

VB36

SHORTBED TAILSTOCK

(Principal Components)

PART REF.

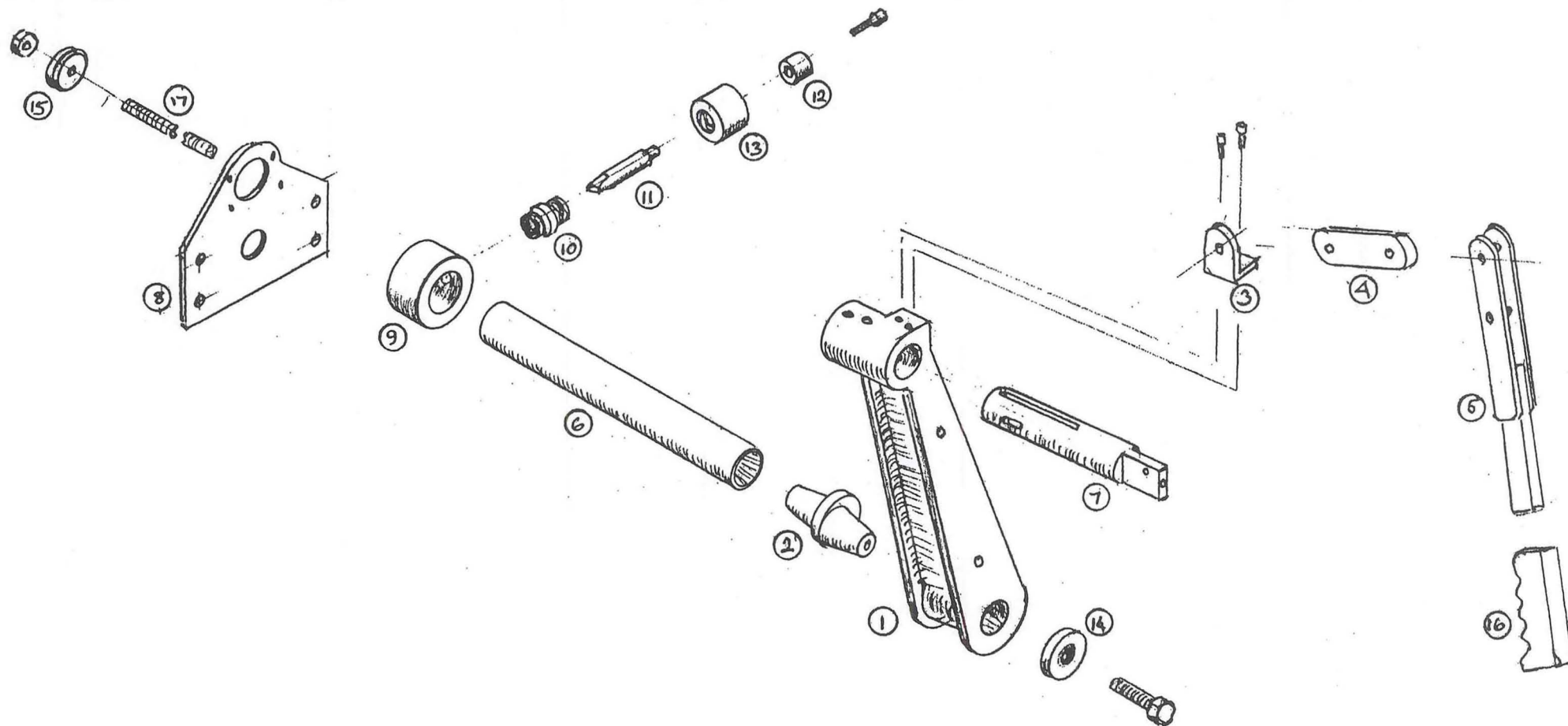
DESCRIPTION

SBT 1	Tailstock Body Casting
SBT 2	Taper Block
SBT 3	Handle Bracket
SBT 4	Handle Link
SBT 5	Handle
SBT 6	Bed Tube
SBT 7	Tailstock Quill
SBT 8	Support Plate
SBT 9	Support Bush

PART REF.

DESCRIPTION

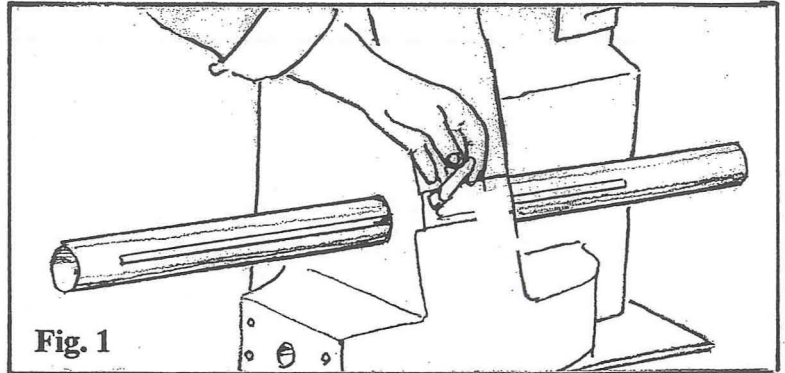
SBT 10	Detent Plunger Bush
SBT 11	Detent Plunger
SBT 12	Handwheel Cap
SBT 13	Knurled Handwheel
SBT 14	Taper Clamp Cap
SBT 15	Tension Rod Clamp Cap
SBT 16	Handle Grip
SBT 17	Threaded Tension Rod



