

SPRINGS

Industrial Applications

AXTONE provides the right springs for valves, actuators, stone crushers, vibration screen-sorting technology, vehicle suspensions, the mining industry, construction machinery, power plants, tube supports, agricultural machinery, systems used for vibration isolation, rail vehicles and playground equipment.

We specialize in hot coiled springs with rods from 14 mm up to 80 mm in diameter.

Using **round peeled, straightened polished bars** as a raw material is an advantage which makes us unique on the market. Thanks to this technology, we eliminate any surface defects at the beginning of our production process.

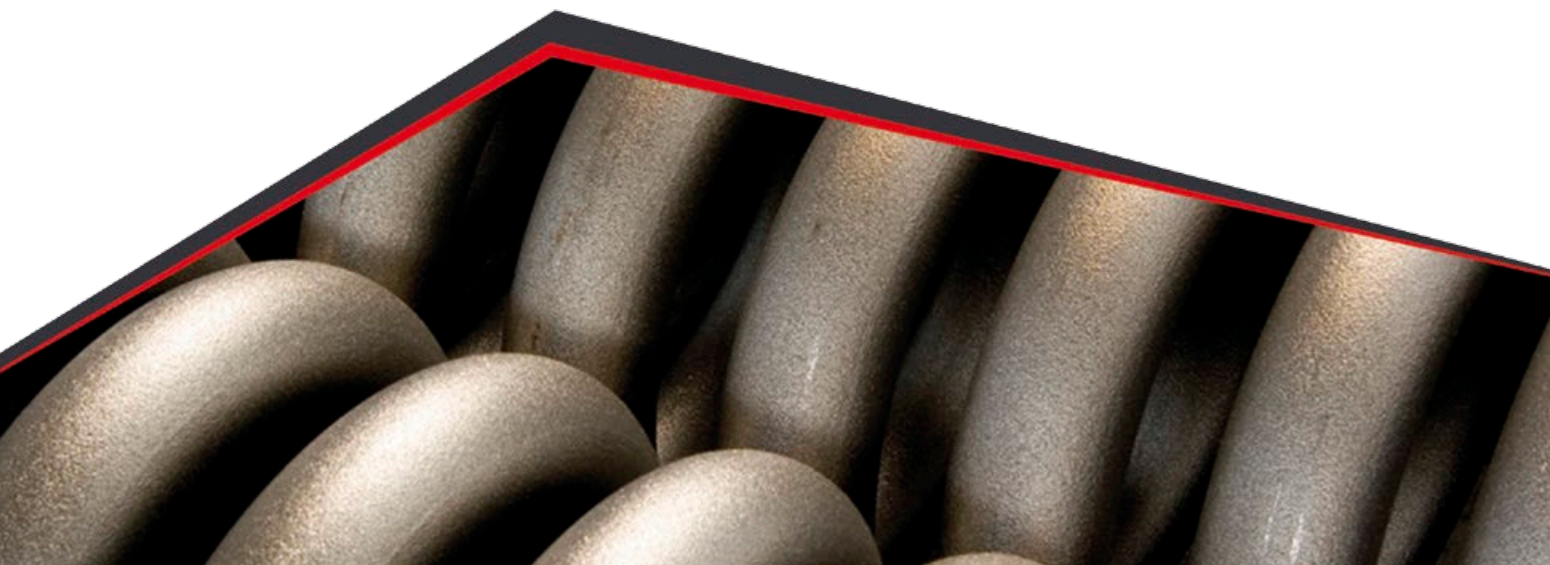
We are able to produce springs up to 450 mm in diameter and we can coil bars up to 11.5 meters in length.

Independently, we produce cold coiled springs from wires from 1.80 mm up to 13.50 mm in diameter.

MAIN TYPES OF STEEL THAT WE USE IN OUR PRODUCTION:

- 51CrV4
- 52CrMoV4
- 61SiCr7
- Other types of steel, according to customer needs

