Jointer/ Planer Combination Machine Manual

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Model Number: MJOPL104200

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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 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 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 working environment 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

Machine	**10”**	**12”**	**16”**
Motor	**2 hp**	**3 hp**	**4 hp**
Jointer table size	**10” X 42”**	**12” X 63”**	**16” X 63”**
Planer table size	**10” X 24”**	**12” X 30”**	**16” X 30”**
Feed roller diameter	**1 ½”**	**1 ½”**	**1 ½”**
Cutter head diameter	**3”**	**3 ¾”**	**Sher tec**
Number of knives	**3**	**4**	**105**
Fence size	**44” X 5 ¼”**	**44” X 5 ¼”**	**44” X 5 ¼”**
Fence tilt	**0 to 45 degrees**	**0 to 45 degrees**	**0 to 45 degrees**
Dust chute diameter	**4”**	**4”**	**4”**
Max joining width	**10”**	**12”**	**16”**
Max cutting depth	**!/8”**	**3/16”**	**¼”**
Max planning height	**7”**	**8 ½”**	**9”**
Cutter speed	**4800 rpm**	**4800 rpm**	**4800 rpm**
Volts	**220V**	**220V**	**220V**
Feed speed	**26 ft/min**	**26 ft/min**	**26 ft/min**
Weight	**436 lb**	**760 lb**	**1000 lb**

Receiving your machine

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] within 24 hours.

Introduction to Jointer / planers

The Jointer / planers are designed to give you years of safe service. Read this owner's manual in its entirety before assembly or use.
The jointer / planer is generally defined as a machine that cuts planks of wood flat, smooth and parallel. The machine achieves this by the plank being pushed along a flat table and passing the plank over a revolving cutter head.
There are many types of cutter head but this range of machines uses either a parallel blade system [12" and 14"]or an inserted cutter type [16"].
Both have advantages and disadvantages.
The insert cutter type has the main advantage of reducing tear out of the grain but the finish is not as smooth. It is well within the capabilities of a belt sander to give a professional finish.
The parallel blade system gives a finish without the lines that the insert cutter system gives but is susceptible to tear out especially on planks with knots. On balance it is better to use a machine with the insert cutters than the parallel blades as it greatly reduces the risks of having to scrap valuable wood or spending excessive time sanding tear out marks.

Additional Instructions for the use of jointer / planers

Like all machines there is danger associated with the machine. Injury is frequently caused by lack of knowledge or familiarity. Use this machine with respect. If normal safety precautions re overlooked or ignored, serious personal injury may occur.

1. Kickback.

"Kickback" is when the work piece is thrown off the jointer table
by the cutter head. Always use push blocks and safety glasses to reduce the likelihood of injury from "kickback.". The "kickback zone" is the path directly

through the end of the in feed table. Never stand or allow others to stand in this area during operation. If kick back occurs, severer injury may occur.

2. Cutter head alignment.
To reduce the possibility of kickback. Keep the top edge of the out feed table aligned with the cutter head knife or insert at top dead centre (TDC).

3. Push blocks.
The cutter heads are extremely dangerous and you must never pass your hands over the cutter head. Always use push blocks whenever surface planning

4. Supporting the work.
Only make cuts if the work piece is stable and never attempt to cut unstable planks or injury may occur.

6.Cutting depth.
Never exceed the maximum cutting depth as stated in the specification for your machine. It is far better to take several small cuts rather than large cuts.

7. Direction of cut
Jointing against the grain or jointing end grain is dangerous and could produce chatter or excessive chip out. Always joint with the grain.

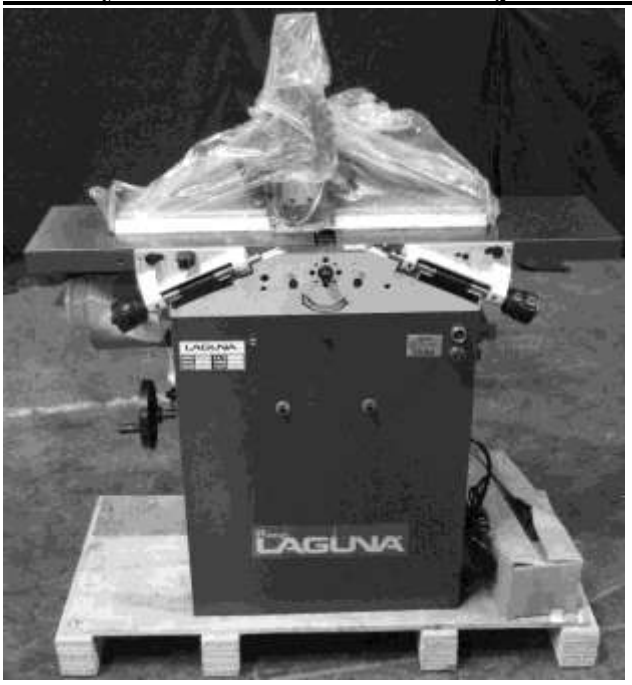
8.Guards.
Guards are designed to reduce the risk of injury. **Always use the guards**. If it is imperative to use the machine without the guards [Rabbeting] always replace the guards.

9.Cutting direction.
Only cut in the direction from in feed table to out feed table and always complete the cut. Do not stop the wood progress until the job has cleared the cutter head completely. Only cut with the grain or at a slight angle to the grain.

10. Stock.
Your safety will be greatly enhanced if you only use good lumber. Only work with lumber after you have inspected it completely. Staples, Nails Loose knots and any other metal in the plank will damage your cutter head and could case

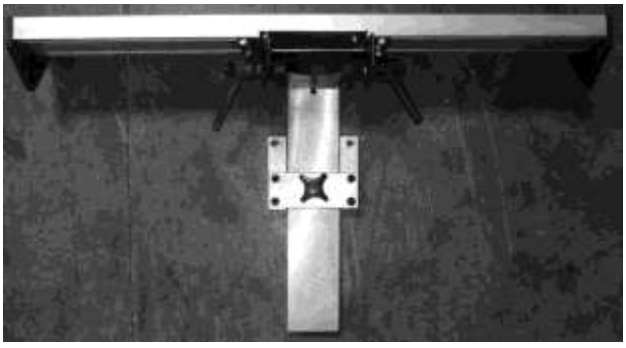
injury and or fire. If you have any question about a piece of lumber do not use it.

What you will receive with the jointer / planer.



Machine with box removed

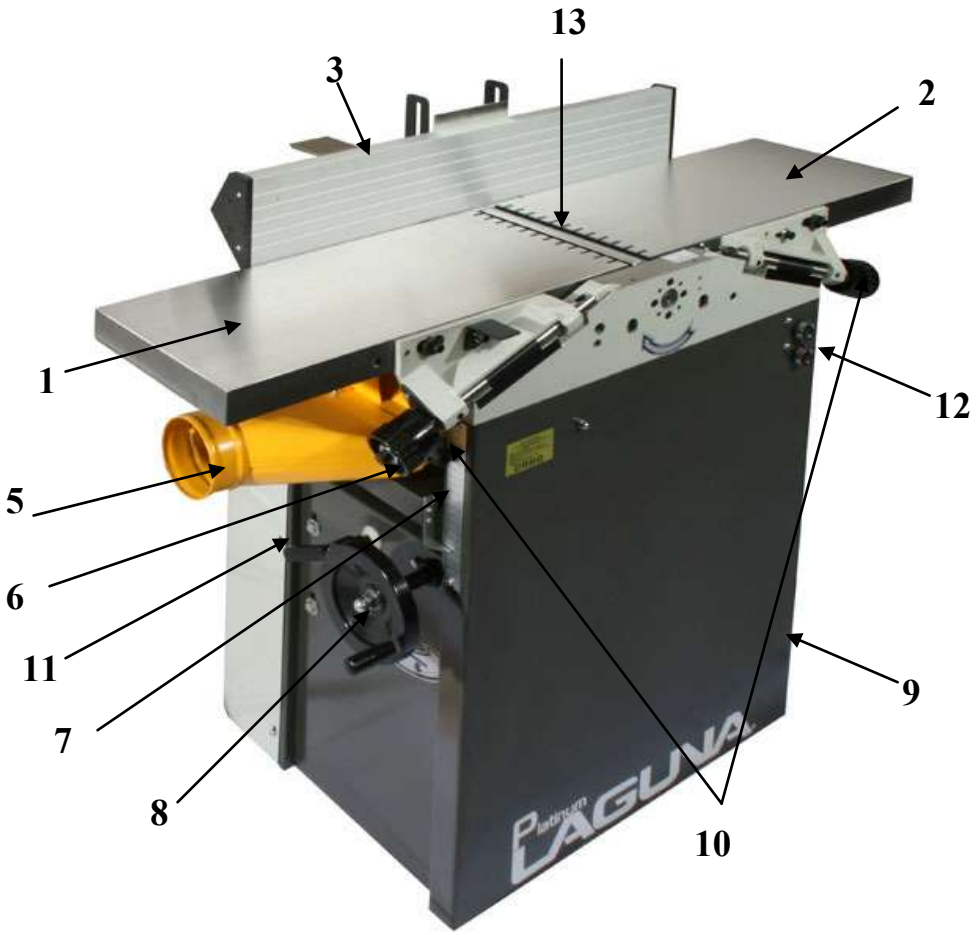
Parts



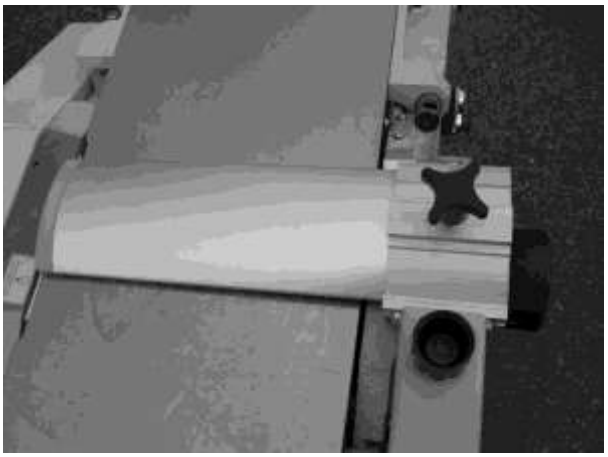
Fence

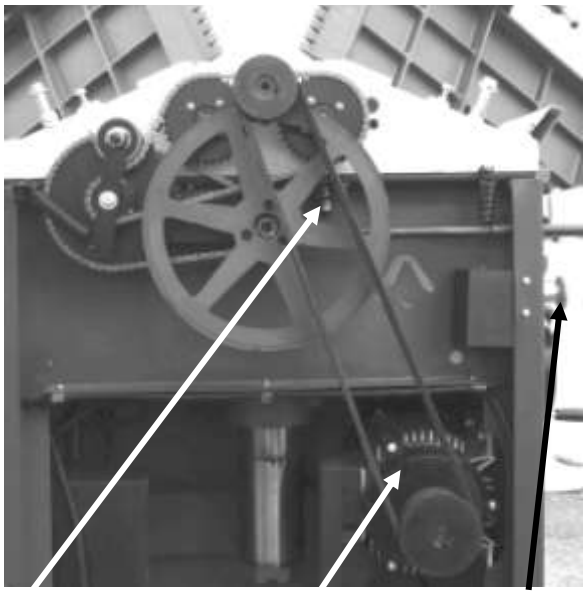
Parts of the Jointer / planer

The jointer / planer doe's not have many parts. The major parts are discussed in this manual. If you are not familiar with the jointer / planer, take the time to read this section and become familiar with the machine.



