

A centre steady

Walter Hall makes a centre steady, using offcuts and scraps

WALTER HALL



Walter Hall is a woodturner who has specialised in making pens and pencils for more than 20 years. Based on the beautiful Northumberland coast in the UK, Walter sells his bespoke pens and pencils through local craft centres and via his website.

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As a pen maker, I seldom have need of a large centre steady and could not justify the expense of buying one. However, when a friend asked me if I could make her a tall vase, necessity became the mother of invention and I set about making one from whatever I could find lying around unused in my workshop.

This steady is designed specifically to fit my Nova 3000 lathe in its current location with a shelf behind it, but there is no reason why the design could not be modified to fit any lathe.

The frame must be strong enough to support the work without vibration and the arms sufficiently rigid to avoid flexing. Provided these criteria are met, the choice of materials is not important. I used 12mm plywood laminated together to give a strong 24mm frame, but MDF would be equally effective as would thicker material that would not need laminating. The arms, which I have made from aluminium, could equally well be made from ply, MDF, or a stable hardwood. Be innovative and use what you have to hand. The whole point of making this yourself is to avoid the expense of buying one ready made.



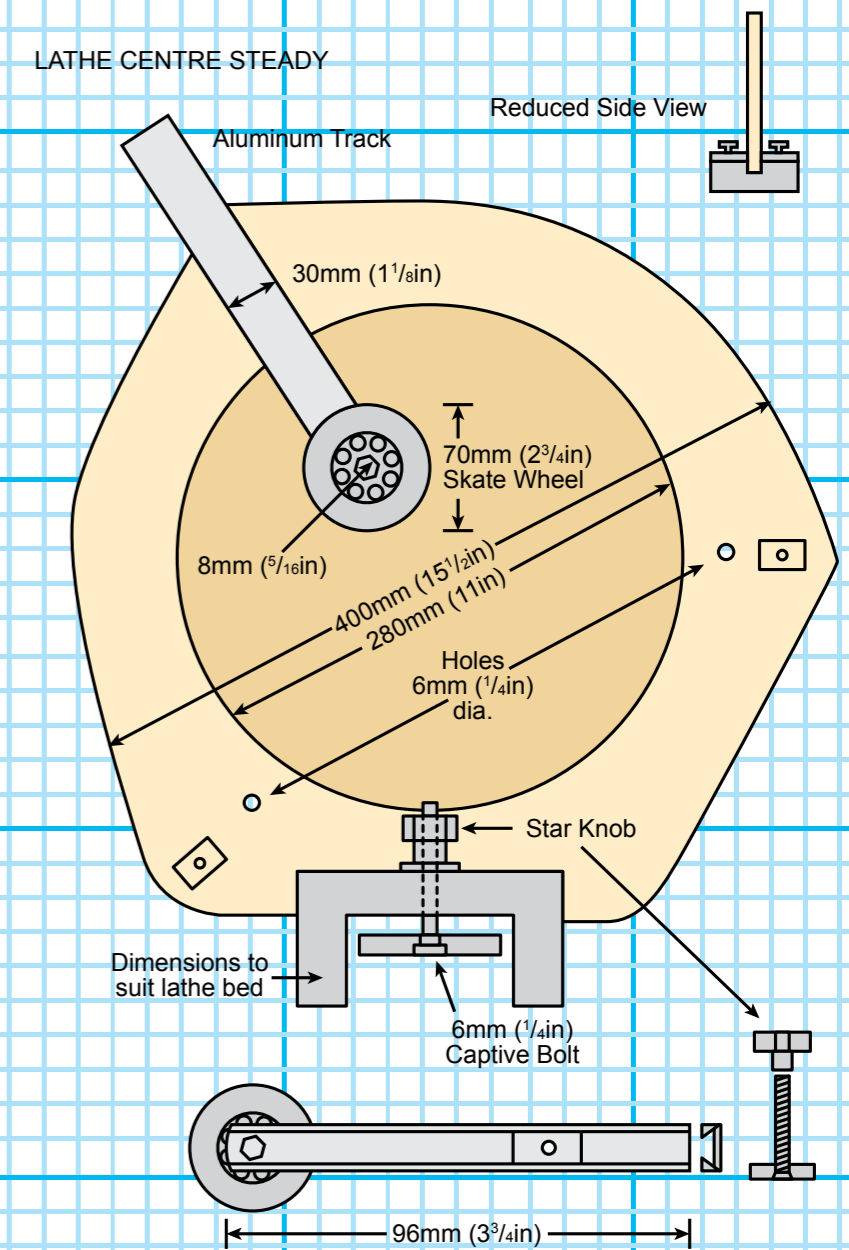
PHOTOGRAPHS BY WALTER HALL

INFORMATION AND PLANS

EQUIPMENT USED

- Plywood or MDF offcuts to suit lathe size
- T-track or similar extrusion
- In-line skate wheels (and bolts for mounting)
- 12mm Corian or similar
- 6mm t-bolts and star knobs
- Wood glue
- Cramps and/or weights
- Protractor and marking tools
- Bandsaw
- Pillar drill or hand drill and drill bits
- 6mm tap and tap holder
- Router and circle cutting jig (or jigsaw or padsaw)
- Biscuit joiner and biscuits
- Disk sander or grinder

