Southco® Quarter-turn Fasteners

Small Series
• For limited-space applications
• Quick access

Studs

Retainer

Receptacles

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).

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>WEAR WASHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>EJECTOR SPRING</td>
<td>BLACK</td>
</tr>
<tr>
<td></td>
<td>WHITE</td>
</tr>
<tr>
<td>81-41-102-24</td>
<td>81-46-101-41</td>
</tr>
</tbody>
</table>

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.
Southco® Quarter-turn Fasteners
Small Series, Receptacles

**Shielded press-in for sheet metal**
- Provides RFI-EMI shielding

Installation Tool

**Press-in for blind applications and solid materials**

**Solid Materials**

**Blind Applications**

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

**Adjustment Formula**
To enter Stud Selection Table determine your Total Material Thickness.
Substitute 1.3 (.050) (constant) for frame thickness if frame thickness is less than 1.27 (.050).

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

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

**Adjustment Formula**
To enter Stud Selection Table determine your Outer Panel Thickness.

**Product Strength Guidelines**
(To assist in your product selection; samples are available for your evaluation.)
Maximum static load: 440 N (100 lbs.)
Snap-in

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

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.

Adjustment Formula
To use Stud Selection Table on pg. 273 calculate:
Outer Panel Thickness + 1.5 (.060) but use Total Material Thickness column.

NOTE: This tool will bear against the top surface of the receptacle, it will not enter the top opening.

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

Clip-on

To Install
By hand
With screwdriver
With tool

Material and Finish
RECEPTACLE: 1064 Steel, zinc immersion coating or 17-7PH stainless steel, passivated (see table).

Adjustment Formula
To use Stud Selection Table on pg. 273 determine your Total Material Thickness by calculating:

Figure I

P + F + G -1.07 (.042) (constant) when G is 0.45 (.018).

Figure II

P + F + G -1.5 (.060) (constant) when G is 0.46 (.019) or greater.

Product Strength Guidelines
(To assist in your product selection; samples are available for your evaluation.)
Maximum static load: 440 N (100 lbs.)
Southco® Quarter-turn Fasteners
Small Series, Receptacles

For ultrasonic installation in thermoplastics

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

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.

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.

Product Strength Guidelines

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

Dimensions without tolerances are for reference only.

PART NUMBER
81-35-310-55

millimeter (inch)

millimeter (inch)
**Southco® Quarter-turn Fasteners**

**Small Series, Stud Selection**

<table>
<thead>
<tr>
<th>FOR: Press-in Part No. 81-35-308-55 and Ultrasonic Part No. 81-35-310-55</th>
<th>FOR: All OTHER RECEPCTACLES*</th>
<th>STUD PART NUMBER</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer Panel Thickness ‡</td>
<td>Total Material Thickness ‡</td>
<td>OVAL SLOTTED</td>
<td>WING HEAD</td>
</tr>
<tr>
<td>MIN.</td>
<td>MAX.</td>
<td>MIN.</td>
<td>MAX.</td>
</tr>
<tr>
<td>1 (.040)</td>
<td>1.5 (.059)</td>
<td>2.3 (.090)</td>
<td>2.8 (.109)</td>
</tr>
<tr>
<td>1.5 (.060)</td>
<td>2 (.079)</td>
<td>2.6 (.101)</td>
<td>3.3 (.129)</td>
</tr>
<tr>
<td>2 (.080)</td>
<td>2.5 (.099)</td>
<td>3.3 (.130)</td>
<td>3.8 (.149)</td>
</tr>
<tr>
<td>2.5 (.100)</td>
<td>3 (.119)</td>
<td>3.8 (.150)</td>
<td>4.3 (.169)</td>
</tr>
<tr>
<td>3 (.120)</td>
<td>3.5 (.139)</td>
<td>4.3 (.170)</td>
<td>4.8 (.189)</td>
</tr>
<tr>
<td>3.6 (.140)</td>
<td>4.1 (.159)</td>
<td>4.8 (.190)</td>
<td>5.3 (.209)</td>
</tr>
<tr>
<td>4.1 (.160)</td>
<td>4.6 (.179)</td>
<td>5.3 (.210)</td>
<td>5.8 (.229)</td>
</tr>
<tr>
<td>4.6 (.180)</td>
<td>5.1 (.199)</td>
<td>5.6 (.230)</td>
<td>6.3 (.249)</td>
</tr>
<tr>
<td>5.1 (.200)</td>
<td>5.6 (.219)</td>
<td>6.4 (.250)</td>
<td>6.9 (.269)</td>
</tr>
<tr>
<td>5.6 (.220)</td>
<td>6.1 (.239)</td>
<td>6.9 (.270)</td>
<td>7.4 (.289)</td>
</tr>
<tr>
<td>6.1 (.240)</td>
<td>6.6 (.259)</td>
<td>7.4 (.290)</td>
<td>7.9 (.309)</td>
</tr>
<tr>
<td>6.6 (.260)</td>
<td>7.1 (.279)</td>
<td>7.9 (.310)</td>
<td>8.4 (.329)</td>
</tr>
</tbody>
</table>

