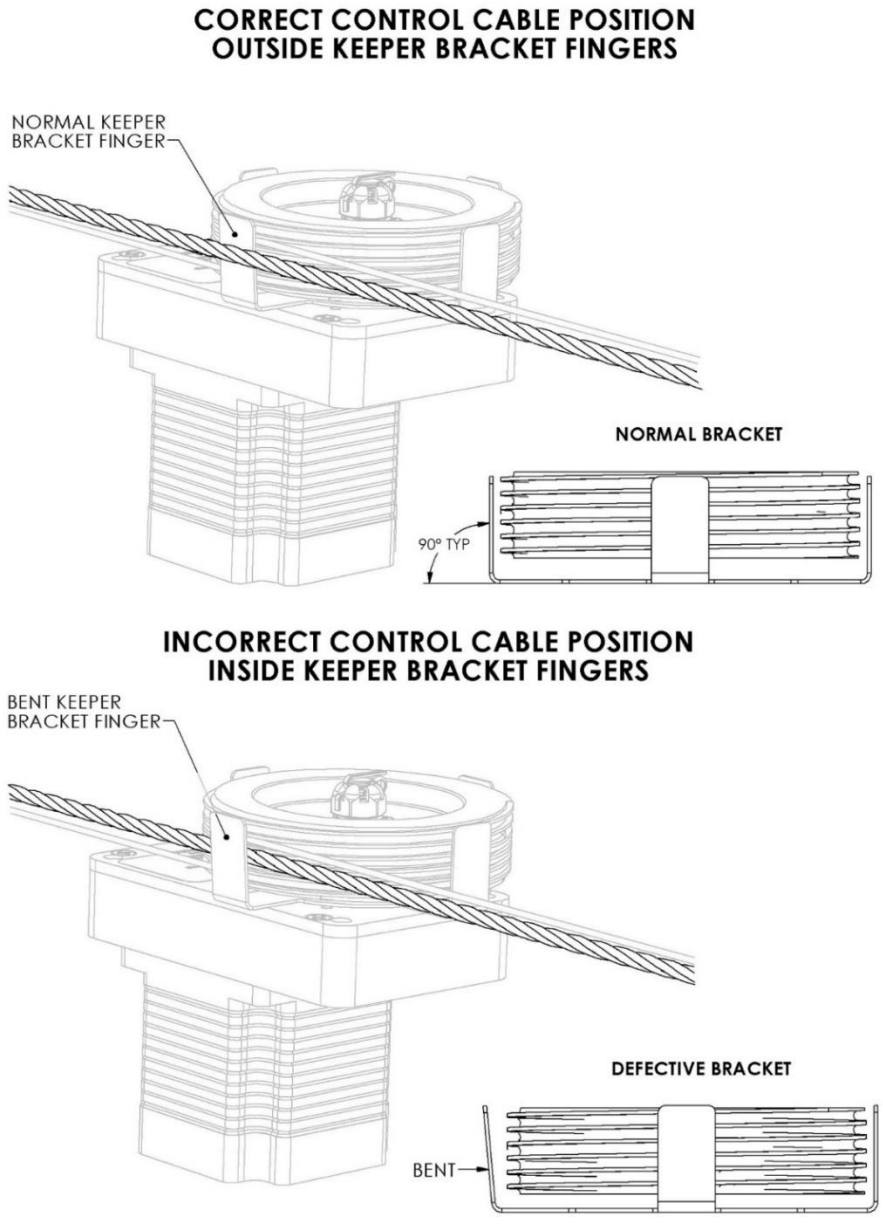
TECHNICAL SERVICE BULLETIN:
1.5in. Capstan Cable Guard, Rev B

Original Bulletin: November 17, 2022
PLEASE READ THIS BULLETIN IN ITS ENTIRETY BEFORE CONTACTING DYNON AVIONICS

Description

The fingers of the cable guard for the pitch servo's 1.5in. capstan used on Bonanza 35 and 36 models can be bent, potentially creating an out-of-specification gap between the capstan and the guard. This gap may allow the elevator control cable to jump over the capstan guard, positioning itself between the capstan and the cable guard (see figure below).



Applicability and Affected Equipment

This service bulletin only affects aircraft with the following:

- P/N 103535-000, which is part of the SV32C-150 (P/N 503679-000) servo assembly.

The affected part may be installed in the following certified aircraft:

- Certified Bonanza 35 models with a pitch servo installation.
- Certified Bonanza 36 models with a pitch servo installation.

