

AW1416VS

Woodturning Lathe



User Manual

951247



Axminster Reference No: **AW1416VS**

www.axminster.co.uk

Index of Contents...

	Page No.
Index of Contents.....	01
Declaration of Conformity.....	01
What's in the Box.....	02
Optional Accessories.....	03
General Instructions for 230V Machines.....	03-04
Specific Safety Instructions for Woodturning Lathes.....	4
Specifications.....	05
Assembly Instructions.....	05-06-07
Identification and Parts Description.....	07-08-09
Indexing Operation.....	10
Removing Drive/Live Centres.....	11
Changing the Belt Speed.....	12
Maintenance.....	13
AW1416VS Parts Breakdown.....	14-15
AW1416VS Parts List.....	16-17-18
AW1416VS Wiring Diagram.....	18

Declaration of Conformity... Copied from CE Certificate



The undersigned, Calvin Chou authorised by The Kingcraft Machinery Company Limited
 No. 26 Chung Gong Yeh 12 rd,
 Da-Li City, Taichung County, Taiwan
 declares that this product:

Woodturning Lathes

1643INV, 1417, 1643, 1417INV, 1430, 1430INV, 1443, 1443INV, 1643INV

Manufactured by The Kingcraft Machinery Company Limited is in compliance with the following standards or standardisation documents in accordance with Council Directives

**Machinery Directive: 2006/42/EC Low Voltage Directive: 2006/95EC
 Electromagnetic Compatibility Directive: 2004/108/EC**



SAFETY!!

The symbols shown on the cover of this manual advise that you wear the correct safety protection when using this machine.

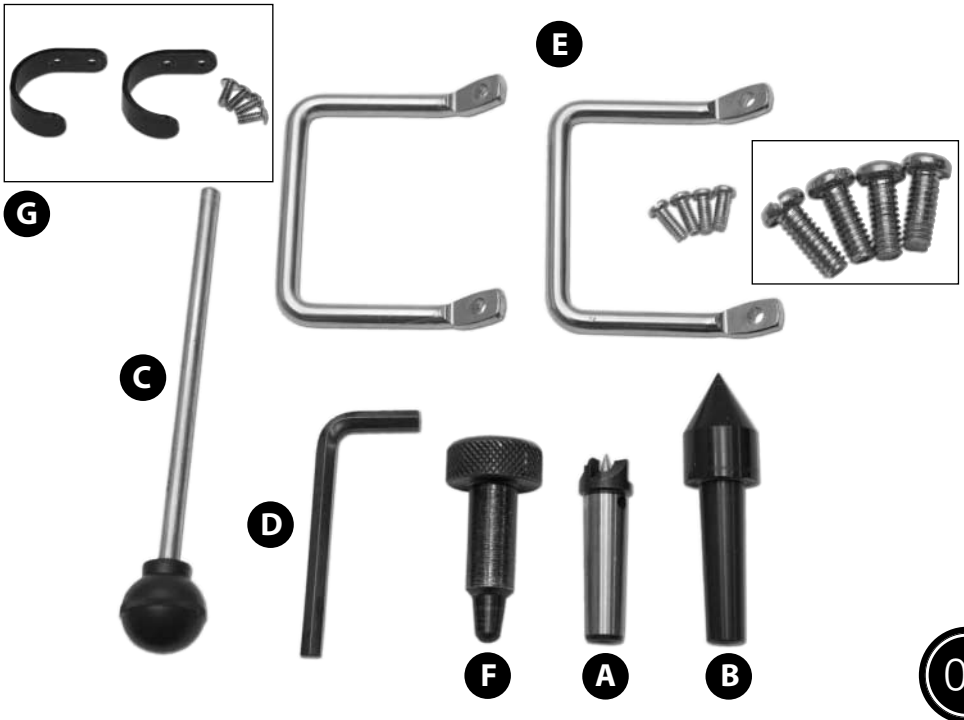


Safety Protection Symbols



Manufacturer's Model Number:		KC1417-INV
1 off	AW1416VS Woodturning Lathe (Headstock and Tailstock fitted)	
1 off	Tool Rest Arm (Fitted to Lathe Bed)	
1 off	152mm Tool Rest (Fitted to Toolrest Arm)	
1 off	80mm Faceplate (Fitted to Headstock)	
1 off	4 Prong Drive Centre (Fitted to Headstock)	A
1 off	Live Centre (Fitted to Tailstock)	B
Packet Containing		
1 off	Push Rod	C
1 off	8mm Hex Key	D
2 off	Steel Carryng Handles with four M6 x 16mm Phillips Screws	E
1 off	24 Index Pin with Magnetic Base	F
2 off	Steel Hooks & (4) Phillips Screws	G
1 off	Instruction Manual	
1 off	Guarantee Card	

Having unpacked your new AW1416VS woodturning lathe please dispose of the unwanted packaging responsibly. The cardboard packaging is biodegradable.



