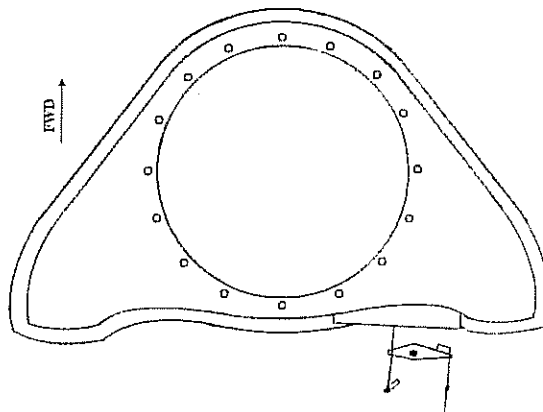


Air Filter Bypass Door

The engine induction air comes from a plenum built into the lower front cowl area and is "fed" by a NACA duct also built into this area. In this set of instructions an air filter bypass door will be installed. This allows air to flow to the engine should the filter clog.

Induction air plenum

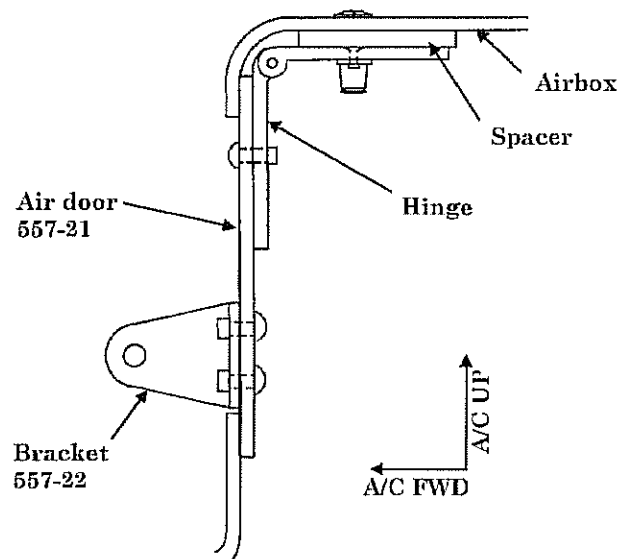
Figure 1



1. Assemble the airbox before bonding it to the plenum.
 - a). Temporarily fit the hinge to the door with superglue and, using a spacer made from aluminum scrap, fit the assembly inside the airbox (see figure 2).

