V-Way Mortiser Manual

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Model Numbers: MMORT2000-0250

Table of contents

Safety Rules.

As with all machinery there are certain hazards involved with the operation and use. Using it with caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. If you have any questions relative to the installation and operation, do not use the equipment until you have contacted your supplying distributor.

Read the following carefully before operating the machine.

1. **Keep the working area clean and be sure adequate lighting is available.**
2. **Do not wear loose clothing, gloves, bracelets, necklaces or ornaments. Wear face, eye, respiratory and body protection devices as indicated for the operation or the environment.**
3. **Be sure that the power is disconnected from the machine before tools are serviced or an attachment is to be fitted or removed.**
4. **Never leave the machine with the power on.**
5. **Do not use dull, gummy or cracked cutting tools.**
6. **Be sure that the keys and adjusting wrenches have been removed and all the nuts and bolts are secured.**

Limited Warranty

New machines and accessories sold by Laguna Tools carry a one-year warranty effective from the date of shipping. Machines sold through dealers must be registered with Laguna Tools within 30 days of purchase to be covered by this warranty. Laguna Tools guarantees all new machines and accessories sold to be free of manufacturers' defective workmanship, parts and materials. We will repair or replace, without charge, any parts determined by Laguna Tools, Inc. to be a manufacturer's defect. We require that the defective item/part be returned to Laguna Tools with the complaint. Any machines returned to Laguna Tools must be returned with packaging in the same manner in which it was received. If a part or blade is being returned it must have adequate packaging to ensure no damage is received during shipping. In the event the item/part is determined to be damaged due to lack of maintenance, cleaning or misuse/abuse, the customer will be responsible for the cost to replace the item/part, plus all related shipping charges. This limited warranty does not apply to natural disasters, acts of terrorism, normal wear and tear, product failure due to lack of maintenance or cleaning, damage caused by accident, neglect, lack of or inadequate dust collection, misuse/abuse or damage caused where repair or alterations have been made or attempted by others.

Laguna Tools, Inc. is not responsible for additional tools or modifications sold or performed (other than from/by Laguna Tools, Inc.) on any Laguna Tools, Inc. machine. Warranty maybe voided upon the addition of such described tools and/or modifications, determined on a case-by-case basis.

Software purchased through Laguna Tools Inc. is not covered under this warranty and all technical support must be managed through the software provider. Software is non-refundable.

Normal user alignment, adjustment, tuning and machine settings are not covered by this warranty. It is the responsibility of the user to understand basic machinery operation, settings and procedures and to properly maintain the equipment in accordance with the standards provided by the manufacturer.

Parts, under warranty, are shipped at Laguna Tools, Inc.'s cost either by common carrier, FEDEX ground service or a similar method. Technical support to install replacement parts is primarily provided by phone, fax, e-mail or Laguna Tools Customer Support Website. The labor required to install replacement parts is the responsibility of the user.

Laguna Tools is not responsible for damage or loss caused by a freight company or other circumstances not in our control. All claims for loss or damaged goods must be notified to Laguna Tools within twenty-four hours of delivery. Please contact our Customer Service Department for more information.

Only **new** machines sold to the original owner are covered by this warranty.
For warranty repair information, **call 1-800-332-4094**.

Noise emission.

Notes concerning noise emission :
Given that there exists a relationship between noise level and exposure times, it is not precise enough to determine the need for supplementary precautions. The factors affecting the true level of exposure to operators are clearly the amount of time exposed, the characteristics of the working environment, such as other sources of dust and noise, etc. for example, adjacent machines - in other words, the level of ambient noise. It is possible that exposure level limits will vary from country to country.

Specification sheet.

Motor	**3 HP**
Voltage	**220V Single phase**
Chuck capacity	**5/8 in**
Work table size	**8 in X 19 ½ in**
Side to side travel	**11 in**
Plunge travel	**5 ½ in**
Table vertical travel	**5 ½ in**
Maximum mortise height above the table	**9 ½ in**
Miter fence	**18 in X 2 ½ in**
Drill index centers	**16, 20, 22, and 25 mm**
Height to the top of the machine	**42 in**
Base size	**20 ½ in X 27 in**
Weight	**270 lbs**

Receiving your mortiser.

Note. It is probable that your machine will be delivered by a third party. Before you unpack your new machine you will need to first inspect the packing, invoice and shipping documents supplied by the driver.
Insure that there is no visible damage to the packing or the machine. You need to do this prior to the driver leaving. All damage must be noted on the delivery documents and signed by you and the delivery driver. You must then contact the seller [Laguna Tools] as soon as practical. If damage is found after delivery, contact the seller as soon as is practical.

Note. It is probable that you will find sawdust within your machine. This is because the machine has been tested prior to shipment from the factory and/ or Laguna Tools.
Laguna Tools endeavours to test machines prior to shipping to customers as movement can take place during transportation. It must be noted that additional machine movement can take place between Laguna Tools and the end user and some adjustments may have to be undertaken by the customer. These adjustments are covered in the various sections of this manual.

Introduction to your mortiser.

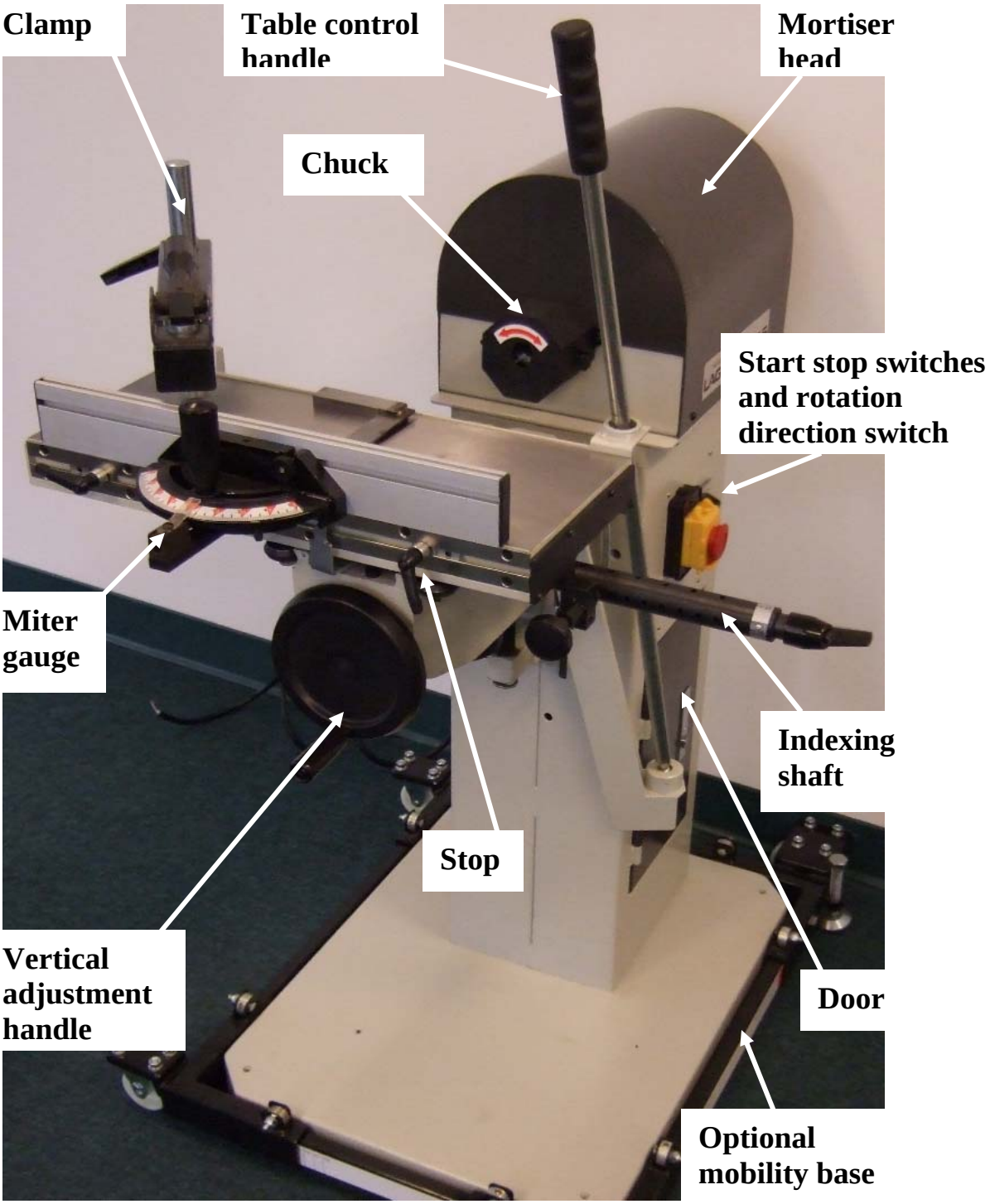
This machine is designed to give you years of safe service. Read the owners manual in its entirety before assembly or use.

