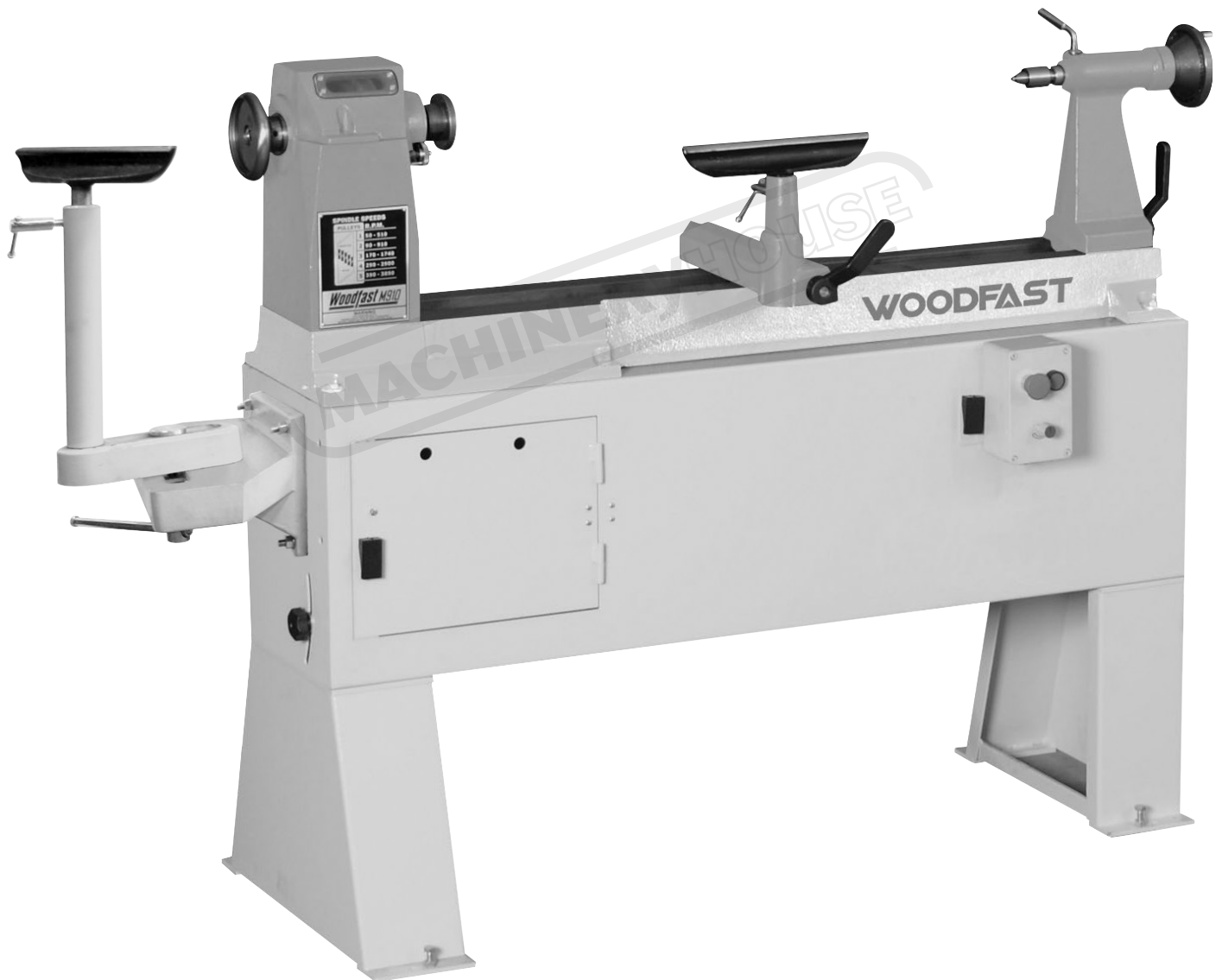


INSTRUCTION MANUAL

M910 Heavy Duty Wood Lathe (240V) 520 x 975mm



W685

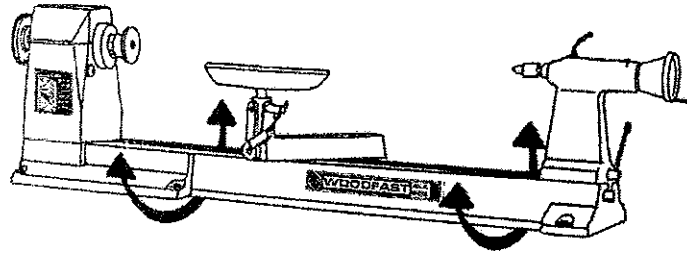
Table of Contents

Table of Contents

1, Lifting of the machine	2
2, Unpacking the machine	2
3, Specifications	2
4, Standard Equipment	2
5, Installation	3
6, Electricals	4
Working with the lathe	
A, Speeds	5
B, Headstock - General	6
C, Spindle General - Headstock	6
D, Face Plate	7
E, Indexing	7
F, Spindle Lock	7
G, Spur Drive Centre	7
H, Revolving Cone Centre	8
I, Cam-lock Toolrest Bracket	8
J, Toolrest	8
K, Tailstock	8
Keeping Your Lathe Clean	9
Woodturning	10
Maintenance	
A, Replacing Belt	11
B, Fitting New Headstock Pulley	11&12
C, Removing Main Spindle	12
D, Removing Old Bearings	12
E, Replacing Inboard Bearings	12
F, Replacing Main Spindle	12
G, Replacing Outboard Bearings	12&13
H, Tailstock Spindle Service	13
I, Replacing Index Pin	14
J, Toolrest Bracket Cam Service	14
K, Re-setting Cams	14
Stand Assembly	15
Stand Assembly Instruction.....	16
Spare Parts Chart & Listing	17&18
Accident Prevention And Tips	19&20
Troubing Shooting	21

Reference numbers shown in brackets throughout these instructions identify parts shown in spare parts section (Page 17&18).

1, Lifting of the machine



2, Unpacking the machine

After unpacking your machine, check that all components have been included.

- 1, Refer Stand Assembly (Page 16) - includes plastic bag with fasteners.
- 2, Check all standard equipment (Listed below).

3, Specifications

Distance between centres	975 mm
Swing over bed	520 mm
Rear Turning Capacity	760 mm
Headstock Taper	No. 2 M.T.
Tailstock Taper	No. 2 M.T.
Tailstock spindle travel	100 mm
Spindle speeds	50 - 3890 R.P.M.
Spindle thread(Australia)	30 mm x 3.5P
Spindle lock	Standard
Motor connect to 1 phase power	1.5 kw x 3phase
Switch	Mag-Con with Remote STOP / START Station
Indexing - 24 divisions	Standard
Floor space	1450mm long x 580mm wide
Packed weight - with stand	270 kgs

4, Standard Equipment

Face Plate 82 mm Right Hand	1	Centre Knockout Bar	1
Face Plate Spanner	2	Handwheel Brake	1
Spur Drive Centre 25 mm	1	Indexing/Spindle Lock Pin	1
Revolving Cup Centre	1	Allen Key 3 mm	1
Toolrest 300 mm	1	Allen Key 4 mm	1
Toolrest 150 mm	1	Motor and Switch	1
Cam-lock Toolrest Bracket	1	Instruction Manual	1

5, Installation

To assemble your new lathe correctly, please follow in order shown.

1, Location in Workshop

Consideration should be given to adequate lighting, power supply, storage access for tools and accessories, positioning of a grinder for sharpening tools, sufficient operating room to the front of the lathe and also the tailstock end for when long drilling is involved. Also adequate distance from other workshop machines so as to not hinder their safe usage.

2, Assembly of lathe stand (Refer Page 16)

3, Positioning the stand

- a, Aim to position the stand onto a solid and even floor.
- b, The stand should be allowed to sit on the floor under its own weight preferably on top of hard rubber sheeting, cardboard or similar especially if the stand is made from steel, as this will help dampen any noise.
- c, If any gap appears between the stand legs and floor then a packer of equivalent thickness must be used to eliminate it.
- d, Bolting the stand to the floor is optional but it is most important that it is standing equally on all four legs before applying any bolt tension.

4, Bolting the lathe to the stand

The lathe bed **MUST** be correctly levelled on the stand. This is one of the most important aspects of installing a lathe prior to commencing and enjoying woodturning.

If done incorrectly, mis-alignment of headstock and tailstock centres could occur due to twisting of the bed, causing unwanted vibration.

- 1, Sit the lathe onto the stand but do not bolt down.
- 2, Check if any gap appears between the 6 bolting down holes in the bed and the top of the stand. Any gap must have a solid washer or packer between the two surfaces before bolting down. This will ensure no twisting of the bed takes place thus eliminating possible vibrations caused by the enforced stresses as well as not altering the alignment of both headstock and tailstock centres.