Required Actions

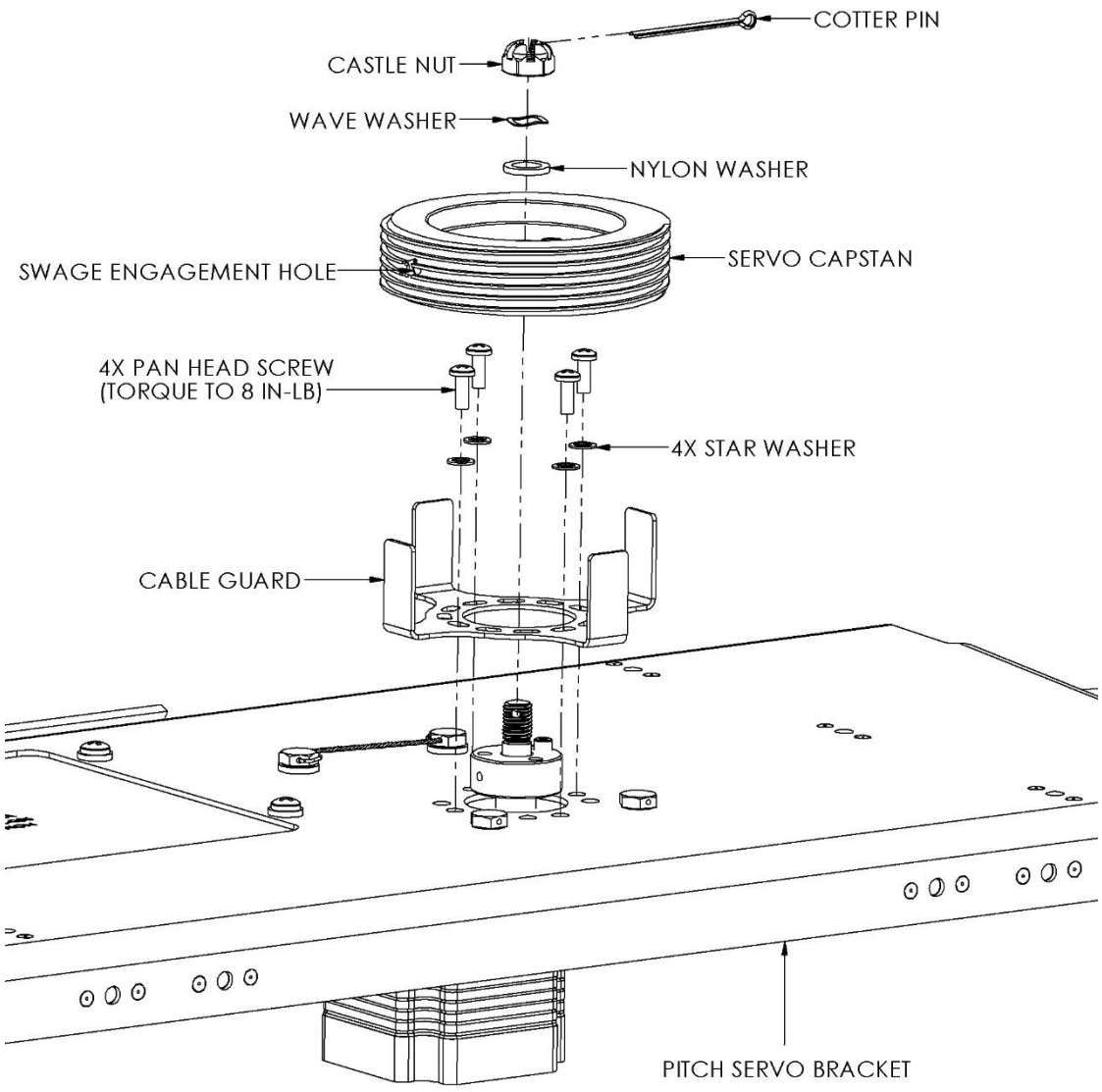
1. Prior to next flight, and every 25 hours thereafter, perform a visual inspection of the pitch servo installation to verify the elevator cable is not positioned between the capstan and cable guard.
   This action may be performed by the owner/operator (pilot) holding at least a private pilot certificate.
   a. Remove the access panel located behind the baggage area in accordance with the manufacturer's service manual.
   b. Inspect the pitch servo installation.
   c. If the elevator control cable has positioned itself between the capstan and the cable guard, notify Dynon Technical Support.
2. Within 12 months after the effective date of this service bulletin or 100 flight hours, whichever comes first, replace the pitch servo's capstan guard with a new Dynon-provided product (P/N 103535-001). To request the part, fill out and submit the following form: Service Bulletin Cable Guard Request Form.