Optional Accessories...

1 off	Extension Bed (Order No: 951249)	H
2 off	M8 x 30mm Caphead Bolts & M8 Spring/washer	I



General Instructions for 230V Machines...

Good Working Practices/Safety

The following suggestions will enable you to observe good working practices, keep yourself and fellow workers safe and maintain your tools and equipment in good working order.



WARNING!

KEEP TOOLS AND EQUIPMENT OUT OF THE REACH OF YOUNG CHILDREN

Primary Precautions

These machines are supplied with a moulded 13 Amp. Plug and 3 core power cable. Before using the machine inspect the cable and the plug to make sure that neither are damaged. If any damage is visible, have the tool inspected/ repaired by a suitably qualified person. If it is necessary to replace the plug, it is preferable to use an 'unbreakable' type that will resist damage. Only use a 13 Amp plug, and make sure the cable clamp is tightened securely. Fuse as required. If extension leads are to be used, carry out the same safety checks on them, and ensure that they are correctly rated to safely supply the current that is required for your machine.

Work Place/Environment

Make sure when the machine is placed that it sits firmly on the bench or stand, that it does not rock, that it is sufficiently clear of adjacent obstacles so that you have unimpeded access to all parts of the machine. The machine is designed for indoor use, do not use when or where it is liable to get wet. Keep the machine clean; it will enable you to more easily see any damage that may have occurred. Clean the overall machine with a damp soapy cloth if needs be, do not use any solvents or cleaners, as these may cause damage to any plastic parts or to the electrical components. Clean the machine components with a lightly oiled cloth. If the machine is liable to be standing idle for any length of time a light coat of machine or spray oil will minimise rusting.

General Instructions for 230V Machines...



Keep the work area as uncluttered as is practical, this includes personnel as well as material. Under no circumstances should CHILDREN be allowed in work areas.

It is good practice to leave the machine unplugged until work is about to commence, also make sure to unplug the machine when it is not in use, or unattended. Always disconnect by pulling on the plug body and not the cable. Once you are ready to commence work, remove all tools used in the setting operations (if any) and place safely out of the way. Re-connect the machine.

Carry out a final "tightness" check e.g. chuck or face plate, workpiece, tool rest, etc., check that the correct speed has been selected.

Make sure you are comfortable before you start work, balanced, not reaching etc.

If the work you are carrying out is liable to generate flying grit, dust or chips, wear the appropriate safety clothing, goggles, gloves, masks etc. If the work operation appears to be excessively noisy, wear ear-defenders. If you wear your hair in a long style, wearing a cap, safety helmet, hairnet, even a sweatband, will minimise the possibility of your hair being caught up in the rotating parts of the tool, likewise, consideration should be given to the removal of rings and wristwatches, if these are liable to be a 'snag' hazard. Consideration should also be given to non-slip footwear, etc.

DO NOT work with cutting tools of any description if you are tired, your attention is wandering or you are being subjected to distraction. A deep cut, a lost fingertip or worse; is not worth it! Above all, **OBSERVE....** make sure you know what is happening around you, and **USE YOUR COMMON SENSE.**

Specific Safety Instructions for Woodturning Lathes...

- 1. Do not** use 'split' work pieces.
- 2. Always** start at the lowest speed when starting a new task.
- 3. Check** that the tool rest is at or slightly below the centre line of the workpiece.
- 4. Check** the workpiece is securely mounted in the lathe before switching on the power.
- 5. Rotate** the workpiece by hand, to check that it is centralised, clear of the tool rest, not 'split' or has loose knots.
- 6.** Where lathes have the facility to be reversed; check the machine is rotating in the correct direction.
- 7.** If your lathe has the facility to run in reverse, you must ensure that the mounting accessories (chucks, faceplates etc.,) can be 'locked' onto the lathe mandrel, and in the case of chucks have some form of security device to prevent them 'unwinding' during reverse operation.
- 8. Make** sure your tools are stored/racked away from the turning area of the lathe. Do not reach over a rotating workpiece at any time.
- 9. Do not** 'dig in' or try to take too large a cut.
- 10. Do not** leave the lathe running unattended; or leave the machine until everything is stopped.
- 11.** Some turning tools may have specific sharpening angles that have been determined by the manufacturers; when re-sharpening, adhere to these angles to maximise the finish of your work.

Specification...

Axminster No.	AW1416VS
Rating:	Trade
Power:	230V 50Hz 560W
Speed:	0-800,200-1,750, 400-3,600rpm
Spindle Taper:	2MT
Spindle Thread:	M33 x 3.5mm (Ref T38)
Taper Tailstock	2MT
Distance Between Centres:	400mm
Max Diameter Over Bed:	350mm
Tool Rest Stem Diameter:	25.4mm
Overall L x W x H:	865 x 330 x 415mm (With Extension Bed: 1465 x 330 x 415mm)
Weight:	41kg

Please read the Instruction Manual prior to using your new machine; as well as the operating procedures for your new machine, there are numerous hints and tips to help you to use the machine safely and to maintain its efficiency and prolong its life. Keep this Instruction Manual readily accessible for any others who may also be required to use the machine.

