WILLIAMS & HUSSEY
Machine & Tool Company

Model 206 & 209
PRODUCT MANUAL

Welcome to the world of precision woodworking with a Williams & Hussey molder. As you embark on your journey rest assured that you're equipped with a reliable and innovative tool engineered to bring your woodworking projects to life with precision and efficiency.

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01. SPECIFICATIONS

MOLDER SPECS	MODEL 206	MODEL 209
Machine Stand	24"L X 24"W X 33"H, Steel Construction	24"L X 24"W X 33"H, Steel Construction
Guide System - Included with All Models	23 1/2" X 11 3/4" X 1/2", HDPE	23 1/2" X 11 3/4" X 1/2", HDPE
Motor	2 HP	1.5 HP
Feed Rate	0-19 FPM	0-19 FPM
Arbor RPMs	6900	6960
Max. Profile Depth	3/4"	3/4"
Min. Stock Length	9"	9"
Max. Profile Width	6 3/4"	6 3/4"
Min. Stock Thickness	1/4"	1/4"
Max. Height Above Final Cut	3/16"	3/16"
Max. Stock Thickness	7"	7"
Planes	7" Wide	7" Wide
Overall Machine Dimensions	24"L X 24"W X 50"H	24"L X 24"W X 50"H
Working Height	35"	35"
Shipping Weight	Approximately 315 lbs.	Approximately 315 lbs.
Shipping Dimensions of Skid	36"L X 36"W x 60"H	36"L X 36"W x 60"H

ELECTRICAL SPECIFICATIONS	206 (Single Phase)	206 (3 Phase)	206 50HZ	209
Model Number	206.208/ 230.1 V2.5	206.208/ 230.3 V2.5	206.208/ 230.1.50 V2.5	209.115.1 V2.5
Voltage	208/230	208/230	208/230	120
Feed	Variable Feed 0-19 FPM	Variable Feed 0-19 FPM	Variable Feed 0-19 FPM	Variable Feed 0-19 FPM
Knife Motor	2 HP	2 HP	2 HP	1 1/2 HP
Full Load Amps	8.8	5	8.8	15
Phase	Single Phase	3 Phase	Single Phase	Single Phase
RPMs	3450	3490	3000	3450

02. SAFETY GUIDELINES

Williams & Hussey (W&H) engineered your Molder with a focus on safety. However, like all power tools, it can cause injury if not used properly. You must thoroughly read and understand this manual before operating the Molder. Contact Williams & Hussey with any questions about usage or safety procedures.

a. General Safety

- Treat a W&H Molder with the respect and caution it demands. Adhering to the specified and implicit safety precautions can significantly reduce the risk of personal injury. Neglecting these measures can increase the risk of accidents.
- The instructions in this manual are simple to follow. The potential injuries resulting from disregarding these safety measures are severe and not worth the time saved.
- The W&H Molder is designed for specific tasks. Do not alter or use it for anything other than its intended purposes as described in this manual.
- Using a motor with a horsepower rating above 2HP or any other modifications may lead to personal injury and will void the warranty.
- Failure to adhere to the instructions in this manual can result in poor performance, unnecessary repairs, and potential injury.

b. Personal Protective Equipment (PPE)

- To protect against airborne particles, always wear safety glasses, hearing protection, and a suitable dust mask or respirator.
- Wear non-slip footwear to maintain proper footing and balance.

c. Molder Safety

- Keep cutting tools sharp and clean for best performance and safety.
- Properly ground the Molder before use.
- Verify that all guards are in place and fully operational.
- Before starting the machine, remove all adjusting keys and wrenches.
- Inspect the material (stock) for loose knots, nails, or other foreign objects that could disrupt operation or pose a hazard.
- Position yourself beside the machine, not directly in front of the infeed or outfeed areas.
- Before servicing the machine or changing blades, disconnect the power supply.
- Maintain a clean, dry, and well-lit work area around the Molder. Clutter and poor lighting can lead to accidents.
- The electric control panel has a red emergency stop button. This button stops the cutter head and the feed rollers simultaneously.

d. Additional Safety Recommendations

- Educate and train all operators on the safe use of the W&H Molder. Untrained usage can lead to severe accidents.
- Regularly review and reinforce safety practices to ensure compliance and awareness among all users.

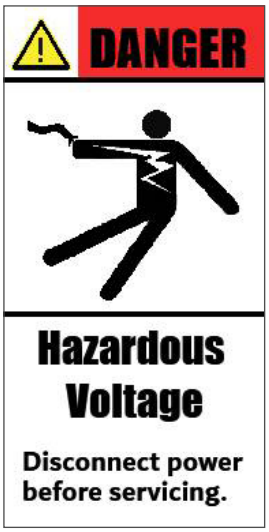
e. Symbols/Decals

The following symbols and decals are affixed to Molders.

They indicate a risk of personal injury, loss of life, or damage to the tool if the instructions in this manual are not followed.

Denotes guard requirements and use of PPE

Contact Williams & Hussey to replace damaged, missing or illegible decals.



Denotes risk of electrical shock

03. INTENDED USES FOR MOLDERS

The Williams and Hussey Molder is designed for versatile woodworking applications, particularly for creating custom moldings, trim, and millwork. This machine is ideal for professional woodworkers and serious hobbyists who require precision in shaping and finishing wood. It can handle various wood types and profiles, from simple beading to complex architectural moldings.

The Molder can be used in small-scale production environments or for individual custom projects, providing high-quality finishes with consistent results. Its compact design allows easy integration into workshops with limited space while offering robust functionality for creative woodworking tasks.

The Molder's ease of use and adjustable settings make it suitable for a wide range of woodworking projects, enhancing productivity and craftsmanship in any woodshop.

Key Features and Capabilities

Mold straight, curved, or elliptical with ONE machine

- Quick & easy knife setup
- Cut up to a 6 3/4" profile
- Open-ended design for wide boards and doors
- A+ finished molding quality
- No more middleman allows you to choose the wood species AND no setup cost
- W&H Molders are built for safety, quality, durability and little to no maintenance
- Technical & sales support based in the USA for the lifetime of your molder
- Upgrades available for vintage molders
- Proudly manufactured in the USA

04. UNPACKING INSTRUCTIONS

1. Remove clear packaging.
2. Inspect the machine for any shipping damage.
3. Remove the side panel. (Figure 1)
4. Cut the zip-tie around the motor. (Figure 2)
5. Remove the motor shipping boards. (Figure 2)
6. Remove the lag bolts holding the machine to the pallet. (Figure 2)
7. Lift the machine off of the pallet.
8. Re-install the side panels.
9. Before elevating the molder, loosen the motor lock. (Figure 3 & 4)

Figure 1

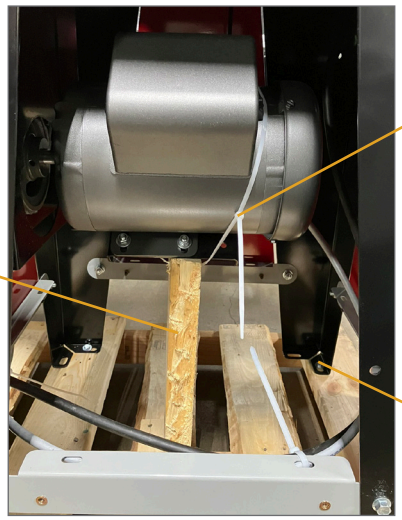


Figure2

Figure 3

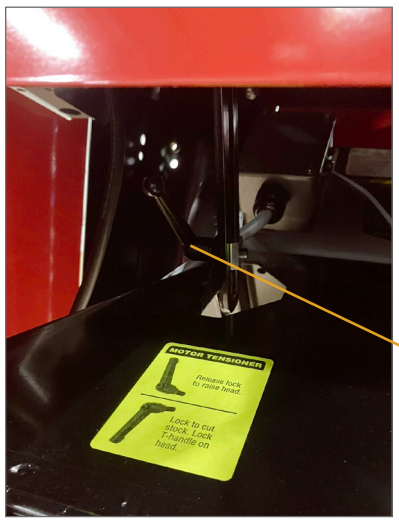


Figure 4

05. INSTALLATION

Molder Installation

The Williams & Hussey Moder is fully assembled and shipped to customers on a pallet. Because the Molder is shipped complete, assembly time is eliminated. Molders are factory-tested and meet our strict quality standards.

Knife Attachment

1. Begin by attaching the knives to the knife arbor. Position panel knives on the far right, smaller knives towards the post-side mounting area, and larger knives centrally for optimal roller surface utilization.

