

A Motor Belt Tensioner for my Lathe

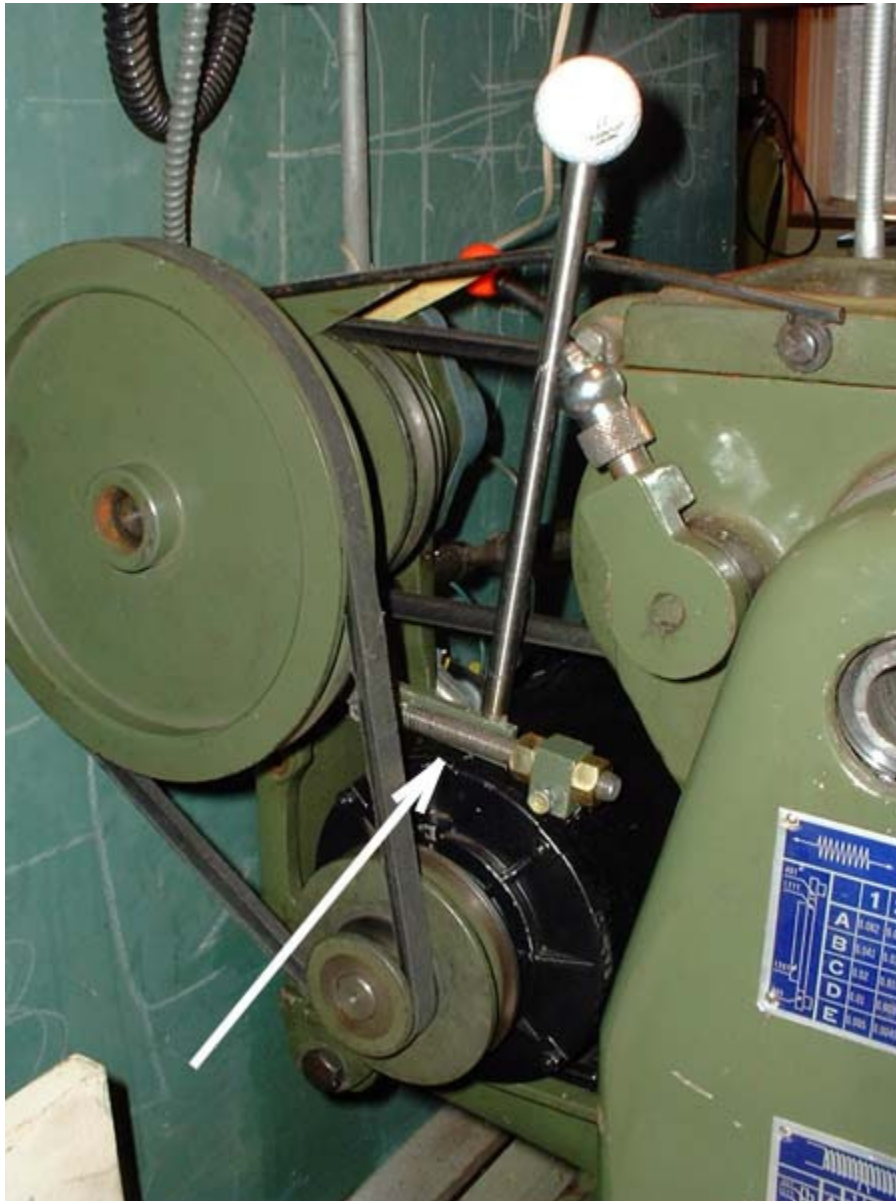
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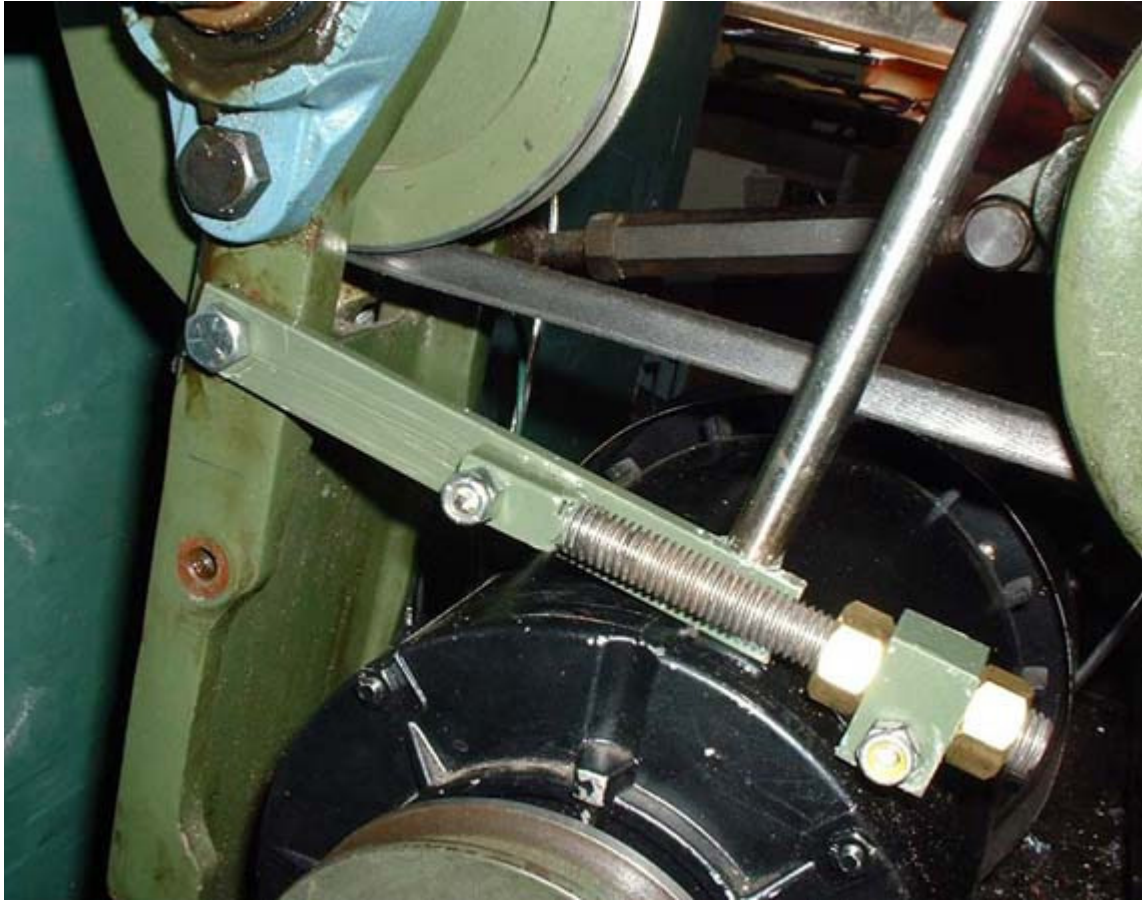
The motor-jack shaft belt on my Jet 10x24 lathe was tensioned by the weight of the motor, with a pivot on one side. This is a common but inadequate technique. For example, with my lathe in the highest speed setting and with the 4 jaw chuck mounted, there is just too much mass to accelerate to too high a speed and the motor "hops". That is, it pulls itself up the belt, then slips and drops, and repeats. To stop it, I reach over the spinning chuck to push down on the motor to increase the belt tension. A pucker moment. The lack of belt tension can also mean a slipping belt when taking a heavy cut. I was not getting nearly all the power that I have in the motor.

A second problem that I had was de-tensioning the motor belt to change speeds. There was no convenient way to lift the motor - I usually levered it up with a stick.

I have now added a breaking linkage that both tensions and de-tensions the belt:



Here it is with the upper pulley and belt removed. It is in the tensioned position and the linkage is just enough over-center to hold it:



In the de-tensioned lift position:



The linkage is fastened to the motor with a welded-on bracket. I was going to drill and tap holes in the motor case until I found that it was only 1/16" thick. The welding was done one tack at a time with water cooling after each tack.

The result is better than I expected: the motor accelerates smoothly and I can easily take cuts that would previously slip the belt and jamb the cutter. Motor belt changing is a piece of cake.