

A Stud Tool, version 1.1

By R. G. Sparber



The cylinder has a blind hole tapped $\frac{1}{4}$ -20. I want to screw the piece of threaded rod into it without damaging its threads. I did *not* want to take a long side trip to develop a handsome new tool at this time.



Here is my slapped together, "git 'er done" stud tool. It enables me to screw in $\frac{1}{4}$ -20 studs without damaging the threads. It also lets me unscrew the stud in a similar fashion.



All parts came from my scrap bin and minimal machining was needed.

The "Remove Locking Bar" on the left is $\frac{1}{4}$ " thick with a center hole tapped $\frac{1}{4}$ -20.

The $\frac{1}{2}$ " thick bar in the middle was tapped $\frac{1}{4}$ -20 in all 3 holes and is the body of the tool.

The bolt on the right has its threaded part shortened to about $\frac{1}{4}$ ". This is my "Install Lock".

The Removal Locking Bar bolts to the bottom of the body for storage.



To drive in the stud, I first screw the body onto the stud. Either the end or center hole in the 1/2" bar can be used.

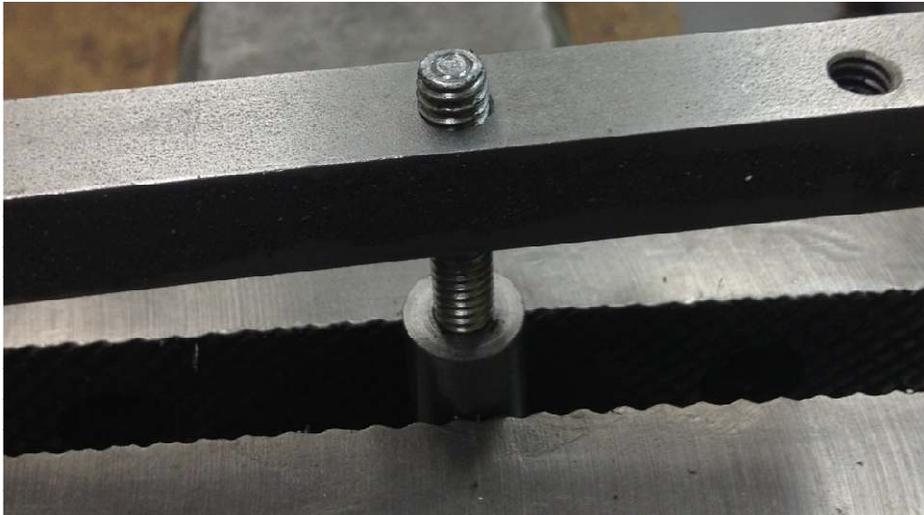
Then the Install Lock is screwed in until it wedges into the top of the stud.

Alternately, if I am driving a number of studs, I leave the Install Lock in place.



By using the center threaded hole I get a T handle.

I can now turn the tool and drive the stud into the blind hole. When done, I hold the body and turn the Install Lock counterclockwise. This releases the stud and lets me unscrew the tool.



To remove the stud, I first spin the body on.



Then I spin on the Remove Locking Bar and tighten it against the body. I am now able to turn the tool counterclockwise and remove the stud. If the stud starts to slip in the tool, I turn the Remove Locking Bar clockwise a little to tighten.

With minimal skill, a hobbyist should be able to make a much nicer looking version of this tool and even put more thread sizes in the same bars.

Gee, I think it took longer to write this up than it took to make the tool.

Reaction to Version 1.0

Vern asked me to compare this tool to a simple pair of nuts locked together. Great suggestion.

You likely have two nuts that fit the threaded rod so there is nothing to make. You also should have a pair of wrenches. For occasional use, this works fine. If you have a lot of studs to install or remove, it can start to get old.

I then asked Vern for his opinion and received the following excellent response:

Pros for the two hex nut method:

For studs of 1/2" diameter or less, two hex nuts (of the same size and thread as the stud) are for the most part readily available and easy to use. When threaded onto the stud and properly locked together, they can be used to thread a stud into a blind hole, or extract a stud whose lower threads may have been damaged during installation or use.

Cons for the two hex nut method:

Care must be taken NOT to do the following things:

1. Over torque the locking nuts, causing the bolt to fracture due to excessive strain.
2. Bend (and potentially break) the stud, while attempting to loosen or tighten it. This is sometimes easy to do, if for example, an over-sized or long wrench is used; as there is a potential for it to act more as a lever, than a wrench.
3. Attempt to turn the wrong nut in order to tighten or loosen the stud. For right-hand threaded studs, use the top nut to tighten, and the lower nut to loosen. For left-hand threaded studs, it's simply the reverse of the above.

Pros for the 'Stud Tool':

Using compression rather than strain (pulling force) to 'lock' the stud within the body of the tool, avoids the issue of breakage due to excessive strain.

By design, it provides the user a simple and quick method to install or remove a stud safely (again, when properly used), and without additional tools.

Cons for the 'Stud Tool':

Time, tools and materials needed to make the tool.

Still has the potential to fracture the stud (when extracting).

Past Experience

In the past, I have pressed long coupling nuts into service (when I had them), and a second stud or bolt to do the same thing you have done using your stud tool. The advantage of your tool, is as I stated above (i.e., no extra tools are needed once it is made).

Larry Rudd sent in this idea.

"Keep a few "coupling nuts" around in popular sizes. As the photo shows they are compact, quick and easy to use for stud runners, but they also work pretty well to hold a bolt for sawing. I have used them to hold a bolt for rework in the lathe too, but they tend to fit a little sloppy so that use has its limits. And of course they are handy for coupling threaded rod."



Acknowledgements

Thanks to Vern for asking how the tool compares to a simple set of locked nuts and then giving me a much better answer than I could generate. Thanks to Larry Rudd for showing us how a coupler nut can be used to drive studs.

I welcome your comments and questions.

If you wish to be contacted each time I publish an article, email me with just "Article Alias" in the subject line.

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