ASSEMBLY INSTRUCTIONS FOR VB36 SHORTBED TAILSTOCK

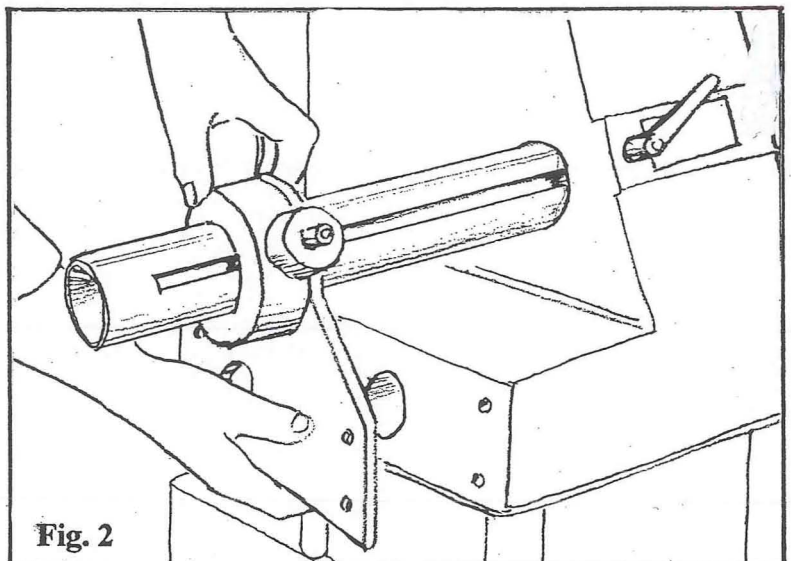
1. Prepare the bore in the headstock casting for the new *Tailstock Bed Tube* (SBT6) by removing any traces of the lathe's powder coating from the bore and/or sharp edges left by the original machining process. Fine aluminium oxide paper (Say 320 grit or finer) or emery cloth will be suitable. Spray the bore with a light lubricant such as WD40.

2. Remove the ~~one~~ M8 screws which would normally clamp the standard tailstock bed bar in place, and replace them with the ~~one~~ M8 *Adjustable Clamping Levers*. Do not allow the screws to project into the bore until after the *Tailstock Bed Tube* has been inserted.

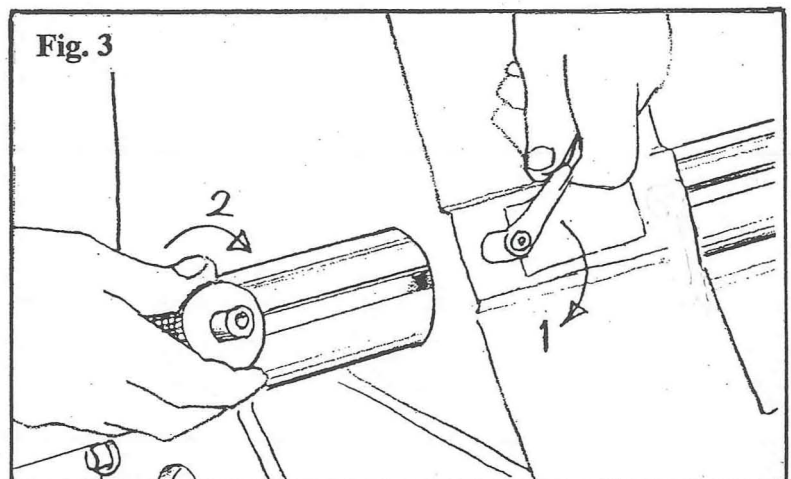


3. Slide the new *Bed Tube* through the headstock bore with the machined groove at about 2 o'clock so that the M8 *Clamping Levers* can be tightened into it. Check that the tube slides freely. (Fig. 1)

4. Loosely fix the *Support Bush Assembly* (SBT/Assy.) onto its *Support Plate* (SBT8) using the 4 x M8 screws with spring and flat washers. Slide the whole assembly onto the *Bed Tube*. Now loosely fix the *Support Plate* to the headstock casting using the 4 x M10 screws with spring and flat washers. (Fig. 2)



5. Fully tighten, first the M8 *Clamping Levers*, and then the *Knurled Handwheel* (SBT13) which locate and clamp the *Bed Tube*. (Fig. 3) (For subsequent use, it does not matter in which order the clamps are tightened.)



