

AXMINSTER

WORKSHOP

Code 107675

Original Instructions

AW16BM

Bench Morticer



AT: 10/03/2022
BOOK VERSION: 5

INDEX OF CONTENTS

EU Declaration of Conformity	02
What's Included	03
General Instructions for 230V Machines	04
Specific Safety Instructions for Morticers	04
Assembly	05-06
Specification	07
Illustration and Parts Description	07-08-09
Setting up the Machine	10-11-12-13
Optional Accessories	14
Maintenance	15
Exploded Diagrams/Lists	16-17-18
Wiring Diagram	18
Notes	19

EU DECLARATION OF CONFORMITY

Cert No: MS3816 Axminster Tool Centre Ltd Axminster Devon EX13 5PH UK axminstertools.com declares that the machinery described:- <table><tr><td>Type</td><td>Bench Morticer</td></tr><tr><td>Model</td><td>AW16BM</td></tr></table> Signed  Andrew Parkhouse Operations Director Date: 13/08/2020	Type	Bench Morticer	Model	AW16BM	EU Declaration of Conformity This machine complies with the following directives: 2006/42/EC 2006/95/EC EN 61029-1:2009+A11 06/42/EC - Annex I/05.2006 and conforms to the machinery example for which the EC Type-Examination Certificate No AM 50476859 has been issued by Laizhou Tongtailai Machinery Co., Ltd. at: No. 2666 Shuangfeng Road Chengguo Dongfeng Laizhou 261437, Shandong and complies with the relevant essential health and safety requirements.
Type	Bench Morticer				
Model	AW16BM				

The symbols below advise the correct safety procedures when using this machine.



**Fully read manual
and safety instructions
before use**



**Ear protection
should be worn**



**Eye protection
should be worn**



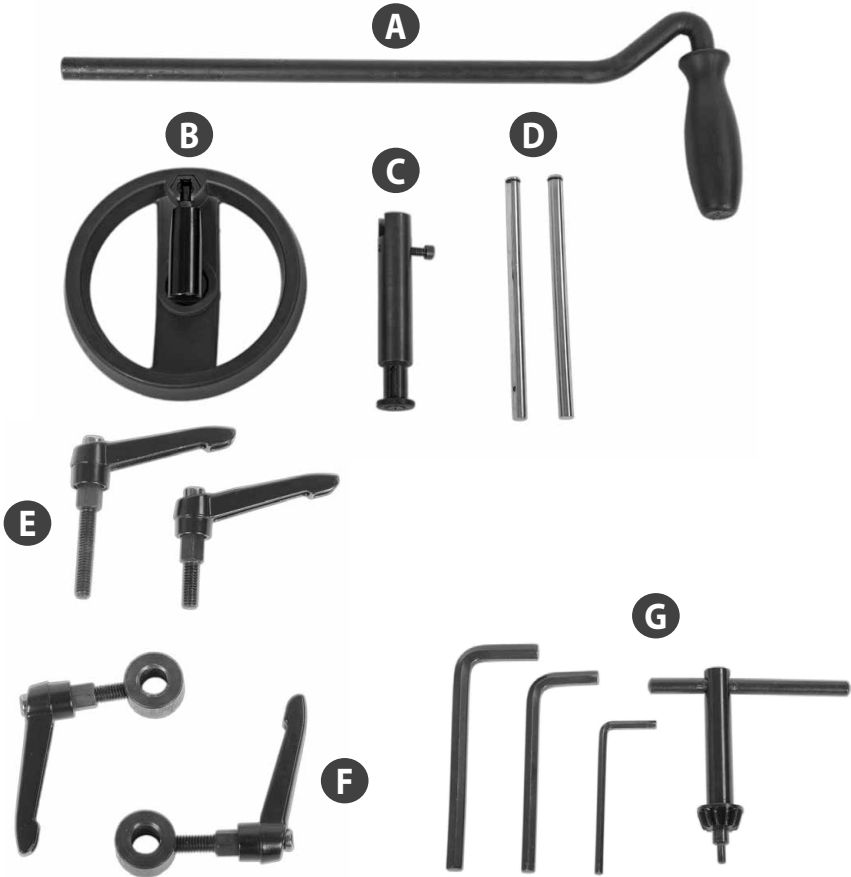
**Dust mask
should be worn**



**HAZARD
Motor gets hot**

WHAT'S INCLUDED

Quantity	Item	Part
1	AW16BM Bench Morticer	
1	Operating Lever	A
1	Saddle Operating Wheel	B
1	Operating Wheel Shaft	C
2	Distance Stop Rods	D
Bag 1		
2	M6 x 30mm and M6 x 16mm Lift and Shift Handles	E
2	Ring Collar Clamps with Lift and Shift Handles	F
Bag 2		
1	13mm Chuck Key, 6,5,3mm Allen Keys	G
1	Instruction Manual	



GENERAL INSTRUCTIONS FOR 230V MACHINES

The following 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 REACH OF YOUNG CHILDREN



KEEP WORK AREA AS UNCLUTTERED AS IS PRACTICAL. UNDER NO CIRCUMSTANCES SHOULD CHILDREN BE ALLOWED IN WORK AREAS.

Mains Powered Tools

- Tools are supplied with an attached 13 Amp plug.
- Inspect the cable and plug to ensure that neither are damaged. Repair if necessary by a suitably qualified person.
- Do not use when or where it is liable to get wet.

Workplace

- Do not use 230V a.c. powered tools anywhere within a site area that is flooded.
- Keep machine clean.

- Leave machine unplugged until work is about to commence.
- Always disconnect by pulling on the plug body and not the cable.
- Carry out a final check e.g. check the cutting tool is securely tightened in the machine and the correct speed and function set.
- Ensure you are comfortable before you start work, balanced, not reaching etc.
- Wear appropriate safety clothing, goggles, gloves, masks etc. Wear ear defenders at all times.
- If you have long hair wear a hair net or helmet to prevent it being caught up in the rotating parts of the machine.
- Consideration should be given to the removal of rings and wristwatches.
- Consideration should also be given to non-slip footwear etc.
- If another person is to use the machine, ensure they are suitably qualified to use it.
- Do not use the machine if you are tired or distracted.
- Do not use this machine within the designated safety areas of flammable liquid stores or in areas where there may be volatile gases.
- Check cutters are correct type and size, are undamaged and are kept clean and sharp, this will maintain their operating performance and lessen the loading on the machine.
- **OBSERVE....** make sure you know what is happening around you and **USE YOUR COMMON SENSE.**

SPECIFIC SAFETY INSTRUCTIONS FOR MORTICERS

1. Ensure that the morticer is firmly fixed to its base as the force exerted through the operating handle could be enough to over-balance the machine.
2. Ensure that the operating handle is returned to the upright position after cutting a mortise.
3. Mortice chisels have very sharp ends, handle them with great care.
4. Make sure that the timber is held firmly down against the table by using the table clamp. This prevents the possibility of the timber being pulled upwards as the mortice chisel is withdrawn from the hole.

