

charnwood PRO

Woodworking machinery at its best!

SERIES

6" X 90" BELT SANDER OWNERS MANUAL MODEL: BS690



CE
UK
CA

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Bardon Hill, Leicestershire, LE67 1TU

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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 BS690 Specification

Abrasive Belt Size	150mm x 2260mm
Belt Speed	960 m/min
Motor (Induction)	2200w (3hp) 240v
Recommended Breaker Size (MCB)	16 Amps (Type C)
Table Size	750mm x 250mm
Table Vertical Travel	80mm
Table Tilt	0 - 90 degrees
Dust Port Diameter	100mm
Dust Collection Minimum Requirement	1000m ³ /hour (50 Litres per second)
Assembled Dimensions (WxDxH)	1325 x 570 x 1235mm
Shipping Dimensions (WxDxH)	1400 x 650 x 620mm
Weight	125kg
Sound Level	81 dB(A)
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 all contents from the shipping cartons.

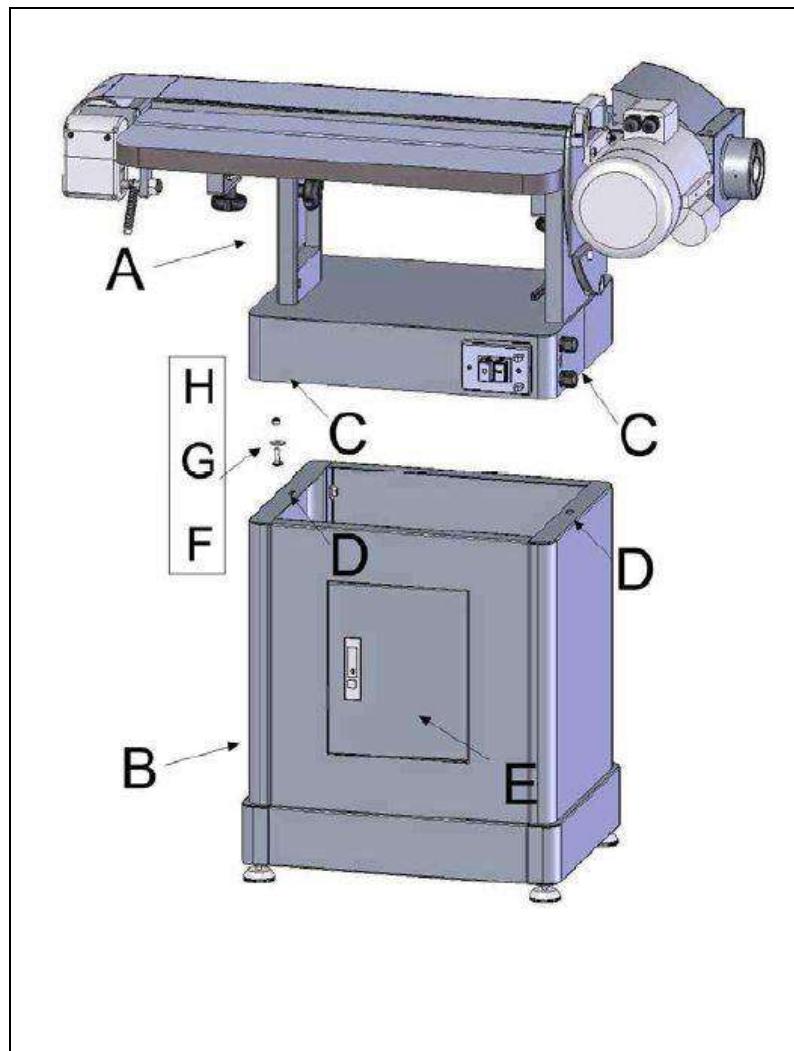
Clean all rust protected surfaces

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.

Assembly

An exploded view diagram of the stand assembly. It shows the front panel (D) at the bottom, the side panels (C) on the left and right, and the rear panel (H) at the top. The shelf (F) is attached to the inside of the side panels (C). Various hardware components are labeled: A (rubber pads), B (hex nuts), E (hex nuts), G (washers), J (hex nuts), and H (rear panel). Arrows point from the labels to their respective parts in the diagram.	<p>Assemble The Stand</p> <ol style="list-style-type: none">1. Attach the four rubber pads (A) to the bottoms of the side panels (C) with four each hex nuts (B). The hardware can be found in the bag with the rubber pads.2. Attach the side panels (C) to the front panel (D) with four M8 x 16mm hex cap screws, eight M8 flat washers, four M8 lock washers, and four M8 hex nuts (E). Hand tighten the hardware at this point. Note: Assemble the stand upside down to make sure that the tops of the panels are flush.3. Mount the shelf (F) to the inside of the stand with two M5x10 pan head screws, two M5 flat washers and two M5 lock washers (G).6. Finish the stand assembly by attaching the rear panel (H) to the side panels (C) with four M8 x 16mm hex cap screws, eight M8 flat washers, four M8 lock washers, and four M8 hex nuts (J).7. Make sure the stand is sitting evenly on a level surface before tightening hardware.
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Install the Table and Motor Unit to the Stand

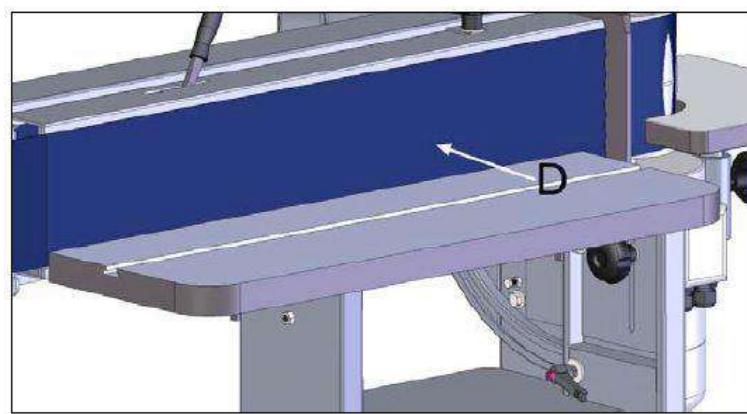
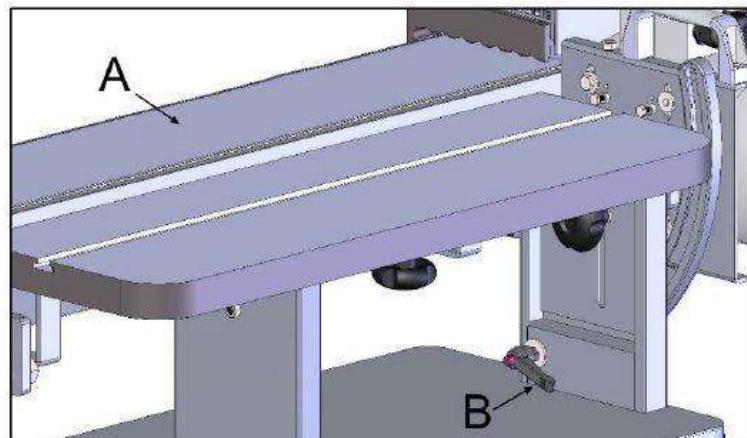


The Table and Motor Unit is heavy!

