# MODEL 154

# OPERATOR'S MANUAL

# MANUAL # OM-98


## WILLIAMS & HUSSEY MACHINE CO., INC.

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**Customer Service is available Monday-Friday, 8:30 AM- 4:30 PM EST**



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| SPECIFICATIONS | | ACCESSORIES | |
|---|---|---|---|
| MOTOR | 2HP | GUIDE SYSTEM | GS-2 |
| RPM | 6900 | ELLIPTICAL JIG | EJ-92 |
| FEED RATE | 15 FPM | RETRO KIT | VF-104-K |
| MAX PROFILE DEPTH | ¾” | RETRO KIT | VF-106-K |
| MAX PROFILE WIDTH | 6 ¾” | 11FPM KIT | 54-310-K |
| PLANING WIDTH | 7” | 20FPM KIT | 54-311-K |
| MIN STOCK LENGTH | 9” | R. PANEL KIT | 54-312-K |
| MIN STOCK THICKNESS | ¼” | CRANK EXTEND | 54-306 |
| MAX STOCK THICKNESS | 8” | PINT OF G. B. OIL | 54-416 |
| WORKING HEIGHT | 35” | | |
| OVERALL HEIGHT | 50” | | |
| OVERALL WIDTH | 22” | | |
| OVERALL LENGTH | 28” | | |
| SHIPPING WEIGHT | 218# | | |

## *SAFETY RULES*

Your 154 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 154 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 154 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. Substituting a motor with a horsepower rating over 2HP constitutes a modification. 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!

**Failure to read and apply the manual instructions will cause poor performance, unnecessary repairs and injury.**

Wear safety glasses and respiratory protection.

Disconnect the power before servicing or changing knives.

Wear 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 in-feed or out-feed areas.

Keep the knives sharp and clean.

Make sure the machine has proper grounding.

Make sure all guards are secured and in working order.

Remove all adjusting keys and wrenches before starting.

Check the stock for loose knots, nails, and foreign matter.

Keep the machine in a dry, clean, well-lit area.

## *PREPARING TO USE THE MACHINE*

1. Disconnect the power source while going through steps 1-10.

2. Check the oil level. The oil cup should be 1/3 full. This is important because a lack of oil will cause many mechanical problems.

3. 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. When *planing* unscrew all four pressure screws exposing ¼" of thread to have the correct roller pressure. This setting is for planing only! Failure to do so will cause feeding diffuculties and feed system damage.

4. *When molding, the head scale setting must be set to within 3/16" of the height of your stock* entering the machine, compensating for any sub-plate thickness. 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.

5. 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.

6. With the power off roll the knife arbor by hand to ensure the knife area is clear.

7. Do not stand or let others stand in the out-feed area or directly in line with the in-feed of the machine.

8. 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.

9. Set the head at the proper height for a test piece of stock and make sure the stock will make good contact with the in-feed roller.

10. Check to make sure it is safe to start the machine, connect to power and test to see if the motor rotation is correct before molding any stock.

## *MOTOR LOCK*

Your newly designed machine base has a motor lock. This new devise allows you to lock your motor in place to keep it from bouncing on the belt during interrupted cuts etc. It also allows you to modify the belt tension which can aid you in achieving the finish quality you are looking for.

To reduce tension you can crank the head down to within 1/4" of the actual setting you will use and lock your motor. Then reset your head to the 1/4" lower running position and your tension will be reduced. You can vary the 1/4" factor to achieve the tension you desire.

**Always unlock the motor** before resetting the machine head height

## *KNIFE CHANGING*

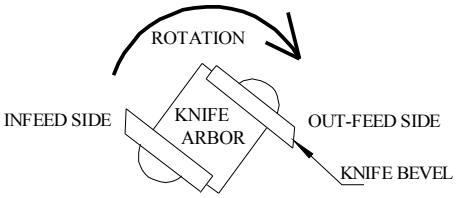
## *DISCONNECT POWER BEFORE CHANGING KNIVES!*

## *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 7/32" allen 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

## *GEAR BOX OIL*

Check your oil level every day before starting machine, and if running continuously, check the oil every hour. ***The oil cup should be one third full.*** The gear box holds 2 oz. of oil.

