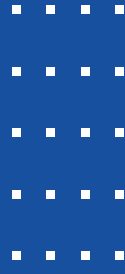


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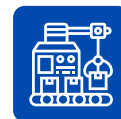
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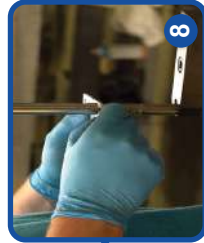
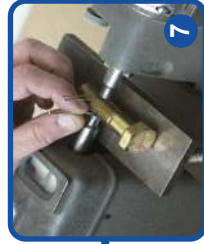
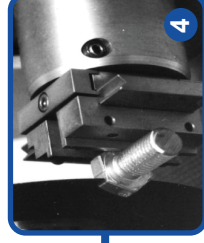
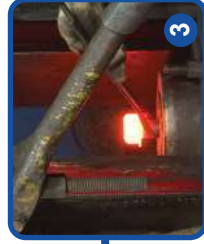
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# MATERIAL GRADES

INCOLOY	DUPLEX AND SUPER DUPLEX	INCONEL
N08904 / SS904L	S32205 / Duplex2205	N06600 / Inconel600
N08020 / Alloy20	S31803	N06601 / Inconel601
N08800 / Alloy800	S32550 / Ferallium255	N06617 / Inconel617
N08825 / Alloy825	S32750	N06625 / Inconel625
N19903 / Alloy903	S32760 / Zeron100	N06686 / Inconel686
N19907 / Alloy907		N06690 / Inconel690
N09908 / Alloy908		N07718 / Inconel718 / AH-PH
N19909 / Alloy909		N07725 / Inconel725
N09925 / Alloy925		N07740 / Inconel740H
N08926 / Alloy926		N07750 / Inconel X-750
S66286 / Alloy A286 / A453 660		N07751 / Inconel751
		R30783 / Inconel783

HASTELLOY	MONEL	NIMONIC
N10001 / Hastelloy B	N04400 / Monel 400	N06075 / Nimonic75
N10665 / Hastelloy B2	N04404 / Monel 404	N07080 / Nimonic80A
N10675 / Hastelloy B3	N04405 / Monel R405	N07090 / Nimonic90
N06022 / Hastelloy C22	N05500 / Monel K500	N07263 / Nimonic263
N10276 / Hastelloy C276		N09901 / Nimonic901
N06200 / Hastelloy C2000		
N06985 / Hastelloy G3		
N06030 / Hastelloy G30		
N06035 / Hastelloy G35		
N06002 / Hastelloy X		



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# MATERIAL GRADES

STAINLESS STEEL	FERRITIC CARBON STEEL
ASTM A240 / A479 / A193 / A194 / A320	ASTM A193 / A194 / A320
S30400 / SS304 / B8	B5
S31603 / SS316L / B8M	B7 / B7M
S34703 / SS347 / B8C	L1
S30500 / B8P	L7 / L7M / L70
S30451 / B8N	G40370 / AISI 4037 / L7A / L71
S31254 / SMO254 / B8MLCuN	G41370 / AISI 4137 / L7B / L72
S31730 / SS317 / B8ML4CuN	G87400 / AISI 8740 / L7C / L73
S32100 / B8T	G43400 / AISI 4340 / L43
S20910 / Nitronic50 / XM19 / B8R	B16
S21800 / Nitronic60 / B8S	
S15500 / 15-5PH	
S17400 / 17-4PH	
S41000 / SS410 / B6	
S42900 / SS429	
S43000 / SS430	
S43035 / SS439	
S43400 / SS434	
S44400 / SS444	
S44626 / XM33	
S44627 / XM27	



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# MATERIAL GRADES

NON - FERROUS		
ALLUMINIUM	COPPER	TITANIUM
A92024 / Alloy2024	C61300 / Alloy613	R50250 / Gr1
A96061 / Alloy6061	C61400 / Alloy614	R50400 / Gr2
A97075 / Alloy7075	C63000 / Alloy630	R56400 / Gr5
	C70600 / Alloy706 / CuproNickle 90-10	R56401 / Alloy23 / Ti6Al4V
	C71000 / Alloy710	R52400 / Gr7
	C71500 / Alloy715 / CuproNickle70-30	

MARAGING STEEL	STELLITE	TANTALUM	ZIRCONIUM
K92810 / Alloy200 / C200	R30006 / Stellite6	R05200 / Unalloyed Ta	R60802 / Zircaloy2
K92890 / Alloy250 / C250	R30012 / Stellite12	R05400	R60804 / Zircaloy4
K93120 / Alloy300 / C300	R30605 / L605		R60904 / Zr-2.5Nb

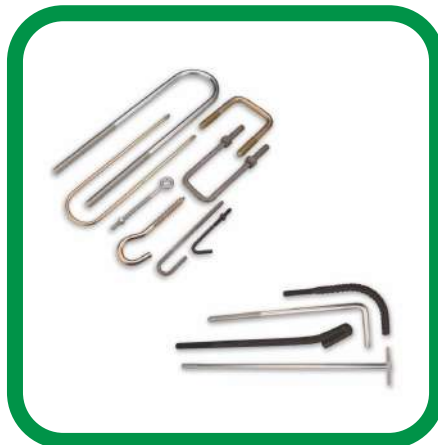


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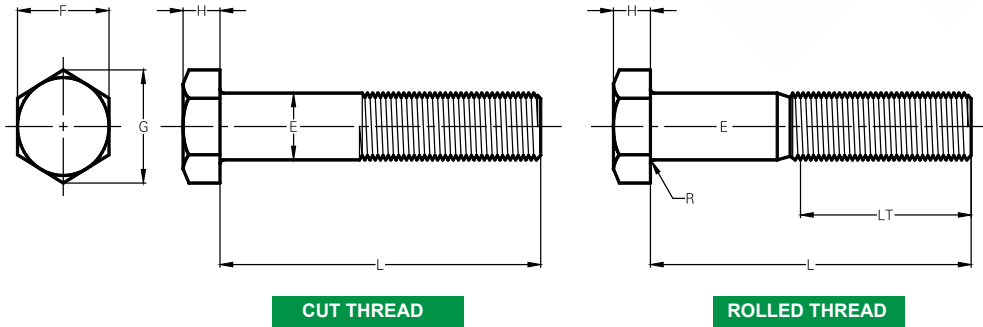
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# GLIMPSE OF OUR PRODUCTS



