Technical Data Contents

Technical Data

Self-Tapping Screws

Self Tapping Screws Gimlet Point
Gimlet point self-tapping screws have various references depending on the standard.
BS 4174 referred to as **Type AB**
DIN 7970 referred to as **Type B**
ISO 1478 referred to as **Type C**

Self Tapping Screws Blunt Point
Blunt point self-tapping screws have various references depending on the standard.
BS 4174 referred to as **Type B**
DIN 7970 referred to as **Type BZ**
ISO 1478 referred to as **Type F**

* Max countersunk head diameters are theoretical diameters of head to sharp corners and are the diameter to which holes should be countersunk to enable the screwheads to fit flush with the surface.

Manufacturing Standards for **Head Dimensions**

HEAD DIMENSIONS BS4174 STANDARD

GAUGE	METRIC REF	C/R PAN		SLOTTED PAN				C/R FLANGE		C/R CSK (80°)		SLOTTED CSK (80°)				C/R RSD CSK (80°)		SLOTTED RSD CSK (80°)				HEX	
		BS4174		BS4174				BS4174		BS4174		BS4174				BS4174		BS4174				BS4174	
		DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	SLOT WIDTH MAX	SLOT DEPTH NOM	DIA MAX	DEPTH MAX	*DIA MAX	DEPTH REF	*DIA MAX	DEPTH REF	SLOT WIDTH MAX	SLOT DEPTH NOM	*DIA MAX	DEPTH REF	*DIA MAX	DEPTH REF	SLOT WIDTH MAX	SLOT DEPTH NOM	A/F MAX	DEPTH MAX
2	2.2	4.24	1.57	4.24	1.35	0.79	0.68	-	-	4.37	1.30	4.37	1.30	0.79	0.48	4.37	1.30	4.37	1.30	0.79	1.04	-	-
4	2.9	5.56	2.03	5.56	1.73	0.99	0.89	6.53	1.60	5.71	1.70	5.71	1.70	0.99	0.63	5.71	1.70	5.71	1.70	0.99	1.37	4.75	2.03
6	3.5	6.86	2.46	6.86	2.08	1.22	1.12	8.15	1.88	7.09	2.11	7.09	2.11	1.22	0.79	7.09	2.11	7.09	2.11	1.22	1.70	6.35	2.79
7	3.9	-	-	-	-	-	-	8.90	2.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	4.2	8.18	2.92	8.18	2.44	1.37	1.32	9.75	2.36	8.43	2.54	8.43	2.54	1.37	0.94	8.43	2.54	8.43	2.54	1.37	2.03	6.35	2.92
10	4.8	9.47	3.38	9.47	2.79	1.52	1.55	11.38	2.90	9.78	2.95	9.78	2.95	1.52	1.12	9.78	2.95	9.78	2.95	1.52	2.39	7.92	3.05
12	5.5	10.80	3.84	10.80	3.18	1.70	1.75	13.00	3.15	11.13	3.35	11.13	3.35	1.70	1.27	11.13	3.35	11.13	3.35	1.70	2.72	7.92	3.94
14	6.3	12.50	4.44	12.50	3.66	1.90	2.01	14.55	3.68	12.88	3.89	12.88	3.89	1.90	1.47	12.88	3.89	12.88	3.89	1.90	3.15	9.53	4.83

Tolerances to BS 4174

HEAD DIMENSIONS DIN STANDARDS

GAUGE	METRIC REF	C/R PAN		SLOTTED PAN				C/R CSK (80°)		SLOTTED CSK (80°)				C/R RSD CSK (80°)		SLOTTED RSD CSK (80°)				HEX	
		DIN 7981		DIN 7971				DIN 7982		DIN 7972				DIN 7983		DIN 7973				DIN 7976	
		DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	SLOT WIDTH NOM	SLOT DEPTH MAX	*DIA MAX	DEPTH REF	*DIA MAX	DEPTH REF	SLOT WIDTH NOM	SLOT DEPTH MAX	*DIA MAX	DEPTH REF	*DIA MAX	DEPTH REF	SLOT WIDTH NOM	SLOT DEPTH MAX	A/F	DEPTH NOM
2	2.2	4.2	1.8	4.2	1.35	0.6	0.8	4.3	1.3	4.3	1.3	0.6	0.6	4.3	1.3	4.3	1.3	0.6	1.15	3.2	1.3
4	2.9	5.6	2.2	5.6	1.75	0.8	1.0	5.5	1.7	5.5	1.7	0.8	0.75	5.5	1.7	5.5	1.7	0.8	1.5	5.0	1.5
6	3.5	6.9	2.6	6.9	2.1	1.0	1.25	6.8	2.1	6.8	2.1	1.0	0.95	6.8	2.1	6.8	2.1	1.0	1.9	5.5	2.3
7	3.9	7.5	2.8	7.5	2.25	1.0	1.4	7.5	2.3	7.5	2.3	1.0	1.05	7.5	2.3	7.5	2.3	1.0	2.05	7.0	2.3
8	4.2	8.2	3.05	8.2	2.45	1.2	1.5	8.1	2.5	8.1	2.5	1.2	1.15	8.1	2.5	8.1	2.5	1.2	2.25	7.0	2.8
10	4.8	9.5	3.55	9.5	2.8	1.2	1.7	9.5	3.0	9.5	3.0	1.2	1.35	9.5	3.0	9.5	3.0	1.2	2.6	8.0	3.0
12	5.5	10.8	3.95	10.8	3.2	1.6	1.95	10.8	3.4	10.8	3.4	1.6	1.5	10.8	3.4	10.8	3.4	1.6	2.95	8.0	4.0
14	6.3	12.5	4.55	12.5	3.65	1.6	2.2	12.4	3.8	12.4	3.8	1.6	1.75	12.4	3.8	12.4	3.8	1.6	3.45	10.0	4.8

Tolerances to DIN 267

HEAD DIMENSIONS ISO STANDARDS

GAUGE	METRIC REF	C/R PAN		SLOTTED PAN				C/R CSK (90°)				SLOTTED CSK (90°)				C/R RSD CSK (90°)		SLOTTED RSD CSK (90°)				HEX	
		ISO 7049		ISO 1481				ISO 7050				ISO 1482				ISO 7051		ISO 1483				ISO 1479	
		DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	SLOT WIDTH NOM	SLOT DEPTH MIN	*DIA MAX	DIA ACTUAL MAX	DIA ACTUAL MIN	DEPTH REF	*DIA MAX	DEPTH MAX	SLOT WIDTH NOM	SLOT DEPTH MAX	*DIA MAX	DEPTH MAX	*DIA MAX	DEPTH MAX	SLOT WIDTH NOM	SLOT DEPTH MAX	A/F	DEPTH MAX
2	2.2	4.0	1.6	4.0	1.3	0.5	0.5	4.4	3.8	3.5	1.1	4.4	1.1	0.5	0.6	4.4	1.1	4.4	1.1	0.5	1.0	3.2	1.6
4	2.9	5.6	2.4	5.6	1.8	0.8	0.7	6.3	5.5	5.2	1.7	6.3	1.7	0.8	0.85	6.3	1.7	6.3	1.7	0.8	1.45	5.0	2.3
6	3.5	7.0	2.6	7.0	2.1	1.0	0.8	8.2	7.3	6.9	2.35	8.2	2.35	1.0	1.2	8.2	2.35	8.2	2.35	1.0	1.7	5.5	2.6
7	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	4.2	8.0	3.1	8.0	2.4	1.2	1.0	9.4	8.4	8.0	2.6	9.4	2.6	1.2	1.3	9.4	2.6	9.4	2.6	1.2	1.9	7.0	3.0
10	4.8	9.5	3.7	9.5	3.0	1.2	1.2	10.4	9.3	8.9	2.8	10.4	2.8	1.2	1.4	10.4	2.8	10.4	2.8	1.2	2.4	8.0	3.8
12	5.5	11.0	4.0	11.0	3.2	1.6	1.3	11.5	10.3	9.9	3.0	11.5	3.0	1.6	1.5	11.5	3.0	11.5	3.0	1.6	2.6	8.0	4.1

Tolerances to ISO 4759/1

E. & O. E.

Technical Data

Self-Tapping Screws

Self Tapping Screws
Gimlet Point
Gimlet point self-tapping screws have various references depending on the standard.
BS 4174 referred to as **Type AB**
DIN 7970 referred to as **Type B**
ISO 1478 referred to as **Type C**

Self Tapping Screws
Blunt Point
Blunt point self-tapping screws have various references depending on the standard.
BS 4174 referred to as **Type B**
DIN 7970 referred to as **Type BZ**
ISO 1478 referred to as **Type F**

Manufacturing Standards for **Thread Dimensions & Mechanical Properties**

THREAD DIMENSIONS

GAUGE	METRIC REF	T.P.I.	MAJOR DIA MAX	MAJOR DIA MIN			MINOR DIA MAX	MINOR DIA MIN		
			BS, DIN, ISO	BS	DIN	ISO	BS, DIN, ISO	BS	DIN	ISO
2	2.2	32	2.24	2.13	2.10	2.10	1.63	1.52	1.52	1.52
4	2.9	24	2.90	2.79	2.76	2.76	2.18	2.08	2.08	2.08
6	3.5	20	3.53	3.43	3.35	3.35	2.64	2.51	2.51	2.51
7	3.9	19	3.91	3.78	3.73	3.73	2.92	2.77	2.77	2.77
8	4.2	18	4.22	4.09	4.04	4.04	3.10	2.95	2.95	2.95
10	4.8	16	4.80	4.65	4.62	4.62	3.58	3.43	3.43	3.43
12	5.5	14	5.46	5.31	5.28	5.28	4.17	3.99	3.99	3.99
14	6.3	14	6.25	6.10	6.03	6.03	4.88	4.70	4.70	4.70

MECHANICAL PROPERTIES

GAUGE	MIN TORSIONAL LOAD NM
2	0.45
4	1.47
6	2.70
7	3.55
8	4.40
10	6.30
12	9.90
14	16.00

RECESS SIZE

GAUGE	CRUCIFORM	T-DRIVE®	
		PAN	CSK
2	1	T8	-
4	1	T10	T8
6	2	T15	T10
7	2	T15	T15
8	2	T20	T20
10	2	T25	T25
12	3	T27	T25
14	3	T30	T30

Manufacturing Standards for **Length Tolerances**

LENGTH TOLERANCES (BS4174)

LENGTH		TYPE AB				TYPE B			
		MAX		MIN		MAX		MIN	
MM NOM	INCH NOM	MM	INCH	MM	INCH	MM	INCH	MM	INCH
3.2	1/8	3.78	0.149	2.58	0.102	3.18	0.125	2.58	0.102
4.5	3/16	5.36	0.211	4.16	0.164	4.76	0.188	4.16	0.164
6.5	1/4	7.10	0.280	5.60	0.220	6.35	0.250	5.60	0.220
7.9	5/16	8.73	0.342	7.10	0.282	7.94	0.312	7.19	0.282
9.5	3/8	10.27	0.404	8.77	0.345	9.52	0.375	8.77	0.345
13	1/2	13.60	0.535	11.80	0.465	12.70	0.500	11.80	0.465
16	5/8	16.78	0.661	14.98	0.590	15.88	0.625	14.98	0.590
19	3/4	20.10	0.791	18.00	0.709	19.05	0.750	18.00	0.709
22	7/8	23.27	0.916	21.17	0.833	22.22	0.875	21.17	0.833
25	1	26.45	1.041	24.35	0.959	25.40	1.000	24.35	0.959
32	1 1/4	33.00	1.300	30.50	1.201	31.75	1.250	30.50	1.201
38	1 1/2	39.35	1.549	36.85	1.451	38.10	1.500	36.85	1.451
45	1 3/4	45.70	1.799	43.20	1.701	44.45	1.750	43.20	1.701
50	2	52.30	2.059	49.30	1.941	50.80	2.000	49.30	1.941

LENGTH TOLERANCES (DIN 267)

LENGTH	TYPE B		TYPE BZ	
MM NOM	MAX	MIN	MAX	MIN
4.5	5.10	3.90	4.5	3.9
6.5	7.10	5.90	6.5	5.75
9.5	10.25	8.75	9.5	8.75
13	13.90	12.10	13.0	12.1
16	16.90	15.10	16.0	15.10
19	20.05	17.95	19.0	17.95
22	23.05	20.95	22.0	20.95
25	26.05	23.95	25.0	23.95
32	33.25	30.75	32.0	30.75
38	39.25	36.75	38.0	36.75
45	46.25	43.75	45.0	43.75
50	51.25	48.75	50.0	48.50

LENGTH TOLERANCES (ISO 4759/1)

LENGTH	TYPE C		TYPE F	
MM NOM	MAX	MIN	MAX	MIN
4.5	5.3	3.7	4.5	3.7
6.5	7.3	5.7	6.5	5.7
9.5	10.3	8.7	9.5	8.7
13	13.8	12.2	13.0	12.2
16	16.8	15.2	16.0	15.2
19	19.8	18.2	19.0	18.2
22	22.8	21.2	22.0	20.7
25	25.8	24.2	25.0	23.7
32	33.3	30.7	32.0	30.7
38	39.3	36.7	38.0	36.7
45	46.3	43.7	45.0	43.5
50	51.3	48.7	50.0	48.5

Dimensions in Millimetres

Technical Data

Self-Tapping Screws

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Due to the variety of the hardness of metals and the different operating conditions, it may be found necessary to vary these dimensions which should be used only as a guide.

Recommended Hole Sizes

GAUGE	METRIC REF	METAL THICKNESS		PIERCED OR EXTRUDED HOLE DIAMETER	DRILLED OR CLEAN PUNCHED HOLES	
					HOLE DIAMETER	
		MM	INCHES	INCHES	MM	INCHES
2	2.2	0.45 0.91 1.62	0.018 0.036 0.064	- - -	1.60 1.85 1.95	0.063 0.073 0.077
4	2.9	0.45 0.91 1.62 2.03	0.018 0.036 0.064 0.080	- 0.098 - -	2.05 2.30 2.40 2.60	0.081 0.091 0.095 0.102
6	3.5	0.45 0.91 1.62 2.03 2.64	0.018 0.036 0.064 0.080 0.104	- 0.111 - - -	2.35 2.80 2.95 3.10 3.20	0.092 0.110 0.116 0.122 0.126
8	4.2	0.71 0.91 1.22 1.62 2.64 3.18	0.028 0.036 0.048 0.064 0.104 0.125	- 0.136 - - - -	2.90 3.10 3.20 3.40 3.70 3.80	0.114 0.122 0.126 0.134 0.146 0.150
10	4.8	0.71 1.22 1.62 2.64 3.18 4.75	0.028 0.048 0.064 0.104 0.125 0.187	- - - - - -	3.40 3.60 3.80 4.10 4.30 4.50	0.134 0.142 0.150 0.161 0.169 0.177
12	5.5	0.71 1.22 1.62 2.64 3.18 4.75	0.028 0.048 0.064 0.104 0.125 0.187	- - - - - -	4.10 4.30 4.50 4.80 4.90 5.10	0.161 0.169 0.177 0.189 0.193 0.201
14	6.3	1.22 1.62 2.03 3.18 4.75 6.35	0.048 0.064 0.080 0.125 0.187 0.250	- - - - - -	4.80 5.20 5.40 5.70 5.90 6.00	0.189 0.205 0.213 0.224 0.232 0.236

