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

Oval Slot
Hex Recess
Oval Recess
Tool Head Recess
Flush Recess

Head Styles - Hand Actuated

Wing
Bail Style RA
Bail Style RB

Optional Bail Cover

For use when receptacle is vertical
For use when receptacle is horizontal

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
### Stud Length Table

<table>
<thead>
<tr>
<th>Material</th>
<th>H</th>
<th>K</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel, zinc plated</td>
<td>(not available in tool head recess head style)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Stud Length Table

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>K</th>
<th>U</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.7 (.026)</td>
<td>1.2 (.045)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1.2 (.045)</td>
<td>1.7 (.065)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1.7 (.065)</td>
<td>2.2 (.085)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2.2 (.085)</td>
<td>2.7 (.105)</td>
<td>0 (0)</td>
<td>0.5 (.019)</td>
<td>1.3 (.050)</td>
<td>1.8 (.070)</td>
</tr>
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<td>2.7 (.105)</td>
<td>3.2 (.125)</td>
<td>0.5 (.019)</td>
<td>1.0 (.039)</td>
<td>1.8 (.070)</td>
<td>2.3 (.090)</td>
</tr>
<tr>
<td>3.2 (.125)</td>
<td>3.7 (.145)</td>
<td>1.0 (.039)</td>
<td>1.5 (.059)</td>
<td>2.3 (.090)</td>
<td>2.8 (.110)</td>
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<td>3.7 (.145)</td>
<td>4.2 (.165)</td>
<td>1.5 (.059)</td>
<td>2.0 (.097)</td>
<td>2.8 (.110)</td>
<td>3.3 (.130)</td>
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<td>4.7 (.185)</td>
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<td>2.5 (.099)</td>
<td>3.3 (.130)</td>
<td>3.8 (.150)</td>
</tr>
<tr>
<td>4.7 (.185)</td>
<td>5.2 (.205)</td>
<td>2.5 (.099)</td>
<td>3.1 (.119)</td>
<td>3.8 (.150)</td>
<td>4.3 (.170)</td>
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<td>5.7 (.225)</td>
<td>3.1 (.119)</td>
<td>3.5 (.139)</td>
<td>4.3 (.170)</td>
<td>4.8 (.190)</td>
</tr>
<tr>
<td>5.7 (.225)</td>
<td>6.2 (.245)</td>
<td>3.5 (.139)</td>
<td>4.1 (.159)</td>
<td>4.8 (.190)</td>
<td>5.3 (.210)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>4.1 (.159)</td>
<td>4.6 (.179)</td>
<td>5.3 (.210)</td>
<td>5.8 (.230)</td>
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<tr>
<td>–</td>
<td>–</td>
<td>4.6 (.179)</td>
<td>5.1 (.199)</td>
<td>5.8 (.230)</td>
<td>6.3 (.250)</td>
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<tr>
<td>–</td>
<td>–</td>
<td>5.1 (.199)</td>
<td>5.6 (.219)</td>
<td>6.3 (.250)</td>
<td>6.8 (.270)</td>
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<td>–</td>
<td>–</td>
<td>5.6 (.219)</td>
<td>6.1 (.239)</td>
<td>6.8 (.270)</td>
<td>7.3 (.290)</td>
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<tr>
<td>–</td>
<td>–</td>
<td>6.1 (.239)</td>
<td>6.6 (.259)</td>
<td>7.3 (.290)</td>
<td>7.8 (.310)</td>
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<tr>
<td>–</td>
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<td>6.6 (.259)</td>
<td>7.1 (.279)</td>
<td>7.8 (.310)</td>
<td>8.3 (.330)</td>
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<tr>
<td>–</td>
<td>–</td>
<td>7.1 (.279)</td>
<td>7.6 (.299)</td>
<td>8.3 (.330)</td>
<td>8.8 (.350)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>7.6 (.299)</td>
<td>8.1 (.319)</td>
<td>8.8 (.350)</td>
<td>9.3 (.370)</td>
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<tr>
<td>–</td>
<td>–</td>
<td>8.1 (.319)</td>
<td>8.6 (.339)</td>
<td>9.3 (.370)</td>
<td>9.8 (.390)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>8.6 (.339)</td>
<td>9.1 (.359)</td>
<td>9.8 (.390)</td>
<td>10.3 (.410)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>9.1 (.359)</td>
<td>9.6 (.379)</td>
<td>10.3 (.410)</td>
<td>10.8 (.430)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>9.6 (.379)</td>
<td>10.1 (.399)</td>
<td>10.8 (.430)</td>
<td>11.3 (.450)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>10.1 (.399)</td>
<td>10.6 (.419)</td>
<td>11.3 (.450)</td>
<td>11.8 (.470)</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>10.6 (.419)</td>
<td>11.1 (.439)</td>
<td>11.8 (.470)</td>
<td>12.3 (.490)</td>
</tr>
</tbody>
</table>

