Belleville Spring Washer Series

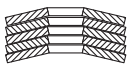
High Load in Small Spaces

Lee Spring's series of Belleville Washers are ideal for applications requiring high loads in small spaces with minimal deflection.

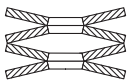
Belleville Washers are often used to solve vibration, thermal expansion, relaxation and creep problems. The Lee Spring line of Belleville Washers are made of Type 300 Stainless Steel and are passivated to remove contaminants and further improve corrosion resistance. Type 300 Stainless Steel is slightly magnetic and is recommended for any application where the temperature is below 500˚ F (260˚ C). Lee Spring Belleville Washers are offered in a wide range of diameters and bolt sizes.

VARIOUS CONFIGURATIONS OF BELLEVILLE WASHERS

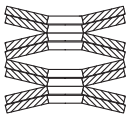
Single
ONE WASHER



Parallel
ALL WASHERS STACKED THE SAME WAY



Series
ALL WASHERS STACKED OPPOSITE EACH OTHER



Series Parallel
A COMBINATION OF THE TWO

Belleville Washers can be stacked in series, parallel, or a combination of both to achieve varying loads and height. Belleville Washers can be used in 4 different ways:

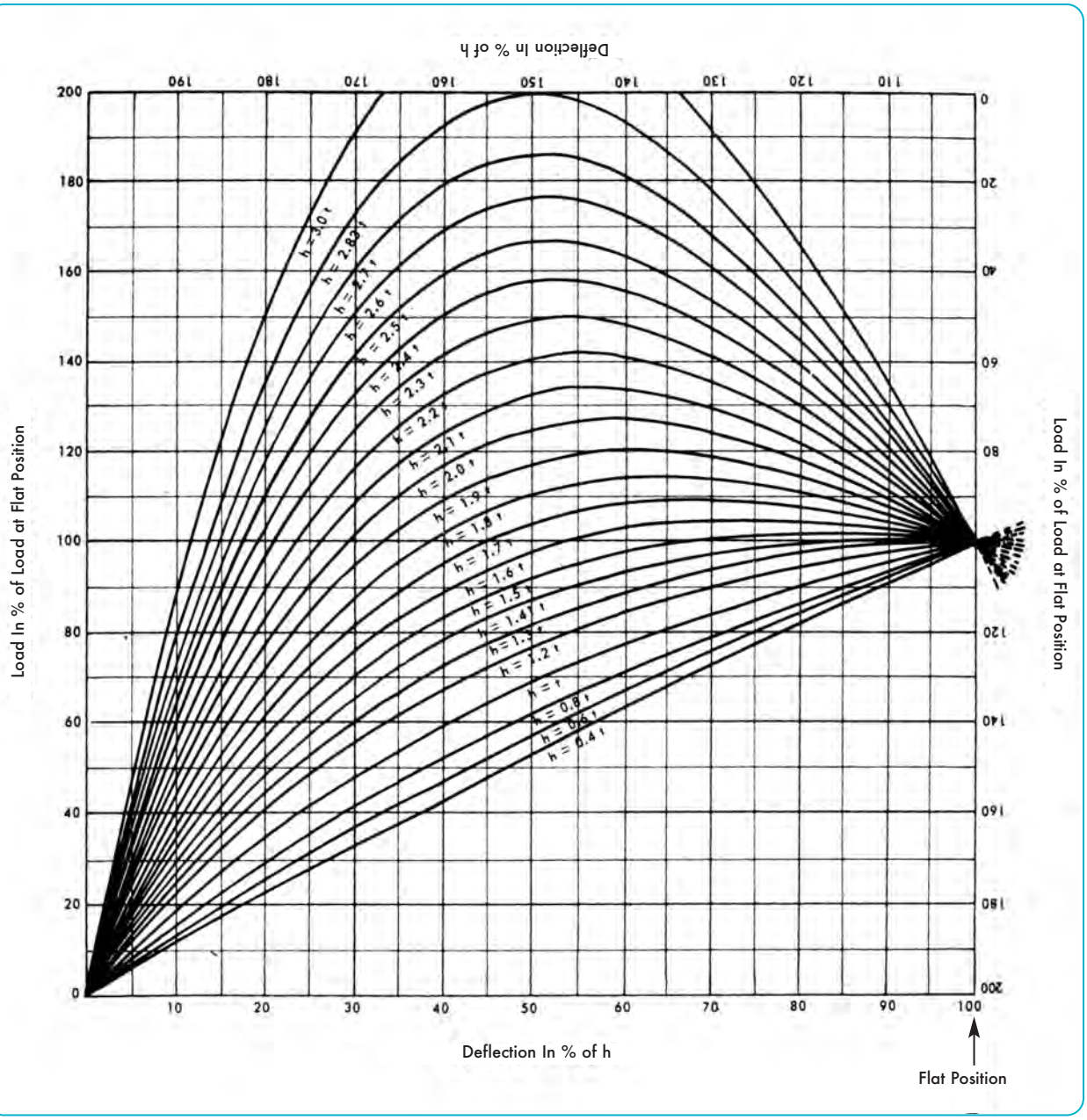
A single Belleville Washer has a specific load for a given deflection. Two washers stacked in parallel will yield double the load of a single washer for the same deflection; three washers will yield triple the load; four washers will yield four times the load, etc.

