

Southco® Quarter-turn Fasteners

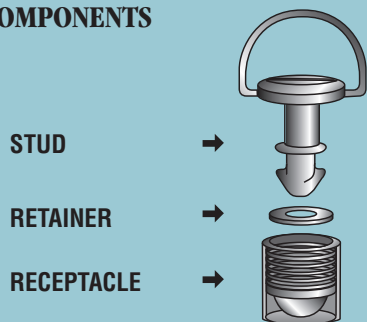
How to Choose a Quarter-turn Fastener Assembly

To Select a Quarter-turn Assembly:

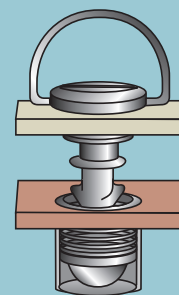
- 1.) Choose your receptacle first
- 2.) Choose your stud
- 3.) Choose your retainer

In a typical application, the stud is installed into the outer panel and held captive with the retainer. The receptacle is permanently secured to the frame or inner panel.

ASSEMBLY COMPONENTS



To fasten, turn the stud one quarter-turn. The stud engages with the installed receptacle and efficiently secures the panels together.



TYPICAL APPLICATION

Components shown installed. Panel/Frame is unfastened.

A quarter-turn in the opposite direction disengages the assembly. After disengaging from the receptacle, the stud remains captive to the outer panel, ready for use again.

Southco offers three sizes of quarter-turn fasteners with multiple head styles and shank diameters. Stud lengths are available in 0.5 mm increments.

Headstyles available



Available accessories include:

Wear Washers: use to protect the panel surface from the turning stud. Cupped style helps align ejector spring.

Ejector Spring: use to provide a visual indication of whether or not the stud is fastened or unfastened.

Sealing Washer: use to provide a seal under the head of the quarter-turn stud.

Southco® Quarter-turn Fasteners

Large Series

- For robust applications
- Quick access

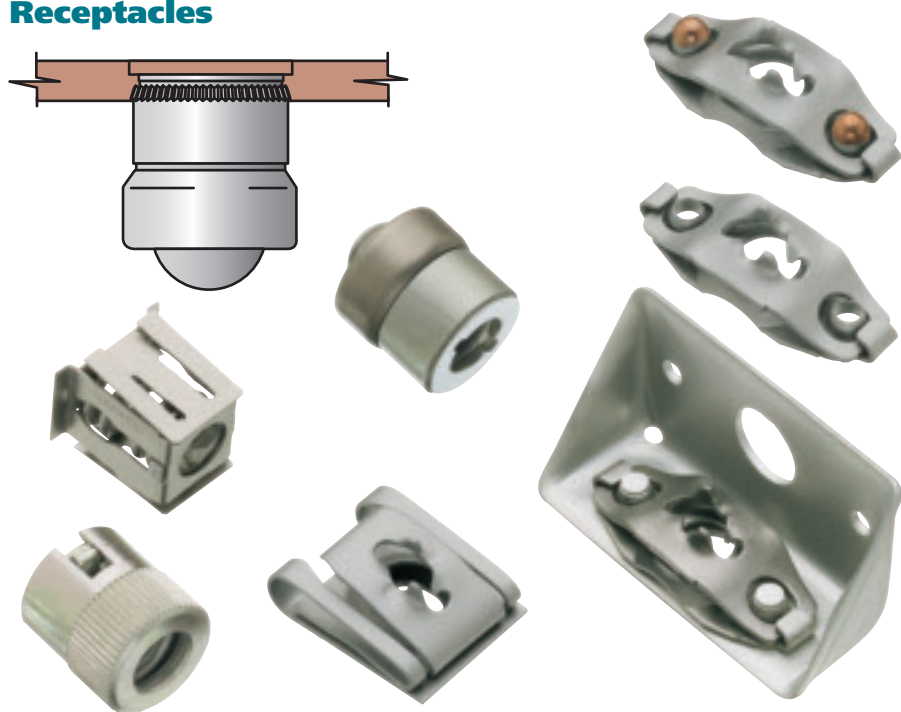
Studs



Retainers



Receptacles



Southco® Quarter-turn Fasteners

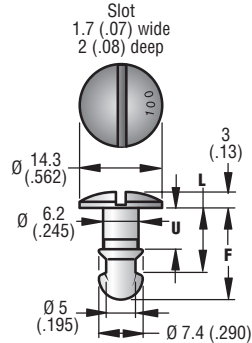
Large Series

Available in Steel and Stainless Steel

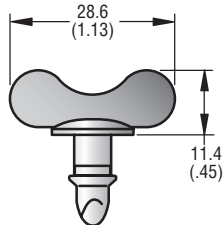
NOTE: To select a Stainless Steel part, substitute the suffix -20 where the -16 is seen in the part number table.

