

charnwood

Woodworking machinery at its best!

PRO SERIES

22" DRUM SANDER OWNERS MANUAL MODEL: DS22VFP



CE
UK
CA

Charnwood Machinery, 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 all 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 task.
11. Wear proper apparel. Avoid loose clothing, gloves, ties, 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 the machine in good condition. Keep the 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 blade.
16. Never leave the machine running unattended. Turn the power off. Do not leave the machine until it comes to a complete stop.
17. Do not use any power tools while under the effects of drugs, alcohol or medication.
18. 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.



Risk of Injury!
Never reach into
a rotating drum



Wear Eye
Protection



Wear Ear
Protection

Rating Description

Trade: Suitable for daily use by professional woodworkers.

Continuously rated, high power and a 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.

Charnwood DS22VFP Specification

Maximum Width (1 Pass)	560mm (22")
Maximum Width (2 Passes)	1120mm (44")
Maximum Workpiece Thickness	100mm (4")
Minimum Workpiece Thickness	5mm (1/5")
Minimum Length	160mm (6.3")
Sandpaper Wrap (Width x Length)	78mm x 3280mm
Drum Motor (Induction)	1500w (2hp), 240v, 50Hz
Drum Speed	0 - 1800rpm
Drum Size (Diameter / Length)	132mm / 565mm
Conveyor Motor (DC)	120w
Conveyor Speed (Variable)	0-7.5m/min
Dust Port Diameter	100mm
Dust Collection Minimum Requirement	1000m ³ /hour (50 Litres per second)
Assembled Dimensions (WxDxH)	1070 x 1080 x 1150mm
Shipping Dimensions (WxDxH)	1100 x 770 x 1380mm
Weight	137kg
Rating	Trade
Product Guarantee	5 Year

Unpacking



Open The Crate

This product is packed into 1 wooden crate.

To open the wooden crate:

Cut the vertical straps

Use a pry bar to release the nails around the base

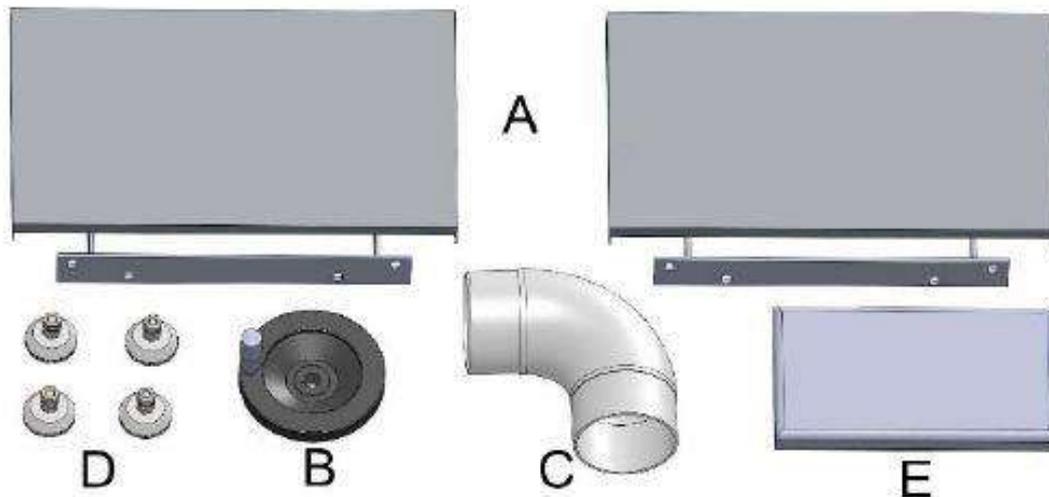
Lift off the complete lid.

Remove Loose Items

Remove the plastic cover and the carton of loose parts.

Do not dispose of any of the packaging until the machine has been completely assembled and tested.
In the unlikely event that the product needs to be returned, the original packaging will be required.

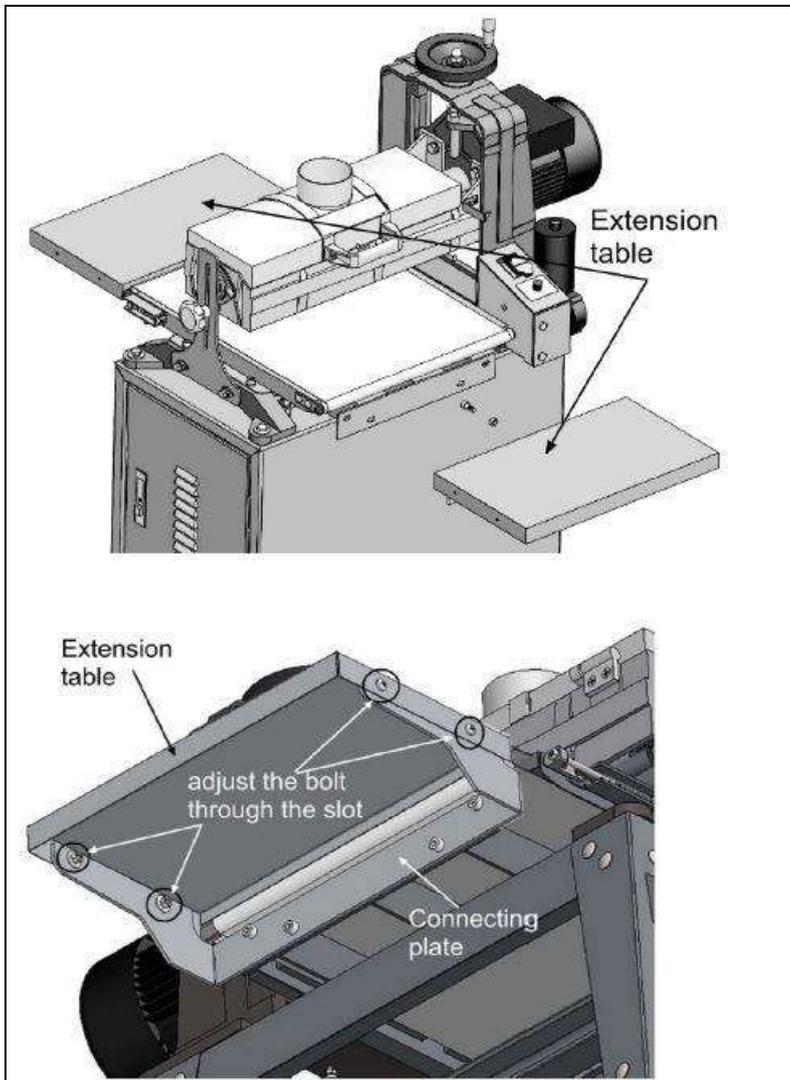
Identify The Loose Parts



- A)** Extension Table Assembly
- B)** Height Adjustment Wheel
- C)** Dust Collection Elbow (Not on DS22VFP Model)
- D)** Rubber Foot
- E)** Hardware

