

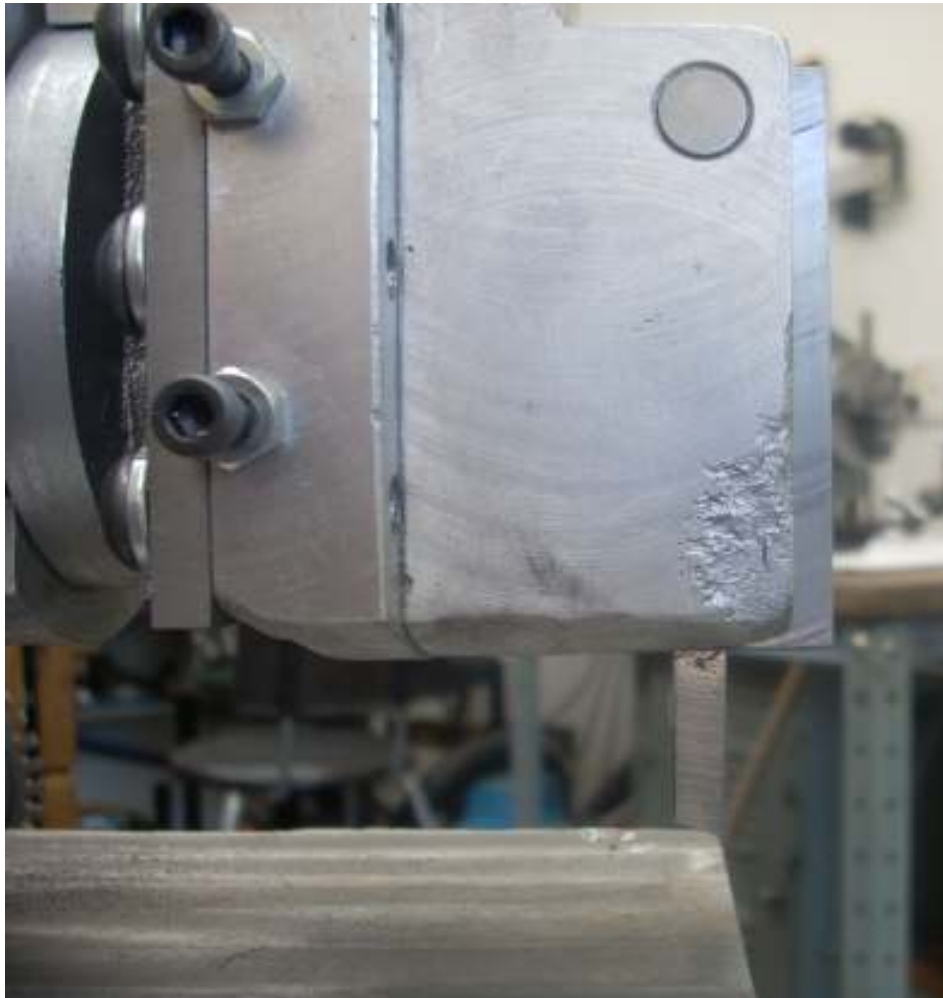
Ram Stroke Adjustment

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One of the challenges of modifying Gingery's shaper design is that there are unexpected consequences. One of these surprises was that the cutter did not reach far enough forward. It also started too far back.



After making a few modifications, I was able to get the cutter to almost reach the front edge of the table.



At the start of the stroke it now just comes off the table.

The main reason for the original misalignment is how I modified the clapper. The cutter is set back such that the center of the cutter lines up with the center of the pivot pin. This is supposed to reduce chatter.

The trick in making the adjustment is to minimize rework of parts.



One point of interference is the link to the ramp clamp. Here I am cutting a step so the ram clamp can have a bit more room.