# HEXAGON HEAD BOLT

## INCH THREAD



### ANSI B 18.2.1

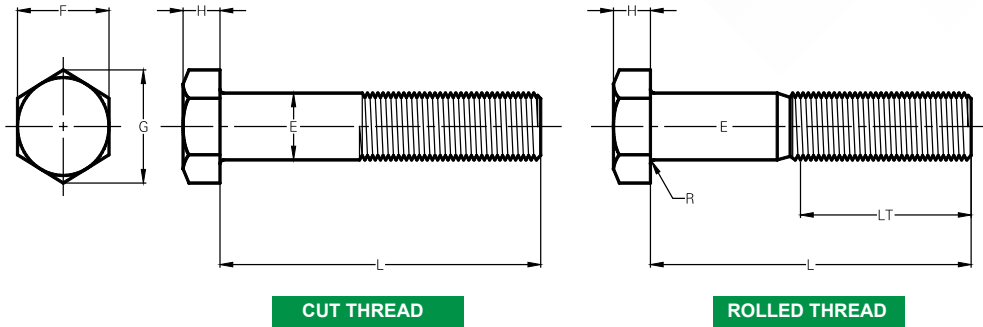
NOMINAL SIZE	E		F		G		H		R		LT	
	BODY DIA		ACROSS FLATS		ACROSS CORNERS		HEIGHT		RADIUS OF FILLET		THREAD LENGTH FOR BOLT LENGTHS	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	6" and Shorter	Over 6"
1/4	6.60	6.02	11.12	10.80	12.82	12.30	4.77	3.81			19.05	25.40
5/16	8.23	7.57	12.70	12.30	14.65	14.03	5.96	4.96	0.76	0.26	22.23	28.58
3/8	9.85	9.15	14.27	13.82	16.51	15.75	6.80	5.75			25.40	31.75
7/16	11.48	10.70	15.87	15.32	18.33	17.45	8.02	6.91			28.58	34.93
1/2	13.08	12.25	19.05	18.42	21.99	20.99	9.24	7.68			31.75	38.10
5/8	16.30	15.37	23.82	23.02	27.50	26.24	11.27	9.61			38.10	44.45
3/4	19.50	18.52	28.57	27.64	32.99	31.50	13.30	11.56	1.52	0.51	44.45	50.80
7/8	22.73	21.65	33.32	32.24	38.50	36.76	15.34	13.49			50.80	57.15
1	25.95	24.79	38.10	36.83	43.99	41.99	17.78	15.02			57.15	63.50
1 1/8	29.18	27.89	42.87	41.43	49.50	47.22	19.81	16.72	2.28	0.77	63.50	69.85
1 1/4	32.43	31.07	47.62	46.03	57.99	52.48	22.25	19.03			69.85	76.20
1 3/8	35.66	34.17	52.37	50.65	60.50	57.74	23.87	20.58			76.20	82.55
1 1/2	38.88	37.34	57.15	55.25	65.98	63.00	26.31	22.92			82.55	88.90
1 5/8	42.11	40.42	61.92	59.85	71.50	66.45	28.34	24.85			88.90	95.25
1 3/4	45.33	43.59	66.67	64.47	76.98	73.49	30.37	26.78			95.25	101.60
1 7/8	48.56	46.72	71.42	69.07	82.49	78.72	32.41	28.71	304	1.02	101.60	107.95
2	51.79	49.89	76.20	73.66	87.98	83.98	35.25	29.85			107.95	114.30
2 1/4	58.54	56.24	85.72	82.86	98.98	94.47	39.31	33.71			120.65	127.00
2 1/2	64.99	62.51	95.25	92.08	109.98	104.98	43.38	37.57			133.35	139.70
2 3/4	71.80	68.86	104.77	101.30	120.98	115.47	47.47	41.46			146.05	152.40
3	78.25	75.21	114.30	110.49	131.97	125.96	52.32	46.11			158.75	165.10
3 1/4	84.70	81.54	123.82	119.69	142.97	136.45	57.17	49.18	4.82	1.53	171.45	177.80
3 1/2	91.16	87.91	133.35	128.91	153.97	146.97	60.45	52.25			184.15	190.50
3 3/4	97.99	94.64	142.87	138.10	164.97	157.43	65.32	56.93			196.85	203.20
4	104.41	100.97	152.40	147.32	175.97	167.95	70.20	61.57			209.55	215.90





