WILLIAMS & HUSSEY

MODEL 206 MOLDER

OWNERS MANUAL

www.williamsnhussey.com

Second edition 4/07

OUR PLEDGE TO YOU

Your W&H Model 206 is a quality product and is built to last. Our technical support services are legendary. Call us toll free. We are ready to help you with any maintenance or operational questions you may have.

The Model 206 is a new design built in the W&H tradition of ruggedness and durability. This machine rises above others in its class, in ease of use, compactness, versatility, and the control over your work that you desire.

Knife changing is so simple that it can be perfectly done in about two minutes, allowing you to quickly move from job to job.

The machine is manufactured in New Hampshire by people who take pride in making a superior product. We welcome comments and observations from you on any aspect of the machine and what you are making with it.

WILLIAMS & HUSSEY MACHINE CO. INC.
70 Powers Street
Milford NH 03055
E-mail: info@williamsnhussey.com
Or see http://www.williamsnhussey.com
1800 258 1380 603 732 2019 fax 603 732 4048
Customer Service is available Monday-Friday, 8:30 AM- 4:30 PM EST

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6/97
3/03
9/03
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TABLE OF CONTENTS
In alphabetical order

ASSEMBLY OF YOUR PACKAGE PIECES

Stand parts

1. Fabricated main frame
2. Belt guard
3. belt guard attaching bracket
4. Solid wheels (2)
5. Caster wheel
6. Brake knobs (2)
7. Left hand roller brackets (2)
8. Right hand roller brackets (2)
9. Stock rollers (2)

Hardware

1. #10 screws and lock washers (2)
2. ¼" x 5/8" round head screws (15)
3. ¼" lock washers (19)
4. ¼" nuts (16)
5. ¼" flat washers (3)
6. ¼" x 1 ½" hex head bolts (4)
7. 5/16" x ¾" bolts, nuts, flat washers, and lock washers (4)
8. 3/8" x 2 ¼" axle bolts, flat washers, lock washers and nuts (2)

ASSEMBLY INSTRUCTIONS

Tools needed

Wrench 7/16"----------Philips screw driver
Wrench ½"----------Pliers
Wrenches 9/16" (2)--------Razor knife
Blade screw driver---------Wire stripper/crimper

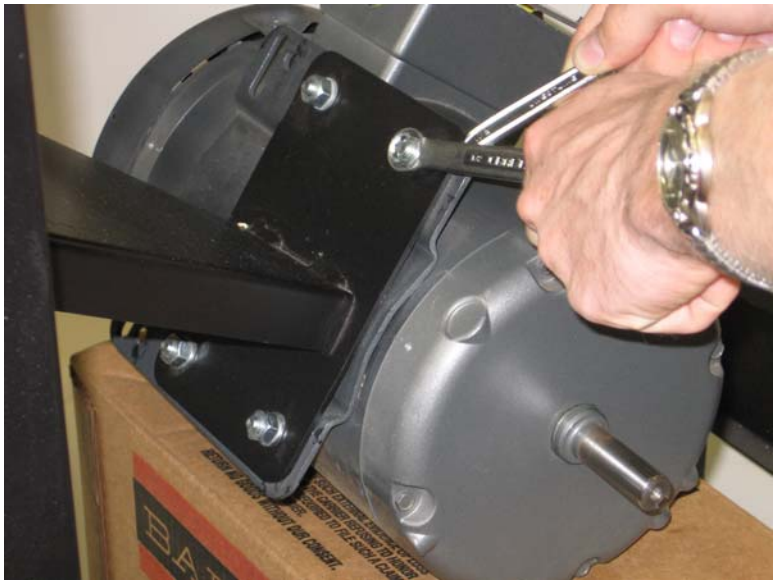
Approximate time to assemble machine package is 3 hours.

Place solid wheels in the channel of the bottom of the roller stand. Insert the 3/8”x 2 ¼” axle bolts through the holes provided.

Install the flat washer, lock washer, nut and tighten.

Install brake knobs in threaded insert on end of the stand.

Mount castor wheel on its base with (4) 1/4”x 5/8” round head machine screws, lock washers, and nuts.



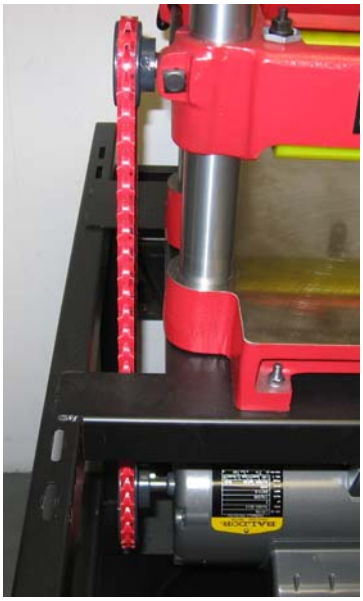
Mount the motor on the mount with (4) 5/16” x ¾” long bolts, flat washers, lock washers and nuts. *Do not tighten yet.* The motor is mounted with the shaft end in line with the cut out for the belt in the machine mounting area.

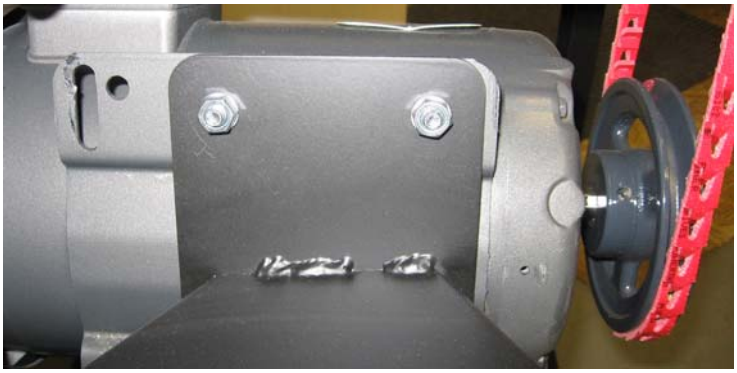
Mount the pulley on the motor shaft

Place the machine on the stand with the pulley side of the machine over the belt cut out area in the stand.

Bolt the machine base to the stand using (4) ¼ x 1 ½” long hex head bolts and lock washers, and nuts.

Install the belt from the machine to the motor

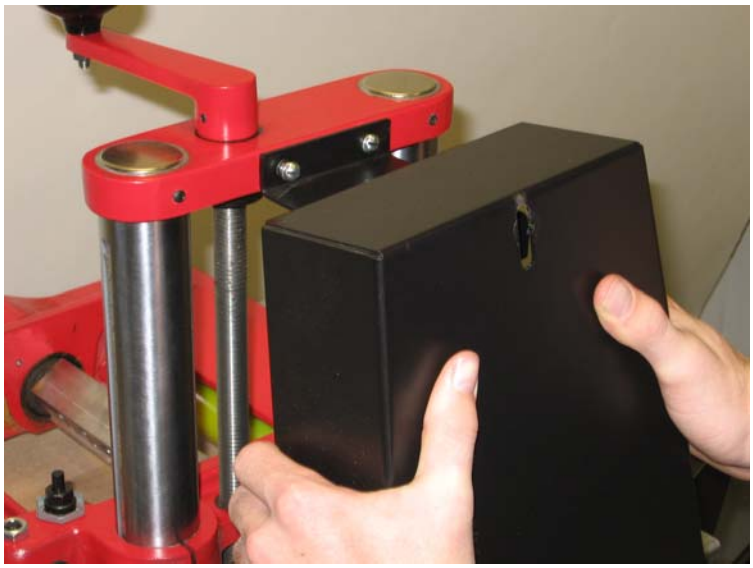




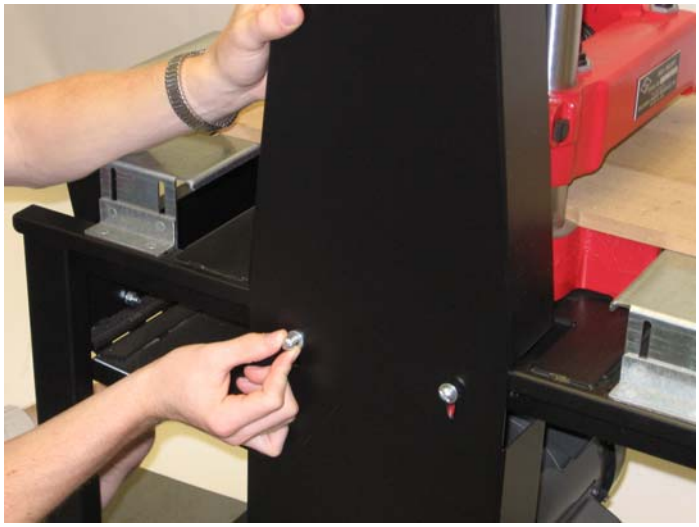
Offset the motor within the clearance of the elongated slots to find a running position that puts the motor on the same plane as the bed of the machine

Align the belt so that the belt travels in a straight line from one pulley to the other.

Install the belt guard bracket. Use (2) 10-24 x ½" screws and lock washers.



