lisi AUTOMOTIVE

For further information on the type of plating and the resulting colour, please open the flap.

Our partner:

PRODUCTION PLANTS:

GERMANY
1. **Heidelberg**
2. **Mellrichstadt**
3. **Vöhrenbach**

CANADA
4. **Mississauga**

CHINA
5. **Beijing**

FRANCE
6. **Delle**
7. **Dasle**
8. **Melisey**
9. **Monistrol**
10. **Puiseux**
11. **Saint-Florent-sur-Cher**
12. **Scionzier-Marignier**
13. **Thiant**

CZECH REPUBLIC
14. **Cejc**
15. **Korycany**

SUPPORT ACTIVITIES:

FRANCE
16. **Grandvillars**
    Material preparation
    Surface treatment
    Tooling
17. **Lure**
    Tooling

INDUSTRY CATALOGUE

LISI AUTOMOTIVE

lisi AUTOMOTIVE

INDUSTRY CATALOGUE

Fasteners and
safety components

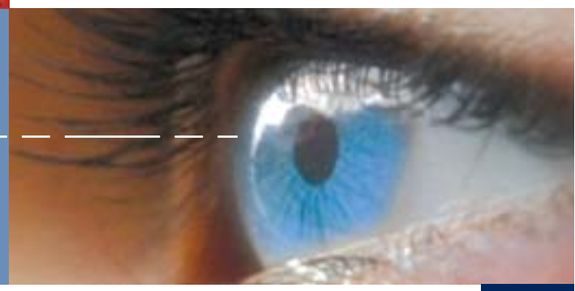
FORMER
KKP
MECANO
RAPID

General Contents

This catalogue describes the standard products of **LISI AUTOMOTIVE**.

Our sales team is at your service to register your specific needs and to propose suitable solutions.

For any further information. please do not hesitate to contact us at the following address: **sales@lisi-automotive.com**.



AUTOMOTIVE

LINK SOLUTIONS:

A manufacturer with a full product range

LISI AUTOMOTIVE is an expert in fasteners and mechanical assembly components for the automotive industry.

The group's mechanical assembly solutions are based on the most comprehensive product range on the market, extending from standard parts to safety-critical components. These link solutions contribute to achieving vital reductions in the costs of assembly and after-sales service.

Through its strategy of continuous innovation, LISI AUTOMOTIVE plays an active part in improving vehicle quality, safety and comfort and in reducing the nuisances associated with automobiles.

A UNIQUE PARTNER

An expert open to co-operation and partnership

With its firm knowledge of assembly in the automotive industry, LISI AUTOMOTIVE can provide you with the competence of a specialist and the independent advice of an outside expert.

- integration in the customer's project team,
- optimisation of products and methods,
- audit of assembly lines.

A responsive and reliable designer

- design offices employing more than 100 people,
- unique digital simulation and test laboratory,
- process of development in partnership with the customer,
- rapid prototyping.

An integrated manufacturer, for better control of costs, lead times and quality

- integration of cold heading, stamping, plastic injection, precision machining and hot forging,
- high production capacity in factories specialising in particular product families and production processes,
- high investment capacity.

A tier 1 and 2 supplier

LISI AUTOMOTIVE is a reliable partner recognised by the major global automobile manufacturers. It delivers directly AUDI, BMW, DAIMLERCHRYSLER, GM, PSA, RENAULT and VW – and to the major globally active automotive component manufacturers such as AUTOLIV, BOSCH, FAURECIA, KOYO, TI Group, TRW or SCHNEIDER in the field of electrical engineering.

lisi AUTOMOTIVE

INTEGRATION OF TECHNOLOGIES: COMBINING INNOVATION AND QUALITY

Complementary techniques for an optimal solution

- cold heading,
- stamping,
- plastic injection,
- hot forging,
- precision machining,
- assembly,
- 100% inspection of operational requirements.

Mastery of these seven techniques enables us to conceive and implement, on an industrial scale, the solution to any mechanical fastening problem and to satisfy the related technical, economic and environmental requirements.
LISI AUTOMOTIVE also possesses know-how and significant resources in complementary technologies, such as wire drawing, heat treatment, surface treatment and tooling. Substantial investment is being constantly made in these technologies, in order to attain LISI AUTOMOTIVE's aims of growth, innovation and cost control.

A tool at the service of the particular function

The use of these different techniques enables us to create varied and innovative solutions. The following principal functions have been tested, and their combination makes it possible to provide the market rapidly with new multi-functional solutions that meet specific requirements:

- pre-stressed assembly,
- rapid assembly,
- sealing, hydraulic connections,
- electrical connections,
- guiding,
- force transmission,
- energy absorption, force control.

Innovation in global service

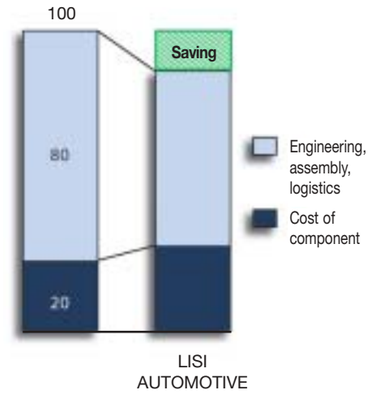
LISI AUTOMOTIVE offers a global service, including:

- productivity audit of an assembly line: LISI AUTOMOTIVE provides recommendations on the fastening systems and their installation, leading to direct improvements in assembly line productivity,
- unique training courses in the tightening, functional analysis and surface treatment of fastening components,
- functional expertise: LISI AUTOMOTIVE can simulate the operating conditions of a fastener in the lab and scientifically demonstrate the causes of a problem,
- design and delivery of specific assembly machines,
- customised logistic services.

By taking into account all parameters of the overall cost (complete engineering, automatic installation, rapid assembly, reduced need for last-minute corrections, pre-adjusted multifunctional subassemblies, optimised logistics etc.), LISI AUTOMOTIVE is able to propose significant savings compared to the cost of the product alone.

The manufacturer's added value: availability, proximity and permanent progress

- a totally integrated offer, from conception to production,
- an industrial tool, organised into production units specialised according to their technology,
- international presence,



A UNIQUE PARTNER

2005

Presentation of the company

6 Delle Headquarter
FRANCE

General management, sales, purchasing, accountancy, human resources, quality, IT system, research and development, logistic

1 Heidelberg
GERMANY

U nuts, clips, snap-on fasteners, panel fasteners, rivets, sink fasteners

2 Mellrichstadt
GERMANY

Clips, rivets, tube attachments, knobs, cable channels, plastic components

3 Vöhrenbach
GERMANY

Flange nuts, castle nuts, hexagonal nuts, circular nuts, domed nuts, wheel nuts

4 Mississauga
CANADA

Guiding rods, torsion bars

5 Beijing
CHINA

Plastic clips cage screws, assembled components

6 Delle
FRANCE

Screws for robotised assembly, engine screws, captive washer screws, safety pieces, electrical connection

7 Dasle
FRANCE

Weld nuts, nuts with collars, special nuts, plugs, spacers, valve spring plates

8 Melisey
FRANCE

Guiding rods, hydraulic fittings, tube nuts (male and female threads), torsion bars, special components cold forged then machined

9 Monistrol
FRANCE

Motor screws for cars and trucks, screws with collar, screws and security shafts for road holding

10 Puiseux
FRANCE

Clips, spring nuts, tapped chimney nuts, panel fasteners, cage screws, cage nuts, rivets, plugs & caps, tube attachments

11 Saint-Florent-sur-Cher
FRANCE

Motor screws for cars and trucks, screws with collar, wheel screws, screws and security shafts for road holding, ball pins

12 Scionzier-Marignier
FRANCE

Compressor shafts, injector holder bodies, reducters, engine shafts, imput rods, master cylinder pistons

13 Thiant
FRANCE

Nylon ring or all metal self-locking nuts, captive washer nuts (sems), flange head nuts, PRESSFIX nuts, hexagonal and round weld nuts

14-15 Cejc - Korycany
CZECH REPUBLIC

Guiding rods, special components cold forged then machined

SUPPORT ACTIVITIES

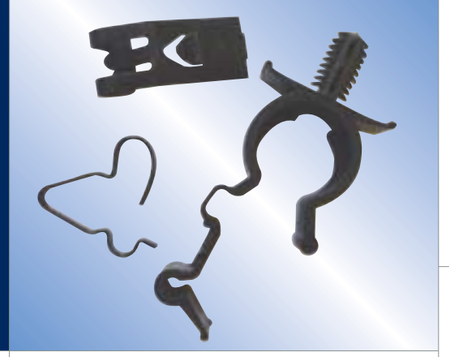
16 Grandvillars
FRANCE

Treatment of wire for cold forging Surface treatment Tooling

17 Lure
FRANCE

Tooling for cold forging and tooling for thread rolling

Standard products

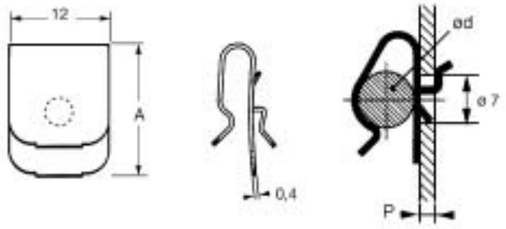


FASTENERS FOR TUBES, RODS, CABLES AND LAYOUTS

Cable and tube fasteners for insertion in mid-panel

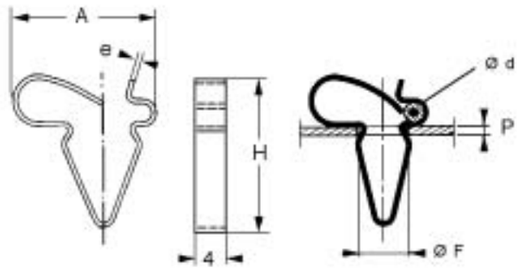
Recommended use:
This type of fastener is installed simply by clipping it into a round or square punched hole and provides an elastic fixing for wires, cables, tubes and piping.

TYPE 1



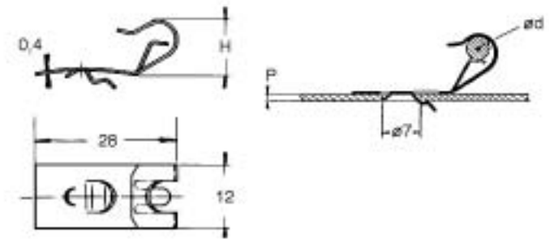
Ø d	P = PANEL THICKNESS	REFERENCE	A
4 to 6	0.4 to 0.7	CS 43031 ZH	21.2
4 to 6	0.8 to 1.2	CS 43032 ZE	21.2
4 to 6	1.3 to 1.7	CS 43033 ZE	21.2
7 to 9	0.4 to 0.7	CS 43041 ▲	19.5
7 to 9	0.8 to 1.2	CS 43042 ▲	19.5
7 to 9	1.3 to 1.7	CS 43043 ▲	19.5
7 to 9	1.8 to 2.2	CS 43044 ▲	19.5
10 to 12	0.4 to 0.7	CS 43051 ZB	18.4
10 to 12	0.8 to 1.2	CS 43052 ▲	18.4
10 to 12	1.3 to 1.7	CS 43053 ▲	18.4
10 to 12	1.8 to 2.2	CS 43054 ▲	18.4
5 to 7	0.8 to 1.2	CS 43252 ▲	21.2
5 to 7	1.3 to 1.7	CS 43253 ZB	21.2
5 to 7	1.8 to 2.2	CS 43254 ▲	21.2

TYPE 2



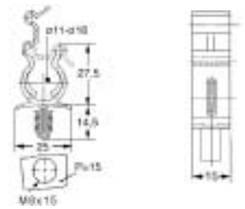
Ø d	P = PANEL THICKNESS	REFERENCE	A	H	e	Ø F
3	0.8 to 1.4	C 2742 ▲	20	21.2	0.6	7.3
	1.5 to 2					7.6
4.7 to 5	0.8 to 1.4	C 4732 ▲	21	21.2	0.6	7.3
	1.5 to 2					7.6
8 to 8.5	0.8 to 1.3	C 4733 ZB	22	24	0.8	7.3
	1.4 to 2					7.6
11 to 11.5	0.8 to 1.3	C 4734 ▲	30	28	1	7.3
	1.4 to 2					7.6

TYPE 3

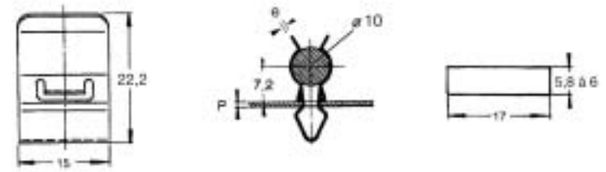


Ø d	P = PANEL THICKNESS	REFERENCE	H
3 to 4	0.8 to 1.2	C 37241 ▲	10.6
3 to 4	1.3 to 1.7	C 37242A ZN	10.6
4 to 6	0.8 to 1.2	C 46301 ▲	10
4 to 6	1.3 to 1.7	C 46302 ▲	10

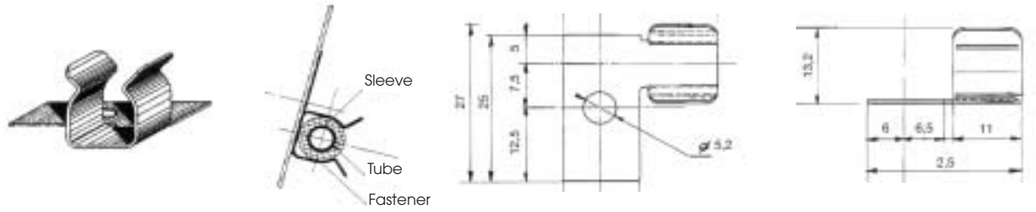
TYPE 4: P 5241



TYPE 5: C 2741 DC



TYPE 6: C 4644 PV



	FASTENER
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

Recommended assembly method:
1. Position the fastener on the panel.
2. Insert the fastener in the substrate with the aid of a simple tool.
3. Once in position, the fastener is self-retaining.

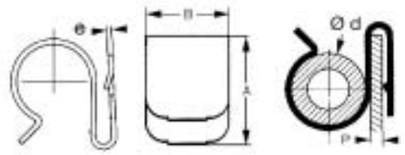
FASTENERS FOR TUBES, RODS, CABLES AND LAYOUTS

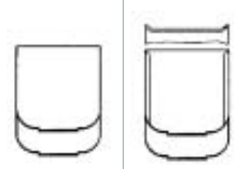
Cable and tube fasteners for fixing to panel edges

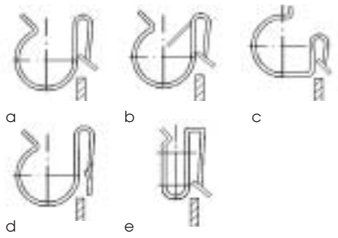
Recommended use:

This type of fastener holds cables and tubes and is designed to clamp the edge of a panel or cornice. The fastener is retained in position by the teeth or tabs of the clip, depending on the model.

TYPE 1 **TYPE 2** **SHAPES**



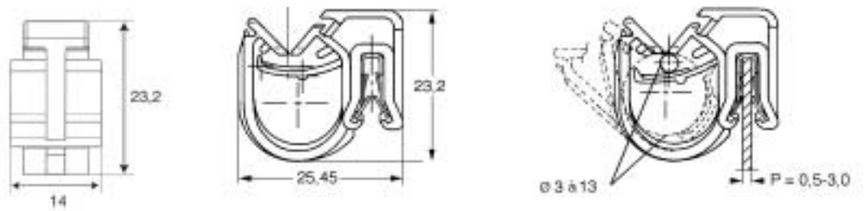




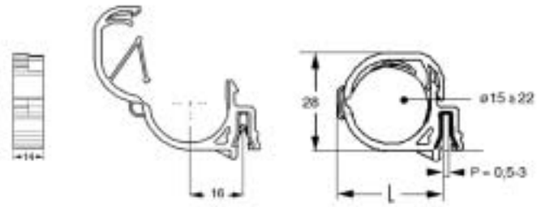
Ø d	P = PANEL THICKNESS	REFERENCE	A	B	e	TYPE
10 to 14	0.7 to 2.1	C 8483 DC	20	14	0.6	1b
22 to 26	0.8 to 1.2	C 362808 DA	27	14	0.6	1c
12	0.8 to 1.2	C 36212 ▲	11	14	0.6	1d
5	0.8 to 2	C 3629 DC	11.6	10	0.4	1d
2 to 2.5 x 2	0.8 to 2.2	SCO 7245 NQJ	8.5	10	0.3	1e
7	1.2 to 2.2	C 8254 SD	9	12	0.5	2a
2 to 2.5 x 2	2 to 3	SCO 6936 ZB	9	10	0.3	1e

	FASTENER
MATERIAL	Treated spring steel
SURFACE	See table on cover flap
TREATMENT	Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

TYPE 3: REFERENCE: MP 5377A - STAINLESS STEEL / PA 6.6 SHOCK

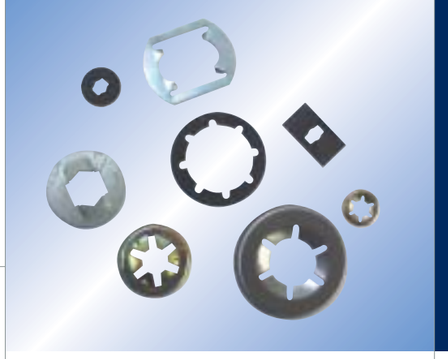


TYPE 4: REFERENCE: MP 8462A - STAINLESS STEEL / PA 6.6 SHOCK



Recommended assembly method:

1. Position the clip at the edge of the panel.
2. Clamp the clip to the substrate by hand or with the aid of a simple tool.
3. Once clipped into position, the clip is self-retaining.



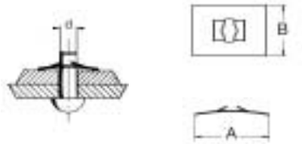
FASTENERS ON SHAFTS

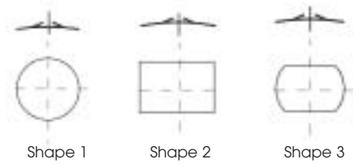
Axially mounted lock washers: "2-tab spring washer" and "Multi-tab spring washer" series

Recommended use:

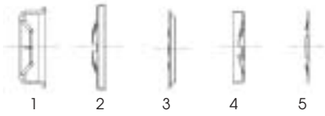
These lock washers can be fitted over any smooth rod and enable elastic fixing of light parts. The washers are particularly economical and ensure vibration-proof assembly.

TYPE 1: 2-TAB **SHAPES**





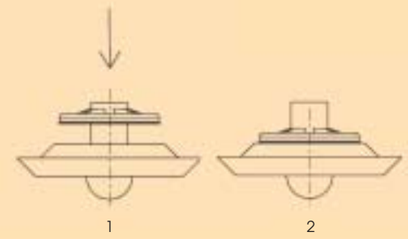
TYPE 2: MULTI-TAB **SHAPES**



Ø d	REFERENCE	A	B	C	e	TYPE	SHAPE
2	FPL 3007 ▲	15	8		0.3	1	2a
2.5	FPL 3017 ▲	15	8		0.3	1	2a
2.5	FR 3422 ZN	6		1.5	0.25	2	1
3	FR 3403 ▲	9			0.3	1	1a
3.5	FRL 3411 ▲	9			0.3	1	1a
4	SFP 0212 ▲	14.2	9.5		0.35	1	2a
4	FPL 3012 ▲	18	10		0.4	1	2a
4	FR 3404 ▲	12			0.4	1	1a
4	FR 3404 B ■	12			0.4	1	1a
4	FR 3424 ▲	10.5			0.4	1	1a
4	SFO 6045 ZB	11		1.6	0.2	2	4
5	SFO 5965 ZH	11.6		1.6	0.3	2	4
5	FR 3405 ▲	15			0.4	1	1a
6x2	FPS 3116 B ■	18	10	3	0.3	1	2a
6	SFR 6908 ▲	18			0.5	1	1b
6	FR 3406 ▲	15			0.4	1	1a
8	FRL 3458 DA	15		1.2	0.3	2	3
8	FRL 3457 ZH	22		3	0.3	2	2
10	FR 3410 DC	23.5			0.5	1	1a
12	SFR 5460 ZC	22		1.4	0.5	2	5
14	FRL 8527 B ■	34.3		4	0.4	2	4
16	FPL 3026 ZB	28	22		0.4	1	3b
20	FRL 3456 ▲	28.6		1.5	0.4	2	2

Recommended assembly method:

1. Manually pre-position the "fixed" washer at the end of the shaft, which should preferably be chamfered.
2. Press home the "fixed" washer with the aid of a simple tool.



