

Focus on the design and development of Wave springs,Spiral retaining rings.



LISPRING OF CHINA

Web: www.wave-spring.com

Email: yl@lispring.com

Tel: +86-577-62606161

Fax: +86-577-62606162

Add: No.14 High-tech Industrial Park,Lingang Economic Development Zone,
Yueqing Bay,Yueqing City,Zhejiang,China

LISPRING OF AMERICA

Web: www.lispring.com

Email: marketing@lispring.com

Tel: +1-312-709-5128

Add: 405 W Superior St. 7th Floor,Chicago,IL 60654 USA

LS.261020.EN

Wave Springs

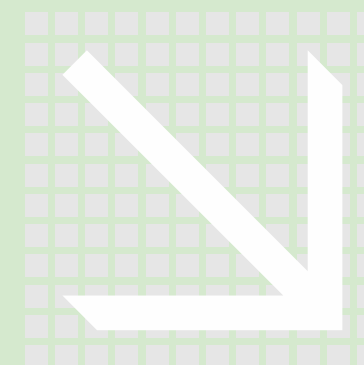
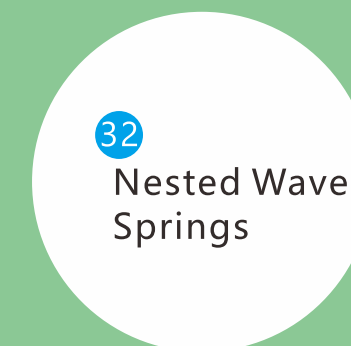


Zhejiang Lisheng Spring Co., Ltd

Focus on the design and development of Wave springs,Spiral retaining rings.



lisheng Wave spring



CONTENTS

Wave Springs



COMPANY CERTIFICATION

- IATF 16949:2016
- ISO 45001:2018
- ISO 13485:2016
- ISO 50001:2018
- AS 9100:2013
- D-U-N-S® No. 52-556-1640
- ISO 14001:2015
- ISO/IEC 17025:2017 (CNAS L26012)



LISPRING

SPECIALIST
IN WAVE SPRINGS

WAVE SPRINGS



LISPRING is certified to CNAS L26012, IATF 16949, ISO 13485 and ISO 9001 quality management systems. Our wave springs and spiral retaining rings are widely used in aerospace, automotive, oil & gas, medical equipment, wind energy, construction



Product Introduction

Wave springs are precise flat wire compression springs that fit into assemblies where space is at a premium. Since the overall lengths and operating heights of wave springs are smaller than those of conventional round wire springs, they can often reduce the size of the spring cavity by as much as 50%. Of course, this will also reduce the weight and raw material costs of the assembly.

Wave Springs Advantages

Wave springs are precise flat wire compression springs that fit into assemblies where space is at a premium.

OVER 3,000 STANDARDS, CARBON AND STAINLESS STEEL,CUSTOM PRODUCTS 5 MM TO 2,000 MM,NO TOOL FEE.



Wave Springs Type

	Multi-Turn Wave Springs L/LM		Shim-End Wave Springs LS/LMS		Interlaced Wave Springs
	Gap Type Wave Springs LR/LB/JBT		Overlap Type Wave Springs LR/LB/JBT		Marcel Expanders Wave springs
	Round Wire Wave Springs RW		Nested Wave Springs NLR/NLB		Linear Wave Springs LLS

Application examples



Wave springs are especially suitable for applications requiring weight-reduction and featuring limited mounting space. Typical applications include aerospace, new-energy vehicles, medical equipment, robotics, liquid-cooling systems, petroleum, construction machinery, consumer electronics and industrial products, such as mechanical seals, pumps and valves, vacuum



Carbon Steel

[Oil Temper]

- This prehardened material is the standard material for wave springs.
- Less expensive option to Stainless Steel.
- Maximum Recommended Operating Temperature.

Stainless Steel

[SUS304H Stainless Steel]

304 is the standard stainless steel for spiral retaining rings. This widely used material is specified because of its combination of corrosion resistance and physical properties. 304 obtains its spring temper condition by cold working. Though it is categorized as being a nonmagnetic stainless, 304 becomes slightly magnetic as a result of cold working. It is not hardenable by heat treatment.

[SUS316 Stainless Steel]

Nearly identical in physical properties and heat resistance to 302, 316 provides additional corrosion resistance, particularly against pitting, due to its molybdenum chemical content. 316 is generally used in food, chemical and sea water applications. 316 shows less magnetism than 302. However, as with 302, magnetism increases as the wire is cold reduced. This stainless grade is also not hardenable by heat treatment.

[SUS631 (17-7PH) Stainless Steel]

Similar in corrosion resistance to type 302, this alloy is used almost exclusively for wave springs, yet offers both high tensile and yield strengths for special ring applications. In fatigue and high stress applications, 17-7 out performs even the finest grade of carbon steel. Spring properties are achieved by precipitation hardening Condition C to Condition Ch900. As a result, the material may be subjected to a temperature of 650°F (343°C) without a loss of spring properties. 17-7 PH Condition CH900 exhibits magnetism similar to high carbon steel.

Superalloy Rigid INCONEL X-750*

This nickel-chromium alloy is used most commonly in high temperature and corrosive environments. Two commonly specified tempers of Inconel are described below. Most commonly, Inconel X-750 is precipitation heat treated to a spring temper condition. In this state, it has temperature resistance to 700°F. The National Association of Corrosion Engineers (NACE) approves this hard temper to specification MR-01-75 (Rc50 maximum) for spiral retaining rings and wave/compression springs.

Material Finishes

[Passivation]

Passivation is an optional cleaning operation for stainless steel. It provides a bright finish and increased corrosion resistance. Passivation dissolves iron particles and other substances, which have become imbedded in the surface of stainless steel during production. If not dissolved, these foreign particles could promote rusting, discoloration or even pitting.

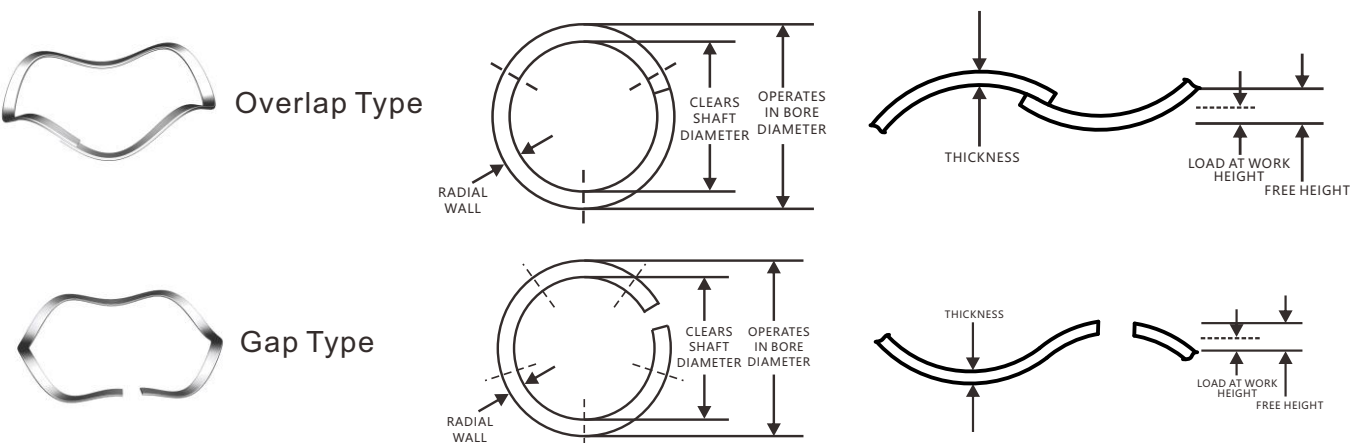
[Vapor Degrease/Ultrasoni Cleaning]

This is the standard cleaning and finish for all stainless steels. The process removes oil and other organic compounds from the material surface by use of a chlorinated solvent. The solvent effectively removes oil and grease from the exposed surfaces of the ring or spring. Ultrasonics are used in forcing the solvent to act between the turns of the ring.

Vibratory Deburring/Hand Deburring

Though all circumferential surfaces and edges of Spiral Retaining Rings are smooth, sharp corners are always present on the gap ends due to the cut-off operation. To break the sharp corners, achieving a blended/smooth surface finish, rings may either be vibratory or hand deburred to meet your specifications.

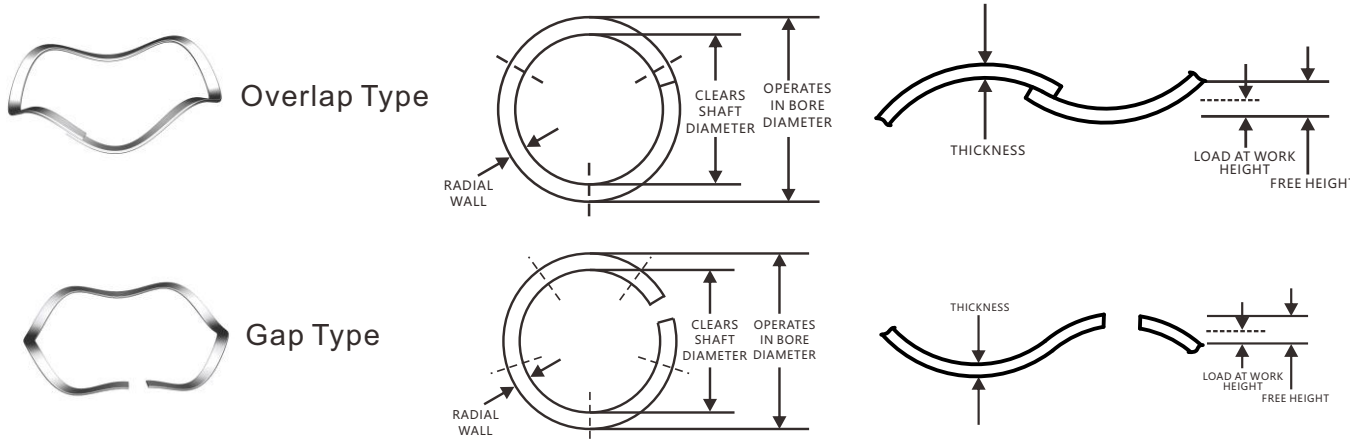
Single-Turn Wave Spring Washers



Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Thickness	Radial Wall	Spring Rate ²	End Type
Carbon Steel ³	17-7PH Add Suffix	mm	mm	(N)	mm	mm		mm	mm	N/MM	
LB-0035	-S17	9.00	6.86	25.80	1.00	1.50	3	0.20	0.81	52.00	overlap
LB-0039	-S17	10.00	7.49	27.60	1.00	1.57	3	0.20	1.02	48.00	overlap
LB-0043	-S17	11.00	8.46	29.40	1.00	1.83	3	0.20	1.02	35.00	overlap
LB-0047	-S17	12.00	9.17	33.40	1.00	1.57	3	0.25	1.17	59.00	overlap
LR-0050	-S17	12.70	9.91	31.12	1.27	2.16	3	0.20	1.02	35.00	overlap
LB-0051	-S17	13.00	9.53	37.80	1.00	1.57	3	0.25	1.47	66.00	overlap
LR-0062	-S17	15.88	12.19	44.45	1.27	2.41	3	0.25	1.47	38.85	overlap
JBT-016	-S17	16.00	-	80.00	1.00	1.90	3	0.30	1.83	112.00	overlap
LB-0063	-S17	16.00	11.28	44.50	1.57	2.29	3	0.25	1.98	65.00	overlap
JBT-019	-S17	19.00	-	90.00	1.00	2.00	3	0.33	2.01	87.00	overlap
LB-0075	-S17	19.00	14.28	53.40	1.57	3.05	3	0.25	1.98	35.00	overlap
LR-0075	-S17	19.05	12.70	62.23	1.57	4.06	3	0.25	1.98	25.03	overlap
JBT-022	-S17	22.00	-	110.00	1.20	2.30	3	0.38	2.39	106.00	overlap
LB-0087	-S17	22.00	16.46	62.30	1.57	2.79	3	0.30	2.39	48.00	overlap
LR-0087	-S17	22.23	15.75	71.12	1.57	3.30	3	0.30	2.39	41.13	overlap
LB-0095	-S17	24.00	18.46	66.70	1.57	3.56	3	0.30	2.39	35.00	overlap
LR-0100	-S17	25.40	19.81	80.02	1.57	4.06	3	0.30	2.39	32.20	overlap
JBT-026	-S17	26.00	-	130.00	1.20	2.80	3	0.45	2.39	100.60	overlap
LB-0102	-S17	26.00	18.22	71.20	1.98	2.54	3	0.41	3.38	111.00	overlap
JBT-028	-S17	28.00	-	140.00	1.20	2.40	3	0.48	2.39	90.70	overlap
LB-0110	-S17	28.00	20.22	75.60	1.98	2.79	3	0.41	3.38	85.00	overlap
LR-0112	-S17	28.58	21.34	88.91	1.98	3.30	3	0.41	3.38	67.38	overlap
JBT-030	-S17	30.00	-	160.00	1.20	2.80	3	0.53	2.41	92.80	overlap
LB-0118	-S17	30.00	22.22	84.50	1.98	3.30	3	0.41	3.38	66.00	overlap
LR-0125	-S17	31.75	24.38	97.80	1.98	3.81	3	0.41	3.38	53.55	overlap
JBT-032	-S17	32.00	-	180.00	1.20	3.40	3	0.45	3.38	82.00	overlap
LB-0126	-S17	32.00	24.22	89.00	1.98	3.81	3	0.41	3.38	52.00	overlap
LR-0137	-S17	34.93	27.69	106.69	1.98	4.83	3	0.41	3.38	37.45	overlap
JBT-035	-S17	35.00	-	210.00	1.50	2.90	4	0.40	3.38	138.00	overlap
LB-0138	-S17	35.00	27.22	97.90	1.98	4.57	3	0.41	3.38	38.00	overlap
LB-0146	-S17	37.00	28.72	102.30	1.98	3.81	3	0.46	3.63	58.00	overlap
LR-0150	-S17	38.10	29.72	115.58	1.98	4.32	3	0.46	3.63	49.53	overlap
JBT-040	-S17	40.00	-	230.00	1.50	3.30	4	0.45	3.38	151.00	overlap
LB-0158	-S17	40.00	31.72	111.20	1.98	5.08	3	0.46	3.63	37.00	overlap
LR-0162	-S17	41.28	33.27	124.47	1.98	5.08	3	0.46	3.63	40.25	overlap
JBT-042	-S17	42.00	-	250.00	1.50	2.70	4	0.53	3.63	177.00	overlap
LB-0165	-S17	42.00	33.72	115.70	1.98	3.05	4	0.46	3.63	99.00	overlap
LR-0175	-S17	44.45	36.58	133.36	1.98	3.56	4	0.46	3.63	84.70	gap
JBT-047	-S17	47.00	-	270.00	1.50	3.40	4	0.53	3.63	119.60	overlap
LB-0185	-S17	47.00	38.72	129.00	1.98	3.81	4	0.46	3.63	68.00	overlap
LR-0187	-S17	47.63	39.62	142.25	1.98	3.81	4	0.46	3.63	77.70	gap
LR-0200	-S17	50.80	42.67	151.14	2.36	3.56	4	0.61	3.81	126.53	gap
JBT-052	-S17	52.00	-	280.00	2.00	3.60	4	0.60	4.52	253.00	overlap

¹Reference dimension.
²Theoretical dimension, unit: N/mm
³Carbon steel products are unavailable for wire thickness ≤0.3 mm

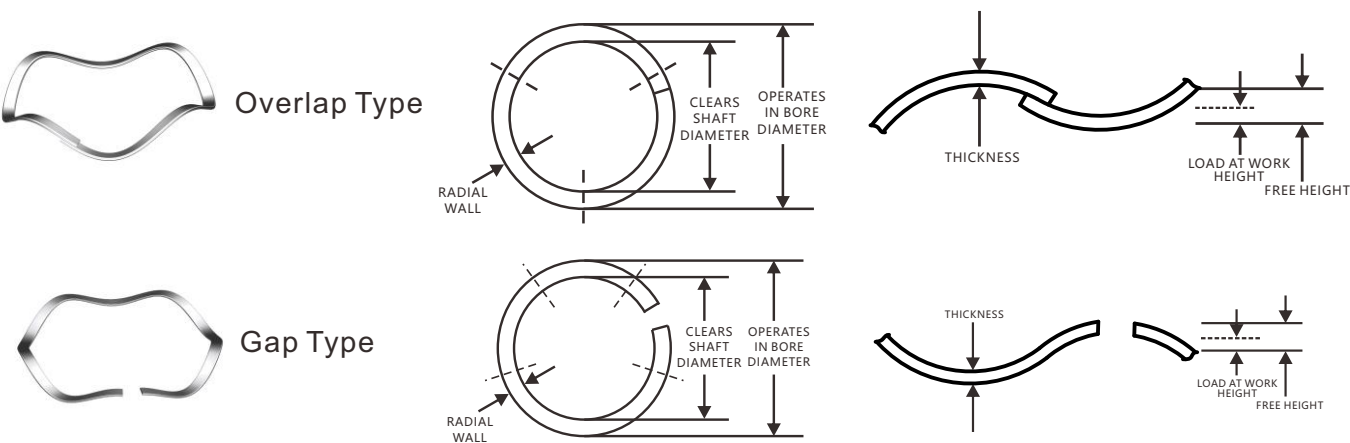
Single-Turn Wave Spring Washers



Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Thickness	Radial Wall	Spring Rate ²	End Type
Carbon Steel	17-7PH Add Suffix	mm	mm	(N)	mm	mm		mm	mm	N/MM	
LB-0205	-S17	52.00	43.11	142.40	2.36	3.56	4	0.61	3.76	121.00	overlap
LR-0212	-S17	53.98	45.72	160.03	2.36	3.81	4	0.61	3.81	110.60	gap
LB-0217	-S17	55.00	46.11	151.30	2.36	3.81	4	0.61	3.76	100.00	overlap
LR-0225	-S17	57.15	49.02	168.92	2.36	4.32	4	0.61	3.81	86.45	gap
LR-0237	-S17	60.33	50.55	177.81	2.36	4.06	4	0.61	4.52	104.48	gap
JBT-062	-S17	62.00	-	330.00	2.00	3.70	4	0.76	4.78	202.00	gap
LB-0244	-S17	62.00	51.69	169.10	2.36	4.32	4	0.61	4.52	85.00	overlap
LR-0250	-S17	63.50	53.85	186.70	2.36	4.32	4	0.61	4.52	95.38	gap
LR-0262	-S17	66.68	56.90	195.59	2.36	4.83	4	0.61	4.52	79.45	gap
LB-0268	-S17	68.00	57.17	186.90	2.77	4.32	4	0.76	4.78	131.00	overlap
LR-0275	-S17	69.85	59.44	204.48	2.77	4.32	4	0.76	4.78	131.95	gap
LB-0276	-S17	70.00	59.17	191.30	2.77	4.32	4	0.76	4.78	119.00	overlap
JBT-072	-S17	72.00	-	390.00	2.00	4.70	4	0.76	4.78	125.00	gap
LB-0284	-S17	72.00	61.17	195.80	2.77	4.57	4	0.76	4.78	108.00	overlap
LB-0287	-S17	73.03	62.74	213.37	2.77	4.57	4	0.76	4.78	118.30	gap
LB-0295	-S17	75.00	64.17	204.70	2.77	5.08	4	0.76	4.78	94.00	overlap
LR-0300	-S17	76.20	65.79	222.26	2.77	4.83	4	0.76	4.78	107.98	gap
LR-0312	-S17	79.38	68.83	231.15	2.77	5.33	4	0.76	4.78	90.13	gap
JBT-080	-S17	80.00	-	440.00	2.00	3.90	5	0.76	4.01	215.90	gap
LB-0315	-S17	80.00	68.66	218.00	2.77	5.59	4	0.76	4.78	76.00	overlap
LR-0325	-S17	82.55	69.85	240.05	2.77	5.08	4	0.76	5.92	103.78	gap
LR-0325-N	-S17	82.55	71.63	240.05	2.77	5.08	4	0.76	4.78	103.78	gap
JBT-085	-S17	85.00	-	470.00	2.00	4.30	5	0.76	4.78	220.00	gap
LB-0335	-S17	85.00	71.38	231.40	2.77	5.59	4	0.76	5.92	83.00	overlap
LR-0337	-S17	85.73	72.14	248.94	2.77	5.59	4	0.76	5.92	88.38	gap
LR-0337-N	-S17	85.73	74.68	248.94	2.77	5.59	4	0.76	4.78	88.38	gap
LR-0350	-S17	88.90	76.20	257.83	2.77	5.84	4	0.76	5.92	83.83	gap
LR-0350-N	-S17	88.90	77.98	257.83	2.77	6.60	4	0.76	4.78	67.20	gap
JBT-090	-S17	90.00	-	500.00	2.00	4.80	5	0.76	4.78	184.00	gap
LB-0354	-S17	90.00	76.38	249.20	2.77	6.35	4	0.76	5.92	68.00	overlap
LR-0362	-S17	92.08	79.25	266.72	2.77	6.10	4	0.76	5.92	80.15	gap
LR-0362-N	-S17	92.08	81.03	266.72	2.77	6.86	4	0.76	4.78	65.28	gap
LB-0374	-S17	95.00	81.38	262.50	2.77	7.37	4	0.76	5.92	57.00	overlap
LR-0375	-S17	95.25	82.55	275.61	2.77	6.60	4	0.76	5.92	71.93	gap
LR-0375-N	-S17	95.25	84.33	275.61	2.77	7.11	4	0.76	4.78	63.53	gap
LR-0387	-S17	98.43	85.60	284.50	2.77	7.62	4	0.76	5.92	58.63	gap
LR-0387-N	-S17	98.43	87.38	284.50	2.77	7.87	4	0.76	4.78	55.65	gap
JBT-100	-S17	100.00	-	530.00	2.00	4.70	5	0.76	4.78	132.00	gap
LB-0394	-S17	100.00	86.38	275.90	2.77	4.57	5	0.76	5.92	157.00	gap
LR-0400	-S17	101.60	88.90	293.39	2.77	4.83	5	0.76	5.92	142.63	gap
LR-0400-N	-S17	101.60	90.68	293.39	2.77	5.08	5	0.76	4.78	126.88	gap
LR-0412	-S17	104.78	91.95	297.83	2.77	5.08	5	0.76	5.92	128.80	gap
LR-0412-N	-S17	104.78	93.73	297.83	2.77	5.08	5	0.76	4.78	128.80	gap

¹Reference dimension.
²Theoretical dimension, unit: N/mm

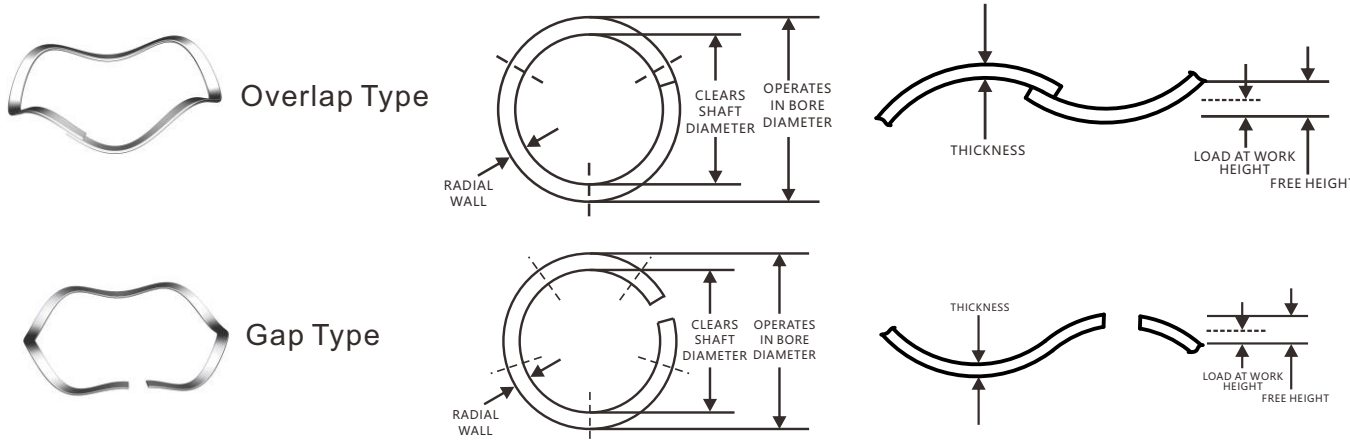
Single-Turn Wave Spring Washers



Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Thickness	Radial Wall	Spring Rate ²	End Type
Carbon Steel	17-7PH Add Suffix	mm	mm	(N)	mm	mm		mm	mm	N/MM	
LR-0425	-S17	107.95	95.00	306.72	2.77	5.33	5	0.76	5.92	119.53	gap
LR-0425-N	-S17	107.95	97.03	306.72	2.77	6.10	5	0.76	4.78	92.23	gap
JBT-110	-S17	110.00	-	560.00	2.00	4.90	6	0.76	4.78	197.60	gap
LB-0433	-S17	110.00	96.38	302.60	2.77	5.33	5	0.76	5.92	115.00	gap
LR-0437	-S17	111.13	98.04	311.17	2.77	5.33	5	0.76	5.92	121.28	gap
LR-0437-N	-S17	111.13	100.08	311.17	2.77	5.33	5	0.76	4.78	121.28	gap
LR-0450	-S17	114.30	101.35	320.06	2.77	5.84	5	0.76	5.92	104.13	gap
LR-0450-N	-S17	114.30	103.38	320.06	2.77	7.11	5	0.76	4.78	73.68	gap
LB-0453	-S17	115.00	101.38	315.90	3.18	6.35	5	0.76	5.92	99.00	gap
LR-0462	-S17	117.48	104.39	324.51	3.18	6.86	5	0.76	5.92	88.03	gap
LR-0462-N	-S17	117.48	106.43	324.51	3.18	6.86	5	0.76	4.78	88.03	gap
JBT-120	-S17	120.00	-	570.00	2.00	5.80	6	0.76	4.78	152.00	gap
LB-0472	-S17	120.00	106.38	329.30	3.18	7.11	5	0.76	5.92	86.00	gap
LR-0475	-S17	120.65	107.70	333.40	3.18	7.87	5	0.76	5.92	70.88	gap
LR-0475-N	-S17	120.65	109.73	333.40	3.18	8.13	5	0.76	4.78	67.38	gap
LR-0487	-S17	123.83	111.00	337.84	3.18	7.37	5	0.76	5.92	80.68	gap
LR-0487-N	-S17	123.83	112.78	337.84	3.18	8.13	5	0.76	4.78	68.25	gap
JBT-125	-S17	125.00	-	570.00	2.00	6.20	6	0.76	4.78	135.00	gap
LB-0492	-S17	125.00	111.38	342.60	3.18	7.62	5	0.76	5.92	76.00	gap
LR-0500	-S17	127.00	114.05	346.73	3.18	7.87	5	0.76	5.92	73.85	gap
LR-0500-N	-S17	127.00	116.08	346.73	3.18	8.89	5	0.76	4.78	60.73	gap
JBT-130	-S17	130.00	-	580.00	3.00	4.70	6	1.06	7.92	532.00	gap
LB-0512	-S17	130.00	116.38	356.00	3.18	8.64	5	0.76	5.92	67.00	gap
LR-0512	-S17	130.18	117.09	355.62	3.18	8.64	5	0.76	5.92	65.10	gap
LR-0512-N	-S17	130.18	119.13	355.62	3.18	8.89	5	0.76	4.78	62.30	gap
LR-0525	-S17	133.35	120.40	364.51	3.18	9.40	5	0.76	5.92	58.63	gap
LR-0525-N	-S17	133.35	122.43	364.51	3.18	9.14	5	0.76	4.78	61.08	gap
LB-0532	-S17	135.00	121.38	369.30	3.18	9.40	5	0.76	5.92	59.00	gap
LR-0537	-S17	136.53	123.44	373.40	3.18	9.65	5	0.76	5.92	57.58	gap
LR-0537-N	-S17	136.53	125.48	373.40	3.18	11.18	5	0.76	4.78	46.73	gap
LR-0550	-S17	139.70	126.75	382.29	3.18	6.35	6	0.76	5.92	120.40	gap
LR-0550-N	-S17	139.70	128.78	382.29	3.18	7.11	6	0.76	4.78	97.13	gap
JBT-140	-S17	140.00	-	580.00	3.00	5.20	6	1.06	7.92	415.00	gap
LB-0551	-S17	140.00	126.38	382.70	3.18	6.86	6	0.76	5.92	108.00	gap
LR-0562	-S17	142.88	129.79	391.18	3.18	6.86	6	0.76	5.92	106.23	gap
LR-0562-N	-S17	142.88	131.83	391.18	3.18	7.37	6	0.76	4.78	93.28	gap
LB-0571	-S17	145.00	131.38	396.00	3.18	7.37	6	0.76	5.92	97.00	gap
LR-0575	-S17	146.05	133.10	400.08	3.18	7.11	6	0.76	5.92	101.68	gap
LR-0575-N	-S17	146.05	135.13	400.08	3.18	8.64	6	0.76	4.78	73.33	gap
LR-0587	-S17	149.23	136.14	408.97	3.18	7.62	6	0.76	5.92	92.05	gap
LR-0587-N	-S17	149.23	138.18	408.97	3.18	8.64	6	0.76	4.78	74.90	gap
JBT-150	-S17	150.00	-	600.00	3.00	5.30	6	1.07	9.53	458.20	gap