Dimensions in millimeters (inch) unless otherwise stated.

### Part Number Selection

1. **Select correct fastener**
   - 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.
**Material and Finish**
Steel, zinc immersion coating

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

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**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

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**Part Number**
See table

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

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**Part Number**
See table

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

---

**Material**

<table>
<thead>
<tr>
<th>Material</th>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel</td>
<td>82-35-295-15</td>
<td>D</td>
</tr>
<tr>
<td>Stainless steel</td>
<td>82-35-295-20</td>
<td>D</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-35-303-15</td>
<td>D</td>
</tr>
</tbody>
</table>

**Side Mount**

- **Material and Finish**: Steel, zinc immersion coating
- **Installation Notes**: Install with Ø 2.5 (3/32) rivets

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>82-45-101-15</td>
<td>D</td>
</tr>
</tbody>
</table>

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

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

**Installation Notes**
Installation Tool

**Part Number**
29-8125-309

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

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**Part Number**
See table

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

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**Part Number**
82-35-306-10

<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>

---

**Part Number**
82-35-309-56

<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.
**82 DZUS® Lion Quarter-Turn Fasteners**

**Receptacles**

**Clip-On**

**By Hand**

**With Screwdriver**

**Press-In**

**Solid Install**

**Blind Install**

**Material and Finish**

Steel, zinc immersion coating or 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 $\geq$ 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.

**Material and Finish**

Steel, zinc plated and stainless steel

**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.

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Dimensions in millimeters (inch) unless otherwise stated.

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[www.southco.com/82](http://www.southco.com/82)
**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

- **Ø 13.4 (.53)** Over knurl
- **Ø 11.81 (.465)**
- **10.29 (.405)**

### Installation

- Optional alignment lug
- **2.5±.1 (.100±.005)**

### Blind Hole Installation

- **Ø 11.9 (.469)**
- **0.30 (.012)**
- **11.2 (.44)**
- **Min.**

### Thru Hole Installation

- **Ø 11.9 (.469)**
- **13.4±.3 (.540±.010)**
- **12.7±.3 (.500±.010)**

### Shielded – Self-Clinching

- **Ø 11.1±.04 (.437±.016)**
- **12 (.465)**
- **0.94 (.037) Min.**

### Frame

- **Frame thickness (F) > 0.9 (.036)**
  + Retainer thickness: **TMT = P + F**
- **Frame thickness (F) ≤ 0.9 (.036)**
  + Retainer thickness: **TMT = P + 0.9 (.036) + Retainer thickness**

### Part Number

- **82-35-310-55**
- **82-35-315-55**

### Stud Selection Column

- **B**
- **C**

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>

Part Number
See table

Notes
Adjustment value:
When using accessories the components increase TMT
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/82
**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

**Installation Notes**
Bail cover:
A wear washer must be fitted under the stud head to fit flush with surface
Wear washer part number 85-34-301-12 (see page 391)

---

**Head Styles - Tool Actuated**

**Studs**
- Ø 14.3 (0.562) x 3.0 (0.130)
- Ø 4.7 (0.185)

**Bail Cover**
- Ø 6.2 (0.245) x 2.8 (0.110)

**Phillips Recess**
- Ø 14.3 (0.562) x 4.6 (0.180)

**Tool Head Recess**
- Ø 14.3 (0.562) x 4.6 (0.180)

---

**Head Styles - Hand Actuated**

**Wing**
- 11.4 (0.45)

**Bail Style RA**
- 28.6 (1.13)
- 5.7 (0.224)

**Bail Style RB**
- 24.2 (0.95)
- 28.7 (1.13)

---

**Optional Bail Cover**

- Part number: 85-5-8-000

**Bail Cover Part Number**

**Stud Panel Preparation**

Prepare Hole
- Ø 7.9 (0.31)

Dimensions in millimeters (inch) unless otherwise stated
### Part Number Selection

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.

