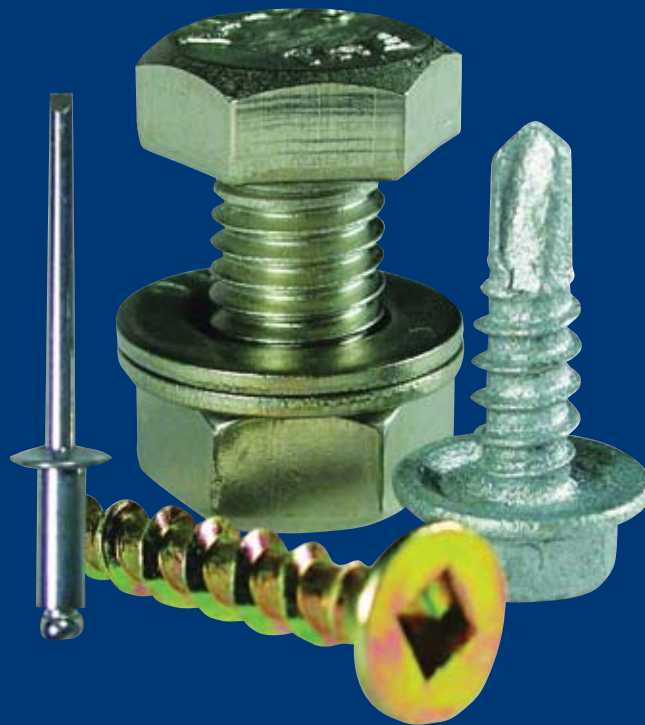


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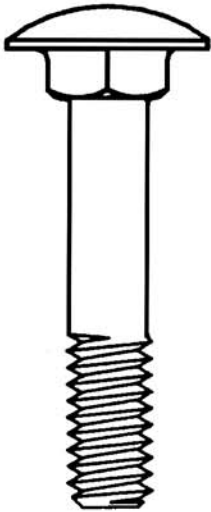
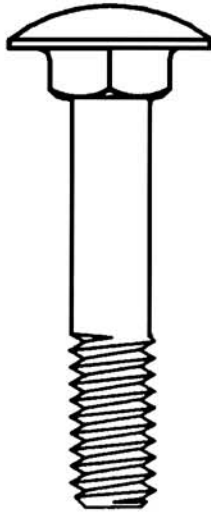


METAL JOINED	FASTENER MATERIAL AND FINISH											
	Zinc Plated Steel	Hot Dipped Galv. Steel	Alum. Alloy	Black or Bright Steel	Cadmium Plated Steel	Lead-Tin Plated Steel	Brass and Mang. Bronze	Copper	Chrome Plated Steel	Monel	Chrome Plated Brass	Austenitic Stainless Steel
Zinc (eg. Die Casting)	R	R	S	S ²	S	S	S	S	S	S	S	S
Zinc Plated (Electro) Steel	R	R	S	U	S	S	S	S	S	S	S	S
Hot Dipped Galv. Steel	S ²	R	S	U	S ²	S	S	S	S	S	S	S
Aluminium or its Alloys	S ⁶	S	R ⁷	U	R ³	S	U	U	S	S	S	R ⁴
Black or Bright Steel	S	S	U	R ²	S	S	S	S	-	-	-	-
Cast Iron	S	S	U	R ⁷	S	S	S	S	-	-	-	-
Hot Tinned (Steel, Copper, etc)	U	U	U	U ⁴	U	U	S ⁴	S ⁸	S	S	S	R
Chrome Plated Steel	U	U	U	-	U	U	U	U	R	S	S	R
Lead	U	U	U	U	U	R	S	S	-	S	S	-
Brass	U	U	U	U	U	U	R	S	-	S	S	S
Copper	U	U	U	U	U	U	S	R	-	S	S	S
Monel	U	U	U	U	U	U	-	-	-	R	R	S
Chrome Plated Brass	U	U	U	U	U	U	-	-	S	S	R	S
Nickel	U	U	U	U	U	U	-	-	S	R	R	S
Stainless Steel Martensitic	U	U	U	-	U	U	U	U	S	S	S	R
Stainless Steel Austenitic	U	U	U	-	U	U	U	U	S	U	U	R

R = Recommended
 S = Satisfactory
 U = Unsuitable
 - = Unlikely to be considered due to appearance difference or other reason

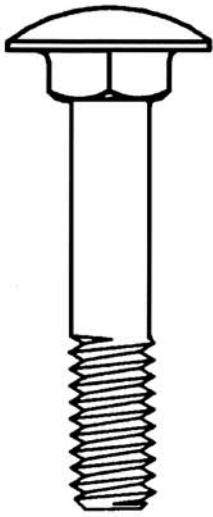
NOTES

- In this category Black or Bright Steel means plain carbon and low alloy steels regardless of mechanical properties.
- Protection of the small area of the fastener depends on amount of zinc available on the surrounding die cast or galvanised surface.
- This combination is widely used in airframe construction. Corrosion possibilities are further reduced by the use in assembly of zinc or barium chromate filled jointing compound.
- Recommended alternatively with aluminium alloys if better mechanical properties are required than obtainable with the latter. Eg, there might be required higher strength in a bolt or greater hardness in a self-tapping screw. It is sometimes advised for critical applications that fasteners made from stainless steel may be cadmium plated for use in contact with aluminium alloys.
- Trade usage of the term "Chrome-Plated" really means adequate under-deposits of copper and/or nickel finished with a chromium deposit.
- Aluminium is the protected member of aluminium-zinc combinations, causing accelerated corrosion of the zinc. Since wastage of the zinc will eventually lead to exposure of the basic steel of the fastener, and then this bare steel could accelerate corrosion of the aluminium - and also cause staining, the greater the available amount of zinc the better. Thus in the absence of painting, the more heavily coated hot dipped galvanised fastener is a better choice than its zinc plated counterpart.
- It is not intended to imply that exposure of these materials in an unprotected condition in a corrosive environment will yield a satisfactory behaviour. The recommendation is essentially for elimination of galvanic corrosion.
- Subsequent hot tinning of an assembly containing this metal as a fastener upgrades its suitability to being a recommended practice; the key symbol, without qualification refers to the combination without further processing, hot tinning of assemblies containing mixed metals is extensively practised in food industries.



Dia. Length	M6			M8			Dia. Length
	Std. Pack	Zinc		Std. Pack	Galv.	Zinc	
20	200	*		100	*	*	20
25	200	*		100	*	*	25
30	150	*		75	*	*	30
35	150	*					35
40	150	*		75	*	*	40
45	150	*		50	*	*	45
50	150	*		50	*	*	50
55	150	*		50	*	*	55
60	150	*		50	*	*	60
65	150	*		50	*	*	65
70	150	*		50	*	*	70
75	125	*		50	*	*	75
80	125	*		50		*	80
90	100	*		50	*	*	90
100	100	*		50	*	*	100
110	100	*		50	*	*	110
130	100	*		50	*	*	130
140				50	*	*	140
150	100	*		50	*	*	150
160							160
180							180
190							190
200							200
Dia. Length	M10			M12			Dia. Length
	Std. Pack	Galv.	Zinc	Std. Pack	Galv.	Zinc.	
20	100		*				20
25	100	*	*				25
30	100	*	*	50	*		30
35							35
40	75	*	*	50	*		40
45							45
50	75	*	*	50	*		50
55							55
60	50	*	*				60
65	50	*	*	25	*		65
70	50	*	*	25	*		70
75	50	*	*	25	*		75
80	50	*	*				80
85							85
90	50	*	*	25	*		90
100	50	*	*	25	*		100
110	50	*	*	25	*		110
120	50	*		25	*		120
130	50	*	*	25	*		130
140	50	*		25	*		140
150	50	*	*	25	*		150
160	50	*		25	*		160
170	50	*		25	*		170
180	50	*		25	*		180
190	40	*		20	*		190
200	40	*	*	20	*		200
220	40	*		20	*		220
240	40	*		20	*		240
260	40	*		20	*		260
280	40	*		20	*		280
300	40	*		20	*		300
325				20	*		325
350				20	*		350
375							375
400							400

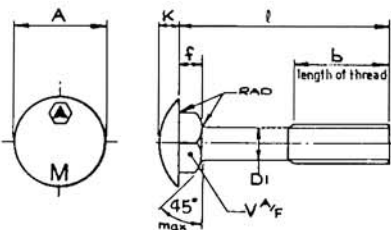




Dia. Length	M16		M20		Dia. Length
	Std. Pack	Galv	Std. Pack	Galv	
50	50	*			50
60					60
65	50	*			65
70					70
75	50	*			75
90	50	*			90
100	50	*			100
110	50	*			110
130	50	*			130
150	50	*			150
160					160
165					165
180	50	*			180
200	50	*			200
220	50	*			220
240	50	*			240
250	50	*			250
260	50	*			260
280	50	*			280
300					300
325					325
350					350
375					375
400					400
450	25	*			450
500					500

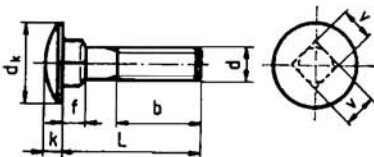
Metric Cup Head, Square Neck Bolts and Nuts.
Mild Steel
Relevant Australian Standard 1390

1. DIMENSIONS



Nominal Diameter (mm) D	Pitch of Thread P	Shank Diameter D1		Head Diameter A		Head Thickness k		Length of Square Neck f		Across Flats of Square Neck V	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
6	1.0	5.97	5.20	13.50	12.40	3.6	3.0	3.6	3.0	6.48	5.52
8	1.25	7.97	7.00	18.00	16.90	4.8	4.0	4.8	4.0	8.58	7.42
10	1.5	9.55	8.80	22.50	21.20	5.8	5.0	5.8	5.0	10.58	9.42
12	1.75	11.96	10.60	27.00	25.70	6.8	6.0	6.8	6.0	12.70	11.30
16	2.00	15.96	14.50	36.00	34.40	8.9	8.0	8.9	8.0	16.70	15.30
20	2.50	19.96	18.10	45.00	43.40	10.9	10.0	10.9	10.0	20.84	19.16

DIN : 603



d	M6	M8	M10	M12	M16
P	1	1,25	1,5	1,75	2
b ₁	18	22	26	30	38
b ₂	24	28	32	36	44
b ₃	-	41	45	49	57
dk	16	20	24	30	38
f	4	5	6	8	12
k	3,5	4,5	5	6,5	8,5
v	6	8	10	12	16



ISOMETRIC CUP HEAD BOLTS AND NUTS

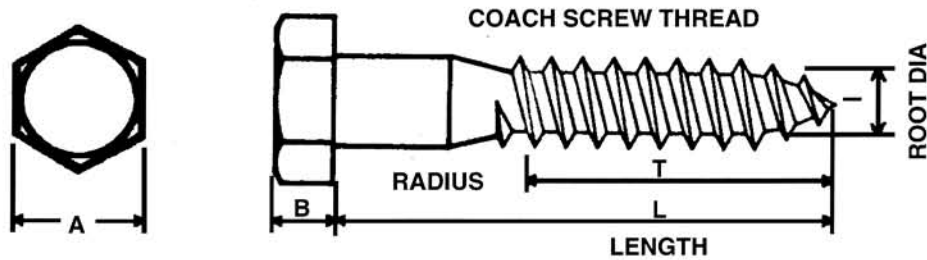
Kgs per100

Length	M6	M8	M10	M12	M16	M20	Length
20	0.8	1.6					20
25	0.9	1.8	3.3				25
30	0.9	1.9	3.5	5.4			30
40	1.1	2.2	4.0	6.1			40
45	1.2	2.4	4.3	6.5			45
50	1.3	2.6	4.5	6.8	14.1		50
60	1.5	2.9	5.0	7.5	15.5		60
65	1.5	3.0	5.2	7.9	15.6	25.7	65
70	1.7	3.2	5.5	8.2	16.2	27.0	70
75	1.7	3.3	5.7	8.6	16.7	28.3	75
85	1.9	3.6	6.4	9.1	17.5	30.2	85
90	2.0	3.8	6.5	9.6	18.3	32.1	90
100	2.1	4.1	7.0	10.3	19.4	34.0	100
120	2.5	4.7	7.9	11.8	23.3	37.5	120
130	2.6	5.0	8.4	12.5	25.1	39.4	130
140	2.8	5.3	8.9	13.2	25.7	40.0	140
150	3.0	5.6	9.4	13.9	26.3	42.8	150
170		6.5	11.3	16.7	32.1	49.5	170
180		7.0	11.9	17.6	32.8	56.2	180
190		7.5	12.5	18.5	34.4	58.7	190
200		7.9	13.1	19.4	36.0	61.1	200
220			14.7	21.1	39.0	65.9	220
240			15.5	22.9	42.1	70.7	240
260			17.2	24.7	45.2	75.7	260
280			18.5	26.4	48.4	80.6	280
300			19.8	28.2	51.5	85.5	300
325			20.7	30.3	55.3	91.7	325
350			22.3	32.5	59.2	97.8	350
375			23.8	34.7	63.2	104.0	375
400			25.3	36.9	67.1	110.1	400
450				41.4	75.0	122.4	450
500				45.8	82.9	134.7	500
550					90.8	147.0	550
600					98.7	159.3	600



Dia. Length	M6			M8			M10			Dia. Length
	Std. Pack		Galv.	Std. Pack		Galv.	Std. Pack		Galv.	
40	150		*	75		*	75		*	40
50	150		*	75		*	75		*	50
65	150		*	75		*	50		*	65
75	125		*	75		*	50		*	75
80										80
90	100		*	50		*	50		*	90
100	100		*	50		*	50		*	100
120							50		*	120
130							50		*	130
150							50		*	150
160							50		*	160
180							50		*	180

Dia. Length	M12			M16			Dia. Length
	Std. Pack		Galv.	Std Pack		Galv.	
40	50		•				40
50	50		•				50
65	50		•				65
75	25		•				75
90	25		•				90
100	25		•				100
120	25		•				120
130	25		•				130
150	25		•				150
180	25		•				180
200	25		•				200



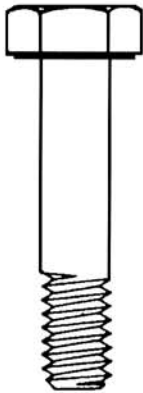
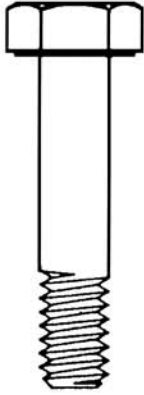
Dimensions in millimetres:

Dimensions to AS 1393 - 1973

Diam.	A max.	B max.	Thread Pitch	Root Diam. max.	T
6 mm	10	4.38	2.5	4.4	Thread length = 0.6 nominal length + 3.0 - 0.0
8 mm	13	5.88	3.0	5.6	
10 mm	17	7.45	3.5	7.0	
12 mm	19	8.45	4.0	8.3	
16 mm	24	10.45	5.0	12.7	
20 mm	30	13.90	5.0	15.6	



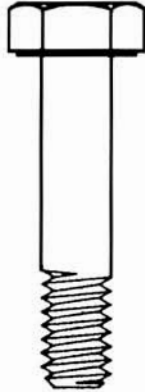
ISOMETRIC COURSE PITCH SERIES.
CLASSES 4.6



Dia.	M6			M8				M10				Dia.	
	Length	Std. Pack	Black	Zinc	Std. Pack	Black	Galv.	Zinc	Std. Pack	Black	Galv.		Zinc
12	200	*	*										12
16	200	*	*	125	*		*						16
20	200	*	*	100	*	*	*	100	*	*	*		20
25	200	*	*	100	*	*	*	100	*	*	*		25
30	150	*	*	75	*	*	*	100	*	*	*		30
35	150	*	*	75	*	*	*	75	*	*	*		35
40	150	*	*	75	*	*	*	75	*	*	*		40
45	150	*	*	50	*	*	*	75	*	*	*		45
50	150	*	*	50	*	*	*	75	*	*	*		50
55	150	*	*	50	*	*	*	50	*	*	*		55
60	150	*	*	50	*	*	*	50	*	*	*		60
65	150	*	*	50	*	*	*	50	*	*	*		65
70	150	*	*	50	*	*	*	50	*	*	*		70
75	125	*	*	50	*	*	*	50	*	*	*		75
80	125	*	*	50	*	*	*	50	*	*	*		80
90	100	*	*	50	*	*	*	50	*	*	*		90
100	100	*	*	50	*	*	*	50	*	*	*		100
110	100		*	50	*	*	*	50	*	*	*		110
120				50	*	*	*	50	*	*	*		120
130				50	*	*	*	50	*	*	*		130
140				50	*	*	*	50	*	*	*		140
150				50	*	*	*	50	*	*	*		150
160								50	*	*			160
180								50	*	*			180
200								25	*	*			200
220								25	*	*			220
240								25	*	*			240
260								25	*	*			260
280													280
300								50	*	*			300
Dia.	M12					M16				Dia.			
	Length	Std. Pack	Black	Galv.	Zinc	Std. Pack	Black	Galv.	Zinc		Length		
25	75	*	*	*	25	*	*			25			
30	75	*	*	*	25	*	*			30			
35	50	*	*	*	25	*	*			35			
40	50	*	*	*	25	*	*			40			
45	50	*	*	*	25	*	*			45			
50	50	*	*	*	25	*	*			50			
55	25	*	*	*	25	*	*			55			
60	25	*	*	*	25	*	*			60			
65	25	*	*	*	20	*	*			65			
70	25	*	*	*	20	*	*			70			
75	25	*	*	*	20	*	*			75			
80	25	*	*	*	20	*	*			80			
90	25	*	*	*	20	*	*			90			
100	25	*	*	*	15	*	*			100			
110	25	*	*	*	15	*	*			110			
120	25	*	*	*	15	*	*			120			
130	25	*	*	*	15	*	*			130			
140	25	*	*	*	15	*	*			140			
150	25	*	*	*	15	*	*			150			
160	25	*	*	*	15	*	*			160			
180	25	*	*	*	15	*	*			180			
190										190			
200	20	*	*	*	15	*	*			200			
220	20	*	*	*	15	*	*			220			
230										230			
240	20	*	*	*	15	*	*			240			
260	20	*	*	*	15	*	*			260			
280	50	*	*	*	25	*	*			280			
300	50	*	*	*	25	*	*			300			
325	50	*	*	*	25	*	*			325			
350	50	*	*	*	25	*	*			350			
375	50	*	*	*	25	*	*			375			
400	50	*	*	*	25	*	*			400			
425					25	*	*			425			
450					25	*	*			450			
475										475			
500					25	*	*			500			
525										525			
550					25	*	*			550			
575										575			
600										600			



ISOMETRIC COURSE PITCH SERIES.
CLASSES 4.6

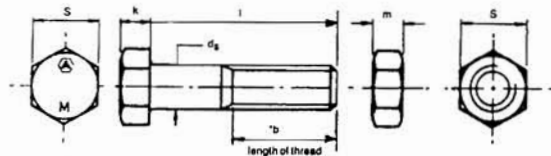


Dia.	M20			M24			Dia.
	Length	Std. Pack	Black	Galv.	Std. Pack	Black	
40	15	*	*				40
45	15	*	*				45
50	15	*	*	50	*	*	40
55	15	*	*				55
60	10	*	*	50	*	*	60
65	10	*	*	50	*	*	65
70	10	*	*				70
75	10	*	*	25	*	*	75
80	10	*	*	25	*	*	80
90	10	*	*	25	*	*	90
100	10	*	*	25	*	*	100
110	10	*	*	25	*	*	110
120	10	*	*				120
130	10	*	*				130
140	10	*	*				140
150	10	*	*	25	*	*	150
160	10	*	*				160
180	10	*	*	25	*	*	180
200	10	*	*	25	*	*	200
220	10	*	*				220
240	10	*	*				240
260	10	*	*				260
280	20	*	*				280
300	20	*	*				300
325	20	*	*				325
350	20	*	*				350
375	20	*	*				375
400	20	*	*				400
425							425
450							450
475							475
500							500
525							525
550							550
560							560
575							575
600							600
700							700
800							800

Metric Commercial Hexagon Bolts & Nuts and Set Screws

Metric Commercial Hexagon Bolts & Nuts and Set Screws. ISO Metric Coarse Pitch Series. Threads, Class 8g. Property Classes 4.6 Relevant Australian Standards Bolts and Set Screws AS 1111., Nuts AS 1112.

1. DIMENSIONS



All dimensions in millimetres

Nominal Dia.	Pitch of Thread	Shank Diameter d_s		Width Across Flats S		Head Thickness k		Nut Thickness m	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
D	P								
M6	1.0	6.48	5.52	10.0	9.64	4.38	3.62	5.20	4.90
M8	1.25	8.58	7.42	13.0	12.57	5.68	4.92	6.80	6.44
M10	1.5	10.58	9.42	16.0	15.57	6.85	5.95	8.40	8.04
M12	1.75	12.70	11.30	18.0	17.57	7.95	7.05	10.80	10.37
M16	2.0	16.70	15.30	24.0	23.16	10.75	9.25	14.80	14.10
M20	2.5	20.84	19.16	30.0	29.16	13.40	11.60	18.00	16.90
M24	3.0	28.84	23.16	36.0	35.00	15.90	14.10	21.50	20.20
M30	3.5	30.84	29.16	46.0	45.00	19.75	17.65	25.60	24.30
M36	4.0	37.00	35.00	55.0	53.80	23.55	21.45	31.00	29.40

THREAD LENGTH b.

Nominal Length of Bolt	Min. Length of Thread b
Up to and including 125mm	2D + 6mm
Over 125mm up to and including 200mm	2D + 12mm
Over 200mm	2D + 25mm

Where D = Nominal Diameter in millimetres

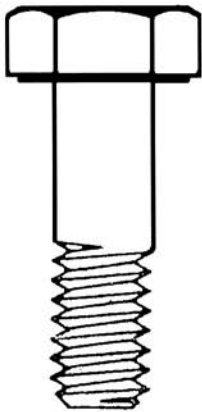
Hexagon Head Screws are threaded to within 2 1/2 Pitches of the underside of the head.

2) MECHANICAL PROPERTIES.

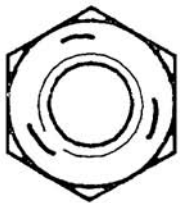
PROPERTY CLASS 4.6
Tensile Strength
400 MPa (N/mm²) min.
58,000 lb/in² min.
25.9 ton f/in² min.
Proof Load Stress
225 MPa (N/mm²) min.
32,800 lb/in² min.
14.6 tonf/in² min.



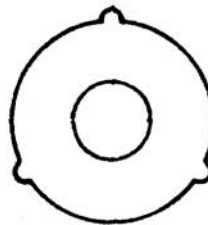
HIGH STRENGTH STRUCTURAL ISOMETRIC



Dia.	M16		M20		M24		Dia.
	Std. Pack	Galvanised	Std. Pack	Galvanised	Std. Pack	Galvanised	
Length							Length
40	100	*	75	*			40
45	100	*	75	*			45
50	100	*	50	*	30	*	50
55	100	*	50	*	30	*	55
60	100	*	50	*	30	*	60
65	75	*	50	*	30	*	65
70	75	*	50	*	30	*	70
75	75	*	50	*	30	*	75
80	75	*	50	*	30	*	80
85			50	*	30	*	85
90	75	*	50	*	30	*	90
100	75	*	50	*	30	*	100
110			40	*	20	*	110
120			40	*	20	*	120
130			40	*	20	*	130
140			30	*	20	*	140
150			30	*	20	*	150
Dia.	M30		M36		Dia.		
	Std. Pack	Galvanised	Std. Pack	Galvanised			
Length					Length		
75	15	*			75		
80	15	*			80		
85	15	*			85		
90	15	*	8	*	90		
100	15	*	8	*	100		
110	15	*			110		
120	15	*	8	*	120		
130	10	*	8	*	130		
140	10	*	8	*	140		
150	10	*	8	*	150		
160	10	*	5	*	160		
170	10	*	5	*	170		
180	10	*	5	*	180		
190	8	*			190		
200	8	*	5	*	200		



STRUCTURAL NUTS ISO METRIC COARSE		
Dia	Std. Pack	Galvanised
16	450	*
20	250	*
24	100	*
30	50	*
36	25	*

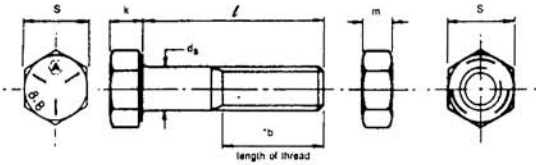


STRUCTURAL WASHERS ISO METRIC METRIC		
Dia	Std. Pack	Galvanised
16	800	*
20	500	*
24	350	*
30	250	*
36	200	*



Metric High Strength Structural Bolts & Nuts.
General Grade. (ISO Property Class 8.8) ISO
Metric Coarse Pitch Series Threads. Class 6g.
Relevant Australian Standard, 1252

1. DIMENSIONS



All dimensions in millimetres

Nominal Diameter D	Pitch of Thread P	Shank Dia d _s		Across Flats S		Head Thickness k		Nut Thickness m	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
M16	2.0	16.70	15.30	27	26.16	10.75	9.25	17.1	16.00
M20	2.5	20.84	19.16	32	31.00	13.90	12.10	21.3	20.00
M22	2.5	22.84	21.16	36	35.00	14.90	13.10	23.30	22.00
M24	3.00	24.84	23.16	41	40.00	15.90	14.10	25.3	24.00
M30	3.5	30.84	29.16	50	49.00	19.75	17.65	31.3	30.00
M36	4.0	37.00	35.00	60	58.80	23.55	21.45	37.6	36.00

2. BREAKING AND PROOF LOADS

The following tables list tensile breaking and proof loads of Ajax Spurway bolts calculated from tensile on proof load stress and "Stress Area" of the thread, and nut proof loads, and are based on:

BOLTS		NUTS	
Tensile Strength	"Proof Load" Stress	Proof Load Stress	= 1075 MPa (N/mm ²)
830 MPa (N/mm ²) min.	600 MPa (N/mm ²) min.	(on stress area of corresponding bolt)	Black Nuts
120 Kips/in ² min.	87 Kips/in ² min.		Galvanised Nuts
53.5 tonf/in ² min.			= 1000 lbf

Nominal Bolt Diameter D	Tensile Stress Area of Thread mm ²	BOLTS						NUTS	
		Breaking Load Minimum			Proof Load Minimum			Proof Load Minimum	
		kN	Kips	tonf	kN	Kips	tonf	Black	Galvanised
M16	157	130	29.2	13.04	94.2	21.2	9.45	169	183
M20	245	203	45.6	20.37	147.0	33.0	14.75	263	285
M22	303	252	56.7	25.3	182	40.9	18.25	325.7	352.9
M24	353	293	65.8	29.40	212.0	47.6	21.27	279	411
M30	561	466	104.7	46.76	337.0	75.7	33.82	603	654
M36	817	678	152.4	68.04	490.0	110.1	49.17	878	952

3. LENGTHS OF STRUCTURAL BOLTS

Overall Length l	Nominal bolt diameter D									
	M16		M20		M24		M30		M36	
	min.	max.	min.	max.	min.	max.	min.	max.	min.	max.
40	38.75	41.25	8	14	-	-	-	-	-	-
45	43.75	46.25	8	14	10	17.5	-	-	-	-
50	48.75	51.25	8	14	10	17.5	-	-	-	-
55	53.5	56.5	11	17	10	17.5	12	21	-	-
60	58.5	61.5	16	22	10	17.5	12	21	-	-
65	63.5	66.5	21	27	11.5	19	12	21	-	-
70	68.5	71.5	26	32	16.5	24	12	21	15	25.5
75	73.5	76.5	31	37	21.5	29	12	21	15	25.5
80	78.5	81.5	36	42	26.5	34	17	26	15	25.5
85	83.25	86.75	41	47	31.5	39	22	31	15	25.5
90	88.25	91.75	46	52	36.5	44	27	36	15	25.5
95	93.25	96.75	51	57	41.5	49	32	41	18.5	29
100	98.25	101.75	56	62	46.5	54	37	46	23.5	34
110	108.25	111.75	66	72	56.5	64	47	56	33.5	44
120	118.25	121.75	76	82	66.5	74	57	66	43.5	54
130	128	132	80	86	70.5	78	61	70	47.5	58
140	138	142	90	96	80.5	88	71	80	57.5	68
150	148	152	100	106	90.5	98	81	90	67.5	78
160	156	164	-	-	-	-	91	100	77.5	88
170	166	174	-	-	-	-	101	110	87.5	98
180	176	184	-	-	-	-	111	120	97.5	108
190	186	194	-	-	-	-	121	130	107.5	118
200	196	204	-	-	-	-	131	140	117.5	128
220	216	224	-	-	-	-	138	147	124.5	135
240	236	244	-	-	-	-	158	167	144.5	155

- 1. Body Length (l_s).**
The distance from the bearing surface of the bolt head to the last scratch of thread, or top to the extrusion angle, whichever is closer to the head.
- 2. Grip Length (l_g).**
This distance between the bearing face of the head and the nearest face of a nut with no countersink, when screwed onto the bolt as far as practicable by hand. This represents the approximate minimum thickness of materials which can be clamped, excluding the washer thickness.
- 3. Bolts with lengths above the heavy line have thread lengths - shorter than the nominal lengths referred to below.**

4. NOMINAL THREAD LENGTHS

Nom. bolt length l	Basis for nominal length of thread b	Nominal length of thread b millimetres				
		M16	M20	M24	M30	M36
≤125	2D + 6	38	46	54	66	78
<125 ≤200	2D + 12	44	52	60	72	84
<200	2D + 25	-	65	73	85	97

Note. These thread lengths are not applicable to bolt lengths above the heavy line in the above

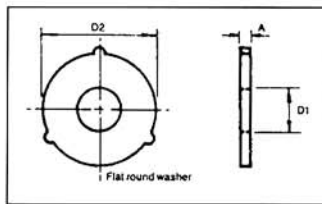
METRIC HIGH STRENGTH STRUCTURAL WASHERS

Metric High Strength Structural Washers for
Metric High Strength Structural Bolts & Nuts.
Relevant Australian Standard, 1252.

1. DIMENSIONS

All Dimensions in Millimetres

Nominal Diameter of Bolt	Inside Diameter D ₁		Outside Diameter D ₂		Thickness A	
	Max.	Min.	Max.	Min.	Max.	Min.
M16	18.43	18.0	34.0	32.4	4.6	3.1
M20	22.52	22.0	39.00	37.4	4.6	3.1
M22	25.42	24.0	44.0	42.4	4.6	3.4
M24	26.52	26.0	50.0	48.4	4.6	3.4
M30	33.62	33.0	60.0	58.1	4.6	3.4
M36	39.62	39.0	72.0	70.1	4.6	3.4



2. MECHANICAL PROPERTIES

Washers are hardened and tempered to a hardness of HV345 to HV445. (Rockwell C35-C45). Hardened flat circular washers for high strength structural bolts are identified by three equispaced projections on the washer periphery.

3. APPLICATION

The washer is used under the nut or bolt head, whichever is rotated in tightening. It is to prevent galling during tightening of the softer structural steel. Prevention of galling is the primary function of the washer. The washer may be one of those required when using oversize or slotted holes or may be additional to the further washer requirements. Australian Standard 1511 - SAA High Strength Structural Bolting Code allows:

1. That in the fabrication process where oversize or short slotted holes are permitted and used, hardened washers are to be installed over the exposed holes.
2. Each bolt and nut shall be assembled with at least one washer, and where only one washer is used it shall be placed under the rotating component.



ISOMETRIC COMMERCIAL HEXAGON HEAD BOLTS AND NUTS

Kgs per100

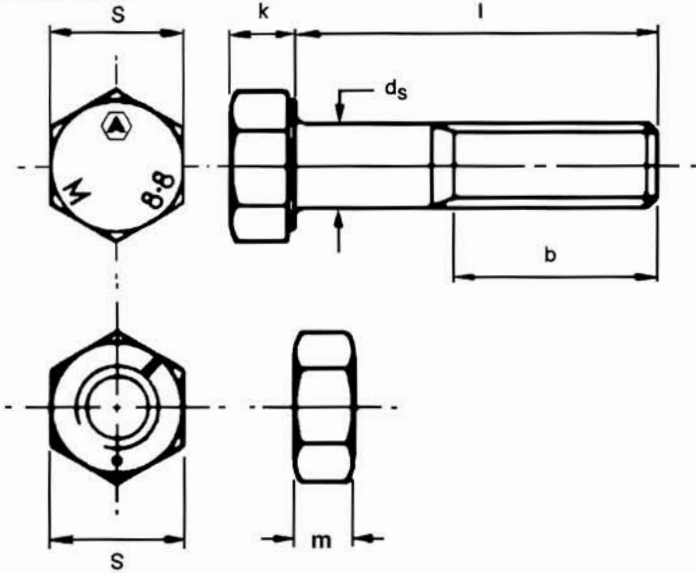
Length	M6	M8	M10	M12	M16	M20	M24	M30	M36	Length
20	0.7	1.6	3.3	4.7						20
25	0.8	1.9	3.5	5.0	9.7					25
30	0.9	2.1	3.7	5.5	10.3	19.2				30
35	1.0	2.2	4.0	5.8	11.2	20.2				35
40	1.2	2.4	4.3	6.2	12.0	21.3				40
45	1.3	2.6	4.6	6.7	12.7	22.3				45
50	1.4	2.8	4.9	7.1	14.1	23.3	39.5			50
55	1.5	3.0	5.2	7.5	14.4	24.3	39.9			55
60	1.6	3.2	5.4	7.9	15.2	25.3	41.3			60
65	1.8	3.4	5.7	8.4	16.0	26.6	42.7			65
70	1.9	3.6	6.0	8.8	16.8	27.8	44.9			70
75	2.0	3.8	6.3	9.2	17.5	29.0	46.6	84.9		75
80	2.1	4.0	6.6	9.7	18.3	30.2	48.3	87.2		80
85	2.3	4.2	6.9	10.1	19.1	31.4	50.0	89.4		85
90	2.4	4.4	7.1	10.5	19.8	32.6	51.8	91.7		90
100	2.6	4.8	7.8	11.4	20.3	35.0	55.2	96.1	163.1	100
110	2.8	5.2	8.3	12.2	21.4	37.3	58.7	100.8	171.0	100
120	3.0	5.6	8.9	13.1	22.1	39.7	62.0	105.4	179.0	120
130	3.3	6.0	9.4	14.0	22.9	42.1	65.2	110.1	186.9	130
140	3.5	6.1	10.0	14.8	23.7	44.5	68.7	114.8	194.9	140
150	3.7	6.2	10.6	15.7	24.5	46.9	72.1	119.5	202.8	150
160			11.2	16.8	27.7	49.7	76.6	127.7	210.8	160
170			11.7	17.9	30.9	52.5	81.0	736.0	218.7	170
180			12.3	18.7	32.7	54.9	82.8	141.5	226.6	180
190			12.9	19.8	34.2	57.4	84.6	147.1	234.6	190
200			13.5	20.8	35.7	59.8	86.4	152.6	242.5	200
220			14.5	21.8	38.5	64.1	88.3	163.2	250.5	220
240			15.6	23.5	41.5	69.1	90.0	173.8	258.4	240
260			16.7	25.2	44.4	74.0	107.1	184.8	266.4	260
280			17.9	29.3	47.4	78.8	114.3	195.9	274.3	280
300			19.0	31.8	50.3	83.7	121.4	207.0	282.2	300
325				32.8	54.0	89.9	128.7			325
350				33.7	57.5	96.1	138.5			350
375				35.8	61.2	102.2	148.4			375
400				38.0	64.9	108.4	157.3			400
425				40.2	70.6	114.7	166.3			425
450				42.3	72.3	121.0	175.3			450
500				46.6	79.5	137.3	193.2			500
550				51.0	85.0	150.2	211.2			550
600				55.3	90.4	158.5	229.1			600



ISOMETRIC CLASS 8.8 - HIGH TENSILE HEXAGON

Metric High Tensile, Precision Hexagon Head Bolts & Nuts and Set Screws. ISO Metric Coarse Pitch Series. Threads, Class 6g. Relevant Australian Standards. Bolts and Set Screws AS 1110. Nuts AS 1112.

1. DIMENSIONS



Nominal Dia D	Pitch of Thread	Shank Diameter d_s		Width Across Flats S		Head Thickness k		Nut Thickness m	
		Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
M6	1.0	6.0	5.82	10.0	9.78	4.15	3.85	5.20	4.90
M8	1.25	8.0	7.78	13.0	12.73	5.45	5.15	6.80	6.44
M10	1.5	10.0	9.78	16.0	15.73	6.58	6.22	8.40	8.04
M12	1.75	12.0	11.73	18.0	17.73	7.68	7.32	10.80	10.37
M16	2.0	16.0	15.73	24.0	23.67	10.18	9.82	14.80	14.10
M20	2.5	20.0	19.67	30.0	29.67	12.72	12.28	18.00	16.90
M24	3.0	24.0	23.67	36.0	35.38	15.22	14.78	21.50	20.20

Thread length b.

Nominal Length of Bolt l	Min. Length of Thread b
Up to and including 125mm	2D + 6mm
Over 125 up to and including 200mm	2D + 12mm
Over 200mm	2D + 25mm

Where D = Nominal Diameter in millimetres

* Hexagon Head Screws are threaded to within 2½ pitches of the underside of the head.

2. MECHANICAL PROPERTIES

	M6 TO M16 DIAMETER	OVER M16 DIAMETER
Tensile Strength	800MPa (N/mm ²) min. 116,000 lbf/in ² min. 51.8 tonf/in ² min.	830 MPa (N/mm ²) min. 120,000 lbf/in ² min. 53.6 tonf/in ² min.
Proof Load Stress	580MPa (N/mm ²) min. 84,400lbf/in ² min. 37.7 tonf/in ² min.	600MPa (N/mm ²) min. 87,600 lbf/in ² min. 39.1 tonf/in ² min.

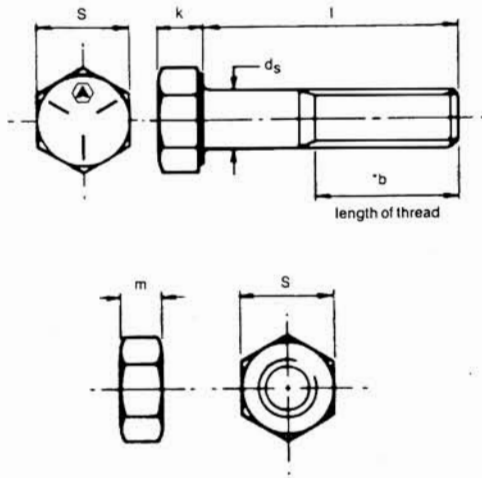
DIA	M6			M8			DIA
	Length	STD Pack	Black	Zinc	STD Pack	Black	
16	200		*	125		*	16
20	200		*	100		*	20
25	200		*	100		*	25
30	150		*	75		*	30
35	150		*	75		*	35
40	125		*	75		*	40
45	100		*	50		*	45
50	100		*	50		*	50
55	150		*	50		*	55
60	150		*	50		*	60
65	150		*	50		*	65
70				75		*	70
75				50		*	75
DIA	M10			M12			DIA
Length	STD Pack	Black	Zinc	STD Pack	Black	Zinc	
20	100		*				20
25	100		*	75		*	25
30	100		*	50		*	30
35	75		*	50		*	35
40	75		*	50		*	40
45	75		*	50		*	45
50	75		*	50		*	50
55	50		*	25		*	55
60	50		*	25		*	60
65	50		*	25		*	65
70	50		*	25		*	70
75	50		*	25		*	75
80	50		*	25		*	80
90	50		*	25		*	90
100				25		*	100
110				25		*	110
120				25		*	120
DIA	M16			M20			DIA
Length	STD Pack	Black	Zinc	STD Pack	Black	Zinc	
35	25		*				35
40	25		*	15		*	40
45	25		*				45
50	25		*	15		*	50
55	25		*	15		*	55
60	25		*	10		*	60
65	20		*	10		*	65
70	20		*	10		*	70
75	20		*	10		*	75
80	20		*	10		*	80
90	20		*	10		*	90
100	15		*	10		*	100
110							110
120				5		*	120
130							130
140							140
150				5		*	150



UNC/UNF GRADE 5 - HIGH TENSILE HEXAGON

Unified High Tensile Bolts & Nuts and Set Screws. UNC & UNF Threads. SAE Grade 5. Mechanical Properties Relevant Australian Standard. 2465 Dimensionally Equivalent to ANSI B 18.2.1/ANSI B 18.2.2

1. DIMENSIONS



Nominal Diameter	Threads per inch		Shank Diameter ds		Head Thickness k		Across Flats S		Nut Thickness m	
	UNC	UNF	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1/4	20	28	.250	.245	.163	.150	.438	.428	.226	.212
5/16	18	24	.3125	.3065	.211	.195	.500	.489	.273	.258
3/8	16	24	.375	.369	.243	.226	.562	.551	.337	.320
7/16	14	20	.4375	.4305	.291	.272	.625*	.612*	.385	.365
1/2	13	20	.500	.493	.323	.302	.750	.736	.448	.427
5/8	11	18	.625	.617	.403	.378	.938	.922	.559	.535
3/4	10	16	.750	.741	.483	.455	1.125	1.100	.665	.617
7/8	9	14	.875	.866	.563	.531	1.312	1.285	.776	.724
1	8	12	1.000	.990	.627	.591	1.500	1.469	.887	.831

* Note 7/16 Nut Across Flats .688 .675

THREAD LENGTH b

For Bolt Lengths	Nominal Bolt Diameter									
	1/4	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	
Up to and including 6" Long	3/4	7/8	1	1.1/8	1.1/4	1.1/2	1.3/4	2	2.1/4	
Over 6" Long	1	1.1/8	1.1/4	1.3/8	1.1/2	1.3/4	2	2.1/4	2.1/2	

* Hexagon Head Screws are threaded to within 21/2 pitches of the underside of the Head.

