

Chapter 19 Baggage Door

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19.1 Introduction

The baggage door is hinged by two aluminum brackets with friction created through the use of cupped spring washers within the pivot mechanism. At the bottom of the door, two locks are installed which both secure and lock the door closed.

Steps to Completion

- Pre-fit the baggage door in the opening in the top fuselage.
- Install the two hinge brackets.
- Install the two hinge arms
- .Install the two tab door locks
- Install the weather stripping

Before You Start

The fuselage top needs to be permanently installed prior to fitting the baggage door.

Caution!

Always perform the pre-fits that are recommended.

A Word about Bonding Surfaces

The instructions in this chapter refer to roughing up a surface or preparing a bonding area. When we recommend preparing a surface or a bonding area, we expect each of the following steps to be completed every time.

1. Sand the phenolic or the surface area using 40-grit sandpaper.
2. Vacuum all sanded areas.
3. Clean all sanded surfaces with Acetone.

19.2 Parts List

Baggage door and hinge hardware

Item	Part Number	QTY	Description
1)	2004	1	Baggage door
2)	BD347 <u>BD347 Purchase O53-U (or customer can fabricate part)</u>	2	Hinge brackets
3)	<u>BD347</u>	2	Hinge arms
4)		4	Screws through fuselage
5)		4	Nuts for screws through fuselage to hold hinge bracket
6)	AN3-5	2	Bolts
7)	<u>106-00229713K58</u>	8	Spring washers
8)	AN310-3	2	Castle nuts
9)	MS24665-132	2	Cotter pins
10)	AN470AD4-8	4	Rivets

Baggage door latches

Item	Part Number	QTY	Description
1)	BD346-01	2	Baggage door lock mount, phenolic
2)	BD346-02	2	Alum. capture plate for baggage door lock
3)	BD346-03	2	Wedge lock for baggage door
4)	DL-01	1	Lock with removable key
5)	DL-02	1	Lock with non-removable key
6)	DLT-01	2	Tab door lock
7)	MS24694-S7	4	Bolts used as studs

Baggage door latches

Item	Part Number	QTY	Description
8)	AN365-832A	4	Nuts for studs
9)			Orkot blocks

Weatherstripping

Item	Part Number	QTY	Description
1)	BD346-04	7 ft.	Weatherstripping



19.3 Construction Procedures

19.3.A Fitting and Hinging the Baggage Door



The following first two steps describe how to pre-fit the baggage door. The baggage door must be pre-fit before it can be attached to the hinges.

