



SERVICE LETTER NUMBER 119			
TITLE: Reposition elevator down spring attachment tab			
BY: KMT	AIRCRAFT MAKE/MODEL(S):	FLOAT MODEL(S):	NOTE(S):
APP: KMT	Quest Aircraft Co.	7000S or 7000A	<b><u>MANDATORY</u></b>
DATE: 30-Mar-11	Model 100 Kodiak		<b><u>COMPLIANCE</u></b>
REV: A			

FAA APPROVAL HAS BEEN OBTAINED FOR TECHNICAL DATA IN THIS PUBLICATION THAT AFFECTS STC OR TSO DESIGN COMPLIANCE

EFFECTIVITY:

All Quest Aircraft Co. Model 100 Kodiak aircraft equipped with Wipline 7000S or 7000A twin seaplane or amphibious floats, and also equipped with downturned exhaust ducts and/or exhaust deflectors listed on Wipaire installation drawing 1004690 or 1004683.

*Note:* drawing 1004863 has been superseded, and is now combined with 1004690 (at revision D). Revised installation drawings are available from Wipaire, Inc. customer service. The revised installation drawing may be required to accomplish the technical instructions herein if the cable clamp is removed from the elevator spring.

SERVICE LETTER P/N: 1005265 for ECO 22339

COMPLIANCE:

**MANDATORY.** This bulletin must be accomplished within the next 20 flight hours, maximum.

**BACKGROUND:**

Aircraft equipped with downturned exhaust ducts are equipped with an elevator down spring. The down spring is installed in the aft fuselage per drawing 1004690, attaching to the autopilot clutch bracket with a small angle, and connecting with a cable clamp to the elevator cable. In two instances, the down spring was determined to rub against the elevator cable. This letter includes instructions to reposition the angle attaching the spring to increase the distance between spring and cable. Two fasteners are replaced, to further increase bolt-head clearance, a small piece of phenolic material is added to provide a rubbing surface in the event the cable vibrates, and a fastener is added between the attach angle and clutch bracket to fix its angular orientation.

**COMPLIANCE METHOD:**

Compliance is achieved through completion of the instructions in the Technical Data section of this service letter.

**APPROX. SHOP HOURS:**

The functions outlined by this service bulletin will take approximately 1 hr. to accomplish.

**WARRANTY INFORMATION:**

This service letter does not include any warranty parts or labor.

**FOLLOW UP ACTIONS:**

After completion of procedures in the Technical Data section:

1. Inform Wipaire, Inc. customer service via email ([customerservice@wipaire.com](mailto:customerservice@wipaire.com)) or phone (651-309-0459) as to completion of this service letter. Include the S/N and registration number of your aircraft, and the date on which the procedures in this letter were accomplished.
2. Make an aircraft logbook entry in accordance with 14 CFR Part 43, referencing accomplishment of the procedures in this service letter.

## NOTES:

(none)

## TECHNICAL DATA:

Complete the following tasks:

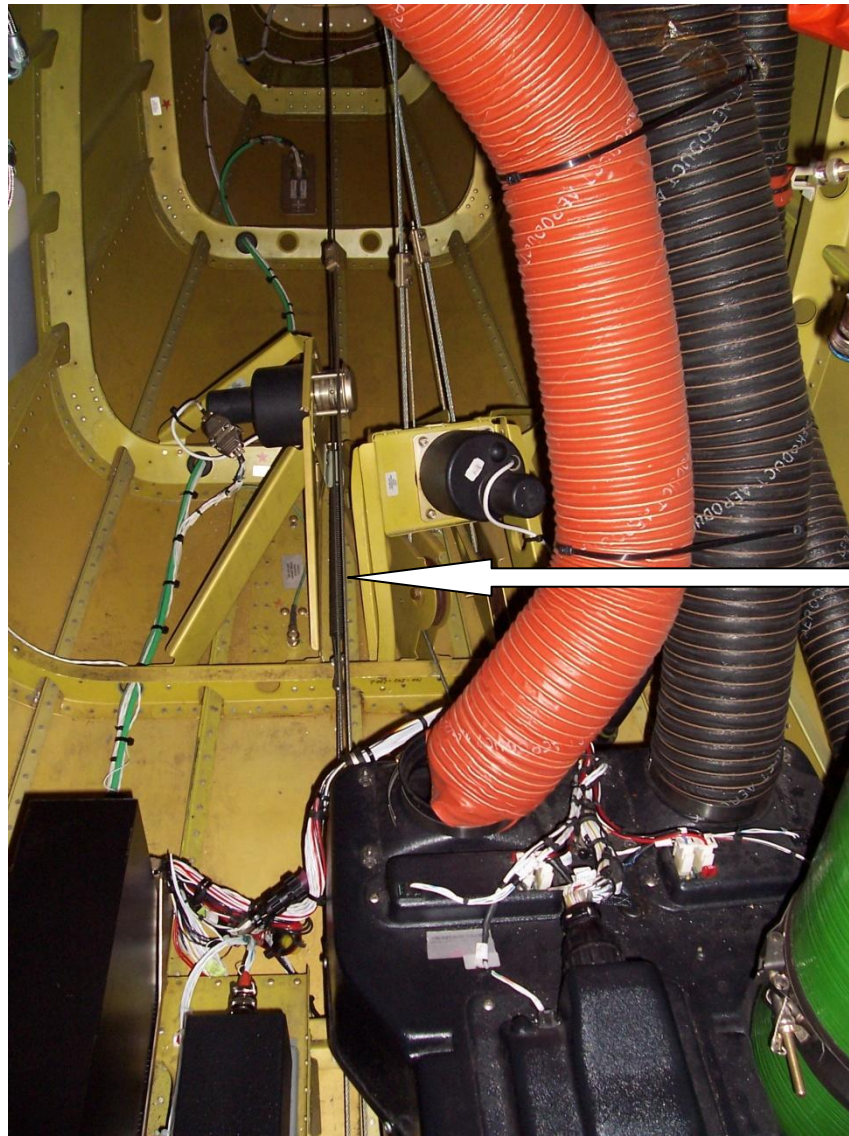
1. Gather necessary technical data:
  - a. Obtain a copy of drawing 1004690, revision D, or later approved revision, title: Installation, optional exhaust, Kodiak 100.
  - b. A copy of this service bulletin number 119, revision A or later approved revision.
  - c. Quest Aircraft Co. Aircraft Maintenance Manual (AMM) for model 100 Kodiak, latest revision. (available from the aircraft manufacturer)
2. Gain access to the aft interior fuselage structure by removing the aft cabin bulkhead, see AMM for instructions on removing the aft bulkhead.
3. Inspect aircraft:
  - a. Inspect the elevator down spring installation (see fig.1).
  - b. Inspect the lower portion of the elevator cable adjacent to the spring for any damage. The forward most portion of the spring will have the least clearance.
  - c. Inspect the upper portion of the spring for any damage.
  - d. If either the spring or elevator cable exhibits slight discoloration, this may be an acceptable condition, and the parts may be considered undamaged.
  - e. If the spring exhibits any grooves as a result of the rubbing cable, the spring must be replaced. This can be determined by running a finger nail along the spring coil to feel for a groove.
  - f. If the cable exhibits *any* fraying, it must be replaced. This can be determined by slowly running a hand along the cable, feeling for frayed strands.

*Note:* a leather glove on the hand will prevent injury during this inspection.
4. Disconnect the spring from angle 1004687, then remove the angle.
5. As shown in figure 4, use a small metal scale to measure 3 inches down from the rivet head, parallel to the edge of the clutch bracket. Draw a line at the end of the scale, on the clutch bracket.
6. Locate a #40 hole in the angle 1004387 as shown in figure 5.
7. Position the angle on the autopilot clutch bracket, and attach the AN525-1032 screw and associated hardware. Gently snug the fastener, allowing rotation of the angle.
8. Rotate the angle, centering the new #40 hole in the angle with the line drawn in step 5. Snugly draw down the AN525-1032 fastener so the angle is held firmly.

9. Temporarily connect the spring and measure clearance between the spring and bridle hardware and the elevator cable. Clearance should be 1/8 inches minimum. Make sure to check clearance with the bridle hardware *and* spring body. See figure 6. If clearance is inadequate, the angle may be rotated slightly (pitch down).
10. After correct positioning has been determined Match drill a #17 hole through the angle and autopilot clutch bracket.
11. Finish hardware installation as shown in figure 2. A screw is added to retain the angle to the auto pilot clutch bracket and two bolts are replaced with washer head screws to increase cable clearance.
12. Add a piece of phenolic bonded to the auto pilot clutch bracket at the location and size shown in figure 2. Bond the phenolic to the clutch bracket with 3M DP190 or equivalent adhesive. This is not a structural bond.
13. Reinstall the elevator down spring as shown in figure 2, and installation drawing 1004690.
14. If the cable clamp was removed, re-tension the spring using instructions in the installation drawing. If the cable clamp was not removed, the spring tension should not require adjustment.