Assembly

A perspective view of a grey stand assembly. The stand has a rectangular base and a vertical back panel. Four small, light-colored feet are attached to the bottom corners of the base.	<p>Assemble The Stand</p> <p>Install the four feet onto the bottom of the stand.</p>
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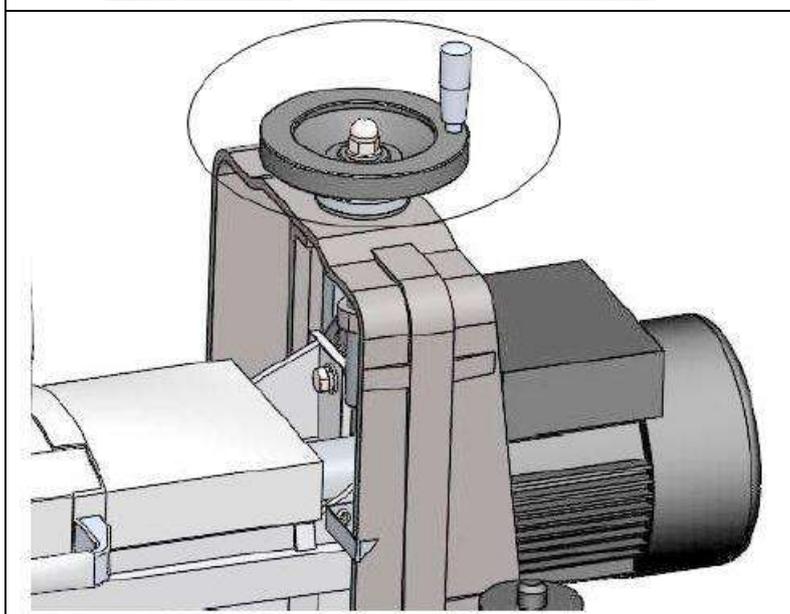


Fitting the Extension Tables

The extension table is already connected to the connecting plate.

To connect the extension table to the feed roller support use M8 x 20mm bolts and washers.

To set the extension table height, put a straight edge across the feed roller and the extension tables and adjust the M6 x 16mm bolts on the connecting plate.

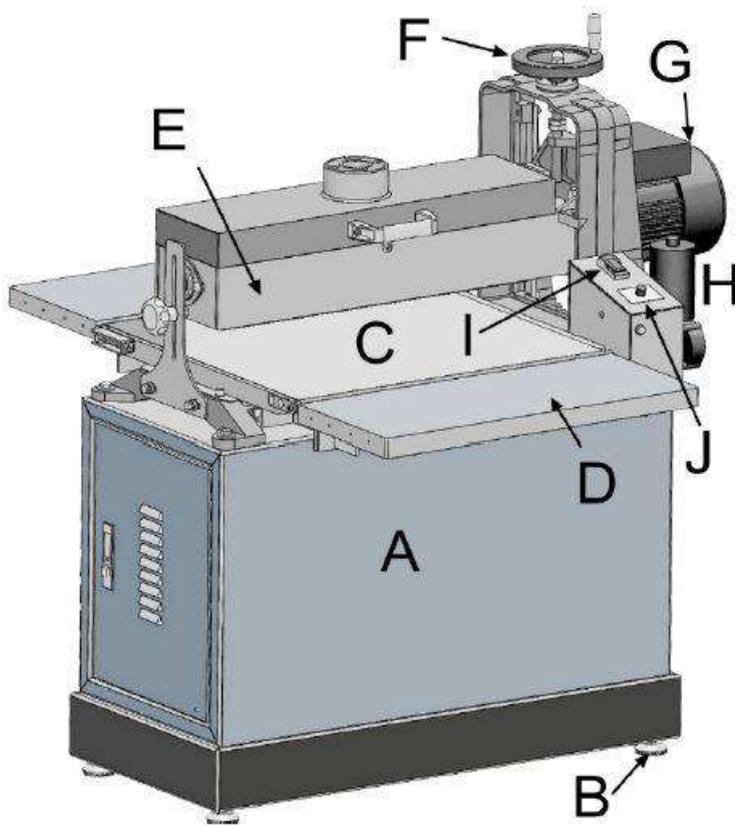


Installing the Height Adjustment Wheel

Attach the height adjustment wheel onto the screw on top of the sander.

