



FASTENER BROCHURE

FASTENERS, FIXINGS, STUDDING, NUTS, & WASHERS

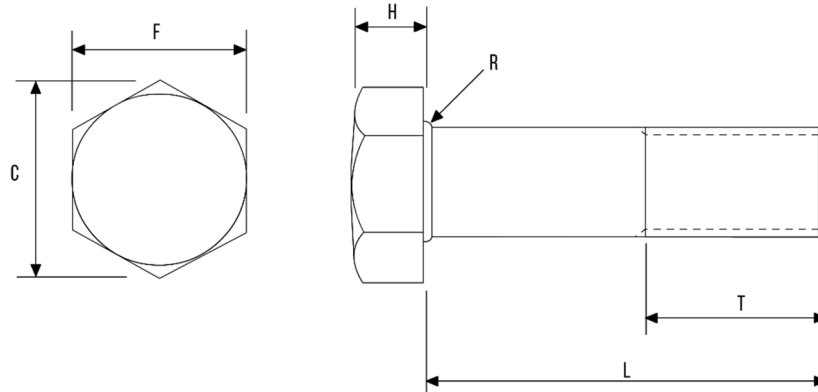
INDEX

PAGE	CONTENT
2	Index
4	Hex Bolts (Metric) - DIN931/ISO4014
5	Hex Setscrews (Metric) - DIN933/ISO4017
6	Hex Bolts (Imperial) - BS1768/ASME B18.2.1
7	Hex Setscrews (Imperial) - BS1768/ASME B18.2.1
8	Hex Bolts (Imperial) - BS1769
9	Socket Head Capscrews (Metric) - DIN912/ISO4762
10	Low Head Socket Capscrews (Metric) - DIN7984
11	Socket Countersunk Screws (Metric) - DIN7991/ISO10642
12	Socket Button Heads (Metric) - ISO7380
13	Socket Setscrews (Metric) - ISO4026/4027/4028/4029
15	Socket Head Capscrews (Imperial - 1960 Series) - ASME B18.3
16	Socket Countersunk Screws (Imperial) - ASME B18.3
17	Socket Button Heads (Imperial) - ASME B18.3
18	Socket Setscrews (Imperial) - ASME B18.3
19	Hex Full Nuts (Metric) - DIN934/ISO4032
20	Hex Lock Nuts (Metric) - DIN439-2/ISO4035
21	Nylon Insert Nuts (Metric) - DIN982 High Type P
22	Nylon Insert Nuts (Metric) - DIN982 Thin Type T
23	Hex Full Nuts (Imperial) - ASME B18.2.2/BS1768
24	Hex Lock Nuts (Imperial) - ASME B18.2.2/BS1768
25	Nylon Insert Nuts (Imperial) - DIN982 NE Type P
26	Dome Nuts (Metric) - DIN1857
27	Flange Nuts (Metric) - DIN6923
28	Binx ® Nut - All Metal Self Locking Nut
29	Philidas ® Nut - Industrial Self Locking Nut
30	Philidas ® Nut - Turret Self Locking Nut

INDEX (CONT)

PAGE	CONTENT
31	Plain Washers (Metric) - BS4320 Form A, B , C & D
32	Plain Washers (Metric) - BS4320 Form A, B , C & D
33	Spring Washers Square Section (Metric) - DIN7890
34	Plain Washers (Imperial) - BS3410 Table 3
35	Plain Washers (Imperial) - BS3410 Table 7
36	Spring Washers Square Section (Imperial) - BS1802
37	Internal Serrated Lock Washers - DIN6798 (Fan Disc)
38	External Serrated Lock Washers - DIN6798J (Fan Disc)
39	Internal Toothed Lock Washers - DIN6797J (Fan Disc)
40	External Toothed Lock Washers - DIN6797A (Fan Disc)
41	Repair (Penny) Washers - DIN9021
42	Square Plate (Round Hole) Washers - DIN1587

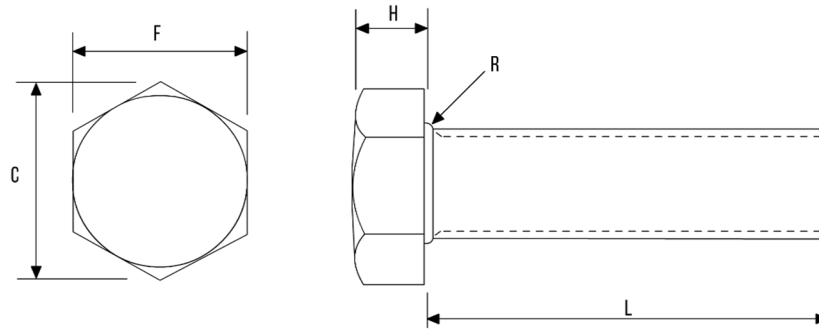
HEX BOLTS (METRIC) - DIN 931 / ISO 4014



DIA	A/F	A/C	HEIGHT	RADIUS	THREAD (T)		
	F	C (MIN)	H (NOM)	R (MIN)	L ≤ 125	L=125-200	L ≥ 200
M6	9.78 - 10.00	11.05	4.00	0.25	18	-	-
M8	12.73 - 13.00	14.38	5.30	0.40	22	-	-
M10	15.73 - 16.00	17.77	6.40	0.40	26	32	45
M12	17.73 - 18.00	20.03	7.50	0.60	30	36	49
M14	20.67 - 21.00	23.36	8.80	0.60	34	40	53
M16	23.67 - 24.00	26.75	10.00	0.60	38	44	57
M18	26.67 - 27.00	30.14	11.50	0.60	42	48	61
M20	29.67 - 30.00	33.53	12.50	0.80	46	52	65
M22	33.38 - 34.00	37.72	14.00	0.80	50	56	59
M24	35.38 - 34.00	39.98	15.00	0.80	54	60	73
M27	40.00 - 41.00	45.20	17.00	1.00	60	66	79
M30	45.00 - 46.00	50.85	18.70	1.00	66	72	85
M33	49.00 - 50.00	55.37	21.00	1.00	-	78	91
M36	53.80 - 55.00	60.79	22.50	1.00	-	84	97
M39	58.80 - 60.00	66.44	25.00	1.00	-	90	103
M42	63.10 - 65.00	71.30	26.00	1.20	-	95	109
M45	68.10 - 70.00	76.95	28.00	1.20	-	102	115
M48	73.10 - 75.00	82.60	30.00	1.60	-	108	12
M52	78.10 - 80.00	88.25	33.00	1.60	-	116	129
M56	82.80 - 85.00	93.56	35.00	2.00	-	-	137
M60	87.00 - 90.00	99.21	38.00	2.00	-	-	145
M64	92.80 - 96.00	104.86	40.00	2.00	-	-	153

- Dimensions in millimetres
- Available in Grade 8.8, 10.9, 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

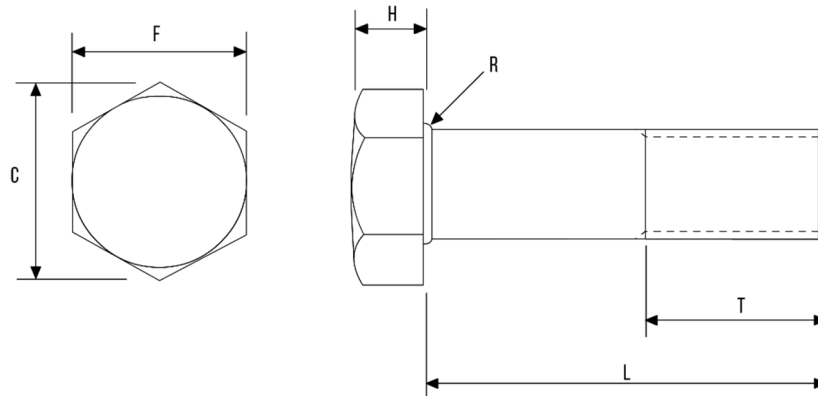
HEX SETSCREWS (METRIC) - DIN 933 / ISO 4017



DIA	A/F	A/C	HEIGHT	RADIUS
M5	7.78 - 8.00	8.79	3.50	0.20
M6	9.78 - 10.00	11.05	4.00	0.25
M8	12.73 - 13.00	14.38	5.30	0.40
M10	15.73 - 16.00	17.77	6.40	0.40
M12	17.73 - 18.00	20.03	7.50	0.60
M14	20.67 - 21.00	23.36	8.80	0.60
M16	23.67 - 24.00	26.75	10.00	0.60
M18	26.67 - 27.00	30.14	11.50	0.60
M20	29.67 - 30.00	33.53	12.50	0.80
M22	33.38 - 34.00	37.72	14.00	0.80
M24	35.38 - 34.00	39.98	15.00	0.80
M27	40.00 - 41.00	45.20	17.00	1.00
M30	45.00 - 46.00	50.85	18.70	1.00
M33	49.00 - 50.00	55.37	21.00	1.00
M36	53.80 - 55.00	60.79	22.50	1.00
M39	58.80 - 60.00	66.44	25.00	1.00
M42	63.10 - 65.00	71.30	26.00	1.20
M45	68.10 - 70.00	76.95	28.00	1.20
M48	73.10 - 75.00	82.60	30.00	1.60
M52	78.10 - 80.00	88.25	33.00	1.60
M56	82.80 - 85.00	93.56	35.00	2.00
M60	87.00 - 90.00	99.21	38.00	2.00
M64	92.80 - 96.00	104.86	40.00	2.00

- Dimensions in millimetres
- Available in Grade 8.8, 10.9, 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

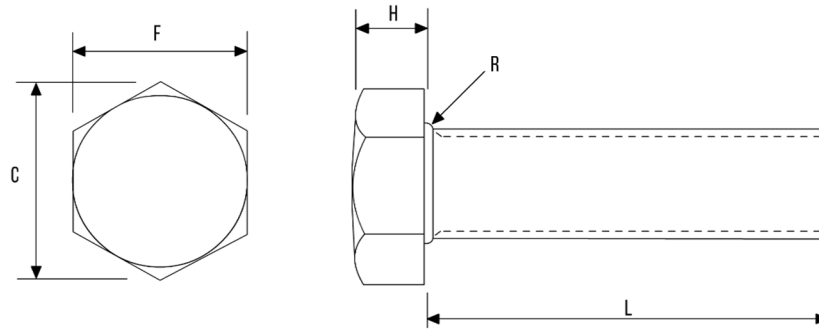
HEX BOLTS (IMPERIAL) – BS1768 / ASME B18.2.1



DIA	TPI		A/F	A/C	HEIGHT	RADIUS	THREAD (T)	
	UNC	UNF	(F)	(C)	(H)	(R)	L ≤ 6"	L > 6"
1/4	20	28	0.428 - 0.438	0.488 - 0.505	0.150 - 0.163	0.015 - 0.025	0.750	1.000
5/16	18	24	0.489 - 0.500	0.557 - 0.577	0.195 - 0.211	0.015 - 0.025	0.875	1.125
3/8	16	24	0.551 - 0.562	0.628 - 0.650	0.226 - 0.243	0.015 - 0.025	1.000	1.250
7/16	14	20	0.612 - 0.625	0.698 - 0.722	0.272 - 0.291	0.015 - 0.025	1.125	1.375
1/2	13	20	0.736 - 0.750	0.302 - 0.323	0.302 - 0.323	0.015 - 0.025	1.250	1.500
9/16	12	18	0.798 - 0.812	0.348 - 0.371	0.348 - 0.371	0.020 - 0.045	1.375	1.625
5/8	11	18	0.922 - 0.938	0.378 - 0.403	0.378 - 0.403	0.020 - 0.045	1.500	1.750
3/4	10	16	1.100 - 1.125	0.455 - 0.483	0.455 - 0.483	0.020 - 0.045	1.750	2.000
7/8	9	14	1.285 - 1.312	0.531 - 0.563	0.531 - 0.563	0.040 - 0.065	2.000	2.250
1	8	12	1.469 - 1.500	0.591 - 0.627	0.591 - 0.627	0.060 - 0.095	2.250	2.500
1-1/8	7	8	1.631 - 1.688	0.658 - 0.718	0.658 - 0.718	0.060 - 0.095	2.500	2.750
1-1/4	7	8	1.812 - 1.875	0.749 - 0.813	0.749 - 0.813	0.060 - 0.095	2.750	3.000
1-3/8	6	8	1.994 - 2.062	0.810 - 0.878	0.810 - 0.878	0.060 - 0.095	3.000	3.250
1-1/2	6	8	2.175 - 2.250	0.902 - 0.974	0.902 - 0.974	0.060 - 0.095	3.250	3.500

