



Code **105144**

Original Instructions

# AC16BM

## Bench Morticer



AT&M: 17/07/2020  
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# EU Declaration of Conformity

<p><b>Cert No: MS3816</b></p> <p>Axminster Tools &amp; Machinery Ltd          Axminster Devon          EX13 5PH UK  <a href="http://axminster.co.uk">axminster.co.uk</a></p> <p>declares that the machinery described:-</p> <table border="1"> <tr> <td>Type</td> <td><b>Bench Morticer</b></td> </tr> <tr> <td>Model</td> <td><b>AC16BM</b></td> </tr> </table> <p>Signed </p> <p><b>Andrew Parkhouse</b>          Operations Director</p> <p>Date: <b>17/03/2010</b></p>	Type	<b>Bench Morticer</b>	Model	<b>AC16BM</b>	<p><b>EU Declaration of Conformity</b></p> <p><b>This machine complies with the following directives:</b></p> <p>2006/42/EC          2006/95/EC          06/42/EC - Annex I/05.2006          EN 61029-1:2009</p> <p>and conforms to the machinery example for which the EC Type-Examination Certificate No AN 50171993, AM 50171994 has been issued by <b>Laizhou Tongtailai Machinery Co., Ltd.</b> at: No. 2666 Shuangfeng Road Chengguo Dongfeng Laizhou, Shandong 261437 China and complies with the relevant essential health and safety requirements.</p>
Type	<b>Bench Morticer</b>				
Model	<b>AC16BM</b>				

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



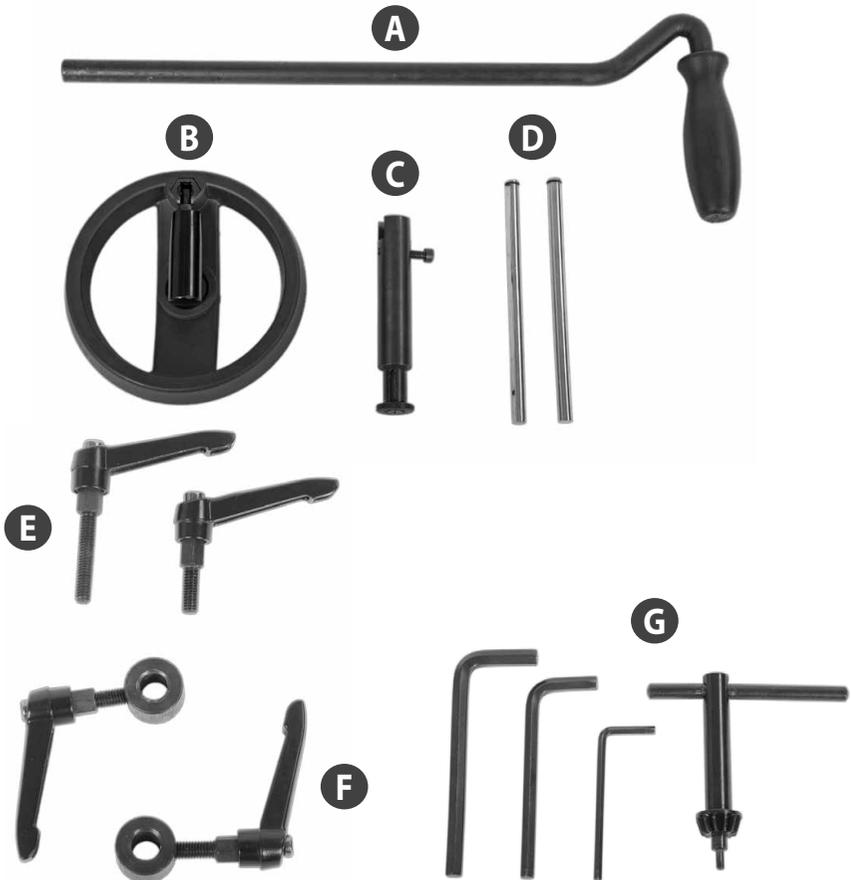
Dust mask should be worn



HAZARD  
 Motor gets hot

## What's Included

Quantity	Item	Part
1	AC16BM Bench Morticer	
1	Operating Lever	<b>A</b>
1	Saddle Operating Wheel	<b>B</b>
1	Operating Wheel Shaft	<b>C</b>
2	Distance Stop Rods	<b>D</b>
Bag 1		
2	M6 x 30mm and M6 x 16mm Lift and Shift Handles	<b>E</b>
2	Ring Collar Clamps with Lift and Shift Handles	<b>F</b>
Bag 2		
1	13mm Chuck Key, 6,5,3mm Allen Keys	<b>G</b>
1	Instruction Manual	



## General Instructions for 230V Machines

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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