*Note:* if the spring requires re-tensioning, be sure to use drawing 1004960, revision D or later approved revision.
15. Ensure clearance between the installed spring and elevator cable is positive as shown in figure 3. The forward most portion of the spring will have the least clearance. Make sure to check clearance with the bridle hardware *and* spring body. See figure 6.
16. Ensure all tools are removed from aft fuselage, clean any aluminum shavings from the fuselage belly skin.
17. Reinstall the aft cabin bulkhead per the AMM.
18. Accomplish the FOLLOW UP ACTIONS listed previously in the service letter.

Figures are shown on the following pages.

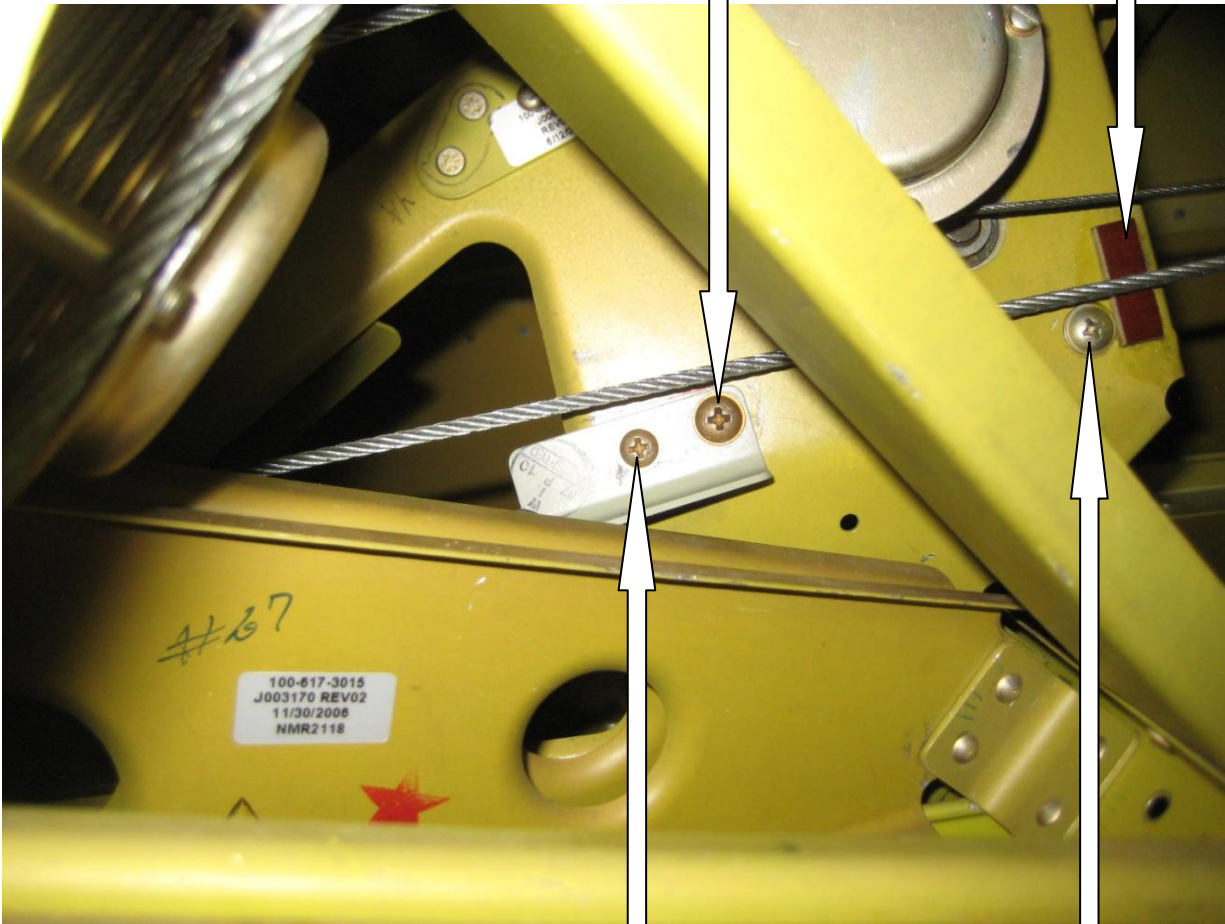


Elevator down  
spring in this  
area

Fig. 1 – General location of elevator down spring (refer to drawing 1004690)  
Looking aft from rear passenger cabin with aft cabin bulkhead removed

