

## Application Guidelines for VCI Shrink Film

The following information is intended as a guideline for using Daubert Cromwell corrosion inhibitor shrink films to cover and protect stationary metal objects. Procedures can be modified for the specific applications, work space, and packaging environment.

### 1. Tools

First, assemble the following tools:

- A. Fire extinguisher
- B. Heat applicator ( Shrink fast 975 or equivalent)
- C. Cylinder of propane
- D. Heat-resistant gloves
- E. Safety glasses
- F. Rope or strapping
- G. Flame-retardant padding
- H. Shrink wrap tape (2"-4")
- I. Ladders or man lift if needed

### 2. Heat shrink equipment and temperature recommendations

- A. A high BTU output shrink gun is recommended for equipment over 50 sq. ft. (5 sq. meters).
- B. Use Shrink fast 975 or equivalent.
- C. Attach regulator to tank with a wrench; keeping in mind that the threads are reverse threads. Attach hose to regulator and gun with wrench.
- D. Turn on gas and set regulator to 15 PSI.
- E. Observe for the presence of gas. If there is an odor of propane, close the propane valve and check fittings.
- F. Test the gun by slowly pulling on the front trigger to unlock the back safety trigger and allow you to depress both and ignite the gun. If the unit does not light, repeat the process.
- G. Average shrink temperature ranges 340°-440°F (171°-227°C).
- H. Average sealing/welding temperatures 240°-320°F (116°-160°C).

### 3. Preparation of the area and unit to be wrapped

- A. Clean/sweep floor/area of any and all contaminants, (dust, dirt, rocks, debris, etc.). This will help reduce the possibility of film failures and contamination to the unit.
- B. Clean the unit as needed remove any loose parts, packaging/crating that is not needed or that might puncture the shrink film.
- C. Padding. Locate all sharp edges, corners, protrusions on the outer surface of the object that may puncture film. Cover those areas with flame retardant padding.

- a. Padding can be held in place with heat resistant tape or wire ties.
- b. Ensure padding is of a durable quality and flexible enough to prevent puncturing.
- c. ***Do Not use wood, cardboard or other known materials that may cause contamination***
- D. Void Spaces – Using ¼” to ½” nylon rope, construct a grid/web like pattern to prevent the film from collapsing into the unit being wrapped.

#### 4. Measuring the right amount of VCI shrink film.

- A. Determine height x length x width or diameter of object to wrap. Calculate film size needed. Add 10”-12” (25 to 30 centimeters) for overlap.
- B. Cut film to desired length/width. Film can be seamed together for larger width items.
- C. For stationary items, lift it to install film between it and the support skid.
- D. If unable to lift, shroud with film ensuring that there is enough film to reach the bottom of the unit.
- E. Lift film above the item, then drape over to keep from snagging edges. Handling or personnel equipment maybe required.
- F. All seams should face down, upper film piece on top of bottom film piece.
  - a. Seams should be no higher than the center of the unit.
  - b. Shrink tape can be used as a temporary hold for the seaming process; however Do Not put tape onto bare metal surfaces.

#### 5. Seaming/Welding film together.

- A. Starting at the center of a seam, pull top layer of film up approximately 4-6” (10-15 cm).
  - a. While moving the shrink gun in a sweeping motion, sandwich heat between the top and bottom layers.
  - b. After heat is applied, gently pat top layer of film to bottom layer. **DO NOT** wipe. This may cause tears in film, or glove may stick to film. Continue until the entire seam is completed.
  - c. After the film has cooled to the touch, gently try to pull seams apart. If the weld remains intact, continue using the same process. If the weld/seam does pull apart, try to open enough space between the layers to direct the heat into that space and pat the layers back together.
  - d. After all seams are complete, go back over the seams to increase weld strength, however be careful not to apply too much heat as this will thin and weaken the film.

***Notes: DO NOT PULL OR PUSH ON FILM WHILE HOT.  
Do not shrink wrap outdoors in rain or high winds.***

#### 6. Side Seams/corners.

- A. All seams must face down. This will help prevent water from building up in the folds.
- B. Cut out any excess film from the inside layer, carefully, to ensure you are leaving enough film to weld the top and bottom pieces of film together.
- C. As described above, apply heat between the top layer and bottom layer of film and pat layers together.

## 7. Completing the heat shrink process.

- A. After seams/welds are completed and intact, using a sweeping motion begin shrinking the remaining film surface. Work your way from the top to the bottom.
- B. Hold the shrink gun back from the film, approximately 8-10" (20-25 cm). Move closer if necessary, being careful not to linger in one spot too long, and as this will cause weak spots or holes.
- C. To achieve maximum performance of the film, observe the film as it starts to soften and shrink. Continue to move across and down in a checkboard fashion. Do not try to remove wrinkles or shrink the film in one pass. Continue shrinking around the entire unit.
- D. Allow film to cool as you move from one area to the other. After allowing the film to cool, continue to shrink to a taut fit.
- E. If unit will be exposed to excessive sunlight, leave some slack in the film to allow for expanding and contracting during storage.

## 8. Patching holes.

- A. For holes the size of a quarter or smaller, cover with shrink tape. For slightly larger holes, patch using Daubert Cromwell shrink film as used in the application. If holes are larger than basketball size, replace the entire film.
- B. Generally, patch with a cut piece of film 2x the size of the hole.
- C. Sandwich the heat between the patch and film below, seam all four sides, then shrink to a taut fit.

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