Cross Section of Airbox

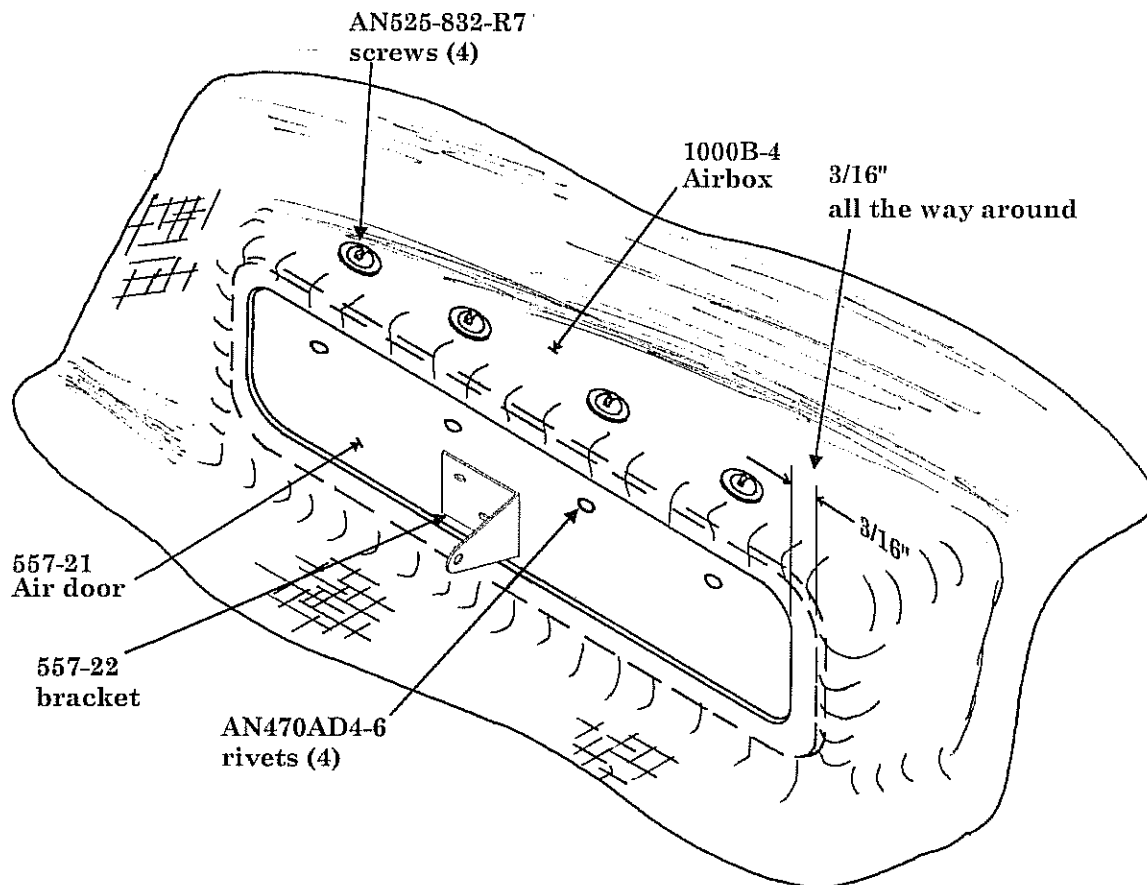
Figure 2



Draw a line around the door on the inside of the airbox. Remove the door and draw another line inset $3/16$ " from the first line. Cut out the opening for the air door along the inner line (see figure 3).

Assembling the Airbox

Figure 3



b). Install the assembly using AN-525-832-R7 screws, K1000-08 nutplates, and AN426A3-5 rivets. Use AN470AD4-6 rivets to attach the door to the hinge.

c). Mount the 557-22 bracket on the door as close to the bottom as possible using AN470AD3-4 rivets.

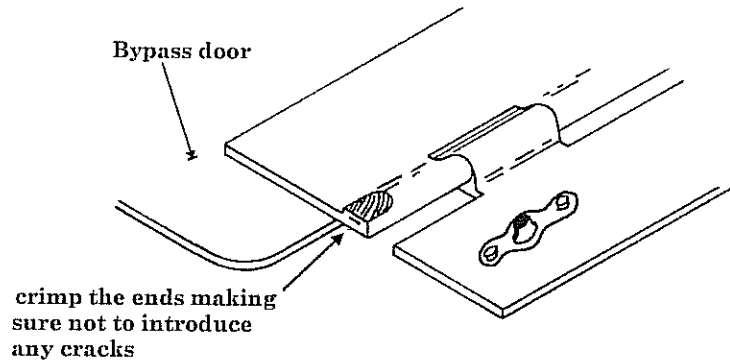
d). Secure the hinge pin (see figure 4).

e). Make sure that the door seats well against the air box and moves freely on the hinges.

NOTE: It is recommended that you silicone a 1/8" or 1/4" mesh screen over the door opening, with a small slot cut out for the 557-22 bracket to pass through.

