

12. Outboard Aileron Hinge



Section Objective: The correct installation of the outboard Aileron wing hinge bracket.

Required parts: Left aileron PN104-700, Right aileron PN104-800, Left outboard hinge ALW-0064L, right outboard hinge ALW-0064R, 2 of bearing PN63195K63,

Required hardware: 4 of AN3-7A, 4 of AN365-1032A elastic stop nut, 4 of AN960-10 std washers, 4 of AN970-10 wide area washers.

Required tools: 3/8" wrenches & sockets, 3/16" or #10 drill bit, assorted sanding tools, scrap wood for jiggging.

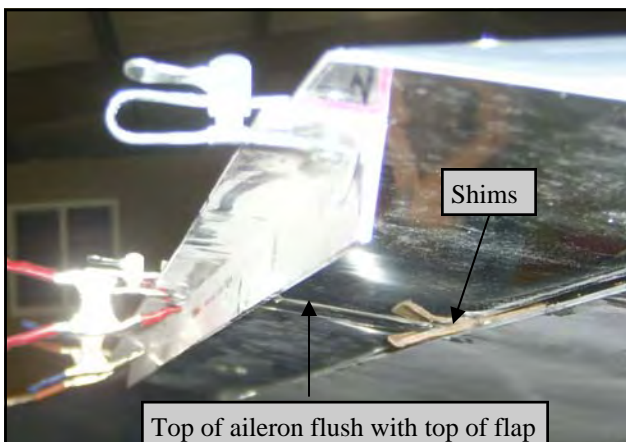
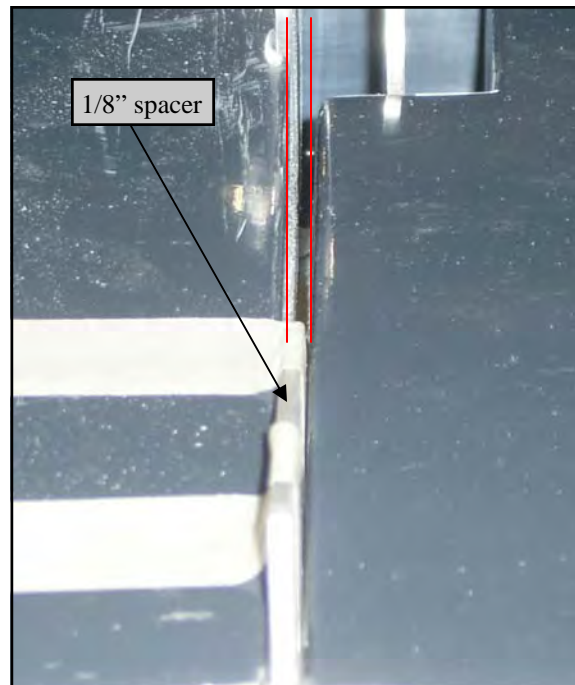
Required conditions: N/A

Required skills and training: Basic knowledge of hand tools and use. Ability to read and understand simple directions.

Note: Fitting of the ailerons is extremely easy when the aircraft is up side down on saw horses. This is not a requirement as building them up right can be done with extra help or clamps. Many of the pictures shown depict how we construct the aircraft in house, that is upside down.

Date
Completed

1. Install the wings with main bolts, nuts and washers are not needed. AOI bolt need not be installed however a 5/16" bolt should be inserted into the previously drill AOI holes to correctly align the wings.
2. Install the flaps temporarily.
3. Clamp the root end of the flap in position with the fuselage root. The bottom should be flush with the bottom of the fuselage. We use a 1/8" thick 1" by 1" aluminum angle, this must be sturdy so as not to flex.
4. The next few steps will take some trial and error to get the aileron to lined up the way you want.
5. Use a scrap piece of 1/8" thick aluminum taped to the inboard end of the aileron to keep the gap spacing to the flap correct.
6. Place the aileron I position up against the flap.
7. Use a long (about 6') piece of heavy aluminum angle and clamp it to the flap and then also to the aileron. This should keep the trailing edge inline with the flap all the way to the root.
8. Use card board or wood shims to adjust the height of the aileron in the bay.



