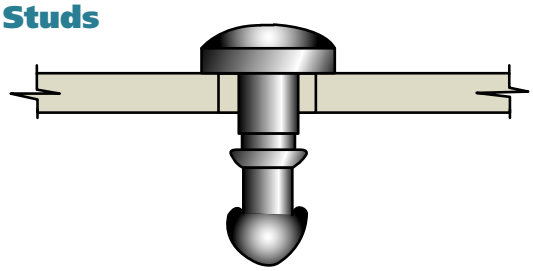
Southco® Quarter-turn Fasteners

Small Series

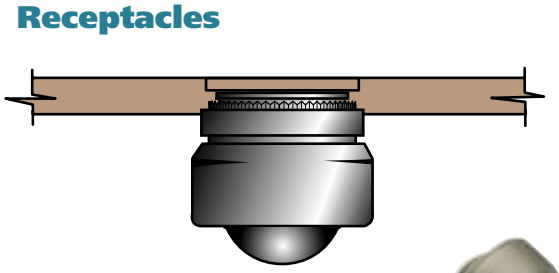
- **For limited-space applications**
- **Quick access**

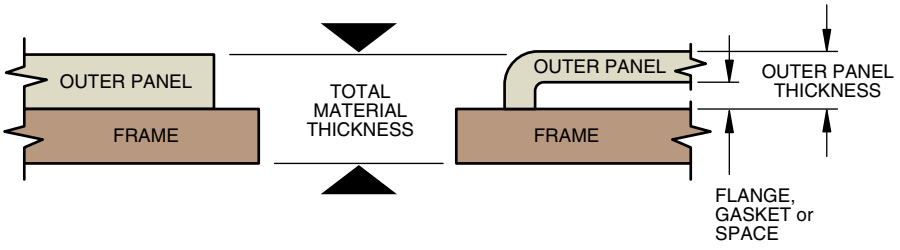
Studs



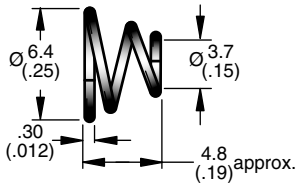
Retainer

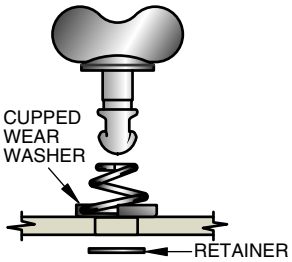
Receptacles



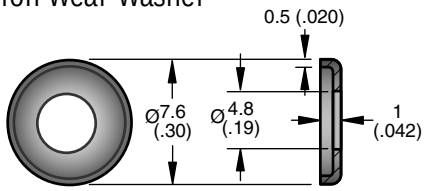


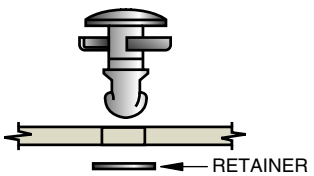
Stud Ejector





Nylon Wear Washer





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) use measurement (or adjusted measurement) to find part number in table, pg. 273 under stud head style you want.
3. Choose a retainer.
4. Order each component and tool (if required) separately by part number.

Material and Finish

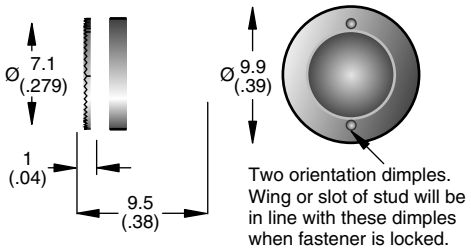
EJECTOR SPRING: 302 Stainless steel, passivated.
WEAR WASHER: Nylon, black or white (see table).

PART NUMBER		
EJECTOR SPRING	WEAR WASHER	
	Black	White
81-41-102-24 •	81-46-101-41 •	81-46-101-39 •

NOTE: Adjustment Formula
When using a stud ejector (ejector spring and wear washer), add 0.8 (.032) to your Outer Panel Thickness or Total Material Thickness.

When using a wear washer, add 0.5 (.020) to your Outer Panel Thickness or Total Material Thickness.

millimeter (inch)
millimeter (inch)
Dimensions without tolerances are for reference only.



millimeter (inch)

millimeter
(inch)

Dimensions without tolerances are for reference only.

● 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.

southco®

Snap-in

Installation Tool

Material and Finish

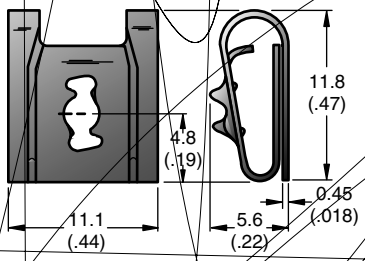
HOUSING and RETAINER: 301 Stainless steel, natural.
RECEPTACLE: 1010 Steel, zinc plate, chromate plus sealer.
SPRING: 302 Stainless steel, passivated.
TOOL: 12L14 Steel, zinc plated, plus bright chromate dip.

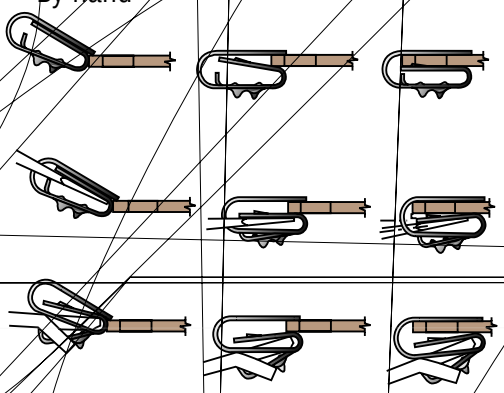
Push only on the center area of the receptacle as shown until all four spring legs snap out behind your panel.

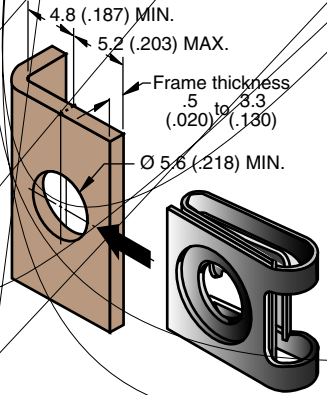
Clip-on

To Install

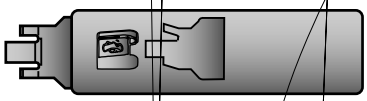
By hand







Installation Tool



millimeter (inch)

millimeter
(inch)

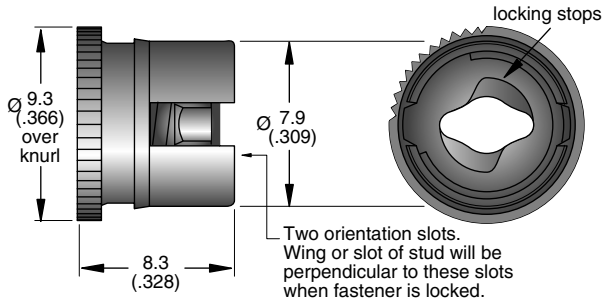
Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

Small Series, Receptacles

For ultrasonic installation in thermoplastics

- **Minimize residual stress**
- **Increased pull-out resistance**
- **Increased torque-out resistance**



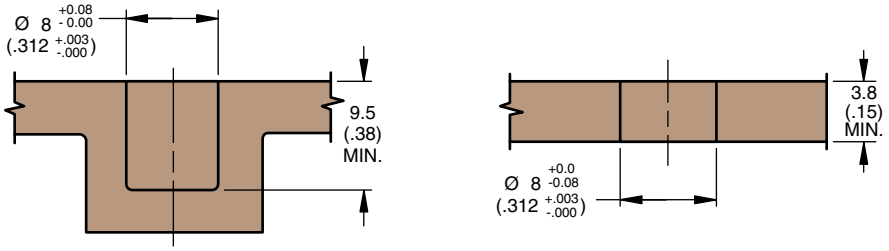
PART NUMBER
81-35-310-55 ●

Material and Finish

RECEPTACLE: 1010 Steel, case hardened and zinc plate, chromate plus sealer.
SHELL: Low carbon steel, zinc plate, chromate plus sealer.
SPRING: 302 Stainless steel, zinc immersion coating.

Installation

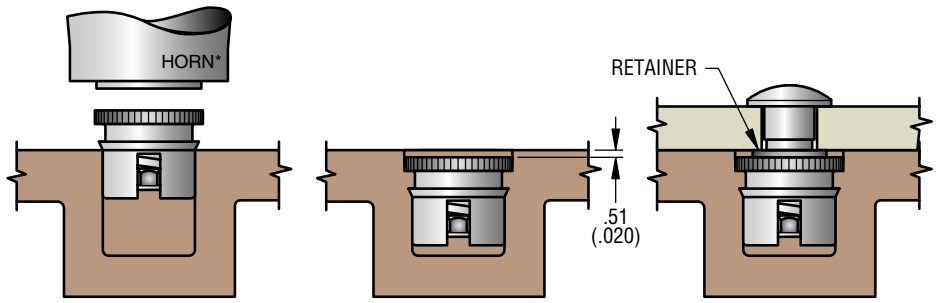
1. Prepare hole.



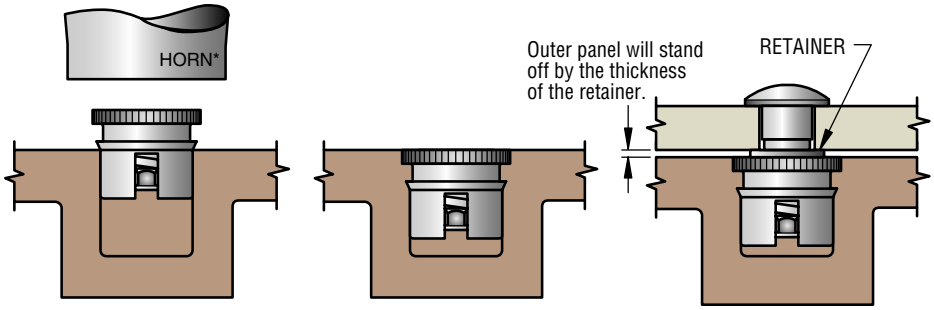
2. Use one of the methods shown.