Identification.

There is a plate at the back of the machine listing all the manufacturing data, including the model, etc.

Parts of the mortiser.

The mortiser consists of a number of major parts, which are discussed in this manual. Take the time to read this section and become familiar with the machine.



Base column.
The base column is fabricated from heavy gauge steel sheet. It houses the electrical system, and the on/off switch. It has a door that allows access to the inside of the column, which can be used for storage.

Mortiser head.
The mortiser head houses the motor, which has the chuck attached. The chuck is protected by a guard with a hinged access flap.

Table assembly.
The table assembly is constructed from cast iron. It provides movement in all three planes, and is provided with stops. The dust collection port is located under the table, and is 4” in diameter.

Clamp.
The machine is provided with a clamp that is fully adjustable and has two holes that allow for different clamp reach options.

Table adjusting lever.
The table adjustment lever, allows the operator to control the, in/out and left/right movement, from a single lever.

Miter gauge.
The miter gauge is adjustable from – 60 to +60 degrees. The fence can be adjusted left/right to suit the job.

Indexing shaft.
The machine has an indexing shaft that will allow holes to be drilled on 16, 20, 22, and 25mm centers.

Electrical system.
The electrical control system is housed inside the body of the machine. The power cord is not supplied with a plug, as the type of plug will vary dependant on your installation.

What you will receive with the mortiser.

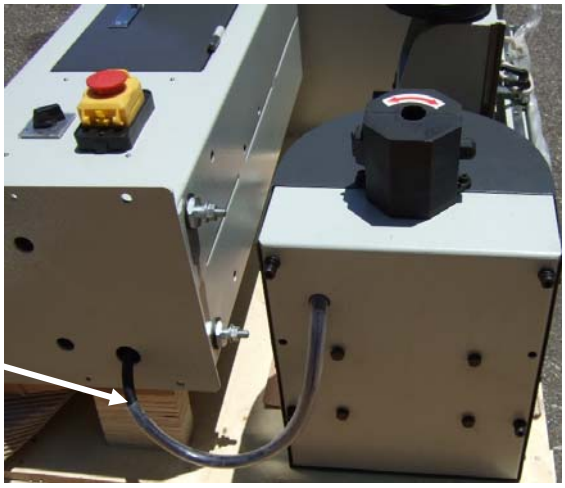
Where to locate your mortiser.
Before you remove your machine from the packaging, select the area where you will use your machine. There are no hard and fast rules for its location, but below are a few guidelines:
1. There should be an area at the front of the machine suitable for comfortable working.
2. There should be sufficient area at the back of the machine to allow access for adjustments and maintenance to be conducted.
3. Adequate lighting. The better the lighting the more accurately and safely you will be able to work.
4. Solid floor. You should select a solid flat floor, preferably concrete or something similar.
5. Locate it close to a power source and dust collection.
6. Allow an area for the storage of blanks, finished products and tools.

Unpacking your mortiser

To unpack your mortiser, you will need tin snips, knife, screwdriver and a wrench.
1. Using the tin snips, cut the banding that is securing the packing box [If fitted]. **WARNING: EXTREME CAUSION MUST BE USED, BECAUSE THE BANDING WILL SPRING AND COULD CAUSE INJURY.**

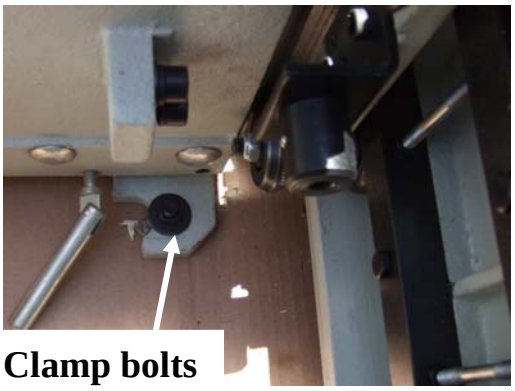
2. Dismantle the box, including the sides as this will ease access to the machine.
3. Remove the bolts that secure the mortiser head to the base of the box. You will have to access them from the under side of the box base.
Note. The mortiser head is heavy, and you must use caution when removing the fixing bolts. Also you must use caution when removing the mortiser head from the box base.

Note. The mortiser head comes pre-wired to the base column, and the cable has to be fed back into the base column when assembling the mortiser head onto the base column.



Electrical cable

4. Remove the bolts that attach the table assembly to the base of the box.



Clamp bolts

Note. The machine is heavy. Ensure that you have sufficient people.
Note. If you have any doubt about the described procedure, seek professional assistance. Do not attempt any procedure that you feel is unsafe, or that you do not have the physical capability of achieving.

Outer socket head screws

Assembly and setup

Assembling the mortiser head to the base column.

1. Remove the four outer socket head screws from the mortiser head.

2. Lift the mortiser head from the box base and rotate so that the chuck is in line with the side of the base column with the two table fixing bolts.

Mortiser head fitted

3. While feeding the electrical cable into the base column, line up the mortiser head so that the four remaining socket head screws fit into the holes in the base column. Clamp the

mortiser head to the base column with the four socket head screws that you removed.

