charnwood

Woodworking machinery at its best!

HOLLOW CHISEL MORTICER
OPERATORS MANUAL

MODEL: W316

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

Tel. 01530 516 926 Fax. 01530 516 929
email: sales@charnwood.net website: www.charnwood.net

GENERAL SAFETY RULES

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

1. Know your machine. For your own safety, read the owner's manual carefully. Learn its application and limitations, as well as specific potential hazards pertinent to this machine.

2. Make sure all tools are properly earthed.

3. Keep guards in place and in working order. If a guard must be removed for maintenance or cleaning, make sure it is properly replaced before using the machine again.

4. Remove adjusting keys and spanners. Form a habit of checking to see that the keys and adjusting spanners are removed from the machine before switching 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, rings, bracelets, and jewellery which could get caught in moving parts. Non-slip footwear is recommended. Wear protective hair covering to contain long hair.

12. Always use safety glasses. Normal spectacles only have impact resistant lenses. They are not safety glasses.

13. Do not over-reach. Keep proper footing and balance at all times.

14. Maintain 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 its power source before servicing and when changing the chisel.

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.

ADDITIONAL RULES FOR MORTICERS

1. Support the chisel with a piece of wood when inserting or removing it from the tool. This will protect your fingers from the very sharp points!

2. When morticing long boards use one or more roller stand(s) to support the work.

3. Do not cut material that is badly warped or which has screws or nails in it.

Note: This morticer has been designed and built solely as a woodworking machine. Do not modify it in any way or use it for anything other than its designated purpose. Neither the manufactures nor the supplier are liable for any damage or injury caused by incorrect assembly, operation or electrical connection of this machine.

Important:

Risk of Injury!
Never reach into the moving tool

Wear Eye Protection

Wear Ear Protection

Specification

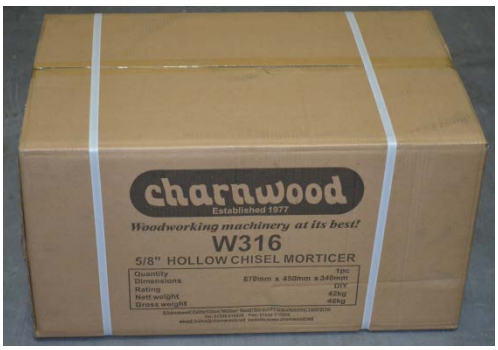
From chisel bush to table	220mm
Max. Timber height (with 1/2” chisel fitted)	110mm
Timber clamping width	25mm (1”) to 125mm (5”)
Chisel capacity	1/4” to 5/8”
Vertical chisel stroke	104mm (4”)
Chisel shank diameter	3/4”
Table travel (left to right)	170mm
Table travel (front to back)	75mm
Motor (induction)	375W (1/2” hp), 240v
Motor speed	1400 rpm
Weight	42kg
Rating	Hobby
Warranty	1 year

Rating Description

Hobby: Suitable for Weekend DIY'ers and woodworking enthusiasts.
Generally lighter weight machines with lower power ratings and smaller tooling capacities. Typically only ever used by one person for short periods of time or longer periods of time infrequently. Machinery should be well maintained in a clean, dry environment such as a home workshop, garage or timber shed. **Expected maximum use of 100 hours annually**.

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

Unpacking

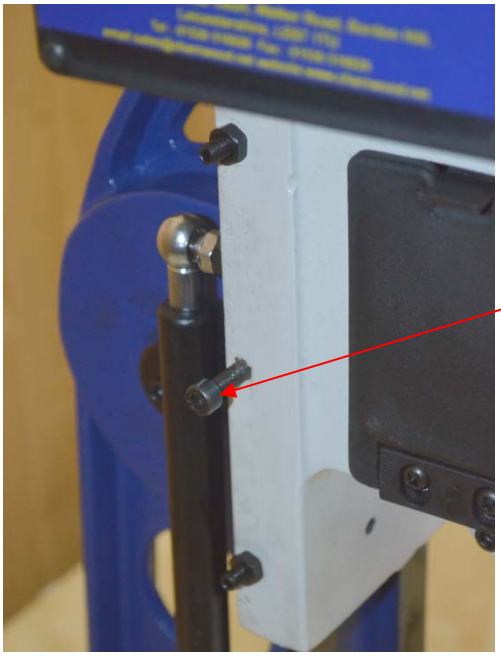


Cut the strapping, open the carton and remove all parts from the packaging.

