



Operating Instructions and Parts Manual Planer/Molder

Model JPM-13CS



JET
427 New Sanford Road
LaVergne, Tennessee 37086
Ph.: 800-274-6848
www.jettools.com

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1.0 Warranty and Service

JET warrants every product it sells against manufacturers' defects. If one of our tools needs service or repair, please contact Technical Service by calling 1-800-274-6846, 8AM to 5PM CST, Monday through Friday.

Warranty Period

The general warranty lasts for the time period specified in the literature included with your product or on the official JET branded website.

- JET products carry a limited warranty which varies in duration based upon the product. (See chart below)
- Accessories carry a limited warranty of one year from the date of receipt.
- Consumable items are defined as expendable parts or accessories expected to become inoperable within a reasonable amount of use and are covered by a 90 day limited warranty against manufacturer's defects.

Who is Covered

This warranty covers only the initial purchaser of the product from the date of delivery.

What is Covered

This warranty covers any defects in workmanship or materials subject to the limitations stated below. This warranty does not cover failures due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, improper repair, alterations or lack of maintenance.

Warranty Limitations

Woodworking products with a Five Year Warranty that are used for commercial or industrial purposes default to a Two Year Warranty. Please contact Technical Service at 1-800-274-6846 for further clarification.

How to Get Technical Support

Please contact Technical Service by calling 1-800-274-6846. **Please note that you will be asked to provide proof of initial purchase when calling.** If a product requires further inspection, the Technical Service representative will explain and assist with any additional action needed. JET has Authorized Service Centers located throughout the United States. For the name of an Authorized Service Center in your area call 1-800-274-6846 or use the Service Center Locator on the JET website.

More Information

JET is constantly adding new products. For complete, up-to-date product information, check with your local distributor or visit the JET website.

How State Law Applies

This warranty gives you specific legal rights, subject to applicable state law.

Limitations on This Warranty

JET LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD OF THE LIMITED WARRANTY FOR EACH PRODUCT. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

JET 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. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

JET sells through distributors only. The specifications listed in JET printed materials and on official JET website are given as general information and are not binding. JET reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever. JET® branded products are not sold in Canada by JPW Industries, Inc.

Product Listing with Warranty Period

90 Days – Parts; Consumable items; Light-Duty Air Tools
1 Year – Motors; Machine Accessories; Heavy-Duty Air Tools; Pro-Duty Air Tools
2 Year – Metalworking Machinery; Electric Hoists, Electric Hoist Accessories
5 Year – Woodworking Machinery
Limited Lifetime – JET Parallel clamps; VOLT Series Electric Hoists; Manual Hoists; Manual Hoist Accessories; Shop Tools; Warehouse & Dock products; Hand Tools

NOTE: JET is a division of JPW Industries, Inc. References in this document to JET also apply to JPW Industries, Inc., or any of its successors in interest to the JET brand.

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3.0 Safety warnings

For your own safety, read this instruction manual before operating the tool.

Wear Eye Protection

1. **KEEP GUARDS IN PLACE** and in working order.
2. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form the habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it on.
3. **KEEP THE WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
4. **DO NOT USE IN A DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.
5. **KEEP CHILDREN AWAY.** All visitors should be kept at safe distance from the work area.
6. **MAKE THE WORKSHOP KID PROOF** with padlocks, master switches, or by removing starter keys.
7. **DON'T FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE THE RIGHT TOOL.** Don't force a tool or attachment to do a job for which it was not designed.
9. **USE THE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in the line voltage resulting in loss of power and overheating. The table below shows the correct size to use depending on the cord length and name plate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Volts	Total Length of Cord in Feet			
120V	25	50	100	150
240V	50	100	200	300
	AWG			
	14	12	Not recommended	

Table 1

10. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
11. **ALWAYS USE SAFETY GLASSES.** Also use face or dust masks if the cutting operation is dusty. Everyday eyeglasses only have impact resistant lenses, they are NOT safety glasses.
12. **SECURE WORK.** Use clamps or a vise to hold the work when its practical. It's safer than using your hand and it frees both hands to operate the tool.
13. **DON'T OVERREACH.** Keep proper footing and balance at all times.
14. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
15. **DISCONNECT TOOLS** before servicing; when changing accessories, such as blades, bits cutters, and the like.
16. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure the switch is in the off position before plugging in the machine.
17. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause a risk of injury.

18. **NEVER STAND ON A TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
19. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.
20. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.
21. **NEVER LEAVE THE TOOL RUNNING UNATTENDED. TURN THE POWER OFF.** Don't leave the tool until it comes to a complete stop.
22. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contain chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:
 - Lead from lead based paint.
 - Crystalline silica from bricks, cement and other masonry products.
 - Arsenic and chromium from chemically treated lumber.

Your risk of exposure varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area and work with approved safety equipment, such as face or dust masks that are specifically designed to filter out microscopic particles.

Familiarize yourself with the following safety notices used in this manual:

CAUTION This means that if precautions are not heeded, it may result in minor injury and/or possible machine damage.

WARNING This means that if precautions are not heeded, it may result in serious injury or possibly even death.

4.0 About this manual

This manual is provided by JET covering the safe operation and maintenance procedures for a JET Model JPM-13CS Planer-Molder. This manual contains instructions on installation, safety precautions, general operating procedures, maintenance instructions and parts breakdown. Your machine has been designed and constructed to provide years of trouble-free operation if used in accordance with the instructions as set forth in this document.

If there are questions or comments, please contact your local supplier or JET. JET can also be reached at our web site: www.jettools.com.

Retain this manual for future reference. If the machine transfers ownership, the manual should accompany it.

WARNING Read and understand the entire contents of this manual before attempting assembly or operation! Failure to comply may cause serious injury!

5.0 Electrical connections

5.1 Grounding instructions

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

⚠WARNING Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded. Failure to comply may cause serious or fatal injury.

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug.

5.2 115 Volt operation

As received from the factory, your planer/molder is ready to run at 115 volt operation. This planer/molder, when wired for 115 volt, is intended for use on a circuit that has an outlet and a plug that looks like the one illustrated in Figure 1a. A temporary adapter, which looks like the adapter as illustrated in Figure 1b, may be used to connect this plug to a two-pole receptacle, as shown in Figure 1b if a properly grounded outlet is not available. The temporary adapter should only be used until a properly grounded outlet can be installed by a qualified electrician. **This adapter is not applicable in Canada.** The green colored rigid ear, lug, or tab, extending from the adapter, must be connected to a permanent ground such as a properly grounded outlet box, as shown in Figure 1b.

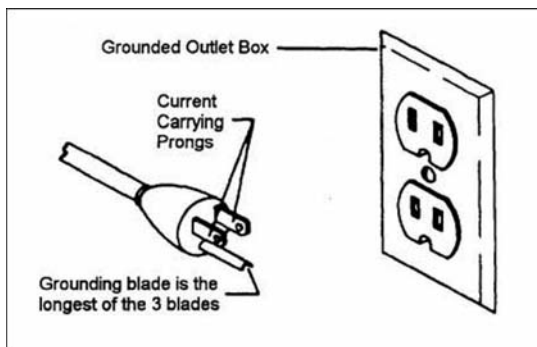


Figure 1a

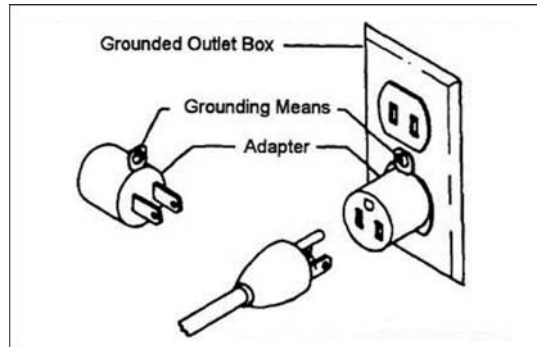


Figure 1b

5.3 230 Volt operation

If 230V, single phase operation is desired, the following instructions must be followed:

1. Disconnect the machine from the power source.
2. This planer/molder is supplied with four motor leads that are connected for 115V operation, as shown in Figure 2a. Reconnect these four motor leads for 230V operation, as shown in Figure 2b.
3. The 115V attachment plug, supplied with the planer/molder, must be replaced with a UL/CSA listed plug suitable for 230V operation, similar to the one shown in Figure 3. Contact your local Authorized JET Service Center or qualified electrician for proper procedures to install the plug. The planer/molder must comply with all local and national codes after the 230 volt plug is installed.

- The planer/molder with a 230 volt plug should only be connected to an outlet having the same configuration as illustrated by the grounded outlet box in Figure 3. No adapter is available or should be used with the 230 volt plug.

Important: In all cases (115 or 230 volts), make certain the receptacle in question is properly grounded. If you are not sure, have a registered electrician check the receptacle.

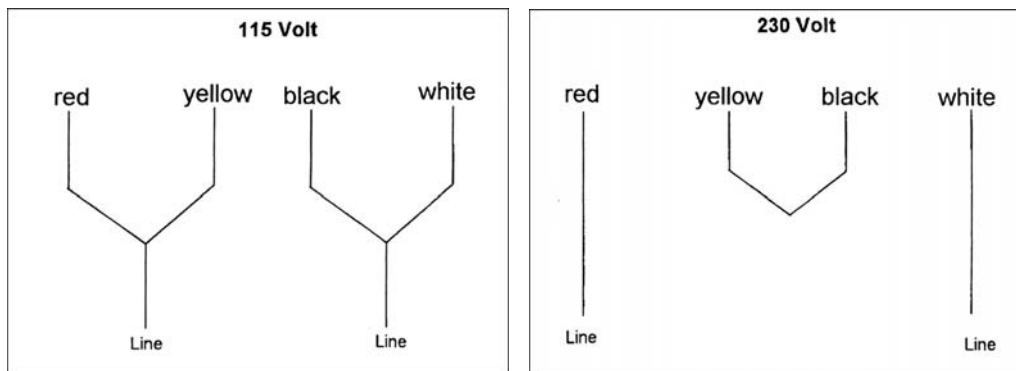


Figure 2a

Figure 2b

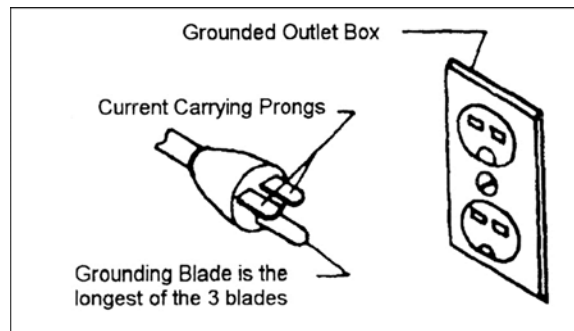


Figure 3

6.0 On-Off Switch Padlock

To safeguard your machine from unauthorized operation and to avoid accidental starting by young children, the use of a padlock (not provided) is highly recommended.

To lock out an on-off switch (see Figure 4):

- Open the padlock.
- Insert through holes in the start button.
- Close the padlock.
- Place the key in a safe location.

