

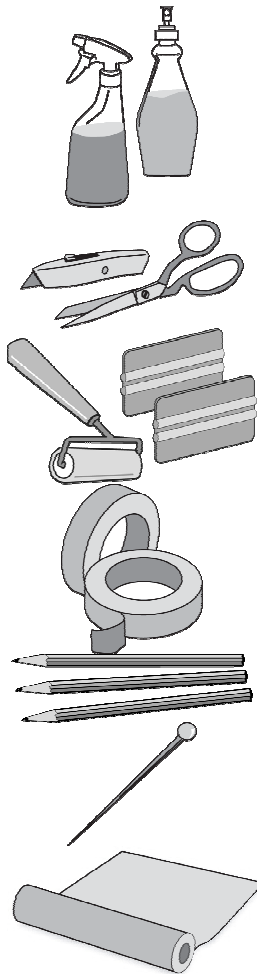
## Instructions for Applying Decals

### READ FIRST

At Higher Graphics we want your decal application to result in no frustration, no waste, and your complete satisfaction. These instructions contain all the tricks and tips you need to succeed. Review them before applying your decals to make it an easier job.

### Equipment You Need

Gather the equipment you will need:



- A spray bottle with a window cleaner such as Windex.  
You will wet the adhesive of the decal with window cleaner in the course of applying it. You can use the spray bottle the window cleaner comes in, or any spray bottle that sprays a fine mist, such as a pump-action hair spray bottle.
- A sharp knife or scissors
- A squeegee or rubber roller (brayer)
- Painter's masking tape (required for large decals)
- A water-soluble marker (required for large decals)
- A pin for releasing air from bubbles
- Waxed paper (required for small decals applied with a squeegee)

## Anatomy of a Decal

The following terms are used in this document:

- The backing protects the adhesive until the decal is applied.
- Adhesive fastens the decal to the target surface.
- The decal consists of one or more layers of vinyl.
- The transfer film, present in all larger decals, allows you to apply pressure to the decal without damaging it.



**Backing   Adhesive   Decal   Transfer Film**

## Preparation

- Newly painted surfaces must be allowed to dry prior to decal application.
- Clean the surface it even if it appears clean. **THIS STEP IS CRITICAL.**  
Use a gentle solvent such as denatured alcohol or rubbing alcohol. Test the solvent in a small and inconspicuous area for damage to surface. Clean off all oil, grease, dirt, polish, and stains. For interior applications, make sure that all Armor All or any other protectant has been completely removed from the surface.
- Ensure that the surface is at room temperature, 60° to 90° F (16° to 32° C). This helps the decal to conform to the surface shape. Decals can be gently molded around rivets and laps by using a hair dryer to further warm and soften the decal.
- Anyone who is going to handle the decals should thoroughly wash and dry their hands. Even hands that look clean may contain natural skin oils and other contaminants that could affect the decal's bond.

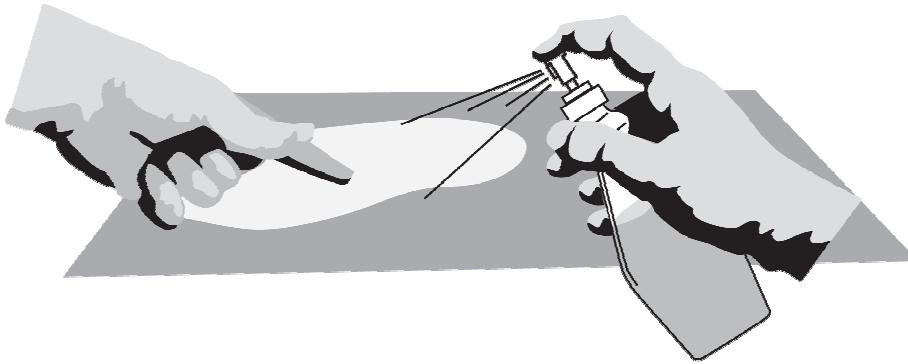
## Applying the Decal

Procedures vary depending on the size of the decal. The smallest decals often come without transfer film (the layer in front of the decal) and can be slid into position. Decals that are a little larger may or may not have transfer film and generally need to be close to the proper position before application. The largest decals always have transfer film and must be positioned perfectly before application.