Change hardware:  
Screw, AN525-1032R10  
Washer, NAS1149F0363P  
Nut, MS21044N3

Add 1/8" thick 1" X 5/16"  
phenolic, bond to bracket  
with 3M DP190 adhesive  
(Note 1)

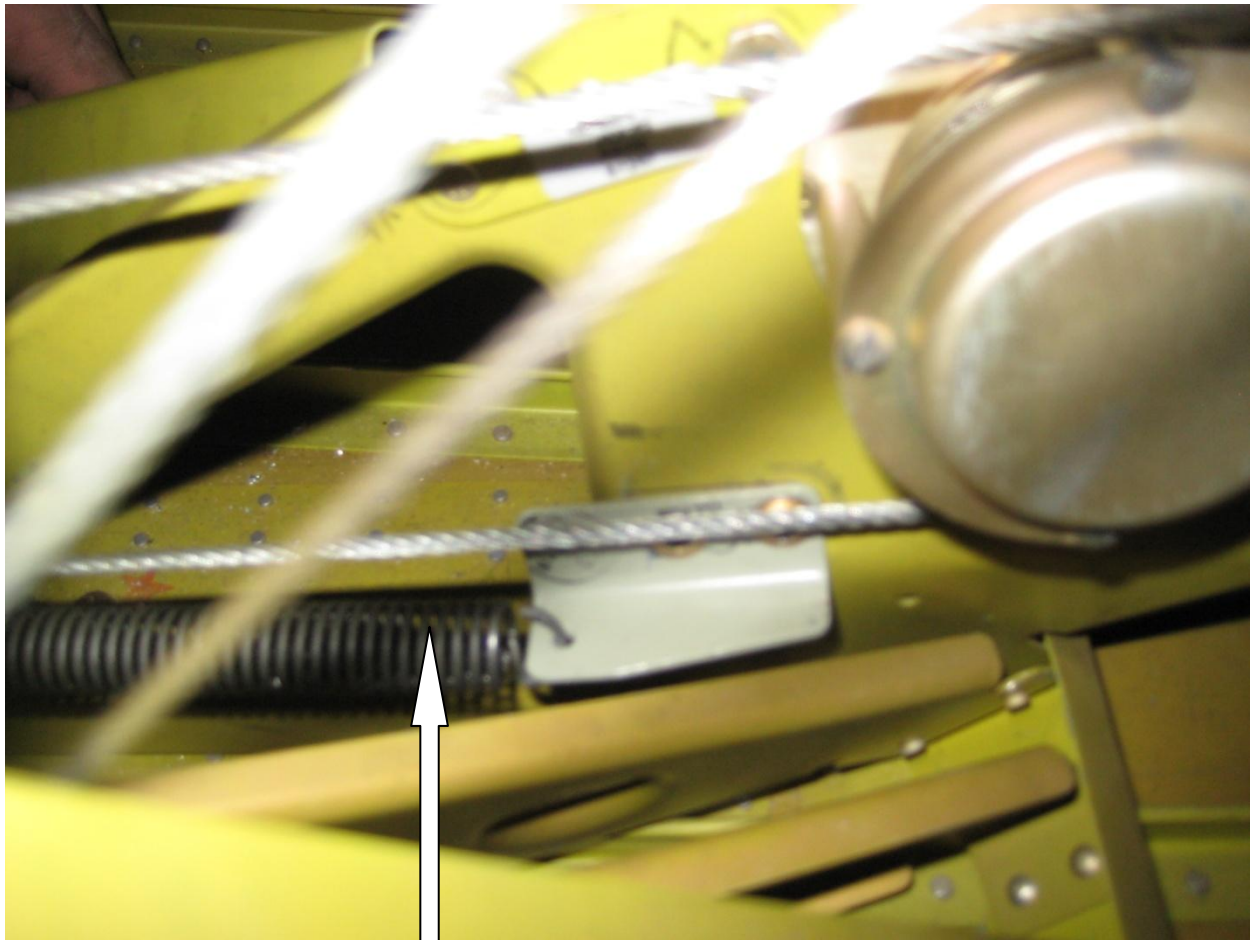


Add hardware:  
Screw, AN525-832R8  
Washer, NAS1149F0832P  
Nut, MS21044N08

Change hardware:  
Screw, AN525-1032R8  
Washer, NAS1149F0363P  
Nut, MS21044N3

Fig. 2 – Fastener replacement and addition  
Spring attach angle shown clocked in correct position, with additional fastener  
Looking starboard from center

Note 1: Phenolic material conforming to MIL-P-18324D, or equivalent.  
Aircraft Spruce P/N 03-52500 is considered equivalent for this application.



