

Near-linear, convex or negative force characteristics: with springs, almost everything is possible. Only their perfect design and quality makes the reliable and secure functioning of many applications possible in the first place. As a leading provider of disc springs and precision components with consistent specialization, cb succeeds in creatively designing flexible solutions for its customers.



- Over 130 years of experience
- Established quality
- Worldwide market presence



Product Range: Disc springs, disc spring stacks, slotted disc springs, special springs, wave springs, ball-bearing disc springs, conical spring washers, other stamped and fine-blanked components; vanes, rings, rotors and entire subassemblies for vane cell pumps and rollers for roller cell pumps. Further components on request.

Certifications: ISO TS 16949, ISO TS 9001, TÜV, customer-specific audits, e.g. for the world's leading automotive manufacturers



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The art of flexibility



cb disc springs deliver reliable performance in automobiles, aircraft or power stations – and in numerous other applications too. Just contact us to find out more!

The Fascination of Advanced Technology Disc springs from cb

General characteristics. Disc springs fundamentally stand for high spring forces and long service life. In contrast to other spring types they offer far better use of available space. Their force-deflection curves can be varied in many different ways. Classic linear characteristics are possible, as are degressive ones or even curves where the spring force actually decreases as spring travel increases. All these variations and options make it difficult to generalize spring types. What is needed is experience, know-how – and a solution partner like cb.

Disc springs, from standardized to customized. cb develops and produces disc springs according to DIN 2093 and also customer specifications. All kinds of dimensions, designs and applications are available to suit your needs precisely. At cb you also have complete freedom of choice when it comes to materials. The range here extends from spring steels, also heat-resistant or stainless, and heat-resistant special materials all the way to titanium alloys. In the corrosion-protection sector, possibilities include zinc coating, zinc particulate paint, the Geomet 321 procedure, and also polyamide and nickel coating. cb disc springs resist forces from 1 - 4,000,000 N. External diameters are from 6 - 1,000 mm.

Individuality is Attractive More spring types from cb



Disc spring stacks. Stacking of individual disc springs enables the range of application to be greatly extended in terms of spring force and spring travel. cb supplies disc spring stacks on mounting supports or in final installation condition – just the way you want them. This not only reduces set-up costs but also ensures maximum reliability.

Slotted disc springs. Internal slots, external ones, or combined? With developments that are either individual according to customer requirements or based on drawings, cb also supports you with everything required for slotted disc springs.

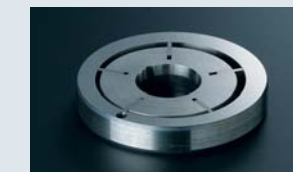
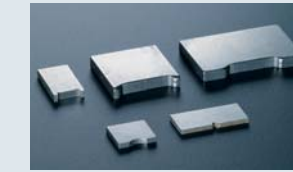
Special springs. Special requirements necessitate unique solutions. As a specialist for everything to do with disc springs, cb is also your ideal partner when the intended application deviates from standard. For example, we also design self-centering disc springs, and solutions featuring spring support on two sides, or as a switching element. And we'll be happy to advise you regarding flat springs or spring clips for tube connections!

Wave springs. In this sector cb gives you customized spring elements with minimal spring-force tolerances. Our special manufacturing method results in superior product quality, as required by e.g. automatic transmissions and steering systems.

Ball-bearing disc springs. These are used for axial preload and for bridging any dimensional deviations, resulting in noise reduction and prolonged life of the ball bearings: cb provides you with ball-bearing disc springs in slotted and plain versions.

Conical spring washers. These spring elements secure screw connections to DIN 6796. Manufactured by cb, these structural components are subject to high stress and their long-term functioning is one hundred percent reliable.

Great Ability on a Small Scale Precision components from cb



Vanes. These components of vane cell pumps with various different radii are made from numerous different steels, including rolling bearing steel and high-speed steel. The dimensions are just as diverse – products include the smallest vane ever made!

Rotors and complete subassemblies for vane pumps. With these products, we have been successful suppliers of automotive power steering systems ever since the mid-1960s. Today our products are also used in common rail injection systems. With non-contact sealing, they are exposed there to pressures that sometimes exceed 150 bar – so the requirements placed on cb here are extremely high. The key criteria here are evenness, parallelism, the correct angle, dimensional accuracy and surface finish. Tolerances are tight – within the range of just two microns.

Rollers. With these filigree components for roller cell pumps too, the tightest of tolerances and accurate right angles are of the greatest importance – and are daily practice in production at cb. By the way: we produce the tiniest designs!

Further products. Month after month, we supply customers from all over the world with several million precision components, as well as blanked and fine-blanked parts. Among the many highlights are slide locks for camshaft adjustment systems. With a focus on the automotive sector, today we are one of Europe's leading providers of mass-produced parts.

Seen as a Whole Arguments for cb

cb philosophy. cb has a corporate philosophy built on firm principles and has been a solid family-run company ever since it was founded in the year 1880. Expansion is an avowed aim – but we eschew any compromises where quality, solution-orientation or delivery reliability are concerned. The focus remains on disc springs and precision components for the most stringent requirements, and fair, trusting cooperation in partnership with our customers.

cb quality. In a sense, the tightest of production tolerances form the foundations of our headquarters in Welzheim, Southwestern Germany. This is what makes cb so special, and it is a key reason for our company's success. Here, quality has its origins in highly-qualified employees. Careful selection and proper training create the basis for responsible action. The right materials and their safe processing are further important aspects of cb quality.

cb flexibility. The requirements placed on disc springs and precision components can be very varied indeed – as can our production processes. Depending on individual cases, production can begin on hydraulic presses, eroding machines or CNC machines. Laser technology, measurement data acquisition, computer-controlled continuous furnaces and testing machines then enable adherence to the tightest of tolerances. The characteristics and the service life of the springs as well as their compressive stability are all comprehensively checked and tested. State-of-the-art methods such as FMEA (Failure Mode and Effects Analysis) are also optionally available, and guarantee optimal results.

The art of flexibility cb for disc springs

- Decades of familiarity with the market and extensive know-how
- Tightest of production tolerances
- DIN disc springs available from stock
- Solution-driven and motivated by customized developments
- Flexible and comfortable design due to special cb calculation programmes at www.christianbauer.com

The art of flexibility cb for precision components

- High level of vertical integration
- Impressive product quality for long-term operation
- Unique miniaturisation expertise

The art of flexibility cb for a long-term partnership

- Mature corporate culture of a family-owned company
- Motivated, highly-qualified employees
- Advanced production and quality assurance