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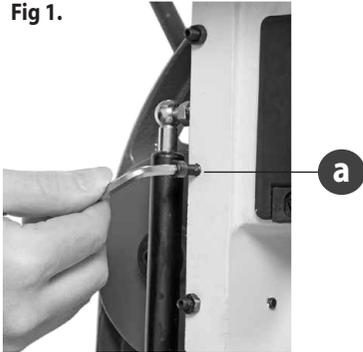
1. Ensure that the morticer is firmly fixed to its base as the force exerted through the operating handle could be enough to over-balance the machine.
2. Ensure that the operating handle is returned to the upright position after cutting a mortise.
3. Mortice chisels have very sharp ends, handle them 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.**

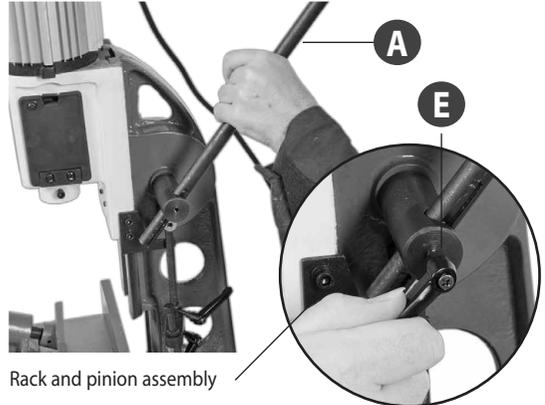
Place the machine onto a suitable surface, at a height that will enable you to work comfortably and to ensure that

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 morticers 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.**

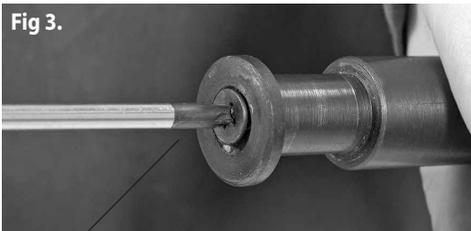


Rack and pinion assembly

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

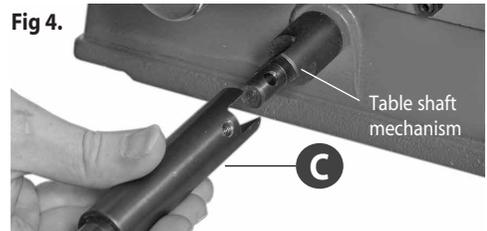
mechanism, line up the pre-drilled hole with the one in the table shaft mechanism and secure them in position using a 5mm allen key and the M6 x 23mm caphead screw you removed earlier (See figs 4 and 5).

**Fig 3.**



Remove the phillips screw and clamping washer.

**Fig 4.**



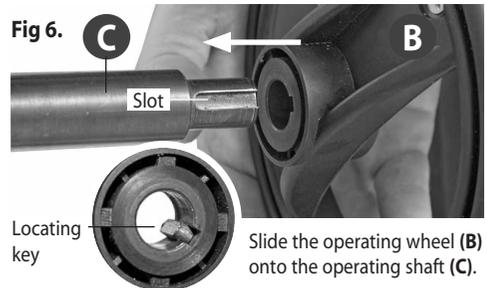
Slide the machined cutout onto the transverse table shaft mechanism.

**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 shafts machined slot.**)

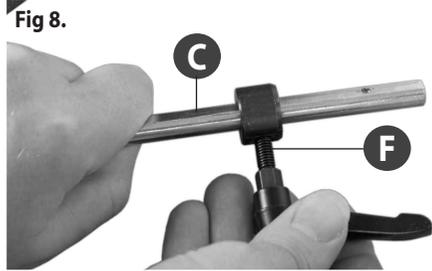
Secure using the phillips screw and clamping washer you removed earlier (See fig 7).

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.

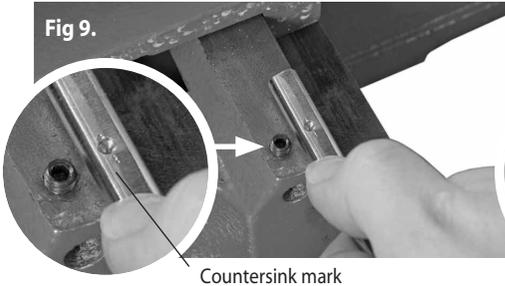


Fig 10.

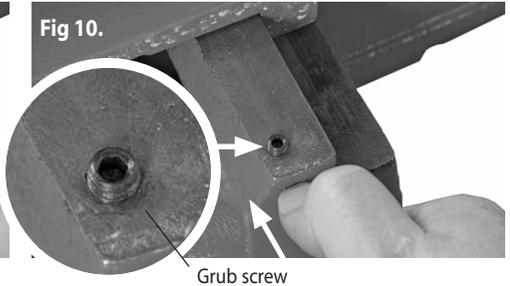


Fig 11.



