



THREADED RODS

Full Threaded Bars

Standards:-

- ASTM/ASME/BS/DIN/BS EN ISO /JIS

Material:-

- Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

Size Range:-

- M6 to M100 in metric series
- ¼" to 4" in imperial

Threads:-

- UNC, 8UN, UNF, Metric Coarse and Metric Fine

Typical Grades & Standards:-

- ASTM A193 Grade B7, B7M, B8, B8M & B16
- ASTM A320 Grade L7 & L7M
- Stainless Steel 304, 304L, 316, 316L, A2-70/80, A4-70/80
- BS 3692 / BS 4190 grade 4.6, 4.8, 5.6, 5.8, 8.8

Any other specific grade can be manufactured upon request with short lead times.

Ordering Information:-

- Dimensions - Dia and Length.
- Standard and Grade
- Finish (Black, GI, Yellow, HDG, Cadmium, Nickel, PTFE etc)





**Alloy Steel Threaded Rod
ANSI B.1.1/BS4882
Material to ASMT
A193-B7/B7M/B16/B8 & B8M**

DIA(D)	Thread per inch	Weight kg/Ft.
1/4" UNC	20	0.130
5/16" UNC	18	0.163
3/8" UNC	16	0.195
7/16" UNC	14	0.228
1/2" UNC	13	0.250
9/16" UNC	12	0.293
5/8" UNC	11	0.372
3/4" UNC	10	0.560
7/8" UNC	9	0.771
1" UNC	8	1.018
1.1/8" UNC	7	1.298
1.1/8" UNS	8	1.298
1.1/4" UNC	7	1.639
1.1/4" UNS	8	1.639
1.3/8" UNC	6	2.032
1.3/8" UNS	8	2.032
1.1/2" UNC	6	2.425
1.1/2" UNS	8	2.425
1.5/8" UNS	8	2.934
1.3/4" UNS	8	3.403
1.7/8" UNS	8	3.911
2" UNS	8	4.458
2.1/4" UNS	8	5.648
2.1/2" UNS	8	7.115
2.3/4" UNS	8	8.865
3" UNS	8	10.636
3.1/4" UNS	8	12.200
3.1/2" UNS	8	15.510

**Alloy Steel Threaded Rod to DIN 975
Material to ASMT
A193M-B7/B7M/B16/B8 & B8M**

DIA(D)	Thread Pitch	Weight kg/Meter.
M6	1	0.18
M8	1.25	0.31
M10	1.5	0.49
M12	1.75	0.73
M14	2	0.99
M16	2	1.33
M18	2.5	1.64
M20	2.5	2.06
M22	2.5	2.55
M24	3	2.98
M27	3	3.85
M30	3.5	4.70
M33	3.5	5.78
M36	4	6.85
M39	4	8.15
M42	4.5	9.4
M45	4.5	10.9
M48	5	12.4
M52	5	14.65
M56	5.5	16.9
M64	6	22.20
M72	6	28.51
M76	6	31.96

STUD BOLTS



Full Threaded Studs and Engineering Studs

Standards:-

- ASTM/ASME/BS/DIN/BS EN ISO /JIS

Material:-

- Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

Size Range:-

- M6 to M100 in metric series
- ¼" to 4" in imperial

Threads:-

- UNC, 8UN, UNF, Metric Coarse and Metric Fine

Typical Grades & Standards:-

- ASTM A193 Grade B, B7M, B8, B8M & B16
- ASTM A320 Grade L7 & L7M

Any other specific grade can be manufactured upon request with short lead times.

Ordering Information:-

- Dimension - Dia and Length.
- Standards and Grade
- Finish (Black, GI, Yellow, HDG, Cadmium, Nickel, PTFE etc)
- Nut and washer quantity.



ANCHOR BOLTS



Anchor bolts, Foundation bolts, holding down Bolts, U Bolts, sag Rods & Tie Rods can be manufactured as per customer's drawing and as per grade required.

Standards:-

- ASTM/ASME/BS/DIN/BS EN ISO /JIS

Material:-

- Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

Size Range:-

- M6 to M100 in metric series
- ¼" to 4" in imperial

Threads:-

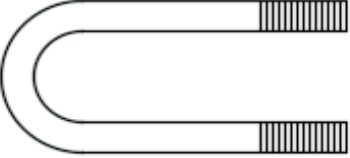
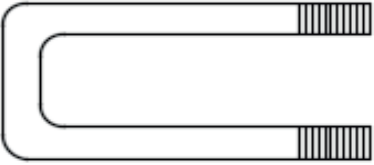


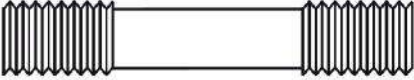

- UNC, 8UN, UNF, Metric Coarse and Metric Fine
- Typical Grades & Standards:-
- BS 3692 / BS 4190 grade 4.6, 4.8, 5.6, 5.8, 8.8, 10.9 and 12.9
- ASTM A307, A325, A193, B7 & B16, ASTM A320 L7
- Stainless Steel 304, 304L, 316, 316L, A2-70/80, A4-70/80, ASTM A193 Grade B8 & B8M
- ASTM A675 Grade 90, ASTM A572 Grade 50 and ASTM F1554 grade 36, 55 and 105

Any other specific grade can be manufactured upon request with short lead times.

Ordering Information:-

- Dimensions.
- Standard and Grade.
- Finish (Black, GI, Yellow, HDG, Cadmium, Nickel, PTFE etc.)
- Nut and washer quantity
- Plate and sleeve dimensions (if required).

