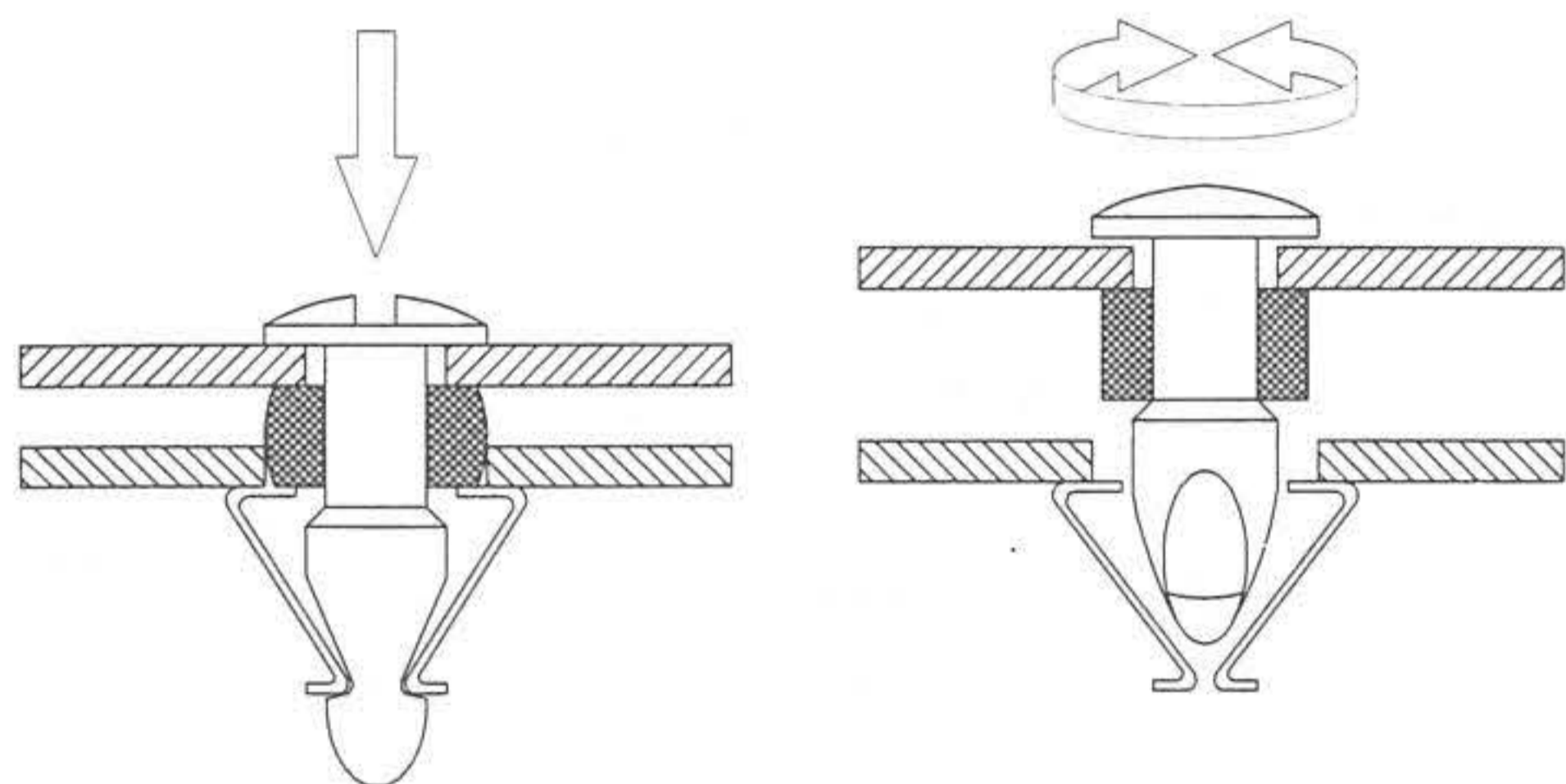


### Paneloc BI-FIX Quarter Turn Fasteners

#### Functional Characteristics

The Paneloc **BI-FIX** quarter-turn fastener is used for securing panels and components where accessibility is important. The special characteristic of the BI-FIX quarter-turn fastener is its quick and simple detachability. A 90°-turn of the stud unlocks the fastener (fig. 2), finger pressure onto the head of the stud reclicks the fastener into the locked position. (fig. 1)

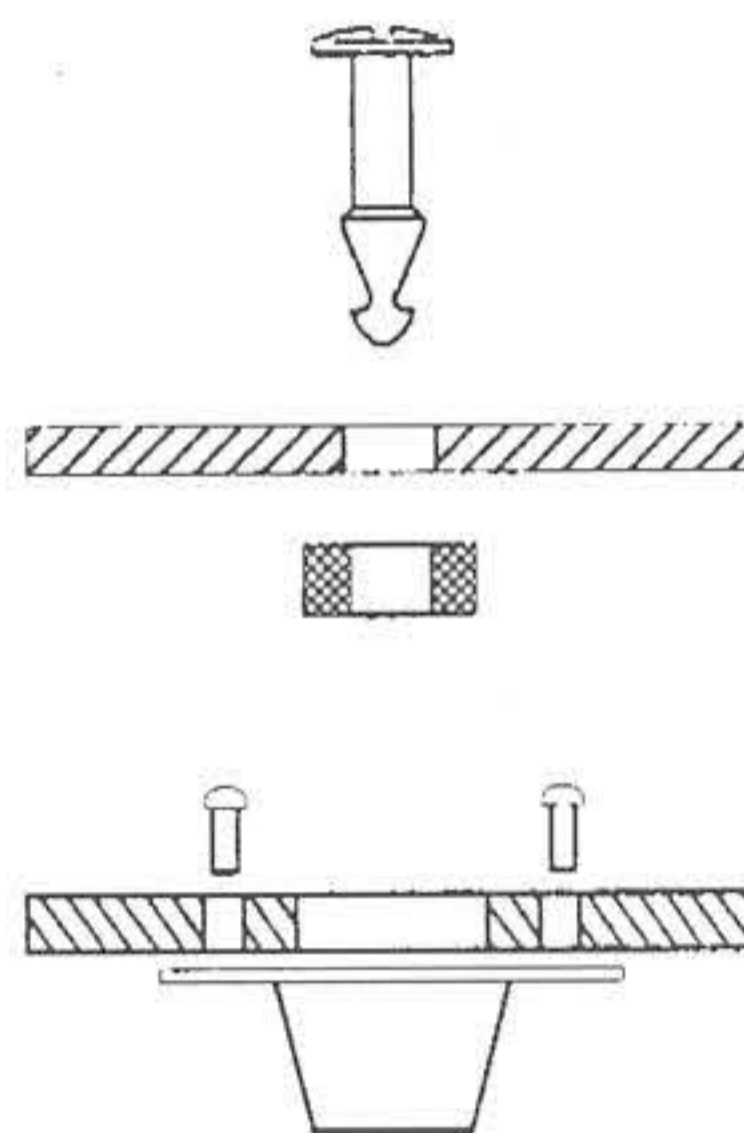


The **BI-FIX** can be used wherever 2 elements have to be fastened and detached in a quick and safe manner. The **BI-FIX** quarter-turn fastener is ideal for any application where panels, doors or hatches are continually opened or removed for maintenance or security. Manufactured from quality materials, they are rugged and easy to operate.

The most simple **BI-FIX** quarter-turn fastener consists of 3 parts:

- A. **Stud** - which is located in the panel (loose part).
- B. **Washer** - which is used for retention and vibration resistance
- C. **Spring Clip** - which is installed permanently into the framework

Finger pressure on top of the head of the stud is sufficient to click the fastener into the locked position. In locked position, the two sides of the clip seize the notches of the stud. This connection cannot be opened by vibration or shocks, unless they reach some 100 g (acceleration due to gravity). Under axial tension the fasteners become more and more form-fit, until the clip reaches maximum load (see technical details).



There are different methods of fixing the spring clip to the fixed part. The design of the spring clip ensures the stud is ejected automatically when turned 90°. Separation of the loose part from the fixed part occurs at this point.

The **BI-FIX** quarter-turn fastener is manufactured in 3 sizes. To choose the size most suited to the application, please refer to the data on pages 4-6. Aesthetics are often the main design parameter.



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# BI-FIX Quarter Turn Fasteners

## Choice of the Components

To identify the appropriate **BI-FIX** quarter-turn fastener for specific applications, please refer to the examples shown below.

### 1. Forces and hole diameters (sizes)

The size of the fastener can be determined by the occurring forces (see table of forces), by existing hole sizes or aesthetics.

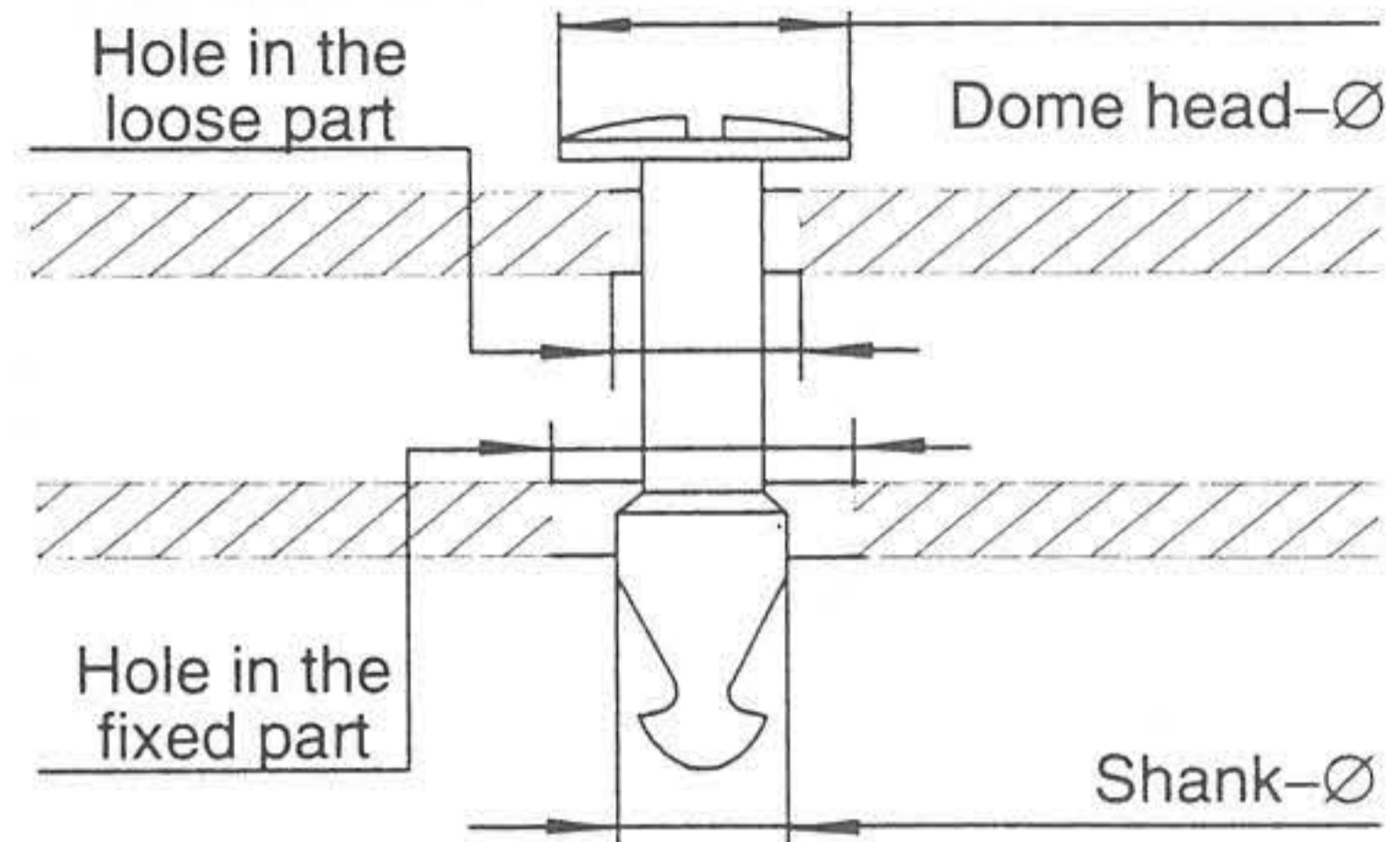


Table of forces in (force [N], dimensions in [mm])

Size	Nominal Load	Maximum Load	Dome head- $\varnothing$	Hole in the loose part	Hole in the fixed part
"08"	80	300	8	4.0 - 4.5	7.5 - 8.0
"11"	300	900	11	6.5 - 7.0	11.5 - 12.0
"16"	900	2700	16	10.0 - 10.5	15.5 - 16.0

### 2. Standard heads and material of the stud

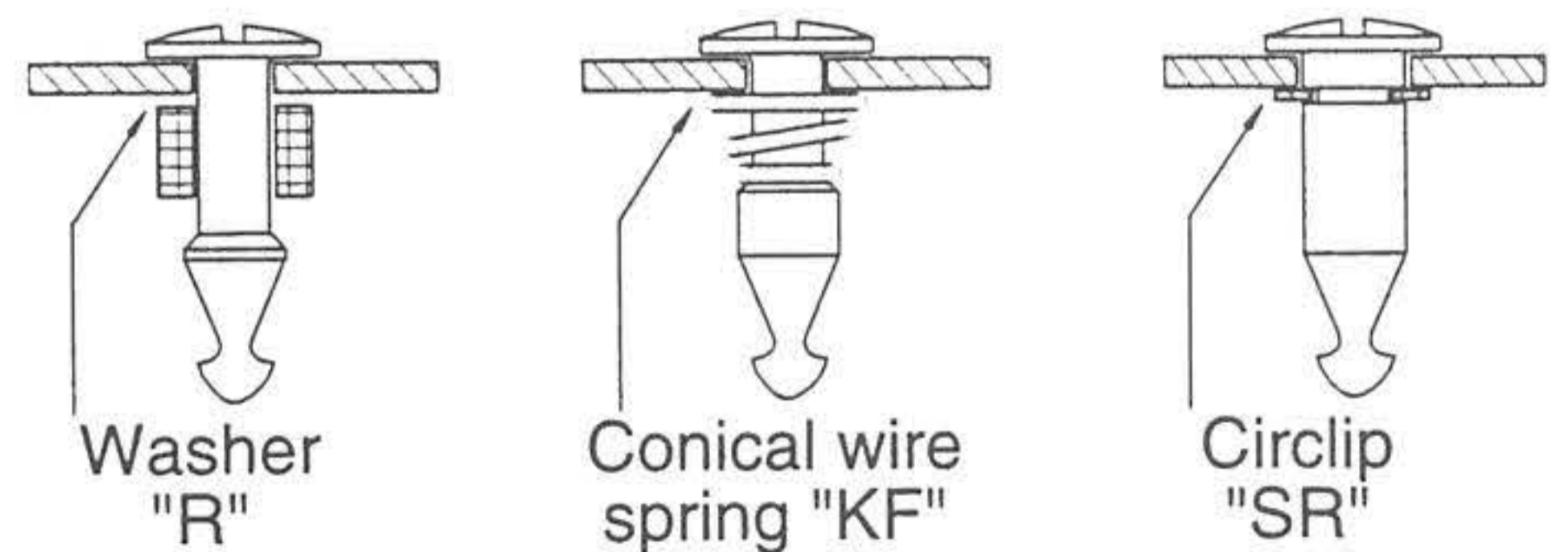
Once the size of the stud has been selected, the shape of the head and the material must be chosen.

For special heads refer to pages 7– 8. To determine the length of the stud see page 5.



### 3. Securing the Stud

You have to choose the best method of securing the stud at the loose part. For temperatures up to 90°C the standard washer "R" is adequate and the most popular method of retention. For temperatures exceeding 90°C the conical wire spring or circlip are recommended. For further information please refer to (page 10-11).

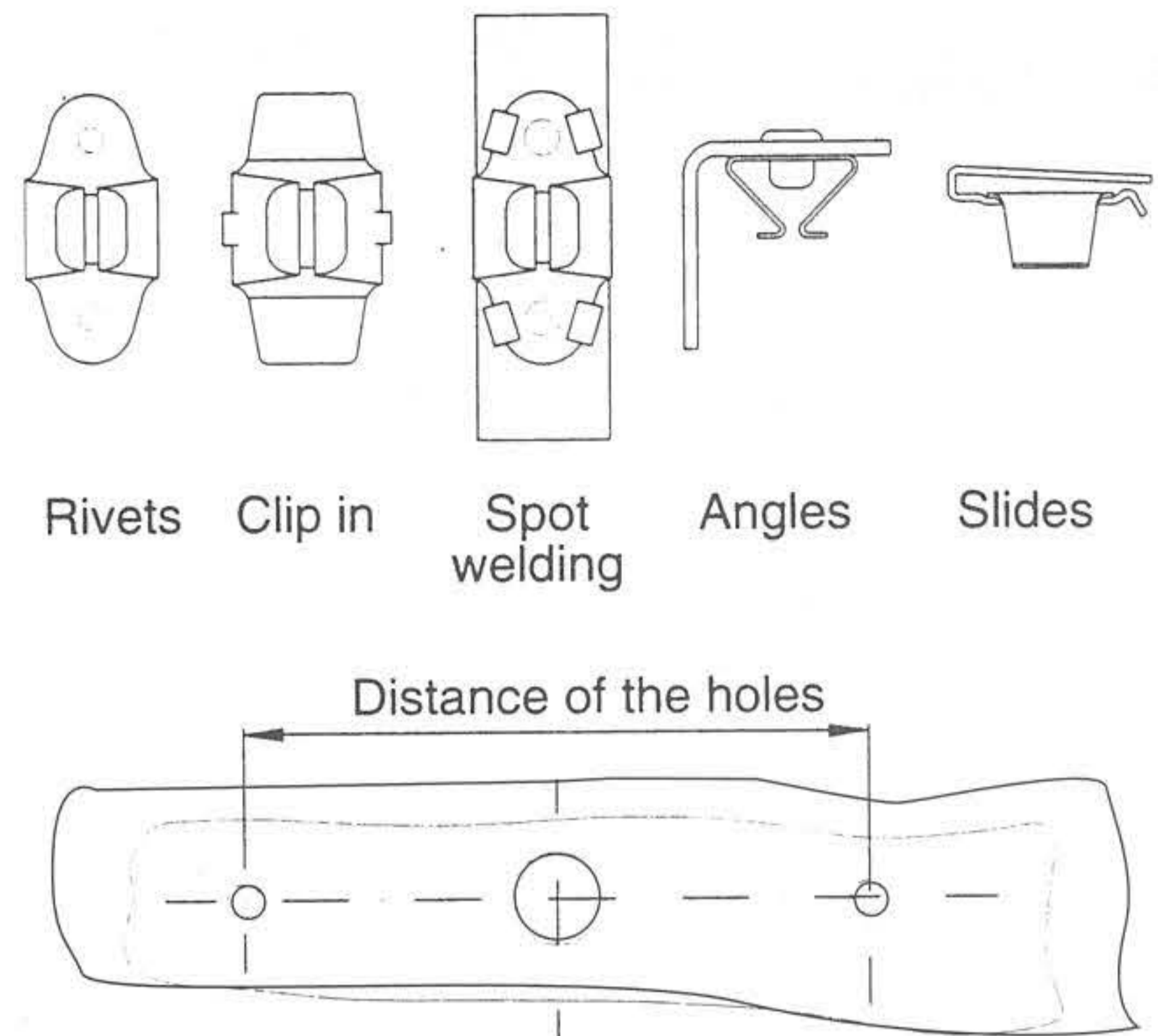




## 4. Fixing-methods for Spring Clips

The Clip is the least expensive item and dependent upon customer preference and mounting position. The Clip can be assembled using rivets, spot welding, screws, clip-ins, slide-ons and angle-plates. For further information refer to pages 7-8.

To ease a conversion to the **BI-FIX** quarter-turn system, we offer spring-clips whose hole patterns correspond to those of other producers. For further information refer to pages 7-8.



## Choice of the Stud

All series are available in any grip length, standard items are graduated as listed. Specials are available to customer requirements:

Size	Length in [mm]	Remark
"08"	0.5 - 1.0	The length of a stud is constructed so that a continuous use of the "H" dimension is possible
"11"	1.0 - 2.0	
"16"	1.0 - 2.0	

For choice of the head shape, shank, material and the character of finish - refer to dedicated type "08" on pages 14 through 18. In the following examples, the indications a, b, c, d, e, and f refer to the description of the actual components.

The grip length (H dimension) is critical and is always measured from the underside of the head of the stud to the top surface of the clip. This includes any bracketry.

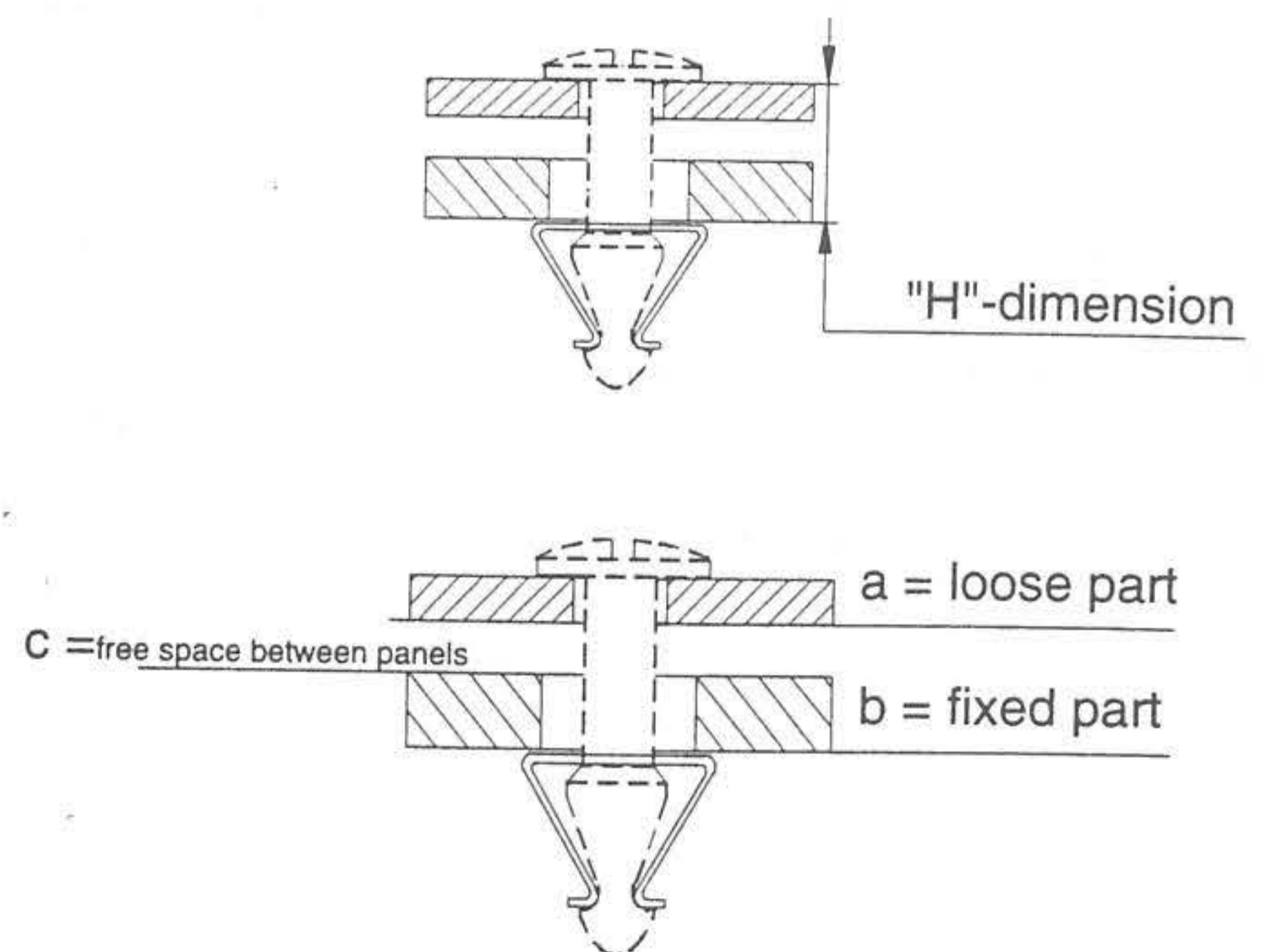
### Determination of the "H"

Determination of the "H"-dimension (grip length), please refer to examples shown:

### Standard-use

For "H"-dimension calculation see formula below:

$$H = a + b + c$$

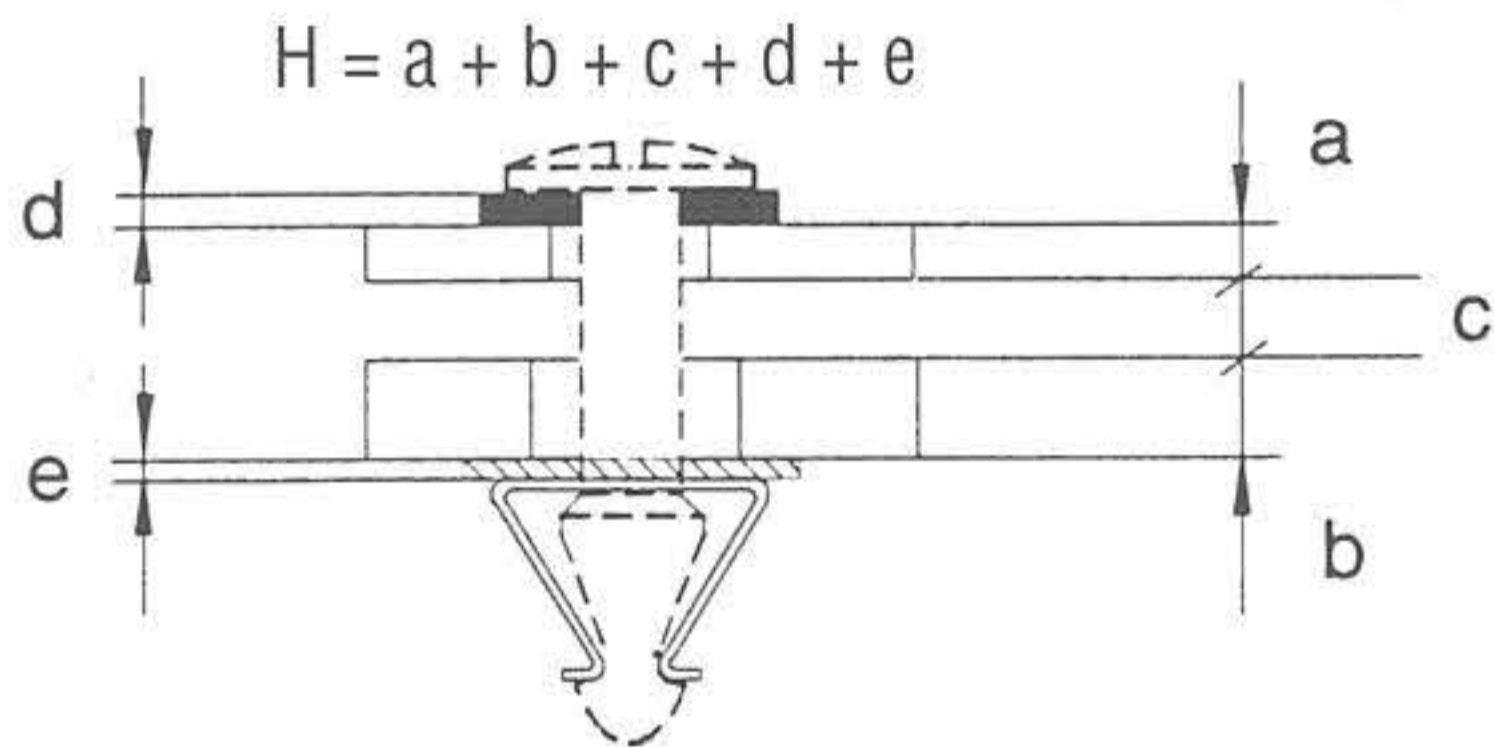




# BI-FIX Quarter Turn Fasteners

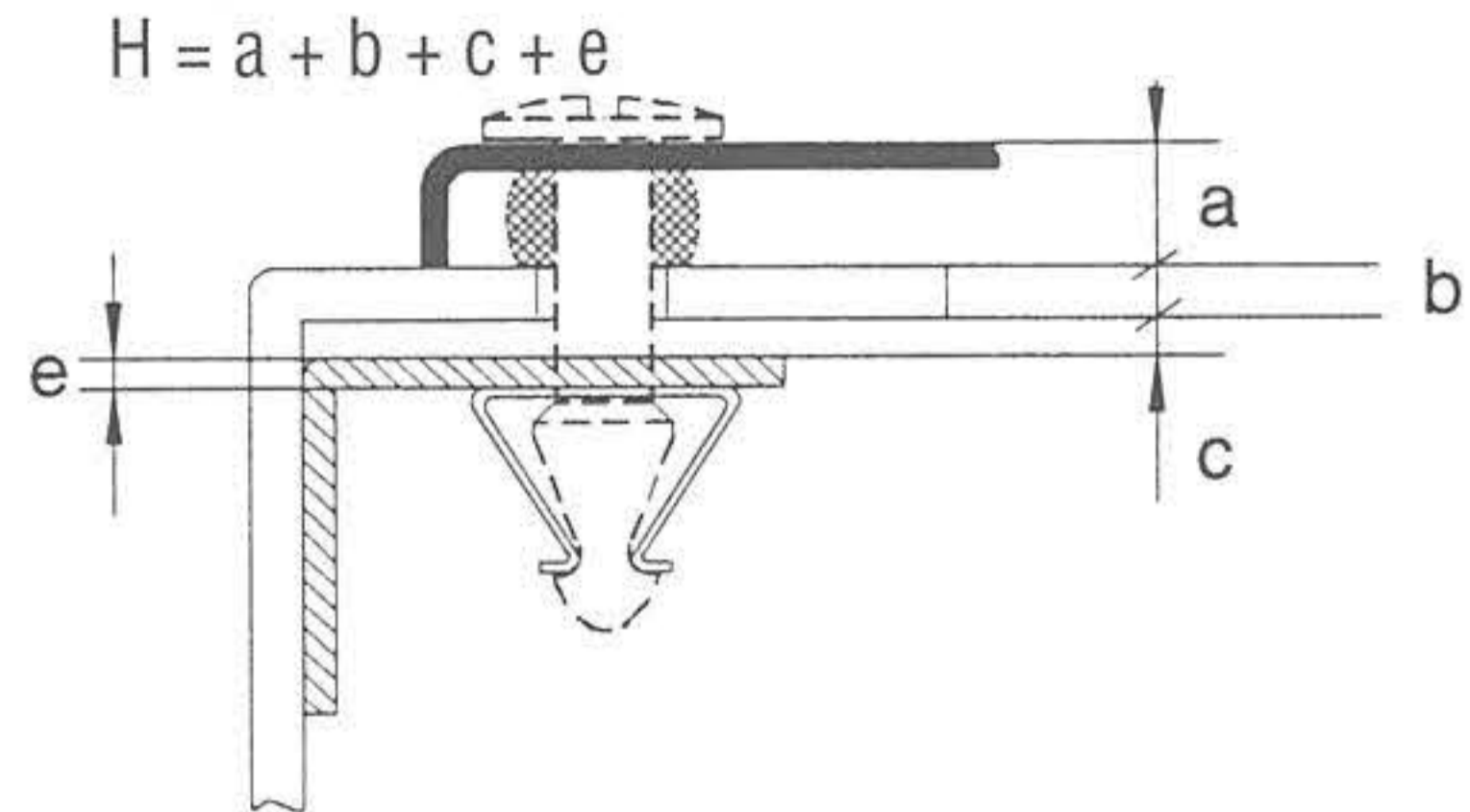
## Use of other components

If other structural members are used, like the plain washer RW, the tolerance compensator TA, the conical wire spring KF, the spot-welding-clip CP or spring-clips which are pre-assembled, the thickness of the actual structural member (d or e) has to be taken into consideration.