4 **Cover removed** **15**





1. Out feed Table.
2. In feed Table.
3. Fence.
4. Cutter head Guard.
5. Dust port.
6. Planer Table.
7. Depth Scale.
8. Planer Table Height Hand wheel.
9. Body.10. table adjusting handles.
11. Lock.
12. Start & stop switches.
13. Cutter head.
14. Motor.
15. Planer feed lever.
16. Safety micro switch.
17. Emergency stop switch.
18. Serial and data plate.

18 Serial plate

<u>Out feed Table.</u>

The function of the out feed table is to support the job once it has been machined by the cutter head. The out feed table must be adjusted level with the cutter head teeth / blades at top dead centre [TDC].

<u>In feed Table.</u>

The in feed table is adjusted to suit the depth of cut that is required.

Note:- Never exceed the maximum depth of cut specified for your machine. It is far safer to take many small cuts rather than one large cut.

Fence.
The fence is used to keep the job square to the cutter head and is also used to produce angle cuts on the edges of panels. The fence can be adjusted from 0 to 45 degrees.

Cutter head Guard.
The guard is there to protect you. Always adjust the guard to expose only the minimum amount of cutter to suit the job thickness.

Dust port.
The dust port is designed to allow maximum extraction of saw dust and wood chippings. Connect a 4" flexible dust collection hose between the machine and your dust extraction system.
Note:- The stronger the dust collector the better

Planer Table.
The planer table supports the job being machined and is adjustable to suit the thickness of the job in hand and the depth of cut. **Note**:- never exceed the maximum depth of cut for your machine. It is far better to take many smaller cuts rather than one large cut.

Depth Scale.
The depth scale indicates the distance between the planer table and the bottom of the cutter head.

Planer Table Height Hand wheel.
The hand wheel adjusts the planer table to the required distance between the bottom of the cutter head and the plainer table.

Body.
The body of the machine supports all the tables etc. It is manufactured from heavy gauge steel and provides a heavy base that is designed for rigidity.

Table adjusting handles.
The table adjusting handles move the tables in relation to the cutter head.

In feed handle is used to adjust the depth of cut
Out feed handle is used to adjust the table level with the top of the cutter head when on top dead centre.

Lock handle.
The lock handle is used to lock planer table in position once the required setting has been set.

Start & stop switches.
The switches are used to start and stop the machine.

Cutter head
There are two types of cutter head depending on the machine that you have parallel blade system [12" and 14"]or an inserted cutter type [16"].

Motor.

Planer feed lever
The plainer feed lever engages or disengages the plainer feed rollers.

Safety micro switch.
This safety switch ensures that the machine will not start with the tables in the open position and the dust chute not in the up position.

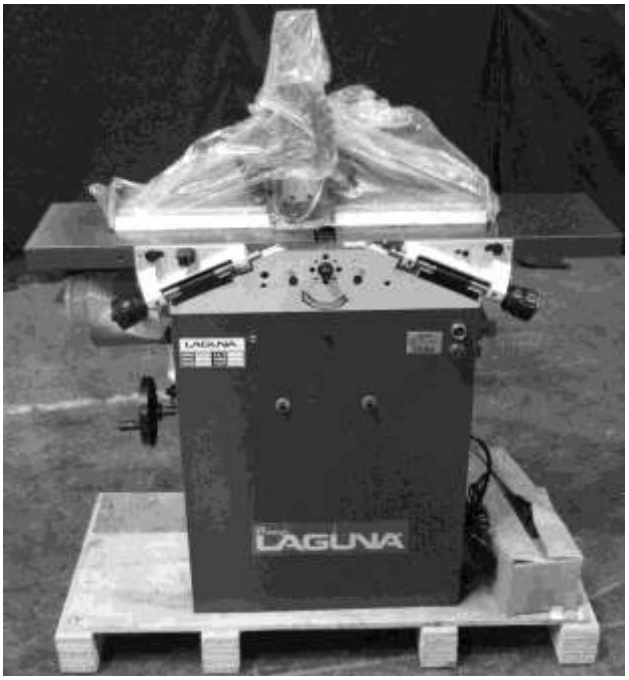
Emergency stop switch.
This switch like all emergency stop switches removes power to the motor.

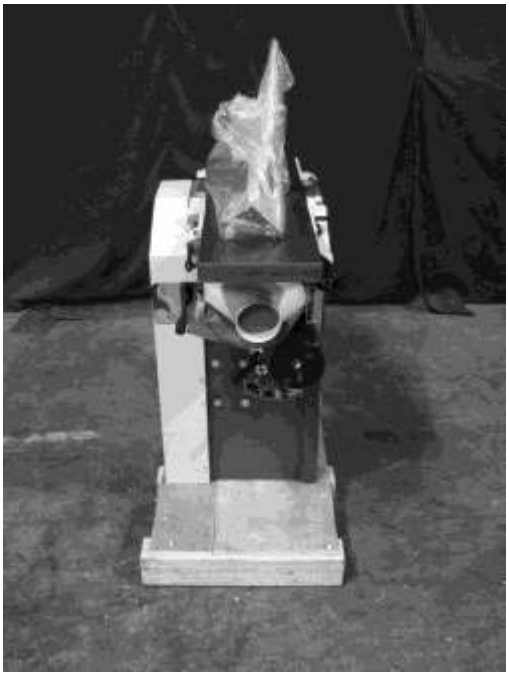
Serial and data plate.
This plate is mounted on the side of the machine.

Where to locate your Machine
Before you remove your machine from the pallet, 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 and back of the machine suitable for the length of wood that you will be machining.
2. Adequate lighting. The better the lighting, the more accurate and safely you will be able to work
3. Solid floor. You should select a solid flat floor, preferably concrete or something similar.
4. Close to power source and dust collection.

Unpacking your machine



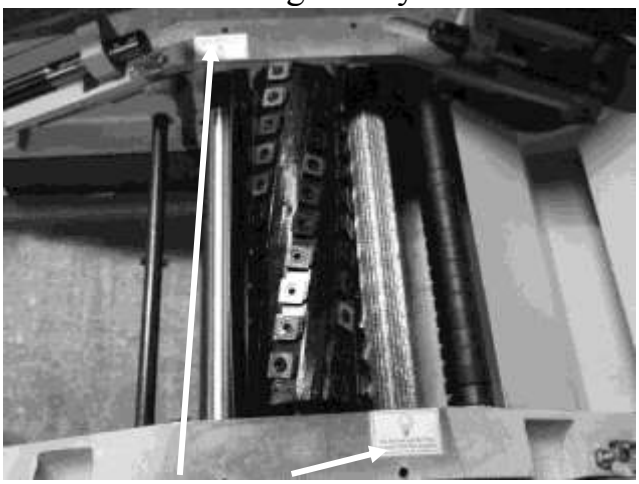


To unpack your machine, you will need tin snips, knife and a wrench.
1. Using the tin snips, cut the banding that is securing the machine to the pallet.
WARNING: EXTREAM CAUTION MUST BE USED BECAUSE THE BANDING WILL SPRING AND COULD CAUSE INJURY.
2. Lift the box off and discard.

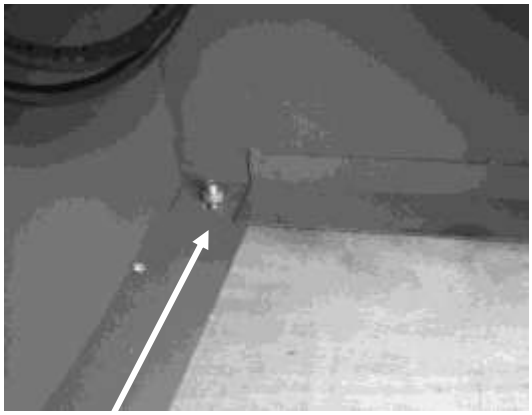
3. Using the knife, cut the plastic wrap from the top. The fence and accessories that were ordered could be attached to the side of the machine and extreme caution must be taken that the parts do not fall and

cause injury or damage. Remove them in order from the top and set aside.

4. Remove the base mounting bolts that secure the machine to the pallet. To access the mounting bolts you must remove the front cover.



Lifting bolt holes



Pallet bolt

5. It is recommended that the machine be removed from the pallet by lifting it with a hoist or forklift. Fit the lifting eyes in the tapped holes provided [holes shown above]. Place a sling through the lifting eyes and lift vertically. Remove the pallet and lower to the floor. The machine can be lifted using a forklift truck, sliding it onto the forks or by using a forklift "SLING", with a lifting capability of 2,000 lb (900kg). If no lifting device is available, the machine can be removed from the pallet as follows:

Lifting eye

Note:- The machine is heavy, and 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.

With two or more people, move the machine so that the base of the machine is over the edge of the pallet. Tilt the machine away from the pallet so that the base of the machine touches the floor, slide the pallet from under the machine

and then move the machine to the vertical position so that it is completely resting on the floor

Assembly & set up

Levelling bolts

Levelling foot

1. Raise the machine off the ground on to wooden blocks.

2. Fit a levelling bolt to the 4 corners of the machine.

3. Lower the machine to the ground and place a spirit level on the table of the machine.

4. Adjust the bolts until the spirit level shows that the table is level in both directions and that the machine will not rock.

5. Note:- If you move the machine you may find that the levelling bolts will need to be readjusted.

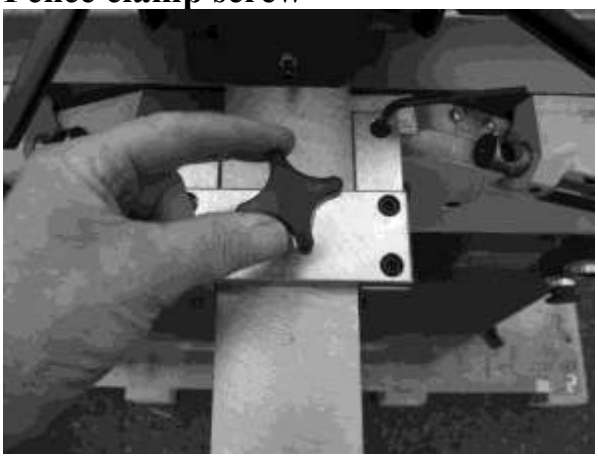
Fitting the mortiser chuck guard

Fit the mortiser chuck guard even if you have no chuck fitted. This will protect the threads at the end of the cutter spindle and also protect you from the spinning shaft.