Enter the No. 81 Stud Selection Table on pg. 273 with your Outer Panel Thickness using column for Part Number 81-35-310-55.

METHOD A—Horn recesses receptacle to a 0.5 (.020) depth.



METHOD B—Horn installs receptacle flush with surface.



*Horn design may vary with material and applications.

Product Strength Guidelines

(To assist in your product selection; samples are available for your evaluation.)
Maximum static load: 440 N (100 lbs.)

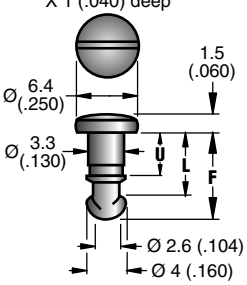
millimeter (inch)
millimeter (inch)
Dimensions without tolerances are for reference only.

● 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.

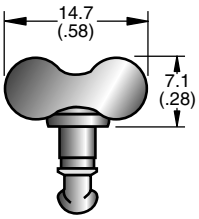
Southco® Quarter-turn Fasteners

Small Series, Stud Selection

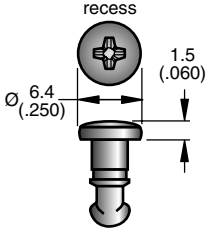
Oval Slotted



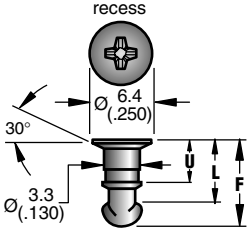
Wing Head



Oval Phillips Recess



Flush Phillips Recess



FOR: Press-in Part No. 81-35-308-55 and Ultrasonic Part No. 81-35-310-55		FOR: ALL OTHER RECEPTACLES*		STUD PART NUMBER				DIMENSIONS		
				Zinc plate, chromate plus sealer		Case hardened and zinc plate chromate plus sealer.				
Outer Panel Thickness ‡		Total Material Thickness ‡		OVAL SLOTTED	WING HEAD	OVAL PHILLIPS RECESS	FLUSH PHILLIPS RECESS	U	L	F
MIN.	MAX.	MIN.	MAX.							
1 (.040)	1.5 (.059)	2.3 (.090)	2.8 (.109)	81-11-**100**-16 ●	81-12-**100**-16 ●	81-18-**100**-16 ●	81-19-**100**-16 ●	4.9 (.193)	7.2 (.285)	9.8 (.385)
1.5 (.060)	2 (.079)	2.8 (.110)	3.3 (.129)	81-11-**120**-16 ●	81-12-**120**-16 ●	81-18-**120**-16 ●	81-19-**120**-16 ●	5.4 (.213)	7.8 (.305)	10.3 (.405)
2 (.080)	2.5 (.099)	3.3 (.130)	3.8 (.149)	81-11-**140**-16 ●	81-12-**140**-16 ●	81-18-**140**-16 ●	81-19-**140**-16 ●	5.9 (.233)	8.3 (.325)	10.8 (.425)
2.5 (.100)	3 (.119)	3.8 (.150)	4.3 (.169)	81-11-**160**-16 ●	81-12-**160**-16 ●	81-18-**160**-16 ●	81-19-**160**-16 ●	6.4 (.253)	8.8 (.345)	11.3 (.445)
3 (.120)	3.5 (.139)	4.3 (.170)	4.8 (.189)	81-11-**180**-16 ●	81-12-**180**-16 ●	81-18-**180**-16 ●	81-19-**180**-16 ●	6.9 (.273)	9.3 (.365)	11.8 (.465)
3.6 (.140)	4.1 (.159)	4.8 (.190)	5.3 (.209)	81-11-**200**-16 ●	81-12-**200**-16 ●	81-18-**200**-16 ●	81-19-**200**-16	7.4 (.293)	9.8 (.385)	12.3 (.485)
4.1 (.160)	4.6 (.179)	5.3 (.210)	5.8 (.229)	81-11-**220**-16 ●	81-12-**220**-16	81-18-**220**-16 ●	81-19-**220**-16	8 (.313)	10.3 (.405)	12.8 (.505)
4.6 (.180)	5.1 (.199)	5.8 (.230)	6.3 (.249)	81-11-**240**-16 ●	81-12-**240**-16	81-18-**240**-16	81-19-**240**-16	8.5 (.333)	10.8 (.425)	13.3 (.525)
5.1 (.200)	5.6 (.219)	6.4 (.250)	6.9 (.269)	81-11-**260**-16 ●	81-12-**260**-16	81-18-**260**-16	81-19-**260**-16	9 (.353)	11.0 (.445)	13.8 (.545)
5.6 (.220)	6.1 (.239)	6.9 (.270)	7.4 (.289)	81-11-**280**-16 ●	81-12-**280**-16	81-18-**280**-16	81-19-**280**-16	9.5 (.373)	11.8 (.465)	14.4 (.565)
6.1 (.240)	6.6 (.259)	7.4 (.290)	7.9 (.309)	81-11-**300**-16 ●	81-12-**300**-16	81-18-**300**-16	81-19-**300**-16	10 (.393)	12.3 (.485)	14.9 (.585)
6.6 (.260)	7.1 (.279)	7.9 (.310)	8.4 (.329)	81-11-**320**-16 ●	81-12-**320**-16 ●	81-18-**320**-16	81-19-**320**-16	10.5 (.413)	12.8 (.505)	15.4 (.605)

Material and Finish

WING HEAD STUD: 1008 Steel.
WING: 1010 Steel.
OTHERS: 1008 Steel (see table for finishes).

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

‡ If using ejector spring or nylon wear washers, see bottom of page 269.

millimeter (inch)

millimeter
(inch)

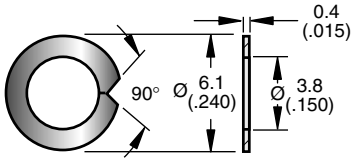
Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

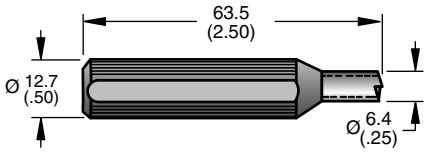
Small Series

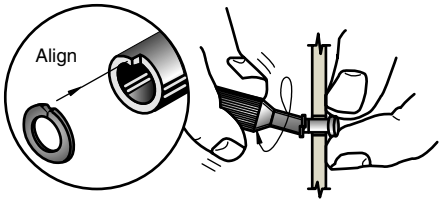
Retainers

Split-Ring Retainer
Hand or tool installation

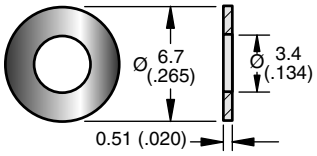


Installation Tool

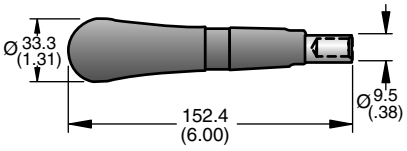


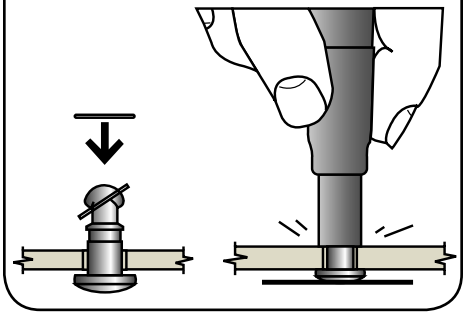


Push-On Retainer
Tool installation



Installation Tool





Material and Finish

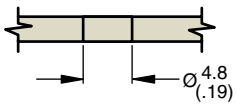
SPLIT-RING RETAINER: 302 Stainless steel, passivated.
PUSH-ON RETAINER: Nylon, black.
SPLIT-RING TOOL: Steel, zinc plated.
PUSH-ON TOOL: Hardened low carbon steel, zinc plated.

RETAINER/TOOL	PART NUMBERS
Split-Ring Retainer	81-32-101-20 •
Split-Ring Tool	81-0-15129-11 •
Push-On Retainer	81-32-301-12 •
Push-On Tool	81-0-18173-11 •

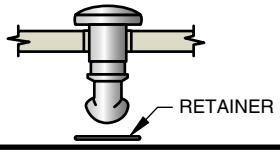
Installation

For Above-surface styles

1. Drill.

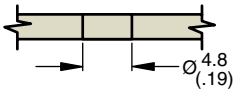


2. Insert stud and add retainer.

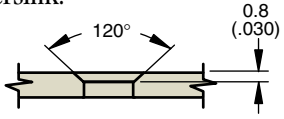


For Flush-head style

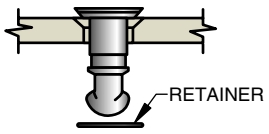
1. Drill.



2. Countersink.



3. Insert stud and add retainer.



millimeter (inch)
millimeter
(inch)
Dimensions without tolerances are for reference only.