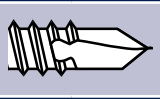
Self-Drilling Screws

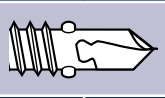
Manufacturing
Standard DIN 7504

Head Dimensions, Drilling Range & Recess Sizes

GAUGE	METRIC	HEAD DIMENSIONS																			
																					
		PAN		PAN		CSK (80°)		CSK (90°)		INDENTED WASHER HEX				RAISED CSK (80°)		INDENTED WASHER HEX				FLANGE	
		DIN 7504 - N		DIN 7504 - M		DIN 7504 - P		DIN 7504 - O		DIN 7504 - K				DIN 7504 - Q		DIN 7504 - L				DIN 7504 SIMILAR	
		DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	DIA MAX	DEPTH REF	DIA MAX	DEPTH REF	HEX A/F MAX	HEX DEPTH MIN	WASHER DIA MAX	TOTAL DEPTH MAX	DIA MAX	DEPTH REF	HEX A/F MAX	HEX DEPTH MIN	WASHER DIA MAX	TOTAL DEPTH MAX	DIA MAX	DEPTH MAX
4	2.9	5.6	2.2	5.6	2.4	5.5	1.7	5.5	1.7	-	-	-	-	5.5	1.7	-	-	-	-	-	-
6	3.5	6.9	2.6	7.0	2.6	6.8	2.1	7.3	2.35	5.5	1.55	8.3	3.45	6.8	2.1	5.5	1.55	8.3	3.45	-	-
7	3.9	7.5	2.8	7.5	2.8	7.5	2.3	-	-	5.5	1.55	8.3	3.45	7.5	2.3	5.5	1.55	8.3	3.45	-	-
8	4.2	8.2	3.05	8.0	3.1	8.1	2.5	8.4	2.6	7.0	1.9	8.8	4.25	8.1	2.5	7.0	1.9	8.8	4.25	10.92	2.36
10	4.8	9.5	3.55	9.5	3.7	9.5	3.0	9.3	2.8	8.0	2.0	10.5	4.45	9.5	3.0	8.0	2.0	10.5	4.45	11.40	2.40
12	5.5	10.8	3.95	11.0	4.0	10.8	3.4	10.3	3.0	8.0	2.7	11.0	5.45	10.8	3.4	8.0	2.7	11.0	5.45	-	-
14	6.3	12.5	4.55	12.0	4.6	12.4	3.8	11.3	3.15	10.0	3.3	13.2	6.45	12.4	3.8	10.0	3.3	13.2	6.45	-	-

Dimensions in Millimetres

GAUGE	METRIC	DRILLING RANGE TO DIN7504		GAUGE	METRIC	RECESS SIZE		
								
		SHEET METAL OR PLATE THICKNESS				CR (H)	SQ DRIVE	T-DRIVE®
		FROM	TO					
4	2.9	0.7	1.9	2.9	4	1	-	T10
6	3.5	0.7	2.25	3.5	6	2	1	T15
7	3.9	0.7	2.4	3.9	7	2	2	T15
8	4.2	1.75	3.0	4.2	8	2	2	T20
10	4.8	1.75	4.40	4.8	10	2	-	T25
12	5.5	1.75	5.25	5.5	12	3	-	T27
14	6.3	2.0	6.0	6.3	14	3	-	T30

GAUGE	METRIC	SELF-DRILLING SCREWS WITH WINGS AND UNDERHEAD RIBS	
			
		DRILL POINT	DRILL LENGTH
8	4.2	2	4.50 - 5.50
10	4.8*	2	4.50 - 5.50
10	4.8**	3	6.00 - 7.00
12	5.5	3	7.00 - 8.00
14	6.3	3	8.00 - 9.00

4.8* - Screw Lengths under 13mm (INCL.)
4.8** - Screw Lengths over 13mm

T-Drive® is a registered trade mark of Lancaster Fastener Co Ltd
E. & O. E.

Technical Data

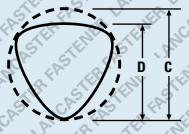
Tap-Fix® Screws

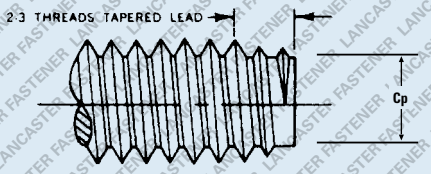
METRIC Series Thread Rolling Screws for Metal Applications

METRIC Series
Thread and Heads to
DIN 7500

Head Dimensions, Thread Dimensions & Length Tolerances

SCREW SIZE DIA & PITCH	HEAD DIMENSIONS															
	PAN				CSK (90°)				INDENTED WASHER HEXAGON				SOCKET CAP			
	FORM C DIN 7985				FORM M DIN 965				FORM D (EQUIVALENT)				FORM E (SIMILAR)			
	DIA MAX	DEPTH MAX	RECESS SIZE		DIA MAX	DEPTH REF	RECESS SIZE		HEX		WASHER DIA MAX	TOTAL DEPTH MAX	DIA MAX	DEPTH MAX	RECESS SIZE	
			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®	A/F MAX	DEPTH MAX					T-DRIVE®	A/F
M2 X .4	4	1.72	1	T6	3.8	1.2	1	T6	-	-	-	-	3.80	2.00	-	1.50
M2.5 X .45	5	2.12	1	T8	4.7	1.5	1	T8	-	-	-	-	4.50	2.50	-	2.00
M3 X .5	6	2.52	1	T10	5.6	1.65	1	T10	5.0	1.90	6.30	2.40	5.50	3.00	-	2.50
M3.5 X .6	7	2.82	2	T15	6.5	1.93	2	T15	-	-	-	-	-	-	-	-
M4 X .7	8	3.25	2	T20	7.5	2.2	2	T20	5.5/7	2.80/3.20	8.30/8.80	3.50/4.10	7.00	4.00	T20	3.00
M5 X .8	10	3.95	2	T25	9.2	2.5	2	T25	8	3.40	10.40	4.50	8.50	5.00	T25	4.00
M6 X 1	12	4.75	3	T30	11	3	3	T30	10	4.00	13.00	5.20	10.00	6.00	T30	5.00
M8 X 1.25	16	6.15	4	T40	14.5	4	4	T40	13	5.60	16.90	7.00	13.00	8.00	T40	6.00
M10 X 1.5	20	7.68	4	T50	18	5	4	T50	17	7.16	22.10	9.00	16.00	10.00	T50	8.00





THREAD & STRENGTH STANDARDS						TORSIONAL STRENGTH MIN Nm
SCREW SIZE DIA & PITCH	BODY DIAMETER				POINT DIA. Cp (Max)	
	C		D			
	MAX	MIN	MAX	MIN		
M2 x .4	2.06	1.98	1.98	1.90	1.67	0.5
M2.5 x .45	2.57	2.48	2.48	2.39	2.13	1.0
M3 x .5	3.07	2.98	2.97	2.88	2.58	1.5
M3.5 x .6	3.58	3.48	3.46	3.36	3.00	2.3
M4 x .7	4.08	3.98	3.94	3.84	3.40	3.4
M5 x .8	5.09	4.98	4.93	4.82	4.31	7.1
M6 x 1	6.10	5.97	5.90	5.77	5.13	12
M8 x 1.25	8.13	7.97	7.88	7.72	6.91	29
M10 x 1.5	10.15	9.97	9.85	9.67	8.69	59

SUGGESTED PILOT HOLE SIZES										
MATERIAL	S	A	S	A	S	A	S	A	S	A
THICKNESS	.5 - 2		1.5 - 3.5		3 - 6.5		6 - 8		8 - 12	
DIA & PITCH										
M2 X .4	1.75	1.7	1.8	1.75	-	-	-	-	-	-
M2.5 X .45	2.25	2.2	2.3	2.25	2.35	2.3	-	-	-	-
M3 X .5	2.7	2.6	2.75	2.7	2.8	2.75	-	-	-	-
M3.5 X .6	3.1	3.1	3.2	3.1	3.2	3.2	3.25	3.2	3.3	3.25
M4 X .7	3.6	-	3.7	3.6	3.75	3.7	3.75	3.7	3.8	3.75
M5 X .8	-	-	4.5	4.5	4.6	4.5	4.7	4.6	4.7	4.7
M6 X 1	-	-	5.4	5.4	5.5	5.4	5.6	5.5	5.7	5.6
M8 X 1.25	-	-	7.3	7.3	7.4	7.3	7.5	7.4	7.6	7.5
M10 X 1.5	-	-	-	-	9.25	9.2	9.3	9.25	9.4	9.3

LENGTH TOLERANCES		
SCREW SIZE	NOM LENGTH MM	TOL MM
M2 - M10	5mm	+/- 0.25
	6mm	+/- 0.25
	8mm	+/- 0.3
	10mm	+/- 0.3
	12mm	+/- 0.35
	16mm	+/- 0.35
	20mm	+/- 0.4
	25mm	+/- 0.4
	30mm	+/- 0.4
	40mm	+/- 0.5

Dimensions in Millimetres

Technical Data

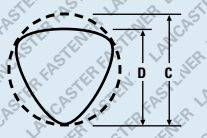
Tap-Fix® Screws

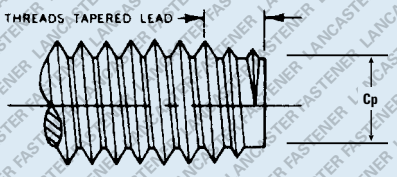
UNIFIED Series Thread Rolling Screws for Metal Applications

UNIFIED Series
UNC

Head Dimensions, Thread Dimensions & Length Tolerances

SCREW SIZE DIA & PITCH	HEAD DIMENSIONS												
	PAN				CSK (80°)				FORGED HEX		INDENTED WASHER HEX		
	ANSI B18.6.4				ANSI B18.6.4				ANSI B18.6.4		ANSI B18.6.4		
	DIA MAX	DEPTH MAX	RECESS SIZE		ABSOLUTE MAX DIA (SHARP EDGE)	DEPTH (ref)	RECESS SIZE		WIDTH A/F MAX	DEPTH MAX	HEX		WASHER DIA MAX	TOTAL DEPTH MAX
			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®			A/F MAX	DEPTH MAX		
2 - 56	.167	.062	1	T8	.172	.051	1	T6	.125	.050	.125	.050	.166	.066
4 - 40	.219	.080	1	T10	.225	.067	1	T8	.188	.060	.188	.060	.243	.079
6 - 32	.270	.097	2	T15	.279	.083	2	T10	.250	.093	.250	.093	.328	.118
8 - 32	.322	.115	2	T20	.332	.100	2	T15	.250	.110	.250	.110	.348	.141
10 - 24/32	.373	.133	2	T25	.385	.116	2	T20	.312	.120	.312	.120	.414	.151
1/4 - 20	.492	.175	3	T30	.507	.153	3	T27	.375	.190	.375	.190	.520	.240
5/16 - 18	.615	.218	4	T40	.635	.191	4	T40	.500	.230	.500	.230	.676	.285
3/8 - 16	.740	.261	4	T45	.762	.230	4	T40	.562	.295	.562	.295	.780	.358





SCREW SIZE DIA & PITCH	THREAD & STRENGTH STANDARDS					TORSIONAL STRENGTH MIN lbf in
	BODY DIAMETER				POINT DIA. Cp (Max)	
	C		D			
	MAX	MIN	MAX	MIN		
2 - 56	.0875	.0835	.0840	.0800	.070	6
4 - 40	.1145	.1105	.1095	.1055	.090	16
6 - 32	.1410	.1350	.1350	.1290	.111	24
8 - 32	.1670	.1610	.1610	.1550	.137	52
10 - 24	.1940	.1880	.1860	.1800	.153	65
10 - 32	.1930	.1870	.1870	.1810	.163	81
1/4 - 20	.2550	.2490	.2450	.2390	.206	176
5/16 - 18	.3180	.3120	.3070	.3010	.264	340
3/8 - 16	.3810	.3750	.3685	.3625	.320	620

SUGGESTED PILOT HOLE SIZES										
MATERIAL	S	A	S	A	S	A	S	A	S	A
THICKNESS	.020 - .060		.060 - .125		.125 - .250		.250 - .315		.315 - .500	
DIA & PITCH										
2 - 56	.076	.076	.079	.079	.079	.079	-	-	-	-
4 - 40	.098	.098	.102	.100	.104	.102	-	-	-	-
6 - 32	.120	.120	.120	.120	.125	.125	.128	.125	-	-
8 - 32	-	-	.147	.147	.150	.150	.154	.152	-	-
10 - 24	-	-	.166	.166	.172	.166	.177	.170	-	-
10 - 32	-	-	.173	.173	.177	.173	.180	.177	-	-
1/4 - 20	-	-	.219	.219	.224	.221	.228	.224	.234	.228
5/16 - 18	-	-	.281	.281	.281	.281	.285	.285	.290	.287
3/8 - 16	-	-	-	-	.344	.339	.348	.344	.354	.348

LENGTH TOLERANCES		
SCREW SIZE	NOM. LENGTH INCHES	TOL INCHES
2.56 - 3/8.16	3/8 AND BELOW	+0/-0.031
	3/4 AND BELOW	+0/-0.031
	1 1/2 AND BELOW	+0/-0.046
	ABOVE 1 1/2	+0/-0.062

Dimensions in Inches

Technical Data

Rolled Thread Machine Screws

METRIC Series

Head Dimensions & Length Tolerances

HEAD DIMENSIONS

SCREW SIZE	PAN DIN 7985				CSK (90°) DIN 965				SLOTTED CHEESE DIN 84				SLOTTED PAN DIN 85				SLOTTED CSK (90°) DIN 963			
	DIA MAX	DEPTH MAX	RECESS SIZE		DIA MAX	DEPTH REF	RECESS SIZE		DIA MAX	DEPTH REF	SLOT WIDTH REF	SLOT DEPTH MAX	DIA MAX	DEPTH REF	SLOT WIDTH REF	SLOT DEPTH MAX	DIA MAX	DEPTH REF	SLOT WIDTH REF	SLOT DEPTH MAX
			CROSS RECESS	T-DRIVE®			CROSS RECESS	T-DRIVE®												
M1.6	3.20	1.42	0	T5	3.00	0.96	0	T5	-	-	-	-	-	-	-	-	-	-	-	-
M2	4.00	1.72	1	T6	3.80	1.20	1	T6	3.8	1.3	0.5	0.8	-	-	-	-	3.8	1.2	0.5	0.6
M2.5	5.00	2.12	1	T8	4.70	1.50	1	T8	4.5	1.6	0.6	0.9	-	-	-	-	4.7	1.5	0.6	0.7
M3	6.00	2.52	1	T10	5.60	1.65	1	T10	5.5	2.0	0.8	1.15	6.0	1.8	0.8	0.95	5.6	1.65	0.8	0.85
M3.5	7.00	2.82	2	T15	6.50	1.93	2	T15	6.0	2.4	0.8	1.4	7.0	2.1	0.8	1.1	6.5	1.93	0.8	1.0
M4	8.00	3.25	2	T20	7.50	2.20	2	T20	7.0	2.6	1.0	1.5	8.0	2.4	1.0	1.3	7.5	2.2	1.0	1.1
M5	10.00	3.95	2	T25	9.20	2.50	2	T25	8.5	3.3	1.2	1.8	10.0	3.0	1.2	1.5	9.2	2.5	1.2	1.3
M6	12.00	4.75	3	T30	11.00	3.00	3	T30	10.0	3.9	1.6	2.2	12.0	3.6	1.6	1.9	11.0	3.0	1.6	1.6
M8	16.00	6.15	4	T40	14.50	4.00	4	T40	13.0	5.0	2.0	2.6	16.0	4.8	2.0	2.4	14.5	4.0	2.0	2.1
M10	-	-	-	-	-	-	-	-	16.0	6.0	2.5	3.0	20.0	6.0	2.5	3.0	18.0	5.0	2.5	2.6

LENGTH TOLERANCES

SCREW SIZE	NOM LENGTH MM	TOL MM
M2 - M10	4mm - 6mm	+/-0.25
	8mm - 10mm	+/-0.30
	12mm - 18mm	+/-0.35
	20mm - 30mm	+/-0.40
	35mm - 50mm	+/-0.50
	55mm - 80mm	+/-1.00
	85mm -100mm	+/-1.15

