



Security Fixing Specialists

2007 STOCK PRODUCT GUIDE



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Special Message for Fastener Merchants

Interested in increasing your sales, profitability and client base?




















































10 ways we can help:

- * We GIVE YOU ACCESS to the fast growing security market
- * You get to deal with the only wholesaler who's sole focus is security fasteners
- * We are continuously sourcing new and unique products from around the globe to help you keep ahead
- * All our PROLOK fasteners are covered by our 'Peace of Mind' guarantee (see page 37)
- * We deliver fast and efficient response times so your clients are not kept waiting
- * Family business means you get friendly, committed service where all clients are treated equally with honesty and integrity
- * We provide free marketing material to generate sales for you. This includes: Sample Boards, Store Posters, Catalogues, Flyers, Free Samples, Market Information.
- * You can use our sales staff training and back-up support system to bring your staff up to speed on the opportunities available.
- * We reward our clients with free gifts



WHAT NEXT...

Pick up the phone and dial **1800 PROLOK** (1800 776 565) (it's free) and put us to the test.

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HOW TO ORDER

- Does it need to be removable?
If 'yes' look for 
If 'no' look for 
- What size?
- What material?
- What quantity do you require?
- Bulk packs or in box quantity?
- How many driver bits do you need?



- Do you want direct to site plain label delivery?
- Phone before 4.30pm to avoid disappointment!

Call our Sales team on
1800 PRO LOK
1800 776 565



2 HOLE

2 Hole security screws (sometimes known as pig nose) are designed for low to medium torque applications. They have two holes drilled into the head which need a unique 2-pin driver to install and remove. Aesthetically pleasing head design, often specified by designers and architects. Available from stock in self-tapping and machine screws as below.

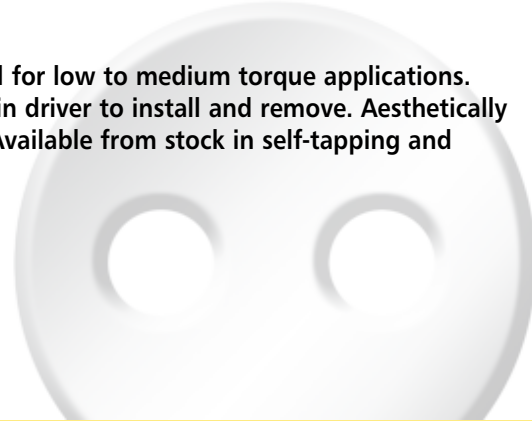
Requires matching tooling See page 27

Manufactured in A2 stainless steel.

Head dimensions? See page 30



INSERT BIT



COUNTERSUNK • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length		3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
Gauge		9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
4	2.9mm											TH3
6	3.5mm											TH4
8	4.2mm											TH5
10	4.8mm											TH6
12	5.5mm											TH7
14	6.3mm											TH8

PAN HEAD • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length		3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
Gauge		9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
4	2.9mm											TH3
6	3.5mm											TH4
8	4.2mm											TH5
10	4.8mm											TH6
12	5.5mm											TH7
14	6.3mm											TH8

COUNTERSUNK • MACHINE SCREWS

BOX QTY 100

Length		8mm	10mm	12mm	16mm	20mm	25mm	30mm	35mm	40mm	DRIVER SIZE
Gauge											
M3											TH3
M4											TH5
M5											TH6
M6											TH8
M8											N8
M10											N14



Made to measure with this drive system:

Male & Female bolts, Grub screws, Large disc head, Glass screws etc.



Self tappers can be substituted for woodscrews.

BOX QTY 100

PAN HEAD • MACHINE SCREWS

Length		6mm	10mm	12mm	14mm	16mm	20mm	25mm	30mm	40mm	DRIVER SIZE
Gauge											
M3											TH3
M4											TH5
M5											TH6
M6											TH8
M8											N8
M10											N14



BOX QTY 100

RAISED COUNTERSUNK • MACHINE SCREWS

Length		12mm	25mm	30mm	40mm	50mm	DRIVER SIZE
Gauge							
M3.5							TH4



2-HOLE SPECIALS - MADE TO MEASURE

see page 28/29

IMPERIAL MACHINE SCREWS UNC & UNF

(POPULAR FOR COMPUTERS)
6.32 to 1/4-20 x 1/4" to 2 1/2" to order only





PIN HEX

Pin Hex security screws have been manufactured with an internal pin within the standard socket aperture. This prevents the use of standard hexagon keys from removing the fastener. This system is suitable for medium torque applications and is one of the hardest security screws to remove without the matching driver. Available from stock as self tappers and machine screws as below.

Requires matching tooling See page 27

Manufactured in A2 stainless steel.

Head dimensions? See page 30



INSERT BIT

KEY WRENCH



COUNTERSUNK • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length		3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
Gauge		9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm											H30
8	4.2mm											H40
10	4.8mm											H40
12	5.5mm											H40
14	6.3mm											H40



BUTTON HEAD • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length		3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
Gauge		9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm											H30
8	4.2mm											H40
10	4.8mm											H40
12	5.5mm											H40
14	6.3mm											H40



COUNTERSUNK • MACHINE SCREWS

BOX QTY 100

Length		6mm	8mm	10mm	12mm	16mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	60mm	DRIVER SIZE
Gauge															
M3															H20
M4															H40
M5															H40
M6															H40
M8															H50
M10															H60
M12															H80



Can be made to order in alternative materials and other style screws, such as Cap screws and Grub screws, subject to minimum order quantities.



Self tappers can be substituted for woodscrews.

BOX QTY 100

BUTTON HEAD • MACHINE SCREWS

Length		6mm	8mm	10mm	12mm	16mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	60mm	100mm	DRIVER SIZE
Gauge																
M3																H20
M4																H40
M5																H40
M6																H40
M8																H50
M10																H60
M12																H80



BOX QTY 100

RAISED COUNTERSUNK • MACHINE SCREWS

Length		12mm	20mm	25mm	30mm	40mm	50mm	60mm	DRIVER SIZE
Gauge									
M3.5									H30



PIN HEX SOCKET SPECIALS MADE TO ORDER

Socket Cap screws
Grub screws etc.





RESYTORK

Resytork security screws (sometimes known as Star Drive Pin, Post Torx, or Resistox®) are suitable for higher torque applications. These are manufactured with a central pin inside the six-lobe recess preventing removal with standard torx tools. Stocked in the largest range available, including machine screws, self tappers, self drilling screws, barrel nuts and anchor systems. (See page 25).

Requires matching tooling See page 27

Manufactured in A2 stainless steel.

Head dimensions? See page 30



KEY WRENCH

COUNTERSUNK • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length Gauge	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
	9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
4 2.9mm											T10
6 3.5mm											T15
8 4.2mm											T20
10 4.8mm											T25
12 5.5mm											T27
14 6.3mm											T30

BUTTON HEAD • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length Gauge	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
	9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6 3.5mm											T10
8 4.2mm											T15
10 4.8mm											T25
12 5.5mm											T27
14 6.3mm											T27

COUNTERSUNK • MACHINE SCREWS

BOX QTY 100

Length Gauge	6mm	8mm	10mm	12mm	16mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	60mm	80mm	DRIVER SIZE
M3															T10
M4															T20
M5															T25
M6															T30
M8															T40
M10															T45



Also available in zinc plated steel to order only. Subject to availability.



Specials can be made to order, such as Grub Screws and other thread styles e.g. Concrete tapping screws, Tri-lobular metal and plastic tapping threads etc.

BOX QTY 100

BUTTON HEAD • MACHINE SCREWS

Length Gauge	6mm	8mm	10mm	12mm	16mm	20mm	25mm	30mm	35mm	40mm	45mm	50mm	60mm	80mm	90mm	95mm	DRIVER SIZE
M3																	T10
M4																	T20
M5																	T25
M6																	T30
M8																	T40
M10																	T45

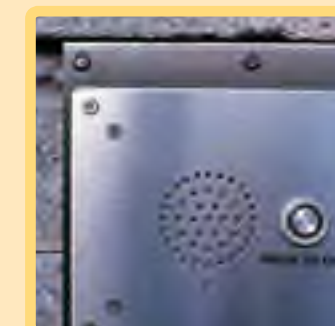
BOX QTY 100

RAISED COUNTERSUNK • MACHINE SCREWS

Length Gauge	12mm	20mm	25mm	30mm	40mm	50mm	DRIVER SIZE
M3.5							T10

Resytork Specials Made To Order

To order subject to minimum order quantities.