Please note step 6 is no longer required in assembly and there is only one locking handle Required as shown in fig 1,2 & 3.

7. Progressively and uniformly tighten, **first** the M8 screws that hold the *Support Bush* to the *Support Plate*, **then** the M10 screws which clamp the *Support Plate* to the headstock casting. (Fig. 4) (Do not overtighten the M10 screws as they are threaded into cast iron.)

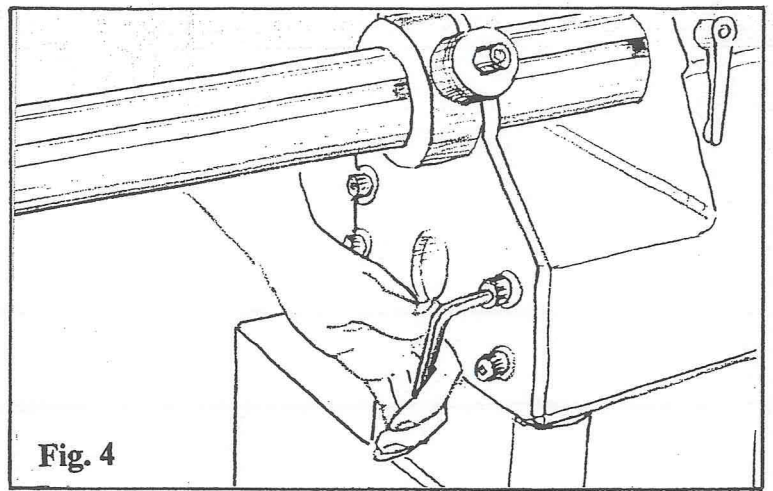


Fig. 4

8. Lubricate the bar with a light oil spray. Slacken all the bed bar clamps and check that the bar is free enough to slide in and out of the lathe under light to moderate pressure.

9. Fully screw home one end of the *Threaded Tension Rod* (SBT17) into the tapped hole in the end of the concentric side of the *Taper Block* (SBT2). Using a *12mm Ø bar and spanner, very firmly tighten the lock-nut. (Fig. 5) Use of thread grade 'Loctite' on this joint will help to prevent it unscrewing when future adjustments are made to the alignment of the centres.

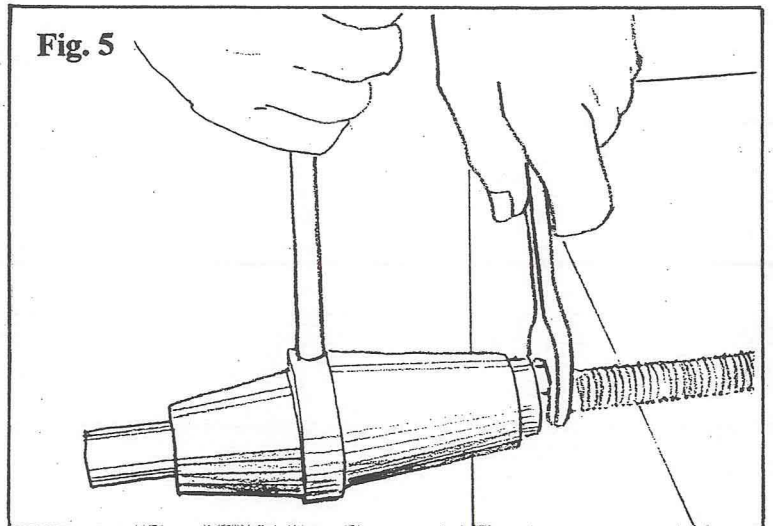


Fig. 5

*(The shaft/index locking bar supplied with the VB lathe is suitable for this.)

10. Ensure that the male and female tapers are thoroughly clean and loosely insert the taper into the mouth of the *Bed Tube* so that the threaded *Tension Rod* extends through it and projects from the rear.

11. Fit the *Tension Rod Clamp Cap* (SBT15) over the *Tension Rod* at the rear of the *Bed Tube*. Fit two, greased, flat washers and the retaining nut. (Fig. 6) (Lubrication of the washers will assist rotation of the *Tension Rod* as the *Taper Block* is later turned to make the alignment setting.)