Alternatively, two washers stacked in series will yield double the deflection of a single washer for the same load; three washers will yield triple the deflection; four washers will yield four times the deflection, etc.

Various series-parallel combinations therefore can provide a wide variety of combined results of load versus deflection for the stack. Consequently, depending on the application, the designer can:

- Stack in parallel to increase the load.
- Stack in series to increase the deflection
- Adjust the load and deflection of a washer stack by adding or removing individual washers and/or the sequence in which they are used, whether in series or parallel.

Lee Spring can manufacture custom Belleville spring washers to your specifications. Contact us today!

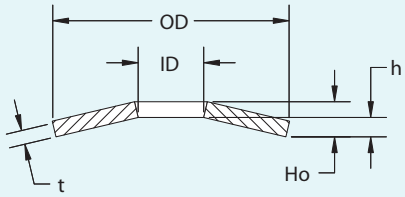


SELECTING BELLEVILLE WASHERS

Lee Spring Belleville Washer part numbers reflect three of the key measurement parameters. As shown in the diagram below the washer part number is configured as follows:

Washer Part Number **093-005-188**

Measurement Parameters **ID** **t** **OD**



ID Represents the washer inside diameter. This is a ***minimum*** measurement and reflects the **bolt size** that the washer will accommodate.

t Represents the washer material thickness as well as the washer solid (flat) height.

OD Represents the washer outside diameter. This outside diameter is the ***maximum*** outside diameter as supplied and prior to loading.

OTHER IMPORTANT CONSIDERATIONS ARE:

Ho Overall Height, unloaded

h h = Ho – t

Pmax Load at flat (the load at full compression)

In order to obtain intermediate loads for Belleville Washers, you can use the Load-Deflection diagram above.

Belleville Spring Washer Series

Guide to using tables

Lee Stock Number:
Lee Spring Part Number

Inside Diameter (ID):
Nominal hole size of washer's inside.

Thickness (t):
Material thickness.

Calculated Load at Flat (Pmax):
Load when the spring washer is fully compressed.

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

LEE STOCK NUMBER	BOLT SIZE	INSIDE DIAMETER (ID)		OUTSIDE DIAMETER (OD)		THICKNESS (t)		OVERALL HEIGHT UNLOADED (Ho)		CALCULATED LOAD AT FLAT (Pmax)		PRICE GROUP
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
093-005-188				.188	4.78	.005	.13	.014	.36	5.7	2.6	W2
093-006-188				.188	4.78	.006	.15	.015	.38	9.8	4.5	W2
093-007-188	3/32	.093	2.36	.188	4.78	.007	.18	.014	.36	12.1	5.5	W2
093-009-188				.188	4.78	.009	.23	.014	.36	18.4	8.4	W2
093-010-188				.188	4.78	.010	.25	.015	.38	25.3	11.5	W2
125-012-236				.236	5.99	.012	.30	.018	.46			W1

Bolt Size:
Suggested maximum bolt size to guide the inside of the washer.

Outside Diameter (OD):
Nominal outside diameter of the washer. If used in a containment hole the hole must be greater than this dimension.

Overall Height Unloaded (Ho):
The height of the washer in the unloaded position.

Additional Information

- Belleville Washers manufactured from Type 300 Stainless Steel with passivated finish in accordance with ASTM A967.
- To minimize friction and optimize load, ensure stack of springs are guided over a rod or within a bore or cylinder.