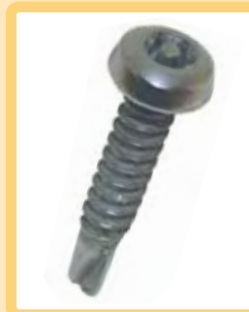
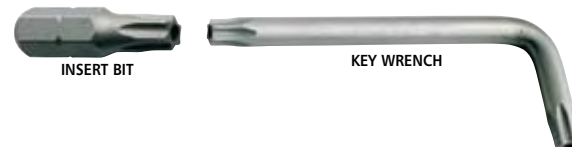


SELF DRILLING

Manufactured in 410 stainless steel, these self drilling screws are the ideal security solution for applications such as fences, sheds, security screens, etc, where fast installation is essential

Requires matching tooling See page 27

Manufactured in 410 stainless steel.

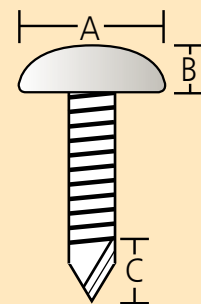


PAN HEAD • SELF DRILLING SCREWS • 410 STAINLESS

BOX QTY 100

Length		1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	DRILLING CAPACITY
Gauge		13mm	16mm	19mm	25mm	32mm	38mm	50mm	
8	4.2mm								2 - 2.5mm
10	4.8mm								2 - 2.8mm
12	5.5mm								2 - 3mm
14	6.3mm								2.7 - 5mm

This table is a guide only and does not constitute a warranty of any type.



DIMENSIONS (mm)

Gauge		A	B	C
8	4.2	8	3	4.5
10	4.8	9	3.1	7
14	6.3	12	4	8



RESYTORK BARREL NUTS

Resytork Barrel Nuts requiring matching driver tools are the ultimate security solution for playground manufacturers, councils and schools, or other applications where an aesthetically pleasing, vandal proof finish is required. Available in both metric and imperial.

Requires matching tooling See page 27

Manufactured in Zinc, Galvanised and 304 stainless steel.



BOX QTY 100

BUTTON HEAD • BARREL NUTS

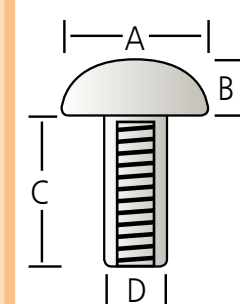
Future stock

DESCRIPTION	MATERIAL	DRIVER
3/8 UNC x 16mm	304 Stainless	T45
3/8 UNC x 28mm	Zinc	T45
3/8 UNC x 28mm	Galvanised	T45
M10 x 28	Zinc	T45
M10 x 28	Galvanised	T45
M10 x 28	304 Stainless	T45



DIMENSIONS (mm)

DESCRIPTION	MATERIAL	DRIVER	A	B	C	D
3/8 UNC x 16mm	304 S/S	T45	23	6	16	12.5
3/8 UNC x 28mm	Zinc / Galv	T45	21	6	28	13.5
M10 x 28mm	304 S/S	T45	22	8	28	14
M10 x 28mm	Zinc / Galv	T45	21	6	28	13.5





CLUTCH HEADS

ONE-WAY SLOTTED DRIVE

Clutch Head one way screws only operate in a clockwise motion using a standard slotted screwdriver. This drive system was probably the world's first security recess.

No specialist tools required. Uses standard slotted screwdriver

Manufactured in bright zinc plated hardened steel (woodscrews) and A2 stainless steel (self tappers).



BZP TWINTHREAD • COUNTERSUNK • WOODSCREWS BOX QTY 200

Length	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
Gauge	19mm	25mm	32mm	38mm	50mm	63mm	75mm
No 6							
No 8							
No 10							
No 12							

ZINC • SELF TAPPERS MACHINE SCREWS BOX QTY 100

Length	3/4"	20mm
Gauge		
10G		
12G		
M5		
M6		

Ideal for Number Plates

A2 STAINLESS STEEL • COUNTERSUNK • SELF TAPPERS • AB TYPE THREAD BOX QTY 100

Length	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	REMOVAL TOOL
Gauge	9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm										RT41
8	4.2mm										RT51
10	4.8mm										RT51

A2 STAINLESS STEEL • ROUND HEAD • SELF TAPPERS • AB TYPE THREAD BOX QTY 100

Length	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	REMOVAL TOOL
Gauge	9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm										RT41
8	4.2mm										RT51
10	4.8mm										RT51
14	6.3mm										RT61

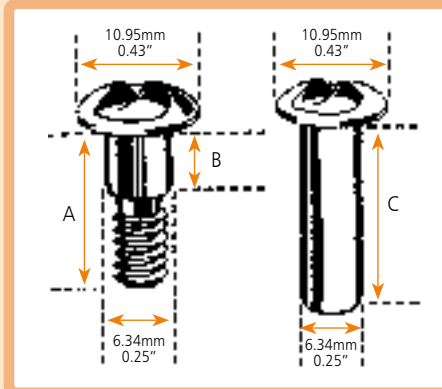
CHROME PLATED • TRUSS HEAD • 10.24 UNC THREAD • CLUTCH HEAD • SHOULDER SCREWS & BARREL NUTS

SHOULDER SCREW BOX QTY 100

Length	3/4"	15/16"	1 1/8"	1 1/4"	1 3/8"
Gauge					
10 - 24					
Dimen A	18.7mm 0.74"	23.4mm 0.92"	26.1mm 1.03"	30mm 1.18"	33mm 1.30"
Dimen B	6.8mm 0.27"	4.8mm 0.19"	6.6mm 0.26"	6.6mm 0.26"	6.7mm 0.26"

BARREL NUT BOX QTY 100

Length	13mm	16mm
Gauge	1/2"	5/8"
10 - 24		
Dimen C	12.6mm 0.50"	15.9mm 0.63"



DESIGN RIGHTS APPLY

ONE-WAY POZI DRIVE



The original Nettlefolds one way pozidrive security system. This recess is ideal for easy and fast application with power tools. The most popular permanent option. Other sizes and lengths available to order.

No specialist tools required. Uses standard pozi or Superdrive bits or drivers

Manufactured in bright zinc plated hardened steel woodscrews and machine screws.



BOX QTY 200 ZINC PLATED TWINTHREAD • COUNTERSUNK • WOODSCREWS

Length	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
Gauge	13mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm								PZ2
8	4.2mm								PZ2
10	4.8mm								PZ2
12	5.5mm								PZ3

BOX QTY 100 ZINC PLATED • COUNTERSUNK • MACHINE SCREWS

Length	12mm	16mm	20mm	25mm	30mm	40mm	50mm	DRIVER SIZE
Gauge								
M4								PZ2
M5								PZ2
M6								PZ3

BOX QTY 100 ZINC PLATED • BUTTON HEAD • MACHINE SCREWS

Length	12mm	16mm	20mm	25mm	30mm	40mm	50mm	DRIVER SIZE
Gauge								
M4								PZ2
M5								PZ2
M6								PZ3
M8								PZ4

SENTINEL MADE TO MEASURE SPECIALS

To order subject to minimum quantities.





TORXplus®

The original Resistorx screw has six lobes . Its successor the Torxplus has five lobes . This provides a higher level of security due to the fact that the design is patented. Tooling availability is restricted and driver sales are therefore limited to bonafide Torxplus customers. All Torxplus drivers are logged for customer security. The drive quality of the elliptical five lobe system makes this fastener suitable for higher torque applications.

Requires matching tooling See page 27



(Registered for controlled availability)

Manufactured in A2 stainless steel self tappers.

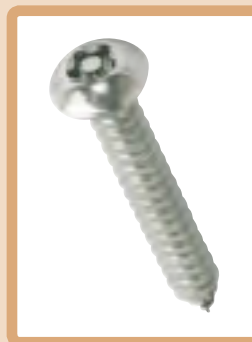
Metric machine screws available Subject to minimum order quantities



COUNTERSUNK • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length Gauge	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
	9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm										15 IPR
8	4.2mm										20 IPR
10	4.8mm										25 IPR
12	5.5mm										25 IPR
14	6.3mm										30 IPR



BUTTON HEAD • SELF TAPPERS • AB TYPE THREAD

BOX QTY 100

Length Gauge	3/8"	1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	DRIVER SIZE
	9.5mm	13mm	16mm	19mm	25mm	32mm	38mm	50mm	63mm	75mm	
6	3.5mm										10 IPR
8	4.2mm										15 IPR
10	4.8mm										25 IPR
12	5.5mm										
14	6.3mm										27 IPR



COUNTERSUNK & BUTTON HEAD • MACHINE SCREWS

- IMPERIAL SIZES AVAILABLE
- METRIC SIZES - CALL FOR AVAILABILITY
- SPECIAL THREADS AVAILABLE SUBJECT TO MINIMUM QUANTITIES



TRI-LOBULAR

One of the most popular security drives, Tri-lobular screws are usually used in the sign and playground industries. Special sizes / types available to order, please phone for availability.