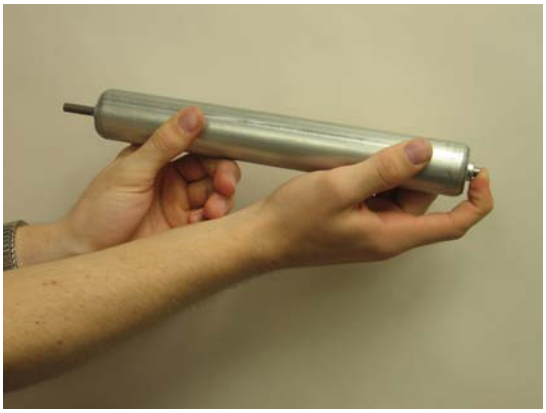
Take the belt guard and mount it over the top of the bracket and just start a ¼" x 5/8" round head screw with a flat washer in threaded hole in the bracket.

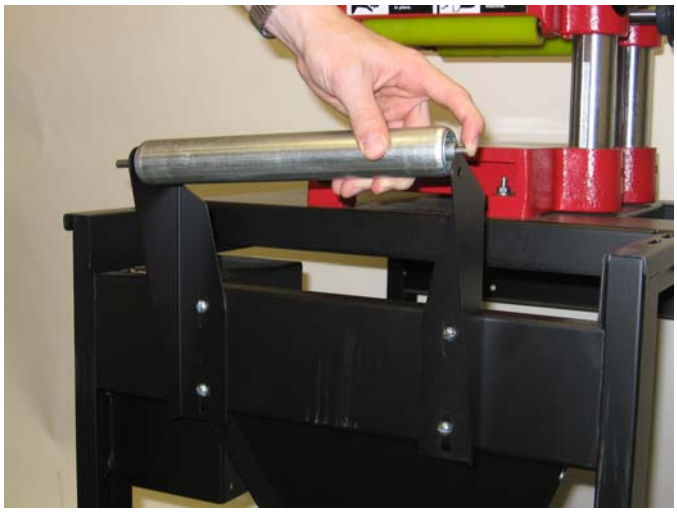


Lift the guard slightly and start the (2) lower ¼”x 5/8” round head screws with flat washers. Tighten all three guard screws

Mount the vertical roller support brackets in pairs, left and right hand on both ends of the stand. Use ¼”x 5/8” long round head screws, lock washers and nuts.

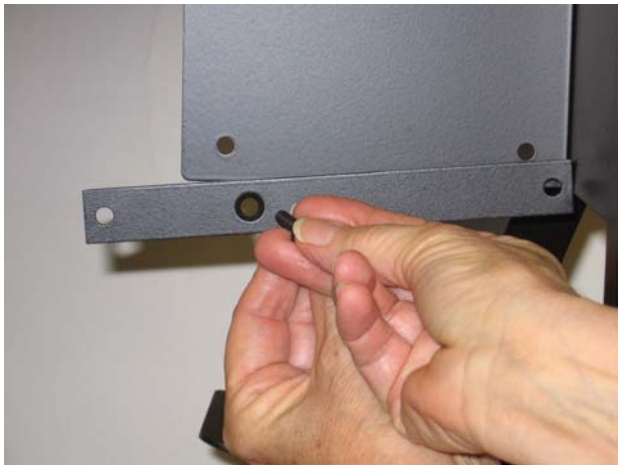
The rollers are spring loaded. One end depresses to allow you to engage the roller in its set of brackets.





Install the two external stock rollers.

Your machine has been packed with two control mounting braces and two #10 flat head screws, lock washers and nuts. They are packed in the box under the machine head. The brace shown here is being mounted to the top of the black sheet metal control mounting enclosure. Use one of the flat head #10 screws, lock washers and nuts to mount the brace on the inside of the sheet metal enclosure with the center counter sunk hole facing you. The flat head screw goes into the center counter sunk hole. The lock washer and nut go on the outside, or back side of the enclosure.



This view shows the second brace being mounted to the bottom of the control mounting enclosure. Use the one remaining #10 flat head screw, washer and nut mounted in the center hole of the bracket as you did with the first brace.

Both braces are shown here mounted to the control enclosure.

The deluxe motor control gets fastened to the enclosure with the four “plastite” screws packed in the box under the head of the molder. These “plastite” screws go in the four remaining open holes in the brackets. Start each of the screws and then tighten. **Do not overtighten.**

The Vari-Feed motor plugs into the center of the bottom of your control. Plug it in and twist it ¼ of a turn to lock it in place.

WIRING INSTRUCTIONS

Caution! These instruction are for wiring a **Baldor 2hp motor,** catalogue number L3515M, with a specification number 35J 383 2013, 56/56H frame, ***only!***

230 volt wiring instructions (high voltage)

The 230 volt switch is for 230 volt applications only!

There is a wiring diagram on the motor connection box. The following is a word description of this diagram.

1) The 6' cord coming out of the switch gets a plug fitting your power supply connection.

2) The 3' cord coming out of the switch goes to the 2hp motor.

   a) Cut back the outer covering on the cord 6".
   b) Strip off ¾" of insulation of each of the three wires.
   c) Take the cover of the connection box on the motor.
   d) Install the cord connector in the connection box on the motor.
   e) Insert the cord 6" and tighten the connector onto the full cord casing.
   f) Crimp the forked terminal onto the **green** cord wire and place it under the **green screw** in the motor connection box and tighten the screw.
   g) Twist together the **white** wire on the cord to the **blue #1** wire on the motor. Twist a yellow wire nut onto this connection.
   h) Twist the **black** wire on the cord to the **yellow #4** wire on the motor. Twist a yellow wire nut onto this connection.
   i) The motor connection box wires **brown J** and the **black #5** wires are joined to themselves with a yellow wire nut.

   j) The motor connection box wires; **orange #3, red #8, and white #2** are joined to themselves with a yellow wire nut.
   k) Double check your connections and replace the cover. Install your power plug.

THE 115 VOLT WIRING INSTRUCTIONS ARE ON THE NEXT PAGE.

115 volt wiring instructions (low voltage)

The 115 volt switch is for 115 volt applications only!

1) Follow the instructions on the previous page **through step 2f.** Then proceed with the following instructions.
   a) Connect the incoming **white** cord wire to the **blue #1, orange #3, and red #8** wires in the motor connection box.
   b) Connect the incoming **black** cord wire to the **yellow #4** wire in the motor connection box.
   c) The motor connection box wires; **white #2, brown J and black #5** are joined to themselves with a yellow wire nut.
   d) **Double check** your connections and replace the cover. Install your power plug.

Installation Instructions for GS1

TOOLS NEEDED

- A 3/8" drive socket ratchet handle with a 7/16" socket.

APPROXIMATE ASSEMBLY TIME 20 MINUTES

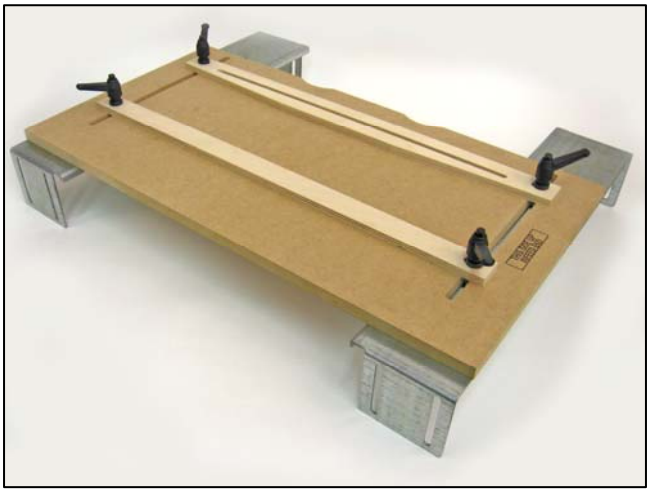
CAUTION!!! Unplug your machine before assembling this guide system.

The flex guide and the fence positions may be interchanged from one side to the other depending on your need at the time. Generally you would want the flex guide on the highest side of the molding to protect it from being cut into by the long side of the knife. This will preserve your flex guide, giving you the best flex and smoothest surface for running your stock.

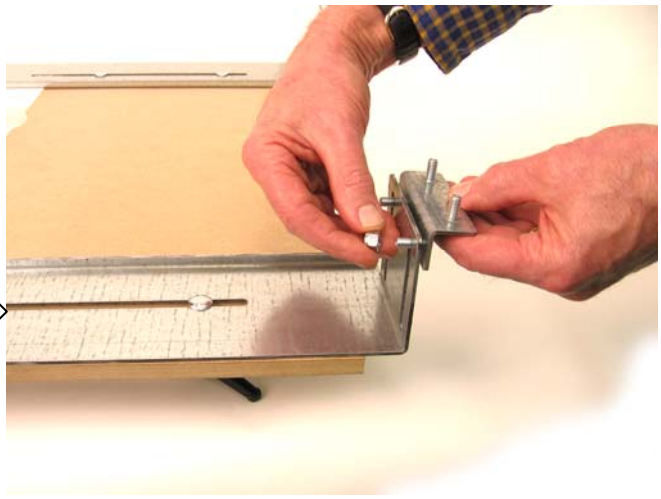
Mount the flex guide, fence and sub plate to bed extensions with the 1 ½" carriage bolts, flat washers, and guide locking handles. The rounded edges of the extended beds should be facing each other. The side mounting flanges should be facing down**.**

The metal bed extensions, seen in the picture, are set 4 ½" from the sub plate.

The 1" long carriage bolts in your hardware bag are for mounting the guide and fence directly on the bed extensions and machine bed.