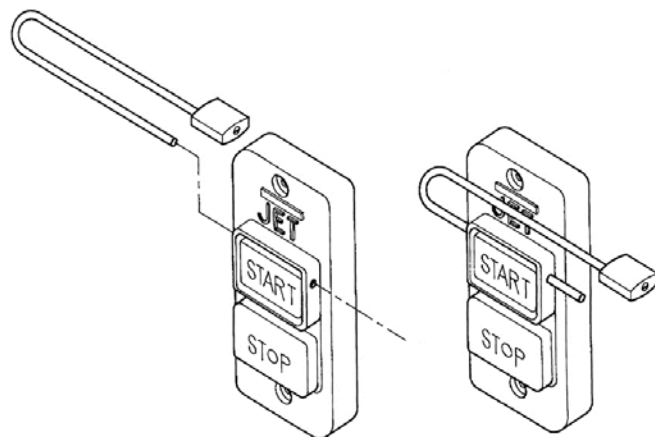


Figure 4

7.0 Specifications

Model numberJPM-13CS
Stock Number 708524

Capacities:

Maximum Cutting Width..... 13" (330 mm)
Maximum Thickness..... 6-1/8" (156 mm)
Full Width Depth of Cut..... 1/16"
Minimum Planing Length..... 14" (356 mm)
Cuts per Minute 13,500
Feed Rate, Planing..... 20 fpm
Feed Rate, Molding 10 fpm

Cutterhead:

Number of Knives 3
Knife Size..... 13-1/16"L x 1/8"W x 5/8"H
Cutterhead Diameter 2-9/16"
Cutterhead Speed (RPM) 4500

Motor and controls:

Motor type..... totally enclosed fan cooled, induction, capacitor start
Horsepower 1-1/2 HP
Phase..... single
Voltage..... 115/230V (prewired 115V)
Cycle..... 60Hz
Listed FLA (full load amps) 15/7.5 A
RPM..... 3450
Start capacitor..... 400MFD, 125VAC
Power transfer v-belt
On/off switch push button
Motor speed..... 3450 RPM
Power plug installed..... 120V
Recommended circuit and fuse/breaker size¹ 30A (115V), or 15A (230V)

¹ subject to local/national electrical codes.

Dust collection:

Dust port outside diameter..... 4" (100mm)
Minimum extraction volume required..... 350 CFM (18CMM)

Dimensions and weights:

Overall Dimensions..... 23-31/32"W x 36-1/2"D x 43-1/2"H
Net Weight (approx.)..... 225 lb (102 kg)
Shipping Weight (approx.) 262 lb (119 kg)

The specifications in this manual were current at time of publication, but because of our policy of continuous improvement, JET reserves the right to change specifications at any time and without prior notice, without incurring obligations.

IMPORTANT:

- * **The use of a dust chute and adequate dust collection system is highly recommended but not required for most planing operations.**
- * **The use of a dust chute and adequate dust collection system is required for all molding operations.**

For a complete line of woodworking dust collectors, contact your local JET distributor, or visit our website at www.jettools.com.

8.0 Glossary

- **Cutterhead** (A, Figure 5) – metal cylinder that holds the planer knives or the molding cutters.
- **Table** – part of machine over which the lumber passes.
- **Feed Rollers** – two rubber covered cylinders that push lumber through the machine.
- **Planer Knife** – one of three knives found in the cutterhead used for planing. (B, Figure 5)
- **Molding Cutter** – one of three cutters in a set with a patterned edge used for cutting a decorative design into wood.
- **Gib** – metal bar with adjusting screws that holds planer knives or molding cutters in the cutterhead.
- **Depth of Cut** – depth of cut from workpiece on a single pass through the machine. (Figure 6)
- **Snipe** – depression on either end of a planed board caused by feeding the board into the machine at an angle to the table or letting the board end drop down when exiting the planer.

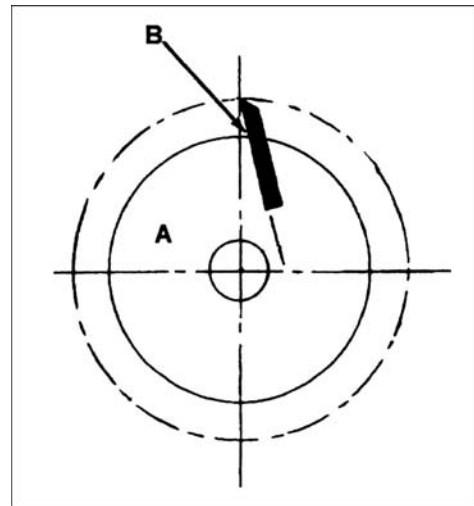


Figure 5

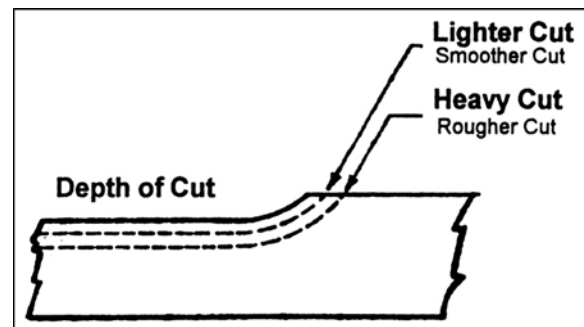


Figure 6

9.0 Setup and assembly

9.1 Shipping contents

- 1 Molder/Planer
- 1 Dust Chute
- 2 Extension Roller Assemblies
- 1 **Accessory Package, containing:**
 - 1 Handle Assembly
 - 1 10/12mm Wrench*
 - 1 11/13mm Wrench*
 - 1 Screwdriver*
 - 1 3mm Hex Wrench*
 - 1 4mm T-Handle Hex Wrench*
 - 1 5mm Hex Wrench*
 - 1 Knife Setting Gauge*
 - 1 Molding Cutter Gauge*
 - 1 Feed Roller Adjustment Wrench*
 - 1 Brass Bar*
 - 1 Video
 - 1 Hardware Bag #2 (p/n MHD-17S-A)
 - 1 Operator's Manual
 - 1 Warranty Card

* included in Hardware Bag #1 (p/n MHD-17S)

⚠ WARNING Read and understand all assembly instructions before attempting assembly. Failure to comply may cause serious injury.

9.2 Unpacking and cleanup

- 1. Finish removing all contents from the shipping container. Do not discard any shipping material until the planer/molder is set up and running properly.
- 2. Inspect contents for shipping damage. Report damage, if any, to your distributor.
- 3. Compare contents of shipping carton with the contents list in this manual. Report shortages, if any, to your distributor.
- 4. Clean all rust protected surfaces with a mild solvent or kerosene. Do not use lacquer thinner, paint thinner, or gasoline; these will damage painted surfaces.
- 5. To prevent rust, apply a light coating of paste wax to the table surface.

9.3 Assembly

- 1. Remove dust hood. Check gib screws on cutterhead for tightness. Reinstall dust hood. **Note:** Recheck after five minutes of operation. Recheck again after every 2 hours of use.
- 2. Attach the handle to the post with a hex socket cap screw.

- 3. Attach the top side of dust chute with three M5x10 machine screws, and three M5 washers.
- 4. Attach lower section of dust chute with three M6x8 machine screws, and three M6 washers.
- 5. Mount extension roller assembly to the middle table with four M8x12 hex cap bolts, and four M8 flat washers. The frame is adjustable using these bolts.
- 6. Use a straight edge to make sure rollers are level with middle table.
- 7. The first roller is adjustable by loosening the hex cap bolts that hold the roller on the frame supports.
- 8. Repeat steps 5-7 for opposite side roller assembly.

⚠ WARNING Never run machine with dust hood loose or removed. Failure to comply may cause serious injury.

10.0 Adjustments: Planing

10.1 Depth of cut

⚠ WARNING Maximum depth of cut is 1/8" up to 5-1/2" wide, and 1/16" on stock over 5-1/2" wide. Trying to cut more in one pass will cause stress on machine and could damage cutterhead.

Thickness planing refers to the sizing of lumber to a desired thickness while creating a level surface parallel to the opposite side of the board.

The quality of thickness planing depends on the operator's judgment about the depth of cut. Depth of cut depends upon the width, hardness, dampness, grain direction, and grain structure of the wood.

The maximum thickness of wood that can be removed in one pass is 1/8" on wood up to 5-1/2" wide and 1/16" on wood wider than 5-1/2".

When planing hard wood, take light cuts or plane wood in thin widths.

Make a test cut when working with a new type of board or different kind of operation. Check the accuracy of the test cut before working on the finished product.

10.2 Adjusting depth of cut scale

⚠ WARNING Use caution when placing hands near cutterhead. Knives are extremely sharp. Failure to comply may cause serious injury.

- 1. Take a test cut.

2. Measure the cut piece.
3. Adjust pointer accordingly.

10.3 Feed rate adjustment

The planer/molder has two speeds that feed the work piece, at 10 feet per minute (FPM) for improved surface finish when molding and 20 FPM for faster planing.

To change the feed rate gears:

1. Disconnect machine from power source (Unplug).
2. Remove acorn nut holding the gear cover.
3. Remove two hex socket cap screws and two washers.
4. Remove gears and position according to operation. See gear chart (Figure 7).
5. Replace screws and washers to hold gears in place.
6. Replace cover and acorn nut.

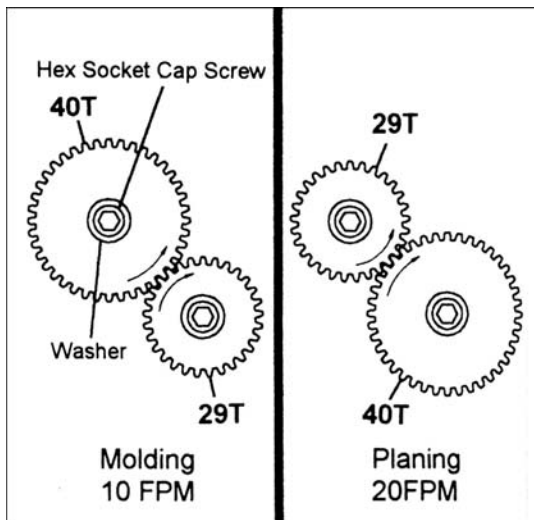


Figure 7

10.4 Adjusting V-Belt Tension

1. Disconnect machine from power source. (Unplug)
2. Remove stand cover on left of stand.
3. Loosen four round cap hex socket slot screws holding motor plate to stand.
4. Push down on motor to tension belt. Belt is tensioned properly when moderate finger pressure on belt midway between the two pulleys causes approximately 1/4" deflection.
5. Tighten four round cap hex socket slot screws.
6. Replace stand cover.

10.5 Knife adjustment

CAUTION Any adjustment or replacement of knives must be done to all three knives at the same time. Failure to comply may result in an out-of-balance cutterhead which will lead to bearing failure.

WARNING Use caution when placing hands near the cutterhead. Knives are extremely sharp. Failure to comply may cause serious injury.