Place them all on a bench, a two man lift is recommended for the main part of the machine.

Familiarise yourself with the components and read this instruction manual.

Assembly



Locate the transport locking screw on the left hand side of the head. Loosen it using a 5mm hex key.

Fit the handle shaft.

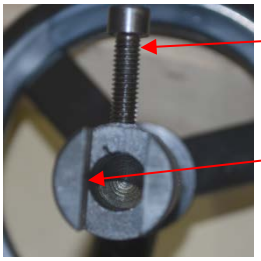
Line up the castellated end to the gear shaft, which is already fitted.

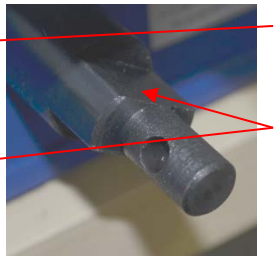
Fit the locking bolt with spring, down the centre of the shaft and secure it with a screwdriver.

Fit the operating handle.

Feed the handle into the handle shaft until the pivot pin is touching the shaft.

Secure the handle using a washer, spring, washer and nut.



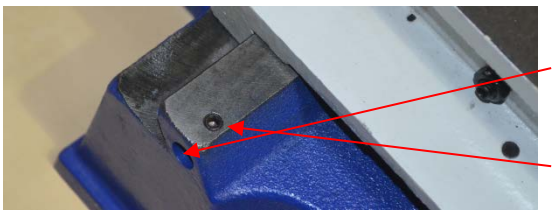


Take the large hand wheel and loosen the socket head bolt.

Place it over the spindle, which controls the left/right movement of the sliding bed, ensuring that the flats engage.
Use a 5mm Hex key to tighten the bolt.

Screw in the winding handle.

Slide a stop onto each of the chrome plated rods and take note of the dimple at one end of each rod.



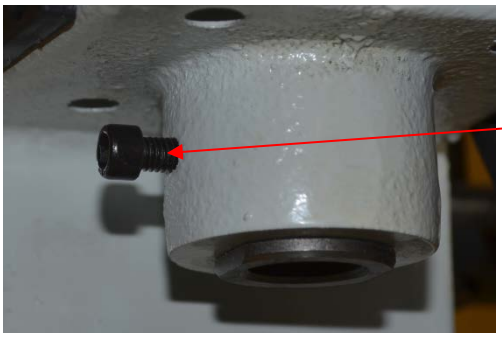
Insert one rod into the hole at each side of the base.

Tighten the grub screw using a 3mm hex key to lock the rods in place.

To gain access to the chuck for chisel and auger fitting or changing, you will need to loosen this screw (Ph2 head) and hinge the door downwards.

The chuck is now accessible.

Please note that the chuck key is spring loaded and that it needs to be pressed in firmly to engage.



The chisel bushing is held in position by this set screw. It passes through the bushing and, when tightened, locks the chisel in place.

The tooling comes in 2 parts:

Hollow Chisel

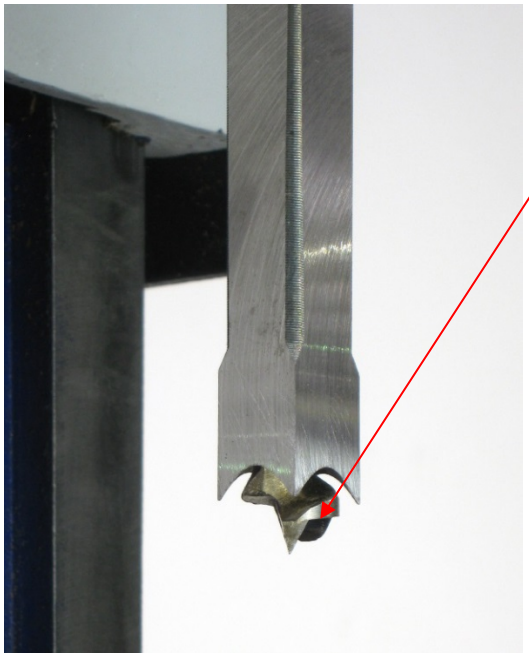
Auger Bit

The auger must be inserted into the chisel prior to being inserted into the chuck. Take care when handling, the tips of the chisel are very sharp.

