

Hammer®

www.hammer.at



Machine Setup Guide

1. Foreword

This Machine Setup Guide is intended as an additional reference to the Operating Manual that is provided with the machine, not as a substitute. Under no circumstance should you use the machine without reading the Operation Manual first.

The correct operating procedures are described within the Operation Manual and these must be rigidly adhered to, along with the guidelines described for safety. In addition to this there is a significant amount of important information to be found in the Operation Manual that is not covered by this Machine Setup Guide including specific information for your particular machine. This Setup Guide is functional for a variety of Hammer machines.

Safety First

Before every use of the machine, perform the safety checks that are detailed in the Operation Manual for your particular machine. It is also important to understand that even with all of the appropriate safety devices correctly installed, there are still risks remaining. Any potential operators of the machine should be fully aware of these risks and must also have read the Operation Manual before using the machine.

Never perform any adjustments to the machine with the tool running. Always switch off the machine before making adjustments. Never work when you are tired and always apply common sense to your working techniques in addition to those techniques outlined in the Operation Manual.

©2005 HAMMER - Errors and modifications of technical data reserved at any time, always use the safety devices provided with the machine.

4. Process Overview

The Machine is manufactured, assembled and rigourously quality controlled at the factory in Austria.



The machine is fully calibrated and test cuts are made before it is packed for shipping.



The machine is then shipped out to you.



The machine is delivered



You unpack the machine from the container(s) and study the Operation Manual



You then remove the machine from the pallet



Only after reading the Operation Manual, clean all components of preserving oils



Assemble the machine, position it and connect it to the extraction system



Perform some basic checks to ensure accuracy and for peace of mind



Start enjoying your new Hammer!

5.Delivery

Before We Ship Anything...

Your machine has been manufactured, assembled and rigorously quality controlled at our factory in Austria. The machine was fully assembled and fully calibrated, including making test cuts. Once the quality controlling was completed (Homologation to GS and CE - a guarantee for high quality and safe machines!), it was packed for shipping, including treatment with preserving oils to protect the surfaces from corrosion and to help ensure that the machine will arrive in perfect condition



Delivery

The machine will be delivered in a protective cardboard enclosure. Check for any signs of obvious damage to this enclosure, or for signs of tampering. Machines with sliding tables of length in excess of 78" (2 meters) will have the sliding table shipped in a separate container.

An agreement between the FELDER Group and the shipping companies in the U.S. means that you, as a receiver, are allowed to inspect the shipment(s) for any kind of damage for 30 minutes upon arrival. This agreement also stipulates that any claims filed after this time will not be honored by the shipper.

In the unlikely instance that you believe there is or may be a damaged machine, article or component, please contact FELDER without delay so that this may be further clarified and if necessary, further action taken.

6.What You Will Need

What You Will Need to Get Going

- Cutting knife
- Torx head bits
- Power drill
- Wrenches
- 13mm, 17mm Sockets and ratchet drive
- Screwdrivers, Flat and Crossheaded
- Electrical provision*
- Board, 2ft x 4ft x ½"
- Board, 2" x 4" x 2ft
- Pallet jack
- An assistant (for sliding table assembly and to help bring the machine down from it's pallet)

*Powering Up

All new Hammer machines with the exception of those specified for 3 x 400 Volts, arrive with approximately 2 meters of cord and no plug, due to the number of variations in plugs/sockets across the market. These machines will therefore require a plug suitable for the electrical system you already have installed. Machines running 3 x 400 volts come equipped with a plug and approx. 78" (2 meters) of cord.

- Standard Breaker size is 30A. Please consult your electrician for details on arranging this



6.What You Will Need

For Making Basic Machine Checks:

Requirements listed by machine type:

For Saws;

- Approx. 3ft x 3ft board (at least ½" thickness for ease)
- Vernier calipers
- Tape Measure
- Precision square
- 45° Engineering Angle / Miter Gauge / Angle gauge
- 1 Meter Straight edge

For Shapers;

- Precision square
- 45° Engineering Angle / Miter Gauge / Angle gauge

For Joiner / Planers;

- Approx. 3ft x 2" x 4" boards; 2 of
- Vernier calipers
- Feeler gauge



7. Taking Off The Pallet

Removing the machine from the pallet

The cardboard enclosure can be removed by cutting through the plastic ties and pulling the cardboard away from the pallet wherever it is secured.

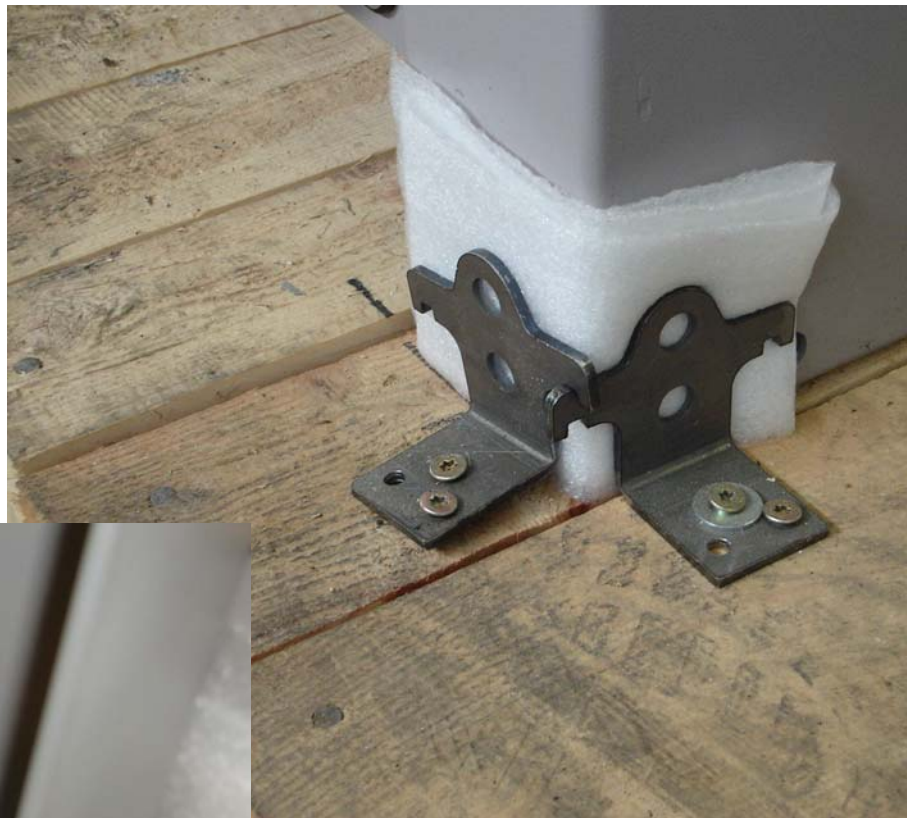
The machine comes wrapped in a preserving plastic film to protect the cast iron tables and to secure some of the accessory boxes. Pull off the plastic film or carefully cut through it, avoiding scratching the machine or cutting through any cables.