1. Disconnect machine from power source (Unplug).
2. Remove screws securing dust hood and dust chute.
3. Remove dust hood and dust chute.
4. With a marking pen, label each knife on the cutterhead one, two, and three for easy identification.
5. Loosen all lock bar screws on blade number one.
6. With the brass bar and a mallet, carefully tap on each end on the outside of the set screws for all three lock bars on knife number one. This loosens the taper fit of the lock bar.
7. Raise or lower knife by turning jack screw. Knife is at correct height when knife tip just touches center tip of knife gauge (Figure 8).

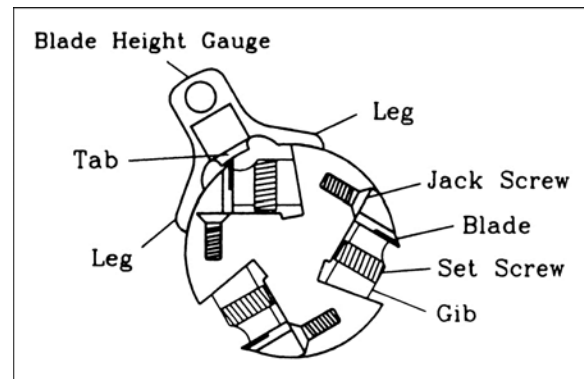


Figure 8

8. Place knife gauge at other end of knife number one.
9. Raise or lower knife to correct height.
10. Tighten knife bar locking screws. Note: Tighten each large lock bar independently. Take half turns alternating on each end until lock bar is tight against the knife. Tighten small lock bar after two large lock bars are tight. The small lock bar requires two spacers to firmly hold the knife. Tighten in the same manner as the large lock bars.
11. Continue to check knife height with gauge until set screws are firmly tightened.

- Repeat steps five through eleven for blades two and three.

10.6 Knife replacement

⚠WARNING Use caution when placing hands near the cutterhead. Knives are extremely sharp. Failure to comply may cause serious injury.

- Disconnect machine from power source. (Unplug)
- Remove screws securing the dust hood and dust chute.
- Remove dust hood and dust chute.
- With a marking pen, label each knife on the cutterhead one, two, and three for easy identification.
- Loosen all lock bar set screws on knife number one.
- With the brass bar and a mallet, carefully tap on each end on the outside of the set screws for all three lock bars on knife number one. This loosens the taper fit of the lock bar.
- Carefully remove knife.
- Remove lock bars.
- Repeat steps 5-8 for knives two and three.
- Clean cutterhead of any wood chips, pitch, saw dust, and any other debris.
- Replace lock bars on knife number one as in Figure 9, paying attention to which direction they face.

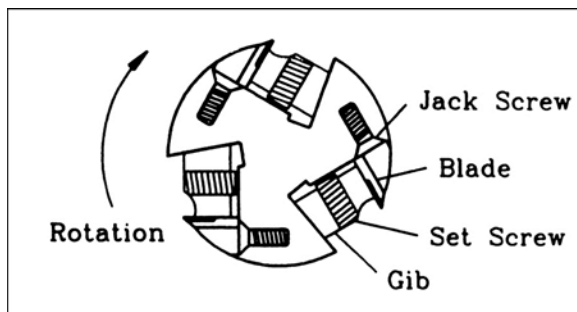


Figure 9

- Carefully install new or sharpened knife into cutterhead between lock bar and cutterhead. Note direction of knife as pictured in Figure 5.
- Adjust knife. Refer to section in this manual titled "Knife Adjustment", steps seven through eleven.
- Repeat steps 11-13 for blades number two and three.

10.7 Adjusting infeed roller and outfeed rollers for planing

As a general rule of thumb, the infeed and outfeed rollers are set 1/8" below the cutterhead (not the knives) at the factory. To check the feed rollers:

- Disconnect machine from power source. (Unplug)
- Make two blocks out of scrap 2x4 lumber using the dimensions noted.
- Mark each block as shown in Figures 10 and 11.

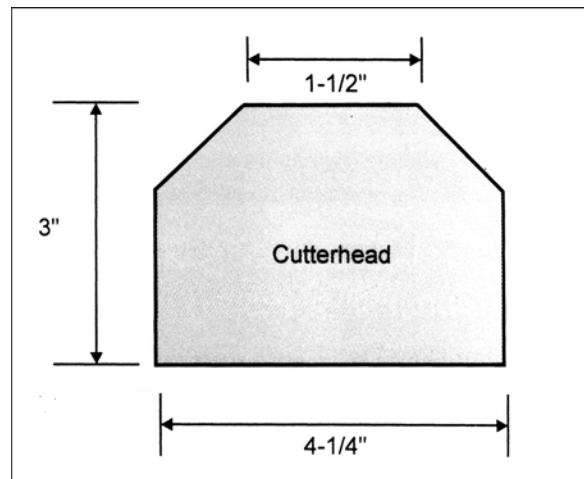


Figure 10

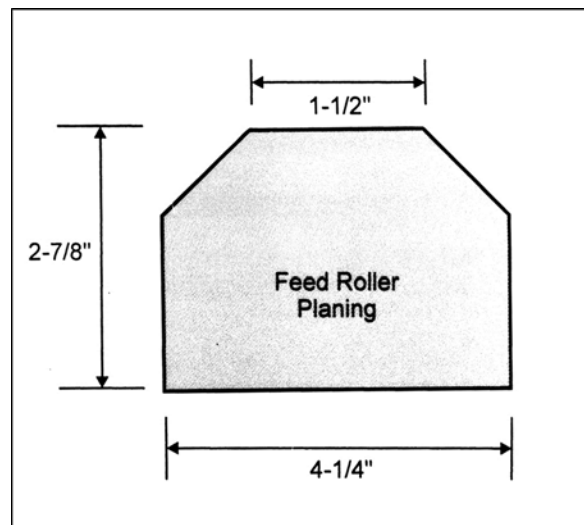


Figure 11

- Lower the work table to allow cutterhead block to slide freely between the table and the cutterhead. Note: Cutterhead may have to be turned by hand to rotate a blade out of the way.
- Adjust the table height so the block can be inserted between the table and the cutterhead with minimum resistance.
- Remove the block. Do not raise or lower the table at this point. It will affect the final result.

7. Insert the block labeled "Feed Roller Planing" into the planer opening.
8. Raise or lower the feed roller until it rests on top of the block end to end. To adjust the feed roller (Fig 12):
 - Loosen the jam nut on both sides of infeed roller with the wrench provided.
 - Turn the threaded bushing counter-clockwise to raise roller and clockwise to lower roller.
 - Raise or lower roller until it contacts the top of the block on both ends of the roller.
 - Block should slide in and out with a minimum of force.
 - Tighten jam nuts and re-check.
9. Repeat this process with outfeed roller. Retain the wooden blocks for future use.

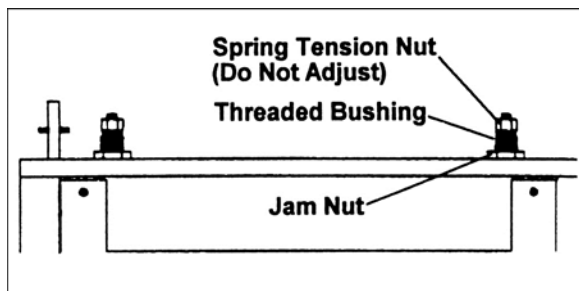


Figure 12

10.8 Adjusting chip deflectors for planing

Adjust the outfeed chip deflector (as shown in Figure 13) to within 1/4" to 1/8" of planing knives to prevent chips from being pressed into the planed surface of the work piece by the outfeed roller.

Note: Adjusting the chip deflector too close to the cutterhead while planing will cause a higher than normal noise level especially when using a dust collector. The use of a dust collection system with the capacity to handle a large volume of material is highly recommended.

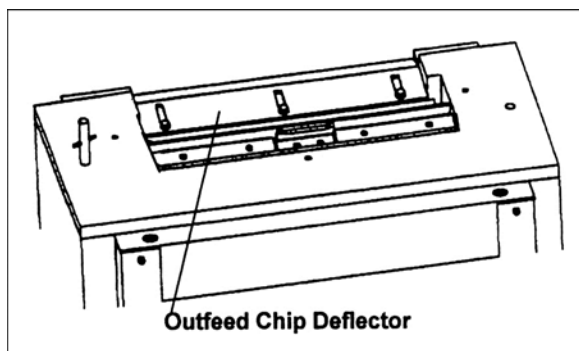


Figure 13

The infeed chip deflector (curved piece attached to the top cover with three screws and wing nuts) must be adjusted as close to the cutterhead as the

adjustment allows without contacting the cutterhead and knives.

11.0 Planing procedure

⚠WARNING Never stand directly in front of or behind machine while planing or molding. Always stand to one side. Failure to comply may cause serious injury from kickback.

⚠WARNING Never attempt to plane a workpiece shorter than 14" or thinner than 1/2". Failure to comply may cause serious injury.

⚠CAUTION Never plane more than 1/8" on stock narrower than 5-1/2" and 1/16" on stock 5-1/2" and wider in one pass. This will cause stress on machine, lead to premature wear, and may damage knives and/or cutterhead.

⚠CAUTION The use of a dust collection system is highly recommended. If a dust collection system is not used, remove hose adaptor from dust hood to prevent wood chips collecting in dust hood and backing up into machine.

The JPM-13CS is supplied with planing blades mounted in the cutterhead. Planing can be done at 10 FPM for an improved surface finish or 20 FPM for faster planing. Work pieces longer than 24" should be supported with infeed and outfeed rollers.

1. Adjust table height to produce desired depth of cut.
2. Start machine.
3. Stand to one side and grasp work piece in the center.
4. Gently slide work piece into infeed side of planer/molder until infeed roller begins to advance the work piece.
5. Let go of the work piece and allow the feed rollers to advance the work piece.
6. Catch the work piece as it comes out the outfeed side of the planer/molder.

11.1 Dealing with warped wood

Warp is caused by different grain directions in a piece of wood drying at different rates during the drying process.

Wood warped across the width - Cupped wood is planed flat on one side first, then planed flat on the other. Ripping the board down the middle will avoid huge amounts of waste in planing to thickness.

Wood warped lengthwise - Feed rollers will flatten a lengthwise warped board as if it were flat, but the board will spring back to its original shape once out of the planer. A lengthwise warped board must be jointed flat on one side on a jointer before being thickness planed.

Twisted wood - Twisted lumber or lumber twisted lengthwise is difficult to thickness plane. The wood may be so twisted that it cannot be thickness planed. One possible solution may be to saw the board into smaller sections and see if the sections can be thickness planed.

11.2 Wood Grain

For an improved surface finish with minimal tearout, always plane the work piece with the grain.

The work piece should be fed into the planer/molder so that blades are traveling with the grain as they finish the cut. The grain should be angled up toward the rear of the work piece as it is fed into the planer/molder.

12.0 Molding setup and adjustments

Set feed gear box to 10 FPM. (See illustration and instruction in *section 10.3*).

12.1 Installing molding cutters

⚠ WARNING Cutterhead knives are sharp. Use extreme caution when working in close proximity. Never attempt to mold without a dust chute and dust collection system. Failure to comply may cause serious injury.