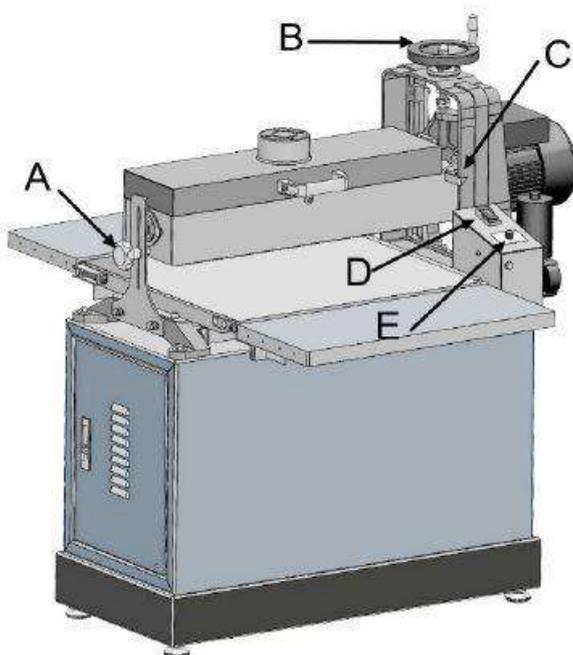
Fit the large M12 washer and the M12 acorn nut on top of the wheel and tighten

Knowing Your Drum Sander



- A: Cabinet
- B : Rubber Feet
- C: Conveyor Belt
- D: Extension Table
- E: Sanding Drum Housing
- F: Height Adjustment Wheel
- G: Motor
- H: Conveyor Motor
- I: ON/OFF Switch
- J: Feed Rate Dial

Basic Controls



- A: Elevation Lock Knob: Secures the sanding head in place after adjusting the elevation. Additionally, this lock helps keep the sanding drum parallel to the conveyor belt during operation.
- B: Elevation Handwheel: Adjusts the height of the sanding drum above the conveyor belt to control the depth of cut or accommodate new workpieces.
- C: Pointer & Elevation Scale: Displays the current height of the sanding drum above the conveyor belt in inches and millimetres.
- D: ON/OFF Switch: Controls power flow to the sanding and conveyor motors.
- E: Conveyor Variable Feed Rate Dial: Adjusts the feed rate of the conveyor belt from 0 to 10 FPM (Feet Per Minute).

Operating The Sander

Drum Sander Vs Thicknesser

Drum sanding gradually removes material in increments of 0.8mm or less depending on sanding grit, stock hardness, stock width, etc. Thicknessing, on the other hand, is for quick, bulk material removal at rates up to 3mm per pass. If you have used a planer thicknesser to smooth and dimension timber you will quickly learn to work with the drum sander, but do not over work it.

Be patient, let the drum sander do the work: 0.8mm or less per pass for best results.

The most common mistake made with a drum sander is forcing it to remove too much material too fast. Variables such as sandpaper grit, stock width, wood type, feed rate, and moisture content all influence how much material can be removed in a single pass.

Double Pass

The maximum sanding width in a single pass is 550mm. When working with stock up to this width, the drum height lock should be engaged once the drum height has been set.

It is possible to work with stock up to 1100mm wide by making 2 passes.

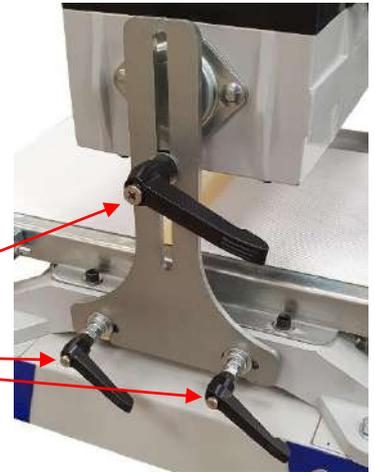
Firstly, remove the End Plate to make the end of the sander open.

Remove completely the drum height locking lever

Loosen the 2 lower locking levers

The end plate can now be removed.

Wider stock can now be fed through the drum, with only the first 255mm being sanded. The stock can then be rotated 180 degrees and fed back into the sander with the remaining area being sanded to the same depth.



Abrasive Grit Selection

Smoothing wood, or sanding, is the process of making finer and finer scratches until they become so small they are no longer visible to the human eye.

The grit size of the sandpaper designates the coarseness of the abrasive. The lower the grit number, the coarser the sandpaper and the larger the scratches made to the surface. Thus 80 grit sandpaper is coarser (bigger scratches) than 120 grit sandpaper, and 120 grit is coarser than 240 grit, and so on. With coarser grit papers, such as 80 grit, very aggressive material removal and surface scratching occurs, whereas with 240 grit, very little surface material is removed and a buffed like look begins to appear.

Typically, you begin sanding with a coarse grit and progressively work through finer grits until the desired finish or thickness is achieved. Choosing which grit to begin sanding with is a subjective judgment based on your assessment of stock condition (rough, smooth, etc.), thickness, hard/soft wood, and the desired outcome. Below are some general guidelines regarding sanding grits. Pre-cut wraps in each listed grit size are available.

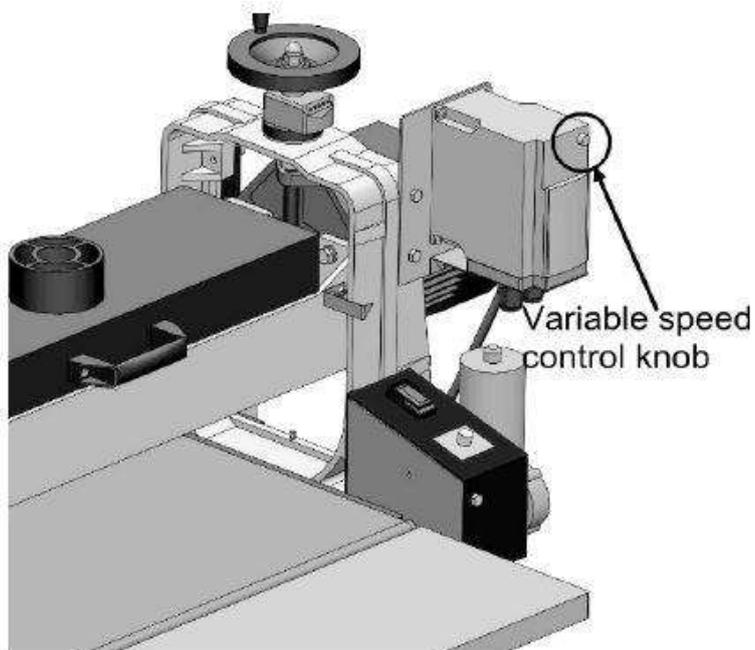
GRIT	USES and ABRASIVE CHARACTERISTICS
80	Medium aggressive: stock removal, surfacing, glue removal, end grain smoothing, planer mark removal
120	Medium fine: light surfacing and stock removal, thin stock dimensioning
150	Fine: minimum stock removal, finish sanding surface preparation, thin stock dimensioning
180	Fine: finish sanding
240	Very fine: finish sanding

Drum Height

The height of the drum is raised by turning the handwheel in a clockwise direction. To lower the drum, turn the handwheel in a counterclockwise direction. The depth of the movement is approximately 0.4mm per 1/4 turn in either direction. One complete turn is 1.6mm. Depth settings can be measured using the height reading scale. Depth settings used during surface sanding of stock are adjusted by considering several variables. The hardness of the material, the width of the material being surfaced, and the feed rate selected are all considered when determining the amount of material to be removed on each pass. Never remove more than 0.8mm of material in one pass.