*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.

Material and Finish

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

*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

Retainers

Split-Ring Retainer
Hand or tool installation

Installation Tool

Push-On Retainer
Tool installation

Installation Tool

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.

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.

<table>
<thead>
<tr>
<th>RETAINER/TOOL</th>
<th>PART NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-Ring Retainer</td>
<td>81-32-101-20</td>
</tr>
<tr>
<td>Split-Ring Tool</td>
<td>81-0-15129-11</td>
</tr>
<tr>
<td>Push-On Retainer</td>
<td>81-32-301-12</td>
</tr>
<tr>
<td>Push-On Tool</td>
<td>81-0-18173-11</td>
</tr>
</tbody>
</table>

Dimensions without tolerances are for reference only.
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.
Southco® Quarter-turn Fasteners
Medium Series, Receptacles

Leaf Spring Receptacles

For riveting – with base

For riveting—without base

For welding

Side Mount

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.

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.

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.

Dimensions without tolerances are for reference only.
**Material and Finish**

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

**Adjustment Formula**

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

**Snap-in**

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

**Installation Tool**

All four spring legs must snap out behind panel.

**Vibration isolating**

Mounting holes, Ø 2.5 (.098)

2.5 (.100) MAX. frame thickness

**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.

**To enter Stud Selection Table**

Determine your Outer Panel Thickness.

Dimensions without tolerances are for reference only.
Southco® Quarter-turn Fasteners

Medium Series, Receptacles

For ultrasonic installation in thermoplastics
- Minimize residual stress
- Increased pull-out resistance
- Increased torque-out resistance

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.
RETAINER: 302 Stainless steel, zinc plate, chromate plus sealer.

Enter the No. 82 Stud Selection Table on page 282 with your Outer Panel Thickness using column for Part Numbers: 82-35-308-55 and 82-35-313-55.

Test these receptacles in your materials; we’ll supply samples.

**Southco**® Quarter-turn Fasteners

**Medium Series, Receptacles**

For ultrasonic installation in thermoplastics
- Minimize residual stress
- Increased pull-out resistance
- Increased torque-out resistance

**Installation**

1. Prepare hole.

Blind Hole Application

Through Hole Application

2. Use one of the methods shown.

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

*0.8±0.1 (.035±.005) when the 82-56-XXX-XX, fully retracting studs are used.

**METHOD B** – Horn installs receptacle flush with surface.

Optional alignment lug

<table>
<thead>
<tr>
<th>PART NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-35-310-55</td>
</tr>
</tbody>
</table>

Enter the No. 82 Stud Selection Table on page 282 with your Outer Panel Thickness using column for Part Numbers: 82-35-308-55 and 82-35-313-55.

Test these receptacles in your materials; we’ll supply samples.
Shielded Press-In
- Provides RFI-EMI shielding

NOTE: For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R85 or softer.

