)
- Direct Line Feed (DLF)
- KANBAN

Other 'made to measure' delivery modes can be accommodated to suit customer supply systems. We maintain our own transport fleet to ensure that all elements in the delivery chain are under our control.

Quality Assurance

Our aim at William Hughes is to meet and exceed the expectations of our customers in every way adhering to principles of continuous improvement and zero defect. Quality systems to ISO 9001:2000, ISO/TS 16949:2002, the latest automotive standard, and AS9100 for aerospace ensure consistency and accuracy of supply.



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