Drum Speed Control

This machine is fitted with a DELTA inverter which allows you to adjust the speed of the sanding drum from 0 – 1800rpm.



Conveyor Feed Rate

The variable feed rate is set to prevent burning and provide a smooth sanded surface on different types and widths of materials. As a general rule: 1/4 turn or 0.4mm or less is recommended stock removal for coarser grits and softer woods, while 1/8 of a turn or 0.2mm may be more desirable with harder woods

and/or finer grits. Some experimenting and practice will be required to become familiar with the sanding performance of your Drum Sander.

When selecting the rate of feed for the material being surfaced:

Wider material - slow the feed rate.

Harder wood - slow the feed rate.

To Begin Sanding

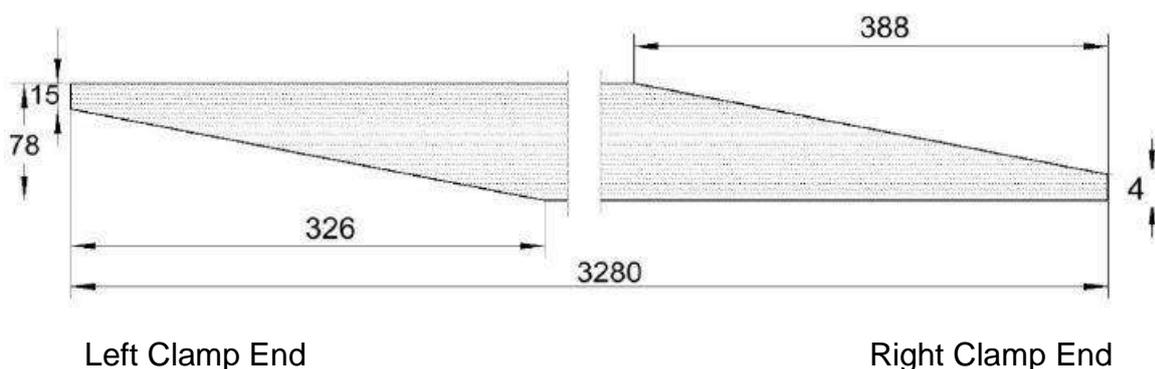
1. With power off, place stock on the feed table and advance the stock to a point so that you can adjust height of sanding drum to equal thickness of stock at its greatest point.
2. Connect and turn on the dust extractor.
3. Adjust feed rate to match sanding requirements and width of stock.
4. Turn on unit and place stock on the feed conveyor table allowing the feed belt to carry the stock into and engage the sanding action of the drum. Support long stock as necessary during the feed operation. Once the sanding operation feed allows, reposition yourself to the out feed side of the machine to accept, support, and control the board as it exits the Sander. NOTE: Do not apply upward or downward pressure when supporting and guiding stock through the sander. To do so may induce snipe (sander drum dig-in) into the sanded stock.
5. Reverse the feed direction of the stock on successive passes, while adjusting the depth of cut using the height adjustment hand wheel.

Sanding Wrap Replacement

The most convenient way to buy sandpaper wraps is to use the precut type which come with the tapered ends ready to install.

The other option is to buy a roll of 78mm wide sandpaper and cut the tapers yourself.

The template below gives the dimensions for the tapers.





To Change The Sandpaper Wrap

Disconnect from the power supply.

Identify the wider (15mm) end of the wrap.

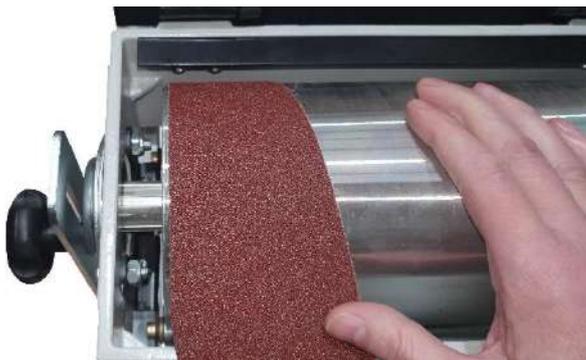
Make a fold around 30mm in from the end.



On the left side of the drum, press the spring loaded clip up towards the rim of the drum.

Insert the tip of the wrap through the slot in the drum and into the teeth of the clip.

Approximately 30mm of material should be inserted into the clip.



Stand in front of the drum and radially wrap the abrasive material.

Roll the drum away from you, whilst keeping some tension on the abrasive wrap and guide it onto the drum.

The edge of the taper should be parallel to the edge of the drum.



Continue along the length of the drum:

Do not let the sandpaper overlap, it should be flush or slightly gapped.



On the right hand end of the drum, press the clip and tensioning device towards the slot in the drum.

Insert the end of the wrap into the clip whilst keeping tension on the wound part of the wrap. When the clip is released it will grip the wrap and apply tension to it.