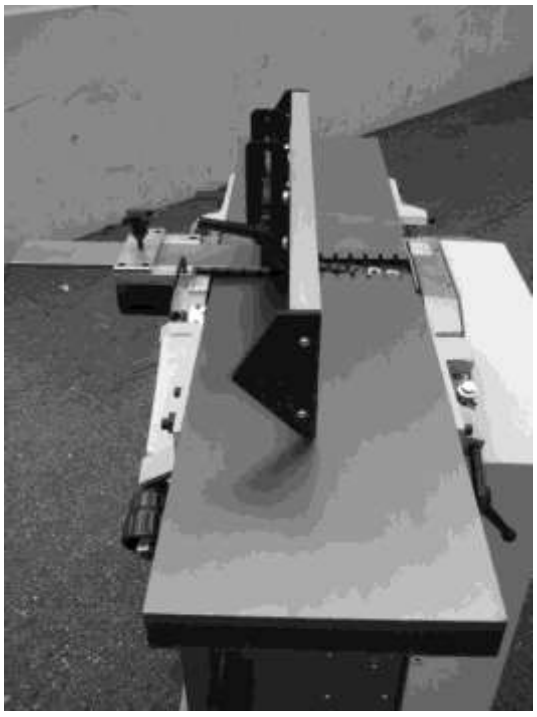
Mortiser chuck guard

Fitting the fence

Fence clamp screw



Fence clamp knob/



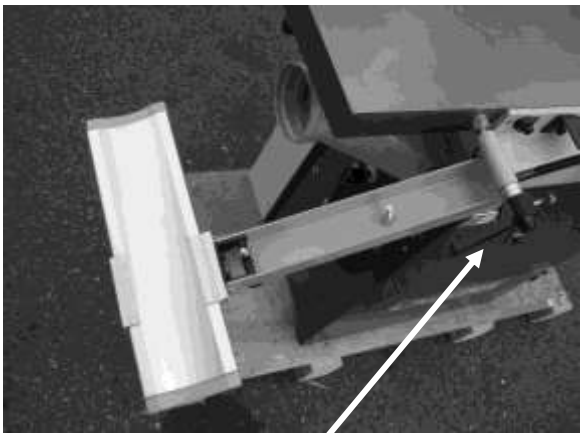
Fence fitted 90 degrees

Fit the fence as shown. The fence can be adjusted from vertical to 45 degrees by loosening the angle clamp knob moving to the required angle and re clamping the knob.
To move the fence in or out, loosen the fence clamping knob, move to the required position and re clamp.

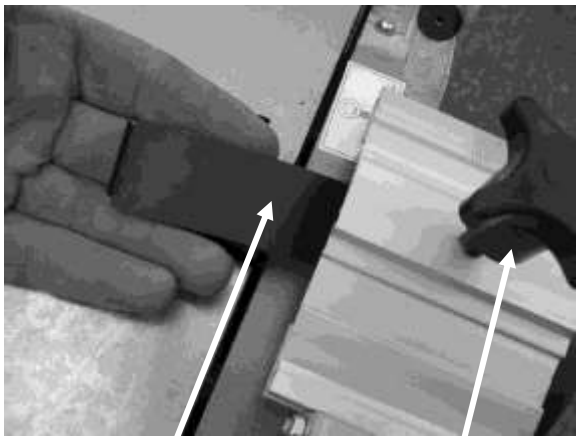
Angle clamp knob

Fence fitted

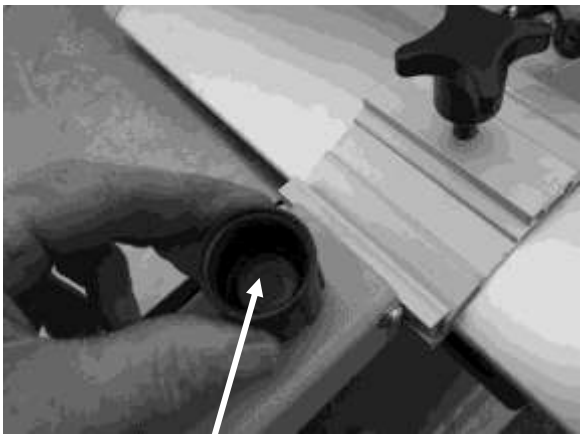
<u>Fitting the cutter guard</u>



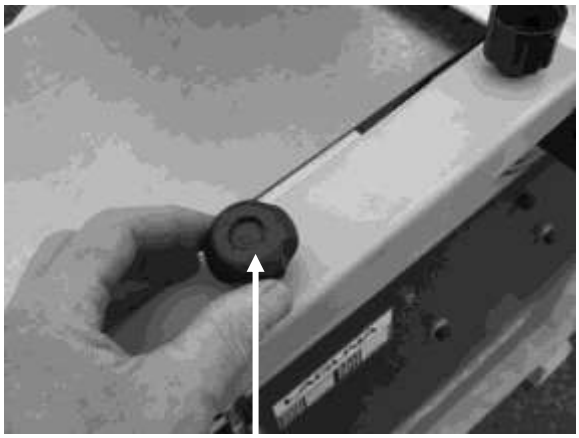
Guard clamp handle



Guard protector **Fence clamp screw**



Guard angle adjusting screw



Guard arm angle adjusting screw

1. Fit the guard arm to the machine in the position shown.
2. Holding the guard protector in position slide the guard into the arm and clamp in position with the clamp screw.
3. The guard arm is adjustable in the vertical plane with the adjusting screw. This will allow you to adjust the guard so that it just clears the plank being machined and give maximum protection.
4. The guard is adjustable [angle adjustment] to allow you to adjust the guard parallel to the bed of the machine once the arm has been adjusted.

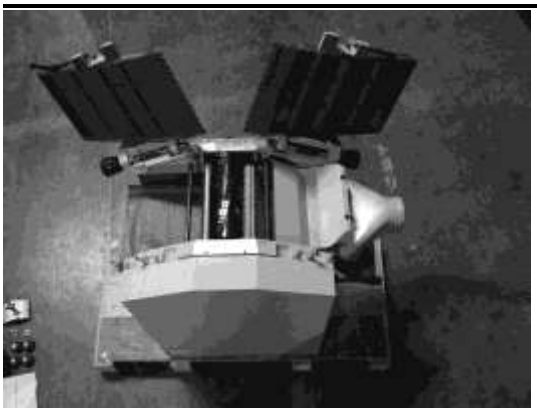
Connecting the electrical supply.

Note:- A qualified electrician must carry out the installation.

Ensure that the main supply corresponds with that of the machine [Single phase 220 V].
It is recommended that you use a 30-amp mains breaker & a 30amp NEMA 6-30p plug.
If you need a longer cable than that supplied on the machine, you can connect a new cable into the internal power termination.
It is recommended that number 12 cable is used for installation up to 15'and installations 15' to 30' use number 10-gauge cable.

Note:- The machine is not normally supplied with an electrical plug, as the type of plug will be dependent on the installation. If a plug is supplied that is not a NEMA 6-30P remove and replace with NEMA6-30p.

Converting the machine from a jointer to a planer



Machine with tables open

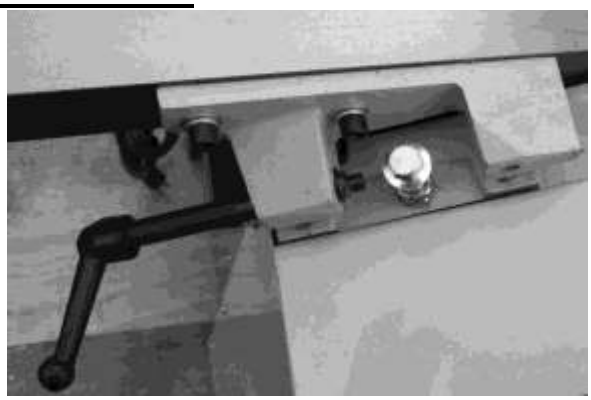


Table lock shown unlocked

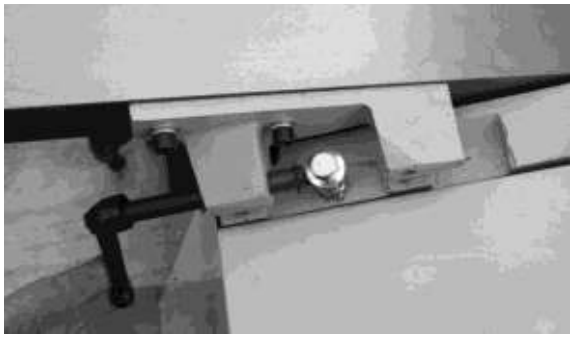
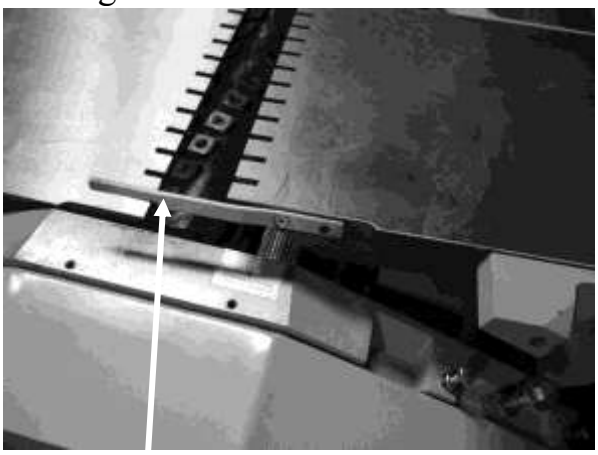


Table lock shown locked

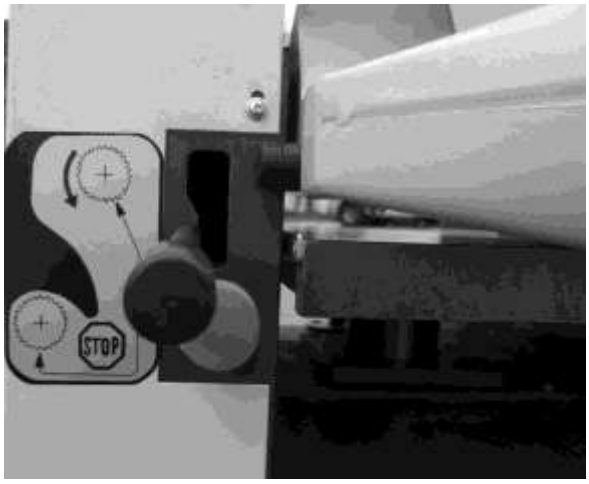
To convert the machine from a jointer to plainer

1. Unlock both tables and lift the tables to the vertical position.

Note:- the out feed table has a lock bar attached and has to be lifted first.
Note:- The out feed table contacts a safety micro switch and the dust collection hood when in the plainer position also contacts the switch. This is a safety feature ensuring that the power is disconnected from the motor with the tables in the vertical position and the dust collection hood in the jointer position
Note:- The planer table has to be lowered to the bottom of its travel before moving the hood.