1. Disconnect machine from power source (Unplug).
2. Remove screws (A, Figure 14) securing the dust hood.

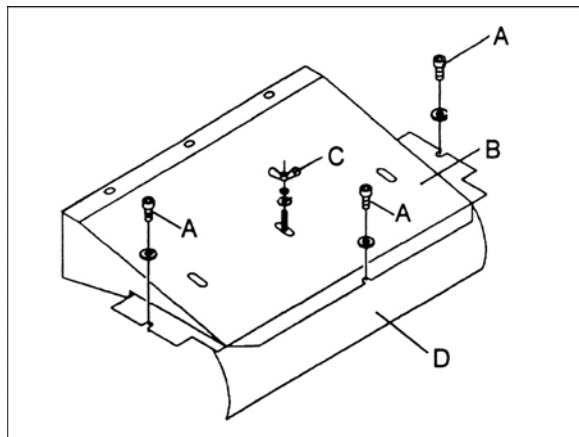


Figure 14

3. Remove dust hood (B, Figure 14) and dust chute.
4. Loosen three wing nuts (C, Figure 14) and slide the curved infeed chip deflector (D, Figure 14) out of the way.
5. Tighten screws to hold chip deflector in place. It is not used in the molding operation.
6. Remove plastic outfeed chip deflector completely.
7. With a marking pen, label each knife slot on the cutterhead one, two, and three for easy identification.

For 2" and under cutters:

- Loosen set screws on 2" lock bar at cutter number one.
- With the brass bar and a mallet carefully tap on lock bar outside of set screws to loosen taper fit of the lock bar.
- Remove spacers.
- Remove lock bar. Note: With 2" wide and under molding cutters, the planing knives remain in place (Figure 15).
- Install lock bar but do not tighten at this time. Note: Depending on cutter width, 1" and under cutters will require a spacer next to the cutter.

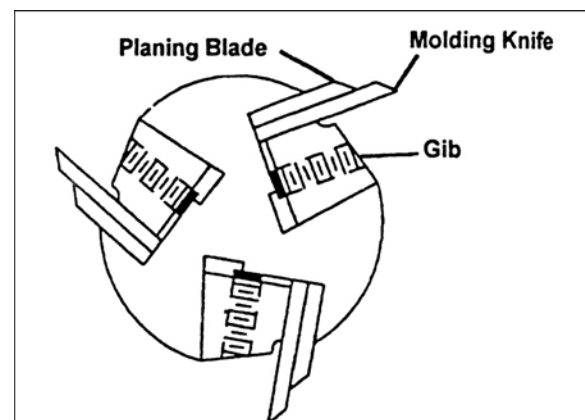


Figure 15

- Install cutter in place of spacers. Cutters must face proper direction and be seated fully in the cutterhead.

For cutters over 2":

- Loosen set screws on all lock bars at cutter number one.
- With the brass bar and a mallet, carefully tap on lock bar outside of set screws to loosen lock bar taper fit.
- Carefully remove spacers, planing knives and lock bars.

- Install special lock bar that is included with the knife set. Make sure set screws are loose to allow locking adjustment. Do not tighten at this time.
 - Install cutter. Make sure it is facing proper direction and is fully seated in the cutterhead.
8. Install molding cutter gauge with hex socket cap screw and tighten to hold in place. The guide may be attached to either side. See Figure 16.

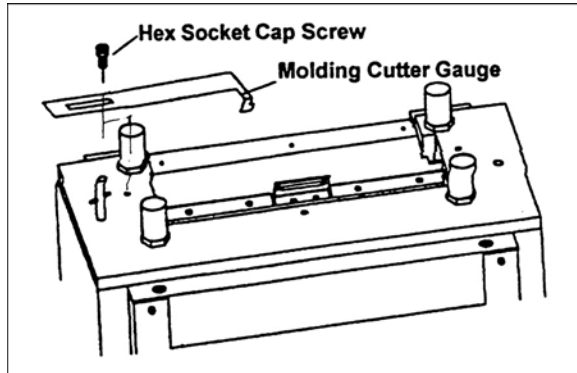


Figure 16

9. Adjust the guide end to meet the cutter edge.
10. Tighten the hex socket cap screw holding the guide bar and be careful not to move it during the alignment process.
11. Tighten lock bar set screws to hold cutter in place. Tighten set screws half turn each side to uniformly raise the lock bar until tight.
12. Rotate cutterhead to the second cutter insert.
13. Repeat steps for cutter inserts two and three making sure the cutters are properly positioned according to the alignment guide.
14. Remove guide.
15. Check that all set screws in the cutterhead are tight.
16. Replace dust hood and dust chute.
17. Run machine for five minutes. Re-tighten gib screws in cutterhead. Recheck after every 2 hours of use.

WARNING Never run the machine with the dust hood loose or removed. All cutter lock bar screws must be firmly seated before turning on the machine. Failure to comply may cause blade and/or cutter ejection resulting in damage to machine, cutter, and may pose hazard to operator.

12.2 Setting feed rollers for molding

The infeed and outfeed rollers will have to be lowered for most molding operations. The amount of adjustment required will vary depending on the size and style of the cutter.

When using cutters larger than 2" wide, the feed rollers will have to be set 5/16" below the cutter head. To set the feed rollers for molding:

1. Following the method for setting the feed rollers when planing (previously explained in this manual), make another wooden block 5/16" lower than the cutterhead block. See Figure 17.

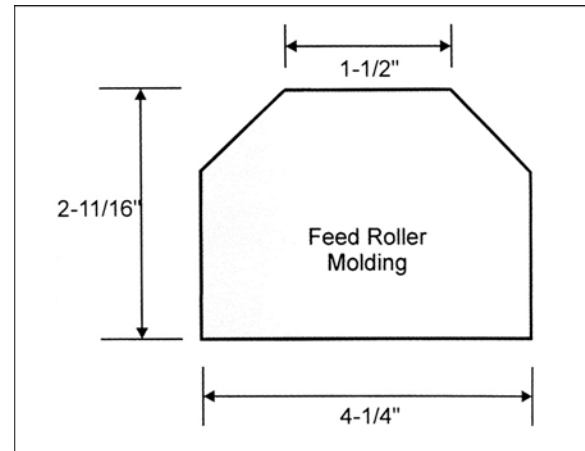


Figure 17

2. Adjust the infeed and outfeed rollers in the same manner as setting the rollers for planing using this new block.
3. Label this block "feed roller molding".
4. Save the block for future use.

CAUTION Never lower infeed and outfeed rollers beyond 5/16" lower than cutterhead. This will cause severe stress on gear box and roller system.

When using molding knives wider than 2", the first pass or cut will remove approximately two thirds of the stock. Test cuts on scrap material will determine the number of passes required to complete the cut. **Never attempt to complete a cut with less than two passes on smaller knives (under 2") and three passes on larger knives (over 2").** Generally, the more passes, the better the finish.

Due to the variety of cutters available, it is impossible to cover every possible set-up. It is very important to use test cuts on scrap material before attempting cuts on project material.

This machine is designed and intended for use with three matched knives in sets. Many companies offer knife sets that included only one knife and two counter-weights. These cause severe vibration and can damage the machine.

12.3 Making & installing a bedboard

CAUTION You must use a board over the planer/molder table when molding. This prevents the knives from hitting the table and allows the knives to cut into the guide boards to clean up the sides of the molding.

1. Disconnect machine from power source (unplug).
2. Cut a piece of 3/4" particle board 12-7/8" wide and 31-1/4" long. Note: Board is 12" longer than the table to allow overhang (6" front and rear). This increases the work surfaces for longer pieces of wood stock.
3. Mark and drill four 1/4" holes on the bedboard that match the pre-drilled holes in the planer/molder table.
4. Countersink the four drilled holes on the top side to allow installation of countersunk screws.
5. Secure the bedboard to the table with four 3/16" x 1-1/2" flat head machine screws, four 3/16" x 3/4" washers and four 3/16" hex nuts.

12.4 Making guide rails

Guide rails are used during the molding process to align the workpiece with the molding cutters. Using properly adjusted guide rails assures the workpiece passes the molding cutters in the same position using multiple passes.

Guide rails should be the same length as the table (31-1/4") and 2" wide and be made from smooth, straight hardwood, such as oak, maple, alder, etc. so they will not damage the cutters when they contact them. Some molding profiles require the knives to cut into the guide rails to clean up the outer edge to complete the cut. (Fig. 18)

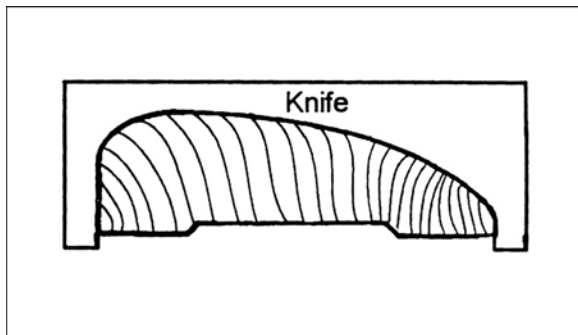


Figure 18

Guides should be cut 1/4" lower than the maximum thickness of the final workpiece profile. Regardless of how thick your guide rails are, they must be notched to clear the infeed/outfeed rollers and anti-kickback fingers. See Figure 19 for pattern.

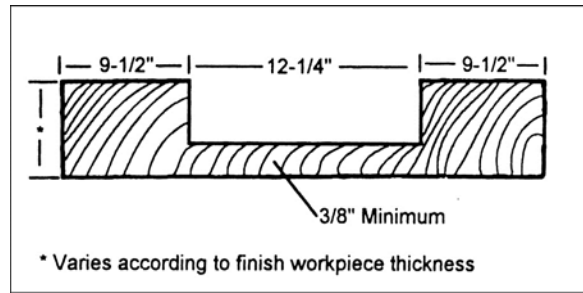


Figure 19

12.5 Guide rail placement and attachment

1. Disconnect machine from power source (unplug).
2. To assist in proper placement of guide rails, it is suggested to remove the dust hood and dust chute to clearly see the cutter knife and rail placement. It is also helpful to draw parallel lines on the bedboard to assure proper alignment of the guide rails from the infeed side to the outfeed side.
3. Molding cutter must be installed properly in the cutterhead. See "Installing Molding Cutters".
4. Lower table.
5. Carefully turn cutterhead so that one cutter is at the lowest point of the cutting arc.
6. Slide in first guide rail and position inside edge of guide rail to outside edge of the finished work piece. Note: On many patterns this will be the outside edge of the knife.
7. Clamp the guide rail to the bedboard using "C" clamps on both ends. (This can also be done by nailing with small gauge finish nails. Keep in mind the guide rails must be positioned properly before nailing. Be careful with nail length; do not nail through the bedboard and into the table). (Fig. 20)

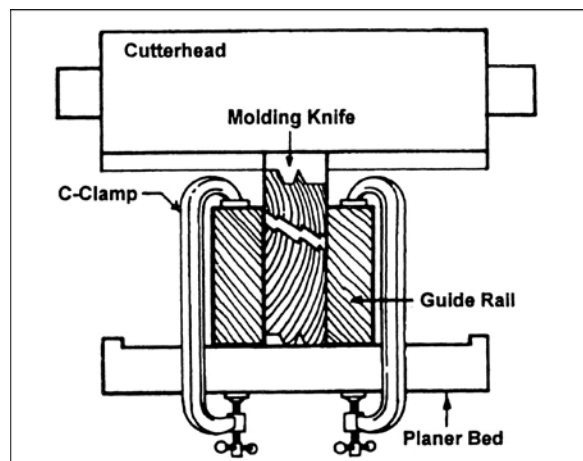


Figure 20

8. Position second guide rail on the table. Placement of this rail depends on the width of the board and if the board requires outer edge clean-up. Review molding procedure section for pre-sizing stock guidelines. When using knives that require outer edge clean-up, the workpiece will contact the guide rails only while wood is feeding into the cutterhead. After the workpiece passes the cutterhead, the outfeed roller will hold the workpiece in position.
9. Clamp or nail second guide rail.
10. Replace dust hood, dust chute and fasten in place.
11. Connect to the dust collection system.
12. Make sure all adjusting tools and wood stock are removed from the machine.

