



SERVICE BULLETIN SB00015 Rev E Page 1 of 6

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EFFECTIVE DATE: This SERVICE BULLETIN is effective July 31, 2019.

SUBJECT: TORQUE TUBE ASSEMBLY INSPECTION

MODELS AFFECTED: CC11-100 AND CC11-160 S/N 00001 THRU S/N 00427

COMPLIANCE TIME: WITHIN 10 FLIGHT HOURS

CONTINUED INSPECTION: INSPECT AT CONDITION INSPECTION

PURPOSE: To inspect the control system to verify that there is no movement between parts at the riveted joint between the torque tube and mast.

WARRANTY: All aircraft under warranty will be provided parts at no cost and receive up to 8 hours of labor, if work is performed at Cub Crafters authorized service center. Please contact Cub Crafters Customer Support for assistance.

PARTS LIST:

PART NUMBER	DESCRIPTION	QTY
AN380-2-2	Cotter Pin, 1/2	3
AN380-2-3	Cotter Pin, 3/4	3
CR3213-4-3	Rivet, Cherry Max, 1/8 x 3/16	1*
CR3243-5-3	Rivet, Cherry Max, 5/32 x 3/16	10
Loctite 680	Retaining Compound, 10 ml	1
SC31065-001	Grommet	1
SC31065-003	Grommet	1
SC92101-001	Torque Tube	1
TC9105-001	Snap Ring	2

**Autopilot Installed Aircraft Only*

INSTRUCTIONS:

1. Inspect your torque tube assembly for any movement between the torque tube and torque tube masts. This can be accomplished by restricting movement of the aft control stick while attempting to rotate the forward control stick. Any movement will be felt, as well as seen, in the rivets.
2. If no movement is detected between the parts make a log book entry: "Inspected per SB00015". No further action is required other than normal condition inspections per the Aircraft Maintenance Manual.

NOTE: Serial numbers 00146 and earlier used a torque tube with a thinner wall than subsequent serial numbers, and are more prone to movement. Cub Crafters recommends replacing these tubes with that provided as a preventative measure.



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3. If movement is found, repair as follows:

- a. Remove the elevator inspection covers. Loosen the top elevator cable turnbuckle and remove the top elevator cable from the elevator horn. Tie a string onto cable and secure outside aircraft to prevent cable falling inside.
- b. Remove the triangular belly panel and teardrop cover panel on the boot cowl. Disconnect aileron cable from the bottom of the aft torque tube mast by removing the center fastener from the link underneath the floor, keeping the aileron cables connected.

NOTE:

If autopilot is installed, remove linkages connected to torque tube and cables.

NOTE:

Do not unrig the aileron.

- c. Disconnect the front elevator cable pulley hardware and bracket. Remove the pulley.
- d. Remove the front block bolts and slide the bracket aft until it can be easily handled. Remove the snap ring from the grommet and slide the grommet out of the bracket. Cut and remove the grommet. Slide the cable through the bracket.
- e. Remove snap ring from the grommet installed on the aft torque tube mast. See Figure 2. Slide the grommet out, cut and remove the grommet. Slide the cable through the aft torque tube mast.
- f. Remove the elevator pushrod from both the forward and aft control stick.
- g. Remove the elevator pushrod by sliding it out the aft end. Set the pushrod aside.

NOTE:

Elevator pushrod **MUST** be removed prior to the next step.

