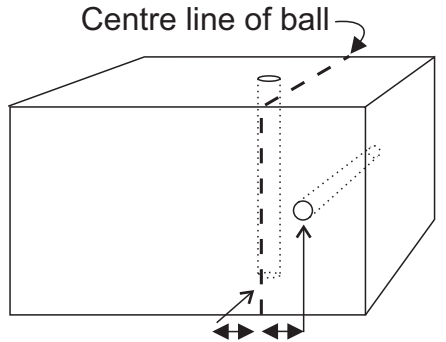


Tunnelled Ball

Demonstrated by Bruce Wood who was inspired to do this by the work of Mike Foster. Mike attributed his inspiration to Paul Hedman.

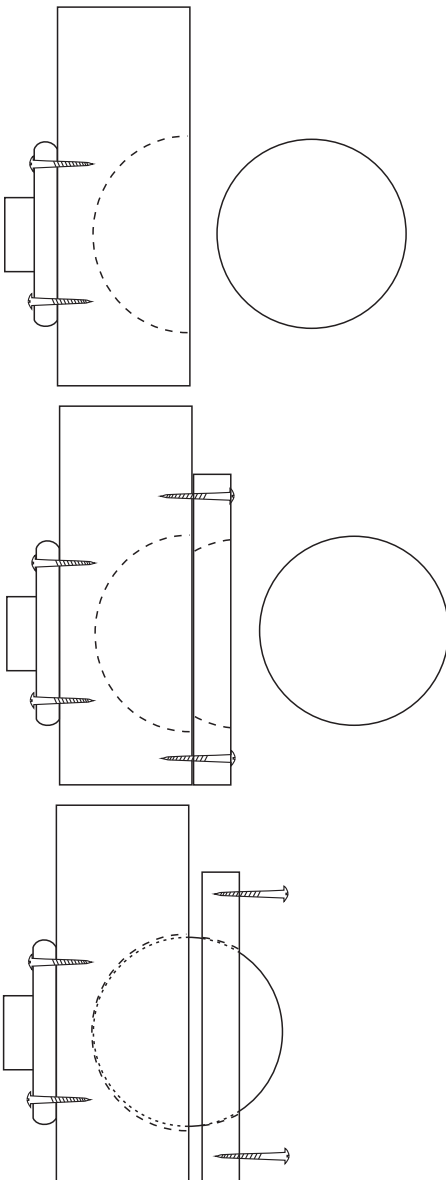
A wooden ball with two shaped tunnels through it. Make the ball to an exact diameter and fit it into an offset ball chuck of that same diameter.

The ball shown here is 100mm diameter with the drawings scaled to fit the page.



Drill holes 22mm off-centre line

The Ball Chuck



The block is 110mm square with a length depending on your ball making method. The two 10mm holes are laterally central and 22mm away from the centre line of the ball.

Make this into a ball. Ensure that the centre line marked on the block does become the centre of the finished ball.

Sand to a good finish. The ball should now be 100mm diameter.

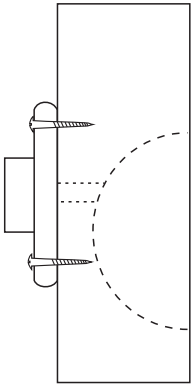
Make a circular template to exactly 100mm diameter. Use a single piece of wood, or mdf and scrap wood, to make a block at least 70mm thick and 200mm square. Mount this on a faceplate with that faceplate 22mm off-centre and exactly on the centre line drawn on the wood. Cut a curve into this wood so that half of the diameter of the template is in the wood but it is not a tight fit. You should also have 20mm thickness left between the bottom of this curve and the faceplate.

Screw a square of mdf to the face of the chuck. Place the screws exactly equidistant around this mdf so that it can be turned over later.

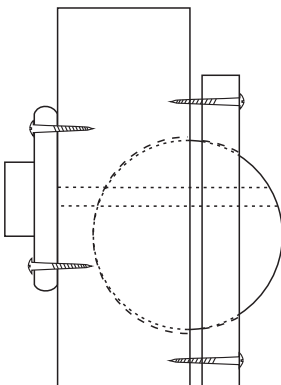
Cut a curve through this mdf so that the ball template will fit in until it is 5mm short of half way. Try to cut the curve on the mdf so that the whole curve is in contact with the template.

Take the mdf off and turn it around. Put the ball into the chuck and test that the mdf plate will hold it securely.

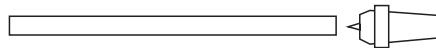
Tunnelled Ball page 2



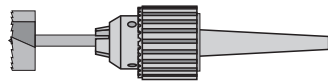
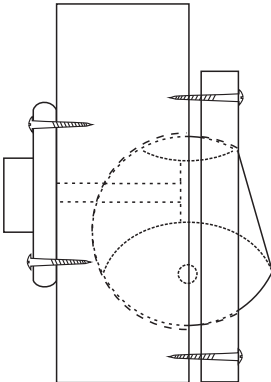
Shift the faceplate the 22mm back to the exact centre of the back of the chuck. Drill a 10mm hole through the chuck. If the wood at this central point is not at least 20mm thick to ensure that the dowel used to align the ball is in perfect position, then note the tailstock use below.



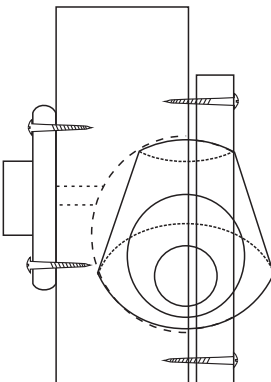
Put the ball into the chuck and align one of the 10mm holes with the 10mm hole in the chuck by passing a 10mm dowel through both. You may check this alignment by bringing the tailstock up to the centre of the dowel end.



Screw the mdf plate on. You may now need to add some weights to the upper side of the chuck to get even rotation of the work.



Use a 32mm forstner bit to drill just past half way through the ball. Then use the tools of your choice to open this hole to a nice curve. Sand and finish this curve.



For each of the remaining three holes repeat this process. Align each one with the dowel then drill and then cut. Sand and finish each one as you progress.

Texture, decorate, colour, or carve as you desire.

