



Sealing and Connecting Solutions for Lab Automation and Fluid Handling

Advancing Automation Through Innovation



In response to growing workloads and a shrinking labor force, research laboratories all over the world are seeking more opportunities to automate routine procedures and processes. By providing leading manufacturers and suppliers of clinical and diagnostic fluid handling equipment with innovative sealing and connecting solutions, Bal Seal Engineering is helping labs achieve higher levels of automation, productivity, and profit.

Our custom-engineered Bal Seal® spring-energized seals and Bal Spring® canted coil springs deliver reliable, repeatable results for critical applications such as microliter and nanoliter fluid handling. They outlast and outperform O-rings, three-piece seals and other traditional components, and they help reduce lab maintenance and OEM warranty costs, as well.

Sealing Solutions

At Bal Seal Engineering, we apply our material science expertise and unique Bal Spring canted coil spring technology to produce sealing solutions that help you improve the reliability and performance of your designs. Our custom-engineered Bal Seal spring-energized seals combine the low friction properties of PTFE and other precision-blended polymers with the constant, uniform force of a spring energizer to keep you miles ahead of the competition.

Features:

- Low-friction PTFE formulations
- Tight tolerances
- One-piece designs

Benefits:

- Longer service life
- Ability to consistently dispense small volumes
- Miniature seal sizes to 0.035" ID
- Rapid installation and replacement

Typical Seal Designs

The figure below illustrates the unique capabilities of our Bal Seal spring-energized seal in a pipette application. The short-lip 13 Series seal is employed at the base of the pipette shell to provide a vacuum which facilitates accurate displacement and dispensing. The seal delivers longer service life and more reliability than an o-ring, and it eliminates common fluid dispensing challenges such as "stiction" and volume variability. It lowers maintenance costs and ensures consistent, repeatable results. We can engineer sealing solutions to fit any range of pipette channels, volumes and sealing requirements for today's most advanced fluid handling systems.



Connecting, Conducting, and EMI/RFI Shielding Solutions

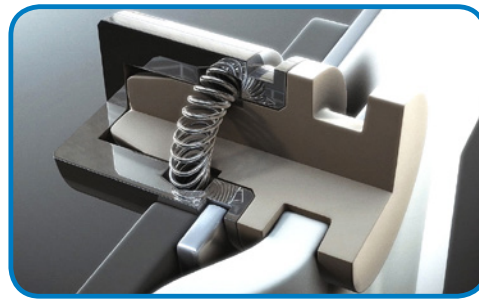
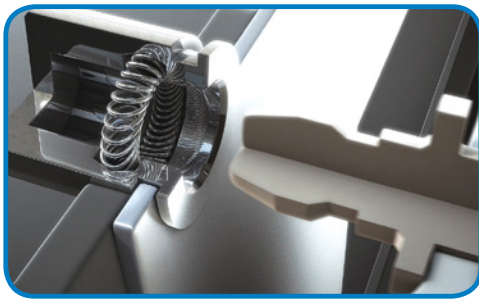
The latching, locking, and holding capabilities of our Bal Spring® canted coil spring allow you to tailor the amount of insertion/breakaway force required for your specific mechanical fastening application. The result is a smart, efficient solution with fewer moving parts. The spring's electrical properties also make it ideal for applications requiring management of electrical current/signal and shielding against EMI/RFI.

Typical Applications:

- Robotics latching/holding applications
- Snap-in/out sample trays
- Test tube holding
- Loading and misalignment compensation

Spring Features:

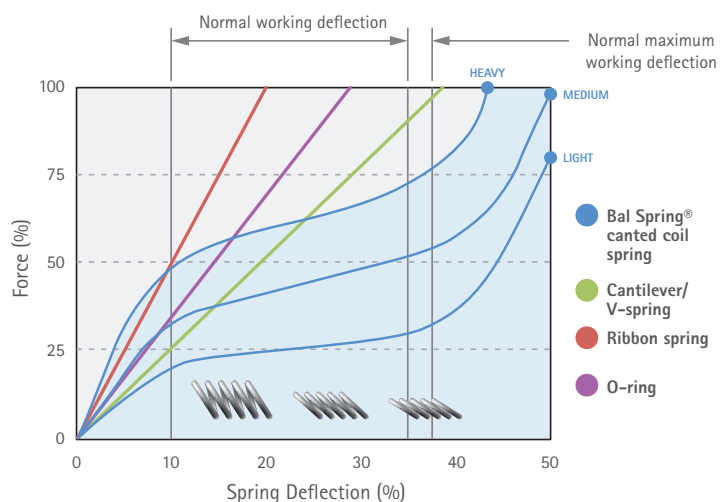
- Spring welded ring diameters available as small as 0.035"
- Standard coil heights available from 0.025" to 0.450"
- Springs can be coated/plated to enhance corrosion and abrasion resistance



Typical latching application

Technology at the Core

The innovative solutions we develop center around our Bal Spring canted coil spring technology. In our seals, this simple, robust component exerts a near-constant force over a wide deflection range, ensuring more even, consistent wear and longer service life. In electrical conducting and EMI/RFI shielding applications, the spring's individual coils provide multi-point contact and they compensate for irregularities in mating surfaces. The Bal Spring can be customized to meet specific application load requirements, and its unique design gives it superior resistance to compression set.





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Bal Seal Engineering is certified to **ISO 9001**