

# ASTM A325M Heavy Hex Structural Bolts (Metric)

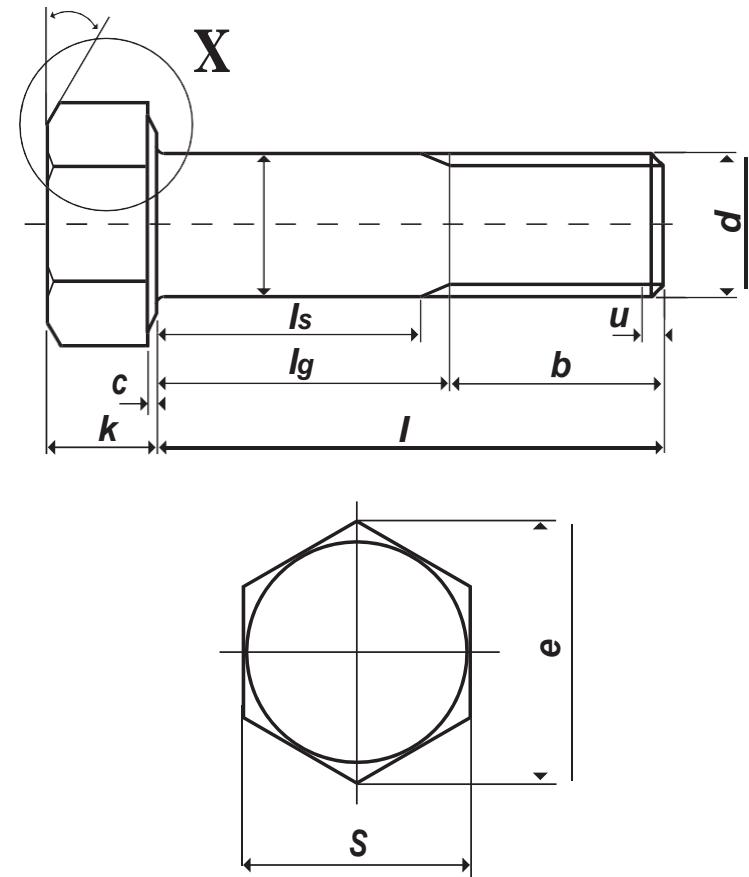
## A325M Bolt Dimensions

Thread size <b>d</b>	M16	M20	M22	M24	M27	M30	M36	
<b>P</b> pitch of thread	2	2.5	2.5	3	3	3.5	4	
<b>b</b>	Bolt ≤ 100	31	36	38	41	44	49	56
	Bolt > 100	38	43	45	48	51	56	63
<b>ds</b>	min.	15.30	19.16	21.16	23.16	26.16	29.16	35.00
	max.	16.70	20.84	22.84	24.84	27.84	30.84	37.00
<b>s</b>	min.	26.16	33.00	35.00	40.00	45.00	49.00	58.80
	max.	27.00	34.00	36.00	41.00	46.00	50.00	60.00
<b>e</b>	min.	29.56	37.29	39.55	45.20	50.85	55.37	66.44
	max.	31.18	39.26	41.57	47.34	53.12	57.74	69.28
<b>k</b>	min.	9.25	11.60	13.10	14.10	16.10	17.65	21.45
	max.	10.75	13.40	14.90	15.90	17.90	19.75	23.55
<b>k<sup>1</sup></b>	min.	6.5	8.1	9.2	9.9	11.3	12.4	15.0
<b>dw<sup>1</sup></b>	min.	24.9	31.4	33.3	38.0	42.8	46.5	55.9
<b>c</b>	min.	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	max.	0.8	0.8	0.8	0.8	0.8	0.8	0.8
<b>da</b>	max.	18.2	22.4	24.4	26.4	30.4	33.4	39.4
<b>r</b>	min.	0.6	0.8	0.8	1.0	1.2	1.2	1.5

<sup>1)</sup> The maximum value of **dw** shall not exceed the actual width across flats