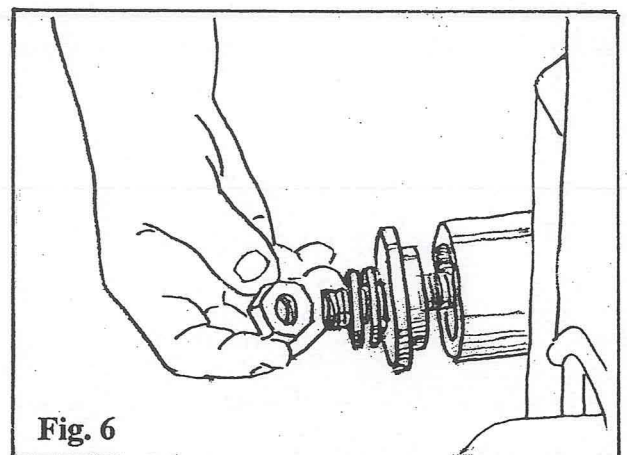
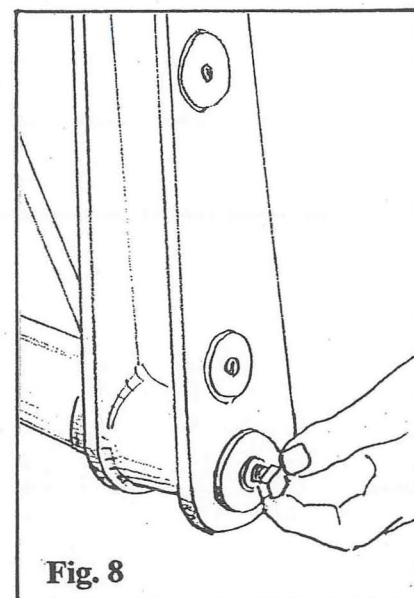
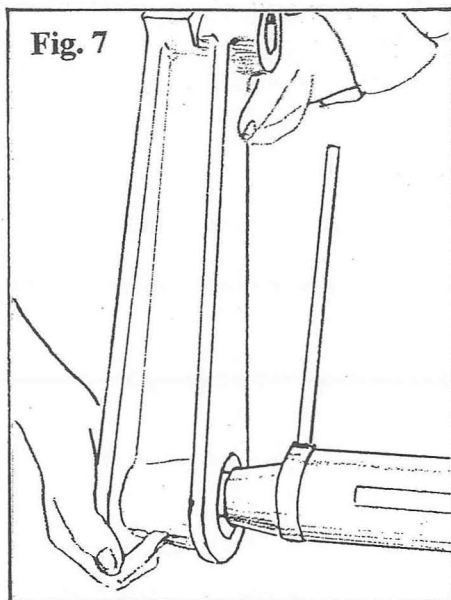


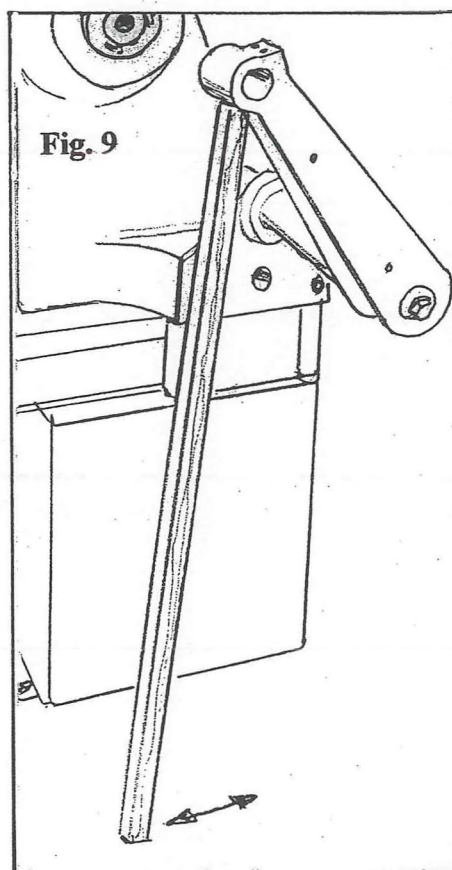
Fig. 6

12. Loosely tighten (just a little more than finger pressure) the nut at the rear of the *Bed Tube* so that the *Taper Block* is pulled into light contact with its seat in the mouth of the *Bed Tube*. Using a 12mm Ø bar in the hole in the large diameter of the *Taper Block*, turn the block a few degrees left and right to check for free rotational movement, whilst at the same time continuing to tighten the *Tension Rod Nut* at the rear of the *Bed Tube*. The aim is to pull the taper into its seat to an extent that allows it to be turned by the leverage of the tommy bar, but not so that it locks. (If the taper does lock into the *Bed Tube* at this stage, slacken the *Tension Rod Nut* and screw it out to the end of the exposed thread to protect it from damage. Shield the outer face of the nut with a wooden block and strike the block a sharp blow with a heavy mallet to free the taper. (Take care to protect the thread with the clamping nut and by use of a wooden block.)