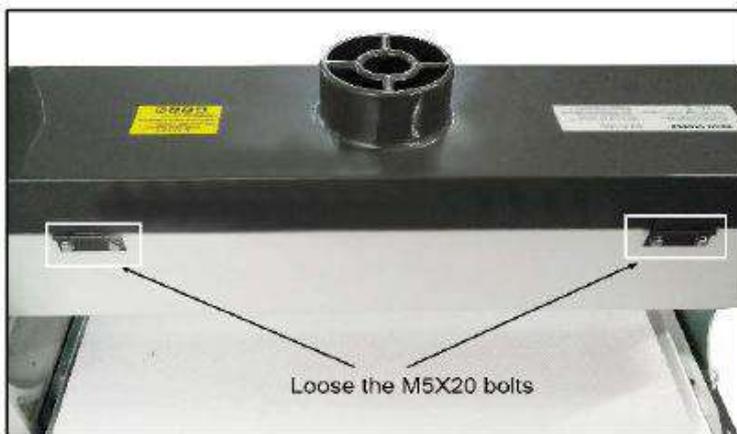


The tensioning device will hold tension in the event the wrap stretches during use.

TIP: The final part can be quite fiddly. You may find it helpful to place a wedge of timber into the open end of the drum to prevent it from rotating whilst inserting the tail end of the wrap.

Optional Accessories

The DS22VFP can be fitted with 3 optional heads.

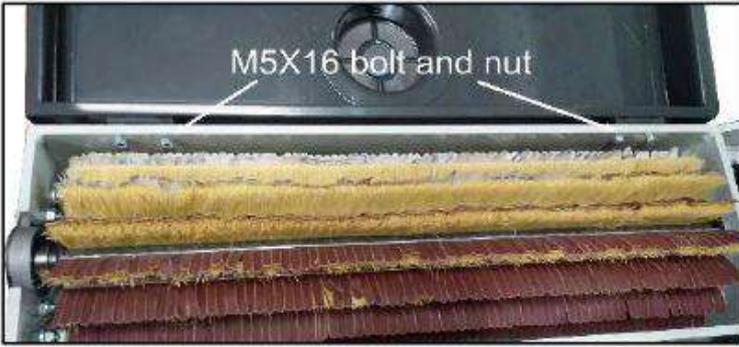


Please note that when changing to use other sanding heads, the scraping-chip plate in the following picture must be removed!!

Loosen the M5X20 screws that fasten the drum cover, scraping-chip plate.



Remove the scraping-chip plate.

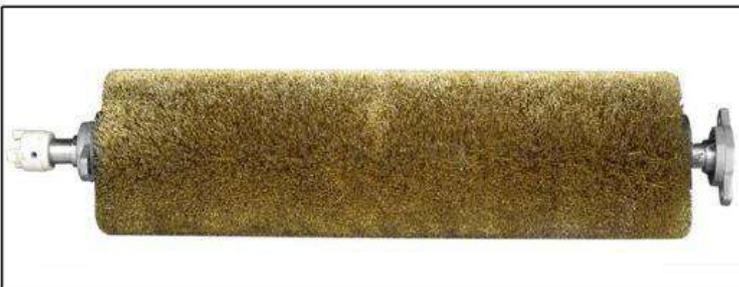


Fasten the drum cover using the M5X16 bolts and nuts.
Then change the sanding heads you need.



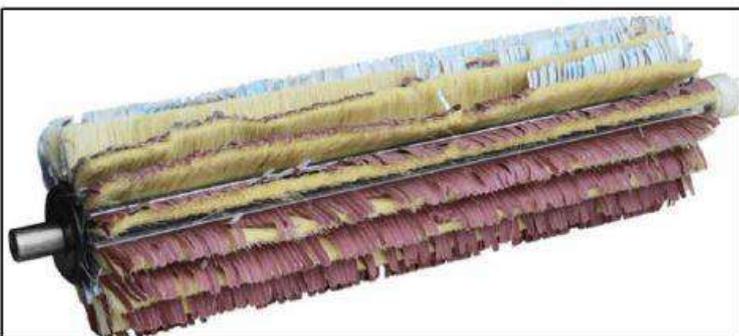
Silicon carbide sanding brush.

Easy to fit in place of the standard abrasive sanding drum. It's used for sanding mouldings profiles, and raised and fielded panels as found on skirting, architrave, picture rails or doors. It can also be used for producing a "grain" effect on sheet metal or box sections, especially aluminium. This will save a huge amount of time and make your work consistent in quality every time.



Wire brush

Easily fitted in place of the standard abrasive sanding drum, it's 0.4mm steel wire bristles can produce a "distressed" finish on new softwood. Can also be used to produce a grained effect. Also very effective at cleaning old boards, removing dirt etc without changing the aged colours. Can be used on metals as well to produce decorative effects, for oxidation removal, scuff sanding and primer sanding.

