WOODTURNERS
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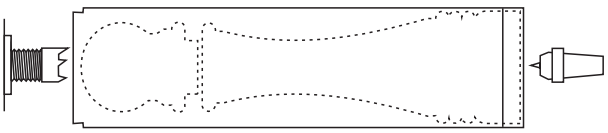
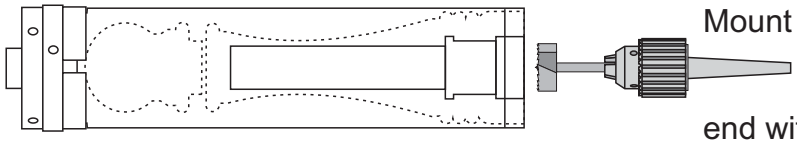
WOODTURNERS GUILD INC
TURNING TOMORROW'S TREASURES

SALT OR PEPPER GRINDER

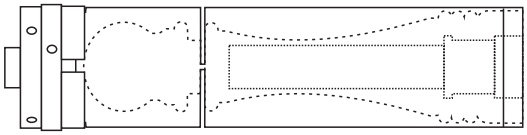
This uses the full size CrushGrind mechanism and makes a grinder as designed by the CrushGrind designers. You can make it almost any height you wish by adding to or cutting off the shaft. The minimum diameter for the foot which holds the grinder mechanism is about 65mm. This drawing is scaled down from a grinder that is 300mm tall with an 80mm diameter foot.



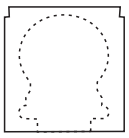
Mount between centres a block of about 320 long by 85mm square. Round it off and down to 81mm diameter. Choose which is to be the top, capstan, end and cut a spigot for the chuck of your choice at that end. Make a small V cut about 5mm in from the planned bottom end of the grinder for later remounting in a 100mm chuck.

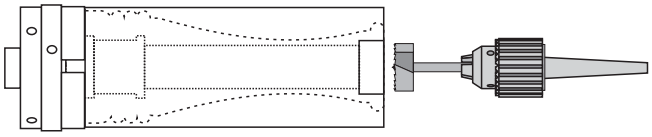


Mount the wood in a chuck (a spindle steady can be helpful) and dress the exposed end. Drill the bottom end with a hole 45mm diameter and 20mm (or more) into the wood. Then drill a 38mm diameter hole for a further 35mm into the wood. Cut a groove at the far end of this hole 6mm long and 3mm deep (towards the side of the grinder). The dimensions for these holes and the groove are critical for fitting the grinder mechanism. Now continue to drill a 38mm, or smaller, hole to within 30mm of the top end of the grinder base. Sand and finish the base and inside the drilled holes.

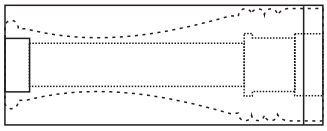


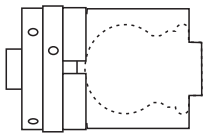
Part the grinder body from the capstan. Set the capstan part aside.





Remount the body in a chuck. Use the V cut made earlier for easy re-mounting. Drill a 38mm hole down to meet the previously drilled hole from the bottom. Sand and finish these end faces. Set this body part aside.





Remount the capstan. Cut the spigot on the underside of the capstan to be a nice fit within the drilled hole in the base. Not loose at this stage.

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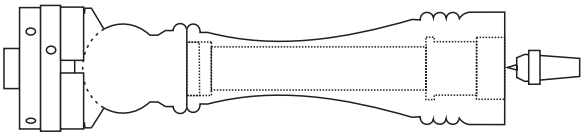
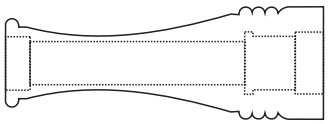
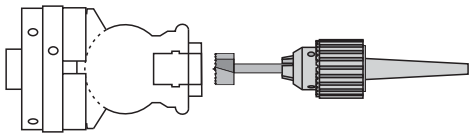
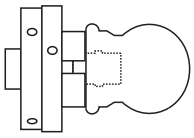


Put the base into place on the capstan and hold it there with the tailstock. You may have to make a wooden plug to fit within the base to take the tailstock pressure. Turn the grinder base and as much of the capstan as is possible to the shape of your choice. Sand and finish all of these surfaces. Set the body part aside.





Drill a 22mm diameter hole 34mm into the capstan. Cut a groove 1.5mm (or a little more) into the sides of this hole between 15 and 20mm from the base of the capstan. Sand and finish all these surfaces. Sand the sides of the spigot a little more where it fits the base to ensure that it will rotate easily.



Remount the capstan by the spigot in a chuck or jam chuck. Finish the top side.

To fit the grinder into the bottom of the base part and the driver into the capstan the makers of the CrushGrind mechanism recommend the use of a press (Use a drill press, carpenters vice, or the tailstock of your lathe). The parts should be a firm fit so that the ribs around the parts seat into the wood and prevent rotation while the clips go into the cut recesses and hold the parts up into the drilled holes.

Some makers consider that this pressure may split the wood and they prefer to cut the clips off and reduce the size of the ribs. Then they glue the parts into place.

If you want a nice grain match between the capstan and body make the initial parting cut with a slim parting tool. Then add a separate piece of wood into the capstan and turn it to make the spigot that fits into the body.