## Use of pre-assembled angles

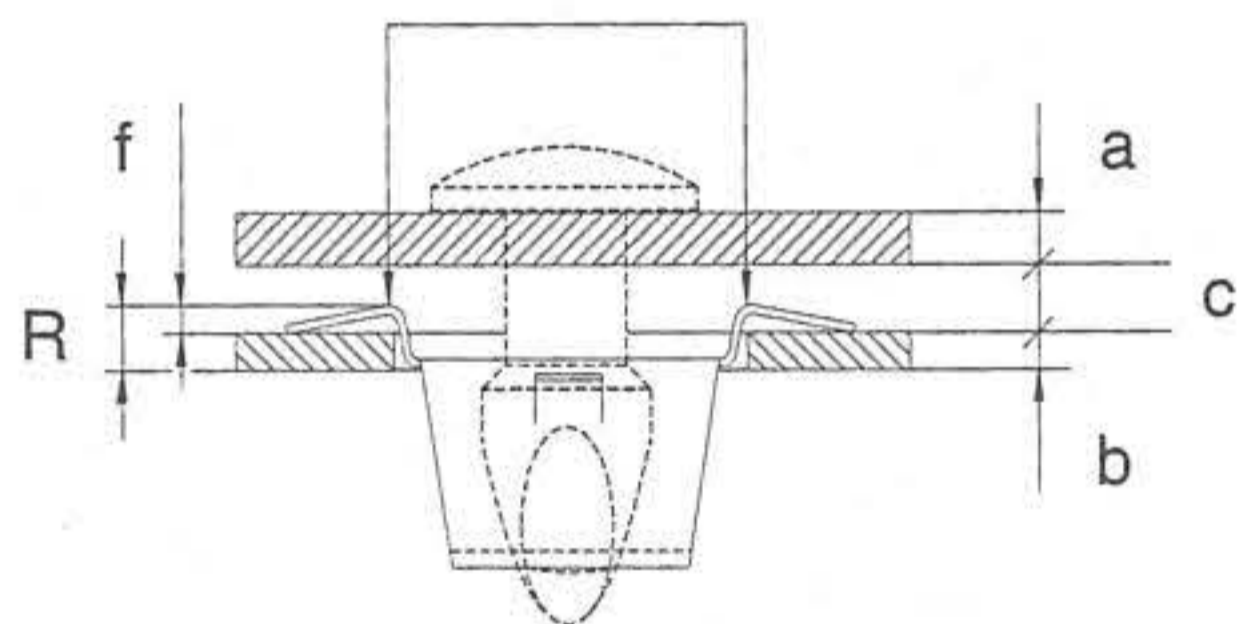
If bend off front-panels and pre-assembled spring-clips are in use (a=loose part), the "H"-dimension results as the sum of:



## "Clip in Clip"

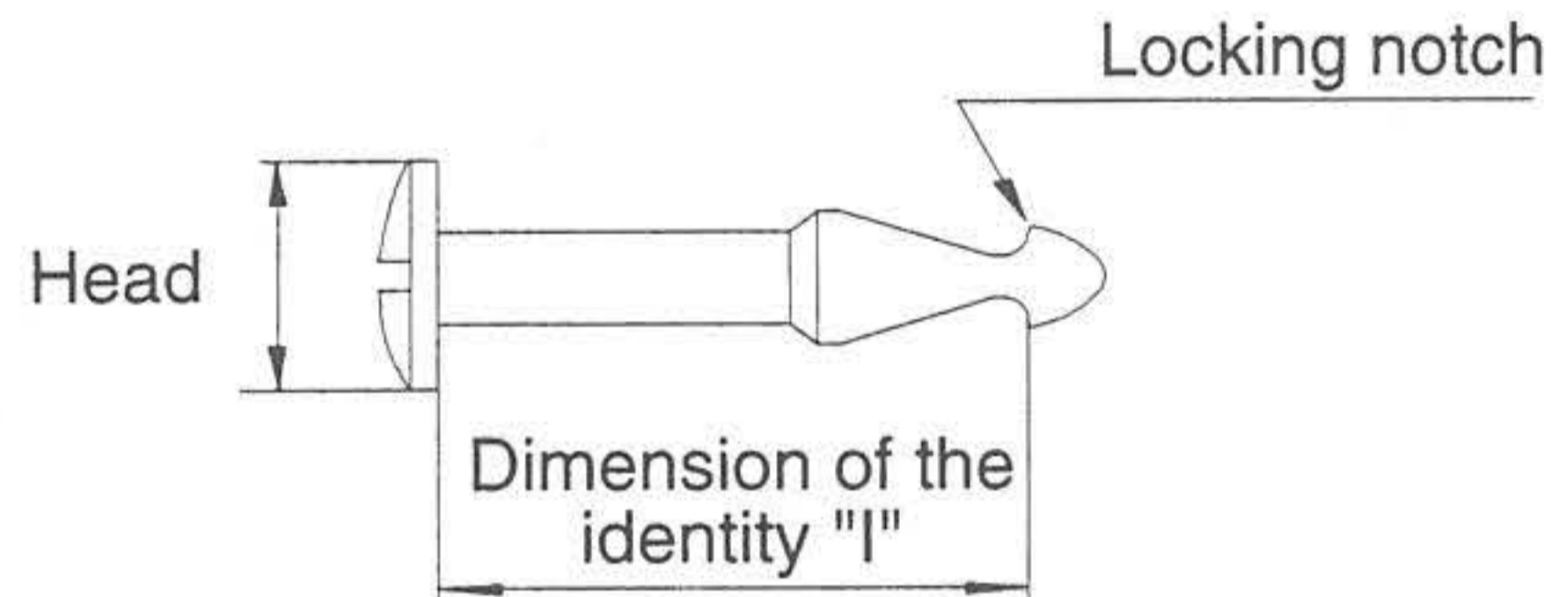
If Clip-in Clips (CC) are used, the thickness f has only to be taken into consideration, if the thickness c is smaller than the thickness f. The "H"-dimension results as the sum of

Dimension H = if  $c > f \rightarrow a + b + c$   
if  $c < f \rightarrow$  see specs of spring clips  
"Clip in Clip"



## Dimension of the identity "I"

To guarantee the safe identification of the different BI-FIX quarter-turn Studs, the dimension of the identity "I", which is the distance between the bottom side of the head and the locking notch, is given.



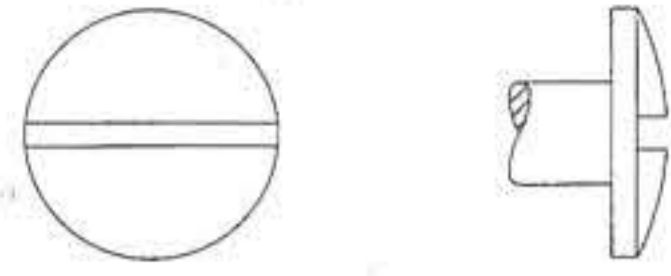
Stock Designation of a Stud				
Example: <b>K 11 16 - SZO</b>				
Headform	Size	Dimension	Material	Finish
D / W / K	"08" / "11" / "16"	"H" = 16 = a+b+c+d+e	steel	zinc, olive
Characters for materials- and Finish- stock designation				
Material	Finish, colors	Abbreviation	Example stock designation	
Brass	nickel-plated 7-8µm	N/A	D	0803
Steel	xylan coated, black	SXL	D	0803-XL
Steel	zinc 12-14 mm, blue passivated	SZB	DR	0803
Steel	zinc 12-14 mm, olive passivated	SZO	D	0803-SZO
Steel	zinc 12-14 mm, yellow passivated	SZG	D	0803-SZG
Steel	zinc 12-14 mm, black passivated	SZS	D	0803-SZS
Stainless Steel	passivated	non-existent	D	0803-IX
Reinforced Nylon	RAL NR:.....	7038	DN	0803-.....



**Summary - bolt heads**

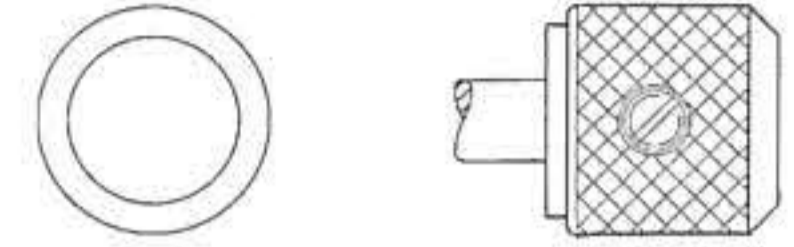
**Standard Dome Head**

Stock designation  
**D ... + DR ...**



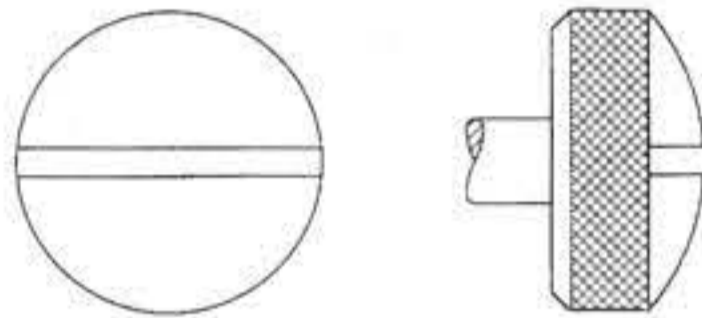
**Special Knurled Head**

Stock designation  
**KS ...**



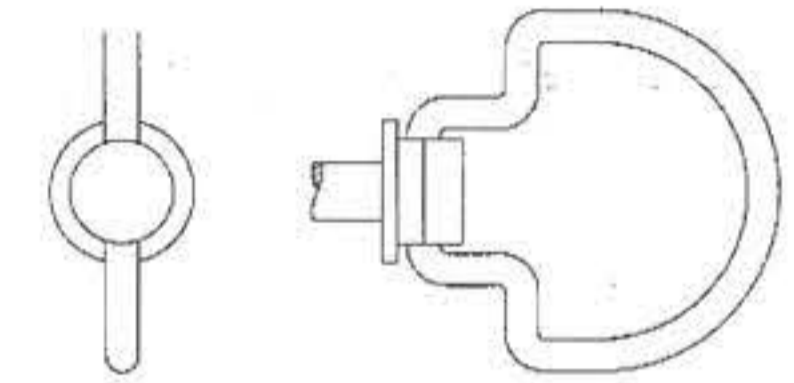
**Standard Knurled Head**

Stock designation  
**K ...**



**Hinged - bow Head**

Stock designation  
**B ...**



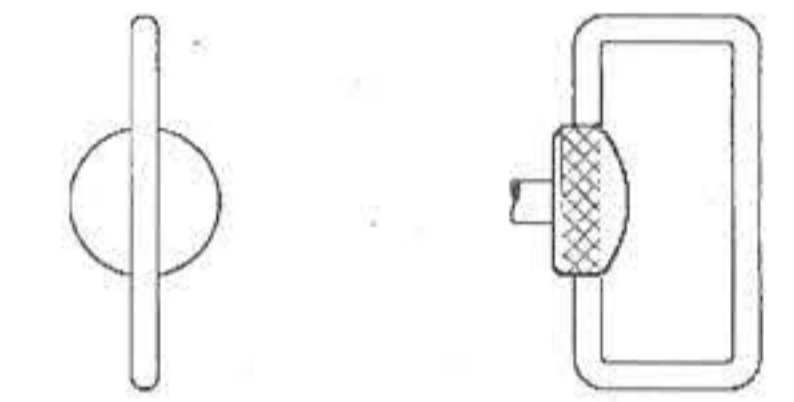
**Hexagon Socket Head**

Stock designation  
**IR ...**



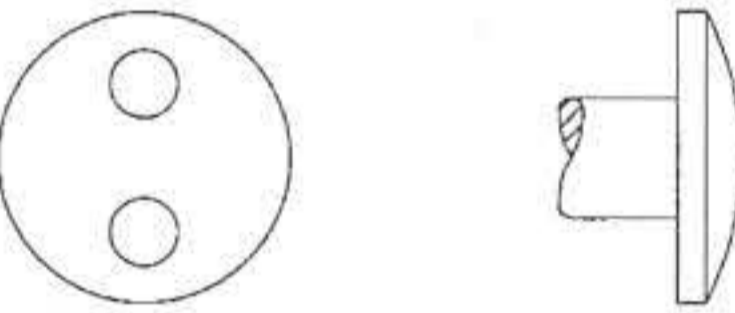
**Special Hinged-bow Head**

Stock designation  
**BS ...**



**Two hole Security head**

Stock designation  
**DL ...**



**Special Wing Head**

Stock designation  
**WS ...**



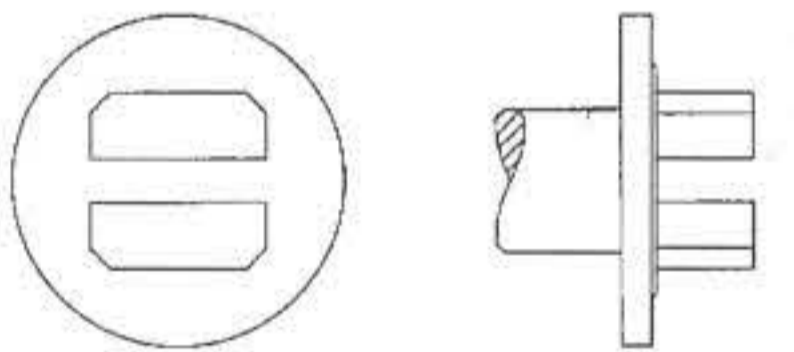
**Hook Wrench Head**

Stock designation  
**DLS ...**



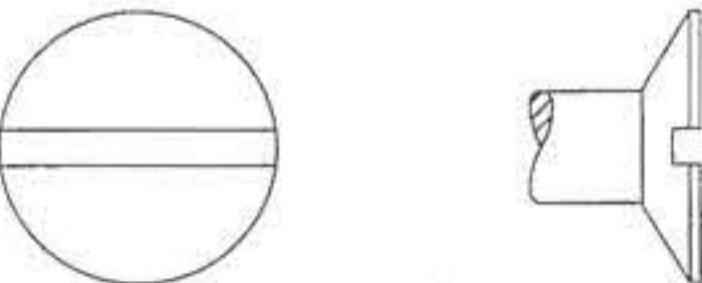
**External Square Head**

Stock designation  
**SV ...**



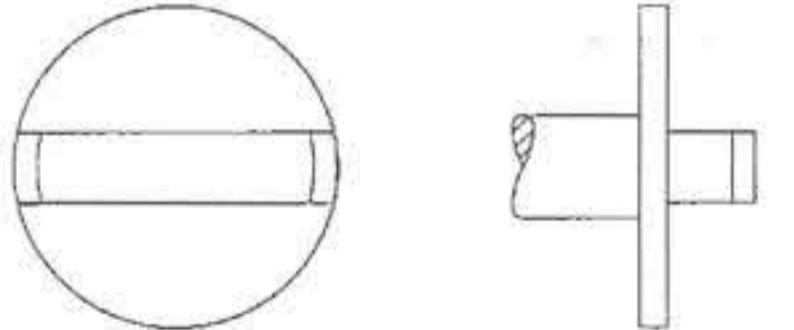
**Countersunk Head**

Stock designation  
**F ...**



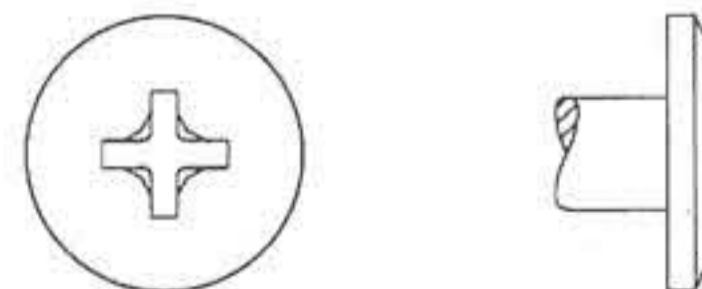
**Milled Wing Head**

Stock designation  
**WF ...**



**Cross Recessed Head**

Stock Designation  
**IS ...**

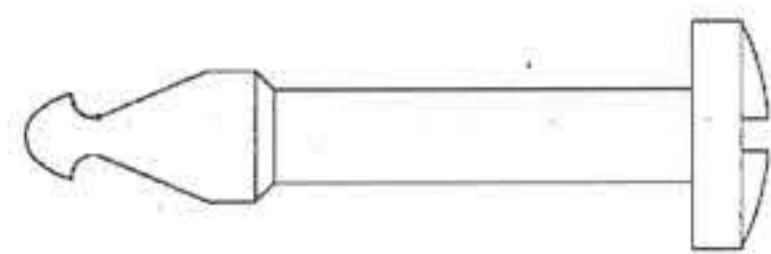


# BI-FIX Quarter Turn Fasteners

## Shank

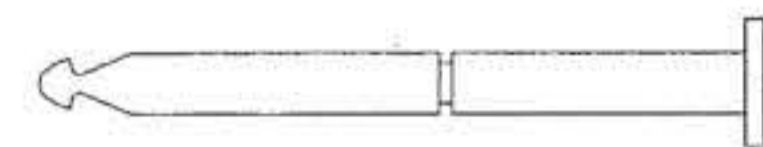
### Standard Shank

Stock designation  
**D ...**



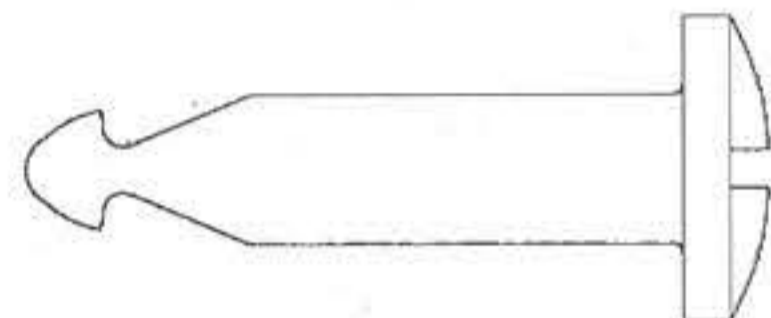
### Cylindrical - Shank

Shape with recess for circlip  
**DQ S...**



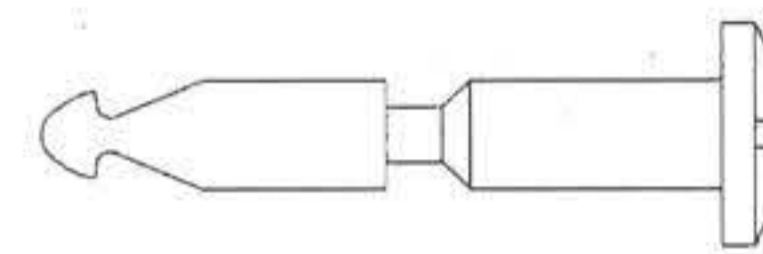
### Cylindrical - Shank

Stock designation  
**DQ ...**



### Standard - Shank

Shape for pieces XR  
**DR...**



### Stock Designation of a Spring Clip

Example: **C 11 .. IX**

Type of clip	Size	Clip/thickness of tin-plate	Material	Finish
D / W / K	"08" / "11" / "16"	"H" = 16= a+b+c+d+e	steel	zinc, olive

### Characters for material-and Finish- stock designation

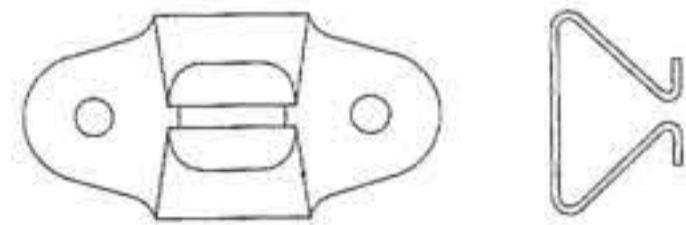
Material	Finish, color	Abbreviation	Example stock designation
Steel	zinc 12-14 µm	N/A	C 11
Steel	xylan (synthetic) coated	SXL	CC 16/1-XL
Steel	chemically nickel-plated min. 12µm	SCN	CC 08-SCN
Stainless steel	passivated	IX	C 11-1X
Aluminum	blank	ALB	MSC 16-ALB



**Clips**

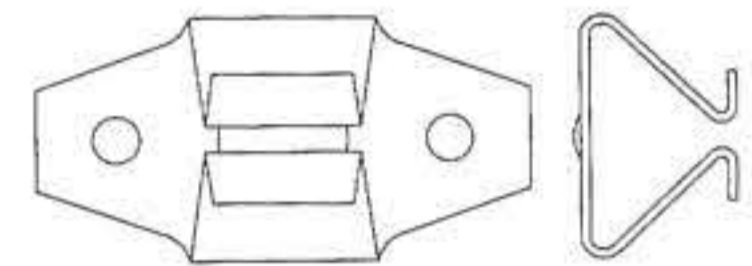
**Rivets, screws**

Stock designation  
**C ...**



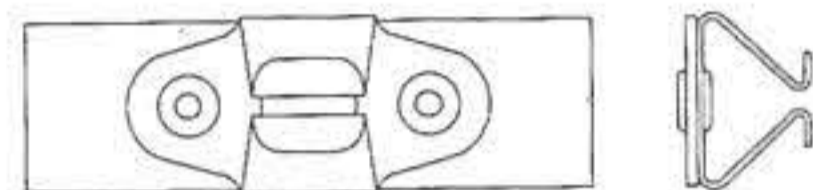
**Clip with welding dimples**

Stock designation  
**C ... SB**



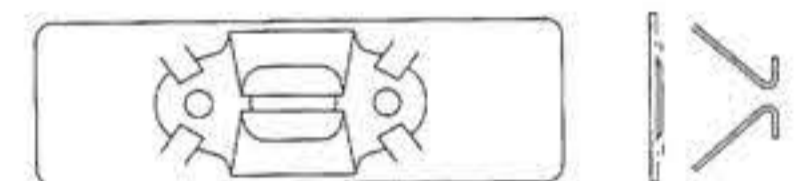
**Spot welded**

Stock designation  
**CP ...**



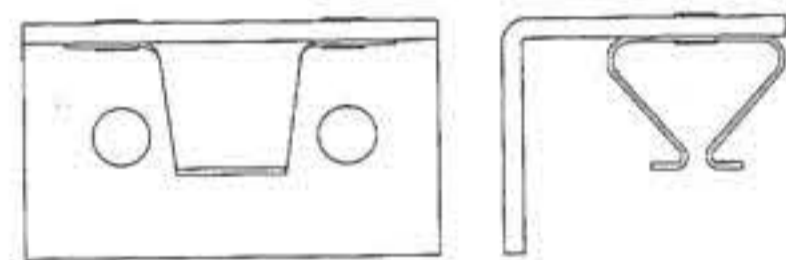
**Spot welded clip**

Stock designation  
**CPR ...**



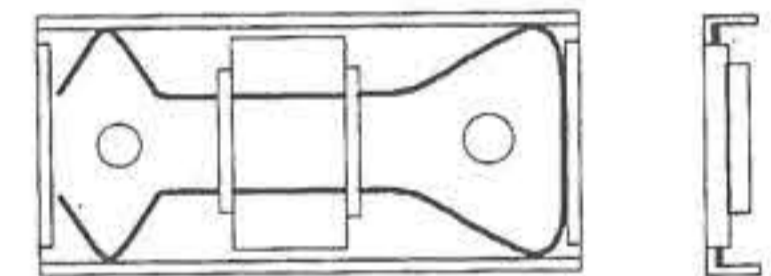
**Angle plates**

Stock designation  
**MSC ...**



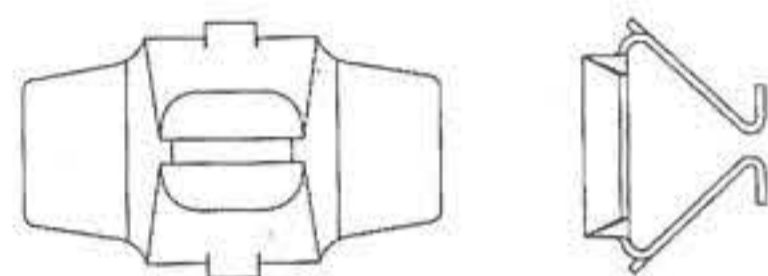
**Flat Clip**

Stock designation  
**CU ...**



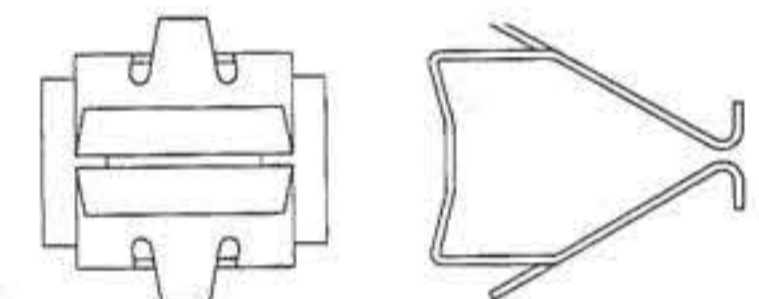
**Clip-in-Clip**

Stock designation  
**CC ...**



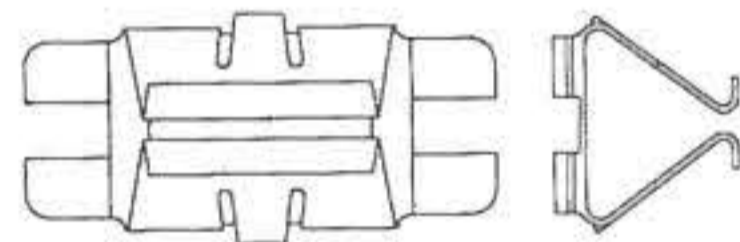
**Clip-in-Clip for 19"-racks**

Stock designation  
**CX ...**



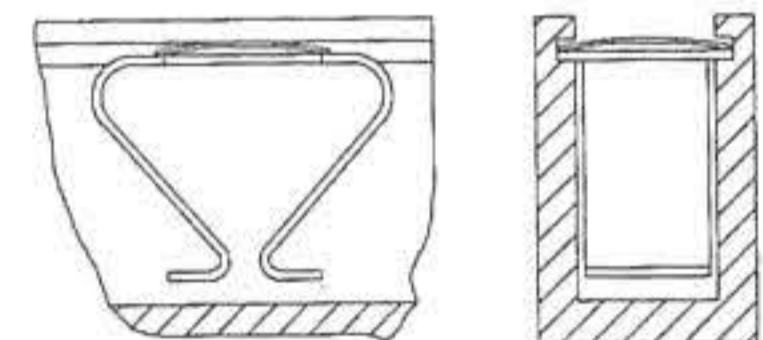
**Tolerance Clip-in-Clip**

Stock designation  
**CCT ...**



**Slide in profile**

Stock designation  
**CF ...**



**Slide-on**

Stock designation  
**CS ...**



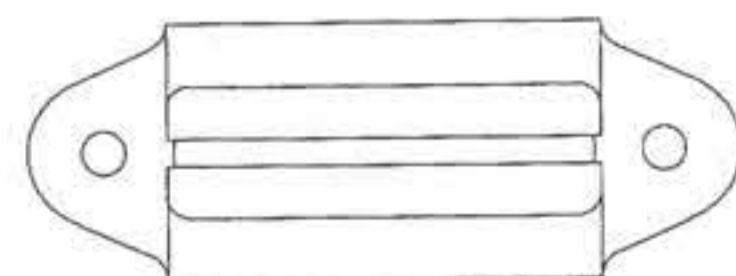
**Slide**

Stock designation  
**CC ...**



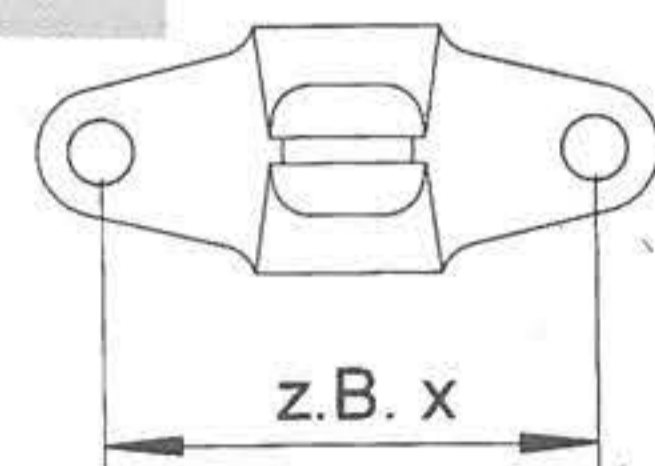
**Tolerance clip**

Stock designation  
**CT ...**



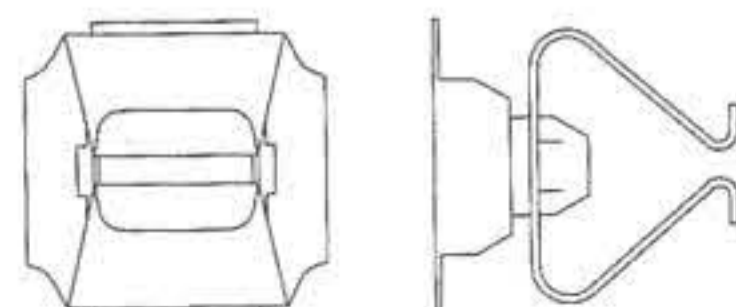
**Different hole patterns**

Stock designation  
**C .../X**



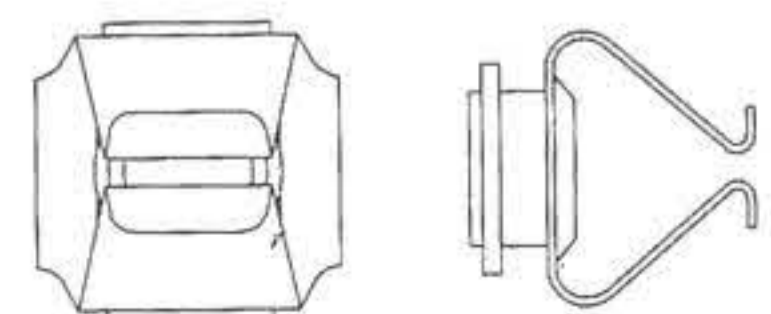
**Two-piece clip-in-clip**

Stock designation  
**CR ...**



**Profile clip**

Stock designation  
**CG ...**





# BI-FIX Quarter Turn Fasteners

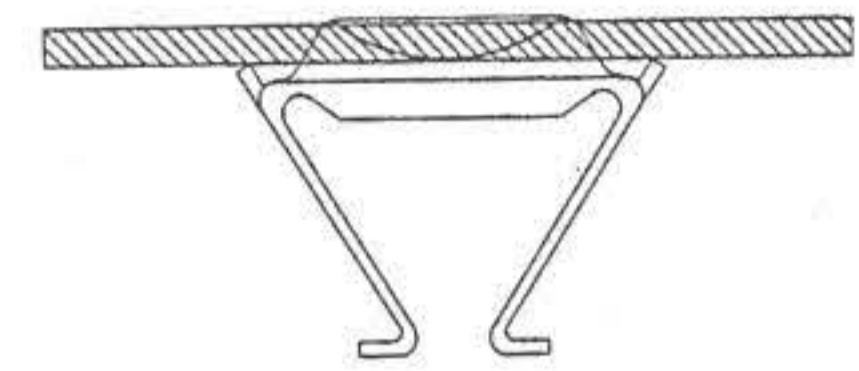
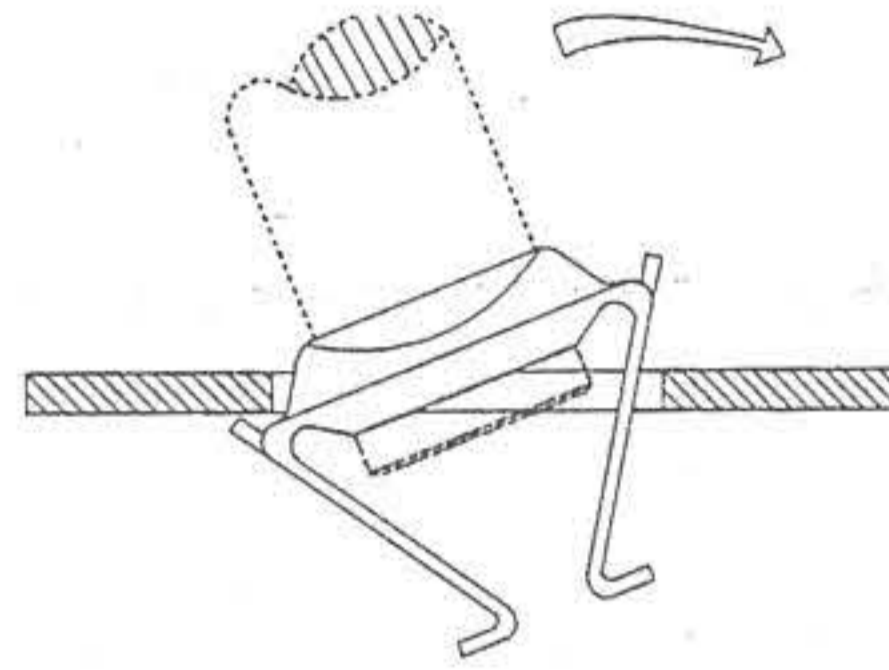
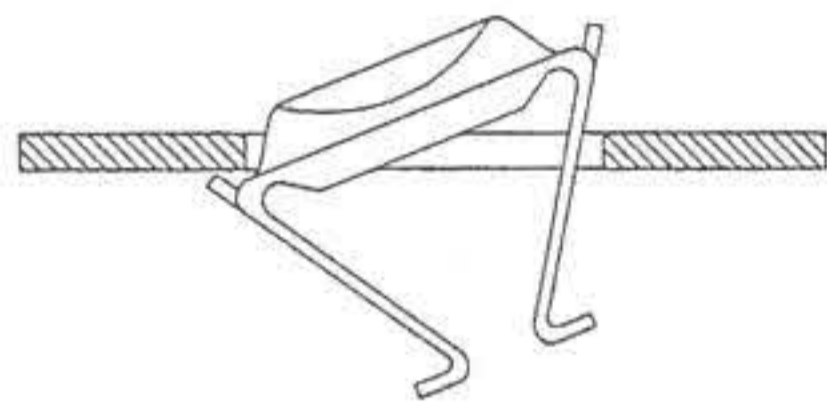
## Fixing of the Clip-in Clips

### Description Clip-in Clip

The "Clip-in Clip" method offers high savings on assembly costs, as the clips fit into rectangular holes in a simple and precise way.