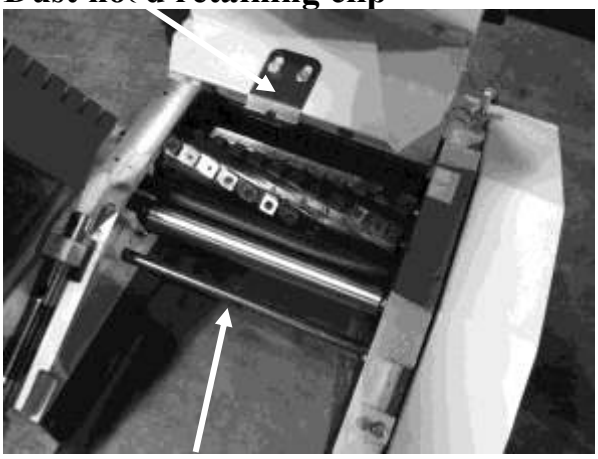


Out feed lock bar

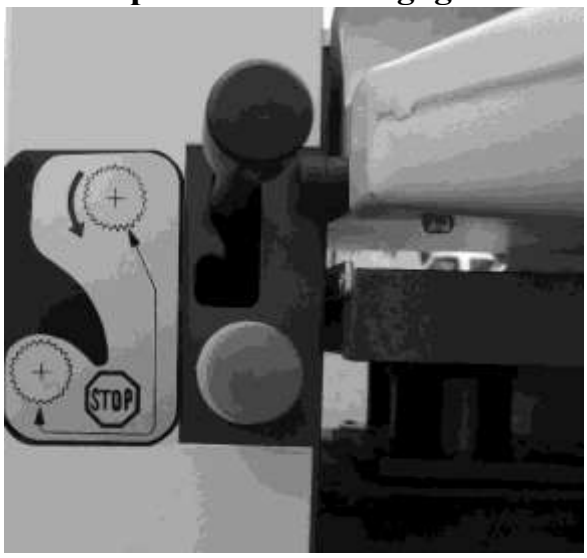


Plainer power feed disengaged

Dust hood retaining clip



Dust hood retaining roll pin



Plainer power feed engaged

2. To start the power feeder move the plainer power feeder lever to the engaged position.
3. To convert the machine from planer to jointer, reverse the above procedure, ensuring that when the dust hood is moved to the jointer position that the

retaining clip is released and the plainer table is lowered to the bottom of its travel.

Connecting the dust collection

Connect a 4" flexible hose between the dust collection hood and your dust collector.
Once fitted pull on the hose to ensure that the connection is tight. You will be moving the dust collection hood between the two positions and you do not want it to come off during production.

Dust collection hood

Note:- You will need a dust collection system with a minimum of 1000 cubic feet per minuet capacity. The stronger the dust collection the better as the machine is capable of producing a lot of waste.

Adjusting the plainer table height.

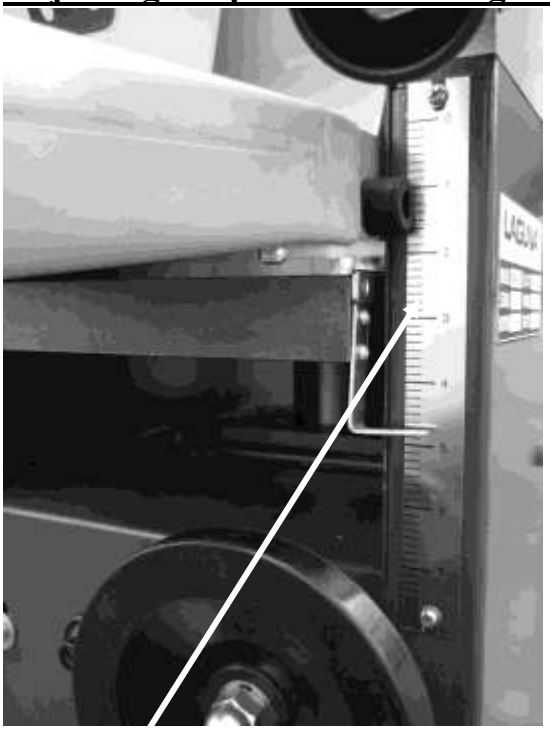


Table height gauge

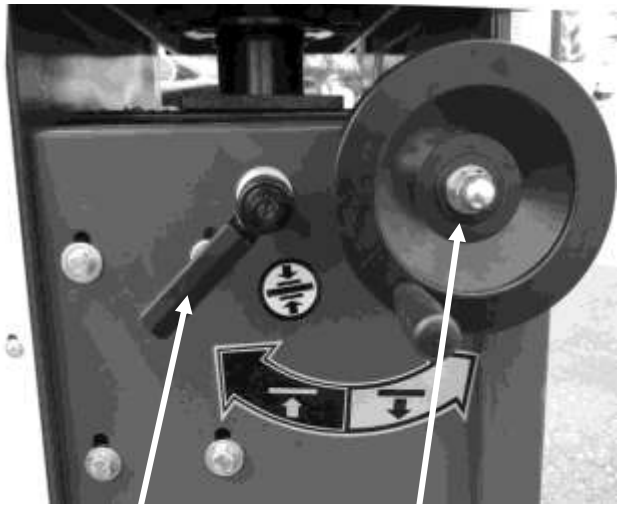


Table lock handle

Table height adjusting handle

Unlock the table and move the table to the thickness that you require. Lock the table.

Note:- Until you get experience with the machine, it is suggested that after setting the plainer thickness you machine a scrap piece of wood and check that the thickness is correct before you machine your production.

Adjusting the jointer tables.

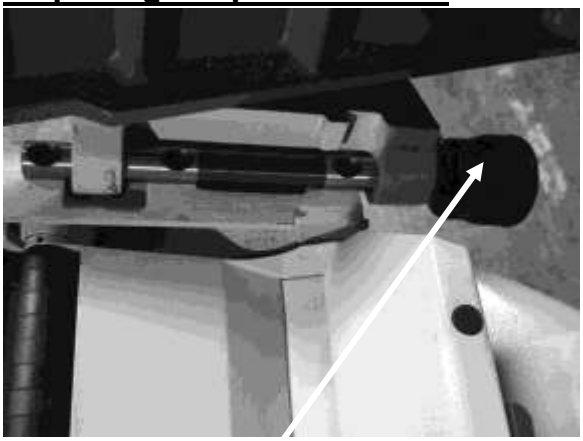


Table height adjusting handle

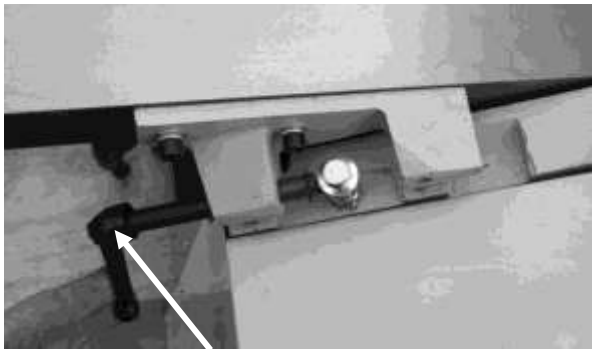


Table lock handle

1. Release the table lock handle for the table that is to be adjusted.

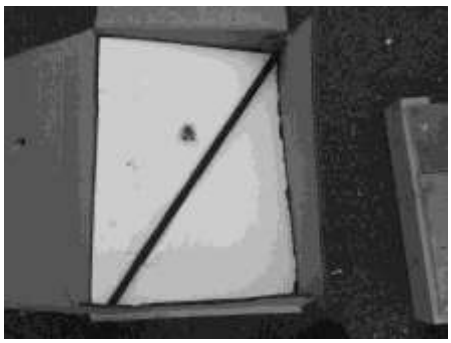
2. Using the relevant table adjusting handle move the table to the required height [using the table height scale].

3. Lock the table using the table lock handle.

Table height scale

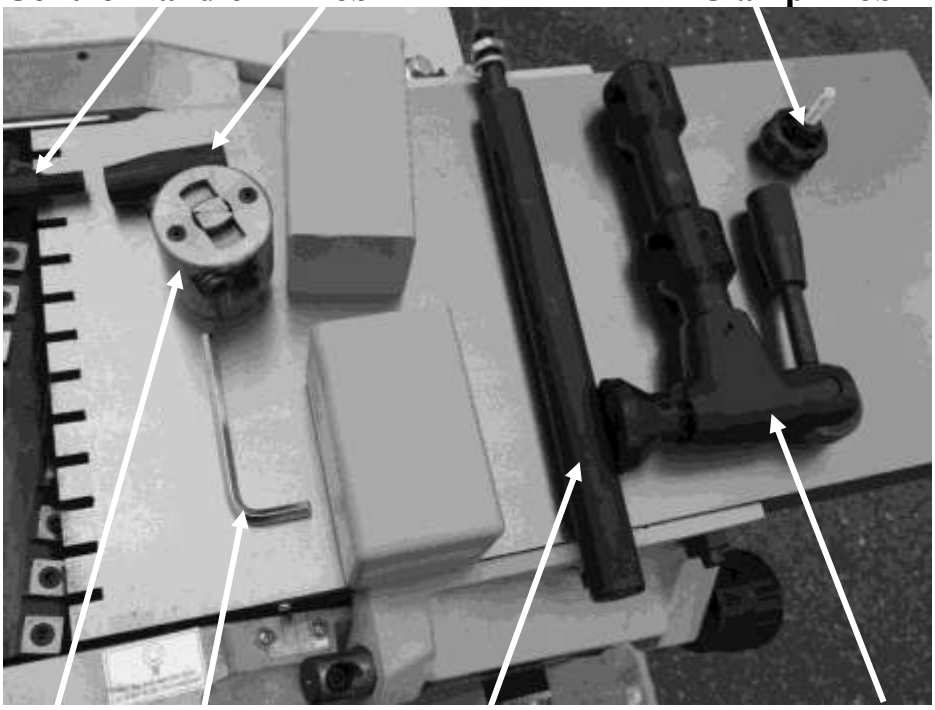
Fitting the optional mortiser

Receiving your mortiser



Control handle

Control handle **Knob** **Clamp knob**



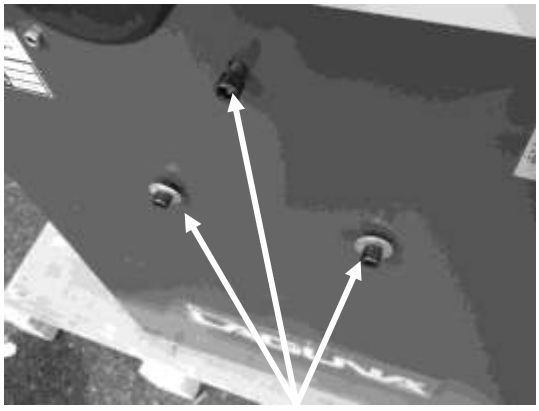
Chuck **Clamp shaft** **Clamp**

Allen key

Fitting the chuck

Chuck

Chuck fitted



Mortiser mounting bolts

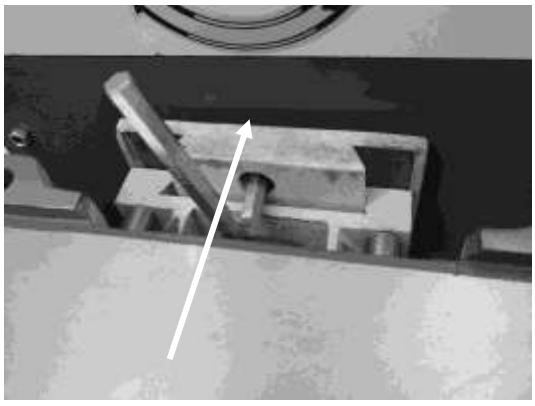
Remove the chuck guard and fit the chunk.
Note :- The thread is left hand.
Refit the chuck guard.
Remove the top mortiser mounting bolt. Then loosen the two lower mortiser mounting bolts.
Slide the mortiser on to the lower bolts and fit the upper bolt.
Tighten all the bolts.
Note:- You will have to lower the mortiser table to gain access to the top clamp screw hole.