2. MECHANICAL PROPERTIES

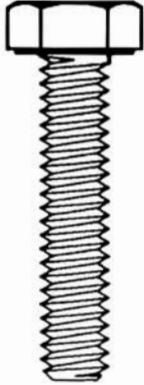
Tensile Strength 120000 lbf/in' (53.6 tonf/in')
Yield Stress 85000 lbf/in' (37.9 tonf/in')



Dia	1/4			5/16			Dia	
	Length	Std. Pack	Black	Zinc	Std. Pack	Black		Zinc
1/2	200	*	*		125	*	*	1/2
5/8	200	*	*					5/8
3/4	150	*	*		125	*	*	3/4
1	150	*	*		175	*	*	1
1.1/4	150	*	*		175	*		1.1/4
1.1/2	125	*	*		125	*	*	1.1/2
1.3/4	125	*	*		125	*	*	1.3/4
2	100	*	*		125	*	*	2
2.1/4	100	*	*		125	*		2.1/4
2.1/2	125	*	*		100	*	*	2.1/2
2.3/4								2.3/4
3	100	*	*		100	*		3
3.1/2					75	*		3.1/2
4					75	*		4
Dia	3/8			7/16			Dia	
Length	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Length	
3/4	75	*	*				3/4	
1	100	*	*	75	*		1	
1.1/4	100	*	*	75	*	*	1.1/4	
1.1/2	100	*	*	75	*		1.1/2	
1.3/4	100	*	*	50	*		1.3/4	
2	75	*	*	50	*		2	
2.1/4	75	*	*				2.1/4	
2.1/2	75	*	*	50	*		2.1/2	
2.3/4				50	*		2.3/4	
3	50	*	*	50	*		3	
3.1/4							3.1/4	
3.1/2	50	*	*	25	*		3.1/2	
4	50	*	*	25	*		4	
4.1/2	25	*	*				4.1/2	
5	25	*	*	25	*		5	
5.1/2							5.1/2	
6	25	*	*				6	
Dia	1/2			5/8			Dia	
Length	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Length	
1	50	*	*				1	
1.1/4	50	*	*				1.1/4	
1.1/2	50	*	*	25	*		1.1/2	
1.3/4	50	*	*	25	*		1.3/4	
2	50	*	*	25	*	*	2	
2.1/4							2.1/4	
2.1/2	25	*	*	25	*		2.1/2	
2.3/4							2.3/4	
3	25	*	*	20	*		3	
3.1/2	25	*	*	20	*		3.1/2	
4	25	*	*	15	*		4	
4.1/2	25	*	*	15	*		4.1/2	
5	25	*	*	15	*		5	
5.1/2							5.1/2	
6	25	*	*				6	
7							7	
8							8	

Dia	3/4		
Length	Std. Pack	Black	Zinc
1.1/4			
1.1/2	15	*	
1.3/4			
2	15	*	
2.1/4			
2.1/2	15	*	
2.3/4			
3	10	*	
3.1/2			
4	10	*	
4.1/2			
5			

ISOMETRIC COARSE PITCH
CLASS 4.6

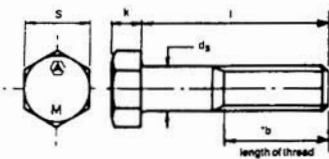


Length	M6			M8				M10				Length
	Std. Pack	Black	Zinc	Std. Pack	Black	Galv.	Zinc	Std. Pack	Black	Galv.	Zinc	
12	200	*	*	125	*		*					12
16	200	*	*	125		*	*	100	*		*	16
20	200	*	*	100	*	*	*	100	*	*	*	20
25	200	*	*	100	*	*	*	100	*	*	*	25
30	150	*	*	75	*	*	*	100	*	*	*	30
35	150	*	*	75	*	*	*	75	*		*	35
40	150	*	*	75	*	*	*	75	*	*	*	40
45	150	*	*	50	*	*	*	75			*	45
50	150	*	*	50	*		*	75	*	*	*	50
55								50			*	55
60												60
65								50			*	65
70												70
75				50			*	50			*	75

Length	M12				M16				Length
	Std. Pack	Black	Galv.	Zinc	Std. Pack	Black	Galv.	Zinc	
20	75			*					20
25	75			*					25
30	75	*		*	25	*		*	30
35	50			*					35
40	50		*	*	25		*	*	40
45	50			*					45
50	50	*		*	25			*	50
60	25			*					60
65	25			*					65
75	25		*	*	20	*	*		75

Metric Commercial Hexagon Bolts & Nuts and Set Screws. ISO Metric Coarse Pitch Series. Threads, Class 8g. Property Classes 4.6 Relevant Australian Standards Bolts and Set Screws AS 1111., Nuts AS 1112.

1. DIMENSIONS



All dimensions in millimetres

Nominal Dia. D	Pitch of Thread P	Shank Diameter d _s		Width Across Flats S		Head Thickness k	
		Max.	Min.	Max.	Min.	Max.	Min.
M6	1.0	6.48	5.52	10.0	9.64	4.38	3.62
M8	1.25	8.58	7.42	13.0	12.57	5.68	4.92
M10	1.5	10.58	9.42	16.0	15.57	6.58	5.95
M12	1.75	12.70	11.30	18.0	17.57	7.95	7.05
M16	2.0	16.70	15.30	24.0	23.16	10.75	9.25
M20	2.5	20.84	19.16	30.0	29.16	13.40	11.60
M24	3.0	24.84	23.16	36.0	35.00	15.90	14.10
M30	3.5	30.84	29.16	46.0	45.00	19.75	17.65
M36	4.0	37.00	35.00	55.0	53.80	23.55	21.45

THREAD LENGTH b.

Hexagon Head Screws are threaded to within 2 1/2 Pitches of the underside of the head.

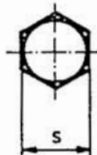
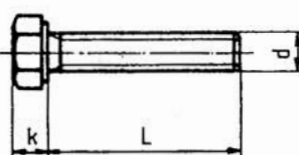
2. MECHANICAL PROPERTIES

PROPERTY CLASS 4.6

Tensile Strength
400 MPa (N/mm²) min.
58,000 lbf/in² min.
25.9 tonf/in² min.

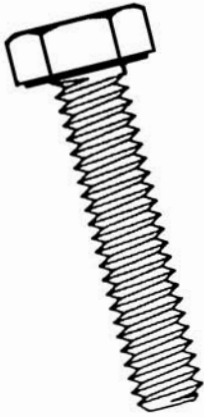
Proof Load Stress
225 MPa (N/mm²) min.
32,800 lbf/in² min.
14.6 tonf/in² min.

DIN : 933



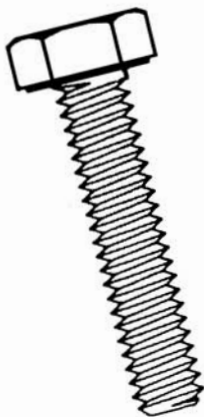
d	M6	M8	M10	M12	M16	M20
P	1	1,25	1,5	1,75	2	2,5
k	4	5,3	6,4	7,5	10	12,5
s	10	13	17	19	24	30





Dia.	M6			M8			M10			Dia.
Length	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Length
12	200	*	*	125		*				12
16	200	*	*	125	*	*				16
20	200	*	*	100	*	*				16
25	200		*	100	*	*	100	*	*	25
30	150		*	75		*	100	*	*	30
35	150		*	75		*	75	*	*	35
40	125		*	75		*	75		*	40
45	100		*	50		*	75		*	45
50	100		*	50	*	*	75		*	50
Dia.	M12			M16			M20			Dia.
Length	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Length
16										16
20										20
25	75		*							25
30	50		*							30
35	50	*	*	25		*				35
40	50		*	25	*	*				40
45	50		*							45
50	50		*	25		*				50

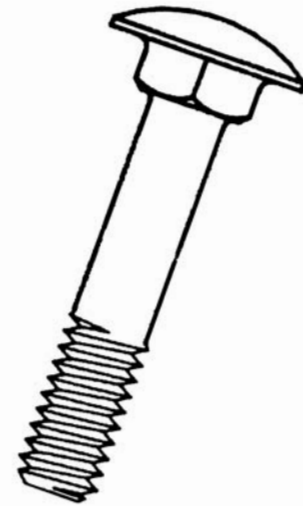
UNC/UNF GRADE 5 - HIGH TENSILE HEXAGON



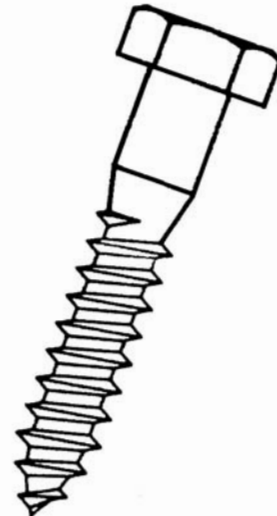
Dia.	¹ / ₄			⁵ / ₁₆			Dia.
Length	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Length
¹ / ₂	200		*	125		*	¹ / ₂
⁵ / ₈			P/A				⁵ / ₈
³ / ₄	150	*	*	125	*	*	³ / ₄
1	150		*	175		*	1
1. ¹ / ₄	150		*	175	*	*	1. ¹ / ₄
1. ¹ / ₂	125	*	*	125		*	1. ¹ / ₂
1. ³ / ₄							1. ³ / ₄
2	100		*	125	*	*	2
Dia.	³ / ₈			⁷ / ₁₆			Dia.
Length	Std. Pack	Black	Zinc	Std. Pack	Black	Zinc	Length
⁵ / ₈							⁵ / ₈
³ / ₄	75		*				³ / ₄
1	100	*	*				1
1. ¹ / ₄	100		*				1. ¹ / ₄
1. ¹ / ₂	100	*	*				1. ¹ / ₂
1. ³ / ₄							1. ³ / ₄
2	75		*	50		*	2
Dia.	¹ / ₂						
Length	Std. Pack	Black	Zinc				
³ / ₄							
1	50		*				
1.1/4	50		*				
1.1/2	50		*				
1.3/4							
2	50		*				

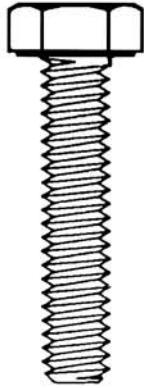


STAINLESS STEEL COACH BOLTS TO DIN 603								
	M6		M8		M10		M12	
	304	316	304	316	304	316	304	316
20	*			*				
25	*	*	*	*	*			
30		*		*	*			
40	*	*	*		*			
50	*	*	*	*	*			
60	*	*	*		*			
70	*		*		*			
80	*				*			
100					*			



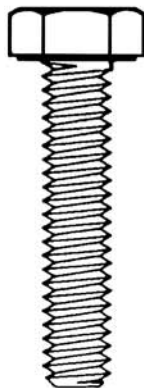
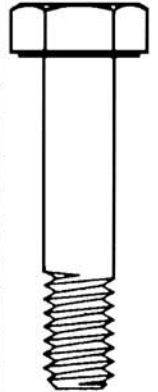
STAINLESS STEEL COACH SCREWS TO DIN 571								
Grade	M6		M8		M10		M12	
Length	304	316	304	316	304	316	304	316
30		*		*				
40		*		*		*		
50		*		*		*		
60		*		*		*		*
70		*		*		*		*
80		*		*		*		*
100				*		*		*
120						*		





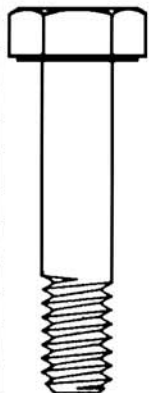
STAINLESS STEEL SETSCREWS TO ANSI B18.2.1.										
DIA T.P.I.	1/4-20		5/16-18		3/8-16		1/2-13		5/8-11	
Grade	304	316	304	316	304	316	304	316	304	316
Length 1/2	*	*		*						
5/8	*	*			*					
3/4	*	*	*	*	*	*		*		
1	*	*	*	*	*	*		*		*
1 1/4	*	*	*	*	*	*		*		*
1 1/2	*	*	*	*	*	*		*		*
1 3/4	*			*		*		*		*
2	*	*	*	*	*	*		*		*
2 1/2		*		*		*		*		*
3		*		*		*		*		*
3 1/2				*		*		*		*
4		*		*		*		*		*

STAINLESS STEEL BOLTS TO ANSI B18.2.1.										
DIA T.P.I.	1/4-20		5/16-18		3/8-16		1/2-13		5/8-11	
Grade	304	316	304	316	304	316	304	316	304	316
304	304	316	304	316	304	316	304	316	304	316
1										
1 1/4	*	*								
1 1/2	*	*	*	*	*	*				
1 3/4	*		*							
2	*	*	*	*	*	*		*		*
2 1/2		*	*	*	*	*		*		*
3		*		*	*	*		*		*
3 1/2		*		*		*		*		*
4		*		*		*		*		*
4 1/2				*						
5		*		*		*		*		*
5 1/2										
6		*		*		*		*		*



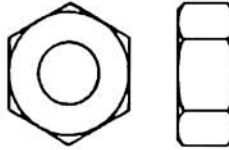
STAINLESS STEEL SETSCREWS TO DIN 933										
	M6		M8		M10		M12		M16	
Grade	304	316	304	316	304	316	304	316	304	316
Length 12	*	*	*	*						
16	*	*	*	*	*	*				
20	*	*	*	*	*	*	*	*	*	*
25	*	*	*	*	*	*	*	*	*	*
30	*	*	*	*	*	*	*	*	*	*
35	*	*	*	*	*	*	*	*	*	*
40	*	*	*	*	*	*	*	*	*	*
45	*	*	*	*	*	*	*	*		*
50	*	*	*	*	*	*	*	*	*	*
60	*	*	*	*	*	*		*	*	*
65		*	*	*	*	*		*		
70		*		*	*	*	*	*		*
75				*	*	*		*		*
80	*	*	*	*		*	*	*		*
90		*	*	*	*	*	*	*		*
100	*	*	*	*	*	*	*	*		*

STAINLESS STEEL BOLTS TO DIN 931										
	M6		M8		M10		M12		M16	
Grade	304	316	304	316	304	316	304	316	304	316
Length 30	*	*	*	*						
35	*	*	*	*	*	*				
40	*	*	*	*	*	*	*	*		
45	*	*	*	*	*	*	*	*		*
50	*	*	*	*	*	*	*	*	*	*
60	*	*	*	*	*	*	*	*	*	*
65	*	*	*	*	*	*	*	*	*	*
70	*	*	*	*	*	*	*	*	*	*
75	*	*	*	*	*	*	*	*		*
80	*	*		*	*	*	*	*	*	*
90		*		*	*	*		*		*
100		*	*	*	*	*	*	*	*	*
110					*		*	*	*	*
120						*	*		*	*
150						*	*		*	*
160						*	*		*	*
170						*	*		*	*
180						*	*		*	*
200							*	*	*	*



HEX FULL NUTS

	Mild Steel SAE Grades UNC			High Tensile SAE Grades UNC/UNF		Stainless Steel	
	Black	Zinc	Galv.	Black	Zinc	304	316
1/8						*	
5/32						*	
3/16		*				*	*
1/4	*	*		*	*	*	*
5/16	*	*		*	*	*	*
3/8	*	*	*	*	*	*	*
7/16				*	*		*
1/2		*	*	*	*	*	*
9/16				*	*		
5/8		*	*	*	*	*	*
3/4		*	*	*	*	*	*



	Mild Steel			High Tensile Class 8		Stainless Steel	
	Black	Zinc	Galv.	Black	Zinc	304	316
M3		*				*	*
M4		*				*	*
M5		*				*	*
M6	*	*		*	*	*	*
M8	*	*	*	*	*	*	*
M10	*	*	*	*	*	*	*
M12	*	*	*	*	*	*	*
M16	*	*	*	*	*	*	*
M20	*	*	*	*	*	*	*

NYLON INSERT NUTS

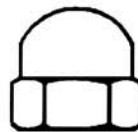
	Mild Steel Zinc Plated		Stainless Steel	
	UNC	UNF	304	316
1/8				
5/32				
3/16	*	*	*	*
1/4	*	*	*	*
5/16	*	*	*	*
3/8	*	*	*	*
7/16	*	*		
1/2	*	*	*	*
9/16	*	*		
5/8	*	*	*	*
3/4	*	*		*



	Mild Steel Zinc. Plated	Stainless Steel	
		304	316
M3	*	*	
M4	*	*	
M5	*	*	*
M6	*	*	*
M8	*	*	*
M10	*	*	*
M12	*	*	*
M16	*	*	*
M20	*	*	*

DOME NUTS

	Brass		Stainless Steel	
	Self Colour	Nickle Plated	304	316
1/8	*	*		
5/32	*	*		
3/16	*	*	*	
1/4	*	*	*	
5/16	*	*	*	
3/8	*	*	*	
1/2			*	
5/8			*	
3/4				

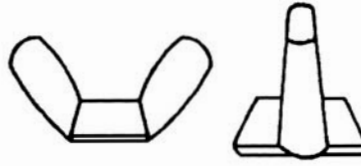


	Brass		Stainless Steel	
	Self Colour	Nickle Plated	304	316
M3				
M4			*	
M5		*	*	
M6			*	
M8			*	
M10			*	
M12			*	
M16			*	



WING NUTS

	Steel	Stainless Steel	
	Zinc Plated	304	316
UNC	*	*	
3/16	*	*	
1/4	*	*	
5/16	*	*	
3/8	*	*	
1/2			
5/8			
3/4			

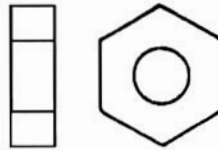


WING NUTS

	Steel	Stainless Steel	
	Zinc Plated	304	316
M5	*	*	
M6	*	*	
M8	*	*	
M10	*	*	
M12	*	*	
M16			
M20			

HEX PRESSED NUTS ZP

1/8	5/32	3/16	1/4
*	*	*	*

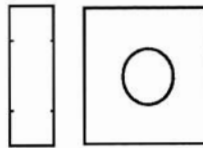


HEX PRESSED NUTS ZP

M3	M4	M5	M6
			*

SQUARE PRESSED NUTS ZP

		3/16	1/4
		*	*



T-NUTS

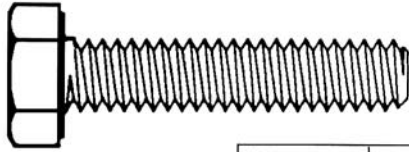
	Round Flanged Pressed Steel T-Nuts
3/16	*
1/4	*
5/16	*
3/8	*



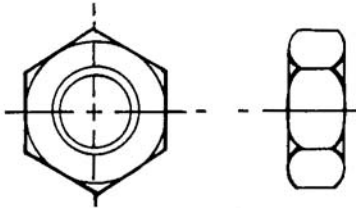
T-NUTS

	Rounded Flanged Pressed Steel T-Nuts
M4	*
M5	*
M6	*
M8	*
M10	*

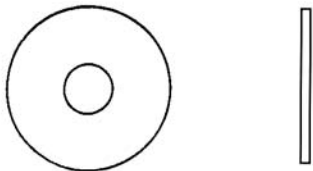




Hex Head Bolts Titanium	Size	3/4"	1"	1 1/4"	1 1/2"	1 3/4"	2"	2 1/2"
	1/4 - 20	*	*	*	*	*	*	*



Hex Nuts Titanium	Size	Across Flats	Thickness
	1/4 - 20	7/16"	.218



Washers Titanium	Size	Thickness	O.D
	1/4"	.032 to .040	3/4


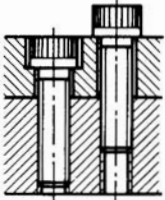
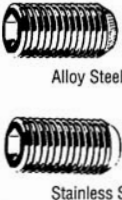
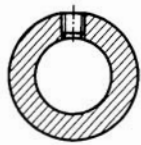

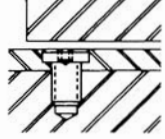

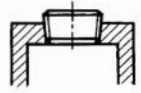

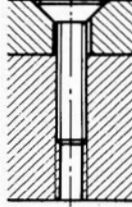

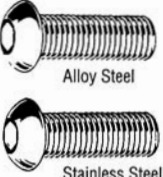
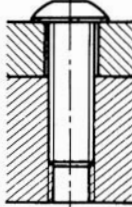
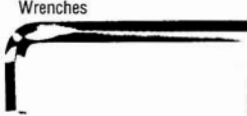
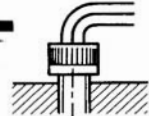
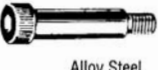
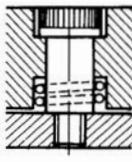

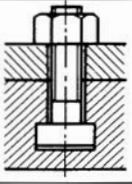
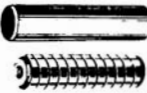
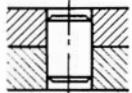
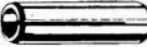
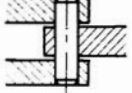
Other sizes available subject to minimum quantities.

For use in anodising baths and high corrosive areas.

NOTE: These titanium bolts & nuts are not high tensile.



A full range of Cap Screws is available on request.

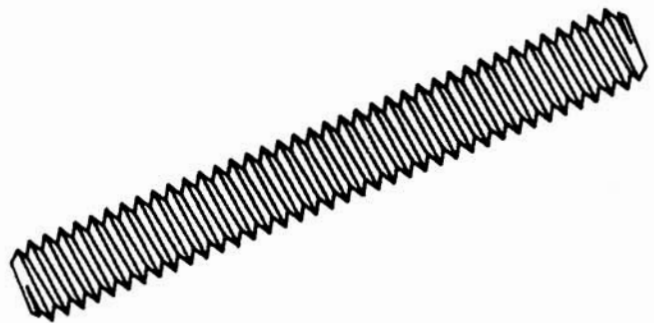
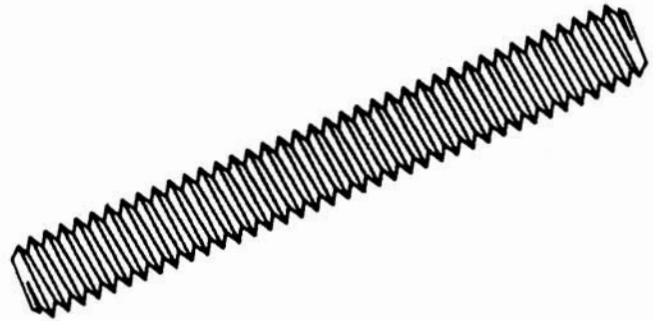
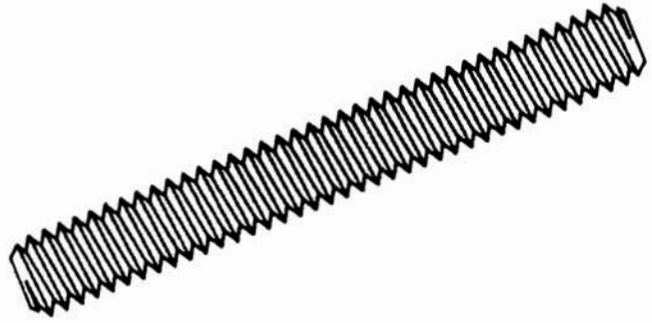
Type	Application/Features	Type	Applications/Features
Socket Head Cap Screws  Alloy Steel Stainless Steel	 Suitable for all high tensile applications. Use Stainless for corrosive-cryogenic or elevated temperatures.	Socket Set Screws  Alloy Steel Stainless Steel	 Fasten collars, sheaves, gears, knobs on shafts. Locate machine parts. Cone, half dog, oval, cup and self locking knurled cup points are standard.
Socket Low Head Cap Screw  Alloy Steel	 Suitable for use in parts too thin for std. SHCS; and for applications with limited clearances.	Pressure Plugs  3/4" Taper Dry Seal	 Features common to 3/4" and 7/8" tapers: Dryseal threads for positive seal without sealing compound: Controlled chamfer for faster starting.
Flat Head Screws  Alloy Steel Stainless Steel	 Controlled angle under the head ensures maximum flushness and sidewall contact. Non-slip Hex socket prevents marring of material. Note: Inclined angle under the head varies as follows: BSW & BSF Threads - 90o UNC & UNF Threads - 82o Metric Threads - 90o	 Level Seal	Level-seat features: Controlled 7/8" taper in 3/4" taper hole seats plug level, flush with surface within 1/2 pitch.
Button Head Screws  Alloy Steel Stainless Steel	 Low heads streamline design. Use them in materials too thin to counter-sink; also for non-critical loading requiring heat treated screws.	Wrenches 	 Tough, ductile, for high torquing; corners won't round; accurate fit in all types of socket screws. Size marked for quick identification.
Shoulder Screws  Alloy Steel	 Replaces costly special parts - shafts, pivots, pins, guides, linkages and trunnion mountings. Also standard for tool and die industries.	Tee Bolts  Alloy Steel	 Holds the heaviest work with absolute safety. Saves time in preparing work and machining. Can be used repeatedly. Cuts costs.
		Dowel Pins 	 Formed ends, controlled head treat prevent chipping, close tolerances; Standard for die work; Also used as bearings, gauges, precision parts etc.
		Sellok Pins 	 Fits standard size holes. Self locking, reusable, lightweight. Strong chamfered ends. Standard product is cadmium plated.



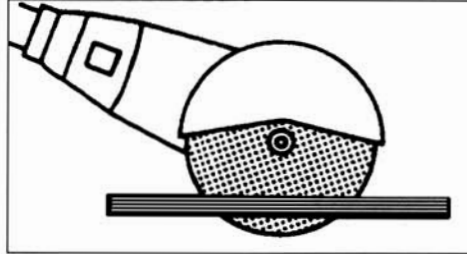
<u>THREADED ROD</u>			
36 Inch Lengths			
	ZP Steel	304 S/Steel	316 S/Steel
3/16	*	*	*
1/4-20	*	*	*
5/16-18		*	*
3/8-16		*	*
1/2-13		*	*
5/8-11		*	*

<u>THREADED ROD</u>			
1 Meter Lengths			
	ZP Steel	304 S/Steel	316 S/Steel
M3			*
M4			*
M5		*	*
M6	*	*	*
M8	*	*	*
M10	*	*	*
M12	*	*	*
M16	*	*	*

<u>THREADED ROD</u>			
2 Meter Lengths			
	ZP Steel	304 S/Steel	316 S/Steel
M6	*		
M8	*		
M10	*		
M12	*		
M16	*		

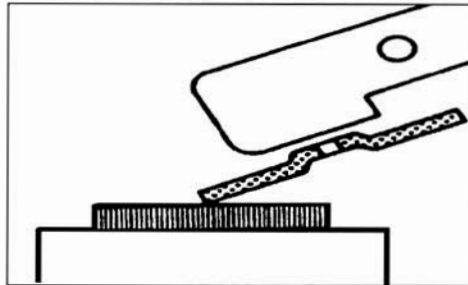


**CUTTING WHEELS USED ON PORTABLE MACHINES
100mm - 230mm METAL AND MASONRY**



SPECIFICATION	APPLICATION
A36TBR	Mild steel, low alloy steel metal sheets, pipes general purpose, good cutting speed and long life.
A24TBRE	Mild steel general purpose, good cutting speed and long life.
C24RBR	General purpose application on masonry, concrete and other building materials, refractories, marble and stone etc.

**GRINDING DISCS
100mm - 230mm METAL AND MASONRY**



SPECIFICATION	APPLICATION
A24SB	General purpose application on mild and medium alloy steel, cast iron, weld beads
A36QB	General purpose, mild and medium steel.
C24SB	Masonry marble and non ferous.
C36QB	Masonry marble and non ferous.





SPECIFICATION

Tridon Micro and Regular clamps feature a perforated (slotted) band

- 8mm (micro) and 12.5mm (regular) band widths.
- Hexagonal head incorporating screwdriver slot for ease of installation.
- Both micro and regular clamps feature a perforated (slotted) band.
- Built to original equipment standards.

Size Range		Part Number
mm	inches	Pack of 10
6 - 16mm	7/32 - 5/8	MAH004
11 - 18mm	7/16 - 11/16	MAH005
8 - 22mm	5/16 - 7/8	MAH006
9.5 - 22mm	3/8 - 7/8	HAS006
11 - 25mm	7/16 - 1	HAS008
14 - 27mm	9/16 - 1 1/16	HAS010
14 - 32mm	9/16 - 1 1/4	HAS012
17 - 38mm	1 1/16 - 1 1/2	HAS016
19 - 44mm	3/4 - 1 1/4	HAS020
27 - 51mm	1 1/16 - 2	HAS024
33 - 57mm	1 5/16 - 2 1/4	HAS028
40 - 64mm	1 9/16 - 2 1/2	HAS032
46 - 70mm	1 13/16 - 2 3/4	HAS036
52 - 76mm	2 1/16 - 3	HAS040
59 - 83mm	2 5/16 - 3 1/4	HAS044
65 - 89mm	2 9/16 - 3 1/2	HAS048
71 - 95mm	2 13/16 - 3 3/4	HAS052
78 - 102mm	3 1/16 - 4	HAS056
84 - 108mm	3 5/16 - 4 1/4	HAS060
90 - 114mm	3 9/16 - 4 1/2	HAS064
103 - 127mm	4 1/16 - 5	HAS072
117 - 140mm	4 5/8 - 5 1/2	HAS080
125 - 146mm	4 15/16 - 5 3/4	HAS084
106 - 152mm	4 3/16 - 6	HAS088
115 - 164mm	4 3/4 - 6 7/16	HAS096
133 - 170mm	5 1/4 - 7 1/16	HAS104
146 - 197mm	5 3/4 - 7 3/4	HAS116
159 - 206mm	6 1/4 - 8 1/8	HAS120
165 - 213mm	6 1/2 - 8 3/8	HAS124
175 - 217mm	6 7/8 - 8 9/16	HAS128
181 - 225mm	7 1/8 - 8 7/8	HAS136
206 - 251mm	8 1/8 - 9 7/8	HAS152
260 - 311mm	10 1/4 - 12 1/4	HAS188
279 - 330mm	11 - 13	HAS200
298 - 349mm	11 3/4 - 13 3/4	HAS212

MICRO CLAMPS (MAH Series)

Series	MAH
Band	5/16" (8mm) 301 Stainless Steel
Housing	301 Stainless Steel
Screw	1/4" (6.3mm) Hex Head, 305 Stainless

REGULAR CLAMPS (HAS Series)

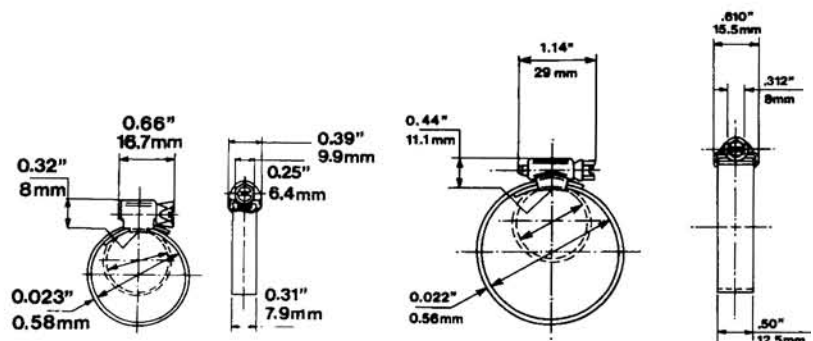
Series	HAS
Band	1/2" (12.5mm) 301 Stainless Steel
Housing	301 Stainless Steel
Screw	5/16" (8mm) Hex Head, 305 Stainless



SIZES 004-006



SIZES 006-212



Larger sizes available on request



Material and Hole Condition		Hardness	Included	Speed	m./min.	Lubricant
		Range B.H.N.	Point Angle	Ft./Min.		
Aluminium Alloys Alum. Alloys Cast	Deep Hole	50-140	118°	200-300	61-91	Soluble Oil
	High Silicon	45-120	118°	80-120	24-37	
	Low Silicon	35-110	118°	140-200	43-61	
Aluminium Forged Alum. Alloys Forged	Shallow Hole	50-140	118°	200-500	61-153	Kerosene
	Deep Hole	50-140	118°	200-500	61-153	
Brass	Leaded Free Machining	100-150	118°	200-300	61-91	Soluble Oil
Bronze	Castings	80-120	118°	60-90	18-27	
Cast Iron	Wrought	120-220	118°	35-80	11-24	Soluble Oil
	Chilled or White Hard Grey Iron	400 Over 200	150° 118°	15-25 45-50	4.6-7.6 14-15	
Cast Iron	Medium Grey	150-200	90°-110°	80-110	24-34	Dry or Compressed Air
	Iron Soft Grey Iron	Below 150	90°	140-150	43-46	
Cast Iron S.G.	Malleable	140	118°	80-100	24-34	Soluble Oil
	As Cast	220	118°	40-50	12-15	
	Annealed-Ferritic	190	118°	45-65	14-20	
Copper Die Castings (Zinc Base)		45-110	100°	70-100	21-30	Soluble Oil
Gunmetal Leaded & Brass Castings		70-90	118°	300-400	91-122	
Magnesium and Alloys		40-70	118°	200-500	61-153	Soluble Oil and Kerosene
"R" Monel, Nickel		110-200	118°	40-100	12-30	Sulphur Base Oil
"K" Monel		160-275	135°	20-60	6-18	
Nickel Alloys	31/2% Nickel Steel	190-240	135°-140°	30-50	9-15	Soluble Oil
Plastics	Thermo-plastics		90°	100-300	30-91	Soapy Water
Steel	Free Cutting	110-130	118°	120-150	37-46	Soluble Oil
	Mild 30 ton	130	118°	120-140	37-43	
	Medium Carbon 35 ton	155	118°	100-115	30-35	
	Medium Carbon 45 ton	210	118°	65-90	20-27	
Steel	Tool and Spring	200-400	140°	25-65	7.6-20	Sulphur Base Oil
	55 ton	250	118°	50-70	15-21	
Steel Alloy	65 ton	300	118°-140°	40-55	12-17	Sulphur Base Oil
	75 ton	340	130°-150°	30-40	9-12	
Steel Stainless	Ferritic	150-200	118°	50-90	15-27	Sulphur Base Oil
	Martensitic	250	125°-135°	35-50	11-15	
	Austenitic	170	118°	20-30	6-9	
	Mart. Free Machining	250	125°-135°	40-55	12-17	
	Aust.Free Machining	170	118°	25-40	7.6-12	
Wood			60°	500	153	None

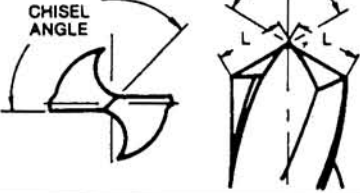
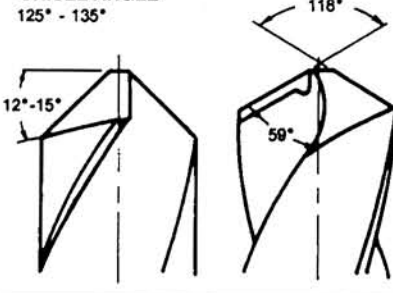
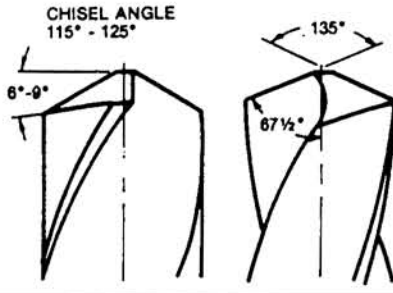
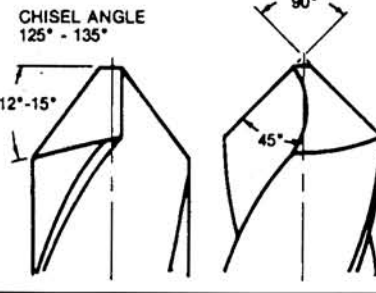
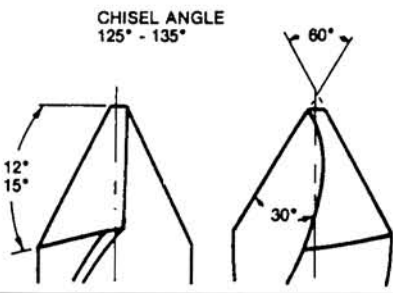
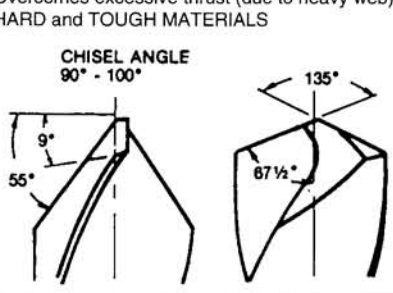
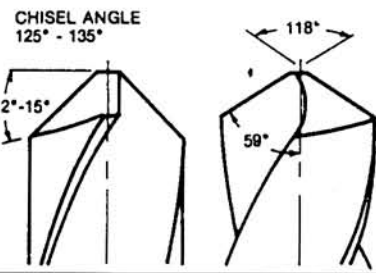
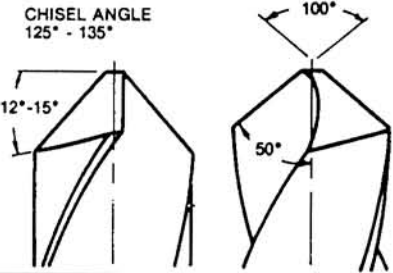
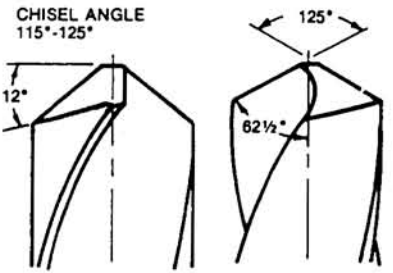
RECOMMENDED FEEDS FOR VARIOUS DIAMETER DRILLS

Diameter of Drill - Inches	Feed per Revolution	
	Inches	Millimetres
Under 1/8	.001 to .003	.02 to .08
1/8 to 1/4	.002 to .006	.05 to .15
1/4 to 1/2	.004 to .010	.10 to .25
1/2 to 1	.007 to .015	.18 to .40
1 inch and over	.015 to .025	.40 to .63

Note: It is best to start with a moderate speed and feed, increasing either one, or both, after observing the action and condition of the drill.



P&N drills are pointed on precision automatic grinding machines. The standard point geometry on P&N drills has an included angle of 118° with a lip relief angle of 12 to 15°. This drill is suitable for most materials. However, a user will sometimes find it necessary to re point the drill to better suit the material being machined.