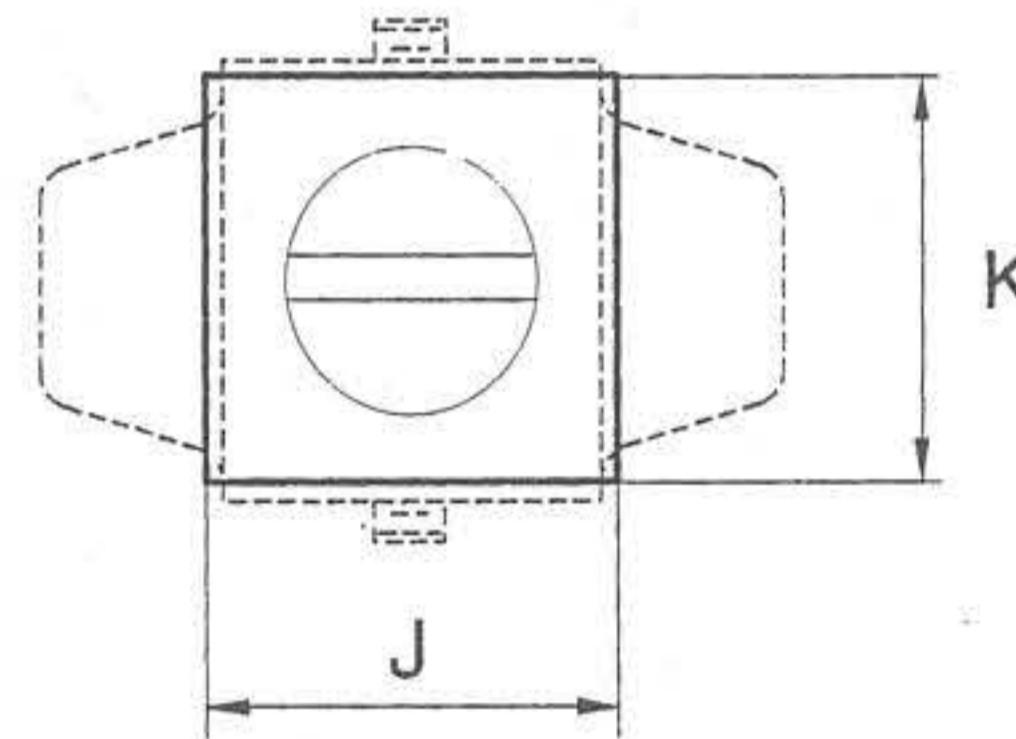
The Clip-in Clip is located in a oblique way. Then the Clip simply has to be pressed in with a simple tool or even with the thumb.

The Clip-in Clip is fixed inside the hole. The different dimensions are given in the following table of hole-patterns.



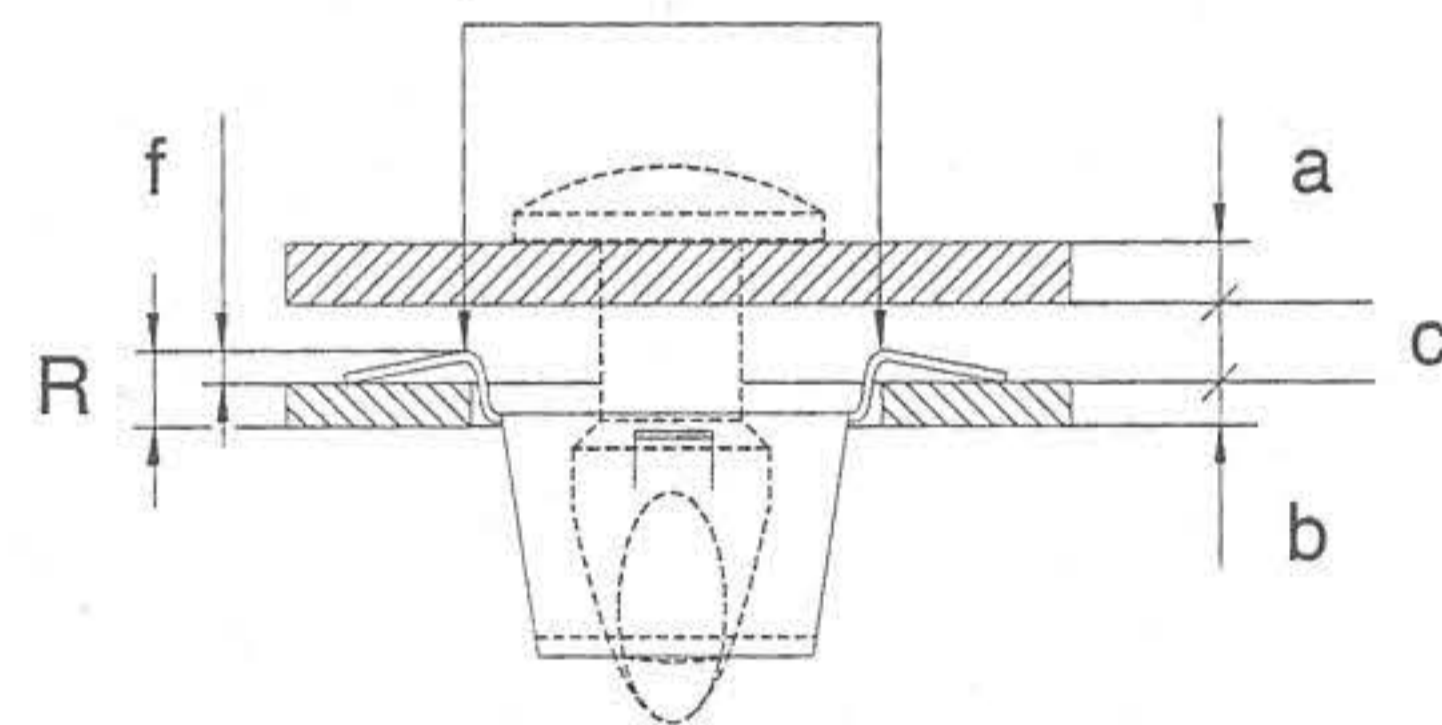
### Table of hole - patterns

Table of hole-patterns			
Size	J [mm]	K [mm]	Tool Nr.
"08"	8.7±0.1	9.0±0.1	WZ CCR08
"11"	13.0±0.1	12.0±0.1	WZ CCR11
"16"	20.0±0.1	17.0±0.1	WZ CCR16



### The "H"-dimension, when using Clip-in Clips

If Clip-in Clips are used, there is always a small space between the loose and the framework (supporting-curve). This space "R" has to be taken into account, if the space between panels c is smaller than the thickness f.



$$\text{Dimension } H = a + f - b$$

Size	Thickness of the fix part [mm]	Constant R [mm]	Stock designation	Size	Thickness of the fix part [mm]	Constant R [mm]	Stock designation
"08"	0.5 - 0.9	1.1	CCR 08-1-XL	"16"	0.9 - 1.6	2.2	CCR 16-1-XL
	0.9 - 1.2	1.6	CCR 08-2-XL		1.6 - 2.8	3.1	CCR 16-2-XL
	1.2 - 2.0	2.4	CCR 08-3-XL		2.8 - 4.0	4.6	CCR 16-3-XL
"11"	0.6 - 1.2	1.7	CCR 11-1-XL				
	1.2 - 2.0	2.4	CCR 11-2-XL				
	2.0 - 3.5	4.0	CCR 11-3-XL				



## Application of the CX - Clip

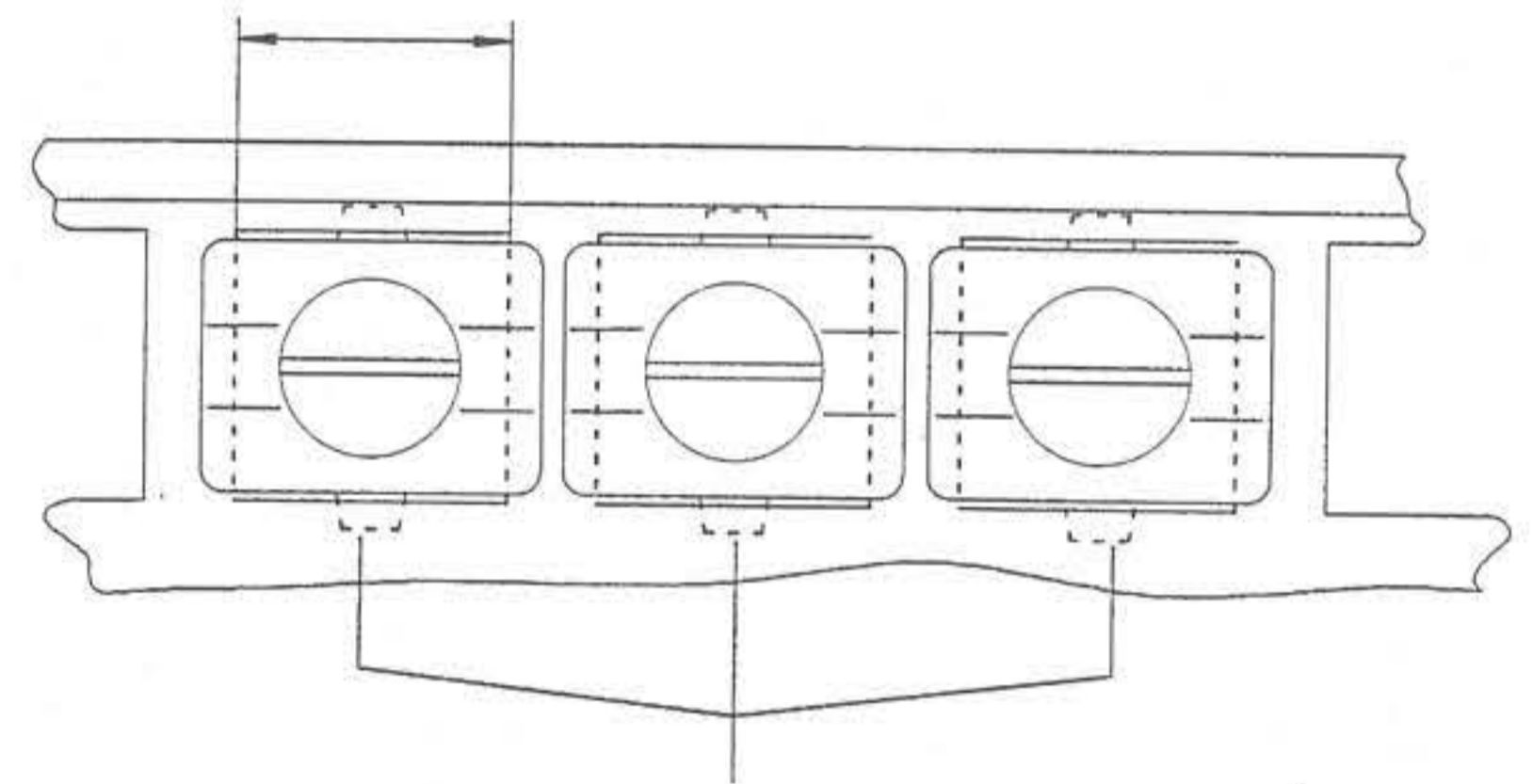
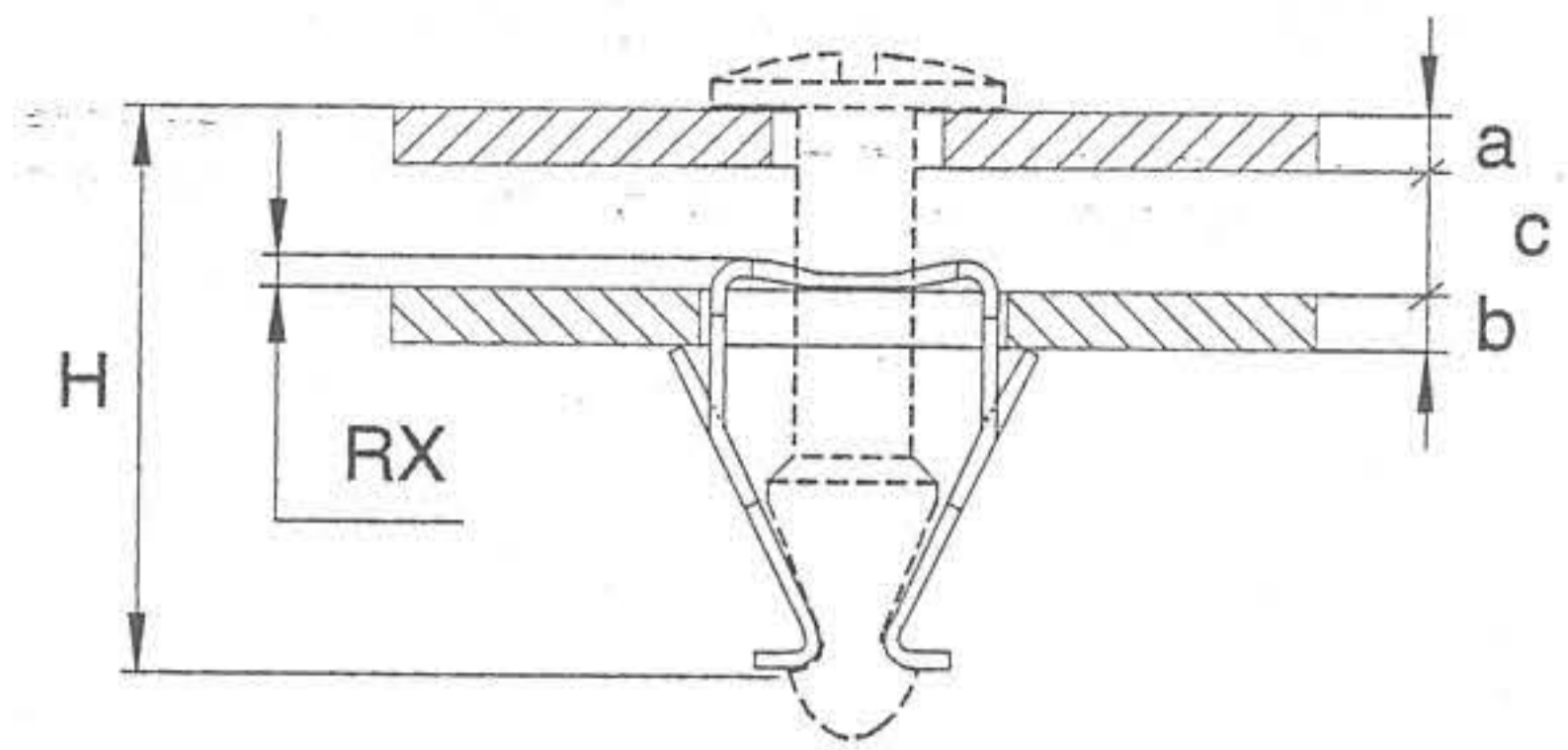
Spring Clip CX 11 was developed especially for the 19° racking applications. **BI-FIX** Clips can uniquely be fixed from the front of the framework.

Tolerance for dimension b is  $\pm 0.1$  mm and does not impair performance of the Spring Clip.

Grip Length H = when  $c > RX \rightarrow a + b + c$   
 when  $c < RX \rightarrow$  not applicable

Thickness of plate [mm]	Constant RX [mm]	Height HX [mm]	Stock designation
1.5±0.1	1.0	13.0±0.1	CX 11/15-IX
2.0±0.1		13.0±0.1	CX 11/20-IX
2.5±		13.0±0.1	CX 11/25-IX

The profile to the right shows, that in case of continuous punching, each hole can be hard faced.



## Choice of the fixing devices

The stud has to be securely fixed and as perpendicular as possible to the loose part. The washer R serves this purpose. The function of the washer is to seal the hole of the fixed part and to avoid vibration. Washers are manufactured from EPDM. For each size, there are different lengths of washers available. They consist of EPDM and they

can be used in a temperature range of  $-40^{\circ}\text{C}$  bis  $+90^{\circ}\text{C}$ . EPDM is exceptionally resistant against UV-rays, as well as against most industrial fats and oils. Also it can be used in the food industry. If other materials are used, they have to be specified after the stock designation.

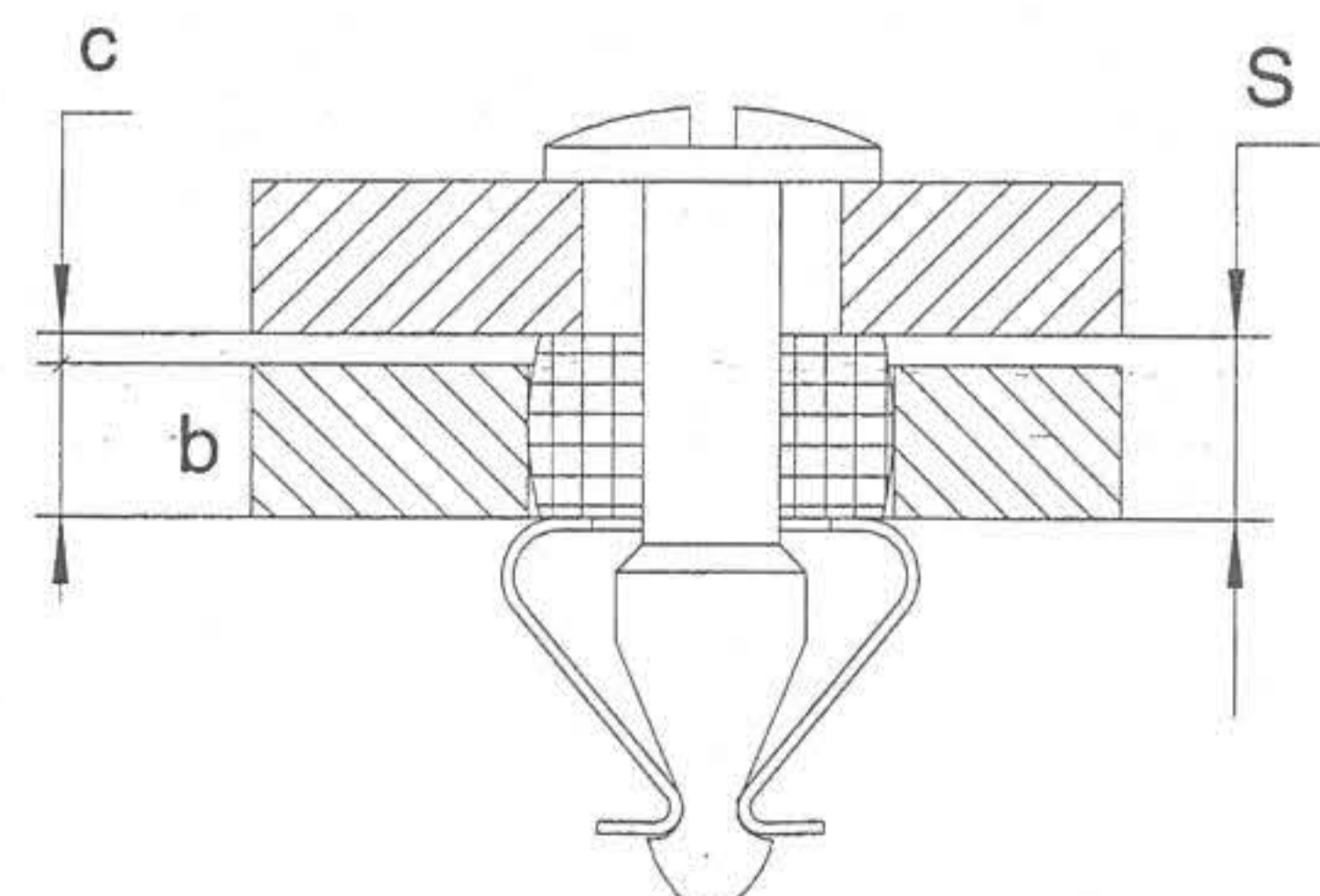
Material	Store hardness [°A]	Temperature range	Stock designation
EPDM	50-60	$-40$ bis $+90^{\circ}\text{C}$	N/A
for Example: Silicon	45-60	$-45$ bis $+90^{\circ}\text{C}$	SIL

## Determination of the thickness of the washer

To determine thickness of the washer, dimension S add thickness of the fixed part dimension b to those of any free space between panels, add 25%. Choose standard washer nearest to this dimension.

$$\text{Thickness of the washer } S = (b + c) \times 1.25$$

Please note that the thickness of the washer includes the free space. This enables the stud to be fixed perpendicularly. As shown in the drawing the assembly is solidly fixed and resists vibration and lateral movement.



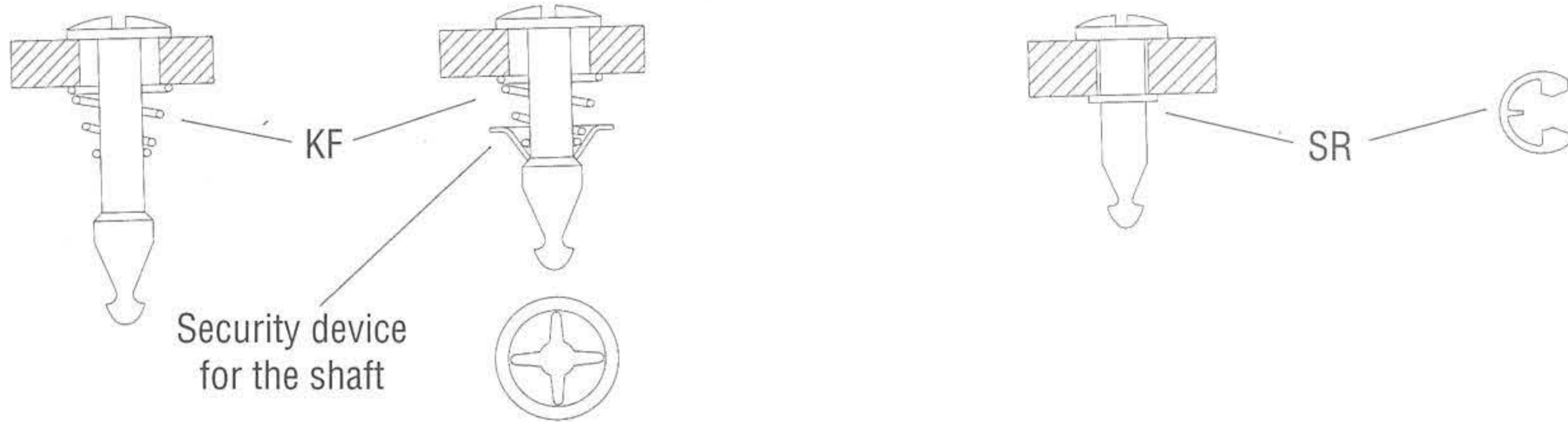


# BI-FIX Quarter Turn Fasteners

## Fixing devices at temperatures exceeding 90°C

When **BI-FIX** quarter-turn fasteners are used at temperatures exceeding 90°C a conical wire spring KF is used instead of the washer R. If shorter studs are used, the conical wire spring might interfere with the Spring Clips. Therefore, we recommend the installation of an additional retainer. This

may not be necessary if retention in the loose part is not important. Also the Stud can be fixed to the loose part with a Circlip. In this case a matching puncture at the shank of the Stud is provided for.



Stock Designation of a Washer			
Example: R 1708 - M			
Type of fixing device	Thickness of the Washer	Size	Material
R	"H" = 1.7mm in 1/10mm	"08" / "11" / "16"	not mentioned for standard

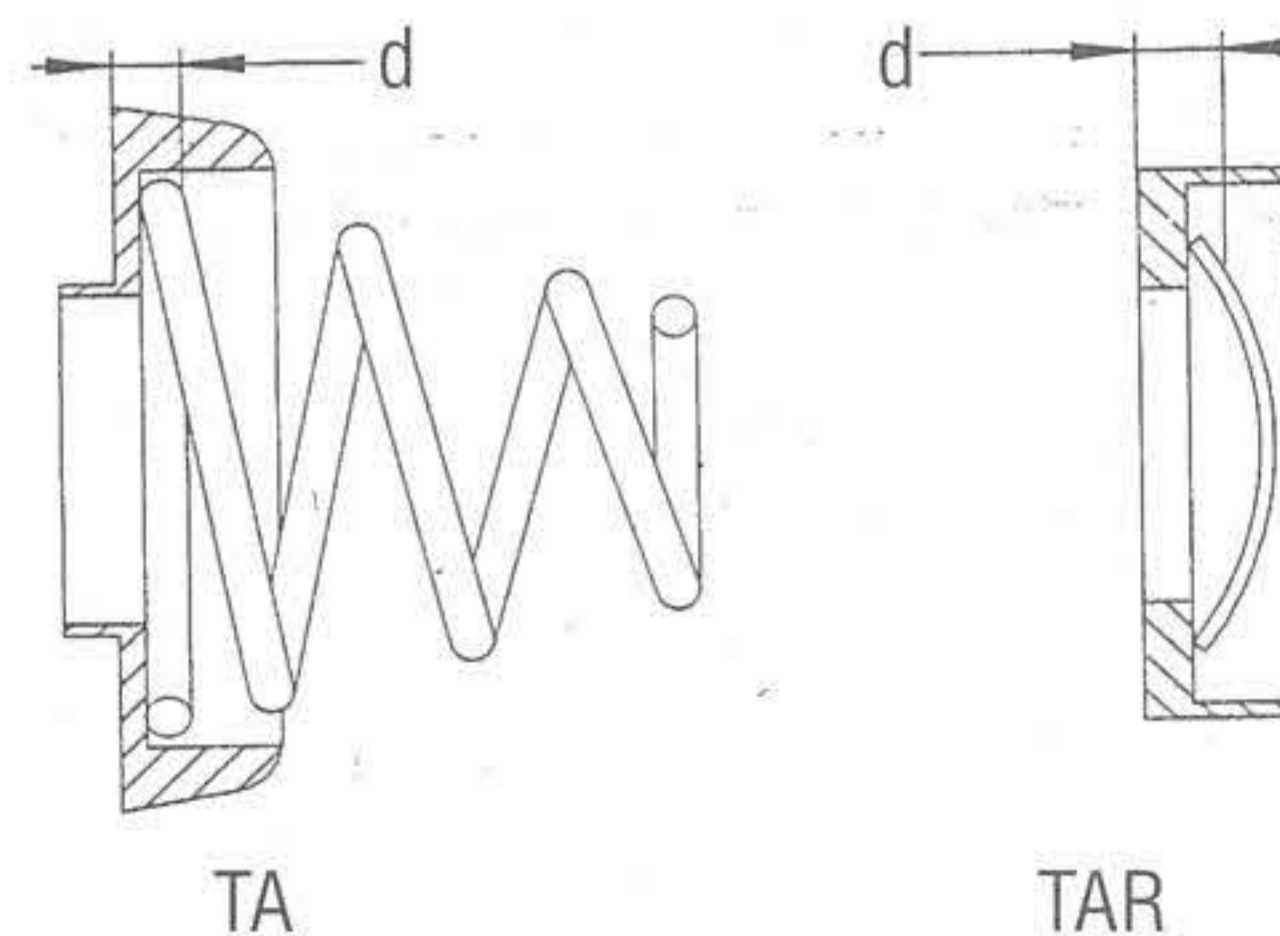
## Choice of Accessories

The **BI-FIX** quarter-turn fastener system offers a wide range of accessories. These items will help solve a variety of fastening solutions.

### The Tolerance Compensator TA / TAR

Variations of the "H"-dimensions, caused by building up of tolerances can be compensated with the Tolerance Compensator TA/TAR. If the Tolerance compensator is used, its thickness has to be added to the "H"-dimension:

$$\text{dimension H} = a + b + c + d$$

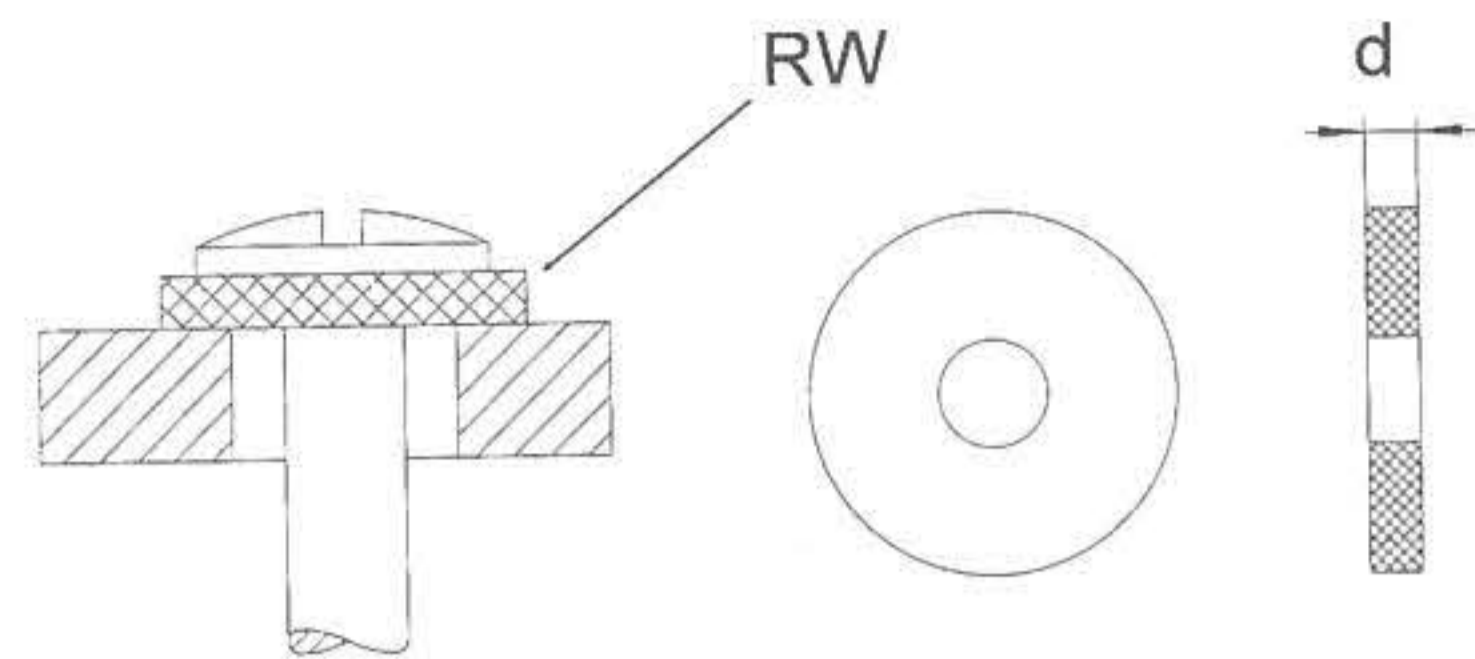




### Seal-washers RW

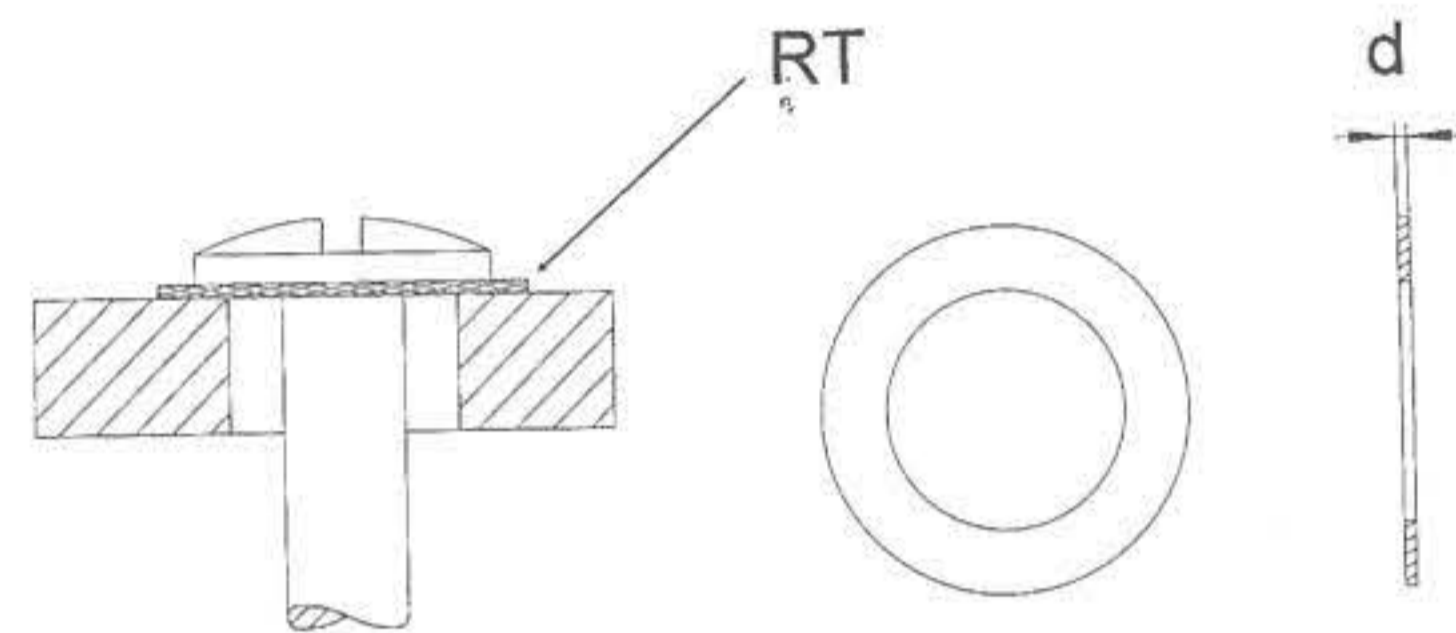
To splash-proof a **BI-FIX** assembly, place a seal-washer under the head of the stud.