   This action must be performed by an appropriately-rated certified mechanic and must be entered into the aircraft records showing compliance with this service bulletin in accordance with 14 CFR 43.9(a)(1) through (4) and 14 CFR 91.417(a)(2)(v). The record must be maintained as required by 14 CFR 91.417.

   Reference the figure below when performing the following procedure.
   a. Disconnect aircraft battery.
   b. Secure elevator in neutral position.
   c. Remove access panel located behind the baggage area in accordance with manufacturer's service manual.
   d. Disconnect D9 cable harness connector from pitch servo.
   e. Mark locations of bridle cable clamps on elevator control cable.
   f. Note position of capstan's swage engagement hole in relation to elevator control cable.
   g. Secure bridle cable to capstan grooves with tape to prevent cable from unraveling when handling.
   h. Loosen bridle cable clamps.
   i. Remove cotter pin that secures castle nut to servo shaft.
   j. Mark position of castle nut in relation to servo shaft, and then remove castle nut from servo shaft.
   k. Remove wave washer and nylon washer from servo shaft.
   l. Remove capstan from servo shaft.
      DO NOT remove shear screw from servo disc. The capstan has a hole that fits over shear screw head. If shear screw is loosened, it must be completely removed and replaced (contact Dynon Certified Technical Support at dynoncertified.com/contact for guidance).
   m. Remove screws and star washers that secure capstan guard to servo.
   n. Remove old and replace with new capstan guard.
   o. Secure capstan guard to servo with screws and star washers.
   p. Place capstan onto output shaft, aligning hole in capstan with shear screw head located in servo disc. Make sure swage engagement hole is in same position as noted in step 'f'.
   q. Replace nylon washer and wave washer on servo shaft.

r. Finger-tighten castle nut onto servo shaft, and then use a wrench to tighten until slot in castle nut lines up with hole for cotter pin in servo shaft.
   DO NOT overtighten the castle nut! Tightening castle nut beyond 4 in-lbs may prevent the capstan from rotating freely in event of shear screw failure.
s. Install new cotter pin to secure castle nut to servo shaft.
t. Use bridle cable clamps to loosely connect bridle cable ends to elevator control cable at marks made in step 'e'. Make sure clamps contact swage stops at each end of bridle cable.
u. Ensure bridle cable does not contact cable guard. Adjust cable guard position as necessary.
v. Tension and temporarily secure bridle cable to 15–20 lbs. Make sure swage engagement hole is in same position as noted in step 'f'.
   NOTE: The tension on the bridle cable should never exceed the tension on control cable.
w. When satisfied with tension and capstan position, tighten all bridle cable clamp nuts to 35-40 in-lb.
x. Use a feeler gauge to measure gaps between bridle cable clamp halves (top and bottom). Make sure gap measurements on both sides of clamp are not less than 0.003" and not more than 0.050".
y. If clamp gap measurements do not meet criteria above, measure diameter of control cable, and then contact Dynon Technical Support for a resolution. Out-of-specification clamps can slip under load.
z. Remove tape applied in step 'g'.
aa. Connect D9 cable harness connector to servo.
bb. Release elevator.
cc. Connect aircraft battery.
dd. Move elevator control through full range of motion, and verify the following:
   - Control is smooth throughout (i.e., no grinding, rubbing, or roughness).
   - Bridle cable clamps do not contact any structures during entire travel.
   - Capstan never rotates more than 150 degrees in either direction from neutral.
ee. Cycle the control several times, return it to neutral, and verify the following:
   - Position of bridle cable clamps is same as marked in step 'e'.
   - Swage engagement hole is on opposite side of capstan from control cable.
   - Bridle cable tension has not changed.
ff. Report compliance of the service bulletin to Dynon Certified Technical Support at dynoncertified.com/contact.

BRIDLE CABLE REMOVED FOR CLARITY



Material Information

New part to be sent by Dynon.

NEW P/N	QTY	DESCRIPTION	OLD P/N	DISPOSITION
103535-001	1	Bracket Capstan Cable Guard	103535-000	Discard (Do Not Reuse)

Time in Effect

This technical service bulletin is in effect indefinitely.

Additional Questions?

Contact Dynon Certified Technical Support at dynoncertified.com/contact.