<p>IMPORTANT: Lip lengths and angles must be equal.</p> 	<p>• BRASS and SOFT BRONZE</p> <p>CHISEL ANGLE 125° - 135°</p> 	<p>• HARD and TOUGH MATERIALS MANGANESE STEEL RAILS, etc.</p> <p>CHISEL ANGLE 115° - 125°</p> 
<p>• HARDWOOD, BAKELITE, HARD RUBBER and FIBERS, SOFT and MEDIUM CAST IRON</p> <p>CHISEL ANGLE 125° - 135°</p> 	<p>• WOOD, RUBBER, BAKELITE, FIBER, MOULDED PLASTICS</p> <p>CHISEL ANGLE 125° - 135°</p> 	<p>• CRANKSHAFT or SPLIT POINT for DEEP HOLES Overcomes excessive thrust (due to heavy web) HARD and TOUGH MATERIALS</p> <p>CHISEL ANGLE 90° - 100°</p> 
<p>• REGULAR POINT ... GENERAL PURPOSE, MILD STEELS, LAMINATED PLASTICS, etc.</p> <p>CHISEL ANGLE 125° - 135°</p> 	<p>• SOFT ALUMINIUM, MAGNESIUM, COPPER and MEDIUM HARD BRASS</p> <p>CHISEL ANGLE 125° - 135°</p> 	<p>• HEAT TREATED STEELS, DROP FORGINGS and CONNECTING RODS</p> <p>CHISEL ANGLE 115° - 125°</p> 

WEB THINNING

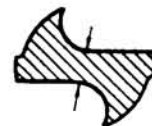
Most P&N drills have a web that is thin near the point of the drill. As a drill is resharpened it becomes shorter, the web thickness becomes greater and the drill point develops a much longer chisel edge. This longer chisel edge will result in more pressure required for penetration, resulting in greater heat generation and a reduction in drill life. The chisel edge can be reduced by web thinning.

For correct web thinning it is important that equal amounts of material be ground from either side of the chisel edge until the total length of the edge returns to the same value as that found on a new drill. (Excessive web thinning weakens the point of the drill and splitting of the web may occur.)

The ground surface produced by web thinning, must blend evenly into the flutes without abrupt termination. The web thinning should extend 50 to 100% of the drill diameter along the flute.



Web thickness near point

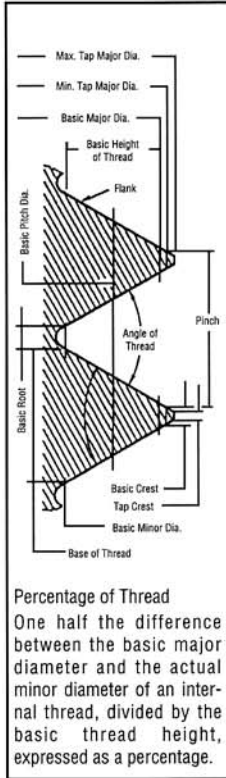


Web thickness near shank showing web increase



A drill with web properly thinned





Some of the hazards experienced in tapping can be greatly reduced by using the general recommendations on pages T15-T19 - Tapping-Drill Section and by following a pre-tapping check list for the tapping set-up as listed hereunder.

1. Check that the correct tap has been selected for the particular job.
2. Select the tapping drill size which best suits the application bearing in mind that the largest permissible drill should always be chosen. Relatively small decreases in hole diameter can double torque requirements at the same time producing a similar reduction in tap life. Tests have shown clearly that percentage depth of thread in excess of 60% does not increase the static strength of a threaded fastener.
3. Use the correct drill cutting speed, especially in materials with work hardening tendencies.
4. Check that the drill is sharp and drills a clean, straight, round hole.
5. Ensure that the depth of a blind hole is sufficient for tapping swarf acceptance.
6. Select a suitable tapping speed from the Tables Page T22.
7. Ensure that the tap will be presented squarely to the hole and that there will be no relative eccentricity between the tap and the hole.
8. Ensure adequate flow of the chosen lubricant (see table - Page T22).
9. When tapping, start the tap smoothly into each hole and keep the flutes clear of swarf.
10. Pre-tapped holes which are tapered, out of round, etc., will affect the life of a tap and the size of the threaded hole. These undesirable effects can be eliminated by the use of a reamer which ensures clean, accurate threaded holes with increased tap life.

DRILL SIZES FOR TAPPING

ISO-Metric

ISO METRIC THREAD - COARSE PITCH SERIES					
Nominal Diameter & Pitch mm	Drill Size mm		Nominal Diameter & Pitch mm	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
2.0 x 0.40	1.65	1.60	9.0 x 1.25	7.90	7.80
2.5 x 0.45	2.10	2.05	10.0 x 1.50	8.70	8.50
3.0 x 0.50	2.55	2.50	11.0 x 1.50	9.80	9.50
3.5 x 0.60	2.95	2.90	12.0 x 1.75	10.50	10.20
4.0 x 0.70	3.40	3.30	14.0 x 2.00	12.20	12.00
4.5 x 0.75	3.80	3.70	16.0 x 2.00	14.50	14.25
5.0 x 0.80	4.30	4.20	18.0 x 2.50	15.75	15.50
6.0 x 1.00	5.10	5.00	20.0 x 2.50	18.00	17.50
7.0 x 1.00	6.10	6.00	22.0 x 2.50	20.00	19.50
8.0 x 1.25	6.90	6.80	24.0 x 3.00	21.50	21.00

ISO METRIC THREAD - MISCELLANEOUS POPULAR FINE PITCH AND SPARK PLUG SIZES					
Nominal Diameter & Pitch mm	Drill Size mm		Nominal Diameter & Pitch mm	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
8 x 1.00	7.10	7.00	14 x 1.50	12.80	12.50
10 x 1.00	9.20	9.00	16 x 1.50	14.75	14.50
10 x 1.25	8.90	8.80	18 x 1.50	16.50	16.50
12 x 1.25	11.00	10.80	20 x 1.50	18.50	18.50
12 x 1.50	10.80	10.50	22 x 1.50	20.50	20.50
14 x 1.25	13.00	12.80	24 x 2.00	22.50	22.00



U.N.F., U.N.C.

U.N.F.					
Nominal Diameter & T.P.I.	Drill Size mm		Nominal Diameter & T.P.I.	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
0 x 80	1.25	1.25	3/8 x 24	8.60	8.50
1 x 72	1.55	1.55	7/16 x 20	10.00	9.80
2 x 64	1.90	1.90	1/2 x 20	11.50	11.50
3 x 56	2.15	2.15	9/16 x 18	13.00	12.80
4 x 48	2.40	2.40	5/8 x 18	14.50	14.50
5 x 44	2.70	2.70	3/4 x 16	17.50	17.50
6 x 40	2.95	2.95	7/8 x 14	20.50	20.50
8 x 36	3.50	3.50	1 x 12	23.50	23.00
10 x 32	4.10	4.10	1-1/8 x 12	26.50	26.50
12 x 28	4.70	4.70	1-1/4 x 12	30.00	29.50
1/4 x 28	5.50	5.50	1-3/8 x 12	33.00	32.50
5/16 x 24	7.00	6.90	1-1/2 x 12	36.00	36.00
U.N.C.					
Nominal Diameter & T.P.I.	Drill Size mm		Nominal Diameter & T.P.I.	Drill Size mm	
	Normal Application	Special Application		Normal Application	Special Application
1 x 64	1.55	1.55	1/2 x 13	11.00	10.80
2 x 56	1.85	1.85	9/16 x 12	12.50	12.20
3 x 48	2.10	2.10	5/8 x 11	13.80	13.50
4 x 40	2.35	2.35	3/4 x 10	17.00	16.50
5 x 40	2.65	2.65	7/8 x 9	19.50	19.50
6 x 32	2.85	2.85	1 x 8	22.50	22.00
8 x 32	3.50	3.50	1-1/8 x 7	25.50	25.00
10 x 24	3.90	3.90	1-1/4 x 7	28.50	28.00
12 x 24	4.50	4.50	1-3/8 x 6	31.00	30.50
1/4 x 20	5.20	5.10	1-1/2 x 6	34.50	34.00
5/16 x 18	6.70	6.60	1-3/4 x 5	40.00	39.50
3/8 x 16	8.10	8.00	2 x 4 1/2	45.50	45.00
7/16 x 14	9.50	9.20			

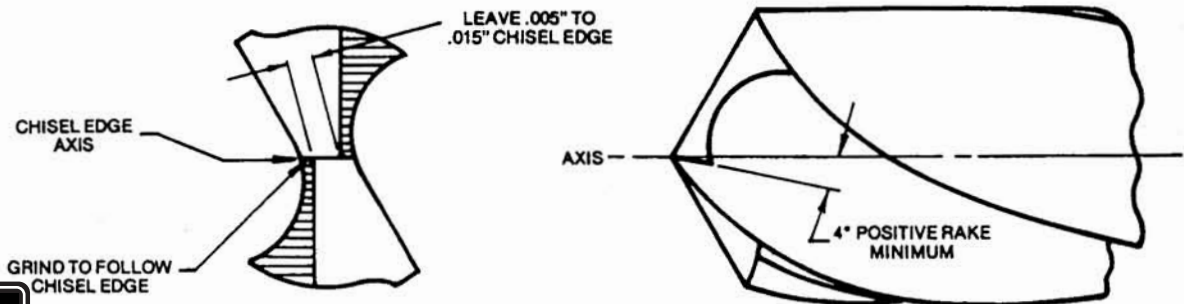


Select drill speed nearest to table figure as possible.

Diameter of Drill		Aluminum, Brass, Plastic, Hard Rubber	Free Cutting Steel, Soft Cast Iron	Medium Carbon 35 ton Steel	Malleable Iron	Medium Cast Iron 45 ton Steel	Tool Steel 55 ton Steel	Hard Cast Iron, Stainless Steel 65 ton Steel	Wood
Inch	mm	Speed feet per minute			90	80	60	40	300
		200	140	100					
		Speed metres per minute			27	24	18	12	91
		61	43	30					
1/16	1.5	12223	8556	6112	5500	4889	3667	2445	18335
3/32	2.5	8149	5704	4074	3667	3259	2445	1630	12223
1/8	3.0	6112	4278	3056	2750	2445	1833	1222	9167
5/32	4.0	4889	3422	2445	2200	1956	1467	978	7334
3/16	5.0	4074	2852	2037	1833	1630	1222	815	6112
7/32	5.5	3492	2445	1746	1572	1397	1048	698	5238
1/4	6.5	3056	2139	1528	1375	1222	917	611	4584
9/32	7.0	2716	1901	1358	1222	1086	815	543	4074
5/16	8.0	2445	1711	1222	1100	978	733	489	3667
3/8	10.0	2037	1426	1019	917	815	611	407	3056
7/16	11.0	1746	1222	873	786	698	524	349	2619
1/2	12.5	1528	1070	764	688	611	458	306	2292
9/16	14.0	1358	951	679	611	543	407	272	2037
5/8	16.0	1222	856	611	550	489	367	244	1833
11/16	17.5	1111	778	556	500	444	333	222	1667
3/4	19.0	1019	713	509	458	407	306	204	1528
7/8	22.0	873	611	437	393	349	262	175	1310
1	25.4	764	535	382	344	306	229	153	1146
1-1/8	28.5	679	475	340	306	272	204	136	1019
1-1/4	32.0	611	428	306	275	244	183	122	917
1-3/8	35.0	556	389	278	250	222	167	111	833
1-1/2	38.0	509	357	255	229	204	153	102	764
1-5/8	41.5	470	329	235	212	188	141	94	705
1-3/4	44.5	437	306	218	196	175	131	87	655
1-7/8	47.5	407	285	204	183	163	122	81	611
2	50.0	382	267	191	172	153	115	76	573
2-1/4	57.0	340	238	170	153	136	102	68	509
2-1/2	63.0	306	214	153	138	122	92	61	458
2-3/4	70.0	278	194	139	125	111	83	56	417
3	76.0	255	178	127	115	102	76	51	382

SPLIT POINTING

Split Pointing is recommended to reduce point pressure and greatly improve the cutting action of the chisel edge.





MILLIMETRE AND INCH SIZES

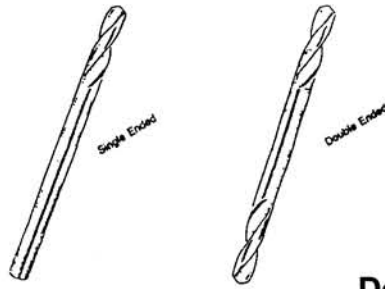
Silver jet jobber drills are the most popular drills used by engineers, tradesman and home handymen. These drills are designed to give optimum performance in a wide range of materials.

Manufactured to A.N.S.I. B94 - 11. 1967 standard.

Diameter		Flute Length		Overall Length		Diameter		Flute Length		Overall Length		Diameter		Flute Length		Overall Length		
mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	mm	Inch	
0.35		3	1/8	19	3/4	2.90						8.10						
0.38						2.95						8.20						
	1/64	5	3/16	19	3/4	3.00		41	1-5/8	70	2-3/4	8.30		84	3-5/16	118	4-5/8	
0.40						3.10							21/6					
0.42						3.20		1/8				8.40						
0.45						3.30						8.50						
0.48		5	3/16	22	7/8	3.40						8.60		87	3-7/16	121	4-3/4	
0.50						3.50						8.70		11/32				
0.52								9/64	45	1-3/4	73	2-7/8						
0.55						3.60						8.80						
0.58		6	1/4	25	1	3.70						8.90		89	3-1/2	124	4-7/8	
0.60						3.80			48	1-7/8	76	3		23/64				
0.65		8	5/16	29	1-1/8	3.90						9.20						
0.70		10	3/8	32	1-1/4							9.50		92	3-5/8	127	5	
0.75						4.00		5/32	51	2	79	3-1/8		3/8				
0.80	1/32	13	1/2	35	1-3/8	4.10						9.80		25/64	95	3-3/4	130	5-1/8
0.85						4.20			54	2-1/3	83	3-1/4						
0.90						4.30						10.00						
0.95		16	5/8	38	1-1/2				11/64			10.20						
1.00		18	11/16	41	1-5/8	4.40						10.50		13/32	98	3-7/8	133	5-1/4
1.05						4.50			56	2-3/16	86	3-3/8						
1.10						4.60						10.80		27/64	100	3-15/16	137	4-3/8
1.15						4.70						11.00						
1.20	3/64	19	3/4	45	1-3/4	4.80		3/16	59	2-5/16	89	3-1/2		7/16	103	4-1/16	140	5-1/2
1.25						4.90						11.20						
1.30						5.00			62	2-7/16	92	3-5/8		29/64	106	4-3/16	143	5-5/8
1.35						5.10						11.50						
1.40						5.20						11.80						
1.45		22	7/8	48	1-7/8	5.30			64	2-1/2	95	3-3/4		15/32	110	4-5/16	146	5-3/4
1.50						5.40						12.00						
1.55						5.50			7/32			12.20		31/64	111	4-3/8	149	5-7/8
1.60	1/16					5.60						12.50						
1.65						5.70			67	2-5/8	98	3-7/8		1/2	114	4-1/2	152	6
1.70						5.80						12.80						
1.75						5.90			15/64			13.00						
1.80		25	1	51	2	6.00												
1.85						6.10												
1.90						6.20			70	2-3/4	102	4						
1.95						6.30												
2.00	5/64					6.40			1/4									
2.05		29	1-1/8	54	2-1/8	6.50												
2.10						6.60												
2.15						6.70												
2.20						6.80												
2.25						6.90												
2.30		32	1-1/4	57	2-1/4	7.00			17/64	73	2-7/8	105	4-1/8					
2.35						7.10												
2.40	3/32					7.20												
2.45		35	1-3/8	60	2-3/8	7.30			9/32	75	2-15/16	108	4-1/4					
2.50						7.40												
2.55						7.50												
2.60						7.60												
2.65		37	1-7/16	64	2-1/2	7.70			19/64	78	3-1/16	111	4-3/8					
2.70						7.80												
2.75						7.90												
2.80	7/64	38	1-1/2	67	2-5/8	8.00												
2.85									5/16	81	3-3/16	114	4-1/2					

For availability of sizes not shown please contact our nearest Office or discuss your requirements with our Sales Representative.





**Single-ended
High-speed Steel
Silver Jet**

Ground-from-solid. High efficiency drill of extremely sturdy construction, ideally suited for drilling thin materials with portable drills (sheet metal and body panel shops). Not suitable for normal (deeper) holes.

Imperial	Size	Metric	Gauge	Metric Flute Length	Metric Overall Length
		3.3	30 (.1258)		
		4.1	20 (.1610)	27	54
		4.9	11 (.1910)	30	57

**Double-ended
High-speed Steel
Silver Jet**

Right-hand cutting. Ground-from-solid. Especially suited to panel work and general drilling use.

Size	Metric	Gauge	Metric Flute Length	Metric Overall Length
	3.3	30(.1258)		54
	4.1	20 (.1610)		
			16	
	4.9	11 (.1910)		

**Countersink/Deburring Tools
High-speed steel**

Cross-hole style.

6 sizes in 90° included angle.

Holes from: 3.0mm to 37.0mm

5 sizes in 82° included angle.

Holes from: 3.0mm to 28.0mm

Sets: 5 piece 90°, 1/8" - 1³/₃₂"

5 piece 82°, 1/8" - 1³/₃₂"

Single-flute style.

4 sizes in 90° included angle.

Holes from: 1.0mm to 28.0mm

4 sizes in 82° included angle.

Holes from: 1.0mm to 28.0mm

Three-flute style.

5 sizes in 90°

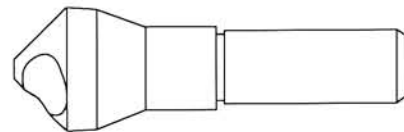
Holes from: 4.0mm to 37.0mm

4 sizes in 82°.

Holes from: 4.0mm to 28.0mm

Set: 4 piece 90°, 4.0mm - 28.0mm

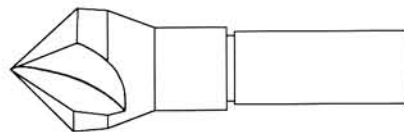
All available with TiNite finish on request.



CROSS-HOLE

Crosshole

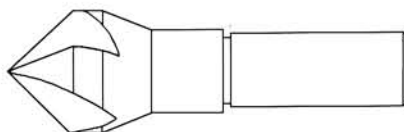
SIZE:	CH901	CH902	CH903
RANGE:	3-6mm	4-10mm	5-13mm
SIZE:	CH904	CH905	CH906
RANGE:	8-20mm	14-28mm	13-37mm



SINGLE-FLUTE

Single Flute

SIZE:	SF901	SF902	SF903
RANGE:	1-10mm	2-14mm	2-20mm
SIZE:	SF904		
RANGE:	3-28mm		



THREE-FLUTE

Three Flute

SIZE:	TF901	TF902	TF903
RANGE:	4-10mm	4-14mm	5-20mm
SIZE:	TF904	TF905	
RANGE:	6-20mm	6-37mm	



Metal Case Sets for the Workshop

Set No.		Size Range	No. of Drills
Imperial	Metric		
1		1/16-1/4 x 64ths	13
2		1/16-3/8 x 64ths	21
3		1/16-1/2 x 64ths	29
3B		1/16-1/2 x 32nds	15
	1M	1.00-7.00mm x .5mm rises	13
	2M	1.00-10.00mm x .5mm rises	19
	3M	1.00-13.00mm x .5mm rises	25
	50M	1.00-5.90mm x .1mm rises	50
	51M	6.00-10.00mm x .1mm rises	41



No. 4



No. 4M

Plastic Case Sets

Set No.		Size Range	No. of Drills
Imperial	Metric		
4		1/16-1/4 x 64ths	13
	4M	1.00-6.50mm x .5mm rises	12
8		1/16-1/4 x 32nds	7
SL13		1/16-1/4 x 64ths	13
SL7		1/16-1/4 x 32nds	7



No. 1



No. 1M

Dial-a-Drill Sets

Set No.		Size Range	No. of Drills
Imperial	Metric		
DD13		1/16-1/4 x 64ths	13
DD21		1/16-3/8 x 64ths	21
	DD13M	1.00-7.00mm x .5mm rises	13
	DD19M	1.00-10.00mm x .5mm rises	19



No.3



No. 3M

No. DD21 No. DD19M



No. DD13M

No. DD13



No. 50M

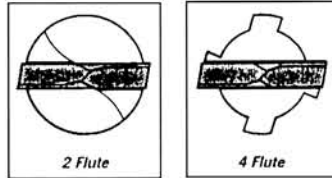


No. 51M



Tip Support

The tungsten carbide tip has 55% more surface area support than the conventional 2 flute drill. This support area, cushioned by the welding material and enclosed within the steel body, enables the tungsten.

End view**Cross Section**

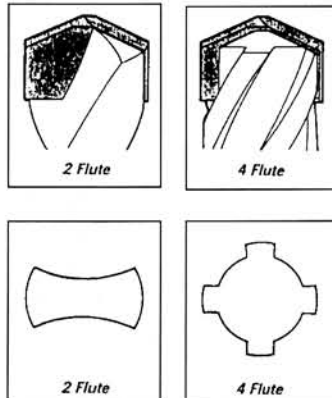
The cross section of the Evacut 4 flute masonry drill has 55% greater body area than conventional 2 flute designs, offering increased strength and rigidity.

NZ Patent 185289

The 4 Flute Masonry Drill***An improved concept in masonry drilling***

The inherent design of the Evacut 4 flute masonry drill gives far greater strength and support than conventional 2 flute designs. Suitable for both rotary and rotary impact drilling, the 4 flute masonry drill is heat-treated and has a high resistance to tip fracture.

carbide tip to withstand greater shock during use without fracture. This is most important when drilling material of variable composition such as concrete.

Side view**SF; Standard Fixing 4 Flute**

Suitable for rotary and rotary impact drilling in all masonry materials. Designed for general use in hand, power and impact drills.

Size		Metric Flute Length	Metric Overall Length
Imperial	Metric		
1/8	3.5	45	75
5/32	4.0	45	75
3/16	5.0	50	85
	5.5	50	85
7/32	6.0	60	100
1/4	6.5	60	100
9/32	7.0	60	100
	7.5	60	100
5/16	8.0	70	115
3/8	10.0	70	115
7/16	11.0*	70	115
15/32	12.0*	70	115
1/2	13.0*	70	115

SB; Single Brick 4 Flute

Suitable for rotary and rotary impact drilling in all masonry materials. Designed to produce holes for short and long devices used for fastening.

Size		Metric Flute Length	Metric Overall Length
Imperial	Metric		
3/16	5.0	86	150
7/32	6.0		
1/4	6.5		
5/16	8.0		
3/8	10.0		
7/16	11.0*		
15/32	12.0*		
1/2	13.0*		
19/32	15.0**		
5/8	16.0**		
23/32	18.00**		
3/4	20.0**		
7/8	23.0**		
1	26.0**		
11/8	29.0**		
11/4	32.0**		

DB; Double Brick 2 Flute

Suitable for rotary and rotary impact drilling of deep holes in all masonry-type materials.

Size		Metric Flute Length	Metric Overall Length
Imperial	Metric		
1/4	6.5	200	330
5/16	8.0		
3/8	10.0		
7/16	11.0*		
15/32	12.0*		
1/2	13.0*		
19/32	15.0**		
5/8	16.0**		
3/4	20.0**		
7/8	23.0**		
1	26.0**		
11/8	29.0**		
11/4	32.0**		

Product	Description/compliance	Uses
Flamex One	Flexible, intumescent sealant, based on an acrylic emulsion system which, on exposure to fire, swells and provides a barrier to hot gases and flame. Colours: white and grey. Other colours to special order. Fire performance in accordance with: BS 476: Part 20: 1987 (UK).	Bedding and sealing fire rated building components, particularly fire protection panels. Installing and sealing fire door frames and other low-movement joint sealing applications such as an acoustical sealant in dry-lined constructions.
Flamex Two	Two part, exterior intumescent, polysulphide joint sealant which, on exposure to fire, swells forming a structure which insulates and provides a barrier to hot gases and flame. At other times, Flamex operates as an elastomeric high-performance building sealant. Colour: grey. Fire performance in accordance with: BS 476: Part 20: 1987. Conforms to performance requirements of BS 4254: 1983 (UK).	Exterior expansion and construction joints in concrete and in blockwork and brickwork walls, particularly in compartment walls. Also seismic joints.
Secomastic	Economic, oleo resinous joint sealing compound - gun-applied. Colours: White, silver grey and bronze.	General bedding and sealing of sills, frames; perimeter sealing to window and door frames, particularly timber in low rise buildings.
Silaflex B	One part, neutral curing, gun-applied, low modulus silicone rubber sealant. Supplied in cartridges. Can accommodate high movement; durable and resistant to temperature extremes. Colours: black, grey, white. Conforms to: BS 5889: 1989 Type A (UK) US Federal Specification TT-S-1543A (US). ASTM C920 Clause 25. DIN 18540: 1980 (German).	Sealing joints between lightweight building components, GRP panels, high movement joints in concrete, stone and metals
SilaflexC	One part low modulus neutral curing silicone sealant. Colour: white. MAF approved. NZ Steel approved.	Specially designed for refrigeration and coolroom applications, such as between panel joints.
Silaflex MS	One part, gun applied, low modulus modified silicone sealant with a neutral curing mechanism. Has excellent unprimed adhesion and can be painted after two hours. It does not stain concrete, granite or other masonry surfaces. Colours: white and grey. Other colours available on request	Sealing joints in concrete panels, marble, granite, brick and block work. Ideal for sealing around powder coated aluminium windows.
Silaflex N	One part neutral cure gun grade silicone sealant. NZ Steel approved.	A sealant for roofing and other sheet metal joints. Also for metal to timber or concrete joints.
Silaflex NG	Fast neutral cure, new generation silicone sealants which provides a permanent watertight seal. Supplied in 375ml cartridges and 125ml tubes. Colours: White, Almond Ivory, Mist Grey and Apricot.	For sealing joints in and around showers, baths, basins and other wet areas in kitchens. For refrigeration seals and other hygiene applications. Contains mould inhibitors. Exceptionally good adhesion to acrylic showers and baths.



JOINT SEALANTS

Product	Description/compliance	Uses
Silaflex RTV	One part, acid curing, gun-applied, silicone-rubber sealant. Supplied in cartridges. Colours: black, clear, almond, ivory, mist grey, apricot, bronze and white. Conforms to: BS 5889: 1989, Type 'B' (UK). DIN Standard 18545 Parts 1-3 (German).	In areas where hygiene is important: kitchen fittings, tiled walls, showers, sanitary ware, fixtures in operating theatres. Also for glazing applications.
Uraflex Extra	One part gun grade polyurethane sealant. Pointable. Colours: grey, white, black and bronze.	For sealing between concrete panels, around window frames and between timber and aluminium building components.

ADHESIVES

Product	Description/compliance	Uses
Contacbond	A range of brush and spray grade contact adhesives.	For general construction adhesion including laying butyl roofing membranes.
Epoxy Adhesive NS	Non-slump epoxy adhesive.	Where gaps in excess of 2 mm must be filled.
Epoxy Adhesive TS	Fast setting, non-slump epoxy adhesive.	Where rapid cure is necessary.
Metal Seal	A one part, synthetic rubber/resin solvent-based gap filling adhesive and sealant for metal ducting and flashings etc.	For heating and ventilating, ducting, spouting & gap joints in metal seam-sealing in coach-building & panel-beating
Panelbond	Low solvent containing gun grade adhesive. Gap filling properties.	For adhesion of wall panels of all materials including polystyrene.
SB Adhesive	Sealant based gun grade gap filling wallboard adhesive with fast grab.	For adhesion of wall and ceiling linings to framing of timber, steel or cement.
WB Adhesive	Water based flexible gun grade adhesive.	For adhesion of wall, ceiling and floor linings where a flexible bond is required.

WATERPROOFING

Product	Description/compliance	Uses
Mulseal	Bitumen latex emulsion, brush applied to form a waterproof film.	For waterproofing block walls, concrete, basements etc.





EVO-STIK Flashband is a self adhesive bitumen weatherproofing strip, faced with Aluminium. Flashband bonds to a wide range of substrates forming a durable barrier, which is watertight and weatherproof.

Features:

- For emergency repairs to prevent expensive damage caused by leaking roofs and gutters.
- Provides an instant water tight seal.
- Quick and easy to use.
- Lasts for up to 15 years (BBA Certificate).
- No special tools required for application.
- Can be applied in damp weather.
- FLASHBAND Primer available for difficult surfaces.

Application:

Roofs (compatible with Zincalume), Guttings, Flashings, Pipes, replacement of lead surfaces, Glasshouses and Conservatories.

Adheres To:

- Without primer - Glass and Metal
- With primer - Brickwork, Concrete and Timber

Applying Flashband in Cold Weather:

Where it is safe to do so FLASHBAND application can be made easier by warming the surface to which it is to be fixed. Alternatively, gently warm the reverse side fo the FLASHBAND.



10 metre roll

Width (mm)	50	75	100	150	225	300	450	600
Primer req'd.	250ml	375ml	500ml	750ml	1.1L	1.5L	2.3L	3.0L

3.75 metre roll (Flashband + complete with primer)

Width (mm)		75	100	150	225	300		
Primer req'd.		140ml	190ml	280ml	420ml	570ml		

“A full range of self adhesive tapes is available on request”

Aluminium foil tapes, single and double-sided foam tapes, electrical and plastic film joining tapes, masking, light and heavy duty packaging tapes, waterproof cloth tapes and many more. (Orders may be subject to minimum quantities.)





HIGH SPEED STEEL ALL HARD BLADES

These blades are manufactured from high grade high speed steel. The blade is solid high speed steel heat treated to a high hardness level sufficient to provide rigidity and excellent cutting performance whilst maintaining toughness to withstand normal shock in use.

The all hard blade is suitable for cutting all grades of material (including tool steels and alloy steels) where maximum blade life and high cutting rates are required. Ideal for the engineering shop where the workpiece is firmly secured.

RANGE AVAILABLE

300 mm x 13 mm x 0.65 mm - 12" x 1/2" x 0.025" pitch 14, 18, 24, 32, and prog
250 mm x 13 mm x 0.65 mm - 10" x 1/2" x 0.025" pitch 18, 24, 32

Blades for Power Hacksaws are also available.



BI METAL HACKSAW BLADES

These blades are manufactured from the highest grades of bi metal strip. This consists of an edge of high steel welded to a spring steel back. This highly sophisticated material produced by an electron beamwelding process, makes a hacksaw blade with all cutting qualities of a solid high speed steel blade but one that is shatterproof and virtually unbreakable even under severe conditions of service.

Bi metal blades are fast and straight cutting and are suitable for all types of material. They are perfect for bench work and fitting where a high standard of cutting performance is required.

RANGE AVAILABLE

300 mm x 13 mm x 0.65 - 12" x 1/2" x 0.025" pitch 14, 18, 24, 32, and prog
250 mm x 13 mm x 0.65 - 10" x 1/2" x 0.025" pitch 18, 24, 32

Blades for Power Hacksaws are also available.



FLEXIBLE HIGH SPEED STEEL BLADES

- are manufactured from high grade, high speed steel. The blade is solid high speed steel, heat treated to medium hardness and high toughness to give a good level of cutting performance and high resistance to breakage even during the most severe shock in use.

The flexible blade is ideal for the home handyman, plumbing and electrical installation work. They are suitable for cutting, steel, nonferrous metals is not always firmly held in a vice.

RANGE AVAILABLE

300 mm x 13 mm x 0.65 mm - 12" x 1/2" x 0.025" pitch 14, 18, 24, 32 and prog



FINISHES

Standard finishes are:

STEEL Bright Steel, zinc chromate and florentine
HINGES bronze, (zinc chromate and florentine bronze are factory applied cosmetic only finishes on zinc). Special finishes such as powder coating (various colours), baked enamel (any colour), brass plating, satin chrome, nickel etc., can be supplied to order.

BRASS Self colour lightly polished. Brass hinges can
HINGES be supplied to order in the rumbled condition or a highly polished version.

MATERIALS

Hinges are manufactured from materials complying to the following specifications:

- STEEL** Material to ASTM 109M-83
 Chemical Properties to AISI 1023
 Mechanical Properties - HRB 70-85
- BRASS** Material to ASTM 836 - Alloy No. 8
 Chemical composition - Copper 64-08.5%
 Lead 0.15% max
 Iron 0.05% max
 Zinc Balance
 Mechanical Properties - HRB 57-74

STANDARD PRODUCTS

Hinge Series	Size 'A' In Inches	Width 'B' In Inches	Material Thickness 'T' In Inches	Holes in each Hinge	Recommended Screw Gauge	Finish	Hinge Pin Material	Special Features	Hinge Series	Size 'A' In Inches	Width 'B' In Inches	Material Thickness 'T' In Inches	Holes in each Hinge	Recommended Screw Gauge	Finish	Hinge Pin Material	Special Features
814	1"	2-29/32	.048	6	5	Bright Steel	Steel	-		2"	1-3/16	.048	4	5	Bright Steel	Steel	-
	1 1/8"	3-3/8	.064	6	7	Bright Steel Florentine Bronze	Steel Brass	- -							Florentine Bronze Zinc Plated	Steel Brass	- -
808	3/4"	3-1/2	.104	6	10	Bright Steel Florentine Bronze Zinc Plated	Steel Brass Brass	- - -		2 1/2"	1-5/16	.048	6	5	Bright Steel	Steel	-
	4"	4	.104	8	10	Bright Steel Brass Florentine Bronze Zinc Plated	Steel Brass Brass Brass	- - - -							Florentine Bronze Zinc Chromate Zinc Plated	Steel Brass Brass Brass	- - - -
804	3/4"	3-1/2	.104	6	10	Bright Steel Zinc Chromate Florentine Bronze Zinc Plated Zinc Plated	Steel Steel Steel Steel Brass	- - - - -	333	3"	2	.064	6	7	Bright Steel	Steel	-
	4"	4	.104	8	10	Bright Steel Brass Zinc Chromate Florentine Bronze Zinc Plated Zinc Plated	Steel Steel Steel Steel Steel Brass	- - - - - -							Florentine Bronze Zinc Plated	Steel Brass Brass Brass	- - - -
3000	2 1/2"	1	.048	5	5	Florentine Bronze	Steel	Radius	1000	45mm	Refer Sketch		4	5	Florentine Bronze	Steel	-
	1"	7/8	.028	4	2	Bright Steel Florentine Bronze	Steel Steel	- -	2000	50mm	Refer Sketch		5	5	Florentine Bronze	Steel	-
5000	1"	1	.036	4	3	Bright Steel Brass Florentine Bronze Zinc Plated	Steel Brass Brass Brass	- - - -	1840	3"	2	.064	6	9	Bright Steel	Steel	-
	1 1/8"	1	.036	4	3	Bright Steel Brass Florentine Bronze Zinc Plated	Steel Brass Brass Brass	- - - -							Bright Steel Brass Zinc Chromate Zinc Chromate Florentine Bronze Zinc Plated Zinc Plated	Steel Brass Steel Steel Steel Steel Steel Brass	- - - - - - - -
										3 1/2"	2-1/4	.080	6	9	Bright Steel Bright Steel Brass Brass Zinc Chromate Zinc Chromate Zinc Chromate Florentine Bronze Florentine Bronze Florentine Bronze Zinc Plated Zinc Plated Zinc Plated	Steel Brass Brass Brass Steel Steel Steel Steel Steel Steel Steel Brass	Radius Radius - Radius - - Radius - Unassembled Radius Un* - - Radius - Radius - Radius
										4"	2-7/8	.080	8	9	Bright Steel Brass Zinc Chromate Zinc Chromate Zinc Chromate Florentine Bronze Florentine Bronze Zinc Plated Zinc Plated Zinc Plated	Steel Steel Steel Steel Steel Steel Steel Steel Steel Brass	- - - Radius - - - Radius - Radius - Radius

*Radius Unassembled.

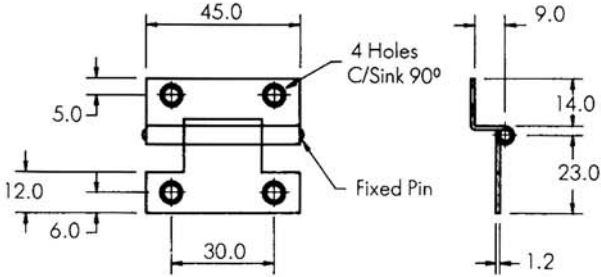


OVERLAY HINGES

NO. 1000

FOR CUPBOARD DOORS

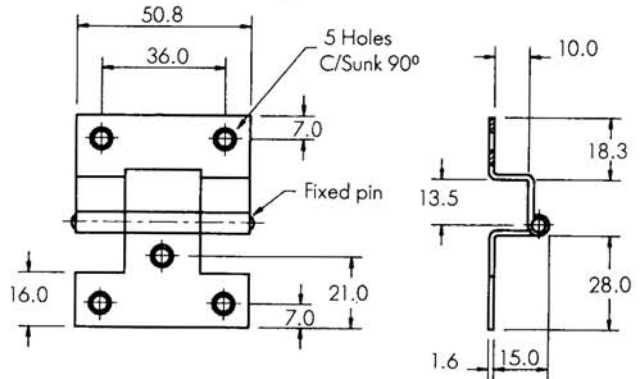
Suits all standard Overlay doors up to 16mm thick that are not required to open much over 90°. (all dimensions are in millimetres)



NO. 2000

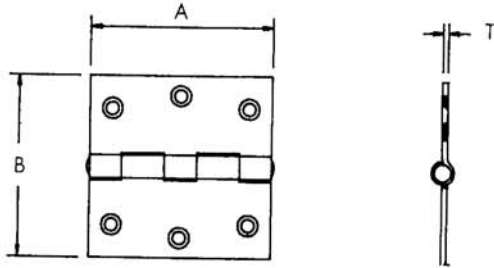
FOR CUPBOARD DOORS

Suits most overlay situations. Allows the door to open 180°.