To achieve desired tension between the two parts make sure thickness of all washers are added into the equation. The connection then is splash-proof to IP44. Then the max. closeness reaches about 10mm Wg.



### The plain-washer RT

To protect coated surfaces, a plain-washer RT is placed under the head. A thickness of 0.2mm can also be used to fine tune the fit of the fastener.



## Advice, construction, latest developments...

Providing advice is an important part of our customer service. We have the necessary experience to help you with solutions for fastening problems. **Paneloc** is here to help and advise you on new products and applications. Please do not hesitate to contact us or visit our website at [www.Paneloc.com](http://www.Paneloc.com).



## BI-FIX Quarter Turn Fasteners

Dome Head D		Wing Head W		Knurled Head K		Dimensions [mm]		
p/n	g/100pcs	p/n	g/100pcs	p/n	g/100pcs	"H" max	L	"I"
D 0802	135	W 0802	215			3.0	11.2	9.3
D 0802.5	123	W 0802	215			3.5	11.7	9.7
D 0803	140	W 0803	220	K 0803	645	4.0	12.2	10.3
D 0803.5	142	W 0803.5	222			4.4	12.7	10.7
D 0804	145	W 0804	225	K 0804	654	4.8	13.0	11.1
D 0805	150	W 0805	230	K 0805	655	5.7	13.9	12.0
D 0806	155	W 0806	235	K 0806	660	6.8	15.0	13.1
D 0807	160	W 0807	240	K 0807	665	7.8	16.0	14.4
D 0808	165	W 0808	245	K 0808	670	9.0	17.2	15.3
D 0809	170	W 0809	250					
D 0810	175	W 0810	255					
D 1812	185	W 0812	260					
D 0832	190	W 0832	365					



**Rivet on Clip C**

p/n	Material	g/100pcs
C 08/1.8	Steel-Zn	65
C 08/2.5	Steen-Zn	61

**Rivet on Clip C**

p/n	Material	g/100pcs
C 08-IX	Stainless	60

**Weld on Clip C**

p/n	Material	g/100pcs
C 08-O-IX	Stainless	60

**Weld on Clip C**

p/n	Material	g/100pcs
C 08-SB-IX	Stainless	60

**Rivet on Clip C**

p/n	Material	g/100pcs
C 08/19	Steel-Zn	68

**Weld on Clip CP**

p/n	Material	g/100pcs
CP 08	Steel-Zn	165

**Angle Bracket MSC**

p/n	Material	g/100pcs
MSC 08/1	Steel-Zn	410



# BI-FIX Quarter Turn Fasteners

**Slide on Clip CS**

p/n	s	Material	g/100pcs	Panel Thickness Range s
CS 08/1.4	1.4	steel-Zn	165	s — 0.5 - 1.4mm
CS 08/3.0	3.0	steel-Zn	170	s — 1.5 - 3.0mm
CS 08/1.4-IX	1.4	stainl.	165	s — 0.5 - 1.4mm
CS 08/3.0-IX	3.0	stainl.	170	s — 1.5 - 3.0mm

**Slide on Clip CC**

p/n	Material	g/100pcs
CC 08	Steel-Ni	

**Profile Clip CS**

p/n	Material	g/100pcs	Aluminum Profile
CS 08-SB	steel		Supplied on Request

**Profile Clip CS**

p/n	Material	g/100pcs	p/n	Material	g/100pcs	Alumium Profile
CF 08	steel-Zn	40	BS 08	Steel-Zn	8	
CF 08-IX	Stainless	40	BS 08-IX		8	



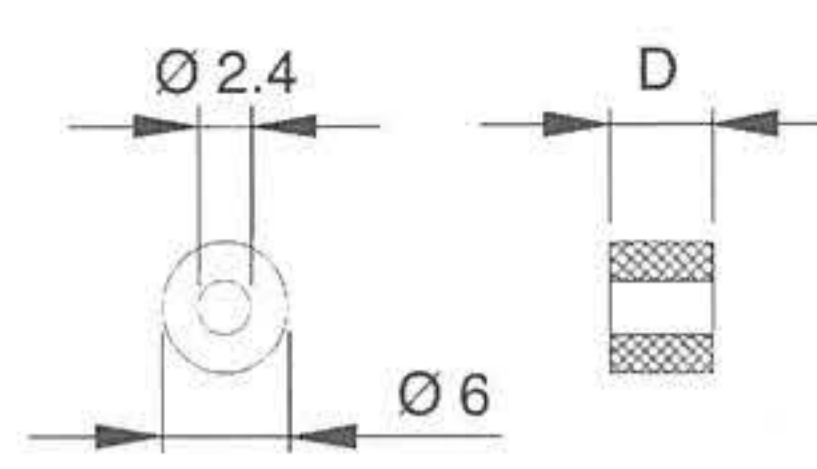
Clip-in-Clip CR 08 two-piece (use Neoprene Washer RC and Distance Washer RC)					
<b>p/n</b>	<b>Material</b>	<b>g/100pcs</b>	<b>p/n</b>	<b>Material</b>	<b>g/100pcs</b>
CR 08 C	steel-ZN	40	CR 08 H	Steel-ZN	13
CR 08 C	Stainless	40	CR 08 H	Stainless	13
When using part number CR08, panel thickness is a constant ( 3 mm = sheet thickness + distance washer). The hole has to be punched as per above drawing.					

Clip - in - Clip CC					
<b>p/n</b>	<b>Material</b>	<b>g/100pcs</b>	<b>Panel Thickness Range</b>	<b>A</b>	<b>B</b>
CC 08/1	SZB = IX	58	0.5 - 1.0	~18.5	~ 6.7
CC 08/2	SZB + IX	58	1.0 - 1.5	~17.3	~ 7.2
CC 08/3	SZB + IX	58	1.5 - 2.0	~16.0	~ 7.7
CC 08/4	SZB + IX	58	2.0 - 2.5	~14.8	~ 8.2



# BI-FIX Quarter Turn Fasteners

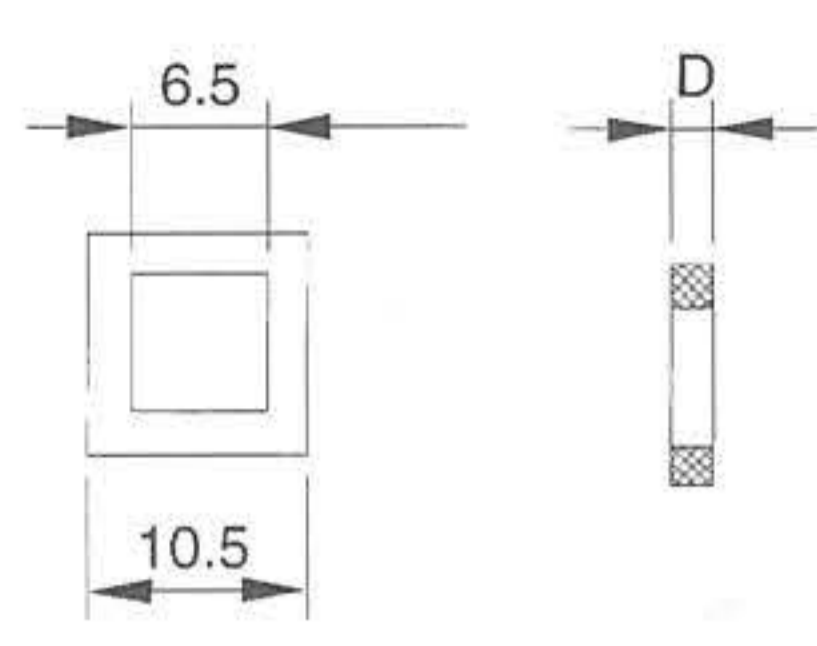
**Neoprene Washer R**



p/n	D	g/100pcs
R 0508	0.5	1.5
R 1208	1.2	3.0
R 1708	1.7	50.
R 2508	2.5	7.0
R 3208	3.2	8.0
R 4808	4.8	15

Material: Neoprene

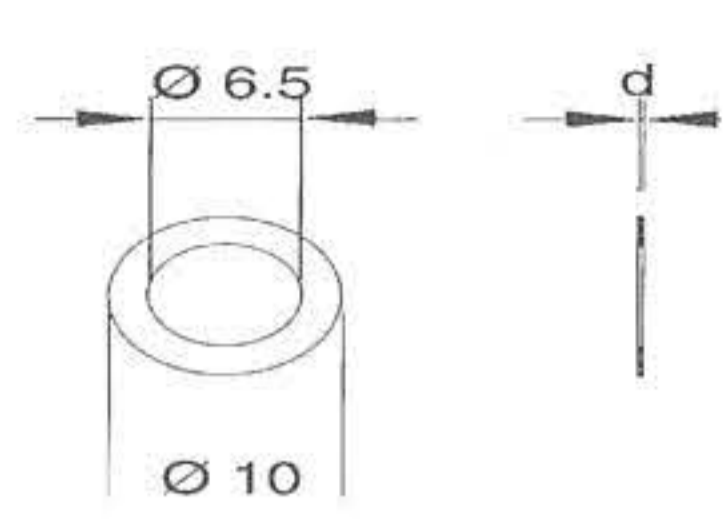
**Distance Washer RC (Clip CR)**



p/n	D	g/100pcs
RC 0508	0.5	6
RC 1008	1.0	9
RC 1508	1.5	14
RC 2008	2.0	17

Material: Neoprene

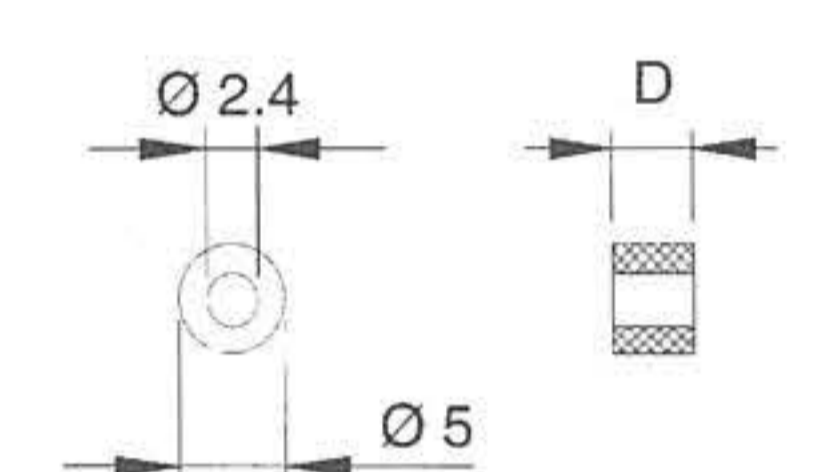
**Washer for Finish Protection RT**



p/n	D	g/100pcs
RT 0208	0.2	0.5

Material: Nylon

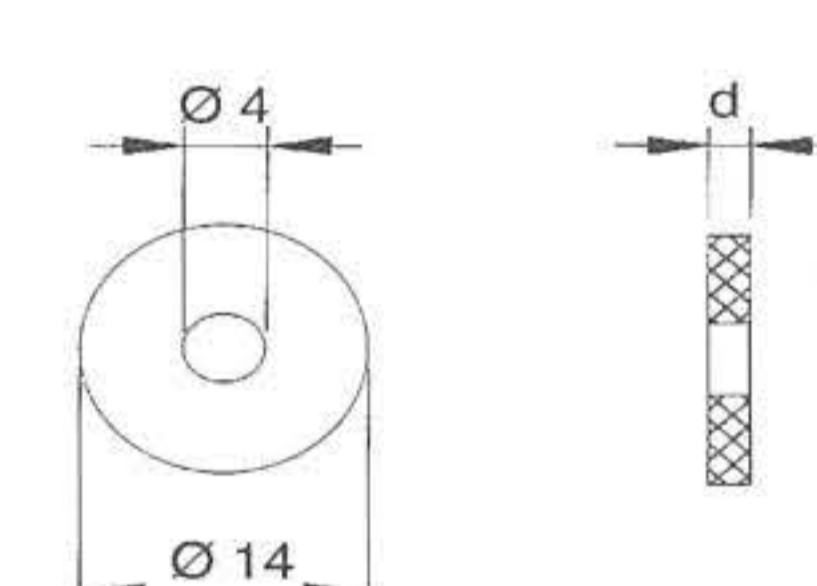
**Washer RC (Clip CR)**



p/n	D	g/100pcs
RC 4008	3.8	7

Material: Neoprene

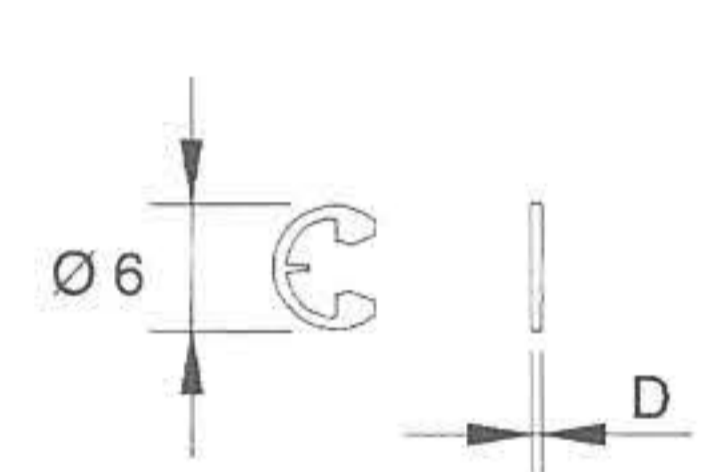
**Sealing Washer RW**



p/n	D	g/100pcs
RW 1508	1.5	17

Material: Neoprene

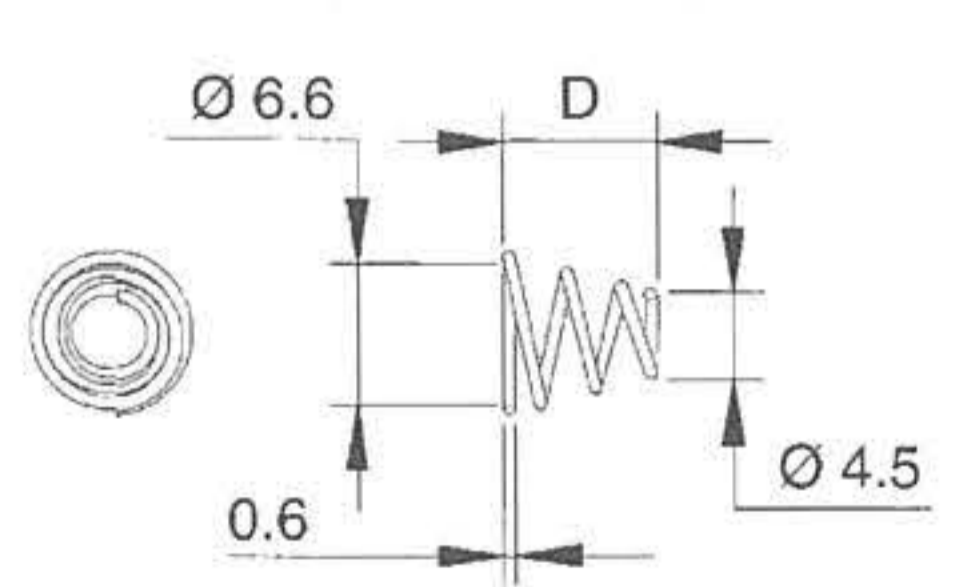
**Circlip SR**



p/n	D	g/100pcs
SR 08	0.6	7

Material: Steel, Zinc & Passivate

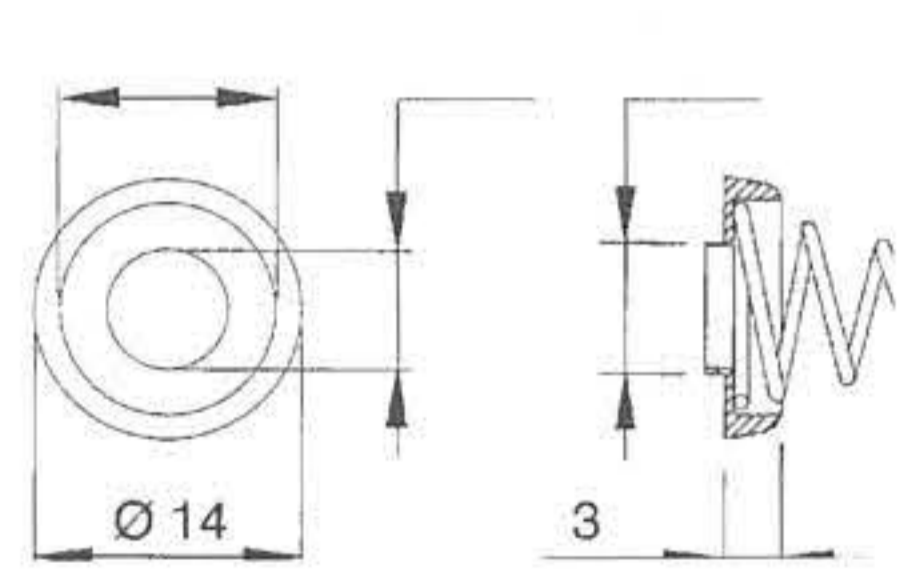
**Retaining Spring KF**



p/n	D	g/100pcs
KF 08	5.5	10

Material: Stainless

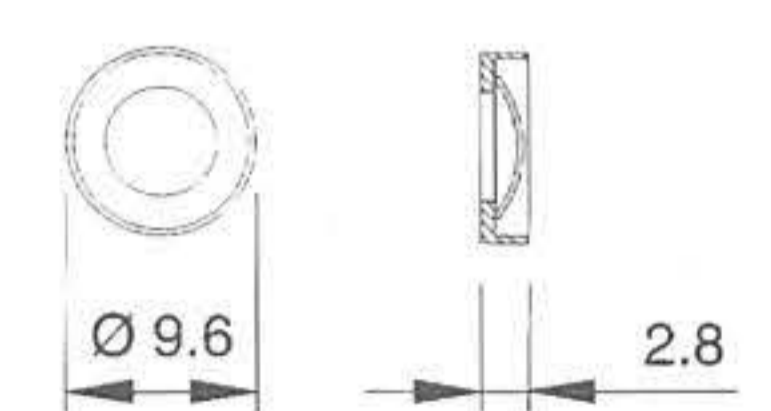
**For Larger Tolerances TA**



p/n	D	g/100pcs
TA 08	1.5	95

Material: Stainless & Brass

**For Small Tolerances TAR**

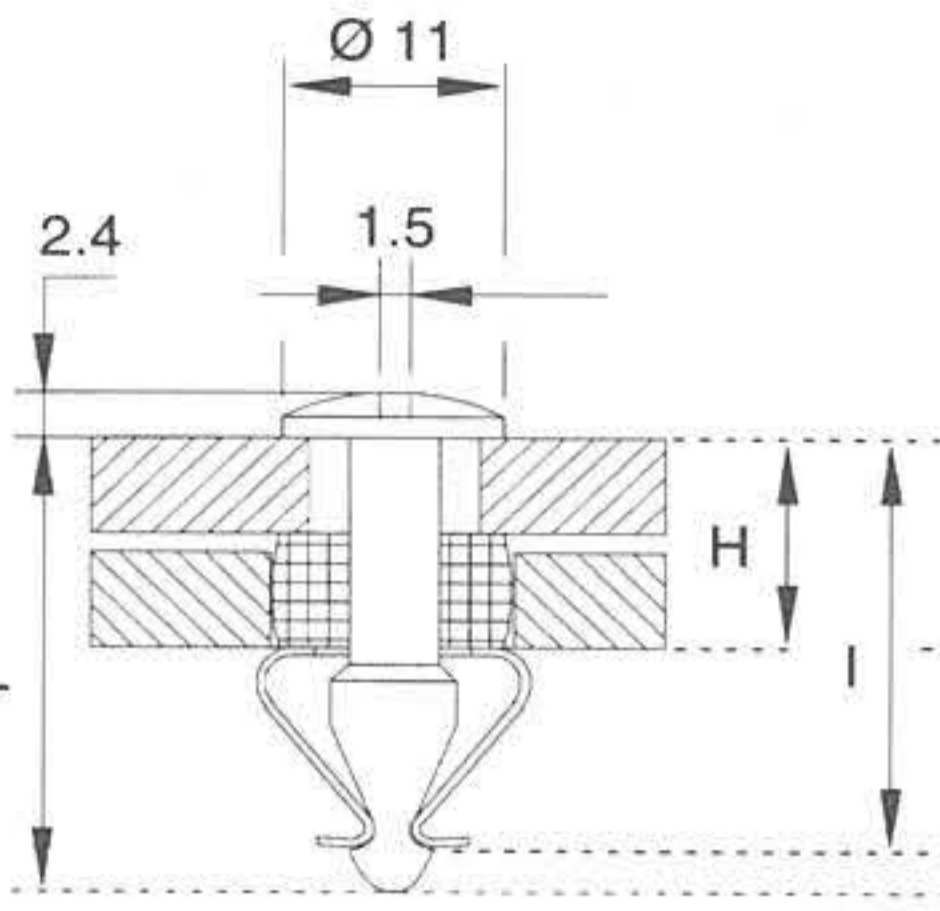
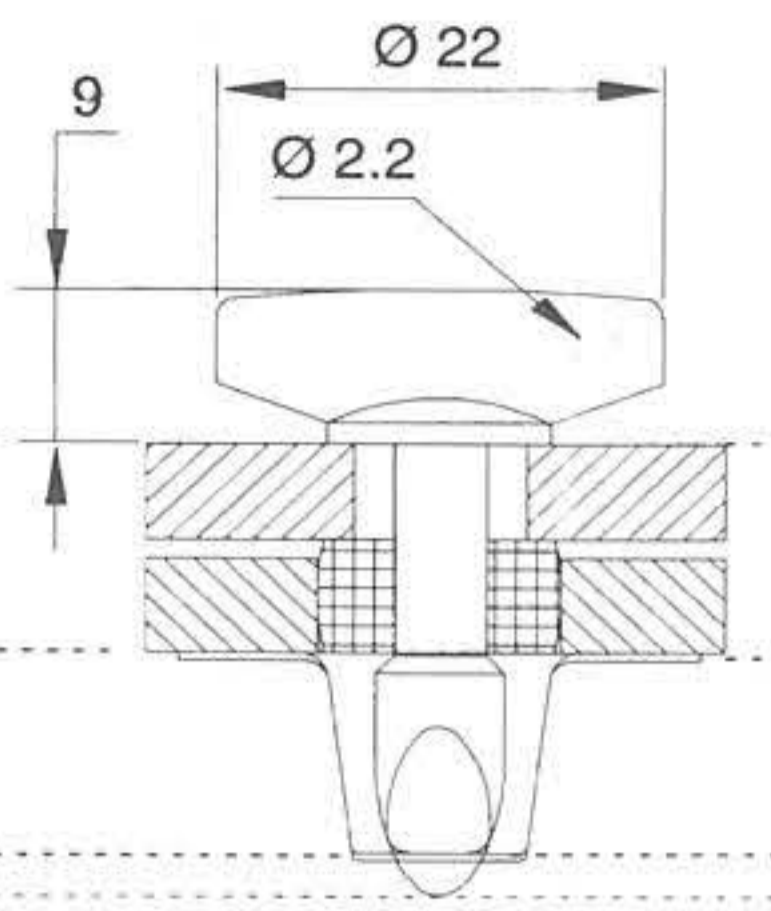
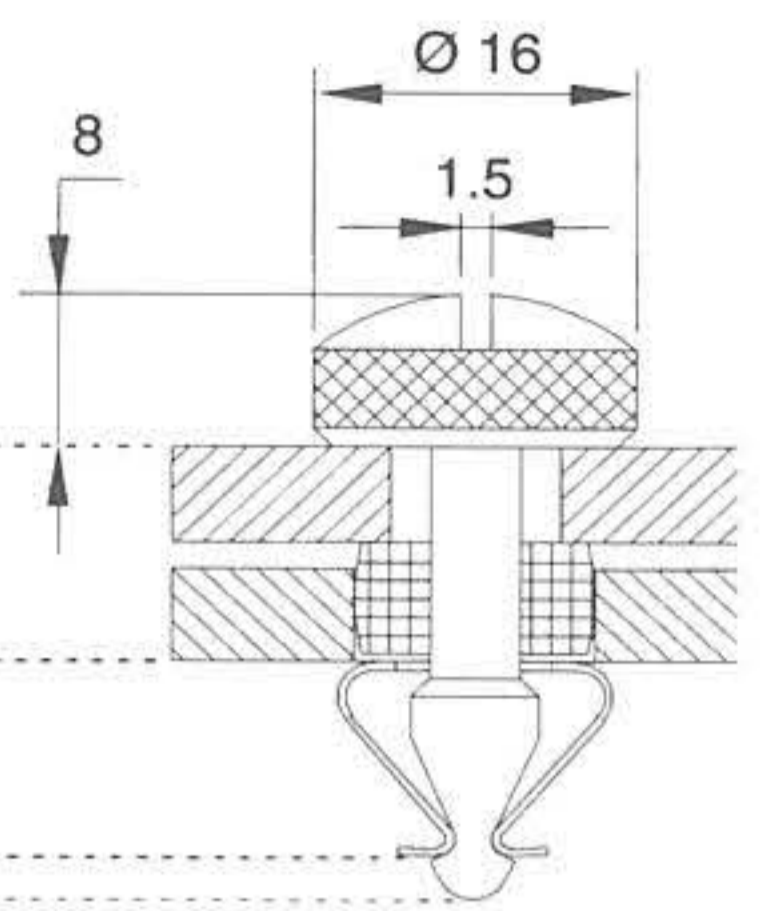