5, Connect motor and switch to power (Refer Page 5)

6, Electricals

Connect the motor and switch to the power

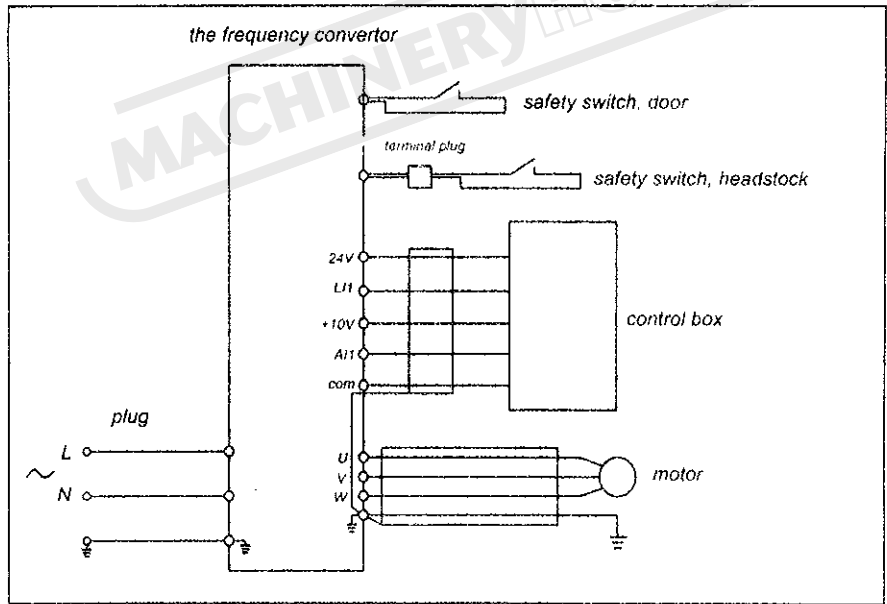
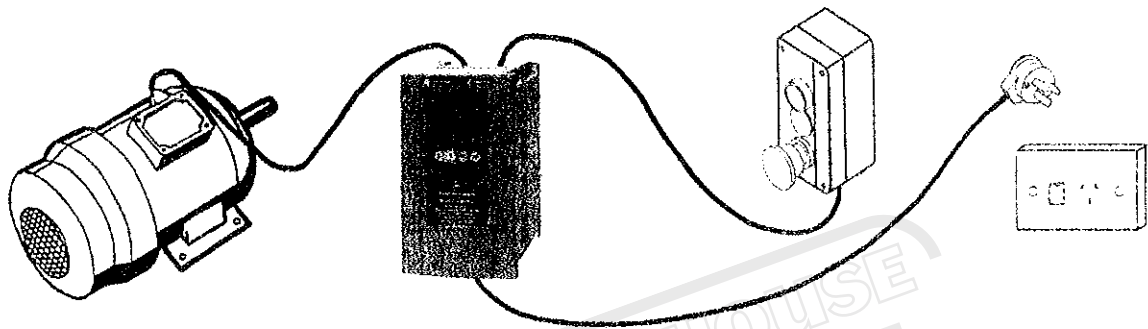
The lathe is supplied as standard with a 1.5 kw (2hp) 3 Phase totally enclosed fan cooled motor, a switch with lead and plug (1Phase) for connection to power.

NOTE:

If a motor or switch is provided by any other means then a qualified electrician must be engaged to complete all electrical connections.

Mount the switch to switch plate/stand (refer page 16)

Electronic Variable Speed with Remote Stop / Start Station



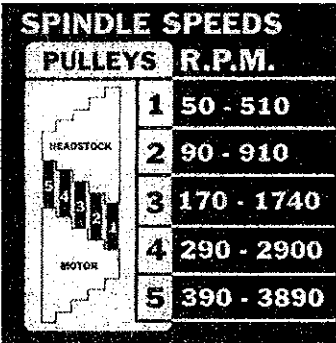
NOTE:

1. For the sake of safety, there are two safety switches mounted for both the lid of the headstock and the door on the cabinet stand. In case of the lid of the headstock or the door on the cabinet stand is opened, the power will be disconnected and the machine can not be switched on.
2. For the condition that the lathe bed and the cabinet stand are packed separately, there is a terminal plug for the safety switch of the door on the cabinet stand. Be sure it is plugged in correctly when putting the lathe bed on the cabinet stand.

Working with the lathe

A, Changing Speed Ranges

1, The chart mounted in front of the headstock indicates the spindle speeds (R.P.M.) relative to the drive belt position. 5 convenient spindle speed ranges are incorporated to cover both faceplate and spindle work. The slower speeds are generally used for large and out of balance faceplate work. Faster speeds are used for spindle work especially as the project becomes more slender. Slower speeds are more suited for final sanding work as the less heat generated allows the sanding paper to cut better and also not wear out as quickly.



PULLEYS	R.P.M.
1	50 - 510
2	90 - 910
3	170 - 1740
4	290 - 2900
5	390 - 3890

2, To change to a faster or slower speed range, turn off switch. Open the headstock lid (3), unlock and lift the motor plate assembly, shift the belt (18) to the required position ensuring the belt (18) is fully seated into the grooves in the pulleys (9 and 59). Lower the motor plate assembly and under its own weight lock the motor lever. Close headstock lid (3).

NOTE: Do not apply excessive load onto the belt (18) prior to locking, as damage may result.

Speed Chart Guide

Workpiece Diameter	Suggested Spindle Speeds	
	Roughing	Finishing
up to 50mm (2")	1000 to 1200 rpm	1900 to 3000 rpm
50mm to 100mm (2" - 4")	600 to 700 rpm	1000 to 2300 rpm
100mm to 150mm (4" - 6")	600 to 700 rpm	1000 to 1200 rpm
150mm to 300mm (6" - 12")	250 to 400 rpm	600 to 700 rpm
300mm to 450mm (12" - 18")	250 to 300 rpm	250 to 400 rpm

Suggested spindle speed chart to be used as a guide prior to commencing a new project.

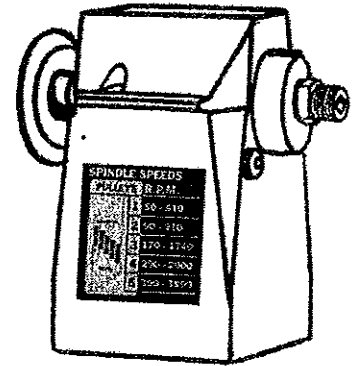
The chart figures were calculated as approximate speeds to suit turners who have completed at least some basic woodturning tuition.

NOTE: Poorly prepared timber blanks that are out of balance can become a hazard therefore slower speeds should be selected.

Working with the lathe

B, Headstock - General

The headstock (2) supports the main spindle assembly and is rigidly fixed to the bed (1) to ensure long term accuracy and stability. The main spindle (6) is supported by 4 large precision bearings. They are sealed for life and require no lubrication or adjustment during their extended use. These bearings are specially designed to run at high temperatures. Any detection of this is not necessarily a cause for concern. A failing bearing is usually detected when it becomes noisy, spindle hard to turn or if the spindle is turned slowly by hand the bearings feel bumpy.



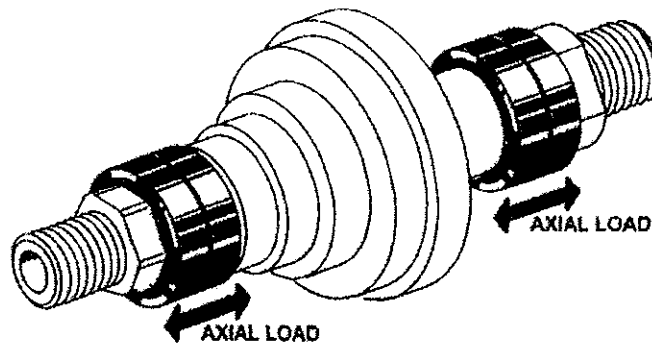
The main spindle (6) is hollow to accept the knock out bar (47) for the removal of tapered centres.

Face plates and chucks should be screwed onto the spindle (6) and up against the hexagon face. Excessive force is not required as it makes for difficult removal. The spindle lock and face plate spanner (46) is used for this purpose.

C, Spindle - General

The spindle is the working part of the lathe. It is mounted with the new QUATRE PRECISION BEARING SYSTEM

The 2 directional axial load provides greater performance for both inboard and outboard turning operations.



Both ends of the spindle are threaded to allow the attachment of accessories, such as faceplates and chucks. The inboard end of the spindle has a right hand thread and the outboard has a left hand thread. The spindle is also hollow to allow for deep boring and knocking out centres.

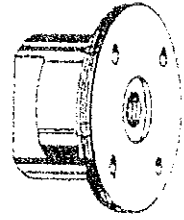
The knockout bar (47) provided is for the ease of knocking out centres through the headstock or tailstock.



Working with the lathe

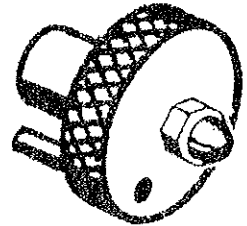
D, Face Plate (82 mm)

A face plate can be used by attaching project wooden blanks with wood screws through the 4 holes provided.



E, Indexing

The dual purpose indexing/spindle lock is positioned at the front of the headstock for ease of use. The headstock pulley (9) has 24 equally spaced holes on its side face. The spring loaded lock pin assembly is engaged by turning the knob half a turn allowing it to drop into the desired hole. To dis-engage, pull the knob (12) forward and turn it half a turn in either direction until the locating pin enters the safety catch position in the knob (12).



