



**NINGBO
MINGYU**



BOLTS

NUTS

THREADED RODS

WASHERS

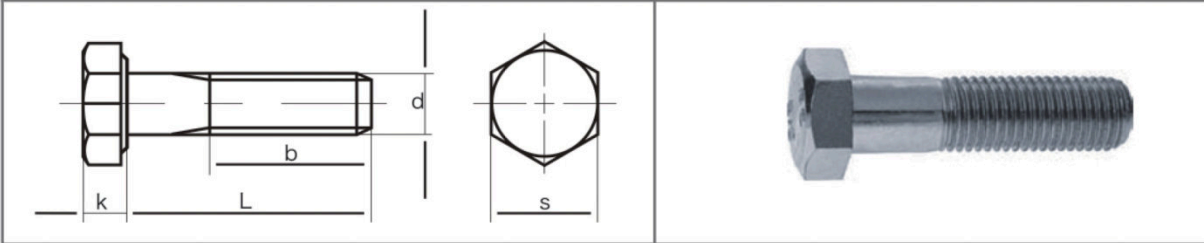
宁波铭宇金属制品有限公司

NINGBO MINGYU METAL PRODUCTS CO., LTD

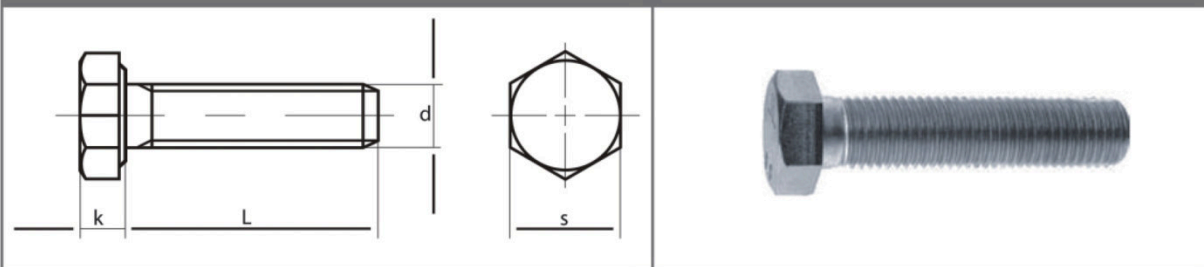
Company Profile

Ningbo Mingyu Metal Products Co.,Ltd is located in Ningbo City of Zhejiang Province. Our company was established in 2009 and we are a professional manufacturer of fasteners. We design, manufacture and build many kinds of fasteners such as high strength bolts, nuts, washers, threaded rods and stainless steel products which are according to GB, DIN, ASTM, BS, ISO, JIS and other standards. We would like to develop together with our customers in the market all over the world. Our company will supply you with the best quality products and satisfaction service.

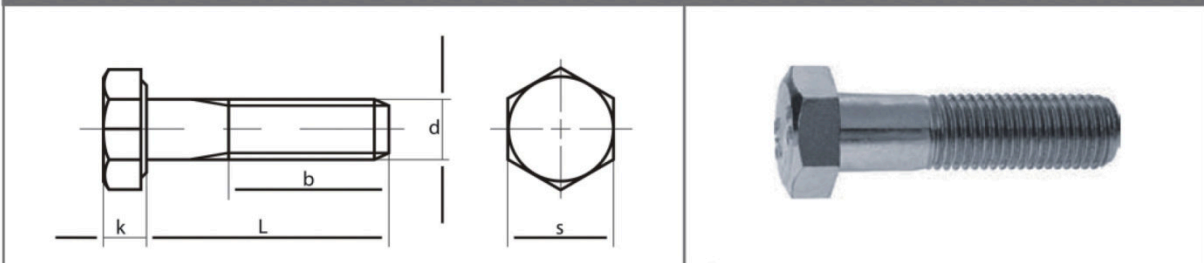


Metric Bolts
ISO4014 EN24014
DIN 931

Hexagon head bolts, partial threaded

d	M4	M5	M6	M7	M8	M10	M12	M14
P	0,7	0,8	1	1	1,25	1,5	1,75	2
b ⁽¹⁾	(1)	14	16	18	20	22	26	30
	(2)	-	22	24	26	28	32	36
	(3)	-	-	-	-	-	45	49
k	2,8	3,5	4	4,8	5,3	6,4	7,5	8,8
s	7	8	10	11	13	17/16*	19/18*	22/21*

ISO4017 EN24017
DIN 933

Hexagon head bolts, fully threaded

d	M33	M36	M39	M42	M45	M48	M52
P	3,5	4	4	4,5	4,5	5	5
k	21	22,5	25	26	28	30	33
s	50	55	60	65	70	75	80

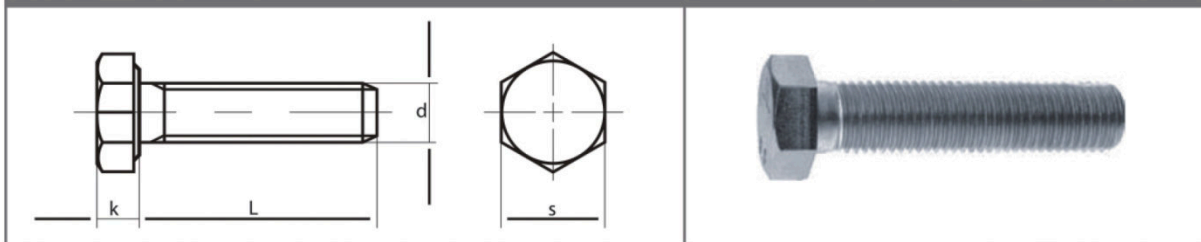
ISO8765 EN28765
DIN 960

Hexagon head bolts-Metric fine pitch thread, partial threaded

dxP	M8x1	M10x1	M12x1,25	M14x1,5	M16x1,5	M18x1,5	M20x1,5	M22x1,5	M24x1,5
		M10x1,25	M12x1,5			M18x2	M20x2	M22x2	M24x2
b ¹	1	22	26	30	34	38	42	46	50
	2	28	32	36	40	44	48	52	56
k	5,3	6,4	7,5	8,8	10	11,5	12,5	14	15
s	13	17/16*	19/18*	22/21*	24	27	30	32/34*	36

Metric Bolts

DIN 961

ISO 8676 EN 28676

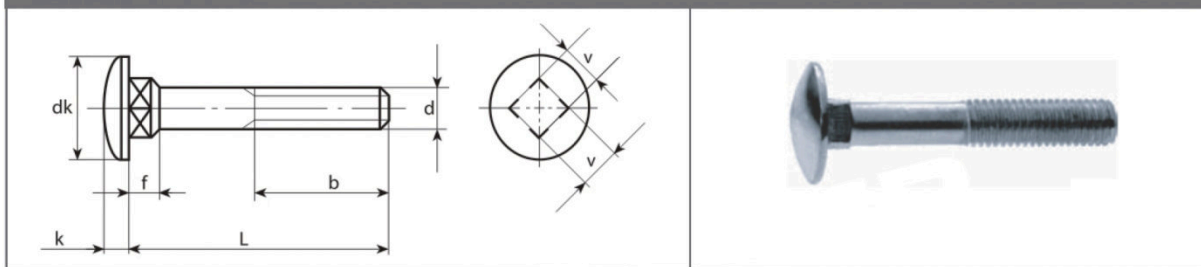


Hexagon head bolts-Metric fine pitch thread,full threaded

dxP	M8x1	M10x1 M10x1,25	M12x1,25 M12x1,5	M14x1,5	M16x1,5	M18x1,5 M18x2	M20x1,5 M20x2
k	5,3	6,4	7,5	8,8	10	11,5	12,5
s	13	17/16*	19/18*	22/21*	24	27	30

DIN 603

ISO 8677 EN -

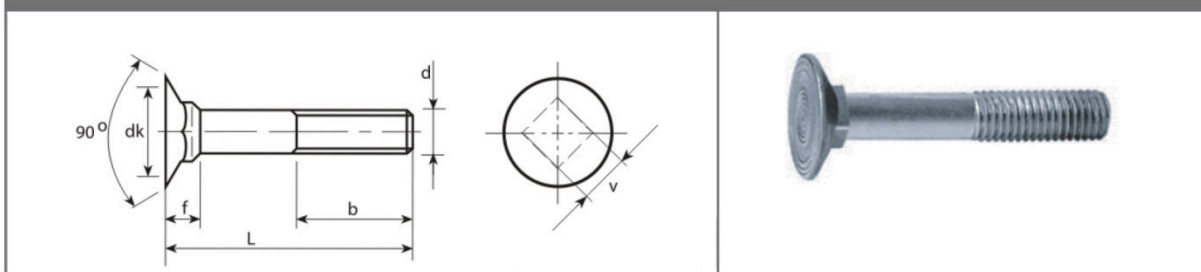


Mushroom head square neck bolts (cup square neck bolts)

d	M5	M6	M8	M10	M12	M16	M20
P	0,8	1	1,25	1,5	1,75	2	2,5
b ⁽¹⁾	(1) 16 (2) 22 (3) -	18 24 -	22 28 41	26 32 45	30 36 49	38 44 57	46 52 65
dk (max)	13,55	16,55	20,65	24,65	30,65	38,8	46,8
f (max)	4,1	4,6	5,6	6,6	8,75	12,9	15,9
k (max)	3,3	3,88	4,88	5,38	6,95	8,95	11,05
v (max)	5,48	6,48	8,58	10,58	12,7	16,7	20,84