# HEAVY HEXAGON BOLT

## INCH THREAD



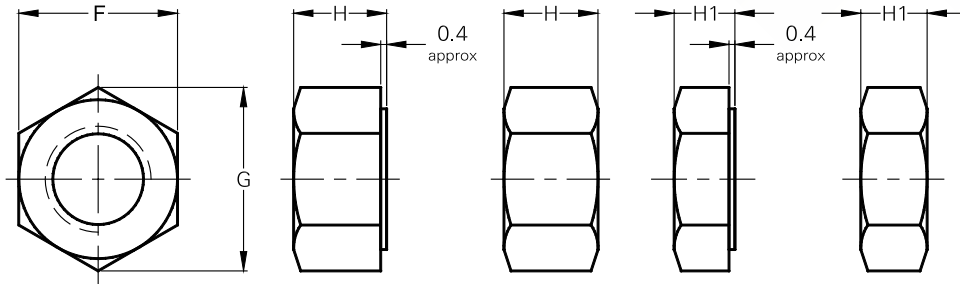
### ANSI B 18.2.1

NOMINAL SIZE	E		F		G		H		R		S	
	BODY DIA		WIDTH ACROSS FLATS		WIDTH ACROSS CORNERS		HEIGHT		RADIUS OF FILLET		THREAD LENGTH FOR BOLT LENGTHS	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Nom	Nom
3/8	9.85	9.15	17.47	17.00	20.16	19.39	6.80	5.75	0.76	0.26	25.40	31.75
1/2	13.08	12.25	22.22	21.59	25.65	24.62	9.24	7.68			31.75	38.10
5/8	16.30	15.37	26.97	26.19	31.16	29.85	11.27	9.61			38.10	44.45
3/4	19.50	18.52	31.75	30.79	36.65	35.13	13.30	11.56	1.52	0.51	44.45	50.80
7/8	22.73	21.65	36.52	35.41	42.16	40.37	15.34	13.49			50.80	57.15
1	25.95	24.79	41.27	40.01	47.65	45.62	17.78	15.02			57.15	63.50
1 1/8	29.18	27.89	46.02	44.61	53.16	50.86	19.81	16.72	2.28	0.77	63.50	69.85
1 1/4	32.43	31.07	50.80	49.23	58.64	56.11	22.25	19.03			69.85	76.20
1 3/8	35.66	34.17	55.57	53.83	64.16	61.37	23.87	20.58			76.20	82.55
1 1/2	38.88	37.34	60.32	58.42	69.64	66.60	26.31	22.92	3.04	1.02	82.55	88.90
1 5/8	42.11	40.42	65.07	63.02	75.15	71.86	28.34	24.85			88.9	95.25
1 3/4	45.33	43.59	69.85	67.62	80.64	77.09	30.37	26.78			95.25	101.60
1 7/8	48.56	46.72	74.62	72.24	86.15	82.35	32.41	28.71	4.82	1.53	101.60	107.95
2	51.79	49.89	79.37	76.84	91.64	87.61	35.25	29.85			107.95	114.30
2 1/4	58.54	56.24	88.90	86.06	102.64	98.10	39.31	33.71			120.65	127
2 1/2	64.99	62.51	98.42	95.25	113.63	108.59	43.38	37.57	4.82	1.53	133.35	139.70
2 3/4	71.80	68.86	107.95	104.45	124.63	119.08	47.47	41.46			146.05	152.4
3	78.25	75.21	117.47	113.67	135.63	129.60	52.32	46.11			158.75	165.10



# HEXAGON NUT

## INCH THREAD



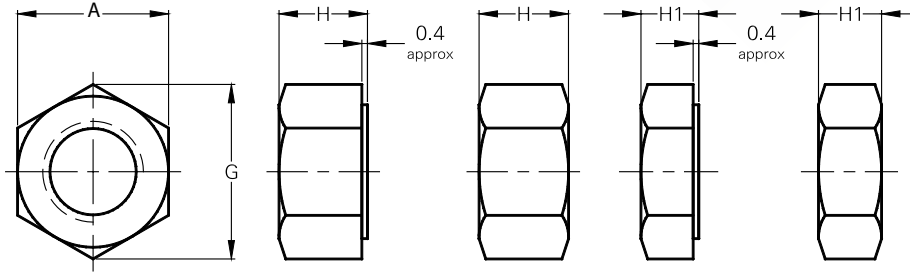
### ANSI B 18.2.2

NOMINAL SIZE	F		G		H		H1	
	WIDTH ACROSS FLATS		WIDTH ACROSS CORNERS		THICKNESS HEX NUT		THICKNESS JAM NUT	
	Max	Min	Max	Min	Max	Min	Max	Min
1/4"	11.12	10.88	12.82	12.40	5.74	5.39	4.14	3.81
5/16"	12.70	12.43	14.65	14.15	6.93	6.56	4.95	4.58
3/8"	14.30	14.00	16.51	15.96	8.55	8.13	5.76	5.34
7/16"	17.47	17.15	20.16	19.51	9.77	9.28	6.60	6.10
1/2"	19.05	18.70	21.99	21.34	11.37	10.85	8.20	7.68
9/16"	22.22	21.87	25.65	24.95	12.59	12.02	8.22	7.65
5/8"	23.82	23.42	27.50	26.70	14.19	13.59	9.82	9.23
3/4"	28.57	27.64	32.99	31.50	16.89	15.68	11.32	10.11
7/8"	33.32	32.24	38.50	36.76	19.71	18.39	12.95	11.64
1.0"	38.10	36.83	43.99	41.99	22.52	21.11	14.60	13.19
1 1/8"	42.87	41.43	49.50	47.22	25.37	23.86	16.23	14.71
1 1/4"	47.62	46.03	54.99	52.48	27.78	26.17	19.07	17.45
1 3/8"	52.37	50.65	60.50	57.74	30.63	28.91	20.70	18.98
1 1/2"	57.15	55.25	65.98	63.00	33.45	31.63	22.35	20.53
1 5/8"	61.72	59.69	71.24	68.05	35.96	34.65	23.97	22.05
1 3/8"	66.67	64.47	76.98	73.49	39.11	37.09	25.62	23.60
1 7/8"	71.45	69.14	82.47	78.82	41.93	39.81	27.25	25.13
2.0"	76.20	73.66	87.98	83.98	44.78	42.55	28.90	26.67
2 1/4"	85.72	82.89	98.98	94.47	50.44	48.01	32.18	29.34
2 1/2"	95.25	92.08	109.98	104.98	56.10	53.47	36.24	35.59
2 3/4"	104.77	101.30	120.98	115.47	61.74	58.91	39.52	38.66
3.0"	114.30	110.49	131.97	125.96	67.41	64.37	42.79	41.74
3 1/4"	123.82	119.72	142.97	136.48	73.07	69.83	46.07	44.40
3 1/2"	133.35	128.91	153.97	146.97	78.74	75.29	49.35	47.50
3 3/4"	142.87	138.13	164.97	157.46	84.37	80.73	52.62	50.55
4.0"	152.40	147.32	175.97	167.95	90.04	86.19	55.90	53.65