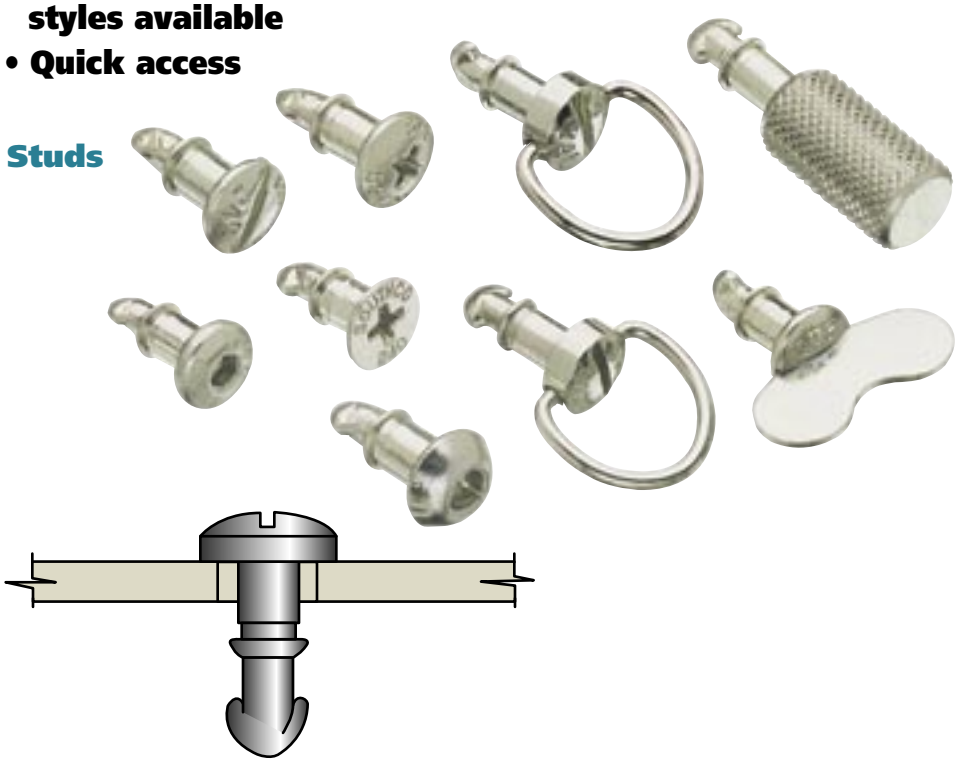
• Products identified with this symbol are stocked subject to prior sale in one or more of our global locations. If unavailable from our facility nearest you, allow for shipping time from another facility.

Southco® Quarter-turn Fasteners

Medium Series

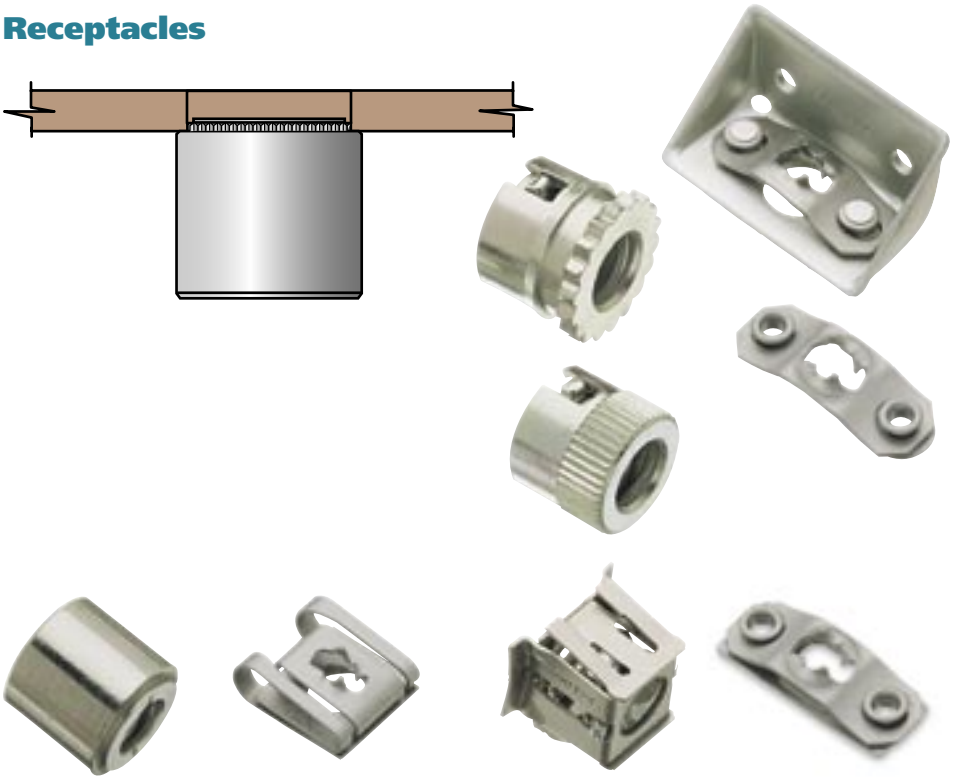
- **Widest variety of assemblies**
- **Snap-in studs, spring-ejected, and full-retraction styles available**
- **Quick access**

Studs



Retainers

Receptacles



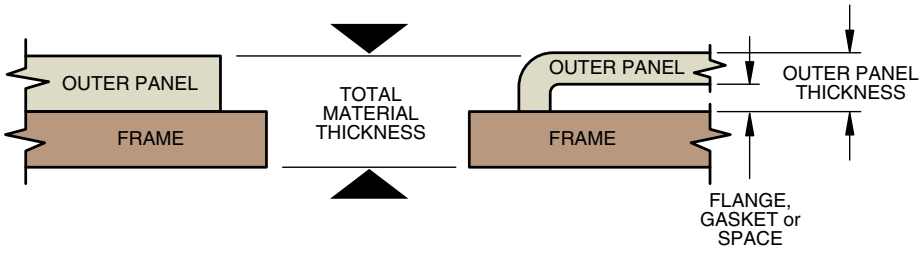
Southco® Quarter-turn Fasteners

Medium Series, 1/4-turn Studs, Snap-in Studs and Fully Retracting Stud Assemblies

1/4-turn and Snap-in Studs

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 measure).
   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) when using snap-in studs, add an additional 0.5 (.020) to the Total Material Thickness or Outer Panel Thickness, as required by your choice of receptacle.
   e) use measurement (or adjusted measurement) to find part number in table (see pages 282 and 283) under stud head style you want. For snap-in studs, add a -1 suffix, ie. 82-11-180-16-1.
3. Choose a retainer.
   NOTE: Snap-in stud assemblies do not require a separate retainer.
4. Review the stud installation procedure.
5. Order each component and tool (if required) separately by part number.



Fully-retracting

- **Permits sliding applications**
- **Full stud retraction assists in panel-to-frame alignment**
- **Pre-assembled to speed installation**
- **Installation options—Press-in or Flare-in**
- **Black or bright finish**
- **Tool operated**

To select correct fastener

1. Choose a receptacle (note any panel or frame thickness limitations).
2. Select one of the following stud assemblies:

Press-in

a) Use your Outer Panel Thickness or measure your Total Material Thickness, as required by your choice of receptacle.
b) If an adjustment formula is shown under the receptacle part number, apply this formula to your measurement.
c) Use measurement (or adjusted measurement) to find stud part number in the table on page 282.

Flare-in

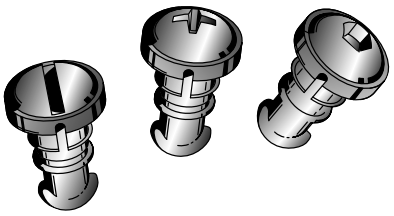
Measure your Outer Panel Thickness and use Table located at bottom of page 284 to determine which column (I or II) you will need in table on page 283.

Follow steps a) and b) at left and use your measurement (or adjusted measurement) to find stud part number in table on page 282.

3. Review the stud installation procedure. Order each fastener component and installation tool (if required) separately by part number.

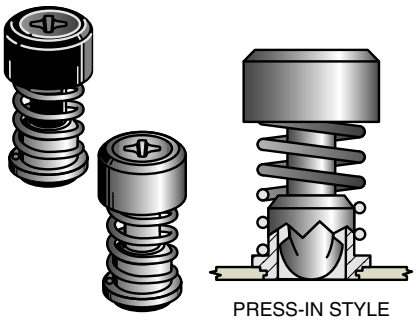
No. 82 Snap-in Stud Assemblies

- **Speeds installation**
- **Reduces inventory**

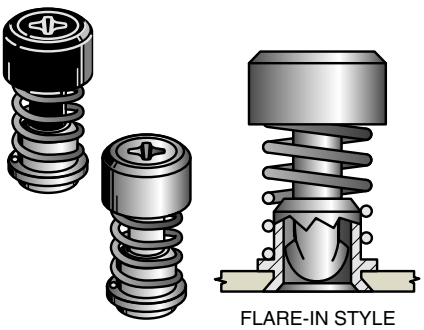


To order, add a -1 suffix;
Example: 82-11-180-16 **"-1"**

Outer Panel Thickness for Snap-in Studs 1.5 (.060) MIN. 3.2 (.125) MAX.
Minimum stud grip range is 4.5 (.180) Grip.



PRESS-IN STYLE



FLARE-IN STYLE

millimeter (inch)

millimeter
(inch)

Dimensions without tolerances are for reference only.

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Southco® Quarter-turn Fasteners

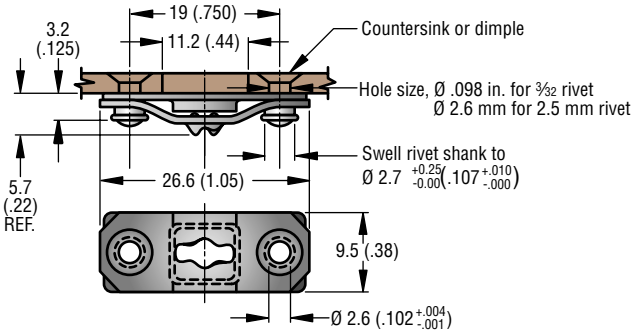
Medium Series, Receptacles

Leaf Spring Receptacles

PART NUMBER
82-35-302-15 •

See page 276 for snap-in studs.

For riveting – with base



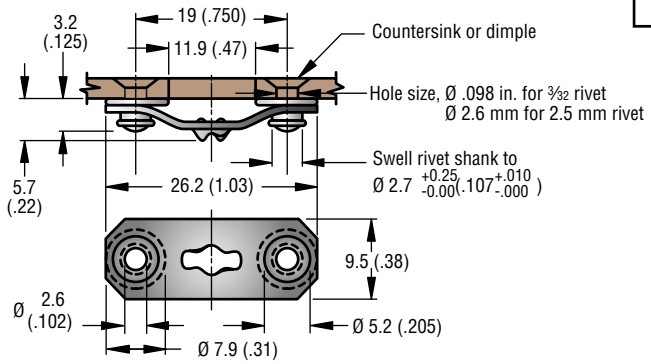
Material and Finish

SPRING: 1065 Steel, zinc immersion coating.
BASE: 1010 Steel, zinc immersion coating.
To enter Stud Selection Table determine your Total Material Thickness.

SPRING MUST FLOAT FREELY AS BEFORE RIVETING.

