

Precision springs – and more.



**HAAS**

Wire is the start.



***Quality is a tradition.***

Since 1904 the name of Carl Haas stands for high precision products based on wire and strips. This knowledge is used to manufacture springs in large-scale production for the benefit of our customers.

***Profit from our expertise.***

From raw material to the finished product, everything is managed by us. State of the art technology such as laser welding is used in our manufacturing processes. Our know-how and competence is the result of continuous improvement and guarantees safe production and quality of Haas products.

***Reliable quality.***

Our knowledge is recognized in various industries. One of the target markets is the automotive industry. But even in medical engineering our products are appreciated.

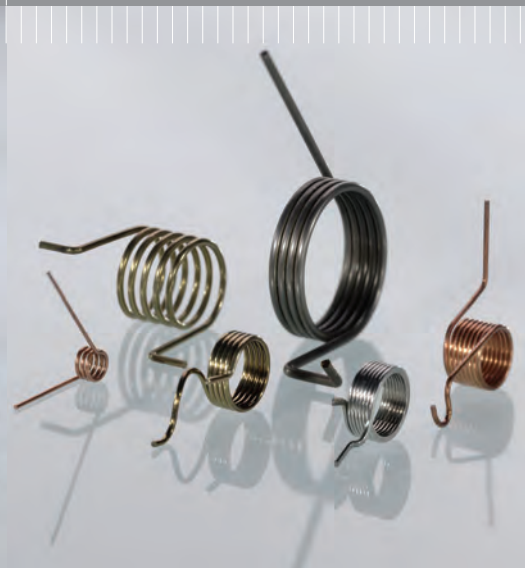
What else can prove the reliability?

# Precision – no compromise.

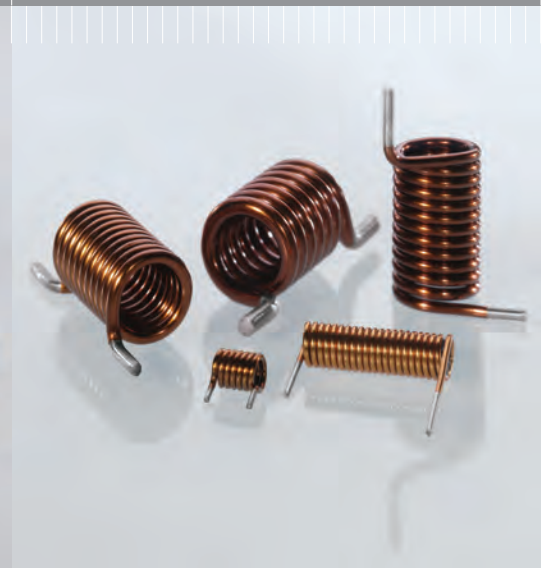
Compression springs



Torsion springs



Coils of enamelled copper



Our compression and torsion springs are made from music wire or stainless steel alloys to DIN or AISI standards. Copper alloys to DIN 1780/DIN 17682 including copper beryllium are used as well as resistance wires and nickel alloys to customer specifications. Wire thickness ranges from 0.08 to 1 mm and those of enamelled copper wire up to 2 mm. These springs are produced as ready-to-use parts and are supplied in bulk packing. In order to rationalize our customers' processes, individual packing to specification can be offered (e.g. deep-drawn pallets).



The springs are being cleaned and heat-treated. Galvanic layers can be applied either to the wire or the finished products according to the application of the springs.

Based on a quality management system according to DIN EN ISO 9001:2000, ISO/TS 16949:2002 and DIN EN ISO 13485:2003 we support our customers from prototyping through pilot runs to industrial production.



## Reliable connections.

Resistors



Urethral-prosthesis



Ring-shaped coil



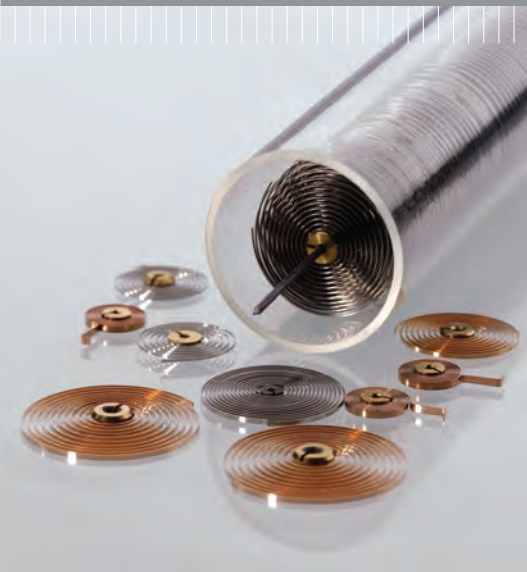
Our use of laser technology dates back to 1971. Precise positioning and contactless welding improved the accuracy of clock and watch movements significantly. This technology has been successfully transferred to other applications and is now used for welding precision parts in the automotive and medical engineering industries. Mass production is made on automatic machines. Smaller lots and prototypes can be produced economically.



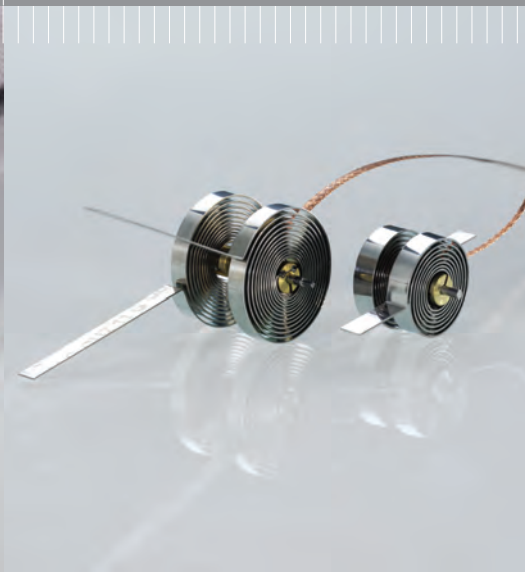
We use solid-state lasers with an output of 5 to 300 watts allowing us to produce both, spot and seam-welded parts.

# Progress follows tradition.

Hairsprings



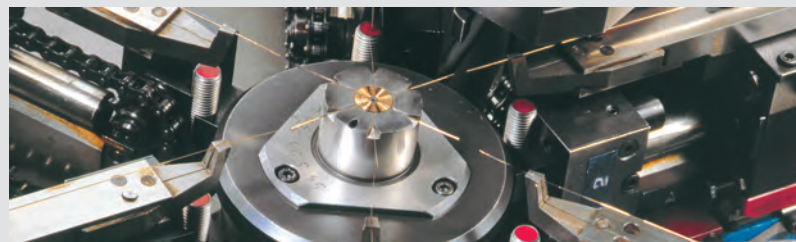
Movements for MDIs



Bimetal helixes



Hairsprings, our traditional product, are still produced in their millions today. We use copper alloys and stainless steels with strip thickness from 0.01 mm and up to 4 mm width. The semifinished product is drawn and rolled in-house. The same technology is used to manufacture precious metal strips (ligaments) from a thickness of 0.005 mm and a width up to 1 mm. Bimetal helixes for temperature ranges from -40 °C to +500 °C and bimetal movements for MDIs are being produced.



Packing can be adapted to customers' handling systems in the interest of economic production.

Carl Haas GmbH. A company of the KERN-LIEBERS Group.



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