IMPORTS, INC.

3/4 H.P. SHAPER

MODEL G1024

INSTRUCTION MANUAL

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DISCONTINUED MACHINE MANUAL DISCLAIMER

THE INFORMATION IN THIS MANUAL REPRESENTS THE LAST CONFIGURATION OF THE MACHINE BEFORE IT WAS DISCONTINUED. MACHINE CONFIGURATIONS MAY HAVE CHANGED AS PRODUCT IMPROVEMENTS WERE INCORPORATED. IF YOU OWN AN EARLIER VERSION OF THE MACHINE, THIS MANUAL MAY NOT EXACTLY DEPICT YOUR MACHINE . CONTACT CUSTOMER SERVICE IF YOU HAVE ANY QUESTIONS ABOUT DIFFERENCES. PREVIOUS VERSIONS ARE NOT AVAILABLE ONLINE.

TABLE OF CONTENTS

I. INTRODUCTION

We are proud to offer the Model G1024 Shaper. The Model G1024 is part of a growing Grizzly family of fine woodworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

The Model G1024 is intended for use in a home or small professional shop. This shaper features a 3/4 H.P., 110 / 220V single phase motor and full reversing capabilities. The Model G1024 also features a precision-ground cast iron table and 1/2" spindle. This shaper operates at 10,000 RPM, giving you plenty of shaping flexibility at a very reasonable price.

A number of optional accessories for the Model G1024 are available through the Grizzly catalog. They include a heavy-duty mobile base and a router bit spindle, which enable your shaper to use most standard 1/2" router bits.

We are also pleased to provide this instructional manual with the Model G1024 Shaper. This manual was written to guide you through assembly, review safety considerations and cover general operating procedures. It represents our latest effort to produce the best documentation possible. If you have any constructive criticisms or comments you feel we should include in our next printing, please write us at the address below.

Manager, Technical Documentation
Grizzly Industrial, Inc.
P.O. Box 2069
Bellingham, WA 98227

Finally, we stand behind our machines. We have two excellent regional service departments at your disposal, should the need arise. If you have any service questions or parts requests, please call or write us at the appropriate location listed below.

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II. COMMENTARY

To operate this, or any power tool, safely and efficiently, it is essential to become as familiar with its characteristics as possible. Take as much time as necessary to become acquainted with the Model G1024 Shaper. The time you invest before you begin to use this machine will be time well spent. Also, read all of the safety procedures. If you do not understand something, do not operate this machine.

The specifications, drawings and photographs illustrated in this manual represent the Model G1024, as supplied when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes to the Model G1024 may be made at any time with no obligation on the part of Grizzly.

The information in this manual has been obtained from sources believed to be reliable and as up-to-date as possible. While this manual is intended to be a substantial source of basic shaping information, it is by no means the last word on shaping. Instead, we have focused primarily on the proper assembly and adjustment of the machine – as well as some basic information on shaping procedures. We have also included some important safety measures which we believe to be essential to this machine's operation. While most safety measures are generally universal, Grizzly cautions that each workshop is different and safety rules should be considered *as they apply to your individual situation.*

The shaper is a fundamental machine, capable of performing a wide range of work. Its primary function is to profile edges for moldings and cabinets. The shaper can also be used for making joints, grooves, flutes and profiles in many different designs and shapes.

The shaper is designed for highly-skilled individuals who have an understanding of wood and how it mills. A strong knowledge of woodworking is essential for the proper use of the shaper and its correct applications. We realize there are numerous kinds of cutters and specialized techniques used to shape wood throughout the woodworking community. To list all of the techniques necessary to operate a shaper correctly for specific applications would require many volumes.

If you are not familiar with shapers and their safe operation, we strongly suggest you obtain as many books on the subject as you can. Grizzly has a number of fine books available on wood shaping. A visit to the local library, or time spent browsing through back issues of woodworking magazines will prove beneficial in gaining knowledge of shaper operations.

III. SAFETY RULES FOR ALL TOOLS

WARNING! As with all power tools, there is a certain amount of inherent danger associated with the Model G1024 Shaper. Using the tool with respect and caution will considerably lessen the possibility of mechanical damage or operator injury. However, if normal safety precautions are overlooked or ignored, injury to the operator or others in the area is possible.