The 24 division indexing facility allows accurate pattern work to be carried out on projects such as straight fluting, grooving, drilling, marking out and many more. By adapting a router or electric drill to special purpose fixtures (not supplied), a wide variety of detail can be achieved.

F, Spindle Lock

The spindle lock pin is engaged by choosing any of the spaced holes and is suited for when removing face plates, chucks etc. and also assists the loading of work. When not in use ensure knob is in the safety catch position.

G, Spur Drive Centre - Headstock

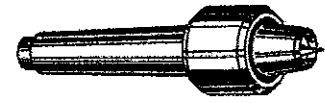
- 1, The spur drive centre (48) is used in conjunction with the revolving centre (50) in the tailstock to support cylindrical work such as chair and table legs, tool handles etc.
- 2, When loading a project blank onto the spur drive centre, do not use a hammer or similar as damage to the headstock bearings may result. The pressure obtained via the tailstock handwheel (31) should be sufficient to provide adequate drive when using softer woods. For harder woods, shallow diagonal saw cuts in the end section should be made plus a small hole in the centre. The spur centre (48) can now be directly knocked into the wood by using only a soft mallet. Never use a steel hammer as this will damage the taper shank.



Working with the lathe

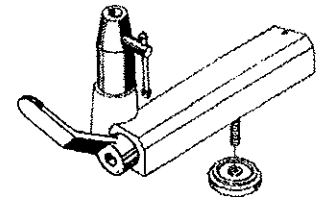
H, Revolving Cup Centre - Tailstock

1. The revolving cup centre is used for supporting spindle turning projects that can not be held suitably in a chuck. It can also be used as a safety device to support face plate work for as long as possible, especially during roughing down stage.



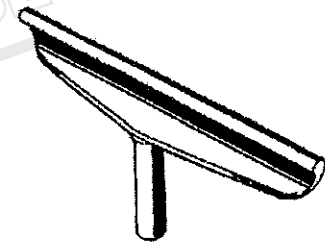
I, Cam-lock Toolrest Bracket

1. The cam-lock toolrest bracket (64) is designed as a quick action easy to use support base for the toolrest (53 or 54). Locking and unlocking is by way of the cam lever (30) which will operate in either direction. Excessive pressure when locking should be avoided. (refer page 13-K).
2. The toolrest lockscrew (45) is positioned for ease of use. Excessive pressure should be avoided.



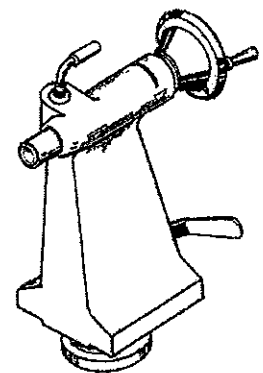
J, Toolrest

1. The toolrest (53 or 54) has been specially shaped for operator safety and ease of use. The top face has been machined to assist smooth tool movement. If this surface becomes damaged from sharp edged tools, use a fine file to make smooth. (Remove all sharp corners from turning tools such as parting tools and skews).



K, Tailstock

1. The tailstock (22) can be moved along the bed ways and locked by way of the cam lever (30). Excessive pressure should be avoided. (refer page 13-K) The sliding spindle (27) is hollow to allow for long hole drilling as well as having a No. 2 morse taper which accepts the revolving support centre (50) and other tapered accessory tools. The spindle (27) is moved by winding the large handwheel (31) and can be locked when required by the top lever (25).



Keeping Your Lathe Lubricated and Clean

All parts of your lathe should be cleaned or lubricated after use with special attention to the points below

1, Bed Ways

Occasionally wipe clean with kerosine or similar.

2, Tailstock Spindle

Wipe clean and lightly oil to maintain smooth travel.

3, Toolrest Bracket

Clean the cam shaft (42), the clamp tube (43) and the clamp block (23) for ease of movement.

4, Main Spindle

Keep the thread clean and especially the back locating face. Any build-up of dirt or damage to this area will affect the true running of face plates, chucks etc.

5, Avoid Rust

The morse taper in both the headstock spindle (6) and the tailstock spindle (27) can become rusted caused by moisture from the wood being turned or from the air especially if the lathe is not being used regularly.

Occasionally smear a little oil into the tapers but it must be wiped dry before inserting any of the centres to avoid slippage.

6, Indexing / Spindle Lock

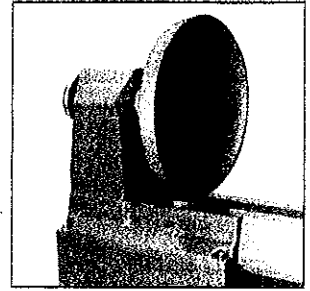
If needed add a few drops of oil to plunger pin assembly.

Note: The 4 large precision bearings are sealed for life and require no lubrication or adjustment during their extended use.

Woodturning

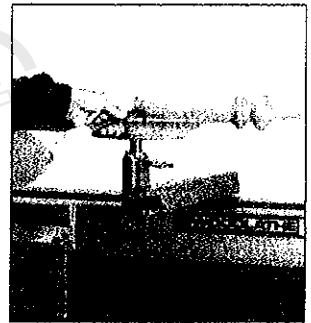
Faceplate Turning

- A, Check the project blank is free from cracks and defects.
- B, Fix the project blank securely to faceplate with suitable woodscrews.
- C, If using a chucking device check that the project blank is well seated before being locked firmly.
- D, Test the project blank is suitably balanced by spinning project by hand.
- E, Always start the lathe on lower speed when first commencing the project.
- F, Have the tailstock supporting the project for as long as possible during turning operation.
- G, Where possible, always cut in a direction towards the headstock. This not only assists the original holding method but provides greater rigidity and longer bearing life.
- H, Ensure cutting tools are correctly sharpened.
- I, Wear adequate safety face shield or glasses when turning.



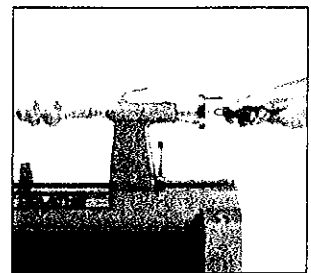
Spindle Turning

- A, Check project blank is free from cracks and defects.
- B, Hold project blank correctly and securely between centres.
- C, Sufficient force should be applied by the tailstock to safely hold the project when machining. Too much force can damage bearings and cause long slender projects to whip in the middle and possibly break.
- D, Rotate the project by hand to ensure it clears the toolrest.
- E, Ensure cutting tools are correctly sharpened.
- F, Wear adequate safety face shield or glasses.
- G, Long slender projects may require the use of an additional steady rest.



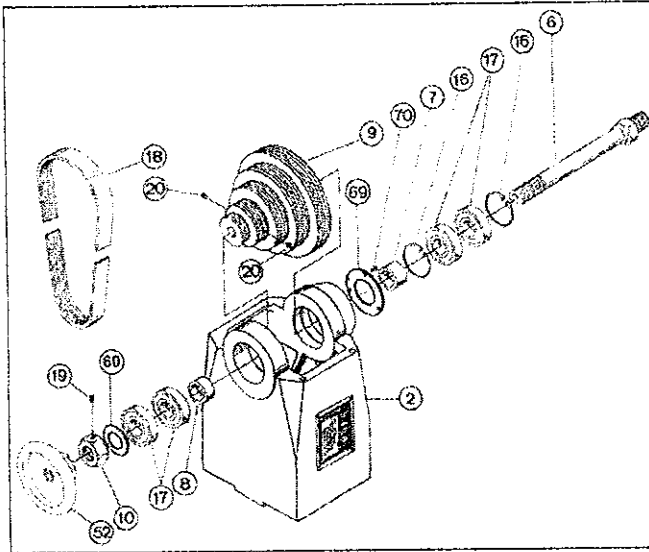
Deep Boring

- A, Deep boring through a long spindle such as a lamp column requires a special boring cup centre and a boring drill.
- B, Bore the column before the final shaping in case errors spoil the work.
- C, Guide the boring drill with the left hand through the boring centre and into the work while holding the handle firmly with the right hand.
- D, Choose a speed of approximately 1200 r.p.m. but this will vary depending on the type of wood.
- E, Do not use excessive force when pushing the boring drill into the wood and regularly pull it back to remove the shavings. Too much force may cause the boring drill to drill off line.



Maintenance

Replacing the headstock pulley main spindle / head bearings.



A, Replacing Drive Belt

- 1, Disconnect machine from mains power supply.
- 2, Take drive belt (18) off motor pulley (59).
- 3, Engage spindle lock into headstock pulley (9).
- 4, Remove handwheel brake (52) using spanner (46) (L.H. Thread)
- 5, Remove grub screw (19) from spindle lock nut (10).
- 6, Remove spindle lock nut (10) using spanner (46) (L.H. Thread), and remove the washer (60).
- 7, Dis-engage spindle lock.
- 8, Remove 2 grub screws (20) from headstock pulley (9).
- 9, Place a piece of timber against spindle (6) and knock with mallet or hide hammer in direction of tailstock until headstock pulley (9) and rear spacer (8) can be removed. At this point, drive belt (18) can be removed and replaced.
- 10, Once you have replaced the belt, main spindle can be knocked back in, refer step 25 and then re-assemble, refer steps 32 to 39. If the dimples on the main spindle do not line up with pulley then refer steps 12 to 16.