Example: 85-11-140-16 becomes 85-11-140-20.

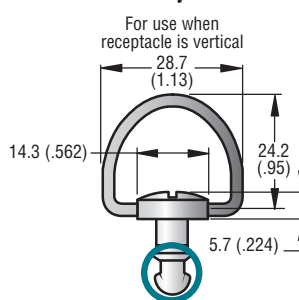
Oval Slotted



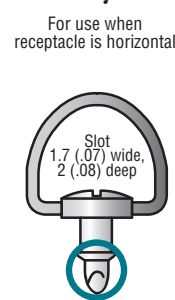
Wing Head



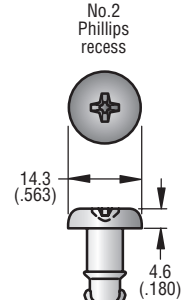
Bail Style RB



Bail Style RA



Phillips Recess



FOR: 		PART NOS. 85-35-308-55 85-35-313-55		FOR: 		PART NOS. 85-35-311-55		FOR: 		ALL OTHER RECEPTACLES*		STUD PART NUMBERS					
OUTER PANEL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		Zinc plate, chromate plus sealer				Zinc plated plus bright chromate dip	
MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
						2.3 (.090)	2.8 (.109)					85-11-100-16 •	85-12-100-16	85-16-100-16	85-15-100-16	85-P-100	
						2.8 (.110)	3.3 (.129)					85-11-120-16 •	85-12-120-16	85-16-120-16	85-15-120-16	85-P-120	
						3.3 (.130)	3.8 (.149)					85-11-140-16 •	85-12-140-16 •	85-16-140-16	85-15-140-16	85-P-140	
						3.8 (.150)	4.3 (.169)					85-11-160-16 •	85-12-160-16 •	85-16-160-16 •	85-15-160-16	85-P-160	
						4.3 (.170)	4.8 (.189)					85-11-180-16 •	85-12-180-16 •	85-16-180-16	85-15-180-16	85-P-180	
						4.8 (.190)	5.3 (.209)					85-11-200-16 •	85-12-200-16 •	85-16-200-16	85-15-200-16	85-P-200	
						5.3 (.210)	5.8 (.229)					85-11-220-16 •	85-12-220-16 •	85-16-220-16 •	85-15-220-16	85-P-220 •	
		1.3 (.050)	1.8 (.069)			5.8 (.230)	6.3 (.249)					85-11-240-16 •	85-12-240-16 •	85-16-240-16	85-15-240-16	85-P-240 •	
0.4 (.015)	0.9 (.034)	1.8 (.070)	2.3 (.089)	6.4 (.250)	6.9 (.269)	85-11-260-16 •	85-12-260-16 •	85-16-260-16	85-15-260-16	85-P-260							
0.9 (.035)	1.4 (.054)	2.3 (.090)	2.8 (.109)	6.9 (.270)	7.4 (.289)	85-11-280-16 •	85-12-280-16 •	85-16-280-16	85-15-280-16	85-P-280							
1.4 (.055)	1.9 (.074)	2.8 (.110)	3.3 (.129)	7.4 (.290)	7.9 (.309)	85-11-300-16 •	85-12-300-16 •	85-16-300-16	85-15-300-16	85-P-300							
1.9 (.075)	2.4 (.094)	3.3 (.130)	3.8 (.149)	7.9 (.310)	8.4 (.329)	85-11-320-16 •	85-12-320-16 •	85-16-320-16	85-15-320-16	85-P-320							
2.4 (.095)	2.9 (.114)	3.8 (.150)	4.3 (.169)	8.4 (.330)	8.9 (.349)	85-11-340-16 •	85-12-340-16 •	85-16-340-16	85-15-340-16 •	85-P-340							
2.9 (.115)	3.4 (.134)	4.3 (.170)	4.8 (.189)	8.9 (.350)	9.4 (.369)	85-11-360-16 •	85-12-360-16 •	85-16-360-16	85-15-360-16	85-P-360							
3.4 (.135)	3.9 (.154)	4.8 (.190)	5.3 (.209)	9.4 (.370)	9.9 (.389)	85-11-380-16 •	85-12-380-16 •	85-16-380-16 •	85-15-380-16	85-P-380							
3.9 (.155)	4.4 (.174)	5.3 (.210)	5.8 (.229)	9.9 (.390)	10.4 (.409)	85-11-400-16 •	85-12-400-16 •	85-16-400-16	85-15-400-16	85-P-400							
4.4 (.175)	4.9 (.194)	5.8 (.230)	6.3 (.249)	10.4 (.410)	10.9 (.429)	85-11-420-16 •	85-12-420-16 •	85-16-420-16	85-15-420-16	85-P-420							
5 (.195)	5.5 (.214)	6.4 (.250)	6.9 (.269)	10.9 (.430)	11.4 (.449)	85-11-440-16 •	85-12-440-16 •	85-16-440-16	85-15-440-16	85-P-440							
5.5 (.215)	6 (.234)	6.9 (.270)	7.4 (.289)	11.4 (.450)	11.9 (.469)	85-11-460-16 •	85-12-460-16	85-16-460-16	85-15-460-16	85-P-460							
6 (.235)	6.5 (.254)	7.4 (.290)	7.9 (.309)	11.9 (.470)	12.4 (.489)	85-11-480-16 •	85-12-480-16	85-16-480-16	85-15-480-16	85-P-480							
6.5 (.255)	7 (.274)	7.9 (.310)	8.4 (.329)	12.5 (.490)	12.9 (.509)	85-11-500-16 •	85-12-500-16	85-16-500-16	85-15-500-16	85-P-500							
7 (.275)	7.5 (.294)	8.4 (.330)	8.9 (.349)	13 (.510)	13.5 (.529)	85-11-520-16 •	85-12-520-16	85-16-520-16	85-15-520-16	85-P-520							
7.5 (.295)	8 (.314)	8.9 (.350)	9.4 (.369)	13.5 (.530)	14 (.549)	85-11-540-16 •	85-12-540-16	85-16-540-16	85-15-540-16	85-P-540							
8 (.315)	8.5 (.334)	9.4 (.370)	9.9 (.389)	14 (.550)	14.5 (.569)	85-11-560-16 •	85-12-560-16	85-16-560-16	85-15-560-16	85-P-560							
8.5 (.335)	9 (.354)	9.9 (.390)	10.4 (.409)	14.5 (.570)	15 (.589)	85-11-580-16 •	85-12-580-16	85-16-580-16	85-15-580-16	85-P-580							

