

Jim Claar, Toolmaker

Give a blacksmith good tools and they will make nice things. Give a blacksmith a block of 4" 4140 steel and access to a CNC guided oxy-acetylene cutter and they will make nice tools. This can be rightfully said of Jim Claar, retired blacksmith from Chrysler, former sheet metal man, and successful prize-fighter. Jim's shop is located in New Lisbon, Ind. in the gymnasium of his former school. He happens to have access to tons of metal in various shapes, he knows people who do not mind testing the limits of their CNC cutter and above all, his mind never stops working on new ideas.

In this article, we present two of the many tools Jim developed: a rotating swage block and a post-vise

anvil combination. Both are very useful tools in many ways and both seem to be the next step in their evolution.

Rotating Swage

Jim built the rotating swage because he was tired of having to turn his swage blocks over and over to locate an appropriate groove. An immediate benefit of a rotating swage is that it is easy and kind of fun to turn the wheel the right groove. to find Furthermore, depending on the shape of your swage and your back, it might just be easier to rotate a piece of steel.

This project started at a salvage yard, where Jim found a 5" thick steel disk that was about 21" in diameter. For some reason it already had a sizeable hole burned into it. Jim used his industrial size



lathe to increase the hole to 8" in diameter as he happened to have a 8" shaft available. On this swage, he cut the grooves with a torch and worked them with a drill press and lathe and

finished by polishing them. Once this was done, Jim heat treated the swage and fabricated the mounting brackets and welded them on a stand. This particular swage does not have a break, yet in 15 years of forging, he never had a problem with it turning on him. He attributes this to the 400 pound weight of the swage as well as the fact that he hits straight down on it.

Jim made several kinds of rotating swages. We now present one that is an improvement over the first. Jim obtained some 4" 4140 steel to produce several anvils and another rotating swage.



This swage is 19 ¹/₂" in diameter and was cut with a CNC guided oxy-acetylene torch. A shop owner he knows did not mind experimenting with thick steel like this and was kind enough to do all the programming of the CNC machine per Jim's instructions. Among others, they cut all the groves as well as the center hole that receives the mounting shaft.

Once the blank was back in Jim's shop, he again used his drill press and milling machine to clean up the blank. He polished the critical surfaces and drilled an oil hole. Jim did not heat treat this swage as he felt that 4140 is already excellent steel. Furthermore, some hardening will have taken place as a result of the torch cutting. As this swage

is not as heavy as the first one he built, Jim added a break to it. The break is simply a wrench welded to a $1 \frac{1}{4}$ " inch bolt that is used to compress the mounting brackets to the swage. The bolt runs through the shaft into the opposite bracket.

Post Vise Anvil

Jim developed this tool when he was asked to make 20 hooks for a pot rack. Being a sheet metal man, he wanted to be able to form the hooks under closer scrutiny than allowed by the low height of an anvil. A post vise provides the right height but not enough surface to work the hooks. To solve this problem, Jim modified a post vise by cutting off the rear jaw and welding in its stead a stake anvil properly modified so that its top lines up with the top of the front jaw.





He eventually took this idea a step further and built what could be called a vise anvil. It is an anvil with a vise attached to its front. There are many contraptions that enable us to hold a piece of hot steel to the anvil so as to free up a hand. Surely, Jim's vise anvil provides the ultimate in holding power.

Jim does not develop written plans for the tools he makes. He said that his work is driven by the materials he has available. He pointed out that no two tools he made are alike. Certainly the people who run the CNC cutters develop what might be called plans. In general, Jim just seems to get out his torch, power up his industrial machinery and make what he planned in While the so modified vise is a good idea, Jim was not happy with the shape of the stake anvil, as it was not sufficiently wide and simply too long. After thinking about this, Jim built a second postvise anvil. This time, he made an anvil on his 400# Chambersburg. The anvil is $3\frac{1}{2}$ " wide and 19" long and as you can see, has more mass where it counts. This is the postvise that Jim uses in his shop.



his head. Asked whether he minds if people build some of the tools shown in this article, Jim replied that it would make him proud.

Jim recently auctioned off most all of his shop equipment, including all of the tools shown in this article. He did this so he can outfit his shop with tools he has made. When prompted about his plans for the near future, he said that he wants to continue making tools but that he has this idea for another powerhammer. He has been thinking for a while about using truck suspension air bags. So stay tuned for the next evolution in power hammers.

This article was written by Michael Wollowski, who also took the photographs.