



82 DZUS® Performance Quarter-Turn Fasteners Studs

82

85

D8

D9

D1

D4

D5

D7

NY

Material and Finish

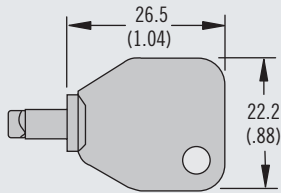
Studs: Steel, zinc plated and chromate or stainless steel

Bail cover: ABS, black

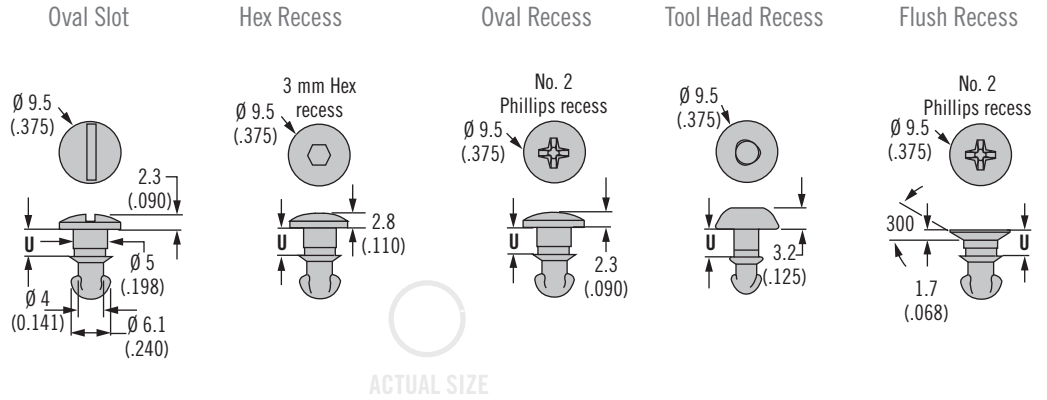
Accessories

Tool head recess key:

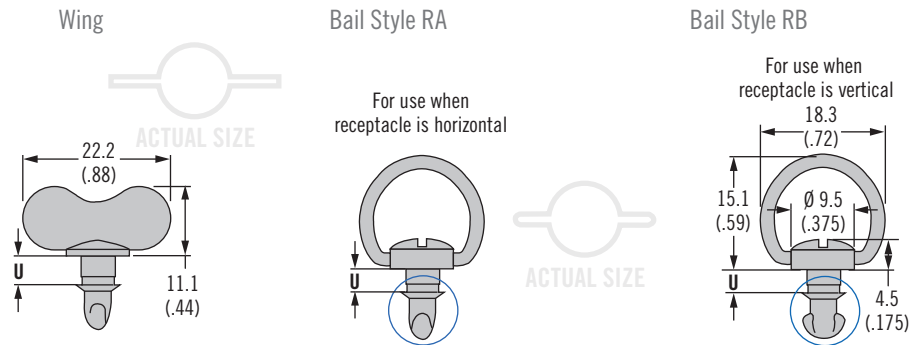
Part number: 29-90-214-10



H Head Styles - Tool Actuated



H Head Styles - Hand Actuated



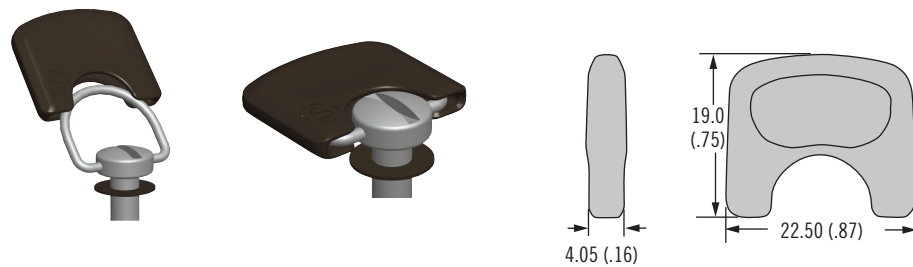
Installation Notes

Bail cover:

A retainer must be fitted under the stud head to fit flush with surface

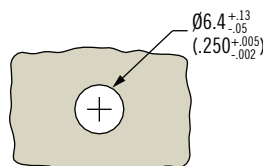
Retainer part number 82-32-301-12 (see page 385)

Optional Bail Cover



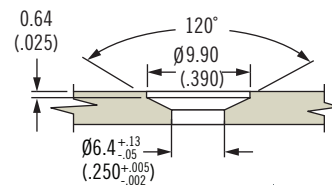
Bail Cover Part Number
82-2-B-000

Stud Panel Preparation



Flush Head Styles

(when outer panel is 1.3 (.050) or greater)



Dimensions in millimeters (inch) unless otherwise stated



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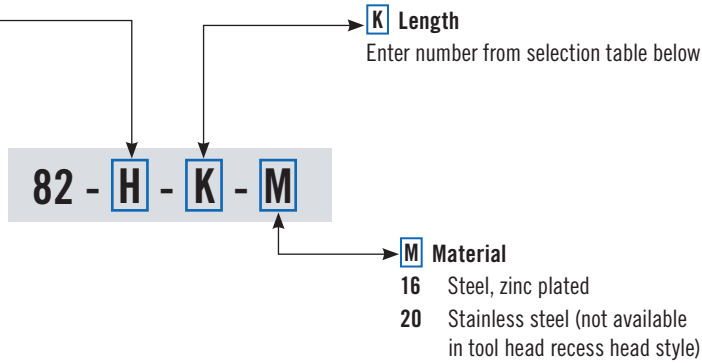
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82 DZUS® Lion Quarter-Turn Fasteners

Stud selection



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



Part Number Selection

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NY



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.

Stud Length Table									
A		B		C		D		K	U
TMT Range For: 82-35-306-10		TMT Range For: 82-35-308-55 82-35-310-55		TMT Range For: 82-35-315-55		TMT Range For: All Other Receptacles			
Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.		
0.7 (.026)	1.2 (.045)	~	~	~	~	2.3 (.090)	2.8 (.110)	100	3.2 (.127)
1.2 (.045)	1.7 (.065)	~	~	~	~	2.8 (.110)	3.3 (.130)	120	3.7 (.147)
1.7 (.065)	2.2 (.085)	~	~	~	~	3.3 (.130)	3.8 (.150)	140	4.2 (.167)
2.2 (.085)	2.7 (.105)	0 (0)	0.5 (.019)	1.3 (.050)	1.8 (.070)	3.8 (.150)	4.3 (.170)	160	4.7 (.187)
2.7 (.105)	3.2 (.125)	0.5 (.019)	1 (.039)	1.8 (.070)	2.3 (.090)	4.3 (.170)	4.8 (.190)	180	5.3 (.207)
3.2 (.125)	3.7 (.145)	1 (.039)	1.5 (.059)	2.3 (.090)	2.8 (.110)	4.8 (.190)	5.3 (.210)	200	5.8 (.227)
3.7 (.145)	4.2 (.165)	1.5 (.059)	2 (.079)	2.8 (.110)	3.3 (.130)	5.3 (.210)	5.8 (.230)	220	6.3 (.247)
4.2 (.165)	4.7 (.185)	2 (.079)	2.5 (.099)	3.3 (.130)	3.8 (.150)	5.8 (.230)	6.3 (.250)	240	6.8 (.267)
4.7 (.185)	5.2 (.205)	2.5 (.099)	3 (.119)	3.8 (.150)	4.3 (.170)	6.4 (.250)	6.9 (.270)	260	7.3 (.287)
5.2 (.205)	5.7 (.225)	3 (.119)	3.5 (.139)	4.3 (.170)	4.8 (.190)	6.9 (.270)	7.4 (.290)	280	7.8 (.307)
5.7 (.225)	6.2 (.245)	3.5 (.139)	4.1 (.159)	4.8 (.190)	5.3 (.210)	7.4 (.290)	7.9 (.310)	300	8.3 (.327)
~	~	4.1 (.159)	4.6 (.179)	5.3 (.210)	5.8 (.230)	7.9 (.310)	8.4 (.330)	320	8.8 (.347)
~	~	4.6 (.179)	5.1 (.199)	5.8 (.230)	6.3 (.250)	8.4 (.330)	8.9 (.350)	340	9.3 (.367)
~	~	5.1 (.199)	5.6 (.219)	6.3 (.250)	6.8 (.270)	8.9 (.350)	9.4 (.370)	360	9.8 (.387)
~	~	5.6 (.219)	6.1 (.239)	6.8 (.270)	7.3 (.290)	9.4 (.370)	9.9 (.390)	380	10.3 (.407)
~	~	6.1 (.239)	6.6 (.259)	7.3 (.290)	7.8 (.310)	9.9 (.390)	10.4 (.410)	400	10.8 (.427)
~	~	6.6 (.259)	7.1 (.279)	7.8 (.310)	8.3 (.330)	10.4 (.410)	10.9 (.430)	420	11.4 (.447)
~	~	7.1 (.279)	7.6 (.299)	8.3 (.330)	8.8 (.350)	10.9 (.430)	11.4 (.450)	440	11.9 (.467)
~	~	7.6 (.299)	8.1 (.319)	8.8 (.350)	9.3 (.370)	11.4 (.450)	11.9 (.470)	460	12.4 (.487)
~	~	8.1 (.319)	8.6 (.339)	9.3 (.370)	9.8 (.390)	11.9 (.470)	12.4 (.490)	480	12.9 (.507)
~	~	8.6 (.339)	9.1 (.359)	9.8 (.390)	10.3 (.410)	12.5 (.490)	12.9 (.510)	500	13.4 (.527)
~	~	9.1 (.359)	9.6 (.379)	10.3 (.410)	10.8 (.430)	13 (.510)	13.5 (.530)	520	13.9 (.547)
~	~	9.6 (.379)	10.1 (.399)	10.8 (.430)	11.3 (.450)	13.5 (.530)	14 (.550)	540	14.4 (.567)
~	~	10.1 (.399)	10.6 (.419)	11.3 (.450)	11.8 (.470)	14 (.550)	14.5 (.570)	560	14.9 (.587)
~	~	10.6 (.419)	11.1 (.439)	11.8 (.470)	12.3 (.490)	14.5 (.570)	15 (.590)	580	15.4 (.607)





