

## Restoring Aluminum Cooling Fins

I have a 07 Heritage that I bought in early 09. The only thing I didn't like about it was the fact that the ends of cooling fins were oxidized/crusty and stained, and as time passed it got nothing but worse (they became nearly black). Nothing I tried to shine them back up worked, and I tried a lot of things. I might add mine are the "highlighted" fins. They are machined, but are not the "bright" machined fins that the 08's and later models have. I've searched everywhere for an answer/method on how to clean and brighten them back up and really found nothing of value. There are a lot of posts on the HD forums and elsewhere with people talking/complaining about the same thing, but there has never been a good answer on how to clean them. Well, I found the way.

Below is a Before Picture after a heavy cleaning with soap, water and some serious elbow grease (bottom part of the cylinder). **NOTE:** Skip section 1 if your fins are only lightly oxidized. Section 1 is for badly corroded fins.



### Section 1: BASIC RESTORATION.

#### What you'll need:

- 1) White vinegar
- 2) Water
- 3) Scotch-Brite sponge (can be purchased at the local grocery store.) Note: The sponge backing provides support and prevents edge rounding, where regular Scotch-Brite will round edges.



#### 4) Soft Cloth

#### **Instructions:**

**Warning:** *Be careful using the Scotch-Brite sponge around chrome. It will scratch. It is recommended that chrome be protected with blue painters tape or equivalent.*

- 1) Mix 2 to 3 tablespoons of white vinegar in a quart of water.
- 2) Dampen one end of the Scotch-Brite sponge with the liquid. You want a little liquid in the sponge, but not soaked.
- 3) Using the wet end of Scotch-Brite side, and light to moderate pressure, scrub along the length of the fins. If need be, switch to the dry end of the Scotch-Brite and do the same thing for a while and then switch back to the wet end.
- 4) Stop and leave the remaining liquid on the fins for a period of time. The vinegar is a mild acid and will actually etch the aluminum/oxide.
- 5) Use a dry cloth to remove the liquid and polish the fins.
- 6) Wet a clean cloth with clean water and clean the fins, then dry.
- 7) Using clean cloth, polish again. Repeat as necessary.

Note: The cleaned part of the fins are bare aluminum and will tarnish over time. When you are satisfied, use HD engine brightener on it. The brightener has silicone in it and will protect your work.

*It's a little tedious in the tight areas, but on the bottom 2/3rds of the cylinders you can use the full width of the sponge, getting 4 or more fins at a time so it goes fairly fast. This method will not round the edges of the fins. The whole engine took me about two hours. Be patient and a couple of cold beers along the way doesn't hurt... This will get 95% of it on the first pass though.*

Below are a couple of pictures of the results.