Assembly Instructions...

Please take some time to read the section entitled "Illustration & Parts Description" to identify the various parts of your machine so that you are familiar with the terminology we will use to enable you to set up and operate your table lathe safely and correctly.

The machine and its accessories will arrive coated with corrosion preventative grease. This will need to be cleaned from the machine, its components and accessories prior to it being set up and commissioned. Use coal oil, paraffin or a proprietary degreaser to remove the barrier grease. Be warned, it will stain if you splash it on clothing etc., wear overalls, coverall et al., rubber gloves are also a good idea, as is eye protection if your cleaning process tends to be a little bit enthusiastic. After cleaning, lightly coat the machine with a thin layer of light machine oil. N.B If you used paraffin/kerosene make sure you apply this thin film sooner rather than later.

95% of the machine comes fully assembled, (See what's in the Box) to assemble the remaining 5% please follow the instructions below.

Assembling the Carrying handles

Locate the two steel carrying handles (**E**) & the four M6 x 16mm phillips screws, attach them to each end of the lathe bed (See fig 1).

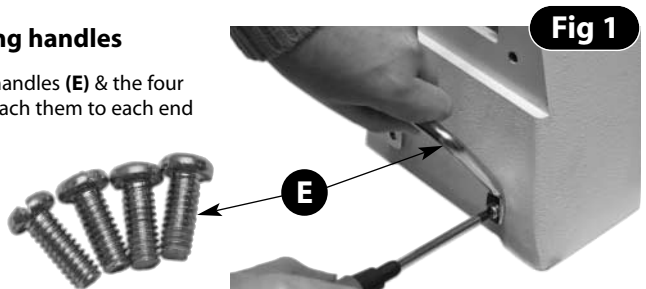
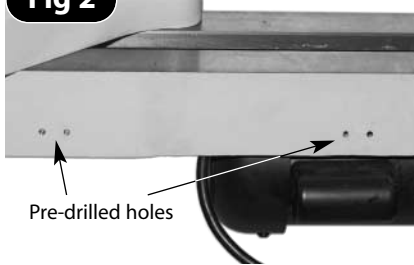


Fig 1

Assembling the Power Cable Hooks

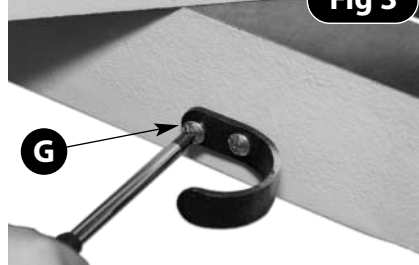
Locate the two steel hooks & phillips screws (G) & screw them with the hooks facing inwards, into the pre-drilled holes in the lathe bed. (See figs 1, 2, 3, 4 & 5)

Fig 2



Pre-drilled holes in lathe bed casting

Fig 3



Steel hook

Fig 4



Steel hooks in position

Fig 5



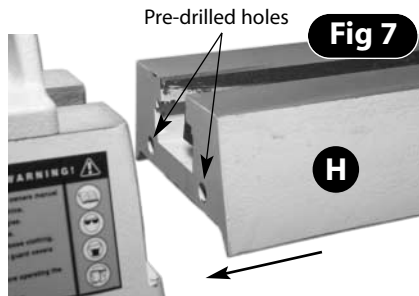
Attaching the Optional Extension Bed (951249)

Fig 6



Step 1: Remove the carrying handle from the end of lathe bed and place safely aside.

Fig 7



Step 2: Line-up the pre-drilled holes in the extension bed (H) with the holes in the lathe.

Continues on next page...



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Fig 8



Fig 9



Step 3: Locate the two M8 x 30mm caphead bolts & spring/washers (I), Slot them through the holes in the extension bed (H) & lightly screw them into the lathe bed, using a 8mm allen key. Clamp the tailstock over the two beds and adjust until both beds are aligned then tighten the bolts, **(DO NOT OVERTIGHTEN)**. (See figs 8 & 9) Replace the carrying handle (E) & screws to the end of the extension bed (H).



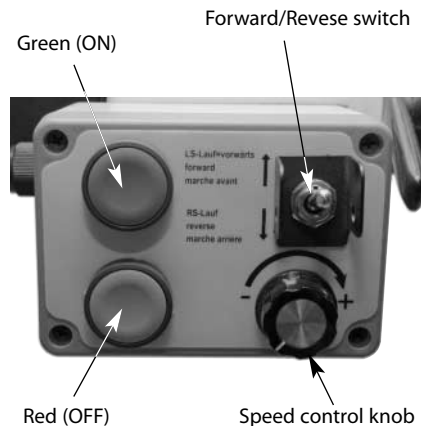
AW1416VS Lathe

Extension Bed

Illustration & Parts Description...



