82 **DZUS®** Performance Quarter-Turn Fasteners

### Studs

- **Material and Finish**
  - Studs: Steel, zinc plated and chromate or stainless steel
  - Bail cover: ABS, black

- **Accessories**
  - Tool head recess key:
    - Part number: 29-90-214-10

### Installation Notes

- **Bail cover:** A retainer must be fitted under the stud head to fit flush with surface.
- **Retainer part number:** 82-32-301-12 (see page 385)

### Head Styles - Tool Actuated

<table>
<thead>
<tr>
<th>Head Style</th>
<th>Oval Slot</th>
<th>Hex Recess</th>
<th>Oval Recess</th>
<th>Tool Head Recess</th>
<th>Flush Recess</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø 9.5 (.375)</td>
<td>Ø 9.5</td>
<td>3 mm Hex</td>
<td>Ø 9.5</td>
<td>Ø 9.5 (.375)</td>
<td>Ø 9.5 (.375)</td>
</tr>
<tr>
<td>Ø 5 (.198)</td>
<td>Ø 6.1</td>
<td>2.8</td>
<td>2.3</td>
<td>3.2 (.125)</td>
<td>1.7 (.068)</td>
</tr>
<tr>
<td>Ø 4 (.141)</td>
<td>Ø 6.1 (.240)</td>
<td>2.3 (.090)</td>
<td>2.3 (.090)</td>
<td>3.2 (.125)</td>
<td>1.7 (.068)</td>
</tr>
</tbody>
</table>

### Head Styles - Hand Actuated

- **Wing**
  - For use when receptacle is vertical
  - Ø 9.5 (.375)
  - Ø 5 (.198)
  - Ø 4 (.141)

- **Bail Style RA**
  - For use when receptacle is horizontal
  - Ø 9.5 (.375)
  - Ø 5 (.198)
  - Ø 4 (.141)

- **Bail Style RB**
  - For use when receptacle is vertical
  - Ø 9.5 (.375)
  - Ø 5 (.198)
  - Ø 4 (.141)

### Optional Bail Cover

- **Bail Cover Part Number:** 82-2-B-000

### Stud Panel Preparation

- **Flush Head Styles**
  - (when outer panel is 1.3 (.050) or greater)

- **Dimensions in millimeters (inch) unless otherwise stated**
82 \textit{DZUS®} Lion Quarter-Turn Fasteners

Stud selection

To select correct fastener:
1. Select receptacle
   Choose a receptacle from pages 380-384
2. Select retainer and accessories
   from page 385 and note any adjustment values
3. Specify stud length
   Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B, C, or D) given for the receptacle selected, find [K].
4. Complete the stud part number
   by specifying the head style [H], stud length [K], and material [M].

Example:
For rivet-on with base receptacle 82-35-302-15 use column D
For TMT value calculated as 5.2 (.206), K = 200
For slotted head style in steel material, completed part number:
82-11-200-16
A complete example can be found on page 377

Notes
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

www.southco.com/82
**Material and Finish**
Steel, zinc immersion coating

**Installation Notes**
Install with Ø 2.5 (3/32) rivets, spring plate must float freely after riveting

---

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

**Material and Finish**
Steel, zinc immersion coating or stainless steel

**Installation Notes**
Install with Ø 2.5 (3/32) rivets, spring plate must float freely after riveting

---

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

**Material** | **Part Number** | **Stud Selection Column**
---|---|---
Steel | 82-35-295-15 | D
Stainless steel | 82-35-295-20 | D

Dimensions in millimeters (inch) unless otherwise stated
**Weld-On**

**Material and Finish**
Steel, zinc immersion coating

**Installation Notes**
Spring plate must float freely after welding

---

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

**Side Mount**

**Material and Finish**
Steel, zinc immersion coating

**Installation Notes**
Install with Ø 2.5 (3/32) rivets

---

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

Dimensions in millimeters (inch) unless otherwise stated
82 **DZUS® Lion Quarter-Turn Fasteners**
Receptacles

