

## **From My Shop**

by Phil Lawrence

### **Cleaning rust from the water passages**

Work on the speedster continues, and lately I've been working on the engine. It's an older rebuilt engine that's been sitting for years. First job to tackle is directly related to an on-going issue and my favorite challenge to overcome...rust!

This time it was rust inside the water passages. I mounted the engine on a stand and started to remove the transmission cover, crankcase head, etc., to inspect, clean up and reinstall.

The problem became apparent each time I rotated the engine on the stand. Each time, I could hear what sounded like sand and gravel sliding inside the engine. Chunks of rust would fall to the ground out of whatever opening was at the bottom.

Since the engine was assembled, I had to come up with a way of cleaning out the block by hand. This is the process I came up with. First was to remove the head and set it aside until later. Next, I grabbed assorted screwdrivers, a punch, hammer, my trusty little extending magnet pick-up tool and went to work.

The punch and hammer made quick work of removing the three freeze plugs. In doing so, and expecting to find an opening, instead I found all three would-be openings were plugged solid with rust. Loose pieces of rust could be seen looking down the passageways on the top of the block. Grabbing a screwdriver and using it like a scraper and occasionally as a chisel, I started cleaning them out and removing the crud with my magnetic pick-up tool, in addition to a mini crevasse tool on the small shop vac.

Going into every opening I could, I was starting to get quite a pile of debris. I needed a break, so with an idea in my head, I ran down to the hardware store to pick up a one-foot long piece of 5/16 steel cable, came home, and brazed a spot on the cable a short distance from one end to keep the cable from unraveling. After that, I frayed my cordless drill and used my new tool to do the final cleaning of the water passages. I used the same process for the head. On the head, a larger diameter cable and one 18 inches long would have been better.

The block cleaned up really good, but before I mount it in the frame, after it's reassembled, I'll run a flushing compound in the engine to remove any remaining particles of rust. The photo shows my small magnetic pick-up tool, the cable I made up to get into the tight spots in the block, and my small shop vacuum adapter with the mini crevice attachment. Also shown is some of the debris I removed from the block. Note the quarter in the center of the debris for size comparison.

## The Tools and the Rust and Debris

