

Hints For Building Vacu-formed Plastic Models

Start by outlining the plastic parts with a **sharp-pointed felt-tip permanent marker pen** with the pen held at a 45° angle to the flat surface of the plastic sheet and with the mark being made in the angle where the "kit part" and the surplus "non-part" plastic meet.

Next, most modelers use a # 11 Exacto blade drawn backwards (and held at a 45° angle to the flat surface of the plastic sheet) around the model parts to make a scribed line. Then they snap off the unwanted plastic from around the part--it may take a couple of times scribing to get the plastic to snap off easily. Any mistakes can usually be repaired with model putty or gap-filling super glue.

Once the parts have been cut out, the "45° angle raw edge" of the plastic part must be removed by filing/sanding. Sand/file the parts to make a smooth-perfectly-mating-edge with it's mirror twin. In the sanding/filing process, I use a fine-cut double-bastard file (a mill cut file is ok but the other is faster to get down to the sanding process). Start sanding just prior to filing off all of the "45° raw edge"--to sand, place a large sheet of sandpaper on a flat surface like a piece of glass and move the plastic part in a gentle circular rubbing motion over the sandpaper (rubber cement will help hold the sandpaper in place). Move from 150 grit to about 400 grit sandpaper (I usually stop at 200 grit). You will **know when to stop** the filing/sanding process when the sanded edge reaches the remaining permanent marker pen mark-line.

Occasionally, after a part is removed from the plastic sheet, "tension" created during the vacuform molding process will cause the part to bow slightly--(mainly fuselage halves!)--if this causes problems with the joining process, gently cut the part edges in several places & deep enough to allow the part to lie flat--then using scrap material, glue a reinforcement piece inside the fuselage to correct the warp--when the glue has dried completely, fill the cut areas with putty/gap-filling cyano-acrylic CA (I use gap-filling CA glue with an "accelerator" spray to dry the CA instantly). Next, sand the "repaired" areas smooth.

Wings, elevators, rudders, etc must be filed/sanded so that the edges form a natural contour--which means the trailing **inside edges** are filed/sanded to a mighty sharp angle with a mighty thin sharp edge. If there is a small gap every now & then, fill it with gap-filling super-glue or model putty. There will be some imperfections on the plastic caused by the tiny holes in the model' s mold through which the vacuum is created when the model is made--these and any other imperfections must be sanded off/filled with putty/gap-filling CA glue as needed.

It will probably help to glue small tabs of scrap plastic on alternating sides of the edges of the two fuselage halves (inside the fuselage halves) to give the glue more holding surface. Often, some modelers use expanding plastic foam to fill the cavities of the fuselage halves (allow the expanded foam to cure/harden completely before filing/sanding the foam to enable the parts to mate properly). This really gives rigidity to large model fuselages--test your foam on a small piece of plastic to see if they' re compatible before filling the fuselage cavities!

Keep the vertical and horizontal axes of your model in mind and do not allow the model to become warped/skewed/twisted during the joining/building process. This is especially essential during the joining of wings/horizontal stabilizers to the fuselage, mounting landing gear and engine nacelles, etc. Warped/miss-aligned parts should be carefully broken/cut apart, re-aligned & re-joined. If your model does not include wing "spars", it will strengthen the wing/fuselage joint if a "spar" is crafted from scrap material--it should fit into & be glued to the fuselage body, have the correct dihedral for the wing joint & fit snugly inside the upper/lower wing halves. Small wood dowels work fine as spars for joining the horizontal stabilizer. In gluing the wing/horizontal stabilizer halves to the "spar", a "jig" is useful to maintain correct alignment during the joining process.

The vacuform process sometimes makes the thickness of the plastic for deep-cavity parts become very thin and **susceptible to being crushed** (prop spinners, crew seats, etc). If this has happened, carefully push out the crushed part from the back-side. If possible, fill it with model putty to give it rigidity and fill/repair/sand any imperfections caused by the crushing. Carefully cut out vacu-formed plastic detail parts--such as props, spinners, wheels, etc., and fill the cavities with model putty, white glue, or CA gap-filling glue. Allow the glue to dry completely before lightly re-sanding the mating edges and gluing them together with CA or liquid styrene plastic glue applied with a small sharp-pointed paint brush. It is helpful to make a simple jig to hold/align prop & spinner parts, landing gear parts, etc. during the "build-up" process.

I don' t use the tube-type plastic model glue because it is hard to control the amount of glue applied and often makes smears.I use only CA & liquid styrene plastic glue--liquid plastic glue melts the plastic slightly and welds the mating edges together. CA glue, when used with an "accelerator" spray, takes only seconds to harden--this is particularly useful when using "gap-filling" CA to fill imperfections/mistakes and make fillets, etc. that require sanding, or just to make the "joining" process go faster

The rest is just like building an injection molded model!! Before painting, if your model doesn' t have engraved panel lines, control surface lines, etc., carefully scribe these lines on the wings and fuselage surfaces or after painting the model, draw them on the model using a sharp pointed black-lead pencil (Wings Models already have these details expertly molded in place!). On tricycle landing-gear models, don' t forget to put some weight in the nose prior to gluing the fuselage halves so the model will sit correctly on it's landing gear--this saves cutting a hole to insert the weight and then repairing the hole! Hope this helps you to get started.

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