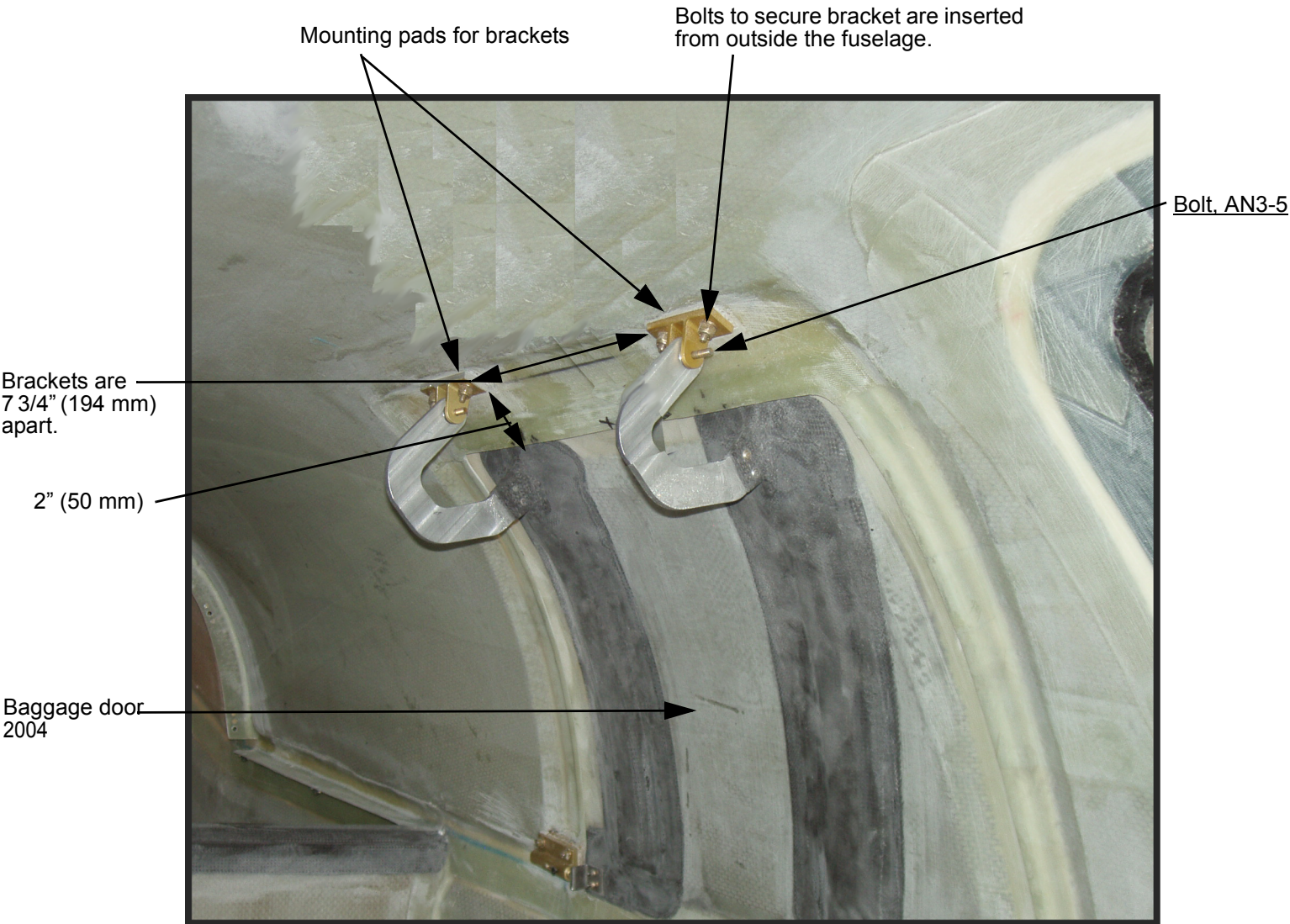
Steps...

1. Check the fit of the premolded baggage door (2004) by inserting it into the opening in the fuselage.
2. Sand the edges of the door until it fits within the joggle on the fuselage.

Tip: There are two joggles around the baggage door area. The baggage door should fit into the shallow, larger circumference joggle. The deeper joggle will be used later for the weatherseal in Figure 19.3.C.1.

3. Determine the location of the two hinge arms on the fuselage top.
 - The inside edge of each bracket (fabricated or use 053-U) the hinge arms attach to need to be 7 3/4" (194 mm) apart.
 - The front edge of the bracket needs to be 2" (50 mm) back from the edge of the baggage door opening.
4. Glue the brackets in place with a temporary glue.
5. Back drill the holes for each bracket from the inside of the fuselage.
6. Countersink the screws from the outside of the fuselage.
7. Remove the brackets and create the floc mounting pad for each hinge.
8. Redrill the holes for the screws.
9. Install the brackets by screwing them in place and securing with bolts.
10. Floc the screws in on the outside of the fuselage.

Figure 19.3.A.1 Aluminum hinge arms with brackets installed on the floc mounting pads



Installing the Hinges

Steps...

1. Install the two hinge arms onto the brackets (BD347) using bolt, AN3-5, two washers, 106-00229713K58, and slide the bolt through the bracket and the hinge arm (BD347). Complete the installation by sliding two more washers, 106-00229713K58, onto the bolt followed by a castle nut, AN310-3, and a cotter pin, MS24665-132.
2. Use duct tape to temporarily hold the baggage door in position on the fuselage.
3. From inside the fuselage, align the hinge brackets to the baggage door by rotating the aluminum hinge brackets outward until they contact the inner surface of the baggage door.
4. Rough up the end of the hinge arm that attaches to the door and floc it to the door.
5. Attach the hinge arms to the baggage door with a 3-BID onto each side of the end of the arm. Extend the 3-BID about 3" (75 mm) onto the door and up about 3/4" (20 mm) onto the aluminum hinge arm.
6. Allow the 3-BID to cure.

