WILDLIFE COMPUTERS

Attachment Protocol for Kit-000
(AZ-ATTCHKIT-000)

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Based on the method used by the New England Aquarium Rescue Department & the Northeast Region Stranding Network for Rehabilitated Hard-shelled Turtles

This technique uses a very small attachment footprint, only marginally larger than the tag base itself. There is no need to smear epoxy all over the turtle. The combined weight of the tag and all the glue should not exceed 3% of the turtle's body weight. The health and condition of the turtle should also be carefully evaluated.

Materials:

- Nitrile gloves
- Two-part, quick-setting marine epoxy—Devcon 5 Minute Epoxy Dev-Pak Adhesive Cartridge, 1.7 oz./50 ml cartridge #14270—to attach tag to carapace
- Devcon adhesive dispenser for 1:1 50 ml cartridge
- Disposable paper mixing cups for mixing epoxy
- Wooden tongue depressors or sticks for mixing epoxy
- Brushes for applying epoxy
- Fiberglass cloth
- Loctite EA 3463 10 Minute Repair Epoxy, known as Loctite Fixmaster Metal Magic Steel. 4 oz. stick, #98853 to fill in irregularities between the carapace and the bottom of the tag
- 80 grit sandpaper

The above items can be purchased individually or from Wildlife Computers as an attachment kit, part number AZ-ATTCHKIT-000.

The Devcon adhesive dispenser is also available from Wildlife Computers, part number AZ-DISPENSER-000.
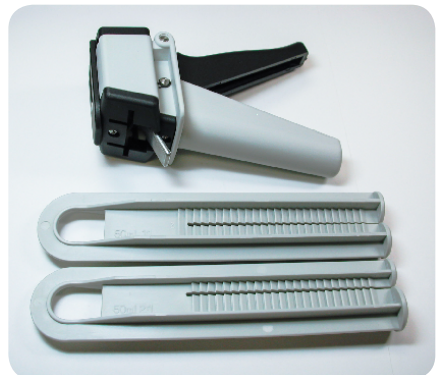
Devcon Dispensing Gun
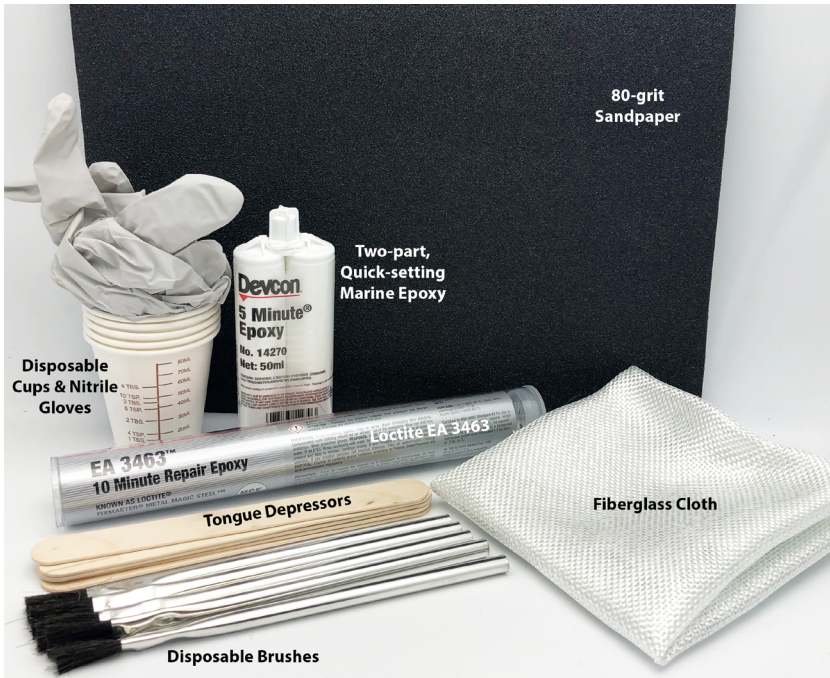
Contents of AZ-Attchkit-000

Other mandatory items required for the attachment not included in the kit:

- Scissors
- Scouring pad
- Acetone or isopropyl alcohol to clean the carapace (Acetone preferred)
- Bright-colored electrical tape (to temporarily cover wet/dry sensors)
- Cloths for covering the head of the turtle and cleaning the carapace
- Bucket for sea water
- Anti-fouling paint and brush for final coat after tag attachment. Wildlife Computers recommends Micron66 or Micron anti-fouling paint
- Additional nitrile gloves, brushes, tongue depressors and mixing containers

General notes before you begin:

The entire process will take about 60 minutes depending upon the size of the tag.

Tags should be protected from biofouling with Interprotect primer and three coats of Micron66 paint several days prior to tag attachment. See Wildlife Computers document "Micron66 Tag Anti-fouling Protocol."

