

**THIS BULLETIN IS FAA APPROVED FOR ENGINEERING DESIGN**

SERVICE BULLETIN M20-295A

Date: September 17, 2007

SUBJECT: Aircraft with Garmin GFC700 – Manual Electric Trim and Roll Servo Installation.

MODELS/ SN
AFFECTED: **Procedure 1:**
M20M: 27-0326 thru 27-0355
M20R: 29-0333 thru 29-TBA
M20TN: 31-0001 thru 31-TBA

MODELS/ SN
AFFECTED: **Procedure 2:**
M20R: 29-0361, 29-0444, 29-0463, 29-0464, 29-0466, 29-0471, 29-0475, 29-0476
M20TN: 31-0003, 31-0006, 31-0013, 31-0016, 31-0018, 31-0019, 31-0020, 31-0026, 31-0033

TIME OF
COMPLIANCE: MANDATORY – Before Next Flight

INTRODUCTION: This Bulletin has been written in two procedure steps.

Procedure 1: There have been reported occurrences, discovered in the field of the Garmin GFC-700 Manual Electric Trim experiencing intermittent operation in certain flight profiles. Until a permanent solution to this intermittent operation is available, the Manual Electric Trim function shall be temporarily disabled until a next Revision to this Service Bulletin is released. Compliance with this Service Bulletin DOES NOT inhibit normal operation of the aircraft's Manual Trim system, or the operation of the GFC700 Auto Trim system.

Procedure 2: There are two control rods connecting the aileron control linkage, which are sensitive to the order in which they are “adjusted”. We have experienced at least one instance where the mechanic did not realize they were order dependant. Occasionally the aileron control rod is adjusted to center the “cushion”. When this is done post GFC 700 installation, the servo control rod must be readjusted to center the servo arm.

INSTRUCTIONS: **Read entire procedures before beginning work.****Procedure (1) – Disable Manual Electric Trim:**

- 1-1. Turn master switch - OFF.
- 1-2. Locate AMP connector with specified wires at end of the Pilot's Control Wheel tube, verify if factory installed or retrofit installed (see Figure 1) also refer to Chapter 39-10-04 of applicable MAC aircraft Service & Maintenance Manual.

NOTE:

The harness installation may require cable ties to be removed for adequate clearance of connecting wires and cover with PVC Tubing (P/N RM026215) for stowing.

- 1-3. Remove specified wire pins (Aircraft side of harness) with an AMP Extractor Tool (AMP P/N 305183), cap wires individually with 3” of PVC Tubing (P/N RM026215). Stow and secure wires using (2) cable ties (P/N T50R9M4) on the Pilot's Control Wheel harness (see Figure 1 and 2) also refer to Chapter 39-10-04 of applicable MAC aircraft Service & Maintenance Manual.
- 1-4. Install any cable ties to secure harness if removed for access.
- 1-5. Install placard (P/N 150056-(X)3048(Y)) on instrument panel (see Figure 3), clean surface area with isopropyl alcohol before applying placard to remove any oils or debris.

Procedure (2) - Roll Servo Adjustment:

- 2-1. Remove the forward belly fairing.
- 2-2. Insert aileron rig pin (see Figure 4)
- 2-3. Remove the middle panel of the center console to access roll servo.
- 2-4. Use an alignment tool (or protractor) to check the 58° (± 2°) required alignment (see Figure 4).
- 2-5. If the alignment is unsatisfactory, adjust rod end on the servo control rod as needed (lengthen or shorten) to obtain the proper 58° (± 2°) alignment (see Figure 4) also refer to Chapter 27-10-00 of applicable MAC aircraft Service & Maintenance Manual for Aileron Rigging.

NOTE:

This alignment should be performed every time the aileron control tube is adjusted.

- 2-6. Pull aileron pin.
- 2-7. Check control system for free “non-binding” movement.
- 2-8. Install center console panels and belly fairing.
- 2-9. Complete log book entry for both procedures.
- 2-10. Return aircraft to service.
- 2-11. Procedure complete.

WARRANTY: Mooney Airplane Company, Inc. will warrant labor (approximately 2 hours), when done in accordance with the procedures of this Service Bulletin for aircraft currently covered under the Mooney Airplane Company, Inc. factory warranty program.