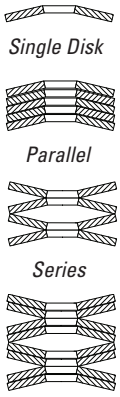
How to Determine Price

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

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

BELLEVILLE SPRING WASHERS

300 SERIES • ***Stainless Steel (Passivated)***



LEE STOCK NUMBER	BOLT SIZE	INSIDE DIAMETER (ID)		OUTSIDE DIAMETER (OD)		THICKNESS (t)		OVERALL HEIGHT UNLOADED (Ho)		CALCULATED LOAD AT FLAT (Pmax)		PRICE GROUP
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
093-005-188				.188	4.78	.005	.13	.014	.36	5.7	2.6	W2
093-006-188				.188	4.78	.006	.15	.015	.38	9.8	4.5	W2
093-007-188	3/32	.093	2.36	.188	4.78	.007	.18	.014	.36	12.1	5.5	W2
093-009-188				.188	4.78	.009	.23	.014	.36	18.4	8.4	W2
093-010-188				.188	4.78	.010	.25	.015	.38	25.3	11.5	W2
125-012-236				.236	5.99	.012	.30	.018	.46	34.7	15.7	W1
125-008-250				.250	6.35	.008	.20	.016	.41	11.8	5.3	W1
125-013-250	1/8	.125	3.18	.250	6.35	.013	.33	.020	.51	44.3	20.1	W1
125-012-394				.394	10.01	.012	.30	.026	.66	24.9	11.3	W2
125-016-394				.394	10.01	.016	.41	.028	.71	50.6	22.9	W2
125-020-394				.394	10.01	.020	.51	.030	.76	82.3	37.4	W2
138-010-281				.281	7.14	.010	.25	.020	.51	22.6	10.2	W1
138-012-281				.281	7.14	.012	.30	.019	.48	27.3	12.4	W1
138-013-281	#6	.138	3.51	.281	7.14	.013	.33	.021	.53	39.7	18.0	W1
138-015-281				.281	7.14	.015	.38	.023	.58	60.9	27.6	W1
138-022-437				.437	11.10	.022	.56	.032	.81	89.1	40.4	W3
148-009-281				.281	7.14	.009	.23	.017	.43	13.7	6.2	W1
148-011-281				.281	7.14	.011	.28	.017	.43	18.8	8.5	W1
148-013-281	#6	.148	3.76	.281	7.14	.013	.33	.019	.48	31.0	14.1	W1
148-015-281				.281	7.14	.015	.38	.024	.61	71.4	32.4	W1
156-009-312				.312	7.92	.009	.23	.020	.51	14.8	6.7	W1
156-010-312				.312	7.92	.010	.25	.020	.51	18.5	8.4	W1
156-011-312	5/32	.156	3.96	.312	7.92	.011	.28	.022	.56	27.1	12.3	W1
156-013-312				.312	7.92	.013	.33	.021	.53	32.5	14.7	W1
156-015-312				.312	7.92	.015	.38	.023	.58	49.9	22.6	W1
156-017-312				.312	7.92	.017	.43	.024	.61	63.6	28.8	W1
165-013-343				.343	8.71	.013	.33	.024	.61	36.2	16.4	W2
165-016-343				.343	8.71	.016	.41	.026	.66	61.4	27.8	W2
165-018-343				.343	8.71	.018	.46	.028	.71	87.4	39.6	W3
165-016-394	#8	.165	4.19	.394	10.01	.016	.41	.028	.71	52.9	24.0	W2
165-020-394				.394	10.01	.020	.51	.030	.76	86.1	39.1	W3
165-016-472				.472	11.99	.016	.41	.031	.79	44.5	20.2	W2
165-020-472				.472	11.99	.020	.51	.033	.84	75.2	34.1	W3
165-024-472				.472	11.99	.024	.61	.039	.99	150.0	68.0	W3
187-012-375				.375	9.53	.012	.30	.024	.61	26.5	12.0	W1
187-015-375				.375	9.53	.015	.38	.025	.64	43.1	19.6	W1
187-017-375				.375	9.53	.017	.43	.026	.66	56.5	25.6	W1
187-020-375				.375	9.53	.020	.51	.029	.74	92.0	41.7	W1
187-022-375	3/16	.187	4.75	.375	9.53	.022	.56	.030	.76	108.8	49.4	W1
187-025-375				.375	9.53	.025	.64	.031	.79	119.7	54.3	W2
187-028-375				.375	9.53	.028	.71	.033	.84	140.2	63.6	W2
187-030-375				.375	9.53	.030	.76	.036	.91	206.9	93.9	W2
187-020-562				.562	14.27	.020	.51	.037	.94	69.0	31.3	W3
187-028-562				.562	14.27	.028	.71	.042	1.07	156.0	70.8	W3

SPECIAL INSTRUCTIONS FOR BELLEVILLE SPRING WASHERS

PRICING: See Inside Back Cover for up to 199 pricing. To price or order up to 1000 pcs. visit leespring.com; 1000+ pcs. contact Lee Spring.