Cardboard boxes that sit on the pallet were stapled to the pallet whilst the box was still open, so these should be emptied of their contents before pulling up the box, this will avoid the contents falling through the bottom of the box when pulling the box off full.

7. Taking Off The Pallet

You will need a power drill and a torx head bit to remove the screws that secure the machine to the pallet. Extension tables that do not come assembled and rip fence guide bars will also be screwed down onto the pallet. Once these are removed and the rest of the pallet is cleared- check underneath the machine as well - you can remove the machine from the pallet.



Remove all torx screws before ☐
moving or pulling up machine ☐
and components

7. Taking Off The Pallet

To remove the machine from the pallet you will need some boards, similar to those pictured below, a pallet jack and ideally another person to help ensure the machine comes down from the pallet smoothly and safely.

Creating a Ramp



You may also wish to fix the ramp together with its supporting boards, especially necessary if the ramp seems unsteady or if it does not quite match up to the same height as the pallet. An example is shown with 6 fixing points.

7. Taking Off The Pallet

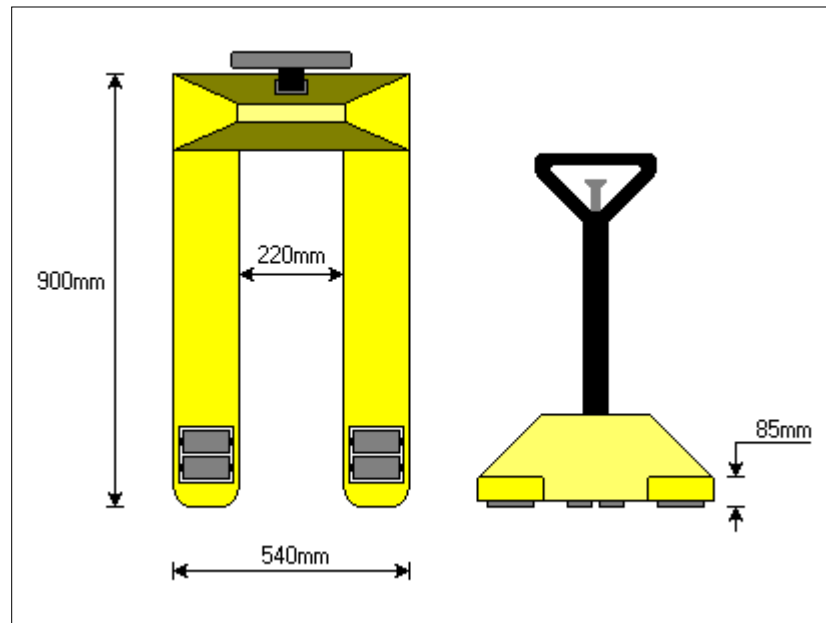
The Pallet Jack

The dimensions of the pallet jack are of obvious significance, because if the forks are too wide or too tall (when fully lowered), they won't fit underneath the machine. NOTE: for Joiner planers, it is almost unavoidable having to use only one of the fork legs. This will therefore require more care and definitely some assistance in bringing the machine into place. Take extra care not to pull the machine by the tables otherwise their alignment could be affected. Try where possible to use the chassis of the machine to manoeuvre it.



7. Taking Off The Pallet

The approximate dimensions of the pallet jack are shown below:



Check with your Hammer representative if you are uncertain whether your particular pallet jack will fit your new Hammer machine.

8. Positioning Your New Machine

Positioning Your New Machine

Once the machine is fully assembled and ready to go, you can position it where it will be best suited to the tasks that you want to achieve. The layout of your shop should have at least some form of direction. That is to say from loading stock material to final finishing there should be a distinct process direction in order to achieve maximum efficiency during busy periods. Reducing the number of times a part or workpiece is handled will go a long way to improving build time and will also contribute towards quality control. However, there are always space and shape restrictions and not everyone is blessed with a purpose built woodworking shop, so a compromise on efficiency may well be necessary.

To make certain that you get the most out of your machine, make sure that there is easy access to the operating sides of the machine and that sliding tables or joiner tables are not restricted in their travel. Where outrigger tables are included, make sure this can be used without interference, including the use of the crosscut fence. Check that the entire capacity of the machine can be used for the materials you will be processing. In particular, make sure the infeed and outfeed sides of the machine are suitably clear for the sizes of materials you intend to process. The machine should ideally be placed on a flat surface and leveling it will also be beneficial. Check that the position of the machine is also compatible with the extraction facility you presently have or intend to install.

Also of great importance is that the working area has no hazards at floor level – or even head level, as this will obviously make using the machine hazardous and unsafe. Appropriate lighting should be considered, as should ventilation for when the workload steps up a pace or two! All in all the environment should be conducive to precision woodworking.



9.Extraction

Extraction

Hopefully by now you will already have an extraction system in place, or have organised an appropriate extraction solution for when you are ready to begin machining. It would be unwise to begin machining without suitable extraction already in place as this would not only be a health hazard but will also impair the quality of the workpieces you can produce on your new Hammer. Your Hammer representative can offer further information about the extraction solutions that would be best suited to your needs.



10.Cleaning The Machine

Cleaning and Protecting the Machine

Once the machine is assembled and ready to be checked for calibration, it should be cleaned thoroughly to remove the various preserving oils that are left on the machine. This will also ensure maximum possible accuracy during the calibration process and will allow test cuts to be made under proper working conditions.

Once cleaned, surface protectants should be used to protect the machine against corrosion and to aid various woodworking processes.

Disposable, strong paper towels are most appropriate for this job as they will end up very dirty and greasy.

FELDER offer specialized cleaning fluids and treatments specifically for this purpose:



Universal Cleaner

Ideal for cleaning new machines, the Universal Cleaner is a very strong cleaning substance. It removes dirt, grease, and oil from treated surfaces in seconds. The Universal Cleaner does not affect textiles, plastics, rubber or paint. It comes in a solid spray container with an adjustable nozzle; contents: 0,5 liter. The spray bottle can be refilled with a convenient 3 liter container.

10.Cleaning The Machine

Cleaner for Plastics



The all purpose detergent for workshop, car, house and office in a handy spray bottle!

The FELDER Cleaner for plastics is an all purpose detergent for all kind of plastics. Whatever you use it for – to clean decorative chipboards or boards with laminated plastic, for machine components, inside or outside cleaning of the car, or to clean plastics in the house or in the office – even very dirty plastics will appear new again



Harzlöser

Removes resin easily from saw blades, tools and machine-elements! Solid spray container, adjustable nozzle; contents: 0,5 liter. The spray bottle can be refilled with a convenient 3 liter container.

10.Cleaning The Machine



Metall Glanz

Metall-Glanz protects metal surfaces from corrosion. It is a high performance long-term Corrosion Protectant and free of silicones. Metall-Glanz is not aggressive against textiles, plastics, rubber or paint. It comes in a solid spray container with an adjustable nozzle; contents: 0,5 liter. The spray bottle can be refilled with a convenient 3 liter container.