4. Slide the assembly so that the base is off the box base.

5. Lift the mortiser head end of the machine, and tip until the machine is standing vertically on the base.

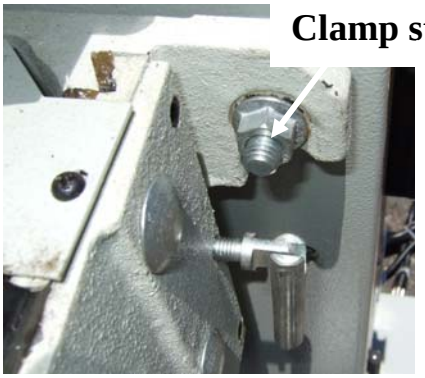
Mortiser base off the box base

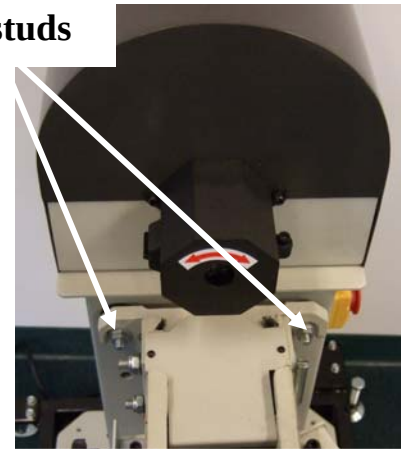
Fitting the table assembly.

1. Loosen the two clamp nuts on the studs that are on the side of the column, [do not remove the nuts].

2. The table assembly has two slots that will locate onto the studs. Slide the table assembly on to the studs and tighten the nuts.

Clamp studs





Note. If you have any doubt about the described procedure, seek professional assistance. Do not attempt any procedure that you feel is unsafe, or that you do not have the physical capability of achieving.

Clamp

Fitting the clamp.

1. Fit the clamp shaft into the hole on the side of the table, and secure with the nut and washer.

2. Slide the clamp arm onto the shaft and secure with the locking handle.

Lever bracket

Lever clamp screw

Fitting the table adjusting lever.

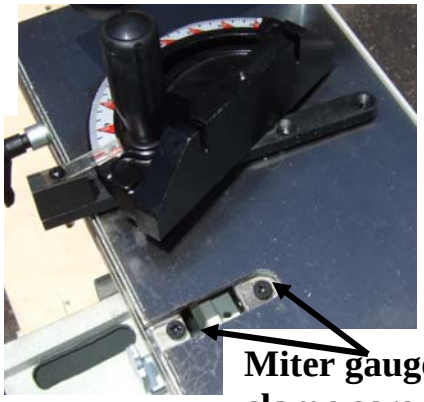
1. Remove the two screws, fit the bracket as shown and refit the screws.

2. Remove the screw at the bottom of the bracket.

3. Slide the table adjusting lever through the swivel bearing in the table, and locate the end in the pocket at the bottom of the bracket.

4. Refit the screw to retain the lever.

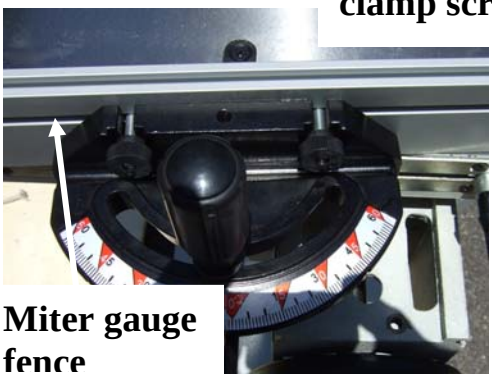
Miter gauge



Fitting the miter gauge.

1. Remove the two screws.

2. Fit the miter gauge in the slot and refit the screws.



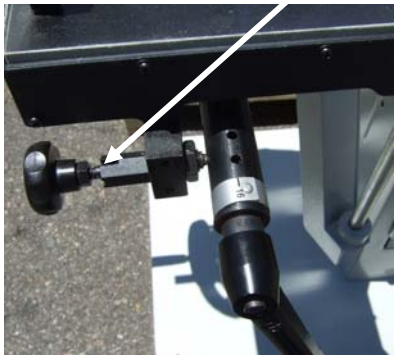
Fitting the fence to the miter gauge.

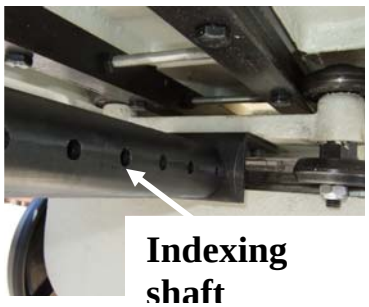
Slide the fence clamping screws into the slots in the miter gauge and clamp in position.

Fitting the indexing shaft.

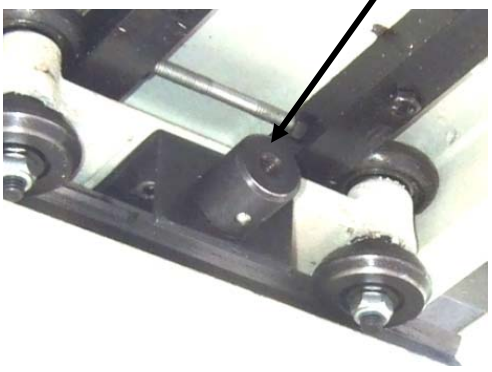
Screw the indexing shaft on to the base which is located on the underside of the table assembly, and tighten with the locking handle. Fit the index pin plate to the end of the table.

Index pin

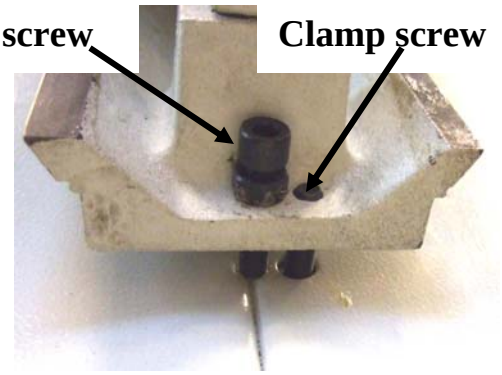




Index spigot



Adjusting the mortiser.



Adjusting the table parallel to the mortiser spindle.

The table is attached to the column by two studs located at the top of the table. There is another screws located at the bottom of the main casting, which is used to jack the table parallel to the chuck.

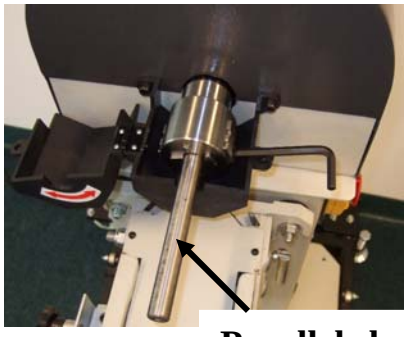
1. Fit the clamp screw from the inside of the column into the tapped hole in the casting so that it pulls the jacking screw tight.

2. Open the chuck cover by removing the allen screw.

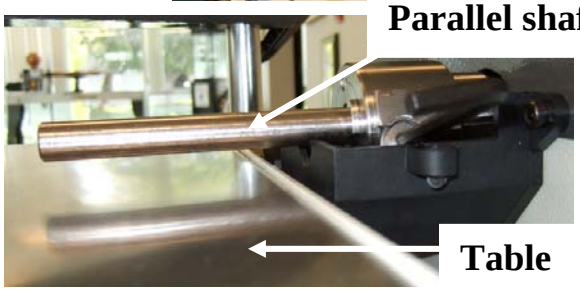
3. Fit a parallel shaft in the chuck and tighten the chuck.

Note. The maximum diameter of shaft that the chuck can accommodate is 5/8 in. [15mm], and the shaft should not be longer than 9 in.

