

charnwood

Woodworking machinery at its best!

PRO SERIES

ELECTRONIC VARIABLE SPEED LATHE OWNERS MANUAL

MODEL: 1421VF



CE

Charnwood, Cedar Court, Walker Road,
Hilltop Industrial Estate, Bardon Hill, Leicestershire, LE67 1TU

Tel. 01530 516 926

email: sales@charnwood.net

website: www.charnwood.net

GENERAL SAFETY RULES

WARNING: Do not attempt to operate the machine until you have read thoroughly and understood completely all instructions, rules, etc. contained in this manual. Failure to comply may result in accidents involving fire, electric shock, or serious personal injury. Keep this owner's manual and review frequently for continuous safe operation.

1. Know your machine. For your own safety, read the owner's manual carefully. Learn its application and limitations, as well as specific potential hazards pertinent to this machine.
2. Make sure all tools are properly earthed.
3. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning, make sure it is properly replaced before using the machine again.
4. Remove adjusting keys and spanners. Form a habit of checking to see that the keys and adjusting spanners are removed from the machine before switched it on.
5. Keep your work area clean. Cluttered areas and workbenches increase the chance of an accident.
6. Do not use in dangerous environments. Do not use power tools in damp or wet locations or expose them to rain. Keep work areas well illuminated.
7. Keep children away. All visitors should be kept a safe distance from the work area.
8. Make workshop childproof. Use padlocks, master switches and remove starter keys.
9. Do not force the machine. It will do the job better and be safer at the rate for which it is designed.
10. Use the right tools. Do not force the machine or attachments to do a job for which they are not designed. Contact the manufacturer or distributor if there is any question about the machine's suitability for a particular job.
11. Wear proper apparel. Avoid loose clothing, gloves, ties, rings, bracelets, and jewellery which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.
12. Always use safety glasses. Normal spectacles only have impact resistant lenses. They are not safety glasses.
13. Do not over-reach. Keep proper footing and balance at all times.
14. Maintain machine in good condition. Keep machine clean for best and safest performance. Follow instructions for lubrication and changing accessories.
15. Disconnect the machine from power source before servicing and when changing the drive belt.
16. To avoid accidental starting, make sure the switch is in the OFF position before plugging in the mains cable.
17. Never leave the machine running unattended. Turn the power off. Do not leave the machine until it comes to a complete stop.
18. Do not use any power tools while under the effects of drugs, alcohol or medication.
19. Always wear a face or dust mask if operation creates a lot of dust and/or chips. Always operate the tool in a well ventilated area and provide for proper dust removal. Use a suitable dust extractor.

ADDITIONAL RULES FOR LATHES

Never attempt to adjust any part of the workpiece whilst the lathe is still in motion. Wait until the workpiece has come to a complete stop.

1. Ensure that chuck keys, tommy bars and similar items are removed before the lathe is started.
2. Always stand to one side when you start the lathe so that if anything does fly off e.g. a loose piece of bark, you will be out of the line-of-fire.
3. When mounting a new piece of timber, rotate the wood through 360° by hand to ensure that it will not hit the tool rest or the bed of the lathe and then start the lathe at its slowest speed. When you are certain that that the work is secure and not too out of balance set the lathe to the normal turning speed.
4. Always check the rotation speed before switching the lathe on to avoid the risk of starting it whilst it is set to run at too high a speed.
5. The speed of the lathe must be adjusted to suit the size, balance, length and condition of the timber being turned. The greater the diameter of the work, the slower the rotation speed needs to be. If the piece you are turning is out of balance, then you must start turning at a low speed, until it is balanced.
6. The tool must rest firmly on the tool rest before it is brought into contact with the rotating wood and must never be lifted off the tool rest as long as it is in contact with the timber.
7. Before sanding, polishing or doing anything else that brings your fingers close to the work, remove the tool rest. Getting your fingers trapped between the tool rest and the work will at least be very painful and may cause serious injury.
8. Never wrap the sandpaper or polishing cloth round the work. If it tightens up it will pull your fingers into contact with the timber and may lead to serious injury.

Important



Risk of Injury!
Never reach into
Moving parts



Wear Eye
Protection



Wear Ear
Protection

Introduction

In order to get the most out of your lathe, please read through this manual and safety instructions before use. Please keep the manual in case you need it in the future.

Rating Description

Trade: Suitable for daily use by professional woodworkers.

