

Stick Grip Pivoting Spacer (SGPS) Installation Instructions

CONGRATULATIONS ! , and *Thanks Loads* for purchasing our Stick Grip Pivot Spacer (SGPS) for your Pride and Joy !!

Your Stick Grip Pivoting Spacer (SGPS) allows our / your Stick Grip to pivot +/- 45° from center for better forearm to wrist ergonomics for MUCH better comfort while you fly. Your SGPS is mounted into the ID of your stick tube and held in place via 3 stainless steel Button Head Set Screws and 3 Nord-Lock type washers (<https://www.youtube.com/watch?v=WPCfd4Zr6rE>).

To start, I have Stick Grip Pivot Spacers (SGPS) for ~0.875 OD and ~1.000 OD stick tubes, the vast majority of stick tube OD's, until I find out all other Sport Aircraft stick tube OD's and ID's.

Challenge: Extruded Tubing OD dimensions are +/-0.015", and then what is the wall thickness of your stick tube? To keep production costs down so that we are not making 1-off custom SGPS Lower Collars, I need to know the stick tube OD's and ID's of ALL the Sport Aircraft on the market. So, I am collecting this data. If you want to help, simply e-mail me the make and model of your or your friends Sport Aircraft along with your or your friends pilot and co-pilot stick tube OD's and ID's (PLEASE measure on 3 sides of the ID of your stick tube with a Vernier AFTER you deburr and clean up the ID of your stick tube so I can get an accurate average of everyone's stick tube ID's). *Thanks !*

The installation is very simple, but please read these instructions at least three times before starting . . .

- * The SGPS comes assembled, but the stainless steel snap ring is intentionally left off for you to install later, which you will soon understand why ;
- * If your SGPS is not installed into your Stick Grip, slide your SGPS over your cable and install it into your Stick Grip with the slot aft. See your *Stick Grip Installation Instructions*, and for more help, read my FAQ on my Stick Grip page on my web site ;
- * Check that the ID of your stick tube is de-burred and round, and a deburred oval hole is made just above the stick tube pivot point near the bottom of your stick tube for the Stick Grip cable to come out, unless you can come out of the bottom of your stick tube. My A&P book says there is supposed to be a doubler over that oval hole. An RV builder came up with a good idea of using a Fender Washer shaped over a mandrel, the Fender Washer hole is oveled and deburred to match the stick tube oval hole, then tack welded over the oval hole.
QUERY: I don't understand why all the Sport Aircraft Kit Manufactures do not already have an oval hole with a doubler welded onto their stick tubes just above the pivot point because EVERYONE has a stick grip of some kind with wires coming out of it, but most builders do not add a doubler. Their customers need to rise up and bitch ! ☺ ;
- * While sitting on your parachute (you should always fly with a parachute, and the best are from *Paraphernalia Parachutes* <http://www.softieparachutes.com/>), or seat and back cushions, slide your Stick Grip cable and Stick Grip with the installed SGPS into your stick tube ID to figure out how much of your stick tube to trim off, if any. If it doesn't fit, you can lap sand the ID of your stick tube to make it fit, or machine or file off a little on the OD of the SGPS Lower Collar until it fits. Full forward stick so your Stick Grip just clears under your instrument panel (even though you are not doing outside loops) probably drives your stick tube length ;
- * After fitting your Stick Grip with SGPS for stick tube length, pull it out and set it aside. Drill 3 small 5/64" holes about 3/8" down from the top of your stick tube equally distanced around the circumference with the center of the 3 small holes near the center of the stick tube on the aft side. The reason for the short distance down from the top of your stick tube is simply for cosmetics so that the bottom of the Stick Grip will block the

view of the ss Button Head Screws as you fly. If you do not care that you can see them while you are flying, then drill the 3 small holes anywhere you want along the length of the Stick Grip Lower Collar inside your stick tube ;

* Slide off the SGPS Lower Collar from the SGPS Pivot Shaft and put it into your stick tube ID with the fish-mouth straight ahead. Then, drill a 7/64" pilot hole thru the small 5/64" hole in the center aft stick tube thru the wall of the Lower Collar. Do NOT drill so deep that you scar the opposite inside surface of the Lower Collar ;

* Pull the Lower Collar out of the stick tube ID and tap the 7/64" pilot hole you just made with a 6-32 tap ;

* Slide the Lower Collar back into your stick tube and install 1 of the provided ss Button Head Screws. Now the Lower Collar is your jig to drill 7/64" pilot holes in the other 2 small holes in the stick tube WITHOUT scarring the opposite side. Then, take the ss Button Head Screw and the Lower Collar out and thread the other (2) 7/64" pilot holes in the Lower Collar with a 6-32 tap ;

* Deburr your new threaded holes and practice fit all 3 ss Button Head Screws WITH provided Nord-Lock type washers and check the ID of the Lower Collar to make sure the ss Button Head Screws will NOT protrude into the ID of the Lower Collar and drag against the SGPS Pivot Shaft, If they do, shorten the ss Button Head Screw(s) so that they do NOT protrude into and drag against the SGPS Pivot Shaft ;

* Slide your Lower Collar and ss Snap Ring over your cable and over the SGPS Pivot Collar. Install the ss Snap Ring in the groove of the SGPS Pivot Shaft. Slide the Lower Collar now connected to your SGPS back into your stick tube ID and install the 3 ss Button Head Screws with their Nord-Lock type washers ;

* If you want more pivot in 1 direction over the other, bias the Lower Collar a little in that direction. Or, carefully dremel open the fish-mouth in that direction ;

NOTE: You can now more comfortably hold our Stick Grip with your other hand, too.

Call me any afternoon after 1330 M-F Pacific Time if you have any questions – 619-448-5103 .

OBTW – if you have any suggestions to improve these instructions, please let me know.

PS -- If you liked the movie "Top Gun", I'm helping my friend sell his book. See link below.

Infinity's Forever (<http://www.InfinityAerospace.com>),

JD

Retired F-14 Naval Aviator, F-14 Flight Test, F-14 Instructor, and UAV's
EAA National Lifetime Member, and Local Chapter 14 Member
EAA Technical Counselor, and EAA Flight Advisor
Legion Member, and Life Time AMVET Member
AOPA Member
Test Pilot , Eagle Scout , Kwisatz Haderach
SOTW, OJAAT
My \$0.02 = \$37+

"Top Gun Days" (<http://www.topgunbio.com/>) -- if you like F-14's &/or the movie "Top Gun", my friend wrote a GREAT book about it, and our 1st 3 years in our first F-14 Fleet Squadron. OBTW -- I'm the tallest one in the group picture in the middle of the book :-).

Some of what JD used to do:

<https://www.facebook.com/video.php?v=769841983036329&fref=nf>