Material and Finish

**PART NUMBER**
82-35-315-55 •

Adjustment Formula: To enter Stud Selection Table determine your Total Material Thickness. Substitute 1.3 (.051) (constant) for frame thickness if frame thickness is less than 1.3 (.051).

Installation
1. Drill or punch hole in inner panel.
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

*0.8±.1 (.035±.005) when the 82-56-XXX-XX, fully retracting studs are used.

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

**PART NUMBER**

| with 90° locking stops | 82-35-308-55 • |
| without 90° locking stops | 82-35-313-55 • |

To enter Stud Selection Table determine your Outer Panel Thickness.
Southco® Quarter-turn Fasteners
Medium Series, Receptacles

Clip-on

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

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>Steel</th>
<th>Stainless</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>82-47-113-15</td>
<td>82-47-113-20</td>
</tr>
</tbody>
</table>

Installation

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

**Figure I**

\[ P + F + 1.40 \times (0.055) \text{ (constant) when } G \text{ is } 0.64 \times (0.025) . \]

**Figure II**

\[ P + F + G + 0.76 \times (0.050) \text{ (constant) when } G \text{ is } 0.65 \times (0.026) \text{ or greater.} \]

When using snap-in studs see step d on page 276.
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

<table>
<thead>
<tr>
<th>Part No.</th>
<th>FOR: 82-35-306-10</th>
<th>FOR: 82-35-313-55 and Ultrasonic Part No. 82-35-310-55</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Slot</strong></td>
<td>1.2 (.05) wide</td>
<td>1.2 (.05) deep</td>
</tr>
</tbody>
</table>

### Wing Head

<table>
<thead>
<tr>
<th>Part No.</th>
<th>FOR: 82-99-205-15</th>
</tr>
</thead>
</table>

### Hex Socket

<table>
<thead>
<tr>
<th>Part No.</th>
<th>FOR: 82-35-310-55</th>
</tr>
</thead>
</table>

### Bail Style RB

For use when receptacle is vertical.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>FOR: ALL OTHER RECEPTACLES*</th>
</tr>
</thead>
</table>

### Bail Style RA

For use when receptacle is horizontal.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>TOOLHEAD RECESS KEY</th>
</tr>
</thead>
</table>

### Thickness

<table>
<thead>
<tr>
<th>MIN. MAX.</th>
<th>MIN. MAX.</th>
<th>MIN. MAX.</th>
<th>MIN. MAX.</th>
<th>MIN. MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7 (.028)</td>
<td>1.2 (.045)</td>
<td>0.0 (000)</td>
<td>0.5 (.019)</td>
<td>1.3 (.050)</td>
</tr>
<tr>
<td>1.2 (.046)</td>
<td>1.7 (.065)</td>
<td>2.2 (.085)</td>
<td>3.2 (.125)</td>
<td>0.5 (.020)</td>
</tr>
<tr>
<td>2.2 (.086)</td>
<td>2.7 (.105)</td>
<td>4.6 (.187)</td>
<td>5.5 (.213)</td>
<td>0.8 (.032)</td>
</tr>
<tr>
<td>3.2 (.126)</td>
<td>3.7 (.145)</td>
<td>5.8 (.227)</td>
<td>6.8 (.258)</td>
<td>1.0 (.040)</td>
</tr>
<tr>
<td>3.7 (.146)</td>
<td>4.2 (.165)</td>
<td>6.5 (.260)</td>
<td>7.5 (.298)</td>
<td>1.5 (.060)</td>
</tr>
</tbody>
</table>

