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PRESS RELEASE

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Illustrations And Drawing Available On Request

LEE SPRING TAKES THE PRESSURE OFF WITH INNOVATIVE COMPRESSION SPRINGS

Brooklyn NY... The Lee Spring Catalog has always offered springs with relatively low rates, but the diameter was often too small to give the required pressure level or to accommodate assembly requirements. Lee Spring's solution is a unique new line of low pressure, high index Lite Pressure™ Stock Springs designed to provide 1 to 5 psi's in larger diameters. Some common applications for these soft springs can include syringes, relief valves, check valves, dispensers and pistons. This Series is offered ONLY in passivated, ultrasonically cleaned Type 316 Stainless Steel to satisfy most potential requirements. There are 600 Lite Pressure™ Compression Spring designs in wire diameter ranging from .008" through .072" and in outside diameters ranging from .218" up to 1.580".

WHY "PRESSURE"? Pressure is described as a force which is exerted over a surface area. In regards to compression springs, the pressure exerted as the result of a specific deflection can be more technically described as force over a flat surface with a circular perimeter (the Nominal Hole in which the spring is being used). The term "Lite Pressure™" is used to describe a series of springs designed to be utilized where relatively low forces are required for a given diameter.

RELATIONSHIP TO FLUID PRESSURE: The pressure ratings used for Lite Pressure™ Series springs have no direct relationship with "pressure" as traditionally used in the fluid power industry, although indirectly the pressure ratings are conceptually equivalent. Fluid pressure would be the result of a spring force acting

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over the specific area exposed to the fluid and would depend on other application components such as the valve face or the piston head.

HOW PRESSURE RATING FOR LITE PRESSURE SPRING WOULD BE USED: The pressure rating assigned to each item of the Lite Pressure™ series is a selection parameter to assist in meeting qualitative requirements or quantitative requirements. Each series is offered in a range from 1 to 5 psi pressure ratings, in 1 psi increments.

PRESSURE CALCULATION EXAMPLE

Catalog Lite Pressure spring LP 014E 05 S316 has the following characteristics:

Nominal Hole: 0.375 inch

Free Length: 1.000 inch

Solid Height: 0.143 inch

Spring Rate: 0.161 lbs/inch

The maximum recommended pressure for this spring will occur when the spring is at 80% of maximum available deflection (it is not generally recommended to use a compression spring all the way down to solid height). The maximum available deflection is the difference between the Free Length (1.000) and the Solid Height

- $(0.143) \text{ or } 1.000 - 0.143 = 0.857 \text{ inch.}$
- $80\% \text{ of that would be } 0.857 \times 80\% = 0.686 \text{ inch.}$
- The calculated load at this deflection would be the deflection (0.686) times the Spring Rate (0.161) or $0.686 \text{ inch} \times 0.161 \text{ lbs/inch} = 0.110 \text{ lbs.}$
- The surface area over the Nominal Hole diameter (0.375) would be pi times the diameter squared divided by four or $\pi \times (0.375^2) / 4 = 0.110 \text{ in}^2.$

The resultant pressure would then be determined by dividing the calculated load by the surface area or $0.110 \text{ lbs} / 0.110 \text{ in}^2 = 1 \text{ lb/in}^2 \text{ (psi).}$

POTENTIAL APPLICATIONS: LP series springs are ideal for many fluid power applications such as relief valves, check valves or pistons. Other miscellaneous applications could include motor brushes, contacts, displays, syringes, toys, dispensers and many more.

MATERIAL: Lite Pressure Compression Springs are offered ONLY in Type 316 Stainless Steel so as to provide a design that can meet requirements in various diverse applications that call for:

- Improved corrosion resistance
- Enhanced cleanliness
- Moderately elevated temperatures

Lee Spring is a manufacturer of stock and custom mechanical wire springs, servicing diverse manufacturing markets in the United States and abroad. Founded in 1918, Lee Spring has seven ISO 9001:2000 Certified locations in the United States, Mexico and the United Kingdom, as well as a facility in China. Lee Spring employs approximately 150 people at its Brooklyn facility; other domestic locations employ 100 people. They publish an extensive print and online catalog featuring over 16,000 Stock Springs. All Lee Spring Stock Products meets RoHS specifications, enabling manufacturers to sell their products into the European Union while meeting environmental regulations. Lee also offers extensive custom services for the production of Springs, Wire Forms, Washers, Stampings, Four Slide Parts and Assemblies.

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