Please take some time to read the section entitled “Illustration and 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 Morticer safely and correctly.

Place the machine onto a suitable surface, at a height that will enable you to work comfortably and to ensure that

there is adequate room on either side for the size of timber you plan to use. Once you are happy, bolt the morticer down. Loosen the locking caphead screw (a) to raise the morticer's head assembly. Locate the operating lever (A) and the M6 x 16mm lift and shift handle (E), introduce the operating lever through the rack and pinion assembly, then secure the lever in place using the M6 lift and shift handle (E) (See fig 2).

Fig 1.

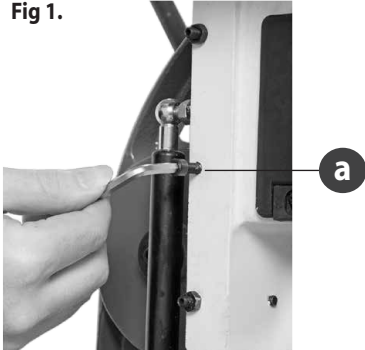
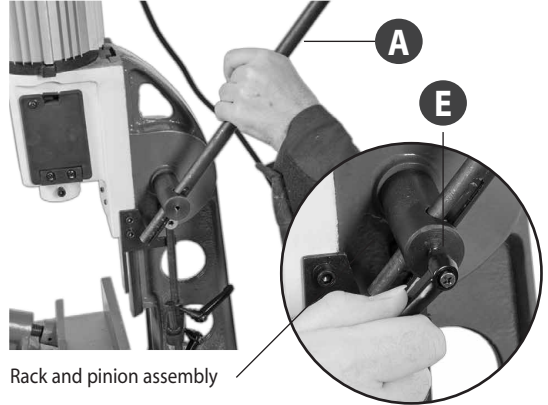
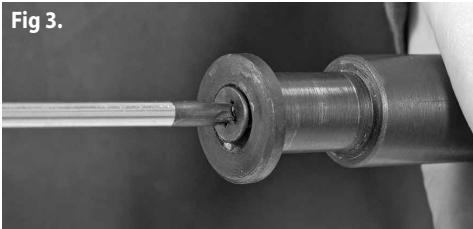


Fig 2.



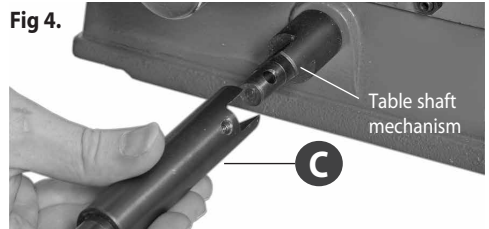
Locate the operating wheel Shaft (C), remove the phillips screw, clamping washer and M6 x 23mm caphead screw and place them safely aside (See figs 3 and 5). Slide the machined cutout onto the transverse table shaft mechanism, line up the pre-drilled hole with the one in the table shaft mechanism and secure them in position using a 5mm allen key and the M6 x 23mm caphead screw you removed earlier (See figs 4 and 5).

Fig 3.



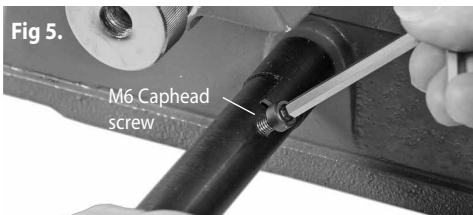
Remove the phillips screw and clamping washer.

Fig 4.



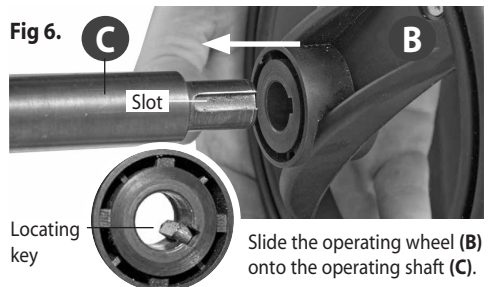
Slide the machined cutout onto the transverse table shaft mechanism.

Fig 5.



Secure the wheel shaft (C) to the table shaft using the M6 caphead screw.

Fig 6.



Slide the operating wheel (B) onto the operating shaft (C).

ASSEMBLY

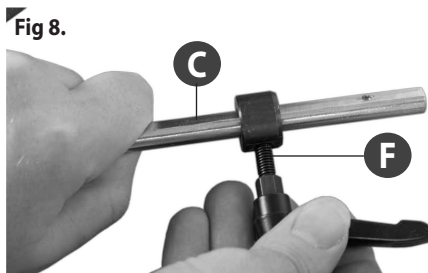
Locate the operating wheel (B), slide it on to the operating wheel shaft (C) as shown in fig 6 (**Note: Make sure the locating key engages into the shaft's machined slot**). Secure using the phillips screw and clamping washer you removed earlier (See fig 7).

Fig 7.



Secure the operating wheel (B) using the phillips screw and clamping screw.

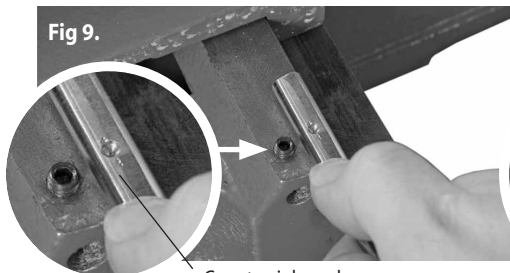
Fig 8.



Slide the ring collar clamp (F) onto the distance stop rod (D) and lightly tighten.

