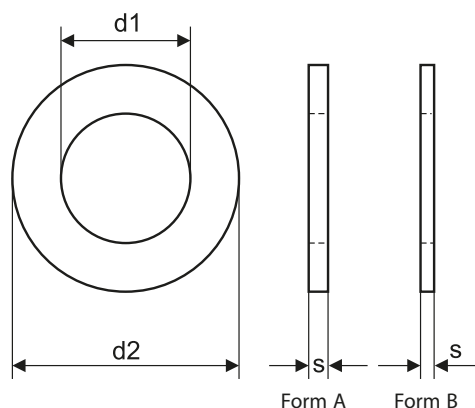


Plain Washers

BS 4320 Metric Series

Table 1: Bright Washers - Normal diameter series
(Forms A and B)



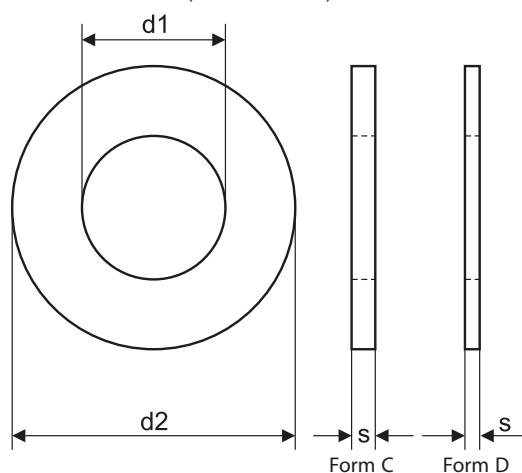
BS 4320 Dimensions of washers (Forms A and B)

Nominal size of bolt or screw	Inside diameter d1			Outside diameter d2			Thickness s					
							Form A (Normal range)			Form B (Normal range)		
	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.
M3	3.2	3.4	3.2	7.0	7.0	6.7	0.5	0.6	0.4	-	-	-
M4	4.3	4.5	4.3	9.0	9.0	8.7	0.8	0.9	0.7	-	-	-
M5	5.3	5.5	5.3	10.0	10.0	9.7	1.0	1.1	0.9	-	-	-
M6	6.4	6.7	6.4	12.5	12.5	12.1	1.6	1.8	1.4	0.8	0.9	0.7
M8	8.4	8.7	8.4	17.0	17.0	16.6	1.6	1.8	1.4	1.0	1.1	0.9
M10	10.5	10.9	10.5	21.0	21.0	20.5	2.0	2.2	1.8	1.25	1.45	1.05
M12	13.0	13.4	13.0	24.0	24.0	23.5	2.5	2.7	2.3	1.6	1.8	1.4
(M14)	15.0	15.4	15.0	28.0	28.0	27.5	2.5	2.7	2.3	1.6	1.8	1.4
M16	17.0	17.4	17.0	30.0	30.0	29.5	3.0	3.3	2.7	2.0	2.2	1.8
(M18)	19.0	19.5	19.0	34.0	34.0	33.2	3.0	3.3	2.7	2.0	2.2	1.8
M20	21.0	21.5	21.0	37.0	37.0	36.2	3.0	3.3	2.7	2.0	2.2	1.8
(M22)	23.0	23.5	23.0	39.0	39.0	38.2	3.0	3.3	2.7	2.0	2.2	1.8
M24	25.0	25.5	25.0	44.0	44.0	43.2	4.0	4.3	3.7	2.5	2.7	2.3
(M27)	28.0	28.5	28.0	50.0	50.0	49.2	4.0	4.3	3.7	2.5	2.7	2.3
M30	31.0	31.6	31.0	56.0	56.0	55.0	4.0	4.3	3.7	2.5	2.7	2.3
(M33)	34.0	34.6	34.0	60.0	60.0	59.0	5.0	5.6	4.4	3.0	3.3	2.7
M36	37.0	37.6	37.0	66.0	66.0	65.0	5.0	5.6	4.4	3.0	3.3	2.7
(M39)	40.0	40.6	40.0	72.0	72.0	71.0	6.0	6.6	5.4	3.0	3.3	2.7

