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1/4-Turn Fasteners

5F Series	B-1 - B-4
99F Series	C-1 - C-3
50F Series (650 N Working Load)	D-1 - D-7
50F Series (2.600 N Working Load)	E-1 - E-6
2600 / 2700 Series	F-1 - F-12
D4002 Series	G-1 - G-13
991F Series.....	H-1 - H-6
V34F Series.....	I-1 - I-3

One-Piece Fasteners

V936F Series.....	J-1 - J-2
713F Series.....	K-1 - K-2

Push Button Fasteners

15F Series.....	L-1 - L-4
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Push-Turn Fasteners

715F Series	M-1 - M-3
716F Series	N-1 - N-3
717F Series	O-1 - O-3
PT10 Series	P-1 - P-4

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The Camloc brand was established in 1937. Since that time our fastening systems have been successfully integrated into numerous applications within many different industries.

Our customers benefit from more than 80 years of fastening experience.

We provide local support for innovative, high quality fastening systems supplied globally to the strictest environmental and working conditions.



IATF 16949:2016



ISO 14001: 2015

Your Howmet Fastening Systems team

Disclaimer

Parts listed are subject to technical changes. All dimensions in mm. All information is correct to the best of our knowledge at the time of printing. No liability for disadvantages caused by printing errors or false application.

Advantages of the Camloc-1/4-Turn Fasteners

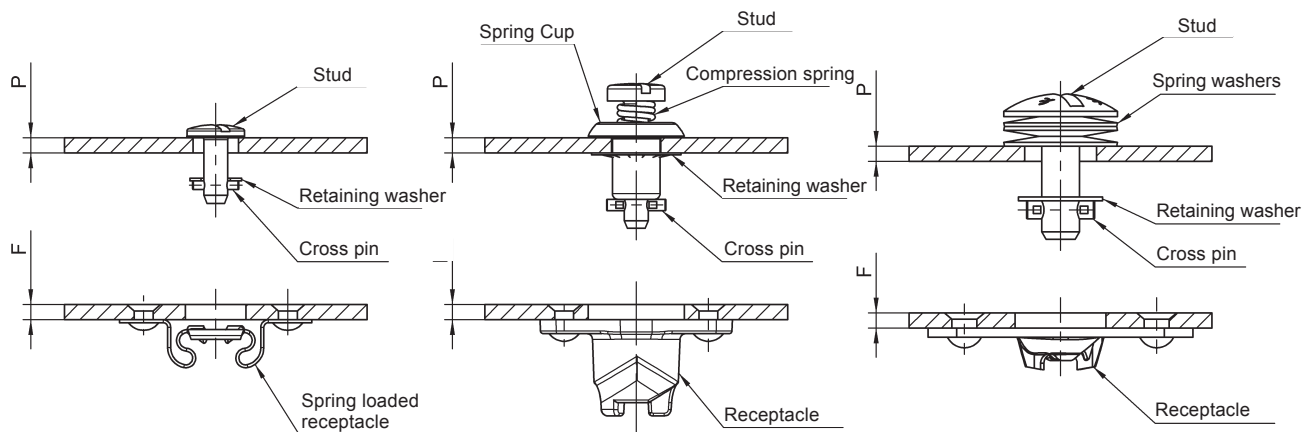
- Secure quick release fastener system
- Locking and unlocking by a quarter turn
- Long life - high number of operating cycles
- Hand or tool-operated
- Easy to use and fast operation reduces assembly costs
- Camloc fasteners are standardised worldwide
- Wide range of sizes
- Stud assemblies are captive in the panel
- Tolerance compensating
- Vibration-resistant

Components

The 1/4-turn fastener consists of a stud, retaining ring and receptacle.

¼ turn fasteners require a spring element in the joint to enable them to work correctly. Depending upon the fastener type and mounting requirements the spring element can be part of the stud assembly or incorporated in the receptacle.

Stud assemblies with snap-in grommets are available on some Series giving a captive assembly without the need for a retaining washer.



Design Principles

Quarter-turn fasteners connect components under an elastic preload.

The spring element to produce the preload can be part of the stud or receptacle.

Fastener tensile loads specified in the catalogue are reached after overcoming the spring element generated preload.

Unlike threaded fasteners, Camloc fasteners do not rely on the elasticity of joint and fastener materials to accomplish preload. The stud assembly or receptacle is designed with a spring element which allows repeated application of controlled preload with assured reliability over an high number of cycles.

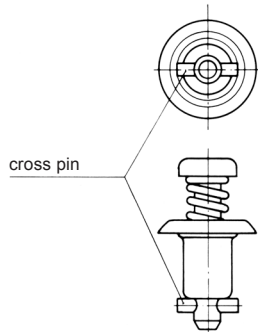
[Click here: Camloc Quarter Turn Fastener](#)



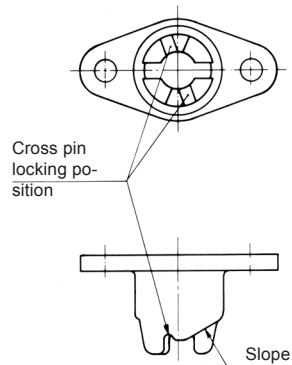
How it operates

When the stud assembly is rotated, the stud cross pin rides up the cam causing a controlled joint preload to be applied. This action is accomplished by rotating the stud 90°. At this point a positive mechanical stop is reached and the cross pin falls into the locking detent. Excellent resistance to vibration induced loosening is assured.

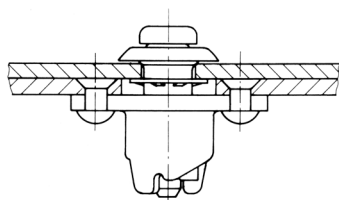
Stud Assembly



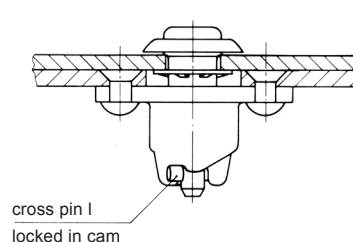
Receptacle



unlocked



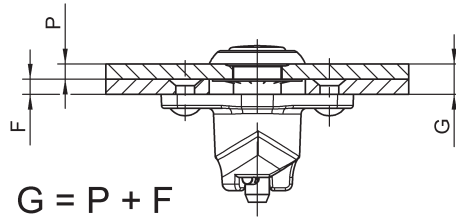
locked



Lock and unlock the stud by a quarter turn.

For general installation instructions please refer to the next page.

Selecting the Fastener



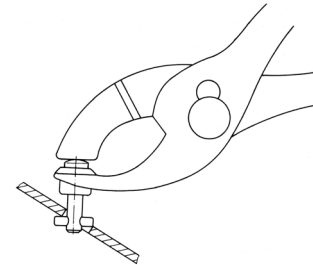
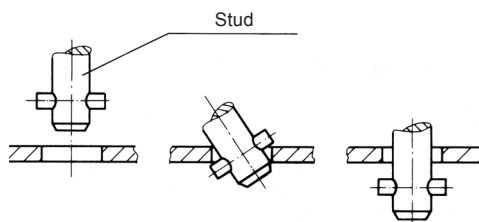
P = Panel thickness (stud assembly)

F = Frame thickness (receptacle)

G = total thickness, consisting of P + F as well as possible gaskets, paint thickness or gaps. This dimension gives the stud length number in the corresponding series tables.

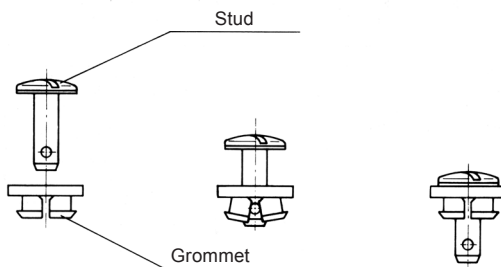
Installation

Stud

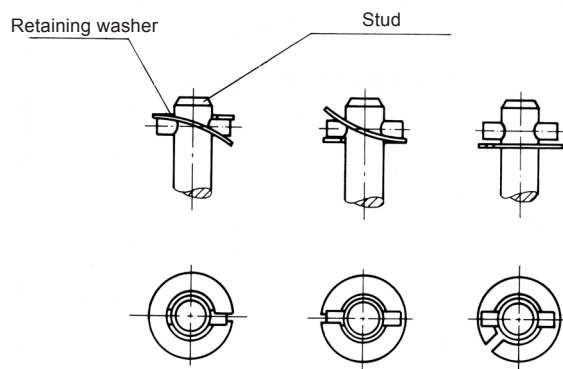


For short, spring-loaded stud assemblies, the use of 4P3-1 pliers is recommended..

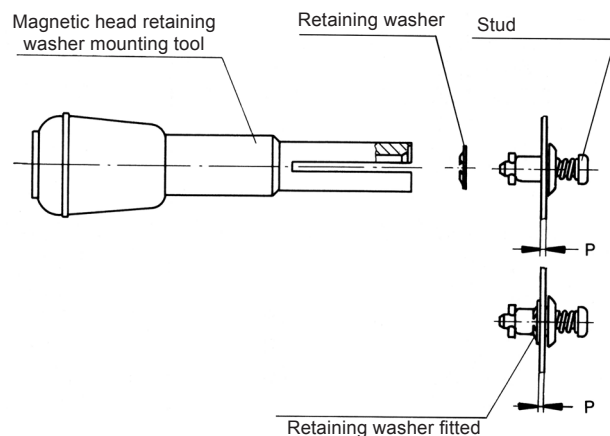
With Grommet



With retaining washer (slotted)



With retaining washer



Overview Quick-Operating Fasteners

Series	Max. Tensile Strength*	Working Load*	Slotted Recess Head	Cross Recess Head	Hex Head	Hex Recess Head	Fixed Wing Handle	Offset Fixed Wing Handle	Folding Bail Handle	Pages
5F	670 N	450 N	X	X						B1-B4
99F	700 N	480 N	X							C1-C3
50F	900 N	650 N	X	X	X	X	X	X	X	D1-D6
50F	3.700 N	2.600 N	X	X	X	X	X	X	X	E1-E6
2600	1.330 N	900 N	X	X			X		X	F1-F12
2700	1.330 N	900 N	X	X						F1-F12
D4002	4.700 N	3.100 N	X	X		X	X		X	G1-G13
991F	10.000 N	7.000 N			X	X	X	X	X	H1-H5
V34F	44.482 N	28.913 N			X					I1 - I3
V936F	300 N	200 N	X							J1-J2
715F	700 N	600 N	X							M1-M3
716F	1.400 N	1.200 N	X							N1-N3
PT10	1.200 N	800 N	X	X						P1-P4
717F	3.000 N	2.500 N	X							O1-O3

Series	Max. Tensile Strength*	Working Load*	Plastic Star Form Handle	Fixed Wing Handle Plastic	Square Head	Knurled Head	Triangular Plastic Handle	Folding Wing Handle	Push Button	Pages
50F	900 N	650 N	X	X						D1-D6
50F	3.700 N	2.600 N	X	X	X					E1-E6
2600	1.330 N	900 N	X	X		X	X			F1-F12
D4002	4.700 N	3.100 N	X							G1-G13
991F	10.000 N	7.000 N	X					X		H1-H5
15F	1.330 N	930 N							X	K1-K4
V936F	300 N	200 N				X				J1-J2
715F	700 N	600 N				X				M1-M3
716F	1.400 N	1.200 N				X				N1-N3
PT10	1.200 N	800 N		X						P1-P4
717F	3.000 N	2.500 N				X				O1-O3

* Load limitations within series are possible. Please check the footnotes on the relevant catalogue pages.

Features

Max. tensile strength 670 N, Working Load 450 N

Plastic washer stud assembly to protect decorative surfaces.

Spring loaded receptacle.

Selection Instructions

1. Select stud assembly and receptacle, page B-2 und B-4.
2. Select retaining washer or grommet, page B-3.
3. Select stud length number from total thickness G using the formula and table below (e.g. V5S5-*AGV).

Determining the stud length number:

With retaining washer

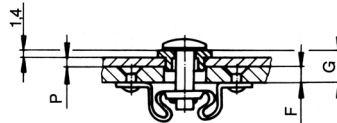
$$G = P + F$$



with Grommet

$$G = P + F + 1,4$$

$$G_{\min} = 3,9 \text{ mm}$$

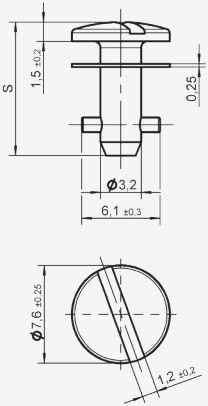
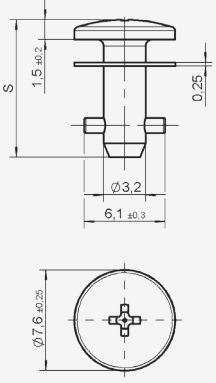


Stud Length Table

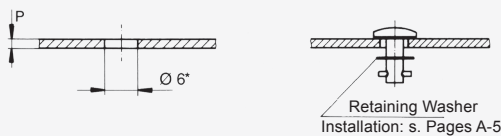
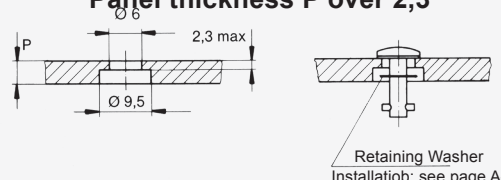
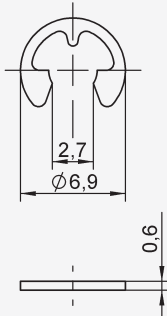
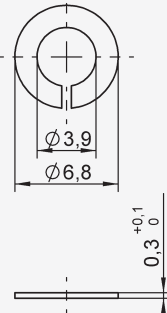
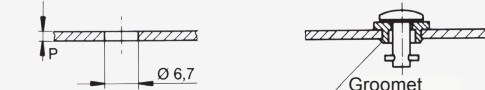
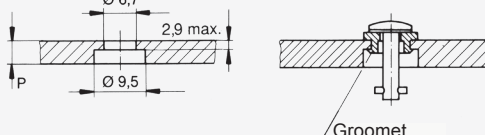
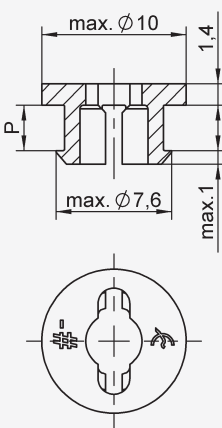
Total Thickness G	Stud Length No. When Using Receptacles
0,50 - 0,90	1
0,90 - 1,30	2
1,30 - 1,65	3
1,65 - 2,05	4
2,05 - 2,40	5
2,40 - 2,80	6
2,80 - 3,20	7
3,20 - 3,55	8
3,55 - 3,95	9
3,95 - 4,30	10
4,30 - 4,70	11

Total Thickness G	Stud Length No. When Using Receptacles
4,70 - 5,10	12
5,10 - 5,45	13
5,45 - 5,85	14
5,85 - 6,20	15
6,20 - 6,60	16
6,60 - 7,00	17
7,00 - 7,35	18
7,35 - 7,75	19
7,75 - 8,15	20
8,15 - 8,50	21

Other lengths on request.

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 $S = 6,70 + (0,38 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation with plastic washer (PA6) Steel / nickel-plated with plastic washer (PA6)	100 100	V5S5- *AGV 5S27-*
Cross Recess Head 	 $S = 6,70 + (0,38 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation with plastic washer (PA6) Stainless steel with stainless steel washer (tensile strength 470 N max. working load 300 N)	100 200	V5S21- *AGV 5S15-*

* Length no. from Table, Page B-1.
For installation dimensions see page B-3.

Installation Dimensions	Accessories	Materials / Finish	Panel Thickness P	Part No.						
Slotted Recess Head Panel thickness P up to 2,3  Panel thickness P over 2,3 	Retaining Washer  Retaining Washer 	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel		V5W3-1AG 5S3-2						
Snap-In Grommet Panel thickness P up to 2,9  <table><tr><th>P max</th><th>G min</th></tr><tr><td>1,4</td><td>2,0</td></tr><tr><td>2,9</td><td>3,5</td></tr></table> Panel thickness P over 2,9 	P max	G min	1,4	2,0	2,9	3,5	Grommet 	Plastic (PA6) black	up to 1,4 1,8 - 2,9	5S72-5-1AA 5S72-9-1AA
P max	G min									
1,4	2,0									
2,9	3,5									

Features

Max. tensile strength 700 N, working load 480 N.

Increased grip range.

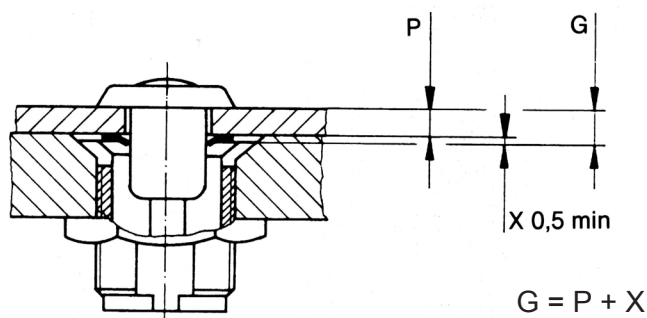
Externally threaded receptacles for use in castings or on panels with a retaining nut (see page C-3).

Encapsulated design, splash-proof.

Selection Instructions

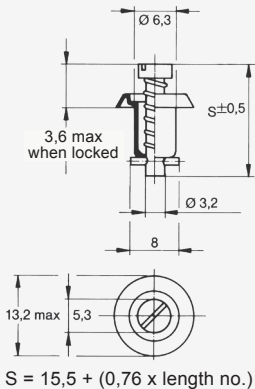
1. Select stud assembly and receptacle, page C-2 and C-3.
2. Select hex nut for receptacle, if necessary, page C-3.
3. Select stud retaining washer, page C-2.
4. Select stud length number from total thickness G using the formula and table below (e.g. 99S10-01AG).

Determining the stud length number:



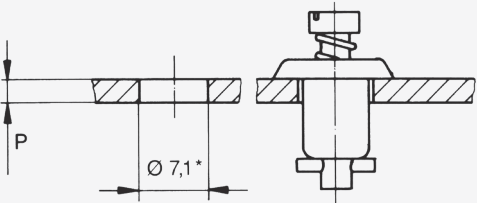
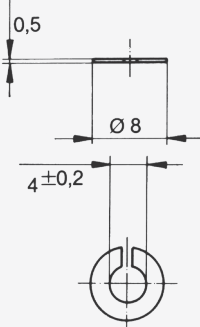
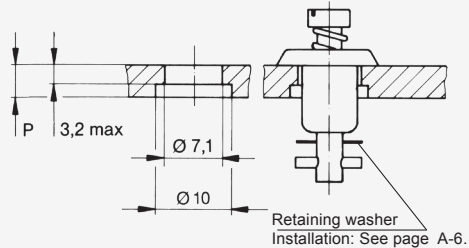
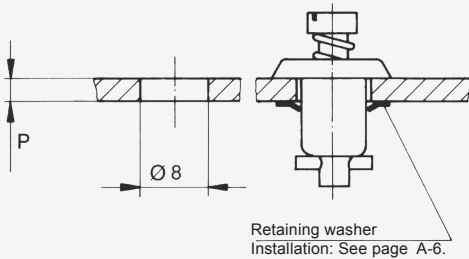
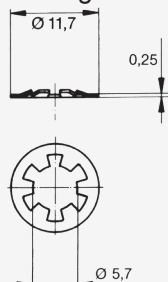
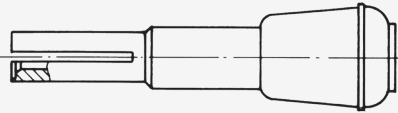
Total Thickness G	Stud Length no.
0,5 - 1,5	01
1,5 - 3,0	03
3,0 - 4,5	05
4,5 - 6,0	07
6,0 - 7,5	09
7,5 - 9,0	11
9,0 - 10,5	13
10,5 - 12,0	15
12,0 - 13,5	17
13,5 - 15,0	19

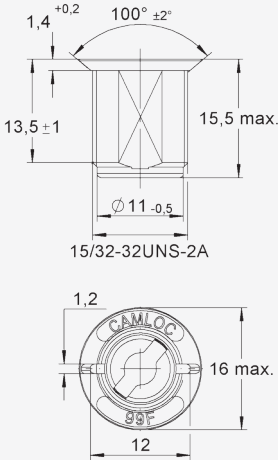
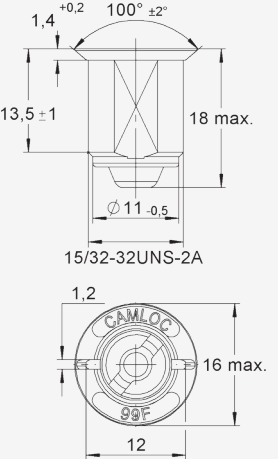
Other lengths on request.

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 		Steel / zinc-plated, CrVI-free, clear passivation	100	V99S10-*AG

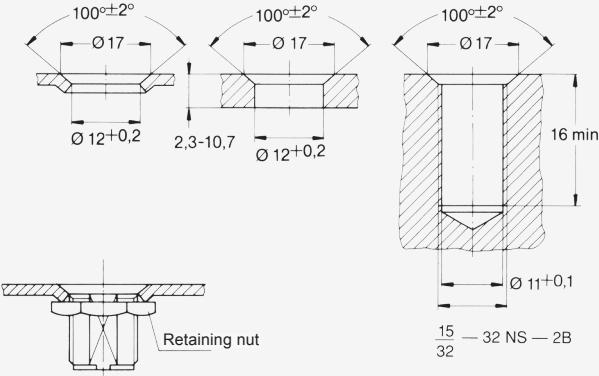
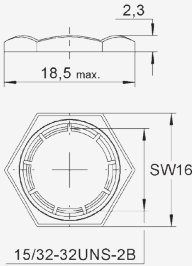
* Length no. from Table, see page C-1.