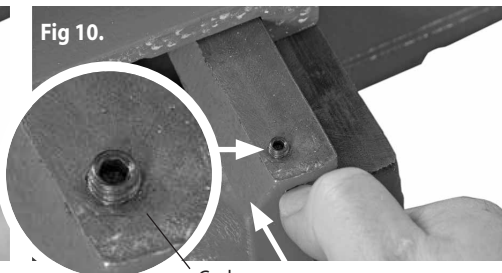
Move the table to the left by turning the operating wheel (B), thus revealing the grub screw beneath. Locate one of the two distance stop rods (D) and a ring collar clamp (F), slide the ring collar clamp (F) onto the distance stop rod (D) and lightly tighten by turning the lift and shift handle, see fig 8 on the previous page. Line up the countersink mark on the rod (D) with the grub screw, (make sure the grub screw is raised fully) slide the rod (D) into the pre-drilled hole to the end of casting and tighten the grub screw (See figs 9,10 and 11) repeat for the opposite side.

Fig 9.



Countersink mark

Fig 10.



Grub screw

Fig 11.



Remove locking caphead screw (a) (see page 5), that locks the morticer's head assembly and replace it with the M6 x 30mm lift and shift handle (E) (See fig 12).

Fig 12.



E

SPECIFICATION

Code	107675	Max Height of Timber with 12.7mm Chisel and Bit	
Model	AW16BM	110 mm (160 mm with optional spacer block)	
Rating	Workshop	Max Chisel Size Softwood	16 mm
Power	550 W	Max Chisel Size Hardwood	16 mm
Voltage	230 V	Overall L x W x H	520 mm x 580 mm x 640 mm
Chisel Stroke	100 mm	Weight	42 kg
Centre of Chisel to Back Fence	55 mm		

ILLUSTRATION AND PARTS DESCRIPTION

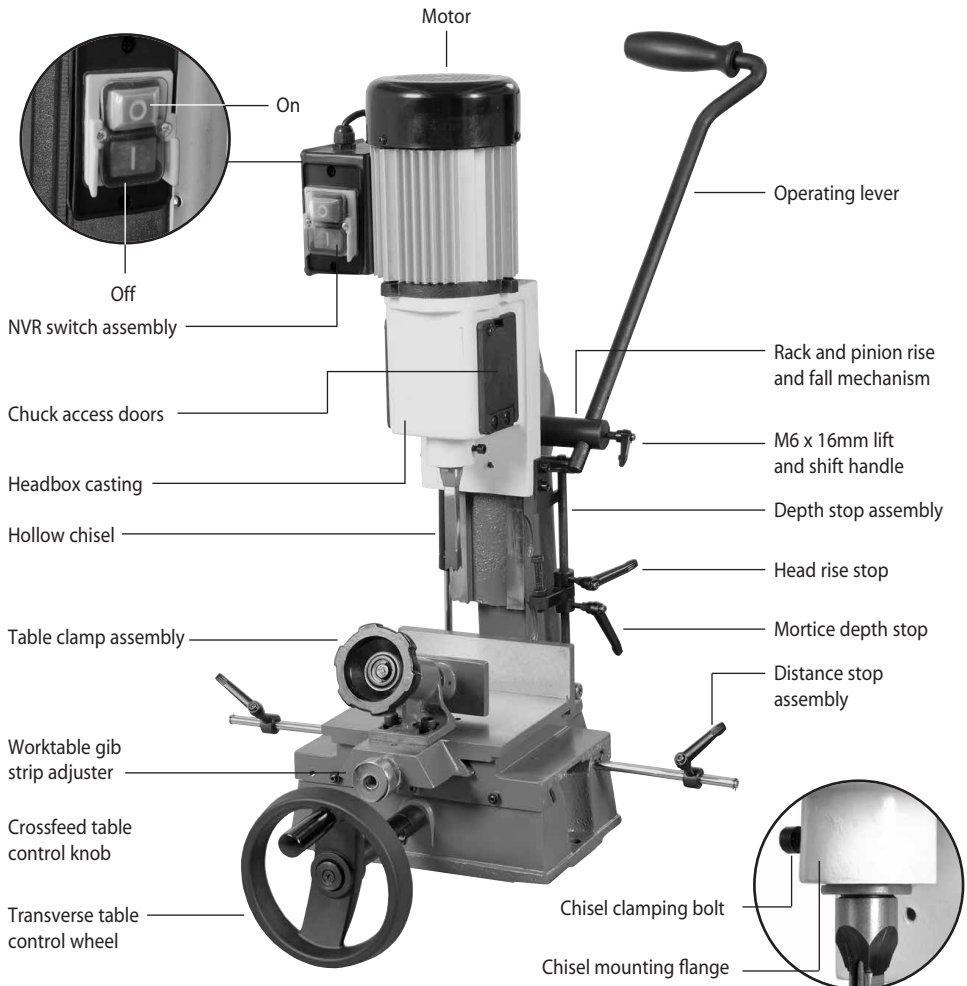
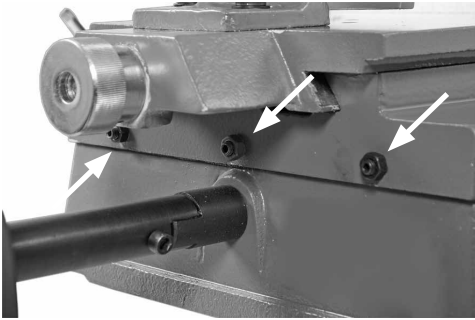