**The Final Result:**



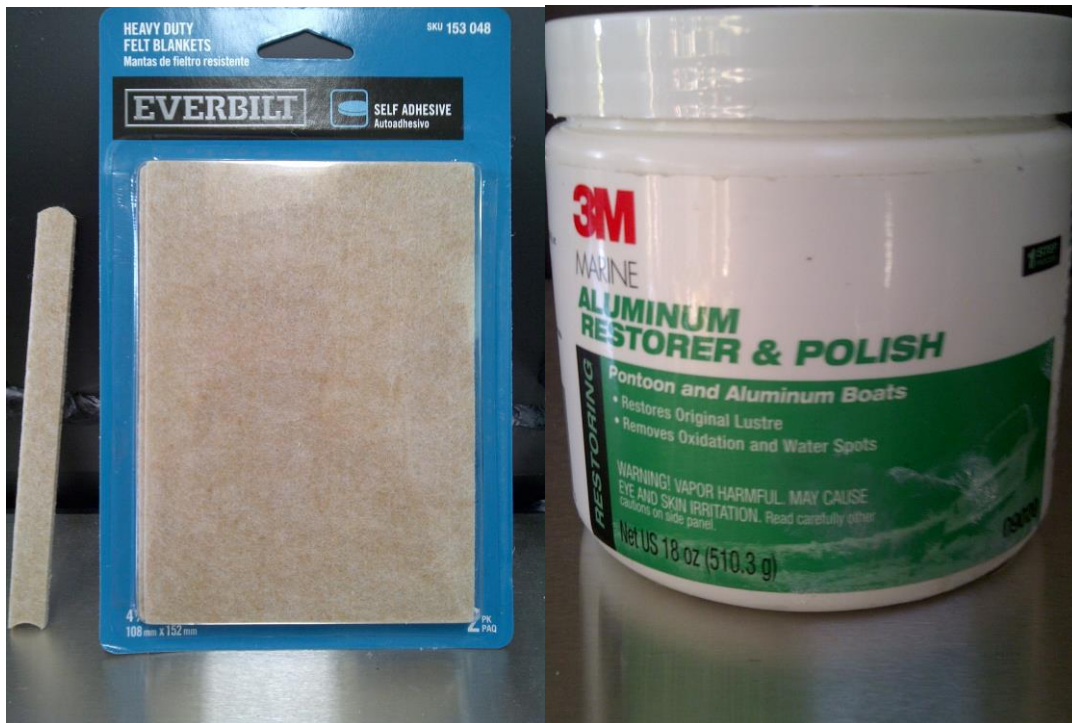
**Section 2: MODERATE SHINE.**

I said in Section 1 that the method got about 95% of the crud/crust and oxidation on the first pass. It is a good method if your fins are in really bad shape. What was left on the

5% were some gray stains and the fins had with a somewhat shiny burnished finish. The method below will provide a moderate shine and eliminate the burnished look.

### What you'll need:

- 1) Heavy Duty Felt Pads cut in half lengthwise (purchased from Home Depot. Picture below)
- 2) 3M Marine Aluminum Restorer & Polish (purchased from Amazon. Picture below)  
Note: Mothers Aluminum polish will not work.
- 3) Soft Cloth



These felt pads are made of a similar material as the Dremel polishing balls used in Section 3. You can get them at Home Depot or Lowe's. They are actually adhesive backed felt furniture pads. You don't remove the backing to expose the adhesive. They are about 1/8 inch thick and work real well. If need be, cut them up to reach in hard to get places. These pads will give you a "near" same finish as the method in Section 3. The narrow one shown is the same thing as the pad. I used them for getting in places like behind the push rod tubes.

