Morse #0 Arbor for UNIMAT SL DB 200 Headstock

Current prices are on our website.

Size: The new tailstock spindle for UNIMAT SL DB looks basically the same as the old spindle except that it has a Morse #0 arbor cut in the front end. The new spindle is cut from stainless steel and still has a M12-1.0 threaded head, and M12-1.0 end. The UNIMAT standard spindle and our design have about the same length. The ring is separately machined and hold with two setscrews.

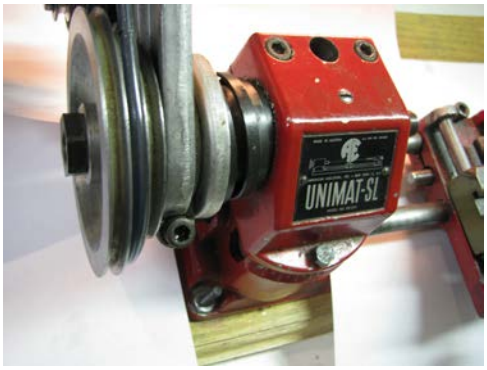
Purpose of that tool: Use professional and standard Morse type accessories on your UNIMAT. The advantage of a Morse arbor is that it can be used as a fast tool change system. In addition, many accessories are available and the system is self-centered, i.e., it is more precise than just a boring type arbor.

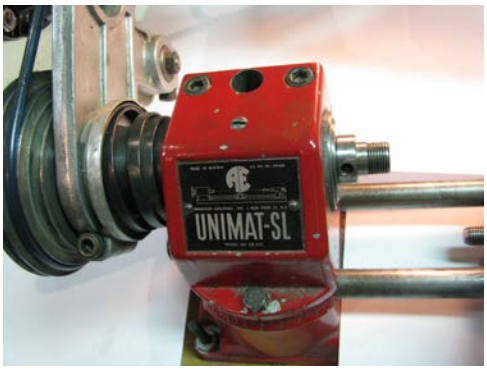
Mounting the new spindle: Disassemble your old tailstock (and remember how you do it - ☺, don't lose parts -☺ -☺). Proceed in reversed order to mount the new spindle – that's it.

A few hints:

- Remove the drive belt.
- Remove the M12-1.0 nut at the end of the spindle.
- Pull the old spindle out from the front end.
- Remove spacer tubing, bearing, front plate.
- Proceed in reversed order to mount the new spindle.

Other options/procedures exist.





Technical notes & FAQ

What is Morse..? For the novice: If you read descriptions (specs) of lathes than you may come across the term Morse taper #2 .. Äh – Morse … what? No, that's not about SOS - beep beep … It refers to the type/shape of the lathe spindle. Morse taper (name of a guy) are standardized slopes either cut in the outside of a round (Morse taper) or a sloped boring (Morse arbor). If the angle cut is small (1-2°),

then the taper/arbor combination is self-holding. That pair fits quite tight together without bolts or glue. Therefore, a Morse arbor is use in the headstock and tailstock spindle of a lathe. (Your drill press may also have one – here is it typically a Jacobs (another guy) taper.) Morse taper are numbered from zero to seven depending on the diameter of the large end. Sherlines lathe has a Morse #1 in the headstock and Morse #0 in the tailstock, for example. Most Chinese imported lathes have Morse #2 spindles. Some other benchtop systems just have a straight through hole as an arbor, such as the UNIMAT lathes (7.2 mm boring).

Why not using a M12-to-Morse #0 adapter? One could also machine a screw-on M12 adapter that holds a Morse arbor. However, that would probably result in a pretty bad runout.

Do full length Morse #0 accessories fit? Yes, full length Morse #0 taper are 2" long and fit in your new headstock spindle.

Can I use reduced length (Sherline type) Morse #0 accessories? Yes, you can.

Do all Morse accessories fit in the tailstock? All Morse #0 tailstock accessories will fit, full length and reduced length (without a tang). The spindle is drilled through with O.D. 7.2 mm, i.e., you will be limited in regard of drawbar Morse type accessories.