ILLUSTRATION AND PARTS DESCRIPTION



Transverse gib strip adjusters

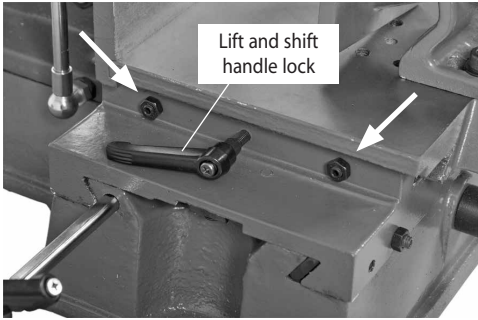


Table gib strip adjusters

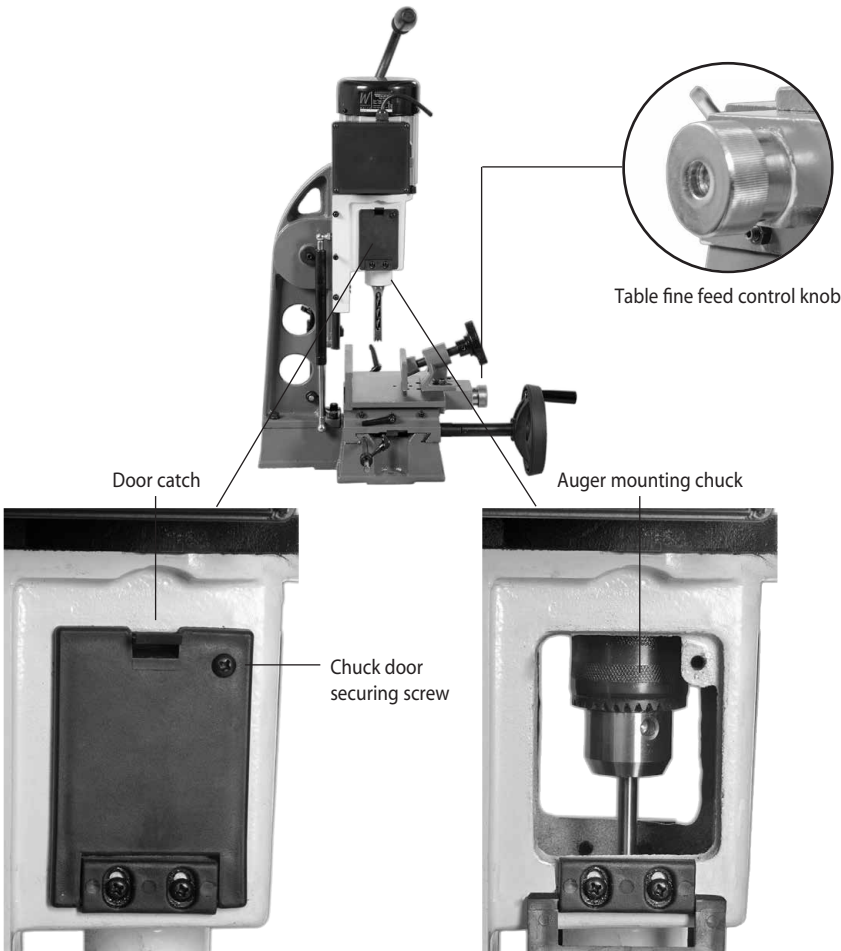
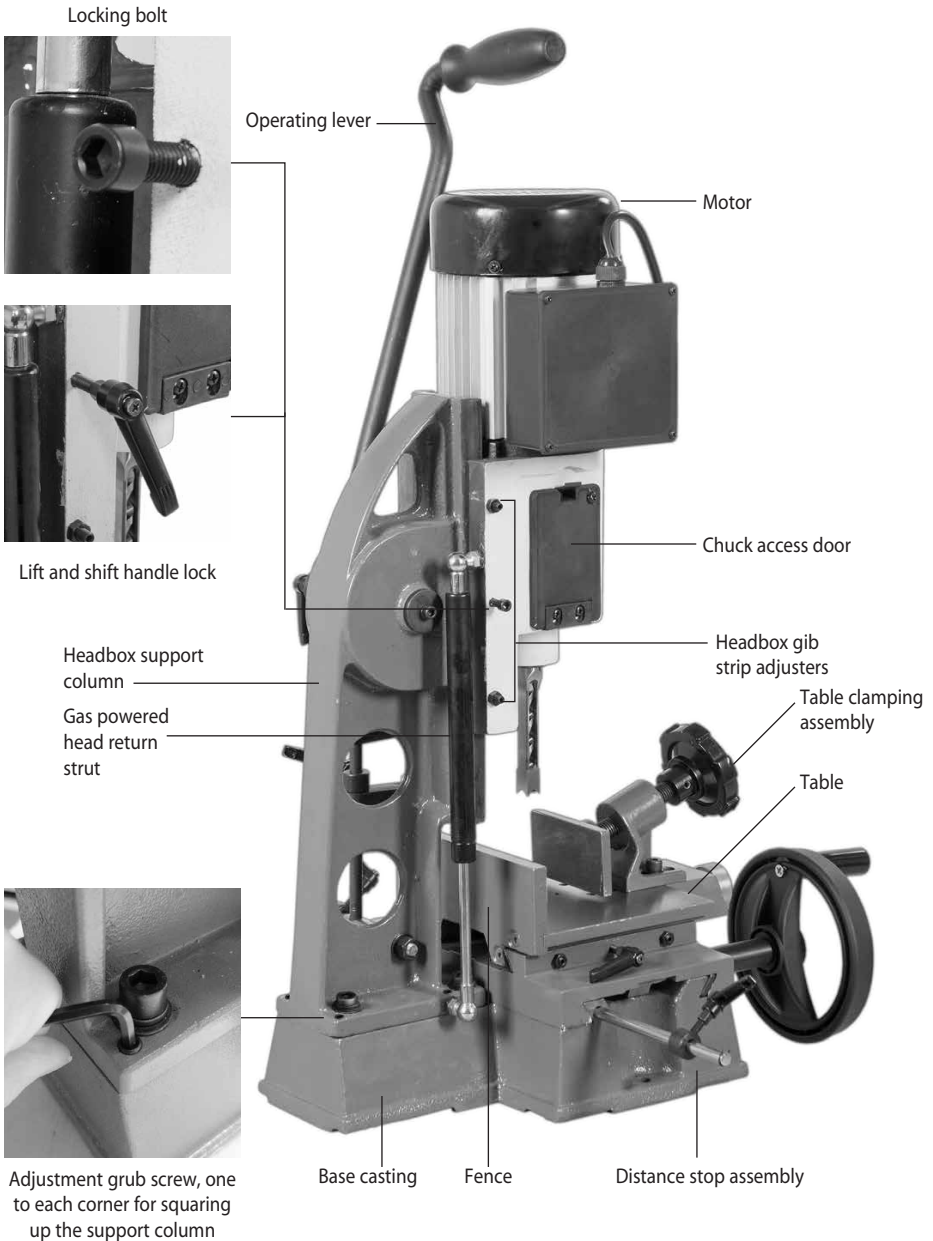