82 DZUS[®] Lion Quarter-Turn Fasteners Receptacles

Material and Finish

Steel, zinc immersion coating

Installation Notes

Install with \varnothing 2.5 (3/32) rivets, spring plate must float freely after riveting

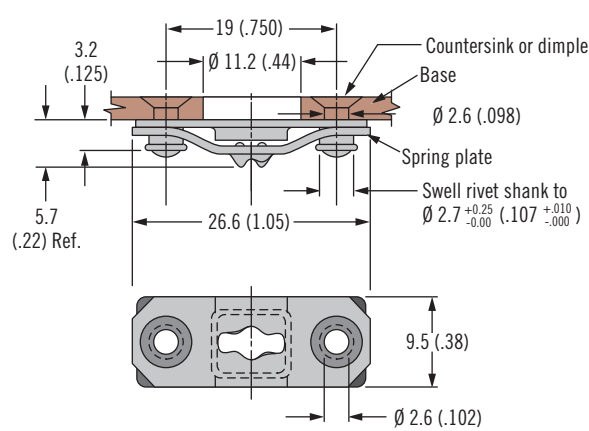
Part Number

See table

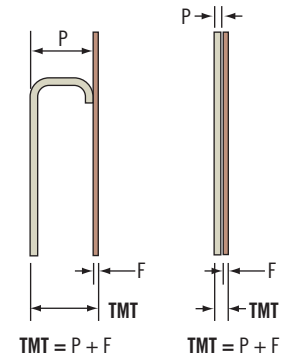
Notes

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

Rivet-On With Base



ACTUAL SIZE



Part Number	Stud Selection Column
82-35-302-15	D

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with \varnothing 2.5 (3/32) rivets, spring plate must float freely after riveting

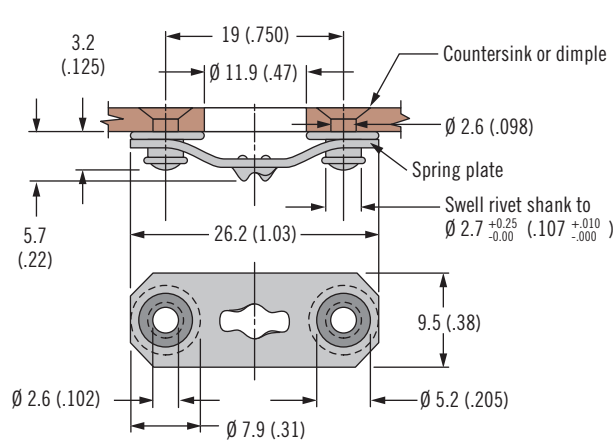
Part Number

See table

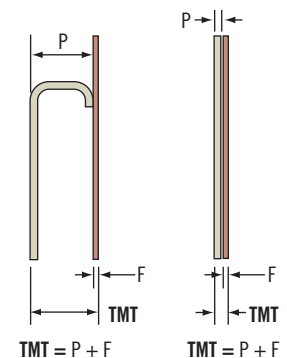
Notes

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

Rivet-On Without Base



ACTUAL SIZE



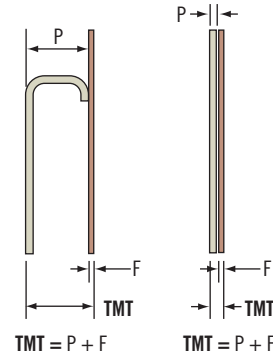
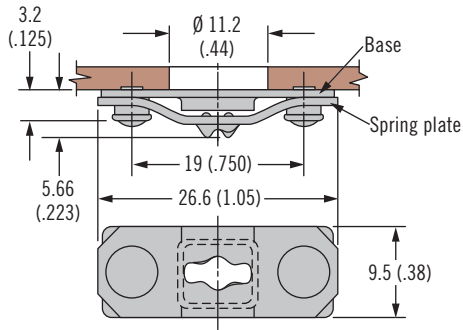
Material	Part Number	Stud Selection Column
Steel	82-35-295-15	D
Stainless steel	82-35-295-20	

Dimensions in millimeters (inch) unless otherwise stated

82 DZUS® Lion Quarter-Turn Fasteners Receptacles



Weld-On



ACTUAL SIZE

Part Number	Stud Selection Column
82-35-303-15	D

Material and Finish

Steel, zinc immersion coating

Installation Notes

Spring plate must float freely after welding

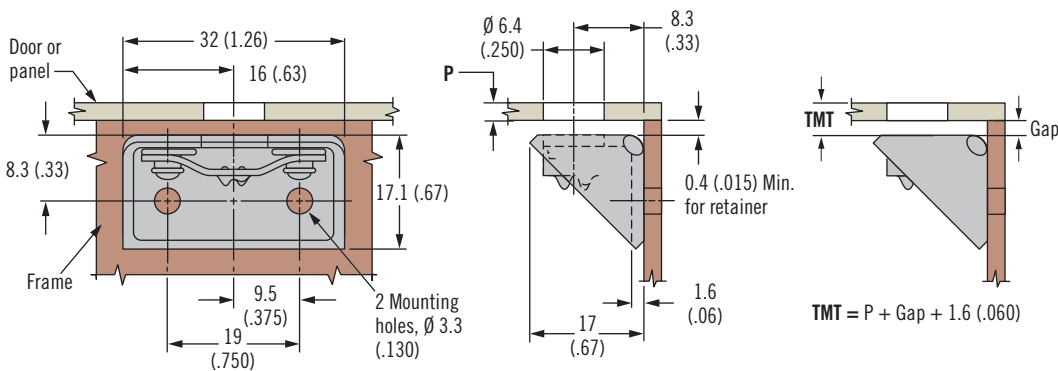
Part Number

See table

Notes

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

Side Mount



ACTUAL SIZE

Part Number	Stud Selection Column
82-45-101-15	D

Material and Finish

Steel, zinc immersion coating

Installation Notes

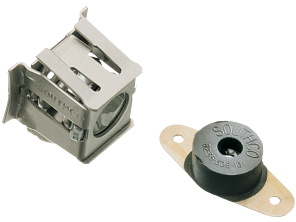
Install with Ø 2.5 (3/32) rivets

Part Number

See table

Notes

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



82 DZUS® Lion Quarter-Turn Fasteners Receptacles

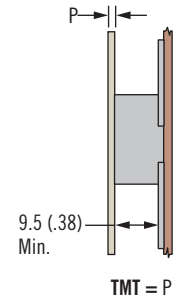
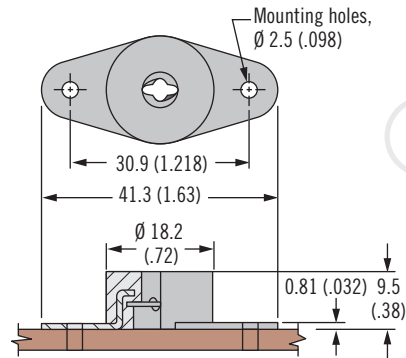
Material and Finish

Steel, zinc plated and neoprene

Installation Notes

Install with \varnothing 2.5 (3/32) rivets

Vibration Isolating



Part Number

See table

Notes

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

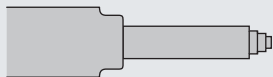
Part Number	Stud Selection Column
82-35-306-10	A

Material and Finish

Steel, zinc plated and stainless steel

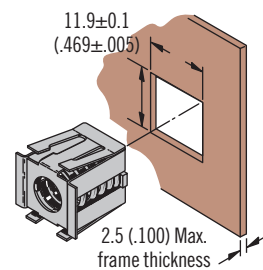
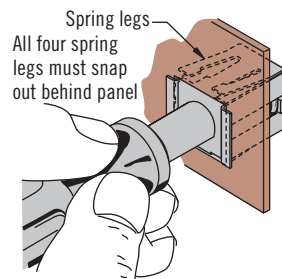
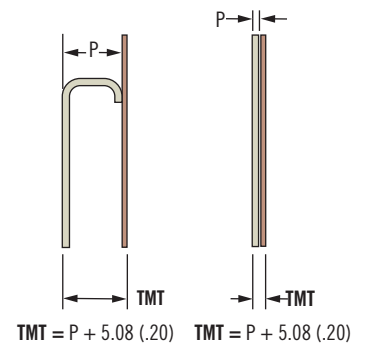
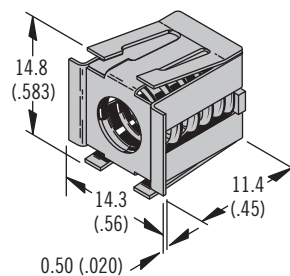
Installation Notes

Installation Tool



Part Number: 29-8125-309

Snap-In - Front Mount



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	Stud Selection Column
82-35-309-56	D



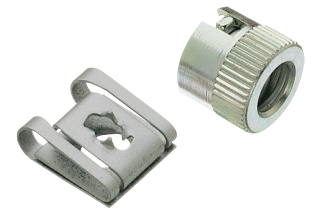
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Dimensions in millimeters (inch) unless otherwise stated