There are certain applications for which this tool was designed. We strongly emphasize that this tool should never be modified and/or used for any application other than that for which it was designed. If you are confused about any aspect of this machine, **do not** use it until you have resolved any questions you might have. The following are important safety rules for all tools:

1. **KNOW YOUR POWER TOOL.** Read the owner's manual carefully. Learn the tool's applications and limitations, as well as its particular hazards.

2. **KEEP GUARDS IN PLACE** and in working order.

3. **GROUND ALL TOOLS.** If the tool is equipped with a three-prong plug, it should be plugged into a three-hole grounded outlet. If an adapter is used to accommodate a two-prong receptacle, the adapter plug must be attached to a known ground. Never remove the grounding prong.

4. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make it a habit to check that keys and adjusting wrenches are removed from the machine before turning it on.

5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

6. **AVOID DANGEROUS ENVIRONMENTS.** Do not use power tools in damp or wet locations or expose them to rain. Keep your work area well lighted.

7. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance away from your work area.

8. **MAKE WORKSHOP CHILD-PROOF** with padlocks, master switches, or by removing starter keys.

9. **DO NOT FORCE TOOL.** Tools work better and more safely when they are allowed to work at their own speed.

10. **USE THE RIGHT TOOL.** Do not use a tool or an attachment to do a job it wasn't intended for.

11. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, or jewelry that might get caught in moving parts. Non-slip footwear is also recommended. Wear a hat or other protective head wear if your hair is long.

12. **USE SAFETY GLASSES AND EAR PROTECTION.** Also use a dust mask if the cutting operation is dusty.

13. **SECURE YOUR WORK.** Use clamps or a fixture to hold your work. It is safer than using your hands and frees up both hands for operating the tool.

14. **DO NOT OVERREACH.** Keep proper footing and balance at all times.

15. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **DISCONNECT TOOLS FROM POWER** before servicing and when changing accessories, such as blades, bits and cutters.

17. **USE RECOMMENDED ACCESSORIES.** Consult the current catalog for recommended accessories. The use of improper accessories may be hazardous.

18. **AVOID ACCIDENTAL STARTING.** Make sure the switch is in the "OFF" position before plugging in the cord.

19. **NEVER STAND OR LEAN ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

20. **CHECK DAMAGED PARTS.** Before further use of the tool, any part or guard that is damaged should be promptly repaired or replaced. Do not operate the machine until you are certain it is in perfect running condition. Failure to follow this precaution could result in further mechanical damage and operator injury.

21. **DIRECTION OF FEED.** Always feed your work against the direction of blade or cutter travel. Workpieces fed in the same direction as the cutter travel could be forced out of your control.

22. **NEVER LEAVE THE TOOL RUNNING UNATTENDED - TURN POWER OFF.** Do not leave the tool until it comes to a full stop.

23. **DRUGS, ALCOHOL, MEDICATION.** Do not operate the tool under the influence of drugs, alcohol, or any medication. Never operate machinery when overly fatigued.

IV. UNPACKING

The Model G1024 Shaper is shipped from the factory in heavy-duty cardboard packaging. Carefully remove the cardboard box by cutting through the box at its base. The top of the box can then be lifted off and set aside while you make your inspection of the machine. You can use the box, turned upside down, as a receptacle for other packing materials as you prepare to set up the shaper.

If you find the machine is damaged after you've signed for delivery and the truck and driver are already gone, you will need to file a freight claim with the carrier. Save the containers and all packing materials for inspection by the carrier or their agent. Without the packing materials, filing a freight claim can be difficult. If you need advice regarding this situation, please call us.

Caution: The shaper weighs a hefty 155 pounds in its packaging. DO NOT over-exert yourself while unpacking or moving this machine. Use a heavy-duty hand truck whenever possible while moving the shaper. If it has to be moved up or down a flight of stairs, be sure the staircase is capable of supporting the combined weight of you and the shaper. Always get plenty of assistance when attempting to move the Model G1024.

Figure 1

V. PIECE INVENTORY

Take a quick inventory of the parts and put them aside for assembly later.

Since the majority of the shaper is pre-assembled at the factory, there aren't a lot of items to inventory. You should have the following:

- Shaper Unit
- Miter Gauge
- Spindle and Spacers
- Fence Boards
- Freehand Guard
- Bolt Bag (See below)
- Stand (4 pcs.)
- Adjustable Fence (3 pcs.)