Setting the Chisel & Auger

Wearing a sturdy glove or using a cloth to support the sharp end of the chisel & auger, insert the chisel & auger up into the bushing and into the drill chuck.
Lock the chisel into place using the socket head bolt.

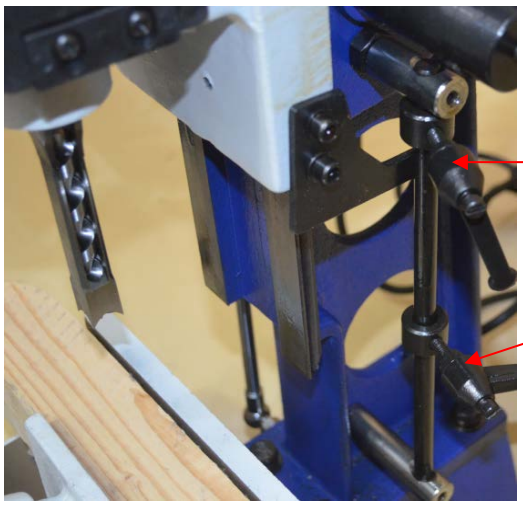
Next set the height of the auger and lock it in place with the chuck key.



The Auger has a spur in the centre and a flat cutting lip. This cutting lip must be set below the four points of the chisel.
The recommended setting between the chisel tips and the flat cutting lip is between 2mm to 5mm. Set the height of the auger and then lock it into the chuck using the chuck key.

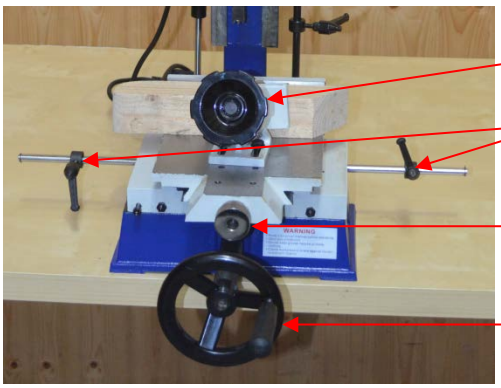
Try adjusting the height setting of the auger if cutting the mortice proves difficult in hardwood or if the waste wood is not being carried up the flute of the auger for ejection.

The chisel has an open side. This is to allow the waste wood to be ejected from the side. The chisel should be aligned with the slot facing to the right. To adjust it, leaving the auger in place, loosen the chisel locking bolt and rotate the chisel.



The top position (starting position) of the morticing head can be set by use of the upper stop. This is used to save time when working with smaller timber.

The depth of the mortice can be set by moving the lower stop to the desired position.



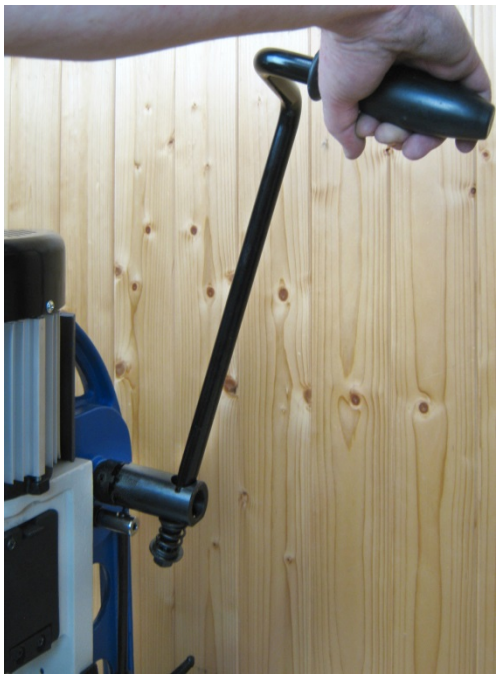
This wheel operates the work piece clamp.

These are the left and right end stops.

The small wheel controls the longitude (forwards and backwards) movement of the sliding bed.

The large wheel controls the lateral (left and right) movement of the sliding bed.

To start and stop the morticer, it is fitted with an NVR switch, located on the left hand side of the motor housing.