p/n	D	g/100pcs
TAR 08	1.5	25

Material: Stainless & Nylon Black

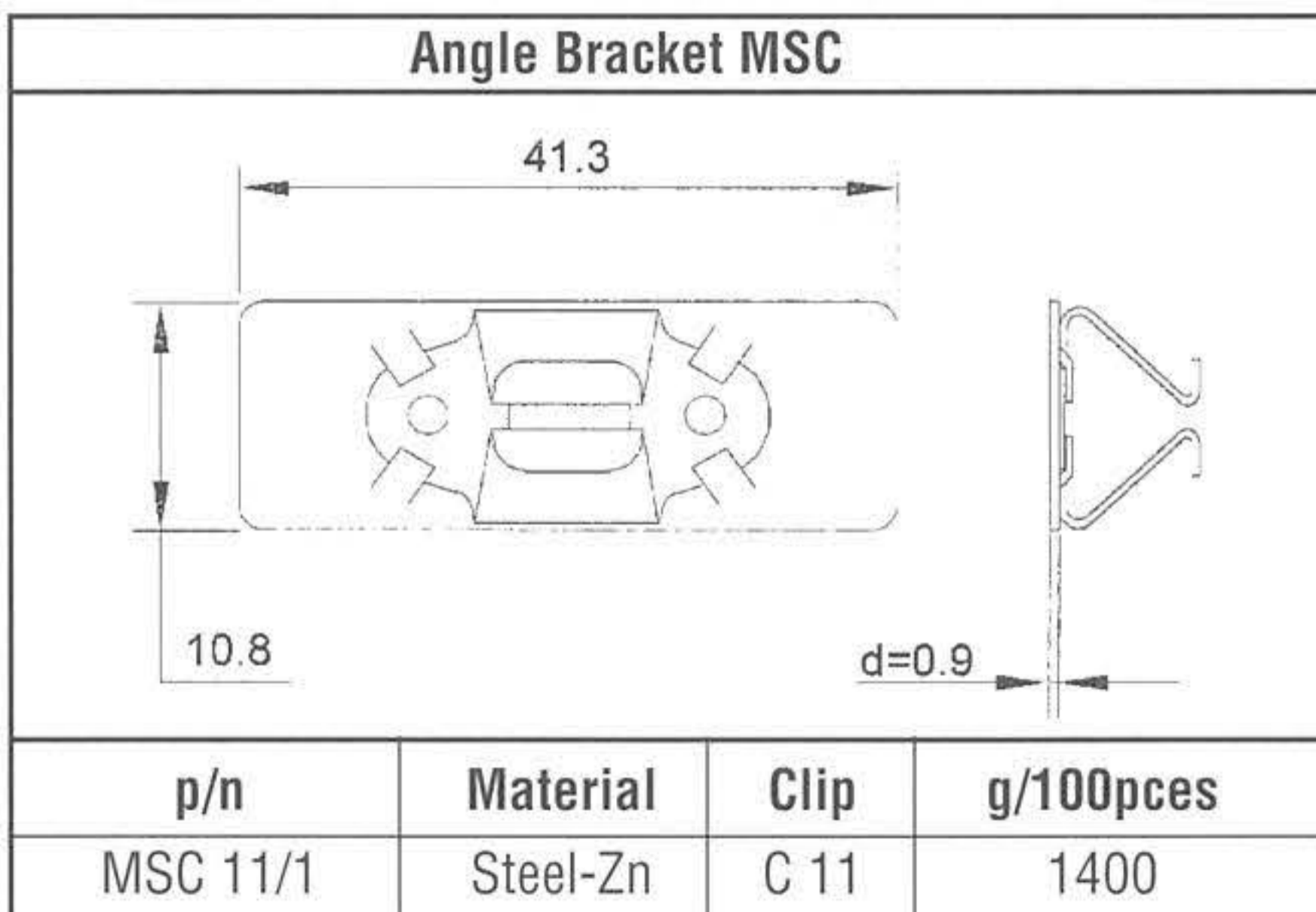
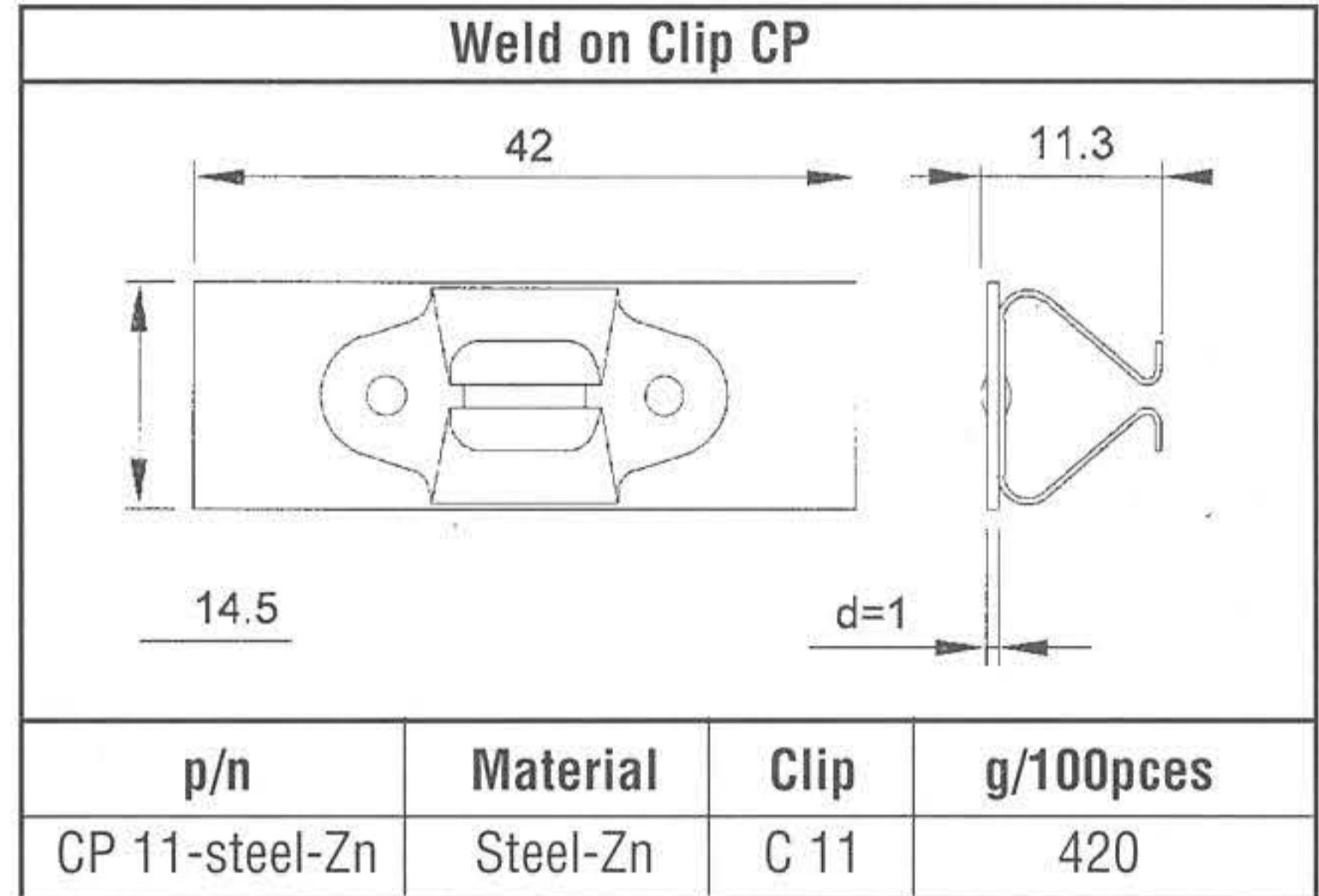
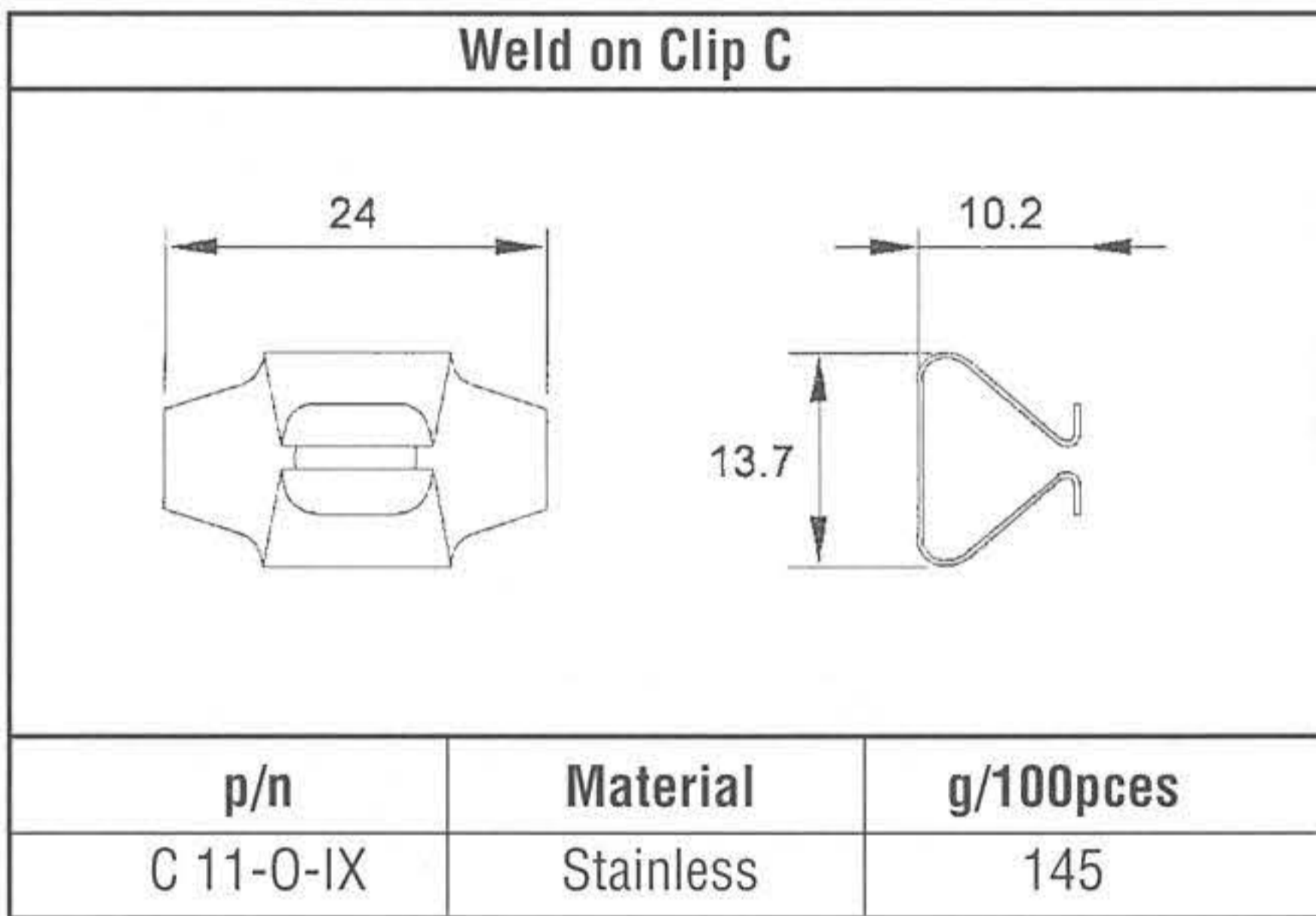
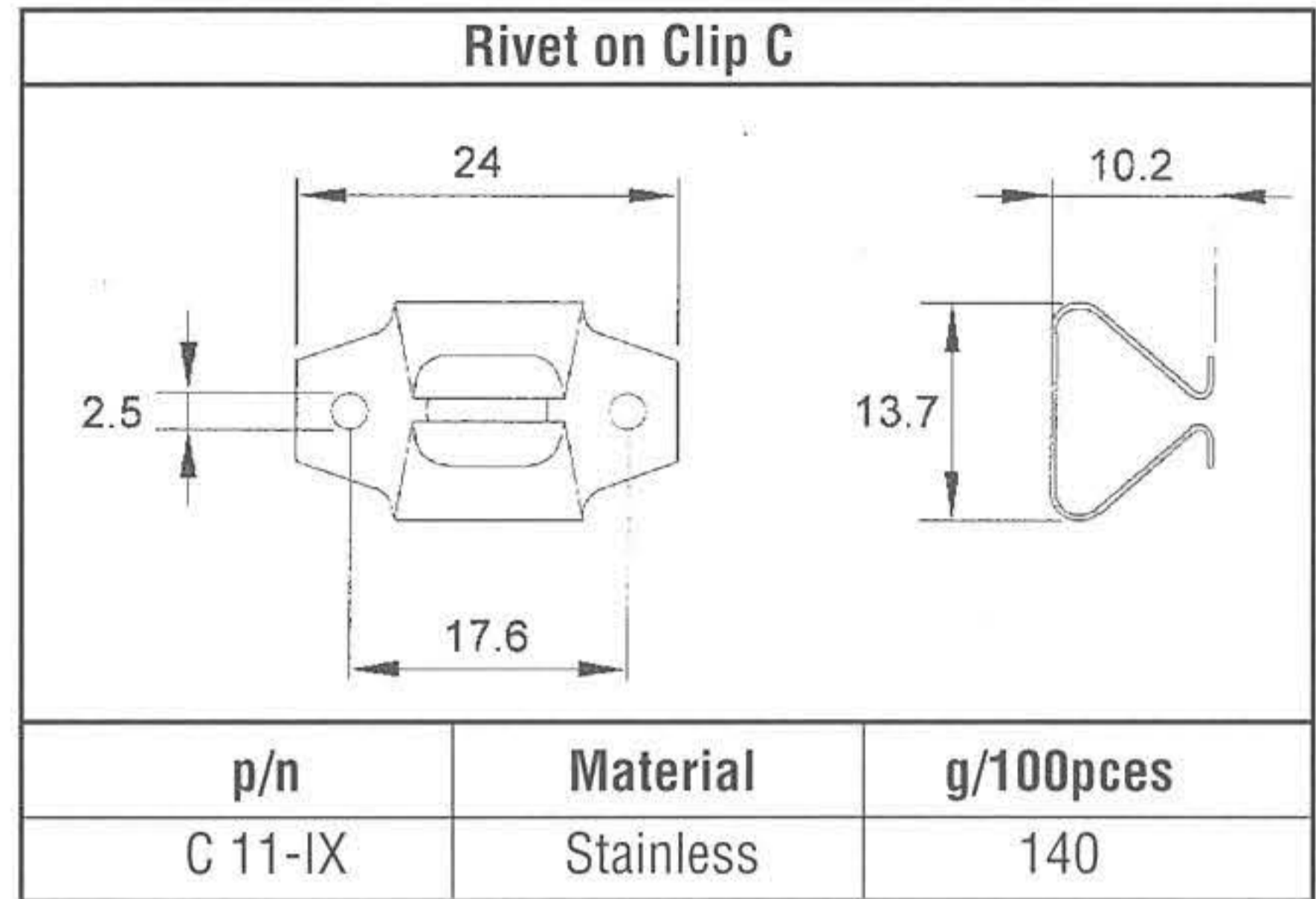
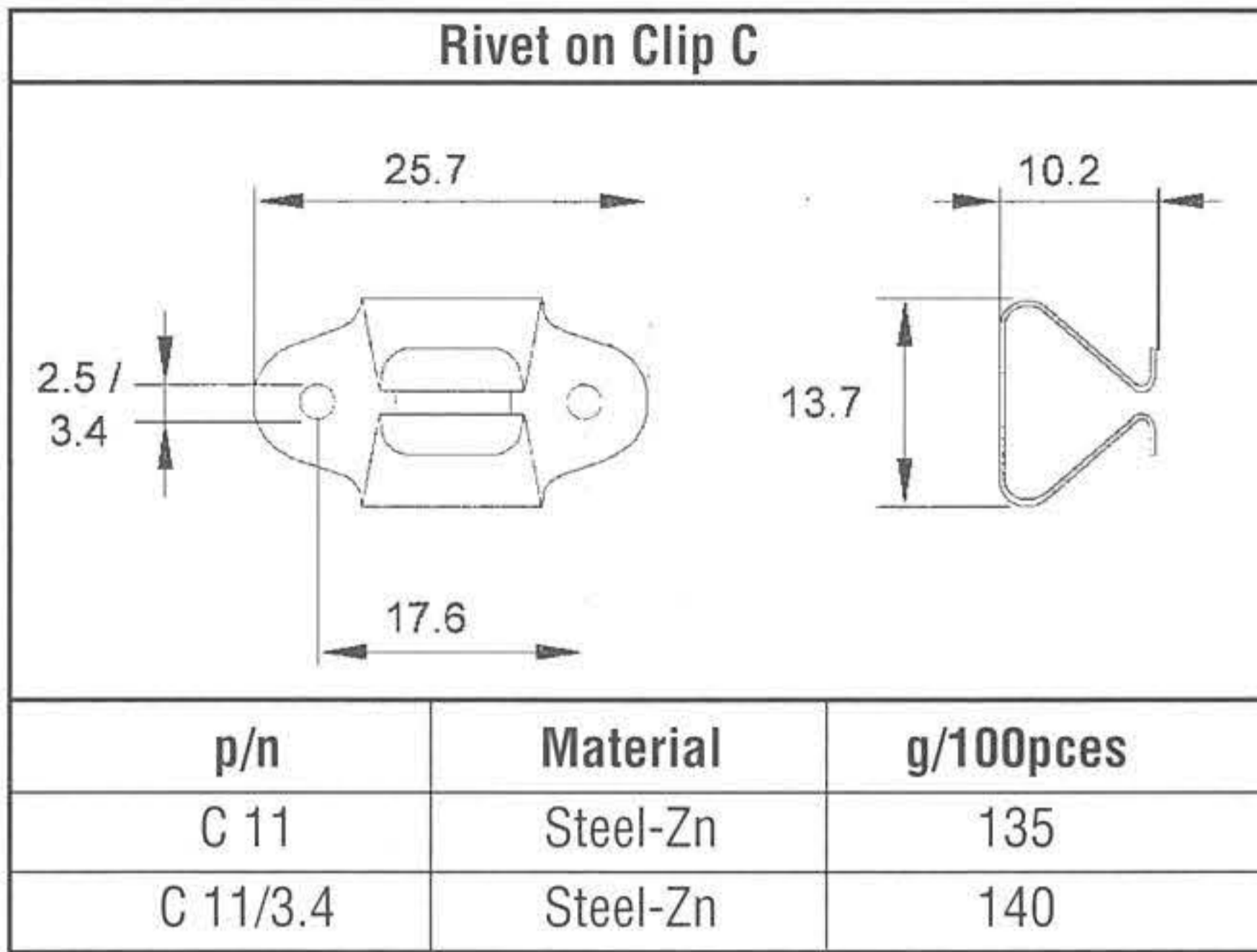


## BI-FIX Quarter Turn Fasteners

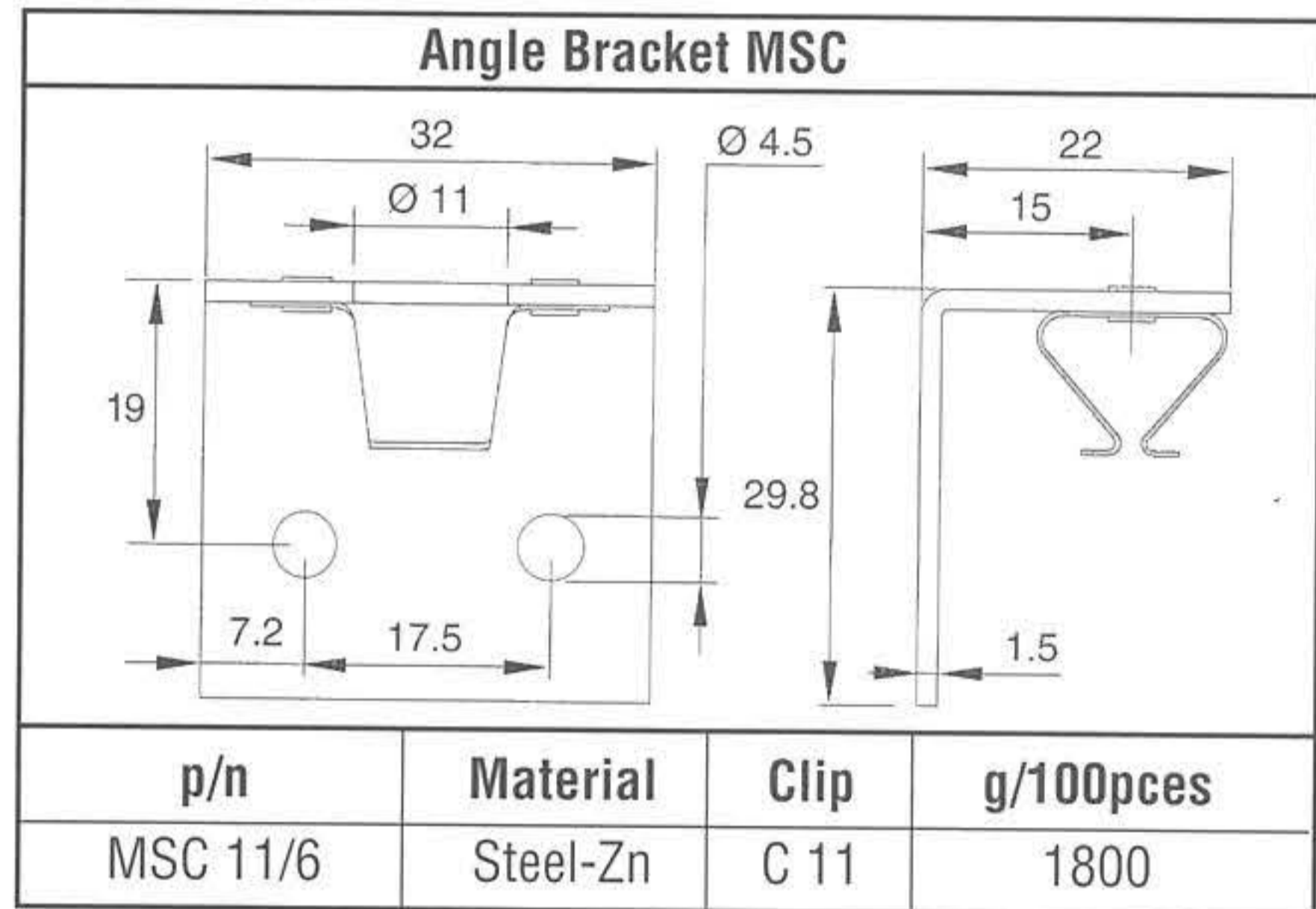
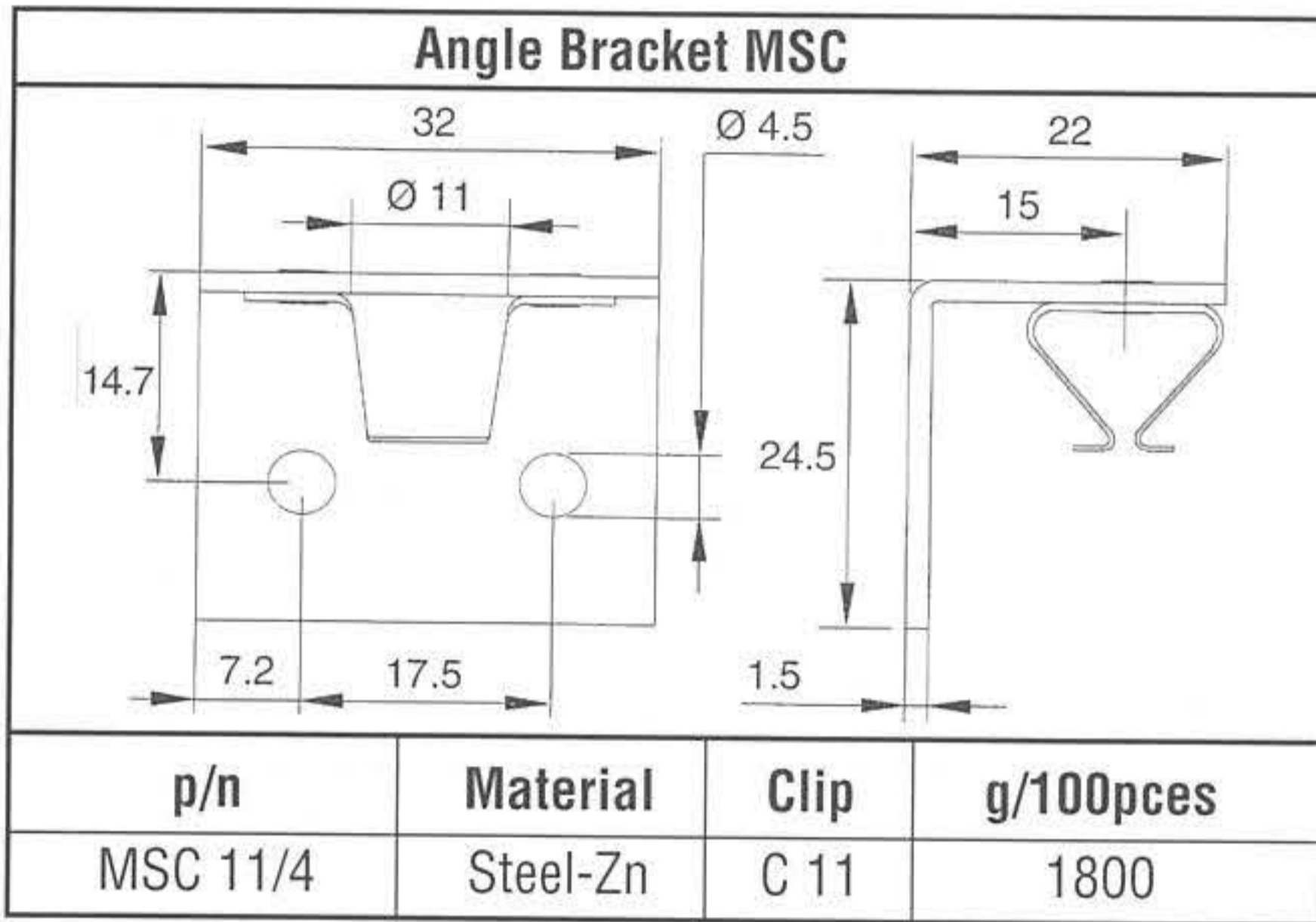
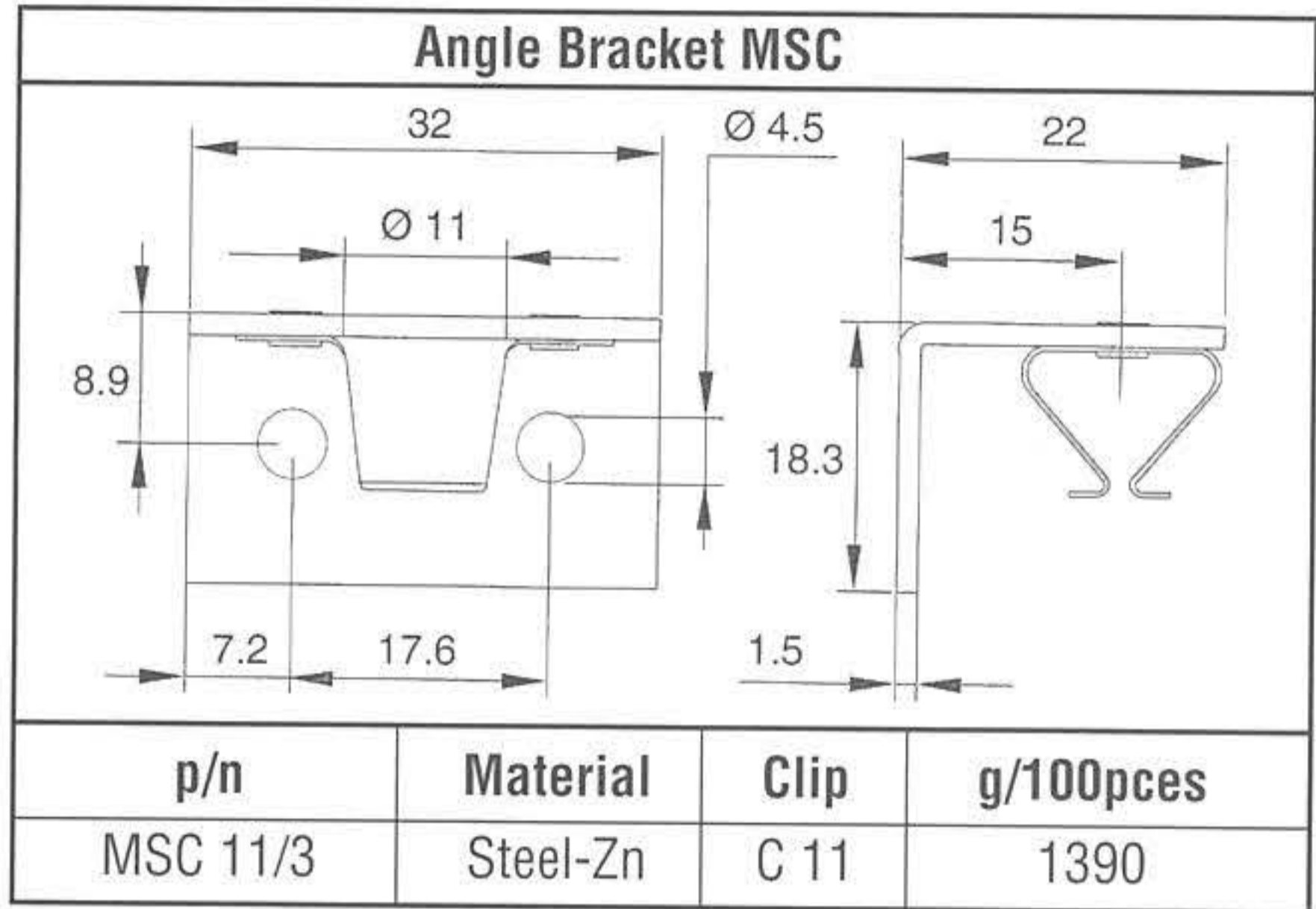
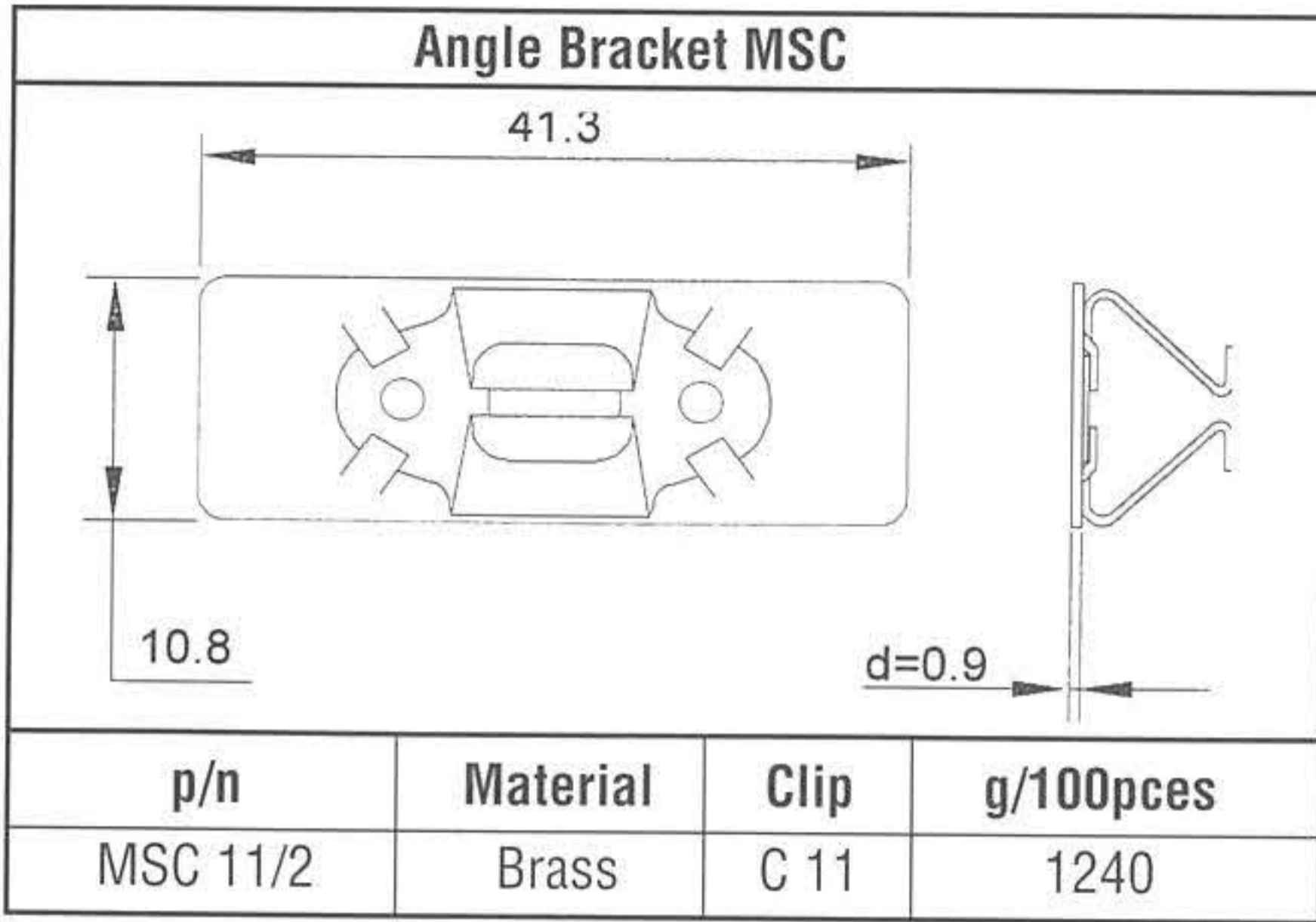
Dome Head D		Wing Head W		Knurled Head K		Dimensions (mm)		
								
p/n	g/100pcs	p/n	g/100pcs	p/n	g/100pcs	“H” max	L	“I”
D 1103	405	W 1103	575	K 1103	1350	3.7	16.6	14.4
D 1104	420	W 1104	585	K 1104	1360	4.7	17.6	15.4
D 1105	435	W 1105	600	K 1105	1370	5.7	18.6	16.4
D 1106	450	W 1106	615	K 1106	1380	6.9	19.8	17.6
D 1107	460	W 1107	625	K 1107	1395	7.7	20.6	18.4
D 1108	475	W 1108	640	K 1108	1410	8.9	21.8	19.6
D 1109	490	W 1109	650			9.7	22.6	20.4
D 1110	500	W 1110	665	K 1110	1435	10.7	23.6	21.4
D 1111	510	W 1111	680			11.7	24.6	22.4
D 1112	525	W 1112	690	K 1112	1460	12.9	25.8	23.6
D 1114	550	W 1114	715	K 1114	1490	14.7	27.6	25.4
D 1116	575	W 1116	740	K 1116	1515	16.7	29.6	27.4
D 1118	600	W 1118	770	K 1118	1540	18.7	31.6	29.4
D 1120	630	W 1120	795	K 1120	1565	20.9	33.8	31.6
D 1122	655	W 1122	820	K 1122	1590	22.7	35.6	33.4
Material: Brass*		Finish: Bright Nickel*		Weights are approximate				



# BI-FIX Quarter Turn Fasteners









# BI-FIX Quarter Turn Fasteners

Tolerance Clip-in-Clip CCT		
p/n	Material	g/100pcs
CCT 11	Stainless	180

Clip-in-Clip CC							
p/n	Material	g/100pcs	Panel Thickness Range	A	B	K	J
CC 11/1	SZB + IX	150	0.6 - 1.3	~24.1	~11.4	12±0.1	13±0.1
CC 11/2	SZB + IX	150	1.3 - 1.99	~22.2	~12.5		
CC 11/3	SZB + IX	150	2.0 - 3.50	~18.7	~14.0		
CC 11/4	SZB + IX	150	3.50 - 4.50	~18.5	~14.8		

Clip-in-Clip for Electrical Racks CCX			
p/n	material	g/100pcs	Panel Thickness Range
CCX 11-15	Stainless	85	1.4 - 1.59
CCX 11-20	Stainless	85	2.0 - 2.19
CCX 11-25	Stainless	85	2.5 - 2.69



**Profile Clip CF**

p/n	Material	g/100pcs	p/n	Material	g/100pcs
CF 11	Steel-Zn	122	BS 71	Steel-Zn	19
Supplied on Request					

**Clip-in-Clip CR 11 two-piece (use Neoprene Washer RC and Distance Washer RC)**

p/n	Material	g/100pcs	p/n	Material	g/100pcs
CR 11 C	Steel-Zn	122	CR 11H	Steel-Zn	38
When using part number CR11, panel thickness is a constant (4.3mm = sheet thickness + distance washer). Hole to be punched as to above drawing.					