Stud Installation Instructions

Installation Dimensions	Accessories	Materials / Finish	Part No.
Panel thickness P 0,5 - 3,2  * For P up to 1,65 m 6,5 for installation without retaining washer	Retaining washer 	Stainless steel	2600-SW
Panel thickness P over 3,2 			
Panel thickness P 0,50 - 4,75 	Retaining Washer 	Steel / zinc-plated, CrVI-free, transparent passivated Stainless steel	99W10-01A1 V2600-LW-7
	Mounting tool for retaining washer V2600-LW-7 and 99W10-01A1		T98-1

Style	Dimensions	Materials / Finish	°C	Part No.
open 		Zinc die casting / zinc-plated, CrVI-free, transparent passivated	100	99R10-01A1
Encapsulated 		Zinc die casting / zinc-plated, CrVI-free, transparent passivated Capsule: Stainless steel	100	99E10-01

Receptacle Installation Instructions

Installation Dimensions	Accessories	Materials / Finish	Part No.
 Retaining nut Installation torque 3 Nm	Retaining nut  15/32-32NS-2B	Steel / zinc-plated, CrVI-free, transparent passivated	99N10-01A1 15/32-32NS-2B

Features

Max. tensile strength 900 N, working load 650 N.

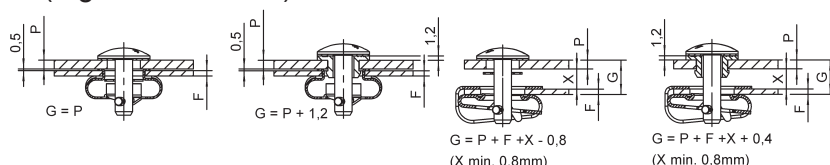
Stud assembly incorporates a plastic washer to protect decorative surfaces.

Snap-in or clip-on spring loaded receptacle.

Snap-in grommet for quick stud installation without a retaining washer.

Selection Instructions

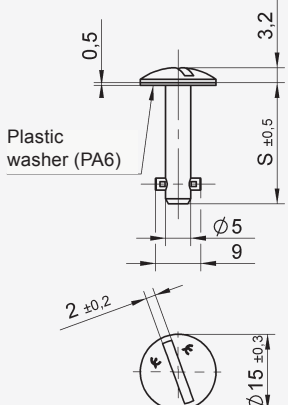
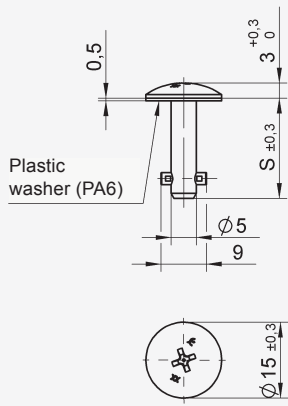
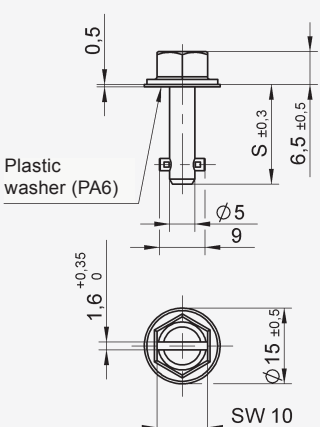
1. Select stud assembly and receptacle, page D-2 to D-4 and D-6.
2. Select retaining washer or grommet, page D-5.
3. Select stud length number from total thickness G using the formula and table below (e.g. 50E21-*AGV)



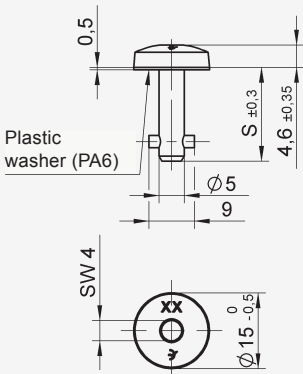
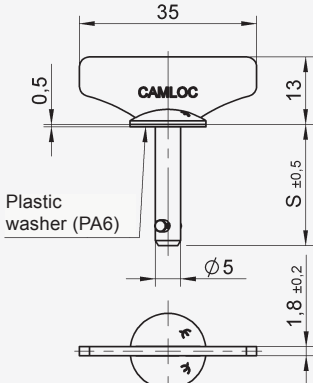
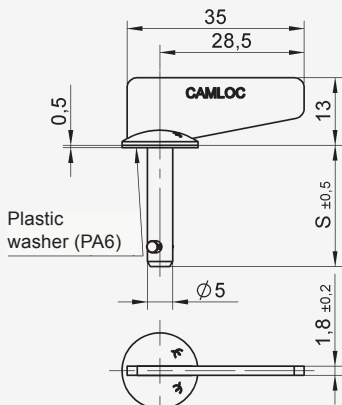
Stud Length Table

Total Thickness G	Stud Length No. when using Receptacles Typee 1 1 F= 1,0 - 2,1	Total Thickness G	Stud Length No. when using Receptacles Typee 2 F= 2,1 - 3,0	Total Thickness G	Stud Length No. when using Receptacles Typee 3
0,50 - 1,10	5	0,50 - 1,10	7	2,30 - 2,90	5
1,10 - 1,70	6	1,10 - 1,70	8	2,90 - 3,50	6
1,70 - 2,30	7	1,70 - 2,30	9	3,50 - 4,10	7
2,30 - 2,90	8	2,30 - 2,90	10	4,10 - 4,70	8
2,90 - 3,50	9	2,90 - 3,50	11	4,70 - 5,30	9
3,50 - 4,10	10	3,50 - 4,10	12	5,30 - 5,90	10
4,10 - 4,70	11	4,10 - 4,70	13	5,90 - 6,50	11
4,70 - 5,30	12	4,70 - 5,30	14	6,50 - 7,10	12
5,30 - 5,90	13	5,30 - 5,90	15	7,10 - 7,70	13
5,90 - 6,50	14	5,90 - 6,50	16	7,70 - 8,30	14
6,50 - 7,10	15	6,50 - 7,10	17	8,30 - 8,90	15
7,10 - 7,70	16	7,10 - 7,70	18	8,90 - 9,50	16
7,70 - 8,30	17	7,70 - 8,30	19	9,50 - 10,10	17
8,30 - 8,90	18	8,30 - 8,90	20	10,10 - 10,70	18
8,90 - 9,50	19	8,90 - 9,50	21	10,70 - 11,30	19
9,50 - 10,10	20	9,50 - 10,10	22	11,30 - 11,90	20
10,10 - 10,70	21	10,10 - 10,70	23	11,90 - 12,50	21
10,70 - 11,30	22	10,70 - 11,30	24	12,50 - 13,10	22
11,30 - 11,90	23	11,30 - 11,90	25	13,10 - 13,70	23
11,90 - 12,50	24	11,90 - 12,50	26	13,70 - 14,30	24
12,50 - 13,10	25	12,50 - 13,10	27	14,30 - 14,90	25
13,10 - 13,70	26	13,10 - 13,70	28	14,90 - 15,50	26
13,70 - 14,30	27	13,70 - 14,30	29	15,50 - 16,10	27
14,30 - 14,90	28	14,30 - 14,90	30	16,10 - 16,70	28
14,90 - 15,50	29	14,90 - 15,50	31	16,70 - 17,30	29
15,50 - 16,10	30	15,50 - 16,10	32	17,30 - 17,90	30

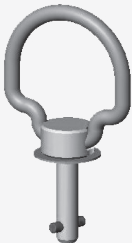
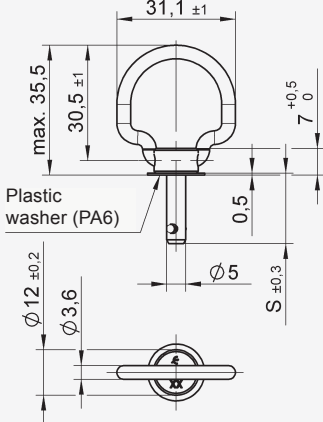
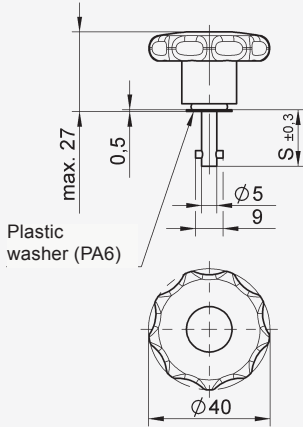
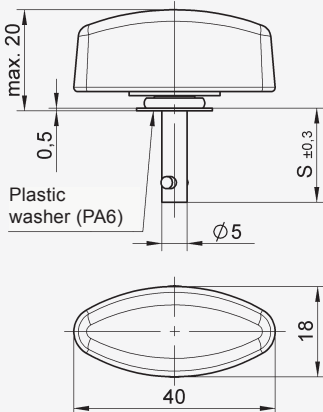
Other lengths on request.

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, transparent clear passivation with plastic washer (PA6) Stainless steel with plastic washer (PA6)	80 80	50E21-*AGV 50E21-*S
Cross Recess Head 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, transparent clear passivation with plastic washer (PA6)	80	50E70-*AGV
Hex Head Slotted Recess 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, transparent clear passivation with plastic washer (PA6)	80	50E90-*AGV

* Length no. from Table, Page D-1.

Style	Dimensions	Materials / Finish	°C	Part No.
Hex Reces 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, transparent clear passivation with plastic washer (PA6)	80	50E60-*AGV
Fixed Wing Handle 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, transparent clear passivation with plastic washer (PA6) Stainless steel with plastic washer (PA6)	80 80	50E21-*WAGV 50E21-*WS
Offset Fixed Wing Handle 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, transparent clear passivation with plastic washer (PA6)	80	50E21-*W0AGV

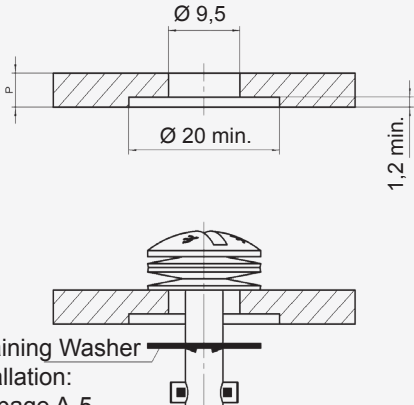
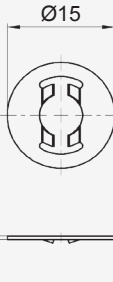
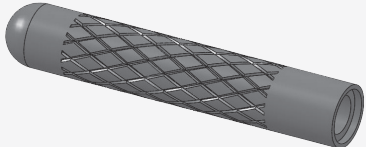
* Length no. from Table, Page D-1.

Style	Dimensions	Materials / Finish	°C	Part No.
Folding Bail Handle 180° 		Steel / zinc-plated, CrVI-free, clear passivation with plastic washer (PA6)	80	50E18-*AGV
Plastic Star Form Handle 		Steel / zinc-plated, CrVI-free, clear passivation with plastic head and plastic washer (PA6) Stainless steel with plastic head and plastic washer (PA6)	- 40 up to + 60 - 40 up to + 60	50E80-*AGV 50E80-*CP
Fixed Wing Handle Plastic 		Steel / zinc-plated, CrVI-free, clear passivation with plastic head and plastic washer (PA6) Stainless steel with plastic head and plastic washer (PA6)	- 40 up to + 60 - 40 up to + 60	50E82-*AGV 50E82-*CP

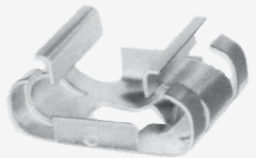
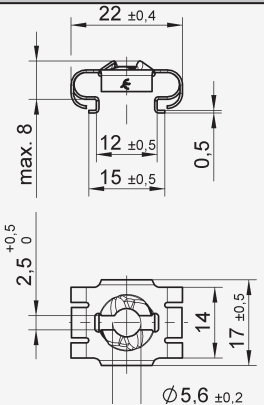
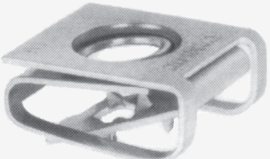
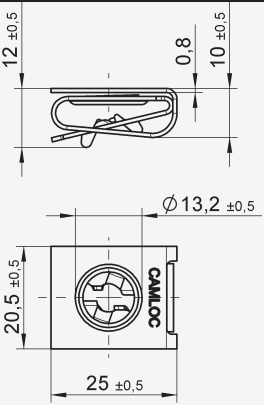
* Length no. from Table, Page D-1.

Style	Dimensions	Materials / Finish	P	Part No.
Snap-In Grommet	Grommet	Plastic (PA6) / natural colour	up to 1,60	50S12-0-1AA
		Working temperature: -40°C + 120°C	1,70- 2,80	50S12-1-1AA
			2,90 - 4,00	50S12-2-1AA
			4,10 - 5,30	50S12-3-1AA
			5,40 - 6,65	50S12-4-1AA
Retaining Washer	Retaining washer	Stainless steel		4002-SW-SS
	Retaining washer	Stainless steel		50E2-3BP
	Retaining washer	Plastic (PA6) / natural colour		50W204-01K
	Retaining washer	Working temperature: -40°C + 120°C		
		ADVANTAGE: Plastic retaining washer can be assembled without tooling		

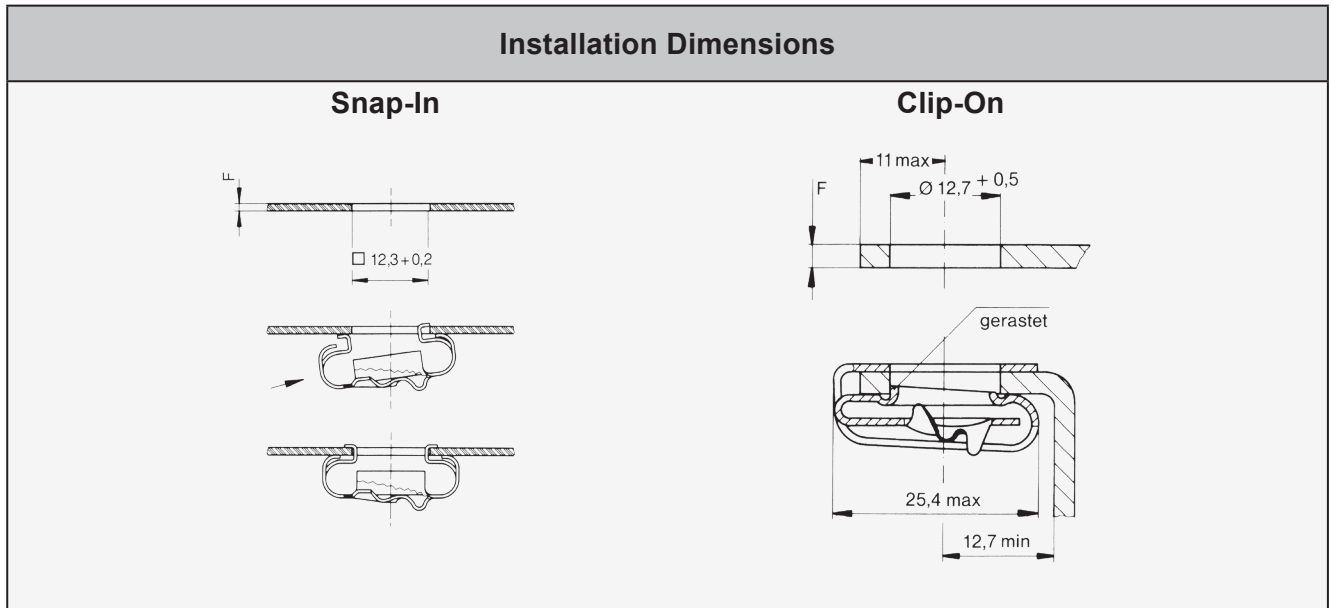
*For P up to 2mm Ø 8^{+0,2} for
installationwithout retaining washer

Retaining Washer  Retaining Washer Installation: see page A-5	Retaining washer (loose) 	Stainless steel	50W17-1BP
	Mounting tool for retaining washer 50W17-1BP		50T01-1DR

Receptacle

Style	Dimensions	Materials / Finish	Panel Thickness P	°C	Part No.
Snap-In 		Spring steel / zinc flake coated Spring steel / zinc flake coated Max. tensile strength 250 N max. Working Load 170N	F=1,0 - 2,0 F=2,1 - 3,0	170 170	50E20-1AK7 (Type 1) 50E20-2AK7 (Type 2)
Clip-On 		Spring steel / zinc flake coated	F=0,8 - 5,6	170	V50R4-2-1AK7 (Type 3)

Receptacle Installation Instructions



Features

Max. tensile strength 3.700 N, working load 2.600 N.

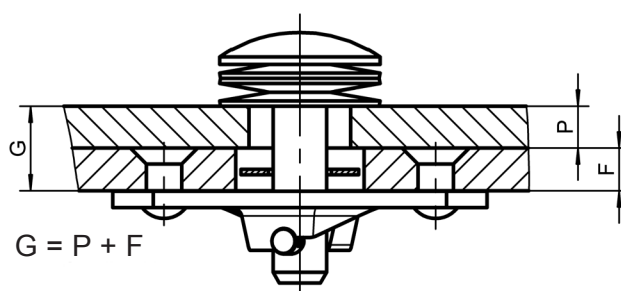
Small fastener giving high tensile load.

Flat receptacle.

High preload.

Selection Instructions

1. Select stud assembly and receptacle, page E-2 to E-4 and E-6.
2. Select retaining washer, page E-5.
3. Select stud length number from total thickness G using the formula and table below (e.g. 50E8-*AGV).

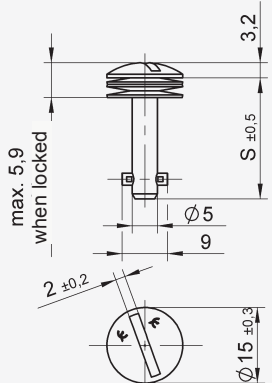
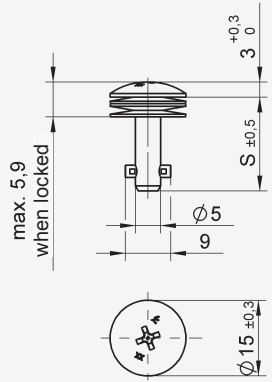
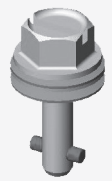
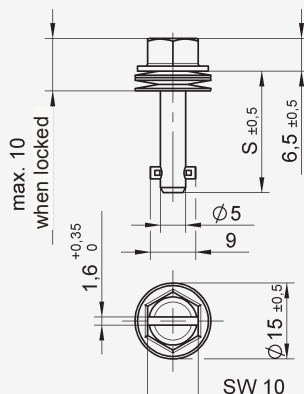


Stud Length Table

Total Thickness G	Stud Length no.
0,50 - 1,10	2
1,10 - 1,70	3
1,70 - 2,30	4
2,30 - 2,90	5
2,90 - 3,50	6
3,50 - 4,10	7
4,10 - 4,70	8
4,70 - 5,30	9
5,30 - 5,90	10
5,90 - 6,50	11
6,50 - 7,10	12
7,10 - 7,70	13
7,70 - 8,30	14
8,30 - 8,90	15
8,90 - 9,50	16
9,50 - 10,10	17
10,10 - 10,70	18

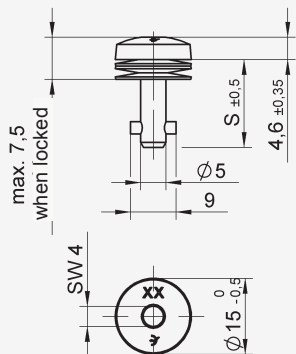
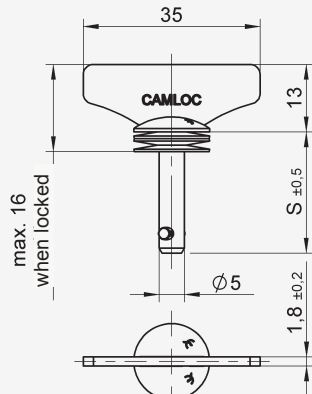
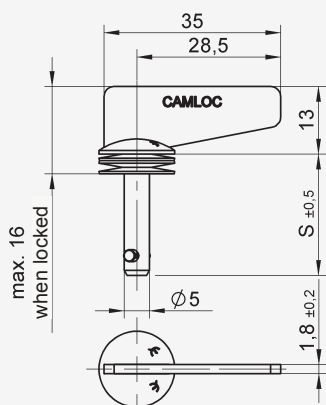
Total Thickness G	Stud Length no.
10,70 - 11,30	19
11,30 - 11,90	20
11,90 - 12,50	21
12,50 - 13,10	22
13,10 - 13,70	23
13,70 - 14,30	24
14,30 - 14,90	25
14,90 - 15,50	26
15,50 - 16,10	27
16,10 - 16,70	28
16,70 - 17,30	29
17,30 - 17,90	30
17,90 - 18,50	31
18,50 - 19,10	32
19,10 - 19,70	33
19,70 - 20,30	34
20,30 - 20,90	35

Other lengths on request.

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	50E8-*AGV 50E8-*S
Cross Recess Head 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	120	50E71-*AGV
Hex Head Slotted Recess 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	120	50E91-*AGV

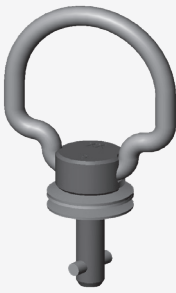
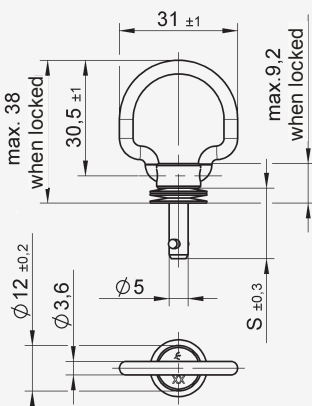
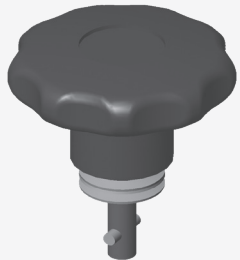
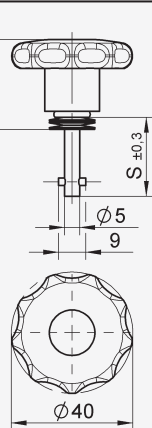
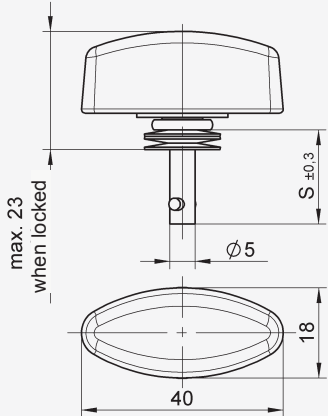
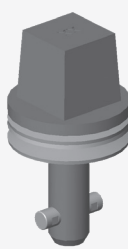
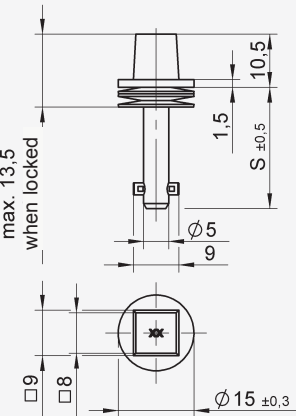
* Length no. from Table, Page E-1.

