



RIBE® Technical Springs – Fact Sheet

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# SLEEVES

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## › BASIC FORMS

### Custom-built sleeve geometry

- Round
- Angular
- Oval
- Custom forms

### Floating slot geometries

- Closed (outside or inside)
- Open
  - with pre-defined aperture dimension
  - for pre-defined tension force

### Custom forms

- V form
- Wave form

### Additional functions

- Front-end interlocking
- Impressions on inner / outer faces

## › MATERIALS

- Untempered materials
- Stainless materials
- Micro-alloyed materials
- Copper alloys
- Aluminum alloys

## › DIMENSIONS

- Outer diameter  $\varnothing$  5 mm to  $\varnothing$  40 mm
- Sleeve length 3.00 mm to 50 mm
- Flat metal thicknesses 0.2 mm – 3.00 mm

## › PRODUCTION TECHNOLOGIES

### State-of-the-art punching / bending machines

#### Bihler technology

- Maximum flexibility thanks to
  - linear tool setup
  - radial tool setup
- Max. process reliability thanks to cam disk control
- Large flexibility thanks to integrated NC axes
- Maximum process speeds

#### Specially developed tool technologies

- Advantage thanks to own tool development
- Short reaction times thanks to our in-house tool manufacture
- Specially developed forming tools including diameter and length calibration permit maximum precision together with the narrowest tolerance zone

#### Lean processes thanks to process linkage

- Linked assembly processes
  - Assembly of entire system components
- Component cleaning
  - Alcohol-based cleaning
  - Water-based cleaning
  - State-of-the-art residual contamination laboratory
- Automatic packing (trays, user-specific packing)
- Packing in clean room



## › FUNCTION OPTIMIZED CORROSION PROTECTION METHODS

### Duplex coatings

- e.g. zinc flake
  - » Advantages: Maximum corrosion protection, sliding requirements

### Coating systems including coloring

- » Advantage: Part marking

### Plastic coating

- » Advantage: Component protection + sliding features

### Gold & silver coating

- » Advantage: Requirements regarding conductivity & oxidation

# DEVELOPMENT PARTNERS

## › PROJECT SUPPORT AT ALL DEVELOPMENT STAGES

- Sound and detailed calculation & design
- Latest advances in manufacturing technology and optimized functionality
- Individual spring feasibility analyses based on your application
- Fast implementation of solutions
- Very good, quick and flexible production of near-series prototypes for customer tests

## › STATE-OF-THE-ART TESTING EQUIPMENT

- Computer-controlled visual testing facilities



# PRODUCT PORTFOLIO

## › COMPRESSION SPRINGS



**Basic forms:** Cylindrical, convex & concave, conical

**Spring ends:** Open, closed, ground

**Wire:** Round, flat & square wires, pre-coated wires  
from  $\varnothing$  0.15 mm to  $\varnothing$  3.20 mm

## › TENSION SPRINGS



**Basic forms:** Customized lug form  
for every customer application

**Wire:** Round and square wires  
from  $\varnothing$  0.20 mm to  $\varnothing$  4.00 mm

## › TORSION SPRINGS



**Basic forms:** A helical body / helical body combinations,  
double torsion springs, variable custom-built  
leg geometry

**Wire:** Round, flat & square wires and pre-coated wires  
from  $\varnothing$  0.20 mm to  $\varnothing$  4.00 mm

## › COIL SPRINGS



**Basic forms:** Custom-built leg and  
helical body geometries

**Wire:** Round, flat & square wires  
from  $\varnothing$  0.12 mm to  $\varnothing$  4.00 mm

## › PREFORMED WIRES



**Materials**

- Untempered, tempered and stainless materials
- Super high strength spring materials – Rm 2000 N/mm<sup>2</sup>
- Copper alloys
- Aluminum alloys
- Materials with special features regarding extension behavior and magnetism

**Wire:** Round, flat and square wires  
from 0.4 mm to 10 mm, feed length up to 350 mm

## › PREFORMED FLAT METAL



**Flat metal:**  
from 0.1 to 3 mm with a maximum width up to 150 mm,  
feed length up to 350 mm