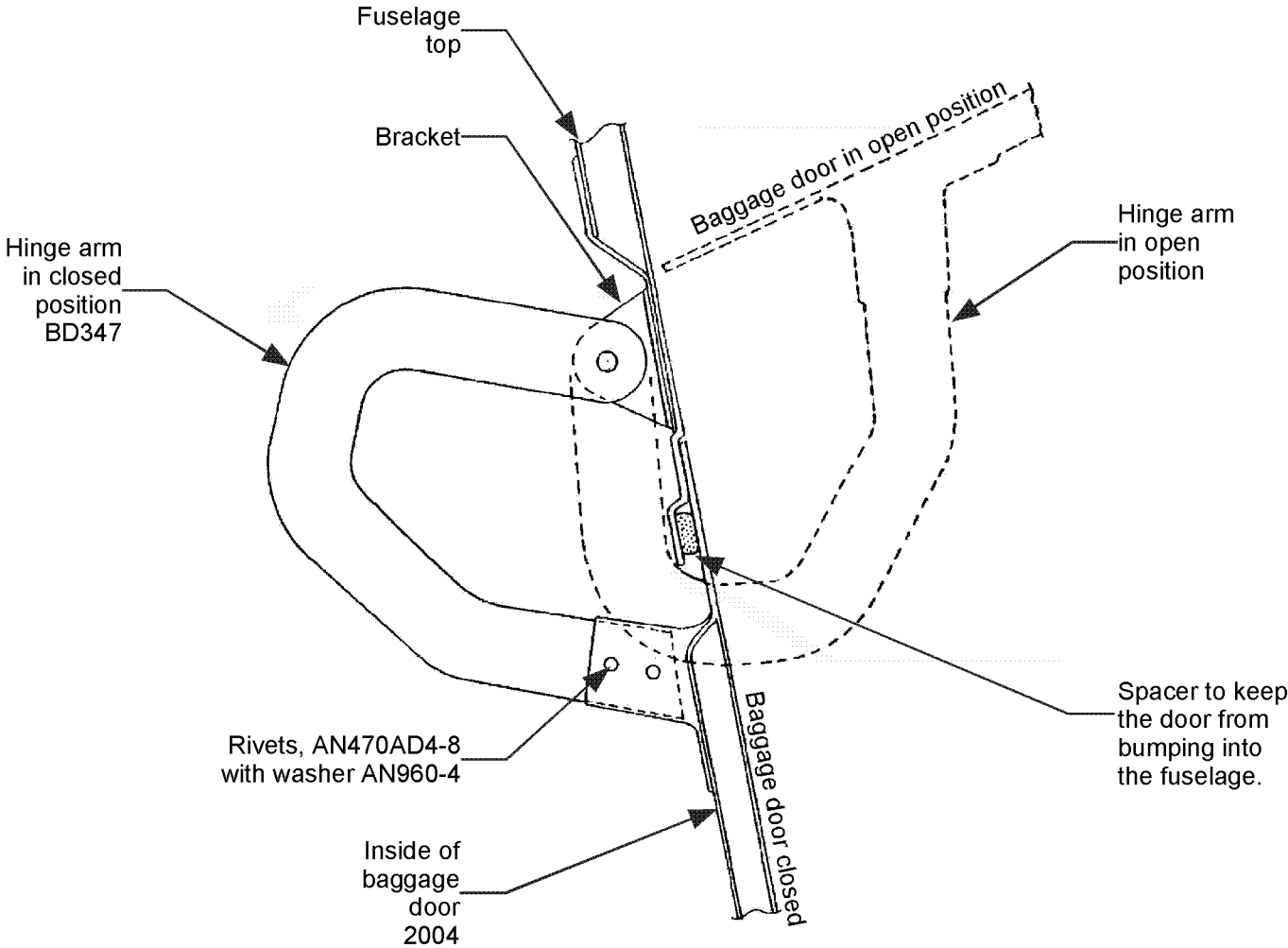
Steps after cure...