Use great care and adequate resources when lifting the unit up onto the stand!

Failure to comply may cause serious injury and/or damage to the sander and/or property!

1. With the aid of another person, carefully lift the table and motor unit (A) out of the shipping box, and up onto the stand (B).
2. Line up threaded holes in the base (C) with the holes in the stand (D).
3. Open the cabinet door (E) and through the opening attach main unit to stand with two M8 x 32mm hex cap screws (F), two M8 lock washers (G) and two M8 flat washers (H). Tighten with a 13mm wrench.

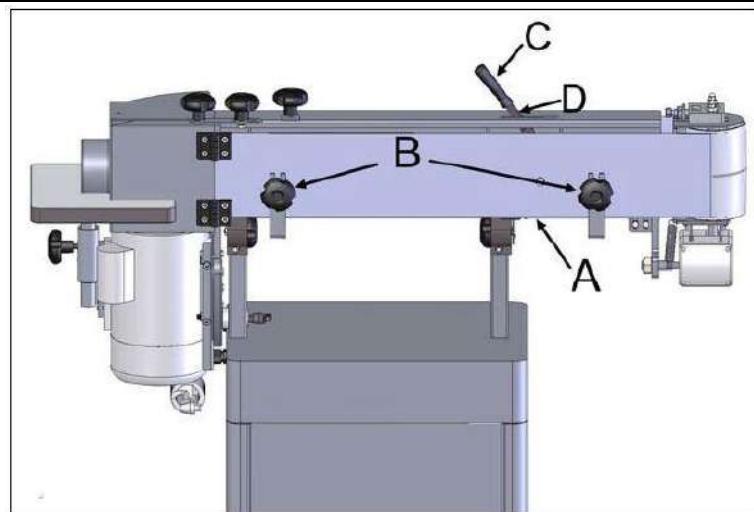


Tilt the Sanding Belt to the Vertical Position

4. The sanding belt (A) is presently in the horizontal position. Pull lock handle (B) forward to unlock the platen assembly.
5. Tilt sanding belt to the vertical position, which will look like D; then push the lock handle (B) to lock the platen assembly in place.

Note: Do not turn the lock handle.

Turning or rotating the lock handle will change the tension of the locking assembly. This may cause the locking assembly not to work, making it necessary for adjustment before using the machine.

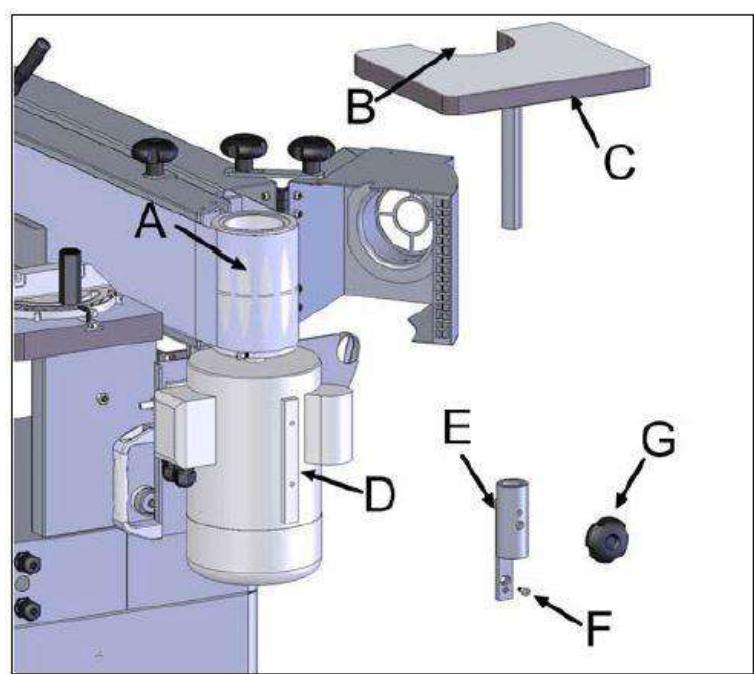


Sanding Belt Installation

1. From the rear of the sander, remove the belt guard (A) by unscrewing two lock knobs (B). Take out the sanding belt and removable fence from behind the belt guard.
2. Remove the tension from the mechanism by moving the handle (C) to the Loose position.
3. Place the belt on both rollers so that the edge of the belt is even with the edge of the rollers.

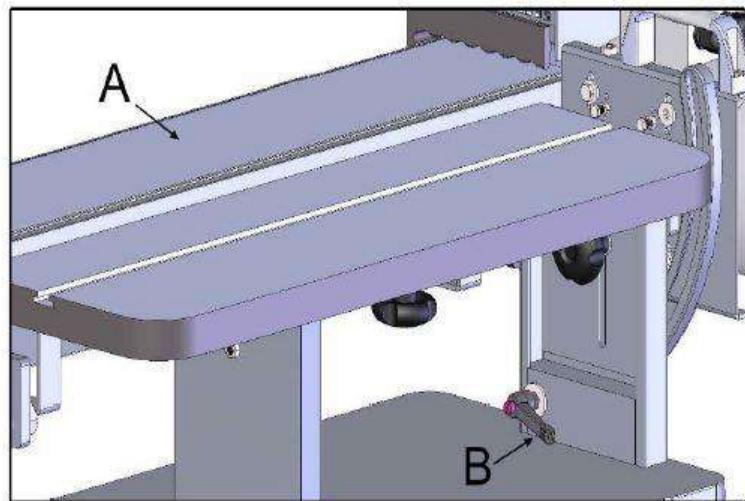
Note: Make sure that direction arrow on belt matches the direction indicator on the top of the platten.

4. Tighten the belt by moving the tension handle (C) to the Tight position. Rotate the belt by hand in the direction indicated by the arrow on top of the platten. If the belt tracking needs adjustment, see Belt Tracking Adjustment.



