

# Instructional Bulletin

**Converting Tips For Sign Films**  
**Instructional Bulletin #2.10 (Revision 3)**  
**Dated: 10/19/01**

To assist you in the successful processing of Avery's sign maker films on computer sign cutting equipment, the following tips are provided:

## 1.0 Cutting

- Determining the correct amount of weight or pressure to place on your knife depends on several factors which only you can determine. A general rule of thumb is that more is not necessarily better, the lightest weight or the least amount of pressure that will cut through with facestock and adhesive is the best to use. If too much weight or pressure is used it may score the liner, fracturing the silicone release coating, exposing uncoated paper to the adhesive. This may inhibit the graphic releasing from the liner with the premask. Always make a test cut prior to cutting the desired legend.
- A very sharp blade is essential. If you are experiencing cutting problems with Avery Dennison™ vinyl, try a new blade. Market research indicates that most blades are made from carbide (carbide stays sharper longer than plain steel). There are also ceramic blades on the market that give a nice cut but seem to wear out quickly.
- Three types of blades are available: a 30° blade for most vinyl films and polyesters, a 45° blade for sandblasting materials, and a 60° blade recommended for NV911 EVG reflective vinyl. Testing indicates that 30° and 45° blades work equally well for the Reflective films, and Intermediate Calendered films.
- Avery Dennison™ sign maker films can be run on pin-fed and friction-fed computer sign cutting equipment, as well as flat bed plotters.
- Cast, Calendered and Reflective films have all been designed specifically for use on computer sign cutting equipment incorporating a knife cutting (blade) system. While both Cast and Calendered materials have been cut and weeded successfully on plotters incorporating a hot tip stylus, it will be important to use a very high tack premask for transferring. The use of a high tack premask, in conjunction with recommended premasking/transferring techniques, should help alleviate anticipated transferring difficulties. Cutting Reflective Series and NV 911 EVG series reflective film with a hot tip is not recommended; the complexity and thickness of these films inhibit clean cutting of these materials. NOTE: Special attention may need to be taken when computer sign cutting a film coated with a 90# polycoated liner. If problems arise, please refer to trouble-shooting checklist on the next page.
- Due to the nature of retroreflective material, graphics comprised of multiple pieces of film may show the perception of a color shift depending on the viewing angle and light source. This is not considered a defect in the material. To minimize this effect, cut large letters from a continuous piece of material or use material from adjacent portions of the roll. Also, a small overlap (<.25") or no overlap of the reflective film is recommended to maintain a consistent viewing angle.

## 2.0 Weeding

- Since the "open side" of most letters are on the right side, it is recommended that the matrix be weeded using a rocking motion from right to left.
- When weeding large letters/graphics (larger than 5 in. or 13 cm height), there may be a large, hard-to-handle matrix area to deal with. Cut matrix into sections before weeding, this will make weeding process less cumbersome.



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## 3.0 Transferring

- Using the proper premask is paramount in the successful conversion of the Avery® sign maker films. A premask incorporating high enough adhesion strength to lift the legend from the liner is needed. At the same time, the premask adhesion cannot be so high as to lift the legend back off the ultimate application surface. Always test the premask for both adequate tack to lift the legend from the liner and to make sure the adhesion is not so high as to either damage or pull the legend back up from the ultimate application surface (especially if it is some type of paper or cardboard).
- The following premask tapes have the characteristics necessary for the successful conversion of both large and small letters using Avery Dennison™ films. This is not an exhaustive list of premask tapes.

Manufacturer	Premask Tape
American Bilrite	6600, 6700, 6760, 6782, 6792, 6798*, W-1311
Main Tape	GXP-600, GXP-625, GXP-650, GXP-675
R-Tape	4600, 4690, 4695, 4700, 4750, 4775, 4885

\*NOTE: Premask NOT recommended for printing.

- Pressure must be used when applying premask. The use of either a squeegee or a roll laminator is recommended.
- After applying the premask, turn the piece over so the liner is face up. Squeegee on the liner side to apply even pressure to the film. This even pressure facilitates removal of the film from the liner.
- The recommended method of removing graphics from the release liner is as follows:
  - Place the premask on the vinyl as recommended.
  - Turn the piece over so the vinyl is face down.
  - Grasp the edge of the release liner, holding the premask down with one hand.
  - Pull the liner off at 180° angle with the other hand.

NOTE: The use of application fluid is not recommended with NV 1400, NV 200, and SX 1000 calendared series. Manufacturer's recommendations must be followed when using application fluids.

## 4.0 Troubleshooting Checklist

Due to the "soft/spongy" nature of a 90# polycoated StaFlat® liner, it may be necessary to practice the following cutting techniques.

### 4.1 Cutting Blade Angle Setting

- For optimal results, it has been determined that a 45° angle of the cutting blade may produce a superior cut.

### 4.2 Pressure/Weight on Cutting Blade

- Unlike a conventional PS PVC film construction, it is recommended to begin at a setting of 0.0 units and increasing in increments of 0.5 units until an acceptable cut is obtained. Generally, the smaller the letter size, the slower the cutting speed needs to be. Under optimal cutting conditions, a 100% speed can be used for figures > 1.0 inches (>2.5 cm) in height.



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## 4.3 Issue Resolution Table

Issue	Potential Resolution*
Face Film is tearing upon cutting	<ul style="list-style-type: none"><li>• Replace used blade with new blade</li><li>• Confirm or adjust blade angle to 45°</li><li>• Reduce blade pressure/weight</li><li>• Confirm liner type to be 90# StaFlat®</li><li>• Reduce cutting speed</li></ul>
Blade is "skipping" over film producing perforations or a rough cut of the face film	<ul style="list-style-type: none"><li>• Replace used blade with new blade</li><li>• Confirm or adjust blade angle to 45°</li><li>• Reduce blade pressure/weight</li><li>• Reduce cutting speed</li></ul>
Blade is cutting into liner	<ul style="list-style-type: none"><li>• Confirm or adjust blade angle to 45°</li><li>• Reduce blade pressure/weight</li></ul>
Not completely cutting through the film	<ul style="list-style-type: none"><li>• Replace used blade with new blade</li><li>• Confirm or adjust blade angle to 45°</li><li>• Confirm liner type to be 90# StaFlat®</li><li>• Increase blade pressure/weight</li></ul>

*Revisions have been italicized.*

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