The Model G1026 Bolt Box contains:

Rubber Feet	(4)	Nut M8-1.25	(16)
Hex Bolt M6-1.0x12	(4)	Flat Washer 3/8"	(16)
Hex Nut M6-1.0	(4)	Slot Head Screws	(4)
Flat Washer 3/8"	(4)	Flat Washer 5/16"	(4)
Carriage Bolt M8-1.25x20	(16)	Nut M8-1.25	(4)

The quantities given here are the minimum necessary to do the job; there may be some extra parts. On the other hand, bolt bags are occasionally shipped from the factory with a nut or bolt missing. You might consider replacing those items at your local hardware store. It's not that we're trying to cheat you, but if you are short two screws that cost 10¢ apiece, it's much cheaper to buy locally than writing or phoning us. Even more, the time saved in shipping will mean that your shaper is ready to use right away. Of course, if the number of items missing is extensive, or if the missing parts are more substantial than nuts or bolts, we want to know about it, so we can eliminate problems for future customers.

VI. CLEAN-UP BEFORE ASSEMBLY

All of the unpainted surfaces on this machine – and a few of the painted ones – are coated with a preservative oil, called Cosmolene, which prevents rust and corrosion during shipping. The coating can be removed with paint thinner (mineral spirits) and a good supply of paper towels, although you may find that careful scraping with a putty knife may be necessary where the coating is particularly thick. Use caution when removing the coating with your putty knife to avoid scratching the table top or painted surfaces on your shaper.

DO NOT use gasoline, lacquer thinner, acetone, or other highly-flammable solvents. The possibility of flash fire or explosion is far greater and they don't work much better anyway. Don't use chlorinated solvents, such as perchloroethelene; they will lift the paint and ruin the shaper's finish. Be careful when working around the drive belts. Any solvent that cuts grease will, in the long run, be harmful to rubber. While you are cleaning the shaper, please pay attention to the following rules:

1. Work only in a well-ventilated area.

2. Make sure there are no sources of open flame in your work area, such as pilot lights or woodstoves.

3. DO NOT smoke while you're working.

4. Dispose of soiled towels in a proper manner to avoid fire and environmental damage.

Packaged in a separate box you will find a number of parts also covered with Cosmolene. The smaller pieces are best cleaned by placing them in a container of solvent for several minutes. After soaking, the remaining coating may be removed with firm pressure, using rags or paper towels. Some pieces may have to be pried apart using a putty knife. Don't forget to remove the fence assembly and clean under it. Once again, dispose of waste properly.

VII. SITE PLANNING

When placing the planer in your shop, three considerations should be addressed; floor load, working clearances and electrical requirements. We'll look at the first two requirements now and leave the third for the next section.

A. FLOOR LOAD

Your Model G1024 Shaper represents a fairly large weight load in a small footprint. For planning purposes, the intended work area should be able to take a uniform distributed live load of 100 pounds per square foot. Most commercial and residential floors are suitable for the Model G1024, though some older wooden residential floors may require some additional build up to support both machine and operator.

B. WORKING CLEARANCES

Working clearances will vary from one customer to the next, depending on individual requirements. Place your shaper in a position that can handle your most ambitious shaping requirements. The working area around the shaper should be lit well enough to eliminate shadows.

VIII. ELECTRICAL SERVICE REQUIREMENTS

The Grizzly Model G1024 Shaper is furnished with a complete electrical package: A 3450 RPM TEFC 3/4 H.P. motor, ON-OFF starter switch, FORWARD/REVERSE switch and a cord set. The motor is single phase and may be operated on 220/240V, as well as 110/120V.

A. GENERAL

The Model G1024 comes with a standard 110V cord and plug. Its motor draws 10 amps. While that is not excessive, using the Model G1024 on a circuit that is already close to capacity could result in overload. If possible, add a circuit specifically for the shaper. A 15-amp circuit breaker is ideal for the Model G1024.

If you choose to re-wire the Model G1024 for 220V operation, use NEMA-approved connecter plugs. See Figure 2 for examples of typical plug configurations. You should also check with our service department for specific information on motor re-wiring requirements. Your local building department or a licensed electrical contractor should also be able to help you if electrical requirements exceed your understanding.