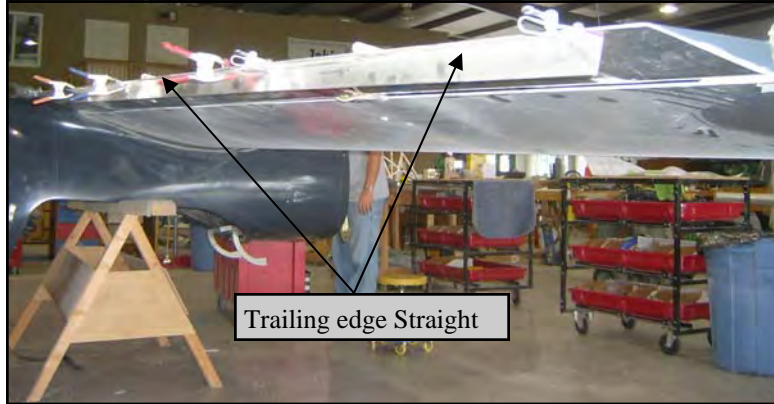
9. The top of the aileron must be flush with the top of the flap.

12. Outboard Aileron Hinge



Date
Completed

- When shimming the height do not worry about the gap between the top of the aileron to the wing skin. The aileron must fit true, the wing skin will be trimmed back later to achieve a constant gap and clearance at full deflection.



- The radial bearings PN63195K63 must be pressed into the out board brackets ALW-0064L and ALW-0064R.

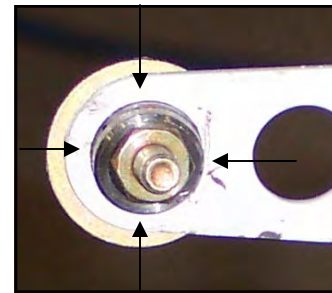
- Use a flat surface to support the edges of the bracket.
- Find a socket that is the same size as the radial bearings outer flange.

- With a hammer tap the bearing into the bracket. The bearing will be in the correct position when equal amounts of it are protruding thru each side.



- The bearing should be a press fit, however better bearing security can be accomplished by "peening" the material around the bearing.

- Use a sharp point punch and a hammer. Strike the material surrounding the bearing in about 4 spots each side on both sides equally. This presses some of the material outward forcing the steel into the small groove in the bearing locking it in place

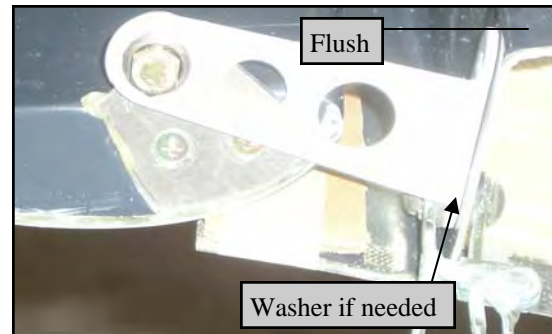


- With the Aileron still in place, bolt the hinge to bracket in the aileron.

- Clamp the outboard bracket to the rear spar as shown in the photo. The hinge base must not hang below the wing surface.

- Match drill the holes in the bracket to the rear spar.
- If the bracket is not perfectly flush, the use of washers underneath the base is acceptable.

- If using washers than remove the gel-coat under the hinge base only, the gap will be filled in with epoxy later.



- Install the bracket using AN3-7A bolts.

- Use large area AN970-10 washers on the back and secure with AN365-1032A elastic stop nuts.

- If washers were used under a portion of the base for a spacer, you must fill this gap in to provide a solid base.

- Mix a small amount a 24hour epoxy and flox mix and pack under the brackets base.