¹Reference dimension.
²Theoretical dimension, unit: N/mm

Single-Turn Wave Spring Washers

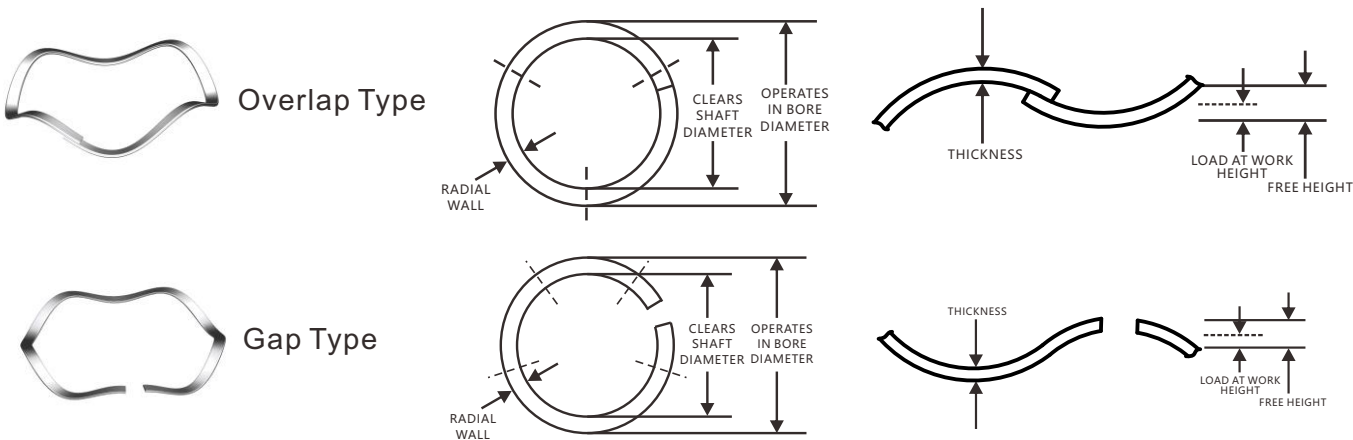


Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Thickness	Radial Wall	Spring Rate ²	End Type
Carbon Steel	17-7PH Add Suffix	mm	mm	(N)	mm	mm		mm	mm	N/MM	
LB-0591	-S17	150.00	136.38	404.90	3.18	7.87	6	0.76	5.92	87.00	gap
LR-0600	-S17	152.40	139.45	417.86	3.18	7.62	6	0.76	5.92	93.98	gap
LR-0600-N	-S17	152.40	141.48	417.86	3.18	8.64	6	0.76	4.78	76.48	gap
LR-0612	-S17	155.58	142.49	426.75	3.18	7.87	6	0.76	5.92	90.83	gap
LR-0612-N	-S17	155.58	144.53	426.75	3.18	7.11	7	0.76	4.78	108.33	gap
LR-0625	-S17	158.75	145.54	435.64	3.18	8.64	6	0.76	5.92	79.80	gap
LR-0625-N	-S17	158.75	147.83	435.64	3.18	7.11	7	0.76	4.78	110.60	gap
JBT-160	-S17	160.00	-	620.00	3.00	6.00	6	1.07	9.53	366.40	gap
LB-0630	-S17	160.00	146.38	440.50	3.18	9.40	6	0.76	5.92	71.00	gap
LR-0637	-S17	161.93	148.84	444.53	3.18	8.89	6	0.76	5.92	77.70	gap
LR-0637-N	-S17	161.93	150.88	444.53	3.18	7.62	7	0.76	4.78	99.93	gap
LB-0650	-S17	165.00	151.38	453.90	3.18	10.41	6	0.76	5.92	64.00	gap
LR-0650	-S17	165.10	151.89	453.42	3.18	9.91	6	0.76	5.92	67.38	gap
LR-0650-N	-S17	165.10	154.18	453.42	3.18	7.62	7	0.76	4.78	102.03	gap
JBT-170	-S17	170.00	-	640.00	3.00	4.50	6	1.06	9.53	360.00	gap
LB-0669	-S17	170.00	156.38	467.20	3.18	11.18	6	0.76	5.92	58.00	gap
LR-0675	-S17	171.45	158.24	462.31	3.18	10.67	6	0.76	5.92	61.78	gap
LR-0675-N	-S17	171.45	160.53	462.31	3.18	7.62	7	0.76	4.78	103.95	gap
LB-0689	-S17	175.00	154.16	480.60	3.96	8.13	6	0.81	9.53	116.00	gap
LR-0700	-S17	177.80	156.46	471.20	3.96	8.13	6	0.81	9.53	113.05	gap
LR-0700-N	-S17	177.80	164.59	471.20	3.96	8.13	7	0.76	5.92	113.05	gap
JBT-180	-S17	180.00	-	720.00	3.00	5.00	6	1.06	9.53	363.00	gap
LB-0709	-S17	180.00	159.16	493.90	3.96	8.64	6	0.81	9.53	105.00	gap
LR-0725	-S17	184.15	163.58	480.09	3.96	8.89	6	0.81	9.53	97.48	gap
LR-0725-N	-S17	184.15	170.94	480.09	3.96	8.38	7	0.76	5.92	108.68	gap
LB-0728	-S17	185.00	164.16	507.30	3.96	9.14	6	0.81	9.53	97.00	gap
JBT-190	-S17	190.00	-	900.00	4.00	5.20	7	1.06	9.53	727.00	gap
LB-0748	-S17	190.00	169.16	520.60	3.96	9.91	6	0.81	9.53	88.00	gap
LR-0750	-S17	190.50	169.93	488.98	3.96	9.14	6	0.81	9.53	94.33	gap
LR-0750-N	-S17	190.50	177.29	488.98	3.96	9.14	7	0.76	5.92	94.33	gap
LR-0775	-S17	196.85	176.28	506.76	3.96	9.65	6	0.81	9.53	89.08	gap
LR-0775-N	-S17	196.85	183.64	506.76	3.96	9.65	7	0.76	5.92	89.08	gap
JBT-200	-S17	200.00	-	980.00	4.00	5.60	7	1.06	9.53	610.00	gap
LB-0787	-S17	200.00	179.16	547.30	3.96	7.11	7	0.81	9.53	174.00	gap
LR-0800	-S17	203.20	182.63	524.54	3.96	9.91	6	0.81	9.53	88.20	gap
LR-0807	-S17	205.00	184.16	560.70	3.96	7.37	7	0.81	9.53	161.00	gap
LR-0825	-S17	209.55	188.98	542.32	3.96	10.92	6	0.81	9.53	77.88	gap
LR-0827	-S17	210.00	189.16	578.50	3.96	7.87	7	0.81	9.53	149.00	gap
JBT-215	-S17	215.00	-	1510.0	4.00	7.20	7	1.06	9.53	482.00	gap
LB-0847	-S17	215.00	194.16	591.80	3.96	8.38	7	0.81	9.53	138.00	gap
LR-0850	-S17	215.90	195.07	560.11	3.96	8.64	7	0.81	9.53	119.88	gap
LR-0866	-S17	220.00	199.16	605.20	3.96	8.64	7	0.81	9.53	128.00	gap
LR-0875	-S17	222.25	201.42	577.89	3.96	8.64	7	0.81	9.53	123.73	gap

¹Reference dimension.
²Theoretical dimension, unit: N/mm

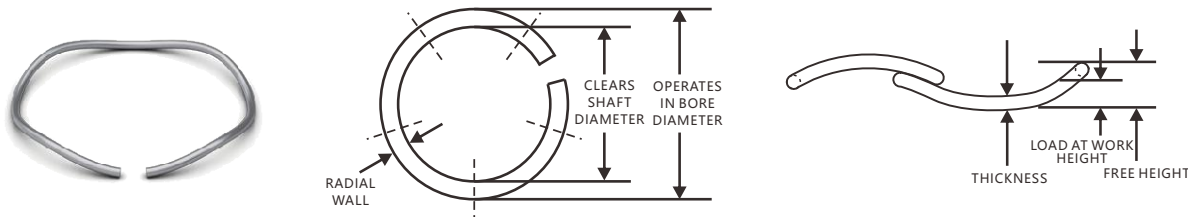
Single-Turn Wave Spring Washers

Round Wire Wave Springs



Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Thickness	Radial Wall	Spring Rate ²	End Type
Carbon Steel	17-7PH Add Suffix	mm	mm	(N)	mm	mm		mm	mm	N/MM	
LB-0886	-S17	225.00	204.16	618.50	3.96	7.11	8	0.81	9.53	203.00	gap
LR-0900	-S17	228.60	207.77	595.67	3.96	7.37	8	0.81	9.53	175.00	gap
LB-0906	-S17	230.00	209.16	631.90	3.96	6.10	9	0.81	9.53	303.00	gap
LB-0925	-S17	235.00	214.16	645.20	3.96	6.35	9	0.81	9.53	283.00	gap
JBT-240	-S17	240.00	-	1570.0	4.00	8.80	7	1.06	9.53	333.00	gap
LB-0945	-S17	240.00	219.16	658.60	3.96	6.35	9	0.81	9.53	265.00	gap
LR-0950	-S17	241.30	220.47	631.23	3.96	6.10	9	0.81	9.53	295.75	gap
LB-0984	-S17	250.00	229.16	685.30	3.96	6.86	9	0.81	9.53	232.00	gap
LR-1000	-S17	254.00	232.92	666.79	3.96	7.37	9	0.81	9.53	195.83	gap
LB-1024	-S17	260.00	239.16	712.00	3.96	7.37	9	0.81	9.53	205.00	gap
LB-1043	-S17	265.00	244.16	725.30	3.96	7.62	9	0.81	9.53	193.00	gap
LR-1050	-S17	266.70	245.62	702.35	3.96	7.87	9	0.81	9.53	179.55	gap
LB-1063	-S17	270.00	249.16	743.10	3.96	8.13	9	0.81	9.53	182.00	gap
LR-1100	-S17	279.40	258.32	737.92	3.96	8.89	9	0.81	9.53	149.80	gap
LB-1102	-S17	280.00	259.16	769.80	3.96	8.64	9	0.81	9.53	162.00	gap
LB-1142	-S17	290.00	269.16	796.50	3.96	9.40	9	0.81	9.53	144.00	gap
LR-1150	-S17	292.10	270.76	773.48	3.96	9.14	9	0.81	9.53	149.28	gap
LB-1181	-S17	300.00	279.16	823.20	3.96	10.41	9	0.81	9.53	129.00	gap
LR-1200	-S17	304.80	283.46	809.04	3.96	11.18	9	0.81	9.53	112.18	gap
LB-1221	-S17	310.00	289.16	849.90	3.96	7.11	9	1.07	9.53	264.00	gap
LR-1250	-S17	317.50	296.16	844.60	3.96	8.89	10	0.81	9.53	171.33	gap
LB-1260	-S17	320.00	299.16	876.60	3.96	7.62	9	1.07	9.53	239.00	gap
LR-1300	-S17	330.20	308.86	880.17	3.96	10.41	10	0.81	9.53	136.50	gap
LB-1339	-S17	340.00	319.16	934.50	3.96	8.64	9	1.07	9.53	198.00	gap
LR-1350	-S17	342.90	321.31	915.73	3.96	10.92	10	0.81	9.53	131.60	gap
LB-1378	-S17	350.00	329.16	961.10	3.96	9.40	9	1.07	9.53	180.00	gap
LR-1400	-S17	355.60	334.01	951.29	3.96	7.62	12	0.81	9.53	260.05	gap
LB-1417	-S17	360.00	339.16	987.90	3.96	7.62	10	1.07	9.53	271.00	gap
LR-1450	-S17	368.30	346.71	982.41	3.96	8.13	12	0.81	9.53	235.90	gap
LB-1457	-S17	370.00	349.16	1014.60	3.96	8.13	10	1.07	9.53	249.00	gap
LB-1496	-S17	380.00	359.16	1041.30	3.96	8.64	10	1.07	9.53	229.00	gap
LR-1500	-S17	381.00	358.90	1022.41	3.96	8.89	12	0.81	9.53	207.55	gap
LB-1535	-S17	390.00	369.16	1072.40	3.96	9.14	10	1.07	9.53	211.00	gap
LR-1550	-S17	393.70	371.86	1062.42	3.96	7.87	13	0.81	9.53	271.60	gap
LB-1575	-S17	400.00	379.16	1099.10	3.96	9.65	10	1.07	9.53	196.00	gap
LR-1600	-S17	406.40	384.56	1102.43	3.96	8.64	13	0.81	9.53	235.90	gap
LB-1614	-S17	410.00	382.82	1125.80	3.96	8.38	10	1.07	12.70	251.00	gap
LB-1654	-S17	420.00	392.82	1152.50	3.96	8.89	10	1.07	12.70	233.00	gap
LB-1693	-S17	430.00	402.82	1179.20	3.96	7.62	11	1.07	12.70	317.00	gap
LB-1732	-S17	440.00	412.82	1205.90	3.96	8.13	11	1.07	12.70	295.00	gap
LB-1811	-S17	460.00	432.82	1263.70	3.96	8.89	11	1.07	12.70	256.00	gap
LB-1890	-S17	480.00	452.82	1317.10	3.96	8.13	12	1.07	12.70	318.00	gap
LB-1969	-S17	500.00	472.82	1370.50	3.96	8.89	12	1.07	12.70	280.00	gap
LB-2126	-S17	540.00	512.82	1481.80	3.96	8.89	13	1.07	12.70	303.00	gap
LB-2284	-S17	580.00	552.82	1593.00	3.96	8.89	14	1.07	12.70	327.00	gap

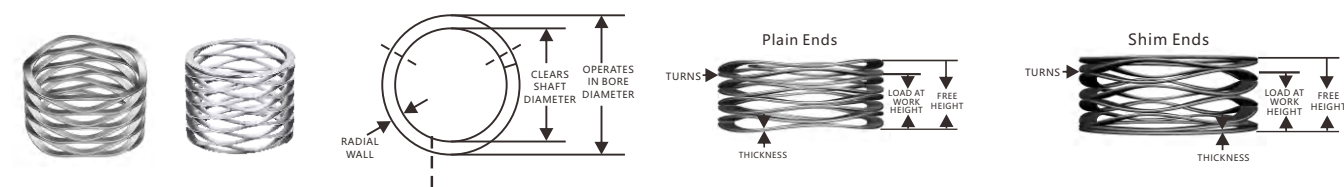
¹Reference dimension.
²Theoretical dimension, unit: N/mm
³Carbon steel is unavailable for models LB-1614 ~ LB-2284.



Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Wire Diameter	Spring Rate ²
Carbon Steel	17-7PH Add Suffix	mm	mm	(N)	mm	mm		mm	N/MM
RW-0050	-S17	12.70	10.36	155.6	1.32	1.57	3	0.79	612.5
RW-0062	-S17	15.88	13.13	222.3	1.63	1.96	3	0.97	673.1
RW-0075	-S17	19.05	15.95	311.2	1.93	2.34	3	1.14	765.6
RW-0087	-S17	22.23	18.80	355.6	2.18	2.64	3	1.30	777.7
RW-0100	-S17	25.40	21.72	400.1	2.41	2.95	3	1.42	750.1
RW-0112	-S17	28.58	24.56	444.5	2.59	3.23	3	1.52	700.0
RW-0125	-S17	31.75	27.46	489.0	2.79	3.51	3	1.65	687.6
RW-0137	-S17	34.93	31.06	533.4	2.41	3.07	4	1.42	807.6
RW-0150	-S17	38.10	34.01	577.9	2.59	3.25	4	1.52	875.0
RW-0162	-S17	41.28	36.68	622.3	2.79	3.48	4	1.65	907.4
RW-0175	-S17	44.45	39.73	666.8	2.87	3.66	4	1.70	846.8
RW-0187	-S17	47.63	42.72	711.2	3.02	3.94	4	1.78	777.7
RW-0200	-S17	50.80	45.80	755.7	3.15	4.19	4	1.83	725.6
RW-0212	-S17	53.98	48.41	800.1	3.28	4.11	4	1.93	954.6
RW-0225	-S17	57.15	51.38	844.6	3.45	4.27	4	2.03	1039.2
RW-0237	-S17	60.33	54.38	889.0	3.58	4.52	4	2.11	945.9
RW-0250	-S17	63.50	57.43	933.5	3.66	4.7	4	2.16	896.4
RW-0262	-S17	66.68	60.30	977.9	3.89	5.16	4	2.29	770.0
RW-0275	-S17	69.85	63.42	1022.4	3.91	5.38	4	2.31	694.1
RW-0287	-S17	73.03	66.50	1066.8	4.01	5.33	4	2.36	807.6
RW-0300	-S17	76.20	70.28	1111.3	3.58	4.55	5	2.11	1151.3
RW-0312	-S17	79.38	73.10	1155.7	3.66	4.67	5	2.16	1137.5
RW-0325	-S17	82.55	76.00	1200.2	3.89	4.83	5	2.29	1277.0
RW-0337	-S17	85.73	79.12	1244.6	3.91	4.95	5	2.31	1195.1
RW-0350	-S17	88.90	82.19	1289.1	4.01	5.11	5	2.36	1180.2
RW-0362	-S17	92.08	85.24	1333.5	4.09	5.23	5	2.41	1166.7
RW-0375	-S17	95.25	88.27	1378.0	4.22	5.38	5	2.49	1179.3
RW-0387	-S17	98.43	91.31	1422.4	4.32	5.28	5	2.54	1473.7
RW-0400	-S17	101.60	94.44	1466.9	4.32	5.72	5	2.54	1050.0
RW-0412	-S17	104.78	97.21	1489.1	4.45	5.61	5	2.67	1274.5
RW-0425	-S17	107.95	100.28	1533.5	4.52	5.72	5	2.67	1284.5
RW-0437	-S17	111.13	103.20	1555.8	4.75	6.1	5	2.79	1155.7
RW-0450	-S17	114.30	106.30	1600.2	4.75	6.27	5	2.79	1050.0
RW-0462	-S17	117.48	109.47	1622.4	4.75	6.43	5	2.79	967.8
RW-0475	-S17	120.65	112.55	1666.9	4.83	6.53	5	2.84	979.5
RW-0487	-S17	123.83	115.70	1689.1	4.83	6.71	5	2.84	898.6
RW-0500	-S17	127.00	118.67	1733.6	4.95	6.73	5	2.95	974.9
RW-0512	-S17	130.18	121.21	1778.0	5.08	6.96	5	3.00	945.9
RW-0525	-S17	133.35	124.28	1822.5	5.18	7.09	5	3.05	956.7
RW-0537	-S17	136.53	127.94	1866.9	4.75	6.22	6	2.79	1267.2
RW-0550	-S17	139.70	131.11	1911.4	4.75	6.38	6	2.79	1175.8
RW-0562	-S17	142.88	134.19	1955.8	4.83	6.22	6	2.84	1400.0
RW-0575	-S17	146.05	137.31	2000.3	4.83	6.38	6	2.84	1291.0
RW-0587	-S17	149.23	140.31	2044.7	5.00	6.65	6	2.95	1238.5
RW-0600	-S17	152.40	143.36	2089.2	5.08	6.81	6	3.00	1209.6

¹Reference dimension.
²Theoretical dimension, unit: N/mm

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ²
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm			mm	mm	N/MM
	Add Suffix		Add Suffix										
L018-L1	-S17	-	-S17	4.78	3.18	4.45	0.89	1.91	2.5	3	0.10	0.38	4.38
L018-M1	-S17	-	Customized	4.78	3.18	9.78	1.19	2.26	2.5	3	0.13	0.51	9.17
L018-L2	-S17	-	-S17	4.78	3.18	4.45	1.17	2.54	2.5	4	0.10	0.38	3.24
L018-M2	-S17	-	-S17	4.78	3.18	9.78	1.60	3.02	2.5	4	0.13	0.51	6.88
L018-L3	-S17	-	-S17	4.78	3.18	4.45	1.45	3.18	2.5	5	0.10	0.38	2.57
L018-M3	-S17	-	-S17	4.78	3.18	9.78	2.01	3.78	2.5	5	0.13	0.51	5.50
L018-L4	-S17	-	-S17	4.78	3.18	4.45	1.73	3.81	2.5	6	0.10	0.38	2.14
L018-M4	-S17	-	-S17	4.78	3.18	9.78	2.41	4.55	2.5	6	0.13	0.51	4.59
L018-L5	-S17	-	-S17	4.78	3.18	4.45	2.01	4.45	2.5	7	0.10	0.38	1.82
L018-M5	-S17	-	-S17	4.78	3.18	9.78	2.82	5.31	2.5	7	0.13	0.51	3.92
L018-L6	-S17	-	-S17	4.78	3.18	4.45	2.29	5.08	2.5	8	0.10	0.38	1.59
L018-M6	-S17	-	-S17	4.78	3.18	9.78	3.23	6.07	2.5	8	0.13	0.51	3.43
L018-L7	-S17	-	-S17	4.78	3.18	4.45	2.57	5.74	2.5	9	0.10	0.38	1.40
L018-M7	-S17	-	-S17	4.78	3.18	9.78	3.63	6.81	2.5	9	0.13	0.51	3.08
L018-L8	-S17	-	-S17	4.78	3.18	4.45	3.12	7.01	2.5	11	0.10	0.38	1.14
L018-M8	-S17	-	-S17	4.78	3.18	9.78	4.42	8.33	2.5	11	0.13	0.51	2.50
L018-L9	-S17	-	-S17	4.78	3.18	4.45	3.68	8.28	2.5	13	0.10	0.38	0.96
L018-M9	-S17	-	-S17	4.78	3.18	9.78	5.16	9.86	2.5	13	0.13	0.51	2.08
LM05-L1	-S17	-	-S17	5.00	3.50	5.00	1.14	1.84	2.5	3	0.13	0.46	7.14
LM05-M1	-S17	-	-S17	5.00	3.50	10.00	1.14	1.89	2.5	3	0.15	0.46	13.33
LM05-L2	-S17	-	-S17	5.00	3.50	5.00	1.52	2.45	2.5	4	0.13	0.46	5.38
LM05-M2	-S17	-	-S17	5.00	3.50	10.00	1.52	2.52	2.5	4	0.15	0.46	10.00
LM05-L3	-S17	-	-S17	5.00	3.50	5.00	1.91	3.06	2.5	5	0.13	0.46	4.35
LM05-M3	-S17	-	-S17	5.00	3.50	10.00	1.91	3.15	2.5	5	0.15	0.46	8.06
LM05-L4	-S17	-	-S17	5.00	3.50	5.00	2.26	3.68	2.5	6	0.13	0.46	3.52
LM05-M4	-S17	-	-S17	5.00	3.50	10.00	2.26	3.78	2.5	6	0.15	0.46	6.58
LM05-L5	-S17	-	-S17	5.00	3.50	5.00	2.67	4.29	2.5	7	0.13	0.46	3.09
LM05-M5	-S17	-	-S17	5.00	3.50	10.00	2.67	4.41	2.5	7	0.15	0.46	5.75
LM05-L6	-S17	-	-S17	5.00	3.50	5.00	3.02	4.90	2.5	8	0.13	0.46	2.66
LM05-M6	-S17	-	-S17	5.00	3.50	10.00	3.02	5.04	2.5	8	0.15	0.46	4.95
LM05-L7	-S17	-	-S17	5.00	3.50	5.00	3.43	5.52	2.5	9	0.13	0.46	2.39
LM05-M7	-S17	-	-S17	5.00	3.50	10.00	3.43	5.67	2.5	9	0.15	0.46	4.46
LM05-L8	-S17	-	-S17	5.00	3.50	5.00	4.14	6.74	2.5	11	0.13	0.46	1.92
LM05-M8	-S17	-	-S17	5.00	3.50	10.00	4.14	6.93	2.5	11	0.15	0.46	3.58
LM05-L9	-S17	-	-S17	5.00	3.50	5.00	4.90	7.97	2.5	13	0.13	0.46	1.63
LM05-M9	-S17	-	-S17	5.00	3.50	10.00	4.90	8.19	2.5	13	0.15	0.46	3.04
L021-L1	-S17	-	-S17	5.56	3.56	6.67	1.02	2.01	2.5	3	0.13	0.51	6.74
L021-M1	-S17	-	-S17	5.56	3.56	20.00	1.30	2.03	2.5	3	0.20	0.51	27.16
L021-L2	-S17	-	-S17	5.56	3.56	6.67	1.35	2.67	2.5	4	0.13	0.51	5.04
L021-M2	-S17	-	-S17	5.56	3.56	20.00	1.73	2.72	2.5	4	0.20	0.51	20.20
L021-L3	-S17	-	-S17	5.56	3.56	6.67	1.68	3.33	2.5	5	0.13	0.51	4.04
L021-M3	-S17	-	-S17	5.56	3.56	20.00	2.16	3.38	2.5	5	0.20	0.51	16.42
L021-L4	-S17	-	-S17	5.56	3.56	6.67	2.03	3.99	2.5	6	0.13	0.51	3.41
L021-M4	-S17	-	-S17	5.56	3.56	20.00	2.57	4.06	2.5	6	0.20	0.51	13.35
L021-L5	-S17	-	-S17	5.56	3.56	6.67	2.34	4.65	2.5	7	0.13	0.51	2.89
L021-M5	-S17	-	-S17	5.56	3.56	20.00	3.00	4.75	2.5	7	0.20	0.51	11.41
L021-L6	-S17	-	-S17	5.56	3.56	6.67	2.69	5.31	2.5	8	0.13	0.51	2.56
L021-M6	-S17	-	-S17	5.56	3.56	20.00	3.43	5.44	2.5	8	0.20	0.51	9.98
L021-L7	-S17	-	-S17	5.56	3.56	6.67	3.05	5.99	2.5	9	0.13	0.51	2.26
L021-M7	-S17	-	-S17	5.56	3.56	20.00	3.86	6.10	2.5	9	0.20	0.51	8.94
L021-L8	-S17	-	-S17	5.56	3.56	6.67	3.71	7.32	2.5	11	0.13	0.51	1.86
L021-M8	-S17	-	-S17	5.56	3.56	20.00	4.75	7.47	2.5	11	0.20	0.51	7.37
L021-L9	-S17	-	-S17	5.56	3.56	6.67	4.34	8.64	2.5	13	0.13	0.51	1.56
L021-M9	-S17	-	-S17	5.56	3.56	20.00	5.51	8.81	2.5	13	0.20	0.51	6.06

¹Reference dimension.