Requires matching tooling See page 27

Available in zinc yellow and galvanised.



INSERT BIT
TO SUIT 10 GAUGE

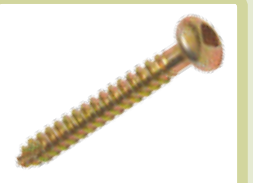


INSERT BIT
TO SUIT M10

BOX QTY 1000

BUTTON HEAD • TYPE 17 • ZINC YELLOW

Length Gauge	3/4"	1"	1 1/4"	1 1/2"	DRIVER SIZE
	19mm	25mm	32mm	38mm	
10					TL2



BOX QTY 1000

BUTTON HEAD • TYPE 17 • GALVANISED

Length Gauge	3/4"	1"	1 1/4"	1 1/2"	DRIVER SIZE
	19mm	25mm	32mm	38mm	
10					TL2

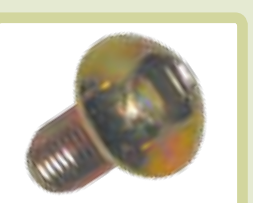


BOX QTY 1000 BUTTON HEAD • (10-16) SELF DRILLER GALVANISED

Length Gauge	5/8"	DRIVER SIZE
	16mm	
10		TL2

BOX QTY 1000 BUTTON HEAD • MACHINE SCREW CONE POINT • ZINC YELLOW

Length Gauge	3/4"	DRIVER SIZE
	20mm	
M10		TL10



QUADTECH

This unique security drive offers all the benefits of the popular square drive system, with an internal pin making it a secure solution for sign installers and screen manufacturers.

Requires matching tooling

Available in galvanised steel.



INSERT BIT

BOX QTY 1000

BUTTON HEAD • TYPE 17 • GALVANISED

Length Gauge	3/4"	1"	1 1/2"	DRIVER SIZE
	19mm	25mm	38mm	
10				SD2



BOX QTY 1000

BUTTON HEAD • (10-16) SELF DRILLER • GALVANISED

Length Gauge	5/8"	DRIVER SIZE
	16mm	
10		SD2





OVAL PAN HEAD SECURITY SCREWS



OVAL PAN HEAD

This security screw is extremely deceptive in its looks. It is not instantly apparent that this fastener is oval. At a casual glance this fastener looks like a stud or rivet, leaving the potential intruder fooled. Installation is only by using the matching Oval socket and is suitable for low to medium torque applications. These screws are case hardened for further resistance to attack.

Requires matching driver See page 27 

Manufactured in bright zinc plated steel machine screws.

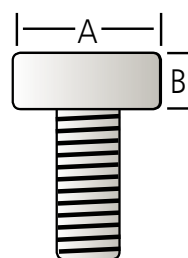
Can be manufactured as an AB Type self tapping screw or as a woodscrew subject to minimum order quantities.



MACHINE SCREWS • OVAL PAN HEAD

BOX QTY 100

Length Gauge	10mm	12mm	16mm	20mm	25mm	30mm	40mm	DRIVER SIZE
M4								OP4
M5								OP56
M6								OP56
M8	TO ORDER ONLY (SUBJECT TO MINIMUM QTY)							



HEAD DIMENSIONS (mm)

Gauge Size	M4	M5	M6
A	6.8	9.9	9.9
B	2.8	3.5	3.5



KEYED-LOK® SECURITY SCREWS



KEYED - LOK®

This system enables every customer to have their own unique personalised drive key specifically for their application. You can have a unique driver for virtually any type of screw. The millions of key way variations ensures that your driver key is unique, therefore enhancing the level of security to a new plane.

It requires a perfectly cut key to operate the screw.
(Only the owners have the private exclusive key code).

Manufactured to order in steel or stainless steel.



INSERT BIT



PLEASE NOTE: MANUFACTURED TO ORDER SUBJECT TO MINIMUM ORDER QUANTITIES.



AB TYPE SELF TAPPERS

Countersunk and Button Head self tapping screws from No.4 to No.14 gauge, from 3/8" to 4" long.

(PLEASE NOTE: Manufactured to order subject to minimum order quantities.)



METRIC MACHINE SCREWS

Countersunk and Button Head metric machine screws from M2 up to M16 diameter, from 4mm to 100mm long.

(PLEASE NOTE: Manufactured to order subject to minimum order quantities.)



It is not just tamper resistant.
It repels 2-Hole, Pin Hex and Resytork bits.



Over 9 million key combinations available.

medical equipment

correctional institutions

domestic appliances

parking meters

fire arms



PATENTS AND DESIGN REGISTRATIONS APPLY



The Nogo enclosure offers the highest security for any nut or bolt. This two part enclosure is made from case hardened steel and resists most forms of attack, including drills and saws.

No specialist tools required. Uses standard hammer.

Manufactured in zinc plated hardened steel.



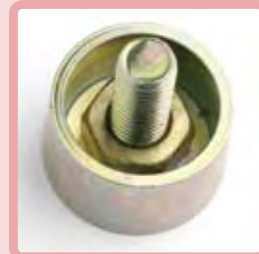
TYPE 1 Sold in singles - cap & base

M5	M6	M8	M10	M12



TYPE 2 Sold in singles - cap & base

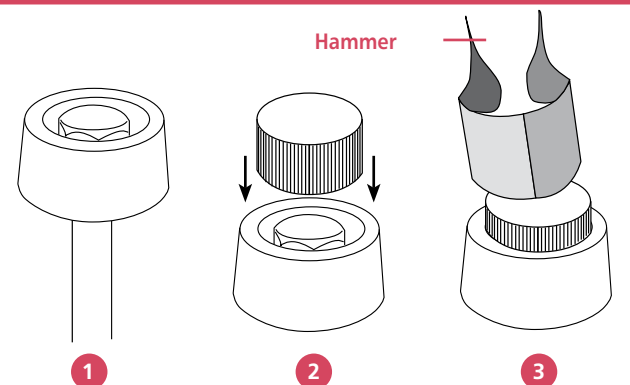
M5	M6	M8	M10	M12



A.
Fix base cup under fastener



B.
Hammer home cap for the most secure fastening



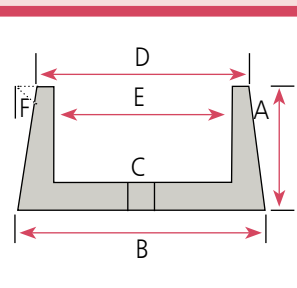
1
Fit in standard bolt or nut

2
Pop in case hardened cap

3
Hammer home cup for secure fastening

DIMENSIONS (mm)

Gauge	Length	Measurements in mm					Angle°
		A	B	C	D	E	
M5		12	20	5.4	18	12.9	4.5°
M6		13	22	6.4	20	15.0	5°
M8		14	28.4	8.4	26	19.9	6°
M10		18	32	10.4	30	25.3	6°
M12		20	36	12.4	32	26.4	6°



The only security fixing to win Sold Secure Silver award



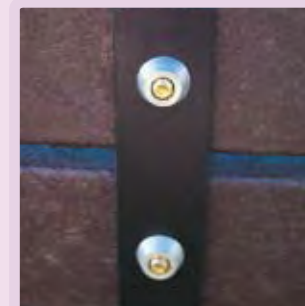
PATENTED PRODUCT

A simple conical collar which is hammered over any standard hexagon bolt head or nut, rendering it tamper resistant. This security fastener has the advantage of not being governed by torque and can be applied to existing fasteners. Another advantage of using the Armour Ring is that it leaves a smooth cover to existing fixings. Armour Rings are suitable for any British standard or DIN standard hexagon bolts and nuts, including hex head coach screws.

No specialist tools required. Uses standard hammer.

Manufactured in bright zinc plated steel and stainless steel.

Cannot be easily removed. Home Office approved.



