

# ZLoc Fastener Principles and Design Options:

One usually thinks of two components as part of the ZLoc Fastener, the Stud and Spring Receptacle. In the case of the EHF Stud, it is retained in the panel when unlocked by the flange being fastened to the outside panel. Standard ZLoc Studs, however, must have a Stud retainer to prevent it from falling from the panel when unlocked. Two common retainers are the Nylon GP Retainer or the GA (for Oval Head Studs) or GF (for Flush Head Studs). GP Retainers require no installation tooling, GA and GF Grommet/Retainers require tooling to install. GP Grommets do not figure into Total Thickness calculations whereas GA or GF Grommets add .028 to Total Thickness Calculations. AO & FO Buttons use no Retainers.

## Some helpful hints to remember about ZLoc Fasteners:

- 1) For any Stud/Spring combination, the grip range varies by about .050 unless the spring is bent (up to approximately 3/8").
- 2) Thicker panels require shorter Springs for a given Stud. Likewise, thinner panels require a taller Spring for a given Stud.
- 3) When locked, the Stud slot or wing always aligns with the Spring mounting holes. Therefore, whatever angle you mount the Spring Receptacle, the Stud will align with it when locked.
- 4) SKEHF5 Studs should only use S5A or #5 Springs. SKEHF6 Pro Studs can use either S5A or S6A Springs.
- 6) TOTAL THICKNESS is the summation of both the outside and inside panels plus allowances for gaskets, grommets, or interference.
- 7) If springs are mounted to Weld Tabs of Plates, the Tab serves as the Inside Panel and adds .100 to Total Thickness
- 8) If locking torque is too tight or too loose, bend the spring with Skybolt Tool SK-7301
- 9) The Part# of a ZLoc stud is the L Diminsion measured from the head (beneath the head for Oval Head, on the top of the head for Flat Head) to the far end of the slot where the spring rests when locked. FO65-50 is .50 from the flat of the head to the end of the slot saddle.
- 10) The Part# of the Spring is the height of the Spring. SK6-375 is .375 high

## Skybolt SK EHF Ejector Series

SKEHF5 and SKEHF6 Self Ejecting Fasteners provide ZLoc 1/4-turn action with studs that eject from the receptacle when opened. Ejected studs won't hang up when sliding or curved panels are removed and give visual sign of unlocked fastener. The Stud assembly is riveted to the panel with 1/8" rivets or screws.



SKEHF	Head Diameter	L	Total* Thickness
<b>SK5-40</b>	5/8	.40	.075-.125
<b>SK5-50</b>	5/8	.50	.150-.225
<b>SK'5-50W</b>	5/8	.50	.150-.225
<b>SK5-55</b>	5/8	.55	.225-.275
<b>SK5-60</b>	5/8	.60	.275-.325
<b>SK5-65</b>	5/8	.65	.325-.425
<b>SK6-40*</b>	3/4	.40	.050-.100
<b>SK6-50*</b>	3/4	.50	.100-.175
<b>SK6-55</b>	3/4	.55	.200-.250
<b>SK6-60</b>	3/4	.60	.250-.300
<b>SK6-65</b>	3/4	.65	.300-.350

## Skybolt SK EJ Ejector Series

SKEJ Series Ejecting Fasteners utilize a threaded backing collar to secure fastener to outer panel. Made of 7075 aluminum, the fastener has the same strength rating as the SKEHF5 Series, is 30% lighter, with superior finish.

**No more ugly rivets!**



SKEJ	Head Diameter	L	Total* Thickness
<b>SKEJ-40A</b>	3/4	.50	.075-.125
<b>SKEJ-50A</b>	3/4	.60	.150-.225
<b>SKEJ-50AW</b>	3/4	.60	.150-.225
<b>SKEJ-55A</b>	3/4	.65	.225-.275
<b>SKEJ-60A</b>	3/4	.70	.275-.325
<b>SKEJ-65A</b>	3/4	.75	.325-.425

**All SKEJ Series - Outer Panel - .030 to 3/16"**

For greater panel thickness, contact Skybolt

\*Note: Total Thickness figures are for most applications using either the SK5-325 height springs or SK6-375 height springs.

# ZLoc AO and FO BUTTONS - STEEL



## SKAO Oval Head Buttons

### #5 Series 9/16 Head Diameter

Part#	Load	Torque	Total* Thickness
SKAO5-50	800 lb	40 in-lb	.100-.175

### #6 Series 11/16 Head Diameter

Part#	Load	Torque	Total* Thickness
SKAO65-40	1000 lb	60 in-lb	.100-.175
SKAO65-50	1000 lb	60 in-lb	.175-.250
SKAO65-55	1000 lb	60 in-lb	.250-.300
SKAO65-60	1000 lb	60 in-lb	.300-.450
SKAO65-65	1000 lb	60 in-lb	.450-.500



## SKFO Flat Head Buttons

### #5 Series 9/16 Head Diameter

Part#	Load	Torque	Total* Thickness
SKFO5-50	800 lb	40 in-lb	.100-.175

### #6 Series 11/16 Head Diameter

Part#	Load	Torque	Total* Thickness
SKFO65-40	1000 lb	60 in-lb	.100-.175
SKFO65-50	1000 lb	60 in-lb	.175-.250
SKFO65-55	1000 lb	60 in-lb	.250-.300
SKFO65-60	1000 lb	60 in-lb	.300-.450
SKFO65-65	1000 lb	60 in-lb	.450-.500

