

# MC600 Series Solid Wire Vernier Fuel Mixture Control Installation Instructions

The McFarlane Aviation, Inc. solid wire Universal Mixture Control is **FAA-PMA Approved** for installation on single engine aircraft equipped with carburetors as listed on the McFarlane Aviation, Inc. Use Eligibility Chart, Drawing 1404, dated July 30, 2002 or later revision.. These controls can be used as a replacement or minor alteration part. No STC or FAA Form 337 is required

Note: The McFarlane Universal Vernier Mixture Control has been designed to fit most general aviation aircraft equipped with carburetors. It is the responsibility of the installer to ensure that installation of this vernier mixture control will not interfere with any installed system on the aircraft. Before installing the mixture control, insure that adequate clearance is available between the mixture control and the flight controls with the mixture control in all positions and the flight controls in all positions. Some aircraft models require changing the mixture control location. The installer must verify that installation of this control provides full travel of the carburetor mixture arm and that the installation was accomplished in an airworthy manner. The installation of this mixture control must not interfere with the compliance of an Airworthiness Directive or the Aircraft Manufacturers Service Information. FAA Advisory Circular 20-143 may be referenced for guidance concerning the installation, inspection, and maintenance of aircraft engine controls.

1. Disconnect the old Mixture Control from the Carburetor's fuel mixture arm. Save the hardware removed.
2. Remove the old mixture control cable noting the control routing and the location of existing clamps.
3. If the hole in the instrument panel is less than  $\frac{3}{4}$  of an inch in diameter; enlarge to  $.765 \pm .010$  inches.
4. Remove the nut and lock washer from the new vernier control.
5. Remove the knob/shaft and inner-wire from the new control. Lay the new mixture control alongside the old mixture control aligning the Panel Nuts with each other. Mark the new mixture control conduit and cut; making the two mixture controls the same length.
6. Reinstall the knob/shaft and inner wire in the new assembly. Make certain both mixture control knobs are all the way in. Mark and cut the inner-wire making it the same length as the old unit.
7. Route the replacement control through the instrument panel, nut, lock washer and firewall. Make certain the nut and lock washer are on the firewall side of the instrument panel.
8. Secure the control conduit to the airframe and at the original attaching points in the engine compartment. Ensure that the clamps used are in airworthy condition and securely grip the conduit. Clamps that fit the conduit properly will not allow the conduit to slide. Do not use "rubber-cushioned" clamps or clamps made from aluminum.
9. Assemble the new inner-wire and hardware that attaches the mixture control to the carburetor's mixture arm. Do not tighten at this time. Enlargement of the clamp bolt hole may be required to allow for the .071" inch diameter inner wire. Ensure that the cross hole edges are radiused to eliminate any stress concentrations on the wire.
10. Position the mixture control knob  $\frac{1}{16}$  –  $\frac{1}{8}$  of an inch from the panel nut as shown in Figure 1. Hold the carburetor's mixture arm in the full rich position. Tighten or otherwise secure the hardware as appropriate, making certain that the control's inner-wire is secure and will not slip. Follow the aircraft manufacturers service information when securing or tightening the attaching hardware.
11. Safety the attaching hardware as per the aircraft manufacturers service information.
12. Inspect the function of the installation by moving the mixture knob to the full lean position. Visually inspect the carburetor's mixture arm. It must be against the lean stop on the carburetor. Move the control knob to the full rich position. Visual inspect the control arm on the carburetor. It must be against the full rich stop and the mixture control knob must be  $\frac{1}{16}$  to  $\frac{1}{8}$  of an inch from the panel nut as shown in figure 1. Cycle the control from full rich to full lean several times. The control should move freely without excessive resistance throughout it's range of travel. Move the flight controls to all positions and check for interference between the flight controls and the mixture control when the mixture control is in all positions. Correct any interference before the aircraft is returned to service.
13. If the existing mixture placard is missing or has been obliterated; install the placard supplied with this control.
14. The McFarlane Aviation, Inc. Universal Mixture Control is an FAA Approved item that does not require an STC. Make the appropriate log book entries for a minor alteration. The McFarlane Aviation, Inc. Universal Mixture Control is FAA-PMA approved for installation on single engine aircraft equipped with carburetors, as a replacement or modification part. See Drawing 1404, dated July 30, 2002 or later revision for aircraft eligibility.

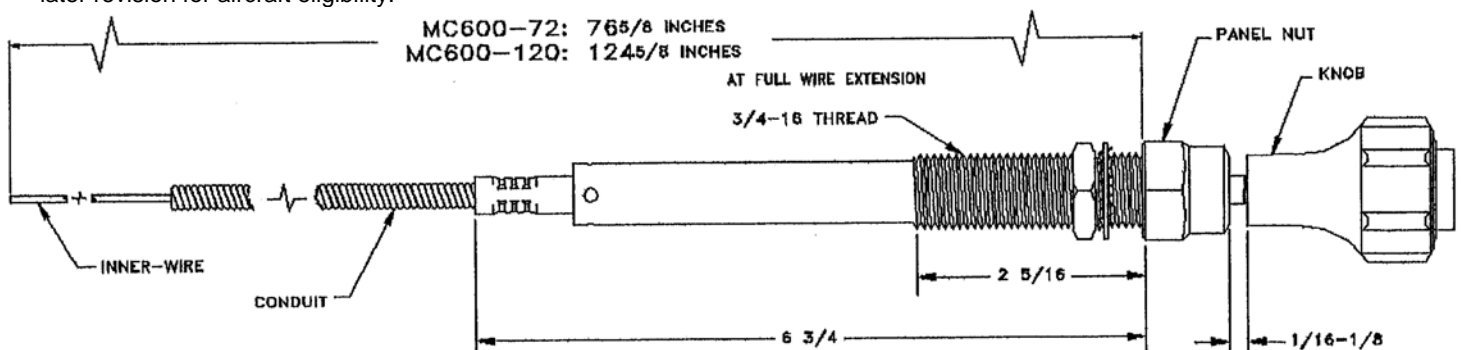


Figure 1.

Maximum Travel: 4 1/4 inches



**McFarlane Aviation Products**

696 E 1700 Rd Baldwin City, KS 66006

800-544-8594

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