Specially Manufactured Items:-

	<p>'U' Bolts Grip and Non Grip Type</p>	<p>N.B. (1/2") M15-(24") M600 DIA. Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Square Bend 'U' Bolts</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>'J' Foundation Bolts</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Double Ended Engineer Studs</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Waisted Double Ended Engineer Studs</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>
	<p>Tie Bars & Foundation Bolts</p>	<p>Bar Size Range (1/4") M6 - (4") M100</p>

- All products are available with the appropriate grades of nuts and washers
- All forms of plating and coating can be carried out

HEX BOLTS



Hex Head and Heavy Hex Head in Full and Partial Threading

Standards:-

- ASTM/ASME/BS/DIN/BS EN ISO /JIS

Material:-

- Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

Size Range:-

- M6 to M64 in metric series
- ¼" to 2½" in imperial
- Bigger sizes can be manufactured as per order.

Threads:-

- UNC, 8UN, UNF, Metric Coarse and Metric Fine

Typical Grades & Standards:-

- BS3692 / BS4190 grade 4.6, 4.8, 5.6, 5.8, 8.8, 10.9 and 12.9
- ASTM A307 Grade A and B
- ASTM A325
- ASTM A193 Grade B7, B7M, B8, B8M & B16
- ASTM A320 Grade L7 & L7M
- Stainless Steel 304, 304L, 316, 316L, A2-70/80, A4-70/80

Any other specific grade can be manufactured upon request with short lead times.

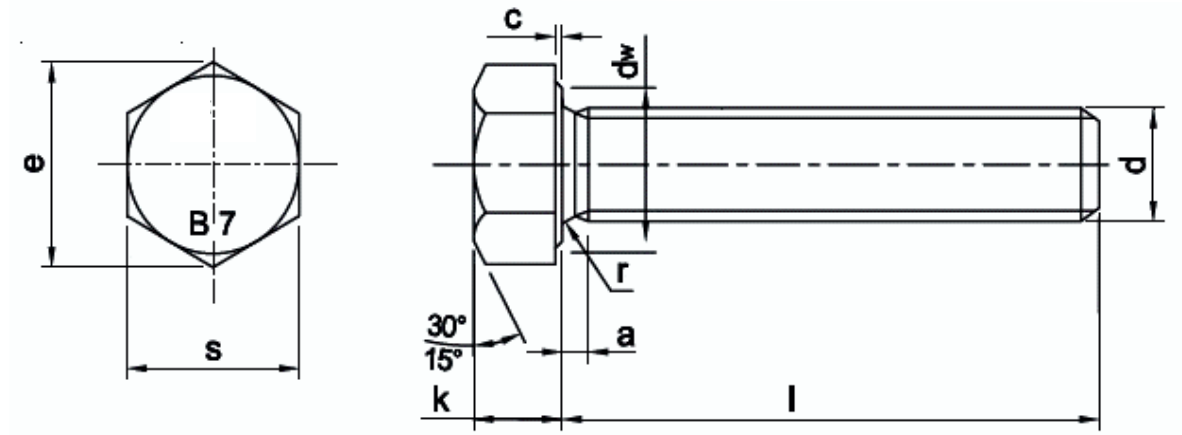
Ordering Information:-

- Dimensions – Size Dia and Length.
- Standards and Grade
- Finish (Black, GI, Yellow, HDG, Cadmium, Nickel, PTFE etc)
- Nut and washer quantity