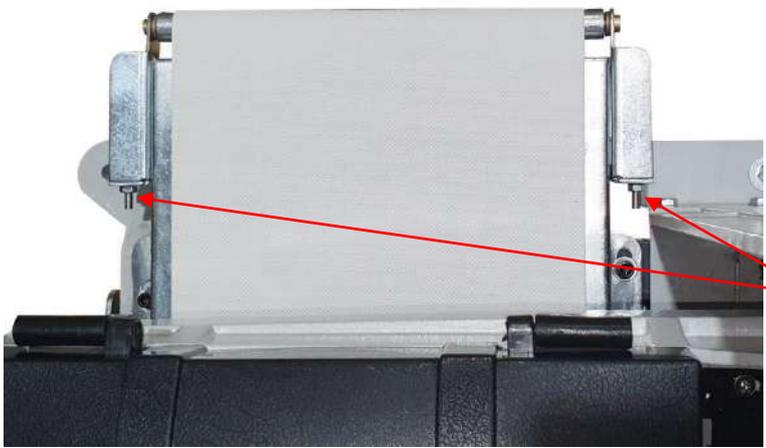


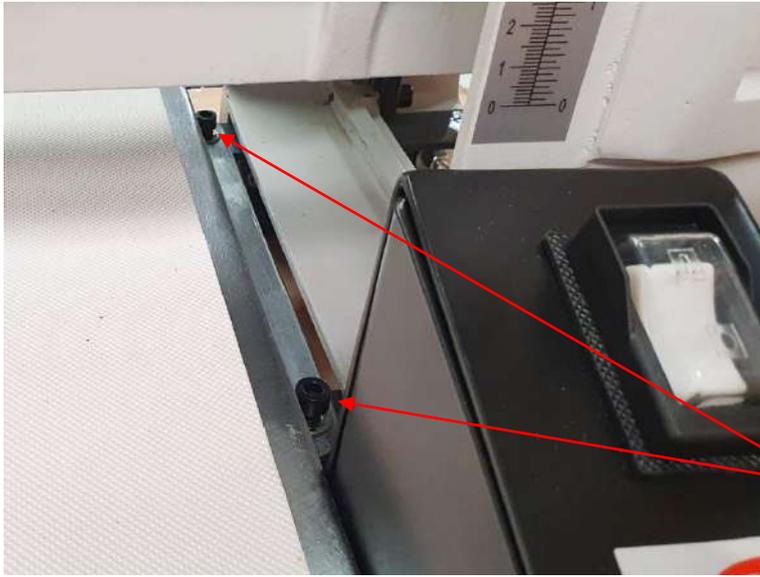
Flatter type sanding head

It is a non-aggressive method of sanding that does not sever the woods fibres, creating a uniform finish to the timber. This has many advantages when applying a sealer or stain finish. The sealer or stain can penetrate the surface more evenly, especially on the edges, improving the woods structure.

	<p>De-nibbing is effectively done before applying a sealer or stain. This process can save up to 50% in sealer or stain consumption, not to mention the time saved.</p> <p>The uniformity of finish is much better than can be achieved by other sanding methods.</p>
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Servicing And Maintenance

	<p>Conveyor Belt Tracking Adjustment</p> <p>Occasional adjustment of the conveyor belt tracking may be required due to belt stretching. Ideally, the conveyor feed belt should track in the center of the table.</p> <p>Adjustment nuts are located on both sides of the outfeed end of the conveyor. To adjust, use a 10mm spanner with the conveyor running at full speed.</p>
	<p>If the belt is tracking right, towards the motor side of the sander:</p> <p>Tighten the nut on the motor side and loosen the nut on the floating side.</p> <p>It may take a few moments to see the effect happening.</p>



Conveyor Belt Replacement

The conveyor feed belt may need replacing after normal wear and tear.

Disconnect from the power supply.

Raise the sanding drum to its highest position.

Remove the End Plate.

Use a 6mm Allen key to loosen 2 bolts on the right side which secure the table to the sub frame.



Use a 6mm Allen key to completely remove the 2 bolts on the open side which secure the table to the sub frame.

Reduce tension on the conveyor feed belt by rotating both the left and right belt tracking nuts in a counterclockwise direction.

Remove the used conveyor belt by grasping both sides of the belt. Gently lift the conveyor table as you slide off the conveyor belt.

If the belt will not move, further reduce the tension on the feed belt and ensure you are lifting the table high enough to allow the feed belt to slide off.

To install the replacement conveyor feed belt, follow the steps in reverse.

Center the new belt on the table and evenly tension the belt using the left and right tracking adjusters.

Remove 2 Bolts

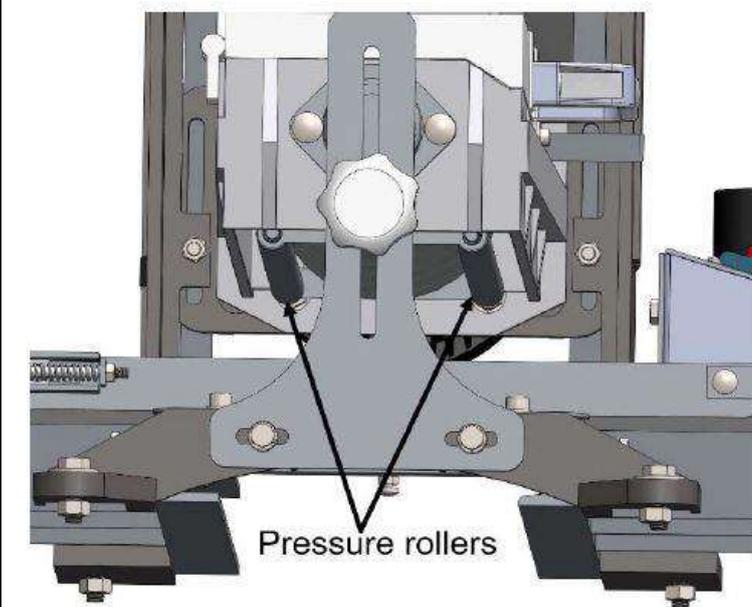


Excess Movement in the Floating End of the Drum

If movement is detected, check the tightness of the 2 Clamp Bolts.

Adjusted the bolts to allow smooth height adjustments, while ensuring a tight enough fit to limit drum deflection. If the screws are too loose, the drum will deflect during use, causing an uneven sanding surface. If the screws are too tight, sanding drum height adjustments will be difficult.

To adjust the screws, use a 6mm Hex Key and 13mm spanner. Loosen or tighten each bolt, as required, in 1/8 turn increments to attain the desired fit and smoothness.



Pressure Roller Adjustment

The height of the pressure rollers is set slightly below the bottom of the sanding drum to keep the workpiece firmly against the conveyor belt as it passes through the sander, preventing workpiece kickback.