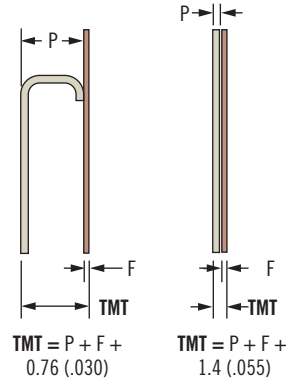
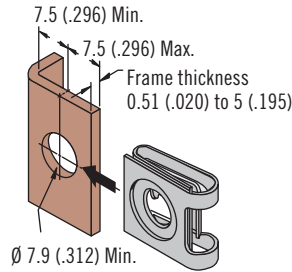
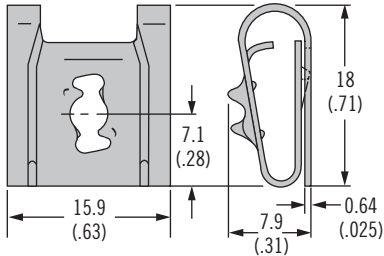
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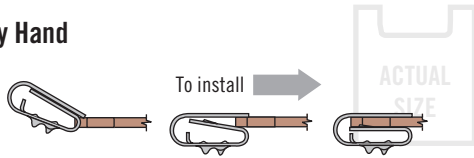
82 DZUS® Lion Quarter-Turn Fasteners Receptacles



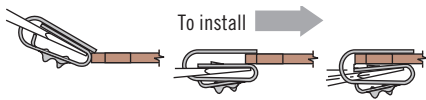
Clip-On



By Hand



With Screwdriver



Material	Part Number	Stud Selection Column
Steel	82-47-113-15	D
Stainless steel	82-47-113-20	

Material and Finish

Steel, zinc immersion coating or stainless steel

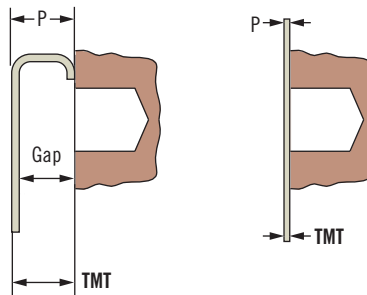
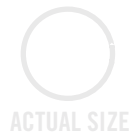
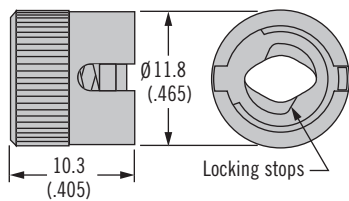
Part Number

See table

Notes

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

Press-In

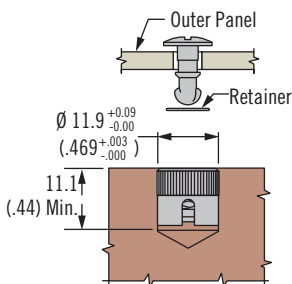


$$TMT = P + \text{Gap} - 0.5 (.020)$$

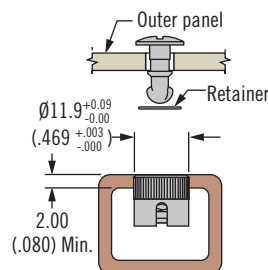
(when gap is > retainer thickness)

$$TMT = P + (\text{Retainer adjustment value}) - 0.5 (.020)$$

Solid Install



Blind Install



Part Number	Stud Selection Column
82-35-308-55	B

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

Press receptacle flush to frame

Notes

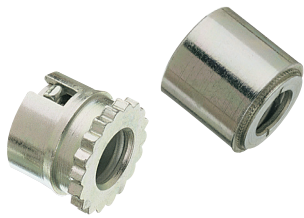
Receptacle shown installed flush to the frame. To eliminate the gap between the frame and outer panel, install to a depth \geq the thickness of the selected retainer. This depth should be added to the TMT.

Part Number

See table

Notes

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



82 DZUS® Lion Quarter-Turn Fasteners

Receptacles · Self-clinching

Material and Finish

Steel, zinc plated and stainless steel

82

Installation Notes

Press receptacle flush to frame

85

D8

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.

D9

D1

D4

D5

Part Number

See table

D7

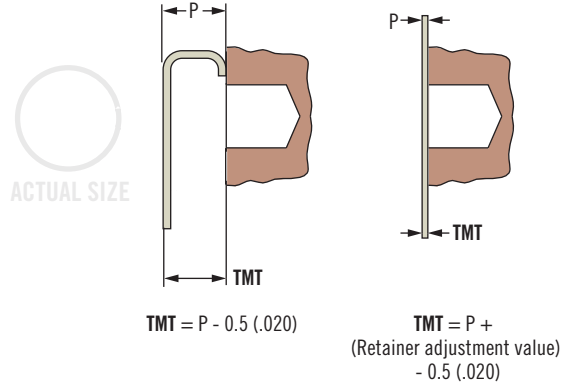
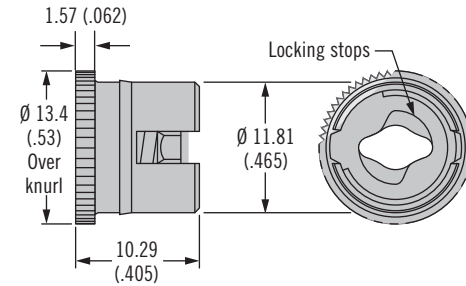
NY

Notes

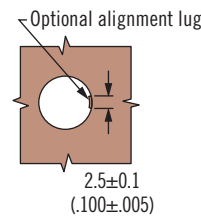
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 379



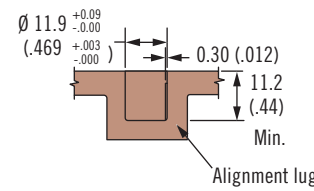
Ultrasonic For Thermoplastics



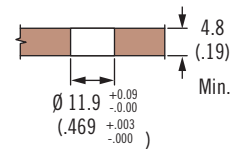
Installation



Blind Hole Installation



Thru Hole Installation



Part Number	Stud Selection Column
82-35-310-55	B

Material and Finish

Steel, zinc plated and stainless steel

Installation Notes

For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R_b 85 or softer

See page 543 for installation guidelines

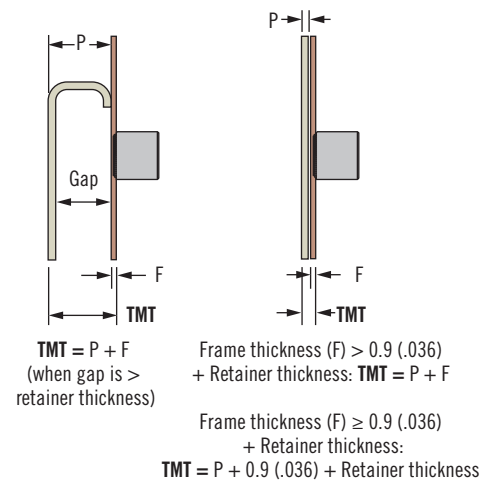
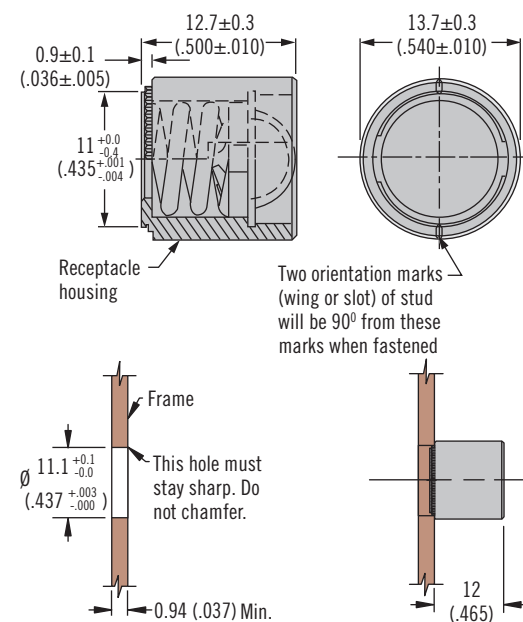
Part Number

See table

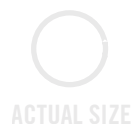
Notes

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

Shielded – Self-Clinching



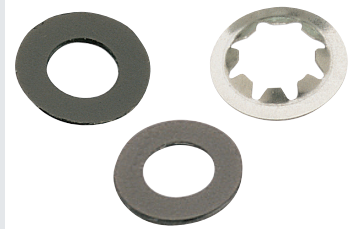
Part Number	Stud Selection Column
82-35-315-55	C



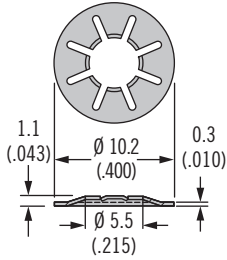
Dimensions in millimeters (inch) unless otherwise stated