Continuously rated, high power, and heavy-duty construction. Typically used by several different operators in a small or medium-sized business. Will be used up to the machines maximum limit with some long work periods. **Expected maximum use of 1000 hours annually.**

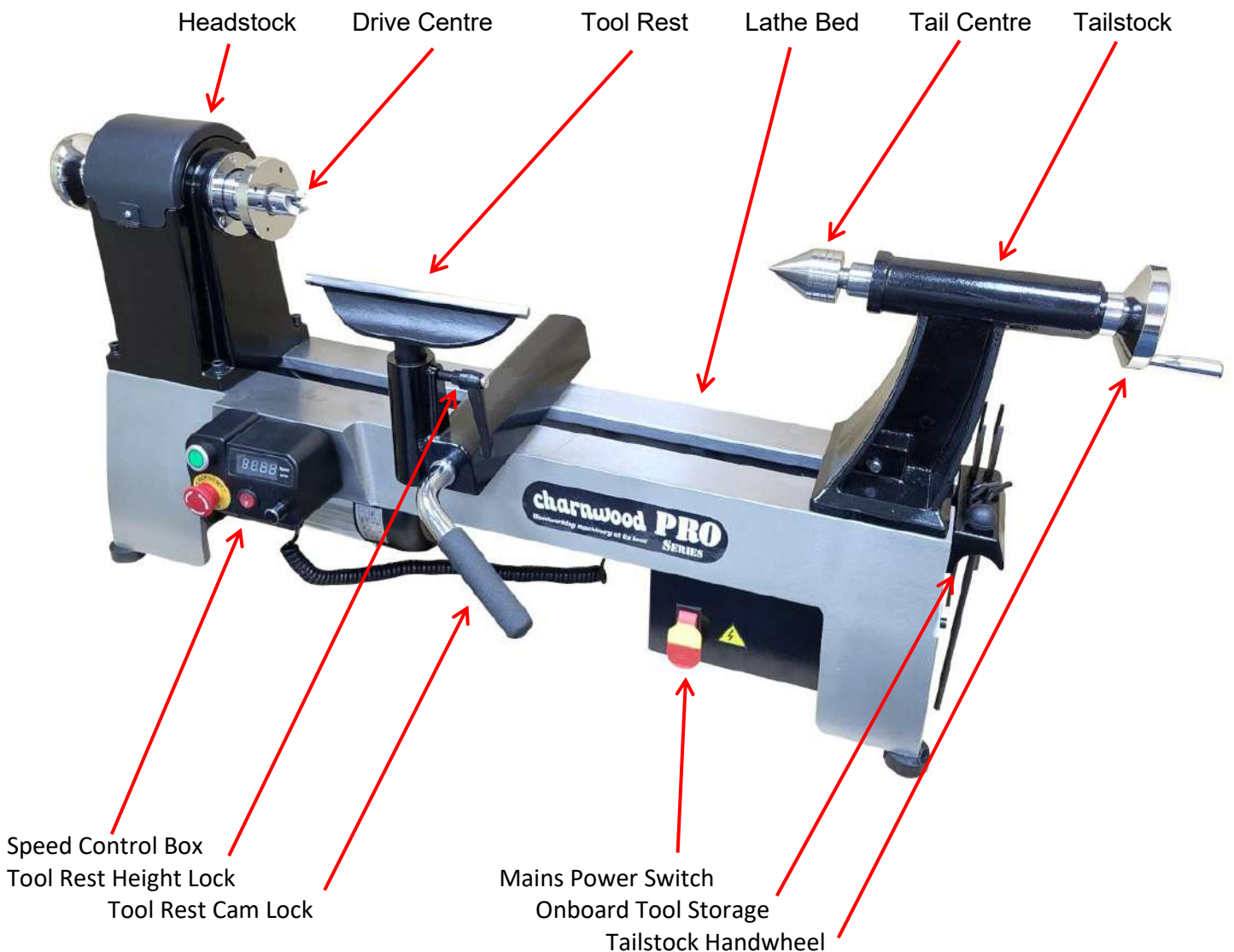
Please Note: Using a product in excess of its rating will void the manufacturer's free warranty.

Technical Data

N.B. The distance between centres will vary and be dependent on the type of centres or accessories used. Maximum distance is 577mm (22.3/4").

Max. spindle length (without centres fitted)		577mm (22.3/4")
Max. spindle length (with centres fitted)		457mm (18")
Distance over bed (Max Bowl Diameter)		350mm (14")
Distance over Banjo		250mm (10")
Motor AC with inverter		1100w (1.5hp) 50hz, 240v
Speed Range (Forward & Reverse)	Low	0 - 1500rpm
	High	0 - 3550rpm
Spindle thread size		M33 x 3.5mm
Spindle tapers		MT2
Indexing Positions		24 (every 15 degrees)
Dimensions (WxDxH)		1100 x 420 x 480cm
Weight		56kg
Rating		Trade
Product Guarantee		5 Year

Main Components



Unpacking



The Lathe is packed in 1 wooden crate.

