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## Westfield Fasteners Product Specification:

# DIN 127 B - Rectangular Section Helical Spring Washers

This product guide contains the specification for helical spring washers with a rectangular cross section, for use with metric sized fasteners. These washers are standard inventory items at Westfield Fasteners. The basis of this specification is the DIN standard DIN 127.

## Product Description

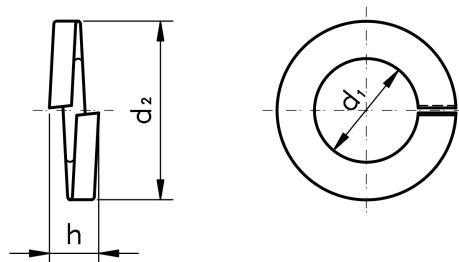
Helical spring washers are also known as split washers, and are designed to help prevent loosening of bolted joints when subjected to vibration. This type has a rectangular section and is generally used on hexagon head bolted fixings, and is manufactured to DIN 127 B.

## Scope of the DIN standard.

DIN 127 covers spring type lock washers designed to be used with bolt and nut assemblies, with property class of 5.8 or less. These spring washers do not effectively prevent loosening if the assembly is under a varying radial load. They are designed for use with short bolts, subjected to thrust. Helical spring washers should be fitted to the nut end of a bolted joint.

Figure 1 and table 1 below illustrate the dimensions and tolerances. Figure 1 shows the usual spring washer shape for a right hand thread. To be most effective, a spring washer with a reversed coil should be used when employed with left hand threads. A 'type A' version of these washers is specified in the standard, which includes additional prongs at each cut point at the ends of the coil. These prongs are designed to bite into the material of the joint, with the intention of making the joint more secure.

Type B



Washer cross section  
(enlarged)

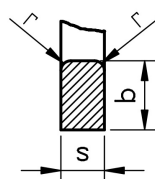


Figure 1: Helical Spring Washer with Rectangular Section

**Table 1: Dimensions & Tolerances according to DIN 127**

<b>Nominal Size</b>		<b>2</b>	<b>2.2</b>	<b>2.5</b>	<b>3</b>	<b>3.5</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>16</b>	<b>18</b>	<b>20</b>	<b>22</b>	<b>24</b>	<b>27</b>
d <sub>1</sub>	min	2.1	2.3	2.6	3.1	3.6	4.1	5.1	6.1	7.1	8.1	10.2	12.2	14.2	16.2	18.2	20.2	22.5	24.5	27.5
	max	2.4	2.6	2.9	3.4	3.9	4.4	5.4	6.5	7.5	8.5	10.7	12.7	14.7	17	19	21.2	23.5	25.5	28.5
d <sub>2</sub>	max	4.4	4.8	5.1	6.2	6.7	7.6	9.2	11.8	12.8	14.8	18.1	21.1	24.1	27.4	29.4	33.6	35.9	40	43
b	-	0.9	1	1	1.3	1.3	1.5	1.8	2.5	2.5	3	3.5	4	4.5	5	5	6	6	7	7
	Tolerance	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.15	+/-0.15	+/-0.15	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.25	+/-0.25
s	-	0.5	0.6	0.6	0.8	0.8	0.9	1.2	1.6	1.6	2	2.2	2.5	3	3.5	3.5	4	4	5	5
	Tolerance	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.1	+/-0.15	+/-0.15	+/-0.15	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2	+/-0.2
h	Type B min	1	1.2	1.2	1.6	1.6	1.8	2.4	3.2	3.2	4	4.4	5	6	7	7	8	8	10	10
	Type B max	1.2	1.4	1.4	1.9	1.9	2.1	2.8	3.8	3.8	4.7	5.2	5.9	7.1	8.3	8.3	9.4	9.4	11.8	11.8
r		0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.5	0.5	1	1	1	1	1	1	1.6	1.6
To Suit Thread		M2	M2.2	M2.5	M3	M3.5	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27

**Table 1: Dimensions & Tolerances according to DIN 127 (Continued)**

<b>Nominal Size</b>		<b>30</b>	<b>36</b>	<b>39</b>	<b>42</b>	<b>45</b>	<b>48</b>	<b>52</b>	<b>56</b>	<b>60</b>	<b>64</b>	<b>68</b>	<b>72</b>	<b>80</b>	<b>90</b>	<b>100</b>
d <sub>1</sub>	min	30.5	36.5	39.5	42.5	45.5	49	53	57	61	65	69	73	81	91	101
	max	31.7	37.7	40.7	43.7	46.7	50.5	54.5	58.5	62.5	66.5	70.5	74.5	82.5	92.5	102.5
d <sub>2</sub>	max	48.2	58.2	61.2	68.2	71.2	75	83	87	91	95	99	103	111	121	131
b	-	8	10	10	12	12	12	14	14	14	14	14	14	14	14	14
	Tolerance	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25
s	-	6	6	6	7	7	7	8	8	8	8	8	8	8	8	8
	Tolerance	+/-0.2	+/-0.2	+/-0.2	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25	+/-0.25
h	Type B min	12	12	2	14	14	14	16	16	16	16	16	16	16	16	16
	Type B max	14.2	14.2	14.2	16.5	16.5	16.5	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9	18.9
r		1.6	1.6	1.6	2	2	2	2	2	2	2	2	2	2	2	2
To Suit Thread		30	36	39	42	45	48	52	56	60	64	68	72	80	90	100

For further details, please refer to the ISO/DIN standard document for this item.

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