



MANSON
PRECISION REAMERS

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Instructions for the Remington 700 Tap/Mandrel

You've just purchased a precision cutting tool, made to exacting specifications from the best available materials. Taking a few minutes to read and understand these instructions will help you realize the most profit from your investment.

Tool Design

The Manson Tap was designed to allow precise re-cutting of receiver threads in Remington 700- style actions, necessary during "blueprinting" of these actions for accurizing purposes. When fully threaded into an action, the tap also serves as a precision mandrel to true the front receiver ring and outside diameter of the action.

In order to accommodate differing action internal diameters, a pair of tapered, hardened pilot bushings has been carefully fitted to the pilot of each tap. These bushings allow the tap to be used on actions with widely differing I.D.s with no loss of precision.

Additional Tools Required

The following tools are suggested for use during the receiver reaming and re-threading operation:

- Large (5" min opening) Bench Vise
- Large (12"-20") Tap Handle
- Brownells Action Wrench p/n 080-800-700 for Rem 700
- ¼" diameter x 4" Brass or Aluminum Rod
- Good-quality Cutting Oil (Brownells Do-Drill)

Please Note: *The operation can be done differently, with different tools. The tools and procedures described here are known to produce good results.*

Preliminary Steps

Strip the receiver completely, removing the trigger, bolt stop, any sight bases, etc. Using finger pressure, insert the small end of one of the bushings into the tang end of the receiver, small end of the bushing pointing toward the front. Similarly, insert the small end of the other bushing into the front of the receiver, pointing toward the rear. Slide the pilot of the Tap first through the bushing in the front receiver ring and then through the bushing in the rear receiver ring—you may have to wiggle the tap slightly to align with the bushing in the rear receiver ring. Once both bushings engage the pilot, seat the bushings further into the action's I.D. by pushing them deeper with the brass rod. The tap's pilot should slide through the guide bushings with minimal resistance.



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Tapping the Receiver

With the guide bushings seated in place, clamp the receiver in the Brownells Action Wrench, and then clamp the Action Wrench/receiver assembly in your bench vise—front receiver ring up. Oil both guide bushings lightly and slide the tap through the bushings until the cutting edges of the tap rest on the front receiver ring. Carefully pick up the existing receiver threads by turning the tap—**by hand**—until its threads engage those of the receiver. It's unlikely that the Tap will cross-thread, but care must be taken to insure it starts in the existing threads. Oil the tap with good quality cutting oil and clamp a Tap Handle to the square of the Tap. Begin turning the tap in a clockwise(right-hand) direction. The effort required to do this will be more than normal because the .010" oversize tap removes metal in the roots of the threads as well the flanks and crests. In other words, it's cutting a higher percentage thread. **Remember:** When threading a barrel for a receiver re-cut with this Tap, the Major Barrel Thread Diameter should be 1.075"/1.072".

Take two full turns, back the tap out and inspect the area just cut. It should be smooth and align perfectly with the threads that have yet to be cut. Clean any chips from the Tap and receiver, reoil the tap and bushings and tap the receiver to full depth. Some 'smiths like to reverse the tap every turn or so to "break the chip". This is not necessary and only hastens wear of the Tap's cutting edges.

Once the Tap has cleaned up the existing receiver thread, the effort required to turn it will increase greatly—at this point, you have completed truing the receiver threads. If you're not going to use the Tap/Mandrel to true the face and/or O.D. of the receiver, back it out, remove both pilot bushings, clean the receiver of all chips and oil and you're done.

If you are going to true the face and/or O.D. of the receiver, leave the Tap in place and note whether any of its threads protrude past the face of the receiver. If they do, you'll have to remove the Tap from the receiver-leave the bushings in place-and carefully grind the ends of the threads closest to the Tap's shank so they are all below the receiver's face. This will prevent your facing tool from hitting the tap during truing of the receiver face. This alteration will probably NOT be necessary, but is described only in case you are working on a receiver that was not tapped deep enough by the factory.

Receiver Work in the Lathe Using the Tap as a Mandrel

With the Tap seated fully into the receiver threads, it may be used as a turning mandrel for truing the receiver face and/or O.D. The Tap/receiver assembly can be turned between centers, or can be driven by a collet with the opposite end supported by the tailstock. In either case, the tailstock must be perfectly aligned with the headstock to insure good results. The shank of the tap should be driven by the headstock, with the other end of the Tap supported by the tailstock center. This means you'll be working close to the headstock and will need a left-hand parting tool to true the receiver face. Working this way minimizes the effects of any tailstock mis-alignment.

Make sure all elements of your set-up are snug and proceed to do your facing/O.D. work. When complete, remove the Tap from the receiver, tap out the guide bushings using a soft hammer, clean everything up and you're done. This tool, like all tools we manufacture are guaranteed against defects in material and workmanship. It will perform the job for which it was designed when used in accordance with accepted machining principles and these guidelines. If you have ANY QUESTIONS about its use, or suggestions as to how it might be improved, please call or write us. IT'S BETTER TO ASK A QUESTION THAN TO RUIN AN EXPENSIVE RECEIVER OR TOOL.