### Material and Finish
Steel, zinc plated and neoprene

### Installation Notes
Install with Ø 2.5 (3/32) rivets

### Part Number
See table

### Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

### Vibration Isolating

**Mounting holes, Ø 2.5 (0.98)**

**Min.**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-35-306-10</td>
<td>A</td>
</tr>
</tbody>
</table>

---

### Snap-In - Front Mount

**Spring legs**

All four spring legs must snap out behind panel

**2.5 (.100) Max. frame thickness**

**0.50 (.020)**

**11.4 (.45)**

**14.3 (.56)**

**14.8 (.583)**

**P**

**TMT = P + 5.08 (.20)**

**TMT = P + 5.08 (.20)**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-35-309-56</td>
<td>D</td>
</tr>
</tbody>
</table>

---

Dimensions in millimeters (inch) unless otherwise stated
**ACTUAL SIZE**

---

**Material and Finish**

Steel, zinc immersion coating or stainless steel

---

**Part Number**

See table

---

**Notes**

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

**Material and Finish**

Steel, zinc plated and stainless steel

---

**Installation Notes**

Press receptacle flush to frame

---

**Notes**

Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

---

**Part Number**

See table

---

**Notes**

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

Dimensions in millimeters (inch) unless otherwise stated
**82 DZUS® Lion Quarter-Turn Fasteners**

**Receptacles · Self-clinching**

### Material and Finish
Steel, zinc plated and stainless steel

### Installation Notes
Press receptacle flush to frame

### Notes
Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

### Part Number
See table

### Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

### Ultrasonic For Thermoplastics

**Installation**

![Installation Diagram](https://via.placeholder.com/150)

**Blind Hole Installation**

![Blind Hole Diagram](https://via.placeholder.com/150)

**Thru Hole Installation**

![Thru Hole Diagram](https://via.placeholder.com/150)

---

### Shielded – Self-Clinching

Steel, zinc plated and stainless steel

### Installation Notes
For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R₈₅ or softer

See page 543 for installation guidelines

---

### Part Number
See table

### Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379

---

### Table

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-35-310-55</td>
<td>B</td>
</tr>
<tr>
<td>82-35-315-55</td>
<td>C</td>
</tr>
</tbody>
</table>

Dimensions in millimeters (inch) unless otherwise stated.
82 DZUS® Lion Quarter-Turn Fasteners
Retainers · Accessories

Retainer Push-On

Retainer Push-On Plastic

Retainer Split

Sealing Washer

Ejector Spring

Cupped Washer

Flat Wear Washer

Snap-In Retainer

Material and Finish
See table

Installation Notes
For standard retainers:

Part Number: 82-0-22542-11

For split retainers:

Part Number: 82-0-7595-11

Notes
For snap-in retainer:

Min. stud $K = 180$ when using snap-in retainer (see page 379 for $K$ reference).

Install stud into retainer before inserting into panel

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Material</th>
<th>Adjustment Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push-on retainer</td>
<td>82-32-201-20</td>
<td>Stainless steel</td>
<td>Add 0.25 (.010)</td>
</tr>
<tr>
<td>Push-on plastic retainer</td>
<td>82-32-301-12</td>
<td>Nylon, black</td>
<td>Add 0.64 (.025)</td>
</tr>
<tr>
<td>Split retainer</td>
<td>82-32-101-20</td>
<td>Stainless steel</td>
<td>Add 0.38 (.015)</td>
</tr>
<tr>
<td>Sealing washer</td>
<td>82-43-201-38</td>
<td>Neoprene nitrile rubber, black</td>
<td>Add 0.51 (.020)</td>
</tr>
<tr>
<td>Ejector spring</td>
<td>43-13-1-24</td>
<td>Stainless steel</td>
<td>Add 0.51 (.020)</td>
</tr>
<tr>
<td>Cupped washer</td>
<td>82-46-101-39</td>
<td>Nylon, white</td>
<td>Add 0.51 (.020)</td>
</tr>
<tr>
<td>Flat wear washer</td>
<td>82-46-101-41</td>
<td>Nylon, black</td>
<td>Add 0.51 (.020)</td>
</tr>
<tr>
<td>Snap-in retainer</td>
<td>82-32-401-41</td>
<td>Nylon, black</td>
<td>Add 0.51 (.020)</td>
</tr>
</tbody>
</table>