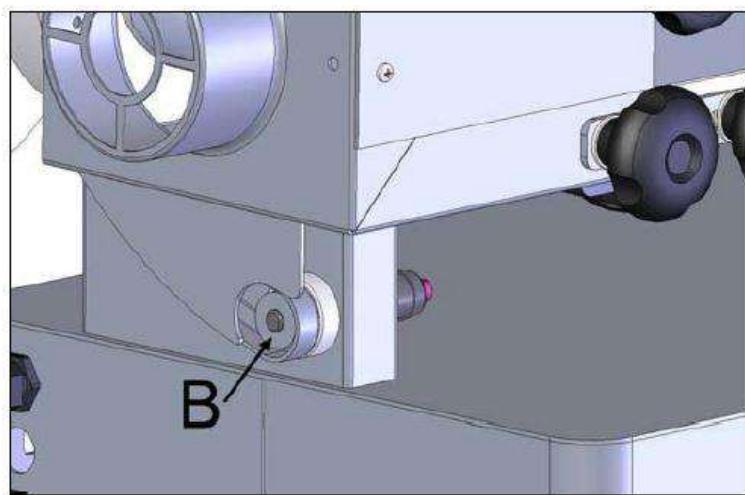
Attach The Extension Table

1. Attach the bracket (E) for the extension table to the side of the motor housing (D) and secure with two socket head cap screws (F).
2. Slide the shaft of the extension table (C) into the bracket (E), positioning the table so the opening (B) wraps around the drive drum (A).
3. Insert lock knob (G) into the threaded hole on the side of the bracket (E) visible from the rear of the sander.



Sanding Belt Angle Adjustment

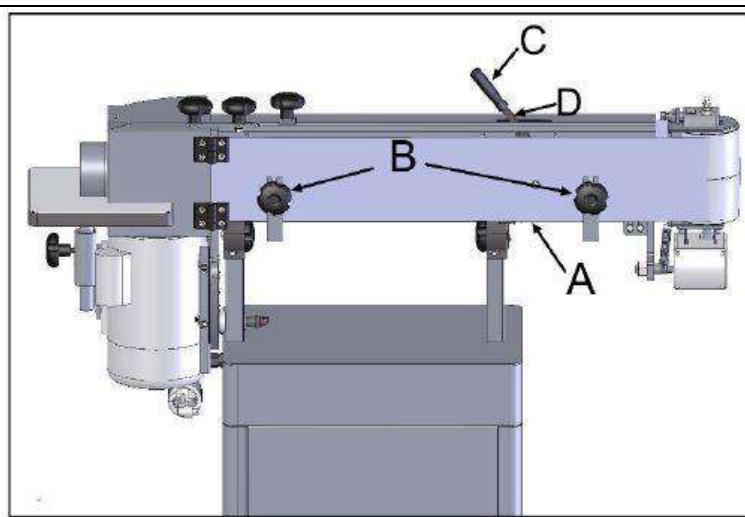
1. Disconnect the machine from the power source.
2. Pull the lock handle (B) forward (unlock) to release tension. Move the sanding platen (A) to the desired position. Use a combination square between the table and the sanding platen to get precise angles.
3. Hold the platen (A) while locking the handle.



Platen Lock Tension Adjustment

1. Disconnect the machine from the power source.
2. Loosen (unlock) the handle (B in above) and place the platen in the horizontal position as shown in (A in above). Do not lock.
3. Tension eccentric block by tightening the nut (B) with a 14mm wrench. Turn the nut in by $\frac{1}{4}$ turn increments and test locking handle for proper tension.

The lock handle is properly tensioned when it requires positive force to move the eccentric block (attached to the locking handle) from one side to the other. The platen and motor assembly must stay in a locked position without sliding once the handle has been moved to the locked position. Re-adjust as necessary.



Changing the Sanding Belt

1. Disconnect the machine from the power source.
2. Lock the sanding platen in the vertical position (see the Sanding Belt Angle Adjustment section).
3. Release tension on the belt by loosening the handle (C).
4. Loosen or remove the lock knobs (B) and remove the belt guard (A).

5. Remove the old belt and install the new belt matching the direction of the arrows on the belt with the arrow label on the top of the platen.
6. Line up edge of belt with edge of rollers.
7. Place tension on the belt by moving the tension arm handle (C) to the Tight position.
8. Reinstall the belt guard (A) and tighten the lock handles (B)

Note: Belts stretch with wear. When a belt is replaced, you may have to adjust tracking.

Belt Tracking Adjustment

The Belt Tracking Adjustment is a fine adjustment procedure. The Motor Mount Tracking Adjustment (following section) is a course adjustment.

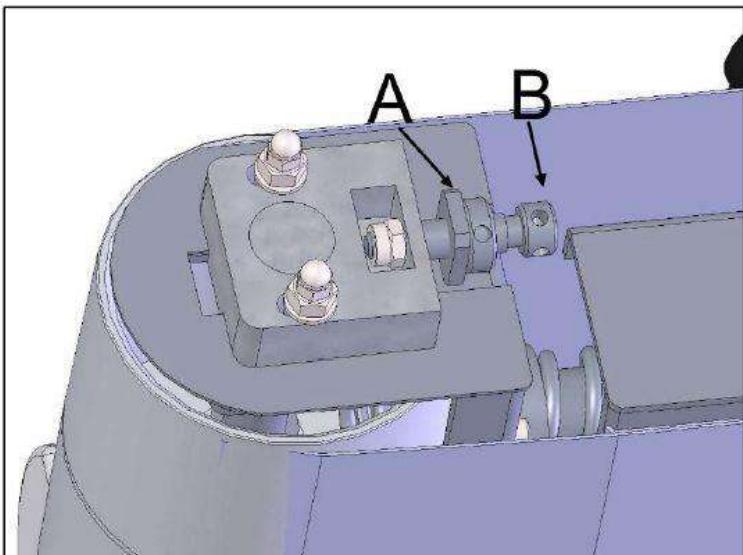
To adjust the belt tracking:

1. Disconnect the machine from the power source.
2. Push the belt by hand from left to right (the direction indicated top of the platen) and observe the belt's position on the rollers. The oscillating movement of the belt is by design.

Observe the belt's range of movement from its highest to lowest position. The edges of the belt should not have a tendency to move above or below the edges of the rollers.

If adjustment is still necessary:

3. Insert the round shaft of the belt tracking tool (provided) into the micro adjust lock nut (A) and turn away from you to loosen.
4. Turn the micro adjusting screw (B) in 1/4 turn increments until the belt tracks evenly on the rollers when rotated by hand.



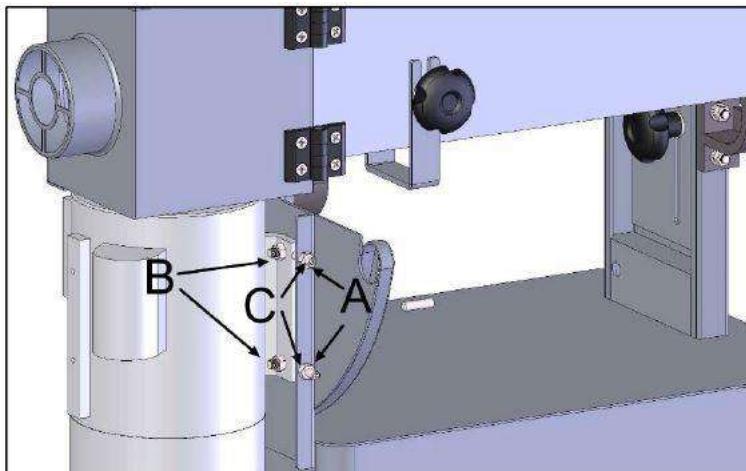
Tip: Moving the belt tracking tool away from you raises the belt on the drum and towards you lowers the belt on the drum.

