LeeP™ Plastic Composite Spring Series

Non-Magnetic Material • High Corrosion Resistance • High Strength to Weight Ratio

LeeP™ Plastic Composite Springs are an innovative compression spring designed to have properties unavailable in a metal spring. The LeeP™ Plastic Composite Spring Series offers a wide range of sizes and strength combinations. This unique non-magnetic spring offers high corrosion resistance, excellent strength to weight ratio and designed to perform under load with minimal side thrust.

Made of a unique formulation using Ultem* PEI resins, the LeeP™ Series is designed for optimal performance in a wide range of applications.

The LeeP™ Series is available in color coded strengths for ease of identification (weakest to strongest):

- Red
- Orange
- Yellow
- Green
- Violet

LeeP™ Plastic Compression Springs offer many advantages including:

- Unique patented designs to maximize spring rates and cycle life, while minimizing solid height (US Patent No. 8,939,438 B2).
- High strength to weight ratios that optimize performance while reducing mass.
- Excellent stability of physical and mechanical properties at temperatures up to 340°F (171° C).
- High corrosion resistance and generally compatible with many chemicals including strong acids, weak bases, aromatics, and ketones.
- Non-magnetic material does not interfere with imaging and other Ferro-sensitive technologies.
- Dielectric insulating material suitable for non-conductive applications.
- Low flammability and toxicity ensuring environmental safety.
- Recyclable and compliant with most Global regulations including RoHS and REACH.

*Typical properties of Ultem**	
Tensile Strength [ASTM D638]	15,000 psi minimum
Ultimate Shear Strength [ASTM D732]	Approx. 15,000 psi
Thermal Conductivity	0.85 BTU-in/hr-ft²-°F
Max. Working Temperature [or Relative Thermal Index (Continuous, air)]	340 °F (171°C)
Dielectric Constant [1 MHz; ASTM D150(2)]	3.15
Dielectric Strength [Short Term; ASTM D149(2)]	830 V/mil
Flammability UL94 Low	(V-0)
Outgassing Total Mass Loss	0.40%
Non-magnetic	YES
Recyclable	YES
Chemical Resistance	
Strong Acids	Excellent Resistance[1]
Weak Bases	Excellent Resistance[1]
Alcohols	Excellent Resistance[1]
Ethers	Excellent Resistance[1]
Inorganic Salt Solutions	Excellent Resistance[1]
Steam	Excellent Resistance[1]
Weak Alkalis	Excellent Resistance[1]

NOTE: This information represents typical values intended for reference only. Environmental Stress Cracking Resistance [ESCR] to Chemicals at 73˚F (23˚C) and at 0.25-0.5% strain under immersion unless otherwise specified.

Lee Spring can manufacture custom LeeP™ plastic springs to your specifications. Contact us today!

LeeP™ Plastic Composite Spring Series

Guide to using tables

Lee Stock Number:
Lee Spring Part Number.

Hole Diameter:
Suggested minimum hole size for spring containment.

Rod Diameter:
Suggested maximum rod size to guide the inside of the spring.

Approx. Load @ Solid Height:
The load or force required to bring all coils into contact.

Spring Rate:
The change in load per unit of deflection.

Price Group:
Reference for price list. **See fold-out section at rear of book.**

LEE STOCK NUMBER	COLOR	HOLE DIAMETER		OUTSIDE DIAMETER		ROD DIAMETER		MATERIAL THICKNESS X RADIAL WALL		APPROX. LOAD @ SOLID HGT		FREE LENGTH		SPRING RATE		SOLID HEIGHT		PRICE CODE
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	IN.	MM	LB/IN.	KG/MM	IN.	MM	
LL 038 038 U000	R									0.991	0.449	0.375	9.525	3.70	0.066	0.108	2.738	L1
LL 038 038 U10G	O							.030	0.76	1.498	0.679	0.375	9.525	5.59	0.100	0.108	2.738	L1
LL 038 038 U20G	Y	.375	9.525	.350	8.890	.150	3.810	x	x	1.636	0.742	0.375	9.525	6.11	0.109	0.108	2.738	L1
LL 038 038 U30G	G							.082	2.08	1.811	0.822	0.375	9.525	6.76	0.121	0.108	2.738	L1
LL 038 038 U40G	V									2.041	0.926	0.375	9.525	7.62	0.136	0.108	2.738	L1
LL 038 050 U000	R									0.991	0.449	0.500	12.700	2.65	0.047	0.127	3.220	L2
LL 038 050 U10G	O							.030	0.76	1.498	0.679	0.500	12.700	4.00	0.071	0.127	3.220	L2
LL 038 050 U20G	Y	.375	9.525	.350	8.890	.150	3.810	x	x	1.636	0.742	0.500	12.700	4.41	0.079	0.127	3.220	L2