# HEAVY HEXAGON NUT

## INCH THREAD



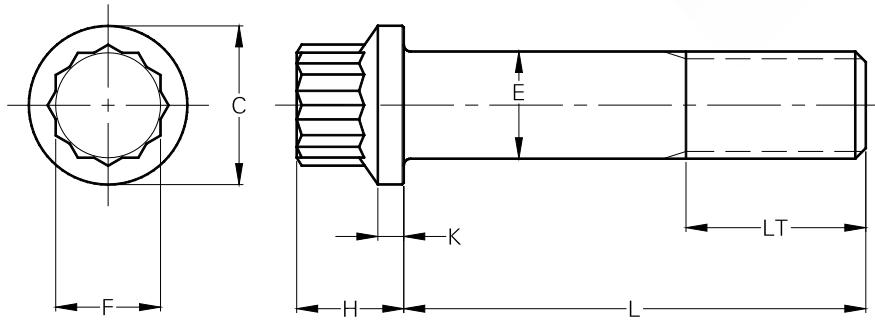
### ANSI B 18.2.2

NOMINAL SIZE	A		G		H		H1	
	WIDTH ACROSS FLATS		WIDTH ACROSS CORNERS		THICKNESS HEX NUT		THICKNESS JAM NUT	
	Max	Min	Max	Min	Max	Min	Max	Min
1/4"	12.70	12.40	14.65	14.13	6.35	5.54	4.77	3.97
5/16"	14.27	13.87	16.51	15.80	7.97	7.12	5.58	4.73
3/8"	17.47	17	20.16	19.39	9.57	8.67	6.40	5.49
7/16"	19.05	18.50	21.99	21.09	11.20	10.24	7.23	6.28
1/2"	22.22	21.59	25.65	24.62	12.80	11.79	8.05	7.04
9/16"	23.82	23.09	27.50	26.34	14.42	13.36	8.86	7.80
5/8"	26.97	26.19	31.16	29.85	16.02	14.91	9.67	8.56
3/4"	31.75	30.79	36.65	35.11	19.25	18.04	11.32	10.11
7/8"	36.52	35.41	42.16	40.37	22.47	21.16	12.95	11.64
1.0"	41.27	40.01	47.65	45.62	25.70	24.29	14.6	13.19
1 1/8"	46.02	44.61	53.16	50.86	28.93	27.41	16.23	14.71
1 1/4"	50.80	49.23	58.64	56.11	31.77	30.15	19.07	17.45
1 3/8"	55.57	53.83	64.16	61.37	35.00	33.28	20.70	18.98
1 1/2"	60.32	58.42	69.64	66.60	38.22	36.40	22.35	20.53
1 5/8"	65.07	63.02	75.15	71.84	41.45	39.53	23.97	22.05
1 3/4"	69.85	67.62	80.64	77.09	44.67	42.65	25.62	23.60
1 7/8"	74.62	72.24	86.15	82.35	47.90	45.78	27.25	25.13
2.0"	79.37	76.84	91.64	87.61	51.13	48.90	28.90	26.67
2 1/4"	88.9	86.06	102.64	98.10	57.17	54.74	31.77	29.34
2 1/2"	98.42	95.25	113.63	108.60	63.62	60.99	38.22	35.59
2 3/4"	107.95	104.45	124.63	119.08	70.07	67.24	41.50	38.66
3.0"	117.47	113.67	135.63	129.60	76.53	73.49	44.78	41.74
3 1/4"	127	122.89	146.65	140.09	82.60	79.35	47.65	44.40
3 1/2"	136.52	132.08	157.65	150.58	89.05	85.6	50.95	47.50
3 3/4"	146.05	141.28	168.65	161.07	95.50	91.85	54.20	50.55
4"	155.57	150.50	179.65	171.58	101.95	98.10	57.50	53.65