For riveting—without base

PART NUMBER	
Steel	Stainless Steel
82-35-295-15 •	82-35-295-20 •



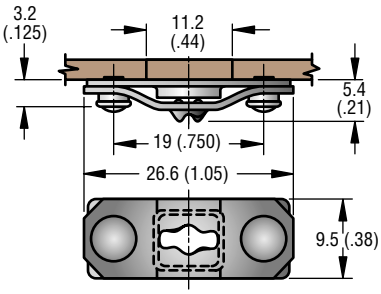
Material and Finish

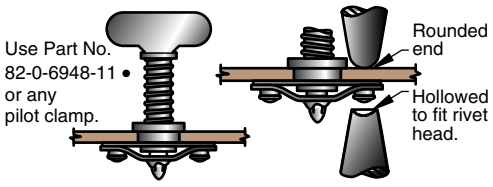
SPRING: 1065 Steel. zinc immersion coating or 17-7PH stainless steel, passivated (see table). EYELET: Steel, zinc immersion coating or 302/305 stainless steel, passivated (see table).
To enter Stud Selection Table determine your Total Material Thickness.

SPRING MUST FLOAT FREELY AS BEFORE RIVETING.

For welding

PART NUMBER
82-35-303-15 •





Rivet must not melt over onto spring.

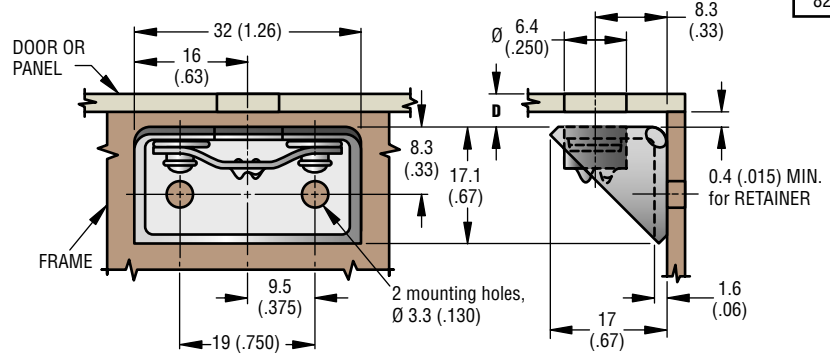
Material and Finish

SPRING: 1065 Steel, zinc immersion coating. BASE: 1010 Steel, zinc immersion coating.
WELDING STUDS: Steel copper plate.
To enter Stud Selection Table determine your Total Material Thickness.

SPRING MUST FLOAT FREELY AS BEFORE RIVETING.

Side Mount

PART NUMBER
82-45-101-15 •



Material and Finish

SPRING: 1065 Steel, zinc immersion coating.
ANGLE BRACKET: 1010 Steel, zinc plate, chromate plus sealer.
EYELET: Steel, zinc immersion coating.

Adjustment Formula

To enter Stud Selection Table calculate: D + 1.5 (.060) and use Total Material Thickness column.

millimeter (inch)

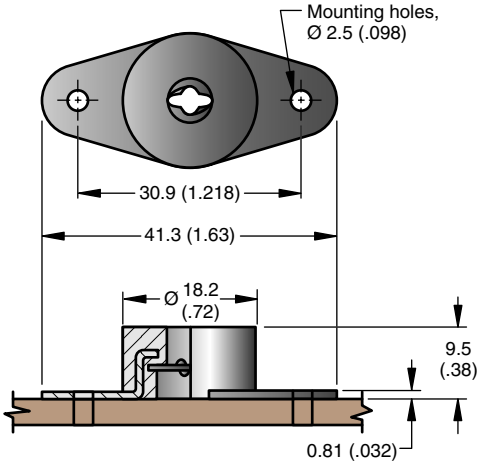
millimeter (inch)

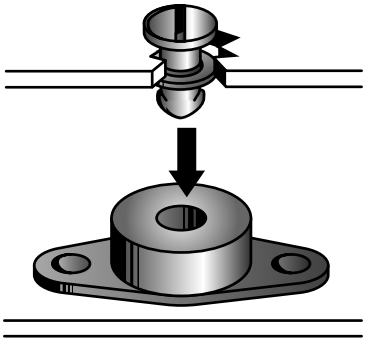
Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

Medium Series, Receptacles

Vibration isolating





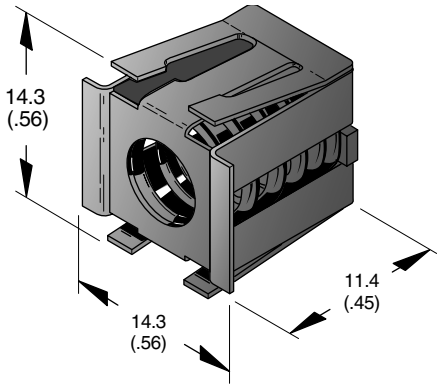
Material and Finish

RECEPTACLE: 1050-1070 Steel, zinc plate, chromate plus sealer.
PLATE: 6061 Aluminum, zinc chromate.
BOSS: Neoprene, black.

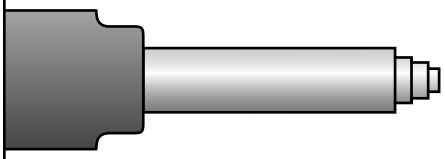
PART NUMBER
82-35-306-10 •

To enter Stud Selection Table determine your Outer Panel Thickness.

Snap-in



Installation Tool

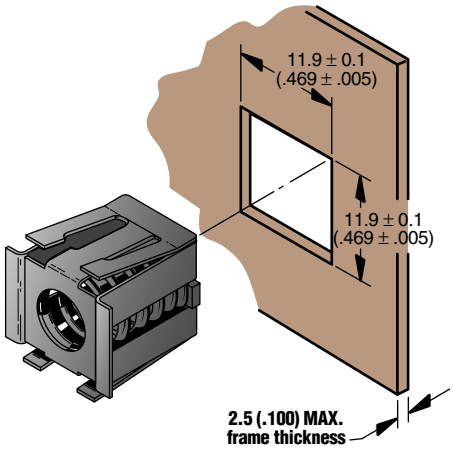


TOOL PART NUMBER
29-8125-309 •

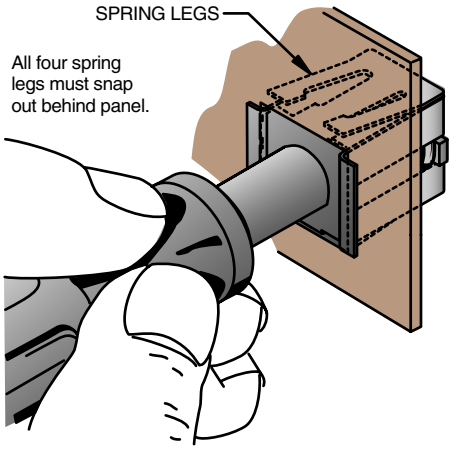
Material and Finish

HOUSING: 301 Stainless steel, natural.
RECEPTACLE: 1010 Steel, case hardened and zinc plate, chromate plus sealer.
SPRING: 302 Stainless steel, passivated.
RETAINER: 301 Stainless steel, natural.
TOOL: 12L14 Steel, zinc plated plus bright chromate dip.

PART NUMBER
82-35-309-56 •



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



Adjustment Formula

To enter Stud Selection Table calculate:
Outer Panel Thickness + 5.08 (.200) but use Total Material Thickness column.

millimeter (inch)
millimeter
(inch)
Dimensions without tolerances are for reference only.

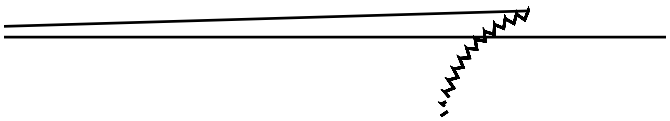
 • Products identified with this symbol are stocked subject to prior sale in one or more of our global locations. If unavailable from our facility nearest you, allow for shipping time from another facility. southco

Southco® Quarter-turn Fasteners

Medium Series, Receptacles

For ultrasonic installation in thermoplastics

- **Minimize residual stress**
- **Increased pull-out resistance**
- **Increased torque-out resistance**



millimeter (inch)

millimeter
(inch)

Dimensions without tolerances are for reference only.

Material and Finish

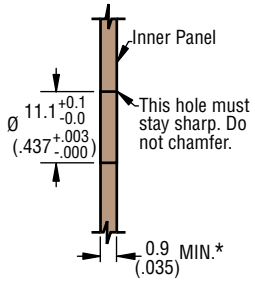
RECEPTACLE: 1010 Steel, hardened and zinc plate, chromate plus sealer. SHELL: Low carbon steel, hardened and zinc plate, chromate plus sealer.

SPRING: 302 Stainless steel, zinc immersion coating.

CAP: Aluminum, natural.

Installation

1. Drill or punch hole in inner panel.

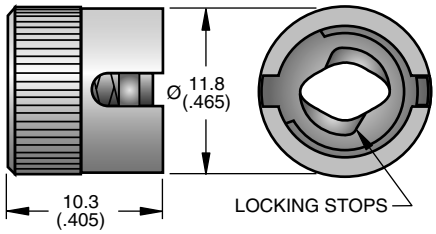


*Note: for inner panels less than 1.3 (.051) thick, the retainer will create a slight gap between the panels. For proper stud selection in these cases, assume the inner panel thickness as 1.3 (.051).

2. Press receptacle into hole until the shoulder on the receptacle bottoms out on the panel's surface.

3. To select the proper grip of stud, determine total panel thickness (both panels) and refer to appropriate stud selection table on page 282.

Press-in for blind applications and solid materials



millimeter (inch)

millimeter
(inch)

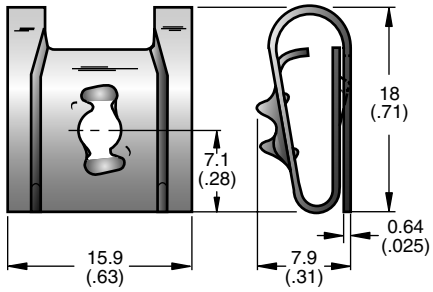
Dimensions without tolerances are for reference only.