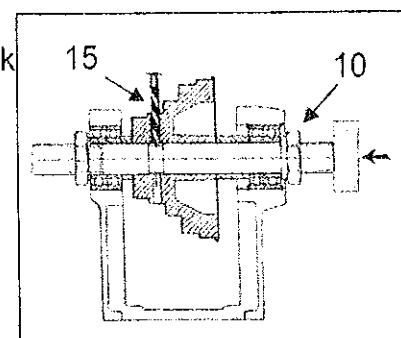
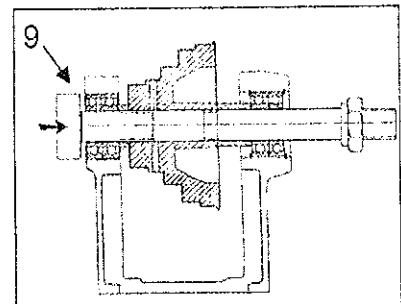
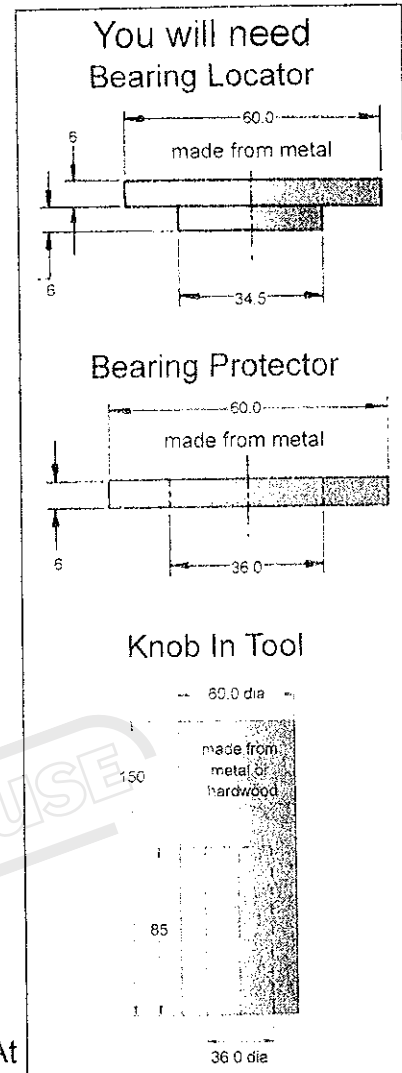
B, Fitting a new headstock pulley

- 11, After step 1 to 9 a new headstock pulley can be replaced.
- 12, To re-assemble, the spindle can be knocked back in, refer step 25.

NOTE:

The spindle (6) must be re-dimpled through the headstock pulley in a new position on the spindle.

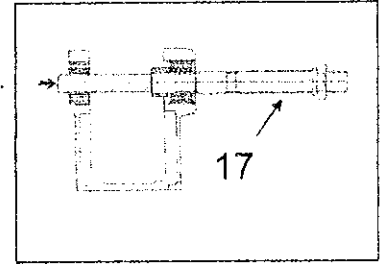
- 13, Rotate pulley (9) on spindle (6) to new position by viewing thru the grub screw holes in the pulley.
- 14, Follow steps 33 to 36.



Maintenance

B, Fitting a new headstock pulley (Continued)

15. Drill through the grub screw holes in the headstock pulley using a power drill into the spindle with a 6.3mm (1/4") drill bit. The dimple depth should only be the point depth of the drill.
16. Follow steps to 37 to 39 to complete assembly.

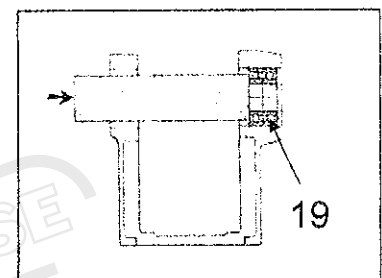
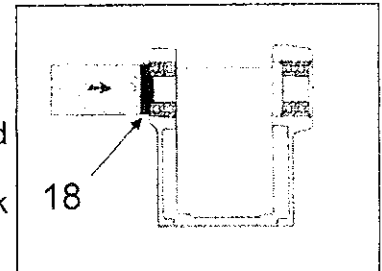


C, Removing main spindle

17. To remove main spindle, complete steps 1 to 9 and pull spindle through all bearings (17). A wooden dowel may be required to assist this step.

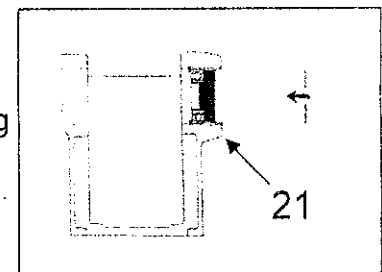
D, Removing old bearings

18. To remove outboard bearings (17A) complete steps 1 to 9 and step 17. Loose the screw (70) and remove the plate (69). Remove the Knock outboard bearings using the special knock in tool and bearing locator. The bearings can be knocked out in the direction of the tailstock.
19. To remove inboard bearings (17), remove outer front circlip (16) and then knock out bearings using a wooden dowel from the rear of the headstock in the direction of the tailstock, taking care not to damage inner circlip (16A).



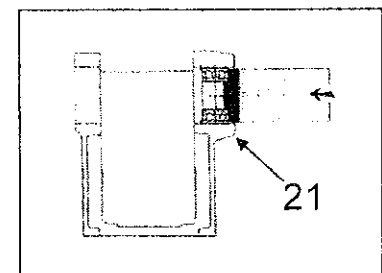
E, Replacing new inboard bearings

20. Wipe clean machined bore then smear a little oil around to assist bearing entry.
21. Locate new inboard bearing (17) (one at a time) squarely against casting bore. Gently tap the **outer rim only** of the bearing making sure the inner race or seal does not get damaged. Alternate between opposite sides to ensure the bearing remains square to the casting. Only knock the bearing in until it commences to enter the bore.
22. Re-fit outer front circlip (16), and re-fit plate (69) to headstock.



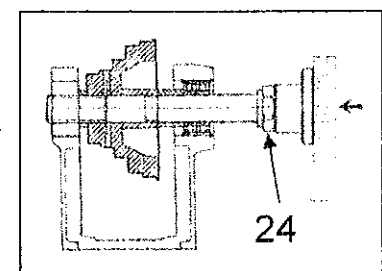
F, Replacing main spindle

23. Wipe main spindle (6) clean and smear a little oil to assist entry.
24. Fit faceplate (51) to main spindle (6) to protect the spindle thread then using a piece of wood against faceplate knock spindle in with a mallet through the front bearings until the spindle is just appearing through the inner front bearing.
25. Slip on spacer (7), headstock pulley (9), drive belt (18) and other spacer (8) and continue knocking spindle in until the main spindle shoulder touches the outer front bearing.



G, Replacing new outboard bearings

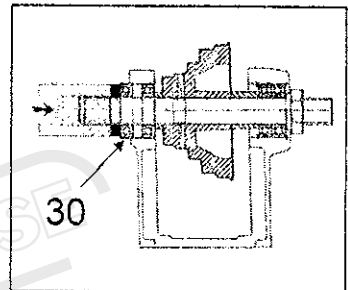
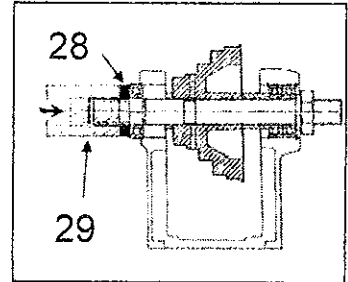
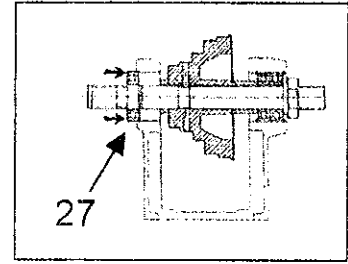
26. Make sure the casting bore is clean and smear a little oil around the inner face.
27. Slide new outboard bearing (17A) (one at a time) onto rear of main spindle and position squarely against casting bore. Gently tap the **outer rim only** of the bearing making sure the inner race or seal does not get damaged. Alternate between opposite sides to ensure the bearing remains square to the casting. Only knock the bearing in until it commences to enter the bore.