Dimensions in Millimetres

T-Drive® is a registered trade mark of Lancaster Fastener Co Ltd

E. & O. E.

Rolled Thread Machine Screws

UNIFIED Series
UNC

Head Dimensions & Length Tolerances

HEAD DIMENSIONS						
SCREW SIZE DIA & PITCH	PAN ANSI B18.6.4			CSK (80°) ANSI B18.6.4		
	DIA MAX	DEPTH MAX	RECESS SIZE CR (Z)	DIA MAX	DEPTH REF	RECESS SIZE CR (Z)
2 - 56	0.167	0.062	1	0.172	0.051	1
4 - 40	0.219	0.080	1	0.225	0.067	1
6 - 32	0.270	0.097	2	0.279	0.083	2
8 - 32	0.322	0.115	2	0.332	0.100	2
10 - 24	0.373	0.133	2	0.385	0.116	2
1/4 - 20	0.492	0.175	3	0.507	0.153	3

LENGTH TOLERANCES		
SCREW SIZE	NOM LENGTH INCHES	TOL INCHES
2-56 UNC - 1/4-20 UNC	3/16″ - 1″	+.00/-.03
	1 1/8″ - 1 1/4″	+.00/-.06

Dimensions in Inches

Technical Data

Tamper Proof Machine Screws

METRIC Series Tamper Proof Screws for Metal Applications

Head Dimensions & Recess Sizes

PROTECTOR 4 - PIN T-DRIVE®

SCREW SIZE	PAN			COUNTERSUNK			BUTTON			COUNTERSUNK		
	DIN 7985 SIMILAR STEEL ZINC PLATED			DIN 965 SIMILAR STEEL ZINC PLATED			ISO 7380 SIMILAR A2 STAINLESS STEEL			DIN 7991 SIMILAR A2 STAINLESS STEEL		
	DIA MAX	DEPTH MAX	RECESS SIZE	DIA MAX	DEPTH REF	RECESS SIZE	DIA MAX	DEPTH MAX	RECESS SIZE	DIA MAX	DEPTH REF	RECESS SIZE
M1.6	3.20	1.42	T5	3.00	0.96	T5	-	-	-	-	-	-
M2	4.00	1.72	T6	3.80	1.20	T6	-	-	-	-	-	-
M2.5	5.00	2.12	T8	4.70	1.50	T8	-	-	-	-	-	-
M3	6.00	2.52	T10	5.60	1.65	T10	5.70	1.65	T10	6.00	1.70	T10
M3.5	7.00	2.82	T15	6.50	1.93	T15	6.60	1.90	T15	7.00	2.00	T15
M4	8.00	3.25	T20	7.50	2.20	T20	7.60	2.20	T20	8.00	2.30	T20
M5	10.00	3.95	T25	9.20	2.50	T25	9.50	2.80	T25	10.00	2.80	T25
M6	12.00	4.75	T30	11.00	3.00	T30	10.50	3.30	T30	12.00	3.30	T30
M8	16.00	6.15	T40	14.50	4.00	T40	14.00	4.40	T40	16.00	4.40	T40

PROTECTOR 7 - PIN HEXAGON

SCREW SIZE	BUTTON			COUNTERSUNK		
	ISO 7380 SIMILAR			DIN 7991 SIMILAR		
	DIA MAX	DEPTH MAX	RECESS SIZE	DIA MAX	DEPTH REF	RECESS SIZE
M3	5.70	1.70	2mm	6.00	1.70	2mm
M3.5	6.60	1.90	2mm	6.50	1.93	2mm
M4	7.60	2.20	2.5mm	8.00	2.30	2.5mm
M5	9.50	2.80	3mm	10.00	2.80	3mm
M6	10.50	3.30	4mm	12.00	3.30	4mm
M8	14.00	4.40	5mm	16.00	4.40	5mm

Tamper Proof Self-Tapping Screws

METRIC Series Tamper Proof Screws for Sheet Metal Applications

Head Dimensions & Recess Sizes

GAUGE	METRIC REF	PROTECTOR 4 - PIN T-DRIVE®											
		PAN			COUNTERSUNK			BUTTON			COUNTERSUNK		
		DIN 7981 SIMILAR STEEL ZINC PLATED			DIN 7982 SIMILAR STEEL ZINC PLATED			DIN 7981 SIMILAR A2 STAINLESS STEEL			DIN 7982 SIMILAR A2 STAINLESS STEEL		
		DIA MAX	DEPTH MAX	RECESS SIZE	DIA MAX	DEPTH REF	RECESS SIZE	DIA MAX	DEPTH MAX	RECESS SIZE	DIA MAX	DEPTH REF	RECESS SIZE
2	2.2	4.20	1.80	T8	4.30	1.30	-	-	-	-	-	-	-
4	2.9	5.60	2.20	T10	5.50	1.70	T8	-	-	-	-	-	-
6	3.5	6.90	2.60	T15	6.80	2.10	T10	6.70	1.90	T10	7.80	3.30	T15
7	3.9	7.50	2.80	T15	7.50	2.30	T15	-	-	-	-	-	-
8	4.2	8.20	3.05	T20	8.10	2.50	T20	7.90	2.20	T15	9.10	3.80	T20
10	4.8	9.50	3.55	T25	9.50	3.00	T25	9.20	2.60	T25	10.50	4.30	T25
12	5.5	10.80	3.95	T27	10.80	3.40	T25	10.50	2.90	T27	11.10	4.40	T30
14	6.3	12.50	4.55	T30	12.40	3.80	T30	11.10	3.40	T27	13.50	5.10	T30

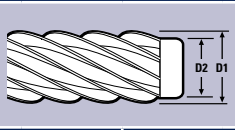
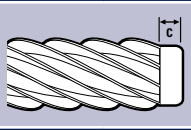
GAUGE	METRIC REF	PROTECTOR 7 - PIN HEXAGON					
		BUTTON			COUNTERSUNK		
		DIN 7981 SIMILAR			DIN 7982 SIMILAR		
		DIA MAX	DEPTH MAX	RECESS SIZE	DIA MAX	DEPTH REF	RECESS SIZE
6	3.5	6.70	1.90	2mm	7.80	2.50	2mm
8	4.2	7.90	2.20	2.5mm	9.10	2.80	2.5mm
10	4.8	9.20	2.50	3mm	10.40	3.20	3mm
12	5.5	10.50	2.90	4mm	11.10	3.40	4mm
14	6.3	11.10	3.40	4mm	13.50	4.10	4mm

Technical Data

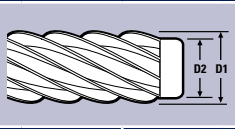
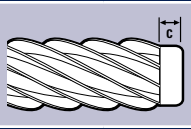
Type U Hammer Drive Screws

Manufacturing Standard BS4174

Head Dimensions, Thread Dimensions & Length Tolerances

GAUGE	HEAD DIMENSIONS		THREAD DIMENSIONS				LENGTH TOLERANCES			
									LENGTH	TOLERANCE
	ROUND		D1		D2		PILOT LENGTH			
	DIA MAX	DEPTH MAX	MAX	MIN	MAX	MIN	SCREW LENGTH	C NOM		
00	0.099	0.034	0.060	0.057	0.049	0.046	below 1/8	0.020	UP TO AND INCLUDING 3/8"	+/- 0.010
0	0.127	0.049	0.075	0.072	0.063	0.060	1/8 to 5/32	0.035		
2	0.162	0.069	0.100	0.097	0.083	0.080	3/16 to 5/16	0.045		
4	0.211	0.086	0.116	0.112	0.096	0.092	3/8 to 1/2	0.062	OVER 3/8"	+/- 0.015
6	0.260	0.103	0.140	0.136	0.116	0.112	5/8 to 7/8	0.078		
8	0.309	0.120	0.167	0.162	0.136	0.132	1 and over	0.125		
10	0.359	0.137	0.182	0.177	0.150	0.146				

Dimensions in Inches

GAUGE	HEAD DIMENSIONS		THREAD DIMENSIONS				LENGTH TOLERANCES			
									LENGTH	TOLERANCE
	ROUND		D1		D2		PILOT LENGTH			
	DIA MAX	DEPTH MAX	MAX	MIN	MAX	MIN	SCREW LENGTH	C NOM		
00	2.51	0.86	1.52	1.45	1.24	1.17	below 3.2	0.5	UP TO AND INCLUDING 9.5	+/- 0.25
0	3.22	1.24	1.90	1.83	1.60	1.52	3.2 to 4	0.9		
2	4.11	1.75	2.54	2.46	2.11	2.03	4.5 to 8	1.2		
4	5.36	2.18	2.95	2.84	2.44	2.34	9.5 to 13	1.6	OVER 9.5	+/- 0.38
6	6.60	2.62	3.56	3.45	2.95	2.84	16 to 22	2.0		
8	7.85	3.05	4.24	4.11	3.45	3.35	25 and over	3.2		
10	9.12	3.48	4.62	4.50	3.81	3.71				

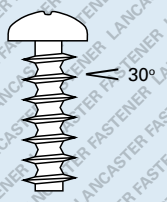
Dimensions in Millimetres

GAUGE	RECOMMENDED HOLE SIZES			
	THIN SHEET METAL, NON-FERROUS CASTINGS, PLASTICS ETC.		CAST IRON, THICK SHEET METAL	
	HOLE DIAMETER			
	MM	INCH	MM	INCH
00	1.30	0.051	1.40	0.055
0	1.65	0.065	1.75	0.069
2	2.20	0.087	2.30	0.091
4	2.55	0.100	2.70	0.106
6	3.10	0.122	3.30	0.130
8	3.70	0.146	3.90	0.154
10	4.10	0.161	4.30	0.169

E. & O. E.

Plas-Tech® 30 Screws

METRIC Series Thread Forming Screws for Plastic Applications

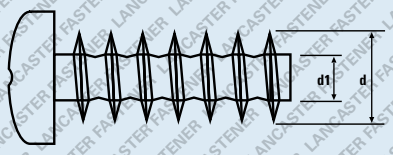


METRIC Series
30° Thread

Head Dimensions, Thread Dimensions & Length Tolerances

HEAD DIMENSIONS

SCREW SIZE DIA & PITCH	PAN						CSK (90°)				FLANGE					
	DIA MAX		DEPTH MAX		RECESS SIZE		ABSOLUTE DIA MAX (SHARP EDGE)	DEPTH REF	RECESS SIZE		DIA MAX		DEPTH MAX		RECESS SIZE	
	CROSS RECESS	T-DRIVE®	CROSS RECESS	T-DRIVE®	CROSS RECESS	T-DRIVE®			CROSS RECESS	T-DRIVE®	CROSS RECESS	T-DRIVE®	CROSS RECESS	T-DRIVE®	CROSS RECESS	T-DRIVE®
1.8 X 0.80	3.20	3.60	1.20	1.30	0	T6	-	-	-	-	-	-	-	-	-	-
2.2 X 0.98	3.90	4.00	1.50	1.50	1	T6	3.80	1.30	1	T6	4.40	4.50	1.60	1.40	1	T6
2.5 X 1.12	4.40	4.20	1.70	1.60	1	T7	4.70	1.75	1	T8	5.00	5.00	1.80	1.50	1	T6
3.0 X 1.34	5.30	5.60	2.00	2.10	1	T10	5.50	2.05	1	T8	6.00	6.00	2.10	2.10	1	T10
3.5 X 1.57	6.10	6.90	2.50	2.30	2	T10	7.30	2.80	2	T15	7.00	7.00	2.40	2.40	2	T10
4.0 X 1.79	7.00	7.50	2.70	2.60	2	T20	8.40	3.25	2	T20	8.00	8.00	2.50	2.60	2	T20
5.0 X 2.24	8.80	8.20	3.40	2.90	2	T20	9.30	3.40	2	T20	10.00	10.00	3.20	3.30	2	T20
6.0 X 2.69	10.50	10.80	4.00	3.80	3	T25	11.30	3.80	2	T30	12.00	12.00	4.00	3.60	3	T25



Typical Soft Plastics:
NYLON, ABS
Typical Hard Plastics:
POLYCARBONATE & MODIFIED PPO

SCREW SIZE DIA & PITCH	BODY DIAMETER		
	d		d1
	MAX	MIN	NOM
1.8 X 0.8	1.90	1.80	1.04
2.2 X 0.98	2.34	2.20	1.25
2.5 X 1.12	2.64	2.50	1.40
3.0 X 1.34	3.15	3.00	1.66
3.5 X 1.57	3.68	3.50	1.91
4.0 X 1.79	4.18	4.00	2.17
5.0 X 2.24	5.20	5.00	2.68
6.0 X 2.69	6.20	6.00	3.19

SCREW SIZE DIA & PITCH	SUGGESTED HOLE SIZES			
	POLY PROP	NYLON	GLASS FILLED	POLY CARB
1.8 X 0.8	1.26	1.35	1.44	1.53
2.2 X 0.98	1.54	1.65	1.76	1.87
2.5 X 1.12	1.75	1.87	2.00	2.12
3.0 X 1.34	2.10	2.25	2.40	2.55
3.5 X 1.57	2.45	2.62	2.80	2.97
4.0 X 1.79	2.80	3.00	3.20	3.40
5.0 X 2.24	3.50	3.75	4.00	4.25
6.0 X 2.69	4.20	4.50	4.80	5.10

LENGTH TOLERANCES	
NOM LENGTH MM	TOL MM
4 - 6	+/- 0.60
7 - 10	+/- 0.75
12 - 18	+/- 0.90
20 - 30	+/- 1.05
35 - 50	+/- 1.25
60	+/- 1.50

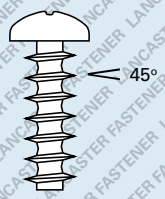
Dimensions in Millimetres

Technical Data

Plas-Fix® 45 Screws

METRIC Series Thread Rolling Screws for Plastic Applications

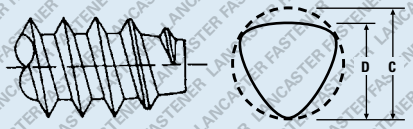
METRIC Series
45° Thread



Head Dimensions, Thread Dimensions & Length Tolerances

HEAD DIMENSIONS

SCREW SIZE DIA & PITCH	PAN				CSK (90°)				FLANGE				INDENTED WASHER HEX			
	DIA MAX	DEPTH MAX	RECESS SIZE		ABSOLUTE MAX DIA. (SHARP EDGE)	DEPTH REF	RECESS SIZE		DIA MAX	DEPTH MAX	RECESS SIZE		HEX		WASHER	
			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®	A/F MAX	DEPTH MAX	DIA MAX	THICKNESS MAX
1.8 x 0.8	3.6	1.5	0	-	-	-	-	-	-	-	-	-	-	-	-	-
2.2 x 1.0	4.24	1.57	1	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5 x 1.4	4.0	1.6	1	T6	4.4	1.3	1	T6	-	-	-	-	3.0	1.27	4.22	0.41
3 x 1.5	5.0	1.95	1	T8	5.5	1.5	1	T8	-	-	-	-	4.0	1.52	5.20	0.42
3.5 x 1.65	6.0	2.3	1	T10	6.3	1.65	1	T10	6.6	1.6	1	T10	5.0	1.82	6.50	0.52
4 x 1.75	7.0	2.45	2	T15	7.35	1.9	2	T15	8.0	2.0	2	T15	5.5	2.12	7.15	0.57
5 x 2.3	8.0	2.8	2	T20	8.4	2.2	2	T20	9.6	2.3	2	T20	5.5	2.80	8.40	0.67
6 x 2.5	10.0	3.5	2	T25	10.0	2.5	2	T25	12.0	2.9	2	T25	-	-	-	-



Typical Soft Plastics:
NYLON, ABS
Typical Hard Plastics:
POLYCARBONATE & MODIFIED PPO