2. Roll one knife down so it is pointing toward the Molder bed.

3. Place a sample piece of your stock on the machine bed, align it with the knife profile, and lower the machine head until the roller firmly secures the stock.

Installing Guides

4. Molders are equipped with the GS-2 guide system, which features both a flex guide and a solid guide. Attach the flex guide on the side of the stock where the shallowest cut will occur. The beveled portion should face the stock. Adjust it to exert slight pressure (about 1/32”) to stabilize the stock. Ensure the handles are lifted up and away from the stock path.

5. Install the solid guide on the opposite side of the stock. Press it tightly against the stock and secure it by tightening the handles, ensuring they are angled away from the stock path.

6. Raise the machine head and slide the stock from the bed.

06. ELECTRICAL INFORMATION

The Electrical Information section provides detailed wiring instructions tailored to specific models. These guidelines ensure proper installation and safe operation of the Molder.

a. Molder Wiring

Model 206 Single-phase, 208/230 volt Molders and Model 209 Single-phase, 120-volt Molders
These models contain factory-installed plugs.

Model 206 Single Phase Cord

Model 209 Cord

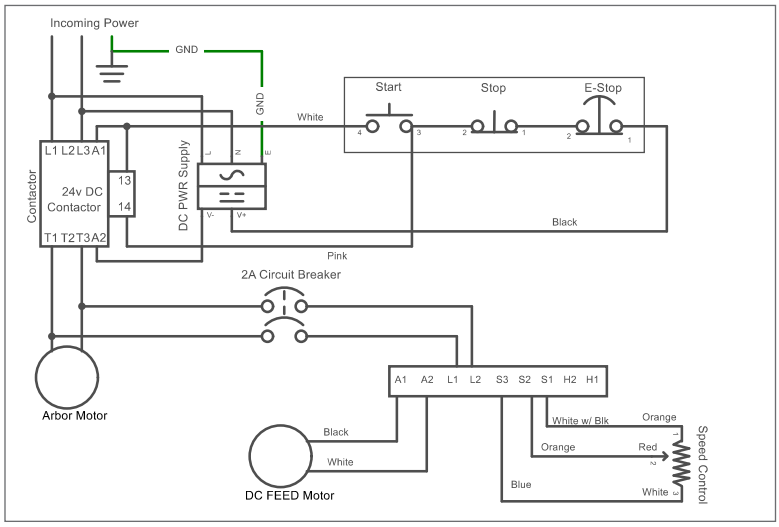
Model 206 Three-phase, 208/230 volt Molders

The Grey #12-4 wires on the 3-phase machines come preprinted with lead numbers for easy identification. Follow these instructions for wiring a plug or connecting directly to the power box. Please contact us if you have any questions.

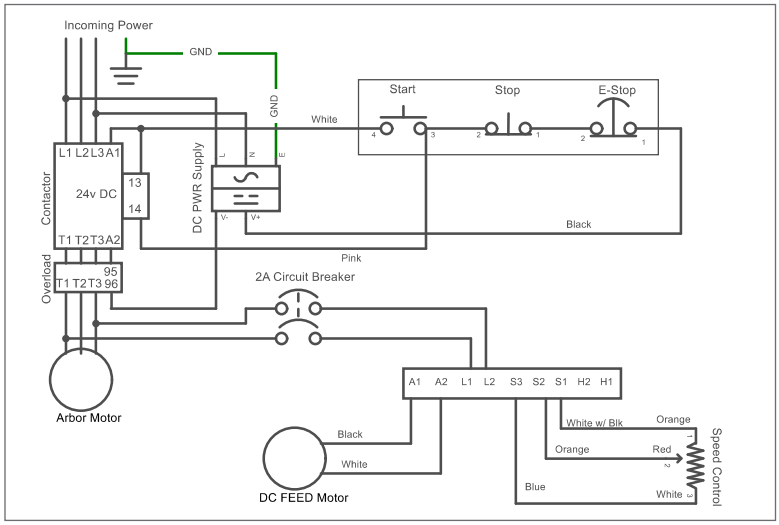
- Wire #1: This is a hot wire.
- Wire #2: This is another hot wire.
- Wire #3: This is also a hot wire.
- Green/Yellow Stripe Wire: This wire is for grounding.

Ensure all connections are secure and properly insulated to prevent electrical hazards.

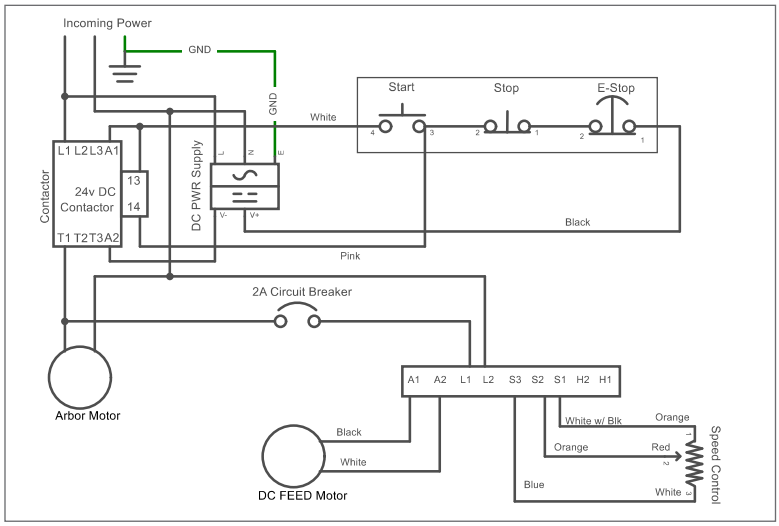
b. Wiring Diagrams



Model 206
Single-phase Molder
208/230 Volt



Model 206
3-phase Molder
208/230 Volt

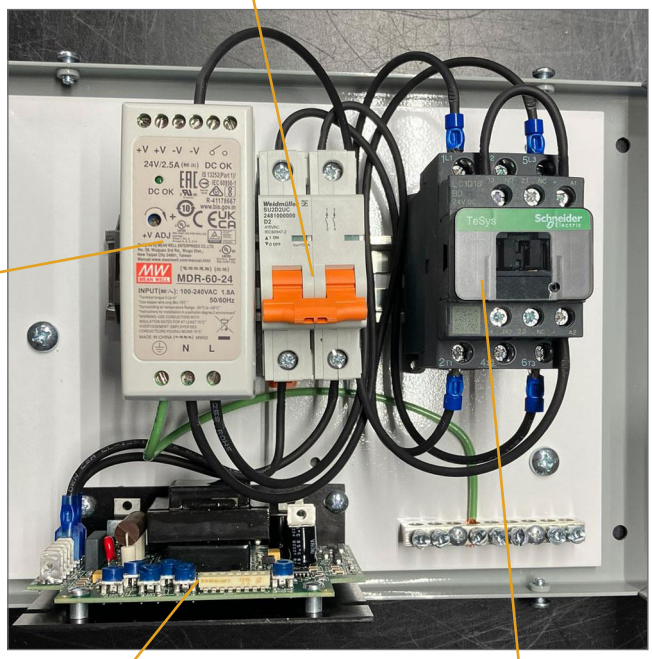


Model 209
Single-phase Molder
120 Volt

c. Electrical Controls

The photo on the right displays the standard electrical control box, which contains the contactor that operates the cutter head motor and the DC drive board that regulates the feed wheels.

(Model 206 Single-Phase shown)



The start/stop controls located on the front of the machine serve the following purposes:

E-Stop: Instantly shuts down both the cutter head and feed rollers.

Start/Stop Station: Activates or deactivates the cutter head.

Speed Dial: Adjusts the speed of the feed rollers, with 0 stopping the rollers and 10 being the maximum speed.

Drive Motor: The drive motor is hard-wired into the electrical box. Route the cord around the head casting and secure it with the cord clamps as illustrated.

Changing the Plug: If replacing a molded cord and plug end, buy a new plug that matches the correct amperage ratings. The machine requires a plug rated for 20 amps, and using an incorrectly rated plug can cause damage.

07. OPERATION OF MOLDERS

a. Daily Preparation

1. **Check Knives:** Confirm all knife bolts are tightly secured to prevent movement during operation.

2. **Set Guides:** Adjust the guides to direct the stock path through the knife area for molding. Guide settings are optional for planing.

3. **Adjust Head Scale:** Align the Molder head scale with your stock's height for precise molding.
   - Set the scale to "0" at the top of the GS-2 guide system subplate.
   - For a full profile pass on ¾" stock, set the head to the ¾" mark.
   - Set the head to 15/16" for initial deeper cuts, ensuring proper roller tension and safety.