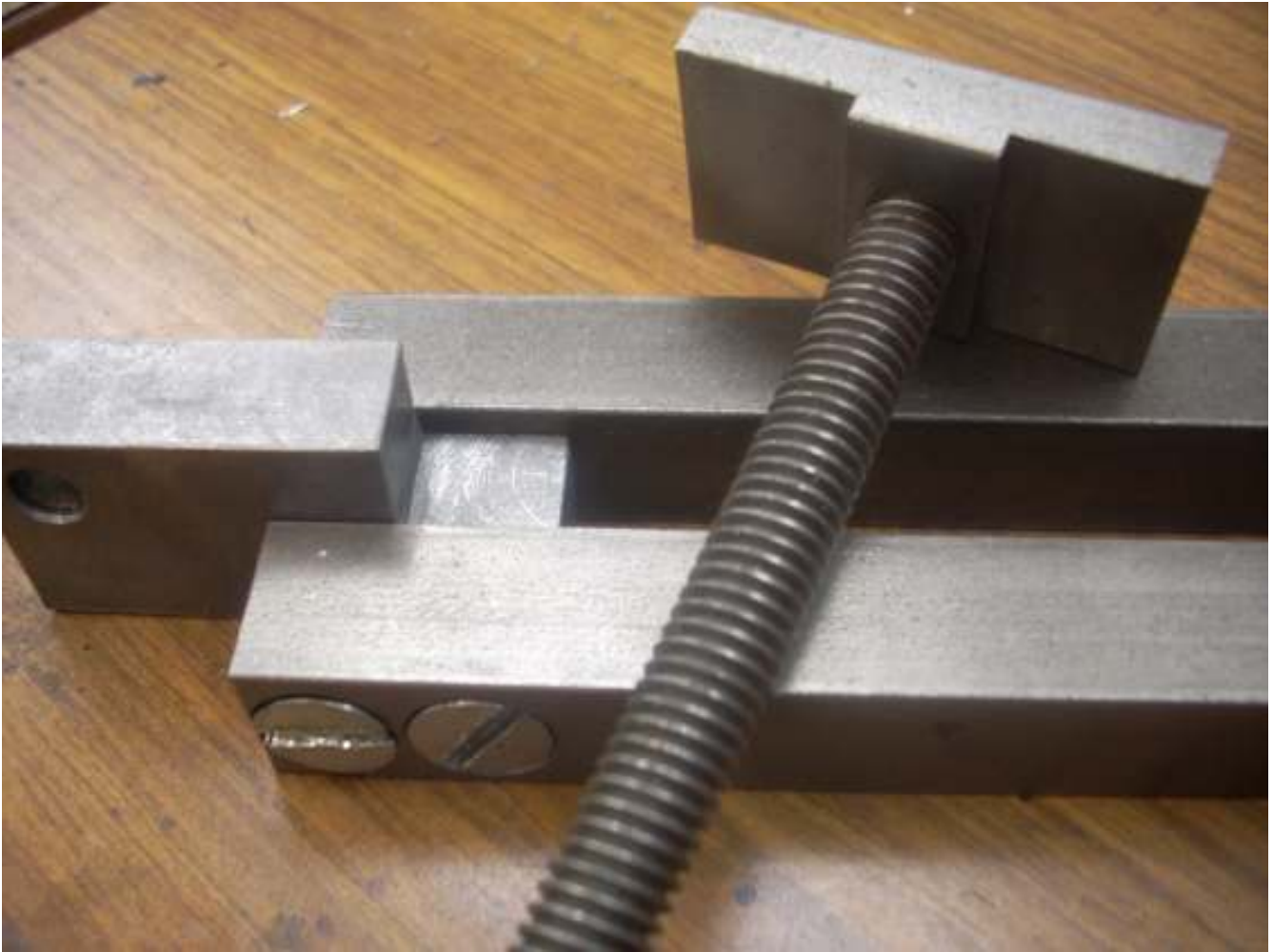
Gee, that should have helped but now I see that the clamp guide is hitting.



The large hole passes the ram clamp while the smaller hole is for a screw that fastens it to the bottom of the ram (see page 67 of Gingery's book). By just removing the screw and rotating the block, I was able to gain over $\frac{1}{2}$ ".



Here I am using a bench block to tap the new hole in the ram ways for the clamp guide screw.



I had to recut the link block so that the raised part of the clamp would slide over the link.

I also had to recut the clamp guide so the larger hole was open on the end facing the link. That got me another 0.2”.



As a final step, I decided to round the corner of the link block to make it easier to move around the scotch yoke's closest corner. I started by running a close fitting rod through the hole and having it rest on the jaws of my vise. The cutter is then lowered until it rests on the top face. The DRO is then set to zero. I now know how much to feed in to get the proper radius which will blend into the top face.

The block was then rotate so the top right corner points straight up. I milled it down until the DRO read zero.



This turned out to be enough metal removed so I moved over to the belt sander for a final rounding.

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