Maintenance

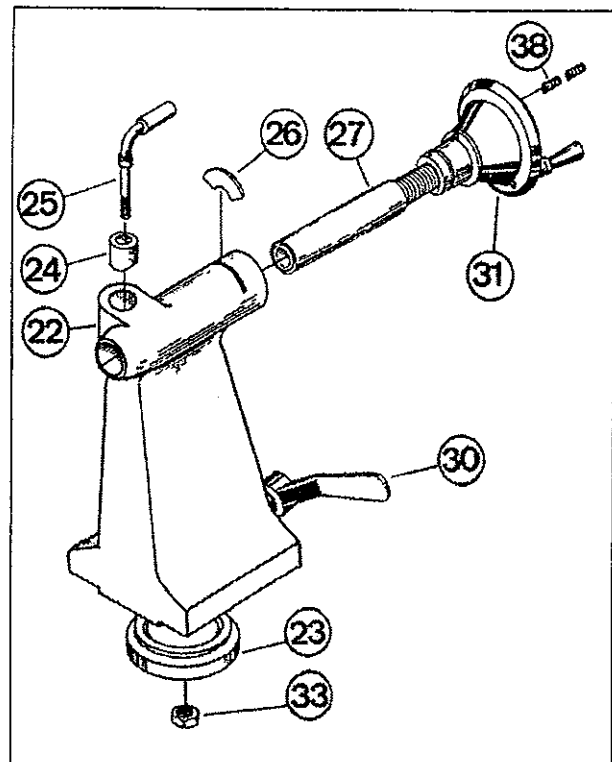
G, Replacing new outboard bearings (Continued)

28. Slide the special bearing protector (made or purchased) onto the rear of spindle and up against bearing face.
29. Using your knock-in tool, knock the bearing into the bore until it touches the rear spacer (8).
30. Remove the special bearing protector and load the second bearing onto the spindle and repeat step (27 - 29).
31. Once the two rear bearings (17A) have been knocked in check that spindle is still sitting up against inboard bearing (17) face. Knock spindle back in if required.
32. Rotate the pulley (9) on the spindle (6) and line up with both dimple marks by viewing through grub screw holes. Fit grub screws (20) in while checking alignment is maintained and stop just before final locking but sufficient to not allow the pulley (9) to rotate on the spindle (6). Fit Washer (60) on to spindle
33. Using your lathe spanner (46) and a second spanner, tighten the rear locknut (10) until hole in locknut lines up with dimple mark in spindle threaded section.
34. Gently knock the main spindle from both directions to ensure the bearings and complete assembly is seated correctly and no pre-load exists on bearings.
DO NOT DAMAGE THE SPINDLE THREADS
35. Rotate the spindle by hand and check for a smooth rotation.
36. Lock the rear locknut (10) onto the spindle using grub screw (19) with medium pressure.
37. Lock the grub screws (20) in the headstock pulley onto the main spindle (6).
38. Fit the handwheel brake (52) onto the outboard side (L.H. Thread).
39. Fit the drive belt (18) back onto both the headstock and motor pulleys.



H, Tailstock spindle and handwheel service

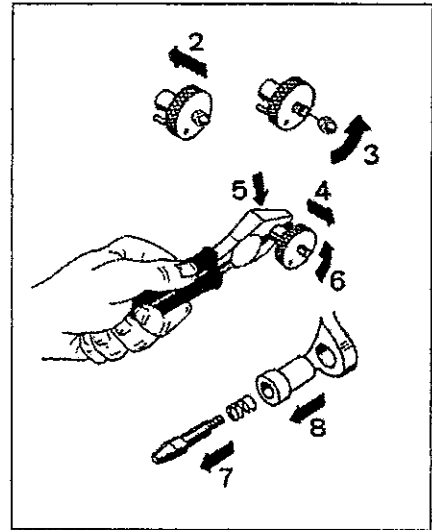
1. Remove the lock lever (25) and the clamp block (24).
2. Pass the hexagon wrench (56) supplied, through the hole in the handwheel (31) and unscrew two grub screws (38) in the tailstock.
3. Remove the keeper plate (26).
4. Remove the handwheel (31) together with the spindle (27) from the end of the tailstock casting (22).
5. Unscrew handwheel (31) from spindle (27).
6. Wipe clean all parts with kerosine or similar to remove any grime and dust build-up.
7. Smear a little grease inside tailstock casting (22) where the handwheel (31) rotates.
8. Lightly oil outside of the spindle (27) including thread.
9. Reverse procedures to re-assemble.



Maintenance

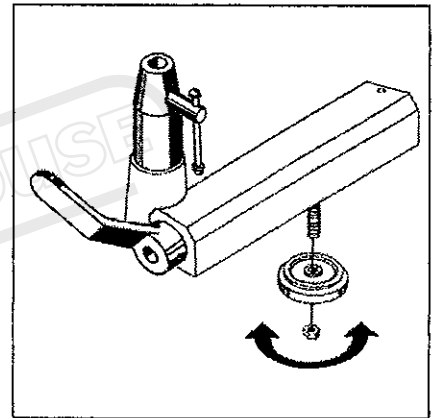
I, Replacing index pin / spindle lock assembly

- 1, Remove the headstock pulley (9) (refer page 11) steps A-1 to A-9.
- 2, Set the knob (12) in its engaged position.
- 3, Unscrew the domed locknut (15).
- 4, Pull the knob (12) fully forward.
- 5, Grip the lock pin (13) with pliers or similar.
- 6, Unscrew the knob (12).
- 7, Lock pin (13) can now be removed from inside of the headstock face followed by the spring (14).
- 8, Locating bush (11) can be tapped out of the rear face.
- 9, Reverse the procedure to fit new assembly.



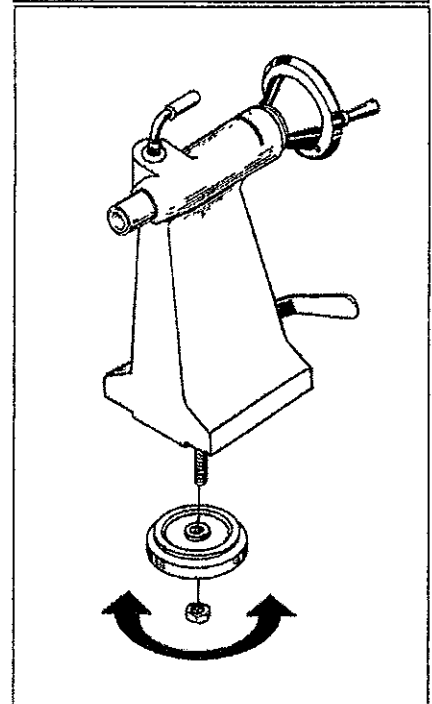
J, Cam-lock toolrest bracket service

- 1, Slide the complete toolrest bracket assembly off the lathe bed.
- 2, Lay the assembly upside down on a bench.
- 3, Scrape and clean the base of the main body (39) and also the clamping face of the clamp disc (23).
- 4, Wipe clean the cam spindle (42) and the clamp tube (43) and lightly grease cam spindle (42).
- 5, Slide the assembly back onto the bed and adjust the clamping tension with nut (33) if necessary.



K, Re-setting the toolrest bracket & the tailstock cams

- 1, The correct sliding action of both the camlock toolrest bracket (39) and the tailstock (22) as well as clamping tension are obtained by adjusting the nut (33) under the clamping blocks (23).
- 2, Minimum clearance between the clamp blocks (23) and the lathe bed (1) will make sliding of the toolrest bracket (39) and tailstock (22) difficult. The lever (30) locking action will be too firm resulting in poor locking.
- 3, Unscrew the nut (33) a little at a time until a smooth sliding action is achieved. The locking lever (30) should now have more rotational travel ensuring a softer but more effective locking.

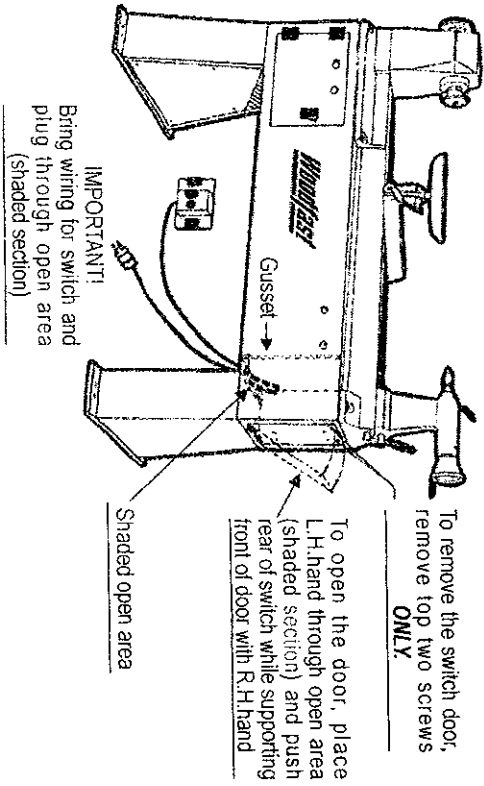
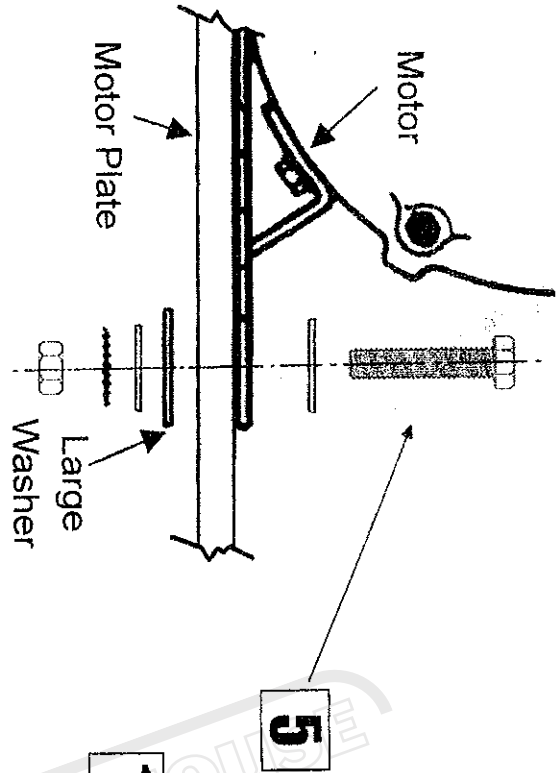