Do not dispose of the packaging until the lathe has been fully assembled and tested. It will be required in the unlikely event that a return is required.

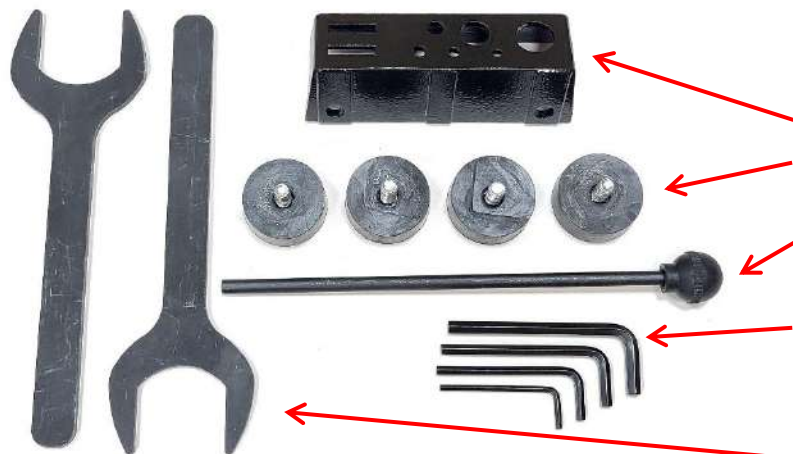


This part of the assembly requires 2 people:

Remove the lid of the crate.



Remove the two transit bolts



Check the loose items are all present. If anything is missing, please contact us.

Right Hand Carry Handle
Rubber Feet

Knockout Bar

Service Tools

Spindle Spanners

Decide where you wish to mount your lathe. Ideally, the height of the spindle should be approximately level with your elbow when standing/sitting in a working position.

The lathe is sufficiently heavy and stable to be used without fixing to a base provided the workpiece is not too large and the blank well balanced. For larger diameter blanks (6" plus) and unbalanced pieces, it is recommended that the lathe is fixed to a suitable stand or bench.

In that case, do not install the rubber feet and mount directly using the M8 threaded holes.

Assembly



Fit the feet

If you decide to bench mount your lathe, without permanently fixing it, you should now fit the four rubber feet into the four threaded holes in the underside.



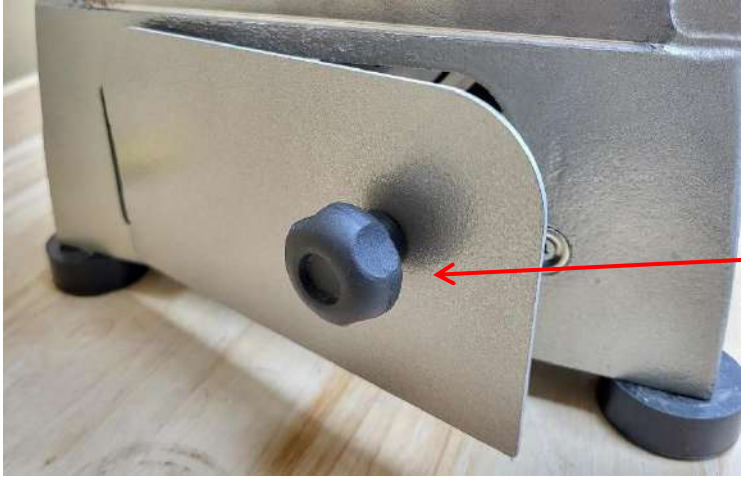
Fit the Carry Handle

Fit the handle using two M8 x 12mm allen key bolts and washers.



The Carry Handles Double as onboard storage for the accessories and service tools.

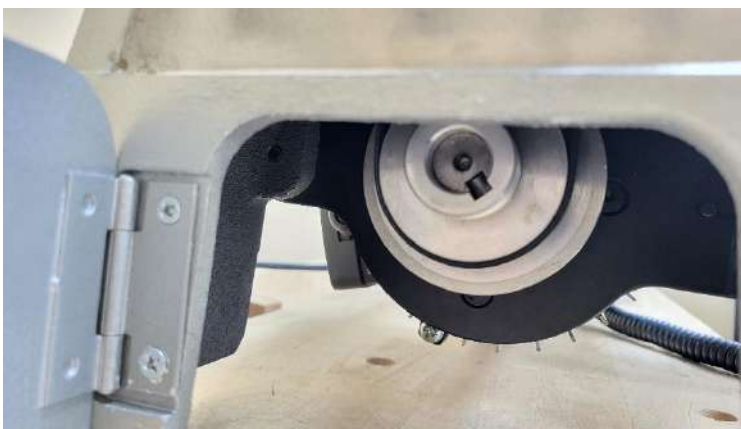
Adjusting The Spindle Speed



The lathe has electronic variable speed control. There are two ranges of speeds which are obtained by changing the position of the drive belt.