Secure the Pin

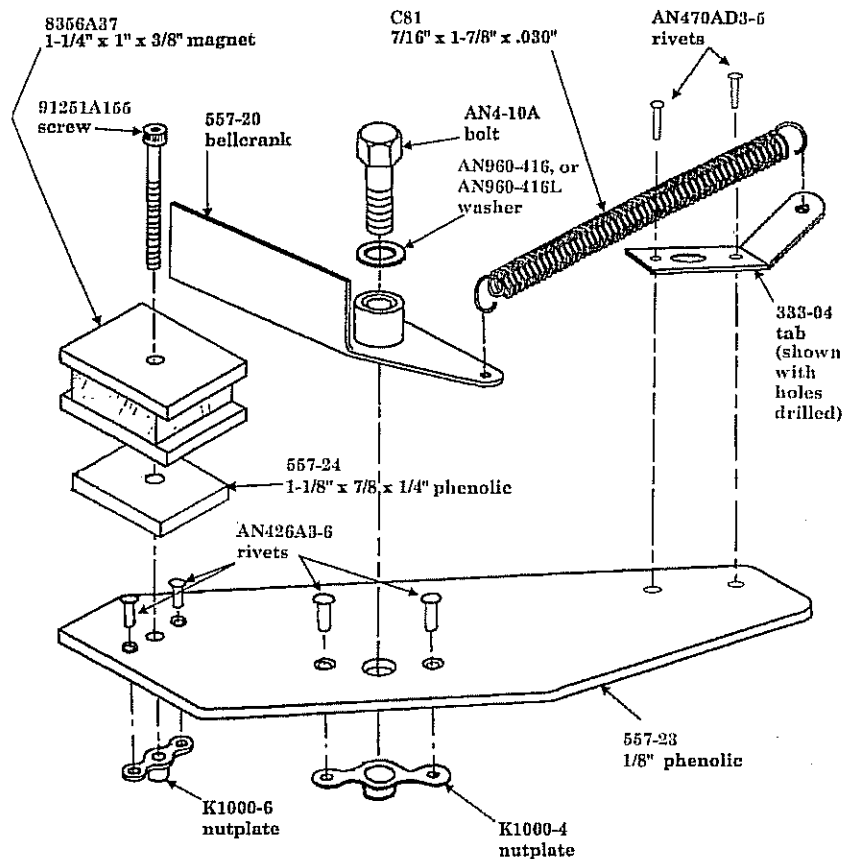
Figure 4



2. Complete the bellcrank assembly.

Exploded View of Bellcrank Assembly

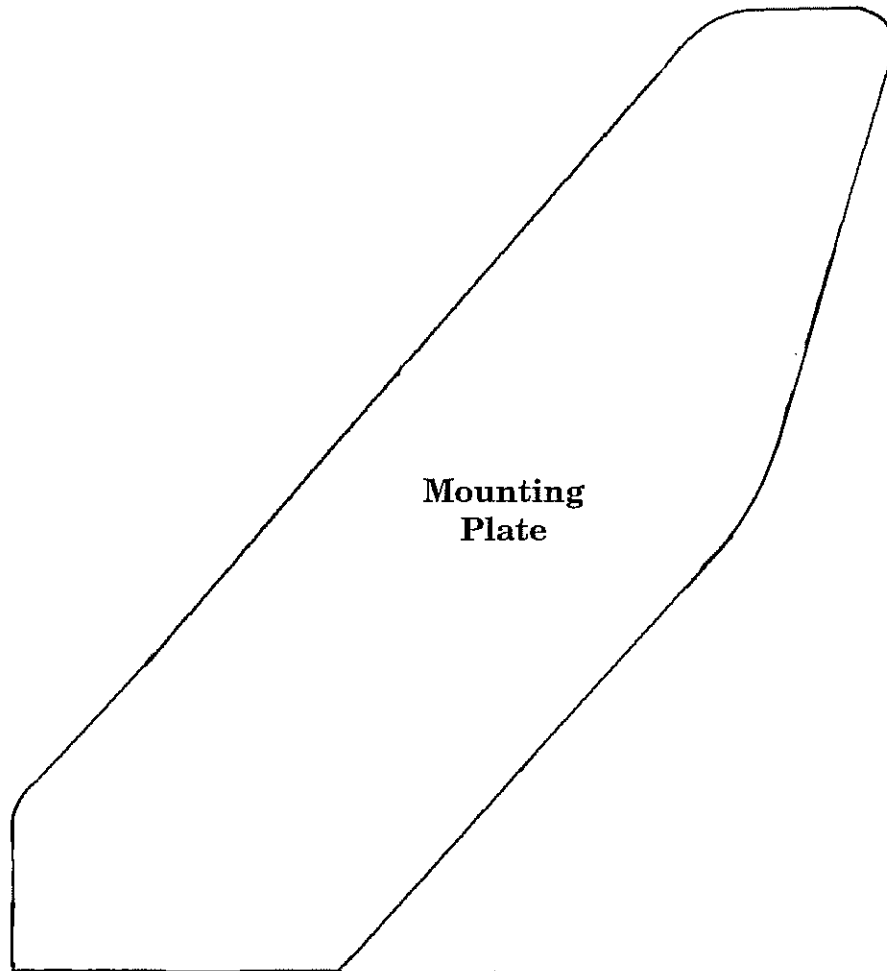
Figure 5



a). Use the template to cut the 1/8" phenolic mounting plate (p/n 557-23). Cut a 1-1/8 x 7/8 x 1/4" phenolic spacer (p/n 557-24). Drill the two #40 holes in the 333-04 bracket (see Figure 5).