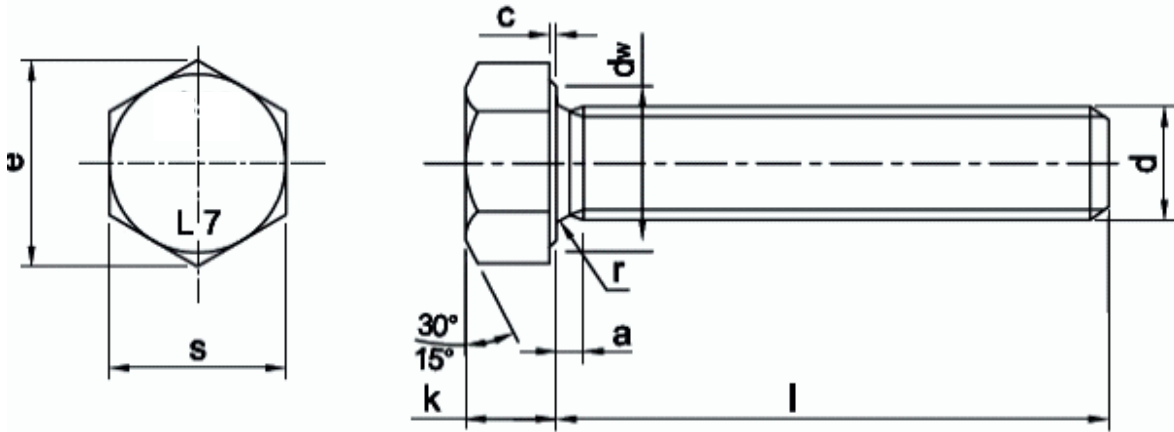
DIN 93 HEXAGON HEAD BOLT

Material ASTM A193 Grade B7



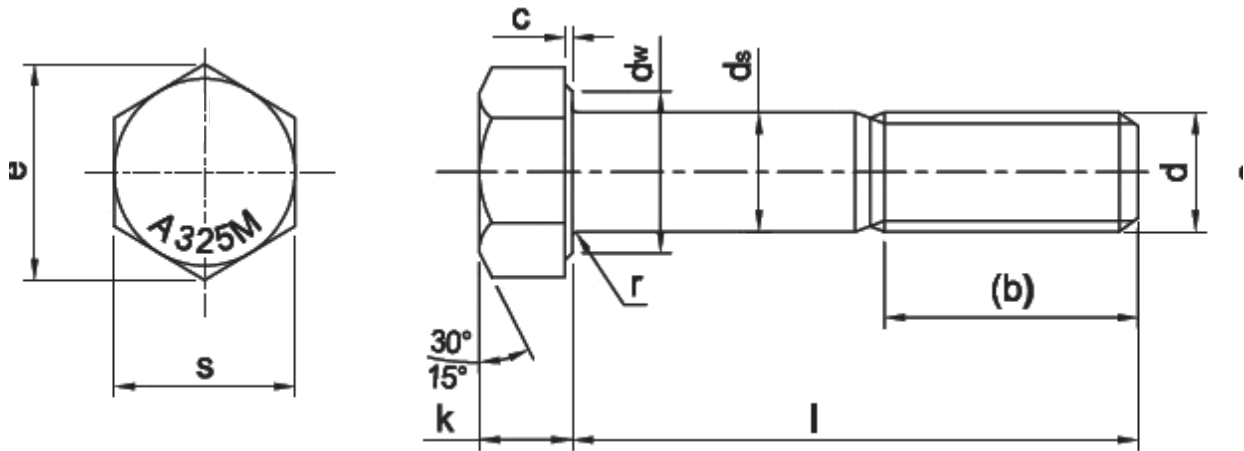
Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.67	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50	3.00	3.00	3.50	3.50	4.00	4.00	4.50	4.50	5.00
	Max	3.00	4.00	4.50	5.30	6.00	7.50	9.00	9.00	10.50	10.50	12.00	12.00	13.50	13.50	5.00
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19	33.61	38.00	42.70	46.50	51.10	55.90	55.90	64.70	74.20
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60

DIN 933 HEXAGON HEAD BOLT Material ASTM A320 Grade L7



A320 L7 HEX BOLTS																
Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.7	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50	3.00	3.00	3.50	3.50	4.00	4.00	4.50	4.50	5.00
	Max	3.00	4.00	4.50	5.30	6.00	7.50	9.00	9.00	10.50	10.50	12.00	12.00	13.50	13.50	5.00
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19	33.61	38.00	42.70	46.50	51.10	55.90	55.90	64.70	74.20
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60

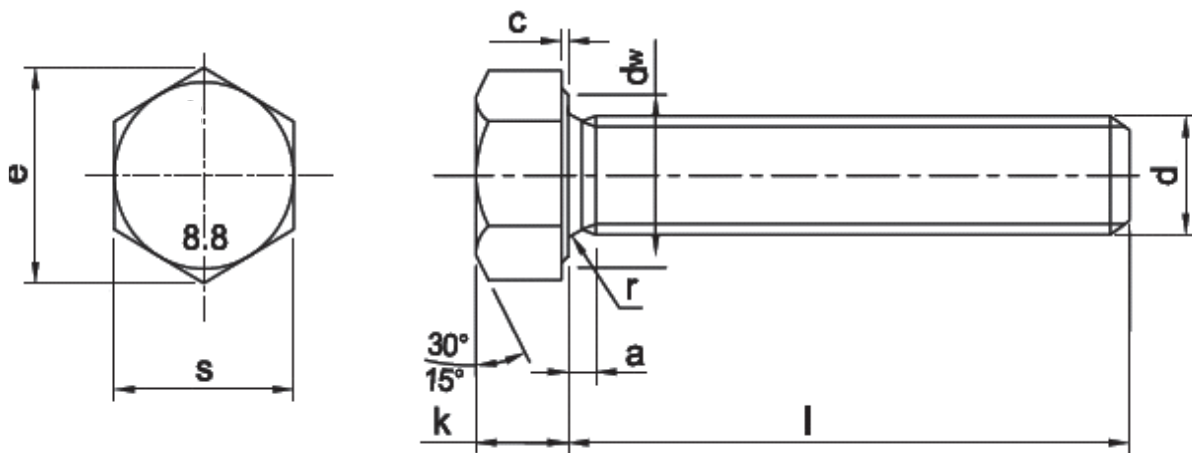
ASTM A325M HEX BOLTS



A325M HEX BOLTS								
Threads (d)		M16	M20	M24	M27	M30	M33	M36
Across flat (s)	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
Across corner(e)	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
Head Thickness(k)	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
Washer face Depth (c)	Min	0.40	0.40	0.40	0.40	0.40	0.40	0.40
	Max	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Washer face Dia (dw)	Min	24.90	31.40	33.30	38.00	42.80	46.50	55.90
Shank Diameter (d s)	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
Head junction Radius(r)	Min	0.60	0.80	0.80	1.00	1.20	1.20	1.50
Thread Length (b)	1<100	31	36	38	41	44	49	56
	1>100	38	43	45	48	51	56	63

l = Overall length of the Bolt

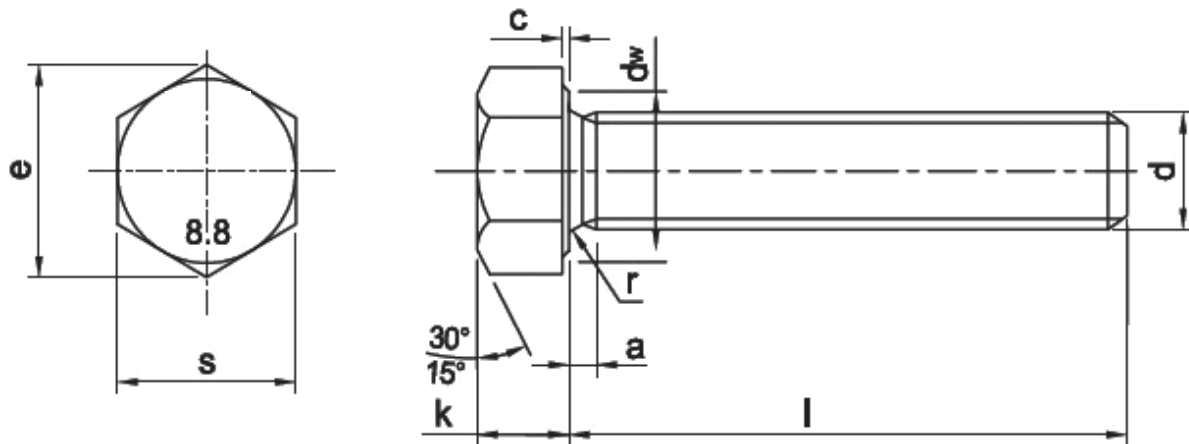
DIN 933 HEX SCREWS (FULL THREAD) Grades 4.6, 8.8, 10.9, 12.9, A2 70, A2 80, A4 70 and A4 80



Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.7	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Unthreaded Length (a)	Min	1.00	1.25	1.5	1.75	2.00	2.50	3.00	3.00	3.50	3.50	4.00	4.00	4.50	4.50	5.00
	Max	3.00	4.00	4.50	5.30	6.00	7.50	9.00	9.00	10.50	10.50	12.00	12.00	13.50	13.50	5.00
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	8.88	11.63	15.60	17.40	22.49	28.19	33.61	38.00	42.70	46.50	51.10	55.90	55.90	64.70	74.20
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60

DIN 931 HEX BOLTS (HALF THREAD)

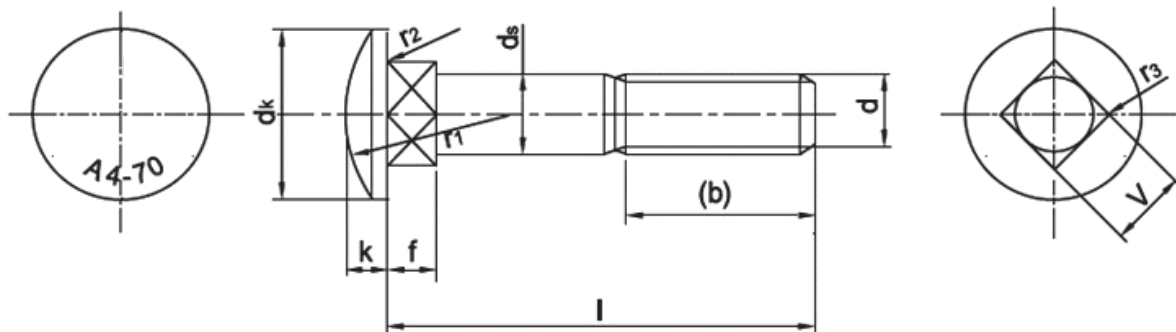
Grades - 4.6, 8.8, A2 70, A2 80, A4 70 and A4 80



A320 L7 HEX BOLTS																
Threads (d)		M6	M8	M10	M12	M16	M20	M24	M27	M30	M33	M36	M39	M42	M45	M52
Across flat (s)	Min	9.78	12.73	16.73	18.7	23.67	29.67	35.38	40.00	45.00	49.00	53.80	58.80	63.10	68.10	78.10
	Max	10.00	13.00	17.00	19.00	24.00	30.00	36.00	41.00	46.00	50.00	55.00	60.00	65.00	70.00	80.00
Across corner(e)	Min	11.05	14.38	18.90	21.10	26.75	33.53	39.98	45.20	50.85	55.37	60.79	66.44	71.30	76.95	88.25
Head Thickness(k)	Min	3.85	5.15	6.22	7.32	9.82	12.28	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	32.50
	Max	4.15	5.45	6.58	7.68	10.18	12.72	15.22	17.35	19.12	21.42	22.92	25.42	26.42	28.42	33.50
Washer face Depth (c)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Washer face Dia (dw)	Min	0.15	0.15	0.15	0.15	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.30	0.30	0.30	0.30
	Max	0.50	0.60	0.60	0.60	0.80	0.80	0.80	0.80	0.80	0.80	0.80	1.00	1.00	1.00	1.00
Shank Diameter (ds)	Min	5.82	7.78	9.78	11.73	15.73	19.67	23.67	27.00	30.00	33.00	36.00	39.00	42.00	45.00	52.00
	Max	6.00	8.00	10.00	12.00	16.00	20.00	24.00	26.48	29.48	32.38	35.38	38.38	41.38	44.38	51.26
Head junction Radius(r)	Min	0.25	0.40	0.40	0.60	0.60	0.80	0.80	1.00	1.00	1.00	1.00	1.00	1.20	1.20	1.60
Thread Length (b)	1<125*	18	22	26	30	38	46	54	60	66						
	125<200	24	28	32	36	44	52	60	66	72	78	84	90	96	102	116
	1>200*	37	41	45	49	57	65	73	79	85	91	97	103	109	115	129

l = Overall length of the Bolt

DIN 603 STAINLESS STEEL CARRIAGE BOLT/MUSHROOM BOLT



Threads (d)		M6	M8	M10	M12
dk	Min	15.45	19.35	23.35	29.35
	Max	16.55	20.65	24.65	30.65
ds	Min	5.52	7.42	9.42	11.30
	Max	6.00	8.00	10.00	12.00
f	Min	3.40	4.40	5.40	7.25
	Max	4.60	5.60	6.60	8.75
k	Min	3.12	4.12	4.62	6.05
	Max	3.88	4.88	5.38	6.95
r1	Approx	12.60	16.00	19.20	24.10
r2	Max	0.50	0.50	0.50	1.00
r3	Max	0.90	1.20	1.50	1.80
v	Min	5.52	7.42	9.42	11.30
	Max	6.48	8.58	10.58	12.70
(b)	1<125*	18	22	26	30
	125<200	24	28	32	36
	1>200*	37	41	45	49

l = Overall length of the Bolt

SOCKET SCREWS

Socket Screws are also known as Allen Head Bolts and are fastened with a hex Allen wrench. Socket Screws are available in various head styles and materials.