Guideways and Spindle Fluid



The Guideways and Spindle Fluid is ideal for all guidetracks, roller guideways and moving spindles. It is transparent and helps to repel dust and chips. The Guideways and Spindle Fluid contains no silicones and has a low friction factor ensuring slick movement of all treated guideways.

10.Cleaning The Machine

Super Gleit



Moist and wet timbers have a high resistance and are difficult to machine. Super-Gleit greatly reduces the gliding resistance of timber when shaping, surface and thickness planing. Super-Gleit contains no water or silicone particles ensuring that no residues remain on the timber. This enables later surface treatment without problem. Comes in a solid spray container with an adjustable nozzle; contents: 0,5 liter.

Note Regarding Sliding Tables

To prolong the life of your sliding table and to keep it working in top condition, keep the guideways clean and free from dust.

HAMMER recommends Super Gleit for cleaning the guideways, but the tracks **must** be kept dry, so after applying the lubricant, wipe it off otherwise dust and dirt will cling to the surface.

Adjustments

Alignment: p 74

JR02 Outfeed Table to Cutterblock

Check the outfeed table to the cutterblock with a dial indicator at either end of the cutterblock, as shown in Figures JR02.1 and JR02.2. Compare the measured results.

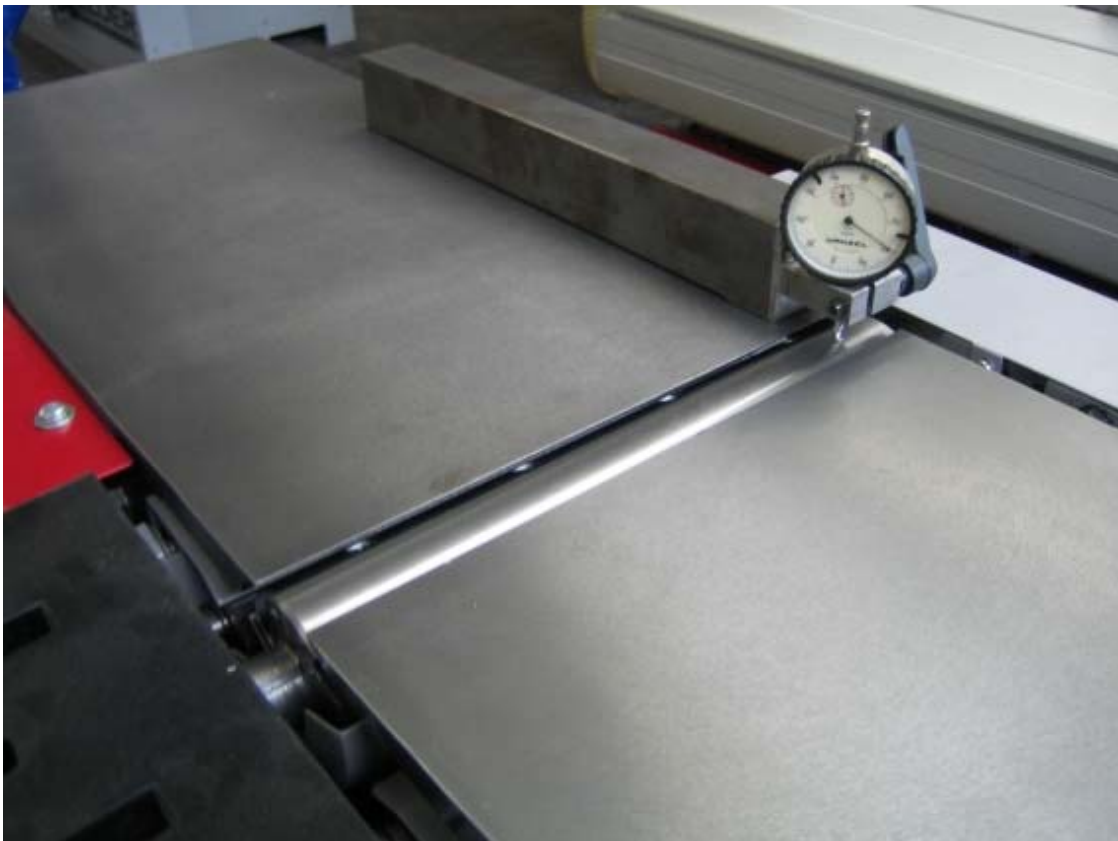


Figure JR02.1

Continued...

Adjustments

JR02 continued



Figure JR02.2

If the alignment is within spec, proceed to the next machine check. If the alignment is out of spec, adjustments are available.

If at all, it should only be necessary to adjust the table on the locking-handle side, shown in Figure JR02.3 (with the tables in the upright position). Move both of the adjustment bolts up or down depending on the requirement. When closing the table, the two bolt heads must touch the table at the same time, otherwise the locking mechanism will cause the table to tilt, by an amount dependant on the force used to lock the table.

After making the adjustment, check the new alignment.

Continued...