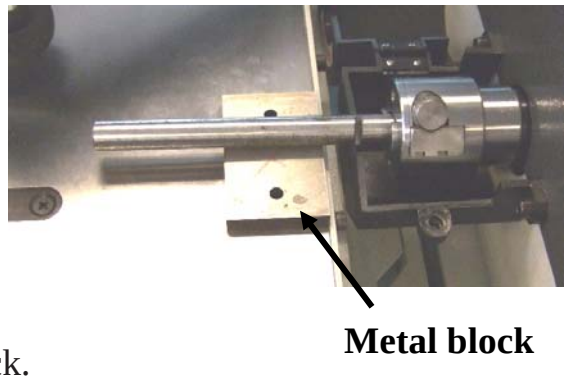
4. There are several methods for checking that the shaft is parallel to the table.



The method that we have found that is most convenient, is:
Place a parallel piece of metal between the table and the shaft.
Bring the table up so that the metal just touches the shaft.



Move the metal along the shaft from end to end, checking that it just touches the shaft.
If adjustment is needed, loosen the clamp screw, and adjust the jacking screw either in or out depending on the direction of the error.
Once the adjustment has been made, re-clamp the clamping screw and re-check.



Adjusting the table square to the mortiser spindle.
Check that the spindle is square to the table with a square. If the table needs adjustment, loosen the screws that clamp the mortiser head to the base column, move the head and re-clamp.

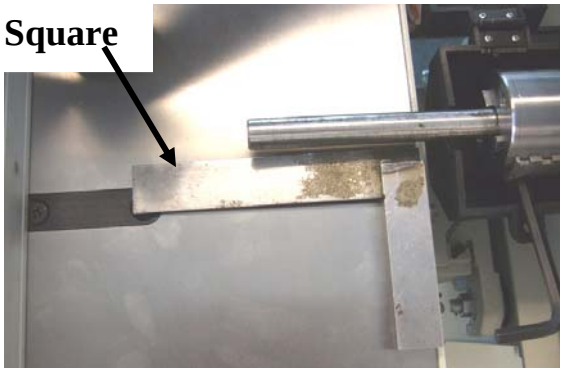
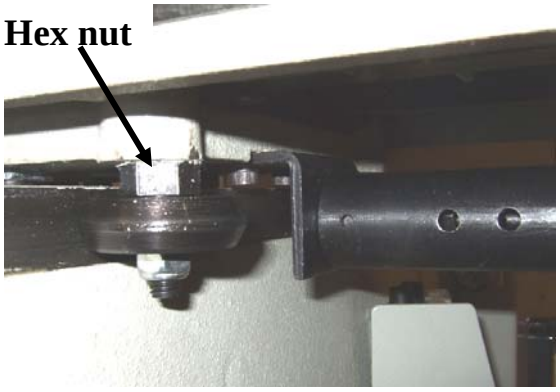
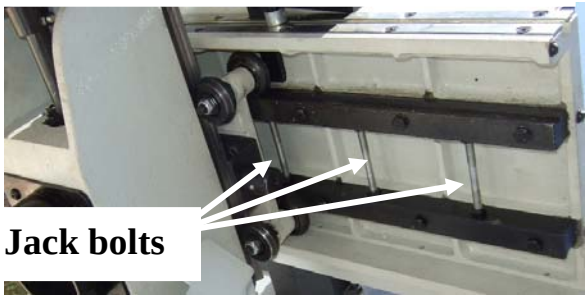


Table V-groove adjustment.
The clearance between the table and the V-grooves comes factory set. Should adjustment be required the following procedure should be followed:

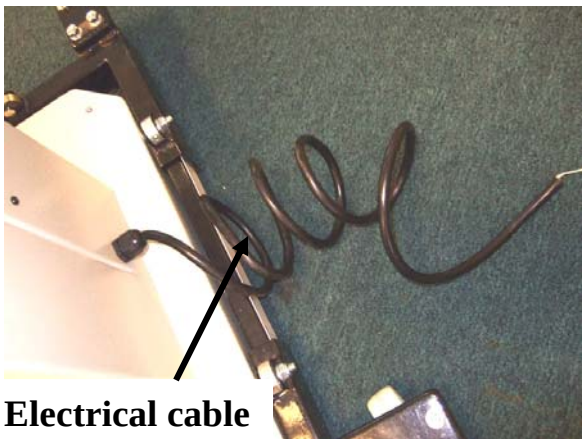


Forward/back movement adjustment.
The steel wheels have eccentric shafts and can be adjusted by rotating the hex nut to remove any play.

Left to right movement adjustment.
Loosen the bolts on one rail. Adjust the jacking bolts to remove any play, re-clamp the rail bolts.



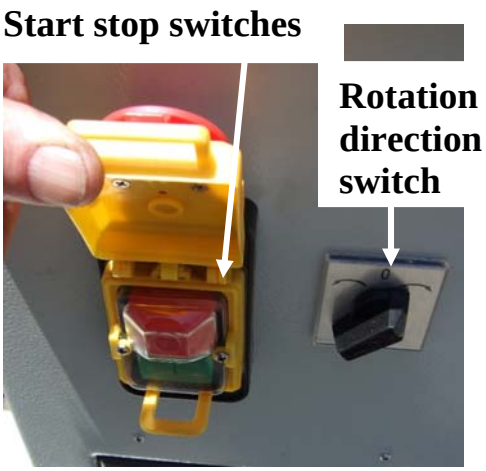
Connecting the electrical supply.
The machine is supplied with an electrical cable, but no plug, as the installation will dictate type of plug you require.
Ensure that the electrical supply corresponds with that of the machine [Single phase 220V].
It is recommended that you use a 30-amp main breaker.
Note. A qualified electrician must carry out the installation.



Cleaning the machine.

Remove the rust protection grease with WD 40 or a similar solvent.
It is important that you remove all the grease and re-lubricate with a Teflon-based lubricant. Teflon has fewer tendencies to attract sawdust, and cause clogging.

Testing the machine.



1. Turn the rotation direction switch to the left or right.
2. Activate the green start switch. The motor should start.
3. Activate the red stop switch. The motor should stop.
4. With the motor stopped turn the direction switch to the other rotation.
5. Activate the green start switch. The motor should start and turn in the opposite direction.
6. Activate the red stop switch. The motor should stop.

Maintenance and troubleshooting.

General.

Keep your machine clean. At the end of each day, clean the machine. Wood contains moisture and if sawdust or wood chips are not removed they will cause rust.
In general, we recommend that you only use a Teflon based lubricant on the mortiser. Regular oil attracts dust and dirt. Teflon lubricant tends to dry and has fewer tendencies to accumulate dirt and sawdust.
Periodically check that all nuts and bolts are tight.

Bearings.

All bearings are sealed for life and do not require any maintenance. If a bearing becomes faulty, replace it.

Rust

The mortiser is made from steel and cast iron. All none painted surfaces will rust if not protected. It is recommended that they be protected by applying wax or a Teflon based lubricant.

Troubleshooting.

Mortiser will not start.

1. Check that the direction switch is not in the "0" position.
2. Check that the electrical power cord is plugged into the power outlet.
3. Check that the electrical supply is on [reset the breaker].
4. With the power disconnected from the machine, check the wiring to the plug is correct. Check that the rubber insulation is stripped enough and is not causing a bad connection. Check that all the screws are tight.

The machine will not stop.

