



**MANSON**  
PRECISION REAMERS

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## Instructions for the Manson Scope Ring Reamer

Have you ever experienced a scope moving under recoil, or had to tighten ring screws to the point you thought they'd break in order to hold the scope in place? Or, having removed a scope from a set of rings, have you noticed the tube slightly distorted from uneven ring pressure?

These problems are usually caused by less-than-perfect ring alignment and incomplete contact between the ID of the rings and the scope. Modern rings are very well made but, because of tolerances required in manufacturing, can be improved upon in each specific installation. Complete contact between each ring and the scope tube keeps the scope in place under even the heaviest recoil and eliminates loose reticles and other problems caused by distortion of the scope tube. You'll find also that quick release mounts work better when no stress exists between scope and rings. Lapping is sometimes used to align rings, but this takes a lot of time. Using the Manson Scope Ring Reamer takes much less time and achieves the desired results.

Each reamer is marked with the size it cuts. It shouldn't have to be said, but use a 1" reamer with 1" rings, a 30mm reamer with 30mm rings and a 26mm reamer with 26mm rings. DO NOT use the reamer with Weaver strap-type rings, or vertically split rings of the Conetrol or Buehler type.

The criterion is that there must be a way gradually to tighten the rings on the reamer as it cuts, without moving the rings relative to the base. If tightening the ring to its base also tightens the ring on the scope, the Reamer should not be used. Don't attempt to ream plated or anodized rings without first removing the plate or anodize from the inside surface only. These surface treatments may damage the cutting edges of the reamer. Investment-cast stainless Ruger rings are also very hard and should be avoided.

All work should be done with the unloaded firearm securely clamped in a padded bench vise. It's recommended that a rag be placed over the action/magazine/sear to keep chips from finding their way into these areas.

Mount the bases and rings in the usual manner. Alignment rods, such as those sold by Brownells, are a good tool to insure the best possible alignment before reaming. Better alignment prior to reaming means less metal has to be removed and the installation will be that much stronger—particularly important with light rings or heavy-recoiling rifles.

Lay the Reamer in the rings as you would a scope, apply some good quality cutting oil (Brownells Do-Drill) and lightly tighten the caps. If you're working with Kimber-type, vertically-split rings, clamp each ring tightly to its base, slide the reamer through both rings and gently snug the top screws. Using a 7/8" open-end or adjustable wrench, turn the Reamer several turns in the direction indicated on the tool. IF IT WON'T TURN WITH MODERATE TORQUE, DON'T FORCE IT! Back off the clamping pressure and try again—you'll quickly develop a feel for how much clamping pressure is needed.

If you're using rings with windage-adjustable bases, be especially careful to keep the windage screws tight and not apply excessive force turning the reamer. Loose windage screws and/or too much torque can pull the ring from its base and distort the screws.



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Remove the Reamer from the rings and examine the inner surfaces for clean-up. If the rings haven't completely cleaned up, remove any chips, replace and re-oil the reamer and repeat the process, with the caps tightened a little more. Gradually tighten the screws and turn the reamer, tighten and turn, until 100% clean-up is achieved. If it's difficult to determine the areas cleaned up by the Reamer, apply some black magic marker or machinists' blue to the inside of the rings—when the black or blue is gone, the rings have been reamed to 100% contact. Break any sharp edges created during reaming and clean off all chips. Degrease the rings and you're ready to install the scope, knowing it will be held securely and stress-free.

Be aware that with badly aligned rings the caps may bottom before clean-up. If this happens, remove a little stock from the ring flanges to allow the caps to clamp on the Reamer. In all cases, make sure neither ring has been reamed too thin for good strength. If you have any doubts about the strength of a particular installation, it's better to try another set of rings than to send out a job that will fail in the field.

Like all our products, the Manson Scope Ring Reamer is warranted against defects in material and workmanship. If you have ANY questions about using this tool, or suggestions as to how it could be improved, please call. It's better to ask questions than to ruin an expensive job and lose a customer.