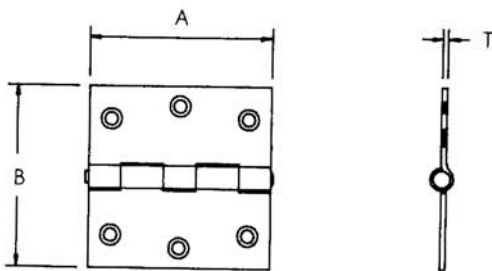


BROAD BUTTS

NO. 808 FIXED PIN BROAD BUTT HINGES FOR EXTERIOR SECURITY DOORS OPENING UP TO 180°

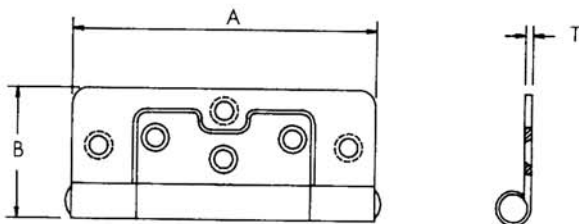


NO. 804 LOOSE PIN BROAD BUTT HINGES



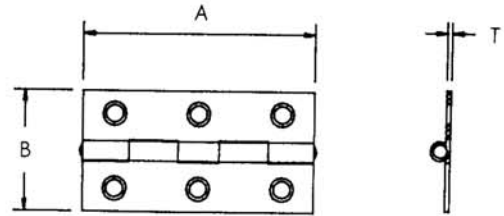
FLUSH BUTTS

NO. 3000 FIXED PIN FLUSH BUTT HINGES

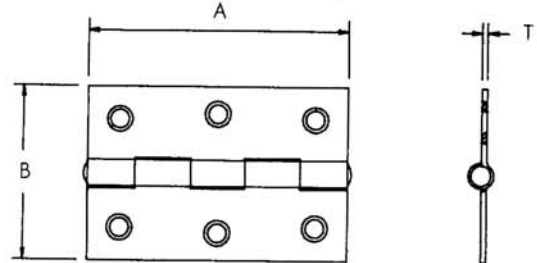


BUTT HINGES

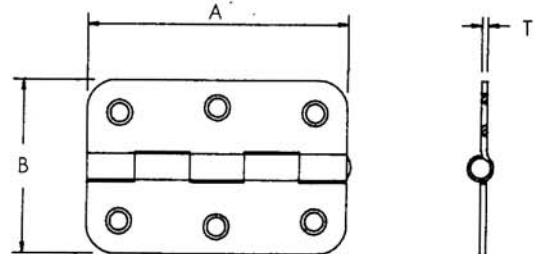
NO. 5000 NARROW BUTT HINGES FOR CUPBOARD DOORS



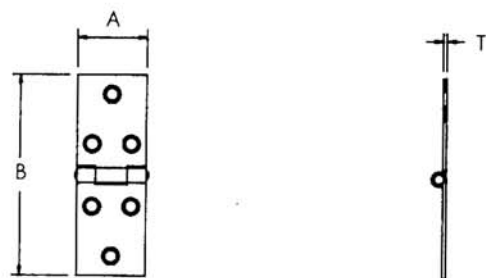
NO. 333 FIXED PIN BUTT HINGES FOR SECURITY DOORS, WINDOWS

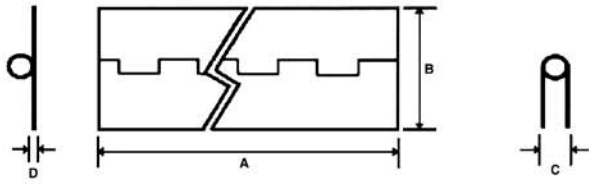


NO. 1840 LOOSE PIN BUTT HINGES FOR INTERIOR DOORS



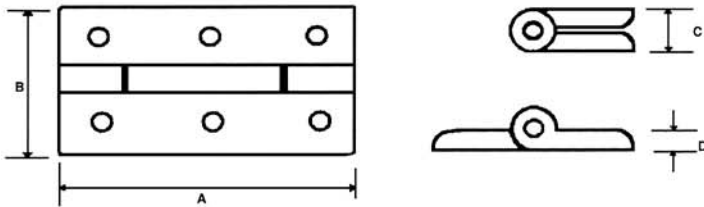
NO. 814 BACK FLAPS





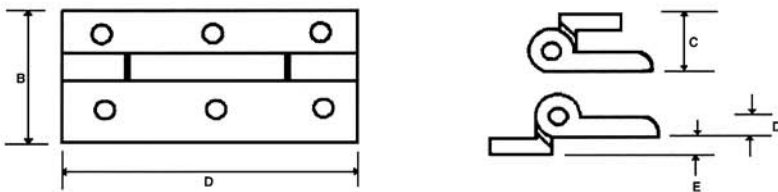
Aluminium Piano Hinge

	MM	MM
A	1800	1800
B	30	60
C	6.1	6.8
D	1.2	1.6
PIN	S/Steel	S/Steel



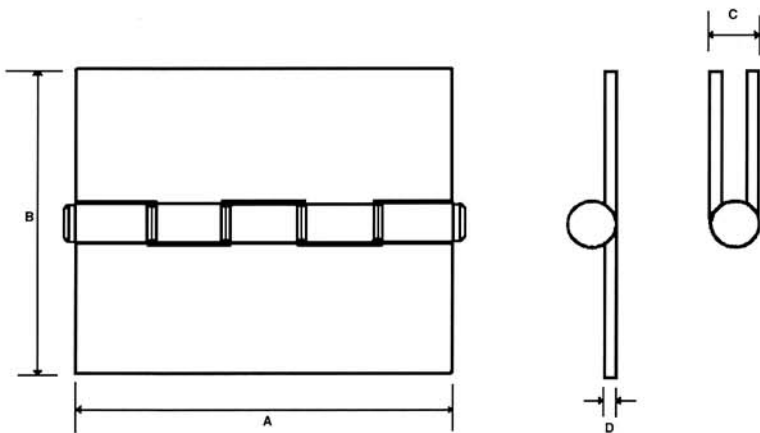
Flat Aluminium Butt Hinge

A	51mm	76mm	Satin
B	43mm	43mm	
C	10mm	10mm	
D	4mm	4mm	



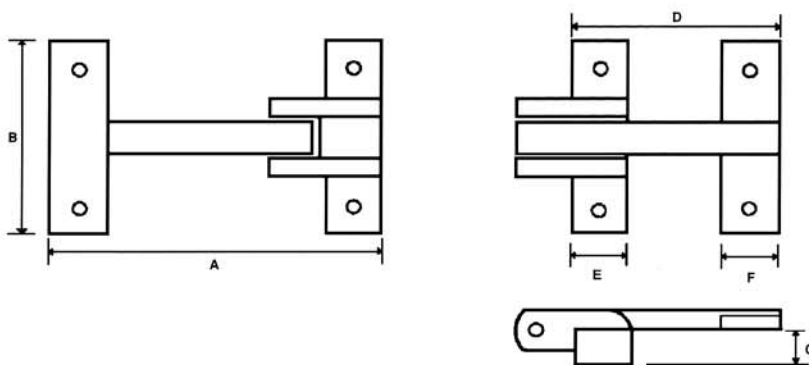
Stepped Aluminium Hinge

A	51mm	76mm	Satin
B	33mm	33mm	
C	14mm	14mm	
D	4mm	4mm	
E	5mm	5mm	



Aluminium Butt Hinge

A	100mm	Satin Bronze Black
B	83mm	
C	15mm	
D	3mm	

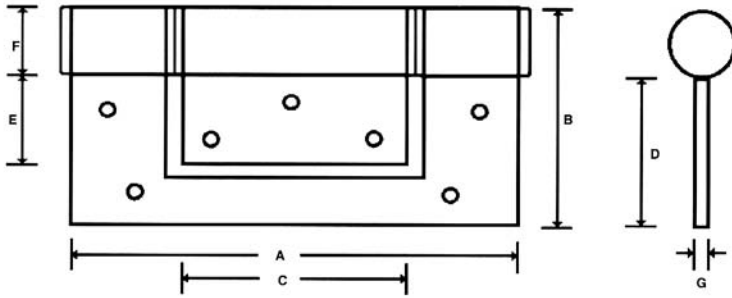


Canopy Hinges

A	140mm
B	80mm
C	13mm
D	85mm
E	23mm
F	24mm

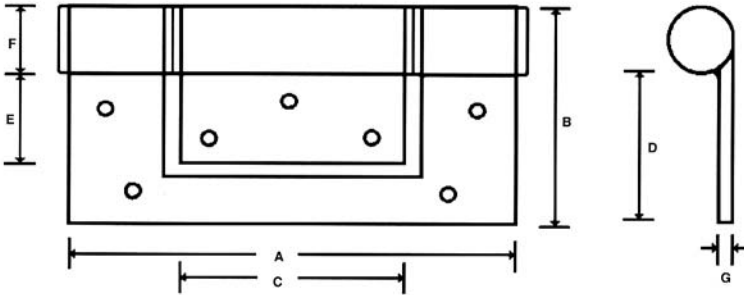
Cast Aluminium with
Stainless Steel Pin





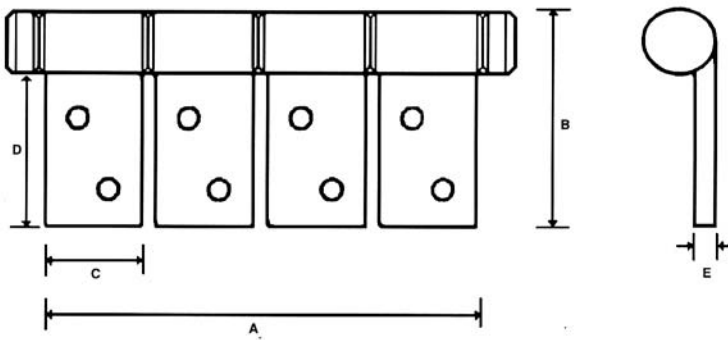
4" Aluminium Flush Butt Hinge

A	102mm	Satin
B	50mm	Bright Silver
C	53mm	Gold
D	35mm	Gun Metal
E	20mm	Black
F	15mm	Bronze and
G	3mm	Powder Coated



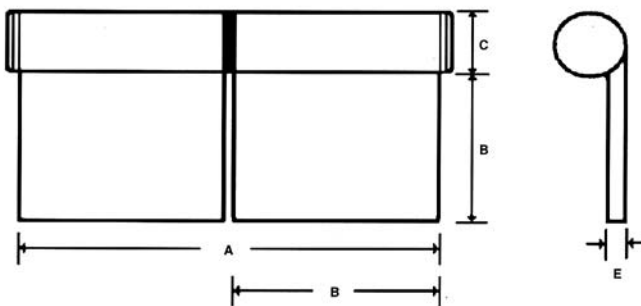
4" Aluminium Flush Butt Hinge Series (2)

A	102mm	Satin
B	50mm	Bright Silver
C	53mm	Gold
D	35mm	Gun Metal
E	20mm	Black
F	15mm	Bronze and
G	3mm	Powder Coated



4" Aluminium Multi Leaf Hinge

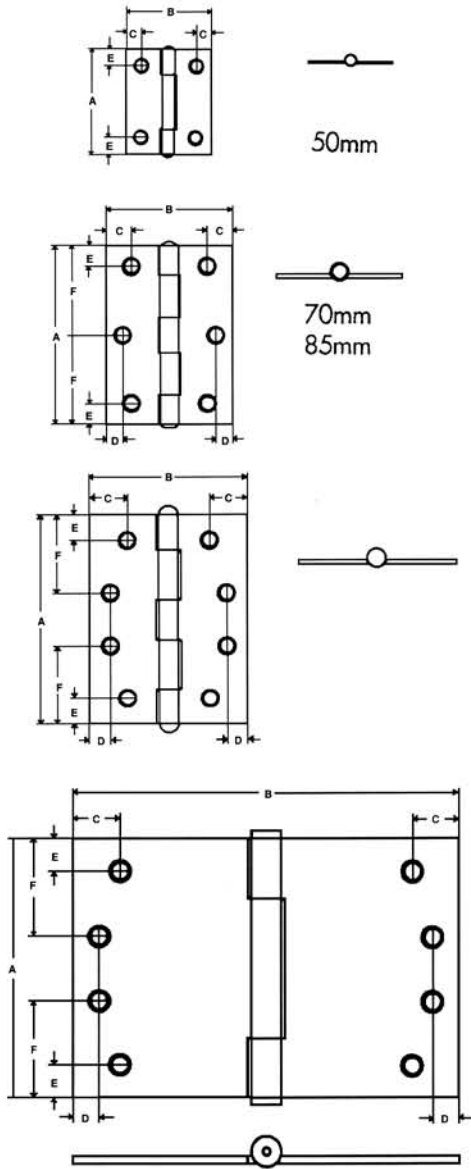
A	100mm	Satin
B	49mm	Black
C	24mm	Bronze
D	35mm	Gun Metal
E	3mm	Black



Aluminium Multi Leaf Hinge

A	102mm	152mm	Satin
B	49mm	49mm	Bronze
C	15mm	15mm	Black
D	50mm	75mm	
E	3mm	3mm	





Stainless Steel

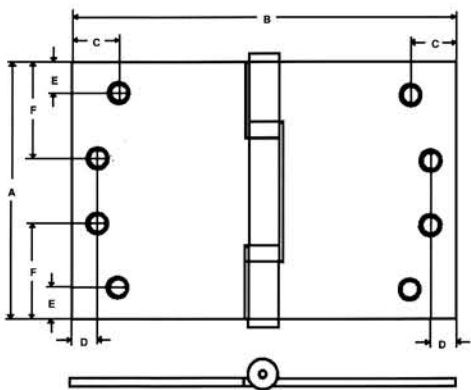
Catalogue No.	Pin Type	A	B	C	D	E	F	Gauge of Mat.	Csk Wood Screw	Csk MT Screw
8838SS x 50	Fixed	50	40	7	-	8	-	1.2	6	M3
8838SS x 70	Fixed	70	50	10	8	10	35	1.6	6	M3.5
8838SS x 85	Fixed	85	60	12	8	10	42.5	1.6	8	M4
8838SS x 100	Fixed	100	75	18	10	12.5	37.5	1.6	8	M4
0838SS x 70	Loose	70	50	10	8	10	35	1.6	6	M3.5
0838SS x 85	Loose	85	60	12	8	10	42.5	1.6	8	M4
0838SS x 100	Loose	100	75	18	10	12.5	37.5	1.6	8	M4

Catalogue No.	Pin Type	A	B	C	D	E	F	Gauge of Mat.	Csk Wood Screw	Csk MT Screw
9580SS 100 x 75	Loose	100	75	18	10	12.5	37.5	3.2	10	M5
9580SS 100 x 100	Loose	100	100	18	10	12.5	37.5	3.2	10	M5
9588SS 100 x 75	Fixed	100	75	18	10	12.5	37.5	3.2	10	M5
9588SS 100 x 100	Fixed	100	100	18	10	12.5	37.5	3.2	10	M5

Manufactured from 18/8 non-rusting and non-magnetic stainless steel.

Standard Finishes available:

- Loose Pin - Satin Stainless Steel, Bronze
- Fixed Pin - Satin Stainless Steel, Bronze



Catalogue No.	Pin Type	A	B	C	D	E	F	Gauge of Mat.	Csk Wood Screw	Csk MT Screw
SB954SS 100 x 75	Loose	100	75	18	10	12.5	37.5	3.2	10	M5
SB954SS 100 x 100	Loose	100	100	18	10	12.5	37.5	3.2	10	M5
SB958SS 100 x 75	Fixed	100	75	18	10	12.5	37.5	3.2	10	M5
SB958SS 100 x 100	Fixed	100	100	18	10	12.5	37.5	3.2	10	M5

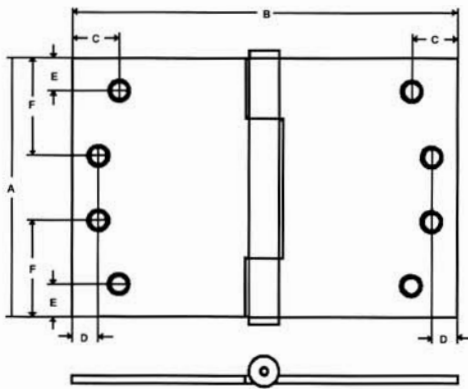
Manufactured from 18/8 non-rusting and non-magnetic stainless steel.

Standard Finishes available:

- Loose Pin - Satin Stainless Steel, Bronze
- Fixed Pin - Satin Stainless Steel, Bronze

Note: Bearing finish in all cases is Satin Stainless Steel, regardless of hinge finish.





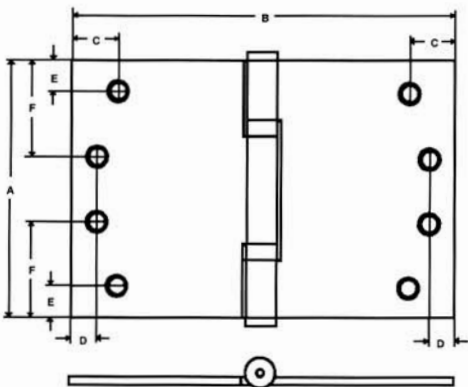
Catalogue No.	Pin Type	A	B	C	D	E	F	Gauge of Mat.	Csk Wood Screw	Csk MT Screw
9680SS 100 x 125	Loose	100	125	18	10	12.5	37.5	3.2	10	M5
9680SS 100 x 150	Loose	100	150	18	10	12.5	37.5	3.2	10	M5
9680SS 100 x 175	Loose	100	175	18	10	12.5	37.5	3.2	10	M5
9680SS 100 x 200	Loose	100	200	18	10	12.5	37.5	3.2	10	M5
9688SS 100 x 125	Fixed	100	125	18	10	12.5	37.5	3.2	10	M5
9688SS 100 x 150	Fixed	100	150	18	10	12.5	37.5	3.2	10	M5
9688SS 100 x 175	Fixed	100	175	18	10	12.5	37.5	3.2	10	M5
9688SS 100 x 200	Fixed	100	200	18	10	12.5	37.5	3.2	10	M5

Manufactured from 18/8 non-rusting and non-magnetic stainless steel.

Standard Finishes available:

Loose Pin - Satin Stainless Steel, Bronze

Fixed Pin - Satin Stainless Steel, Bronze



Catalogue No.	Pin Type	A	B	C	D	E	F	Gauge of Mat.	Csk Wood Screw	Csk MT Screw
SB964SS 100 x 125	Loose	100	125	18	10	12.5	37.5	3.2	10	M5
SB964SS 100 x 150	Loose	100	150	18	10	12.5	37.5	3.2	10	M5
SB964SS 100 x 175	Loose	100	175	18	10	12.5	37.5	3.2	10	M5
SB964SS 100 x 200	Loose	100	200	18	10	12.5	37.5	3.2	10	M5
SB968SS 100 x 125	Fixed	100	125	18	10	12.5	37.5	3.2	10	M5
SB968SS 100 x 150	Fixed	100	150	18	10	12.5	37.5	3.2	10	M5
SB968SS 100 x 175	Fixed	100	175	18	10	12.5	37.5	3.2	10	M5
SB968SS 100 x 200	Fixed	100	200	18	10	12.5	37.5	3.2	10	M5

Manufactured from 18/8 non-rusting and non-magnetic stainless steel.

Standard Finishes available:

Loose Pin - Satin Stainless Steel, Bronze

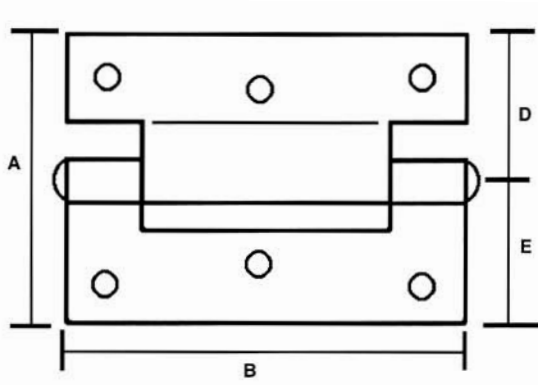
Fixed Pin - Satin Stainless Steel, Bronze

Note: Bearing finish in all cases is Satin Stainless Steel, regardless of hinge finish.



SIZE		
25.4	x	0.8 x 1830mm
38.1	x	0.8 x 1830mm
50.8	x	1.2 x 1830mm
60.0	x	1.6 x 1220mm



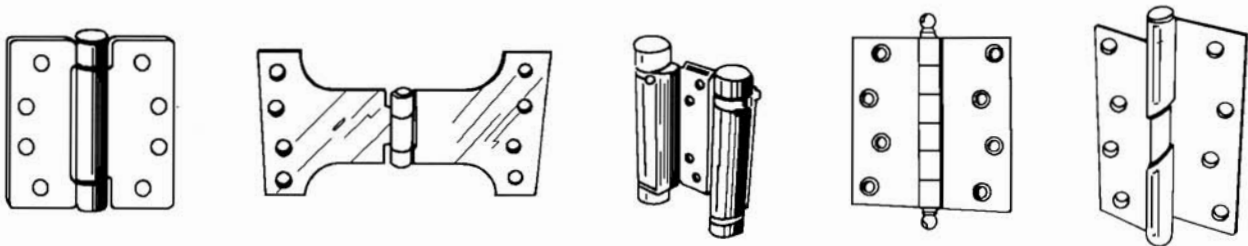
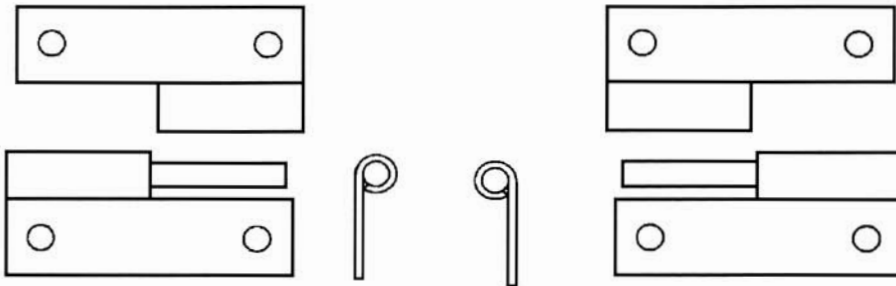












75mm Security Door Hinge

- A = 48.5mm
- B = 75mm
- C = 44mm
- D = 23mm
- E = 25.5mm
- F = 5.9mm
- G = 1.8mm

Colours: Black and White
 Pin Material: Stainless Steel
 Steel Pin available on indent.

A wide range of other types and styles of hinges are available on request. These may be subject to minimum quantities.



	Order Number			Anchor Hole Size Dia. x Length (mm)	Thread Size	Fixture Thickness Max. (mm)	Hole Depth Min. (mm)	Qty. per Box
	Carbon Steel (Plated)	Stainless Steel	Hot Dipped Galvanised					
HEX NUT 	D6026	-		6 x 26mm	M4.5	5	23	100
	D6038	D6038SS		6 x 38mm	M4.5	8	33	100
	D6058	D6058SS		6 x 58mm	M4.5	27	33	100
	D8042	D8042SS		8 x 42mm	M6	8	40	100
	D8066	D8066SS		8 x 66mm	M6	30	40	50
	D8092	-		8 x 92mm	M6	56	40	50
	D10040	-	D10040GA	10 x 40mm	M8	6	40	50
	D10048	D10048SS	D10048GA	10 x 48mm	M8	10	45	50
	D10075	D10075SS	D10075GA	10 x 75mm	M8	35	45	50
	D10100	D10100SS	D10100GA	10 x 100mm	M8	62	45	25
	D12058	D12058SS	D12058GA	12 x 58mm	M10	12	50	25
	D12070	D12070SS	D12070GA	12 x 70mm	M10	18	55	25
	D12098	D12098SS	D12098GA	12 x 98mm	M10	46	55	20
	D12126	D12126SS	D12126GA	12 x 126mm	M10	74	55	20
	D16064	-	D16064GA	16 x 64mm	M12	12	55	20
	D16108	-	D16108GA	16 x 108mm	M12	49	60	10
	D16142	-	D16142GA	16 x 142mm	M12	83	60	10
	D20082	-	D20082GA	20 x 82mm	M16	20	65	10
	D20114	-	D20114GA	20 x 114mm	M16	52	65	5
	D20158	-	D20158GA	20 x 158mm	M16	96	65	5
HEX BOLT 	D8040C	-		8 x 40mm	M6	8	40	100
	D8065C	-		8 x 65mm	M6	30	45	50
	D8092C	-		8 x 92mm	M6	56	45	50
	D10048C	-		10 x 48mm	M8	10	45	50
	D10075C	-		10 x 75mm	M8	35	50	50
	D10100C	-		10 x 100mm	M8	62	50	25
	D12058C	-		12 x 58mm	M10	12	55	25
	D12070C	-		12 x 70mm	M10	18	60	25
	D12100C	-		12 x 100mm	M10	46	60	20
	D16060C	-		16 x 60mm	M12	12	60	20
	D16100C	-		16 x 100mm	M12	49	70	10
	COUNTERSUNK HEAD 	D6034F	-		6 x 34mm	M4.5	20	20
D6058F		D6058FSS		6 x 58mm	M4.5	28	35	100
D6076F		D6076FSS		6 x 76mm	M4.5	47	35	100
D6098F		-		6 x 98mm	M4.5	69	35	100
D8060F		D8060FSS		8 x 60mm	M6	25	40	100
D8086F		D8086FSS		8 x 86mm	M6	51	40	50
D10074F		D10074FSS		10 x 74mm	M8	30	50	50
D10102F		D10102FSS		10 x 102mm	M8	85	50	50
-		D10127FSS		10 x 127mm	M8	92	50	25
ROUND HEAD 	D6032R	-		6 x 32mm	M4.5	16	20	100
	D6054R	D6054RSS		6 x 54mm	M4.5	24	35	100
	D6074R	D6074RSS		6 x 74mm	M4.5	43	35	100
	D6096R	D6096RSS		6 x 96mm	M4.5	65	35	100
	D8058R	D8058RSS		8 x 58mm	M6	23	40	50
	D8082R	D8082RSS		8 x 82mm	M6	48	40	50
	D10064R	D10064RSS		10 x 64mm	M8	24	50	50
	D10092R	D10092RSS		10 x 92mm	M8	51	50	50
	D10120R	D10120RSS		10 x 120mm	M8	78	50	25
SETLOK® 	D6038H	-		6 x 38mm	M4.5	Hole Dia. 6	41	100
	D8000E	-		8 x 31mm	M6	8	50	100
EYE BOLT 	D20082E	-		20 x 82mm	M16	20	60	1
	D8000HB	-		8 x 31mm	M6	8	50	50
HOOK BOLT 	-	DR45SS		-	M4.5	-	-	100
	DR6	-		-	M6	-	-	100
	DR8	-		-	M8	-	-	100
POST SCREWS 	-	DF45SS		-	M4.5	-	-	100
	DF6	DF6SS-		-	M6	-	-	100
	DF8	DF8SS		-	M8	-	-	100
	DA4.5	-		-	M4.5	-	-	100
	DA6	-		-	M6	-	-	100
	DA8	-		-	M8	-	-	100
	DT6	-		-	M6	-	-	100
	DT8	-		-	M8	-	-	100
	DT10	-		-	M10	-	-	100

True Dimension all steel through fixing for Masonry and Concrete

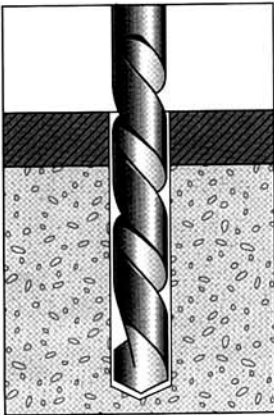
FEATURES

- Through fixing: no marking out and repositioning
- True Dimension Anchor: Hole size, anchor diameter and thread size are all the same diameter
- Fully assembled
- One piece wrap around sleeve.
- Anti-rotation lugs

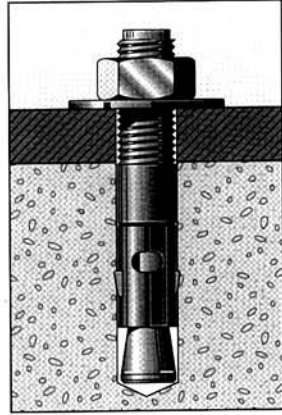
MATERIALS

Carbon Steel
Stainless Steel AISI 316

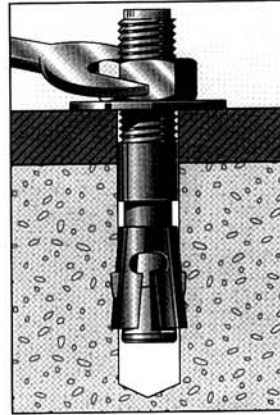
INSTALLATION



1. Using fixture as template, drill the hole the same diameter as the TRUBOLT anchor to the required depth.



2. Drive the anchor into the hole until the nut and washer is flush with the fixture.



3. Tighten with a spanner. For optimum anchor performance a torque wrench should be utilized.

SURFACE FINISH

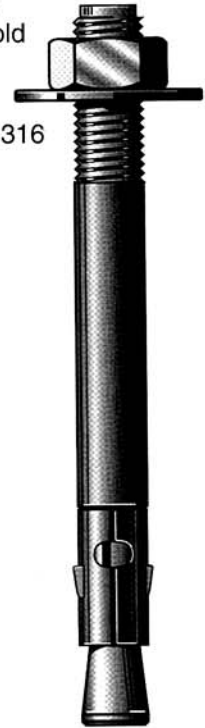
Carbon Steel: All components are zinc plated in accordance to AS 1789-1984 and passivated gold chromate conversion coating to AS 1791-1986.
Hot dipped galvanised to AS 1650-1989.
Stainless Steel -all components are Grade AISI 316

DURABILITY

See Suppliers Statement Reference zinc, Hot dipped Galvanised and Stainless Steel.

APPLICATIONS

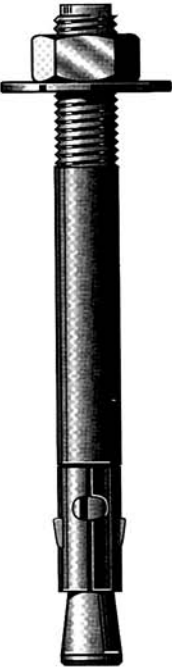

Timber to concrete: Bottom wall plates.
Wall and floor frame work.
Steel to Concrete: Racking, balustrades, machinery, safety barriers, hand rails, stairways.



Anchor Size	INSTALLATION				STRUCTURAL LIMITS			RECOMMENDED WORKING LOADS (kN)					
	Hole Diam. (mm)	Embed. Depth (mm)	Fixture Clearance Diam. (mm)	Tight. Torque (Nm)	Edge Dist. Min. (mm)	Anchor Spacing Dist. Min. (mm)	Struct. Thick. Min. (mm)	20MPa		30MPa		40MPa	
								Tensile	*Shear	Tensile	*Shear	Tensile	*Shear
T/..M6	6	32	8	6	65	65	40	1.7	3.0	2.0	3.7	2.3	3.7
	6	50	8	6	125	125	80	3.3	3.0	3.3	3.7	3.3	3.7
T/..M8	8	35	10	14	70	70	50	1.9	5.6	2.3	6.8	2.7	6.8
	8	55	10	14	135	135	90	2.7	5.6	3.3	6.8	3.3	6.8
T/..M10	10	38	12	28	95	95	60	2.1	8.7	2.5	10.7	2.9	10.7
	10	65	12	28	160	160	100	6.0	8.7	7.2	10.7	7.2	10.7
T/..M12	12	60	15	34	135	135	90	4.7	8.8	5.7	10.8	6.6	10.8
	12	80	15	34	195	195	120	8.1	8.8	9.8	10.8	9.8	10.8
T/..M16	16	75	19	85	165	165	110	6.2	16.3	7.5	20.0	8.7	20.0
	16	110	19	85	270	270	160	13.0	16.3	12.9	20.0	12.9	20.0
T/..M20	20	85	24	166	225	225	130	8.0	25.5	9.7	31.2	11.2	31.2
	20	135	24	166	345	345	200	18.9	25.5	22.9	31.2	22.9	31.2

* For shear loads acting towards the edge(s) of the concrete, the above edge distances and spacings are not applicable, please consult with your nearest Ullrich Fastenings Office.



	Order Number			Thread Size X Length (mm)	Thread Length (mm)	Fixture Thickness Max. (mm)	Hole Depth Min. (mm)	Qty. per Box
	Carbon Steel (plated)	Stainless Steel	Hot Dipped Galvanised					
TRUBOLT 	T6045	T6045SS	-	M6 X 45	20	5	35	100
	T6055	T6055SS	-	M6 X 55	25	15	35	100
	T6085	T6085SS	-	M6 X 85	25	45	35	100
	T8050	T8050SS	-	M8 X 50	16	5	40	100
	T8065	T8065SS	-	M8 X 65	21	20	40	100
	T8080	T8080SS	-	M8 X 80	30	35	40	50
	T8090	T8090SS	-	M8 X 90	30	45	40	50
	T8100	T8100SS	-	M8 X 100	30	55	40	50
	T8130	T8130SS	-	M8 X 130	45	85	40	50
	T10060	T10060SS	-	M10 X .60	25	10	45	50
	T10075	T10075SS	-	M10 X 75	30	25	50	50
	T10090	T10090SS	-	M10 X 90	36	40	50	50
	T10120	T10120SS	-	M10 X 120	44	70	50	20
	T12080	T12080SS	T12080GA	M12 X 87	30	12	65	20
	T12100	T12100SS	T12100GA	M12 X 100	30	25	65	20
	T12120	T12120SS	T12120GA	M12 X 120	30	45	65	20
	T12140	T12140SS	T12140GA	M12 X 140	30	65	65	20
	T12180	T12180SS	T12180GA	M12 X 180	30	105	65	20
	T16100	T16100SS	T16100GA	M16 X 107	30	12	85	20
	T16125	T16125SS	T16125GA	M16 X 125	30	30	85	20
	T16150	T16150SS	T16150GA	M16 X 150	35	55	85	20
	T16175	T16175SS	T16175GA	M16 X 175	40	80	85	20
	T20120	T20120SS	T20120GA	M20 X 131	40	20	100	10
T20160	T20160SS	T20160GA	M20 X 160	50	50	100	10	
T20215	T20215SS	T20215GA	M20 X 215	50	105	100	10	
WIRE HANGER 	T6055WH	-	-	M6 X 55	-	-	45	100



All metal wing cavity fasteners in gravity or spring configuration

FEATURES

- Fire resistant - ideally suited for ceiling installations
- Wide wingspan - high loadings in plaster walls and ceilings.

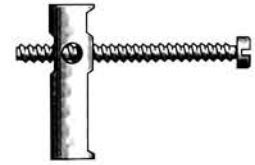
MATERIALS

Body: Pressed Steel, Screw: Carbon steel

INSTALLATION

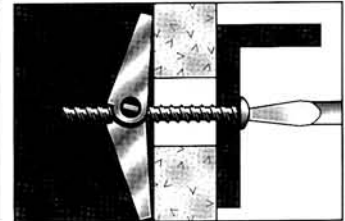
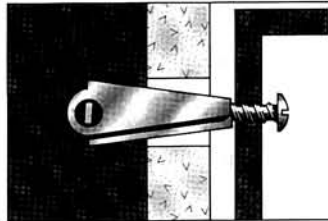
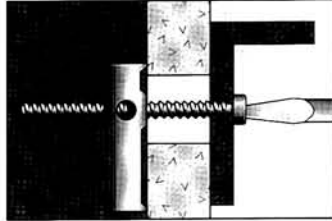
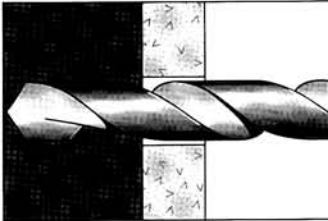
SURFACE FINISH

Zinc electroplated passivated chromate conversion coating.



APPLICATIONS

Towel rails, ceiling lights, plumbing and sanitary installations, shelf and cupboard installation.




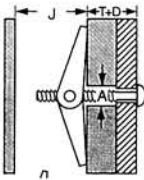
1. Drill the correct size hole through the material to which the fixture is to be fastened.

- Gravity Toggle -
2. Pass the screw through the fixture and into the toggle for a few turns. Insert the toggle through the hole in the material.
 3. Pull back on the fixture to hold the toggle in place against the reverse side of the material and tighten the screw with a screwdriver.

- Spring Toggle -
2. Pass the screw through the fixture and into the toggle for a few turns. Insert the toggle through the hole in the material.

3. Pull back on the fixture to hold the toggle in place against the reverse side of the material and tighten the screw with a screwdriver.

Head Style	Order No.	Hole Diameter (mm)	Screw Thread size	Screw Length (mm)	Qty. per Box	Rec. Working Load in 10mm plasterboard Tension (kN*)
GRAVITY TOGGLES with screws Round Head 	GT2018R	16	1/8"	50	50	0.15
	GT2316R	14	3/16"	50	50	0.18
	GT3316R	14	3/16"	75	50	0.18
	GT4316R	14	3/16"	100	50	0.18
	GTT2018R	11	1/8"	51	10	0.15
	GTT2316R	14	3/16"	51	10	0.15
SPRING TOGGLES with screws Round Head 	ST2018R	11	1/8"	50	50	0.15
	ST2316R	14	3/16"	50	50	0.18
	ST3316R	14	3/16"	75	50	0.18
	ST4316R	14	3/16"	100	50	0.18
	STT2018R	11	1/8"	51	10	0.15
	STT2316R	14	3/16"	51	10	0.18

Head Style	Order No.	Thread Diam.	Screw Length (mm)	Combined Wall & Fixture Thickness Max. T + D (mm)	Cavity Depth Min. 'J' (mm)	Qty. Per Box	Hole Dia. 'A' (mm)	Recommended Working Load in 10mm plasterboard (kN)*
	STM3050R	M3	50	30	20	100	11	0.15
	STM5050R	M5	50	20	30	100	14	0.18
	STM5075R	M5	75	45	30	50	14	0.18
	STM5100R	M5	100	70	30	50	14	0.18
	STM6075	M6	75	45	30	50	18	0.20
Toggles Head only	STM3H	M3			20	100	11	0.15
	STM3H	M5			30	100	14	0.18
	STM6H	M6			30	100	18	0.2
	STM8H	M8			40	50	22	0.3
	STM10H	M10			40	50	25	0.3
Cup Hook	ST2316HB	3/16"	50	20	30	50	14	0.18
Square Hook	ST2316SB	3/16"	50	20	30	50	14	0.18

* with a safety factor 4:1



Light duty nail expanding anchor for solid masonry and hollow wall constructions.

FEATURES

- Multiple style heads for versatility
- Small diameter hole for discreet fixings
- Fully assembled through fixing - fast fixing in repetitive applications
- Nylon body provides insulation between expander nail and work surface
- no bimetal corrosion.

MATERIALS

Body - Nylon

Expander Nail - Carbon Steel or Stainless Steel.

SURFACE FINISH

Expander Nail - Carbon Steel - Zinc electroplated passivated blue chromate conversion coating.

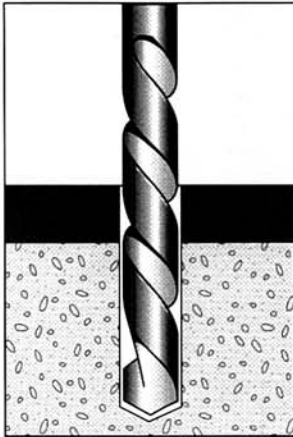
DURABILITY

Nylon body temperature resistance up to +80°C in service.

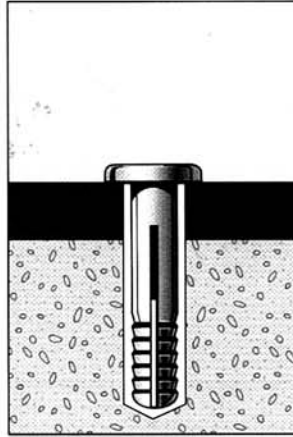
Installation temperature -10°C to +40°C.

APPLICATIONS

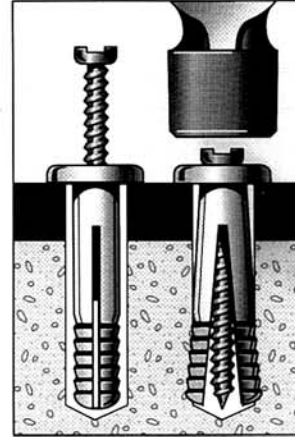
Signs, conduit brackets, electrical fittings, radiators, partition boards.







1. Drill the correct size hole using the fixture as a template.



2. Insert the NYLON ANCHOR through the fixture to be fastened and push the anchor in until the head of the anchor is tight against the fixture.



3. Tap screw nail home with a hammer.

Head Style	Order No.	Anchor Diam. (mm)	Drill Bit Diam. (mm)	Anchor Length (mm)	Head Diam. (mm)	Qty. per Box	Rec. Working Load (kN)	
							tension	shear
 Countersunk	NAC34	5	5	25	10	100	0.2	0.5
	NAC44	6.5	6.5	25	11	100	0.3	0.8
	NAC46	6.5	6.5	38	11	100	0.3	0.8
	NAC48	6.5	6.5	50	11	100	0.3	0.8
	NAC412	6.5	6.5	75	11	100	0.3	0.8
 Mushroom	NAM520	5	5	20	11	100	0.2	0.5
	NAM34	5	5	25	11	100	0.2	0.5
	NAM44	6.5	6.5	25	14	100	0.3	0.8
	NAM46	6.5	6.5	38	14	100	0.3	0.8
	NAM48	6.5	6.5	50	14	100	0.3	0.8
	NAM412	6.5	6.5	75	14	100	0.3	0.8
 Round	NAR525	5	5	25	9	100	0.2	0.5
	NAR36	5	5	38	9	100	0.2	0.5
	NAR44	6.5	6.5	25	11	100	0.3	0.8
	NAR46	6.5	6.5	38	11	100	0.3	0.8
	NAR48	6.5	6.5	50	11	100	0.3	0.8
 Flush	NAF525	5	5	25	11	100	0.2	0.5



The accepted method of light weight screw fixing into solid masonry.

FEATURES

- Each Nylon Plug will accept a wide range of screw sizes
- Stainless Steel and Brass screws used with Nylon Plugs offer full corrosion resistance
- High expansion capabilities insures strong fixings in a variety of materials.