¹⁾Max. tensile strength 2.600 N max., Working Load 1.700 N

Style	Dimensions	Materials / Finish	°C	Part No.
Hex Reces Head 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	120	50E61-*AGV
Fixed Wing Handle 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	50E8-*WAGV 50E8-*WS
Offset Fixed Wing Handle 	 $S = 11,4 + (0,6 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	50E8-*W0AGV 50E8-*W0S

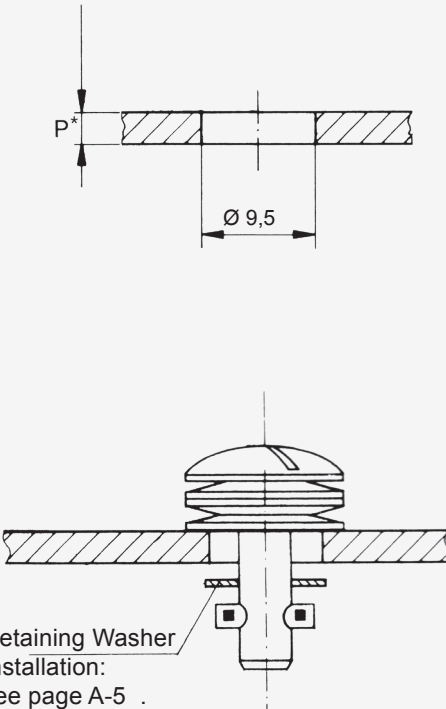
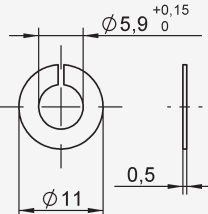
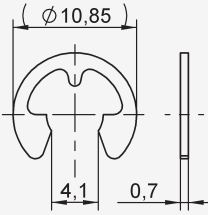
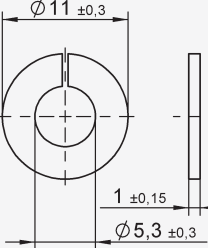
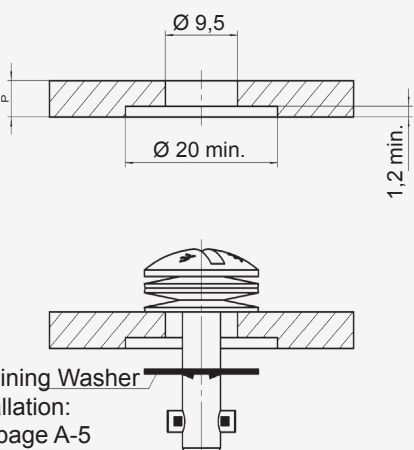
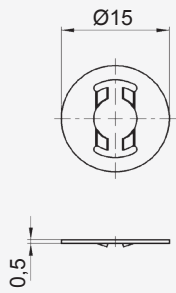
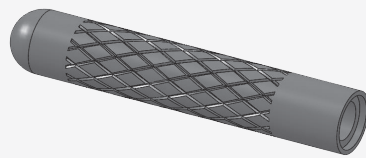
* Length no. from Table, Pages E-1.

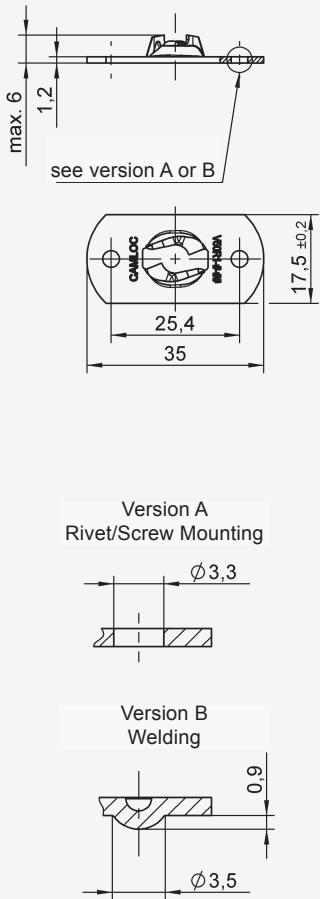
¹⁾Max. tensile strength 2.600 N max., Working Load 1.700 N

Style	Dimensions	Materials / Finish	°C	Part No.
Folding Bail Handle 180° 		Steel / zinc-plated, CrVI-free, clear passivation	120	50E19-*AGV
Plastic Star Form Handle 		Steel / zinc-plated, CrVI-free, clear passivation with plastic knob (PA 6) Stainless steel ¹⁾ with plastic knob (PA 6)	-40 up to +60 -40 up to +60	50E81-*AGV 50E81-*CP
Fixed Wing Handle Plastic 		Steel / zinc-plated, CrVI-free, clear passivation with plastic knob (PA 6) Stainless steel ¹⁾ with plastic knob (PA 6)	-40 up to +60 -40 up to +60	50E83-*AGV 50E83-*CP
Square Head 		Steel / zinc-plated, CrVI-free, clear passivation	120	50E7-*AGV

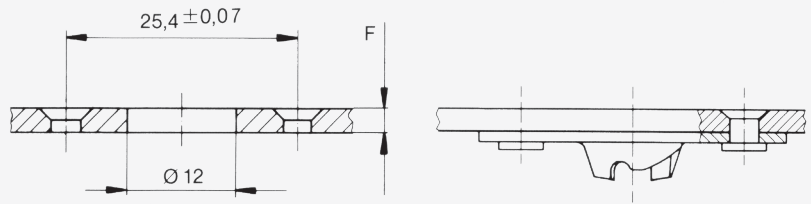
* Length no. from Table, Page E-1.

¹⁾ Max. tensile strength 2.600 N max., Working Load 1.700 N

Installation Dimensions	Accessories	Materials / Finish	Part No.
 Retaining Washer Installation: see page A-5 . For P up to 2mm Ø 8 ^{+0,2} for installation without retaining washer	Retaining washer (loose)  Retaining washer (fixed)  Retaining washer (loose) 	Stainless steel Stainless steel Plastic (PA6) / natural colour Working temperature: -40°C + 120°C ADVANTAGE: Plastic retaining washer to be assembled without tooling.	4002-SW-SS 50E2-3BP 50W204-01K
 Retaining Washer Installation: see page A-5	Retaining washer (loose) 	Stainless steel	50W17-1BP
	Mounting tool for retaining washer 50W17-1BP		50T01-1DR

Style	Dimensions	Materials / Finish	°C	Part No.
Rivet- / Screw or Weld Mounting 	 max. 6 1.2 see version A or B Version A Rivet/Screw Mounting Version B Welding	Rivet / Screw Mounting (A) Steel / zinc-plated, CrVI-free, clear passivation Stainless steel	120	V50R1-1-1AGV
		Welding (B) Steel / zinc-plated Steel / oil coated	200	V50R1-1-1BP
			-	V50R1-1-2AZ
			-	V50R1-1-2AR

Receptacle Installation Instructions

Installation Dimensions
Rivet- / Screw or Weld Mounting 

Features

Max. tensile strength 1.330 N, working load 900 N.

Small fastener giving a high tensile load.

Wide range of stud head styles and receptacles.

Selection Instructions

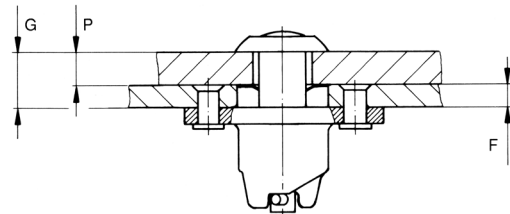
1. Select stud assembly and receptacle, page F-3 up to F-5, F-7 up to F-10.
2. Select stud accessories (retaining washer, gasket), page F-6 and F-7.
3. Select hex nut for receptacle, if necessary, page F-11.
4. Select stud length number from total thickness G using the formula and table on page F-2 (e.g. V26S01-*AGV).

Determining the stud length number when using receptacle:

Type 1 + 3*

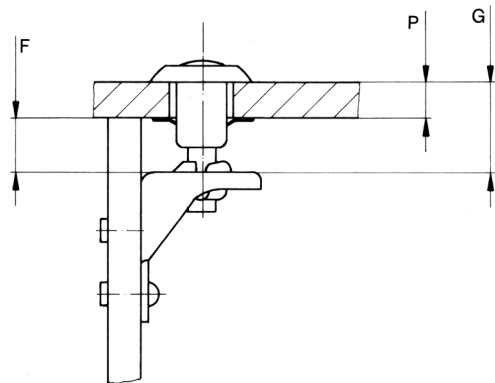
$$G = P + F$$

* For Type 3: G = 9,9 mm min.



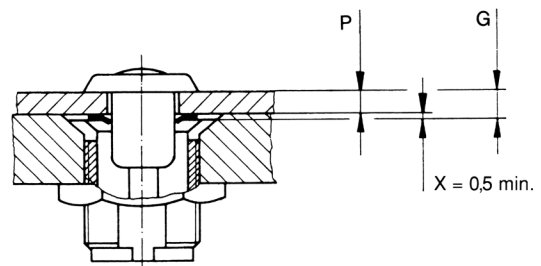
Type 2

$$G = P + F \text{ (0,75 min.)}$$



Type 4

$$G = P + X \text{ (0,5 min.)}$$

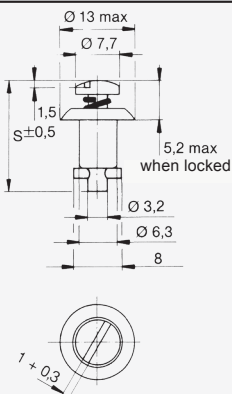
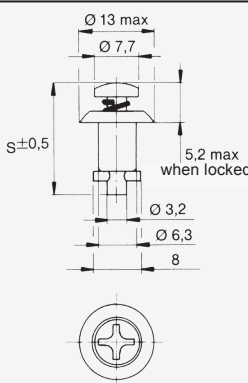
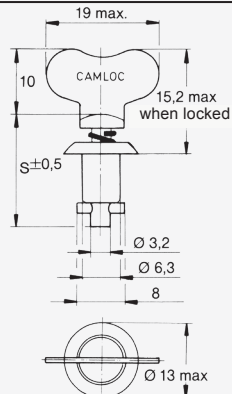


Total Thickness G	Stud Length No. when using Receptacles Typee 1 1 + 4
0,75 - 1,50	1
1,50 - 2,30	2
2,30 - 3,05	3
3,05 - 3,80	4
3,80 - 4,60	5
4,60 - 5,35	6
5,35 - 6,10	7
6,10 - 6,85	8
6,85 - 7,60	9
7,60 - 8,40	10
8,40 - 9,15	11
9,15 - 9,90	12
9,90 - 10,65	13
10,65 - 11,40	14
11,40 - 12,20	15
12,20 - 12,95	16
12,95 - 13,70	17
13,70 - 14,50	18
14,50 - 15,25	19
15,25 - 16,00	20
16,00 - 16,75	21
16,75 - 17,50	22
17,50 - 18,30	23
18,30 - 19,05	24
19,05 - 19,80	25
19,80 - 20,60	26
20,60 - 21,35	27
21,35 - 22,10	28
22,10 - 22,85	29
22,85 - 23,60	30
23,60 - 24,40	31
24,40 - 25,15	32
25,15 - 25,90	33
25,90 - 26,65	34
26,65 - 27,40	35
27,40 - 28,20	36
28,20 - 28,95	37
28,95 - 29,70	38
29,70 - 30,50	39
30,50 - 31,25	40

Total Thickness G	Stud Length No. when using Receptacles Typee 1 2
0,75 - 1,50	2
1,50 - 2,30	3
2,30 - 3,05	4
3,05 - 3,80	5
3,80 - 4,60	6
4,60 - 5,35	7
5,35 - 6,10	8
6,10 - 6,85	9
6,85 - 7,60	10
7,60 - 8,40	11
8,40 - 9,15	12
9,15 - 9,90	13
9,90 - 10,65	14
10,65 - 11,40	15
11,40 - 12,20	16
12,20 - 12,95	17
12,95 - 13,70	18
13,70 - 14,50	19
14,50 - 15,25	20
15,25 - 16,00	21
16,00 - 16,75	22
16,75 - 17,50	23
17,50 - 18,30	24
18,30 - 19,05	25
19,05 - 19,80	26
19,80 - 20,60	27
20,60 - 21,35	28
21,35 - 22,10	29
22,10 - 22,85	30
22,85 - 23,60	31
23,60 - 24,40	32
24,40 - 25,15	33
25,15 - 25,90	34
25,90 - 26,65	35
26,65 - 27,40	36
27,40 - 28,20	37
28,20 - 28,95	38
28,95 - 29,70	39
29,70 - 30,50	40

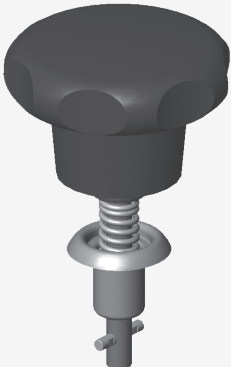
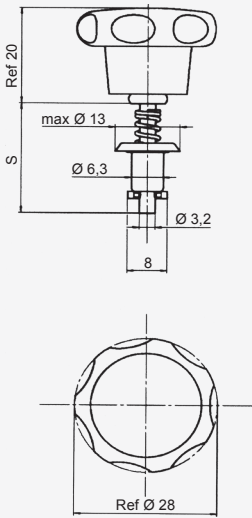
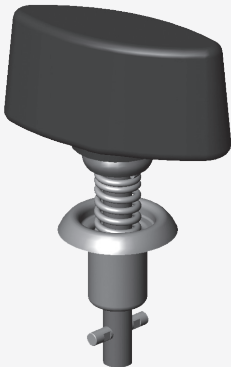
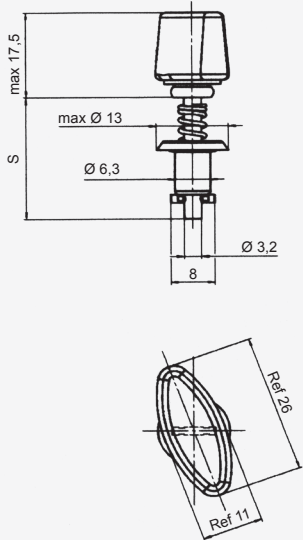
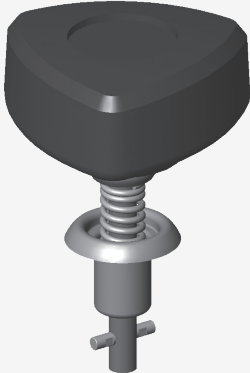
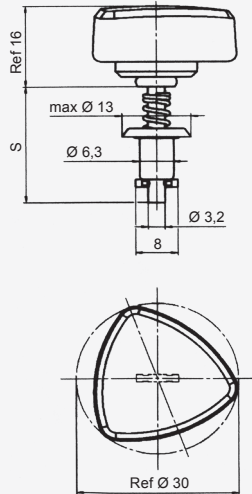
Total Thickness G	Stud Length No. when using Receptacles Typee 1 3
9,90 - 10,65	1
10,65 - 11,40	2
11,40 - 12,20	3
12,20 - 12,95	4
12,95 - 13,70	5
13,70 - 14,50	6
14,50 - 15,25	7
15,25 - 16,00	8
16,00 - 16,75	9
16,75 - 17,50	10
17,50 - 18,30	11
18,30 - 19,05	12
19,05 - 19,80	13
19,80 - 20,60	14
20,60 - 21,35	15
21,35 - 22,10	16
22,10 - 22,85	17
22,85 - 23,60	18
23,60 - 24,40	19
24,40 - 25,15	20
25,15 - 25,90	21
25,90 - 26,65	22
26,65 - 27,40	23
27,40 - 28,20	24
28,20 - 28,95	25
28,95 - 29,70	26
29,70 - 30,50	27
30,50 - 31,25	28
31,25 - 32,00	29
32,00 - 32,75	30
32,75 - 33,50	31
33,50 - 34,30	32
34,30 - 35,05	33
35,05 - 35,80	34
35,80 - 36,60	35
36,60 - 37,35	36
37,35 - 38,10	37
38,10 - 38,85	38
38,85 - 39,60	39
39,60 - 40,40	40

Other lengths on request.

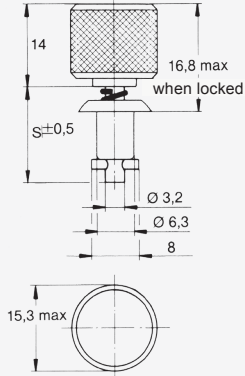
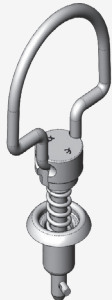
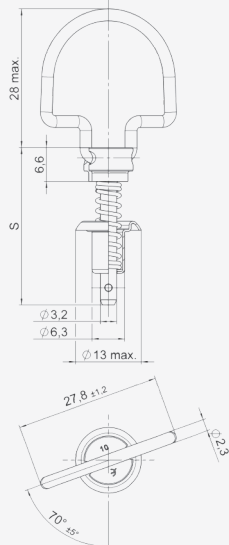
Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Pan Head 	 $S = 18,54 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Steel / chrome-plated Stainless steel ¹⁾ Steel / nickel-plated	120 120 200 120	V26S01-*AGV 26S38-* 2600-*S 26S42-*
Cross Recess Pan Head 	 $S = 18,54 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Steel / nickel-plated Stainless steel ¹⁾	120 120 200	V26S02-*AGV 26S39-* 26S51-*
Fixed Wing Handle 	 $S = 18,54 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	V26S04-*AGV 2600-*SW

* Length no. from Table, see page F-2.

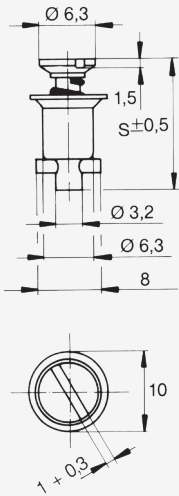
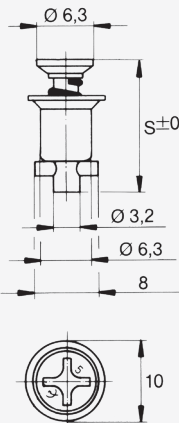
¹⁾ Max. tensile strength 1.000 N max., Working Load 700 N

Style	Dimensions	Materials / Finish	°C	Part No.
Plastic Star Form Handle 		Steel / zinc-plated, CrVI-free, clear passivation with plastic knob (PA 6) Note: Not to be used with encapsulated receptacles	-40 up to +60	V26S06- *AGV
Fixed Wing Handle Plastic 		Steel / zinc-plated, CrVI-free, clear passivation with plastic knob (PA 6) Note: Not to be used with encapsulated receptacles	-40 up to +60	V26S07- *AGV
Triangular Plastic Handle 		Steel / zinc-plated, CrVI-free, clear passivation with plastic knob (PA 6) Note: Not to be used with encapsulated receptacles	-40 up to +60	V26S08- *AGV

* Length no. from Table, see page F-2.

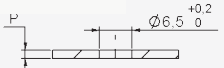
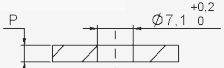
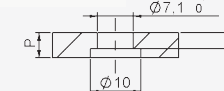
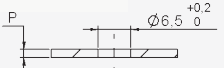
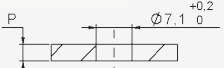
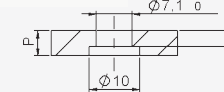
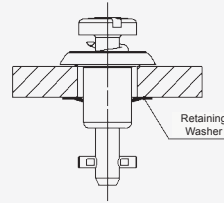
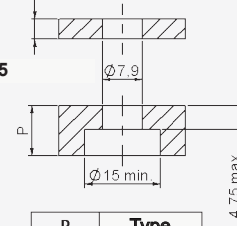
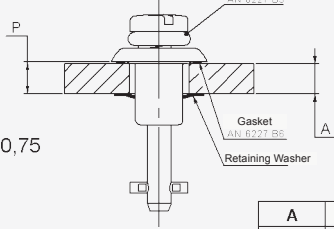
Style	Dimensions	Materials / Finish	°C	Part No.
Knurled Head 	 $S = 16,76 + (0,76 \times \text{length no.})$	Steel / chrome-plated	120	26S34 -*
Folding Bail Handle 180° 		Steel / zinc-plated, CrVI-free, clear passivation	120	V26S22 - *AGV

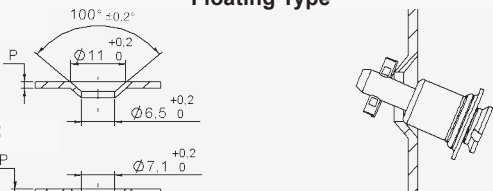
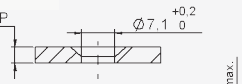
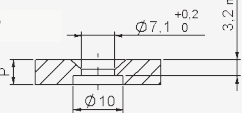
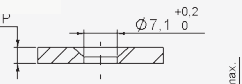
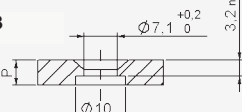
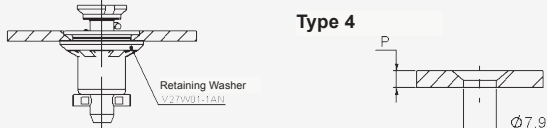
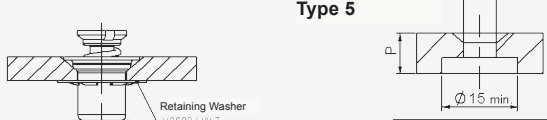
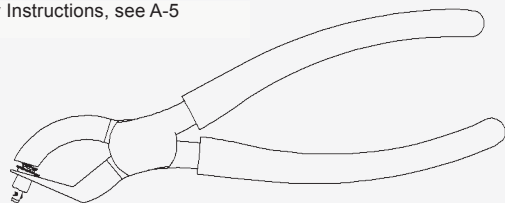
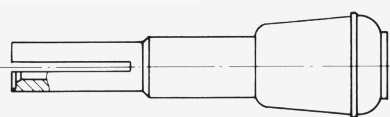
* Length no. from Table, see page F-2.