LEE STOCK NUMBER	BOLT SIZE	INSIDE DIAMETER (ID)		OUTSIDE DIAMETER (OD)		THICKNESS (t)		OVERALL HEIGHT UNLOADED (Ho)		CALCULATED LOAD AT FLAT (Pmax)		PRICE GROUP
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
205-010-394	#10	.205	5.21	.394	10.01	.010	.25	.022	.56	14.2	6.5	W2
205-016-394				.394	10.01	.016	.41	.028	.71	58.3	26.5	W2
205-020-394				.394	10.01	.020	.51	.030	.76	94.9	43.1	W3
205-020-472				.472	11.99	.020	.51	.035	.89	91.1	41.3	W3
205-024-472				.472	11.99	.024	.61	.037	.94	136.4	61.9	W3
205-024-591				.591	15.01	.024	.61	.041	1.04	108.3	49.1	W3
218-016-437	#12	.218	5.54	.437	11.10	.016	.41	.031	.79	57.8	26.2	W2
218-020-437				.437	11.10	.020	.51	.032	.81	90.3	41.0	W2
218-023-437				.437	11.10	.023	.58	.034	.86	125.9	57.1	W3
218-035-687				.687	17.45	.035	.89	.050	1.27	217.7	98.8	W3
250-024-472	1/4	.250	6.35	.472	11.99	.024	.61	.037	.94	150.4	68.2	W3
250-015-500	1/4	.250	6.35	.500	12.70	.015	.38	.028	.71	31.6	14.3	W2
250-017-500				.500	12.70	.017	.43	.029	.74	42.4	19.2	W1
250-018-500				.500	12.70	.018	.46	.030	.76	50.4	22.8	W1
250-020-500				.500	12.70	.020	.51	.032	.81	69.1	31.3	W1
250-023-500				.500	12.70	.023	.58	.036	.91	113.8	51.6	W1
250-024-500				.500	12.70	.024	.61	.038	.97	139.3	63.2	W2
250-025-500				.500	12.70	.025	.64	.039	.99	157.4	71.4	W2
250-038-500				.500	12.70	.038	.97	.047	1.19	355.3	161.2	W3
250-042-562				.562	14.27	.042	1.07	.055	1.40	520.0	235.9	W3
250-020-591	1/4	.250	6.35	.591	15.01	.020	.51	.039	.99	73.0	33.1	W3
250-024-591				.591	15.01	.024	.61	.041	1.04	112.8	51.2	W3
250-028-591				.591	15.01	.028	.71	.043	1.09	158.1	71.7	W3
250-032-637	1/4	.250	6.35	.637	16.18	.032	.81	.048	1.22	212.4	96.4	W3
250-052-687				.687	17.45	.052	1.32	.069	1.75	820.9	372.4	W7
250-025-750				.750	19.05	.025	.64	.049	1.24	106.9	48.5	W2
250-036-750				.750	19.05	.036	.91	.054	1.37	239.4	108.6	W3
250-052-750				.750	19.05	.052	1.32	.065	1.65	521.1	236.4	W9
250-061-812				.812	20.62	.061	1.55	.084	2.13	1263.3	573.0	W11
250-050-875				.875	22.23	.050	1.27	.066	1.68	416.1	188.8	W9
250-075-875				.875	22.23	.075	1.91	.086	2.18	965.6	438.0	W11
250-070-937				.937	23.80	.070	1.78	.100	2.54	1868.8	847.7	W11
283-014-551	9/32	.283	7.19	.551	14.00	.014	.36	.031	.79	28.1	12.7	W2
283-020-551				.551	14.00	.020	.51	.035	.89	72.2	32.8	W3
283-031-551				.551	14.00	.031	.79	.043	1.09	215.2	97.6	W3
283-050-875				.875	22.23	.050	1.27	.066	1.68	417.9	189.6	W9
283-075-875				.875	22.23	.075	1.91	.086	2.18	969.7	439.8	W11

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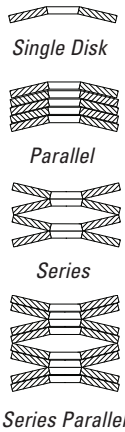
BELLEVILLE SPRING WASHERS

