

Camloc Quick-Operating Fasteners



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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.

Each of our customers will feel the full benefit of our 70 years of fastening experience.

Customer proximity, environmental awareness and quality are the main criteria of our services and products.



ISO/TS 16949: 2002



DIN EN ISO 14001 : 2005

Please find additional information about our environmental program under: www.alcoa.com.

Your Alcoa 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 Fastener

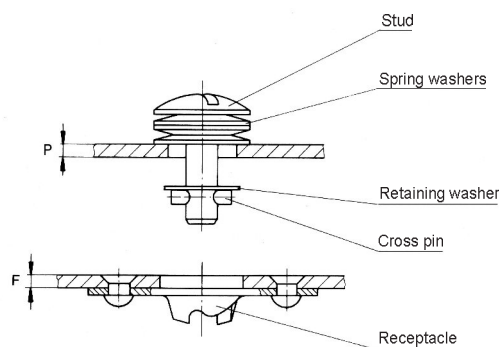
- Safe mechanical quick release fastener systems
- Locking or unlocking by quarter turn
- Long life - high number of operating cycles
- Hand or tool-operated
- Service-friendly, time-saving and cost cutting
- Camloc fasteners are standardised worldwide
- Fastener series for any industrial applications
- Captive-type
- Tolerance compensating
- Vibration-resistant

Components

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

Depending upon the strength, fastener size and mounting conditions, the spring component is a part of the stud assembly or the receptacle.

For some fastener series, stud assemblies with clip-in grommets are available which allow easy mounting without retaining washers. This ensures, at the same time, retention of the fastener.



Design Principle

Quarter-turn fasteners connect components under an elastic preload (frictional connection).

Spring components to produce the preload may be part of the stud or receptacle.

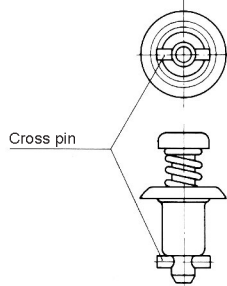
Forces: The fasteners transmit the tensile loads specified in the catalogue after overcoming the preload.

Lateral forces are transmitted to the components by friction resulting from the preload of the fastener. Such forces vary with the conditions of the components.

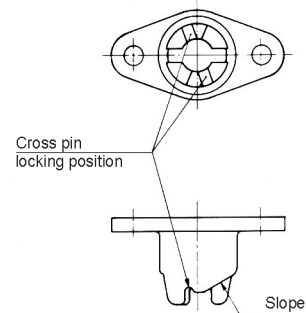
How it Operates

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.

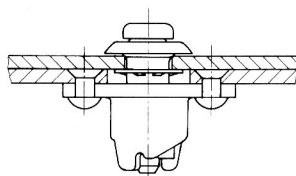
Stud Assembly



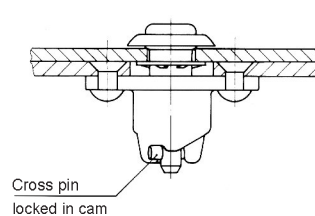
Receptacle



Unlocked

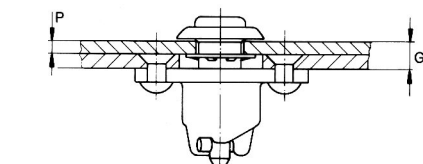


Locked



For general installation instructions please refer to the next page.

Selecting the Fastener



$$G = P + F$$

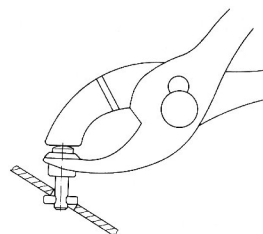
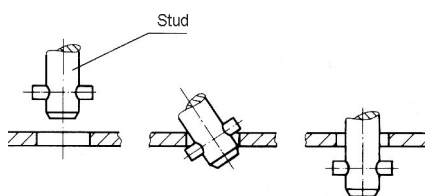
P = panel thickness (stud assembly)

F = frame thickness (receptacle)

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

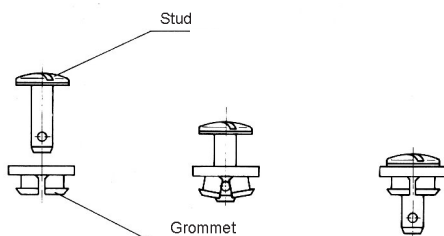
Installation

Stud

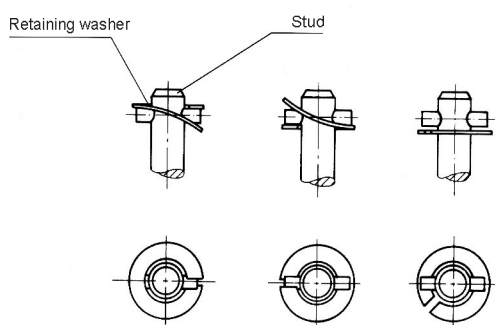


For short, spring-loaded stud assemblies, the use of 4P3-1 pliers is recommended.

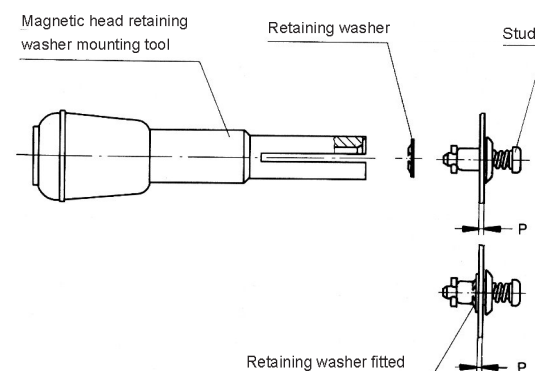
With Grommet



With retaining washer (slotted)



With retaining washer



Particular Features

Max. tensile strength 670 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, insert into stud part number * (e.g. V5S5-*AGV).

Determining the stud length number:

With retaining washer
 $G = P + F$



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


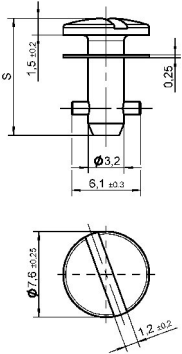

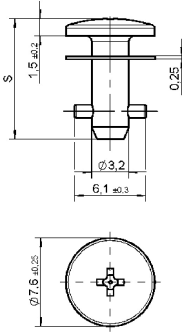


Stud Length Table

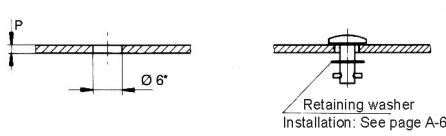
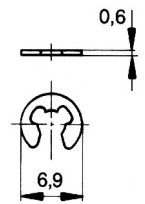
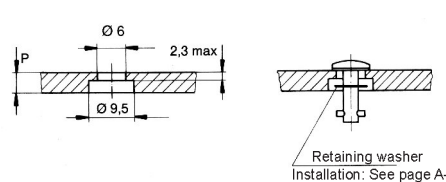
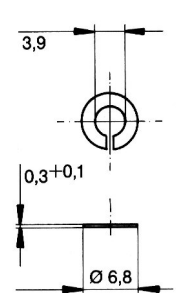

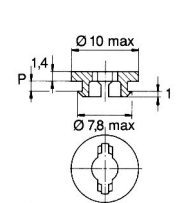
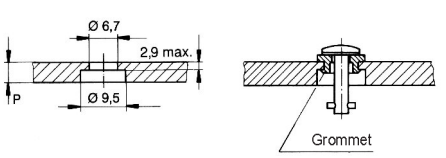
Total Thickness G	Stud Length No. When Using Receptacles
0,50 - 0,90	1
0,90 - 1,30	2
1,30 - 1,65	3
1,65 - 2,05	4
2,05 - 2,40	5
2,40 - 2,80	6
2,80 - 3,20	7
3,20 - 3,55	8
3,55 - 3,95	9
3,95 - 4,30	10
4,30 - 4,70	11
4,70 - 5,10	12
5,10 - 5,45	13
5,45 - 5,85	14
5,85 - 6,20	15
6,20 - 6,60	16
6,60 - 7,00	17
7,00 - 7,35	18
7,35 - 7,75	19
7,75 - 8,15	20
8,15 - 8,50	21


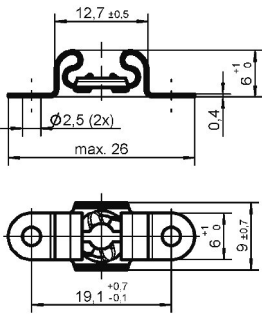
Other lengths on request.

■ Preferred dash-lengths

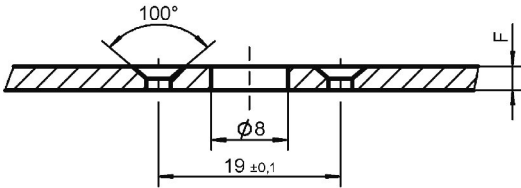
Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 <p>$S = 6,70 + (0,38 \times \text{length no.})$</p>	<p>Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)</p> <p>Steel / nickel-plated with plastic washer (PA6)</p>	<p>120</p> <p>120</p>	<p>V5S5- *AGV</p> <p>5S27-*</p>
Cross Recess Head 	 <p>$S = 6,70 + (0,38 \times \text{length no.})$</p>	<p>Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)</p> <p>Stainless steel with stainless steel washer (tensile strength 470 N max.)</p>	<p>120</p> <p>230</p>	<p>V5S21- *AGV</p> <p>5S15-*</p>

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

Installation Dimensions	Accessories	Material / Finish	Panel Thickness P	Part No.						
<p>Retainig Washer Panel Thickness P up to 2,3</p>  <p>Retaining washer Installation: See page A-6</p>	<p>Retaining washer</p> 	Steel/zinc-plated, CrVI-free, transparent passivated		V5W3-1AG						
<p>Panel thickness P over 2,3</p>  <p>Retaining washer Installation: See page A-6</p>	<p>Retaining washer</p> 	Stainless steel		5S3-2						
<p>* For P up 1,4 : Ø 5,6 for installation without retaining washer</p>										
<p>Snap-In Grommet Panel thickness P up to 2,9</p>  <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>	P max	G min	1,4	2,0	2,9	3,5	<p>Grommet</p> 	Plastic (PA6) black	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									
<p>Panel thickness P over 2,9</p> 										

Style	Dimensions	Materials / Finish	°C	Part-No.
Type 1 Rivet / Screw Mounting 		Steel / zinc flake coated	230	V5R2-1AK7
		Stainless steel	230	5R2-3

Receptacle Installation Instructions

Dimensions
<p>Rivet / Screw Mounting</p> 

Particular Features

Max. tensile strength 700 N.

Increased grip range.

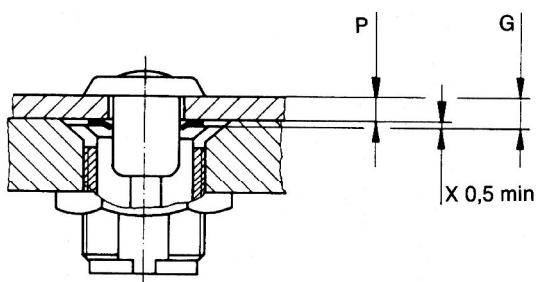
Receptacles with external thread for screwing or retaining nut (see page C-3).

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, insert into stud part number * (e.g. 99S10-*A1).


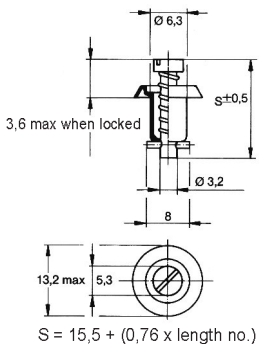
Determining the stud length number:



Total Thickness G	Stud Length No.
0,5 - 1,5	1
1,5 - 3,0	3
3,0 - 4,5	5
4,5 - 6,0	7
6,0 - 7,5	9
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

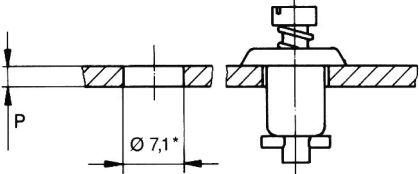
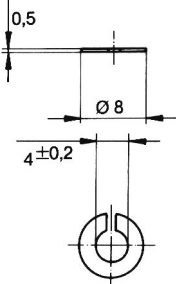
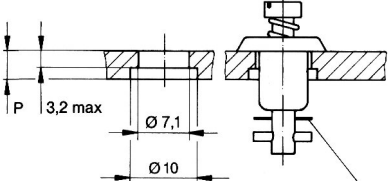
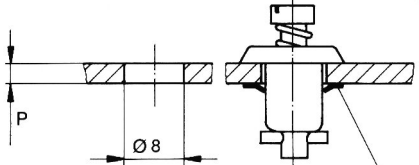
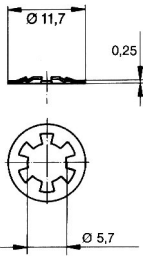
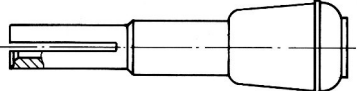
Other lengths on request.


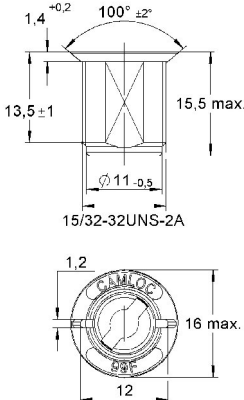

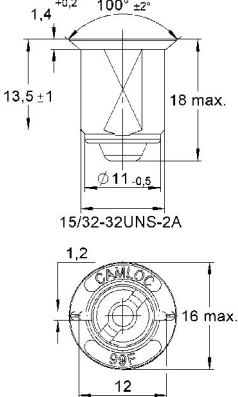
■ Preferred dash-lengths

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	99S10-A1

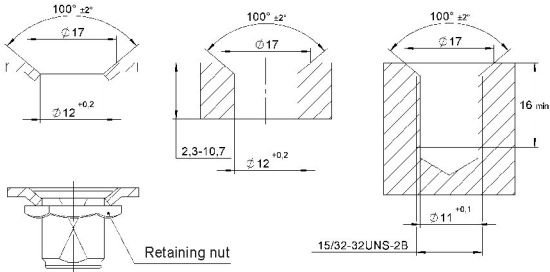
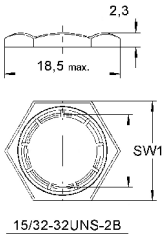
* Length no. from Table, see page C-1.

Stud Installation Instructions

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

Style	Dimensions	Materials / Finish	°C	Part No.
Open 		Zinc die casting / zinc-plated, CrVI-free, transparent passivated	150	99R10-01A1
Encapsulated 		Zinc die casting / zinc-plated, CrVI-free, transparent passivated Capsule: Stainless steel	150	99E10-01

Receptacle Installation Instructions

Installation Dimensions	Accessories	Materials / Finish	Part No.
 <p>Retaining nut</p> <p>15/32-32UNS-2B</p>	<p>Retaining nut</p>  <p>15/32-32UNS-2B</p> <p>Tap</p>	<p>Steel / zinc-plated, CrVI-free, transparent passivated</p>	<p>99N10-01A1</p> <p>15/32-32UNS-2B</p>

Particular Features

Max. tensile strength 900 N.

Plastic washer stud assembly to protect decorative surfaces.

Spring loaded receptacle as snap-in and clip-on design.

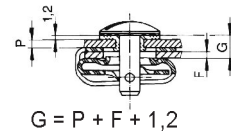
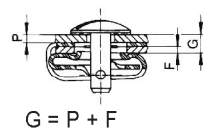
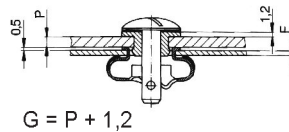
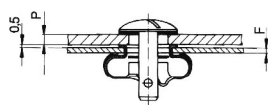
Snap-in grommet for quick stud installation without retaining washer.

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, insert into stud part number * (e.g. 50E21-*AGV).