BOX QTY 100

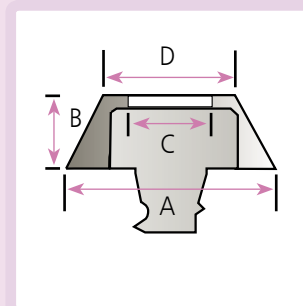
ARMOUR RINGSTM

Size	M6	M8	M10	M12	M16	M20
Material						
BRIGHT ZINC PLATED STEEL						
A2 STAINLESS STEEL						

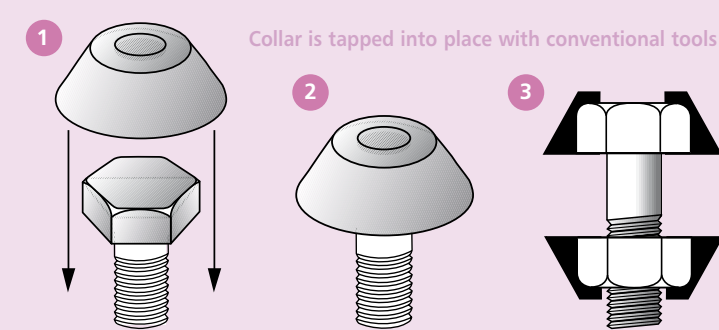


DIMENSIONS (mm)

Size	M6	M8	M10	M12	M16	M20
Dimension						
A	15.8	20	26.6	33	41.2	51
B	6.8	7.7	9.8	12.3	16	19
C	7.2	10.5	11.5	14	17.3	19
D	11	15	20	25	30	38



Cutaway showing Armour Ring fixing on Hex Head Coach Screw.



Collar is tapped into place with conventional tools



bridges

bus shelters

lighting

public toilets

stations

kinmar®
— permanent —



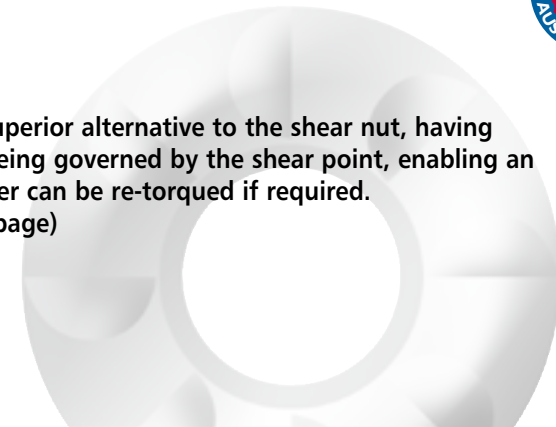
PATENTED PRODUCT



Unique high torque security drive. This patented system is a superior alternative to the shear nut, having the advantage of not leaving any unplated surfaces and not being governed by the shear point, enabling an accurate and reliable torque rating to be achieved. This fastener can be re-torqued if required. This is a permanent fixing. (Removable version - see opposite page)

Requires matching tooling See page 27

Manufactured in bright zinc plated steel, galvanised steel and stainless steel.



KINMAR PERMANENT NUTS

BOX QTY 100

Size	M5	M6	M8	M10	M12
Material					
ZINC PLATED STEEL					
GALVANISED	to order	to order			
A2 ST/LESS	to order	to order		to order	to order
DRIVER SIZE	KM6P	KM6P	KM8P	KM10P	KM12P



KINMAR PERMANENT BOLTS

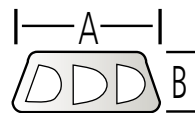
BOX QTY 100

Sizes available off the shelf:
M8 x 40mm
All other sizes available subject to minimum quantity.



DIMENSIONS (mm)

Size	M5	M6	M8	M10	M12
Dimension					
A	12.1	12.1	16.1	20.1	24.2
B	5.6	5.6	7.3	9.1	10.5



kinmar®
— removable —



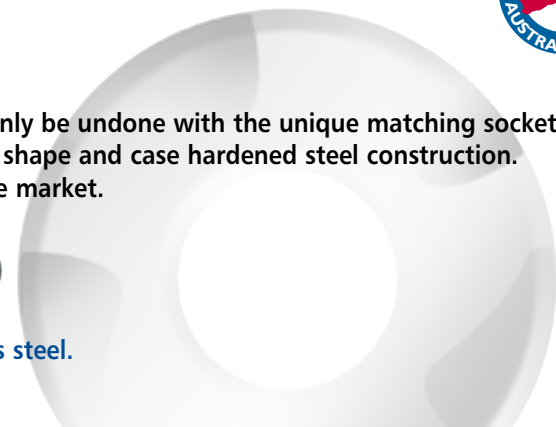
PATENTED PRODUCT



Another unique high torque security drive system which can only be undone with the unique matching socket. This product is extra resilient to attack because of its rounded shape and case hardened steel construction. Probably the most cost-effective removable security nut on the market.

Requires matching driver socket See page 27

Manufactured in case hardened steel in bright zinc plated or galvanised finish. Also manufactured in stainless steel.



BOX QTY 100

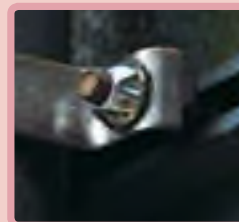
KINMAR REMOVABLE NUTS

Size	M5	M6	M8	M10	M12
Material					
ZINC PLATED STEEL					
GALVANISED					
A2 ST/LESS					
DRIVER SIZE	KM6R	KM6R	KM8R	KM10R	KM12R



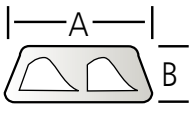
KINMAR REMOVABLE BOLTS

To order only - minimum order quantities apply



DIMENSIONS (mm)

Size	M5	M6	M8	M10	M12
Dimension					
A	12.1	12.1	16.1	20.1	24.2
B	5.6	5.6	7.3	9.1	10.5





SHEAR NUTS

A high security permanent nut fastening. The hexagonal part of the nut shears off at a predetermined torque (because only the cone part is threaded) leaving a tamper resistant cone.

No specialist tools required. Uses standard socket or spanner.

Manufactured in galvanised mild steel, bright zinc plated steel and stainless steel.



ZINC PLATED SHEAR NUTS

BOX QTY 100

SIZE	M6	M8	M10	M12	M16	M20	M24
STOCK							TO ORDER
SHEAR TORQUE	lb/ft 5 - 9	10 - 15	23 - 28	38 - 44	54 - 60	72 - 82	
	nm 7 - 14	14 - 20	31 - 38	52 - 60	74 - 82	100 - 113	
A/F (mm)	14	16	19	22	27	32	



GALVANISED SHEAR NUTS

BOX QTY 100

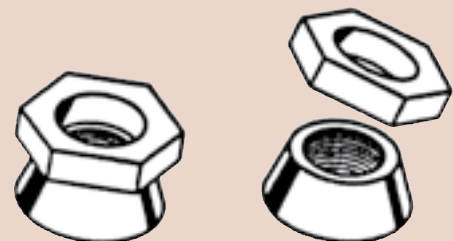
SIZE	M8	M10	M12	M16	M20	M24
STOCK						TO ORDER
SHEAR TORQUE	lb/ft 10 - 15	23 - 28	38 - 44	54 - 60	72 - 82	
	nm 14 - 20	31 - 38	52 - 60	74 - 82	100 - 113	
A/F (mm)	16	19	22	27	32	



A2 STAINLESS STEEL SHEAR NUTS

BOX QTY 100

SIZE	M6	M8	M10	M12	M16	M20	M24
STOCK							TO ORDER
SHEAR TORQUE	lb/ft 5 - 9	10 - 15	23 - 28	38 - 44	54 - 60	72 - 82	
	nm 7 - 14	14 - 20	31 - 38	52 - 60	74 - 82	100 - 113	
A/F (mm)	10	13	17	19	24	30	



BEFORE

AFTER

SHEAR BOLTS

A high security permanent bolt fastening. This bolt works on the same concept as a shear nut. The hexagon part of the bolt shears off leaving a plain tamper resistant head.

No specialist tools required. Uses standard socket or spanner.

Manufactured in galvanised mild steel, bright zinc plated steel and stainless steel.



BUTTON HEAD SHEAR BOLTS

Shear bolts made to order only. Delivery 2-3 weeks. Most common materials available. For further details please phone us with material and quantity required.



COUNTERSUNK HEAD SHEAR BOLTS

Shear bolts made to order only. Delivery 2-3 weeks. Most common materials available. For further details please phone us with material and quantity required.



BOX QTY 100

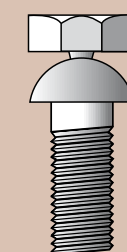
GALVANISED SADDLE BOLTS

Available in M8 x 40mm galvanised. Suitable for most types of pallisade fencing to go with M8 galvanised shear nuts. T-bolts available to order.