300 SERIES • ***Stainless Steel (Passivated)***



LEE STOCK NUMBER	BOLT SIZE	INSIDE DIAMETER (ID)		OUTSIDE DIAMETER (OD)		THICKNESS (t)		OVERALL HEIGHT UNLOADED (Ho)		CALCULATED LOAD AT FLAT (Pmax)		PRICE GROUP
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
312-023-625	5/16	.312	7.92	.625	15.88	.023	.58	.037	.94	78.4	35.5	W3
312-024-625				.625	15.88	.024	.61	.040	1.02	101.8	46.2	W3
312-025-625				.625	15.88	.025	.64	.042	1.07	122.2	55.4	W3
312-028-625				.625	15.88	.028	.71	.042	1.07	141.4	64.1	W3
312-030-625				.625	15.88	.030	.76	.044	1.12	173.9	78.9	W3
312-031-625				.625	15.88	.031	.79	.048	1.22	233.0	105.7	W3
312-047-625				.625	15.88	.047	1.19	.059	1.50	573.2	260.0	W6
312-052-687				.687	17.45	.052	1.32	.068	1.73	819.3	371.6	W9
312-040-875				.875	22.23	.040	1.02	.057	1.45	229.6	104.2	W5
312-030-937				.937	23.80	.030	.76	.060	1.52	147.9	67.1	W6
312-045-937				.937	23.80	.045	1.14	.067	1.70	366.2	166.1	W7
312-070-937				.937	23.80	.070	1.78	.094	2.39	1503.5	682.0	W13
312-080-1000				1.000	25.40	.080	2.03	.111	2.82	2533.9	1149.3	W14
323-020-709	5/16	.323	8.20	.709	18.01	.020	.51	.043	1.09	63.0	28.6	W3
323-028-709				.709	18.01	.028	.71	.049	1.24	157.8	71.6	W3
323-031-709				.709	18.01	.031	.79	.051	1.30	204.0	92.5	W4
323-039-709				.709	18.01	.039	.99	.055	1.40	324.9	147.4	W6
323-028-787				.787	19.99	.028	.71	.053	1.35	147.3	66.8	W3
323-035-787				.787	19.99	.035	.89	.057	1.45	253.1	114.8	W4
323-028-906				.906	23.01	.028	.71	.059	1.50	134.0	60.8	W4
323-035-906				.906	23.01	.035	.89	.063	1.60	236.3	107.2	W4
344-090-1000	11/32	.344	8.74	1.000	25.40	.090	2.29	.102	2.59	1407.4	638.4	W19
344-062-1125				1.125	28.58	.062	1.57	.083	2.11	630.8	286.1	W12
375-025-750	3/8	.375	9.53	.750	19.05	.025	.64	.040	1.02	75.0	34.0	W3
375-028-750				.750	19.05	.028	.71	.042	1.07	98.3	44.6	W3
375-030-750				.750	19.05	.030	.76	.044	1.12	120.9	54.8	W3
375-032-750				.750	19.05	.032	.81	.046	1.17	146.7	66.5	W3
375-035-750				.750	19.05	.035	.89	.055	1.40	274.2	124.4	W3
375-038-750				.750	19.05	.038	.97	.048	1.22	175.5	79.6	W4
375-040-750				.750	19.05	.040	1.02	.059	1.50	388.9	176.4	W4
375-042-750				.750	19.05	.042	1.07	.052	1.32	236.9	107.5	W5
375-044-750				.750	19.05	.044	1.12	.054	1.37	272.4	123.6	W5
375-057-750				.750	19.05	.057	1.45	.070	1.78	769.9	349.2	W8
375-062-750				.750	19.05	.062	1.57	.078	1.98	1219.4	553.1	W8
375-076-750				.750	19.05	.076	1.93	.108	2.74	4492.1	2037.6	W13
375-047-950				.950	24.13	.047	1.19	.068	1.73	397.7	180.4	W8
375-042-970				.970	24.64	.042	1.07	.057	1.45	193.6	87.8	W6
375-080-1000				1.000	25.40	.080	2.03	.109	2.77	2418.8	1097.1	W14
375-053-1125				1.125	28.58	.053	1.35	.080	2.03	509.3	231.0	W11
375-078-1125				1.125	28.58	.078	1.98	.097	2.46	1142.5	518.2	W14
375-089-1188				1.188	30.18	.089	2.26	.121	3.07	2553.3	1158.2	W18
406-062-875	13/32	.406	10.31	.875	22.23	.062	1.57	.074	1.88	647.7	293.8	W11
406-089-875				.875	22.23	.089	2.26	.100	2.54	1756.3	796.6	W18
406-109-875				.875	22.23	.109	2.77	.124	3.15	4399.6	1995.6	W22
406-062-1000				1.000	25.40	.062	1.57	.092	2.34	1185.1	537.5	W12
406-105-1000				1.000	25.40	.105	2.67	.118	3.00	2494.3	1131.4	W22
406-098-1188				1.188	30.18	.098	2.49	.119	3.02	2251.4	1021.2	W21
406-105-1188				1.188	30.18	.105	2.67	.125	3.18	2637.3	1196.2	W22
406-074-1250				1.250	31.75	.074	1.88	.098	2.49	996.1	451.8	W14

