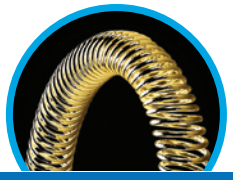
High-Performance 3-in-1 Spring For Semiconductor Equipment Design

Bal Spring® delivers robust, reliable EMI shielding, power conducting & mechanical connecting

With the Bal Spring canted coil spring, you can achieve a higher level of protection for your semicon processing and test equipment designs, while improving yield and simplifying maintenance for your end user. Our spring lets you do more with less—effectively shielding against EMI, managing high current with low heat rise, and latching components together with controllable, consistent force over thousands of cycles. Engineered with wire materials and platings that resist breakdown in the aggressive chemicals and temperatures of semicon fabrication, Bal Spring also keeps process streams cleaner than other shielding technologies.

BAL SEAL® ENGINEERING



In fabrication equipment such as etchers, ALD, CVD, PECVD, and PVD, and test equipment for semiconductor devices, no other component can match the consistent electrical contact, high-cycle durability, and broad temperature resistance of the Bal Spring. Here's why:

Bal Spring® feature	Why is it relevant?	What's the benefit?
Engineered deflection of individual spring coils	• Ensures electrical contact for proper grounding, conducting of RF power, and promoting uniform film deposition	• Promotes repeatability in electrical performance over 1000's of load/unload cycles without damaging hardware • Provides effective EMI shielding thereby preventing unintended system interruptions • 4X more effective in reducing transfer impedance than spiral gaskets at 50 to 1000 MHz
	• Allows precisely controllable and constant forces over thousands of cycles	• Promotes mechanical repeatability over 1000's of load/unload cycles • Self-retains in grooves for ease of installation (no tools required) • Compensates for large tolerances and stack-up • Offers greater design flexibility
Wire material & plating composition	• Tolerates a broad range of temperatures and aggressive chemicals	• Prevents chamber contamination while meeting mechanical & electrical requirements
Available in rings or lengths	• Forms include precision-cut lengths and closed/welded rings (ranging from 0.020 in. (0,508 mm) to 20 in. (508 mm)	• Nearly limitless options, not tied to one size • Can accommodate eccentric, non-standard shapes • Suitable for use in a range of wafer size systems

Factors Impacting Semicon Processing Equipment Design

ELECTRICAL PERFORMANCE

- Consistent electrical performance enables film uniformity in depositions
- Reliable EMI shielding prevents unintended system disruptions/failures

TEMPERATURE

- Material with broad temperature resistance to allow thousands of cycles while maintaining proper contact

ENVIRONMENTAL CONDITIONS

- Manufacturing processes are carried out in highly controlled environments, in a broad range of temperatures

Key Semicon Processing Equipment Design Considerations

- Component survivability - will it withstand aggressive temperatures and chemicals?
- Electrical contact effectiveness - does it maintain excellent multi-point contact to shield consistently against EMI and/or conduct power with minimal heat rise?
- Component service life - can it perform electrically and/or mechanically over thousands of cycles?

Get a custom spring proposal in 3 working days and a prototype in 4-6 weeks. Leverage our engineering expertise to save time and money in development and testing.

REQUEST A DESIGN

19650 Pauling
Foothill Ranch, CA
USA 92610-2610
0 +1 949 460 2100
F +1 949 460 2300

VIDA Building, 1st Floor
Kabelweg 57
1014 BA Amsterdam
The Netherlands
0 +31 20 638 6523
F +31 20 625 6018

Suite 901, Chinachem
Century Tower
178 Gloucester Road,
Wanchai, Hong Kong
0 +852 28681860
F +852 22956753

A KAMAN COMPANY www.balseal.com • sales@balseal.com

ISO 9001

BAL SEAL® ENGINEERING

SS-07-R01-12/21