We recommend using our W&H Gear Box Oil. A substitute for our oil would be Mobil SHC 634, but W&H Oil is the best option. Any problems caused by not using the proper oil will not be covered by the warranty.

Some minor oil leaking is normal. A serious leak in a new machine is almost always caused by overfilling the gear box. This is not a serious problem though, as the gearbox will eventually purge the excess oil. In an older machine, worn shaft bushings are normally the cause of significant leakage. Replacement of these is relatively simple.

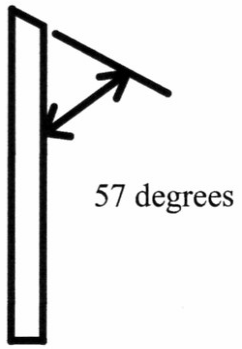
## *KNIFE SHARPENING*

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.

We re-sharpen knives every day at our plant. We take care to preserve the life of your knife by either face grinding or profile grinding, whichever preserves the knife life the most.

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.




Face of knife →

## *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. Our optional GS-2 guide system has a sub-plate built into it, a fixed guide, flex guide, and ratchet handles, all for a very reasonable price.

3. A basic set of guides has been shipped with your machine. Place a sample piece of stock on the bed and roll the knife profile to contrast against the stock and align the stock to the position you want it to run. Lower the head to grip the stock with the rollers and set your solid guide and then set your flex guide with a little tension. You may fashion a sub plate yourself and clamp it to the machine base. When using a sub-plate, always remember to add its thickness to the stock thickness when setting machine height. You will need longer "C" clamps when using a sub plate. See the guide section for more info.

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

5. Stock width should be uniform and not extend beyond knife edges. 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 near 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. Set the head height to within 3/16"of your stock height measured off the bed of the machine. If using a sub-plate you must compensate for it's thickness off the bed in your head setting calculation. 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". Failure to set your head height within 3/16" of the stock height will create an <u>extreme safety hazard</u> in that possibly not enough roller pressure will be applied, or that no roller pressure at all will be applied
**Example,** You want to take a first cut at 3/16" above the "full cut" setting. You have a ½" sub plate on the machine bed and you are molding a ¾" piece of stock. You set the machine head at 1 7/16", adding ½" + ¾" + 3/16" = 1 7/16". After this first pass you may take three more passes at 1/16" each to get to "full profile cut", or two passes at 3/32" each, etc. A complete revolution of the elevation handle is equal to 3/32" in knife height.

8. 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 rabbet knives found in our catalog, or you may use a dado blade on a table saw.

9. 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.

10. 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.

11. 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.

12. 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*

a. **Guiding your stock**
b. Your machine comes with a 14" flex guide, a 14" solid guide and (4) C clamps to guide your stock. **To set these guides**, first attach your knives to the knife arbor in the **position** you have chosen, often a place where you can get the most out of your roller surfaces. Panel knives would go to the far right. Smaller knives to the post side half of the mounting area and larger knives to the central positions.
c. Roll one knife down pointing to the machine bed and place a sample piece of stock you are going to mold on the bed. **Align the stock** to the knife profile and carefully lower the machine head until the roller puts pressure on your stock to hold it securely.
d. **Attach your flex guide** to the side of the profile that will cut the least deep into your stock. This will give the longest possible life to your flex guide. Attach both C clamps putting about a 1/32" amount of pressure on the flex part of the guide. This will keep you stock from wandering within the glide path. Angle the bodies of the C clamps away from the stock path.
e. **Attach your solid guide** on the other side of the stock. Push it up firmly against the stock and install and tighten both C clamps angling the body of the clamps away from the stock path.
f. **Remove your set up piece of stock** by raising the machine head, and pulling the stock out from the bed.
g. **Your knives will usually cut into one or both guides.** This is normal and expected. The guides are effective and last a long time after being cut into many times.

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

Mold your bevels or bottom knife cut first when molding bed or crown moldings. If ordering a custom bottom bevel knife you can have a key path cut as a guiding mechanism for your top profile. Angled bottom cuts in crowns or bed moldings require special attention. You must make a sample of the bevel and top profile to see if everything is set to give you the result you desire. Once a good sample is made use it to set up on in the future.

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. Use center reliefs 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 3/8" 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 by gently lowering your knife down into the guides to just below your running position.