Color:
Represents the strength of the spring.

Outside Diameter:
Spring outer diameter, parts listed in ascending order.

Material Thickness X Radial Wall:
The thickness and width of flat cross-section used to make the spring.

Free Length:
The overall height of the spring in the unloaded position.

Solid Height:
Length when fully compressed.

Additional Information

- LeeP™ Plastic Composite Springs can be stacked and/or nested to vary lengths and spring rates.
- Custom design capability to meet unique performance requirements.

(Note: A flat plastic washer could be used between springs while stacking for better performance.)

How to Determine Price

1. Select the spring you want by LEE STOCK NUMBER.
2. Read across to the last column PRICE GROUP to obtain the price code: when applicable, select the price code that corresponds to the material type required.
3. Refer to the PRICE GROUP in the appropriate pricing chart by spring type located in the back of this catalog for pricing up to 199 pieces of an item.
4. Prices subject to change without notice.

FREE SHIPPING AVAILABLE
See Price List in back of catalog for details.

*Trademark of SABIC Innovative Plastics IP BV. (1) Excellent resistance equals greater than 90% retention of mechanical properties.

LEE STOCK NUMBER	COLOR	HOLE DIAMETER		OUTSIDE DIAMETER		ROD DIAMETER		MATERIAL THICKNESS X RADIAL WALL		APPROX. LOAD @ SOLID HGT		FREE LENGTH		SPRING RATE		SOLID HEIGHT		PRICE CODE
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	IN.	MM	LB/IN.	KG/MM	IN.	MM	
LL 038 038 U000	R	.375	9.525	.350	8.890	.150	3.810	.030 x .082	0.76 x 2.08	0.991	0.449	0.375	9.525	3.70	0.066	0.108	2.738	L1
LL 038 038 U10G	O									1.498	0.679	0.375	9.525	5.59	0.100	0.108	2.738	L1
LL 038 038 U20G	Y									1.636	0.742	0.375	9.525	6.11	0.109	0.108	2.738	L1
LL 038 038 U30G	G									1.811	0.822	0.375	9.525	6.76	0.121	0.108	2.738	L1
LL 038 038 U40G	V									2.041	0.926	0.375	9.525	7.62	0.136	0.108	2.738	L1
LL 038 050 U000	R	.375	9.525	.350	8.890	.150	3.810	.030 x .082	0.76 x 2.08	0.991	0.449	0.500	12.700	2.65	0.047	0.127	3.220	L2
LL 038 050 U10G	O									1.498	0.679	0.500	12.700	4.00	0.071	0.127	3.220	L2
LL 038 050 U20G	Y									1.636	0.742	0.500	12.700	4.37	0.078	0.127	3.220	L2
LL 038 050 U30G	G									1.811	0.822	0.500	12.700	4.84	0.086	0.127	3.220	L2
LL 038 050 U40G	V									2.041	0.926	0.500	12.700	5.46	0.098	0.127	3.220	L2
LL 050 050 U000	R	.500	12.700	.485	12.319	.218	5.537	.042 x .112	1.07 x 2.84	1.905	0.864	0.500	12.700	5.40	0.096	0.148	3.753	L2
LL 050 050 U10G	O									2.881	1.307	0.500	12.700	8.16	0.146	0.148	3.753	L2
LL 050 050 U20G	Y									3.147	1.427	0.500	12.700	8.91	0.159	0.148	3.753	L2
