

Peppermill/Salt Grinder Instructions

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Initial Blank Notes

Start with a 3" x 3" rectangular blank squared up on both ends. Squared ends are key, do not skip this step.

Kit instructions will tell you minimum size blank of 2-½" square. That will work, but there is no margin for error. I always use 3" square to give both a wider feel and more room for cleaning up mistakes.

NOTE: You are not bound to the head/body proportions specified in the instructions. If you want a head that is 1" larger, simply add 1" to the head and subtract 1" from the body. The overall size must not change.

For the Chinese 9" kit from Craig Meyer, I use a 10 ¼" 3 x 3 blank. I like the head larger than the Chinese instructions want. So I cut the head to 2 ¾" and the body to 7 ½". For the PSI kit, use their dimensions.

Cutting Head

Cut the head from the blank to the length desired either using the above dimensions or as specified in the kit instructions. The chuck tenon you make will be shaped later, not removed. Do not add ¼" for the chuck tenon you will make later.

Cutting Body

Next find the body length your kit requires and add exactly ½" to that length. For example, if kit instructions say 12" body, cut the body piece to 12 ½". This allows for a ¼" chuck tenon on each end. Both be removed later on.

NOTE: If you're using my Chinese dimensions above, the ½" has already been added to the body length. Do not add it again here.

Make sure to cut the body to size on the OPPOSITE end from where you cut the head. This keeps the grain pattern consistent between the body and head.



Mark The Pieces

To keep the grain orientation correct, mark a T (top) and a B (bottom) on the ends of both pieces. This helps keep track of correct orientation of the blanks when drilling holes, shaping the head inset tenon and as you pick up and put down each piece.

Mark your center points on each side of both pieces.

Turning the Body

Mount the body blank between centers, spindle turn to round. Make a $\frac{1}{4}$ " chuck tenon on each end of the body. Size to fit your bowl chuck – I use my small jaws.

Don't try to make your final shape at this point. It is much easier to decide that later when both head and body are turned as one piece.

Test fit BOTH tenons to your chuck now.



Turning the Head

Mount the head blank with the 'T' at headstock and 'B' at live center - Spindle turn between centers to round.

Turn a chuck tenon of proper size for your bowl chuck on the end marked with 'T'.

Turn the inset tenon on the 'B' end per kit instructions. Usually this is a $\frac{1}{2}$ " wide tenon turned down to precisely a 1 and $\frac{1}{16}$ " diameter the entire length of the tenon.

This dimension is key to smooth operation of the grinder. Too small and the head will have play in it during after final shaping. Too large and the head won't seat properly onto the body.



Now decide your intended shape:

If doing a classic shape, round the edge on 'B' side of head a little. This makes it easier to achieve a fully round shape later when both head and body are turned as one piece.

Be sure to slightly concave the 'B' end inward so the head will sit flat to the top of the body during final assembly.

If doing a modern/minimalist shape, there's nothing more to do. Final shape will be decided once both pieces are turned together.





Drilling the Head

Drill the 7mm hole clear through.

I use a parting tool to true up the bottom face of the inset tenon. This is where the mounting disc from the hardware kit will install.

If it is not flat 90-degrees perpendicular to the inset tenon when you install the mounting disc, the head will not seat properly to the body. You'll have a gap you do not want or poor operation when twisting the head to grind.

SAND the bottom of the head and the inset tenon at this time. You won't get another chance to do it on the lathe after this step.

Test fit tenon to bowl chuck before you proceed.

Drilling the Body

Mount the 'T' end of body into chuck so you can drill the bottom of body first.

Drill $\frac{3}{4}$ " deep hole with larger forstner bit. Kit will probably say $\frac{1}{2}$ " deep, but you must allow for the $\frac{1}{4}$ " tenon. So drill the larger hole $\frac{3}{4}$ " deep from outside edge of bowl tenon.

Install boring extension and 1-1/16" forstner bit.

Drill smaller hole slowly. The faster you try to drill, the more chance the drill bit will walk off center. Remember to clear the drill bit every 2-3 full turns of the tailstock wheel. Drill as far as you want to go.



True up the edge and face of the tenon on the 'B' end now. This ensures the tenon is now turned true to the hole you just drilled. Skipping this step will result in alignment issues later.

Flip body around in bowl chuck so you can drill opposite end. **Be gentle tightening the bowl chuck down** on the body bottom tenon, you just drilled most of that tenon's wood away. Drill smaller hole until you've drilled clear through body.

Turn off bowl tenon and cut the end inward slightly concave. This ensures the head and body remain flat to each other. Sand this end now so you don't have to worry about it later.

Clear the debris from the hole.



TEST FIT THE HEAD at this point. The head inset tenon should fit cleanly into the 1-1/16" hole of the body with no slop or play.

If it doesn't fit, lightly sand inset tenon on head or just re-chuck it and carefully reduce diameter with a parting tool. Test fit head to body until the two pieces sit flush to each other and head rotates smoothly.

Turning Final Mill/Grinder

Remove bowl chuck. Install preferred mill chuck in headstock. I use the one from Rubber Chucky.

Turn both body and head together. To do this, mount bottom of body to mill chuck first. Then add head, align the grain pattern, bring up tailstock and tighten.

I wait until I'm completely done before I turn off the bottom bowl tenon, but technically it can be done at any point.

Shape the head to merge the bowl tenon with the head. Do not remove the tenon. The head length must remain as specified or you'll have to modify the center drive shaft of the kit to make everything fit.

Turn/shape/sand/finish. Don't forget to sand the bottom.



FINISHING NOTES

If using 3408 to finish and doing it on the lathe, remove head from body first. You don't want to accidentally glue the head to the body during finishing. Apply 3408 to head by hand. This also gives you the opportunity to 3408 the top of the body and the bottom of the head now that they are separated.

Once the finish is done, install hardware per kit instructions.

Always drill pilot holes for screws and drill them at a slight angle outwards from the center. This helps ensure you don't split the body base when screws are tightened.