Plain Washers

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Table 2: Bright Washers - Large diameter series
(Forms C and D)



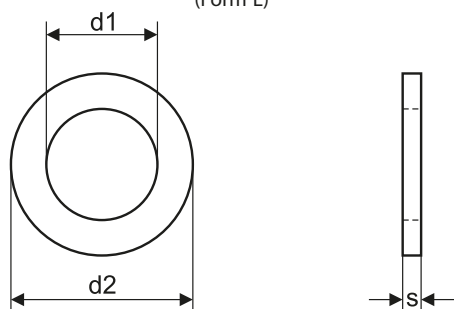
BS 4320 Dimensions of washers (Forms C and D)

Nominal size of bolt or screw	Inside diameter d_1			Outside diameter d_2			Thickness s					
							Form C (Normal range)			Form D (Normal range)		
	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.
M4	4.3	4.5	4.3	10.0	10.0	9.7	0.8	0.9	0.7	-	-	-
M5	5.3	5.5	5.3	12.5	12.5	12.1	1.0	1.1	0.9	-	-	-
M6	6.4	6.7	6.4	14.0	14.0	13.6	1.6	1.8	1.4	0.8	0.9	0.7
M8	8.4	8.7	8.4	21.0	21.0	20.5	1.6	1.8	1.4	1.0	1.1	0.9
M10	10.5	10.9	10.5	24.0	24.0	23.5	2.0	2.2	1.8	1.25	1.45	1.05
M12	13.0	13.4	13.0	28.0	28.0	27.5	2.5	2.7	2.3	1.6	1.8	1.4
(M14)	15.0	15.4	15.0	30.0	30.0	29.5	2.5	2.7	2.3	1.6	1.8	1.4
M16	17.0	17.4	17.0	34.0	34.0	33.2	3.0	3.3	2.7	2.0	2.2	1.8
(M18)	19.0	19.5	19.0	37.0	37.0	36.2	3.0	3.3	2.7	2.0	2.2	1.8
M20	21.0	21.5	21.0	39.0	39.0	38.2	3.0	3.3	2.7	2.0	2.2	1.8
(M22)	23.0	23.5	23.0	44.0	44.0	43.2	3.0	3.3	2.7	2.0	2.2	1.8
M24	25.0	25.5	25.0	50.0	50.0	49.2	4.0	4.3	3.7	2.5	2.7	2.3
(M27)	28.0	28.5	28.0	56.0	56.0	55.0	4.0	4.3	3.7	2.5	2.7	2.3
M30	31.0	31.6	31.0	60.0	60.0	59.0	4.0	4.3	3.7	2.5	2.7	2.3
(M33)	31.0	31.6	31.0	66.0	66.0	65.0	5.0	5.6	4.4	3.0	3.3	2.7
M36	37.0	37.6	37.0	72.0	72.0	71.0	5.0	5.6	4.4	3.0	3.3	2.7
(M39)	40.0	40.6	40.0	77.0	77.0	76.0	6.0	6.6	5.4	3.0	3.3	2.7

Plain Washers

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Table 3: Black washers - Normal diameter series
(Form E)



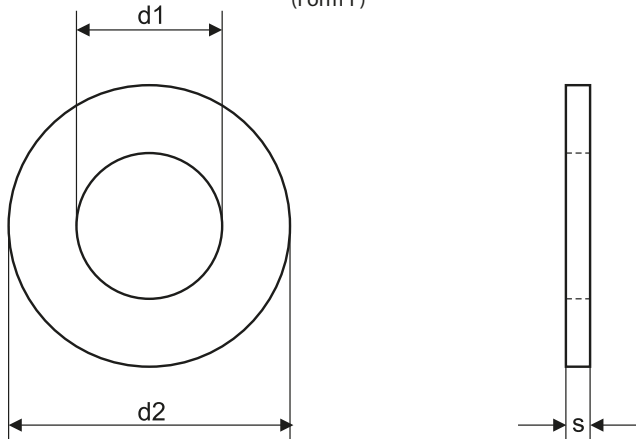
BS 4320 Dimensions of washers (Forms E)