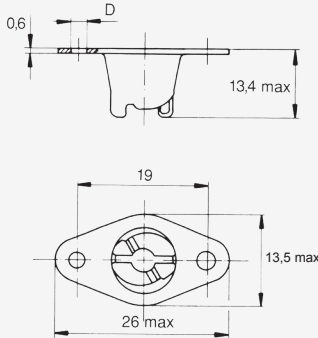
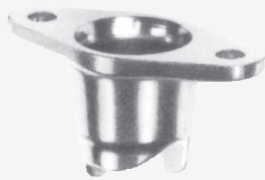
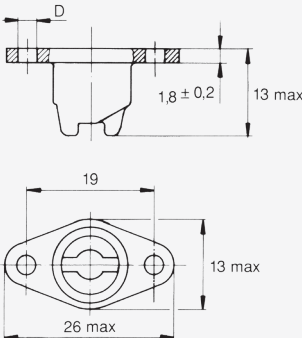
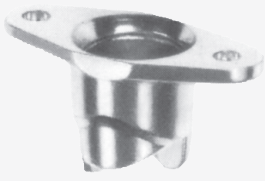
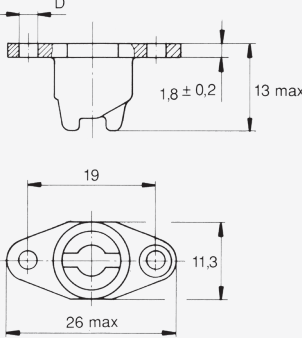
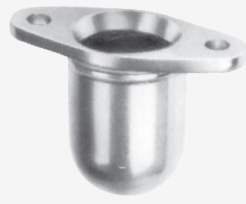
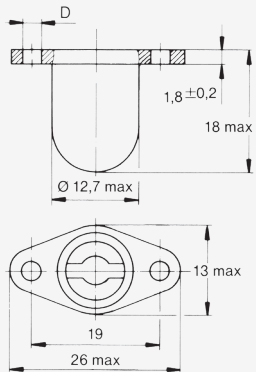
Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Flush Head 	 $S = 14,73 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	V27S01-*AGV 2700-*S
Cross Recess Flush Head 	 $S = 14,73 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	120	V27S02-*AGV

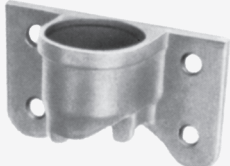
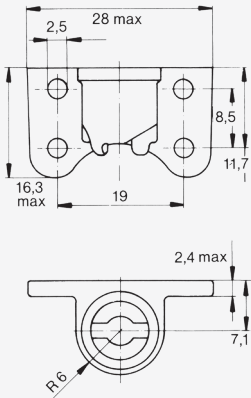
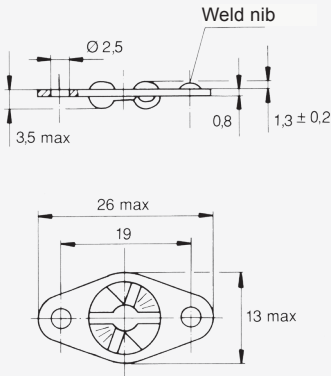
* Length no. from Table, Page F-2.

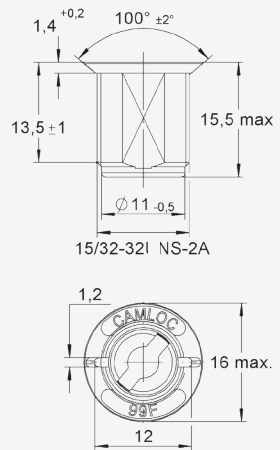
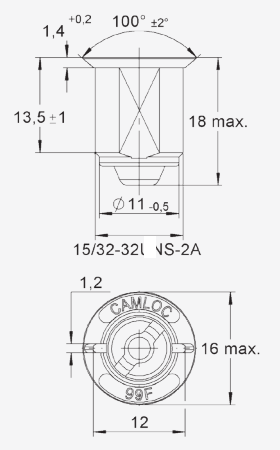
¹⁾Max. tensile strength 1.000 N max., Working Load 700 N

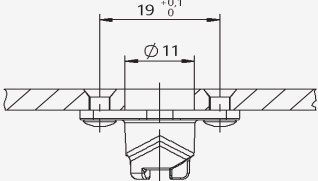
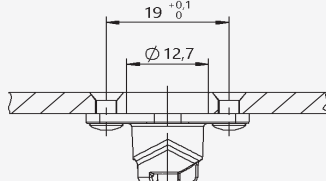
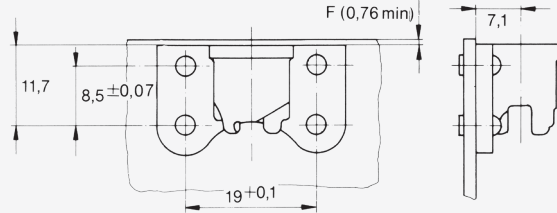
Installation Dimensions	Accessories	Materials / Finish	Part No.								
Stud Retention up to Dash No. 4 without Retaining Washer Floating Type Type 1  Type 2  Type 3  <table><tr><th>P</th><th>Type</th></tr><tr><td>≤ 1,65</td><td>1</td></tr><tr><td>1,65 < P ≤ 3,2</td><td>2</td></tr><tr><td>> 3,2</td><td>3</td></tr></table> 4P3-1 installation pliers, see F-8	P	Type	≤ 1,65	1	1,65 < P ≤ 3,2	2	> 3,2	3	-	Note: up to Length no. 4 Captive even without Retaining Washer	-
P	Type										
≤ 1,65	1										
1,65 < P ≤ 3,2	2										
> 3,2	3										
Stud Retention from Dash No. 5 with Retaining Washer Floating Type Type 1  Type 2  Type 3  <table><tr><th>P</th><th>Type</th></tr><tr><td>≤ 1,65</td><td>1</td></tr><tr><td>1,65 < P ≤ 3,2</td><td>2</td></tr><tr><td>> 3,2</td><td>3</td></tr></table> 4P3-1 installation pliers, see F-8	P	Type	≤ 1,65	1	1,65 < P ≤ 3,2	2	> 3,2	3	Retaining Washer	Stainless steel	2600-SW
P	Type										
≤ 1,65	1										
1,65 < P ≤ 3,2	2										
> 3,2	3										
Stud Retention with Retaining Washer Fixed installed Type 4  Type 5  <table><tr><th>P</th><th>Type</th></tr><tr><td>≤ 4,75</td><td>4</td></tr><tr><td>> 4,75</td><td>5</td></tr></table> 4P3-1 installation pliers, see F-8 T98-1 installation tool, see F-8	P	Type	≤ 4,75	4	> 4,75	5	Retaining Washer	Stainless steel	V2600-LW-7		
P	Type										
≤ 4,75	4										
> 4,75	5										
Series 2600 Sealed only for Recess Types Slotted or Cross only in combination with Retaining Washer V2600-LW-7  P= A + 0,75 <table><tr><th>A</th><th>Type</th></tr><tr><td>≤ 4,00</td><td>4</td></tr><tr><td>> 4,00</td><td>5</td></tr></table> 4P3-1 installation pliers, see F-8 T98-1 installation tool, see F-8	A	Type	≤ 4,00	4	> 4,00	5	Gaskets	Rubber (100°C)	AN6227-B6		
A	Type										
≤ 4,00	4										
> 4,00	5										
		Rubber (100°C)	AN6227-B3								

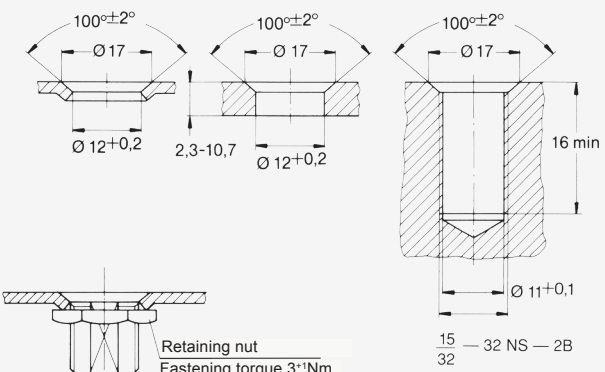
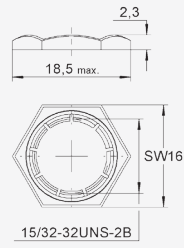
Installation Dimensions	Accessories	Materials / Finish	Part No.								
Stud Retention up to Dash No. 4 without Retaining Washer Floating Type Type 1  Type 2  Type 3  <table><tr><th>P</th><th>Type</th></tr><tr><td>≤ 1,65</td><td>1</td></tr><tr><td>1,65 < P ≤ 3,2</td><td>2</td></tr><tr><td>> 3,2</td><td>3</td></tr></table> 4P3-1 installation pliers, see below	P	Type	≤ 1,65	1	1,65 < P ≤ 3,2	2	> 3,2	3	-	-	-
P	Type										
≤ 1,65	1										
1,65 < P ≤ 3,2	2										
> 3,2	3										
Stud Retention from Dash No. 5 with Retaining Washer Floating Type Type 1  Type 2  Type 3  <table><tr><th>P</th><th>Type</th></tr><tr><td>≤ 1,65</td><td>1</td></tr><tr><td>1,65 < P ≤ 3,2</td><td>2</td></tr><tr><td>> 3,2</td><td>3</td></tr></table> 4P3-1 installation pliers, see below	P	Type	≤ 1,65	1	1,65 < P ≤ 3,2	2	> 3,2	3	Retaining Washer	Stainless steel	2600-SW
P	Type										
≤ 1,65	1										
1,65 < P ≤ 3,2	2										
> 3,2	3										
Stud Retention with Retaining Washer Fixed installed Type 4  Type 5  <table><tr><th>P</th><th>Type</th></tr><tr><td>≤ 4,75</td><td>4</td></tr><tr><td>> 4,75</td><td>5</td></tr></table> 4P3-1 installation pliers, see F-8 T98-1 installation tool, see F-8	P	Type	≤ 4,75	4	> 4,75	5	Retaining Washer	Stainless steel	V2600-LW-7		
P	Type										
≤ 4,75	4										
> 4,75	5										
		Steel / nickel-plated	V27W01-1AN								
Assembly Instructions, see A-5			4P3-1								
Assembly Instructions, see A-5			T98-1								

Style	Dimensions	Materials / Finish	Loch- Ø	°C	Part No.
Type 1 Lightweight 		Steel / zinc-plated, CrVI-free, clear passivation	2,6	120	V26R6-1AGV
Type 1 Cast 		Hard bronze / zinc-plated, CrVI-free, clear passivation Hard bronze / zinc-plated, CrVI-free, clear passivation Stainless steel	2,5 3,3 2,5	120 120 200	V212-12-1FGV V212-12-2FGV 212-12S
Type 1 Narrow Width 		Hard bronze / zinc-plated, CrVI-free, clear passivation	2,5	120	V212-12N-1FGV
Type 1 Encapsulated 		Hard bronze / zinc-plated, CrVI-free, clear passivation Capsule: Steel / zinc-plated CrVI-free, clear passivation Stainless steel	2,5 2,5	120 150	26R16-1FGV 26R18-1-1AA

Style	Dimensions	Materials / Finish	°C	Part No.
Type 2 Side Mounting 		Aluminium / anodized	175	26R1-1
Type 3 Rivet / Screw or Weld Mounting 		Rivet / Screw Mounting Steel / zinc-plated, CrVI-free, clear passivation Stainless steel Welding Stainless steel	120 200	V312-12AGV 312-12S 312-12WS

Style	Dimensions	Materials / Finish	°C	Part No.
Type 4 Single Hole Mounting 	 15/32-32I NS-2A	Zinc die casting / zinc-plated, CrVI-free, transparent passivated	100	99R10-01A1
Type 4 Single Hole Mounting Encapsulated 	 15/32-32I NS-2A	Zinc die casting / zinc-plated, CrVI-free, transparent passivated Capsule: Stainless steel	100	99E10-01

Installation Dimensions	
Type 1 + 3 Receptacles Hole Pattern when using the retaining washer 2600-SW 	Type 1 + 3 Receptacles Hole Pattern when using the retaining washer V2600-LW-7 
Type 2 Receptacle Hole Pattern (Side Mounting) 	

Installation Dimensions	Accessories	Materials / Finish	Part No.
Installation Options Type 4 Receptacle  Retaining nut Fastening torque 3"Nm	Retaining nut  15/32-32UNS-2B Tap	Steel / zinc-plated, CrVI-free, transparent passivated	99N10-01A1 15/32-32NS-2B

Features

Max. tensile strength 4.700 N, working load 3.100 N.

Small fastener for high tensile load.

Large range of stud assemblies with fixed and floating receptacles.

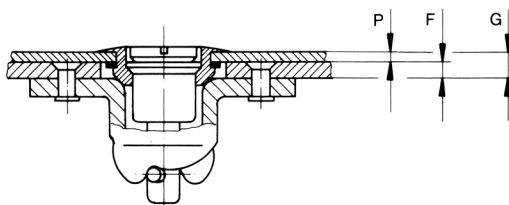
Selection Instructions

1. Select stud assembly, page G-4 and G-5, grommet and snap-on retaining ring, page G-7 and receptacle, page G-8 and G-9.
2. Select retaining washer, page G-6, for studs from length no. 5.
3. Select stud length number from total thickness G using the formula and the table on page G-2 and G-3 (e.g. D4002-*AGV).

Determining the stud length number when using receptacle:

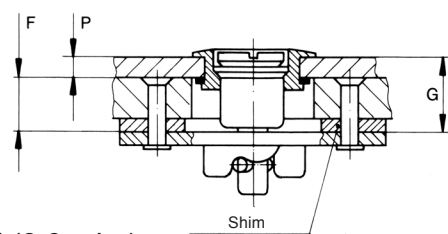
Standard Version

Type 1 + 2



$$G = P + F$$

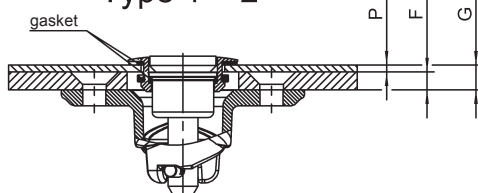
Type 3



$$G = P + F (8,9 \text{ min.})$$

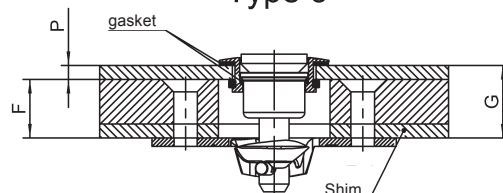
Sealed Version

Type 1 + 2



$$G = P + F + 0,75$$

Type 3



$$G = P + F (8,9 \text{ min.}) + 0,75$$

**When Using the Following Grommet and Receptacles:
Flush Mounting Grommets
D4002-G-AGV D4002-H-AGV
4002-GS 4002-HS**

Stud Length No. When Using

Total Thickness G	Type 1	Type 2	Type 3	Total Thickness G	Type 1	Type 2	Type 3
0,50 - 1,30	-	-	-	27,20 - 27,95	35	36	26
1,30 - 2,05	-	-	-	27,95 - 28,70	36	37	27
2,05 - 2,80	-	3	-	28,70 - 29,50	37	38	28
2,80 - 3,55	3	4	-	29,50 - 30,20	38	39	29
3,55 - 4,30	4	5	-	30,20 - 31,00	39	40	30
4,30 - 5,10	5	6	-	31,00 - 31,75	40	41	31
5,10 - 5,85	6	7	-	31,75 - 32,50	41	42	32
5,85 - 6,60	7	8	-	32,50 - 33,30	42	43	33
6,60 - 7,30	8	9	-	33,30 - 34,05	43	44	34
7,30 - 8,15	9	10	-	34,05 - 34,80	44	45	35
8,15 - 8,90	10	11	-	34,80 - 35,55	45	46	36
8,90 - 9,65	11	12	-	35,55 - 36,30	46	47	37
9,65 - 10,40	12	13	3	36,30 - 37,10	47	48	38
10,40 - 11,20	13	14	4	37,10 - 37,85	48	49	39
11,20 - 11,95	14	15	5	37,85 - 38,60	49	50	40
11,95 - 12,70	15	16	6	38,60 - 39,35	50	51	41
12,70 - 13,50	16	17	7	39,35 - 40,10	51	52	42
13,50 - 14,20	17	18	8	40,10 - 40,90	52	53	43
14,20 - 15,00	18	19	9	40,90 - 41,65	53	54	44
15,00 - 15,75	19	20	10	41,65 - 42,40	54	55	45
15,75 - 16,50	20	21	11	42,40 - 43,15	55	56	46
16,50 - 17,30	21	22	12	43,15 - 43,90	56	57	47
17,30 - 18,00	22	23	13	43,90 - 44,70	57	58	48
18,00 - 18,80	23	24	14	44,70 - 45,45	58	59	49
18,80 - 19,55	24	25	15	45,45 - 46,20	59	60	50
19,55 - 20,30	25	26	16	46,20 - 46,95	60	-	51
20,30 - 21,10	26	27	17	46,95 - 47,70	-	-	52
21,10 - 21,85	27	28	18	47,70 - 48,50	-	-	53
21,85 - 22,60	28	29	19	48,50 - 49,25	-	-	54
22,60 - 23,40	29	30	20	49,25 - 50,00	-	-	55
23,40 - 24,15	30	31	21	50,00 - 50,75	-	-	56
24,15 - 24,90	31	32	22	50,75 - 51,50	-	-	57
24,90 - 25,65	32	33	23	51,50 - 52,30	-	-	58
25,65 - 26,40	33	34	24	52,30 - 53,05	-	-	59
26,40 - 27,20	34	35	25	53,05 - 53,80	-	-	60

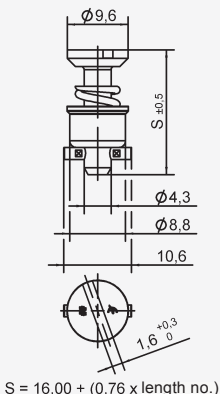
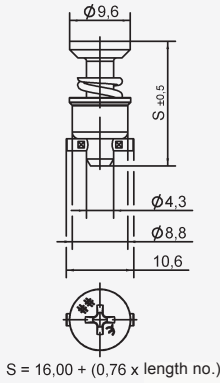
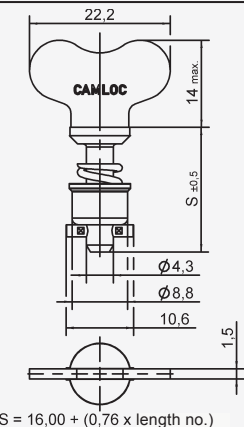
Other lengths on request.

**When Using the Following Grommet and Receptacles:
Plus Flush Mounting Grommets**
D4002-N-AGV D4002-O-AGV D4002-P-AGV D4002-R-AGV D4002-S-AGV D4002-T-AGV
4002-NS 4002-OS D4002-P-BP D4002-R-BP D4002-S-BP D4002-T-BP

Stud Length No. When Using

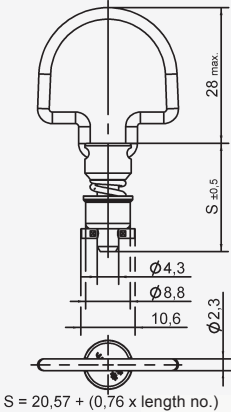
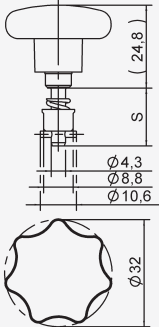
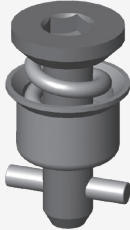
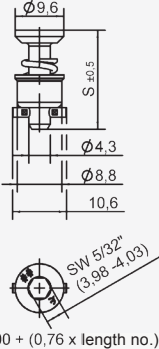
Total Thickness G	Type 1	Type 2	Type 3	Total Thickness G	Type 1	Type 2	Type 3
0,50 - 1,30	-	-	-	27,20 - 27,95	36	37	27
1,30 - 2,05	-	3	-	27,95 - 28,70	37	38	28
2,05 - 2,80	3	4	-	28,70 - 29,50	38	39	29
2,80 - 3,55	4	5	-	29,50 - 30,20	39	40	30
3,55 - 4,30	5	6	-	30,20 - 31,00	40	41	31
4,30 - 5,10	6	7	-	31,00 - 31,75	41	42	32
5,10 - 5,85	7	8	-	31,75 - 32,50	42	43	33
5,85 - 6,60	8	9	-	32,50 - 33,30	43	44	34
6,60 - 7,30	9	10	-	33,30 - 34,05	44	45	35
7,30 - 8,15	10	11	-	34,05 - 34,80	45	46	36
8,15 - 8,90	11	12	-	34,80 - 35,55	46	47	37
8,90 - 9,65	12	13	3	35,55 - 36,30	47	48	38
9,65 - 10,40	13	14	4	36,30 - 37,10	48	49	39
10,40 - 11,20	14	15	5	37,10 - 37,85	49	50	40
11,20 - 11,95	15	16	6	37,85 - 38,60	50	51	41
11,95 - 12,70	16	17	7	38,60 - 39,35	51	52	42
12,70 - 13,50	17	18	8	39,35 - 40,10	52	53	43
13,50 - 14,20	18	19	9	40,10 - 40,90	53	54	44
14,20 - 15,00	19	20	10	40,90 - 41,65	54	55	45
15,00 - 15,75	20	21	11	41,65 - 42,40	55	56	46
15,75 - 16,50	21	22	12	42,40 - 43,15	56	57	47
16,50 - 17,30	22	23	13	43,15 - 43,90	57	58	48
17,30 - 18,00	23	24	14	43,90 - 44,70	58	59	49
18,00 - 18,80	24	25	15	44,70 - 45,45	59	60	50
18,80 - 19,55	25	26	16	45,45 - 46,20	60	-	51
19,55 - 20,30	26	27	17	46,20 - 46,95	-	-	52
20,30 - 21,10	27	28	18	46,95 - 47,70	-	-	53
21,10 - 21,85	28	29	19	47,70 - 48,50	-	-	54
21,85 - 22,60	29	30	20	48,50 - 49,25	-	-	55
22,60 - 23,40	30	31	21	49,25 - 50,00	-	-	56
23,40 - 24,15	31	32	22	50,00 - 50,75	-	-	57
24,15 - 24,90	32	33	23	50,75 - 51,50	-	-	58
24,90 - 25,65	33	34	24	51,50 - 52,30	-	-	59
25,65 - 26,40	34	35	25	52,30 - 53,05	-	-	60
26,40 - 27,20	35	36	26	53,05 - 53,80	-	-	-

Other lengths on request.