Dimensions in millimeters (inch) unless otherwise stated

www.southco.com/82
85 DZUS® Lion Quarter-Turn Fasteners
Studs

Material and Finish
Studs: Steel, zinc plated or stainless steel
Bail cover: ABS, black

Accessories
Tool head recess key:
Part number: 29-90-215-10

Head Styles - Tool Actuated

Oval Slot
Hex Recess
Phillips Recess
Tool Head Recess

Head Styles - Hand Actuated

Wing
Bail Style RA
Bail Style RB

Optional Bail Cover

Bail Cover Part Number
85-5-B-000

Stud Panel Preparation

Prepare Hole

Dimensions in millimeters (inch) unless otherwise stated
**85 DZUS® Lion Quarter-Turn Fasteners**

**Stud selection**

<table>
<thead>
<tr>
<th>Head style</th>
<th>K Length</th>
<th>M Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Oval slot</td>
<td></td>
<td>16 Steel, zinc plated</td>
</tr>
<tr>
<td>12 Wing head</td>
<td></td>
<td>20 Stainless steel (not available in tool head recess head style)</td>
</tr>
<tr>
<td>15 Bail RA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Bail RB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78 Hex recess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P Oval Phillips recess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T Tool head recess (not available in stainless steel)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H Head style</th>
<th>P Oval Phillips recess</th>
<th>T Tool head recess (not available in stainless steel)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 Oval slot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 Wing head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Bail RA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Bail RB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>78 Hex recess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P Oval Phillips recess</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T Tool head recess (not available in stainless steel)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Stud Length Table**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>K</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TMT Range For:</strong></td>
<td><strong>TMT Range For:</strong></td>
<td><strong>TMT Range For:</strong></td>
<td><strong>K</strong></td>
<td><strong>U</strong></td>
</tr>
<tr>
<td><strong>85-35-308-55</strong></td>
<td><strong>85-35-311-55</strong></td>
<td><strong>All other receptacles</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Part Number Selection</strong></th>
</tr>
</thead>
</table>

1. **Select receptacle:**
   Choose a receptacle from page 388-390

2. **Select retainer and accessories:**
   from page 391 and note any adjustment values

3. **Specify stud length:**
   Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B or C) given for the receptacle selected, find K.

4. **Complete the stud part number:**
   by specifying the head style H, stud length K, and material M.

**Example:**
For rivet-on with base receptacle 85-35-295-15 use column C.
For TMT value calculated as 5.2 (.206), K = 200.
For slotted head style in steel material, completed part number: 85-11-200-16.
A complete example can be found on page 377.

**Notes:**
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

Dimensions in millimeters (inch) unless otherwise stated.

---

**To select correct fastener:**

1. **Select receptacle:**
   Choose a receptacle from page 388-390

2. **Select retainer and accessories:**
   from page 391 and note any adjustment values

3. **Specify stud length:**
   Calculate the total material thickness (TMT) using the formula given for the receptacle selected. Find the range of TMT using the stud length selection table (left) using the column (A, B or C) given for the receptacle selected, find K.

4. **Complete the stud part number:**
   by specifying the head style H, stud length K, and material M.

Example:
For rivet-on with base receptacle 85-35-295-15 use column C.
For TMT value calculated as 5.2 (.206), K = 200.
For slotted head style in steel material, completed part number: 85-11-200-16.
A complete example can be found on page 377.

Notes:
Stainless steel material may require a higher minimum order quantity. Contact Southco for details.