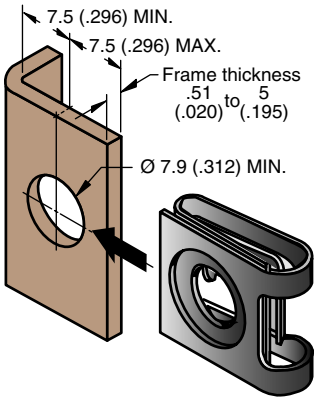
• Products identified with this symbol are stocked subject to prior sale in one or more of our global locations. If unavailable from our facility nearest you, allow for shipping time from another facility.

Southco® Quarter-turn Fasteners

Medium Series, Receptacles

Clip-on

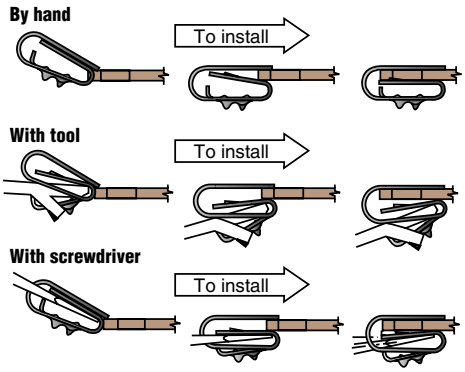




Material and Finish

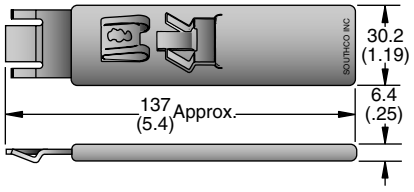
1064 Steel, zinc immersion coating or 17-7PH stainless steel, passivated.

PART NUMBER	
Steel	82-47-113-15 ●
Stainless	82-47-113-20 ●



Installation Tool

PART NUMBER
29-82-101-10 ●



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

Figure I

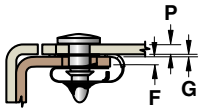
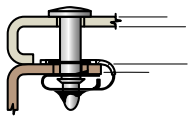


Figure II



millimeter (inch)
millimeter
(inch)
Dimensions without tolerances are for reference only.

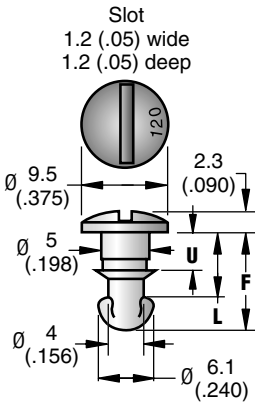
Southco® Quarter-turn Fasteners

Medium Series, Stud Selection

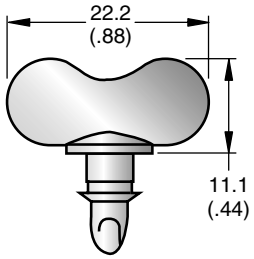
Available in Steel and Stainless Steel

NOTE: To select a Stainless Steel part, substitute the suffix -20 where the -16 is seen in the part number table.
Example: 82-11-100-16 becomes 82-11-100-20..

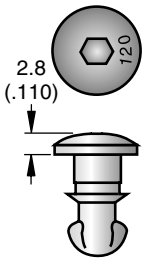
Oval Slotted



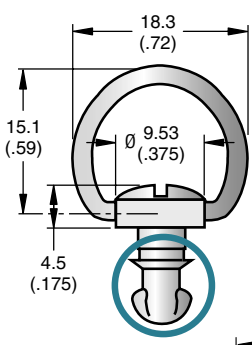
Wing Head



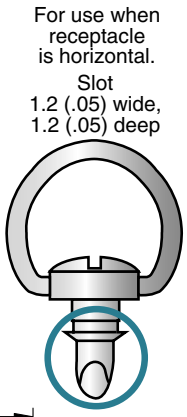
Hex Socket

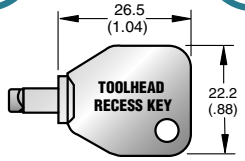


Bail Style RB



Bail Style RA





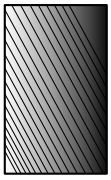
FOR: Part No. 82-35-306-10		FOR: Part No. 82-99-205-15		FOR: Press-in Part Nos. 82-35-308-55 82-35-313-55 and Ultrasonic Part No. 82-35-310-55		FOR: Part No. 82-35-315-55		FOR: ALL OTHER RECEPTACLES*		STUD PART NUMBER Zinc plate, chromate plus sealer		
OUTER PANEL THICKNESS ‡		OUTER PANEL THICKNESS ‡		OUTER PANEL THICKNESS ‡		TOTAL MATERIAL THICKNESS ‡		TOTAL MATERIAL THICKNESS‡		OVAL SLOTTED	WING HEAD	HEX SOCKET
MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.			
0.7 (.026)	1.2 (.045)	———	———	———	———	———	———	2.3 (.090)	2.8 (.109)	82-11-**100**-16 •	82-12-**100**-16 •	———
1.2 (.046)	1.7 (.065)	———	———	———	———	———	———	2.8 (.110)	3.3 (.129)	82-11-**120**-16 •	82-12-**120**-16 •	82-78-**120**-16
1.7 (.066)	2.2 (.085)	———	———	———	———	———	———	3.3 (.130)	3.8 (.149)	82-11-**140**-16 •	82-12-**140**-16 •	82-78-**140**-16
2.2 (.086)	2.7 (.105)	———	———	0 (.000)	0.5 (.019)	1.3 (.050)	1.8 (.069)	3.8 (.150)	4.3 (.169)	82-11-**160**-16 •	82-12-**160**-16 •	82-78-**160**-16
2.7 (.106)	3.2 (.125)	———	———	0.5 (.020)	1 (.039)	1.8 (.070)	2.3 (.089)	4.3 (.170)	4.8 (.189)	82-11-**180**-16 •	82-12-**180**-16 •	82-78-**180**-16
3.2 (.126)	3.7 (.145)	———	———	1 (.040)	1.5 (.059)	2.3 (.090)	2.8 (.109)	4.8 (.190)	5.3 (.209)	82-11-**200**-16 •	82-12-**200**-16 •	82-78-**200**-16
3.7 (.146)	4.2 (.165)	———	———	1.5 (.060)	2 (.079)	2.8 (.110)	3.3 (.129)	5.3 (.210)	5.8 (.229)	82-11-**220**-16 •	82-12-**220**-16 •	82-78-**220**-16
4.2 (.166)	4.7 (.185)	———	———	2 (.080)	2.5 (.099)	3.3 (.130)	3.8 (.149)	5.8 (.230)	6.3 (.249)	82-11-**240**-16 •	82-12-**240**-16 •	82-78-**240**-16
4.7 (.186)	5.2 (.205)	0.5 (.020)	1.5 (.060)	2.5 (.100)	3 (.119)	3.8 (.150)	4.3 (.169)	6.4 (.250)	6.9 (.269)	82-11-**260**-16 •	82-12-**260**-16 •	82-78-**260**-16
5.2 (.206)	5.7 (.225)	1 (.040)	2 (.080)	3 (.120)	3.5 (.139)	4.3 (.170)	4.8 (.189)	6.9 (.270)	7.4 (.289)	82-11-**280**-16 •	82-12-**280**-16 •	82-78-**280**-16
5.7 (.226)	6.2 (.245)	1.5 (.060)	2.5 (.100)	3.6 (.140)	4.1 (.159)	4.8 (.190)	5.3 (.209)	7.4 (.290)	7.9 (.309)	82-11-**300**-16 •	82-12-**300**-16 •	82-78-**300**-16
———	———	2 (.080)	3 (.120)	4.1 (.160)	4.6 (.179)	5.3 (.210)	5.8 (.229)	7.9 (.310)	8.4 (.329)	82-11-**320**-16 •	82-12-**320**-16 •	82-78-**320**-16
———	———	2.5 (.100)	3.6 (.140)	4.6 (.180)	5.1 (.199)	5.8 (.230)	6.3 (.249)	8.4 (.330)	8.9 (.349)	82-11-**340**-16 •	82-12-**340**-16 •	82-78-**340**-16
———	———	3 (.120)	4.1 (.160)	5.1 (.200)	5.6 (.219)	6.4 (.250)	6.9 (.269)	8.9 (.350)	9.4 (.369)	82-11-**360**-16 •	82-12-**360**-16 •	82-78-**360**-16
———	———	3.6 (.140)	4.6 (.180)	5.6 (.220)	6.1 (.239)	6.9 (.270)	7.4 (.289)	9.4 (.370)	9.9 (.389)	82-11-**380**-16 •	82-12-**380**-16 •	82-78-**380**-16
———	———	4.1 (.160)	5.1 (.200)	6.1 (.240)	6.6 (.259)	7.4 (.290)	7.9 (.309)	9.9 (.390)	10.4 (.409)	82-11-**400**-16 •	82-12-**400**-16 •	82-78-**400**-16
———	———	4.6 (.180)	5.6 (.220)	6.6 (.260)	7.1 (.279)	7.9 (.310)	8.4 (.329)	10.4 (.410)	10.9 (.429)	82-11-**420**-16 •	82-12-**420**-16 •	82-78-**420**-16
———	———	5.1 (.200)	6.1 (.240)	7.1 (.280)	7.6 (.299)	8.4 (.330)	8.9 (.349)	10.9 (.430)	11.4 (.449)	82-11-**440**-16 •	82-12-**440**-16	82-78-**440**-16
———	———	5.6 (.220)	6.6 (.260)	7.6 (.300)	8.1 (.319)	8.9 (.350)	9.4 (.369)	11.4 (.450)	11.9 (.469)	82-11-**460**-16 •	82-12-**460**-16	82-78-**460**-16
———	———	6.1 (.240)	7.1 (.280)	8.1 (.320)	8.6 (.339)	9.4 (.370)	9.9 (.389)	11.9 (.470)	12.4 (.489)	82-11-**480**-16 •	82-12-**480**-16	82-78-**480**-16
———	———	6.6 (.260)	7.6 (.300)	8.6 (.340)	9.1 (.359)	9.9 (.390)	10.4 (.409)	12.5 (.490)	12.9 (.509)	82-11-**500**-16 •	82-12-**500**-16	82-78-**500**-16
———	———	7.1 (.280)	8.1 (.320)	9.1 (.360)	9.6 (.379)	10.4 (.410)	10.9 (.429)	13 (.510)	13.5 (.529)	82-11-**520**-16 •	82-12-**520**-16	82-78-**520**-16
———	———	7.6 (.300)	8.6 (.340)	9.6 (.380)	10.1 (.399)	10.9 (.430)	11.4 (.449)	13.5 (.530)	14 (.549)	82-11-**540**-16 •	82-12-**540**-16	82-78-**540**-16
———	———	8.1 (.320)	9.1 (.360)	10.2 (.400)	10.7 (.419)	11.4 (.450)	11.9 (.469)	14 (.550)	14.5 (.569)	82-11-**560**-16 •	82-12-**560**-16	82-78-**560**-16
———	———	8.6 (.340)	9.6 (.380)	10.7 (.420)	11.2 (.439)	11.9 (.470)	12.4 (.489)	14.5 (.570)	15 (.589)	82-11-**580**-16 •	82-12-**580**-16	82-78-**580**-16

* 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 page 284.