TIP: Save money, time, and frustration by experimenting first with scrap work pieces before attempting to mold with expensive stock.

13.0 Molding procedure

CAUTION Never mold without using a dust collector. Molding without a dust collector may cause clogging of and damage to machine.

Molding with professional results takes planning prior to starting. Always take a light cut for the smoother finish. Pre-sizing wood before molding is a necessity. Always pre-size the workpiece to 1/16" of the final thickness before running the workpiece through the molder.

With profiles that require outer edge clean-up, the workpiece should be 1/8" larger than the final width allowing 1/16" on either side of the cutter. (Fig. 21)

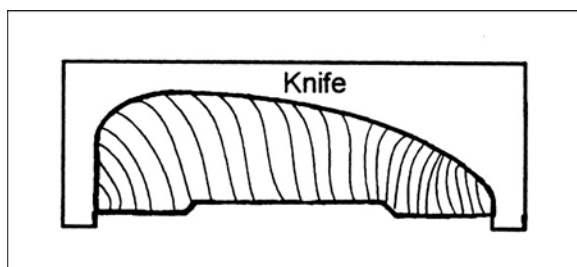


Figure 21

With profiles that only cut the edge of the workpiece, the workpiece should be the same size as the final width. (Fig. 22)

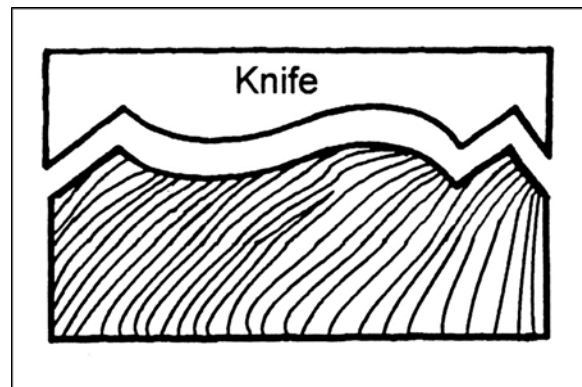


Figure 22

Other considerations before molding to consider are wood hardness, moisture content, degree of warp, and direction of grain.

WARNING Never attempt to mold a workpiece shorter than 14" or thinner than 1/2". Failure to comply may cause damage to machine and/or serious injury to operator.

13.1 Setting table height for first pass

1. Do not connect machine to power source until instructed to do so.
2. Lower table to allow insertion of workpiece.
3. While looking into the front opening of the machine, raise the table until the workpiece just contacts the infeed roller.
4. Record the height of the table as indicated on the scale to either side of the table.
5. Lower the table and remove the workpiece.
6. Raise the table back up to the recorded measurement.
7. Raise the table one full turn above the recorded measurement to allow adequate feed roller pressure. This measurement is now the starting point for this particular job.
8. Connect the machine to the power source, start the dust collector, and start the machine.
9. Insert the work piece until the infeed roller begins to advance the workpiece.
10. Let go of the work piece and move to one side of the machine.
11. Retrieve the work piece from the outfeed side of the machine. **Note:** It is our experience that on the first pass using some cutters, the material may feed in a jerky motion. If this occurs, raise the table during the cut until the workpiece begins to advance smoothly. This point now becomes your first pass measurement.

12. Run all stock to be molded through the machine at this time. **Note: If you are molding several boards with the same profile and have to make several passes to complete the profile, you must run all boards through at each setting. This assures all stock will match the desired shape. This is especially important when splicing molded boards together such as crown molding or baseboards.**

13.2 Back Relief Molding

Back relief molding is used to create a better fit over irregular surfaces. With less wood contact, the molding matches irregular surfaces more easily. The back relief cut is formed on the work piece first; then the workpiece is molded to its finished shape. (Fig. 23)

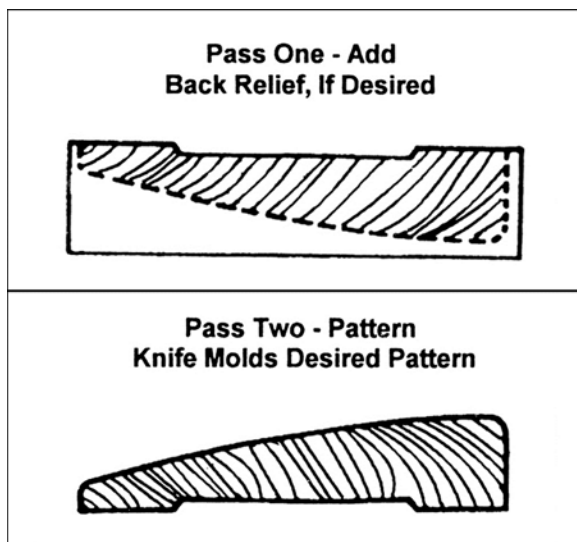


Figure 23

13.3 Tongue and Groove Molding

Tongue and groove molding is accomplished in the same manner as other types of molding. Keep in mind the edge guide must be taller to adequately support the work piece. The edge guides must be set 3/4" below the lowest point the cutter will travel.

Cutting the groove first allows adequate support when cutting the tongue (Figure 24).

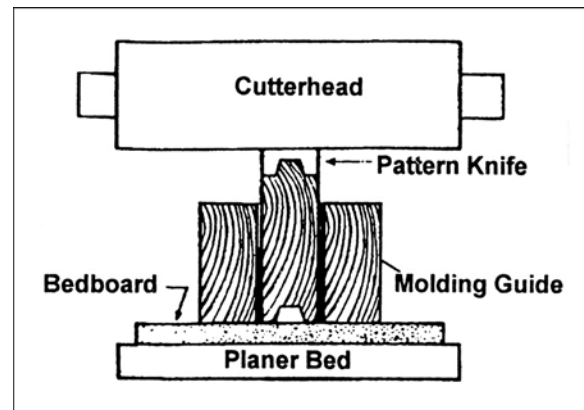


Figure 24

14.0 Maintenance

Disconnect machine from power source (unplug).

- Keep anti-kickback pawls clean and operating smoothly to prevent injury due to kickback.
- Lubricate table with furniture wax or automotive paste wax for smoother feeding of workpiece. Do not use a lubricant that will affect the workpiece's ability to accept stains or protective finishes.
- Replace feed rollers, blades, and cutter knives if they become damaged. Sharpen blades and cutters when they become dull.

14.1 Lubrication

Disconnect machine from power source (unplug).

- Coat the elevating screws with light automotive bearing grease once a month.
- Lightly coat the chain drive and gears with light automotive grease once a month.
- Lubricate four columns with 10W machine tool oil once a month.

15.0 Troubleshooting the JPM-13CS

15.1 Mechanical and electrical problems

Trouble	Probable Cause	Remedy
Table difficult to adjust.	Lack of lubrication on corner posts and screws.	Lubricate corner posts and screws.
Chain is jumping.	Inadequate tension.	Adjust chain tension.
	Sprockets misaligned.	Align sprockets.
	Sprockets are worn.	Replace sprockets.
Machine will not start/restart or repeatedly trips circuit breaker or blows fuses.	No incoming power.	Verify power connections to planer.
	Building circuit breaker trips or fuse blows.	Verify that planer is on a circuit of correct size. Check amp setting on motor. If circuit size is correct, there is probably a loose electrical lead.
	Loose electrical connections.	Go through all the electrical connections on the planer including motor connections, verifying the tightness of each. Look for any signs of electrical arcing which is a sure indicator of loose connections or circuit overload.
	Motor failure.	If electric motor is suspect, you have two options: Have a qualified electrician test the motor for function or remove the motor and take it to a qualified electric motor repair shop and have it tested.
	Miswiring of the unit.	Check to confirm all electrical connections are correct and properly tight. Make any needed corrections.
	On/off switch failure.	If the on/off switch is suspect, you have two options: Have a qualified electrician test the switch for function, or purchase a new on/off switch and establish if that was the problem on changeout.