This is a very rare occurrence as the machine is designed to fail-safe. If it should occur and you cannot fix the fault, seek professional assistance. The machine must be disconnected from the power and never run until the fault has been rectified.
1. Stop switch faulty. Replace the stop switch.

Motor tries to start but will not turn.

1. With the power disconnected from the machine. Try to turn the spindle by hand. If the spindle will not turn, check the reason for the jamming.
2. Capacitor faulty. Replace the capacitor.
3. Motor faulty. Replace the motor.

Motor overheats.

The motor is designed to run hot, but should it overheat it has an internal thermal overload protector that will shut it down until the motor has cooled, and then it will reset automatically. If the motor overheats, wait until it has cooled and restart. If the motor shuts down consistently check for the reason. Typical reasons are dull cutting tools, motor cooling fan clogged or faulty, motor cooling fins clogged, over feeding the job, and excessive ambient temperature.

Squeaking noise.

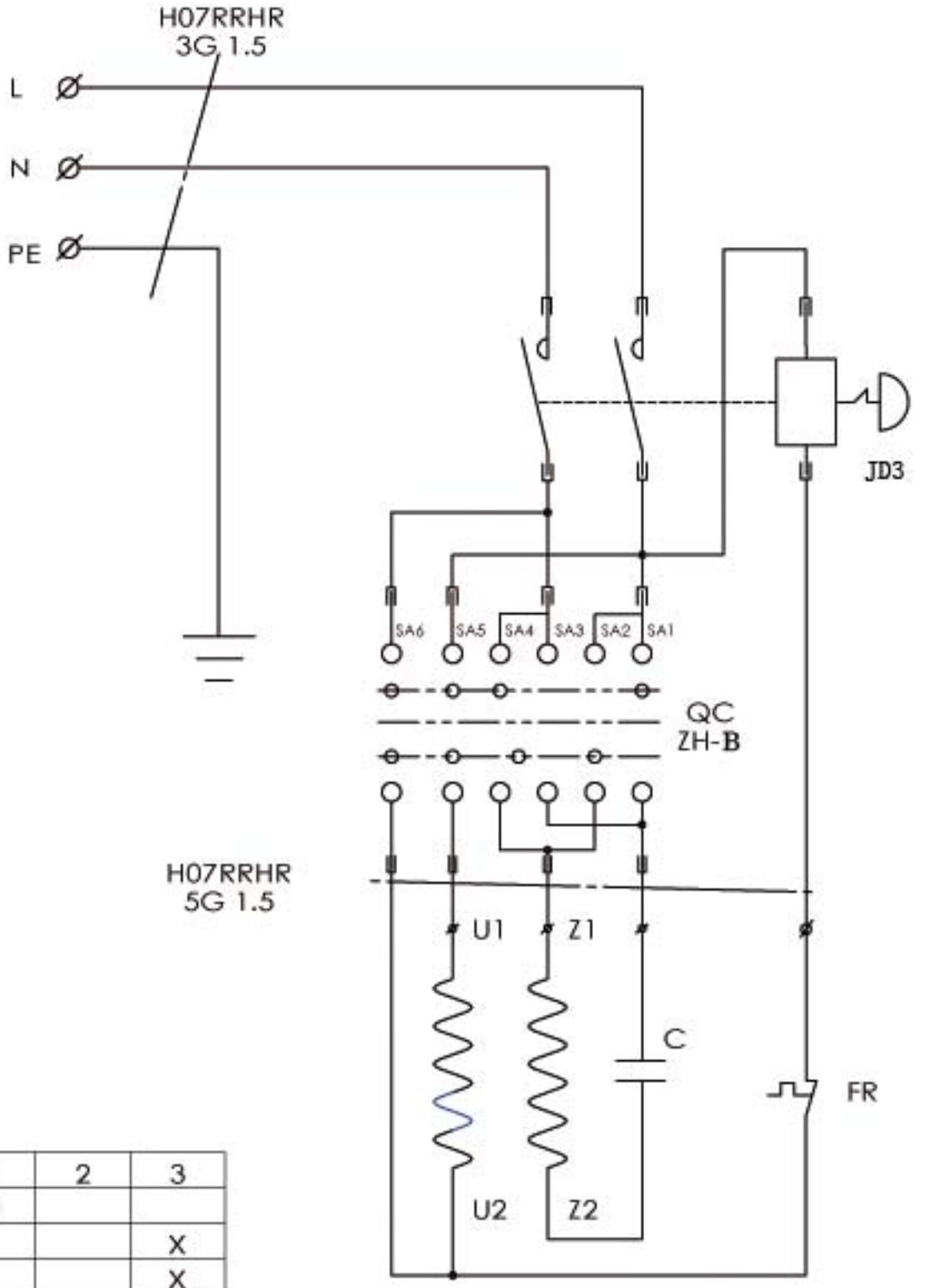
1. Check that the motor cooling fan is not contacting the fan cover.
2. Check the bearings.

Spindle slows down during a cut.

1. Dull cutting tools. Replace the tool or have it re-sharpened.
2. Feeding the wood too fast. Slow down the feed rate.

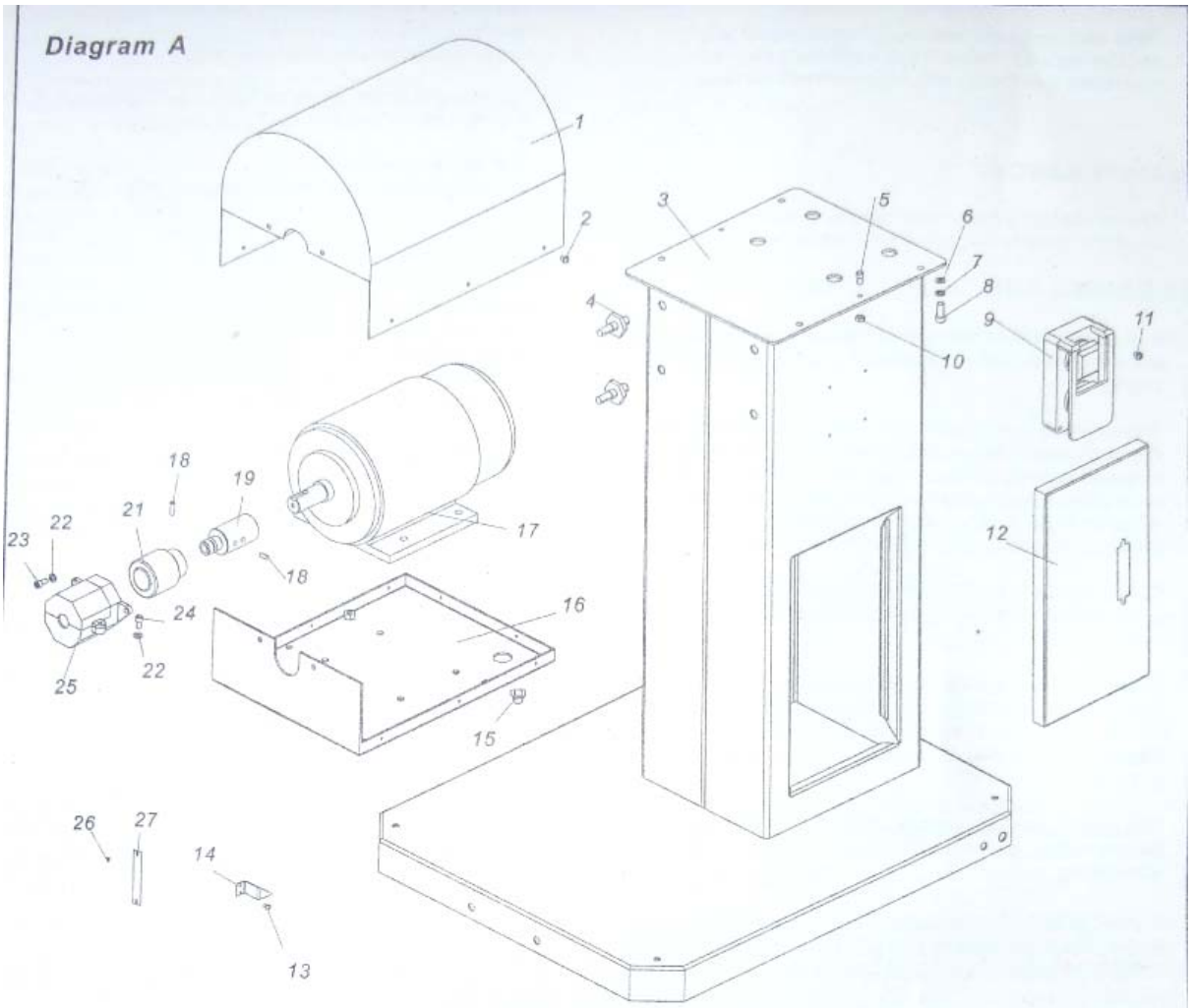
Machine vibrates.