## Materials

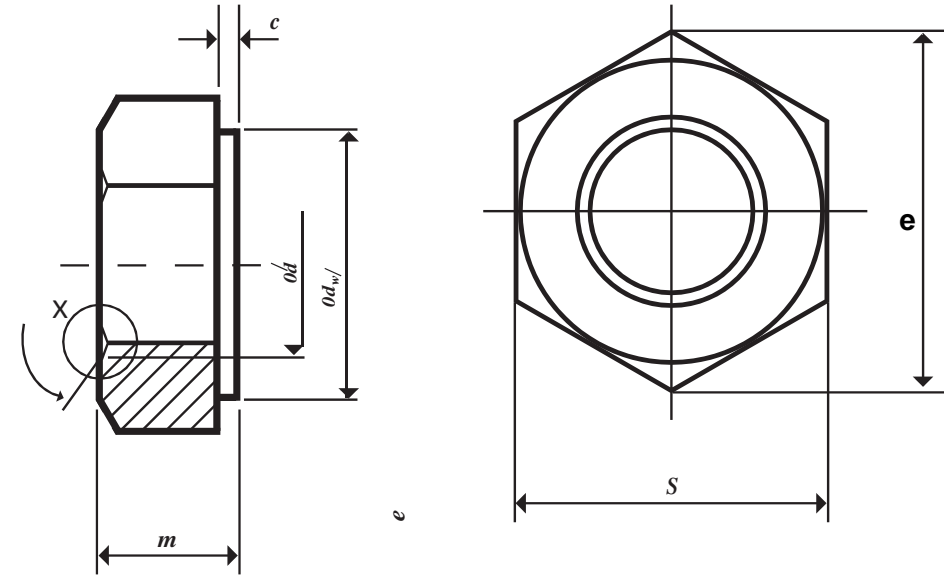
Medium carbon, carbon boron, medium carbon alloy or alloy boron steel in accordance with ASTM A325M



All dimensions are in millimeters

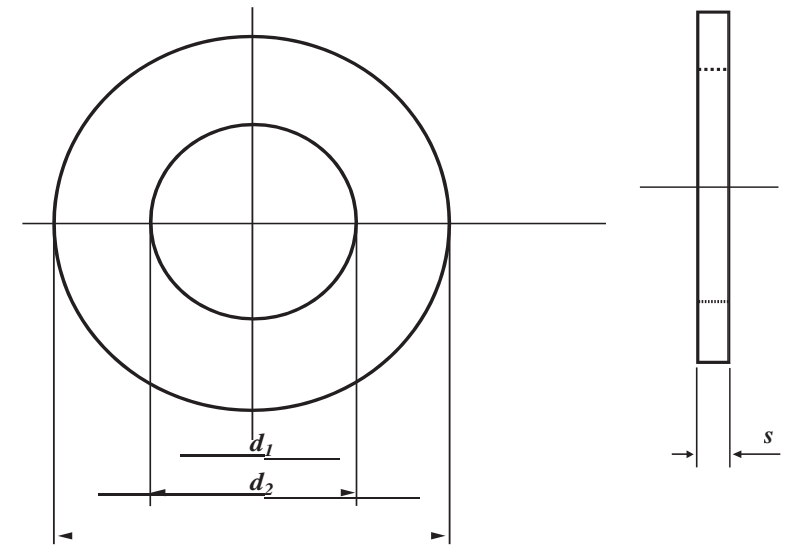
## A563M Nut Dimension Classes 8S & 10S

Nominal size and thread pitch <i>d</i>	<i>s</i>		<i>e</i>		<i>m</i>		<i>dw</i> <sup>1)</sup>	<i>c</i>		Total runout of bearing surface
	Width across flats		Width across corners		Thickness		Bearing face diameter	Washer face thickness		
	max	min	max	min	max	min	min	max	min	
<b>M16 x 2</b>	27.00	26.16	31.18	29.56	17.1	16.4	24.9	0.8	0.4	0.47
<b>M20 x 2.5</b>	34.00	33.00	39.26	37.29	20.7	19.4	31.4	0.8	0.4	0.58
<b>M22 x 2.5</b>	36.00	35.00	41.57	39.55	23.6	22.3	33.3	0.8	0.4	0.63
<b>M24 x 3</b>	41.00	40.00	47.34	45.20	24.2	22.9	38.0	0.8	0.4	0.72
<b>M27 x 3</b>	46.00	45.00	53.12	50.85	27.6	26.3	42.8	0.8	0.4	0.80
<b>M30 x 3.5</b>	50.00	49.00	57.74	55.37	30.7	29.1	46.6	0.8	0.4	0.87
<b>M36 x 4</b>	60.00	58.80	69.28	66.44	36.6	35.0	55.9	0.8	0.4	1.05



## F436M Washer Dimensions

Nominal Washer Size		M16	M20	M22	M24	M27	M30	M36
<i>d</i> <sub>1</sub>	max	18.4	22.5	24.5	26.5	30.5	33.6	39.6
	min	18.0	22.0	24.0	26.0	30.0	33.0	39.0
<i>d</i> <sub>2</sub>	max	34.0	42.0	44.0	50.0	56.0	60.0	72.0
	min	32.4	40.4	42.4	48.4	54.1	58.1	70.1
<i>s</i>	max	4.6	4.6	4.6	4.6	4.6	4.6	4.6
	min	3.1	3.1	3.4	3.4	3.4	3.4	3.4



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All dimensions are in millimeters