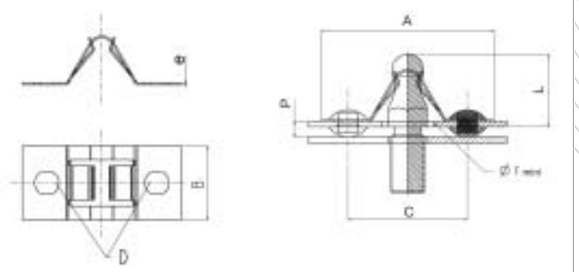
	WASHER
MATERIAL	Treated spring steel
SURFACE	See table on cover flap
TREATMENT	Except for parts with reference "▲": Phosphating: " ■ ": stainless steel
COLOUR	See table on cover flap Except for parts with reference "▲": Black

FASTENERS FOR PANELS

Closing systems, small model

Recommended use:
These systems consist of a stud that clips into a fastener formed by spring blades. The fasteners are screwed or riveted to their substrate. The fastener is opened and closed simply by pulling or pressing. The insertion and extraction forces depend on the material thickness of the fastener.

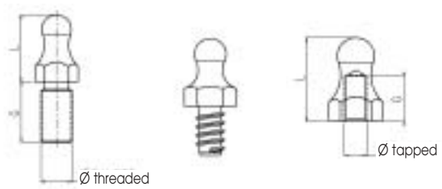
FASTENER



REFERENCE	A*	B	C*	D	e	Ø F min.	AVERAGE INSERTION FORCE** (DaN)	AVERAGE EXTRACTION FORCE** (DaN)
C 4410	26	12	18	3.2	0.3	7.2	1.5	2
C 4411	26	12	18	3.2	0.4	7.2	2.5	3
C 4412	26	12	18	3.2	0.5	7.2	4	5
C 4413	26	12	18	3.2	0.6	7.2	6	8
C 4414	26	12	18	3.2	0.7	7.2	7.5	12
C 4415	26	12	18	3.2	0.8	7.2	9	15

* Dimensions A and C refer to the assembled part.
** Average force recorded in the test lab on a typical assembly.

STUD



P = PANEL THICKNESS	L	REFERENCE	Ø	G
0.9 to 1.4	11.4	R 7053	4.2 metal/wood screw type	8
1.5 to 2.1	12	R 6333	M5 threaded	10
2.2 to 3	12.7	R 6707	M3 tapped	4.5
2.5 to 3.8	13.4	R 7105	4.2 metal/wood screw type	8
3.1 to 4.1	14	R 6486	M5 threaded	10
4.2 to 5.2	15	R 7253	M4 threaded	7
7.2 to 8.2	18	R 6374	M5 threaded	10

The thickness P must include the height of the fixing element of the fastener (screw head or rivet).

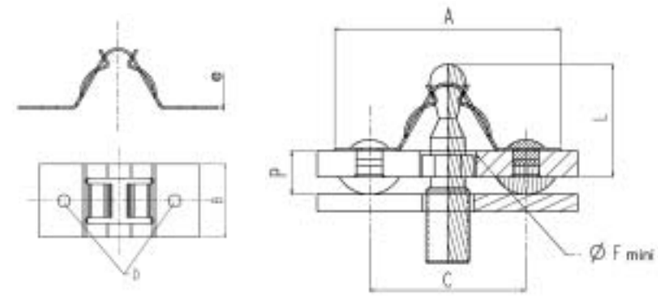
	FASTENER	STUD
MATERIAL	Treated spring steel	Steel
SURFACE TREATMENT	Phosphating + Paint	Zinc plating
COLOUR	Black	White

FASTENERS FOR PANELS

Closing systems, large model

Recommended use:
These systems consist of a stud that clips into a fastener composed of spring blades. The fasteners are screwed or riveted to their substrate. The fastener is opened and closed by simple pulling or pressing force.

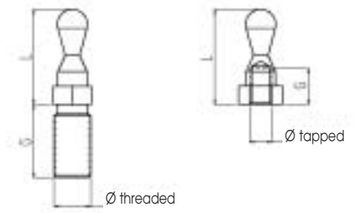
FASTENER



REFERENCE	A*	B	C*	D	e	Ø F min.	AVERAGE INSERTION FORCE** (DaN)	AVERAGE EXTRACTION FORCE** (DaN)
C 4402-4-52	51	18	38	5	0.4	10.5	2.5	2.5
C 4402-5-52	51	18	38	5	0.5	10.5	5	5
C 4402-6-52	51	18	38	5	0.6	10.5	10	10
C 4402-7-52	51	18	38	5	0.7	10.5	15	15

* Dimensions A and C refer to the assembled part.
** Average force recorded in the test lab on a typical assembly.

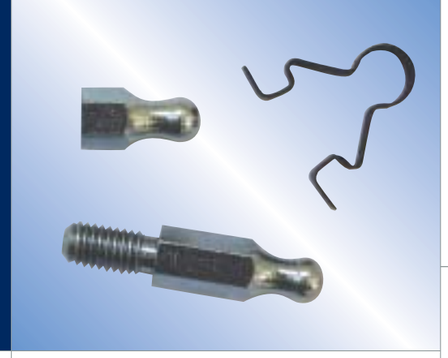
STUD



P = PANEL THICKNESS	L	REFERENCE	Ø	G
1.5 to 5	25	R 6523	M4 threaded	10
1.5 to 5	25	R 10292	M6 threaded	10
4 to 7.5	27.4	R 6775	M5 threaded	7

The thickness P must include the height of the fixing element of the fastener (screw head or rivet).

	FASTENER	STUD
MATERIAL	Treated spring steel	Steel
SURFACE TREATMENT	Phosphating + Paint	Zinc plating
COLOUR	Black	White

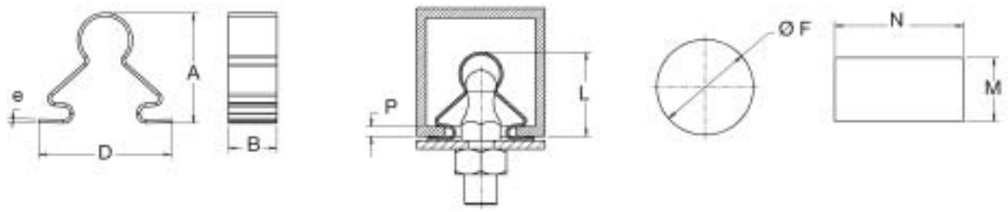


FASTENERS FOR PANELS

Clip-on closing systems

Recommended use:
These systems, which require very little space, consist of a stud that clips into a spring fastener. The fasteners are fitted to the support from the outside and automatically lock in position. The system is opened and closed by simple pulling or pressing force.

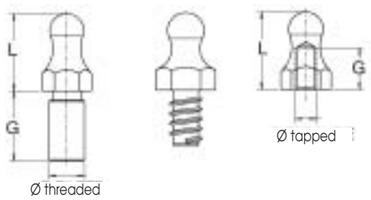
FASTENER



P = PANEL THICKNESS	REFERENCE	A	B	D *	e	Ø F	M	N	AVERAGE INSERTION FORCE** (DaN)	AVERAGE EXTRACTION FORCE** (DaN)
0.5 to 0.8	C 4434-1	13.4	6	16.5	0.4	10.5	7	9	9	8
0.9 to 1.2	C 4434-2	13.8	6	16.5	0.4	10.5	7	9	8	8
0.9 to 1.2	C 4438-2	13.8	8	15.2	0.4	11.4	8.3	8	18	14
1.3 to 1.6	C 4434-3	14.2	6	16.4	0.4	10.5	7	9	8	8
1.7 to 2	C 4434-4	14.6	6	16.3	0.4	10.5	7	9	7	7
2.9 to 3.2	C 4434-7	15.8	6	16.7	0.4	10.5	7	9	7	7

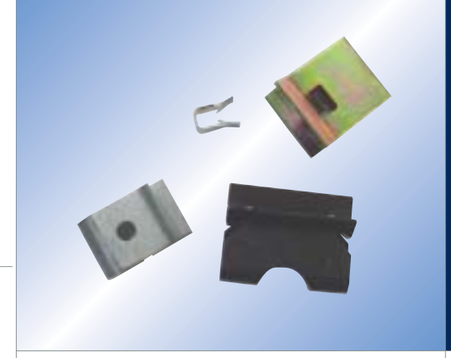
* Dimension D is quoted for the assembled part.
** Average force recorded in the lab on a typical assembly.

STUD



P = PANEL THICKNESS	L	REFERENCE	Ø	G
0.5 to 0.8	11.4	R 7053	4.2 metal/wood screw type	8
0.9 to 1.2	12	R 6333	M5 threaded	10
1.3 to 1.6	12.7	R 6652	M4 threaded	5
1.3 to 1.6	12.7	R 6299	M5 threaded	10
1.7 to 2	12.7	R 6299	M5 threaded	10
1.7 to 2	12.7	R 6707	M3 tapped	4.5
1.7 to 2	12.7	R 6652	M4 threaded	5
2.9 to 3.2	14	R 6486	M5 threaded	10

	FASTENER	STUD
MATERIAL	Treated spring steel	Steel
SURFACE TREATMENT	Phosphating + lacquer	Zinc plating
COLOUR	Black	White

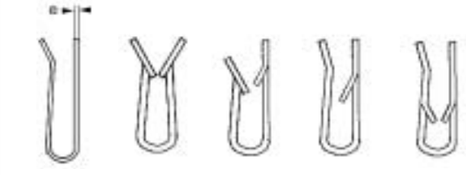


FASTENERS FOR PANELS

Single snap-on fasteners

Recommended use:
These fasteners are mainly used to fix trim panels. They can also be used as temporary fastening. They are suitable for assemblies exposed to low mechanical stress.

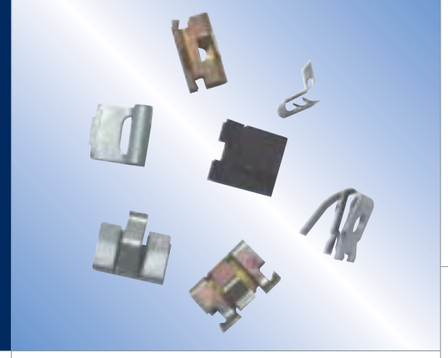
SHAPES



P = PANEL THICKNESS	REFERENCE	B	A	e	SHAPE
0.7	C 3774 ZH	12	16.5	0.7	e
0.8 to 1.8	C 4741 ▲	12	8.5	0.4	c
1.5 to 2.5	SCO 6963 ZBJ	4	7	0.4	b
1.5 to 3	SCO 5790 ZBJ	12.7	15.7	0.6	b
1.6 to 2.4	C 3701 ▲	12	8.2	0.4	c
2 to 2.5	SCO 6933 ZB	4	7	0.4	b
2 to 2.5	SCO 7309 TRJ	20.2	16.1	0.5	c
2.5 to 3	C 3778 ZE	12	13	0.4	e
2.5 to 3	C 4782 DC	12	8.3	0.4	e
2.5 to 4	SCO 7352 SRJ	13	9.6	0.3	b
3 to 4	SCO 7041 YN	13	13	0.4	e
3.5 to 3.8	C 3765 DC	10	15	0.5	d
3.5 to 5	C 5132 DC	12	11	0.4	c
5.3 to 6.3	C 4792 DC	12	11	0.5	c
5.5 to 6.5	C 2775 ZH	12	11	0.4	c
6	C 2761 ZH	12	11	0.5	d

Recommended assembly method:
Fit the fastener manually by pushing it over the edge of the panel. On thick panels, a simple tool may be necessary.

	FASTENER
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

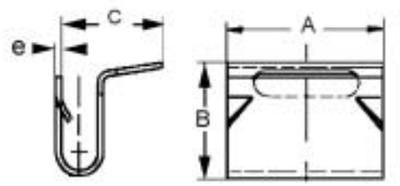


FASTENERS FOR PANELS

Snap-on fasteners with leg

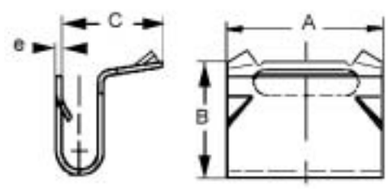
Recommended use:
These fasteners are mainly used for fastening automobile trim panels. They are easy to dismantle.

TYPE 1: SHAPE A



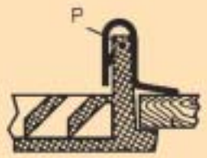
Shape a

SHAPE B



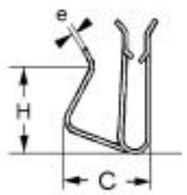
Shape b

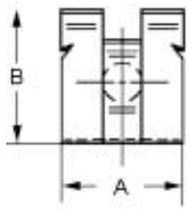
Recommended assembly method:



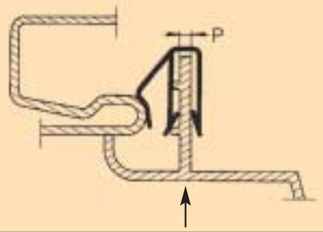
P = PANEL THICKNESS	REFERENCE	A	B	C	e	SHAPE
1.6 to 2	C 3702 ▲	12	9	7.7	0.4	a
1.2 to 1.4	C 8369 DL	12	9	7.7	0.4	a
2.2 to 2.6	C 4625 DC	12	11	12	0.4	b

TYPE 2



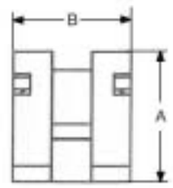


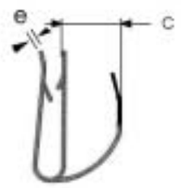
Recommended assembly method:



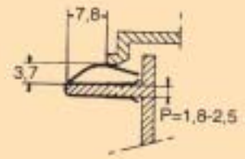
P = PANEL THICKNESS	REFERENCE	A	B	C	e	H
1.8	C 2633A ZF	16	11.3	9.3	0.5	8.4
1.8 to 2.5	C 3693 ▲	12.7	13.9	8.3	0.3	9.8
1.8 to 2.5	C 5410 ▲	12.7	13.9	8.9	0.3	9.8

TYPE 3



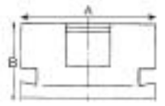


Recommended assembly method:

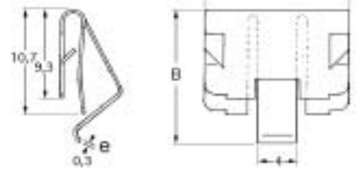


P = PANEL THICKNESS	REFERENCE	A	B	C	e
1.8 to 2.5	C 2800 DA	12.7	14.3	11	0.5
1.8 to 2.5	C 8384 DC	12.7	14	9.7	0.3

TYPE 4



Shape a



Shape b

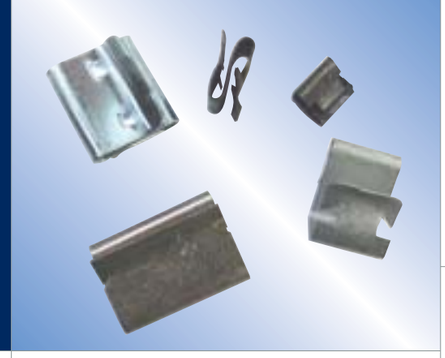
Recommended assembly method:

Shape a

Shape b

P = PANEL THICKNESS	REFERENCE	A	B	C	e	SHAPE
1.2 to 1.6	C 8225 DK	15	13.6		0.3	b
3 to 3.5	SCO 7280 ZHJ	15	8.3	7.2	0.3	a

	FASTENER
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

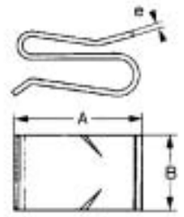


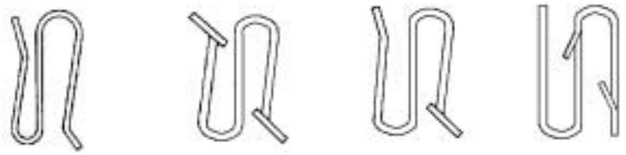
FASTENERS FOR PANELS

Double snap-on fasteners

Recommended use:
These fasteners are mainly used to join panels end to end. They provide an advantageous alternative to screwed fasteners. They are easy to dismantle and reuse.

SHAPES



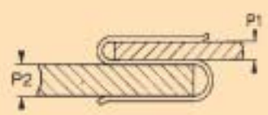


a b c d

P1 = PANEL THICKNESS	P2 = PANEL THICKNESS	REFERENCE	A	B	e	SHAPE VARIANT
0.7 to 2.5	0.7 to 2.5	SCO 6043 ZCJ	17.7	20	0.7	c
0.8 to 1.5	0.8 to 1.5	C 36552 ▲	13.2	13	0.5	a
0.8 to 2.3	0.8 to 2.3	C 8452 DK	10	12	0.4	b
1 to 1.5	1.8 to 2.5	SCO 5784 ▲	13	9	0.6	c
1.7 to 1.8	3.8	SCO 7216 ZGJ	15.6	15	0.6	c
1.8	2.4	SCO 7286B TGJ	11.6	15	0.6	b
2	2	C 5039A DK	14.6	12	0.6	b
2 to 3.2	0.6 to 0.8	C 46131 DD	9.4	12	0.5	d
2 to 3.2	1.9 to 2.3	C 46134 ▲	10	12	0.5	d
2 to 3	2.5	SCO 6714 ▲	19.5	15	0.5	b
2.3 to 2.7	0.8	C 2631 ZF	18	25	0.6	c
2.5	9	C 8266 DK	16	14	0.5	c

	FASTENER
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

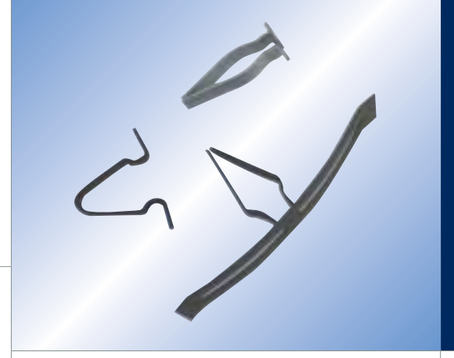
Recommended assembly method:



1. Position the fastener at the edge of the panel.
2. Fit the two pinching sections of the double fastener over the two panels using a simple tool.
3. Once correctly fitted in position the fastener is self-retaining.

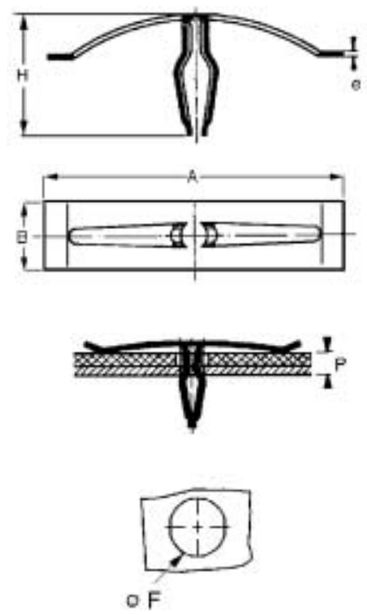
CLIPS AND RIVETS

Metal clips

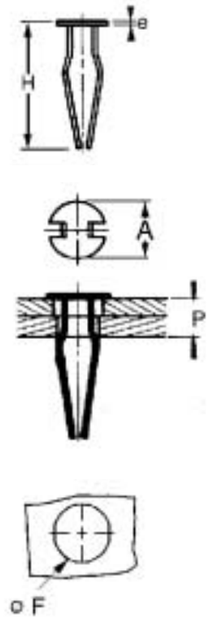


Recommended use:
Lightweight panel assemblies. Manual assembly.
Easy to dismantle and reuse.

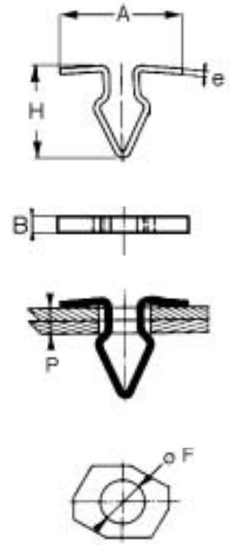
TYPE 1



TYPE 2



TYPE 3



P = PANEL THICKNESS	REFERENCE	H	A	B	e	Ø F	TYPE
1.5 to 2	C 4747 ▲	12	20	3	0.6	6	3
2.1 to 2.8	C 4718 ▲	13.5	17.2	3	0.6	6	3
3 to 4	C 4774 DC	18	Ø 7.2		0.5	4.5	2
3.6 to 4.5	C 47261 PV	18	44	9	0.5	5	1

Recommended assembly method:
Install manually by simply pressing into place.