To adjust the drive belt position:

Open the lower pulley access door.



The **approximate** speed ranges are:

Left Hand Pulleys: 60 - 1500rpm

Right Hand Pulleys: 145 - 3550rpm



Remove the retaining screw

Open the upper belt cover

Rotate the drive belt tension release lever towards you to unlock it.



Press the lever down to lift the motor and release the tension.

Rotate the Lever back to the starting position to lock it.

Move the slack belt to the alternate set of pulleys. Always remove the belt from the larger pulley first.

Release the locking lever and allow the motor to drop back down to tension the belt. Lock the lever.

Close the upper belt cover and lower pulley door.

Spindle Indexing



Before starting the lathe, rotate the spindle by hand and make sure the indexing pin is not engaged.

Please Note: Starting the motor with the pin engaged will damage the lathe.

To disengage the indexing pin:
Pull the plunger out, away from the headstock, and rotate it so that the pin is engaged in the shallower of the two slots.

Control Box



To turn the power on:

Pull the power switch outwards.

The speed display screen will be illuminated and show 4 zeros.



The lathe is fitted with a floating switch box that can be positioned in the most convenient place, depending on the task being carried out.

Magnets will hold the switch box anywhere along the bed.

To start the lathe press the green start button.



You can adjust the speed using the variable speed control dial.

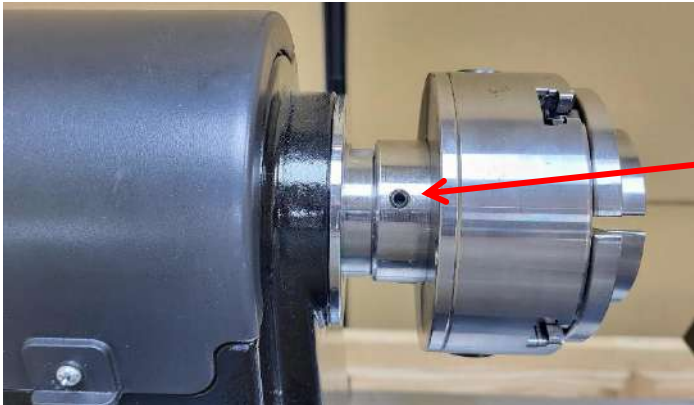
- Speed Readout
- On Button
- Forward/Reverse Switch
- Variable Speed Control Dial
- Emergency / Off Switch (After pressing - Rotate To Release)

Recommended Turning Speeds

Workpiece Diameter mm	Roughing Cuts RPM	General Cutting RPM	Finishing Cuts RPM
Under 50	1500	3200	3200
50-100	750	1600	2500
100-150	500	1000	1700
150-200	500	800	1250
200-250	500	650	1000
250-300	500	530	850

Forward / Reverse Direction

The Forward / Reverse switch should never be used when the lathe spindle is still in motion. Always stop the lathe by using the OFF switch, wait for the workpiece to come to a standstill, then switch direction.



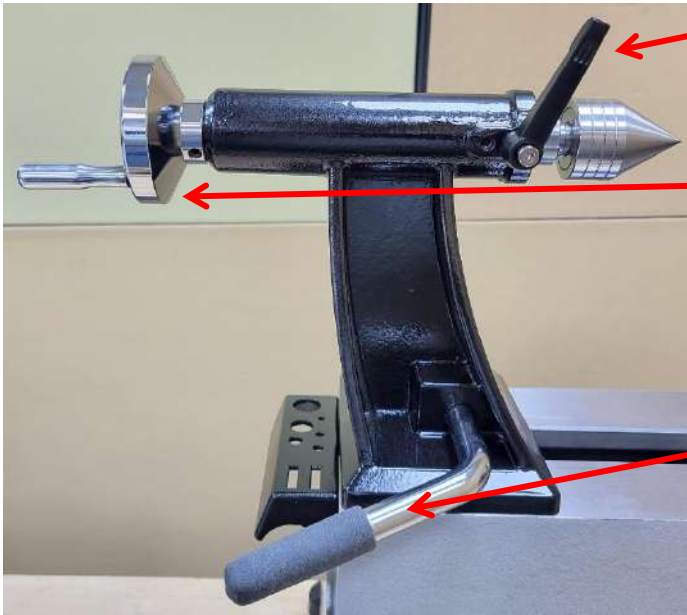
IMPORTANT

When turning a bowl: The lathe should only be used in reverse direction if the accessory mounted to the headstock spindle is locked onto the spindle with grub screws.