5. Tighten the micro adjusting nut (A).
6. Connect the machine to power.
7. Turn on the power to the machine and observe the belt's up and down range of movement.

Adjustment is correct when the edges of the belt do not move above or below the edges of the rollers.

8. When adjustment is complete, tighten the micro adjust lock nut (A).

If the tracking cannot be corrected go to the Motor Mount Tracking Adjustment section.



Motor Mount Tracking Adjustment

This machine comes with tracking adjustment bolts (A) on the motor plate. These are set at the factory and should not require any further adjustment. If, however, you are not able to track the belt with the Belt Tracking Adjustment described in the previous section, the motor mount bolts will have to be adjusted.

Note: The Motor Mount Tracking Adjustment is a coarse adjustment. Use the Belt Tracking Adjustment first for fine adjustment. If it cannot be adjusted, then use the procedure described below.

To adjust:

1. Disconnect the machine from the power source.
2. Slightly loosen the four motor mount nuts (B) just enough so the tracking screws (A) can be turned to make an adjustment.
3. Loosen the two locking hex nuts (C) that secure the tracking screws (A).
4. Turn one screw (A) a 1/4 turn and rotate the sanding belt by hand to observe which direction the adjustment

is causing the belt to move. If it is traveling in the direction needed to correctly track the belt go to step 6.

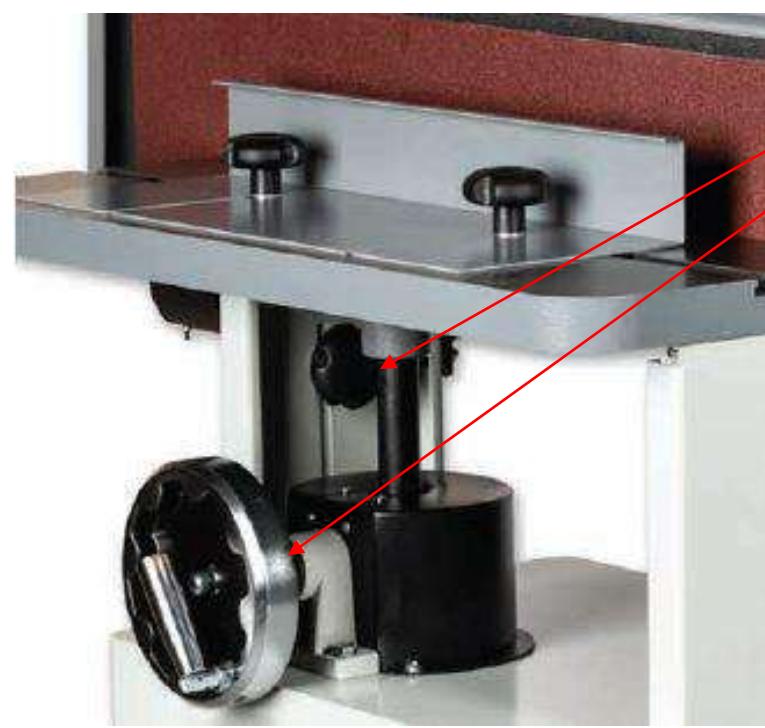
5. If the belt starts to travel in the wrong direction, back off a quarter turn and tighten the other screw a quarter turn. This should start the belt moving in the proper direction.

6. Tighten both locking nuts (C) and motor mount nuts (B). Then return to the Belt Tracking Adjustment section and again attempt to fine tune the tracking.

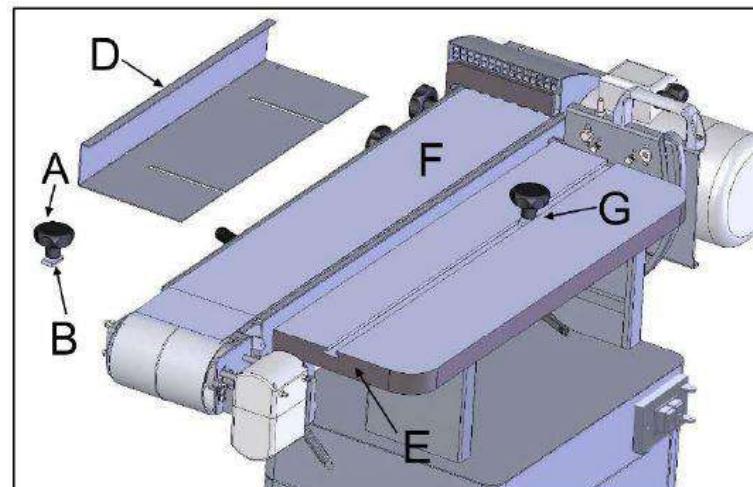
Table Adjustment

1. Loosen the two lock knobs.
2. Raise or lower the work table to desired level using the handwheel.
3. Tighten the two lock knobs.

Do not position the table below the sanding belt! Keep an overlap of at least 2mm between the table and the sanding belt to avoid material and/or fingers getting caught!