82 DZUS® Lion Quarter-Turn Fasteners

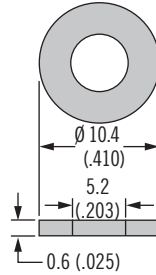
Retainers · Accessories



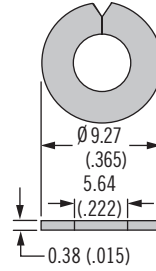
Retainer Push-On



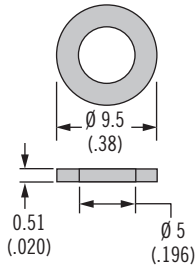
Retainer Push-On Plastic



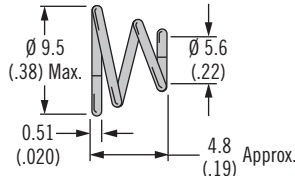
Retainer Split



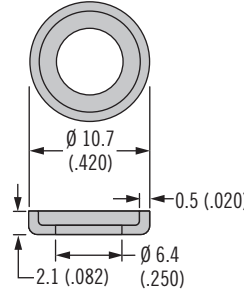
Sealing Washer



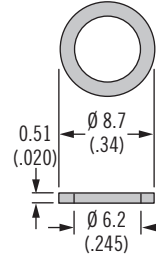
Ejector Spring



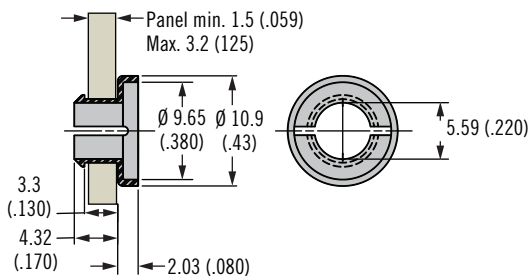
Cupped Washer



Flat Wear Washer



Snap-In Retainer

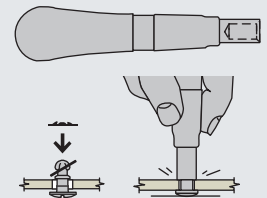


Material and Finish

See table

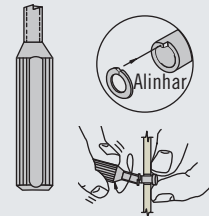
Installation Notes

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

Type	Part Number	Material	Adjustment Value
Push-on retainer	82-32-201-20	Stainless steel	Add 0.25 (.010)
Push-on plastic retainer	82-32-301-12	Nylon, black	Add 0.64 (.025)
Split retainer	82-32-101-20	Stainless steel	Add 0.38 (.015)
Sealing washer	82-43-201-38	Neoprene nitrile rubber, black	Add 0.51 (.020)
Ejector spring	43-13-1-24	Stainless steel	Add 0.51 (.020)
Cupped washer	82-46-101-39	Nylon, white	Add 0.51 (.020)
	82-46-101-41	Nylon, black	
Flat wear washer	82-46-103-39	Nylon, white	Add 0.51 (.020)
Snap-in retainer	82-32-401-41	Nylon, black	Add 0.51 (.020)

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)



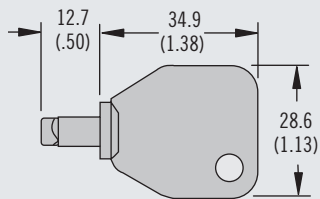
85 DZUS® Lion Quarter-Turn Fasteners Studs

Material and Finish

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

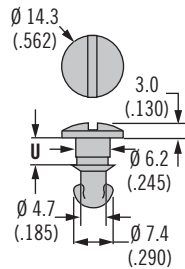
Accessories

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

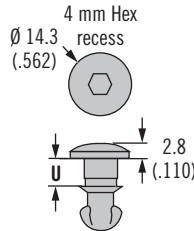


H Head Styles - Tool Actuated

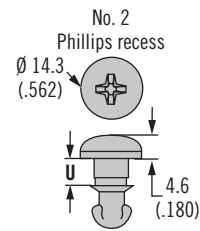
Oval Slot



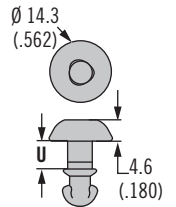
Hex Recess



Phillips Recess



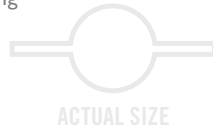
Tool Head Recess



ACTUAL SIZE

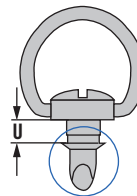
H Head Styles - Hand Actuated

Wing



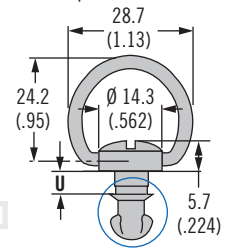
Bail Style RA

For use when receptacle is horizontal



Bail Style RB

For use when receptacle is vertical



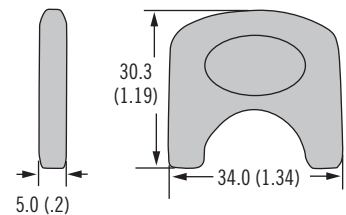
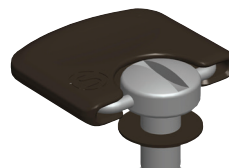
ACTUAL SIZE

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)

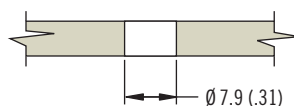
Optional Bail Cover



Bail Cover Part Number
85-5-B-000

Stud Panel Preparation

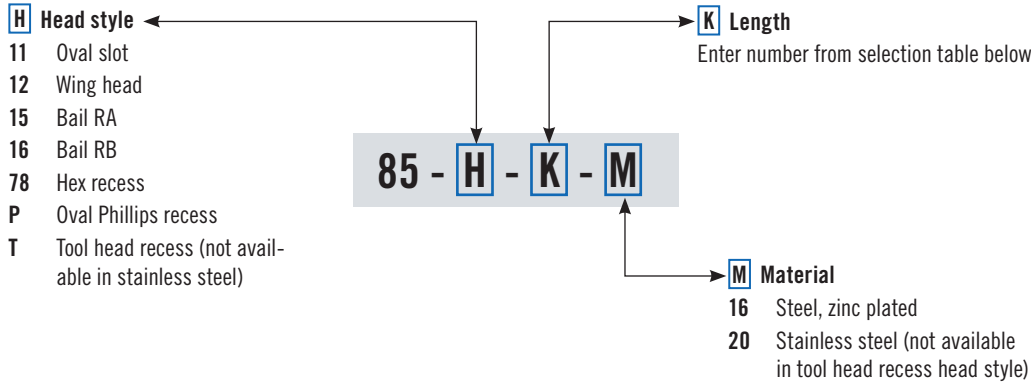
Prepare Hole



Dimensions in millimeters (inch) unless otherwise stated

85 DZUS® Lion Quarter-Turn Fasteners

Stud selection



Stud Length Table							
A		B		C		K	U
TMT Range For: 85-35-308-55		TMT Range For: 85-35-311-55		TMT Range For: All other receptacles			
Min.	Max.	Min.	Max.	Min.	Max.		
~	~	~	~	2.3 (.090)	2.8 (.110)	100	5.2 (.205)
~	~	~	~	2.8 (.110)	3.3 (.130)	120	5.7 (.225)
~	~	~	~	3.3 (.130)	3.8 (.150)	140	6.2 (.245)
~	~	~	~	3.8 (.150)	4.3 (.170)	160	6.7 (.265)
~	~	~	~	4.3 (.170)	4.8 (.190)	180	7.2 (.285)
~	~	~	~	4.8 (.190)	5.3 (.210)	200	7.7 (.305)
~	~	~	~	5.3 (.210)	5.8 (.230)	220	8.3 (.325)
~	~	1.3 (.050)	1.8 (.070)	5.8 (.230)	6.3 (.250)	240	8.8 (.345)
0.4 (.015)	0.9 (.035)	1.8 (.070)	2.3 (.090)	6.4 (.250)	6.9 (.270)	260	9.3 (.365)
0.9 (.035)	1.4 (.055)	2.3 (.090)	2.8 (.110)	6.9 (.270)	7.4 (.290)	280	9.8 (.385)
1.4 (.055)	1.9 (.075)	2.8 (.110)	3.3 (.130)	7.4 (.290)	7.9 (.310)	300	10.3 (.405)
1.9 (.075)	2.4 (.095)	3.3 (.130)	3.8 (.150)	7.9 (.310)	8.4 (.330)	320	10.8 (.425)
2.4 (.095)	2.9 (.115)	3.8 (.150)	4.3 (.170)	8.4 (.330)	8.9 (.350)	340	11.3 (.445)
2.9 (.115)	3.4 (.135)	4.3 (.170)	4.8 (.190)	8.9 (.350)	9.4 (.370)	360	11.8 (.465)
3.4 (.135)	3.9 (.155)	4.8 (.190)	5.3 (.210)	9.4 (.370)	9.9 (.390)	380	12.3 (.485)
3.9 (.155)	4.4 (.175)	5.3 (.210)	5.8 (.230)	9.9 (.390)	10.4 (.410)	400	12.8 (.505)
4.4 (.175)	4.9 (.195)	5.8 (.230)	6.3 (.250)	10.4 (.410)	10.9 (.430)	420	13.3 (.525)
5 (.195)	5.5 (.215)	6.4 (.250)	6.9 (.270)	10.9 (.430)	11.4 (.450)	440	13.8 (.545)
5.5 (.215)	6 (.235)	6.9 (.270)	7.4 (.290)	11.4 (.450)	11.9 (.470)	460	14.4 (.565)
6 (.235)	6.5 (.255)	7.4 (.290)	7.9 (.310)	11.9 (.470)	12.4 (.490)	480	14.9 (.585)
6.5 (.255)	7 (.275)	7.9 (.310)	8.4 (.330)	12.5 (.490)	12.9 (.510)	500	15.4 (.605)
7 (.275)	7.5 (.295)	8.4 (.330)	8.9 (.350)	13 (.510)	13.5 (.530)	520	15.9 (.625)
7.5 (.295)	8 (.315)	8.9 (.350)	9.4 (.370)	13.5 (.530)	14 (.550)	540	16.4 (.645)
8 (.315)	8.5 (.335)	9.4 (.370)	9.9 (.390)	14 (.550)	14.5 (.570)	560	16.9 (.665)
8.5 (.335)	9 (.355)	9.9 (.390)	10.4 (.410)	14.5 (.570)	15 (.590)	580	17.4 (.685)

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

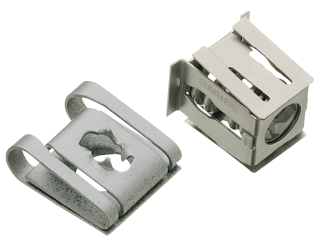
For slotted head style in steel material, completed part number: 85-11-200-16

