

Thread Gages (Training Wheels for a Newbie), version 2.0

By **R. G. Sparber**

Protected by Creative Commons.¹

A valuable skill to develop as a hobby machinist is to identify thread sizes by eye. But when you are just starting out, it will be necessary to have help. The thread gages presented here should assist you as your skill grows.



The simplest thread gages are a selection of labeled nuts and bolts. If the nut spin on the unknown bolt, you just identified the thread size. If the identified bolt can screw into unknown nuts, it too has been identified This approach is good because the cost is low and there is no machining necessary. It is slightly annoying because you must spin the nut on and then spin it off.

Understand that the goal here is to identify nuts and bolts that are not damaged or out of spec.

¹ This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.



A variation on the nut idea is to braze or epoxy nuts together and then saw across them. Deburr as needed. If you are able to cut right on the centerline, you get one tool for yourself and another for a friend.

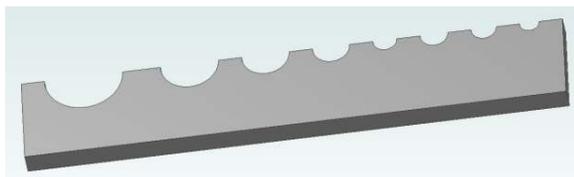


Slap the gage against the side of the bolt and if it fits snugly, you have identified the thread size.

You can braze or epoxy as many nuts as you like together but I found 3 felt about right.



A variation on this idea is to braze or epoxy three nuts flat to flat. Then saw each one shy of the center. A bit of filing will be needed so the bolt can slide in but you get the maximum possible amount of thread engaged.



If you are a little more advanced and have the tooling, you can drill a series of tap holes and then run the appropriate taps. Next, make the center line cut. The key is to get all of those holes on center.



We can also make a gage to sort nuts. Here we have a 1/4-20, 5/16-18, and 3/8-16 nut. The gage has been turned on my lathe to have diameters of 0.196", 0.252", and 0.307". These are the minimum minor diameters of these inside thread sizes. Each diameter can be +0 / -0.01" and still get the job done. Note that Metric nuts can fool this gage.



The unknown nut is dropped onto the gage and it passes through the smallest diameter but is stopped by the largest diameter. This means it must be a 5/16-18 nut.



This must be a 1/4-20 nut.



The 3/8-16 nut clears the two smallest diameters and rests on the base.

My hope is that you will initially use these gages but eventually out grow them. Then give these tools to a newbie you are helping get on board.

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.

Rick Sparber
Rgsparber.ha@gmail.com
Rick.Sparber.org