### Small Decals

- 1) Wash and dry your hands thoroughly.
- 2) Remove the protective backing from the decal. If the decal is on a page of decals, remove the decal from the page.

- 3) Lightly spray the back adhesive surface with window cleaner. This is best accomplished while the decal is resting on a flat surface. Spread the window cleaner around on the surface, if necessary, with a clean fingertip. Make sure there is a thin film of window cleaner over the entire surface of the decal.



- 4) Evenly moisten the target surface the same way.
- 5) Lay the decal on the target surface and slide it into its proper position.
- 6) Carefully press out the moisture or air trapped under the decal and transfer film with your fingers, a roller, or a squeegee. If you use a squeegee to do this, use a very light touch or put wax paper or backing paper (slick surface toward decal) over the decal. Pressing hard with the squeegee can cause the decal to catch and move, bunch or stretch. In any case, be sure to hold the decal in place while removing the moisture and bubbles.

If the decal has adhered to the surface and air bubbles cannot be moved, then they can be removed with a pinprick. Prick the edge of the bubble and press toward the pinhole.



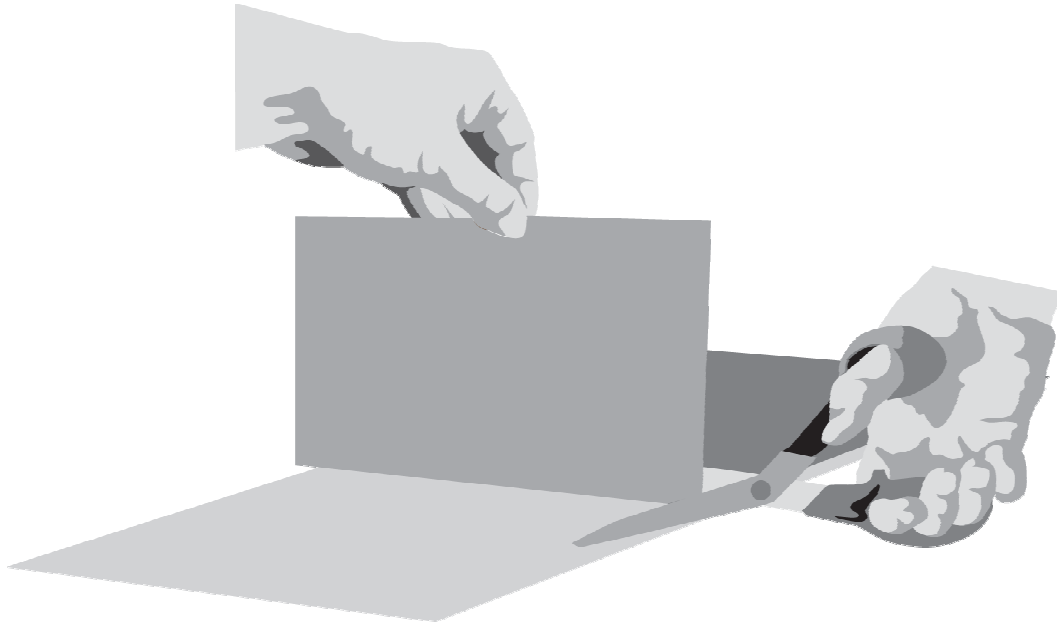


You can also get bubbles of window cleaner trapped under the decals. Generally these can easily be pressed out with fingers or a roller. But if the decal has adhered and you cannot remove a bubble easily, it is best to allow the bubble to dry on its own. This may take several days and can be accelerated by heating.

- 7) In a few minutes, after the window cleaner has dried, press the decal into place to lock in the adhesive. You can use a squeegee by putting wax paper or backing paper (with the slick surface toward decal) over the decal while pressing with the squeegee. If you use a roller, you can press on the decal directly.