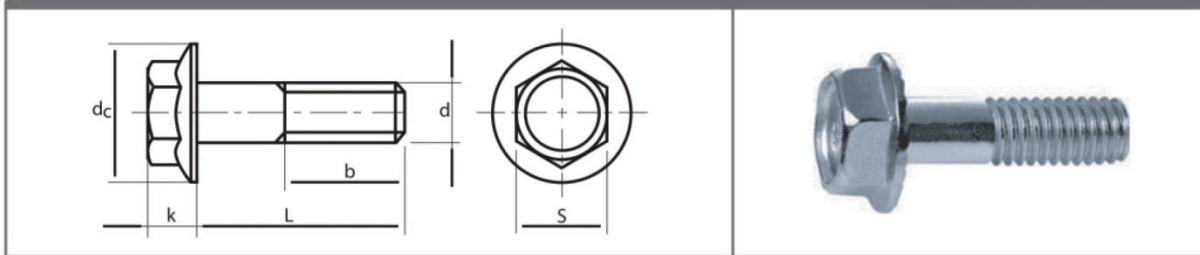
DIN 608

ISO - EN -



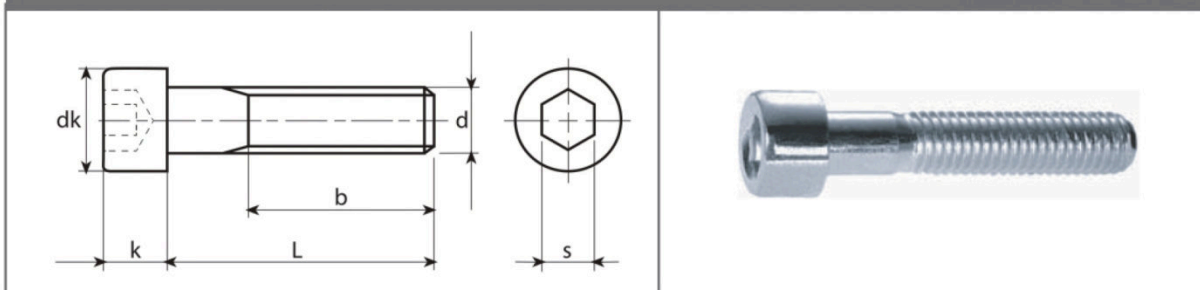
Flat countersunk square neck bolts

d	M10	M12
P	1,5	1,75
b	26	30
dk (max)	19,65	24,65
f (max)	8,45	11,05
v (max)	10,58	12,7

Metric Bolts
ISO 8100 EN -
DIN 6921


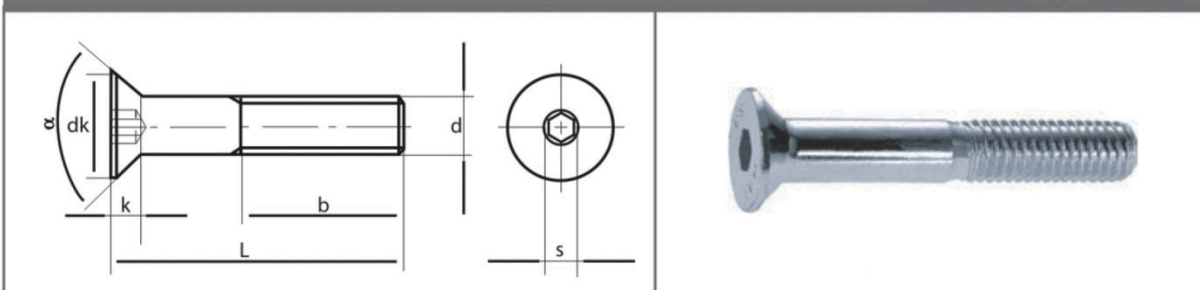
hexagon flange bolts

d	M5	M6	M8	M10	M12	M14	M16	M20
P	0,8	1	1,25	1,5	1,75	2	2	2,5
b	16	18	22	26	30	34	38	46
k	5,40	6,6	8,1	9,2	11,5	12,8	14,4	17,1
s	8	10	13	15	16	18	21	27
dc	11,8	14,2	18	22,3	26,6	30,5	35	43

ISO 4762 EN -
DIN 912


hexagon socket head cap screws

d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18
P	0,5	0,7	0,8	1	1,25	1,5	1,75	2	2	2,5
b*	18	20	22	24	28	32	36	40	44	48
dk (max)	5,5	7	8,5	10	13	16	18	21	24	27
k (max)	3	4	5	6	8	10	12	14	16	18
s	2,5	3	4	5	6	8	10	12	14	14

ISO - EN -
DIN 7991


Hexagon socket countersunk head screws

d	M3	M4	M5	M6	M8	M10	M12	M16	M20
P	0,5	0,7	0,8	1	1,25	1,5	1,75	2	2,5
b*	12	14	16	18	22	26	30	38	46
dk	6	8	10	12	16	20	24	30	36
k (max)	1,7	2,3	2,8	3,3	4,4	5,5	6,5	7,5	8,5
!	90	90	90	90	90	90	90	90	90
s	2	2,5	3	4	5	6	8	10	12

Nuts



ISO 4032 EN 24032 **DIN 934**

Hexagon nuts

d	M3	M4	M5	M6	M7	M8	M10	M12	M14
P	0,5	0,7	0,8	1	1	1,25	1,5	1,75	2
m	2,4	3,2	4	5	5,5	6,5	8	10	11
s	5,5	7	8	10	11	13	17/16*	19/18*	22/21*

d	M16	M18	M20	M22	M24	M27	M30	M33	M36
P	2	2,5	2,5	2,5	3	3	3,5	3,5	4
m	13	15	16	18	19	22	24	26	29
s	24	27	30	32/34*	36	41	46	50	55

d	M39	M42	M45	M48	M52	M56	M60	M64	M68
P	4	4,5	4,5	5	5	5,5	5,5	6	6
m	31	34	36	38	42	45	48	51	54
s	60	65	70	75	80	85	90	95	100

d	M72	M76	M80	M90	M100	M110
P	6	6	6	6	6	6
m	58	61	64	72	80	88
s	105	110	115	130	145	155

ISO - EN - **DIN 985**

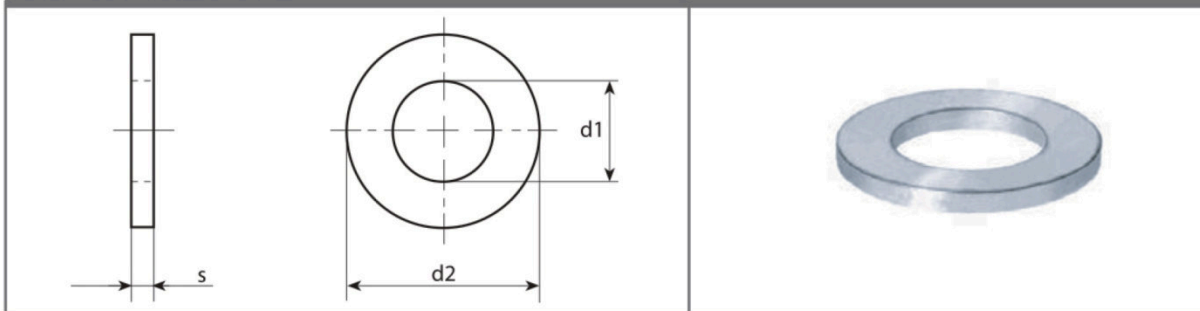
Prevailing torque type hexagon nuts with nylon insert

d	M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18
p	0,5	0,7	0,8	1	1	1,25	1,5	1,75	2	2	2,5
s	5,5	7	8	10	1	13	17/16*	19/18*	22/21*	24	27
h	4	5	5	6	7,5	8	10	12	14	16	18,5

d	M20	M22	M24	M27	M30	M33	M36	M39	M42	M45	M48
p	2,5	2,5	3	3	3,5	3,5	4	4	4,5	4,5	5
s	30	32/34*	36	41	46	50	55	60	65	70	75
h	20	22	24	27	30	33	36	39	42	45	48