- Dimensions in inches
- Available in SAE Grade 5 & Grade 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

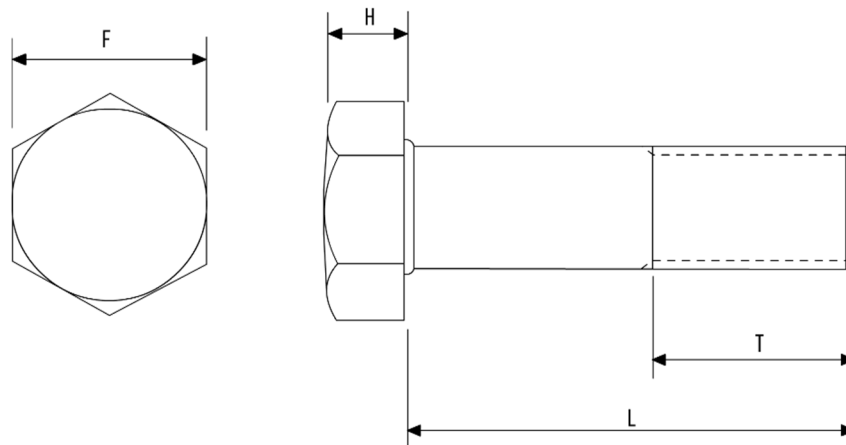
HEX SETSCREWS (IMPERIAL) – BS1768 / ASME B18.2.1



DIA	TPI		A/F	A/C	HEIGHT	RADIUS
	UNC	UNF	(F)	(C)	(H)	(R)
1/4	20	28	0.428 - 0.438	0.488 - 0.505	0.150 - 0.163	0.015 - 0.025
5/16	18	24	0.489 - 0.500	0.557 - 0.577	0.195 - 0.211	0.015 - 0.025
3/8	16	24	0.551 - 0.562	0.628 - 0.650	0.226 - 0.243	0.015 - 0.025
7/16	14	20	0.612 - 0.625	0.698 - 0.722	0.272 - 0.291	0.015 - 0.025
1/2	13	20	0.736 - 0.750	0.302 - 0.323	0.302 - 0.323	0.015 - 0.025
9/16	12	18	0.798 - 0.812	0.348 - 0.371	0.348 - 0.371	0.020 - 0.045
5/8	11	18	0.922 - 0.938	0.378 - 0.403	0.378 - 0.403	0.020 - 0.045
3/4	10	16	1.100 - 1.125	0.455 - 0.483	0.455 - 0.483	0.020 - 0.045
7/8	9	14	1.285 - 1.312	0.531 - 0.563	0.531 - 0.563	0.040 - 0.065
1	8	12	1.469 - 1.500	0.591 - 0.627	0.591 - 0.627	0.060 - 0.095
1-1/8	7	8	1.631 - 1.688	0.658 - 0.718	0.658 - 0.718	0.060 - 0.095
1-1/4	7	8	1.812 - 1.875	0.749 - 0.813	0.749 - 0.813	0.060 - 0.095
1-3/8	6	8	1.994 - 2.062	0.810 - 0.878	0.810 - 0.878	0.060 - 0.095
1-1/2	6	8	2.175 - 2.250	0.902 - 0.974	0.902 - 0.974	0.060 - 0.095

- Dimensions in inches
- Available in SAE Grade 5 & Grade 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

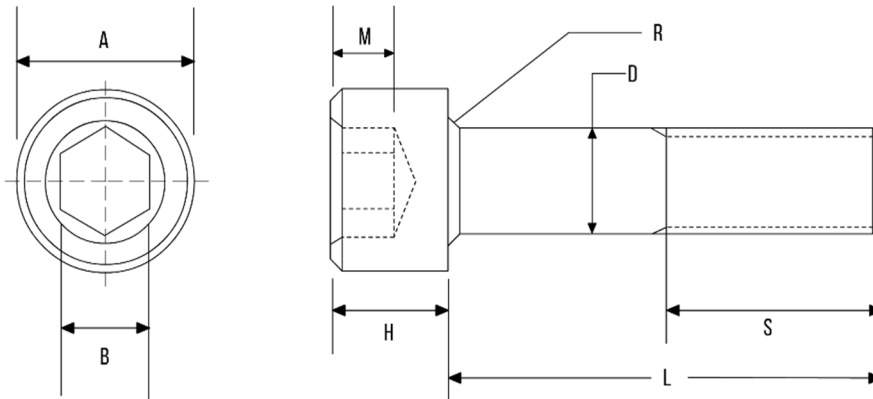
HEX BOLTS (IMPERIAL) – BS1769



DIA	TPI	HEIGHT	A/F	THREAD (T)	THREAD (T)
	UNC	(H)	(F)	L ≤ 6"	L > 6"
1/2	13	0.386 - 0.426	0.855 - 0.875	1.250	1.500
5/8	11	0.478 - 0.522	1.038 - 1.063	1.500	1.750
3/4	10	0.570 - 0.618	1.225 - 1.250	1.750	2.000
7/8	9	0.662 - 0.714	1.408 - 1.438	2.000	2.250
1	8	0.722 - 0.778	1.595 - 1.625	2.250	2.500
1-1/8	7	0.814 - 0.874	1.783 - 1.813	2.500	2.750
1-1/4	7	0.906 - 0.970	1.955 - 2.000	2.750	3.000
1-3/8	6	0.997 - 1.065	2.143 - 2.188	3.000	3.250
1-1/2	6	1.089 - 1.161	2.330 - 2.375	3.250	3.500
1-3/4	5	1.272 - 1.352	2.690 - 2.750	3.750	4.000
2	4.5	1.394 - 1.482	3.065 - 3.125	4.250	4.500

- Dimensions in inches
- Available in mild steel from stock.
- Other materials manufactured on request

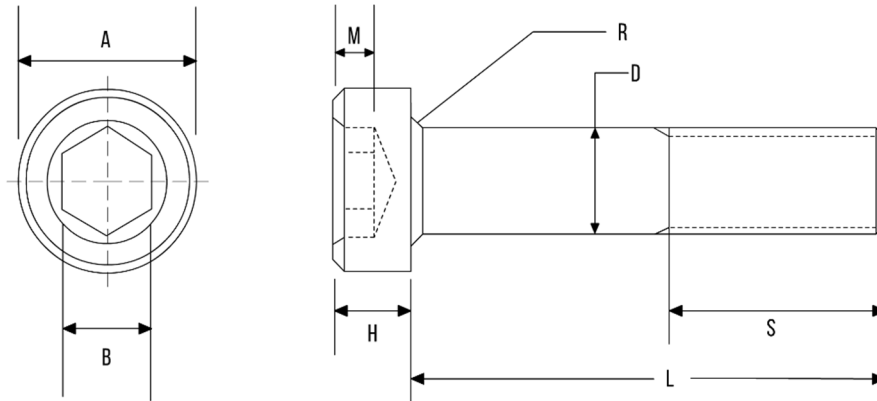
SOCKET HEAD CAPSCREWS (METRIC) - DIN 912 / ISO 4762



DIA	A	H	B	M (MIN)	S (MIN)	R (MIN)
M3	5.32 - 5.68	2.86 - 3.00	2.520 - 2.580	1.30	18.00	0.10
M4	6.78 - 7.22	3.82 - 4.00	3.020 - 3.080	2.00	20.00	0.20
M5	8.28 - 8.72	4.82 - 5.00	4.020 - 4.095	2.50	22.00	0.20
M6	9.78 - 10.22	5.70 - 6.00	5.020 - 5.140	3.00	24.00	0.25
M8	12.73 - 13.27	7.64 - 8.00	6.020 - 6.140	4.00	28.00	0.40
M10	15.73 - 16.27	9.64 - 10.00	8.025 - 8.175	5.00	32.00	0.40
M12	17.73 - 18.27	11.57 - 12.00	10.025 - 10.175	6.00	36.00	0.60
M14	20.67 - 21.33	13.57 - 14.00	12.032 - 12.212	7.00	40.00	0.60
M16	23.67 - 24.33	15.57 - 16.00	14.032 - 14.212	8.00	44.00	0.60
M18	26.67 - 27.33	17.57 - 18.00	14.032 - 14.212	9.00	48.00	0.60
M20	29.67 - 30.33	19.48 - 20.00	17.050 - 17.230	10.00	52.00	0.80
M22	32.61 - 33.39	21.48 - 22.00	17.050 - 17.230	11.00	56.00	0.80
M24	35.61 - 33.39	23.48 - 24.00	19.065 - 19.275	12.00	60.00	0.80
M27	39.61 - 40.39	26.48 - 27.00	19.065 - 19.275	13.50	66.00	1.00
M30	44.61 - 45.39	29.48 - 30.00	22.065 - 22.275	15.50	72.00	1.00
M33	49.61 - 50.39	32.38 - 33.00	24.065 - 24.275	18.00	76.00	1.00
M36	53.54 - 54.46	35.38 - 36.00	27.065 - 27.275	19.00	84.00	1.00
M39	57.54 - 58.46	38.38 - 39.00	27.065 - 27.275	21.00	90.00	1.00

- Dimensions in millimetres
- Available in Grades 8.8, 10.9 & 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

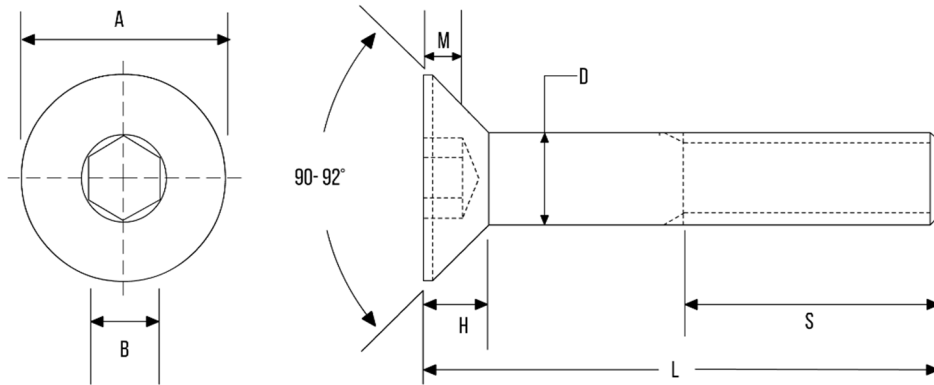
SOCKET LOW HEAD CAPSCREWS (METRIC) - DIN 7984



DIA	A	H	B	M	S (MIN)	R (MIN)
M3	5.32 - 5.50	1.86 - 2.00	2.020 - 2.080	1.38 - 1.62	12	0.10
M4	6.78 - 7.00	2.66 - 2.80	2.520 - 2.580	2.18 - 2.42	14	0.20
M5	8.28 - 8.50	3.32 - 3.50	3.020 - 3.080	2.58 - 2.82	16	0.20
M6	9.78 - 10.00	3.82 - 4.00	4.020 - 4.095	2.88 - 3.12	18	0.25
M8	12.73 - 13.00	4.82 - 5.00	5.020 - 5.140	3.65 - 3.95	22	0.40
M10	15.73 - 16.00	5.82 - 6.00	7.025 - 7.175	4.35 - 4.65	26	0.40
M12	17.73 - 18.00	6.78 - 7.00	8.025 - 8.175	4.85 - 5.15	30	0.60
M14	20.67 - 21.00	7.78 - 8.00	10.025 - 10.175	5.15 - 5.45	34	0.60
M16	23.67 - 24.00	8.78 - 9.00	12.032 - 12.212	5.35 - 5.65	38	0.60
M18	26.67 - 27.00	9.78 - 10.00	12.032 - 12.212	6.32 - 6.68	42	0.60
M20	29.67 - 30.00	10.73 - 11.00	14.032 - 14.212	7.32 - 7.68	46	0.80