Spindle speed LED



Green (ON)

Forward/Reverse switch

LS-Lauf
forward
marche avant

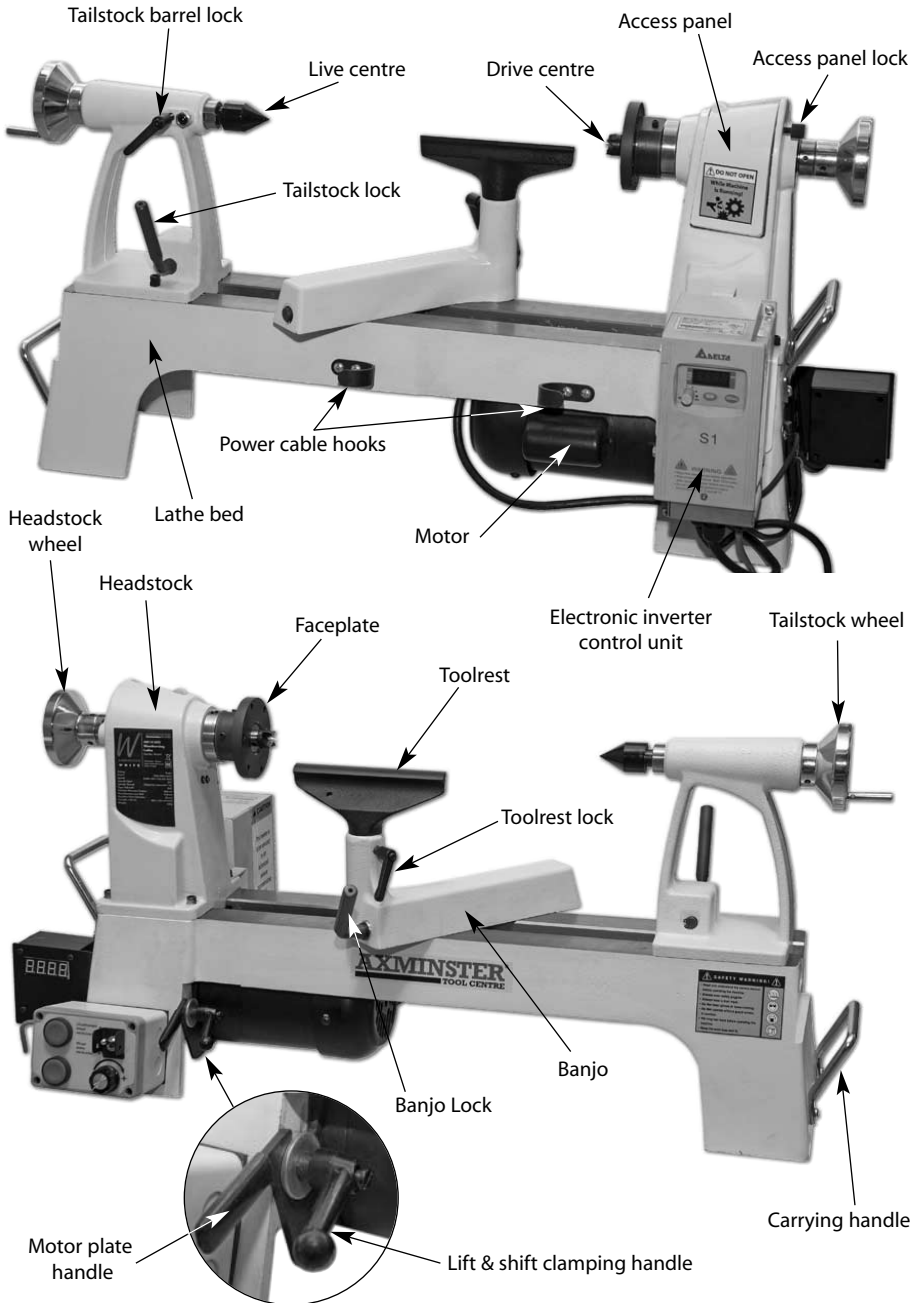
RS-Lauf
reverse
marche arrière

Red (OFF)

Speed control knob



Illustration & Parts Description...



