

# Fly Press Application

By Bruce Weakly & Steve Gschwend

The screw press or fly press is a versatile machine that offers the brute strength of a power hammer while doing so with control and precision. I was first drawn to the machine while using Dave Davelaar's #5 fly press to form bowls out of eighth inch flat stock. That experience led me researching availability. As Steve points out, by making our own machine, we not only enjoyed the planning, design, and construction, but also realized a substantial monetary savings along with having an intimate understanding of the workings of the machine.



My work is with relatively light stock and I enjoy both precision work and finishing. Since the press offers the ability to form and work material either hot or cold, and because the machine has a relatively small footprint, the one-man, manual fly press became a needed tool for my shop and replaces a three ton arbor press. An internet search will quickly yield a handful of sites offering machines and tooling. Additionally, information on technique and video's are available.

To demonstrate the mechanical advantage and amazing force that can be generated from this machine, Steve and I pressed both a three-quarter inch hole, and a couple half-inch holes through half-inch bar. This process clearly demonstrated the mechanical advantage gained through the acme screw. By simply turning the flywheel, the punch was driven cleanly through the material.



One procedure that I have found extreme difficult if not next to impossible, is to weld from a gas forge. We were curious if the uniform pressure from the fly press might make welding with propane possible. Using two half inch square bars, we cleaned the metal and heated to maximum temperature my forge would provide. We did not do the normal crowning or beveling in preparation for the weld. Other than wire brushing,



the stock was left in its original size and shape. After heating, a brazing flux was applied liberally. The two pieces were then brought up to maximum heat, laid together under the ram and “tapped” together with several light bumps using the handle on the flywheel. The stock was reheated and again pressed together under the ram. To examine the weld, we ground into the stock. A solid weld was obtained with no fissures, stress fractures, or weld contaminant. This machine produced a high quality weld. We were amazed and delighted.

To demonstrate the ease and precision that the fly press provides in performing decorative work, we formed a groove in quarter inch stock. This could be used for example, in making a border, in veining, or for producing interesting decorations in a twist. Since this was a trial run, a temporary fence was clamped to the worktable instead of making a permanent fixture. We also were using a chisel from Steve’s hydraulic press, which was not designed for this type of work. Again the procedure was simple and easy. A gentle pull of the handle provided ample force to make the resulting groove.

Another handy use for the fly press is to bend uniform circles in either square or round stock. By working the metal vertically over an elevated jig, and by consistent pulls of the flywheel handle, a near perfect circle may be obtained.



I am also looking forward to using the fly press for veining leaves and texturing as one might use a treadle hammer, along with fullering to make candleholders, and to form up tongues. In addition, the comparatively slow action of the screw and ram make the fly press extremely controllable and a relatively safe tool to use.