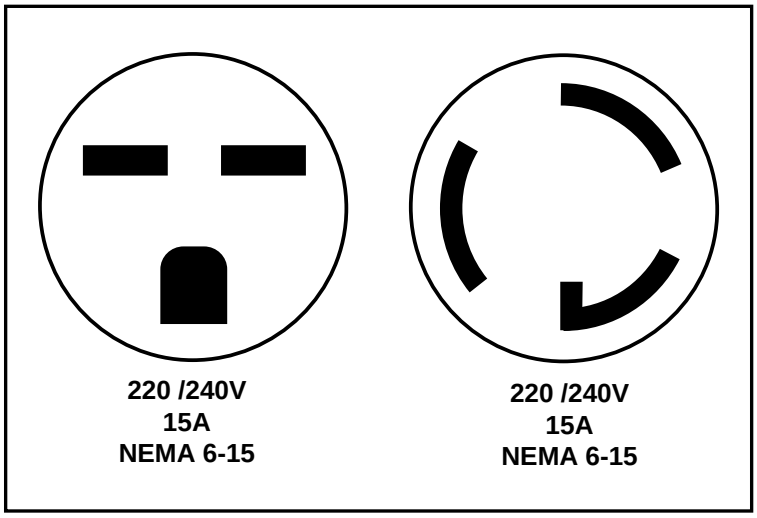


Figure 2

B. GROUNDING

If you are plugging into an existing outlet, ensure that it is grounded. If not, it will be necessary to run a separate grounding wire, #10 copper or larger, from the frame of the machine to the grounding stud at your service panel.

If you find it necessary to use an extension cord with your shaper, make sure its conductors are rated at #10 or larger (for 220V). The cord should be rated for hard service (S-type jacket), with NEMA-approved connectors and a ground wire. An SJ-rated cord (#12-wire) should be sufficient for 110V.

CAUTION: Never cut the grounding pin from the plug. If you have problems with the electrics supplied with the G1024, please contact our service department for assistance. Should you decide to use a larger motor on the machine, DO NOT rely on the information above. Contact a licensed electrician or your local building department for proper wiring requirements.