- Dimensions in millimetres
- Available in Grades 10.9 Steel
- Other materials manufactured on request

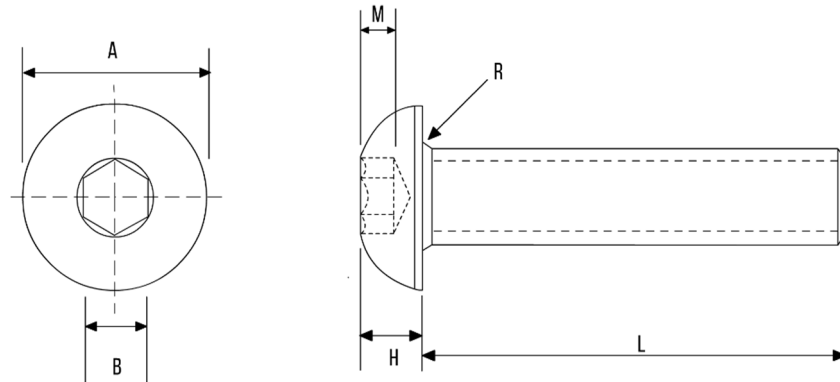
SOCKET COUNTERSUNKS SCREWS (METRIC) - DIN 7991 / ISO 10642



DIA	A	B	M (MIN)	S (MIN)	H (MIN)
M3	5.54 - 6.72	2.020 - 2.080	1.1	18	1.86
M4	7.53 - 8.96	2.520 - 2.580	1.5	20	2.48
M5	9.43 - 11.20	3.020 - 3.080	1.9	22	3.10
M6	11.34 - 13.44	4.020 - 4.095	2.2	24	3.72
M8	15.24 - 17.92	5.020 - 5.140	3.0	28	4.96
M10	19.22 - 22.40	6.020 - 6.140	3.6	32	6.20
M12	23.12 - 26.88	8.025 - 8.175	4.3	36	7.44
M14	26.52 - 30.80	10.025 - 10.175	4.5	40	8.40
M16	29.01 - 33.60	10.025 - 10.175	4.8	44	8.80
M20	36.05 - 40.32	12.032 - 12.212	5.6	52	10.16

- Dimensions in millimetres
- Available in Grades 10.9 & 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

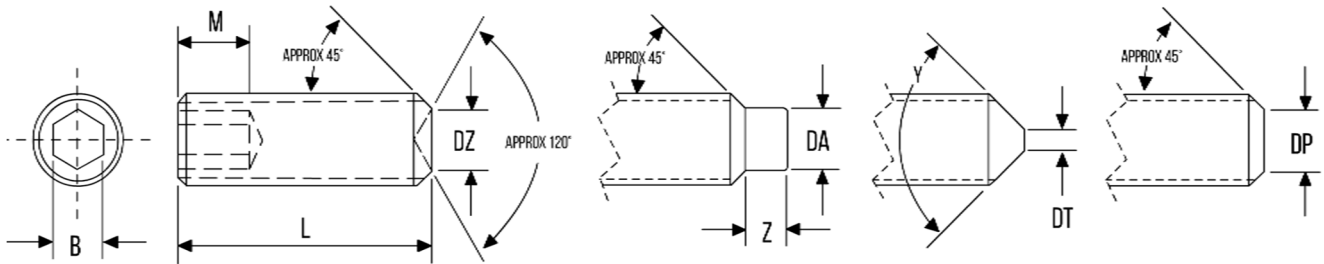
SOCKET BUTTON HEAD SCREWS (METRIC) - ISO 7380



DIA	A	H	B	M (MIN)	R (MIN)
M3	5.40 - 5.70	1.40 - 1.65	2.020 - 2.080	1.04	0.10
M4	7.24 - 7.60	1.95 - 2.20	2.520 - 2.580	1.30	0.20
M5	9.14 - 9.50	2.50 - 2.75	3.020 - 3.080	1.56	0.20
M6	10.07 - 10.50	3.00 - 3.30	4.020 - 4.095	2.08	0.25
M8	13.57 - 14.00	4.10 - 4.40	5.020 - 5.140	2.60	0.40
M10	17.07 - 17.50	5.20 - 5.50	6.020 - 6.140	3.12	0.40
M12	20.48 - 21.00	6.24 - 6.60	8.025 - 8.175	4.16	0.60
M16	27.48 - 28.00	8.44 - 8.80	10.025 - 10.175	5.20	0.60

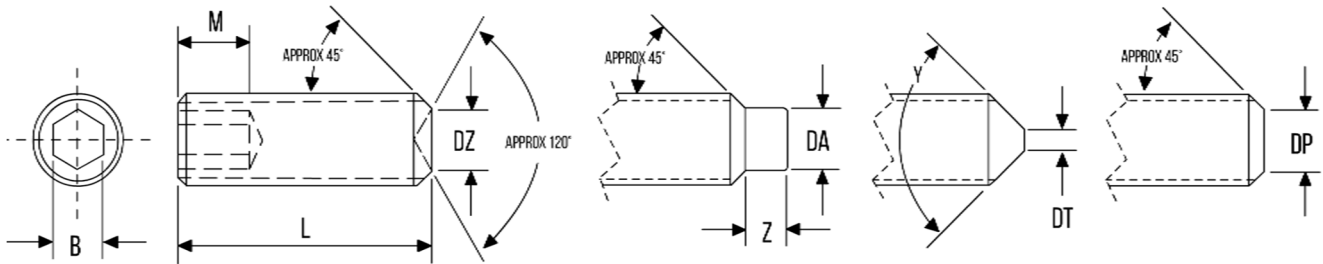
- Dimensions in millimetres
- Available in Grades 10.9 & 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

SOCKET SETSCREWS (METRIC) - ISO 4026 / 4027 / 4028 / 4029



DIA	CUP POINT (M)		DOG POINT (M)			CONE POINT (M)		FLAT POINT (M)	
	LENGTH	MIN	LENGTH	MIN	Z	LENGTH	MIN	LENGTH	MIN
M3	L ≤ 4	1.20	L ≤ 5	1.20	0.75 - 1.00	L ≤ 4	1.20	L ≤ 3	1.20
	L > 4	2.00	L > 5	2.00	1.50 - 1.75	L > 4	2.00	L > 3	2.00
M4	L ≤ 5	1.50	L ≤ 6	1.50	1.00 - 1.25	L ≤ 5	1.50	L ≤ 4	1.50
	L > 5	2.50	L > 6	2.50	2.00 - 2.25	L > 5	2.50	L > 4	2.50
M5	L ≤ 5	2.00	L ≤ 6	2.00	1.25 - 1.50	L ≤ 6	2.00	L ≤ 5	2.00
	L > 5	3.00	L > 6	3.00	2.50 - 2.75	L > 6	3.00	L > 5	3.00
M6	L ≤ 6	2.00	L ≤ 8	2.00	1.50 - 1.75	L ≤ 6	2.00	L ≤ 6	2.00
	L > 6	3.50	L > 8	3.50	3.00 - 3.25	L > 6	3.50	L > 6	3.50
M8	L ≤ 8	3.00	L ≤ 10	3.00	2.00 - 2.25	L ≤ 8	3.00	L ≤ 8	3.00
	L > 8	5.00	L > 10	5.00	4.00 - 4.30	L > 8	5.00	L > 8	5.00
M10	L ≤ 10	4.00	L ≤ 12	4.00	2.50 - 2.75	L ≤ 10	4.00	L ≤ 10	4.00
	L > 10	6.00	L < 12	6.00	5.00 - 5.30	L > 10	6.00	L > 10	6.00
M12	L ≤ 12	4.80	L ≤ 16	4.80	3.00 - 3.25	L ≤ 12	4.80	L ≤ 12	4.80
	L > 12	8.00	L > 16	8.00	6.00 - 6.30	L > 12	8.00	L > 12	8.00
M14	L ≤ 14	5.60	L ≤ 20	5.60	3.50 - 3.80	L ≤ 14	5.60	L ≤ 14	5.60
	L > 14	9.00	L > 20	9.00	7.00 - 7.36	L > 14	9.00	L > 14	9.00
M16	L ≤ 16	6.40	L ≤ 20	6.40	4.00 - 4.30	L ≤ 16	6.40	L ≤ 16	6.40
	L > 16	10.00	L > 20	10.00	8.00 - 8.36	L > 16	10.00	L > 16	10.00
M18	L ≤ 18	7.20	L ≤ 25	7.20	4.50 - 4.80	L ≤ 18	7.20	L ≤ 18	7.20
	L > 18	11.00	L < 25	11.00	9.00 - 9.86	L > 18	11.00	L > 18	11.00
M20	L ≤ 20	8.00	L ≤ 25	8.00	5.00 - 5.30	L ≤ 20	8.00	L ≤ 20	8.00
	L > 20	12.00	L > 25	12.00	10.00 - 10.36	L > 20	12.00	L > 20	12.00

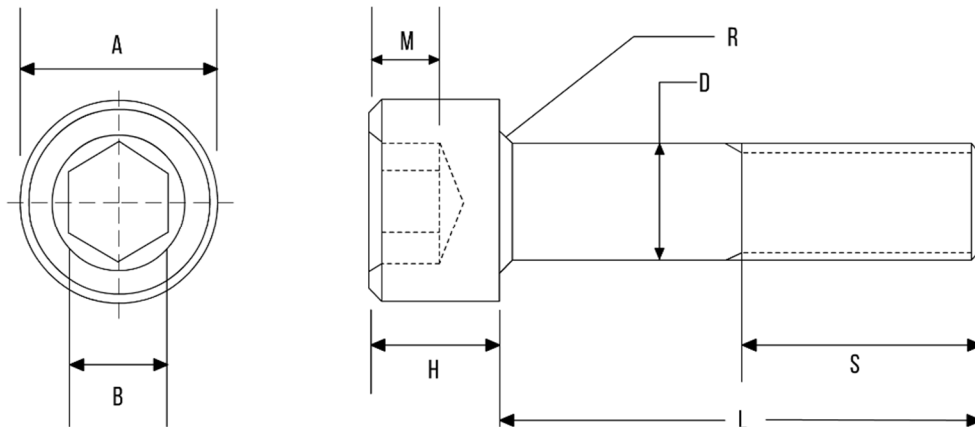
SOCKET SETSCREWS (METRIC) - ISO 4026 / 4027 / 4028 / 4029 - CONTINUED



DIA	DP	DZ	DT (MAX)	DA	B
M3	1.75 - 2.00	1.15 - 1.40	0.75	1.75 - 2.00	1.152 - 1.580
M4	2.25 - 2.50	1.75 - 2.00	1.00	2.25 - 2.50	2.020 - 2.080
M5	3.20 - 3.50	2.25 - 2.50	1.25	3.20 - 3.50	2.520 - 2.580
M6	3.70 - 4.00	2.75 - 3.00	1.50	3.70 - 4.00	3.020 - 3.080
M8	5.20 - 5.50	4.70 - 5.00	2.00	5.20 - 5.50	4.020 - 4.095
M10	6.64 - 7.00	5.70 - 6.00	2.50	6.64 - 7.00	5.020 - 5.140
M12	8.14 - 8.50	7.64 - 8.00	3.00	8.14 - 8.50	6.020 - 6.140
M14	9.64 - 10.00	8.64 - 9.00	4.00	9.64 - 10.00	6.020 - 6.140
M16	11.57 - 12.00	9.64 - 10.00	4.00	11.57 - 12.00	8.025 - 8.175
M18	12.57 - 13.00	11.57 - 12.00	5.00	12.57 - 13.00	10.025 - 10.175
M20	14.57 - 15.00	13.57 - 14.00	5.00	14.57 - 15.00	10.025 - 10.175

- Dimensions in millimetres
- Available in Grades 14.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