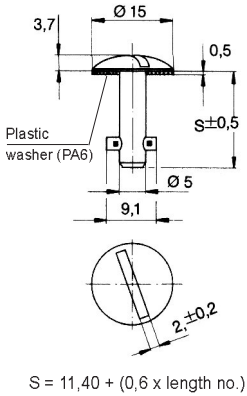

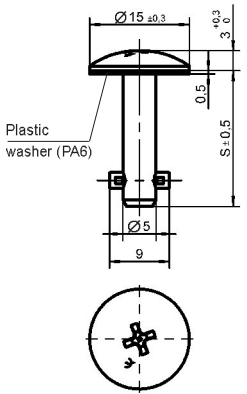

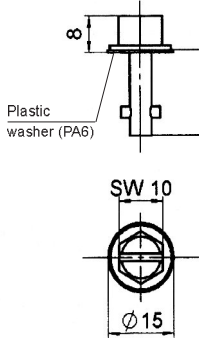


Stud Length Table


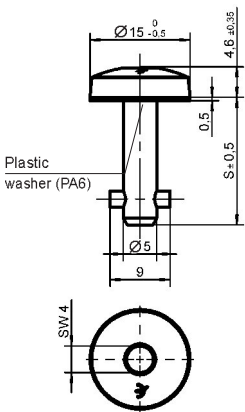

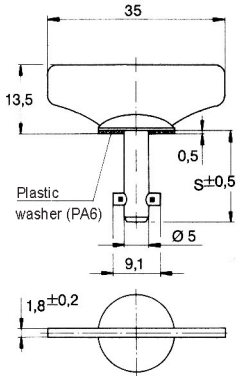

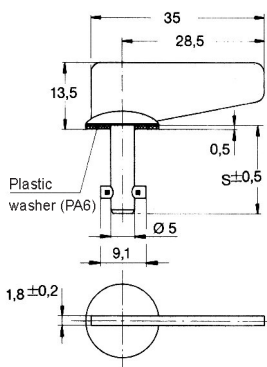
Total Thickness G	Stud Length No. when using Receptacles Type 1 F= 1,0 - 2,1	Total Thickness G	Stud Length No. when using Receptacles Type 1 F= 2,1 - 3,0	Total Thickness G	Stud Length No. when using Receptacles Type 2
0,50 - 1,10	5	0,50 - 1,10	7	2,30 - 2,90	5
1,10 - 1,70	6	1,10 - 1,70	8	2,90 - 3,50	6
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.


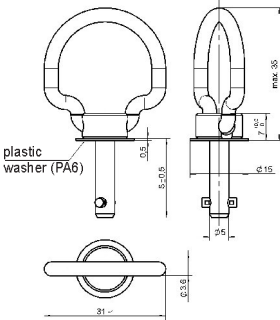

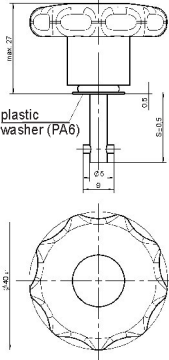

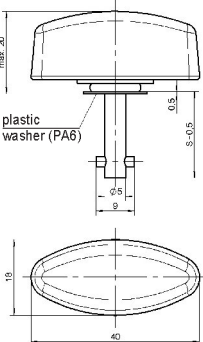
■ Preferred dash-lengths

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 <p>S = 11,40 + (0,6 x length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6) Stainless steel with plastic washer (PA6)	80 80	50E21-*AGV 50E21-*S
Cross Recess Head 	 <p>S = 11,40 + (0,6 x length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)	80	50E70-*AGV
Hex Head Slotted Recess 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)	80	50E90-*AGV

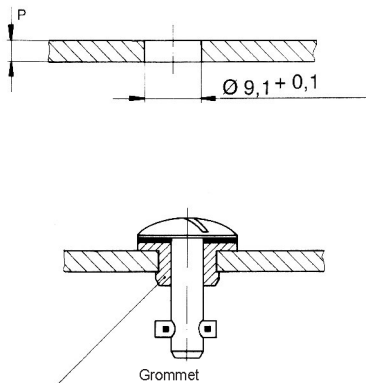
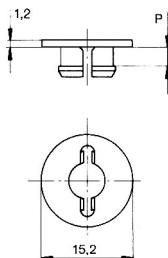
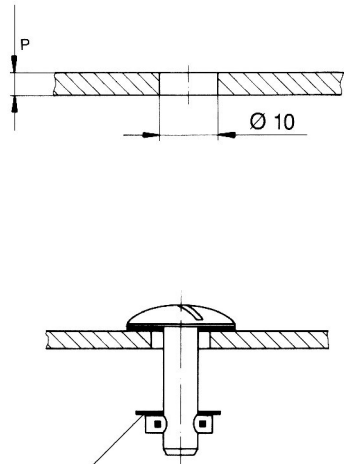
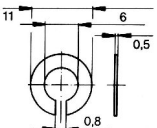
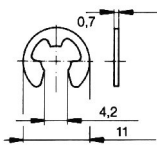
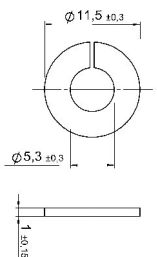
* Length no. from Table, see page D-1.

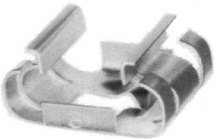
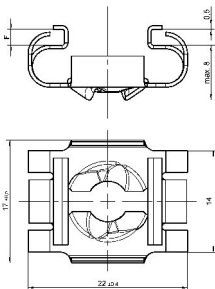

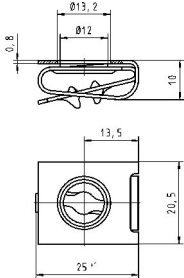
Style	Dimensions	Materials / Finish	°C	Part No.
Hex Recess Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)	80	50E60-*AGV
Fixed Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)	80	50E21-*WAGV
Offset Fixed Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)	80	50E21-*W0AGV

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

Style	Dimensions	Materials / Finish	°C	Part No.
Folding Bail Handle 	 <p>plastic washer (PA6)</p>	Steel / zinc-plated, CrVI-free, transparent passivated with plastic washer (PA6)	80	50E18-*AGV
Star Formed Head 	 <p>plastic washer (PA6)</p>	Steel / zinc-plated, CrVI-free, transparent passivated 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
Wing Head 	 <p>plastic washer (PA6)</p>	Steel / zinc-plated, CrVI-free, transparent passivated 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

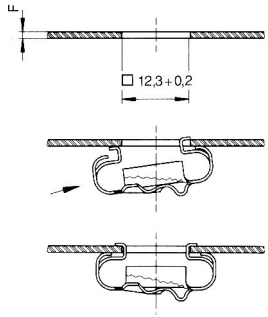
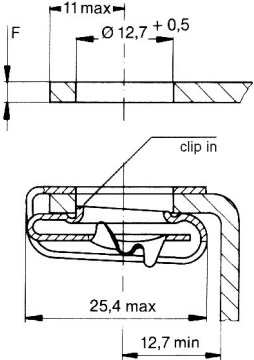
* Length no. from Table, see page D-1.

Style	Dimensions	Materials / Finish	P	Part No.
Snap-In Grommet 	Grommet 	Plastic (PA6) / natural colour Working temperature: -40°C + 120°C	Up to 1,60 1,70- 2,80 2,90 - 4,00 4,10 - 5,30 5,40 - 6,65	50S12-0-1AA 50S12-1-1AA 50S12-2-1AA 50S12-3-1AA 50S12-4-1AA
Retaining Washer  <p>Retaining washer Installation: see page A-6.</p>	Retaining washer  Retaining washer  Retaining washer 	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 50W204-01K

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

Receptacle Installation Instructions

Installation Dimensions

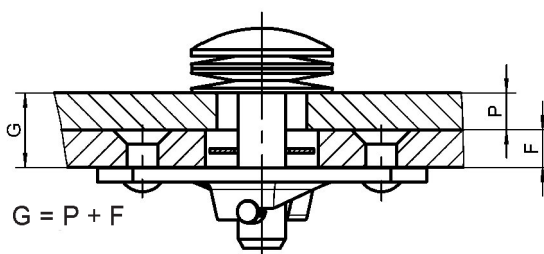
Snap-In	Clip-On
	

Particular Features

Max. tensile strength 3.700 N.
Small-size fastener for 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, insert into stud part number * (e.g. 50E8-*AGV).




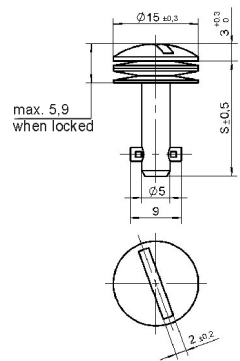

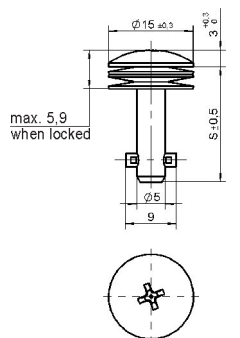

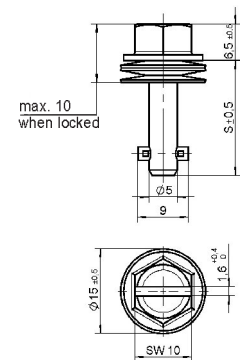
Stud Length Table

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


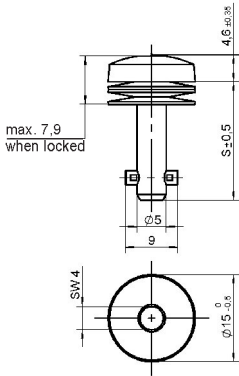

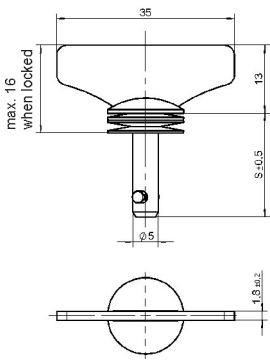

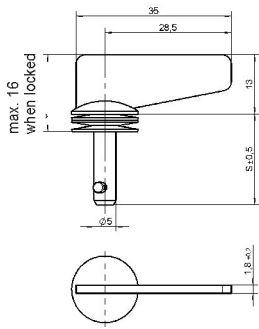
Other lengths on request.

■ Preferred dash-lengths

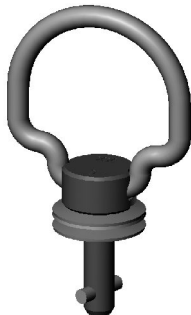
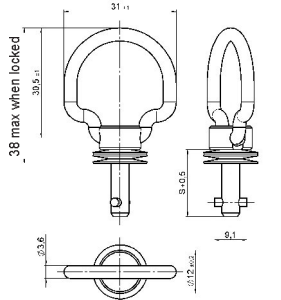

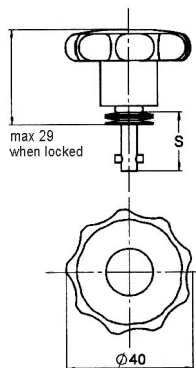

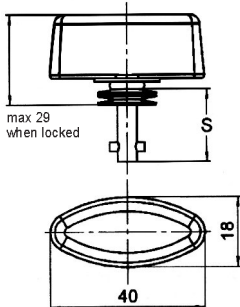

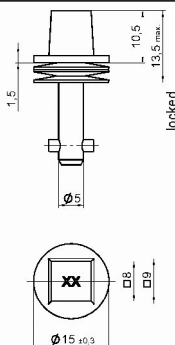
Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 		Steel / zinc-plated, CrVI-free, transparent passivated Stainless steel ¹⁾	230 230	50E8-*AGV 50E8-*S
Cross Recess Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E71-*AGV
Hex Head Slotted Recess 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E91-*AGV

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

¹⁾Max. tensile strength 2.600 N.

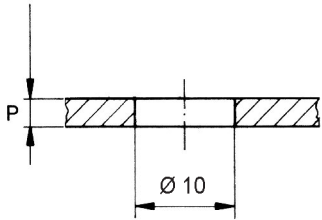
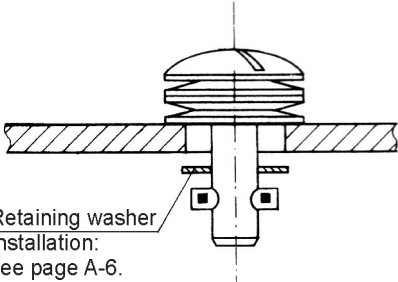
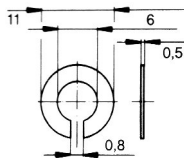
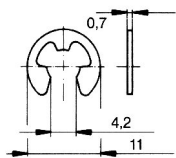
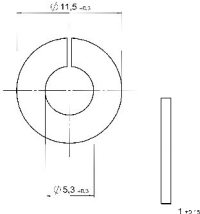
Style	Dimensions	Materials / Finish	°C	Part No.
Hex Recess Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E61-*AGV
Fixed Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E8-*WAGV
Offset Fixed Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E8-*W0AGV


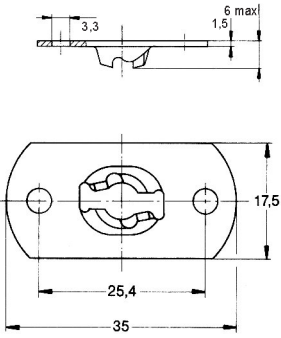
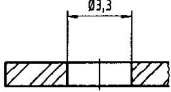
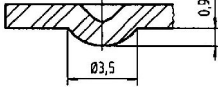
* Length no. from Table, page E-1.

Style	Dimensions	Materials / Finish	°C	Part No.
Folding Bail Handle 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E19-*AGV
Star Formed Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic knob Stainless steel ¹⁾ with plastic knob	-40 up to +60 -40 up to +60	50E81-*AGV 50E81-*CP
Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic knob Stainless steel ¹⁾ with plastic knob	-40 up to +60 -40 up to +60	50E83-*AGV 50E83-*CP
Square Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	50E7-*AGV

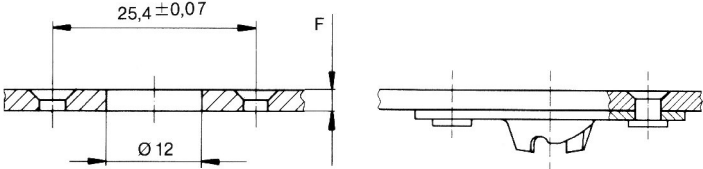
* Length no. from Table, page E-1.

¹⁾Max. tensile strength 2.600 N.

Installation Dimensions	Accessories	Material / Finish	Part No.
  <p>Retaining washer Installation: see page A-6.</p> <p>For P up to 2 mm Ø 8^{+0,2} for installation without retaining washer</p>	Retaining washer (loose)	Stainless steel	4002-SW-SS
		Stainless steel	50E2-3BP
	Retaining washer (fixed)	Plastic (PA6) / natural colour	50W204-01K
		Working temperature: -40°C + 120°C	
	Retaining washer (loose)	ADVANTAGE: Plastic retaining washer to be assembled without tooling.	
			

Style	Dimensions	Materials / Finish	°C	Part No.
Rivet- / Screw or Weld Mounting 	 <p>Version A Rivet/Screw Mounting</p>  <p>Version B Welding</p> 	Rivet / Screw Mounting Steel / zinc-plated, CrVI-free, transparent passivated	230	V50R3-1-1AGV
		Stainless steel	230	V50R3-1-1BP
		Welding Steel / zinc-plated	230	V50R3-1-2AZ

Receptacle Installation Instructions

Installation Dimensions
Rivet- / Screw or Weld Mounting 

Particular Features

Max. tensile strength 1.330 N.

Small-size fastener for high tensile load.

Wide variety of conventional stud assembly and receptacle designs.