ILLUSTRATION AND PARTS DESCRIPTION

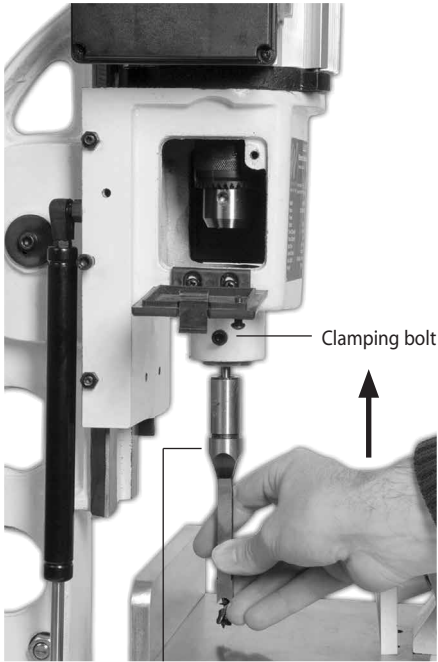


SETTING UP THE MACHINE

Initial Set up

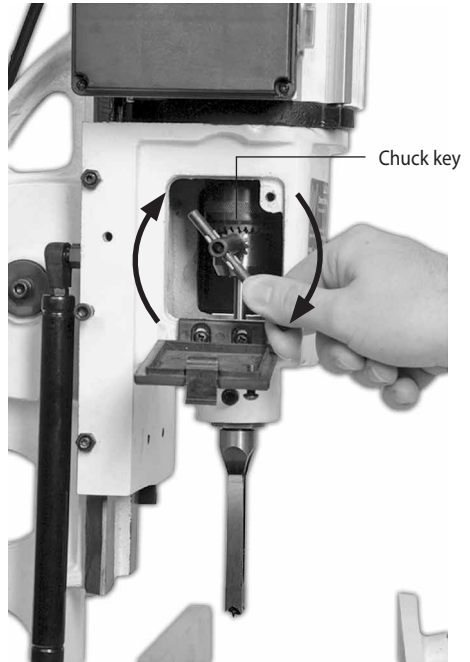
Introduce the chisel into the adaptor collar, press the auger up into the chuck, tighten the chuck and withdraw the chuck key. Gently pinch the chisel in place by finger tightening the clamping bolt. (See figs A,B)

Fig A.



Hollow Chisel

Fig B.



Setting the Chisel Auger Clearance

The old rule of thumb for chisel auger clearance was known as "the one penny width". This was achieved by introducing a penny between the locating shoulder of the chisel and the adaptor face, with the auger locked in place and with the chisel pulled hard down on the auger. The penny was then removed and the chisel pushed up to the adaptor face and locked in place, this established the "one penny width" between the chisel and the auger, which for general timbers and mortice sizes is quite adequate.

Traditional morticers normally had a cross pin in the auger mounting mandrel, to prevent the auger being pushed back up into the chisel. The mounting method on the newer morticers is a chuck. It is well worth taking the extra time and care to prepare your augers to give the correct 'reach' when 'bottomed' out in the chuck. This will prevent the auger being pushed back towards the chisel and altering the clearance setting. (See fig C)

Setting the chisel auger clearance

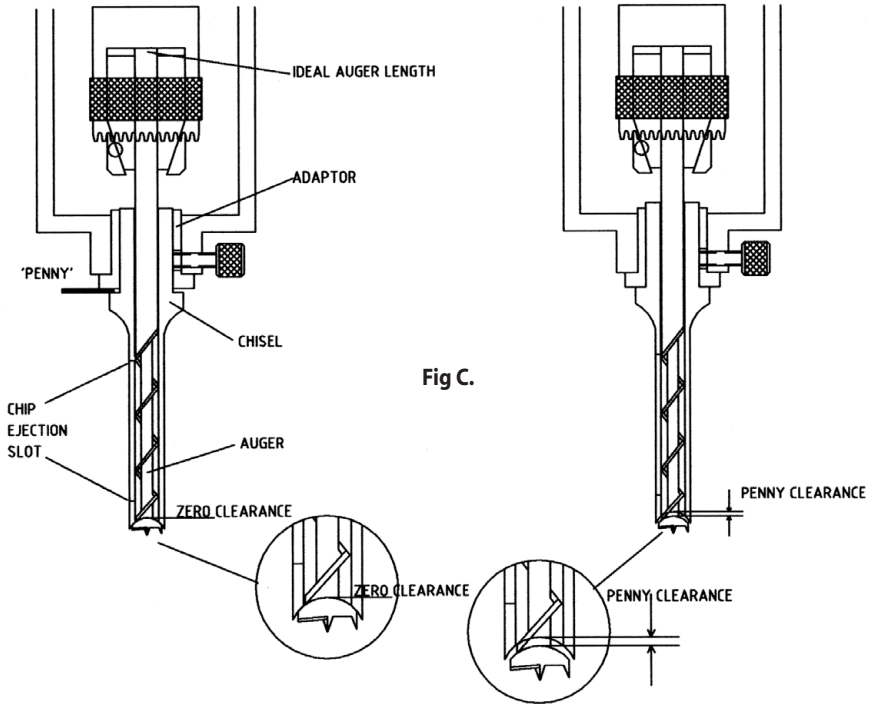


Fig C.

General Notes

The mortise will generate a lot of 'grip' on the chisel, especially the first cut, or if the timber is a little green. Make sure you use the table clamp assembly to help control the timber during the raise operation of the morticer.

Setting the chisel Square

When the chisel is tightened in the machine it must normally be square to the back fence. The easiest way to achieve this is to bring the headbox down to bring the chisel as close to the table as possible, set a square against the back fence and set the side of the chisel against the square and clamp tight. (Remember to have the chip ejection slot in the chisel to the side from which you will cut the mortice).

Quick Setting of the Mortice Depth

Put a mark on an easily accessible end of the workpiece to be mortised, at the depth you require. Pull the headbox

down, and put the end of the timber against the chisel. Position the headbox so that the chisel points or the auger point are at the depth required, raise the depth stop collar to the underside of the headbox and tighten gently. Recheck the depth of the chisel point, if it is satisfactory tighten securely, if not it can be gently 'nudged' down the column with the headbox, then tighten. Reposition the operating handle to give the most comfortable position and purchase on the lever, over the full distance of the movement you have just set.

Headbox Rise Adjustment

Coupled with the depth stop on the same assembly is the head box rise limiter. This limits the rise of the head box / chisel to a convenient distance above the work by the use of a locking collar positioned above the stop finger on the side of the headbox. The travel of this assembly is then restricted to your chosen setting rather than having to return it to the top of the slide each time.

SETTING UP THE MACHINE

Depth Stop Assembly

The hinged depth stop can be used to adjust the depth of the morticer (See fig A). The ring collar clamp can also be used as a depth stop (See fig B).

