

DIY Decalcifier for AC Units and Engines

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[VIDEO](#)

A Fistfull of Dollars

This little DIY project will help you descale air-conditioning units or engines and save you a whole pile of money.

Most manufacturers these days advise flushing raw-water-cooled marine machinery with a descaling solution, typically once or twice a year. There are many of these solutions on the market and most are fairly corrosive due to the inclusion of mineral-based muriatic, hydrochloric or phosphoric acids, the stuff, of course, that most incisively promotes the dissolution and removal obstructive material from internal components.

There are several devices on the market as well, each engineered to circulate descaling solutions in roughly the same way. A pump extracts descaler solution from a 5-gallon bucket via one hose, circulates it through a given piece of machinery and then returns it to the bucket via another hose.

All of this sounds pretty straightforward, right? And it is, but there's one hang-up: While most descaling solutions seem fairly and comparatively priced, the circulatory devices are quite expensive—one retails, in fact, for more than \$700.

Not long ago, while I contemplated buying one of these devices to do a routine flush of the Betty Jane II's relatively new self-contained Aqua-Air air-conditioning unit, I had a DIY-inspired idea. Why not build my own device? Why spend hundreds on what amounts to a pump in a bucket?



I began by gathering components in my shop. A 10-foot section of ½-inch water hose came first, then came several appropriately-sized nylon fittings (barbed and otherwise), an old, Pentair Shurflo Aqua King II water pump I had kicking around and, last but not least, a 5-gallon bucket. Before drilling my first hole, however, I did some preliminary research. Just for grins.

And what I found out was problematic, at least at first. Not all pumps, it seems, are created equal. I discovered that I needed an expensive, chemically-resistant pump, else I'd be buying a cheaper "throw-away pump" every time I repeated the descaling process.

I'm nothing if not resourceful. I began hunting the internet for a solution that would descale Betty's air-con unit but, while doing so, not damage or compromise the pump involved, whether it was a brand-new cheapie or, in my case, a slightly beat but still functional oldie-but-goodie.

Eventually, I struck pay dirt—[Hammerhead Marine Descaler](#), distributed by Bright Bay Products. When I dialed up Allen Pollitt, Bright Bay president, he told me Hammerhead contains none of the harsh, mineral-type acids that are present in other descaler brands. Instead, proprietary food-grade “organic acids” do the job without degrading either metals (including aluminum), plastics or “soft parts,” like rubbery O-rings, seals and gaskets.



It took a couple of hours to create the device shown above. I had no trouble getting it to circulate 3 gallons of Hammerhead Marine Descaler through Betty’s air-con unit for two hours.

How did the Hammerhead Marine Descaler work? Given the amount of debris I flushed into the bucket, I’d say quite well. And what did my DIY-inspired device cost me to build? Well, actually nothing. But, had I purchased the necessary components brand new, I’m estimating the total damages at about \$100: figuring \$50 for a new, relatively-inexpensive straight-model, 500-gph Rule baitwell pump, \$35 for the hose, \$12 for fittings, clamps and PVC and \$3 for the bucket. Not bad, eh?