Adjustments

JR02 continued

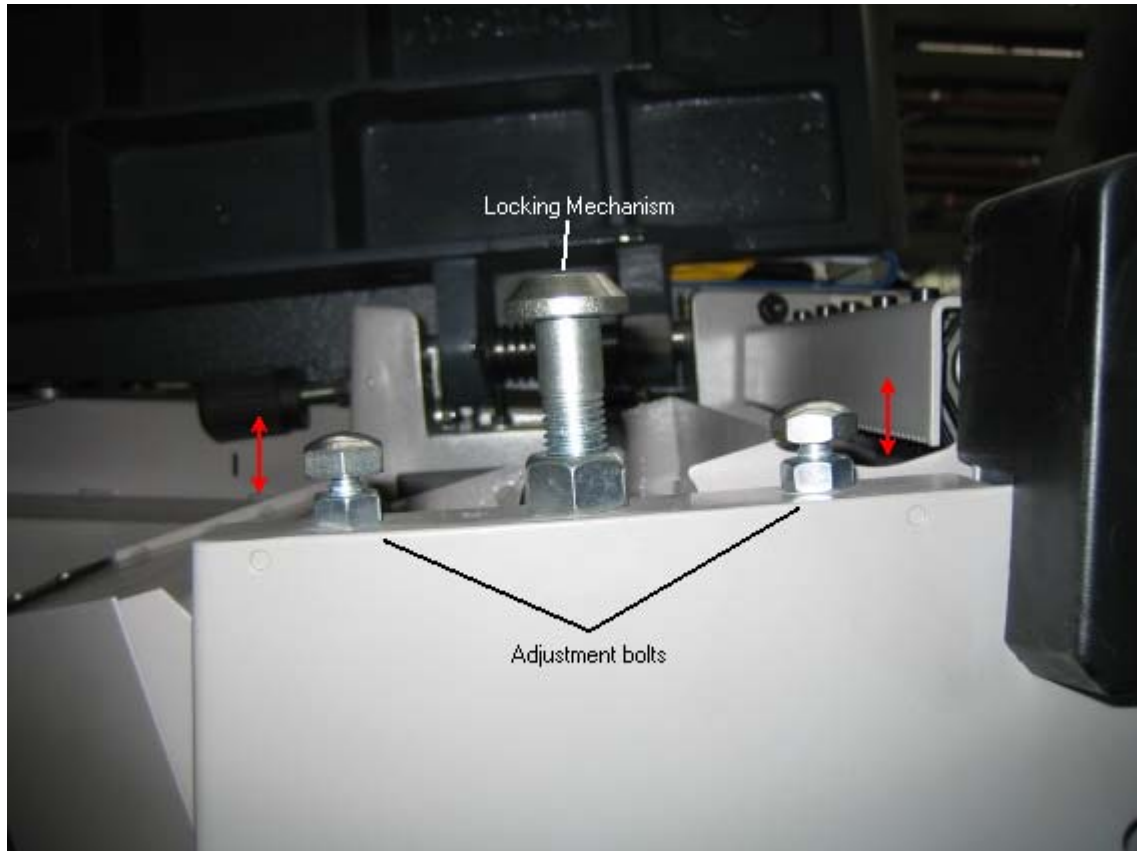


Figure JR02.3

If the overall height tolerance of the table to the cutterblock cannot be achieved with the fine adjustment knob* (shown in JR02.5), then adjustment on the hinge side will also be necessary, to raise or lower the table. These adjustments are shown in figure JR02.4. *Always raise the table to it's final position*

Continued...

Adjustments

JR02 continued

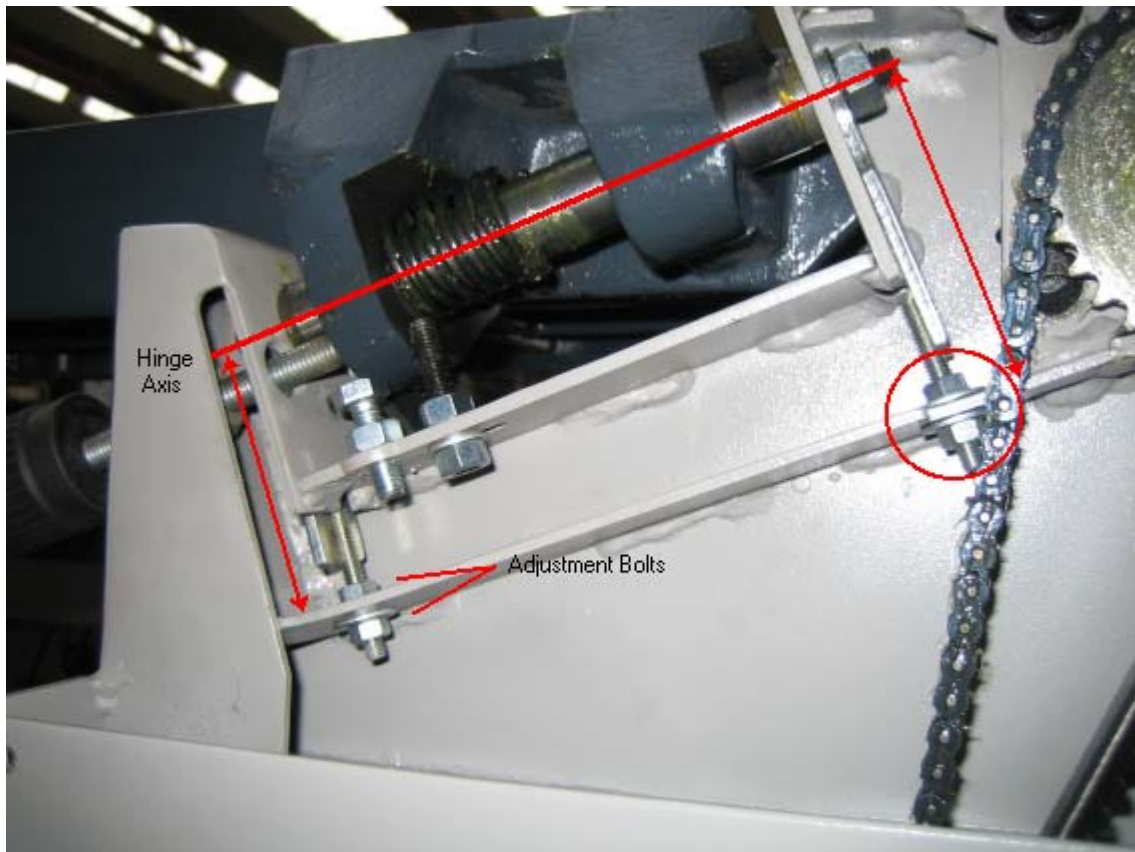


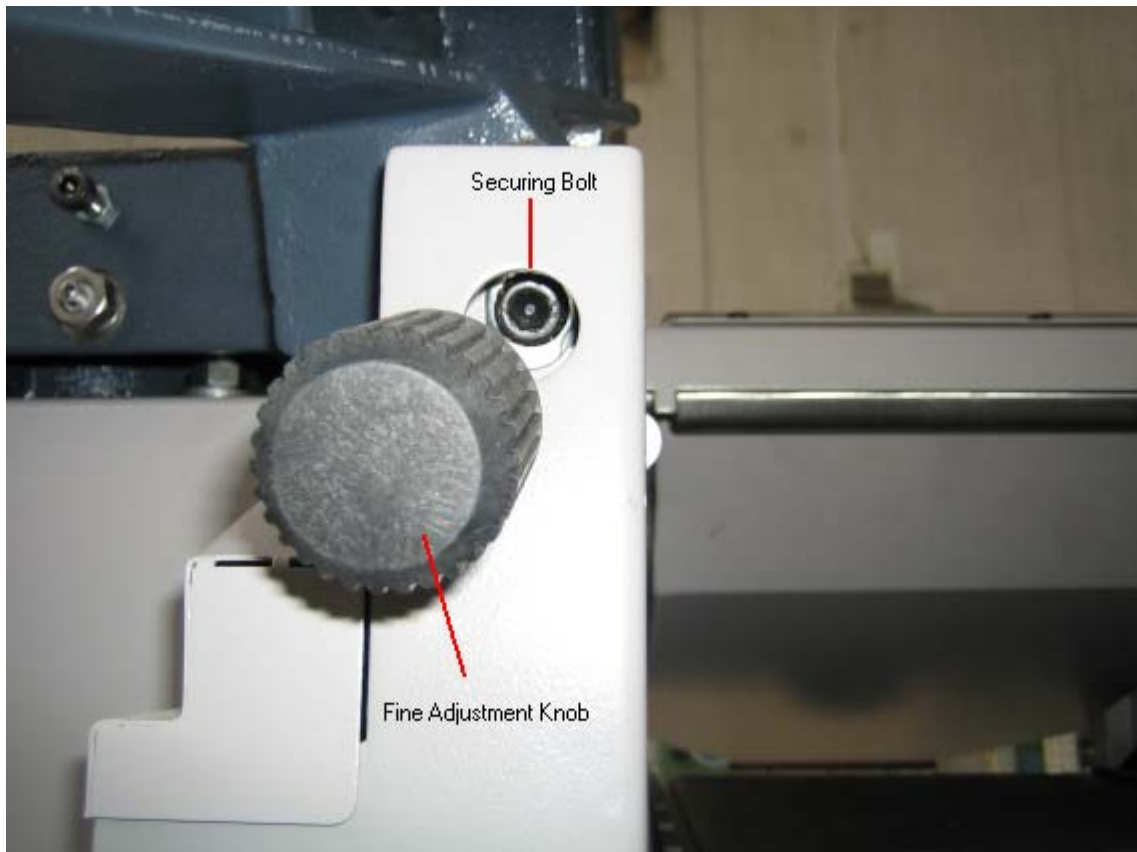
Figure JR02.4

To make adjustments here, the hinge securing bolt must first be released slightly. This bolt is shown in figure JR02.5. Loosen the bolt by one complete revolution, then make an adjustment to the table alignment (working in $\frac{1}{2}$ revolutions at a time), re-tighten the securing bolt and measure the new alignment.