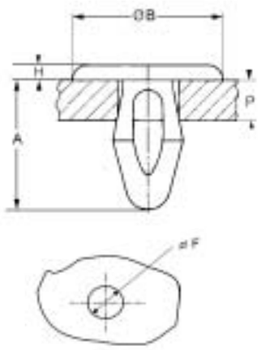
	CLIP
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

CLIPS AND RIVETS

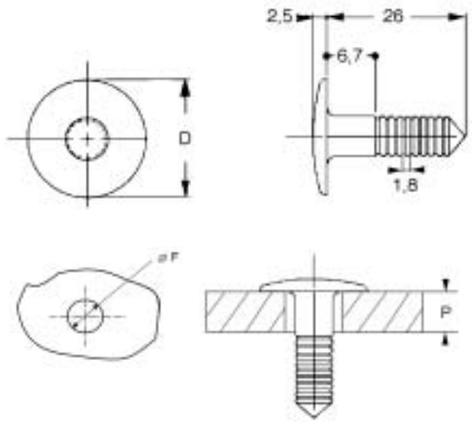
Plastic rivets

Recommended use:
Particularly suitable for fastening cladding and trim panels, these fasteners are used on relatively thin metal sheets or plastic panels. They are designed for assemblies exposed to low mechanical stress. The fasteners can be dismantled and reused and are corrosion-resistant, lightweight and economical. They have numerous applications, both interior and exterior, in various sectors of activity such as the aeronautical, shipbuilding and automotive industries etc.

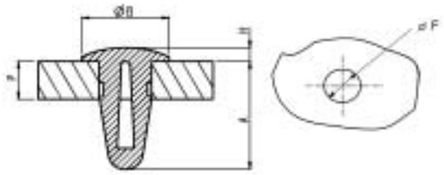
TYPE 1



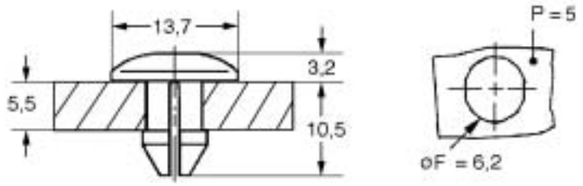
TYPE 2



TYPE 3



TYPE 4



Ø F	P = PANEL THICKNESS	REFERENCE	A	Ø B	H	COLOUR	MATERIAL	TYPE
5	2 to 3	P 0941 KN	14.6	13.8	3	Black	PA 6.6	1
6	2 to 6	P 0282 KN	14	14.8	2.5	Black	PA 6.6	1
6	5.5	P 0393 KN	13	10	0.5	Black	PA 6.6	3
6.2	5.5	P 1537A KN	10.5	13.7	3.2	Black	POM	4
7.5	10 to 25	P 1606	26	22	2.5	Black	PEbd	2

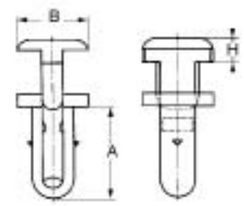
Recommended assembly method:
The fasteners can be installed manually or with the aid of a simple tool.

CLIPS ET RIVETS

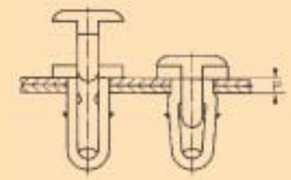
Plastic rivets with drive pin

Recommended use:
Particularly suitable for fastening cladding and trim panels, these fasteners are used on relatively thin metal sheets or plastic panels. They are designed for assemblies exposed to low mechanical stress. The fasteners can be dismantled and reused and are corrosion-resistant, lightweight and economical. They have numerous applications, both interior and exterior, in various sectors of activity such as the aeronautical, shipbuilding and automotive industries etc.

TYPE 1

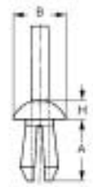


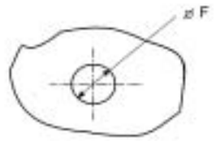
Recommended assembly method:



Ø F	P = PANEL THICKNESS	REFERENCE	A	B	H	MATERIAL	COLOUR
3	1.5 to 5	P 1503NAT	11	7	1	PA 6.6.	Natural
4	1 to 3	P 1514NOIR	10	8	1.2	PA 6.6.	Black
4	2 to 4	P 0183 KW	12.3	8	0.9	PA 6.6.	White
4	2 to 6	P 1504NAT	12.5	7.5	1.2	PA 6.6.	Natural
4	4 to 7	P 0312 KG	14	8	1.2	POM	Grey
4.5	2 to 4	P 0739 KN	7.5	7	1.2	POM	Black
6	2 to 6	P 1506NAT	15	10	1.7	PA 6.6.	Natural
6	2 to 6	P 1506NOIR	15	10	1.7	PA 6.6.	Black

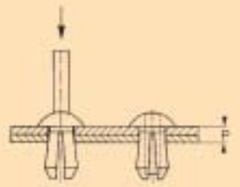
TYPE 2

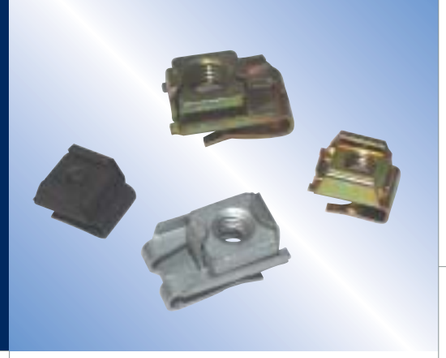




Ø F	P = PANEL THICKNESS	REFERENCE	A	B	H	MATERIAL	COLOUR
4.5	3 to 6	P 0336 KA	10	8.5	1.5	PA 6.6.	White
6	3 to 6	P 0904 KN	8	15	2	PA 6.6.	Black
6.5	2.8 to 4	P 0335 KA	6.6	11	3.5	PA 6.6.	Brown
8	1.5 to 4.5	KKP 485	10.5	16	2	PA 6.6.	Black

Recommended assembly method:
These plastic rivets are mounted manually or with the aid of a simple tool.



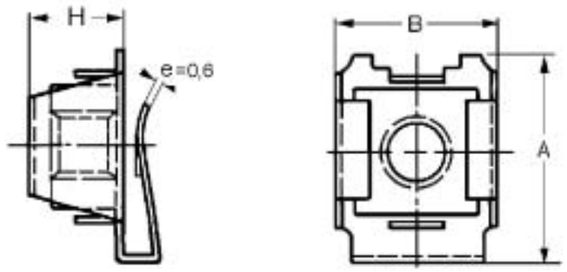


SNAP-ON NUTS

Snap-on caged nuts: Type CJ 4500/ CJ 4800

Recommended use:
These nuts are designed for mounting on the edge of a panel or cornice, after painting or enamelling. They are self-retained in the punched hole whilst providing a degree of play to permit alignment compensation. Type CJ 4800 has the same advantages as Type CJ 4500. Its larger pinching jaw (dimension C) gives it a greater carrying capacity.

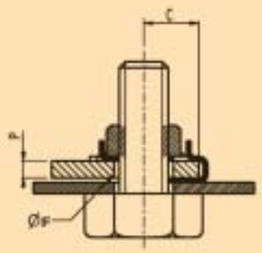
TYPE 1: CJ 4500



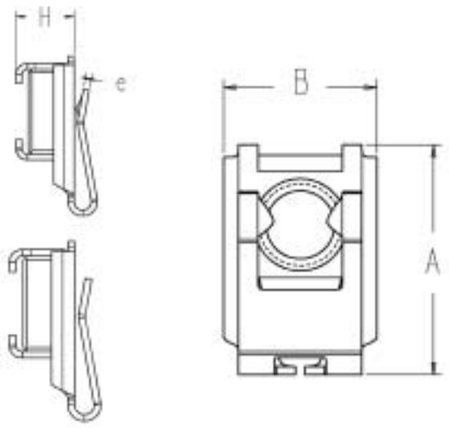
SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	H	B	C	Ø F	TIGHTENING TORQUE** IN Nm (max)
M4	0.5 to 1.1	CJ 45041 ▲	15.6	6.2	12.1	7.1	6	1.92
M4	1.2 to 1.8	CJ 45042 ▲	15.4	6.2	11.7	6.6	6	1.92
M4	1.9 to 2.5	CJ 45043 ▲	15.3	6.2	11.7	6.2	6	1.92
M4	2.6 to 3.1	CJ 45044 ▲	14.7	6.2	11.7	6.5	6	1.92
M5	0.5 to 1.1	CJ 45051 ▲	15.6	6.2	12.1	7.1	6	3.8
M5	1.2 to 1.8	CJ 45052 ▲	15.4	6.2	12.1	6.6	6	3.8
M5	1.9 to 2.5	CJ 45053 ▲	15.3	6.2	11.7	6.2	6	3.8
M5	2.6 to 3.1	CJ 45054 ZE	14.7	6.2	11.7	6.5	6	3.8
M6	1.2 to 1.8	CJ 45062 ▲	15.6	6.2	11.7	6.8	7	6.6
M6	1.9 to 2.5	CJ 45063 ▲	15.5	6.2	11.7	6.4	7	6.6
M6	2.6 to 3.1	CJ 45064 ZE	14.9	6.2	11.7	6.7	7	6.6

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

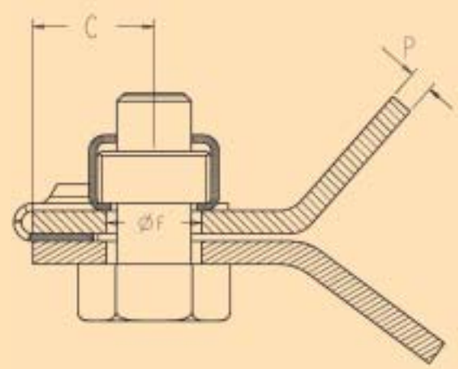
Recommended assembly method:
1. Fit the caged nut on substrate manually or with the aid of a simple tool.
2. The snap-on type caged nut is self-retained on its substrate.



TYPE 2: CJ 4800



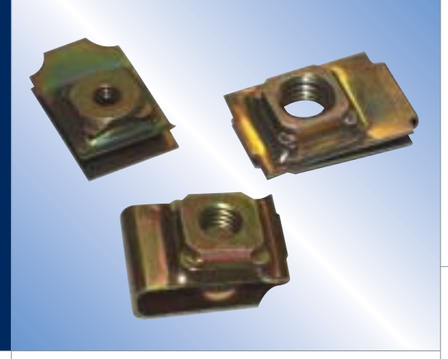
Recommended assembly method:



SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	H	B	C	Ø F	e	TIGHTENING TORQUE** IN Nm (max)
M5	1.1 to 2	CJ 48151 ▲	22.5	8	14.9	12.7	6	0.8	3.8
M6	1.1 to 2	CJ 48161 ▲	22.5	8	14.9	12.7	7	0.8	6.6
M6	2.1 to 3	CJ 48162 DA	22.4	8	14.9	12.1	7	0.8	6.6
M6	3.1 to 4	CJ 48163 ▲	22.4	8	14.9	11.6	7	0.8	6.6
M8	0.7 to 1	CJ 48180 ZF	22.7	8.3	15.3	12.7	9	1	15.9
M8	1.1 to 2	CJ 48181 ZE	22.7	8.3	15.3	12.7	9	1	15.9
M8	2.1 to 3	CJ 48182 ZE	22.6	8.3	15.3	12.1	9	1	15.9
M8	3.1 to 4	CJ 48183 ZH	22.6	8.3	15.3	11.6	9	1	15.9
M8	4.1 to 5	CJ 48184 ▲	22.5	8.3	15.3	11	9	1	15.9

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

	CAGE	NUT
MATERIAL	Treated spring steel	Treated steel
SURFACE TREATMENT	See table on cover flap, except for parts with reference "▲": Phosphating	
COLOUR	See table on cover flap, except for parts with reference "▲": Black paint	

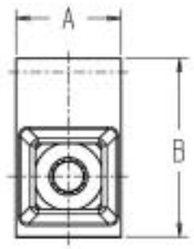


SNAP-ON NUTS

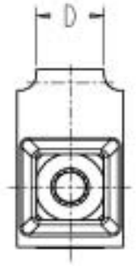
Snap-on caged nuts: Type CNU / SMC

Recommended use:
These elongated caged nuts have a large contact surface. The flexibility of the cage ensures easy assembly, especially in the middle of the panel.

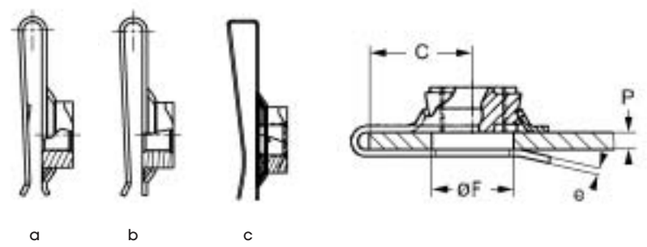
TYPE 1



TYPE 2



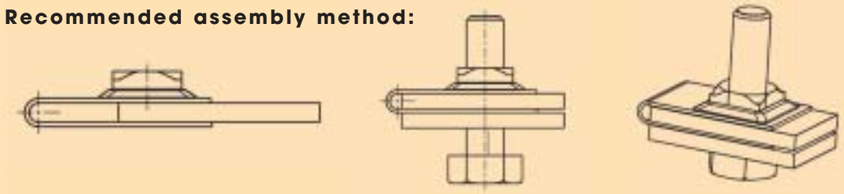
SHAPES



SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	B	C	D	Ø F	e	TIGHTENING TORQUE** IN Nm (max)	TYPE
M4	1.5 to 2.5	CNU 4554 ZF	24.8	15	14.5	7	8.5	0.4	1.9	2a
M5	1.5 to 2.5	CNU 4555 ZF	24.8	15	14.5	7	8.5	0.4	3.8	2a
M6	0.6 to 1.5	MC 5950 ZHJ	25.9	18	14.9	12.3	6.5	0.7	6.6	2b
M6	1.5 to 2.5	CNU 4556 ZF	24.8	15	14.5	7	8.5	0.4	6.6	2a
M6	4 to 5.3	SMC 6394 ZHJ	21.8	15.8	10.4	15.8	7.5	0.6	6.6	1c
M8	0.5 to 1.5	MC 5988 ZHJ	26.6	18	15	12	9	0.7	15.9	2b
M8	2.7 to 3.1	CNU 45155 ZE	24.5	19	11.6	19	8.5	0.8	15.9	1c
M8	4 to 5	SMC 7403 TRJ	22.4	15.8	10	15.8	9	0.6	15.9	1c

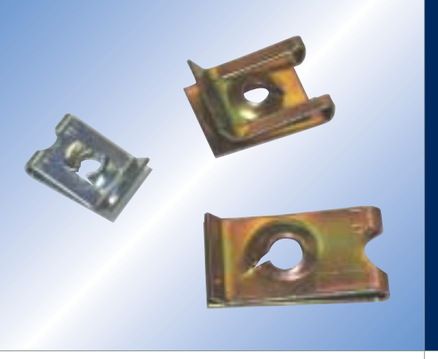
** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

Recommended assembly method:



1. Fit the nut manually on the substrate.
2. The caged nut is self-retained on its substrate.

	CAGE	NUT
MATERIAL	Treated spring steel	Treated steel
SURFACE TREATMENT	See table on cover flap	See table on cover flap
COLOUR	See table on cover flap	See table on cover flap

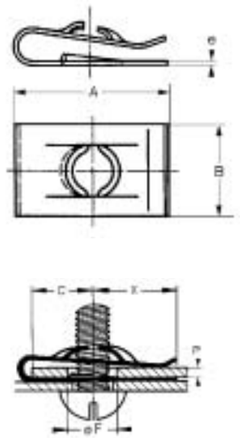


SNAP-ON NUTS

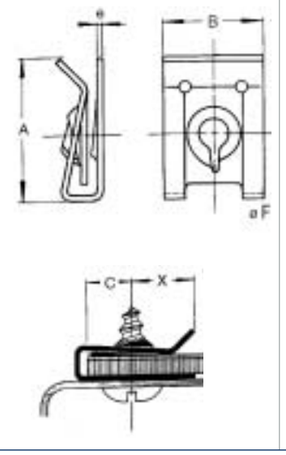
Snap-on nuts: Type NU / SNU

Recommended use:
These nuts can simply be pushed onto the edge of a metal panel. They automatically clip into self-retained position. The punched hole can provide clearance (play) to allow alignment errors to be corrected. These nuts can be dismantled and reused at any time.

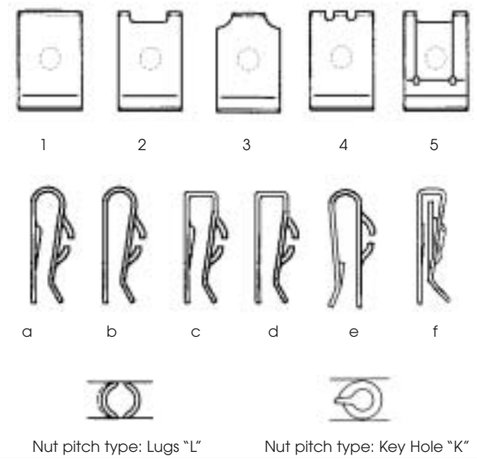
TYPE 1



TYPE 2



SHAPES



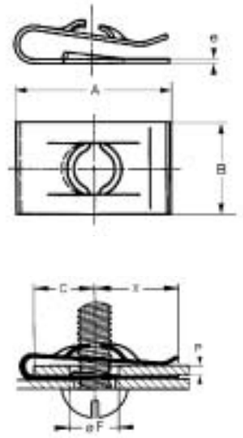
FOR METRIC SCREWS

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	B	C	X	e	Ø F	TYPE	SHAPE	NUT PITCH	TIGHTENING TORQUE** IN Nm (max)
M3	0.4 to 1.3	NU 05031 ■	12.1	8	6	5	0.3	5	1	1a	L	0.4
M3	1.4 to 2.3	NU 05032 ■	11.8	8	5	5	0.3	5	1	1a	L	0.4
M3	2.4 to 3.3	NU 05033 ■	11.6	8	4.5	5	0.3	5	1	1a	L	0.4
M4	0.4 to 1.2	NU 05041 ■	16.4	10	7	8	0.4	6	1	1a	L	0.8
M4	1 to 2	NUL 0501 ■	18.1	10	8.5	8	0.4	6	1	1a	L	0.8
M4	4.5 to 5	NUL 0525 ■	19.5	10	9	9	0.4	5	1	1b	L	0.8
M5	5.4 to 6.8	NU 05152 ■	21.2	12	10	10	0.5	7	1	1a	L	1.8
M5	2.1 to 2.5	NUL 05212 ZE	20.7	12	9	10	0.5	7	1	2a	L	1.8
M5	2.7 to 4.2	NUL 05213A DC	20	12	7.5	9.1	0.5	7	1	2a	L	1.8
M5	4.8 to 5.3	NUS 2209 ZH	12.9	12	5	6.8	0.5	6	1	2b	L	1.8
M5	0.5 to 1.8	NUS 2210 ■	14.8	12	6.5	6.8	0.5	7	1	3a	L	1.8
M6	0.3 to 0.9	NUS 22191 DL	16.9	16	9	6.6	0.5	8	1	2a	L	3
M6	1 to 1.8	NUS 22192 ■	16.7	16	8.5	6.6	0.5	8	1	2a	L	3
M6	1.9 to 3	NUS 22193 ■	16.4	16	7.5	6.6	0.5	8	1	2a	L	3
M6	3.1 to 4.2	NUS 22194 ■	16	16	6.5	6.6	0.5	8	1	2a	L	3
M8	0.6 to 2.1	NU 05081 ■	27.3	16	12.5	13	0.6	9.5	1	1a	L	5
M8	2.2 to 3.1	NU 05082 ■	27	16	11.5	13	0.6	9.5	1	1a	L	5

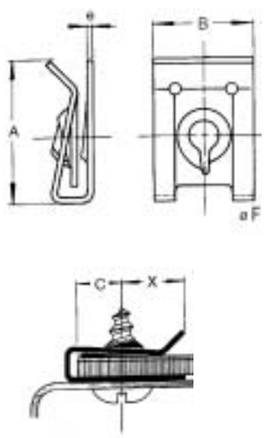
** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

