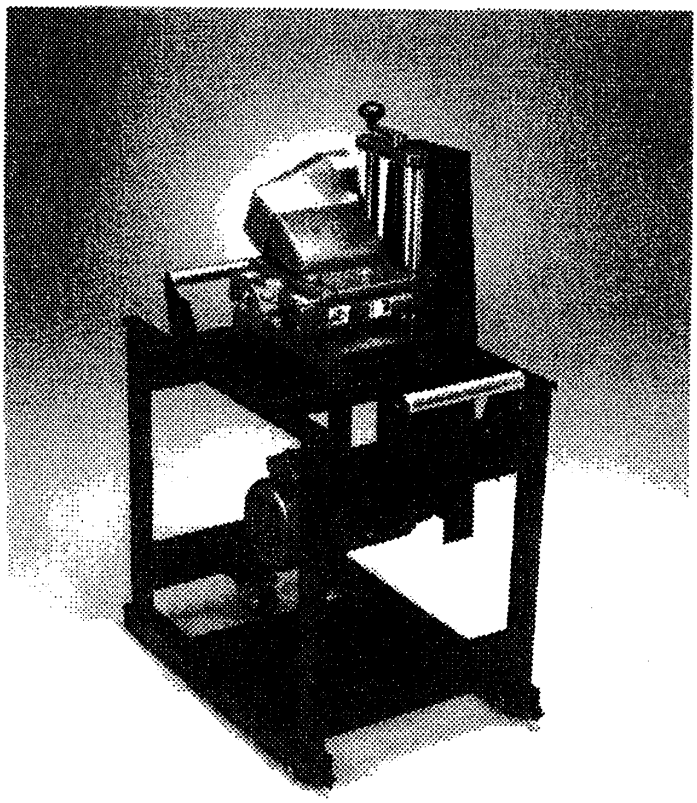
Williams & Hussey Molder Planer

OPERATOR'S



MANUAL

TM

OUR PLEDGE TO YOU

Your W&H Molder/Planer is warranted for five years (see back cover). In addition, as long as you own it, competent help with its care and operation is as close as your phone; simply call the toll-free number below.

The W&H has been a proven design since 1955. This is a superior machine. It will mold and plane to the specifications set forth on page four, faster, easier and with greater precision than any other machine in its class.

It is compact enough to take to the job, yet heavy enough to stand up to years of hard use. You can change knives in about two minutes with absolute precision.

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

Need a hand? USA 1-800-258-1380 ☎ 603-654-6828 ☎ Fax 603-654-5446
Customer Service: Monday - Friday, 8:30 AM - 4:30 PM East Coast Time
E-mail: WNH@tellink.net
Web Site: http://www.WilliamsnHussey.com

Complete Revision: 6/91
Revised: 12/92
8/95
8/96
6/97
3/03
9/03

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SAFETY RULES

Your WILLIAMS & HUSSEY molder/planer has been designed for maximum safety. However, as with all power tools there is a certain amount of potential hazards involved for the operator. Therefore, ***it is imperative that the owners manual is read completely before using.***

Use your WILLIAMS & HUSSEY molder/planer with respect and caution. Following safety precautions will considerably lessen the possibility of personal injury. However if normal safety precautions are overlooked or completely ignored, personal injury to the operator can result.

The WILLIAMS & HUSSEY molder/planer was designed for specific applications. ***Do not modify*** or use the machine for any purpose other than the limitations specified in the manual. Any modifications to the molder/planer may result in personal injury and will void the warranty. ***If you have any questions relative to its applications, do not use*** the molder planer until you have contacted WILLIAMS & HUSSEY.

Remember to:

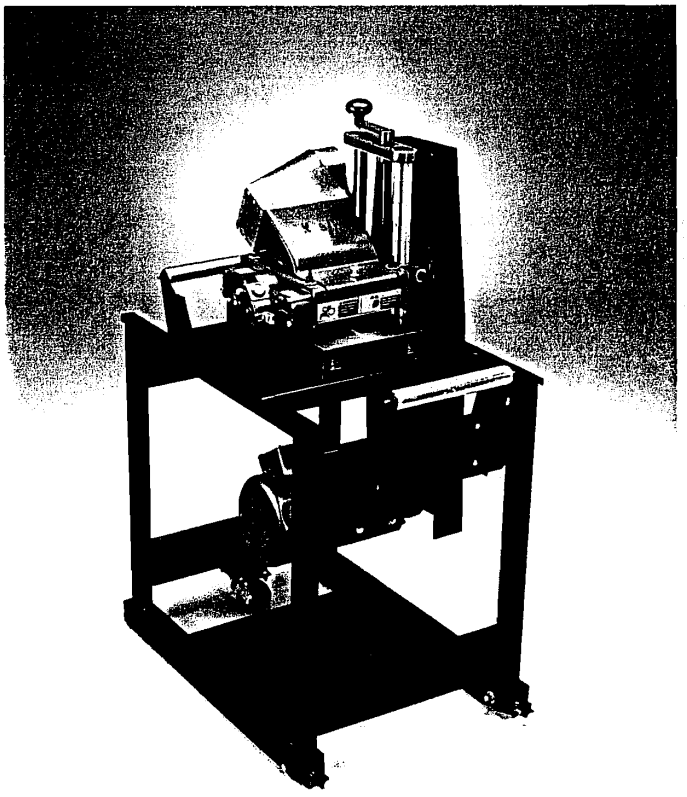
- Know your molder/planer. Read the owners manual carefully. Learn the machines' applications and limitations as well as the specific potential hazards to it.
- Use safety glasses. Also, use a face or dust mask.
- Disconnect the power source to the molder/planer before servicing and when changing accessories such as knives.
- Wear proper apparel. Loose clothing or jewelry can get caught in moving parts. Rubber-soled footwear is recommended for best footing.
- Don't overreach. Keep proper footing and balance at all times.
- Avoid accidental starting. Make sure switch is in off position before plugging in cord.
- Maintain tools in top condition. Keep knives sharp and clean for the best and safest performance. Follow instructions for lubricating machine and changing knives.
- Ground all tools. Three-pronged plugs should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter wire must be attached to a known ground. Never remove the third prong.
- Keep guards in place and in working order.
- Remove adjusting keys and wrenches before starting machine.
- Check stock for loose knots, nails and foreign matter.
- Always stand beside the machine, never in front of infeed or in back of outfeed.
- Set your machine up in a clean, dry, well-lit area.

SPECIFICATIONS FOR

THE W&H MOLDER/PLANER FACTORY PACKAGE

PACKAGE INCLUDES; MOLDER, STAND, & 2HP MOTOR

Specifications



- 2 HP Motor
- 7000 RPM Arbor
- 15 FPM Feed Rate
- Max Profile Depth 3/4"
- Max Profile Width 6 3/4"
- Planes 7" Wide
- Min Stock Length 9"
- Min Stock Thickness 1/4"
- Max Stock Thickness 8" *

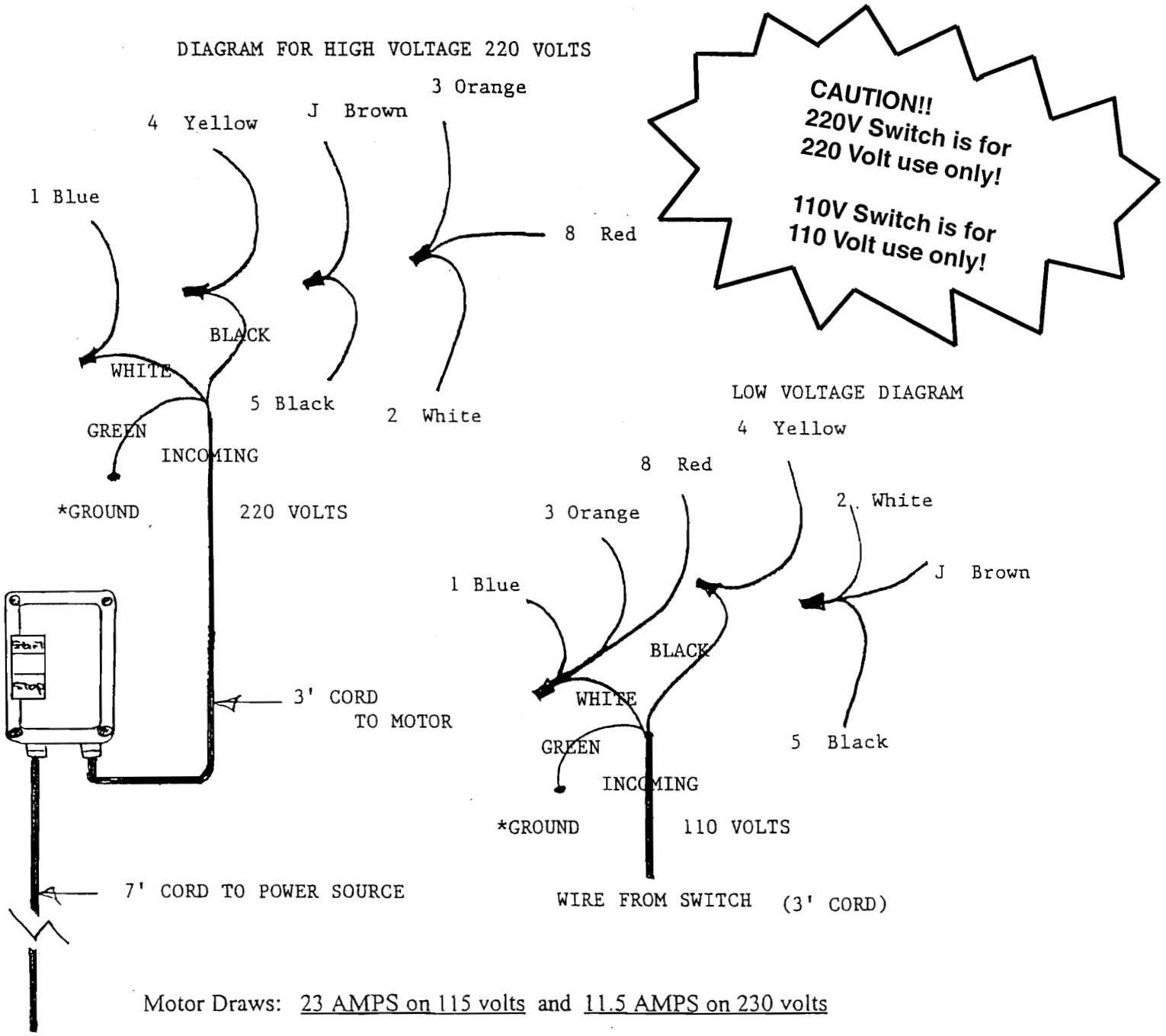
All molding cuts must be at full depth and made in a single pass.

