TIP SEAL

The Tip Seal consists of a honeycomb shape extruded aluminum bonded to an aluminum skin via an epoxy adhesive, and is available in 6” wide x 8’-0” long strips.

Figure 1 (below) shows a typical section of an installed Tip Seal and fan ring before it is formed with Tip Seal Roller.

The following tools are required for installation:

- Power Drill with 7/32” Drill Bit
- Socket Wrench with 3/8” Socket
- 9/16” and 3/4” Wrenches
- Hack Saw
- Tape Measure
- Tip Seal Roller
- Short Length of 1 1/4” to 2” Pipe or Shafting

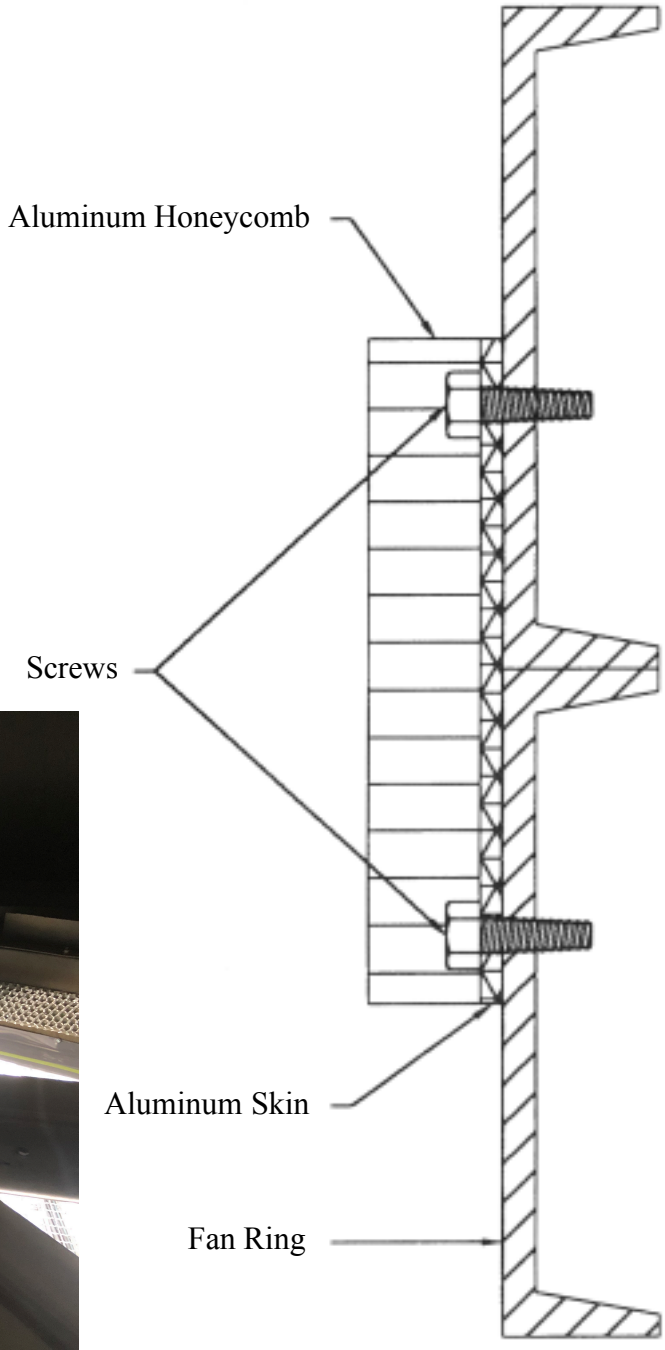


Figure 1 - Tip Seal

INSTALL THE TIP SEAL AS SHOWN BELOW

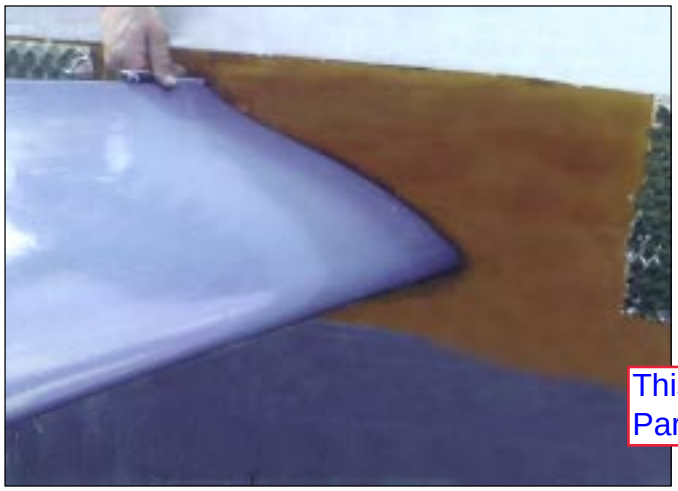
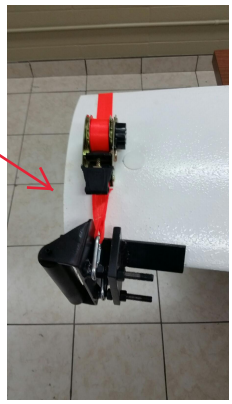


Figure 2 - Mark a line

Step 1

Install one fan blade with pitch set at 22½. Mark a line completely around inside of fan ring with a pencil held on trailing edge of blade as shown in Figure 2. **Minimum** clearance between blade tip and fan ring must be 3/8". Fan ring must be readjusted if clearance is less than 3/8" at any point.