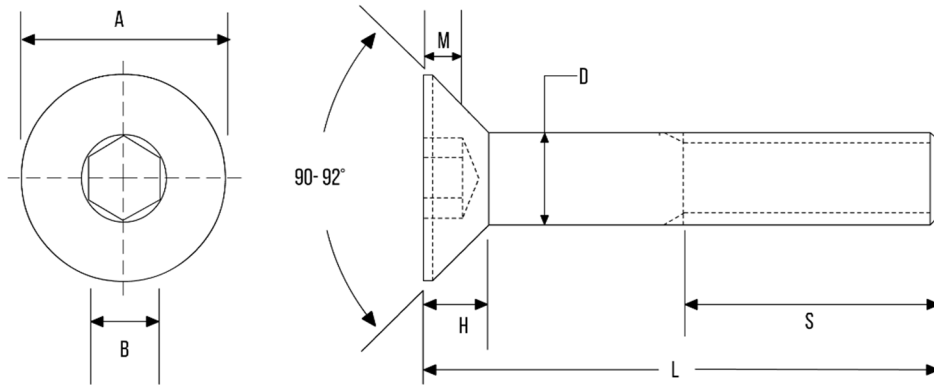
SOCKET HEAD CAPSCREWS - ASME B18.3 (1960 SERIES)



DIA	A	H	B (NOM)	M (MIN)	R (MIN)	S (MIN)
1/4	0.365 - 0.375	0.244 - 0.250	3/16 (0.188)	0.120	0.007	1.000
5/16	0.457 - 0.469	0.306 - 0.312	1/4 (0.250)	1.151	0.009	1.120
3/8	0.550 - 0.562	0.368 - 0.375	5/16 (0.312)	0.182	0.012	1.250
7/16	0.642 - 0.656	0.430 - 0.438	3/8 (0.375)	0.213	0.014	1.380
1/2	0.735 - 0.750	0.492 - 0.500	3/8 (0.375)	0.245	0.016	1.500
9/16	0.827 - 0.843	0.554 - 0.562	7/16 (0.438)	0.276	0.021	1.630
5/8	0.921 - 0.938	0.616 - 0.625	1/2 (0.500)	0.307	0.021	1.750
3/4	1.107 - 1.125	0.740 - 0.750	5/8 (0.625)	0.370	0.025	2.000
7/8	1.293 - 1.312	0.864 - 0.875	3/4 (0.750)	0.432	0.031	2.250
1	1.479 - 1.500	0.988 - 1.000	3/4 (0.750)	0.495	0.034	2.500
1-1/8	1.665 - 1.688	1.111 - 1.125	7/8 (0.875)	0.557	0.039	2.810
1-1/4	1.852 - 1.875	1.236 - 1.250	7/8 (0.875)	0.620	0.044	3.120
1-3/8	2.038 - 2.062	1.360 - 1.375	1 (1.000)	0.682	0.048	3.440
1-1/2	2.224 - 2.250	1.485 - 1.500	1 (1.000)	0.745	0.052	3.750

- All dimensions are in inches
- Available in Grade 12.9 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

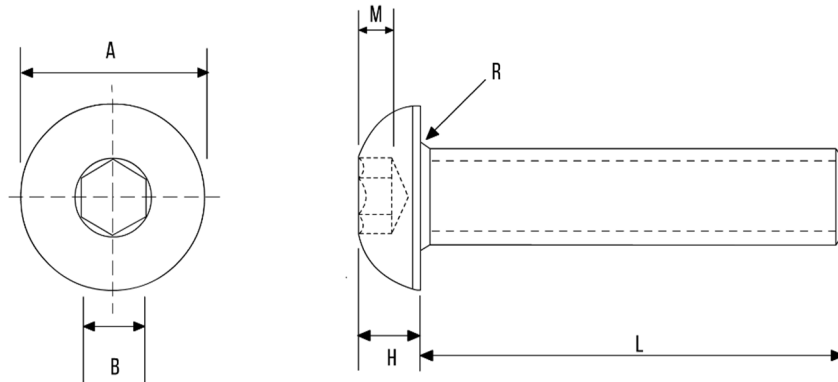
SOCKET COUNTERSUNKS SCREWS (IMPERIAL) – ASME 18.3



DIA	A	B	M (MIN)	S (MIN)
1/4	0.480 - 0.531	5/32 (0.156)	0.111	1.00
5/16	0.600 - 0.656	3/16 (0.188)	0.135	1.12
3/8	0.720 - 0.781	7/32 (0.219)	0.159	1.25
7/16	0.781 - 0.844	1/4 (0.250)	0.159	1.38
1/2	0.872 - 0.938	5/16 (0.312)	0.172	1.50
5/8	1.112 - 1.188	3/8 (0.375)	0.220	1.75
3/4	1.355 - 1.438	1/2 (0.500)	0.220	2.00
7/8	1.604 - 1.688	9/16 (0.562)	0.248	2.25
1	1.841 - 1.938	5/8 (0.625)	0.297	2.50
1-1/8	2.079 - 2.188	3/4 (0.750)	0.325	2.81
1-1/4	2.316 - 2.438	7/8 (0.875)	0.358	3.12
1-3/8	2.553 - 2.688	7/8 (0.875)	0.402	3.44
1-1/2	2.791 - 2.938	1 (1.000)	0.435	3.75

- Dimensions in inches
- Available in High Tensile Steel and A2 Stainless Steel
- Other materials manufactured on request

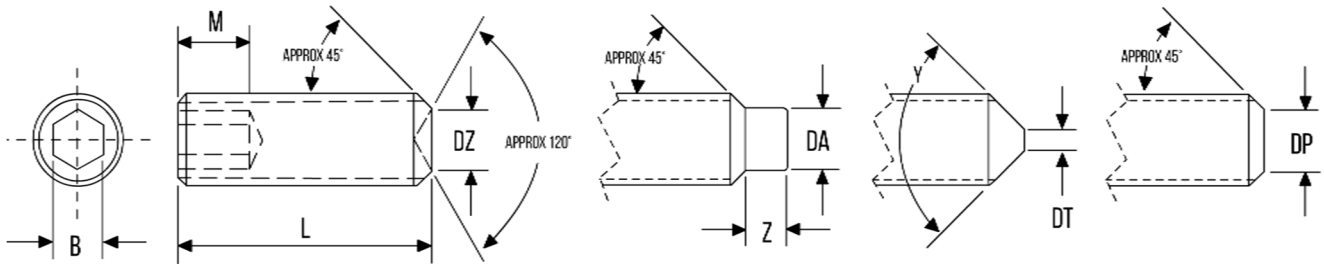
SOCKET BUTTON HEAD SCREWS (IMPERIAL) – ASME B18.3



DIA	A	H	B	M (MIN)	S (MIN)
1/4	0.419 - 0.437	0.122 - 0.132	5/32 (0.156)	0.087	0.007
5/16	0.527 - 0.547	0.152 - 0.166	3/16 (0.188)	0.105	0.009
3/8	0.636 - 0.656	0.185 - 0.199	7/32 (0.219)	0.122	0.012
1/2	0.851 - 0.875	0.245 - 2.265	5/16 (0.312)	0.175	0.016
5/8	0.970 - 1.000	0.311 - 0.331	3/8 (0.375)	0.210	0.021

- Dimensions in inches
- Available in High Tensile Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

SOCKET SETSCREWS (IMPERIAL) – ASME B18.3

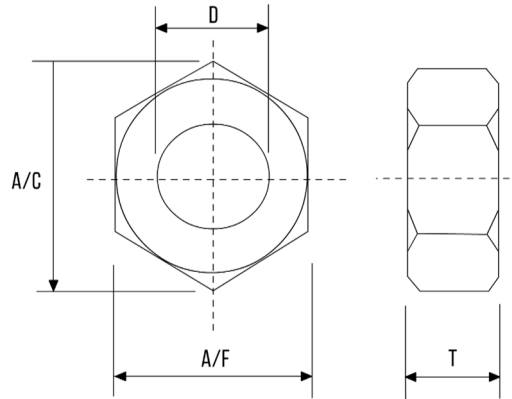


DIA	CUP POINT (M)		DOG POINT (M)			CONE POINT (M)		FLAT POINT (M)	
	LENGTH	MIN	LENGTH	MIN	Z	LENGTH	MIN	LENGTH	MIN
1/4	$L \geq 0.25$	0.125	$L \geq 0.31$	0.125	0.059 - 0.067	$L \geq 0.31$	0.125	$L \geq 0.25$	0.125
5/16	$L \geq 0.31$	0.156	$L \geq 0.38$	0.156	0.074 - 0.082	$L \geq 0.44$	0.156	$L \geq 0.31$	0.156
3/8	$L \geq 0.38$	0.188	$L \geq 0.44$	0.188	0.089 - 0.099	$L \geq 0.44$	0.188	$L \geq 0.38$	0.188
7/16	$L \geq 0.44$	0.219	$L \geq 0.50$	0.219	0.104 - 0.114	$L \geq 0.63$	0.219	$L \geq 0.44$	0.219
1/2	$L \geq 0.50$	0.250	$L \geq 0.63$	0.250	0.120 - 0.130	$L \geq 0.63$	0.250	$L \geq 0.50$	0.250
5/8	$L \geq 0.63$	0.312	$L \geq 0.88$	0.312	0.148 - 0.164	$L \geq 0.88$	0.312	$L \geq 0.63$	0.312
3/4	$L \geq 0.75$	0.375	$L \geq 1.00$	0.375	0.480 - 0.196	$L \geq 1.00$	0.375	$L \geq 0.75$	0.375
7/8	$L \geq 0.88$	0.500	$L \geq 1.00$	0.500	0.211 - 0.227	$L \geq 1.00$	0.500	$L \geq 0.88$	0.500
1	$L \geq 1.00$	0.562	$L \geq 1.25$	0.562	0.240 - 0.260	$L \geq 1.25$	0.562	$L \geq 1.00$	0.562

DIA	DP	DZ	DF (MAX)	DA	B
1/4	0.118 - 0.132	0.118 - 0.132	0.0250	0.149 - 0.156	1/8 (0.125)
5/16	0.156 - 0.132	0.156 - 0.132	0.0312	0.195 - 0.203	5/32 (0.156)
3/8	0.194 - 0.212	0.194 - 0.212	0.0375	0.241 - 0.250	3/16 (0.188)
7/16	0.232 - 0.252	0.232 - 0.252	0.4370	0.287 - 0.297	7/32 (0.219)
1/2	0.270 - 0.291	0.270 - 0.291	0.0500	0.334 - 0.344	1/4 (0.250)
5/8	0.347 - 0.371	0.347 - 0.371	0.0625	0.456 - 0.469	5/16 (0.312)
3/4	0.425 - 0.450	0.425 - 0.450	0.7500	0.549 - 0.562	3/8 (0.375)
7/8	0.502 - 0.530	0.502 - 0.530	0.8750	0.642 - 0.656	1/2 (0.500)
1	0.579 - 0.609	0.579 - 0.609	0.1000	0.734 - 0.750	9/16 (0.562)

- Dimensions in inches
- Available in High Tensile Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

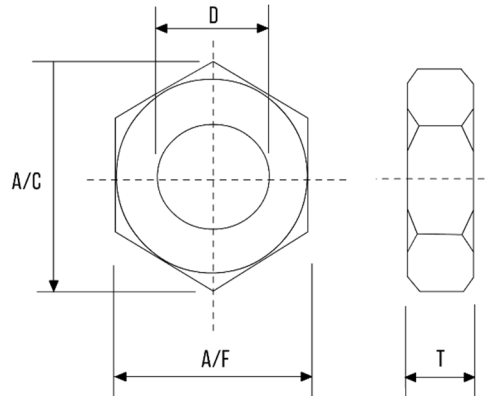
HEX FULL NUT (METRIC) – DIN 934 / ISO 4032