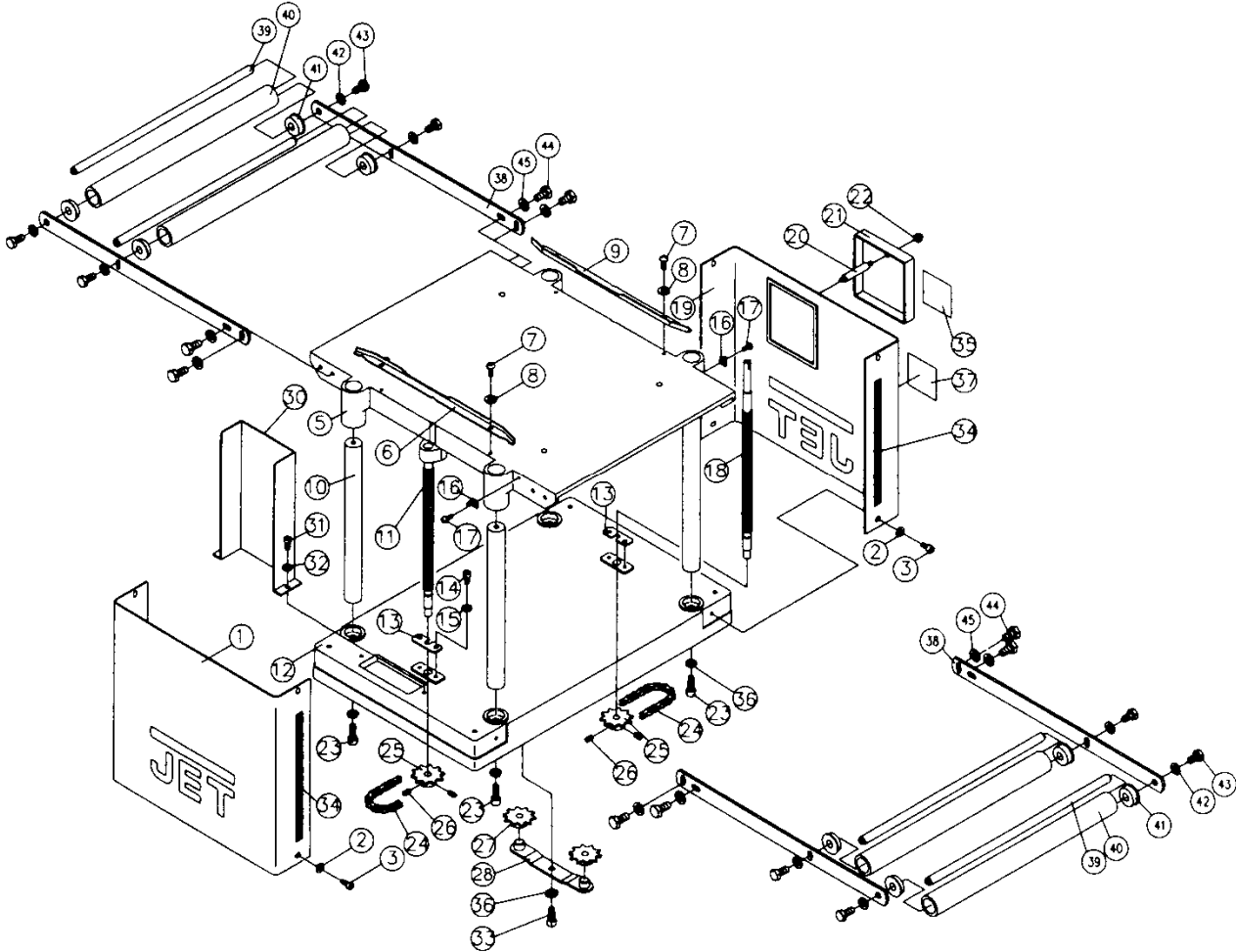
15.2 Performance problems

Trouble	Probable Cause	Remedy
Snipe.	Table rollers not set properly.	Adjust rollers to proper height.
	Inadequate support of long boards.	Support long boards with extension rollers.
	Uneven feed roller pressure front to back.	Adjust feed roller pressure.
	Dull knives.	Sharpen or replace knives.
	Lumber not butted properly.	Butt end-to-end each piece of stock as they pass through.
Fuzzy grain.	Planing wood with high moisture content.	Remove moisture by drying, or use different stock.
	Dull knives.	Sharpen or replace knives.
Torn grain.	Too heavy a cut.	Adjust proper depth of cut.
	Knives cutting against grain.	Cut along the grain where possible.
	Dull knives.	Sharpen or replace knives.
Rough/raised grain.	Dull knives.	Sharpen or replace knives.
	Too heavy a cut.	Adjust proper depth of cut.
	Planing wood with high moisture content.	Remove moisture by drying, or use different stock.
Rounded, glossy surface.	Dull knives.	Sharpen or replace knives.
	Feed rate too slow.	Increase feed rate.
	Cutting depth too shallow.	Increase cutting depth.
Poor feeding of lumber.	Inadequate feed roller pressure.	Adjust feed roller tension. If proper tension cannot be achieved, replace feed rollers.
	Planer table rough or dirty.	Clean pitch and residue from table, and apply paste wax.
	Belt slipping on pulleys.	Tighten belt.
	Surface of feed rollers too smooth.	Lightly roughen feed roller surface with sandpaper.
Wavering molding pattern.	Improper guide setup.	Review proper guide setup for molding.
Tearing out at end of molding.	Improper guide setup.	Review proper guide setup for molding.
	Inadequate outfeed pressure.	Adjust feed roller tension.
Uneven depth of cut side to side.	Knife projection not uniform	Adjust knife projection.
	Table not parallel to cutterhead.	Adjust table/cutterhead parallelism.
Board thickness does not match depth of cut scale.	Depth of cut scale is incorrect.	Adjust depth of cut scale.

16.0 Replacement Parts

Replacement parts are listed on the following pages. To order parts or reach our service department, call 1-800-274-6848 Monday through Friday (see our website for business hours, www.jettools.com). Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately.

16.1.1 Table and Base Assembly – Exploded View

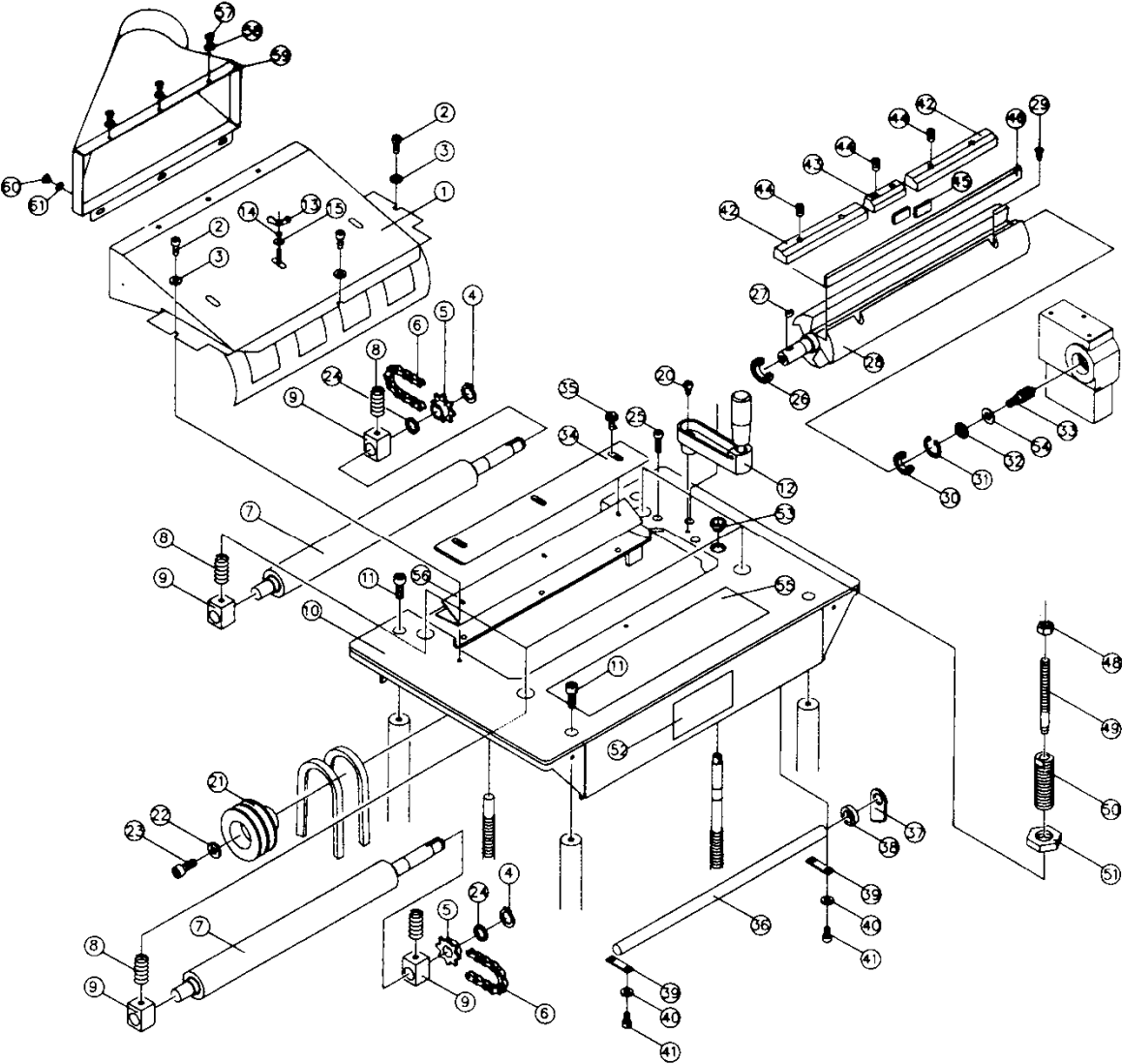


16.1.2 Table and Base Assembly – Parts List

Index No	Part No	Description	Size	Qty
1	MHA-B01W	Cover (left)		1
2	TS-0680021	Flat Washer	1/4	8
3	TS-1503011	Hex Socket Cap Screw	M6x8	8
4	MGA-B05	Scale (inch)		1
5	MHA-B02	Middle Table (serial # 6082715 and lower)		1
	MHA-B02AW	Middle Table (serial # 6082716 and higher)		1
6	MGA-B29	Guide (left)		2
7	TS-1534031	Pan Head Machine Screw	M6x10	4
8	TS-1551041	Lock Washer	M6	4
9	MGA-B15	Guide (right)		1
10	MHA-B03	Column		4
11	MHA-B04	Leadscrew (left – serial # 6082715 and lower)		1
	MHA-B04A	Leadscrew (left – serial # 6082716 and higher)		1
12	MHA-B05W	Base		1
13	MGA-B09	Anchor Plate		2
14	TS-1503031	Hex Socket Cap Screw	M6x12	4
15	TS-1551041	Lock Washer	M6	4
16	MHA-B20	Pointer		2
17	TS-1532022	Pan Head Machine Screw	M4x8	2
18	MHA-B06	Leadscrew (right – serial # 6082715 and lower)		1
	MHA-B06A	Leadscrew (right – serial # 6082716 and higher)		1
19	MHA-B07	Cover (right – serial #810xxx and lower)		1
	MHA-B07UW	Cover (right – serial #811xxx and lower)		1
21	MHA-B09	Gear Box Cover (serial #810xxx and lower)		1
	MHA-B09U	Gear Box Cover (serial #811xxx and higher)		1
22	5BB-B07	Hex Nut	M8x25	1
23	TS-1504051	Hex Socket Cap Screw	M8x25	4
24	5GF-B07	Chain		1
25	PGE-B14	Sprocket		2
26	TS-1523011	Set Screw	M6x6	4
27	PGE-B12	Sprocket		2
28	PGE-B10	Sprocket Idler/Bracket Bushing		1
29	PGE-B11	Bracket Bushing RE:PGE-B10		2
30	MHA-B10	Pulley Cover		1
31	TS-1503021	Hex Socket Cap Screw	M6x10	2
32	TS-0680021	Flat Washer	1/4	2
33	TS-1504051	Hex Socket Cap Screw	M8x20	1
34	MGA-B04	Scale (metric)		1
35	MHA-B11	Speed Label (serial #810xxx and lower)		1
	MHA-B11U	Speed Label (serial #810xxx and higher)		1
36	TS-1551061	Lock Washer	M8	5
37	MHA-C18	Identification Label		1
	JPM13CS-RA	Roller Assembly		
38	MHD-Y01A	Roller Frame		4
39	MHA-Y02A	Roller Shaft		4
40	MHA-Y02C	Roller		4
41	PJ020804	Bushing		8
42	TS-1550041	Flat Washer	M6	8
43	TS-1482021	Hex Cap Bolt	M6x12	8
44	TS-1490011	Hex Cap Bolt ²	M8x12	8
45	TS-1550061	Flat Washer ²	M8	8