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 $S = 16,00 + (0,76 \times \text{length no.})$	Steel / zinc-plated CrVI-free, clear passivation Stainless steel ¹⁾	120 200	D4002-*AGV D4002-*BP
Cross Recess Head 	 $S = 16,00 + (0,76 \times \text{length no.})$	Steel / zinc-plated CrVI-free, clear passivation Stainless steel ¹⁾	120 200	D40S5-*AGV D40S5-*BP
Fixed Wing Handle 	 $S = 16,00 + (0,76 \times \text{length no.})$	Steel / zinc-plated CrVI-free, clear passivation Stainless steel ¹⁾	120 200	D4002-*WAGV D4002-*WBP

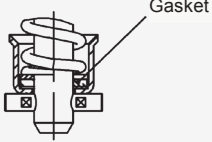
* Length no. from Table, see page G-2 and G-3

¹⁾ Max. tensile strength 3.300 N, Working load 2.200 N

Style	Dimensions	Materials / Finish	°C	Part No.
Folding Bail Handle 180° 	 S = 20,57 + (0,76 x length no.)	Steel / zinc-plated CrVI-free, clear passivation	120	D40S47-*AGV
Plastic Star Form Handle 	 S = 16,00 + (0,76 x length no.)	Steel / zinc-plated CrVI-free, clear passivation	-40 up to +60	D40E22-*AGV
Hex Reces 	 S = 16,00 + (0,76 x length no.)	Steel / zinc-plated CrVI-free, clear passivation Stainless steel ¹⁾	120 200	D40E28- *AGV D40E28-*BP

* Length no. from Table, see page G-2 and G-3

¹⁾ Max. tensile strength 3.300 N, Working load 2.200 N

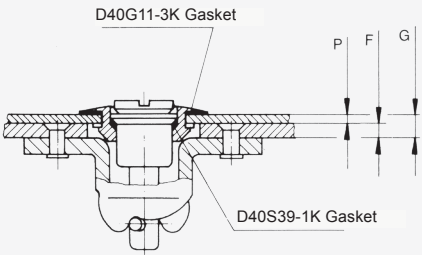
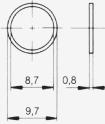
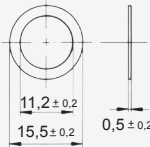
Style	Dimensions	Materials / Finish	°C	Part No.
Sealed Slotted Recess Head 	 Additional required gasket, see page G-4	Steel / zinc-plated CrVI-free, clear passivation Gasket: Vulkollan®* Available from length no. 4 Stainless steel ¹⁾	-15 up to +80 200	D4002I-*AGV D4002I-*BP
		Steel / zinc-plated CrVI-free, clear passivation Gasket: Vulkollan®* Available from length no. 4 Stainless steel ¹⁾	-15 up to +80 200	D40S5I-*AGV D40S5I-*BP

* Vulkollan® is a registered brand of Bayer AG.

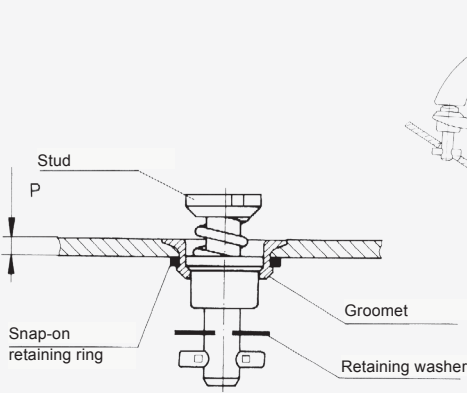
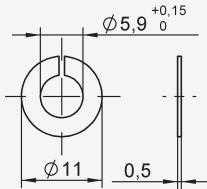
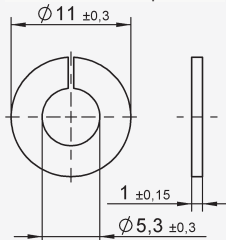
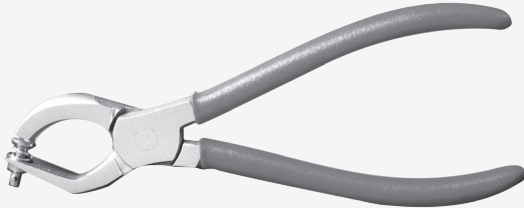
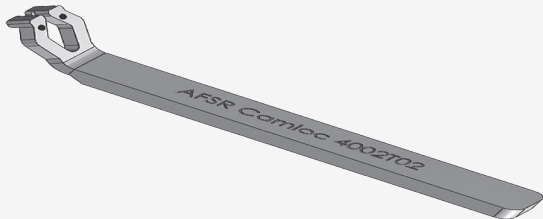
¹⁾ Max. tensile strength 3.300 N, Working load 2.200 N

Click here: [D4002 installation – including new Camloc Mounting Tool 4002T02](#)



Installation Dimensions	Accessories	Materials / Finish	Part No.
Gasket to be ordered in addition to the sealed stud assembly  D40G11-3K Gasket D40S39-1K Gasket	Gasket 	Plastic / (PA6) EPDM black	D40S39-1K D40G11-3K
	Gasket 		

* Length no. from Table, see page G-2 and G-3.

Installation Dimensions	Accessories	Materials / Finish	Part No.
 Stud P Snap-on retaining ring Groomet Retaining washer 4P3-1 installation pliers, see below	retaining ring loose on stud use for stud length no. 5 and up  retaining ring loose on stud use for stud length no. 5 and up 	Stainless steel Plastic	4002-SW-SS 50W204-01K
	Stud Installation pliers		4P3-1
	Installation tool for Retaining Washer**		4002T02-1BP

Installation Instructions für 4002-SW-SS



Detail view

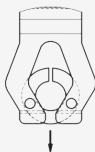
Detail view: Step 1



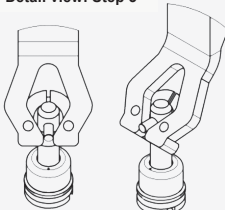
Slot position!

Bottom view

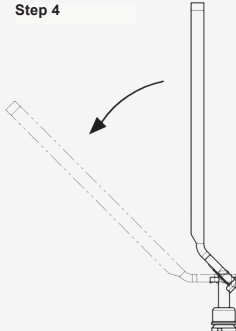
Detail view: Step 2



Detail view: Step 3

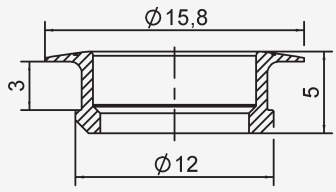
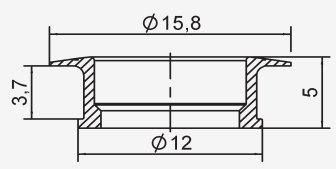
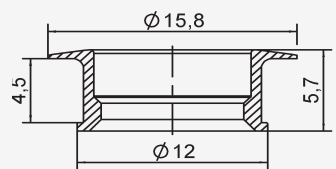
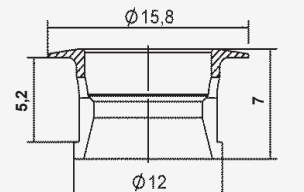
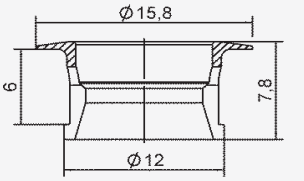
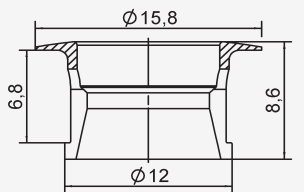
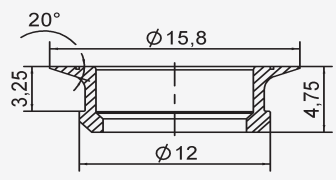
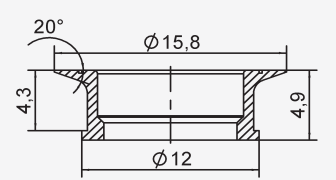


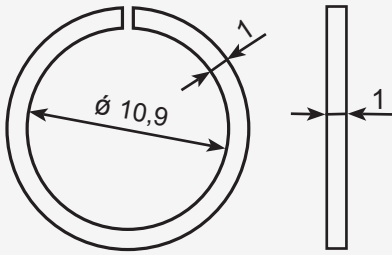
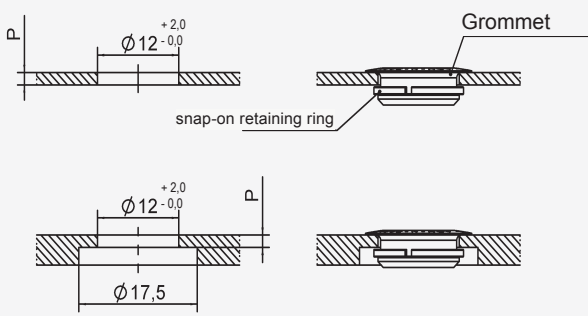
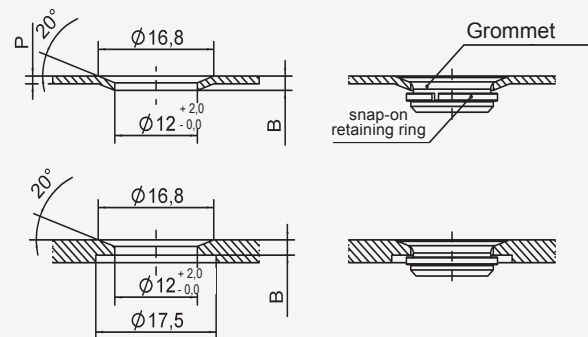
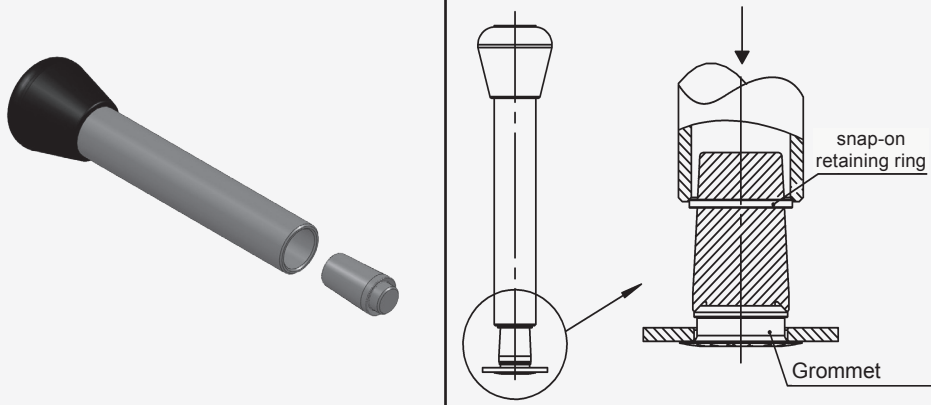
Step 4

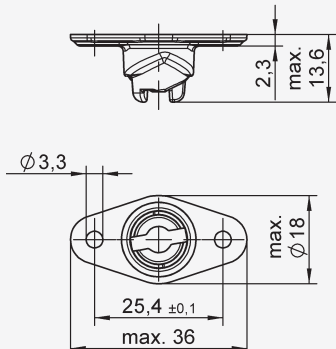
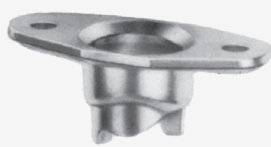
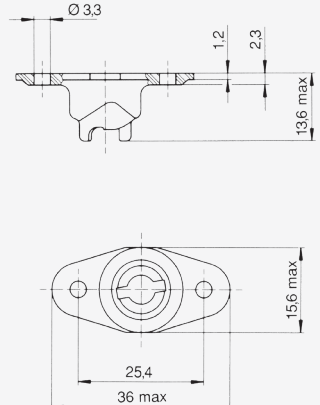
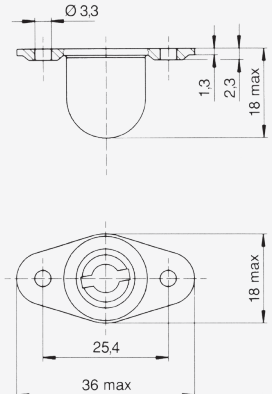


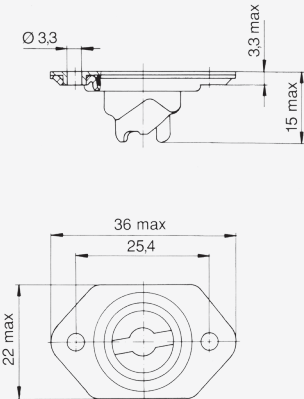
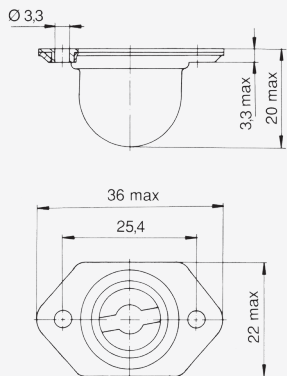
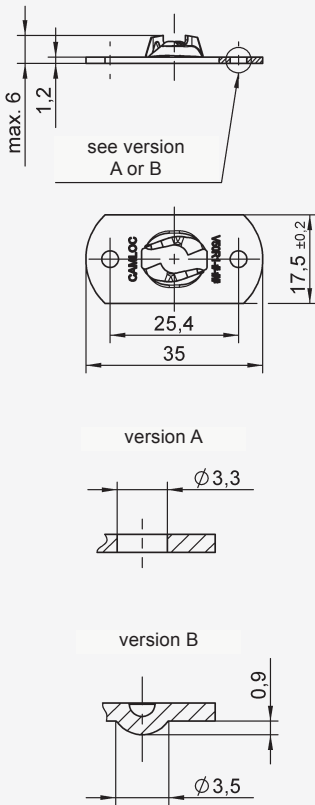
* Optional to be used from Stud length No. 5..

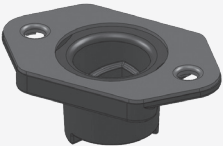
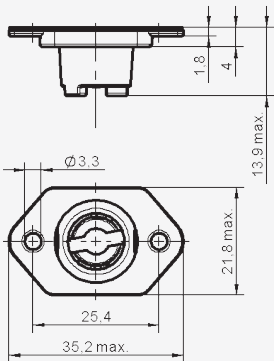
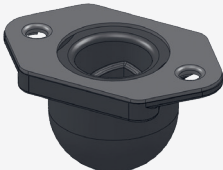
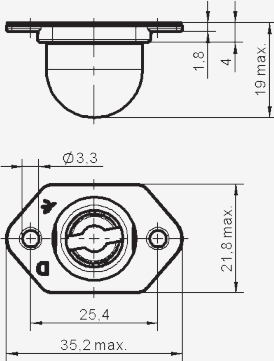
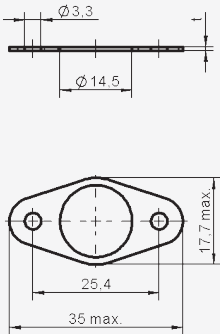
** Mounting tool 4002T02 is only for retaining washers of (D)4002 Series.

Style	Dimensions	Werkstoff/ Oberfläche	°C	Part No.
Plus Flush Mounting for Panel Thickness up to 1,65 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-N-AGV 4002-NS
Plus Flush Mounting for Panel Thickness from 1,65 up to 2,40 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-P-AGV 4002-OS
Plus Flush Mounting for Panel Thickness from 2,40 up to 3,20 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-P-AGV D4002-P-BP
Plus Flush Mounting for Panel Thickness from 3,20 up to 3,95 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-R-AGV D4002-R-BP
Plus Flush Mounting for Panel Thickness from 3,95 up to 4,75 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-S-AGV D4002-S-BP
Plus Flush Mounting for Panel Thickness from 4,8 up to 5,60 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-T-AGV D4002-T-BP
Flush Mounting for Panel Thickness up to 1,88 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-G-AGV 4002-GS
Flush Mounting For Panel Thickness from 1,88 up to 2,97 		Steel/ zinc-plated CrVI-free, clear passivation stainless steel	120 200	D4002-H-AGV 4002-HS

Style	Dimensions	Materials/ Finish	Part No.
		Steel/ zinc-plated, CrVI-free, clear passivation Stainless steel Stainless steel / non-magnetic	R4G-3 V40G26-1BP V40G26-1N
		Grommet plus flush Part No.	P_{max} 1,65 2,40 3,20 5,60
		Grommet flush Part No.	P_{max} B_{max} 1,65 1,88 2,18 2,97
			T26

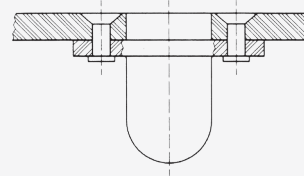
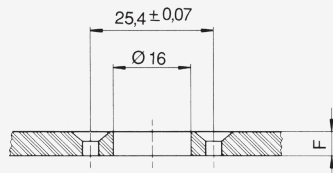
Style	Dimensions	Materials / Finish	°C	Part No.
Type 1 cast 		Hard bronze / zinc-plated, CrVI-free, clear passivation Stainless steel	120 200	D214-16FGV 214-16S
Type 1 cast, narrow width 		Hard bronze / zinc-plated, CrVI-free, clear passivation	120	D214-16NFGV
Type 1 cast, encapsulated 		Hard bronze / zinc-plated, CrVI-free, clear passivation Capsule: Brass / zinc-plated, CrVI-free, clear passivation	120	D40R12-1FGV

Style	Dimensions	Materials / Finish	°C	Part No.
Type 2 Float up to 0,75 mm (cast receptacle) 		Hard bronze / zinc-plated, CrVI-free, clear passivation Cage: Steel / zinc-plated, CrVI-free, clear passivation Stainless steel	120 200	D244-16-FGV 244-16S
Type 2 Float up to 0,75 mm Encapsulated 		Hard bronze / zinc-plated, CrVI-free, clear passivation Capsule: Steel / zinc-plated, CrVI-free, clear passivation Stainless steel	120 200	D244-16C-FGV 244-16SC
Type 3 Flat Rivet- / Screw or Weld Mounting 		Rivet / Srew Mounting (A) Steel / zinc-plated, CrVI-free, clear passivation Stainless steel Welding (B) Steel / zinc-plated, CrVI-free Stainless steel, oil-coated	120 200 - -	V50R1-1-1AGV V50R1-1-1BP V50R1-1-2AZ V50R1-1-2AR

Style	Dimensions	Materials / Finish	°C	Part No.
Type 2 Float up to 0,75 mm (Torlon) 		Torlon base plate: Steel / zinc-plated, CrVI-free, clear passivation	120	V244-16T1
		Torlon Base plate: Stainless steel	120	V244-16TS1
Type 2 Float up to 0,75 mm (Torlon) encapsulated 		Torlon Base plate: Steel / zinc-plated, CrVI-free, clear passivation	120	V244-16T1C
		Torlon Base plate: Stainless steel	120	V244-16TS1C
Shim 		Aluminium t=0,8mm	175	D40W02-1DR
		Aluminium t=1,5mm to be used with: D214-16FGV 214-16 S D214-16 NFGV D40R12-1FGV	175	D40W02-2DR

Installation Dimensions

**Receptacle Hole Pattern
Type 1, 2 and 3**



Features

Max. tensile strength 10.000 N, Working Load 7.000 N

High tensile strength and preload.

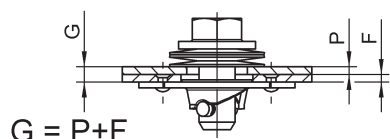
Typical applications:

Commercial vehicles, coaches, agricultural machinery, chemical engineering, heating systems etc.

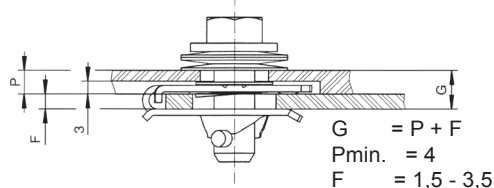
1. Select stud assembly and receptacle, pages H-2, H-3 and H-5.
2. Sealed: Also select rubber gasket and buffer plate, page H-4.
3. Select retaining washer, page H-4.
4. Select stud length number from total thickness G using the formula and table below (e.g. 991S01-*AGV).