- Working Height 31"
- Overall Height 45"
- Overall Width 20"
- Overall Length 33"
- Pkg. Wt. Approx. 200#

* The crank handle will hit the chip deflector at the 6" height. For convenience of operation at heights above 6", an optional crank extension 54-306 is available.

INSTRUCTIONS FOR WIRING MOTOR

2 HP Baldor Motor, Catalogue #L3515M Spec #35J 383-2013, 56/56H Frame
These instructions are for the above motor only!



Motor Draws: 23 AMPS on 115 volts and 11.5 AMPS on 230 volts

* GROUNDING: When wiring for either high or low voltage use a cord with three wires. The green wire is to be attached to the green screw down in the bottom of the motor wire box.

SETUP - STAND

1) Place stand on it's end, motor mount end toward the floor. Place solid wheels in channel of bottom of roller stand on the motor mount end of the stand. Insert 3/8-16 x 2 1/4" axle bolts through holes provided. Mount flat washers, lock washers and nuts on inside of the channel.

2) Mount caster wheel on its base with four 1/4-20 round head screws, lock washers, and nuts.

3) Mount motor on its mounting area with four 5/16-18 x 3/4" bolts, flat washers, lock washers and nuts. The motor is mounted with the shaft end in line with the cut out for the belt in the molder/planer mounting area. Offset motor on it's mount the maximum the bolt clearance will allow to compensate for some twist on the mount while the motor is held in the running position with the belt alone.

4) Place stand back on it's wheels. Install two brake knobs in the end of the stand in tapped holes found adjacent to the two wheels just installed. Mount molder/planer on the stand using four 1/4-20 x 1 ½ hex head bolts and lock washers. Use nuts from bolts used to secure the molder/planer to the shipping pallet.

5) Mount pulley on the motor, hub side facing the motor.

6) Install belt from motor to molder/planer.

7) Make adjustments to motor and molder/planer to align belt with no twist in line with each other. Tighten down motor and molder/planer.

8) Install the belt guard bracket. Use two 10-24 x 1/2" screws and lock washers. Take guard and mount over upper bracket and align with two lower tapped holes. Install three 1/4-20 x 5/8" screws and flat washers.

9) Mount vertical roller support brackets in pairs, left and right hand, on both ends of the stand with 1/4-20 x 5/8" screws, lock washers, and nuts in holes provided.

10) Install two rollers. Adjust the rollers to be approximately 1/32" higher than and parallel to the molder/planer base.

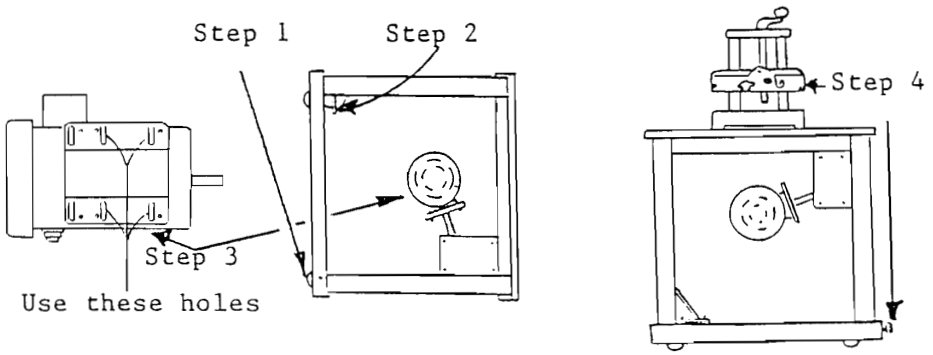
11) To mount the switch, align the four (4) holes in the back of the switch box to the four (4) in the bracket. Partially start all four (4) screws and then tighten them evenly. Be careful not to over tighten the screws. Strip back about six (6) inches of cord casing being careful not to cut into the wire insulation. Install the cord connector to the motor and insert cord so that the casing is clamped in the connector. Then follow the wiring instructions in the manual on page 5.

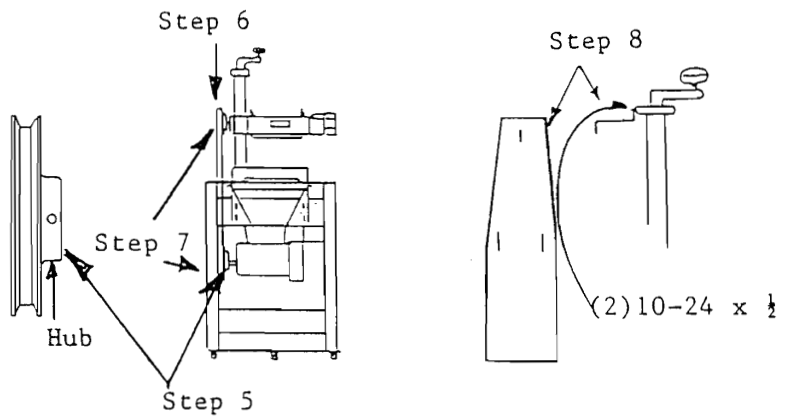
STAND PARTS LIST

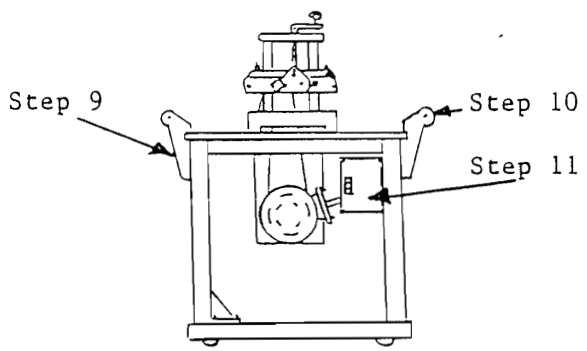
Fabricated Main Frame
Belt Guard
Belt Guard Attaching Bracket
2 Solid Wheels
1 Caster Wheel
2 Brake Knobs
Hand Roller Brackets
2 Right Hand Roller Brackets
2 Stock Rollers

HARDWARE

(2) 10-24 x 1/2" Screws and Lock Washers
(15) 1/4-20 x 5/8" Screws
(19) 1/4 Lock Washers
(12) 1/4" Hex Nuts
(3) 1/4" Flat Washers
(4) 1/4-20 x 1 1/2" Hex Head Bolts (Nuts are on bolts 2 Left Securing molder planer in shipping box).
(4) 5/16-18 x 3/4" Bolts, Nuts, Flat Washers and Lock Washers
(2) 3/8-16 x 2 1/4" Axle bolts, Flat Washers, Lock Washers And Nuts







SETUP OF MACHINE ON BENCH

Unpack and inspect. Report any damage to the shipper promptly.

THE MOTOR

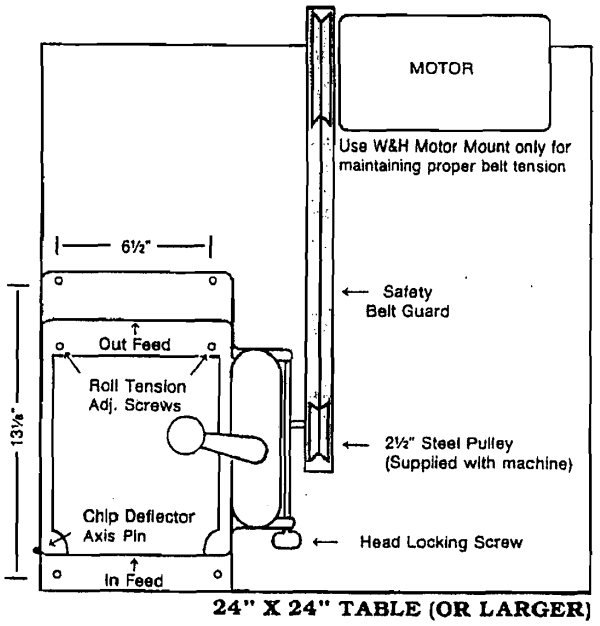
❶ No wire, plug or switch is provided with the motor.
❷ We recommend using a 2 HP motor.
❸ The machine is designed to be powered by a 3450 RPM motor using a 5" pulley.

