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APOGEE PEAK OF FLIGHT NEWSLETTER

Alternative Method of Attaching Vac Form Wraps

By Tim Van Milligan

I've seen a few posts on the internet about people ruining their wraps. In those posts, they are asking other modelers for advice on how to attach the thin sheets to the tube without messing them up. That is why I'm writing this article, and why I'm adding a new video to the Saturn instruction CD-ROM.

In the new video, you'll see an alternative method of attaching the vacuum form wraps to your rocket. I'm adding this extra segment to the instructions because many people are still applying too much glue to the rocket and are damaging their wraps.

This method is much safer on the vacuum form wraps, but takes significantly more effort, and it will cost you a little more in extra materials.

Unfortunately, many of the helpful people on the internet have suggested using 3M's Spray 77 adhesive on the wraps -- after all, this is what Estes recommends on their Saturn V kit. But I don't recommend this. First, too much of the spray adhesive on the wraps is the same as too much CyA glue -- They'll melt.

Second, despite what the can says, the 3M 77 is not permanent over long periods of time. Eventually, the edges of your wraps will come unglued. I've seen wraps that have come completely off the rocket. This softening happens even quicker if you put your rocket in the sunlight where it can warm up and soften the rubbery adhesive.

The "alternative" method on the new video will show you how to use double-sided tape to affix the wraps to the rocket. But you have to use high quality double-sided tape, because you don't want it to separate later.

I recommend the Scotch brand of tape by the 3M corporation. They have a special artist's tape used for mounting photographs that goes by the number "463" (they prefer to use numbers instead of names). You'll have to special order it from an artist's supply store. It's not cheap, costing about $16 for 60 yards of tape. But it is worth it.

Note: Apogee Components does not carry this brand of tape.

Because the wraps are sized to exactly fit around the circumference of the tube, the added thickness of the tape will make them a little short. The ends may not exactly come together.

Fortunately, we did our best with the design of the wraps to hide the end edges where they are not seen. For example, we tried to put them under tunnels or in areas where they are camouflaged better -- such as where one side is painted white, and the other side is painted black. This makes it hard to see the seam.

But there is something you can do to make the edges meet better. That is to prepare the wraps by sanding the backs of them. After cutting the wraps from the waste plastic, the edges may still (and usually do) hold the wrap a bit higher on the tube than they should... the stringer valleys may not touch the tube for a snug fit.

Using one of the 2" x 11" extruded aluminum sander bars (available from Great Planes) on the backside of the wraps can actually cause the wrap to lie flatter on the tube and in doing so, the "gap" on the shorter wrap ends is significantly narrowed. You should use a fine grit sandpaper, such as 400 grit for this operation. Hold the wrap in your hands and support the edges. Then push the sanding block from the middle of the part toward the edge. You want to remove the lip that hangs down on the edge of the wrap. You can also lightly sand the middle of the wrap to smooth it down a little bit.

After sanding, wash the wrap in water to remove the dust from the bottom of the wrap. If you don't, the tape won't stick as well. Then allow it to dry. If you've painted or sanded the

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body tube, you'll also want to wash it to remove any dust. Having clean surfaces is definitely a "must" in this technique.

The Scotch brand of double-stick tape is pretty easy to apply. You'll need to cover the entire back surface of the part for the best results. But you'll find it does go down easily on the wrap, and the plastic backing comes off easily when you get to that part.

Work from one side toward the other, so that you can control the edges of the tape better. Anything that hangs over the edge will be trimmed off with a sharp hobby knife.

Laying the wrap down on the tube is now a little more tricky. If you stick it down wrong, it is going to be difficult to pry up. So expose the tape on one edge (say about 1/8 inch) of the wrap by removing the plastic backing. Carefully lay this on the line you have previously drawn on the tube that helps position the wraps location.

Then test fit the wrap around the tube to make sure the edges will come together. Because of the thickness of the plastic backing, the edges may not touch, but at least you'll be able to see if the wrap will lay down straight. If not, reposition it before the adhesive on the glue really grasps tight.

After you know you have the wrap positioned so it will lay down straight, you can remove the plastic backing from the tape, and carefully lay the wrap down on the tube. After the wrap has been positioned, you can press it down more firmly with your fingers. You'll want to pay particular attention to the edges of the wrap to make sure that they are securely attached.

After a few minutes, you'll find that the tape has really grabbed, and it will become extremely difficult to pry up the edges. This is good.

This method is a bit more time consuming, but if you have trouble with the glue technique, I'd recommend that you give this a try. But be sure to use high quality tape, or it may come apart later.

This method is what really good modelers, like John Pursley use. He says that he has never seen a wrap come up.

About the Author:

Tim Van Milligan is the owner of Apogee Components (http://www.apogeerockets.com) and the curator of the rocketry education web site: http://www.apogeerockets.com/education. He is also the author of the books: "*Model Rocket Design and Construction*," "*69 Simple Science Fair Projects with Model Rockets: Aeronautics*" and publisher of the FREE e-zine newsletter about model rockets. You can subscribe to the e-zine at the Apogee Components web site, or sending an email to: ezine@apogeerockets.com with "SUBSCRIBE" as the subject line of the message.

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