

A Small Mill Table Mounted Crane, version 1

By R. G. Sparber

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Warning: This is a lifting device. Never place any part of your body under any object being lifted by this crane. Assume anything raised can quickly fall. Inspect all parts of the crane before each use to insure that nothing is broken.

The winch is capable of lifting far more than 100 pounds but that may overstress the T slots so is not recommended.



One awkward lift can give me back problems for months. Rather than tempt fate, I built myself a small crane. It easily lifts 100 pounds which is more than enough for this application.

Here you see my 4" mill vise being lowered onto the table. Nice and uneventful.

This article gives suggestions on how to build the crane but there are no plans. It all depends on what you have in your scrap pile.

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The first step in using the crane is to secure the base. It is just a piece of $\frac{1}{4}$ " thick steel plate with a length of thick walled steel pipe welded to it.

The plate is angled so the studs coming out of the T slot line up. Standard studs and T nuts are employed.

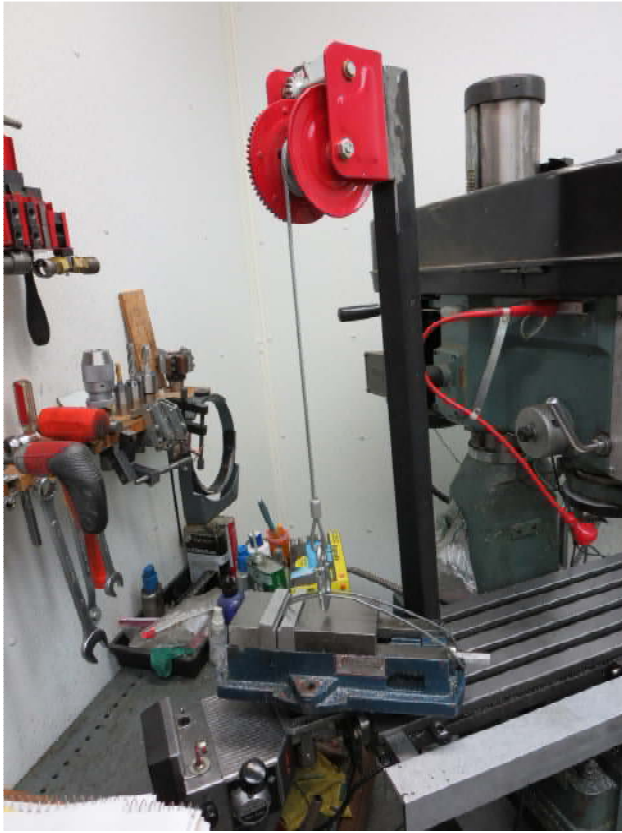


I took care to set the pipe perpendicular to the plate before welding. Then the pipe was put in my lathe and I machined the weldment to give me a flat ring. This ring supports the bottom of the crane's mast.

The mast is square tubing with another piece of square tubing welded on the top. The winch is bolted on.



My vise was sitting behind the mill table. Bending over the table to lift this vise would be really asking for trouble. But swinging a hook over to it is rather easy.



The hook is positioned to be at the center of gravity of the vise so it remains close to level when lifted.

It is a simple matter to spin the mast around and move the vise from behind the table to over the center of the table.





Here is a close up of the lifting handle for my vise. The ends of the wire were hammered so they are flat. This gives a better grip for the vise. The loop fits over the screw shank. I can slide the hook along these wires so it lands at the center of gravity.