IX. ASSEMBLY

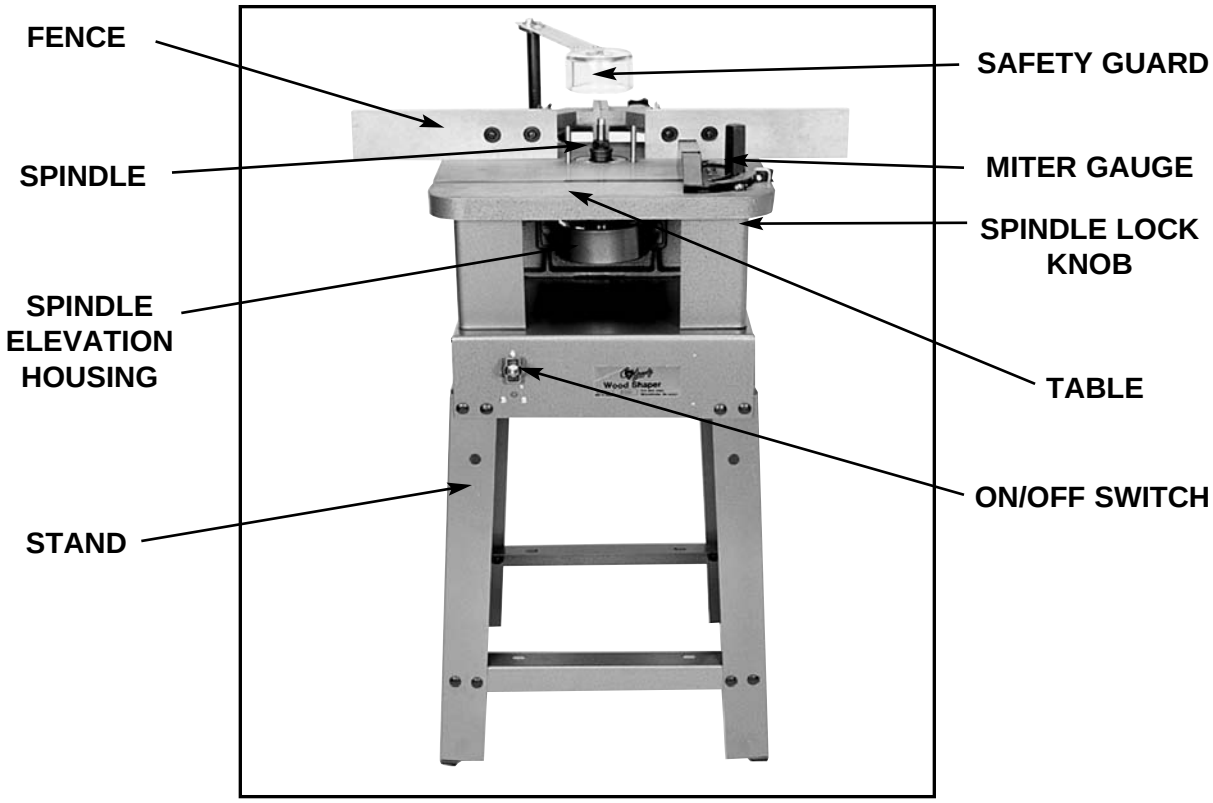


Figure 3

Carefully lift the Model G1024 Shaper from its packaging. Be sure to get plenty of help when attempting to lift or move the machine. The Model G1024 Shaper has a shipping weight of more than 150 lbs. Make sure you have plenty of help when it comes time to move the machine. The Model G1024 is largely pre-assembled at the factory, so very little actual assembly is required. The motor is already mounted and all wiring is in place. The remaining parts which require assembly are:

A. Stand
B. Fence
C. Safety Guard

The necessary assembly can be accomplished with a few hand tools. You'll need a 12mm wrench, a 14mm wrench, metric Allen wrenches and a Phillips head screwdriver. An adjustable wrench and a metric socket set are helpful, but not essential, for assembly.

A. STAND

The Model G1024 Shaper features an A-frame stand. Begin assembling the stand by attaching the four rubber feet to the bottom of the side panels with the M6-1.0x12 hex bolts, M6-1.0 hex nuts and $^{3}/_{8}$" flat washers provided. See Figure 4.

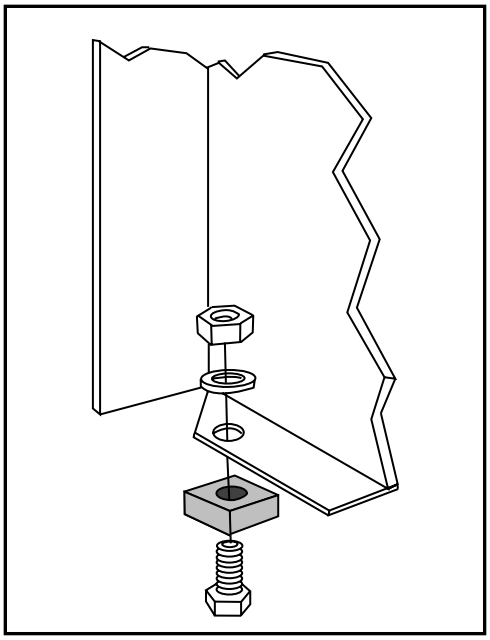


Figure 4

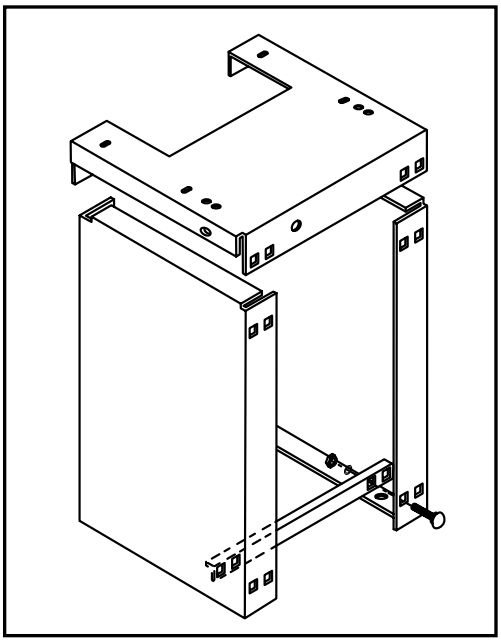


Figure 5

Once the rubber feet are connected, attach the crossbars loosely with the carriage bolts, nuts and washers provided. See Figure 5. At this point, the stand will be somewhat wobbly. You will find it a real help to have an assistant hold the stand in place while you attach the nuts and bolts.