NOTE:

- 1, *HEAVY PRESSURE SHOULD BE AVOIDED WHEN LOCKING BOTH TOOLREST BRACKET AND TAILSTOCK.*
- 2, *THE LOCKING LEVER CAN BE OPERATED IN EITHER DIRECTION.*

Stand Assembly

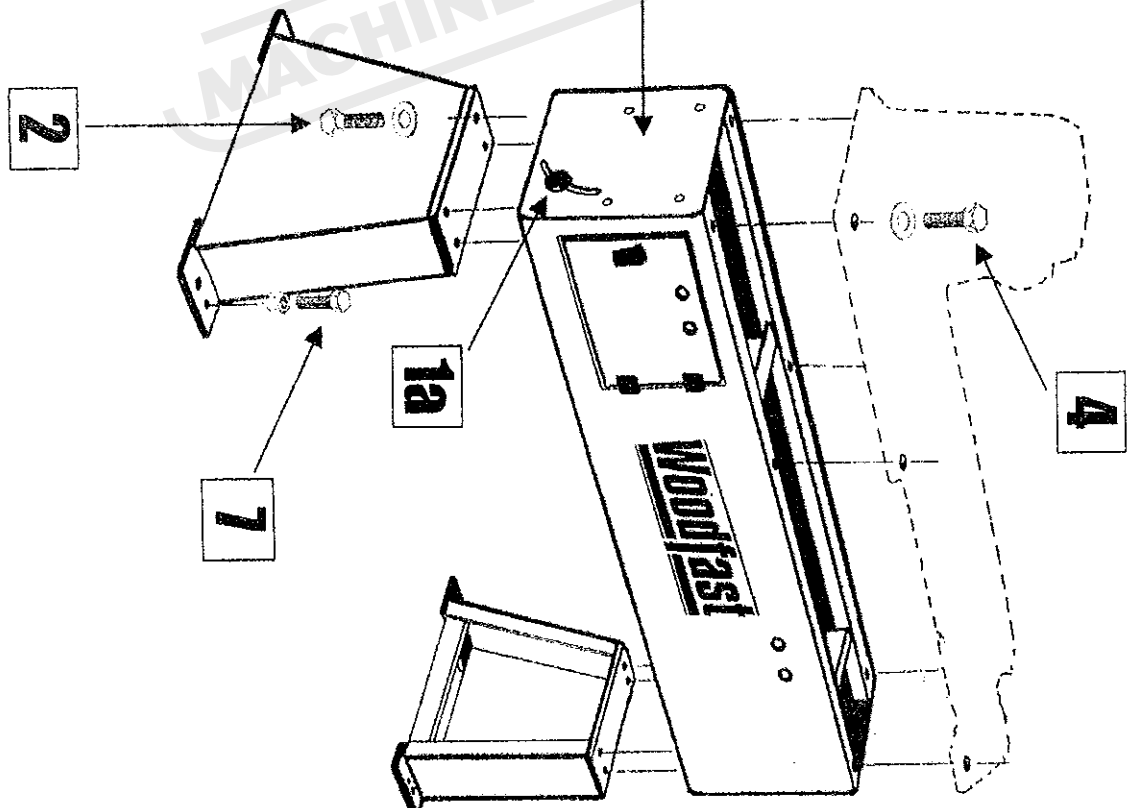
Motor secure to the motor plate



To remove the switch door, remove top two screws **ONLY**

To open the door, place L.H. hand through open area (shaded section) and push rear of switch while supporting front of door with R.H. hand

IMPORTANT!
Bring wiring for switch and plug through open area (shaded section)



Stand Assembly Instructions

1a, Ensure the motor bracket is securely locked.

1b, Roll the main channel over onto woodlathe mounting surface.

CAUTION: ENSURE THE SWITCH AND THE CABLE ARE NOT DAMAGED OR CRUSHED WHEN ROLLING THE CHANNEL OVER

2, Place the legs onto the main channel and attach using:

8 off M10 x 30 Set screw

8 off Washer H/duty Dia 10

8 off Washer shakeproof Dia 10

(make sure open side of legs are facing inwards as shown)

*** TIGHTEN ALL SCREWS ***

3, Roll the main channel with the legs attached to upright position.

CAUTION: ENSURE THE SWITCH AND THE CABLE ARE NOT DAMAGED OR CRUSHED WHEN ROLLING CHANNEL OVER

4, Place the woodlathe onto the main channels and attach using:

6 off M10 x 40 Set screw

6 off Washer H/duty Dia 10

6 off Washer shakeproof Dia 10

NOTE: Before you commence bolting the lathe, check to see if any gap appears under any of the 6 bolt holes of the lathe. If there is a gap, it is necessary to pack or shim with a thin washer or piece of steel before final bolting. This will prevent any possible bed distortion, tailstock mis-alignment or incorrect sliding action.

*** TIGHTEN ALL SCREWS ***

5, When supplying your own motor ensure both pulleys are aligned before fixing to the motor plate using screws provided.

4 off M8 x 25 Set screw

8 off Washer bright Dia 8

4 off Washer H/duty Dia 8

4 off Washer shakeproof Dia 8

4 off Standard nut M8

6, Move the machine/stand in the position to be secured to the floor.

7, Use the 4 off M8 x 25 Set screws in the threaded holes to stabilise the machine and lock the screws with the 4 off M8 standard nuts before fixing to the floor.

NOTE: The 2 sets of 19mm holes located on both the front and rear channels are used for easy re-location of the switch. The front holes are used for the switch and switch plate only. The rear holes are used for the optional switch column where the switch and switch plate can be re-positioned approximately at the operators eye level.

TO SECURE SWITCH GEAR TO SWITCH PLATE:

8, Secure the remote switch to the switch plate using:

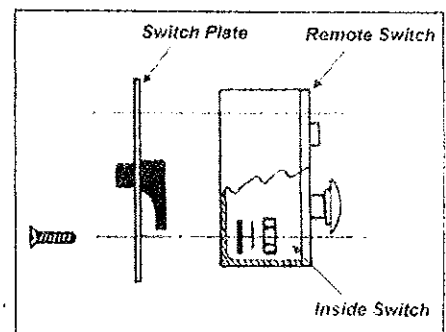
2 off 3/16" x 3/4" countersink screw

2 off 3/16" x 1/2" Washer

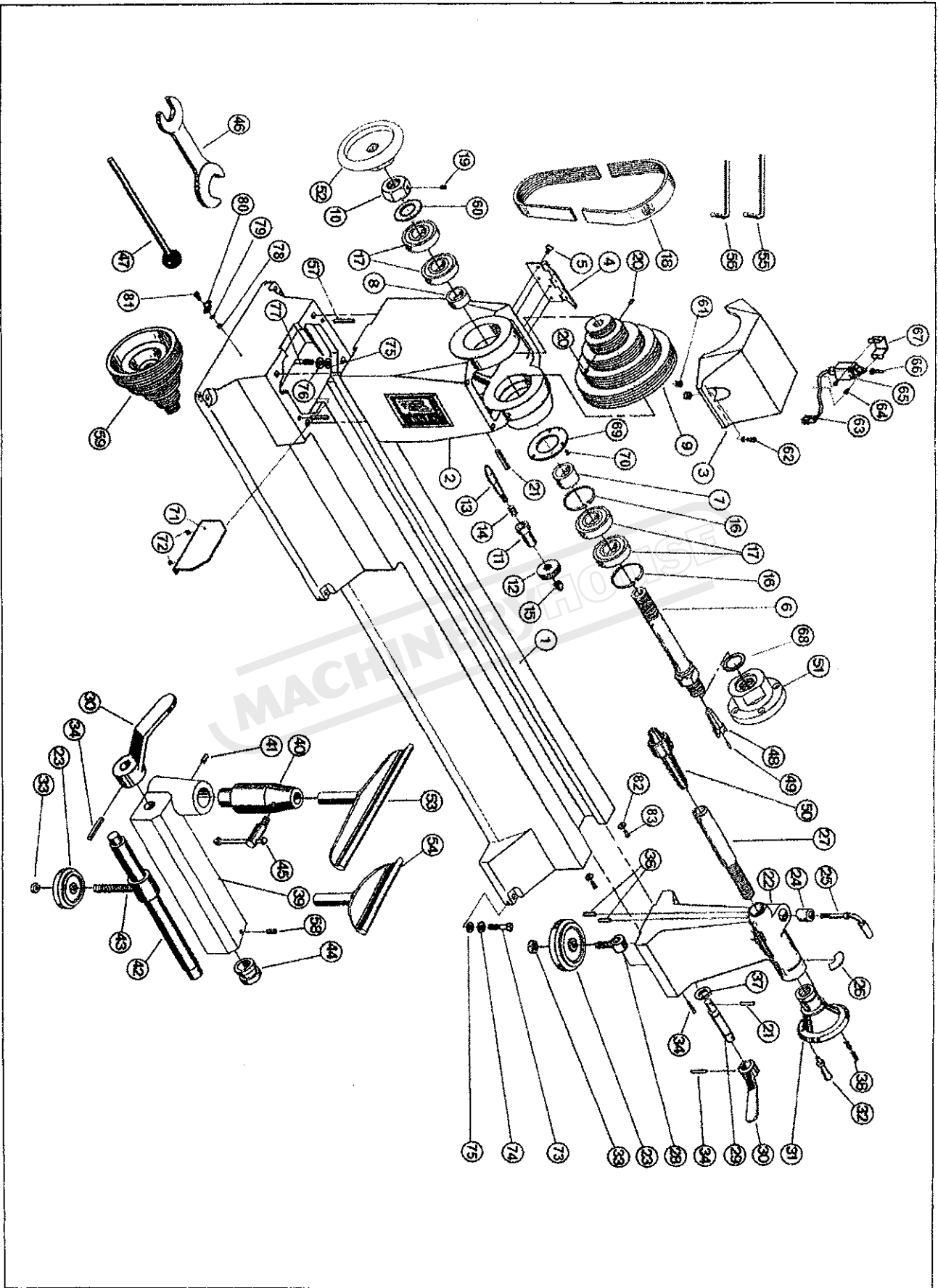
2 off 3/16" Washer shakeproof

2 off 3/16" Standard hex nut

9, Inside the door of the main channel section of the stand, connect the terminal plug for safety switch. Refer page 4.