4. **Install and Secure Chip Extractor:** Properly position and secure the chip extractor under the outfeed end, checking its engagement with the spring-loaded catch.

5. **Check Knife Clearance:** With the subplate and chip extractor removed, use the arbor to manually rotate the knife at the 5" pulley cutout on the inner belt guard to verify that the area around the knife is clear.

6. **Lock Machine Head:** With the head correctly positioned, firmly tighten the head locking bolt. This step is crucial for ensuring the machine settings' safety and stability.

7. **Test Stock Path:** Manually feed a stock piece with the machine off to test its contact with the infeed roller.

8. **Safety Precautions:** Do not stand or allow others to stand in the outfeed area or directly in line with the machine's infeed.

b. How to Mold

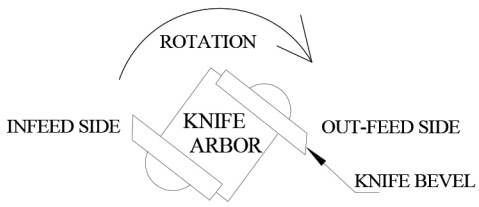
For optimal operation of your Williams & Hussey Molder, please follow these guidelines:

- **Prepare Stock:** Ensure the stock height is within 3/16" of the final molding size. For a single pass, the height should be within 1/32". Uniform stock width equal to the finished molding size is crucial for smooth operation. All stock should be planed to these dimensions before molding.
- **Subplate and Elliptical Jig Recommendations:** Utilize the guide subplate for most operations, removing it only for using the elliptical jig. Use of the subplate prevents the knife from striking the Molder's base when using knives to cut below the bottom of the stock, such as half or quarter rounds.
- **Knife Installation:** For precise alignment, install the knives by pressing them against the arbor lip and sideways towards the tube side. Secure the bolts while holding the knives in position.
- **Adjust Roller Pressure:** The roll pressure screws are factory set for maximum pressure. For planing, reduce the roller pressure by adjusting the pressure screw locknut and setting each screw ¼" higher than fully seated, then re-tighten the locknut.
- **Stock Sizing Considerations:**
    - Verify that the width of the stock does not exceed the knife's maximum cutting capacity. Cutting a wider area than the knife is designed for can generate excessive heat, leading to potential burning of the stock and excessive strain on the feed system.
    - Remove some material before molding deep or wide cuts. To debulk the stock, use rabbet/dado knives on the Molder or a dado blade on a table saw.
- **Motor Lock Feature:**
    - The redesigned machine base includes a motor lock to stabilize the motor during interrupted cuts and allows belt tension adjustment for optimal finish quality.
    - To reduce tension, lower the head to within 1/4" of your planned setting, lock the motor, and reset the head to the lower running position. This adjustment can be varied to achieve the desired tension.
    - Always unlock the motor before adjusting the Molder's head height.

c. Changing Knives

Setting Planer and Molding Knives:

1. Remove the Chip Extractor. First, pull out the pin and lift the infeed end. Then, pull it back to release it from the lip's hold.
2. Clean off the knives and machine arbor.
3. Place one knife at a time against the lip of the arbor, aligning the bevel as indicated in the illustration.
4. Press the knife firmly down against the arbor lip and sideways against the bolts in the direction of the tube side of the machine to secure it in place.
5. Securely tighten the eight bolts using a 7/32" Allen wrench.
6. Double-check to ensure the knives are snug against the lip after tightening.



VIEW FROM PULLEY SIDE OF MACHINE

d. Vari-Feed Information

Starting and Controlling the Machine:

- The main control start button activates the knife and Vari-Feed motors.
- Use the speed control knob to adjust the feed rate of the rollers. The feed rate ranges from 0 to 19 feet per minute (fpm), depending on the knob's position. Always set the desired feed rate before introducing stock into the machine, although adjustments can be made during the cut.
- The Vari-Feed allows adjustments during the cut to accommodate the wood type, depth of cut, hardness of the wood, and a change in the grain structure.

Speed Settings:

- At the 9 o'clock position, the feed speed is approximately 4 fpm.
- At the 12 o'clock position, the feed speed is around 6 fpm.
- At the 3 o'clock position, the feed speed reaches about 14 fpm.
- When turned fully to the right, the feed speed peaks at approximately 19 fpm.

Usage Tips:

- Higher feed rates are suitable for lighter cuts.
- Increase the knife height for a partial profile for deeper and wider cuts and introduce the stock slowly. Starting at a slower speed helps prevent large chips, chatter marks, or snipe at the beginning of your stock. The same precautions apply when exiting the cut.
- The variable feed (vari-feed) feature is beneficial for achieving high feed rates during relief cuts on the backside of casings. Combining multiple passes with slow feed rates enhances versatility, especially on deep hardwood profiles.

These steps ensure safe and effective handling of the Vari-Feed Motor during removal and reinstallation.

Vari-Feed Removal Instructions:

1. Loosen Set Screw: Start by loosening the set screw on the infeed roller chain sprocket.
2. Remove Bolts from Chain Guard: Loosen and remove the two hex head bolts and one socket head bolt that secures the chain guard to the machine head.
3. Detach the In-feed Chain Sprocket: As you pull the unit away from the machine, remove the infeed chain sprocket you previously loosened.
4. Remove Motor: Remove the motor from the motor mount and the chain guard, and remove the two motor shaft chain sprockets. Then, loosen and remove four socket head cap screws arranged in a rectangular pattern around the motor gear housing.
5. Disassemble Motor Mount:
    - For Older Molders: Remove the two remaining socket head cap screws with nuts to detach the motor mount from the chain guard.
    - For Newer Models: Unscrew the two threaded screws that attach directly to the motor.

Reinstalling the Vari-Feed Motor

After repairing the Vari-Feed motor, check and adjust the chain tensions as follows:

- The short in-feed chain should have a slight slack.
- The long out-feed chain should have more slack.
- Push the unit towards the infeed end while tightening it to set the correct tension. Adjust using the bolt-hole clearance to provide optimal tension and slack.

e. Using Molder Guides

- Guide Maintenance: It's normal for the knives to cut into the guides occasionally. Despite this, the guides remain effective and durable after multiple uses. As you gain experience with the machine, consider crafting wooden guides for specific tasks. Always create a complete sample (both top and bottom) of any profiles and keep these as templates.

- Milling Techniques: When milling bed and crown moldings, always start with the bottom cut. Consider adding a key cut to guide the top profile.

- Planing the Edge of Stock: Use a high, square, relieved guide for better squareness and stability for planing edges. Center reliefs will minimize friction.

- Managing Deep Profiles: A V-Block, also known as a V-groove block or V-jig, is a versatile tool for woodworking. Any profile with a depth of cut of 3/4" or more needs a V-Block to reduce the depth of cut. Designed with a V-shaped groove running along its length, it also provides a stable and precise way to hold cylindrical or irregularly shaped workpieces. Williams & Hussey does not provide V-Blocks, but will provide you with the angle needed to create your own.

- Guide Thickness and Knife Clearance: Ensure the guide is 3/8" thinner than your stock to prevent the rollers from scuffing the guides once the stock exits the machine. Install a sub-plate between the guides to maintain adequate thickness for thin stock. Always check and adjust knife clearance to the guide, removing any part of the guide that interferes by lowering the knife just below its operational position.

f. Molding Picture Frames

Many craftsmen use Molders to make picture frames efficiently and precisely. To begin, decide whether the rabbet or profile cut will be done first. If you choose to start with the rabbet cut using the W&H Molder, do this step first. Order a rabbet knife that matches the required depth of your cut. If our standard knives do not meet your depth requirement, a custom knife can be made to fit your specifications. This approach ensures that your cuts are precise and tailored to your project needs.

g. Constant Radius Arcs

The machine setup for constant radius arc molding is similar to the setup for straight molding. The main difference is that the molding stock must be supported on a template. This support helps the knife avoid the jig guiding hardware. Note that for constant radius jobs, our EJ-92 Elliptical Jig is not necessary.
Tips for preparing the stock:

- Determine the necessary angle to cut wood sections within your desired radius. Mark these angles on the wood, considering grain structure and color for optimal results. Cut the sections and join them with biscuits and glue.
- Some woodworkers design a pivot bar and bracket for cutting both the inside and outside radii. The pivot bar attaches to the scrap portion of the inside radius of your stock. This bar is drilled with multiple holes to accommodate various radius sizes. Consider adding a fine adjuster to make minute adjustments between the preset holes. Always cut the outside radius first.
- The guides should be 20" long, matching the length of the GS-2 guide system, or 14" if using only the machine bed. Guides can be crafted using a band saw setup. Use MDF board to create one guide for the inside radius and another for the outside.