MATERIALS

Nylon

DURABILITY

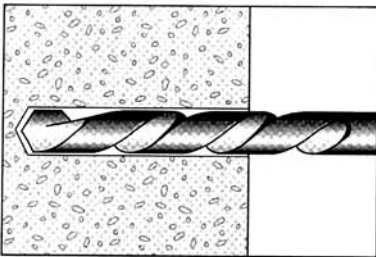
Nylon body temperature resistance up to +80°C in service.
Installation temperature -10°C to 40°C

APPLICATIONS

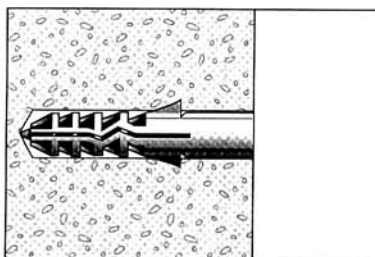
Facia boards, plumbing installations, shelf brackets, ceiling hangers, switch and junction boxes.



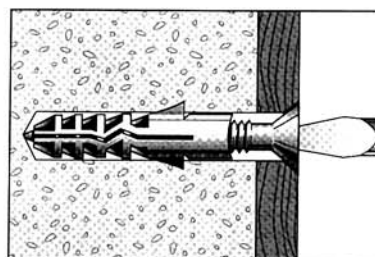
INSTALLATION



1. Drill th correct diameter and depth hole.
Clean the hole thoroughly.



2. Insert the NYLON PLUG into the hole until flush with the surface.



3. Pass the wood screw through the fixture and into the NYLON PLUG.
Tighten with a screwdriver.
Note: Screw length = length of NYLON PLUG + thickness of fixture.

Order Number	Plug/ Hole Diam. (mm)	Length/ Hole Depth (mm)	Wood Screw Size		Qty. per Box	Rec. Working Load (kN) in 25MPa concrete in tension
			(mm)	gauge		
DNP5	5	25	2.5	5-7	100	0.3
DNP6	6	30	3.5-5	6-9	100	0.5
DNP7	7	35	4.5-5.5	9-12	100	0.7
DNP8	8	40	4.5-6	10-14	100	0.8
DNP10	10	50	6-8	14-18	50	1.2
DNP12	12	60	8-10	18-24	25	1.8



ROOFING NAILS

The Mild Steel Plated roofing nail that has been developed to fulfill the demand for a perfect sealing, inexpensive roofing fastener. The nail has been designed with a sharp point reducing the excessive dimpling effect on metal roofs caused by a less pointed fastener being unable to penetrate quickly and easily.

The seal is a dual composition bonded seal produced from galvanised steel or Zincalume and is bonded to genuine neoprene giving a total O.D. of 16mm. This material has an ultra violet and weatherability performance which exceeds most nominal applications.

SPECIFICATIONS

Length: Standard lengths 60mm and 75mm

Diameter: 4mm

Plating: Hot Dip Galvanized

Assembly: Nails are supplied complete with seals

Packaging: Small cartons of 300 or outers of 1500 (5 cartons of 300)

Approx Quantity Per Kg

60mm 118

75mm 106

ALUMINIUM DRIVE SCREW NAIL

The Aluminium Drive Screw Nail was produced for fixing aluminium roofing. Designed with a twisted shank it has a greater holding power and is less likely to loosen once installed. This nail has been designed for use with our roofing washers.

Note: We recommend that you drill a 3.5-4.0mm pilot hole to insure ease of installation.

SPECIFICATIONS

Length: Standard lengths 65, 75mm

Diameter: 6mm

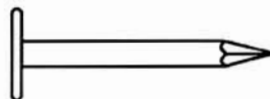
Head diameter: 10mm

Material: 6061 T⁶ aluminium

Approx Quantity Per Kg

65mm 253

75mm 220

ALUMINIUM CLOUT NAIL

The Alloy Clout Nail was produced for use with many forms of aluminium cladding, however it is also used for holding tags on timber during processing through the saw mill, another common use is holding scrim to bowling greens as the Alloy Clout Nail does not damage mower blades.

SPECIFICATIONS

Length: 30mm

Diameter: 10 gauge

Head diameter: 10mm

Material: 6061 T⁶ aluminium

Approx Quantity Per Kg

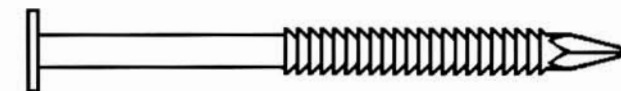
1212



For Anti-Corrosion Durability - consider Silicon Bronze or Stainless Steel Nails



SILICONE BRONZE ROSE HEAD NAILS



SILICONE BRONZE FLAT HEAD NAILS

Today's High Cost...

of timber makes even the most modest building project a considerable investment. Evaluate the cost of stainless steel and silicone bronze nails over nails made of plain, galvanised or zinc chromate steel in terms of the total project cost. The expenditure for stainless steel or silicone bronze is minor when compared to labour, timber and other costs.

Your peace of mind with the superior corrosion resistance of stainless steel and silicone bronze

Quality Structural Nails

...The choice for long lasting structural work!

Annular grooved nails offer joint strength comparable to wood screws of similar length and diameter while providing superior withdrawal resistant.

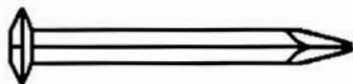
For all permanent timber foundations.

Do It Once and Do It Right!

Corrosion resistance of nails is of primary importance for timber and plywood construction applications when meeting the durability requirements as required under the building code.

Always specify silicone bronze and stainless steel nails for these applications.

- Cedar weatherboards
- Decks
- Stairs and railings
- Planters and Windowboxes
- Boat docks and piers
- Fences and Privacy Screens
- Weather Boards
- Gutter Brackets
- Flashings
- All High Moisture and salt spray areas
- Exterior Claddings

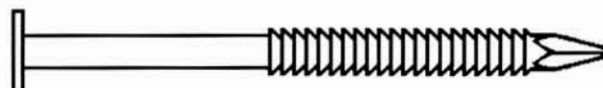


COPPER ROSE HEAD NAILS

For the corrosion free fixing of copper sheets, roof coverings and also used in boat building. Square shank.



STAINLESS STEEL ROSE HEAD NAILS



STAINLESS STEEL FLAT HEAD NAILS

Today's High Cost...

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- Gutter Brackets
- Flashings
- All High Moisture and salt spray areas
- Exterior Claddings

NOTE: Refer to page 52 for sizes etc.



PRODUCT DESCRIPTION	QUANTITY PER JAR	WEIGHT PER 1000 IN KGS
SILICON BRONZE FLAT HEAD NAILS		
5/8 x 16	1000	.295
3/4 x 16	1000	.365
7/8 x 16	1000	.390
1 x 16	1000	.490
3/4 x 14	1000	.565
7/8 x 14	1000	.655
1 x 14	500	.730
1-1/4 x 14	500	.900
1-1/2 x 14	500	1.100
1 x 12	500	1.390
1-1/4 x 12	200	1.600
1-1/2 x 12	200	1.875
2 x 12	200	2.375
1-1/4 x 10	200	2.500
1-1/2 x 10	200	2.850
1-3/4 x 10	100	3.400
2 x 10	100	4.000
2-1/2 x 10	100	4.750
3 x 10	100	5.700
SILICON BRONZE ROSE HEAD NAILS		
7/8 x 14	500	.700
1-1/4 x 14	500	.960
2 x 12	200	2.500
2-1/2 x 10	100	4.900
3 x 10	100	5.650
COPPER ROSE HEAD NAILS		
3/4 x 16	1000	.530
1 x 16	1000	.645
3/4 x 14	1000	.785
1 x 14	500	1.030
1-1/4 x 14	500	1.180
1-1/2 x 14	200	1.400
1-1/4 x 12	200	2.175
1-1/2 x 12	200	2.500
1-3/4 x 12	200	3.025
2 x 12	200	3.250
1-1/4 x 10	200	3.350
1-1/2 x 10	200	3.775
2 x 10	100	4.850
2-1/4 x 10	100	5.600
2-1/2 x 10	100	6.000
3 x 10	100	7.500
3 x 9	100	9.000
3-1/2 x 9	100	1.110
STAINLESS STEEL ROSE HEAD NAILS		
1-1/4 x 14	500	1.080
2 x 14	100	1.750
2 x 12	100	2.350
2-1/4 x 10	100	4.000
3 x 10	100	5.450
100mm x 4mm	100	10.000
STAINLESS STEEL FLAT HEAD NAILS		
2 x 12	200	2.200
2-1/4 x 10	100	3.850

To remain competitive in today's rapidly changing technological environment, it is essential that production methods are fast, versatile and cost effective.

Assembly problems are often intricate, with design, size and specifications varying significantly to meet market preferences and customer needs.

Manufacturers work with a variety of sheet sizes and thicknesses, and with square or tubular components, many requiring access from one side during assembly. Requirements vary from batch assembly to flow line production. From domestic appliances, requiring adjustable feet and reversible doors, to the exacting standards of high technology applications, where small components are used in electronic and computer assembly. These and many other applications are ideal for one or more threaded inserts.

Placing Sequence Standard Threaded Inserts
 exclusive "One Piece" design consists of an upper sleeve and a conically shaped, internally threaded base that features a unique "Breakaway" section.

How it works

- 1 Threaded insert is placed into the prepared hole.
- 2 On actuation, the tool breaks the conical-shaped portion and draws it up into the sleeve.
- 3 The tool is withdrawn leaving the threaded portion fully expanded into the hole ready to receive a screw or bolt.

Placing Sequence Thin Sheet Threaded Inserts

The Thin Sheet Threaded insert - A "One Piece" which has been developed specifically to give designers a strong, deep, vibration proof steel thread in thin sheet applications down to thickness of 0.020".

How it works

- 1 The Thin Sheet Threaded insert is placed into the prepared hole.
- 2 On actuation, the placing tool pulls the threaded portion until the wall collapses radially outwards clenching it tight against the sheet.
- 3 The tool is withdrawn leaving the Thin Sheet Threaded insert ready to receive a screw or bolt.

Threaded inserts for all applications

Sheet materials, square or circular tubing or just blind holes. Whatever the requirement, there is a choice of inserts, in various thread sizes and forms. When placed they are extremely resistant to push-out and pull-out pressures. A major feature of the whole range is their ability to be placed in painted materials without damage to the work surface, avoiding re-work and wastage.

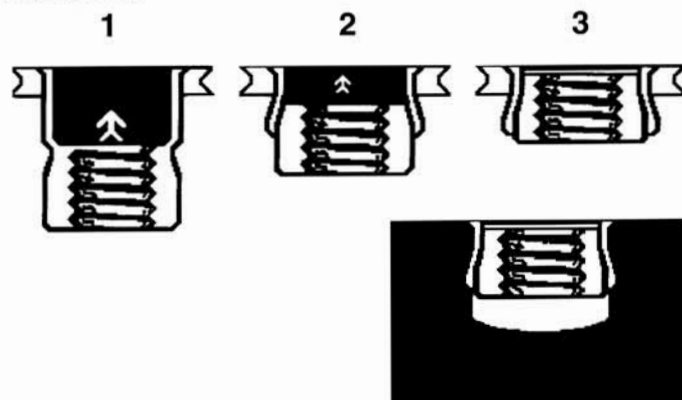
Ease of Operation

Any operator may place the range of inserts. No special knowledge or training is necessary. Requiring only pre-drilled, or pre-punched holes, each insert is placed from one side of the work-piece quickly and easily with the appropriate tool.

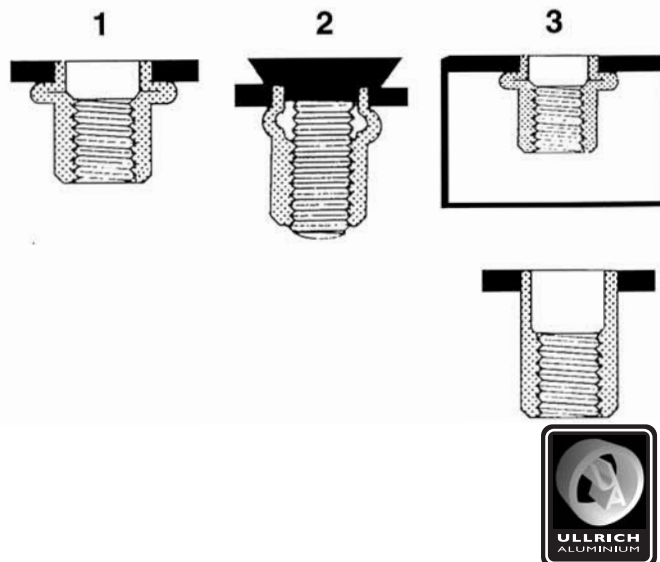
Simple Construction

Threaded inserts are high quality components made from carbon steel. Every insert has a prepared deep, vibration proof load bearing thread. When placed, the thread is immediately clear and ready to accept a screw or bolt.

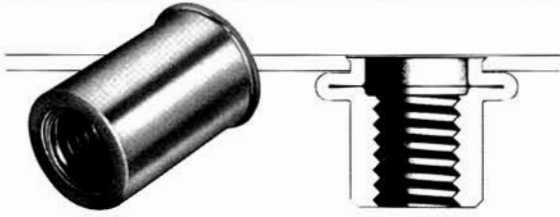
STANDARD THREADED INSERT



THINSHEET THREADED INSERT



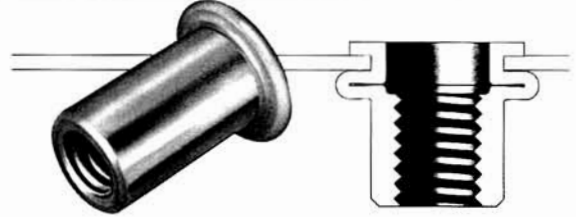
THIN SHEET THREADED INSERT



Designed for thin sheet applications, each insert size has a wide grip range.

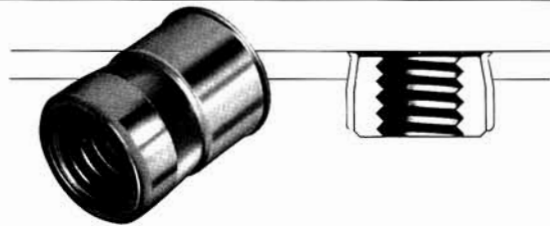
Each insert is zinc plated with a passivated finish. When placed, the insert deforms behind the sheet to provide good bearing area and grip. These inserts provide hardened steel load bearing threads which are zinc plated, passivated and lubricated to ensure consistent placing and good corrosion resistance.

LARGE FLANGE THIN SHEET THREADED INSERT



Ideal for applications where a larger head is required to spread the load. Each insert has a wide grip range and provides exceptional resistance to push-out and pull-out forces.

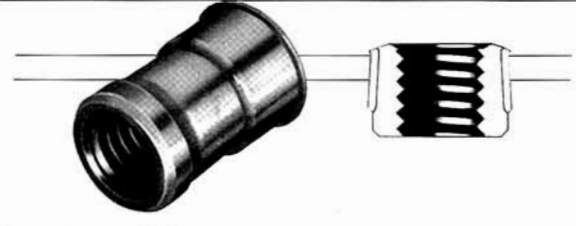
THREADED INSERT



For use in materials from 0.031" (0.8mm), up to and including blind holes.

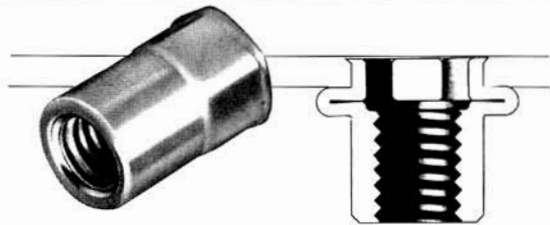
Made from carbon steel and zinc plated, this insert expands in or behind the sheet providing a friction lock between the outer sleeve and inner threaded portion.

THREADED INSERT



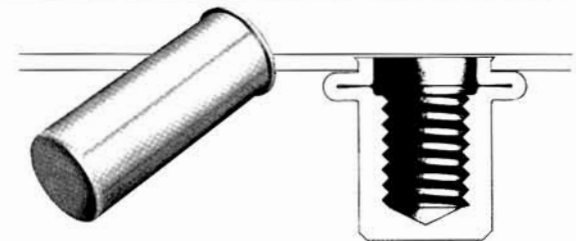
For use in materials from 0.031" (0.8mm) and including blind hole. The insert expands in or behind the sheet. The threaded section of the nut is locked onto the top of the insert shell to provide greater resistance to push out.

HEXAGONAL THREADED INSERT



The Hexagonal shape is designed to provide increased torque to turn resistance, particularly in cases where bolts or screws may be corroded in service and then prove difficult to remove. The insert forms behind the sheet to provide a secure grip over a large bearing area.

CLOSED END INSERTS



Where application may be exposed to ingress of moisture and corrosion, or when it is necessary to avoid contact with mechanical components or electrical wiring.

FEATURES AND BENEFITS

FEATURES

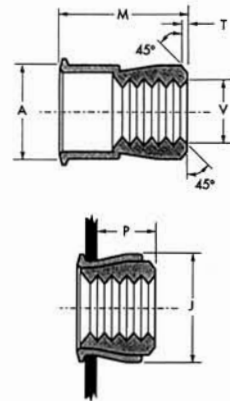
- ★ Wide range of inserts
- ★ High speed placing
- ★ Ideal for painted surfaces
- ★ Clear thread on placing
- ★ Hard Steel load-bearing thread
- ★ One-sided application
- ★ Closed end versions
- ★ Choice of tooling

BENEFITS

- Extends choice of working materials, provides single source of supply for efficient stocking.
- Increased output and low assembly costs.
- Avoids expensive re-work and wastage.
- Eliminates need for inspection.
- Allows design flexibility.
- Increases speed of assembly.
- Prevents ingress of moisture and corrosion.
- Provides flexibility and scope on production line.

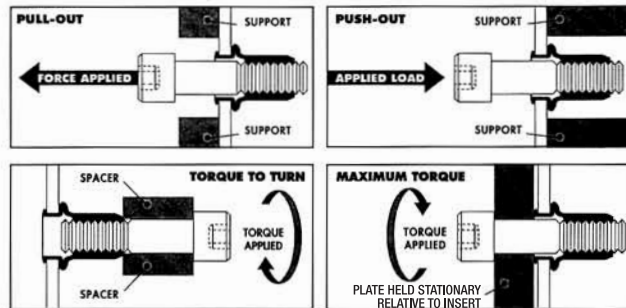
MATERIAL	FINISH	STANDARD THREADED INSERT
Low Carbon Steel to B.S. 970-230 M07	Zinc Plated to B.S 3382	9500 Series 

Thread type & size	Part No	METRIC DATA						
		Hole Size* min./max.	A max.	J max.	M max.	P max.	T min./max.	V min./max.
3/16 BSW	09501-00612	7.15/7.23	7.130	8.89	9.78	5.08	0.64/0.25	5.00/5.92
1/4 BSW	09501-00816	9.53/9.61	9.513	11.18	13.34	6.86	0.64/0.25	5.99/7.06
5/16 BSW	09501-01020	12.70/12.80	12.688	14.48	15.88	8.13	1.02/0.51	8.00/9.09
3/8 BSW	09501-01224	14.29/14.39	14.275	16.26	18.93	9.66	1.02/0.51	10.01/11.10
M4 x 0.7	09508-00412	6.35/6.44	6.338	7.88	9.78	5.08	0.64/0.25	4.01/5.92
M5 x 0.8	09508-00512	7.15/7.23	7.130	8.89	9.78	5.08	0.64/0.25	5.00/5.92
M6 x 1.0	09508-00616	9.53/9.61	9.513	11.18	13.34	6.86	0.64/0.25	5.99/7.06
M8 x 1.25	09508-00820	12.70/12.80	12.688	14.48	15.88	8.13	1.02/0.51	8.00/9.09
M10 x 1.5	09508-01024	14.29/14.39	14.275	16.26	18.93	9.66	1.02/0.51	10.01/11.10




* ONLY for sheet thickness 1/32" - 1/8" (0.80mm - 3.17mm). Above 1/8" (3.17mm) hole size depends on sheet hardness.

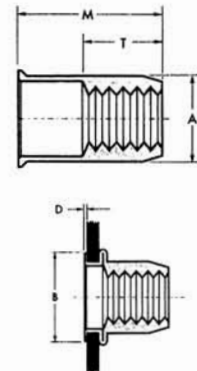
Thread Type & Size	METRIC DATA			
	Pull Out N	Push Out N	Torque to turn Nm	Maximum Torque to be applied to bolt Nm*
3/16 BSW	5916	222	0.56	7.9
1/4 BSW	8618	222	1.1	12.4
5/16 BSW	14790	267	1.7	16.4
3/8 BSW	18904	267	2.26	33.9
M4 x 0.7	4568	133	0.34	5.1
M5 x 0.8	5916	222	0.56	7.9
M6 x 1.0	8618	222	1.1	12.4
M8 x 1.25	14790	267	1.7	16.4



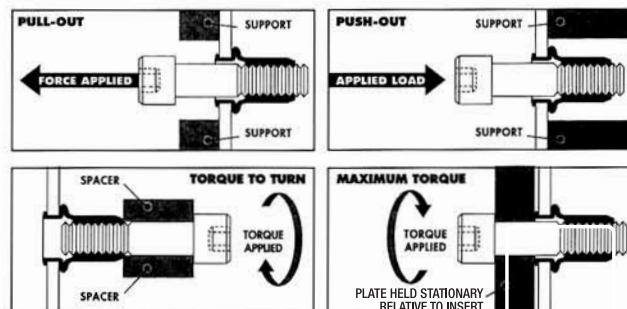
The diagrams above illustrate the nature of the tests conducted to obtain typical strength figures.

MATERIAL	FINISH	STANDARD THREADED INSERT
Low Carbon Steel to B.S. 970-040 A04	Zinc Plated to B.S. 3382 and to B.S 3382	9650 Series 


Thread Size	Part No	METRIC DATA						
		Grip Range min./max.	Hole Size min./max.	A max.	B max.	D max.	M max.	T max.
3/16 BSW	09651-00614	0.51/3.00	7.14/7.23	7.11	8.00	0.50	11.81	6.10
1/4 BSW	09651-00819	0.76/3.25	9.53/9.61	9.50	10.67	0.76	14.60	8.51
M4 x 0.7	09658-00413	0.51/2.00	6.35/6.44	6.32	6.86	0.51	10.41	6.48
M5 x 0.8	09658-00413	0.51/3.00	7.14/7.23	7.11	8.00	0.51	11.81	6.23
M6 x 1.0	09658-00619	0.76/3.25	9.53/9.61	9.50	10.67	0.76	14.60	8.64
M8 x 1.25	09658-05821	0.91/3.70	10.60/10.68	10.57	11.68	0.76	16.00	9.53

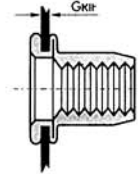
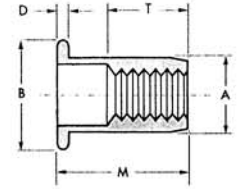


Thread Type & Size	METRIC DATA			
	Pull Out N	Push Out N	Torque to turn Nm	Maximum Torque to be applied to bolt Nm*
3/16 BSW	5693	1979	2.60	7.9
1/4 BSW	6761	2491	3.39	12.4
M4 x 0.7	4092	1379	1.92	5.1
M5 x 0.8	5693	1979	2.60	7.9
M6 x 1.0	6761	2491	3.39	12.4
M8 x 1.25	14679	2811	3.50	16.4



The diagrams above illustrate the nature of the tests conducted to obtain typical strength figures.

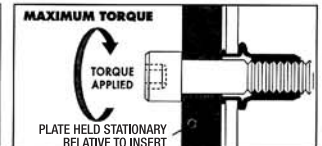
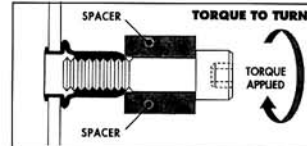
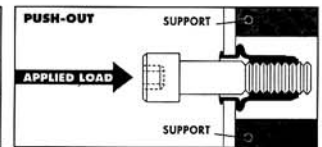
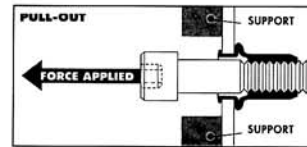
MATERIAL	FINISH	LARGE FLANGE THIN SHEET THREADED INSERT
Low Carbon Steel to B.S. 970-040 A04	Zinc Plated to B.S. 3382 and gold passivated to B.S. 6338	9698 Series 




METRIC DATA									
Thread Type & Size	Part N°	Grip Range min./max.	Hole Size min./max.	A	B	D	J	M	
				max.	min./max.	0.13	nom.	nom.	
M4 x 0.7	09698-00415	0.5/2.5	6.1	6.05	8.90/9.30	0.80	11.7	6.2	
M5 x 0.8	09698-00516	0.5/2.5	7.1	7.05	9.70/10.30	1.00	12.1	6.0	
M6 x 1.0	09698-00620	0.5/3.0	9.1	9.05	12.90/13.30	1.50	15.9	8.4	
M8 x 1.25	09698-00823	1.0/4.0	11.1	11.05	13.7/14.3	1.50	17.5	10.0	
	09698-02822	0.5/3.0	11.1	11.05	15.60/16.40	1.50	17.5	10.0	
	09698-02825	3.0/5.5	11.1	11.05	15.60/16.40	1.50	20.0	10.0	

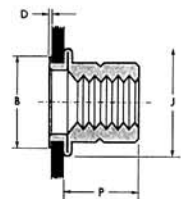
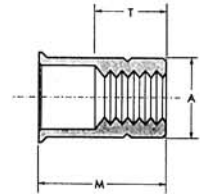
PERFORMANCE DATA

Thread Type & Size	METRIC DATA			
	Pull Out N	Push Out N	Torque to turn Nm	Maximum Torque to be applied to bolt Nm*
M4 x 0.7	7117	1926	1.9	5.1
M5 x 0.8	9029	3482	2.6	7.9
M6 x 1.0	13277	5084	3.4	12.4
M8 x 1.25	18192	7792	3.6	16.4
M10 x 1.5	15790	9200	3.8	33.9



The diagrams above illustrate the nature of the tests conducted to obtain typical strength figures.

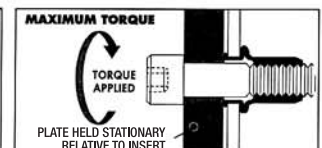
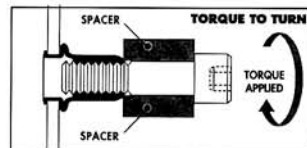
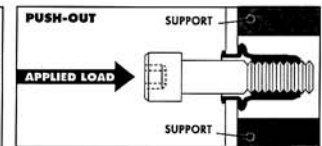
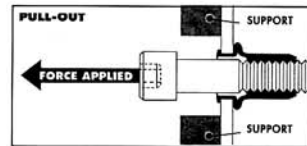
MATERIAL	FINISH	THIN SHEET THREADED INSERT
Stainless Steel A1S1 303	Natural	9468 Series 



METRIC DATA										
Thread Type & Size	Part N°	Grip Range min./max.	Hole Size min./max.	A	B	D	J	M	P	T
				max.	max.	max.	max.	max.	max.	max.
M4 x 0.7	09468-00413	0.51/1.27	6.35/6.44	6.317	7.50	0.64	10.3	10.42	7.2	6.61
M5 x 0.8	09468-00514	0.60/1.27	7.14/7.23	7.110	8.26	0.64	12.7	11.82	7.0	6.35
M6 x 1.0	09468-00619	0.76/3.25	9.53/9.61	9.492	10.85	0.77	15.5	14.61	9.5	8.77
M8 x 1.25	09468-05821	0.91/3.25	10.59/10.86	10.567	11.74	0.77	17.2	16.13	10.1	9.40

PERFORMANCE DATA

Thread Type & Size	METRIC DATA			
	Pull Out N	Push Out N	Torque to turn Nm	Maximum Torque to be applied to bolt Nm*
M3 x 0.5	8250	1084	0.40	4.00
M4 x 0.7	11456	2068	1.90	5.60
M5 x 0.8	15940	2770	2.60	11.30
M6 x 1.0	18311	2990	3.40	16.90
M8 x 1.25	24220	3280	3.60	22.60
M10 x 1.5	33908	4264	4.20	33.90



The diagrams above illustrate the nature of the tests conducted to obtain typical strength figures.



YOUR GUIDE.

A simple step-by-step method of selecting the correct Cherry Rivet for any job.

EXAMPLE

The job to be riveted has two pieces of material with a total thickness of 5/16" (8mm).

METHOD

Step 1. Decide which **head style and rivet type** is best. For example, Truss Head Plugged Type.

Chart 1.

Step 2. Select the **most suitable** rivet for the job. (Assume, aluminium). **Chart 2.**

Step 3. Select the **type of material** for the rivet stem. (Presume for this job steel would be best.)

Chart 3.

Step 4. Choose the most suitable rivet size for the job considering the strength required. For example 3/16" (4.8mm) diameter. **Chart 4.**

Step 5. Measure the total **thickness of the material** to be riveted. In this example it is 5/16" (7.9mm).

Chart 5.

Using these steps we found that:







- 1 - Type: Truss Head Plugged Rivet Code = 73
- 2 - Rivet Material: Aluminium Code = A
- 3 - Stem Material: Steel Code = S
- 4 - Rivet Diameter: 3/16" (4.8mm) Code = 6
- 5 - Material Thickness: 5/16" (8mm) Code = 5

The correct Cherry Rivet for this job would be 73-A-S-6-5

IMPORTANT

Drills selected must be sharpened correctly and for optimum performance care must be taken in drilling the hole within the limits set out on the specification sheet. An oversize hole can cause problems in setting the rivet, especially in soft materials. **Refer Chart 4 for correct drill size.**

THE CHERRY RIVET CODE SYSTEM

 <p>CHERRY RIVET TYPES</p> <p>73 - Truss Hd. - plugged rivet 72 - C'sk Hd. - plugged rivet 27 - Truss Hd. - hollow rivet 26 - C'sk Hd. - hollow rivet</p> <p style="text-align: right;">1</p>	 <p>RIVET MATERIAL</p> <p>M - Monel S - Steel A - Aluminium</p> <p style="text-align: right;">2</p>	<p>STEM MATERIAL</p> <p>A - Aluminium S - Steel</p>  <p style="text-align: right;">3</p>
<p>RIVET DIAMETER IN 1/32" UNITS</p> <p>Code No. 4 = 1/8" -3.2mm Code No. 5 = 5/32" - 4.0mm Code No. 6 = 3/16" -4.8mm</p>  <p>DRILL SELECTION</p> <p>Drill Size</p> <p>Code No. 4 3.3mm Code No. 5 4.1mm Code No. 6 4.9mm</p> <p style="text-align: right;">4</p>	<p>GRIP RANGE IN 1/16" UNITS</p> <p>Code No. 1 = 1/16" - 1.6mm Code No. 2 = 1/8" - 3.2mm Code No. 3 = 3/16" - 4.8mm Code No. 4 = 1/4" - 6.4mm Code No. 5 = 5/16" - 7.9mm Code No. 6 = 3/8" - 9.5mm Code No. 7 = 7/16" - 11.1mm Code No. 8 = 1/2" -12.7mm Code No. 9 = 9/16" -14.3mm Code No.10 = 5/8" - 15.9mm</p>   <p style="text-align: right;">5</p>	



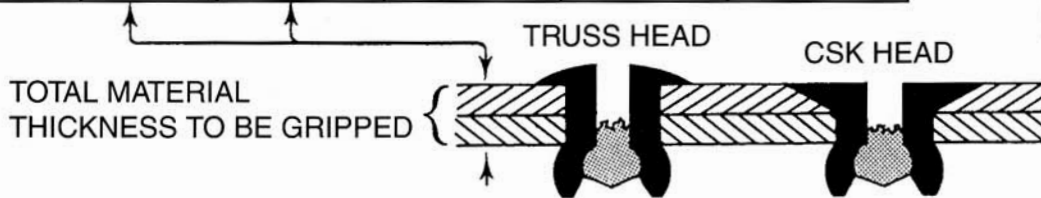
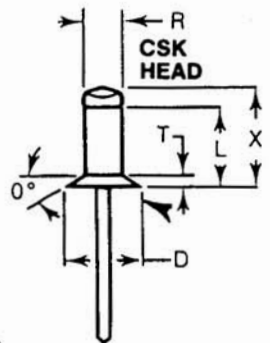
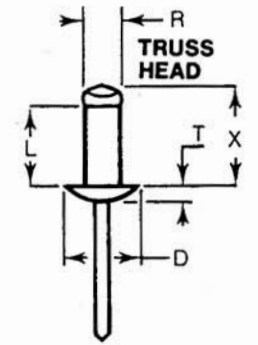
73 AS Series Truss Head
72 AS Series CSK Head

Rivet material: Aluminium Alloy 5056
Stem material: Carbon Steel Grade 1016

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73 AS (Truss) 72AS (CSK)	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 4 1/8" 3.2mm	Up to 1/16	Up to 1.6	4 - 1	5.4	7.4
	1/16 - 1/8	1.6 - 3.2	4 - 2	7.0	9.0
	1/8 - 3/16	3.2 - 4.8	4 - 3	8.6	10.6
	3/16 - 1/4	4.8 - 6.4	4 - 4	10.2	12.2
	1/4 - 5/16	6.4 - 7.9	4 - 5	11.7	13.7
	5/16 - 3/8	7.9 - 9.5	4 - 6	13.3	15.3
	7/16 - 1/2	11.1 - 12.7	4 - 8	16.5	18.5
	9/16 - 5/8	14.3 - 15.9	4 - 10	19.7	21.7
No 5 5/32" 4.0mm	Up to 1/16	Up to 1.6	5 - 1	6.1	8.4
	1/16 - 1/8	1.6 - 3.2	5 - 2	7.7	10.0
	1/8 - 3/16	3.2 - 4.8	5 - 3	9.3	11.6
	3/16 - 1/4	4.8 - 6.4	5 - 4	10.9	13.2
	1/4 - 5/16	6.4 - 7.9	5 - 5	12.5	14.8
	5/16 - 3/8	7.9 - 9.5	5 - 6	14.1	16.4
	7/16 - 1/2	11.1 - 12.7	5 - 8	17.3	19.6
	9/16 - 5/8	14.3 - 15.9	5 - 10	20.4	22.7
No 6 3/16" 4.8mm	Up to 1/16	Up to 1.6	6 - 1	6.9	9.4
	1/16 - 1/8	1.6 - 3.2	6 - 2	8.5	11.0
	1/8 - 3/16	3.2 - 4.8	6 - 3	10.1	12.6
	3/16 - 1/4	4.8 - 6.4	6 - 4	11.7	14.2
	1/4 - 5/16	6.4 - 7.9	6 - 5	13.3	15.8
	5/16 - 3/8	7.9 - 9.5	6 - 6	14.9	17.4
	7/16 - 1/2	11.1 - 12.7	6 - 8	18.0	20.6
	9/16 - 5/8	14.3 - 15.9	6 - 10	21.2	23.7

Specific Gravity
2.64

Melting Range
568-638°C
(1054-1180°F)



Rivet Dimensions

R RIVET DIAMETER	D HEAD DIAMETER		T HEAD THICKNESS		HOLE SIZE		TYPICAL STRENGTH		RECOM. DRILL SIZE MM	
	TRUSS	CSK	TRUSS	CSK	MAX	MIN	SHEAR	TENSILE		
No 4 3.2mm	1/8"	0.250	0.236	0.037	0.036	0.132	0.128	200lbs	300lbs	3.3
	3.2mm	6.35	5.99	0.94	0.91	3.4	3.3	890 N	1330 N	
No 5 4.0mm	5/32"	0.315	0.263	0.045	0.039	0.164	0.161	300lbs	450lbs	4.1
	4.0mm	8.00	6.8	1.14	0.99	4.2	4.1	1330N	2000 N	
No 6 4.8mm	3/16"	0.375	0.320	0.051	0.045	0.196	0.191	460lbs	750lbs	4.9
	4.8mm	9.53	8.13	1.30	1.14	5.0	4.9	2040 N	3330 N	

Coloured rivets also available. Main stock colours:
Black, Bronze and White. (Other colours subject to minimum quantity)

SIZES
4-2 to 4-6
5-2 to 5-6
6-2 to 6-6



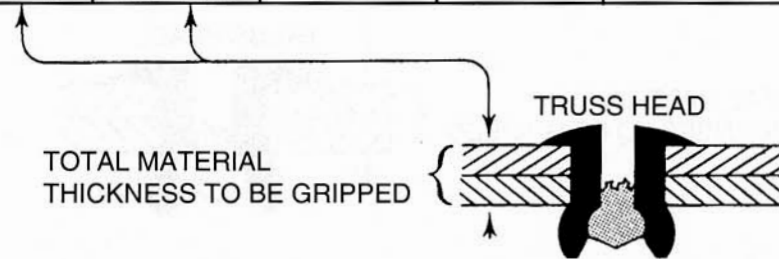
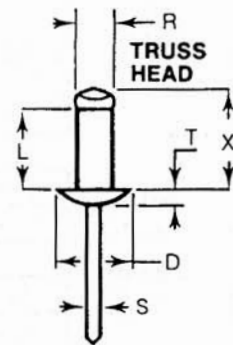
73AS Series Truss Head

Rivet material: Aluminium Alloy 5056
Stem material: Carbon Steel ZP 1016

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73 AS (Truss)	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 3. 3/32" 2.4mm TYPICAL Shear - 100lbs 45KP 445N Tensile - 170lbs 77KP 756N	Up to 1/16	Up to 1.6	3 - 1	5.4	7.4
	1/16 - 1/8	1.6 - 3.2	3 - 2	7.0	9.0
	1/8 - 3/16	3.2 - 4.8	3 - 3	8.6	10.6
No 4. 1/8" 3.2mm	11/16 - 3/4	15.0 - 19.0	4 - 12	24.0	26.6
	13/16 - 7/8	18.0 - 22.0	4 - 14	27.0	29.6
No 6. 3/16" 4.8mm TYPICAL Shear - 460lbs 209KP 2040N Tensile - 750lbs 340KP 3330N	11/16 - 3/4	15.0 - 19.0	6 - 12	24.0	26.6
	13/16 - 7/8	18.0 - 22.0	6 - 14	27.0	29.6
	15/16 - 1"	21.0 - 25.0	6 - 16	30.0	32.6
	1 1/8 - 1 3/16	24.0 - 29.5	6 - 18	35.0	37.6
	1 5/16 - 1 3/8	28.5 - 34.5	6 - 22	40.0	42.6
	1 9/16 - 1 3/4	40.0 - 45.0	6 - 24	50.0	53.0
No 8. 1/4" 6.4mm TYPICAL Shear - 944lbs 428KP 4000N Tensile - 1298lbs 589KP 5500N	3/16 - 1/4	4.8 - 6.4	8 - 4	12.7	15.4
	5/16 - 3/8	6.4 - 9.5	8 - 6	15.9	18.6
	7/16 - 1/2	9.5 - 12.7	8 - 8	19.1	21.8
	9/16 - 5/8	12.7 - 15.9	8 - 10	22.3	25.0
	11/16 - 3/4	15.9 - 19.0	8 - 12	25.4	28.1
	13/16 - 7/8	19.0 - 22.2	8 - 14	28.6	31.3

Melting Range
568-638°C
(1054-1180°F)

Specific Gravity
2.64



Rivet Dimensions

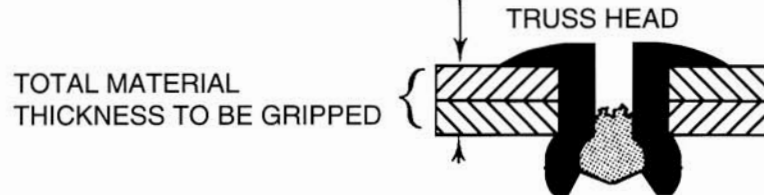
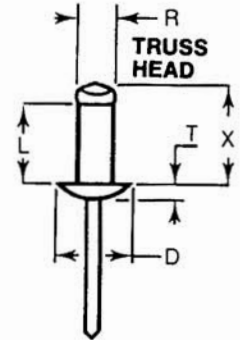
R RIVET DIAMETER	D HEAD DIAMETER	T HEAD THICKNESS		S STEM DIAMETER		HOLE SIZE		RECOM. DRILL SIZE MM
		TRUSS	CSK	TRUSS	CSK	MAX	MIN	
No 3 2.4mm	0.175 4.45	NA	0.035 0.89	NA	0.072 1.83	0.099 2.6	0.096 2.5	2.5
No 6 4.8mm	0.375 9.35	NA	0.051 1.30	NA	0.104 2.64	0.196 5.0	0.191 4.9	4.9
No 8 6.4mm	0.478 12.14	NA	0.07 1.8	NA	0.150 3.8	0.26 6.6	0.25 6.5	6.5