* Please check for any special conditions, or constant required by your specific receptacle on the receptacle description pages.

‡ If using ejector spring, sealing washer or nylon wear washer, see bottom of page.

Retainers

Material and Finish

302 Stainless steel, passivated.

PART NUMBER
 85-34-201-20 •

To install, use tool.

PART NUMBER
 85-0-22543-11 •

Material and Finish

Nylon, black.

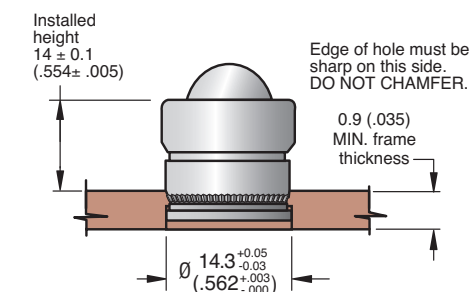
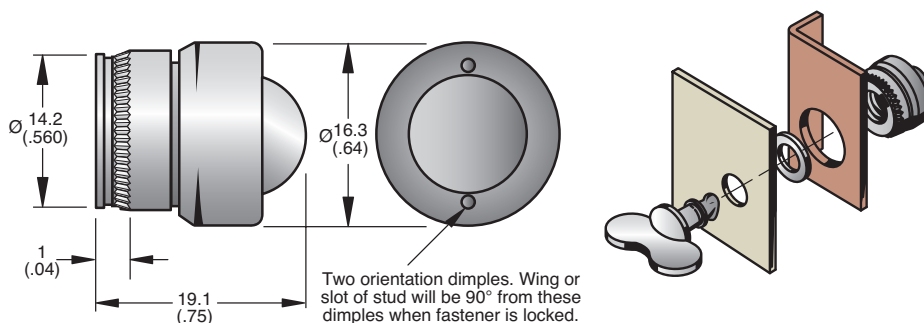
PART NUMBER
 85-34-301-12 •

Southco® Quarter-turn Fasteners

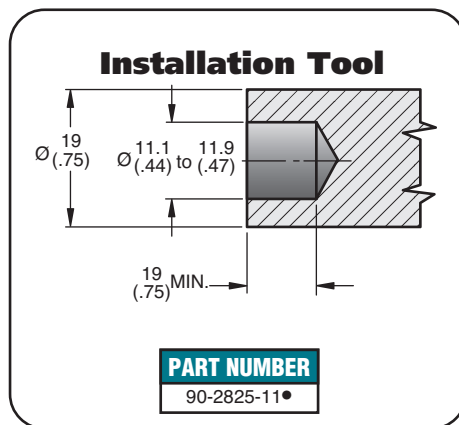
Large Series, Receptacles

Shielded press-in for sheet metal

- Provides RFI-EMI shielding



NOTE: For use in low carbon steels, aluminium and stainless steels in the annealed condition that are RB85 or softer.



