

As a global partner to the automotive industry, Mubea has locations worldwide in all continents. We develop, manufacture, and market high-quality products like suspension springs and stabiliser bars, spring band clamps, disc springs, valve springs, belt tensioner systems, tubular shafts, camshafts and intermediate shafts, wire form springs, flat coil springs, headrest supports, wire springs, flat springs and components produced by Flexible Rolling.



Mubea
Valve springs.

Mubea

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Mubea
engineering for mobility

Leader in the market
by innovation



Mubea facilities for valve springs

- 1 Muhr und Bender KG, Attendorn (Germany)
- 2 F.M. Fabbrica Molle SA, Bedano (Switzerland)
- 3 Mubea Inc., Florence, Kentucky (USA)
- 4 Mubea do Brasil Ltda., Taubaté (Brazil)
- 5 Mubea de Mexico, Saltillo (Mexico)

Mubea is among the leading producers of valve springs worldwide. Innovative development, high quality and economical, fully inter-linked production systems assure this prominent position.

The valve springs are among the most highly stressed components in the car engine. They fulfil requirements, some of which seem to be contradictory:

Reduction of spring forces, installation height and moving mass

The spring forces must close the valve reliably and prevent it from lifting off the surface of the cam during movement. Conversely, the spring forces affect the friction level in the engine, and therefore the amount of fuel consumed. For this reason, the spring forces should be kept as low as possible. The optimisation of the dynamic behaviour through reduction of the moving masses, ensures the reliable functioning of the engine at high rpms.

For this reason, Mubea develops both cylindrical springs with symmetrical or asymmetrical coiling and tapered springs or so-called beehive springs. All spring types can be made from wire with round or profiled cross sections. The stress limits for springs of different material types and treatment processes are determined in our own test facilities to ensure that the design criteria are based on a firm foundation.

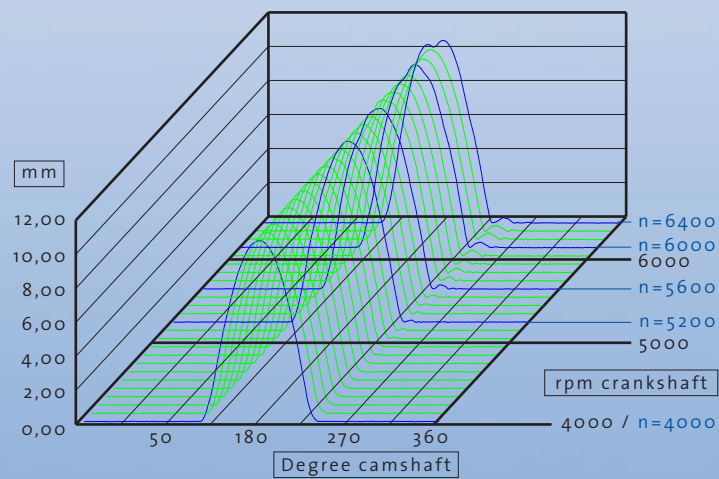
Mubea has developed simulation and measuring techniques to optimise the dynamic behaviour of the valve drive system. In order to validate new designs, prototype springs are manufactured on machinery similar to that used in production and then dynamically tested on engine test stands (towed or fired).

Assurance of minimum failure rates

Fractured valve springs frequently cause engine damage. Absolute control of every stage in production, from spring wire to finished spring, is therefore essential for the quality of the product.

Constant testing of raw-material quality and the development of new qualities in collaboration with well-known wire manufacturers is the first step towards fulfilling the most stringent quality demands. Production on fully inter-linked machinery, followed by 100% testing, ensures that the tightest production tolerances are met. The MKF, MRM and MSV treatment processes guarantee products that can withstand the highest degrees of stress.

Mubea has accepted the challenge and is the world's leading manufacturer of valve springs. A team of experienced specialists and continuous improvement of the product and production processes have driven this achievement. Cooperation with other companies and global presence make Mubea your partner in the development of new products worldwide.



Valve lift deviation

Stress calculation using
Finite-Element-Method
„Ansys“