Continued...

Adjustments

JR02 continued



JR02.5

Adjustments

Alignment: p 75

JR03 Knives to Outfeed Table

Using a dial indicator, check the height of all of the knives to the outfeed table, at each point where the knife is fixed into the cutterblock. If, at each point, the height is within tolerance, move onto the next machine check.

NB: The overall height of all of the knives can be adjusted with the outfeed table fine adjustment knob*, rather than adjusting each knife individually.

Always raise the tables to their final position



Figure JR03.1

To make an adjustment to the knife, start by loosening the securing screw, as shown in figure JR03.2, then make a small adjustment, say one eighth of a revolution, to the set screw, shown in figure JR03.3

Continued...

Adjustments

JR03 continued



Figure JR03.2

Figure JR03.3



Continued...

Adjustments

JR03 continued

Once the adjustment has been made, re-tighten the securing screw and check the height at this position and the two next to it with a dial indicator.

Once all knives are within the spec, the alignment is complete and the next machine check can be performed.

Adjustments

Alignment: p 76

JR04 Infeed Table to Outfeed Table

For checking the infeed table alignment, you will need a 2000mm straight edge and a feeler gauge. Place the straight edge across the tables in such a way that it is supported by the outfeed table only, so that it provides a reference line for the infeed table.

Now bring the infeed table up level with the outfeed table (or until the first contact between table and straight edge), as shown in Figure JR04.1

Now use the feeler gauge to determine the size of any gaps between the straight edge and the infeed table. Check at all of the specified positions.



Figure JR04.1

If the infeed table is within the spec then this check is complete and you can continue with the next machine check.

If the infeed table is not within the specified tolerance, there are adjustments available. The adjustments are shown in figures JR04.3 and JR04.4. For making any changes to the hinge side adjustments, the hinge securing bolt (figure JR04.2) must first be loosened and then re-tightened after adjustment.

NB: When making any adjustment, always leave the nut/bolt tight and check the new alignment. Always raise the tables to their final position.

Continued...

Adjustments

JR04 continued

Figure JR04.2

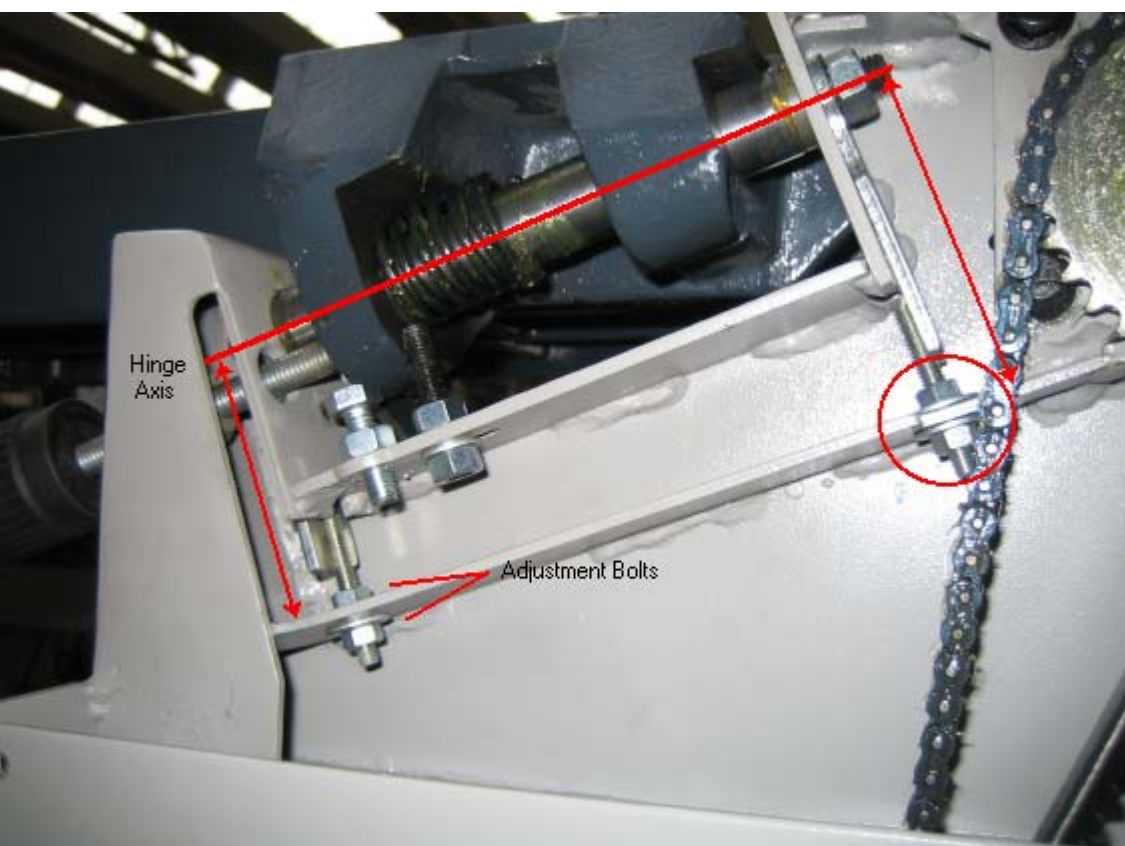
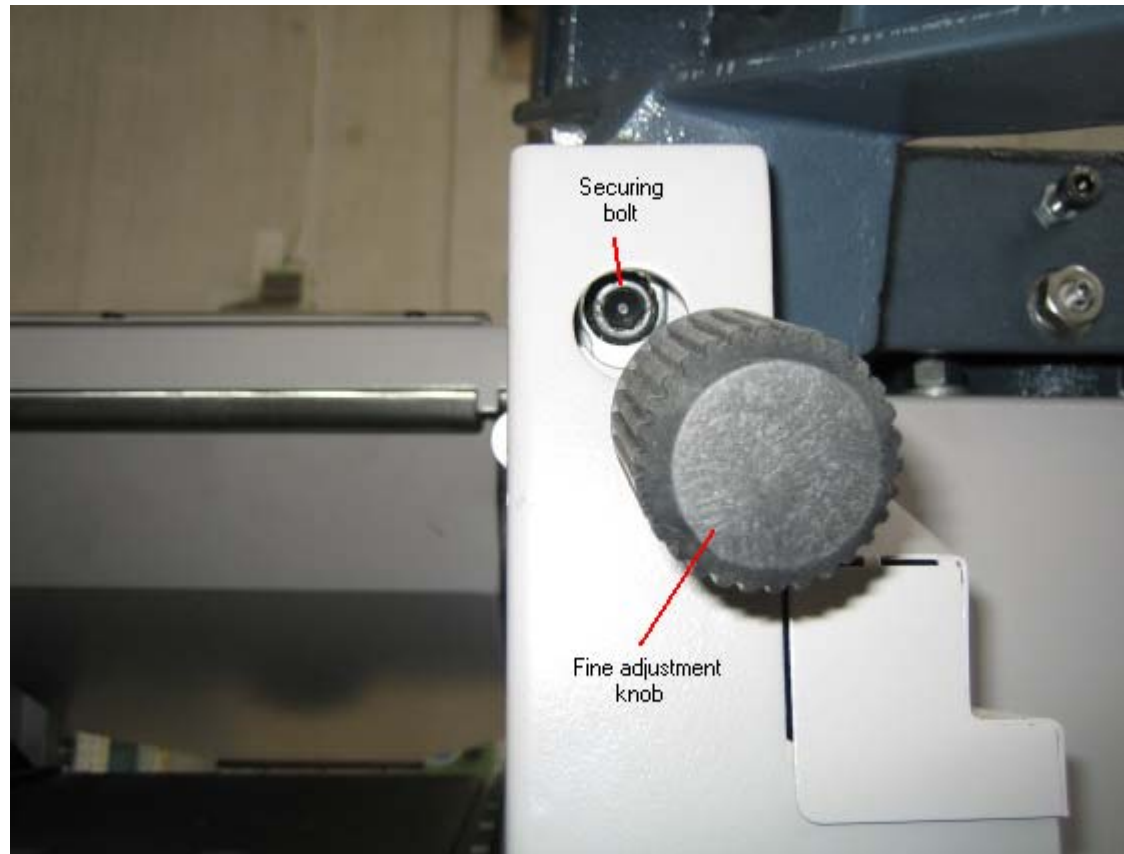