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

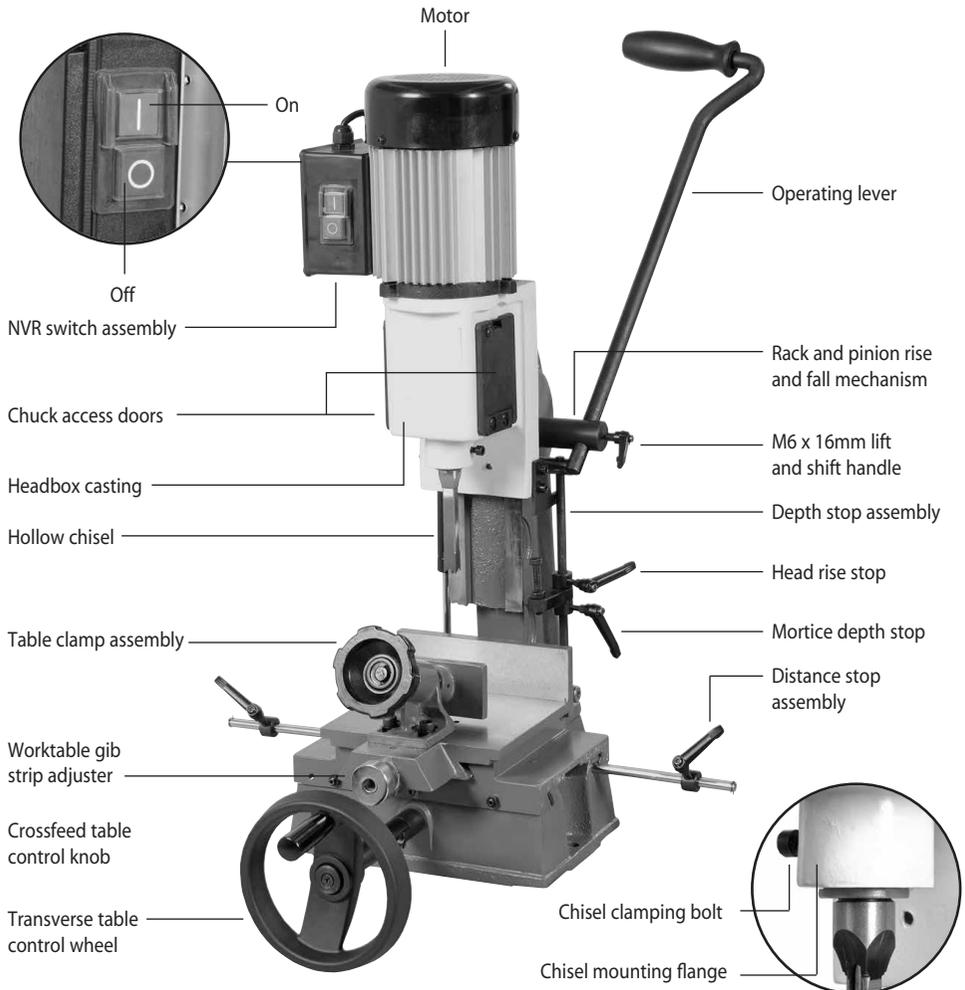
Fig 12.



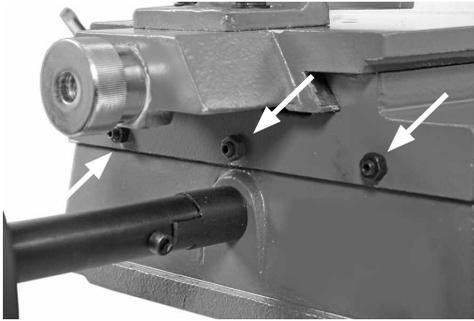
## Specification

Code	105114	Centre of Chisel to Back Fence	55 mm
Model	AC16BM	Max Height of Timber with 12.7mm Chisel and Bit	
Rating	Craft		110 mm (160 mm with optional spacer block)
Power	375 W	Max Chisel Size Softwood	16 mm
Voltage	230 V	Max Chisel Size Hardwood	16 mm
Chisel Stroke	100 mm	Overall L x W x H	275 mm x 440 mm x 640 mm
		Weight	42 kg