This tool fits all fan blades
Part # UTP254017



Hudson tool fits only Tuf-Lite fan blades

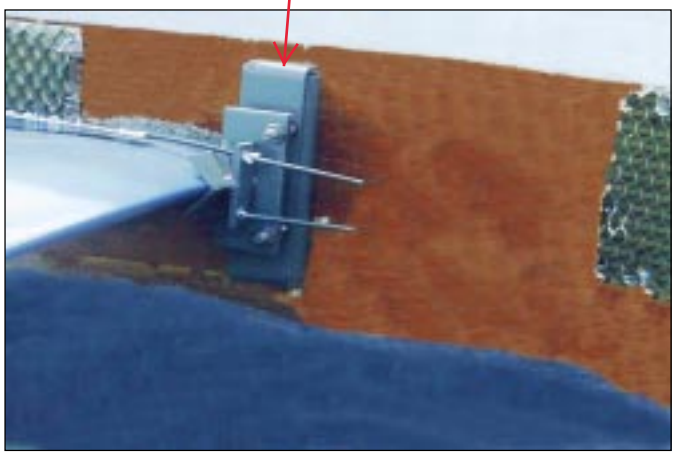


Figure 3 - Install Tip Seal Roller

Step 2

Change blade pitch to 0½. Install Tip Seal Roller as shown in Figure 3. Adjust roller axis to be vertical and place end of roller 1/2" above the mark made in Step 1. A small pitch change, and or a small adjustment of roller clamp wing nuts may be necessary to bring roller to correct height.

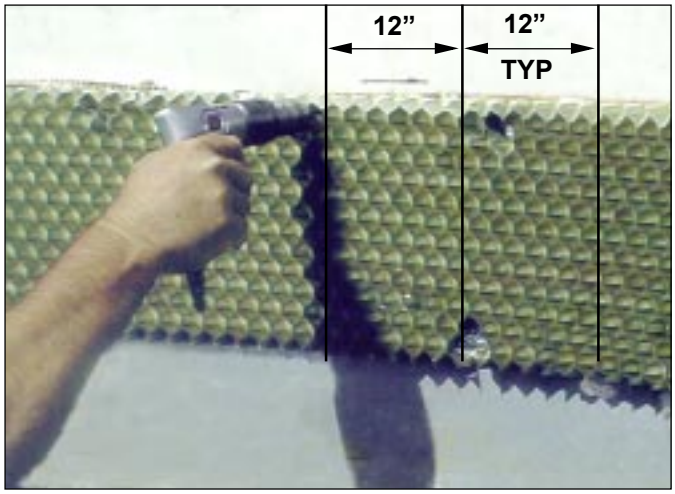


Figure 4 - Install Tip Seal Strips

Step 3

Align upper edge of Tip Seal strip with line drawn in Step 1. Drill holes with 7/32" drill and attach tip seal strip with 1/4" diameter x 3/4" long self-tapping screws, PN. 82750, using a 3/8" socket wrench, as shown in Figure 4.

Tip Seal strips are supplied in 8 ft. lengths. The last section must be cut to length but do not install at this time.*

(*Refer to Table 1 for additional information)

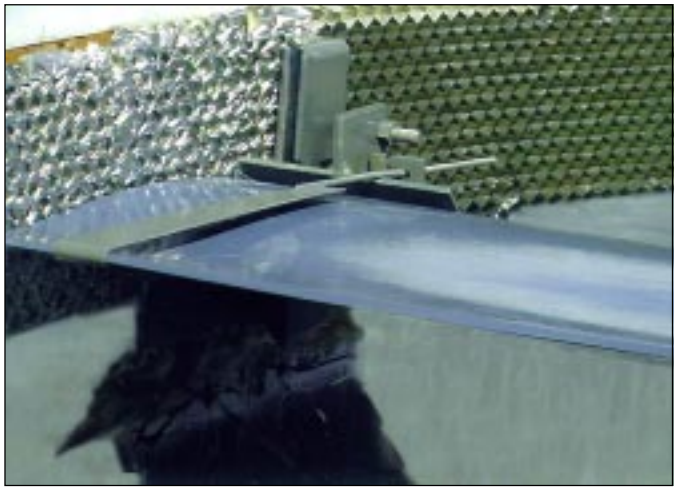


Figure 5 - Using Tip Seal Roller

Step 4

Adjust Tip Seal Roller to give 3/8" tip clearance. Push roller into Tip Seal strip 1" to 2" and increase roller depth in approximately 1/8" increments until proper depth is reached. Push Tip Seal Roller slowly but firmly around fan ring as shown in Figure 5. Finished clearance should not exceed 5/8" at any point.