When the stand's sides and crossbars are in place, set the sheet steel top piece in place, as shown in Figure 5. Make sure the square bolt holes are in alignment. When the bolt holes are correctly in line, attach the remaining carriage bolts. When you've got all the bolts attached, tighten all the nuts and bolts finger-tight. Working on a level surface, adjust the stand until the top piece is level. You can verify your results by placing a carpenter's level on the top, or measure diagonally from bottom corner to top corner of the stand. When all of your measurements are equal, tighten all of your bolts.

After you've made sure the stand is level and secure, place the shaper assembly on the stand. Align the holes on the bottom of the shaper with the holes in the top of the stand. Use the hex bolts, nuts and washers provided to secure the shaper to the stand.

NOTE: Sheet steel will often "spring" after it has been fabricated at the factory, occasionally making it difficult to line up precisely with other parts without a bit of effort. Don't be surprised if the stand requires a bit of "persuasion" to fit together. On the other hand, if the parts just don't seem to work together, try switching parts around (such as crossbars). If that doesn't work, call our service department and we'll try to help you remedy the situation.

B. FENCE ASSEMBLY

The Model G1024 Shaper comes with a two-piece adjustable fence. Before attaching the fence unit to the shaper table, you will want to “wood” it. The wood fence pieces included with the Model G1024 are pre-drilled and counterbored to allow the slotted mounting screws to rest below the wood surface once they are tightened.

Most woodworkers like to replace the wood pieces on the fence with wider and thicker boards. This gives the user greater stability and a larger bearing surface. The following procedure will ensure that the fence is parallel with itself and square with the table.

1. Ensure that the bolts on each side are tight and adequately countersunk.

2. To align the wood fences, adjust one or both fence halves so they are in close alignment. Micro-adjust and check the alignment with a good straight edge.

3. If the boards are not co-planar with each other, resurface the wooden fences as one unit. You can perform this operation on a jointer. See Figure 6.

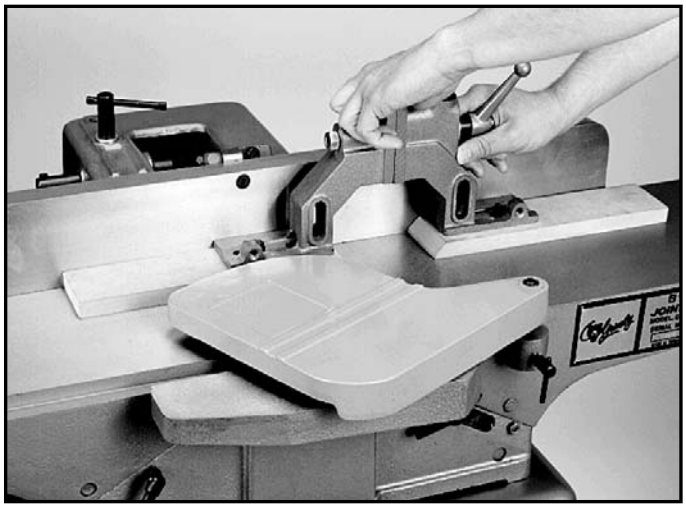


Figure 6

CAUTION: Make sure the bolt holes are countersunk deep enough so jointer knives will not come in contact with the heads of the bolts. Check the jointer fence and bed for square. Run the shaper fence through the jointer until both sides are co-planar. Check your work with your high-quality straight edge. Remember: If the jointer is not set up properly, the results will be unsatisfactory. This procedure can be continued as long as there is enough wood left for the jointer knives to clear the bolt heads.

Once you are satisfied that the fence is co-planar, mount the fence assembly on the shaper table. The mounting studs are already attached to the table. All you will need to do is remove the wing nuts, place the fence assembly on the studs and re-tighten the nuts.

C. SAFETY GUARD

The Model G1024 features a clear acrylic safety guard which is designed to deflect wood chips away from the machine's operator. To attach the guard, slip the support rod into the hole provided in the bracket bolted to the back of the shaper table. See Figure 7. The height of the safety guard can be adjusted by loosening the locking knob on the bracket and raising or lowering the support rod. Be sure to re-tighten the locking knob securely after making height adjustments.