Some chucks are not equipped with any form of locking and should never be used in reverse.

The faceplate supplied with the lathe has locking screws, to be engaged before running in reverse.

Setting The Tailstock



Fine adjustment of the tail centre is made by undoing the Tail Centre Quill Lock (by half a turn only).

Turn the Tailstock Handwheel to advance or retract the tailstock quill.

It has a travel of 70mm.

When fully retracted the Tail Centre will be automatically ejected.

To slide the tailstock along the bed, rotate the Tailstock Cam Lock Lever.

When the tailstock is positioned where required, clamp it firmly in place by rotating the lever back to the locked position.

Setting The Tool Rest



The Tool Rest height can be adjusted using the locking lever.

This type of lever can be rotated to a more convenient position, without moving the thread, by pulling the lever away from the thread to disengage the ratchet teeth and then rotating it.

The Tool Rest banjo slides along the bed of the lathe.

To release the banjo, rotate the Tool Rest Cam Lock Lever.

The tool rest can now freely slide along the bed. When it is positioned where required, clamp it firmly in place by rotating the lever back to the locked position.

Using the Indexing System

The lathe is fitted with an indexing system which allows the spindle to be locked in any of 24 positions in a full 360 degrees rotation, therefore in intervals of 15 degrees.

The indexing facility is useful for fluted columns, clock faces and accurate hole placements.



Index Pin Disengaged



Index Pin Engaged



Open the top belt pulley cover to expose the indexing ring.

Mark a convenient position on the headstock casting and turn the faceplate to line up indexing position 1 with the mark.

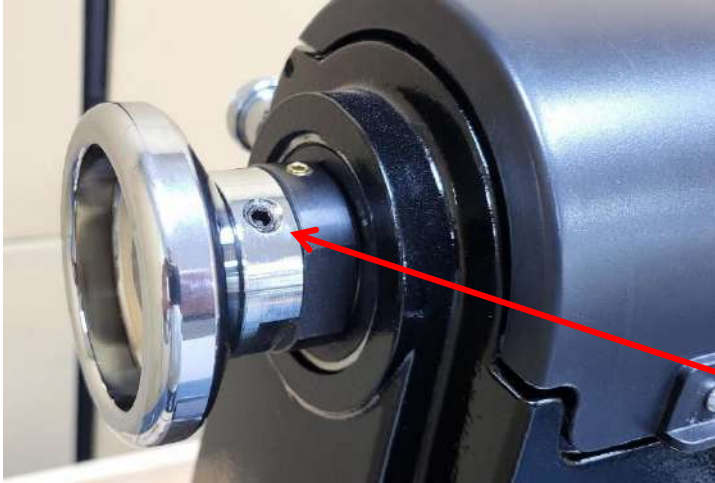
Then pull out and rotate the indexing pin, until it springs forward and locks the spindle.

To move onto the next position, pull out the indexing pin, rotate the spindle by hand until the next number required is lined up with the mark, release the indexing pin to engage the lock.

IMPORTANT: The indexing pin should never be used as a spindle lock

To remove accessories from the spindle, always use the spanner provided to hold the spindle. Failure to do so, may result in damage to the pin and indexing wheel.

Outboard Turning



The lathe is fitted with an M33 x 3.5mm thread on the left hand side of the headstock.

A scroll chuck can be fitted in the outboard position, giving access to a bigger bowl turning capacity.

Note: Requires the optional extension bed to be fitted.

Loosen the 2 locking grub screws on the handwheel and turn anticlockwise to remove. If necessary, use the spindle spanners.



IMPORTANT

When turning a bowl: The lathe should only be used in reverse direction if the accessory mounted to the headstock spindle is locked onto the spindle with grub screws.

Some chucks are not equipped with any form of locking and should never be used in reverse.

The faceplate supplied with the lathe has locking screws, to be engaged before running in reverse.



When outboard turning, the tool rest sits on the (optional) extension bed.