MOUNTING ON YOUR BENCH

The motor should be positioned so that there is enough belt tension to keep the bottom of the motor about 1/2" off the bench top when the head is in its lowest position. The weight of the motor provides proper belt tension. A W&H motor mount may be purchased separately.

Anchor molder/planer securely with bolts. Bench top should be 3/4" plywood or thicker.

Our stand includes a belt and pulley guard. We provide an arbor pulley guard if you elect to bench mount your machine. However, *you must enclose the entire belt area with a safety belt guard* to fit your set up.



24" X 24" TABLE (OR LARGER)

GETTING STARTED

Disconnect the power source while going through these "getting started" procedures.

Check the oil level. See illustration on the next page.

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 want to set guides, although, many times they are not needed. Refer to the guide section for further information.

When molding, the head must be set to within 1/32" of the height of your stock. This setting will provide the proper roller tension. Any other setting is a hazardous one. For more details about molding see the section on molding.

If planning, for example, set your head 1/32" below stock size to remove 1/32" stock.

The stock must contact the infeed roller as you are engaging the stock into the machine.

Attach the chip deflector with its pin. Make sure the pin is inserted all the way in until it snaps into the spring loaded catch. When detaching the chip deflector, take the pressure off of it by lifting up off of its stop. This will enable you to remove the pin easily.

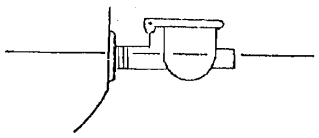
Roll knife arbor by hand with the pulley to ensure all is clear of the knife area.

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

With the head set in position, lock the head locking bolt firmly.

GEAR BOX OIL

Check your oil level each day before you start your machine.



We recommend you use W&H Gear Box Oil. Short term substitute for W&H Gear Box Oil would be a straight mineral 80-90 gear lube.

Some minor oil leaking is normal

A more serious leak in a new machine is almost always caused by overfilling the gear box. If overfilled, the gear box will slowly purge all the excess oil.

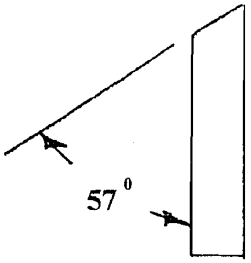
In an older machine, worn shaft bushings are normally the cause of serious oil leakage.

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 begin to notice them becoming dull. This will give optimum performance and minimum knife edge loss.

Molding knives should be surface ground on the face in pairs to preserve the profile and maintain the height of the knife.

Planer knives may be reground on either the bevel or surface ground on the face.



Both planer and molding knives have an edge angle of 57 degrees.

NOTE: The use of dull knives will put a strain on the feed mechanism and will result in the need of a repair.

HOW TO PLANE

❶ Measure the thickness of your stock.

❷ The amount of stock removable in one pass is dependent on the density of the wood (i.e. how hard or soft), how wide the cut is, and the moisture content of the stock.

GENERAL GUIDELINES FOR DEPTH OF CUT

1" poplar 1/4" depth of cut
1" red oak, 3/16" depth of cut

3" white pine 3/16" depth of cut
3" white oak 1/8" depth of cut

6" poplar 1/8" depth of cut
6" red oak 1/16" depth of cut

❸ Loosen the planing head locking knob (54-21). To initially get started planing, set the head elevation position to a setting 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.

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

❺ Adjust the chip deflector with the P129 screw and the P130 lock nut so that the deflector does NOT ride on the stock.

❻ **EXCEPTION! With stock that's 12" or shorter or less than 1/2" thick, have the deflector ride on the stock.**

HOW TO MOLD

- **CAUTION!** Some set-ups require a subplate. See page 14 for further information.

- Stock height should be uniform in size and finished molding size (see Illustration C).

- Stock width should be uniform and to finished molding size (see Illustration C). Saw ripping to width will not make the stock uniform enough for a smooth flow through the guides. We recommend all stock be thickness planed in both width and height to finished molding size before setting up to do the profile.

- When tightening the knives down, push the knives 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.

- The guides should be 75% as high as the stock is. Take note that you will need cut out areas for the rollers or they will scuff. In addition, cut out clearance in the knife area so the knife will not generate any unnecessary heat. Refer to the guide section for further information.

- Set the molder/planer head (54-2) to the scale setting that matches your stock height. This will give you proper roller tension and a complete profile on you molding stock. The machine was designed to cut in this fashion. It is acceptable to leave 1/32" (no more) of the cut for a later finish pass.

- **CAUTION!** On some deep and wide molding cuts, some prior stock removal will be required before molding the profile with your W&H machine. You may remove this stock using one of the roughing knives found in the Standard Knives Catalogue. You may also use a dado blade on a table saw.

- **Warning!** Failure to set your head height adjustment all the way down to within 1/32" of the stock height you are running will create a safety hazard of not enough roller pressure or no roller pressure at all. Knife breakage or kick back can be the result of this incorrect setting.

- Illustration D shows a correct set up with the stock the proper width for the knife.

- Illustration E shows the stock wider that the area the knife is intended to cut. This plowing situation generates lots of heat in the knives and resistance in the feed mechanism.

Illustration C

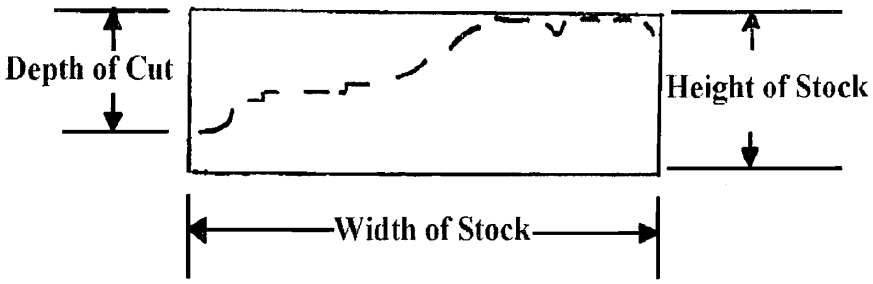


Illustration D

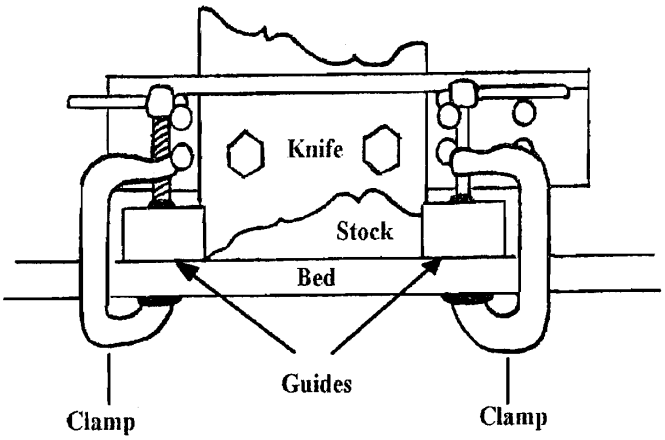
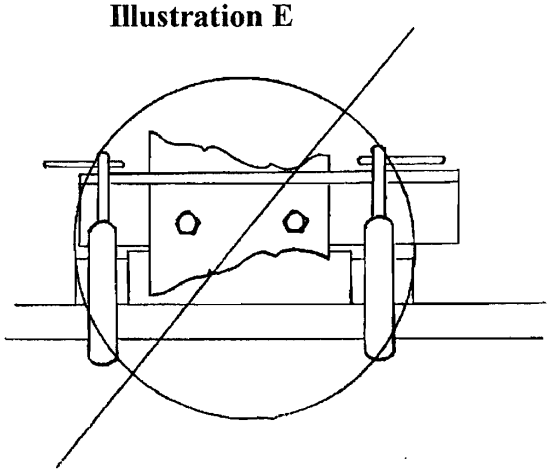


Illustration E



SUBPLATES

A subplate will be needed on any job where the knife is designed to come past the bottom of the stock. This type of knife will hit the base of the machine if a subplate is not used. An example of this situation would be the molding of half or quarter rounds (see Illustration F).

If the knife only comes close to the base, you should use a subplate just for a little insurance against accidentally depressing the head too low and plunging the knife into the bed. An example of a knife coming close to the bed would be the bottom knife on any of the crown or bed moldings.

A subplate should be made out of wood and "C" clamped to the base of the machine (see Illustration G).

When using a subplate, always remember to add its thickness to the stock thickness when setting machine height.

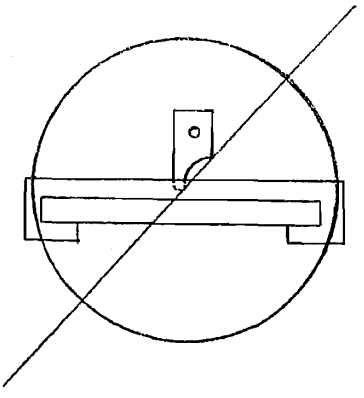


Illustration F

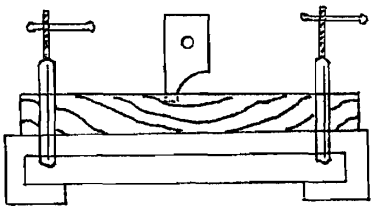


Illustration G

SETTING THE ROLLER PRESSURE SCREWS

The roller pressure screws are set on maximum pressure (screwed all the way into the head) at the factory. In most cases, this is the setting that is needed for optimum performance. There may arise a situation where the stock will pause for a second while engaging the outfeed roll and leave a mark on your stock. If this happens, you may want to reduce the roll pressure on the outfeed roller a little. To adjust the pressure on the outfeed roller, loosen the two locknuts at the base of the pressure screws and back them up out of the head three threads. Tighten the two lock nuts.