### Toolhead

<table>
<thead>
<tr>
<th>TOOLHEAD</th>
<th>MIN. MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.8 (.230)</td>
<td>6.3 (.249)</td>
</tr>
<tr>
<td>6.4 (.259)</td>
<td>6.9 (.289)</td>
</tr>
<tr>
<td>7.4 (.299)</td>
<td>7.9 (.329)</td>
</tr>
<tr>
<td>8.4 (.339)</td>
<td>8.9 (.369)</td>
</tr>
<tr>
<td>9.9 (.399)</td>
<td>10.4 (.429)</td>
</tr>
<tr>
<td>10.9 (.459)</td>
<td>11.4 (.489)</td>
</tr>
<tr>
<td>11.9 (.519)</td>
<td>12.4 (.549)</td>
</tr>
<tr>
<td>13.8 (.559)</td>
<td>14.3 (.589)</td>
</tr>
<tr>
<td>15.2 (.629)</td>
<td>15.7 (.669)</td>
</tr>
<tr>
<td>16.6 (.699)</td>
<td>17.1 (.739)</td>
</tr>
</tbody>
</table>

### Other

<table>
<thead>
<tr>
<th>OTHER</th>
<th>MIN. MAX.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 (.165)</td>
<td>4.7 (.185)</td>
</tr>
<tr>
<td>5.2 (.205)</td>
<td>5.7 (.225)</td>
</tr>
<tr>
<td>6.2 (.245)</td>
<td>6.4 (.259)</td>
</tr>
<tr>
<td>7.5 (.300)</td>
<td>8.1 (.320)</td>
</tr>
<tr>
<td>8.4 (.339)</td>
<td>9.1 (.360)</td>
</tr>
<tr>
<td>9.4 (.379)</td>
<td>10.7 (.419)</td>
</tr>
<tr>
<td>10.9 (.449)</td>
<td>11.9 (.479)</td>
</tr>
</tbody>
</table>

### Note

- * 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.
**Press-in Stud Assembly**

NOTE: Stud will float 1 (.040) total movement

**Flare-in Stud Assembly**

**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.

**Dimensions**

- **STUD PART NUMBER**
- **DIMENSIONS**
  - **I**
  - **II**
  - **U**
  - **L**
  - **F**

**STUD ASSEMBLIES**

- **PRESS-IN STYLE**
- **FLARE-IN STYLE**

**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.**

**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.
Southco® Quarter-turn Fasteners

**Sealing Washer**

- Material: Nitrile fibre core rubber; black.
- Adjustment Formula: Add 0.51 (.020) to your Outer Panel Thickness or Total Material Thickness.

**Ejector Spring**


**Nylon Wear Washers**

- Flat: Material: 304 Stainless steel, passivated.

**Retainers—Tool Installation**

- Material: Nylon, black.

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

**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:** Flare-in Fully-retracting styles.

1. Do not chamfer direction of installation.
2. Press assembly into panel until shoulder contacts panel surface.
3. Smooth face punch (diameter greater than cap diameter).
4. To insure proper installation, punch surface and back-up tool surface must remain parallel during installation.

**For:** Press-in Fully-retracting styles.

1. Drill.
2. Countersink to depth of stud head.
3. Insert stud and add retainer.

**Adjustment Formula:**

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

**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
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.

Material and Finish
SEALING WASHER: Nitrile fibre core rubber, black.
STUD EJECTOR: 302 Stainless steel, passivated.
WEAR WASHERS: Nylon, white or black (see table).

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

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

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

<table>
<thead>
<tr>
<th>PART NUMBERS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sealing Washer</td>
<td>85-43-201-38</td>
</tr>
<tr>
<td>Ejector Spring</td>
<td>14-18-150-24</td>
</tr>
<tr>
<td>Flat (White)</td>
<td>85-46-103-39</td>
</tr>
<tr>
<td>Wear Washer</td>
<td></td>
</tr>
<tr>
<td>Cupped (White)</td>
<td>85-46-101-39</td>
</tr>
<tr>
<td>Cupped (Black)</td>
<td>85-46-101-41</td>
</tr>
</tbody>
</table>

Dimensions without tolerances are for reference only.
### Southco® Quarter-turn Fasteners
#### Large Series, Receptacles

**Leaf Spring Receptacles**

**For riveting**

- Ø 14.3 (.56)
- 120° x 17.5 (.500) if outer panel is dimpled.