# BI-FIX Quarter Turn Fasteners

**Neoprene Washer R**

p/n	D	g/100pcs
R 1711	1.7	10
R 2511	2.5	18
R 4011	4.0	28
R 6011	6.0	45

Material: EPDM

**Sealing Washer RW**

p/n	D	g/100pcs
RW 0511	0.5	13
RW 1011	1.0	19
RW 1511	1.5	25
RW 2011	2.0	31

Material: EPDM

**Washer for Finish Protection RT**

p/n	D	g/100pcs
RT 0211	0.2	1.5

Material: Nylon

**Distance Washer RC (Clip CR)**

p/n	D	g/100pcs
RC 1011	1.0	17
RC 1511	1.5	22
RC 2011	2.0	27
RC 3011	3.0	38

Material: Neoprene

**Neoprene Washer for (Clip CR)**

p/n	D	g/100pcs
RC 6011/3	3.0	12
RC 6011/6	6.0	24

Material: Neoprene

**Retaining Spring KF**

p/n	D	g/100pcs
KF 11/4.5	4.5	33
KF 11/6.5	6.5	33

Material: Stainless

**For Larger Tolerances TA**

p/n	D	g/100pcs
TA 11	1.5	130

Material: Stainless, Brass-Nickel

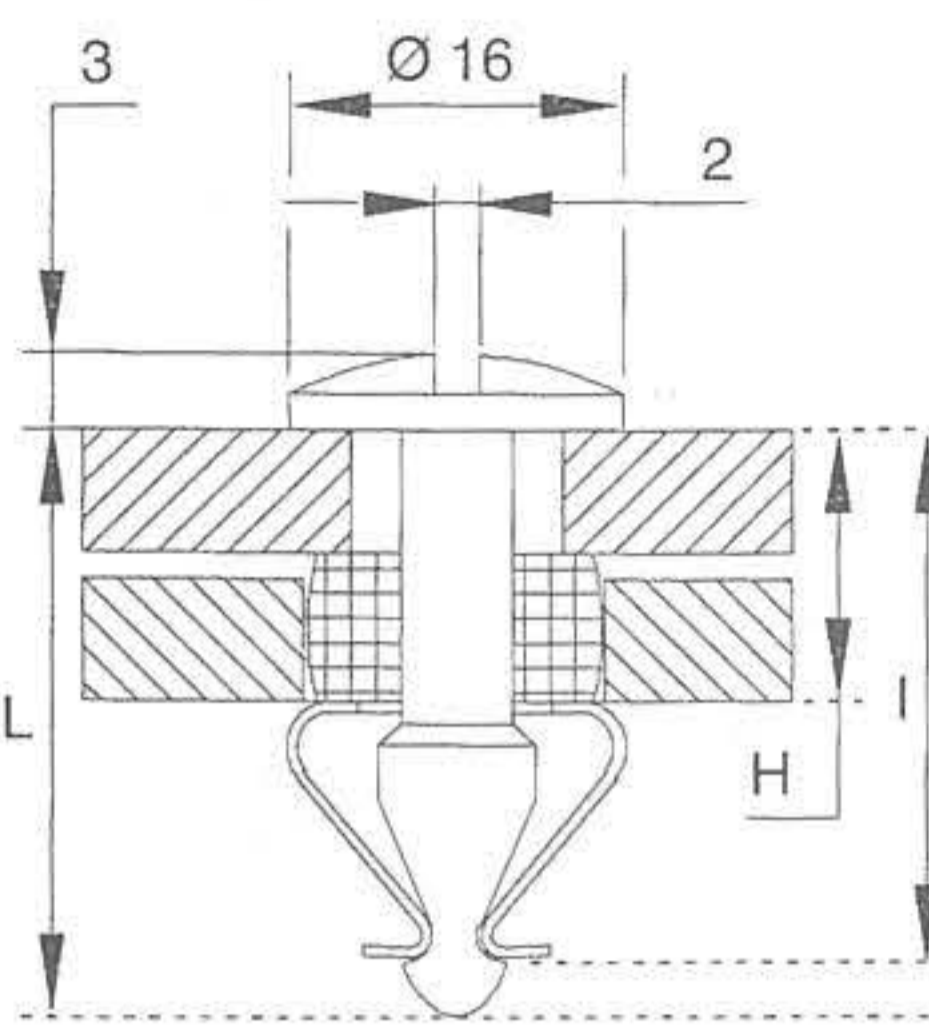
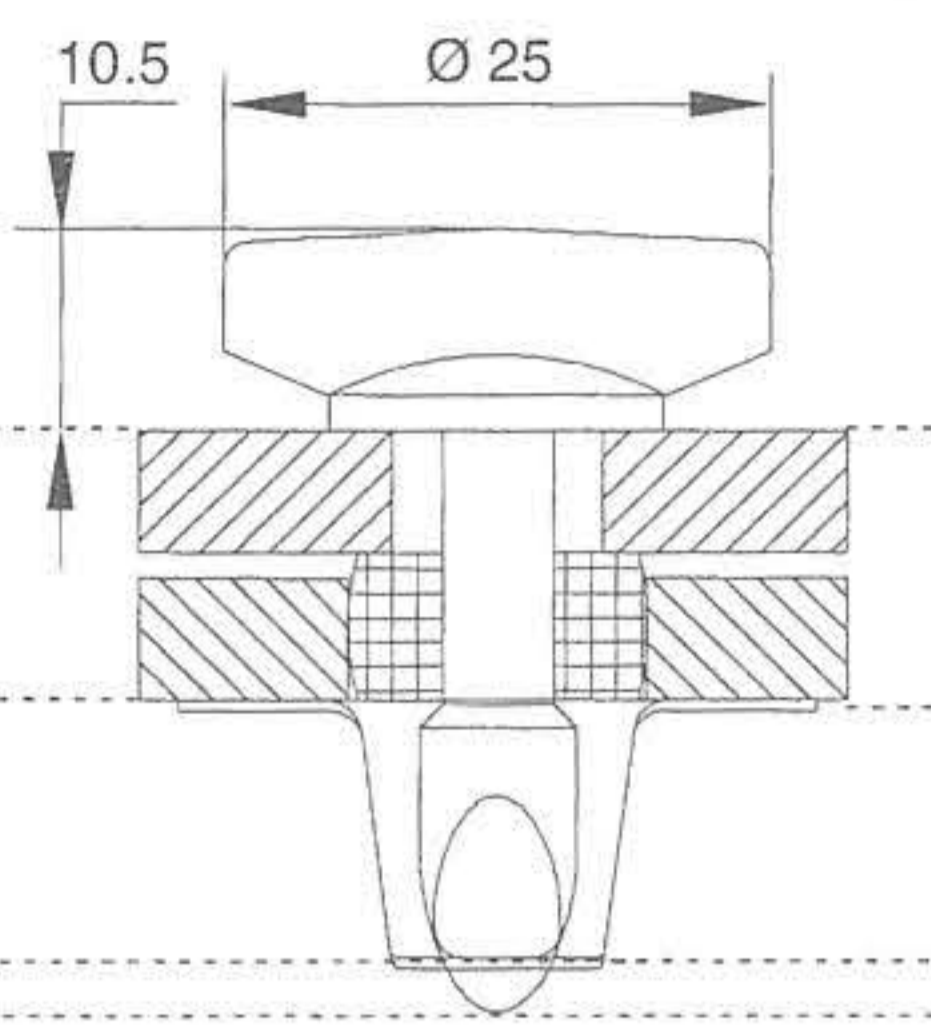
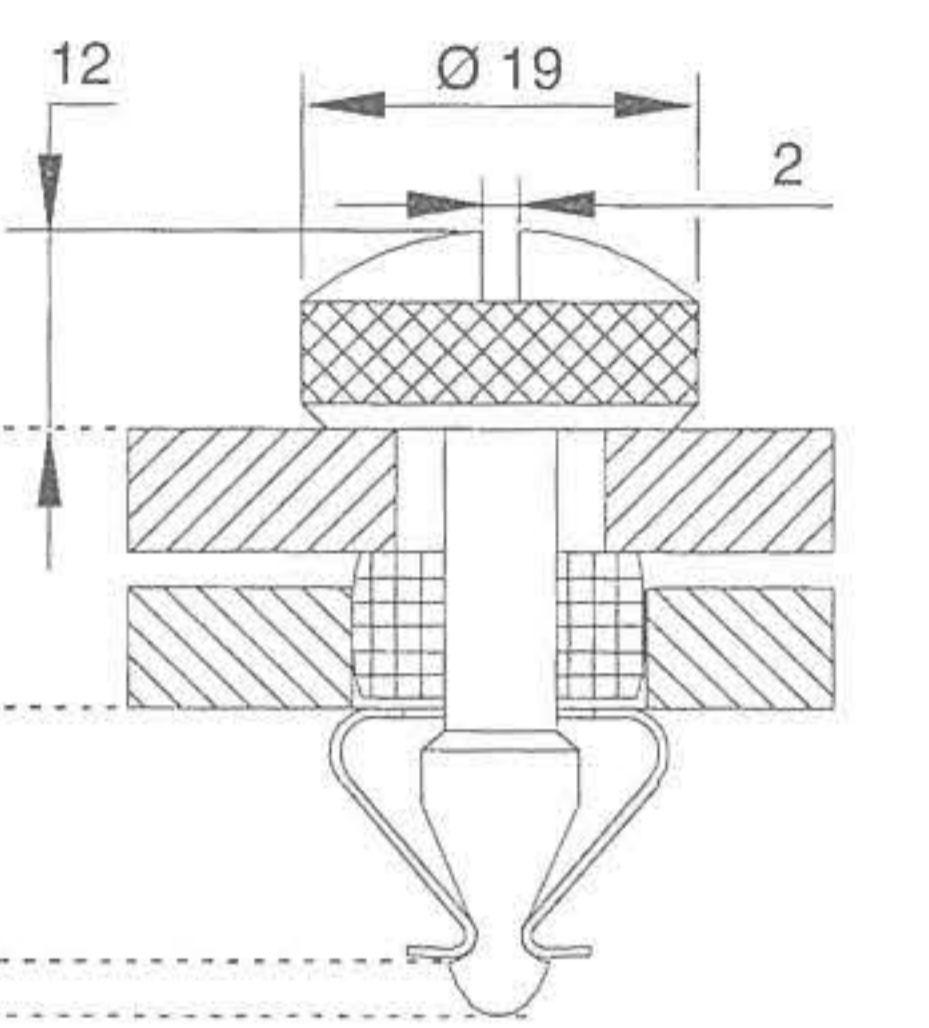
**Circlip SR**

p/n	D	g/100pcs
SR 11	0.6	16

Material: Steel, Zinc Passivate



## BI-FIX Quarter Turn Fasteners

Dome Head D		Wing Head W		Knurled Head K		Dimensions (mm)		
								
p/n	g/100pcs	p/n	g/100pcs	p/n	g/100pcs	"H" max	L	"I"
D 1604	1085	W 1604	1440	K1604		5.0	22.2	18.4
D 1606	1145	W 1606	1795	K 1606	3255	7.0	24.2	20.4
D 1608	1205	W 1608	2150	K 1608	3345	9.0	26.2	22.4
D 1610	1265	W 1610	2505	K 1610	3435	11.0	28.1	24.3
D 1612	1325	W 1612	2860	K 1612	3525	13.0	30.1	26.3
D 1614	1385	W 1614	3215	K 1614	3615	15.2	32.4	28.6
D 1616	1445	W 1616	3570	K 1616	3705	17.0	34.1	30.3
D 1618	1505	W 1618	3925	K 1618	3795	18.8	36.0	32.2
D 1620	1565	W 1620	4280	K 1620	3885	21.0	38.1	34.3
Material: Brass*		Finish: Bright Nickel*		Weights are approximate				

# BI-FIX Quarter Turn Fasteners

**Rivet on Clip C**

p/n	Material	g/100pcs
C 16	Steel-Zn	375
C 16/5.3	Steel-Zn	

**Rivet on Clip C**

p/n	Material	g/100pcs
C 16-IX	Stainless Steel	370
C 16/5.3-IX	Stainless Steel	370

**Weld on Clip C (no riveting hole)**

p/n	Material	g/100pcs
C 16-0-IX	Stainless Steel	375

**Tolerance Rivet on Clip CT**

p/n	Material	g/100pcs
CT 16	Steel-Dacromet	580

**Weld On Clip CP**

p/n	Material	Clip	g/100pcs
CP 16	Steel-Zn	C 16	800



Clip-in-Clip CC					
p/n	Material	g/100pcs	Panel Thickn. Range	a	b
CC 16/1	SZB + IX	410	0.9 - 1.6	~ 34.7	~ 14.1
CC 16/2	SZB + IX	410	1.6 - 2.8	~ 33.2	~ 14.9
CC 16/3	SZB + IX	410	2.8 - 3.7	~ 30.2	~ 16.4
CC 16/4	SZB + IX	410	3.7 - 4.8	~ 27.8	~ 13.5

Angle Bracket MSC			
p/n	Material	Clip	g/100pcs
MSC 16/1	Steel-Zn	C 16	1350

# BI-FIX Quarter Turn Fasteners

**Neoprene Washer R**

p/n	D	g/100pcs
R 1716	1.7	25
R 2516	2.5	35
R 4016	4.0	60
R 6016	6.0	90
R 8016	8.0	120

Material: EPDM

**Sealing Washer RW**

p/n	D	g/100pcs
RW 0516	0.5	50
RW 1016	1.0	65
RW 1516	1.5	90
RW 2016	2.0	105

Material: EPDM

**Washer for Finish Protection RT**

p/n	D	g/100pcs
RT 0216	0.2	2.5

Material: Nylon

**Retaining Spring KF**

p/n	D	g/100pcs
KF 16		75

Material: Stainless

**For Larger Tolerances TA**

p/n	D	g/100pcs
TA 16	1.5	375

**For Small Tolerances TAR**

p/n	D	g/100pcs
TAR 16	1.5	85

**Circlip SR**

p/n	D	g/100pcs
SR 16	1.0	60

Material: Steel, Zinc Passivated



## BI-FIX - Spherical Studs "KB"

Spherical studs are used when a panel has to be opened by pulling and closed by simple pushing. These studs use the same clips as standard BI-FIX quarter-turn studs. If required the spherical studs can be fixed so the fastening system is not seen from the outside.

Spherical Stud			
Example: KB 08 A5V - 001			
p/n	Size	Fastening of Stud	Dash Number
Spherical stud	"08" / "11" / "16 Corresponding clip	A = External Thread / 5 = Thread Size (M5)	To distinguish between studs with same characteristics but different grip length & thread length
		I = External Thread / 5 = Thread Size (M5)	
		S = Welding (stud welding)	
		V = Polygonal (hexagonal size)	
		E = Injection moulding (insert into tooling)	

Designation for Materials and Finish			
Material	Surface, Color	Abbreviation	Designation
Brass	Nickel 7-8 µm		see next chapters
Brass	Xylan, black	XI	"
Steel	Zinc 12-14 µm, Passivated blue	SZ	"
Steel	Zinc 12-14 µm, Passivated olive	SZO	"
Steel	Zinc 12-14 µm, Passivated yellow	SZG	"
Steel	Zinc 12-14 µm, Passivated black	SZS	"
Stainless Steel	Passivated	IX	"
Nylon	RAL Nr.....	7038	"

**Spherical Stud "08"**

p/n	g/100pcs	Material
TA 08A3-001	105	Brass

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A3-002	165	Brass

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A4-001	190	Brass

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A4-002	185	Brass
Pull Out Strength ~20 N *1		

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A4V-001	155	Brass
Pull Out Strength ~75 N *1		

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A4V-002	200	Brass
Pull Out Strength ~75 N *1		

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A4V-003	285	Brass
Pull Out Strength ~25 N *1		

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A4V-004	235	Brass
Pull Out Strength ~28 N *1		

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A5V-001	275	Brass
Pull Out Strength ~35 N *1		



# BI-FIX Quarter Turn Fasteners

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A5V-002	325	Brass
Pull Out Strength ~25 N *1		

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08A6V-001	485	Brass

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08S-001	195	Steel

**Spherical Stud "08"**

p/n	g/100pcs	Material
KB 08S-002	60	Stainl.
Pull Out Strength ~15 N *1		

**Spherical Stud "16"**

p/n	g/100pcs	Material
KB 16A5-001		
Pull Out Strength ~185 N *3		

**Spherical Stud "16"**

p/n	g/100pcs	Material
KB 16A6V-001	635	Steel

**Spherical Stud "16"**

p/n	g/100pcs	Material
KB 16A6V-002	840	
Pull Out Strength ~185 N *3		

**Spherical Stud "16"**

p/n	g/100pcs	Material
KB 16A6V-003	840	Steel

**Spherical Stud "16"**

p/n	g/100pcs	Material
KB 16S-001	500	Stainl.
Pull Out Strength ~85 N *3		

Spherical Stud "16"		
p/n	g/100pcs	Material
SBV1701	270	Steel

Spherical Stud "16"		
p/n	g/100pcs	Material
SBV1700	138	Steel



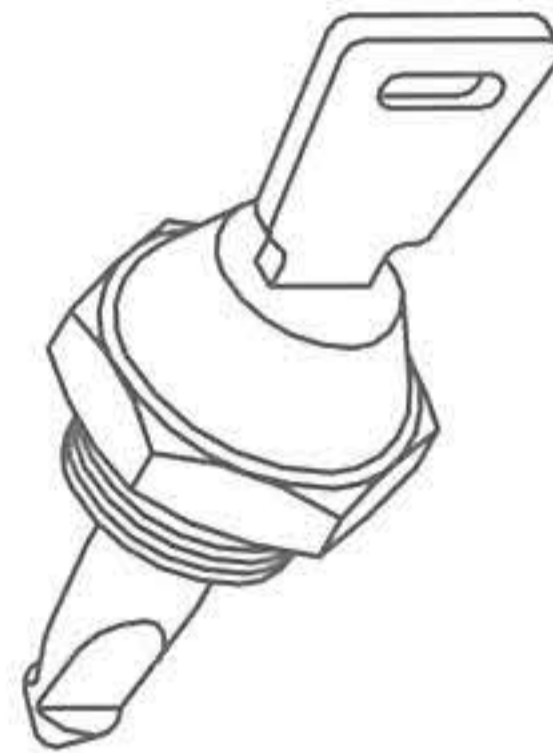
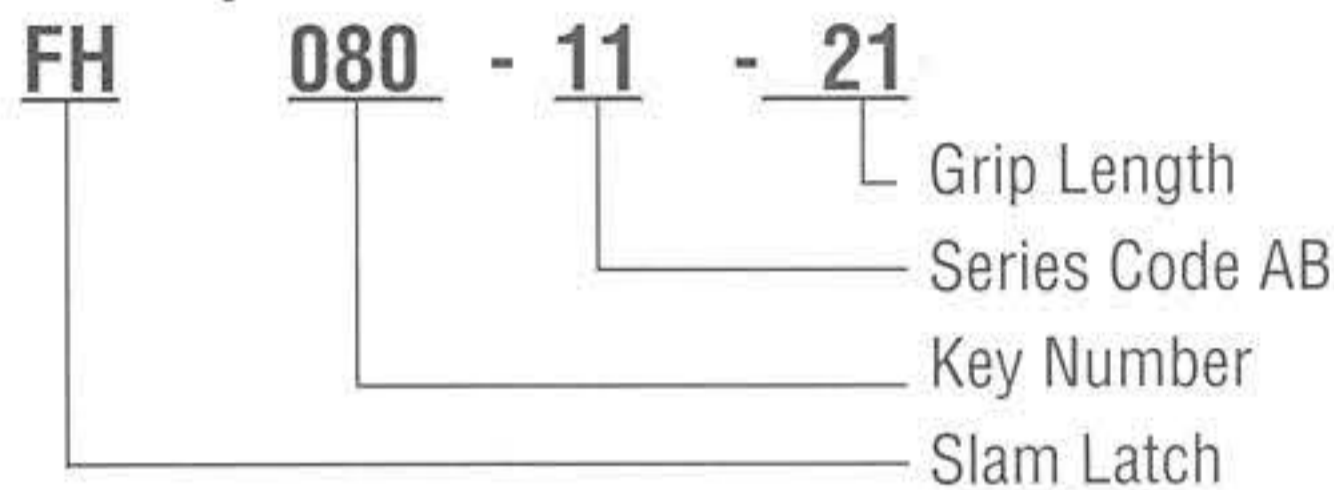
# BI-FIX Quarter Turn Fasteners

## Quarter-Turn Fastener with Keylock

Very high quality secure slam latch - solidly constructed and aesthetically superb. For use in rugged applications where strength, resistance to vibration and security are important.

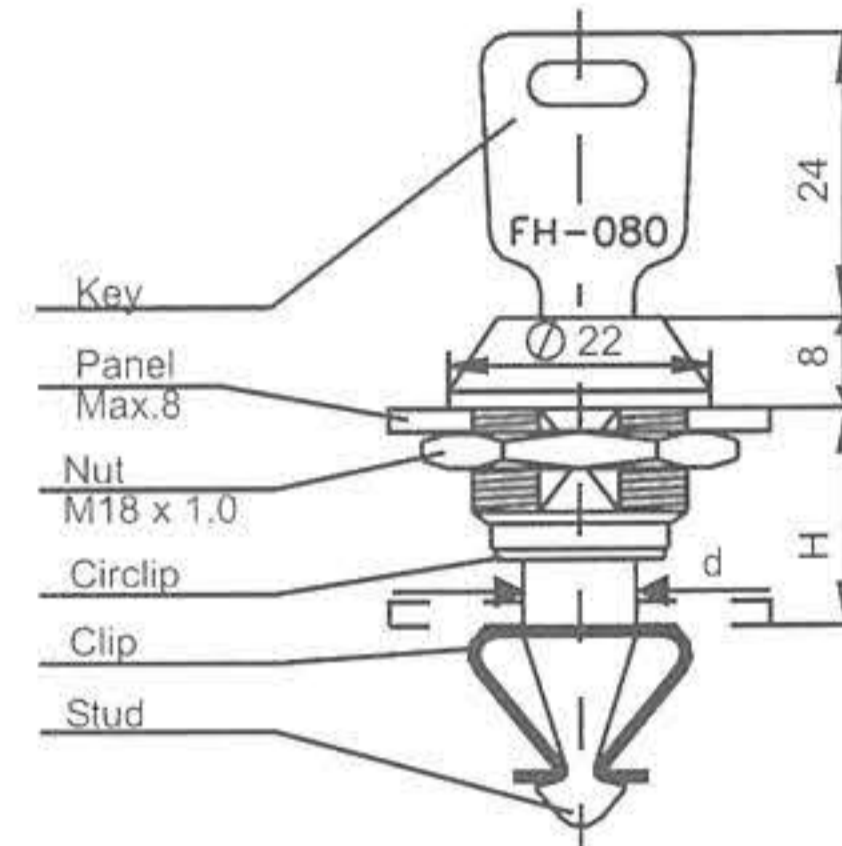
Quarter turn to open. When the key is removed, the fastener aligns automatically.

### Example of Part Number

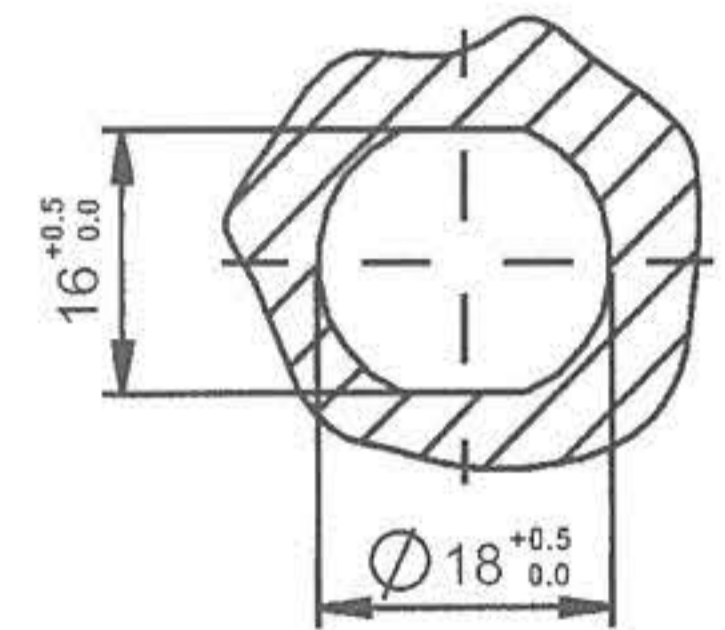


Key locks are available in any grip length and do not require any special recessing. One size fits all types and sizes.

There are up to 200 variations of keys (F000 to F200). Master keys are also available.



### Panel Preparation



AB	Clip Pages	Max. Load	Stud Diameter
08	15-17	300N	3,9 mm
11	20-23	900N	6,5 mm
16	27-29	2700N	9,3 mm

### Material:

Keylock: Chrome plated zinc alloy

Stud: Nickel plated brass

Contact Paneloc for alternate finishes and materials.

Grip length determined by application, minimum grip length 15 mm.

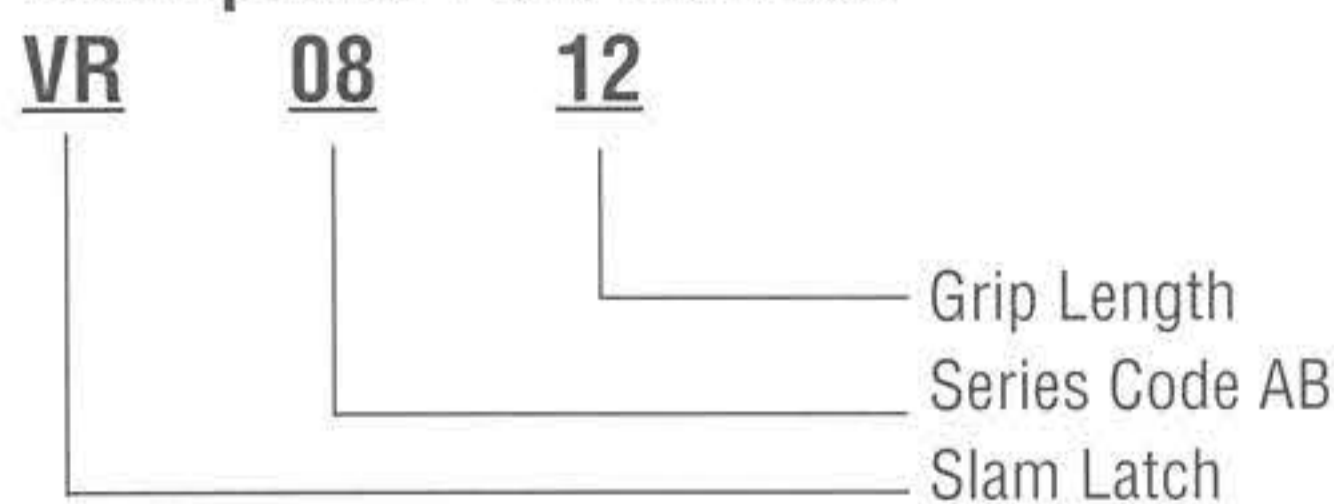
Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip.

## Quarter-Turn Fastener with Automatic Return Feature

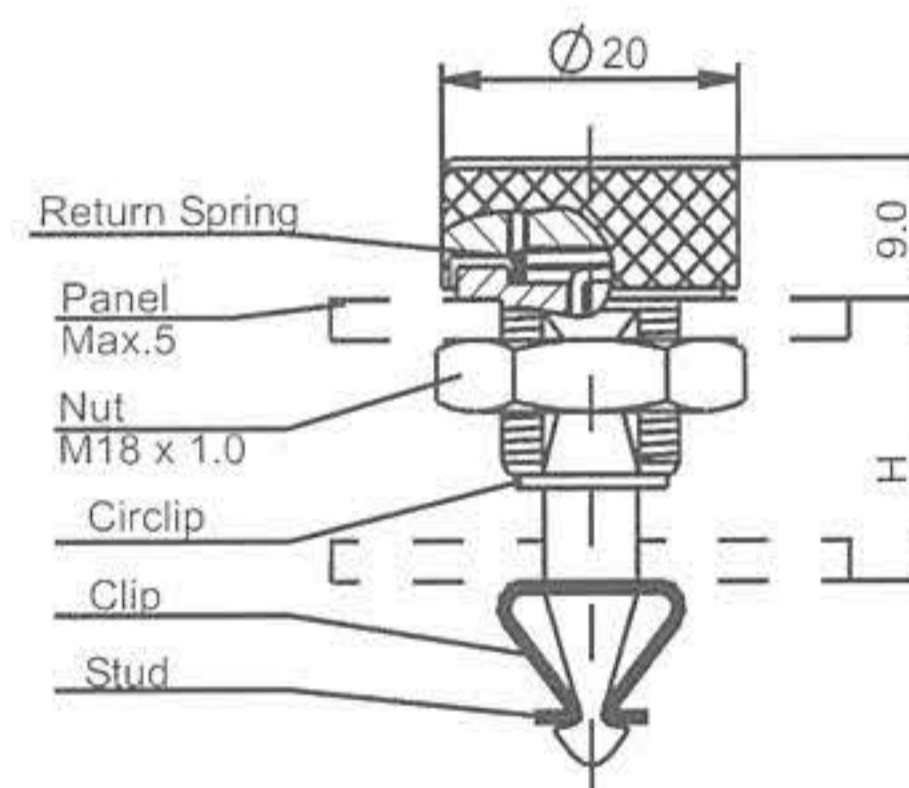
Heavy Duty Slam latch, solidly constructed. For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then re-aligns automatically, ready to be slammed or pushed closed.

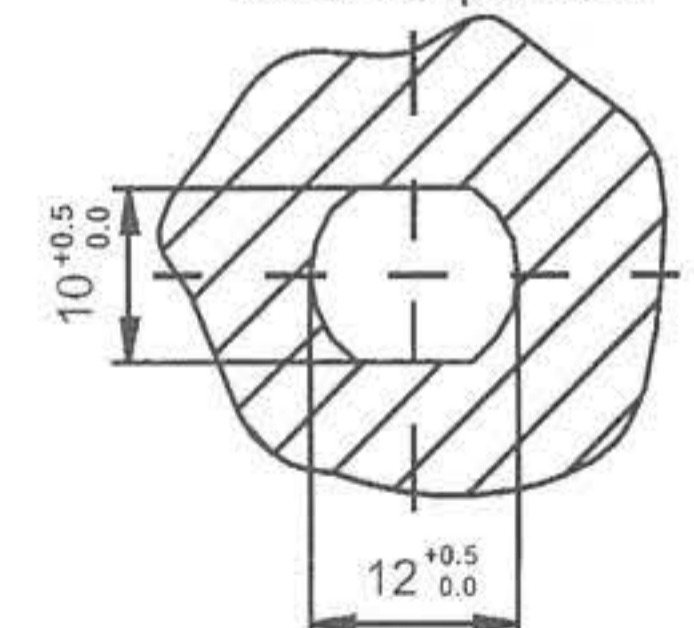
### Example of Part Number



These solid brass fasteners are available in any grip length and in both 8 and 11 series formats. They do not require any special recessing when fitting.



### Panel Preparation



AB	Clip Pages	Max. Load
08	15-17	300N
11	20-23	900N

### Material: Nickel plated brass

Contact Paneloc for alternate finishes and materials.

Grip length determined by application, minimum grip length 8 mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip.

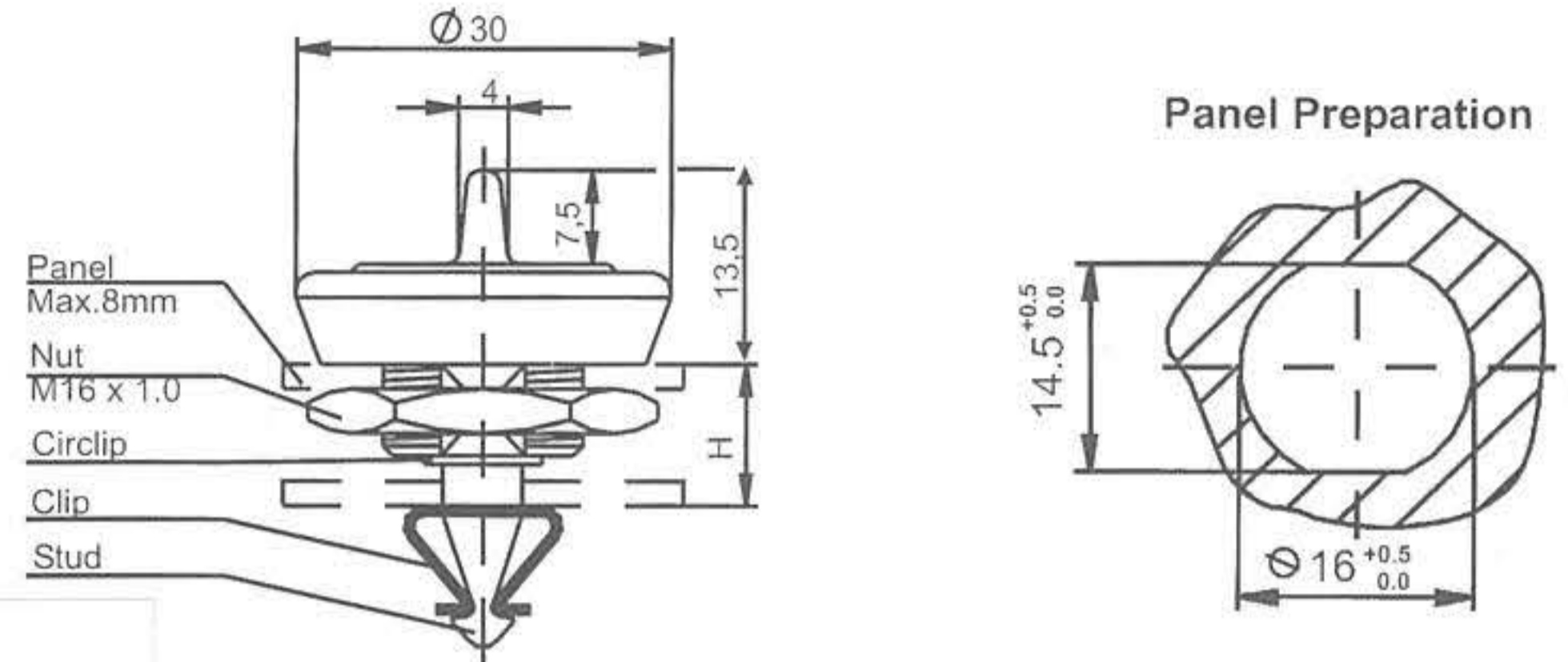


**Quarter-Turn Fastener with Automatic Return Feature  
Wing Headed Version for Hand Operation**

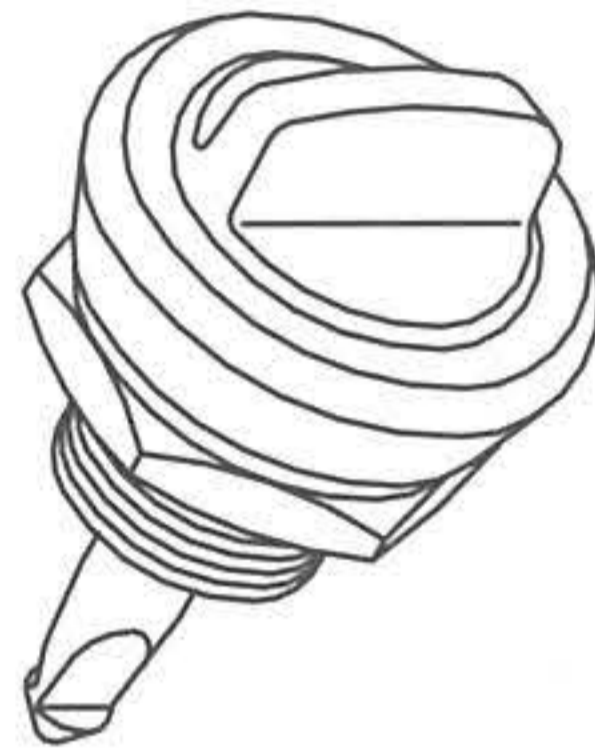
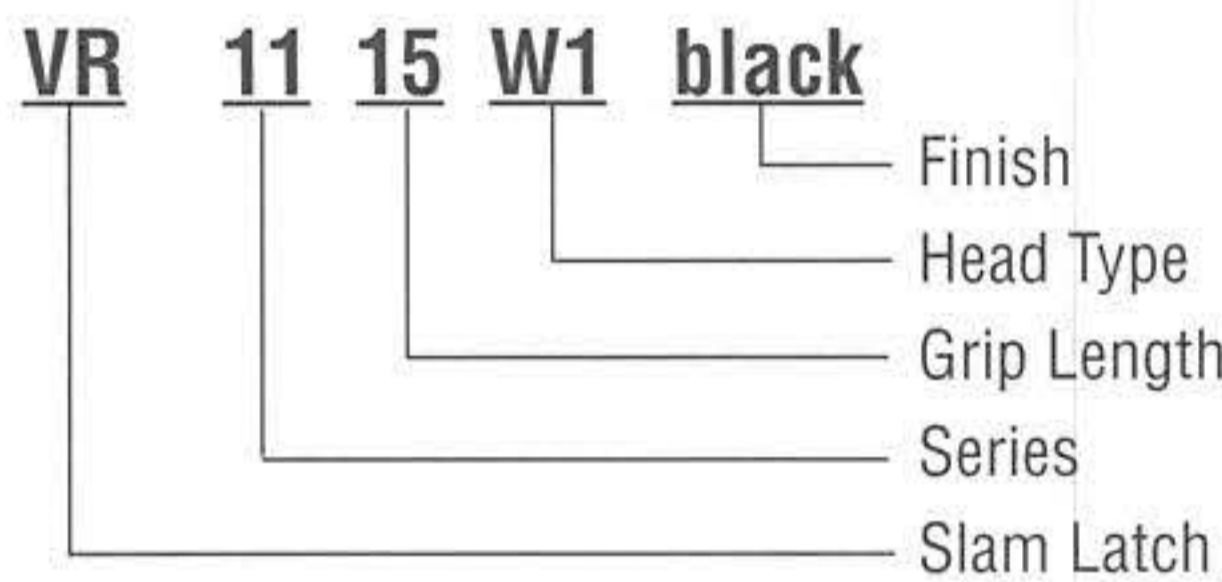
For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

This aesthetically pleasing fastener sits on top of the panel and does not require any special recessing when fitting.