1. Remove the pivot bolts in the bracket and take the baggage door off, leaving the hinge brackets attached to the door.
 2. Drill out two holes through the end of the hinge arm and the BID around the it.
 3. Set two rivets, AN470AD4-8, into the holes to secure to the door. Place a washer, AN960-4, under each rivet end before squeezing it.
- This is a backup and will secure the hinge arms to the door.

This completes the hinge assembly. Tension on the pivot bolts, which compresses the cupped spring washers (106-00229713K58), will easily provide friction to hold the door open. But for now, set a little tension so the hinge pieces will stay wherever you rotate them to.

Note: The door should not be allowed to bump against the top fuselage when fully opened. Bond a spacer under the lip on the fuselage if necessary.

Figure 19.3.A.2 Hinge arm in closed and opened positions



19.3.B Installing the Baggage Door Locks

The baggage door locks double as the latches. They both pull the door snugly against the seal and lock it at the same time. Notice that there are two types of lock, DL-01 and DL-02. Use the DL-02 as the forward lock.

Steps...

1. Locate the proper position for the locks on the baggage door.
2. Remove the core so it can accept the 1/4" (6 mm) phenolic blocks which will mount the lock barrels.
3. Fabricate the mounting blocks for the lock barrels from the phenolic (BD346-01) pieces provided.
These 1/4" (6 mm) phenolic blocks will serve as the primary attachment for the locks.
4. Set two "studs" (MS24694-S7) into each mounting plate using the standard method of potting machine screws in place with epoxy/flox.
With this approach, the locks can be nearly flush fitted and can be removed from the inside as well.

Figure 19.3.B.1 Baggage door lock assembly

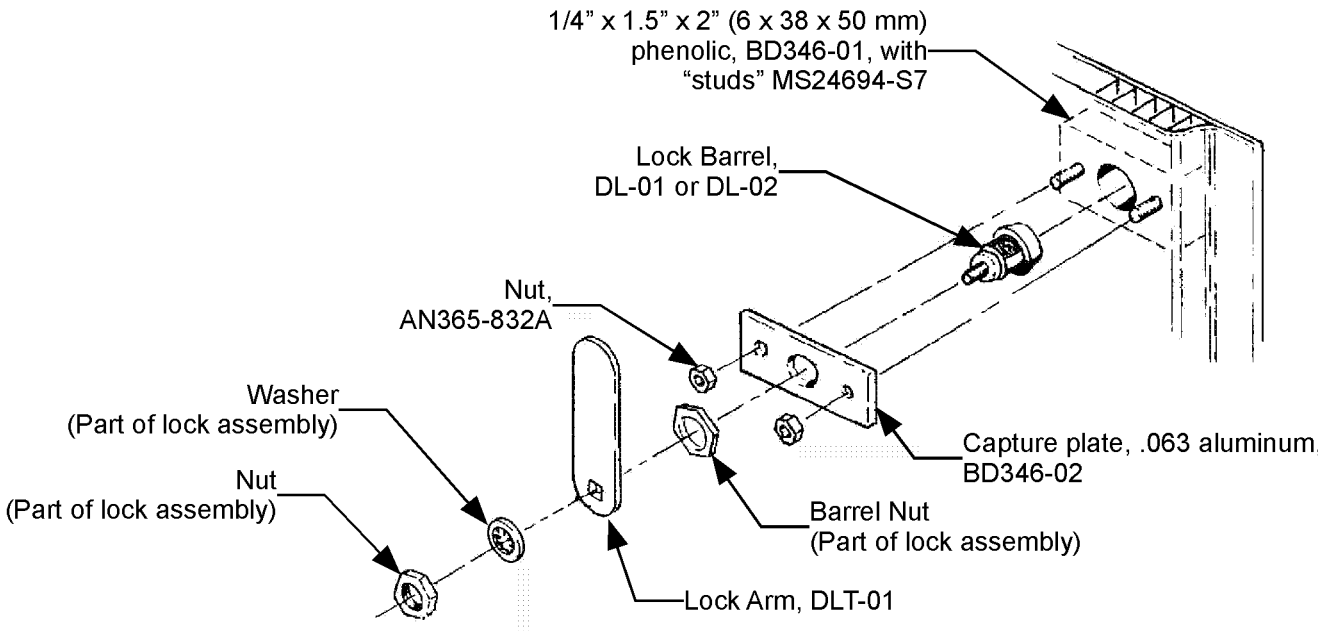
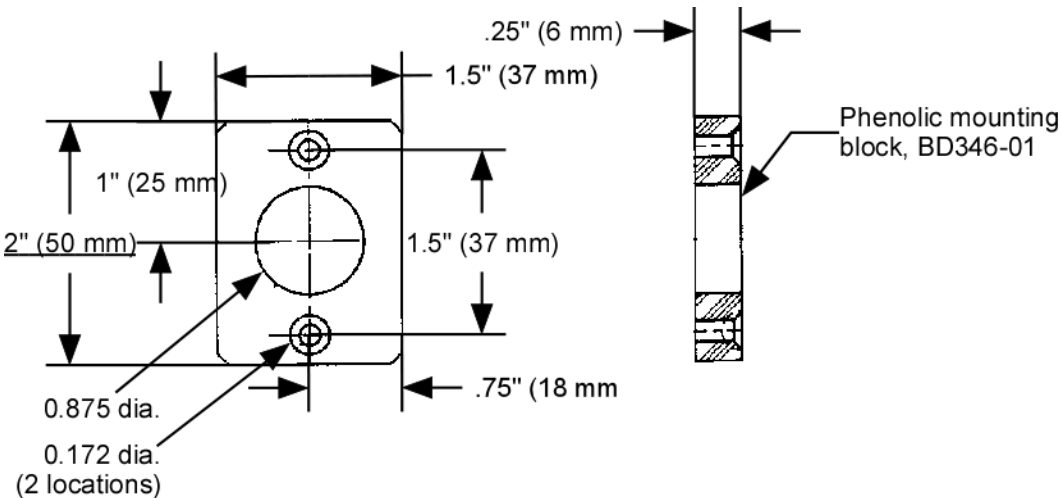


