

# D1 DZUS® Dart Quarter-Turn Fasteners

## Studs, Glass-filled nylon

### Material and Finish

Glass-filled nylon, black

### Adjustment formula

Add 2.3 (.090) to panel thickness and recalculate your TMT when using self-ejecting stud assembly

### To select correct fastener:

#### 1. Select receptacle

Choose a receptacle from pages 411-413

#### 2. Select retainer and accessories

from page 413 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 (right) using the column (A, B, C, or D) given for the receptacle selected.

#### 4. Complete the stud part number

by specifying the head style **H**, stud length **K**, and material **M**

Example: For rivet-on

D1-004-001-010 use column **A**  
For TMT value calculated as 5.2 (.206), K = 55

For slotted head style, completed part number: D1-004-055-030  
A complete example can be found on page 377.

### Part Number Selection

### H Head Styles - Tool Actuated

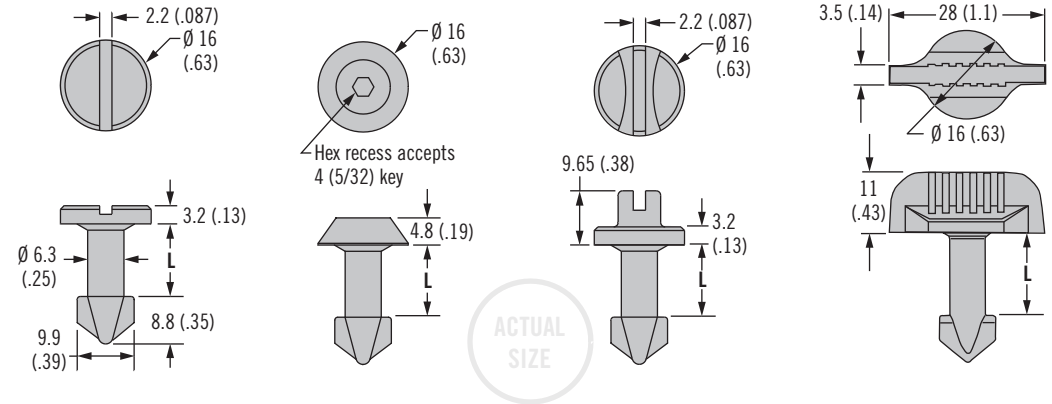
Slot Recess

Hex Recess

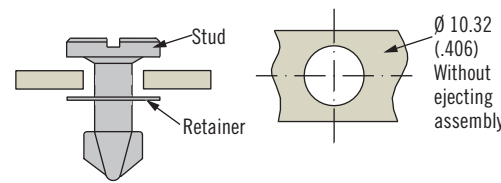
### H Head Styles - Hand Actuated

Slotted Recess Knob

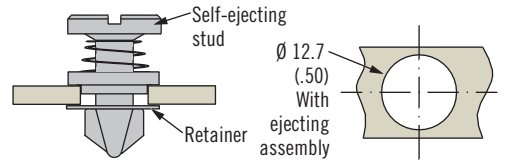
Wing



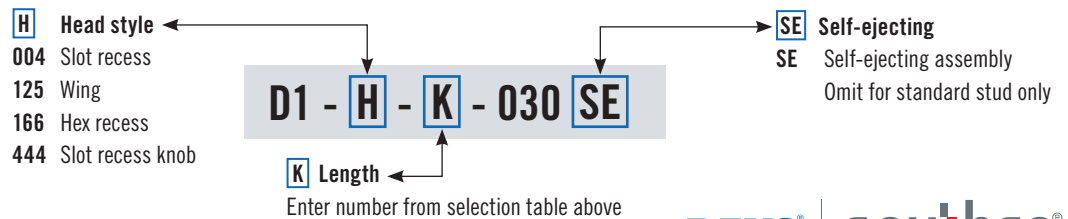
### Standard Stud Assembly



### Self-Ejecting Stud Assembly



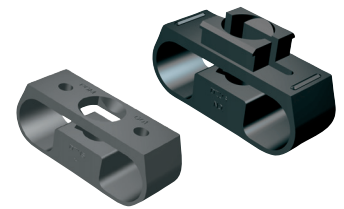
| Stud Length Table                |              |                                    |              |                                    |              |  |              |            |            |
|----------------------------------|--------------|------------------------------------|--------------|------------------------------------|--------------|--|--------------|------------|------------|
| A                                |              | B                                  |              | C                                  |              | D  |              | K          | L          |
| TMT Range For:<br>D1-004-001-010 |              | TMT Range For:<br>D1-004-00(F)-010 |              | TMT Range For:<br>D1-004-92(F)-010 |              | TMT Range For:<br>D1-004-91(F)-010<br>D1-004-01(F)-010 |              |            |            |
| Min.                             | Max.         | Min.                               | Max.         | Min.                               | Max.         | Min.   | Max.         |            |            |
| 2.54 (.100)                      | 3.80 (.149)  | ~                                  | ~            | 4.32 (.170)                        | 5.58 (.219)  | 4.13 (.163)  | 5.39 (.212)  | <b>045</b> | 11.4 (.45) |
