
Tech Note 121203.1: Repairing scratched anodization

This document describes the quick repair of blemished/scratched aluminum surfaces only. If greater damage to the anodized surface has occurred, such as a gouge (defined below), contact WET Labs to return the sensor for repair.

Definition of terms:

Blemish—Anodization is missing/removed but without any loss of or depth in the aluminum.

Scratch—Anodization is missing/removed with a maximum size and depth of 3mm x 1mm x 0.25mm

Gouge—Anodization is missing/removed and is larger than a **Scratch**.

The Biofloat sensor is used as an example for this document but the process can be applied to all WET Labs sensors that have aluminum exterior surfaces.

During the service and retrieval of the Biofloat sensors, the exterior of the anodized aluminum housing will most likely get scratched. The Biofloat sensors include a working anode as a preventive measure against corrosion of the 6061-T6 aluminum housing, along with a hard black anodization to limit the amount of corrosion when in seawater. All Biofloat sensors are thoroughly inspected for surface coverage of the hard anodization, and are shipped with protective sleeves to prevent any surface wear of the anodization. A visual inspection of the housings should be performed when receiving the Biofloat sensors to make sure no scratches occurred during shipping and handling. Look for small scratches that expose the silver aluminum of the body. Should small surface scratches of the black hard anodization occur, the following procedure can be used as a quick repair.

Components

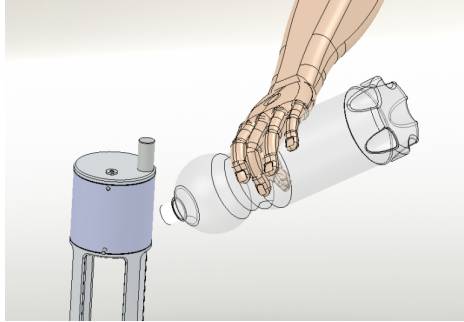
Here is a list of components needed for repair. All of these products can be bought from a grocery store or pharmacy.

1. Isopropyl alcohol (IPA) > 90%
2. Cotton balls
3. Black enamel paint
 - WET Labs recommends an enamel paint marker (www.testors.com; Part Number 2547C).
 - Any black enamel paint will work.
 - Fingernail polish
 - Model paint.

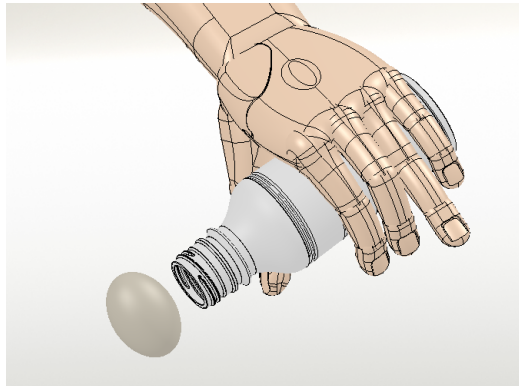
DO NOT USE SPRAY PAINT.
The open optics will get contaminated with paint particulates.

Prepare and clean the scratched area

1. Remove all biofouling/dirt/grease within the area of the scratch.
2. Clean the surface around the scratch as best as you can with clean fresh water.
 - a. DO NOT use salt water for rinsing area around a scratch.

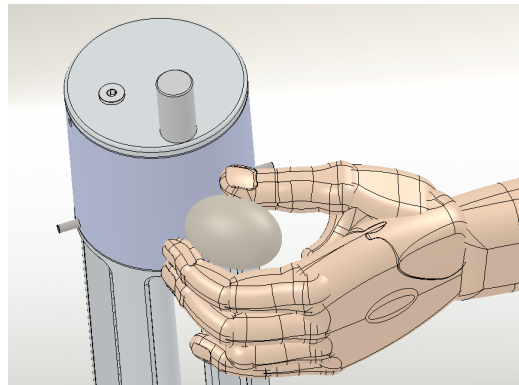


3. Open the IPA bottle and wet a cotton ball with the alcohol.



Note that IPA is cold to the touch. It will dry out your skin. Use protective gloves if your skin is sensitive to chemicals.

4. Rub the wetted cotton ball over the scratch. Make sure liquid IPA gets down into the scratch.

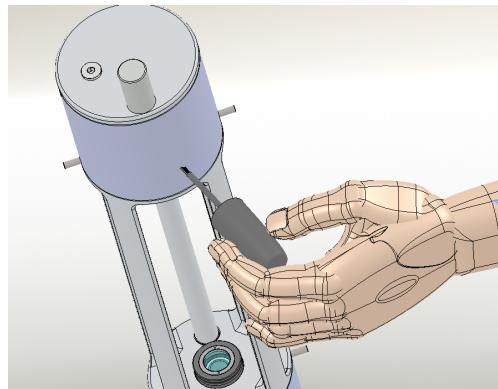


5. Do not touch the area around scratch after cleaning it with IPA. Skin oils will prevent paint from completely bonding to the surface.
6. Blow dry the area to evaporate the alcohol. You can wipe with a clean paper towel to help speed up evaporation.

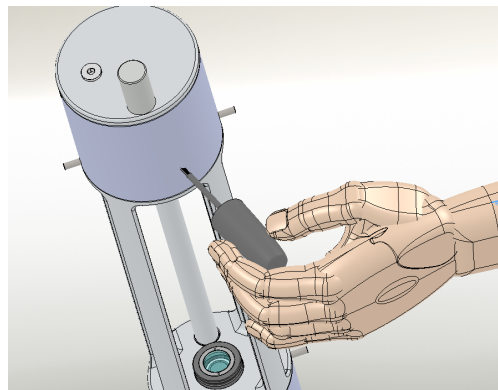
Paint the scratched area

Do all painting in a well ventilated area.

1. Apply enamel paint into the scratch and 1 mm around the scratch.



2. Allow the paint to dry for approximately 1 hour.
3. Apply a second coat of paint to the scratch and paint ~3mm around the scratch.



4. Allow the paint to dry for approximately 1 hour.

You can apply a “sealer” or “clear coat” at this point if you wish for added protection.