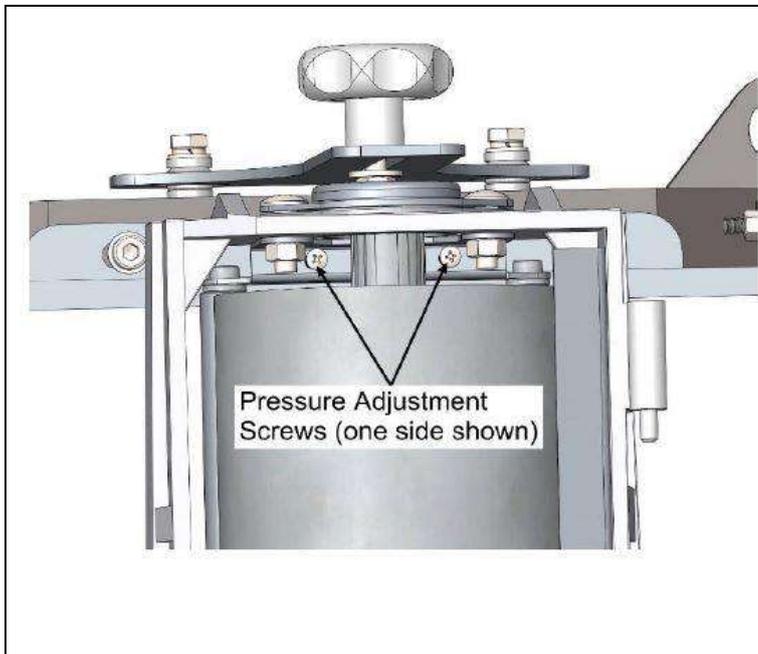
The pressure these rollers exert on the workpiece as it passes underneath the sanding head is controlled by compression springs and adjustment screws.

Proper pressure on the workpiece helps avoid kickback and keeps the workpiece from slipping.

However, as pressure increases on the workpiece from the rear pressure roller, snipe also increases.

In this case, decrease the pressure on the rear roller.

If you choose to increase or decrease the pressure that these rollers exert on the workpiece, perform the following procedure.



To Adjust the Pressure Rollers

1. DISCONNECT THE SANDER FROM THE POWER!
2. Remove the cap screw that secures the dust collection hood, then lift the hood up to gain access to the pressure roller adjustment screws.
3. To increase the pressure exerted by the rollers, tighten all four screws in small, equal amounts, then test the pressure of the rollers by pressing up on them. Conversely, loosen the adjustment screws to lessen the pressure.
4. Test your adjustments by sanding a scrap workpiece.

Troubleshooting

Problem	Cause	Remedy
Machine does not start	Thermal Overload has tripped	Wait for motor to cool down
	Faulty switch	Replace switch
	Switch Disabling Key Removed	Re-install switch disabling key
	Motor overloaded and its circuit breaker tripped	Wait for motor to cool, then reduce depth of cut or feed rate.
Only starts when Green button is held down	Faulty switch	Replace switch
MCB trips on Start up	Short circuit in cable or plug	Repair the damage
Machine hums but does not start	Start capacitor failed	Replace start capacitor
Motor running but drum is not rotating	Broken or coupling or spider	Inspect and replace rubber spider
Motor slows down during the cut	Depth of cut is too great	Take a smaller cut
	Dust & Chip collector hood is blocked	Clear the blockage and ensure the extractor is functioning correctly
Conveyor belt slipping	Build up of dust and sap on the belt	Clean the belt
	Insufficient tension on belt	Increase tension on belt

	Rubber drive roller is worn out	Replace drive roller
Long lines or ridges along the length of planed timber	Damaged sanding wrap	Re-wrap or replace the sandpaper
Conveyor running, but speed not changing	Failed PCB	Replace the PCB inside the switch housing
Sandpaper clogs quickly	Sanding depth of cut too much or feed rate too slow.	Reduce depth of cut or increase feed rate
	Workpiece has high moisture content or sap	Use different stock, or accept the characteristics of the stock and plan on cleaning/replacing the sandpaper frequently
	Not using the correct grit of sandpaper	Use the correct grit of sandpaper for the operation
	Poor dust collection	Unclog ducts, close gates to improve suction
	Sandpaper loaded with sawdust and gum	Clean/replace sandpaper

Declaration of Conformity for CE Marking

Charnwood Declare that Woodworking Drum Sander, Model DS22VFP

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

Conforms with the following UK Regulations: Supply of Machinery (Safety) Regulations 2008
Electromagnetic Compatibility Regulations 2016

And further conforms to the machinery example for which the EC type examination Certificate No. TA 385213771 & AE 50624786 have been issued by TUV Rheinland LGA Products GmbH, Tillystrasse 2, 90431, Nurnberg, Germany.

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, Director

Dated: 25/07/2025

Location: Leicestershire



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!

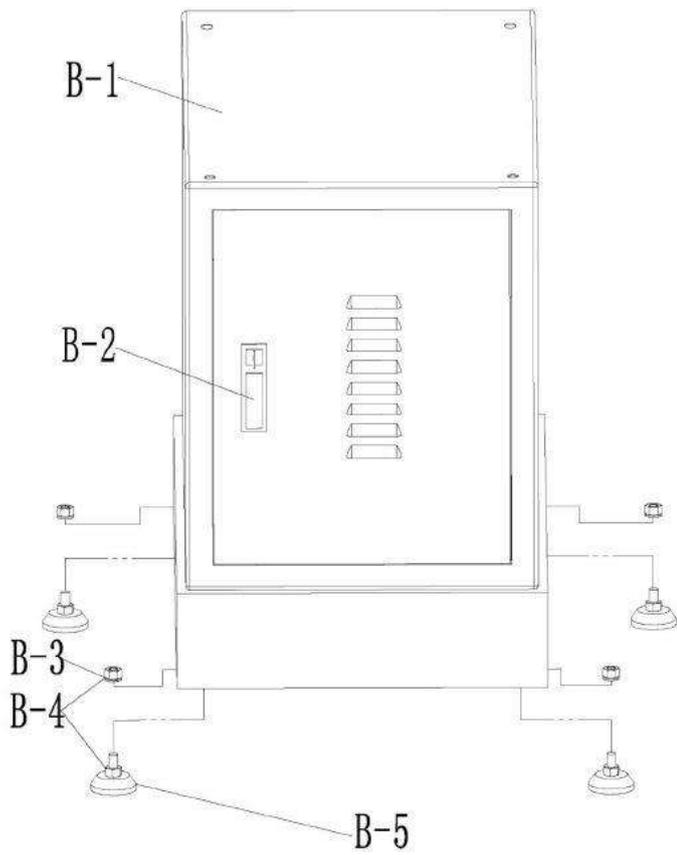
In observance of European Directive 2002/96/EC on waste electrical and electronic equipment (EEE) and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