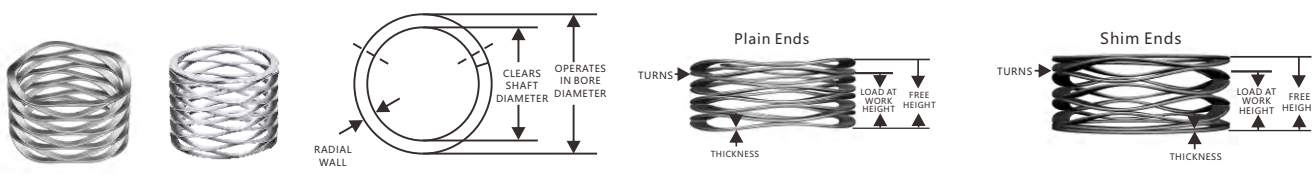
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

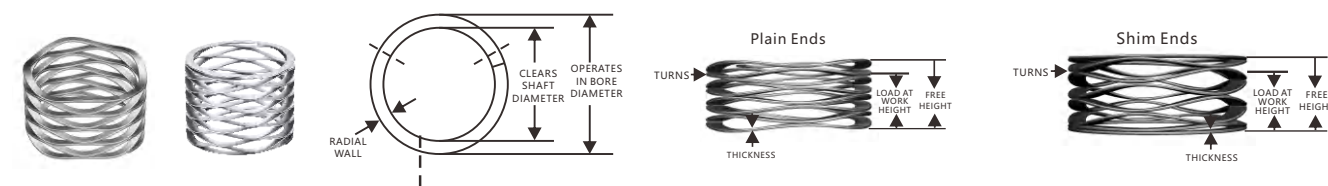
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix		Add Suffix										
LM06-L1*	-S17	-	Customized	6.00	4.00	6.00	0.61	1.52	2.5	3	0.13	0.51	6.59
LM06-M1*	-S17	-	-S17	6.00	4.00	12.00	0.74	1.52	2.5	3	0.15	0.61	15.38
LM06-L2*	-S17	-	Customized	6.00	4.00	6.00	0.81	2.03	2.5	4	0.13	0.51	4.92
LM06-M2*	-S17	-	-S17	6.00	4.00	12.00	0.97	2.03	2.5	4	0.15	0.61	11.32
LM06-L3*	-S17	-	-S17	6.00	4.00	6.00	1.02	2.54	2.5	5	0.13	0.51	3.95
LM06-M3*	-S17	-	-S17	6.00	4.00	12.00	1.22	2.54	2.5	5	0.15	0.61	9.09
LM06-L4*	-S17	-	-S17	6.00	4.00	6.00	1.22	3.05	2.5	6	0.13	0.51	3.28
LM06-M4*	-S17	-	-S17	6.00	4.00	12.00	1.47	3.05	2.5	6	0.15	0.61	7.59
LM06-L5*	-S17	-	-S17	6.00	4.00	6.00	1.42	3.56	2.5	7	0.13	0.51	2.80
LM06-M5*	-S17	-	-S17	6.00	4.00	12.00	1.70	3.56	2.5	7	0.15	0.61	6.45
LM06-L6*	-S17	-	-S17	6.00	4.00	6.00	1.63	4.06	2.5	8	0.13	0.51	2.47
LM06-M6*	-S17	-	-S17	6.00	4.00	12.00	1.96	4.06	2.5	8	0.15	0.61	5.71
LM06-L7*	-S17	-	-S17	6.00	4.00	6.00	1.83	4.57	2.5	9	0.13	0.51	2.19
LM06-M7*	-S17	-	-S17	6.00	4.00	12.00	2.18	4.57	2.5	9	0.15	0.61	5.02
LM06-L8*	-S17	-	-S17	6.00	4.00	6.00	2.24	5.59	2.5	11	0.13	0.51	1.79
LM06-M8*	-S17	-	-S17	6.00	4.00	12.00	2.69	5.59	2.5	11	0.15	0.61	4.14
LM06-L9*	-S17	-	-S17	6.00	4.00	6.00	2.64	6.60	2.5	13	0.13	0.51	1.52
LM06-M9*	-S17	-	-S17	6.00	4.00	12.00	3.18	6.60	2.5	13	0.15	0.61	3.51
L025-L1*	-S17	-	Customized	6.35	3.81	8.89	0.84	1.91	2.5	3	0.15	0.61	8.40
L025-M1*	-S17	-	Customized	6.35	3.81	22.23	0.94	1.91	2.5	3	0.20	0.61	23.10
L025-L2*	-S17	-	-S17	6.35	3.81	8.89	1.27	2.54	2.5	4	0.15	0.61	7.00
L025-M2*	-S17	-	Customized	6.35	3.81	22.23	1.22	2.54	2.5	4	0.20	0.61	16.80
L025-L3*	-S17	-	-S17	6.35	3.81	8.89	1.52	3.18	2.5	5	0.15	0.61	5.43
L025-M3*	-S17	-	-S17	6.35	3.81	22.23	1.65	3.18	2.5	5	0.20	0.61	14.53
L025-L4*	-S17	-	-S17	6.35	3.81	8.89	1.91	3.81	2.5	6	0.15	0.61	4.73
L025-M4*	-S17	-	-S17	6.35	3.81	22.23	1.91	3.81	2.5	6	0.20	0.61	11.73
L025-L5*	-S17	-	-S17	6.35	3.81	8.89	2.16	4.45	2.5	7	0.15	0.61	3.85
L025-M5*	-S17	-	-S17	6.35	3.81	22.23	2.29	4.45	2.5	7	0.20	0.61	10.33
L025-L6*	-S17	-	-S17	6.35	3.81	8.89	2.41	5.08	2.5	8	0.15	0.61	3.33
L025-M6*	-S17	-	-S17	6.35	3.81	22.23	2.54	5.08	2.5	8	0.20	0.61	8.75
L025-L7*	-S17	-	-S17	6.35	3.81	8.89	3.05	5.72	2.5	9	0.15	0.61	3.33
L025-M7*	-S17	-	-S17	6.35	3.81	22.23	3.05	5.72	2.5	9	0.20	0.61	8.40
L025-L8*	-S17	-	-S17	6.35	3.81	8.89	3.56	6.99	2.5	11	0.15	0.61	2.63
L025-M8*	-S17	-	-S17	6.35	3.81	22.23	3.76	6.99	2.5	11	0.20	0.61	6.83
L025-L9*	-S17	-	-S17	6.35	3.81	8.89	4.32	8.26	2.5	13	0.15	0.61	2.28
L025-M9*	-S17	-	-S17	6.35	3.81	22.23	4.45	8.26	2.5	13	0.20	0.61	5.78
L031-L1	-S17	LS031-L1	-S17	7.92	5.08	13.34	1.78	2.90	2.5	3	0.20	0.81	11.90
L031-M1	-S17	LS031-M1	-S17	7.92	5.08	26.67	1.83	2.90	2.5	3	0.25	0.81	25.03
L031-L2	-S17	LS031-L2	-S17	7.92	5.08	13.34	2.44	3.86	2.5	4	0.20	0.81	9.45
L031-M2	-S17	LS031-M2	-S17	7.92	5.08	26.67	2.44	3.86	2.5	4	0.25	0.81	18.73
L031-L3	-S17	LS031-L3	-S17	7.92	5.08	13.34	3.00	4.83	2.5	5	0.20	0.81	7.35
L031-M3	-S17	LS031-M3	-S17	7.92	5.08	26.67	3.12	4.83	2.5	5	0.25	0.81	15.75
L031-L4	-S17	LS031-L4	-S17	7.92	5.08	13.34	3.68	5.79	2.5	6	0.20	0.81	6.30
L031-M4	-S17	LS031-M4	-S17	7.92	5.08	26.67	3.66	5.79	2.5	6	0.25	0.81	12.43
L031-L5	-S17	LS031-L5	-S17	7.92	5.08	13.34	4.19	6.76	2.5	7	0.20	0.81	5.25
L031-M5	-S17	LS031-M5	-S17	7.92	5.08	26.67	4.47	6.76	2.5	7	0.25	0.81	11.73
L031-L6	-S17	LS031-L6	-S17	7.92	5.08	13.34	4.95	7.72	2.5	8	0.20	0.81	4.90
L031-M6	-S17	LS031-M6	-S17	7.92	5.08	26.67	5.00	7.72	2.5	8	0.25	0.81	9.80
L031-L7	-S17	LS031-L7	-S17	7.92	5.08	13.34	5.46	8.69	2.5	9	0.20	0.81	4.20
L031-M7	-S17	LS031-M7	-S17	7.92	5.08	26.67	5.77	8.69	2.5	9	0.25	0.81	9.10
L031-L8	-S17	LS031-L8	-S17	7.92	5.08	13.34	6.65	10.62	2.5	11	0.20	0.81	3.33
L031-M8	-S17	LS031-M8	-S17	7.92	5.08	26.67	7.06	10.62	2.5	11	0.25	0.81	7.53
L031-L9	-S17	LS031-L9	-S17	7.92	5.08	13.34	7.85	12.55	2.5	13	0.20	0.81	2.80
L031-M9	-S17	LS031-M9	-S17	7.92	5.08	26.67	8.53	12.55	2.5	13	0.25	0.81	6.65

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ³
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm			mm	mm	N/MM
	Add Suffix		Add Suffix										
LM08-L1	-S17	LMS08-L1	-S17	8.00	5.00	15.00	1.70	2.82	2.5	3	0.20	0.81	13.39
LM08-M1	-S17	LMS08-M1	-S17	8.00	5.00	30.00	1.78	2.82	2.5	3	0.25	0.81	28.85
LM08-L2	-S17	LMS08-L2	-S17	8.00	5.00	15.00	2.39	3.76	2.5	4	0.20	0.81	10.95
LM08-M2	-S17	LMS08-M2	-S17	8.00	5.00	30.00	2.54	3.76	2.5	4	0.25	0.81	24.59
LM08-L3	-S17	LMS08-L3	-S17	8.00	5.00	15.00	2.74	4.70	2.5	5	0.20	0.81	7.65
LM08-M3	-S17	LMS08-M3	-S17	8.00	5.00	30.00	3.05	4.70	2.5	5	0.25	0.81	18.18
LM08-L4	-S17	LMS08-L4	-S17	8.00	5.00	15.00	3.56	5.64	2.5	6	0.20	0.81	7.21
LM08-M4	-S17	LMS08-M4	-S17	8.00	5.00	30.00	3.81	5.64	2.5	6	0.25	0.81	16.39
LM08-L5	-S17	LMS08-L5	-S17	8.00	5.00	15.00	4.01	6.58	2.5	7	0.20	0.81	5.84
LM08-M5	-S17	LMS08-M5	-S17	8.00	5.00	30.00	4.32	6.58	2.5	7	0.25	0.81	13.27
LM08-L6	-S17	LMS08-L6	-S17	8.00	5.00	15.00	4.57	7.52	2.5	8	0.20	0.81	5.08
LM08-M6	-S17	LMS08-M6	-S17	8.00	5.00	30.00	4.95	7.52	2.5	8	0.25	0.81	11.67
LM08-L7	-S17	LMS08-L7	-S17	8.00	5.00	15.00	5.26	8.46	2.5	9	0.20	0.81	4.69
LM08-M7	-S17	LMS08-M7	-S17	8.00	5.00	30.00	5.59	8.46	2.5	9	0.25	0.81	10.45
LM08-L8	-S17	LMS08-L8	-S17	8.00	5.00	15.00	6.35	10.34	2.5	11	0.20	0.81	3.76
LM08-M8	-S17	LMS08-M8	-S17	8.00	5.00	30.00	6.86	10.34	2.5	11	0.25	0.81	8.62
LM08-L9	-S17	LMS08-L9	-S17	8.00	5.00	15.00	7.37	12.22	2.5	13	0.20	0.81	3.09
LM08-M9	-S17	LMS08-M9	-S17	8.00	5.00	30.00	7.87	12.22	2.5	13	0.25	0.81	6.90
L037-L1	-S17	LS037-L1	-S17	9.53	6.35	17.78	1.57	3.81	2.5	3	0.20	0.81	7.88
L037-M1	-S17	LS037-M1	-S17	9.53	6.35	31.12	2.06	3.81	2.5	3	0.28	0.81	17.68
L037-L2	-S17	LS037-L2	-S17	9.53	6.35	17.78	2.49	5.08	2.5	4	0.20	0.81	6.83
L037-M2	-S17	LS037-M2	-S17	9.53	6.35	31.12	3.02	5.08	2.5	4	0.28	0.81	15.05
L037-L3	-S17	LS037-L3	-S17	9.53	6.35	17.78	2.74	6.35	2.5	5	0.20	0.81	4.90
L037-M3	-S17	LS037-M3	-S17	9.53	6.35	31.12	3.68	6.35	2.5	5	0.28	0.81	11.73
L037-L4	-S17	LS037-L4	-S17	9.53	6.35	17.78	3.43	7.62	2.5	6	0.20	0.81	4.20
L037-M4	-S17	LS037-M4	-S17	9.53	6.35	31.12	4.57	7.62	2.5	6	0.28	0.81	10.15
L037-L5	-S17	LS037-L5	-S17	9.53	6.35	17.78	3.81	8.89	2.5	7	0.20	0.81	3.50
L037-M5	-S17	LS037-M5	-S17	9.53	6.35	31.12	5.13	8.89	2.5	7	0.28	0.81	8.23
L037-L6	-S17	LS037-L6	-S17	9.53	6.35	17.78	4.67	10.16	2.5	8	0.20	0.81	3.33
L037-M6	-S17	LS037-M6	-S17	9.53	6.35	31.12	6.10	10.16	2.5	8	0.28	0.81	7.70
L037-L7	-S17	LS037-L7	-S17	9.53	6.35	17.78	4.95	11.43	2.5	9	0.20	0.81	2.80
L037-M7	-S17	LS037-M7	-S17	9.53	6.35	31.12	6.65	11.43	2.5	9	0.28	0.81	6.48
L037-L8	-S17	LS037-L8	-S17	9.53	6.35	17.78	5.79	12.70	2.5	10	0.20	0.81	2.63
L037-M8	-S17	LS037-M8	-S17	9.53	6.35	31.12	7.57	12.70	2.5	10	0.28	0.81	6.13
L037-L9	-S17	LS037-L9	-S17	9.53	6.35	17.78	6.10	13.97	2.5	11	0.20	0.81	2.28
L037-M9	-S17	LS037-M9	-S17	9.53	6.35	31.12	8.31	13.97	2.5	11	0.28	0.81	5.43
LM10-L1	-S17	LMS10-L1	-S17	10.00	7.00	18.00	1.91	3.96	2.5	3	0.20	0.81	8.78
LM10-M1	-S17	LMS10-M1	-S17	10.00	7.00	35.00	2.03	3.96	2.5	3	0.28	0.81	18.13
LM10-L2	-S17	LMS10-L2	-S17	10.00	7.00	18.00	2.54	5.28	2.5	4	0.20	0.81	6.57
LM10-M2	-S17	LMS10-M2	-S17	10.00	7.00	35.00	2.79	5.28	2.5	4	0.28	0.81	14.06
LM10-L3	-S17	LMS10-L3	-S17	10.00	7.00	18.00	3.15	6.60	2.5	5	0.20	0.81	5.22
LM10-M3	-S17	LMS10-M3	-S17	10.00	7.00	35.00	3.56	6.60	2.5	5	0.28	0.81	11.51
LM10-L4	-S17	LMS10-L4	-S17	10.00	7.00	18.00	3.78	7.92	2.5	6	0.20	0.81	4.35
LM10-M4	-S17	LMS10-M4	-S17	10.00	7.00	35.00	4.32	7.92	2.5	6	0.28	0.81	9.72
LM10-L5	-S17	LMS10-L5	-S17	10.00	7.00	18.00	4.42	9.25	2.5	7	0.20	0.81	3.73
LM10-M5	-S17	LMS10-M5	-S17	10.00	7.00	35.00	5.08	9.25	2.5	7	0.28	0.81	8.39
LM10-L6	-S17	LMS10-L6	-S17	10.00	7.00	18.00	5.05	10.57	2.5	8	0.20	0.81	3.26
LM10-M6	-S17	LMS10-M6	-S17	10.00	7.00	35.00	5.84	10.57	2.5	8	0.28	0.81	7.40
LM10-L7	-S17	LMS10-L7	-S17	10.00	7.00	18.00	5.69	11.89	2.5	9	0.20	0.81	2.90
LM10-M7	-S17	LMS10-M7	-S17	10.00	7.00	35.00	6.60	11.89	2.5	9	0.28	0.81	6.62
LM10-L8	-S17	LMS10-L8	-S17	10.00	7.00	18.00	6.32	13.21	2.5	10	0.20	0.81	2.61
LM10-M8	-S17	LMS10-M8	-S17	10.00	7.00	35.00	7.37	13.21	2.5	10	0.28	0.81	5.99
LM10-L9	-S17	LMS10-L9	-S17	10.00	7.00	18.00	6.96	14.53	2.5	11	0.20	0.81	2.38
LM10-M9	-S17	LMS10-M9	-S17	10.00	7.00	35.00	8.13	14.53	2.5	11	0.28	0.81	5.47

¹Reference dimension.

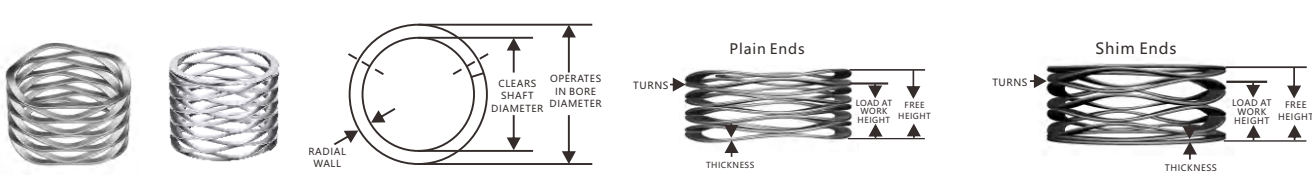
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

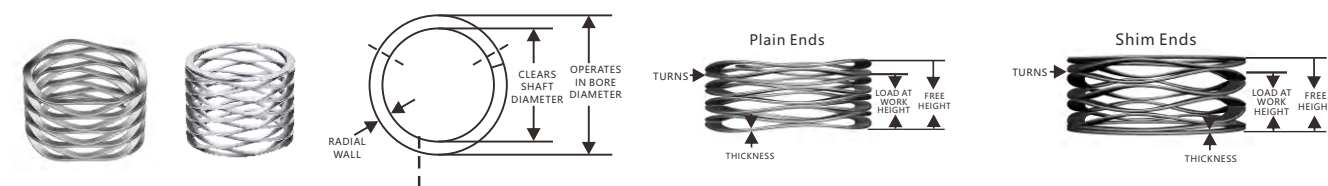
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ² (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix		Add Suffix										
L043-L1	-S17	LS043-L1	-S17	11.10	7.14	17.78	1.60	4.19	2.5	3	0.20	1.02	6.83
L043-M1	-S17	LS043-M1	-S17	11.10	7.14	35.56	2.08	4.19	2.5	3	0.28	1.17	16.80
L043-L2	-S17	LS043-L2	-S17	11.10	7.14	17.78	2.36	5.59	2.5	4	0.20	1.02	5.43
L043-M2	-S17	LS043-M2	-S17	11.10	7.14	35.56	2.92	5.59	2.5	4	0.28	1.17	13.30
L043-L3	-S17	LS043-L3	-S17	11.10	7.14	17.78	2.77	6.99	2.5	5	0.20	1.02	4.20
L043-M3	-S17	LS043-M3	-S17	11.10	7.14	35.56	3.61	6.99	2.5	5	0.28	1.17	10.50
L043-L4	-S17	LS043-L4	-S17	11.10	7.14	17.78	3.63	8.38	2.5	6	0.20	1.02	3.68
L043-M4	-S17	LS043-M4	-S17	11.10	7.14	35.56	4.55	8.38	2.5	6	0.28	1.17	9.28
L043-L5	-S17	LS043-L5	-S17	11.10	7.14	17.78	4.06	9.78	2.5	7	0.20	1.02	3.15
L043-M5	-S17	LS043-M5	-S17	11.10	7.14	35.56	5.03	9.78	2.5	7	0.28	1.17	7.53
L043-L6	-S17	LS043-L6	-S17	11.10	7.14	17.78	4.95	11.18	2.5	8	0.20	1.02	2.80
L043-M6	-S17	LS043-M6	-S17	11.10	7.14	35.56	5.87	11.18	2.5	8	0.28	1.17	6.65
L043-L7	-S17	LS043-L7	-S17	11.10	7.14	17.78	5.33	12.57	2.5	9	0.20	1.02	2.45
L043-M7	-S17	LS043-M7	-S17	11.10	7.14	35.56	6.48	12.57	2.5	9	0.28	1.17	5.78
L043-L8	-S17	LS043-L8	-S17	11.10	7.14	17.78	6.10	13.97	2.5	10	0.20	1.02	2.28
L043-M8	-S17	LS043-M8	-S17	11.10	7.14	35.56	7.37	13.97	2.5	10	0.28	1.17	5.43
L043-L9	-S17	LS043-L9	-S17	11.10	7.14	17.78	6.60	15.37	2.5	11	0.20	1.02	2.10
L043-M9	-S17	LS043-M9	-S17	11.10	7.14	35.56	8.10	15.37	2.5	11	0.28	1.17	4.90
LM12-L1	-S17	LMS12-L1	-S17	12.00	9.00	20.00	1.47	4.34	2.5	3	0.20	1.02	6.97
LM12-M1	-S17	LMS12-M1	-S17	12.00	8.50	40.00	2.36	4.34	2.5	3	0.28	1.17	20.20
LM12-H1	-S17	LMS12-H1	-S17	12.00	8.50	60.00	1.98	4.34	2.5	3	0.30	1.14	25.42
LM12-L2	-S17	LMS12-L2	-S17	12.00	9.00	20.00	1.98	5.79	2.5	4	0.20	1.02	5.25
LM12-M2	-S17	LMS12-M2	-S17	12.00	8.50	40.00	3.18	5.79	2.5	4	0.28	1.17	15.33
LM12-H2	-S17	LMS12-H2	-S17	12.00	8.50	60.00	2.64	5.79	2.5	4	0.30	1.14	19.05
LM12-L3	-S17	LMS12-L3	-S17	12.00	9.00	20.00	2.46	7.24	2.5	5	0.20	1.02	4.18
LM12-M3	-S17	LMS12-M3	-S17	12.00	8.50	40.00	3.96	7.24	2.5	5	0.28	1.17	12.20
LM12-H3	-S17	LMS12-H3	-S17	12.00	8.50	60.00	3.30	7.24	2.5	5	0.30	1.14	15.23
LM12-L4	-S17	LMS12-L4	-S17	12.00	9.00	20.00	2.95	8.69	2.5	6	0.20	1.02	3.48
LM12-M4	-S17	LMS12-M4	-S17	12.00	8.50	40.00	4.75	8.69	2.5	6	0.28	1.17	10.15
LM12-H4	-S17	LMS12-H4	-S17	12.00	8.50	60.00	3.99	8.69	2.5	6	0.30	1.14	12.77
LM12-L5	-S17	LMS12-L5	-S17	12.00	9.00	20.00	3.45	10.13	2.5	7	0.20	1.02	2.99
LM12-M5	-S17	LMS12-M5	-S17	12.00	8.50	40.00	5.54	10.13	2.5	7	0.28	1.17	8.71
LM12-H5	-S17	LMS12-H5	-S17	12.00	8.50	60.00	4.65	10.13	2.5	7	0.30	1.14	10.95
LM12-L6	-S17	LMS12-L6	-S17	12.00	9.00	20.00	3.94	11.58	2.5	8	0.20	1.02	2.62
LM12-M6	-S17	LMS12-M6	-S17	12.00	8.50	40.00	6.32	11.58	2.5	8	0.28	1.17	7.60
LM12-H6	-S17	LMS12-H6	-S17	12.00	8.50	60.00	5.31	11.58	2.5	8	0.30	1.14	9.57
LM12-L7	-S17	LMS12-L7	-S17	12.00	9.00	20.00	4.45	13.03	2.5	9	0.20	1.02	2.33
LM12-M7	-S17	LMS12-M7	-S17	12.00	8.50	40.00	7.11	13.03	2.5	9	0.28	1.17	6.76
LM12-H7	-S17	LMS12-H7	-S17	12.00	8.50	60.00	5.97	13.03	2.5	9	0.30	1.14	8.50
LM12-L8	-S17	LMS12-L8	-S17	12.00	9.00	20.00	4.93	14.48	2.5	10	0.20	1.02	2.09
LM12-M8	-S17	LMS12-M8	-S17	12.00	8.50	40.00	7.92	14.48	2.5	10	0.28	1.17	6.10
LM12-H8	-S17	LMS12-H8	-S17	12.00	8.50	60.00	6.63	14.48	2.5	10	0.30	1.14	7.64
LM12-L9	-S17	LMS12-L9	-S17	12.00	9.00	20.00	5.44	15.93	2.5	11	0.20	1.02	1.91
LM12-M9	-S17	LMS12-M9	-S17	12.00	8.50	40.00	8.71	15.93	2.5	11	0.28	1.17	5.54
LM12-H9	-S17	LMS12-H9	-S17	12.00	8.50	60.00	7.29	15.93	2.5	11	0.30	1.14	6.94
L050-L1	-S17	LS050-L1	-S17	12.70	7.92	22.23	1.57	4.57	2.5	3	0.20	1.42	7.35
L050-M1	-S17	LS050-M1	-S17	12.70	7.92	44.45	1.65	4.57	2.5	3	0.23	1.47	15.23
L050-H1	-S17	LS050-H1	-S17	12.70	7.92	66.68	1.91	4.57	2.5	3	0.30	1.52	25.03
L050-L2	-S17	LS050-L2	-S17	12.70	7.92	22.23	2.29	6.10	2.5	4	0.20	1.42	5.78
L050-M2	-S17	LS050-M2	-S17	12.70	7.92	44.45	2.34	6.10	2.5	4	0.23	1.47	11.90
L050-H2	-S17	LS050-H2	-S17	12.70	7.92	66.68	2.79	6.10	2.5	4	0.30	1.52	20.13
L050-L3	-S17	LS050-L3	-S17	12.70	7.92	22.23	2.72	7.62	2.5	5	0.20	1.42	4.55
L050-M3	-S17	LS050-M3	-S17	12.70	7.92	44.45	2.90	7.62	2.5	5	0.23	1.47	9.45
L050-H3	-S17	LS050-H3	-S17	12.70	7.92	66.68	3.45	7.62	2.5	5	0.30	1.52	15.93