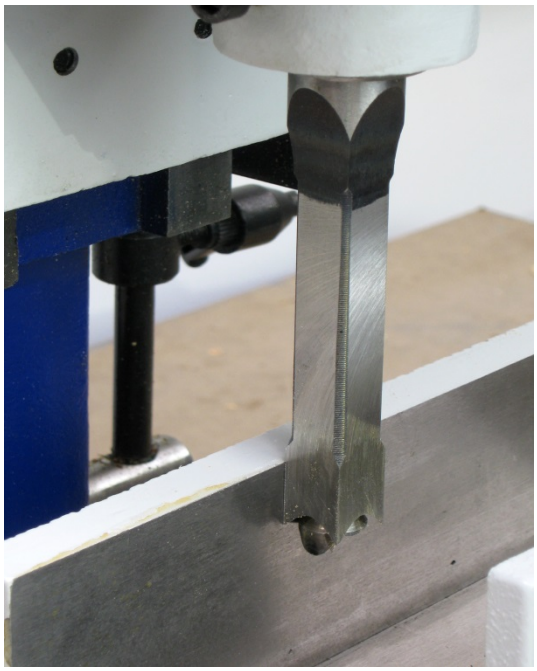
The starting position of the operating handle can be adjusted to a convenient and comfortable position.

Take hold of the hand grip and pull the handle to the right. This will disengage the teeth of the handle shaft and the handle can now be rotated forwards or backwards to the desired starting position.

To set the position move the handle back to the left, which will re-engage the teeth on the shaft.

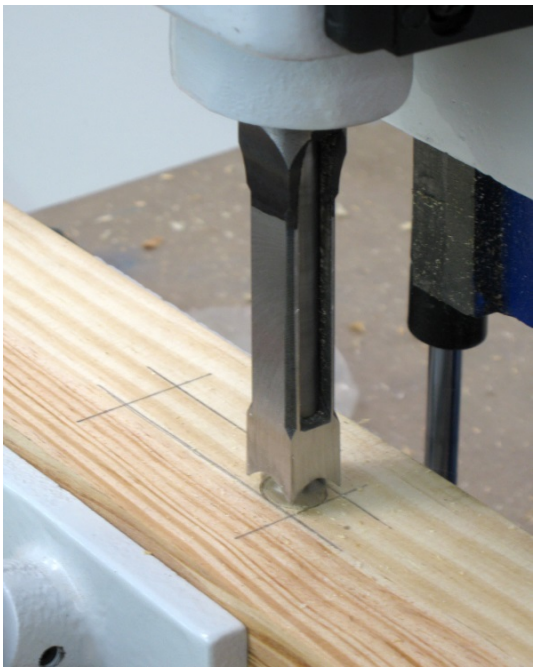
Using the Morticer

Set the gap between the auger cutting lip and chisel tips.



Next set the chisel square to the back fence. The easiest way to do this is to lower the chisel and wind the sliding bed forwards until it just touches the back of the chisel.
If necessary, rotate the chisel until it is square.

When setting the depth of a mortice, allow for the fact that the drill bit precedes the chisel, which actually cuts the square shape. The tip of the auger cuts indentations in the bottom of the mortice. These are useful. When the joint is glued up and assembled some of the glue is scraped from the sides and the irregular bottom surface gives that displaced glue somewhere to go.



You may find it helpful to mark the outline of the mortice, including the depth, on the outside of the work piece. Set the depth limiter so that the points of the chisel reach the marked line. The tip will go below this line.

Clamp the workpiece firmly to the bed, the angle of the clamp is designed to hold down the timber when the chisel is raised. If not clamped securely the workpiece may lift off the bed when the morticer head is raised.

Assuming that you have set the open side of the chisel facing to the right, make the first cut at the right hand end of the mortice. Using the large handwheel, move the sliding bed so that the right hand end of the mortice is lined up with the right hand side of the chisel.
Using the small wheel, line the front of the mortice up with the front of the chisel.

Start the motor, wait for it to come up to speed, pull down on the down feed handle of the morticer. You should aim for a cut rate that does not cause the motor to labour but still produces a progressive entry of the chisel into the wood.

If a deep mortice is being cut, it should be completed in two passes.

It is important that the chips produced by the cut are able to eject from the chisel.

Make the first cut to a depth of about 20mm then raise the chisel. Now move the table to the right and start the next cut. Position the table so that the chisel cuts almost its complete width. The chippings will be ejected into the space created by the previous cut. Continue moving along the mortice, cutting a series of holes, until the complete length of the mortice has been cut.