Determining the stud length number when using:

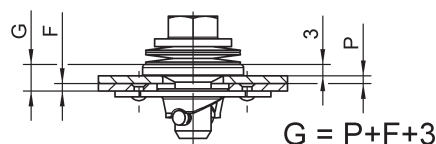
Rivet, Screw and Weld mounting Receptacle



Clip-On Receptacle



Sealed Stud Assemblies



Click here:

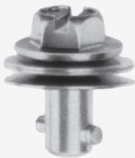
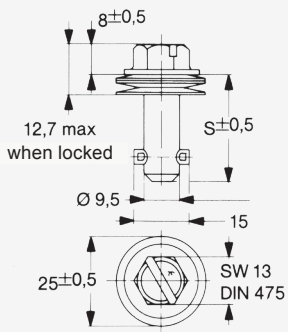
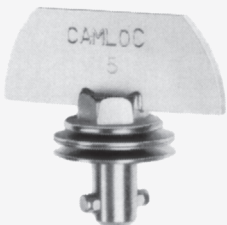
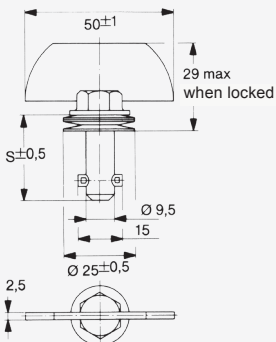
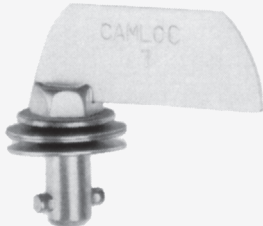
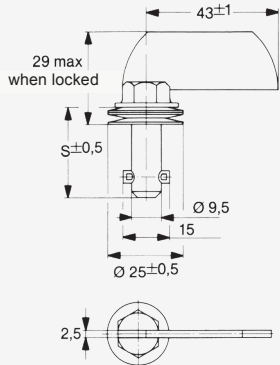
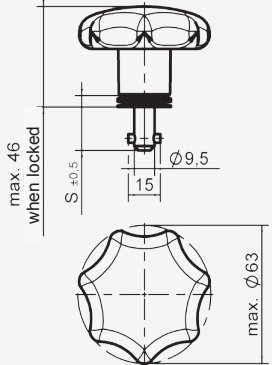
[Quarter Turn Installation \(991F Series\)](#)



Stud Length Table

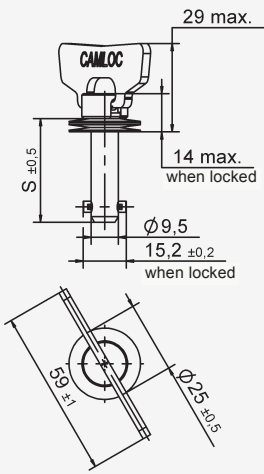
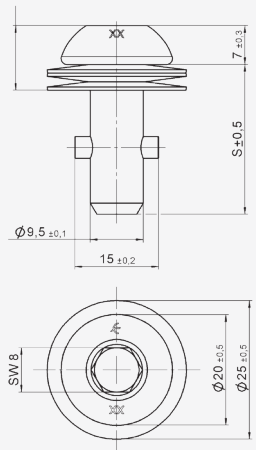
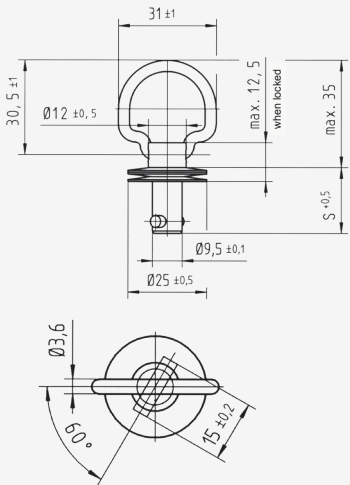
Total Thickness G	Stud Length no.	Total Thickness G	Stud Length no.	Total Thickness G	Stud Length no.
0,90 - 1,65	1	13,85 - 14,60	18	26,80 - 27,55	35
1,65 - 2,40	2	14,60 - 15,35	19	27,55 - 28,30	36
2,40 - 3,15	3	15,35 - 16,15	20	28,30 - 29,10	37
3,15 - 3,95	4	16,15 - 16,90	21	29,10 - 29,85	38
3,95 - 4,70	5	16,90 - 17,65	22	29,85 - 30,60	39
4,70 - 5,45	6	17,65 - 18,40	23	30,60 - 31,35	40
5,45 - 6,20	7	18,40 - 19,20	24	31,35 - 32,15	41
6,20 - 7,00	8	19,20 - 19,95	25	32,15 - 32,90	42
7,00 - 7,75	9	19,95 - 20,70	26	32,90 - 33,65	43
7,75 - 8,50	10	20,70 - 21,45	27	33,65 - 34,40	44
8,50 - 9,25	11	21,45 - 22,25	28	34,40 - 35,20	45
9,25 - 10,05	12	22,25 - 23,00	29	35,20 - 35,95	46
10,05 - 10,80	13	23,00 - 23,75	30	35,95 - 36,70	47
10,80 - 11,55	14	23,75 - 24,50	31	36,70 - 37,45	48
11,55 - 12,30	15	24,50 - 25,25	32	37,45 - 38,25	49
12,30 - 13,10	16	25,25 - 26,05	33	38,25 - 39,00	50
13,10 - 13,85	17	26,05 - 26,80	34		

Other lengths on request.

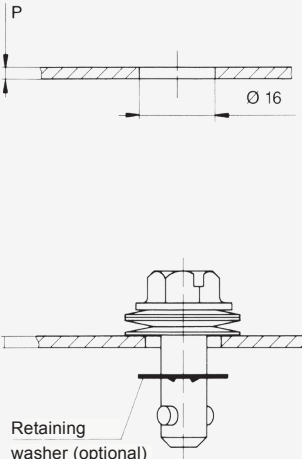
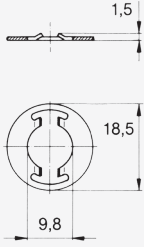
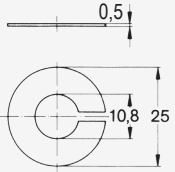
Style	Dimensions	Materials / Finish	°C	Part No.
Hex Head Slotted Recess 	 $S = 16,26 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	991S01- *-1AGV 991S01- *-1BP
Fixed Wing Handle 	 $S = 16,26 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	991S02- *-1AGV 991S02- *-1BP
Offset Fixed Wing Handle 	 $S = 16,26 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation Stainless steel ¹⁾	120 200	991S03- *-1AGV 991S03- *-1BP
Plastic Star Form Handle 	 $S = 16,26 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	-40 up to +60	991S04- *-1AGV

* Length no. from Table, see page H-1.

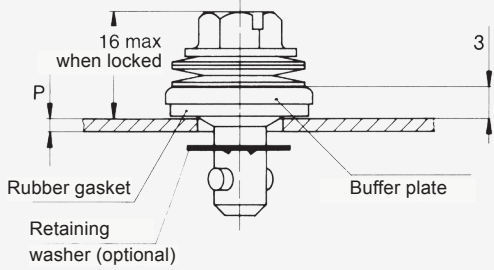
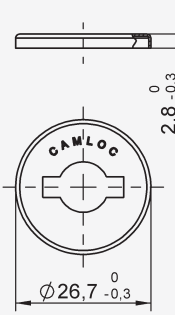
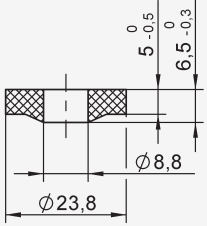
¹⁾ Max. tensile strength 7.000 N, Working load 4.500 N

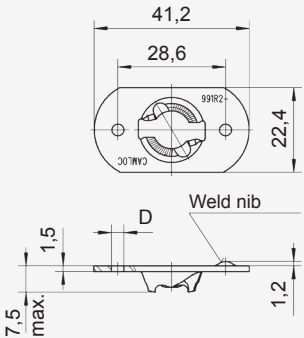
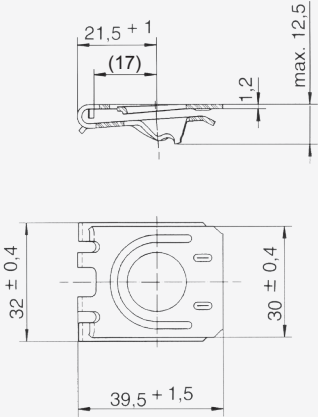
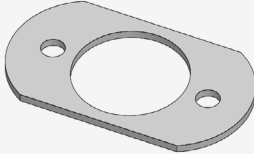
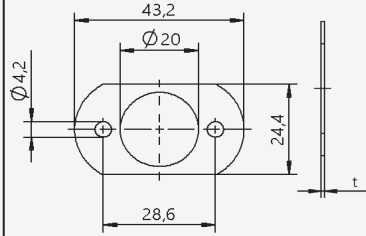
Style	Dimensions	Materials / Finish	°C	Part No.
Folding Wing Handle 180° 	 $S = 16,26 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	80	991S500-* -1AGV
Hex Reces Head 		Steel / zinc-plated, CrVI-free, clear passivation	120	991S30-*AGV
Folding Bail Handle 180° 	 $S = 15,03 + (0,76 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	120	991S2991-*AGV

* Length no. from Table, see page H-1.

Installation Dimensions	Accessories	Materials / Finish	Part No.
	Retaining Washer 	Stainless steel	991W04-1BP
	Slotted retaining Washer 		

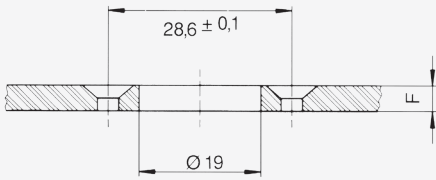
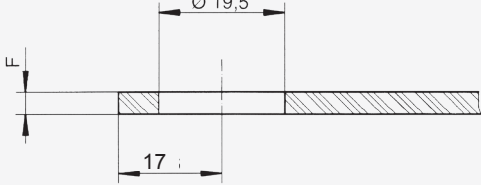
Sealed Stud Assemblies

Installation Dimensions	Accessories	Materials / Finish	Part No.
	Buffer plate 	Stainless steel	991W03-1BP
	Rubberring 		

Style	Dimensions	Materials / Finish	Mounting- Ø	°C	Part No.
Rivet- / Screw or Weld Mounting 		Rivet / Screw Steel / zinc-plated, CrVI-free, clear passivation	3,3	120	991R2-1AGV
		Steel / zinc-plated, CrVI-free, clear passivation	4,1	120	991R2-3AGV
		Stainless steel	3,3	200	991R2-1BP
		Stainless steel	4,1	200	991R2-3BP
		Welding Steel / zinc-plated	-	-	991R2-2AZ
		Steel / oil-coated	-	-	991R2-2AR
Clip-On 		Steel / zinc-plated, zinc flake coated Frame thickness F= 1,5mm - 3,5mm		150	991R6-1AK7
Distanzbase plate* 		POM black/ t=0,8	4,2	100	991W120-08K
		POM black/ t=1,0	4,2	100	991W120-10K
		POM black/ t=1,5	4,2	100	991W120-15K
		POM black/ t=2,0	4,2	100	991W120-20K

* If you have slightly different clamping thicknesses in an application, it is possible to compensate them with our distance plates, which are fixed under the retaining cam. This makes it possible to use only one stud length.

Receptacle Installation Instructions

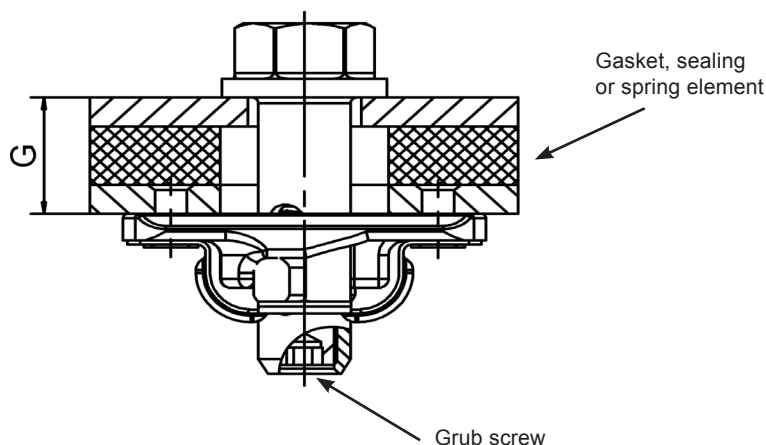
Installation Dimensions	
Rivet / Screw or Welded Mounting 	Clip-On 



Special features

Max. tensile strength (ultimate) 10.000 lbs / 44.482 N, rated working load 6.500 lbs / 28.913 N. The fastener is capable of absorbing high tensile loads and withstanding mechanical damage under severe operating conditions, such as shipbuilding or military applications. A unique adjustable cross pin allows for adjustable clamp lengths within a chosen grip length.

Determination of the length no. of the stud:



1. Determine clamping thickness „G“.

Attention: Increase the clamping thickness „G“ by the thickness of surface treatments and the compressed thickness of a gasket, sealing or spring element.

2. You will find the total clamping thickness „G“ you have determined in the left column of the following table.

3. Select the appropriate stud length in the right column.

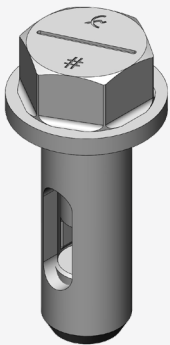
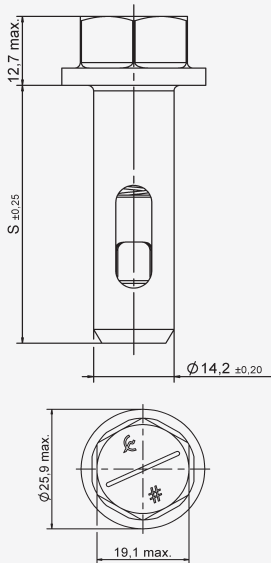
If not using a gasket, sealing or spring element, please contact us for further information.

Stud Length Table

Total Thickness „G“	Stud Length no.
6,35 - 12,67	1
12,70 - 19,02	2
19,05 - 25,37	3
25,40 - 31,72	4
31,75 - 38,07	5
38,10 - 44,42	6
44,45 - 50,77	7

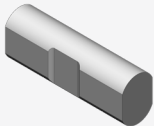
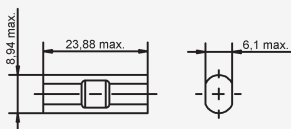
Other lengths on request..

Stud

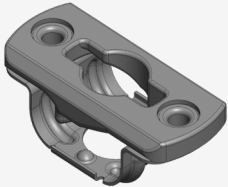
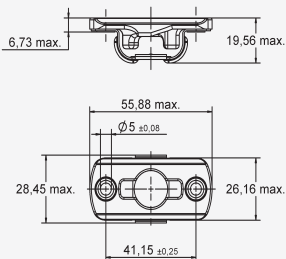
Style	Dimensions	Materials / Finish	°C	Part No.
Hex Head Stud 	 *S = 34,8 + (6,35 x pin length)	Steel / zinc-nickel, silver, CrVI-free passivated and sealed	215	V34S01-*-1ASNV

* Length no. from Table, see page I-1.

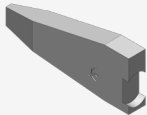
Cross pin

Style	Dimensions	Materials / Finish	°C	Part No.
Cross pin 		Steel / zinc-nickel, silver, CrVI-free passivated and sealed		V34S02-1-1ASNV

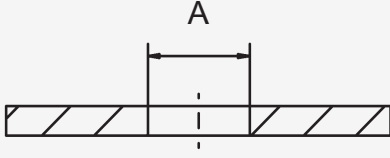
Receptacle

Style	Dimensions	Materials / Finish	°C	Part No.
Rivet / Screw Mounting 		Steel / zinc-nickel, silver, CrVI-free passivated and sealed		V34R01-2-1BSNV

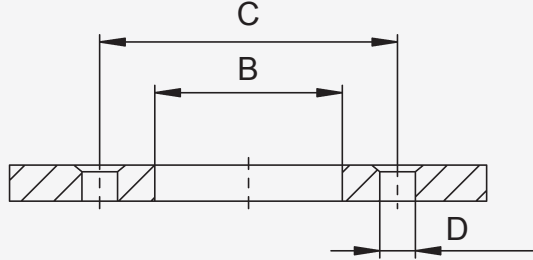
Cross pin assembly tool

Style	Materials / Finish	°C	Part No.
	stainless Steel		VT135-1-1B

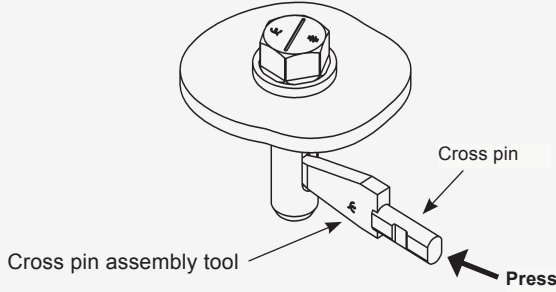
Panel preparation for stud

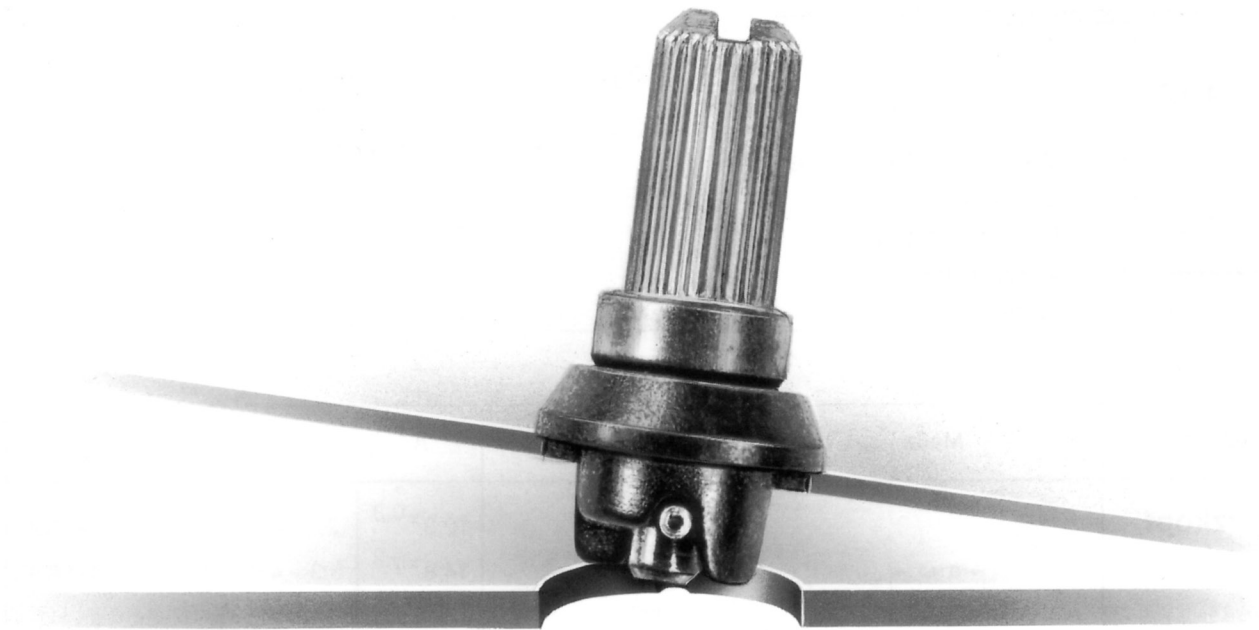
Installation Dimensions	
	A 17,48 mm ± 0,25
	0.688 inch ± 0,010

Panel preparation for receptacle

Installation Dimensions	
	B 25,91 mm ± 0,25
	1.020 inch ± 0,010
	C 41,15 mm ± 0,25
	1.620 inch ± 0,010
	D 5,0 mm ± 0,010
	0.197 inch ± 0,004

Stud installation instructions

Installation	Adjustment of the cross pin
 1. Insert the stud into the prepared hole. 2. Install the cross pin by using the assembly tool. 3. When the tool has been pushed completely through the stud, the cross pin will automatically lock into place. This makes the stud captive.	Adjust the cross pin by turning the grub screw (located on the underside of the bottom of the stud) with an allen wrench (type 5) to achieve the desired clamping load.



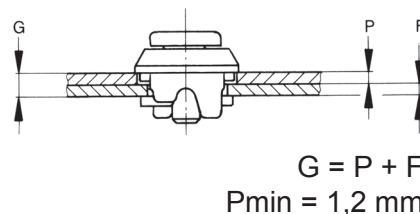
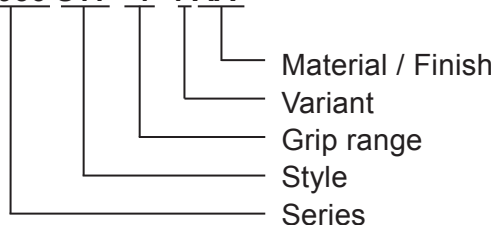
Features

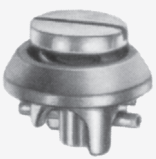
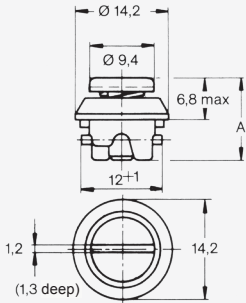
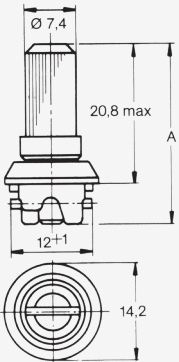
Max. tensile strength 300 N, working load 200 N.
Same hole shape for panel and frame.
Available in slotted recess or knurled head styles .
Fastener position indication by stud slot.
Stud assembly captive in the panel.
Vibration resistant.
Grip ranges from 2,0 mm to 4,6 mm.
Lock and unlock by a quarter turn.
Typical applications are in electro-mechanical and electronic equipment.
Quick installation without tools.

Part no. example

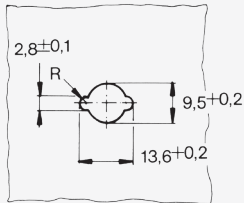
Knurled head for 3,3 mm to 4,6 mm grip range.

V936 S11 - 4 -1 AA

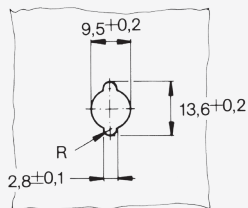


Style	Dimensions	Materials / Finish	A	Grip range G	°C	Part No.
Slotted Recess Head 		stud, spiral pin: Steel / zinc-plated, CrVI-free, clear chromate Compression spring: Stainless steel Casing: Zinc die casting / zinc-plated, CrVI-free, clear chromate	12,6 max	2,0 - 3,3	100	V936S05-3-1AA
			15,1 max	3,3 - 4,6	100	V936S05-4-1AA
Knurled Head 		stud, casing: Zinc die casting / zinc-plated, CrVI-free, clear chromate Compression spring: Stainless steel Spiral pin: Steel / zinc-plated, CrVI-free, clear chromate	26,6 max	2,0 - 3,3	100	V936S11-3-1AA
			29,2 max	3,3 - 4,6	100	V936S11-4-1AA

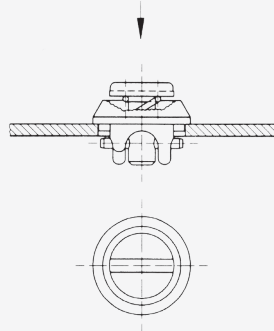
Hole shape in panel P



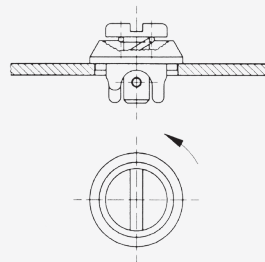
Hole shape in frame F



Installing the fastener

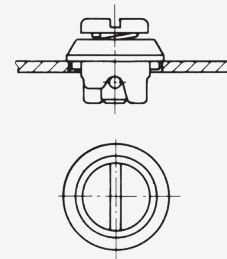


Fastener retained in panel
(captive)

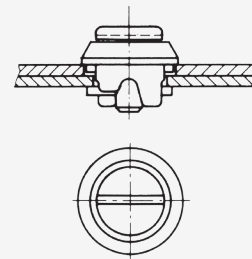


The slot indicates the position of
the fastener

unlocked



locked





Features

This fastener fastens panels in electrical switch cabinets (e.g. 19"-equipment) to modular bars.