Using The Belt Sander



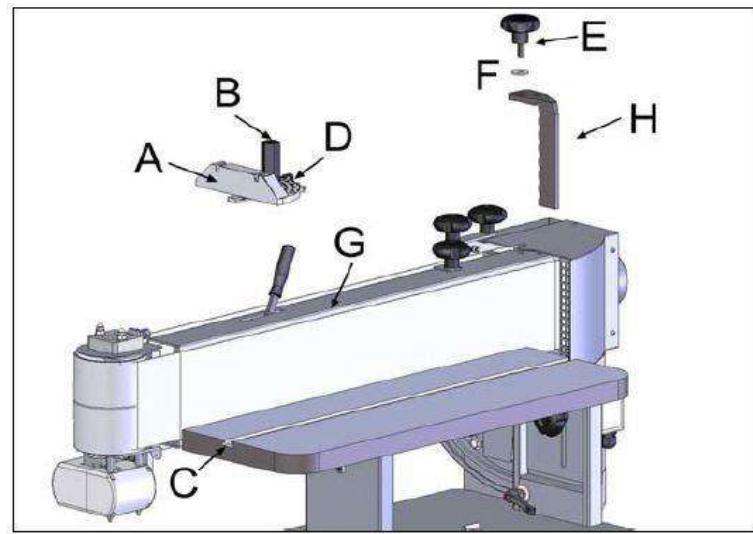
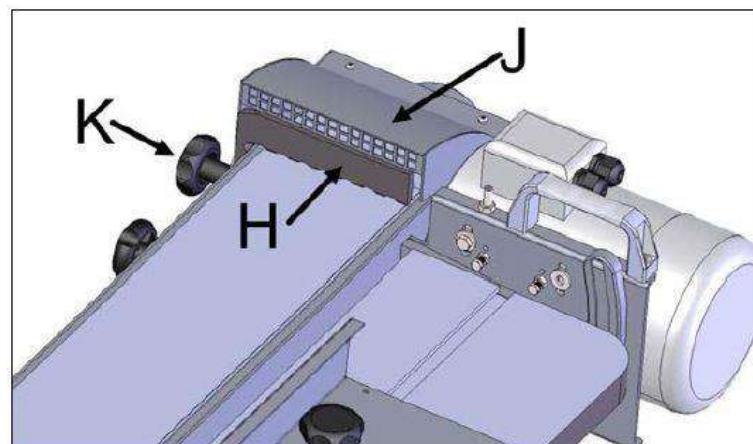
Removing the belt guard exposes more of the sanding belt! Replace the belt guards immediately after completing any sanding that requires its removal! Failure to comply may cause serious injury

Horizontal Sanding

For horizontal sanding, the platen is locked in the horizontal position as shown (F) and the removable fence (D) is secured to the table (E) as follows.

1. Place M8 flat washers (not shown) and guide blocks (B) on two lock knobs (A)
2. Insert the guide blocks (B) into the mitre slot (C) and position the lock knobs (G) on the table (E) as shown.
3. Place the removable fence (D) on the table and secure by tightening the lock knobs (G).

The backstop (H) can also be used by swivelling the drum guard & dust port (J) out of the way and placing the backstop pin in the positioning hole and securing in place with the lock knob (K) and M8 flat washer.



Vertical Sanding

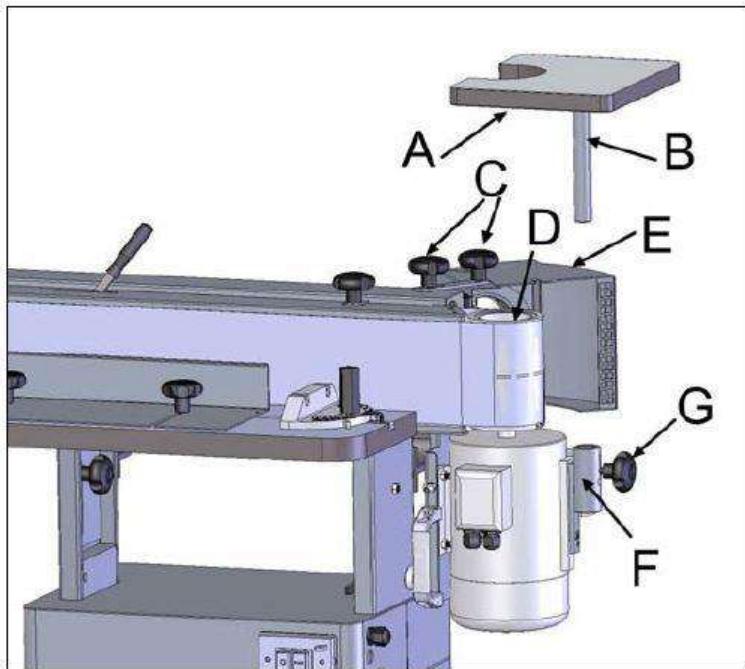
For vertical sanding, the platen (G) is locked in the vertical position as shown and the backstop (H) and/or the mitre gauge (B) may be used.

Mitre Gauge

1. Slide the guide bar (D) of the mitre gauge (A) into the mitre slot (C) on the table.
2. Set the mitre angle; then secure the mitre by tightening the lock handle (B).

Backstop

Place the backstop pin in the positioning hole and secure in place with the lock knob (E) and M8 flat washer (F).



Contour Sanding

Contour sanding is done from the extension table mounted on the motor where the sanding belt wraps around the **drive drum** (D).

To set up the sander for contour sanding:

1. Loosen the two lock knobs (C) that secure the drum guard & dust port (E).
2. Swing the end guard (E) back, bringing the drive drum (D) into view.
3. Tighten the lock knobs (C).
4. Mount the extension table (A) to the sander by inserting the post (B) into the bracket (F).
5. Set the table to the desired height, then secure into position by tightening the lock knob (G).

Important: When the extension table (B) is not in use, the drum guard & dust port (E) should always be in the closed position so the **drive drum** (D) is not in view.

Troubleshooting

Before carrying out any fault service or maintenance work always:

1. Turn the machine OFF
2. Unplug the power cable

Problem	Cause	Remedy
Sander will not start	1. Sander unplugged from wall or motor 2. Fuse blown or circuit breaker tripped 3. Cord damaged	1. Check all plug connections 2. Replace fuse or reset circuit breaker 3. Replace cord
Sanding belt does not come up to speed	1. Extension cord too light or too long 2. Motor not wired for proper voltage 3. Low current	1. Replace with adequate size and length cord 2. Refer to motor junction cover for proper wiring 3. Contact a qualified electrician
Machine vibrates excessively	1. Stand on uneven floor 2. Motor mounts are loose 3. Tension spring is worn or broken	1. Adjust stand so that it rests evenly on the floor 2. Tighten motor mount bolts 3. Replace spring
Abrasive belt keeps tearing	1. Belt is running in the wrong direction	1. Arrow on the sanding belt and machine should be pointing in the same direction.
Sanded edge not square	1. Table not square to sanding platen	1. Use a square to adjust table to sanding platen
Sanding marks on wood	1. Wrong grit sanding belt 2. Feed pressure too great 3. Sanding against the grain	1. Use coarser grit for stock removal and fine grit for finish sanding. 2. Never force work into sanding platen 3. Sand with the grain

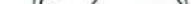
Declaration of Conformity for CE Marking

Charnwood Declare that Woodworking Belt Sander, Model BS690

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. AM 50607417 & AE 50616092 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:  Dated: 22/07/2025 Location: Leicestershire
Richard Cook, Director

CE UK
CA



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.