2600 Series: Fillister head; 2700 Series: Flush head.

Selection Instructions

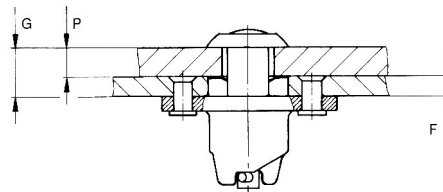
1. Select stud assembly and receptacle, page F-3 up to F-5, F-7 up to F-10.
2. Select stud accessories (retaining washer, gasket), page F-6 and F-7.
3. Select hex nut for receptacle, if necessary, page F-10.
4. Select stud length number from total thickness G using the formula and table on page F-2 insert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

Determining the stud length number when using receptacle:

Type 1 + 3*

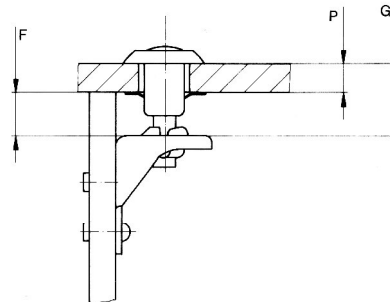
$$G = P + F$$

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



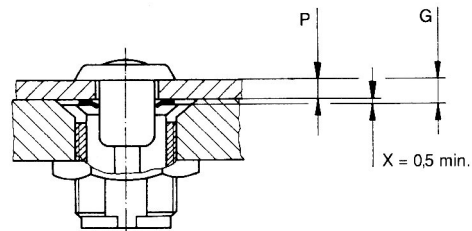
Type 2

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



Type 4

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


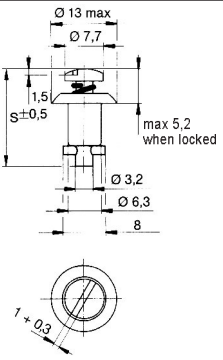

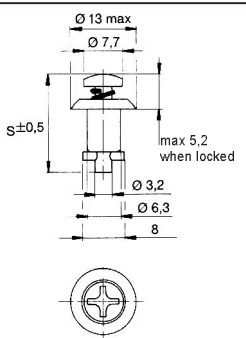

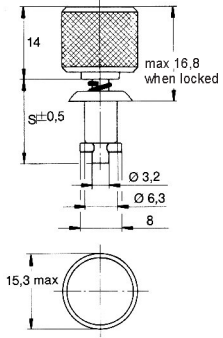

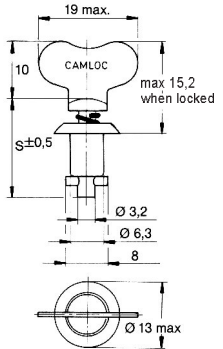


2600/2700 Series Stud Length Table

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


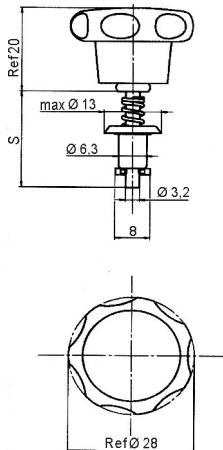
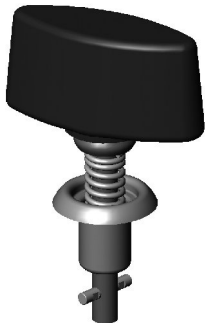
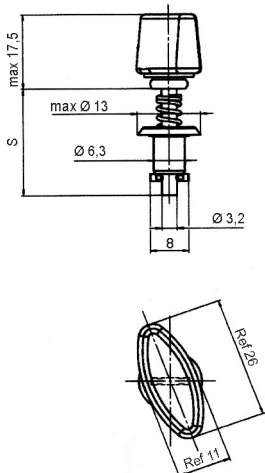
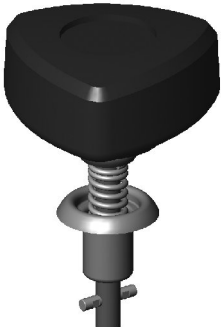
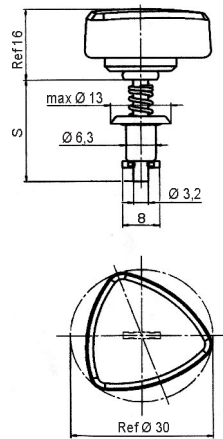
Other lengths on request.

■ Preferred dash-lengths


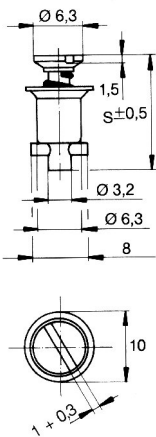

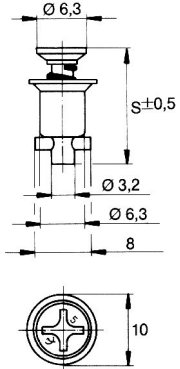
Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Fillister Head 		Steel / zinc-plated, CrVI-free, transparent passivated Steel / chrome-plated Stainless steel ¹⁾ Steel / nickel-plated	230 230 230 230	V26S01-*AGV 26S38-* 2600-*S 26S42-*
Cross Recess Fillister Head (Phillips Gr.2) 		Steel / zinc-plated, CrVI-free, transparent passivated Steel / nickel-plated Stainless steel ¹⁾	230 230 230	V26S02-*AGV 26S39-* 26S51-*
Knurled Head 		Steel / chrome-plated	230	26S34-*
Fixed Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated Stainless steel ¹⁾	230 230	V26S04-*AGV 2600-*SW

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

¹⁾ Max. Tensile strength 1.000 N.

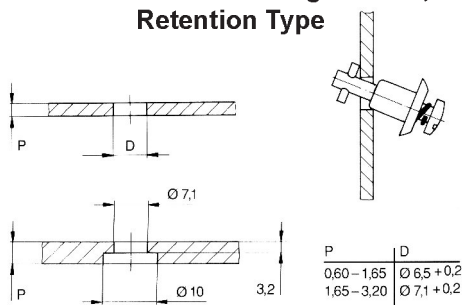
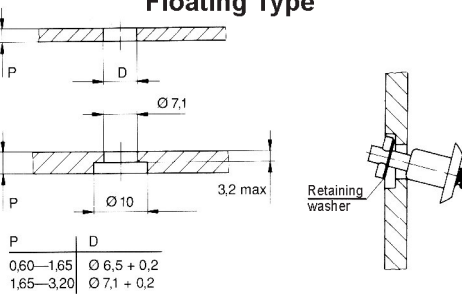
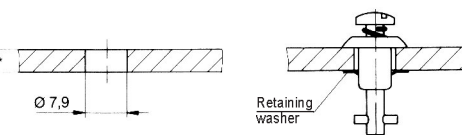
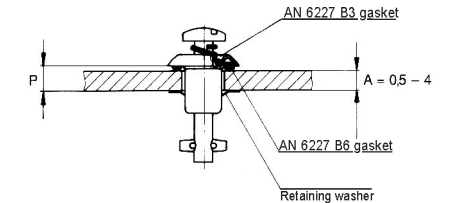
Style	Dimensions	Materials / Finish	°C	Part No.
Star Formed Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic knob (PA6) Note: Not to be used with encapsulated receptacles	-40 up to +60	V26S06- *AGV
Wing Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic knob (PA6) Note: Not to be used with encapsulated receptacles	-40 up to +60	V26S07- *AGV
Triangular Head 		Steel / zinc-plated, CrVI-free, transparent passivated with plastic knob (PA6) Note: Not to be used with encapsulated receptacles	-40 up to +60	V26S08- *AGV

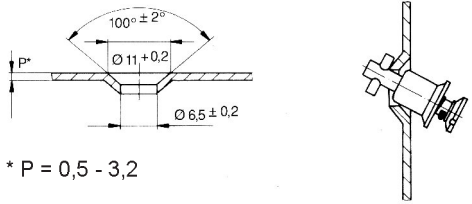
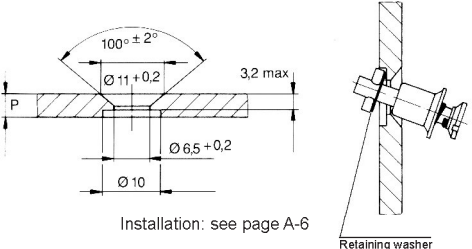
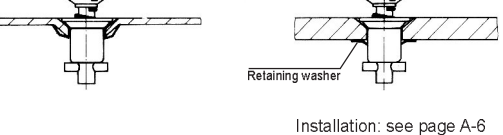
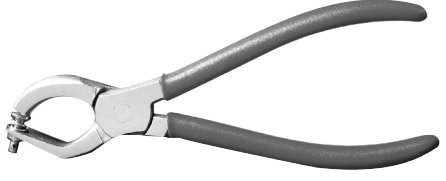
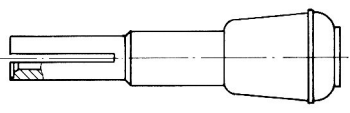
* Length no. from Table, page F-2.


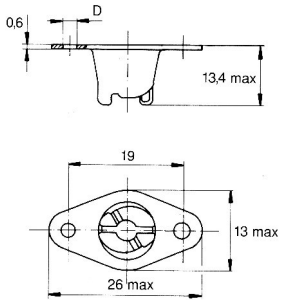

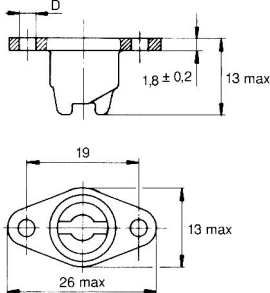
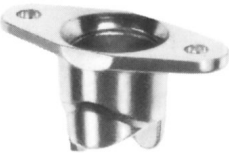
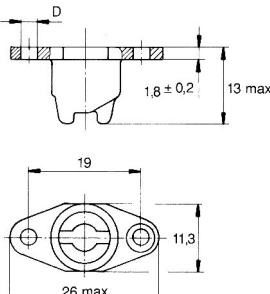

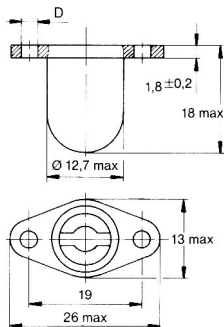
Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Flush Head 		Steel / zinc-plated, CrVI-free, transparent passivated Stainless steel ¹⁾	230 230	V27S01-*AGV 2700-*S
Cross Recess Flush Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	V27S02-*AGV

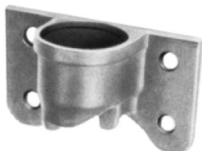
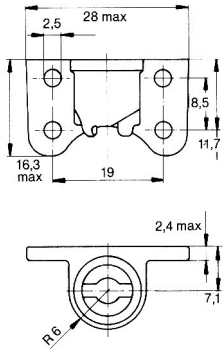

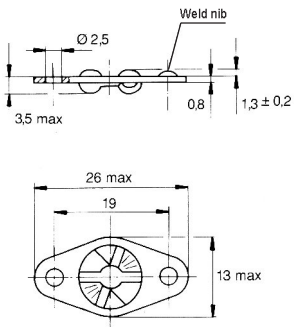
* Length no. from Table, page F-2.


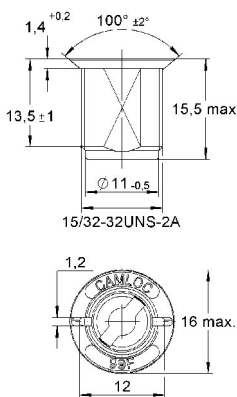

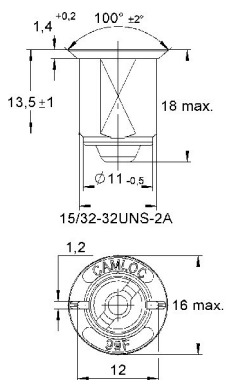
¹⁾Max. Tensile strength 1.000 N.

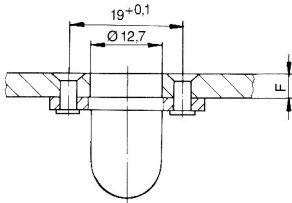
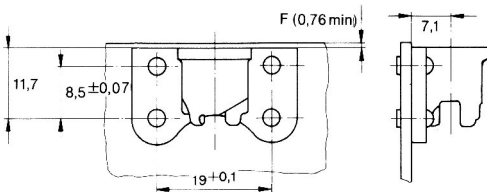
Installation Dimensions	Accessories	Material / Finish	Part No.						
<p>Stud Without Retaining Washer, Retention Type</p>  <table><tr><td>P</td><td>D</td></tr><tr><td>0,60–1,65</td><td>Ø 6,5 + 0,2</td></tr><tr><td>1,65–3,20</td><td>Ø 7,1 + 0,2</td></tr></table> <p>4P3-1 installation pliers, see page F-7.</p>	P	D	0,60–1,65	Ø 6,5 + 0,2	1,65–3,20	Ø 7,1 + 0,2	-	- Note: Dash "4" stud and smaller are self-captivating	-
P	D								
0,60–1,65	Ø 6,5 + 0,2								
1,65–3,20	Ø 7,1 + 0,2								
<p>Stud Without Retaining Washer, Floating Type</p>  <table><tr><td>P</td><td>D</td></tr><tr><td>0,60–1,65</td><td>Ø 6,5 + 0,2</td></tr><tr><td>1,65–3,20</td><td>Ø 7,1 + 0,2</td></tr></table> <p>4P3-1 installation pliers, see page F-7.</p>	P	D	0,60–1,65	Ø 6,5 + 0,2	1,65–3,20	Ø 7,1 + 0,2	Retaining washer	Stainless steel Note: Retaining rings are required for stud length dash numbers "5" and up	2600-SW
P	D								
0,60–1,65	Ø 6,5 + 0,2								
1,65–3,20	Ø 7,1 + 0,2								
<p>Stud With Retaining Washer, Fixed Spring Cup</p>  <table><tr><td>P</td><td>D</td></tr><tr><td>0,60–1,65</td><td>Ø 6,5 + 0,2</td></tr><tr><td>1,65–3,20</td><td>Ø 7,1 + 0,2</td></tr></table> <p>4P3-1 installation pliers, see page F-7.</p>	P	D	0,60–1,65	Ø 6,5 + 0,2	1,65–3,20	Ø 7,1 + 0,2	Retaining washer	Stainless steel Not for chrome-plated parts	V2600-LW-7
P	D								
0,60–1,65	Ø 6,5 + 0,2								
1,65–3,20	Ø 7,1 + 0,2								
<p>Sealed</p>  <table><tr><td>P</td><td>A</td></tr><tr><td>0,60–1,65</td><td>0,5 – 4</td></tr><tr><td>1,65–3,20</td><td>0,5 – 4</td></tr></table> <p>P = A + 0,75</p> <p>T98-1 installation tool, page F-6. Installation see page A-6.</p> <p>4P3-1 installation pliers, see page F-7.</p>	P	A	0,60–1,65	0,5 – 4	1,65–3,20	0,5 – 4	Gaskets	Rubber (100°C) Rubber (100°C)	AN6227-B6 AN6227-B3
P	A								
0,60–1,65	0,5 – 4								
1,65–3,20	0,5 – 4								

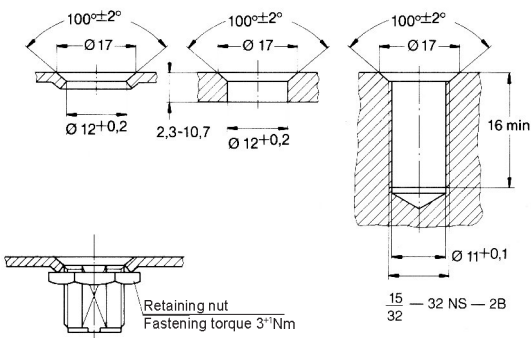
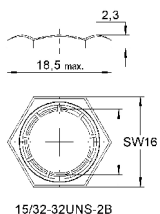
Installation Dimensions	Accessories	Material / Finish	Part No.
<p>Stud Without Retaining Washer, Retention Type</p>  <p>* P = 0,5 - 3,2</p> <p>Installation tool see below</p>	-	-	-
<p>Stud Without Retaining Washer, Floating Type</p>  <p>Installation: see page A-6</p> <p>Installation tool see below</p>	Retaining washer	Stainless steel	2600-SW
<p>Stud Without Retaining Washer, Fixed Spring Cup</p>  <p>Installation: see page A-6</p> <p>Installation tool see below</p>	Retaining washer	Stainless steel	V2600-LW-7
		Steel / nickel-plated	V27W01-1AN
	Stud Installation pliers		4P3-1
	V2600-LW-7 retaining washer installation tool		T98-1

Style	Dimensions	Materials / Finish	D	°C	Part No.
Type 1 Swage 		Steel / zinc-plated, CrVI-free, transparent passivated	2,6	230	V26R6-1AGV
Type 1 Cast 		Hard bronze / zinc-plated, CrVI-free, transparent passivated Hard bronze / zinc-plated, CrVI-free, transparent passivated Stainless steel	2,5 3,3 2,5	230 230 230	V212-12-1FGV V212-12-2FGV 212-12S
Type 1 Narrow Width 		Hard bronze / zinc-plated, CrVI-free, transparent passivated	2,5	230	V212-12N-1FGV
Type 1 Encapsulated 		Hard bronze / zinc-plated, CrVI-free, transparent passivated Capsule: Steel / zinc-plated, CrVI-free, transparent passivated Stainless steel	2,5 2,5	150 150	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, transparent passivated Stainless steel Welding Stainless steel	230 230 230	V312-12AGV 312-12S 312-12WS

Style	Dimensions	Materials / Finish	°C	Part No.
Type 4 Single Hole Mounting 		Zinc die cast / zinc-plated, CrVI-free, clear chromate	150	99R10-01A1
Type 4 Single Hole Mounting Encapsulated 		Zinc die cast / zinc-plated, CrVI-free, clear chromate Capsule: Stainless steel	150	99E10-01

Installation Dimensions
<p>Type 1 + 3 Receptacles Hole Pattern</p> 
<p>Type 2 Receptacles Hole Pattern (Side Mounting)</p> 

Installation Dimensions	Accessories	Materials / Finish	Part No.
<p>Installation Options Type 4 Receptacle</p>  <p>Retaining nut Fastening torque 3¹Nm</p>	<p>Retaining nut</p>  <p>Tap</p>	<p>Steel / zinc-plated, CrVI-free, clear chromate</p>	<p>99N10-01A1</p> <p>15/32-32UNS-2B</p>

Particular Features

Max. tensile strength 4.700 N.