TYPE 1

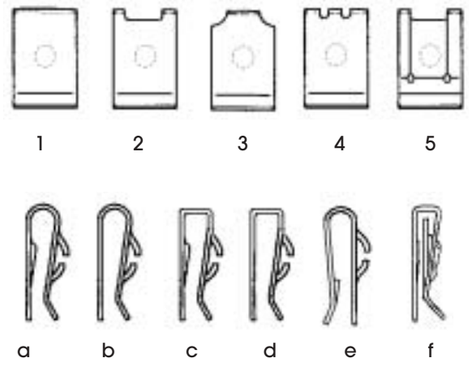
FASTENER



TYPE 2



SHAPES



FOR METAL PANEL SCREWS

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	B	C	X	e	Ø F	TYPE	SHAPE	NUT PITCH	TIGHTENING TORQUE ** IN Nm (max)
n°4 2.9	2 to 2.5	NUL 05374 DC	11.9	8	5	5	0.5	4.9	1	1a	L	1
n°4 2.9	0.7 to 1.2	SNU 1812 PHJ	11.1	7.9	4.8	5	0.5	4.8	1	1a	L	
n° 4 2.9	1.2 to 2	SNU 5079 ZHJ	10.7	7.9	4	4.9	0.5	4.8	1	1a	L	1
n° 4 2.9	2.2 to 2.8	SNU 5815 ZZC	10.7	7.9	4	4.9	0.5	4.8	1	1a	K	1
n° 4 2.9	2 to 2.2	SNU 7283A TGJ	9.5	15	4	3.7	0.5	5	1	4a	K	1
n° 6 3.5	0.5 to 4	NU 0923 ▲	20	14	8.8	10	0.5	6	2	5f	K	1.5
n° 6 3.5	0.6 to 1.8	SNU 5552 ZBJ	10.3	7.9	3.8	4.9	0.6	6	1	1a	K	1.5
n° 6 3.5	0.7 to 1.6	SNU 1219 ▲	16.4	11	6.7	7.9	0.6	6	1	2a	L	1.5
n° 6 3.5	1.75 to 4	SNU 6856 ZHJ	15.2	11	6	7.9	0.5	6	1	2b	K	1.5
n° 6 3.5	2 to 3	NUL 0528A RDB ■	16.4	10	9	5.5	0.5	6.3	1	1a	K	1.5
n° 6 3.5	2.3 to 2.8	SNU 6635 ▲	14.5	9	5.8	8	0.5	6	1	1b	K	1.5
n° 6 3.5	4 to 4.5	SNU 6402 PPJ	25.2	9.5	12.5	8.5	0.6	6	1	2a	L	1.5
n° 7 3.9	0.7 to 1.6	SNU 5743 ZHJ	16.5	11	6.7	8.5	0.6	7.2	1	2a	L	1.8
n°7 3.9	1.6 to 2	NUL 05313 ▲	12	9	6	4.4	0.6	6	1	3e	L	1.8
n° 7 3.9	2.1 to 2.5	NUL 05314 ▲	11.8	9	5	4.4	0.6	6	1	3e	L	1.8
n° 8 4.2	0.5 to 1.5	SNU 6828 ZZD ■	15.9	8.7	8.7	6.4	0.7	5.1	1	1b	L	2
n° 8 4.2	0.5 to 4	NU 0920A DA	20	14	8.8	10	0.5	7	2	5f	K	2
n° 8 4.2	0.6 to 1.4	NUS 22171 ▲	16	12	8.5	5.6	0.6	6	1	2a	L	2
n° 8 4.2	0.7 to 1	NUL 05461 CB	12.2	9	6.5	4.4	0.6	6	1	3e	L	2
n° 8 4.2	0.7 to 1.6	SNU 0536 ZGJ	16.5	11	6.7	7.9	0.6	7.2	1	2a	L	2
n° 8 4.2	0.7 to 1.6	SNU 1561 ▲	24.6	11.1	15	7.9	0.6	7.2	1	2a	L	2
n° 8 4.2	0.7 to 1.6	SNU 5527 ▲	16.5	11	6.7	7.8	0.7	7.2	1	2a	L	2
n° 8 4.2	0.7 to 1.6	SNU 6161 ZGJ	17	11.3	6.7	7.9	0.6	7.2	1	2a	K	2
n° 8 4.2	0.8 to 1.5	NUS 2214 ZF	13	12	6.2	5	0.6	6	1	2a	L	2
n° 8 4.2	1	SNU 6025 ZB	13.5	12	6	5.7	0.6	4.5	1	2b	K	2

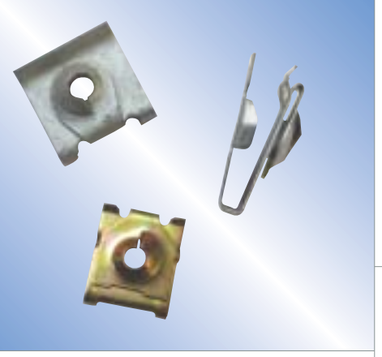
SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	B	C	X	e	ØF	TYPE	SHAPE	NUT PITCH	TIGHTENING TORQUE ** IN Nm (max)
n° 8 4.2	1.0 to 1.6	SNU 5682 ZBJ	13.9	12.7	5.6	6.4	0.7	7.2	1	2a	L	2
n° 8 4.2	1.2 to 2.2	SNU 5783 ZHJ	16.5	11	6.8	7.9	0.6	6.5	1	2b	L	2
n° 8 4.2	1.4 to 2.5	NUL 05242 DC	20.8	12	9	10	0.6	7	1	2a	L	2
n° 8 4.2	1.5 to 2.5	NUL 5392A ZZB ■	13.5	9.5	6.5	5.8	0.6	6	1	2a	K	2
n° 8 4.2	1.5 to 3.0	NUL 0549A ZYB ■	20.5	12	8.8	9.5	0.6	6	1	1a	K	2
n° 8 4.2	1.5 to 4.0	SNU 6792 BHJ	16	11	5	7.9	0.6	7.2	1	2a	K	2
n° 8 4.2	1.5 to 4.0	SNU 6805 DDJ	15.8	11	6.3	7.9	0.6	7.5	1	2a	K	2
n° 8 4.2	1.8 to 2.2	NUL 0601 ZH	11.5	12	5	5.5	0.6	4.5	1	2b	L	2
n° 8 4.2	2.0 to 2.5	NUL 5071B DC	13.8	9	6.8	6.1	0.5	6	1	4a	K	2
n° 8 4.2	2.5 to 3.2	NUL 5187B	16.3	10	8.5	5.5	0.6	5	1	1b	L	2
n° 8 4.2	3.0 to 4.0	NUL 0534 SC	17.1	11	6.6	7.8	0.6	5	1	1b	L	2
n° 8 4.2	3.8 ç 4.2	NUL 0536 ZF	13.2	9	6	5.6	0.6	6	1	1a	L	2
n° 8 4.2	5.0 to 7.0	NUL 0622 ZH	20	10	10	9	0.6	5	1	1b	L	2
n° 10 4.8	0.4 to 1.9	NUL 0533 ▲	26	9	14	10	0.6	6.5	1	1a	L	3.5
n° 10 4.8	0.5 to 4.0	NU 0921 ZF	20	14	8.8	10	0.6	7	2	5f	K	3.5
n° 10 4.8	0.7 to 1.5	SNU 5594 C	20	12.7	7.9	9.5	0.7	8	1	1b	L	3.5
n° 10 4.8	0.9 to 2.0	SNU 0537 ZGJ	19.8	12.7	7.9	9.6	0.7	8	1	1a	L	3.5
n° 10 4.8	0.9 to 2.0	SNU 6723 ZGJ	20	13	9.4	9.5	0.7	8	1	1a	L	3.5
n° 10 4.8	0.9 to 2.0	SNU 6740 ▲	19.5	12.5	8.4	9.5	0.6	6	1	2b	K	3.5
n°10 4.8	1.1 to 2.5	NUL 05062 ▲	20.9	12	9	10	0.7	7	1	2a	L	3.5
n° 10 4.8	1.5 to 2.8	SNU 5774 ZHJ	18	16	9	6.8	0.7	6	1	2b	L	3.5
n° 10 4.8	2 to 2.5	SNU 6979 ▲	11.1	12	4.5	6	0.6	8	1	3b	K	3.5
n° 10 4.8	2.0 to 3.0	SNU 7207 ▲	19.8	12.7	7.9	9.6	0.7	8	1	1b	L	3.5
n° 10 4.8	2.0 to 3.0	SNU 7311B TKJ	17	11.3	7	7.9	0.6	5.5	1	2b	K	3.5
n° 10 4.8	2.0 to 5.0	SNU 6899 ZNJ	18.5	16	9	9.5	0.8	7.5	1	2a	L	3.5
n° 10 4.8	2.5 to 3.2	NUS 22073 ▲	14.1	12	5.5	6.3	0.7	7	1	2a	L	3.5
n° 10 4.8	3 to 3.5	SNU 7248 TRJ	23.7	16	11	11	0.7	8	1	2b	K	3.5
n°10 4.8	5.0 to 6.0	NUL 0532 ZH	19	12	7.5	10	0.7	7	1	1a	L	3.5
n° 10 4.8	6.1 to 6.4	SNU 2012 ZBJ	22.2	17.5	10.3	7.9	0.7	8	1	2a	L	3.5
n° 12 5.5	0.8 to 1.6	NUS 22202 ▲	19	16	9	8	0.8	8	1	2a	L	4
n° 12 6.3	0.8 to 1.8	SNU 5113 ZHJ	27.3	14.3	13	12.3	0.9	10.2	1	2a	K	6
n° 12 5.5	0.9 to 2.6	SNU 0538 ZHJ	26.2	15.1	11.1	12.4	0.8	10	1	2a	L	4
n° 12 6.3	2.5 to 4.0	SNU 5418 ZHJ	25.7	16	10	12.4	0.9	10	1	1a	K	6
n° 12 5.5	2.6 to 3.5	SNU 6366 NFJ	19	13	7.7	9.7	0.8	8	1	2b	K	4
n° 14 6.35	5.0 to 8.0	NUL 0553 ZZB ■	24	16	9	12.3	0.6	9.5	1	1a	K	6

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

	NUT
MATERIAL	Treated spring steel, except for parts with reference " ■ ": stainless steel
SURFACE TREATMENT	See table on cover flap, Except for parts with reference " ▲ ": Phosphating
COLOUR	See table on cover flap, except for parts with reference "▲": Black paint

Recommended assembly method:

1. Fit the nut onto the substrate manually or with the aid of a simple tool.
2. When fastened the nut is self-retained in position.

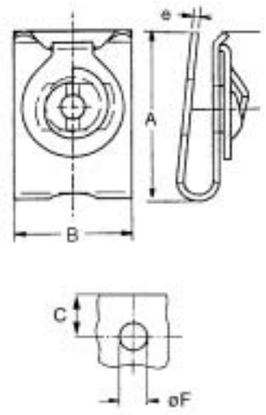


SNAP-ON NUTS

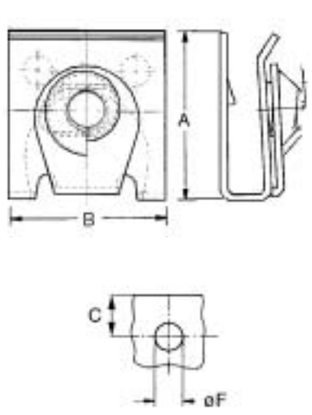
Snap-on anti-vibration nuts: Type SNK

Recommended use:
These nuts are designed for applications exposed to higher mechanical stresses compared to the standard NU/SNU-type snap-on nuts. They provide good resistance to axial extraction and vibration. Their special design reduces creep when used with plastic materials.

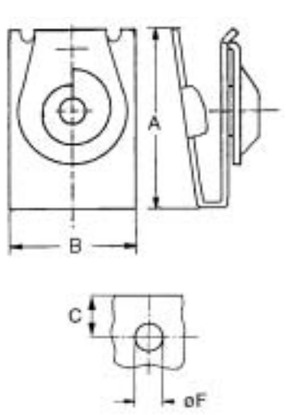
TYPE 1



TYPE 2



TYPE 3

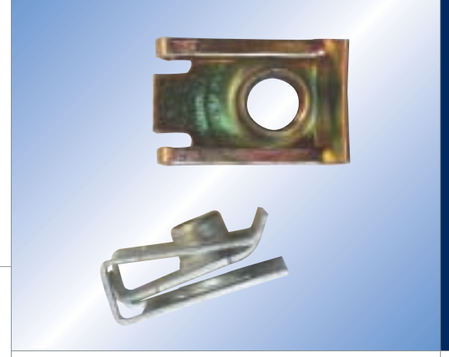


SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	B	C	Ø F	e	TYPE	TIGHTENING TORQUE ** IN Nm (max)
n° 7 3.9	0.6 to 1.2	SNK 7166 ZGK	15.6	13	6.1	7	0.5	1	1.8
n° 10 4.8	0.9 to 2	SNK 6617 ▲	18.6	12.7	8.1	6	0.7	1	3.5
n° 10 4.8	3.5	SNK 7275 ▲	16.9	16	7.5	6	0.7	2	3.5
n° 12 5.5	2.5	SNK 7274 BTGL	22.5	18	10	10.5	0.5	3	4.5
n° 12 5.5	3	SNK 7200A THL	22	18	10	11	0.5	3	4.5

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

Recommended assembly method:
1. Fit the nut onto the substrate manually or with the aid of a simple tool.
2. When fastened the nut is self-retained in position.

	NUT
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap, except for parts with reference " ▲ ": Phosphating
COLOUR	See table on cover flap, except for parts with reference " ▲ ": Black paint

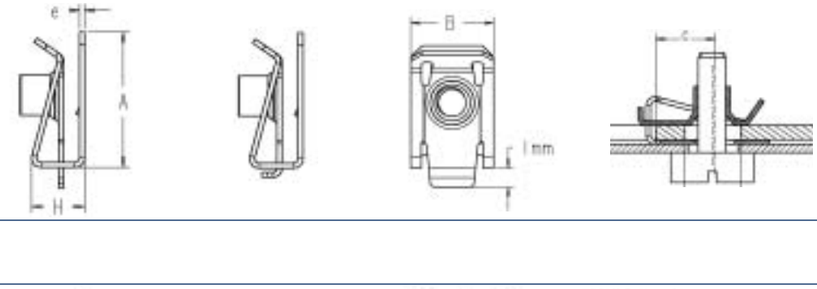


SNAP-ON NUTS

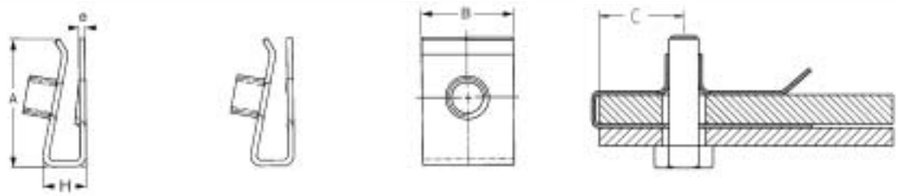
Snap-on nuts with tapped drum: Type NUT

Recommended use:
These nuts are designed to permit blind assembly at the edge and middle of panels. They withstand high tightening torques. Depending on the particular model, they can be used with a wide range of panel thicknesses. They can be fitted to thin panels manually but require a tool for higher thicknesses. The nut is self-retained in the punched hole.

TYPE 1



TYPE 2



SCREW SIZE	P = PANEL THICKNESS	SHAPE	REFERENCE	A	H	B	C	Ø F	e	TIGHTENING TORQUE ** IN Nm (max)
M5	0.5 to 4	1	NUT 8415A ZH	20	8.2	14	11.5	7.5	0.7	3.8
M5	0.5 to 4	1	NUT 8445A ZH	20-21	8.2	14	11.4	7.5	0.7	3.8
M5	2.5 to 5	1	NUT 8465A ZH	20	8.2	14	11.7	7.5	0.7	3.8
M6	0.5 to 4	1	NUT 8376A DL	20	8.6	15	12.5	8.5	0.8	6.6
M6	0.5 to 4	1	NUT 5246C ZH	22.3	8.6	15	12.5	8.5	0.8	6.6
M6	2.8 to 3.2	2	NUT 0986 ZZE ■	22.2	5.8	15	11	8.5	0.7	6.6
M6	3.5 to 5	1	NUT 8616 DL	22.3	8.6	15	12.5	8.5	0.8	6.6
M6	5	2	NUT 0966B SR ●	26.8	7.4	22	13.4	7	0.7	6.6
M8	0.5 to 4	1	NUT 0978 SJ	25.4	7.5	16.3	12	9	1	15.9
M8	0.5 to 4	1	NUT 0958D ZH	25.4	7.6	16.7	12	11.6	1	15.9

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).
"●" Self-locking variant.

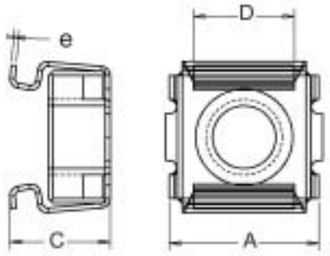
Recommended assembly method:
1. Fit the nut into the substrate manually or with the aid of a simple tool.
2. The snap-on nut is self-retained on its substrate.
3. Engage the screw in the nut.
4. Tighten to complete the assembly.

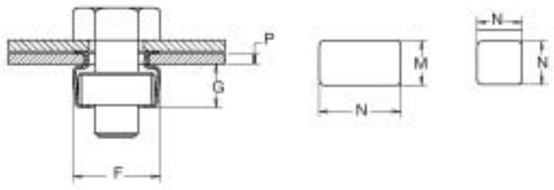
	NUT
MATERIAL	Treated spring steel, except for parts with reference " ■ ": stainless steel
SURFACE TREATMENT	See table on cover flap
COLOUR	See table on cover flap

CLIP-IN NUTS

Caged nuts: Types C 4800 and SMG

Recommended use:
This type of nut is simply clipped into the fixing hole from the back of the panel. It can be used with a wide range of different panel thicknesses. It can also slide inside a long hole that allows significant lateral movement. The nut also has play within its cage, to permit compensation for positioning dispersions.

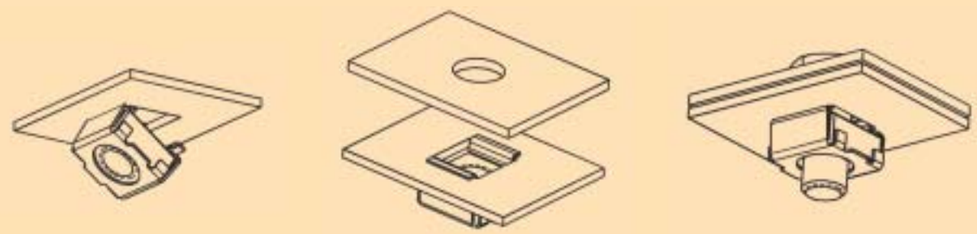




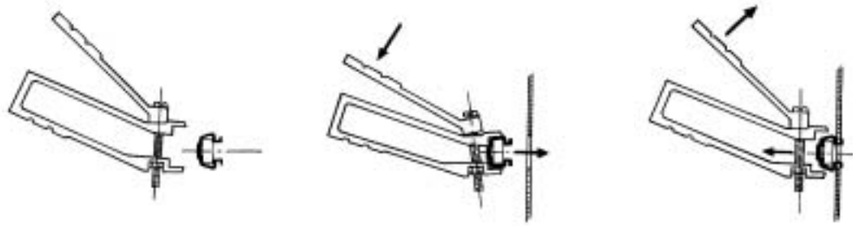
Recommended assembly method:
1. Insert the caged nut into the substrate with the aid of a simple tool.
2. The caged nut is self-retained on its substrate.

	CAGE	NUT
MATERIAL	Treated spring steel or stainless steel	Treated steel or stainless steel
SURFACE TREATMENT	See table on cover flap	See table on cover flap
COLOUR	See table on cover flap	See table on cover flap

The references followed by the symbol " ■ " correspond to a fully stainless steel assembly (cage + nut).



ASSEMBLY TOOL FOR CAGED NUTS - REFERENCE: OUT 5212



This clipper is used for rapid and precise insertion of caged nuts in hole sizes 8.3 x 8.3 and 9.5 x 9.5. It is used with M4, M5 and M6 nuts.

