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# D.I.Y/Self Help Sheet

# ALIGNMENT OF THE NOVA 3000 HEADSTOCK & TAILSTOCK

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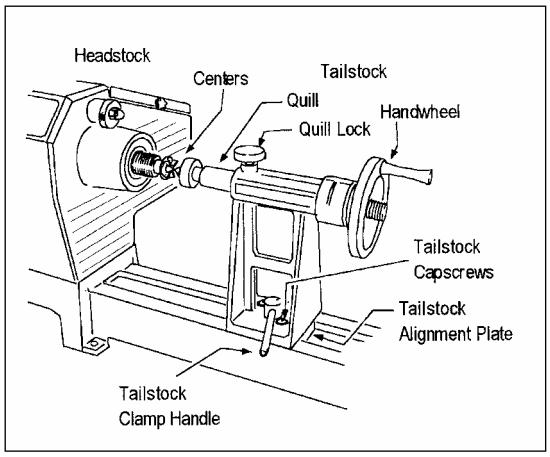
| Date Raised: 10.06.99<br><br>Date Amended: | Safe practises should always be employed to ensure the Health and Safety of yourself, employees and customers (if applicable) Refer to product manuals, exploded drawings and our website if further assistance is required, or contact us on service@teknatool.com |




The Nova 3000 lathe incorporates a unique adjustable tailstock to ensure the utmost in turning accuracy.

**Tolerances:**
The between centre tolerance is 0.5mm on a standard lathe configuration i.e. with one Bed Extension

**Possible reasons and solutions for misalignment:**

1. Bed incorrectly bolted to stand causing a twist.
   Refer to your manual for information on setting up your lathe. The stand must be level and flat. Use a spirit level on the top of the bed to check position of the lathe.
2. Headstock has not returned to the locked detent position after being swivelled.

- Headstock detent pin not fully home
- Dirt or wood dust accumulated in detent hole on underside of the headstock.
- Swivel pin has movement

3. Tailstock out of alignment.
   Check alignment of tailstock.

Follow the instructions below for fine tuning adjustment and alignment of the tailstock.

**Parts Required:**
1 x Adjustable Tailstock (available from Teknatool International, standard on all Nova 3000 lathes)
1 x Adjustable Tailstock Locking Plate (available from Teknatool International, standard with Nova 3000 Lathes)
2 x M8x20 Button Head Cap Screws (available from Teknatool International)
2 x M8 flat washers (available from Teknatool International)
1 x Acruline System or Live Centre and Spur Centre (both come standard with the Nova 3000 lathes)

**Tools Required:**
1 x 5mm Allen Key

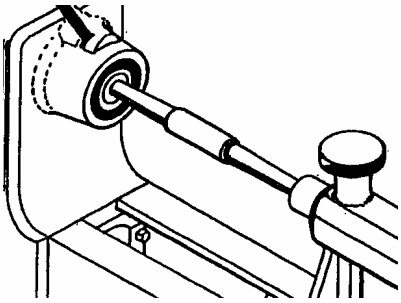
**Procedure:**
All Nova 3000 lathes that leave Teknatool International are aligned to the headstock. Any tailstocks that are sent as replacement parts will have the locking plates loosely secured by the cap screws. They have to be aligned to the Headstock using the following procedure:

**1**. **IMPORTANT** Ensure that releasing the headstock swivel correctly centres the Headstock clamp bolt and pushing the detent pin upward with a slight backwards and forwards screwing motion.
Relock headstock clamp bolt.

**2**. If this is a new tailstock first check that the plate enters the bed and is free to move along the whole bed length. If not, sand/file the sides of the plate to ensure a smooth fit (undo cap screws and remove plate). After sanding/filing put the plate in the same way it was removed to align with the holes and secure cap screws. The cap screws should be tightened in such a way that you can move the plate in order to have sideways movement on the plate for alignment.

**3**. Move half of the Tailstock Quill out and lock it.

**4**. Check that the internal morse tapers are clean and free of burrs. Place 2MT Acruline gauge in Headstock and home firmly.



**5**. Bring the tailstock quill close to the headstock (ensure morse taper is clean) and carefully lead tailstock quill over morse until almost fully engaged on morse. Push firmly forward on the tailstock in a fast snap motion to lock the morse taper in tailstock quill. Make sure that the tailstock is free to position itself on the morse taper this ensures perfect alignment. Tighten the cap screws equally and firmly secure.

**6**. Using a knock out bar, remove the Acruline gauge from the headstock , slide tailstock back and remove the Acruline gauge from the tailstock quill .

**7**. Using accurate centres, you can check alignment by bringing the tailstock up close to the headstock centre point and locking the tailstock in place. Now carefully advance quill out until centre points are almost touching the lock quill. The centre points' should be a close match, less than 0.5mm (.020 “). This has checked the quill in the mid-position. Check also when the quill is advanced almost fully out and when the quill is almost fully in. At all stages of the travel the match should be within approximately 0.5mm difference. If there is significant variation repeat steps 5 & 6.