Small-size fastener for high tensile load.

Wide variety of conventional stud assembly and receptacle design.

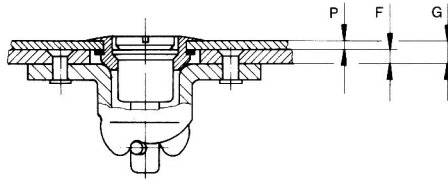
Floating receptacles available.

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. 16.
3. Select stud length number from total thickness G using the formula and the table on page G-2 and G-3 insert into stud part number * (e.g. 4002-*D).

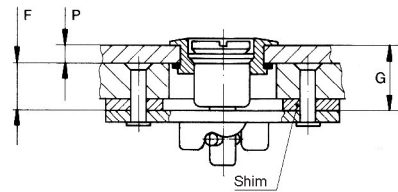
Determining the stud length number when using receptacle:

Type 1 + 2



$$G = P + F$$

Type 3



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

<p>For Using the Following Grommet and Receptacles:</p> <p>Flush Mounting Grommets</p> <p>4002-G-1 4002-H-2</p> <p>4002-GS 4002-HS</p>							
Total Thickness G	Stud Length No. When Using Type 1 Receptacles	Total Thickness G	Stud Length No. When Using Type 2 Receptacles	Total Thickness G	Stud Length No. When Using Type 3 Receptacles	Total Thickness G	Stud Length No. When Using Type 4 Receptacles
0,50 - 1,30	-	0,50 - 1,30	-	8,90 - 9,65	2	0,50 - 1,30	2
1,30 - 2,05	-	1,30 - 2,05	2	9,65 - 10,40	3	1,30 - 2,05	3
2,05 - 2,80	2	2,05 - 2,80	3	10,40 - 11,20	4	2,05 - 2,80	4
2,80 - 3,55	3	2,80 - 3,55	4	11,20 - 11,95	5	2,80 - 3,55	5
3,55 - 4,30	4	3,55 - 4,30	5	11,95 - 12,70	6	3,55 - 4,30	6
4,30 - 5,10	5	4,30 - 5,10	6	12,70 - 13,50	7	4,30 - 5,10	7
5,10 - 5,85	6	5,10 - 5,85	7	13,50 - 14,20	8	5,10 - 5,85	8
5,85 - 6,60	7	5,85 - 6,60	8	14,20 - 15,00	9	5,85 - 6,60	9
6,60 - 7,30	8	6,60 - 7,30	9	15,00 - 15,75	10	6,60 - 7,30	10
7,30 - 8,15	9	7,30 - 8,15	10	15,75 - 16,50	11	7,30 - 8,15	11
8,15 - 8,90	10	8,15 - 8,90	11	16,50 - 17,30	12	8,15 - 8,90	12
8,90 - 9,65	11	8,90 - 9,65	12	17,30 - 18,00	13	8,90 - 9,65	13
9,65 - 10,40	12	9,65 - 10,40	13	18,00 - 18,80	14	9,65 - 10,40	14
10,40 - 11,20	13	10,40 - 11,20	14	18,80 - 19,55	15	10,40 - 11,20	15
11,20 - 11,95	14	11,20 - 11,95	15	19,55 - 20,30	16	11,20 - 11,95	16
11,95 - 12,70	15	11,95 - 12,70	16	20,30 - 21,10	17	11,95 - 12,70	17
12,70 - 13,50	16	12,70 - 13,50	17	21,10 - 21,85	18	12,70 - 13,50	18
13,50 - 14,20	17	13,50 - 14,20	18	21,85 - 22,60	19	13,50 - 14,20	19
14,20 - 15,00	18	14,20 - 15,00	19	22,60 - 23,40	20	14,20 - 15,00	20
15,00 - 15,75	19	15,00 - 15,75	20	23,40 - 24,15	21	15,00 - 15,75	21
15,75 - 16,50	20	15,75 - 16,50	21	24,15 - 24,90	22	15,75 - 16,50	22
16,50 - 17,30	21	16,50 - 17,30	22	24,90 - 25,65	23	16,50 - 17,30	23
17,30 - 18,00	22	17,30 - 18,00	23	25,65 - 26,40	24	17,30 - 18,00	24
18,00 - 18,80	23	18,00 - 18,80	24	26,40 - 27,20	25	18,00 - 18,80	25
18,80 - 19,55	24	18,80 - 19,55	25	27,20 - 27,95	26	18,80 - 19,55	26
19,55 - 20,30	25	19,55 - 20,30	26	27,95 - 28,70	27	19,55 - 20,30	27
20,30 - 21,10	26	20,30 - 21,10	27	28,70 - 29,50	28	20,30 - 21,10	28
21,10 - 21,85	27	21,10 - 21,85	28	29,50 - 30,20	29	21,10 - 21,85	29
21,85 - 22,60	28	21,85 - 22,60	29	30,20 - 31,00	30	21,85 - 22,60	30
22,60 - 23,40	29	22,60 - 23,40	30	31,00 - 31,75	31	22,60 - 23,40	31
23,40 - 24,15	30	23,40 - 24,15	31	31,75 - 32,50	32	23,40 - 24,15	32
24,15 - 24,90	31	24,15 - 24,90	32	32,50 - 33,30	33	24,15 - 24,90	33
24,90 - 25,65	32	24,90 - 25,65	33	33,30 - 34,05	34	24,90 - 25,65	34
25,65 - 26,40	33	25,65 - 26,40	34	34,05 - 34,80	35	25,65 - 26,40	35
26,40 - 27,20	34	26,40 - 27,20	35				
27,20 - 27,95	35	26,40 - 27,20	35				


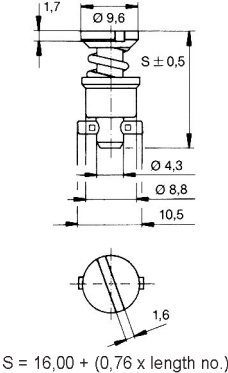

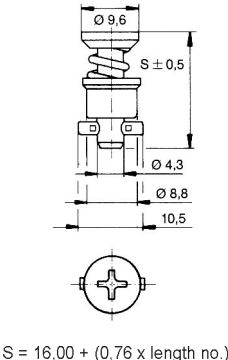

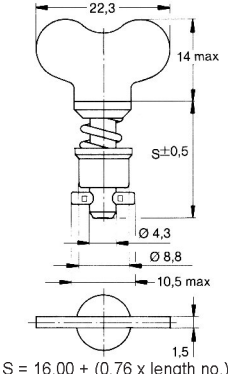

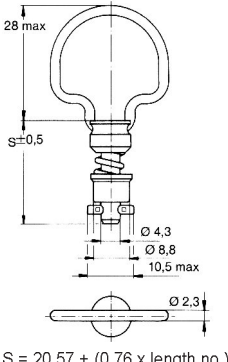
Other lengths on request.

■ Preferred dash-lengths

For Using the Following Grommet and Receptacles: Plus Flush Mounting Grommets 4002-N-3 4002-O-1 4002-NS 4002-OS							
Total Thickness G	Stud Length No. When Using Type 1 Receptacles	Total Thickness G	Stud Length No. When Using Type 2 Receptacles	Total Thickness G	Stud Length No. When Using Type 3 Receptacles	Total Thickness G	Stud Length No. When Using Type 4 Receptacles
0,50 - 1,30	1	0,50 - 1,30	2	8,90 - 9,65	3	0,50 - 1,30	3
1,30 - 2,05	2	1,30 - 2,05	3	9,65 - 10,40	4	1,30 - 2,05	4
2,05 - 2,80	3	2,05 - 2,80	4	10,40 - 11,20	5	2,05 - 2,80	5
2,80 - 3,55	4	2,80 - 3,55	5	11,20 - 11,95	6	2,80 - 3,55	6
3,55 - 4,30	5	3,55 - 4,30	6	11,95 - 12,70	7	3,55 - 4,30	7
4,30 - 5,10	6	4,30 - 5,10	7	12,70 - 13,50	8	4,30 - 5,10	8
5,10 - 5,85	7	5,10 - 5,85	8	13,50 - 14,20	9	5,10 - 5,85	9
5,85 - 6,60	8	5,85 - 6,60	9	14,20 - 15,00	10	5,85 - 6,60	10
6,60 - 7,30	9	6,60 - 7,30	10	15,00 - 15,75	11	6,60 - 7,30	11
7,30 - 8,15	10	7,30 - 8,15	11	15,75 - 16,50	12	7,30 - 8,15	12
8,15 - 8,90	11	8,15 - 8,90	12	16,50 - 17,30	13	8,15 - 8,90	13
8,90 - 9,65	12	8,90 - 9,65	13	17,30 - 18,00	14	8,90 - 9,65	14
9,65 - 10,40	13	9,65 - 10,40	14	18,00 - 18,80	15	9,65 - 10,40	15
10,40 - 11,20	14	10,40 - 11,20	15	18,80 - 19,55	16	10,40 - 11,20	16
11,20 - 11,95	15	11,20 - 11,95	16	19,55 - 20,30	17	11,20 - 11,95	17
11,95 - 12,70	16	11,95 - 12,70	17	20,30 - 21,10	18	11,95 - 12,70	18
12,70 - 13,50	17	12,70 - 13,50	18	21,10 - 21,85	19	12,70 - 13,50	19
13,50 - 14,20	18	13,50 - 14,20	19	21,85 - 22,60	20	13,50 - 14,20	20
14,20 - 15,00	19	14,20 - 15,00	20	22,60 - 23,40	21	14,20 - 15,00	21
15,00 - 15,75	20	15,00 - 15,75	21	23,40 - 24,15	22	15,00 - 15,75	22
15,75 - 16,50	21	15,75 - 16,50	22	24,15 - 24,90	23	15,75 - 16,50	23
16,50 - 17,30	22	16,50 - 17,30	23	24,90 - 25,65	24	16,50 - 17,30	24
17,30 - 18,00	23	17,30 - 18,00	24	25,65 - 26,40	25	17,30 - 18,00	25
18,00 - 18,80	24	18,00 - 18,80	25	26,40 - 27,20	26	18,00 - 18,80	26
18,80 - 19,55	25	18,80 - 19,55	26	27,20 - 27,95	27	18,80 - 19,55	27
19,55 - 20,30	26	19,55 - 20,30	27	27,95 - 28,70	28	19,55 - 20,30	28
20,30 - 21,10	27	20,30 - 21,10	28	28,70 - 29,50	29	20,30 - 21,10	29
21,10 - 21,85	28	21,10 - 21,85	29	29,50 - 30,20	30	21,10 - 21,85	30
21,85 - 22,60	29	21,85 - 22,60	30	30,20 - 31,00	31	21,85 - 22,60	31
22,60 - 23,40	30	22,60 - 23,40	31	31,00 - 31,75	32	22,60 - 23,40	32
23,40 - 24,15	31	23,40 - 24,15	32	31,75 - 32,50	33	23,40 - 24,15	33
24,15 - 24,90	32	24,15 - 24,90	33	32,50 - 33,30	34	24,15 - 24,90	34
24,90 - 25,65	33	24,90 - 25,65	34	33,30 - 34,05	35	24,90 - 25,65	35
25,65 - 26,40	34	25,65 - 26,40	35				
26,40 - 27,20	35	26,40 - 27,20	35				

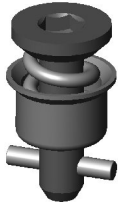
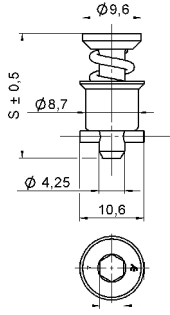

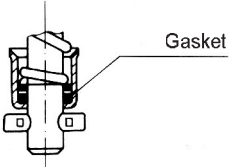
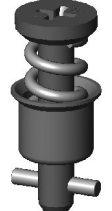
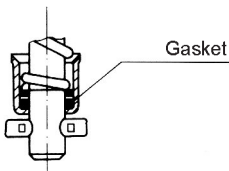
Other lengths on request.

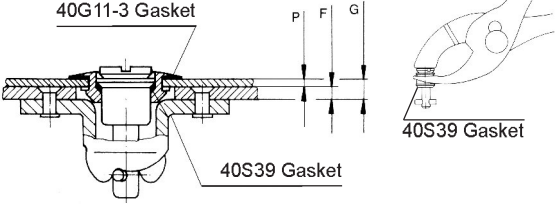
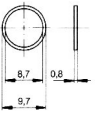
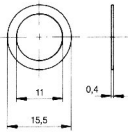
■ Preferred dash-lengths

Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 	 <p>$S = 16,00 + (0,76 \times \text{length no.})$</p>	Steel / zinc-plated, yellow chromate Stainless steel ¹⁾	230 290	4002-*D 4002-*S
Cross Recess Head 	 <p>$S = 16,00 + (0,76 \times \text{length no.})$</p>	Steel / zinc-plated, yellow chromate	230	40S5-*D
Fixed Wing Head 	 <p>$S = 16,00 + (0,76 \times \text{length no.})$</p>	Steel / zinc-plated, yellow chromate Stainless steel ¹⁾	230 290	4002-*WB 4002-*SW
180° Folding Bail Handle 	 <p>$S = 20,57 + (0,76 \times \text{length no.})$</p>	Steel / zinc-plated, yellow chromate	230	40S47-*C

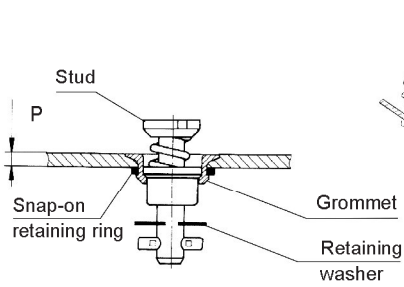
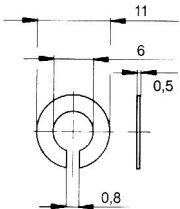
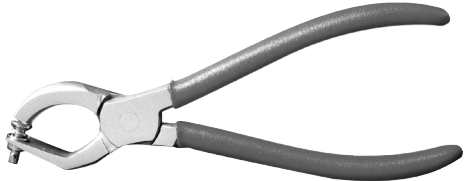
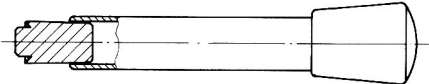
* Length no. from Table, page G-2 and G-3


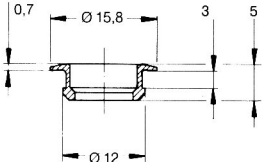

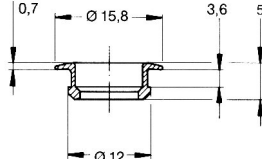

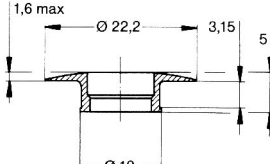

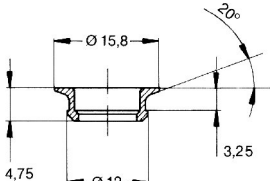

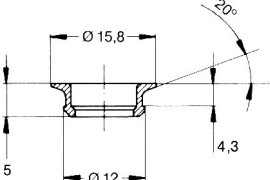
¹⁾ Max. tensile strength 3.300 N.