## *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 OR 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. The main difference is the stock is attached to a template that raises the stock up for the knife to clear the jig hardware. Our EJ92 Elliptical Jig is not needed for a fixed, constant radius.

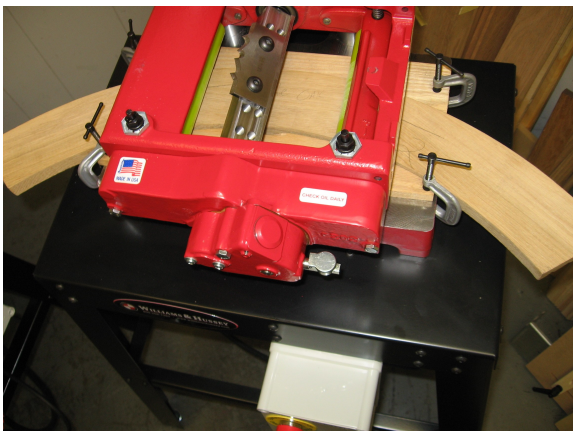
Stock preparation can be done in many ways. The following is one example.

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. Cut the sections and biscuit join them together with glue.

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 14” long if you are just using the bed of the machine and 20” long if you are using the GS-2 guide system. 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.

## *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.

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 that will eliminate the chain mark entirely.

## *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 handle (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.

Check to see that the chip deflector height is adjusted so that the bottom of the deflector does NOT ride on the stock. Contact between the deflector and stock has the potential to damage either the stock or the machine and cause undesirable results.

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.

## *CHATTER*

| | |
|---|---|
| **Definition**<br>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.<br><br>**Cause**<br>These marks are caused by either loosely held stock or by an imbalance in the machine’s mechanical qualities | **Solutions**<br>The most common cause of poor stock finish quality is a rough running belt. Replace the belt.<br><br>Make sure you are cutting with the head set at the appropriate height.<br><br>Keep your knives sharp. Dull knives cause intermittent feeding.<br><br>Check the pulleys for damage or imbalance.<br><br>Check to see that both knives and all attaching bolts are of the same weight. |

## *SNIPE*

| | |
|---|---|
| **Definition**<br>Snipe is generally an unwanted undercut in the stock. It 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.<br><br>**Causes**<br>The stock may be cupped, warped or twisted.<br><br>The stock experiences a change in down pressure as the out feed roller engages the stock, and when the stock disengages with the in feed roller.<br><br>The stock may enter or exit the machine on an angle because it is either being fed from a higher or lower plane than the bed, or it is exiting to a higher or lower plane. | **Solutions**<br>Use a jointer to flatten cupped, warped, or twisted stock.<br><br>Butt stock pieces tight end to end.<br><br>Put a slight upward pressure on the exposed end of the stock during both the in feed and out feed stroke.<br><br>Use slightly longer stock length than needed and cut the snipe off.<br><br>Make sure the head locking handle is tight.<br><br>Your outboard support should be slightly higher than your bed. |

## *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.**<br>**1) Make sure your stock is not binding in the guides.**<br>2) **Make sure the stock is of consistent width.** Saw ripping is inadequate**.**<br>**3) Make sure stock is the proper width for the knife profile.**<br>**4) Make sure the head is set at the correct height.**<br>**5) Check the rollers for wear or pitch.**<br>**6) Check your pressure screw pressure.**<br>**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 roller that won't operate.** |
| **Both feed rollers turn until you try to engage stock and then both stop.** | **Check for a broken roll pin in the P-108 bronze gear, P-504 assembly. 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. The pin is a 1/8" diameter spring tension roll pin 5/8" long.** |
| **Neither feed roller will turn even in the absence of stock.** | **1. Check for a broken fiber drive, P117.**<br>**2. Check for a broken primary shaft, P203.**<br>**3. Check for a stripped small bronze worm gear, P105, inside the gear box.** |

## *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 Post side axle, 54-16 Rest pins, 54-15 Pivot screws.
A tube of thread locker is available for purchase. Part number P-242.
**Do not use** on P124 in-feed axle, or on P224, out-feed axle.

## *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 54-15 pivot screws and remove swing arm, leaving chain connected to mating sprocket.
Reinstall each pivot screw with a drop of *medium strength thread locker*.