---

### 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>TMT Range For: 85-35-308-55</td>
<td>TMT Range For: 85-35-311-55</td>
<td>TMT Range For: All other receptacles</td>
<td>( K )</td>
<td>( U )</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>0.4 (.015)</td>
<td>0.9 (.035)</td>
<td>1.8 (.070)</td>
<td>2.3 (.090)</td>
<td>6.4 (.250)</td>
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<td>0.9 (.035)</td>
<td>1.4 (.055)</td>
<td>2.3 (.090)</td>
<td>2.8 (.110)</td>
<td>6.9 (.270)</td>
</tr>
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<td>1.4 (.055)</td>
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<td>3.3 (.130)</td>
<td>7.4 (.290)</td>
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<td>3.3 (.130)</td>
<td>3.8 (.150)</td>
<td>7.9 (.310)</td>
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<td>2.9 (.115)</td>
<td>3.8 (.150)</td>
<td>4.3 (.170)</td>
<td>8.4 (.330)</td>
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<td>8.9 (.350)</td>
</tr>
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<td>4.8 (.190)</td>
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<td>9.4 (.370)</td>
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<td>9.9 (.390)</td>
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<td>5.8 (.230)</td>
<td>6.3 (.250)</td>
<td>10.4 (.410)</td>
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<td>5.0 (.195)</td>
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<td>10.9 (.430)</td>
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<tr>
<td>5.5 (.215)</td>
<td>6.0 (.235)</td>
<td>6.9 (.270)</td>
<td>7.4 (.290)</td>
<td>11.4 (.450)</td>
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<tr>
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<td>6.5 (.255)</td>
<td>7.4 (.290)</td>
<td>7.9 (.310)</td>
<td>11.9 (.470)</td>
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<tr>
<td>6.5 (.255)</td>
<td>7.0 (.275)</td>
<td>7.9 (.310)</td>
<td>8.4 (.330)</td>
<td>12.5 (.490)</td>
</tr>
<tr>
<td>7.0 (.275)</td>
<td>7.5 (.295)</td>
<td>8.4 (.330)</td>
<td>8.9 (.350)</td>
<td>13.0 (.510)</td>
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<tr>
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<td>8.0 (.315)</td>
<td>8.9 (.350)</td>
<td>9.4 (.370)</td>
<td>13.5 (.530)</td>
</tr>
<tr>
<td>8.0 (.315)</td>
<td>8.5 (.335)</td>
<td>9.4 (.370)</td>
<td>9.9 (.390)</td>
<td>14.0 (.550)</td>
</tr>
<tr>
<td>8.5 (.335)</td>
<td>9.0 (.355)</td>
<td>9.9 (.390)</td>
<td>10.4 (.410)</td>
<td>14.5 (.570)</td>
</tr>
</tbody>
</table>

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Dimensions in millimeters (inch) unless otherwise stated

---

**Head style**
- 11 Oval slot
- 12 Wing head
- 15 Bail RA
- 16 Bail RB
- 78 Hex recess
- P Oval Phillips recess
- T Tool head recess (not available in stainless steel)

**Material**
- 16 Steel, zinc plated
- 20 Stainless steel (not available in tool head recess head style)
**Material and Finish**
Steel, zinc immersion coating or stainless steel

**Clip-On**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.3 (0.41)</td>
<td></td>
</tr>
<tr>
<td>11.1 (0.44)</td>
<td></td>
</tr>
<tr>
<td>15.1 (0.59)</td>
<td></td>
</tr>
<tr>
<td>26.2 (1.03)</td>
<td></td>
</tr>
<tr>
<td>20.6 (0.81)</td>
<td></td>
</tr>
<tr>
<td>0.8 (0.03)</td>
<td></td>
</tr>
<tr>
<td>1.6±0.8 (0.06±0.03)</td>
<td></td>
</tr>
</tbody>
</table>