- h. Carefully cut the torque tube by removing the rear block plate and top half of the block, sliding the block forward and cutting close to the aft mast. Slide out both halves and remove from the aircraft.
- i. Remove the four rivets attaching the aft torque tube mast to the torque tube. Grind the rivet head enough to allow the lock ring to disengage. Knock the center pin out using a punch without distorting the fitting. Drill the head of the rivet off. Knock the remainder of the rivet through the hole with a punch.
- j. Drill out the rivets on the forward torque tube mast using the same manner as described in Step i. Discard old torque tube.
- k. Set the new torque tube, the forward and the aft mast on a level surface outside the aircraft. The surface must be such that the masts rest squarely against the surface.
- l. Assemble the new torque tube, the forward mast, and the aft mast as shown in Figure 1.
- m. Match drill the torque tube to $\text{Ø}.176\text{''}-.180\text{''}$ using the existing holes in the masts. Ensure the masts are 22.885'' apart, edge to edge as shown in Figure 1.
- n. Clean the forward mast and the new torque tube with isopropyl alcohol.



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- o. Apply the retaining compound, Loctite 680, to the outer surface of the forward section of the new torque tube.
- p. Install, as removed, the forward mast onto the torque tube by installing four (4) or six (6) CR3243-5-3 rivets in original holes.
- q. Ensure that excess retaining compound is visible around the aft end of the forward mast and allow 30 minutes from the time of torque tube insertion for the compound to wick fully into the joint.
- r. Thoroughly wipe both sides of the joint, removing **ALL** excess retaining compound from the edges of the joint. Excess retaining compound at the edges will inhibit cure within the joint.
- s. Apply grease to the inside of the blocks.
- t. Install the torque tube into the aircraft, as removed, so the forward torque tube mast butts up against the block. Refer to Figure 2.
- u. Remove the top half of the aft block. Slide the lower half forward to gain clearance around the torque tube.
- v. Apply the retaining compound, Loctite 680, to the outer surface of the aft section of the new torque tube.
- w. Reinstall, as removed, the aft mast by installing four (4) CR3243-5-3 rivets in original holes.
- x. Ensure that excess retaining compound is visible around the forward end of the aft mast and allow 30 minutes from the time of torque tube insertion for the compound to wick fully into the joint.
- y. Thoroughly wipe both sides of the joint, removing **ALL** excess retaining compound from the edges of the joint. Excess retaining compound at the edges will inhibit cure within the joint.
- z. Reinstall the top half of the aft block, as removed. Ensure both masts butt up against their respective blocks and reinstall hardware.

NOTE:

Reinstall blocks **ONLY** when all retaining compound has been removed.

- aa. Reattach the elevator pushrod and cables to the forward and aft control sticks, as removed, using one (1) each MS20392-3C19, AN960-416L, and AN380-2-2 at each location.
- bb. Verify the control sticks are parallel to each other.
- cc. Feed the elevator control cable through the aft mast and attach the new grommet and snap ring, as removed in step e.
- dd. Reattach the linkage to the aft mast, as removed, using the following hardware: Original AN23-10 or -11, AN960-10L (3X), AN310-3, and AN380-2-2. Refer to Figure 3.
- ee. Feed the elevator cable through the bracket and attach the new grommet and snap ring as removed in step d.
- ff. Reinstall the pulley, as removed; ensuring the control cable is pulled through the pulley cover. The hardware stack is shown below:
 - 1. Bolt, AN5-13



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2. AN960-516L (washer)
3. floor wall
4. inner washer stack
5. pulley
6. inner washer stack
7. floor wall
8. AN960-516L (washer)
9. Castle nut, AN310-5
10. Cotter pin, AN380-2-3

NOTE:

Inner washer stacks are equal.

- gg.** Reattach the elevator turnbuckle to the elevator horn, as removed, and tension the cable to 60 lbs. Remove all bottom inspection covers on the fuselage as the cable is tensioned; pay particular attention to the guide blocks aft of the bottom triangle panels. Ensure proper alignment of the cable within the guide block.
- hh.** Reinstall the torque tube clamp as removed (autopilot only) tighten it around the tube correctly using AN3-3, AN960-10, and AN365-1032A hardware then match drill to the tube and rivet it using a CR3213-4-3 rivet.
- ii.** Reinstall all inspection covers that were removed.
- jj.** Wait 24 hours for the full curing of the retaining compound to occur.