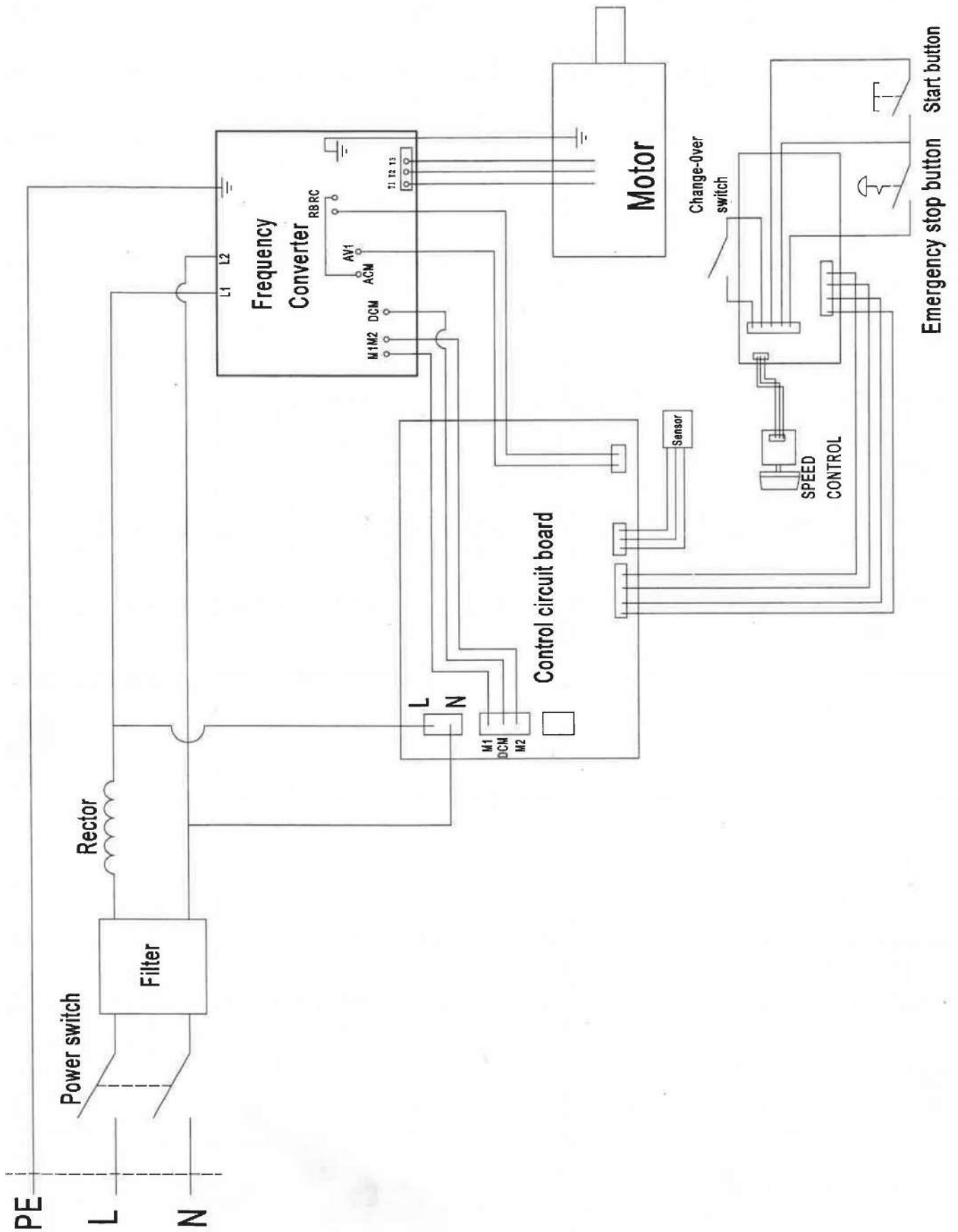
The switch box can be moved to a more convenient position.

Shown with optional 3 in 1 extension bed fitted.

CHARNWOOD 1421VF LATHE TROUBLESHOOTING GUIDE

Fault	Possible Cause	Remedy
Machine will not start	Power supply not connected Fuse in plug blown Fuse in Control Box blown Break in power supply cable Loose terminal on switch Switch failed	Check plug connections in rear of control unit Replace fuse Replace Fuse Visually check cable - replace if necessary Remove switch and check connections Replace switch
Machine will not start, Speed Display Lit	Indexing Pin Engaged Fuse in Control Box blown Speed controller failed	Disengage Indexing Pin Replace fuse Replace speed controller
Machine starts only when green button held	Switch has failed	Replace Switch
Machine starts to turn but slow speed only	Failed variable speed circuit	Check connection to speed dial
Spindle stalls but motor still running	Loose drive belt	Increase belt tension
Motor is running but spindle not turning	Broken drive belt	Replace drive belt
Motor is overheating	Too much load on motor Airflow around motor restricted	Reduce load - make shallower cuts Keep motor clear of shavings
Spindle rotation slows during cut	Excessive depth of cut Chisels are dull Loose drive belt	Make shallower cuts Sharpen chisels Increase belt tension

