

# Applying Vinyl Lettering on a "Hard Shell" Life Ring

## Step 1: Flame Treating

**Caution!** Heat or open flames may contribute to a flash fire or burns. Follow these precautions when using a heat source for flame treating.

- Read and follow the instructions supplied with the heat source.
- Avoid personal contact with the heat source. Wear heat-resistant gloves and safety glasses.
- Do not use heat sources near solvent mixtures or residues, or where solvent vapors may be present.

**Caution!** Always provide adequate ventilation to remove emissions that result from the heat of flame treating. Failure to provide adequate ventilation can result in operator exposure.

Flame treating changes the molecular structure of the substrate. It oxidizes a very thin layer of the substrate allowing the adhesive to wet the surface and make a good bond.

1. Clean the substrate so that it is free of dirt and oil.
2. Use a burner designed to produce a continuous, straight or curved ribbon of flame, or use a series of small burners, as appropriate for the shape of the substrate.
3. Obtain a volumetric air to natural gas ratio of 11 or 12 to 1, or an air to propane gas ratio of 24 to 1.
4. Touch the tip of the flame's outer blue envelope (not the inner, yellow or red cone) to the material for 1 second. Longer exposure can deform or soften the material—Flame treating is not heat treating.
5. Check for proper treatment by pouring water on the substrate. If the water forms into beads, the surface is not adequately treated. If the water does not form into beads, the surface is adequately treated.
6. Thoroughly dry the surface, but do not touch it with your bare hands.
7. Apply the film to the substrate soon after flame treating. The surface oxidation will disappear within minutes after treatment.

## Step 2: Install the lettering

1. Separate the part from the vessel name with a sharp knife or razor blade. We use a single edge razor blade held in a box knife.
2. Remove the backing from the lettering. The lettering will stick to the transfer tape. If it does not, try squeegeeing the transfer tape first to make sure that the lettering really sticks.
3. Line up your lettering that is stuck to the transfer tape. If you don't get it in just the right spot you can pull the lettering up at this time. Give it a quick jerk!
4. Once you get the lettering in the right spot, squeegee it down. Work with small strokes and don't be afraid to apply pressure.
5. Gently remove the transfer tape by pulling it back along itself. Do not try to pull up at a 90 degree angle since this tends to lift the lettering. If removal is difficult, spray the transfer tape with water.
6. Install the low friction sleeve (or a piece of transfer tape) on your squeegee and squeegee the lettering down. This requires a fair amount of force. The better your job here, the longer the lettering will last.
7. Pop any trapped air bubbles with the straight pin and force the vinyl down to the life ring with your thumbnail. If necessary squeegee once again with the low friction sleeve.



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