

## Shop Practice X6 Abrasive Tumbling

Not a very common private shop practice but a useful method to add to your bag of tricks.

Abrasive tumbling is a common system for the deburring of small parts in many shops. Many types of vibrator and tumbler systems are available with some exotic media. But they are not common in prototype shops, which is essentially what we do.

A recently acquired project was one that had languished in a backyard under a tarp for more than 10 years. That combined with having reached the stage of being built but not painted yet left the bare iron surfaces to rust and corrode. This was especially evident on the scale fasteners unprotected ends. Scale fasteners can get expensive and you can't get them at the local hardware so it made sense to me to reuse all that I could, but wire brushing individual miniature nuts was a non-starter.

Then I remembered abrasive cleaning by the tumbling method. While not done at home, unless you're a rock polisher, it seemed very doable. I obtained a plastic container, about a quart size, with a snap on lid and then loaded all the nuts and bolts into it with about a third of a quart of sand blasting media. I put the container in the lathe in a chuck only tightening it enough to hold it in position, and then retained it in place with a plate positioned by the tailstock. This arrangement was intended to keep the cover on, above all, as I did not want abrasive on the lathe. I covered the ways with a piece of aluminum foil, my go to protective material.

I put the lathe in back gear and adjusted the speed to get a nice constant tumbling sound and let it run for about 2 hours.

On opening the container later I found most of the corrosion had been polished away and I considered running it some more but I did not want to start removing the edges of features of the bolts or roughening the treads. In retrospect I should have left it running longer but I also wanted to treat them with phosphoric acid to stop the rust still in the surface pits. The results were good but not pretty. Then again I would be painting most of them and the surfaces were well prepared for that. For those that needed to be polished bare metal I could now wire brush or polish the remaining discoloration.

To gather the screws out of the abrasive I used a magnet. That did not work for the two brass screws that had sneaked into the pile by being so dark in color.

This quick cleaning method worked very well and I have a base point for further use if I find another piece of equipment that needs this treatment.