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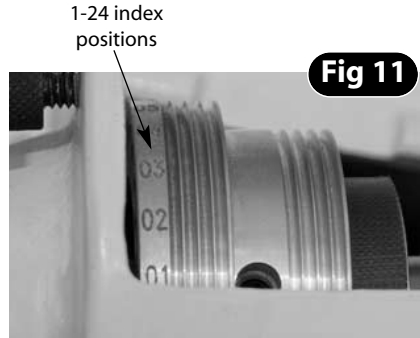
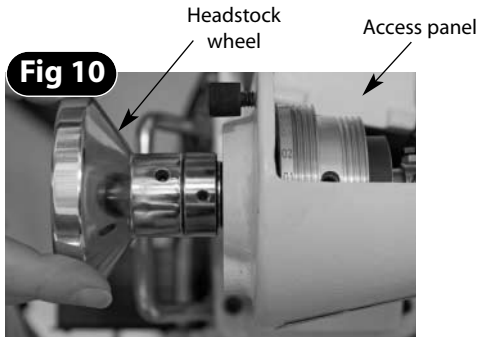
Electronic Inverter Control Unit

General Purpose AC Micro Drive from "Delta Electronics". The VFD-S drive is famous for its low noise carrier frequency feature and easy to use keypad. The digital keypad comes in two parts; the display panel and keypad. The display provides the parameter display and shows operation status of the AC drive. The keypad provides programming interface between the user and the AC drive. For more information see manufacturer's manual.

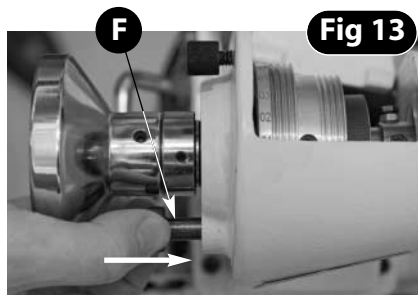
Note: The inverter comes preset from the factory and you should not need to make any adjustments.



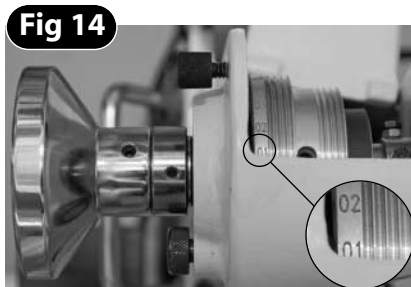
The indexing facility is useful for fluted columns, clock faces and accurate hole positioning. The indexing pulley has 24 positions (15°) indexing using the supplied index pin (F).



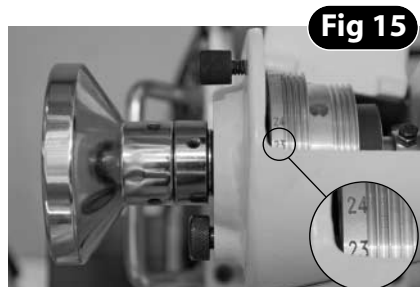
Open the access panel, turn the headstock wheel until the pre-drilled hole in the headstock lines up with one of the 24 pre-drilled hole positions on the index pulley. (See figs 10,11 & 12)



Locate the 24 index pin (F) and slide the pin into the pre-drilled holes to lock the pulley to the desired position.



The picture above shows the index number is set to position 01.



The picture above shows the index number is set to position 23.

Note: The index pin (F) has a magnetic base, enabling the pin to be attached to the lathe to prevent it from being lost.



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Removing Drive/Live Centres...

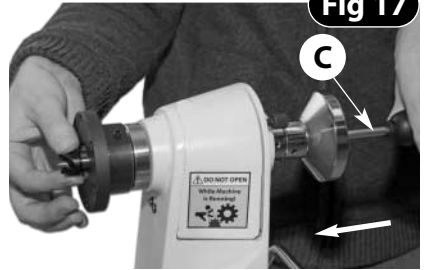
To remove the Drive Centre, locate (A) the push rod (C), while holding the tool insert the push rod (C) through the centre hole of the headstock wheel and push the drive centre out. (See figs 16,17,18) Repeat the procedure for the Live Centre in the tailstock. (See fig 19)

Fig 16



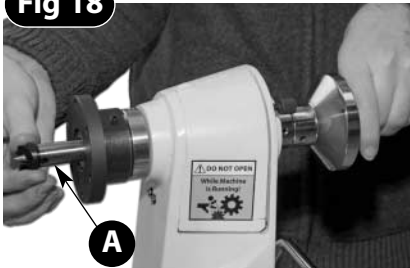
Centre hole in the headstock operating wheel.

Fig 17



Insert the push rod (C) through the headstock and push the drive centre out.

Fig 18



Removing the drive centre

Fig 19



Live centre in tailstock

Changing the Belt Speed...

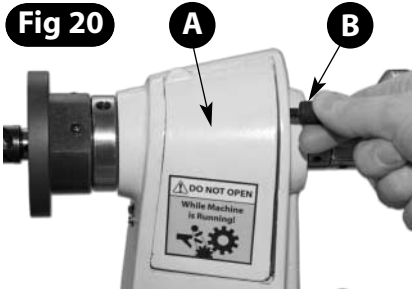
Note. The lowest speed pulley combination is furthest from the faceplate, i.e. smallest motor pulley diameter to largest spindle pulley diameter.