Jack screw

Lower mortiser clamp screw

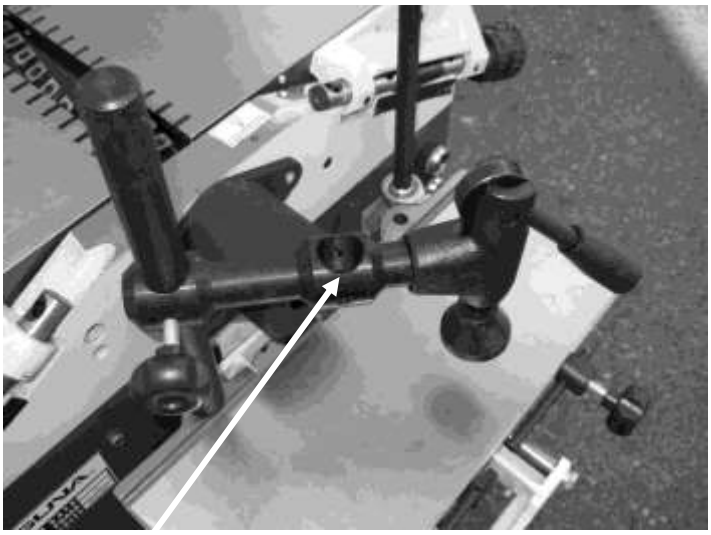
Handle

Fit the handle to the vertical movement shaft.
The mortiser comes factory set parallel to the spindle of the chuck. If adjustment is required, jacking screws are provided.
To adjust the mortiser parallel to the spindle:-

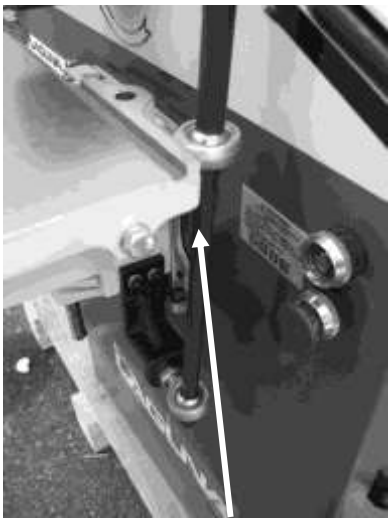


Top clamp screw

1. Fit a long parallel bar into the chuck.
2. Check the distance between the mortiser table and the bar at both ends [close to the chuck and at the other end of the bar]
3. Loosen the mortiser clamp screws and adjust the jacking screws either in or out depending on the error.
Note:- You should adjust both jacking screws the same amount.
4. Tighten the clamp screws and re check as stated in **2.**
5. Re adjust if required.
Note: - Small movements of the jacking screws are better than large movements.



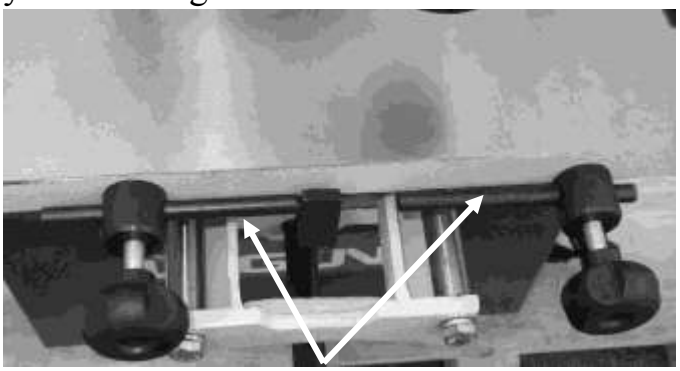
Mortiser clamp



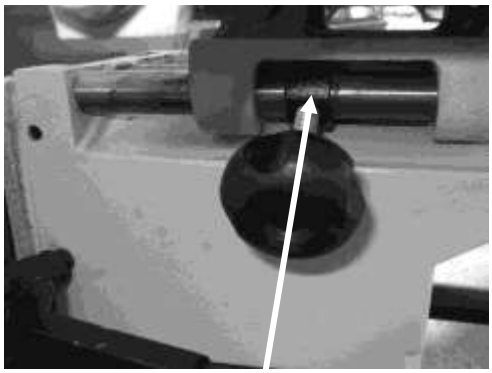
Mortiser handle

Fit the mortiser handle and clamp with the fixing screw at the bottom of the shaft.

Assemble and fit the work clamp. Clamp the vertical shaft to the work table with the nut and washer provided.
Note: - The clamp can be fitted to either side of the table to suite the job that you are doing.



Stop bars



Stop

Stops are provided to limit the sideways movement of the table to suit the job at hand.
Loosen the clamp [either left or right hand side] position the stop bar in the position required and clamp in position.
A side stop is provided to limit the forward travel of the table. This is used to set the depth that the cutter will travel into the job.
With the cutter not rotating gently bring the table forward so that it just touches the work piece. Loosen the clamp and move so that the clamp is away from the back casting face the correct dimension for the depth of cut and clamp in position.
It is suggested that you check the depth and width of cut by machining a scrap piece of wood untill you become famiular with the machine.

<u>Table vertical lock</u>
The table is provided with a vertical lock on the left hand side of the mortiser. Always lock the table once you have adjusted vertically as it may move due to the vibrations caused by the action of cutting.

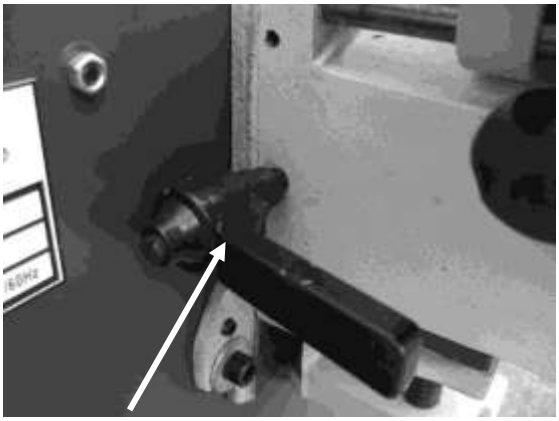


Table vertical lock

Running and adjusting the machine.

Cleaning the machine.

The machine is shipped with the none painted surfaces protected from rust by a film of grease.
The grease must be removed with WD40 or similar as it attracts saw dust and dirt. The surfaces should then be coated with a Teflon lubricant or similar. Teflon tends to dry and will not attract saw dust and dirt.

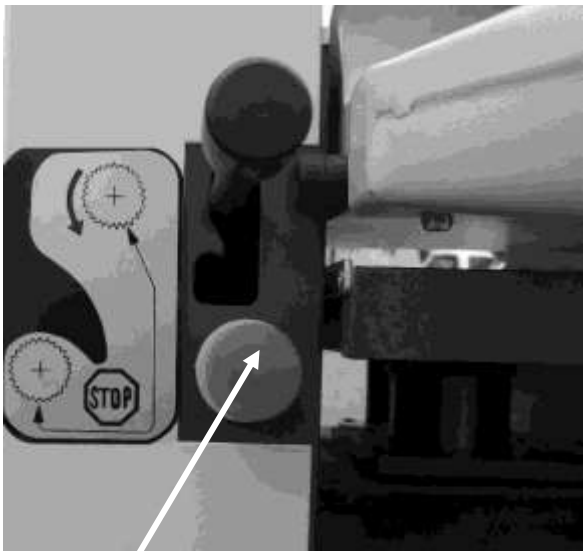
Test Run

Now that the assembly is complete it is time to conduct a test run.
During the test run you will check the following points.

1. Motor starts and runs smoothly.
2. That the stop and emergency stop buttons function correctly.
3. That the table micro switch functions correctly.

Before you run the machine check the following.

1. All the tools have been removed from the machine.
2. All the guards are in place.
3. The tables are down and locked in position.
4. You are wearing the appropriate safety equipment.
5. You have read and understood the instruction manual.



Stop button

Start button

Emergency stop button

Note:- If any of the below functions fail to operate correctly the fault must be corrected prior to continuing to the next test. Any investigation to find or correct a fault must be conducted with the power disconnected.

Note:- The emergency stop button when pressed in with remain in the off position until re set. To re set the emergency stop button twist. Check that the emergency stop button is in the out position prior to conducting the below tests.

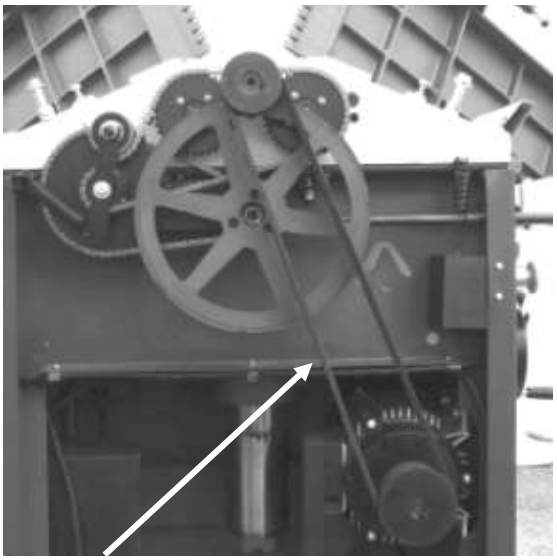
1. Start the machine by pressing the green start button.
The machine should run smoothly with little or no vibration.
2. Press the red stop button. The machine should slow down and stop.
3. Restart the machine and press the emergency stop button. The machine should slow down and stop.
4. Lift the tables to the vertical position and press the green start button. The machine should **not** start.
5. Lift the yellow dust extraction hood to the plainer position and ensure that it is held in place by the retaining pin and press the green start button. The machine should start.

Adjustments

Note;- The machine has had all its functions calibrated at the factory but due to shipping conditions some movement may have taken place. This is unavoidable and it is therefore recommended that the following checks are made prior to starting production. As the machine is used some functions may move and it is therefore good practice to become know the process for adjusting the machine prior to production.

Adjusting the drive belts.

The drive belts should be checked after running the machine for approximately 10 hours. The belts bed into the pulleys and will slacken off slightly. If they are not adjusted slippage may accrue and this will cause early belt failure. There should be a 3/16" deflection when the belt is pressed with moderate finger pressure.
Note:- To access the motor and drive belts, remove the panel.
Note:- Disconnect the power to the machine prior to conducting and machine adjustments or repairs.



Drive belts

Setting the out feed table to the cutter head.

The out feed table must be level with the teeth / blade of the cutter head when the teeth / blade is at top dead centre [T.D.C.]

1. Rotate the cutter head so that the blade / teeth are at the T.D.C. position.

2. Place a straight edge on the out feed table over the cutter head and check that the blades/ teeth just touch the straight edge.

Note:- This has to be checked at both sides of the table.

3. Check that the table is lined up with the scale at "0".

4. If adjustment of the scale is required, loosen the screws that clamp the scale and adjust.

Setting the in feed table.

1. Place a straight edge so that it is equal on both the in feed and out feed tables.

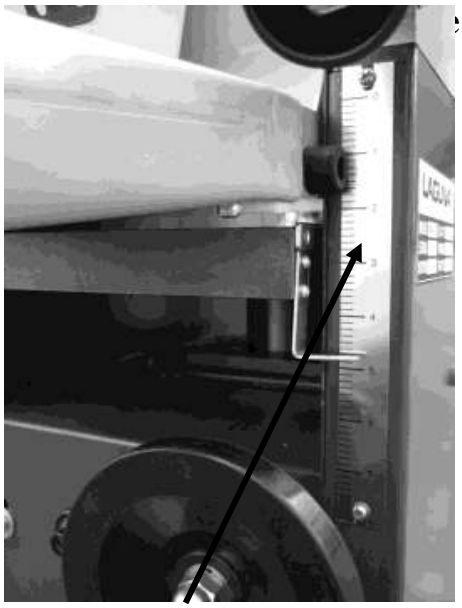
2. Bring the in feed table up so that the straight edge is even on both tables.