A complete example can be found on page 377

Notes

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

- 82
- 85**
- D8
- D9
- D1
- D4
- D5
- D7
- NY



85 DZUS® Lion Quarter-Turn Fasteners Receptacles

Material and Finish

Steel, zinc immersion coating or stainless steel

82

85

D8

D9

D1

D4

D5

D7

NY

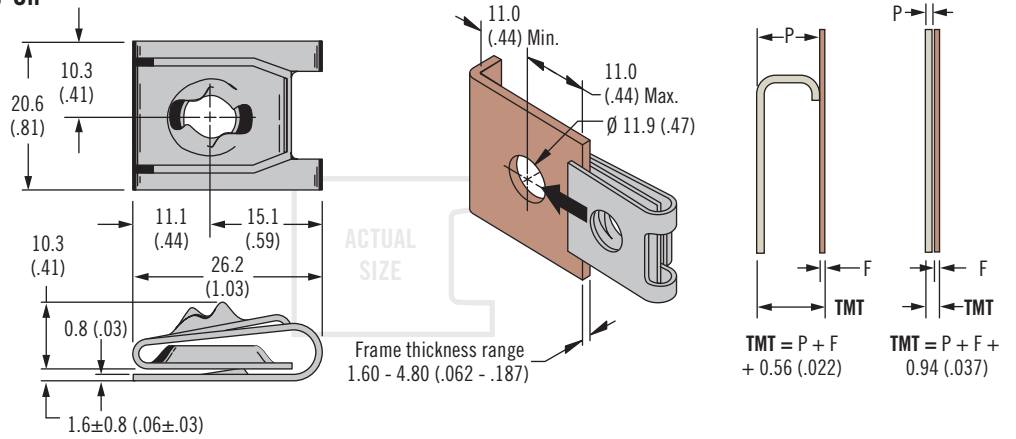
Part Number

See table

Notes

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

Clip-On



By Hand



With Screwdriver

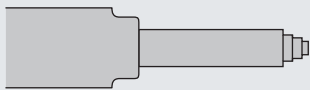


Material	Part Number	Stud Selection Column
Steel	85-47-101-15	C
Stainless steel	85-47-101-20	

Material and Finish

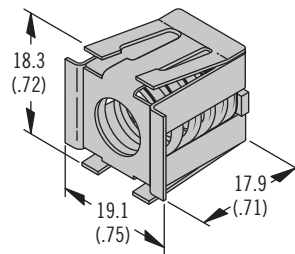
Steel, zinc plated and stainless steel

Installation Tool

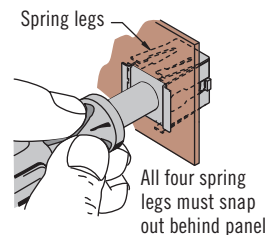
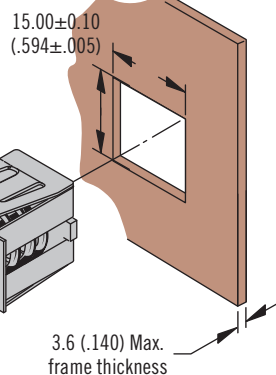
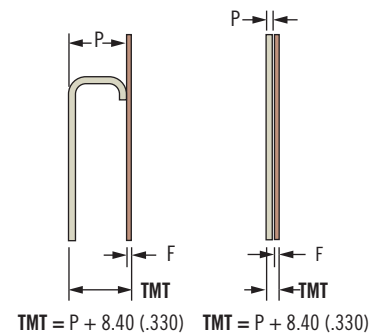


Part Number: 29-8125-309

Snap-In – Front Mount



ACTUAL SIZE



Part Number	Stud Selection Column
85-35-309-56	C

Part Number

See table

Notes

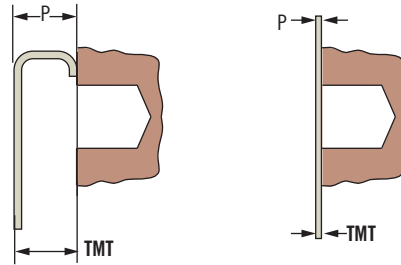
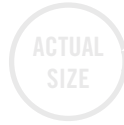
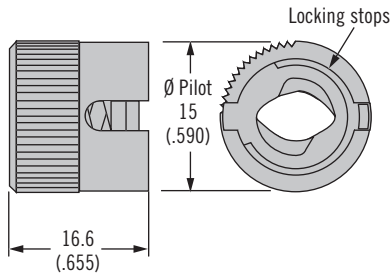
Utilize stud selection column indicated when choosing a stud length from the stud length table on page 387

Dimensions in millimeters (inch) unless otherwise stated

85 DZUS® Lion Quarter-Turn Fasteners Receptacles



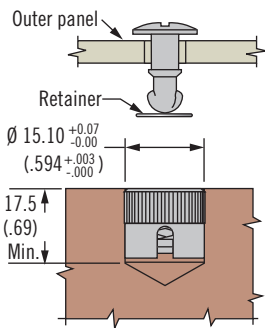
Press-In



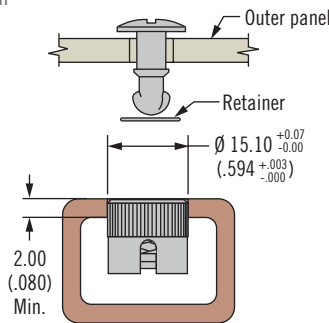
$TMT = P + \text{Gap} - 0.6 (.025)$
(when gap is > retainer thickness)

$TMT = P +$
(Retainer adjustment value)
 $- 0.6 (.025)$

Solid Install



Blind Install



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

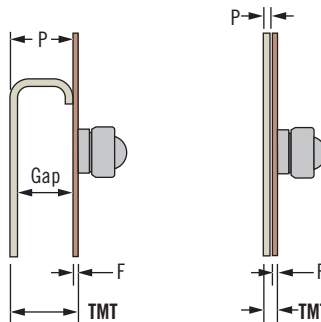
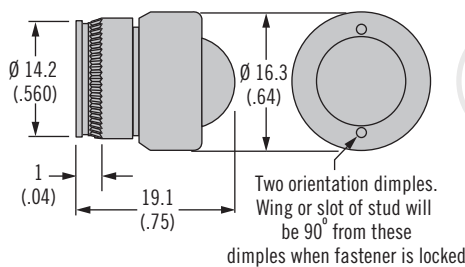
See table

Notes

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

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

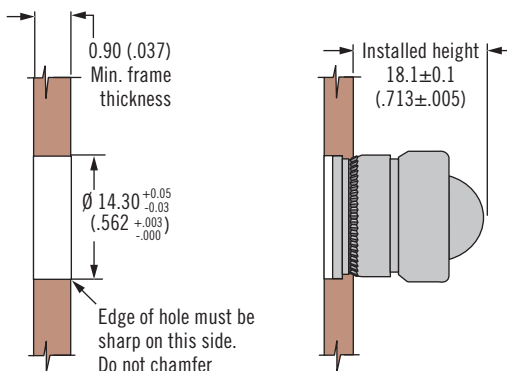
Shielded – Self-Clinching



$TMT = P + F$
(when gap is > retainer thickness)

Frame thickness (F) > 0.9 (.036)
+ Retainer thickness: $TMT = P + F$

Frame thickness (F) \geq 0.9 (.036)
+ Retainer thickness:
 $TMT = P + 0.9 (.036) + \text{Retainer thickness}$



Material and Finish

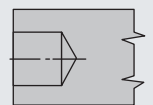
Steel, zinc plated and stainless steel

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

Installation Tool



Part number: 90-2825-11

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
85-35-311-55	B





85 DZUS® Lion Quarter-Turn Fasteners Receptacles

Material and Finish

Steel, zinc immersion coating or stainless steel

Installation Notes

Install with $\varnothing 3$ (.125) rivets, spring must float freely after riveting

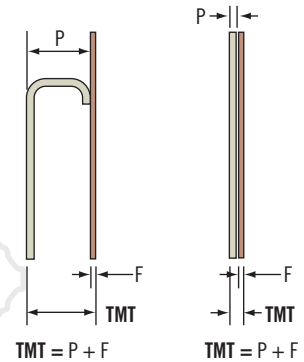
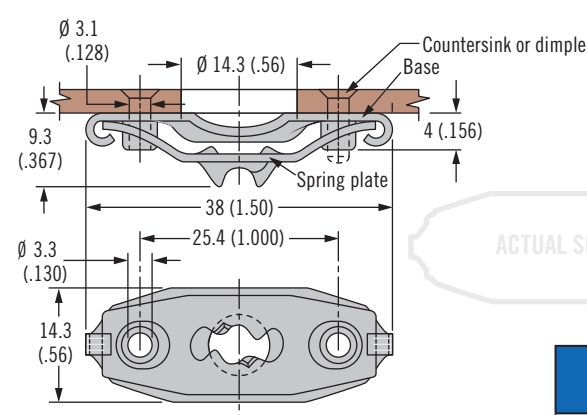
Part Number

See table

Notes

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

Rivet-On With Base



Material	Part Number	Stud Selection Column
Steel	85-35-295-15	C
Stainless steel	85-35-295-20	

Material and Finish

Steel, zinc immersion coating

Installation Notes

Spring must float freely after welding

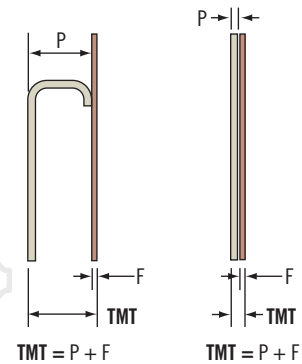
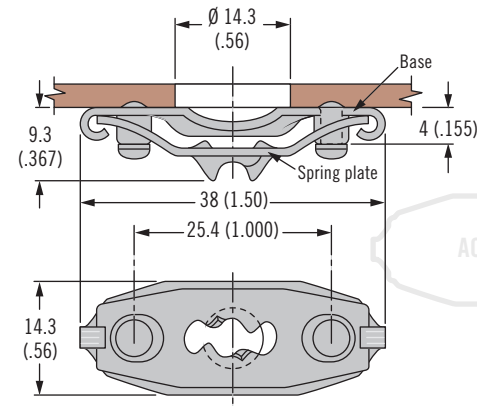
Part Number