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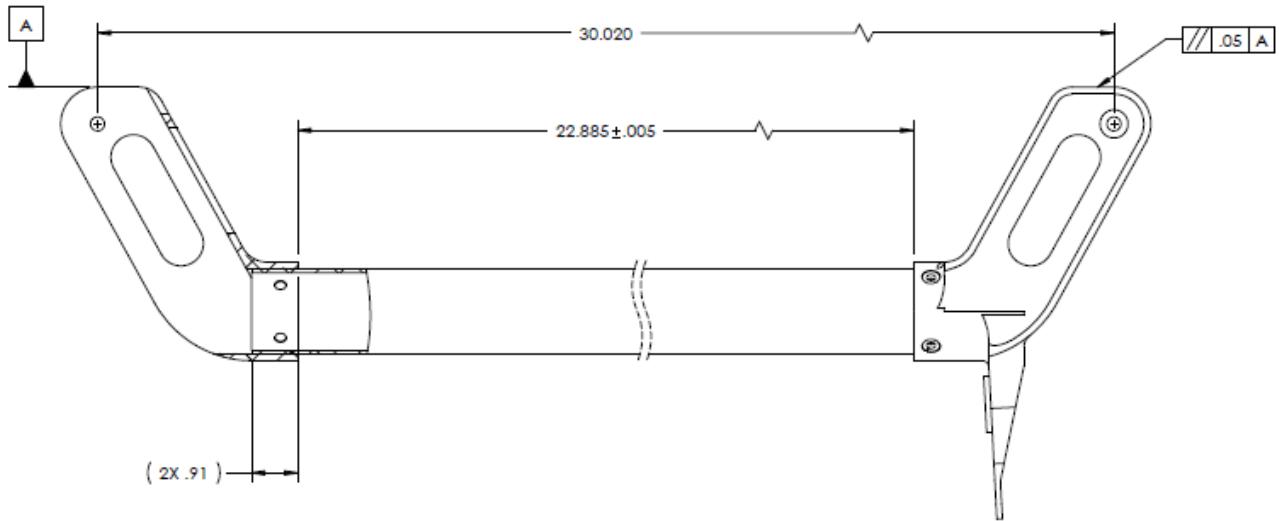