3. Check that the table is lined up with the scale at "0".

4. If adjustment of the scale is required, loosen the screws that clamp the scale and adjust.

Setting the planer depth Scale

The simplest way to check if the plainer scale is set correctly is to machine a piece of wood , check the finished thickness of the wood and check that the scale is reading the correct dimension. If adjustment is required, loosen the gauge clamp screws and adjust the scale.

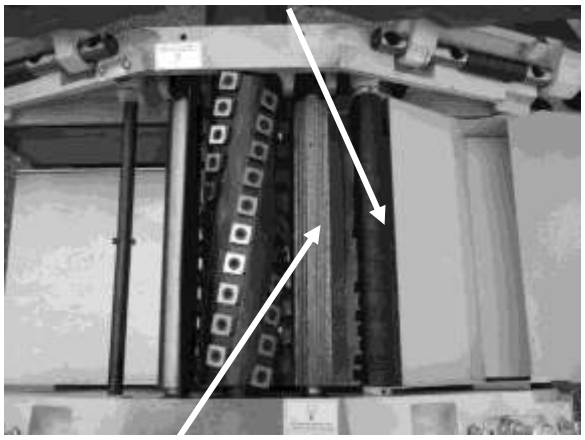


Planer depth Scale

Anti kick back teeth

The anti kick back teeth must be free to move or they will not for fill there function.
With the power disconnected, check that all the teeth move freely. If they do not lubricate with Teflon based lubricant.

Anti kick back teeth



Pressure roller

Fitting teeth to the Sher tec cutter head

The carbide cutter head [Sher Tec] has multiple teeth which have 4 cutting edges. The teeth can be rotated as follows when they are blunt.
Note:- You will notice that each cutter tooth has a registration dot to enable you to ensure that the teeth are moved round in the same direction.
1. Loosen the tooth with the special allen key
2. Lift the tooth and rotate to the new cutting face.
Note:- Take special care to clean the tooth and its mating surface. Any dirt or sawdust that is trapped under the tooth will cause it to be at a different height to the other teeth and degrade the surface finish when you start machining. This will result in you having to take all the teeth out and clean the teeth and the mating surfaces again. This is very frustrating and a waste of time, take your time and ensure that you are very thorough with cleaning.

Sher tec cutter head

3. Lower the tooth into the cutter head and clamp with the allen key.
Note:- Only move all the teeth to a new cutting edge. Do not move less than all the teeth.
Note:- The carbide cutter head will has several advantages over the parallel blade type cutter head.
1. The teeth are carbide and will last longer than high speed steel parallel blades.

2. There is less chance of tare out.
The disadvantage is that they are initially more expensive and that the surface finish is slightly wavy. This is caused because the teeth have a very slight radius. This waviness is easily removed by a light sanding.

Fitting blades to parallel blade cutter head.
Blades must be HSS 250X30X3mm and must meet the requirements of EN847-
WARNING! Disconnect the machine from the mains before any adjustment.
1. Lift the tables to the vertical position.
2. Release the clamping screws.
3. The blade will be released and the springs will eject the blade.
4. Remove the blade and clean the bearing surface.
5. Clean the new blade carefully. It is very sharp and can cut you very easily.
6. Insert the new blade and tighten the clamping screws using a suitable blade height setting fixture or gauge to set the blade to the correct height.
Note:- Screw tightening sequence. Start tightening the centre screw and work outwards on either side of the centre screw.
Note:- The maximum amount that the blade can extend passed the surface of the cutter head is 1.1mm. It is recommended that you set the blades to0.7 to 0.8mm above the cutter head.
Note:- Before you close the tables and start the machine, check that all the clamping screws are tight.
WARNING! Never use blades that are narrower than 17mm as the clamping area is too small and there is a real danger that the blades can fly out of the machine causing injury or death.

Adjusting the table locking clamps.

Note:- Disconnect the power from the machine.
1. Lift the tables to the vertical position.
2.Loosen the lock nut, adjust the bolt and tighten the locking nut.
3. Lower the table and engage the locking clamp.
4. Repeat until the locking clamp securely clamps and locks the table.

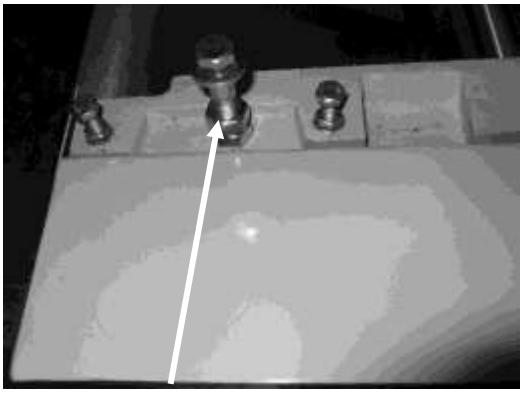


Table lock bolt

Maintenance

As with any machine, to ensure optimal performance you must conduct regular maintenance.

Daily checks.

1. Clean the machine and lubricate unpainted surfaces with a Teflon lubricant. Wipe off any excess and buff with a dry polishing cloth. This will reduce the likely hood of rust forming and reduce the friction on the tables as the wood is machined.
2. Check cutter teeth for chips and dullness.
3. Generally inspect the machine for damage and loose or warn parts.

Weekly checks.

1. Clean the cutter head.
2. Check cutter teeth for chips and dullness.
3. Generally inspect the machine for damage and loose or warn parts.
4. Check the dust extraction for blockages and any large bits that could cause blockages.

Monthly checks.

1. Check the motor drive belts for wear, splits and cuts.
2. Clean the motor compartment and the motor to ensure that the motor cooling fins work efficiently.
3. Clean and lubricate the drive chains and cogs.
4. Clean and lubricate the plainer table column and worm drive.
5. Clean and lubricate the table pivot shafts
6. Generally inspect the machine for damage and loose or warn parts.
Note:- It is recommended that you use a Teflon based lubricant.

Drive belt replacement.

Note:- If your machine is fitted with a double drive belt system, always replace both belts with a matched pare. **Never** replace only one belt as this will cause vibration, excessive ware to bearings and result in a poor work finish.
Note:- Disconnect the power to the machine.
1. Remove the side cover.
2. Loosen the motor clamping bolts.
3. Remove the drive belt / s.
4. Fit the new belt / s.

5. Re tension the belts. There should be a 3/16" deflection when the belt is pressed with moderate finger pressure. Tighten the motor clamping bolts.
6. The drive belts should be checked after running the machine for approximately 10 hours. The belts bed into the pulleys and will slacken off slightly. If they are not adjusted slippage may accrue and this will cause early belt failure. There should be a 3/16" deflection when the belt is pressed with moderate finger pressure.
7. Refit the side cover before running the machine.

Lubricating the machine.

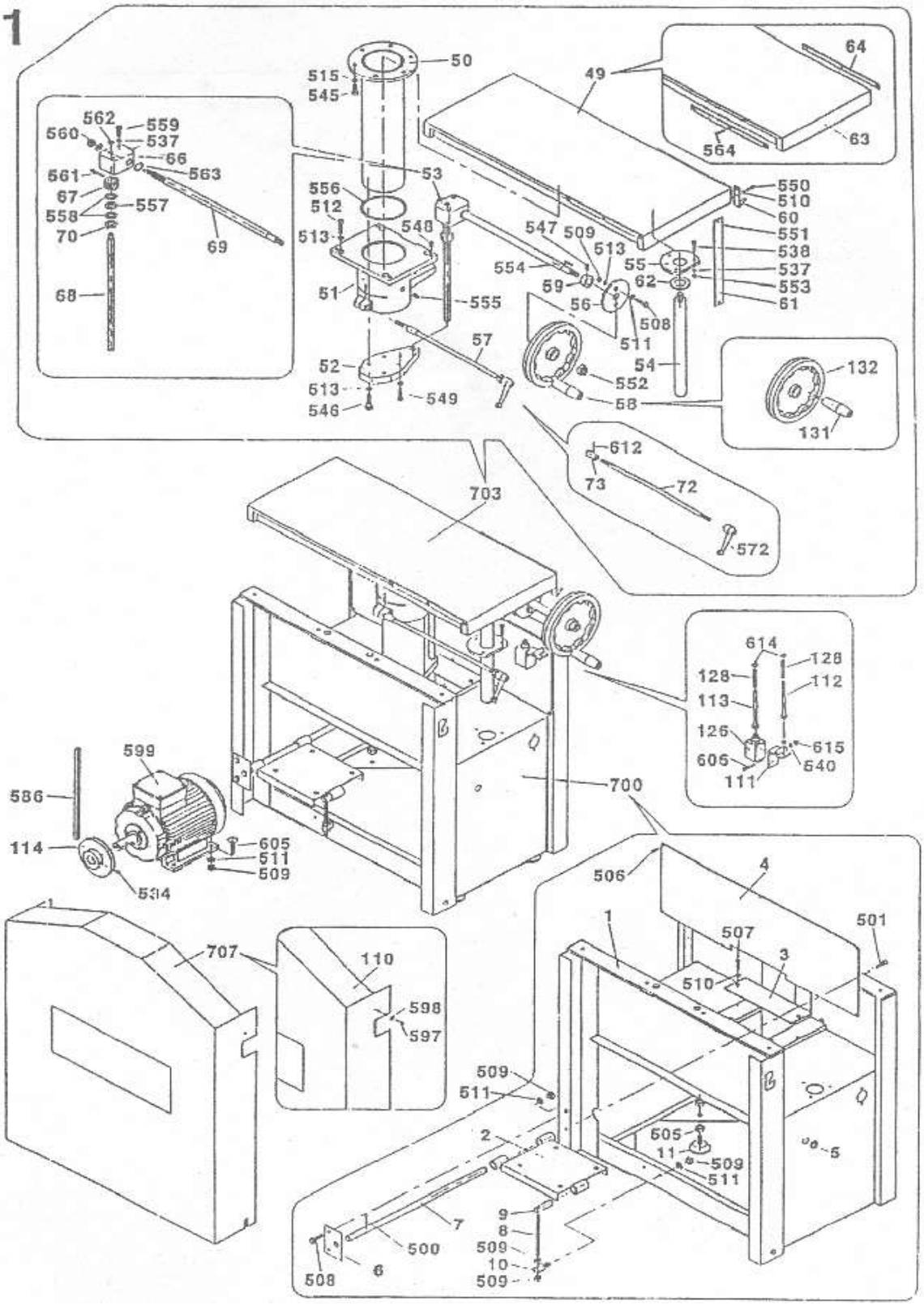
Note:- All the bearings are sealed for life and do not require lubrication. If a bearing is noisy do not try to re lubricate but replace it.
Note:- It is recommended that you use a Teflon based lubricant as it tends to dry and therefore will attract less saw dust and dirt.
1. Lubricate the drive chains and cogs. To gain access to the drive system remove the side cover.
2. Clean and lubricate the plainer table column and worm drive. To gain access to the plainer table column remove the side cover.
3. Clean and lubricate the table pivot shafts

Troubleshooting and fault finding.