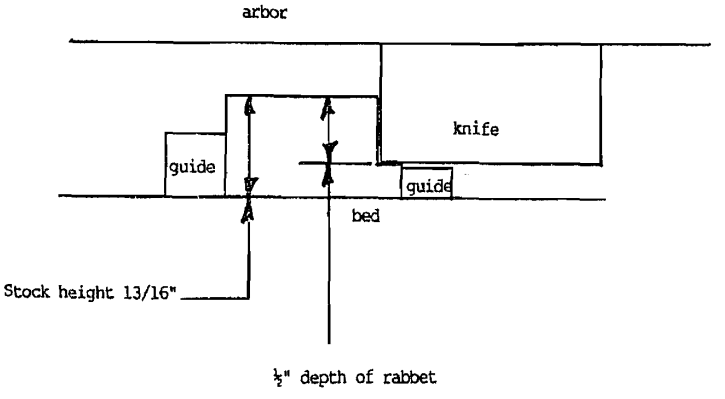
MOLDING PICTURE FRAMES

Decide whether you should do the rabbet or profile cut first. If you are going to make the rabbet on your W&H machine make the rabbet cut first.

If you want to make your rabbet cut on the W&H machine you need to select a rabbet knife that has a depth of cut that is exactly the depth you need. If a stock knife is not available, a special knife should be ordered. You cannot adjust the machine to cut at a depth of cut other than the one the knife is designed for without creating a safety hazard. (See illustration O).

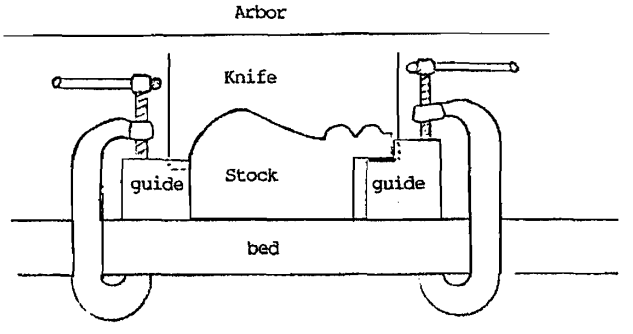
Illustration P shows the set up for making the profile. The knife is down to stock size. The guides are set in place using an optional step guide. You may use a square stock guide instead of the step guide.

Illustration O



* The knife is designed to cut a ½" rabbet
* The head is set at 13/16" on the scale setting

Illustration P



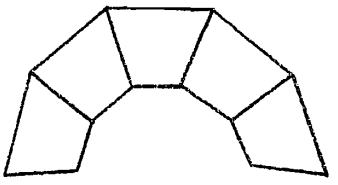
MOLDING ROUND TOP CASINGS

Note: Minimum inside radius for round top molding is 7". We manufacture knives with the profile cutting the deeper end away from the post side of the machine. This will allow you to feed the stock from the open side as shown on page 18. However, if you are putting a profile on the end of a wide board, please specify.

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. The trick in making round top molding is the preparation of the stock and making of the guide system.

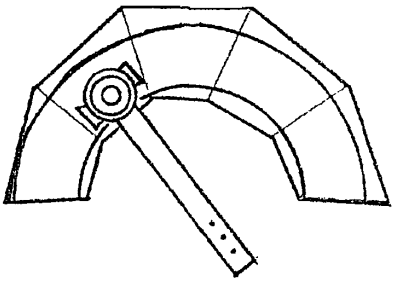
Stock preparation can be done in many ways. We have made many samples here at the factory and have used the following method:

First determine the angle you will need to cut your wood sections on in order to stay central within the parameters of your radius. Lay out your wood sections by marking your angles while being careful to select cuts for grain structure and color. Cut your sections and biscuit join and glue them together.



USING THE ROUTER

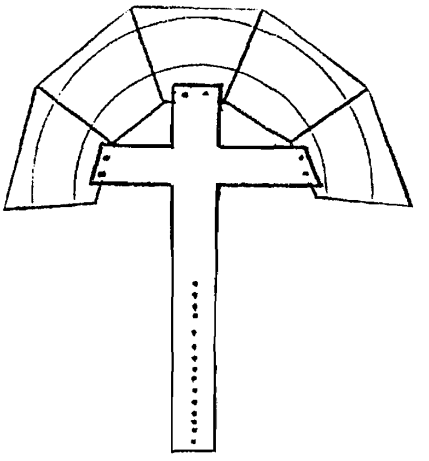
We have tried to cut the inside and outside radii with a router. We used a router mounted on a pivoting arm mounted on a large wooden work bench. The pivoting arm is drilled through with multiple pivot positions as shown in the diagram. Tack down the stock relative to the pivot point and rout out the inside and outside radii.



Note: For elliptical shaped moldings you will need to use the Williams & Hussey Elliptical Jig. Call for details.

USING A BANDSAW

We have also tried this method. It is quicker and a lot less noisy. Prepare your stock in the same manner as described on the preceding page. The drawback here is that the edges are left with a saw cut that you may want to finish which will require another operation.

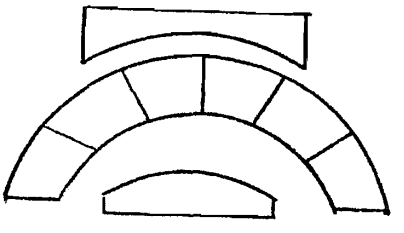


We made a fixture consisting of a pivot bar and bracket. We mounted the pivot bar to the stock on the scrap portion of the inside radius. The illustration shows the stock and the pivot bar attached to it. The pivot bar is drilled with numerous holes to accommodate any radius sizes. You may also want to design a fine adjuster to allow you to make any radius in between your adjusting holes.

Make sure outside radius is cut first.

THE GUIDES

Here is an illustration that shows what the guides look like in reference to the round top casing stock. The guides should be 14" long, the length of the machine bed. They should be clamped to the bed in the same fashion as you fasten the guides used for straight molding guides. The guides may be made using the same router or band saw setup.



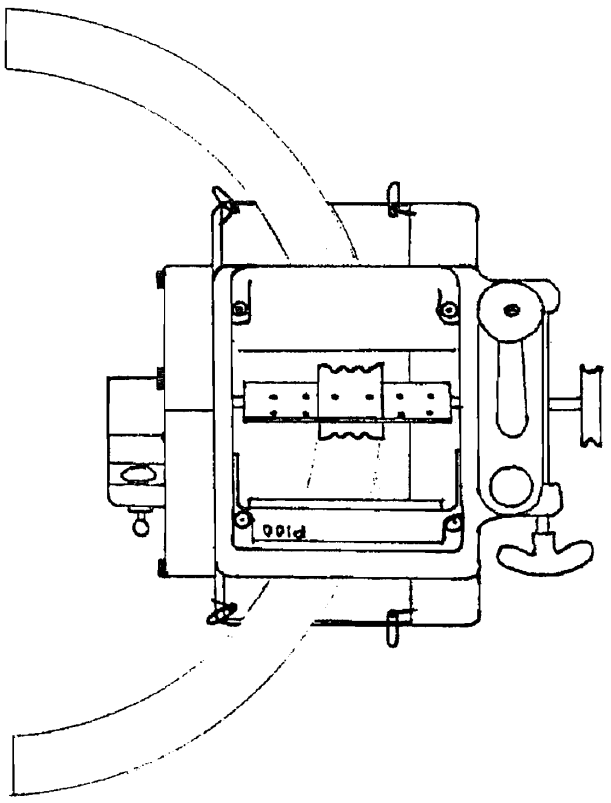
Note: Do not attempt to mold any closed loop molding stock. This is an unsafe procedure.

THE SETUP

Once your guides and stock are made, the set up is essentially the same as a straight molding set up.

Disconnect the power supply!

Raise the machine head and set the stock on the bed. Align the stock with your molding profile. Lower the head to pinch the stock. Set your guides and clamp them in place as shown in the drawing. Raise the machine head, remove your stock, and reset your head to stock size (add thickness of subplate when used). Check for interference in the knives' rotational path. You should now be ready to mold the profile on the round top stock.



MAKING RAISED PANELS

A reminder to work safely! The W&H machine is designed to make the profile in one pass. The head must be set at the panel thickness in order to have the correct roller tension.

All our panel knives are designed to produce a 1/4" tongue. Be sure to select your panel knife based on your finished panel thickness. A panel must be 9" or more in width to safely run in the W&H machine.

If you desire a different tongue size or have a panel thickness other than 3/4" or 5/8", a special knife must be made.

THE SET-UP

☞ ***DISCONNECT THE POWER SUPPLY BEFORE MAKING YOUR SETUP!***

- Install your knives over toward the tube side of the machine allowing enough room to install your guide.