**Example of Part Number**



**Material:**

Housing: Zinc Alloy, Powder coated - Color optional  
Stud: Nickel plated brass

Grip length determined by application, minimum grip length 9 mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

For use with 11 series clips (refer to pages 20 - 23).  
Clips are ordered separately.

**Quarter-Turn Fastener with Automatic Return Feature**

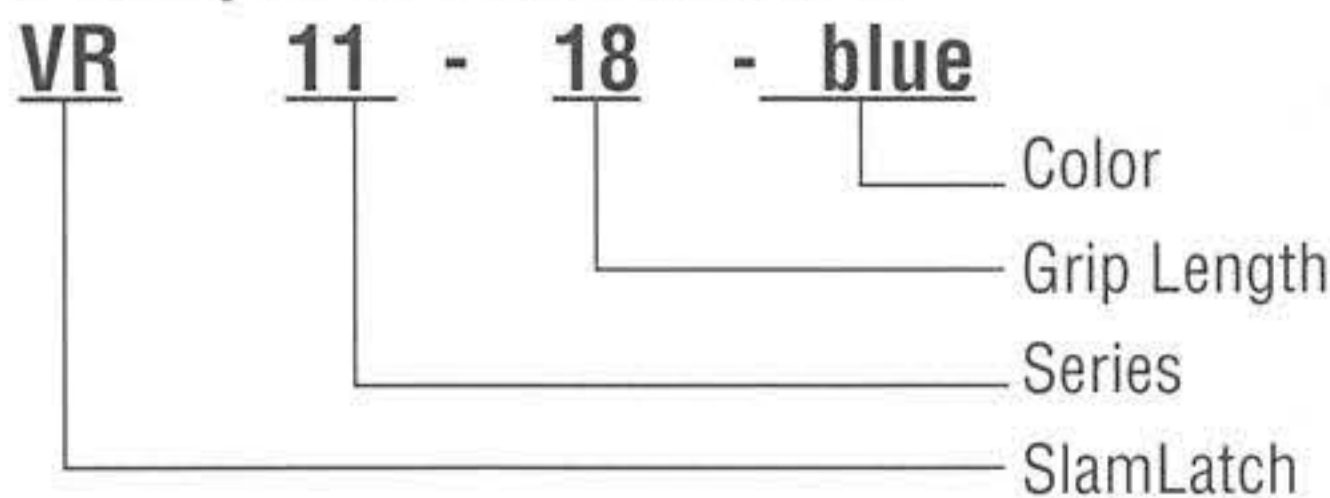
For use in rugged applications where strength and resistance to vibrations are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

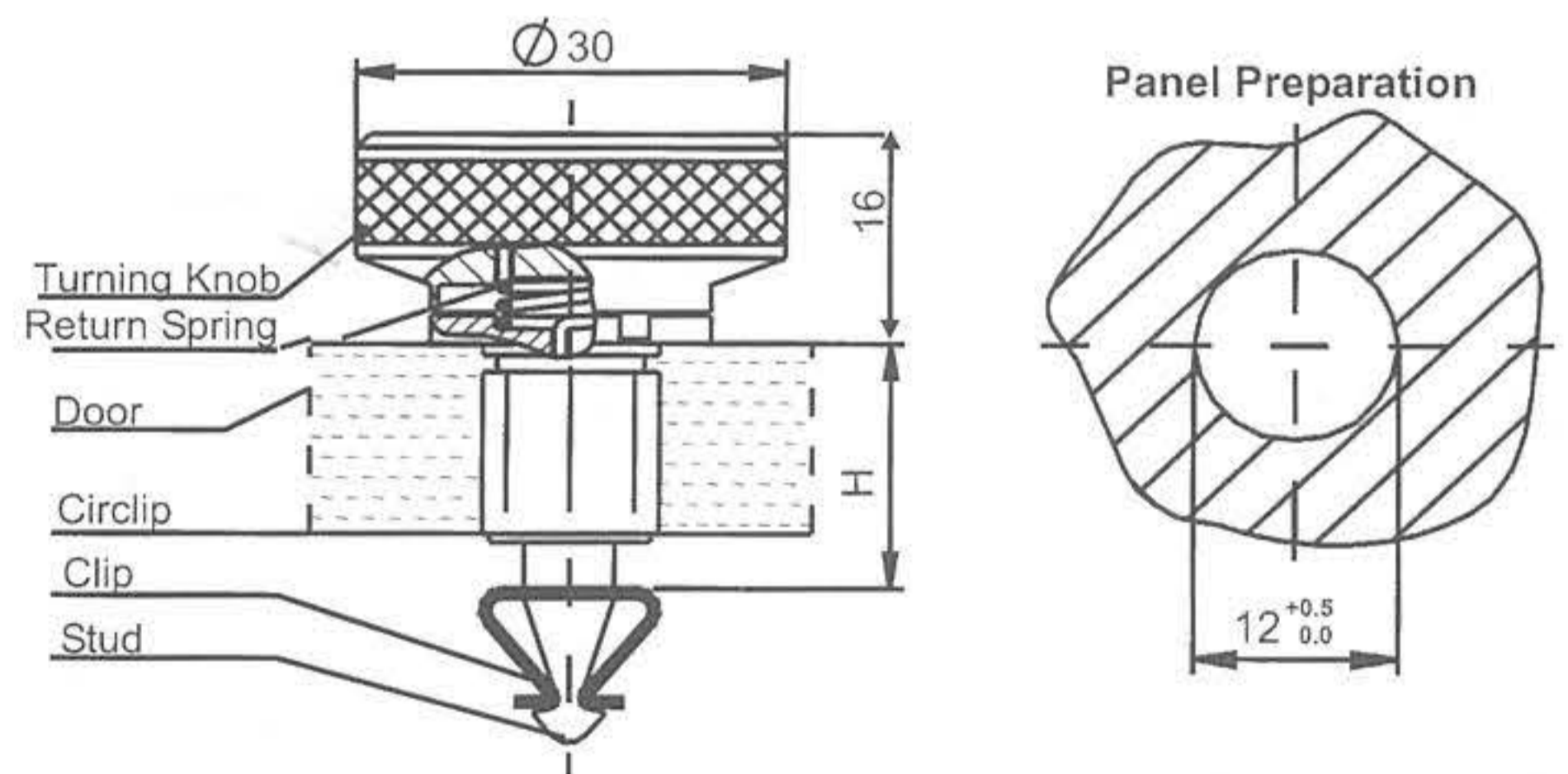
The fastener shown is for use without a tool.

This type is available to fit one of two standard panel thicknesses either 15mm or 23mm. The fasteners are fixed by adhesive directly into the panel. To ensure correct adhesion it is important to set the adhesive while the fastener is engaged into the clip.

**Example of Part Number**



are ordered separately.



**Material:** Colored plastic - color optional

Grip length determined by application, minimum grip length 15 mm resp.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

It is absolutely necessary that closing position of clip and stud are aligned!

For use with 11 series clips. (refer to pages 20-23). Clips



# BI-FIX Quarter Turn Fasteners

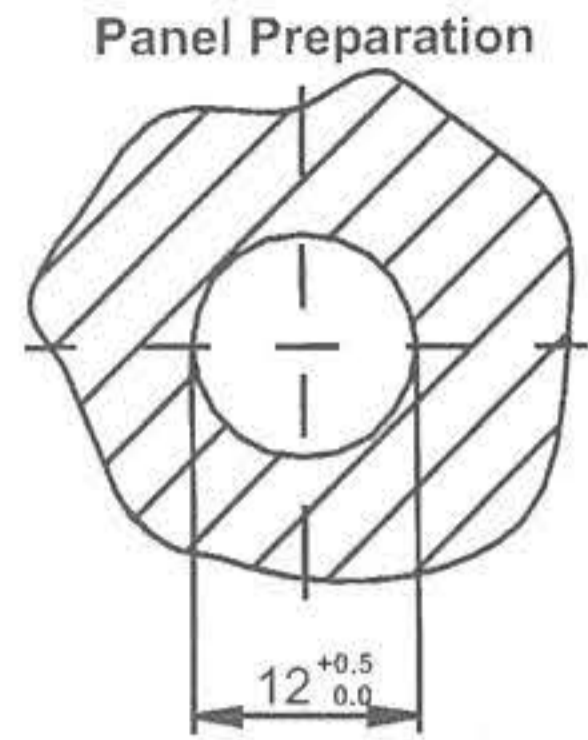
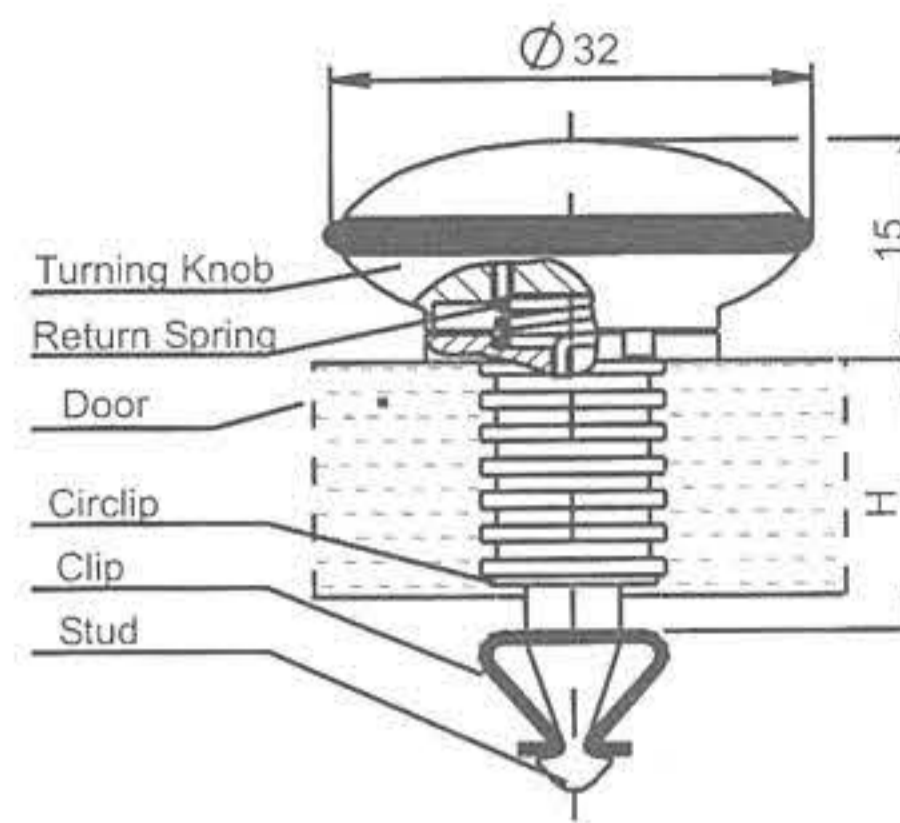
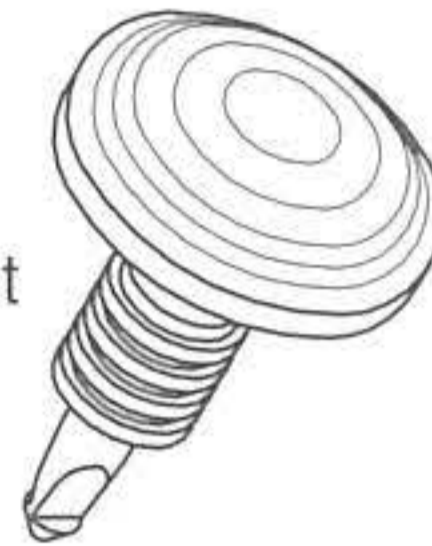
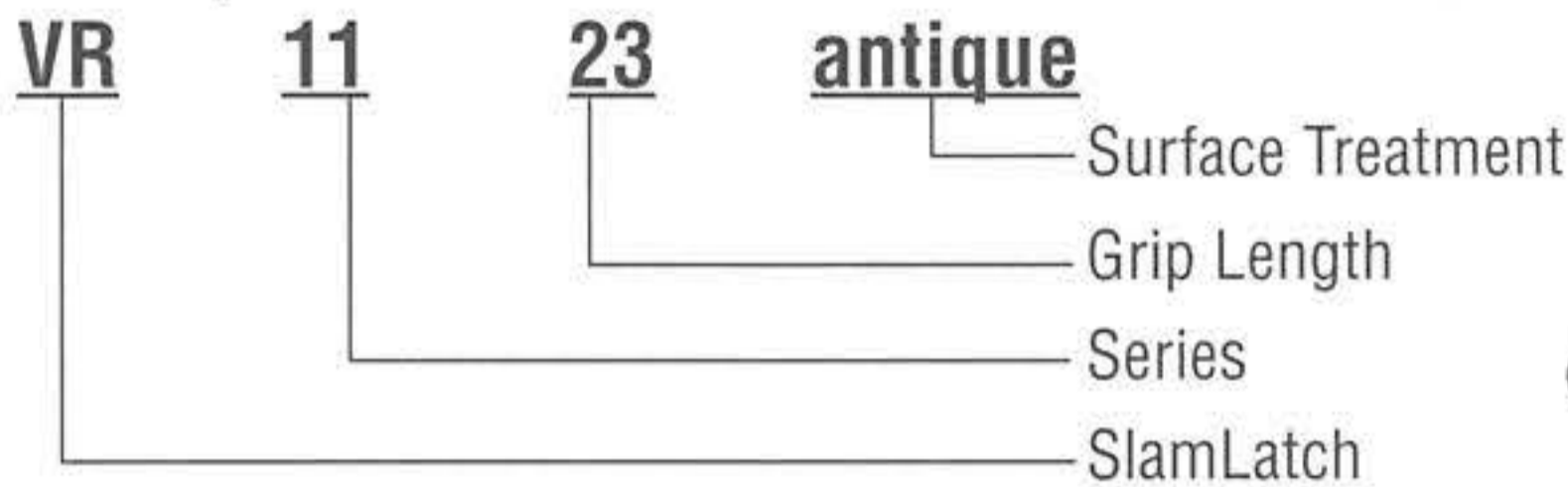
## Quarter-Turn Fastener with Automatic Return Feature

For use in general applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

The fastener shown is for use without the need for a tool.

### Example of Part Number



**Material:** Brass, antique matt finish

Grip length determined by application, minimum grip length 15mm, 23mm resp.

Dimensions “H” or “Grip length” is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

It is absolutely necessary that closing position of clip and stud are aligned!

This type is available to fit one of two standard panel thickness either 15mm or 23mm. The fasteners are fixed by adhesive directly into the panel. To ensure correct fixing it is important to set the adhesive while the fastener is engaged into clip.

For use with 11 series clips, (refer to page 20-23). Clips are ordered separately.

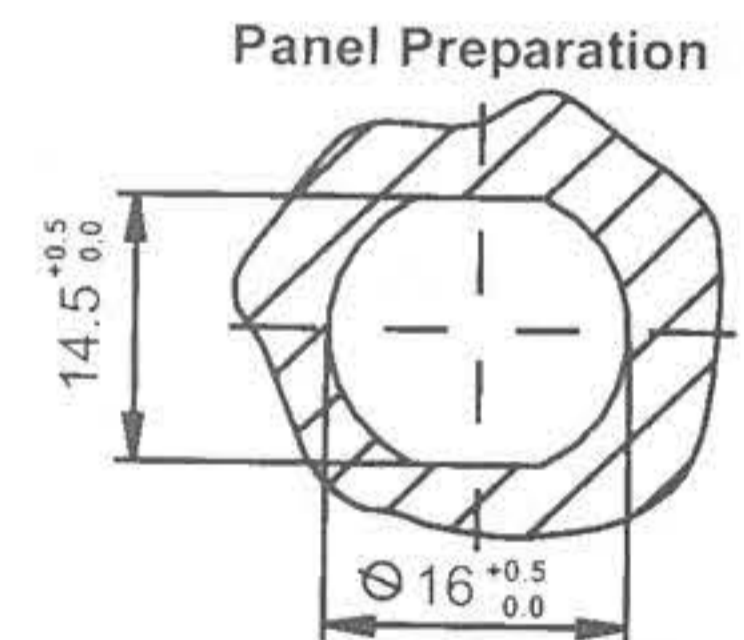
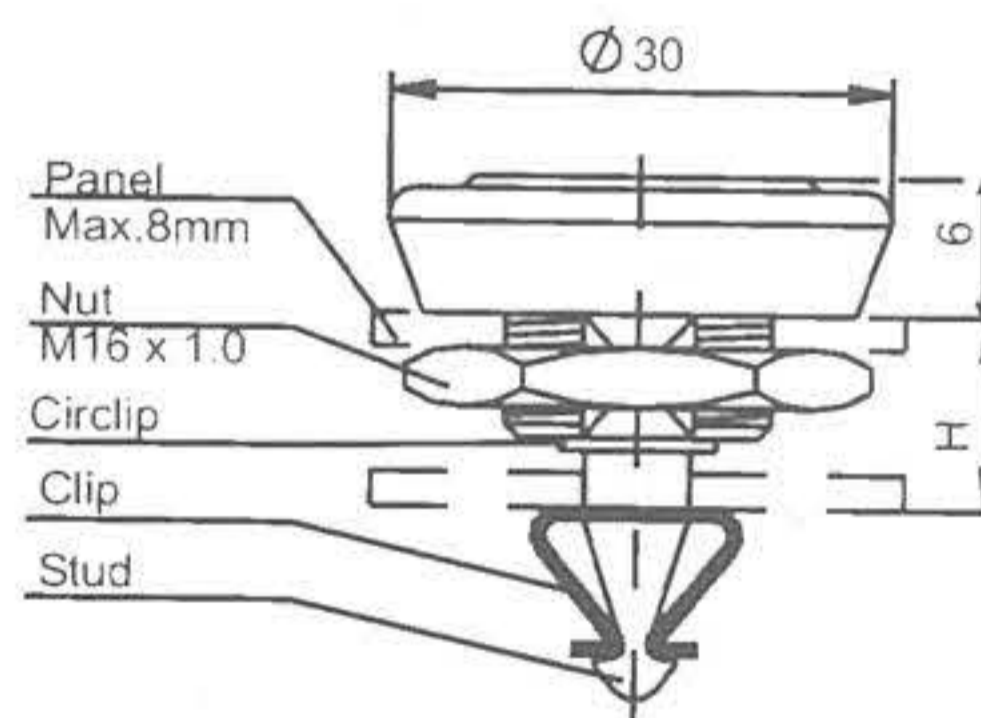
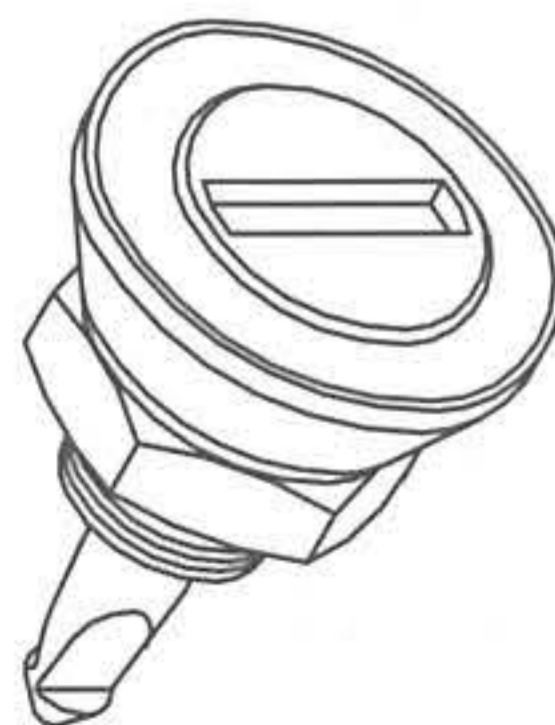
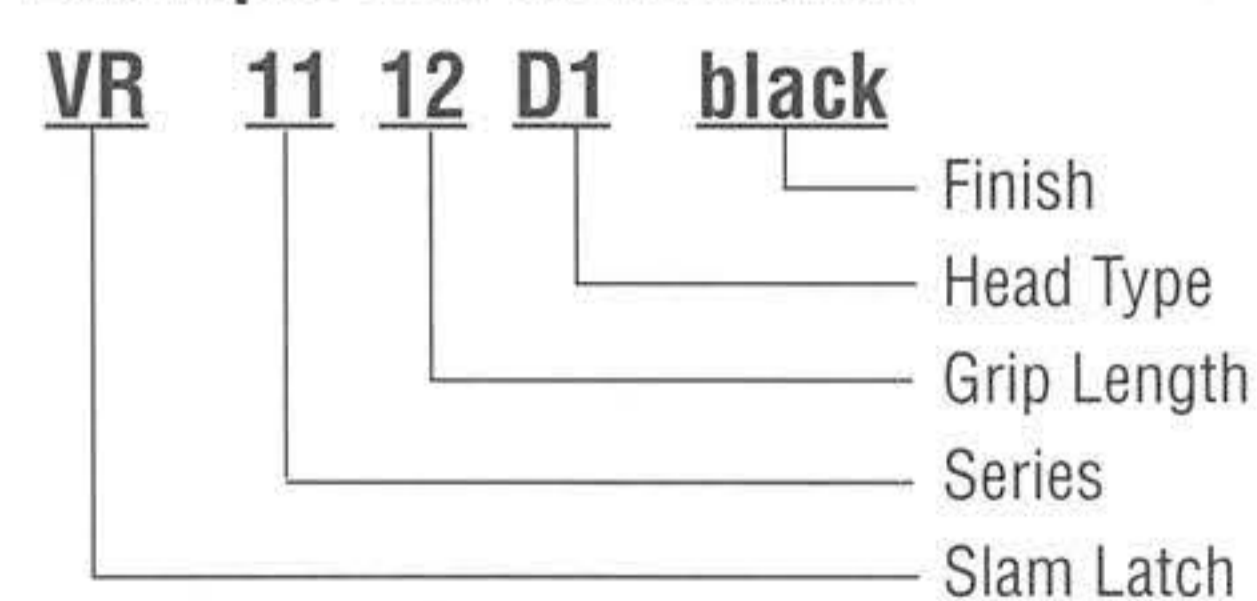
## Quarter-Turn Fastener with Automatic Return Feature Slotted Head for Tool or Coin Operation

For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

This aesthetically pleasing fastener sits on top of the panel and does not require any special recessing when fitting.

### Example of Part Number



**Material:**

Housing: Zinc Alloy, Powder coated - Color optional  
Stud: Nickel plated brass

Grip length determined by application, minimum grip length 9mm.

Dimension “H” or “Grip length” is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

For use with 11 series clips (refer to pages 20-23). Clips are ordered separately.

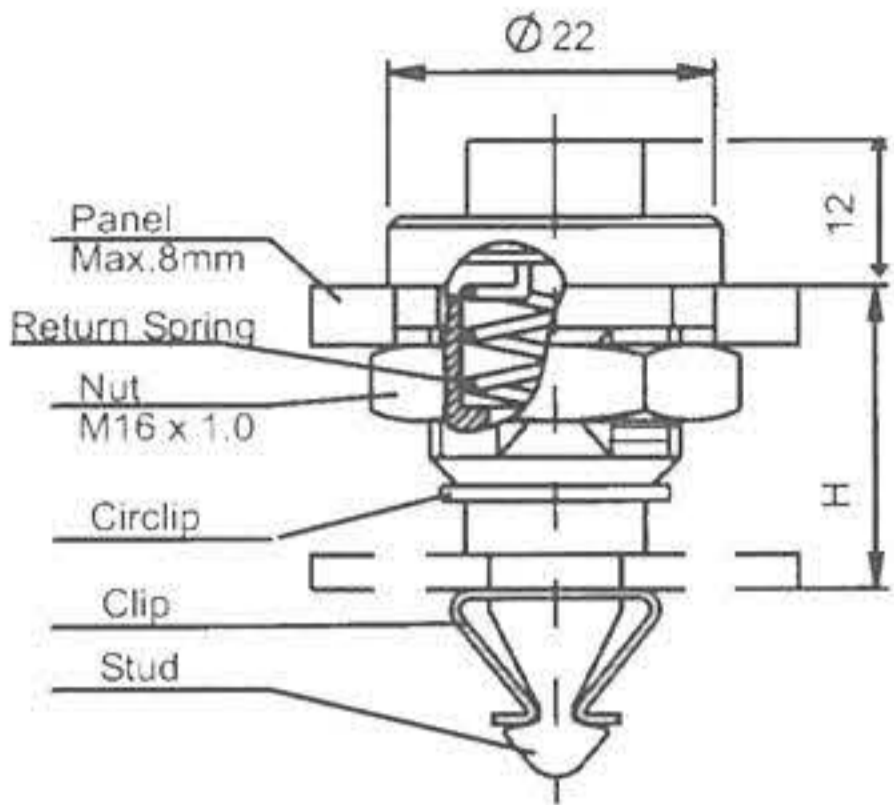
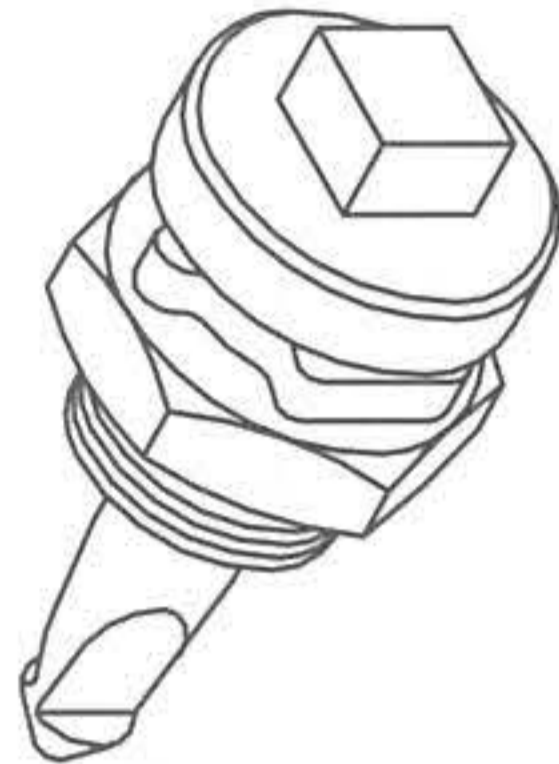
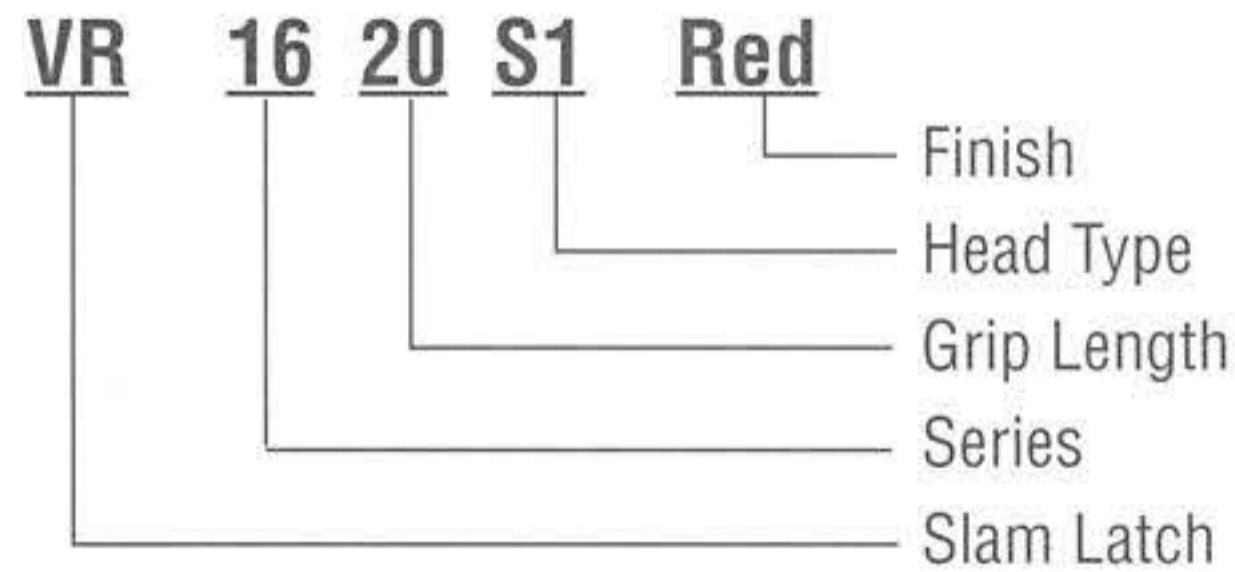


**Quarter-Turn Fastener with Automatic Return Feature  
Slotted Head for Tool or Coin Operation**

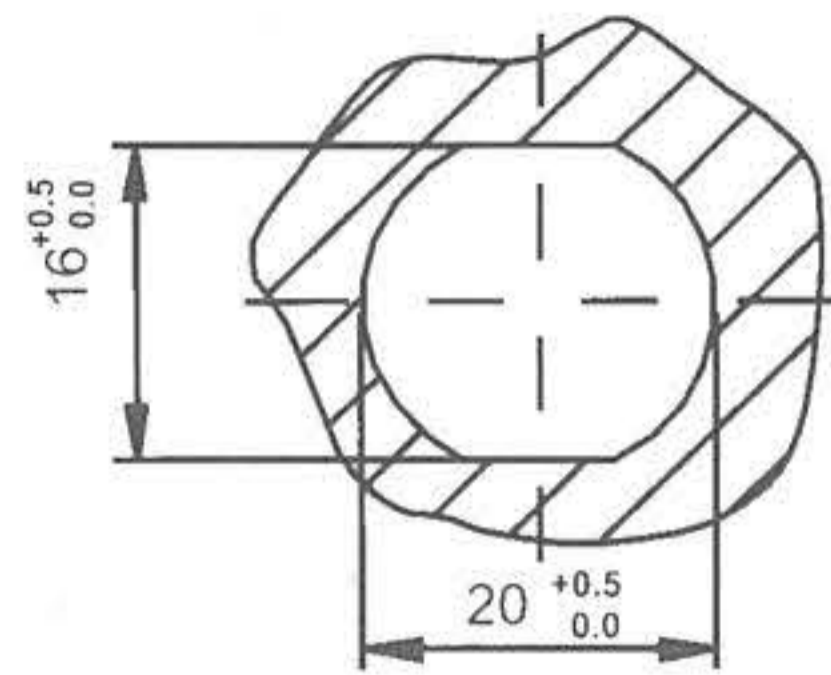
For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

**Example of Part Number**



Panel Preparation



**Material:**

Housing: Zinc Alloy, Powder coated - Color optional  
Stud: Nickel plated brass

Grip length determined by application, minimum grip length 15mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

This aesthetically pleasing fastener sits on the panel and does not require any special recessing when fitting.