Material and Finish

RECEPTACLE: 1010 Steel, hardened and zinc plate, chromate plus sealer.

SHELL: Low carbon steel, hardened and zinc plate, chromate plus sealer.

SPRING: 302 Stainless steel

DACROTIZED†.

CAP: 305 Stainless steel DACROTIZED†.

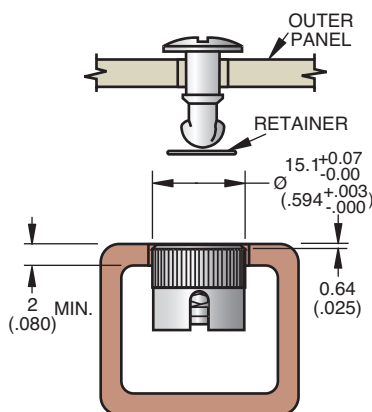
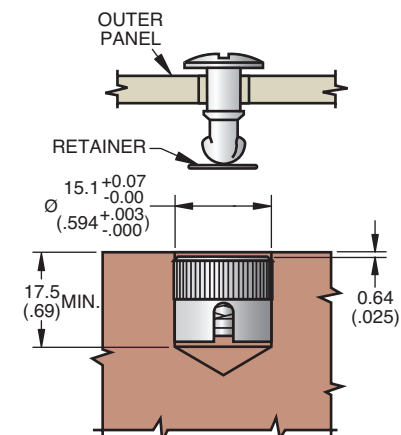
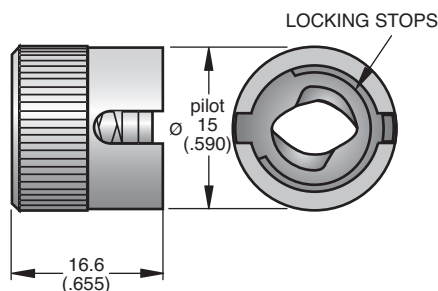
†Registered trademark of Metal Coatings International, Inc.

PART NUMBER

85-35-311-55 •

Adjustment Formula: To enter Stud Selection Table determine your Total Material Thickness. Substitute 1.4 (.055) (constant) for frame thickness if frame thickness is less than 1.4 (.055).

Press-in for blind applications and solid materials



Material and Finish

RECEPTACLE: 1010 Steel, hardened and zinc plate, chromate plus sealer.

SHELL: Low carbon steel, hardened and zinc plate, chromate plus sealer.

SPRING and RETAINER: 302 Stainless steel, passivated.

PART NUMBER

with 90° locking stops 85-35-308-55 •

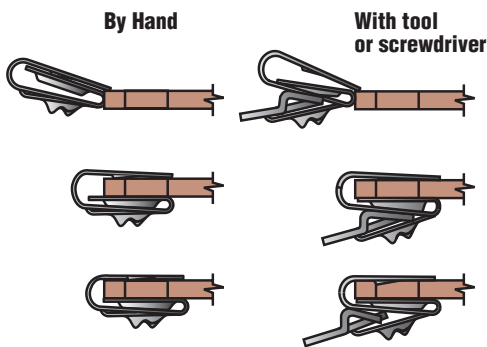
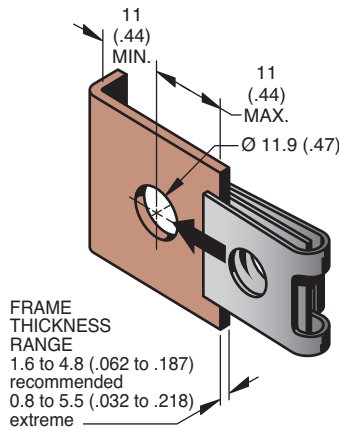
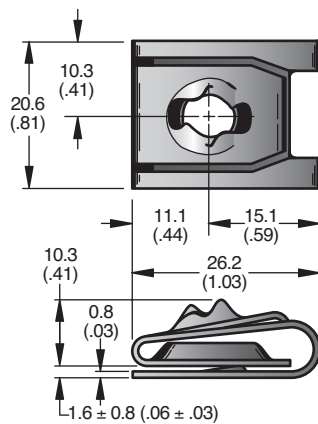
without 90° locking stops 85-35-313-55 •

To enter Stud Selection Table determine your Outer Panel Thickness.