SCREW SIZE DIA & PITCH	BODY DIAMETER			
	C		D	
	MAX	MIN	MAX	MIN
1.8 x 0.8	1.85	1.75	1.75	1.65
2.2 x 1.0	2.25	2.15	2.15	2.05
2.5 x 1.4	2.55	2.45	2.50	2.40
3 x 1.5	3.05	2.95	3.00	2.90
3.5 x 1.65	3.55	3.45	3.47	3.37
4 x 1.75	4.06	3.91	3.96	3.81
5 x 2.3	5.06	4.91	4.96	4.81
6 x 2.5	6.06	5.91	5.95	5.80

TORSIONAL STRENGTH (Min) Nm	SUGGESTED HOLE DIA.	
	SOFT PLASTIC	HARD PLASTIC
0.3	1.19	1.45
0.5	1.47	1.79
0.6	1.80	2.00
1.4	2.26	2.50
2.4	2.73	2.95
3.8	3.18	3.41
5.0	3.62	4.10
10.6	4.55	5.05

SCREW SIZE	LENGTH TOLERANCES	
	NOM LENGTH MM	TOL MM
1.8 - 2.2	ALL LENGTHS	+/- 0.8
2.5 - 5	UPTO 20MM	+/- 0.8
	ABOVE 20MM	+/- 1.3
6 - 8	ALL LENGTHS	+/- 1.3

Dimensions in Millimetres

Plas-Fix® 60 Screws

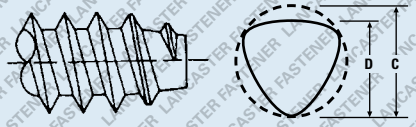
INCH Series Thread Rolling Screws for Plastic Applications

INCH Series
60° Thread

Head Dimensions, Thread Dimensions & Length Tolerances

HEAD DIMENSIONS

SCREW SIZE DIA & PITCH	PAN				CSK (80°)				FLANGE				INDENTED WASHER HEX			
	DIA MAX	DEPTH MAX	RECESS SIZE		ABSOLUTE MAX DIA. (SHARP EDGE)	DEPTH (REF)	RECESS SIZE		DIA MAX	DEPTH (REF)	RECESS SIZE		HEX		WASHER	
			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®	A/F MAX	DEPTH MAX	DIA MAX	THICKNESS MAX
2 - 28	.167	.062	1	T6	.172	.051	1	T6	.194	.059	1	T6	.125	.050	.166	.016
4 - 20	.219	.080	1	T10	.225	.067	1	T10	.257	.063	1	T10	.187	.080	.243	.019
6 - 19	.270	.097	2	T15	.279	.083	2	T15	.321	.074	2	T10	.250	.110	.328	.025
8 - 16	.322	.115	2	T20	.332	.100	2	T20	.384	.093	2	T20	.250	.115	.348	.031
10 - 14	.373	.133	2	T25	.385	.116	2	T25	.448	.114	2	T25	.312	.120	.414	.031



Typical Soft Plastics:
NYLON, ACETAL, ABS

Typical Hard Plastics:
INCLUDE GLASS FILLED VARIETIES, DMC AND IN CERTAIN CASES PHENOLICS AND SIMILAR

SCREW SIZE DIA & PITCH	BODY DIAMETER			
	C		D	
	MAX	MIN	MAX	MIN
2 - 28	.092	.088	.089	.085
4 - 20	.127	.121	.123	.117
6 - 19	.147	.141	.143	.137
8 - 16	.185	.179	.179	.173
10 - 14	.212	.206	.208	.202

TORSIONAL STRENGTH (MIN) lbf in	SUGGESTED HOLE DIA.	
	SOFT PLASTIC	HARD PLASTIC
4	.079	.080
13	.099	.106
24	.121	.128
39	.147	.157
56	.173	.184

LENGTH TOLERANCES	
NOM LENGTH INCHES	TOL INCHES
UPTO 3/4"	+/- 0.030
OVER 3/4"	+/- 0.050

Dimensions in Inches

Technical Data

Type BT Thread Cutting Screws

Manufacturing Standard BS4174

* Max countersunk head diameters are theoretical diameters of head to sharp corners and are the diameter to which holes should be countersunk to enable the screwheads to fit flush with the surface.

Head Dimensions, Thread Dimensions & Recommended Hole Sizes

GAUGE	METRIC REF	HEAD DIMENSIONS											RECESS SIZE		THREAD DIMENSIONS (BS4174)							MECHANICAL PROPERTIES	
		PAN				FLANGE				CSK (80°)								MAJOR d1		MINOR d2			
		DIA MAX	DIA MIN	DEPTH MAX	DEPTH MIN	DIA MAX	DIA MIN	DEPTH MAX	DEPTH MIN	DIA MAX	DIA MIN	DEPTH REF	CR (Z)	T-DRIVE® (PAN ONLY)	GAUGE	METRIC REF	T.P.I.	MAX	MIN	MAX	MIN	GAUGE	MIN TORSIONAL LOAD NM
4	2.9	5.56	5.21	2.03	1.78	6.53	6.12	1.60	1.35	5.71	4.95	1.70	1	T10	4	2.9	24	2.90	2.79	2.18	2.08	4	1.47
6	3.5	6.86	6.50	2.46	2.21	8.15	7.70	1.88	1.57	7.09	6.20	2.11	2	T15	6	3.5	20	3.53	3.43	2.64	2.51	6	2.70
8	4.2	8.18	7.77	2.92	2.67	9.75	9.24	2.36	2.01	8.43	7.42	2.54	2	T20	8	4.2	18	4.22	4.09	3.10	2.95	8	4.40
10	4.8	9.47	9.07	3.38	3.10	11.38	10.80	2.90	2.51	9.78	8.64	2.95	2	T25	10	4.8	16	4.80	4.65	3.58	3.43	10	6.30

Dimensions in Millimetres

LENGTH NOM		TYPE BT			
		MAX		MIN	
MM	INCH	MM	INCH	MM	INCH
4.5	3/16	4.76	0.188	4.16	0.164
6.5	1/4	6.35	0.250	5.60	0.220
7.9	5/16	7.94	0.312	7.19	0.282
9.5	3/8	9.52	0.375	8.77	0.345
13	1/2	12.70	0.500	11.80	0.465
16	5/8	15.88	0.625	14.98	0.590
19	3/4	19.05	0.750	18.00	0.709
22	7/8	22.22	0.875	21.17	0.833
25	1	25.40	1.000	24.35	0.959
32	1 1/4	31.75	1.250	30.50	1.201
38	1 1/2	38.10	1.500	36.85	1.451
45	1 3/4	44.45	1.750	43.20	1.701
50	2	50.80	2.000	49.30	1.941

LENGTH TOLERANCES (BS4174)

GAUGE	RECOMMENDED HOLE SIZES							
	METAL APPLICATIONS				PLASTIC APPLICATIONS			
	ALUMINIUM & ZINC ALLOY DIE CASTINGS		SHEET METAL		PHENOLICS	CELLULOSE ACETATE & NITRATE ACRYLIC & STYRENE RESINS	DEPTH OF PENETRATION	
	METAL THICKNESS	HOLE DIA	METAL THICKNESS	HOLE DIA	HOLE DIA	HOLE DIA	MIN	MAX
4	2.36	2.50	0.79	2.35	2.65	2.55	3.0	8.0
	3.18	2.55	1.22	2.40				
	4.75	2.55	1.60	2.45				
	6.35	2.55	-	-				
6	3.18	3.00	1.22	2.85	3.10	3.10	5.0	9.5
	4.75	3.10	1.60	2.90				
	6.35	3.15	2.39	3.00				
	7.92	3.15	-	-				
8	3.18	3.80	1.22	3.30	3.70	3.60	6.5	12.5
	4.75	3.80	1.60	3.40				
	6.35	3.80	2.39	3.60				
	7.92	3.90	3.18	3.70				
10	3.18	4.20	1.60	3.80	4.30	4.20	8.0	16.0
	4.75	4.20	2.39	3.90				
	6.35	4.30	3.18	4.10				
	7.92	4.30	4.75	4.20				
NOTES	*i. Sheet Aluminium and brass ; slightly decrease hole diameter* *ii. Allow two full threads of engagement above cutting flutes*				*i. Holes should be counterbored to minimise the possibility of material fracturing*			

Dimensions in Millimetres

Type Y Thread Cutting Screws

Manufacturing Standard BS4174

* Max countersunk head diameters are theoretical diameters of head to sharp corners and are the diameter to which holes should be countersunk to enable the screwheads to fit flush with the surface.

Head Dimensions, Thread Dimensions & Recommended Hole Sizes

GAUGE	METRIC REF	HEAD DIMENSIONS											RECESS SIZE		THREAD DIMENSIONS (BS4174)								MECHANICAL PROPERTIES	
		PAN				FLANGE				CSK (80°)								MAJOR d1		MINOR d2			
		DIA MAX	DIA MIN	DEPTH MAX	DEPTH MIN	DIA MAX	DIA MIN	DEPTH MAX	DEPTH MIN	DIA MAX	DIA MIN	DEPTH REF	CR (Z)	T-DRIVE® (PAN ONLY)	GAUGE	METRIC REF	T.P.I.	MAX	MIN	MAX	MIN	GAUGE	MIN TORSIONAL LOAD NM
4	2.9	5.56	5.21	2.03	1.78	6.53	6.12	1.60	1.35	5.71	4.95	1.70	1	T10	4	2.9	24	2.95	2.84	2.29	2.18	4	1.47
6	3.5	6.86	6.50	2.46	2.21	8.15	7.70	1.88	1.57	7.09	6.20	2.11	2	T15	6	3.5	20	3.58	3.48	2.74	2.62	6	2.70
8	4.2	8.18	7.77	2.92	2.67	9.75	9.24	2.36	2.01	8.43	7.42	2.54	2	T20	8	4.2	18	4.27	4.14	3.20	3.05	8	4.40
10	4.8	9.47	9.07	3.38	3.10	11.38	10.80	2.90	2.51	9.78	8.64	2.95	2	T25	10	4.8	16	4.88	4.72	3.68	3.53	10	6.30

Dimensions in Millimetres

LENGTH TOLERANCES (BS4174)					
LENGTH NOM		TYPE Y			
		MAX		MIN	
MM	INCH	MM	INCH	MM	INCH
4.5	3/16	4.76	0.188	4.16	0.164
6.5	1/4	6.35	0.250	5.60	0.220
7.9	5/16	7.94	0.312	7.19	0.282
9.5	3/8	9.52	0.375	8.77	0.345
13	1/2	12.70	0.500	11.80	0.465
16	5/8	15.88	0.625	14.98	0.590
19	3/4	19.05	0.750	18.00	0.709
22	7/8	22.22	0.875	21.17	0.833
25	1	25.40	1.000	24.35	0.959
32	1 1/4	31.75	1.250	30.50	1.201
38	1 1/2	38.10	1.500	36.85	1.451
45	1 3/4	44.45	1.750	43.20	1.701
50	2	50.80	2.000	49.30	1.941

GAUGE	RECOMMENDED HOLE SIZES									
	MATERIAL THICKNESS INCH	CELLULOSE ACETATE, ACRYLIC RESIN, CELLULOSE NITRATE (I.E. PERSPEX TYPES)			PHENOL FORMALDEHYDE (I.E. BAKELITE TYPES)			CAST IRON		
		HOLE DIA INCH	DRILL SIZE		HOLE DIA INCH	DRILL SIZE		HOLE DIA INCH	DRILL SIZE	
			MM	ALTERNA-TIVES		MM	ALTERNA-TIVES		MM	ALTERNA-TIVES
4	1/8	0.094	2.40	42	0.100	2.55	39	-	-	-
	1/4	0.094	2.40	42	0.100	2.55	39	-	-	-
	1/2	0.095	2.40	42	0.100	2.55	39	0.102	2.60	38
6	1/8	0.118	3.00	31	-	-	-	-	-	-
	1/4	0.125	3.20	1/8	0.130	3.30	30	-	-	-
	1/2	0.125	3.20	1/8	0.130	3.30	30	0.125	3.20	1/8
8	1/8	0.150	3.80	25	-	-	-	-	-	-
	1/4	0.150	3.80	25	0.150	3.80	25	-	-	-
	1/2	0.150	3.80	25	0.150	3.80	25	0.153	3.90	23
10	1/4	0.173	4.40	17	0.177	4.50	16	-	-	-
	1/2	0.177	4.50	16	0.177	4.50	16	0.177	4.50	16
NOTES	*i. Because conditions differ widely it may be necessary to vary the hole size to suit a particular application.*									
	ii. Type Y screws are not generally suitable in materials other than those listed above.									

Dimensions in Millimetres

Technical Data

High-Low Threadforming Screws

* Countersunk head diameters are theoretical diameters of head to sharp corners and are the diameter to which holes should be countersunk to enable the screwheads to fit flush with the surface.

Head Dimensions, Thread Dimensions & Recommended Hole Sizes

GAUGE & PITCH	HEAD DIMENSIONS											CR (Z) RECESS SIZE
	PAN				FLANGE				CSK (80°)			
	DIA MAX	DIA MIN	DEPTH MAX	DEPTH MIN	DIA MAX	DIA MIN	DEPTH MAX	DEPTH MIN	DIA MAX	DIA MIN	DEPTH REF	
5-20	5.56	5.21	2.03	1.78	6.53	6.12	1.60	1.35	5.71	4.95	1.70	1
6-19	6.22	5.86	2.26	2.01	6.53	6.12	1.60	1.35	5.71	4.95	1.70	2
8-18	6.86	6.50	2.46	2.21	8.15	7.70	1.88	1.57	8.43	7.42	2.54	2
10-16	8.18	7.77	2.92	2.67	9.75	9.24	2.36	2.01	8.43	7.42	2.54	2
11-16	9.47	9.07	3.38	3.10	11.38	10.80	2.90	2.51	9.78	8.64	2.95	2

N.B. As there are no BS Standards for High-Low head sizes, they are generally offered 1 diameter smaller than self-tapping screws. However, this should be checked prior to ordering if this factor is important.