LL 050 050 U30G	G									3.484	1.580	0.500	12.700	9.87	0.176	0.148	3.753	L2
LL 050 050 U40G	V									3.925	1.780	0.500	12.700	11.12	0.199	0.148	3.753	L2
LL 050 075 U000	R	.500	12.700	.470	11.938	.218	5.537	.042 x .112	1.07 x 2.84	1.985	0.900	0.750	19.050	3.56	0.064	0.193	4.912	L3
LL 050 075 U10G	O									3.002	1.362	0.750	19.050	5.38	0.096	0.193	4.912	L3
LL 050 075 U20G	Y									3.278	1.487	0.750	19.050	5.88	0.105	0.193	4.912	L3
LL 050 075 U30G	G									3.630	1.646	0.750	19.050	6.50	0.116	0.193	4.912	L3
LL 050 075 U40G	V									4.090	1.855	0.750	19.050	7.33	0.131	0.193	4.912	L3
LL 075 075 U000	R	.750	19.050	.720	18.288	.343	8.712	.062 x .172	1.57 x 4.37	4.340	1.969	0.750	19.050	8.18	0.146	0.221	5.607	L3
LL 075 075 U10G	O									6.563	2.977	0.750	19.050	12.37	0.221	0.221	5.607	L3
LL 075 075 U20G	Y									7.167	3.251	0.750	19.050	13.51	0.241	0.221	5.607	L3
LL 075 075 U30G	G									7.935	3.599	0.750	19.050	14.96	0.267	0.221	5.607	L3
LL 075 075 U40G	V									8.941	4.056	0.750	19.050	16.85	0.301	0.221	5.607	L3
LL 075 100 U000	R	.750	19.050	.720	18.288	.343	8.712	.062 x .172	1.57 x 4.37	4.340	1.969	1.000	25.400	5.85	0.104	0.259	6.588	L4
LL 075 100 U10G	O									6.563	2.977	1.000	25.400	8.84	0.158	0.259	6.588	L4
LL 075 100 U20G	Y									7.167	3.251	1.000	25.400	9.65	0.172	0.259	6.588	L4
LL 075 100 U30G	G									7.935	3.599	1.000	25.400	10.69	0.191	0.259	6.588	L4
LL 075 100 U40G	V									8.941	4.056	1.000	25.400	12.04	0.215	0.259	6.588	L4
LL 100 100 U000	R	1.000	25.400	.965	24.511	.469	11.913	.085 x .230	2.16 x 5.84	8.133	3.689	1.000	25.400	11.64	0.208	0.303	7.699	L4
LL 100 100 U10G	O									12.298	5.578	1.000	25.400	17.60	0.314	0.303	7.699	L4
LL 100 100 U20G	Y									13.431	6.092	1.000	25.400	19.23	0.343	0.303	7.699	L4
LL 100 100 U30G	G									14.870	6.745	1.000	25.400	21.28	0.380	0.303	7.699	L4
LL 100 100 U40G	V									16.755	7.600	1.000	25.400	23.98	0.428	0.303	7.699	L4
LL 100 125 U000	R	1.000	25.400	.965	24.511	.469	11.913	.085 x .230	2.16 x 5.84	8.133	3.689	1.250	31.750	8.95	0.160	0.343	8.717	L5
LL 100 125 U10G	O									12.298	5.578	1.250	31.750	13.53	0.242	0.343	8.717	L5
LL 100 125 U20G	Y									13.431	6.092	1.250	31.750	14.77	0.264	0.343	8.717	L5
LL 100 125 U30G	G									14.870	6.745	1.250	31.750	16.36	0.292	0.343	8.717	L5
LL 100 125 U40G	V									16.755	7.600	1.250	31.750	18.43	0.329	0.343	8.717	L5

SPECIAL INSTRUCTIONS FOR LEEP™ PLASTIC COMPOSITE SPRINGS SERIES

PRICING: See Inside Back Cover pricing for pricing up to 199 pieces. To price or order up to 599 pieces, visit leespring.com; 600+ pieces, contact Lee Spring.
CUSTOM DESIGNS: Custom LeeP Spring designs are available on request; see Custom Springs Section for LeeP specification form.