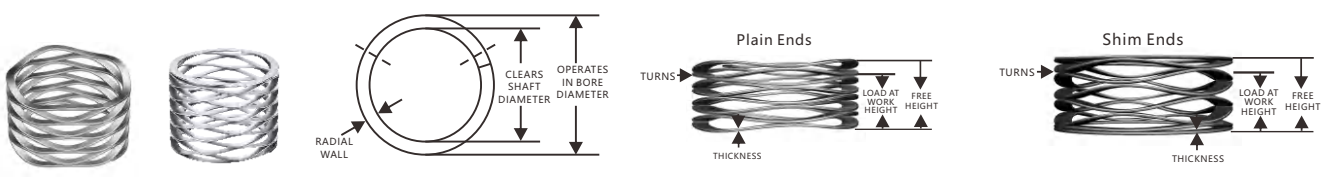
Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ¹ Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH Add Suffix	Carbon Steel ³ (Shim Ends)	17-7PH Add Suffix	mm	mm	(N)	mm	mm			mm	mm	N/MM
L050-L4	-S17	LS050-L4	-S17	12.70	7.92	22.23	3.45	9.14	2.5	6	0.20	1.42	3.85
L050-M4	-S17	LS050-M4	-S17	12.70	7.92	44.45	3.73	9.14	2.5	6	0.23	1.47	8.23
L050-H4	-S17	LS050-H4	-S17	12.70	7.92	66.68	4.24	9.14	2.5	6	0.30	1.52	13.65
L050-L5	-S17	LS050-L5	-S17	12.70	7.92	22.23	3.81	10.67	2.5	7	0.20	1.42	3.33
L050-M5	-S17	LS050-M5	-S17	12.70	7.92	44.45	4.11	10.67	2.5	7	0.23	1.47	6.83
L050-H5	-S17	LS050-H5	-S17	12.70	7.92	66.68	4.62	10.67	2.5	7	0.30	1.52	11.03
L050-L6	-S17	LS050-L6	-S17	12.70	7.92	22.23	4.57	12.19	2.5	8	0.20	1.42	2.98
L050-M6	-S17	LS050-M6	-S17	12.70	7.92	44.45	4.98	12.19	2.5	8	0.23	1.47	6.13
L050-H6	-S17	LS050-H6	-S17	12.70	7.92	66.68	5.49	12.19	2.5	8	0.30	1.52	9.98
L050-L7	-S17	LS050-L7	-S17	12.70	7.92	22.23	4.95	13.72	2.5	9	0.20	1.42	2.45
L050-M7	-S17	LS050-M7	-S17	12.70	7.92	44.45	5.26	13.72	2.5	9	0.23	1.47	5.25
L050-H7	-S17	LS050-H7	-S17	12.70	7.92	66.68	6.10	13.72	2.5	9	0.30	1.52	8.75
L050-L8	-S17	LS050-L8	-S17	12.70	7.92	22.23	5.59	15.24	2.5	10	0.20	1.42	2.28
L050-M8	-S17	LS050-M8	-S17	12.70	7.92	44.45	6.25	15.24	2.5	10	0.23	1.47	4.90
L050-H8	-S17	LS050-H8	-S17	12.70	7.92	66.68	7.11	15.24	2.5	10	0.30	1.52	8.23
L050-L9	-S17	LS050-L9	-S17	12.70	7.92	22.23	6.10	16.76	2.5	11	0.20	1.42	2.10
L050-M9	-S17	LS050-M9	-S17	12.70	7.92	44.45	6.71	16.76	2.5	11	0.23	1.47	4.38
L050-H9	-S17	LS050-H9	-S17	12.70	7.92	66.68	7.92	16.76	2.5	11	0.30	1.52	7.53
LM14-L1	-S17	LMS14-L1	-S17	14.00	10.00	22.00	2.18	4.95	2.5	3	0.23	1.47	7.94
LM14-M1	-S17	LMS14-M1	-S17	14.00	10.00	50.00	2.18	4.95	2.5	3	0.30	1.52	18.05
LM14-H1	-S17	LMS14-H1	-S17	14.00	9.00	80.00	3.15	4.95	2.5	3	0.38	1.52	44.44
LM14-L2	-S17	LMS14-L2	-S17	14.00	10.00	22.00	2.95	6.60	2.5	4	0.23	1.47	6.03
LM14-M2	-S17	LMS14-M2	-S17	14.00	10.00	50.00	2.95	6.60	2.5	4	0.30	1.52	13.70
LM14-H2	-S17	LMS14-H2	-S17	14.00	9.00	80.00	4.19	6.60	2.5	4	0.38	1.52	33.20
LM14-L3	-S17	LMS14-L3	-S17	14.00	10.00	22.00	3.71	8.26	2.5	5	0.23	1.47	4.84
LM14-M3	-S17	LMS14-M3	-S17	14.00	10.00	50.00	3.71	8.26	2.5	5	0.30	1.52	10.99
LM14-H3	-S17	LMS14-H3	-S17	14.00	9.00	80.00	5.26	8.26	2.5	5	0.38	1.52	26.67
LM14-L4	-S17	LMS14-L4	-S17	14.00	10.00	22.00	4.52	9.91	2.5	6	0.23	1.47	4.08
LM14-M4	-S17	LMS14-M4	-S17	14.00	10.00	50.00	4.52	9.91	2.5	6	0.30	1.52	9.28
LM14-H4	-S17	LMS14-H4	-S17	14.00	9.00	80.00	6.30	9.91	2.5	6	0.38	1.52	22.16
LM14-L5	-S17	LMS14-L5	-S17	14.00	10.00	22.00	5.33	11.56	2.5	7	0.23	1.47	3.53
LM14-M5	-S17	LMS14-M5	-S17	14.00	10.00	50.00	5.33	11.56	2.5	7	0.30	1.52	8.03
LM14-H5	-S17	LMS14-H5	-S17	14.00	9.00	80.00	7.34	11.56	2.5	7	0.38	1.52	18.96
LM14-L6	-S17	LMS14-L6	-S17	14.00	10.00	22.00	6.17	13.21	2.5	8	0.23	1.47	3.13
LM14-M6	-S17	LMS14-M6	-S17	14.00	10.00	50.00	6.17	13.21	2.5	8	0.30	1.52	7.10
LM14-H6	-S17	LMS14-H6	-S17	14.00	9.00	80.00	8.41	13.21	2.5	8	0.38	1.52	16.67
LM14-L7	-S17	LMS14-L7	-S17	14.00	10.00	22.00	7.01	14.86	2.5	9	0.23	1.47	2.80
LM14-M7	-S17	LMS14-M7	-S17	14.00	10.00	50.00	7.01	14.86	2.5	9	0.30	1.52	6.37
LM14-H7	-S17	LMS14-H7	-S17	14.00	9.00	80.00	9.45	14.86	2.5	9	0.38	1.52	14.79
LM14-L8	-S17	LMS14-L8	-S17	14.00	10.00	22.00	7.85	16.51	2.5	10	0.23	1.47	2.54
LM14-M8	-S17	LMS14-M8	-S17	14.00	10.00	50.00	7.85	16.51	2.5	10	0.30	1.52	5.77
LM14-H8	-S17	LMS14-H8	-S17	14.00	9.00	80.00	10.49	16.51	2.5	10	0.38	1.52	13.29
LM14-L9	-S17	LMS14-L9	-S17	14.00	10.00	22.00	8.71	18.16	2.5	11	0.23	1.47	2.33
LM14-M9	-S17	LMS14-M9	-S17	14.00	10.00	50.00	8.71	18.16	2.5	11	0.30	1.52	5.29
LM14-H9	-S17	LMS14-H9	-S17	14.00	9.00	80.00	11.56	18.16	2.5	11	0.38	1.52	12.12
L056-L1	-S17	LS056-L1	-S17	14.27	9.53	22.23	2.03	4.95	2.5	3	0.23	1.47	7.53
L056-M1	-S17	LS056-M1	-S17	14.27	9.53	48.90	2.18	4.95	2.5	3	0.30	1.52	17.68
L056-H1	-S17	LS056-H1	-S17	14.27	9.53	80.02	2.36	4.95	2.5	3	0.38	1.52	30.80
L056-L2	-S17	LS056-L2	-S17	14.27	9.53	22.23	3.18	6.60	2.5	4	0.23	1.47	6.48
L056-M2	-S17	LS056-M2	-S17	14.27	9.53	48.90	3.12	6.60	2.5	4	0.30	1.52	14.00
L056-H2	-S17	LS056-H2	-S17	14.27	9.53	80.02	3.45	6.60	2.5	4	0.38	1.52	25.38
L056-L3	-S17	LS056-L3	-S17	14.27	9.53	22.23	3.43	8.26	2.5	5	0.23	1.47	4.55
L056-M3	-S17	LS056-M3	-S17	14.27	9.53	48.90	3.68	8.26	2.5	5	0.30	1.52	10.68
L056-H3	-S17	LS056-H3	-S17	14.27	9.53	80.02	4.19	8.26	2.5	5	0.38	1.52	19.78

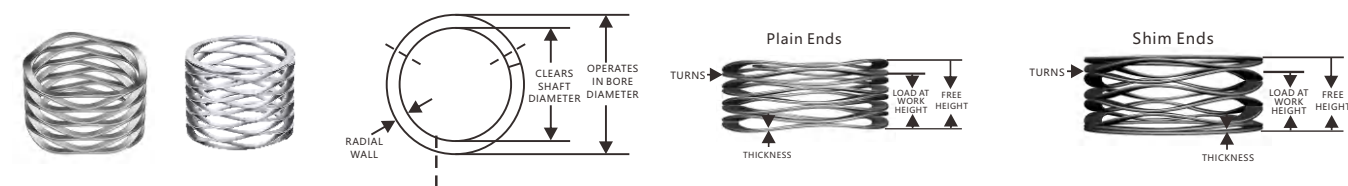
¹Reference dimension.
²Theoretical dimension, unit: N/mm
³Carbon steel products are unavailable for wire thickness ≤0.3 mm
⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ³ Bore Diameter	Clears Shaft ¹ Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire	Radial Wall	Spring Rate ²
Carbon Steel ³ (Plain Ends)	17-7PH Add Suffix	Carbon Steel ³ (Shim Ends)	17-7PH Add Suffix								mm	mm	(N)
L056-L4	-S17	LS056-L4	-S17	14.27	9.53	22.23	4.57	9.91	2.5	6	0.23	1.47	4.20
L056-M4	-S17	LS056-M4	-S17	14.27	9.53	48.90	4.75	9.91	2.5	6	0.30	1.52	9.45
L056-H4	-S17	LS056-H4	-S17	14.27	9.53	80.02	5.38	9.91	2.5	6	0.38	1.52	17.68
L056-L5	-S17	LS056-L5	-S17	14.27	9.53	22.23	4.83	11.56	2.5	7	0.23	1.47	3.33
L056-M5	-S17	LS056-M5	-S17	14.27	9.53	48.90	5.31	11.56	2.5	7	0.30	1.52	7.88
L056-H5	-S17	LS056-H5	-S17	14.27	9.53	80.02	6.22	11.56	2.5	7	0.38	1.52	15.05
L056-L6	-S17	LS056-L6	-S17	14.27	9.53	22.23	5.84	13.21	2.5	8	0.23	1.47	2.98
L056-M6	-S17	LS056-M6	-S17	14.27	9.53	48.90	6.43	13.21	2.5	8	0.30	1.52	7.18
L056-H6	-S17	LS056-H6	-S17	14.27	9.53	80.02	7.16	13.21	2.5	8	0.38	1.52	13.30
L056-L7	-S17	LS056-L7	-S17	14.27	9.53	22.23	6.60	14.86	2.5	9	0.23	1.47	2.63
L056-M7	-S17	LS056-M7	-S17	14.27	9.53	48.90	6.93	14.86	2.5	9	0.30	1.52	6.13
L056-H7	-S17	LS056-H7	-S17	14.27	9.53	80.02	8.20	14.86	2.5	9	0.38	1.52	12.08
L056-L8	-S17	LS056-L8	-S17	14.27	9.53	22.23	7.24	16.51	2.5	10	0.23	1.47	2.45
L056-M8	-S17	LS056-M8	-S17	14.27	9.53	48.90	8.08	16.51	2.5	10	0.30	1.52	5.78
L056-H8	-S17	LS056-H8	-S17	14.27	9.53	80.02	9.14	16.51	2.5	10	0.38	1.52	10.85
L056-L9	-S17	LS056-L9	-S17	14.27	9.53	22.23	8.00	18.16	2.5	11	0.23	1.47	2.28
L056-M9	-S17	LS056-M9	-S17	14.27	9.53	48.90	8.71	18.16	2.5	11	0.30	1.52	5.25
L056-H9	-S17	LS056-H9	-S17	14.27	9.53	80.02	10.36	18.16	2.5	11	0.38	1.52	10.33
LM15-L1	-S17	LMS15-L1	-S17	15.00	11.00	25.00	2.57	5.18	2.5	3	0.25	1.47	9.58
LM15-M1	-S17	LMS15-M1	-S17	15.00	10.00	50.00	3.43	5.18	3.5	3	0.23	1.47	28.57
LM15-H1	-S17	LMS15-H1	-S17	15.00	10.00	80.00	3.20	5.18	3.5	3	0.25	1.47	40.40
LM15-L2	-S17	LMS15-L2	-S17	15.00	11.00	25.00	3.43	6.91	2.5	4	0.25	1.47	7.18
LM15-M2	-S17	LMS15-M2	-S17	15.00	10.00	50.00	4.57	6.91	3.5	4	0.23	1.47	21.37
LM15-H2	-S17	LMS15-H2	-S17	15.00	10.00	80.00	4.19	6.91	3.5	4	0.25	1.47	29.41
LM15-L3	-S17	LMS15-L3	-S17	15.00	11.00	25.00	4.27	8.64	2.5	5	0.25	1.47	5.72
LM15-M3	-S17	LMS15-M3	-S17	15.00	10.00	50.00	5.72	8.64	3.5	5	0.23	1.47	17.12
LM15-H3	-S17	LMS15-H3	-S17	15.00	10.00	80.00	5.23	8.64	3.5	5	0.25	1.47	23.46
LM15-L4	-S17	LMS15-L4	-S17	15.00	11.00	25.00	5.13	10.36	2.5	6	0.25	1.47	4.78
LM15-M4	-S17	LMS15-M4	-S17	15.00	10.00	50.00	6.86	10.36	3.5	6	0.23	1.47	14.29
LM15-H4	-S17	LMS15-H4	-S17	15.00	10.00	80.00	6.27	10.36	3.5	6	0.25	1.47	19.56
LM15-L5	-S17	LMS15-L5	-S17	15.00	11.00	25.00	5.99	12.09	2.5	7	0.25	1.47	4.10
LM15-M5	-S17	LMS15-M5	-S17	15.00	10.00	50.00	8.00	12.09	3.5	7	0.23	1.47	12.22
LM15-H5	-S17	LMS15-H5	-S17	15.00	10.00	80.00	7.32	12.09	3.5	7	0.25	1.47	16.77
LM15-L6	-S17	LMS15-L6	-S17	15.00	11.00	25.00	6.83	13.82	2.5	8	0.25	1.47	3.58
LM15-M6	-S17	LMS15-M6	-S17	15.00	10.00	50.00	9.14	13.82	3.5	8	0.23	1.47	10.68
LM15-H6	-S17	LMS15-H6	-S17	15.00	10.00	80.00	8.36	13.82	3.5	8	0.25	1.47	14.65
LM15-L7	-S17	LMS15-L7	-S17	15.00	11.00	25.00	7.70	15.54	2.5	9	0.25	1.47	3.19
LM15-M7	-S17	LMS15-M7	-S17	15.00	10.00	50.00	10.29	15.54	3.5	9	0.23	1.47	9.52
LM15-H7	-S17	LMS15-H7	-S17	15.00	10.00	80.00	9.40	15.54	3.5	9	0.25	1.47	13.03
LM15-L8	-S17	LMS15-L8	-S17	15.00	11.00	25.00	8.53	17.27	2.5	10	0.25	1.47	2.86
LM15-M8	-S17	LMS15-M8	-S17	15.00	10.00	50.00	11.43	17.27	3.5	10	0.23	1.47	8.56
LM15-H8	-S17	LMS15-H8	-S17	15.00	10.00	80.00	10.46	17.27	3.5	10	0.25	1.47	11.75
LM15-L9	-S17	LMS15-L9	-S17	15.00	11.00	25.00	9.40	19.00	2.5	11	0.25	1.47	2.60
LM15-M9	-S17	LMS15-M9	-S17	15.00	10.00	50.00	12.57	19.00	3.5	11	0.23	1.47	7.78
LM15-H9	-S17	LMS15-H9	-S17	15.00	10.00	80.00	11.51	19.00	3.5	11	0.25	1.47	10.68
L062-L1	-S17	LS062-L1	-S17	15.88	11.43	26.67	1.40	4.57	2.5	3	0.25	1.47	8.40
L062-M1	-S17	LS062-M1	-S17	15.88	11.43	53.34	2.64	4.57	3.5	3	0.25	1.47	27.65
L062-H1	-S17	LS062-H1	-S17	15.88	11.43	88.91	2.59	4.57	3.5	3	0.30	1.52	44.80
L062-L2	-S17	LS062-L2	-S17	15.88	11.43	26.67	1.73	6.10	2.5	4	0.25	1.47	6.13
L062-M2	-S17	LS062-M2	-S17	15.88	11.43	53.34	3.30	6.10	3.5	4	0.25	1.47	19.08
L062-H2	-S17	LS062-H2	-S17	15.88	11.43	88.91	3.43	6.10	3.5	4	0.30	1.52	33.25
L062-L3	-S17	LS062-L3	-S17	15.88	11.43	26.67	2.16	7.62	2.5	5	0.25	1.47	4.90
L062-M3	-S17	LS062-M3	-S17	15.88	11.43	53.34	4.45	7.62	3.5	5	0.25	1.47	16.80

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height ³	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ⁴
Carbon Steel (Plain Ends)	17-7PH	Carbon Steel (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm			mm	mm	N/MM
	Add Suffix		Add Suffix										
L062-H3	-S17	LS062-H3	-S17	15.88	11.43	88.91	4.45	7.62	3.5	5	0.30	1.52	28.00
L062-L4	-S17	LS062-L4	-S17	15.88	11.43	26.67	2.69	9.14	2.5	6	0.25	1.47	4.20
L062-M4	-S17	LS062-M4	-S17	15.88	11.43	53.34	5.23	9.14	3.5	6	0.25	1.47	13.65
L062-H4	-S17	LS062-H4	-S17	15.88	11.43	88.91	5.21	9.14	3.5	6	0.30	1.52	22.58
L062-L5	-S17	LS062-L5	-S17	15.88	11.43	26.67	3.25	10.67	2.5	7	0.25	1.47	3.68
L062-M5	-S17	LS062-M5	-S17	15.88	11.43	53.34	6.25	10.67	3.5	7	0.25	1.47	12.08
L062-H5	-S17	LS062-H5	-S17	15.88	11.43	88.91	6.22	10.67	3.5	7	0.30	1.52	19.95
L062-L6	-S17	LS062-L6	-S17	15.88	11.43	26.67	4.19	13.72	2.5	9	0.25	1.47	2.80
L062-M6	-S17	LS062-M6	-S17	15.88	11.43	53.34	8.05	13.72	3.5	9	0.25	1.47	9.45
L062-H6	-S17	LS062-H6	-S17	15.88	11.43	88.91	8.00	13.72	3.5	9	0.30	1.52	15.58
L062-L7	-S17	LS062-L7	-S17	15.88	11.43	26.67	5.13	16.76	2.5	11	0.25	1.47	2.28
L062-M7	-S17	LS062-M7	-S17	15.88	11.43	53.34	9.80	16.76	3.5	11	0.25	1.47	7.70
L062-H7	-S17	LS062-H7	-S17	15.88	11.43	88.91	9.91	16.76	3.5	11	0.30	1.52	12.95
L062-L8	-S17	LS062-L8	-S17	15.88	11.43	26.67	6.05	19.81	2.5	13	0.25	1.47	1.93
L062-M8	-S17	LS062-M8	-S17	15.88	11.43	53.34	11.53	19.81	3.5	13	0.25	1.47	6.48
L062-H8	-S17	LS062-H8	-S17	15.88	11.43	88.91	11.81	19.81	3.5	13	0.30	1.52	11.03
LM16-L1	-S17	LMS16-L1	-S17	16.00	11.00	25.00	2.11	5.41	2.5	3	0.25	1.47	7.58
LM16-M1	-S17	LMS16-M1	-S17	16.00	11.00	55.00	3.63	5.41	3.5	3	0.25	1.47	30.90
LM16-H1	-S17	LMS16-H1	-S17	16.00	11.00	90.00	3.30	5.41	3.5	3	0.30	1.52	42.65
LM16-L2	-S17	LMS16-L2	-S17	16.00	11.00	25.00	2.79	7.21	2.5	4	0.25	1.47	5.66
LM16-M2	-S17	LMS16-M2	-S17	16.00	11.00	55.00	4.83	7.21	3.5	4	0.25	1.47	23.11
LM16-H2	-S17	LMS16-H2	-S17	16.00	11.00	90.00	4.57	7.21	3.5	4	0.30	1.52	34.09
LM16-L3	-S17	LMS16-L3	-S17	16.00	11.00	25.00	3.51	9.02	2.5	5	0.25	1.47	4.54
LM16-M3	-S17	LMS16-M3	-S17	16.00	11.00	55.00	6.05	9.02	3.5	5	0.25	1.47	18.52
LM16-H3	-S17	LMS16-H3	-S17	16.00	11.00	90.00	5.59	9.02	3.5	5	0.30	1.52	26.24
LM16-L4	-S17	LMS16-L4	-S17	16.00	11.00	25.00	4.19	10.82	2.5	6	0.25	1.47	3.77
LM16-M4	-S17	LMS16-M4	-S17	16.00	11.00	55.00	7.24	10.82	3.5	6	0.25	1.47	15.36
LM16-H4	-S17	LMS16-H4	-S17	16.00	11.00	90.00	6.86	10.82	3.5	6	0.30	1.52	22.73
LM16-L5	-S17	LMS16-L5	-S17	16.00	11.00	25.00	4.90	12.62	2.5	7	0.25	1.47	3.24
LM16-M5	-S17	LMS16-M5	-S17	16.00	11.00	55.00	8.46	12.62	3.5	7	0.25	1.47	13.22
LM16-H5	-S17	LMS16-H5	-S17	16.00	11.00	90.00	7.87	12.62	3.5	7	0.30	1.52	18.95
LM16-L6	-S17	LMS16-L6	-S17	16.00	11.00	25.00	6.30	16.23	2.5	9	0.25	1.47	2.52
LM16-M6	-S17	LMS16-M6	-S17	16.00	11.00	55.00	10.87	16.23	3.5	9	0.25	1.47	10.26
LM16-H6	-S17	LMS16-H6	-S17	16.00	11.00	90.00	10.16	16.23	3.5	9	0.30	1.52	14.83
LM16-L7	-S17	LMS16-L7	-S17	16.00	11.00	25.00	7.70	19.84	2.5	11	0.25	1.47	2.06
LM16-M7	-S17	LMS16-M7	-S17	16.00	11.00	55.00	13.28	19.84	3.5	11	0.25	1.47	8.38
LM16-H7	-S17	LMS16-H7	-S17	16.00	11.00	90.00	12.45	19.84	3.5	11	0.30	1.52	12.18
LM16-L8	-S17	LMS16-L8	-S17	16.00	11.00	25.00	9.09	23.44	2.5	13	0.25	1.47	1.74
LM16-M8	-S17	LMS16-M8	-S17	16.00	11.00	55.00	15.70	23.44	3.5	13	0.25	1.47	7.11
LM16-H8	-S17	LMS16-H8	-S17	16.00	11.00	90.00	14.73	23.44	3.5	13	0.30	1.52	10.33
LM18-L1	-S17	LMS18-L1	-S17	18.00	13.00	30.00	3.63	5.72	3.5	3	0.20	1.80	14.35
LM18-M1	-S17	LMS18-M1	-S17	18.00	13.00	55.00	3.68	5.72	3.5	3	0.25	1.83	26.96
LM18-H1	-S17	LMS18-H1	-S17	18.00	13.00	90.00	3.84	5.72	3.5	3	0.30	1.83	47.87
LM18-L2	-S17	LMS18-L2	-S17	18.00	13.00	30.00	4.75	7.62	3.5	4	0.20	1.80	10.45
LM18-M2	-S17	LMS18-M2	-S17	18.00	13.00	55.00	4.98	7.62	3.5	4	0.25	1.83	20.83
LM18-H2	-S17	LMS18-H2	-S17	18.00	13.00	90.00	5.13	7.62	3.5	4	0.30	1.83	36.14
LM18-L3	-S17	LMS18-L3	-S17	18.00	13.00	30.00	5.94	9.53	3.5	5	0.20	1.80	8.36
LM18-M3	-S17	LMS18-M3	-S17	18.00	13.00	55.00	6.22	9.53	3.5	5	0.25	1.83	16.62
LM18-H3	-S17	LMS18-H3	-S17	18.00	13.00	90.00	6.40	9.53	3.5	5	0.30	1.83	28.75
LM18-L4	-S17	LMS18-L4	-S17	18.00	13.00	30.00	7.14	11.43	3.5	6	0.20	1.80	6.99
LM18-M4	-S17	LMS18-M4	-S17	18.00	13.00	55.00	7.47	11.43	3.5	6	0.25	1.83	13.89
LM18-H4	-S17	LMS18-H4	-S17	18.00	13.00	90.00	7.70	11.43	3.5	6	0.30	1.83	24.13
LM18-L5	-S17	LMS18-L5	-S17	18.00	13.00	30.00	8.31	13.34	3.5	7	0.20	1.80	5.96

¹Reference dimension.

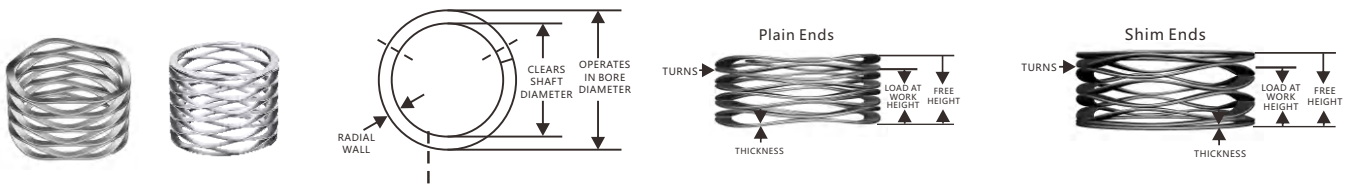
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

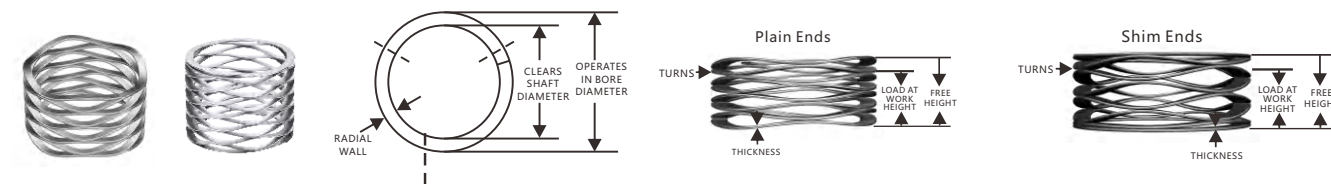
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm			mm	mm	N/MM
	Add Suffix		Add Suffix										
LM18-M5	-S17	LMS18-M5	-S17	18.00	13.00	55.00	8.74	13.34	3.5	7	0.25	1.83	11.96
LM18-H5	-S17	LMS18-H5	-S17	18.00	13.00	90.00	8.97	13.34	3.5	7	0.30	1.83	20.59
LM18-L6	-S17	LMS18-L6	-S17	18.00	13.00	30.00	10.69	17.15	3.5	9	0.20	1.80	4.64
LM18-M6	-S17	LMS18-M6	-S17	18.00	13.00	55.00	11.23	17.15	3.5	9	0.25	1.83	9.29
LM18-H6	-S17	LMS18-H6	-S17	18.00	13.00	90.00	11.53	17.15	3.5	9	0.30	1.83	16.01
LM18-L7	-S17	LMS18-L7	-S17	18.00	13.00	30.00	14.25	22.86	3.5	12	0.20	1.80	3.48
LM18-M7	-S17	LMS18-M7	-S17	18.00	13.00	55.00	14.96	22.86	3.5	12	0.25	1.83	6.96
LM18-H7	-S17	LMS18-H7	-S17	18.00	13.00	90.00	15.37	22.86	3.5	12	0.30	1.83	12.02
L075-L1	-S17	LS075-L1	-S17	19.05	13.97	31.12	3.61	6.35	3.5	3	0.20	1.80	11.38
L075-M1	-S17	LS075-M1	-S17	19.05	13.97	57.79	4.04	6.35	3.5	3	0.25	1.98	25.03
L075-H1	-S17	LS075-H1	-S17	19.05	13.97	97.80	4.29	6.35	3.5	3	0.33	2.01	47.60
L075-L2	-S17	LS075-L2	-S17	19.05	13.97	31.12	4.75	8.46	3.5	4	0.20	1.80	8.40
L075-M2	-S17	LS075-M2	-S17	19.05	13.97	57.79	5.16	8.46	3.5	4	0.25	1.98	17.50
L075-H2	-S17	LS075-H2	-S17	19.05	13.97	97.80	5.46	8.46	3.5	4	0.33	2.01	32.55
L075-L3	-S17	LS075-L3	-S17	19.05	13.97	31.12	6.25	10.59	3.5	5	0.20	1.80	7.18
L075-M3	-S17	LS075-M3	-S17	19.05	13.97	57.79	6.86	10.59	3.5	5	0.25	1.98	15.40
L075-H3	-S17	LS075-H3	-S17	19.05	13.97	97.80	7.39	10.59	3.5	5	0.33	2.01	30.63
L075-L4	-S17	LS075-L4	-S17	19.05	13.97	31.12	7.24	12.70	3.5	6	0.20	1.80	5.78
L075-M4	-S17	LS075-M4	-S17	19.05	13.97	57.79	7.98	12.70	3.5	6	0.25	1.98	12.25
L075-H4	-S17	LS075-H4	-S17	19.05	13.97	97.80	8.51	12.70	3.5	6	0.33	2.01	23.28
L075-L5	-S17	LS075-L5	-S17	19.05	13.97	31.12	8.84	14.81	3.5	7	0.20	1.80	5.25
L075-M5	-S17	LS075-M5	-S17	19.05	13.97	57.79	9.68	14.81	3.5	7	0.25	1.98	11.20
L075-H5	-S17	LS075-H5	-S17	19.05	13.97	97.80	10.29	14.81	3.5	7	0.33	2.01	21.70
L075-L6	-S17	LS075-L6	-S17	19.05	13.97	31.12	11.33	19.05	3.5	9	0.20	1.80	4.03
L075-M6	-S17	LS075-M6	-S17	19.05	13.97	57.79	12.42	19.05	3.5	9	0.25	1.98	8.75
L075-H6	-S17	LS075-H6	-S17	19.05	13.97	97.80	13.36	19.05	3.5	9	0.33	2.01	17.15
L075-L7	-S17	LS075-L7	-S17	19.05	13.97	31.12	14.73	25.40	3.5	12	0.20	1.80	2.98
L075-M7	-S17	LS075-M7	-S17	19.05	13.97	57.79	16.48	25.40	3.5	12	0.25	1.98	6.48
L075-H7	-S17	LS075-H7	-S17	19.05	13.97	97.80	17.75	25.40	3.5	12	0.33	2.01	12.78
LM20-L1	-S17	LMS20-L1	-S17	20.00	15.00	35.00	2.72	6.32	3.5	3	0.20	1.80	9.72
LM20-M1	-S17	LMS20-M1	-S17	20.00	14.00	70.00	3.05	6.32	3.5	3	0.25	1.98	21.41
LM20-H1	-S17	LMS20-H1	-S17	20.00	14.00	100.00	4.24	6.32	3.5	3	0.33	2.01	48.08
LM20-L2	-S17	LMS20-L2	-S17	20.00	15.00	35.00	3.61	8.43	3.5	4	0.20	1.80	7.26
LM20-M2	-S17	LMS20-M2	-S17	20.00	14.00	70.00	4.06	8.43	3.5	4	0.25	1.98	16.02
LM20-H2	-S17	LMS20-H2	-S17	20.00	14.00	100.00	5.66	8.43	3.5	4	0.33	2.01	36.10
LM20-L3	-S17	LMS20-L3	-S17	20.00	15.00	35.00	4.52	10.54	3.5	5	0.20	1.80	5.81
LM20-M3	-S17	LMS20-M3	-S17	20.00	14.00	70.00	5.08	10.54	3.5	5	0.25	1.98	12.82
LM20-H3	-S17	LMS20-H3	-S17	20.00	14.00	100.00	7.06	10.54	3.5	5	0.33	2.01	28.74
LM20-L4	-S17	LMS20-L4	-S17	20.00	15.00	35.00	5.41	12.65	3.5	6	0.20	1.80	4.83
LM20-M4	-S17	LMS20-M4	-S17	20.00	14.00	70.00	6.27	12.65	3.5	6	0.25	1.98	10.97
LM20-H4	-S17	LMS20-H4	-S17	20.00	14.00	100.00	8.48	12.65	3.5	6	0.33	2.01	23.98
LM20-L5	-S17	LMS20-L5	-S17	20.00	15.00	35.00	6.32	14.76	3.5	7	0.20	1.80	4.15
LM20-M5	-S17	LMS20-M5	-S17	20.00	14.00	70.00	7.32	14.76	3.5	7	0.25	1.98	9.41
LM20-H5	-S17	LMS20-H5	-S17	20.00	14.00	100.00	9.91	14.76	3.5	7	0.33	2.01	20.62
LM20-L6	-S17	LMS20-L6	-S17	20.00	15.00	35.00	8.13	18.97	3.5	9	0.20	1.80	3.23
LM20-M6	-S17	LMS20-M6	-S17	20.00	14.00	70.00	9.17	18.97	3.5	9	0.25	1.98	7.14
LM20-H6	-S17	LMS20-H6	-S17	20.00	14.00	100.00	12.73	18.97	3.5	9	0.33	2.01	16.03
LM20-L7	-S17	LMS20-L7	-S17	20.00	15.00	35.00	10.82	25.30	3.5	12	0.20	1.80	2.42
LM20-M7	-S17	LMS20-M7	-S17	20.00	14.00	70.00	12.22	25.30	3.5	12	0.25	1.98	5.35
LM20-H7	-S17	LMS20-H7	-S17	20.00	14.00	100.00	16.97	25.30	3.5	12	0.33	2.01	12.00
L087-L1	-S17	LS087-L1	-S17	22.23	15.24	53.34	2.97	6.35	3.5	3	0.25	2.18	15.75
L087-M1	-S17	LS087-M1	-S17	22.23	15.24	80.02	3.15	6.35	3.5	3	0.30	2.39	25.90
L087-H1	-S17	LS087-H1	-S17	22.23	15.24	111.13	4.22	6.35	3.5	3	0.38	2.39	52.15

