Making tools for your toolbox

Roll pin removal tool

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By Frank Bourlon Columnist

It's not always possible to find a tool that will conveniently do the job at hand. But take care to ensure that if you do have to fabricate a tool, that it can remove and install parts without too much difficulty.

Take, for example, a roll pin removal tool. Normally, all you need is a small punch and hammer. But in some cases - such as the shaft that attaches the motor-operated potentiometer to the small speed control motor found in old Fincor motor controller cabinets - this isn't feasible. The punch and hammer could damage the associated components.

Here's a tip: Make a new roll pin removal tool from a pair of slip joint pliers (see Figure 1). With a carbide bit, drill a hole in the lower jaw. (There is less metal to drill through.)

The hole can be drilled with a standard high-speed drill bit but will require two to three drill bits or re-sharpening.

The hole will now allow the roll pin to pass through the hole as the pin is pressed out of the shaft. Place a small solid pin between the upper jaw of the pliers and the roll pin you want to remove. The upper jaw will provide the force necessary to remove the roll pin.

Make sure you find the right size solid pin. If it's too small it will become wedged in the hole in the center of the roll pin. I recommend using the shaft of a drill bit to provide the solid pin you need. Select a bit that is one size smaller than the roll pin's outside diameter. Then remove the shaft from the bit by

grinding it off. Grind the end of the shaft so that

the end is flat.

Always remember to use the proper safety equipment, including glasses and work gloves, when fabricating a tool. Drill bits are extremely hard and they can send pieces of metal flying if they shatter under the pressure.

Form roller adjustment tool

The Goss Urbanite form roller adjustment tool is another implement that must be fabricated because it is impossible to purchase. The tool makes the task of adjusting these rollers very convenient.

To make your own, find some scrap material. The one illustrated with this column was made with a 3/8-inch rod. The sleeve is a 5/8-inch rod with a 3/8-inch hole drilled into it (see Figure 2).

The main part of the wrench is made from 1/2-inch pipe, which will allow the screwdriver assembly to pass through the pipe's center and then through the 3/4-inch socket welded onto the pipe's end. The screwdriver tip, 3/4-inch socket and the 1/4-inch Allen wrench were just extra tools lying around.

I use the different pipe sizes to install bearings in lead-in rollers, ink rollers, dampener rollers and other areas of the press' units and folder. The pipe has to be sized so that it only applies pressure to either the outside or inside race of the bearing, depending upon resistance.

The idea is to keep the side stress from the ball bearings within the bearing itself, and to prevent damage to the bearing's metal or plastic seals. A sleeve can also be made by a local machine shop if you can't find the right size pipe.

If you have a unique tool that you have made to help you maintain your press, send me an e-mail. We'll write about your tool in a future column.

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