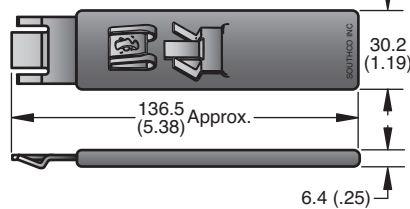
Southco® Quarter-turn Fasteners

Large Series, Receptacles

Clip-on



Installation Tool



PART NUMBER
29-85-101-10 •

Material and Finish

1064 Steel, DACROTIZED† or 17-7 PH stainless steel, passivated.

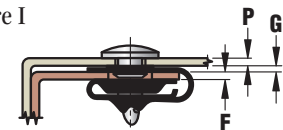
† Registered trademark of Metal Coatings International, Inc.

PART NUMBER

Steel	85-47-101-15 •
Stainless Steel	85-47-101-20 •

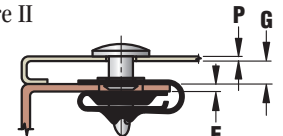
Adjustment Formula: To enter Stud Selection Table determine your Total Material Thickness by calculating as follows:

Figure I



$P + F + 0.94 (.037)$ (constant) when G is 1.32 (.052).

Figure II



$P + F + G - 0.38 (.015)$ (constant) when G is 1.33 (.053) or greater.

Material and Finish

RETAINER and HOUSING: 301 Stainless steel, natural.

RECEPTACLE: 1010 Steel, hardened and zinc plate, chromate plus sealer.

SPRING: 302 Stainless steel, passivated.

TOOL: 12L14 Steel, zinc plate, chromate plus sealer.

PART NUMBER

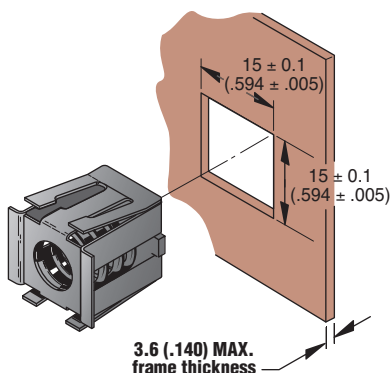
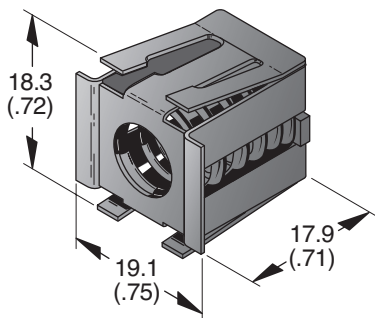
85-35-309-56 •

Adjustment Formula: To enter Stud Selection Table calculate: Outer Panel Thickness + 8.4 (.330) but use Total Material Thickness column.

millimeter (inch)
millimeter
(inch)

Dimensions without tolerances are for reference only.

Snap-in



Installation Tool

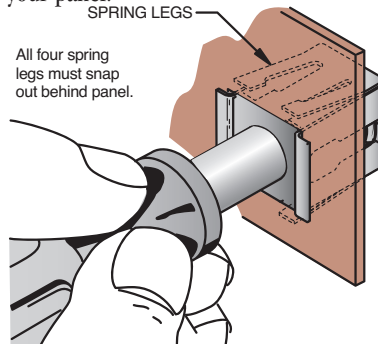


PART NUMBER
29-8125-309 •

Push only on the center area of the receptacle as shown until all four spring legs snap out behind your panel.

SPRING LEGS

All four spring legs must snap out behind panel.

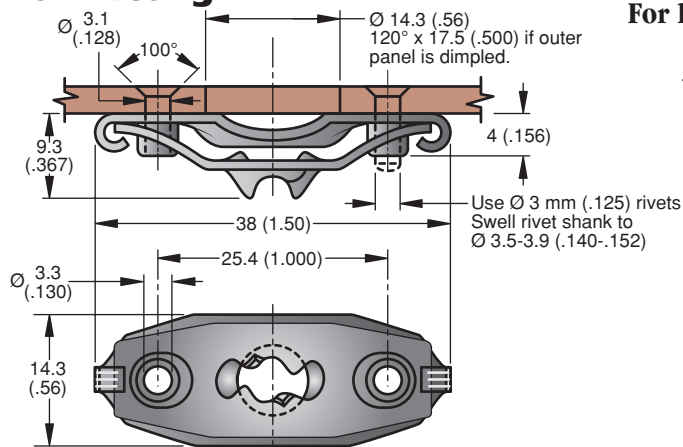


Southco® Quarter-turn Fasteners

Large Series, Receptacles

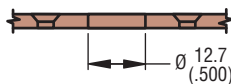
Leaf Spring Receptacles

For riveting

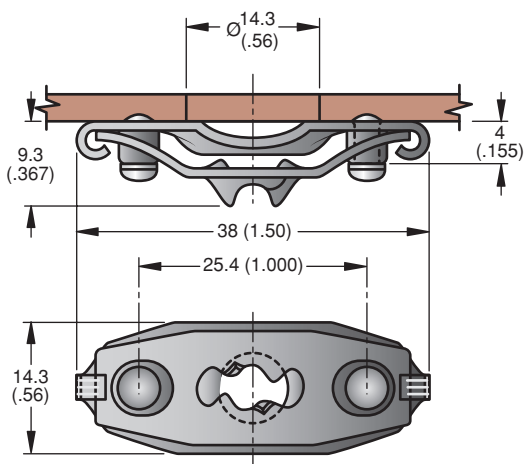


SPRING MUST FLOAT FREELY AS BEFORE RIVETING.