Figure 1 – Torque Tube Placement

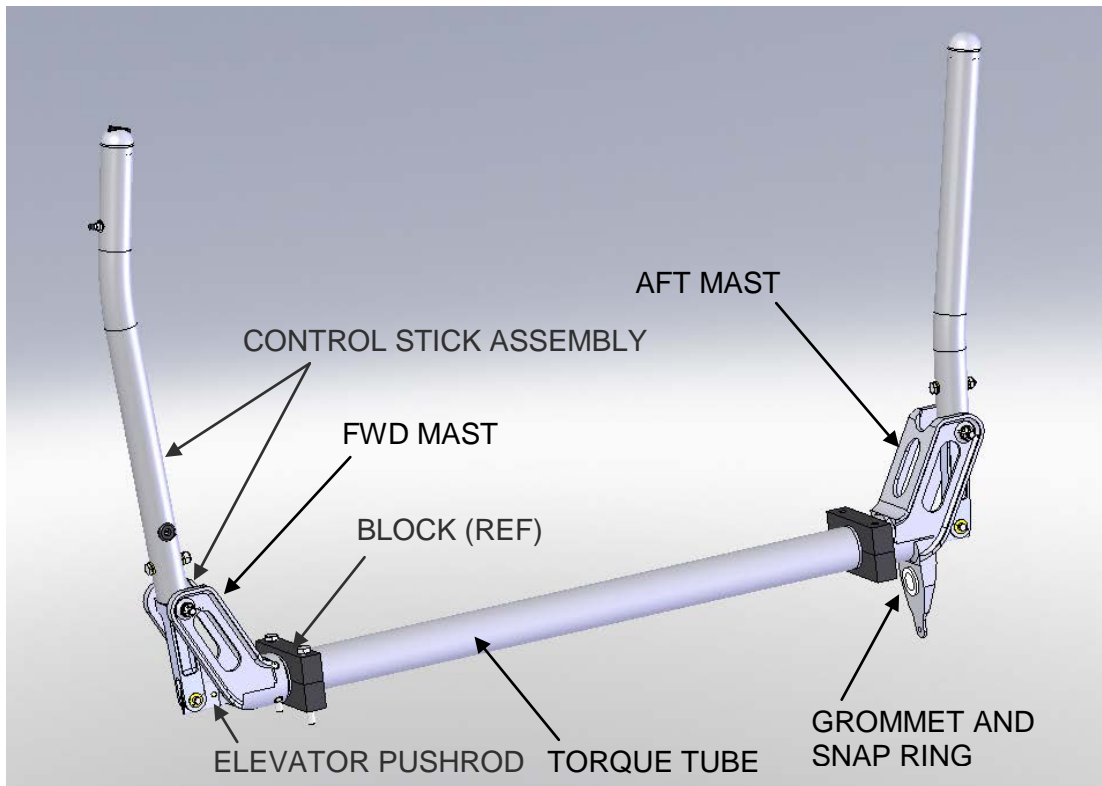


Figure 2 – Torque Tube Assembly

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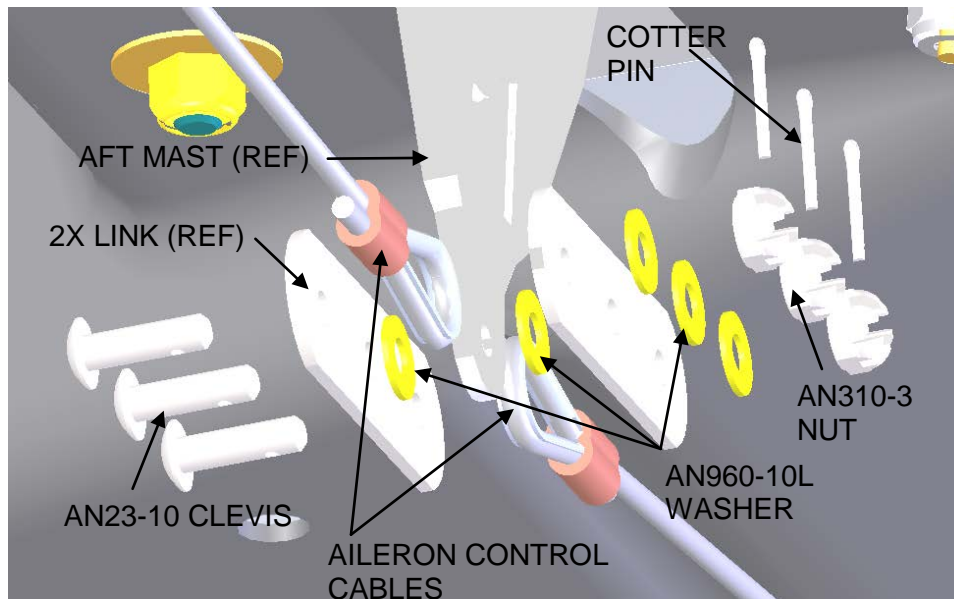


Figure 3 – Link Hardware

4. Verify all control surface deflections and proper control surface operation per Section 6 of the Aircraft Maintenance Manual prior to next flight.
5. Make a logbook entry: "Torque Tube replaced per SB00015".

If you are no longer in possession of this aircraft, please forward this information to the present owner/operator and notify Cub Crafters, Inc. of the address of the current owner at:

Cub Crafters, Inc.
1918 S. 16th Avenue
Yakima, WA 98903.
1-877-484-7865 or 1-509-248-9491
support@cubcrafters.com

Please include the aircraft registration number, serial number, current name, and address of the owner and/or operator.