Rivet material: Aluminium Alloy 5056
Stem material: Carbon Steel 1016

73 ASL Series Large Head

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73 ASL	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 4 $\frac{1}{8}$ " 3.2mm	Up to $\frac{1}{8}$	Up to 3.2	4 - 2	7.0	9.0
	$\frac{3}{16}$ - $\frac{1}{4}$	4.8 - 6.4	4 - 4	10.2	12.2
	$\frac{5}{16}$ - $\frac{3}{8}$	7.9 - 9.5	4 - 6	13.3	15.3
	$\frac{7}{16}$ - $\frac{1}{2}$	11.1 - 12.7	4 - 8	16.5	18.5
No 5 $\frac{5}{32}$ " 4.0mm	Up to $\frac{1}{8}$	Up to 3.2	5 - 2	7.7	10.0
	$\frac{3}{16}$ - $\frac{1}{4}$	4.8 - 6.4	5 - 4	10.9	13.2
	$\frac{5}{16}$ - $\frac{3}{8}$	7.9 - 9.5	5 - 6	14.1	16.4
	$\frac{3}{8}$ - $\frac{1}{2}$	11.1 - 12.7	5 - 8	17.3	19.6
No 6 $\frac{3}{16}$ " 4.8mm	Up to $\frac{1}{8}$	Up to 3.2	6 - 2	8.5	11.0
	$\frac{3}{16}$ - $\frac{1}{4}$	4.8 - 6.4	6 - 4	11.7	14.2
	$\frac{5}{16}$ - $\frac{3}{8}$	7.9 - 9.5	6 - 6	14.9	17.4
	$\frac{7}{16}$ - $\frac{1}{2}$	11.1 - 12.7	6 - 8	18.0	20.6
	$\frac{9}{16}$ - $\frac{5}{8}$	14.3 - 15.9	6 - 10	21.2	24.2
	$\frac{11}{16}$ - $\frac{3}{4}$	15.0 - 19.0	6 - 12	24.0	26.6
	$\frac{13}{16}$ - $\frac{7}{8}$	18.0 - 22.0	6 - 14	27.0	29.6
	$\frac{15}{16}$ - 1	21.0 - 25.0	6 - 16	30.0	32.6



Rivet Dimensions

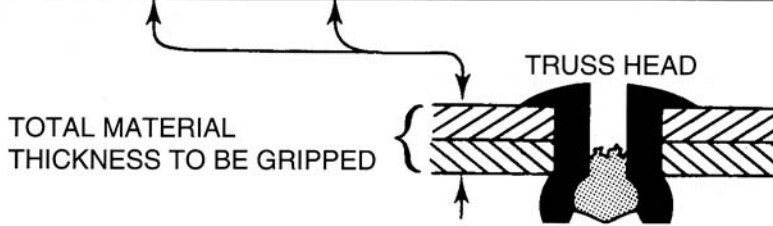
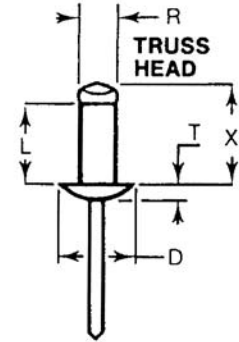
R	RIVET DIAMETER	D HEAD DIAMETER	T HEAD THICKNESS	HOLE SIZE		TYPICAL STRENGTH		RECOM. DRILL SIZE MM
				MAX	MIN	SHEAR	TENSILE	
No 4	$\frac{1}{8}$ " 3.2mm	0.375	0.048	0.132	0.128	200lbs	300lbs	3.3
		9.53	1.22	3.4	3.3	890 N	1330 N	
No 5	$\frac{5}{32}$ " 4.0mm	0.480	0.064	0.164	0.161	300lbs	450lbs	4.1
		12.19	1.63	4.3	4.1	1330 N	2000 N	
No 6	$\frac{3}{16}$ " 4.8mm	0.480	0.064	0.196	0.191	460lbs	750lbs	4.9
		12.19	1.63	5.0	4.9	2040 N	3330 N	



73CS Series Truss Head

Rivet material: Copper
Stem material: Steel Zinc Plated

R RIVET DIAMETER		GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73 CS (Truss)	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 4	1/8" 3.2mm	1/16 - 1/8	1.6 - 3.2	4 - 2	7.0	9.0
		1/8 - 3/16	3.2 - 4.8	4 - 3	8.6	10.6
		3/16 - 1/4	4.8 - 6.4	4 - 4	10.2	12.2
		5/16 - 3/8	7.9 - 9.5	4 - 6	13.3	15.3



Rivet Dimensions

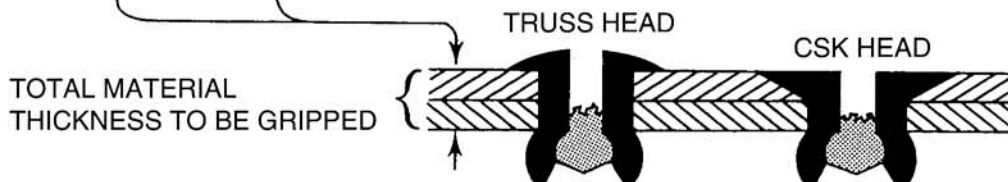
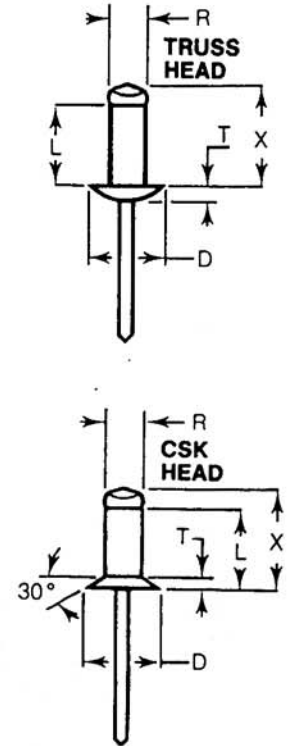
R RIVET DIAMETER		D HEAD DIAMETER		T HEAD THICKNESS		HOLE SIZE		TYPICAL STRENGTH		RECOM. DRILL SIZE MM
		TRUSS		TRUSS		MAX	MIN	SHEAR	TENSILE	
No 4	1/8" 3.2mm	0.250		0.037		0.132	0.128			3.3
		6.35		0.94		3.4	3.3			



73 MS Series Truss Head
72 MS Series CSK Head

Rivet material: Monel Grade 400
Stem material: Carbon Steel Grade 1038

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73 MS (Truss) 72 MS (CSK)	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 4 1/8" 3.2mm	Up to 1/16	Up to 1.6	4 - 1	4.6	6.8
	1/16 - 1/8	1.6 - 3.2	4 - 2	6.2	8.4
	1/8 - 3/16	3.2 - 4.8	4 - 3	7.8	10.0
	3/16 - 1/4	4.8 - 6.4	4 - 4	9.4	11.6
	1/4 - 5/16	6.4 - 7.9	4 - 5	11.0	13.1
	5/16 - 3/8	7.9 - 9.5	4 - 6	12.6	14.7
	7/16 - 1/2	11.1 - 12.7	4 - 8	16.5	18.5
No 5 5/32" 4.0mm	Up to 1/16	Up to 1.6	5 - 1	5.4	8.1
	1/16 - 1/8	1.6 - 3.2	5 - 2	7.0	9.7
	1/8 - 3/16	3.2 - 4.8	5 - 3	8.6	11.2
	3/16 - 1/4	4.8 - 6.4	5 - 4	10.2	12.8
	1/4 - 5/16	6.4 - 7.9	5 - 5	11.7	14.4
	5/16 - 3/8	7.9 - 9.5	5 - 6	13.3	16.0
No 6 3/16" 4.8mm	7/16 - 1/2	11.1 - 12.7	5 - 8	16.5	19.2
	Up to 1/16	Up to 1.6	6 - 1	6.9	9.9
	1/16 - 1/8	1.6 - 3.2	6 - 2	8.5	11.4
	1/8 - 3/16	3.2 - 4.8	6 - 3	10.1	13.0
	3/16 - 1/4	4.8 - 6.4	6 - 4	11.7	14.6
	1/4 - 5/16	6.4 - 7.9	6 - 5	13.3	16.2
	5/16 - 3/8	7.9 - 9.5	6 - 6	14.9	17.8
	7/16 - 1/2	11.1 - 12.7	6 - 8	18.0	21.0
	9/16 - 5/8	14.3 - 15.9	6 - 10	21.2	24.1



Rivet Dimensions

R RIVET DIAMETER	D HEAD DIAMETER		T HEAD THICKNESS		HOLE SIZE		TYPICAL STRENGTH		RECOM. DRILL SIZE MM
	TRUSS	CSK	TRUSS	CSK	MAX	MIN	SHEAR	TENSILE	
No 4 1/8" 3.2mm	0.234	0.236	0.035	0.036	0.132	0.128	350lbs	500lbs	3.3
	5.94	5.99	0.89	0.91	3.4	3.3	1550 N	2220 N	
No 5 5/32" 4.0mm	0.265	0.263	0.042	0.039	0.164	0.161	550lbs	750lbs	4.1
	6.73	6.68	1.07	0.99	4.2	4.1	2440 N	3330 N	
No 6 3/16" 4.8mm	0.315	0.320	0.050	0.045	0.196	0.191	800lbs	1000lbs	4.9
	8.00	8.13	1.27	1.14	5.0	4.9	3560 N	4450 N	

MATERIAL BREAKDOWN

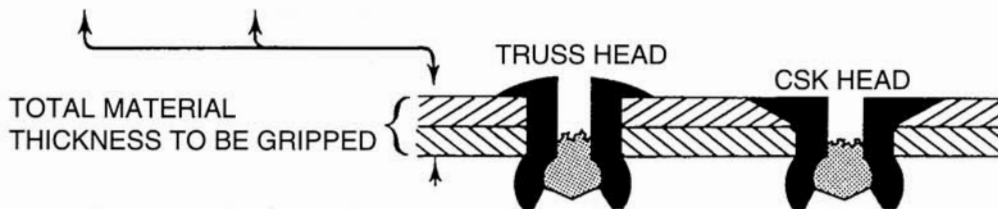
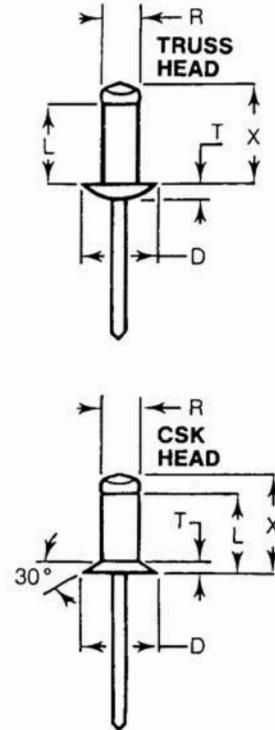
Mondel Grade	400 :	Sulphur	.24%
Copper	28 - 34%	Iron	2.5%
Nickel	63% Max.	Manganese	2%
Silicone	.5% Max.	Carbon	.1%



73 SS Series Truss Head
72 SS Series CSK Head

Rivet material: Carbon Steel Grade 1010
Stem material: Carbon Steel Grade 1016

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73 SS (Truss) 72 SS (CSK)	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 4 1/8" 3.2mm	Up to 1/16	Up to 1.6	4 - 1	4.6	6.8
	1/16 - 1/8	1.6 - 3.2	4 - 2	6.2	8.4
	1/8 - 3/16	3.2 - 4.8	4 - 3	7.8	10.0
	3/16 - 1/4	4.8 - 6.4	4 - 4	9.4	11.6
	1/4 - 5/16	6.4 - 7.9	4 - 5	11.0	13.1
	5/16 - 3/8	7.9 - 9.5	4 - 6	12.6	14.7
	3/8 - 1/2	11.1 - 12.7	4 - 8	15.7	17.9
No 5 5/32" 4.0mm	Up to 1/16	Up to 1.6	5 - 1	5.4	8.1
	1/16 - 1/8	1.6 - 3.2	5 - 2	7.0	9.7
	1/8 - 3/16	3.2 - 4.8	5 - 3	9.6	11.2
	3/16 - 1/4	4.8 - 6.4	5 - 4	10.2	12.8
	1/4 - 5/16	6.4 - 7.9	5 - 5	11.7	14.4
	5/16 - 3/8	7.9 - 9.5	5 - 6	13.3	16.0
	3/8 - 1/2	11.1 - 12.7	5 - 8	16.5	19.2
No 6 3/16" 4.8mm	Up to 1/16	Up to 1.6	6 - 1	6.9	9.9
	1/16 - 1/8	1.6 - 3.2	6 - 2	8.5	11.5
	1/8 - 3/16	3.2 - 4.8	6 - 3	10.1	13.1
	3/16 - 1/4	4.8 - 6.4	6 - 4	11.7	14.7
	1/4 - 5/16	6.4 - 7.9	6 - 5	13.3	16.3
	5/16 - 3/8	7.9 - 9.5	6 - 6	14.9	17.9
	7/16 - 1/2	11.1 - 12.7	6 - 8	18.0	21.0
	9/16 - 5/8	14.3 - 15.9	6 - 10	21.2	24.2
	11/16 - 3/4	15.0 - 19.0	6 - 12	24.0	26.6



Rivet Dimensions

R	RIVET DIAMETER	D HEAD DIAMETER		T HEAD THICKNESS		HOLE SIZE		TYPICAL STRENGTH		RECOM. DRILL SIZE MM
		TRUSS	CSK	TRUSS	CSK	MAX	MIN	SHEAR	TENSILE	
No 4	1/8" 3.2mm	0.250	0.236	0.037	0.036	0.032	0.128	260lbs	350lbs	3.3
		6.35	5.99	0.94	0.91	3.4	3.3	1150 N	1550 N	
No 5	5/32" 4.0mm	0.315	0.263	0.045	0.039	0.164	0.161	370lbs	500lbs	4.1
		8.00	6.68	1.14	0.99	4.2	4.1	1640 N	2220 N	
No 6	3/16" 4.8mm	0.375	0.320	0.051	0.045	0.197	0.191	600lbs	800lbs	4.9
		9.53	8.13	1.30	1.14	5.0	4.9	2660 N	3560 N	



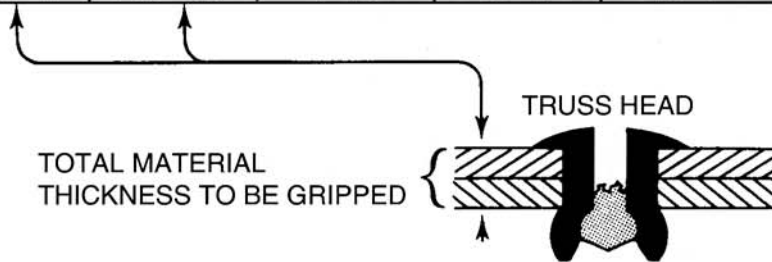
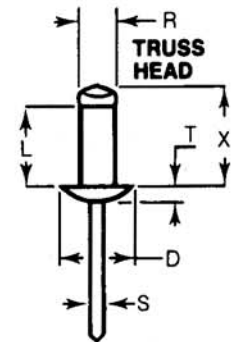
73 STST Series Truss Head

Rivet material: Stainless Steel 300
Stem material: Stainless Steel 300

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE 73STSST (Truss)	TYPICAL SHELL LENGTH (L)mm	TYPICAL RIVET CLEARANCE (X)mm
No 4. 1/8" 3.2mm TYPICAL Shear - 490lbs 222KP 2180N Tensile - 610lbs 277KP 2715N	1/16 - 1/8	1.6 - 3.2	4 - 2	7.0	9.0
	1/8 - 3/16	3.2 - 4.8	4 - 3	8.6	10.6
	3/16 - 1/4	4.8 - 6.4	4 - 4	10.2	12.2
	5/16 - 3/8	7.9 - 9.5	4 - 6	13.3	15.3
	7/16 - 1/2	11.1 - 12.7	4 - 8	16.5	18.5
No 5. 5/32" 4.0mm TYPICAL Shear - 750lbs 340KP 3330N Tensile - 1000lbs 454KP 4450N	1/16 - 1/8	1.6 - 3.2	5 - 2	7.7	10.0
	3/16 - 1/4	4.8 - 6.4	5 - 4	10.9	13.2
	1/4 - 3/8	7.9 - 9.5	5 - 6	14.1	16.4
No 6. 3/16" 4.8mm TYPICAL Shear - 1000lbs 454KP 4450N Tensile - 1375lbs 624KP 6119N	1/16 - 1/8	1.6 - 3.2	6 - 2	8.5	11.0
	1/8 - 3/16	3.2 - 4.8	6 - 3	10.1	12.6
	3/16 - 1/4	4.8 - 6.4	6 - 4	11.7	14.2
	1/4 - 3/8	7.9 - 9.5	6 - 6	14.9	17.4
	3/8 - 1/2	11.1 - 12.7	6 - 8	18.0	20.6
	9/16 - 5/8	14.3 - 15.9	6 - 10	21 - 2	23 - 7

Melting Range
1400-1455°C
(2550-2650)°F

Specific Gravity
7.90



Rivet Dimensions

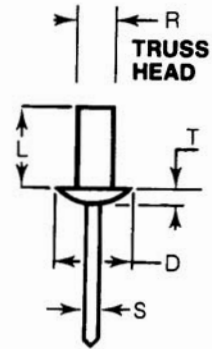
R RIVET DIAMETER	D HEAD DIAMETER		T HEAD THICKNESS		S STEM DIAMETER		HOLE SIZE		RECOM. DRILL SIZE MM
	TRUSS	CSK	TRUSS	CSK	TRUSS	CSK	MAX	MIN	
No 4 3.2mm	1/8"	0.250	0.037	NA	0.076	NA	0.132	0.128	3.3
	6.35	NA	0.94	NA	1.93	NA	3.4	3.3	
No 5 4.0mm	5/32"	0.315	0.045	NA	0.096	NA	0.164	0.161	4.1
	8.00	NA	1.14	NA	2.44	NA	4.2	4.1	
No 6 4.8mm	3/16"	0.375	0.051	NA	0.116	NA	0.196	0.191	4.9
	9.53	NA	1.30	NA	2.95	NA	5.0	4.9	



Stainless Steel Sealed Rivets

**Rivet material: Stainless Steel
Stem material: Stainless Steel**

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE TST (Truss)	TYPICAL SHELL LENGTH (L)mm
No.6	1/16 - 1/8	1.6 - 3.2	6 - 2	9.5
3/16"	3/16 - 1/4	4.8 - 6.4	6 - 4	12.7
4.8mm	5/16 - 3/8	7.9 - 9.5	6 - 6	15.9



TOTAL MATERIAL THICKNESS TO BE GRIPPED



Rivet Dimensions

R RIVET DIAMETER		D HEAD DIAMETER		T HEAD THICKNESS		S STEM DIAMETER		HOLE SIZE		RECOM. DRILL SIZE MM
		TRUSS	CSK	TRUSS	CSK	TRUSS	CSK	MAX	MIN	
No	3/16"	0.335		0.065		0.104		0.196	0.191	4.9
6	4.8mm	8.51		1.65		2.64		5.0	4.9	

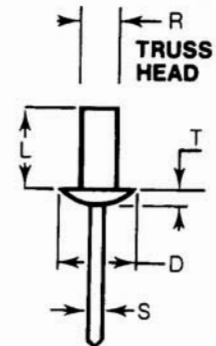


TA Series Aluminium Sealed Truss

Rivet material: Aluminium Alloy 5056

Stem material: Carbon Steel Rust Preventing Oil Finish

RIVET DIAMETER	GRIP RANGE (Inches)	GRIP RANGE (Millimeter)	RIVET CODE TA (Truss) TK (CSK)	TYPICAL SHELL LENGTH (L)mm
No 4 1/8" 3.2mm	Up to 1/16	Up to 1.6	4 - 1	7.1
	1/16 - 1/8	1.6 - 3.2	4 - 2	8.7
	1/8 - 3/16	3.2 - 4.8	4 - 3	10.3
	3/16 - 1/4	4.8 - 6.4	4 - 4	11.9
	1/4 - 5/16	6.4 - 7.9	4 - 5	13.5
	5/16 - 3/8	7.9 - 9.5	4 - 6	14.5
No 5 5/32" 4.0mm	1/16 - 1/8	1.6 - 3.2	5 - 2	9.1
	1/8 - 3/16	3.2 - 4.8	5 - 3	10.7
	3/16 - 1/4	4.8 - 6.4	5 - 4	12.3
	1/4 - 5/16	6.4 - 7.9	5 - 5	13.9
	5/16 - 3/8	7.9 - 9.5	5 - 6	15.9
No 6 3/16" 4.8mm	1/16 - 1/8	1.6 - 3.2	6 - 2	9.5
	1/8 - 3/16	3.2 - 4.8	6 - 3	11.1
	3/16 - 1/4	4.8 - 6.4	6 - 4	12.7
	1/4 - 5/16	6.4 - 7.9	6 - 5	14.3
	5/16 - 3/8	7.9 - 9.5	6 - 6	15.9
	7/16 - 1/2	11.1 - 12.7	6 - 8	19.0



Melting Range
568-638°C
(1054-1180°F)

Specific Gravity
2.64

TOTAL MATERIAL THICKNESS TO BE GRIPPED



Rivet Dimensions

R RIVET DIAMETER	D HEAD DIAMETER		T HEAD THICKNESS		S STEM DIAMETER		HOLE SIZE		RECOM. DRILL SIZE MM
	TRUSS	CSK	TRUSS	CSK	TRUSS	CSK	MAX	MIN	
No 4 1/8" 3.2mm	0.230		0.045		0.065		0.132	0.128	3.3
	5.84		1.14		1.65		3.4	3.3	
No 5 5/32" 4.0mm	0.270		0.055		0.086		0.164	0.161	4.1
	6.86		1.40		2.18		4.2	4.1	
No 6 3/16" 4.8mm	0.335		0.065		0.104		0.196	0.191	4.9
	8.51		1.65		2.64		5.0	4.9	



PEELED ALUMINIUM RIVETS

Peeled rivets are extremely versatile and are necessary for good cohesion of softer materials without fracturing or distortion.

Peeled rivets will join a wide range of material thicknesses, reducing stockholding and minimising operator error.

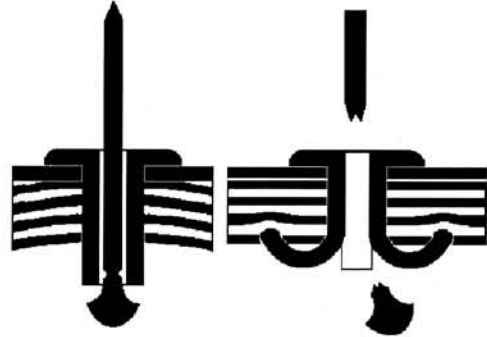
Suggested materials are plastic, rubber, wood, cardboard, felt etc.

APPLICATIONS

The ridges under the head of the mandrel cause the sleeve of the rivet body to peen back in 4 directions giving a strong, reliable fixing.

- Woodwork
- Sheetmetal Work
- Upholstering or shopfitting

Peeled rivets are particularly suitable for uneven surfaces or where oversized holes remain after repairs.



PEELED ALUMINIUM RIVETS ZINC PLATED STEEL MANDRELS

Rivet Code No.	Rivet Diam.	Rivet Length	Head Diam.	Grip Range	Hole Size	Tensile Strength	Shear Strength
P 6 - 6	4.8mm	15mm	9.5mm	3.0 - 9.0mm	5.5mm	Values vary according to application	
P 6 - 8	4.8mm	18mm	9.5mm	6.0 - 12.0mm	5.5mm		
P 6 - 10	4.8mm	21mm	9.5mm	9.0 - 15.0mm	5.5mm		
P 6 - 12	4.8mm	24mm	9.5mm	12.0 - 18.0mm	5.5mm		

PEELED ALUMINIUM RIVETS LARGE FLANGE ZINC PLATED STEEL MANDRELS

Rivet Code No.	Rivet Diam.	Rivet Length	Head Diam.	Grip Range	Hole Size	Tensile Strength	Shear Strength
P 6 - 6	4.8mm	15mm	16.0mm	7.0 - 10.5mm	5.5mm	Values vary according to application	
P 6 - 8	4.8mm	18mm	16.0mm	9.5 - 13.5mm	5.5mm		
P 6 - 10	4.8mm	21mm	16.0mm	12.5 - 16.0mm	5.5mm		
P 6 - 12	4.8mm	24mm	16.0mm	15.0 - 19.0mm	5.5mm		

Other sizes can be produced on request. Minimum quantities by negotiation.





BLIND IN APPLICATION

Multigrip are called "Blind" rivets because they are installed from one side of the work only. This allows product design to be simplified, since only one side of the workpiece need be accessible and it gives the designer greater flexibility by opening up the whole field of hollow section materials to his use.

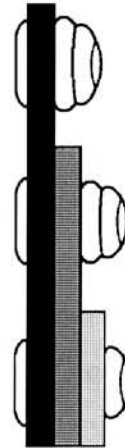
HIGH STRENGTH

Expansion of the rivet during installation completely fills the hole and clamps the components together securely. It is this excellent hole fill characteristic that gives good proof shear strength to the finished joint.

POSITIVE STEM RETENTION

Because the rivet material flows behind and in front of the stem during installation, the stem head is retained to plug the tail end of the rivet bore, the rivet grips tight and gives vibration and weather proof seal. It also means hole size tolerance are less critical during assembly. And that's not all. Operators find them so easy to use; simply slip the rivet stem into the nose of the power tool - place the rivet into the prepared hole and operate the power tool. In seconds you have a perfect joint.

NOTE: A wide range of tools can be supplied for applications where there is no compressed air available.



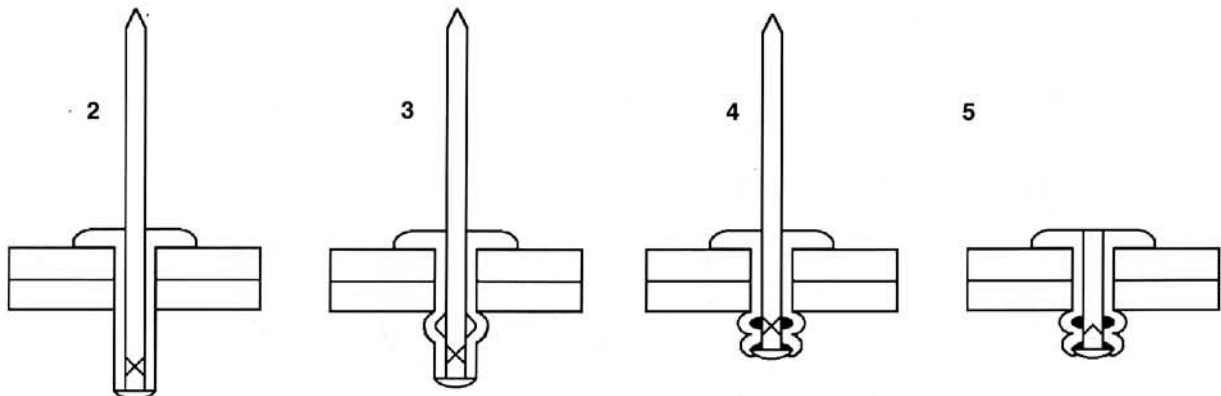
Multigrip Blind Rivet with Hole Fill

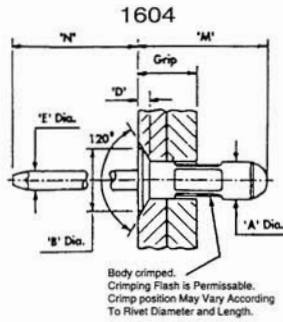
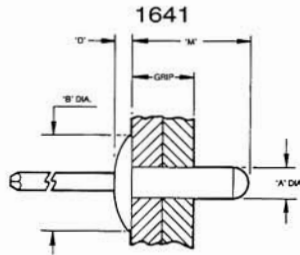
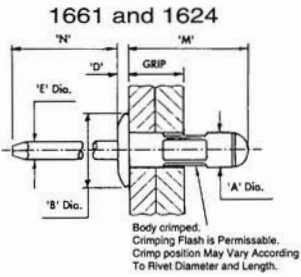
PLACING SEQUENCE

Multigrip is a break stem rivet - where a hollow rivet is assembled with a headed stem. This stem (which is formed with a reduced neck or break notch) projects from the head end of the rivet to enable it to be gripped by the placing tool.

HOW IT WORKS

1. Place the rivet stem into the nose of the tool.
2. Place rivet into prepared hole.
3. The tool, engaged with the rivet stem, is actuated and the jaws grip and pull the stem while reacting on the rivet head.
4. The pull continues deforming the rivet tail to produce an enlarged blind tail - this section fills the hole and clamps the sheets together securely.
5. On completion of the cycle the stem breaks at the break notch and is discarded through the rear of the tool head.





Rivet Dia.	Recommended Hole Size	
	in	mm
1/8	.129/.134	3.28/3.40
5/32	.161/.166	4.10/4.22
3/16	.193/.198	4.90/5.03

**1661 SERIES
LOW PROFILE HEAD
MULTIGRIP RIVETS**

	Material	Finish
Rivet	Aluminium Alloy 2.5% Magnesium 5251/5052 DIN.1725 Al.Mg.2.5 Werkstaff 3.3523	Plain
Stem 1/8, 5/32 3/16 in	Low Carbon Steel B.S.970 080A15 OR 080A20 DIN.1654 Cq.15 OR 1.1152	Zinc Coated
Stem 3mm	Low Carbon Steel B.S.970 040A12 DIN. 1654 QSt36-3 Werkstaff 1.0214	Zinc Coated

METRIC DIMENSIONS																
Nom. Size	Part Number	Nominal Grip Range	'A' Dia.		'B' Dia.		'D'		'E' Dia.		'M'		'N'		Typical Strength N	
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Single Shear	Ult. Tensile	
3mm	1661-5307	0.8-4.3	2.997	2.908	6.66	6.17	1.05	0.86	1.651	9.1	7.4	29.8	700	980		
3.2mm	1661-0410	0.8-4.8	3.175	3.060	6.66	6.17	1.05	0.86	1.766	12.0	10.4	29.2	735	1025		
	1661-0412	1.2-6.3								13.6	12.0	29.2	735	1025		
	1661-0414	4.0-7.9								15.1	13.4	29.1	735	1025		
	1661-0416	5.5-9.5														
4.0mm	1661-0508	0.5-3.2	4.035	3.947	8.16	7.67	1.30	1.11	2.121	9.3	7.7	31.9	1135	1670		
	1661-0512	1.2-6.3								12.5	10.9	28.6	1135	1670		
	1661-0516	4.0-9.5								15.6	14.0	28.6	1135	1670		
	1661-0521	6.4-12.7								19.6	18.0	28.6	1045	1670		
4.8mm	1661-0613	1.6-6.3	4.852	4.711	10.06	9.57	1.55	1.37	2.832	13.9	11.8	28.2	1535	2335		
	1661-0619	4.8-11.1								18.7	16.6	28.5	1310	2335		
	1661-0621	4.8-12.7								20.2	18.1	26.9	1310	2335		
	1661-0631	4.8-19.8								28.2	26.1	25.6	1425	2335		

**1641 SERIES
LARGE FLANGE MULTIGRIP RIVETS
COMMERCIAL**

PRODUCT	MATERIAL	FINISH
1641 SERIES LARGE FLANGE	RIVET ALUMINIUM ALLOY 2 1/2% MAGNESIUM (5251/DIN.1725 Al, Mg.2.5)	PLAIN
AVEX RIVETS	STEM LOW CARBON STEEL TO B.S.970	ZINC COATED

SIZE	PART No.	'A' DIA.	'B' DIA MAX.	'D' MAX.	RECOM. HOLE SIZE	GRIP RANGE	'M' MAX.	TYPICAL STRENGTH N	
								SINGLE SHEAR	ULT. TENSILE
4.8	1641-0613	4.83/4.72	16.13	1.88	4.90/5.05	1.58/6.35	13.56	1310	2068
	1641-0621					6.35/12.7	19.66	1310	2068
	1641-0631					12.7/19.84	27.58	1425	2068

**1604 SERIES
COUNTERSUNK HEAD
MULTIGRIP RIVETS**

	Material	Finish
Rivet	Aluminium Alloy 2.5% Magnesium 5251/5052 DIN.1725 Al. Mg. 2.5 Werkstaff 3.3523	Plain
Stem	Low Carbon Steel B.S.970 080A15 OR 080A20 DIN.1654 Cq15 OR Cq22 Werkstaff 1.1132 OR 1.1152	Zinc Coated

METRIC DIMENSIONS																
Nom. Size	Part Number	Nominal Grip Range	'A' Dia.		'B' Dia.		'D'		'E' Dia.		'M'		'N'		Typical Strength N	
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Single Shear	Ult. Tensile	
3.2	1604-0412	2.0 - 6.3	3.175	3.060	5.52	5.20	1.02	0.81	1.766	12.2	10.4	28.0	690	910		
	1604-0414	4.0 - 7.9								13.4	12.0		735	1025		
4.0	1604-0514	2.8 - 7.9	3.963	3.810	6.53	6.21	1.07	0.86	2.121	14.3	12.4	28.0	1135	1335		
4.8	1604-0615	3.2 - 7.9	4.852	4.711	8.92	8.43	1.50	1.30	2.832	15.5	13.5	28.0	1555	2355		
	1604-0621	6.3 - 12.7								20.4	18.3		1310	2355		

**1624 SERIES
SNAP HEAD STEEL
MULTIGRIP RIVETS**

	Dia.	Material	Finish
Rivet	1/8 3/16	Low Carbon Steel B.S.970 040A04 DIN. 1654 QSt.32-3 Werkstaff 1.0303	Zinc Plated
	5/32	B.S.970 080A15 DIN.1654 Cq15 Werkstaff 1.1132	
Stem	1/8 5/32	Low Carbon Steel B.S.970 080A15 OR 080A20 DIN. 1654 Cq15 OR Cq 22 Werkstaff 1.1132 OR 1.1152	Zinc Coated
	3/16	B.S.970 040A04 DIN. 1654 QSt32-3 Werkstaff 1.0303	

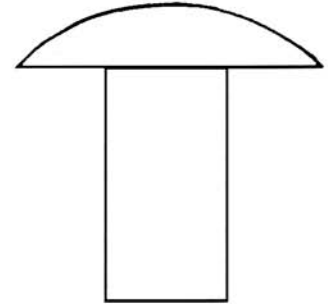
METRIC DIMENSIONS																
Nom. Size	Part Number	Nominal Grip Range	'A' Dia.		'B' Dia.		'D'		'E' Dia.		'M'		'N'		Typical Strength N	
			Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Min.	Single Shear	Ult. Tensile	
3.2	1624-0411	1.12 - 4.00	3.264	3.162	7.55	6.93	0.94	0.76	2.121	11.4	10.4	26.0	1334	1710		
4.0	1624-0514	1.40 - 5.00	4.077	3.975	8.44	7.82	1.32	1.11	2.764	13.6	12.5	27.6	1995	2355		
4.8	1624-0612	1.20 - 4.80	4.865	4.762	10.09	9.47	1.88	1.67	3.417	13.8	12.5	29.0	3605	3335		
	1624-0616	4.00 - 6.30								16.2	14.9		29.0	4560	3470	

MUSHROOM HEAD SOLID ALUMINIUM RIVETS

Length:	1/4	3/8	1/2	5/8	3/4	1	1 1/2
D	1/8	*	*	*	*		
I	3/16		*	*	*	*	*
A	1/4	*	*	*	*	*	*

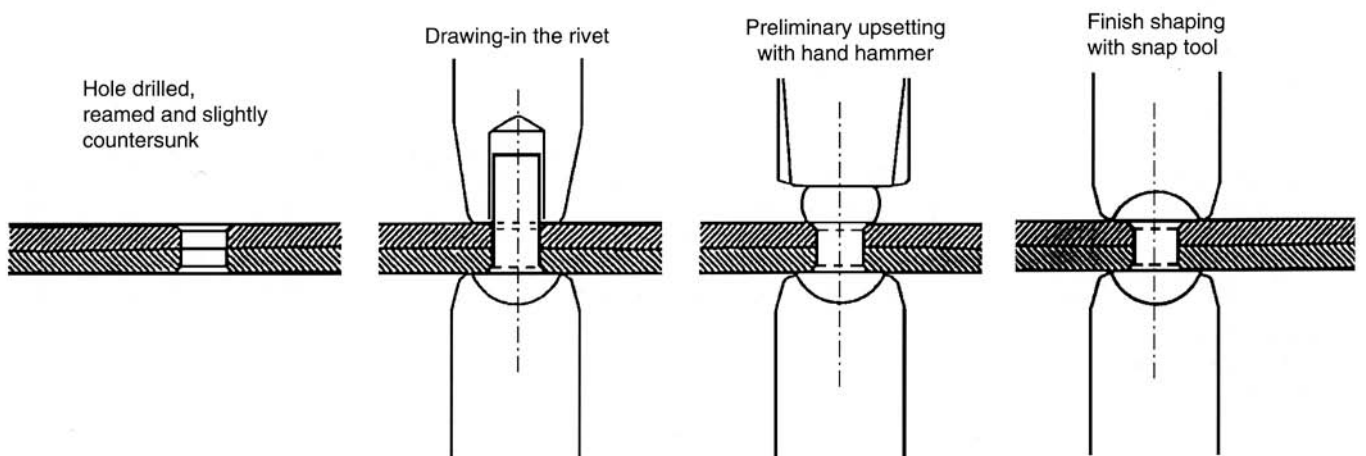
APPROX QUANTITY PER KG

	1/8	3/16	1/4
1/4			690
3/8		1162	640
1/2	3264	940	508
5/8	2640	880	415
3/4	2330	725	370
1		630	370
1 1/2		460	



The solid aluminium rivet is produced from 6061 T⁶ alloy. Commonly used in aluminium boat manufacturing as they have good mechanical properties and corrosion resistance.

Please contact our nearest Office or discuss your requirements with our Sales Representative.

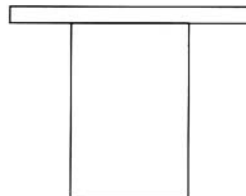


TINSMENS RIVETS (GALVANISED)

Size No.	Length	Shank Diameter		Head Diameter		Head Thickness	
		Max In.	Min In.	Max In.	Min In.	Max In.	Min In.
4	5/32	.095	.089	.190	.178	.035	.025
5	11/64	.109	.103	.220	.208	.036	.026
6	3/16	.109	.103	.220	.208	.036	.026
7	13/64	.120	.118	.248	.236	.039	.029
8	7/32	.124	.118	.248	.236	.039	.029
9	1/4	.136	.130	.280	.272	.042	.032
10	17/64	.150	.144	.300	.288	.046	.036
11	9/32	.150	.144	.300	.288	.046	.036
12	5/16	.164	.158	.328	.316	.049	.043
13	11/32	.180	.174	.360	.348	.053	.043
14	11/32	.200	.194	.400	.388	.058	.048
15	25/64	.206	.200	.412	.400	.060	.050
16	7/16	.220	.214	.440	.428	.063	.053
17	15/32	.228	.222	.456	.444	.065	.055
18	1/2	.254	.248	.508	.496	.072	.062
20	17/32	.284	.278	.568	.556	.079	.069

Packed in cartons of 1000










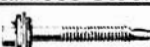

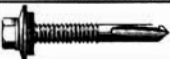
Stock sizes 6, 8, 10, 11, 12, 13, 14












NOTE: Minimum quantities are required for this range of products and are available on an indent basis only.










Self drilling screws for metal with Drill Point
Electroplated finish in either Class 2 or Class 3.