DIA	TPI	A/C	THICKNESS (T)		A/F	
	(COARSE)		MIN	MIN	MAX	MIN
M6	1.00	10.89	4.90	5.20	9.78	10.00
M8	1.25	14.20	6.44	6.80	12.73	13.00
M10	1.50	17.77	8.04	8.40	15.73	16.00
M12	1.75	20.03	10.37	10.80	17.73	18.00
M14	2.00	23.36	12.10	12.80	20.67	21.00
M16	2.00	26.75	14.10	14.80	23.67	24.00
M18	2.50	29.56	15.10	15.80	26.16	27.00
M20	2.50	32.95	16.90	18.00	29.16	30.00
M22	2.50	37.29	18.10	19.40	33.00	34.00
M24	3.00	39.55	20.20	21.50	35.00	36.00
M27	3.00	45.20	22.50	23.80	40.00	41.00
M30	3.50	50.85	24.30	25.60	45.00	46.00
M33	3.50	55.37	27.40	28.70	49.00	50.00
M36	4.00	60.79	29.40	31.00	53.80	55.00
M39	4.00	66.44	31.80	33.40	58.80	60.00
M42	4.50	71.30	32.40	34.00	63.10	65.00
M45	4.50	76.95	34.40	36.00	68.10	70.00
M48	5.00	82.60	36.40	38.00	73.10	75.00
M52	5.00	88.25	40.40	42.00	78.10	80.00
M56	5.50	93.56	43.40	45.00	82.80	85.00
M60	5.50	99.21	46.40	48.00	87.80	90.00
M64	6.00	104.86	49.10	51.00	92.80	95.00

- Dimensions in millimetres
- Available in Grades 6, 8, 10, 12 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

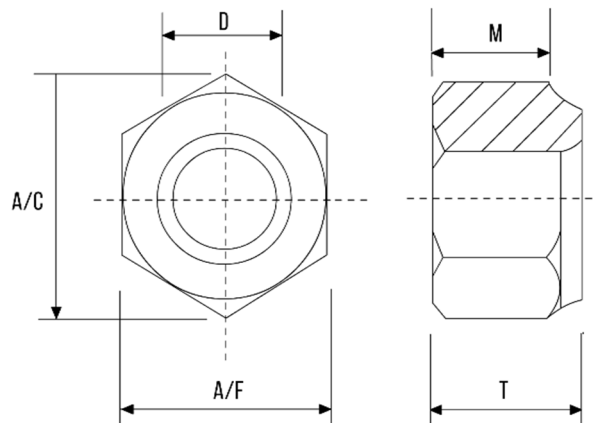
HEX LOCK NUT (METRIC) - DIN 439-2 / ISO 4035



DIA	TPI	A/C MIN	THICKNESS (T)		A/F	
	(COARSE)		MIN	MAX	MIN	MAX
M6	1.00	10.89	2.90	3.20	9.78	10.00
M8	1.25	14.20	3.70	4.00	12.73	13.00
M10	1.50	18.90	4.70	5.00	16.73	17.00
M12	1.75	21.10	5.70	6.00	18.67	19.00
M14	2.00	24.49	6.42	7.00	20.67	21.0
M16	2.00	26.75	7.42	8.00	23.67	24.00
M18	2.50	29.56	8.42	9.00	26.16	27.00
M20	2.50	32.95	9.10	10.00	29.16	30.00
M22	2.50	35.03	9.90	11.00	31.00	32.00
M24	3.00	39.55	10.90	12.00	35.00	36.00
M27	3.00	45.20	12.40	13.50	40.00	41.00
M30	3.50	50.85	13.90	15.00	45.00	46.00
M33	3.50	55.37	15.40	16.50	49.00	50.00
M36	4.00	60.79	16.90	18.00	53.80	55.00
M39	4.00	66.44	18.20	19.50	58.80	60.00
M42	4.50	71.30	19.70	21.00	63.10	65.00
M45	4.50	76.95	21.20	22.50	68.10	70.00
M48	5.00	82.60	22.70	24.00	73.10	75.00
M52	5.00	88.25	24.70	26.00	78.10	80.00
M56	5.50	18.90	4.70	5.00	16.73	17.00

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

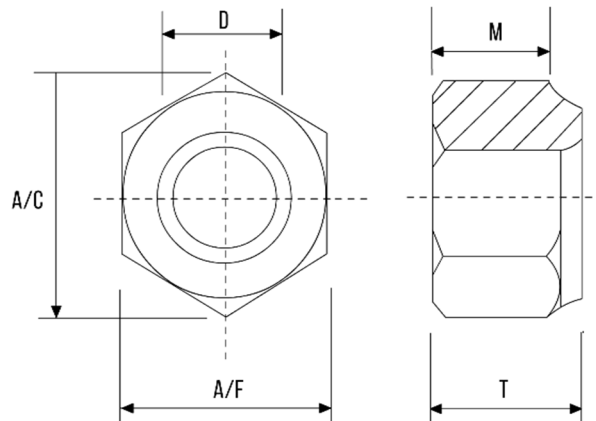
NYLON INSERT NUT (METRIC) - DIN 982 HIGH TYPE (P)



DIA.	TPI	A/C	T		M	A/F	
	COARSE	MIN	MIN	NOM	MIN	MIN	MAX
M5	0.80	8.79	6.00	6.30	4.40	7.78	8.00
M6	1.00	11.05	7.70	8.00	4.90	9.78	10.00
M7	1.00	12.12	8.20	8.50	6.14	10.73	11.00
M8	1.25	14.38	9.14	9.50	6.44	12.73	13.00
M10	1.50	18.90	11.14	11.50	8.04	16.73	17.00
M12	1.75	21.10	13.64	14.00	10.37	18.67	19.00
M14	2.00	24.49	15.30	16.00	12.10	21.67	22.00
M16	2.00	26.75	17.30	18.00	14.10	23.67	24.00
M18	2.50	29.56	19.16	20.00	15.10	26.18	27.00
M20	2.50	32.95	20.70	22.00	16.90	29.16	30.00
M22	2.50	35.03	23.70	25.00	18.10	31.00	32.00
M24	3.30	39.55	26.70	28.00	20.20	35.00	36.00

- Dimensions in millimetres
- Available in Grade 8 & 10 and A2 & A4 Stainless Steel
- Other materials manufactured on request

NYLON INSERT NUT (METRIC) - DIN 985 THIN TYPE (T)



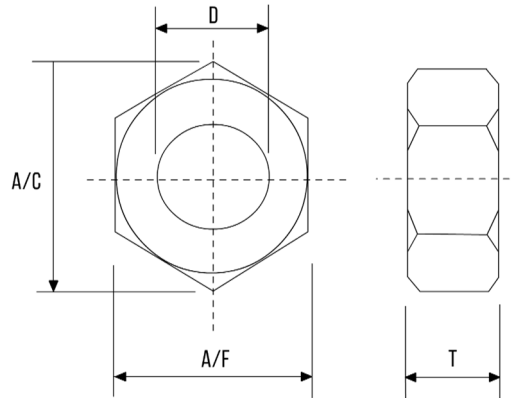
DIA	TPI	A/C MIN	T		M MIN	A/F	
	COARSE		MIN	NOM		MIN	MAX
M10	1.50	18.90	9.64	10.00	6.50	15.73	16.00
M12	1.75	21.10	11.57	12.00	8.00	17.73	18.00
M14	2.00	24.49	13.30	14.00	9.50	20.67	21.00
M16	2.00	26.75	15.30	16.00	10.50	23.67	24.00
M18	2.50	29.56	17.66	18.50	13.00	26.16	27.00
M20	2.50	32.95	18.70	20.00	14.00	29.16	30.00
M22	2.50	35.03	20.70	22.00	15.00	33.00	34.00
M24	3.00	39.55	22.70	24.00	15.00	35.00	36.00
M27	3.00	45.20	25.70	27.00	17.00	40.00	41.00
M30	3.50	50.85	28.70	30.00	19.00	45.00	46.00
M33	3.50	55.37	31.40	33.00	22.00	49.00	50.00
M36	4.00	60.79	34.40	36.00	25.00	53.80	55.00
M39	4.00	66.44	37.40	39.00	27.00	58.80	60.00
M42	4.50	72.09	40.40	42.00	29.00	63.10	65.00
M45	4.50	76.95	43.40	45.00	32.00	68.10	70.00
M48	5.00	82.60	46.40	48.00	36.00	73.10	75.00

- Dimensions in millimetres
- Available in Grade 8 & 10 and A2 & A4 Stainless Steel
- Other materials manufactured on request

FASTENERS



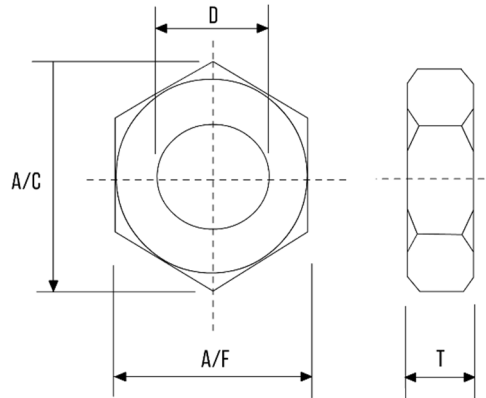
HEX FULL NUT (IMPERIAL) – ANSI B18.2.2 / BS1768



DIA	A/F			A/C		T		
	BASIC	MAX	MIN	MAX	MIN	BASIC	MAX	MIN
1/4	7/16	0.438	0.428	0.505	0.488	7/32	0.226	0.212
5/16	1/2	0.500	0.489	0.577	0.557	17/64	0.273	0.258
3/8	9/16	0.562	0.551	0.650	0.628	21/64	0.337	0.320
7/16	11/16	0.688	0.675	0.794	0.768	3/8	0.385	0.365
1/2	3/4	0.750	0.736	0.866	0.840	7/16	0.448	0.427
9/16	7/8	0.875	0.861	1.010	0.982	31/64	0.496	0.473
5/8	1.5/16	0.938	0.922	1.083	1.051	35/64	0.559	0.535
3/4	1.1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617
7/8	1.5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.724
1	1.1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.831
1.1/8	1.11/16	1.688	1.631	1.949	1.859	31/32	0.999	0.939
1.1/4	1.7/8	1.875	1.812	2.165	2.066	1.1/6	1.094	1.030
1.3/8	2.1/16	2.062	1.994	2.382	2.273	1.11/64	1.206	1.138
1.1/2	2.1/4	2.250	2.175	2.598	2.480	1.9/32	1.317	1.245
1.5/8	2.7/16	2.438	2.356	2.185	2.686	1.25/64	1.429	1.353
1.3/4	2.5/8	2.625	2.558	3.031	2.893	1.1/2	1.540	1.460
2	3	3.000	2.900	3.464	3.306	1.23/32	1.763	1.675
2.1/4	3.3/8	3.375	3.236	3.897	3.719	1.15/16	1.986	1.890
2.1/2	3.3/4	3.750	3.625	4.330	4.133	2.5/32	2.209	2.105
2.3/4	4.1/8	4.125	3.988	4.763	4.546	2.3/8	2.431	2.319

- Dimensions in inches
- Available in SAE Grades 2, 5, 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

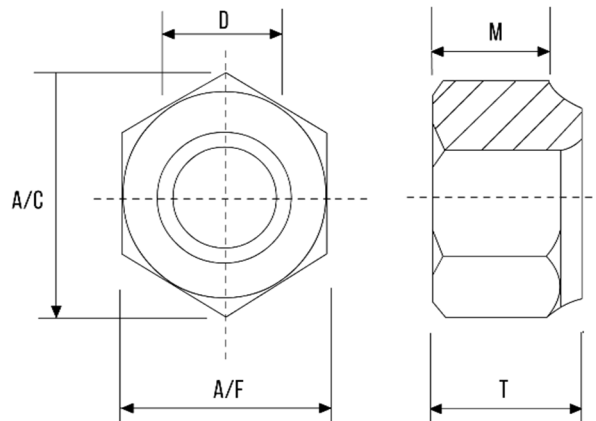
HEX LOCK NUT (IMPERIAL) – ANSI B18.2.2 / BS1768



