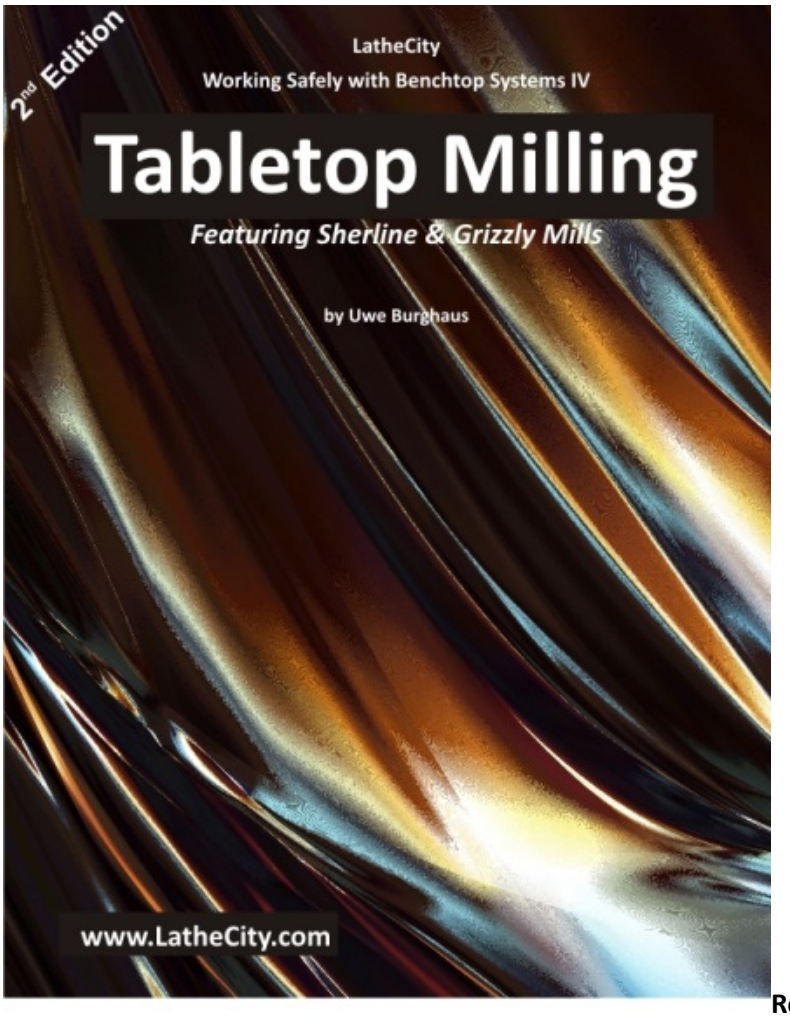

Reprinted from "Tabletop Milling"

If you try getting a shop crane together then check out the following tools: chain hoist ($50), electric hoist ($100-$200, these are often 20% duty cycle motors, 2 min operation 10 min cooling, backup plan in case that the hoist dies in the middle of the operation ?…), "I beam" trolley ($100-$200, don't work on small set-ups), gantry crane ($600-$..., too large for a small shop), pallet jack ($200 or so, but what to do with the thing afterwards), engine hoist ($300, don't work well for machinery, too bulky, not tall enough), high jack stand (probably the cheapest way, $40/each, to improvise a chop crane, however, these tip over rather easily), eye bolts ($10/each, use these rated for lifting, some can be screwed in a base plate without lifting up the machinery, didn't look safe to me, however), hooks (typically not rated for lifting), chains (those rated for lifting), load leveler ($40, results in long/tall set-ups, rather useless), beam (I used a 1.5" square steel channel which I had at hand, an "I beam" is recommended, I guess), one can rent equipment such as that, but typically not what you need… lifting up stuff like that is quite scary the first time and not safer the 2nd …

Lifting a heavy mill - Example. The G0722R mill does not have any fixtures for lifting. In addition, the clearance of the mill table to the support amounts only to about ¼". Thus, lifting hooks rated for that weight of 800 lb. don't fit underneath of the mill support. That is a safety hazard, in my opinion. How can someone sell heavy equipment without thinking about how to lift it? Lifting equipment is often not rated as such since companies are apparently afraid of law-suits. However, not to provide any lifting features may also be a legal concern. No idea if this is correct, I am not a lawyer. Use a fork lift car, perhaps, however, the problem would remain the same, in my opinion: how to hang that mill on the fork lift crane.

I purchases 8 hooks that did fit underneath the mill (not rated for lifting but hopefully sturdy enough), and connected these with chains (rated for 1,200 lb.) to a "crane" (high jack stand). I could balance the weight when sliding these hooks underneath the mill along the longer side of the mill support. Preventing that the hooks move, I interconnected the chains along the circumference of the mill with another chain. The low budget crane was assembled from part obtained from Harbor Freight Tools (Fig. 26.4).

One can get eye-bolts, which could replace the 4 screws on the mill table. However, the strongest I found (which can be mounted without lifting the equipment) were rated for lifting only ~300 lb. and it would have required enlarging the holes in the base of the mill, compromising warranty. The safest, I guess, would be to weld 90° brackets on the frame of the mill. I will do so once the warrantee is expired. Assuming that the mill is perfectly balanced one could perhaps use 4 lifting hooks rated for 1/4th or so of the total weight. However, that's risky, isn't it?

Now, lifting a weight is "rather" simple, moving it requires a lot more sophisticated and expensive equipment. Don't try to push/move equipment on a high jack stands – these will tip over.

The procedure shown in Fig. 26.4 worked for me more or less safely. I don't recommend following it. Whatever you do, the risk is yours. Use personnel protective equipment and proper lifting hardware!

Fig. 26.4: Lifting the mill with low budget equipment from Harbor Freight Tools. Don't copy this, the risk is yours. High stand jacks tip over easily, to my experience