Fig A.

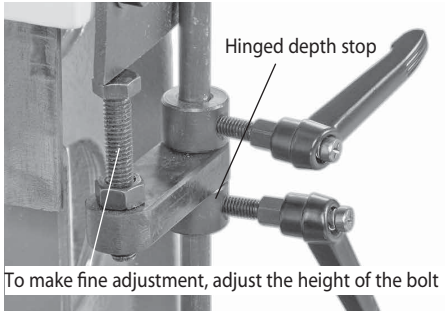
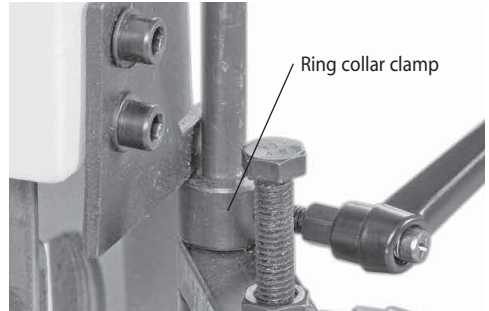
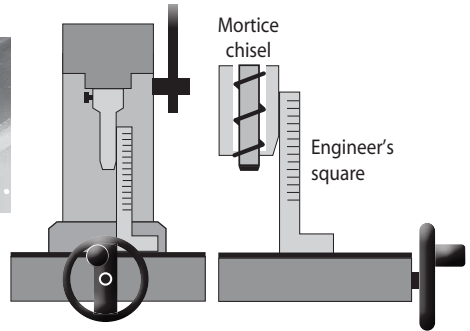


Fig B.



Support Column Leveling Grub Screws

Place an engineer square against the side of the mortice chisel, check it's square. If adjust is required adjust the grub screws to each corner of the support columns base until the chisel is perpendicular to the worktable. Re-position the square to the front face of the chisel and repeat the procedure. Nip-up the four M10 bolts to the columns base to secure.



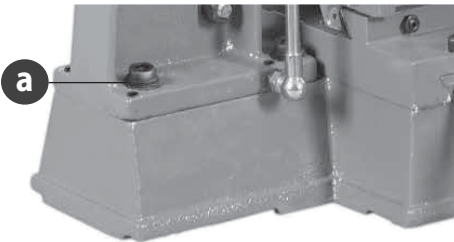
Optional: Raiser Block Kit Assembly



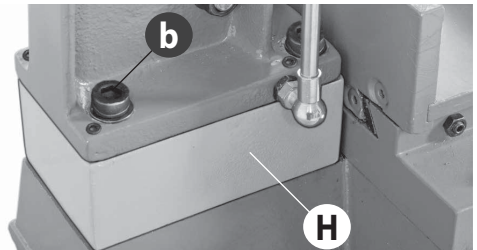
YOU MAY REQUIRE ASSISTANCE AS THE HEADBOX SUPPORT COLUMN IS HEAVY

The headbox support column can be raised by fitting the optional raiser block (H) beneath it. Remove the four M10 bolts (a) that secures the support column and place them

and the column safely to one side. Locate the raiser block (H) and the four M10 long bolts, washers/spring washers (b). Line up holes in the raiser block (H) with the holes in the base casting, replace the headbox support column on top, line up the holes and secure in position using the four M10 long bolts (b), washers/spring washers. Lightly tighten ready for the next step.



Before

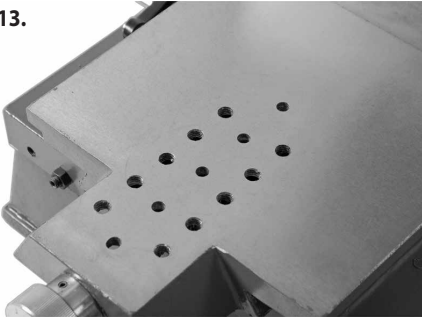


After

Table Clamp Assembly

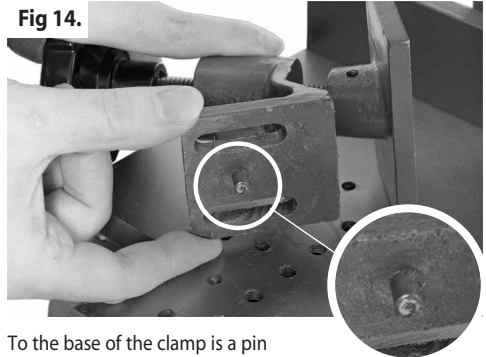
The table clamp can be adjusted to accommodate different sizes of timber using the pre-drilled holes in the table (See figs 13,15 and 16). To the base of the clamp there is pin which slots into the centre holes in the table to prevent movement (See figs 13 and 14). The clamp can also be pivoted to clamp uneven shapes (See figs 17 and 18).

Fig 13.



The table has pre-drilled holes which allows the clamp to be repositioned.

Fig 14.



To the base of the clamp is a pin that slots into the centre holes in the table.

Fig 15.

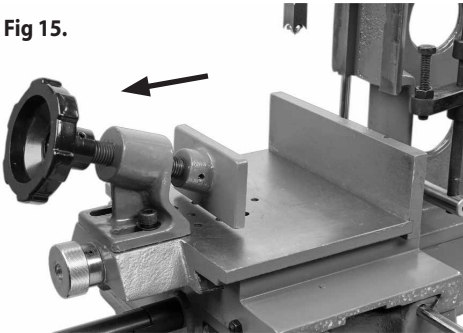
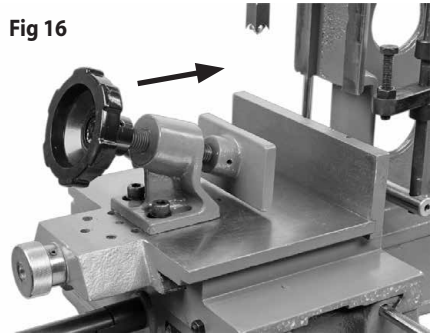


Fig 16



The table clamp can be adjusted to accommodate different sizes of timber.

Fig 17.