DIA	A/F			A/C		T		
	BASIC	MAX	MIN	MAX	MIN	BASIC	MAX	MIN
1/4	7/16	0.438	0.428	0.505	0.488	5/32	0.164	0.150
5/16	1/2	0.500	0.489	0.577	0.557	3/16	0.195	1.180
3/8	9/16	0.562	0.551	0.650	0.628	7/32	0.227	1.210
7/16	11/16	0.688	0.675	0.794	0.768	1/4	0.260	0.240
1/2	3/4	0.750	0.736	0.866	0.840	5/16	0.323	0.302
9/16	7/8	0.875	0.861	1.010	0.982	5/16	0.324	0.301
5/8	1.5/16	0.938	0.922	1.083	1.051	3/8	0.387	0.363
3/4	1.1/8	1.125	1.088	1.299	1.240	27/64	0.446	0.398
7/8	1.5/16	1.312	1.269	1.516	1.447	31/64	0.510	0.458
1	1.1/2	1.500	1.450	1.732	1.653	35/64	0.575	0.519
1.1/8	1.11/16	1.688	1.631	1.949	1.859	39/64	0.639	0.579
1.1/4	1.7/8	1.875	1.812	2.165	2.066	23/32	0.751	0.687
1.3/8	2.1/16	2.062	1.994	2.382	2.273	25/32	0.815	0.747
1.1/2	2.1/4	2.250	2.175	2.598	2.480	27/32	0.880	0.808
1.5/8	2.7/16	2.438	2.356	2.185	2.686	29/32	0.945	0.869
1.3/4	2.5/8	2.625	2.558	3.031	2.893	31/32	1.009	0.929
2	3	3.000	2.900	3.464	3.306	1.3/32	1.138	1.050
2.1/4	3.3/8	3.375	3.236	3.897	3.719	1.7/32	1.267	1.171
2.1/2	3.3/4	3.750	3.625	4.330	4.133	1.11/32	1.396	1.292
2.3/4	4.1/8	4.125	3.988	4.763	4.546	1.15/32	1.525	1.413

- Dimensions in inches
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on requested

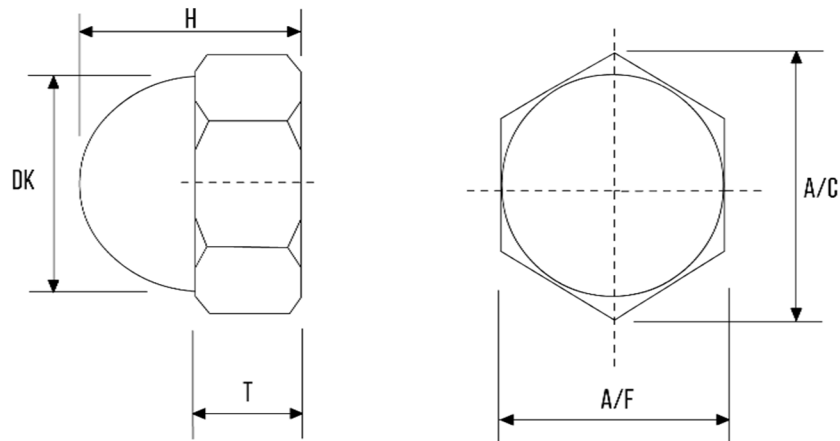
NYLON INSERT NUT (IMPERIAL) - DIN 982 NE (TYPE P)



DIA	TPI		A/C	T	M	A/F	
	UNC	UNF	MIN	NOM	MIN	MIN	MAX
1/4	20	28	0.482	0.328	0.225	0.430	0.439
5/16	18	24	0.552	0.359	0.250	0.492	0.502
3/8	16	24	0.622	0.468	0.335	0.553	0.564
7/16	14	20	0.698	0.468	0.324	0.615	0.627
1/2	13	20	0.837	0.609	0.464	0.741	0.752
9/16	12	18	0.978	0.656	0.469	0.865	0.877
5/8	11	18	1.051	0.765	0.593	0.928	0.940
3/4	10	16	1.191	0.890	0.742	1.052	1.064
7/8	9	14	1.403	0.999	0.790	1.269	1.252
1	8	12	1.615	1.078	0.825	1.450	1.440
1-1/8	7	12	1.826	1.203	0.930	1.631	1.627
1-1/4	7	12	2.038	1.422	1.125	1.812	1.815
1-3/8	6	12	2.232	1.609	1.282	1.994	2.008
1-1/2	6	12	2.444	1.640	1.313	2.175	2.197

- Dimensions in inches
- Available in SAE Grade 5 & 8 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on requested

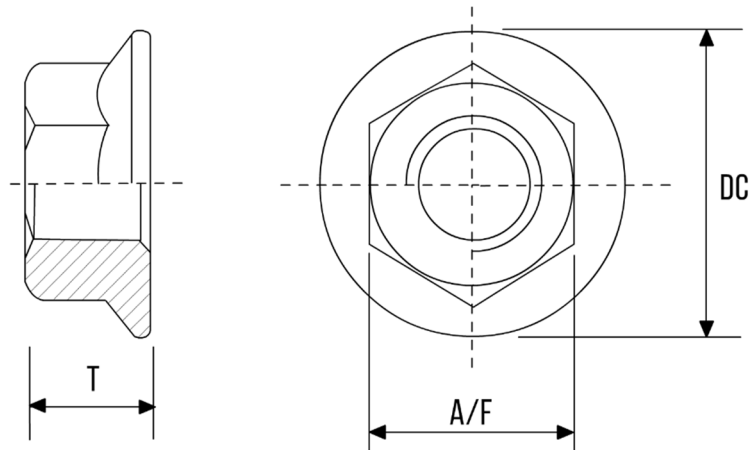
DOME NUT (METRIC) - DIN 1857



DIA	PITCH	A/F	A/C	T	H	DK
M3	0.50	5.5	6.01	2.4	7.0	5.5
M4	0.70	7.0	7.66	3.2	8.0	6.5
M5	0.80	8.0	8.79	4.0	10.0	7.5
M6	1.00	10.0	11.05	5.0	12.0	9.5
M8	1.25	13.0	14.38	6.5	15.0	12.5
M10	1.50	17.0	18.90	8.0	18.0	16.0
M12	1.75	19.0	21.10	10.0	22.0	18.0
M14	2.00	22.0	24.49	11.0	25.0	21.0
M16	2.00	24.0	26.75	13.0	28.0	23.0
M18	2.50	27.0	30.14	15.0	32.0	26.0
M20	2.50	30.0	33.53	16.0	34.0	28.0
M22	2.50	34.0	37.72	18.0	39.0	33.0
M24	3.00	36.0	39.98	19.0	42.0	34.0
M27	3.00	41.0	47.30	20.0	47.0	40.0
M30	3.50	46.0	52.00	24.0	52.0	42.0

- Dimensions in millimetres
- Available in Grade 6 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

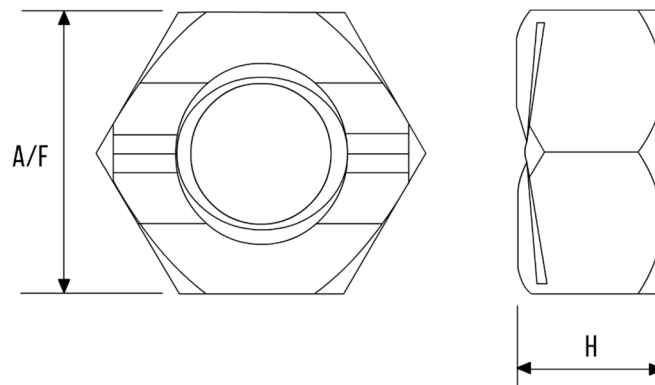
FLANGE NUT (METRIC) - DIN 6923



DIA	PITCH	DC	T		A/F	
			MAX	MIN	MAX	MIN
M5	0.80	11.80	5.00	4.70	8.00	7.78
M6	1.00	14.20	6.00	5.70	10.00	9.78
M8	1.25	17.90	8.00	7.60	13.00	12.73
M10	1.50	21.80	10.00	9.60	15.00	14.73
M12	1.75	26.00	12.00	11.60	18.00	17.73
M14	2.00	29.90	14.00	13.30	21.00	20.67
M16	2.00	34.50	16.00	15.30	24.00	23.67
M20	2.50	42.80	20.00	18.90	30.00	29.67

- Dimensions in millimetres
- Available Serrated and Unserrated
- Available in Grade 6 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

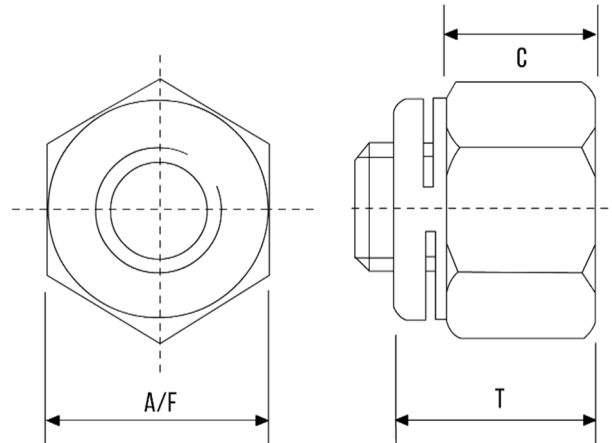
BINX[®] NUT – ALL METAL SELF LOCKING NUT



SIZE	PITCH	A/F	HEIGHT
M3	0.50	5.5	3.2
M4	0.70	7.0	3.2
M5	0.80	8.0	4.1
M6	1.00	10.0	6.1
M8	1.25	13.0	6.4
M10	1.50	17.0	7.9
M12	1.75	19.0	9.9
M14	2.00	22.0	11.0
M16	2.00	24.0	13.0
M18	2.50	27.0	15.0
M20	2.50	30.0	16.0
M22	2.50	32.0	17.8
M24	3.00	36.0	28.8
M27	3.00	41.0	22.2
M30	3.50	46.0	23.9
M36	4.00	55.0	32.0

- Dimensions in millimetres
- Available in Mild Steel, Brass and 300 & 316 Type Stainless Steel
- Other materials manufactured on request

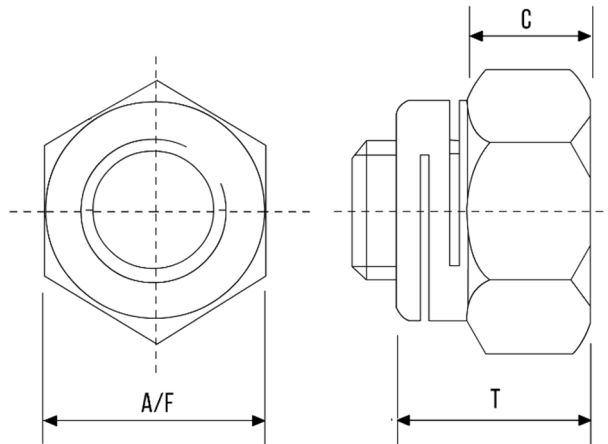
PHILIDAS[®] NUT – INDUSTRIAL SELF LOCKING NUT



DIA	PITCH	A/F	T (NOM)	C (NOM)
M5	0.80	8.00	6.50	4.30
M6	1.00	10.00	7.50	5.00
M8	1.25	13.00	8.50	5.70
M10	1.50	17.00	11.00	8.00
M12	1.75	19.00	13.00	9.50
M14	2.00	22.00	15.00	11.00
M16	2.00	24.00	17.00	12.80
M18	2.50	27.00	20.00	15.50
M20	2.50	30.00	22.00	17.50
M22	2.50	32.00	23.00	18.00
M24	3.00	36.00	25.00	19.50
M27	3.00	41.00	28.00	22.00
M30	3.50	46.00	31.00	24.50
M33	3.50	50.00	33.00	26.20
M36	4.00	55.00	36.00	28.60
M39	4.00	60.00	39.00	31.10
M42	4.50	65.00	42.00	33.50
M45	4.50	70.00	45.00	36.00
M48	5.00	75.00	48.00	38.00
M52	5.00	80.00	52.00	41.50