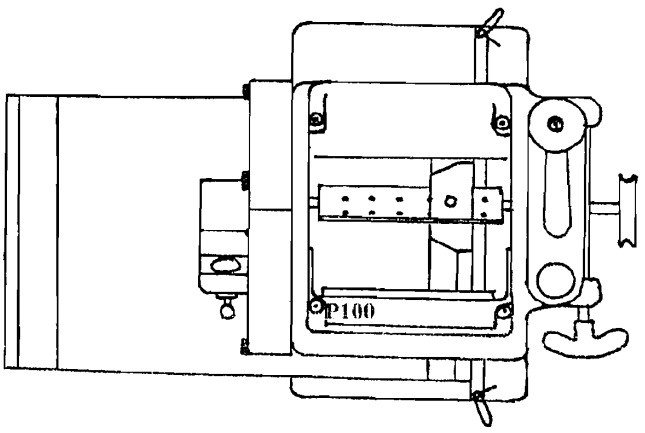
- Index the knife arbor so the profile will be seen against the bed. Raise the head to allow the panel to be laid on the bed and to be lined up with the profile visually.

- Once you have found the proper position for the panel lower the head so the rollers will put pressure on the panel while you butt your guide up against your panel and secure it with clamps on each end.

- Raise the head, pull the panel out of the machine and lower the head to the panel height. Rotate the blade arbor by hand to insure nothing is interfering with its rotational path.

- Mold the panel cross grain ends first. Stand somewhere between the open side and the infeed side.

The Illustration shows the panel with both cross grain cuts made. The machine is off and the chip deflector removed to show setup detail.



COMMON PROBLEMS WITH RAISED PANELS

It takes some practice to make a good panel. A helpful tip is 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 normally somewhere around 1/32" clearance between the top of the panel and the bottom of the head of the machine, provided the head setting is at the stock size setting and not below.

Many users try to take a little 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.***

On occasion you may find a light chain imprint on the top of your panel. This mark may be removed when you are finished molding your panel with a thickness planer or sander. Or, you may install a W&H Raised Panel Kit which will eliminate the chain mark entirely.

KNIFE CHANGING

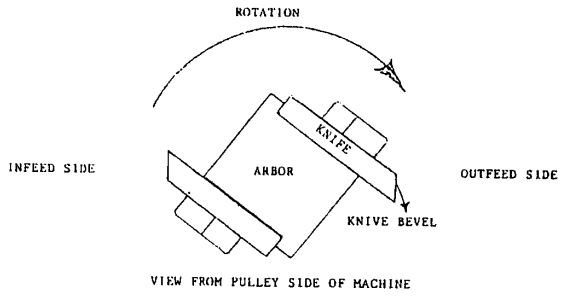
☞ ***DISCONNECT POWER BEFORE CHANGING KNIVES!***

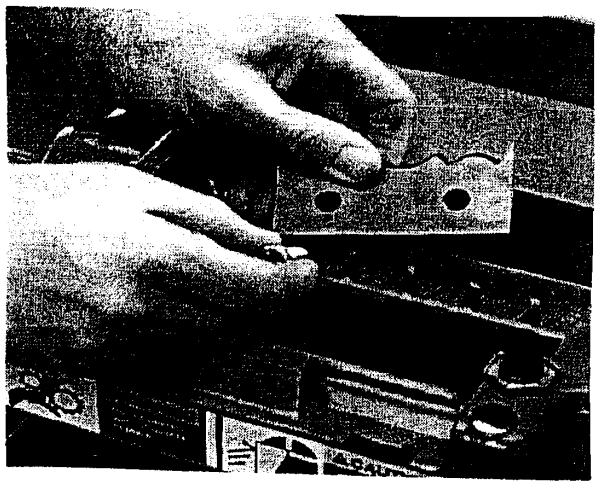
PLANER KNIVES

Remove the chip deflector by first lifting it up and then pulling out the pin. Set one knife at a time in place against the lip of the arbor. Place the "bevel" side of the knife facing the infeed end of the machine as shown in the picture 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.

MOLDING KNIVES

Set one knife at a time in place with the bevel edge toward the infeed end of the machine. 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 bolts.





GUIDES

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

- Your guides should be 75% as high as your stock. This will give you the support you need to stabilize the stock and minimize chatter while the profile is being cut (see Illustration H and I).

- Using the 75% guideline, you will need to cut out relief areas for the rollers in order not to scuff them after the stock has left the machine and the machine is still running. To keep the knives from rubbing on the guides, cut a relief into the guide in the knife running area (see Illustration L).

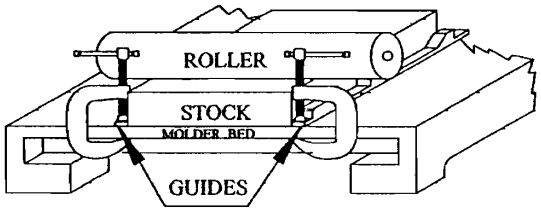
- When cutting bed and crown moldings make your bottom cut first. After making your bottom cut you should make angled guides to match the bottom cut (see Illustration J).

- Where planing the edge of stock a high, square, relieved guide is needed in order to have the edge reasonably square. The relief is to reduce friction (see Illustration K).

- Where running a tongue and groove job, a serious and detailed approach is needed in order to achieve a uniform fit on your finished stock. Carefully pre-inspect your stock for cupping and be sure you uniformly size your stock. Use a guide as shown in illustration K.

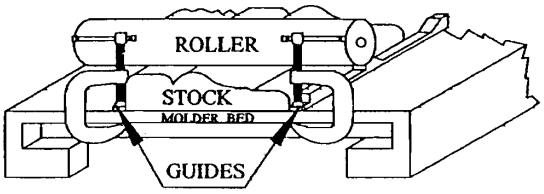
- Some profiles are too deep to make on the W&H. In some cases you can rotate the profile into a flatter position reducing the depth of cut to ¾" or less. You would make a V-block to guide your stock through the knife (see illustration O) the knife would have to be special made for this new position.

ILLUSTRATION H



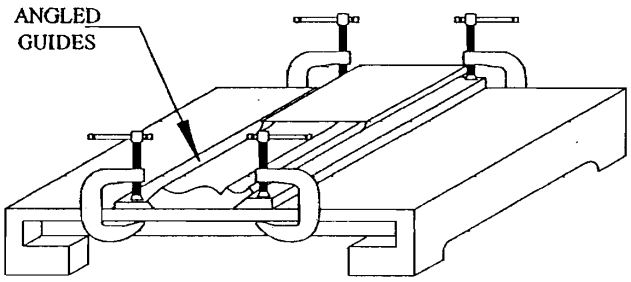
INFEED VIEW

ILLUSTRATION I



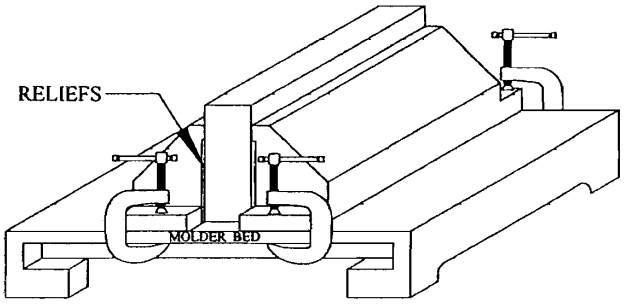
OUTFEED VIEW

ILLUSTRATION J



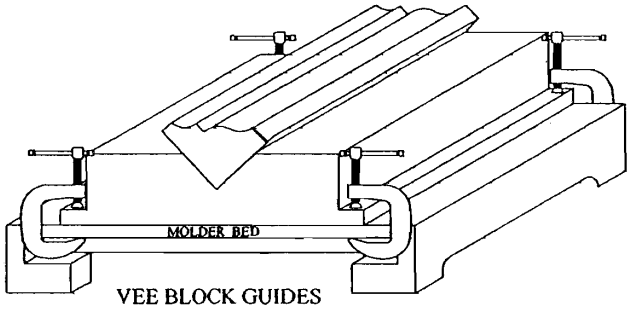
GUIDES TO RUN CROWN TOP PROFILE

ILLUSTRATION K



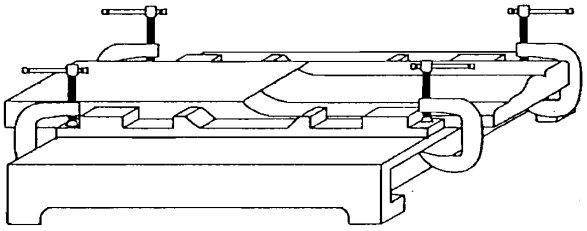
GUIDES TO RUN TONGUE AND GROOVE
AND SQUARE EDGE

ILLUSTRATION O



VEE BLOCK GUIDES

ILLUSTRATION L



STANDARD GUIDES PROVIDED WITH W& H PACKAGE

DEALING WITH GENERAL WOODWORKING PROBLEMS

CHATTER

Definition: Chatter marks are irregularities in the surface finish quality of the wood. They can be evenly spaced or random. They might be described as little hills and valleys in the surface.

General Causes: These marks are generated by the stock not being held securely while being cut or by some imbalance in the machine such as rotating parts .

Some specific areas to check:

- Check your belt for irregularities. The most common cause of stock finish quality problems is a belt not running smoothly. Change to a smooth running belt.
- Make sure you are cutting with the head set at the stock height.
- Keep your knives sharp. A dull knife will push the stock back little intermittently and cause a mark on the stock.
- Check for damaged or imbalanced pulley.
- Make sure each knife and bolt has an equal weight.
- Make sure your head locking bolt is tight while operating the machine.
- In an older machine, check for any play in the arbor bearings.
- Make sure the bed set screws are tight on the tubes (54-8 A&B).