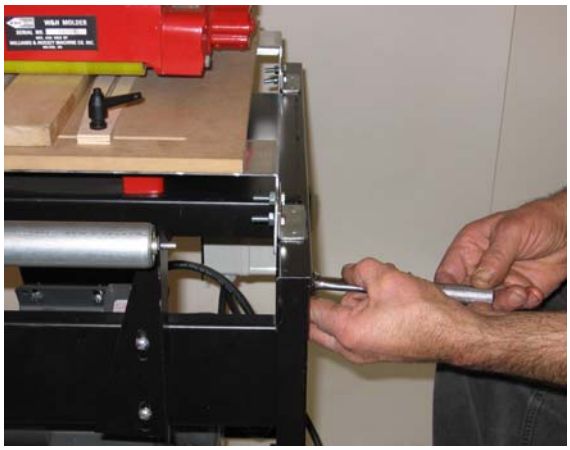


Turn the GS1 assembly upside down and mount the four angle brackets onto the bed extensions using eight of the lock nuts. **Do not tighten.**



Turn the GS1 right side up. Raise the W&H molder head several inches. Insert the GS-1 assembly through the open side and over the machine bed as you guide the angle brackets into their slots in the top of the stand. Centralize the guide system relative to the length of the machine base.

Lower the machine head to hold the sub plate tight against the machine bed. Install and tighten the (8) lock nuts that secure the angle brackets to the stand.



Tighten the (8) lock nuts joining the bed extensions to the angle brackets.

The assembly is now complete.

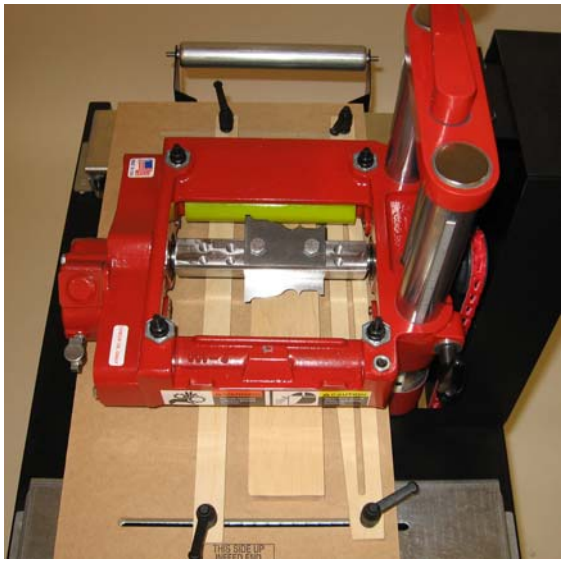
Operating Instructions GS-1 Guide Fence System

CAUTION Always **unplug** your machine before making a set up.

CAUTION Beware of **pinching** your finger between the stock and flex guide as you guide the stock into the machine.

The flex guide and the fence positions may be interchanged from one side to the other depending on your need at the time. Generally you would want the flex guide on the highest side of the molding to protect it from being cut into by the long side of the knife. This will preserve your flex guide, giving you the best flex and smoothest surface for running your stock**.**

Install your molding knives and orient one knife toward the machine sub plate. Lay a 12" sample piece of stock on your sub plate and align it with the knife profile.

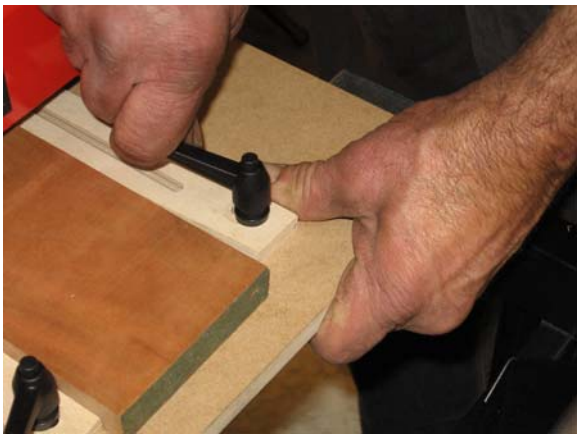


Crank the machine head down to hold your stock. Do not let the knife dig into the stock.

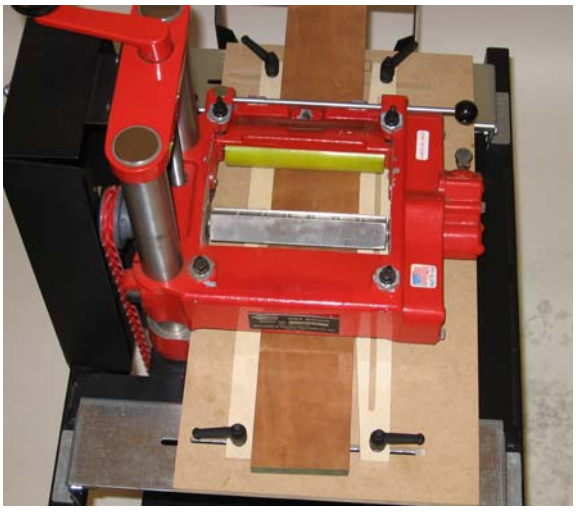
Push the fence up against your stock and tighten the guide locking handles.

The guide locking handles have a ratchet built into them, just push down on the top button and pull up on the handle and turn it to get the handle out of your way.

Push the flex guide adjacent to the stock and tighten one end first. Then push enough on the other end to put some flex pressure on the stock. Use a deflection pressure of 1/32” and tighten the last handle. Raise the machine head and slide a longer piece of stock in between guides to see if the guide tension is what you desire. Adjust it to suit your need.



Completed set up.



SEE THE NEXT PAGE FOR MORE INFORMATION

You will need to add the thickness of your sub plate to the thickness of your stock to know where to set your machine head. Example: ¾" piece of molding stock, plus ½" of sub plate equals 1 ¼". Set machine head at 1 ¼" on your scale to achieve proper roller tension and a safe operation.

Be sure to **check for sufficient feed roller contact** before proceeding to use this setup.

Be sure to rotate your molding knives to **check for rotation clearance** with the power off before starting the machine.

You may also use your fence and flex guide directly on the machine bed and extension plates. Just remove your MDF sub plate and reinstall your guides using your 1" carriage bolts in place of the 1 ½" bolts you were using with your sub plate.

In the following pages you will see other applications using the GS1 system.

SAFETY RULES

Your W&H Molder has been designed for maximum safety. However, as with all power tools, there is a possibility of incident or injury to the operator. Therefore, ***it is imperative that this manual is completely read and understood before using***.

Use your W&H Molder with respect and caution. Following stated and inherent safety precautions will considerably lessen the possibility of personal injury. If normal safety measures are not taken or are overlooked, the possibility of incident rises tremendously. These safety measures are simple to follow, and the injuries that could happen are not worth the few minutes saved by ignoring safety.

The W&H Molder was designed for specific applications. ***Do not modify*** or use the machine for any purpose other than what this manual describes as its capabilities. Any modifications or improper use to the Molder-Planer may result in personal injury, and will void the warranty. Please contact us if you are unsure about safety protocol before using the machine.

SAFETY CHECK LIST

DON'T TAKE UNNECESSARY RISKS!

The Owner's Manual has been read and is understood. Failure to understand the manual can cause either poor performance or injury.

Safety glasses and respiratory protection.

The power source has been disconnected before servicing or changing knives.

You are wearing footwear that does not slip. This will help you keep proper footing and balance. Always stand beside the machine, never in the way of the infeed/outfeed areas.

The switch is off before plugging in machine.

Knives are kept sharp and clean.

All tools are grounded. If an adapter is used to accommodate a two-prong receptacle, it must be attached to a known ground. Do not alter the plug.

The guards are secured and in working order.

All adjusting keys and wrenches have been removed before starting.

The stock has been checked for loose knots, nails, and foreign matter.

The machine is in, and has been stored in, a dry, clean, well-lit area.

PREPARING TO USE THE MACHINE

1. Disconnect the power source while going through these procedures.

2. Check knives to ensure that the bolts are tight. If molding, set your guides for the stock path through the knife area. If planing, you may or may not wish to set your guides. Many times, they are not needed in planing.

3. ***When molding, the head scale setting must be set to within 3/16" of the height of your stock.*** This setting will provide the proper roller tension. Any other setting further away from the thickness of the stock entering the machine is unacceptable and dangerous. See the molding section for more information.

4. Attach the chip deflector with its pin. Make sure the pin is inserted all the way in until you feel it "catch" on the spring-loaded catch. When detaching the chip deflector, take the pressure off of it by lifting up off of its stop. This will allow for simple removal of the chip deflector.

5. Roll knife arbor by hand with the pulley to ensure the knife area is clear.

6. Do not stand or let others stand in the outfeed area or directly in line with the infeed of the machine.

7. With the head set in the proper position, tighten the head locking bolt firmly. This is essential for safety and to ensure the machine head will stay where you have set it.

8. Check to see that the Vari-Feed toggle switch is in the off position before starting the main control.

9. Test a piece of stock, with the machine off, to see if it will make contact with the in-feed roller.

VARI-FEED OPERATIONAL TIPS

The main control must be on to operate the Vari Feed motor. The Vari Feed toggle switch must be on. **Always turn of the Vari-Feed toggle switch after you have pushed the "E" Stop button.** You could blow a fuse in your control by starting both at the same time. There are two fuses in the control, a 1 amp armature fuse and a 2 amp line fuse. The speed control knob controls the speed of the feed rollers.

The stock feed rate is approximately from 0 to 19 fpm (feet per minute), depending on where the knob is set. Higher rates of feed are only recommended for lighter depths of cuts. Turn the knob clockwise to increase the feed rate.