Problem	Cause	Corrective action
Motor will not start or fuses or circuit breakers blow.	1. Emergency button depressed.	1. Rotate until the switch returns to off position
	2. Short circuit	2. Repair or replace short circuit item.
	3. Start capacitor faulty.	3. Fit new capacitor.
	4. Motor thermal protection circuit breaker faulty, or motor is at fault.	4. Replace thermal Protection Circuit Breaker in motor or replace motor.
	5. Open circuit in motor or loose connections.	5. Replace or repair motor or loose connection
Fuses or circuit breakers blow.	1. Motor drawing excessive current	1. Repair or replace motor.
	2. Cutter head or motor jammed	2. Remove jam.
	3. Short circuit	3. Repair or replace short circuit item.
Motor will not develop full power or motor speed slows with load, overheats, or stalls.	1. Motor run capacitor at fault.	1. Replace the capacitor.
	2. Machine overloaded.	2. Take smaller cuts.
	3. Motor overheating.	3. Clean motor taking, care to make sure that all the cooling fins are clean.
	6. Short circuit in motor or loose connections.	6. Repair or replace motor / loose connections.
Cutter head slows or belt squeals when cutting,	1. V-belt loose.	1. Tighten V-belt
	2. V-belt worn out.	2. Replace V-belt

Loud noise coming from machine.	1. Motor pulley set screws or keys are missing or loose	1. Replace or tighten if necessary.
	2. Drive belts are damaged.	2. Replace drive belts
Tables are hard to adjust.	1. Table spindles are tight.	1. Clean and lubricate spindles.
Tables will not lock	1. Table locks too high or too low.	1. Adjust lock bolts.
Excessive snipe. (gouge in the end of the board that is uneven with the rest of the cut).	1. Out feed table is too low.	1. Re set out feed table with cutter head.
	2. Operator pushing down on trailing end of job.	2. Eliminate downward pressure on trailing end of job.
	3. job is not supported as it leaves the out feed of the planer.	3. Support the job as it leaves the out feed of the planer.
Job stops or slows in during cut.	1. Taking too deep cut.	1. Take a smaller cuts.
	2. Pitch or build up on planer components.	2. Clean the tables and cutter head components
Chipping or marks (consistent pattern).	1. Knots or conflicting grain direction in wood.	1. Inspect job for knots and grain direction; only use good material.
	2. Nicked, chipped or dull blade or carbide tooth.	2. Replace the blade or rotate/replace affected tooth.
	3. Taking too deep cut.	3. Take smaller cuts. Take small cuts on hard woods.
Furry finish on the grain.	1. Wood has high moisture content or surface wetness.	1. Check moisture content and allow to dry.
	2. Blunt blades or teeth.	2. Rotate/replace the

		blades or teeth.
Lines or ridges that run along the board	1. Nicked or chipped blades or teeth.	1. Replace blades or rotate or replace teeth.
Chatter marks across the face of the board. Uneven blade or teeth marks, wavy or surface.	1. Blades not adjusted at even heights.	1. Adjust the blades so they are set up evenly in the cutter head
	2. Teeth not installed evenly.	2. Check that there is no dirt etc under the teeth and that they are evenly tight.
	3. Worn cutter head bearings.	3. Replace cutter head bearings.
Shiny finish.	1. Blades or teeth are blunt.	1. Rotate/replace the blades or teeth.
	2. Too fine a cut.	2. Increase the depth of cut.
Chip Marks Random pattern.	1. Chips not removed from cutter head.	1. Use a dust collection system. Or a stronger dust collection system
Board edge is concave or convex after jointing.	1. Job not held with even pressure on in feed and out feed table during cut.	1. Hold job with even pressure as it moves over the cutter head.
	2. Job started too uneven.	2. Take small cuts to remove the extreme high spots before doing a full pass.
	3. Board has excessive bow or twist along its length.	3. Surface plane one face so there is a good surface to position against the fence.
	4. Insufficient number of passes.	4. It may take 3 to 5 passes to achieve a Good edge, depending on starting condition of board and depth of cut.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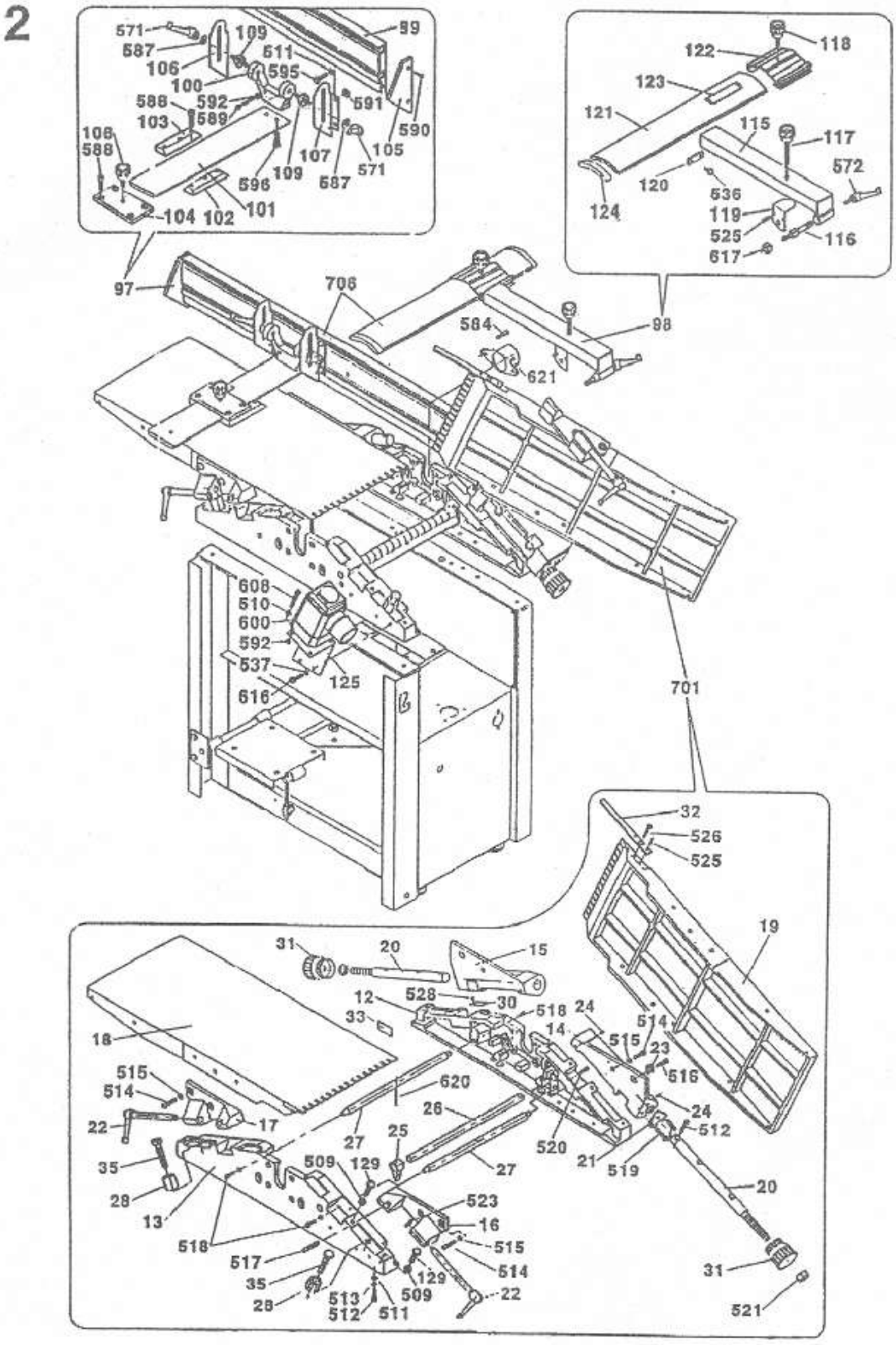
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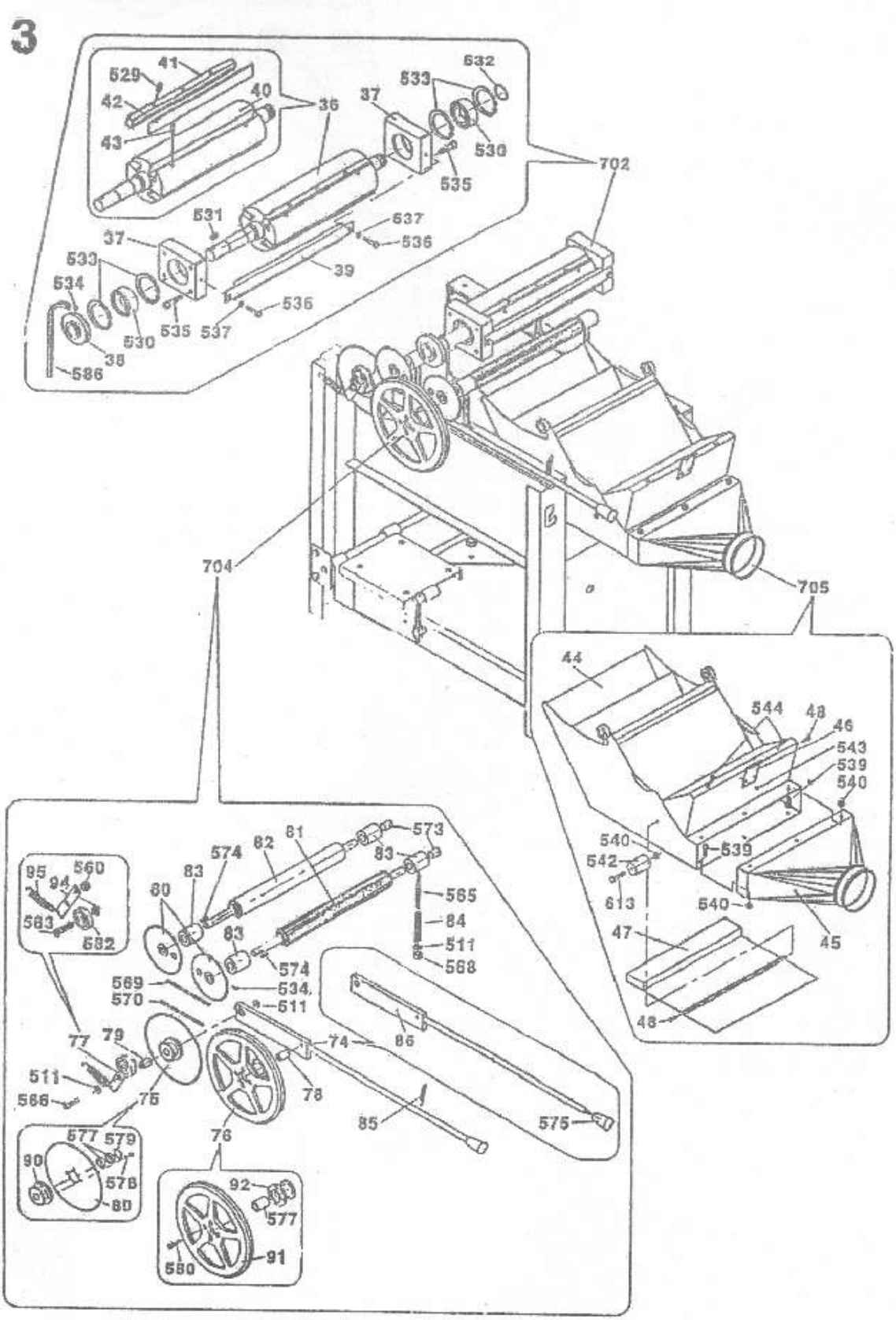
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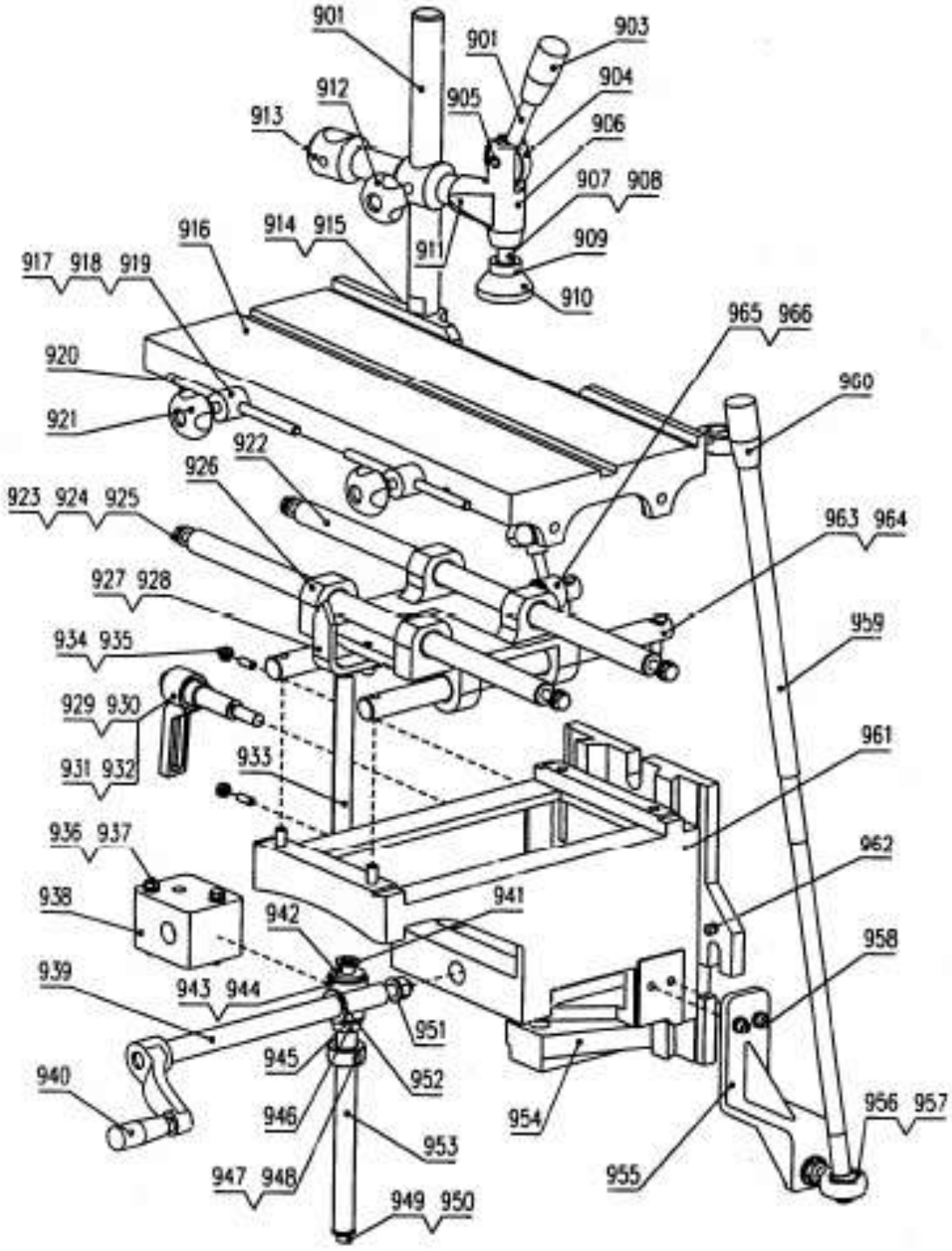
Mortiser exploded drawing.