# FLANGE 12 POINT SCREW

## INCH THREAD

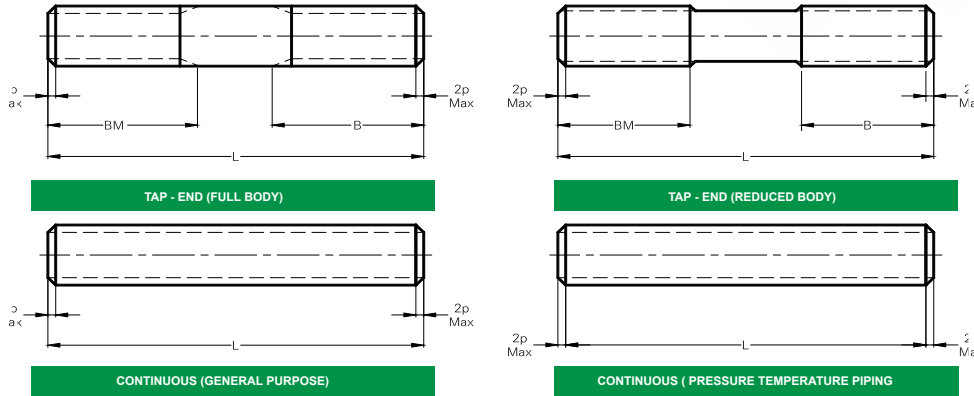


### IFI 115

NOMINAL SIZE	E	C		F		G	H	K	LT
	BODY DIA (Max equal to nom size)	FLANGE DIA		WIDTH ACROSS FLATS		WIDTH ACROSS CORNERS	HEAD HEIGHT	FLANGE THICKNESS	THREAD LENGTH
	Min	Max	Min	Max	Min	Min	Max	Min	Basic
1/4	6.19	9.52	9.28	6.40	6.20	7.07	6.60	1.48	25.40
5/16	7.76	11.91	11.61	8.00	7.78	8.84	7.92	1.88	28.58
3/8	9.35	14.27	13.97	9.57	9.35	10.67	9.52	2.42	31.75
7/16	10.91	16.66	16.31	11.12	10.90	12.43	11.12	2.77	34.93
1/2	12.50	19.05	18.67	12.75	12.53	14.28	12.70	3.28	38.10
9/16	14.07	21.43	21.04	14.32	14.10	16.08	14.30	3.69	41.28
5/8	15.66	23.82	23.40	15.92	15.70	17.91	15.87	4.22	44.45
3/4	18.82	28.57	28.12	19.10	18.88	21.52	19.05	5.08	50.80
7/8	21.97	33.32	32.85	22.27	22.00	25.07	22.22	5.95	57.15
1	25.11	38.10	37.57	25.47	25.18	28.71	25.40	6.81	63.50
1-1/8	28.16	42.87	42.30	28.65	28.33	32.29	28.57	7.88	69.85
1-1/4	31.34	47.62	47.05	31.82	31.50	35.92	31.75	8.89	76.20
1-3/8	34.47	52.37	51.77	35.00	34.68	39.53	34.92	9.96	82.55
1-1/2	37.64	57.15	56.49	38.17	37.83	43.11	38.10	11.00	88.90



# CONTINUOUS AND DOUBLE - END STUD



## ANSI B18.31.2

NOMINAL SIZE	BM		B		
	TAP END THREAD LENGTH		MINIMUM NUT END FULL THREAD LENGTH		
	Min	Max	L ≤ 10	10 < L ≤ 10	L > 16
1/4	8.90	10.16	19.05	25.40	38.10
5/16	11.18	12.64	22.23	28.58	41.28
3/8	13.52	15.08	25.40	31.75	44.45
7/16	15.75	17.57	28.58	34.93	47.63
1/2	17.99	20.11	31.75	38.10	50.80
9/16	20.38	22.75	34.93	41.28	53.98
5/8	22.66	24.96	38.10	44.45	57.15
3/4	27.31	29.84	44.45	50.80	63.50
7/8	31.96	34.74	50.80	57.15	69.85
1	36.53	39.67	57.15	63.50	76.20
1 1/8	41.28	44.45	63.50	69.85	82.55
1 1/4	46.05	49.22	69.85	76.20	88.90
1 3/8	50.80	53.97	76.20	82.55	95.25
1 1/2	55.58	58.75	82.55	88.90	101.60
1 5/8	60.33	63.50	88.90	95.25	107.95
1 3/4	65.10	68.27	95.25	101.60	114.30
1 7/8	69.85	73.02	101.60	107.95	120.65
2	74.30	78.10	107.95	114.30	127.00
2 1/4	83.82	87.63	120.65	127.00	139.70
2 1/2	93.35	97.15	133.35	139.70	152.40
2 3/4	102.87	106.68	146.05	152.40	165.10
3	112.40	116.20	-	165.10	177.80
3 1/4	121.29	126.36	-	177.80	190.50
3 1/2	130.81	135.89	-	190.50	203.20
3 3/4	140.34	145.41	-	203.20	215.90
4	149.86	154.94	-	215.90	228.60