When the dial is in the 9 o'clock position the feed speed is approximately 4 fpm.
At the 12 o'clock position = approximately 6 fpm
At the 3 o'clock position = approximately 14 fpm
At the full to the right position = approximately 19 fpm

Always remember to set your stock rate prior to entering the stock into the machine. The feed rate may be changed during the cut.

The vari-feed option allows for high feed rates on relief cuts on the backside of casings. The vari-feed multi-pass combination provides the versatility of slow feed rates on deep hardwood profiles making possible two or three passes to finish.

On deep and wide profiles you can now raise the knife for a partial profile cut and enter the stock very slowly, while engaging the butt into the knife gently, letting stock move under the out-feed roller before engaging a higher feed rate. This reduces the incidence of a large chip out, a chatter mark or snipe on the first few inches of your stock. You have the same advantages exiting the cut.

As the grain structure changes throughout the cut you can vary the stock feed rate to reduce the possibility of chip outs and spoilage of your piece of stock.

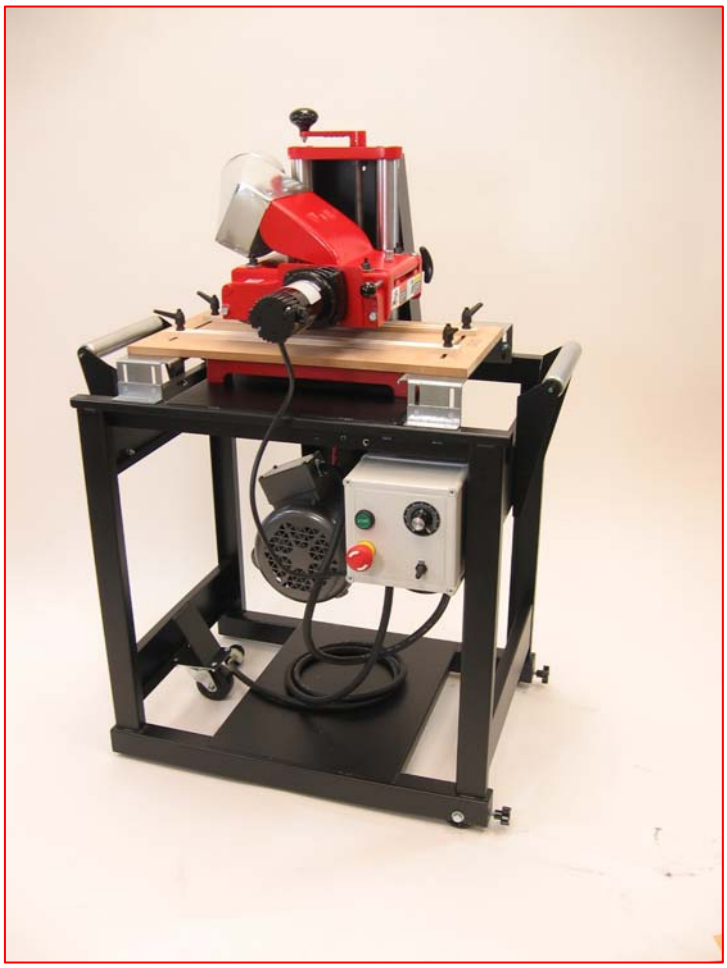
Before starting the machine first familiarize yourself with the rest of this "Owners Manual". It is very important to safely operate the machine as outlined in this "Owners Manual". Operate the machine only within the described design intent.

Be sure you check for <u>rotation direction</u> before you use the machine. See the rotation illustration on page 22.

SPECIFICATIONS FOR THE W&H MODEL 206

Specifications

- 2HP Baldor Motor
- 1/15TH HP DC Motor
- 7000 RPM Knife Arbor
- 0 - 19 FPM Feed Rate
- Max Profile Depth ¾”
- Max Profile Width 6 ¾”
- Planes 7” Wide
- Min Stock Length 9”
- Min Stock Thickness ¼”
- Max Stock Thickness 8”*
- Working Height 31”
- Overall Height 45”
- Overall Width 24”
- Overall Length 33”
- Total Weight approx. 242Lb



*The crank handle will hit the chip deflector at 6.” For convenient operations at heights of over 6,” the optional crank extension 54-306 is available.

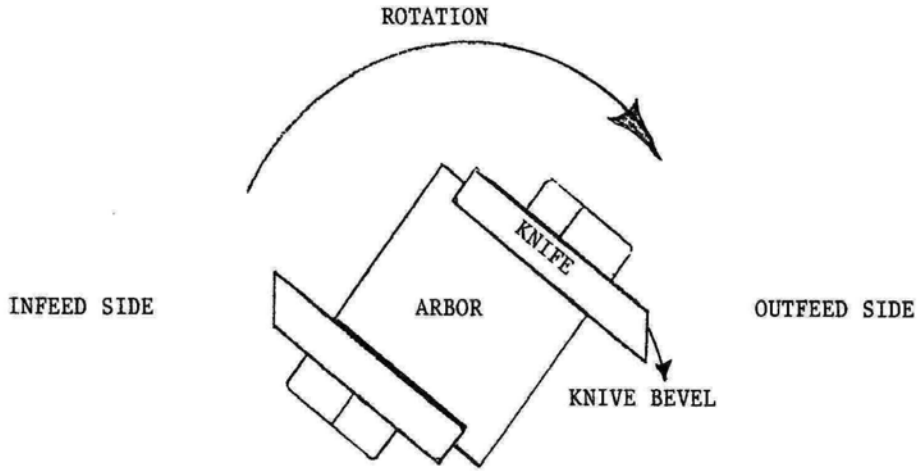
DISCONNECT POWER BEFORE CHANGING KNIVES!

PLANER KNIVES

Remove the chip deflector by first lifting it up and then pulling out the pin. Clean off knives and machine arbor. Set one knife at a time in place against the lip of the arbor. Place the "bevel" of the knife as shown in the illustration below. Tighten the eight bolts securely using a 9/16" wrench. After tightening, double check to see that the knives are snug against the lip.
We do not recommend shimming out planer knives.

MOLDING KNIVES

Clean off knives and machine arbor. Set one knife at a time in place with the bevel edge positioned as shown in the illustration below. Push the knife firmly down against the arbor lip and sideways against the bolts in the direction of the tube side of the machine. Hold secure while tightening the bolts.



VIEW FROM PULLEY SIDE OF MACHINE

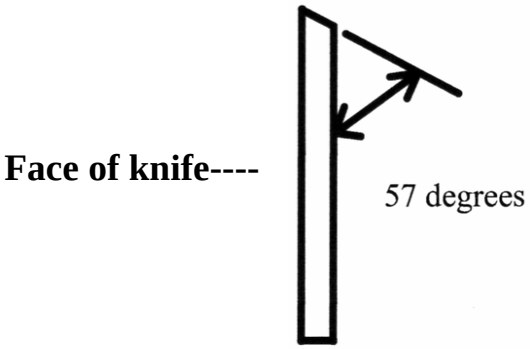
KNIFE SHARPENING

For fast and professional results with minimum edge loss, return your knives to the factory for resharpening. Have your knives resharpened when you first notice some dullness. This gives optimal performance and maximum life span out of the knives.

Molding knives should be surface ground on the face in pairs to preserve the profile and maintain the height of the knife. This is how they are intended to be ground. The profile should never be ground.

Planing knives may be ground on the surface or on the bevel.

Both molding and planing knives have an edge angle of 57 degrees measured off the back of the knife.



Hook angle is 11 degrees

The use of dull knives will put a strain on the feed mechanism and will result in your need of a repair. Any problems created due to the use of dull knives are not covered under the warranty.

HOW TO MOLD

1. A **sub-plate** made of knife millable material will be needed on any job where the knife is designed to cut below the bottom of the stock. This type of knife will hit the base of the machine if a sub-plate is not used. An example of this situation would be the molding of half or quarter rounds .

2. If the knife comes close to the base of the machine, such as the bottom knife of any crown or bed moldings, a **sub-plate** should be used to prevent damage in case of accidental depression of the head, which would plunge the knife into the base

3. The GS1 guide system has a **sub-plate** built into it, including bed extensions, a fixed guide, flex guide, and ratchet handles. When using the sub-plate, always remember to add its thickness to the stock thickness when setting machine height.

4. **Stock height** should be uniform in size and to within 1/32" of finished molding size.

5. Stock width should be uniform and to finished molding size. Saw ripping to width will not make the stock uniform enough **for smooth flow through the guides**, and thus, will not result in a satisfactory molding. We recommend that all stock be planed in both width and height to finished molding size before setting up to do the profile.

6. When **tightening the knives**, push them firmly against the lip and sideways against the bolts in the direction of the tube side of the machine for an exact profile match up. Hold secure while tightening bolts.

7. As you become familiar with the machine and its use, you may want to make some **custom guides** to suit your specific applications.

8. When running a **tongue and groove**, pre-inspect the stock for cupping and ensure that you can guarantee your stock is uniform in size. Good quality stock is required in order to join the tongue and groove.

9. Some profiles are too deep for use on the W&H Molder. In some cases you can rotate the profile into a flatter position if it will reduce the depth of cut to less than ¾". The "**V-Block**" technique is used in such a case. A knife must be custom made for "V-Block" use.

10. **Set the head height** to within 3/16”of your stock height. This will give you proper roller tension on your molding stock. This is the correct way to mold. It is acceptable to leave 3/16” of the cut for multiple passes. But for safety reasons leave no more than 3/16”.