Style	Dimensions	Materials / Finish	°C	Part No.
Hex Recess Head 		Steel / zinc-plated, yellow chromate	230	40E28-*1AF
Sealed Slotted Recess Head 	 Additional required gasket see page G-4.	Steel / zinc-plated, yellow chromate Gasket: Velumoid	100	40S37-*E
Sealed Cross Recess Head 	 Additional required gasket see page G-4.	Steel / zinc-plated, yellow chromate Gasket: Velumoid	100	40S37-*AE

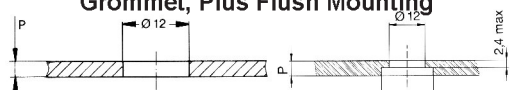
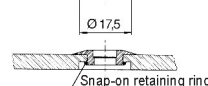
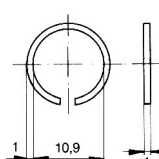
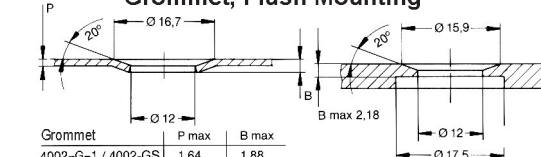
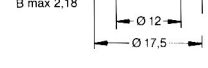
Installation Dimensions	Accessories	Materials / Finish	Part No.
Gasket to be ordered in addition to the sealed stud assembly 	Gasket  Gasket 	Plastic / (PA6) Gasket: Velumoid	40S39 40G11-3


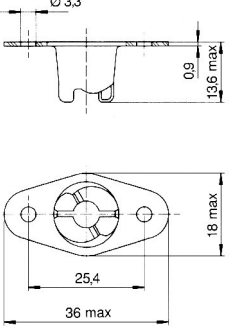

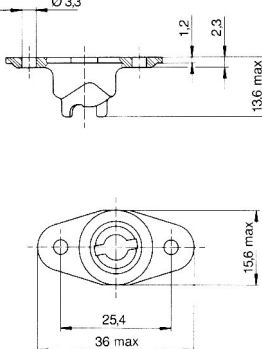

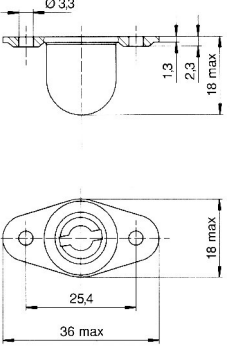

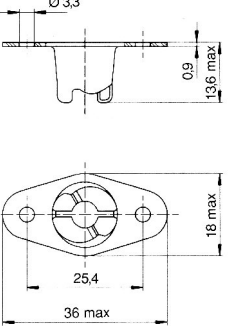
* Length no. from Table, page G-2 and G-3.


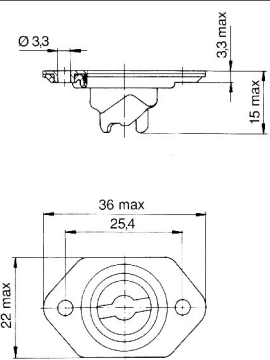

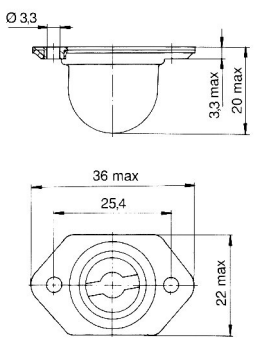

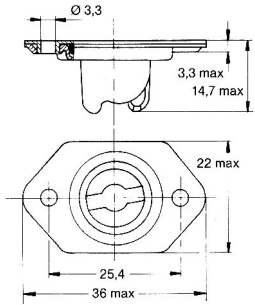

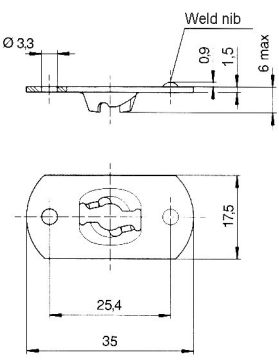
Installation Dimensions	Accessories	Materials / Finish	Part No.
 <p>4P3-1 installation pliers, see below</p>	<p>Retaining washer</p>  <p>From stud length no. 16</p>	Stainless steel	4002-SW-SS
	Stud installation pliers		4P3-1
	40G26-1 snap-on retaining ring installation tool		T26

Style	Dimensions	Materials / Finish	°C	Part No.
Plus Flush Mounting For Panel Thickness up to 1,65 		Steel / zinc-plated, yellow chromate	230	4002-N-3
		Stainless steel	230	4002-NS
Plus Flush Mounting For Panel Thickness from 1,65 to 2,40 		Steel / zinc-plated, yellow chromate	230	4002-O-1
		Stainless steel	230	4002-OS
Plus Flush Mounting For Panel Thickness from 1,27 to 1,83 		Steel / zinc-plated, yellow chromate	230	4002-N3-B
Flush Mounting For Panel Thickness up to 1,65 		Steel / zinc-plated, yellow chromate	230	4002-G-1
		Stainless steel	230	4002-GS
Flush Mounting For Panel Thickness from 1,65 to 2,18 		Steel / zinc-plated, yellow chromate	230	4002-H-2
		Stainless steel	230	4002-HS

Grommets for thicker panels upon request.

Installation Dimensions	Accessories	Materials / Finish	Part No.									
<div><h3>Grommet, Plus Flush Mounting</h3><table><tr><th>Grommet</th><th>P max</th></tr><tr><td>4002-N-3 / 4002-NS</td><td>1,65</td></tr><tr><td>4002-N3-B</td><td>1,83</td></tr><tr><td>4002-O-1 / 4002-OS</td><td>2,40</td></tr></table><p>T26 installation tool, see page G-6.</p></div>	Grommet	P max	4002-N-3 / 4002-NS	1,65	4002-N3-B	1,83	4002-O-1 / 4002-OS	2,40	<div><h3>Snap-on retaining ring</h3></div>	Steel / zinc-plated, yellow chromate	R4G-2	
Grommet	P max											
4002-N-3 / 4002-NS	1,65											
4002-N3-B	1,83											
4002-O-1 / 4002-OS	2,40											
<div><h3>Grommet, Flush Mounting</h3><table><tr><th>Grommet</th><th>P max</th><th>B max</th></tr><tr><td>4002-G-1 / 4002-GS</td><td>1,64</td><td>1,88</td></tr><tr><td>4002-H-2 / 4002-HS</td><td>2,18</td><td>2,97</td></tr></table><p>T26 installation tool, see page G-6.</p></div>	Grommet	P max	B max	4002-G-1 / 4002-GS	1,64	1,88	4002-H-2 / 4002-HS	2,18	2,97			
Grommet	P max	B max										
4002-G-1 / 4002-GS	1,64	1,88										
4002-H-2 / 4002-HS	2,18	2,97										

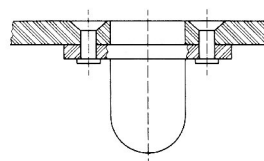
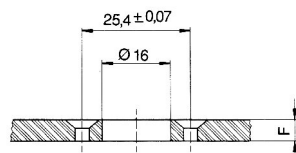
Style	Dimensions	Materials / Finish	°C	Part No.
Type 1 Cast 		Hard bronze / zinc-plated, yellow chromate Stainless steel	230 230	214-16G 214-16S
Type 1 Cast Narrow Width 		Hard bronze / zinc-plated, yellow chromate	230	214-16GN
Type 1 Cast Encapsulated 		Hard bronze / zinc-plated, yellow chromate Capsule: Brass / zinc-plated, yellow chromate	150	40R12-1A
Type 1 Swage 		Stainless steel	230	40R17-1

Style	Dimensions	Materials / Finish	°C	Part No.
Type 2 Float up to 0,75 mm* (Cast Receptacle) 		Hard bronze / zinc-plated, yellow chromate Cage: Steel / zinc-plated, yellow chromate Stainless steel	230 230	244-16G 244-16S
Type 2 Float up to 0,75 mm* Encapsulated 		Hard bronze / zinc-plated, yellow chromate Capsule: Steel / zinc-plated, yellow chromate	230	244-16GC
Type 2 Float up to 0,75 mm (Swage Receptacle) 		Stainless steel	230	40R18-1
Type 3 Flat Rivet / Screw or Weld Mounting 		Rivet / Screw Mounting Hard bronze / zinc-plated, CrVI-free chromate Stainless steel Welding Steel / zinc-plated, CrVI-free	230 230 230	V50R3-1-1AGV V50R3-1-1BP V50R3-1-2AZ

* 1,6 mm float upon request.

Installation Dimensions

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



Particular Features

Max. tensile strength 10.000 N.

Fastener for maximum tensile strength and preload.

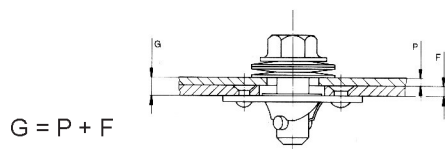
Preferred applications:

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

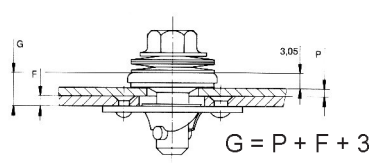
1. Select stud assembly and receptacle, pages H-2, H-3 and H-5.
2. Sealed: Also select rubber gasket and buffer plate, page H-4.
3. Select retaining washer, page H-4.
4. Select stud length number from total thickness G using the formula and table below, insert into stud part number * (e.g. 991S01-*AGV).

Determining the stud length number when using:

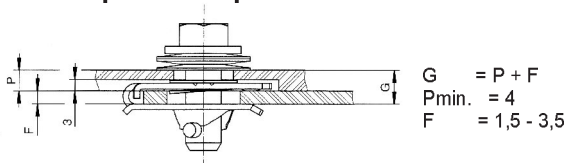
Rivet, Screw and Weld Mounting Receptacle



Sealed Stud Assemblies



Clip-On Receptacle


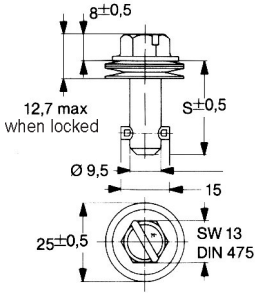
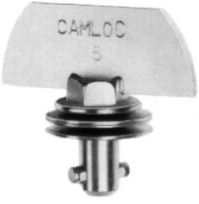
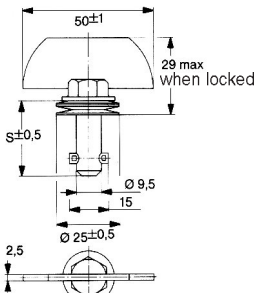

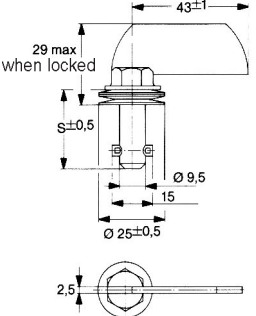

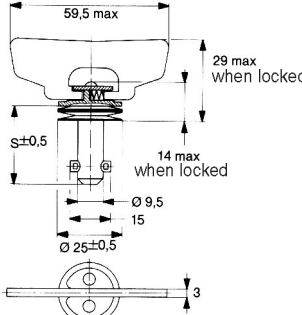


Stud Length Table

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		


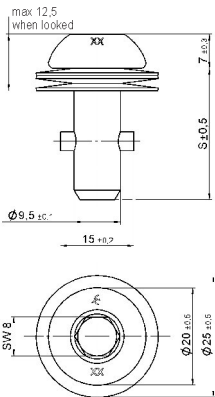

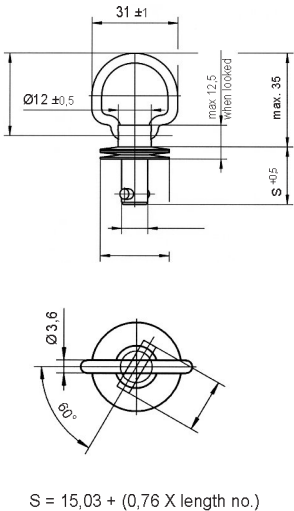
Other lengths on request.

■ Preferred dash-lengths

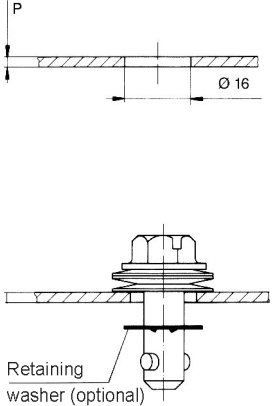
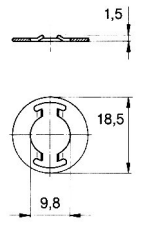
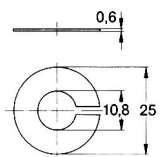
Style	Dimensions	Materials / Finish	°C	Part No.
Hex Head Slotted Recess 	 <p>S = 16,26 + (0,76 x length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated Stainless steel ¹⁾	230 230	991S01- *-1AGV 991S01- *-1BP
Fixed Wing Head 	 <p>S = 16,26 + (0,76 x length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated	230	991S02- *-1AGV
Offset Fixed Wing Head 	 <p>S = 16,26 + (0,76 x length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated	230	991S03- *-1AGV
180° Folding Wing Head 	 <p>S = 16,26 + (0,76 x length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated	230	991S05- *-1AGV

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

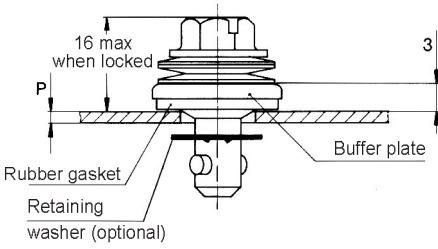
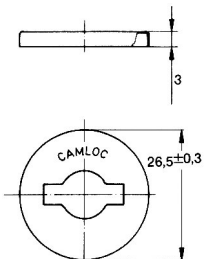
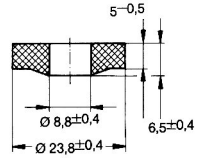
¹⁾ Max. tensile strength 7.000 N.