Proper gap between spring and cable shown, as determined by hole locations in figures 4 and 5. Clearance between spring and cable must be 1/8 inch minimum at forward end of spring.

Fig. 3 – Clearance between elevator spring and cable after modification  
Looking starboard from center



Measure 3 inches down from the rivet head, parallel with the bracket edge, and then draw a line here at the end of scale. This line will coincide with the center of the additional hole in figure 5.

Fig. 4 –Additional hole in auto pilot clutch bracket  
This hole will align with the additional hole in the attach angle P/N 1004687.  
Looking starboard from center



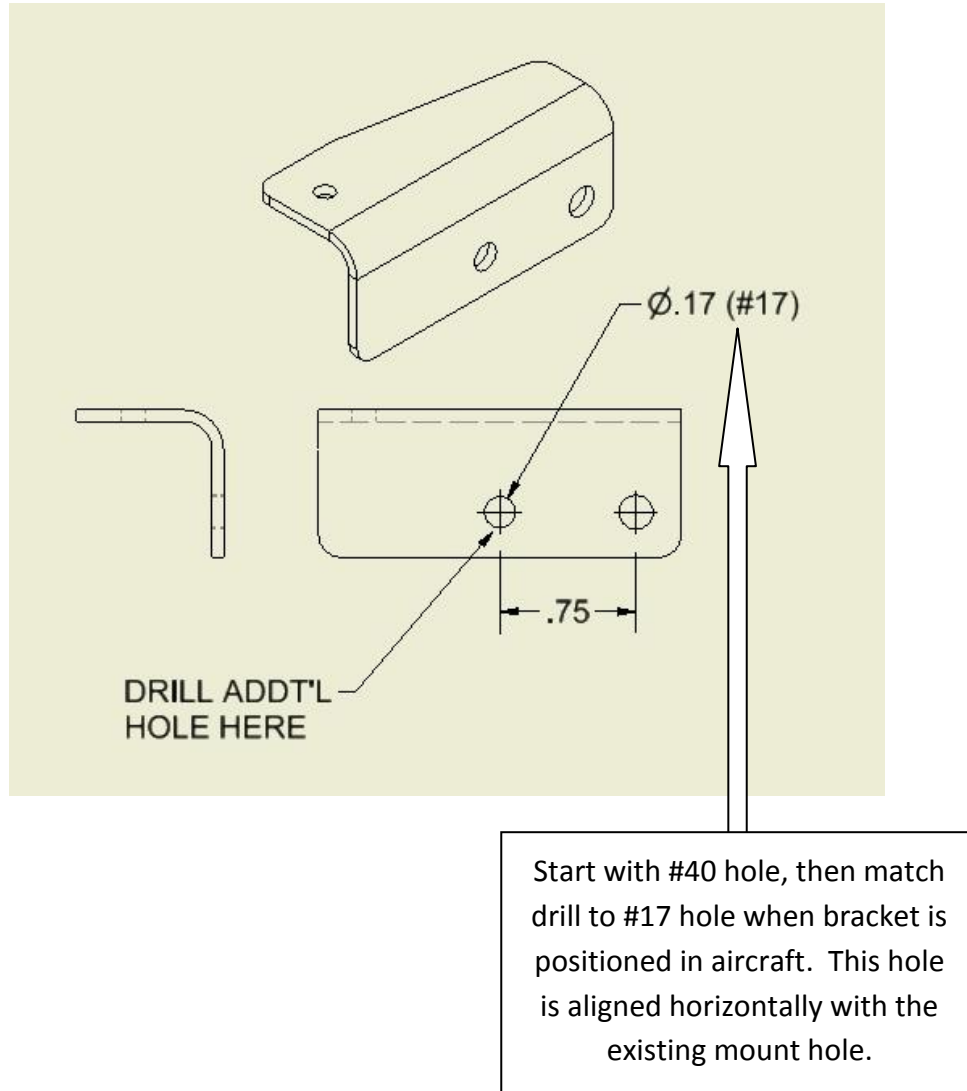
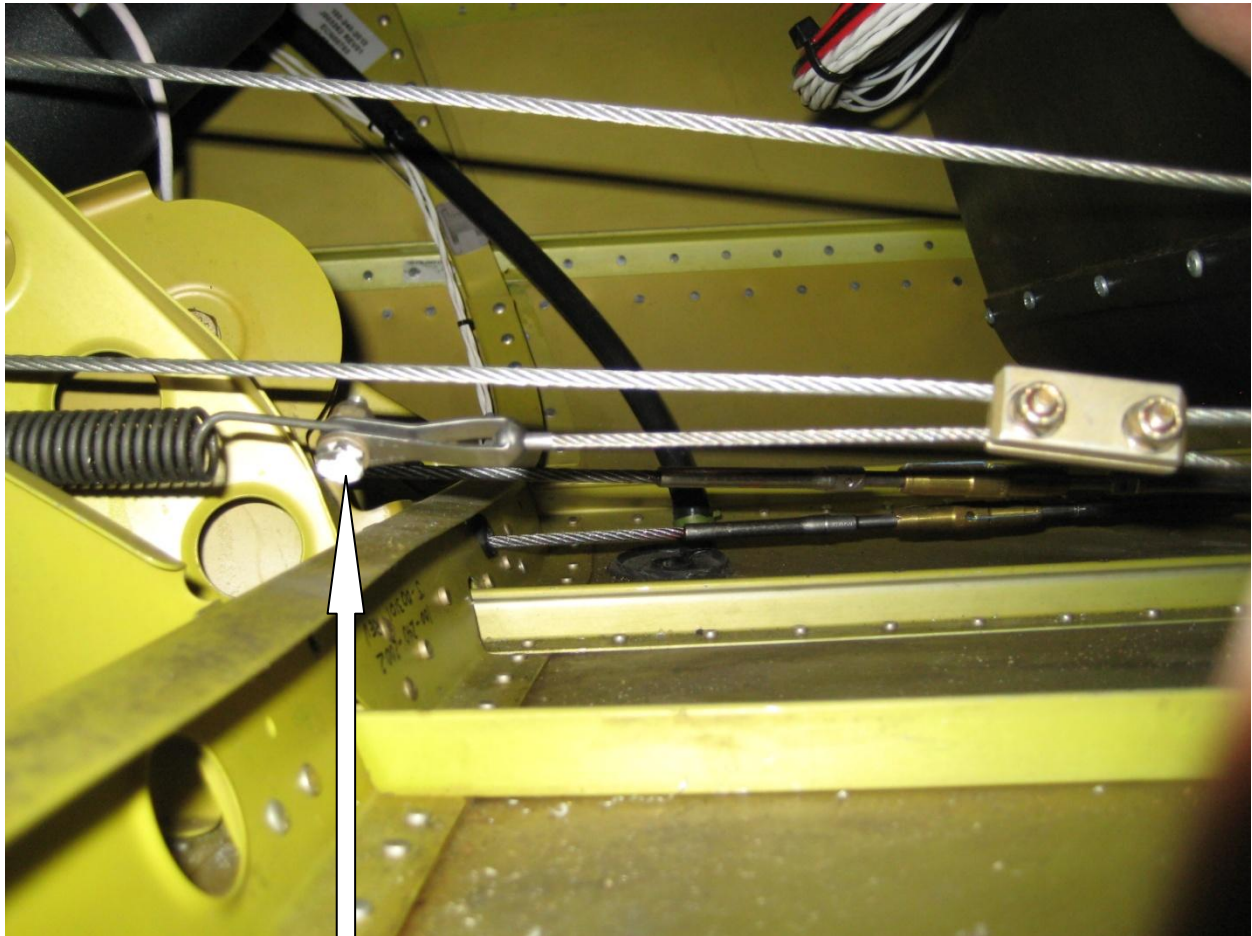


Fig. 5 – Additional hole in angle attach bracket P/N 1004687  
(Part of assembly 1004688)



Ensure there is 1/8 min clearance between bridle hardware and cable. Bolt direction may be swapped to increase clearance if required.

Fig. 6 – Bridle hardware clearance and orientation  
Looking port from center

### END ###