

Getting an “Almost” Wrinkle Finish on Diecast Aluminum

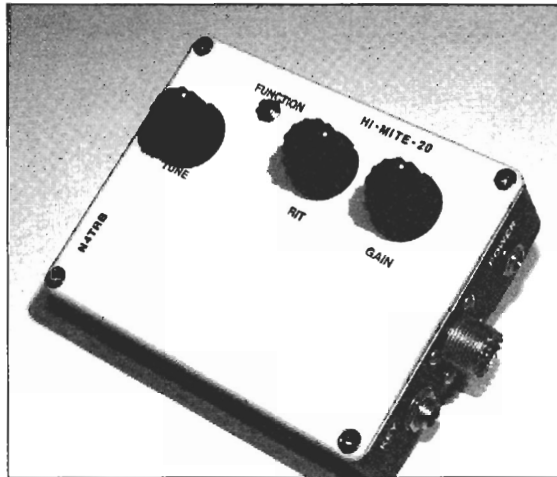
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The Internet is a great thing; but as everyone knows, it can also be a double-edged sword. For instance, when I built a HiMite 20 from Small Wonders Labs (http://www.smallwonderlabs.com/HiMite_docs.htm), I wanted to put it into a really nice case. After looking at quite a few boxes, I settled on a Hammond 1590-series diecast aluminum model (<http://www.hammondmfg.com/dwg.htm>). This was my first experience working with diecast aluminum and I learned quite a bit.

First, drilling diecast is a joy. The raw aluminum finish accepted tiny dots from a fine-point Sharpie® marker to indicate hole centers. Then I dimpled the metal with a nail set to guide the drill bit. Diecast aluminum is a relatively soft metal and with the dimple the drill bit showed no tendency to wander around. The four holes for the p.c. board standoffs and another four holes for the SO-239 chassis connector lined up perfectly with the hardware. Maybe I'm sloppier than other builders, but that's a rare occurrence for me when mounting hardware on sheet metal.

Then I hit the Internet to learn about painting diecast aluminum. I knew that since the aluminum would oxidize readily I had to use some sort of primer. Beyond that, I trusted the Internet to point the way. The good news was that there was no shortage of information. The bad news was that many techniques exist and they ranged from moderately complicated to requiring a license for hazardous materials. After reviewing lots of techniques, I



The Finished Hi-Mite 20.

distilled the various procedures down to three essentials:

1. Clean the unanodized diecast aluminum really, really, well.
2. Use a self-etching primer suitable for aluminum.
3. Use paint appropriate for the primer.

Before applying anything, I scrubbed the bare aluminum with hot water and an SOS soap pad, and rinsed it thoroughly. Then I dried it quickly to avoid oxidation.

At my local AutoZone store I picked up Dupli-Color Self-Etching Primer (DAP 1690), “ideal for bare metal, aluminum & fiberglass.” I applied several coats, let it dry over night, and then “sanded” with #000 steel wool. Next I went straight to paint using Dupli-Color paints on the theory that they might be most compatible with the Dupli-Color primer. For a two-tone fin-

ish, I used Wimbledon White for the cover and black for the chassis.

The paint finish was pretty smooth, but for an automobile luster I imagine buffing would have been in order. Incidentally, I let each of the three coats cure for 24 hours. After the final coat of paint I let the project sit for 48 hours and then washed it gently with hand soap to remove surface oils. The instructions with the dry transfer letters suggested cleaning the surface with “rubber cement thinner.” Being fresh out of rubber cement thinner, I opted for the hand soap.

Next I applied the dry-transfer lettering (DataMark from DataK Corporation). The letters went on well. Somewhere I read a tip about using a Post-It Pad note to help guide alignment. That really helped.

I allowed the letters to sit overnight and then applied several top coats of Datacoat gloss “clear protective spray for dry transfers...” that I ordered from Ocean State Electronics: (<http://www.oselectronics.com>). For a gloss spray it has a surprising amount of texture. The final result is an “almost” wrinkle finish not far from the old Heathkit texture. I can't sand this final coat because of the dry transfer letters. If it were just a sealant, I believe I could sand and respray to achieve a high gloss. Nevertheless, I'm pleased with the texture and the overall result. Moreover, I've worked out a pretty straightforward approach to using diecast aluminum and won't hesitate to use it again for my next project.

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