See table

Notes

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

Weld-On



Part Number	Stud Selection Column
85-35-296-15	C

Material and Finish

Steel, zinc immersion coating

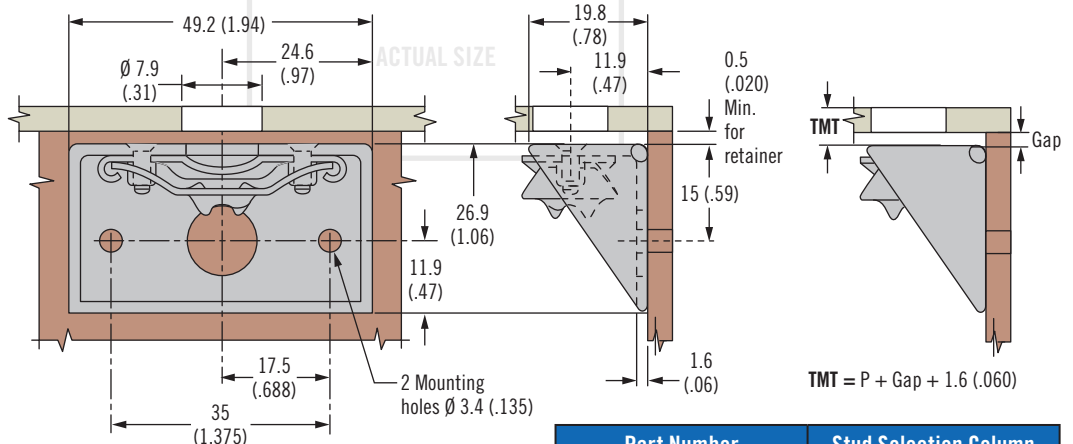
Part Number

See table

Notes

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

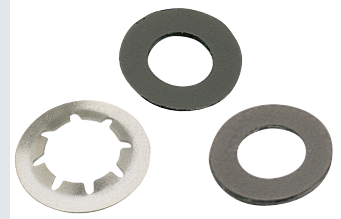
Side Mount



Part Number	Stud Selection Column
85-45-101-15	C

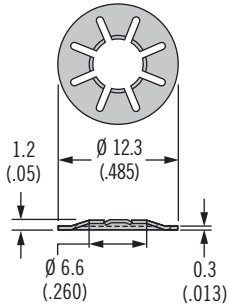
85 DZUS® Lion Quarter-Turn Fasteners

Retainers · Accessories

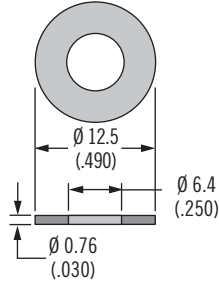


Retainers

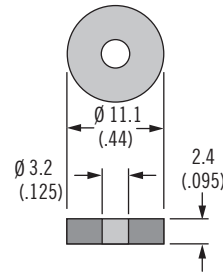
Push-On - Stainless Steel



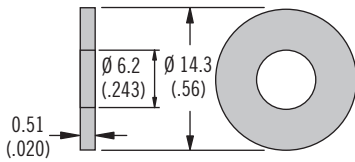
Push-On - Plastic



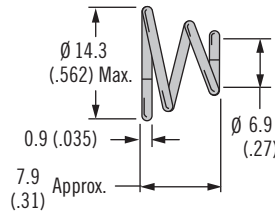
Push-On - Neoprene



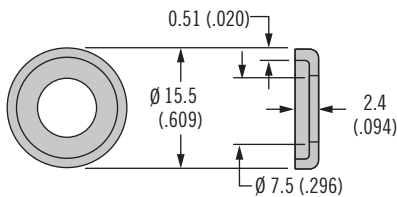
Sealing Washer



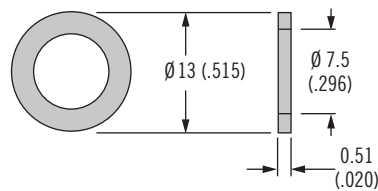
Ejector Spring



Cupped Washer



Flat Wear Washer



Material and Finish

See table

Installation Notes

For standard retainers use tool



Part number 85-0-22543-11

82

85

D8

D9

D1

D4

D5

D7

NY



Type	Part Number	Material	Adjustment Value
Push-on - Stainless steel	85-34-201-20	Stainless steel	Add 0.33 (.013)
Push-on - Plastic	85-34-301-12	Nylon, black	Add 0.76 (.030)
Push-on - Neoprene	85-33-101-27	Neoprene, black	Add 1.22 (.048)
Sealing washer	85-43-201-38	Neoprene nitrile rubber, black	Add 0.51 (.020)
Ejector spring	14-18-150-24	Stainless steel	Add 1.00 (.039)
Cupped washer	85-46-101-39	Nylon, white	Add 0.51 (.020)
	85-46-101-41	Nylon, black	
Flat wear washer	85-46-103-39	Nylon, white	Add 0.51 (.020)

Part Number

See table

Adjustment value:

When using accessories the components add thickness

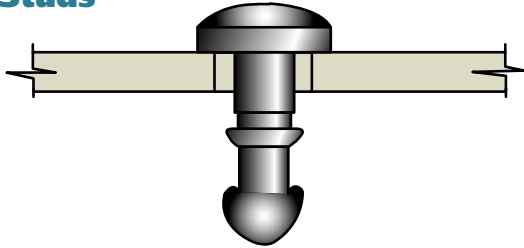
Add the adjustment value to your outer panel thickness (P) when calculating TMT (see page 377 for example)

Southco® Quarter-turn Fasteners

Small Series

- For limited-space applications
- Quick access

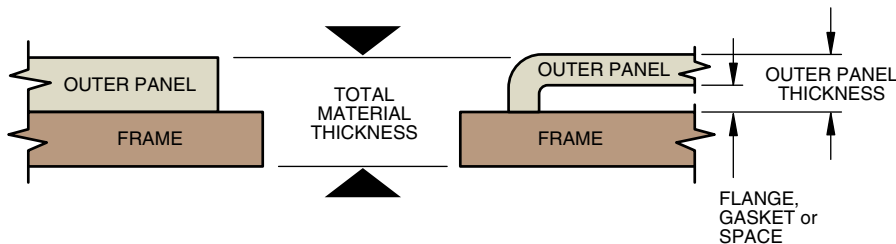
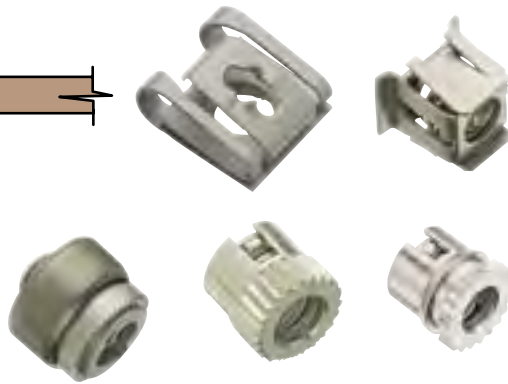
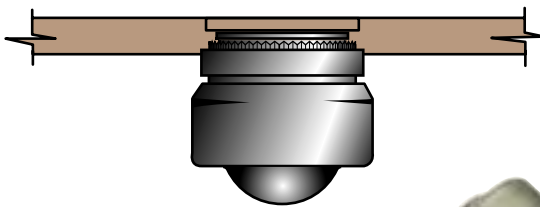
Studs



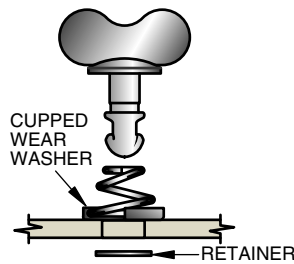
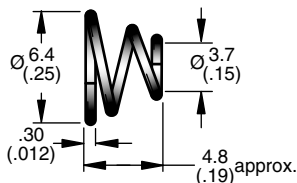
Retainer



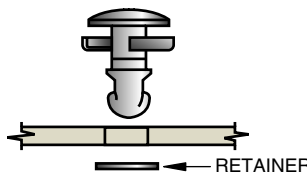
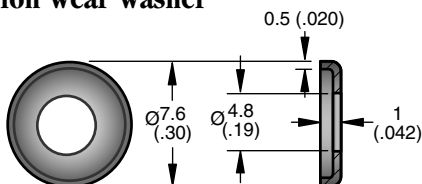
Receptacles



Stud Ejector



Nylon Wear Washer



To select correct fastener:

1. Choose a receptacle (note any frame thickness limitations).
2. To select a stud,
 - a) measure your Outer Panel Thickness or Total Material Thickness (note under receptacle part number will tell you which to use).
 - b) if adjustment formula is shown under receptacle part number apply this formula to your measurement.
 - c) use measurement (or adjusted measurement) to find part number in table, pg. 273 under stud head style you want.
3. Choose a retainer.
4. Order each component and tool (if required) separately by part number.

Material and Finish

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

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

NOTE: Adjustment Formula

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

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

millimeter (inch)
millimeter (inch)

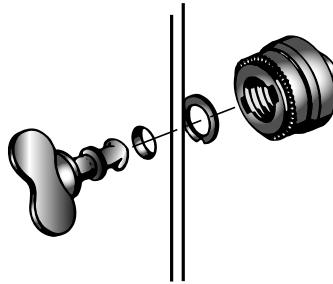
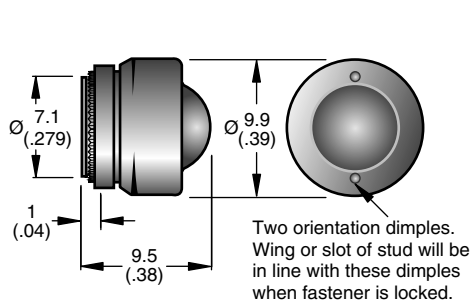
Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

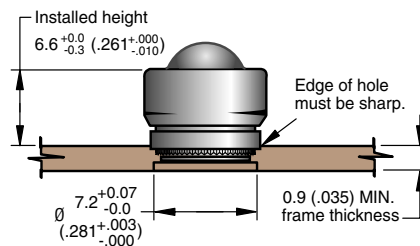
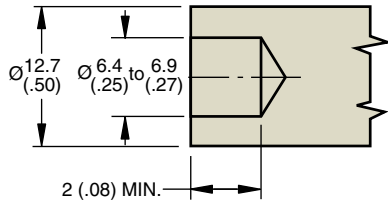
Small Series, Receptacles

Shielded press-in for sheet metal

- Provides RFI-EMI shielding



Installation Tool



TOOL PART NUMBER

54-0-5466-11 •

NOTE: For use in low carbon steels, aluminum and stainless steels in the annealed condition that are R_b85 or less.