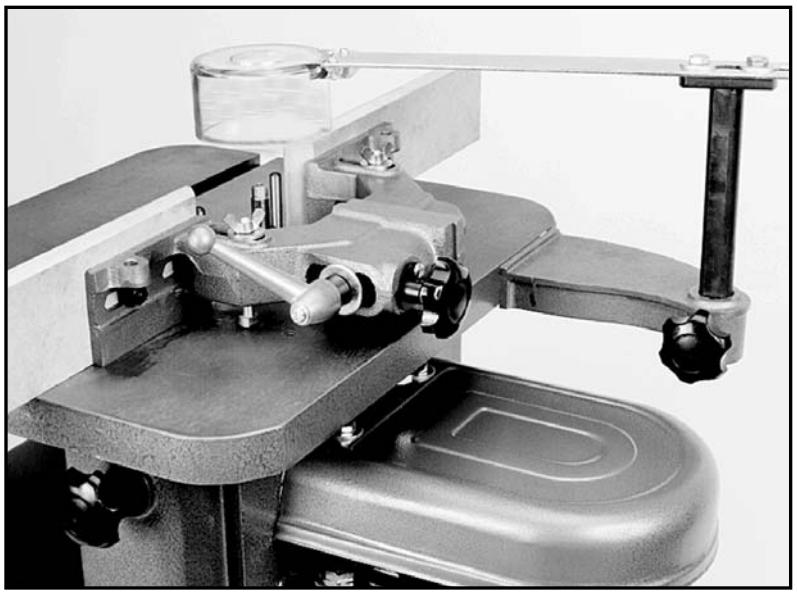


Figure 7

CAUTION: Always use some type of guard when operating your shaper. The cutter is spinning at 10,000 RPM – a knot or wood chip expelled from the shaper could cause severe injury to the operator if proper safety equipment is not in place.

In addition to a safety guard, always wear ANSI-approved eyewear and face shield to protect yourself while operating the shaper. Also avoid wearing loose fitting clothing and use a hat (to contain long hair, if needed). Always follow the safety guidelines we've noted here in the manual. A few simple steps can avoid a world of heartache.

X. SAFETY PROCEDURES

This tool is capable of causing serious injury if used recklessly. This doesn't mean that the machinery should be feared, but it does deserve a healthy respect for its power and potential danger.

At the beginning of this manual we shared some general safety procedures with you. We want to re-emphasize a few points we feel are critical to safe shaper operation:

1. **GROUND EQUIPMENT PROPERLY**. We can't over-emphasize the importance of a well grounded machine.

2. **FOLLOW ELECTRICAL GUIDELINES.** The electrical guidelines in this manual have been well researched and represent safe and efficient standards for the operation of this tool.

3. **DISCONNECT TOOL DURING MAINTENANCE.** Any adjustments and/or maintenance should be done with the power off, the plug pulled from the outlet and after all moving parts have come to a complete stop.

4. **AVOID FIRE DANGER.** Wood waste is combustible and wood dust can be explosive. Smoking and/or open fires should not be allowed in the work area.

5. **MAINTAIN A CLEAN WORK AREA.** Clean the machine and its surroundings thoroughly after each use.

6. **DON'T MIX WORK AND ALCOHOL.** If you have taken any kind of medication which can impair your responses, or if you have consumed any alcohol, **DO NOT USE THIS MACHINE**.

7. **MAKE WORKSHOP CHILDPROOF**. Use padlocks, master switches, or starter keys to prevent children from injuring themselves on this, or any other machine.

8. **KEEP HANDS AWAY FROM CUTTING KNIVES.** A lot of people get hurt – sometimes seriously, and always unnecessarily – by trying to pick out wood scraps from the surface of the table while the machine is running. DO NOT attempt to clear anything away from the cutters until the power is of, the shaper is unplugged and the cutter has come to a complete stop.

9. **SHAPE PROPER MATERIALS.** This shaper is designed to cut wood fibers only.

10. **SECURE SHAPER TO THE FLOOR.** The shaper should be permanently affixed to the floor. Use the holes provided in the base.

11. **READ THE MANUAL.** Know the limitations and hazards of this shaper before attempting to use it. If you don't understand some aspect of this machine's operation, DO NOT use it until you are informed. Please call us for advice, if necessary.

12. **SHORT STOCK.** Never attempt to shape stock shorter than 12 inches in length without special fixtures or jigs. Where practical, shape longer stock and cut to shape.

13. **12-INCH RULE.** When using this shaper, never allow your hands to come within 12 inches of the cutters.

14. **HAND SAFETY.** Never pass your hands directly over, or in front of the cutter. As one hand approaches the 12-inch radius point, move it away from the cutter to the outfeed side and reposition the hand at least 12 inches beyond the cutter.