## Illustration and Parts Description



# Illustration and Parts Description



Transverse gib strip adjusters

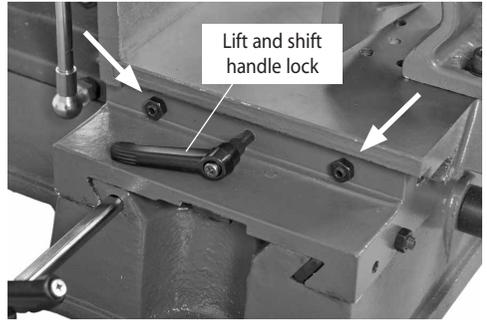


Table gib strip adjusters

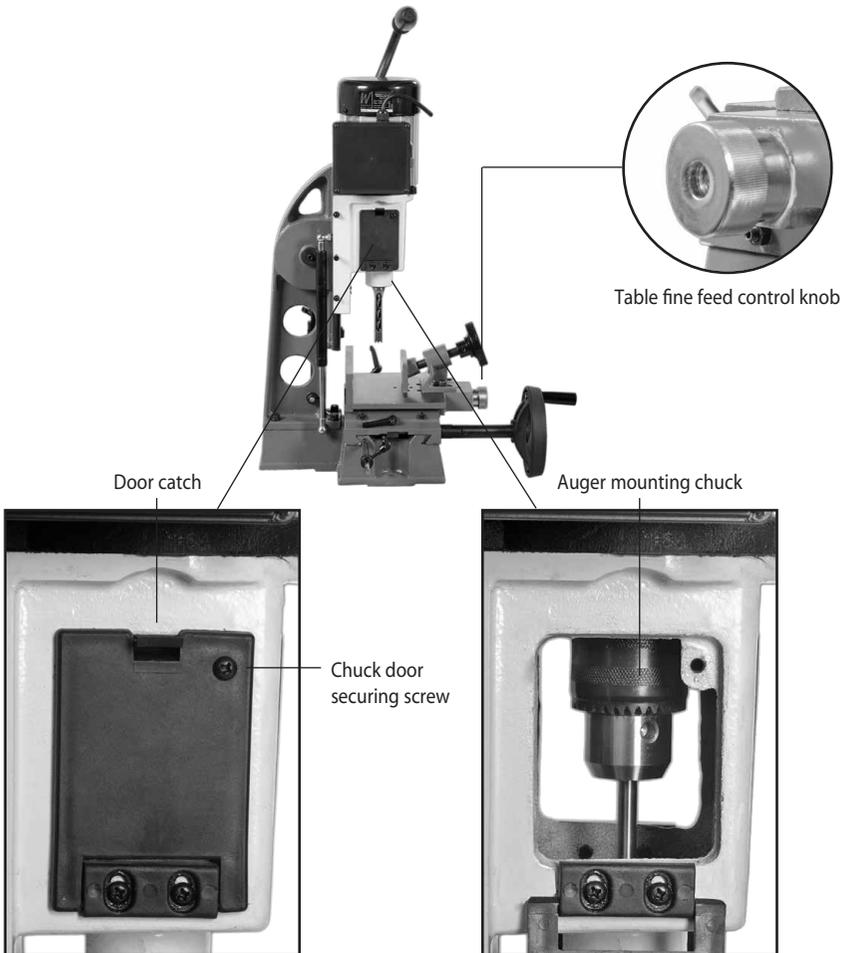


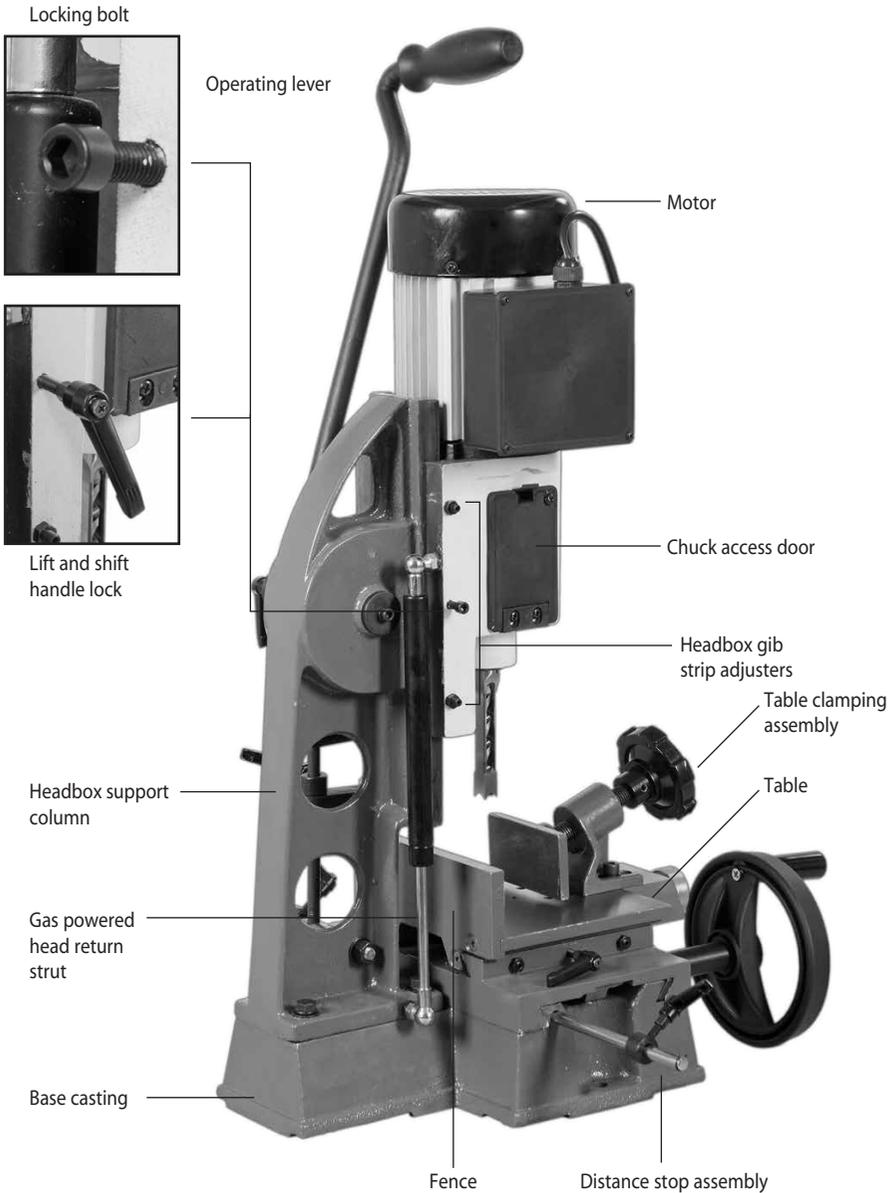
Table fine feed control knob

Door catch

Auger mounting chuck

Chuck door securing screw