² included in Hardware Bag #2, p/n MHD-S17-A

16.2.1 Cutterhead and Roller Assembly – Parts List



16.2.2 Cutterhead and Roller Assembly – Parts List

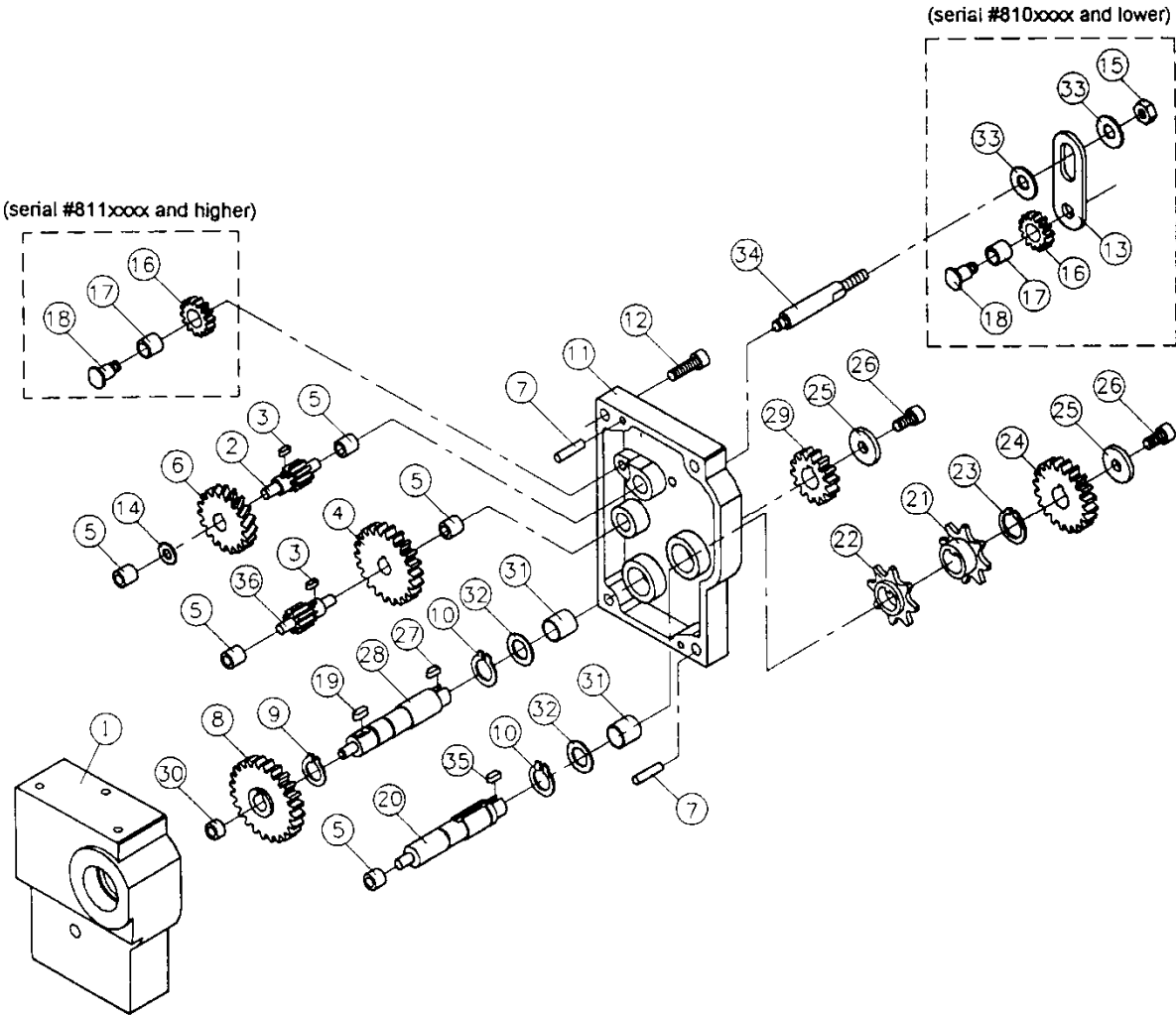
Index No	Part No	Description	Size	Qty
.....	MHA-CW	Dust Hood Assembly CP		1
1	MHA-C01AW	Dust Hood		1
2	TS-1503011	Hex Socket Cap Screw	M6x8	3
3	TS-0680021	Flat Washer	1/4	3
4	5FA-A10	C-Ring	STW15	2
5	PGA-C17	Sprocket		2
6	5GF-B08	Chain		2
7	MHA-C02	Feed Roller		2
8	PGA-C09	Spring		4
9	MGA-C09	Bushing		4
10	MHA-C03W	Head Body		1
11	TS-1504041	Hex Socket Cap Screw	M8x20	4
12	PGE-B19A	Handle Assembly		1
13	TS-2321041	Wing Nut		3
14	PGE-B19B	Bushing		1

Index No	Part No	Description	Size	Qty
15	PGE-B19C	Stud		1
20	TS-1503021	Hex Socket Cap Screw ²	M6x10	1
21	MHA-C05	Spindle Pulley		1
22	TS-0680021	Flat Washer	1/4	1
23	TS-1503051	Hex Socket Cap Screw	M6x20	1
24	MHA-C06	Spacer		2
25	TS-1503041	Hex Socket Cap Screw	M6x16	3
26	BB-6203ZZ	Ball Bearing		1
27	5FK-C06	Key	5x5x15	1
28	MHA-C07	Cutterhead		1
29	TS-1513021	Flat Head Screw	M5x12	6
30	BB-6202ZZ	Ball Bearing		1
31	5BA-A28	C-Ring	RTW35	1
32	MHA-C08	Bushing		1
33	MHA-C09	Gear		1
34	MHA-C10	Chip Deflector		1
35	5AK-E128	Screw	M6x12	3
36	MHA-C11	Anti-Kickback Shaft		1
37	MGA-C30	Anti-Kickback Finger		36
38	MGA-C34	Anti-Kickback Collar		37
39	MGA-C31	Bracket		2
40	TS-1551031	Lock Washer	M5	4
41	TS-1502011	Hex Socket Cap Screw	M5x8	4
42	MHA-C12	Lock Bar (long)		6
43	MGA-C22	Lock Bar (short)		3
44	TS-1524031	Set Screw	M8x12	18
45	MGA-C23	Lock Bar Spacer		6
46	708366	Knife (set of 3)		1
48	TS-1540071	Hex Nut	M10x1.5	4
49	MGA-C07	Adjustment Screw		4
50	MGA-C05	Adjustment Screw		4
51	MGA-C06	Nut		4
52	MHA-C19	Warning Label (long)		1
53	PGE-B13	Bushing		1
54	MHA-C20	Washer		1
55	PJE-C03	Warning Label (small)		1
56	MHA-C22W	Plate		1
57	TS-1533031	Screw ²	M5x10	3
58	TS-1550031	Flat Washer ²	M5	3
59	708361	Dust Chute Assembly		1
60	HS040703	Screw ²	M6x8	3
61	TS-1550041	Flat Washer ²	M6	3
	MHA-X06	Brass Bar (not shown) ¹		1
	MGA-B14A	Feed Roller Adjustment wrench 17/32mm (not shown) ¹		1
	MGA-B14D	Knife Setting Gauge (not shown) ¹		1
	MGA-B14F	Molding Cutter Gauge (not shown) ¹		1
	MHA-X07	T-Handle Hex Wrench (not shown) ¹	4mm	1