| 3.81 (.150)                      | 5.07 (.199)  | 3.81 (.150)                        | 5.07 (.199)  | 5.59 (.220)                        | 6.85 (.269)  | 5.40 (.213)  | 6.66 (.262)  | <b>050</b> | 12.7 (.50) |
| 5.08 (.200)                      | 6.34 (.249)  | 5.08 (.200)                        | 6.34 (.249)  | 6.86 (.270)                        | 8.12 (.319)  | 6.67 (.263)  | 7.93 (.312)  | <b>055</b> | 14.0 (.55) |
| 6.35 (.250)                      | 7.61 (.299)  | 6.35 (.250)                        | 7.61 (.299)  | 8.13 (.320)                        | 9.39 (.369)  | 7.94 (.313)  | 9.20 (.362)  | <b>060</b> | 15.2 (.60) |
| 7.62 (.300)                      | 8.88 (.349)  | 7.62 (.300)                        | 8.88 (.349)  | 9.40 (.370)                        | 10.66 (.419) | 9.21 (.363)  | 10.47 (.412) | <b>065</b> | 16.5 (.65) |
| 8.89 (.350)                      | 10.15 (.399) | 8.89 (.350)                        | 10.15 (.399) | 10.67 (.420)                       | 11.93 (.469) | 10.48 (.413)   | 11.74 (.462) | <b>070</b> | 17.8 (.70) |
| 10.16 (.400)                     | 11.42 (.449) | 10.16 (.400)                       | 11.42 (.449) | 11.94 (.470)                       | 13.20 (.519) | 11.75 (.463)   | 13.01 (.512) | <b>075</b> | 19.1 (.75) |
| 11.43 (.450)                     | 12.69 (.499) | 11.43 (.450)                       | 12.69 (.499) | 13.21 (.520)                       | 14.47 (.569) | 13.02 (.513)   | 14.28 (.562) | <b>080</b> | 20.3 (.80) |
| 12.70 (.500)                     | 13.96 (.549) | 12.70 (.500)                       | 13.96 (.549) | 14.48 (.570)                       | 15.74 (.619) | 14.29 (.563)   | 15.55 (.612) | <b>085</b> | 21.6 (.85) |
| 13.97 (.550)                     | 15.23 (.599) | 13.97 (.550)                       | 15.23 (.599) | 15.75 (.620)                       | 17.01 (.669) | 15.56 (.613)   | 16.82 (.662) | <b>090</b> | 22.9 (.90) |
| 15.24 (.600)                     | 16.50 (.649) | 15.24 (.600)                       | 16.50 (.649) | 17.02 (.670)                       | 18.28 (.719) | 16.83 (.663)   | 18.09 (.712) | <b>095</b> | 24.1 (.95) |
| 16.51 (.650)                     | 17.77 (.699) | 16.51 (.650)                       | 17.77 (.699) | 18.29 (.720)                       | 19.55 (.769) | 18.10 (.713)   | 19.36 (.762) | <b>100</b> | 25.4 (1.0) |



