Archer

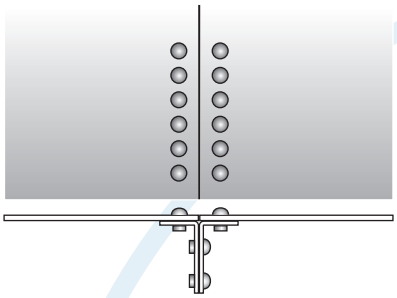
RESIN RIVETS FOR MODEL AIRCRAFT

A MODELER'S GUIDE TO WORKING WITH ARCHER RESIN RIVETS

REVISED EDITION, MAY, 2020

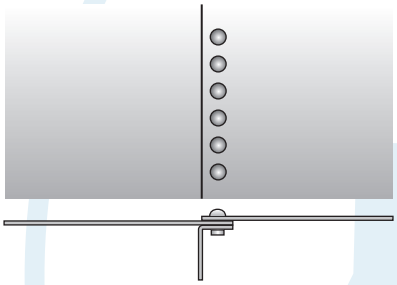
AIRCRAFT RIVETING BASICS FOR MODEL BUILDERS

INTRODUCTION: During my four years in the USAF I was an Airframe Repairman working on several types of military and civilian aircraft in including C47's, F4 Phantoms, F104's, B-52's, KC-135's and SR-71's. As an aircraft model builder I've seen some glaring oversights in the way modern kits are "riveted" so I'm providing a basic overview of typical ways aircraft are assembled. This is not meant to be a doctoral thesis on aircraft assembly, but just a general guide for correcting model aircraft riveting.



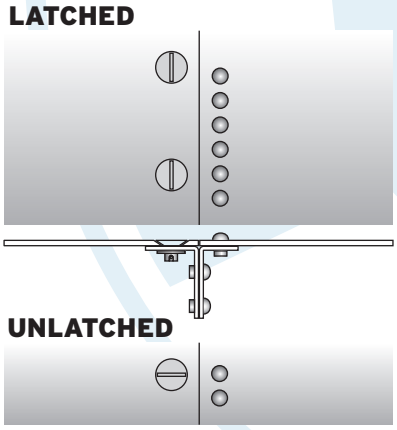
BUTT JOINT

Most panels on aircraft are sheets of aluminum butted together. In this configuration there is a row of rivets on both sides of the seam fastening the panels to the structural member. Note that the rivets are close to the edge.



LAP JOINT

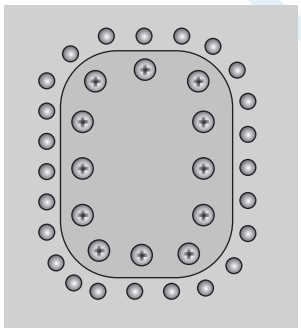
In some rare instances aircraft skin panels overlap with the trailing edge of forward panel overlapping the leading edge of the trailing panel. In this case a single row of rivets fastens both skin panels to the structural member. Note again that the rivets are close to the edge.

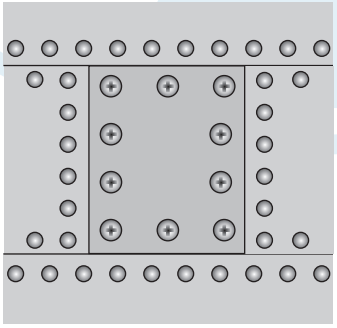


PANELS and DZUS FASTENERS

Panels that are frequently removed to allow access to engines, etc. are held in place by quick release fasteners. Depending on the type of aircraft, different types of quick release fasteners are used. In most WWII aircraft Dzus fasteners are common.

Note: The top illustration shows the position of the slot parallel to the panel edge indicating the fastener is latched. The bottom illustration shows the position perpendicular to the panel edge indicating the fastener is not latched.

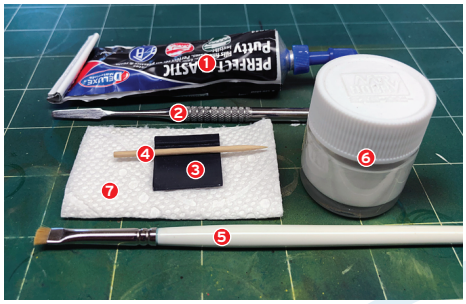




ACCESS PANEL BASICS

If an access panel is within a skin panel the corners are radiused to prevent stress points and cracking. Panels that are bounded on all sides by skin panels are squared off.