SNIPE

Definition: Snipe is generally an unwanted undercut in your stock. It generally occurs in the first few inches and the last few inches of your stock length. It results in a different height dimension than the one you selected for your stock, (see illustration M).

Snipe cannot be completely eliminated in any molder/planer.

Causes:

- The stock: Warped, cupped or twisted stock will generate snipe.

- The machine: Snipe is generated by a change in the down pressure on the stock. This occurs as the stock goes from one roller engagement to a dual roller engagement.

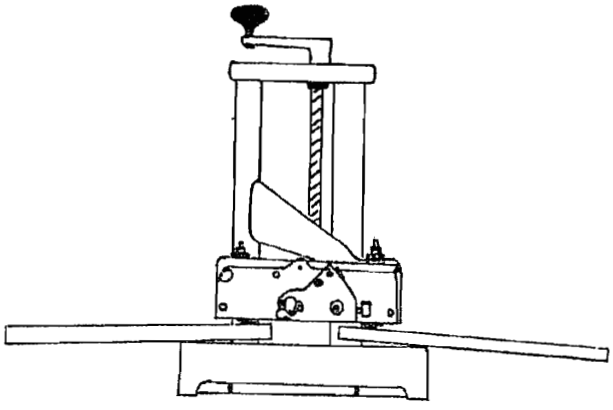
- The setup: *Snipe can occur* if the stock entering or exiting the machine is being guided at a higher or lower plane than the machine bed *as indicated in the illustration N below.*

Tips to minimize snipe

1. Use a jointer to flatten cupped, warped or twisted stock.
2. Allow enough stock length to discard snipe area.
3. Butt stock pieces tight end to end.
4. Put a slight upward pressure on the exposed end of the stock during both the infeed and outfeed stroke.
5. Butt and glue dummy ends on your stock, and remove them after planing.

Illustration M

Illustration N

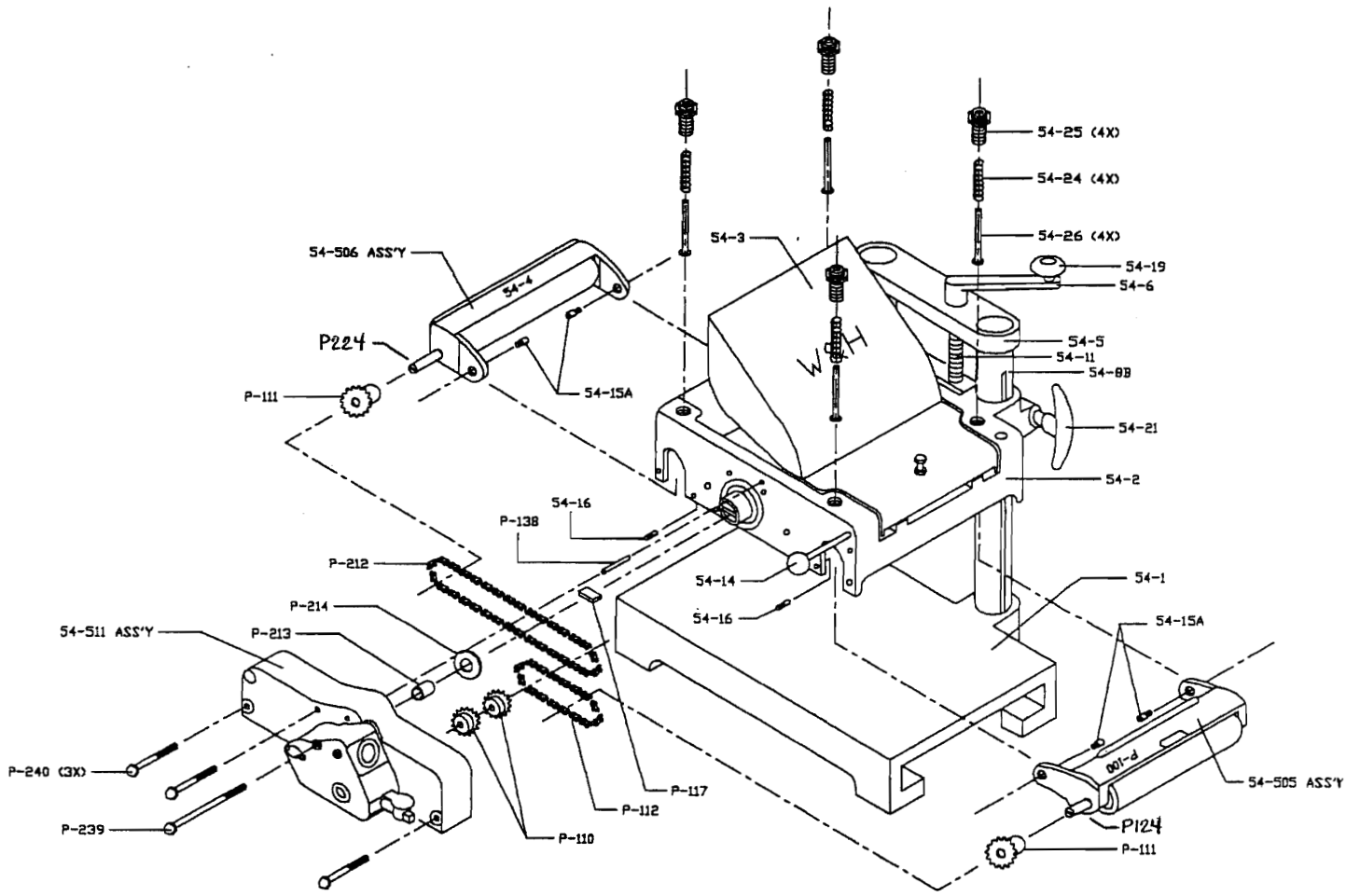


TROUBLE SHOOTING FEEDING PROBLEMS

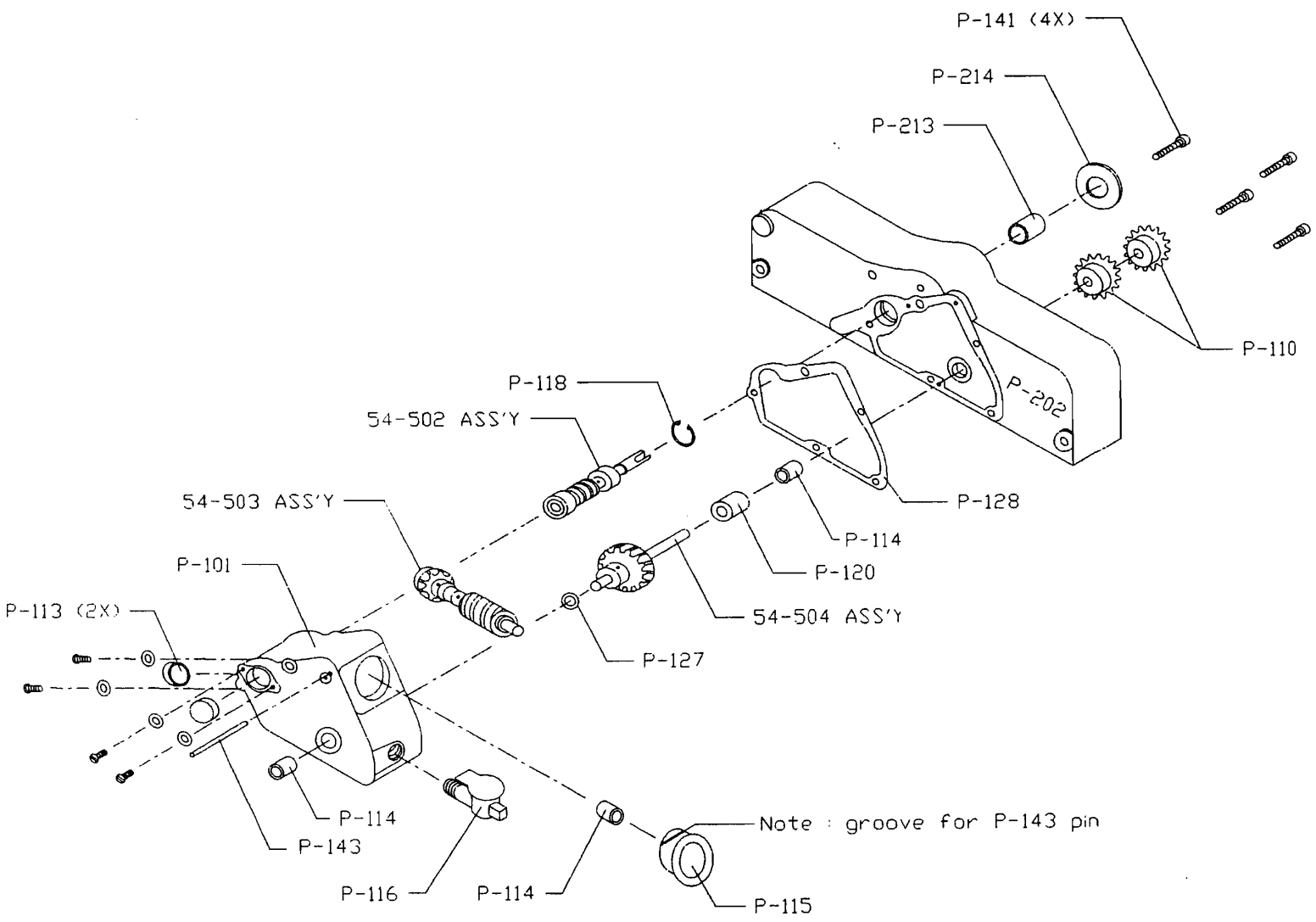
Symptom	Solution
Feed Roller Slipping. Stock stops but both rollers keep going.	This is a traction or friction problem. 1. Make sure the stock is not binding in the guides. 2. Make sure the stock is a consistent width. Saw ripping is not good enough. (see Page 12). 3. Make sure the stock is the proper width for the knife profile. (See Illustration on Page 13). 4. Make sure the machine cutting head is ***not*** set above the stock size. 5. Check the rollers to see if they have a glossy build up. 6. Make sure you have enough spring pressure on the rollers. 7. Check the base or bed for rust or scars.
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 troublesome roller.
Both Feed Rollers Turn until you try to engage the stock and then they both stop.	Check for a broken roll pin (1/8" x 5/8") in the P108 bronze worm gear. * The P108 is the larger of the two bronze gears inside the gear box. (See Illustrations on Page 28-29).
Both Feed Rollers will not turn even with no stock in the machine.	1. Check for a broken fiber drive, P117. 2. Check for a broken drive shaft, P203. (See Illustrations on page 28-29).
Both Feed Rollers will not turn: gear box is very hot!	Check for a stripped small bronze worm gear, P105, inside the gear box. (See Illustrations on Page 28-29).