Nominal size of bolt or screw	Inside diameter d1			Outside diameter d2			Thickness s		
	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.
M5	5.5	5.8	5.5	10.0	10.0	9.2	1.0	1.2	0.8
M6	6.6	7.0	6.6	12.5	12.5	11.7	1.6	1.9	1.3
M8	9.0	9.4	9.0	17.0	17.0	16.2	1.6	1.9	1.3
M10	11.0	11.5	11.0	21.0	21.0	20.2	2.0	2.3	1.7
M12	14.0	14.5	14.0	24.0	24.0	23.2	2.5	2.8	2.2
(M14)	16.0	16.5	16.0	28.0	28.0	27.2	2.5	2.8	2.2
M16	18.0	18.5	18.0	30.0	30.0	29.2	3.0	3.6	2.4
(M18)	20.0	20.6	20.0	34.0	34.0	32.8	3.0	3.6	2.4
M20	22.0	22.6	22.0	37.0	37.0	35.8	3.0	3.6	2.4
(M22)	24.0	24.6	24.0	39.0	39.0	37.8	3.0	3.6	2.4
M24	26.0	26.6	26.0	44.0	44.0	42.8	4.0	4.6	3.4
(M27)	30.0	30.6	30.0	50.0	50.0	48.8	4.0	4.6	3.4
M30	33.0	33.8	33.0	56.0	56.0	54.5	4.0	4.6	3.4
(M33)	36.0	36.8	36.0	60.0	60.0	58.5	5.0	6.0	4.0
M36	39.0	39.8	39.0	66.0	66.0	64.5	5.0	6.0	4.0
(M39)	42.0	42.8	42.0	72.0	72.0	70.5	6.0	7.0	5.0
M42	45.0	45.8	45.0	78.0	78.0	76.5	7.0	8.2	5.8
(M45)	48.0	48.8	48.0	85.0	85.0	83.0	7.0	8.2	5.8
M48	52.0	53.0	52.0	92.0	92.0	90.0	8.0	9.2	6.8
(M52)	56.0	57.0	56.0	98.0	98.0	96.0	8.0	9.2	6.8
M56	62.0	63.0	62.0	105.0	105.0	103.0	9.0	10.2	7.8
(M60)	66.0	67.0	66.0	110.0	110.0	108.0	9.0	10.2	7.8
M64	70.0	71.0	70.0	115.0	115.0	113.0	9.0	10.2	7.8
(M68)	74.0	75.0	74.0	120.0	120.0	118.0	10.0	11.2	8.8

Plain Washers

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Table 4: Black washers - Large diameter series
(Form F)



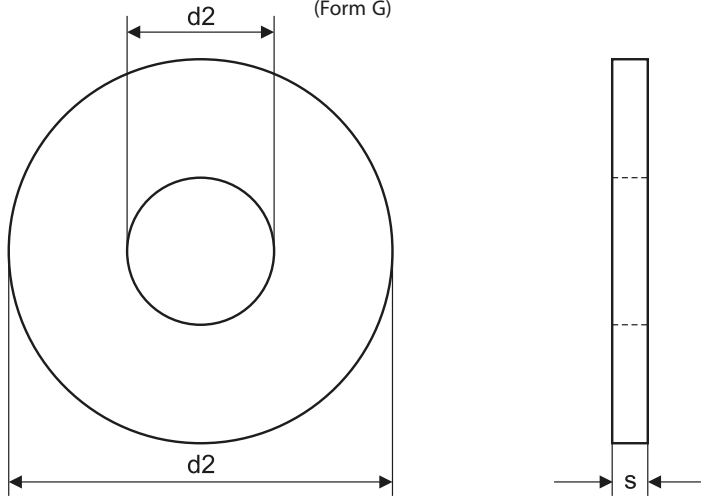
BS 4320 Dimensions of washers (Forms F)