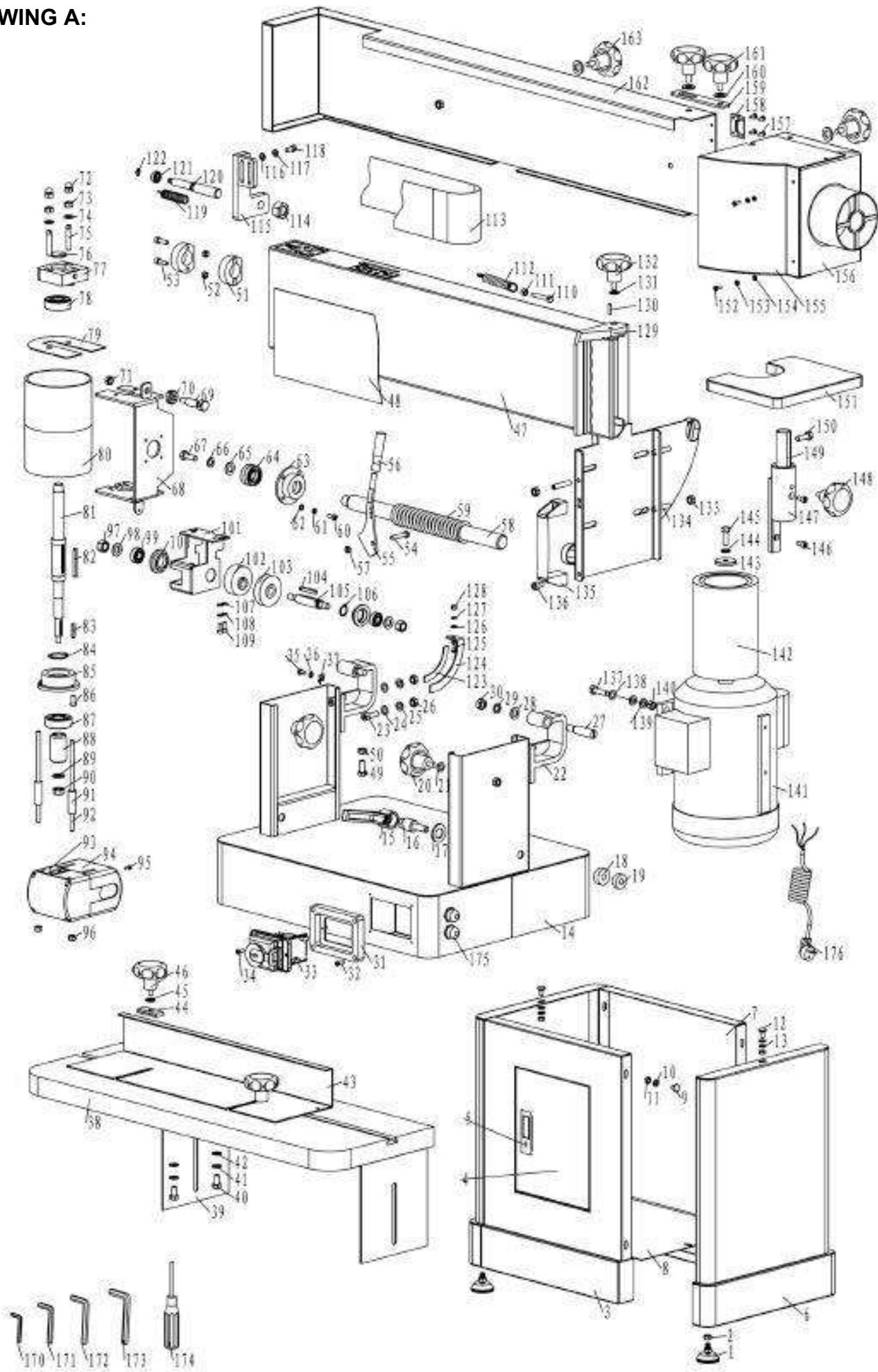


Only for EU countries
Do not dispose of electric tools together with household waste material!
In observance of European Directive 2002/96/EC on waste electrical and electronic equipment (EEE)
and its implementation in accordance with national law, electric tools that have reached the end of their
life 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 BS690 Parts Diagrams

DRAWING A:

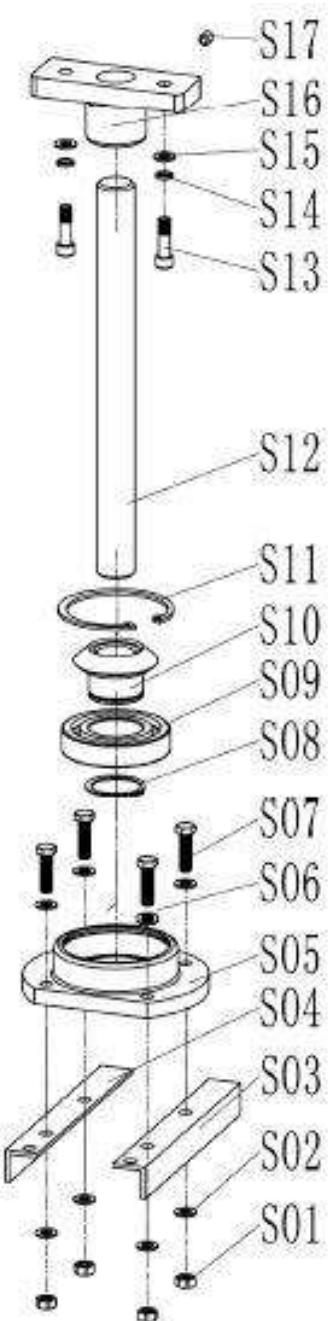
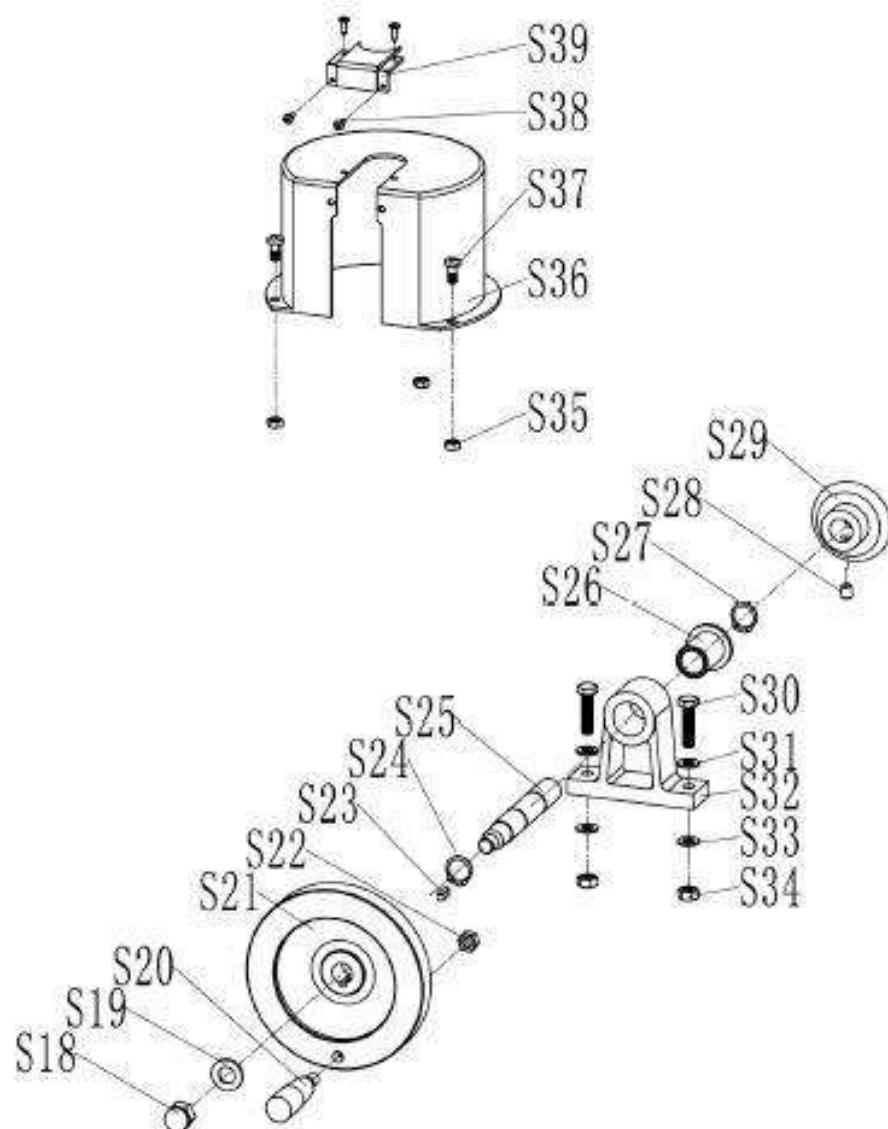