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ³
Carbon Steel ³ (Plain Ends)	17-7PH Add Suffix	Carbon Steel ³ (Shim Ends)	17-7PH Add Suffix	mm	mm	(N)	mm	mm			mm	mm	N/MM
L087-L2	-S17	LS087-L2	-S17	22.23	15.24	53.34	4.01	8.46	3.5	4	0.25	2.18	12.08
L087-M2	-S17	LS087-M2	-S17	22.23	15.24	80.02	4.17	8.46	3.5	4	0.30	2.39	18.90
L087-H2	-S17	LS087-H2	-S17	22.23	15.24	111.13	5.44	8.46	3.5	4	0.38	2.39	36.75
L087-L3	-S17	LS087-L3	-S17	22.23	15.24	53.34	5.26	10.59	3.5	5	0.25	2.18	9.98
L087-M3	-S17	LS087-M3	-S17	22.23	15.24	80.02	5.44	10.59	3.5	5	0.30	2.39	15.58
L087-H3	-S17	LS087-H3	-S17	22.23	15.24	111.13	7.06	10.59	3.5	5	0.38	2.39	31.50
L087-L4	-S17	LS087-L4	-S17	22.23	15.24	53.34	6.15	12.70	3.5	6	0.25	2.18	8.23
L087-M4	-S17	LS087-M4	-S17	22.23	15.24	80.02	6.40	12.70	3.5	6	0.30	2.39	13.30
L087-H4	-S17	LS087-H4	-S17	22.23	15.24	111.13	8.31	12.70	3.5	6	0.38	2.39	25.38
L087-L5	-S17	LS087-L5	-S17	22.23	15.24	53.34	7.29	14.81	3.5	7	0.25	2.18	7.18
L087-M5	-S17	LS087-M5	-S17	22.23	15.24	80.02	7.52	14.81	3.5	7	0.30	2.39	11.55
L087-H5	-S17	LS087-H5	-S17	22.23	15.24	111.13	10.03	14.81	3.5	7	0.38	2.39	23.28
L087-L6	-S17	LS087-L6	-S17	22.23	15.24	53.34	9.60	19.05	3.5	9	0.25	2.18	5.60
L087-M6	-S17	LS087-M6	-S17	22.23	15.24	80.02	9.78	19.05	3.5	9	0.30	2.39	8.75
L087-H6	-S17	LS087-H6	-S17	22.23	15.24	111.13	12.95	19.05	3.5	9	0.38	2.39	18.20
L087-L7	-S17	LS087-L7	-S17	22.23	15.24	53.34	12.65	25.40	3.5	12	0.25	2.18	4.20
L087-M7	-S17	LS087-M7	-S17	22.23	15.24	80.02	12.93	25.40	3.5	12	0.30	2.39	6.65
L087-H7	-S17	LS087-H7	-S17	22.23	15.24	111.13	17.02	25.40	3.5	12	0.38	2.39	13.65
LM25-L1	-S17	LMS25-L1	-S17	25.00	19.00	50.00	2.06	6.63	3.5	3	0.25	2.18	10.94
LM25-M1	-S17	LMS25-M1	-S17	25.00	19.00	80.00	2.95	6.63	3.5	3	0.30	2.39	21.74
LM25-H1	-S17	LMS25-H1	-S17	25.00	19.00	110.00	4.04	6.63	3.5	3	0.38	2.39	42.47
LM25-L2	-S17	LMS25-L2	-S17	25.00	19.00	50.00	2.74	8.84	3.5	4	0.25	2.18	8.20
LM25-M2	-S17	LMS25-M2	-S17	25.00	19.00	80.00	3.94	8.84	3.5	4	0.30	2.39	16.33
LM25-H2	-S17	LMS25-H2	-S17	25.00	19.00	110.00	5.38	8.84	3.5	4	0.38	2.39	31.79
LM25-L3	-S17	LMS25-L3	-S17	25.00	19.00	50.00	3.43	11.05	3.5	5	0.25	2.18	6.56
LM25-M3	-S17	LMS25-M3	-S17	25.00	19.00	80.00	4.90	11.05	3.5	5	0.30	2.39	13.01
LM25-H3	-S17	LMS25-H3	-S17	25.00	19.00	110.00	6.73	11.05	3.5	5	0.38	2.39	25.46
LM25-L4	-S17	LMS25-L4	-S17	25.00	19.00	50.00	4.11	13.26	3.5	6	0.25	2.18	5.46
LM25-M4	-S17	LMS25-M4	-S17	25.00	19.00	80.00	5.89	13.26	3.5	6	0.30	2.39	10.85
LM25-H4	-S17	LMS25-H4	-S17	25.00	19.00	110.00	8.08	13.26	3.5	6	0.38	2.39	21.24
LM25-L5	-S17	LMS25-L5	-S17	25.00	19.00	50.00	4.80	15.47	3.5	7	0.25	2.18	4.69
LM25-M5	-S17	LMS25-M5	-S17	25.00	19.00	80.00	6.88	15.47	3.5	7	0.30	2.39	9.31
LM25-H5	-S17	LMS25-H5	-S17	25.00	19.00	110.00	9.40	15.47	3.5	7	0.38	2.39	18.12
LM25-L6	-S17	LMS25-L6	-S17	25.00	19.00	50.00	6.20	19.89	3.5	9	0.25	2.18	3.65
LM25-M6	-S17	LMS25-M6	-S17	25.00	19.00	80.00	8.84	19.89	3.5	9	0.30	2.39	7.24
LM25-H6	-S17	LMS25-H6	-S17	25.00	19.00	110.00	12.12	19.89	3.5	9	0.38	2.39	14.16
LM25-L7	-S17	LMS25-L7	-S17	25.00	19.00	50.00	8.26	26.52	3.5	12	0.25	2.18	2.74
LM25-M7	-S17	LMS25-M7	-S17	25.00	19.00	80.00	11.79	26.52	3.5	12	0.30	2.39	5.43
LM25-H7	-S17	LMS25-H7	-S17	25.00	19.00	110.00	16.15	26.52	3.5	12	0.38	2.39	10.61
L100-L1	-S17	LS100-L1	-S17	25.40	18.54	53.34	2.13	6.35	3.5	3	0.25	2.18	12.60
L100-M1	-S17	LS100-M1	-S17	25.40	18.54	80.02	2.21	6.35	3.5	3	0.30	2.39	19.25
L100-H1	-S17	LS100-H1	-S17	25.40	18.54	111.13	3.33	6.35	3.5	3	0.38	2.39	36.75
L100-L2	-S17	LS100-L2	-S17	25.40	18.54	53.34	2.74	8.46	3.5	4	0.25	2.18	9.28
L100-M2	-S17	LS100-M2	-S17	25.40	18.54	80.02	2.87	8.46	3.5	4	0.30	2.39	14.35
L100-H2	-S17	LS100-H2	-S17	25.40	18.54	111.13	4.42	8.46	3.5	4	0.38	2.39	27.48
L100-L3	-S17	LS100-L3	-S17	25.40	18.54	53.34	3.68	10.59	3.5	5	0.25	2.18	7.70
L100-M3	-S17	LS100-M3	-S17	25.40	18.54	80.02	3.76	10.59	3.5	5	0.30	2.39	11.73
L100-H3	-S17	LS100-H3	-S17	25.40	18.54	111.13	5.77	10.59	3.5	5	0.38	2.39	23.10
L100-L4	-S17	LS100-L4	-S17	25.40	18.54	53.34	4.19	12.70	3.5	6	0.25	2.18	6.30
L100-M4	-S17	LS100-M4	-S17	25.40	18.54	80.02	4.45	12.70	3.5	6	0.30	2.39	9.63
L100-H4	-S17	LS100-H4	-S17	25.40	18.54	111.13	6.76	12.70	3.5	6	0.38	2.39	18.73
L100-L5	-S17	LS100-L5	-S17	25.40	18.54	53.34	5.11	14.81	3.5	7	0.25	2.18	5.43
L100-M5	-S17	LS100-M5	-S17	25.40	18.54	80.02	5.38	14.81	3.5	7	0.30	2.39	8.58

¹Reference dimension.

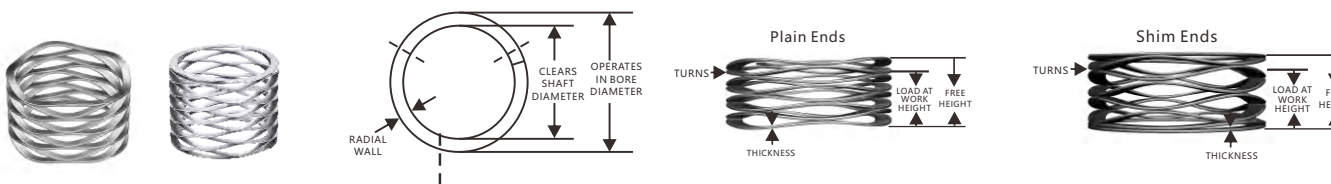
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

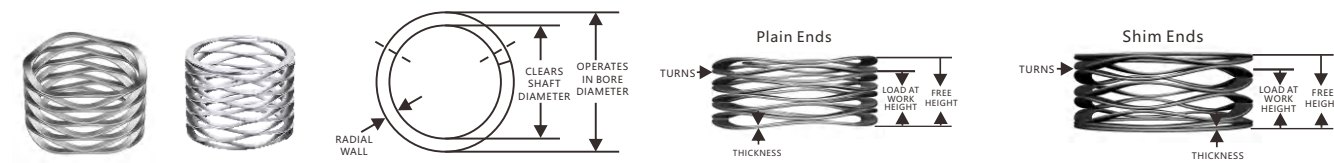
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ³ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix		Add Suffix										
L100-H5	-S17	LS100-H5	-S17	25.40	18.54	111.13	8.10	14.81	3.5	7	0.38	2.39	16.63
L100-L6	-S17	LS100-L6	-S17	25.40	18.54	53.34	6.55	19.05	3.5	9	0.25	2.18	4.20
L100-M6	-S17	LS100-M6	-S17	25.40	18.54	80.02	7.01	19.05	3.5	9	0.30	2.39	6.65
L100-H6	-S17	LS100-H6	-S17	25.40	18.54	111.13	10.31	19.05	3.5	9	0.38	2.39	12.78
L100-L7	-S17	LS100-L7	-S17	25.40	18.54	53.34	8.69	25.40	3.5	12	0.25	2.18	3.15
L100-M7	-S17	LS100-M7	-S17	25.40	18.54	80.02	9.14	25.40	3.5	12	0.30	2.39	4.90
L100-H7	-S17	LS100-H7	-S17	25.40	18.54	111.13	13.74	25.40	3.5	12	0.38	2.39	9.45
L100-L8	-S17	LS100-L8	-S17	25.40	18.54	53.34	11.30	31.75	3.5	15	0.25	2.18	2.63
L100-M8	-S17	LS100-M8	-S17	25.40	18.54	80.02	11.48	31.75	3.5	15	0.30	2.39	4.03
L100-H8	-S17	LS100-H8	-S17	25.40	18.54	111.13	17.48	31.75	3.5	15	0.38	2.39	7.88
L100-L9	-S17	LS100-L9	-S17	25.40	18.54	53.34	13.18	38.10	3.5	18	0.25	2.18	2.10
L100-M9	-S17	LS100-M9	-S17	25.40	18.54	80.02	13.94	38.10	3.5	18	0.30	2.39	3.33
L100-H9	-S17	LS100-H9	-S17	25.40	18.54	111.13	20.65	38.10	3.5	18	0.38	2.39	6.30
L100-L10	-S17	LS100-L10	-S17	25.40	18.54	53.34	16.08	44.45	3.5	21	0.25	2.18	1.93
L100-M10	-S17	LS100-M10	-S17	25.40	18.54	80.02	16.51	44.45	3.5	21	0.30	2.39	2.80
L100-H10	-S17	LS100-H10	-S17	25.40	18.54	111.13	24.31	44.45	3.5	21	0.38	2.39	5.60
L100-L11	-S17	LS100-LS11	-S17	25.40	18.54	53.34	18.03	50.80	3.5	24	0.25	2.18	1.58
L100-M11	-S17	LS100-M11	-S17	25.40	18.54	80.02	18.29	50.80	3.5	24	0.30	2.39	2.45
L100-H11	-S17	LS100-H11	-S17	25.40	18.54	111.13	27.51	50.80	3.5	24	0.38	2.39	4.73
LM28-L1	-S17	LMS28-L1	-S17	28.00	22.00	50.00	3.76	7.24	3.5	3	0.30	2.39	14.37
LM28-M1	-S17	LMS28-M1	-S17	28.00	22.00	80.00	4.39	7.24	3.5	3	0.38	2.39	28.07
LM28-H1	-S17	LMS28-H1	-S17	28.00	22.00	130.00	4.57	7.24	3.5	3	0.46	2.39	48.69
LM28-L2	-S17	LMS28-L2	-S17	28.00	22.00	50.00	5.00	9.65	3.5	4	0.30	2.39	10.75
LM28-M2	-S17	LMS28-M2	-S17	28.00	22.00	80.00	5.84	9.65	3.5	4	0.38	2.39	21.00
LM28-H2	-S17	LMS28-H2	-S17	28.00	22.00	130.00	6.07	9.65	3.5	4	0.46	2.39	36.31
LM28-L3	-S17	LMS28-L3	-S17	28.00	22.00	50.00	6.27	12.07	3.5	5	0.30	2.39	8.62
LM28-M3	-S17	LMS28-M3	-S17	28.00	22.00	80.00	7.32	12.07	3.5	5	0.38	2.39	16.84
LM28-H3	-S17	LMS28-H3	-S17	28.00	22.00	130.00	7.59	12.07	3.5	5	0.46	2.39	29.02
LM28-L4	-S17	LMS28-L4	-S17	28.00	22.00	50.00	7.52	14.48	3.5	6	0.30	2.39	7.18
LM28-M4	-S17	LMS28-M4	-S17	28.00	22.00	80.00	8.79	14.48	3.5	6	0.38	2.39	14.06
LM28-H4	-S17	LMS28-H4	-S17	28.00	22.00	130.00	9.12	14.48	3.5	6	0.46	2.39	24.25
LM28-L5	-S17	LMS28-L5	-S17	28.00	22.00	50.00	8.79	16.89	3.5	7	0.30	2.39	6.17
LM28-M5	-S17	LMS28-M5	-S17	28.00	22.00	80.00	10.24	16.89	3.5	7	0.38	2.39	12.03
LM28-H5	-S17	LMS28-H5	-S17	28.00	22.00	130.00	10.64	16.89	3.5	7	0.46	2.39	20.80
LM28-L6	-S17	LMS28-L6	-S17	28.00	22.00	50.00	10.03	19.30	3.5	8	0.30	2.39	5.39
LM28-M6	-S17	LMS28-M6	-S17	28.00	22.00	80.00	11.71	19.30	3.5	8	0.38	2.39	10.54
LM28-H6	-S17	LMS28-H6	-S17	28.00	22.00	130.00	12.17	19.30	3.5	8	0.46	2.39	18.23
LM28-L7	-S17	LMS28-L7	-S17	28.00	22.00	50.00	11.28	21.72	3.5	9	0.30	2.39	4.79
LM28-M7	-S17	LMS28-M7	-S17	28.00	22.00	80.00	13.18	21.72	3.5	9	0.38	2.39	9.37
LM28-H7	-S17	LMS28-H7	-S17	28.00	22.00	130.00	13.69	21.72	3.5	9	0.46	2.39	16.19
LM28-L8	-S17	LMS28-L8	-S17	28.00	22.00	50.00	13.79	26.54	3.5	11	0.30	2.39	3.92
LM28-M8	-S17	LMS28-M8	-S17	28.00	22.00	80.00	16.10	26.54	3.5	11	0.38	2.39	7.66
LM28-H8	-S17	LMS28-H8	-S17	28.00	22.00	130.00	16.71	26.54	3.5	11	0.46	2.39	13.22
LM28-L9	-S17	LMS28-L9	-S17	28.00	22.00	50.00	16.31	31.37	3.5	13	0.30	2.39	3.32
LM28-M9	-S17	LMS28-M9	-S17	28.00	22.00	80.00	19.02	31.37	3.5	13	0.38	2.39	6.48
LM28-H9	-S17	LMS28-H9	-S17	28.00	22.00	130.00	19.76	31.37	3.5	13	0.46	2.39	11.20
L112-L1	-S17	LS112-L1	-S17	28.58	21.59	53.34	3.71	7.62	3.5	3	0.30	2.39	13.65
L112-M1	-S17	LS112-M1	-S17	28.58	21.59	88.91	4.06	7.62	3.5	3	0.38	2.39	25.03
L112-H1	-S17	LS112-H1	-S17	28.58	21.59	133.36	4.52	7.62	3.5	3	0.46	2.39	43.05
L112-L2	-S17	LS112-L2	-S17	28.58	21.59	53.34	4.72	10.16	3.5	4	0.30	2.39	9.80
L112-M2	-S17	LS112-M2	-S17	28.58	21.59	88.91	5.13	10.16	3.5	4	0.38	2.39	17.68
L112-H2	-S17	LS112-H2	-S17	28.58	21.59	133.36	5.82	10.16	3.5	4	0.46	2.39	30.63
L112-L3	-S17	LS112-L3	-S17	28.58	21.59	53.34	6.35	12.70	3.5	5	0.30	2.39	8.40

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ³
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm			mm	mm	N/MM
	Add Suffix		Add Suffix										
L112-M3	-S17	LS112-M3	-S17	28.58	21.59	88.91	6.86	12.70	3.5	5	0.38	2.39	15.23
L112-H3	-S17	LS112-H3	-S17	28.58	21.59	133.36	7.70	12.70	3.5	5	0.46	2.39	26.60
L112-L4	-S17	LS112-L4	-S17	28.58	21.59	53.34	7.49	15.24	3.5	6	0.30	2.39	6.83
L112-M4	-S17	LS112-M4	-S17	28.58	21.59	88.91	8.08	15.24	3.5	6	0.38	2.39	12.43
L112-H4	-S17	LS112-H4	-S17	28.58	21.59	133.36	8.89	15.24	3.5	6	0.46	2.39	21.00
L112-L5	-S17	LS112-L5	-S17	28.58	21.59	53.34	8.74	17.78	3.5	7	0.30	2.39	5.95
L112-M5	-S17	LS112-M5	-S17	28.58	21.59	88.91	9.68	17.78	3.5	7	0.38	2.39	11.03
L112-H5	-S17	LS112-H5	-S17	28.58	21.59	133.36	10.69	17.78	3.5	7	0.46	2.39	18.90
L112-L6	-S17	LS112-L6	-S17	28.58	21.59	53.34	9.96	20.32	3.5	8	0.30	2.39	5.08
L112-M6	-S17	LS112-M6	-S17	28.58	21.59	88.91	10.85	20.32	3.5	8	0.38	2.39	9.45
L112-H6	-S17	LS112-H6	-S17	28.58	21.59	133.36	11.94	20.32	3.5	8	0.46	2.39	15.93
L112-L7	-S17	LS112-L7	-S17	28.58	21.59	53.34	12.40	25.40	3.5	10	0.30	2.39	4.03
L112-M7	-S17	LS112-M7	-S17	28.58	21.59	88.91	13.61	25.40	3.5	10	0.38	2.39	7.53
L112-H7	-S17	LS112-H7	-S17	28.58	21.59	133.36	15.06	25.40	3.5	10	0.46	2.39	12.95
L112-L8	-S17	LS112-L8	-S17	28.58	21.59	53.34	16.74	33.02	3.5	13	0.30	2.39	3.33
L112-M8	-S17	LS112-M8	-S17	28.58	21.59	88.91	17.98	33.02	3.5	13	0.38	2.39	5.95
L112-H8	-S17	LS112-H8	-S17	28.58	21.59	133.36	19.99	33.02	3.5	13	0.46	2.39	10.15
L112-L9	-S17	LS112-L9	-S17	28.58	21.59	53.34	20.50	40.64	3.5	16	0.30	2.39	2.63
L112-M9	-S17	LS112-M9	-S17	28.58	21.59	88.91	21.87	40.64	3.5	16	0.38	2.39	4.73
L112-H9	-S17	LS112-H9	-S17	28.58	21.59	133.36	24.28	40.64	3.5	16	0.46	2.39	8.23
L112-L10	-S17	LS112-L10	-S17	28.58	21.59	53.34	25.83	50.80	3.5	20	0.30	2.39	2.10
L112-M10	-S17	LS112-M10	-S17	28.58	21.59	88.91	27.64	50.80	3.5	20	0.38	2.39	3.85
L112-H10	-S17	LS112-H10	-S17	28.58	21.59	133.36	30.53	50.80	3.5	20	0.46	2.39	6.65
LM30-L1	-S17	LMS30-L1	-S17	30.00	24.00	50.00	3.18	7.62	3.5	3	0.30	2.39	11.26
LM30-M1	-S17	LMS30-M1	-S17	30.00	24.00	90.00	3.51	7.62	3.5	3	0.38	2.39	21.90
LM30-H1	-S17	LMS30-H1	-S17	30.00	24.00	130.00	4.19	7.62	3.5	3	0.46	2.39	37.90
LM30-L2	-S17	LMS30-L2	-S17	30.00	24.00	50.00	4.22	10.16	3.5	4	0.30	2.39	8.42
LM30-M2	-S17	LMS30-M2	-S17	30.00	24.00	90.00	4.70	10.16	3.5	4	0.38	2.39	16.48
LM30-H2	-S17	LMS30-H2	-S17	30.00	24.00	130.00	5.59	10.16	3.5	4	0.46	2.39	28.45
LM30-L3	-S17	LMS30-L3	-S17	30.00	24.00	50.00	5.28	12.70	3.5	5	0.30	2.39	6.74
LM30-M3	-S17	LMS30-M3	-S17	30.00	24.00	90.00	5.87	12.70	3.5	5	0.38	2.39	13.18
LM30-H3	-S17	LMS30-H3	-S17	30.00	24.00	130.00	6.99	12.70	3.5	5	0.46	2.39	22.77
LM30-L4	-S17	LMS30-L4	-S17	30.00	24.00	50.00	6.32	15.24	3.5	6	0.30	2.39	5.61
LM30-M4	-S17	LMS30-M4	-S17	30.00	24.00	90.00	7.04	15.24	3.5	6	0.38	2.39	10.98
LM30-H4	-S17	LMS30-H4	-S17	30.00	24.00	130.00	8.38	15.24	3.5	6	0.46	2.39	18.95
LM30-L5	-S17	LMS30-L5	-S17	30.00	24.00	50.00	7.39	17.78	3.5	7	0.30	2.39	4.81
LM30-M5	-S17	LMS30-M5	-S17	30.00	24.00	90.00	8.20	17.78	3.5	7	0.38	2.39	9.39
LM30-H5	-S17	LMS30-H5	-S17	30.00	24.00	130.00	9.78	17.78	3.5	7	0.46	2.39	16.25
LM30-L6	-S17	LMS30-L6	-S17	30.00	24.00	50.00	8.43	20.32	3.5	8	0.30	2.39	4.21
LM30-M6	-S17	LMS30-M6	-S17	30.00	24.00	90.00	9.37	20.32	3.5	8	0.38	2.39	8.22
LM30-H6	-S17	LMS30-H6	-S17	30.00	24.00	130.00	11.18	20.32	3.5	8	0.46	2.39	14.22
LM30-L7	-S17	LMS30-L7	-S17	30.00	24.00	50.00	9.50	22.86	3.5	9	0.30	2.39	3.74
LM30-M7	-S17	LMS30-M7	-S17	30.00	24.00	90.00	10.54	22.86	3.5	9	0.38	2.39	7.31
LM30-H7	-S17	LMS30-H7	-S17	30.00	24.00	130.00	12.57	22.86	3.5	9	0.46	2.39	12.63
LM30-L8	-S17	LMS30-L8	-S17	30.00	24.00	50.00	11.61	27.94	3.5	11	0.30	2.39	3.06
LM30-M8	-S17	LMS30-M8	-S17	30.00	24.00	90.00	12.90	27.94	3.5	11	0.38	2.39	5.98
LM30-H8	-S17	LMS30-H8	-S17	30.00	24.00	130.00	15.37	27.94	3.5	11	0.46	2.39	10.34
LM30-L9	-S17	LMS30-L9	-S17	30.00	24.00	50.00	13.72	33.02	3.5	13	0.30	2.39	2.59
LM30-M9	-S17	LMS30-M9	-S17	30.00	24.00	90.00	15.24	33.02	3.5	13	0.38	2.39	5.06
LM30-H9	-S17	LMS30-H9	-S17	30.00	24.00	130.00	18.16	33.02	3.5	13	0.46	2.39	8.75
L125-L1	-S17	LS125-L1	-S17	31.75	25.40	53.34	2.13	7.62	3.5	3	0.30	2.39	9.80
L125-M1	-S17	LS125-M1	-S17	31.75	25.40	88.91	3.15	7.62	3.5	3	0.38	2.39	19.95
L125-H1	-S17	LS125-H1	-S17	31.75	25.40	133.36	4.01	7.62	3.5	3	0.48	2.39	36.75

¹Reference dimension.

