



**METRIC - JIS-B1188 PHILLIPS SMALL PAN SPLIT WASHER / FLAT WASHER SEMS** JIS-B1188

Screw Dimensions		Flat Washer				Split Washer			Phillips Drive Size				
Nominal Size	Thread Pitch	A		H		M	D			W		D1	B(min) x T (min)
		Max	Min	Max	Min	Ref	Max	Min		Max	Min		
M2	0.4	3.5	3.1	1.4	1.2	2.2	5	4.7	0.34	0.26	4	0.9 x 0.5	1
M2.5	0.45	4.5	4.1	1.8	1.6	2.6	6.5	6.15	0.55	0.45	4.8	1 x 0.6	1
M3	0.5	5.5	5	2.15	1.85	3.6	7	6.65	0.55	0.45	5.5	1.1 x 0.7	2
							6	5.7	0.55	0.45			
M4	0.7	7	6.5	2.75	2.45	4.2	9	8.65	0.9	0.7	7	1.4 x 1	2
M5	0.8	9	8.4	3.45	3.15	4.9	10	9.65	1.1	0.9	8.5	1.7 x 1.3	2
M6	1.0	10.5	9.8	4.1	3.7	6.3	12.5	12.1	1.75	1.45	11.5	2.7 x 1.5	3

Tolerance on Length	Nominal Screw Size	Nominal Screw Lengths			
		Up to 10 mm	Over 10 mm to 20 mm, incl.	Over 20 mm to 40 mm, incl.	Over 40 mm
	M2.5	-0.4	-0.6	-0.8	-
M3 to M4	-0.6	-0.6	-0.8	-1	
M5 to M8	-0.8	-1	-1	-1	

<b>Description</b>	A cross-recessed, pan head machine screw with two free-spinning, captive washers. Directly below the pan head is a helical split lockwasher; beneath the split lockwasher is a round flat washer. The diameter and height of the pan head are between 5% and 20% smaller than a standard pan head.		
<b>Applications/ Advantages</b>	This double washer sems screw is typically a more economical alternative to a patented conical washer sems screw. They are commonly used in the electronics industry.		
<b>Component</b>	<i>Screw</i>	<i>Split Lockwasher</i>	<i>Flat Washer</i>
<b>Material</b>	Class 4.8 carbon steel	Split lockwashers shall be made from a carbon steel that conforms to the following chemical composition requirements: <i>Carbon:</i> 0.54 - 0.81%; <i>Silicon:</i> 0.15 - 0.35%; <i>Manganese:</i> 0.30 - 0.90%; <i>Phosphorus:</i> 0.030% max.; <i>Sulfur:</i> 0.030% max.	Plain washers shall be made from a carbon steel that conforms to the following chemical composition requirements: <i>Carbon:</i> 0.12% max.; <i>Manganese:</i> 0.50% max.; <i>Phosphorus:</i> 0.040% max.; <i>Sulfur:</i> 0.045% max.
<b>Hardness</b>	Rockwell B 71 minimum	Rockwell C 42 - 50	Rockwell B 60 maximum
<b>Tensile Strength</b>	420 N/mm <sup>2</sup> (applies to screws with a minimum nominal length of 2.5 <i>d</i> (where <i>d</i> is the nominal diameter of the screw))	-	-
<b>Plating</b>	Sems are available in zinc yellow and clear zinc finishes.		