Figure JR04.3
(pictured with cover removed)

Continued...

Adjustments

JR04 continued

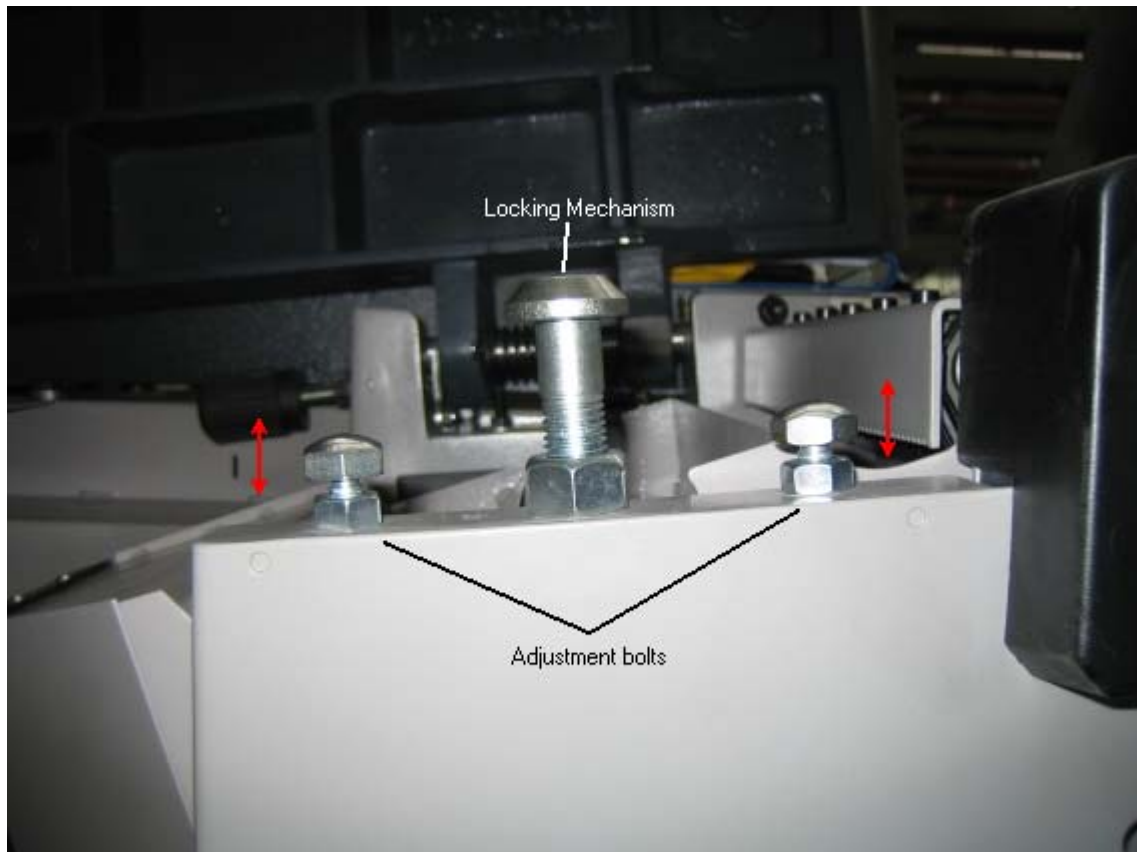


Figure JR04.4

Before finishing, make certain that when the infeed table is locked, the table does not tilt, either away from or towards the cutterblock. If it does tilt, it is almost certain that the two bolts on the locking side of the table (figure JR04.4) do not touch the table at the same time when it is brought down from the upright position.

Adjustments

Alignment: p 78

JR06 Joiner Test Cuts

You will need two 2" x 4" x 1 meter boards to do this test.

Join one face of each board, then place the two jointed faces together. You should have a slightly concave joint that produces a small gap between the boards at the centre of the joint. If you have gaps at each end of the joint, then the cut is convex and is not acceptable.

What to do if:

The concave cut is too large:

1. Use a dial indicator to measure the height of the knives above the outfeed table.
2. Keeping the dial indicator in place, use the fine adjustment knob for the outfeed table to raise the outfeed table (effectively lowering the knives) by 0.025mm (0.001").
3. Lock the table in this position and perform the test once more.
4. This adjustment can be repeated if the subsequent joint is still too concave, until the knives are just underneath level (-0.025mm, -0.001") with the outfeed table. At this point, the infeed table should be checked for its alignment to the outfeed table and adjusted as necessary.

The cut is convex:

1. Go back to checks JR03 and JR04 and make certain that these adjustments are within tolerance.
2. Check that both of the tables do not tilt when locked into position.
3. If these checks prove nothing is out of alignment, start with the knives at 0.10mm (0.004") above the outfeed table and make successive test cuts, each time moving the table up by 0.025mm (0.001"), until a concave cut is obtained.