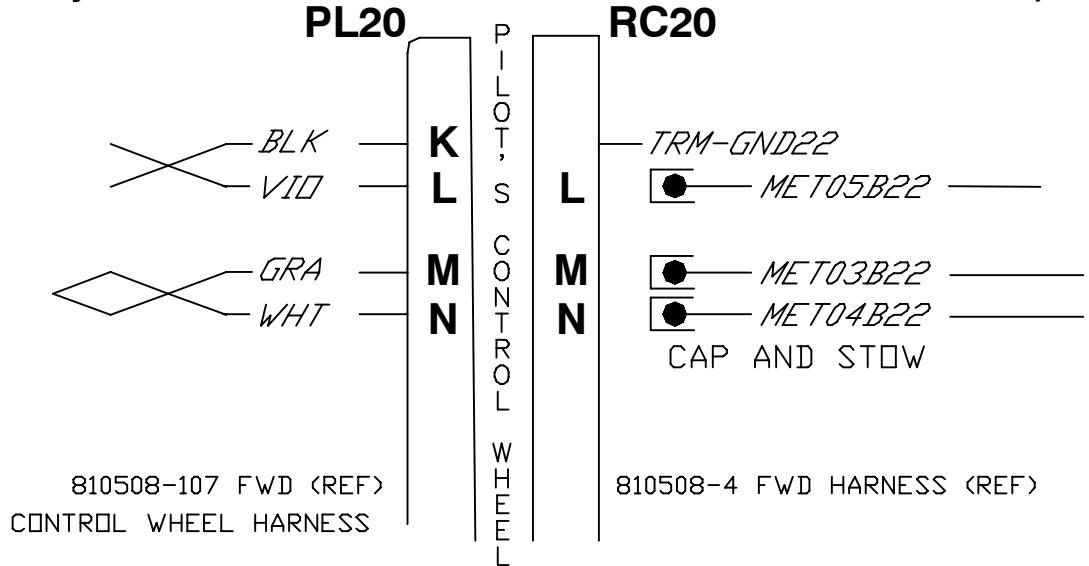
REFERENCE

DATA: MAC Service & Maintenance Manuals (applicable A/C)

PARTS LIST: Mooney Airplane Company, Inc., Parts Kit: M20-295-001

<u>Item</u>	<u>P/N</u>	<u>Description</u>	<u>Qty</u>
1.	150056-(X)3048(Y)	Placard	1
2.	T50R9M4	Cable Tie	5
3.	RM026215	PVC Tubing (PVC105/4)	12”

(Factory Installed GFC700 - Color Coded Trim Switch Harness)



(Retrofit Installed GFC700 - Wire Numbered Trim Switch Harness)