*Check the pin with a paper clip wire. If the wire will not go in one end of the pin and out the other, the pin is broken.

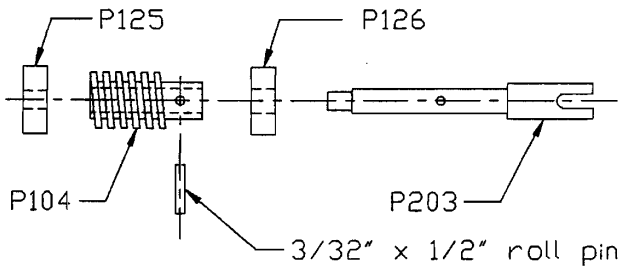
EXPLODED VIEW
W&H



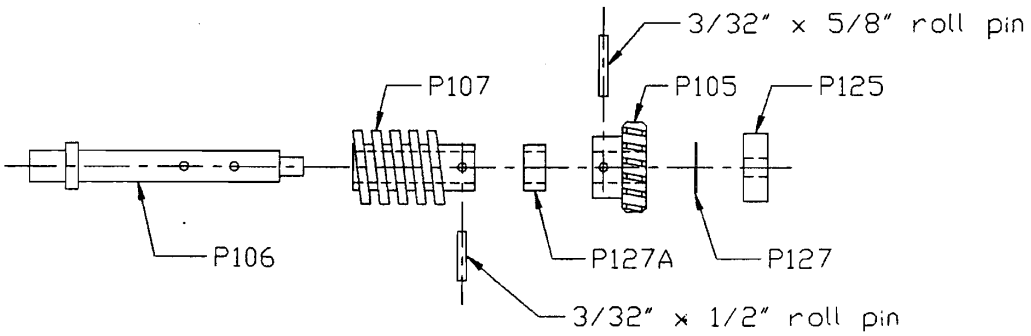
EXPLODED VIEW OF 54-511 ASSEMBLY



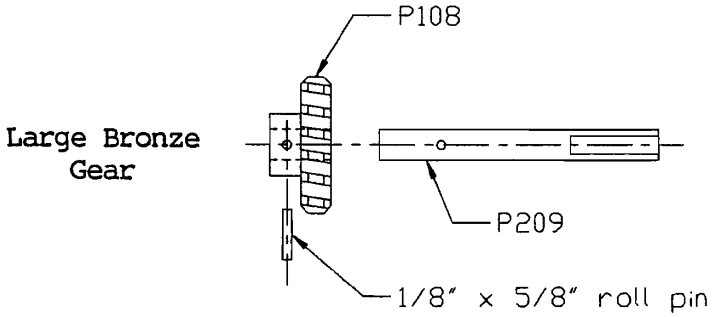
54-502 ASSEMBLY



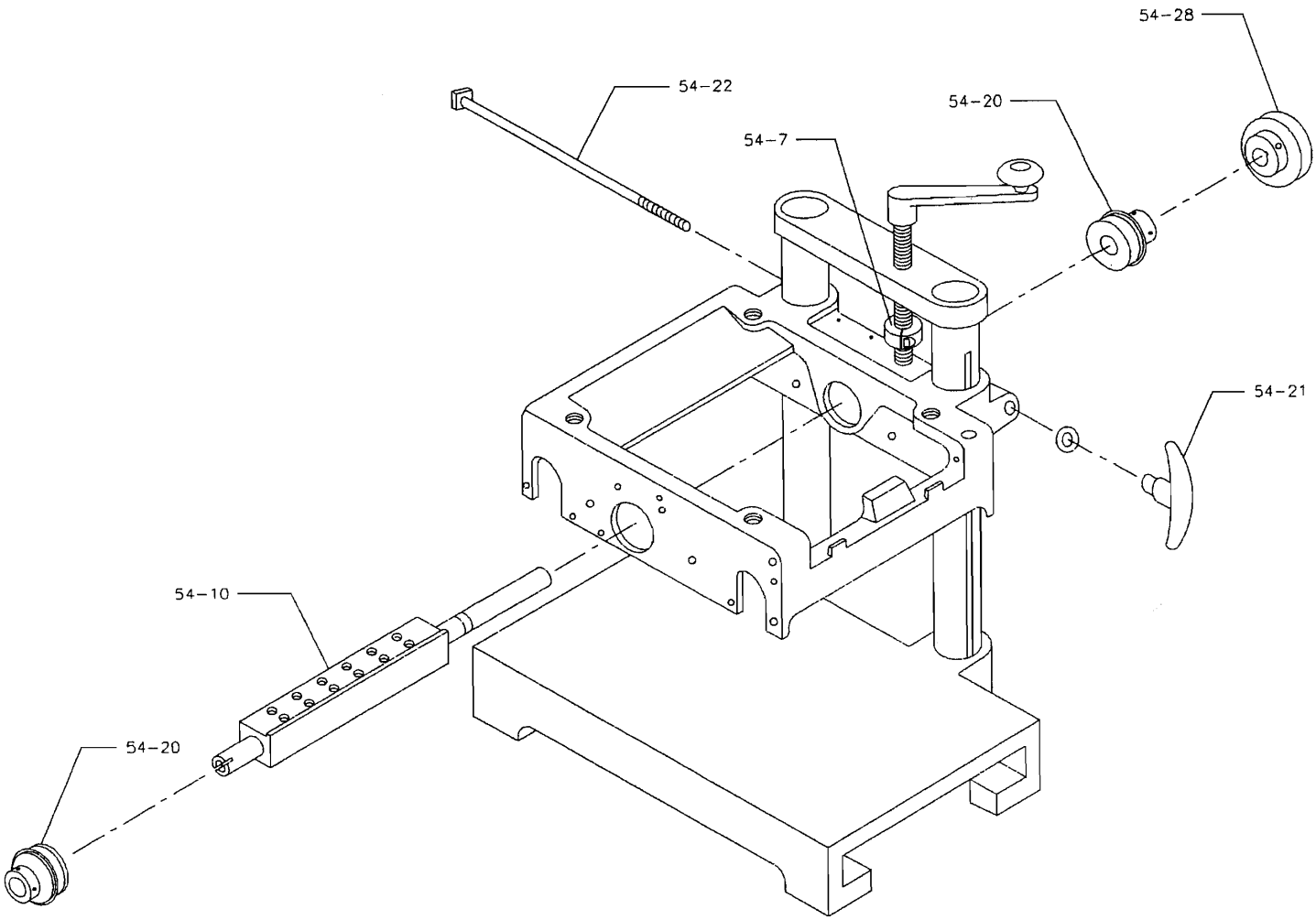
54-503 ASSEMBLY



54-504 ASSEMBLY



EXPLODED VIEW OF ARBOR REMOVAL



PARTS LIST

Part #	*Name*	*Qty.*
54-1	Base	1
54-2	Head	1
54-3	Chip Deflector	1
54-4	Outfeed Swing Arm	1
54-5	Top Brace Bar	1
54-6	Elevating Handle	1
54-7	Elevating Screw Collar	1
54-8A	Plain Tube A	1
54-8B	Slotted Tube B	1
54-9	Crank Knob Screw	1
54-10	Arbor	1
54-11	Elevating Screw	1
54-14	Chip Deflector Axis Pin	1
54-15A	Swing Arm Axis Screw	4
54-16	Swing Arm Stop Pin	2
54-19	Elevating Handle Knob	1
54-20	Arbor Ball Bearing	2
54-21	Head Locking Handle	1
54-22	Head Locking Screw	1
54-23	Knife Attaching Bolt	8
54-24	Spring	4
54-25	Roll Pressure Screw	4
54-26	Roll Pressure Guide	4
54-28	Sheave (Pulley) 2 1/2"	1
54-29*	Pulley Guard	1
54-32	Scale	1
54-36	Catch	1
54-41	Planing Knives (set)	1
P-100	Infeed Swing Arm	1
P-101	Gear Box Housing	1
P-104	Primary Worm	1
P-105	Primary Worm Gear	1
P-106	Secondary Shaft	1
P-107	Secondary Worm	1
P-108	Secondary Worm Gear	1
P-110	Drive Sprocket	2
P-111	Feed Roll Sprocket	2
P-112	Drive Chain	1
P-113	Oil Retention Plug	2
P-114	Oilite Bushing	3
P-115	Bearing Support Plug	1
P-116	Oil Cup	1
P-117	Fiber Drive Coupling	1
P-118	Retaining Ring	1
P-120	Shaft Spacer	1
P-122	Short Roll Journal	2
P-123YE	Rubber Feed Roll	2
P-124	Journal, Infeed Sprocket	1
P-125	Ball Bearing #1601	2
P-126	Ball Bearing #1602	1
P-127	Spacer	2
P-127A	Gear Shaft Spacer	1
P-128	Gear Box Gasket	1
P-129	Chip Deflector Screw	1
P-130	Check Nut	1
P-137	Swing Arm Bushing	4
P-141	Socket Cap Screw	4
P-143	Dowel Pin 1/8" x 1 3/4"	1
P-202	Chain Guard	1
P-203	Primary Shaft	1
P-209	Sprocket Drive Shaft	1
P-212	Long Chain Outfeed	1
P-213	Nylon Bushing	1
P-214	Nylon Collar	1
P-224	Journal Outfeed	1
P-239	Cap Screw 3 1/2"	1
P-240	Cap Screw 2"	3

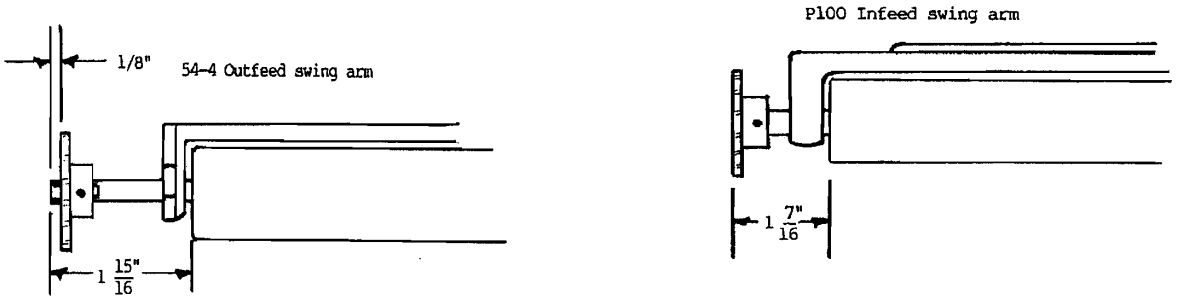
Pulley Guards are provided with machines purchased without stands.

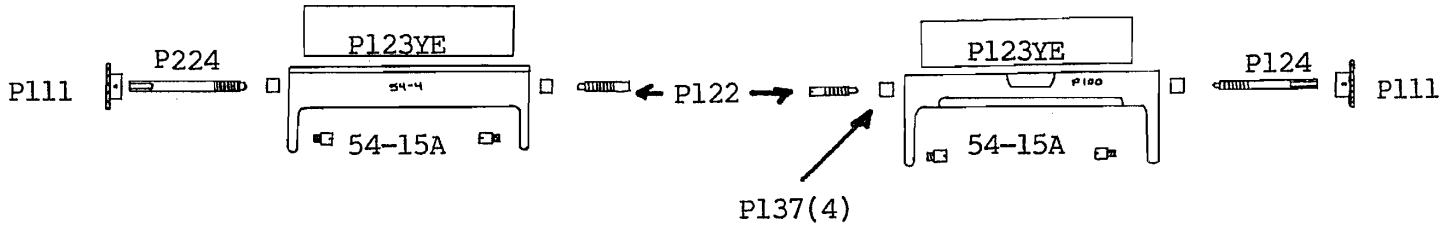
INSTRUCTIONS FOR REMOVAL OF FEED ROLLER

❶ Unplug machine.
❷ Take off chip deflector.
❸ Raise head.
❹ Remove pressure screws over swing arm to be removed.
❺ Remove 54-16 stop pin from head.
❻ Remove (2) 54-15A axis screws and remove swing arm. Leave chain connected to mating sprocket. Reinstall with a drop of *Loctite Blue* on each axis screw.
❼ Take P111 sprocket off swing arm journal. Put long journal in a vise with the flat against the jaw.
❽ Loosen short journal but do not remove yet.
❾ With your hands, turn roller to loosen from long sprocket journal.
❿ Take both journals, long and short, out of roller.

REASSEMBLY

❶ The rollers are constructed with a shallow hole in one end and a deep hole in the other end.
❷ The P122 always goes in the short end. Reinstall with a drop of *Loctite Blue*.
❸ The longer journal goes in the deeper hole. See drawing for swing arm assembly with roller.
❹ To install swing arm assembly in machine, reverse above procedures (1-10).





REMOVAL OF POWER FEED UNIT

❶ **Disconnect power**. Remove chip deflector and raise head 4" - 5".
❷ Spin the arbor to roll the set screw on the infeed Pll1 chain sprocket for access with an allen wrench from the underside of the chain guard. Loosen the set screw.
❸ Starting with the bolts on the chain guard, remove the three hex head bolts attaching the power unit to the head.
❹ Pull power unit free, removing infeed sprocket and chain at the same time. Remove long chain once unit is partially free of head.

DISASSEMBLY OF GEAR BOX

❶ Loosen set screws on Pll0 gear box mounted sprockets and pull them off the P209 drive shaft.
❷ Remove P213 nylon bushing and P214 nylon washer.
❸ Drain oil.
❹ Remove four socket head cap screws holding gear box onto chain guard.
❺ Tap on shafts with a soft hammer to separate the two housings.