Caution: Never attempt closed-loop molding. This practice is unsafe because it does not provide sufficient roller pressure at the start of the process.

h. Planing

Caution: When using the machine as a planer, it is critical to adjust all four pressure screws back by ¼ inch. This reduces roller tension.

Step-by-Step Planing Instructions:

1. Measure the Stock: Start by measuring the thickness of the stock. The maximum depth of cut in a single pass depends on the wood's density, the cut's width, and the wood's moisture content.

2. Adjusting the Planing Head:·Loosen the Planing Head Lock:
   - Loosen the planing head locking knob (54-21).
   - Set Initial Head Height: Set the planing head to a position 1/32 inch lower than the thickness of the stock entering the machine. Adjusting the elevating handle by one-third of a turn corresponds to a change of 1/32 inch.
   - Secure the Head: Once set, tighten the planing head locking knob to secure it in place.

3. Install the Chip Extractor: Ensure the chip extractor is correctly installed with the front lip engaged into the head and the pin securely seated.

4. Using a Guide: When planing the edge of stock, use a high, square, relieved guide to ensure the edge remains reasonably square. A relief in the vertical wall of the guide helps to reduce friction. Refer to the guide section for images and additional details on edge guides.

Please refer to this manual's table of contents section for further information on knife changing

Width	Type of Wood	Depth of Cut
1"	Poplar	1/4"
1"	Red Oak	3/16"
3"	White Pine	3/16"
3"	White Oak	1/8"
6"	Poplar	1/8"
6"	Red Oak	1/16"

i. Raised Panels

Choosing the Correct Panel Knife

All W&H panel knives are designed to produce a ¼" tongue. Select a panel knife that matches the thickness of your finished panel. For tongue sizes different from ¼" or panel thicknesses other than ¾" or 5/8", you can order a custom knife from Williams & Hussey.

Ensure the panel is at least 9 inches in the direction of the molding to prevent it from disengaging from one roller before reaching the next.

When making multiple passes, maintain at least 9 inches of the panel in the direction of the cut to keep the roller in contact with the panel at all times.

Setting Up for Raised Panels

1. Power Off: Ensure the machine's power supply is disconnected.
2. Knife Installation: Install your knives toward the tube side of the machine, leaving enough space to install your guide.
3. Align the Knife: Index the knife arbor so the profile aligns visually with the bed. Raise the machine head to place the panel on the bed and align it with the profile.
4. Secure the Panel: Lower the head so the rollers apply pressure to the panel once aligned. Butt the guide against the panel and tighten it.
5. Final Adjustments: Lift the head, remove the panel, and lower the head to within 3/16" of the panel height. Manually rotate the blade arbor to check for any obstructions.

Molding Procedure

Start by molding the cross-grain ends of the panel. Position yourself between the machine's open side and infeed side.

Common Issues and Tips for Raised Panels

- Practice and Pressure: Creating a high-quality raised panel requires practice. When creating a raised panel, maintain a slight upward pressure on the panel while applying steady pressure against the guide.

- Handling Larger Panels: Since panels often exceed the machine's 7-inch cutting capacity, they must pass beneath the open side of the head. When the machine is set to the stock size setting, there should be about 1/32" clearance between the top of the panel and the machine head.

- Avoiding Errors: Attempting a deeper cut to alter the tongue size or profile appearance can cause the panel to drag and pivot away from the guide path. Always set the head at the panel thickness to ensure enough clearance for the panel to pass through the machine smoothly.

08. ACCESSORIES

Enhance a Williams & Hussey Molder's capabilities with a range of high-quality accessories. Accessories increase precision, efficiency, and versatility, so you can confidently tackle any woodworking project.

Mobile Base: A Mobile Base allows for easy movement of a Molder around the workshop. It features heavy-duty casters and provides both stability and mobility. Mobile Bases are also available for Extension Tables. They are ideal for workshops where space is at a premium or flexibility in machine placement is needed.

Infeed/Outfeed Tables: Extension Tables support the wood entering and exiting the Molder, helping manage long stock pieces and improving material handling.

Elliptical Jig: The Elliptical Jig facilitates the creation of elliptical and curved moldings. It attaches easily to the Molder and adjusts to accommodate various radii. Jigs are perfect for custom furniture makers or any project requiring curved or elliptical designs.

Profile Pressure Guides: The Profile Pressure Guide enhances the stability and accuracy of the molding process by applying uniform pressure along the workpiece. They also provide consistent quality in detailed profiles and complex molding tasks.

Each of these accessories integrates seamlessly with the Williams & Hussey Molder. Enhance woodworking projects by utilizing these practical and effective tools.

Ordering Information: To purchase accessories or for more details, visit www.williamsnhussey.com or contact our customer service department. Our team is ready to assist you with product selection so you get the most out of your Williams & Hussey Molder.

09. PROFILE MOLDING KNIVES

Genuine Williams & Hussey profile molding knives complement all models of Williams & Hussey Molders, whether new or old. We craft knives with the same commitment to quality, durability, and longevity as our Molders.

Profile molding knives come in sets of two so that each molding profile has an accurate finish. Features like precise bolt hole alignment, appropriate knife clearance, and optimal back-off angle make a profile knife genuinely W&H.

When manufacturing knives, we typically set the cut's deepest part on the machine's open side. If you need the cut's deeper side on the vertical tube side, please specify this when placing an order.

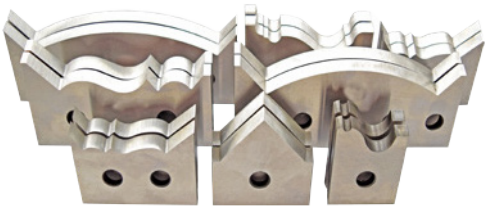
When ordering profile molding knives to use with an Elliptical Jig, let your knife specialist know for proper configuration.

Standard Profile Molding Knives
Our knives are available in various standard profiles, allowing for the creation of many decorative edges and shapes. They are ideal for producing classic and custom architectural details, furniture edges, and fine woodwork finishes. Williams & Hussey has hundreds of pre-designed standard knives from which to choose.

To place an order, visit our website to browse the extensive catalog of standard knife profiles, which includes detailed drawings and dimensions for each profile. If you prefer, we can mail you a catalog upon request. Then contact our customer service by phone or email, providing the profile number and the quantity needed.

Custom Knives
If you can't find the right profile among our standard knives, our in-house design team will transform your vision into a custom knife profile. Custom knives are ideal for projects requiring unique designs or replicating historical or architectural details. These knives enable the creation of exclusive and personalized moldings that perfectly match your specifications.

Send us a detailed drawing of the required profile. If replicating a molding, you can also send a physical sample to Williams & Hussey for accurate duplication. We will design the knife and send you a drawing for approval. Once approved, we will proceed with manufacturing the knife.



10. MAINTENANCE

a. Changing Feed Rolls

Preparation and Disassembly:

1. Safety and Initial Steps:
   - Unplug the machine for safety.
   - Remove the chip deflector.
   - Raise the machine head.
   - Remove the pressure screws located above the swing arm.

2. Removing the Swing Arm:
   - Remove the two 54-15 pivot screws and carefully lift out the swing arm, leaving the chain attached to the mating sprocket.
   - Reinstall each pivot screw with a drop of medium-strength thread locker to secure them.

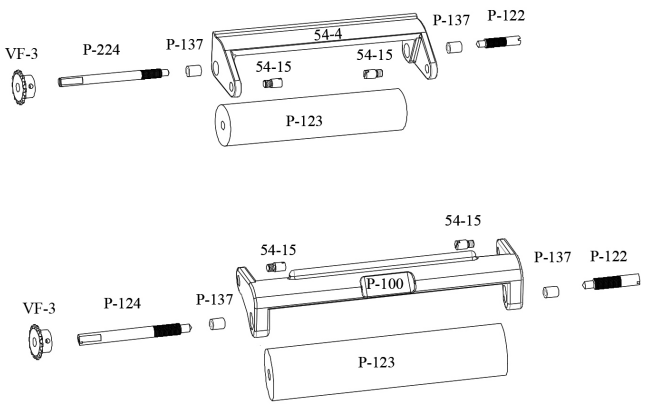
3. Removing the Sprocket:
   - Secure the feed roller in a vise.
   - Use small adjustable wrenches on the flats of the long axle to loosen and remove the sprocket.