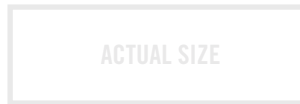
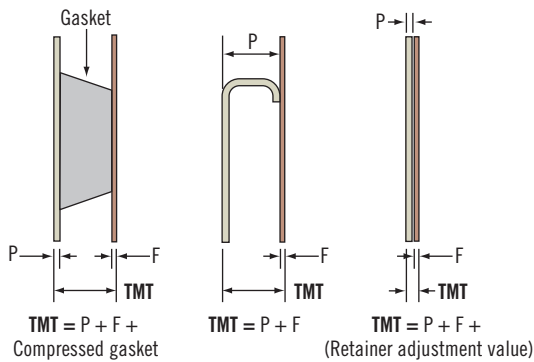
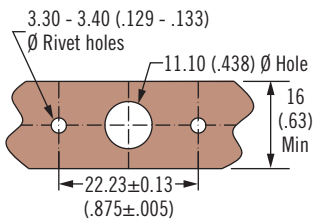
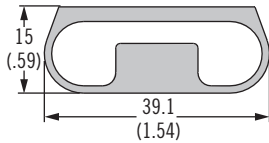
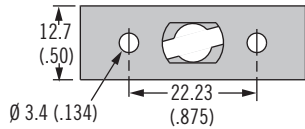
Dimensions in millimeters (inch) unless otherwise stated

# D1 DZUS® Dart Quarter-Turn Fasteners

## Receptacles, Acetal



### Rivet-On



| Part Number    | Stud Selection Column |
|----------------|-----------------------|
| D1-004-001-010 | A                     |

### Material and Finish

Acetal, black

### Notes

After selecting receptacle use stud selection letter **A** and follow instruction on page 410

82

85

D8

D9

**D1**

D4

D5

D7

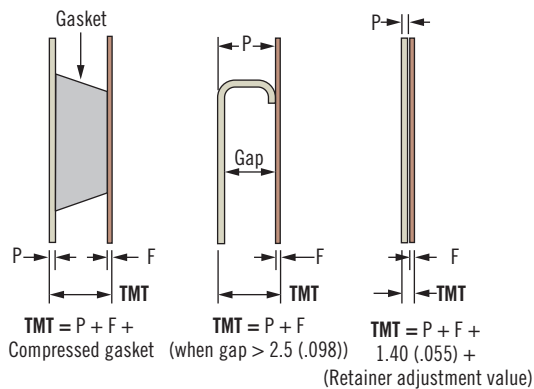
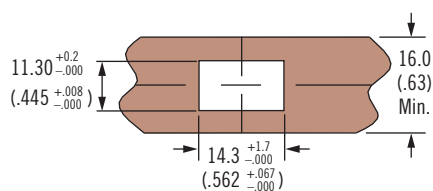
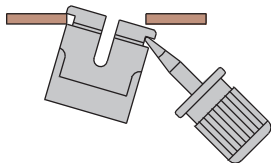
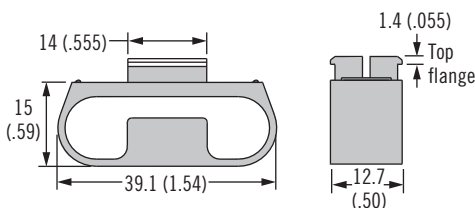
NY



### Part Number

See table

### Snap-In Back Load



| F Frame Thickness |             | Part Number    | Stud Selection Column |
|-------------------|-------------|----------------|-----------------------|
| Min.              | Max.        |                |                       |
| .90 (.035)        | 1.27 (.050) | D1-004-002-010 | <b>B</b>              |
| 1.63 (.064)       | 2.00 (.080) | D1-004-003-010 |                       |
| 2.30 (.090)       | 2.64 (.104) | D1-004-004-010 |                       |
| 3.00 (.119)       | 3.40 (.135) | D1-004-005-010 |                       |
| 3.65 (.144)       | 4.00 (.158) | D1-004-006-010 |                       |

### Material and Finish

Acetal black

### Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

### Part Number

See table



# D1 DZUS® Dart Quarter-Turn Fasteners

## Receptacles, Acetal

### Material and Finish

Acetal, black

82

85

D8

D9

D1

D4

D5

D7

NY

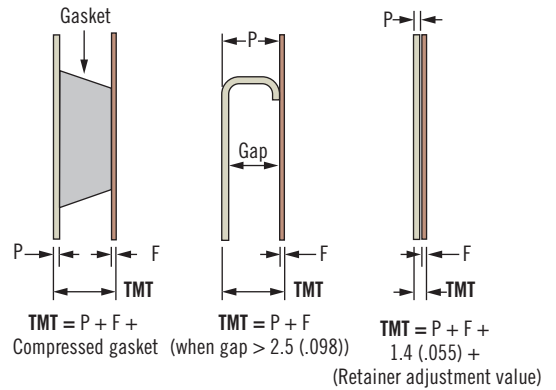
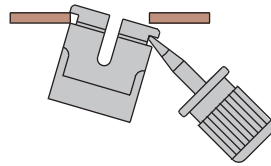
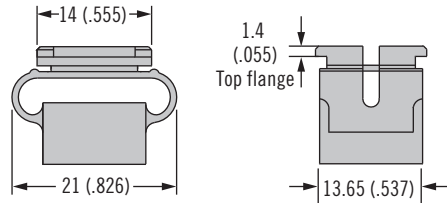
### Part Number