If a mortice deeper than 20mm is required:

Go back to the position of the first cut and repeat the procedure going deeper with the chisel.

If the width of the mortice is bigger than the chisel being used:

Use the small silver hand wheel to move the table backwards and again repeat the procedure to cut another series of holes in front of the first set.

If required, clean out the mortice with a suitable sized flat chisel or screwdriver.

Maintenance

Little maintenance is required. Keep the machine clean. Lubricate ths slides and other moving parts occassionally

It is possible to sharpen the flat lip and the spur of the auger with a small diamond file or slip stone.

The chisel can only be sharpened with a specialist tool but these are very expensive and it is generally better to consider the chisel and auger set as disposable.

Troubleshooting

Problem	Cause	Remedy
Machine does not start	Blown Fuse	Replace Fuse
	Loose switch terminal	Inspect back of switch
	Faulty switch	Replace switch
Chisel will not fit into the bush	Incorrect shank size on Chisel	This morticer uses 3/4” diameter shank. An optional bush is available to use chisels with a 13/16” diameter shank
Only starts when Green button is held down	Faulty switch	Replace switch
Machine does not run but buzzing noise heard from motor	Failed capacitor	Replace the motor start capacitor.
Cuts are slow, wood is blackened	Chisel & auger is blunt or damaged	Examine the tooling. If damaged or worn it should be replaced
Chisel smokes or starting to blue	Check clearance from auger to chisel is adequate	Adjust height of auger
	Spiral flute of the auger is blocked up	Clear any blockage before continuing
	Speed of cut is too slow	Move chisel through timber faster

Declaration of Conformity for CE Marking

Charnwood Declare that Hollow Chisel Morticer, Model W316

Conforms with the following Directives: Machinery Directive 2006/42/EC
Low Voltage Directive 2006/95/EC

And further conforms to the machinery example for which the EC type examination Certificate No. AM 50171994 and AN 50171993 have been issued by TUV Rheinland LGA Products GmbH, Tillystrasse 2, 90431, Nurnberg.

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 directive.