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.

PART NUMBER

81-35-311-55 •

Adjustment Formula

To enter Stud Selection Table determine your Total Material Thickness.

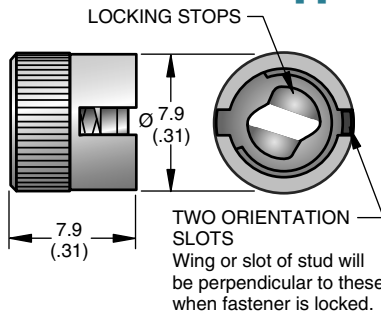
Substitute 1.3 (.050) (constant) for frame thickness if frame thickness is less than 1.27 (.050).

Product Strength Guidelines

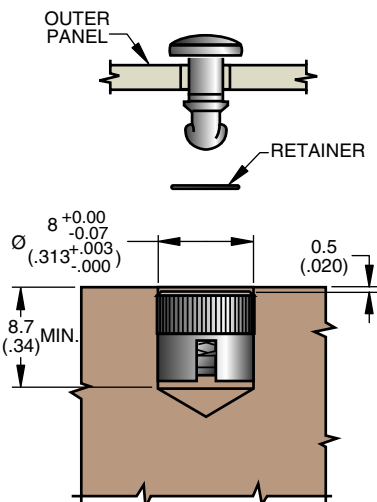
(To assist in your product selection; samples are available for your evaluation.)

Maximum static load: 440 N (100 lbs.)

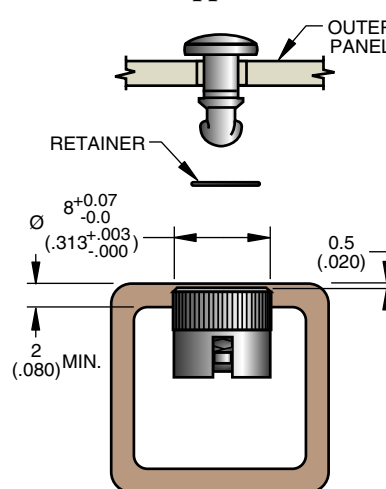
Press-in for blind applications and solid materials



Solid Materials



Blind Applications



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

81-35-308-55 •

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.)

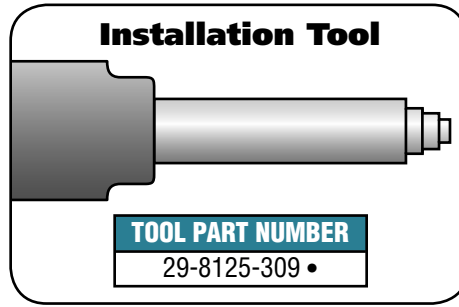
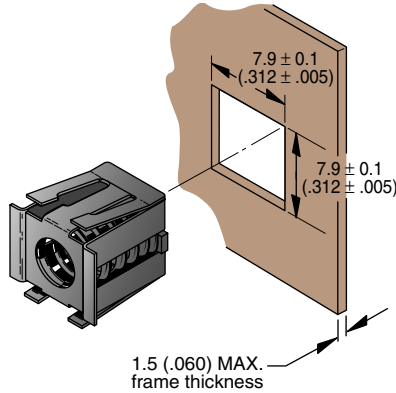
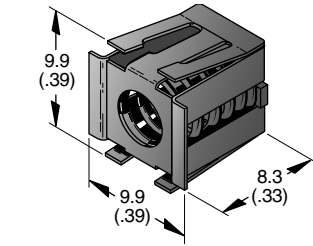
millimeter (inch)
millimeter
(inch)

Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

Small Series, Receptacles

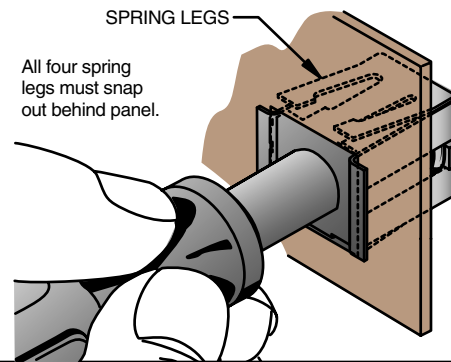
Snap-in



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.



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.

PART NUMBER

81-35-309-56 •

Adjustment Formula

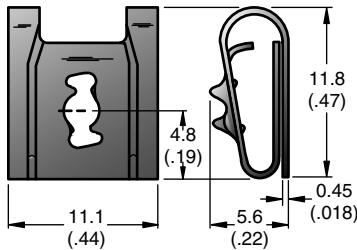
To use Stud Selection Table on pg. 273 calculate:
 Outer Panel Thickness + 1.5 (.060) but use Total Material Thickness column.

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

Product Strength Guidelines

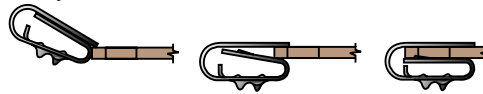
(To assist in your product selection; samples are available for your evaluation.)
 Maximum static load: 440 N (100 lbs.)

Clip-on

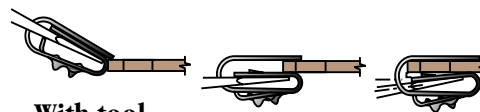


To Install

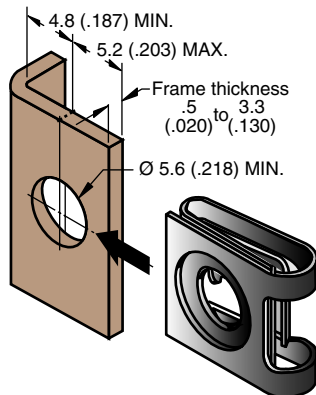
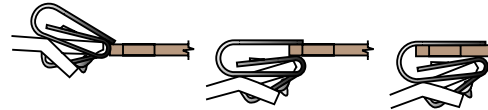
By hand



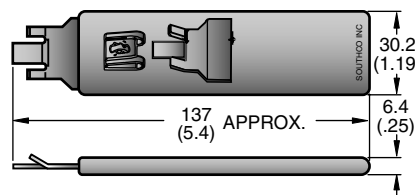
With screwdriver



With tool



Installation Tool



TOOL PART NUMBER

29-81-101-10 •

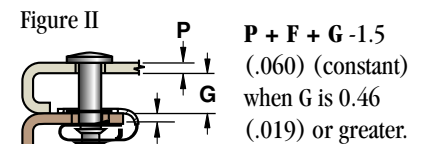
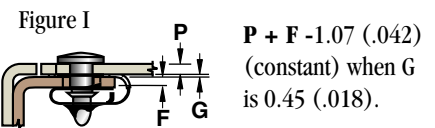
Material and Finish

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

Part Description	PART NUMBER
Steel	81-47-101-15 •
Stainless steel	81-47-101-20 •

Adjustment Formula

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



Product Strength Guidelines

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

millimeter (inch)
 millimeter (inch)

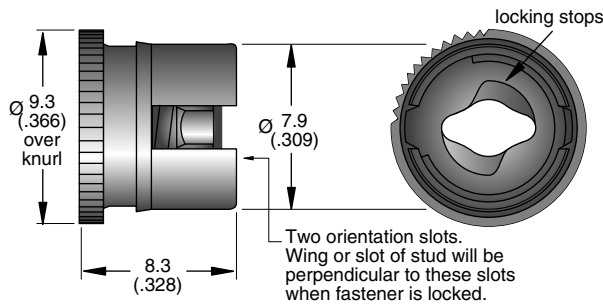
Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

Small Series, Receptacles

For ultrasonic installation in thermoplastics

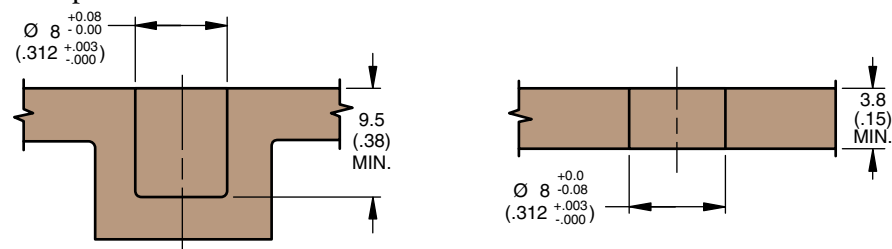
- Minimize residual stress
- Increased pull-out resistance
- Increased torque-out resistance



PART NUMBER
81-35-310-55 •

Installation

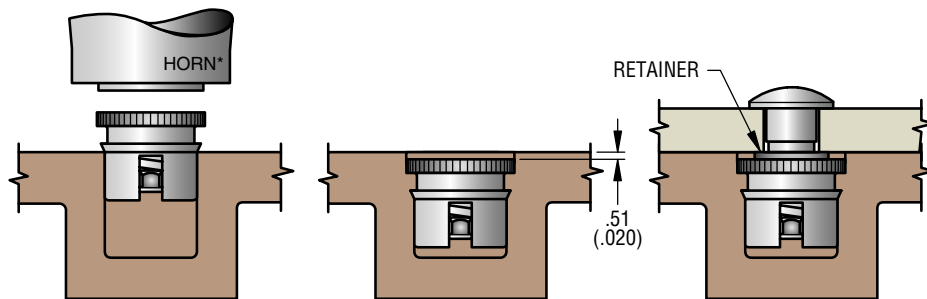
1. Prepare hole.