Tolerances to DIN 267
Dimensions in Millimetres

GAUGE & PITCH	THREAD DIMENSIONS					NOMINAL HOLE SIZE IN PLASTIC
	MAJOR DIA. A		LOW THREAD DIA. B	MINOR DIA. C		HOLE SIZE MAY VARY ON DIFFERENT TYPES OF PLASTIC
	MAX	MIN	NOM	MAX	MIN	
5	3.18	3.02	2.54	1.91	1.75	2.4
6	3.68	3.42	2.74	2.29	2.03	2.7
8	4.32	4.06	3.30	2.66	2.41	3.3
10	4.95	4.70	3.68	2.79	2.51	3.6
11	5.33	5.03	3.81	3.17	2.87	3.8

Dimensions in Millimetres

E. & O. E.

Micro Diameter Screws

Type P - Thread Rolling Screws for Plastic Applications

METRIC Series
JCIS

SCREW SIZE DIA & PITCH	HEAD DIMENSIONS												THREAD STANDARDS			
																
	PAN							COUNTERSUNK					BODY DIAMETER			
	JCIS							JCIS								
	TYPE 1		TYPE 2		TYPE 3		RECESS SIZE CR (H)	TYPE 1		TYPE 3		RECESS SIZE CR (H)	C		D	
	DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX		DIA MAX	DEPTH REF	DIA MAX	DEPTH REF		MIN	MAX	MIN	MAX
1.4 x 0.50	2.00	0.50	2.50	0.50	2.50	0.80	0	2.00	0.45	2.50	0.70	0	1.40	1.46	1.34	1.40
1.6 x 0.64	2.40	0.55	2.80	0.55	2.80	0.85	0	2.40	0.50	2.80	0.80	0	1.60	1.66	1.54	1.60
1.7 x 0.64	2.50	0.50	3.00	0.50	3.00	0.90	0	2.50	0.50	3.00	0.80	0	1.70	1.76	1.63	1.69
2.0 x 0.79	3.00	0.60	3.50	0.60	3.50	1.00	0	3.00	0.60	3.50	0.90	0	2.02	2.12	1.94	2.04
2.3 x 0.91	3.50	0.70	4.00	0.70	4.00	1.10	0	3.50	0.70	4.00	1.00	0	2.33	2.43	2.25	2.35
2.6 x 1.06	4.00	0.80	4.50	0.80	4.50	1.20	0	4.00	0.80	4.50	1.10	0	2.63	2.73	2.54	2.64

Type B - Thread Rolling Screws for Plastic Applications

METRIC Series
JCIS

SCREW SIZE DIA & PITCH	HEAD DIMENSIONS												THREAD STANDARDS			
																
	PAN							COUNTERSUNK					BODY DIAMETER			
	JCIS							JCIS								
	TYPE 1		TYPE 2		TYPE 3		RECESS SIZE CR (H)	TYPE 1		TYPE 3		RECESS SIZE CR (H)	C		D	
	DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX		DIA MAX	DEPTH REF	DIA MAX	DEPTH REF		MIN	MAX	MIN	MAX
1.4 x 0.45	2.00	0.50	2.50	0.50	2.50	0.80	0	2.00	0.45	2.50	0.70	0	1.37	1.43	1.31	1.37
1.6 x 0.50	2.40	0.55	2.80	0.55	2.80	0.85	0	2.40	0.50	2.80	0.80	0	1.57	1.63	1.50	1.56
1.7 x 0.50	2.50	0.50	3.00	0.50	3.00	0.90	0	2.50	0.50	3.00	0.80	0	1.67	1.73	1.60	1.66
2.0 x 0.64	3.00	0.60	3.50	0.60	3.50	1.00	0	3.00	0.60	3.50	0.90	0	1.96	2.04	1.88	1.96
2.3 x 0.79	3.50	0.70	4.00	0.70	4.00	1.10	0	3.50	0.70	4.00	1.00	0	2.26	2.34	2.18	2.26
2.6 x 0.91	4.00	0.80	4.50	0.80	4.50	1.20	0	4.00	0.80	4.50	1.10	0	2.56	2.64	2.47	2.55

E. & O. E.

Technical Data

Micro Diameter Screws

Type S - Thread Rolling Screws for Metal Applications

METRIC Series
JCIS

SCREW SIZE DIA & PITCH	HEAD DIMENSIONS												THREAD STANDARDS			
	PAN JCIS							COUNTERSUNK JCIS					BODY DIAMETER			
	TYPE 1		TYPE 2		TYPE 3		RECESS SIZE CR (H)	TYPE 1		TYPE 3		RECESS SIZE CR (H)	C		D	
	DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX	DIA MAX	DEPTH MAX		DIA MAX	DEPTH REF	DIA MAX	DEPTH REF		MIN	MAX	MIN	MAX
M1.4 x 0.30	2.00	0.50	2.50	0.50	2.50	0.80	0	2.00	0.45	2.50	0.70	0	1.37	1.43	1.31	1.37
M1.6 x 0.35	2.40	0.55	2.80	0.55	2.80	0.85	0	2.40	0.50	2.80	0.80	0	1.57	1.63	1.50	1.56
M1.7 x 0.35	2.50	0.50	3.00	0.50	3.00	0.90	0	2.50	0.50	3.00	0.80	0	1.67	1.73	1.60	1.66
M2.0 x 0.40	3.00	0.60	3.50	0.60	3.50	1.00	0	3.00	0.60	3.50	0.90	0	1.96	2.04	1.88	1.96
M2.3 x 0.40	3.50	0.70	4.00	0.70	4.00	1.10	0	3.50	0.70	4.00	1.00	0	2.26	2.34	2.18	2.26
M2.6 x 0.45	4.00	0.80	4.50	0.80	4.50	1.20	0	4.00	0.80	4.50	1.10	0	2.57	2.65	2.48	2.56

DIN 7985 & DIN 965 - Rolled Thread Machine Screws

METRIC Series

SCREW SIZE	HEAD DIMENSIONS							
	PAN DIN 7985				COUNTERSUNK DIN 965			
	DIA MAX	DEPTH MAX	RECESS SIZE		DIA MAX	DEPTH REF	RECESS SIZE	
			CR (Z)	T-DRIVE®			CR (Z)	T-DRIVE®
M1.6	3.20	1.42	0	T5	3.00	0.96	0	T5
M2	4.00	1.72	1	T6	3.80	1.20	1	T6
M2.5	5.00	2.12	1	T8	4.70	1.50	1	T8

SCREW SIZE	LENGTH TOLERANCES	
	NOM LENGTH MM	TOL MM
M1.6 - M2.5	4mm - 6mm	± 0.25
	8mm - 10mm	± 0.30
	12mm - 18mm	± 0.35
	20mm - 30mm	± 0.40

T-Drive® is a registered trade mark of Lancaster Fastener Co Ltd.
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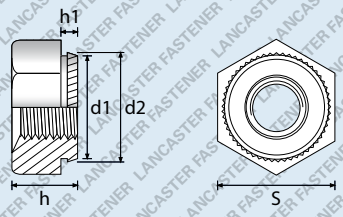
K-Series® Setzmuttern

Standard Spigot



THREAD	h		SPIGOT LENGTH h 1		S WIDTH A/F		HOLE DIAMETER	d1		d2		MATERIAL THICKNESS
M2.5	3.00	+/- 0.13	0.90	+ 0.00 - 0.13	5.50	+/- 0.1	4.50	4.50	+ 0.05 - 0.13	4.70	+/- 0.13	1 mm
M3	3.00	+/- 0.13	0.90	+ 0.00 - 0.13	5.50	+/- 0.1	4.50	4.50	+ 0.05 - 0.13	4.70	+/- 0.13	1 mm
M4	3.20	+/- 0.13	0.90	+ 0.00 - 0.13	7.00	+/- 0.1	5.50	5.50	+ 0.05 - 0.13	5.70	+/- 0.13	1 mm
M5	4.00	+/- 0.13	0.90	+ 0.00 - 0.13	8.00	+/- 0.1	6.50	6.50	+ 0.05 - 0.13	6.75	+/- 0.13	1 mm
M6	5.00	+/- 0.13	0.90	+ 0.00 - 0.13	10.00	+/- 0.1	8.00	8.00	+ 0.05 - 0.13	8.30	+/- 0.13	1 mm
M8	6.50	+/- 0.15	1.80	+ 0.00 - 0.15	13.00	+/- 0.13	10.00	10.00	+ 0.05 - 0.15	10.30	+/- 0.15	2 mm
M10	8.00	+/- 0.15	1.80	+ 0.00 - 0.15	15.00	+/- 0.13	12.50	12.50	+ 0.05 - 0.15	12.85	+/- 0.15	2 mm
M12	10.00	+/- 0.15	2.80	+ 0.00 - 0.15	17.00	+/- 0.15	14.50	14.50	+ 0.05 - 0.15	14.85	+/- 0.15	3 mm
M16	13.00	+/- 0.20	2.40	+ 0.00 - 0.15	22.00	+/- 0.20	18.50	18.50	+ 0.05 - 0.20	18.85	+/- 0.20	3 mm
M20	16.00	+/- 0.20	3.90	+ 0.00 - 0.20	27.00	+/- 0.20	23.00	23.00	+ 0.05 - 0.20	23.40	+/- 0.20	4 mm

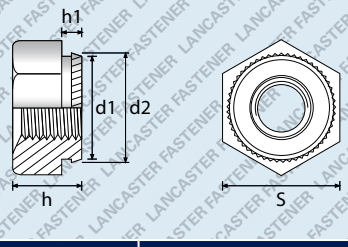
Minimum Case Hardness Hv0.3 610.

Steel K-Series® Setzmuttern are suitable for use in sheet steel with a maximum hardness of Hv300.
Stainless steel K-Series® Setzmuttern are suitable for use in stainless steel with a maximum hardness of Hv200.
Stainless steel K-Series® Setzmuttern are suitable for use in aluminium with a maximum hardness of Hv160.

Technical Data

K-Series® Setzmuttern

Intermediate Spigot

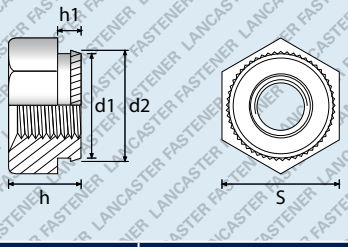


THREAD	h		SPIGOT LENGTH h 1		S WIDTH A/F		HOLE DIAMETER	d1		d2		MATERIAL THICKNESS
M2.5	3.00	+/- 0.13	1.40	+ 0.00 - 0.13	5.50	+/- 0.1	4.50	4.50	+ 0.05 - 0.13	4.70	+/- 0.13	1.5 mm
M3	3.00	+/- 0.13	1.40	+ 0.00 - 0.13	5.50	+/- 0.1	4.50	4.50	+ 0.05 - 0.13	4.70	+/- 0.13	1.5 mm
M4	3.20	+/- 0.13	1.40	+ 0.00 - 0.13	7.00	+/- 0.1	5.50	5.50	+ 0.05 - 0.13	5.70	+/- 0.13	1.5 mm
M5	4.00	+/- 0.13	1.40	+ 0.00 - 0.13	8.00	+/- 0.1	6.50	6.50	+ 0.05 - 0.13	6.75	+/- 0.13	1.5 mm
M6	5.00	+/- 0.13	1.40	+ 0.00 - 0.13	10.00	+/- 0.1	8.00	8.00	+ 0.05 - 0.13	8.30	+/- 0.13	1.5 mm

Minimum Case Hardness Hv0.3 610.

Steel K-Series® Setzmuttern are suitable for use in sheet steel with a maximum hardness of Hv300.
Stainless Steel K-Series® Setzmuttern are suitable for use in stainless steel with a maximum hardness of Hv200.
Stainless Steel K-Series® Setzmuttern are suitable for use in aluminium with a maximum hardness of Hv160.

Long Spigot

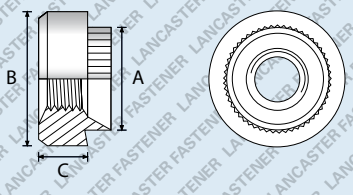


THREAD	h		SPIGOT LENGTH h 1		S WIDTH A/F		HOLE DIAMETER	d1		d2		MATERIAL THICKNESS
M2.5	3.00	+/- 0.13	1.80	+ 0.00 - 0.13	5.50	+/- 0.1	4.50	4.50	+ 0.05 - 0.13	4.70	+/- 0.13	2 mm
M3	3.00	+/- 0.13	1.80	+ 0.00 - 0.13	5.50	+/- 0.1	4.50	4.50	+ 0.05 - 0.13	4.70	+/- 0.13	2 mm
M4	4.50	+/- 0.13	1.80	+ 0.00 - 0.13	7.00	+/- 0.1	5.50	5.50	+ 0.05 - 0.13	5.70	+/- 0.13	2 mm
M5	5.00	+/- 0.13	1.80	+ 0.00 - 0.13	8.00	+/- 0.1	6.50	6.50	+ 0.05 - 0.13	6.75	+/- 0.13	2 mm
M6	5.00	+/- 0.13	1.80	+ 0.00 - 0.13	10.00	+/- 0.1	8.00	8.00	+ 0.05 - 0.13	8.30	+/- 0.13	2 mm

Minimum Case Hardness Hv0.3 610.

Steel K-Series® Setzmuttern are suitable for use in sheet steel with a maximum hardness of Hv300.
Stainless Steel K-Series® Setzmuttern are suitable for use in stainless steel with a maximum hardness of Hv200.
Stainless Steel K-Series® Setzmuttern are suitable for use in aluminium with a maximum hardness of Hv160.

Rivet Bushes



Euro Round

THREAD FORM RANGE		M3	M4	M5	M6	M8
DIAMETER OF SPIGOT +0.00mm -0.13mm	A	5.84	6.90	8.30	9.60	13.05
DIAMETER OF BODY +/- 0.15mm	B	7.92	9.52	11.10	12.70	15.87
DEPTH OF BODY +/- 0.13mm	C	3.17	3.81	4.45	5.72	6.35
RECOMMENDED HOLE SIZE +0.10mm -0.00mm		5.90	6.95	8.35	9.65	13.10

Round

THREAD FORM RANGE		METRIC	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12
		BSW/F	-	1/8"	-	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
		BA	8	6,5	4	3	2	0	-	-	-
		UNC	2	4	6	8	10	1/4"	5/16"	3/8"	1/2"
		UNF	2	4	6	8	10	1/4"	5/16"	3/8"	1/2"
DIAMETER OF SPIGOT +0.00mm -0.13mm	A	METRIC	5.54	5.54	6.73	6.73	7.92	9.52	12.70	15.87	19.05
		IMPERIAL	.218	.218	.265	.265	.312	.375	.500	.625	.750
DIAMETER OF BODY +/- 0.13mm	B	METRIC	7.92	7.92	9.52	9.52	11.10	12.70	15.87	19.05	25.40
		IMPERIAL	.312	.312	.375	.375	.437	.500	.625	.750	1.000
DEPTH OF BODY +/- 0.13mm	C	METRIC	3.17	3.17	3.17	3.17	3.81	5.08	6.35	7.62	10.16
		IMPERIAL	.125	.125	.125	.125	.150	.200	.250	.300	.400
RECOMMENDED HOLE SIZE +0.05mm -0.00mm		METRIC	5.54	5.54	6.73	6.73	7.92	9.52	12.70	15.87	19.05
		IMPERIAL	.218	.218	.265	.265	.312	.375	.500	.625	.750

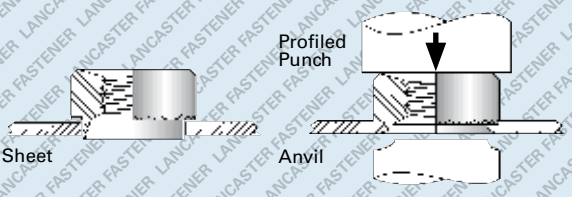
Test Results*

	TORSIONAL RESISTANCE IN 'Nm' (NEWTON METERS)						PULL OUT IN 'N' (NEWTONS)					
	1.0mm (20swg)	1.2mm (18swg)	1.5/1.6mm (16swg)	2.0mm (14swg)	2.5mm (12swg)	3.0mm (10swg)	1.0mm (20swg)	1.2mm (18swg)	1.5/1.6mm (16swg)	2.0mm (14swg)	2.5mm (12swg)	3.0mm (10swg)
M3	3.2	3.9	4.4	4.7	5.6	6.9	1649	1730	1741	1810	1950	2021
M4	7.0	7.9	8.4	9.8	9.4	9.6	2610	2716	2841	3250	3271	2124
M5	9.2	10.4	11.6	13.0	16.0	17.2	3620	3551	3829	4210	4310	4400
M6	16.2	16.8	18.9	24.2	25.4	28.3	3944	4418	4715	5230	5145	5010
M8	25.4	26.9	33.2	34.4	34.7	39.2	4740	4885	5374	5489	6219	6384
M10	32.8	38.4	41.8	42.9	45.3	48.9	4936	5245	5490	5820	6481	6539

* These tests have been conducted using steel product in cold rolled steel, in a controlled test environment. These performance figures should be used for guidance only.

How Rivet Bushes Work

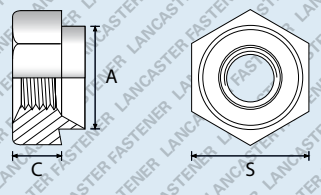
Rivet Bushes can be installed using a variety of methods, ideally a press incorporating a profile punch. However, they can be installed using a simple hammer and ball bearing.