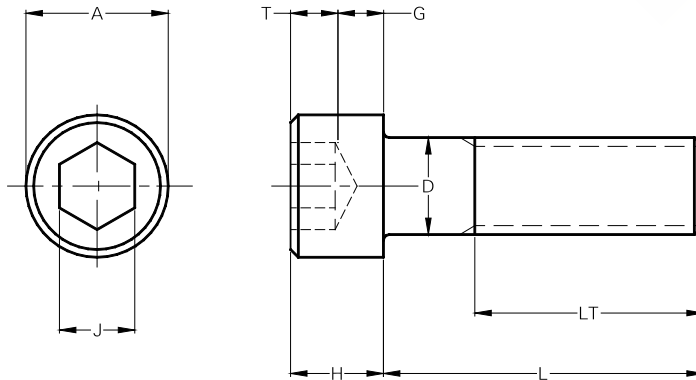


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# HEXAGON SOCKET HEAD CRAP SCREW INCH THREAD



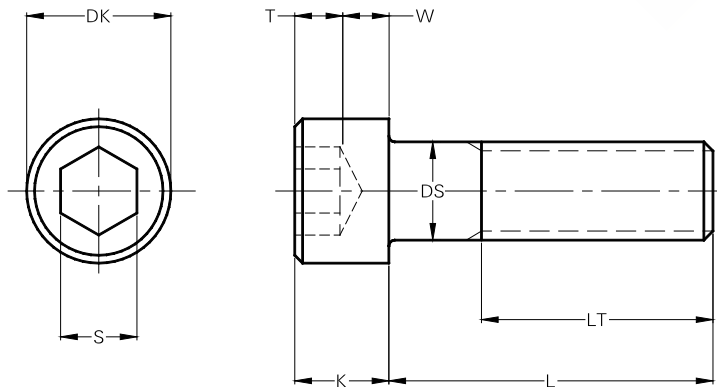
## ANSI B18.31.2

NOMINAL SIZE	D		A		H		J	T	G	LT
	BODY DIA		ACROSS FLATS		HEIGHT		HEXAGON SOCKET SIZE	KEY ENGAGEMENT	WALL THICKNESS	THREAD LENGTH FOR BOLT LENGTHS
	Max	Min	Max	Min	Max	Min	Nom	Min	Min	Min
1/4	6.35	6.19	9.52	9.28	6.35	6.20	4.78	3.05	2.42	25.40
5/16	7.93	7.76	11.91	11.61	7.92	7.78	6.35	3.84	3.03	28.45
3/8	9.52	9.35	14.27	13.97	9.52	9.35	7.92	4.63	3.64	31.75
7/16	11.11	10.91	16.66	16.31	11.12	10.93	9.53	5.41	4.22	35.06
1/2	12.70	12.50	19.05	18.67	12.70	12.50	9.53	6.23	4.83	38.10
5/8	15.87	15.66	23.82	23.40	15.87	15.65	12.70	7.80	6.05	44.45
3/4	19.05	18.82	28.57	28.12	19.05	18.80	15.88	9.40	7.24	50.80
7/8	22.22	21.97	33.32	32.85	22.22	21.95	19.05	10.98	8.46	57.15
1	25.40	25.11	38.10	37.57	25.40	25.10	19.05	12.58	9.66	63.50
1 1/8	28.57	28.16	42.87	42.30	28.57	28.22	22.23	14.15	10.88	71.38
1 1/4	31.75	31.34	47.62	47.05	31.75	31.40	22.23	15.75	12.07	79.25
1 3/8	34.92	34.47	52.37	51.77	34.92	34.55	25.40	17.33	13.29	87.38
1 1/2	38.10	37.64	57.15	56.49	38.10	37.72	25.40	18.93	14.48	95.25
1 3/4	44.45	43.94	66.67	65.97	44.45	44.05	31.75	22.10	16.90	111.26
2	50.80	50.25	76.20	75.44	50.80	50.37	38.10	25.28	19.31	127.00
2 1/4	57.15	56.60	85.72	84.94	57.15	56.70	44.45	28.45	21.72	142.75
2 1/2	63.50	62.90	95.25	94.42	63.50	63.02	44.45	31.63	24.13	158.75
2 3/4	69.85	69.25	104.77	103.89	69.85	69.35	50.80	34.80	26.55	174.76
3	76.20	75.60	114.30	113.39	76.20	75.67	57.15	37.98	28.96	190.50
3 1/4	82.55	81.95	123.82	122.86	82.55	82.00	57.15	41.15	31.37	206.25
3 1/2	88.90	88.30	133.35	132.36	88.90	88.35	69.85	44.33	33.79	222.25
3 3/4	95.25	94.65	142.87	141.84	95.25	94.67	69.85	47.50	36.20	238.26
4	101.60	101.00	152.40	151.34	101.60	101.00	76.20	50.68	38.61	254.00



# HEXAGON SOCKET HEAD CRAP SCREW

## METRIC THREAD



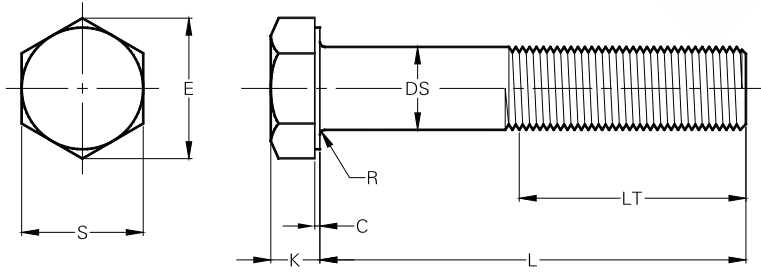
### ISO 4762

NOMINAL SIZE	D		DS		K		S	T	W	LT
	Max	Min	Max	Min	Max	Min	Nom	Min	Min	Ref
M6	10.00	9.78	6.00	5.82	6.00	5.70	5.00	3.00	2.3	24
M8	13.00	12.73	8.00	7.78	8.00	7.64	6.00	4.00	3.3	28
M10	16.00	15.73	10.00	9.78	10.00	9.64	8.00	5.00	4.0	32
M12	18.00	17.73	12.00	11.73	12.00	11.57	10.00	6.00	4.8	36
M14	21.00	20.67	14.00	13.73	14.00	13.57	12.00	7.00	5.8	40
M16	24.00	23.67	16.00	15.73	16.00	15.57	14.00	8.00	6.8	44
M20	30.00	29.67	20.00	19.67	20.00	19.48	17.00	10.00	8.6	52
M24	36.00	35.61	24.00	23.67	24.00	23.48	19.00	12.00	10.4	60
M30	45.00	44.61	30.00	29.67	30.00	29.48	22.00	15.50	13.1	72
M36	54.00	53.54	36.00	35.61	36.00	35.38	27.00	19.00	15.3	84
M42	63.00	62.54	42.00	41.61	42.00	41.38	32.00	24.00	16.3	96
M48	72.00	71.54	48.00	47.61	48.00	47.38	36.00	28.00	17.5	108
M56	84.00	83.46	56.00	55.54	56.00	55.26	41.00	34.00	19.0	124
M64	96.00	95.46	64.00	63.54	64.00	63.26	46.00	38.00	22.0	140