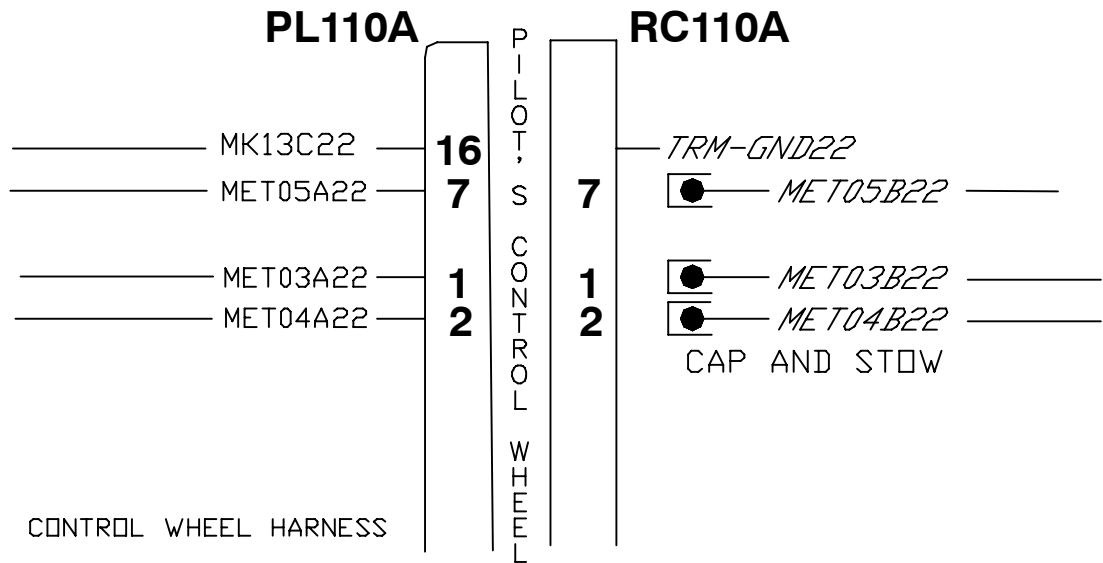


Figure SB M20-295-1 - Control Wheel Harness Connector

**Cut RM026215 PVC Tubing into 3" pieces
Cover Pins and Cable Tie (2) Places to Secure**