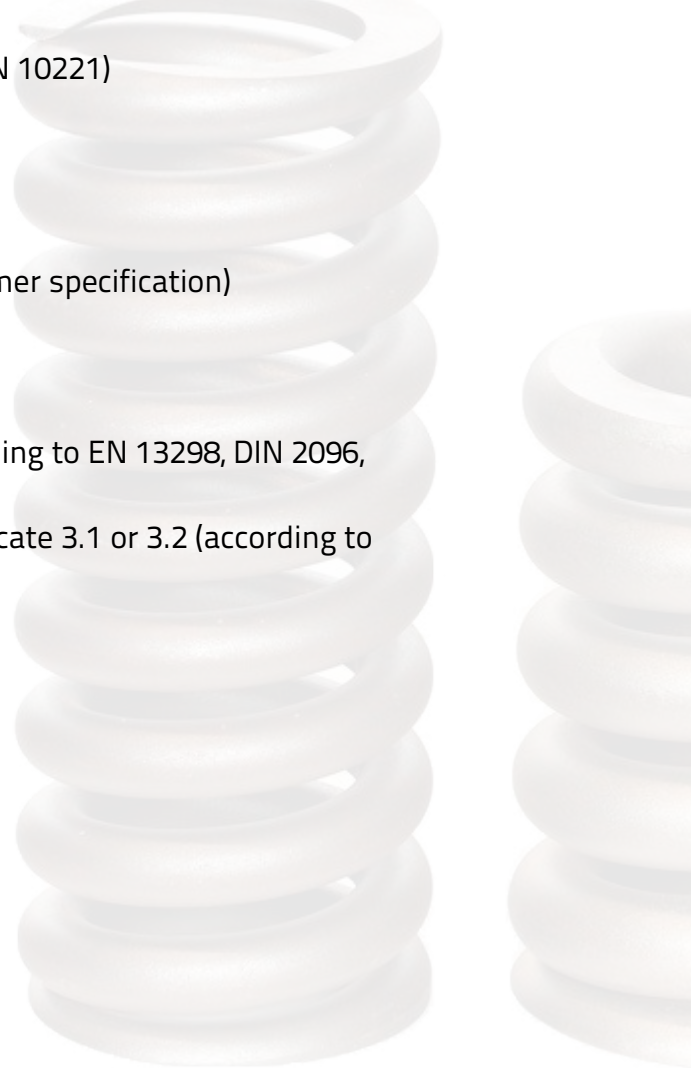
The quality of materials, construction and measurements are just as vital for a durable and flawlessly functioning product as the precision of our production. The use of CNC production machines guarantees consistent precision and provides flexibility, which means that production is economical, even with small batches. Ongoing production control right up to the final check upon completion by special testing machines is standard procedure for us.





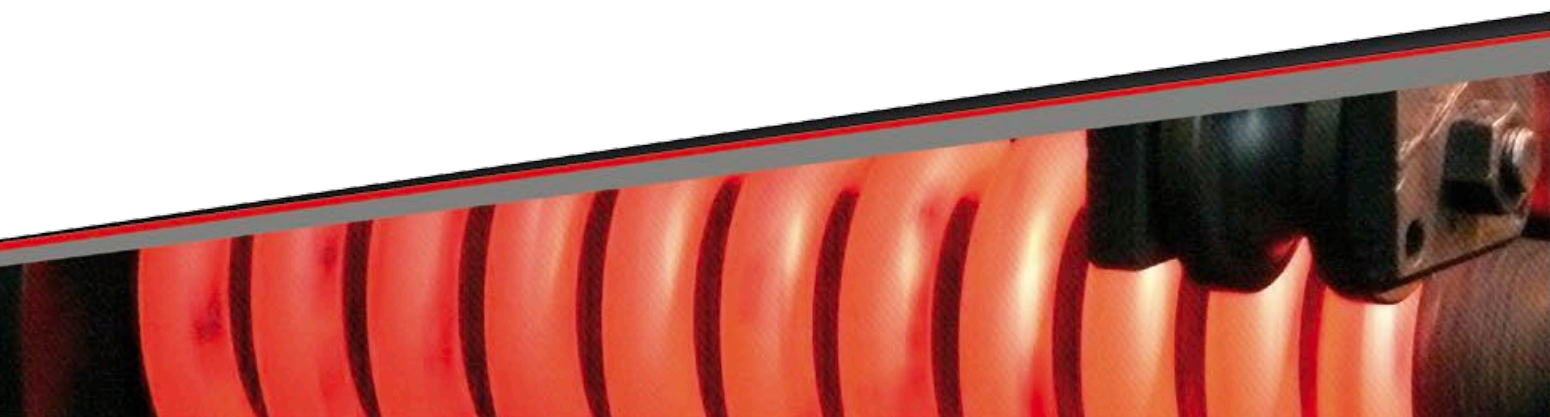
HOW LOOKS THE WAY FROM RAW MATERIAL TO PRODUCT DELIVERY?