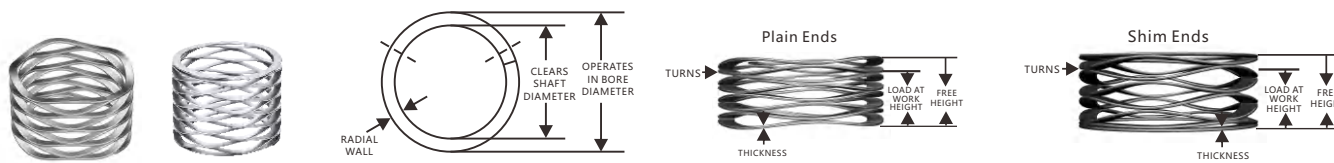
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

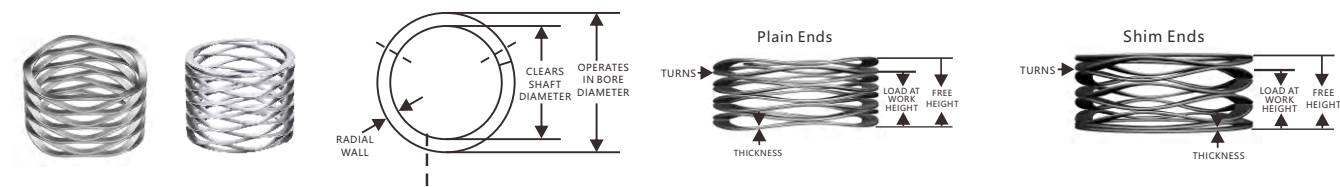
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft ² Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix		Add Suffix										
L125-L2	-S17	LS125-L2	-S17	31.75	25.40	53.34	2.87	10.16	3.5	4	0.30	2.39	7.35
L125-M2	-S17	LS125-M2	-S17	31.75	25.40	88.91	4.19	10.16	3.5	4	0.38	2.39	14.88
L125-H2	-S17	LS125-H2	-S17	31.75	25.40	133.36	5.33	10.16	3.5	4	0.48	2.39	27.65
L125-L3	-S17	LS125-L3	-S17	31.75	25.40	53.34	3.78	12.70	3.5	5	0.30	2.39	5.95
L125-M3	-S17	LS125-M3	-S17	31.75	25.40	88.91	5.46	12.70	3.5	5	0.38	2.39	12.25
L125-H3	-S17	LS125-H3	-S17	31.75	25.40	133.36	6.91	12.70	3.5	5	0.48	2.39	23.10
L125-L4	-S17	LS125-L4	-S17	31.75	25.40	53.34	4.37	15.24	3.5	6	0.30	2.39	4.90
L125-M4	-S17	LS125-M4	-S17	31.75	25.40	88.91	6.43	15.24	3.5	6	0.38	2.39	10.15
L125-H4	-S17	LS125-H4	-S17	31.75	25.40	133.36	8.13	15.24	3.5	6	0.48	2.39	18.73
L125-L5	-S17	LS125-L5	-S17	31.75	25.40	53.34	5.26	17.78	3.5	7	0.30	2.39	4.20
L125-M5	-S17	LS125-M5	-S17	31.75	25.40	88.91	7.70	17.78	3.5	7	0.38	2.39	8.75
L125-H5	-S17	LS125-H5	-S17	31.75	25.40	133.36	9.75	17.78	3.5	7	0.48	2.39	16.63
L125-L6	-S17	LS125-L6	-S17	31.75	25.40	53.34	5.77	20.32	3.5	8	0.30	2.39	3.68
L125-M6	-S17	LS125-M6	-S17	31.75	25.40	88.91	8.66	20.32	3.5	8	0.38	2.39	7.70
L125-H6	-S17	LS125-H6	-S17	31.75	25.40	133.36	11.00	20.32	3.5	8	0.48	2.39	14.35
L125-L7	-S17	LS125-L7	-S17	31.75	25.40	53.34	7.65	25.40	3.5	10	0.30	2.39	2.98
L125-M7	-S17	LS125-M7	-S17	31.75	25.40	88.91	10.85	25.40	3.5	10	0.38	2.39	6.13
L125-H7	-S17	LS125-H7	-S17	31.75	25.40	133.36	13.67	25.40	3.5	10	0.48	2.39	11.38
L125-L8	-S17	LS125-L8	-S17	31.75	25.40	53.34	10.03	33.02	3.5	13	0.30	2.39	2.28
L125-M8	-S17	LS125-M8	-S17	31.75	25.40	88.91	14.66	33.02	3.5	13	0.38	2.39	4.90
L125-H8	-S17	LS125-H8	-S17	31.75	25.40	133.36	18.21	33.02	3.5	13	0.48	2.39	8.93
L125-L9	-S17	LS125-L9	-S17	31.75	25.40	53.34	11.86	40.64	3.5	16	0.30	2.39	1.93
L125-M9	-S17	LS125-M9	-S17	31.75	25.40	88.91	17.58	40.64	3.5	16	0.38	2.39	3.85
L125-H9	-S17	LS125-H9	-S17	31.75	25.40	133.36	22.30	40.64	3.5	16	0.48	2.39	7.35
L125-L10	-S17	LS125-L10	-S17	31.75	25.40	53.34	15.01	50.80	3.5	20	0.30	2.39	1.58
L125-M10	-S17	LS125-M10	-S17	31.75	25.40	88.91	22.00	50.80	3.5	20	0.38	2.39	3.15
L125-H10	-S17	LS125-H10	-S17	31.75	25.40	133.36	28.02	50.80	3.5	20	0.48	2.39	5.78
L137-L1	-S17	LS137-L1	-S17	34.93	26.16	66.68	1.91	7.62	3.5	3	0.30	3.38	11.73
L137-M1	-S17	LS137-M1	-S17	34.93	26.16	111.13	3.61	7.62	3.5	3	0.41	3.38	27.65
L137-H1	-S17	LS137-H1	-S17	34.93	26.16	155.58	3.78	7.62	3.5	3	0.46	3.38	40.60
L137-L2	-S17	LS137-L2	-S17	34.93	26.16	66.68	2.51	10.16	3.5	4	0.30	3.38	8.75
L137-M2	-S17	LS137-M2	-S17	34.93	26.16	111.13	4.72	10.16	3.5	4	0.41	3.38	20.48
L137-H2	-S17	LS137-H2	-S17	34.93	26.16	155.58	4.80	10.16	3.5	4	0.46	3.38	29.05
L137-L3	-S17	LS137-L3	-S17	34.93	26.16	66.68	3.28	12.70	3.5	5	0.30	3.38	7.00
L137-M3	-S17	LS137-M3	-S17	34.93	26.16	111.13	6.10	12.70	3.5	5	0.41	3.38	16.80
L137-H3	-S17	LS137-H3	-S17	34.93	26.16	155.58	6.27	12.70	3.5	5	0.46	3.38	24.15
L137-L4	-S17	LS137-L4	-S17	34.93	26.16	66.68	3.94	15.24	3.5	6	0.30	3.38	5.95
L137-M4	-S17	LS137-M4	-S17	34.93	26.16	111.13	7.14	15.24	3.5	6	0.41	3.38	13.65
L137-H4	-S17	LS137-H4	-S17	34.93	26.16	155.58	7.29	15.24	3.5	6	0.46	3.38	19.60
L137-L5	-S17	LS137-L5	-S17	34.93	26.16	66.68	4.55	17.78	3.5	7	0.30	3.38	5.08
L137-M5	-S17	LS137-M5	-S17	34.93	26.16	111.13	8.64	17.78	3.5	7	0.41	3.38	12.08
L137-H5	-S17	LS137-H5	-S17	34.93	26.16	155.58	8.71	17.78	3.5	7	0.46	3.38	17.15
L137-L6	-S17	LS137-L6	-S17	34.93	26.16	66.68	5.23	20.32	3.5	8	0.30	3.38	4.38
L137-M6	-S17	LS137-M6	-S17	34.93	26.16	111.13	9.75	20.32	3.5	8	0.41	3.38	10.50
L137-H6	-S17	LS137-H6	-S17	34.93	26.16	155.58	9.91	20.32	3.5	8	0.46	3.38	14.88
L137-L7	-S17	LS137-L7	-S17	34.93	26.16	66.68	6.50	25.40	3.5	10	0.30	3.38	3.50
L137-M7	-S17	LS137-M7	-S17	34.93	26.16	111.13	12.34	25.40	3.5	10	0.41	3.38	8.58
L137-H7	-S17	LS137-H7	-S17	34.93	26.16	155.58	12.45	25.40	3.5	10	0.46	3.38	12.08
L137-L8	-S17	LS137-L8	-S17	34.93	26.16	66.68	8.66	33.02	3.5	13	0.30	3.38	2.80
L137-M8	-S17	LS137-M8	-S17	34.93	26.16	111.13	16.05	33.02	3.5	13	0.41	3.38	6.48
L137-H8	-S17	LS137-H8	-S17	34.93	26.16	155.58	16.41	33.02	3.5	13	0.46	3.38	9.45
L137-L9	-S17	LS137-L9	-S17	34.93	26.16	66.68	10.77	40.64	3.5	16	0.30	3.38	2.28
L137-M9	-S17	LS137-M9	-S17	34.93	26.16	111.13	20.02	40.64	3.5	16	0.41	3.38	5.43

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ³ (Plain Ends)	17-7PH	Carbon Steel ³ (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix		Add Suffix										
L137-H9	-S17	LS137-H9	-S17	34.93	26.16	155.58	20.14	40.64	3.5	16	0.46	3.38	7.53
L137-L10	-S17	LS137-L10	-S17	34.93	26.16	66.68	13.46	50.80	3.5	20	0.30	3.38	1.75
L137-M10	-S17	LS137-M10	-S17	34.93	26.16	111.13	24.94	50.80	3.5	20	0.41	3.38	4.38
L137-H10	-S17	LS137-H10	-S17	34.93	26.16	155.58	25.40	50.80	3.5	20	0.46	3.38	6.13
LM35-L1	-S17	LMS35-L1	-S17	35.00	27.00	70.00	3.94	8.38	3.5	3	0.36	3.18	15.77
LM35-M1	-S17	LMS35-M1	-S17	35.00	27.00	110.00	4.14	8.38	3.5	3	0.41	3.38	25.94
LM35-H1	-S17	LMS35-H1	-S17	35.00	27.00	160.00	4.04	8.38	3.5	3	0.46	3.38	36.87
LM35-L2	-S17	LMS35-L2	-S17	35.00	27.00	70.00	5.23	11.18	3.5	4	0.36	3.18	11.76
LM35-M2	-S17	LMS35-M2	-S17	35.00	27.00	110.00	5.51	11.18	3.5	4	0.41	3.38	19.40
LM35-H2	-S17	LMS35-H2	-S17	35.00	27.00	160.00	5.38	11.18	3.5	4	0.46	3.38	27.59
LM35-L3	-S17	LMS35-L3	-S17	35.00	27.00	70.00	6.55	13.97	3.5	5	0.36	3.18	9.43
LM35-M3	-S17	LMS35-M3	-S17	35.00	27.00	110.00	6.88	13.97	3.5	5	0.41	3.38	15.51
LM35-H3	-S17	LMS35-H3	-S17	35.00	27.00	160.00	6.73	13.97	3.5	5	0.46	3.38	22.10
LM35-L4	-S17	LMS35-L4	-S17	35.00	27.00	70.00	7.87	16.76	3.5	6	0.36	3.18	7.87
LM35-M4	-S17	LMS35-M4	-S17	35.00	27.00	110.00	8.26	16.76	3.5	6	0.41	3.38	12.94
LM35-H4	-S17	LMS35-H4	-S17	35.00	27.00	160.00	8.08	16.76	3.5	6	0.46	3.38	18.43
LM35-L5	-S17	LMS35-L5	-S17	35.00	27.00	70.00	9.17	19.56	3.5	7	0.36	3.18	6.74
LM35-M5	-S17	LMS35-M5	-S17	35.00	27.00	110.00	9.63	19.56	3.5	7	0.41	3.38	11.08
LM35-H5	-S17	LMS35-H5	-S17	35.00	27.00	160.00	9.42	19.56	3.5	7	0.46	3.38	15.78
LM35-L6	-S17	LMS35-L6	-S17	35.00	27.00	70.00	10.49	22.35	3.5	8	0.36	3.18	5.90
LM35-M6	-S17	LMS35-M6	-S17	35.00	27.00	110.00	11.02	22.35	3.5	8	0.41	3.38	9.71
LM35-H6	-S17	LMS35-H6	-S17	35.00	27.00	160.00	10.77	22.35	3.5	8	0.46	3.38	13.82
LM35-L7	-S17	LMS35-L7	-S17	35.00	27.00	70.00	11.81	25.15	3.5	9	0.36	3.18	5.25
LM35-M7	-S17	LMS35-M7	-S17	35.00	27.00	110.00	12.40	25.15	3.5	9	0.41	3.38	8.63
LM35-H7	-S17	LMS35-H7	-S17	35.00	27.00	160.00	12.12	25.15	3.5	9	0.46	3.38	12.28
LM35-L8	-S17	LMS35-L8	-S17	35.00	27.00	70.00	14.43	30.73	3.5	11	0.36	3.18	4.29
LM35-M8	-S17	LMS35-M8	-S17	35.00	27.00	110.00	15.14	30.73	3.5	11	0.41	3.38	7.06
LM35-H8	-S17	LMS35-H8	-S17	35.00	27.00	160.00	14.81	30.73	3.5	11	0.46	3.38	10.05
LM35-L9	-S17	LMS35-L9	-S17	35.00	27.00	70.00	17.04	36.32	3.5	13	0.36	3.18	3.63
LM35-M9	-S17	LMS35-M9	-S17	35.00	27.00	110.00	17.91	36.32	3.5	13	0.41	3.38	5.98
LM35-H9	-S17	LMS35-H9	-S17	35.00	27.00	160.00	17.50	36.32	3.5	13	0.46	3.38	8.50
L150-L1	-S17	LS150-L1	-S17	38.10	28.96	88.91	3.28	7.62	3.5	3	0.41	3.38	20.48
L150-M1	-S17	LS150-M1	-S17	38.10	28.96	155.58	3.10	7.62	3.5	3	0.46	3.38	34.48
L150-H1	-S17	LS150-H1	-S17	38.10	28.96	266.72	4.22	7.62	4.5	3	0.46	3.38	78.40
L150-L2	-S17	LS150-L2	-S17	38.10	28.96	88.91	4.17	10.16	3.5	4	0.41	3.38	14.88
L150-M2	-S17	LS150-M2	-S17	38.10	28.96	155.58	4.01	10.16	3.5	4	0.46	3.38	25.38
L150-H2	-S17	LS150-H2	-S17	38.10	28.96	266.72	5.49	10.16	4.5	4	0.46	3.38	57.05
L150-L3	-S17	LS150-L3	-S17	38.10	28.96	88.91	5.41	12.70	3.5	5	0.41	3.38	12.25
L150-M3	-S17	LS150-M3	-S17	38.10	28.96	155.58	5.23	12.70	3.5	5	0.46	3.38	20.83
L150-H3	-S17	LS150-H3	-S17	38.10	28.96	266.72	7.06	12.70	4.5	5	0.46	3.38	47.25
L150-L4	-S17	LS150-L4	-S17	38.10	28.96	88.91	6.27	15.24	3.5	6	0.41	3.38	9.98
L150-M4	-S17	LS150-M4	-S17	38.10	28.96	155.58	6.12	15.24	3.5	6	0.46	3.38	16.98
L150-H4	-S17	LS150-H4	-S17	38.10	28.96	266.72	8.36	15.24	4.5	6	0.46	3.38	38.68
L150-L5	-S17	LS150-L5	-S17	38.10	28.96	88.91	7.65	17.78	3.5	7	0.41	3.38	8.75
L150-M5	-S17	LS150-M5	-S17	38.10	28.96	155.58	7.39	17.78	3.5	7	0.46	3.38	15.05
L150-H5	-S17	LS150-H5	-S17	38.10	28.96	266.72	9.91	17.78	4.5	7	0.46	3.38	33.95
L150-L6	-S17	LS150-L6	-S17	38.10	28.96	88.91	8.56	20.32	3.5	8	0.41	3.38	7.53
L150-M6	-S17	LS150-M6	-S17	38.10	28.96	155.58	8.23	20.32	3.5	8	0.46	3.38	12.95
L150-H6	-S17	LS150-H6	-S17	38.10	28.96	266.72	11.25	20.32	4.5	8	0.46	3.38	29.40
L150-L7	-S17	LS150-L7	-S17	38.10	28.96	88.91	10.92	25.40	3.5	10	0.41	3.38	6.13
L150-M7	-S17	LS150-M7	-S17	38.10	28.96	155.58	10.39	25.40	3.5	10	0.46	3.38	10.33
L150-H7	-S17	LS150-H7	-S17	38.10	28.96	266.72	14.10	25.40	4.5	10	0.46	3.38	23.63
L150-L8	-S17	LS150-L8	-S17	38.10	28.96	88.91	14.35	33.02	3.5	13	0.41	3.38	4.73

¹Reference dimension.

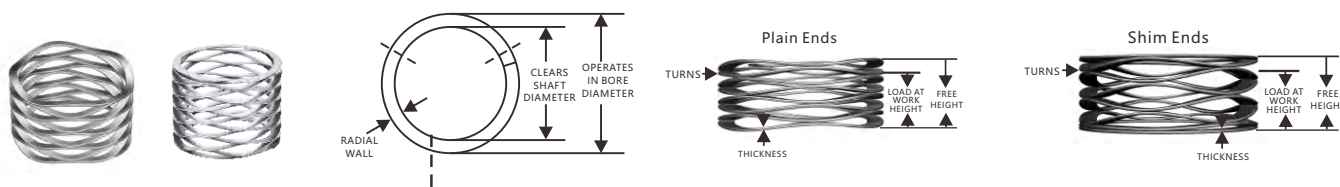
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

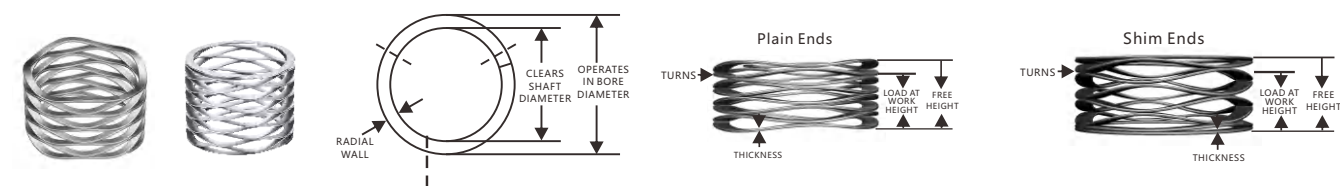
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ² (Plain Ends)	17-7PH	Carbon Steel ² (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix		Add Suffix										
L150-M8	-S17	LS150-M8	-S17	38.10	28.96	155.58	13.72	33.02	3.5	13	0.46	3.38	8.05
L150-H8	-S17	LS150-H8	-S17	38.10	28.96	266.72	18.44	33.02	4.5	13	0.46	3.38	18.38
L150-L9	-S17	LS150-L9	-S17	38.10	28.96	88.91	17.63	40.64	3.5	16	0.41	3.38	3.85
L150-M9	-S17	LS150-M9	-S17	38.10	28.96	155.58	16.69	40.64	3.5	16	0.46	3.38	6.48
L150-H9	-S17	LS150-H9	-S17	38.10	28.96	266.72	22.61	40.64	4.5	16	0.46	3.38	14.88
L150-L10	-S17	LS150-L10	-S17	38.10	28.96	88.91	22.00	50.80	3.5	20	0.41	3.38	3.15
L150-M10	-S17	LS150-M10	-S17	38.10	28.96	155.58	21.21	50.80	3.5	20	0.46	3.38	5.25
L150-H10	-S17	LS150-H10	-S17	38.10	28.96	266.72	28.42	50.80	4.5	20	0.46	3.38	11.90
LM40-L1	-S17	LMS40-L1	-S17	40.00	30.00	100.00	2.90	9.14	3.5	3	0.41	3.38	16.03
LM40-M1	-S17	LMS40-M1	-S17	40.00	30.00	150.00	5.44	9.14	3.5	3	0.53	3.63	40.54
LM40-H1	-S17	LMS40-H1	-S17	40.00	30.00	300.00	5.66	9.14	4.5	3	0.46	3.38	86.21
LM40-L2	-S17	LMS40-L2	-S17	40.00	30.00	100.00	3.86	12.19	3.5	4	0.41	3.38	12.00
LM40-M2	-S17	LMS40-M2	-S17	40.00	30.00	150.00	7.24	12.19	3.5	4	0.53	3.63	30.30
LM40-H2	-S17	LMS40-H2	-S17	40.00	30.00	300.00	7.54	12.19	4.5	4	0.46	3.38	64.52
LM40-L3	-S17	LMS40-L3	-S17	40.00	30.00	100.00	4.80	15.24	3.5	5	0.41	3.38	9.58
LM40-M3	-S17	LMS40-M3	-S17	40.00	30.00	150.00	9.04	15.24	3.5	5	0.53	3.63	24.19
LM40-H3	-S17	LMS40-H3	-S17	40.00	30.00	300.00	9.42	15.24	4.5	5	0.46	3.38	51.55
LM40-L4	-S17	LMS40-L4	-S17	40.00	30.00	100.00	5.77	18.29	3.5	6	0.41	3.38	7.99
LM40-M4	-S17	LMS40-M4	-S17	40.00	30.00	150.00	10.85	18.29	3.5	6	0.53	3.63	20.16
LM40-H4	-S17	LMS40-H4	-S17	40.00	30.00	300.00	11.33	18.29	4.5	6	0.46	3.38	43.10
LM40-L5	-S17	LMS40-L5	-S17	40.00	30.00	100.00	6.73	21.34	3.5	7	0.41	3.38	6.84
LM40-M5	-S17	LMS40-M5	-S17	40.00	30.00	150.00	12.65	21.34	3.5	7	0.53	3.63	17.26
LM40-H5	-S17	LMS40-H5	-S17	40.00	30.00	300.00	13.21	21.34	4.5	7	0.46	3.38	36.90
LM40-L6	-S17	LMS40-L6	-S17	40.00	30.00	100.00	7.70	24.38	3.5	8	0.41	3.38	6.00
LM40-M6	-S17	LMS40-M6	-S17	40.00	30.00	150.00	14.48	24.38	3.5	8	0.53	3.63	15.15
LM40-H6	-S17	LMS40-H6	-S17	40.00	30.00	300.00	15.09	24.38	4.5	8	0.46	3.38	32.29
LM40-L7	-S17	LMS40-L7	-S17	40.00	30.00	100.00	8.66	27.43	3.5	9	0.41	3.38	5.33
LM40-M7	-S17	LMS40-M7	-S17	40.00	30.00	150.00	16.28	27.43	3.5	9	0.53	3.63	13.45
LM40-H7	-S17	LMS40-H7	-S17	40.00	30.00	300.00	16.97	27.43	4.5	9	0.46	3.38	28.68
LM40-L8	-S17	LMS40-L8	-S17	40.00	30.00	100.00	10.59	33.53	3.5	11	0.41	3.38	4.36
LM40-M8	-S17	LMS40-M8	-S17	40.00	30.00	150.00	19.89	33.53	3.5	11	0.53	3.63	11.00
LM40-H8	-S17	LMS40-H8	-S17	40.00	30.00	300.00	20.75	33.53	4.5	11	0.46	3.38	23.47
LM40-L9	-S17	LMS40-L9	-S17	40.00	30.00	100.00	12.52	39.62	3.5	13	0.41	3.38	3.69
LM40-M9	-S17	LMS40-M9	-S17	40.00	30.00	150.00	23.50	39.62	3.5	13	0.53	3.63	9.31
LM40-H9	-S17	LMS40-H9	-S17	40.00	30.00	300.00	24.54	39.62	4.5	13	0.46	3.38	19.89
L175-L1	-S17	LS175-L1	-S17	44.45	34.04	111.13	3.94	9.53	3.5	3	0.46	3.63	19.95
L175-M1	-S17	LS175-M1	-S17	44.45	34.04	222.26	4.78	9.53	4.5	3	0.46	3.63	46.73
L175-H1	-S17	LS175-H1	-S17	44.45	34.04	400.08	5.89	9.53	4.5	3	0.61	3.76	110.08
L175-L2	-S17	LS175-L2	-S17	44.45	34.04	111.13	5.08	12.70	3.5	4	0.46	3.63	14.53
L175-M2	-S17	LS175-M2	-S17	44.45	34.04	222.26	6.20	12.70	4.5	4	0.46	3.63	34.13
L175-H2	-S17	LS175-H2	-S17	44.45	34.04	400.08	7.98	12.70	4.5	4	0.61	3.76	84.70
L175-L3	-S17	LS175-L3	-S17	44.45	34.04	111.13	6.73	15.88	3.5	5	0.46	3.63	12.08
L175-M3	-S17	LS175-M3	-S17	44.45	34.04	222.26	8.00	15.88	4.5	5	0.46	3.63	28.18
L175-H3	-S17	LS175-H3	-S17	44.45	34.04	400.08	10.39	15.88	4.5	5	0.61	3.76	72.98
L175-L4	-S17	LS175-L4	-S17	44.45	34.04	111.13	7.87	19.05	3.5	6	0.46	3.63	9.98
L175-M4	-S17	LS175-M4	-S17	44.45	34.04	222.26	9.50	19.05	4.5	6	0.46	3.63	23.28
L175-H4	-S17	LS175-H4	-S17	44.45	34.04	400.08	12.24	19.05	4.5	6	0.61	3.76	58.80
L175-L5	-S17	LS175-L5	-S17	44.45	34.04	111.13	9.32	22.10	3.5	7	0.46	3.63	8.75
L175-M5	-S17	LS175-M5	-S17	44.45	34.04	222.26	11.48	22.10	4.5	7	0.46	3.63	21.00
L175-H5	-S17	LS175-H5	-S17	44.45	34.04	400.08	14.66	22.10	4.5	7	0.61	3.76	53.73
L175-L6	-S17	LS175-L6	-S17	44.45	34.04	111.13	10.54	25.40	3.5	8	0.46	3.63	7.53
L175-M6	-S17	LS175-M6	-S17	44.45	34.04	222.26	12.83	25.40	4.5	8	0.46	3.63	17.68
L175-H6	-S17	LS175-H6	-S17	44.45	34.04	400.08	16.54	25.40	4.5	8	0.61	3.76	45.15

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ²
Carbon Steel ³ (Plain Ends)	17-7PH Add Suffix	Carbon Steel ³ (Shim Ends)	17-7PH Add Suffix	mm	mm	(N)	mm	mm			mm	mm	N/MM
L175-L7	-S17	LS175-L7	-S17	44.45	34.04	111.13	13.28	31.75	3.5	10	0.46	3.63	5.95
L175-M7	-S17	LS175-M7	-S17	44.45	34.04	222.26	15.98	31.75	4.5	10	0.46	3.63	14.18
L175-H7	-S17	LS175-H7	-S17	44.45	34.04	400.08	20.65	31.75	4.5	10	0.61	3.76	36.05
L175-L8	-S17	LS175-L8	-S17	44.45	34.04	111.13	16.21	38.10	3.5	12	0.46	3.63	5.08
L175-M8	-S17	LS175-M8	-S17	44.45	34.04	222.26	19.51	38.10	4.5	12	0.46	3.63	11.90
L175-H8	-S17	LS175-H8	-S17	44.45	34.04	400.08	24.89	38.10	4.5	12	0.61	3.76	30.28
L175-L9	-S17	LS175-L9	-S17	44.45	34.04	111.13	18.72	44.45	3.5	14	0.46	3.63	4.38
L175-M9	-S17	LS175-M9	-S17	44.45	34.04	222.26	22.83	44.45	4.5	14	0.46	3.63	10.33
L175-H9	-S17	LS175-H9	-S17	44.45	34.04	400.08	29.13	44.45	4.5	14	0.61	3.76	26.08
L175-L10	-S17	LS175-L10	-S17	44.45	34.04	111.13	21.44	50.80	3.5	16	0.46	3.63	3.85
L175-M10	-S17	LS175-M10	-S17	44.45	34.04	222.26	26.06	50.80	4.5	16	0.46	3.63	8.93
L175-H10	-S17	LS175-H10	-S17	44.45	34.04	400.08	33.45	50.80	4.5	16	0.61	3.76	23.10
LM45-L1	-S17	LMS45-L1	-S17	45.00	35.00	110.00	3.38	9.91	3.5	3	0.46	3.63	16.85
LM45-M1	-S17	LMS45-M1	-S17	45.00	35.00	225.00	5.33	9.91	4.5	3	0.46	3.63	49.13
LM45-H1	-S17	LMS45-H1	-S17	45.00	35.00	400.00	6.43	9.91	4.5	3	0.61	3.76	114.94
LM45-L2	-S17	LMS45-L2	-S17	45.00	35.00	110.00	4.52	13.21	3.5	4	0.46	3.63	12.66
LM45-M2	-S17	LMS45-M2	-S17	45.00	35.00	225.00	6.99	13.21	4.5	4	0.46	3.63	36.17
LM45-H2	-S17	LMS45-H2	-S17	45.00	35.00	400.00	8.38	13.21	4.5	4	0.61	3.76	82.82
LM45-L3	-S17	LMS45-L3	-S17	45.00	35.00	110.00	5.64	16.51	3.5	5	0.46	3.63	10.12
LM45-M3	-S17	LMS45-M3	-S17	45.00	35.00	225.00	9.14	16.51	4.5	5	0.46	3.63	30.53
LM45-H3	-S17	LMS45-H3	-S17	45.00	35.00	400.00	11.20	16.51	4.5	5	0.61	3.76	75.33
LM45-L4	-S17	LMS45-L4	-S17	45.00	35.00	110.00	6.76	19.81	3.5	6	0.46	3.63	8.43
LM45-M4	-S17	LMS45-M4	-S17	45.00	35.00	225.00	10.80	19.81	4.5	6	0.46	3.63	24.97
LM45-H4	-S17	LMS45-H4	-S17	45.00	35.00	400.00	12.95	19.81	4.5	6	0.61	3.76	58.31
LM45-L5	-S17	LMS45-L5	-S17	45.00	35.00	110.00	7.90	23.11	3.5	7	0.46	3.63	7.23
LM45-M5	-S17	LMS45-M5	-S17	45.00	35.00	225.00	12.70	23.11	4.5	7	0.46	3.63	21.61
LM45-H5	-S17	LMS45-H5	-S17	45.00	35.00	400.00	15.37	23.11	4.5	7	0.61	3.76	51.68
LM45-L6	-S17	LMS45-L6	-S17	45.00	35.00	110.00	9.02	26.42	3.5	8	0.46	3.63	6.32
LM45-M6	-S17	LMS45-M6	-S17	45.00	35.00	225.00	14.48	26.42	4.5	8	0.46	3.63	18.84
LM45-H6	-S17	LMS45-H6	-S17	45.00	35.00	400.00	17.27	26.42	4.5	8	0.61	3.76	43.72
LM45-L7	-S17	LMS45-L7	-S17	45.00	35.00	110.00	10.16	29.72	3.5	9	0.46	3.63	5.62
LM45-M7	-S17	LMS45-M7	-S17	45.00	35.00	225.00	16.26	29.72	4.5	9	0.46	3.63	16.72
LM45-H7	-S17	LMS45-H7	-S17	45.00	35.00	400.00	19.68	29.72	4.5	9	0.61	3.76	39.88
LM45-L8	-S17	LMS45-L8	-S17	45.00	35.00	110.00	12.40	36.32	3.5	11	0.46	3.63	4.60
LM45-M8	-S17	LMS45-M8	-S17	45.00	35.00	225.00	19.81	36.32	4.5	11	0.46	3.63	13.63
LM45-H8	-S17	LMS45-H8	-S17	45.00	35.00	400.00	24.26	36.32	4.5	11	0.61	3.76	33.17
LM45-L9	-S17	LMS45-L9	-S17	45.00	35.00	110.00	14.66	42.93	3.5	13	0.46	3.63	3.89
LM45-M9	-S17	LMS45-M9	-S17	45.00	35.00	225.00	23.37	42.93	4.5	13	0.46	3.63	11.50
LM45-H9	-S17	LMS45-H9	-S17	45.00	35.00	400.00	28.45	42.93	4.5	13	0.61	3.76	27.62
LM50-L1	-S17	LMS50-L1	-S17	50.00	40.00	110.00	4.83	10.29	3.5	3	0.53	3.63	20.15
LM50-M1	-S17	LMS50-M1	-S17	50.00	40.00	225.00	4.62	10.29	4.5	3	0.46	3.63	39.68
LM50-H1	-S17	LMS50-H1	-S17	50.00	40.00	400.00	5.92	10.29	4.5	3	0.61	3.76	91.53
LM50-L2	-S17	LMS50-L2	-S17	50.00	40.00	110.00	6.10	13.72	3.5	4	0.53	3.63	14.44
LM50-M2	-S17	LMS50-M2	-S17	50.00	40.00	225.00	6.35	13.72	4.5	4	0.46	3.63	30.53
LM50-H2	-S17	LMS50-H2	-S17	50.00	40.00	400.00	7.80	13.72	4.5	4	0.61	3.76	67.57
LM50-L3	-S17	LMS50-L3	-S17	50.00	40.00	110.00	7.87	17.15	3.5	5	0.53	3.63	11.85
LM50-M3	-S17	LMS50-M3	-S17	50.00	40.00	225.00	7.49	17.15	4.5	5	0.46	3.63	23.29
LM50-H3	-S17	LMS50-H3	-S17	50.00	40.00	400.00	10.16	17.15	4.5	5	0.61	3.76	57.22
LM50-L4	-S17	LMS50-L4	-S17	50.00	40.00	110.00	9.40	20.57	3.5	6	0.53	3.63	9.85
LM50-M4	-S17	LMS50-M4	-S17	50.00	40.00	225.00	8.89	20.57	4.5	6	0.46	3.63	19.26
LM50-H4	-S17	LMS50-H4	-S17	50.00	40.00	400.00	11.79	20.57	4.5	6	0.61	3.76	45.56
LM50-L5	-S17	LMS50-L5	-S17	50.00	40.00	110.00	11.30	24.00	3.5	7	0.53	3.63	8.66
LM50-M5	-S17	LMS50-M5	-S17	50.00	40.00	225.00	10.54	24.00	4.5	7	0.46	3.63	16.72

¹Reference dimension.