Part No.	DESCRIPTION	QTY	Part No.	DESCRIPTION	QTY
A001	PAD	4	A043	FENCE	1
A002	NUT	8	A044	GUIDE BLOCK	2
A003	FRONT PANEL(W/DOOR)	1	A045	FLAT WASHER	2
A004	DOOR	1	A046	KNOB	2
A005	LATCH ASSEMBLY	1	A047	PLATEN	1
A006	SIDE PANEL	2	A048	GRAPHITE PAD	1
A007	REAR PANEL	1	A049	SOCKET HEAD CAP SCREW	1
A008	SHELF	1	A050	NUT	1
A009	HEX CAP SCREW	10	A051	RING	2
A010	FLAT WASHER	12	A052	LOCK NUT	4
A011	NUT	12	A053	ROUND HEAD SCREW	4
A012	HEX CAP SCREW	2	A054	SOCKET HEAD CAP SCREW	1
A013	LOCK WASHER	2	A055	BELT TENSION ARM	1
A014	BASE	1	A056	TENSION ARM HANDLE	1
A015	BIG KNOB	1	A057	LOCK NUT	1
A016	LOCK BLOCK	1	A058	TENSION BAR	1
A017	FLAT WASHER	1	A059	SPRING	1
A018	NYLON WASHER	1	A060	ROUND HEAD SCREW	4
A019	LOCK NUT	1	A061	LOCK WASHER	4
A020	KNOB	2	A062	FLAT WASHER	4
A021	FLAT WASHER	2	A063	BEARING HOUSING	1
A022	ANGLE PLATE	2	A064	BALL BEARING	2
A023	ROUND HEAD SCREW	4	A065	FLAT WASHER	1
A024	FLAT WASHER	4	A066	FLAT WASHER	1
A025	LOCK WASHER	4	A067	SOCKET HEAD CAP SCREW	1
A026	NUT	4	A068	IDLE DRUM BRACKET	1
A027	SCREW	2	A069	TRACK ADJUSTING SCREW	1
A028	FLAT WASHER	2	A070	TRACK ADJUSTING NUT	1
A029	LOCK WASHER	2	A071	NYLON INSERT LOCK NUT	1
A030	HEX NUT	2	A072	SPECIAL NUT	2
A031	SWITCH BOX	1	A073	NUT	2
A032	PAN HEAD SCREW	4	A074	FLAT WASHER	2
A033	EMERGENCY SWITCH	1	A075	DOUBLE-SCREW BOLT	2
A034	TAPPING SCREW	2	A076	DISC PLATE	1
A035	PAN HEAD SCREW	1	A077	TRACK ADJUSTING BLOCK	1
A036	EXTERNAL TOOTH LOCK WASHER	1	A078	BALL BEARING	1
A037	POINTER	1	A079	GUARD	1
A038	TABLE	1	A080	IDLE DRUM	1
A039	UP-DOWN TABLE MOUNT PLATE	2	A081	DRIVE SHAFT	1
A040	SOCKET HEAD CAP SCREW	4	A082	KEY	1
A041	FLAT WASHER	4	A083	KEY	1
A042	LOCK WASHER	4	A084	RETAINING RING	1