---

www.southco.com/85
**Material and Finish**
Steel, zinc immersion coating or stainless steel

**Installation Tool**

**Part Number**

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

---

**85 DZUS® Lion Quarter-Turn Fasteners**
**Receptacles**

**Clip-On**
\[
\begin{align*}
\text{Frame thickness range} & : 1.60 - 4.80 (0.062 - 0.187) \\
\text{TMT} & = P + F + 0.94 (0.037)
\end{align*}
\]

**By Hand**

**With Screwdriver**

**Part Number**

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

---

**Snap-In – Front Mount**

**Part Number**

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

---

**Material**

<table>
<thead>
<tr>
<th>Material</th>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>85-47-101-15</td>
<td>C</td>
</tr>
<tr>
<td>Stainless steel</td>
<td>85-47-101-20</td>
<td></td>
</tr>
</tbody>
</table>

---

**Dimensions in millimeters (inch) unless otherwise stated**
85 DZUS® Lion Quarter-Turn Fasteners
Receptacles

Material and Finish
Steel, zinc plated and stainless steel

Installation Notes
Press receptacle flush to frame

Notes
Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth ≥ the thickness of the selected retainer. This depth should be added to the TMT.

Part Number
See table

Notes
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Part Number
Stud Selection Column
85-35-308-55 A
85-35-311-55 B

Dimensions in millimeters (inch) unless otherwise stated
85 DZUS® Lion Quarter-Turn Fasteners
Receptacles

**Material and Finish**
Steel, zinc immersion coating or stainless steel

**Installation Notes**
Install with Ø 3 (.125) rivets, spring must float freely after riveting

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

---

**Material and Finish**
Steel, zinc immersion coating

**Installation Notes**
Spring must float freely after welding

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

---

**Material and Finish**
Steel, zinc immersion coating

**Installation Notes**

**Part Number**
See table

**Notes**
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

---

Dimensions in millimeters (inch) unless otherwise stated
# DZUS® Lion Quarter-Turn Fasteners
## Retainers · Accessories

### Retainers

<table>
<thead>
<tr>
<th>Type</th>
<th>Part Number</th>
<th>Material</th>
<th>Adjustment Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Push-on - Stainless Steel</td>
<td>85-34-201-20</td>
<td>Stainless steel</td>
<td>Add 0.33 (.013)</td>
</tr>
<tr>
<td>Push-on - Plastic</td>
<td>85-34-301-12</td>
<td>Nylon, black</td>
<td>Add 0.76 (.030)</td>
</tr>
<tr>
<td>Push-on - Neoprene</td>
<td>85-33-101-27</td>
<td>Neoprene, black</td>
<td>Add 1.22 (.048)</td>
</tr>
<tr>
<td>Sealing washer</td>
<td>85-43-201-38</td>
<td>Neoprene nitrile rubber, black</td>
<td>Add 0.51 (.020)</td>
</tr>
<tr>
<td>Ejector spring</td>
<td>14-18-150-24</td>
<td>Stainless steel</td>
<td>Add 1.00 (.039)</td>
</tr>
<tr>
<td>Cupped washer</td>
<td>85-46-101-39</td>
<td>Nylon, white</td>
<td>Add 0.51 (.020)</td>
</tr>
<tr>
<td>Flat wear washer</td>
<td>85-46-103-39</td>
<td>Nylon, white</td>
<td>Add 0.51 (.020)</td>
</tr>
</tbody>
</table>

### Sealing Washer

- Ø 6.2 (.243)
- Ø 14.3 (.562) Max.
- 0.9 (.035)
- 7.9 (.31) Approx.

### Ejector Spring

- Ø 14.3 (.562) Max.
- 0.9 (.035)
- 7.9 (.31) Approx.

### Cupped Washer

- Ø 15.5 (.609)
- 2.4 (.094)
- Ø 7.5 (.296)

### Flat Wear Washer

- Ø 13.1 (.515)
- 0.51 (.020)

---

**Material and Finish**
See table

**Installation Notes**
For standard retainers use tool

Part number 85-0-22543-11

---

**Part Number**
See table

**Adjustment value:**
When using accessories the components add thickness
Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 377 for example)

---

Dimensions in millimeters (inch) unless otherwise stated

---

[www.southco.com/85](http://www.southco.com/85)
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).