13. Ensure that the taper surfaces are clean and fit the *Tailstock Body Casting* (SBT 1) onto the eccentric projection of the *Taper Block*. Fit the *Taper Clamp Cap* (SBT 14) with the M12 Hex. screw and flat washer. Tighten the *Taper Clamp Cap* using light pressure so that the *Tailstock Body Casting* can still be rotated on its taper seat. (Figs. 7 & 8)

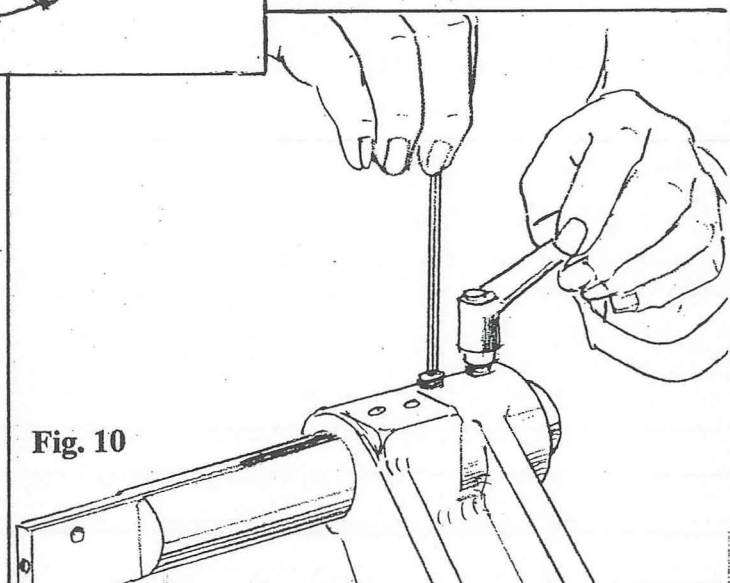


14. Support the weight of the casting with a length of wood from the underside of the upper barrel to the floor. The support batten should be of a length that allows it to be used as an adjustable prop for varying the height of the tailstock centre. (Fig. 9)

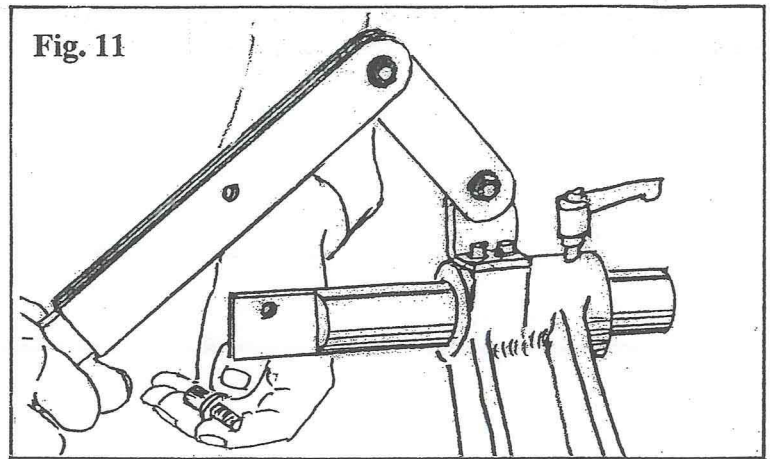


15. Ensure that the internal bore of the tailstock barrel and the *Tailstock Quill* (SBT 7) are clean and lubricated with light oil and assemble.

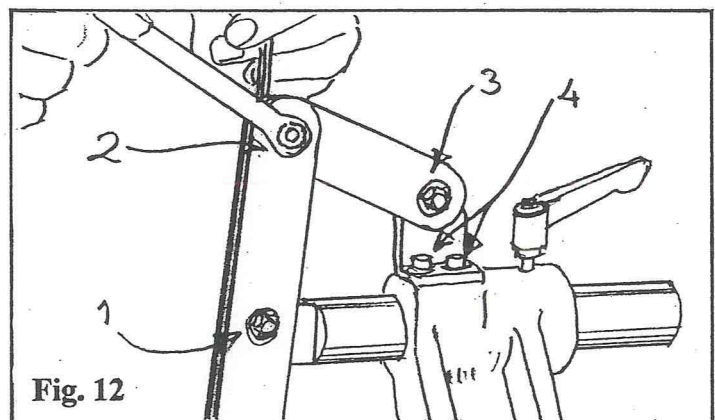
16. Loosely fit the *Handle Bracket* (SBT 3) to the top of the *Tailstock Body Casting* using the 2 x M6 capscrews with flat and spring washers. Fit the *M8 Adjustable Clamp* to the forward hole in the top of the *Tailstock Body Casting* so that it locates in the machined groove in the top of the *Tailstock Quill*. Next, fit the *M8 grub screw* in the adjacent tapped hole and adjust it so that it locates in the groove without bottoming. (Fig. 10)