E. & O. E.

Technical Data

Rivet Bushes



Hexagon

THREAD FORM RANGE		METRIC	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12
		BSW/F	-	1/8"	-	5/32"	3/16"	1/4"	5/16"	3/8"	1/2"
		BA	8	6,5	4	3	2	0	-	-	-
		UNC	2	4	6	8	10	1/4"	5/16"	3/8"	1/2"
		UNF	2	4	6	8	10	1/4"	5/16"	3/8"	1/2"
DIAMETER OF SPIGOT + 0.00mm - 0.13mm	A	METRIC	5.54	5.54	6.73	6.73	7.92	9.52	12.70	15.87	19.05
		IMPERIAL	.218	.218	.265	.265	.312	.375	.500	.625	.750
WIDTH ACROSS FLATS +/- 0.115m	S	METRIC	7.92	7.92	7.92	7.92	9.52	11.10	14.27	19.05	22.22
		IMPERIAL	.312	.312	.312	.312	.375	.437	.562	.750	.875
DEPTH OF BODY + / - 0.13mm	C	METRIC	3.17	3.17	3.17	3.17	3.81	5.08	6.35	7.62	10.16
		IMPERIAL	.125	.125	.125	.125	.150	.200	.250	.300	.400
RECOMMENDED HOLE SIZE + 0.05mm - 0.00mm		METRIC	5.54	5.54	6.73	6.73	7.92	9.52	12.70	15.87	19.05
		IMPERIAL	.218	.218	.265	.265	.312	.375	.500	.625	.750

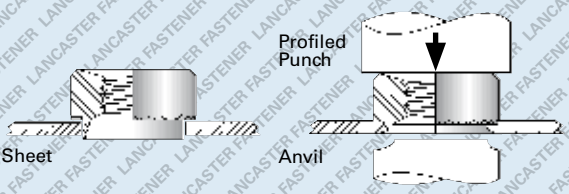
Test Results*

	TORSIONAL RESISTANCE IN 'Nm' (NEWTON METERS)						PULL OUT IN 'N' (NEWTONS)					
	1.0mm (20swg)	1.2mm (18swg)	1.5/1.6mm (16swg)	2.0mm (14swg)	2.5mm (12swg)	3.0mm (10swg)	1.0mm (20swg)	1.2mm (18swg)	1.5/1.6mm (16swg)	2.0mm (14swg)	2.5mm (12swg)	3.0mm (10swg)
M3	3.1	4.0	4.2	4.8	5.6	6.8	1656	1720	1748	1822	1945	2016
M4	7.3	8.0	8.2	9.4	9.4	9.7	2640	2710	2814	3223	3287	3156
M5	9.8	10.1	11.5	13.2	15.9	17.1	3514	3584	3820	4199	4208	4357
M6	16.1	17.0	19.2	23.9	25.6	28.4	3920	4425	4690	5210	5120	5040
M8	25.9	27.1	34.0	34.6	35.1	38.9	4710	4916	5360	5480	6210	6387
M10	32.3	37.2	42.3	43.8	44.8	49.8	4982	5210	5560	5810	6490	6538

* These tests have been conducted using steel product in cold rolled steel, in a controlled test environment. These performance figures should be used for guidance only.

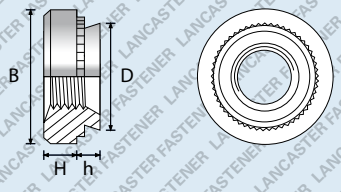
How Rivet Bushes Work

Rivet Bushes can be installed using a variety of methods, ideally a press incorporating a profile punch. However, they can be installed using a simple hammer and ball bearing.



E. & O. E.

Self-Clinching Fasteners



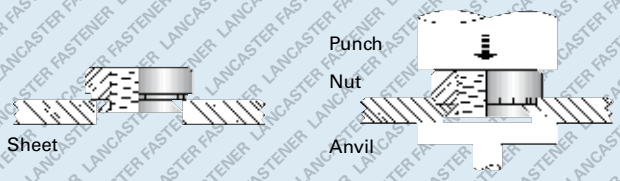
Clinch Nuts

	THREAD & PITCH	CODE	D MAX	B +/- 0.25	H + / 0.25	h MAX	MINIMUM REC. SHEET THICKNESS	HOLE SIZE + 0.08 - 0.00	MINIMUM DISTANCE TO EDGE OF SHEET
METRIC (DIMENSIONS IN 'mm')	M2.5 0.45	- 0	4.22	6.3	1.5	0.77	0.8 - 1	4.25	4.8
		- 1				0.97	1.0		
		- 2				1.38	1.4		
	M3 0.5	- 0	4.22	6.3	1.5	0.76	0.8	4.25	4.8
		- 1				0.97	1.0		
		- 2				1.37	1.4		
	M3 Alt* 0.5	- 0	4.73	7.1	1.5	0.76	0.8	4.75	5.6
		- 1				0.97	1.0		
		- 2				1.37	1.4		
	M3.5 0.6	- 0	4.73	7.1	1.5	0.76	0.8	4.75	5.6
		- 1				0.97	1.0		
		- 2				1.37	1.4		
	M4 0.7	- 0	5.38	7.9	2.0	0.76	0.8	5.4	6.9
		- 1				0.97	1.0		
		- 2				1.37	1.4		
	M5 0.8	- 0	6.38	8.7	2.0	0.76	0.8	6.4	7.1
		- 1				0.97	1.0		
		- 2				1.37	1.4		
	M6 1.0	- 1	8.72	11.05	4.1	1.37	1.4	8.75	8.6
		- 2				2.21	2.3		
	M8 1.25	- 1	10.44	12.65	5.5	1.37	1.4	10.5	9.7
		- 2				2.21	2.3		
	M10 1.5	- 1	13.97	17.35	7.48	2.21	2.31	14	13.5
		- 2				3.05	3.18		

Steel Self Clinch Nuts are suitable for use in sheet steel with a maximum hardness of HRB80.
Stainless Steel Self Clinch Nuts are suitable for use in sheet steel with a maximum hardness of HRB70.
For Sheet Steel with a greater hardness, Rivet Bushes are recommended.

How Self-Clinching Fasteners Work

Self Clinching fasteners must be squeezed into place by applying a constant squeezing action and not a blow (or Trauma) type force. In short, an automated press of some type must be used for installation.

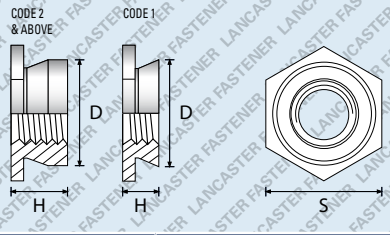


E. & O. E.

Technical Data

Self-Clinching Fasteners

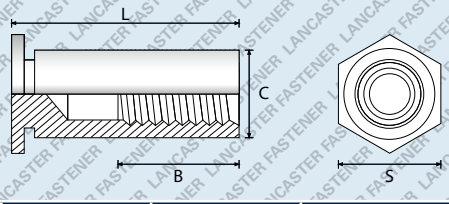
Clinch Flush Nuts



	THREAD & PITCH	CODE	D MAX	S WIDTH A/F +/- 0.2	h MAX	MINIMUM REC. SHEET THICKNESS	HOLE SIZE + 0.08 - 0.00	MINIMUM DISTANCE TO EDGE OF SHEET
METRIC (DIMENSIONS IN 'mm')	M2.5 0.45	- 1	4.35	4.8	1.5	1.5	4.4	6.0
		- 2			2.3	2.4		
	M3 0.5	- 1	4.35	4.8	1.5	1.5	4.4	6.0
		- 2			2.3	2.4		
	M3 Alt* 0.6	- 1	5.35	6.4	1.5	1.5	5.4	6.5
		- 2			2.3	2.4		
	M3.5 0.6	- 1	5.35	6.4	1.5	1.5	5.4	6.5
		- 2			2.3	2.4		
	M4 0.7	- 1	7.35	7.9	1.5	1.5	7.4	7.2
		- 2			2.3	2.4		
	M5 0.8	- 1	7.85	9.5	1.5	1.5	7.9	8.8
		- 2			2.3	2.4		
	M6 1.0	- 3	8.70	9.5	3.1	3.2	8.75	8.8
		(- 4)			3.9	4.0		

Stainless Steel Clinch Flush Nuts are suitable for use in sheet steel with a maximum hardness of HRB70.

Clinch Blind Stand Offs



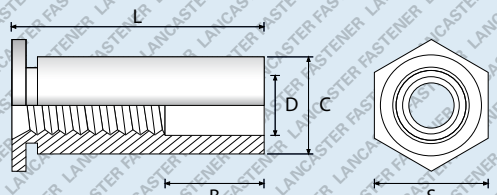
	THREAD & PITCH	C + 0.0 - 0.13	S WIDTH A/F Nom	LENGTH IN mm + / - 0.20									MINIMUM REC. SHEET THICKNESS	HOLE SIZE + 0.08 - 0.00	MINIMUM DISTANCE TO EDGE OF SHEET
	LENGTH CODES			6	8	10	12	14	16	18	20	22	25			
METRIC (DIMENSIONS IN 'mm')	M3 0.5	4.18	4.8	6	8	10	12	14	16	18	20	22	25	1.0	4.2	6
	M3 Alt 0.5	5.39	6.4	6	8	10	12	14	16	18	20	22	25	1.0	5.4	6.8
	M4 0.7	7.10	7.9	6	8	10	12	14	16	18	20	22	25	1.3	7.2	8
	M5 0.8	7.10	7.9	6	8	10	12	14	16	18	20	22	25	1.3	7.2	8

LENGTH (mm)	6	8	10	12	14	16	18	20	22	25
B' Dim. (min)	n/a	4		5	6.5			9.5		

Steel Clinch Blind Stand Offs are suitable for use in sheet steel with a maximum hardness of HRB70.
Stainless Steel Clinch Blind Stand Offs are suitable for use in sheet steel with a maximum hardness of HRB70.
For Sheet Steel with a greater hardness, Rivet Bushes are recommended.

Self-Clinching Fasteners

Clinch Through Stand Offs

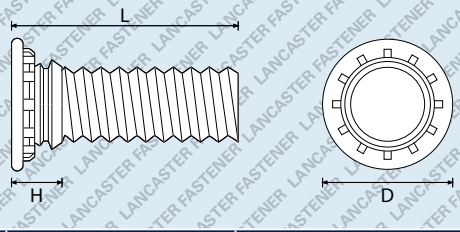


	THREAD & PITCH	C +0.0 -0.13	D	S WIDTH A/F Nom	LENGTH IN mm + / - 0.20										MINIMUM REC. SHEET THICKNESS	HOLE SIZE +0.08 - 0.00	MINIMUM DISTANCE TO EDGE OF SHEET
	LENGTH CODES				6	8	10	12	14	16	18	20	22	25			
METRIC (DIMENSIONS IN 'mm')	M2.5 0.5	4.18	3.2	3.2	6	8	10	12	14	16	18	20	22	25	1.0	4.2	6
	M3 0.5	4.18	3.2	4.8	6	8	10	12	14	16	18	20	22	25	1.0	4.2	6
	M3 Alt 0.5	5.39	3.2	6.4	6	8	10	12	14	16	18	20	22	25	1.0	5.4	6.8
	M4 0.7	7.10	4.8	7.9	6	8	10	12	14	16	18	20	22	25	1.3	7.2	8
	M5 0.8	7.10	5.2	7.9	6	8	10	12	14	16	18	20	22	25	1.3	7.2	8

LENGTH (mm)	6	8	10	12	14	16	18	20	22	25
B' Dim. (Nom)	n/a		4		4	8		8	11	11

Steel Clinch Through Stand Offs are suitable for use in sheet steel with a maximum hardness of HRB70.
Stainless Steel Clinch Through Stand Offs are suitable for use in sheet steel with a maximum hardness of HRB70.
For Sheet Steel with a greater hardness, Rivet Bushes are recommended.

Clinch Studs - Flush Head



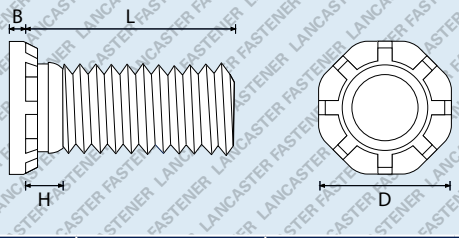
THREAD	D +/- 0.4	H MAX	MINIMUM REC. SHEET THICKNESS	HOLE +0.08 -0.0	MINIMUM DISTANCE TO EDGE OF SHEET
M2.5	4.1	1.95	1.0	2.5	5.4
M3	4.6	2.1	1.0	3.0	5.6
M4	5.9	2.4	1.0	4.0	7.2
M5	6.5	2.7	1.0	5.0	7.2
M6	8.2	3.0	1.6	6.0	7.9
M8	9.6	3.7	2.4	8.0	9.0

Steel Clinch Studs are suitable for use in sheet steel with a maximum hardness of HRB70.
Stainless Steel Clinch Studs are suitable for use in sheet steel with a maximum hardness of HRB70.
For Sheet Steel with a greater hardness, Rivet Bushes are recommended.

E. & O. E.

Technical Data

Self-Clinching Fasteners



High Strength Clinch Studs - Non Flush Head

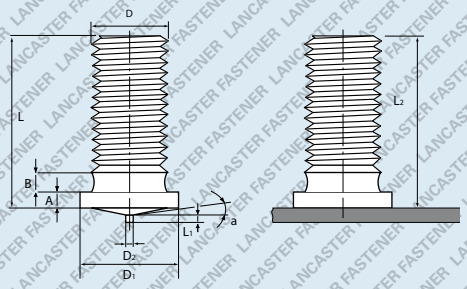
THREAD	D +/- 0.4	H MAX	B MAX	MINIMUM REC. SHEET THICKNESS	HOLE +0.13 -0.0	MINIMUM DISTANCE TO EDGE OF SHEET
M8	12.5	3.5	1.78	2.0	8.0	12.7
M10	15.7	4.1	2.30	2.4	10.0	13.7

Steel High Strength Clinch Studs are suitable for use in sheet steel with a maximum hardness of HRB85.