Standards:-

- DIN/BS EN ISO

Material:-

- Alloy Steel & Stainless Steel (304, 304L, 316, 316L)

Size Range:-

- M5 to M24 in metric series
- Bigger sizes can be manufactured as per order.

Threads:-

- Metric Coarse and Metric Fine

Typical Grades & Standards:-

- A2-70/80, A4-70/80
- DIN 912
- DIN 7991
- ISO 7380

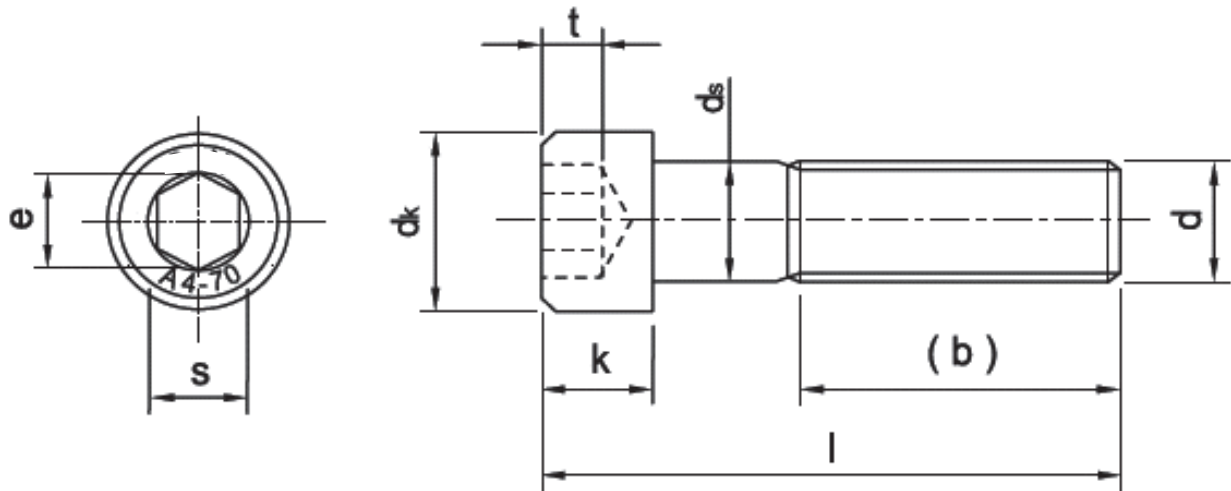
Any other specific grade can be manufactured upon request with short lead times.

Ordering information:-

- Dimensions - Size Dia and Length.
- Standard and Material Grade
- Nut and Washer quantity



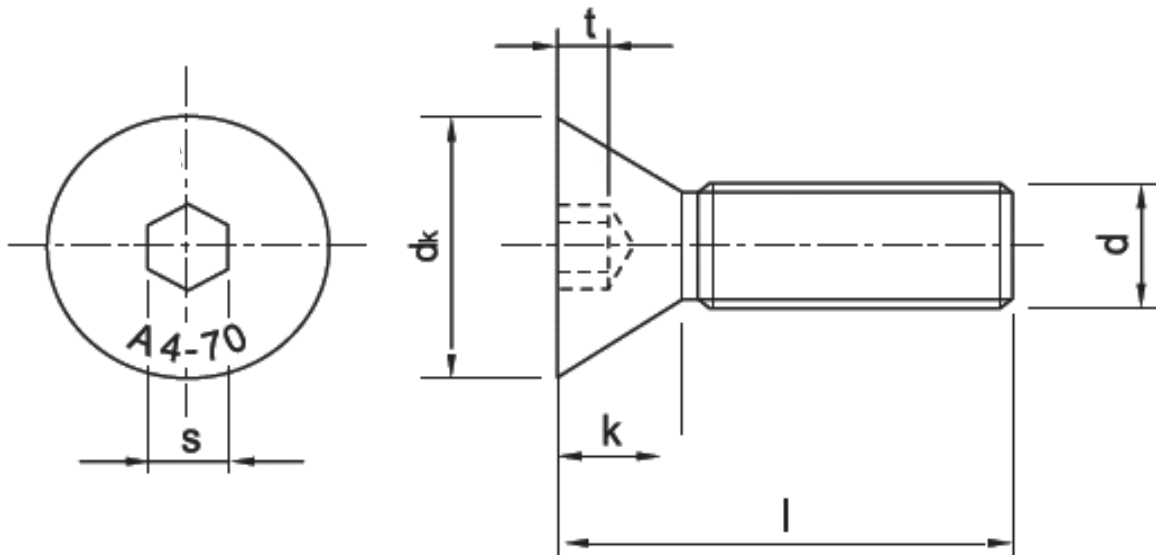
DIN 912 STAINLESS STEEL HEXAGON SOCKET HEAD CAPSCREW



Threads (d)		M6	M8	M10	M12
dk	Min	9.78	12.73	15.73	17.73
	Max For Plain Heads	10.00	13.00	16.00	18.00
	Max For Knurled Heads	10.22	13.27	16.27	18.27
ds	Min	5.82	7.78	9.78	11.73
	Max	6.00	8.00	10.00	12.00
s	Min	5.02	6.02	8.03	10.03
	Max	5.14	6.14	8.175	10.175
e	Min	5.723	6.863	9.149	11.429
k	Min	5.70	7.64	9.64	11.57
	Max	6.00	8.00	10.00	12.00
t	Min	3.00	4.00	5.00	6.00
(b)	Ref	24	28	32	36

l = Overall length of the Bolt

DIN 7991 STAINLESS STEEL HEXAGON SOCKET COUNTERSUNK SCREW



Threads (d)	M6	M8	M10	M12
dk	12.00	16.00	20.00	24.00
s	4.00	5.00	6.00	8.00
k	3.30	4.40	5.50	6.50
t	2.50	3.50	4.40	4.60

l = Overall length of the Bolt

NUTS



Standard Hex Nut, Heavy Hex Nut, Hex Coupling Nut, Nylon Lock Nut, Spring Nut, Dome Nut and Wing Nut

Standards:-

- ASTM/ASME/BS/DIN/BS EN ISO /JIS

Material:-

- Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

Size Range:-

- M6 to M64 in metric series
- ¼" to 2-½" in imperial
- Bigger sizes can be manufactured as per order.