SPARE PARTS LIST No	Part Name	Qty	No	Part Name	Qty
1	Right and left support plate	1	43	Socket hex cap screw M6X16(SK)	8
2	Motor plate	1	44	Dust chute	1
3	Defend plate	2	45	Outlet	1
4	Side plate	1	46	Locking plate of dust chute	1
5	Nylon bush	1	47	Turning plate	1
6	Support plate	1	48	screw M5x6	2
7	Support axis	1	49	Thicknessing table assembly	1
8	Adjusting bolt	1	50	Lifting tube	1
9	AX	1	51	Lifting tube bracket	1
10	Adjusting bolt	1	52	Worm base	1
11	Rubber support	4	53	Gear assembly	1
12	Right cutter block support	1	54	Oriented bar	1
13	Left cutter block support	1	55	Locking block	1
14	Right adjusting bracket	1	56	Locking plate	1
15	Left adjusting bracket	1	57	Locking bar assembly	1
16	Right locking block	1	58	Hand wheel	1
17	Left locking block	1	59	“C” ring	1
18	Outfeed table	1	60	Pointer	1
19	Infeed table	1	61	Depth scale	1
20	Adjusting axle	2	62	Oriented bush	1
21	Metal plate	2	63	Thicknessing table	1
22	Locking handle assembly	2	64	Limiting plate	4
23	Eccentric bush	2	66	Limiting plate	1
24	Locking bolt M10X8	2	67	Gear	1
25	Kick block	15	68	Guide screw	1
26	Axis axle	1	69	Gear axle	1
27	Support axle	2	70	Bush	1
28	Nut M12	2	72	Double head screw	1
30	Scale	1	73	Locating block	1
31	Adjusting wheel	2	74	Control handle assembly	1
32	Locating plate	1	75	Chain wheel assembly	1
33	Scale	1	76	Chain wheel	1

				assembly	
35	Hex bolt M12X55	2	77	Adjusting wheel assembly	1
36	Cutter block assembly	1	78	Bush	1
37	Ball bearing bush	2	79	Bush	1
38	Cutter block pulley	1	80	Sprocket Ⅳ	2
39	Protective plate	1	81	Driving roller	1
40	Special cutter block（SK）	1	82	Pressing roller	1
41	Blade locking block	4	83	Bush	4
42	Special blade（SK）	4	84	Double head screw	4

No	Part Name	Qty	No	Part Name	Qty
85	Spring	1	500	Pin 3.2X30	1
86	Connecting plat	1	501	Socket cap screw M10x16	1
89	Sprocket Ⅲ	1	505	Nut M10	8
90	Chain wheel Ⅱ	1	506	Bolt M5x8	5
91	Cast iron friction wheel assembly	1	507	Bolt M5x8	4
92	China wheel	1	508	Hex bolt M8x16	4
94	Plate	1	509	Nut M8	15
95	Spring	1	510	Washer 5	12
97	Guiding fence assemble	1	511	Washer 8	26
98	Cutter block protective fence	1	512	Socket hex cap screw M8x25	4
99	Fence plate	1	513	Spring washer 8	19
100	Supporting bracket (SK)	1	514	Socket cap screw M10x30	4
101	Guiding plate (SK)	1	515	Spring washer 10	4
102	Right metal plate (SK)	1	516	Socket hex cap screw M10x40	2
104	Connecting plate(SK)	1	517	Pin A6X40	2
105	Protective plate	2	518	Socket hex cap bolt M6x16	4
106	Left sliding	1	519	Hex M8x16	2

	plate(SK)				
107	Right sliding plate (SK)	1	520	Locating bolt M6X16	1
100	Supporting bracket (SK)	1	521	Nut M16	4
110	Protective cover	1	523	“C” ring 15	2
111	Switch fixing plate	1	525	Pin 6X16	1
112	Short locating bar	1	526	Socket cap screw M6x16	1
113	Long locating bar	1	528	Bolt M4x6	2
114	Motor pulley	1	529	Square head screw M6X10	20
118	Locking handle	1	530	Self – centre bearing 2206	2
120	Support plate	1	531	Key 8X16	1
121	Protective plate	1	532	“C” ring 30	1
122	U-shaped bracket	1	533	“C” ring 62	4
123	Locking plate	1	534	Locking bolt M6X10	4
124	Plastic insert	2	535	Socket hex cap screw M8x30	8
125	Switch mounting plate	1	536	Hex screw M6x10	2
126	White micro switch	1	537	Washer 5	12
128	spring	3	538	Socket hex cap screw M6x25	3
129	Hex bolt M8x25	2	539	Hex screw M6x10	9
131	Bar sleeve	1	540	Nut M6	18
132	Hand wheel	1	542	Rubber cylinder	1

544	Anti-vibration washer	2	546	Socket cap screw M8x30	8
545	Socket cap screw M10x16	7	547	Locking bolt M8X8	1
No	Part Name	Qty	No	Part Name	Qty
548	Locking bolt M8X16	4	592	Nut M5	7
549	Socket cap screw M6x16	1	595	Hex bolt M8x16	4
550	Screw M5x8	2	596	Socket cap screw M6x12	2
551	Screw M4x6	2	597	Screw M5x8	2
552	Cap nut M12	1	598	Washer 5	2
553	Nut M6	4	599	Motor	1
554	Key 5X12	1	600	Electromagnetism	1

				switch	
555	Lubricating injection hole M10	1	605	Hex cap screw M8x25	4
556	Seal	1	606	Socket cap screw M6x40	1
557	Ball bearing 51102	1	608	Screw M5x50	2
558	Washer 10	2	612	Elastic pin 4X14	1
559	Hex cap screw M6x65	2	613	Socket cap screw M6x16	2
560	Self-locking nut M10	2	614	“C” ring 6	2
561	Elastic pin 4X25	1	615	Cap nut M6	1
562	Elastic “C” ring 10	1	616	Socket cap screw M5x12	2
563	Elastic “C” ring 18	1	617	Nut M12	1
564	Screw M5x6	12	619	Handle assembly	1
565	Spring	4	621	Protective cover	1
566		Hex cap bolt M6x10		1	
568	Nut M8	4	650	Semicircle head screw M10X100	1
569	Chain 05B-1X106	1	651	Washer 10	2
570	Chain 05B-1X90	1	652	Socket cap screw M8X70	1
571	Locking handle	2	653	Nut M8	1
572	The handle assembly	1	654	Socket cap screw M8X20	2
573	Axle bush	8	655	Screw M10X30	1
574		Key 5X16		2	
575	Handle	1	700	Base assembly	1
577	Bearing 61901-2Z	4	701	Planning table assembly	1
578	Screw M6x10	4	702	Cutter block assembly	1
579	“C” ring 24	4	703	Thicknessing table assembly	1
580	Screw M6x16	4	704	Thicknessing clutch assembly	1
582	Ball bearing 6303-2Z	1	705	Extraction system assembly	1
583	Pin axis	1	706	Fence assembly	1
584	Bolt M6x16	2	707	Protective cover assembly	1
586	v-belt (L=1500)	1	589	Hex bolt M5x50	1
587	Washer 10	6	590	Screw ST5X40	4
588	Socket cap screw M6x12	6	591	Nut M8	4

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