Description	Gauge	Size	
HIGHGRIP 	12	12-14x35mm	
		12-14x45mm	
		12-14x55mm	
HEXAGON HEAD WITH SEAL 	10	10-16x16mm	
		10-24x16mm	
		10-24x16mm	
		10-16x25mm	
		10-24x25mm	
		10-24x25mm	
	12	12-14x20mm	
		12-14x65mm	
	14	14-10x20mm	
		14-10x42mm	
		14-10x50mm	
		14-10x65mm	
HEXAGON HEAD 	8	8-18x12mm	
		10	10-16x16mm
			10-24x16mm
			10-16x25mm
	10-24x25mm		
	12	12-14x20mm	
		12-24x20mm	
	14	14-10x20mm	
		14-10x50mm	
	WAFER HEAD 	10	10-16x16mm
			10-24x16mm
			10-24x24mm
Electroplated Finish in either Class 2 or Class 3.			
Countersunk Head 	6	6-20x50mm	
	8	8-18x25mm	
	10	10-24x40mm	
		10-24x50mm	
		10-24x65mm	
Countersunk Rib Wing Drill 	10	10-16x45mm	
		10-16x55mm	
		10-16x75mm	
	14	14-20x50mm	
Self Embedding Head Wing Drill 	8	8-18x35mm	
Self Embedding Head 	8	8-18x20mm	
		8-18x25mm	
		8-18x30mm	
		8-18x30mm	
Wafer Head 	10	10-24x25mm	
	10	10-24x30mm	
Self Drilling screws for metal - Stainless Steel grade 304			
Hexagon Head with Bonded Washer 	12	12-14x22mm	
	14	14-10x50mm	
Thread forming screws - Stainless Steel grade 304			
Hexagon Head with bonded washer 	14	14-14x25mm	
		14-14x50mm	
		14-14x65mm	
		14-14x75mm	
Extruded Point Self Drilling Screws for metal up to 12mm thick - Class 3 Coated			
Hexagon Head with Bonded Washer 	12	12-24x32mm	
		12-24x50mm	

TYPE 17 Self drilling screws for timber
Electroplated Finish in either Class 2 or Class 3.




Description	Gauge	Size
HIGHGRIP 	12	12-11x50mm
		12-11x65mm
HEXAGON HEAD WITH SEAL 	10	10-12x25mm
	12	12-11x25mm
	14	14-10x25mm
		14-10x50mm
		14-10x65mm
		14-10x75mm
14-10x100mm		
HEXAGON HEAD 	10	10-12x25mm
	12	12-11x25mm
		12-11x45mm
		12-11x50mm
	14	12-11x65mm
		14-10x25mm
		14-10x35mm
		14-10x50mm
		14-10x65mm
		14-10x75mm
	14-10x90mm	
	14-10x100mm	
Electroplated Finish in either Class 2 or Class 3		
COUNTERSUNK HEAD 	10	10-12x30mm
		10-12x40mm
		10-12x50mm
WAFER HEAD 	10	10-12x25mm
		10-12x35mm
		10-12x45mm
PANHEAD 	8	8-15x25mm
SELF EMBEDDING HEAD 	8	8-18x30mm
BUGLE BATTEN 	14	14-10x50mm
		14-10x75mm
		14-10-100mm
TYPE 17 - Stainless Steel grade 304		
HEXAGON HEAD WITH BONDED WASHER 	14	14-10x25mm
		14-10x50mm
		14-10x65mm
		14-10x75mm
		14-10x90mm

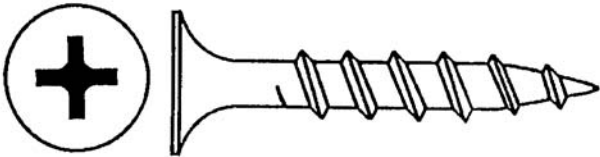


Description	
Metal washers and seals	
	No 14 steel cyclone plates custom orb/corrugate
	No 14 steel cyclone plates - trimdek, spandek, trimline etc.
	No 14 steel cyclone plates - multi span
	No 14 E.P.D.M. Seal - custom orb/Corrugate
	No 14 E.P.D.M. seal - trimdek, spandek, trimline, multi span, etc.
	No 14 25mm x 1mm Galv. Dekfast Washer (also avail in alum. & stainless st.)
	No 14 19mm x 0.9mm Stainless Dekfast Washer (also avail. in galv. & alum.)
	No 14 16mm x 0.9mm Alum Dekfast Washer (also avail. in galv. & stainless st.)
	Weatherlock sealing washer - 20mm Weatherlock sealing washer - 32mm

Product available painted to colour-match roofing or cladding.

CHIPBOARD SCREWS & DRYWALL SCREWS

Description	Gauge	Size
Chipboard screws - Self countersinking		
Countersunk rib head needle point	8	8-15x20mm
		8-10x25mm
		8-10x30mm
		8-10x40mm
		8-10x45mm
		8-10x50mm
		8-10x65mm
Available in Square Drive and Pozi Drive.	10	10-8x75mm
Description	Gauge	Size
Drywall self drilling plasterboard screws		
Bugle head drill point	6	6-18x25mm
		6-18x30mm
		6-18x45mm
Bugle head needle point	6	6-18x25mm
		6-18x30mm
		6-9x30mm
		6-9x45mm



BUGLE PHILLIPS COARSE THREAD DRYWALL SCREWS FOR TIMBER STUDS ZINC CHROMATE			
Gauge \ Length	25mm	32mm	45mm
6	*	*	*



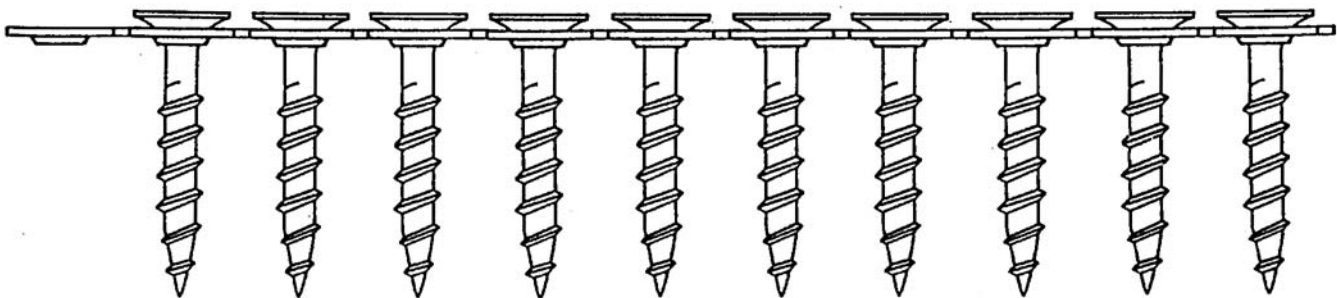
BUGLE PHILLIPS FINE THREAD DRYWALL SCREWS FOR STEEL STUDS ZINC CHROMATE			
Gauge \ Length	25mm	32mm	45mm
6	*	*	*
BLACK PHOSPHATE			
6	*	*	*



BUGLE PHILLIPS FINE THREAD DRYWALL SCREWS FOR STEEL STUDS DRILL POINT ZINC CHROMATE			
Gauge \ Length	25mm	32mm	45mm
6-20		*	

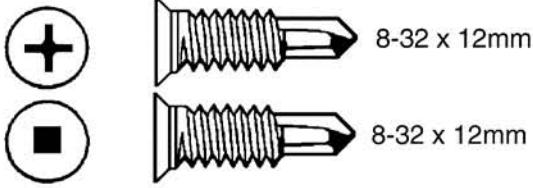
COLLATED DRYWALL SCREWS

All items shown as stock sizes can be supplied in collated strips to suit belt feed Drywall Guns.

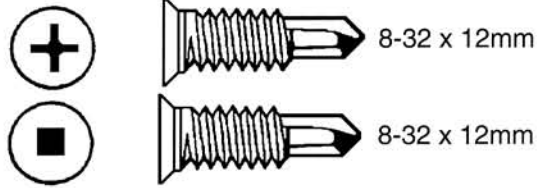


CSK Trim Head reduced point screws Black Zinc Plated (stay screws)

STEEL



410 STAINLESS STEEL

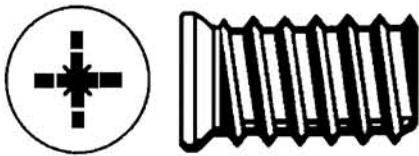


CSK Pozi with hole - Furniture screw zinc plated



Size	M5 x 50
	M6.3 x 50

Euro Screws



Size	6.3 x 10.5
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Our indent range encompasses nine different security fasteners: Snake Eyes® Spanners, Phillips Pin Heads, One-Ways, Socket Pin-Heads, Tri-Wing®, Torx®, Tamperproof, Tufnut®, Tampruf® and GuardNut®. Select the style which serves you best. These items are subject to minimum quantities.



Snake-Eyes® Spanners*



Socket Pin-Heads*



Tufnut®



Phillips Pin-Heads*



Tri-Wing®*



Tampruf®



One-Ways*



Torx® Tamperproof*



Guard-Nut®

Some Flat Head/Oval Head Spanner Machine Screws are available in BRASS. Ask your distributor.

* Denotes 18-8 Stainless Steel. (304 Stainless Steel)



Button Head
SOCKET PIN-HEAD
Sheet Metal Screw



Button Head
SOCKET PIN-HEAD
Cap Screw



Flat Head
SOCKET PIN-HEAD
Cap Screw



Pan Head
PHILLIPS PIN-HEAD
Sheet Metal Screw



Flat Head
PHILLIPS PIN-HEAD
Sheet Metal Screw



Round Head
ONE-WAY
Sheet Metal Screw



Round Head
ONE-WAY
Machine Screw



Oval Head
ONE-WAY
Sheet Metal Screw



Button Head
TORX® TAMPERPROOF
Sheet Metal Screw



Button Head
TORX® TAMPERPROOF
Machine Screw



Flat Head
PHILLIPS PIN-HEAD
Machine Screw

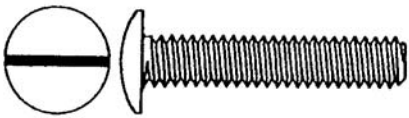


Pan Head
PHILLIPS PIN-HEAD
Machine Screw

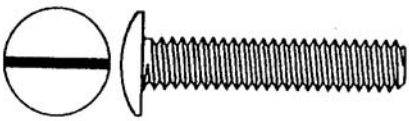


Pan Head
TRI-WING
Sheet Metal Screws

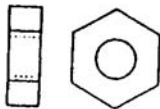
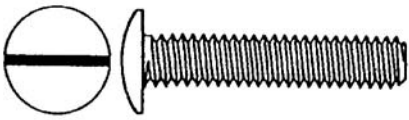




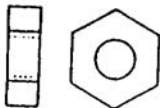
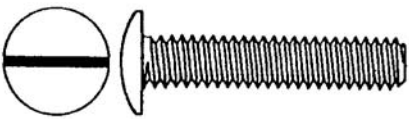
MUSH SLOT GUTTER BOLTS ZINC												
Dia \ Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	
3/16	*	*	*	*	*	*	*		*	*	*	
1/4		*	*	*	*	*	*	*	*	*	*	
Quantity Per Packet 200												



MUSH SLOT GUTTER BOLTS ZINC													
Dia \ Length	10	12	16	20	25	30	35	40	45	50	60	70	80
M5	*	*	*	*	*	*	*	*	*	*			
M6	*	*	*	*	*	*	*	*	*	*	*	*	*
Quantity Per Packet 200													

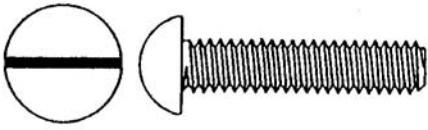


MUSH SLOT GUTTER BOLTS & NUTS ZINC												
Dia \ Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3	
3/16	*	*	*	*	*	*	*		*	*	*	
1/4		*	*	*	*	*	*	*	*	*	*	
Quantity Per Packet 100												

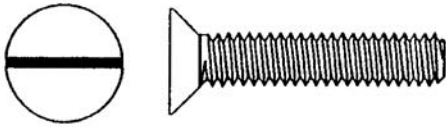


MUSH SLOT GUTTER BOLTS & NUTS ZINC													
Dia \ Length	10	12	16	20	25	30	35	40	45	50	60	70	80
M5	*	*	*	*	*	*	*	*	*	*			
M6	*	*	*	*	*	*	*	*	*	*	*	*	*
Quantity Per Packet 100													

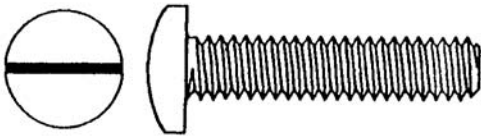




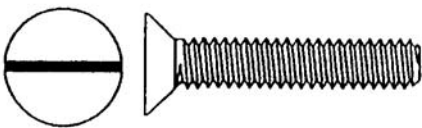
RND SLOT STAINLESS STEEL MACHINE SCREW													
Dia \ Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	
1/8	*	*		*	*								
5/32													
3/16	*	*	*	*	*	*	*	*	*		*	*	
1/4	*	*	*	*	*	*	*	*	*		*	*	



CSK SLOT STAINLESS STEEL MACHINE SCREW													
Dia \ Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	
1/8	*	*		*	*								
5/32													
3/16	*	*	*	*	*	*	*	*	*		*	*	
1/4	*	*	*	*	*	*	*	*	*		*	*	

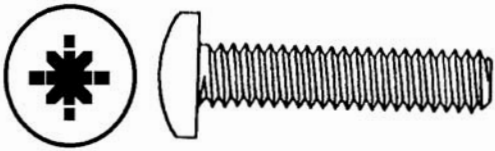


PAN SLOT STAINLESS STEEL MACHINE SCREW													
Dia \ Length	10	12	16	20	25	30	35	40	50	60	65	70	75
M3	*	*	*	*									
M4	*	*	*	*	*	*	*	*	*				
M5	*	*	*	*	*	*	*	*	*				
M6	*	*	*	*	*	*	*	*	*				

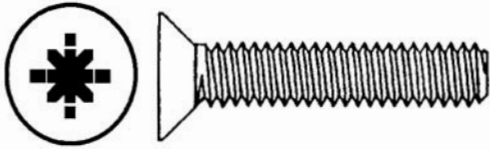


CSK SLOT STAINLESS STEEL MACHINE SCREW													
Dia \ Length	10	12	16	20	25	30	35	40	50	60	65	70	75
M3	*	*	*	*									
M4	*	*	*	*	*	*	*	*	*				
M5	*	*	*	*	*	*		*	*	*	*		
M6	*	*	*	*	*	*		*	*	*	*	*	

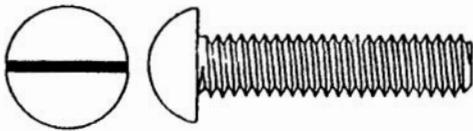




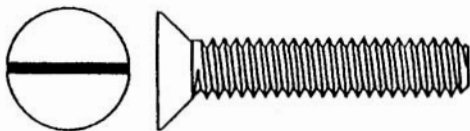
PAN POZI 316 STAINLESS STEEL MACHINE SCREWS										
Dia \ Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	
3/16		*		*	*	*	*		*	
1/4		*		*	*	*	*		*	



CSK POZI 316 STAINLESS STEEL MACHINE SCREWS										
Dia \ Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	
3/16		*		*	*	*	*		*	
1/4		*		*	*	*	*		*	

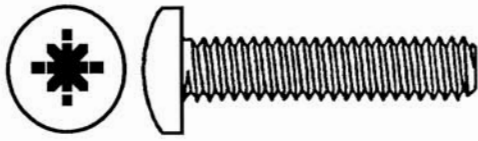


RND SLOT BRASS MACHINE SCREW											
Dia \ Length	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	
1/8	*	*	*	*	*	*		*		*	
5/32	*	*	*	*	*	*	*	*	*	*	*
3/16		*	*		*	*	*	*	*	*	*
1/4			*	*	*	*	*	*		*	

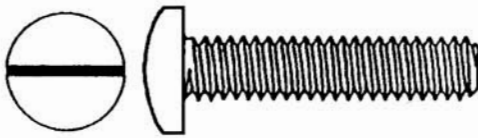


CSK SLOT BRASS MACHINE SCREW											
Dia \ Length	1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	
1/8	*	*	*	*	*	*		*		*	
5/32	*	*	*	*	*	*	*	*	*	*	*
3/16		*	*		*	*	*	*	*	*	*
1/4			*	*	*	*	*	*		*	

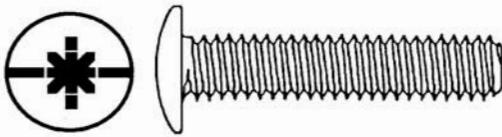




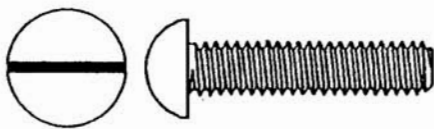
PAN POZI ZINC MACHINE SCREWS													
Length		6	8	10	12	16	20	25	30	35	40	45	50
M E T R I C	D	3	*	*	*	*	*	*	*	*	*		
	I	4	*	*	*	*	*	*	*	*	*	*	*
	A	5		*	*	*	*	*	*	*	*	*	*
		6	*	*	*	*	*	*	*	*	*	*	*



PAN SLOT ZINC MACHINE SCREWS												
Length		6	8	10	12	16	20	25	30	35	40	50
M E T R I C	D	3	*	*	*	*	*	*	*	*	*	
	I	4	*	*	*	*	*	*	*	*	*	
	A	5		*	*	*	*	*	*	*	*	*
		6			*	*	*	*	*	*	*	*

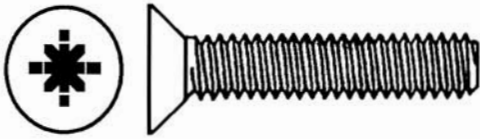


MUSH POZI/SLOT ZINC MACHINE SCREW												
Length		5/8	3/4	7/8	3/4	1	1 1/4	1 3/8	1 1/2			
	5/32	*	*	*	*	*	*	*	*			

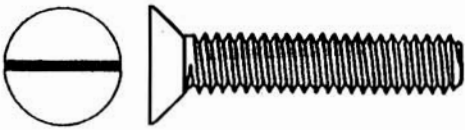


RND SLOT ZINC MACHINE SCREWS												
Length		1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	
D I A	1/8	*	*	*	*	*	*	*	*		*	
	5/32	*	*	*	*	*	*	*	*		*	
	3/16	*	*	*	*	*	*	*	*		*	
	1/4		*	*	*	*	*	*	*		*	

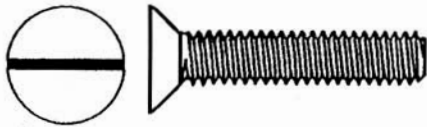




CSK POZI ZINC MACHINE SCREW												
Length		6	8	10	12	16	20	25	30	35	40	50
M E T R I C	D	3	*	*	*	*	*	*	*	*		
	I	4	*	*	*	*	*	*	*	*		
	A	5			*	*	*	*	*	*	*	*
		6			*	*	*	*	*	*	*	*



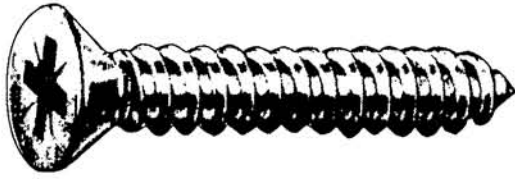
CSK SLOT ZINC MACHINE SCREWS												
Length		6	8	10	12	16	20	25	30	35	40	50
M E T R I C	D	3	*	*	*	*	*	*	*	*	*	
	I	4	*	*	*	*	*	*	*	*	*	*
	A	5			*	*	*	*	*	*	*	*
		6				*	*	*	*	*	*	*



CSK SLOT ZINC MACHINE SCREWS													
Length		1/4	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2
D I M E N S I O N S	1/8	*	*	*	*	*	*	*	*				
	5/32		*	*	*	*	*	*	*		*		
	3/16	*	*	*	*	*	*	*	*	*	*		
	1/4		*	*	*	*	*	*	*	*	*	*	*



Stainless steel self-tapping screws



Stainless Steel Self-Tapping Screws are manufactured from an Austenitic Steel which falls within the 18 per cent Chromium/10 per cent Nickel range which is considered suitable for general corrosive conditions. The actual specification is 305 S19 or A.I.S.I. Type 305, with a tensile strength of about 35/45 tonf/ins². (540-695 N/mm²) These screws are NOT as hard as the more widely used carbon steel Self-Tapping Screws. They are ideal for use with aluminium alloy sheets but are in some cases unsuitable for use in other than the thinner Austenitic Stainless Steel sheets due to the galling tendency of this material. They should be used with care and tapping hole sizes are critical. We strongly recommend that any proposed application be tried out in practice and we are always prepared to advise on this subject.

Which screw to use

Choice of the correct type of screw depends on several factors.

1. **Material** - malleable, brittle, thickness of section?
2. **Method of preparing hole** - punched, drilled rim extruded, moulded?
3. **Method of driving** - hand or power screw-driver?
4. **Environment.**










The obvious aim is to achieve as much engagement as possible between fastener and mating material with reasonable driving conditions to avoid over-stressing on the screw, operator fatigue (if hand driven) or difficult conditions for power screw-driver operation.

Ideally, the stripping torque for the application should equal the minimum torsional load of the screw (see table) thus fully utilising the product. Under these conditions, we recommend a tightening torque of 66 per cent of the stripping torque, to provide an adequate safety margin, since it is not always possible to ensure that power screw-drivers deliver an exact torque.

The second recommendation is that the tapping torque should be 33 per cent of the stripping torque and these two parameters - tightening torque and tapping determine the type of self-tapping screw to use and the pilot hole size for the particular application.

It is not always possible to obtain these ideal conditions for when using self-tapping screws in very thin material, soft or brittle plastics, a tightening torque of 65 per cent of the torsional load of the screw would be more than sufficient to strip the thread formed in the material. It is then necessary to consider

a smaller pilot hole or rim extruded in thin material, and similarly a similar hold or deeper penetration in plastic. This in turn can lead to difficulties in starting, or failure due to splitting because of radial stresses induced on the surrounding material. It is a matter of balancing one factor against another to obtain optimum results.

THREAD FORM	TYPE	USES
	TYPE 'AB'	Sheet metal self with a gimlet point.
	TYPE 'B' OR 'Z'	Self tapper point - used for thicker gauge sheet.
	TYPE 'D'	Slot produces a thread cutting feature. Often used as a paint remover in a tapped hole.
	TYPE 'F'	Slot produces a thread cutting feature. Often used as a paint remover in a tapped hole.
	TYPE 'G'	Slot produces a thread cutting feature. Often used as a paint remover in a tapped hole.
	TYPE '23'	Self tapper with a machine screw thread and an improved thread cutting feature. Normally used in metal tapping.
	TYPE '25'	Type 'B' self tapper with machined thread cutting flute. Normally used in plastic tapping.
	TYPE '17'	Type 'A' or 'AB' self tapper with a cut flute. Acts as a low performance self drilling screw in thin sheet.
	TYPE 'Y'	Similar to type BF but with flutes extending for the length of the thread. Use in castings, brittle mouldings and where thread cutting is required in softer plastics.





Recommended hole and drill sizes

Types AB, B Self-Tapping Screws

In mild steel, brass, aluminium alloy, stainless steel and monel metal sheet.

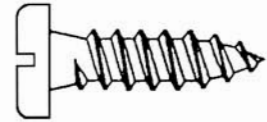
NOTE:

It is important that the correct-hole size is used and the recommendation below should be followed, but if very hard material is being used a hole size slightly larger may have to be used, and in very soft material a smaller hole may be necessary. If any difficulty is encountered send a sample of your application to us and we shall be pleased to carry out tests to determine the optimum screw type, gauge and pilot hole size.

Screw size (No.) and nominal dia.	Material thickness			Pierced or extruded hole dia.		Drilled or clean-punched holes		
	in.	mm.	SWG or fraction	in.	mm.	Hole dia. required in.	Drill size mm.	General use mm.
4 (0.112) (2.85mm)	0.018	0.45	26	0.098	2.48	0.081	2.05	2.50 - 2.55
	0.036	0.91	20			0.091	2.30	
	0.064	1.62	16			0.095	2.40	
	0.080	2.03	14			0.102	2.60	
6 (0.138) (3.50 mm)	0.018	0.45	26	0.111	2.82	0.092	2.35	2.85 - 2.90
	0.036	0.91	20			0.110	2.80	
	0.064	1.62	16			0.116	2.95	
	0.080	2.03	14			0.122	3.10	
	0.104	2.64	12			0.126	3.20	
8 (0.164) (4.17mm)	0.028	0.71	22	0.136	3.46	0.114	2.90	3.50
	0.036	0.91	20			0.122	3.10	
	0.048	1.22	18			0.126	3.20	
	0.064	1.62	16			0.134	3.40	
	0.104	2.64	12			0.146	3.70	
	0.125	3.18	1/8			0.150	3.80	
10 (0.186) (4.71mm)	0.028	0.71	22	0.149	3.82	0.134	3.40	3.85
	0.048	1.22	18			0.142	3.60	
	0.064	1.62	16			0.150	3.80	
	0.104	2.64	12			0.161	4.10	
	0.125	3.18	1/8			0.169	4.30	
	0.187	4.75	3/16			0.177	4.50	
12 (0.212) (5.38mm)	0.028	0.71	22	0.160	4.07	0.161	4.10	4.30
	0.048	1.22	18			0.169	4.30	
	0.064	1.62	16			0.177	4.50	
	0.104	2.64	12			0.189	4.80	
	0.125	3.18	1/8			0.193	4.90	
	0.187	4.75	3/16			0.201	5.10	
14 (0.242) (6.14mm)	0.048	1.22	18	0.196	4.95	0.189	4.80	5.20
	0.064	1.62	16			0.205	5.20	
	0.080	2.03	14			0.213	5.40	
	0.125	3.18	1/8			0.224	5.70	
	0.187	4.75	3/16			0.232	5.90	
	0.225	6.35	1/4			0.236	6.00	

type B self-tapping screws

Hexagon head in structural steel



NOTE: It is important that the correct hole size is used and the recommendations below should be followed, but if very hard material is being used a hole size slightly larger may have to be used, and in very soft material a smaller hole may be necessary. If any difficulty is encountered send a sample of your application to us and we shall be pleased to carry out tests to determine the optimum screw type, gauge and pilot hole.

Screw size (No.) and nominal diameter	Metal Thickness			Cadmium plated or lubricated screws			Self Colour, zinc plated or non-lubricated screws		
	in.	mm	SWG or fraction	Hole diameter required in.	Drill Size		Hole diameter required in.	Drill Size	
					mm	Alt.		mm	Alt.
6 (0.138")	0.036	0.91	20	0.102	2.60	38	0.102	2.60	38
	0.064	1.62	16	0.110	2.80	35	0.110	2.80	35
	0.080	2.03	14	0.114	2.90	33	0.114	2.90	22
	0.104	2.64	12	0.122	3.10	1/8"	0.122	3.10	1/8"
8 (0.164")	0.064	1.62	16	0.130	3.30	30	0.130	3.30	30
	0.080	2.03	14	0.142	3.60	28	0.142	3.60	28
	0.104	2.64	12	0.142	3.60	28	0.146	3.70	26
	0.125	3.18	1/8"	0.146	3.70	26	0.150	3.80	25
10 (0.186")	0.064	1.62	16	0.150	3.80	25	0.150	3.80	25
	0.104	2.64	12	0.158	4.00	22	0.158	4.00	22
	0.125	3.18	1/8"	0.161	4.10	20	0.161	4.10	20
	0.187	4.75	3/16"	0.173	4.40	17	0.177	4.50	16
14 (0.242")	0.125	3.18	1/8"	0.220	5.60	2	0.220	5.60	2
	0.187	4.75	3/16"	0.232	5.90	A	0.232	5.90	A
	0.250	6.35	1/4"	0.232	5.90	A	0.232	5.90	A
	0.312	7.92	5/16"	0.232	5.90	A	0.232	5.90	A

type B self-tapping screws

In non-ferrous castings or sections, aluminium, magnesium, zinc, brass, bronze etc.

NOTES:

- Cored holes. A side taper of 1°11' is permissible. The diameter of a cored hole should equal the nominal hole size shown in the table below at one half the screw penetration depth.
- Porous castings may require the use of a smaller hole and/or increased depth of engagement.
- 18-8 quality stainless steel self-tapping screws are much softer than case hardened steel screws and therefore care must be exercised in using them. They cannot be used in very hard material.

Screw size (No.) and nominal diameter	Minimum penetration				Normal maximum penetration			
	Hole depth in.	Hole dia. in.	Drill size		Hole depth in.	Hole dia. in.	Drill Size	
			mm	Alt.			mm	Alt.
4 (0.112")	5/32	0.096	2.45	41	5/16	0.104	2.65	37
6 (0.138")	3/16	0.130	3.30	30	3/8	0.130	3.30	30
8 (0.164")	7/32	0.153	3.90	24	7/16	0.153	3.90	23
10 (0.186")	1/4	0.177	4.50	16	1/2	0.177	4.50	16

type Y self-tapping screws

In thermo-setting (hard) plastics and cast iron

NOTES:

- Because conditions differ widely it may be necessary to vary the hole size to suit a particular application.
- Type 'Y' screws are not generally suitable in materials other than those listed in the table below.

Screw size No. and nominal diameter	Material thickness in.	Cellulose acetate, acrylic resin, cellulose nitrate (i.e. perspex types)			Phenol formaldehyde (i.e. bakelite types)			Cast iron		
		Hole diameter required in.	Drill size		Hole diameter required in.	Drill size		Hole diameter required in.	Drill size mm or in.	No. drill or equiv
			mm or in.	No. drill or equiv		mm or in.	No. drill or equiv			
4 (0.112")	1/8	0.094	3/32	42	0.100	2.55	39	-	-	-
	1/4	0.094	3/32	42	0.100	2.55	39	-	-	-
	1/2	0.095	2.40	42	0.100	2.55	39	0.102	2.60	38
6 (0.138")	1/8	0.118	3.00	31	-	-	-	-	-	-
	1/4	0.125	1/8	-	0.130	3.30	30	-	-	-
	1/2	0.125	1/8	-	0.130	3.30	30	0.125	1/8	-
8 (0.164")	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 (0.186")	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



**Types AB, B Self-Tapping Screws
In thermo (pliable) plastics**

NOTE:

Because of the vast differences in these plastics, the following table is intended only as a guideline. It may be necessary to increase or decrease the recommended hole size to obtain optimum fastening conditions.

Screw Size (No.) and Nominal diameter	Normal Penetration			Minimum penetration in blind holes
	Hole diameter required in.	Drill size		
		mm	Alternatives	
4 (0.112)	0.093	2.35	42	1/4
6 (0.138)	0.114	2.90	32	1/4
8 (0.164)	0.135	3.40	29	5/16
10 (0.186)	0.154	3.90	23	5/16
12 (0.212)	0.180	4.60	15	3/8
14 (0.242)	0.210	5.30	4	3/8



Type 'AB'

Firstly make a hole to suit the diameter of screw being used. The hole can be clean-punched or drilled as shown in Fig. 1 or plunged as shown in Fig. 2.

Type 'B'

Fig. 5. For light sheet metal assembly, no clearance hole is necessary in the top sheet.

Figs 6. & 7. When fastening to solid section of casting or die-casting, or to heavy gauge sheet metal, a clearance hole in the top piece is required. If a clearance hole is not provided, the total thickness of material must be taken into account when deciding upon the tapping hole size. Remember that as the thickness of material increases, it becomes more difficult to pull the two sheets together tightly.

RECOMMENDED HOLE & DRILL SIZES

(Drilled or Cored Holes)

Type B Self-Tapping Screws

In non-ferrous castings, aluminium, zinc, brass, bronze etc.

NOTES:

1. Cored holes. A side taper of 1°11' is permissible. The diameter of a cored hole should equal the nominal hole size shown in the table below at one half the screw penetration depth.
2. Porous castings may require the use of a smaller hole and/or increased depth of engagement.

Types AB, B Self-Tapping Screws

18-8 Stainless Steel

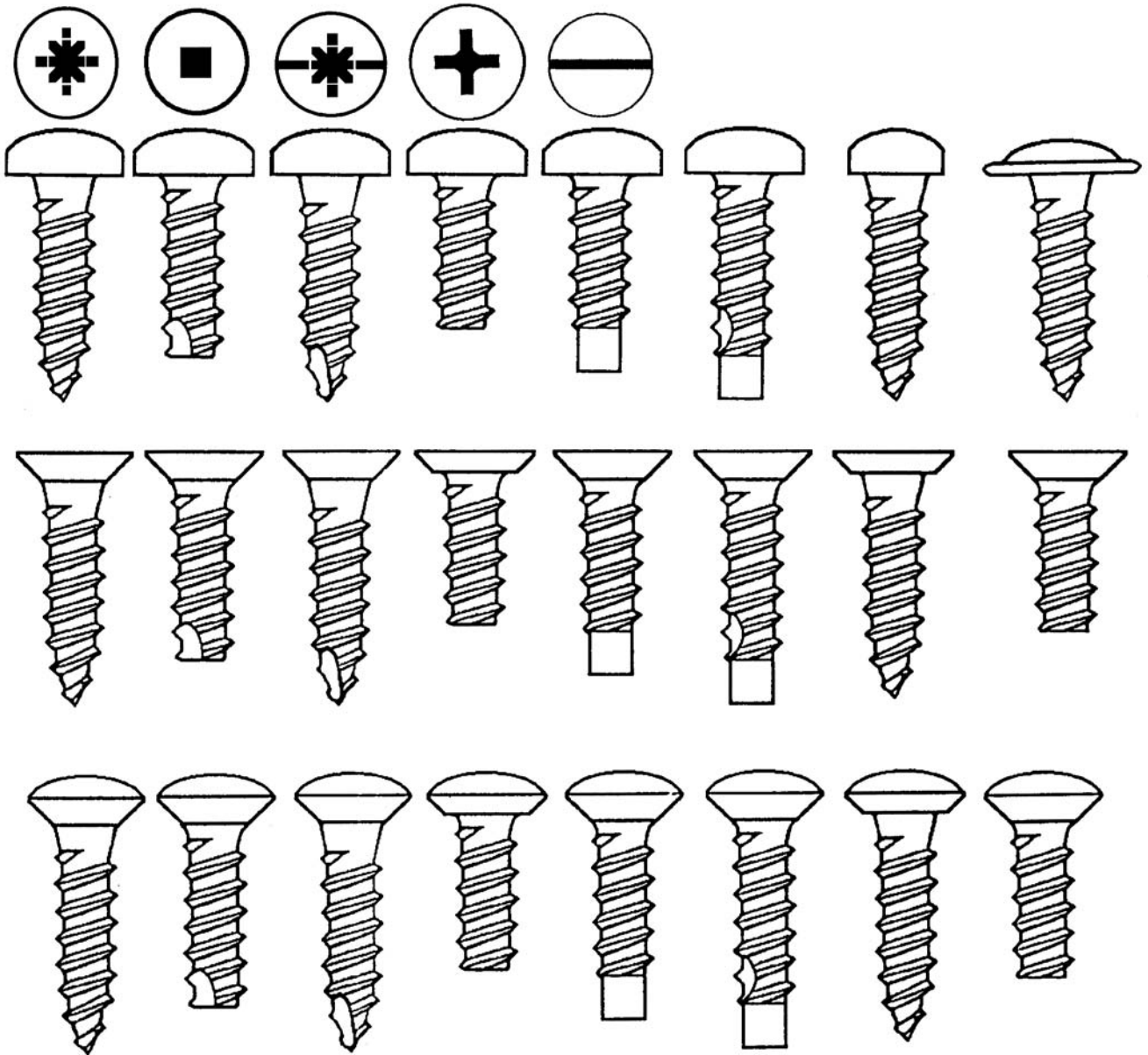
In mild steel, monel metal, brass and aluminium alloy sheet.

NOTES:

1. Because conditions differ widely it may be necessary to vary the hole size to suit a particular application.
2. 18-8 quality stainless steel self-tapping screws are much softer than case hardened steel screws and therefore care must be exercised in using them. They cannot be used in very hard material. Also due to the galling tendency of stainless steel they should not be used in stainless steel sheet.

Screw Size (No.) and nominal diameter	Minimum Penetration		Normal Maximum Penetration					
	Hole depth in.	Hole dia. in.	Drill Size		Hole depth in.	Hole dia. in.	Drill Size	
			mm.	Alt.			mm.	Alt.
4 (0.112)	5/32	0.096	2.45	41	5/16	0.104	2.65	37
6 (0.138)	3/16	0.130	3.30	30	3/8	0.130	3.30	30
8 (0.164)	7/32	0.153	3.90	24	7/16	0.153	3.90	23
10 (0.186)	1/4	0.177	4.50	18	1/2	0.177	4.50	16
12 (0.212)	9/32	0.201	5.10	7	9/16	0.201	5.10	7
14 (0.242)	5/16	0.236	6.00	A	5/8	0.236	6.00	B

Screw size (No.) and nominal diameter	Material Thickness			Drilled or clean-punched holes		
	in.	mm.	SWG	Hole diameter required in.	Drill size	
					mm.	Alt.
4 (0.112)	0.018	0.45	26	0.087	2.20	44
	0.036	0.91	20	0.091	2.30	43
6 (0.138)	0.018	0.45	26	0.106	2.70	36
	0.036	0.91	20	0.110	2.80	36
8 (0.164)	0.028	0.71	22	0.118	3.00	32
	0.048	1.22	18	0.126	3.20	1/8
	0.064	1.62	16	0.134	3.40	29
10 (0.186)	0.028	0.71	22	0.138	3.10	29
	0.048	1.22	18	0.146	3.10	26
	0.064	1.62	16	0.150	3.10	25

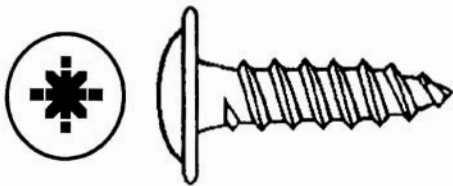




PAN POZI ZINC TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G 4	*	*	*	*	*		*						
A 6	*	*	*	*	*	*	*	*	*				
U 8		*	*	*	*	*	*	*	*		*		
G 10		*	*	*	*		*	*	*		*		
E 12			*	*	*		*	*	*		*		
14													



PAN POZI/SLOT ZINC TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G 4			*										
A 6			*		*		*						
U 8					*								
G 10													
E 12													
14													



MUSH POZI ZINC TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G 4			*										
A 6			*	*	*		*	*	*				
U 8		*	*	*	*		*						
G 10			*		*		*						
E 12													
14													



CSK POZI ZINC TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G 4	*	*	*	*	*		*						
A 6		*	*	*	*		*	*	*				
U 8		*	*	*	*		*	*	*		*		
G 10		*	*	*	*		*	*	*		*	*	*
E 12					*		*	*	*		*	*	*
14									*		*		

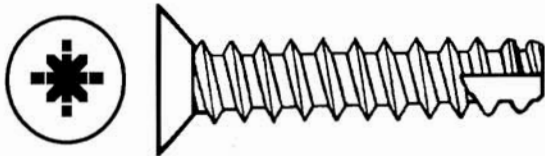




PAN POZI ZINC TYPE 25													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6	*	*	*			*						
U	8			*									
G	10												
E	12												
	14												



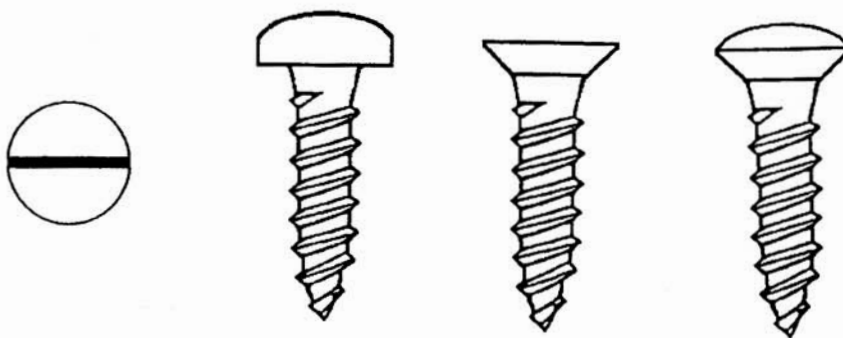
RSD POZI ZINC TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4	*	*	*									
A	6	*	*	*	*		*	*					
U	8	*	*	*	*		*	*	*				
G	10		*	*	*		*	*	*				
E	12			*	*		*						
	14												



CSK POZI ZINC TYPE 25 (Truck Deck Screws)													
Length	1 3/4	2 1/4											
G	14	*	*										



CSK POZI ZINC TYPE 23 (Truck Deck Screws)													
Length	Metric	53	60										
Dia	M6 1-0	*	*										



We can also supply a range of slotted screws in zinc plated.