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	G	D	C	F	N	M	e	TIGHTENING TORQUE ** IN Nm (max)
M3	0.3 to 0.9	C 4843A	9.3	3.5	4.8	5.2	9.8	5.3	5	0.3	0.8
M3	1 to 1.6	C 4843B	9.3	3.5	4.8	5.9	9.8	5.3	5	0.3	0.8
M3	1.7 to 2.3	C 4843C	9.3	3.5	4.8	6.6	9.8	5.3	5	0.3	0.8
M3	2.4 to 3.1	C 4843D	9.3	3.5	4.8	7.4	9.8	5.3	5	0.3	0.8
M4	0.3 to 1.1	C 48040	12	6.2	7.2	8	12.1	8.3	8.1	0.45	1.92
M4	0.3 to 0.9	C 4844A	9.3	3.5	4.8	5.2	9.8	5.3	5	0.3	1.92
M4	0.7 to 1.7	SMG M4-4 ZBJ	13.1	4.6	8.7	6.9	13.5	9.5	9.2	0.5	2.4
M4	1 to 1.6	C 4844B	9.3	3.5	4.8	5.9	9.8	5.3	5	0.45	1.92
M4	1.2 to 1.6	C 4804A 4 ■	12	6.2	7.2	8.5	12.1	8.3	8.1	0.45	1.92
M4	1.2 to 1.6	C 4804A	12	6.2	7.2	8.5	12.1	8.3	8.1	0.45	1.92
M4	1.7 to 2.3	C 4844C	9.3	3.5	4.8	6.6	9.8	5.3	5	0.45	1.92
M4	1.7 to 2.5	C 4804B	12	6.2	7.2	9.5	12.1	8.3	8.1	0.45	1.92
M4	1.7 to 2.5	C 4804B 4 ■	12	6.2	7.2	9.5	12.1	8.3	8.1	0.45	1.92
M4	1.8 to 2.6	SMG M4-8 ZBJ	13.1	4.6	8.7	7.9	13.5	9.5	9.2	0.5	2.4
M4	2.4 to 3.1	C 4844D	9.3	3.5	4.8	7.4	9.8	5.3	5	0.45	1.92
M4	2.6 to 3.5	C 4804C	12	6.2	7.2	10.5	12.1	8.3	8.1	0.45	1.92
M4	2.6 to 3.5	C 4804C 4 ■	12	6.2	7.2	10.5	12.1	8.3	8.1	0.45	1.92
M4	3.6 to 4.5	C 4804D	12	6.2	7.2	11.5	12.1	8.3	8.1	0.45	1.92
M5	0.3 to 1.1	C 48050	12	6.2	7.2	8	12.1	8.3	8.1	0.45	3.8
M5	0.7 to 1.7	SMG M5-4 ZBJ	13.1	4.6	8.7	6.9	13.5	9.5	9.2	0.5	4.8
M5	0.7 to 1.7	SMG M5-6 ZBJ	13.1	6.4	8.8	8.7	13.8	9.5	9.2	0.5	4.8
M5	1.2 to 1.6	C 4805A	12	6.2	7.2	8.5	12.1	8.3	8.1	0.45	3.8
M5	1.2 to 1.6	C 4805A 4 ■	12	6.2	7.2	8.5	12.1	8.3	8.1	0.45	3.8
M5	1.7 to 2.5	C 4805B	12	6.2	7.2	9.5	12.1	8.3	8.1	0.45	3.8
M5	1.7 to 2.5	C 4805B 4 ■	12	6.2	7.2	9.5	12.1	8.3	8.1	0.45	3.8
M5	1.8 to 2.6	SMG M5-8 ZBJ	13.9	6.3	6.7	9.6	13.7	9.5	9.2	0.5	4.8
M5	2.6 to 3.5	C 4805C 4 ■	12	6.2	7.2	10.5	12.1	8.3	8.1	0.45	3.8
M5	2.6 to 3.5	C 4805C	12	6.2	7.2	10.5	12.1	8.3	8.1	0.45	3.8
M5	3.6 to 4.5	C 4805D	12	6.2	7.2	11.5	12.1	8.3	8.1	0.45	3.8
M6	0.3 to 1.1	C 48060	12	6.2	7.2	8	12.1	8.3	8.1	0.45	6.6
M6	0.3 to 1.1	C 48060 4 ■	12	6.2	7.2	8	12.1	8.3	8.1	0.45	6.6
M6	0.7 to 1.7	SMG M6-4 ZBJ	13.1	4.6	8.7	6.9	13.5	9.5	9.2	0.5	8.3
M6	0.7 to 1.7	SMG M6-6 ZBJ	13.4	6.4	8.8	8.7	13.8	9.5	9.2	0.5	8.3

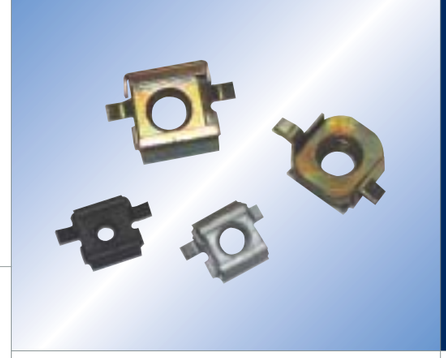
** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	G	D	C	F	N	M	e	TIGHTENING TORQUE ** IN Nm (max)
M6	1 to 1.7	C 4811A	16	7.8	10.6	10.4	16.6	12.3	12.1	0.5	6.6
M6	1.2 to 1.6	C 4806A	12	6.2	7.2	8.5	12.1	8.3	8.1	0.45	6.6
M6	1.2 to 1.6	C 4806A 4 ■	12	6.2	7.2	8.5	12.1	8.3	8.1	0.45	6.6
M6	1.7 to 2.5	C 4806B	12	6.2	7.2	9.5	12.1	8.3	8.1	0.45	6.6
M6	1.7 to 2.5	C 4806B 4 ■	12	6.2	7.2	9.5	12.1	8.3	8.1	0.45	6.6
M6	1.8 to 2.6	SMG M6-8 ZBJ	13.8	6.3	8.9	10.1	13.7	9.5	9.2	0.5	8.3
M6	1.8 to 3.2	C 4811B	16	7.8	10.6	11.9	16.6	12.3	12.1	0.5	6.6
M6	2.6 to 3.5	C 4806C	12	6.2	7.2	10.5	12.1	8.3	8.1	0.45	6.6
M6	2.6 to 3.5	C 4806C 4 ■	12	6.2	7.2	10.5	12.1	8.3	8.1	0.45	6.6
M6	3.3 to 4.7	C 4811C	16	7.8	10.6	13.4	16.6	12.3	12.1	0.5	6.6
M6	3.6 to 4.5	C 4806D	12	6.2	7.2	11.5	12.1	8.3	8.1	0.45	6.6
M6	3.6 to 4.5	C 4806D ZY4 ■	12	6.2	7.2	11.5	12.1	8.3	8.1	0.45	6.6
M8	0.7 to 1.7	SMG M8-6 ZBJ	16.6	7.4	11.4	9.7	17.8	12.5	12.1	0.6	20
M8	1 to 1.7	C 4808A	16	7.8	10.6	10.4	16.6	12.3	12.1	0.5	15.9
M8	1 to 1.7	C 4808A 4 ■	16	7.8	10.6	10.4	16.6	12.3	12.1	0.5	15.9
M8	1.8 to 2.6	SMG M8-8 ZBJ	16.6	7.4	11.4	10.9	17.8	12.3	12.1	0.6	20
M8	1.8 to 3.2	C 4808B	16	7.8	10.6	11.9	16.6	12.3	12.1	0.5	15.9
M8	1.8 to 3.2	C 4808B 4 ■	16	7.8	10.6	11.9	16.6	12.3	12.1	0.5	15.9
M8	3.3 to 4.7	C 4808C 4 ■	16	7.8	10.6	13.4	16.6	12.3	12.1	0.5	15.9
M8	3.3 to 4.7	C 4808C	16	7.8	10.6	13.4	16.6	12.3	12.1	0.5	15.9
M10	1 to 1.7	C 4810A	16	7.8	10.6	10.4	16.6	12.3	12.1	0.5	31
M10	1.8 to 3.2	C 4810B	16	7.8	10.6	11.9	16.6	12.3	12.1	0.5	31
M10	1.8 to 3.2	C 4810BGM	20	10.4	12.6	15	20.5	14	13.7	0.6	31
M10	3.3 to 4.7	C 4810C	16	7.8	10.6	13.4	16.6	12.3	12.1	0.5	31
M10	3.3 to 4.7	C 4810CGM	20	10.4	10.6	16.5	20.5	14	13.7	0.6	31
M10	4.8 to 6.2	C 4810DGM	20	10.4	10.6	18	20.5	14	13.7	0.6	31
M12	0.8 to 1.2	C 48120	20	10.4	12.6	12.7	20.5	14	13.7	0.6	54
M12	1 to 1.7	C 4812A	20	10.4	12.6	12.8	20.5	14	13.7	0.6	54
M12	1.8 to 3.2	C 4812B	20	10.4	12.6	14.7	20.5	14	13.7	0.6	54
M12	3.3 to 4.7	C 4812C	20	10.4	12.6	15.5	20.5	14	13.7	0.6	54
M12	4.8 to 6.2	C 4812D	20	10.4	12.6	17	20.5	14	13.7	0.6	54

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

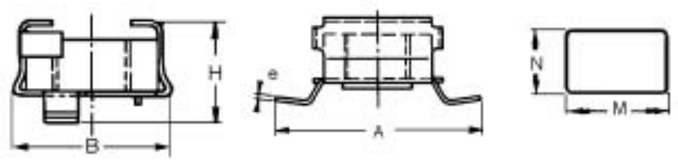
CLIP-IN NUTS

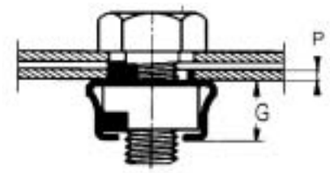
Caged nuts: Types C 0800 and C 4830



Recommended use:
These nuts are fitted from the front of the substrate at the time of final assembly. They are essentially used in assemblies on closed boxes, chassis members and tubular profiles. They can be dismantled.

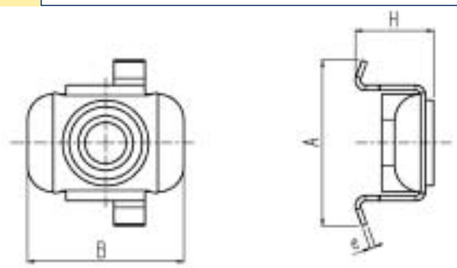
TYPE 1

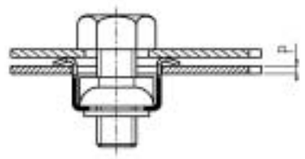




Depending on the nominal diameter, this nut has a slight lateral play in the cage to absorb dispersions in assembly position.

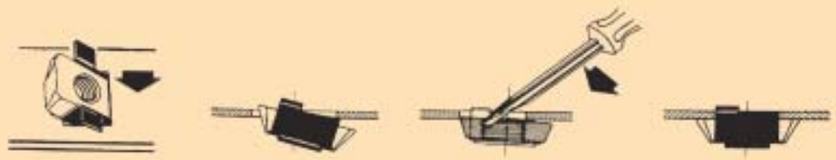
TYPE 2





This type of nut has the added advantage of a large contact surface, which is particularly welcome on thin panels.

Recommended assembly method:



1. Insert the nut in the hole.
2. Turn the nut flat against its substrate.
3. Clip the caged nut into the substrate with the aid of a simple tool.
4. Once in position the nut is self-retained.

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	B	H	A	G	e	M	N	TYPE	TIGHTENING TORQUE ** IN Nm (max)
M4	0.4 to 0.7	C 4832A SJ ■	10.7	5.6	16.2	3.5	0.4	9.6	6.5	1	1.9
M4	1.2 to 1.5	C 4832C ■	10.7	5.6	14.8	3.5	0.4	9.6	6.5	1	1.9
M4	2.0 to 2.2	C 48355 ZH	13	8.4	17.8	5.4	0.5	13	8.2	1	1.9
M5	0.9 to 1.1	C 080510 ♦	14	6.1	20.4		0.5	13	8	2	3.8
M5	1.2 to 1.5	C 48353 ▲	13	7.6	19	5.4	0.5	12.5	8.5	1	3.8
M6	0.6 to 2.2	C 0806 SJ	14	7.2	21.4		0.5	13	8	2	6.6
M6	0.7 to 0.8	C 080608 ♦	14	5.9	20.4		0.5	13	8	2	6.6
M6	0.7 to 1.6	C 08061 SJ	14	6.4	20.8		0.5	13	8	2	6.6
M6	0.9 to 1.0	C 080610 ♦	14	6.1	20.4		0.5	13	8	2	6.6
M6	0.9 to 1.0	C 080110 ♦	15.5	6.8	21.6		0.5	14	9	2	6.6
M6	1.2 to 1.3	C 080612 ♦	14	6.4	20.4		0.5	13	8	2	6.6
M6	1.2 to 1.5	C 48363 ZF	13	8.1	19	5.9	0.5	13	8	1	6.6
M6	1.5 to 1.6	C 080615 ♦	14	6.7	20.4		0.5	13	8	2	6.6
M6	1.6 to 1.9	C 48364 TM	13	8.5	18.4	5.9	0.5	13	8	1	6.6
M6	1.8 to 2.1	C 48914 ▲	15.4	9.4	20	6.5	0.6	14	9	1	6.6
M6	2.0 to 2.2	C 48365 SJ	13	8.9	17.8	5.9	0.5	13	8.2	1	6.6
M6	2.0 to 2.9	C 8306 ZB	13.6	9.9	21	5.9		13	9	2	6.6
M6	2.0 to 2.9	C 8307 ZH	13	9.9	21	5.9		13	9	2	6.6
M6	2.5 to 2.6	C 080125 ♦	15.5	8.4	21.6		0.5	14	9	2	6.6
M8	0.6 to 0.9	C 48381 SJ	19	9.2	28	7.4	0.7	18.5	11	1	15.9
M8	1.2 to 1.3	C 080812 ♦	17.5	8.4	26		0.6	16.5	10.5	2	15.9
M8	1.4 to 1.7	C 48383 ZF	19	10	26.8	7.4	0.7	18.5	11	1	15.9
M8	1.8 to 2.1	C 48384 ZH	19	10.4	26.2	7.4	0.7	18.5	11	1	15.9
M8	2.2 to 2.5	C 48385 SJ	19	10.8	26.5	7.4	0.7	18.5	11	1	15.9
M8	2.5 to 2.6	C 080825 ♦	17.5	9.7	26		0.6	16.5	10.5	2	15.9
M8	1.7 to 1.8	C 080818 ♦	17.5	8.9	26		0.6	16.5	10.5	2	15.9

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

	CAGE	NUT
MATERIAL	Treated spring steel, except for parts with reference " ■ ": stainless steel	Treated spring steel, except for parts with reference " ■ ": stainless steel
SURFACE TREATMENT	See table on cover flap, except for parts with reference " ♦ ": phosphated and painted " ▲ ": phosphated	See table on cover flap, except for parts with reference " ♦ ": phosphated and painted " ▲ ": phosphated
COLOUR	See table on cover flap, except for parts with reference: " ▲ ": Black paint	

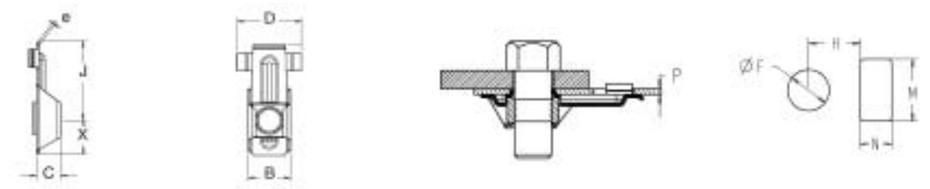
CLIP-IN NUTS

Caged nuts for high-strength assemblies: Type CL Standard

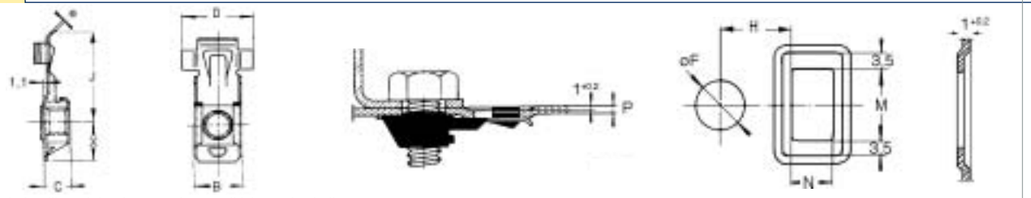
Recommended use:
These nuts are used in assemblies exposed to high mechanical stresses. They can be mounted “blind” with access only from the outside. They can be installed and dismantled easily with the aid of a simple tool. Their large contact surface acts as reinforcement for the substrate, and their self-centring in a round drill-hole helps to guide the screw. Since they are fitted after painting, they eliminate the need for thread masking or retapping.

	CAGE	NUT
MATERIAL	Treated spring steel	Treated steel
SURFACE TREATMENT	See table on cover flap	See table on cover flap
COLOUR	See table on cover flap	See table on cover flap

TYPE 1



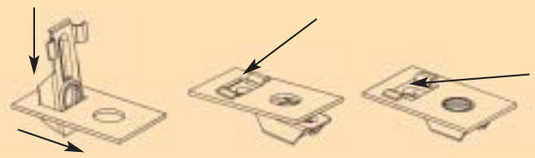
TYPE 2



Fitted in a hole with end-stop to prevent excess thickness due to the cage.

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	J	X	C	B	D	e	Ø F	H	M	N	TYPE	TIGHTENING TORQUE** IN NM (max)
M8	2 to 2.25	CL 48685 ZH2	26	11.5	7.5	14.4	21.5	0.8	10	13	15.2	10.2	1	20
M8	1 to 1.20	CL 48681 PC2	26	11.5	7.5	14.4	21.5	0.8	10	13	15.2	10.2	1	20
M8	1.25 to 1.45	CL 48682 NF	26	11.5	7.5	14.4	21.5	0.8	10	13	15.2	10.2	1	20
M8	1.5 to 1.75	CL 48683 ZF2	26	11.5	7.5	14.4	21.5	0.8	10	13	15.2	10.2	1	20
M8	2 to 2.25	CL 48635 ZF	26.5	12	7.5	14.4	21.5	0.8	10	13	15.2	10.2	2	20
M10	1 to 1.20	CL 48601150 ZF	34.2	15.8	10.4	19.6	27.3	1	12.3	18.45	20.2	13	1	31
M10	1 to 1.20	CL 48591150 SJ	34.2	15.8	10.4	19.6	27	1	12.3	18.45	20.2	13	2	31
M10	1.5 to 1.75	CL 48593150 ZH	34.2	15.8	10.4	19.6	27	1	12.3	18.45	20.2	13	2	31
M10	1.5 to 1.75	CL 48703150 PC2	30	14	9.2	16.6	23.5	0.9	12	16	17.2	11.2	1	31
M10	1.5 to 1.75	CL 48603150 ZF2	34.2	15.8	10.4	19.6	27.3	1	12.3	18.45	20.2	13	1	31
M10	2 to 2.25	CL 48705 150 SJ	29.8	14.7	9.4	16.6	23.5	0.9	12	16	17.2	11.2	1	31

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

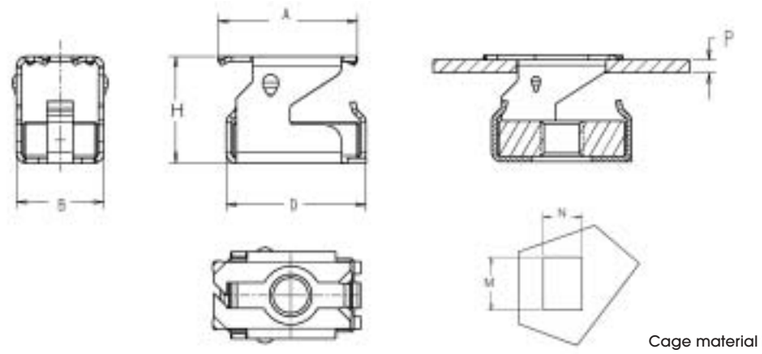


Recommended assembly method:
1. Insert the nut in the oblong hole.
2. Pivot and rotate the nut by the wings.
3. Push the back of the cage and lock it against the substrate.

CLIP-IN NUTS

Turn-and-press caged nuts

Recommended use:
These caged nuts are fitted from the front of the substrate by inserting, turning and then clipping down. They can be dismantled and refitted to another substrate.