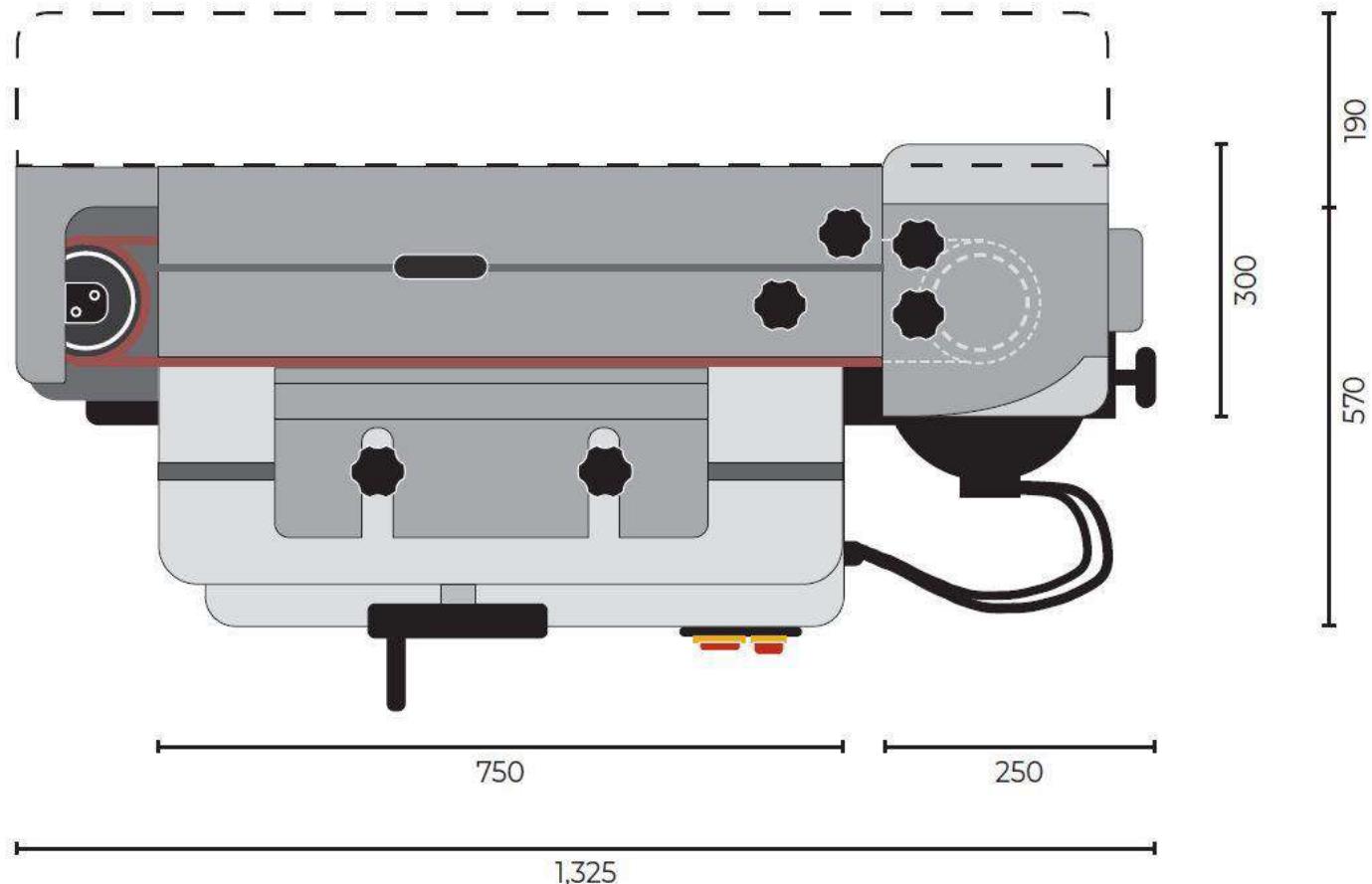
A085	DOWN BEARING HOUSING	1	A129	BRACKET	1
A086	COUNTERSUNK HEAD SCRE	3	A130	PIN	1
A087	BALL BEARING	1	A131	FLAT WASHER	1
A088	WORM	1	A132	KNOB	1
A089	FLAT WASHER	1	A133	NUT	3
A090	LOCK NUT	1	A134	PAN HEAD SCREW	3
A091	COLUMN	2	A135	HANDLE	1
A092	DOUBLE-HEAD LEAD SCREW	2	A136	ROUND HEAD SCREW	2
A093	DUST HOOD BOX	1	A137	SOCKET HEAD CAP SCREW	4
A094	DUST HOOD COVER	1	A138	FLAT WASHER	8
A095	SOCKET HEAD CAP SCREW	4	A139	LOCK WASHER	4
A096	LOCK NUT	2	A140	NUT	4
A097	LOCK NUT	2	A141	MOTOR	1
A098	FLAT WASHER	2	A142	DRIVE DRUM	1
A099	BALL BEARING	2	A143	WASHER	1
A100	BEARING HOUSING	2	A144	LOCK WASHER	1
A101	GEAR HOUSING	1	A145	SOCKET HEAD CAP SCREW	1
A102	CAM	1	A146	ROUND HEAD SCREW	2
A103	WORM GEAR	1	A147	SUPPORTING SEAT	1
A104	KEY	1	A148	KNOB	1
A105	WORM GEAR SHAFT	1	A149	SUPPORTING ROD	1
A106	RETAINING RING	1	A150	SOCKET HEAD CAP SCREW	1
A107	FLAT WASHER	4	A151	EXTENSION TABLE	1
A108	LOCK WASHER	4	A152	PHILLIPS SCREW	3
A109	ROUND HEAD SCREW	4	A153	WASHER	3
A110	SPRING BOLT	1	A154	NUT	3
A111	NUT	18	A155	DUST PORT	1
A112	SPRING	1	A156	DRUM GUARD	1
A113	SANDING BELT	1	A157	CLINCH BOLT	8
A114	NUT	1	A158	HINGE BRACKET	2
A115	BRACKET	1	A159	CONNECTION PLATE	1
A116	FLAT WASHER	4	A160	FLAT WASHER	4
A117	LOCK WASHER	4	A161	KNOB	2
A118	SOCKET HEAD CAP SCREW	4	A162	SANDING BELT COVER	1
A119	SPRING	1	A163	KNOB	2
A120	LEAD SCREW	1	A164	MITRE GAUGE BODY	1
A121	BALL BEARING	1	A170	ALLEN KEY	1
A122	RETAINING RING	1	A171	ALLEN KEY	1
A123	TIILT ANGLE SCALE LABEL	1	A172	ALLEN KEY	1
A124	TIILT SCALE	1	A173	ALLEN KEY	1
A125	PAN HEAD SCREW	1	A174	SCREW DRIVER	1
A126	FLAT WASHER	2	A175	GROMMET	3
A127	LOCK WASHER	1	A176	PLUG	1
A128	NUT	1			

DRAWING S :

Diagram and part list for table lifting handwheel assembly



Part No.	DESCRIPTION	QTY	Part No.	DESCRIPTION	QTY
S01	M8 NUT	4	S21	HAND WHEEL	1
S02	M8 FLAT WASHER	4	S22	M8 NUT	1
S03	LEFT ANGLE IRON	1	S23	FLAT KEY A5 X 16	1
S04	RIGHT ANDLE IRON	1	S24	CIRCLIP	1
S05	BEARING BLOCK	1	S25	SHAFT	1
S06	M8 FLAT WASHER	4	S26	SHAFT BUSH	1
S07	M8 X 30MM BOLT	4	S27	CIRCLIP	1
S08	CIRCLIP	1	S28	M8 X 10MM HEX SCREW	1
S09	BEARING	1	S29	BEVEL GEAR	1
S10	BEVEL GEAR	1	S30	M8 X 30MM BOLT	2
S11	CIRCLIP	1	S31	M8 FLAT WASHER	2
S12	SHAFT	1	S32	SHAFT BRACKET	1
S13	M8 X 30MM BOLT	2	S33	M8 FLAT WASHER	2
S14	M8 SPRING WASHER	2	S34	M8 NUT	2
S15	M8 FLAT WASHER	2	S35	M6 NUT	3
S16	LIFTING SEAT	1	S36	PROTECTION GUARD	1
S17	M8 X 10MM HEX SOCKET SCREW	1	S37	M6 X 14 BOLT	3
S18	M12 NUT	1	S38	BOLT ST4 X 10	4
S19	M12 FLAT WASHER	1	S39	SMALL COVER	1
S20	HANDLE	1			



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SERIES

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