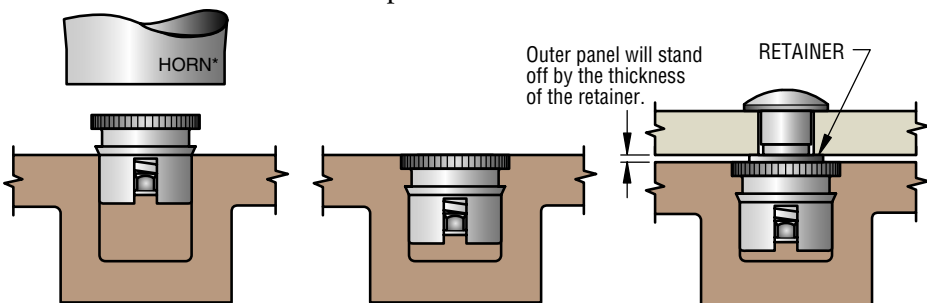
2. Use one of the methods shown.

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.)

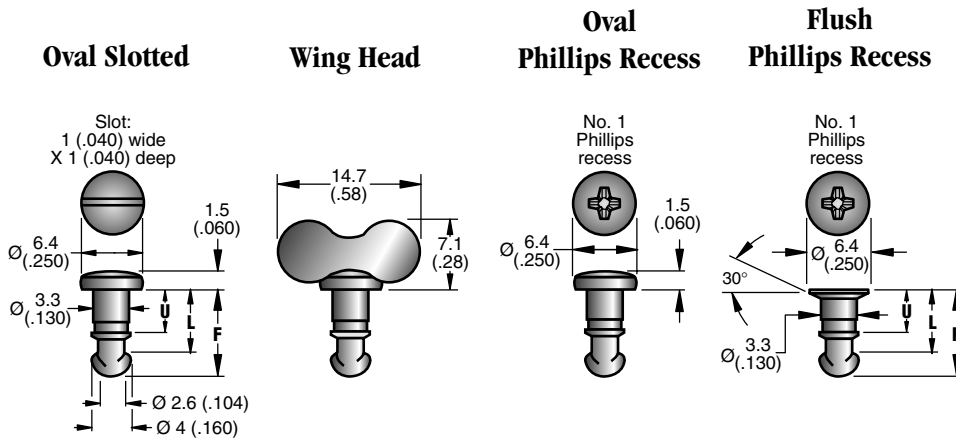
Maximum static load: 440 N (100 lbs.)

millimeter (inch)
millimeter
(inch)

Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

Small Series, Stud Selection



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

Material and Finish

WING HEAD STUD: 1008 Steel.

WING: 1010 Steel.

OTHERS: 1008 Steel (see table for finishes).

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

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

millimeter (inch)
millimeter
(inch)

Dimensions without tolerances are for reference only.

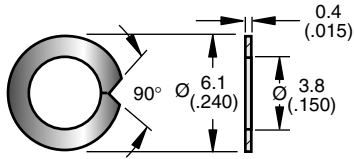
Southco® Quarter-turn Fasteners

Small Series

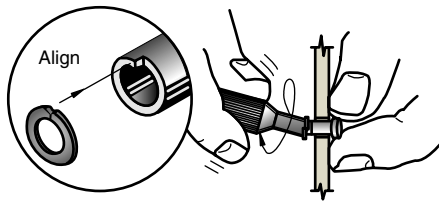
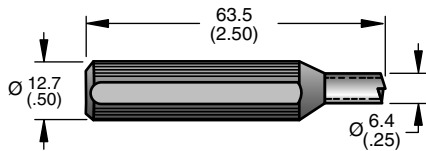
Retainers

Split-Ring Retainer

Hand or tool installation

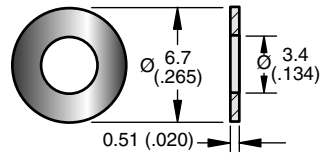


Installation Tool

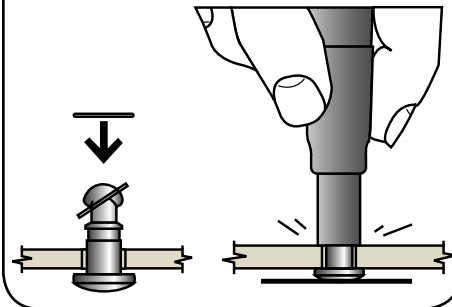
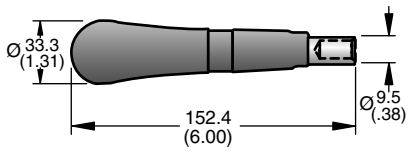


Push-On Retainer

Tool installation



Installation Tool



Material and Finish

SPLIT-RING RETAINER: 302 Stainless steel, passivated.

PUSH-ON RETAINER: Nylon, black.

SPLIT-RING TOOL: Steel, zinc plated.

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

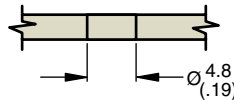
RETAINER/TOOL	PART NUMBERS
Split-Ring Retainer	81-32-101-20 •
Split-Ring Tool	81-0-15129-11 •
Push-On Retainer	81-32-301-12 •
Push-On Tool	81-0-18173-11 •

Installation

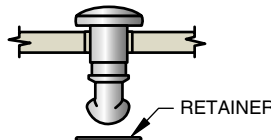
For Above-surface styles



1. Drill.



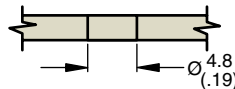
2. Insert stud and add retainer.



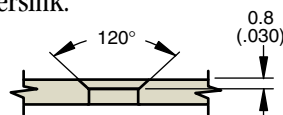
For Flush-head style



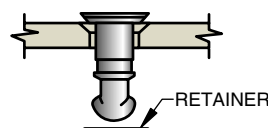
1. Drill.



2. Countersink.



3. Insert stud and add retainer.



millimeter (inch)
millimeter
(inch)

Dimensions without tolerances are for reference only.

Southco® Quarter-turn Fasteners

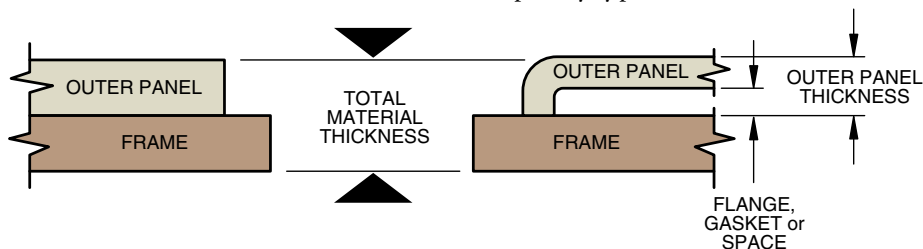
Medium Series, 1/4-turn Studs, Snap-in Studs and Fully Retracting Stud Assemblies

1/4-turn and Snap-in Studs

To select correct fastener

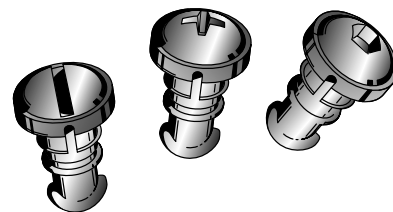
1. Choose a receptacle. (Note any frame thickness limitations).
2. To select a stud,
 - a) measure your Outer Panel Thickness or Total Material Thickness (note under receptacle part number will tell you which to measure).
 - b) if adjustment formula is shown under receptacle part number, apply this formula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



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.

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

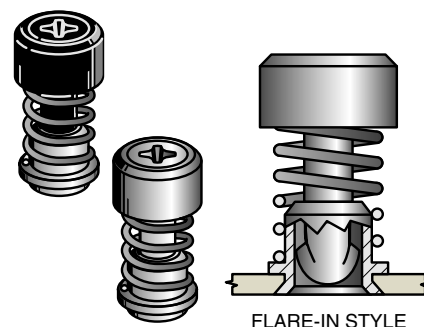
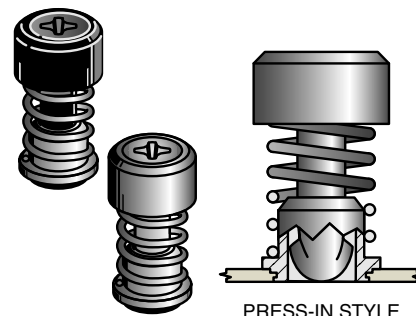
- a) Use your Outer Panel Thickness or measure your Total Material Thickness, as required by your choice of receptacle.
- b) If an adjustment formula is shown under the receptacle part number, apply this formula to your measurement.
- c) Use measurement (or adjusted measurement) to find stud part number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



millimeter (inch)
millimeter
(inch)

Dimensions without tolerances are for reference only.

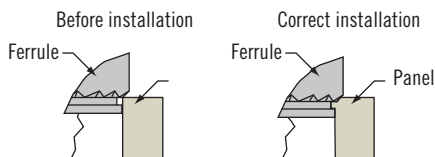
Installation Guidelines

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:

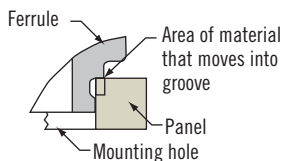
Material:

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:

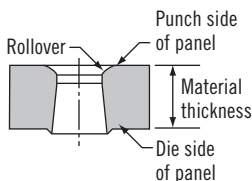
Mounting holes may be drilled, punched, or cast.

- 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.



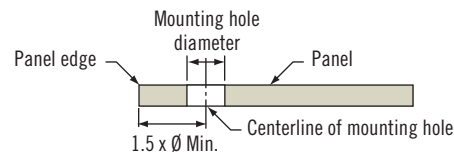
- If the hole is too large, not enough material will flow into the

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.