Threads:-

- UNC, 8UN, UNF, Metric Coarse and Metric Fine

Typical Grades & Standards:-

- DIN 934 Class 4, 8, 10, 12, A270, A280, A470 and A480
- ASTM A194/A194M Grades 2H, 2HM, 4L, 7L and 7LM
- ASTM A563/563M Grades 8, 10S, A, B, C, D, DH, DH3

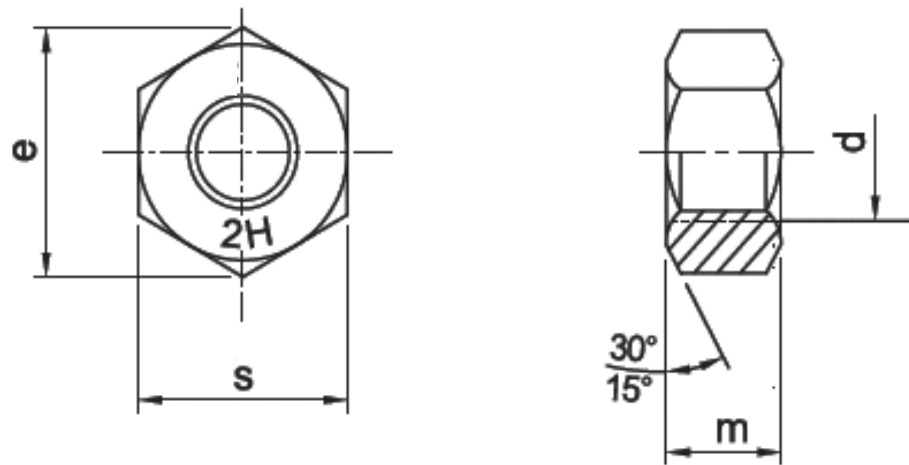
Ordering Information:-

- Dimensions - Size.
- Standard and Grade
- Finish (Black, GI, Yellow, HDG, Cadmium, Nickel, PTFE etc)



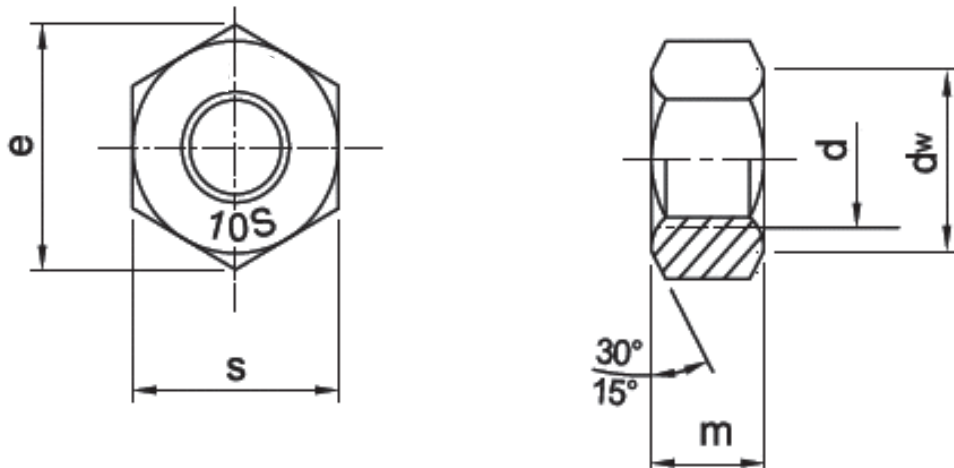
HEAVY HEX NUTS TO DIN 934 (H=D)

Material ASTM A194 Grade 2H/2HM/4L, 7L, 7LM



A194 HEAVY HEX BOLTS				
Dia.(D)	Thread Pitch	Across Flats AF	Thickness (m)	weight KG/100
M8	1.25	13	8	0.65
M10	1.5	17	10	1.45
M12	1.75	19	12	2.17
M14	2	22	14	3.13
M16	2	24	16	4.16
M18	2.5	27	18	6.20
M20	2.5	30	20	8.05
M22	2.5	32	22	9.85
M24	3	36	24	13.80
M27	3	41	27	20.65
M30	3.5	46	30	27.90
M33	3.5	50	33	36.00
M36	4.0	55	36	49.15
M39	4.0	60	39	42.75
M42	4.5	65	42	81.50
M45	4.5	70	45	100.00
M48	5.0	75	48	122.00
M52	5.0	80	52	152.50
M56	5.5	85	56	177.50
M64	6.0	95	64	247.50
M72	6.0	105	72	334.50
M76	6.0	110	76	380.00