Washers

DIN 125A



Plain washers without chamfer

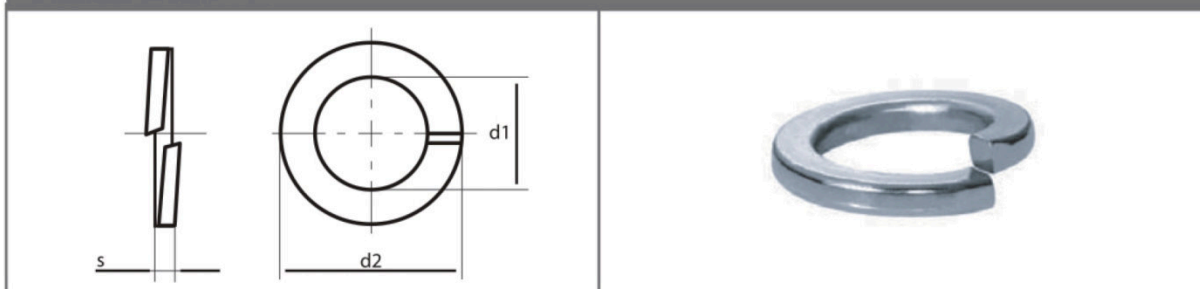
d nom.	M3	M4	M5	M6	M7	M8	M10	M12	M14
d1	3,2	4,3	5,3	6,4	7,4	8,4	10,5	13	15
d2	7	9	10	12	14	16	20	24	28
s	0,5	0,8	1	1,6	1,6	1,6	2	2,5	2,5

d nom.	M16	M18	M20	M22	M24	M27	M30	M33	M36
d1	17	19	21	23	25	28	31	34	37
d2	30	34	37	39	44	50	56	60	66
s	3	3	3	3	4	4	4	5	5

d nom.	M39	M42	M45	M48	M52	M56	M60	M64
d1	40	43	46	50	54	58	62	66
d2	72	78	85	92	98	105	110	115
s	6	7	7	8	8	9	9	9

DIN 127B

ISO - EN -



Spring lock washers

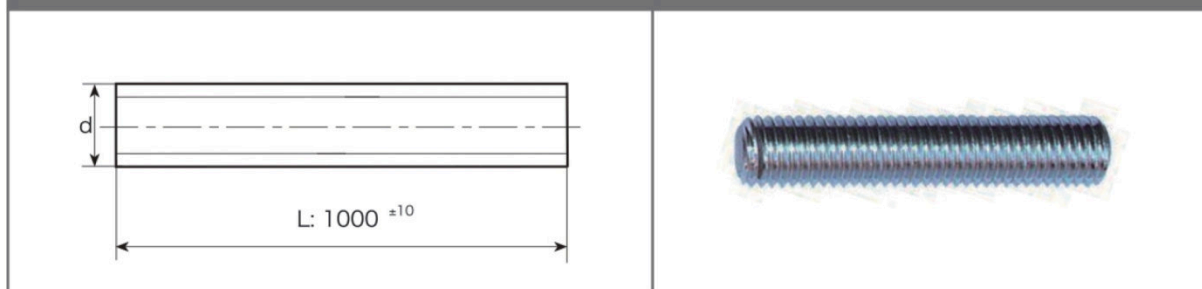
d nom.	M3	M4	M5	M6	M7	M8	M10	M12
d1 (min)	3,1	4,1	5,1	6,1	7,1	8,1	10,2	12,2
d2 (max)	6,2	7,6	9,2	11,8	12,8	14,8	18,1	21,1
s	0,8	0,9	1,2	1,6	1,6	2	2,2	2,5

d nom.	M14	M16	M18	M20	M22	M24	M27	M30
d1 (min)	14,2	16,2	18,2	20,2	22,5	24,5	27,5	30,5
d2 (max)	24,1	27,4	29,4	33,6	35,9	40	43	48,2
s	3	3,5	3,5	4	4	5	5	6

d nom.	M36	M39	M42	M45	M48	M52
d1 (min)	36,5	39,5	42,5	45,5	49	53
d2 (max)	58,2	61,2	68,2	71,2	75	83
s	6	6	7	7	7	8

Threaded Rods & Anchor Bolts

ISO-EN-

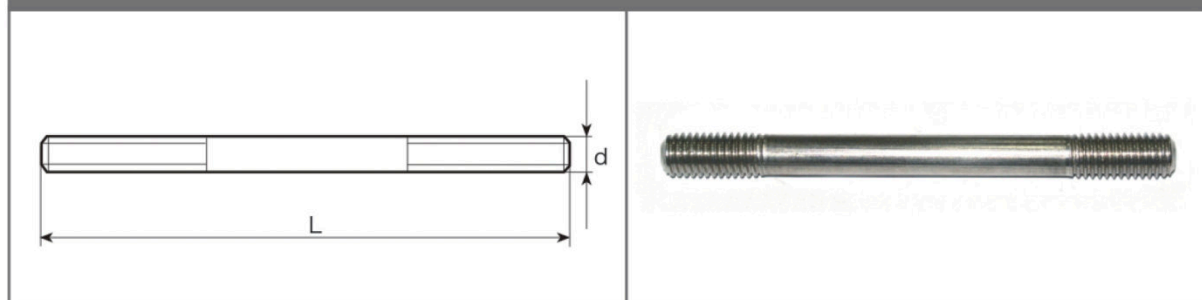
DIN 975

Threaded rods—Length 1 meter

d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
P	0,5	0,7	0,8	1	1,25	1,5	1,75	2	2	2,5	2,5

d	M22	M24	M27	M30	M33	M36	M39	M42	M45	M48	M52
P	2,5	3	3	3,5	3,5	4	4	4,5	4,5	5	5

ISO-EN-

Threaded studs-double ends

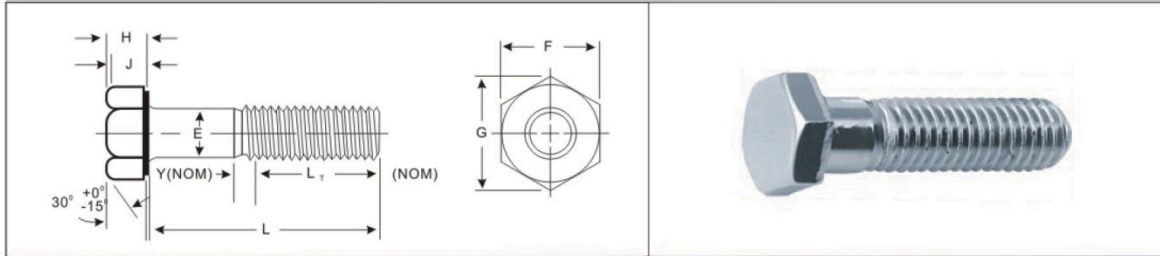
Threaded studs—double ends

d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
P	0,5	0,7	0,8	1	1,25	1,5	1,75	2	2	2,5	2,5

d	M22	M24	M27	M30	M33	M36	M39	M42	M45	M48	M52
P	2,5	3	3	3,5	3,5	4	4	4,5	4,5	5	5

HEX CAP SCREWS

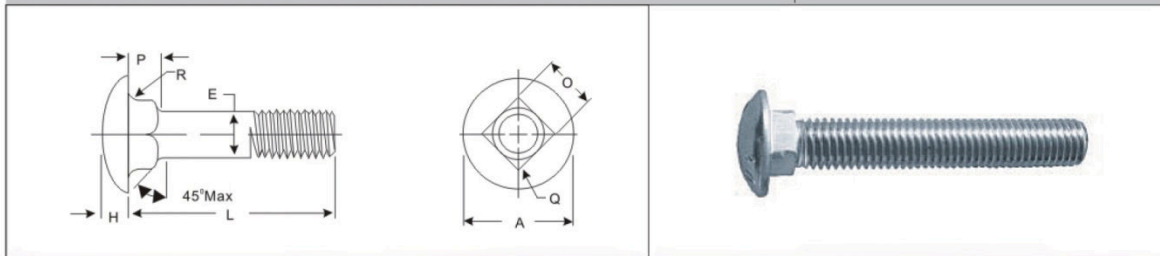
SAE J429 Gr.2 ASTM A307 Gr.A SAE J429 Gr.5 ASTM A449 Ty.1 SAE J429 Gr.8 ASTM A354 Gr.BD



Nominal Size (inch)	E		F			G		H			Thread Length For Screw Lengths	
	Full Size Body Dia.		Width Across Flats			Width Across Corners		Head Height			6 in & Shorter	Over 6 in.
	Max.	Min.	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.	Nom.	Nom.
1/4	0.2500	0.2450	7/16	0.438	0.428	0.505	0.488	5/32	0.163	0.150	0.750	1.000
5/16	0.3125	0.3065	1/2	0.500	0.489	0.577	0.557	13/64	0.211	0.195	0.875	1.125
3/8	0.3750	0.3690	9/16	0.562	0.551	0.650	0.628	15/64	0.243	0.226	1.000	1.250
7/16	0.4375	0.4305	5/8	0.625	0.612	0.722	0.698	9/32	0.291	0.272	1.125	1.375
1/2	0.5000	0.4930	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302	1.250	1.500
9/16	0.5625	0.5545	13/16	0.813	0.798	0.938	0.910	23/64	0.371	0.348	1.375	1.625
5/8	0.6250	0.6170	15/16	0.938	0.922	1.083	1.051	25/64	0.403	0.378	1.500	1.750
3/4	0.7500	0.7410	1 1/8	1.125	1.100	1.299	1.254	15/32	0.483	0.455	1.750	2.000
7/8	0.8750	0.8660	1 5/16	1.313	1.285	1.516	1.465	35/64	0.563	0.531	2.000	2.250
1	1.0000	0.9900	1 1/2	1.500	1.469	1.732	1.675	39/64	0.627	0.591	2.250	2.500
1 1/8	1.1250	1.1140	1 11/16	1.688	1.631	1.949	1.859	11/16	0.718	0.658	2.500	2.750
1 1/4	1.2500	1.2390	1 7/8	1.875	1.812	2.165	2.066	25/32	0.813	0.749	2.750	3.000
1 3/8	1.3750	1.3630	2 1/16	2.063	1.994	2.382	2.273	27/32	0.878	0.810	3.000	3.250
1 1/2	1.5000	1.4880	2 1/4	2.250	2.175	2.598	2.480	15/16	0.974	0.902	3.250	3.500