¹ included in Hardware Bag #1, p/n MHD-S17

² included in Hardware Bag #2, p/n MHD-S17-A

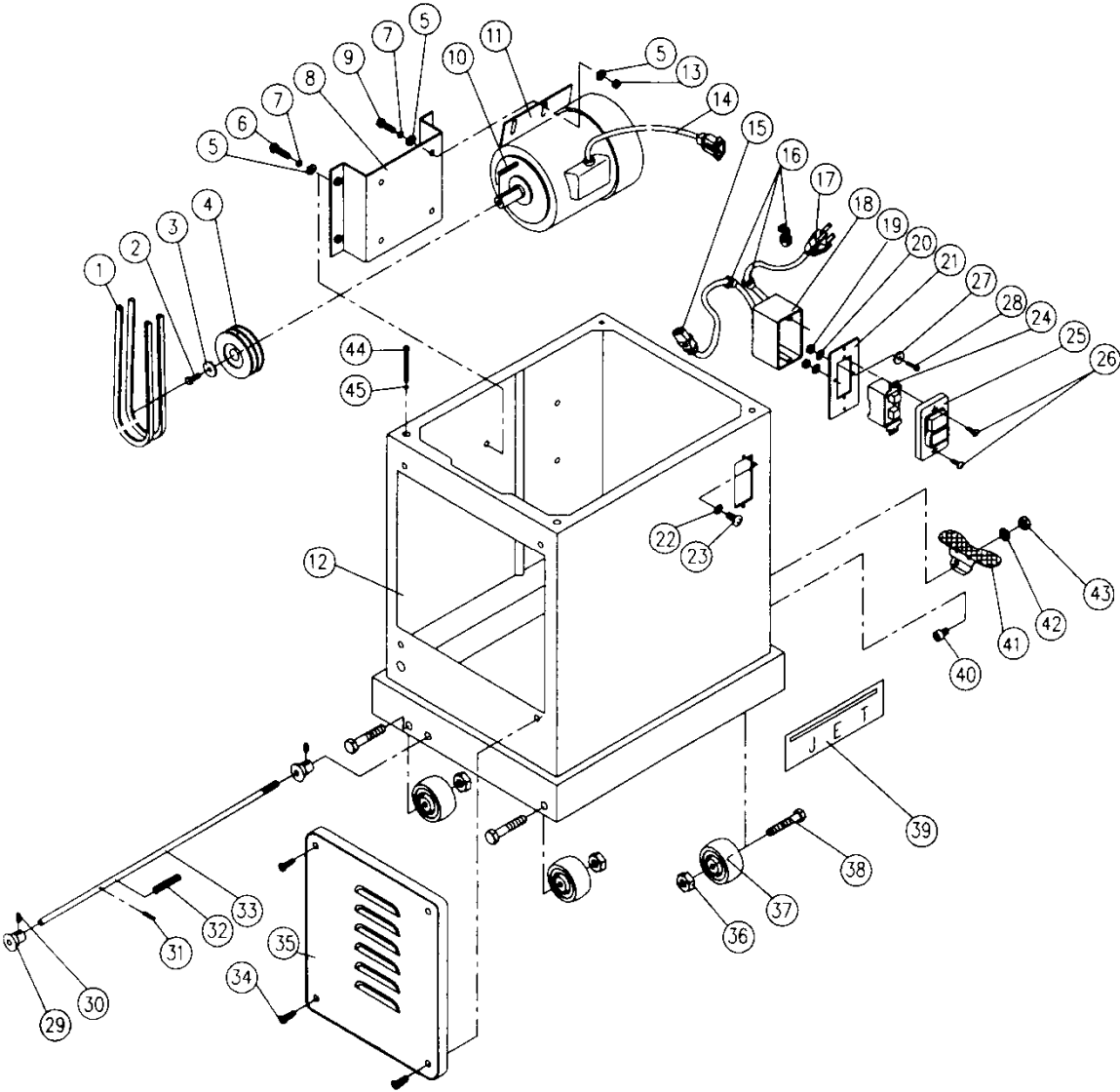
16.3.1 Gearbox Assembly – Parts List



16.3.2 Gearbox Assembly – Parts List

Index No	Part No	Description	Size	Qty
	MHA-G	Gearbox Assy (#'s 1-33,35) (serial #810xxxx and lower)		1
	MHA-GUW	Gearbox #'s (#'s 1-12,14,16-32,35-36) (serial #811xxxx and higher)		1
1	MHA-G01	Gearbox Body (serial #810xxxx and lower)		1
	MHA-G01UW	Gearbox Body (serial #811xxxx and higher)		1
2	MHA-G02	Gear Shaft (serial #810xxxx and lower)	10T	2
	MHA-G02	Gear Shaft (serial #811xxxx and higher)	10T	1
3	FK-A03	Key	3x3x8	2
4	MHA-G03	Gear (serial #810xxxx and lower)	46T	1
	MHA-G03U	Gear (serial #811xxxx and higher)	44T	1
5	PGA-M15	Bushing		5
6	MHA-G04	Gear (serial #810xxxx and lower)	38T	1
	MHA-G04U	Gear (serial #811xxxx and higher)	43T	1
7	MGA-C28	Pin	4x16	2
8	MHA-G05	Gear (serial #810xxxx and lower)	51T	1
	MHA-G05U	Gear (serial #811xxxx and higher)	47T	1
9	5FA-A07	C-Ring	STW12	1
10	5FA-A07	C-Ring	STW12	2
11	MHA-G06	Gear Box Cover (serial #607xxxx and lower)		1
	MHA-G06N	Gear Box Cover (serial #608xxxx to 810xxxx)		1
	MHA-G06UW	Gear Box Cover (serial # 811xxxx and higher)		1
12	TS-1503051	Hex Socket Cap Screw	M6x20	4
13	MHA-G07	Bracket (serial #607xxxx and lower)	R.H.	1
	MHA-G07N	Bracket (serial #608xxxx to 810xxxx)	L.H.	1
14	TS-0680021	Flat Washer (serial #810xxxx and lower)	1/4	2
	TS-0680021	Flat Washer (serial #811xxxx and higher)	1/4	1
15	TS-1540041	Hex Nut (serial #810xxxx and lower)	M6x1.0	1
16	MHA-G08	Gear (serial #607xxxx and lower)	24T	1
	MHA-G08N	Gear (serial #608xxxx to 810xxxx)	28T	1
	MHA-G08U	Gear (serial #811xxxx and higher)	22T	1
17	PGA-M12	Bushing		1
18	MHA-G09	Stud Bolt (serial #607xxxx and lower)		1
	MHA-G09N	Stud Bolt (serial #608xxxx and higher)		1
19	MHA-G18	Key	5x5x9	1
20	MHA-G10	Shaft (serial #607xxxx and lower)		1
	MHA-G10N	Shaft (serial #608xxxx and higher)		1
21	PGA-C17	Sprocket		1
22	MGA-C32	Sprocket		1
23	5FA-A10	C-Ring	STW15	1
24	MHA-G11	Gear (serial #810xxxx and lower)	43T	1
	MHA-G11U	Gear (serial #811xxxx and higher)	40T	1
25	5EB-A08	Washer		2
26	TS-1503031	Hex Socket Cap Screw	M6x12	2
27	5FK-B02	Key	4x4x7	1
28	MHA-G12	Shaft (serial #607xxxx and lower)		1
	MHA-G12N	Shaft (serial #608xxxx to 810xxxx)		1
	MHA-G12U	Shaft (serial #811xxxx and higher)		1
29	MHA-G13	Gear (serial #810xxxx and lower)	31T	1
	MHA-G13U	Gear (serial #811xxxx and higher)	29T	1
30	MHA-G14	Bushing (serial #810xxxx and lower)	I.D. 6	1
	MHA-G14U	Bushing (serial #811xxxx and higher)	I.D. 10	1
31	MHA-G15	Bushing (serial #607xxxx and lower)		2
	MHA-G15N	Bushing (serial #608xxxx and higher)		2
32	MHA-G16	Washer		2
33	MHA-G17	Washer (serial #810xxxx and lower)		2
34	MHA-B08	Stud		1
35	5FK-B05	Key	4x4x12	1
36	MHA-G19	Gear Shaft (serial #811xxxx and higher)	10T	1

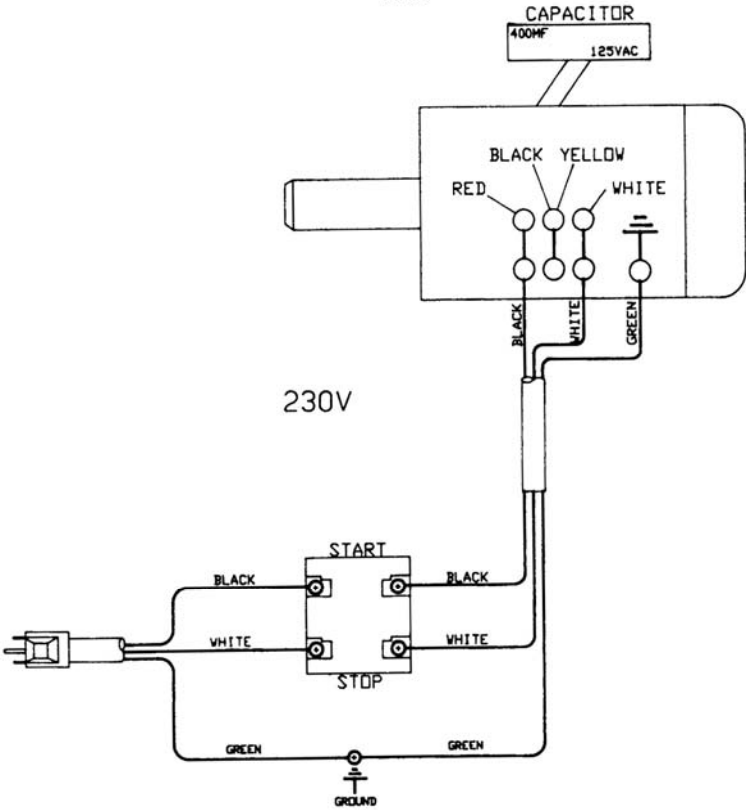
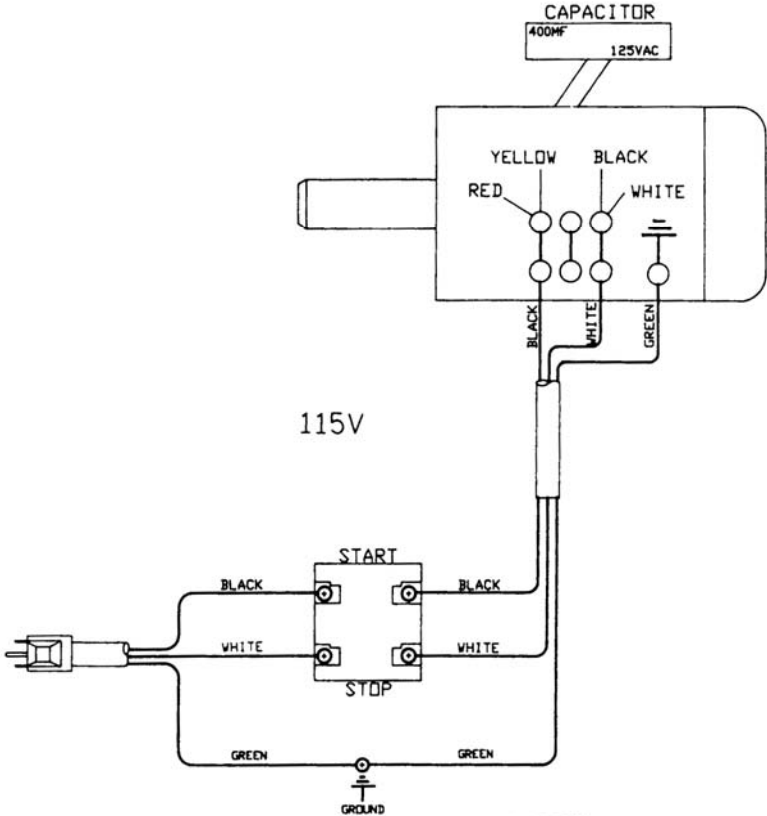
16.4.1 Stand and Motor Assembly – Parts List



16.4.2 Stand and Motor Assembly – Parts List

Index No	Part No	Description	Size	Qty
1	VB-M45	V-Belt		2
2	TS-0051011	Hex Cap Bolt	5/16-18NCx1/2	1
3	PJA-C03	Washer		1
4	MHA-S01	Motor Pulley		1
5	TS-1550061	Flat Washer	M8	12
6	TS-2288202	Pan Head Machine Screw	M8x1.25x20	4
7	TS-1551061	Lock Washer	M8	8
8	MHD-S02	Motor Bracket		1
9	TS-1490031	Hex Cap Bolt	M8x1.25x20	4
10	5FK-C13A	Key	5x5x30	1
11	MHA-S02AW	Motor	1½ HP 115/230V	1
	MHA-S02W	Motor Assembly (includes # 10,11,14)		1
12	MHD-S01	Stand		1
13	TS-1540061	Hex Nut	M8x1.25	4
14	MHA-S02B	Motor Cord	14AWG	1
15	MHA-S14	Switch Cord	14AWG	1
16	5MA-I04	Strain Relief Bushing		3
17	MHA-S16	Power Cord	14AWG	1
18	JEA-S14	Switch Box		1
19	TS-1540021	Hex Nut	M4	2
20	5EB-E05	Star Washer	M5	2
21	JE090702	Plate		1
22	5EB-A04	Washer	M5	2
23	5CD-C06B	Screw	3/16-24NCx1/2	2
24	JE011302	Switch		1
25	JJ-X01	Switch Cover		1
26	5AL-C10A	Pan Head Machine Screw	M4x25	2
27	TS-1550021	Washer		2
28	TS-2284301	Flat Head Machine Screw	M4x.7x30	2
29	PJN-S04	Eccentric Cam		2
30	TS-1523011	Set Screw	M6x1.0x6	2
31	HG010911	Spring Pin	4x20	1
32	PG010033	Spring		1
33	MHD-S03	Shaft		1
34	5EA-E06A	Flat Head Screw	M6x1.0x12	4
35	PJ100001	Door		1
36	TS-0561031	Lock Nut	3/8-16NC	4
37	PJE-S05	Wheel		4
38	5CA-H16B	Hex Cap Bolt	3/8-16NCx2 ½	4
39	PG-M02	JET Label		1
40	TS-1503031	Hex Socket Cap Screw	M6x1.0x12	1
41	PJN-S02	Foot Brake		1
42	TS-1550071	Washer	M10	1
43	TS-2342101	Lock Nut	M10x1.5	1
44	TS-1550041	Flat Washer	M6	4
45	HS020440	Hex Socket Cap Screw	M6x70	4
	STRIPE-1-3/4	JET Stripe (not shown)	1-3/4"W	per ft.

17.0 Electrical Connections





427 New Sanford Road
LaVergne, Tennessee 37086
Phone: 800-274-6848
www.jettools.com