- Dimensions in millimetres
- Available in Grade 8 & 10 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

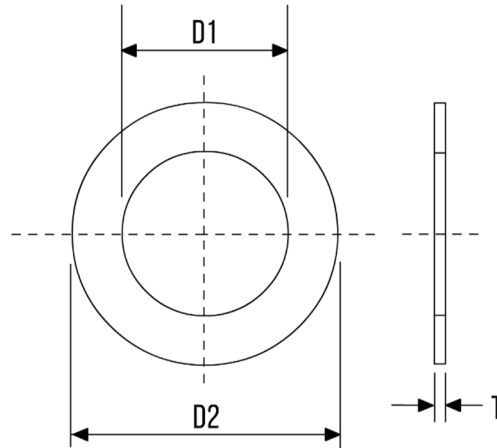
PHILIDAS® NUT – TURRET SELF LOCKING NUT



DIA	PITCH	A/F	T (NOM)	C (NOM)
M5	0.80	8.00	6.80	3.90
M6	1.00	10.00	8.50	5.00
M8	1.25	13.00	10.50	6.00
M10	1.50	17.00	13.00	7.60
M12	1.75	19.00	15.00	8.50
M14	2.00	22.00	17.00	10.00
M16	2.00	24.00	19.50	12.00
M18	2.50	27.00	22.00	14.00
M20	2.50	30.00	24.00	15.50
M22	2.50	32.00	26.50	17.50
M24	3.00	36.00	29.00	19.00
M27	3.00	41.00	33.00	22.00
M30	3.50	46.00	39.00	26.00
M33	3.50	50.00	43.00	30.00
M36	4.00	55.00	47.00	32.50
M39	4.00	60.00	50.00	35.00
M42	4.50	65.00	54.00	37.50
M45	4.50	70.00	58.00	41.00
M48	5.00	75.00	62.00	42.50
M52	5.00	80.00	67.00	46.50

- Dimensions in millimetres
- Available in Grade 8 & 10 Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

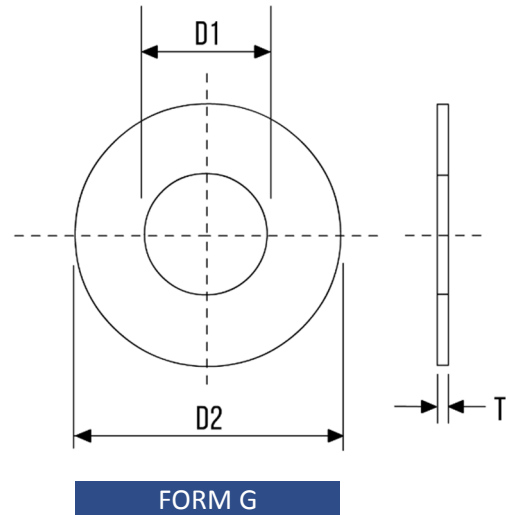
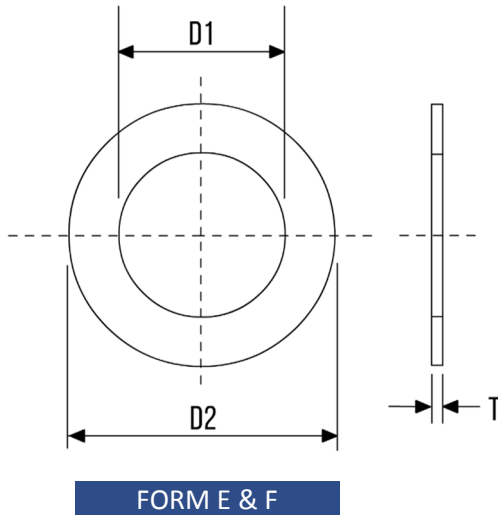
PLAIN WASHERS (METRIC) – BS4320 FORM A, B, C & D



DIA	D1 (NOM)	FORM A		FORM B		FORM C		FORM D	
		D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)
M3	3.2	7.0	0.5	7.0	-	-	-	-	-
M4	4.3	9.0	0.8	9.0	-	10.0	0.8	10.0	-
M5	5.3	10.0	1.0	10.0	-	12.5	1.0	12.5	-
M6	6.4	12.5	1.6	12.5	0.8	14.0	1.6	14.0	0.8
M8	8.4	17.0	1.6	17.0	1.0	21.0	1.6	21.0	1.0
M10	10.5	21.0	2.0	21.0	1.25	24.0	2.0	24.0	1.25
M12	13.0	24.0	2.5	24.0	1.6	28.0	2.5	28.0	1.6
M14	15.0	28.0	2.5	28.0	1.6	30.0	2.5	30.0	1.6
M16	17.0	30.0	3.0	30.0	2.0	34.0	3.0	34.0	2.0
M18	19.0	34.0	3.0	34.0	2.0	37.0	3.0	37.0	2.0
M20	21.0	37.0	3.0	37.0	2.0	39.0	3.0	39.0	2.0
M22	23.0	39.0	3.0	39.0	2.0	44.0	3.0	44.0	2.0
M24	25.0	44.0	4.0	44.0	2.5	50.0	4.0	50.0	2.5
M27	28.0	50.0	4.0	50.0	2.5	56.0	4.0	56.0	2.5
M30	31.0	56.0	4.0	56.0	2.5	60.0	4.0	60.0	2.5
M33	34.0	60.0	5.0	60.0	3.0	66.0	5.0	66.0	3.0
M36	37.0	66.0	5.0	66.0	3.0	72.0	5.0	72.0	3.0
M39	40.0	72.0	6.0	72.0	3.0	77.0	6.0	77.0	3.0

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

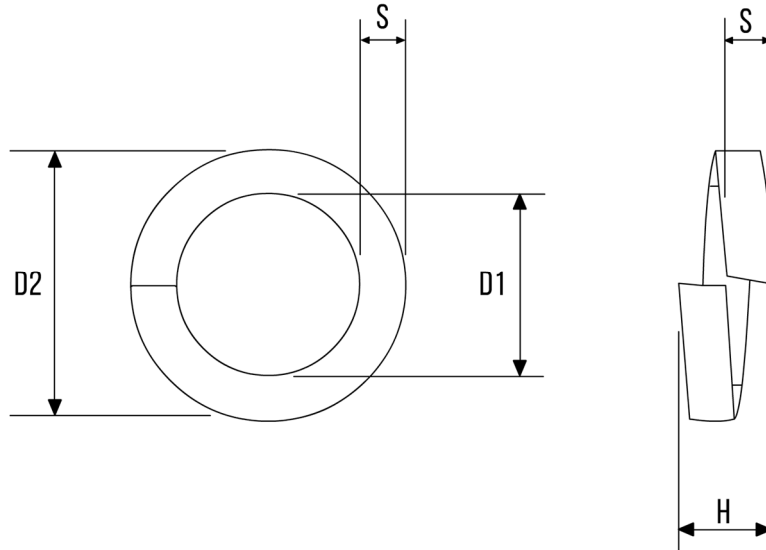
PLAIN WASHERS (METRIC) – BS4320 FORM E, F & G



DIA	D1 (NOM)	FORM E		FORM F		FORM G	
		D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)	D2 (NOM)	T (NOM)
M5	5.5	10.0	1.0	-	-	15.0	1.6
M6	6.6	12.5	1.6	-	-	18.0	2.0
M8	9.0	17.0	1.6	21.0	1.6	24.0	2.0
M10	11.0	21.0	2.0	24.0	2.0	30.0	2.5
M12	14.0	24.0	2.5	28.0	2.5	36.0	3.0
M14	16.0	28.0	2.5	30.0	2.5	42.0	3.0
M16	18.0	30.0	3.0	34.0	3.0	48.0	4.0
M18	20.0	34.0	3.0	37.0	3.0	54.0	4.0
M20	22.0	37.0	3.0	39.0	3.0	60.0	5.0
M22	24.0	39.0	3.0	44.0	3.0	66.0	5.0
M24	26.0	44.0	4.0	50.0	4.0	72.0	6.0
M27	30.0	50.0	4.0	56.0	4.0	81.0	6.0
M30	33.0	56.0	4.0	60.0	4.0	90.0	8.0
M33	36.0	60.0	5.0	66.0	5.0	99.0	8.0
M36	39.0	66.0	5.0	72.0	5.0	108.0	10.0
M39	42.0	72.0	6.0	77.0	6.0	117.0	10.0

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

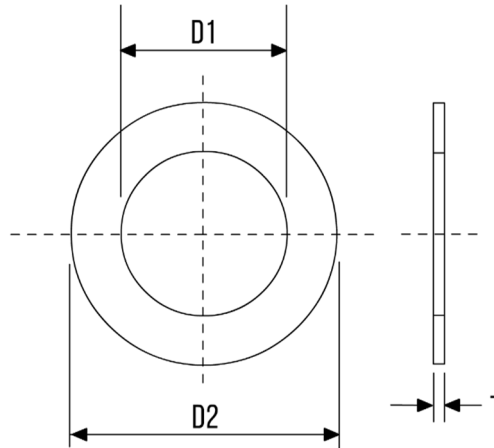
SPRING WASHERS (METRIC) – SQUARE SECTION DIN 7980



DIA	D1 (MIN)	D1 (MAX)	D2 (NOM)	S (MIN)	H (MIN)	H (MAX)
M3	3.1	3.4	5.6	1.0	2.00	2.36
M4	4.1	4.4	7.0	1.2	2.40	2.83
M5	5.1	5.4	8.8	1.6	3.20	3.78
M6	6.1	6.5	9.9	1.6	3.20	3.78
M8	8.1	8.5	12.7	2.0	4.00	4.72
M10	10.2	10.7	16.0	2.5	5.00	5.90
M12	12.2	12.7	16.0	2.5	5.00	5.90
M14	14.2	14.7	21.1	3.0	6.00	7.10
M16	16.2	17.0	24.4	3.5	7.00	8.25
M18	18.2	19.0	26.4	3.5	7.00	8.25
M20	20.2	21.2	30.6	4.5	9.00	10.60
M22	22.5	23.5	32.9	4.5	9.00	10.60
M24	24.5	25.5	35.9	5.0	10.00	11.80
M27	27.5	28.5	38.9	5.0	10.00	11.80
M30	30.5	31.7	44.1	6.0	12.00	24.20
M33	33.5	34.7	47.1	6.0	12.00	14.20
M36	36.5	37.7	52.2	7.0	14.00	26.50
M42	42.5	43.7	60.2	8.0	16.00	18.90
M48	49.0	50.5	67.0	8.0	16.00	18.90

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

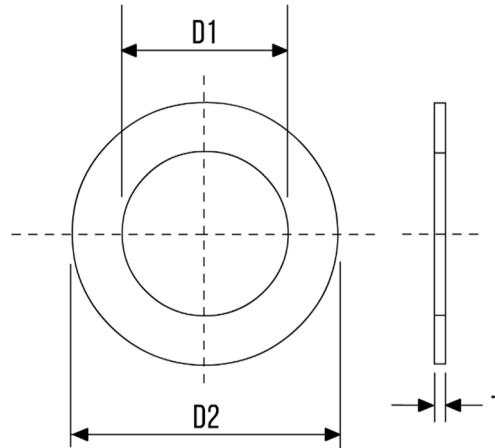
PLAIN WASHERS (IMPERIAL) – BS3410 TABLE 3



DIA	D1 (MAX)	D2 (MAX)	HEAVY PATTERN		LIGHT PATTERN	
			T (SWG)	T	T (SWG)	T
1/4	0.27	0.56	17.00	0.06	20	0.036
5/16	0.33	0.63	15.00	0.07	19	0.040
3/8	0.40	0.75	15.00	0.07	18	0.048
7/16	0.46	0.88	13.00	0.09	18	0.048
1/2	0.52	1.00	13.00	0.09	17	0.056
9/16	0.59	1.13	12.00	0.10	17	0.056
5/8	0.66	1.25	11.00	0.12	15	0.072
3/4	0.78	1.50	10.00	0.13	15	0.072
7/8	0.91	1.63	9.00	0.14	15	0.072
1	1.03	1.88	8.00	0.16	15	0.072
1.1/8	1.16	2.13	7.00	0.18	13	0.092
1.1/4	1.28	2.38	7.00	0.18	11	0.116
1.3/8	1.41	2.63	6.00	0.19	-	-
1.1/2	1.53	2.88	6.00	0.19	-	-
1.3/4	1.78	3.38	5.00	0.21	-	-
2	2.03	3.63	5.00	0.21	-	-