# ZLoc ZG Series Oval and Flush BUTTONS

## *Skytanium Alloy*

*Strength Ratings Equivalent to Alloy Steel  
1/3 the Weight of Steel Buttons*



## ZGO65 Oval Head

### #5 Series 9/16 Head Diameter

Part#	Load	Torque	Total* Thickness
ZGO5-50	600 lb	40 in-lb	.100-.175

### #6 Series 11/16 Head Diameter

Part#	Load	Torque	Total* Thickness
ZGO65-40	1000 lb	60 in-lb	.100-.175
ZGO65-50	1000 lb	60 in-lb	.175-.250
ZGO65-55	1000 lb	60 in-lb	.250-.300
ZGO65-60	1000 lb	60 in-lb	.300-.450
ZGO65-65	1000 lb	60 in-lb	.450-.500

## ZGF65 Flat Head Buttons

### #5 Series 9/16 Head Diameter

Part#	Load	Torque	Total* Thickness
ZGF5-50	600 lb	40 in-lb	.100-.175

### #6 Series 11/16 Head Diameter

Part#	Load	Torque	Total* Thickness
ZGF65-40	1000 lb	60 in-lb	.100-.175
ZGF65-50	1000 lb	60 in-lb	.175-.250
ZGF65-55	1000 lb	60 in-lb	.250-.300
ZGF65-60	1000 lb	60 in-lb	.300-.450
ZGF65-65	1000 lb	60 in-lb	.450-.500

\*Note: Total Thickness figures are for most applications using either SK5-325 height springs or SK6-375 height springs.

# ZLoc WELD TABS

Tabs are welded to frame to serve as a spring mount  
Use SSP43 1/8 Steel Pop Rivets.



## SK944

Use SK4-225 Spring  
Use for all #4 Buttons  
.750 Rivet Spacing  
.100 Thick (Including Spring Dimple)  
Weight = .0115 lbs



## SK945EHF

Use SK5-325 Spring  
Use for all #5 Buttons & EHF/EJ Studs  
1.000 Rivet Spacing  
.100 Thick (Including Spring Dimple)  
Weight = .0220 lbs



## SK945 and SK946

Use SK5-325 or SK6-375 Spring  
Use for all #5 or #6 Buttons & EHF Studs  
1.000 Rivet Spacing (SK945) or 1.375 Rivet Spacing (SK946)  
.100 Thick (Including Spring Dimple)  
Weight = .0260 lbs



## SK945CL

Use SK5-325 Spring  
Use CLoc SK214-16A, 244-16, SK245 Series  
1.000 Rivet Spacing  
.100 Thick (Including Spring Dimple)  
Weight = .0165 lbs

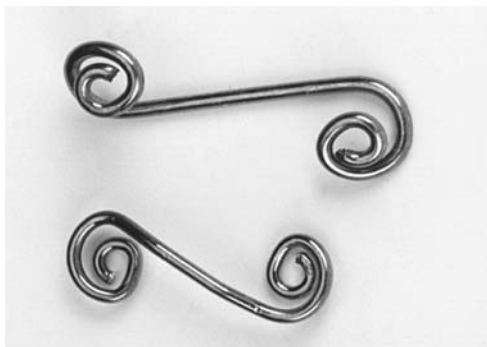
# ZLoc SPRINGS (Most Common)

SK4-225 #4 Spring

SK5-325 #5 Spring

SK6-325 #6 Spring

SK6-375 #6 Spring



## SK-DP1 PANEL REINFORCEMENT PLATE

This aluminum Doubler Plate is used with all #6 FO65 and ZGF65 Flush Head ZLoc Studs to add panel strength.



## SK-DT1 Panel Dimpling Tool

Simply tighten die set to dimple panels when using #6 FO65 Flush Head ZLoc Studs.



## SK-1320RL

An economical tool for all #6 Series Studs.



## ZLoc Spring Adjusting Tool SK-7301

Skybolt has developed this handy spring adjusting tool to effectively adjust spring depth. The SK-7301 Tool eliminates the need for various length buttons. Think about it, one button size fits all hole applications! And with properly adjusting springs, you eliminate troublesome fasteners which are either too tight or too loose. The Skybolt Spring Adjustment Tool can adjust springs outward without even removing the panel, will not bend or mar even the thinnest panel or the finest paint. To tighten springs, the Skybolt Adjusting Tool is designed to pull against the spring legs, even with rivets in place. The Spring Adjusting Tool is designed for not only the chassis fabricator, and the car or aircraft owner. It is designed to fit both #5 and #6 springs. It works!



# GROMMET TOOLING - ZLoc Aircraft Series

## ZLoc - Grommet Setting Tools

Ideal for common replacement of ZLoc studs with grommets. These tools will not set winged studs.

### Tool

<b>SK-A3</b>	3 tools
<b>SK-A4</b>	3 tools
<b>SK-F4</b>	2 tools
<b>SK-A5*</b>	4 tools
<b>SK-F5</b>	2 tools
<b>SK-F5A*</b>	6 tools
<b>SK-F6.5</b>	2 tools

\*Note: The SK-A5 tool is designed to replace grommets on Beech Bonanza cowlings without removing brackets from cowling. SK-F5A is a complete installation set for FJ5 stud installation.



# GROMMET TOOLING - ALoc Series

A must to replace any ALocGrommet.

### Tool Type

<b>29693/29695</b>	#2 Flush
<b>9529/29667</b>	#5 Flush
<b>9529/29770</b>	#5 Round