CARRIAGE BOLTS

SAE J429 Gr.2 ASTM A307 Gr.A SAE J429 Gr.5 ASTM A449 Ty.1

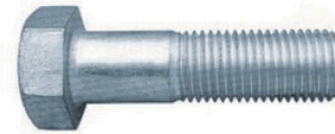
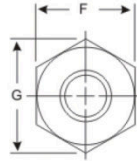
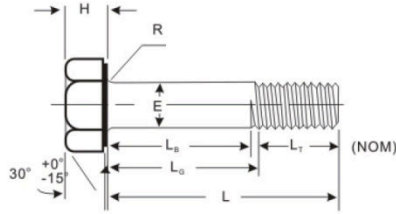


Nominal Size or Basic Bolt Diameter	E		A		H		O		P		Q	R	
	Body Diameter		Head Diameter		Head Height		Square Width		Square Depth		Corner Radius on Square	Fillet Radius	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.	
NO.10	0.1900	0.199	0.182	0.469	0.436	0.114	0.094	0.199	0.185	0.125	0.094	0.031	0.031
1/4	0.2500	0.260	0.237	0.594	0.563	0.145	0.125	0.260	0.245	0.156	0.125	0.031	0.031
5/16	0.3125	0.324	0.298	0.719	0.688	0.176	0.156	0.324	0.307	0.187	0.156	0.031	0.031
3/8	0.3750	0.388	0.360	0.844	0.782	0.208	0.188	0.388	0.368	0.219	0.188	0.047	0.031
7/16	0.4375	0.452	0.421	0.969	0.907	0.239	0.219	0.452	0.431	0.250	0.219	0.047	0.031
1/2	0.5000	0.515	0.483	1.094	1.032	0.290	0.250	0.515	0.492	0.281	0.250	0.047	0.031
5/8	0.6250	0.642	0.605	1.344	1.219	0.344	0.313	0.642	0.616	0.344	0.313	0.078	0.062
3/4	0.7500	0.768	0.729	1.594	1.469	0.406	0.375	0.768	0.741	0.406	0.375	0.078	0.062



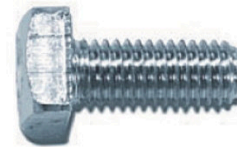
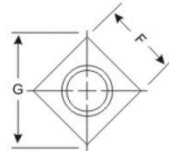
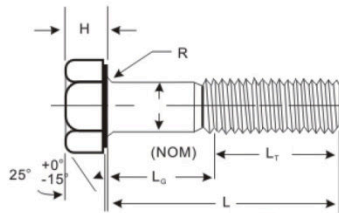
HEAVY HEX STRUCTURAL BOLTS

ASTMA 325 Ty.1 | ASTMA 490 Ty.1



Nominal Size (inch)	E		F			G		H			Thread Length Basic
	Full Size Body Dia		Width Across Flats			Width Across Corners		Head Height			
	Max.	Min.	Basic.	Max.	Min.	Max.	Min.	Basic.	Max.	Min.	
1/2	0.515	0.482	7/8	0.875	0.850	1.010	0.969	5/16	0.323	0.302	1.00
5/8	0.642	0.605	1 1/16	1.063	1.031	1.227	1.175	25/64	0.403	0.378	1.25
3/4	0.768	0.729	1 1/4	1.250	1.212	1.443	1.383	15/32	0.483	0.455	1.38
7/8	0.895	0.852	1 7/16	1.438	1.394	1.660	1.589	35/64	0.563	0.531	1.50
1	1.022	0.976	1 5/8	1.625	1.575	1.876	1.796	39/64	0.627	0.591	1.75
1 1/8	1.149	1.098	1 13/16	1.813	1.756	2.093	2.002	11/16	0.718	0.658	2.00
1 1/4	1.277	1.223	2	2.000	1.938	2.309	2.209	25/32	0.813	0.749	2.00
1 3/8	1.404	1.345	2 3/16	2.188	2.119	2.526	2.416	27/32	0.878	0.810	2.25
1 1/2	1.531	1.470	2 3/8	2.375	2.300	2.742	2.622	15/16	0.974	0.902	2.25

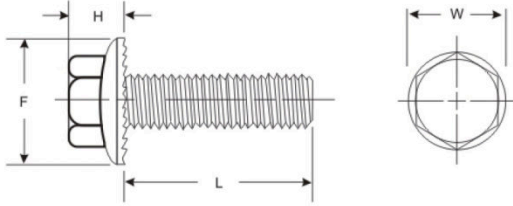
SQUARE HEAD BOLTS



Nominal Size or Basic Product Diameter	Full-Size Body Diameter		Width Across Flats			Width Across Corners		Head Height			Radius Of Fillet		Thread Length For Bolt Lengths		
	Max.	Min.	Basic.	Max.	Min.	Max.	Min.	Basic.	Max.	Min.	Max.	Min.	6 in. And Shorter	Over 6 in.	
														Nom.	Nom.
1/4	0.2500	0.260	0.237	3/8	0.375	0.362	0.530	0.498	11/64	0.188	0.156	0.03	0.01	0.750	1.000
5/16	0.3125	0.324	0.298	1/2	0.500	0.484	0.707	0.665	13/64	0.220	0.186	0.03	0.01	0.875	1.125
3/8	0.3750	0.388	0.360	9/16	0.562	0.544	0.795	0.747	1/4	0.268	0.232	0.03	0.01	1.000	1.250
7/16	0.4375	0.452	0.421	5/8	0.625	0.603	0.884	0.828	19/64	0.316	0.278	0.03	0.01	1.125	1.375
1/2	0.5000	0.515	0.482	3/4	0.750	0.725	1.061	0.995	21/64	0.348	0.308	0.03	0.01	1.250	1.500
5/8	0.6250	0.642	0.605	15/16	0.938	0.906	1.326	1.244	27/64	0.444	0.400	0.06	0.02	1.500	1.750
3/4	0.7500	0.768	0.729	1 1/8	1.125	1.088	1.591	1.494	1/2	0.524	0.476	0.06	0.02	1.750	2.000
7/8	0.8750	0.895	0.852	1 5/16	1.312	1.269	1.856	1.742	19/32	0.620	0.568	0.06	0.02	2.000	2.250
1	1.0000	1.022	0.976	1 1/2	1.500	1.450	2.121	1.991	1/32	0.684	0.628	0.09	0.03	2.250	2.500
1 1/8	1.1250	1.149	1.098	1 11/16	1.688	1.631	2.386	2.239	3/4	0.780	0.720	0.09	0.03	2.500	2.750
1 1/4	1.2500	1.277	1.223	1 7/8	1.875	1.812	2.652	2.489	27/32	0.876	0.812	0.09	0.03	2.750	3.000
1 3/8	1.3750	1.404	1.345	2 1/16	2.062	1.994	2.917	2.738	29/32	0.940	0.872	0.09	0.03	3.000	3.250
1 1/2	1.5000	1.531	1.470	2 1/4	2.250	2.175	3.182	2.986	1	1.036	0.964	0.09	0.03	3.250	3.500

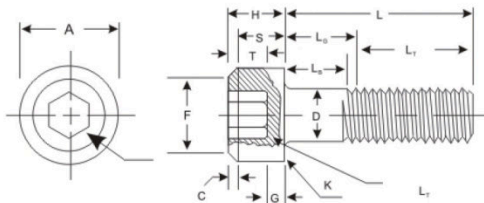
MILD STEEL. MEDIUM STEEL. ALLOY STEEL. STAINLESS STEEL. BRASS

HEX FLANGE SCREWS



Nominal Size	W		H		F		
	Width Across Flats		Thickness		Flange Diameter		
	Max.	Min.	Max.	Min.	Max.	Min.	
4	0.112	0.188	0.181	0.079	0.060	0.243	0.2525
6	0.138	0.187	0.181	0.157	0.132	0.266	0.254
8	0.164	0.250	0.244	0.186	0.161	0.355	0.341
10	0.190	0.312	0.305	0.210	0.185	0.441	0.425
1/4	0.250	0.375	0.367	0.240	0.201	0.531	0.513
5/16	0.313	0.500	0.491	0.298	0.274	0.706	0.686
3/8	0.375	0.562	0.552	0.331	0.307	0.793	0.771
7/16	0.438	0.625	0.612	0.460	0.365	0.930	0.856
1/2	0.500	0.750	0.736	0.510	0.470	1.070	1.020
5/8	0.625	0.9375	0.922	0.620	0.580	1.330	1.260
3/4	0.750	1.1250	1.100	0.730	0.680	1.590	1.490