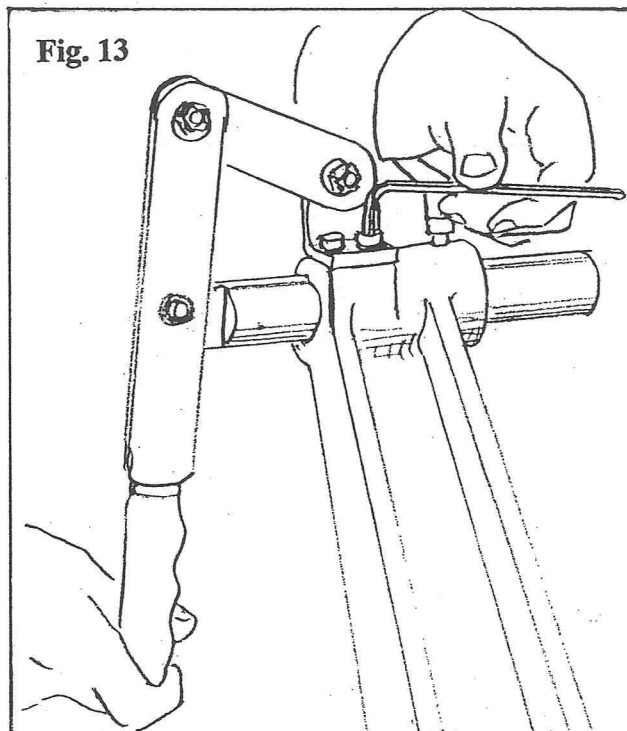
17. Using the M6 Bolts, flat washers and Nyloc Nuts, loosely fit the *Handle Link* (SBT 4) to the *Handle Bracket*. Then fit the *Handle* (SBT 5) to the *Handle Link* and then connect the *Handle* so that it sits over the flats machined on the rear of the *Tailstock Quill*. (Fig. 11)



18. Adjust all the Nyloc nuts so that they barely pinch the components they are securing and allow free pivotal movement of the links. (Fig. 12)



19. Check that the *Handle Bracket* is properly aligned with the handle assembly and finally tighten down the M6 screws that hold the *Handle Bracket* in place on the *Tailstock Body Casting*. (Fig. 13)



20. Insert a tail centre and drive centre in their respective seats. Extend the *Tailstock Quill* to approximately half way and clamp it in place with the *M8 Adjustable Clamp*.

21. Slacken the two *M8 Adjustable Clamps* and the *Knurled Handwheel* that lock the horizontal extension of the complete tailstock assembly. Be careful to manually support the weight of the *Tailstock Body Casting* as you now slide the assembly forward so that the centres are nearly touching. Replace the wooden prop so that it supports the casting in this position.

22. Re-tighten the three *Bed Tube Clamps* before proceeding with the next phase of installation as these have an effect on the centre alignment.

23. Whilst supporting the *Tailstock Body Casting*, use a tommy bar to rotate the *Taper Block*. This has the effect of raising or lowering the tail centre. A combination of *Taper Block* rotation and manual pivoting of the *Tailstock Body Casting* will enable the points of the tail and drive centres to be aligned precisely. (Fig. 14)

This setting must be held whilst the *Taper Block* is finally clamped in the mouth of the *Bed Tube* by tightening the *Tension Rod Nut* at the rear of the *Bed tube*. Use the wooden prop to hold the setting and check that the centres do not move as the taper is tightened.

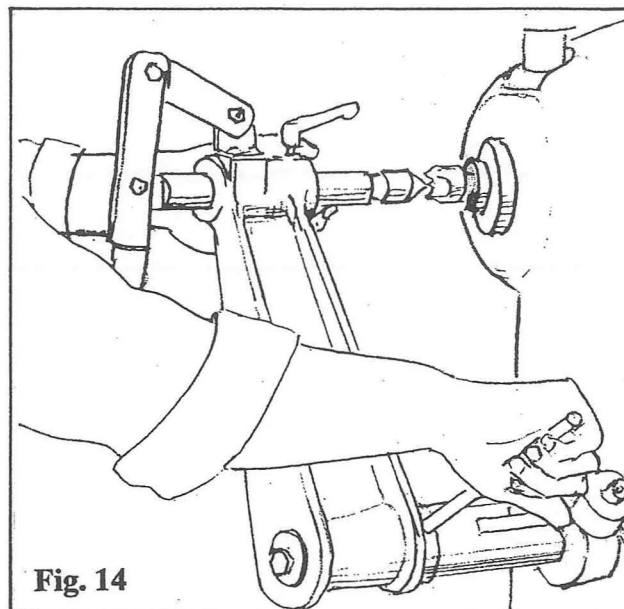


Fig. 14

24. When tightening the *Taper Clamp Cap Screw* that retains and locks the *Tailstock Body Casting* on its eccentric mounting taper, it will be necessary to apply counter-pressure to the casting to prevent it moving with the twisting pressure of the *Taper Clamp Cap*. Do this by applying anti-clockwise force to the top of the *Tailstock Body Casting* as the clamp screw is tightened. Check continually that the alignment of the centres is maintained. (Fig. 15)

Very firm clamping pressure is needed on both tapers to ensure that no movement is possible when the tailstock is in use. (See also: Section 26 below and "Vertical Leg" under Accessories.)