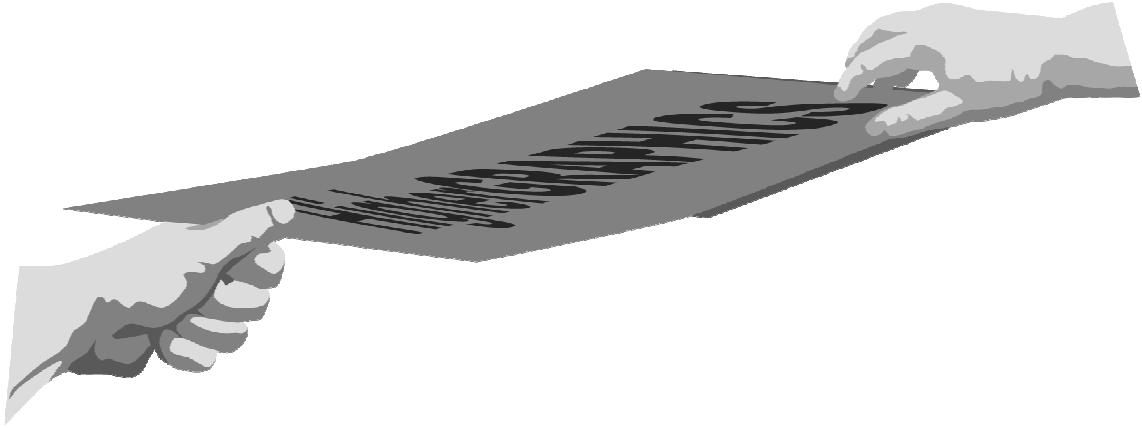
## **Medium-Sized Decals**

- 1) Wash and dry your hands thoroughly.
- 2) If the decal is on a page of decals, separate it from the other decals by carefully cutting it out of the page.
- 3) Separate one-quarter to one-half of the decal from its backing. Trim or fold back the separated backing.



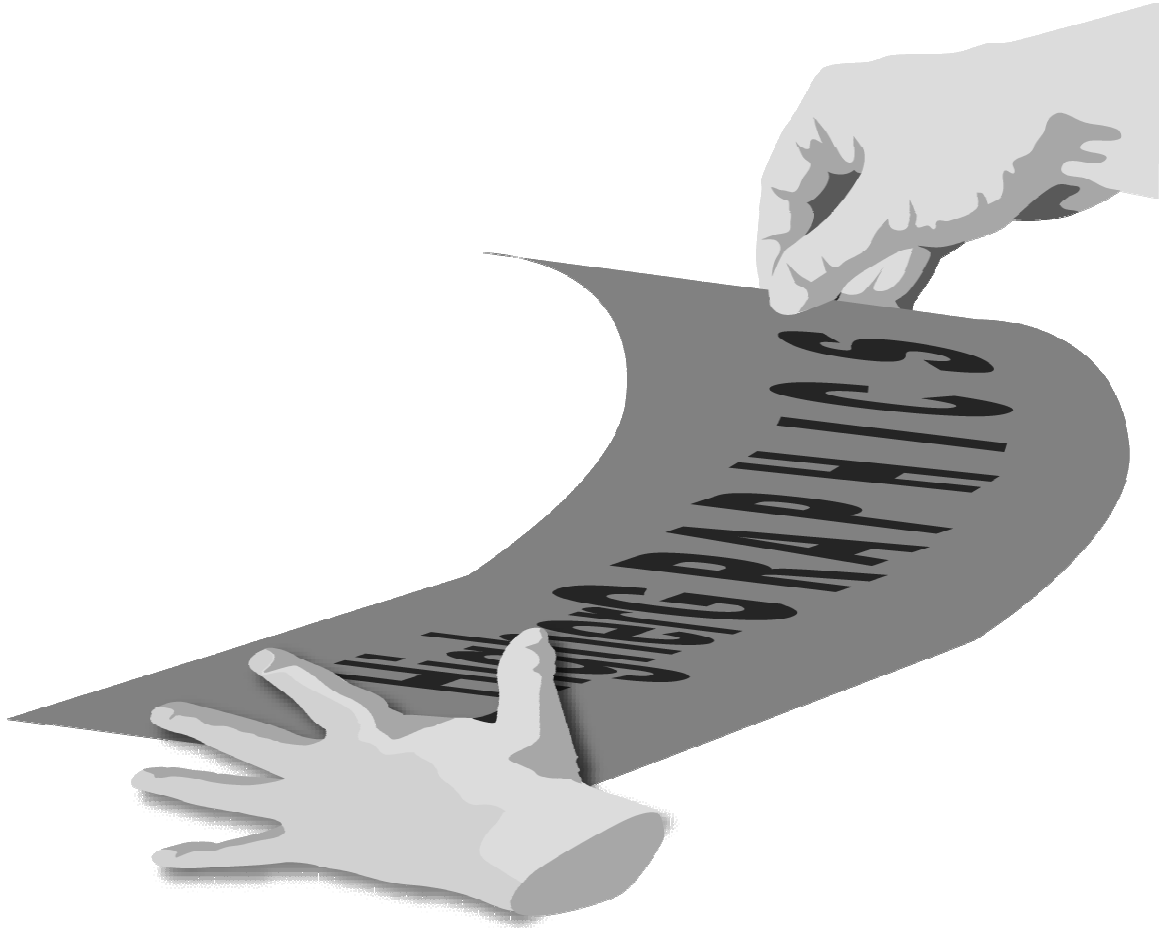
- 4) Spray window cleaner on the exposed adhesive surface of the decal. Spread the window cleaner around on the surface, if necessary, with clean fingertips. Make sure there is a thin film of window cleaner over the entire surface of the exposed adhesive.
- 5) Evenly moisten the target surface the same way.