# Illustration and Parts Description



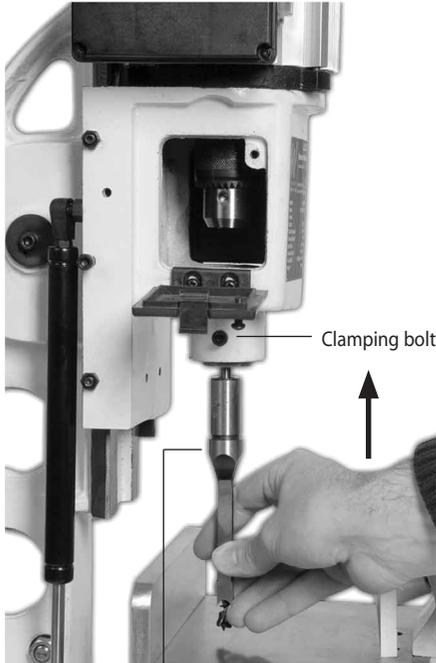
# Setting Up the Machine

## Initial Set up

Introduce the chisel into the adaptor collar, press the auger up into the chuck, tighten the chuck and withdraw

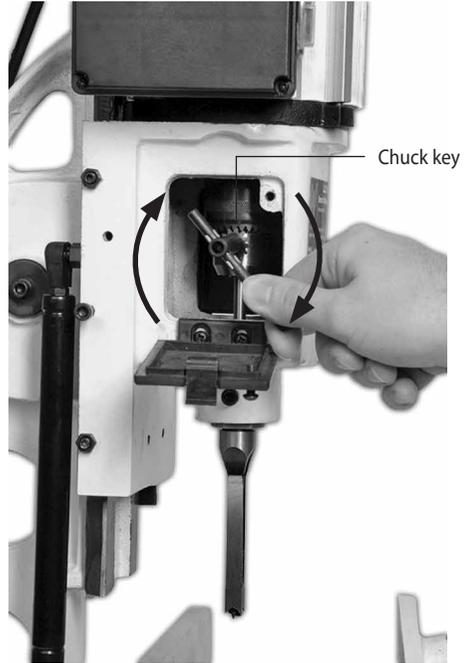
the chuck key. Gently pinch the chisel in place by finger tightening the clamping bolt. (See figs A,B)