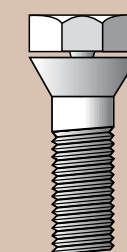


SHEAR BOLTS

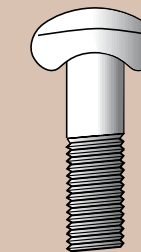
Button Head



Countersunk



SADDLE BOLTS





SCROLL NUTS™



SCR@LL nut

PATENTED PRODUCT



This high security nut is virtually impossible to remove without the unique matching driver. Due to its rounded design, there are no sharp angles to provide grip for normal hand tools. Suitable for medium to high torque applications.

Requires special matching driver socket. See page 27

Manufactured in A2 stainless steel. Available in other materials to order.



SCROLL NUTS

BOX QTY 50

THREADED SIZE	M6	M8	M10	M12	M16	M20
A2 STAINLESS STEEL						TO ORDER ONLY
SCROLL NUT DIMENSIONS (mm)	4.8 12.5mm	6 16mm	7.5 19mm	9.0 22mm	12 25mm	TBA
ACHIEVABLE TORQUE lb/ft	8	31	42	51	60	TBA
ACHIEVABLE TORQUE nm	10	40	55	70	80	TBA
TOOL SIZE	SC6	SC8	SC10	SC12	SC16	SC20



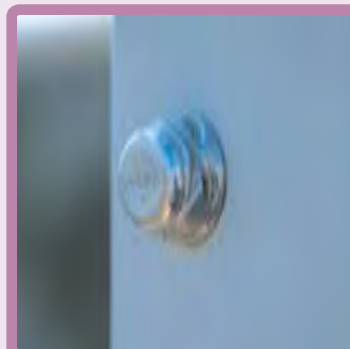
SCROLL DRIVER TOOL

All Scroll drivers are registered with a number and logged for added ownership security.



SCROLL BOLTS

Available to order, Scroll bolt heads have the same dimensions as the Scroll nuts. For further details please phone us with materials and quantities required.



4-HOLE NUTS



4 HOLE NUT

PATENT APPLIED FOR



This security nut is for low torque applications and is manufactured with a narrow circular groove above the small locating holes, rendering this nut tamper resistant. This aesthetically pleasing head design is often specified purely for its good looks, particularly on glass panels and stainless steel architecture.

Requires special matching driver socket. See page 27

Manufactured in A2 stainless steel. Available in other materials to order.



BOX QTY 50

4-HOLE NUTS

THREADED SIZE	M6	M8	M10	M12	M16	M20
MATERIAL A2 STAINLESS STEEL						
NUT DIMENSIONS	6mm 19mm	6mm 19mm	6mm 19mm	6mm 25mm	10mm 38mm	10mm 38mm
TOOL SIZE	FH1	FH1	FH1	FH2	FH3	FH3



4-HOLE SECURITY DRIVER TOOL

All 4-hole drivers are registered with a number and logged for added security.

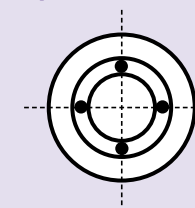


4-HOLE SECURITY BOLTS

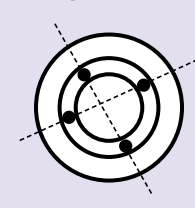
Available to order. For further details please phone us with materials and quantities required.



STANDARD
EQUAL SPACING



PERSONALISED
UNEQUAL SPACING.



This system allows for unequal spacing of the drive holes, therefore only the special driver tool will fit.

A personal drill plate is manufactured and owned by the customer, who can then order bolts and nuts with their personalised design.





SECURITY SLEEVE ANCHORS

This sleeve anchor is a through fixing, thus ensuring fast and simple installation. Ideal for many security applications in a wide variety of base materials. The unique Kinmar drive offers an accurate torque controlled security fixing which can be re-torqued if necessary. There is a permanent and removable version available. The 6-lobe pin anchors in A2 stainless steel are available in Button head and Countersunk offering a removable high torque anchor fixing.

Requires matching tooling. See page 27

Manufactured in bright zinc plated steel (CR3), A2 stainless steel and CL3 galvanised.



KINMAR SLEEVE ANCHOR ZINC, GALVANISED, STAINLESS STEEL BOX QTY 50

PERMANENT - ZINC				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M8 X 40	8	5	35	KM6P
M8 X 65	8	30	35	KM6P
M8 X 85	8	50	35	KM6P
M10 X 40	10	6	34	KM8P
M10 X 50	10	10	40	KM8P
M10 X 60	10	20	40	KM8P
M10 X 75	10	35	40	KM8P
M10 X 95	10	55	40	KM8P
M10 X 120	10	30	40	KM8P
M12 X 60	12	10	50	KM10P
M12 X 75	12	25	50	KM10P
M12 X 100	12	50	50	KM10P
M12 X 130	12	80	50	KM10P
M16 X 65	16	10	55	KM12P
M16 X 100	16	45	55	KM12P

REMOVABLE - ZINC				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M8 X 40	8	5	35	KM6R
M8 X 65	8	30	35	KM6R
M8 X 85	8	50	35	KM6R
M10 X 40	10	6	34	KM8R
M10 X 50	10	10	40	KM8R
M10 X 60	10	20	40	KM8R
M10 X 75	10	35	40	KM8R
M10 X 95	12	55	40	KM8R
M10 X 120	10	80	40	KM8R
M12 X 60	12	10	50	KM10R
M12 X 75	12	25	50	KM10R
M12 X 100	12	50	50	KM10R
M12 X 130	12	80	50	KM10R
M16 X 65	16	10	55	KM12R
M16 X 100	16	45	55	KM12R

PERMANENT - GALVANISED				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M10 X 40	10	6	34	KM8P
M10 X 50	10	10	40	KM8P
M10 X 60	10	20	40	KM8P
M10 X 75	10	35	40	KM8P
M10 X 95	10	55	40	KM8P
M12 X 60	12	10	50	KM10P
M12 X 75	12	25	50	KM10P
M12 X 100	12	50	50	KM10P
M12 X 130	12	80	50	KM10P

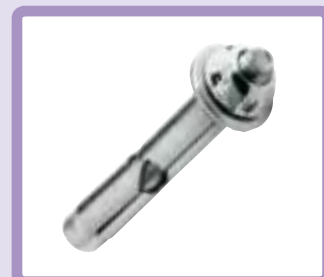
REMOVABLE - GALVANISED				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M8 X 40	8	5	35	KM6R
M8 X 65	8	30	35	KM6R
M8 X 85	8	50	35	KM6R
M10 X 40	10	6	34	KM8R
M10 X 50	10	10	40	KM8R
M10 X 60	10	20	40	KM8R
M10 X 75	10	35	40	KM8R
M10 X 95	10	55	40	KM8R
M12 X 60	12	10	50	KM10R
M12 X 75	12	25	50	KM10R
M12 X 100	12	50	50	KM10R
M12 X 130	12	80	50	KM10R

PERMANENT - STAINLESS				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M10 X 40	10	6	34	KM8P
M10 X 50	10	10	40	KM8P
M10 X 60	10	20	40	KM8P
M10 X 75	10	35	40	KM8P
M10 X 95	10	55	40	KM8P

REMOVABLE - STAINLESS				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M8 X 40	8	5	35	KM6R
M8 X 65	8	30	35	KM6R
M10 X 40	10	6	34	KM8R
M10 X 50	10	10	40	KM8R
M10 X 60	10	20	40	KM8R
M10 X 75	10	35	40	KM8R
M10 X 95	10	55	40	KM8R



Kinmar Permanent Zinc Plated Sleeve Anchor



Kinmar Removable Zinc Plated Sleeve Anchor

SECURITY SLEEVE ANCHORS (CONT.)

RESYTORK A2 STAINLESS STEEL SLEEVE ANCHORS

BOX QTY 50

BUTTON HEAD				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M8 X 45	8	10	37	T30
M10 X 55	10	10	45	T40
M10 X 75	10	25	45	T40
M12 X 65	12	10	52	T45
M12 X 80	12	25	52	T45

COUNTERSUNK				
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM	MINIMUM HOLE DEPTH* MM	DRIVER SIZE
M8 X 50	8	10	37	T30
M10 X 55	10	10	45	T40
M10 X 80	10	25	45	T40
M12 X 60	12	10	52	T45
M12 X 80	12	25	52	T45

* MINIMUM HOLE DEPTH QUOTED IS FOR MAXIMUM FIXTURE THICKNESS. FOR THINNER FIXTURES INCREASE THE HOLE DEPTH ACCORDINGLY.

SPECIAL SIZES/HEAD STYLES AVAILABLE TO ORDER. PLEASE PHONE FOR AVAILABILITY.