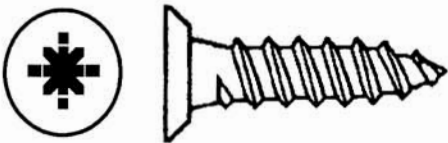




CSK POZI STAINLESS STEEL TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4	*	*	*	*								
A	6	*	*	*	*		*	*	*		*		
U	8		*	*	*		*	*	*		*	*	
G	10			*	*	*	*	*	*		*	*	*
E	12						*	*	*		*	*	*
	14						*	*	*		*	*	*



CSK SQUARE STAINLESS STEEL TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4			*	*	*							
A	6		*	*	*	*	*	*	*		*		
U	8		*	*	*	*	*	*	*		*	*	*
G	10			*	*	*	*	*	*	*	*	*	*
E	12						*	*	*		*	*	*
	14												

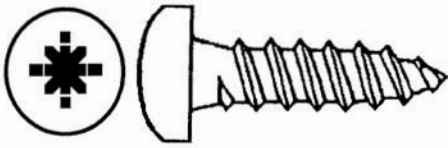


CSK POZI STAINLESS STEEL TYPE AB UNDERCUT HEAD													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	6												
A	8		*	*									
U	10												
G	12												
E													

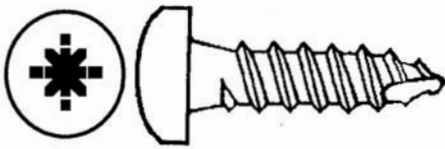


CSK SQUARE STAINLESS STEEL TYPE AB UNDERCUT HEAD													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	6												
A	8												
U	10			*		*							
G	12												
E													





PAN POZI STAINLESS STEEL TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4	*	*	*	*	*							
A	6	*	*	*	*	*	*	*	*		*		
U	8		*	*	*	*	*	*	*		*		
G	10		*	*	*	*	*	*	*		*	*	*
E	12					*	*	*	*		*	*	
	14						*	*	*		*	*	*



PAN POZI STAINLESS STEEL TYPE 17													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6			*	*		*	*	*				
U	8				*								
G	10												
E	12												
	14												

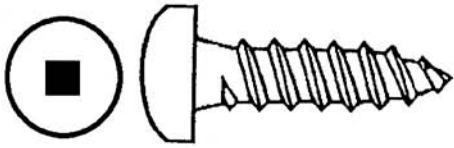


PAN POZI STAINLESS STEEL TYPE 25													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6			*	*								
U	8				*	*							
G	10												
E	12												
	14												

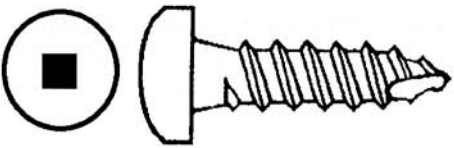


PAN POZI STAINLESS STEEL LEAD POINT													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6				*		*						
U	8				*		*						
G	10												
E	12												
	14												





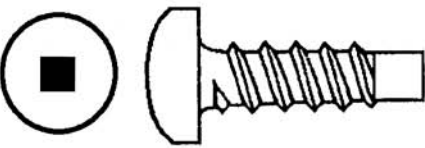
PAN SQUARE STAINLESS STEEL TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6	*	*	*	*	*	*	*	*		*		
U	8	*	*	*	*	*	*	*	*		*	*	*
G	10		*		*		*	*	*		*		
E	12												
	14												



PAN SQUARE STAINLESS STEEL TYPE 17													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6		*		*		*	*	*				
U	8				*		*	*	*				
G	10				*		*		*		*		
E	12												
	14												

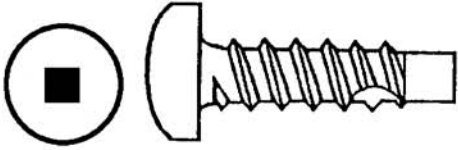


PAN SQUARE STAINLESS STEEL TYPE 25													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6		*		*		*	*	*				
U	8		*		*		*	*	*		*		
G	10										*		
E	12												
	14												



PAN SQUARE STAINLESS STEEL LEAD POINT													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6		*	*	*		*	*			*		
U	8				*		*	*	*		*		
G	10												
E	12												
	14												





PAN SQUARE STAINLESS STEEL LEAD POINT THREAD CUTTERS													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	4												
A	6		*		*		*	*	*				
U	8				*		*	*	*		*		
G	10						*						
E	12												
	14												



PAN SQUARE STAINLESS STEEL TYPE AB 8 GAUGE THREAD WITH 6 GAUGE HEAD													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	8		*										



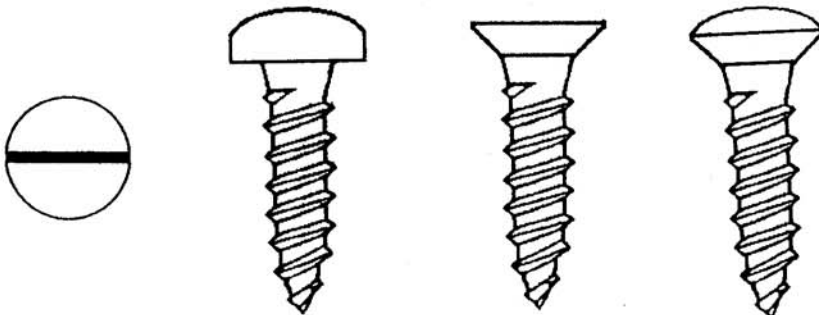
PAN POZI STAINLESS STEEL TYPE AB 8 GAUGE THREAD WITH 6 GAUGE HEAD													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	8		*										



RSD SQUARE STAINLESS STEEL TYPE B UNDERCUT HEAD BLACK													
Length	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	8	*	*										



RSD POZI STAINLESS STEEL TYPE B UNDERCUT HEAD BLACK													
Length	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	8	*	*										



We can also supply a range of slotted screws in stainless steel.





RSD POZI STAINLESS STEEL TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G 4				*									
A 6		*	*	*	*		*	*	*				
U 8		*	*	*	*		*	*	*				
G 10				*			*	*					
E 12													
14													



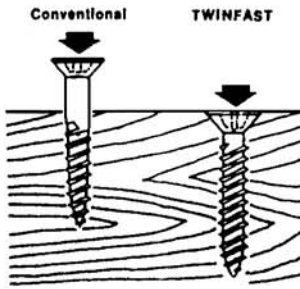
RSD SQUARE STAINLESS STEEL TYPE AB													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G 4													
A 6													
U 8													
G 10													
E 12													
14													



TWINFAST WOODSCREW

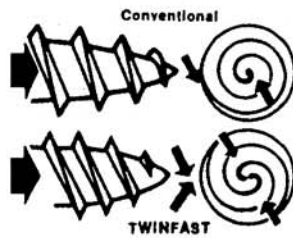
The most advanced screw in the world!

Drive faster



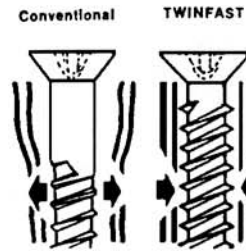
Parallel Twin Threads provide almost twice the thread pitch as that of ordinary woodscrews. Fewer turns required, resulting in faster production, less fatigue and lower assembly costs. It also provides greater holding power.

Drive true



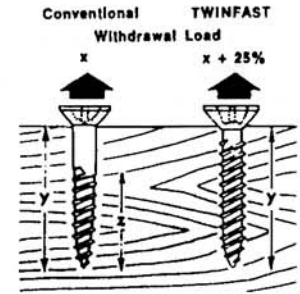
Self-Centering Point you get balanced driving - the screws start straight and drive true.

No splitting



Cylindrical Construction results in a parallel core diameter. This eliminates the tendency to split timber which often happens with ordinary woodscrews due to their wedge shaped core.

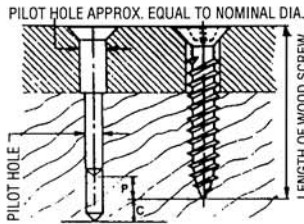
More grip



Relieved Shank Diameter - where screws are not threaded up to the head the unthreaded shank has a smaller diameter than the thread. This stops the stripping of the hole and helps to reduce splitting.

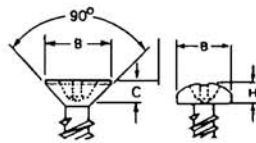
TWINFAST Pozidriv woodscrews are specially recommended for use with all types of particle board, and soft timbers.

PILOT HOLE SIZES NB. THESE SIZES ARE CRITICAL			
Screw Gauge	PINUS	PARTICLE BOARD	CUSTOMWOOD
	Drill Sizes mm	Drill Sizes mm	Drill Sizes mm
4	1.80	1.25	2
5	2.10	1.45	2.4
6	2.40	1.60	2.6
7	2.70	1.65	2.7
8	2.95	1.95	3.0
9	3.00	2.10	Not recommended
10	3.20	2.25	Not recommended



P = Pilot hole in Particle Board should be shorter than the screw length by the pilot length (3 threads)
 C = In Customwood the pilot hole should be longer than the screw length.

Head dimensions



Screw Gauge	Countersunk		Round		All Heads Driver point No.
	B max. mm	C max. mm	B max. mm	H max. mm	
4	5.5	1.6	5.6	2.0	1
5	6.2	1.9	6.2	2.3	2
6	6.9	2.1	6.9	2.5	2
7	7.6	2.3	7.5	2.7	2
8	8.3	2.5	8.2	2.9	2
9	9.0	2.8	8.8	3.3	2
10	9.7	3.2	9.4	3.7	2



		Plating	Length												
			3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	
G	4	BMA	*	*	*	*	*								
		ZINC	*	*	*	*	*								
A	5	BMA	*	*	*	*	*								
		ZINC	*	*	*	*	*								
U	6	BMA		*	*	*	*	*	*						
		ZINC		*	*	*	*	*	*						
G	7	BMA		*	*	*	*	*	*						
		ZINC		*	*	*	*	*	*						
E	8	BMA		*	*	*	*	*	*	*	*				
		ZINC		*	*	*	*	*	*	*	*				
	9	BMA				*	*	*	*	*	*	*			
		ZINC				*	*	*	*	*	*	*			
	10	BMA					*	*	*	*	*	*	*	*	*
		ZINC					*	*	*	*	*	*	*	*	*

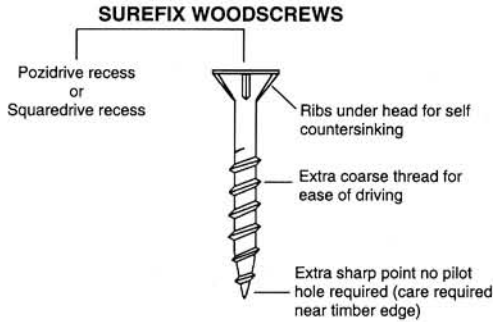


SUREFIX WOODSCREWS

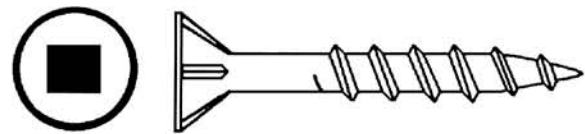
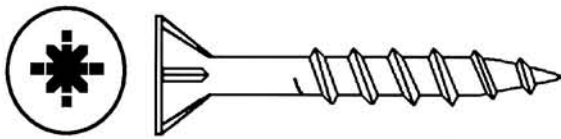
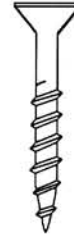
The surefix wood screw is hardened self drilling countersinking wood screw.

It has an extra sharp hardened point which means no pilot hole is required. (Although care is required near the timber edge.) Extra coarse thread for ease of driving and ribs under the head for self countersinking. Designed for applications where pilot holes are undesirable and high clamp loads are required.

We can also offer the surefix without the ribs for use with hinges to give the same high clamping and self drilling advantages as the ribbed version but fitting flush into the hinges.



HINGEFIX WOODSCREWS

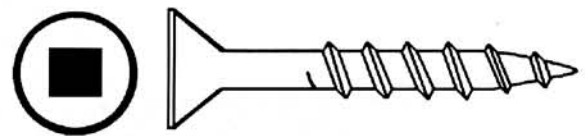
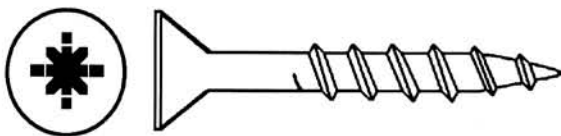


CSK POZI SUREFIX WOODSCREW (Ribbed)

	6			8			10		
	ZC	ZP	BMA	ZC	ZP	BMA	ZC	ZP	BMA
1/2	*								
5/8	*								
3/4	*			*		*			
1	*			*		*			
1 1/8				*		*			
1 1/4	*			*		*			
1 1/2	*			*		*			
1 5/8				*		*			
1 3/4				*		*			
2				*		*			
2 1/2				*	*	*	*		*
3							*		*

CSK SQUARE SUREFIX WOODSCREW (Ribbed)

	6			8			10		
	ZC	ZP	BMA	ZC	ZP	BMA	ZC	ZP	BMA
1/2	*								
5/8	*								
3/4	*			*		*			
1	*			*		*			
1 1/8				*		*			
1 1/4	*			*		*			
1 1/2	*			*		*			
1 5/8				*		*			
1 3/4				*		*			
2				*		*			
2 1/2				*	*	*	*		*
3				*	*	*	*		*



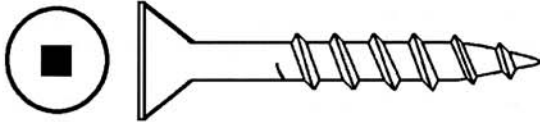
CSK POZI HINGEFIX WOODSCREW (No Ribs)

	5			6			8		
	ZC	ZP	BMA	ZC	ZP	BMA	ZC	ZP	BMA
1/2									
5/8		*	*		*	*			*
3/4					*	*	*	*	*
1							*	*	*
1 1/4								*	*
1 1/2								*	*

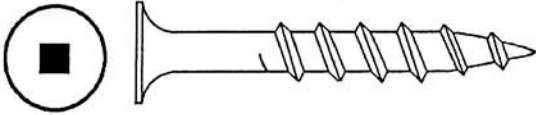
CSK SQUARE HINGEFIX WOODSCREW (No Ribs)

	5			6			8		
	ZC	ZP	BMA	ZC	ZP	BMA	ZC	ZP	BMA
1/2									
5/8		*	*		*	*			*
3/4					*	*	*	*	*
1							*	*	*
1 1/4									*
1 1/2									*

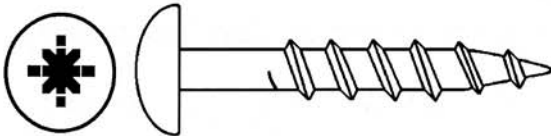




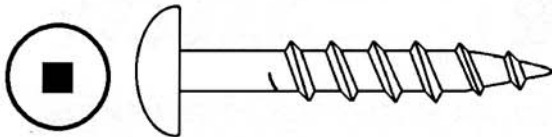
CSK SQUARE BRASS HINGEFIX													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	8				*		*	*	*				



BUGLE SQUARE STAINLESS STEEL SUREFIX													
Length	1/4	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2	3
G	8						*	*	*		*		

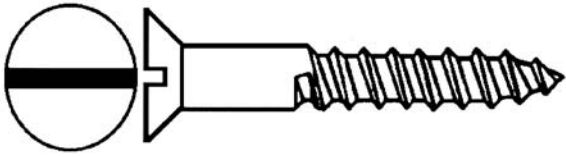


PAN POZI SUREFIX WOODSCREW									
	6			8			10		
	ZC	ZP	BMA	ZC	ZP	BMA	ZC	ZP	BMA
1/2									
5/8									
3/4				*					
1				*					
1 1/8									
1 1/4				*					
1 1/2				*					
1 5/8									
1 3/4									
2									
2 1/2									
3									

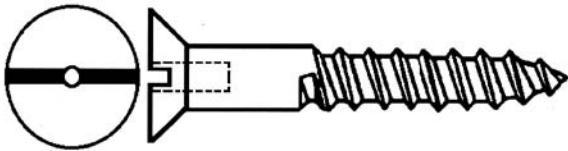


PAN SQUARE SUREFIX WOODSCREW									
	6			8			10		
	ZC	ZP	BMA	ZC	ZP	BMA	ZC	ZP	BMA
1/2									
5/8									
3/4									
1									
1 1/8									
1 1/4									
1 1/2									
1 5/8									
1 3/4									
2									
2 1/2									
3									

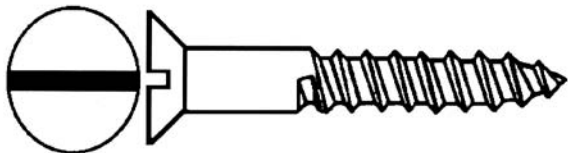




CSK SLOT BRASS WOODSCREWS												
Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3
G A U G E	4	*	*	*	*							
	5		*	*	*	*	*					
	6		*	*	*	*	*	*				
	7			*	*	*	*	*		*		
	8			*	*	*	*	*		*		
	9				*	*	*	*		*		
	10				*	*	*	*		*		*
	12						*	*		*	*	*
14												*



CSK SLOT BRASS WOODSCREW WITH HOLE												
Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3
G	12											*

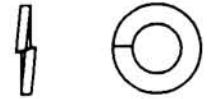


CSK SLOT ZINC PLATED WOODSCREWS													
Length	3/8	1/2	5/8	3/4	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3	
G A U G E	4		*	*	*	*							
	5		*	*	*	*							
	6		*	*	*	*	*	*					
	7		*	*	*	*	*	*					
	8		*	*	*	*	*	*		*			
	9		*		*	*	*	*	*	*	*	*	
	10				*	*	*	*	*	*		*	*
	12					*	*	*	*	*		*	*
14							*				*		



Round head and other drive types available on request.

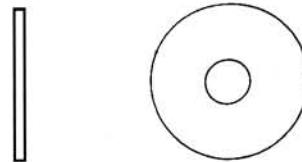


**SPRING WASHERS**

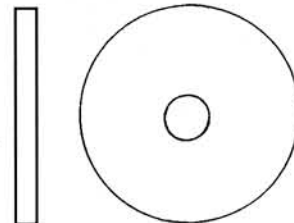
	1/8	5/32	3/16	1/4	5/16	3/8	1/2	5/8
ZINC	*	*	*	*	*	*	*	*
316 STAINLESS	*		*	*	*	*	*	

**FLAT WASHERS**

	1/8	5/32	3/16	1/4	5/16	3/8	1/2
BRASS	*	*	*	*	*	*	*
316 STAINLESS	*		*	*	*	*	*
ZINC	*	*	*	*	*	*	*

**HALF PENNY WASHERS (7/8 O.D.)**

	3/16	1/4	5/16	3/8
STAINLESS	*	*		
ZINC				

**PENNY WASHERS (1 1/4 O.D.)**

	3/16	1/4	5/16	3/8
STAINLESS	*	*	*	*
ZINC	*	*	*	*

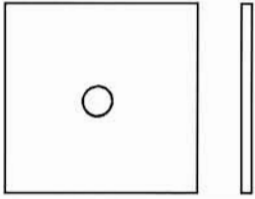




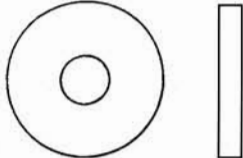

* = STOCK SIZE

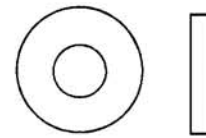
QUANTITY PER PACKET 200

Metric sizes available on request.

For availability of sizes not shown as stock items, please contact our nearest Office or discuss your requirements with our Sales Representative.

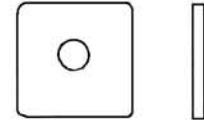


	<p>RB 200</p> <p>The RB 200 is a bitumen based washer for use with the crown or diamond aluminium washer.</p>
	<p>LT 7 CROWN WASHER</p> <p>The LT 7 crown washer is an aluminium washer used in conjunction with the RB 200 to give support and improved sealing on LT 7 profile roofing.</p>
	<p>DIAMOND ALUMINIUM WASHER</p> <p>The diamond aluminium washer is an aluminium washer used in conjunction with the RB 200 to give support and improved sealing on circular corrugated roofing.</p>
	<p>BONDED CROWN WASHER</p> <p>This is a neoprene rubber backed on piece version of the crown washer and RB 200. The seal and support is the same. Being a one piece unit, it requires less time for assembly.</p>
	<p>DIAMOND BONDED WASHER</p> <p>This is a neoprene backed one piece version of the diamond aluminium washer and RB 200. The seal and support is the same. Being a one piece unit, it requires less time for assembly.</p>
	<p>NEOPRENE WASHER</p> <p>The neoprene washer can be used to give an effective seal with a wide range of fasteners.</p>
	<p>BONDED NEOPRENE WASHER</p> <p>The bonded neoprene is a neoprene washer with an aluminium washer bonded to it for added strength.</p>



HEAVY FLAT WASHERS GALVANISED

	6	8	10	12	16
ROUND	*	*	*	*	*
SQUARE			*	*	*



INTERNAL TOOTH WASHER



EXTERNAL TOOTH WASHER

LOCK WASHERS

	1/8	5/32	3/16	1/4	5/16	3/8	1/2
INTERNAL TOOTH	*	*	*	*	*	*	*
EXTERNAL TOOTH	*	*	*	*			

CUP WASHERS

	4	6	8	10	12
BRASS	*	*	*	*	
NICKLE PLATED	*	*	*	*	*
STAINLESS STEEL 304	*	*	*	*	*



CUP WASHER

QUANTITY PER PACKET 200

For availability of sizes not shown as stock items, please contact our nearest Office or discuss your requirements with our Sales Representative.

TOOLS

TAPE MEASURES

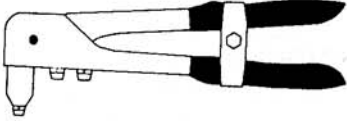
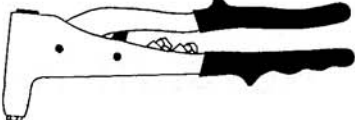
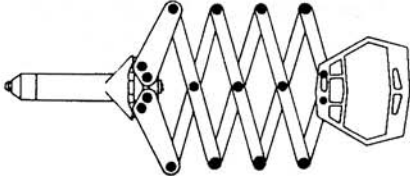
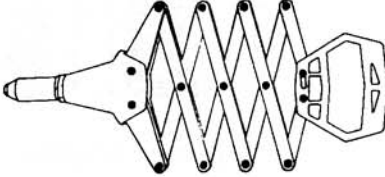
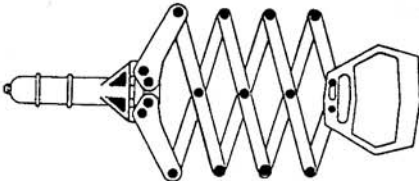

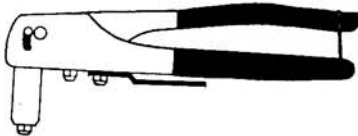


A wide range of Tape Width's and Lengths are Available



HACKSAW FRAMES



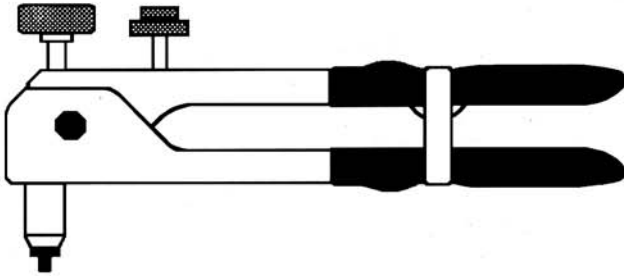
	<p>UL1 RIVET TOOL</p> <table border="0"> <thead> <tr> <th>Rivet mm</th> <th>Dia Inch</th> <th>Length 270mm Rivet Material</th> <th>Weight 630g</th> </tr> </thead> <tbody> <tr> <td>2.4</td> <td>3/32</td> <td>All Materials</td> <td></td> </tr> <tr> <td>3.3</td> <td>1/8</td> <td>All Materials</td> <td></td> </tr> <tr> <td>4.1</td> <td>5/32</td> <td>All Materials</td> <td></td> </tr> <tr> <td>4.9</td> <td>3/16</td> <td>Aluminium Only</td> <td></td> </tr> </tbody> </table>	Rivet mm	Dia Inch	Length 270mm Rivet Material	Weight 630g	2.4	3/32	All Materials		3.3	1/8	All Materials		4.1	5/32	All Materials		4.9	3/16	Aluminium Only	
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	<p>SN2 RIVET TOOL</p> <table border="0"> <thead> <tr> <th>Rivet mm</th> <th>Dia Inch</th> <th>Length Closed 294mm Open 832mm Rivet Material</th> <th>Weight 2.1kg</th> </tr> </thead> <tbody> <tr> <td>3.3</td> <td>1/8</td> <td>All Materials</td> <td></td> </tr> <tr> <td>4.1</td> <td>5/32</td> <td>All Materials</td> <td></td> </tr> <tr> <td>4.9</td> <td>3/16</td> <td>All Materials</td> <td></td> </tr> <tr> <td>6.4</td> <td>1/4</td> <td>All Materials</td> <td></td> </tr> </tbody> </table>	Rivet mm	Dia Inch	Length Closed 294mm Open 832mm Rivet Material	Weight 2.1kg	3.3	1/8	All Materials		4.1	5/32	All Materials		4.9	3/16	All Materials		6.4	1/4	All Materials	
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3.3	1/8	Aluminium Steel																			
4.1	5/32	Aluminium Only																			





TT55D		
Weight	435g	
Length	240mm	
Working Range		
	Rivet Diameter	Drill Size
	2.4 mm (3/32")	2.45 mm
	3.2 mm (1/8")	3.30 mm
	4.0 mm (5/32")	4.10mm

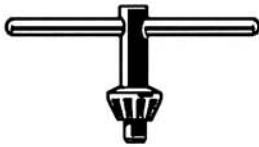
Note: We can service most of the Tucker Rivet Tool Range.



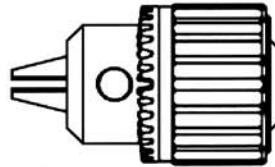
THREADED INSERT TOOLS

TSN	
Weight	720g
Length	270mm
Working Range	M4, M5, M6, M8
Imperial	3/16, 1/4 only

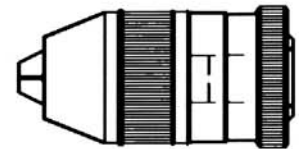
Air Threaded insert Tools are subject to availability at time of enquiry.



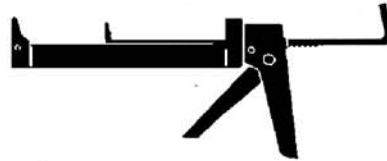
Chuck Keys



Drill Chucks

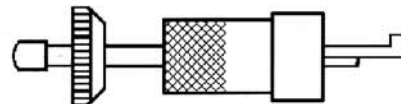


Keyless Chucks



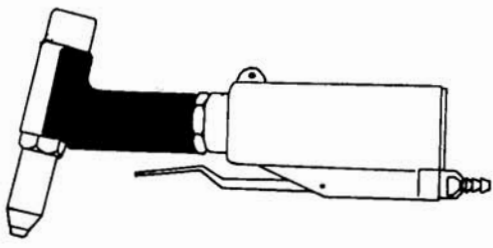
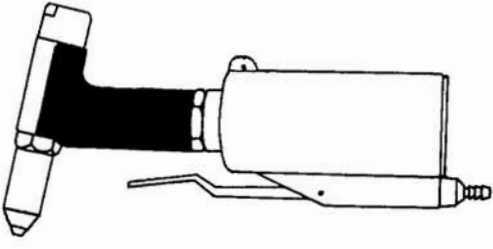
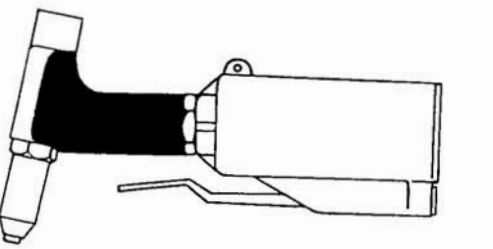
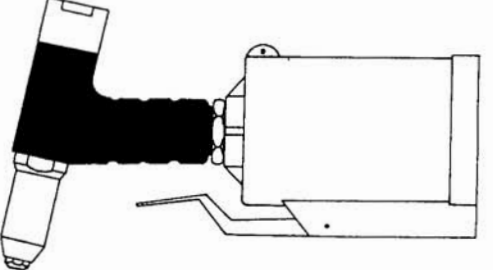
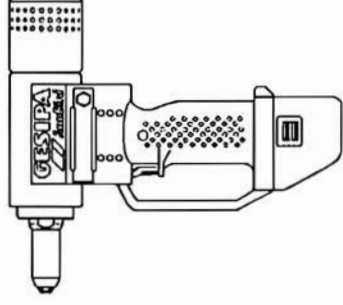
Mastic Guns

Size		
3/32	(2.4)	*
1/8	(3.3)	*
5/32	(4.1)	*
3/16	(4.9)	*
1/4	(6.5)	*



Sheet Grippers

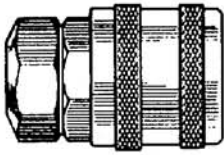


	<p>PH 1 Rivet Tool</p> <p>Weight 1.2 kg Length 325 mm Height 155 mm Air Supply 60 - 90 PSI Air Consumption 0.8 - 1.2 Ltr. Per Cycle Traction Power 650 KP Stroke 15 mm Working Range Up to 4mm øAll Materials</p>																																																
	<p>PH 2 Rivet Tool</p> <p>Weight 1.3 kg Length 325 mm Height 155 mm Air Supply 60 - 90 PSI Air Consumption 1.2 - 1.8 Ltr. Per Cycle Traction Power 900 KP Stroke 15 mm Working Range Up to 5 mm øAll Materials</p>																																																
	<p>T105 Rivet Tool</p> <p>Weight 1.5 kg Length 325 mm Height 155 mm Air Supply 60 - 90 PSI Air Consumption 1.2 - 1.8 Ltr. Per Cycle Traction Power 900 KP Stroke 15 mm Working Range Up to 5 mm øAll Materials</p>																																																
	<p>T115 Rivet Tool</p> <p>Weight 2.2 kg Length 310 mm Height 185 mm Air Supply 60 - 85 PSI Air Consumption 2.8 - 3.6 Ltr. Per Cycle Traction Power 1600 KP Stroke 20 mm Working Range 4 mm to 6 mm All Materials 3 mm with Special Nose</p>																																																
	<p align="center">ACCUBIRD 12V BATTERY RIVET TOOL</p> <p>Working Range: Blind Rivets up to 5mm ø in all materials. Bulb-tile Blind Rivets: 4.0, 5.2 and 6.3mm ø Alu and Steel.</p> <p>Technical Data: Weight: 2.2kg (with Battery) Stroke: 20mm Operating Voltage: 12V Traction Power: 8.500N Power Supply: 230V AC/50Hz Output Voltage: 12V DC Recharging Time: approx. 60 minutes</p> <table border="1"> <thead> <tr> <th colspan="4">Nosepiece table - Rivets per battery charge</th> </tr> <tr> <th>Blind Rivet ø in mm</th> <th>Rivet dia. inch</th> <th>Rivet body material</th> <th>Rivets/ Charge</th> </tr> </thead> <tbody> <tr> <td>2.4</td> <td>3/32"</td> <td>Alum</td> <td>1.900</td> </tr> <tr> <td>3.0 a.3.2</td> <td>1/8"</td> <td>Alum</td> <td>1.300</td> </tr> <tr> <td>3.0 a.3.2</td> <td>1/8"</td> <td>Steel</td> <td>1.100</td> </tr> <tr> <td>3.0 a.3.2</td> <td>1/8"</td> <td>Stainless Steel</td> <td>1.000</td> </tr> <tr> <td>4.0</td> <td>5/32"</td> <td>Alum</td> <td>1.000</td> </tr> <tr> <td>4.0</td> <td>5/32"</td> <td>Steel</td> <td>900</td> </tr> <tr> <td>4.0</td> <td>5/32"</td> <td>Stainless Steel</td> <td>800</td> </tr> <tr> <td>4.8 a5.0</td> <td>3/16"</td> <td>Alum</td> <td>700</td> </tr> <tr> <td>4.8a5.0</td> <td>3/16"</td> <td>Steel</td> <td>500</td> </tr> <tr> <td>4.8a5.0</td> <td>3/16"</td> <td>Stainless Steel</td> <td>400</td> </tr> </tbody> </table> <p>A full range of parts and service is available for all the tools we offer. Many accessories and special attachments are available for special applications. For further details, contact our local Branch or Sale Representative.</p>	Nosepiece table - Rivets per battery charge				Blind Rivet ø in mm	Rivet dia. inch	Rivet body material	Rivets/ Charge	2.4	3/32"	Alum	1.900	3.0 a.3.2	1/8"	Alum	1.300	3.0 a.3.2	1/8"	Steel	1.100	3.0 a.3.2	1/8"	Stainless Steel	1.000	4.0	5/32"	Alum	1.000	4.0	5/32"	Steel	900	4.0	5/32"	Stainless Steel	800	4.8 a5.0	3/16"	Alum	700	4.8a5.0	3/16"	Steel	500	4.8a5.0	3/16"	Stainless Steel	400
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ARD 210

Coupler
1/4 BSP Pipe Thread



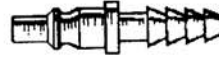
A-2607

1/8 BSP Male
Pipe Thread



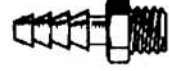
A-3946

Insert for 6mm
Hose



Tailpiece

1/4 BSP Male Pipe Thread
for 6mm Hose



A-2608

1/4 BSP Male
Pipe Thread



A-3947

Insert for 8mm
Hose



1/4" Inline Oiler



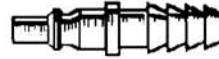
A-2609

1/4 BSP Female
Pipe Thread



A-3948

Insert for 10mm
Hose

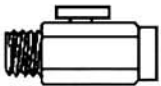


Tailpiece

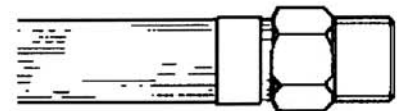
1/4 BSP Male Pipe Thread
for 10mm Hose



Inline Regulator

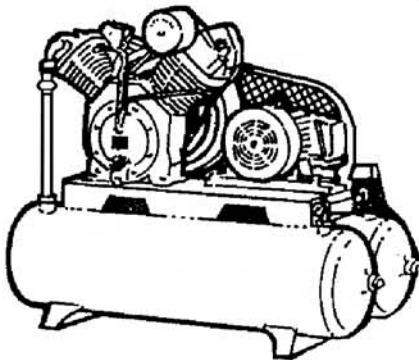
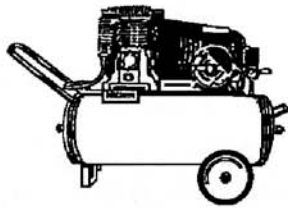


Filter Regulators



Air Hose

COMPRESSORS



A full range of compressors from 9 cubic foot to 50 cubic foot are available as a standard. Special sizes and types can be made to your specifications.





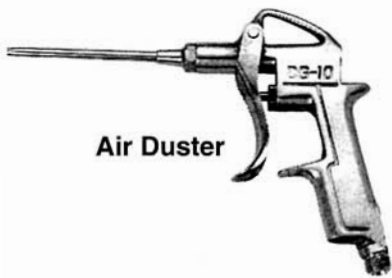
3/8" Air Reversible Drill
 Speed: 1,800RPM
 Capacity: 3/8"
 Weight: 1.1kgs



Air Screwdriver (Clutch Type)
 Speed: 1,800RPM
 Capacity: 6mm
 Weight: 1.18kgs



Air Screwdriver (Clutch Type)
 Speed: 800RPM
 Capacity: 8mm
 Weight: 1.2kgs



Air Duster



Air Nibbler
 Capacity: 1.5mm Steel
 Weight: 0.9kgs



1/2" Impact Wrench
 Torque: 230FI-Lb
 Bolt Cap: 5/8"
 N.W: 2.41kgs



Air Body Saw
 Capacity: 1.6mm Steel
 9300 Stroke/Min
 Weight: 0.6kgs



Straight Metal Shear
 Capacity: 1.6mm
 2500 Stroke/Min
 Weight: 1.14kgs



Air Shear
 Capacity: 1.6mm Steel
 2300 Stroke/Min
 Weight: 1.25kgs



4" Angle Grinder
 Speed: 11,000 RPM
 Capacity: 4"
 N.W: 190kgs



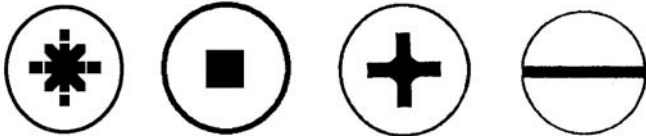
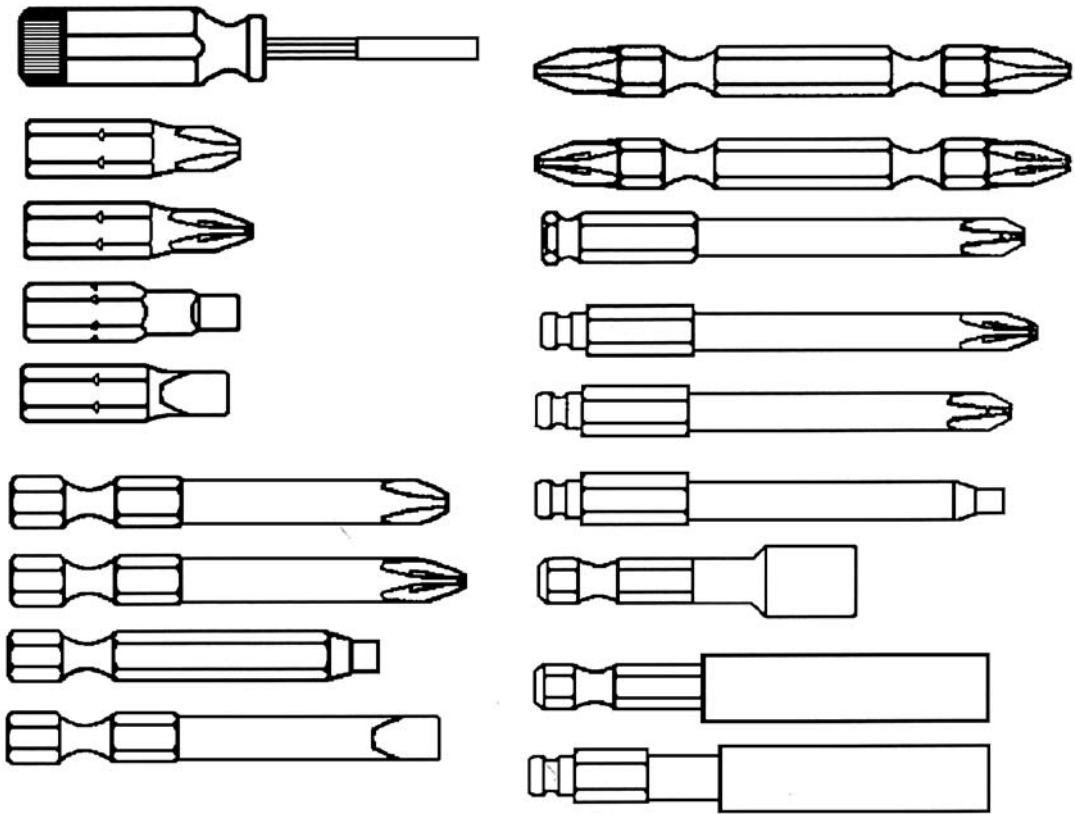
7" Angle Sander

7" Angle Polisher
 Speed: 4,500 RPM (Sander)
 Speed: 2,500 RPM (Polisher)
 Capacity: 7"
 N.W: 2.4kgs



Spray Gun
 Tip of Nozzle: 1.8mm
 Cup Capacity: 1/





We carry an extensive range of screwdriver tips in varying lengths and tip sizes to suit pozi, square, phillips and slotted screws along with socket drivers for hex head self drilling screws.

Tips to suit other drive types are available on request. Examples of special types are shown below.



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ULLRICH ALUMINIUM CO LTD
PO Box 98 843 Manukau City
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ULLRICH ALUMINIUM CO LTD
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