How to fill recessed kit rivets.



Basic tools you'll need:

1: Deluxe Materials brand Perfect Plastic Putty, or any other **water based** filler for plastic models.

2: A mixing stick to thin Perfect Plastic Putty with water since it is too thick as it comes from the tube . The filler should be roughly the consistency of tooth paste.

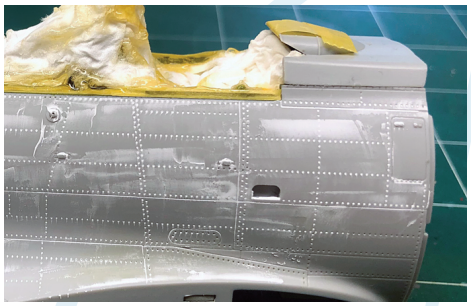
3: Small piece of a rubber squeegee. You can buy one from Amazon, or a home improvement store for a few dollars. Break the holder to remove the rubber part, then cut off a few pieces of different widths. You can also use a piece of .010" plastic card stock, but it may not work as well.

4: A sharpened cocktail stick.

5: An old paint brush with bristles cut very short.

6: A small jar for storing thinned putty for future use. (Optional)

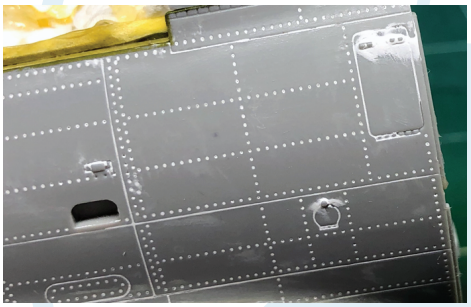
7: Paper towel



STEP 1

Begin by applying a small amount of filler either directly to your squeegee or to the area to be filled. Spread the filler over the rivets in a manner which forces the filler down into the rivet holes, but don't try to be too precise because any excess filler is easily removed as detailed below.

Any filler which had dried on the squeegee should be wiped clean with a damp paper towel.

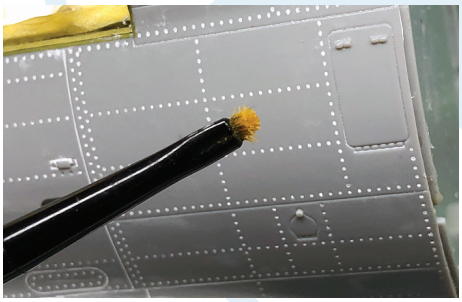


STEP 2

Allow the filler to dry completely. You can force dry with a hair dryer if you wish.

Using a slightly damp paper towel, **gently** begin cleaning away any excess filler. If the paper towel is too wet it will remove some of the filler in the rivet holes.

This photo is a good indication as to what you should accomplish in this step.

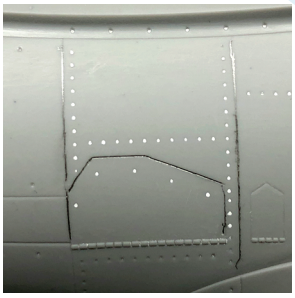


STEP 3

Using a sharpened cocktail stick scrape any filler from the panel lines. Any stubborn filler still in the panel lines can be removed with a cut down brush dampened with water.

Use the same brush to remove any filler around kit details such as hinges, latches, etc. Blot up any excess water.

Check your work carefully and touch up any areas you've missed.



STEP 4

Highlight the panel lines so you can see them as you apply the rivet decals.

You can either use a pencil sharpened to a chisel point now, or you can gloss coat the model and use a thin wash.

If you use a pencil, gloss coat and proceed to apply the rivet decals.

If you use the gloss coat/wash option there is no need to gloss coat a second time.