Spare Parts



Spare Parts

Note: When ordering spare parts please state part description and part no.

Ref. No:	Part Description	Ref. No:	Part Description
1	Lathe bed	43	Cam bolt assembly
2	Headstock	44	Bush - c/lock bracket
3	Headstock lid	45	Lock screw assembly
4	Hinge - Headstock lid	46	Spanner - double ended
5	Screw - gutter bolt 6mm x 8mm long	47	Knockout bar assembly
6	Main spindle - 30mmx3.5P	48	Spur drive centre - 25mm
7	Spacer 35mm	49	Centre point
8	Spacer 14mm	50	Revolving cup centre
9	Pulley - headstock	51	82mm Face plate R/H - 30mmx3.5P
10	Lock collar - 30mmx3.5P	52	Handwheel brake 30mm x 3.5 L.H.
11	Body - index pin	53	Toolrest 300mm
12	Nut - index pin	54	Toolrest 150mm
13	Pin - index pin	55	Allen key 4.0mm
14	Spring - index pin	56	Allen key 3.0mm
15	Dome nut 6mm	57	Sellok pin 8mm x 25mm long
16	Circlip 62mm J62	58	Grub screw M8 x 16
17	Bearing - 6007 VVCM	59	Motor pulley 19mm bore
18	Poly vee belt 550-J6	60	Washer
19	Grub screw M8 x 8	61	Spring
20	Grub screw M8 x 16	62	Oval Phillips Head 1/4 turn stud
21	Sellok pin 3mm x 26mm long	63	Plug B Assembly
22	Tailstock body	64	Screw M4x12
23	Clamp disc	65	Safety Switch
24	Clamp block	66	Pin - Safety Switch
25	Clamp screw	67	Bracket - Safety Switch
26	Keeper plate	68	Plastic Washer
27	Spindle - tailstock	69	Plate
28	Cam bolt- tailstock	70	Screw M4x10
29	Cam spindle - tailstock	71	Insert Plate
30	Lock handle	72	Rivet 3x6
31	Handwheel - tailstock	73	Hex. Head Bolt M10x40
32	Handle - handwheel	74	Washer
33	Nyloc nut M12	75	Int. Teeth Lock Washer M10
34	Sellok pin 5mm x 40mm long	76	Flat Washer M10
36	Sellok pin 3mm x 16mm	77	Hex. Head Bolt M10x30
37	Washer Heavy duty 12mm	78	Nut M4
38	Grub screw M6 x 8	79	Washer M4
39	Toolrest bracket - body	80	Clamp - Plug
40	Insert	81	Screw 4x15
41	Grub screw M8 x 12	82	Washer M5
42	Spindle - cam-lock bracket	83	Screw M6x8

Accident Prevention and Tips

Become familiar with the safety aspects of a woodlathe Read all points before using your new woodlathe

- 1, Read all instructions before operating your lathe.
- 2, **Important**
Support all face plates and spindle work with the tailstock centre for as long as practicable, especially during initial roughing cuts.
So be aware
- 3, Guards as supplied should be in place and used at all times.
- 4, Ensure the switch is in off position before turning on mains power.
- 5, Check the belt position before starting the machine. Always start new project on slow speed to check the running condition.
- 6, Consult suggested spindle speed chart in manual before commencing new project.
- 7, Excessive belt tension will damage your motor and reduce the life of the headstock bearings and belt. Do not apply downward pressure prior to locking motor bracket clamp. The weight of the motor will provide sufficient belt tension prior to locking.
- 8, Make sure the index pin / spindle lock is dis-engaged before starting machine.
- 9, When using hardwoods, set the drive centre into the project away from the lathe (refer page 8 G2). When using softwoods, the drive centre can be set into the project on the lathe using pressure of the tailstock spindle (refer page 8 G2).
- 10, When the tailstock is used for supporting the project while it is being turned, excessive pressure should be avoided as this can cause damage to the headstock and tailstock assemblies, supporting centres as well as cracking the wood.
- 11, When turning between centres make sure the tailstock centre is hard up against the workpiece and locked. Lubricate the tailstock centre with beeswax or paraffin wax to avoid burning if a ball bearing type is not used.
- 12, The toolrest should be firmly fixed at correct height and close to the work at all times. Stop lathe before adjusting the toolrest position.
- 13, Revolve the work by hand to check the clearance between the toolrest before switching on the lathe.
- 14, Hold turning tools securely with both hands. The hand holding the blade should lie above or as close to the toolrest as possible so as to maintain maximum tool control.
- 15, Make sure the project is well secured before commencing turning operation.
- 16, Do not stand in direct rotational line of face plate projects when operating lathe. Stand to one side.
- 17, Do not measure rotating workpiece.
- 18, Do not stop rotating workpiece by hand.
- 19, Two safety screws are fitted to the end of the lathe bed to stop the Tailstock from accidentally falling off the machine.

Accident Prevention and Tips

Become familiar with the safety aspects of a woodlathe Read all points before using your new woodlathe

- 19, Use recommended and original accessories as substitutes may create a hazard.
- 20, Beware of the face plate chucks that do not provide full circumference gripping at all times. As wood is fibrous material it is easy to compress when intermittent area clamping is involved making dislodgment of the project realistic and creating a major hazard.
- 21, If a project becomes dislodged from its holding device at high speed then serious injury may result.
- 22, Keep the turning tools sharp at all times. Dull tools require additional operator pressure which increases the possibility of accidents.
- 23, Remove the toolrest before sanding and polishing.
- 24, When sanding or polishing, hold fingers downwards in direction of rotation.
- 25, Never leave tools or accessories lying on bed of lathe.
- 26, Always clean the lathe after use.
- 27, Excessive force is not needed when locking tailstock movement, cam-lock toolrest bracket, toolrest positioning or when fitting face plates and chucks to the headstock spindle. Apart from damage which may result, unlocking especially of face plates etc. can be difficult. A fabric or plastic washer between the spindle and rear face of face plate or chuck can be helpful.
- 28, Secure any loose clothing and remove ties, rings watches etc.
- 29, Always wear approved safety glasses or face shield when turning.
- 30, Dust can be a nuisance when woodturning especially from some timbers which have found to be health damaging. Dust mask respirators are readily available but a well ventilated area or dust extraction system should be used.
- 31, Inspect the timber workpiece for cracks or any weak joints before commencing the project.
- 32, Glued stock must be thoroughly dry before turning. Remember, the glued surface area diminishes greatly as wood is removed especially with hollowing work. For added operator safety tape the outside surface area wherever possible when hollowing.
- 33, Never leave the lathe when it is running.
- 34, Disconnect the lathe from electrical power when making repairs.
- 35, Outer edge velocity increases greatly as project diameter is increased. Projects of excessive size should not be attempted.

Trouble Shooting

IMPORTANT:

When carrying out any adjustments turn off switch and make sure electrical leads are disconnected from mains power.