### Instructions:

**Note:** The aluminum polish instructions say a little goes a long way. Do not use excessive amounts of polish.

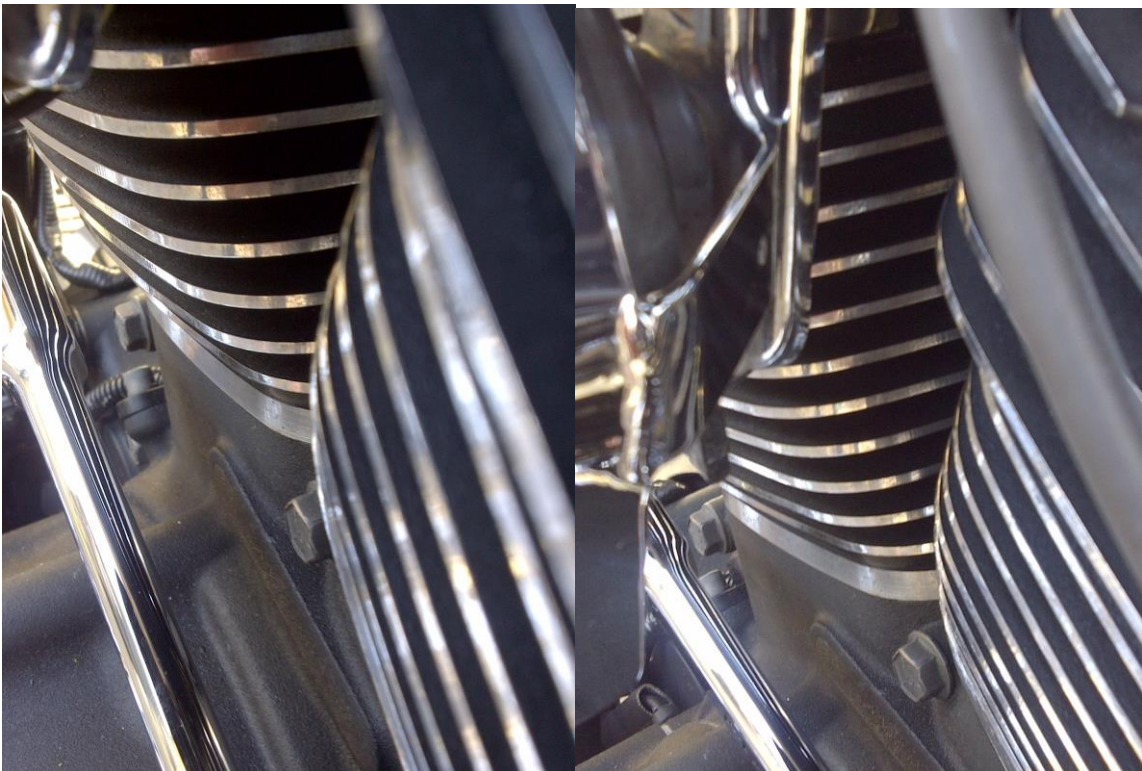
- 1) Apply the aluminum polish to one end of the felt pad and work it in. Insure there is not a lot of excess polish on the pad or you will get the polish on the black portion of the fins. (The polish can be difficult to remove from the black if left to dry, so remove it immediately with a soft clean cloth wrapped around a screwdriver.)
- 2) Using fast strokes and moderate to hard pressure, polish the fins.
- 3) Using soft clean cloth remove black residue and buff.
- 4) Repeat steps 1-3 until desired finish and shine is achieved.

**For additional shine:**

- 5) Apply the aluminum polish to one end of a clean felt pad and work it in.
- 6) Using fast strokes and light pressure, polish the fins.
- 7) Using soft clean cloth remove black residue and buff.
- 8) Repeat steps 5-7 until desired finish and shine is achieved.

**Note:** When you are satisfied use HD engine brightener on it. The brightener has silicone it and will protect you work.

**The final Result:**



**Section 3: BRILLIANT SHINE**

**What you'll need:**

- 1) Dremel Tool fitted with threaded head shank.

- 2) Duct tape.
- 3) Dremel Felt Polishing ball/tip (picture below) Note: A Dremel 414 Felt Polishing wheel can be used, but only on easily accessible areas. (Picture below)
- 4) 3M Marine Aluminum Restorer & Polish (purchased from Amazon.)
- 5) Soft Cloth.



**Instructions:**

**Note:** The aluminum polish instructions say a little goes a long way. Do not use excessive amounts of polish.

- 1) Using a small piece of duct tape, tightly wrap the Dremel attachment locking nut.
- 2) Attach felt polishing ball to Dremel threaded head shank
- 3) Apply the aluminum polish to the end of the felt polishing ball and work it in. Insure there is not a lot of excess polish on the polishing ball or you will get the polish on the black portion of the fins. (The polish can be difficult to remove from the black if left to dry, so remove it immediately with a soft clean cloth wrapped around a screwdriver.)
- 4) Start the Dremel *On Low Speed* away from the bike to sling off any excess polish.
- 5) With the Dremel on low to medium and using moderate pressure, polish the fins.
- 6) Using soft clean cloth remove black residue and buff.
- 7) Repeat steps 3-6 until desired finish and shine is achieved.

**For the Jewelry shine:**

- 8) Attach clean felt polishing ball to Dremel threaded head shank.
- 9) Apply the aluminum polish to the end of the felt polishing ball and work it in.
- 10) Start the Dremel *On Low Speed* away from the bike to sling off any excess.

- 11) With the Dremel on *medium speed* and using light pressure, polish the fins to a Jewelry like finish.
- 12) Using soft clean cloth remove residue and buff.
- 13) Repeat steps 8-12 until desired finish and shine is achieved.

**The final Result:**