1. Machine not level on the floor. Re-level the machine ensuring that it has no movement.



	1	2	3
SA1	X		
SA2			X
SA3			X
SA4	X		
SA5	X		X
SA6	X		X

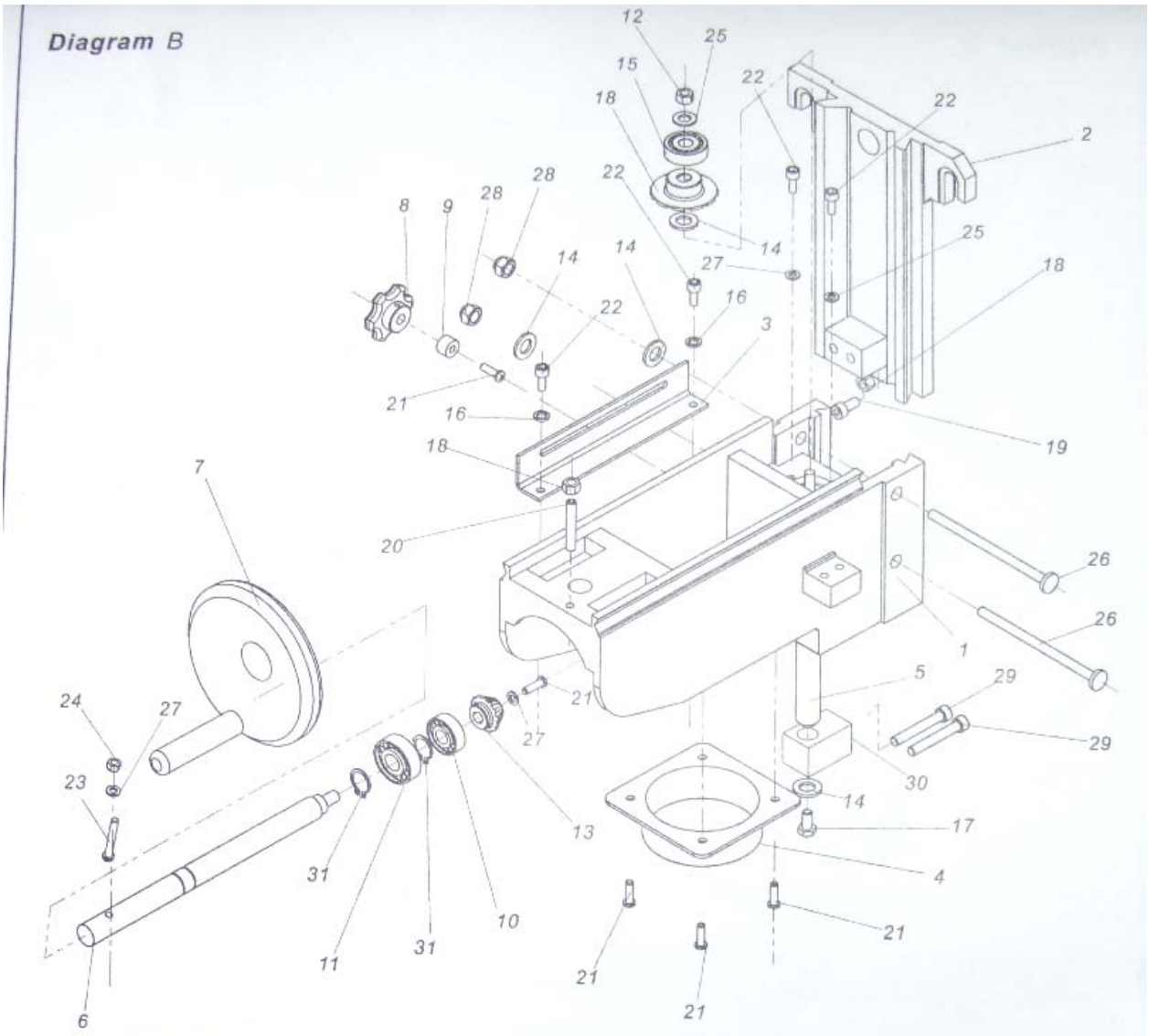
Diagram A



Parts List Diagram A

No	Description	Qty	No	Description	Qty
1	Motor cover	1	14	Pointer	1
2	Pan head screw M5x8	6	15	Strain relief	1
3	Cabinet stand	1	16	Motor support	1
4	Mortising kit support	2	17	Motor	1
5	Thread stop	2	18	Set screw M8x10	2
6	Washer 8mm	4	19	Clamp chuck	1
7	Spring washer 8mm	4	21	Chuck	1
8	Allen screw M8x20	4	22	Washer 6 mm	3
9	Power switch	1	23	Allen screw M6x16	2
10	Lock nut M6	2	24	Allen screw M6x10	1
11	Taping screw ST3.5x16	4	25	Chuck guard	1
12	Door w/lock	1	26	Rivet 3x6	2
13	Pan head screw M4x8	2	27	Height indicator	1