FASTDRIVE™

Fastdrives are the hammer-in security solution for concrete. With 100% contact, the Fastdrive creates compressive strength which provides superior holding power.

No Specialist Tools required. Uses standard hammer.

Manufactured in Galvanised steel.



FASTDRIVE

GALVANISED BOX QTY 100

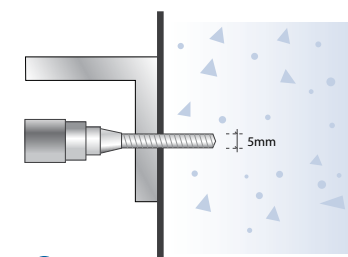
DRILL SIZE MM	TOTAL LENGTH MM	MINIMUM EMBEDMENT MM	MAXIMUM FIXING THICKNESS MM	CLEARANCE HOLE SIZE MM
5	30	25	5	6.5
5	40	25	15	6.5
5	50	30	20	6.5
5	65	30	35	6.5
5	75	30	45	6.5
5	100	30	70	6.5

TECHNICAL DATA

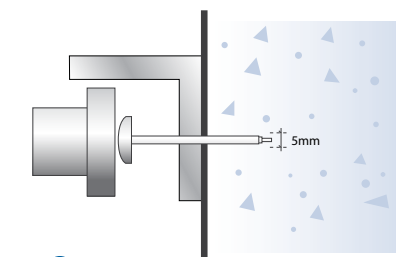
30MPA CONCRETE

EMBEDMENT DEPTH MM	ULTIMATE TENSION (Kn)	ULTIMATE SHEAR (Kn)
20	5.4	8.2
25	7.4	13.8
32	10.6	14.9

INSTALLATION INSTRUCTIONS



1 Drill a 5mm diameter hole to the recommended minimum depth and clean hole.



2 Insert Fastdrive™ through material to be fastened and drive with a hammer until head is flush.



Button Head Resytork A2 Stainless Steel Sleeve Anchors



Countersunk Resytork A2 Stainless Steel Sleeve Anchors

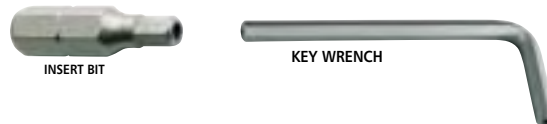


SECURITY GRILLE ANCHORS

This heavy duty shield anchor is designed to save time and money when fixing security grilles. Available as a button head in a permanent (drill out) or removable (pin hex) version.

Requires matching tooling. See page 27

Manufactured in zinc plated passivated steel.



OPTION 1

PIN HEX SECURITY GRILLE ANCHOR



BOX QTY 50

This heavy duty shield anchor is complete with 10.9 grade pin hex button head. This enables this fixing to be removed using the correct security installation tool.

SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM*	MINIMUM HOLE DEPTH MM**	RECOMMENDED TIGHTENING TORQUE N.M.	SAFE STATIC LOADS KN	DRIVER SIZE
M8 X 65	14	25	50	15	TENSION 4.8 SHEAR 4.4	H50
M10 X 75	16	25	60	27	6.2 6.1	H60

* MAX WITHOUT WASHER

** MINIMUM HOLE DEPTH QUOTED IS FOR MAXIMUM FIXTURE THICKNESS. FOR THINNER FIXTURES INCREASE THE HOLE DEPTH ACCORDINGLY.



OPTION 2

DRILL OUT SECURITY GRILLE ANCHOR



BOX QTY 50

This innovative time saver was primarily designed for fixing security grilles. This system saves the installer from welding bolt heads or rounding them off for security. All you have to do is fix the fastener and drill out the standard 8.8 grade socket aperture using a HSS drill bit to leave a circle using drill size as shown.

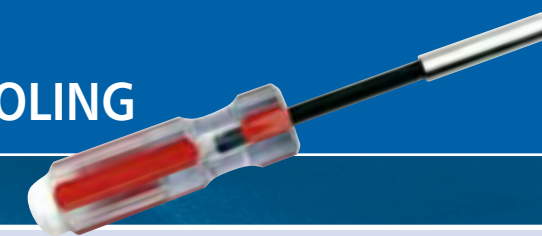
SIZE	DRILL HOLE DIAMETER MM	MAXIMUM FIXTURE THICKNESS MM*	MINIMUM HOLE DEPTH MM**	RECOMMENDED TIGHTENING TORQUE N.M.	SAFE STATIC LOADS KN	DRIVER SIZE	HSS DRILL OUT SIZE MM
M8 X 65	14	25	50	15	TENSION 4.8 SHEAR 4.4	STD 5mm HEX BIT	6.5
M10 X 75	16	25	60	27	6.2 6.1	STD 6mm HEX BIT	7.5

* MAX WITHOUT WASHER

** MINIMUM HOLE DEPTH QUOTED IS FOR MAXIMUM FIXTURE THICKNESS. FOR THINNER FIXTURES INCREASE THE HOLE DEPTH ACCORDINGLY.



- Simplicity saves time and money.
- Apart from grilles and bars it has a wide range of uses such as; playground equipment, security lighting, CCTV mountings, road signs, street furniture, shutter doors, etc.



STANDARD MAGNETIC SCREWDRIVER

With storage area in handle and 1/4" hex drive for interchangeable bits.

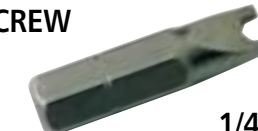


RATCHET MAGNETIC SCREWDRIVER

Reversible silent ratchet magnetic screwdriver. Storage area in handle and 1/4" hex drive for interchangeable bits.



2 - HOLE SCREW



1/4" Hex Insert Bit



One piece screwdriver to order only



PIN HEX SCREWS



1/4" Hex Insert Bit



Pin hex 'L' key wrench



6-LOBE PIN SCREWS



1/4" Hex Insert Bit

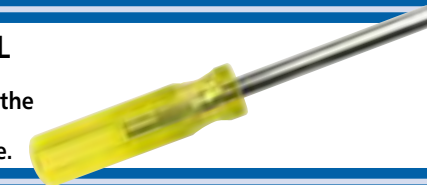


6-Lobe pin 'L' key wrench



CLUTCH HEAD REMOVAL TOOL

For use with Clutch Head screws only. The two tungsten carbide tips dig into the sloping areas of the Clutch Head and enable removal when applying pressure.



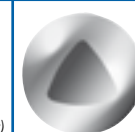
For removal of:

No. 6 gauge	RT41
No. 8 & 10 gauge	RT51
No. 14 gauge	RT61



TORXplus®

(Registered for controlled availability)

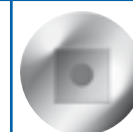


TRI-LOBE

TO SUIT 10 GAUGE
1/4" Hex Insert Bit



TO SUIT M10
8mm Hex Insert Bit



QUADTECH

1/4" Hex Insert Bit



OVAL PAN HEAD

One piece driver to order only



Insert bit



KINMAR PERMANENT

1/2" drive socket



KINMAR REMOVABLE

1/2" drive socket



4 - HOLE T-BAR DRIVER



SCROLL NUT DRIVER SOCKET



SOCKET ADAPTORS

1/4" Socket Set Adaptor
(Will drive 1/4" Insert Bit)



3/8" to 1/4"
Drive Adaptor



1/2" to 3/8"
Drive Adaptor



Please note: Security tools are not guaranteed against breakage, misuse, over-torque or wear. Always ensure correct alignment and care when fastening. Observe safety.

**SPECIALS**

Sentinel Systems are able to offer a made to measure range of Security Fasteners. Our expert sales team are able to assist with every type of security application from design stage to final installation, including on-site testing.

DESIGN**MANUFACTURE****ON-SITE TESTING****INSTALLATION****SECURITY****SAFETY**



DIMENSIONS

Guide sizes only. For accurate current stock sizes, please contact sales team.
Samples available for approval upon request.