Figure 19.3.B.2 Phenolic mounting block specifications for baggage door lock



5. Make two capture plates for the locks from the aluminum pieces (BD346-02) provided.

These are simple aluminum plates with three holes. The center hole is made to incorporate two flats which will prevent the lock barrel from rotating.

6. First drill a 5/8" hole and open the two ends as shown in Figure 19.3.B.3. Use the barrel to trial fit the hole as you enlarge it.

Note the flat side orientation:

- Orient the flat sides vertically if you want the locks to both open in a counter clockwise rotation.
- Orient the flat sides horizontally if you want the locks to both open with a clockwise rotation of the key.

7. Next drill the two small holes to align with the phenolic "studs" which were inserted into the phenolic block.

8. Locate and drill for the lock points in the baggage door skin. Refer to Figure 19.3.B.4.

9. Clean the core away so that the mounting block fits into position against the outer skin of the baggage door.

10. Install the phenolic mounting blocks into the door skin. Center the hole in the phenolic with the hole in the door skin. Use epoxy/flox to secure the phenolic pieces.

11. Using micro, set the lock barrel (DL-01 or DL-02) in position. Cover the lock barrel end with either release tape or wax it. Then pack some micro around the perimeter of the hole and press the lock barrel into the mounting block and in final position in the door.

This will create a micro wedge around the perimeter of the phenolic block and create a custom fit for the tapered portion of the lock barrel.

Note: You'll notice that one lock (DL-01) allows you to remove the key in both positions while the other lock (DL-02) only allows for key removal when locked shut. The DL-02 lock should be placed in the forward position. This way you will be less likely to take off with the baggage door fully unlocked since the key would be stuck in the forward lock unless it is locked.