DISCONNECT THE LATHE FROM THE MAINS SUPPLY

Lower the access panel (A) on the headstock by loosening the access panel lock caphead screw (B), using a Hex key. (See figs 20 & 21) Open the motor access door (C), by pulling the spindle speed LED box towards you. (See fig 22) Loosen the motor's lift & shift handle, see fig 24, lift the motor plate handle to give enough slack in the belt to enable it to be moved to the new selection. When the belt is located, turn the spindle to ensure the belt is correctly seated. Check that the belt is vertical, the belt must not be run out of vertical alignment, this can cause the belt to 'jump' the pulley grooves, possibly the wrong way, and if it does manage to run, it will scuff the sides of the belt badly). When you are sure all is correct, press down on the motor plate handle to put tension on the belt. (**Don't go mad, the belt does not need to be bar taut to operate correctly**). Tighten the lift & shift handle to hold the motor plate in position. Replace the access panel (A) & tighten the caphead screw (B) and close motor access door (C), Reconnect the machine to the mains supply. Give the lathe a little 'burst' to check it all runs smoothly. When you are satisfied, remove any tools you may have been using; stow carefully away. The lathe is now ready to be used again.

Fig 20



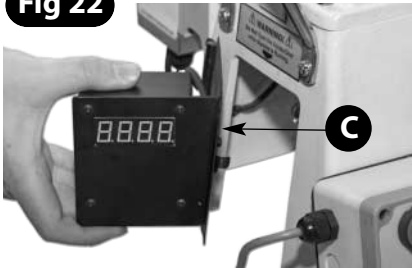
Loosen the access panel caphead screw (B) using a Hex key.

Fig 21



Lower the access door to give access to the spindle pulley

Fig 22



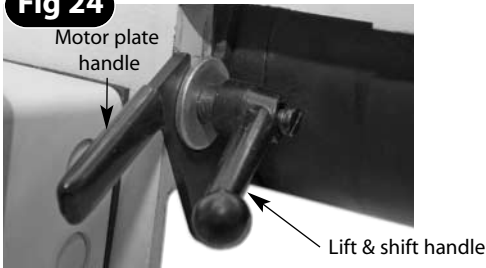
Open the motor access door (C), by pulling the spindle speed LED box towards you.

Fig 23



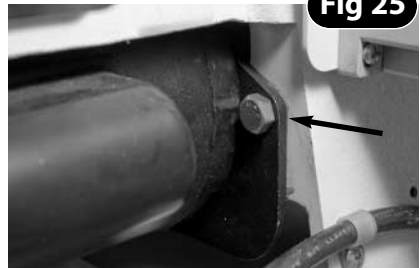
With the motor access door open, gives access to the motor pulley.

Fig 24



Loosen the motor's lift & shift handle and lift the motor plate handle to give enough slack in the belt to enable it to be moved.

Fig 25



Motor's pivot bolt



Daily after use:

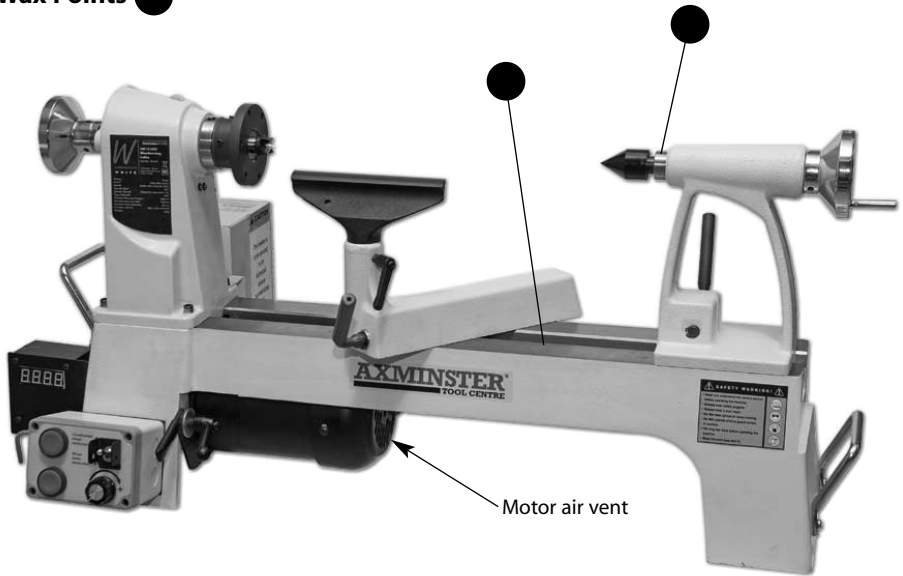
- Clean wood shavings away from the lathe bed and tool rest.
- Smear a light coat of wax (**Protec Tool Wax Polish, Order no. 211835**) over the lathe bed to allow the Banjo and Tailstock to run more smoothly over the bed and to prevent corrosion.