- Ø 14.3 (.56)
- 120° x 17.5 (.500) if outer panel is dimpled.

- 3.1 (.128)
- 100°

**For Dimpling Inner Panel:**

- Ø 12.7 (.500)

Use Ø 3 mm (.125) rivets Swell rivet shank to Ø 3.5-3.9 (.140-.152)

SPRING MUST FLOAT FREELY AS BEFORE RIVETING.

**For welding**

- Ø 14.3 (.56)

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

RIVET MUST NOT MELT OVER ONTO SPRING.

**Side mount**

Adjustment Formula

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

**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.

**PART NUMBER**

<table>
<thead>
<tr>
<th>Steel</th>
<th>Stainless steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-35-295-15 •</td>
<td>85-35-295-20 •</td>
</tr>
</tbody>
</table>

**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.

**PART NUMBER**

85-35-296 -15 •

**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.

To enter Stud Selection Table determine your Total Material Thickness.

**PART NUMBER**

85-45-101 -15 •

• 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, Receptacles

#### Clip-on

![Clip-on Diagram](Image)

- **PART NUMBER**: 29-85-101-10

#### Snap-in

![Snap-in Diagram](Image)

- **PART NUMBER**: 29-8125-309

---

### Material and Finish

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

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>Steel</th>
<th>Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-47-101-10</td>
<td>85-47-101-20</td>
<td></td>
</tr>
</tbody>
</table>

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

- **Figure I**: $P + F + 0.94 \ (0.037)$ (constant) when $G$ is $1.32 \ (0.052)$.
- **Figure II**: $P + F + G - 0.38 \ (0.015)$ (constant) when $G$ is $1.33 \ (0.053)$ or greater.

**Material and Finish**


**Stainless Steel**: 18-8 Stainless steel, passivated.

**Adjustment Formula**: To enter Stud Selection Table calculate: Outer Panel Thickness + 8.4 \ (0.330) but use Total Material Thickness column.

---

*Note: 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.*
Shielded press-in for sheet metal
- Provides RFI-EMI shielding

![Diagram of Quarter-turn Fasteners]

**Installation Tool**

- Installed height: 14 ± 0.1 (.554 ± .005)
- Edge of hole must be sharp on this side. DO NOT CHAMFER.

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

**Press-in for blind applications and solid materials**

![Diagram of Press-in Fasteners]

**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.

**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).

**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.

**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.

---

**Oval Slotted**

<table>
<thead>
<tr>
<th>Slot Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.7 (.07)</td>
<td>2 (.08)</td>
</tr>
</tbody>
</table>

---

**Wing Head**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>28.6</td>
<td>14.3</td>
</tr>
<tr>
<td>11.4</td>
<td>(.562)</td>
</tr>
</tbody>
</table>

---

**Bail Style RB**

For use when receptacle is vertical

**Bail Style RA**

For use when receptacle is horizontal

**Phillips Recess**

No.2 Phillips recess

---

**Material and Finish**

302 Stainless steel, passivated.

---

**Push-on Retainers**

Tool installation

To install, use tool.

---

**Material and Finish**

Nylon, black.

---

### TABLE

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>PART NOS.</th>
<th>FOR: ALL OTHER RECEPTACLES*</th>
<th>FOR: STANDARD</th>
<th>STUD PART NUMBERS</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-11-140-16</td>
<td>85-30-308-55-55</td>
<td>280</td>
<td>85-11-140-16*</td>
<td>85-11-140-16*</td>
<td>1000</td>
</tr>
<tr>
<td>85-11-140-20</td>
<td>85-30-313-55</td>
<td>280</td>
<td>85-11-140-20*</td>
<td>85-11-140-20*</td>
<td>1000</td>
</tr>
</tbody>
</table>

---

* 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.

---

**Push-on Retainers**

Tool installation

To install, use tool.

---

**Material and Finish**

Nylon, black.

---

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Quarter-turn Fasteners

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.

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.