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

Part No.	Description	Qty	Part No.	Description	Qty
2	hex-cap bolt M8X20	10	76	spring washer ϕ 10	4
3	protection cover	1	77	washer ϕ 10	4
5	self-locking nut M8	9	78	lift base	1
6	washer	2	79	lift slip	2
7	handle	1	80	sucken hex-cap screw M8X30	4
8	hex cap bolt M8X20	2	81	elastomer	1
9	"+" dormant screw M4X8	1	81A	motor	1
10	sanding clamp A	1	82	sucken hex-cap screw M8X45	2
11	spring washer ϕ 4	1	83	sucken hex-cap screw M8X95	2
12	nut ϕ 4	3	84	sliping block	2
13	sanding sleeve	1	85	tension block	2
14	sand belt	1	86	sucken hex-cap screw M5X16	4
15	spring(for sanding slamp B)	1	88	nut M5	10
16	spring washer ϕ 28	1	89	transport belt	1
17	sanding clamp B	1	90	outfeed roller	1
18	internal nip guard	1	91	sucken hex-cap bolt M8X12	4
19	bolt M5X20	4	92	table	1
25	sanding sleeve body	1	93	support block	1
26	washer ϕ 8	48	94	bolt M6X16	8
27	nut M8	21	95	washer ϕ 6	12
28	nut M6	16	96	spring washer ϕ 8	17
29	pointer	1	97	infeed roller	1
30	big washer ϕ 6	1	98	inside cover	1
31	hex cap bolt M8X16	4	101-1	smaller axle joining	2
32	flat washer 6	9	101-2	smaller axle joining	1
33	axle joining protect cover	2	102	flange screw M5X10	2
34	flange bolt M5X16	4	103	base	1
35	axle joining	2	106	hex cap bolt M6X20	3
36	sucken hex-cap bolt M6X8	4	109	switch	1
37	screw bolt M4X20	2	111	strain relief	2
38	spring washer ϕ 5	5	112	plug cord	1
39	flat washer	4	113	smaller motor	1
40	spring washer ϕ 5	4	114	outside cover	1
41	flange bolt M4X30	4	117-1	speed control board	1
42	spring	4	117-2	speed control board	1
43	fasten bar fixer	2	118	spanner 5	1
44	fasten bar spring fixer(left)	2	119	spanner 6	1
45	fasten bar spring fixer(right)	2	120	wrench	1
46	self-locking nut M4	4	121	bolt M10X30	4
47	fasten bar sleeve	8	122	bolt M8x30	2
48	fasten bar	2	124	taper washer 8	4
49	nut M12	1	125	spherical washer 8	4
50	washer ϕ 12	1	136	stain relief M20	2
51	turning label	1	137	bearing cover	1
52	wheel	1	138	bearing	2
53	lift axle	1	136	stain relief M20	2
54	key A5X5X16	1	137	bearing cover	1
55	sucken hex-cap screw M5X16	4	138	bearing	2
56	fasten cover	1	140	hex cap bolt M8x20	6

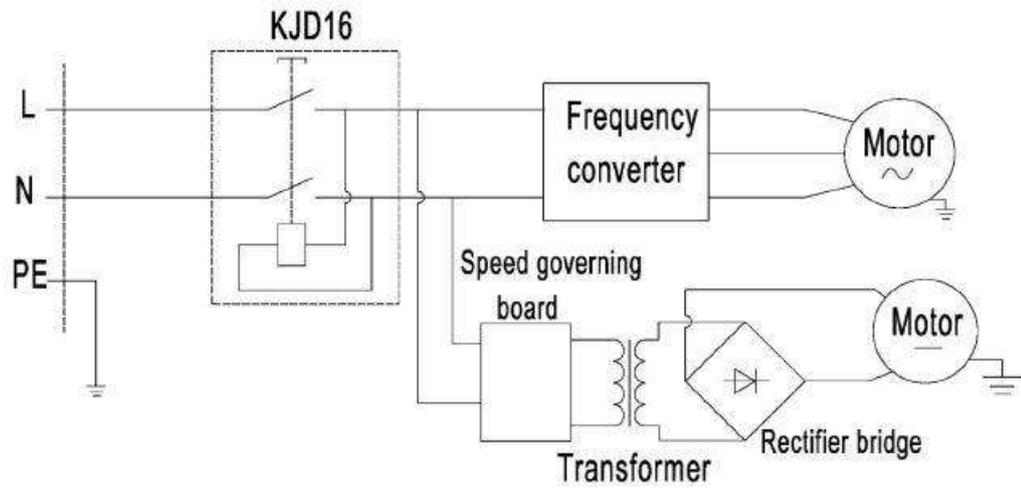
57	steel ball 3	23	141	RPM digital readout	1
58	sleeve	1	142	hex wrench 2.5	1
59	lift frame	1	145	inverter mounting plate A	1
60	steel washer	1	146	inverter	1
61	nut	4	147	inverter seal cover	1
62	flange bolt M6X35	1	148	bolt M6X12	2
63	hex cap bolt M8X40	4	149	bolt M5X14	4
64	spring pin 6X25	2	160	fixing plate	1
65	scale label	1	161	extension table	2
66	feed roller support(left)	1	162	bolt M6X16	8
67	feed roller support(right)	1	163	connecting plate	2
68	spring washer $\phi 8$	20	170	bearing	4
69	hex cap bolt M8X25	6	171	bolt M4x16	4
70	arch stand	1	172	bolt M4x14	4
71	bolt M8X50	1	173	spring washer4	8
72	support stand	1	174	flat key A4X16	1
73	big washer $\phi 8$	2	175	nylon hexagon column	4
74	handle	1	176	bolt M3x8	4
75	hex-cap bolt M10X40	4			

Drawing B:



Part No.	Description	Qty
B-1	Cabinet	1
B-2	Lock	1
B-3	Spring washer 10	4
B-4	Nut M10	8
B-5	Pad	4

DS22VFP WIRING DIAGRAM





Last Updated July 2025

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

Tel. 01530 516 926 email: sales@charnwood.net website: www.charnwood.net