Figure 19.3.B.3 Lock aluminum capture plate

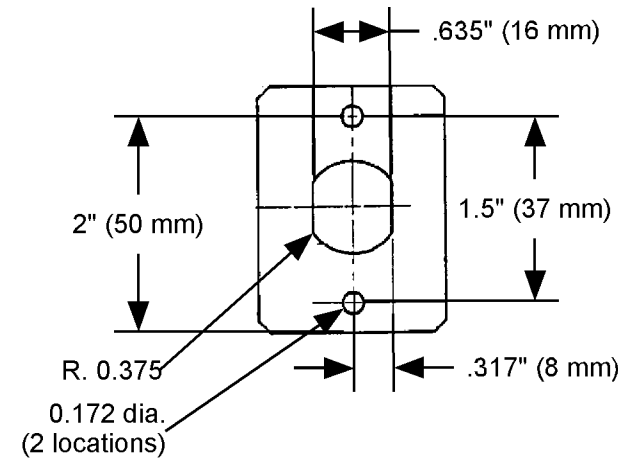
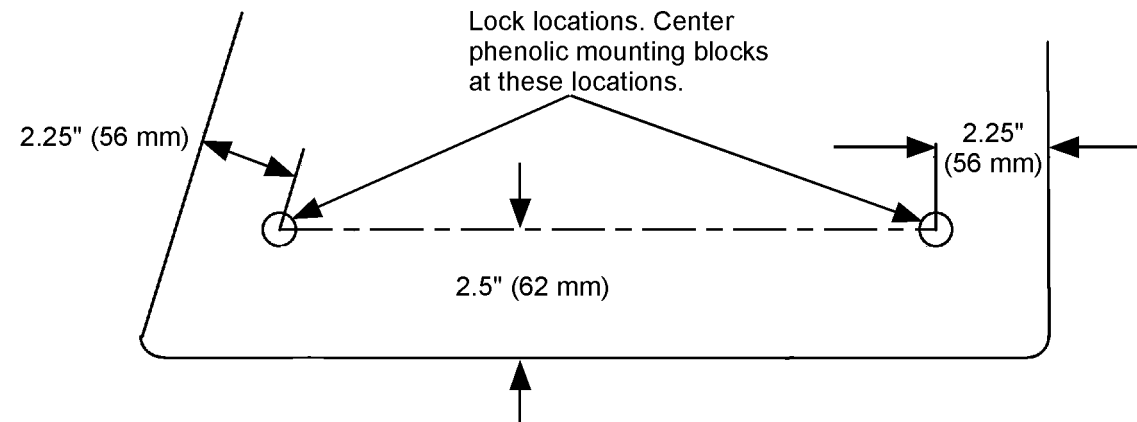


Figure 19.3.B.4 Baggage door lock locations



12. Install the aluminum capture plate (BD346-02). This holds the lock barrel in position.
13. Attach the DLT-01 lock arm. Some models of locks require a small bushing be pressed into the arm, if required, press this square type bushing into position in the arm and then attach the arm to the lock barrel.
14. Using a wedge of Orkot, fabricate and position the lock striker.
It is positioned along the side of the fuselage joggle and made to align with the lock arm. The angled side allows the lock and lock arm to snug up when closed.
15. Close the baggage door and rotate the lock to the closed position and measure the distance (or thickness) required for the striker. It should be about 5/8 to 3/4" (15 to 20 mm) but will vary based on your installation.
16. Make your striker pieces approximately like that illustrated in Figure 19.3.B.5 so the angled side provides a smooth engagement of the lock arm and enables it to snug the baggage door up against the fuselage. Use the Orkot pieces (BD346-03) to fabricate the strikers.
17. Epoxy the striker in position and add a 3-BID tape along the side (away from the door) lapping about 1" onto the fuselage. Be sure to scuff up the Orkot with coarse 40-grit sandpaper prior to bonding & taping.

If adjustments are required, you can always sand the Orkot strikers down a little to relax the fit but make sure you finish off with a fine 360-grit to keep it smooth. You can also bend the lock arm slightly to tighten or relax the fit.