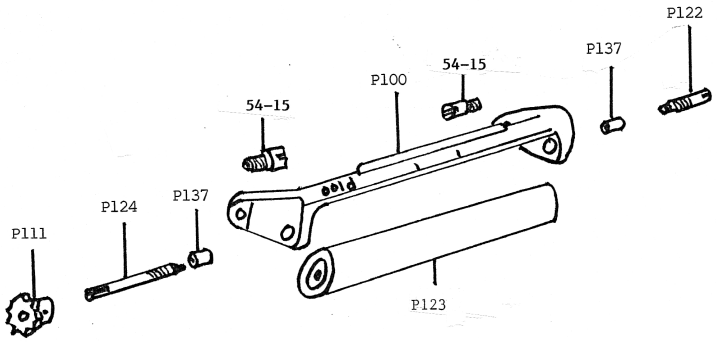
Take P-111 sprocket off swing arm axle. Put the feed roller in a vise. Use a couple of small adjustable wrenches attached to the flat on the long axle to loosen it. Machines with an optional feed kit may have sprockets that have a different number of teeth and different part numbers.

Put a good square shank flat bladed screw driver into the slot on the short axle. Push in as hard as you can while using a wrench on the square shank of the screw driver to loosen the short axle. Sometimes this axle 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 axle still in the roller. Reset the roller in a vise and use a small pipe wrench to remove it from the roller.

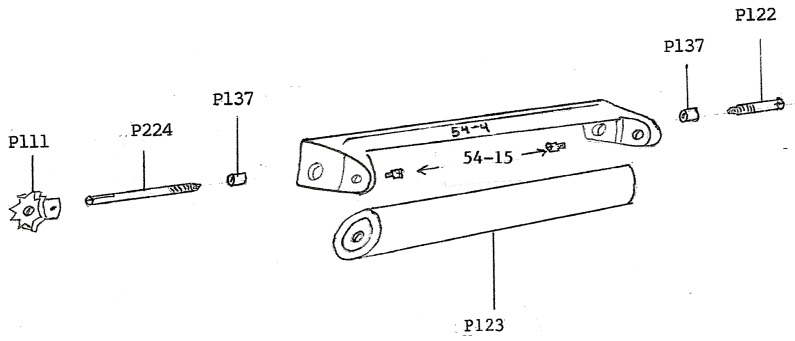
### *REASSEMBLY*

The rollers are constructed with a shallow hole in one end and a deeper hole in the other.
The P-122 always goes in the short end. Reinstall the P-122 parts with two drops of medium strength thread locker on the thread portion. If you don't they will back up and jam your gear box.
The longer axle goes in the deeper end. See drawing for swing arm assembly with roller. Do not use *thread locker* on this longer axle.

INFEED SWING ARM ASSEMBLY 54-505




OUTFEED SWING ARM ASSEMBLY 54-506



## *REMOVAL OF POWER FEED UNIT*

1) **Disconnect power**. Remove chip deflector and raise head 4"-5".
2) Spin the arbor to find the set screw on the in-feed chain sprocket on the underside of the chain guard. Using a 3/32" allen wrench, loosen the set screw.
3) Starting with the bolts on the chain guard, remove the three hex head bolts attaching the power unit to the head.
4) Pull power unit free, removing the in-feed sprocket and chain at the same time. Remove the long chain once the unit is partially free of the head.

## *DISASSEMBLY OF THE GEAR BOX*

1) Loosen set screws on the P110 gear box mounted sprockets and pull them off the P209 drive shaft.
2) Remove P213 nylon bushing and P214 nylon washer.
3) Drain the oil.
4) Remove four socket head cap screws holding gear box onto the chain guard.
5) Tap on the two shafts with a soft hammer to separate the two housings.
6) Drive out P-504 large bronze gear assembly from outside of the gear box with a ¼" pin punch. Watch for small spacer P-127.
7) Drive out 1/8" dowel pin P-143 joining upper P-115 bearing support plug to gear box. Push out the plug with a screw driver from the inside of the gear box.
8) Remove P-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.
9) Remove the P-502 primary shaft assembly (small worm and slotted end shaft).

## *INSTALLATION OF POWER FEED UNIT*

1) Disconnect the power source to the machine. Remove any knives and bolts from the machine arbor. Please note that the gear box/chain guard assembly shall be referred to in these instructions as the power feed unit.