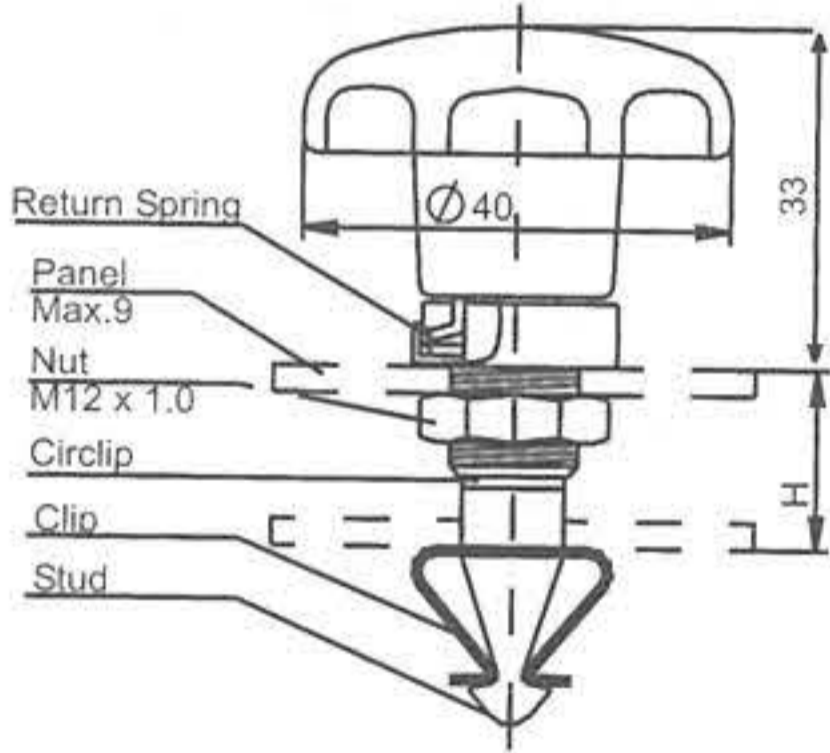
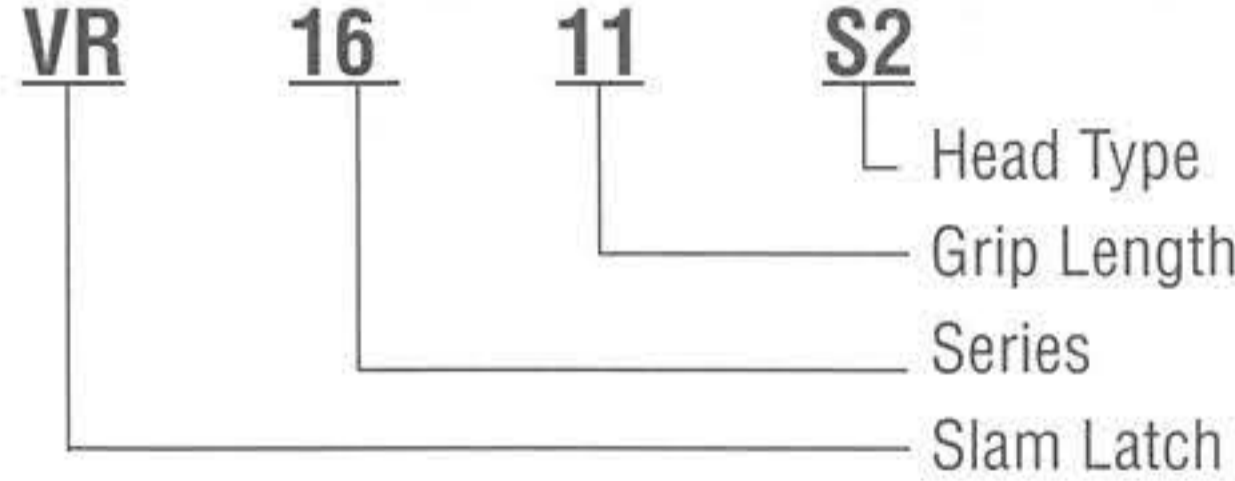
For use with 16 series clips (refer to pages 27-29). Clips are ordered separately.

**Quarter-Turn Fastener with Automatic Return Feature**

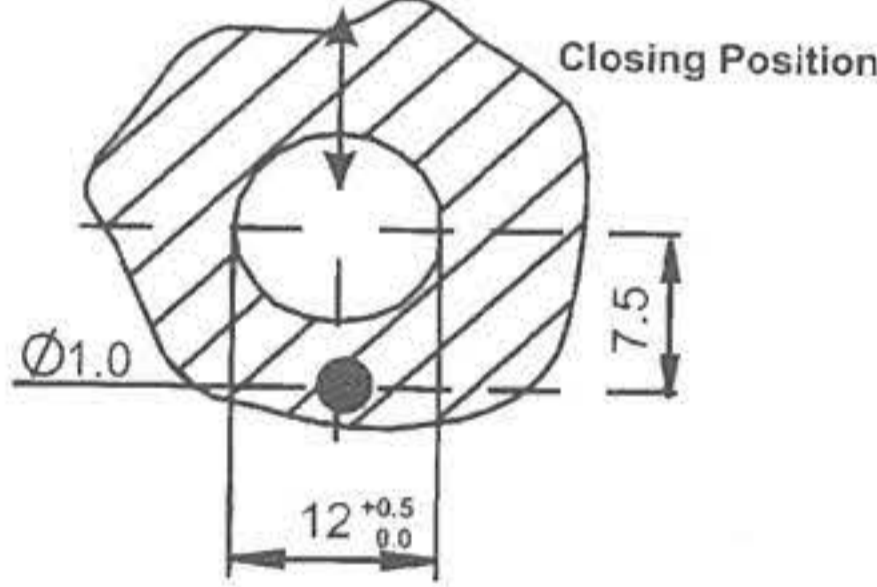
For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

**Example of Part Number**



Panel Preparation



**Material:**

Housing: Zinc Alloy, Powder coated - Color optional  
Stud: Nickel plated brass

Grip length determined by application, minimum grip length 13mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

Orientation between closing position and 1.0 hole has to be noted.

Sits on top of the panel and does not require any special punching or recessing when fitting.

Largest in the range, provides strength with ease of operation and can be used when wearing gloves.

For use with 16 series clips, (refer to pages 27-29). Clips are ordered separately.



## BI-FIX Quarter Turn Fasteners

### Quarter-Turn Fastener with Automatic Return Feature Wing Headed Version for Hand Operation

For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

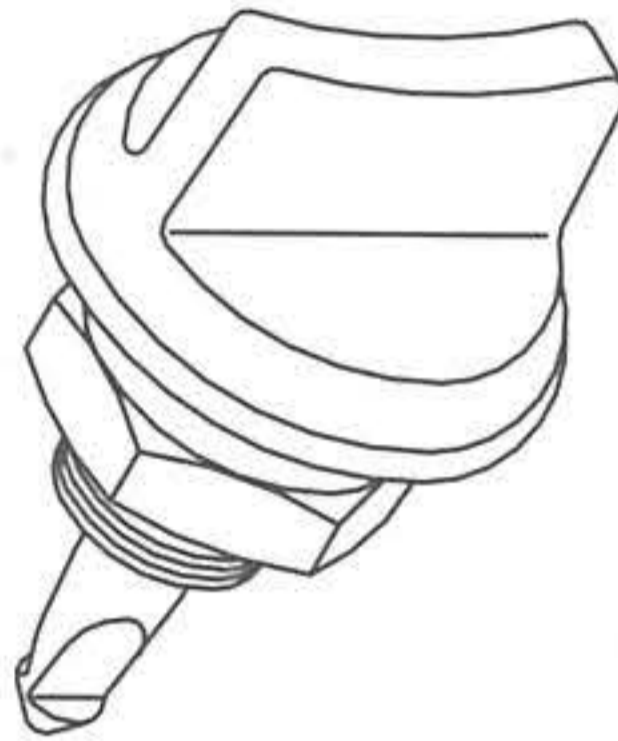
Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

This aesthetically pleasing fastener sits on top of the panel and does not require any special recessing when fitting.

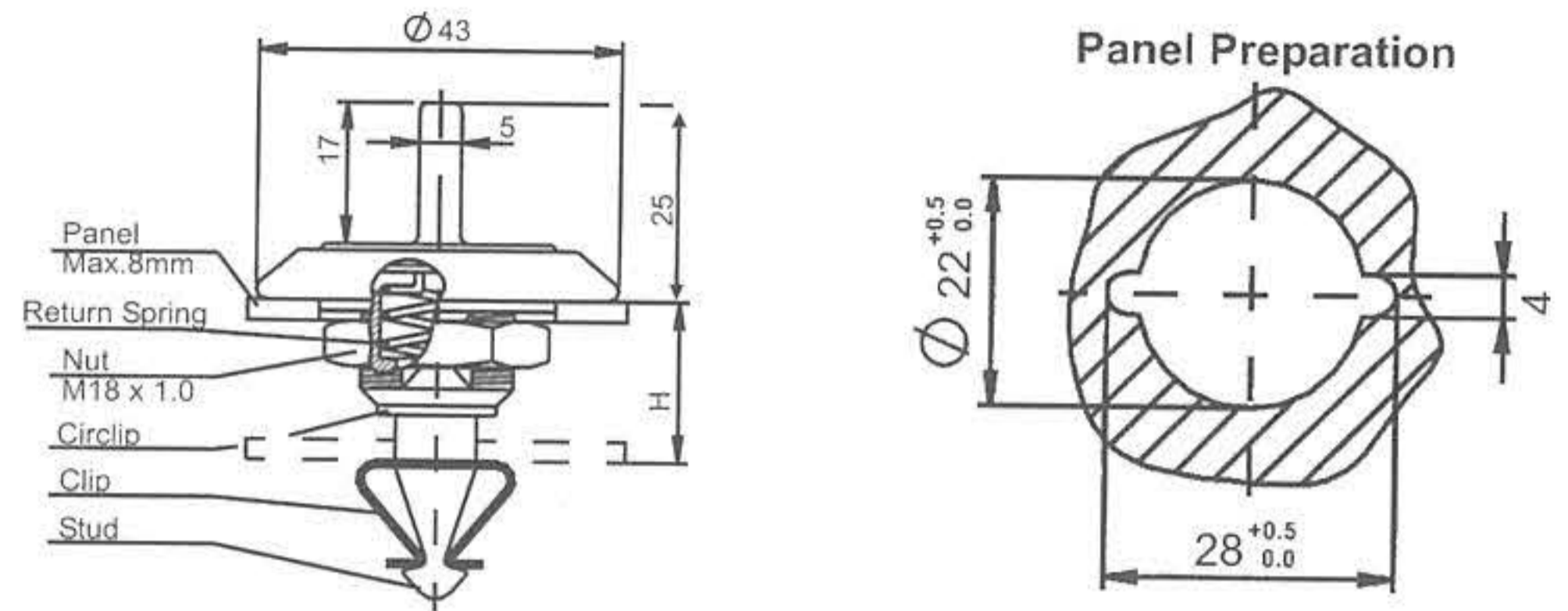
#### Example of Part Number

**VR 16 25 W1 black**

VR — Slam Latch  
16 — Series  
25 — Grip Length  
W1 — Head Type  
black — Finish



For use with 16 series clips (refer to pages 27-29). Clips are ordered separately.



#### Material:

Housing: Zinc Alloy, Powder coated - Color optional

Stud: Nickel plated brass

Grip length determined by application, minimum grip length 15mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

### Quarter-Turn Fastener with Automatic Return Feature Wing Headed Version for Hand Operation

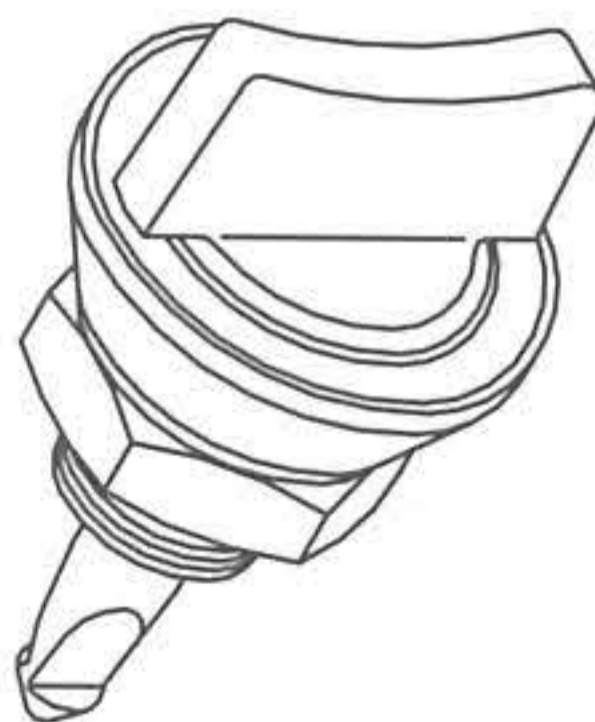
For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

#### Example of Part Number

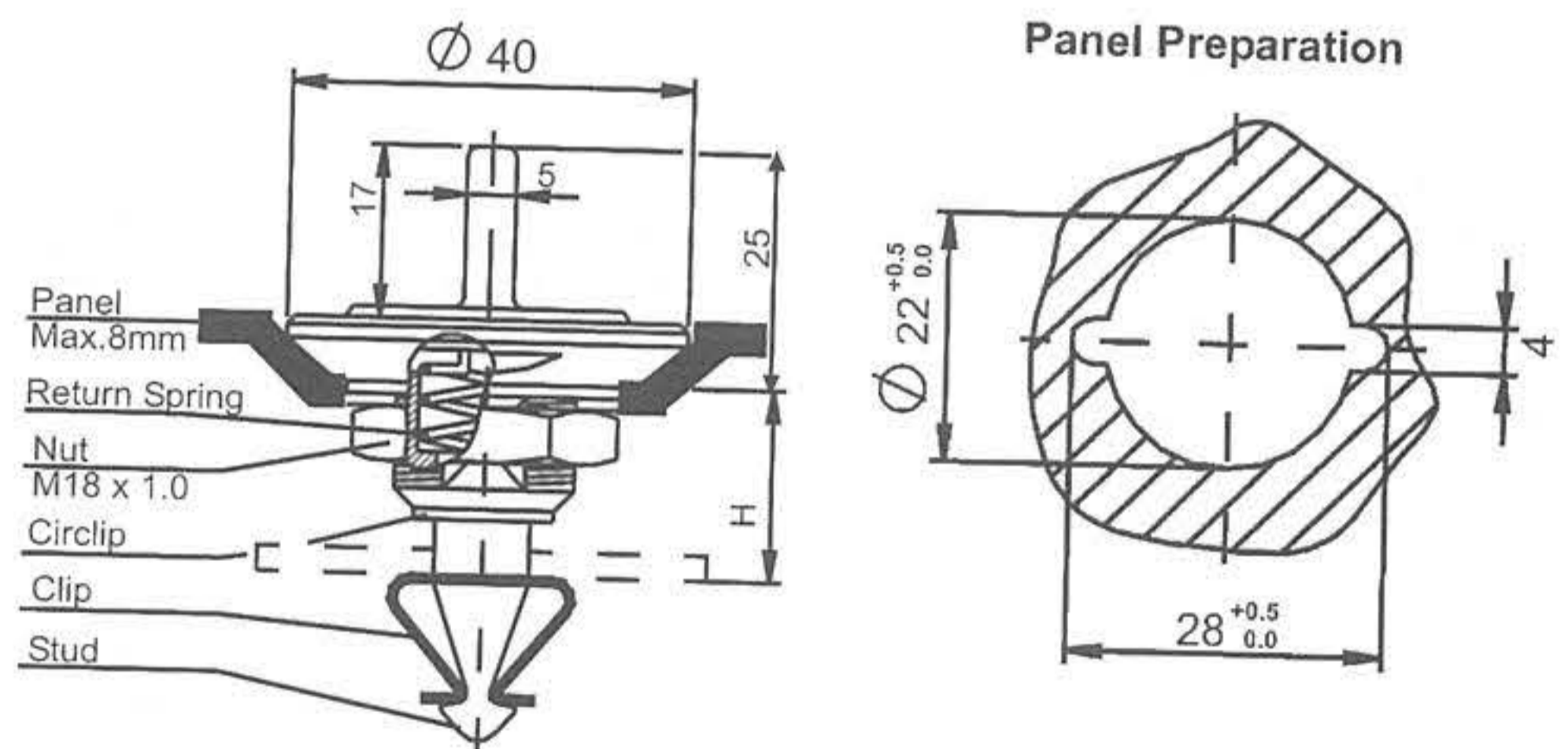
**VR 16 18 W2 black**

VR — Slam Latch  
16 — Series  
18 — Grip Length  
W2 — Head Type  
black — Finish



Flush mounted fastener. Fits into recess in panel.

For use with 16 series clips (refer to pages 27-29). Clips are ordered separately.



#### Material:

Housing: Zinc Alloy, Powder coated - Color optional

Stud: Nickel plated brass

Grip length determined by application, minimum grip length 15mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

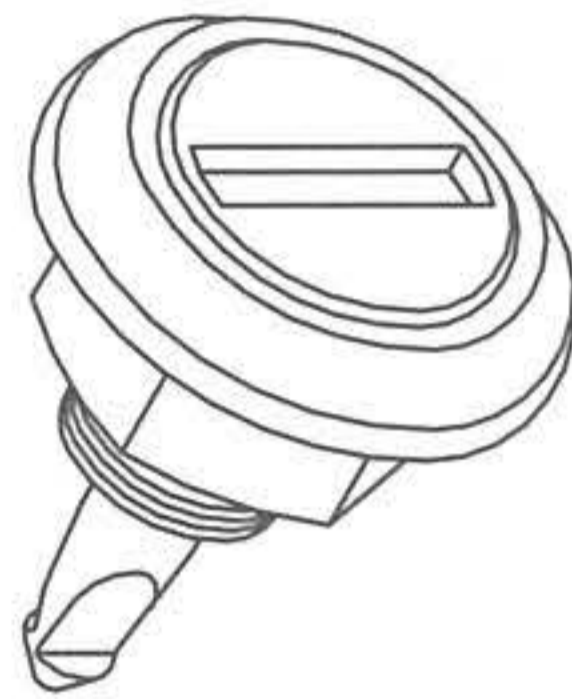
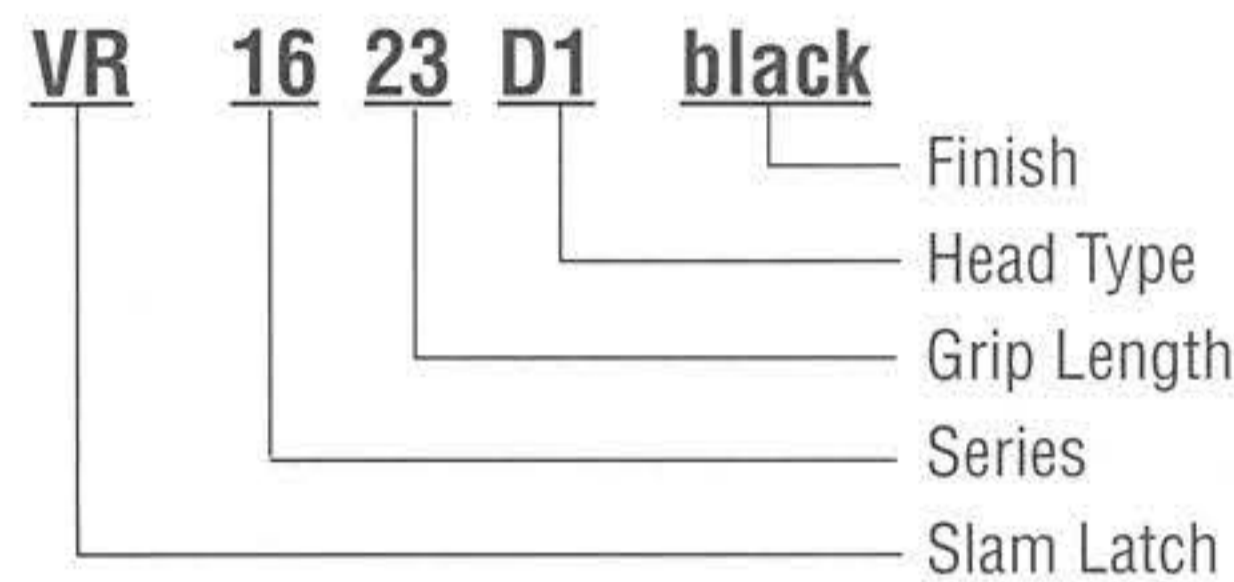


**Quarter Turn Fastener with Automatic Return Feature  
Slotted Head for Tool or Coin Operation**

For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

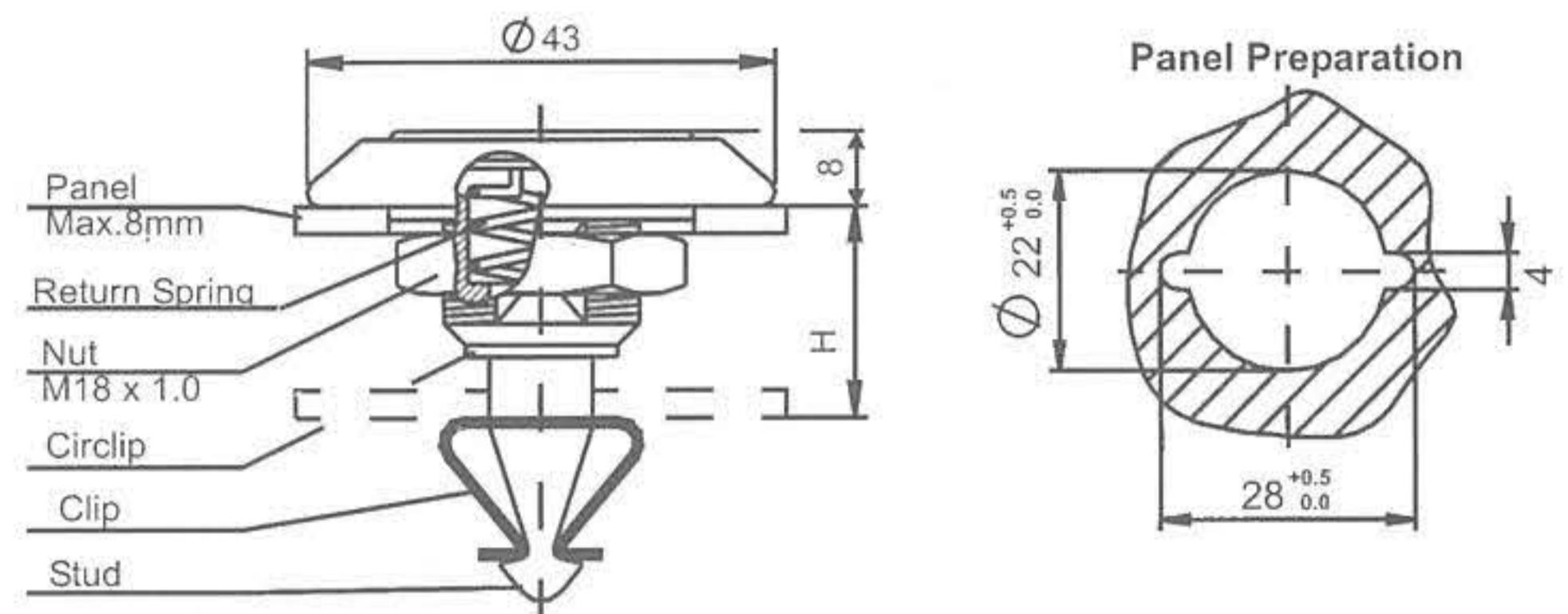
Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

**Example of Part Number**



This aesthetically pleasing fastener sits on the panel and does not require any special recessing when fitting.

For use with 16 series clips (refer to pages 27-29). Clips are ordered separately.



**Material:**

Housing: Zinc Alloy, Powder coated - Color optional  
Stud: Nickel plated brass

Grip length determined by application, minimum grip length 15mm.

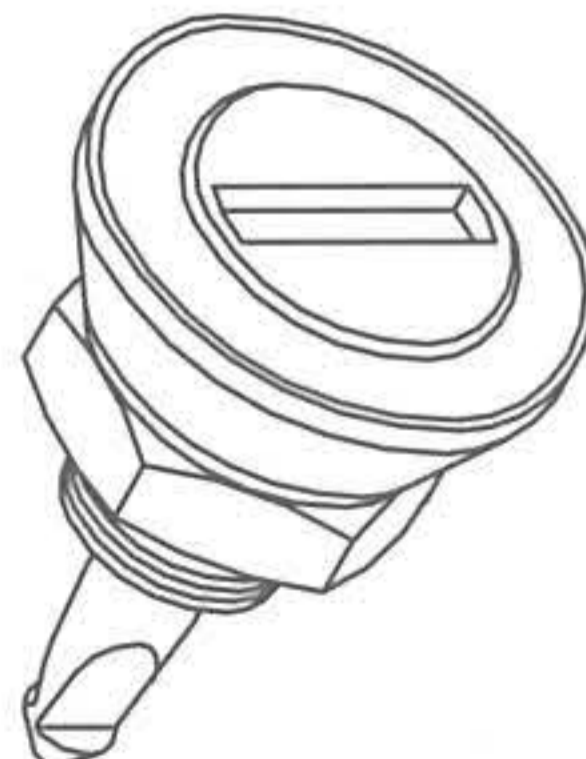
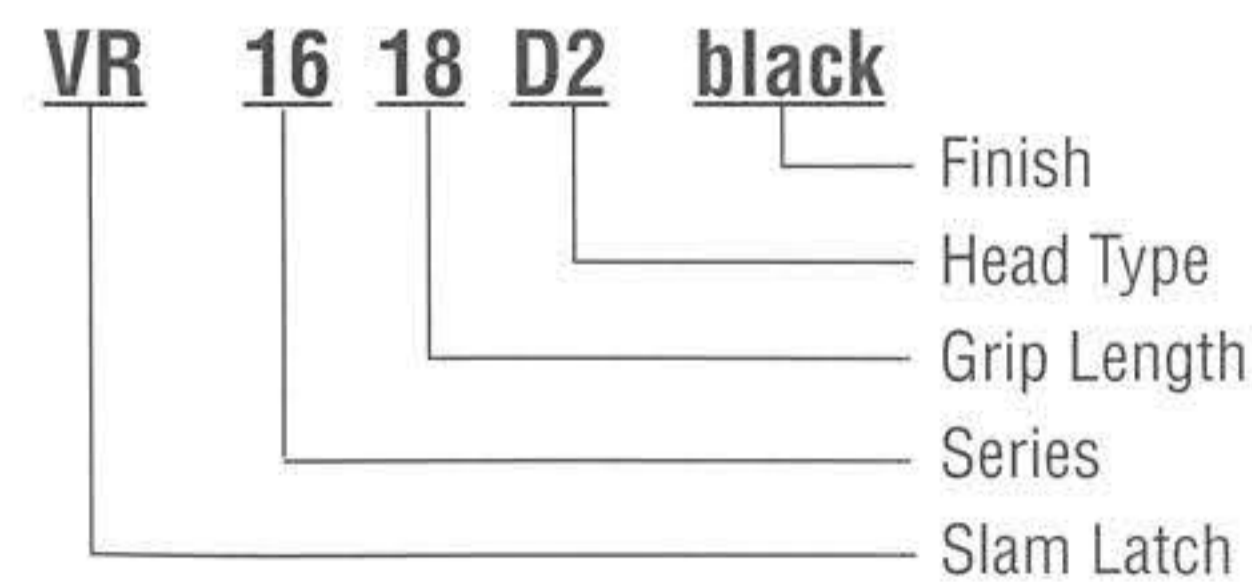
Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.

**Quarter Turn Fastener with Automatic Return Feature  
Slotted Head for Tool or Coin Operation**

For use in rugged applications where strength and resistance to vibration are as important as aesthetics.

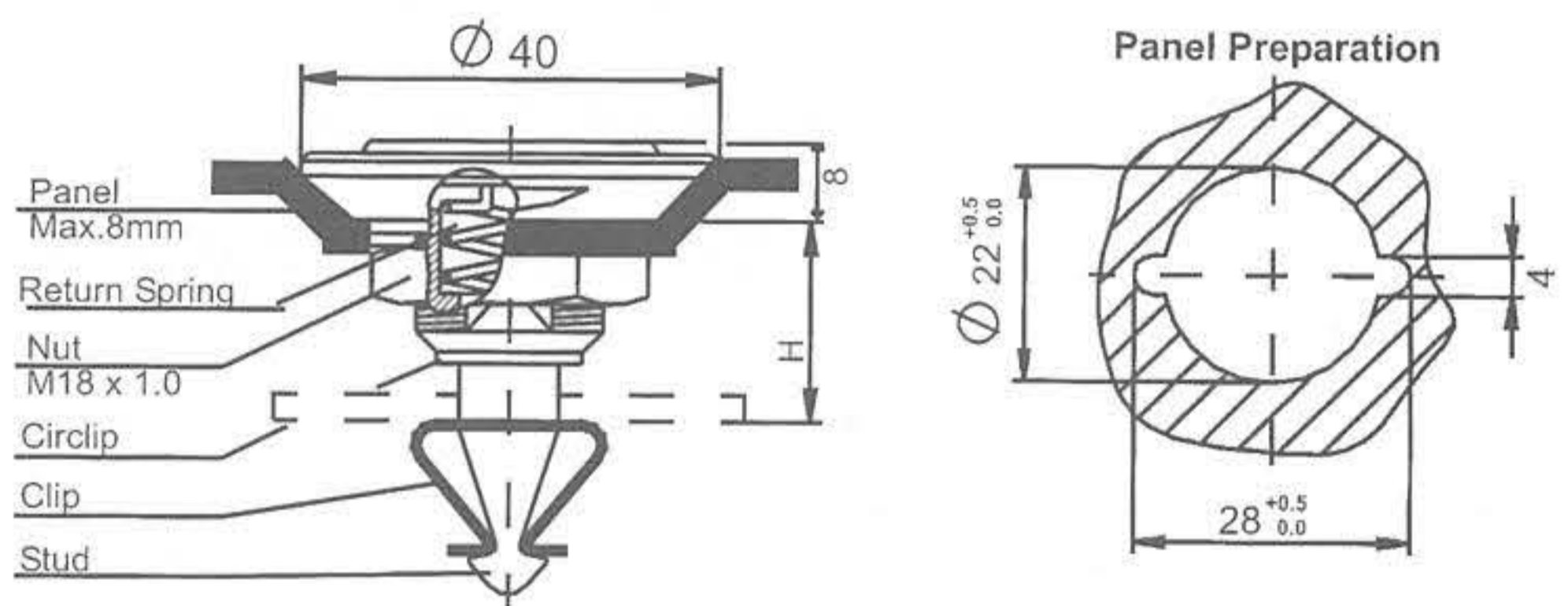
Quarter turn to open. The spring loaded fastener then realigns automatically, ready to be slammed or pushed closed.

**Example of Part Number**



Flush mounted fastener. Fits into recess in panel.

For use with 16 series clips (refer to pages 27-29). Clips are ordered separately.



**Material:**

Housing: Zinc Alloy, Powder coated - Color optional  
Stud: Nickel plated brass

Grip length determined by application, minimum grip length 15mm.

Dimension "H" or "Grip length" is calculated from under the head of the fastener to the top of the clip. For example both panel thicknesses and any gaps.



Please contact us if you have inquiries or questions on any of our products.

- Bi-Fix Quarter Turn Fasteners
- Self Aligning Slam latches
- Spring Release Latches
- Slam Latches
- Spring Latches
- Heavy Duty Spring Latches
- Slip Joint Hinges
- Butt Hinges
- Hasps and Staples