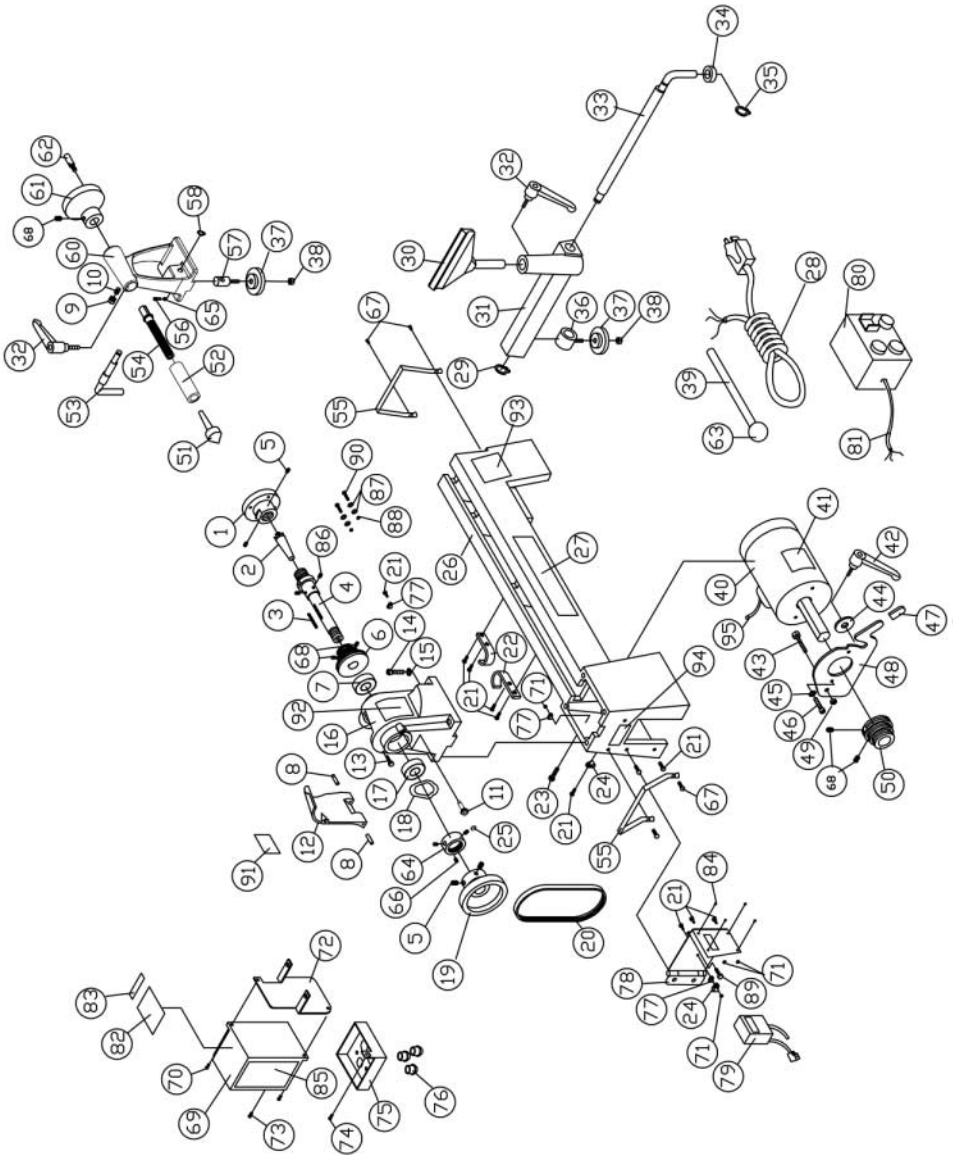
Monthly:

- Check the tension of the belt and adjust, (**See pages 11 & 12 for Changing the Belt Speed**).
- Check any build up of wood shaving on the motor and spindle pulley's and clean if necessary.
- Using an airline, blow out the motor's air vent.