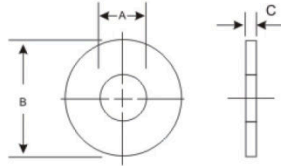
SOCKET HEAD CAP SCREWS



Size	D		A		H		J	T
	Body Diameter		Head Diameter		Head Height		Hex Socket	Key Engag.
	Max.	Min.	Max.	Min.	Max.	Min.	Nom.	Min.
6	.1380	.1329	.226	.218	.138	.134	.109	.064
8	.1640	.1585	.270	.262	.1644	.159	.141	.077
10	.1900	.1840	.312	.303	.190	.185	.156	.090
12	.2160	.2127	.324	.314	.216	.211	.158	.103
1/4	.2500	.2435	.375	.365	.250	.244	.188	.120
5/16	.3125	.3053	.469	.457	.312	.306	.250	.151
3/8	.3750	.3678	.562	.550	.375	.368	.312	.182
7/16	.4375	.4294	.656	.642	.438	.430	.375	.213
1/2	.5000	.4919	.750	.735	.500	.492	.375	.245
9/16	.5625	.5524	.844	.828	.5625	.835	.378	.276
5/8	.6250	.6163	.938	.921	.625	.616	.500	.307
3/4	.7500	.7406	1.125	1.107	.750	.740	.625	.370
7/8	.8750	.8647	1.312	1.293	.875	.864	.750	.432
1	1.000	.9886	1.500	1.479	1.000	.988	.750	.495
1 1/8	1.125	1.1086	1.688	1.665	1.125	1.111	.875	.557
1 1/4	1.250	1.2336	1.875	1.852	1.125	1.236	.875	.620
1 3/8	1.375	1.3568	2.062	2.038	1.375	1.360	1.000	.682
1 1/2	1.500	1.4818	2.250	2.224	1.500	1.485	1.000	.745
1 3/4	1.750	1.7295	2.625	2.597	1.750	1.734	1.250	.870
2	2.000	1.9870	3.000	2.970	2.000	1.983	1.500	.995

Projection-Imperial

Structural Flat Washer F436

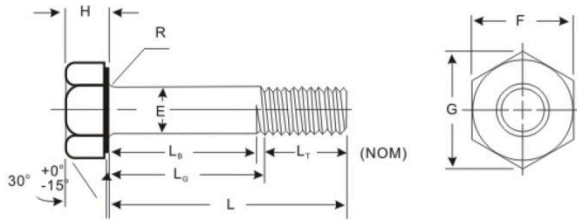


Size	B		A		C		Size	B		A		C		
	Nominal	Nominal	Max	Min	Nominal	Nominal		Max	Min	Nominal	Nominal	Max	Min	
1/4	.625	.281	.051	.080	1	2.000	1.063	.136	.177	2 1/4	4.000	2.375	.240	.340
5/16	.688	.344	.051	.080	1 1/8	2.250	1.188	.136	.177	2 1/2	4.500	2.625	.240	.340
3/8	.813	.406	.051	.080	1 1/4	2.500	1.375	.136	.177	2 3/4	5.000	2.875	.240	.340
7/16	.922	.469	.051	.080	1 3/8	2.750	1.500	.136	.177	3	5.500	3.125	.240	.340
1/2	1.063	.531	.097	.177	1 1/2	3.000	1.625	.136	.177	3 1/4	6.000	3.375	.240	.340
9/16	1.188	.625	.110	.177	1-5/8	3.250	1.750	.178	.280	3 1/2	6.500	3.625	.240	.340
5/8	1.313	.688	.122	.177	1 3/4	3.375	1.875	.178	.280	3 3/4	7.000	3.875	.240	.340
3/4	1.468	.813	.122	.177	1 7/8	3.468	1.937	.178	.196	4	7.500	4.125	.240	.340
7/8	1.750	.938	.136	.177	2	3.750	2.125	.178	.280					

OD	<1=+/-0.032	1=3=+/-0.063	>3=+/-0.125
ID	<1=+/-0.032	1=3=-0/+0.063	>3=-0/+0.125

Hexagon Structure Bolt

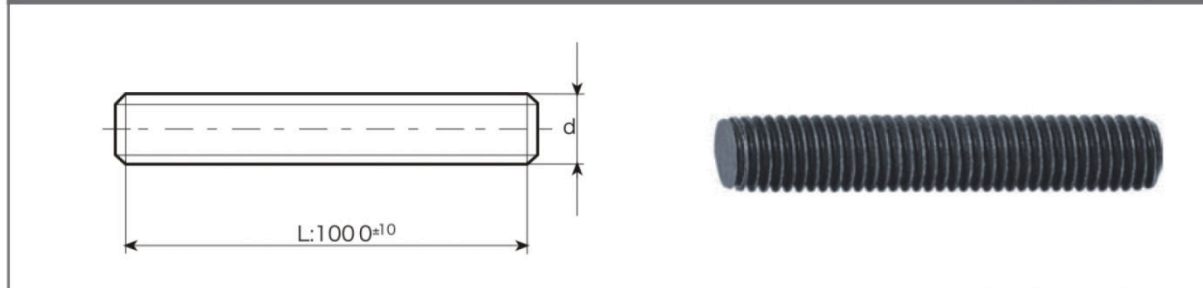
ASTMA 325 Ty.1 ASTMA 490 Ty.1



Nominal Size (inch)	E		F			G		H			Thread Length Basic
	Full Size Body Dia		Width Across Flats			Width Across Corners		Head Height			
	Max.	Min.	Basic.	Max.	Min.	Max.	Min.	Basic.	Max.	Min.	
1/2	0.515	0.482	7/8	0.875	0.850	1.010	0.969	5/16	0.323	0.302	1.00
5/8	0.642	0.605	1 1/16	1.063	1.031	1.227	1.175	25/64	0.403	0.378	1.25
3/4	0.768	0.729	1 1/4	1.250	1.212	1.443	1.383	15/32	0.483	0.455	1.38
7/8	0.895	0.852	1 7/16	1.438	1.394	1.660	1.589	35/64	0.563	0.531	1.50
1	1.022	0.976	1 5/8	1.625	1.575	1.876	1.796	39/64	0.627	0.591	1.75
1 1/8	1.149	1.098	1 13/16	1.813	1.756	2.093	2.002	11/16	0.718	0.658	2.00
1 1/4	1.277	1.223	2	2.000	1.938	2.309	2.209	25/32	0.813	0.749	2.00
1 3/8	1.404	1.345	2 3/16	2.188	2.119	2.526	2.416	27/32	0.878	0.810	2.25
1 1/2	1.531	1.470	2 3/8	2.375	2.300	2.742	2.622	15/16	0.974	0.902	2.25

Projection-Imperial

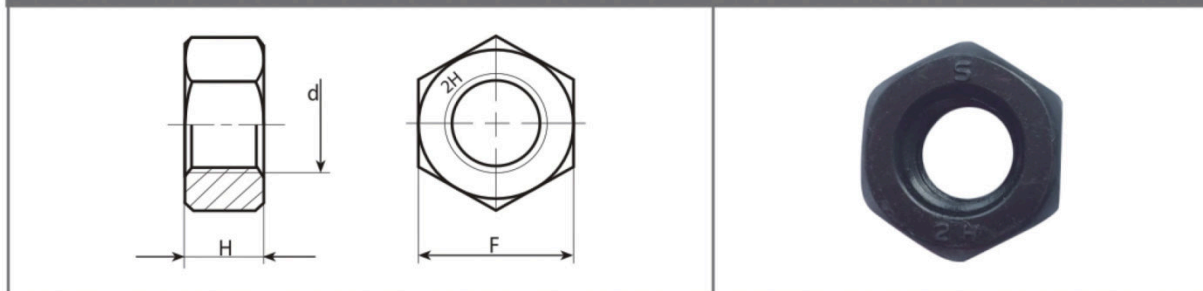
ISO - EN -

ASTM A193

Stud bolts ASTM A193, grade B7, B16, L7

d /inch	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4
Threads per inch	13	11	10	9	8	8	8

d /inch	1 3/8	1 1/2	1 5/8	1 3/4	1 7/8	2"
Threads per inch	8	8	8	8	8	8

ISO - EN -

A194 Grade 2H

Hex nuts ASTM A194 grade 2H

d /inch	1/2	5/8	3/4	7/8	1
Threads per inch	13	11	10	9	8
H	12,3	15,5	18,65	21,85	25
F inch	7/8	1 1/16	1 1/4	1 7/16	1 5/8
F mm	22,2	27	31,75	36,5	41,3

d /inch	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8
Threads per inch	8	8	8	8	8
H	28,2	30,95	34,15	37,3	40,5
F inch	1 13/16	2"	2 3/16	2 3/8	2 9/16
F mm	46	50,8	55,6	60,3	65,1

d /inch	1 3/4	1 7/8	2"
Threads per inch	8	8	8
H	43,65	46,85	50
F inch	2 3/4	2 15/16	3 1/8
F mm	69,85	74,6	79,4