# HEXAGON HEAD BOLT

## METRIC THREAD



### ISO 4014

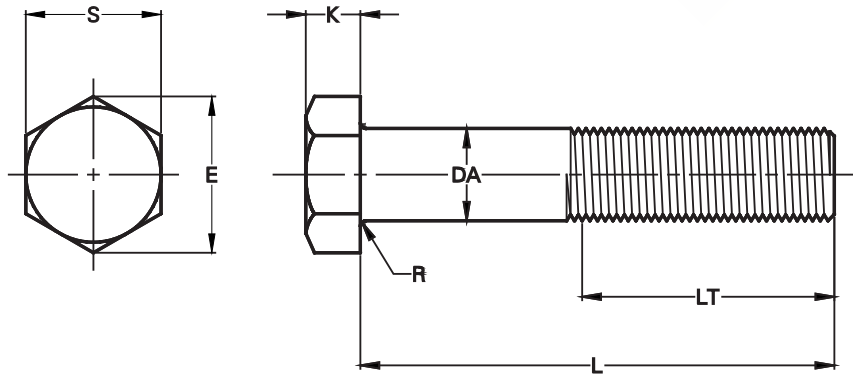
NOMINAL SIZE	C		DS		E	K		R	S		LT		
	Max	Min	Max	Min	Min	Max	Min	Min	Max	Min	≤ 125	125 < L ≤ 200	> 200
M6	0.50	0.15	6.00	5.82	11.05	4.15	3.85	0.25	10.00	9.78	18	24	37
M8	0.60	0.15	8.00	7.78	14.38	5.45	5.15	0.40	13.00	12.73	22	28	41
M10	0.60	0.15	10.00	9.78	17.77	6.58	6.22		16.00	15.73	26	32	45
M12	0.60	0.15	12.00	11.73	20.03	7.68	7.32	0.60	18.00	17.73	30	36	49
M14	0.60	0.15	14.00	13.73	23.36	8.98	8.62		21.00	20.67	34	40	53
M16	0.80	0.20	16.00	15.73	26.75	10.18	9.82		24.00	23.67	38	44	57
M18	0.80	0.20	18.00	17.73	30.14	11.715	11.285	0.80	27.00	26.67	42	48	61
M20	0.80	0.20	20.00	19.67	33.53	12.715	12.285		30.00	29.67	46	52	65
M22	0.80	0.20	22.00	21.67	37.72	14.215	13.785	1.00	34.00	33.38	50	56	69
M24	0.80	0.20	24.00	23.67	39.98	15.215	14.785		36.00	35.38	54	60	73
M27	0.80	0.20	27.00	26.48	45.20	17.35	16.65	1.20	41.00	40.00	60	66	79
M30	0.80	0.20	30.00	29.48	50.85	19.12	18.28		46.00	45.00	66	72	85
M33	0.80	0.20	33.00	32.38	55.37	21.42	20.58		50.00	49.00	-	78	91
M36	0.80	0.20	36.00	35.38	60.79	22.92	22.08	1.60	55.00	53.80	-	84	97
M39	1.00	0.30	39.00	38.38	66.44	25.42	24.58		60.00	58.80	-	90	103
M42	1.00	0.30	42.00	41.38	71.30	26.42	25.58	2.00	65.00	63.10	-	96	109
M45	1.00	0.30	45.00	44.38	76.95	28.42	27.58		70.00	68.10	-	102	115
M48	1.00	0.30	48.00	47.38	82.60	30.42	29.58	2.00	75.00	73.10	-	108	121
M52	1.00	0.30	52.00	51.26	88.25	33.50	32.50		80.00	78.10	-	116	129
M56	1.00	0.30	56.00	55.26	93.56	35.50	34.50	2.00	85.00	82.80	-	-	137
M60	1.00	0.30	60.00	59.26	99.21	38.50	37.50		90.00	87.80	-	-	145
M64	1.00	0.30	64.00	63.26	104.86	40.50	39.50	95.00	92.80	-	-	153	





# HEAVY HEXAGON BOLT

## METRIC THREAD



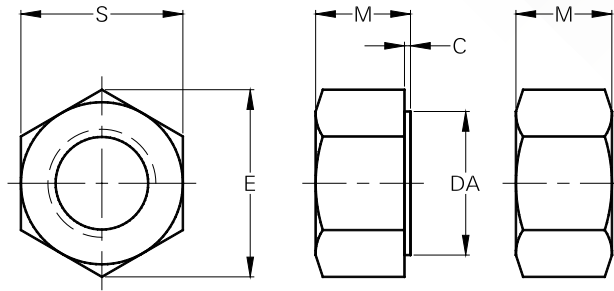
### ANSI B 18.2.3.6 M

NOMINAL SIZE	DA		S		E		K		R	LT		
	Max	Min	Max	Min	Max	Min	Max	Min		Min	≤ 125	125 < L ≤ 200
M12X1.75P	12.70	11.30	21.00	20.16	24.25	22.78	7.95	7.24		30	36	49
M14X2P	14.70	13.30	24.00	23.16	27.71	26.17	9.25	8.51	0.6	34	40	53
M16X2P	16.70	15.30	27.00	26.16	31.18	29.56	10.75	9.68		38	44	57
M20X2.5P	20.84	19.16	34.00	33.00	39.26	37.29	13.40	12.12		46	52	65
M24X3P	24.84	23.16	41.00	40.00	47.34	45.20	15.90	14.56	0.8	54	60	73
M30X3.5P	30.84	29.16	50.00	49.00	57.74	55.37	19.75	17.92		66	72	85
M36X4P	37.00	35.00	60.00	58.80	69.28		23.55	21.72	1.0	78	84	97



