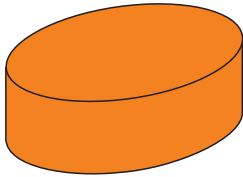




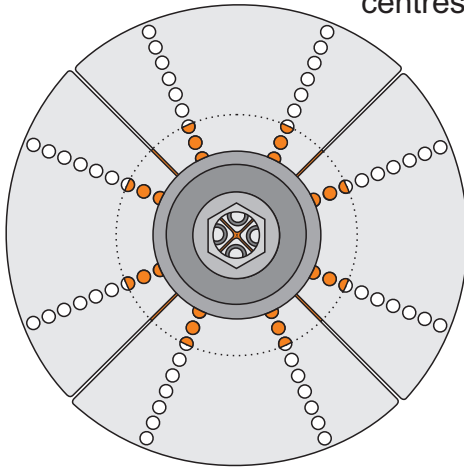
Ball Chuck on Cole Jaws

This chuck is not intended as a device for making spherical objects but it may be good for finishing parts of them. It is intended as a way to hold a ball for decoration or other enhancement. Before starting this project you need to decide what size of ball you want the chuck to hold.

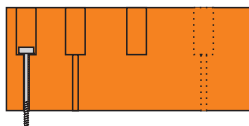
Check the Cole jaws you have: the distance between the innermost threaded holes for the buttons as these have varied between models; and the thread size in those holes - current Cole jaws have an M6 x 1.0 thread. You will need eight bolts, with a flat underside to the head, that are long enough to hold your chosen block of wood.



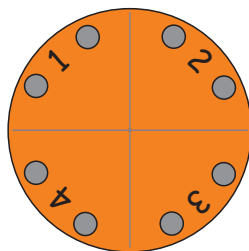
The bowl blank you select for making the jaws needs to have a thickness that is at least equal to 66% of the diameter of the ball you plan to hold in it. The diameter of the bowl blank needs to be about twice the diameter of the ball you intend to hold in it. Mount this wood between centres on the lathe and make all surfaces flat and smooth.



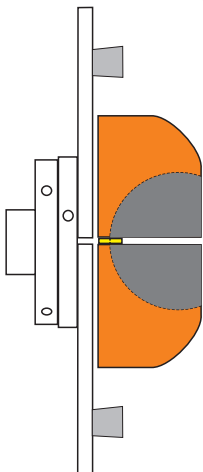
Place the Cole jaws face-down on the block of wood. Look down through the chuck to find and position the centre-point of the wood as now marked by the drive centre on the lathe. Then mark on the wood the centre of each screw hole that will be used.



Drill the first part of the hole just wider than the head of the bolt and to a depth that will allow 10mm of the bolt to extend beyond the wood. Use a flat-faced Forstner style drill. Drill the second hole with a 6mm diameter bit right through the wood.



When all holes are drilled mark where the block is to be cut to quarters. Write numbers on the quarters to assist with repeated re-assembly of the ball chuck. Cut the block to quarters.



With the four quarters of wood secured to the Cole jaws place a 5 to 10mm packer between each quarter and tighten the jaws. Turn a cavity of the size required to fit your sphere. Note that the cavity must be deeper than the radius of the ball so that there is a lip on the cavity to hold the ball in place. Turn away a little of the outer edge of the wooden chuck to make it easier to use.