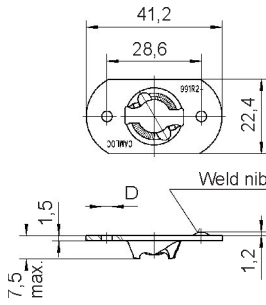

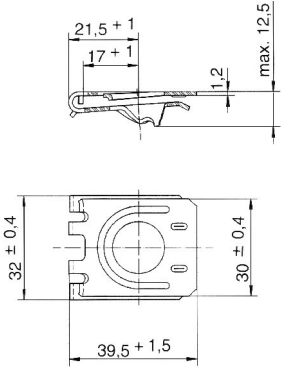
Style	Dimensions	Materials / Finish	°C	Part No.
Hex Recess Head 		Steel / zinc-plated, CrVI-free, transparent passivated	230	991S30-*AGV
Folding Bail Handle 	 <p>S = 15,03 + (0,76 X length no.)</p>	Steel / zinc-plated, CrVI-free, transparent passivated	230	991S2991-*AGV

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

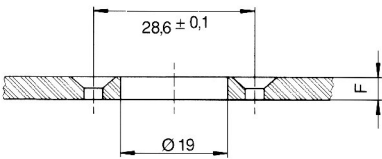
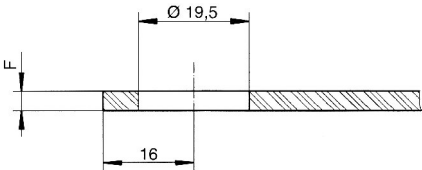
Installation Dimensions	Accessories	Material / Finish	Part No.
	Retaining washer 	Stainless steel	991W04-1BP
	Slotted retaining washer 		991W02-1BP

Sealed Stud Assemblies

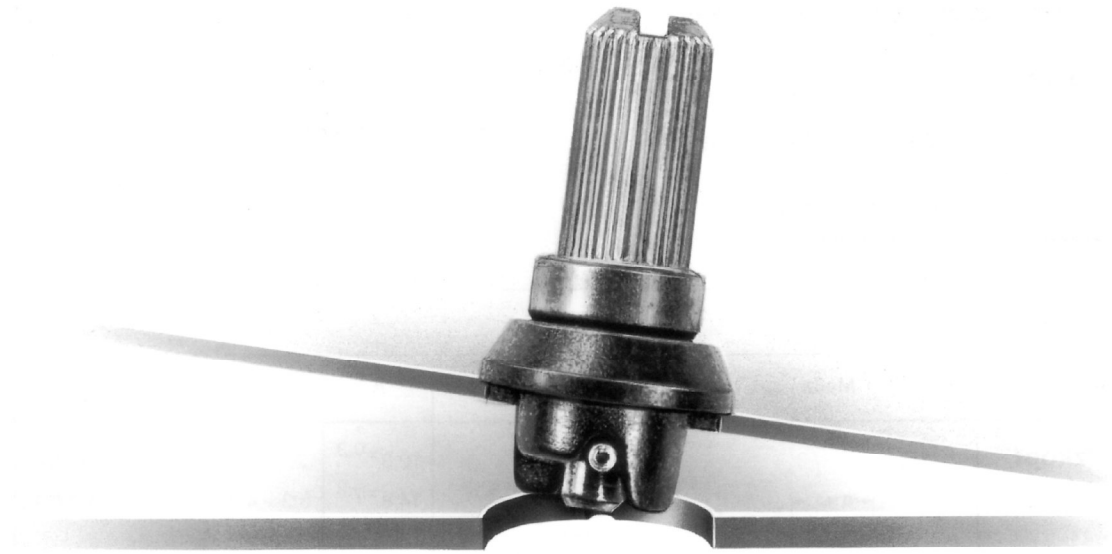
Installation Dimensions	Accessories	Material / Finish	Part No.
	Buffer plate 	Stainless steel	991W03-1BP
	Rubber gasket 		991S17-1K NBR black (100°C max.)

Style	Dimensions	Materials / Finish	Mounting Ø	°C	Part No.
Rivet / Screw Mounting 		Rivet / Screw Mounting Steel / zinc-plated, CrVI-free, transparent passivated	3,3	230	991R2-1AGV
		Steel / zinc-plated, CrVI-free, transparent passivated	4,1	230	991R2-3AGV
		Stainless steel	3,3	230	991R2-1BP
		Stainless steel	4,1	230	991R2-3BP
		Welding Steel / zinc-plated	-	230	991R2-2AZ
Clip-On 		Steel / zinc-plated, zinc flake coated Frame thickness F= 1,5mm - 3,5mm		230	991R6-1AK7

Receptacle Installation Instructions

Installation Dimensions	
Rivet / Screw or Welding Mounting 	Clip-On 

One-Piece Fasteners



Particular Features

Max. tensile strength 300 N.

Same hole shape for panel and frame.

Fastener as slotted recess or knurled head version.

Fastener position indication by stud slot.

Retention type.

Vibration resistant.

Grip ranges from 2,0 mm to 4,6 mm.

Unlock and lock by a quarter turn.

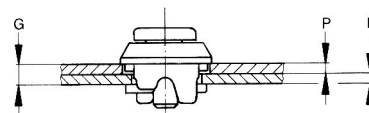
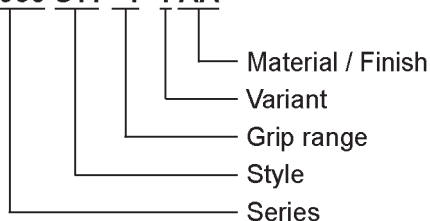
Particularly for applications in electro-technical and electronic equipment.


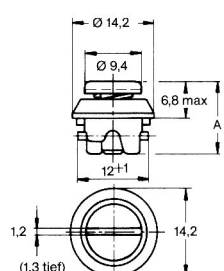

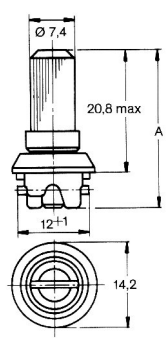
For quick installation without tools.

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	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	12,3 ^{+0,3}	2,0 - 3,2	V936S05-3-1AA
			14,8 ^{+0,3}	3,3 - 4,6	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	26,4 ^{+0,3}	2,0 - 3,2	V936S11-3-1AA
			28,9 ^{+0,3}	3,3 - 4,6	V936S11-4-1AA

<p>Hole Shape in Panel P</p>	<p>Installing the fastener</p>	<p>The slot indicates the position of the fastener</p> <p>Unlocked</p>
<p>Hole Shape in Panel F</p>	<p>Fastener retaining in panel</p>	<p>Locked</p>

Particular Features

This fastener mounts 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 fastener.

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

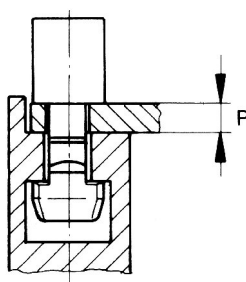
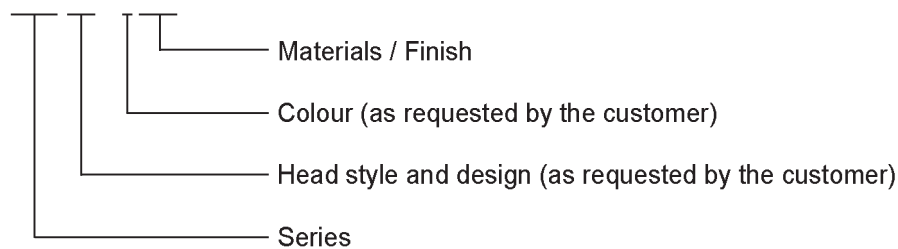
1. the front panel
2. the shape of the modular bar
3. the colour, if necessary


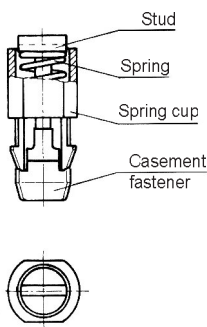

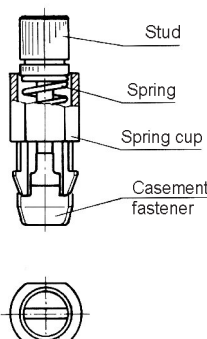
In addition, please send us samples of your modular bar and front panel.

Part no. example

One-piece fastener

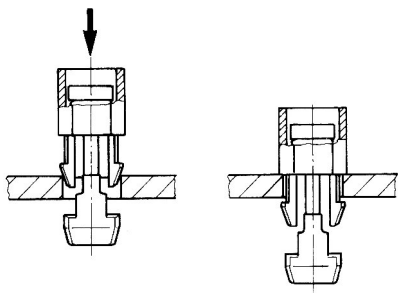
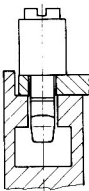

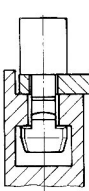

713 S* - * AE



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.

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.

Dimensions	Fastener Position
Installing the Fastener  1. Insert fastener with spring cup into hole. 2. Push stud until snap-in hooks lock in.	<div> Unlocked   </div> <div> Locked   </div> <p>To lock push stud and turn 90°C.</p> <p>The slot indicates the position of the fastener.</p>

Push Button Fasteners



Particular Features

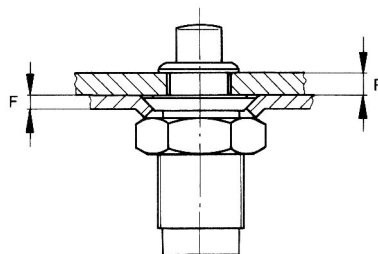
Max. tensile strength 1.330 N.

Quick opening and closing by a finger push.

Easy installation by single hole mounting.

Selection Instructions

1. Select stud assembly, page K-2 and receptacle, page K-3.
2. Select retaining washer, page K-2 and retaining hexnut, page K-3, if necessary.
3. Select stud length number from Panel thickness P using the table below, insert into stud part number * (e.g. 15S1-*-1AD).


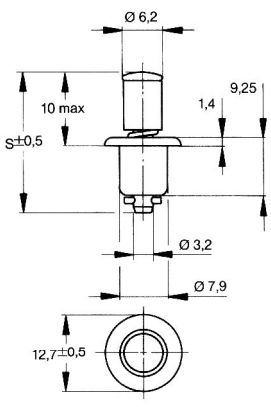


Stud Length Table

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.

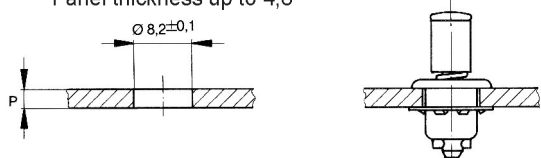
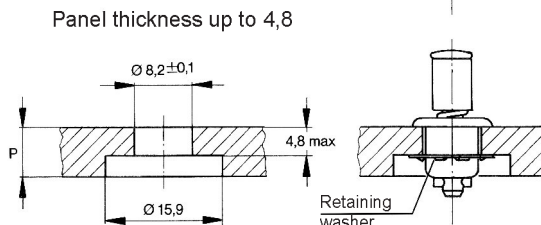
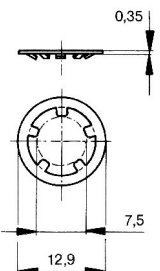
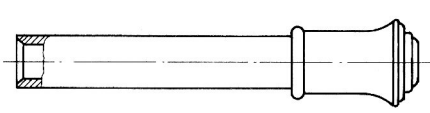
■ Preferred dash-lengths


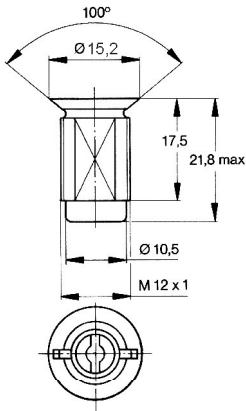
Style	Dimensions	Materials / Finish	°C	Part No.
	 <p>$S=22,4 + (0,76 \times \text{length no.})$</p>	Steel / nickel-plated Steel / zinc-plated CrVI-free, transparent passivated	230	15S1- *-1AD 15S1- *-1AJ

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

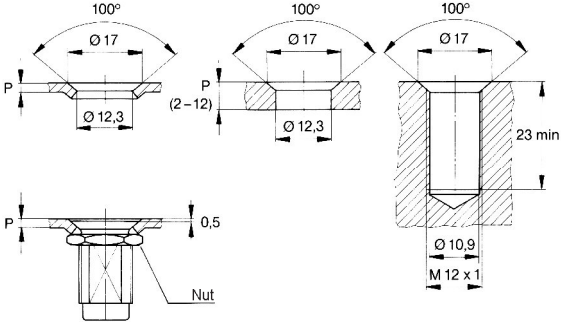
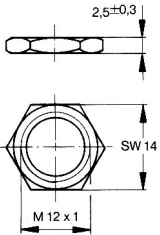
Other lengths and surfaces can be ordered upon request.

Stud Installation Instructions

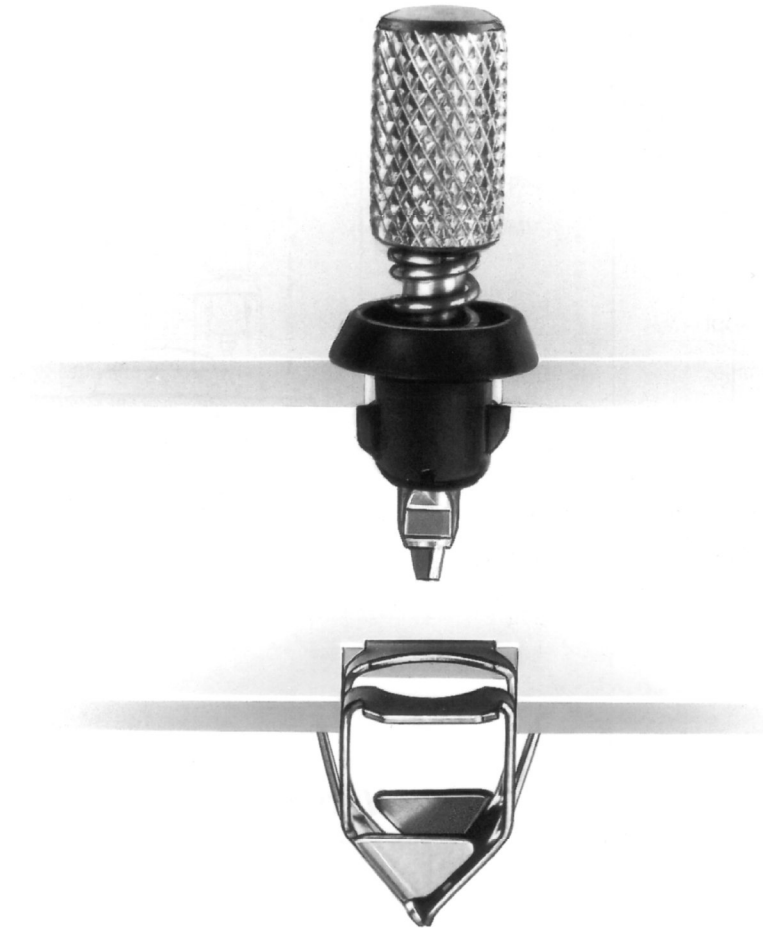
Installation Dimensions	Accessories	Materials / Finish	Part No.
<p>Panel thickness up to 4,8</p>  <p>Panel thickness up to 4,8</p>  <p>Retaining washer</p>	<p>Retaining washer</p> 	Stainless steel	15S11-1CJ
	<p>Installation Tool for 15S11-1CJ retaining washer</p>		T107-1

Style	Dimensions	Materials / Finish	°C	Part No.
		Zinc die casting / zinc-plated CrVI-free, transparent passivated	150	V15R13-1-1AB

Receptacle Installation Instructions

Installation Dimensions	Accessories	Materials / Finish	Part No.
	Hex Nut 	Steel / zinc-plated, CrVI-free, transparent passivated	V15R14-1-1AB

Push-Turn Fasteners



Particular Features

Max. tensile strength 700 N.

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

Also suitable for automatic installation.

Opening by 1/4 turn - closing by a finger push.

Due to their small size, particularly suited for use in electrical engineering / electronics.