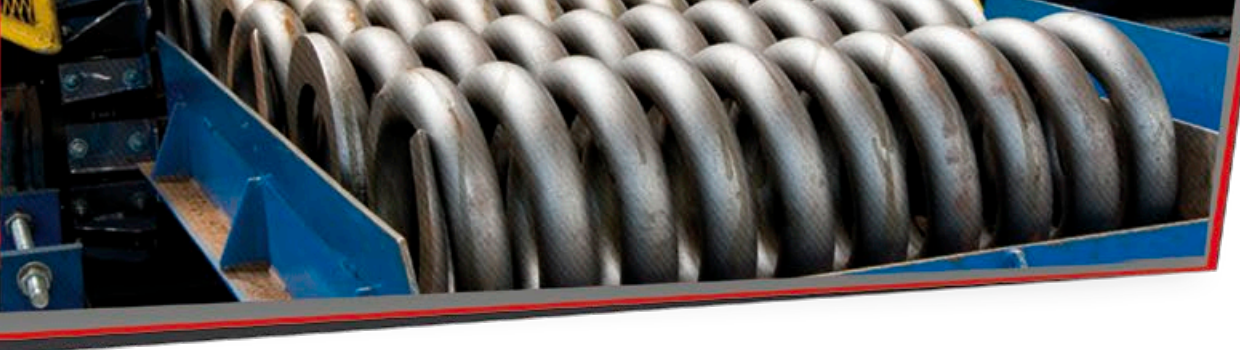
- Raw material inspection (according to EN 10089, EN 10221)
- Heating (850-900 C Deg)
- Impact marking (according to EN 13298)
- Coiling
- Hardening and quenching
- Pre – setting (100-110 C Deg or according to customer specification)
- Crack defect inspection (according to EN 13298)
- Grinding
- Shoot peening (according to EN 13298)
- Testing according to customer specification (according to EN 13298, DIN 2096, PN/M-80700)
- Final inspection and testing - quality control certificate 3.1 or 3.2 (according to EN 13298, DIN 2096, PN/M-80700)
- Painting / coating (according to EN-13298)
- Packing
- Delivery according to customer specification



TESTING

- Presetting
- Time characteristic
- Stiffness short-term and long-term
- Deflection test (according to EN 13298)
- Chasse test (according to EN 13298)
- Lateral stiffness test (according to EN 13298)
- Surface and core hardness test (according to EN 13298)
- Defectoscopy (according to EN 13298)





WE OFFER OUR CUSTOMERS VARIOUS SPRING COATINGS:

- Powder coating
- Immersion painting
- Spray painting
- Zinc coating
- KTL coating
- Others - according to customer's specification

WHEN YOU ARE LOOKING FOR SPRINGS WITH THE FOLLOWING CHARACTERISTICS:

- Progressive spring characteristics
- Springs with cylindrical form and constant inner and outer diameter
- Shorter in length compared to conventional progressive coil springs
- Lighter in weight than comparable progressive coil springs

WE ARE HERE WITH OUR TKS® SPRINGS:

The **AXTONE TKS® spring** with a taper rolled wire cross-section in the progressively acting coils offers the optimum solution! The wire of the progressive coil zones is taper rolled in such a way that the width of the resulting cross-section corresponds to the wire diameter of the spring and the thickness is adapted to the respective stress.





QUALITY PRODUCTS CAN ONLY BE MADE WITH STATE-OF-THE-ART MACHINES AND FACILITIES.

To meet our own high quality claims, we have found it necessary to design and build the most vital machines and facilities by ourselves. As a result, the machinery used for production and quality control is state-of-the-art.

This enables us to manufacture superior products of the highest quality, which is very important since our springs are considered safety critical items. For many years, our springs will maintain a flawless vibration control and energy storage component, even under very tough conditions.

The quality of materials, construction and measurements are just as vital for a durable and flawlessly functioning product as the precision of our production. The use of CNC production machines guarantees consistent precision and provides flexibility, which means that production is economical, even with small batches. Ongoing production control right up to the final check upon completion by special testing machines is standard procedure for us.

To guarantee the consistent high quality and reliability, endurance tests are regularly conducted on our own hydro-pulse testing machines. It goes without saying that this is especially important for any new product development!

But the best machines are only as good as the operators who work on them. Our team of highly skilled and experienced specialists guarantees production batches of absolute quality and reliability. The quality of our products and organization is confirmed by numerous certificates, such as: ISO 9001:2008, AQAP 2110:2009, IRIS Rev. 02, M-1003, DB and many others.

We are looking forward to sending you detailed information on request!