Figure 19.3.B.5 Orkot block

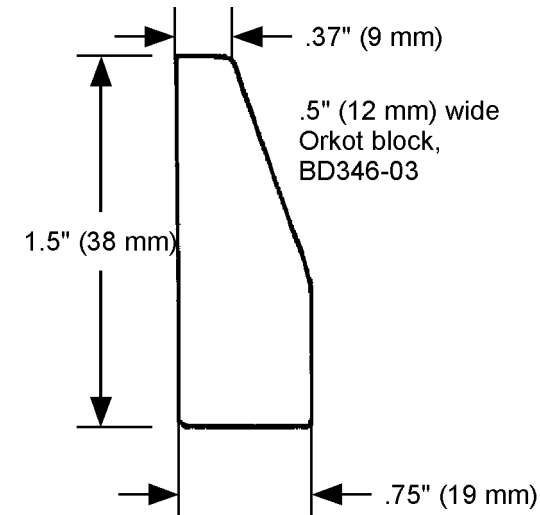
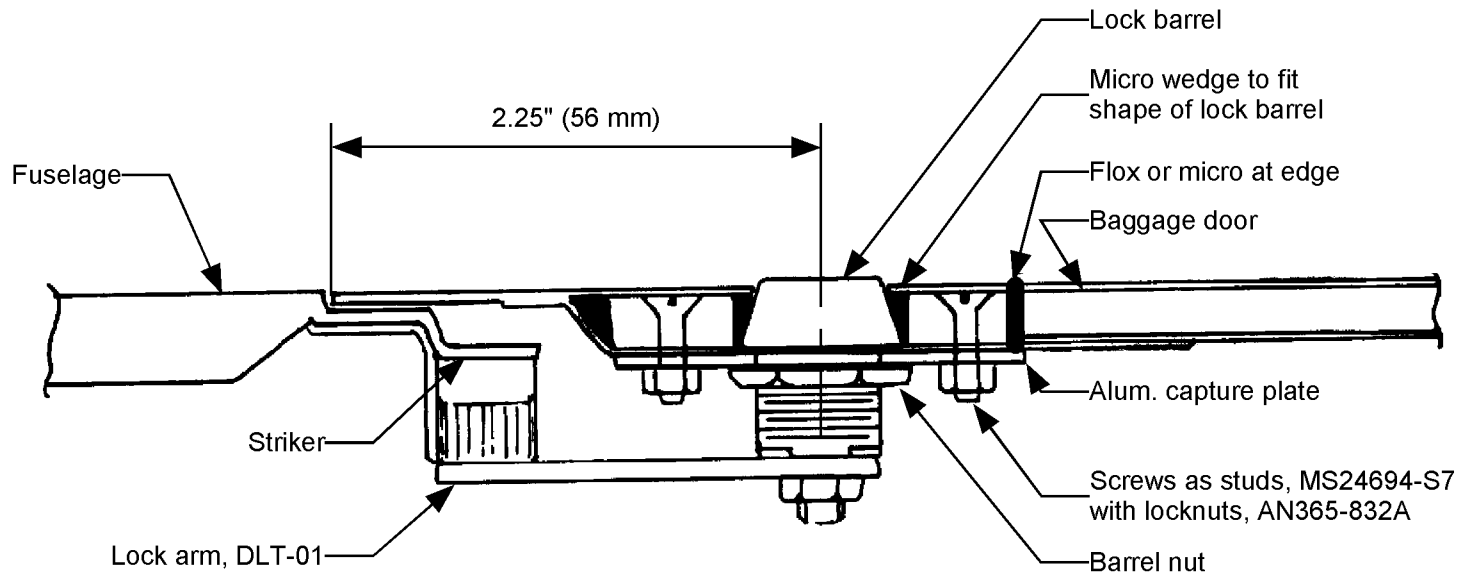


Figure 19.3.B.6 Baggage door strikers



19.3.C Installing the Weather Seal

As a final door seal, the deeper portion of the joggle at the baggage door can be utilized for installation of a typical sponge type seal. The provided seal material 3/8" wide by 3/16" thick (9 mm wide by 5 mm thick) (BD346-04). It takes approximately 7' (2.2 m) per baggage door.

Figure 19.3.C.1 Weather seal around the baggage door