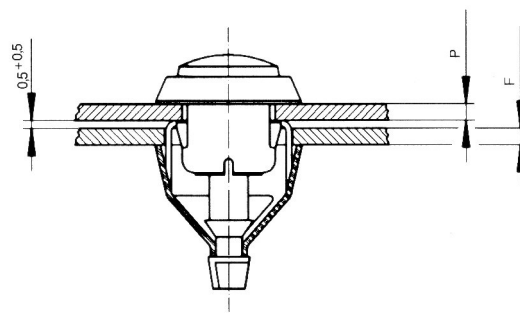
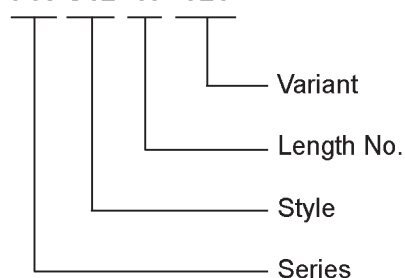
Selection Instructions

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


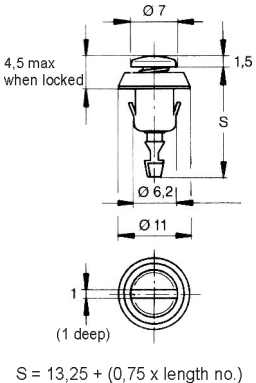

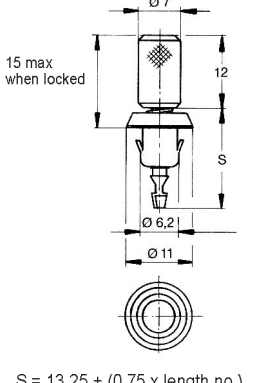


Stud Length Table

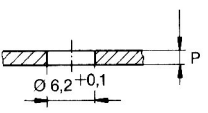
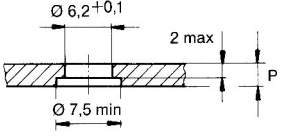
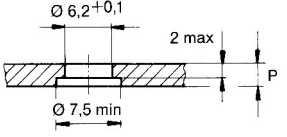
Panel Thickness P	Slotted Recess Head Stud Length No.	Knurled Head Stud Length No.	Panel Thickness P	Slotted Recess Head Stud Length No.	Knurled Head Stud Length No.
0,50 - 1,25	5	5	6,50 - 7,25	13	-
1,25 - 2,00	6	6	7,25 - 8,00	14	-
2,00 - 2,75	7	7	8,00 - 8,75	15	-
2,75 - 3,50	8	8	8,75 - 9,50	16	-
3,50 - 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	-


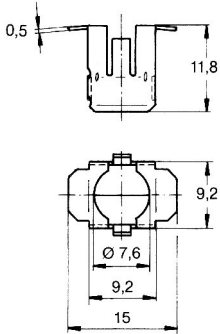
Other lengths on request.

■ Preferred dash-lengths

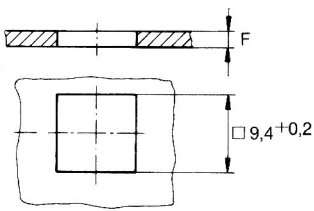
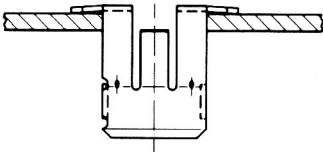
Style	Dimensions	Materials / Finish	Panel Thickness P	°C	Part No.
Slotted Recess Head 	 <p>$S = 13,25 + (0,75 \times \text{length no.})$</p>	Stainless steel Spring cup: Plastic (POM) / black	0,5 - 1,0 1,0 - 1,5 1,5 - 2,0	-40 up to +100	715S12- *-1BP 715S12- *-2BP 715S12- *-3BP
Knurled Head 	 <p>$S = 13,25 + (0,75 \times \text{length no.})$</p>	Stainless steel Spring cup: Plastic (POM) / black	0,5 - 1,0 1,0 - 1,5 1,5 - 2,0	-40 up to +100	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.
Receptacle 		Stainless steel	0,5 - 1,0	-40 up to +100	715R02-1BP
			1,0 - 1,5	(See stud assembly)	715R02-2BP
			1,5 - 2,0		715R02-3BP
			2,0 - 2,5		715R02-4BP

Installation Instructions

Installation Dimensions	
 	

Particular Features

Max. tensile strength 1.400 N.

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

Also suitable for automatic installation.

Opening by 1/4 turn - closing by a finger push.

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 P using table below, insert into stud part number * (e.g. 716S12-*-1BP).

Part no. example

Stud, slotted recess head

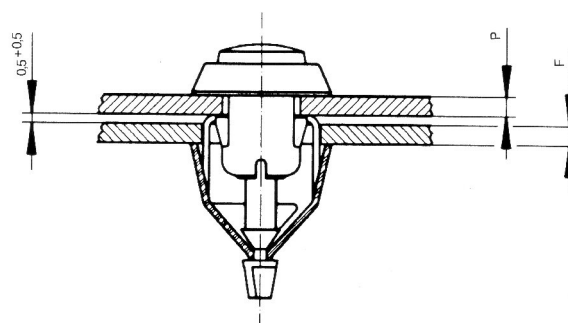
716 S12 -03 -2BP

Variant

Length No.

Style

Series


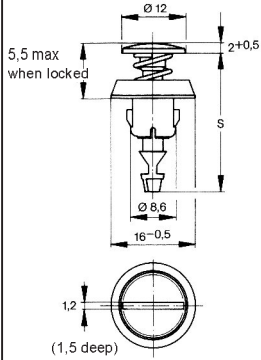

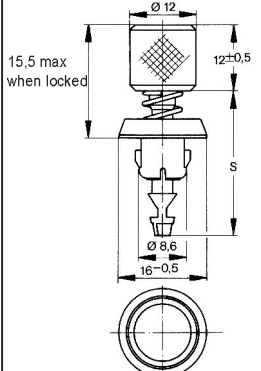


Stud Length Table

Panel Thickness P	Stud Length No.
1,0 - 2,0	2
2,0 - 3,0	3
3,0 - 4,0	4
4,0 - 5,0	5
5,0 - 6,0	6
6,0 - 7,0	7
7,0 - 8,0	8
8,0 - 9,0	9
9,0 - 10,0	10

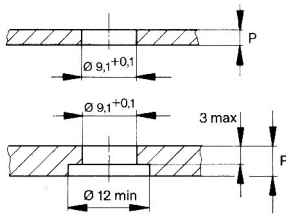
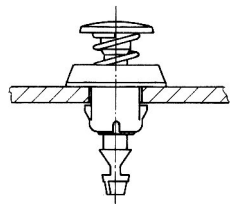
Other lengths on request.

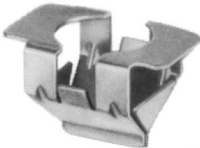
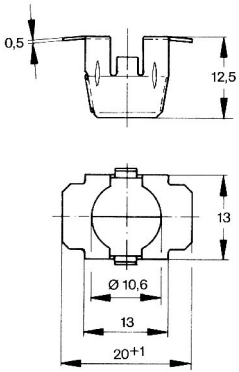
■ Preferred dash-lengths

Style	Dimensions	Materials / Finish	Frame Thickness F	°C	Part No.
Slotted Recess Head 	 <p>S = 18,5 + length no.</p>	Stainless steel Spring cup: Plastic (POM) / black	0,5 - 1,0	-40 up to +100	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 	 <p>S = 18,5 + length no.</p>	Stainless steel Spring cup: Plastic (POM) / black	0,5 - 1,0	-40 up to +100	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

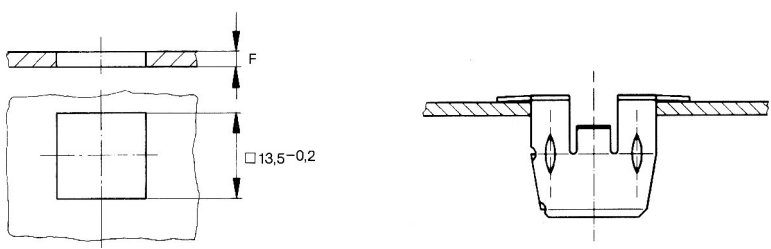
* Length no. from Table, page M-1.

Stud Installation Instructions

Installation Dimensions	
Panel up to 3 mm Panel over 3 mm	 

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	(See stud assembly)	720R01-2B
			2,0 - 2,5		720R01-3B
			2,5 - 3,0		720R01-4B

Installation Instructions

Installation Dimensions


Particular Features

Max. tensile strength 3.000 N.

Robust design - high strength.

Stud assembly with protective, compensating and retaining washers.

Rivet and screw mounting spring clip.

Opening by 1/4 turn - closing by a finger push.

Selection Instructions

1. Select stud assembly and spring clip, page N-2 and N-3.

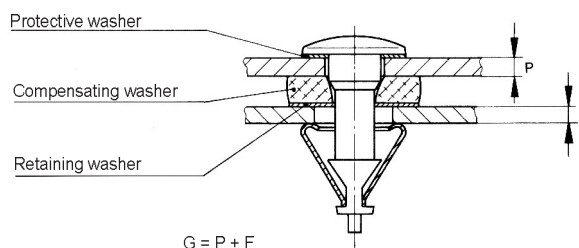
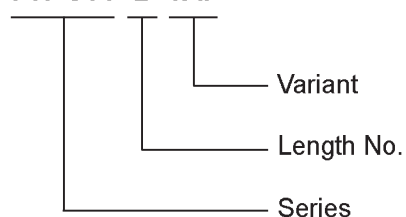
2. Select compensating and retaining washers, page N-2.

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 -1AF


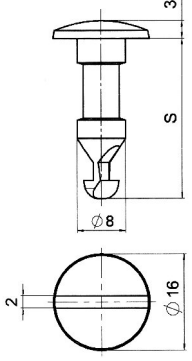

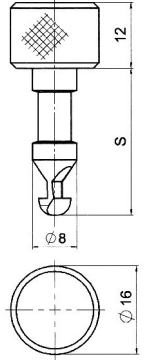


Stud Length Table

Griprange 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

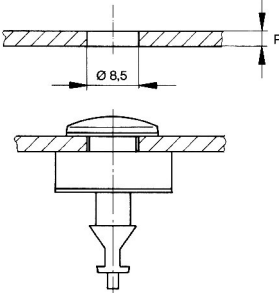
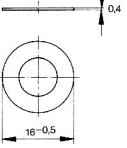
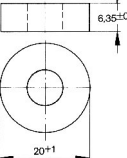
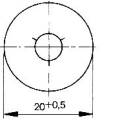
Other lengths on request.


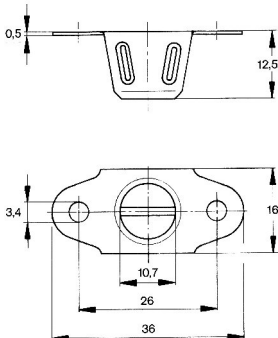
■ Preferred dash-lengths

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

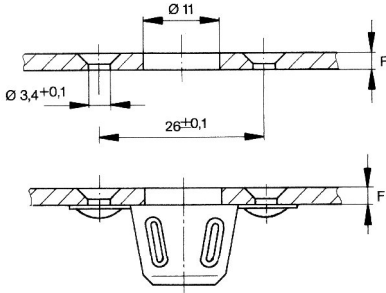
* Length no. from Table, see page N-1.

Stud Installation Instructions

Style	Dimensions	Materials / Finish	°C	Part No.
	Protective 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


Particular Features

Max. tensile strength 1.200 N.
Easy and economic installation by snap-in spring clip.
Easy installation of stud and washer without tool.
Tool or hand operated.
Tool operated with combination recess.
Opening by 1/4 turn - closing by a finger push.
Wide grip range.

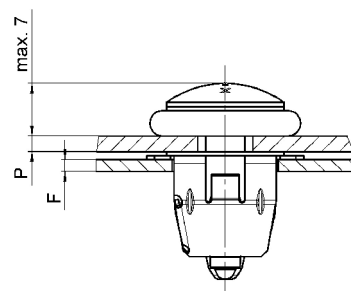
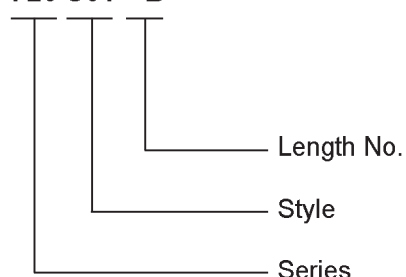
Selection Instructions

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, insert into stud part number * (e.g. 720S01-*B).

Part no. example


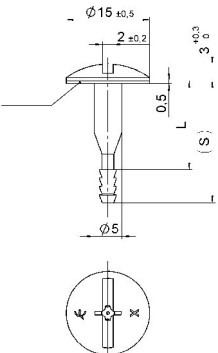

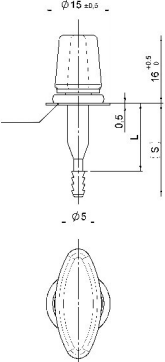
Stud, slot-cross recess

720 S01 -*B



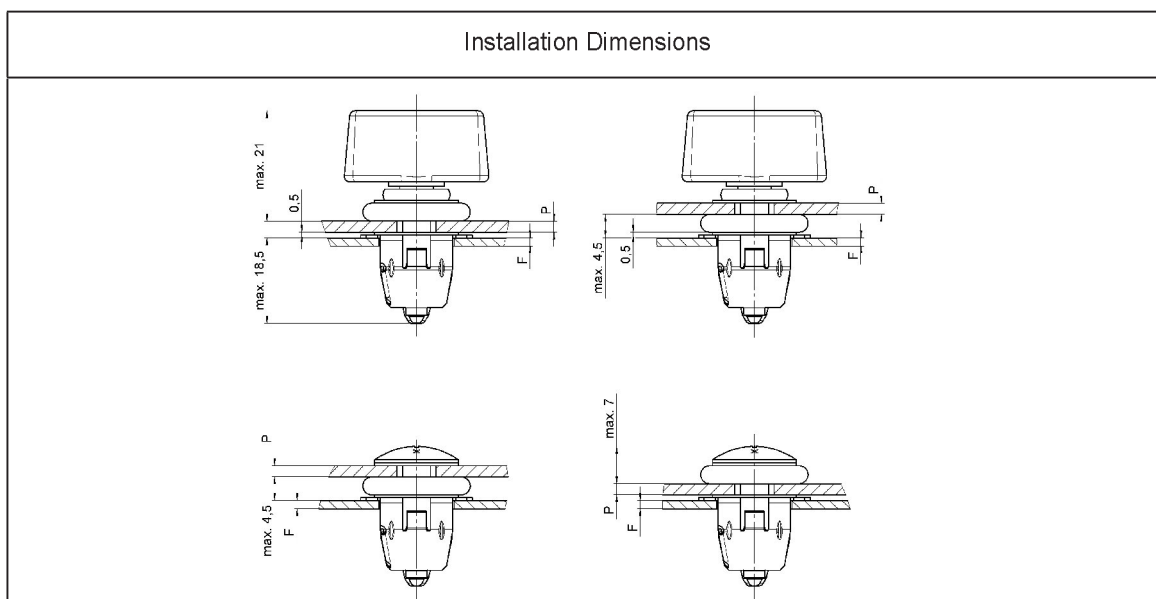
Panel Thickness P	Slot-Cross Recess Length No.	Wing Head Stud Length No.	Dimension L +0,1/-0,2	Dimension (S)
1,00 - 4,00	1	1	16	21
4,00 - 7,00	2	2	19	24
7,00 - 10,00	3	3	22	27

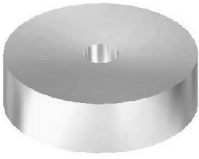
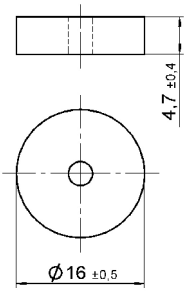
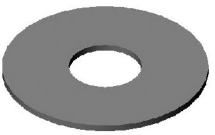
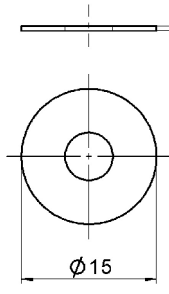
■ Preferred dash-lengths

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

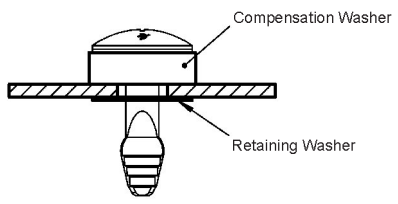
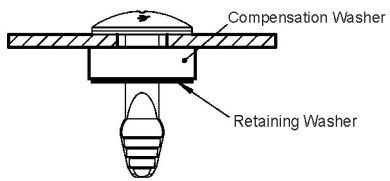
* Length no. from Table, see page O-1.