Step 5

Install remaining fan blades and adjust to required pitch angle.

Step 6

Install the last section of Tip Seal strip as described in Step 3.

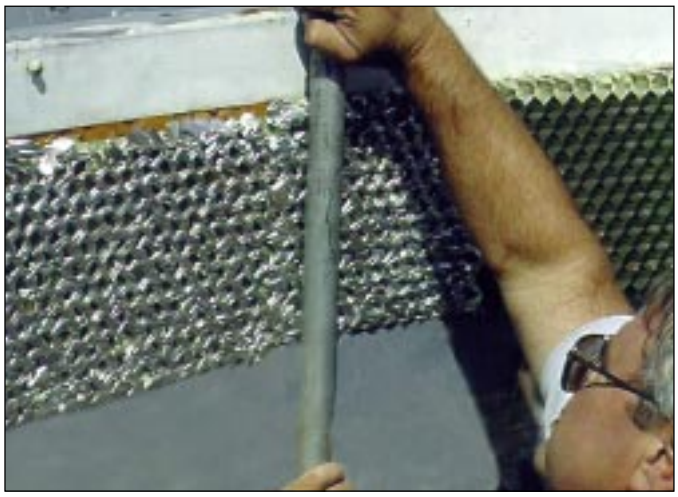


Figure 6 - Rolling Section Using Pipe

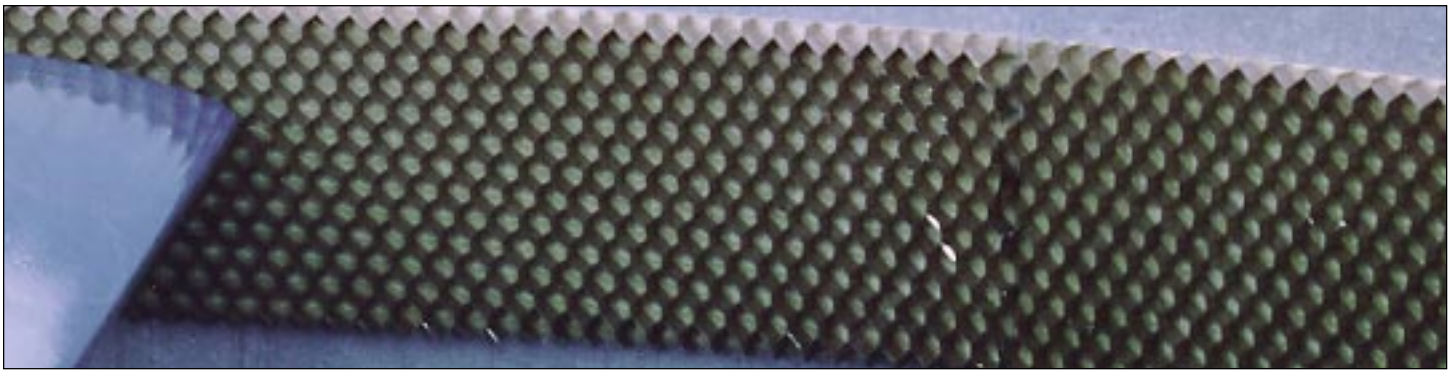
Step 7

Push roller over last section of Tip Seal strip.

Step 8

Remove roller and adjust the blade to required pitch angle.

If for any reason during operation the fan tip drags on the Tip Seal, the fan should be stopped and additional clearance provided at the close point. This may be accomplished easily over a short section by using a piece of 1 1/4" to 2" diameter pipe or shafting rolled under the palm of the hands as shown in Figure 6.



Installed Tip Seal

TABLE 1

Number of Tip Seal strips (8' long) required per fan diameter are listed below:

Fan Diameter	No. Of Pieces	No. Pieces of Hardware
5'	2	38
6'	3	57
7'	3	57
8'	4	76
9'	4	76
10'	4	76
11'	5	95
12'	5	95
13'	6	114
14'	6	114
15'	6	114
16'	7	133
17'	7	133
18'	8	152
19'	8	152
20'	8	152

* For installation in plastic fan stacks, use 5/16" drill bit, and install with Blind Rivets or 1/4" Stainless Steel Bolts. **(Not furnished)**.

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TABLE 2

Recommend Tip Clearance for all axial fans as per API

Fan Size (ft)	Minimum	Maximum
> 5 through 9	1/4"	1/2"
> 10 through 11	1/4"	5/8"
>12 through 16	1/4"	3/4"
>18 through 20	1"	1-1/2"
>22 through 30	1"	1-1/2"
>32 through 40	3/4	1-1/2"