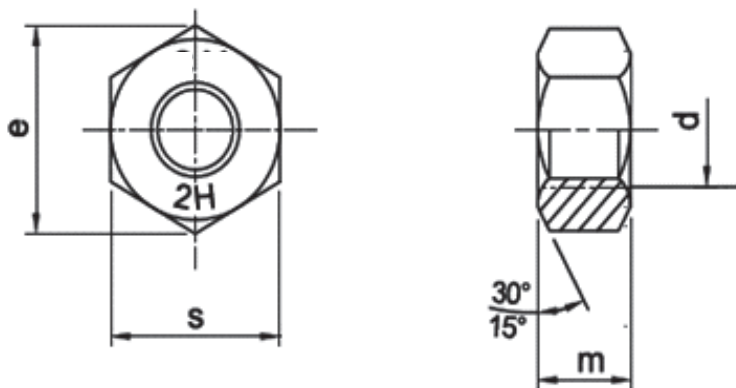
A563M - 10S HEAVY HEX NUTS



A563-10S HEAVY HEX BOLTS									
Threads (d)		M12	M16	M20	M22	M24	M27	M30	M36
Across flat (s)	Min	20.16	26.16	33.00	35.00	40.00	45.00	49.00	58.80
	Max	21.00	27.00	34.00	36.00	41.00	46.00	50.00	60.00
Across corner (e)	Min	22.78	29.56	37.29	39.55	45.20	50.85	55.37	66.44
Nut Thickness (m)	Min	11.90	16.40	19.40	22.30	22.90	26.30	29.10	35.00
	Max	12.30	17.10	20.70	23.60	24.20	27.60	30.70	36.60
Bearing face Dia(dw)	Min	19.20	24.90	31.40	33.30	38.00	42.80	46.60	55.90

HEAVY HEX NUTS TO ANSI B18.2.2

Material ASTM A194 Grade 2H/2HM/4L, 7L, 7LM





A194 HEAVY HEX BOLTS				
Dia.(D)	Thread Pitch	Across Flats AF	Thickness(m)	weight KG/100
1/4" UNC	20	7/16"	1/4"	0.3
5/16" UNC	18	1/2"	5/16"	0.4
3/8" UNC	16	11/16"	3/8"	1.4
7/16" UNC	14	3/4"	3/16"	1.9
1/2" UNC	13	7/8"	1/2"	3.0
9/16" UNC	12	15/16"	9/6"	3.7
5/8" UNC	11	1.1/16"	5/8"	5.4
3/4" UNC	10	1.14"	3/4"	8.8
7/8" UNC	9	1.7/16"	7/8"	13.5
1" UNC	8	1.5/8"	1"	19.3
1.1/8" UNS	8	1.13/16"	1.1/8"	26.9
1.1/4" UNS	8	2"	1.1/4"	35.7
1.3/8" UNS	8	2.3/16"	1.3/8"	46.3
1.1/2" UNS	8	2.3/8"	1.1/2"	59.5
1.5/8" UNS	8	2.9/16"	1.5/8"	73.6
1.3/4" UNS	8	2.3/4"	1.3/4"	92.7
1.7/8" UNS	8	2.15/16"	1.7/8"	109.5
2" UNS	8	3.1/8"	2"	135.8
2.1/4" UNS	8	3.1/2"	2.1/4"	190.3
2.1/2" UNS	8	3.7/8"	2.1/4"	256
2.3/4" UNS	8	4.1/4"	2.3/4"	335
3" UNS	8	4.5/8"	3"	432
3.1/4" UNS	8	5"	3.1/4"	543
3.1/2" UNS	8	5.3/8"	3 1/2"	694



DIN 934 HEX NUTS

DIN 934 HEX NUTS			
Threads (d)	Across flat (s)	Across corner (e)	Nut thickness (m)
M6	10.00	11.05	6.00
M8	13.00	14.38	6.50
M10	17.00	18.90	8.00
M12	19.00	21.10	10.00
M16	24.00	26.75	13.00
M20	30.00	32.95	16.00
M24	36.00	39.55	19.00
M27	41.00	45.20	22.00
M30	46.00	50.85	24.00
M33	50.00	55.37	26.00
M36	55.00	60.79	29.00
M39	60.00	66.44	31.00
M42	65.00	71.30	34.00
M45	70.00	76.95	36.00
M48	75.00	82.60	38.00
M52	80.00	88.25	42.00
M56	85.00	93.56	45.00
M64	95.00	104.86	51.00
M72	105.00	116.16	58.00

WASHERS



Plain Washers, Spring Lock Washers and Hardened Steel Washers

Standards:-

- ASTM/ASME/BS/DIN/BS EN ISO /JIS

Material:-

- Mild Steel, Carbon Steel, Alloy Steel & Stainless Steel.

Size Range:-

- M6 to M64 in metric series
- ¼" to 2-½" in imperial
- Bigger sizes can be manufactured as per order.

Typical Grades & Standards:-

- DIN 125/A
- DIN 127/B
- DIN 9021
- ASTM F436 and F436M

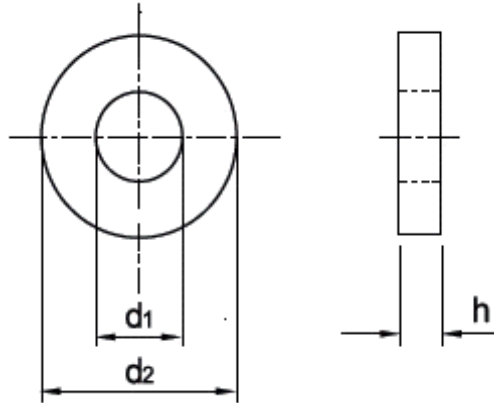
Any other specific grade can be manufactured upon request with short lead times

Ordering information:-

- Dimensions – Size.
- Standard and Grade
- Finish (Black, GI, Yellow, HDG, Cadmium, Nickel, PTFE etc.)