11. On some **extremely deep or wide cuts**, some **prior stock removal** will be required before molding. You may remove this stock using one of the roughing knives found in the Standard Knives Catalog. You may also use a dado blade on a table saw.

12. Failure to **set your head height within 3/16”** of the stock height will create an **extreme safety hazard** in that possibly not enough roller pressure will be applied, or that no roller pressure at all will be applied.

13. **Do not cut a wider stock area** than the knife was designed to cut. This will cause excessive heat in the knife, burn your stock and puts a harmful load on the feed system.

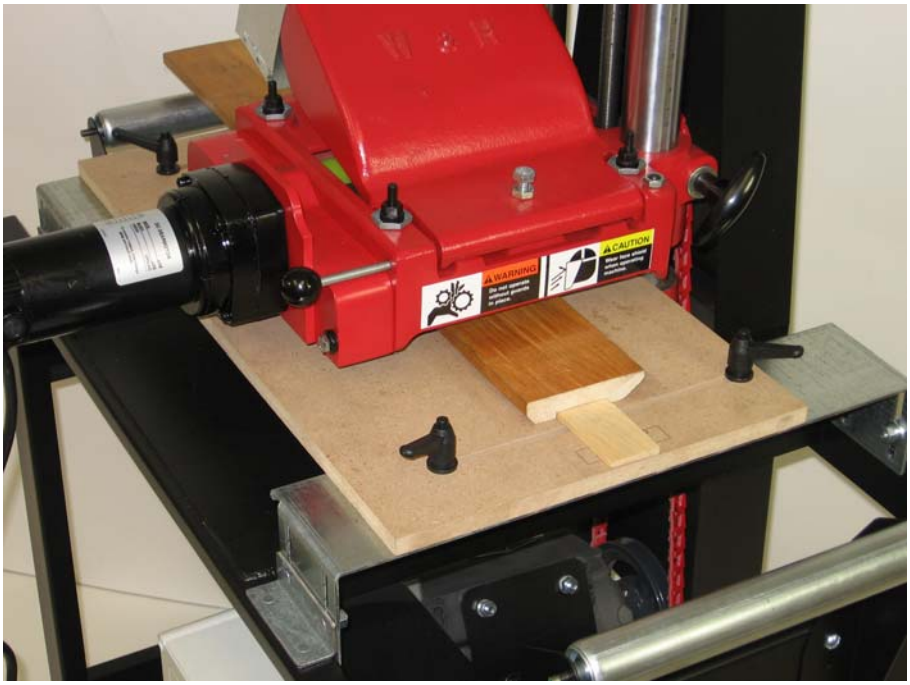
14. **The roll pressure screws are set** at maximum **molding** pressure from the factory. They are screwed into the head as far as possible and the check nut is tightened.

15. When you use the machine **for planing** you will need to **reduce the roller pressure.** Loosen the pressure screw lock nut and screw out each pressure screw ¼” and retighten the lock nut.

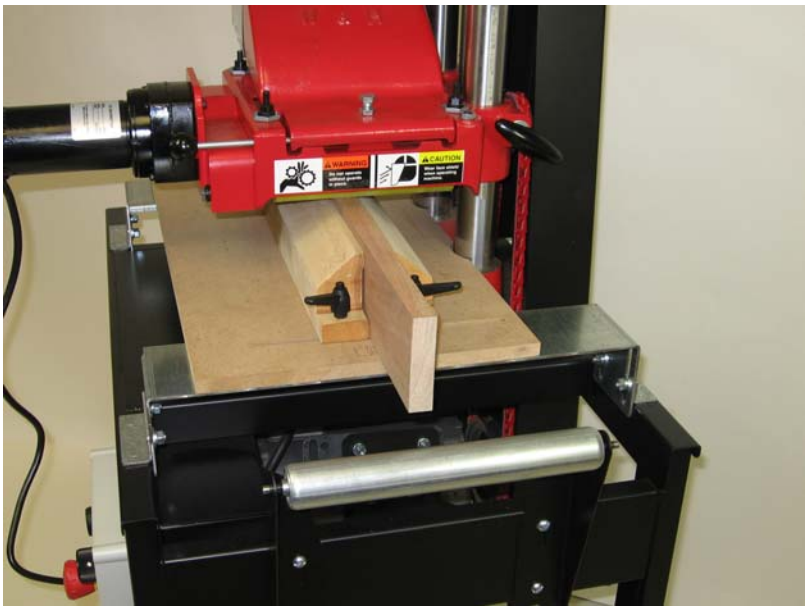
16. **To change the molding knives,** remove the chip deflector by lifting it up and pulling out the pin. Set one knife at a time in place with the bevel edge toward the in-feed end of the machine. Firmly push the knife down against the arbor lip and sideways against the bolts in the direction of the tube side of the machine. Hold secure while tightening bolts.

GUIDES

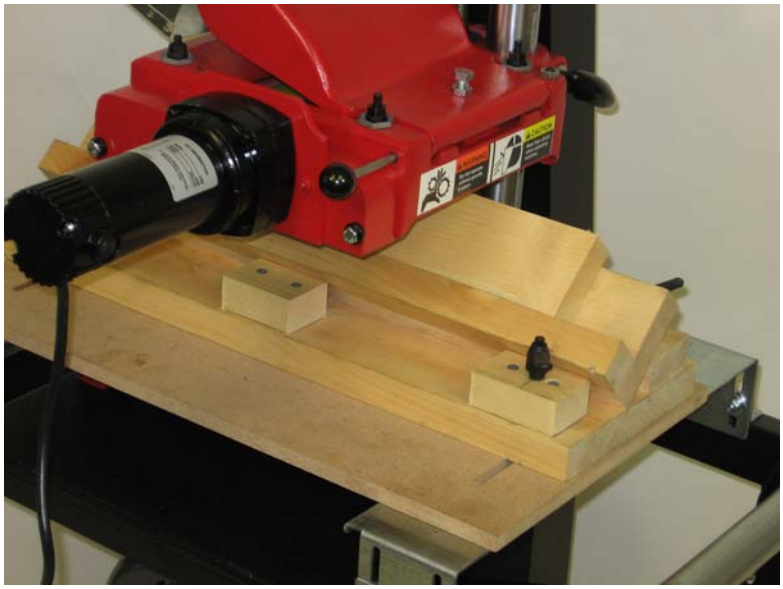
As you become more familiar with the machine and its use, you will want to make wooden **guides to suit specific jobs**.



Make your bottom cut first when milling **bed and crown moldings.** You may want to add a key cut as a guiding mechanism for your top profile.



When **planing the edge** of stock, a high, square, relieved guide is needed in order to have the edge reasonably square and to provide stability. The center reliefs are to reduce friction.



Some profiles are too deep to make on the W&H. In some cases you can rotate the profile into a flatter position to effectively reduce the depth of cut. A **"vee block"** guide would be made to guide your stock. The profile knives would have to be custom made to use in this vee block position.

When making **tongue and groove stock**, a serious and detailed approach is needed in order to achieve a uniform fit. Carefully pre-inspect your stock for cupping and warping. You need to plane all your stock to one uniform size.

The guide thickness should be ¼" thinner than your stock or your **roller will scuff on the guides** when the stock has left the machine and the rollers are in their rest positions. When running thin stock you will need to fasten a sub-plate between the guides to maintain a thick enough guide to control your stock.

Always check your knife clearance to the guide. **Clear away any interfering portion** of the guide.

MOLDING PICTURE FRAMES

Decide whether the rabbet or profile cut should be done first. If you are going to make the rabbet on the W&H Molder, do the rabbet first. In order to utilize the W&H Molder for rabbets, a rabbet knife with a depth of cut equivalent to the depth you need should be ordered. If we do not have a standard knife with the depth you seek, we can make a special knife to suit your needs.

ROUND TOP CASINGS
(CONSTANT RADIUS SIZE ARCS)

We manufacture knives with the profile cutting the deepest portion of the cut on the open side of the machine. Notify us when you order a knife if you want the deep side of the cut on the vertical tube side of the machine.

The set up and operation of the W&H machine for a round top molding job is very similar to the straight molding set up. Our EJ92 Elliptical Jig is not needed for a fixed, constant radius.

Stock preparation can be done in many ways. The following is one example.

First determine the angle needed to cut the wood sections in order to stay within the selected radius. Lay out the wood sections by marking the angles while being careful to select cuts for grain structure and color. Then cut the sections and biscuit join and glue them together.

We made a fixture to band saw the inside and outside radii consisting of a pivot bar and bracket. We mounted the pivot bar to the stock on the scrap portion of the inside radius. The pivot bar is drilled with numerous holes to accommodate any radius sizes. You may also want to design a fine adjuster to allow you to make any radius in between your adjusting holes. Make sure the outside radius is cut first.

The guides should be 20” long, which is the length of the GS1 guide system, or 14” long if you are just using the bed of the machine. The guides may be made using the band saw set up. We make one guide for the inside radius and one for the outside radius. We use MDF board. Continued

ROUND TOP SETUP

1. Make sure power supply is disconnected
2. Raise the machine head and set the stock on the bed.
3. Align the stock with molding profile.
4. Lower the head to pinch the stock.
5. Set the guides and clamp them in place.
6. Raise the machine head, remove the stock, and reset the head to within 3/16" of stock size (Don't forget the sub-plate height if one is used).Ensure that there is no interference in the knife area.

NEVER attempt closed loop molding. It is an unsafe procedure.