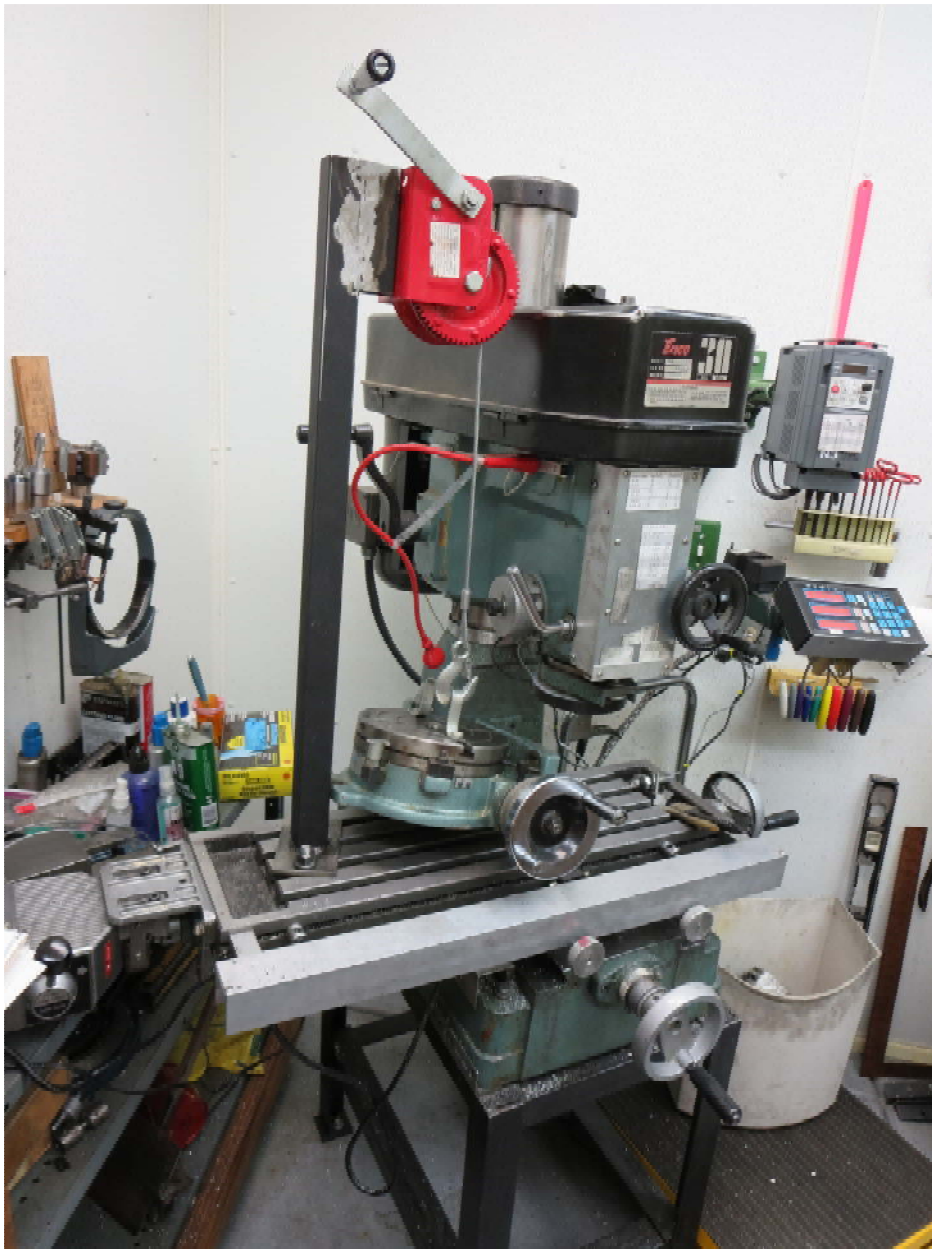
My rotary table is heavier than my vise. It has a bolt on handle for lifting.



The rotary table sits on a shelf so I must lift a little and then slide it off the shelf. The weight of the rotary table is taken by the cable so sliding it is easy.



The rotary table has now swung free of the shelf and it hanging free. Pulling it forward while raising it is not hard. Just keep those feet away from the area.



By pulling horizontally on the cable while cranking, I was able to clear the front of the mill. The mast is then rotated and the rotary table is almost down on the mill's table.



One nasty surprise was related to the handle. It started to unscrew from the crank body while I was lowering the rotary table. I have since put on a generous coating of Loctite and added a locking nut.

I welcome your comments and questions.

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