How to improve on the alignment? Try one of our buddy bars.

Do I need a new parts? No, you don't, you can save the costs for that. Your old headstock parts (bearings etc.) will fit and need to be used. Our spindle does NOT come with new bearings or any other parts. (We don't offer this at LatheCity, yet.)

Can I still use my old UNIMAT accessories? Yes, you can. The new spindle comes with a M12-1.0 mm threaded end at the spindle head. Thus all screw-on type accessories can be used. In addition, LatheCity offers an adapter for using straight pin UNIMAT accessories such as life centers. That adapter is a Morse #0 taper to ~7.2 mm straight hole adapter. We do also offer Morse #0 blanks if you want to machine yourself Morse type gizmos.

How does the arbor really look like? The Morse #0 arbor is cut to full ANSI length using a Morse #0 reamer.

The new spindle does not fit my bearings? That is actually impossible. The new headstock is machined directly from 13 mm stainless steel. Use a little sandpaper if required at all.

Large TIR? The new spindle jiggles. UNIMAT is known for notorious alignment problems and large runout (TIR, total indicator runout). The spindle is machined on a lathe with a TIR of <0.002". We do what we can but there are simply technical limits. If the spindle does not run true enough we can send you an exchange you can try out. The only other thing we can offer is money back. New bearings and proper mounting are important. How large is the TIR of your old spindle?

Safety/Disclaimer: Adapters are not cutting tools in themselves. Still, general safety rules for machine tools are in place. For an extended list of safety notes, consult the literature or go to our website for a free download of a safety booklet (http://www.lathecity.com/Books/Safety-Booklet-Lathe-City.pdf). We do not warrant that any accessories can be used for any particular application. Damage on equipment (particularly damage on the spindle by over tightened screws) caused by usage of accessories is the customer's responsibility. Hobby machinists tend to stick their nose too close to the machinery. Use safety glasses and protective clothing. This manual does not replace books about metal working and/or proper training. Morse adapter/accessories may start to rotate when, for example, a drill bit gets stuck in the work piece. In any case, switch the lathe off. Do not try to stop the rotating adapter with your hands. Make sure that the adapter is properly inserted in the Morse arbor – the quill typically needs to be moved out somewhat. Using a dead center can result in over-heating the work piece and the adapter. Switch the lathe off, and cool down the pieces. The spindle must be assembled correctly otherwise unstable and dangerous working conditions may appear. This manual provides some assistance to assemble the spindle. However, it is the customer's responsibility to properly assemble the spindle and test the newly mounted spindle. Use small RPM, first. For example, if the M12 screw at the end is loose it may fly off at great speed. Use safety glasses. Similarly a loose spindle can cause serious machining problems. The UNIMAT lathe is knows for notorious alignment problems causing large TIR (total indicator runout), i.e., jiggle of e.g. the spindle. If you encounter this, don't use the new spindle. Read the safety notes and follow these and other relevant safety procedures. Neither LatheCity nor its owner shall be liable for damage arising from unprofessional use or misuse of LatheCity accessories. Max RPM 1800 Replace set screws with Nyclock screws in case that heavy vibration can be expected. Any legal action brought against LatheCity/Uwe Burghaus shall be tried in the State of North Dakota in Fargo, USA. WARRANTY: we do not provide any warranty for our products. In no event shall LaheCity's liability exceed the purchase price paid for the product. We shall in no event be liable for death, injuries to persons or property or incidental, contingent, special or consequential damage arising from the use of our products. Do not use lathe accessories that don't run true on your lathe. This may cause unstable and/or dangerous machining operations.

Returns in resalable condition accepted within 30 days (Factory direct) or 14 days (eBay), no questions asked. However, we do NOT reimburse shipping costs, credit card fees, broker fees, taxes, etc. We will charge the respective shipping costs to customers for products that were offered as free shipping when returned. Customer covers all shipping costs and credit card fees (2-3%) raised by e.g. PayPal also when reimbursing payments. Note that the return rate of LatheCity products is below 1%.

Design details may deviate from the image shown which does not affect the function of the accessory.

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