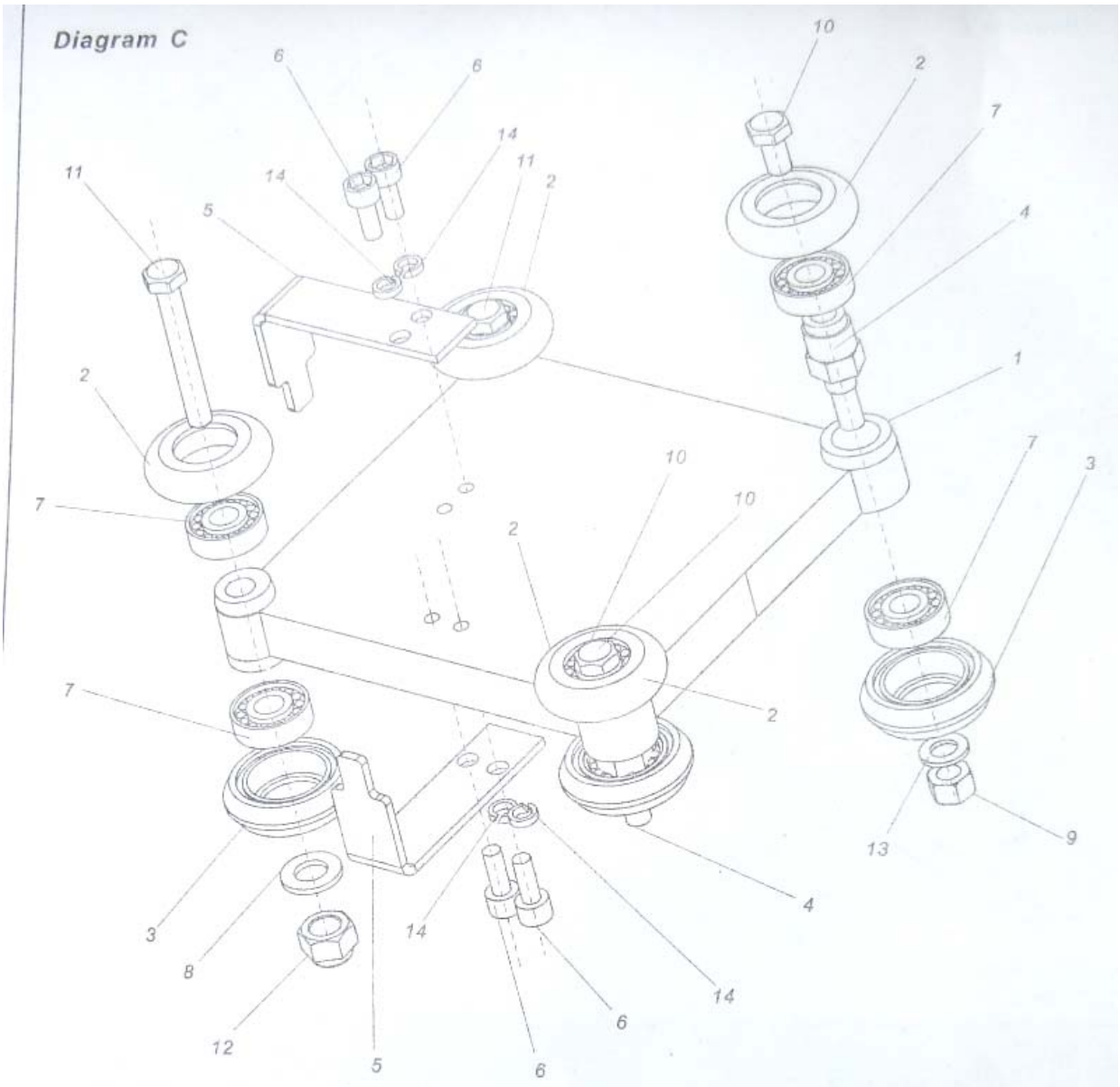
Diagram B



Parts List Diagram B

No	Description	Qty	No	Description	Qty
1	Table base	1	17	Hex head screw M8x16	1
2	Mount base	1	18	Hex nut M8	3
3	"L" bracket	1	19	Allen screw M8x35	1
4	Dust port	1	20	Set screw M8x40	1
5	Thread rod	1	21	Pan head screw M6x10	6
6	Control shaft	1	22	Allen screw M6x16	6
7	Hand wheel	1	23	Carriage bolt M6x45	1
8	Star-type knob M6	1	24	Hex nut M6	1
9	Bush	1	25	Washer 10mm	1
10	Ball bearing 16003	1	26	Carriage Bolt M10x140	2
11	Ball bearing 6004	1	27	Washer 6mm	6
12	Ball bearing 6301	1	28	Hex lock nut M10	2
13	Cone gear	1	29	Allen screw M8x55	2
14	washer 12mm	4	30	Special nut	1
15	Gear	1	31	Circle ring	2
16	Spring washer 8mm	3			

Diagram C



Parts List Diagram C

No	Description	Qty	No	Description	Qty
1	Frame, control roller	1	8	Washer 10mm	2
2	Annulus	4	9	Hex lock nut M8	2
3	Annulus	4	10	Hex head screw M8x20	2
4	Eccentric shaft	2	11	Hex head screw M10x65	2
5	Stop plate	2	12	Hex lock nut M19	2
6	Allen screw M6x10	4	13	Washer 8mm	2
7	ball bearing 6000	8	14	Spring washer 6mm	4