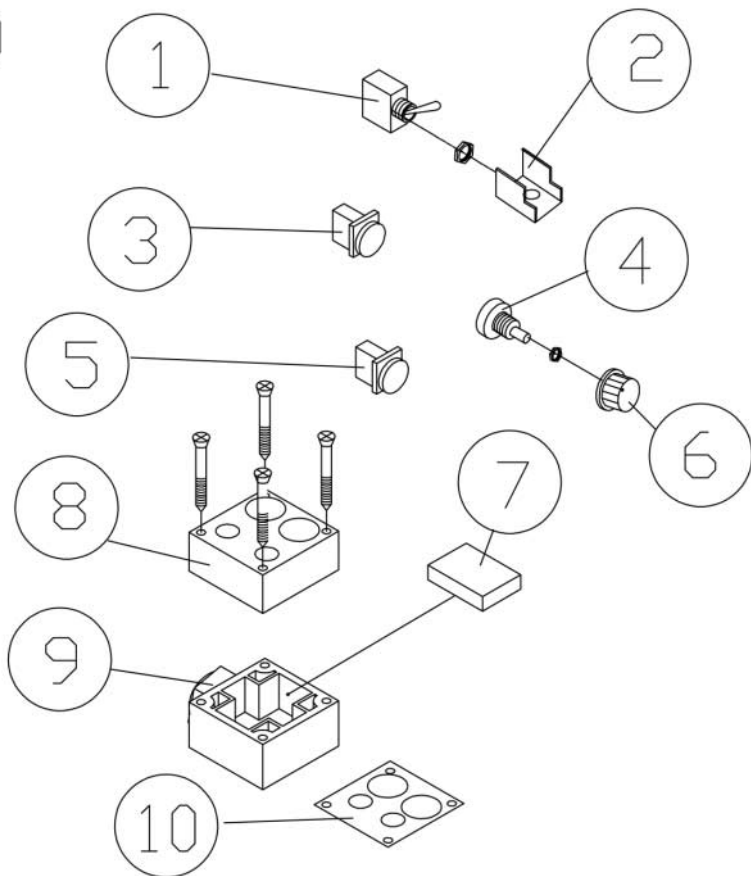
Note: If the lathe is not going to be used for a period of time, smear a light coat of wax over the bed and place a dust sheet (Order no. 600410), over the lathe.

Wax Points ●





80



INDEX NO.	Description	Qty	Size
1	Face plate	1	3"
2	Spur Center	1	MT2
3	key	1	5*5*25
4	Spindle	1	M33XP3.5
5	SET SCREW	5	1/4-20*1/4
6	Spindle Pulley	1	4 SPEED
7	Bearing	1	6005
8	SET SCREW	2	3mmx16mm
9	NUT	1	M10
10	SET SCREW	1	M10*1.5P
11	Lock Pin	1	
12	Cover	1	
13	CAP SCREW	1	1/4*1/2"
14	CAP SCREW	4	1/4*1"
15	Spring Washer	4	1/4"
16	Head Stock	1	
17	Bearing	1	6004
18	Wave washer	1	S-18
19	Handwheel	1	
20	Belt	1	280J-4V
21	Screw	11	#10-24*5/16"
22	Cable Hook	2	
23	Round Cross Head Screw	1	#10-24*3/4"
24	Cord Snap Ring	2	
25	Magnet	1	
26	Bed	1	
27	Lable	1	
28	Power Cable	1	
29	C-Ring	1	S-12
30	Tool Rest	1	6"x1"
31	Tool rest base	1	
32	Locking Handle	2	5/16"X15MM
33	Clamping Shaft	1	
34	Bushing	1	
35	C-Ring	1	S-14
36	Clamp bolt	1	
37	Clamp	2	
38	Nut	2	M10*1.5P
39	shaft	1	
40	Motor	1	3/4HP-60HZ
41	Motor Lable	1	
42	Locking Handle	1	
43	Screw	1	5/16-18X1-1/4
44	Washer	1	5/16-厚3mm
45	Washer	2	1/4
46	CAP SCREW	2	1/4-20X5/8
47	black handle protector	1	

48	motor plate	1	
49	Nut	1	5/16-18UNC
50	Pulley	1	4 SPEED
51	Live center	1	MT2
52	Quill	1	
53	Clamping Shaft	1	
54	Lead Screw	1	
55	Handle	2	
56	Cap Screw	1	1/4"-20UNCX3/8
57	Clamp bolt	1	
58	C-Ring	1	S-10
59	Locking Handle	1	
60	Tailstock	1	
61	Handwheel	1	
62	Handle	1	
63	Knob	1	
64	Nut	1	
65	Nut	1	
66	Set screw	3	3/16"x1/4"
67	Round Head Screw	4	1/4"-20x5/8"
68	SET SCREW	5	1/4-20*3/8
69	Inverter	1	
70	Round Head Screw	2	
71	Nut	4	3/16"
72	Inverter board	1	
73	Round Head Screw	1	
74	Tapping Screw	1	
75	junction box	1	
76	wire clamp	3	PG9
77	wire clamp	2	
78	readout board	1	
79	R.P.M readout	1	
80	Control Box	1	
80-1	Few/Rev Switch	1	
80-2	Switch Guard	1	
80-3	ON SWITCH	1	
80-4	VR	1	
80-5	OFF SWITCH	1	
80-6	VR Knob	1	
80-7	Magnet	1	
80-8	Control Box	1	
80-9	Strain Relief	1	
80-10	Label	1	
81	control wire	1	
82	Lable-big	1	
83	Lable-small	1	
84	TAPPING SCREW	4	
85	WARNING LABLE	2	

951247



AW1416VS Woodturning Lathe



Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local amenity tip and place into the appropriate recycling bin.

Only for EU countries



Do not dispose of electric tools together with household waste material! In observance of European Directive 2002/96/EC on waste electrical and electronic equipment and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.



Axminster Reference No: **AW1416VS**



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TOOL CENTRE

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