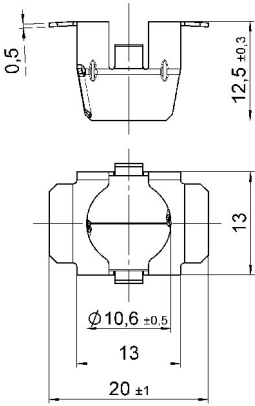
Stud Installation Instructions



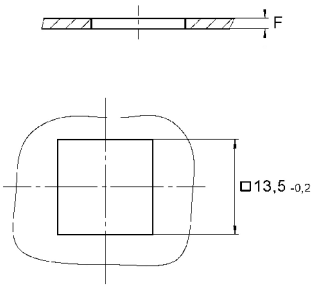
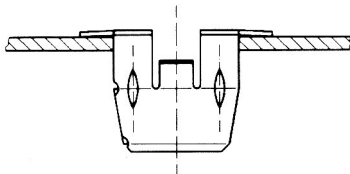
Style	Dimensions	Materials / Finish	°C	Part No.
Compensation Washer 		PU - Elastomer yellow	-20 up to +70	720W01-2K
Retaining Washer 		Polyamid natural	-20 up to +70	50E15-1K

Mounting Instructions

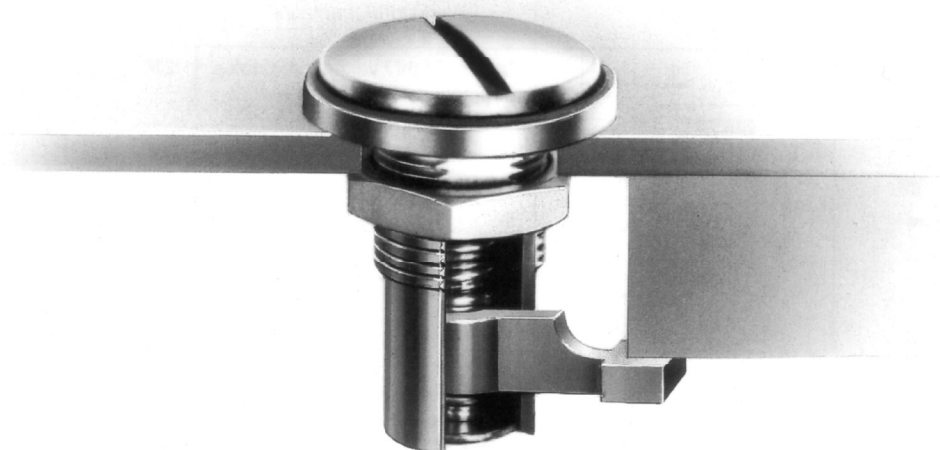
Polyamid natural	Polyamid natural
	

Style	Dimensions	Materials / Finish	Frame Thickness F	°C	Part No.
Spring Clip 		Stainless steel	1,0 - 1,5	-40 up to +150	720R01-1B
			1,5 - 2,0		720R01-2B
			2,0 - 2,5	Please note the restrictions caused to stud assemblies	720R01-3B
			2,5 - 3,0		720R01-4B

Installation Instructions

Installation Dimensions	
	

Pawl Latches



Particular Features

Wide grip range (total thickness G up to 15 mm).

Universally applicable.

Easy installation by single-hole mounting.

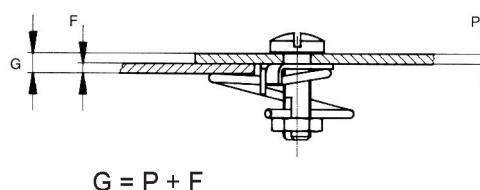
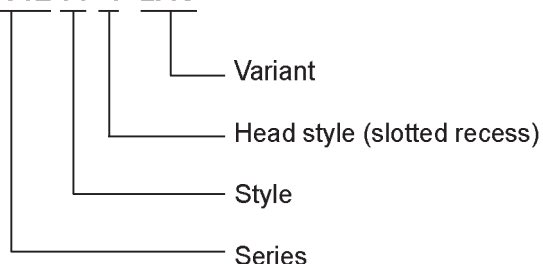
Either tool-operated (slotted recess head) or hand-operated (fixed wing head).


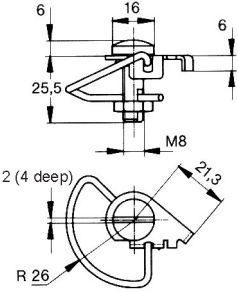

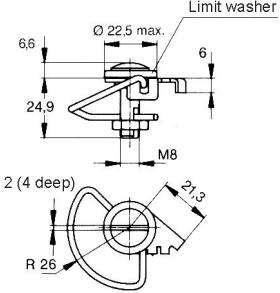

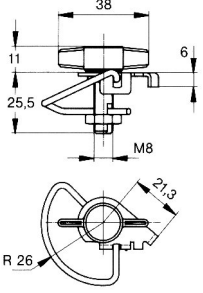
Clockwise locking.

Part no. example

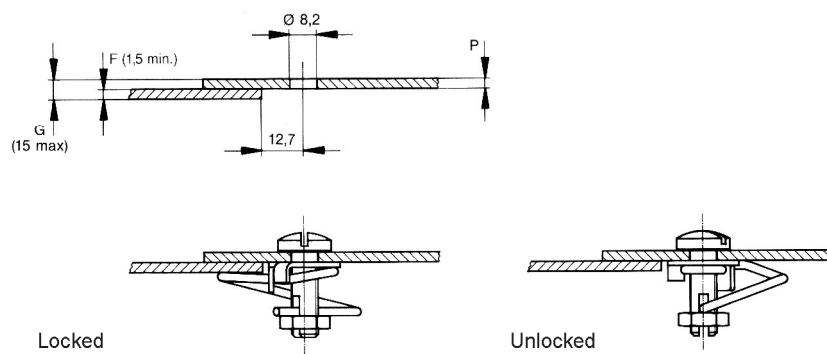
Pawl Latches, slotted recess head, with limit washer.

V964L 01 -1 -2AG



Style	Dimensions	Materials / Finish	°C	Part No.
Slotted Recess Head 		Stud: Steel / zinc-plated CrVI-free, transparent passivated Spring: Stainless steel	230	V964L01-1-1AG
Slotted Recess Head with Decorative Washer 		Stud: Steel / zinc-plated CrVI-free, transparent passivated Spring: Stainless steel	230	V964L01-1-2AG
Fixed Wing Head 		Stud: Steel / zinc-plated CrVI-free, transparent passivated Spring: Stainless steel Wing: Plastic (POM) black	-40 up to +100	V964L01-2-1AG

Installation Dimensions



Particular Features

Two wide grip ranges from 1,0 mm to 18,8 mm to choose from - continuously adjustable.

Two different head styles available.

Easy single hole mounting - low installation cost.

Clockwise locking.

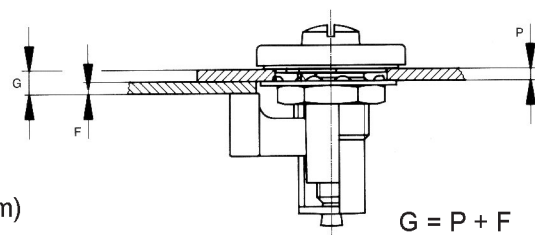
Counterclockwise locking fasteners upon request.


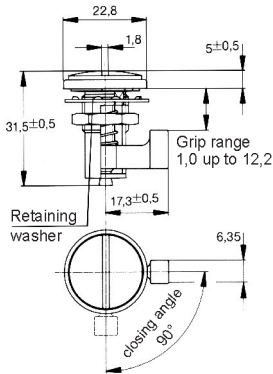

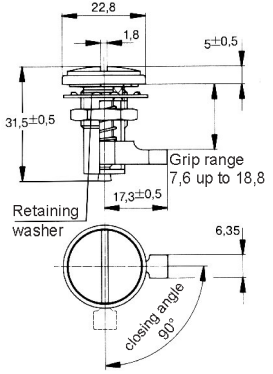
Part no. example


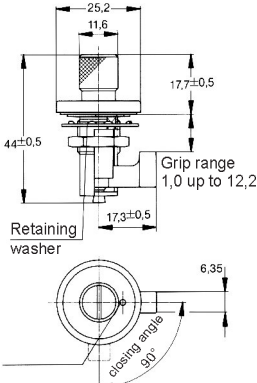

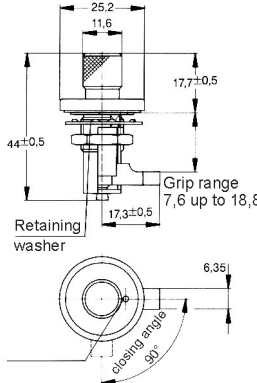
Pawl Latches, fillister head.

Grip range 1,0 mm - 12,2 mm.

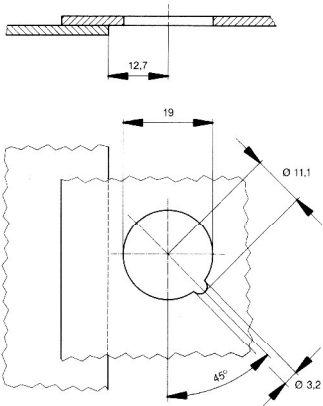
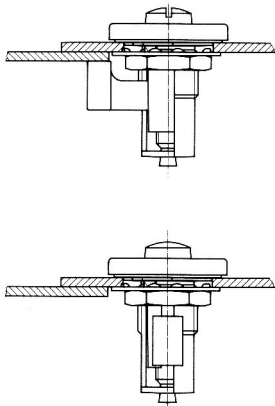
V965L 23 -1 R1AG



Style	Dimensions	Materials / Finish	°C	Part No.
Flat Head Grip Range 1,0 up to 12,2 		Steel / zinc-plated CrVI-free, transparent passivated	-40 up to +100	V965L23-1R1AG
Flat Head Grip Range 7,6 up to 18,8 		Steel / zinc-plated CrVI-free, transparent passivated	-40 up to +100	V965L23-2R1AG

Style	Dimensions	Materials / Finish	°C	Part No.
Knurled Head Grip Range 1,0 up to 12,2 		Steel / zinc-plated CrVI-free, transparent passivated	-40 up to +100	V965L1-1R1AG
Knurled Head Grip Range 7,6 up to 18,8 		Steel / zinc-plated CrVI-free, transparent passivated	-40 up to +100	V965L1-2R1AG

Pawl Latches Installation Instructions

Instruction Dimensions	
	

Part No.	Page	Part No.	Page	Part No.	Page
15/32-32UNS-2B	C3,F11	40R17-1	G8	50W204-01K	D5,E5
15S1- *-1AD	K2	40R18-1	G9	5R2-3	B4
15S1- *-1AJ	K2	40S37-*AE	G5	5S15-*	B2
15S11-1CJ	K2	40S37-*E	G5	5S3-2	B3
212-12S	F8	40S39	G5	5S72-5-1AA	B3
214-16G	G8	40S47-*C	G4	5S72-9-1AA	B3
214-16GN	G8	40S5-*D	G4	713S*- *AE	J2
214-16S	G8	4P3-1	F7,G6	715R02-1BP	L3
244-16G	G9	50E15-1K	O3	715R02-2BP	L3
244-16GC	G9	50E18-*AGV	D4	715R02-3BP	L3
244-16S	G9	50E19-*AGV	E4	715R02-4BP	L3
2600-*S	F3	50E20-1AK7	D6	715S12- *-1BP	L2
2600-*SW	F3	50E20-2AK7	D6	715S12- *-2BP	L2
2600-SW	C2,F6,F7	50E21-*AGV	D2	715S12- *-3BP	L2
26R1-1	F9	50E21-*S	D2	715S13- *-1BP	L2
26R16-1FGV	F8	50E21-*W0AGV	D3	715S13- *-2BP	L2
26R18-1-1AA	F8	50E21-*WAGV	D3	715S13- *-3BP	L2
26S34-*	F3	50E2-3BP	D5,E5	716S12- *-1BP	M2
26S38-*	F3	50E60-*AGV	D3	716S12- *-2BP	M2
26S39-*	F3	50E61-*AGV	E3	716S12- *-3BP	M2
26S42-*	F3	50E7-*AGV	E4	716S12- *-4BP	M2
26S51-*	F3	50E70-*AGV	D2	716S12- *-5BP	M2
2700-*S	F5	50E71-*AGV	E2	716S13- *-1BP	M2
312-12S	F9	50E8-*AGV	E2	716S13- *-2BP	M2
312-12WS	F9	50E8-*S	E2	716S13- *-3BP	M2
4002-*D	G4	50E8-*W0AGV	E3	716S13- *-4BP	M2
4002-*S	G4	50E8-*WAGV	E3	716S13- *-5BP	M2
4002-*SW	G4	50E80-*AGV	D4	717R01-1AK7	N3
4002-*WB	G4	50E80-*CP	D4	717S01- *-1AGV	N2
4002-G-1	G7	50E81-*AGV	E4	717S01- *-2AGV	N2
4002-GS	G7	50E81-*CP	E4	717W01-1K	N2
4002-H-2	G7	50E82-*AGV	D4	717W02-1K	N2
4002-HS	G7	50E82-*CP	D4	717W03-1K	N2
4002-N-3	G7	50E83-*AGV	E4	720R01-1B	M3,O4
4002-N3-B	G7	50E83-*CP	E4	720R01-2B	M3,O4
4002-NS	G7	50E90-*AGV	D2	720R01-3B	M3,O4
4002-O-1	G7	50E91-*AGV	E2	720R01-4B	M3,O4
4002-OS	G7	50S12-0-1AA	D5	720S01-*B	O2
4002-SW-SS	D5,E5,G6	50S12-1-1AA	D5	720S02-*B	O2
40E28- *-1AF	G5	50S12-2-1AA	D5	720W01-2K	O3
40G11-3	G5	50S12-3-1AA	D5	991R2-1AGV	H5
40R12-1A	G8	50S12-4-1AA	D5	991R2-1BP	H5

Part No.	Page	Part No.	Page
991R2-2AZ	O5	V312-12AGV	F9
991R2-3AGV	H5	V50R3-1-1AGV	E6,G9
991R2-3BP	H5	V50R3-1-1BP	E6,G9
991R6-1AK7	H5	V50R3-1-2AZ	E6,G9
991S01- *-1AGV	H2	V50R4-2-1AK7	D6
991S01- *-1BP	H2	V5R2-1AK7	B4
991S02- *-1AGV	H2	V5S21-*AGV	B2
991S03- *-1AGV	H2	V5S3-1AGV	B3
991S05- *-1AGV	H2	V5S5-*AGV	B2
991S17-1K	H4	5S27-*	B2
991S2991-*AGV	H3	V936S05-3-1AA	I1
991S30-*AGV	H3	V936S05-4-1AA	I1
991W02-1BP	H4	V936S11-3-1AA	I1
991W03-1BP	H4	V936S11-4-1AA	I1
991W04-1BP	H4	V964L01-1-1AG	P1
99E10-01	C3,F10	V964L01-1-2AG	P1
99N10-01A1	C3,F11	V964L01-2-1AG	P1
99R10-01A1	C3,F10	V965L1-1R1AG	Q2
99S10-*A1	C2	V965L1-2R1AG	Q2
99W10-01A1	C2	V965L23-1R1AG	Q1
AN6227-B3	F6	V965L23-2R1AG	Q1
AN6227-B6	F6		
R4G-2	G7		
T107-1	K2		
T26	G6		
T98-1	C2,F7		
V15R13-1-1AB	K3		
V15R14-1-1AB	K3		
V212-12-1FGV	F8		
V212-12-2FGV	F8		
V212-12N-1FGV	F8		
V2600-LW-7	C2,F6,F7		
V26R6-1AGV	F8		
V26S01-*AGV	F3		
V26S02-*AGV	F3		
V26S04-*AGV	F3		
V26S06- *-1AGV	F4		
V26S07- *-1AGV	F4		
V26S08- *-1AGV	F4		
V27S01-*AGV	F5		
V27S02-*AGV	F5		
V27W01-1AN	F7		