CLICK HERE TO WATCH THE VIDEO TUTORIAL ON BASIC RIVET DECAL APPLICATION

TIPS FOR APPLYING ARCHER RIVETS

TOOLS YOU'LL NEED

Top to bottom:

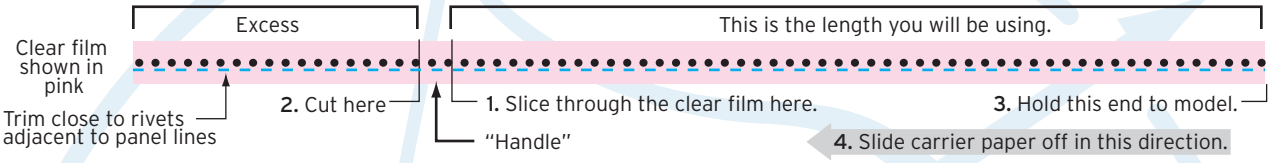
Self clamping tweezers

A scale/ruler. The one shown here is included with any Archer purchase.

Sharp hobby knife

Ball of "blue tac" or equivalent to keep parts from moving around during application.

Flat synthetic as shown and a #3 round sable brush (not shown). The flat synthetic is ideal for positioning and the sable brush for moisture control.



STEP 1: Cut a full strip of rivets from the sheet. Measure the length you will need and using a sharp hobby knife **slice** through the clear film at that point. **DO NOT cut all the way through.**

STEP 2: Count two rivets beyond the slice and **cut** there. The piece between the slice and the cut will act as a "handle".

STEP 3: Using clamping tweezers, hold the strip by the "handle" and dip it in water for about 10 seconds. After about 20 more seconds remove moisture until you see the texture of the carrier paper. Excess moisture impedes application.

STEP 4: Prepare the surface with Mr. Mark Setter then roughly position the rivets, hold with a damp sable brush, slide the rivet decal off the end and hold while pulling the carrier paper away lengthwise.

STEP 5: Use a flat synthetic brush to fine tune into position. Always pull on the rivet decal lengthwise rather than trying to push it to avoid kinking it. A cocktail stick is a good tool for this. Carefully follow the kit rivet lines to avoid making them look crooked. Being off even half a rivet diameter is too much. Be patient.

STEP 6: Apply liberal amounts of setting solution. This is an absolute must and more is better than less. In our testing we've found that Micro Sol, Mr. Mark Softer and Solvaset work well.

APPLY THE RIVETS BEFORE ASSEMBLY

It's a lot easier to work with the rivet decals if you apply them to the kit parts before assembly. We have learned that a gloss coat and setting solutions will bond the rivets strongly enough to tape over them without pulling them off the model.

STARTING THE APPLICATION

Apply the longest runs of rivets first then fill in the short runs between them. Do not overlap. If this is your first time doing this, start on the areas least likely to be seen until you get the hang of applying them.

Trim very close to the rivets that go next to a panel line, otherwise the clear film will catch on the edge of the panel line making close adjustments difficult.

When adjusting long runs, sight down the row from the end to assure the run is straight. Use a flat synthetic shader brush to gently correct any deviation.

When you start to apply the rivet decals and there is too much water on the underside of the paper there will be a tendency for the rivet decal to fold over onto the bottom of the paper. If this happens pull the rivet decal back over until the folded over portion is back on top. It's nearly impossible to fix a folded strip of rivet decals after they are on the kit.

SETTING SOLUTIONS and GLOSS COAT

A gloss coat, along with a prep and setting solution is ideal for maximum adhesion. We recommend Mr. Mark Setter under the rivets due to it's adhesive properties. Note that this can be somewhat problematic because it softens the clear film and can make adjusting the rivets tricky if you don't work quickly.

Always follow with an liberal amount of a setting solution after the decals have dried. Ignore any wrinkling when doing this - once it dries the decal film will settle down.

MICROBRUSH® APPLICATOR

Use a MicroBrush® brand applicator. Generic brand brushes detach from the handle when using the lacquer based filler.

WHY USE A #3 ROUND SABLE BRUSH?

Sable brushes are very soft and absorbant much better than synthetic brushes. This is very important because decals are attracted to water making precise positioning difficult. With a little experience you'll know how much moisture is ideal and a sable brush makes it much easier to precisely control moisture either when adding or removing it.