RAISED PANELS

All of our panel knives are designed to produce a ¼" tongue. Be sure to select a panel knife based on the finished panel thickness. **A panel must be 9" or more in the direction you are molding** in order to not have the panel come off of one roller before it engages the second roller. When you use **multiple passes** you **must have at least 9" of panel remaining** in the direction of the cut in order to have a least one roller on the panel at all times.

If you desire a different tongue size or have a panel thickness other than ¾" or 5/8," a special knife can be ordered and shipped quickly by W&H.

THE SET UP

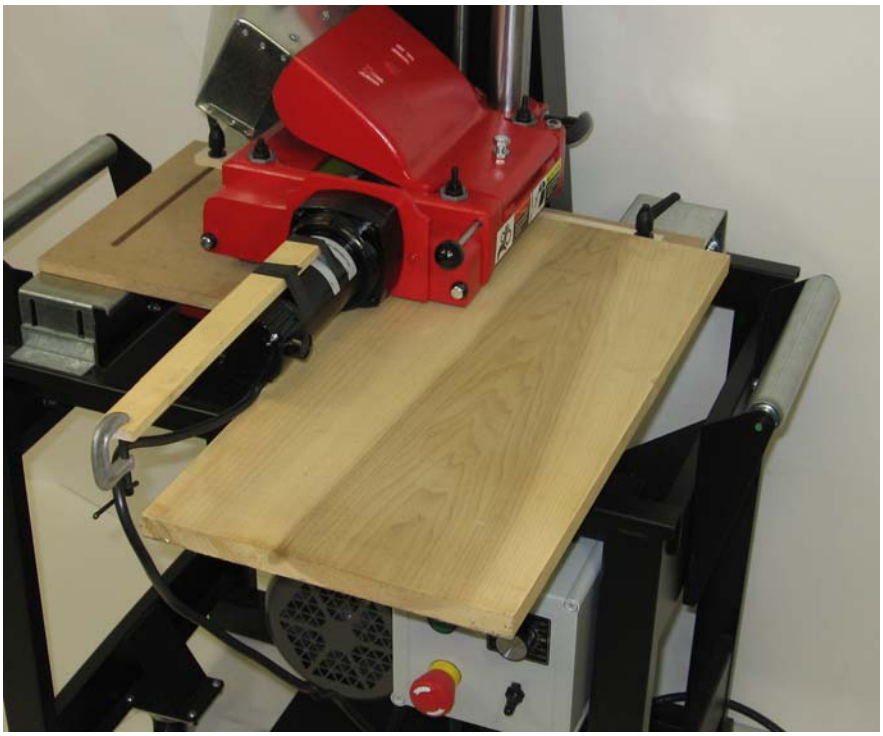
1. Disconnect the power supply.
2. Install your knives over toward the tube side of the machine allowing enough room to install your guide.
3. Index the knife arbor so the profile will be seen against the bed. Raise the head to allow the panel to be laid on the bed and to be lined up with the profile visually.
4. Once you have found the proper position for the panel, lower the head so the rollers will put pressure on the panel while butting the guide against the panel. Tighten your guide.
5. Raise the head, pull the panel out of the machine, and lower the head to within 3/16"of the panel height. Rotate the blade arbor by hand to insure nothing is interfering with its rotational path.
6. Mold the panel cross grain ends first. Stand somewhere between the open side and in-feed side. **See the picture on the next page.**

RAISED PANEL ISSUES

It takes some practice to make a good panel. It is helpful to keep a slight upward pressure on the panel as it is being molded with a steady pressure against the guide.

Because panels are normally larger than the 7” cutting capacity of the machine, the panel must pass beneath the open side of the head. There is approximately 1/32” clearance between the top of the panel and the head of the machine, provided the head is at stock size setting, and not below.

Many users try to create a slightly deeper cut to modify the tongue size or change the profile appearance and end up dragging and pivoting the panel away from the guide path. The head must be set at the panel thickness and not below it in order to have clearance to pass the panel through the machine in a satisfactory way.



HOW TO PLANE

CAUTION! When you use the machine as a planer you will need to **back off all four pressure screws ¼"** so that you will not have too much roller tension, or you will risk shearing a pin in the large bronze worm gear.

Measure the thickness of your stock.

The amount of stock that is removable in one pass is dependent on the density of the wood (relative hardness), how wide the cut is, and the moisture content of the stock.

GENERAL GUIDELINES FOR DEPTH OF CUT

THICKNESS	TYPE OF WOOD	DEPTH OF CUT
1"	Poplar	¼"
1"	Red Oak	3/16"
3"	White Pine	3/16"
3"	White Oak	1/8"
6"	Poplar	1/8"
6"	Red Oak	1/16"

See the table of contents section for knife changing and installation.

Loosen the planing head locking knob (54-21). To initially begin planing, set the head position to a height 1/32" less than the dimension of the stock entering the machine. One-third of a turn on the elevating handle will equal 1/32". Tighten the head locking knob.

Make sure the chip deflector is in place and the pin is firmly seated.

Utilize a **high, square, relieved guide** when planing the **edge of stock** to ensure the edge will be reasonably square. A relief in the vertical wall of the guide reduces friction. See the guide section for a picture of the edge guides.

CHATTER

Definition: Chatter marks are irregularities in the finish quality of the surface of the wood. They can be evenly spaced or randomly distributed. Simply put, they may be described as “hills and valleys” in the wood surface.

General Causes: These marks are caused by either loosely held stock or by an imbalance in the machine’s mechanical qualities.

What to Check For:

1. Check the belt for irregularities. The most common cause of poor stock finish quality is a rough running belt. Replace the belt. We recommend a “Power Twist” belt, “A” size, 47” long.
2. Make sure you are cutting with the head set at the appropriate height.
3. Keep your knives sharp and in good condition. A dull knife will force intermittent feeding, which causes a mark on the stock.
4. Check for a damaged or an unbalanced pulley.
5. Make sure that each knife and attaching bolt has equal weight on both sides of the arbor.
6. Make sure your head locking bolt is tight while operating the machine.
7. Make sure the machine bed screws holding the vertical tubes are tight.

SNIPE

Definition: Snipe is generally an unwanted undercut in the stock. It generally occurs in the first and last few inches of the stock length. It causes a different height dimension than what was selected for the stock. No molder/planer can completely eliminate snipe.

Causes:

1. The stock may be cupped, warped, or twisted.
2. The stock experiences a change in down pressure as the out-feed roller engages the stock, and when the stock disengages the in-feed roller.
3. The stock may enter or exit the machine on an angle because it is either being fed from a higher or lower source than the bed, or it is exiting to a higher or lower plane.

To minimize snipe

1. Use slightly longer stock than originally intended so as to allow a discard area of stock.
2. Use a jointer to flatten cupped, warped, or twisted stock.
3. Butt stock pieces tight end to end.
4. Put a slight upward pressure on the exposed end of the stock during both the in-feed and out-feed stroke.

FEEDING PROBLEMS

Make sure that power is disconnected before inspecting machine.

SYMPTOM	SOLUTION
The stock stops but the feed-rollers continue to turn.	This is a traction or friction problem. 1) Make sure your stock is not binding in the guides. 2) Make sure the stock is of consistent width. **Saw ripping is inadequate**. 3) Make sure stock is the proper width for the knife profile. 4) Make sure the head is set at the correct height. 5) Check the rollers to see if they have a glossier than normal build-up. Clean the gloss or pitch build up off the rollers. 6) Make sure adequate spring pressure is being applied to the rollers. 7) Check the base or bed for rust or scars. 8) Replace worn rollers.
One roller stops while the other continues to operate.	Check for a loose set screw on one of the two chain sprockets involved with the roller that won't operate.
Both rollers will not turn	Check for a blown fuse in the Vari-Feed control. The armature fuse is a 1 amp fuse, and the line fuse is a 2 amp fuse. Both fuses are ¼"x1 ¼" The toggle switch for the Vari-Feed may be in the off position. The motor electrical plug may not be fully engaged in its receptacle.

PARTS LIST

PART NO.	EDP NO.	*NO. REQ'D*	DESCRIPTION
54-1	10002	1	Base
54-2	10003	1	Head
54-3	10005	1	Chip Deflector
54-4	10007	1	Outfeed Swing Arm
54-5	10009	1	Top Bar Brace
54-6	10011	1	Elevating Handle
54-7	10013	1	Elevating Screw Collar
54-8A	10014	1	Plain Tube A
54-8B	10015	1	Slotted Tube B
54-9	80075	1	Crank Knob Screw
54-10	10017	1	Arbor
54-11	10018	1	Elevating Screw
54-14	10022	1	Chip Deflector Axis Pin
54-15A	10023	4	Swing Arm Axis Screw
54-16	10024	2	Swing Arm Stop Pin
54-17	80092	2	Chrome Tube Cap
54-19	10025	1	Elevating Handle Knob
54-20	10026	2	Arbor Ball Bearing
54-21	10027	1	Head Locking Handle
54-22	10029	1	Head Locking Screw
54-23	80076	8	Knife Attaching Bolt
54-25	10032	4	Roll Pressure Screw
54-26	10033	4	Roll Pressure Guide
54-28	10034	1	Sheave (Pulley) 2-1/2"
54-29	10035	1	Pulley Guard **for machines with no W&H stand**
54-30	10105	1	Dust Hood–4" Diameter
54-32	80077	1	Scale
54-36	10036	1	Spring Plunger
54-37	10139	4	Spring **for multi-pass machines serial # 22052 and higher**
P-100	10050	1	Infeed Swing Arm
P-122	10074	2	Short Roll Journal
P-123YE	10161	2	Urethane Feed Roll
P-124	10076	1	Infeed Sprocket Journal
P-129	80082	1	Chip Deflector Screw
P-130	80007	1	Check Nut
P-137	10085	4	Swing Arm Bushing
P224	10098	1	Out-feed roller journal
VF-1	10140	1	Vari Feed motor
VF-2A	10165	1	Motor mount, aluminum
VF-3	10143	2	14 tooth roller sprockets