Nominal size of bolt or screw	Inside diameter d1			Outside diameter d2			Thickness s		
	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.
M8	9.0	9.4	9.0	21.0	21.0	20.2	1.6	1.9	1.3
M10	11.0	11.5	11.0	24.0	24.0	23.2	2.0	2.3	1.7
M12	14.0	14.5	14.0	28.0	28.0	27.2	2.5	2.8	2.2
(M14)	16.0	16.5	16.0	30.0	30.0	29.2	2.5	2.8	2.2
M16	18.0	18.5	18.0	34.0	34.0	32.8	3.0	3.6	2.4
(M18)	20.0	20.6	20.0	37.0	37.0	35.8	3.0	3.6	2.4
M20	22.0	22.6	22.0	39.0	39.0	37.8	3.0	3.6	2.4
(M22)	24.0	24.6	24.0	44.00	44.0	42.8	3.0	3.6	2.4
M24	26.0	26.6	26.0	50.0	50.0	48.8	4.0	4.6	3.4
(M27)	30.0	30.6	30.0	56.0	56.0	54.5	4.0	4.6	3.4
M30	33.0	33.8	33.0	60.0	60.0	58.5	4.0	4.6	3.4
(M33)	36.0	36.8	36.0	66.0	66.0	64.5	5.0	6.0	4.0
M36	39.0	39.8	39.0	72.0	72.0	70.5	5.0	6.0	4.0
(M39)	42.0	42.8	42.0	77.0	77.0	75.5	6.0	7.0	5.0

Plain Washers

BS 4320 Metric Series

Table 5: Black washers - Extra large diameter series
(Form G)



BS 4320 Dimensions of washers (Forms G)

Nominal size of bolt or screw	Inside diameter d1			Outside diameter d2			Thickness s		
	nom.	max.	min.	nom.	max.	min.	nom.	max.	min.
M5	5.5	5.8	5.5	15.0	15.0	14.2	1.6	1.9	1.3
M6	6.6	7.0	6.6	18.0	18.0	17.2	2.0	2.3	1.7
M8	9.0	9.4	9.0	24.0	24.0	23.2	2.0	2.3	1.7
M10	11.0	11.5	11.0	30.0	30.0	29.2	2.5	2.8	2.2
M12	14.0	14.5	14.0	36.0	36.0	34.8	3.0	3.6	2.4
(M14)	16.0	16.5	16.0	42.0	42.0	40.8	3.0	3.6	2.4
M16	18.0	18.5	18.0	48.0	48.0	46.8	4.0	4.6	3.8
(M18)	20.0	20.6	20.0	54.0	54.0	52.5	4.0	4.6	3.4
M20	22.0	22.6	22.0	60.0	60.0	58.5	5.0	6.0	4.0
(M22)	24.0	24.6	24.0	66.0	66.0	64.5	5.0	6.0	4.0
M24	26.0	26.6	26.0	72.0	72.0	70.5	6.0	7.0	5.0
(M27)	30.0	30.6	30.0	81.0	81.0	79.0	6.0	7.0	5.0
M30	33.0	33.8	33.0	90.0	90.0	88.0	8.0	9.2	6.8
(M33)	36.0	36.8	36.0	99.0	99.0	97.0	8.0	9.2	6.8
M36	39.0	39.8	39.0	108.0	108.0	106.0	10.0	11.2	8.8
(M39)	42.0	42.8	42.0	117.0	117.0	115.0	10.0	11.2	8.8