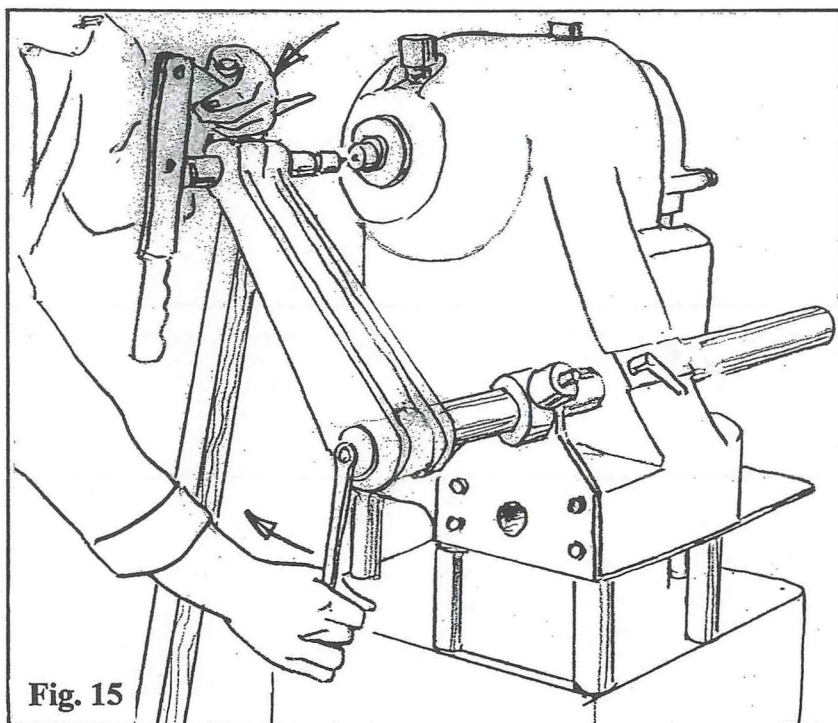


Fig. 15

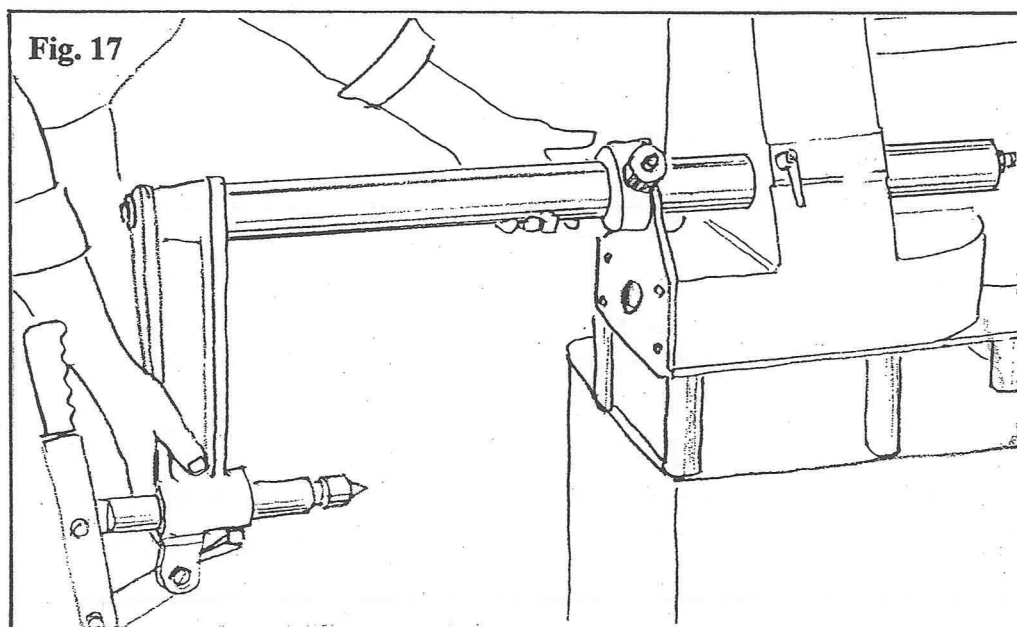
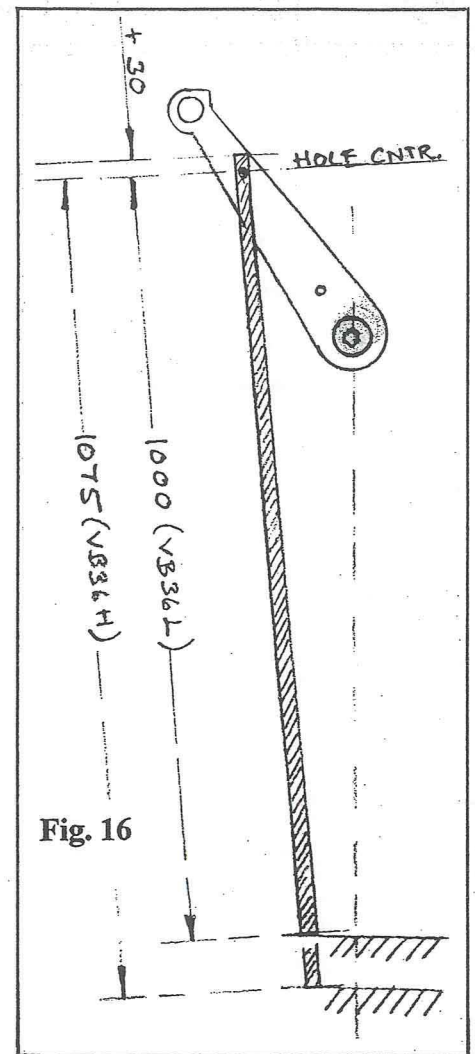
25. If the setting is lost as the tapers are tightened, it will be necessary to free one or both, re-set and re-tighten. (See Paragraph 12 for rear taper unlocking procedure.) To release the lock of the front taper, unscrew the *Taper Clamp Cap Screw* a few turns. Hold a wooden block against the flat forward face of the *Tailstock Body Casting* as near as possible to the *Bed Tube*. Strike the wooden block a sharp blow with a heavy mallet. **TAKE GREAT CARE TO SUPPORT THE WEIGHT OF THE TAILSTOCK BODY CASTING BEFORE, DURING AND AFTER RELEASING THE TAPER LOCK.**