4. Axle Removal:
   - Insert a sturdy, square-shank, flat-bladed screwdriver into the slot on the short axle.
   - Apply strong pressure and use a wrench on the square shank of the screwdriver to loosen the axle. If the axle is stuck and does not come out, you may need to saw it off.
   - If preserving the roller, lift it out of the swing arm with the short axle still inserted. Secure the roller in a vise and use a small pipe wrench to remove the short axle if necessary.

Reassembly:

1. Roller Orientation:
   - Rollers have one shallow and one deeper hole at each end.
   - The P-122 post-side axle fits into the shorter end. Reinstall this axle with two drops of medium-strength thread locker on the thread portion. Avoid using thread locker on P-124 or P-224.
   - The longer axle fits into the deeper hole. Refer to the swing arm assembly drawing for guidance. (page 24)

2. Positioning of Sprockets and Chains:
   - Sprocket Alignment: Initially, position the feed motor shaft sprockets with their hubs facing inward towards the chain guard. Slide the first sprocket to the end of the flat on the motor shaft and position the second sprocket directly against the first.
   - Chain Alignment: Ensure the chains run in a straight line from the feed motor sprockets to the roller sprockets.
   - Adjust the roller sprockets as needed to achieve proper alignment. Look for the marked end of the feed roll. Confirm that the chains maintain a straight trajectory from the feed motor sprockets to the roller sprockets when the machine is operating.



b. Knife Sharpening

For optimal performance and longevity of knives, return them to the factory for resharpening as soon as dullness is noticed. This approach minimizes edge loss and ensures professional results.

Williams & Hussey molding knives should be surface ground on the face in pairs.

Planing knives can be ground either on the surface or on the bevel.

Both molding and planing knives are designed with an **edge angle of 57 degrees**, measured from the back of the knife.

Using dull knives can strain the feed mechanism and may necessitate repairs, which are not covered under the warranty. To prevent such issues, keep knives sharp.

Knife Sharpening Service: To have knives sharpened, contact Williams & Hussey at customerservice@williamsnhussey.com or call 641-843-3240. We will provide you a Return Merchandise Authorization (RMA) number to include with your knives. Ship the knives to Williams & Hussey. Knives are generally sharpened and returned to the customer within 1-2 days.

c. Knife Maintenance

Maintaining the knives in a Williams & Hussey Molder is important for ensuring optimal performance and longevity of your equipment. Maintenance tips include:

1. **Regular Inspection:** Inspect knives for any wear or damage, such as chips, dullness, or deformities. Regular checks will help determine when they need to be sharpened or replaced.

2. **Cleaning:** Keep the knives clean from any wood sap, resin, or debris that can accumulate during use. Neglecting this step can lead to wood residue build-up on the knife, causing it to overheat and ruin the heat treat on the cutting edge. Use a resin remover or a suitable cleaning solvent to clean the blades. Dry the knives before reinstalling them to avoid rust.

3. **Sharpening:** Dull knives can result in poor quality cuts and excessive strain on a Molder. Regular sharpening is critical in knife maintenance. When knives become dull, send them to Williams & Hussey for resharpening.

4. **Storage:** When the knives are not used, store them in a dry and safe place to prevent damage.

By following these simple maintenance tips, knives will remain in good condition, resulting in better performance and longer tool life.

11. DIAGNOSTICS AND TROUBLESHOOTING

Disconnected power before inspecting or performing maintenance on the Molder to prevent accidents and ensure safety.

a. Thread Locking

To prevent parts from loosening due to vibration, apply a medium-strength thread-locking compound to the following components. Use two drops on the thread area:

- P-122 post side axle
- 54-16 Rest pins
- 54-15 Pivot screws

A small tube of thread locker is available for purchase under part number P-242.

b. Chatter

Definition: Chatter marks are irregularities in the finish quality of the wood's surface, appearing as "hills and valleys." These marks can be evenly spaced or randomly distributed. **Cause:** Chatter is typically caused by the stock not being securely held or by mechanical imbalances in the machine.	**Solutions:** • Replace any rough-running belts to improve the stock finish. • Ensure the cutting head is set at the correct height. • Keep knives sharp. Dull knives can cause intermittent feeding issues. • Inspect pulleys for damage or imbalance. • Ensure all knives and attaching bolts are of equal weight to maintain balance.

c. Snipe

Definition: Snipe refers to an unwanted undercut that appears mainly in the stock's first and last few inches, causing variations from the intended height dimension. **Causes:** • The stock may be cupped, warped, or twisted. • Changes in down pressure occur as the outfeed roller engages or disengages from the stock. • Misalignment of the stock's feed angle relative to the machine bed	**Solutions:** • Use a jointer to flatten any cupped, warped, or twisted stock. • Keep stock pieces tightly butted end-to-end. • Apply a slight upward pressure on the stock's end during infeed and outfeed. • Use a longer stock length than necessary and trim off the affected areas. • Ensure the head locking handle is securely tightened. • Adjust your outboard support slightly higher than the bed for better alignment. • Use two 12" scrap boards that are the same thickness as the profile. Place one at the beginning and one at the end of the run to reduce snipe.

d. Feeding Problems

Symptom	**Possible Issue / Solution**
The stock stops but the feed rollers continue to turn.	Possible Issue: This typically indicates a traction or friction problem. Solutions: • Ensure the stock isn't binding in the guides and is of consistent width. Poor saw ripping can cause inconsistencies. • Verify that the stock width matches the knife profile precisely. • Check that the machine head is set at the correct height for the operation. • Inspect the rollers for a glossy or pitch build-up and clean them as necessary to restore normal traction. • Confirm that adequate spring pressure is being applied to the rollers. • Examine the base or bed of the machine for any scars that could affect stock movement. • Replace any worn rollers to ensure proper grip and function.
One roller stops while the other continues to operate.	Possible Issue: This may be caused by a mechanical issue with the chain sprockets. Solution: • Check for a loose set screw on one of the chain sprockets associated with the roller that fails to engage.
Both rollers will not turn	Possible Issue: This could be due to electrical problems affecting the Vari-Feed control. Solution: • Check the breaker in the control panel.

12. ORDERING PARTS

Ordering Genuine Replacement Parts:

The longevity and optimal performance of a Williams & Hussey Molder is important. To guarantee this, order only genuine replacement parts from an authorized distributor or directly from Williams & Hussey Machine and Tool. We are a trusted American manufacturer with a proven track record in providing high-quality parts.

Information Required When Ordering Parts:
Many replacement parts are conveniently available on our website at www.williamsnhussey.com. Alternatively, you can place your order by phone at 641-843-3240 or email at customerservice@williamsnhussey.com.

Please provide the following details to guarantee accurate and timely processing of your order:

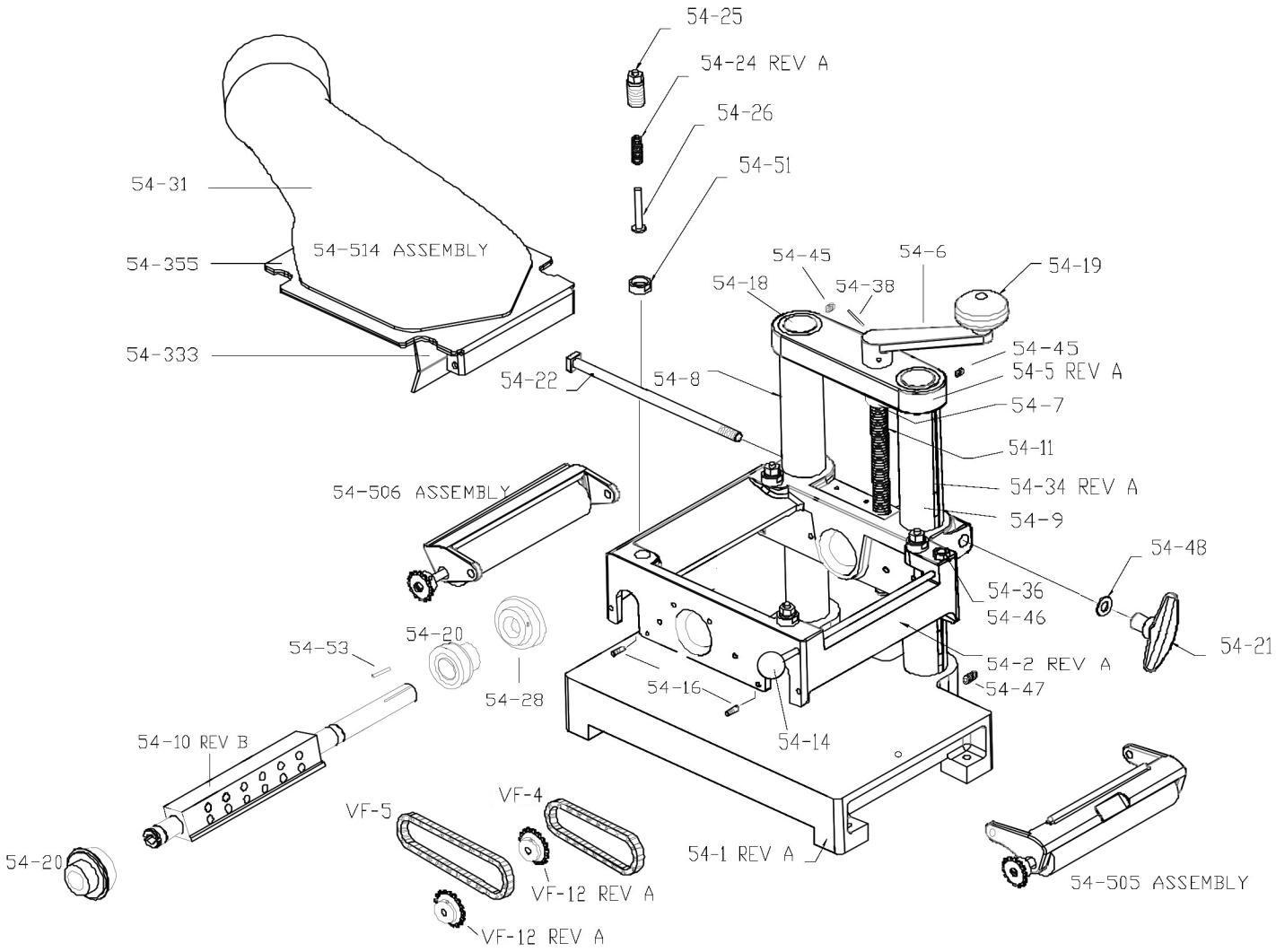
- **Manufacturer Name:** Williams & Hussey Machine and Tool
- **Molder Identification:** Provide the complete data from the Molder.
    - On older Molders, a metal tag affixed to the head contains the serial number and model number.
    - Serial numbers and model numbers are found on newer models' heads and control panels.
    - If you cannot determine the serial or model number, knowing if the Molder is a constant feed or variable speed model is helpful.
- **Parts Details:** Specify the quantity, part number, and description of each part needed.
- **Shipping and Billing Instructions:** Provide complete shipping address and billing information.

Repair Services:
If you need help repairing or replacing parts on your Molder, Williams & Hussey is here to assist. Send your Molder to us for repair or rebuilding. Before shipping your Molder, you must obtain a Return Merchandise Authorization (RMA) number.

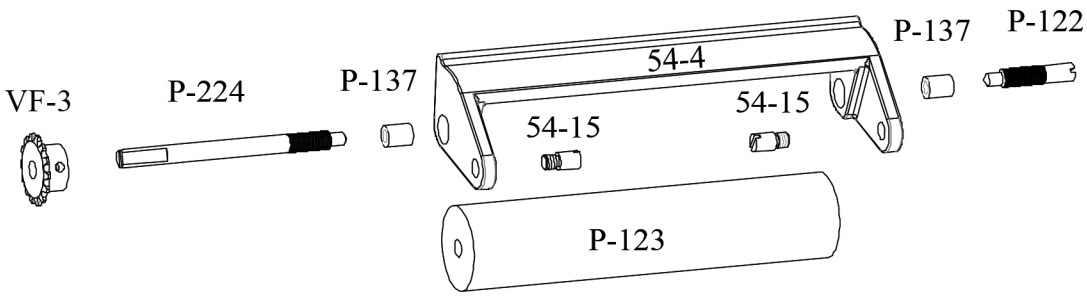
For more information or to request an RMA number, please contact us at customerservice@williamsnhussey.com or call 641-843-3240.