FINISHED HEX NUTS

SAE J995 Gr.2 ASTM A563 Gr.A SAE J995 Gr.5 ASTM A563 Gr.B SAE J995 Gr.8 ASTM A563 Gr.DH

Nominal Size	F		G		H	
	Width Across Flats		Width Across Corners		Thickness	
	Max.	Min.	Max.	Min.	Max.	Min.
1/4	.438	.428	.505	.488	.226	.212
5/16	.500	.489	.577	.557	.273	.258
3/8	.562	.551	.650	.605	.337	.320
7/16	.688	.675	.794	.768	.385	.365
1/2	.750	.736	.866	.840	.448	.427
9/16	.875	.861	1.010	.982	.496	.473
5/8	.938	.922	1.083	1.051	.559	.535
3/4	1.125	1.088	1.299	1.240	.665	.617
7/8	1.312	1.269	1.516	1.447	.776	.724
1	1.500	1.450	1.732	1.653	.887	.831
1 1/8	1.688	1.631	1.949	1.859	.999	.939
1 1/4	1.875	1.812	2.165	2.066	1.094	1.030
1 3/8	2.062	1.994	2.382	2.273	1.206	1.138
1 1/2	2.250	2.175	2.598	2.480	1.317	1.245
1 5/8	2.43	2.35	2.805	2.679	1.416	1.364
1 3/4	2.625	2.538	3.031	2.893	1.540	1.460
1 7/8	2.813	2.722	3.247	3.103	1.651	1.567
2	3.000	2.900	3.464	3.306	1.763	1.675
2 1/4	3.375	3.263	3.897	3.719	1.986	1.890
2 1/2	3.750	3.625	4.330	4.133	2.209	2.105
2 3/4	4.125	3.988	4.763	4.546	2.431	2.319
3	4.5	4.350	5.196	4.959	2.654	2.534

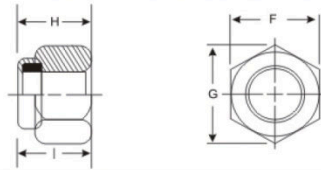
HEX COIL NUTS

Diameter	Threads Per Inch	F	C	H
		W.A.F.	W.A.C.	Thickness
1/2 H	6	.875/.850	1.010/.969	.504/.464
5/8 F	5	.938/.922	1.083/1.051	.559/.535
3/4 F	4.5	1.125/1.088	1.299/1.240	.665/.617
3/4 H	4.5	1.250/1.212	1.443/1.382	.758/.710
7/8 H	4.5	1.438/1.394	1.660/1.589	.885/.833
1 H	3.5	1.625/1.575	1.876/1.796	1.012/.956
1.25 H	3.5	2.000/1.937	2.309/2.209	1.251/1.187
1.50 H	3.5	2.375/2.300	2.742/2.622	1.505/1.433

MILD STEEL. MEDIUM STEEL. ALLOY STEEL. STAINLESS STEEL. BRASS

NYLON INSERT LOCK NUTS

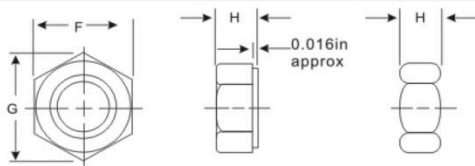
SAE J995 Gr.2 SAE J995 Gr.5 SAE J995 Gr.8



Nominal Size	H		F		G	I
	Max.	Min.	Max.	Min.	Min.	Ref.
1/4-20	.328	.298	.439	.430	.488	.225
1/4-28	.328	.298	.439	.430	.488	.225
5/16-24	.359	.329	.502	.489	.557	.250
5/16-18	.359	.329	.502	.489	.557	.250
3/8-24	.468	.438	.564	.551	.628	.335
3/8-16	.468	.438	.564	.551	.628	.335
7/16-20	.468	.438	.627	.616	.698	.324
7/16-14	.468	.438	.627	.616	.698	.324
1/2-20	.609	.579	.752	.736	.840	.464
1/2-13	.609	.579	.752	.736	.840	.464
9/16-12	.656	.626	.877	.861	.982	.469
9/16-18	.656	.626	.877	.861	.982	.469
5/8-11	.765	.735	.940	.922	1.051	.593
5/8-18	.765	.735	.940	.922	1.051	.593
3/4-10	.890	.860	1.064	1.052	1.191	.742
3/4-16	.890	.860	1.064	1.052	1.191	.742
7/8-14	.999	.969	1.252	1.239	1.403	.790
7/8-9	.999	.969	1.252	1.239	1.403	.790
1-14	1.078	1.016	1.440	1.427	1.619	.825
1-8	1.078	1.016	1.440	1.427	1.619	.825
1 1/8-7	1.203	1.141	1.627	1.614	1.833	0.930
1 1/8-12	1.203	1.141	1.627	1.614	1.833	0.930
1 1/4-7	1.422	1.360	1.815	1.801	2.046	1.125
1 1/4-12	1.422	1.360	1.815	1.801	2.046	1.125
1 3/8-6	1.609	1.547	2.008	1.973	2.259	1.282
1 3/8-12	1.609	1.547	2.008	1.973	2.259	1.282
1 1/2-6	1.640	1.578	2.197	2.159	2.473	1.313
1 1/2-12	1.640	1.578	2.197	2.159	2.473	1.313

HEAVY HEX NUTS

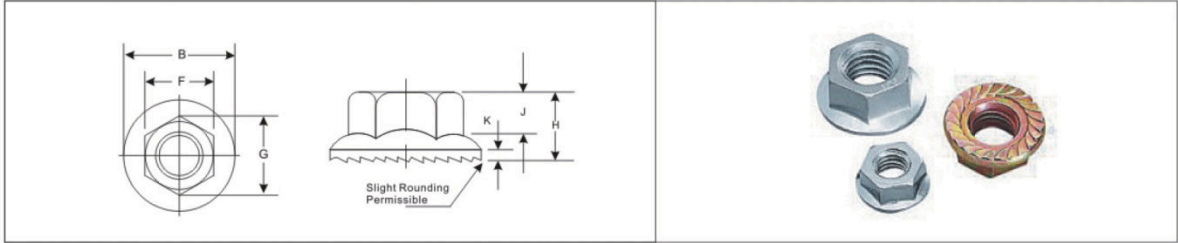
ASTMA194 Gr.2H ASTMA563 Gr.DH



Nominal Size	F		G		H	
	Width Across Flats		Width Across Corners		Thickness	
	Max.	Min.	Max.	Min.	Max.	Min.
1/4	.500	.488	.577	.556	.250	.218
5/16	.562	.546	.650	.622	.314	.280
3/8	.688	.669	.794	.763	.377	.341
7/16	.750	.728	.866	.830	.441	.403
1/2	.875	.850	1.010	.969	.504	.464
9/16	.938	.909	1.083	1.037	.568	.526
5/8	1.062	1.031	1.227	1.175	.631	.587
3/4	1.250	1.212	1.443	1.382	.758	.710
7/8	1.438	1.394	1.660	1.589	.885	.833
1	1.625	1.575	1.876	1.796	1.012	.956
1 1/8	1.812	1.756	2.093	2.002	1.139	1.079
1 1/4	2.000	1.938	2.309	2.209	1.251	1.187
1 3/8	2.188	2.119	2.526	2.416	1.378	1.310
1 1/2	2.375	2.300	2.742	2.622	1.505	1.433
1 5/8	2.562	2.481	2.959	2.828	1.632	1.556
1 3/4	2.750	2.662	3.175	3.035	1.759	1.679
1 7/8	2.938	2.844	3.392	3.242	1.886	1.802
2	3.125	3.025	3.608	3.449	2.013	1.925
2 1/4	3.500	3.388	4.041	3.862	2.251	2.155
2 1/2	3.875	3.750	4.474	4.275	2.505	2.401
2 3/4	4.250	4.112	4.907	4.688	2.759	2.647
3	4.625	4.475	5.340	5.102	3.013	2.893
3 1/4	5.000	4.838	5.774	5.515	3.252	3.124
3 1/2	5.375	5.200	6.207	5.928	3.506	3.370
3 3/4	5.750	5.562	6.640	6.341	3.760	3.616
4	6.125	5.925	7.073	6.755	4.014	3.862
4 1/2	6.875	6.650	7.939	7.581	4.522	4.354
5	7.625	7.375	8.805	8.408	5.030	4.846