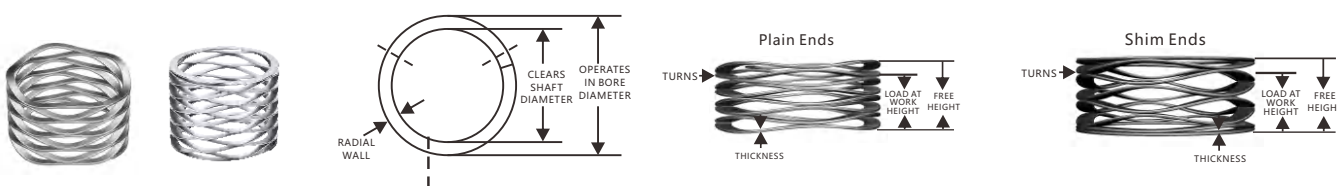
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

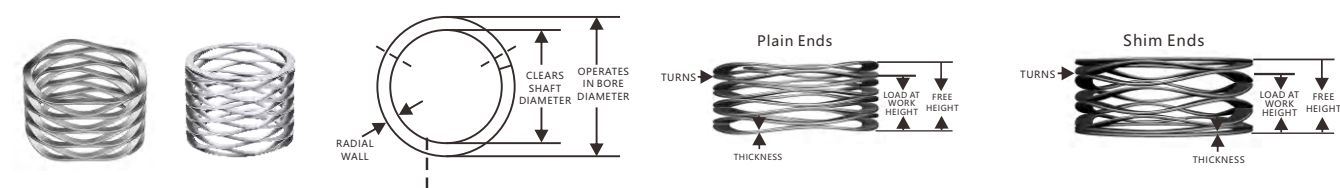
⁵The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height			Wire Thickness	Radial Wall	Spring Rate
Carbon Steel ² (Plain Ends)	17-7PH	Carbon Steel ² (Shim Ends)	17-7PH	mm	mm	(N)	mm	mm	Number of Waves	Number of Turns	mm	mm	N/MM
	Add Suffix	Add Suffix											
LM50-H5	-S17	LMS50-H5	-S17	50.00	40.00	400.00	14.15	24.00	4.5	7	0.61	3.76	40.61
LM50-L6	-S17	LMS50-L6	-S17	50.00	40.00	110.00	12.70	27.43	3.5	8	0.53	3.63	7.47
LM50-M6	-S17	LMS50-M6	-S17	50.00	40.00	225.00	11.89	27.43	4.5	8	0.46	3.63	14.48
LM50-H6	-S17	LMS50-H6	-S17	50.00	40.00	400.00	15.62	27.43	4.5	8	0.61	3.76	33.87
LM50-L7	-S17	LMS50-L7	-S17	50.00	40.00	110.00	14.99	30.86	3.5	9	0.53	3.63	6.93
LM50-M7	-S17	LMS50-M7	-S17	50.00	40.00	225.00	13.59	30.86	4.5	9	0.46	3.63	13.03
LM50-H7	-S17	LMS50-H7	-S17	50.00	40.00	400.00	17.91	30.86	4.5	9	0.61	3.76	30.89
LM50-L8	-S17	LMS50-L8	-S17	50.00	40.00	110.00	18.16	37.72	3.5	11	0.53	3.63	5.62
LM50-M8	-S17	LMS50-M8	-S17	50.00	40.00	225.00	16.71	37.72	4.5	11	0.46	3.63	10.71
LM50-H8	-S17	LMS50-H8	-S17	50.00	40.00	400.00	21.54	37.72	4.5	11	0.61	3.76	24.72
LM50-L9	-S17	LMS50-L9	-S17	50.00	40.00	110.00	21.34	44.58	3.5	13	0.53	3.63	4.73
LM50-M9	-S17	LMS50-M9	-S17	50.00	40.00	225.00	19.61	44.58	4.5	13	0.46	3.63	9.01
LM50-H9	-S17	LMS50-H9	-S17	50.00	40.00	400.00	25.65	44.58	4.5	13	0.61	3.76	21.13
LM50-L10	-S17	LMS50-L10	-S17	50.00	40.00	110.00	24.64	51.44	3.5	15	0.53	3.63	4.10
LM50-M10	-S17	LMS50-M10	-S17	50.00	40.00	225.00	22.48	51.44	4.5	15	0.46	3.63	7.77
LM50-H10	-S17	LMS50-H10	-S17	50.00	40.00	400.00	29.21	51.44	4.5	15	0.61	3.76	17.99
L200-L1	-S17	LS200-L1	-S17	50.80	40.64	111.13	2.39	9.53	3.5	3	0.46	3.63	15.58
L200-M1	-S17	LS200-M1	-S17	50.80	40.64	222.26	3.56	9.53	4.5	3	0.46	3.63	37.28
L200-H1	-S17	LS200-H1	-S17	50.80	40.64	400.08	5.00	9.53	4.5	3	0.61	3.76	88.55
L200-L2	-S17	LS200-L2	-S17	50.80	40.64	111.13	3.05	12.70	3.5	4	0.46	3.63	11.55
L200-M2	-S17	LS200-M2	-S17	50.80	40.64	222.26	4.67	12.70	4.5	4	0.46	3.63	27.65
L200-H2	-S17	LS200-H2	-S17	50.80	40.64	400.08	6.55	12.70	4.5	4	0.61	3.76	65.10
L200-L3	-S17	LS200-L3	-S17	50.80	40.64	111.13	4.01	15.88	3.5	5	0.46	3.63	9.45
L200-M3	-S17	LS200-M3	-S17	50.80	40.64	222.26	6.22	15.88	4.5	5	0.46	3.63	23.10
L200-H3	-S17	LS200-H3	-S17	50.80	40.64	400.08	8.43	15.88	4.5	5	0.61	3.76	53.73
L200-L4	-S17	LS200-L4	-S17	50.80	40.64	111.13	4.55	19.05	3.5	6	0.46	3.63	7.70
L200-M4	-S17	LS200-M4	-S17	50.80	40.64	222.26	7.06	19.05	4.5	6	0.46	3.63	18.55
L200-H4	-S17	LS200-H4	-S17	50.80	40.64	400.08	9.88	19.05	4.5	6	0.61	3.76	43.58
L200-L5	-S17	LS200-L5	-S17	50.80	40.64	111.13	5.51	22.10	3.5	7	0.46	3.63	6.65
L200-M5	-S17	LS200-M5	-S17	50.80	40.64	222.26	8.76	22.10	4.5	7	0.46	3.63	16.63
L200-H5	-S17	LS200-H5	-S17	50.80	40.64	400.08	11.81	22.10	4.5	7	0.61	3.76	38.85
L200-L6	-S17	LS200-L6	-S17	50.80	40.64	111.13	6.17	25.40	3.5	8	0.46	3.63	5.78
L200-M6	-S17	LS200-M6	-S17	50.80	40.64	222.26	10.03	25.40	4.5	8	0.46	3.63	14.53
L200-H6	-S17	LS200-H6	-S17	50.80	40.64	400.08	13.34	25.40	4.5	8	0.61	3.76	33.08
L200-L7	-S17	LS200-L7	-S17	50.80	40.64	111.13	7.77	31.75	3.5	10	0.46	3.63	4.55
L200-M7	-S17	LS200-M7	-S17	50.80	40.64	222.26	12.65	31.75	4.5	10	0.46	3.63	11.55
L200-H7	-S17	LS200-H7	-S17	50.80	40.64	400.08	16.79	31.75	4.5	10	0.61	3.76	26.78
L200-L8	-S17	LS200-L8	-S17	50.80	40.64	111.13	9.27	38.10	3.5	12	0.46	3.63	3.85
L200-M8	-S17	LS200-M8	-S17	50.80	40.64	222.26	15.06	38.10	4.5	12	0.46	3.63	9.63
L200-H8	-S17	LS200-H8	-S17	50.80	40.64	400.08	19.84	38.10	4.5	12	0.61	3.76	21.88
L200-L9	-S17	LS200-L9	-S17	50.80	40.64	111.13	11.00	44.45	3.5	14	0.46	3.63	3.33
L200-M9	-S17	LS200-M9	-S17	50.80	40.64	222.26	17.63	44.45	4.5	14	0.46	3.63	8.23
L200-H9	-S17	LS200-H9	-S17	50.80	40.64	400.08	23.90	44.45	4.5	14	0.61	3.76	19.43
L200-L10	-S17	LS200-L10	-S17	50.80	40.64	111.13	12.45	50.80	3.5	16	0.46	3.63	2.98
L200-M10	-S17	LS200-M10	-S17	50.80	40.64	222.26	20.32	50.80	4.5	16	0.46	3.63	7.35
L200-H10	-S17	LS200-H10	-S17	50.80	40.64	400.08	27.15	50.80	4.5	16	0.61	3.76	16.98
LM55-L1	-S17	LMS55-L1	-S17	55.00	45.00	125.00	5.59	11.05	3.5	3	0.61	3.76	22.89
LM55-M1	-S17	LMS55-M1	-S17	55.00	45.00	250.00	3.10	11.05	4.5	3	0.46	3.63	31.45
LM55-H1	-S17	LMS55-H1	-S17	55.00	45.00	400.00	5.31	11.05	4.5	3	0.61	3.76	69.69
LM55-L2	-S17	LMS55-L2	-S17	55.00	45.00	125.00	7.72	14.73	3.5	4	0.61	3.76	17.83
LM55-M2	-S17	LMS55-M2	-S17	55.00	45.00	250.00	4.11	14.73	4.5	4	0.46	3.63	23.54
LM55-H2	-S17	LMS55-H2	-S17	55.00	45.00	400.00	7.24	14.73	4.5	4	0.61	3.76	53.40
LM55-L3	-S17	LMS55-L3	-S17	55.00	45.00	125.00	9.68	18.41	3.5	5	0.61	3.76	14.30

Multi-Turn Wave Springs



Lispring Part Number				Operates in ¹ Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height	Number of Waves	Number of Turns	Wire Thickness	Radial Wall	Spring Rate ²
Carbon Steel ³ (Plain Ends)	17-7PH Add Suffix	Carbon Steel ³ (Shim Ends)	17-7PH Add Suffix	mm	mm	(N)	mm	mm			mm	mm	N/MM
LM55-M3	-S17	LMS55-M3	-S17	55.00	45.00	250.00	5.16	18.41	4.5	5	0.46	3.63	18.85
LM55-H3	-S17	LMS55-H3	-S17	55.00	45.00	400.00	9.09	18.41	4.5	5	0.61	3.76	42.87
LM55-L4	-S17	LMS55-L4	-S17	55.00	45.00	125.00	11.48	22.10	3.5	6	0.61	3.76	11.77
LM55-M4	-S17	LMS55-M4	-S17	55.00	45.00	250.00	6.20	22.10	4.5	6	0.46	3.63	15.72
LM55-H4	-S17	LMS55-H4	-S17	55.00	45.00	400.00	10.64	22.10	4.5	6	0.61	3.76	34.90
LM55-L5	-S17	LMS55-L5	-S17	55.00	45.00	125.00	13.92	25.78	3.5	7	0.61	3.76	10.54
LM55-M5	-S17	LMS55-M5	-S17	55.00	45.00	250.00	7.21	25.78	4.5	7	0.46	3.63	13.46
LM55-H5	-S17	LMS55-H5	-S17	55.00	45.00	400.00	12.24	25.78	4.5	7	0.61	3.76	29.54
LM55-L6	-S17	LMS55-L6	-S17	55.00	45.00	125.00	15.52	29.46	3.5	8	0.61	3.76	8.97
LM55-M6	-S17	LMS55-M6	-S17	55.00	45.00	250.00	8.26	29.46	4.5	8	0.46	3.63	11.79
LM55-H6	-S17	LMS55-H6	-S17	55.00	45.00	400.00	14.10	29.46	4.5	8	0.61	3.76	26.04
LM55-L7	-S17	LMS55-L7	-S17	55.00	45.00	125.00	18.41	33.15	3.5	9	0.61	3.76	8.49
LM55-M7	-S17	LMS55-M7	-S17	55.00	45.00	250.00	9.27	33.15	4.5	9	0.46	3.63	10.47
LM55-H7	-S17	LMS55-H7	-S17	55.00	45.00	400.00	15.82	33.15	4.5	9	0.61	3.76	23.08
LM55-L8	-S17	LMS55-L8	-S17	55.00	45.00	125.00	21.67	40.51	3.5	11	0.61	3.76	6.63
LM55-M8	-S17	LMS55-M8	-S17	55.00	45.00	250.00	11.33	40.51	4.5	11	0.46	3.63	8.57
LM55-H8	-S17	LMS55-H8	-S17	55.00	45.00	400.00	19.30	40.51	4.5	11	0.61	3.76	18.86
LM55-L9	-S17	LMS55-L9	-S17	55.00	45.00	125.00	25.65	47.88	3.5	13	0.61	3.76	5.62
LM55-M9	-S17	LMS55-M9	-S17	55.00	45.00	250.00	13.41	47.88	4.5	13	0.46	3.63	7.25
LM55-H9	-S17	LMS55-H9	-S17	55.00	45.00	400.00	23.11	47.88	4.5	13	0.61	3.76	16.15
LM55-L10	-S17	LMS55-L10	-S17	55.00	45.00	125.00	29.77	55.25	3.5	15	0.61	3.76	4.91
LM55-M10	-S17	LMS55-M10	-S17	55.00	45.00	250.00	15.47	55.25	4.5	15	0.46	3.63	6.28
LM55-H10	-S17	LMS55-H10	-S17	55.00	45.00	400.00	26.54	55.25	4.5	15	0.61	3.76	13.93
LM60-L1	-S17	LMS60-L1	-S17	60.00	50.00	135.00	5.59	11.43	4.5	3	0.46	3.63	23.12
LM60-M1	-S17	LMS60-M1	-S17	60.00	50.00	275.00	6.65	11.43	4.5	3	0.61	3.76	57.53
LM60-H1	-S17	LMS60-H1	-S17	60.00	50.00	450.00	7.75	11.43	4.5	3	0.76	4.01	122.28
LM60-L2	-S17	LMS60-L2	-S17	60.00	50.00	135.00	7.47	15.24	4.5	4	0.46	3.63	17.37
LM60-M2	-S17	LMS60-M2	-S17	60.00	50.00	275.00	8.86	15.24	4.5	4	0.61	3.76	43.10
LM60-H2	-S17	LMS60-H2	-S17	60.00	50.00	450.00	10.31	15.24	4.5	4	0.76	4.01	91.28
LM60-L3	-S17	LMS60-L3	-S17	60.00	50.00	135.00	9.32	19.05	4.5	5	0.46	3.63	13.87
LM60-M3	-S17	LMS60-M3	-S17	60.00	50.00	275.00	11.07	19.05	4.5	5	0.61	3.76	34.46
LM60-H3	-S17	LMS60-H3	-S17	60.00	50.00	450.00	12.90	19.05	4.5	5	0.76	4.01	73.17
LM60-L4	-S17	LMS60-L4	-S17	60.00	50.00	135.00	11.20	22.86	4.5	6	0.46	3.63	11.58
LM60-M4	-S17	LMS60-M4	-S17	60.00	50.00	275.00	13.28	22.86	4.5	6	0.61	3.76	28.71
LM60-H4	-S17	LMS60-H4	-S17	60.00	50.00	450.00	15.47	22.86	4.5	6	0.76	4.01	60.89
LM60-L5	-S17	LMS60-L5	-S17	60.00	50.00	135.00	13.06	26.67	4.5	7	0.46	3.63	9.92
LM60-M5	-S17	LMS60-M5	-S17	60.00	50.00	275.00	15.49	26.67	4.5	7	0.61	3.76	24.60
LM60-H5	-S17	LMS60-H5	-S17	60.00	50.00	450.00	18.06	26.67	4.5	7	0.76	4.01	52.26
LM60-L6	-S17	LMS60-L6	-S17	60.00	50.00	135.00	14.94	30.48	4.5	8	0.46	3.63	8.69
LM60-M6	-S17	LMS60-M6	-S17	60.00	50.00	275.00	17.70	30.48	4.5	8	0.61	3.76	21.52
LM60-H6	-S17	LMS60-H6	-S17	60.00	50.00	450.00	20.62	30.48	4.5	8	0.76	4.01	45.64
LM60-L7	-S17	LMS60-L7	-S17	60.00	50.00	135.00	16.79	34.29	4.5	9	0.46	3.63	7.71
LM60-M7	-S17	LMS60-M7	-S17	60.00	50.00	275.00	19.94	34.29	4.5	9	0.61	3.76	19.16
LM60-H7	-S17	LMS60-H7	-S17	60.00	50.00	450.00	23.22	34.29	4.5	9	0.76	4.01	40.65
LM60-L8	-S17	LMS60-L8	-S17	60.00	50.00	135.00	20.52	41.91	4.5	11	0.46	3.63	6.31
LM60-M8	-S17	LMS60-M8	-S17	60.00	50.00	275.00	24.36	41.91	4.5	11	0.61	3.76	15.67
LM60-H8	-S17	LMS60-H8	-S17	60.00	50.00	450.00	28.37	41.91	4.5	11	0.76	4.01	33.23
LM60-L9	-S17	LMS60-L9	-S17	60.00	50.00	135.00	24.26	49.53	4.5	13	0.46	3.63	5.34
LM60-M9	-S17	LMS60-M9	-S17	60.00	50.00	275.00	28.78	49.53	4.5	13	0.61	3.76	13.25
LM60-H9	-S17	LMS60-H9	-S17	60.00	50.00	450.00	33.53	49.53	4.5	13	0.76	4.01	28.13
LM60-L10	-S17	LMS60-L10	-S17	60.00	50.00	135.00	27.99	57.15	4.5	15	0.46	3.63	4.63
LM60-M10	-S17	LMS60-M10	-S17	60.00	50.00	275.00	33.22	57.15	4.5	15	0.61	3.76	11.49
LM60-H10	-S17	LMS60-H10	-S17	60.00	50.00	450.00	38.68	57.15	4.5	15	0.76	4.01	24.36

¹Reference dimension.

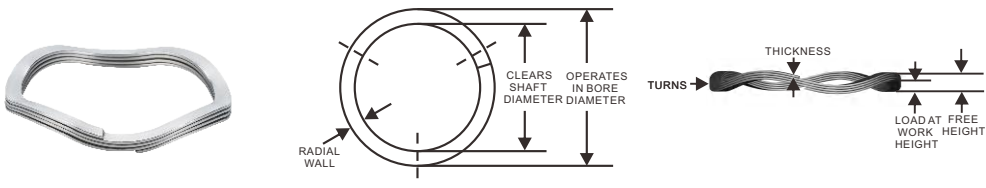
²Theoretical dimension, unit: N/mm

³Carbon steel products are unavailable for wire thickness ≤0.3 mm

⁴The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

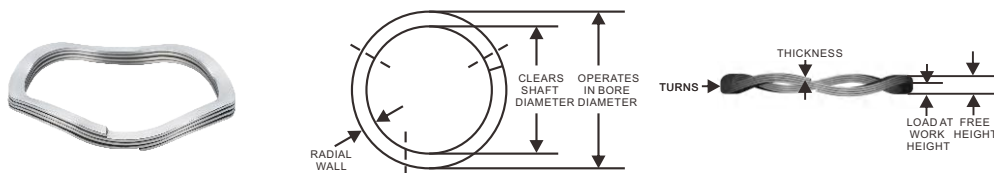
⁶The bore diameter is not the spring outside diameter, but the assembly dimension. The operating bore diameter is slightly larger than the spring outside diameter.

Nested Wave Springs



Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Number of Turns	Thickness	Radial Wall	Spring Rate ²
Carbon Steel ³	17-7PH Add Suffix	mm	mm	(N)	mm	mm			mm	mm	N/MM
NLR-0050-L3	-S17	12.70	9.02	95.7	1.68	2.84	3	3	0.20	1.02	82.4
NLR-0062-L2	-S17	15.88	11.30	89.0	1.50	2.92	3	2	0.23	1.47	62.5
NLR-0062-L3	-S17	15.88	11.30	133.5	1.73	3.15	3	3	0.23	1.47	93.6
NLB-0063-L2	-S17	16.00	11.46	89.0	1.83	2.90	3	2	0.25	1.47	83.0
NLB-0063-L3	-S17	16.00	11.46	133.5	2.08	3.15	3	3	0.25	1.47	125.0
NLB-0075-L2	-S17	19.00	13.36	106.8	1.83	3.31	3	2	0.25	1.98	72.0
NLB-0075-L3	-S17	19.00	13.36	160.2	2.08	3.57	3	3	0.25	1.98	108.0
NLR-0075-L2	-S17	19.05	13.28	124.6	1.83	3.58	3	2	0.25	1.98	71.2
NLR-0075-L3	-S17	19.05	13.28	186.9	2.08	3.84	3	3	0.25	1.98	106.8
NLB-0087-L2	-S17	22.00	15.75	124.6	1.88	3.14	3	2	0.30	2.39	99.0
NLB-0087-L3	-S17	22.00	15.75	186.9	2.18	3.44	3	3	0.30	2.39	148.0
NLR-0087-L2	-S17	22.23	15.88	142.4	1.88	3.38	3	2	0.30	2.39	95.2
NLR-0087-L3	-S17	22.23	15.88	213.6	2.18	3.68	3	3	0.30	2.39	142.8
NLB-0095-L2	-S17	24.00	17.02	133.5	1.88	3.73	3	2	0.30	2.39	72.0
NLB-0095-L3	-S17	24.00	17.02	200.3	2.18	4.03	3	3	0.30	2.39	108.0
NLR-0100-L2	-S17	25.40	18.82	160.2	1.88	4.83	3	2	0.30	2.26	54.3
NLR-0100-L3	-S17	25.40	18.82	240.3	2.18	5.13	3	3	0.30	2.26	81.4
NLB-0102-L2	-S17	26.00	18.14	142.4	2.34	3.37	3	2	0.36	3.18	137.0
NLB-0102-L3	-S17	26.00	18.14	213.6	2.69	3.73	3	3	0.36	3.18	206.0
NLB-0110-L2	-S17	28.00	20.07	151.3	2.34	3.79	3	2	0.36	3.18	104.0
NLB-0110-L3	-S17	28.00	20.07	227.0	2.69	4.14	3	3	0.36	3.18	156.0
NLR-0112-L2	-S17	28.58	20.50	178.0	2.34	4.17	3	2	0.36	3.18	96.6
NLR-0112-L3	-S17	28.58	20.50	267.0	2.69	4.52	3	3	0.36	3.18	145.1
NLB-0118-L2	-S17	30.00	21.87	169.1	2.34	4.42	3	2	0.36	3.18	81.0
NLB-0118-L3	-S17	30.00	21.87	253.7	2.69	4.78	3	3	0.36	3.18	122.0
NLR-0125-L2	-S17	31.75	23.39	195.8	2.39	4.19	3	2	0.41	3.38	108.9
NLR-0125-L3	-S17	31.75	23.39	293.7	2.79	4.60	3	3	0.41	3.38	163.3
NLB-0126-L2	-S17	32.00	23.67	178.0	2.39	4.07	3	2	0.41	3.38	106.0
NLB-0126-L3	-S17	32.00	23.67	267.0	2.79	4.48	3	3	0.41	3.38	159.0
NLR-0137-L2	-S17	34.93	26.24	213.6	2.39	5.16	3	2	0.41	3.38	77.4
NLR-0137-L3	-S17	34.93	26.24	320.4	2.79	5.56	3	3	0.41	3.38	115.9
NLB-0138-L2	-S17	35.00	26.42	195.8	2.39	4.94	3	2	0.41	3.38	77.0
NLB-0138-L3	-S17	35.00	26.42	293.7	2.79	5.35	3	3	0.41	3.38	115.0
NLB-0146-L2	-S17	37.00	28.65	204.7	2.44	4.72	3	2	0.46	3.38	90.0
NLB-0146-L3	-S17	37.00	28.65	307.1	2.90	5.18	3	3	0.46	3.38	135.0
NLR-0150-L2	-S17	38.10	28.85	231.4	2.44	5.00	3	2	0.46	3.63	90.5
NLR-0150-L3	-S17	38.10	28.85	347.1	2.90	5.46	3	3	0.46	3.63	135.6
NLB-0158-L2	-S17	40.00	31.01	222.5	2.44	5.70	3	2	0.46	3.38	68.0
NLB-0158-L3	-S17	40.00	31.01	333.8	2.90	6.15	3	3	0.46	3.38	102.0
NLR-0162-L2	-S17	41.28	31.72	249.2	2.44	6.10	3	2	0.46	3.63	68.1
NLR-0162-L3	-S17	41.28	31.72	373.8	2.90	6.55	3	3	0.46	3.63	102.2
NLB-0165-L2	-S17	42.00	33.50	231.4	2.44	3.71	4	2	0.46	3.38	182.0
NLB-0165-L3	-S17	42.00	33.50	347.1	2.90	4.17	4	3	0.46	3.38	273.0
NLR-0175-L2	-S17	44.45	35.31	267.0	2.44	4.04	4	2	0.46	3.63	166.4
NLR-0175-L3	-S17	44.45	35.31	400.5	2.90	4.50	4	3	0.46	3.63	249.6
NLB-0185-L2	-S17	47.00	38.18	258.1	2.44	4.52	4	2	0.46	3.38	124.0
NLB-0185-L3	-S17	47.00	38.18	387.2	2.90	4.98	4	3	0.46	3.38	186.0
NLR-0187-L2	-S17	47.63	38.28	284.8	2.44	4.60	4	2	0.46	3.63	131.3
NLR-0187-L3	-S17	47.63	38.28	427.2	2.90	5.05	4	3	0.46	3.63	196.9
NLR-0200-L2	-S17	50.80	41.30	302.6	2.97	4.11	4	2	0.61	3.76	262.0
NLR-0200-L3	-S17	50.80	41.30	453.9	3.58	4.72	4	3	0.61	3.76	392.9
NLB-0205-L2	-S17	52.00	42.37	284.8	2.97	4.15	4	2	0.61	3.76	242.0
NLB-0205-L3	-S17	52.00	42.37	427.2	3.58	4.76	4	3	0.61	3.76	363.0