- 6) Put the decal into position by using the backing to slide the decal around while keeping the exposed adhesive from touching the surface. When the decal is in the desired position, press the exposed portion of the decal against the surface. This helps to anchor the decal in the proper position.



- 7) While holding the applied portion with one hand, fold the decal back and remove the rest of the backing. Spray the newly exposed surface of the decal with window cleaner. Spread the window cleaner around to get a thin film.
- 8) Evenly moisten the target surface the same way.

- 9) Lightly roll the decal against the surface starting from the applied end. Lightly rolling the decal into place will prevent air bubbles and will properly position the decal.



- 10) Clear any air bubbles before pressing the decal into place. Air bubbles can be removed if you have not locked in the adhesive with a squeegee or roller. Before pressing the decal into place, the air bubbles should be gently moved to the edge of the decal. If the decal has adhered and the air bubbles cannot be moved, then they can be removed with a pinprick. Prick the edge of the bubble and press toward the pinhole.



- 11) In a few minutes, after the window cleaner has dried, press the decal into place to lock in the adhesive. If the decal does not have transfer film and you are using a squeegee, you need to put wax paper or backing paper (with slick surface toward decal) over the decal while pressing with the squeegee. If you use a roller, you can press on the decal directly.

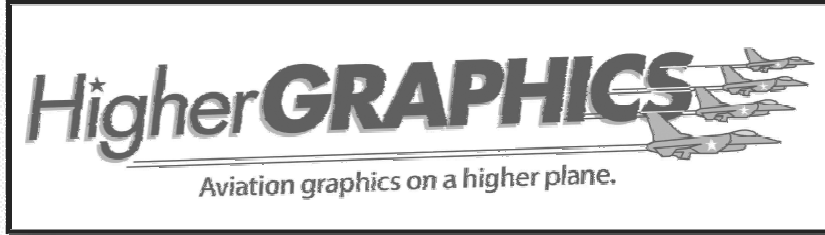
## Large Decals

A large decal requires more preparation than a smaller one because you cannot move a large decal after it has been applied.

