

GLASTAR SERVICE BULLETIN 40

Subject: Elimination of trim tab counterweight with electric trim system

Applicability: All GlaStar kits shipped prior to the publication of *Assembly Manual* Revision D **and** equipped with electric elevator trim

Discussion: We have determined that the counterweight on the elevator trim tab is unnecessary for trim tabs that are actuated by the electric elevator trim system. Load testing of the trim tab/pushrod/servo linkage has revealed sufficient system rigidity to alleviate concerns about trim tab flutter if the counterweight were removed. Because the counterweight adds extra weight and construction time, it is advantageous to omit it or remove it from all GlaStars with electric trim.


Recommended Actions: For GlaStars on which the trim tab counterweight has already been installed, one of the following courses of action is recommended:

- A) Remove the lead from the trim tab counterweight arm;
- B) Remove the trim tab counterweight arm from the trim tab control horn, or;
- C) Remove the trim tab control horn/counterweight arm assembly and replace with a new control horn.

These three choices are obviously arranged in ascending order of time, effort and aesthetic appeal. In the absence of the lead weights and attach hardware, the weight of the counterweight arm itself is so negligible that these options are all functionally equivalent.

If you elect to remove the counterweight arm but retain the original control horn, you have the further choice of leaving the horn as is or trimming it to match the current shape, as shown in Figure 1.

If you wish to replace the trim tab control horn, order **3-1/2"** of **.050" X 1-1/4" X 1-1/2" aluminum tee extrusion** (P/N 100-0640-007) and fabricate a new control horn to the dimensions shown in Figure 1 on the following page. Drill out the old control horn rivets, and use a hole duplicator to drill matching holes in the attach flange of the

	REVISION:	DATE: 12/08/98	PAGE: 1 of 2
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new horn. Drill out rivets as necessary to open the trim tab and then reassemble following the instructions for Steps 73–76 and 92 of "SECTION V: ELEVATOR ASSEMBLY."



Note One advantage of removing the trim tab counterweight is that this reduces the amount of weight required to balance the elevator. Once you have removed the trim tab counterweight, it is necessary to rebalance the elevator per the instructions for Steps 173 and 174 of "SECTION X: FINAL ASSEMBLY."

For GlaStars on which the trim tab counterweight has not yet been installed, it is recommended that the trim tab control horn be fabricated to the dimensions shown in Figure 1 and that the trim tab counterweight arm and counterweight be omitted. Concretely, that means the following:

- A) Substitute Figure 1 below for Panels A and B of Figure 39.1 in "SECTION V: ELEVATOR ASSEMBLY."
- B) Disregard the last paragraph of Step 61 in "SECTION V: ELEVATOR ASSEMBLY."
- C) Disregard the following figures and steps in "SECTION V: ELEVATOR ASSEMBLY": Figures 39.2, 46 and 50; and Steps 67 and 77.
- D) Disregard the following figures and steps in "SECTION X: FINAL ASSEMBLY": Figures 181–183; and Steps 166 and 167.

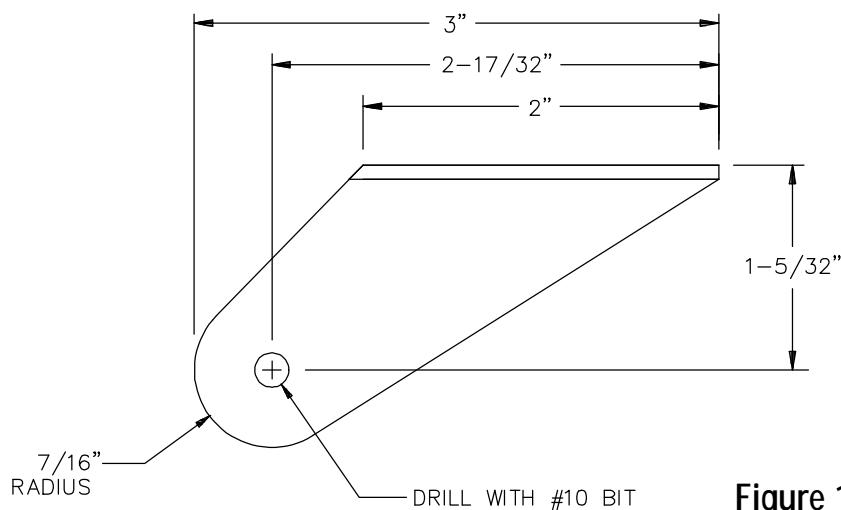


Figure 1: Dimensions for New-Style Trim Tab Control Horn