See table

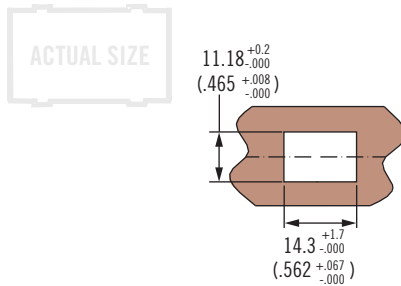
### Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

### Mini Snap-In - Back Load



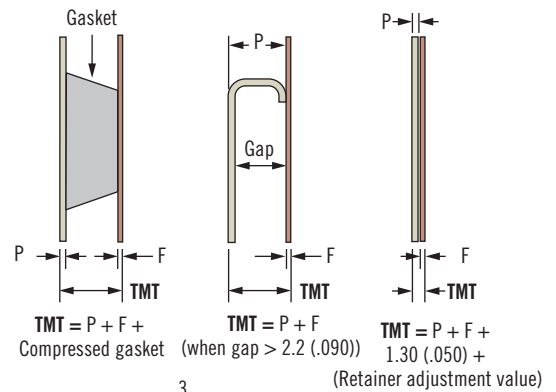
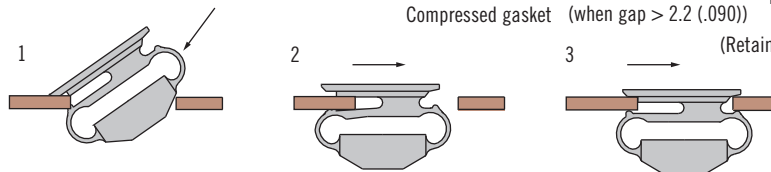
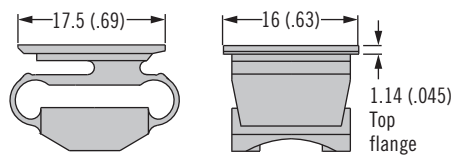
| F Frame Thickness |             | Part Number    | Stud Selection Column |
|-------------------|-------------|----------------|-----------------------|
| Min.              | Max.        |                |                       |
| 0.81 (.032)       | 1.27 (.050) | D1-004-012-010 | D                     |
| 1.29 (.051)       | 2.54 (.100) | D1-004-013-010 |                       |



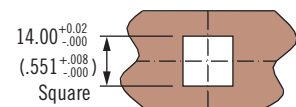
### Material and Finish

Acetal, black

### Mini Snap-In - Front Load



| F Frame Thickness |             | Part Number    | Stud Selection Column |
|-------------------|-------------|----------------|-----------------------|
| Min.              | Max.        |                |                       |
| 0.90 (.035)       | 1.25 (.049) | D1-004-911-010 | D                     |
| 1.30 (.051)       | 1.75 (.069) | D1-004-912-010 |                       |
| 1.80 (.071)       | 2.25 (.089) | D1-004-913-010 |                       |
| 2.30 (.091)       | 2.75 (.109) | D1-004-914-010 |                       |
| 2.80 (.111)       | 3.25 (.129) | D1-004-915-010 |                       |



### Part Number

See table

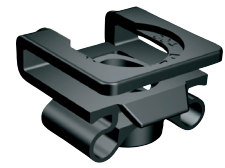
### Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