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

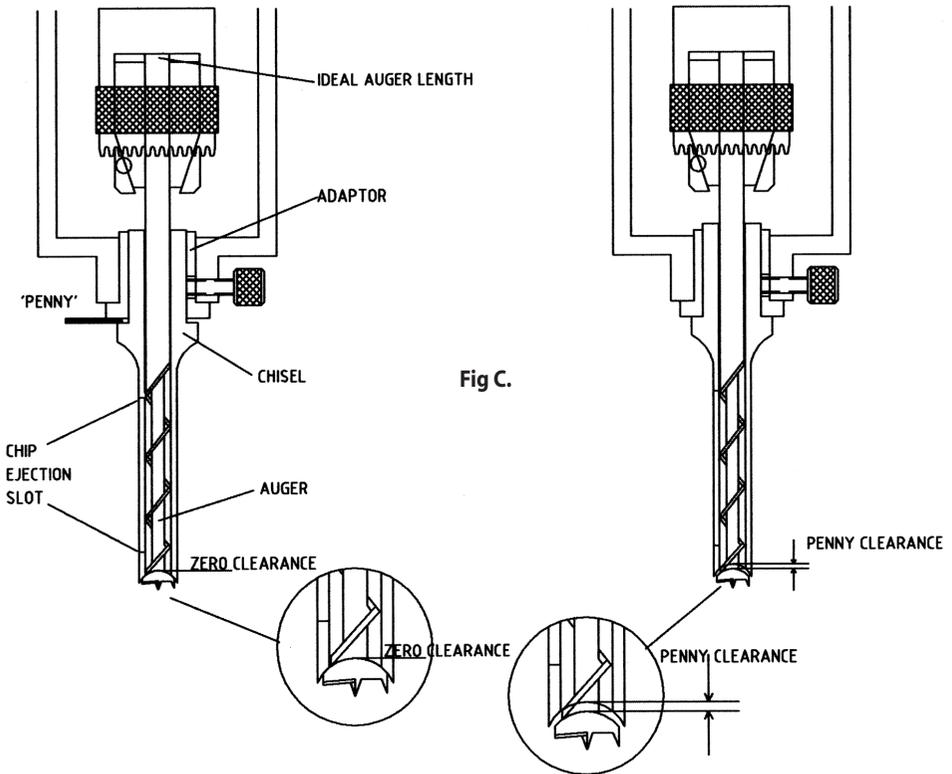


Fig C.

### 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 mortiser.

### 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 Mortise 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 'nudded' 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.

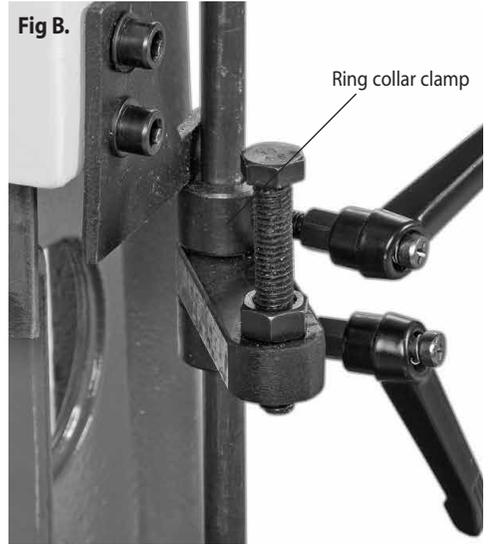
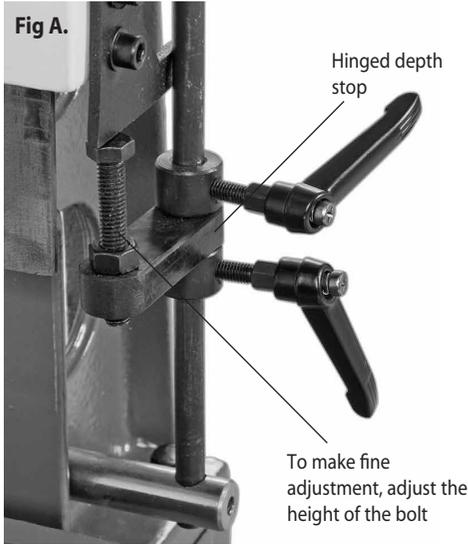
### Headbox Rise Adjustment

Coupled with the depth stop on the same assembly is the head box rise limiter. This limits the rise of the headbox / 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).



## Optional: (950175) Spacer Block Assembly

The headbox support column can be raised by fitting the spacer block (H). Remove the four M10 bolts (a) that secure the support column.

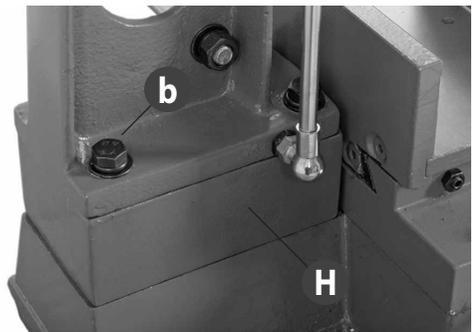
Locate the spacer block (H) and the four M10 x 74mm bolts (b), line up holes in the base casting, place the headbox support column on top, line up the holes and secure in position using the four M10 x 74mm bolts (b), washers, spring washers and tighten using a 14mm spanner.