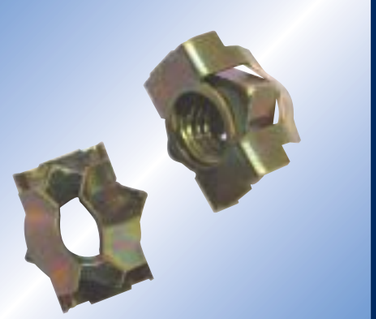
Cage material thickness: 0.6

SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	B	H	M	N	TIGHTENING TORQUE ** IN Nm (max)
M5	0.8 to 1.2	CNS 8945A NK	12.3	16.5	10.2	11	11	8
M6	1.5 to 2	CNS 53461A ZK	12.2	16.6	13.1	13	11	12
M8	1.5 to 2	CNS 53481A ZK	12.2	16.6	13.1	13	11	20

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

	CAGE	NUT
MATERIAL	Treated spring steel	Treated steel
SURFACE TREATMENT	See table on cover flap	See table on cover flap
COLOUR	See table on cover flap	See table on cover flap

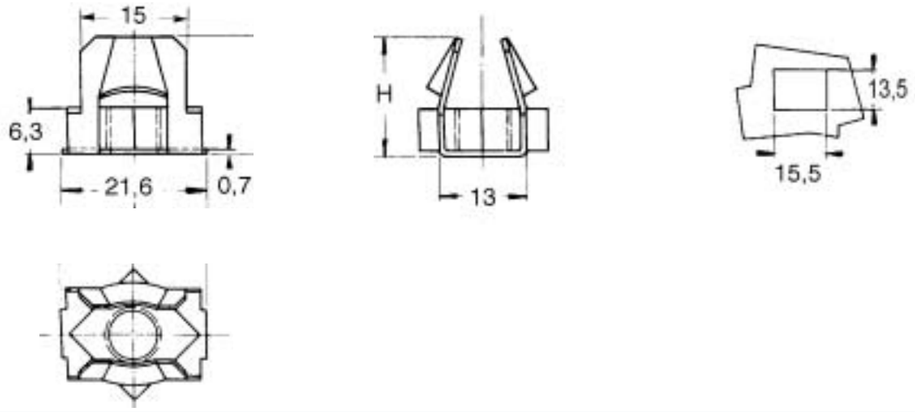
Recommended assembly method:
1. Insert the nut in the hole.
2. Pivot the nut on its substrate.
3. Clip the caged nut into the substrate by pressing it flat with your finger.
4. Once in position the nut is self-retained.



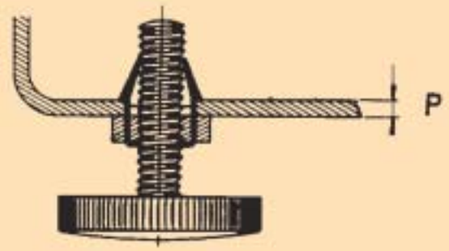
CLIP-IN NUTS

Caged nuts for adjustable feet

Recommended use:
These nuts are designed to fasten adjustable feet in the domestic appliance and metal furniture sectors. They are installed from the front of the substrate after painting or enamelling. They provide a self-locking action on the thread, thereby guaranteeing constant adjustment of the feet.

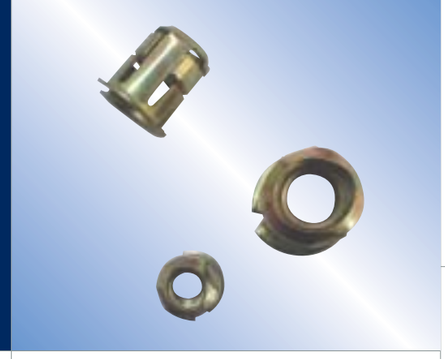


SCREW SIZE	P = PANEL THICKNESS	REFERENCE	H
M8	1.7 to 2.4	C 48882 ▲	15.6
M10	0.8 to 1.6	C 48901 ZF	15.6
M10	1.7 to 2.4	C 48902 ▲	15.6
M10	2.5 to 3.3	C 48903 ▲	17.4



	CAGE	NUT
MATERIAL	Treated spring steel	Treated steel
SURFACE TREATMENT	See table on cover flap, except for parts with reference "▲" : Phosphating	
COLOUR	See table on cover flap, except for parts with reference "▲" : Black paint	

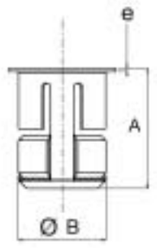
Recommended assembly method:
1. Position one of the sides of the cage in the hole.
2. Clip the other side into the hole, using a simple tool if necessary.
3. Screw the adjustable foot into the hole.
4. Once in position, the nut is self retained.

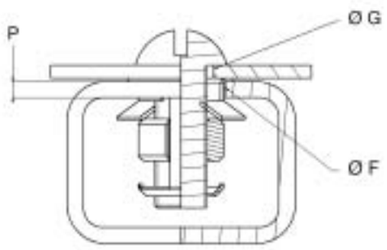


CLIP-IN NUTS

Cylindrical caged nuts: Type CV

Recommended use:
These nuts are inserted in a round hole from outside the substrate. They are recommended for use with thick sheet metal, in closed boxes or on tubes. They can be mounted in a blind hole in compressible materials such as: wood, chipboard, fibro-cement etc. They fully plug the hole. A depth stop with a depth less than "e" can be fitted in the substrate.



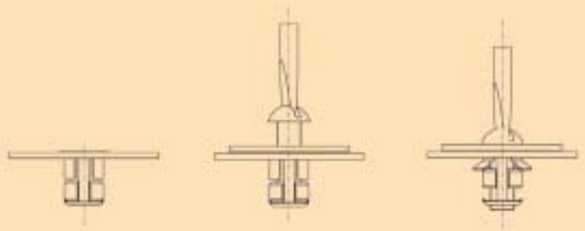


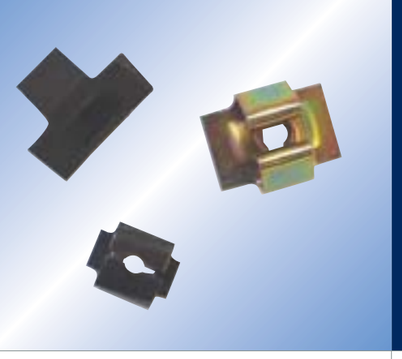
SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	Ø B	e	Ø F	Ø G	TIGHTENING TORQUE ** IN Nm (max)
M 4	0.7 to 3	CV 4822	9.2	7	0.5	7.2	4.5	3
M 4	0.7 to 4	CV 4824	13	9.9	0.6	10.1	4.5	3
M 5	0.7 to 4	CV 4825	13	9.9	0.6	10.1	5.5	5.5
M 5	0.7 to 3.5	CV 4829	11	8.4	0.5	8.6	5.5	5.5
M 6	0.7 to 4	CV 4826	13	9.9	0.6	10.1	6.5	9.5
M 8	1 to 6	CV 4828	18.2	12.9	0.9	13.2	8.5	14

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

Recommended assembly method:
1. Manually insert the caged nut in the substrate.
2. Engage the screw in the nut.
3. The cage is crimped to the substrate by the action of the nut on the cage while screwing. During this operation, the cage is immobilised in rotation by the pressure applied by screwdriver or power screwdriver.
4. Tighten the screw to terminate the assembly.

	CAGE	NUT
MATERIAL	Zinc plated steel Bi-chromate	Zinc plated steel Bi-chromate

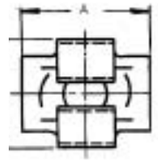


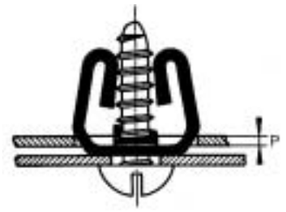


CLIP-IN NUTS

Self-locking nuts: Type EX

Recommended use:
These self-locking nuts are designed for instant installation from the outer side of the substrate at the moment of final assembly. They are essentially used in assemblies exposed to low mechanical stress, on closed boxes, members or tubular profiles. They can be dismantled.

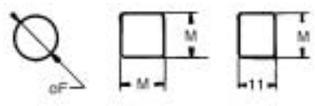




SCREW SIZE	P = PANEL THICKNESS	REFERENCE	H	A	B	e	TIGHTENING TORQUE ** IN Nm (max)	TYPE
n° 8 4.2	0.5 to 2	EX 2508 ▲	9	16	13	0.6	2	1
n° 10 4.8	0.5 to 2	EX 2510 ZH	9	16	13	0.6	3.5	1
n° 10 4.8	0.8 to 1.6	SNO 1742 THJ	8.7	14.3	13.5	0.6	3.5	2

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

TYPE 1



P	F	M	N
0.5 to 0.7		12.6	11
0.8 to 1	14.2	12.6	11

TYPE 2

P	F	M	N
0.8 to 1.2	14.5	13	10

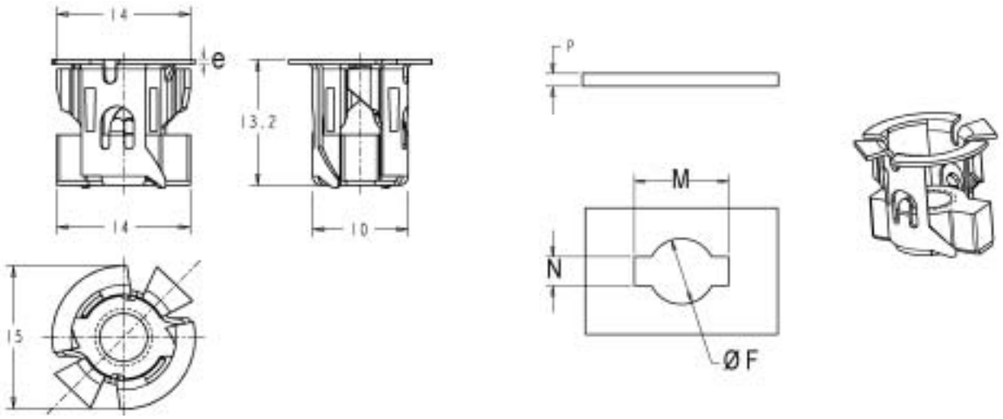
Recommended assembly method:
1. Insert the nut in the hole with the aid of a simple tool.
2. Once in position the nut is self-retaining.

	NUT
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating
COLOUR	See table on cover flap Except for parts with reference "▲": Black paint

CLIP-IN NUTS

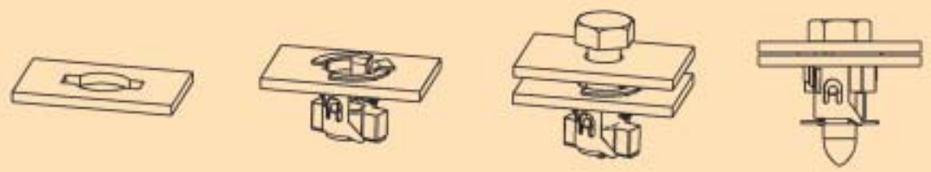
Helicoidal caged nuts: Type CNS

Recommended use:
These caged nuts are inserted from the front of the substrate simply by pressing on the cage. The nuts can be removed and refitted on another substrate.

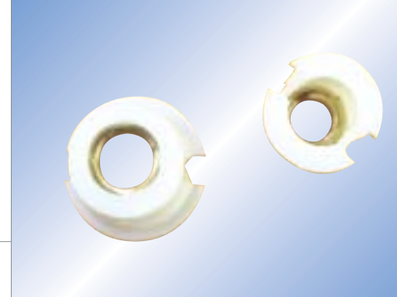


SCREW SIZE	P = PANEL THICKNESS	REFERENCE	M	N	Ø F	e	TIGHTENING TORQUE ** IN Nm (max)
M5	0.7 to 4	CNS 8995 NJ	14.5	4.3	10.3	0.5	8
M6	0.7 to 4	CNS 8636G NJ	14.7	4.6	10.4	0.5	12

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).



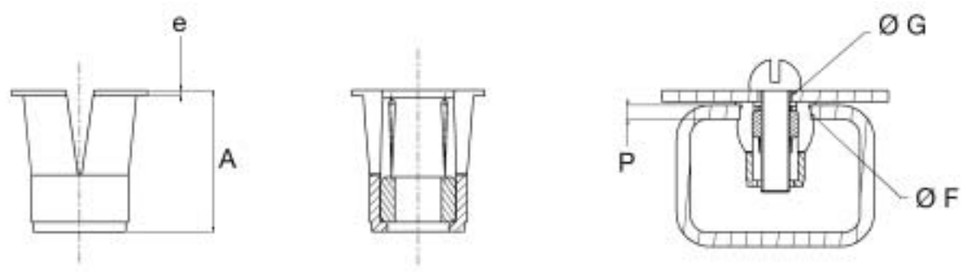
Recommended assembly method:
1. Insert and clip the caged nut in the punched hole.
2. Once in position, the nut is self-retaining.
3. Position the panel to be fastened and engage the screw/bolt in the nut.
4. Tighten the screw/bolt, thereby rotating the nut and tensioning the assembly.



CLIP-IN NUTS

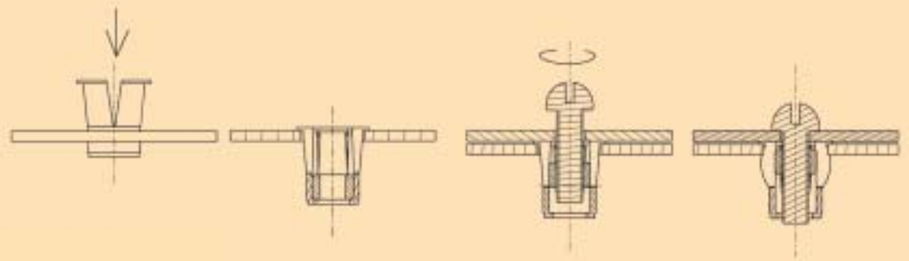
Cylindrical metal-plastic caged nuts: Type CP

Recommended use:
These nuts are for blind assemblies. The polyamide cage ensures electrical insulation. The brass nut provides resistance to corrosion. This device is designed for insertion in a round punched hole. It is recommended for use on thick sheet-metal or in a closed box.



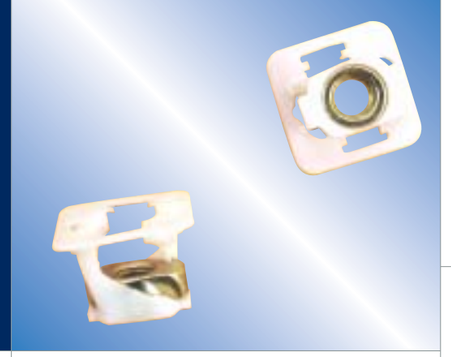
SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	e	Ø F	Ø G	TIGHTENING TORQUE ** IN Nm (max)
M 3	0.5 to 3	CP 3513	7.5	0.3	5.2	3.5	1
M 4	0.5 to 4	CP 3514	9.5	0.4	6.3	4.5	1.5
M 5	0.5 to 5	CP 3515	12	0.5	8.1	5.5	1.5
M 6	0.5 to 6	CP 3516	15	0.6	10.5	6.5	1.5

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).



Recommended assembly method:
1. Manually or with the aid of a simple tool, insert the caged nut into the substrate.
2. The caged nut is self-retained on the substrate.
3. Engage the screw in the nut.
4. Tighten to complete the assembly.

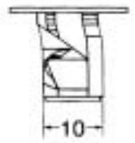
	CAGE	NUT
MATERIAL	PA 6-6 natural	Brass

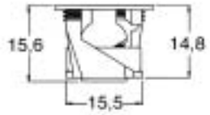


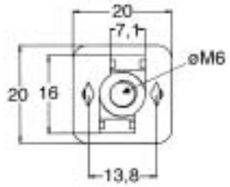
CLIP-IN NUTS

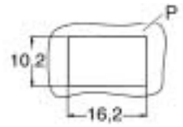
Metal-plastic helicoidal caged nuts

Recommended use:
These caged nuts, which are essentially used in the automotive industry, have the advantage of being mounted directly on the equipment complete with their screw.







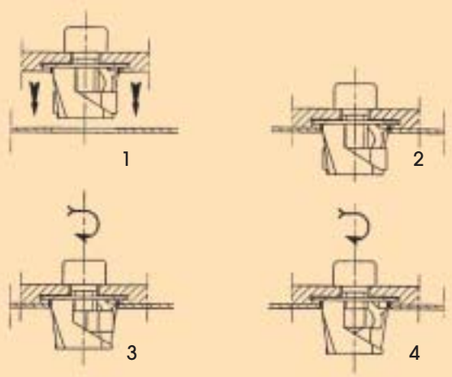


SCREW SIZE	P = PANEL THICKNESS	REFERENCE	TIGHTENING TORQUE ** IN Nm (max)
M6	0.7 to 2.5	MP 8236A	12

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

Recommended assembly method:

1. Insert the caged nut, premounted on the accessory to be fixed, into the hole in the substrate.
2. Position the assembly.
3. Start tightening: the nut starts to ascend and turn.
4. When fully tightened: the nut has turned 90° and now rests against the panel.



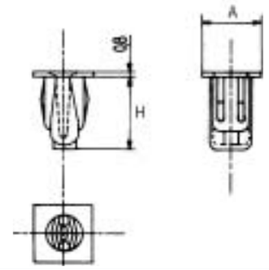
	CAGE	NUT
MATERIAL	PA 6.6	Steel
SURFACE TREATMENT	Zinc + bichromating	
COLOUR	Natural	Yellow

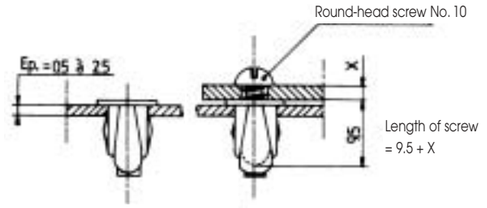
CLIP-IN NUTS

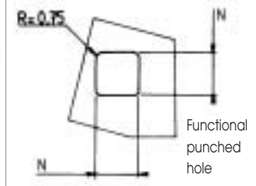
Plastic nuts

Recommended use:
These nuts are designed to be clipped into the outer surface of the substrate and are recommended for assemblies exposed to low mechanical stress.

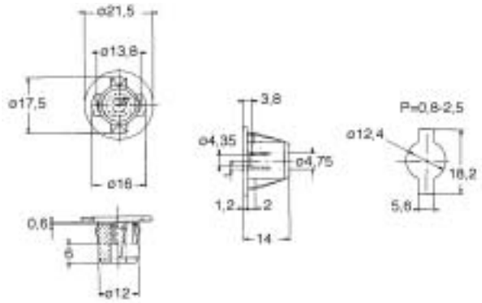
TYPE 1



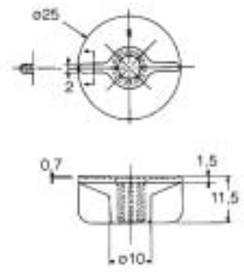




TYPE 2



TYPE 3



TYPE 1

SCREW SIZE	PANEL THICKNESS	REFERENCE	A	H	N
n° 8 4.2 - n° 10 4.8	0.5 to 2.5	P 539 KA ▲	9.7	11	7
n° 10 4.8	0.5 to 2.5	P 1522 KN ■	12	11.2	8.2
N° 8 4.2	0.5 to 2.5	P 1527 NAT	12	11.2	8.2
n° 8 4.2	0.5 to 2	P 1520 NAT	9.5	11.2	7

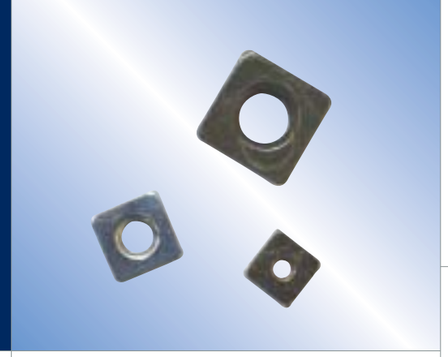
TYPE 2-3

SCREW SIZE	PANEL THICKNESS	REFERENCE	TYPE	MATERIAL
n° 14 6.35	0.8 to 2.5	P 1532	2	PA 6.6
M6	untapped butterfly nut	P 1536 B	3	POM

Recommended assembly method:

1. Position the nut at the edge of the hole.
2. Insert the nut in the substrate with the aid of a simple tool.
3. Once in position, the nut is self-retaining.

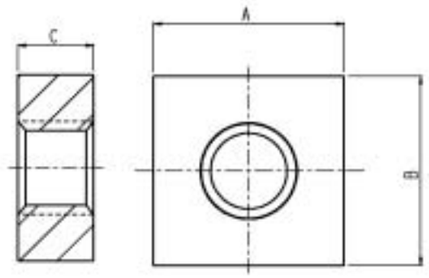
	NUT
MATERIAL	PA 6.6 except for reference "▲": PP
COLOUR	Natural, except for reference "■": Black



FLAT SQUARE NUTS

Square nuts

Recommended use:
These nuts, with reduced dimensional tolerances, are frequently used in profiled sections or cavities of all types. They are particularly well-suited for automated installation.