2) The P-117 fiber drive should be in the end of the arbor. The out feed roller sprocket should be on its shaft. Both swing arms are installed and all four pressure screw assemblies should be in place.

3) The power feed unit should be fully assembled with the P-213 nylon bushing on the P-203 primary shaft (shaft with slot) and the P-214 nylon washer up against the P-213. Both P-110 gear box mounted chain sprockets (sprockets with thin hubs) should be on the P-209 drive shaft, with the thin hubs facing toward the chain guard. Leave a 1/32" gap between the innermost P-110 and the chain guard P-202 (longer feed unit casting). Tighten the set screws in each of the sprockets onto the flat on the P-209 drive shaft.

4) Install the long chain on the driving sprocket closest to the P-202 chain guard. Droop the chain over and under and the nylon bushing P-213, and against the nylon washer P-214.

5) Install the short chain over the outermost P-110 gearbox mounted sprocket. Engage the roller sprocket (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.

6) With the attaching bolts nearby, pick up the power feed unit and first engage the long chain on its roller sprocket. Next, engage the in feed roller sprocket on its shaft and at the same time insert the

primary shaft P-203 into the end of the arbor with the slot straddling the P-117 fiber drive. Install the three attaching bolts, tightening only the longest bolt.

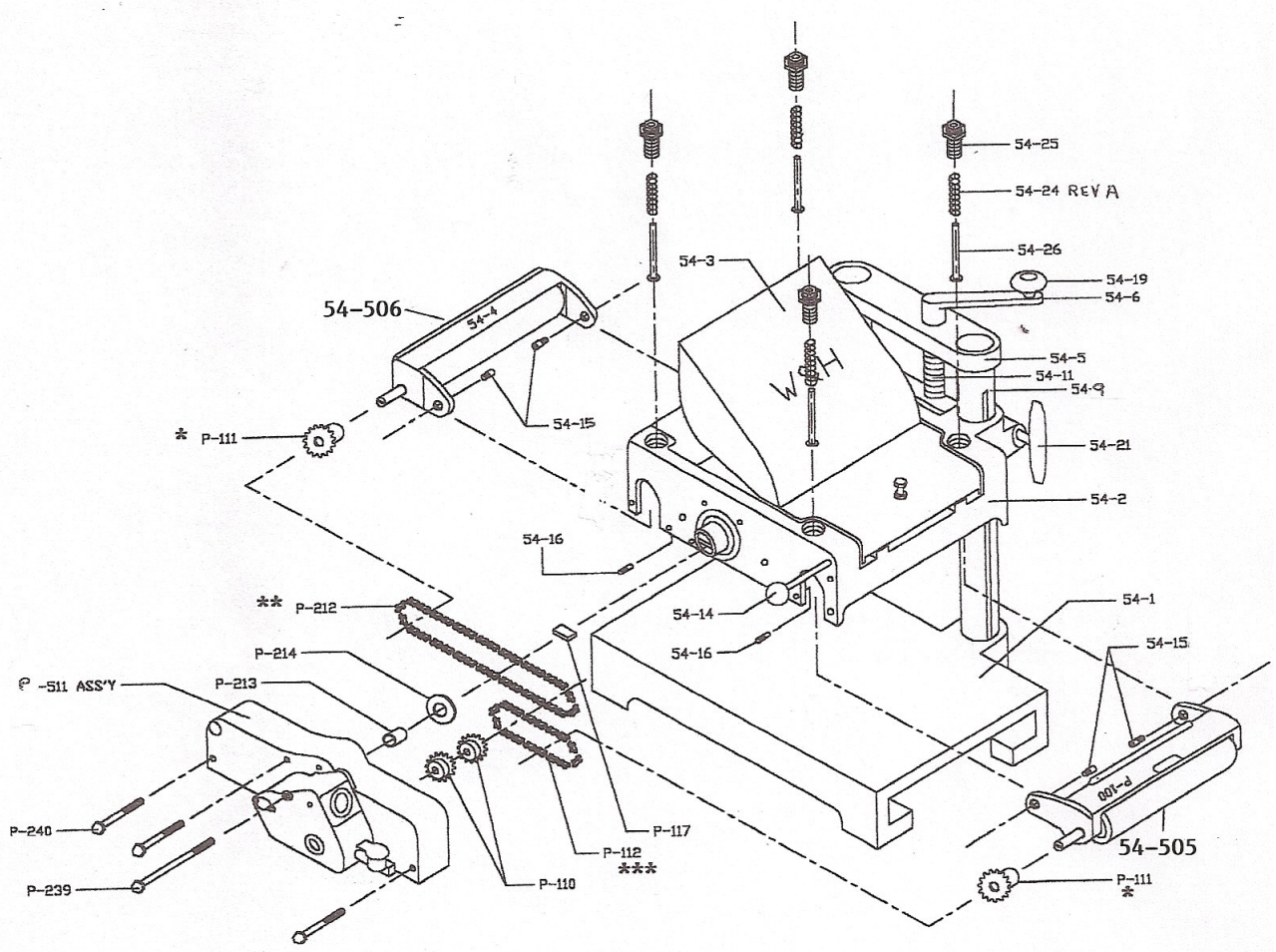
7) Tighten the in feed roller sprocket set screw on its shaft flat with the chain in a straight line position with its mating sprocket.