26. Two M8 tapped holes can be seen on the outer face of the *Tailstock Body Casting*. These are provided so that a vertical leg can be simply attached to the uppermost hole to provide direct ground support for the tailstock body. The leg serves to convert the force exerted by the workpiece from one which would otherwise act as a twisting force on the tapers, to a mainly tangential force that acts directly through the leg to ground. A simple leg can be a length of metal tube or box section with a hole for an M8 screw to pass through its upper end and cut to length to fall slightly off vertical as shown in Fig 16.

27. The tailstock can be removed from the lathe or parked when not in use. Unscrew the three clamps so that the assembly is free to rotate. Pivot the tailstock down so that the *Tailstock Body Casting* is at about 5 o'clock. Slide the assembly into the headstock to its fullest extent so that the quill is alongside the cabinet base. When realigning the tailstock assembly, take care that the chisel-nose detent pin in the knurled handwheel is properly aligned so that it can enter the wedge shaped slot in the *Bed Tube*.

REMOVING THE TAILSTOCK ASSEMBLY

Always withdraw the assembly so that the *Bed Tube* is maintained in a horizontal position. (Fig 17.) The Support Bush & Plate Assembly bolted to the front of the lathe are not designed to take the unsupported weight of the tailstock once the tail end of the *Bed Tube* leaves the support of the main headstock casting bore. Failure to support the tailstock will result in damage to the plate. (Some owners may find it helpful to make a wooden trestle or use an adjustable height stand under the *Bed Tube* to ensure that undue stress is not placed on the *Support Plate* during this operation.)



IMPORTANT SAFETY NOTE:

The Quick Action quill advance mechanism makes it very simple to explore alternative mounting centres before deciding on those which will achieve either the best balance and/or retention of desirable features in the workpiece.

It must be remembered however that the work, especially large pieces, can cause damage or injury if unsupported and allowed to fall as tailstock pressure is released. The best solution is to provide mechanical support for any substantial workpiece, at least until the final fixing between centres has been decided on and implemented.

A ceiling supported sling that cradles the work, or that is positioned to limit the work's fall if released, is one possibility. Another is the *VB Loading Hoist* described under "Accessories" below.

INDUSTRIAL FOOTWEAR SHOULD ALWAYS BE WORN WHEN WORKING WITH TOOLS OR LOADS THAT COULD CONCEIVABLY BE DROPPED.

ACCESSORIES:

The *VB Shortbed Tailstock* is designed as an important accessory for faceplate and hollow form work. Its main working advantage for bowlturners (as opposed to general and spindle turners) is that it can be parked or brought into use in a second when needed. It is extremely robust and designed with the general construction and capacities of the VB36 in mind. Even so, for high load applications, a *Vertical Leg* (SBT/VL) is available to give added support to the assembly and to minimize the effects of shock loads and twisting forces.

The *VB Loading Hoist* (VB/LH250) or (VB/LH400) consists of a vertical post that bolts to the VB's cabinet stand with a horizontal swivelling jib at a little above head height. A standard, manual block and pulley of your own choosing can be used in conjunction with it, or it can be used simply as an overhead anchor point for webbing slings. Alternatively, a motorised winch with full remote control can be supplied.