SCREW SIZE	REFERENCE	A	B	C	TIGHTENING TORQUE ** IN Nm (max)
M3	ECR 3827 ▰	8	8	2.7	0.8
M4	ECR 41040 SJ	10	10	4	1.9
M4	ECR 4827 ▰	8	8	2.7	1.9
M5	ECR 51040 ZB8	10	10	4	3.8
M6	ECR 61045 SJ	10	10	4.5	6.6
M6	ECR 61255 SJ	12	12	5.5	9.5
M8	ECR 81455 ▰	14	14	5.5	15.9

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

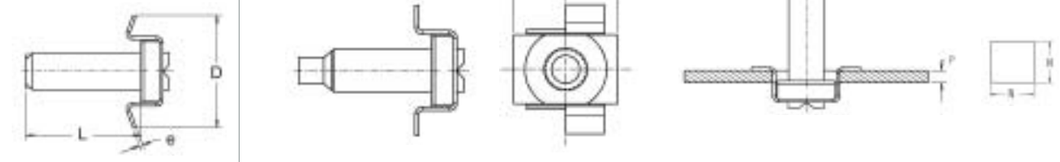
	NUT
MATERIAL	Steel
SURFACE TREATMENT	See table on cover flap, except for parts marked with reference " ▰ ": Zinc plating + green passivation
COLOUR	Yellow, or green in the case of reference " ▰ "

CAGE SCREWS

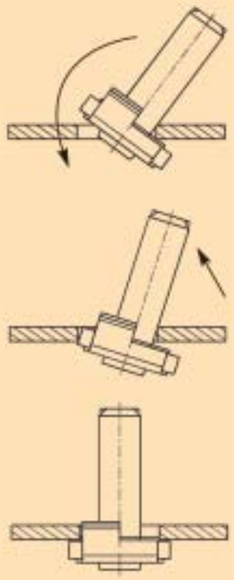
Cage screws: Type V0820

Recommended use:
These "in-box" screws are designed for instant fitting from the front side of the substrate during final assembly. Since they are installed after the substrate is painted, they eliminate the problem of thread-fouling that is otherwise inevitable with welded or crimped screws. Manual assembly possible.

TYPE 1: STRAIGHT TIP | **TYPE 2: PILOT TIP**



Recommended assembly method:

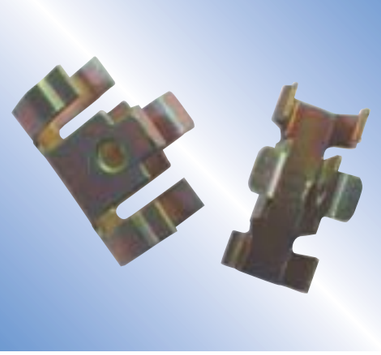


SCREW SIZE	P = PANEL THICKNESS	REFERENCE	A	D	L	e	TYPE	N	TIGHTENING TORQUE ** IN Nm (max)
M5	0.7 to 1.6	V 0825116 SJ8	11	16.5	16	0.4	1	9	3.2
M5	0.7 to 1.6	V 0825125 P SJ8	11	16.5	25	0.4	2	9	3.2
M6	0.7 to 1.6	V 0826116 SJ8	14	18	16	0.5	1	11	5.5
M6	0.7 to 1.6	V 0826118 SJ8	14	18.6	18	0.5	1	11	5.5
M6	0.7 to 1.6	V 0826120 P SJ8	14	18.6	20	0.5	2	11	5.5
M6	0.7 to 1.6	V 0826125 P SJ8	14	18.6	25	0.5	2	11	5.5
M6	0.7 to 1.6	V 0826130 P SJ8	14	18.6	30	0.5	2	11	5.5
M6	0.7 to 1.6	V 0826135 P SJ8	14	18.6	35	0.5	2	11	5.5
M6	1.5 to 2.2	V 0826212 SJ8	14	18	12	0.5	1	11	5.5
M6	1.5 to 2.2	V 0826216 SJ8	14	18	16	0.5	1	11	5.5
M6	1.5 to 2.2	V 0826220 P SJ8	14	18	20	0.5	2	11	5.5
M8	0.7 to 1.6	V 0828112 SJ8	16	21	12	0.5	1	13	13.4
M8	0.7 to 1.6	V 0828120 P SJ8	16	21	20	0.5	2	13	13.4
M8	0.7 to 1.6	V 0828125 P SJ8	16	21	25	0.5	2	13	13.4
M8	2 to 2.1	V 08282020 ▲	16	19.5	20	0.5	1	13	13.4
M8	1.5 to 2.2	V 0828225 P SJ8	16	19.5	25	0.5	2	13	13.4
M8	2.1 to 2.8	V 0828325 P ZP8	16	20.2	25	0.5	2	13.4	13.4

** Values obtained in the lab using a power screwdriver (at 400 rpm) on a hardened steel support with class 8.8 and 12.9 screws (non-lubricated and non-zinc plated).

1. Insert the screw head and its support collar in the hole.
2. Pivot the screw on its support collar.
3. Manually or with the aid of a simple tool, clip the screw into position on the substrate.
4. Once in position, the screw is self-retaining.

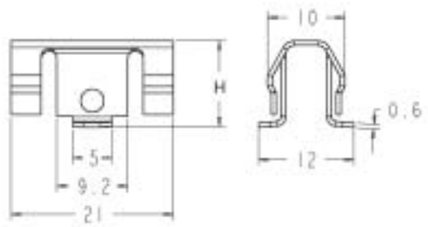
	CAGE	SCREW
MATERIAL	Treated spring steel	Steel
SURFACE TREATMENT	See table on cover flap Except for parts with reference "▲": Phosphating + paint	See table on cover flap Except for parts with reference "▲": Zinc + chromate
COLOUR	Yellow	Yellow

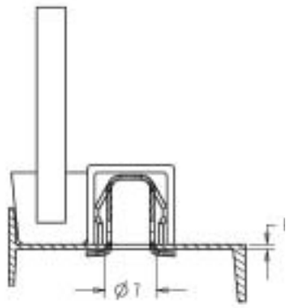


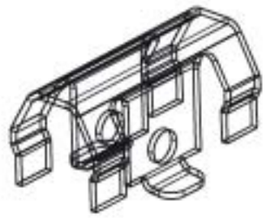
SPECIAL FASTENERS

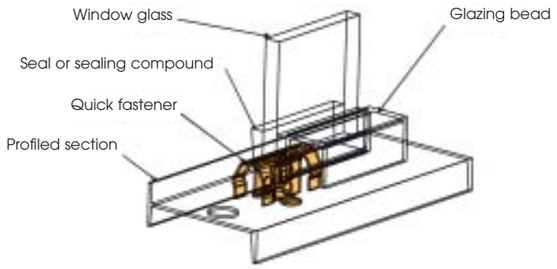
Clips for glazing beads

Recommended use:
For fixing profiled glazing beads.









P = PANEL THICKNESS	REFERENCE	H
2	C 464020 ZE	14.6
3	C 464030 ZE	12.6
4	C 464040 ZE	13.6

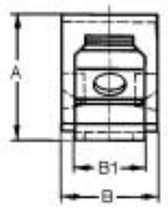
Recommended assembly method:
Fit the fastener to the substrate and then clip on the glazing bead.

	CLIP
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap
COLOUR	See table on cover flap

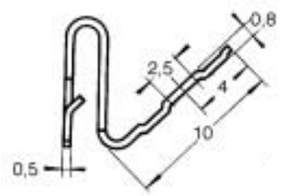
SPECIAL FASTENERS

Snap-fit earth continuity lugs

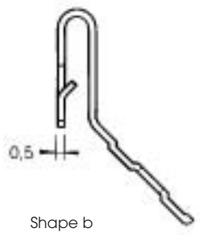
Recommended use:
These blade-type lugs are designed to provide efficient, simple and rapid grounding continuity for electrical appliances. The lugs are pinched onto an edge of a metal panel. Then the cable terminals are clipped to the connecting blades. On assembly, the lugs locally remove the paint, thereby ensuring electrical continuity. These lugs are used on a wide variety of electrical appliances, lighting equipment etc.



TYPE 1

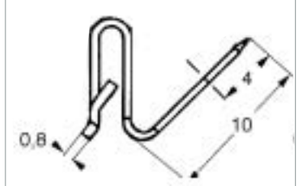


Shape a



Shape b

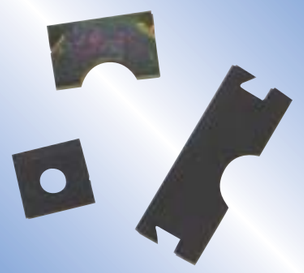
TYPE 2



TERMINAL	P = PANEL THICKNESS	e	REFERENCE	A	B	B1	TYPE	SHAPE
6.35	0.5 to 0.9	0.5	C 27951635 ZB	8.3	6.2	6.2	1	b
6.35	0.5 to 0.9	0.5	C 27251635 ZB	8.3	6.2	6.2	1	a
6.35	1 to 1.4	0.5	C 27252635 ZB	8.1	6.2	6.2	1	a
6.35	1.5 to 2	0.5	C 27253635 ZB	8	6.2	6.2	1	a
6.35	0.5 to 0.9	0.8	C 28831635 ZB	9.5	8	4	2	
6.35	1 to 1.4	0.8	C 28832635 ZB	9.3	8	4	2	
6.35	1.5 to 2	0.8	C 28833635 ZB	9.1	8	4	2	

Recommended assembly method:
1. Install the lug on the panel by hand or with the aid of a simple tool.
2. Make the electrical connection.

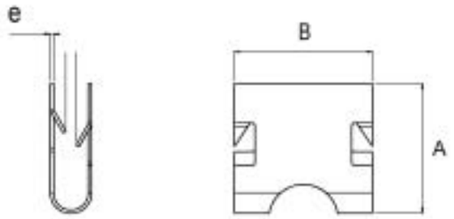
	FASTENER
MATERIAL	Treated spring steel
SURFACE TREATMENT	See table on cover flap
COLOUR	See table on cover flap



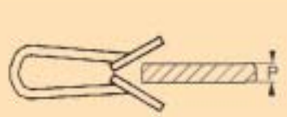
SPECIAL FASTENERS

Balance weights for rotating parts

Recommended use:
These fasteners allow to compensate the unbalance of rotating parts, e.g. fan blades.



WEIGHT (grs)	REFERENCE	e	A	B	P = PANEL THICKNESS
0.176	C 4795 02A	0.2	7.6	8	0.5 to 1.5
0.26	C 4769 02	0.2	7.7	12	0.5 to 1.5
0.264	C 4795 03	0.3	7.5	8	0.5 to 1.5
0.366	C 4796	0.4	7.5	8	0.5 to 1.5
0.37	C 4769 03	0.3	7.7	12	0.5 to 1.5
0.5	C 4769 04	0.4	7.7	12	0.5 to 1.5
0.7	C 4770	0.5	7.7	12	0.5 to 1.5
1	C 4771	0.4	7.5	22	0.5 to 1.5
1.5	C 4773	0.6	7.5	22	0.5 to 1.5

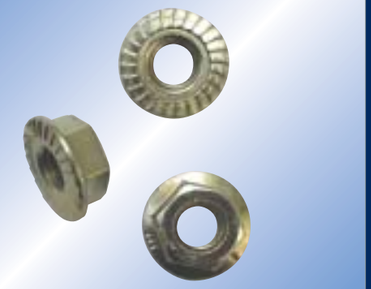


Recommended assembly method:
1. Clip the weight to the relevant part manually or with the aid of a simple tool.
2. Once in position, the weight is self-retaining.

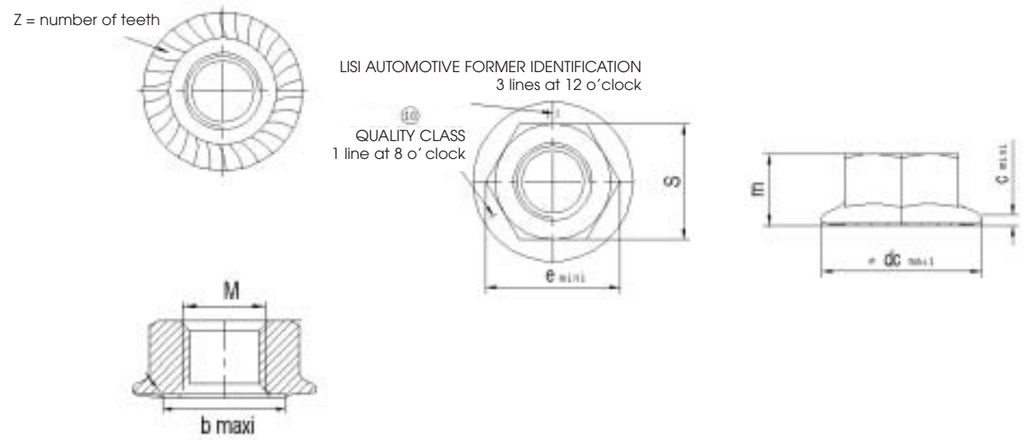
	FASTENER
MATERIAL	Treated spring steel
SURFACE TREATMENT	Phosphating
COLOUR	Black paint

SPECIAL NUTS

Nuts with toothed flange



Recommended use:
These nuts are designed for use when a locking function is required. This function is moderated and ensured by the toothed, concave or convex base of the nut. The tooth pattern can be identical to that of the THIBLOC nut or can be designed to specific customer requirements. The capacity to prevent loosening depends on the substrate material and the tooth shape.

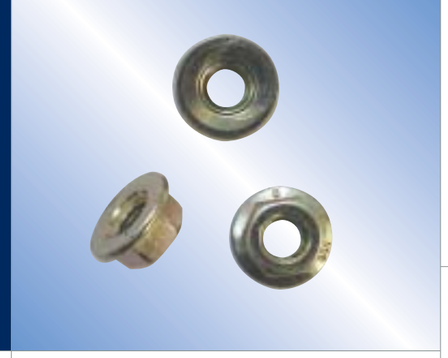


M = SCREW SIZE	REFERENCE	S	e min.	dc maxi	m	C min.	b max.	TIGHTENING TORQUE ** IN Nm (max)
M8	TP 967 SA	12.73 - 13	14.3	17.9	7.6 - 8	1.2	12.05	20.6
M10	TP 981 NA	14.73 - 15	16.5	21.8	9.6 - 10	1.5	15.74	40.7
M12	TP 980 KA	17.73 - 18	19.9	26	11.6 - 12	1.8	17.75	70.1

** Values obtained in the lab on a hardened steel substrate with class 8.8 screws.

Recommended assembly method:
1. Position the nut manually at the end of the screw.
2. Start screwing the nut to the screw.
3. Finish the assembly by tightening the nut.

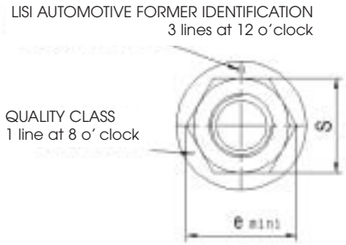
	NUT
MATERIAL	Work-hardened steel
SURFACE TREATMENT	Phosphated coating
COLOUR	White

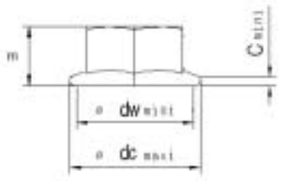


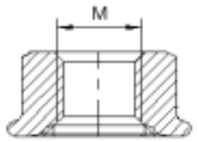
SPECIAL NUTS

Nuts with Thiflex flange

Recommended use:
These nuts are designed for use in applications where the user wishes to compensate for the effects of sagging of the assembly. Flexibility and locking are ensured by the concave shape of the base, which compensates for sagging and maintains the preloading force in the assembly.





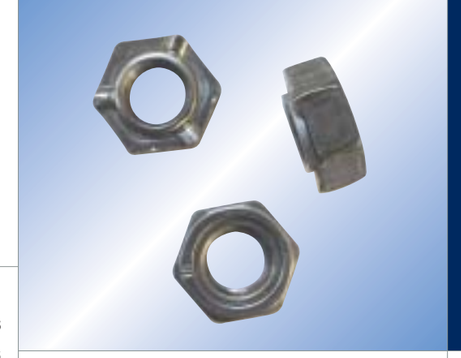


SCREW SIZE	REFERENCE	S	e min.	dc max.	dw min.	m	C min.	TIGHTENING TORQUE ** IN Nm (max)
M5	TP 933 KK	7.78 - 8	8.7	11.8	9.8	4.7 - 5	1	4.5
M6	TP 3336 KL	9.78 - 10	11	14.2	12.2	5.7 - 6	1.1	7.8
M8	TP 342 KL	12.73 - 13	14.3	17.9	15.8	7.6 - 8	1.2	18.8
M10	TP 345 KL	15.73 - 16	16.5	21.8	19.6	9.6 - 10	1.5	37.2
M12	TP 351 KA	17.73 - 18	19.9	26	23.8	11.6 - 12	1.8	64

** Values obtained in the lab on a hardened steel substrate with class 8.8 screws.

Recommended assembly method:
1. Position the nut manually at the end of the screw.
2. Start screwing the nut to the screw.
3. Finish the assembly by tightening the nut.

	NUT
MATERIAL	Class 8 steel
SURFACE TREATMENT	Electrolytic Zinc plating
COLOUR	Yellow

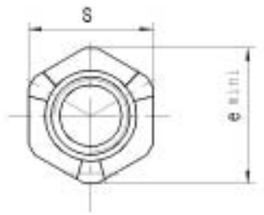


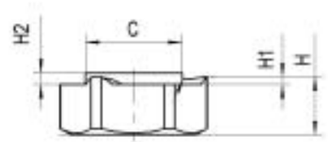
SPECIAL NUTS

Hexagonal welded nuts with three weld dog points

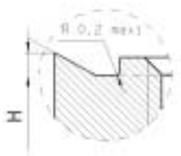
Recommended use:
These nuts are designed for use when the assembly function requires a fixed captive element as reinforcement for the substrate. By its weldability, the nut becomes a fixed captive element in zones that are inaccessible during final assembly.

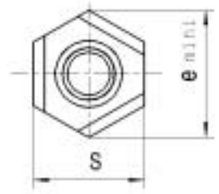
TYPE 1

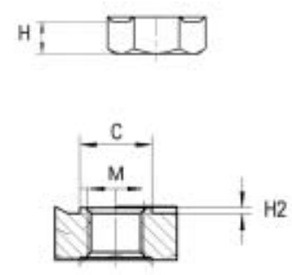




TYPE 2



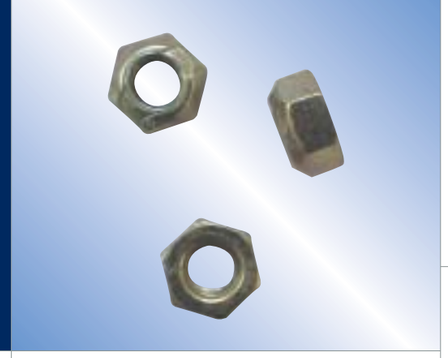




SCREW SIZE	REFERENCE	S	e min.	C	H	H1	H2	TYPE
M6	TP 624 HK	12.5 - 13	13.75	7.4 - 8.0	4.75 - 5.25	0.70 - 0.90	0.45 - 0.75	2
M8	TP 589 HK	15.50 - 16	16.7	10.2 - 10.8	7.75 - 8.25	0.9 - 1.10	0.65 - 0.95	1
M10	TP 596 AK	16.75 - 17	18.73	11.9 - 12.5	7.25 - 7.75	0.8 - 1.0	1.2 - 1.6	1

Recommended assembly method:
1. Position the nut on the metal panel in the welding rig.
2. Place the electrode on the nut to be welded in position.
3. Weld the nut to the panel.

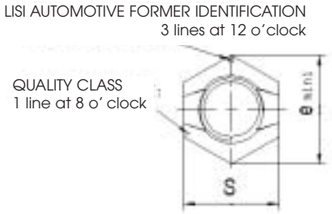
	NUT
MATERIAL	Mild steel
SURFACE TREATMENT	Temporary dry protection
COLOUR	Metal grey

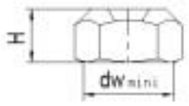


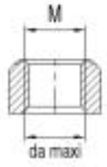
SPECIAL NUTS

Thisert 1 Self-locking nuts

Recommended use:
These nuts are designed for use in applications where the unscrewability of the assembly is vital. Self-locking by axial deformation of the thread prevents free loosening of the nut even after a loss of tension in the assembly, thereby preventing the loss of assembly components.