For Dimpling Inner Panel:

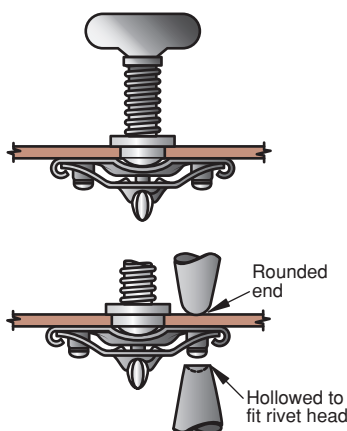


For welding

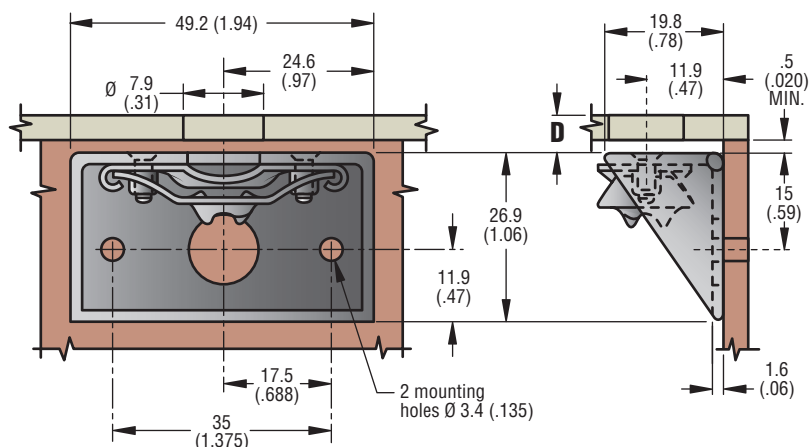


RIVET MUST NOT MELT OVER ONTO SPRING.

Use Part No. 85-90-3278-11 •
or any pilot clamp.



Side mount



Adjustment Formula

To enter Stud Selection Table calculate: $D + 1.6 (.062)$ and use Total Material Thickness column.

southco®

• Products identified with this symbol are stocked subject to prior sale in one or more of our global locations. If unavailable from our facility nearest you, allow for shipping time from another facility.

Material and Finish

RECEPTACLE SPRING: 1064 Steel, DACROTIZED† or 17-7PH stainless steel, passivated (see table).

BASE: 1010 Steel, DACROTIZED† or 305 stainless steel, passivated (see table).

†Registered trademark of Metal Coatings International, Inc.

PART NUMBER

Steel	Stainless steel
85-35-295-15 •	85-35-295-20 •

To enter Stud Selection Table determine your Total Material Thickness.

Material and Finish

SPRING: 1064 Steel, DACROTIZED†

BASE: 1010 Steel, DACROTIZED†.

RIVET: Steel, copper plated.

†Registered trademark of Metal Coatings International, Inc.

PART NUMBER

85-35-296 -15 •

To enter Stud Selection Table determine your Total Material Thickness.

Material and Finish

ANGLE BRACKET: 1010 Steel, zinc plate, chromate plus sealer.

SPRING: 1064 Steel, DACROTIZED†.

BASE: 1010 Steel, DACROTIZED†.

RIVET: 2117 Aluminum, natural.

†Registered trademark of Metal Coatings International, Inc.