Nested Wave Springs

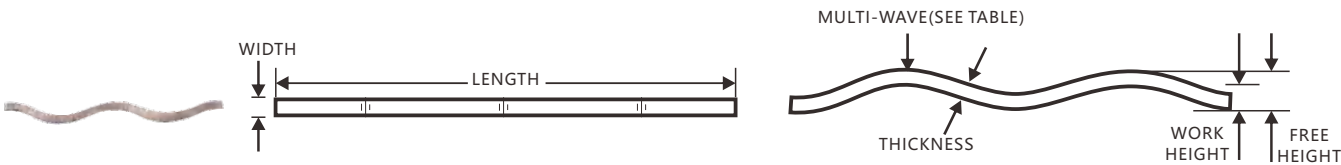


Lispring Part Number		Operates in Bore Diameter	Clears Shaft Diameter	Load	Work Height	Free Height ¹	Number of Waves	Number of Turns	Thickness	Radial Wall	Spring Rate ²
Carbon Steel	17-7PH Add Suffix	mm	mm	(N)	mm	mm			mm	mm	N/MM
NLR-0212-L2	-S17	53.98	44.27	320.4	2.97	4.47	4	2	0.61	3.76	213.2
NLR-0212-L3	-S17	53.98	44.27	480.6	3.58	5.08	4	3	0.61	3.76	319.7
NLB-0217-L2	-S17	55.00	45.31	302.6	2.97	4.48	4	2	0.61	3.76	200.0
NLB-0217-L3	-S17	55.00	45.31	453.9	3.58	5.09	4	3	0.61	3.76	300.0
NLR-0225-L2	-S17	57.15	47.32	338.2	2.97	4.90	4	2	0.61	3.76	175.7
NLR-0225-L3	-S17	57.15	47.32	507.3	3.58	5.51	4	3	0.61	3.76	263.6
NLR-0237-L2	-S17	60.33	49.89	356.0	2.97	5.18	4	2	0.61	4.01	160.1
NLR-0237-L3	-S17	60.33	49.89	534.0	3.58	5.79	4	3	0.61	4.01	240.3
NLB-0244-L2	-S17	62.00	50.65	338.2	2.97	4.93	4	2	0.61	4.52	172.0
NLB-0244-L3	-S17	62.00	50.65	507.3	3.58	5.54	4	3	0.61	4.52	259.0
NLR-0250-L2	-S17	63.50	51.92	373.8	2.97	5.33	4	2	0.61	4.52	158.7
NLR-0250-L3	-S17	63.50	51.92	560.7	3.58	5.94	4	3	0.61	4.52	238.2
NLR-0262-L2	-S17	66.68	54.84	391.6	2.97	5.87	4	2	0.61	4.52	134.6
NLR-0262-L3	-S17	66.68	54.84	587.4	3.58	6.48	4	3	0.61	4.52	202.0
NLB-0268-L2	-S17	68.00	56.16	373.8	3.53	4.94	4	2	0.76	4.78	265.0
NLB-0268-L3	-S17	68.00	56.16	560.7	4.29	5.70	4	3	0.76	4.78	398.0
NLR-0275-L2	-S17	69.85	57.94	409.4	3.53	5.21	4	2	0.76	4.78	242.2
NLR-0275-L3	-S17	69.85	57.94	614.1	4.29	5.97	4	3	0.76	4.78	363.3
NLB-0276-L2	-S17	70.00	58.14	382.7	3.53	5.12	4	2	0.76	4.78	241.0
NLB-0276-L3	-S17	70.00	58.14	574.1	4.29	5.88	4	3	0.76	4.78	361.0
NLB-0284-L2	-S17	72.00	60.07	391.6	3.53	5.32	4	2	0.76	4.78	219.0
NLB-0284-L3	-S17	72.00	60.07	587.4	4.29	6.08	4	3	0.76	4.78	328.0
NLR-0287-L2	-S17	73.03	61.01	427.2	3.53	5.59	4	2	0.76	4.78	208.6
NLR-0287-L3	-S17	73.03	61.01	640.8	4.29	6.35	4	3	0.76	4.78	312.7
NLB-0295-L2	-S17	75.00	62.97	409.4	3.53	5.68	4	2	0.76	4.78	191.0
NLB-0295-L3	-S17	75.00	62.97	614.1	4.29	6.44	4	3	0.76	4.78	286.0
NLR-0300-L2	-S17	76.20	63.98	445.0	3.53	5.99	4	2	0.76	4.78	180.8
NLR-0300-L3	-S17	76.20	63.98	667.5	4.29	6.76	4	3	0.76	4.78	271.3
NLR-0312-L2	-S17	79.38	66.80	462.8	3.53	6.45	4	2	0.76	4.78	157.9
NLR-0312-L3	-S17	79.38	66.80	694.2	4.29	7.21	4	3	0.76	4.78	236.6
NLB-0315-L2	-S17	80.00	67.49	436.1	3.53	6.37	4	2	0.76	4.78	154.0
NLB-0315-L3	-S17	80.00	67.49	654.2	4.29	7.13	4	3	0.76	4.78	231.0
NLR-0325-L2	-S17	82.55	67.87	480.6	3.53	6.12	4	2	0.76	5.92	185.3
NLR-0325-L3	-S17	82.55	67.87	720.9	4.29	6.88	4	3	0.76	5.92	277.9
NLB-0335-L2	-S17	85.00	70.26	462.8	3.53	6.29	4	2	0.76	5.92	168.0
NLB-0335-L3	-S17	85.00	70.26	694.2	4.29	7.05	4	3	0.76	5.92	252.0
NLR-0337-L2	-S17	85.73	70.89	498.4	3.53	6.58	4	2	0.76	5.92	163.1
NLR-0337-L3	-S17	85.73	70.89	747.6	4.29	7.34	4	3	0.76	5.92	244.5
NLR-0350-L2	-S17	88.90	73.86	516.2	3.53	7.11	4	2	0.76	5.92	144.2
NLR-0350-L3	-S17	88.90	73.86	774.3	4.29	7.87	4	3	0.76	5.92	216.3
NLB-0354-L2	-S17	90.00	74.98	498.4	3.53	7.13	4	2	0.76	5.92	138.0
NLB-0354-L3	-S17	90.00	74.98	747.6	4.29	7.89	4	3	0.76	5.92	208.0
NLR-0362-L2	-S17	92.08	76.86	534.0	3.53	7.70	4	2	0.76	5.92	128.1
NLR-0362-L3	-S17	92.08	76.86	801.0	4.29	8.46	4	3	0.76	5.92	192.2
NLB-0374-L2	-S17	95.00	79.65	525.1	3.53	8.08	4	2	0.76	5.92	115.0
NLB-0374-L3	-S17	95.00	79.65	787.7	4.29	8.84	4	3	0.76	5.92	173.0
NLR-0375-L2	-S17	95.25	79.78	551.8	3.53	8.36	4	2	0.76	5.92	114.5
NLR-0375-L3	-S17	95.25	79.78	827.7	4.29	9.12	4	3	0.76	5.92	171.7
NLR-0387-L2	-S17	98.43	82.68	569.6	3.53	9.07	4	2	0.76	5.92	102.6
NLR-0387-L3	-S17	98.43	82.68	854.4	4.29	9.83	4	3	0.76	5.92	153.8
NLB-0394-L2	-S17	100.00	85.42	551.8	3.53	5.27	5	2	0.76	5.92	318.0
NLB-0394-L3	-S17	100.00	85.42	827.7	4.29	6.03	5	3	0.76	5.92	477.0
NLR-0400-L2	-S17	101.60	86.94	587.4	3.53	5.49	5	2	0.76	5.92	301.5
NLR-0400-L3	-S17	101.60	86.94	881.1	4.29	6.25	5	3	0.76	5.92	452.2

¹Reference dimension.

²Theoretical dimension, unit: N/mm

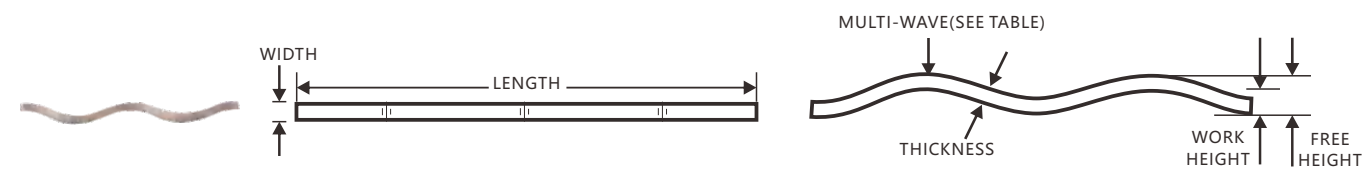
Linear Wave Springs



Lispring Part Number		Number of Waves	Thickness	Width	Length	Load	Work Height	Free Height ¹	Spring Rate ²
Carbon Steel	17-7PH Add Suffix		mm	mm	mm	(N)	mm	mm	N/MM
LLS12188-1	-S17	1	0.3	4.78	38.1	6.67	3.18	5.72	1.93
LLS12250-1	-S17	1	0.3	6.35	38.1	9.79	3.18	5.72	2.63
LLS12312-1	-S17	1	0.3	7.92	38.1	12.9	3.18	5.72	3.33
LLS12375-1	-S17	1	0.3	9.53	38.1	15.57	3.18	5.72	4.03
LLS20188-1	-S17	1	0.51	4.78	47.63	13.35	3.81	6.35	4.73
LLS20250-1	-S17	1	0.51	6.35	47.63	24.92	3.81	6.35	6.3
LLS20312-1	-S17	1	0.51	7.92	47.63	26.7	3.81	6.35	7.88
LLS20375-1	-S17	1	0.51	9.53	47.63	28.47	3.81	6.35	9.45
LLS25188-1	-S17	1	0.64	4.78	57.15	15.57	4.45	6.99	5.25
LLS25250-1	-S17	1	0.64	6.35	57.15	28.92	4.45	6.99	7
LLS25312-1	-S17	1	0.64	7.92	57.15	29.36	4.45	6.99	8.93
LLS25375-1	-S17	1	0.64	9.53	57.15	34.26	4.45	6.99	10.68
LLS38188-1	-S17	1	0.97	4.78	66.68	33.37	5.08	7.62	11.73
LLS38250-1	-S17	1	0.97	6.35	66.68	52.95	5.08	7.62	15.58
LLS38312-1	-S17	1	0.97	7.92	66.68	44.05	5.08	7.62	19.6
LLS38375-1	-S17	1	0.97	9.53	66.68	75.19	5.08	7.62	23.45
LLS12188-2	-S17	2	0.3	4.78	76.2	24.92	3.18	5.72	15.93
LLS12250-2	-S17	2	0.3	6.35	76.2	34.7	3.18	5.72	21.18
LLS12312-2	-S17	2	0.3	7.92	76.2	45.38	3.18	5.72	26.43
LLS12375-2	-S17	2	0.3	9.53	76.2	50.28	3.18	5.72	31.68
LLS45188-1	-S17	1	1.14	4.78	76.2	40.04	5.72	8.26	13.13
LLS45250-1	-S17	1	1.14	6.35	76.2	55.62	5.72	8.26	17.5
LLS45312-1	-S17	1	1.14	7.92	76.2	65.4	5.72	8.26	21.7
LLS45375-1	-S17	1	1.14	9.53	76.2	90.76	5.72	8.26	26.08
LLS62188-1	-S17	1	1.57	4.78	85.73	63.62	6.35	8.89	24.15
LLS62250-1	-S17	1	1.57	6.35	85.73	100.11	6.35	8.89	32.03
LLS62312-1	-S17	1	1.57	7.92	85.73	123.69	6.35	8.89	39.9
LLS62375-1	-S17	1	1.57	9.53	85.73	186.87	6.35	8.89	47.95
LLS20188-2	-S17	2	0.51	4.78	95.25	50.72	3.81	6.35	37.63
LLS20250-2	-S17	2	0.51	6.35	95.25	78.31	3.81	6.35	50.05
LLS20312-2	-S17	2	0.51	7.92	95.25	91.21	3.81	6.35	62.48
LLS20375-2	-S17	2	0.51	9.53	95.25	103.67	3.81	6.35	75.25
LLS12188-3	-S17	3	0.3	4.78	114.3	46.27	3.18	5.72	23.8
LLS12250-3	-S17	3	0.3	6.35	114.3	61.84	3.18	5.72	31.68
LLS12312-3	-S17	3	0.3	7.92	114.3	78.31	3.18	5.72	39.55
LLS12375-3	-S17	3	0.3	9.53	114.3	89.43	3.18	5.72	47.6
LLS25188-2	-S17	2	0.64	4.78	114.3	68.52	4.45	6.99	42.53
LLS25250-2	-S17	2	0.64	6.35	114.3	96.55	4.45	6.99	56.7
LLS25312-2	-S17	2	0.64	7.92	114.3	106.78	4.45	6.99	70.7
LLS25375-2	-S17	2	0.64	9.53	114.3	130.81	4.45	6.99	85.05
LLS38188-2	-S17	2	0.97	4.78	133.35	111.23	5.08	7.62	94.15
LLS38250-2	-S17	2	0.97	6.35	133.35	203.33	5.08	7.62	125.3
LLS38312-2	-S17	2	0.97	7.92	133.35	219.35	5.08	7.62	156.28
LLS38375-2	-S17	2	0.97	9.53	133.35	274.52	5.08	7.62	187.95
LLS20188-3	-S17	3	0.51	4.78	142.88	104.56	3.81	6.35	56.53
LLS20250-3	-S17	3	0.51	6.35	142.88	141.04	3.81	6.35	75.25
LLS20312-3	-S17	3	0.51	7.92	142.88	155.28	3.81	6.35	93.8
LLS20375-3	-S17	3	0.51	9.53	142.88	231.36	3.81	6.35	112.7

¹Reference dimension.

²Theoretical dimension, unit: N/mm



Lispring Part Number		Number of Waves	Thickness	Width	Length	Load	Work Height	Free Height ¹	Spring Rate ²
Carbon Steel	17-7PH Add Suffix		mm	mm	mm	(N)	mm	mm	N/MM
LLS12188-4	-S17	4	0.3	4.78	152.4	65.85	3.18	5.72	31.85
LLS12250-4	-S17	4	0.3	6.35	152.4	88.09	3.18	5.72	42.35
LLS12312-4	-S17	4	0.3	7.92	152.4	115.68	3.18	5.72	52.85
LLS12375-4	-S17	4	0.3	9.53	152.4	112.12	3.18	5.72	63.35
LLS45188-2	-S17	2	1.14	4.78	152.4	160.17	5.72	8.26	104.83
LLS45250-2	-S17	2	1.14	6.35	152.4	189.09	5.72	8.26	139.48
LLS45312-2	-S17	2	1.14	7.92	152.4	268.29	5.72	8.26	173.95
LLS45375-2	-S17	2	1.14	9.53	152.4	325.24	5.72	8.26	209.13
LLS25188-3	-S17	3	0.64	4.78	171.45	124.13	4.45	6.99	63.88
LLS25250-3	-S17	3	0.64	6.35	171.45	154.39	4.45	6.99	85.05
LLS25312-3	-S17	3	0.64	7.92	171.45	192.21	4.45	6.99	106.05
LLS25375-3	-S17	3	0.64	9.53	171.45	239.37	4.45	6.99	127.4
LLS62188-2	-S17	2	1.57	4.78	171.45	300.32	6.35	8.89	192.5
LLS62250-2	-S17	2	1.57	6.35	171.45	462.72	6.35	8.89	256.03
LLS62312-2	-S17	2	1.57	7.92	171.45	462.72	6.35	8.89	319.55
LLS62375-2	-S17	2	1.57	9.53	171.45	620.66	6.35	8.89	384.13
LLS20188-4	-S17	4	0.51	4.78	190.5	144.6	3.81	6.35	75.43
LLS20250-4	-S17	4	0.51	6.35	190.5	199.77	3.81	6.35	100.28
LLS20312-4	-S17	4	0.51	7.92	190.5	226.02	3.81	6.35	125.13
LLS20375-4	-S17	4	0.51	9.53	190.5	331.47	3.81	6.35	150.33
LLS38188-3	-S17	3	0.97	4.78	200.03	271.4	5.08	7.62	141.4
LLS38250-3	-S17	3	0.97	6.35	200.03	330.58	5.08	7.62	187.95
LLS38312-3	-S17	3	0.97	7.92	200.03	391.53	5.08	7.62	234.5
LLS38375-3	-S17	3	0.97	9.53	200.03	467.17	5.08	7.62	281.93
LLS25188-4	-S17	4	0.64	4.78	228.6	189.09	4.45	6.99	85.23
LLS25250-4	-S17	4	0.64	6.35	228.6	224.68	4.45	6.99	113.23
LLS25312-4	-S17	4	0.64	7.92	228.6	275.85	4.45	6.99	141.4
LLS25375-4	-S17	4	0.64	9.53	228.6	342.14	4.45	6.99	169.93
LLS45188-3	-S17	3	1.14	4.78	228.6	289.2	5.72	8.26	157.15
LLS45250-3	-S17	3	1.14	6.35	228.6	369.28	5.72	8.26	209.13
LLS45312-3	-S17	3	1.14	7.92	228.6	484.52	5.72	8.26	260.93
LLS45375-3	-S17	3	1.14	9.53	228.6	593.97	5.72	8.26	313.6
LLS62188-3	-S17	3	1.57	4.78	257.18	469.39	6.35	8.89	288.75
LLS62250-3	-S17	3	1.57	6.35	257.18	716.32	6.35	8.89	384.13
LLS62312-3	-S17	3	1.57	7.92	257.18	776.39	6.35	8.89	479.33
LLS62375-3	-S17	3	1.57	9.53	257.18	1067.81	6.35	8.89	576.1
LLS38188-4	-S17	4	0.97	4.78	266.7	400.43	5.08	7.62	188.48
LLS38250-4	-S17	4	0.97	6.35	266.7	496.09	5.08	7.62	250.6
LLS38312-4	-S17	4	0.97	7.92	266.7	714.99	5.08	7.62	312.73
LLS38375-4	-S17	4	0.97	9.53	266.7	680.73	5.08	7.62	375.9
LLS45188-4	-S17	4	1.14	4.78	304.8	395.98	5.72	8.26	209.65
LLS45250-4	-S17	4	1.14	6.35	304.8	536.13	5.72	8.26	278.78
LLS45312-4	-S17	4	1.14	7.92	304.8	582.85	5.72	8.26	347.9
LLS45375-4	-S17	4	1.14	9.53	304.8	845.35	5.72	8.26	418.25
LLS62188-4	-S17	4	1.57	4.78	304.8	709.65	6.35	8.89	385
LLS62250-4	-S17	4	1.57	6.35	304.8	1041.11	6.35	8.89	512.05
LLS62312-4	-S17	4	1.57	7.92	304.8	1167.92	6.35	8.89	639.1
LLS62375-4	-S17	4	1.57	9.53	304.8	1570.57	6.35	8.89	768.08

¹Reference dimension.
²Theoretical dimension, unit: N/mm

Operating Conditions

Wave spring design should consider actual operating conditions, including temperature, installation space, bore/shaft dimensions, corrosive media, static and dynamic loads, and other service requirements. Based on application requirements, Lispring provides support in material selection, structural design, and parameter optimization.

Bore / Shaft Guidance

Proper bore/shaft guidance and positioning are important for stable wave spring operation and correct assembly. Depending on the assembly structure, the spring may be OD-guided by the bore or ID-guided by the shaft. Lispring's standard bore/shaft dimensions can be used as assembly design references. Proper guidance clearance and installation diameter should be maintained to avoid interference or excessive clearance that may cause instability. For special installation-space or fit requirements, Lispring can provide suitable selection and design recommendations.

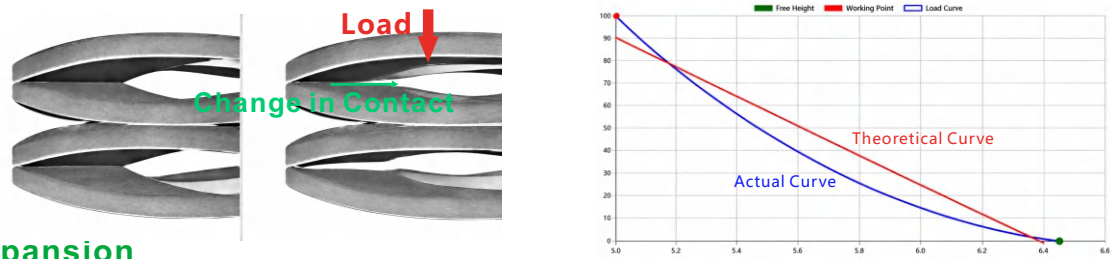
Performance Requirements

The main performance parameters of a wave spring include **load, working height, deflection, and cycle life**. The required load is normally specified at a certain working height. **For dynamic or high-cycle applications, the stress level, working deflection, and fatigue life should also be evaluated.** Lispring can select and design wave springs based on load, working height, installation space, and service-life requirements to provide suitable solutions for different applications.

Load and Spring Rate

Spring rate (N/mm) is an important parameter in wave spring design. In most applications, the required load is defined first, followed by spring geometry optimization. Because wave springs have a relatively complex geometry, the actual spring may differ slightly from the ideal theoretical model.

uring compression, contact positions between adjacent waves may change, resulting in nonlinear load-deflection behavior. Therefore, the actual load and spring rate may differ from theoretical calculations. For high load accuracy requirements, sample testing is recommended. Lispring can further optimize design parameters based on production data to improve consistency between calculated and actual performance.



Diameter Expansion

When a wave spring is compressed, the waves gradually flatten and the spring tends to expand in the radial direction. This diameter expansion should be considered during assembly design, especially when the spring is **guided by the bore**. If the expanded outside diameter contacts the bore wall, it may cause friction, wear, or a deviation from the designed load. Expected diameter expansion can be estimated during design and should be considered when determining radial clearance.

Working Stress

Wave springs are primarily subjected to bending stress during operation. Excessive working stress may cause permanent deformation, load loss, or failure. Proper stress control is essential for spring performance and service life. Maximum working stress should be evaluated against material tensile strength, considering material condition, forming process, and heat treatment. In some cases, presetting may be used to stabilize spring geometry and improve service stability.

Wave Spring Design

Fatigue Life

Wave springs are often subjected to cyclic loading, making **fatigue one of the main failure modes**. For finite-life or high-cycle applications, stress levels at maximum/minimum working heights and stress amplitude should be evaluated together with material properties, spring geometry, and operating conditions. For applications with high life requirements or complex operating conditions, actual sample testing is recommended to verify the design. Based on the required load, working height, number of cycles, and service environment, Lispring can evaluate different design options and help select a wave spring solution better suited to the application.

Life Factor: $x = \frac{(\sigma_b - \sigma_1)}{(\sigma_b - \sigma_2)}$ Where: σ_b —Tensile Strength
 σ_1 —Stress at Lower Working Height
 σ_2 —Stress at Higher Working Height

Life Factor Table

Life Factor (X)	Fatigue Life (×10 ⁴ cycles)
$X \leq 0$	Not Predictable
$0 < X \leq 0.40$	< 3
$0.40 < X \leq 0.50$	3-5
$0.50 < X \leq 0.55$	5-7.5
$0.55 < X \leq 0.60$	7.5-10
$0.60 < X \leq 0.68$	10-20
$0.68 < X \leq 0.70$	20-100
$0.70 < X \leq 0.80$	100-500
$0.80 < X \leq 0.90$	500-1000
$0.90 < X$	≥1000

Calculation Formulas

Load

Single-Turn Wave Spring

$$F = \frac{Ebt^3N_w^4}{KD^3} \cdot \frac{D_e}{D_i} \cdot S$$

Where K = 3.3

Multi-Turn Wave Spring

$$F = \frac{1}{n} \cdot \frac{Ebt^3N_w^4}{KD^3} \cdot \frac{D_e}{D_i} \cdot S$$

Where $N_w = 2\frac{1}{2}, 3\frac{1}{2}, 4\frac{1}{2}, 5\frac{1}{2}, \dots$
K = 3.3.

Nested Wave Spring

$$F = n \cdot \frac{Ebt^3N_w^4}{KD^3} \cdot \frac{D_e}{D_i} \cdot S$$

Where K = 3.3

Working Stress

Single-Turn Wave Spring

$$\sigma = \frac{3}{4} \cdot \frac{\pi FD}{bt^2N_w^2}$$

Multi-Turn Wave Spring

$$\sigma = \frac{3}{4} \cdot \frac{\pi FD}{bt^2N_w^2}$$

Nested Wave Spring

$$\sigma = \frac{3}{4} \cdot \frac{\pi FD}{nbt^2N_w^2}$$

Spring Rate

Single-Turn Wave Spring

$$R = \frac{Ebt^3N_w^4}{KD^3} \cdot \frac{D_e}{D_i}$$

Where K = 3.3

Multi-Turn Wave Spring

$$R = \frac{1}{n} \cdot \frac{Ebt^3N_w^4}{KD^3} \cdot \frac{D_e}{D_i}$$

Where K = 3.3

Nested Wave Spring

$$R = n \cdot \frac{Ebt^3N_w^4}{KD^3} \cdot \frac{D_e}{D_i}$$

Where K = 3.3

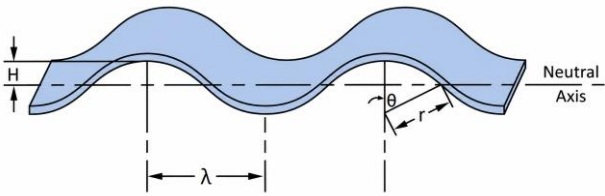
Diameter Expansion

The outside diameter of a wave spring increases during compression. For applications with limited radial clearance, the maximum outside diameter at the compressed condition should be checked during design. The formulas below can be used to estimate the maximum diameter and diameter expansion.

Maximum OD at Solid Height: $De_{max} = (0.02222 \cdot r \cdot Nw \cdot \theta) + b$

Maximum Diameter Expansion: $\Delta D = De_{max} - De$

Where r = Wave Radius = $(4H^2 + \lambda^2) \div 8H$
 θ = Angle (degrees) = $\text{ArcSin}(\lambda \div 2r)$
 λ = 1/2 Wave Frequency = $\pi D \div 2N_w$
 H = 1/2 Mean Free Height = $(H_d - t) \div 2$
 H_d = Free Height per Turn



Names and Symbols

Name	Symbol	Unit
Outside Diameter	D_e	mm
Inside Diameter	D_i	mm
Mean Diameter	D	mm
Material Thickness	t	mm
Material Width	b	mm
Modulus of Elasticity	E	N/mm ²
Deflection	S	mm
Number of Waves	N_w	pc
Load	F	N
Spring Rate	R	N/mm
Working Stress	σ	N/mm ²
Effective Number of Turns	n	turn
Multi-Wave Factor	K	----

Wave Springs-Application requirements

Name _____ Title _____ Date _____

Company _____ E-mail _____

Address _____

Phone _____ Fax _____

Dimension unit: () mm () inch

Apply to _____ Bore Diameter

Inside Diameter can pass through _____ Shaft Diameter

Radial Guide/Pilot

() Bore () Shaft



Shaft Pilot



Bore Pilot

Spring Rate and Deflection (Choose one)

Static loading application

Min/Max Spring Rate @ Work Height () N@MM

Free Height _____ Approximate

Dynamic loading application

Min/Max Spring Rate @ Work Height () N@MM

Min/Max Load @ Work Height () N@MM

Free Height _____ Approximate

Free Height _____ Min _____ Max _____

Waves _____ Material Thickness _____

Radial Wall _____

Applications: (Description)

Material:

Please consider the actual use environment:

Temperature () C° () F°

Corrosive Media _____

*Carbon Steel ()

*17-7PH/CH900 Stainless Steel ()

304 Stainless Steel ()

316 Stainless Steel ()

Inconel X-750 ()

Other _____ ()

Fatigue Strength: Designated Estimated Cyclic Life

() Static application () 1 million cycles

() Under 100 thousand cycles () More than 1 million cycles

() 100 thousand cycles

Quantity: Sample _____
Volume production _____

Type					
					
Single-Turn Gap Wave Springs	Single-Turn Overlap Wave Springs	Multi-Turn Wave Springs	Multi-Turn Wave Springs With Shim Ends	Nested Wave Springs	
☐	☐	☐	☐	☐	