Signed: R Cook Dated: 17/03/2010 Location: Leicestershire

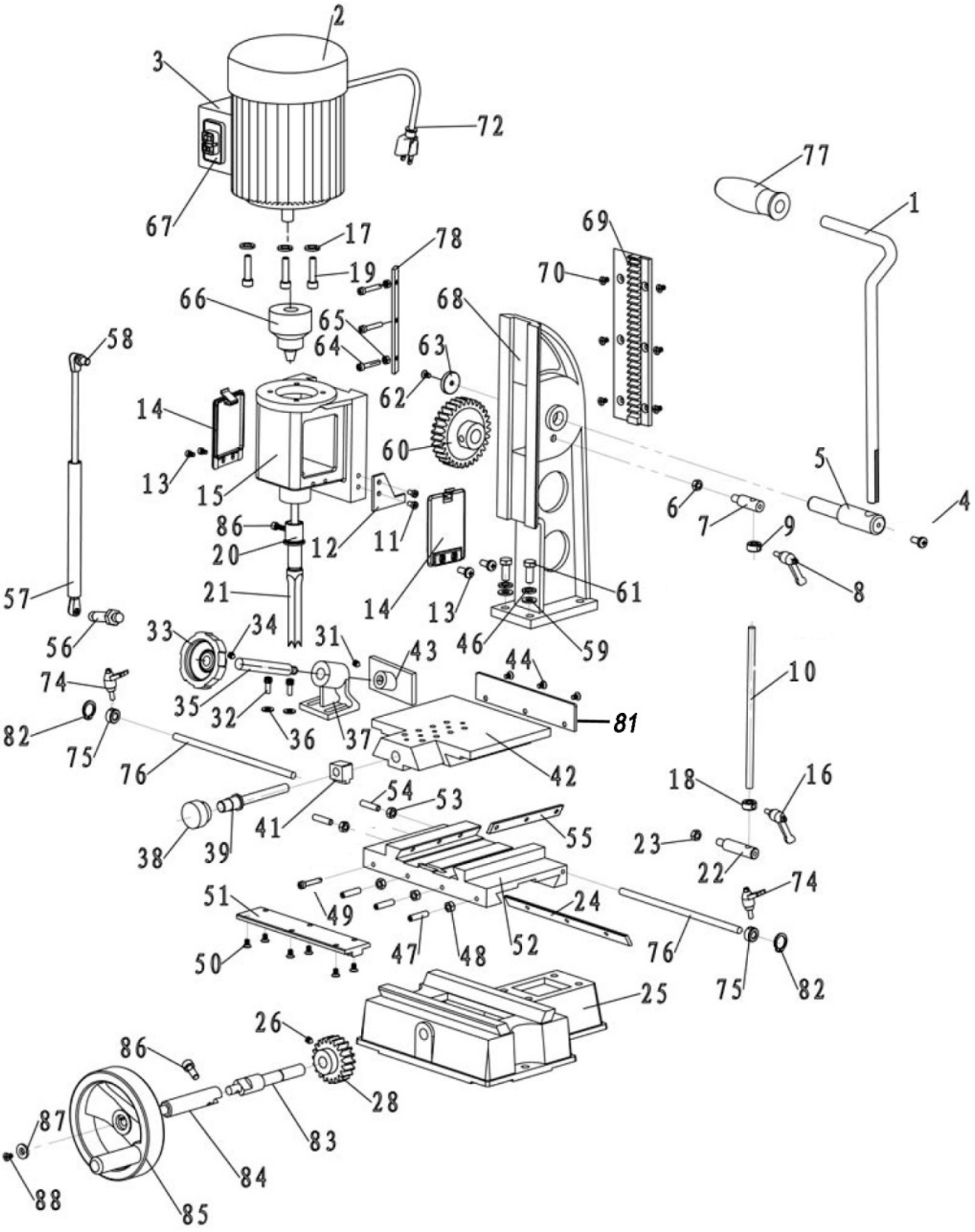
Richard Cook, Director

Please dispose of packaging for the product in a responsible manner. It is suitable for recycling. Help to protect the environment, take the packaging to the local amenity tip and place into the appropriate recycling bin.

Only for EU countries
Do not dispose of electric tools together with household waste material!
In observance of European Directive 2002/96/EC on waste electrical and electronic equipment (EEE) and its implementation in accordance with national law, electric tools that have reached the end of their life must be collected separately and returned to an environmentally compatible recycling facility.

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

Charnwood W316 Morticer Parts Diagram



Charnwood W316 Morticer Parts List

Part No.	Description
1	Operating Handle
1a	Washer 32 dia x 18 Bore
1b	Spring
1c	Washer 32 x 12 Bore
1d	Nut
2	Motor 375W 240V
3	Switch Box
4	Handle Shaft Bolt
5	Gear Shaft
5a	Handle Shaft
5b	Spring
6	Nut
7	Upper Guide Mount
8	Handle Screw
9	Setting Collar
10	Guide Column
11	Screw
12	Stop Plate
13	Screw
14	Cover
15	Headbox Casting
16	Handle Screw
17	Washer
18	Setting Collar
19	Bolt
20	Chisel Bushing
21	Chisel(Not Included)
22	Lower Guide Mount
23	Nut
24	Slide Plate
25	Base Casting
26	Grub Screw
28	Gear
31	Screw
32	Bolt
33	Table Clamp
34	Screw
35	Lead Screw
36	Washer
37	Clamp Casting
38	Table Control Knob
39	Lead Screw
41	Lead Nut

Part No.	Description
42	Table Casting
43	Clamp Plate
44	Screw
46	Spring Washer
47	Screw
48	Nut
49	Screw
50	Screw
51	Rack
52	Intermediate Table
53	Nut
54	Screw
55	Slide Plate
56	Lower Spring Coupling
57	Gas Spring
58	Upper Spring Coupling
59	Washer
60	Gear
61	Bolt
62	Screw
63	Plate
64	Screw
65	Nut
66	Chuck
67	Switch CK1/KJD6
68	Column
69	Rack
70	Screw
72	Power Lead
74	Handle Screw
75	Setting Collar
76	Distance Stop Rod
77	Grip Sleeve
78	Slide Plate
82	C Ring/Circlip
83	Gear Shaft
84	Handle Shaft
85	Hand Wheel
86	Set Screw
87	Washer
88	Set Screw
90	Capacitor 8uf 450V

charnwood

Woodworking machinery at its best!

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

Tel. 01530 516 926 Fax. 01530 516 929
email: sales@charnwood.net website: www.charnwood.net