Frame thickness range 1.60 - 4.80 (0.062 - 0.187)

**By Hand**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screwdriver</td>
<td>To install</td>
</tr>
</tbody>
</table>

**With Screwdriver**

<table>
<thead>
<tr>
<th>Tool</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screwdriver</td>
<td>To install</td>
</tr>
</tbody>
</table>

**Snap-In – Front Mount**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.3 (0.72)</td>
<td></td>
</tr>
<tr>
<td>19.1 (0.75)</td>
<td></td>
</tr>
<tr>
<td>17.9 (0.71)</td>
<td></td>
</tr>
</tbody>
</table>

TMT = P + 8.40 (.330)

Spring legs

All four spring legs must snap out behind panel

**Installation Tool**

Part Number: 29-8125-309

**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 plated and stainless steel

**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>

**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**
85-35-309-56

**Material**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Stud Selection Column</th>
</tr>
</thead>
<tbody>
<tr>
<td>85-35-309-56</td>
<td>C</td>
</tr>
</tbody>
</table>

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

**Receptacles**

### Press-In

Dimensions in millimeters (inch) unless otherwise stated

**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 \( \geq \) 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.

---

### 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 \( \geq \) 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.

---

### Shielded – Self-Clinching

---

### DMT = P + Gap - 0.6 (0.025) (when gap is \( \geq \) retainer thickness)

---

### TMT = P + (Retainer adjustment value) - 0.6 (0.025)

---

### TMT = P + Gap - 0.6 (0.025) (when gap is \( \geq \) retainer thickness)

---

### TMT = P + F + Retainer thickness:

- Frame thickness \( F \) > 0.9 (0.036)
- + Retainer thickness: TMT = P + F
- Frame thickness \( F \) \( \geq \) 0.9 (0.036)
- + Retainer thickness: TMT = P + 0.9 (0.036) + Retainer thickness

---

### Part Number
See table

**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

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
### Retainers

#### Push-On - Stainless Steel

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.6</td>
<td>0.260</td>
</tr>
<tr>
<td>12.3</td>
<td>0.485</td>
</tr>
<tr>
<td>0.3</td>
<td>0.013</td>
</tr>
</tbody>
</table>

#### Push-On - Plastic

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.6</td>
<td>0.250</td>
</tr>
<tr>
<td>12.5</td>
<td>0.490</td>
</tr>
</tbody>
</table>

#### Push-On - Neoprene

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.4</td>
<td>0.250</td>
</tr>
<tr>
<td>11.1</td>
<td>0.440</td>
</tr>
</tbody>
</table>

### Sealing Washer

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2</td>
<td>0.243</td>
</tr>
<tr>
<td>14.3</td>
<td>0.560</td>
</tr>
</tbody>
</table>

### Ejector Spring

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.3</td>
<td>0.562 (Max.)</td>
</tr>
<tr>
<td>6.9</td>
<td>0.267</td>
</tr>
<tr>
<td>7.9</td>
<td>0.310 (Approx.)</td>
</tr>
</tbody>
</table>

### Cupped Washer

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.5</td>
<td>0.609</td>
</tr>
<tr>
<td>7.5</td>
<td>0.296</td>
</tr>
</tbody>
</table>

### Flat Wear Washer

<table>
<thead>
<tr>
<th>Diameter (mm)</th>
<th>Diameter (.in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>0.515</td>
</tr>
<tr>
<td>7.5</td>
<td>0.296</td>
</tr>
</tbody>
</table>

### 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)
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>EJECTOR SPRING</th>
<th>WEAR WASHER</th>
</tr>
</thead>
<tbody>
<tr>
<td>81-41-102-24</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>81-46-101-41</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>81-46-101-39</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.
**Southco® Quarter-turn Fasteners**

**Small Series, Receptacles**

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

![Shielded press-in for sheet metal diagram]

**Installation Tool**

![Installation tool diagram]

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

![Press-in for blind applications and solid materials diagram]

**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.

**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.)

*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, Receptacles

Snap-in

Installation Tool

TOOL PART NUMBER
29-8125-309 •

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

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:

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.)
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.

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

METHOD B—Horn installs receptacle flush with surface.

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.