SCREW TYPE 2-HOLE		SELF TAPPING SCREW GAUGE					METRIC MACHINE SCREWS					
		No. 4	No. 6	No. 8	No. 10	No.12	No. 14					
		2.9mm	3.5mm	4.2mm	4.8mm	5.5mm	6.3mm	M3	M4	M5	M6	M8
PAN HEAD	PH	5.4	6.7	8.0	9.2	10.5	12.2	5.8	7.8	9.8	11.8	
	PH	1.6	2.0	2.3	2.7	3.2	3.5	1.8	2.4	2.9	3.5	
COUNTERSUNK HEAD	CSK	5.5	6.7	7.9	9.0	10.3	12.2	5.5	7.4	9.0	10.8	
	CSK	2.0	2.5	2.8	3.6	3.7	4.6	1.6	2.4	2.9	3.5	

SCREW TYPE PIN HEX		SELF TAPPING SCREW GAUGE					METRIC MACHINE SCREWS					
		No. 6	No. 8	No. 10	No.12	No. 14						
		3.5mm	4.2mm	4.8mm	5.5mm	6.3mm	M3	M4	M5	M6	M8	M10
BUTTON HEAD	BH	6.7	7.4	9.3	9.9	11.0	5.5	7.4	9.3	10.3	13.7	17.4
	BH	2.5	2.1	2.6	2.9	3.4	1.7	2.1	2.6	3.2	4.4	5.5
COUNTERSUNK HEAD	CSK	6.6	7.9	9.3	11.7	12.8	5.5	7.8	9.8	11.8	15.7	19.7
	CSK	2.1	2.5	3.0	4.8	5.2	1.7	2.3	2.8	3.3	5.2	6.3

SCREW TYPE 6-LOBE PIN		SELF TAPPING SCREW GAUGE					METRIC MACHINE SCREWS					
		No. 4	No. 6	No. 8	No. 10	No.12	No. 14					
		2.9mm	3.5mm	4.2mm	4.8mm	5.5mm	6.3mm	M3	M4	M5	M6	M8
BUTTON HEAD	BH		6.7	7.4	9.3	10.0	11.0	5.5	7.4	9.3	10.3	13.7
	BH		2.5	2.1	2.6	3.1	3.4	1.7	2.1	2.6	3.2	4.5
COUNTERSUNK HEAD	CSK	4.8	6.6	7.9	9.3	10.0	13.0	5.9	7.8	9.8	11.8	14.0
	CSK	1.8	2.1	2.5	3.0	4.0	4.8	2.0	2.3	2.8	3.3	4.7

Please note: The guide only shows sizes without min. and max. tolerances. Sentinel Systems reserve the right to change/alter sizes without notice.

Recommended Drill Sizes for AB
Type Self Tapping Screws into Metal

Screw Size		Plate Gauge	Drilled or Punched: Hole Diameter	
Gauge No.	Metric Equiv.	Metal Thickness	Steel,Stainless, Copper,Brass,Nickel Hole Dia.	Aluminium Hole Dia.
#2	2.2	0.46	1.63	
		0.61	1.70	1.63
		0.76	1.78	1.63
		1.22	1.85	1.70
		1.52	1.93	1.78
#4	2.9	0.46	2.18	
		0.61	2.26	
		0.76	2.39	
		1.22	2.44	2.18
		1.52	2.54	2.26
#6	3.5	0.46	2.64	
		0.76	2.69	
		0.91	2.79	
		1.22	2.82	2.64
		1.52	2.95	2.69
#8	4.2	0.91	3.18	3.05
		1.22	3.25	3.25
		1.52	3.45	3.45
		1.91	3.56	3.56
		2.67	3.81	3.73
#10	4.8	0.76	3.66	
		0.91	3.73	
		1.52	3.86	3.66
		1.91	3.99	
		2.67	4.09	3.73
#12	5.5	0.91	4.22	
		1.22	4.32	4.09
		1.52	4.50	4.22
		1.91	4.62	4.39
		2.67	4.70	4.57
#14	6.3	0.91	4.93	
		1.22	5.05	5.05
		1.52	5.18	5.11
		2.67	5.31	5.18
		3.43	5.79	5.31

COMMON THREAD SPECIFICATIONS

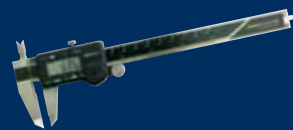
METRIC

150 Metric Coarse				150 Metric Fine	
Nom. Dia.	Major Dia.	Dia. Inch	Thread Pitch	Thread Pitch	
M1.6	1.60	0.0630	0.35		
M1.8	1.80	0.0709	0.35		
M2	2.00	0.0787	0.40		
M2.2	2.20	0.0866	0.45		
M2.5	2.50	0.0984	0.45		
M3	3.00	0.1181	0.50		
M3.5	3.50	0.1378	0.60		
M4	4.00	0.1575	0.70		
M4.5	4.50	0.1772	0.75		
M5	5.00	0.1969	0.80		
M6	6.00	0.2362	1.00		
M8	8.00	0.3150	1.25	1.00	
M10	10.00	0.3937	1.50	1.25	
M12	12.00	0.4724	1.75	1.50	
M14	14.00	0.5512	2.00	1.50	
M16	16.00	0.6299	2.00	1.50	
M18	18.00	0.7087	2.50	1.50	
M20	20.00	0.7874	2.50	1.50	
M24	24.00	0.9449	3.00	2.00	

IMPERIAL

Unified Inch Products					B.S. Inch Products			
Nom. Dia.	Major Dia.		T.P.I.		Nom. Dia.	Major Dia.		T.P.I.
	mm	Inch	UNC	UNF		mm	Inch	
#0	1.52	0.060		80				
#1	1.85	0.073	64	72				
#2	2.18	0.086	56	64				
#3	2.51	0.099	48	56				
#4	2.84	0.112	40	48				
#5	3.18	0.125	40	44	1/8			40
#6	3.51	0.138	32	40				
#8	4.17	0.164	32	36				
#10	4.83	0.190	24	32	3/16			24
#12	5.49	0.216	24	28				
(#14) 1/4	6.35	0.250	20	28	1/4			20
5/16	7.95	0.313	18	24	5/16			18
3/8	9.53	0.375	16	24	3/8			16
7/16	11.13	0.438	14	20	7/16			14
1/2	12.70	0.500	13	20	1/2			12
9/16	14.30	0.563	12	18	9/16			12
5/8	15.88	0.625	11	18	5/8			11
3/4	19.05	0.750	10	16	3/4			10
7/8	22.23	0.875	9	14	7/8			9
1	25.40	1.000	8	12	1			8

Every effort has been made to ensure the accuracy of information provided in this catalogue. Sentinel Systems cannot warrant the information however, expressly or implied, and any liability arising from it is expressly excluded. Customers must satisfy themselves as to the suitability of products and the technical information relating to them, and it is recommended that you conduct your own tests to establish suitability. This does not effect your statutory rights.



FASTENER MATERIAL SELECTION

Due to the wide variety of material used in fastener manufacture the following should be considered to aid selection.

In previous times it was considered necessary for periodical repair of mechanical and electrical components. Today greater consideration is being given to the reduction of maintenance. In cases where a fastener must be removed, corrosion resistance is particularly important to avoid corrosion hindering or preventing fastener removal.

The cost of dealing with corroded fasteners is more expensive than using corrosion resistant fasteners originally. This is especially so when other costs resulting from fastener failure, such as lost production or down time, are taken into consideration.

A low cost option for designers considering corrosion resistance are plated fasteners. These are usually manufactured from mild steel and given a corrosion resistant coating of gal. or zinc. Whilst these coatings may be adequate in non severe corrosive conditions, many designers consider the additional cost of an inherently corrosion resistant material, such as stainless steel, to be an inexpensive insurance against possible failure or discolouration.

In considering the cost factor in using stainless steel fasteners, it is interesting to note that the overall cost of the finished product will generally be affected only by an insignificant amount if we choose stainless.

Where a different colour or surface finish is required for aesthetic appeal this requirement can usually be accommodated in stainless steel.

The designer should consider a fastener as an integral part of the design because a joint is normally under stress and possibly where a failure is likely to occur. Therefore designers should start with the best fastener and design the joint around it.

STAINLESS STEELS

Stainless steel is a family of iron-base alloy steel containing 10.5% or more chromium, and other alloys such as nickel, manganese, molybdenum, sulphur, etc.

The chromium takes care of corrosion and heat resistance. Corrosion resistance is due to the presence of a naturally occurring chromium-rich oxide film on the steel's surface. This inert film adheres tightly to the metal and is rapidly self repairing in the presence of oxygen or surface damage.

The other alloys in stainless steel also enhance corrosion resistance and impart certain characteristics with respect to strength and fabricability.

Stainless steel as used in fastener manufacture is normally identified by the following three terms on the basis of their metallurgical structure. Under each classification the material tends to have similar characteristics with regards corrosion resistance, hardenability and fabricability.

Austenitic - These stainless steels are chromium-nickel and chromium-nickel-manganese compositions. They are hardenable by cold working and are non-magnetic in the annealed condition. Typical of this group is Type 304 or A2 which contains at least 18% chromium and 8% nickel, hence its 18-8 name.