DIN 125 FLAT WASHER



washer size	Inner Diameter (d1)	Outer Diameter (d2)	Thickness (h)
M6	6.40	12.00	1.60
M8	8.40	16.00	1.60
M10	10.50	20.00	2.00
M12	13.00	24.00	2.50
M16	17.00	30.00	3.00
M20	21.00	37.00	3.00
M24	25.00	44.00	4.00
M27	28.00	50.00	4.00
M30	31.00	56.00	4.00
M33	34.00	60.00	5.00
M36	37.00	66.00	5.00
M39	40.00	72.00	6.00
M42	43.00	78.00	7.00
M45	46.00	85.00	7.00
M48	50.00	92.00	8.00
M52	54.00	98.00	8.00
M56	58.00	105.00	9.00
M64	66.00	115.00	9.00
M72	74.00	125.00	10.00



F436M WASHER

washer size	Inner Diameter (d1)		Outer Diameter (d2)		Thickness(h)	
	Max.	Min.	Max.	Min.	Max.	Min.
12	14.40	14.00	27.00	25.70	4.60	3.10
14	16.40	16.00	30.00	28.70	4.60	3.10
16	18.40	18.00	34.00	32.40	4.60	3.10
20	22.50	22.00	42.00	40.40	4.60	3.10
22	24.50	24.00	44.00	42.40	4.60	3.40
24	26.50	26.00	50.00	48.40	4.60	3.40
27	30.50	30.00	56.00	54.10	4.60	3.40
30	33.60	33.00	60.00	58.10	4.60	3.40
36	39.60	39.00	72.00	70.10	4.60	3.40
42	45.60	45.00	84.00	81.10	7.20	4.60
48	52.70	52.00	95.00	92.80	7.20	4.60
56	62.70	62.00	101.00	104.50	8.70	6.10
64	70.70	70.00	187.00	115.80	8.70	6.10
72	78.70	76.00	130.00	127.50	8.70	6.10

MATERIAL FINISHES



Hot Dip Galvanizing:-

STD	COMPONENTS
ASTM A153	Rolled/ Pressed/ steel/ Hardware
ASTM A641	Carbon Steel Wire(Nails/ Straples etc)
ASTM B695	Iron & Steel
ASTM A123	Iron & Steel Anchor Bolts, Fabricated Products
BS EN ISO 461	Heavy Zinc Deposit 388.1 to 76.2 microns

ELECTRO-DEPOSITED Zinc Plating:-

ASTM B633	Iron & Steel Products
BS 3382 PART 2	Bright Finish

ELECTRO-DEPOSITED Cadmium Plating:-

BS 3382 PART 1	Semi- Bright Finish
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ELECTRO-DEPOSITED Nickel Cadmium Plating:-

AMS 2416	Steel
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ELECTRO-DEPOSITED Nickel & Nickel Plus Chromium:-

BS 3382 PART 3 & 4	Steel & Copper Alloy
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PTFE (FLUOROPOLYMER Coating):-

XYLAN 1070	Colour- Red, Medium Dark Blue, Green, Orange, Yellow, Black
XYLAN 1052	Blue
XYLAN 1424	Water Base Blue
xylan standard	Aluminium "cermet" Coating
XYLAN Cobalt Blue 1514	Blue




TECHNICAL INFORMATION



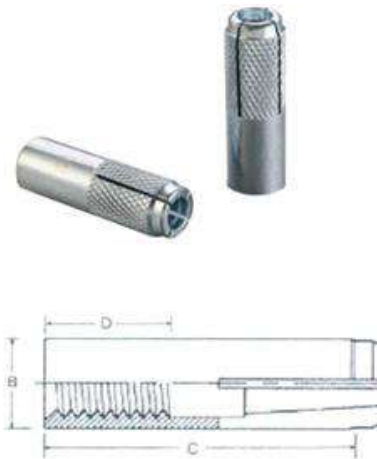
Mechanical properties per ISO 898-1 (Externally Threaded Fasteners)

Metric Property Class	Material	Size Range	Min. Proof Strength MPA	Min. Tensile Strength MPA	Core Hardness Rockwell		Min. Yield Strength MPA	Grade Identification Marking'
					Min.	Max.		
4.6	Low or Medium Carbon Steel	M5-M39	225	400 (58,000 PSI)	B67	B99.5	240	
8.8	Medium Carbon Steel: quenched & tempered	M5-M16	580	800 (116,000 PSI)	C22	C32	640	
		M18-M39	600	830(120,000 PSI)	C23	C34	660	
10.9	Alloy Steel quenched & tempered	M5-M39	830	1040 (150,800 PSI)	C32	C39	940	
12.9	Alloy Steel quenched & tempered	M16-M39	970	1220 (177,000 PSI)	C39	C44	1100	

Mechanical properties per DIN 267 PART 4 (Internally Threaded Fasteners)

Property Class	Typical Material	Proof Stress MPA	Core Hardness Rockwell (max.)	Grade Identifications Marking
Class 8	Low to Medium Carbon Steel	800	C30	
Class 10	Medium Carbon Steel; quenched & tempered	1000	C36	
Class 12	Medium Carbon Steel; quenched & tempered	1200	C36	

DROP IN ANCHOR



Product Code	Size	Drill Bit (B)	Anchor Length (C)	Thread Length (D)
SE-DPA M6	M6	8	25	10
SE-DPA M8	M8	10	30	13
SE-DPA M10	M10	12	40	16
SE-DPA M12	M12	16	50	21
SE-DPA M16	M16	20	65	30
SE-DPA M20	M20	25	80	30

DRAW IN ANCHOR



Product Code	Size	Shield Length	Hole Diameter	Length of Anchor
SE-DWA M6	M6	45	12	45
SE-DWA M8	M8	50	14	50
SE-DWA M10	M10	60	16	60
SE-DWA M12	M12	75	20	65
SE-DWA M16	M16	115	25	95
SE-DWA M20	M20	130	32	115

ACCESSORY SERIES



Duct Corner Piece



G - Clamp