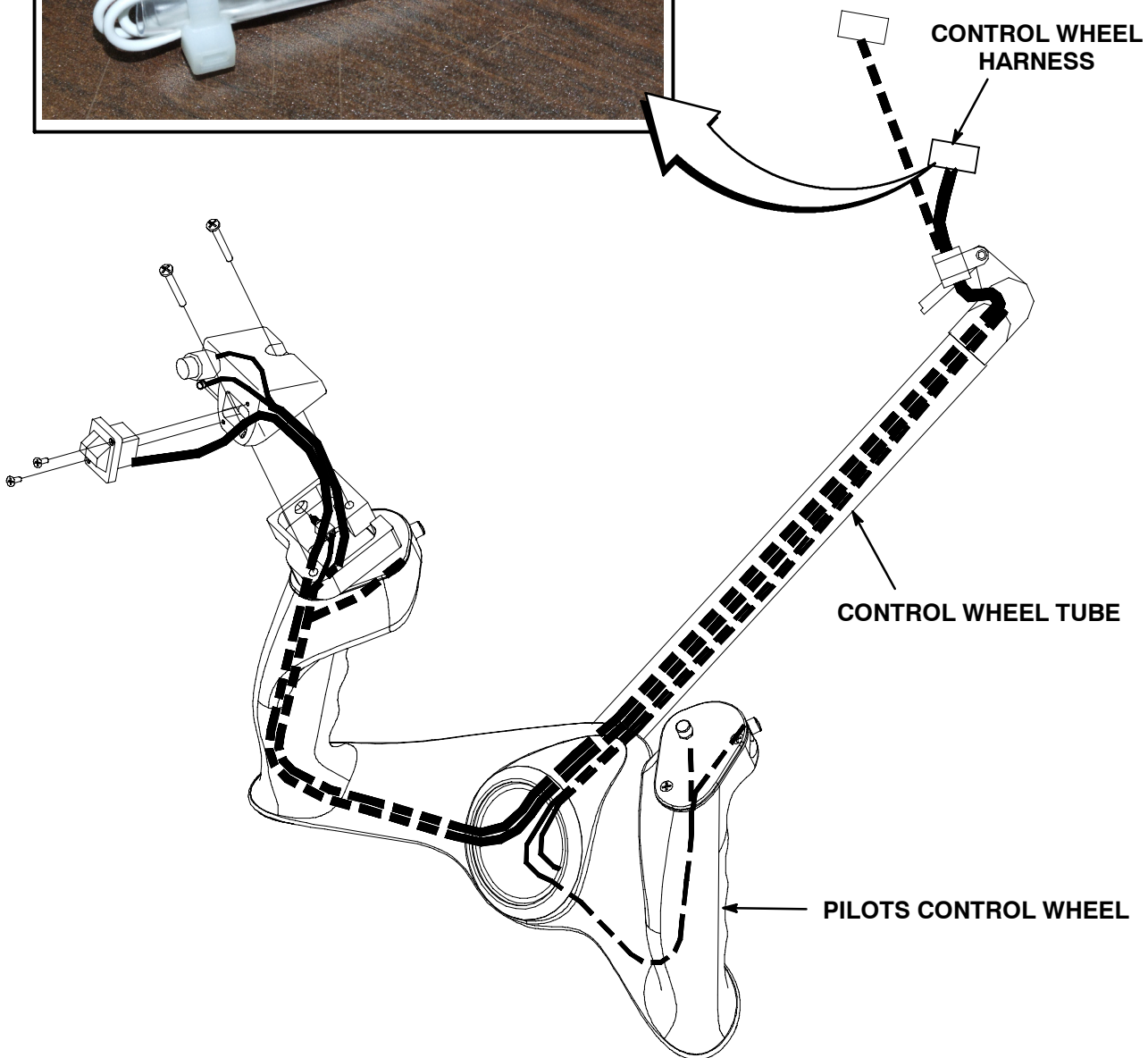


Figure SB M20-295-2 - Control Wheel Harness

**MANUAL ELECTRIC TRIM DISABLED. 150056-(X)3048(Y)
 MANUAL TRIM FUNCTIONAL.