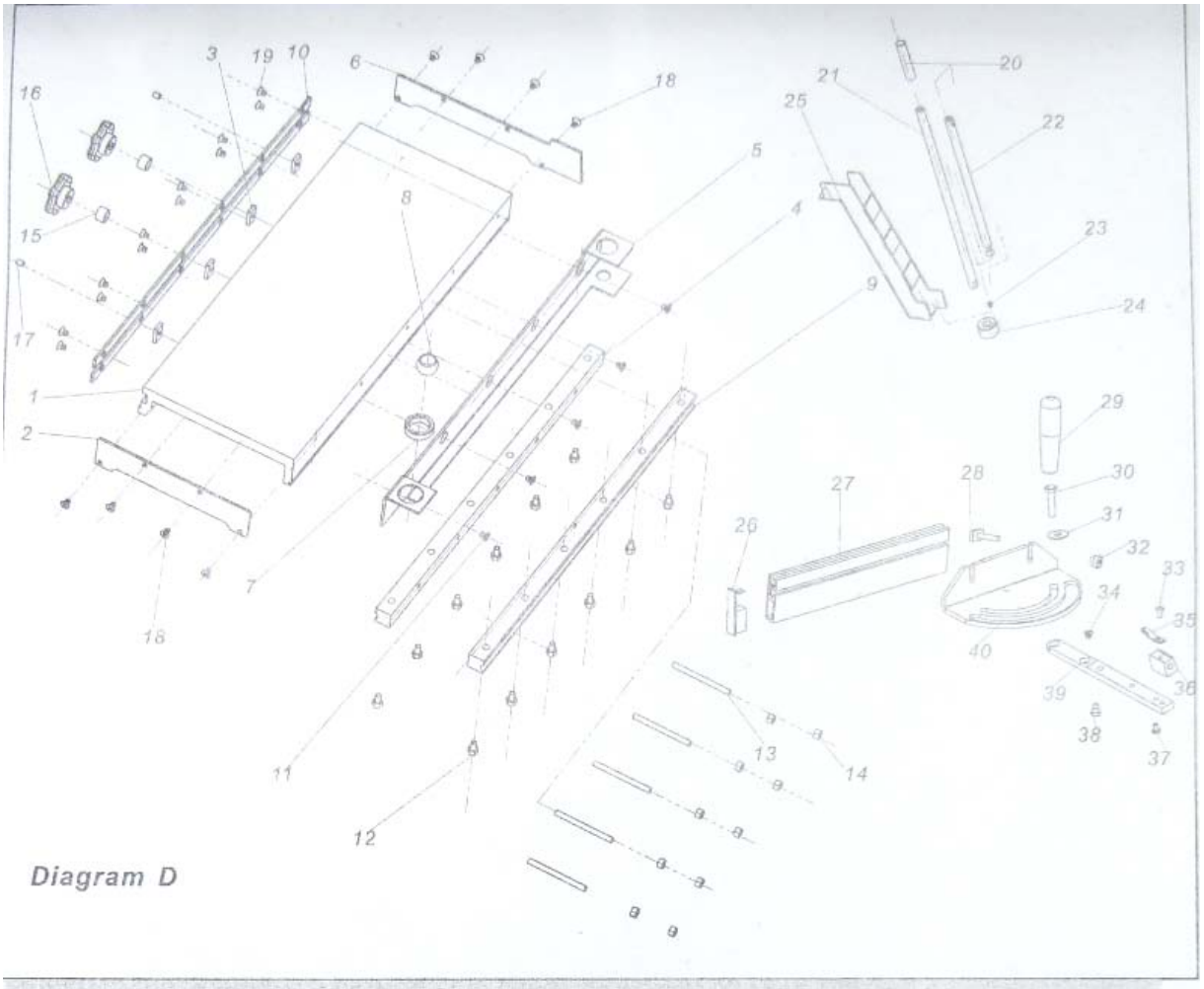


Diagram D

Parts List Diagram D

No	Description	Qty	No	Description	Qty
1	Work table	1	21	Control lever	1
2	End plate	1	22	Control lever	1
3	Square nut	4	23	Sunk head screw M6x12	1
4	Moveable rail	1	24	House, control lever	1
5	Control plate	1	25	Bracket, control lever	1
6	End plate	1	26	End cap, gauge fence	2
7	Ball socket	1	27	Gauge fence	1
8	Ball sphere	1	28	Carriage bolt M6x35	2
9	Fixed rail	1	29	Miter gauge knob	1
10	Segment, table	2	30	Hex head screw M8x15	1
11	Sunk head screw M6x10	5	31	Flat washer 8mm	1
12	Hex head screw M6x30	12	32	Knurled nut M6	2
13	Thread rod M6x75	5	33	Pan head screw M5x10	1
14	hex nut M6	10	34	Pan head screw M6x8	1
15	Bush	2	35	Indicator	1
16	Star-type knob M6x20	2	36	Block indicator	1
17	Set screw M6x10	2	37	Pan head screw M5x10	2
18	Pan head screw M5x8	8	38	Guide pin	1
19	Sunk head screw M5x10	12	39	Gauge rod	1
20	Bush	1	40	Miter gauge base	1

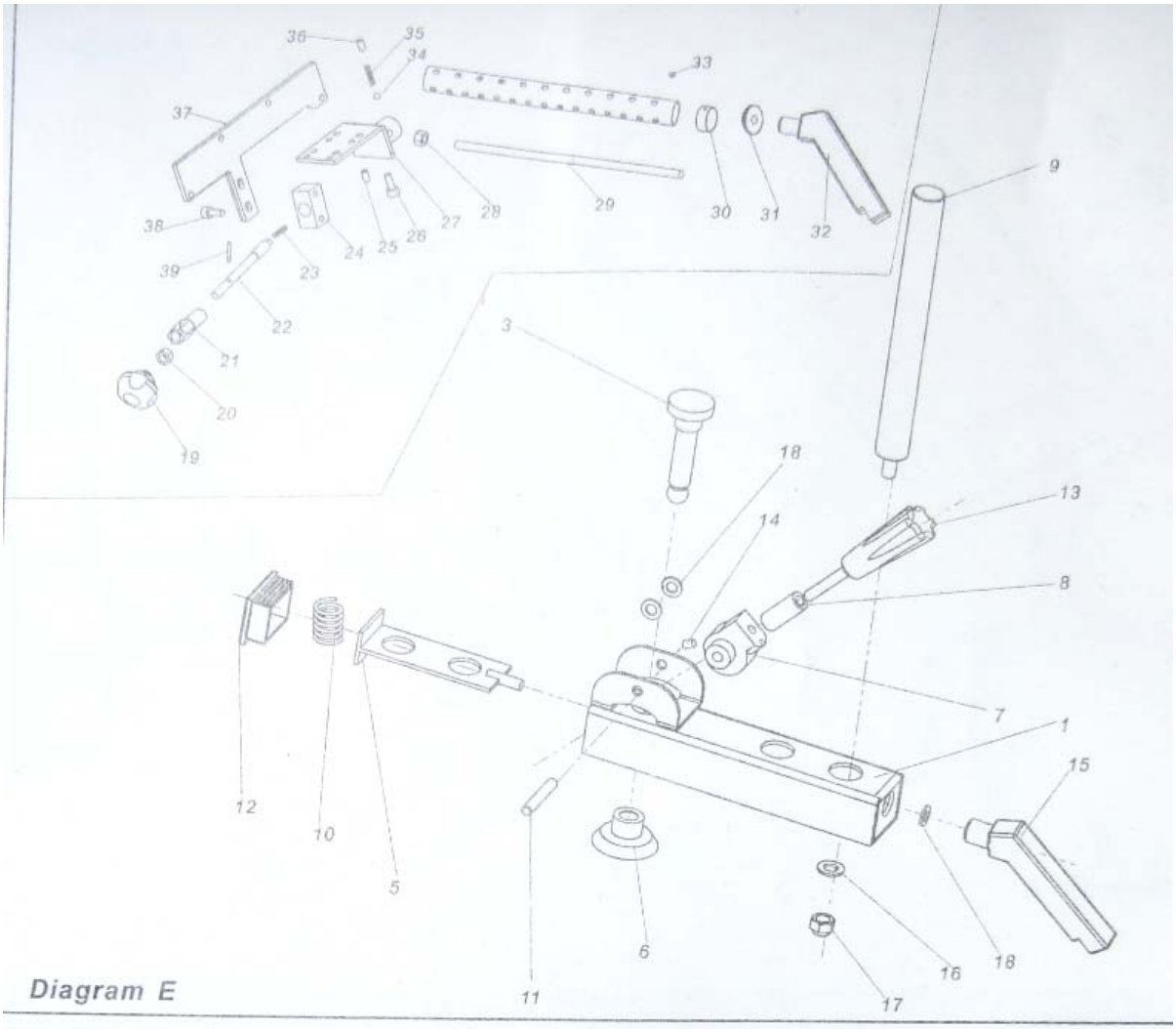


Diagram E

Parts List Diagram E

No	Description	Qty	No	Description	Qty
1	Holder assembly	1	22	Rod	1
3	Press rod	1	23	Spring	1
5	Segment, holder	1	24	Block	1
6	Disc holder	1	25	Set screw M5x8	1
7	Eccentric	1	26	Allen screw M6x8	4
8	Bush	1	27	Graduator base	1
9	Holder rod	1	28	Hex nut M8	1
10	Spring	1	29	Long rod	1
11	roll pin C8x50	1	30	Spacer	1
12	End cap	1	31	Locker	1
13	handle, holder	1	32	Ratchet lever	1
14	Set screw M6x8	1	33	Graduator body	1
15	ratchet lever	1	34	Ball 6mm	1
16	washer 10mm	1	35	Spring	1
17	Hex lock nut M10	1	36	Set screw M5x6	1
18	Washer 8mm	1	37	Stop plate	1
19	Knurled nut M8	1	38	Allen screw M6x20	1
20	Hex nut M8	1	39	Roll pin 3x20	1
21	Thread rod	1			

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