E. & O. E.

CD Weld Studs

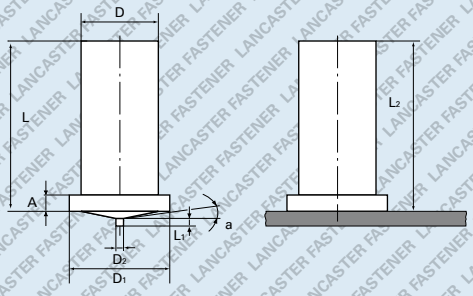
Threaded - PT (DIN EN ISO 13918)



THREAD (D)	L +0.6 -0.0	D1 +/- 0.2	D2 +/- 0.08	L1 +/- 0.05	A	B MAX	L2	a +/- 1°
M3	See Dimensions	4.5	0.60	0.55	0.7 - 1.4	1.5	L - 0.3	3°
M4		5.5	0.65					
M5		6.5	0.75	0.80	0.8 - 1.4	2		
M6		7.5						
M8		9.0		0.85		3		
M10		10.5		0.75	0.7 - 1.4	3		

DIN EN ISO 13918 applies to sizes M3 - M8

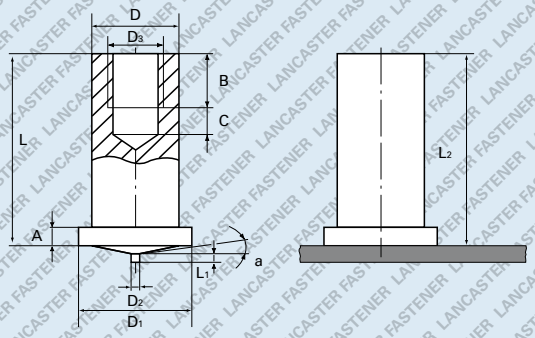
Unthreaded - UT (DIN EN ISO 13918)



THREAD (D) +/- 0.1	L +0.6 -0.0	D1 +/- 0.2	D2 +/- 0.08	L1 +/- 0.05	A	L2	a +/- 1°
Ø 3	See Dimensions	4.5	0.60	0.55	0.7 - 1.4	L - 0.3	3°
Ø 4		5.5	0.65				
Ø 5		6.5	0.75	0.80	0.8 - 1.4		
Ø 6		7.5					
Ø 7,1		9.0		0.85			

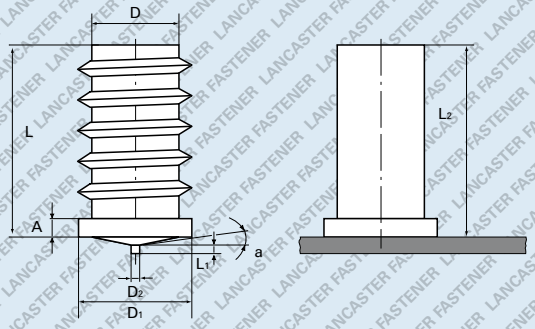
Technical Data

CD Weld Studs



Internally Threaded - IT (DIN EN ISO 13918)

THREAD (D) +/- 0.1	L +0.6 -0.0	D1 +/- 0.2	D2 +/- 0.08	L1 +/- 0.05	A	D3	B +/- 0.05	C	L2	a +/- 1°
Ø 5	See Dimensions	6.5	0.75	0.80	0.8 - 1.4	M3	5	2.5	L - 0.3	3°
Ø 6		7.5				M4	6	3		
Ø 7,1		9.0		0.85		M5	7.5	3		
Ø 8						M6		3		

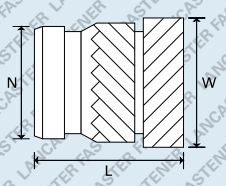


Coarse Threaded - CT

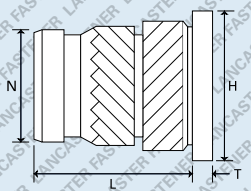
THREAD (D) +/- 0.1	L +0.6 -0.0	D1 +/- 0.2	D2 +/- 0.08	L1 +/- 0.05	A	L2	a +/- 1°
Ø 5	See Dimensions	6.5	0.75	0.80	0.8 - 1.4	L - 0.3	3°

Brass Inserts for Plastics

Sonic-Fix Unheaded (UHDSONFIX) Headed (HDSONFIX)



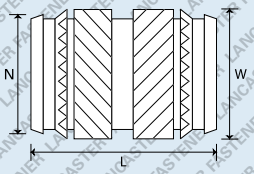
Unheaded



Headed

THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF	3/8-24 UNF
L mm		4.0	5.7	5.7	7.1	8.1	9.5	12.7	12.7	12.7
W mm		3.6	4.6	4.6	5.4	6.3	7.1	8.7	10.2	12.6
T mm		0.53	0.61	0.61	0.76	0.91	1.09	1.35	1.35	1.60
H mm		4.8	5.5	5.5	6.4	7.1	7.9	9.5	11.1	14.0
N mm		3.1	3.9	3.9	4.7	5.5	6.3	7.9	9.5	11.8
RECOMMENDED HOLE SIZE mm (-0.0/+0.1)		3.2	4.0	4.0	4.8	5.6	6.4	8.0	9.6	11.9
MINIMUM WALL THICKNESS mm		1.3	1.6	1.6	1.8	2.1	2.6	3.3	4.5	6.0

Tech-Fix Unheaded (UHDTECFIX)



Unheaded

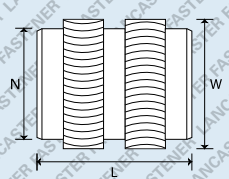
THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF	3/8-24 UNF
L mm		4.0	5.7	5.7	7.1	8.1	9.5	12.7	12.7	12.7
W mm		3.5	4.4	4.4	5.2	6.1	6.8	8.5	10.0	12.3
N mm		3.1	3.9	3.9	4.7	5.5	6.3	7.9	9.5	11.8
RECOMMENDED HOLE SIZE mm (-0.0/+0.1)		3.2	4.0	4.0	4.8	5.6	6.4	8.0	9.6	11.9
MINIMUM WALL THICKNESS mm		1.3	1.6	1.6	1.8	2.1	2.6	3.3	4.5	6.0

E. & O. E.

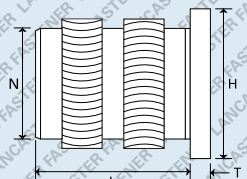
Technical Data

Brass Inserts for Plastics

Heat-Fix Unheaded (UHDHEAFIX) Headed (HDHEAFIX)



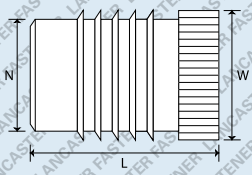
Unheaded



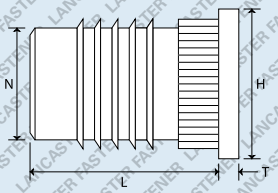
Headed

THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF
L mm		3.9	5.8	5.8	7.1	8.1	9.5	12.7	12.7
W mm		3.5	4.4	4.4	5.2	6.1	6.9	8.5	10.0
T mm		0.51	0.58	0.58	0.74	0.89	1.07	1.32	1.32
H mm		4.8	5.5	5.5	6.4	7.1	7.9	9.5	11.1
N mm		3.1	3.9	3.9	4.7	5.5	6.3	7.9	9.5
RECOMMENDED HOLE SIZE mm (-0.0/+0.1)		3.2	4.0	4.0	4.8	5.6	6.4	8.0	9.6
MINIMUM WALL THICKNESS mm		1.4	1.8	1.8	2.1	2.4	2.8	3.6	5.0

Fin-Fix Unheaded (UHDFINFIX) Headed (HDFINFIX)



Unheaded



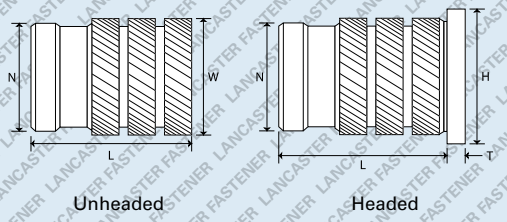
Headed

THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF
L mm		4.0	4.8	4.8	6.4	7.9	9.5	12.7	12.7
W mm		3.7	4.5	4.5	5.3	6.1	7.0	8.6	10.2
T mm		0.45	0.58	0.58	0.74	0.89	1.07	1.32	1.32
H mm		4.8	5.5	5.5	6.4	7.1	7.9	9.5	11.0
N mm		3.1	3.9	3.9	4.7	5.5	6.3	7.9	9.5
RECOMMENDED HOLE SIZE mm (-0.0/+0.1)		3.2	4.0	4.0	4.8	5.6	6.4	8.0	9.6
MINIMUM WALL THICKNESS mm		1.6	2.0	2.0	2.4	2.8	3.2	4.0	4.8

E. & O. E.

Brass Inserts for Plastics

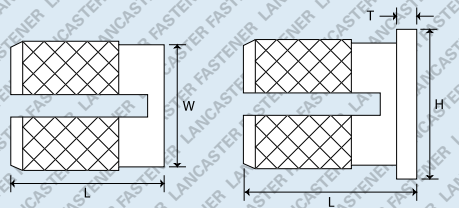
Broach-Fix Unheaded (UHDBROFIX) Headed (HDBROFIX)



Unheaded Headed

THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF	3/8-24 UNF
L mm		4.1	5.3	5.3	6.3	7.4	8.3	9.2	9.2	9.2
W mm		3.3	4.2	4.2	5.0	5.8	6.6	8.2	9.7	12.7
T mm		0.51	0.58	0.58	0.74	0.89	1.07	1.32	1.32	1.57
H mm		4.8	5.5	5.5	6.4	7.1	7.9	9.5	11.1	14.0
N mm		3.0	3.7	3.7	4.5	5.3	6.1	7.7	9.3	12.3
RECOMMENDED HOLE SIZE mm (-0.0/+0.1)		3.1	3.8	3.8	4.6	5.4	6.2	7.8	9.3	12.3
MINIMUM WALL THICKNESS mm		1.6	2.0	2.0	2.5	2.5	2.5	2.8	3.8	5.0

Expansion-Fix Unheaded (UHDEXPFIX) Headed (HDEXPFIX)



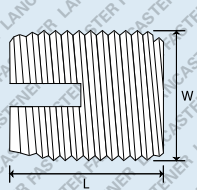
Unheaded Headed

THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF
L mm		3.9	4.7	4.7	6.3	7.9	9.4	12.6	12.6
T mm		0.43	0.51	0.51	0.66	0.82	0.99	1.25	1.25
H mm		4.8	5.5	5.5	6.4	7.1	7.9	9.5	11.1
W MAX mm		3.2	4.0	4.0	4.7	5.5	6.3	7.9	9.5
RECOMMENDED HOLE SIZE mm (-0.0/+0.1)		3.2	4.0	4.0	4.8	5.6	6.4	8.0	9.6
MINIMUM WALL THICKNESS mm		2.4	3.2	3.2	3.6	4.0	4.8	6.0	7.0

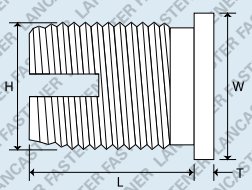
Technical Data

Brass Inserts for Plastics

Thread-Fix Unheaded (UHDTHRFIX) Headed (HDTHRFIX)



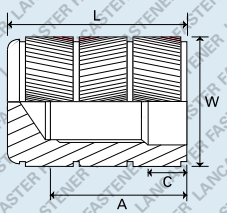
Unheaded



Headed

THREAD	METRIC	M2.5	M3	M3.5	M4	M5	M6	M8	M10
	UNIFIED	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC
						10.32 UNF	1/4-28 UNF	5/16-24 UNF	3/8-24 UNF
L mm		6.0	6.0	8.0	8.0	10.0	14.0	15.0	18.0
T mm		0.58	0.58	0.73	0.89	1.06	1.32	1.32	1.57
H mm		6.0	6.5	7.5	8.0	9.5	12.0	14.0	16.0
W mm MAX		4.5	5.0	6.0	6.5	8.0	10.0	12.0	14.0
RECOMMENDED HOLE SIZE THERMOPLASTICS mm		4.0 - 4.1	4.5 - 4.6	5.3 - 5.4	5.8 - 5.9	7.1 - 7.2	8.6 - 8.8	10.6 - 10.8	12.6 - 12.8
RECOMMENDED HOLE SIZE THERMOSETS mm		4.1 - 4.3	4.6 - 4.8	5.5 - 5.7	6.0 - 6.2	7.3 - 7.6	9.0 - 9.4	11.0 - 11.4	13.0 - 13.4

Flow-Fix Unheaded (UHDFLOFIX)



Unheaded

THREAD	METRIC	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
	UNIFIED	2.56 UNC	-	4.40 UNC	6.32 UNC	8.32 UNC	10.24 UNC	1/4-20 UNC	5/16-18 UNC	3/8-16 UNC
							10.32 UNF	1/4-28 UNF	5/16-24 UNF	3/8-24 UNF
L mm		5.5	6.4	7.3	9.5	10.2	11.2	14.4	16.5	17.9
W mm		3.4	4.3	4.7	5.5	6.3	7.3	9.8	11.4	13.8
A MIN mm		3.6	4.0	4.6	6.0	6.7	7.4	8.1	11.1	11.9
C mm		1.0	1.2	1.3	1.6	1.8	2.0	2.0	2.3	2.4

E. & O. E.

Black Finishing Service

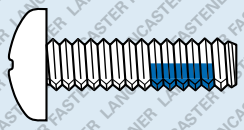
A decorative dip-spin black topcoat with enhanced corrosion resistance and low coating thickness can be applied to Lancaster's existing zinc plated stock. The thin layer application makes it suitable for small fasteners where tolerances are limited and there is no 'build-up' in the screw's recess or threads. The surface treatment is free of hazardous substances and conforms to EU guide lines relating to the End of Life Vehicle Directive (2000/53/EC). Also, because the finish is a 'topcoat', no hydrogen embrittlement occurs in the application of the black finish.

Lancaster's independently commissioned corrosion resistance tests of the black finish when applied to their products achieved a minimum of 150 hours to white rust.

Key Features:

- Consistent high-quality decorative finish
- No 'build-up' in the screw's recess or threads
- Significantly enhanced corrosion resistance
- Integrated lubricant
- Solvent based
- Application: Dip-spin
- RoHS 2 compliant
- Applicable to diameters M2.5 and above

NYLOK® Blue Patching



NYLOK® Blue Patch is a self-locking element comprised of nylon permanently bonded onto the threads of a fastener. When the NYLOK® blue patch is engaged, it creates a wedge between the fastener and mating part compressing the nylon and creating metal to metal contact opposite the patch. This metal to metal contact results in a positive resistance to vibration and loosening. Since nylon has great memory characteristics, this locking element can be reused several times.

Key Features:

- Low minimum order quantities
- Competitive Pricing
- 180° (standard) or 360° (optional) patch coverage
- Fast and efficient delivery service
- Applied to diameters: M2 - M8

NYLOK® 180° Standard Blue Patch (TUF-LOK®)

This patch is applied to an area covering approximately 180° of the circumference of the thread. It offers an excellent resistance to vibrations in applications that require increased thread locking and re-usability.

NYLOK® 360° Optional Blue Patch (TUF-LOK®)

This patch is applied to an area covering the entire circumference of the thread. This process is suited to applications that require a re-usable high pressure seal against liquids or gas.

Technical Data

- Standard patch length: 4 - 6 threads
- Colour: blue
- Standard patch starts 1-2 threads from the end of the screw
- Shelf-Life: indefinite

Advantages

- Reusable/adjustable
- No metal removal to reduce fastener strength or performance
- Parts are ready for assembly
- Torque can be adjusted to meet specific applications
- Can be applied to any size of thread configuration of fastener
- Provides a seal for threads
- Environmentally friendly/non-toxic
- Resistant to lubricants, fuel, hydraulic fluid and most commercial solvents
- Bonds to a broad range of fastener finishes
- Is not affected by high humidity conditions
- Exceptional vibration resistance
- Complies with or exceeds, IFI, DIN and major OEM specifications
- Precise thread coverage on every part

Terms and Conditions for the Sale of Goods

1. INTERPRETATION

1.1 In these conditions **BUYER** means the person or Firm or Company who accepts a quotation of the Seller for the sale of the Goods or whose order for the Goods is accepted by the Seller.

GOODS means the goods (including any installments of the goods or any parts for them) which the Seller is to supply in accordance with these Conditions.

SELLER means Lancaster Fastener Co. Ltd. (registered in England under number 1522235)

CONDITIONS means the standard terms and conditions of sale set out in this document and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the Buyer and the Seller.

CONTRACT means the contract for the purchase and sale of the Goods.

WRITING includes telex, cable, facsimile transmission and comparable means of communication.

1.2 Any reference in these Conditions to any provision of a statute shall be construed as a reference to that provision as amended, reenacted or extended at the relevant time.

1.3 The headings in these Conditions are for convenience only and shall not affect their interpretation.

2. BASIS OF THE SALE

2.1 The Seller shall sell and the buyer shall purchase the Goods in accordance with any written quotation of the Seller which is accepted by the Buyer, or any written order of the Buyer which is accepted by the Seller, subject in either case to these Conditions, which shall govern the Contract to the exclusion of any other terms and conditions subject to which any quotation is accepted or purported to be accepted, or any such order is made or purported to be made, by the Buyer.

2.2 No variation to these Conditions shall be binding unless agreed in Writing between the authorised representatives of the Buyer and the Seller.

2.3 The Seller's employees or agents are not authorised to make any representation concerning the Goods unless confirmed by the Seller in Writing. In entering into the Contract the Buyer acknowledges that it does not rely on, and waives any claim for breach of, any such representations which are not so confirmed.

2.4 Any advice or recommendation given by the Seller or its employees or agents to the buyer or its employees or agents as to the storage, application or use of the Goods which is not confirmed in writing by the Seller is followed or acted upon entirely at the Buyer's own risk, and accordingly the Seller shall not be liable for any such advice or recommendation which is not so confirmed.

2.5 Any typographical, clerical or other error or omission in any sales literature, quotation, price list, acceptance of offer, invoice or other document or information issued by the Seller shall be subject to correction without any liability on the part of the Seller.