**YOU MAY REQUIRE ASSISTANCE AS THE HEADBOX SUPPORT COLUMN IS HEAVY**



Before



After

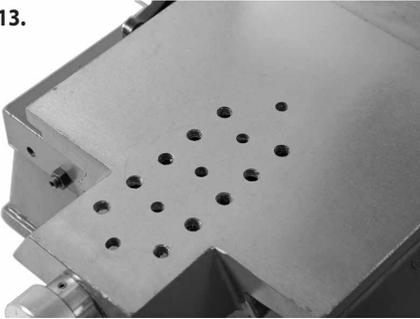
## Setting Up the Machine

### 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

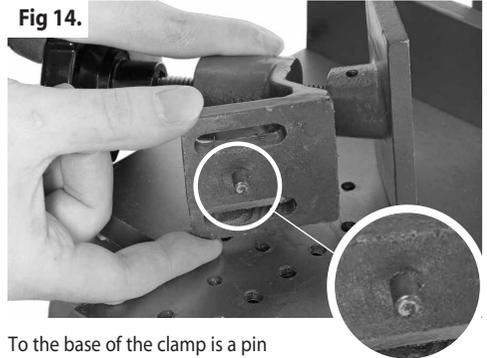
which slots into the centre holes in the table to prevent movement (See figs 13 and 14). The clamp can also be pivoted to clamp uneven shapes (See figs 17 and 18).

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.

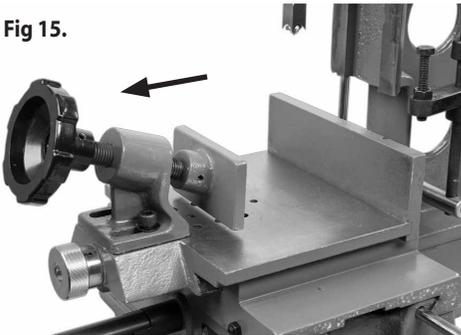
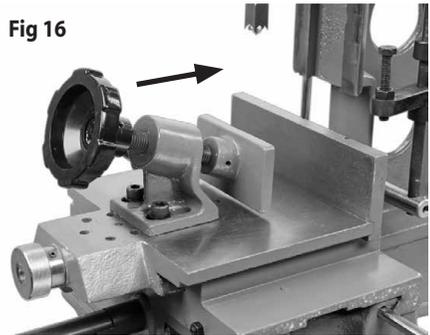


Fig 16



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

Fig 17.

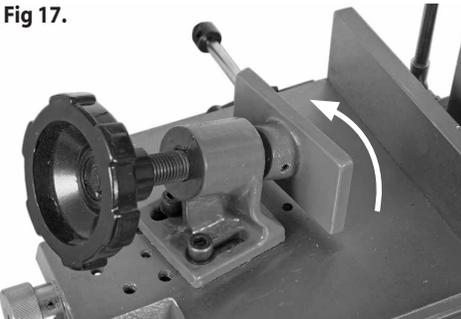
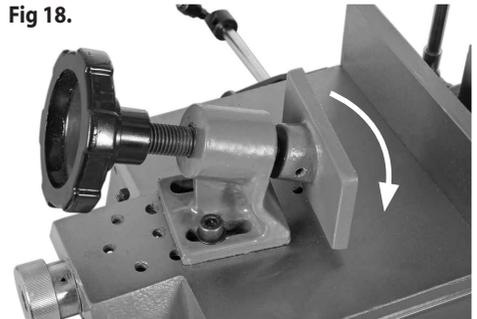


Fig 18.



The clamp can be pivoted to clamp uneven shapes.

# Optional Accessories

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## Headbox support column Spacer Block Assembly (Order no: 950175)

