

Chapter 18 Underwater Maintenance

Zincs

American Tugs are not bonded, which means that the under water metals on the boat are not connected together. Each piece of underwater metal therefore has to be *separately* protected by a zinc.



Depending on the amount of clearance available on the AT34, the propeller and shaft have either a 2in Limited Clearance shaft zinc (CAMP part#CMC09 / West Marine part#485284), or a Camp 'H' prop zinc carried on special propshaft nut (CAMP #CMPNHCZ06/West # 132557 (Zinc+nut) or CMPNZH/132706 (Zinc only). The later is what we have on our boat as shown in the photo above.

If you have the Camp 'H' as we do, the factory replace the original slotted screw with a 5/16in X 3/4 hex-head screw, so that divers can apply more leverage when installing a new zinc.

The rudder shaft should have a 1 1/4in donut shaft zinc (CAMP CMC05 / West #485086). Early Tugs did not have this installed at the factory. If you do not have one, you should. It can be installed above the rudder (as in the photo above) or below.

The bow thruster has two zincs, and most of the optional stern thrusters have one. These are part SM51180 and are proprietary to Sidepower. They can be ordered from the importer, Imtra. Boatyards will probably not carry them. You might want to get a spare screw as well – this is part SM61174.

The following is a link to the Imtra website and the page for the Sidepower zincs.

http://www.imtra.com/product/thrusters/side_power_thrusters/annual_service_items_replacement_parts/zinc_anodes/sm51180.htm

Mike Thould (AT34 #109 'Zummerzet') found:

Fisheries Supply in the Pacific NW sells Sea Shield Zincs that are replacements for the Imtra ones, and they cost less.

The prop zinc erodes the fastest, the rudder zinc the slowest. In electrically 'hot' marinas (or if there are many metal boats around) the prop zinc may last as little as 3 to 6 months.



Zincs need to be installed with Blue Loctite to prevent loosening.

If this is to be done underwater, apply it to the bolt the previous day, and a thin 'skin' will form and not wash away on installation.

Alternatively, McMaster-Carr sell 5/16 X 3/4 hex screws with a nylon 'nylock-like' locking insert.



Bill Pyszka (AT34 #058 "Muddy Paws") recommends:

"When changing the "H" zinc on the prop I was told to put fingernail polish under and around the bolt. This will stop the area from oxidizing and the bolt from falling out. Also always use a new bolt. I found the "H" zinc in Massachusetts for \$28."



If the boat is used predominately in fresh water, you may want to investigate using magnesium anodes in place of zincs.

Underwater metal fasteners

Rudder Bearing bolts

Crevice corrosion has been found on the rudder bearing support bolts of some of the first AT34s. I've found some corrosion and metal-loss around the threads and head area after 2 years underwater.

These bolts provide hold the lower rudder bearing, and are usually covered in sealant or bottom paint. The location is shown by the yellow circles in the photo below.

Rudder bearing support bolts



The 2 bolts are 3/8in diameter and 5in long AT34) or 5 3/4in long (AT41), low-carbon stainless-steel with Nylock nuts, and Tomco now recommend they *should be removed and replaced every second year*. The Wrench size is 9/16 in (you need 2).



Alternatively bronze bolts can be substituted, which should be *removed and replaced every 10 years*. McMaster-Carr sell these (<http://www.mcmaster.com>)
- Part# 93516A640. Silicon Bronze Head Cap Screw 3/8in – 16 thread 5in long.

AT41 AT41 owners will have to buy the 6in long bolts and cut-off 1/4in. The thread and nut sizes are the same.

- Part#93439A630 Silicon Bronze Hex Nut 3/8in – 16 thread 9/16in head
- Part#93496A031, Silicon Bronze lock washer 3/8in screw size
- Part#93490A018 Silicon Bronze Flat Washer 3/8in screw size

There is a stainless flat washer underneath the bolt and nut on each side that needs to be dug out. I found the best way was to push the old SS bolt back flush with the washer, then jam a wedge between the bolt and the washer, and tap the bolt. Tricky, but it worked.

Intake covers

The engine (and air conditioner, if fitted) water intake covers are made of composite materials, but are held in place by stainless steel screws.

The covers should be removed and the screws replaced every year (which also means you can bottom-paint behind the covers properly). Note that these are short screws – they do not penetrate the hull. Be sure to replace these with like-sized screws – the AC cover takes four 1/2” long #6 countersunk screws, and the engine cover takes eight 1/2” long #8 pan-head screws. I replaced mine with bronze screws.

Thru-hulls

These are all Forespar Marelon, an ABYC and UL-approved high-quality material. They require no maintenance other than being opened/closed once a month or so, and light external greasing with Forespar grease or a waterproof silicon lube.

See www.forespar.com.

They have a lifetime warrantee if not disassembled. So don't !



The removable white cap (with an 'O' ring) on the handle is sized to block the thru-hull opening as an emergency 'plug'.

Bottom Paint

Tomco has used a variety of bottom paints when the boats are built.

My boat came with Woolsey Vinelast vinyl paint in 2003, but this has now been withdrawn from sale after Petit bought-out Woolsey.

Currently Petit Trinidad Pro paint or West Marine Bottom Pro bottom paint seems to be used at the factory. Petit technical support recommend a light 'scuffing' of the Vinelast paint before using Trinidad Pro or SR paint (there have been no compatibility issues on my boat after doing this three years ago).

Kurt will know what was applied to the boat when new, and he or the paint manufacturer technical support, can advise on compatibility issues.

Pete Balkus (AT-34 #021 "Braveheart" found:

"We purchased our boat in 2006 and it had "hard" bottom paint (versus ablative). The boat is now in New England and last spring we had our marina prep the bottom and paint bottom with Pettit Horizons Pro 1096 Red which they recommended (ablative). Upon hauling out last fall and pressure washing the bottom was in good shape with only touch up required this spring. Bottom-line – switching from "hard" to ablative worked well in our case with no significant issues so far..."