3. ORDERS AND SPECIFICATIONS

3.1 No order submitted by the Buyer shall be deemed to be accepted by the Seller unless until confirmed in Writing by the Seller's authorised representative.

3.2 The Buyer shall be responsible to the Seller for ensuring the accuracy of the terms of any order (including any applicable specification) submitted by the Buyer, and for giving the Seller any necessary information relating to the Goods within a sufficient time to enable the Seller to perform the Contract in accordance with its terms.

3.3 The quantity, quality and description of and any specification for the Goods shall be those set out in the Seller's quotation (if accepted by the Buyer) and the Buyer's order (if accepted by the Seller).

3.4 If the Goods are to be manufactured or any process is to be applied to the Goods by the Seller in accordance with a specification submitted by the Buyer, the Buyer shall indemnify the Seller against all loss, damages, costs and expenses awarded against or incurred by the Seller in connection with or paid or agreed to be paid by the Seller in settlement of any claim for infringement of any patent, copyright, design or trade mark or any other industrial or intellectual property rights of any other person which results from the Seller's use of the Buyer's specification.

3.5 The Seller reserves the right to make any changes in the specification of the Goods which are required to conform with any applicable safety or other statutory requirements or, where the Goods are to be supplied to the Seller's specification, which do not materially affect their quality or performance.

3.6 No order which has been accepted by the Seller may be cancelled by the Buyer except with the agreement in Writing of the Seller and on terms that the Buyer shall indemnify the Seller in full against all loss (including loss of profit) costs (including the cost of all labour and materials used), damages, charges and expenses incurred by the Seller as a result of cancellation.

4. PRICE OF THE GOODS

4.1 The price of the Goods shall be the Seller's quoted price or, where no price has been quoted (or a quoted price is no longer valid), the price listed in the Seller's published price list current at the date of acceptance of the order. Where the Goods are supplied for export from the United Kingdom, the Seller's published export price list shall apply. All prices quoted are valid for 30 days only or until earlier acceptance by the Buyer, after which time they may be altered by the Seller without giving notice to the Buyer.

4.2 The Seller reserves the right, by giving notice to the Buyer at any time before delivery, to increase the price of the goods to reflect any increase in the cost to the Seller which is due to any factor beyond the control of the Seller (such as, without limitation, any foreign exchange fluctuation, currency regulation, alteration of duties, significant increase in the cost of labour, materials or other costs of manufacture), any change in delivery date, quantities or specifications for the Goods which is required by the Buyer, or any delay caused by any instruction of the Buyer or failure of the Buyer to give the Seller adequate information or instructions.

4.3 Except as otherwise stated under the terms of any quotation or in any price list of the Seller, and unless otherwise agreed in Writing between the Buyer and the Seller, all prices are given by the Seller on an ex works basis, and where the Seller agrees to deliver the Goods otherwise than at the Seller's premises, the Buyer shall be liable to pay the Seller's charges for transport, packaging and insurance.

4.4 The price is exclusive of any applicable value added tax, which the Buyer shall be additionally liable to pay to the Seller.

5. TERMS OF PAYMENT

5.1 Subject to any special terms agreed in Writing between the Buyer and the Seller, the Seller shall be entitled to invoice the Buyer for the price of the Goods on or at any time after delivery of the Goods, unless the Goods are to be collected by the Buyer or the Buyer wrongfully fails to take delivery of the Goods, in which event the Seller shall be entitled to invoice the Buyer for the price at any time after the Seller has notified the Buyer that the Goods are ready for collection or (as the case may be) the Seller has tendered delivery of the Goods.

5.2 The Buyer shall pay the price of the Goods (less any discount to which the Buyer is entitled, but without any other deduction) within 30 days of the last day of the month in which the invoice is delivered, notwithstanding that delivery may not have taken place and the property in the Goods has not passed to the Buyer. The time of payment of the price shall be of the essence of the Contract. Receipts for payment will be issued only upon request.

5.3 If the Buyer fails to make any payment on due date then, without prejudice to any other right or remedy available to the Seller, the Seller shall be entitled to:

5.3.1 cancel the contract or suspend any further deliveries to the Buyer;

5.3.2 appropriate any payment made by the Buyer to such of the Goods (or the goods supplied under any other contract between the Buyer and the Seller) as the Seller may think fit (notwithstanding any purported appropriation by the Buyer); and

5.3.3 charge the Buyer interest (both before and after any judgement) on the amount unpaid, at the rate of four (4) per cent per annum above NatWest Bank plc base rate from time to time, until payment in full is made (a part of a month being treated as a full month for the purpose of calculating interest).

6. DELIVERY

6.1 Delivery of the Goods shall be made by the Buyer collecting the Goods at the Seller's premises at any time after the Seller has notified the Buyer that the Goods are ready for collection or, if some other place for delivery is agreed by the Seller, by the Seller delivering the Goods to that place.

6.2 Any dates quoted for the Delivery of Goods are approximate only and the Seller shall not be liable for any delay in delivery of the Goods howsoever caused. Time for delivery shall not be of the essence unless previously agreed by the Seller in Writing. The Goods may be delivered by the Seller in advance of the quoted delivery date upon giving reasonable notice to the Buyer.

6.3 Where delivery of the Goods is to be made by the Seller in bulk, the Seller reserves the right to deliver up to five per cent more or five percent less than the quantity ordered without any adjustment in the price, and the quantity so delivered shall be deemed to be the quantity ordered.

6.4 Where the Goods are to be delivered in installments, each delivery shall constitute a separate contract and failure by the Seller to deliver any one or more of the installments in accordance with these Conditions or any claim by the Buyer in respect of one or more installments shall not entitle the Buyer to treat the Contract as a whole as repudiated.

6.5 If the Seller fails to deliver the Goods for any reason other than any cause beyond the Seller's reasonable control or the Buyer's fault, and the Seller is accordingly liable to the Buyer, the Seller's liability shall be limited to the excess (if any) of the cost to the Buyer (in the cheapest available market) of similar goods to replace those not delivered over the price of the Goods.

6.6 If the Buyer fails to take delivery of the Goods or fails to give the Seller adequate delivery instructions at the time stated for delivery (otherwise than by reason of any cause beyond the Buyer's reasonable control or by reason of the Seller's fault) then, without prejudice to any other right or remedy available to the Seller, the Seller may:

6.6.1 store the Goods until actual delivery and charge the Buyer for the reasonable costs (including insurance) of storage; or

6.6.2 sell the Goods at the best price readily obtainable and (after deducting all reasonable storage and selling expenses) account to the Buyer for the excess over the price under the Contract or charge the Buyer for any shortfall below the price under the Contract.

7. RISK AND PROPERTY

7.1 Risk of damage to or loss of the Goods shall pass to the Buyer:

7.1.1 In the case of Goods to be delivered at the Seller's premises, at the time when the Seller notifies the Buyer that the Goods are available for collection; or

7.1.2 In the case of the Goods to be delivered otherwise than at the Seller's premises, at the time of delivery or, if the Buyer wrongfully fails to take delivery of the Goods, the time when the Seller has tendered delivery of the Goods.

7.2 Notwithstanding delivery and the passing of risk in the Goods, or any other provision of these Conditions, the property in the Goods shall not pass to the Buyer until the Seller has received in cash or cleared funds payment in full of the price of the Goods and all other goods agreed to be sold by the Seller to the Buyer for which payment is then due.

7.3 Until such time as the property in the Goods passes to the Buyer, the Buyer shall hold the Goods as the Seller's fiduciary agent and bailee, and shall keep the Goods separate from those of the Buyer and third parties and properly stored, protected and insured and identified as the Seller's property. Until that time the Buyer shall be entitled to resell or use the Goods in the ordinary course of it's business, but shall account to the Seller for the proceeds of sale or otherwise of the Goods, whether tangible or intangible, including insurance proceeds, and shall keep all such proceeds separate from any moneys or property of the Buyer and third parties and, in the case of tangible proceeds, properly stored, protected and insured.

7.4 Until such time as the property in the Goods passes to the Buyer (and provided the Goods are still in existence and have not been resold), the Seller shall be entitled at any time to require the Buyer to deliver up the goods to the Seller and, if the Buyer fails to do so forthwith, to enter upon premises of the Buyer or any third party where the Goods are stored and repossess the Goods.

7.5 The Buyer shall not be entitled to pledge or in any way charge by way of security for any indebtedness any of the Goods which remain the property of the Seller, but if the Buyer does so all money owing by the Buyer to the Seller shall (without any prejudice to any other right or remedy of the Seller) forthwith become due and payable.

8. WARRANTIES AND LIABILITY

8.1 Subject to the conditions set out below the Seller warrants that the Goods will correspond with their specification at the time of delivery and will be free from defects in material and workmanship. Such warranty does not extend to goods, parts, materials or equipment not manufactured by the Seller, in respect of which the Buyer shall only be entitled to the benefit of any such warranty or guarantee as is given by the manufacturer to the Seller.

8.2 The Seller shall not be liable to pay any warranty or other costs and shall not have any other liability to the Buyer or third parties for any defects in the Goods to the extent :

8.2.1 of any defect in the Goods arising from any drawing, design or specification supplied by the Buyer.

8.2.2 any defect arises from fair wear and tear, willful damage, negligence, abnormal working conditions, failure to follow the Seller's instructions (whether oral or in writing), improper usage or alteration or repair of the Goods;

8.2.3 the total price for the Goods has not been paid by the due date for payment;

8.2.4 any defect is due to improper storage, design or installation of the Goods by the Buyer and or third parties

8.2.5 the Seller is not the sole seller of the Goods to the Buyer unless and to the extent that the Buyer can prove the Goods are from the Seller's goods supplied

8.2.6 the defect is due to hydrogen embrittlement.

8.3 Subject as expressly provided in these Conditions, and except where the Goods are sold to a person dealing as a consumer (within the meaning of the Unfair Contract Terms Act 1977), all warranties, conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law.

8.4 Where the Goods are sold under a consumer transaction (as defined by the Consumer Transactions (Restrictions on Statements) Order 1976 the statutory rights of the Buyer are not affected by these Conditions.

8.5 Any claim by the Buyer which is based on any defect in the quality or condition of the Goods or their failure to correspond with the specification shall (whether or not delivery is refused by the Buyer) be notified to the Seller within 7 days from the date of delivery or (where the defect or failure was not apparent on reasonable inspection) within a reasonable time after discovery of the defect or failure. If delivery is not refused, and the Buyer does not notify the Seller accordingly, the Buyer shall not be entitled to reject the Goods and the Seller shall have no liability for such defect or failure, and the Buyer shall be bound to pay the price as if the Goods have been delivered in accordance with the Contract.

8.6 Where any valid claim in respect of any of the Goods which is based on any defect in the quality or condition of the Goods or their failure to meet specification is notified to the Seller in accordance with these Conditions, the Seller shall be entitled to replace the Goods (or the part in question) free of charge or, at the Seller's sole discretion, refund to the Buyer the price of the Goods (or a proportionate part of the price), but the Seller shall have no further liability to the Buyer.

8.7 The Seller's maximum liability to the Buyer for the supply of Goods howsoever arising (whether by contract, tort or otherwise, including negligence) shall not exceed the lower of the price paid or payable for the Goods sold within the last twelve (12) months prior to the notification by the Buyer of the Seller's breach or alleged breach and one hundred thousand pounds sterling (£100,000) and the Seller shall not be liable for any consequential, indirect and/or financial losses. Nothing in these Conditions shall limit the Seller's liability for death, personal injury or fraudulent misrepresentation.

8.8 The Seller shall not be liable to the Buyer or be deemed to be in breach of the Contract by reason of any delay in performing, or any failure to perform, any of the Seller's obligations in relation to the Goods, if any delay or failure was due to any cause beyond the Seller's reasonable control. Without prejudice to the generality of the forgoing, the following shall be regarded (but not limited to) as causes beyond the Seller's reasonable control:

8.8.1 Act of God, explosion, flood, tempest, fire or accident;

8.8.2 war or threat of war, sabotage, insurrection, civil disturbance or requisition;

8.8.3 acts, restriction, regulations, bye-laws, prohibitions or measures of any kind on the part of any governmental, parliamentary or local authority;

8.8.4 import or export regulations or embargoes;

8.8.5 strikes, lock-outs or other industrial actions or trade disputes (whether involving employees of the Seller or of a third party);

8.8.6 difficulties in obtaining raw materials, labour, fuel, parts or machinery;

8.8.7 power failure or breakdown in machinery.

9. CANCELLATION OF ORDERS

Contracts may be cancelled only with the Seller's prior written consent and subject to the Buyer indemnifying the Seller in full for any losses incurred by the Seller in respect of such cancellation.

10. BREACH

If the Buyer:

10.1 (being an individual) enters into a deed of arrangement or commits an act of bankruptcy or compounds with its creditors or if a receiving order is made against him; or

10.2 if (being a Company) an order is made or a resolution is passed for the winding up of the Buyer (otherwise than for the purposes of a bona fide amalgamation or reconstruction) or the Buyer enters into a voluntary arrangement or compounds with its creditors or if a receiver or administrator is appointed over all or any of the Buyer's assets or undertaking or if circumstances arise which entitle the court or a creditor to appoint a receiver, manager or administrator or which entitle the court to make a winding up order or if the Buyer takes or suffers any similar or analogous action in consequence of debt; or

10.3 commits any material breach of this or any other contract between the Seller and the Buyer which is irremediable (or, being remediable, has not been remedied by the Buyer within 7 days of receiving notice from the Seller requiring remedy), then the Seller may treat the contract as being at an end.

11. INDEMNITY

11.1 The Buyer shall indemnify the Seller against any and all liabilities claims and costs incurred by or made against the Seller as a direct or indirect result of the carrying out of any work required to be done on or to the goods in accordance with the requirements or specifications of the Buyer involving any infringement or alleged infringement of any rights of any third party.

11.2 The Seller shall have no liability to the Buyer in the event of Goods infringing or being alleged to infringe the rights of any third party. In the event that the Goods are or may be the subject of third party rights the Seller shall be obliged to transfer to the Buyer only such title as the Seller may have.

11.3 The Buyer shall notify the Seller forthwith of any claim made or action brought or threatened alleging infringement of the rights of any third party. The Seller shall have control over and shall conduct any such proceedings in such manner as it shall determine. The Buyer shall provide all such reasonable assistance in connection therewith as the Seller may request. The cost of any such proceedings shall be borne in such proportions as the parties shall determine.

12. GENERAL

12.1 Any notice required or permitted to be given by either party to the other under these Conditions shall be in Writing addressed to that other party as its registered office or principal place of business or such other address as may at the relevant time have been notified pursuant to this provision to the party giving the notice.

12.2 No waiver by the Seller of any breach of the Contract by the Buyer shall be considered as a waiver of any subsequent breach of the same or any other provision.

12.3 If any provision of these Conditions is held by any competent authority to be invalid or unenforceable in whole or in part the validity of the other provisions of these Conditions and the remainder of the provision in question shall not be affected thereby.

12.4 Save as expressly provided herein nothing in these Conditions shall confer on any third party any benefit or the right to enforce any provision of this Contract.

12.5 Any dispute arising under or in connection with these Conditions of the sale of the Goods shall be referred to by a single arbitration appointed by agreement or (in default) nominated on the application of either party by the President for the time being of the British Industrial Fastener Federation.

12.6 A The Contract shall be governed by the laws of England and the Seller and the Buyer irrevocably agree that the courts of England are to have exclusive jurisdiction to settle any disputes which may arise out of or in connection with this contract and that accordingly any suit or proceedings arising out of or in connection with this contract shall be brought in such courts.

12.6 B Nothing contained in this clause 12.6 shall limit the right of the Seller to take proceedings against the Buyer in any court of competent jurisdiction, nor shall the taking of proceedings in one or more jurisdiction by the Seller preclude the takings of proceedings by the Seller in any other jurisdiction, whether concurrently or not, to the extent permitted by the law of such other jurisdiction.

October 2013

E. & O. E.