

MAKING AND QUARTERING WHEELS FOR LOCOS

by Keith Jones - NWMES

Using a three or four jaw chuck, hold the wheel casting on the tread diameter, machine the back face, then drill and fine bore the spindle hole to a good fit on the axle.

Now turn a shaft to fit the lathe spindle taper, drill and thread one end for a draw bar. The now tapered shaft should be long enough so that when inserted in the lathe spindle, enough protrudes so that the end will be just flush with the wheel face when mounted on a face plate (see photo 1). Use a draw bar tighten the shaft into the lathe bore and turn down the protruding end to be a good fit in the wheel hole (i.e. exactly the same diameter as the wheel axles). Now fit the face plate and mark the position of a hole to take an Allen screw passing through the spokes of the wheel such that it will hold the wheel to the faceplate, but it will not interfere with machining the face of the flange or the face of the hub. Drill and tap the hole and fit the wheel to the faceplate with the Allen screw (see photo 1).

Now face the other side of the wheel and turn the tread diameters to size.

Now onto the miller, and here I use my rotary table. Mount the wheel so that it is centred under the machine spindle. Move the cross slide by the crank distance then lock the cross slide. Put a pointer (such as a needle or pin) in your drill chuck and rotate the table so the pointer is central in the web of the wheel (see photo 2 & 2a). Now drill and bore crank pin hole.

Back to the lathe. Turn two pins, one to be a good fit in the wheel centre hole, and one a good fit in the crank pin hole. The pins should have heads larger than the centre hole and both of identical size (the exact size does not matter as long as they are the same).

I now put a tool makers jack under one of the chuck jaws and leave the chuck key in the chuck. I hang then hang a weight hanging on the key (see photo 3). Remember – this is not a good time to switch the lathe on!

Now put a machine parallel across the heads of the two pins and with a clock gauge on the cross slide adjust the jack until it reads zero along the length of the parallel.

I now use my slotting attachment and cut a keyway, if you have not got a slotting attachment use a tool in the tool post and move the saddle back and forth whilst applying a cut by moving the cross slide. We cut keyways like this in the tool room. The main thing to remember is to make sure your tool bit is on centre line.

You should now turn your axles leaving them on the bar (this means back turning the diameter nearest the chuck). Now put a dividing head on the miller and cut one keyway. Then index 90 degrees and cut the second keyway. Finally, back on the lathe part off the axle from the bar.

Once fitted to the axle, the wheel will now be quartered and should be spot on. I have used this method a number of times and personally I have never had a problem.

Thanks for reading



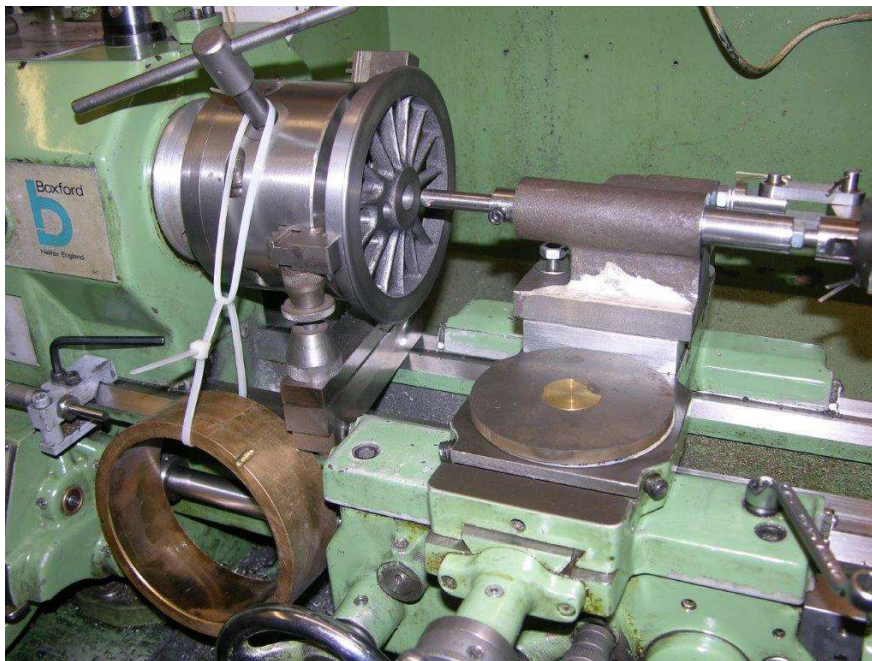
Wheel Quartering - Photo 1



Wheel Quartering – Photo 2



Wheel Quartering – Photo 3



Wheel Quartering – Photo 4



Wheel Quartering – Photo 5