

a PART of the story

Using epoxy putty

by Jim Coffee • San Diego, California, USA • Photos by the author

Technology: Epoxy putty
Purpose: Creating a rotary-tool holder for a lathe



1. An unassembled e-clip and shaft.



2. An e-clip at work, retaining a rolling wheel on a shaft.

One of the things that I love about creating automata is that there is almost always a new challenge, a new problem, and a need for a new solution. When creating automata, I frequently use precision shafting and e-clips. The e-clips are used as retainers to keep shafts in place or to secure things like wheels on the shafts (**photos 1 and 2**).

Before acquiring a lathe, I cut grooves for the e-clip by chucking a shaft into my drill press and using my hand-held rotary tool to cut the groove. While this did work, I had a high failure rate, and the grooves lacked precision.

After acquiring a lathe, I realized that there was a better way. The challenge then became how to securely and firmly fasten the rotary tool to the lathe without damaging it. Milliput to the rescue!

Epoxy putty, such as Milliput (**photo 3**), is versatile and is highly adhesive to most materials. It can be sculpted like clay. After it cures, it can be machined, drilled, tapped, turned, filed, sandpapered, and painted.

I first created a wooden holder for the rotary tool that was a bit too large. I then placed a blanket of Milliput over the insides of the holder. I put my Saran-wrapped



3. To use Milliput, cut two equal amounts and knead them together until they are a smooth, single color. This epoxy putty cures slowly, giving you several hours of working time.



4. The rotary tool's shape has been perfectly impressed into the Milliput.



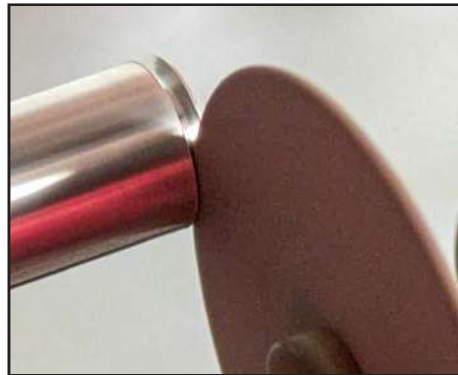
5. The rotary tool is held firmly on the compound slide of the lathe. This arrangement allows the rotary tool to be precisely positioned.

(cling film) rotary tool into the holder and clamped the holder in the lathe, where I left it for the five hours or so required for the Milliput to set.


After the Milliput had hardened, I unfastened the "rotary tool sandwich" from the lathe and released the tool. The Saran wrap did not adhere to the Milliput, so the rotary tool came out cleanly, leaving a perfect impression of itself in the now-hardened Milliput (**photo 4**).

After spraying the fixture with my shop color, I signed and dated it and put it to work. I'm pleased to report that this rotary-tool holder works perfectly. The tool is held firmly (**photo 5**) and does not wiggle at all.

The combination of a rotary tool and lathe now permits me



6. The cutting wheel attached to the high-speed rotary tool grinds a high quality e-clip groove while the lathe is also rotating.

to create flawless grooves for the e-clips (**photo 6**). I can cut grooves that are well within .1mm tolerance. Milliput can, of course, be used for many other things, too, when creating automata. 

THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

www.mbsgb.org.uk

Founded over 60 years ago
the Society welcomes new members
interested in learning more about these
fascinating, self operating,
music producing machines



"In My Humble Opinion"



by Philip Lowndes

Plans available at:

www.lowbot.co.uk