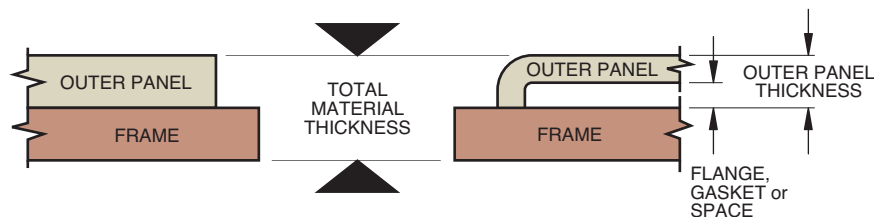
PART NUMBER

85-45-101 -15 •

Southco® Quarter-turn Fasteners

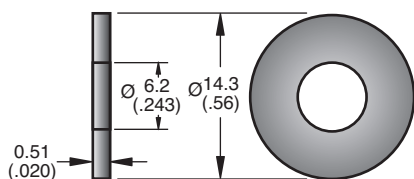
Large Series, Selection Guide

To select correct fastener



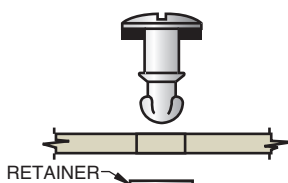
1. Choose a receptacle. (Note any frame thickness limitations).
2. To select a stud,
 - a) measure your Outer Panel Thickness or Total Material Thickness (note under receptacle part number will tell you which to use).
 - b) if adjustment formula is shown under receptacle part number apply this formula to your measurement.
 - c) if sealing washers, stud ejector springs or wear washers will be used, apply proper adjustment formulas to your measurement.
 - d) use measurement (or adjusted measurement) to find part number in table, see pages 290 to 291, under stud head style you want.
3. Choose a retainer.
4. Review the stud installation procedure.
5. Order each component and tool (if required) separately by part number.

Sealing Washer



Adjustment Formula

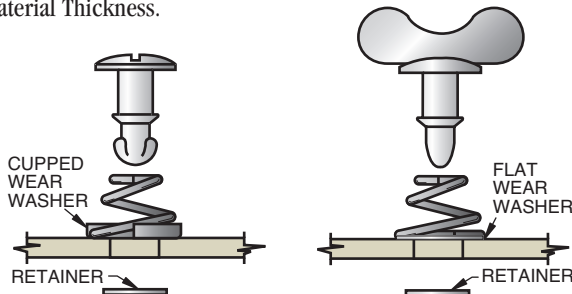
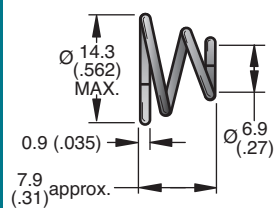
Add .51 (.020) to your Outer Panel Thickness or Total Material Thickness.



Ejector Spring

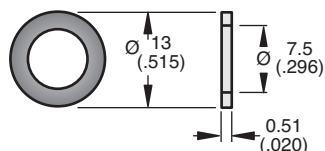
Adjustment Formula

When using a stud ejector (ejector spring and wear washer), add 1.5 (.060) to your Outer Panel Thickness or Total Material Thickness.

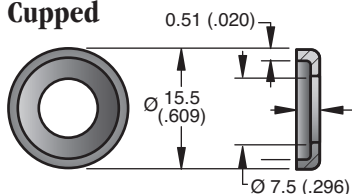


Nylon Wear Washers

Flat

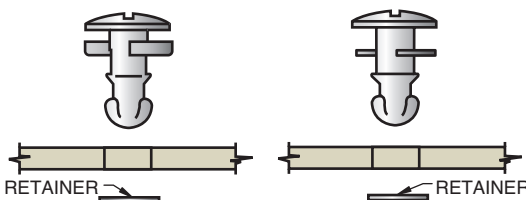


Cupped



Adjustment Formula

When using a wear washer, add 0.51 (.020) to your Outer Panel Thickness or Total Material Thickness.



Material and Finish

SEALING WASHER: Nitrile fibre core rubber, black.

STUD EJECTOR: 302 Stainless steel, passivated.

WEAR WASHERS: Nylon, white or black (see table).

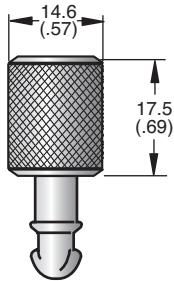
PART NUMBERS

Sealing Washer		85-43-201-38 •
Ejector Spring		14-18-150-24 •
Wear Washer	Flat (White)	85-46-103-39 •
	Cupped (White)	85-46-101-39 •
	Cupped (Black)	85-46-101-41 •

millimeter (inch)
millimeter
(inch)

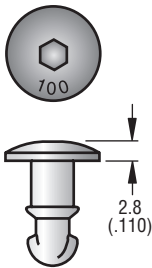
Dimensions without tolerances are for reference only.