Ferritic - These stainless steels are straight chromium steels that are not hardenable by heat treatment and slightly hardenable by cold working. All this type is magnetic. Type 430 is a typical example.

Martensitic - These stainless steels are straight chromium that can be hardened by heat treatment only. All this type is magnetic and Type 410 is a typical example.

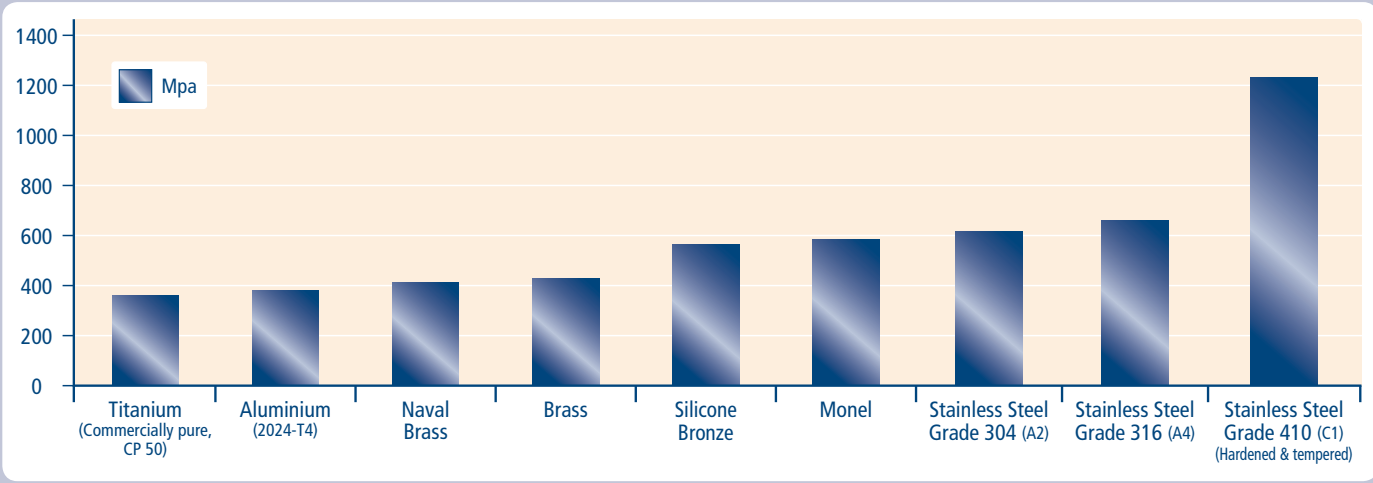
STAINLESS STEEL - THE RIGHT CHOICE

To aid the designer to choose the correct grade of stainless steel in a particular application, the following should be considered.

- All the austenitic stainless steels have excellent corrosion resistance. Type 304 (A2) is the most widely used and is virtually immune to foodstuffs, sterilising solutions, most organic chemicals and many inorganic chemicals.
- If an application demands higher corrosion resistance, Type 316 (A4) is the next choice. This type resists corrosion in environments containing chlorides or sulphurous acid compounds. It can also be used in phosphoric and acetic acids that can cause corrosion to Type 304.
- The relative resistance to corrosion among the common stainless steel fastener materials is: Austenitic (316) superior, (304) excellent, Ferritic (430) good, Martensitic (410) fair.

When these types have been considered on the basis of their corrosion-resistant properties the next concern will be their tensile strength or its capacity to withstand load. See the following chart.

TENSILE STRENGTH OF NINE FASTENER ALLOYS



STAINLESS STEEL FASTENERS - INSTALLATION PROCEDURES

For a fastener to be effective it will be obvious to the designer the fastener must be installed correctly. Incorrect installation can lead to difficulty such as seizing and galling or alternatively the fastener may work loose with vibration.

Reasonable care should be taken in handling fasteners to ensure threads are kept clean and free of dirt.

It is also critical that the fastener is installed to the correct torque. Trouble occurs in this area when fastener installation is attempted without correct torque measuring tools. There are some guidelines in this situation.

- 1) Tighten the fastener finger tight.
- 2) Tighten the fastener one additional turn (360 degrees).

Note: This specification may be too high for 410 type hardened stainless steel and primarily applies to Austenitic stainless steel fasteners. Following is a torque guide table.

TORQUE GUIDE (NM)

BOLT SIZE	GRADE 304 (A2)	GRADE 316 (A4)	BOLT SIZE	GRADE 304 (A2)	GRADE 316 (A4)
1/4" - 20	8.5	9	5/8" - 18	141	147
1/4" - 28	11	11	3/4" - 10	173	179
5/16" - 18	15	16	3/4" - 16	168	176
5/16" - 24	16	17	7/8" - 9	263	275
3/8" - 16	27	28	7/8" - 14	262	273
3/8" - 24	29	31	1" - 8	389	406
7/16" - 14	42	44	1" - 14	351	367
7/16" - 20	45	47	1 1/8" - 7	560	586
1/2" - 13	58	61	1 1/8" - 12	529	553
1/2" - 20	61	64	1 1/4" - 7	709	740
9/16" - 12	77	81	1 1/4" - 12	651	683
9/16" - 18	85	89	1 1/2" - 6	1204	1261
5/8" - 11	125	131	1 1/2" - 12	953	993

It is recommended that fasteners be tightened with a torque wrench and that a suitable form of thread lubrication be used.

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CORROSION - A CLOSER LOOK

The best way to combat the destructive character of corrosion is by prevention. One common practice in industry is to use a fastener material that is more corrosion resistant than the joining materials. The reason being, the fastener is the key to joint integrity and corrosion affected fasteners may cause a major failure, whereas the same amount of corrosive attack elsewhere may not cause a problem.

There are several types of corrosion that can occur in fasteners. The most prevalent form is called galvanic corrosion.

Galvanic corrosion can occur between dissimilar metals in the presence of an electrolyte which could be no more than polluted water. When the two metals are in contact, in effect, a battery is created. Current flows and one of the metals corrodes.

In considering galvanic corrosion it is important to know which of the two metals is more anodic (less noble). This metal will have corrosion accelerated. See following table.

GALVANIC SERIES OF METALS AND ALLOYS

- Magnesium
- Magnesium Alloys
- Zinc

- Aluminum 1100
- Cadmium
- Aluminum 2024-T4

- Steel
- Iron
- Cast Iron

- Lead-Tin Solders
- Lead
- Tin

- Brasses
- Copper
- Bronzes
- Copper-Nickel Alloys

- Stainless Type 430 (Passive)
- Stainless Type 304 (Passive)
- Stainless Type 316 (Passive)

- Silver

- Graphite
- Gold
- Platinum

Source: ITT Harper



**ANODIC
MORE LIKELY
TO BE ATTACKED**

**CATHODIC
MORE NOBLE**

If the joint consists of metals from one group in the galvanic series no serious galvanic action will result under normal circumstances. However, if the joint consists of metals further apart in the series the chance of corrosion is greater.

One other consideration is the relative surface area of the two differing metals. For example, if we couple stainless steel sheets with small steel fasteners the fasteners will corrode rapidly in an electrolyte. If we couple steel plates with stainless steel rivets however, no major corrosion will occur. Therefore the greater the relative area of the anodic metal (less noble) the less severe the corrosion.

The general rule therefore is to use the more noble metal for the part with the smaller surface area. This gives an excellent case for using stainless steel fasteners for joining metals that are less corrosion resistant.

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Make it harder for the intruder!



Placing fasteners in tight corners makes access for impulse tampering harder.



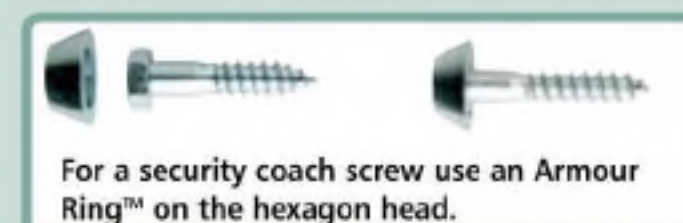
Placing fasteners in a recess further raises the level of security.



Mixing of driver types makes it much harder for intrusion.



By using our rubber plugs you can seal the fastener recess from dirt and also hide the driver type. To order only.



For a security coach screw use an Armour Ring™ on the hexagon head.



A. Can't find the size of screw you need?



B. How about using a length of studding with a security nut?



C. Can you get it in a standard hex head? if so, you could use an Armour Ring™.



Educate the end user and increase security awareness....
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- ELECTRONICS

*"Tell them about
security fixings"*



**All our PROLOK fasteners are covered
by our 'Peace of Mind' guarantee**

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