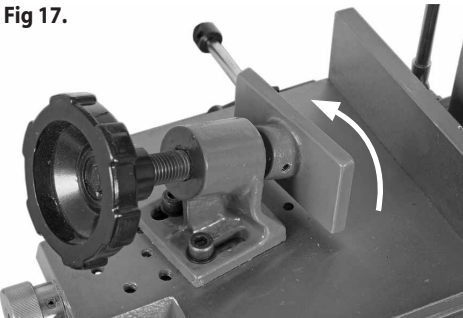
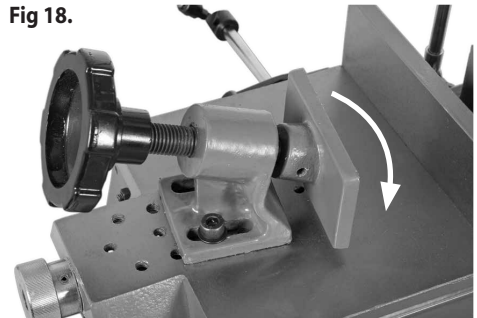


Fig 18.



The clamp can be pivoted to clamp uneven shapes.

OPTIONAL ACCESSORIES

Headbox support column Raiser Block Assembly (Order no: 950175)

H



M10 x 78mm bolts

Drill Chuck and Adaptor (Order no: 400287)

I



You can turn your mortar into a pillar drill by attaching a drill chuck and adaptor.

There is very little maintenance required on your morticer.

Keep it clean

Make sure the rack and pinion gears do not become clogged with chips/sawdust.

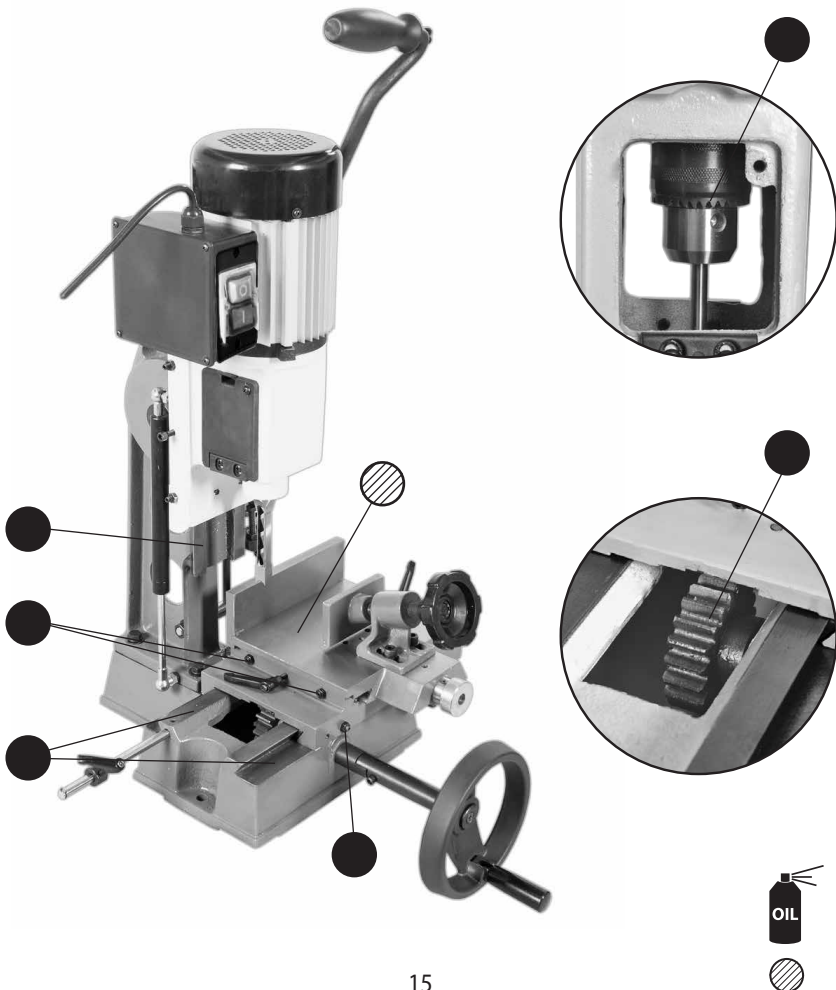
Lightly spray oil on all exposed metal surfaces if the machine is going to stand idle for any length of time. Keep the chisels and augers sharp.

Once a month

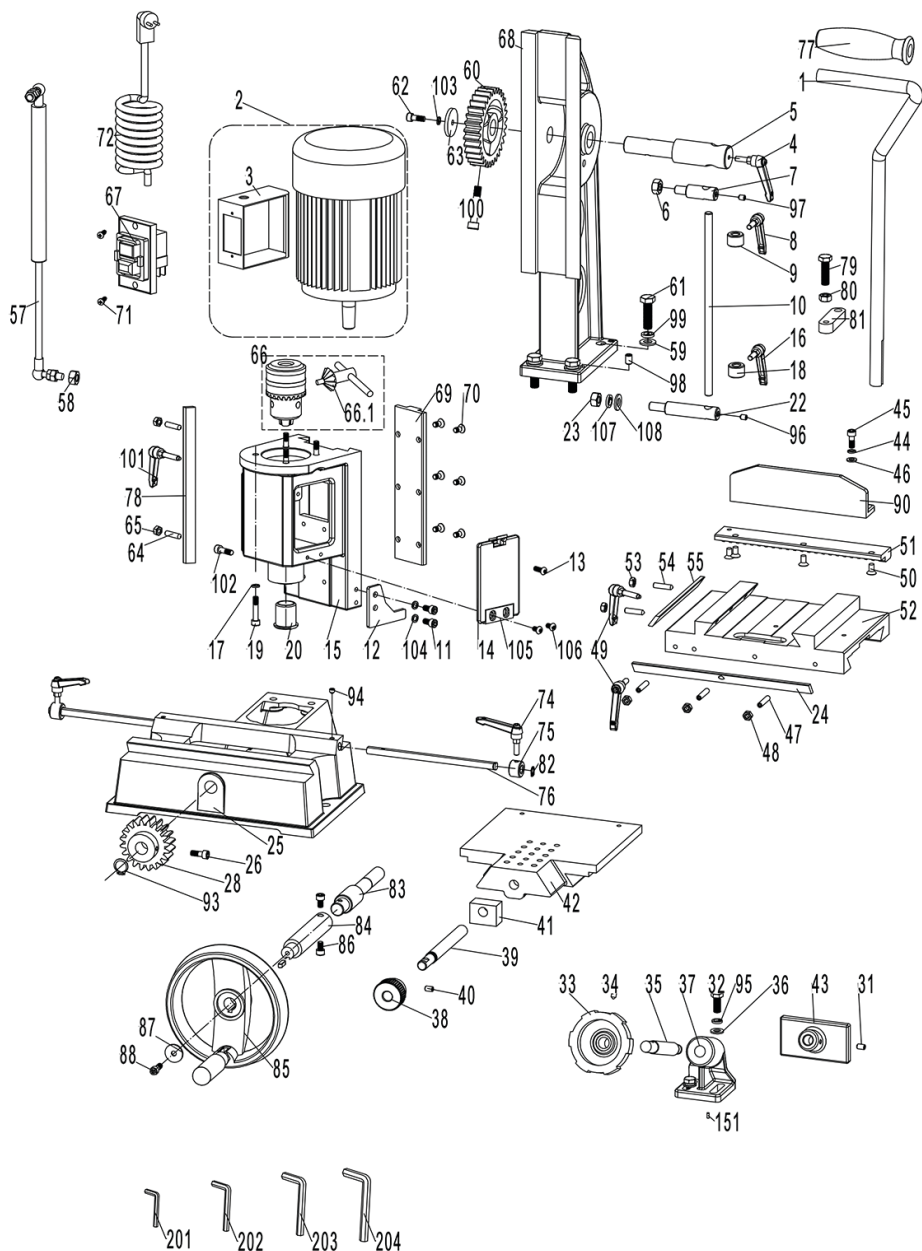
Blow/suck the motor to remove any debris that might have lodged in the fan cover.