Adjustments

JR07 Snipe Check

To check for snipe, you will need a board, say 2" x 4" x 2 ft long (although these dimensions are not necessarily important). Join the board on one face and check the back end of the workpiece for a deeper cut similar to that illustrated in the tolerancing information. This cut is called snipe and occurs when the knives are too high above the outfeed table. The solution is to move the table up (effectively moving the knives down) using the fine adjustment knob. It is best to take a measurement of the present height of the knives, and make adjustments of 0.025mm (0.001") at a time until the snipe disappears.

Adjustments

Alignment: p 80

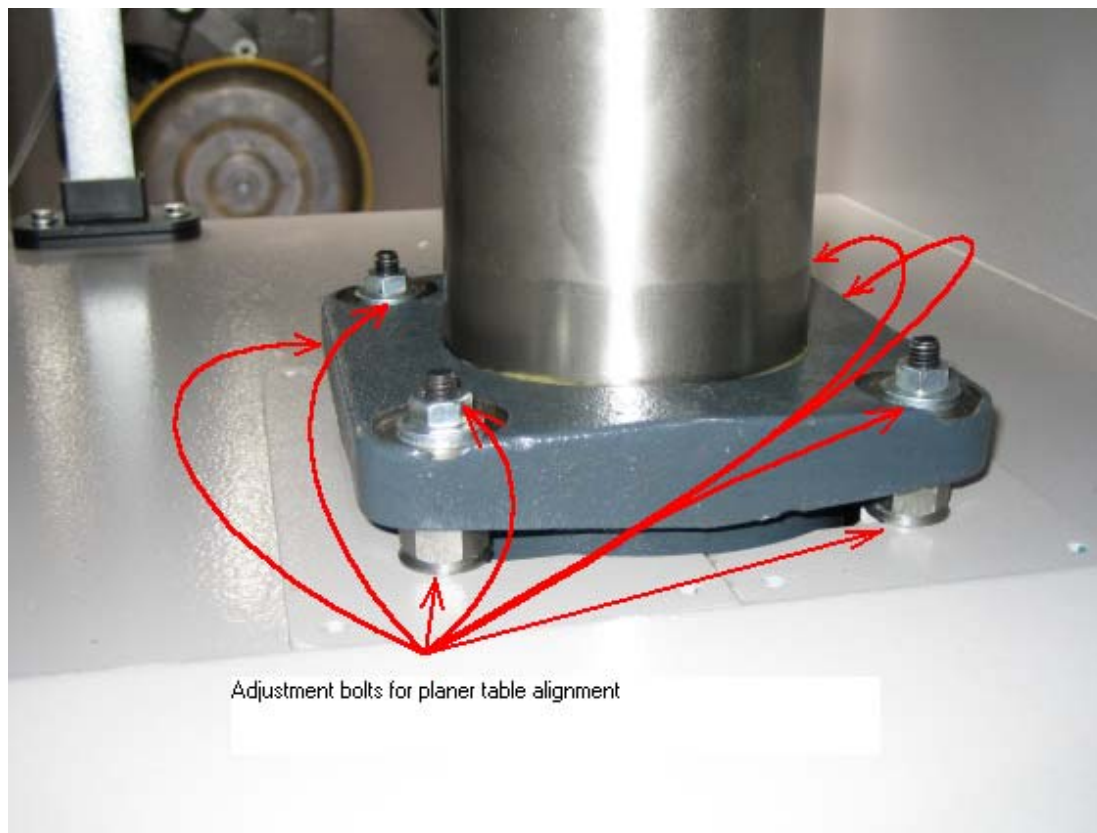
PL01 Planer Test

You will need two boards approximately the same size, both approx. 2" x 4" and at least 2ft long. If the boards do not have planed faces, then join one side of each board first.

Make sure that the feed rollers are engaged and there is suitable extraction. With the joined surface always facing the cast iron table, plane the two workpieces, one at either side of the table. Keep passing workpieces through until the surface is completely planed. Always pass the same workpiece through on the same side of the table. Be sure to lock the table in position each time after raising or lowering it.

When the workpieces have been planed, using a pair of vernier calipers, measure the thickness of both workpieces. Check that the two measurements are the same within tolerance.

If the measurements indicate that the planer is out of tolerance, then an adjustment is necessary. Figure PL01.1 shows 3 of the 4 adjustment positions for the table. To move one side of the table up or down, make an adjustment at both of the screws on that side by an equal amount.



PL01.1

After adjusting, perform the test again and re-adjust as necessary.
N.B. Always raise the table to the desired final position and lock it in place

Adjustments

PL02 Test for Snipe

You will need two boards; both 2" x 4" x 1 ft would be acceptable. If they have no planed surfaces, you will need to plane one face of each board on the joiner first.

Set the appropriate height for the planer table and lock it into place. Pass the boards through the planer, one on either side of the table, then check the front and end of the workpiece for a slightly deeper cut than is elsewhere. Snipe will occur 30 to 60mm from either end of the workpiece if it occurs at all.

If there is no sign of snipe, the next machine check can be made.

If snipe does occur, it will be necessary to make an adjustment to the feed rollers. The feed rollers are mounted onto springs. If the springs on one of the feed rollers are set too tight, there will be too much pressure on one side of the table, causing the table to tip when the workpiece first moves underneath it and then when the workpiece leaves that feed roller. Contrary to this, if one of the feed rollers is not set tight enough, there will not be enough force to hold the workpiece down flat on the table, meaning the workpiece will tip.

This is what causes snipe – the movement of the workpiece (not necessarily the table) under the cutterblock