 • 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. southco®

Oval Phillips Recess

Flush Phillips Recess



See page 276 for snap-in studs.

Material and Finish

WING HEAD STUD: 1008 Steel.
WING: 1010 Steel.
BAIL HEAD STUD: 1008 Steel.
BAIL: 1008 or 1010 Steel.
OVAL SLOTTED AND OVAL PHILLIPS HEAD STUDS: 1008 Steel or 302 stainless steel, passivated. KNURLED HEAD STUD: 12L14 Steel.
OTHER STYLES: 1008 Steel.

All studs are case hardened.

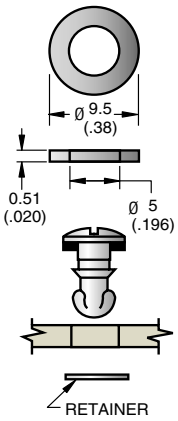
For Fully Retracting Stud Assemblies

CAP and STUD: Low carbon steel, case hardened zinc plate, chromate plus sealer, or with black organic coating.
SPRING: 302 Stainless steel, nickel plate.
FERRULE: (Press-in) 303 Stainless steel, passivated. (Flare-in) 6061 Aluminum, natural.
TOOL: Hardened steel.

millimeter (inch)
millimeter
(inch)
Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

Sealing Washer

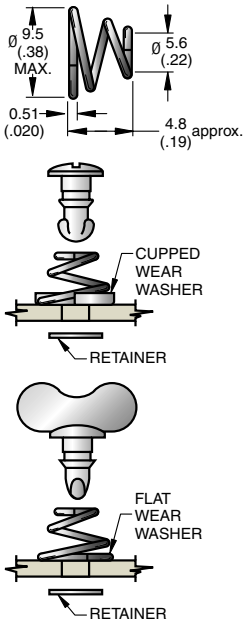


PART NUMBER
82-43-201-38 •

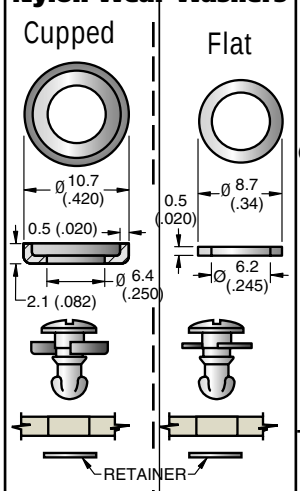
Material
Nitrile fibre core rubber, black.

Adjustment Formula: Add 0.51 (.020) to your Outer Panel Thick-ness or Total Material Thickness.

Ejector Spring



Nylon Wear Washers

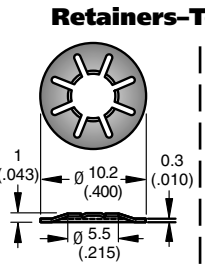


PART NUMBER
82-46-101-41• Black
82-46-101-39• White

PART NUMBER
82-46-103-39• White

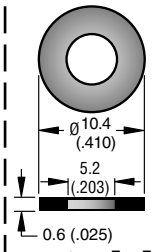
Adjustment Formula: When using a wear washer, add 0.5 (.020) to your Outer Panel Thickness or Total Material Thickness.

Retainers–Tool Installation



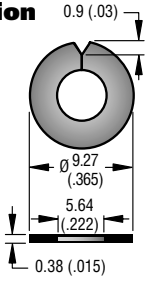
Material
304 Stainless steel, passivated.

PART NUMBER
82-32-201-20 •



Material
Nylon, black.

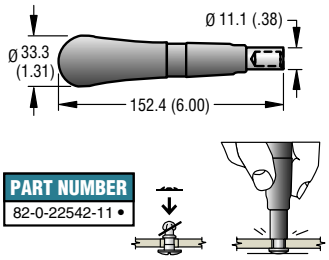
PART NUMBER
82-32-301-12 •



Material
302 Stainless steel, passivated.

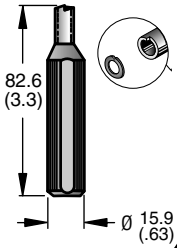
PART NUMBER
82-32-101-20 •

To install, use tool.



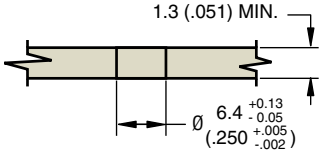
PART NUMBER
82-0-22542-11 •

To install, use tool, part number 82-0-7595-11•.

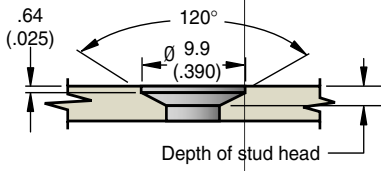


For: Flush head styles - When outer panel is 1.3 (.050) or greater.

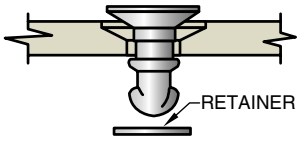
1. Drill.



2. Countersink to depth of stud head.

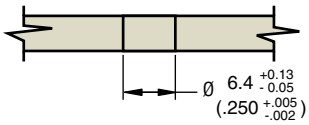


3. Insert stud and add retainer.

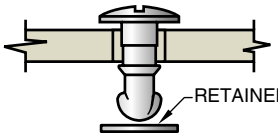


For: Above-surface styles - For any panel thickness.

1. Drill.

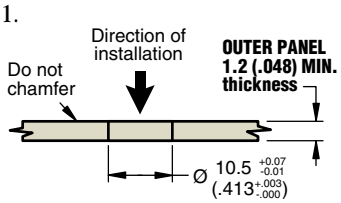


2. Insert stud and add retainer.

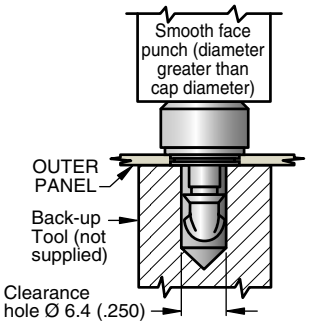


For: Press-in Fully-retracting styles.

1.

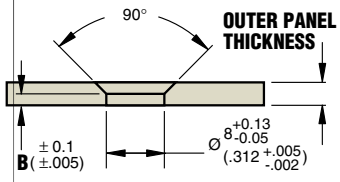


2. Press assembly into panel until shoulder contacts panel surface.

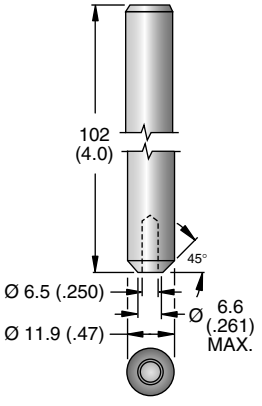


To insure proper installation, punch surface and back-up tool surface must remain parallel during installation.

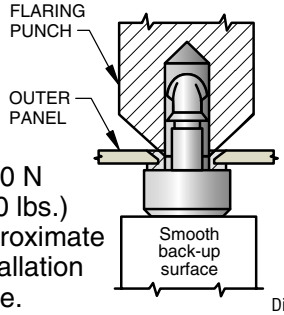
For: Flare-in Fully-retracting styles.



OUTER PANEL THICKNESS		B ±0.1 (±.005)	Select Stud from Column:
MIN.	MAX.		
1.2 (.048)	2.4 (.094)	0.4 (.016)	I
2.4 (.095)	4 (.156)	2.6 (.104)	II



Flaring Punch
47-125 • Order separately.



3550 N (800 lbs.) approximate installation force.

millimeter (inch)
millimeter (inch)

Dimensions without tolerances are for reference only.