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>EJECTOR SPRING</th>
<th>WEAR WASHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>81-41-102-24</td>
<td>Black</td>
<td>White</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.

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

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

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.)

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.
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.)
Southco® Quarter-turn Fasteners
Small Series, Receptacles

Snap-in

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

With screwdriver

With 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.

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.)

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:

Maximum static load: 440 N (100 lbs.)

Product Strength Guidelines

(To assist in your product selection; samples are available for your evaluation.)

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

**Installation**
1. Prepare hole.

![Diagram](image)

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.

![Diagram](image)

METHOD B—Horn installs receptacle flush with surface.

![Diagram](image)

*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.
**Southco® Quarter-turn Fasteners**

**Small Series, Stud Selection**

<table>
<thead>
<tr>
<th><strong>FOR:</strong></th>
<th><strong>FOR:</strong></th>
<th><strong>STUD PART NUMBER</strong></th>
<th><strong>DIMENSIONS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Press-in Part No.</strong></td>
<td><strong>ALL OTHER RECEPTACLES</strong></td>
<td><strong>OVAL SLOTTED</strong></td>
<td><strong>WING HEAD</strong></td>
</tr>
<tr>
<td><strong>Outer Panel Thickness</strong></td>
<td><strong>Total Material Thickness</strong></td>
<td><strong>OVAL SLOTTED</strong></td>
<td><strong>WING HEAD</strong></td>
</tr>
</tbody>
</table>

**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.
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.
PUSH-ON 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>

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.

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.
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, i.e. 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 284.

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 282.
   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.
Installation Guidelines

Self-clinching product installation is offered on these SOUTHCO® products, making them easy-to-use captive panel fasteners:

- Captive Screws
- Receptacles for Quarter-turn Fasteners
- Receptacles for Fast-lead Thread Screws

When pressed into a properly prepared hole, self-clinching captive fasteners cold-flow (move) the panel material into the retaining groove of the fastener. This material then retains the fastener in the panel.

Successful press-in installations depend on:

Material:
The hardness of the panel material must not exceed SOUTHCO® recommendations. If the panel is too hard, the fastener will not install correctly.

Installation Holes:
Mounting holes may be drilled, punched, or cast.
- Hole edge: the top hole edge must be sharp but with no broken edges.
- Punched holes: use a punch and die with a small clearance to minimize the rollover and fracture angle.
- Hole diameter: measure the hole diameter at the panel surface on the side on which the fastener will be installed. The diameter must be within SOUTHCO® specifications for that product.
- If the hole is too large, not enough material will flow into the retaining groove and the fastener may not be retained adequately.
- If the hole is too small, the fastener will not fit and installation may become difficult and unsafe.
- Hole distance from the edge of panel: the minimum recommended distance is 1.5 x the diameter of the mounting hole, unless otherwise indicated.

- Spring-loaded Plungers
- Captive Nuts
- Threaded Inserts

- Installing too close to the edge will cause the material to flow in the opposite direction, deforming the edge of the panel. To install closer to the edge, you may need to restrain the panel edge.

Panel Thickness:
The thickness of the panel at the mounting hole location must meet or exceed Southco's stated minimum recommendations.
If the material is too thin, panel deformation and/or damage to the fastener may result.

Installation is fast and easy if you follow these tips:

How to install: Use the recommended force where noted and a proper back-up tool.
- use any parallel-acting press
- use a punch whose diameter is larger than the head of the fastener

Installation Force: Proper installation requires an even distribution of adequate force. It does not depend on the distance the fastener is pressed into the panel.
- Southco does not recommend using a hammer. The impact force does not provide an even distribution of force to allow the panel material to completely flow into the fastener's retaining groove.
- Installation force varies from application to application, depending on the criteria noted above.
- On parts without a collar to provide a hard stop, press-in until the edge of the knurl is just barely visible.

When to Install:
Installation is recommended after plating or finishing has been applied to the panel.
The hole diameter must meet specifications before finish or plating is applied.
- Do not over-install parts. This interrupts the material and will reduce the retention strength.