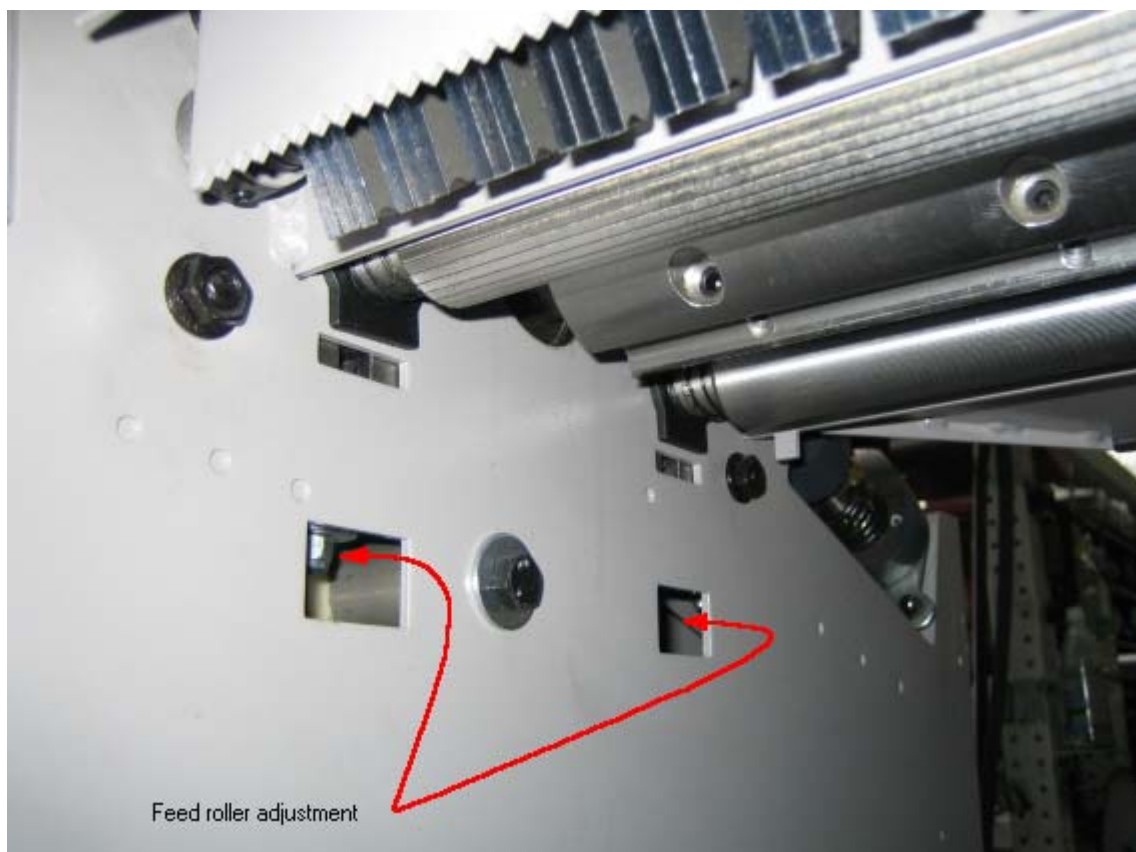


Figure PL02.1

Adjustments

Alignment: p 82

PL03 Feed Rollers

This test should be performed in conjunction with PL02 (Test for snipe), as the adjustments for both are the correct alignment of the feed rollers, shown in figure PL03.1.

As the workpieces are fed through the machine, there should be no sideways movement of the workpiece, only straight feed. Sideways movement is indicative of a feed roller not being parallel to the planer table. It is also therefore important to perform this test on a workpiece that is approximately square, rather than triangular in cross section, as this may yield the same result.

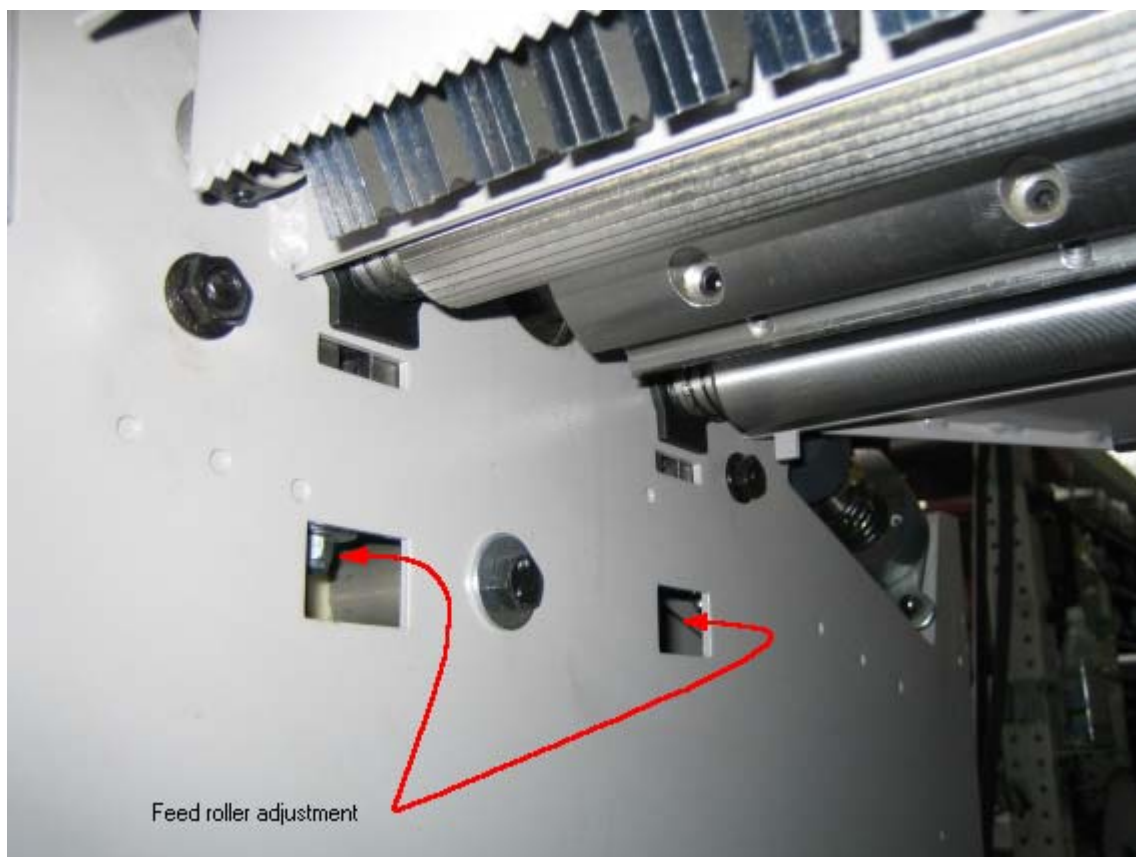


Figure PL03.1

16.FAQ's

Frequently Asked Questions

These are some of the most frequent questions customers ask us when setting up their new Hammer. For any other questions related to the cutting quality of your machine, please work through the Basic Machine Check setup process first to find or eliminate the cause of the issue. Of course, if the answer to your question cannot be found within this Machine Setup Guide or the Operation Manual, you can always contact your Hammer Service Department.

Machine Won't Turn On

Try asking yourself a few basic questions to eliminate some of the possible reasons for the machine not starting:

- Are the emergency stop buttons still depressed? If so, you need to twist them slightly to make them 'pop' back out again.
- Are the access doors closed correctly and have you placed the corresponding switches (where applicable) in the correct place?
- Is the main switch on?
- Are you pressing the start button for long enough (single phase machines in particular)?
- For full combination machines, is the selector switch engaged correctly and for the machine unit you are trying to use?
- Is there power coming from the mains supply? Are all the trip switches okay?
- Is the machine wired up correctly?

Motor Rotation is Backwards (3 phase Machines Only)

Swap two phases of the power supply cord. The electrical compartment may not be opened without the express instruction of the Hammer service department. This would otherwise void the warranty.

Saw Burns the Workpiece

The freecut is not setup properly. Which side does it burn on – Rip fence side (when cutting off the rip fence) or on the crosscut side (when cutting off the crosscut fence)? See *SS01 Freecut From the Sliding Table* or *SR04 Rip Fence Freecut* for details of the correct alignment and links to the adjustments.

17.Links

Hammer[®]

www.hammer.at

Linked Websites

www.hammerusa.com

FELDER[®]

www.felderusa.com

FORMAT[®]

www.format-4usa.com



www.felder-group.com