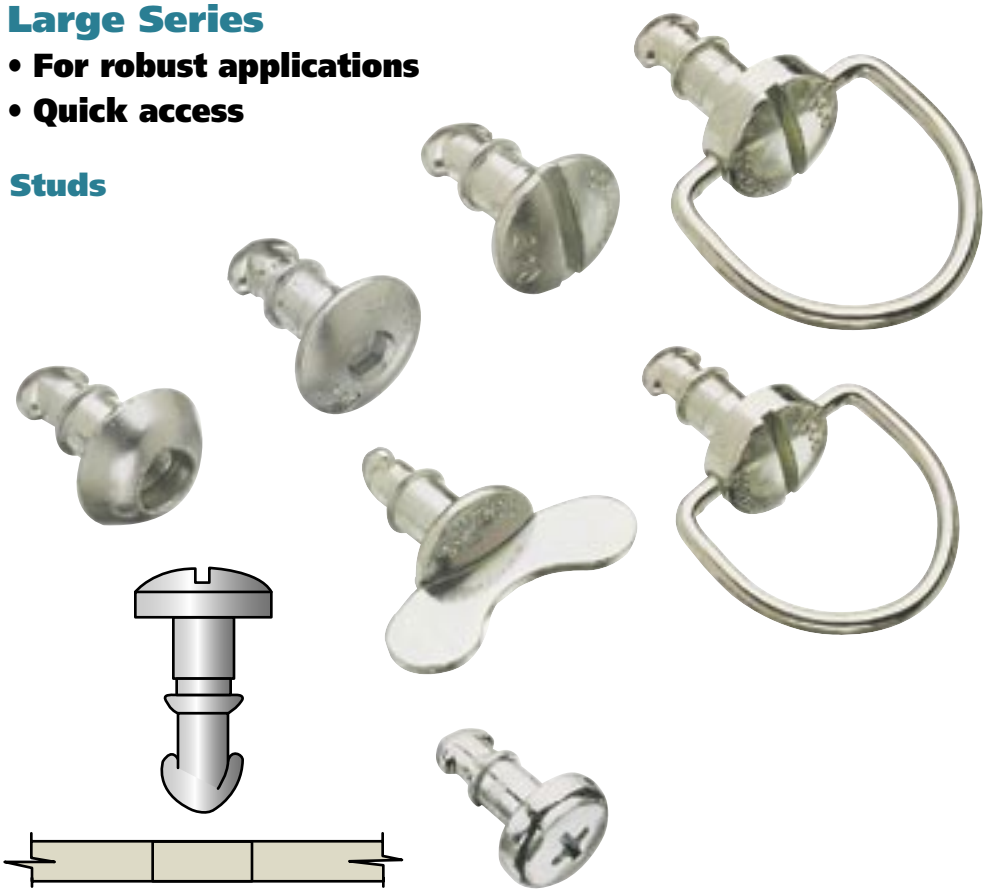
• Products identified with this symbol are stocked subject to prior sale in one or more of our global locations. If unavailable from our facility nearest you, allow for shipping time from another facility.

Southco® Quarter-turn Fasteners

Large Series

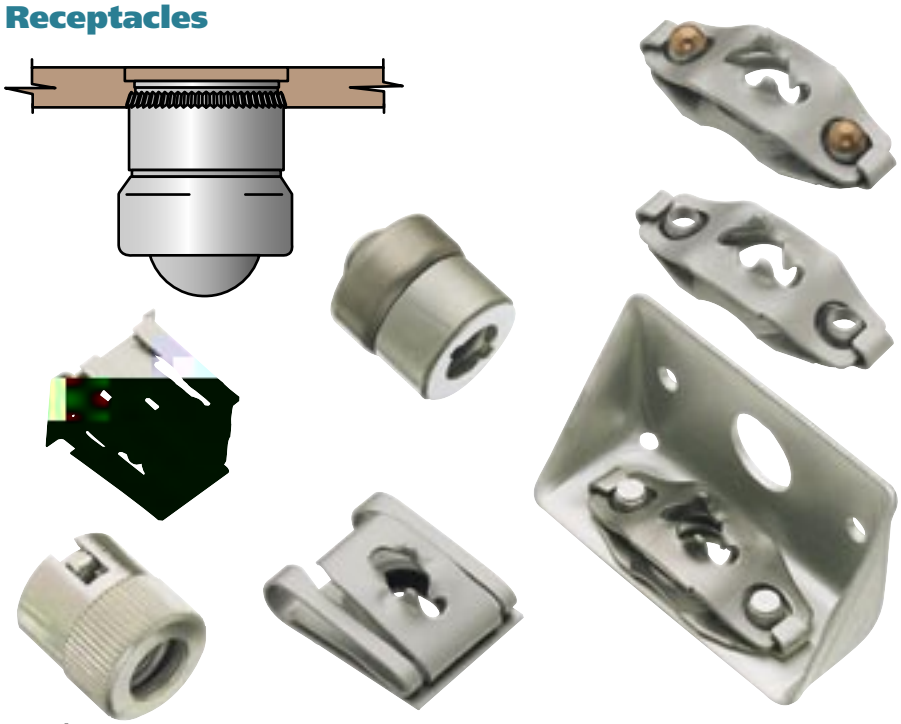
- **For robust applications**
- **Quick access**

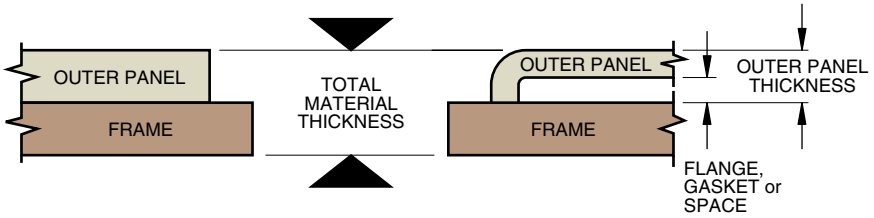
Studs



Retainers

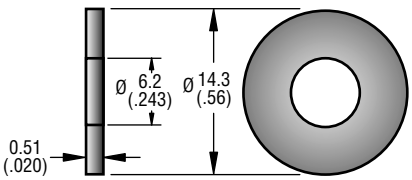
Receptacles

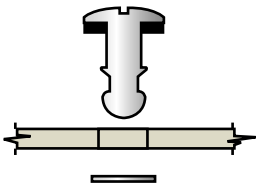




1. Choose a receptacle. (Note any frame thickness limitations).
2. To select a stud,
   a) measure your Outer Panel Thickness or Total Material Thickness (note under receptacle part number will tell you which to use).
   b) if adjustment formula is shown under receptacle part number apply this formula to your measurement.

Sealing Washer





Ejector Spring

millimeter (inch)

millimeter
(inch)

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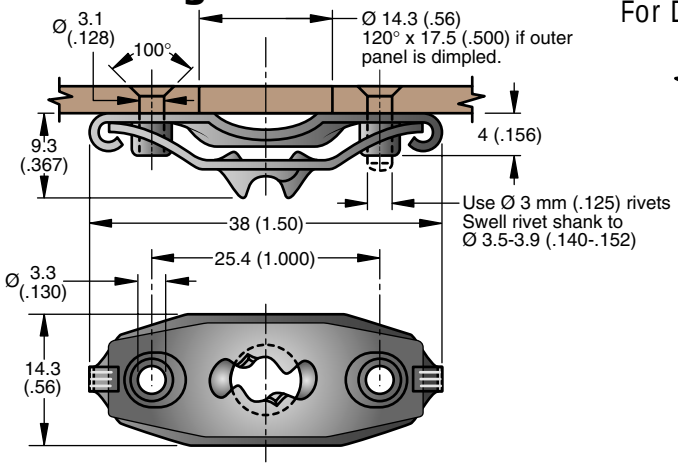
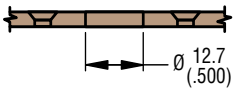
For riveting



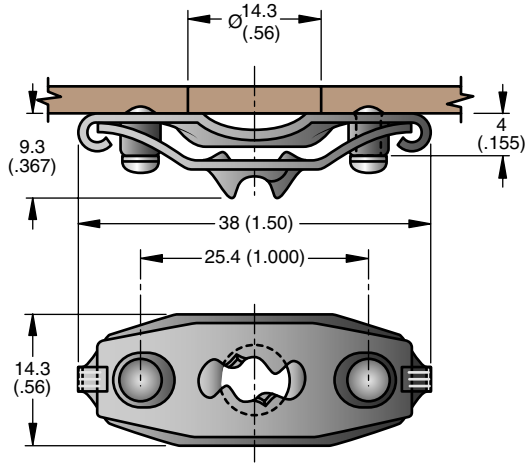
For Dimpling Inner Panel:

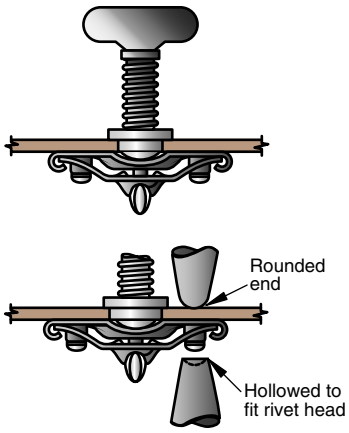


SPRING MUST FLOAT FREELY AS BEFORE RIVETING.

For welding

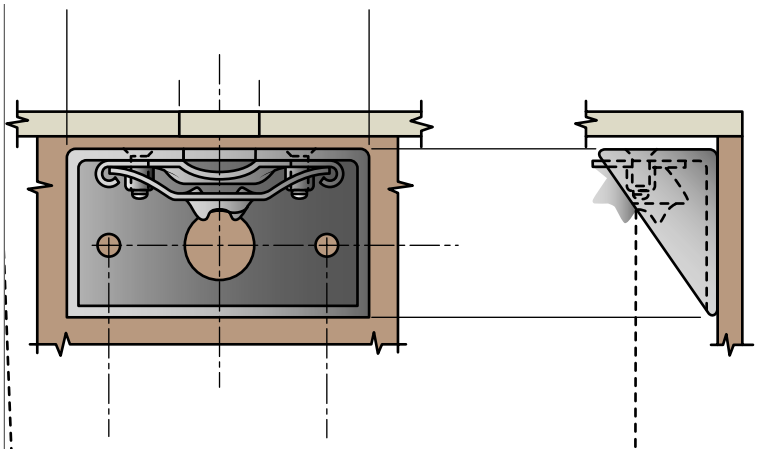
Use Part No. 85-90-3278-11 • or any pilot clamp.





RIVET MUST NOT MELT OVER ONTO SPRING.

Side mount



Material and Finish

RECEPTACLE SPRING: 1064 Steel, zinc immersion coating or 17-7PH stainless steel, passivated (see table).
BASE: 1010 Steel, zinc immersion coating or 305 stainless steel, passivated (see table).

To enter Stud Selection Table determine your Total Material Thickness.