8) Check the oil level now in the gear box and fill as needed. It holds 2 oz. Fill to 1/3 full on the oil cup.

9) 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.

10) 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 quietist 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.

## *MACHINE PARTS ILLUSTRATION*



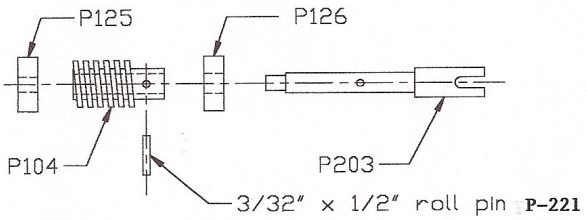

*Caution, your roller sprockets may have a different part number.
If a RAISED PANEL KIT has been installed the sprocket would have 13 teeth and the part number would be P-152.
If a 20' KIT has been installed the sprocket would have 12 teeth and the part number would be P-150.

The P-111 roller sprocket has 15 teeth.

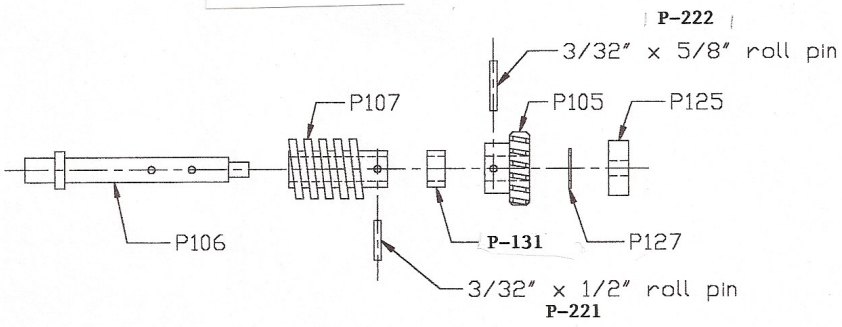
**The long chain position is closest to the machine head.
*** The short chain is closest to the gear box housing.