Charnwood 1421VF Wiring Diagram



Declaration of Conformity

Charnwood Declare that Woodworking Lathe, Model 1421VF

Conforms with the following Directives: Machinery Directive 2006/42/EC
EMC Directive 2014/30/EU

And further conforms to the machinery example for which the EC type examination Certificate No. TA385213730 & TA385244899 which have been issued by TUV Austria (Shanghai) Co Ltd, Room 12D Orient Century building, 345 Xian Xia road, Shanghai, China.

I hereby declare that equipment named above has been tested and found to comply with the relevant sections of the above referenced specifications. The machinery complies with all essential requirements of the directives and regulations.

Signed: Richard Cook

Dated: 24/02/2026

Location: Leicestershire

Richard Cook
Director



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.



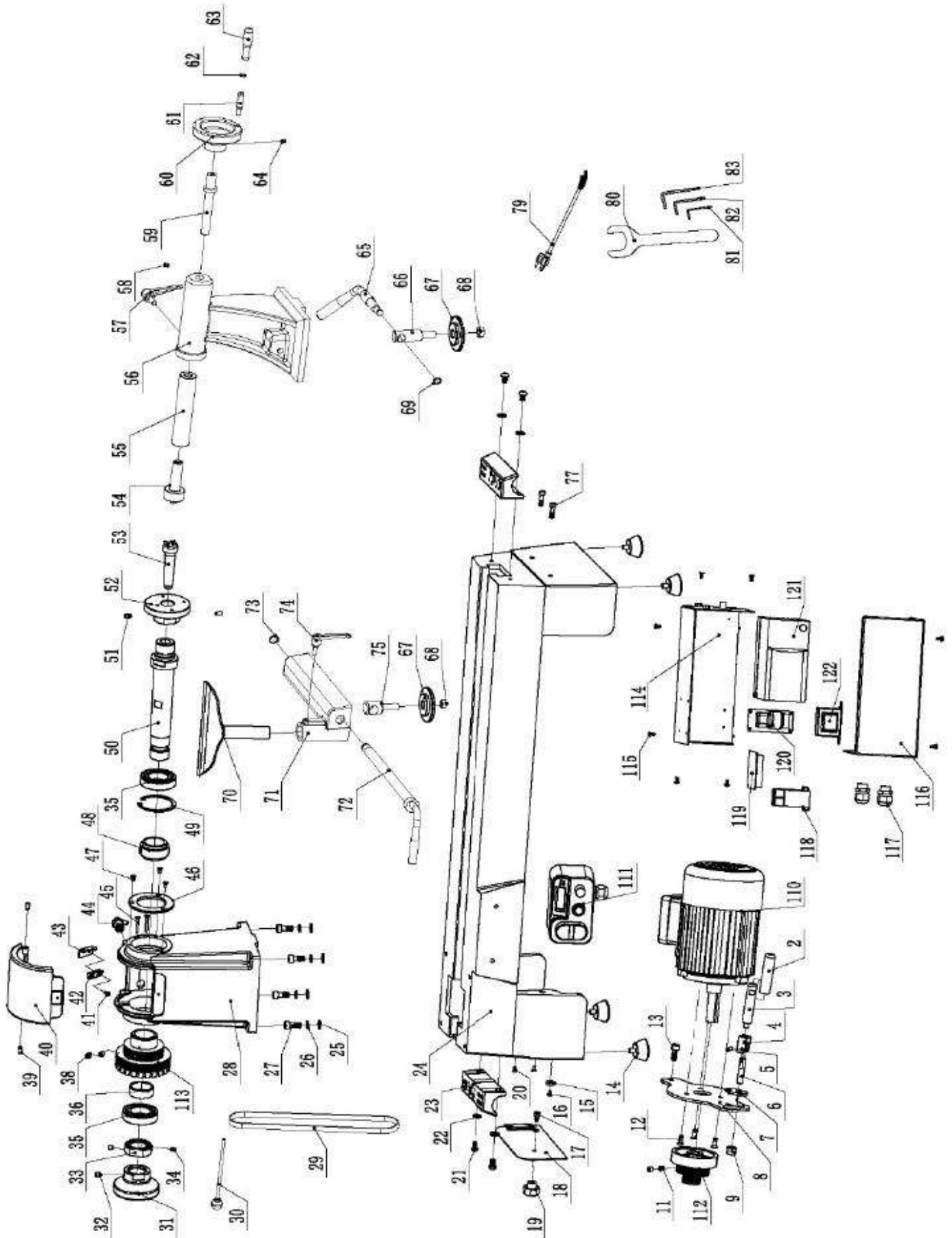
Only for EU countries
Do not dispose of electric tools together with household waste material!