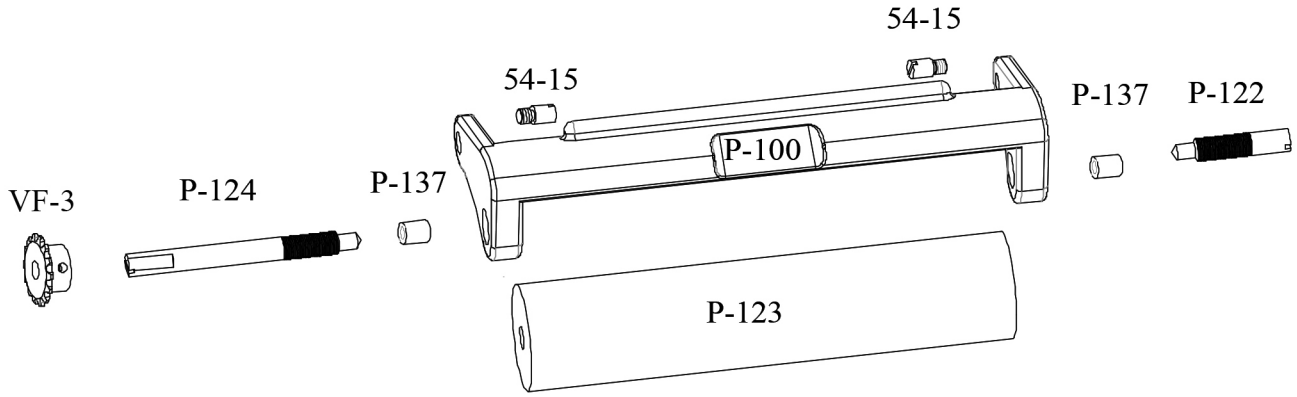
13. EXPLODED VIEWS

a. Machine

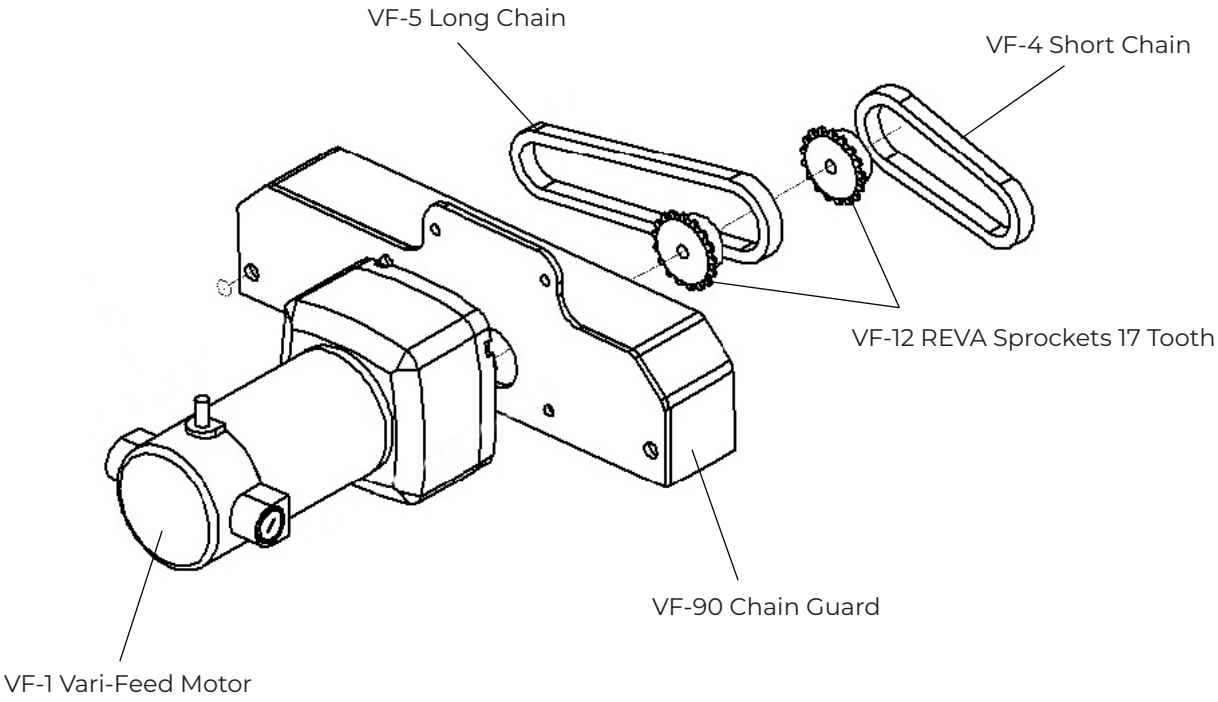


b. Swing Arm

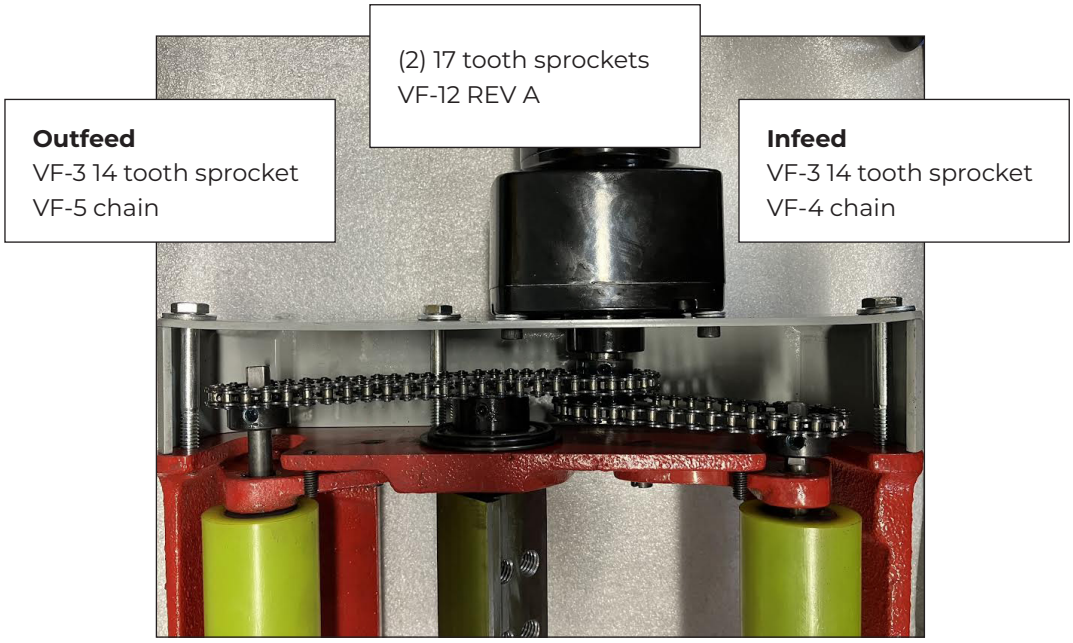

VF-3
P-224
P-137
54-4
54-15
54-15
P-137
P-122
P-123


54-15
54-15
P-137
P-122
P-100
VF-3
P-124
P-137
P-123

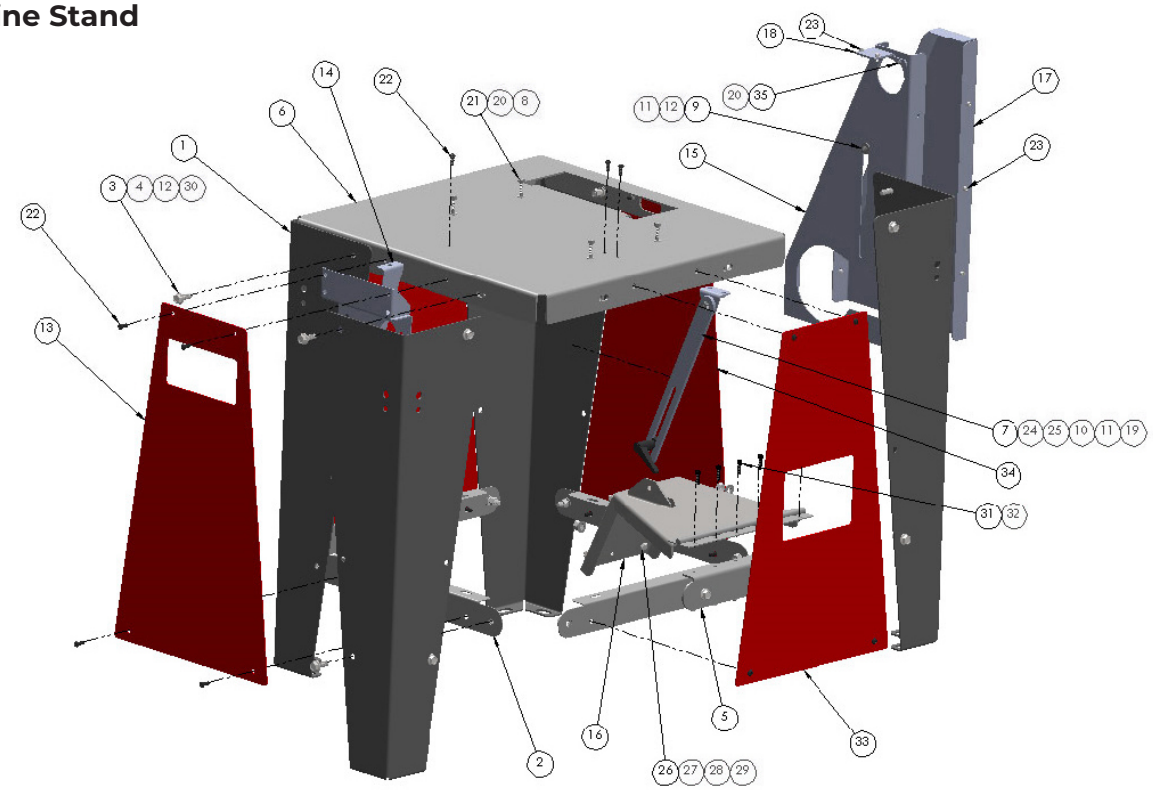
c. Vari-Feed



Underside View of Sprockets and Chains



d. Machine Stand

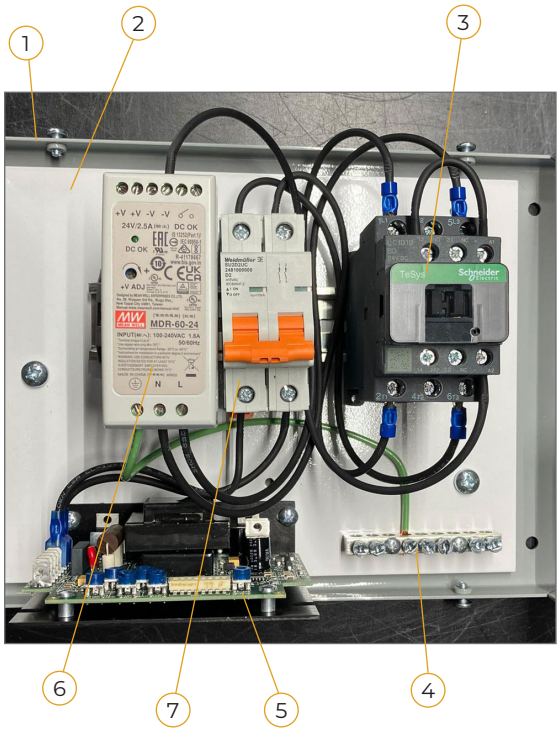


Item	Part No.	Description	Qty
1	088181-09	Leg, Heavy Duty/Commercial Duty Ext.	4
2	084177-06	Cross Brace, Short	4
3	082102	Hex Flange Bolt, 3/8-13 x .75	18
4	084180-00	Hex Nut, 3/8-1 6	18
5	084177.07	Cross Brace, Motor Pivot	1
6	084177.05	Top, Molder Stand	1
7	084177.11	Rod, Lock Bar	1
8	082023-04	1/4-20 x 1 1/4	4
9	54-402-20	Button Head Socket Cap, 5/16-18 x 3/4	1
10	54-402-23	Screw Shoulder, 3/8 (5/16-18)	1
11	082024-02	Nut, 5/16-18 Elastic Stop Zinc Plated	2
12	080674	Flat Washer, 3/8	20
13	084177.30	Front Cover, Molder Stand	1
14	084177.21	Control Bracket Assembly	1
15	084177.17	Belt Guard, Inner	1
16	084177.09	Motor Mount, w/Hinge	1
17	084177.19	Belt Guard, Outer	1
18	084177.15	Mount Belt Guard	1
19	084177.13	Anchor, Lock Bar	1
20	084173	Washer, 1/4 Lock Zinc Plated	6
21	038738	Nut Hex, 1/4-20	4
22	052511	Socket Bind Head Cap Screw, 1/4-20 x 5/8	19
23	697162	Socket Head Cap Screw, Scr 10-24 x 3/8	8
24	900528-00	Clamping Handle	1
25	900529-00	T-Nut, 5/16	1
26	082097	Hex Head Cap Screw, 5/16-18 x 3/4	4
27	099361-16	Flat Washer, 5/16	4
28	099384-07	Lock Washer, 5/16	4
29	099370-04	Hex Nut, 5/1 6-18 Zinc Plated	4
30	000415	Lock Washer, 3/8	18
31	080589	Socket Head Cap Screw, 1 /4-20 x .75	6
32	082024-00	Lock Nut, 1/4-20	7
33	084177.32	Side Cover, Molder Stand	1
34	084177.34	Side-Rear Cover, Molder Stand	2
35	080588-00	Socket Head Cap Screw, 1/4-20 x 1/2	2