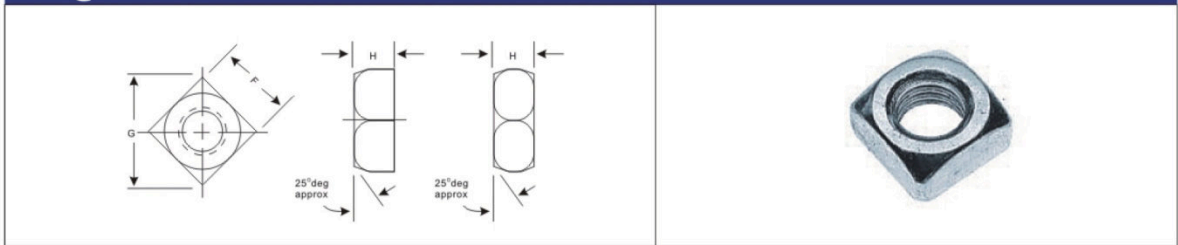
HEX FLANGE NUTS

SAE J995 Gr.2 SAE J995 Gr.5 SAE J995 Gr.8



Nominal Size or Basic Major Dia of Thread	F		G		B		H		J	K	Angularity of Bearing Surface
	Width Across Flats		Width Across Corners		Flange Diameter		Nut Thickness		Wrenching Length	Flange Thickness	
	Max	Min	Max	Min	Max	Min	Max	Min	Min	Max	
NO.6 0.1380	0.312	0.302	0.361	0.342	0.422	0.406	0.171	0.156	0.10	0.02	0.014
8 0.1640	0.344	0.334	0.397	0.381	0.469	0.452	0.203	0.187	0.13	0.02	0.016
10 0.1900	0.375	0.365	0.433	0.416	0.500	0.480	0.219	0.203	0.13	0.03	0.017
12 0.2160	0.438	0.428	0.505	0.488	0.594	0.574	0.236	0.222	0.14	0.04	0.020
1/4 0.2500	0.438	0.428	0.505	0.488	0.594	0.574	0.236	0.222	0.14	0.04	0.020
5/16 0.3125	0.500	0.478	0.577	0.557	0.680	0.660	0.283	0.268	0.17	0.04	0.023
3/8 0.3750	0.562	0.551	0.650	0.628	0.750	0.728	0.347	0.330	0.23	0.04	0.025
7/16 0.4375	0.688	0.675	0.794	0.768	0.937	0.910	0.395	0.375	0.26	0.04	0.032
1/2 0.5000	0.750	0.736	0.866	0.840	1.031	1.000	0.458	0.437	0.31	0.05	0.035
9/16 0.5625	0.875	0.861	1.010	0.982	1.188	1.155	0.506	0.483	0.35	0.05	0.040
5/8 0.6250	0.938	0.922	1.083	1.051	1.281	1.248	0.569	0.545	0.40	0.05	0.044
3/4 0.7500	1.125	1.088	1.299	1.240	1.500	1.460	0.675	0.627	0.46	0.06	0.051

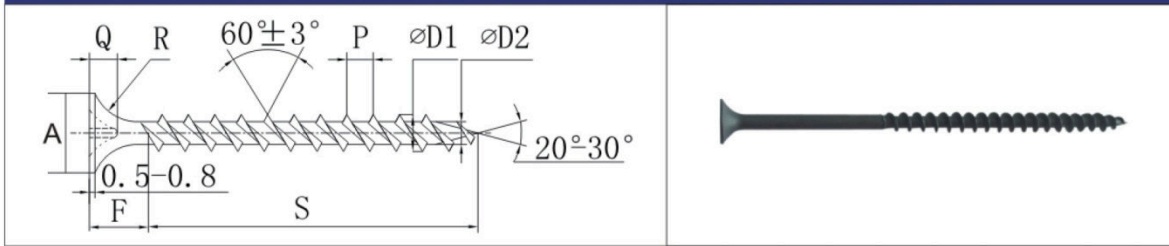
SQUARE NUTS



Nominal Size or Basic Major Dia of Thread	F			G		H		
	Width Across Flats			Width Across Corners		Thickness		
	Basic	Max	Min	Max	Min	Basic	Max	Min
1/4 0.2500	7/16	0.438	0.425	0.619	0.554	7/32	0.235	0.203
5/16 0.3125	9/16	0.562	0.547	0.795	0.721	17/64	0.283	0.249
3/8 0.3750	5/8	0.625	0.606	0.884	0.802	21/64	0.346	0.310
7/16 0.4375	1/4	0.750	0.728	1.061	0.970	3/8	0.394	0.356
1/2 0.5000	13/16	0.812	0.788	1.149	1.052	7/16	0.458	0.418
5/8 0.6250	1	1.000	0.969	1.414	1.300	35/64	0.569	0.525
3/4 0.7500	1-1/8	1.125	1.088	1.591	1.464	21/32	0.680	0.632
7/8 0.8750	1-5/16	1.312	1.269	1.856	1.712	49/64	0.792	0.740
1 1.0000	1-1/2	1.500	1.450	2.121	1.961	7/8	0.903	0.847
1-1/8 1.1250	1-11/16	1.688	1.631	2.386	2.209	1	1.030	0.970
1-1/4 1.2500	1-7/8	1.875	1.812	2.652	2.458	1-3/32	1.126	1.062
1-3/8 1.3750	2-1/16	2.062	1.994	2.917	2.708	1-13/64	1.237	1.169
1-1/2 1.5000	2-1/4	2.250	2.175	3.182	2.956	1-5/16	1.348	1.276

MILD STEEL. MEDIUM STEEL. ALLOY STEEL. STAINLESS STEEL. BRASS

DRYWALL SCREW COARSE THREAD

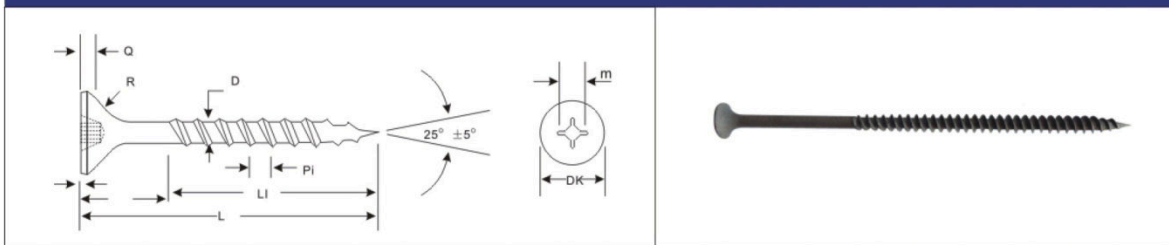


Size	Dk Head Diameter	a	D Major Diameter	d Minor Diameter	K, max.	Pi Pitch	Q Recess Penetration	R	M Phillips Recess Width	Torsional Strength (kg-cm) Min.
# 6	.314/.331	.177/.275	.144/.157	.086/.095	.031	.109/.111	.104/.115	.157/.197	.177/.200	28.00
# 7	.314/.331	.177/.275	.153/.169	.094/.102	.031	.109/.111	.104/.115	.157/.197	.177/.200	35.00
# 8	.314/.331	.177/.275	.171/.187	.102/.110	.031	.124/.126	.104/.115	.157/.197	.177/.200	45.00
# 9	.334/.350	.177/.275	.169/.189	.114/.122	.031	.124/.126	.104/.115	.157/.197	.177/.200	55.00
# 10	.346/.362	.177/.275	.192/.210	.126/.134	.031	.124/.126	.104/.125	.157/.197	.177/.200	56.00

Tolerance on Length	Up to 1 in. Incl.: -0. +0.060	Over 1 in.: -0. +0.100
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Length of Screw	1"=L=2 1/4"	2 1/4"<L<3"	L>3"
Length of thread(s)	Full thread	Lt=2" +0.08/-0.00	Lt=2 1/2"+0.08/-0.00"

DRYWALL SCREW FINE THREAD

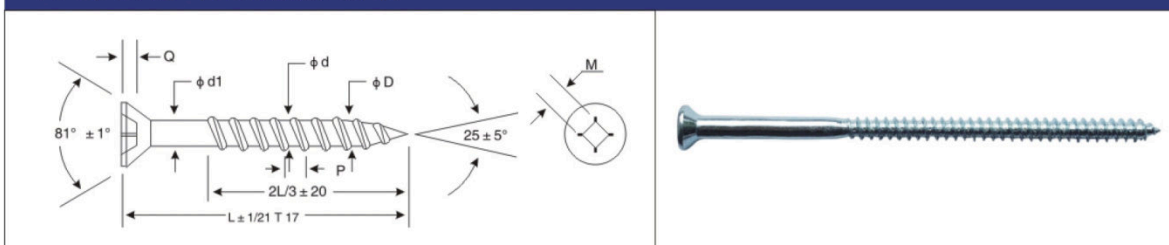


Size	Dk Head Diameter	a	D Major Diameter	K. Max.	Pi Pitch	Q Recess Penetration	R	M Phillips Recess Width	Torsional Strength (kg-cm) Min.
					+/- 10%				
#6	.314/.331	.177/.275	.134/.141	.031	.110	.104/.115	.157/.197	.177/.200	28.00
#7	.314/.331	.177/.275	.147/.157	.031	.125	.104/.115	.157/.197	.177/.200	35.00
#8	.314/.331	.177/.275	.161/.169	.031	.133	.104/.115	.157/.197	.177/.200	45.00
#9	.334/.350	.177/.275	.175/.181	.031	.133	.104/.115	.157/.197	.177/.200	55.00
#10	.346/.362	.177/.275	.185/.195	.031	.165	.104/.125	.157/.197	.177/.200	56.00

Tolerance on Length	Up to 1 in. incl.: -0. +0.060	Over 1 in.: -0. +0.100
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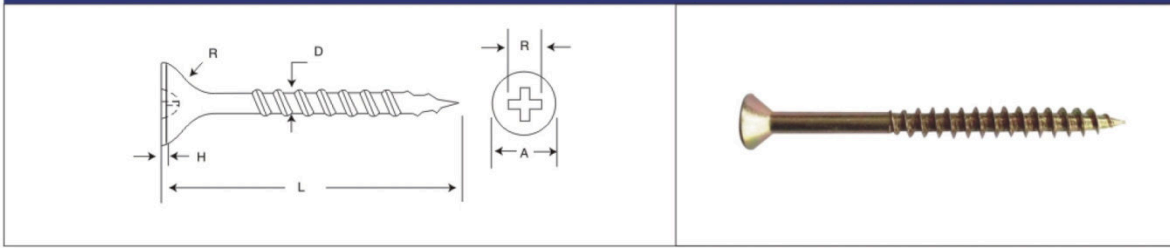
Length of Screw	1"≤L≤2 1/4"	2 1/4"<L≤3"	L>3"
Length of thread(s)	Full thread	Lt=2" +0.08/-0.00	Lt=2 1/2"+0.08/-0.00"