 AUTOTRIM FUNCTIONAL.**

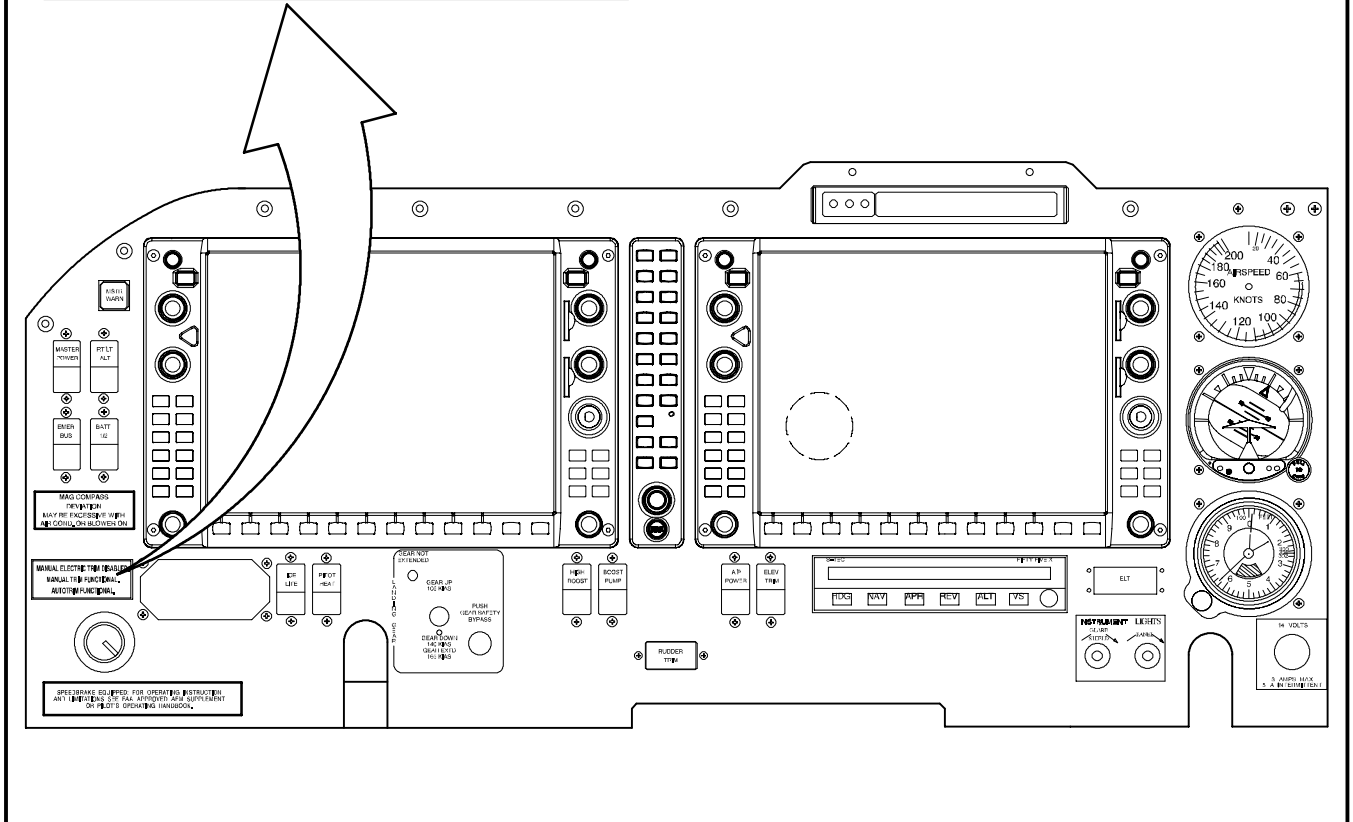


Figure SB M20-295-3 - Placard

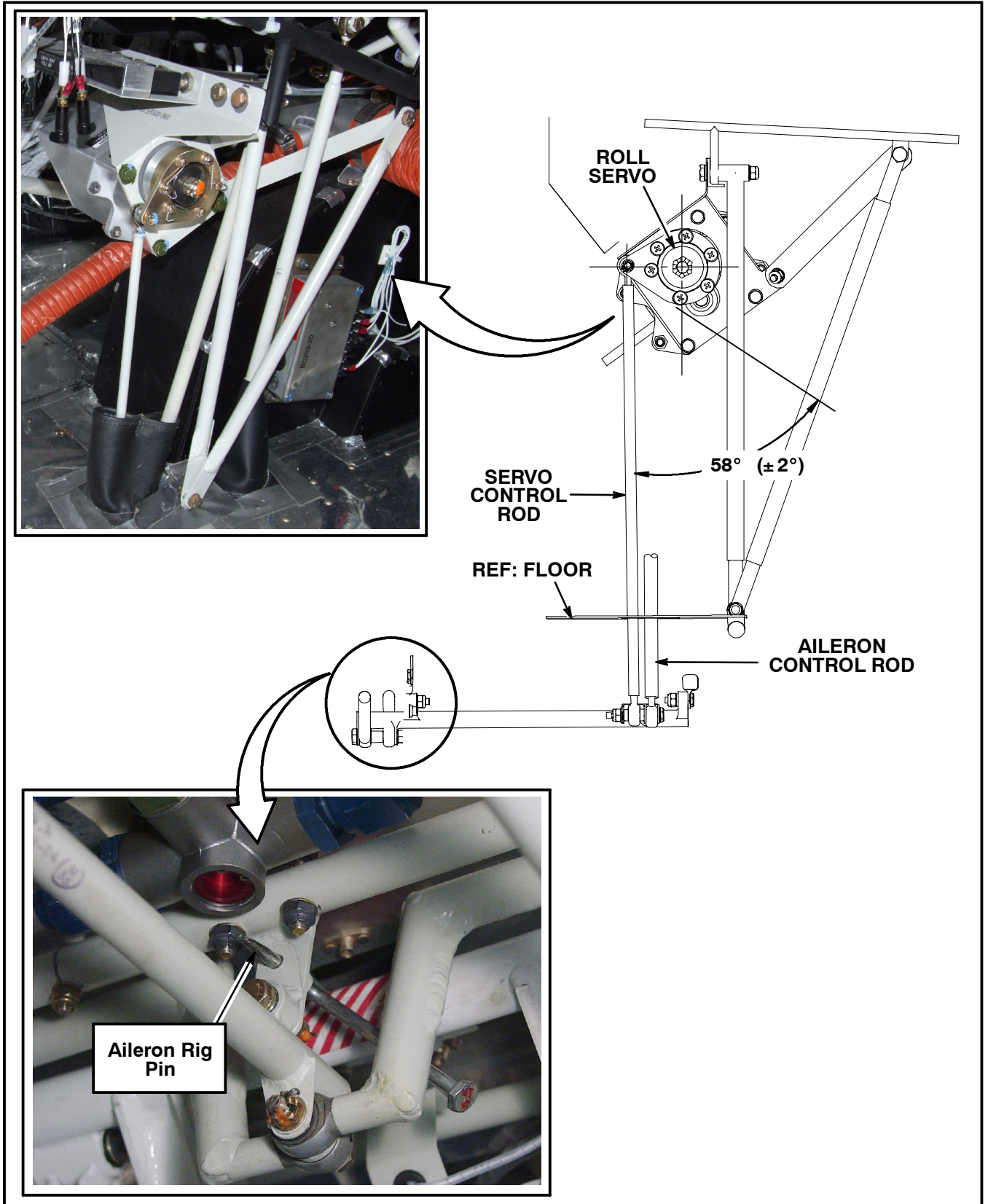


Figure SB M20-295-4 - GFC700 Roll Servo Adjustment