Oil the chuck and exercise it over its full range to ensure the oil coats all moving parts.

There are full ranges of mortice chisels and sharpening sets listed on our website.



EXPLODED DIAGRAMS/LISTS



EXPLODED DIAGRAMS/LISTS

NO.	SIZE	DESCRIPTION	QTY
1		Operating handle	1
2		Motor	1
3		Switch box	1
4		Handle	1
5		Operating shaft	1
6	M10	Hex nut	1
7		Shaft	1
8		Handle	1
9		Setting Collar	1
10		Guide column	1
11	M6x12	Screw	2
12		Localiser	1
13	M5x16	Screw	2
14		Cover	2
15		Headbox Casting	1
16		Handle	1
17	6	Spring washer	4
18		Setting Collar	1
19	M6x25	Screw	4
20		Chisel Bushing	1
22		Shaft	1
23	M10	Hex nut	1
24		Drift	1
25		Base	1
26	M6x25	Screw	1
28		gear	1
31	M6x10	Screw	1
32	M8x20	Hexagon head bolt	2
33		Handwheel	1
34	M6x10	Screw	1
35		Lead screw	1
36	8	Flat washer	2

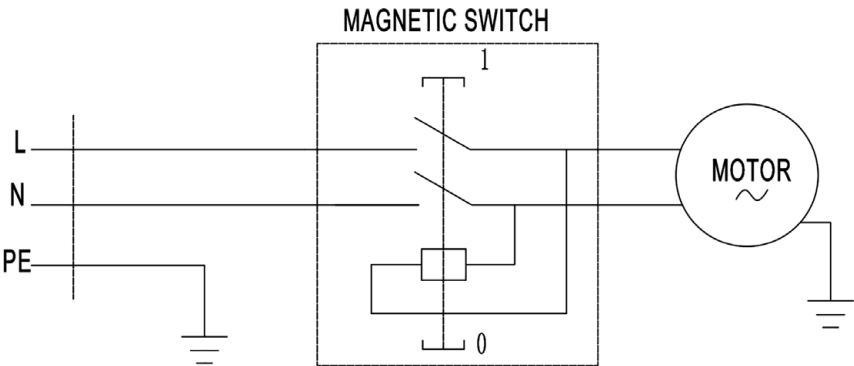
37		Connecting bend	1
38		Table control knob	1
39		Lead screw	1
40	M6x10	Screw	1
41		Nut block	1
42		Worktable	1
43		Clamp plate	1
44	6	Spring washer	2
45	M6x20	Screw	2
46	6	Flat washer	2
47	M6x30	Screw	3
48	M6	Hex nut	3
49		Handle	1
50	M6x12	Screw	4
51		Horizontal rack	1
52		Sliding table	1
53	M6	Hex nut	3
54	M6x30	Screw	3
55		Drift	1
57		Screw	1
58	M8	Horizontal rack	2
59	10	Sliding table	4
60		Hex nut	1
61	M10x30	Screw	4
62	M6x16	Drift	1
63	6	Washer	1
64	M6x25	Screw	2
65	M6	Hex nut	2
66		Drill chuck	1
66.1		Chuck key	1
67		Switch	1
68		Column	1
69		Rack	1
70	M6x12	Screw	6

EXPLODED DIAGRAMS/LISTS

71	ST4x12	Screw	2	95	8	Spring washer	2
72		Plug	1	96	M6x8	Screw	1
74		Handle	2	97	M6x8	Screw	1
75		Setting collar	2	98	M8x12	Grub screw	4
76		Distance stop rod	2	99	10	Spring washer	4
77		Grip sleeve	1	100	M8x45	Screw	1
78		Drift	1	101		Handle	1
79		Hex bolt	1	102	M6x20	Screw	1
80		Nut	1	103	6	Spring washer	1
81		Locating block	1	104	6	Spring washer	2
82	9	C-ring	2	105		Hinge plate	2
83		Gear shaft	1	106	M5x10	Screw	4
84		Connecting shaft	1	107	10	Spring washer	1
85		Handle	1	108	10	Flat washer	1
86		Screw	2	151	5X16	Key	1
87		Washer	1	152	6X14	Pin	1
88		Screw	1	201	S3	Allen wrench	1
90		Fence	1	202	S4	Allen wrench	1
93	16	C-ring	1	203	S5	Allen wrench	1
94	M6x6	Screw	2	204	S6	Allen wrench	1

EXPLODED DIAGRAMS/LISTS

230V 50HZ 1PH:



This image shows a single page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

The Axminster guarantee

Buy with confidence from Axminster!

So sure are we of the quality, we cover all parts and labour free of charge for three years!



For more information visit axminstertools.com/3years



The packaging is suitable for recycling.
Please dispose of it in a responsible manner.



EU Countries Only

Do not dispose of electric tools together with household waste material.
By law they must be collected and recycled separately.



Axminster Tools, Axminster Devon EX13 5PH

axminstertools.com