Selection Instructions

The dimensions of the front panel and the modular bar as well as the colour determine the final design of the fasteners.

To enable us to offer you the custom-tailored fastener, we need your drawings with the dimensions and tolerances of:

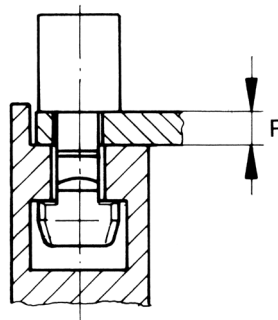
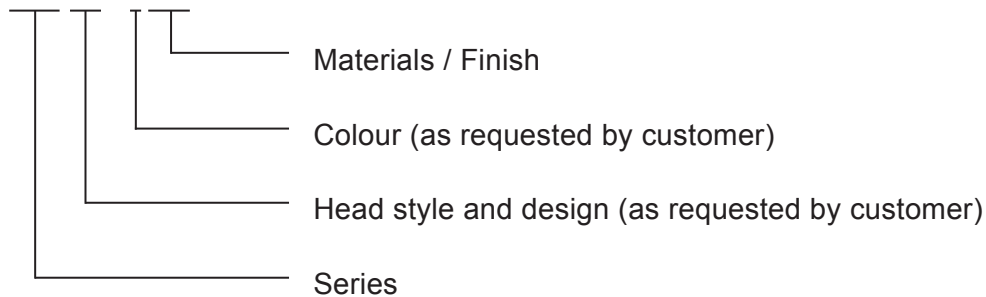
1. the front panel
2. the shape of the modular bar
3. the colour, if necessary

In addition, please send us samples of your modular bar and front panel.

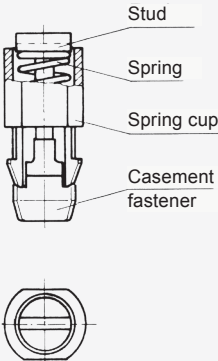
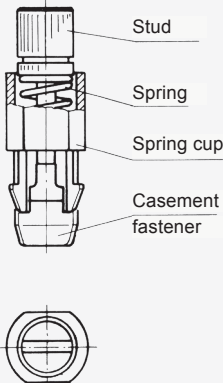
Part no. example

One-piece fastener

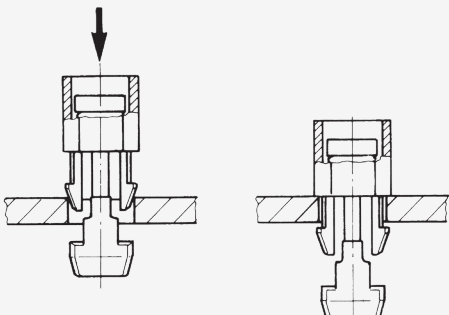
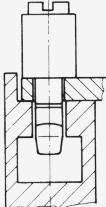
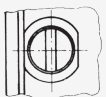
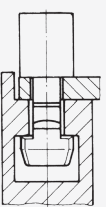
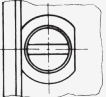
713 S* - * AE



Due to the various front panel thickness, hole shapes and modular bar shapes, it is not possible to offer one standard design. We will individually issue the final part number only after determining the front panel and modular bar dimensions and the colour..

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 		Spring cup: Plastic (POM) stud: Steel / nickel-plated spring: Steel / zinc-plated, CrVI-free, clear chromate Casement fastener: Zinc die casting / zinc-plated, CrVI-free, clear chromate	-25 up to +90	713S*- *AE
Knurled Head 		Spring cup: Plastic (POM) stud: Steel / nickel-plated spring: Steel / zinc-plated, CrVI-free, clear chromate Casement fastener: Zinc die casting / zinc-plated, CrVI-free, clear chromate	-25 up to +90	713S*- *AE

* Design and colour as requested by the customer.

Dimensions	Fastener position
Installing the fastener  1. Insert fastener with spring cup into hole. 2. Push stud until snap-in hooks lock in..	unlocked   locked   To lock push stud and turn 90°C. The slot indicates the position of the fastener.

Push Button Fasteners



Features

Max. tensile strength 1.330 N, Working Load 930 N

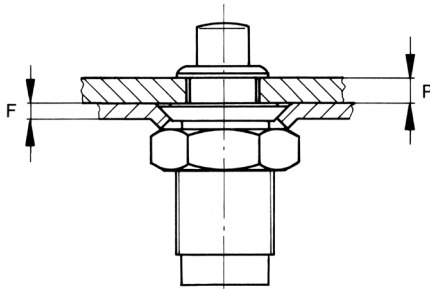
Quick opening and closing by a push of the finger.

Easy installation with single hole mounting.

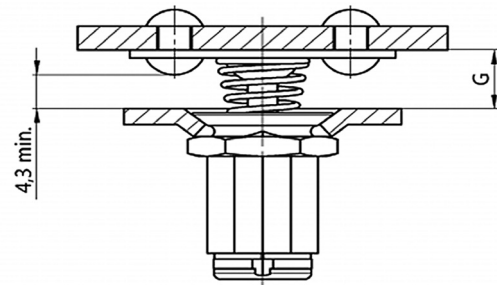
Selection Instructions

1. Select stud assembly, page L-2 or L-3 and receptacle pages L-4.
2. Select retaining washer, page L-2 and retaining hexnut, page L-3, if necessary.
3. Select stud length number from panel thickness P or panel distance G using the table below.

Push Button



Push Panel



Stud Length Table

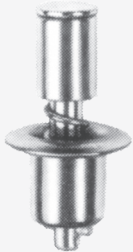
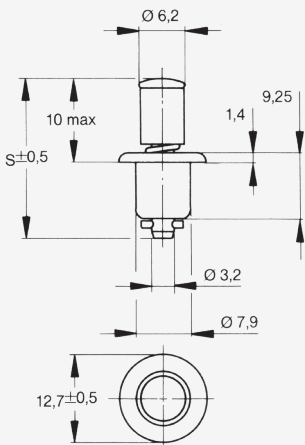
Panel thickness P	Stud Length no.
0,7 - 2,3	1
2,3 - 3,8	3
3,8 - 5,3	5
5,3 - 6,9	7
6,9 - 8,4	9
8,4 - 9,9	11
9,9 - 11,4	13
11,4 - 13,0	15

Other lengths on request.

Stud Length Table

Panel Distance „G“	Stud Length no.
6,1 - 6,9	8
6,9 - 7,6	9
7,6 - 8,4	10
8,4 - 9,1	11
9,1 - 9,9	12
9,9 - 10,7	13
10,7 - 11,4	14
11,4 - 12,2	15

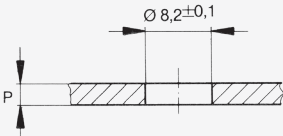
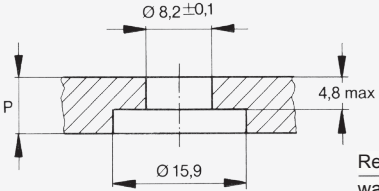
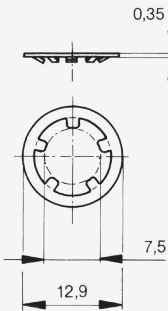
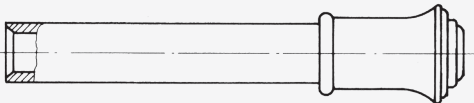
Other lengths on request.

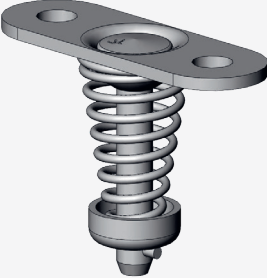
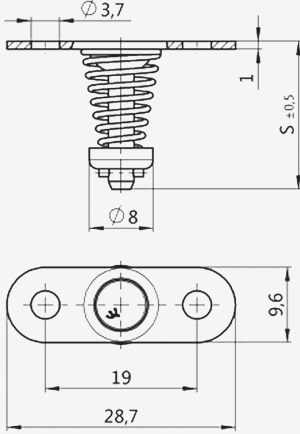
Style	Dimensions	Materials / Finish	°C	Part No.
Push Button 	 S=22,4 + (0,76 x length no.)	Steel / nickel-plated	120	15S1- *-1AD
		Steel / zinc-plated, CrVI-free, clear passivation	120	15S1- *-1AJ

* Length no. from table „Push Button“, see page L-1.

Other lengths and surfaces can be ordered upon request.

Stud Installation Instructions

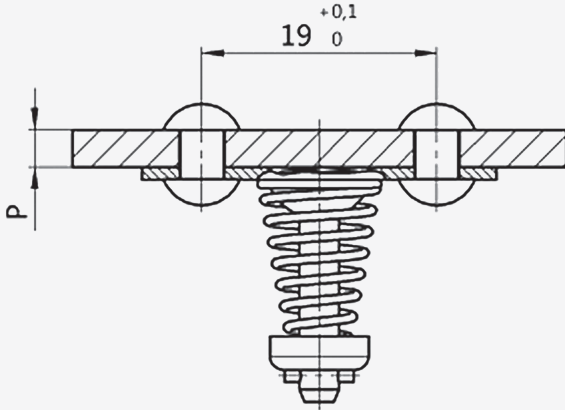
Installation Dimensions	Accessories	Materials / Finish	Part No.
Panel thickness up to 4,8  Panel thickness from 4,8 + up  Retaining washer	Retaining Washer 	Stainless steel	15S11-1CJ
	Installation tool for retaining washer 15S11-1CJ		T107-1

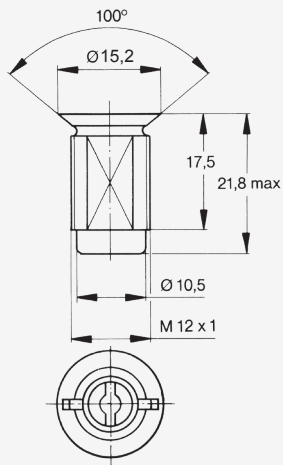
Style	Dimensions	Materials / Finish	°C	Part No.
Push Panel 	 $S=13,7 + (0,76 \times \text{length no.})$	Steel / zinc-plated CrVI-free, clear passivation	230	V15S20- *-1AGV

* Length no. from Table „Push Panel“, see page L-1.

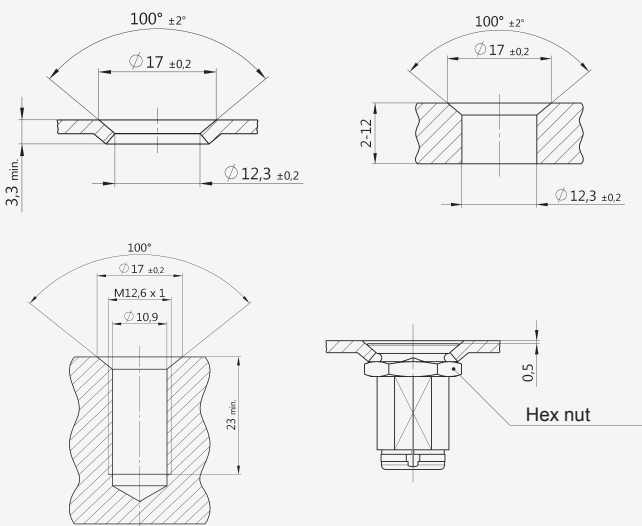
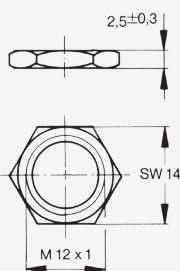
Other lengths and surfaces can be ordered upon request.

Stud Installation Instructions

Installation Dimensions
Push Panel Rivet / Screw Mounting 

Style	Dimensions	Materials / Finish	°C	Part No.
		Zinc die casting / zinc-plated CrVI-free, clear passivation	120	V15R13-1-1AB

Receptacle Installation Instructions

Installation Dimensions	Accessories	Materials / Finish	Part No.
	Hex nut  Recommended torque for the hex nut: 2,3 Nm to 3,0 Nm.	Steel / zinc-plated, CrVI-free, clear passivation	V15R14-1-1AB

Push-Turn Fasteners



Features

Max. tensile strength 700 N, working load 600 N.

Easy and economic clip-in installation for stud and receptacle.

Also suitable for automatic installation.

1/4 turn to open - close by a push of the finger.

Due to their small size they are particularly suited for use in electrical engineering and electronics.

Selection Instructions

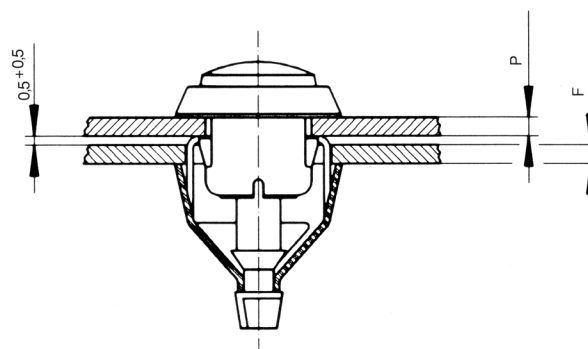
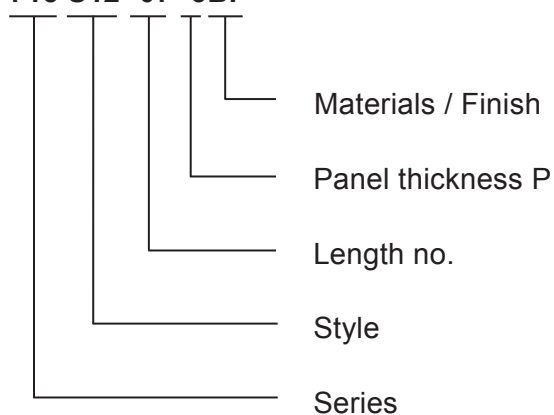
1. Select stud assembly according to panel thickness P, page M-2 and spring clip according to frame thickness F, page M-3.

2. Select stud length number from panel thickness G using the table below, insert into stud part number * (e.g. 715S12-*-1BP).

Part no. example

Stud, slotted recess head

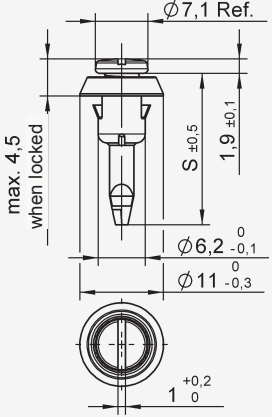
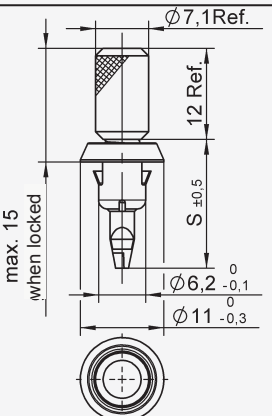
715 S12 -07 -3BP



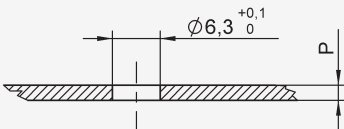
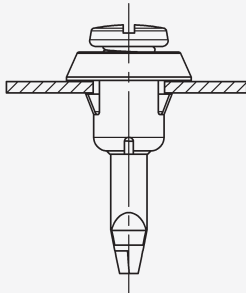
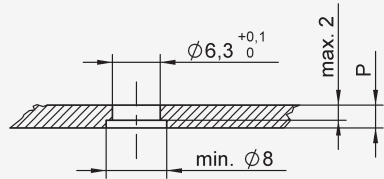
Stud Length Table

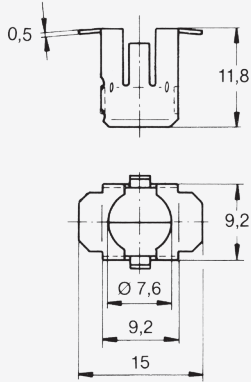
Panel thickness P	Slotted Recess Head Stud Length no.	Knurled Head Stud Length no.	Panel thickness P	Slotted recess Head Stud Length no.	Knurled Head Stud Length no.
0,50 - 1,25	5	5	6,50 - 7,25	13	-
1,25 - 2,00	6	6	7,25 - 8,00	14	-
2,00 - 2,75	7	7	8,00 - 8,75	15	-
2,75 - 3,50	8	8	8,75 - 9,50	16	-
3,50 - 4,25	9	9	9,50 - 10,25	17	-
4,25 - 5,00	10	10	10,25 - 11,00	18	-
5,00 - 5,75	11	-	11,00 - 11,75	19	-
5,75 - 6,50	12	-	11,75 - 12,50	20	-

Other lengths on request.

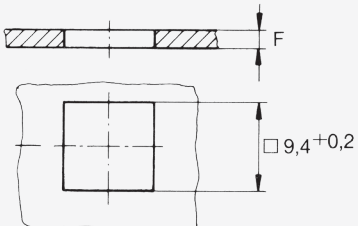
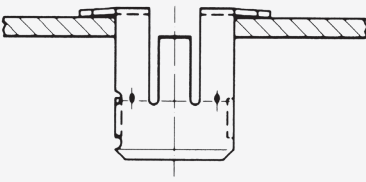
Style	Dimensions	Materials / Finish	Panel Thickness P	°C	Part No.
Slotted Recess Head 	 S = 13,25 + (0,75 x length no.)	Stainless steel spring cup: Plastic (POM) / black	0,5 - 1,0 1,0 - 1,5 1,5 - 2,0	-25 up to +90	715S12- *-1BP 715S12- *-2BP 715S12- *-3BP
Knurled Head 	 S = 13,25 + (0,75 x length no.)	Stainless steel spring cup: Plastic (POM) / black	0,5 - 1,0 1,0 - 1,5 1,5 - 2,0	-25 up to +90	715S13- *-1BP 715S13- *-2BP 715S13- *-3BP

Stud Installation Instructions

Installation Dimensions		
Panel up to 2 mm		
Panel over 2 mm		

Style	Dimensions	Materials / Finish	Frame Thickness F	°C	Part No.
Spring Clip 		Stainless steel	0,5 - 1,0	-25	715R02-1BP
			1,0 - 1,5	up to +90	715R02-2BP
			1,5 - 2,0	(See stud-assemblyfen)	715R02-3BP
			2,0 - 2,5		715R02-4BP

Installation Instructions

Installation Dimensions
 

Features

Max. tensile strength 1.400 N, working load 1.200 N.
Easy and economic clip-in installation for stud and receptacle.
Also suitable for automatic installation.
1/4 turn to open – close with a push of the finger.

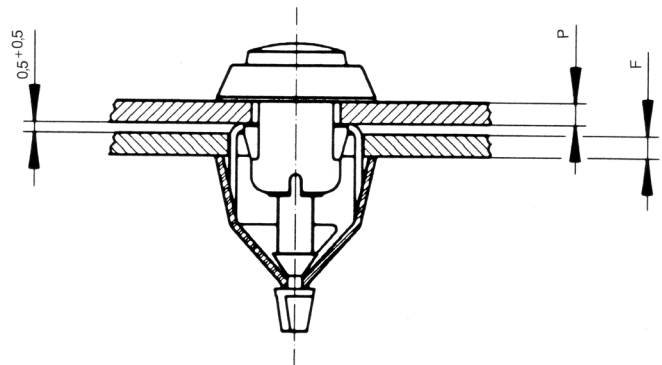
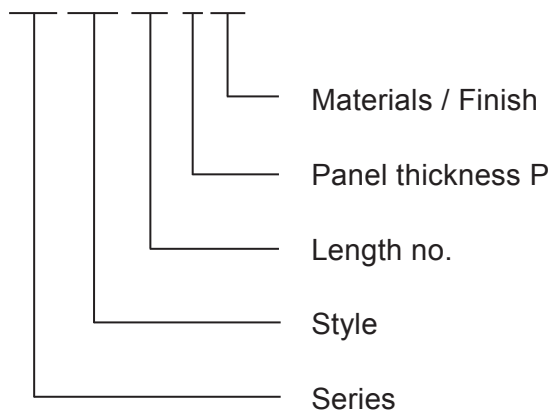
Selection Instructions

1. Select stud assembly according to panel thickness P, page N-2 and spring clip according to frame thickness F, page N-3.
2. Select stud length number from panel thickness P using table below, insert into stud part number* (e.g. 716S12-* -1BP).

Part no. example

Stud, slotted ecess Head

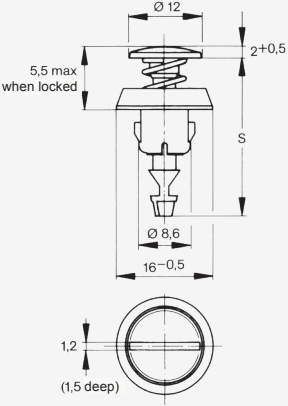
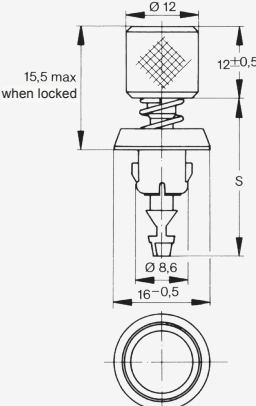
716 S12 -03 -2BP



Stud Length Table

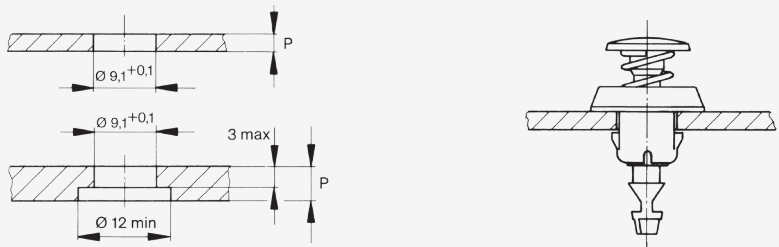
Panel thickness P	Stud Length no.
1,0 - 2,0	02
2,0 - 3,0	03
3,0 - 4,0	04
4,0 - 5,0	05
5,0 - 6,0	06
6,0 - 7,0	07
7,0 - 8,0	08
8,0 - 9,0	09
9,0 - 10,0	10

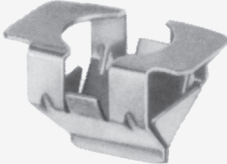
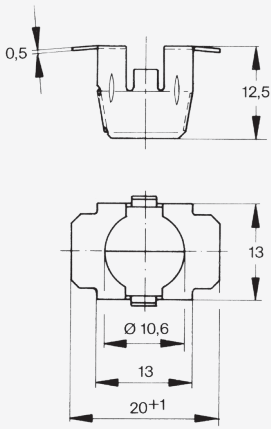
Other lengths on request.