WOOD SCREWS



Size	A	D	d	P+/-10%	d1	Square/Cross Recessed Drive	
						M	Q
#6	.255/.295	.141/.157	.086/.098	.118	.104/.112	.111/.113	.050/.071
#7	.268/.305	.149/.165	.090/.102	.118	.110/.120	.111/.113	.063/.085
#8	.307/.339	.157/.177	.094/.106	.118	.122/.127	.111/.113	.063/.085
#10	.339/.385	.190/.210	.110/.127	.118	.141/.151	.111/.113	.077/.098

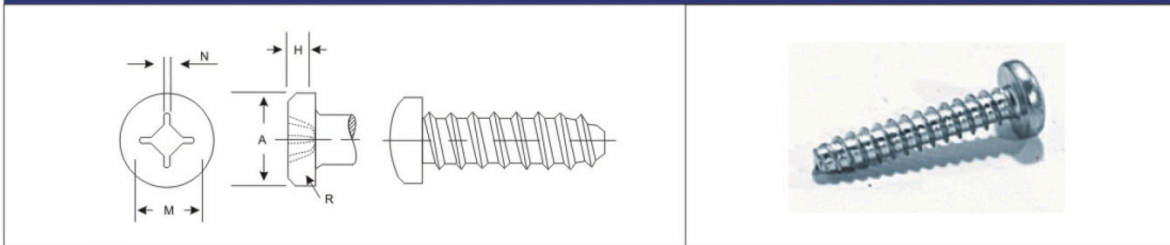
CHIPBOARD SCREW



Size	A		H		R		Recess Penetration		Cross recessed Driver Size	D	
	Head Diameter		Head Thickness		Recess Diameter		Max.	Min.		Major Diameter	
	Max.	Min.	Max.	Min.	Max.	Min.				Max.	Min.
6-8	.347	.315	.031	.020	.201	.176	.116	.093	2	.154	.140
7-8	.355	.315	.031	.020	.201	.176	.116	.093	2	.172	.159
8-8	.363	.315	.039	.020	.201	.176	.116	.093	2	.180	.163
10-8	.363	.334	.039	.020	.204	.190	.125	.098	2	.210	.180

Tolerance on Length		Up to 1 in.incl.: -0. +0.060		Over 1 in.: -0. +0.100			
Length of Screw		1" ≤ L ≤ 2 1/4"		2 1/4" < L ≤ 3"		L > 3"	
Length of thread(s)		Full thread		Lt" +0.08/-0.00		Lt=2 1/2"+0.08/-0.00"	

THREAD ROLLING SCREWS

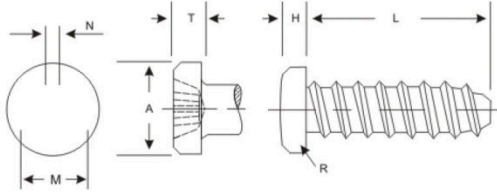


Size	A		H		R	M	N	Driver Size	Recess Penetration Gaging Depth	
	Head Diameter		Head Height		Radius	Rec.Dia.	Rec.Width		Max.	Min.
	Max.	Min.	Max.	Min.	Max.	Ref.	Ref.			
2	.167	.155	.062	.053	.035	.098	.017	1	0.052	0.034
3	.193	.180	.071	.062	.037	.106	.019	1	0.061	0.043
4	.219	.205	.080	.070	.042	.446	.019	1	0.071	0.053
5	.245	.231	.089	.079	.044	.152	.028	2	0.072	0.046
6	.270	.256	.097	.087	.046	.160	.028	2	0.080	0.055
8	.322	.306	.115	.105	.052	.176	.030	2	0.097	0.071
10	.373	.357	.133	.122	.061	.192	.031	2	0.113	0.089
12	.425	.407	.151	.139	.078	.252	.034	3	0.124	0.098
1/4	.492	.473	.175	.162	.087	.274	.036	3	0.144	0.118
5/16	.615	.594	.218	.203	.099	.344	.059	4	0.173	0.149

Nominal Screw Size & Threads per Inch.	Major Diameter	Point Diameter	Dia of Circumscribing Circle(Thread)	Dia of Circumscribing Circle(Point)	Point Length	
	Max.	Max.	Max.	Max.	Max.	Min.
2-56	0.086	--	0.088	0.070	0.062	0.036
3-48	0.099	--	0.101	0.081	0.073	0.042
4-40	0.112	0.086	0.115	0.090	0.088	0.050
5-40	0.125	0.099	0.128	0.103	0.088	0.050
6-32	0.138	0.106	0.141	0.111	0.109	0.062
8-32	0.164	0.132	0.167	0.137	0.109	0.062
10-24	0.190	0.147	0.194	0.153	0.146	0.083
10-32	0.190	0.147	0.193	0.163	0.146	0.083
12-24	0.216	0.173	0.220	0.179	0.146	0.083
1/4-20	0.250	0.198	0.255	0.206	0.175	0.100
5/16-18	0.313	0.255	0.318	0.264	0.194	0.111

MILD STEEL. MEDIUM STEEL. ALLOY STEEL. STAINLESS STEEL. BRASS

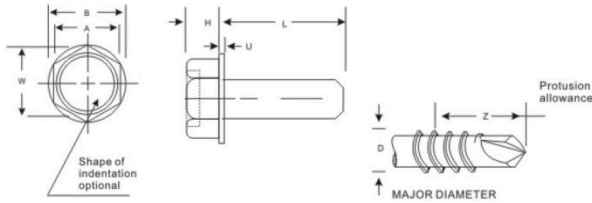
SHEET METAL SCREW



Size	A		H		R	M	T	N
	Head Diameter		Head Height		Head Radius	Recess Diameter	Recess Depth	Recess Width
	Max.	Min.	Max.	Min.	Min.	Ref.	Ref.	Ref.
4	.219	.205	.080	.070	.010	.116	.069	.019
6	.270	.256	.097	.087	.015	.160	.078	.028
7	.296	.281	.106	.096	.015	.170	.088	.029
8	.322	.306	.115	.105	.015	.176	.095	.030
10	.373	.357	.133	.122	.020	.192	.112	.031
12	.425	.407	.151	.139	.025	.252	.128	.034
14	.476	.457	.169	.156	.035	.274	.148	.036
20	.631	.608	.223	.208	.040	.344	.181	.059
24	.734	.709	.259	.242	.040	.382	.222	.065

Nominal Size	Threads per Inch	D		d		Nominal Size	Threads per Inch	D		d	
		Major Diameter		Minor Diameter				Major Diameter		Minor Diameter	
		Max.	Min.	Max.	Min.			Max.	Min.	Max.	Min.
4	24	0.114	0.110	0.083	0.078	12	11	0.221	0.215	0.162	0.155
6	18	0.141	0.136	0.102	0.096	14	10	0.254	0.248	0.185	0.178
7	16	0.158	0.152	0.114	0.108	20	9	0.333	0.327	0.234	0.226
8	15	0.168	0.162	0.123	0.116	24	9	0.390	0.383	0.291	0.282
10	12	0.194	0.188	0.133	0.126						

HEX WASHER HEAD SELF-DRILLING SCREW



Nominal Size	A		W	H		B		U		Optional	
	Width Across Flats		Width Across Corners	Head Height		Washer Diameter		Washer Thickness		Undercut Depth	Undercut Diameter
	Max.	Min.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Max.
4	0.188	0.181	0.202	0.060	0.049	0.243	0.225	0.019	0.011	.0137	.1850
6	0.250	0.244	0.272	0.093	0.08	0.328	0.302	0.025	0.015	.0157	.2523
8	0.250	0.244	0.272	0.110	0.096	0.348	0.322	0.031	0.019	.0196	.2523
10	0.312	0.305	0.340	0.120	0.105	0.414	0.384	0.031	0.019	.0196	.3203
12	0.312	0.305	0.340	0.155	0.139	0.432	0.398	0.039	0.022	.0236	.3203
1/4	0.375	0.367	0.409	0.190	0.172	0.520	0.480	0.050	0.030	.0314	.3893
5/16	0.500	0.488	0.544	0.229	0.207	0.676	0.624	0.055	0.035	.0393	.5253

Nominal Size	Threads per Inch	Type BSD									
		D		d		Z	L				
		Major Dia.		Minor Dia.		Mprotusion	Formed		Milled		
		Max.	Min.	Max.	Min.	Ref.	90° Head	Csk Head	90° Head	Csk Head	
4	24	.114	.110	.086	.082	.163	5/16	3/8	3/8	7/16	
6	20	.139	.135	.104	.099	.190	5/16	3/8	3/8	7/16	
8	18	.166	.161	.122	.116	.211	3/8	7/16	7/16	1/2	
10	16	.189	.183	.141	.135	.300	1/2	9/16	9/16	21/32	
12	14	.215	.209	.164	.157	.353	1/2	5/8	21/32	25/32	
1/4	14	.246	.240	.192	.185	.393	1/2	5/8	11/16	27/32	
5/16	12	.314	.305	.272	.263	.421	5/8	3/4	-	-	



**NINGBO
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