Maximum static load: 440 N (100 lbs.)

Material and Finish

Part Number

81-35-310-55

Product Strength Guidelines

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

Dimensions without tolerances are for reference only.

*Horn design may vary with material and applications.
# Southco® Quarter-turn Fasteners

## Small Series, Stud Selection

### Oval Slotted Wing Head

- **Slot:** 1 (.040) wide x 1 (.040) deep
- **Ø:** 6.4 (.250) x 3.3 (.130)

### Oval Phillips Recess

- **Ø:** 6.4 (.250)

### Flush Phillips Recess

- **Ø:** 6.4 (.250) x 3.3 (.130)

<table>
<thead>
<tr>
<th>FOR: Press-in Part No.</th>
<th>FOR: All Other Receptacles*</th>
<th>STUD PART NUMBER</th>
<th>DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>81-35-308-55 and</td>
<td>Zinc plate, chromate plus sealer</td>
<td>81-11-100-16</td>
<td>U: 4.9 (.193)</td>
</tr>
<tr>
<td>Ultrasonic Part No.</td>
<td>Case hardened and zinc plate chromate plus sealer.</td>
<td>81-12-100-16</td>
<td>L: 7.2 (.285)</td>
</tr>
<tr>
<td>81-35-310-55</td>
<td></td>
<td>81-18-100-16</td>
<td>F: 9.8 (.385)</td>
</tr>
</tbody>
</table>

### Outer Panel Thickness

<table>
<thead>
<tr>
<th>MIN. (MM)</th>
<th>MAX. (MM)</th>
<th>MIN. (MM)</th>
<th>MAX. (MM)</th>
</tr>
</thead>
<tbody>
<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 (.106)</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 (.150)</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>

### Total Material Thickness

<table>
<thead>
<tr>
<th>MIN. (MM)</th>
<th>MAX. (MM)</th>
<th>MIN. (MM)</th>
<th>MAX. (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (.040)</td>
<td>1.0 (.040)</td>
<td>2.0 (.080)</td>
<td>2.5 (.100)</td>
</tr>
<tr>
<td>1.5 (.060)</td>
<td>1.5 (.060)</td>
<td>2.5 (.100)</td>
<td>3.0 (.120)</td>
</tr>
<tr>
<td>2 (.080)</td>
<td>2 (.080)</td>
<td>3 (.120)</td>
<td>3.5 (.140)</td>
</tr>
<tr>
<td>2.5 (.100)</td>
<td>2.5 (.100)</td>
<td>3.5 (.140)</td>
<td>4.0 (.160)</td>
</tr>
<tr>
<td>3 (.120)</td>
<td>3 (.120)</td>
<td>4 (.160)</td>
<td>4.5 (.180)</td>
</tr>
<tr>
<td>3.6 (.140)</td>
<td>3.6 (.140)</td>
<td>4.6 (.180)</td>
<td>5.1 (.220)</td>
</tr>
<tr>
<td>4.1 (.160)</td>
<td>4.1 (.160)</td>
<td>5.1 (.220)</td>
<td>5.6 (.260)</td>
</tr>
<tr>
<td>4.6 (.180)</td>
<td>4.6 (.180)</td>
<td>5.6 (.260)</td>
<td>6.1 (.300)</td>
</tr>
<tr>
<td>5.1 (.200)</td>
<td>5.1 (.200)</td>
<td>6.1 (.300)</td>
<td>6.6 (.340)</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.

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

Retainers

### Split-Ring Retainer
- Hand or tool installation
- Align

### 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.
PUSH-ON TOOL: Steel, zinc plated.
PUSH-ON TOOL: Hardened low carbon steel, zinc plated.

**Retainer/Tool**

<table>
<thead>
<tr>
<th>PART NUMBERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split-Ring Retainer 81-32-101-20</td>
</tr>
<tr>
<td>Push-On Retainer 81-32-301-12</td>
</tr>
</tbody>
</table>

Dimensions without tolerances are for reference only.
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.
Installation Guidelines for SOUTHCOR® Self-Clinching products

Self-clinching product installation is offered on these SOUTHCOR® 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 SOUTHCOR® 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 rolover 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 SOUTHCOR® 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.

Do not chamfer or debur 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.