PART NO.	EDP NO.	NO. REQ'D	DESCRIPTION
VF-4	10144	1	In-feed chain 36 pitch
VF-5	10145	1	Out-feed chain 54 pitch
VF-7	178000	1	Hardware kit * see below
VF-9A	10153	1	Chain guard
VF-12A	10148	2	17 tooth sprockets
VF-13	10129	2	Deluxe 206 control mounting braces

VF-13 10129 Deluxe Control Mounting brace zip bag

Two	mounting braces
Two	#10 lock washers
Two	10-32 x ½" FHSCS
Two	10-32 nuts

*VF-7 178000 HARDWARE

Two	10-32 nuts (motor mount to chain guard)
Two	10-32 x 5/8" SHCS (motor mount to chain guard)
Two	10-32 x ½" SHCS (upper, motor to motor mount)
Two	10-32 x ¾" SHCS (lower, chain guard thru motor mount to motor)
Two	Thick black flat washers, ¼", (used with 2" mounting bolts)

THREAD LOCKING INFORMATION

A medium strength thread-locking compound used on some parts prone to loosen with vibration.

Use two drops on the thread area of the parts listed below.

P-122 Short Roll Journal.

54-16 Stop Pins.

54-15A Swing Arm Axis Screws.

A thread locker is available for purchase. Part number 80101.

Do not use on P124 in-feed sprocket journal, or on P224, out-feed sprocket journal.

INSTRUCTIONS FOR REMOVAL OF FEED ROLLER

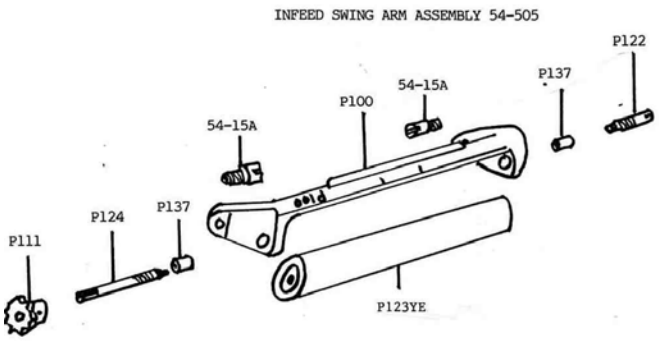
Unplug machine.
Take off chip deflector.
Raise head.
Remove **pressure screws** over swing arm to be removed.
Remove two 54-15A **axis screws** and remove swing arm, leaving chain connected to mating sprocket.
Reinstall each axis screw with a drop of *medium strength thread locker*.

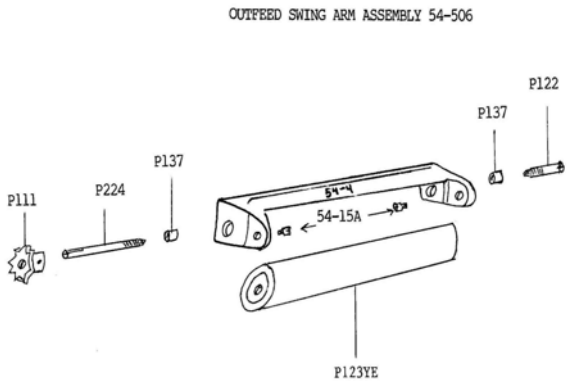
Take **the sprocket** off the swing arm journal by puttting **the feed roller in a vise**. Use a couple of small **adjustable wrenches** attached to the flat on the **long journal** to loosen it.

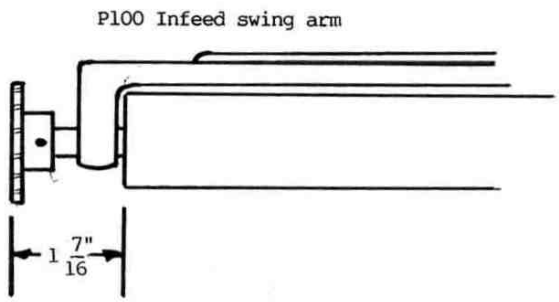
Put **a good square shank flat bladed screw driver** into the slot on the **short journal.** Push in as hard as you can while using a wrench on the square shank of the screw driver to loosen the short journal. Sometimes this journal will not come out. **Hack saw** it off if it won't. If you need **to save the roller**, pull the roller out of the swing arm by lifting it up and pulling it out with the short journal still in the roller. Reset the roller in a vise and **use a small pipe wrench** to remove it from the roller.

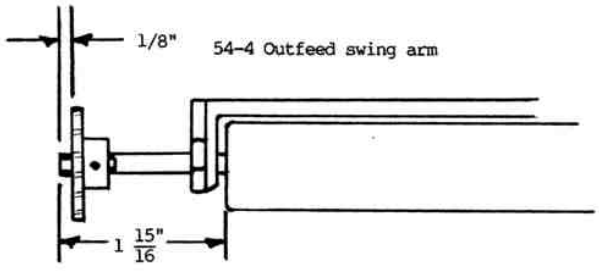
REASSEMBLY

The rollers are constructed with a shallow hole in one end and a deeper hole in the other.
The P122 always goes in the short end. **Reinstall the P122 parts with two drops of medium strength thread locker on the thread portion.**
The longer journal goes in the deeper end. See drawing for swing arm assembly with roller. Do not use *thread locker* on this longer journal.

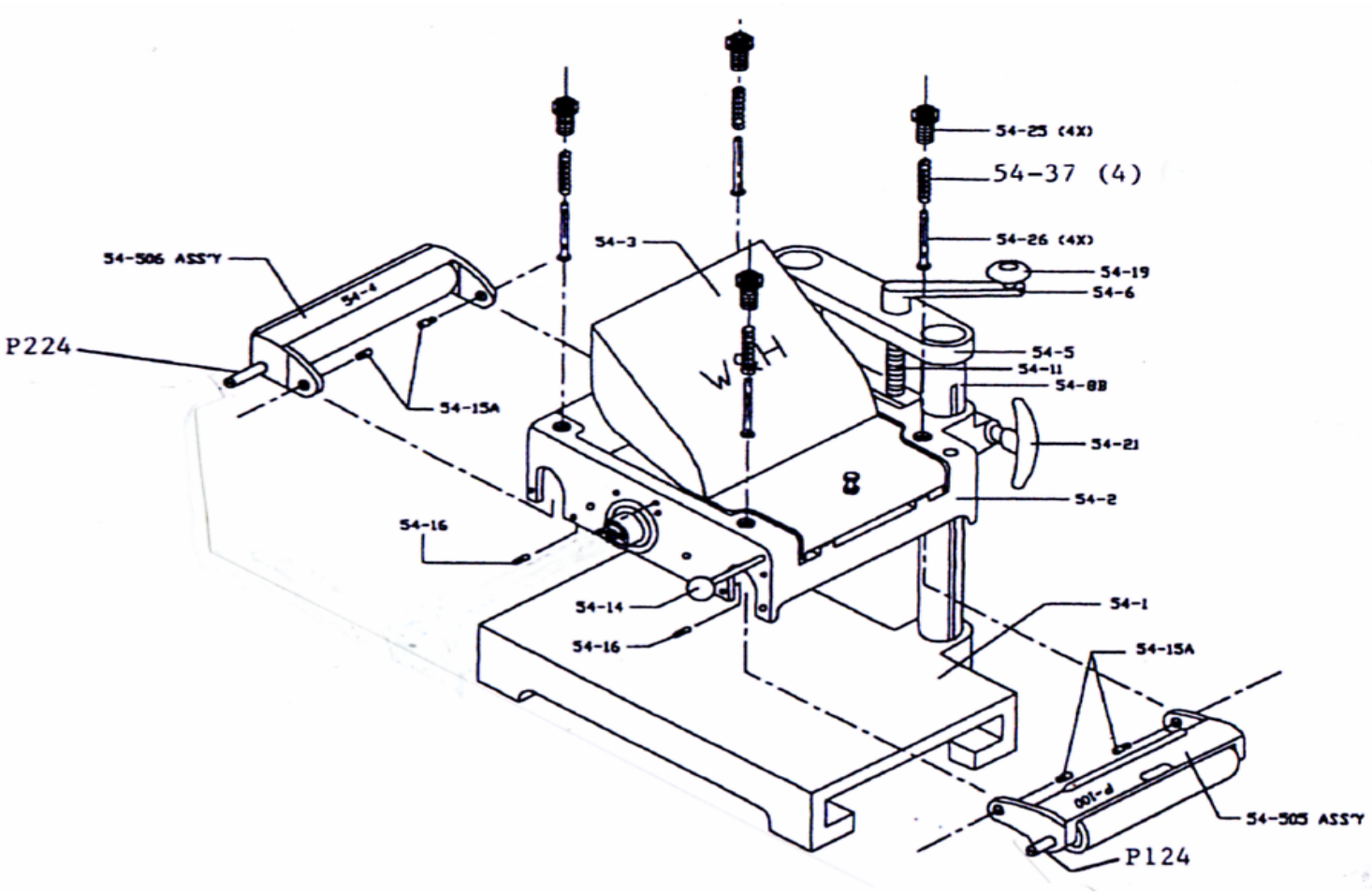








WHOLE MACHINE VIEW LESS VARI-FEED



When reinstalling the vari feed unit after a repair **check the short chain for a proper amount of tension**. It should have nearly no slack in it and the long chain should have plenty of slack. This is the correct setting. The short chain gains slack in the operating position and the long chain looses slack in the operating position. To obtain the correct setting, in most cases, you would push the unit toward the out-feed end of the machine as you tighten it using up the attaching bolt hole clearance. This should give you the optimum chain tension and slack.