M = SCREW SIZE	REFERENCE	S	e min.	da max.	dw min.	H	TIGHTENING TORQUE ** IN Nm (max)
M6	TP 867 GK	9.78 - 10	11	6.8	8.9	5.4 - 5.9	7.6
M8	TP 873 GA	12.73 - 13	14.3	8.8	11.6	6.44 - 7.1	18.3
M10	TP 875 GL	15.73 - 16	17.7	10.8	14.6	8.04 - 9	36.1
M12	TP 881 GA	17.73 - 18	20	13	16.6	10.37 - 11.6	62.2

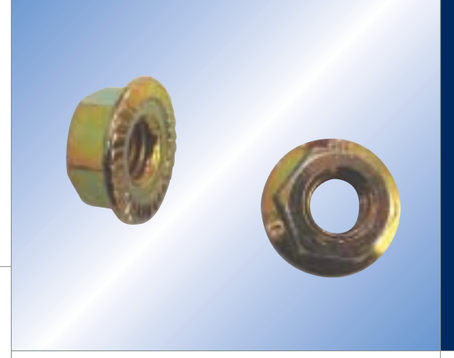
** Values obtained in the lab on a hardened steel substrate with class 8.8 screws.

Recommended assembly method:
1. Position the nut by hand at the end of the screw.
2. Start screwing the nut on the screw.
3. Fix the nut in position by tightening.

	NUT
MATERIAL	Nut steel
SURFACE TREATMENT	Electrolytic Zinc plating
COLOUR	Yellow with lubrication

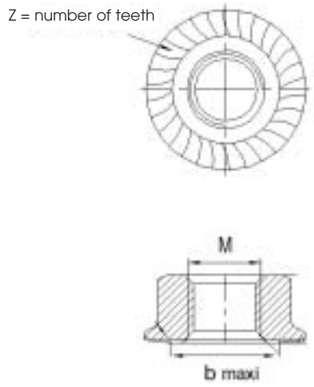
SPECIAL NUTS

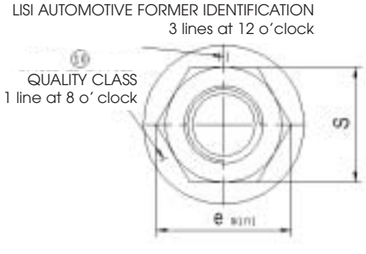
Nuts with Thibloc flange

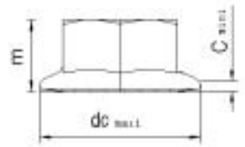


Recommended use:
These nuts are designed for use in applications where unloosenability is important. This tight-locking function is obtained:
- by the shape of the teeth on the convex base,
- by the difficulty of "slipping" on the substrate during tightening and of attacking it during loosening.

The loosening torque is therefore higher than the tightening torque (by 10% to 50% depending on the substrate material).







M = SCREW SIZE	REFERENCE	S	e min.	dc max.	m	C min.	b max.	Z	TIGHTENING TORQUE ** IN Nm (max)
M5	TP 929 EA	7.78 - 8	8.7	11.8	4.7-5	1	6.7	20	5.3
M6	TP 932 8L	9.78 - 10	11	14.2	5.7-6	1.1	8.75	24	9.2
M8	TP 938 RA	12.73 - 13	14.3	17.9	7.6-8	1.2	12.05	30	22.4
M10	TP 944 RA*	14.73 - 15	16.5	21.8	9.6-10	1.5	15.74	32	44.2
M12	TP 948 EA	17.73 - 18	19.9	26	11.6-12	1.8	17.75	40	76.2

** Values obtained in the lab on a hardened steel substrate with class 8.8 screws.
* The M10 model is also available with a width across flats of 15.73 - 16.

Recommended assembly method:
1. Position the nut by hand at the end of the screw.
2. Start screwing the nut on the screw.
3. Fix the nut in position by tightening.

	NUT
MATERIAL	Carbonitride treated steel
SURFACE TREATMENT	Electrolytic Zinc plating
COLOUR	Yellow

Innovations

AUTOMOTIVE - INDUSTRY

EASY RIVET

Easy to assemble and dismantle

Application
Fastener for fixing heat shields to vehicle undercarriage.

Function
- Fastener for fixing invisible panels by simple pressure.
- Withstands temperatures up to 200°C.
- Maintains tension in the assembly.
- High resistance to tear-out extraction.
- Easily removed by turning a quarter turn.

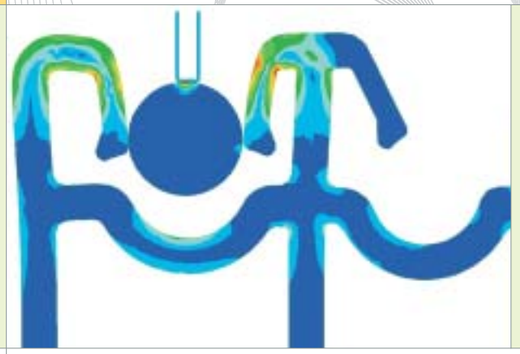
AUTOMOTIVE

METAL-PLASTIC ADJUSTABLE CLAMP

Safety component

Application
Fastening the seat to the body.

Function
- Covers the fixing points on metal panels.
- Positioning allowing play and nut retention before final assembly.



Product design

- Research.
- Product design.
- Math-modeling.
- Prototyping.
- Static (force) and dynamic (vibration) tests.

AUTOMOTIVE

SPARE WHEEL FASTENER

Standardisation

Application
Fastener for spare wheel.

Function
Assembly.

Old version
Approximately 120 different references for our customer.

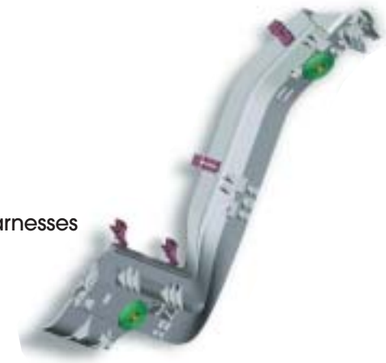
New version
A single fastener per platform, or a total of 5 different references for our customer.

AUTOMOTIVE

WIRING AND PIPING DUCT

Application
Routing channel mounted on elastic supports, also providing thermal protection.

Function
For routing hydraulic, brake and fuel pipes and electric wiring harnesses through the bulkhead, with thermal protection for all parts.



Plastic injection moulding

Injection of all technical plastics,
Bi-material injection.

AUTOMOTIVE

ISOLATING FASTENER

Application
Hydraulic pipe fastener with sound-filtering function.

Function
Isolation of the pipe from the vehicle structure in order to prevent noise transmission.

AUTOMOTIVE

3-TUBE MOUNTING SLEEVE
with 1 variable-diameter tube

Application
Protection of tubes routed through holes punched in the vehicle body.

Function
Prevents damage to pipes and cables.

Plugs and grommets

Grommets and mounting sleeves perform the combined functions of sealing panel cutouts (preventing liquid ingress and providing soundproofing) and guiding and protecting tubes and wiring harnesses.

AUTOMOTIVE

BALL IN RAMP
Safety component

Application
Self-adjusting parking brake for disc calipers.

Function
Force transmission.

AUTOMOTIVE

GUIDE PIN
Safety component

Application
Brake caliper guide pin.

Dedicated test and inspection equipment

The LISI AUTOMOTIVE operating test lab conducts tribological tests under real friction conditions in order to propose the optimal solutions.

AUTOMOTIVE

CLIP PIN
Safety component

Application
Fastens the brake servo clevis to the brake pedal.

Function
- Part linking the pedal to the servo clevis.
- Safety component requiring an endurance of a million cycles.
- Mounted without tool. Double-locked for extra safety by clip-mounting and locating ring.

AUTOMOTIVE

ENGINE FASTENERS
LISI AUTOMOTIVE expert

Application
Engine fasteners: cylinder head screws, connecting rod screws, crankshaft bearing screws, pulley screws, flywheel screws, valve spring seats, rocker screws etc.

Function
Pre-stressed assembly (LISI AUTOMOTIVE has expert knowledge of elasto-plastic material properties, in order to optimise screw design by tightening the screws beyond their elastic limit).

Dimensional optimisation (Downsizing)

Optimisation of calculation and tightening methods has led to a reduction in the diameters of screwed assemblies.

Advantages:
- Weight saving.
- Improved fatigue strength.
- Reduced purchased price of the components.

Fatigue tests on assembled connecting rod screws.

AUTOMOTIVE – INDUSTRY

UNIVERSAL FRONT-MOUNTED NUT

Application
Fastener for mounting a door opener.

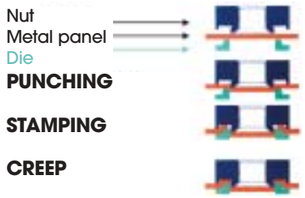
Function
- Fastener for fixing a plastic panel to a metal sheet.
- Rapid assembly.
- Mounted from the front without a tool.
- Compensates for deviations in position about two axes.
- Creep compensation.

AUTOMOTIVE – INDUSTRY

PRESSFIX® NUT
Single-stroke self-punching and self-crimping nut

Application
The PRESSFIX® nut is designed to be installed simultaneously with the sheet stamping operation in a single press stroke. It provides high positioning precision.

Function
Positioning of a tapped hole in the metal sheet. All requirements of torque strength and resistance to axial extraction are met. A single reference per diameter covers all thicknesses and qualities of metal sheet.



Pressfix, a complete system

- A simplified range of square self-punching and self-crimping nuts (M6 and M10).
- Insertion equipment integrated in the cutout tool of the press.
- Space-saving and low-cost module distributor.

This concept, without vibration system, enables different types of nut to be crimped at a single station using the same frame. The system is designed for simplified connection to the automated press control. Maintenance costs are reduced due to standard module replacement and repair in service stations.

INDUSTRIAL VEHICLE

WHEEL NUT
Hot forged

Application
Wheel nut with captive washer.

Function
Prestressed assembly.

AUTOMOTIVE

WHEEL SCREW
Safety component

Application
Wheel screw, with or without washer.

Function
Prestressed assembly.

Hot forging

This process is suitable for manufacturing large components on medium-sized machines and offers a large material deformation capacity.

Cold forging

Saves material and optimises mechanical strength.

Years of industrial experience combined with finite element simulation have enabled the specialists at LISI AUTOMOTIVE to push back the limits of cold forging and extend its field of application.

INDUSTRY

SINK FASTENER

Application
For fastening a sink to a work surface.

Function
This range of different fasteners, distributed around the edge of the sink, ensures perfect sealing.

INDUSTRY

REMOVABLE PUSH-BUTTON MECHANISM

Application
This mechanism enables entirely safe activation of domestic electrical appliances.

Function
The mechanism of this button ensures safe operation of gas or electricity.

Button in Button out

Full range of control knobs and buttons

Controls for gas cookers, microwave ovens and electric hobs.

INDUSTRY

HINGE

Application
For fastening front panels to electric control cabinets.

Function
These hinges enable the front panel to be opened and closed to permit access to the inside of the control cabinet.

ELECTRICAL SCREW FASTENERS

Application
Screws with U-collars for contactors and other electronic or electro-mechanical devices.

Function
These screws are used for gripping cables and conducting current and provide high vibration resistance. Captive contactor screws.

Autonomous workshop dedicated to this product family

Product capacity: flat and convex collar screws and M3 and M5 screws with one and two premounted washers.

The responsiveness of a small production unit combined with the development capacity and staying power of a large industrial group.

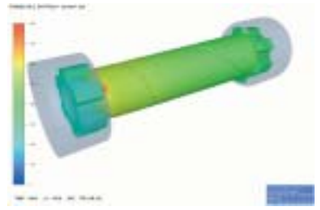
AUTOMOTIVE

TORSION BAR

Safety component

Application
Torsion bar for seat belt inertia reel.

Function
The torsion bars limit the tension on the seat belt material and absorb a considerable quantity of energy in the event of impact, thereby preventing severe injury to the ribcage.



HYDRAULIC CONNECTOR

Brake safety component

Application
Hydraulic connector for brake pipes.
The safety of the hydraulic connections is guaranteed by the cold forging manufacturing method and 100% inspection.

Function
Sealing – hydraulic connection: high hydraulic pressure.

Dedicated test and inspection equipment

The LISI AUTOMOTIVE test lab conducts functional static and dynamic tests on the torsion bars.

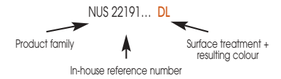
It also has a measuring station for determining pressure loss in hydraulic circuits.

INDEX

References	Products	Pages
SFO 5965 ZH	Axially mounted lock washers: "2-tab spring washer" and "Multi-tab spring washer" type	15
SFO 6045 ZB	Axially mounted lock washers: "2-tab spring washer" and "Multi-tab spring washer" type	15
SFP 0212 ▲	Axially mounted lock washers: "2-tab spring washer" and "Multi-tab spring washer" type	15
SFR 5460 ZC	Axially mounted lock washers: "2-tab spring washer" and "Multi-tab spring washer" type	15
SFR 6908 ▲	Axially mounted lock washers: "2-tab spring washer" and "Multi-tab spring washer" type	15
SMC 6394 ZHJ	Snap-on caged nuts: Type CNU/SMC	28
SMC 7403 TRJ	Snap-on caged nuts: Type CNU/SMC	28
SMG M4-4 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M4-8 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M5-4 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M5-6 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M5-8 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M6-4 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M6-6 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M6-8 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M8-6 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SMG M8-8 ZBJ	Caged nuts: Type C 4800 and SMG	34-36
SNK 6617 ▲	Snap-on anti-vibration nuts Type SNK	33
SNK 7166 ZGK	Snap-on anti-vibration nuts Type SNK	33
SNK 7200A THL	Snap-on anti-vibration nuts Type SNK	33
SNK 7274 BTGL	Snap-on anti-vibration nuts Type SNK	33
SNK 7275 ▲	Snap-on anti-vibration nuts Type SNK	33
SNO 1742 THJ	Self-locking nuts: Type EX	43
SNU 0536 ZGJ	Snap-on nuts: Type NU/SNU	29-31
SNU 0537 ZGJ	Snap-on nuts: Type NU/SNU	29-31
SNU 0538 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 1219 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 1561 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 1812 PHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 2012 ZBJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5079 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5113 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5418 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5527 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 5552 ZBJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5594 C	Snap-on nuts: Type NU/SNU	29-31
SNU 5682 ZBJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5743 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5774 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5783 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 5815 ZZC	Snap-on nuts: Type NU/SNU	29-31
SNU 6025 ZB	Snap-on nuts: Type NU/SNU	29-31
SNU 6161 ZGJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6366 NFJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6402 PPJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6635 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 6723 ZGJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6740 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 6792 BHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6805 DDJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6828 ZZD ■	Snap-on nuts: Type NU/SNU	29-31
SNU 6856 ZHJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6899 ZNJ	Snap-on nuts: Type NU/SNU	29-31
SNU 6979 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 7207 ▲	Snap-on nuts: Type NU/SNU	29-31
SNU 7248 TRJ■	Snap-on nuts: Type NU/SNU	29-31
SNU 7283A TGJ	Snap-on nuts: Type NU/SNU	29-31
SNU 7311B TKJ	Snap-on nuts: Type NU/SNU	29-31
TP 3336 KL	Nuts with Thiflex base	54
TP 342 KL	Nuts with Thiflex base	54
TP 345 KL	Nuts with Thiflex base	54
TP 351 KA	Nuts with Thiflex base	54
TP 589 HK	Hexagonal welded nuts with 3 weld points	55
TP 596 AK	Hexagonal welded nuts with 3 weld points	55
TP 624 HK	Hexagonal welded nuts with 3 weld points	55
TP 867 GK	Thisert 1 self-locking nuts	56
TP 873 GA	Thisert 1 self-locking nuts	56
TP 875 GL	Thisert 1 self-locking nuts	56
TP 881 GA	Thisert 1 self-locking nuts	56
TP 929 EA	Nuts with Thibloc flange	57
TP 932 8L	Nuts with Thibloc flange	57
TP 933 KK	Nuts with Thiflex flange	54
TP 938 RA	Nuts with Thibloc flange	57
TP 944 RA*	Nuts with Thibloc flange	57
TP 948 EA	Nuts with Thibloc flange	57
TP 967 SA	Nuts with toothed flange	53
TP 980 KA	Nuts with toothed flange	53
TP 981 NA	Nuts with toothed flange	53
V 0825116 SJ8	Cage screws: Type V 0820	49
V 0825125 P SJ8	Cage screws: Type V 0820	49
V 0826116 SJ8	Cage screws: Type V 0820	49
V 0826118 SJ8	Cage screws: Type V 0820	49
V 0826120 P SJ8	Cage screws: Type V 0820	49
V 0826125 P SJ8	Cage screws: Type V 0820	49
V 0826130 P SJ8	Cage screws: Type V 0820	49
V 0826135 P SJ8	Cage screws: Type V 0820	49
V 0826212 SJ8	Cage screws: Type V 0820	49
V 0826216 SJ8	Cage screws: Type V 0820	49
V 0826220 P SJ8	Cage screws: Type V 0820	49
V 0828112 SJ8	Cage screws: Type V 0820	49
V 0828120 P SJ8	Cage screws: Type V 0820	49
V 0828125 P SJ8	Cage screws: Type V 0820	49
V 08282020 ▲	Cage screws: Type V 0820	49
V 0828225 P SJ8	Cage screws: Type V 0820	49
V 0828325 P ZP8	Cage screws: Type V 0820	49

TYPE OF PLATING AND RESULTING COLOUR

Example reference composition:



Code	Coating designation	Colour	Min. thickness (µ)	Presence of Cr6	Red oxidation (hours) BS Test	Friction coefficient
B	Stainless steel					
BH	Steel - light oiling			N		
DA	Steel Lamellar zinc	Grey Silver	5	Y	600	> 0.18
DC	Steel Lamellar zinc	Grev Silver	5	Y	600	> 0.18
DD	Steel Lamellar zinc	Grey Silver	8	Y	1000	> 0.18
DK	Steel Lamellar zinc	Grey Silver	5	Y	600	0.12 / 0.18
DL	Steel Lamellar zinc	Grey Silver	8	Y	1000	0.12 / 0.18
GJ	Steel Lamellar zinc	Grev Silver	10	N	720	0.12 / 0.18
KA	Plastic	Natural				
KG	Plastic	Grey				
KN	Plastic	Black				
KW	Plastic	White				
NF	Electrolytic zinc + topcoat	Yellow	8	Y	600	
NJ	Electrolytic zinc + topcoat	Grey Silver	8	N	720	0.12 / 0.18
NQ	Electrolytic zinc + topcoat	Black	12	Y	720	0.20 / 0.35
PC	Zinc phosphating + opaque finishing coat	Grey / Black		N	72	
PH	Zinc phosphating + oiling	Grey /Black		N	48	
PP	Zinc phosphating + paint	Black		N	72	
PV	Zinc phosphating + opaque finishing coat	Green		N	48	
SC	Electrolytic zinc + topcoat	Brown	10	Y	400	
SD	Electrolytic zinc + topcoat	Brown	30	Y	800	
SJ	Electrolytic zinc + topcoat	Yellow	10	Y	400	0.15 / 0.25
SR	Electrolytic zinc + topcoat	Black	10	Y	400	0.20 / 0.30
TA	Steel - Lamellar zinc	Black		N	72	
TG	Steel Lamellar zinc	Grey Silver		N	288	
TH	Steel Lamellar zinc	Grey Silver		N	480	
TM	Steel Lamellar zinc	Grey Silver	8 + 4	N	400	
TR	Steel Lamellar zinc	Black		N	480	
YN	Electrolytic zinc	Black	12	Y	240	
ZB	Electrolytic zinc	White	5		48	
ZE	Electrolytic zinc	Yellow	2	Y	48	
ZF	Electrolytic zinc	Yellow	5	Y	96	
ZG	Electrolytic zinc	Yellow	12	Y	240	
ZH	Electrolytic zinc	Yellow	10	Y	200	
ZJ	Electrolytic zinc	Yellow	15	Y	300	
ZK	Electrolytic zinc	White	10		72	
ZN	Electrolytic zinc	Black	10	Y	200	0.20 / 0.30
ZP	Electrolytic zinc + topcoat	Black	10	Y	400	0.20 / 0.30
ZY	Stainless steel			N		