LATHE CENTRE STEADY



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1 Begin by carefully measuring the centre height of your lathe and the exact dimensions of the bed. It is critical to get these measurements accurate if the centre is to run properly without problems

2 Build the mainframe from plywood. This needs to be heavy enough to withstand the stresses that will be placed upon it. I had a choice of 18mm or 12mm boards available and felt that neither would be sufficient so laminated two 12mm sheets together to form a 24mm board. Use a disposable paint roller to spread the glue evenly

3 Tightly clamp the glued-up boards until the adhesive is fully set. I used a combination of G-clamps and weights, leaving the boards for 24 hours. Follow the instructions for the adhesive you choose. Make the board large enough to cut out the mainframe and the components for the saddle



4 Draw out the design directly onto the board. The outer diameter of the frame should match the swing of your lathe, while the inner diameter should be about 50mm less than this to form a robust structure. Add wider lugs at the mounting locations for the arms and add a flat section tangential to the outer diameter of the frame at the bottom to attach the saddle



5 Use a protractor to accurately position the arm locations. These may be varied to suit your lathe and its location, but must be set at 120° intervals to provide proper support to the work when the steady is in use



6 Cut out the centre circle. I used a router and circle cutting jig, but you could use a jigsaw, scrollsaw or even cut it by hand with a padsaw or fretsaw, depending on the equipment you have available



7 Cut the outer profile using a bandsaw, but again, other options would be equally effective. Drill the holes for the arm mountings, sand all the raw edges smooth and fill any voids in the plywood with a good quality wood filler



8 Cut the components for the saddle from the same board and dimension these appropriately to the bed design of your lathe



9 Join the saddle components using a biscuit jointer. Take care to ensure accurate square joints and good alignment with the central axis of the lathe



10 Everything must be glued up and tightly clamped to ensure a good strong structure. Check everything is square and true before leaving overnight to set



TOP TIPS FOR USE

- Mount the work in the chuck before fitting the steady to the lathe
- Slide the steady into the required position and bring the skate wheels into light contact with the work
- Rotate the work by hand to ensure even light pressure from the wheels
- Take care not to use too much pressure or you will mark the work
- Protect the surface of the work with several layers of low tack masking tape
- Make sure that all knobs and other fasteners are tight before starting the lathe
- Avoid excessive speed or heavy cuts



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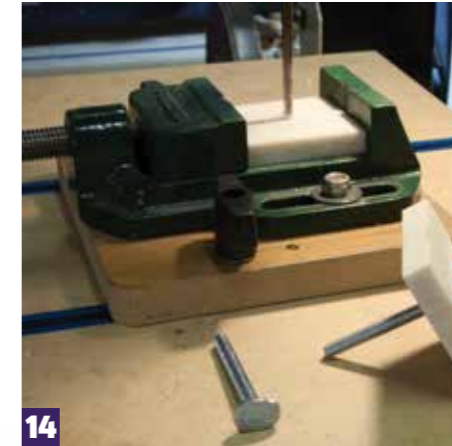
11 Construct the arms using any aluminium profile with t-slots, or even plywood. I made mine from some mitre t-track and sliders that I rescued from an old router table. The design can be easily modified to what you have to hand. Use the wheels from in-line skates and bolt these to the arms

12 Cut the t-track to length and round the ends on a disk sander or grinder. You must now drill a mounting hole for the bolts by which the wheels are attached

13 File smooth any sharp edges that are a result of the shaping of the arms, to ensure that the steady will be safe in use



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14 Attach the saddle to the bed using two plates made from 12mm Corian, which should slide easily on the underside of the bed. Carefully dimension the plates to fit the bed, then drill and tap for t-bolts

15 Mount the saddle on the bed and secure with the Corian plates and t-bolts, then secure with star knobs

16 Next, mount the mitre track sliders on the frame through the pre-drilled holes and fit a wooden guide to prevent lateral movement of the arms



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17 You can now mount the completed steady on the lathe and put it to use. Masking tape can help to protect your work from marking by the steady wheels ●



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