In observance of European Directive 2002/96/EC on waste electrical and electronic equipment (EEE) 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.

Your local refuse amenity will have a separate collection area for EEE goods



Charnwood 1421VF Parts Drawing



Charnwood 1421VF Parts List

No.	Description	QTY.	No.	Description	QTY.
1421VF#002	Handle Sleeve	1	1421VF#050	Spindle	1
1421VF#003	Locking Handle	1	1421VF#051	Screw	2
1421VF#004	Locking Cam	1	1421VF#052	Face Plate	1
1421VF#005	Elastic Cylindrical Pin	1	1421VF#053	Drive Centre	1
1421VF#006	Locking Screw	1	1421VF#054	Revolving Centre	1
1421VF#007	Pressing Plate	1	1421VF#055	Quill	1
1421VF#008	Motor Base	1	1421VF#056	Tailstock	1
1421VF#009	Hexagon Lock Nut	1	1421VF#057	Handle	1
1421VF#011	Screw	2	1421VF#058	Screw	1
1421VF#012	Screw	3	1421VF#059	Guide Screw	1
1421VF#013	Screw	1	1421VF#060	Tailstock Handwheel	1
1421VF#014	Rubber Foot	4	1421VF#061	Handle Lever	1
1421VF#015	Magnet	1	1421VF#062	Retaining Ring	1
1421VF#016	Screw	1	1421VF#063	Handle	1
1421VF#017	Screw	1	1421VF#064	Screw	1
1421VF#018	Bed Cover Plate	1	1421VF#065	Eccentric Handle	1
1421VF#019	Locking Handle	1	1421VF#066	Tailstock Support	1
1421VF#020	Screw	2	1421VF#067	Fixed Plate	1
1421VF#021	Screw	4	1421VF#068	Locking Nut	1
1421VF#022	Flat Washer	4	1421VF#069	Elastic Retaining Ring	1
1421VF#023	Tool Holder	1	1421VF#070	Tool Rest	1
1421VF#024	Bed	1	1421VF#071	Toole Rest Banjo	1
1421VF#025	Flat Washer	4	1421VF#072	Eccentric Handle	1
1421VF#026	Spring Washer	4	1421VF#073	Retaining Ring	1
1421VF#027	Screw	4	1421VF#074	Handle	1
1421VF#028	Headstock	1	1421VF#075	Locking Support	1
1421VF#029	Drive Belt	1	1421VF#077	Screw	2
1421VF#030	Rod	1	1421VF#079	Power Plug	1
1421VF#031	Spindle Handwheel	1	1421VF#080	Spanner	2
1421VF#032	Screw	1	1421VF#081	Allen Key	1
1421VF#033	Positioning Nut	1	1421VF#082	Allen Key	1
1421VF#034	Screw	2	1421VF#083	Allen Key	1
1421VF#035	Bearing	2	1421VF#110	Motor	1
1421VF#036	Spacer	2	1421VF#111	Switch Box Assembly	1
1421VF#038	Screw	2	1421VF#112	Belt Pulley	1
1421VF#039	Screw	2	1421VF#113	Spindle Pulley	1
1421VF#040	Front Access Plate	1	1421VF#114	Inverter Base Plate	1
1421VF#041	Screw	1	1421VF#115	Screw	1
1421VF#042	Sensor	1	1421VF#116	Inverter Panel	20
1421VF#043	Bracket	1	1421VF#117	Strain Relief	1
1421VF#044	Indexing Pin	1	1421VF#118	AC Contactor	2
1421VF#045	Screw	2	1421VF#119	PCB	1
1421VF#046	Bearing Cover	1	1421VF#120	Filter	1
1421VF#047	Screw	3	1421VF#121	Inverter	1
1421VF#048	Plastic Spacer	1	1421VF#122	Reactor	1
1421VF#049	Elastic Retaining Ring	1			



Updated: February 2026

**Charnwood, Cedar Court, Walker Road,
Hilltop Industrial Estate, Bardon Hill, Leicestershire, LE67 1TU
Tel. 01530 516 926
email: sales@charnwood.net website: www.charnwood.net**