SPECIAL INSTRUCTIONS FOR BELLEVILLE SPRING WASHERS

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LEE STOCK NUMBER	BOLT SIZE	INSIDE DIAMETER (ID)		OUTSIDE DIAMETER (OD)		THICKNESS (t)		OVERALL HEIGHT UNLOADED (Ho)		CALCULATED LOAD AT FLAT (Pmax)		PRICE GROUP
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
437-025-875	7/16	.437	11.10	.875	22.23	.025	.64	.052	1.32	99.1	44.9	W4
437-028-875				.875	22.23	.028	.71	.056	1.42	144.3	65.5	W4
437-031-875				.875	22.23	.031	.79	.059	1.50	195.9	88.8	W4
437-035-875				.875	22.23	.035	.89	.058	1.47	231.5	105.0	W5
437-038-875				.875	22.23	.038	.97	.059	1.50	270.6	122.7	W5
437-040-875				.875	22.23	.040	1.02	.060	1.52	300.5	136.3	W5
437-042-875				.875	22.23	.042	1.07	.062	1.57	347.9	157.8	W5
437-059-875				.875	22.23	.059	1.50	.083	2.11	1157.3	525.0	W10
437-035-1000				1.000	25.40	.035	.89	.067	1.70	232.5	105.4	W4
437-040-1000				1.000	25.40	.040	1.02	.071	1.80	336.2	152.5	W5
437-050-1000				1.000	25.40	.050	1.27	.085	2.16	741.3	336.2	W9
437-080-1000				1.000	25.40	.080	2.03	.106	2.69	2255.6	1023.1	W14
480-049-906	15/32	.480	12.19	.906	23.01	.049	1.24	.073	1.85	641.2	290.9	W8
480-028-984				.984	24.99	.028	.71	.063	1.60	140.9	63.9	W4
480-049-984				.984	24.99	.049	1.24	.077	1.96	604.0	274.0	W9
480-059-1240				1.240	31.50	.059	1.50	.093	2.36	744.4	337.7	W12
500-042-830	1/2	.500	12.70	.830	21.08	.042	1.07	.067	1.70	559.3	253.7	W5
500-089-928				.928	23.57	.089	2.26	.107	2.72	2779.3	1260.7	W18
500-030-1000				1.000	25.40	.030	.76	.049	1.24	92.3	41.9	W3
500-033-1000				1.000	25.40	.033	.84	.052	1.32	122.8	55.7	W3
500-035-1000				1.000	25.40	.035	.89	.057	1.45	169.7	77.0	W4
500-038-1000				1.000	25.40	.038	.97	.058	1.47	197.4	89.5	W8
500-042-1000				1.000	25.40	.042	1.07	.060	1.52	239.9	108.8	W8
500-045-1000				1.000	25.40	.045	1.14	.061	1.55	262.3	119.0	W8
500-050-1000				1.000	25.40	.050	1.27	.075	1.91	562.1	255.0	W9
500-073-1000				1.000	25.40	.073	1.85	.091	2.31	1259.6	571.3	W13
500-080-1000				1.000	25.40	.080	2.03	.103	2.62	2118.3	960.8	W14
500-100-1063				1.063	27.00	.100	2.54	.116	2.95	2470.1	1120.4	W19
500-039-1100				1.100	27.94	.039	.99	.074	1.88	295.0	133.8	W6
500-049-1100				1.100	27.94	.049	1.24	.083	2.11	568.4	257.8	W9
500-059-1100				1.100	27.94	.059	1.50	.087	2.21	817.1	370.6	W12
500-062-1125				1.125	28.58	.062	1.57	.083	2.11	674.1	305.8	W12
500-125-1125				1.125	28.58	.125	3.18	.145	3.68	5261.1	2386.4	W25
500-060-1262				1.262	32.05	.060	1.52	.091	2.31	692.7	314.2	W12
500-098-1312				1.312	33.32	.098	2.49	.131	3.33	2948.3	1337.3	W22
500-104-1312				1.312	33.32	.104	2.64	.144	3.66	4271.1	1937.3	W22
500-112-1312				1.312	33.32	.112	2.84	.141	3.58	3867.5	1754.3	W22
500-030-1375				1.375	34.93	.030	.76	.066	1.68	83.3	37.8	W6
500-032-1375				1.375	34.93	.032	.81	.070	1.78	106.7	48.4	W6
500-038-1375				1.375	34.93	.038	.97	.082	2.08	207.0	93.9	W13
500-045-1375				1.375	34.93	.045	1.14	.095	2.41	390.6	177.2	W13
500-087-1375				1.375	34.93	.087	2.21	.123	3.12	2032.1	921.8	W16
500-047-1500				1.500	38.10	.047	1.19	.093	2.36	340.4	154.4	W13
500-070-1500				1.500	38.10	.070	1.78	.104	2.64	831.2	377.0	W13
500-080-1500				1.500	38.10	.080	2.03	.098	2.49	656.9	298.0	W18
500-102-1500				1.500	38.10	.102	2.59	.128	3.25	1966.6	892.0	W21
500-140-1625				1.625	41.28	.140	3.56	.168	4.27	4642.2	2105.6	W32