❻ Drive out 54-504 large bronze gear assembly from outside of gear box with a 1/4" pin punch. Watch for small spacer P127.
❼ Drive out 1/8" dowel pin joining upper P115 bearing retainer to gear box. Push out retainer with a screw driver from the inside of the gear box.
❽ Remove 54-503 secondary shaft assembly, (small bronze gear). Wiggle it out of its socket and remove it from the gear box through the open side of the gear box.
❾ Remove the 54-502 primary shaft assembly, (small worm and slotted end shaft).

INSTALLATION OF POWER FEED UNIT

❶ Disconnect the power source to the machine. Remove any knives and bolts from the machine arbor.
❷ The gear box/chain guard assembly shall be referred to in these instructions as the POWER FEED UNIT.
❸ The P117 fiber drive should be in the end of the arbor. The outfeed roller sprocket should be on its shaft. Both swing arms are installed and all four pressure screw assemblies should be in place.

Installation, continued

❹ The power feed unit should be fully assembled with the P213 nylon bushing on the P203 primary shaft, (shaft with slot) and the P214 nylon washer up against the P213. Both P110 gear box mounted chain sprockets, (sprockets with thin hubs), should be on the P209 drive shaft, with the thin hubs facing toward the chain guard. Leave a 1/32" gap between the innermost P110 and the chain guard (longer feed unit casting). Tighten the set screws in each of the sprockets onto the flat on the P209 drive shaft.

❺ Install long chain on the driving sprocket closest to the P202 chain guard (longer feed unit casting). Droop the chain over and under the nylon bushing, P213, and against the P214 nylon washer.

❻ Install the short chain over the outermost P110 gearbox mounted sprocket. Engage the P111 (which is not on its shaft yet), in the short chain with the hub facing the machine head and the set screw facing down for access later to tighten it.

❼ With the attaching bolts handy, pick up the power feed unit and first engage the long chain on its roller sprocket. Next, engage the infeed roller sprocket on its shaft and at the same time insert the primary shaft, P203, into the end of the arbor with the slot straddling the P117 fiber drive. Install the three attaching bolts, tightening only the longest bolt.

❽ Tighten the infeed roller sprocket set screw on its shaft flat with the chain in a straight line position with its mating sprocket.

☞ *At this point you need to check the oil level in the gear box and fill as needed.*

❾ Install the chip deflector. Check to see that all belt guards are in place. Make sure all is clear inside the arbor area and around the machine.

❿ Start the machine with the attaching bolt wrench ready to loosen the center bolt to make the final smooth running position check of the power feed unit. Move the unit around within the limits of the attaching bolt hole clearance and find the quietest running position. This will be when the primary shaft is most centrally located in the end of the arbor. When this position is found, tighten all three attaching bolts, starting with the central one.

7 Year Limited Warranty

Williams & Hussey Machine Co., Inc. warrants that this molder planer will be free from defects in material and workmanship under normal use for a period of five years from the original date of purchase. The warranty does not extend to anyone except the first purchaser.

If your machine fails during the warranty period, contact Williams & Hussey at 800-258-1380 for a return authorization number.

The returned machine must meet the following:

1. The machine is delivered or shipped freight prepaid.
2. Proof of purchase accompanies the machine.
3. The machine or any part thereof has not been damaged, subjected to misuse or abnormal operation, altered, or maintained in a manner which adversely affected performance or reliability.

THE WARRANTIES SET FORTH ABOVE ARE IN LIEU OF ALL OTHER WARRANTIES EXPRESSED.

Williams & Hussey Machine Co., Inc.
Souhegan St., Wilton, NH 03086

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Customer Service: Monday - Friday, 8:30 AM - 4:30 PM East Coast Time