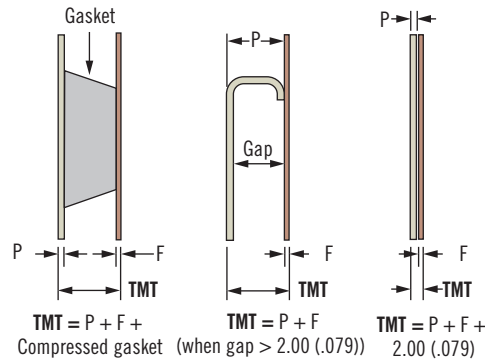
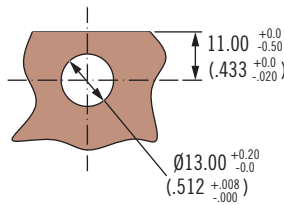
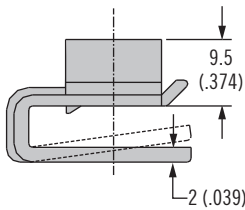
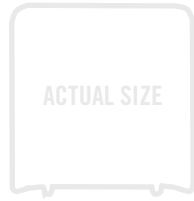
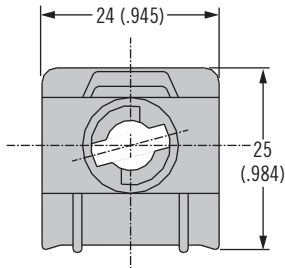
Dimensions in millimeters (inch) unless otherwise stated

# D1 DZUS® Dart Quarter-Turn Fasteners

## Receptacles · Retainers · Accessories



### Clip-On



| F Frame Thickness |             | Part Number    | Stud Selection Column |
|-------------------|-------------|----------------|-----------------------|
| Min.              | Max.        |                |                       |
| 0.70 (.027)       | 2.30 (.090) | D1-004-921-010 | C                     |
| 2.30 (.090)       | 3.90 (.153) | D1-004-922-010 |                       |
| 3.9 (.153)        | 5.5 (.217)  | D1-004-923-010 |                       |

### Material and Finish

Acetal, black

82

85

D8

D9

D1

D4

D5

D7

NY



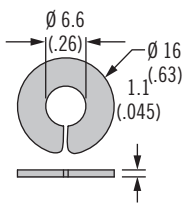
### Part Number

See table

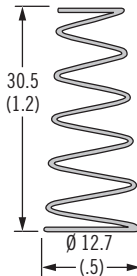
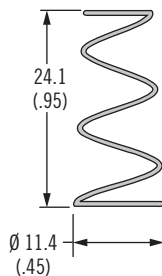
### Notes

Utilize stud selection column indicated when choosing a stud length from the stud length table on page 410

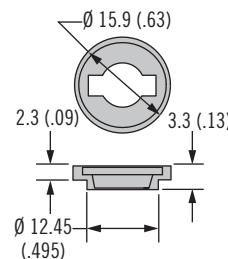
### Retainer Split



### Self-Ejecting Springs



### Self-Ejecting Cup



### Material and Finish

See 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)

| Type                  | K Range    | Part Number    | Material        | Adjustment Value |
|-----------------------|------------|----------------|-----------------|------------------|
| Retainer split        | All        | D1-004-000-010 | Acetal, black   | Add 1.1 (.045)   |
| Self-ejecting springs | 045 to 070 | D1-X1135-2S    | Stainless steel | Add 2.3 (.090)   |
| Self-ejecting springs | 075 to 100 | D1-X1137-2S    | Stainless steel |                  |
| Self-ejecting cup     | All        | D1-X1129       | Acetal, black   |                  |

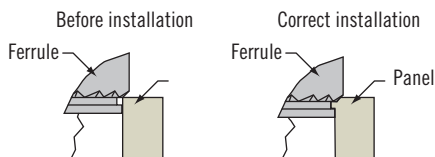
# Installation Guidelines

## for *SOUTHCO*® Self-Clinching products

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:

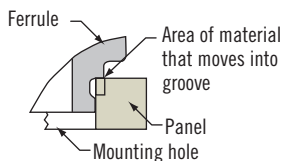
#### Material:

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:

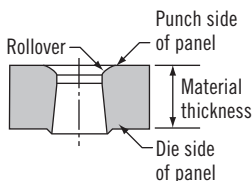
Mounting holes may be drilled, punched, or cast.

- Hole edge: the top hole edge must be sharp but with no broken edges.



Do not chamfer or debur edge.

- 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.



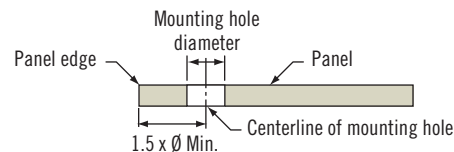
- If the hole is too large, not enough material will flow into the

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.