# HEXAGON NUT

## METRIC THREAD



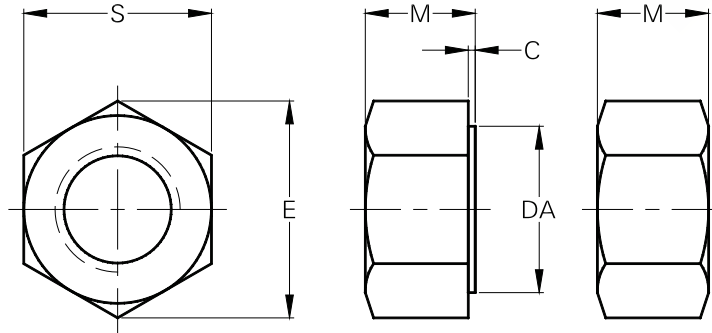
### ISO 4032

NOMINAL SIZE	C		DA		E	M		S	
	Max	Min	Max	Min	Min	Max	Min	Max	Min
M6	0.50	0.15	6.75	6.00	11.05	5.20	4.90	10.00	9.78
M8	0.60	0.15	8.75	8.00	14.38	6.80	6.44	13.00	12.73
M10	0.60	0.15	10.80	10.00	17.77	8.40	8.04	16.00	15.73
M12	0.60	0.15	13.00	12.00	20.03	10.80	10.37	18.00	17.73
M14	0.60	0.15	15.10	14.00	23.36	12.80	12.10	21.00	20.67
M16	0.80	0.20	17.30	16.00	26.75	14.80	14.10	24.00	23.67
M18	0.80	0.20	19.50	18.00	29.56	15.80	15.10	27.00	26.16
M20	0.80	0.20	21.60	20.00	32.95	18.00	16.90	30.00	29.16
M22	0.80	0.20	23.70	22.00	37.29	19.40	18.10	34.00	33.00
M24	0.80	0.20	25.90	24.00	39.55	21.50	20.20	36.00	35.00
M27	0.80	0.20	29.10	27.00	45.20	23.80	22.50	41.00	40.00
M30	0.80	0.20	32.40	30.00	50.85	25.60	24.30	46.00	45.00
M33	0.80	0.20	35.60	33.00	55.37	28.70	27.40	50.00	49.00
M36	0.80	0.20	38.90	36.00	60.79	31.00	29.40	55.00	53.80
M39	1.00	0.30	42.10	39.00	66.44	33.40	31.80	60.00	58.80
M42	1.00	0.30	45.40	42.00	71.30	34.00	32.40	65.00	63.10
M45	1.00	0.30	48.60	45.00	76.95	36.00	34.40	70.00	68.10
M48	1.00	0.30	51.80	48.00	82.60	38.00	36.40	75.00	73.10
M52	1.00	0.30	56.20	52.00	88.25	42.00	40.40	80.00	78.10
M56	1.00	0.30	60.50	56.00	93.56	45.00	43.40	85.00	82.80
M60	1.00	0.30	64.80	60.00	99.21	48.00	46.40	90.00	87.80
M64	1.00	0.30	69.10	64.00	104.86	51.00	49.10	95.00	92.80



# HEAVY HEXAGON NUT

## METRIC THREAD



### ANSI B 18.2.4.6 M

NOMINAL SIZE	S		E		H		DA	C	
	WIDTH ACROSS FLATS		WIDTH ACROSS CORNERS		THICKNESS HEX NUT		BEARING FACE DIA	WASHER FACE THICKNESS	
	Max	Min	Max	Min	Max	Min	Min	Max	Min
M12X1.75P	21.00	20.16	24.25	22.78	12.3	11.9	19.2	0.8	0.4
M14X2P	24.00	23.16	27.71	26.17	14.3	13.6	22.0	0.8	0.4
M16X2P	27.00	26.16	31.18	29.56	17.1	16.4	24.9	0.8	0.4
M20X2.5P	34.00	33.00	33.26	37.29	20.7	19.4	31.4	0.8	0.4
M22X2.5P	35.00	35.00	41.57	39.55	23.6	22.3	33.3	0.8	0.4
M24X3P	41.00	40.00	47.34	45.20	24.2	22.9	38.0	0.8	0.4
M27X3P	46.00	45.00	53.12	50.85	27.6	26.3	42.8	0.8	0.4
M30X3.5P	50.00	49.00	57.74	55.37	30.7	29.1	46.6	0.8	0.4
M36X4P	60.00	58.80	69.28	66.44	36.6	35.0	55.9	0.8	0.4
M42X4.5P	70.00	67.90	80.83	77.41	42.0	40.4	64.5	1.0	0.5
M48X5P	80.00	77.60	92.38	88.46	48.0	46.4	73.7	1.0	0.5
M56X5.5P	90.00	87.20	103.92	99.41	56.0	54.1	82.8	1.0	0.5
M64X6P	100.00	95.30	116.47	110.35	64.0	62.1	92.0	1.0	0.5
M72X6P	110.00	106.40	127.02	121.30	72.0	70.1	101.1	1.2	0.6
M80X6P	120.00	115.00	138.56	132.24	80.0	78.1	110.2	1.2	0.6
M90X6P	135.00	130.50	135.88	148.77	90.0	87.8	124.0	1.2	0.6
M100X6P	150.00	145.00	173.21	165.30	100.00	97.8	137.80	1.2	0.6



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