VARI-FEED VIEW

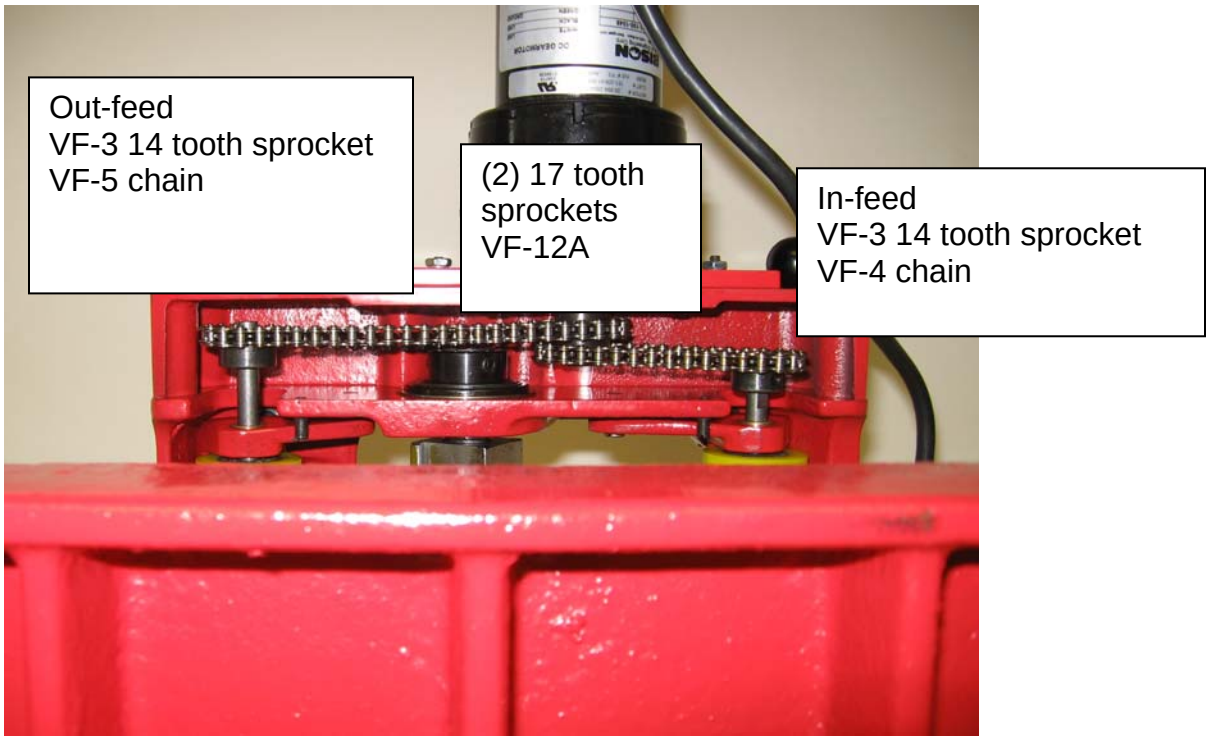
VF-1 Vari-Feed motor
VF-2A Aluminum motor mount
VF-3 Roller sprockets, 14 tooth (2)
VF-4 Short chain, 36 pitch
VF-5 Long chain, 54 pitch
VF-9A Chain guard
VF-12A Motor sprockets, 17 tooth (2)

For hardware list see page 36

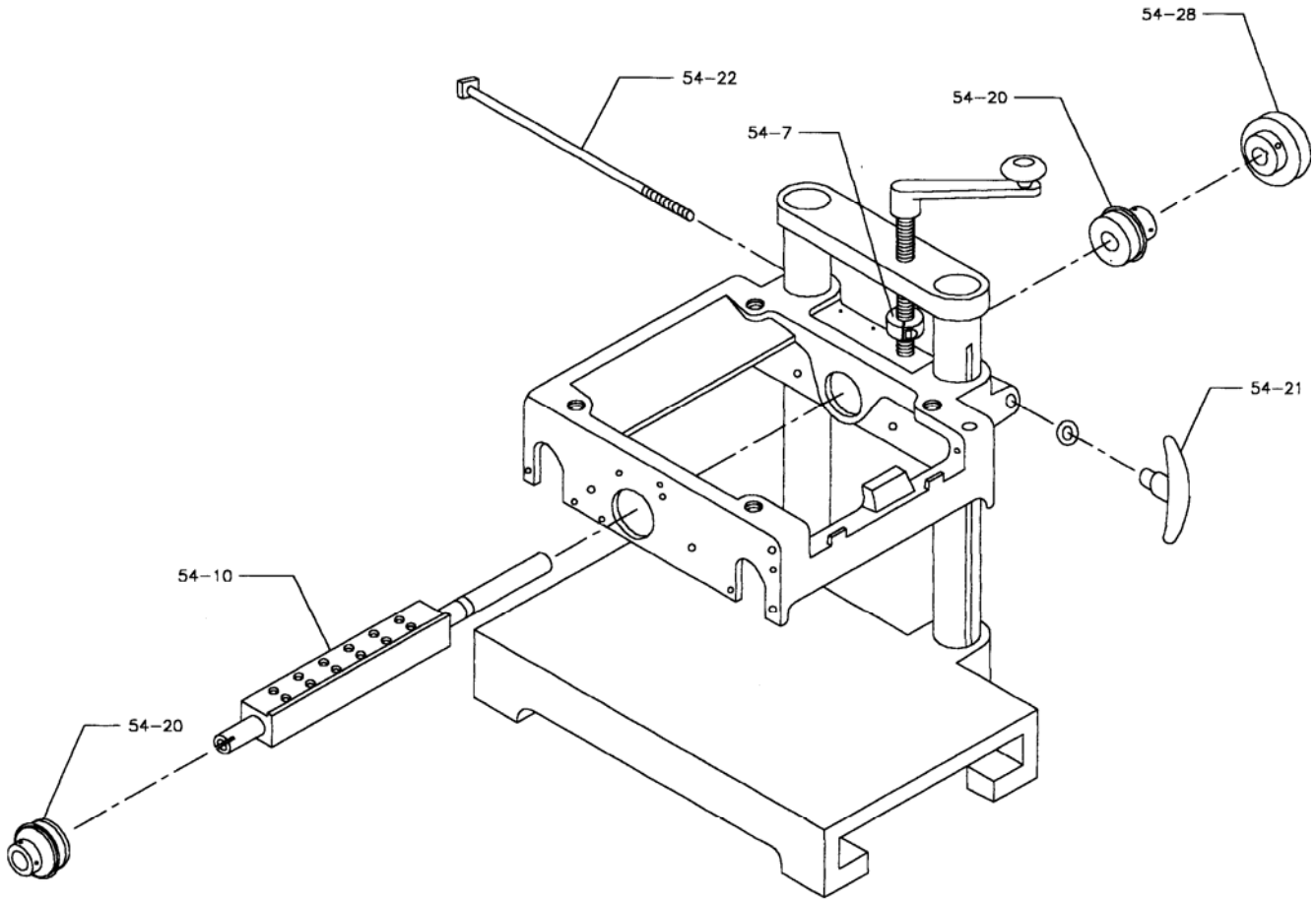
Vari-Feed Removal

Loosen the set screw on the in-feed roller chain sprocket. Loosen and remove the (3) bolts (two hex head and one socket head) holding the chain guard to the machine head. As you pull the unit free, pull off the in-feed chain sprocket you loosened. To remove the motor from the motor mount and chain guard, remove the two motor shaft chain sprockets and loosen and remove (4) socket head cap screws that are in a rectangular pattern surrounding the motor gear housing. To disassemble the motor mount from the chain guard remove the two remaining socket head cap screws with nuts.

UNDERSIDE VIEW OF SPROCKETS AND CHAINS



ARBOR REMOVAL VIEW



7 Year Limited Warranty

Williams & Hussey Machine Co., Inc. warrants this molder for a period of seven years from the original date of purchase.

This warranty **covers** any original parts that were improperly manufactured and any malfunctions due to improper original factory assembly of the molder.

The warranty **does not cover** damage due to; modifications, misuse, improper maintenance, normal wear, or wood jams.

If your machine fails during the warranty period, contact Williams & Hussey at **1 800 258 1380** for a return authorization. Once you receive your authorization to return your machine or a part of your machine you must return it to us with the freight **prepaid.** You must also include a **proof of purchase** with the machine.

The warranty does not extend to anyone except the first purchaser.

The warranties set forth above are in lieu of all other warranties expressed.

WILLIAMS & HUSSEY MACHINE CO.
70 POWERS STREET
MILFORD NH 03055
EMAIL info@williamsnhussey.com
1 800 258 1380
FAX 603 732 4048