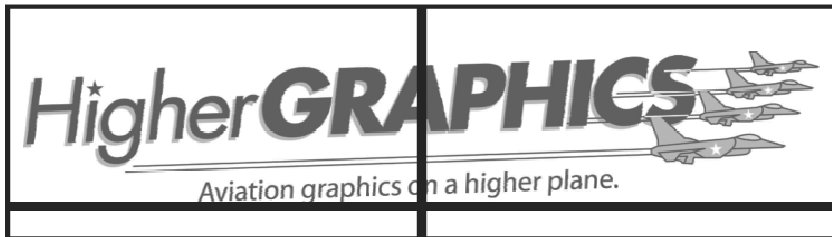
- 1) Wash and dry your hands thoroughly.
- 2) Test your water-soluble marker in an inconspicuous area to be sure the lines can be wiped away without leaving any residue.
- 3) Mark layout lines on the application surface and matching lines on the transfer film of the decal.

# Higher**GRAPHICS**

Aviation graphics on a higher plane.



*Example Decal*



*Layout lines when decal should be centered*



*Layout lines when decal should be aligned on the left.*



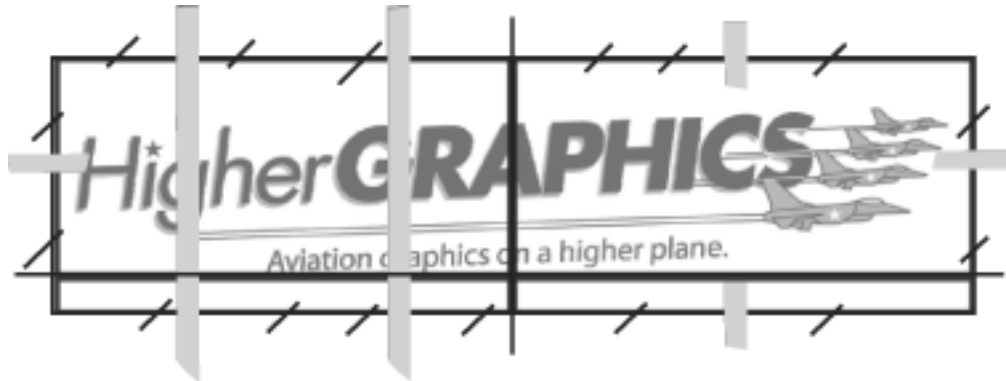
*Layout lines when decal should be aligned on the right.*

- 4) With the backing paper still on the decal, tape the decal into position by aligning the layout lines. Use painter's masking tape to fasten the decal to the application surface, aligning the layout lines on the decal with the lines on the application surface. In the application step you will fold the decal back at the center, so make sure that the decal

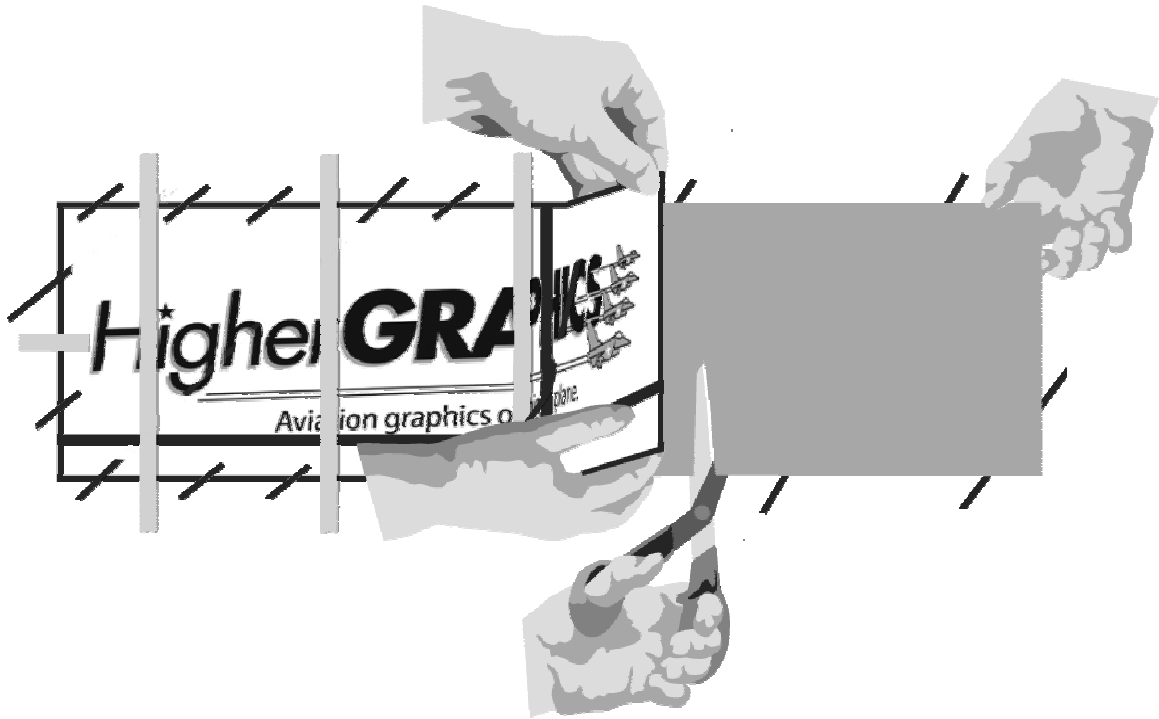
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is firmly taped down at the center and at the end opposite of the end you are folding back.