Style	Dimensions	Materials / Finish	Panel Thickness P	°C	Part No.
Slotted Recess Head 	 S = 18,5 + length no.	Stainless steel Spring cup: Plastic (POM) / black	0,5 - 1,0	-25 up to +90	716S12- *-1BP
			1,0 - 1,5		716S12- *-2BP
			1,5 - 2,0		716S12- *-3BP
			2,0 - 2,5		716S12- *-4BP
			2,5 - 3,0		716S12- *-5BP
Knurled Head 	 S = 18,5 + length no.	Stainless steel Spring cup: Plastic (POM) / black	0,5 - 1,0	-25 up to +90	716S13- *-1BP
			1,0 - 1,5		716S13- *-2BP
			1,5 - 2,0		716S13- *-3BP
			2,0 - 2,5		716S13- *-4BP
			2,5 - 3,0		716S13- *-5BP

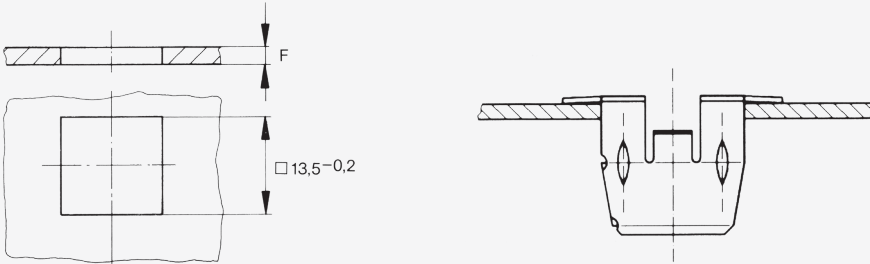
* Length no. from Table, see page N-1.

Stud Installation Instructions

Installation Dimensions	
Panel up to 3 mm	
Panel plate over 3 mm	

Style	Dimensions	Materials / Finish	Frame Thickness F	°C	Part No.
Spring Clip 		Stainless steel	1,0 - 1,5	-25 up to +90 (See stud- assem- bly)	720R01-1B
			1,5 - 2,0		720R01-2B
			2,0 - 2,5		720R01-3B
			2,5 - 3,0		720R01-4B

Installation Instructions

Installation Dimensions


Features

Max. tensile strength 3.000 N, working load 2.500 N.
Robust design - high strength.
Stud assembly with protective, compensating and retaining washers.
Rivet or screw mounting spring receptacle.
1/4 turn to open - close by a push of the finger.

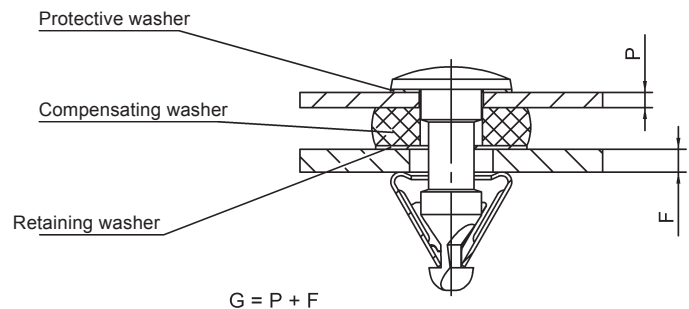
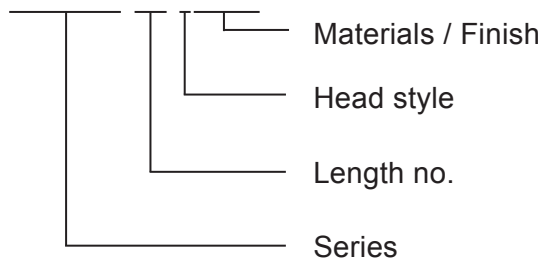
Selection Instructions

1. Select stud assembly and spring clip, page O-2 and O-3.
2. Select compensating and retaining washers, page O-2.
3. Select stud length number from grip range G using the table below, insert into stud part number
* (e.g. 717S01-* -1AGV)

Part no. example

Spring clip, rivet / screw mounting

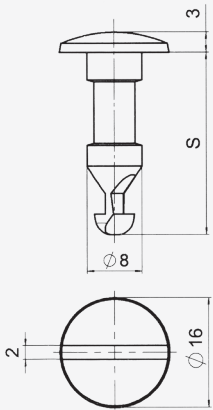
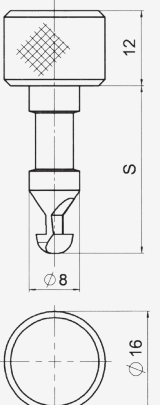
717 S01 -2 -1AGV



Stud Length Table

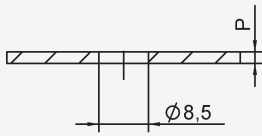
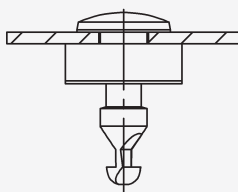
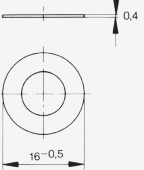
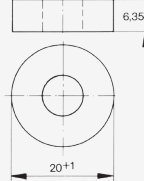
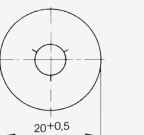
Total Thickness G	Stud Length no.
1,0 - 3,0	1
3,0 - 5,0	2
5,0 - 7,0	3
7,0 - 9,0	4
9,0 - 11,0	5
11,0 - 13,0	6

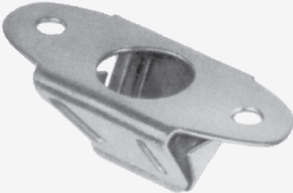
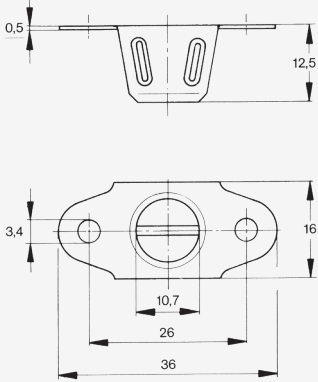
Other lengths on request.

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 $S = 20,5 + (2 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	-40 up to +100	717S01- *-1AGV
Knurled Head 	 $S = 20,5 + (2 \times \text{length no.})$	Steel / zinc-plated, CrVI-free, clear passivation	-40 up to +100	717S01- *-2AGV

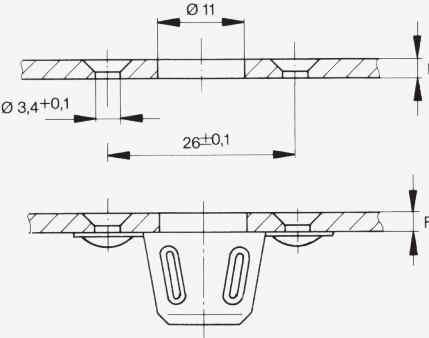
* Length no. from Table, see page O-1.

Stud Installation Instructions

Style	Dimensions	Materials / Finish	°C	Part No.
 	prodective washer 	Plastic (PA6) / natural colour	-40 up to +100	717W02-1K
	compensating washer 	Plastic (PU-foam) / anthracite	-40 up to +100	717W03-1K
	Retaining Washer 	Plastic (PA6) / natural colour	-40 up to +100	717W01-1K

Style	Dimensions	Materials / Finish	°C	Part No.
Rivet / Screw Mounting 		Steel / zinc flake coated	-40 up to 100	717R01-1AK7

Installation Instructions

Installation Dimensions


Features

Max. tensile strength 1.200 N, working load 800 N.
1/4 turn to open, close with a push of the finger
Wide grip range
Tool or hand operated
Fast installation of snap-in spring receptacle.
No tools required for the installation of the stud and washer.
Tool operated stud has combination recess.

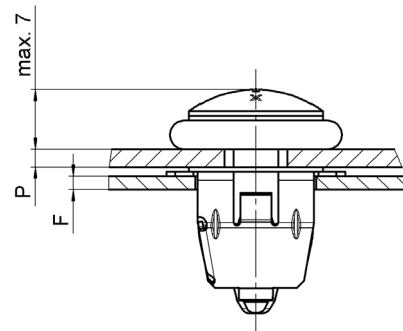
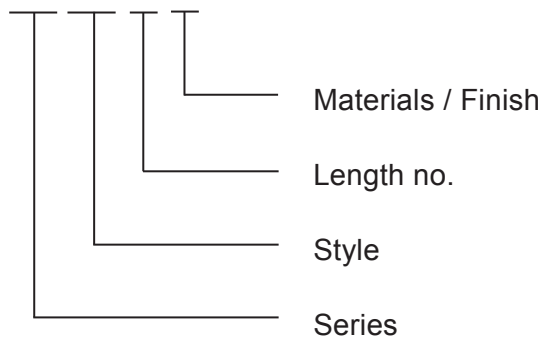
Selection Instructions

1. Select stud assembly according to panel thickness P, page O-2 and spring clip according to frame thickness F, page O-4.
2. Select Compensating washer and Retaining washer, page O-3.
3. Select stud length number from panel thickness P using the formula and table below (e.g. 720S01-*B).

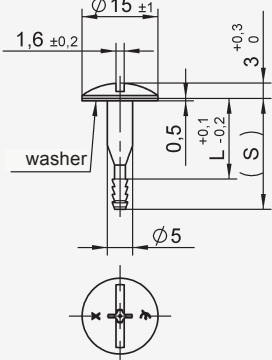
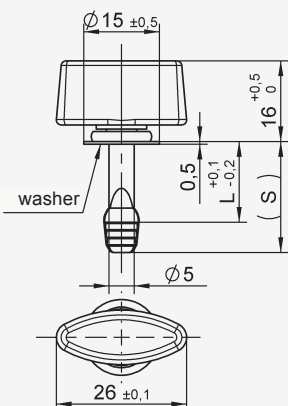
Part no. example

Stud Assembly, combi-slot

720 S01 -1 B

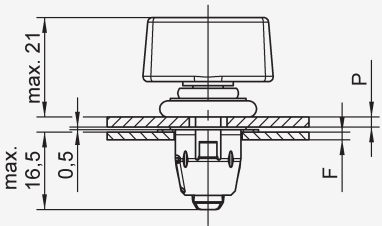
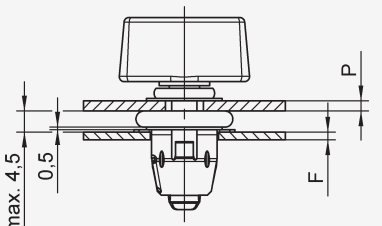
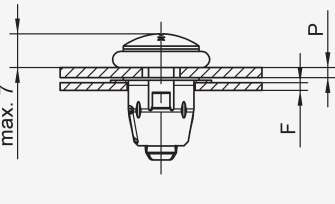
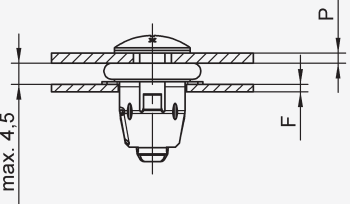


Panel thickness P	Slot-Cross Recess Length No.	Wing Head Stud Length No	Dimension L +0,1/-0,2	Dimension (S)
1,00 - 4,00	1	1	16	21
4,00 - 7,00	2	2	19	24
7,00 - 10,00	3	3	22	27

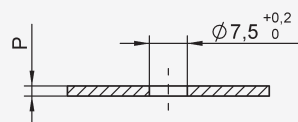
Style	Dimensions	Materials / Finish	°C	Part No.
Slot-Cross Recess Head 	 L + (S) see table page P-1	Stainless steel Washer: PA6 natural	-20 up to +70	720S01-*B
Fixed Wing Handle Plastic 	 L + (S) see table page P-1	Stainless steel Knob: PA6 black Washer: PA6 natural	-20 up to +70	720S02-*B

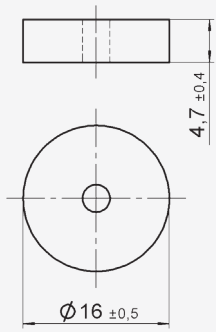
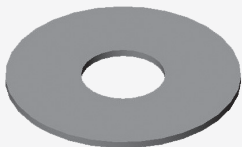
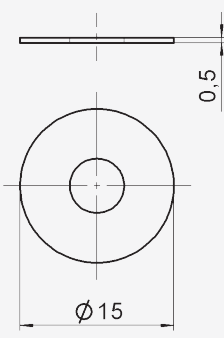
* Length no. from Table, see page P-1.

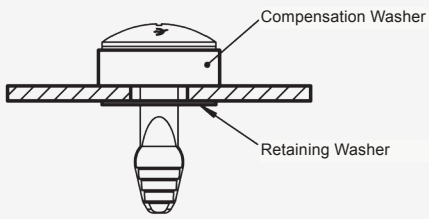
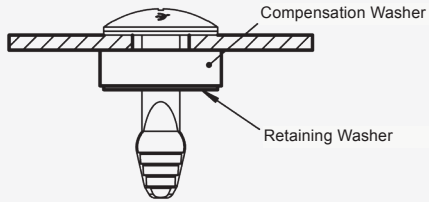
Stud Installation Instructions

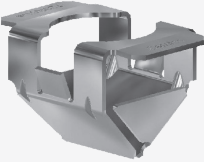
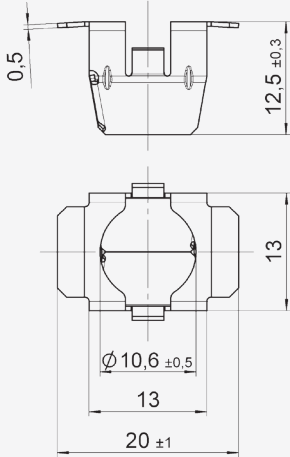
Installation Dimensions	
	
	

Hole preparation:

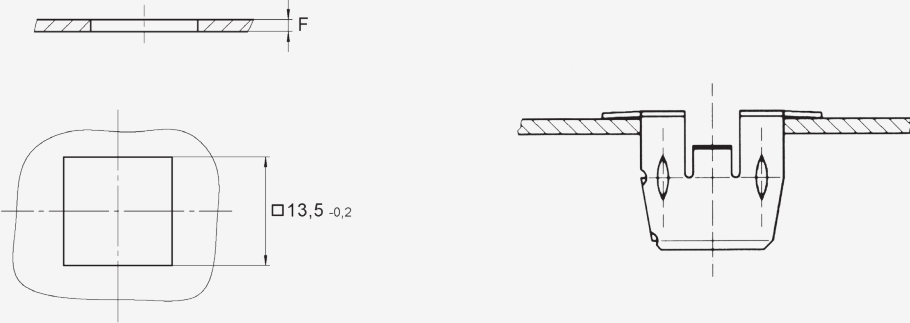


Style	Dimensions	Materials / Finish	°C	Part No.
Compensating Washer 		PU - Elastomer yellow	-20 up to +70	720W01-2K
Retaining Washer 		Polyamid natural	-20 up to +70	50E15-1K

Mounting Instructions	
A  Compensation Washer Retaining Washer	B  Compensation Washer Retaining Washer

Style	Dimensions	Materials / Finish	Frame Thickness F	°C	Part No.
Spring Clip 		Stainless steel	1,0 - 1,5	-40 up to +100	720R01-1B
			1,5 - 2,0		720R01-2B
			2,0 - 2,5		720R01-3B
			2,5 - 3,0		720R01-4B

Receptacle-Installation Instructions

Installation Dimensions	
	

Part No.	Pages	Part No.	Pages	Part No.	Pages
15/32-32NS-2B	C3,F12	50E70-*AGV	D2	716S12- *-1BP	N2
15S1- *-1AD	L2	50E71-*AGV	E2	716S12- *-2BP	N2
15S1- *-1AJ	L2	50E8-*AGV	E2	716S12- *-3BP	N2
15S11-1CJ	L2	50E8-*S	E2	716S12- *-4BP	N2
212-12S	F9	50E8-*W0AGV	E3	716S12- *-5BP	N2
214-16S	G10	50E8-*WAGV	E3	716S13- *-1BP	N2
244-16S	G11	50E8-*WS	E3	716S13- *-2BP	N2
244-16SC	G11	50E8-W0S	E3	716S13- *-3BP	N2
2600-*S	F3	50E80-*AGV	D4	716S13- *-4BP	N2
2600-*SW	F3	50E80-*CP	D4	716S13- *-5BP	N2
2600-SW	C2,F7,F8	50E81-*AGV	E4	717R01-1AK7	O3
26R1-1	F10	50E81-*CP	E4	717S01- *-1AGV	O2
26R16-1FGV	F9	50E82-*AGV	D4	717S01- *-2AGV	O2
26R18-1-1AA	F9	50E82-*CP	D4	717W01-1K	O2
26S34-*	F5	50E83-*AGV	E4	717W02-1K	O2
26S38-*	F3	50E83-*CP	E4	717W03-1K	O2
26S39-*	F3	50E90-*AGV	D2	720R01-1B	N3,P4
26S42-*	F3	50E91-*AGV	E2	720R01-2B	N3,P4
26S51-*	F3	50S12-0-1AA	D5	720R01-3B	N3,P4
2700-*S	F6	50S12-1-1AA	D5	720R01-4B	N3,P4
312-12S	F10	50S12-2-1AA	D5	720S01-*B	P2
312-12WS	F10	50S12-3-1AA	D5	720S02-*B	P2
4002-GS	G8	50S12-4-1AA	D5	720W01-2K	P3
4002-HS	G8	50T01-1DR	D6,E5	991R2-1AGV	H5
4002-NS	G8	50W17-1BP	D6,E5	991R2-1BP	H5
4002-OS	G8	50W204-01K	D5,E5,G7	991R2-2AR	H5
4002-SW-SS	D5,E5,G7	5R2-3	B4	991R2-3AZ	H5
4002T02-1BP	G7	5S3-2	B3	991R2-3AGV	H5
4P3-1	F8,G7	5S15-*	B2	991R2-3BP	H5
50E15-1K	O3	5S27-*	B2	991R6-1AK7	H5
50E18-*AGV	D4	5S72-5-1AA	B3	991S01- *-1AGV	H2
50E19-*AGV	E4	5S72-9-1AA	B3	991S01- *-1BP	H2
50E20-1AK7	D6	713S*- *AE	J2	991S02- *-1AGV	H2
50E20-2AK7	D6	715R02-1BP	M3	991S02-* -1BP	H2
50E21-*AGV	D2	715R02-2BP	M3	991S03- *-1AGV	H2
50E21-*S	D2	715R02-3BP	M3	991S03-* -1BP	H2
50E21-*W0AGV	D3	715R02-4BP	M3	991S04-* -1AGV	H2
50E21-*WAGV	D3	715S12- *-1BP	M2	991S500-* -1AGV	H3
50E21-*WS	D3	715S12- *-2BP	M2	991S17-1K	H4
50E2-3BP	D5,E5	715S12- *-3BP	M2	991S2991-*AGV	H3
50E60-*AGV	D3	715S13- *-1BP	M2	991S30-*AGV	H3
50E61-*AGV	E3	715S13- *-2BP	M2	991W02-1BP	H4
50E7-*AGV	E4	715S13-* -3BP	M2	991W03-1BP	H4

Part No.	Pages
991W04-1BP	H4
991W120-08K	H5
991W120-10K	H5
991W120-15K	H5
991W120-20K	H5
99E10-01	C3,F11
99N10-01A1	C3,F12
99R10-01A1	C3,F11
991R2-2AR	H5
99W10-01A1	C2
AN6227-B3	F7
AN6227-B6	F7
D214-16FGV	G10
D214-16NFGV	G10
D244-16-FGV	G11
D244-16C-FGV	G11
D4002-*AGV	G4
D4002-*BP	G4
D4002-*WAGV	G4
D4002-*WBP	G4
D4002-N-AGV	G8
D4002-P-AGV	G8
D4002-P-AGV	G8
D4002-P-BP	G8
D4002-R-AGV	G8
D4002-R-BP	G8
D4002-S-AGV	G8
D4002-S-BP	G8
D4002-T-AGV	G8
D4002-T-BP	G8
D4002-G-AGV	G8
D4002-H-AGV	G8
D4002I-*AGV	G6
D40E22-*AGV	G5
D40E28-*AGV	G5
D40E28-*BP	G5
D40G11-3K	G6
D40R12-1FGV	G10
D40S39-1K	G6
D40S47-*AGV	G5
D40S5-*AGV	G4
D40S5I-*AGV	G6
D40S5-*BP	G4

Part No.	Pages
D40W02-1DR	G12
D40W02-2DR	G12
R4G-3	G9
T107-1	L2
T26	G9
T98-1	C2,F8
V15R13-1-1AB	L4
V15R14-1-1AB	L4
V15S20-* -1AGV	L3
V212-12-1FGV	F9
V212-12-2FGV	F9
V212-12N-1FGV	F9
V244-16T1	G12
V244-16T1C	G12
V244-16TS1	G12
V244-16TS1C	G12
V2600-LW-7	C2,F7,F8
V26R6-1AGV	F9
V26S01-*AGV	F3
V26S02-*AGV	F3
V26S04-*AGV	F3
V26S06-* -1AGV	F4
V26S07-* -1AGV	F4
V26S08-* -1AGV	F4
V26S22-*AGV	F5
V27S01-*AGV	F6
V27S02-*AGV	F6
V27W01-1AN	F8
V312-12AGV	F10
V34S01-* -1ASNV	I1
V34S02-1-ASNV	I2
V34R01-2-1BSNV	I3
V40G26-1BP	G9
V40G26-1N	G9
V50R1-1-1AGV	E6, G11
V50R1-1-1BP	E6, G11
V50R1-1-2AR	E6, G11
V50R1-1-2AZ	E6, G11
V50R4-2-1AK7	D6
V5R2-1AK7	B4
V5S21-*AGV	B2
V5W3-1AG	B3
V5S5-*AGV	B2

Part No.	Pages
V936S05-3-1AA	J1
V936S05-4-1AA	J1
V936S11-3-1AA	J1
V936S11-4-1AA	J1
V99S10-*AG	C2
VT135-1-1B	I2