Phenolic Template

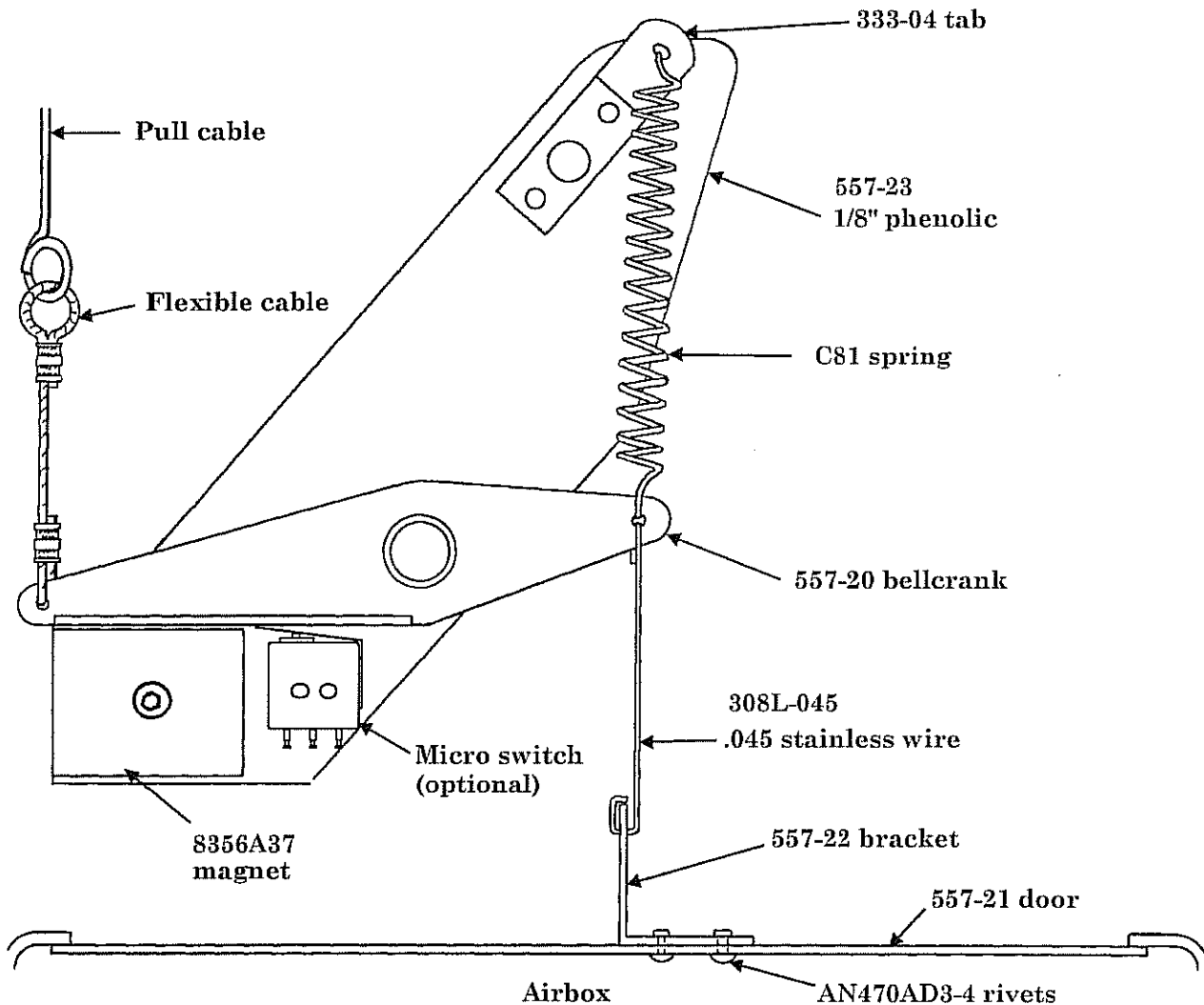
Figure 6



b). Set the magnet, bellcrank and bracket on the plate (see Figure 5 & 7). Mark the position of the mounting holes and mount the components. If you plan to install an optional alternate air door light, you should also install a micro switch on the plate.

Assembling the Bellcrank & Plate

Figure 7



Note: The magnet pole plates must be perfectly aligned with the bellcrank. While the mounting screw is slightly loose, put some superglue between the magnet, spacer, and plate while everything is aligned properly and let the glue set up. Then tighten the screw and check again to make sure the magnet is still aligned.

c). Put loctite on the K1000-4 nutplate and tighten the bolt so the bellcrank swings freely with no wobble or binding (see Figure 5).

d). Make up a short length of cable if you intend to install an optional manual pull cable.

Note: If you have already mounted the plenum, continue with step 3. If the plenum is not yet mounted in the cowling, go to step G4 in chapter 31 of the manual and install the plenum, then return to step 3.

3. Prefit the alternate airbox assembly and the bellcrank assembly in the cowling. Bond them in place.
 - a). Cut the stainless wire to length allowing for a loop at each end (see Figure 7).
 - b). When you are satisfied with the final fit, establish the position of the box on the plenum. Set the box on the plenum bottom flange and push it as far to the right as possible. Make sure the left side of the airbox is as far down and forward as possible to clear the motor mount. With the box temporarily in place, trial fit the bottom cowling and check for clearance between the box and engine mount. Trim as necessary. Bond the airbox in place. Make sure not to twist it in a way that would throw the door out of alignment.
 - c). Protect the nut plates and bolt threads on the bottom of the bellcrank mounting plate with a foam dome or tape and bond the assembly to the bottom of the cowl.
 - d). Fit the stainless wire so that the door is shut tight and the loops are bent back over the wire.
 - e). Check the complete assembly for proper operation and freedom of movement.

Note: If you have the large exhaust openings on the bottom cowl, you will need to modify them to fit the bellcrank assembly. A support shelf bridging the deeper bottom cowl would work.

WARNING: Verify that all mechanical fasteners are properly secured. Apply loctite to the nutplates inside the plenum. Sand off excess epoxy/micro that may break off. Any loose parts inside the plenum will more than likely find their way into the engine.