Note: Motors not shown in diagram

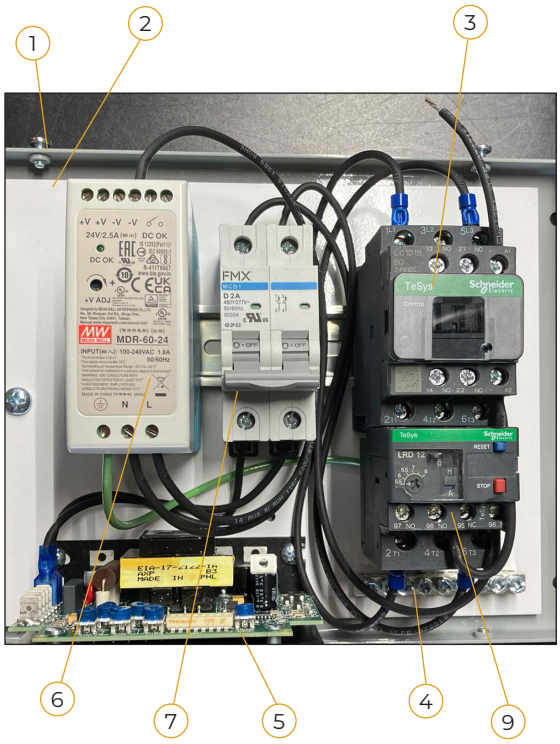
- 54-426-BLDR Single phase 2HP 230-volt
- 54-429-BLDR Single phase 1/2HP 115-volt
- 54-431-BLDR 3 phase 2HP 230-volt

14. CONTROL PANEL ASSEMBLIES



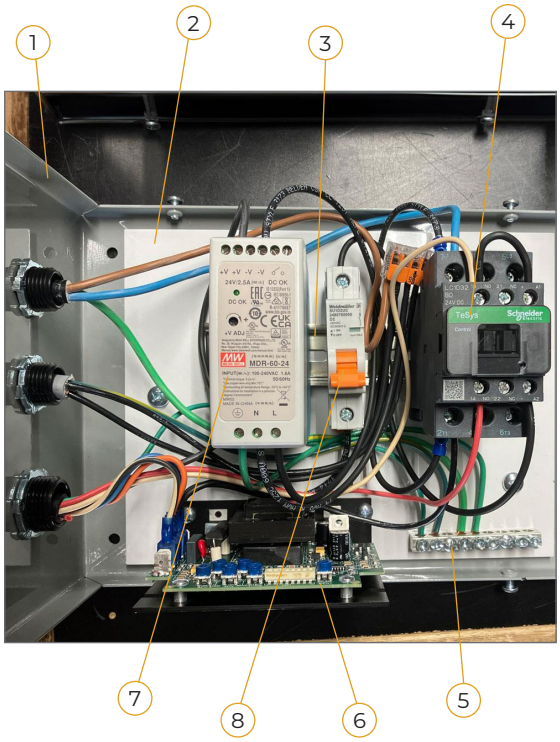
54-417-E
Model 206
Single phase 208/230-volt control with DC drive.

Item No.	Part Number	Description	Qty.
1	201474-28	Enclosure, Custom 12x8.5x6	1
2	201474-28s	Subpanel 9.75 x 7.75	1
3	122108-82-244DC	Mag Starter 18 Amp, 24V DC	1
4	081769-06	Ground Lug Bar	1
5	40005-95	Speed Control, Unfiltered SCR DC Drive Board	1
6	122105-70-100/260	Power Supply; AC-DC; 24V; 2.5A; 100-264V	1
7	081556-202	Breaker, 2 pole 2 amp	1
8	068720-16	Wago, End Stop 249-117 (not pictured)	2



54-420-E
Model 206
3 phase 208/230-volt control with DC drive.

Item No.	Part Number	Description	Qty.
1	201474-28	Enclosure, Custom 12x8.5x6	1
2	201474-28s	Subpanel 9.75 x 7.75	1
3	122108-82-244DC	Mag Starter 18 Amp, 24V DC	1
4	081769-06	Ground Lug Bar	1
5	40005-95	Speed Control, Unfiltered SCR DC Drive Board	1
6	122105-70-100/260	Power Supply; AC-DC; 24V; 2.5A; 100-264V	1
7	081556-202	Breaker, 2 pole 2 amp	1
8	068720-16	Wago, End Stop 249-117 (not pictured)	2
9	122110-82	IEC Heater Pack 5.5-8.0 amp LRD12	1



54-421-E
Model 209
Single phase 115-volt control with DC drive.

Item No.	Part Number	Description	Qty.
1	201474-28	Enclosure, Custom 12x8.5x6	1
2	201474-28s	Subpanel 9.75 x 7.75	1
3	mtg brkt 8.5		1
4	122108-83-24VDC	Mag Starter 32 Amp, 24V DC	1
5	081769-06	Ground Lug Bar	1
6	40005-95	Speed Control, Unfiltered SCR DC Drive Board	1
7	122105-70-100/260	Power Supply; AC-DC; 24V; 2.5A; 100-264V	1
8	081556-102	Breaker, 1 pole 2 amp	1
9	068720-16	Wago, End Stop 249-117 (not pictured)	2

Williams & Hussey Machine and Tool Co. (W&H)

1 Year Limited Warranty

Williams & Hussey Machine Co., Inc. warrants its molders for a period of one year from the original date of purchase. Control and motors have a limited warranty.

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 horsepower 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 damage arising from using our products.

MOTORS – 1-year Limited
Warranty covers any defects in workmanship or materials on original parts. The warranty does not cover defects due directly or indirectly to misuse, abuse, negligence, accidents, normal wear-and-tear, lack of maintenance, or improper repair or alteration.

CONTROLS & ELLIPTICAL JIG – 1-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, accidents, normal wear-and-tear, lack of maintenance, or improper repair or alteration.

VF-104-K
Refer to applicable motor and control warranties.

RETURN MATERIAL AUTHORIZATION (RMA)
Authorization from Williams & Hussey is required before any item is returned for evaluation.

Williams & Hussey takes pride in the workmanship and quality of our products and replacement parts. Our products are designed and manufactured to the highest quality, and we stand behind each part and assembly built. However, we cannot guarantee the quality of others' products or the compatibility of Williams & Hussey knives with third-party products. Use of Williams & Hussey knives in third-party molders and other products not manufactured by Williams & Hussey is at the user's own risk, without warranty, and without opportunity for refund for any reason.

WARRANTY REGISTRATION CARD

Thank you for choosing Williams & Hussey Machine and Tool for your cutting equipment needs. We take pride in manufacturing high-quality Molders and tooling right here in America and supporting local craftsmanship. Your satisfaction is our priority.

WARRANTY DETAILS:
We offer a 1-year limited warranty on our Molders. This warranty covers defects in material and workmanship under regular use. To activate your warranty, please fill out this registration card within 30 days of purchase.

WARRANTY ACTIVATION:
Upon receiving your completed warranty registration card, we will activate your warranty and provide you with a confirmation via email.

Thank you for choosing Williams & Hussey Machine and Tool. We appreciate your trust in our Made in America cutting equipment.

REGISTRATION PROCESS:

1. Fill out this card completely.
2. Mail the warranty card to:

Williams & Hussey Machine and Tool
465 3rd Ave SE
Britt, IA 50423

OR

Email a picture of the warranty card to customerservice@williamsnhussey.com.

3. Keep a copy of the warranty card for your records.

Williams & Hussey Machine and Tool Warranty Registration

PRODUCT INFORMATION:

Molder Model Number: _____

Serial Number: _____

Date of Purchase: _____

Purchased From: _____

CUSTOMER INFORMATION:

Company Name: _____

Contact Name: _____

Address: _____ City: _____ State/Provence: _____ Zip: _____

Email: _____

Phone: _____

NOTES & MAINTENANCE RECORDS

An OSC Technologies Company
WILLIAMS & HUSSEY
Machine & Tool Company

465 3rd Ave SE
Britt, IA 50423
(800) 258-1380
(641) 843-3240
customerservice@williamsnhussey.com

www.williamsnhussey.com

Business Hours:
Monday – Thursday 8:00-4:30 Central
Friday 8:00-12:00 Central

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Specifications subject to change without notice.

06/24