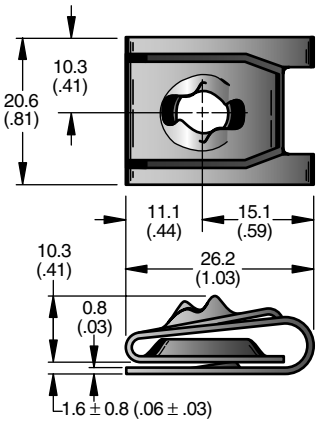
Material and Finish

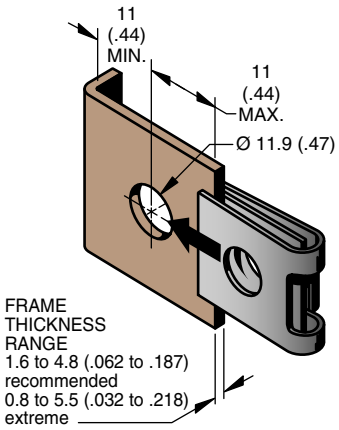
SPRING: 1064 Steel, zinc immersion coating
BASE: 1010 Steel, zinc immersion coating.
RIVET: Steel, copper plated.

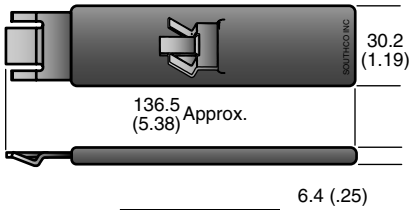
To enter Stud Selection Table determine your Total Material Thickness.

Material and Finish

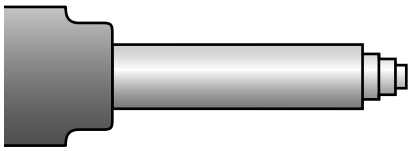
ANGLE BRACKET: 1010 Steel, zinc plate, chromate plus sealer.
SPRING: 1064 Steel, zinc immersion coating.
BASE: 1010 Steel, zinc immersion coating.
RIVET: 2117 Aluminum, natural.







PART NUMBER
29-85-101-10 •



millimeter (inch)

millimeter
(inch)

Dimensions without tolerances are for reference only.

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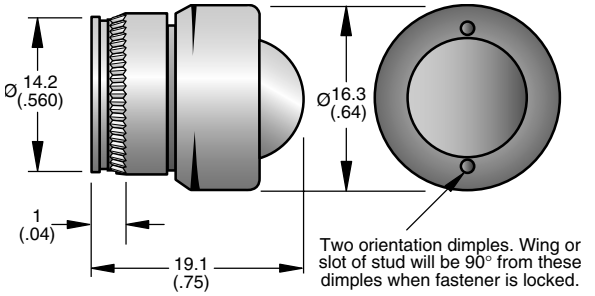
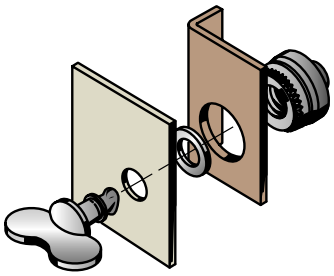
Southco® Quarter-turn Fasteners

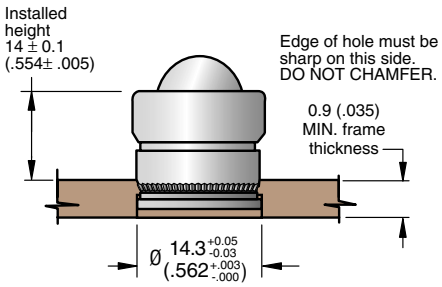
Large Series, Receptacles

Shielded press-in for sheet metal

- **Provides RFI-EMI shielding**

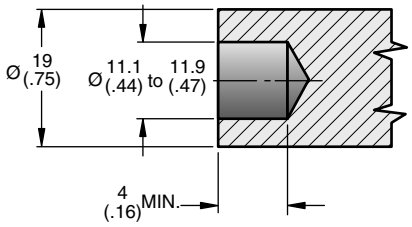






NOTE: For use in low carbon steels, aluminium and stainless steels in the annealed condition that are RB85 or softer.

Installation Tool



PART NUMBER
90-2825-11●

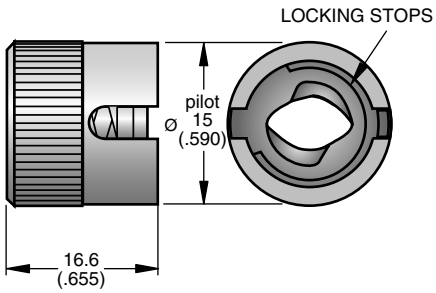
Material and Finish

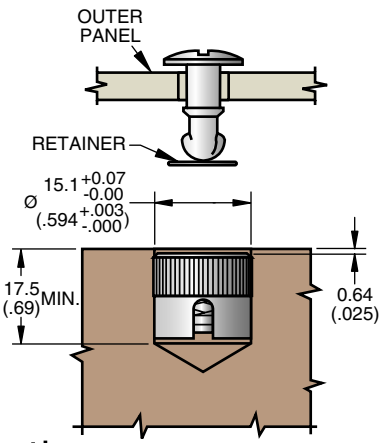
RECEPTACLE: 1010 Steel, hardened and zinc plate, chromate plus sealer.
SHELL: Low carbon steel, hardened and zinc plate, chromate plus sealer.
SPRING: 302 Stainless steel zinc immersion coating.
CAP: 305 Stainless steel, natural.

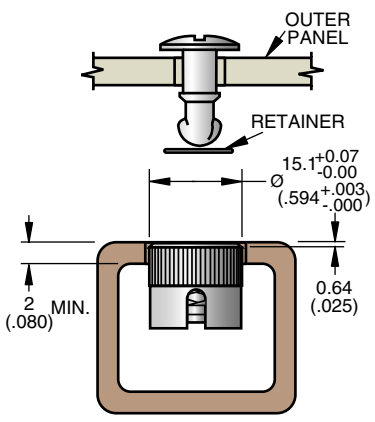
PART NUMBER
85-35-311-55 ●

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.

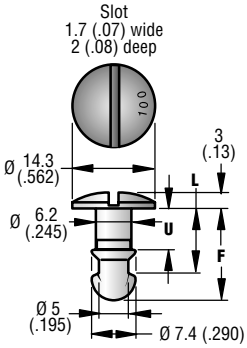
Southco® Quarter-turn Fasteners

Large Series

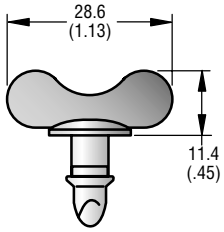
Available in Steel and Stainless Steel

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

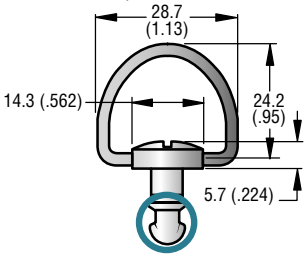


Wing Head



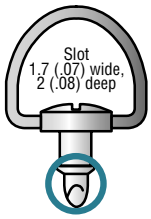
Bail Style RB

For use when receptacle is vertical

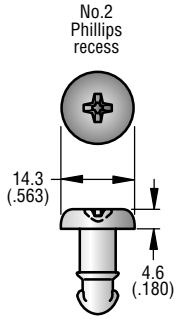


Bail Style RA

For use when receptacle is horizontal



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				
						Zinc plate, chromate plus sealer				Zinc plated plus bright chromate dip
OUTER PANEL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		TOTAL MATERIAL THICKNESS‡		OVAL SLOTTED	WING HEAD	BAIL STYLE RB	BAIL STYLE RA	PHILLIPS RECESS
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**

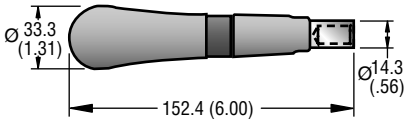
* Please check for any special conditions, or constant required by your specific receptacle on the receptacle description pages.
‡ If using ejector spring, sealing washer or nylon wear washer, see bottom of page.

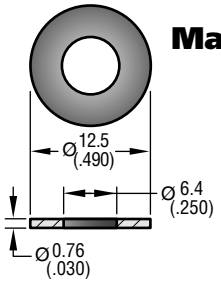
Material and Finish
302 Stainless steel, passivated.

PART NUMBER
85-34-201-20 •

Push-on Retainers
Tool installation

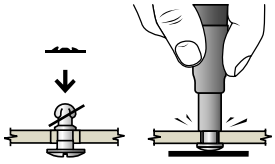
To install, use tool.





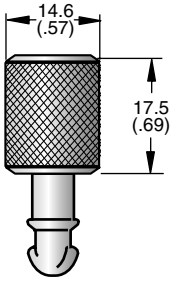
Material and Finish
Nylon, black.

PART NUMBER
85-34-301-12 •

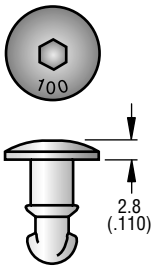


 • Products identified with this symbol are stocked subject to prior sale in one or more of our global locations. If unavailable from our facility nearest you, allow for shipping time from another facility.

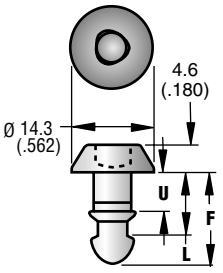
Knurled Head

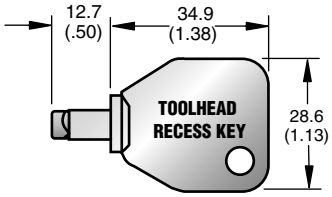


Hex Socket
4 mm 5/32 hex socket



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)	81.4 (.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)

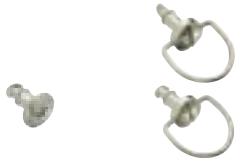
Material and Finish

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 •

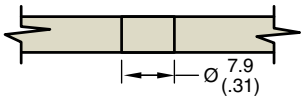
Stud Installation

For: Above-surface styles

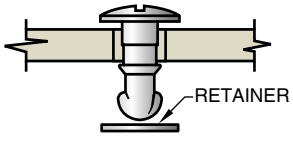


For any panel thickness.

1. Drill.

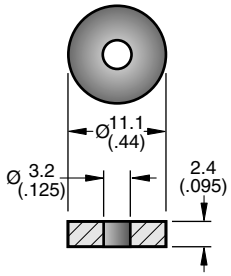


2. Insert stud and add retainer.



Retainer

Hand installation



Material and Finish

Neoprene, black.

PART NUMBER
85-33-101-27 •

To install.