H



M10 x 74mm bolts

## Drill Chuck and Adaptor (Order no: 400287)

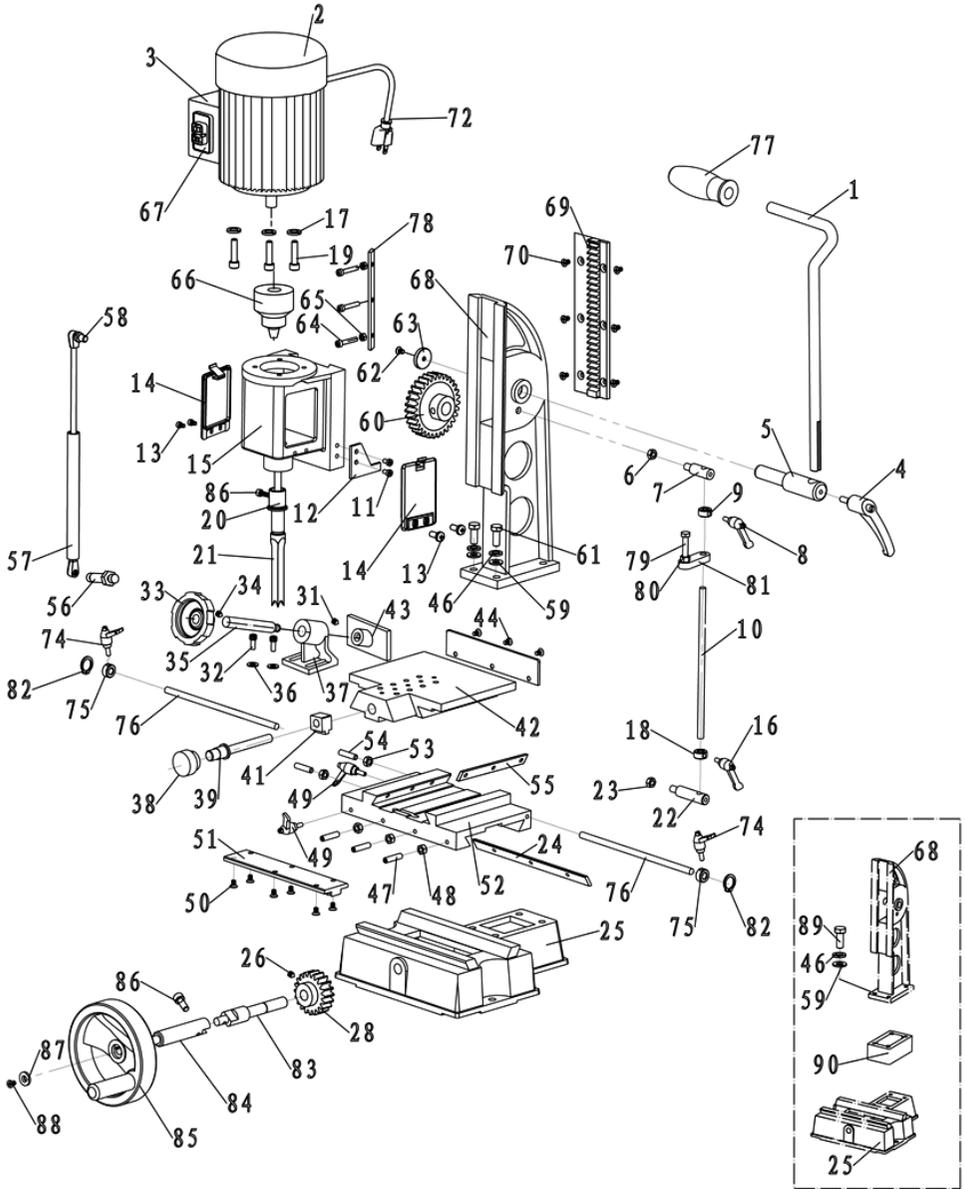
I



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



# Exploded Diagrams/Lists



## Exploded Diagrams/Lists

Part No.	Description	QTY
1	Operating Lever	1
2	Motor	1
3	Switch Box	1
4	Handle Screw	1
5	Operating Shaft	1
6	Nut	1
7	Screw	1
8	Handle Screw	1
9	Setting Collar	1
10	Guide Column	1
11	Screw	2
12	Localiser	1
13	Screw	4
14	Cover	2
15	Headbox Casing	1
16	Handle Screw	1
17	Washer	3
18	Setting Collar	1
19	Bolt	3
20	Chisel Bushing	1
21	Chisel	1
22	Screw	1
23	Nut	1
24	Drift	1
25	Base	1
26	Screw	2
28	Gear	1
31	Screw	1
32	Bolt	2
33	Table Clamp	1
34	Screw	1
35	Lead Screw	1
36	Washer	2
37	Connecting Bend	1
38	Table Control Knob	1
39	Lead Screw	1
41	Lead Nut	1
42	Table	1
43	Clamp Plate	1
44	Screw	4
46	Spring Washer	2
47	Screw	3

Part No.	Description	QTY
48	Nut	3
49	Handle Screw	2
50	Screw	6
51	Rack	1
52	Sliding Plate	1
53	Nut	2
54	Screw	2
55	Drift	1
56	Screw	1
57	Gas Spring	1
58	Screw	1
59	Washer	4
60	Gear	1
61	Bolt	4
62	Screw	1
63	Plate	1
64	Screw	3
65	Nut	2
66	Chuck	1
67	Switch	1
68	Column	1
69	Rack	1
70	Screw	6
72	Power Cord	1
74	Handle Screw	2
75	Setting Collar	2
76	Distance Stop Rod	2
77	Grip Sleeve	1
78	Drift	1
79	Bolt	1
80	Nut	1
81	Plate	1
82	C-Ring	2
83	Gear Shift	1
84	Handle Shaft	1
85	Hand Wheel	1
86	Set Screw	1
87	Washer	1
88	Set Screw	1
89	Bolt	4
90	Riser Block	1





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