Ensure that the tag is either in Start (Deploy) or Auto-Start (Standby) mode. The tag can be activated with a magnet before attachment.
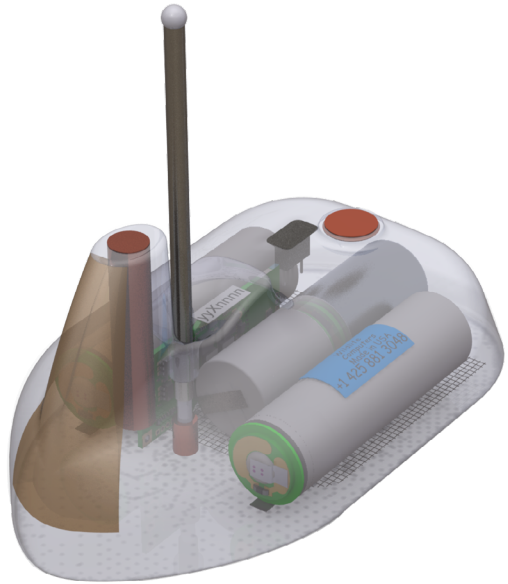
SPOT-375

Assemble all the items you need before the tagging event with a backup kit of 5 spare pairs of gloves, mixing sticks, brushes and mixing containers (new containers must be used for each new batch of epoxy). The single-use brushes are used to spread the epoxy through the fiberglass.

Attachment procedure:

1. Cut the fiberglass cloth into sections.

   - A rectangular or oval base about 50% larger than the base of the tag.
   - Two 1.5" wide (38mm) strips that are 50% longer than the length of the tag.
   - Two 1.5" wide (38mm) strips that are 50% wider than the width of the tag.

2. Cover any wet/dry sensors on the ends or sides of the tag with brightly-colored tape to protect them from epoxy coverage. You MUST remember to remove the tape before releasing the turtle.

3. Place a dark, damp cloth over the animal's eyes—be careful not to cover the nares as the animal will need to breath. This will calm the animal and protect the head from acetone and epoxy.

4. Clean the carapace with sea water and the scouring pad, then dry it completely.

5. Select the best location for the tag. It should be dorsally centered on the carapace for best hydrodynamics and near the head of the turtle. For smaller tags, consider a single-scute attachment on the second central dorsal scute from the head.

6. Thoroughly sand the section of the carapace where you will place the base fiberglass (50% larger than the tag).

7. Clean that section with acetone/IPA and a clean rag to maximize the adhesion of the epoxy to the carapace. Do not touch after cleaning.

8. Repeat this sanding/cleaning process twice more to remove all oils.

9. Load the Devcon epoxy into the epoxy dispenser and extract one-third of the epoxy into a mixing cup. Mix thoroughly for 60 seconds and spread a thin layer onto the carapace where you will place the fiberglass base.

Epoxy on carapace

10. Immediately lay the base fiberglass cloth on top of the wet epoxy. Quickly apply more epoxy with a brush to wet the fiberglass completely. It will dry in 5-10 minutes.

11. Use epoxy putty to cover the entire bottom of the tag which will bond to the fiberglass/epoxy base. ***Work fast as the epoxy putty only has a five-minute working time.***

   • Cut off 3/4 of the epoxy putty stick and remove the plastic cover. Wearing gloves, kneed/mix until a uniform color. This should take about two minutes

- Divide the epoxy in half and make two "logs" that are the length of the tag. Remove the Peel Ply backing from the tag and position these logs on the bottom side of the tag

- Press and smooth the "logs" downward and towards the middle of the tag base **so it covers the entire tag base.** If the turtle has a pronounced dorsal ridge them build up putty on the outside tag edges to straddle the ridge

- Position the tag centrally on the turtle and press it down firmly, moving it from side-to-side to bed it in and squeeze the epoxy putty out the sides

- If necessary, add additional putty to the gap between the tag and carapace until it is fully covered

- Use a gloved finger to press the epoxy putty into the sides of the tag and smooth the surface

- Allow it to set for about 10 minutes

Note: Most Wildlife Computers sea turtle tags are designed to have the antenna nearest the turtle's head. Large SPLASH10-334 tags are the one exception with rear-facing antennas. Contact Wildlife Computers if unsure of the tag's orientation.

12. Apply epoxy fiberglass strips over the epoxy putty, across the back, sides, and front of the tag.

- Mix more of the Devcon epoxy glue. You may need several batches to complete this step

- Paint epoxy across the carapace at the back of the tag, including the epoxy putty, and apply a strip of fiberglass. Wet the fiberglass with a brush and further epoxy. Position so the fiberglass covers the epoxy putty and base fiberglass

- Repeat this step along each side of the tag. These side strips should cover the back strip and also the epoxy putty at the base of the sides of the tag

- Repeat this at the front of the tag, covering the ends of the two side strips

- Be careful not to cover the wet/dry sensors. There should be no epoxy or fiberglass over the top of the tag body

13. Once the epoxy is tacky, paint the epoxy footprint, the tag and the Argos antenna with a further coat of Micron66 paint. Do not paint the wet/dry sensors.

14. Remove any tape from the wet/dry sensors. Allow the anti-fouling paint to dry as long as you can before releasing the turtle.

For a video on this technique, visit https://wildlifecomputers.com/turtle-tagging/

If you have any questions, please contact Wildlife Computers:

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