## *GEAR BOX SHAFT ASSEMBLIES*

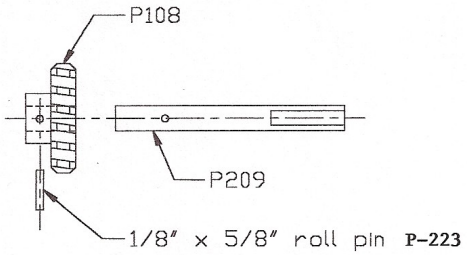
**P-502** *ASSEMBLY*



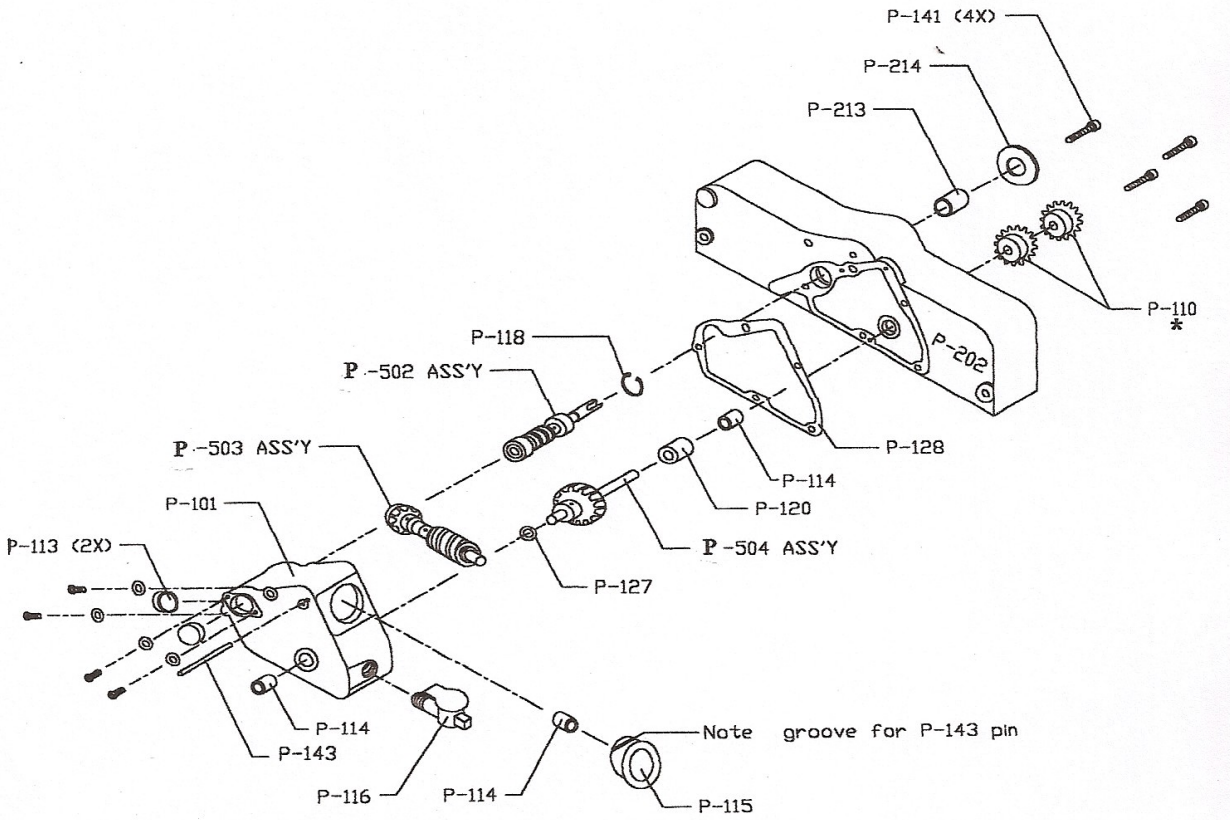

**P-503** *ASSEMBLY*




**P-504** *ASSEMBLY*

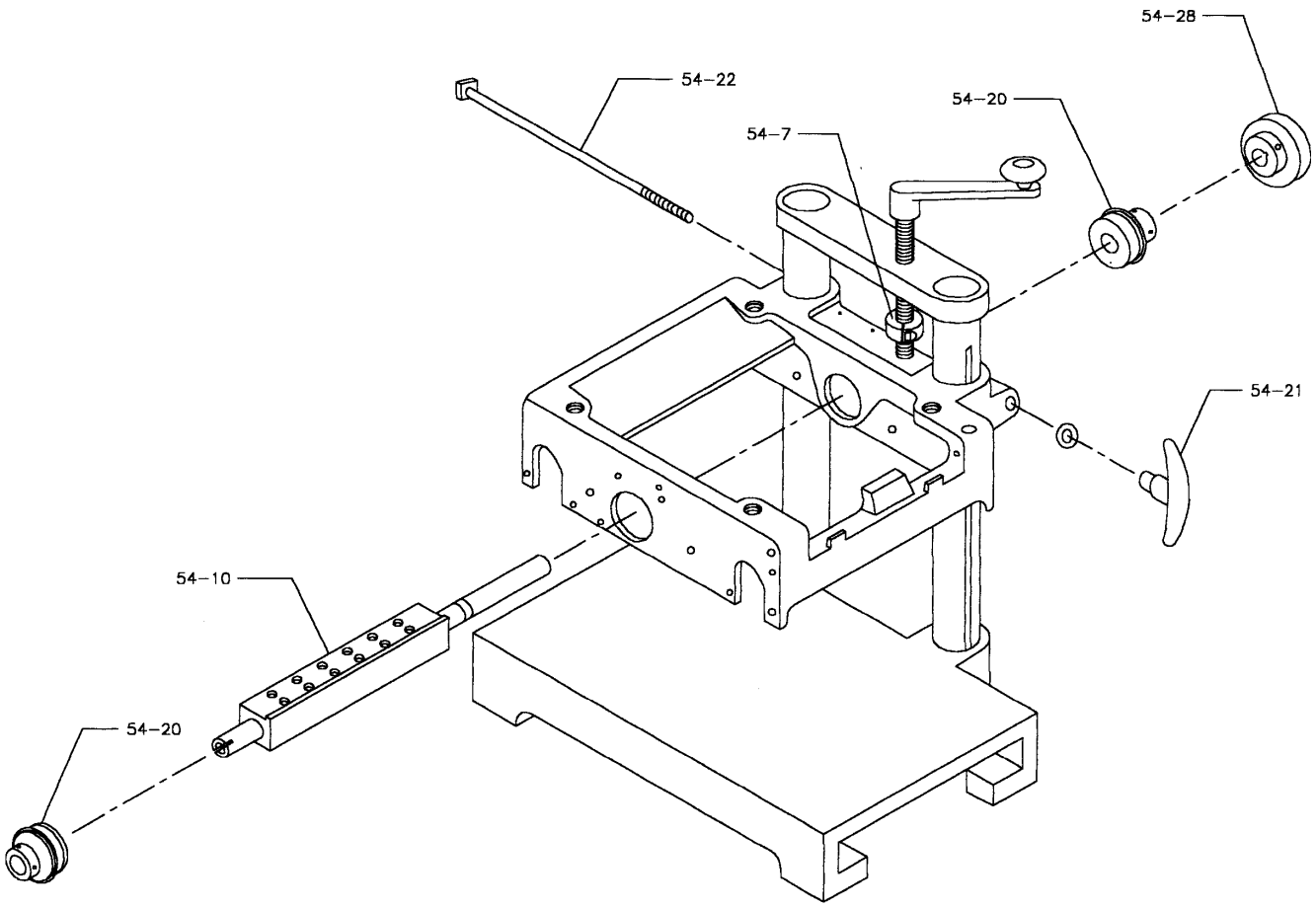


## *GEAR BOX ASSEMBLY VIEW*




*** P-110 sprockets have 16 teeth**
**If you have installed an 11' kit these gear box sprockets will have 12 teeth and be part# P-150**
**If you have installed a 20' kit these gear box sprockets will have 19 teeth and be part# P-154**

## *ARBOR REMOVAL VIEW*



## CONTACT INFORMATION

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70 Powers Street
Milford NH 03055

603-732-0219 (local)
800-258-1380 (toll free)
603-732-4048 (fax)

customerservice@williamsnhussey.com (e-mail)

williamsnhussey.com (website)

Business Hours: Monday – Friday
8:30 am – 4:30 pm

## WARRANTY INFORMATION

**Molder – 7 Year Limited**

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

*WHAT IS COVERED?*
The warranty covers any defects in workmanship or materials.

*WHAT IS NOT COVERED?*
The warranty does not cover damage due to; modifications, misuse, improper maintenance, normal wear, wood jams or using a knife motor with a horse power rating over 2HP.

*WHO IS COVERED?*
The warranty covers the initial purchaser only.

*LIMITATIONS ON WARRANTY*
Williams & Hussey shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special, or consequential damages arising from the use of our products.

**Motors - 2 year Limited**
Warranty covers any defects in workmanship or materials on original parts. Warranty does not cover defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, lack of maintenance, or improper repair or alteration.

**Controls & Elliptical Jig - 1 year Limited**
Same as motors.

**VF-104 and VF-106**
Refer to applicable motor and control warranties.

***AUTHORIZATION FROM WILLIAMS & HUSSEY IS REQUIRED BEFORE ITEMS ARE BETURNED FOR EVALUATION.***