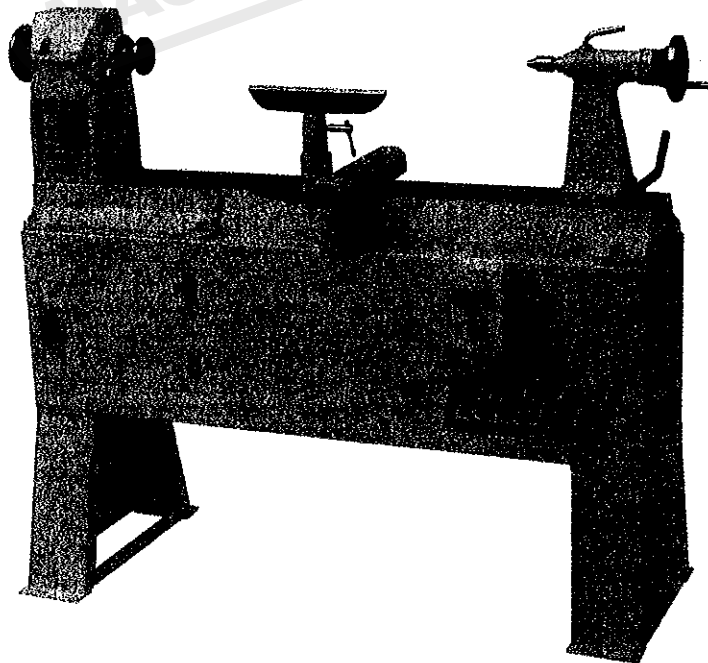
PROBLEM	POSSIBLE CAUSE	THE CURE
Excessive vibration	Out of balance work	Reduce spindle speed. Prepare wood to a true circle before loading into lathe. Point of holding may not be centralised. Holding method may not be sufficiently tight.
	Drive belt has been over tensioned or damaged	Weight of motor should be sufficient prior to locking.
	Motor pulley not in correct alignment with headstock pulley.	Re-align motor pulley to headstock pulley square and parallel to each other.
	Headstock pulley loose	Check pulley is correctly on shaft. Tighten L.H. Locknut. Tighten both grub screws in pulley
	Bolts holding motor to support plate are loose	Tighten all bolts and check correct pulley alignment.
	Single phase motor	Many single phase motors due to their method of design produce minor vibrations which usually can not be altered
	Stand or bench incorrectly standing on floor	Refer to installation instructions (page 4)
Face plate or chucks running out of true	Dirt build up on rear of faceplate or chucks or around hexagon locking face.	Clean off all build up
Belt not running true or becoming damaged on edges.	Headstock and motor pulley incorrectly lined up	1. Open front door on stand. 2. Loosen 4 motor bolts. 3. Re-align both pulleys square and parallel to each other.
TAILSTOCK		
Tailstock handwheel becoming hard to turn	Build up of dust and wood resin on quill or inside of handwheel thread.	Remove quill and handwheel from tailstock body. Wipe clean all areas including inside of tailstock body lightly oil quill and grease handwheel. Re-assemble (refer page 13H)
Tailstock not locking correctly onto bed.	Incorrect clamp plate adjustment	By adjusting the nut under the clamp plate increased or decreased clamp pressure can be obtained (page 14K)
Tailstock not running smoothly on bed ways.	Dirty bed ways and underside of tailstock body	Clean bed ways and underside of tailstock body with kerosine or similar.
	Incorrect adjustment on clamp plate	Adjust clamp plate nut (refer page 14K)
TOOLREST		
Turning tools not running smoothly across toolrest	Damaged surface on toolrest face caused by sharp edged tools.	Using a fine file, smooth surface on top of toolrest and polish with sandpaper. Remove sharp edges from corners of turning tools.
CAM-LOCK TOOLREST BRACKET		
Toolrest bracket not running smoothly on bed ways.	Incorrect clamp plate adjustment.	By adjusting the nut under the clamp plate increased or decreased clamp pressure can be obtained (page 14K)
	Dirty bed ways and underside of cam-lock brkt.	Clean bed ways and underside of toolrest brkt. body with kerosine or similar. (refer page 14J)
Toolrest bracket not locking correctly onto bed.	Incorrect clamp plate adjustment. (Excessive pressure on cam lever should be avoided.)	By adjusting the nut under the clamp plate increased or decreased clamp pressure can be obtained (page 14K)
Toolrest bracket becoming tight to turn	Dirty cam shaft and clamp tube.	Remove cam shaft from cam-lock bracket and clean all parts with kerosine or similar (refer page 14J)
CENTRES		
Spur drive centre or tailstock centre not holding into tapers when turning	Small end of taper has been damaged due to dropping or hitting.	File or polish away any damage. Check that inside of tapers have not been scored.
	Grease or oil inside of tapers.	Wipe clean inside of tapers. Smear of oil between uses will help to reduce rusting.
	Insufficient pressure when loading.	Quick firm pushing by hand is required. Do not knock in with solid object.
Tailstock and Headstock centres not aligned correctly.	Bed incorrectly bolted to stand causing a twist.	Refer installation instructions (page 4)
	Stand incorrectly bolted or positioned on floor.	Refer installation instructions (page 4)

User Responsibility / Warranty

This machine will perform in conformity with the description contained in the instructions provided. This machine must be checked periodically. Defective equipment (including power cable) should not be used. Parts that are broken, missing, obviously worn, distorted or contaminated, should be replaced immediately. Should such repair or replacement become necessary, it is recommended that only genuine replacement parts are used and that such repairs are carried out by qualified persons. This machine or any of its parts should not be altered or changed from standard specifications. The user of this machine shall have the sole responsibility for any malfunction that results from improper use or unauthorized modification from standard specifications, faulty maintenance, damage or improper repair by anyone other than a qualified person.

This machine is covered by warranty providing the nature of the claim is the result of faulty workmanship or from a breakdown in basic materials and is not caused either directly or indirectly through mis-use or abuse and providing that such a claim is first reported to the selling agent from whom the machine was originally purchased. Any faulty parts or equipment may require return to the selling agent suitably packed and freight pre-paid.

The warranty is valid for a period of twelve months starting from the purchase date and consists of the replacement of faulty parts (labour and freight not included) which are found to be defective. The warranty will be void if any unauthorised persons tamper with the machine or equipment.



How best to Use your Electronic Speed Control Unit

This information should be read in conjunction with your Lathe and Speed Control User Manuals.

Danger

1. Before commencing a new project, make sure the Speed Control knob is turned down to slow speed position. Press green Start Button and slowly turn the knob until the desired speed is achieved.
2. Your Speed Control Unit has been factory set to provide a wide speed coverage and power output.

When the drive belt is set on pulley position 5, spindle speed of 3890 rpm can be achieved.

Lower pulley positions will provide slower spindle speeds but at the same time also provides increased power which is ideal for large bowl turning.

All belt positions may not be required for general woodturning operations.

Two or three should be adequate.

Important Comment for School Use

The Headstock Lid and the Motor Compartment door are locked with a special QUARTER TURN screw. A screw driver is required to open both.

Our suggestion to the Teacher in charge of the workshop would be to set the belt on pulley position 1 or 2. These positions will provide maximum spindle speeds of 510 rpm or 910 rpm.

If faster spindle speeds are required, the Teacher in charge can arrange to re-position the belt to achieve the desired speed.

Woodfast ALTIVAR 31 Electronic Speed Control

The Electronic Speed Control Unit has been **factory set** for normal woodturning use.

These settings can be adjusted to suit your own personal preference in line with the procedures shown on this setting sheet and the **Instruction Manual**.

(Use \triangle ∇ to scroll menu for making adjustments)

A). First adjustment. **Acceleration ramp** (1.5 seconds)

- press ENT and SET is displayed
- press ENT and ACC is displayed
- press ENT and Acceleration Ramp in seconds displayed
- set to 1.5 seconds
- press ENT and display flashes once to confirm change
- press ESC until rdy is displayed

B). Second adjustment. **Deceleration ramp** (3.5 seconds)

- press ENT and SET is displayed
- press ENT and ACC is displayed
- press up/down arrow keys until DEC is displayed
- press enter and Deceleration in seconds is displayed
- set to 3.5 seconds
- press ENT and display flashes once to confirm change
- press ESC until rdy is displayed

Woodfast ALTIMAR 31 Electronic Speed Control

#Sometimes with large diameter projects, when stopping, the electronic unit overloads and will not start up again. The Deceleration time can be increased in one second increments until starting is corrected.

C). Third adjustment. **Torque at low speed (100)**

- press ENT and SET is displayed
- press ENT and ACC is displayed
- press up/down arrow keys until Ufr is displayed
- set to 100
- press ENT and display flashes once to confirm change
- press ESC until rdy is displayed

D). Fourth adjustment. **Maximum speed 70Hz**

- press ENT and SET is displayed
- use down arrow and drC is displayed
- press enter and bFr is displayed
- use up/down arrow keys until tFr is displayed
- press enter and Maximum Frequency is displayed
- set to 70Hz
- press ENT and display flashes once to confirm change
- press ESC twice until drC is displayed
- use up arrow and SET is displayed
- press enter and ACC is displayed
- use up/down arrow keys until HSP is displayed
- press enter and High Speed Setting is displayed
- set to 70Hz
- press ENT and display flashes once to confirm change
- press ESC until rdy is displayed

E). Fifth adjustment. **Switching frequency for motor noise 15Hz**

- press ENT and SET is displayed
- press ENT and ACC is displayed
- use up/down arrow keys until SFr is displayed
- press ENT and Switching Frequency is displayed
- set to 15Hz
- press ENT and display flashes once to confirm change
- press ESC until rdy is displayed

F). Sixth adjustment. **Low speed setting 7Hz**

- press ENT and SET is displayed
- press ENT and ACC is displayed
- use up/down arrow keys until LSP is displayed
- press ENT and Low Speed Setting is displayed
- set to 7Hz
- press ENT and display flashes once to confirm change
- press ESC until rdy is displayed

Final setting for normal running

- from drc scroll up to SET
- Turn off power and wait until screen clears. Approximately 10 seconds.
- Turn on power and Frh will briefly appear and flash. A hz number equal to your speed adjustment dial will show. E.G. Zero setting will show approximately 7.0. This number will increase as you increase this spindle speed to the setting at D) Fourth adjustment.