Knurled Head

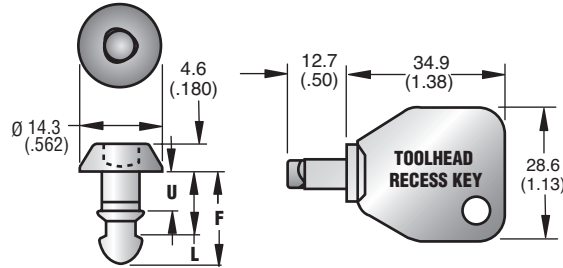


Hex Socket

4 mm 5/32 hex socket



Toolhead Recess



STUD PART NUMBERS			DIMENSIONS		
Zinc plate, chromate plus sealer		Zinc plated plus bright chromate dip	U	L	F REF.
KNURLED HEAD	HEX SOCKET	TOOLHEAD RECESS			
85-13-100-16	85-78-100-16	85-T-100	5.2 (.205)	9.1 (.360)	13.8 (.545)
85-13-120-16	85-78-120-16	85-T-120	5.7 (.225)	9.7 (.380)	14.4 (.565)
85-13-140-16	85-78-140-16	85-T-140	6.2 (.245)	10.2 (.400)	14.9 (.585)
85-13-160-16	85-78-160-16	85-T-160	6.7 (.265)	10.7 (.420)	15.4 (.605)
85-13-180-16	85-78-180-16 •	85-T-180	7.2 (.285)	11.2 (.440)	15.9 (.625)
85-13-200-16	85-78-200-16	85-T-200	7.8 (.305)	11.7 (.460)	16.4 (.645)
85-13-220-16	85-78-220-16	85-T-220	8.3 (.325)	12.2 (.480)	16.9 (.665)
85-13-240-16	85-78-240-16	85-T-240	8.8 (.345)	12.7 (.500)	17.4 (.685)
85-13-260-16	85-78-260-16 •	85-T-260	9.3 (.365)	13.2 (.520)	17.9 (.705)
85-13-280-16	85-78-280-16	85-T-280	9.8 (.385)	13.7 (.540)	18.4 (.725)
85-13-300-16	85-78-300-16	85-T-300	10.3 (.405)	14.2 (.560)	18.9 (.745)
85-13-320-16	85-78-320-16	85-T-320	10.8 (.425)	14.7 (.580)	19.4 (.765)
85-13-340-16	85-78-340-16	85-T-340	11.3 (.445)	15.2 (.600)	19.9 (.785)
85-13-360-16	85-78-360-16	85-T-360	11.8 (.465)	15.8 (.620)	20.5 (.805)
85-13-380-16	85-78-380-16	85-T-380	12.3 (.485)	16.3 (.640)	21 (.825)
85-13-400-16	85-78-400-16	85-T-400	12.8 (.505)	16.8 (.660)	21.5 (.845)
85-13-420-16	85-78-420-16	85-T-420	13.3 (.525)	17.3 (.680)	22 (.865)
85-13-440-16	85-78-440-16	85-T-440	13.8 (.545)	17.8 (.700)	22.5 (.885)
85-13-460-16	85-78-460-16	85-T-460	14.4 (.565)	18.3 (.720)	23 (.905)
85-13-480-16	85-78-480-16	85-T-480	14.9 (.585)	18.8 (.740)	23.5 (.925)
85-13-500-16	85-78-500-16	85-T-500	15.4 (.605)	19.3 (.760)	24 (.945)
85-13-520-16	85-78-520-16	85-T-520	15.9 (.625)	19.8 (.780)	24.5 (.965)
85-13-540-16	85-78-540-16	85-T-540	16.4 (.645)	20.3 (.800)	25 (.985)
85-13-560-16	85-78-560-16	85-T-560	16.9 (.665)	20.8 (.820)	25.5 (1.005)
85-13-580-16	85-78-580-16	85-T-580	17.4 (.685)	21.3 (.840)	26 (1.025)

Material and Finish

WING HEAD STUD: 1008 Steel.

WING: 1010 Steel.

BAIL HEAD STUD: 1008 Steel.

BAIL: 1008 or 1010 Steel.

KNURLED HEAD STUD: Low carbon steel.

OVAL SLOTTED AND OVAL PHILLIPS HEAD STUDS: 1008 Steel or 302 stainless steel, passivated.

OTHER STYLES: 1008 Steel.

PART NUMBERS

Toolhead Recess Key

29-90-215-10 •

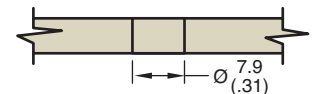
Stud Installation

For: Above-surface styles

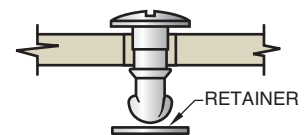


For any panel thickness.

1. Drill.



2. Insert stud and add retainer.

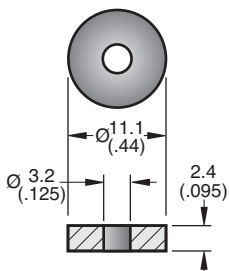


Retainer

Hand installation

Material and Finish

Neoprene, black.



PART NUMBER
85-33-101-27 •

To install.

