



## Heavy Pattern

Nominal Diameter	S	a	d1	Tolerance on d1	d1 ≈	For Bolt Size	Corresponding Washer	Preferred on Length
1	0.2	0.15	1.2	+0.1	0.8	-	-	4-30
1.5	0.3	0.25	1.7		1.1	-	-	4-30
2	0.4	0.35	2.3		1.5	-	-	4-40
2.5	0.5	0.45	2.8		1.8	-	-	4-40
3	0.6	0.	3.3	+0.2	2.1	-	-	4-50
3.5	0.7	5	4.8		2.3	-	3.2	4-50
4	0.8	0.6	4.4		2.8	-	-	5-50
4.5	1	0.7	4.9		2.9	-	4.3	10-100
5	1	0.8	5.4	+0.3	3.4	-	5.3	10-100
6	1.2	1.6	6.4		3.9	-	6.4	10-120
8	1.5	1.6	8.5		5.5	M3	-	10-150
10	2	2	10.5		6.5	M4	8.4	10-150
12	2.5	2	12.5	+0.4	7.5	M5	-	10-180
13	3	2	13.5		8.5	M6	10.5	10-180
14	3	2	14.5		10.5	-	13	10-200
16	3.5	2	16.5		11.5	-	15	10-200
20	4	2	18.5	+0.4	12.5	M8	-	10-200
21	4	3	20.5		13.5	M10	17	14-200
25	5	3	21.5		15.5	-	19	14-200
28	5.5	3	25.5		17.5	M12	21	14-200
30	6	3	28.8		18.5	M14	23	14-200
32	6	3	30.5		20.5	M16	25	14-200
35	7	3	32.5		21.5	M20	28	20-200
38	7.5	4	38.5		23.5	M22	31	20-200
40	7.5	4	40.5		25.5	M24	37	20-200
45	8.5	4	45.5		28.5	M27	40	20-200
50	9.5	4	50.5	31.5	M30			

## PREFERRED ON LENGTHS

Length mm	In Steps of mm
4 to 6	1
6 to 32	2
32 to 40	4
40 to 100	5
100 to 200	20

## TOLERANCES ON LENGTHS

Length mm	Tolerance mm
4 to 10	+0.5
12 to 50	+1.0
50 to 200	+1.5