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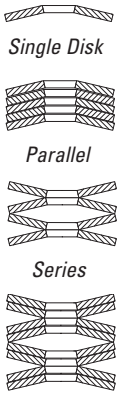
BELLEVILLE SPRING WASHERS

300 SERIES • ***Stainless Steel (Passivated)***



LEE STOCK NUMBER	BOLT SIZE	INSIDE DIAMETER (ID)		OUTSIDE DIAMETER (OD)		THICKNESS (t)		OVERALL HEIGHT UNLOADED (Ho)		CALCULATED LOAD AT FLAT (Pmax)		PRICE GROUP
		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
531-062-1000	17/32	.531	13.49	1.000	25.40	.062	1.57	.085	2.16	1023.4	464.2	W12
531-090-1063				1.063	27.00	.090	2.29	.106	2.69	1855.8	841.8	W19
531-062-1125				1.125	28.58	.062	1.57	.083	2.11	690.9	313.4	W12
531-074-1218				1.218	30.94	.074	1.88	.104	2.64	1387.3	629.3	W14
531-062-1250				1.250	31.75	.062	1.57	.092	2.34	768.2	348.5	W12
531-078-1250				1.250	31.75	.078	1.98	.103	2.62	1274.7	578.2	W14
531-090-1250				1.250	31.75	.090	2.29	.114	2.90	1879.8	852.7	W19
531-125-1250				1.250	31.75	.125	3.18	.143	3.63	3777.3	1713.4	W25
531-100-1375				1.375	34.93	.100	2.54	.120	3.05	1733.1	786.1	W21
531-095-1500				1.500	38.10	.095	2.41	.125	3.18	1845.6	837.1	W20
562-038-1125	9/16	.562	14.27	1.125	28.58	.038	.97	.073	1.85	272.8	123.8	W5
562-057-1125				1.125	28.58	.057	1.45	.084	2.13	710.3	322.2	W11
562-105-1625				1.625	41.28	.105	2.67	.135	3.43	2117.1	960.3	W23
593-089-1188	19/32	.593	15.06	1.188	30.18	.089	2.26	.115	2.92	2333.9	1058.6	W18
625-050-1125	5/8	.625	15.88	1.125	28.58	.050	1.27	.068	1.73	343.2	155.7	W10
625-040-1250				1.250	31.75	.040	1.02	.082	2.08	309.5	140.4	W6
625-062-1250				1.250	31.75	.062	1.57	.092	2.34	823.1	373.4	W12
625-089-1250				1.250	31.75	.089	2.26	.111	2.82	1785.5	809.9	W19
625-050-1375				1.375	34.93	.050	1.27	.095	2.41	511.5	232.0	W11
625-062-1375				1.375	34.93	.062	1.57	.110	2.79	1040.3	471.9	W12
625-078-1375				1.375	34.93	.078	1.98	.100	2.54	949.4	430.6	W14
625-112-1500				1.500	38.10	.112	2.84	.148	3.76	3752.1	1701.9	W25
625-062-1625				1.625	41.28	.062	1.57	.084	2.13	325.0	147.4	W13
625-140-1625				1.625	41.28	.140	3.56	.168	4.27	4762.9	2160.4	W32
625-057-1875				1.875	47.63	.057	1.45	.115	2.92	490.0	222.2	W13
625-086-1875				1.875	47.63	.086	2.18	.129	3.28	1247.6	565.9	W20
625-127-1875				1.875	47.63	.127	3.23	.158	4.01	2896.6	1313.9	W29
656-098-1312	21/32	.656	16.66	1.312	33.32	.098	2.49	.126	3.20	2753.9	1249.2	W22
656-085-1625				1.625	41.28	.085	2.16	.105	2.67	769.8	349.2	W19
656-140-1750				1.750	44.45	.140	3.56	.183	4.65	6275.9	2846.7	W32
656-150-2000				2.000	50.80	.150	3.81	.206	5.23	7567.2	3432.4	W33
692-156-1250	11/16	.692	17.58	1.250	31.75	.156	3.96	.173	4.39	7951.8	3606.9	W33
692-044-1375				1.375	34.93	.044	1.12	.088	2.24	357.9	162.3	W11
692-067-1375				1.375	34.93	.067	1.70	.101	2.57	976.5	442.9	W13
692-140-1375				1.375	34.93	.140	3.56	.190	4.83	13101.7	5942.8	W32
692-125-2000				2.000	50.80	.125	3.18	.161	4.09	2829.8	1283.6	W28
692-187-2375				2.375	60.33	.187	4.75	.227	5.77	7388.1	3351.2	W39
750-040-1500	3/4	.750	19.05	1.500	38.10	.040	1.02	.068	1.73	143.3	65.0	W13
750-045-1500				1.500	38.10	.045	1.14	.093	2.36	349.7	158.6	W13
750-060-1500				1.500	38.10	.060	1.52	.107	2.72	811.6	368.1	W14
750-072-1500				1.500	38.10	.072	1.83	.109	2.77	1104.1	500.8	W18
750-107-1500				1.500	38.10	.107	2.72	.134	3.40	2644.3	1199.4	W23
750-125-1500				1.500	38.10	.125	3.18	.160	4.06	5465.1	2478.9	W27
750-150-2000				2.000	50.80	.150	3.81	.203	5.16	7284.8	3304.3	W35
750-068-2250				2.250	57.15	.068	1.73	.137	3.48	687.3	311.7	W18
750-150-2250				2.250	57.15	.150	3.81	.188	4.78	4062.7	1842.8	W35