- Dimensions in inches
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

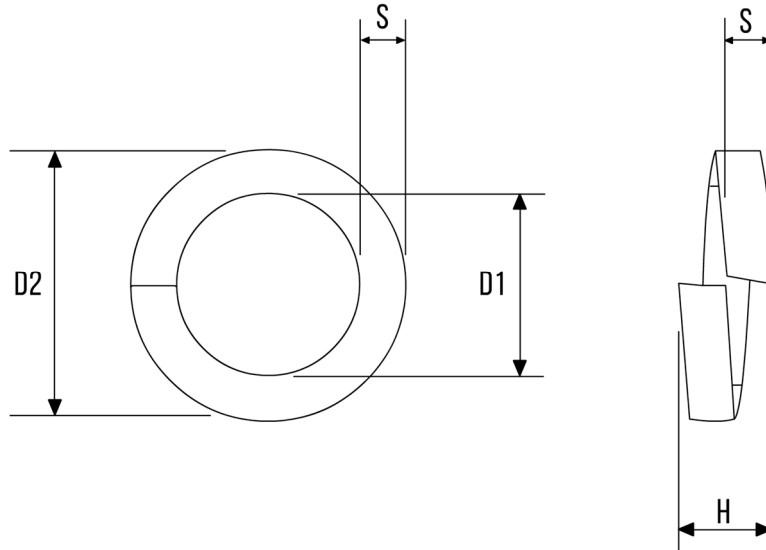
PLAIN WASHERS (IMPERIAL) – BS3410 TABLE 7



DIA	D1	D2	T (SWG)	T
1/4	0.28	0.63	16.00	0.06
5/16	0.34	0.75	14.00	0.08
3/8	0.42	0.88	14.00	0.08
7/16	0.47	1.00	12.00	0.10
1/2	0.56	1.13	12.00	0.10
9/16	0.63	1.25	10.00	0.13
5/8	0.69	1.38	10.00	0.13
3/4	0.81	1.63	9.00	0.14
7/8	0.94	1.88	8.00	0.16
1	1.06	2.13	7.00	0.18
1.1/8	1.19	2.38	7.00	0.18
1.1/4	1.38	2.63	6.00	0.19
1.3/8	1.50	2.88	6.00	0.19
1.1/2	1.63	3.13	6.00	0.19
1.5/8	1.75	3.38	5.00	0.21
1.3/4	1.88	3.63	5.00	0.21
1.7/8	2.00	3.88	5.00	0.21
2	2.13	4.13	5.00	0.21

- Dimensions in inches
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

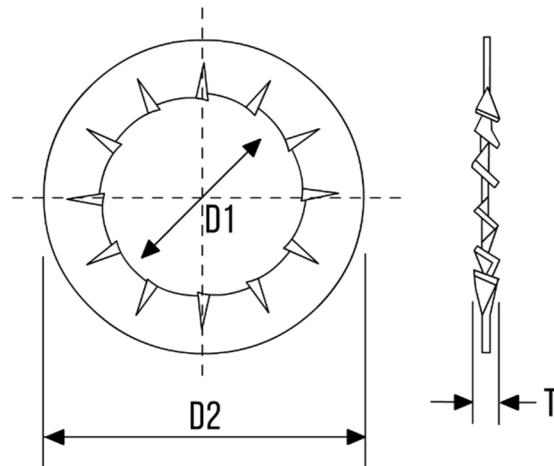
SPRING WASHERS (IMPERIAL) – SQUARE SECTION BS1802



DIA	D1 (MAX)	D1 (MIN)	D2 (MAX)	S	SWG
1/8	0.137	0.129	0.205	0.032	21.00
5/32	0.170	0.160	0.252	0.040	19.00
3/16	0.202	0.192	0.330	0.064	16.00
1/4	0.267	0.255	0.425	0.072	15.00
5/16	0.334	0.320	0.503	0.800	14.00
3/8	0.399	0.383	0.590	0.920	13.00
7/16	0.461	0.445	0.677	0.104	12.00
1/2	0.524	0.508	0.763	0.116	11.00
9/16	0.590	0.570	0.880	0.128	10.00
5/8	0.660	0.636	0.976	0.144	9.00
3/4	0.790	0.762	1.165	0.176	7.00
7/8	9.250	0.890	1.360	0.212	5.00
1	1.052	1.016	1.526	0.232	4.00
1.1/8	1.184	1.145	1.690	0.252	3.00

- Dimensions in inches
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

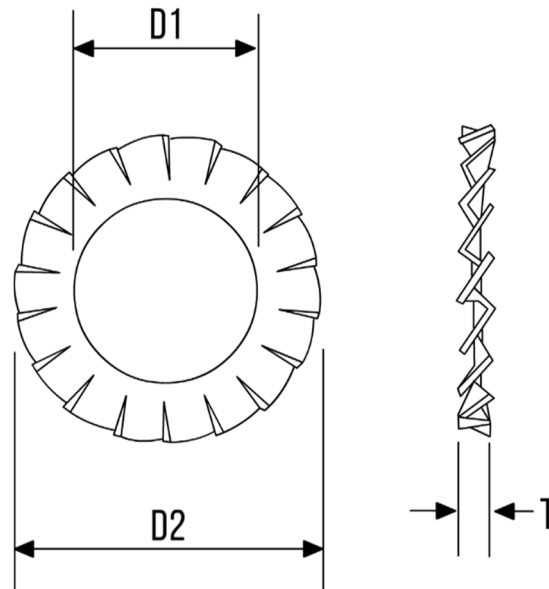
INTERNAL SERRATED LOCK WASHERS – DIN6798 (FAN DISC)



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40
M22	23.00	36.00	1.50
M24	25.00	38.00	1.50

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

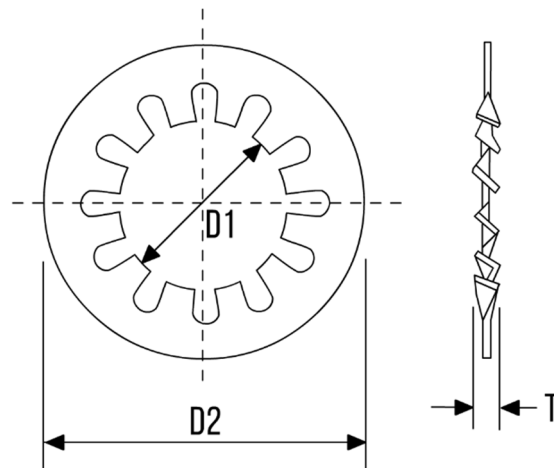
EXTERNAL SERRATED LOCK WASHERS – DIN6798J (FAN DISC)



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40
M22	23.00	36.00	1.50
M24	25.00	38.00	1.50

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

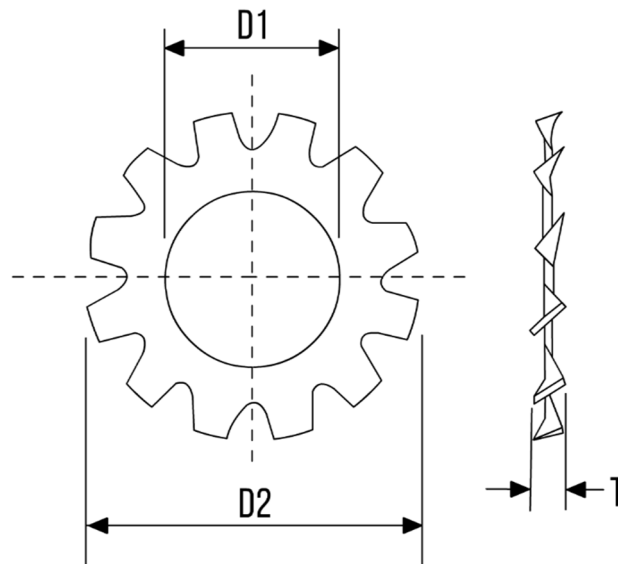
INTERNAL TOOTHED LOCK WASHERS – DIN6797J



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

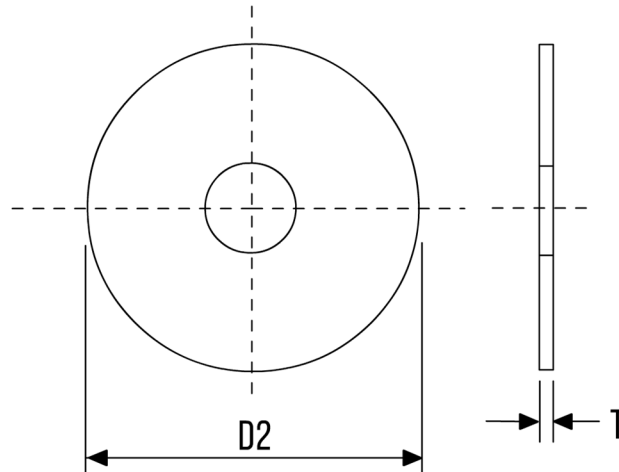
EXTERNAL TOOTHED LOCK WASHERS – DIN6797A



DIA	D1	D2	T
M3	3.20	6.00	0.40
M4	4.30	8.00	0.50
M5	5.30	9.00	0.50
M6	6.40	11.00	0.70
M8	8.40	15.00	0.80
M10	10.50	18.00	0.90
M12	12.50	20.50	1.00
M14	14.50	24.00	1.00
M16	16.50	26.00	1.20
M18	19.00	30.00	1.40
M20	21.00	33.00	1.40

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

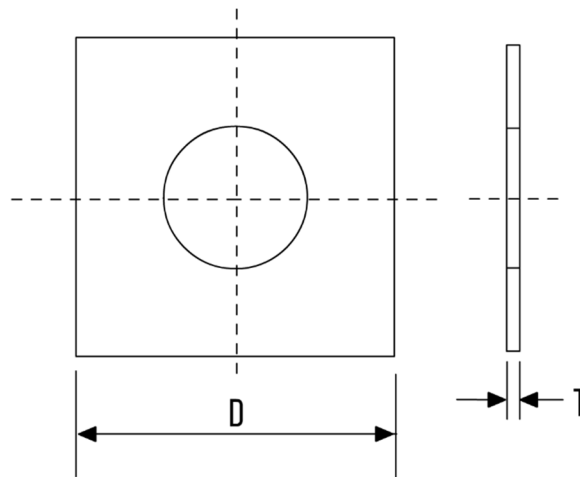
REPAIR (PENNY) WASHERS – DIN9021



DIA	D2	T
M5	20	1.50
M5	25	1.50
M5	30	1.50
M6	20	1.50
M6	25	1.50
M6	30	1.50
M6	40	1.50
M6	50	1.50
M8	25	1.50
M8	30	1.50
M8	40	1.50
M8	50	1.50
M10	25	1.50
M10	30	1.50
M10	40	1.50
M10	50	1.50
M12	38	1.50
M12	50	1.50

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

SQUARE PLATE WASHERS (ROUND HOLE) – DIN1587



DIA	D	T
M8	40x40	3
M10	40x40	3
M10	50x50	3
M12	40x40	3
M12	50x50	3
M12	65x65	6
M16	50x50	3
M16	75x75	6
M20	50x50	3
M20	75x75	6

- Dimensions in millimetres
- Available in Mild Steel and A2 & A4 Stainless Steel
- Other materials manufactured on request

STUDBOLT 
SCOTLAND LIMITED
PETROCHEMICAL AND INDUSTRIAL GRADE FASTENERS AND SUPPLIES



www.studboltscotland.co.uk



sales@studboltscotland.co.uk



8 Abbotsinch Road
Grangemouth
FK3 9UX



01324 473355