After the decal has been positioned and taped in place, use your water-soluble marker to make diagonal marks every few inches across the transfer film and the application surface. After the backing has been removed and the decal is being applied, you can place the decal precisely by lining up these marks.



- 5) Pull one end of the taped decal loose from the surface and gently fold it back at the center. If the decal is clear or translucent, make sure all layout lines that will be under the decal are removed. Do not wipe off any lines that are outside the area where the decal will be applied.
- 6) Verify that the target surface and your hands are clean.
- 7) Start from the end of the folded portion and peel the backing off the decal. Be very careful to not allow the adhesive surface of the decal to fold on itself. For very large decals, you might require an assistant to hold the decal while you peel off the backing. You can also temporarily tape the free end of the decal to hold it while you peel off the backing. After the decal has been peeled back to the center, cut the backing off near the fold.



- 8) Lightly spray the exposed adhesive surface of the decal with window cleaner. The moisture provides a small amount of movement of the decal for a few minutes, but most importantly it makes removing the air bubbles easier. For best results the entire surface must have a thin coating of solution. Spread it around on the adhesive surface with clean fingertips.
- 9) Evenly moisten the target surface the same way.
- 10) Apply the decal to the surface working from the center of the decal toward the end. Align the decal to the diagonal marks. Use a squeegee and diagonal strokes. Apply the squeegee from the center toward the end to remove air bubbles, folds, and moisture.
- 11) You can proceed with the application of the other end before allowing the decal to dry and adhere if you are careful to support the decal during the following steps. If you do not support the decal it can pull at the applied end causing it to move or twist. If you are in doubt, let the applied end dry.

When you are ready, pull the painter's tape off the other end and fold that end back. As before, make sure all the layout lines are removed from under the area where the decal will be applied.

Peel off the last part of the backing.

Lightly spray the adhesive surface with window cleaner and spread it around so that



the entire surface is wet. Evenly moisten the target surface the same way.

As before, apply the decal working from the center toward the end, aligning with your diagonal marks. Apply the squeegee to remove air bubbles, folds, and moisture.

- 12) Let the decal dry before you remove the front transfer film. Once the decal has adhered the transfer film can be removed safely.
- 13) Spray the surface of paper transfer film with water or window cleaner. Wait a few minutes and the adhesive on the transfer film will weaken and the film will be easier to remove. (This trick does not work on transparent vinyl transfer film.)
- 14) **Remove the transfer film by pulling it parallel to the decal.** The worst way to remove the film is to pull perpendicular to the decal. This can result in pulling the decal off the surface. Instead, fold it back and pull it back along the surface of the decal to minimize the pull on the decal itself.



## Finishing Up

- 1) For text narrower than 0.5 in (1.3 cm) it is a good idea to put a protective clear coat over the lettering.
- 2) Stand back and admire your work. These procedures will help insure that your decal can be enjoyed for many years.