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		IN.	MM	IN.	MM	IN.	MM	IN.	MM	LB.	KG	300 Series Stainless
875-057-1750	7/8	.875	22.23	1.750	44.45	.057	1.45	.114	2.90	620.0	281.2	W13
875-085-1750				1.750	44.45	.085	2.16	.128	3.25	1551.1	703.6	W21
875-131-1750				1.750	44.45	.131	3.33	.167	4.24	4753.6	2156.2	W30
875-150-2000				2.000	50.80	.150	3.81	.198	5.03	6865.0	3113.9	W35
1000-049-1969	1	1.000	25.40	1.969	50.01	.049	1.24	.112	2.84	347.0	157.4	W14
1000-059-1969				1.969	50.01	.059	1.50	.122	3.10	605.7	274.7	W14
1000-065-2000				2.000	50.80	.065	1.65	.130	3.30	802.7	364.1	W14
1000-078-2000				2.000	50.80	.078	1.98	.138	3.51	1280.4	580.8	W18
1000-097-2000				2.000	50.80	.097	2.46	.145	3.68	1970.1	893.6	W25
1000-078-2375				2.375	60.33	.078	1.98	.157	3.99	1112.8	504.8	W20
1016-118-2000	1	1.016	25.81	2.000	50.80	.118	3.00	.165	4.19	3504.4	1589.6	W30
1016-090-3000				3.000	76.20	.090	2.29	.180	4.57	1170.9	531.1	W30
1063-219-3500	1 1/16	1.063	27.00	3.500	88.90	.219	5.56	.281	7.14	8477.4	3845.3	W40
1125-059-2250	1 1/8	1.125	28.58	2.250	57.15	.059	1.50	.136	3.45	561.9	254.9	W19
1125-073-2250				2.250	57.15	.073	1.85	.148	3.76	1036.7	470.2	W20
1130-206-2750	1 1/8	1.130	28.70	2.750	69.85	.206	5.23	.272	6.91	12685.3	5754.0	W39
1250-219-2250	1 1/4	1.250	31.75	2.250	57.15	.219	5.56	.252	6.40	13217.9	5995.5	W39
1250-080-2500				2.500	63.50	.080	2.03	.160	4.06	1178.9	534.7	W35
1255-187-2500	1 1/4	1.255	31.88	2.500	63.50	.187	4.75	.241	6.12	10185.8	4620.2	W39
1255-168-3750				3.750	95.25	.168	4.27	.251	6.38	4489.8	2036.5	W39
1406-132-2750	1 13/32	1.406	35.71	2.750	69.85	.132	3.35	.196	4.98	3546.7	1608.8	W37
1755-133-3000	1 3/4	1.755	44.58	3.000	76.20	.133	3.38	.223	5.66	4751.6	2155.3	W38
2063-125-3375	2	2.063	52.40	3.375	85.73	.125	3.18	.203	5.16	2826.3	1282.0	W38

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