15. **STOCK FEED.** Always feed stock opposite the direction of the cutter rotation. For example, if the cutter rotation is counterclockwise, feed from right to left. NEVER back stock out of the cutter along the fence, once the cut has been started. Instead, pull the stock straight back, away from the fence and cutter and begin the cut again. See Figure 8.

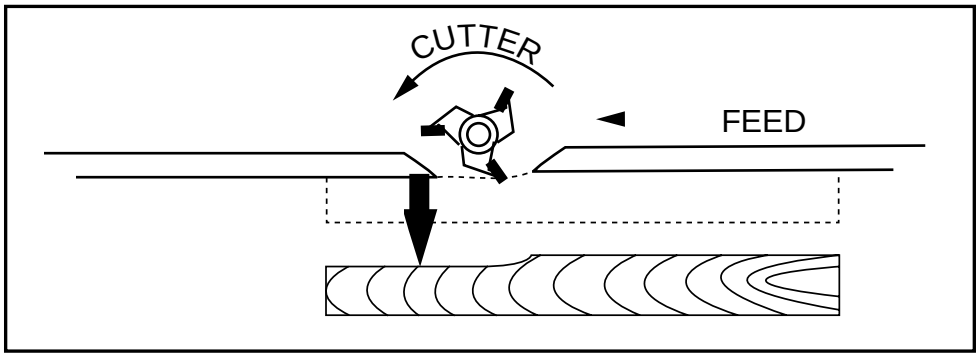


Figure 8

16. **BLIND CUT WHENEVER POSSIBLE.** This keeps the knives on the underside of the workpiece and provides a distance guard for the operator.

17. **CUTTER CLEARANCE.** With the machine unplugged, always rotate the spindle by hand with any new setup to ensure proper cutter clearance before starting the machine.

18. **SAFETY LOCK NUT.** Never operate the Model G1026 Shaper without the second locking nut in place over the spindle nut. See Figure 9.

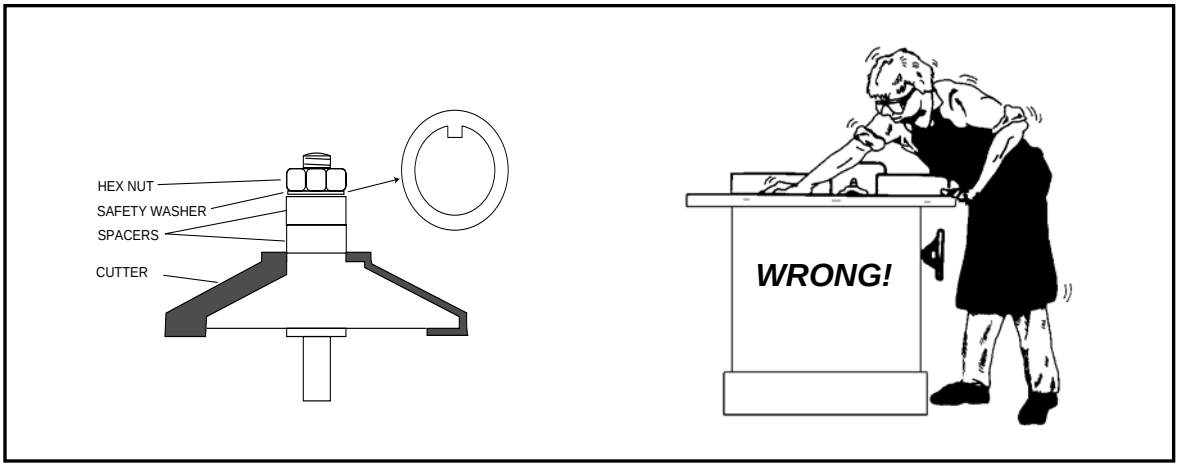


Figure 9

19. **DO NOT REACH OVER THE SHAPER.** There is a danger of kickback, which can pull your hand into the cutter. Work from directly in front of the shaper, whenever possible.

20. **STOCK CONDITION.** The danger of experiencing kick-back is increased when the stock has knots, holes, or foreign objects in it. Warped stock should be run through a jointer before attempting to run it through a shaper.

21. **MISUSE.** Do not use the Model G1024 for anything other than its intended purpose. If used for other purposes, Grizzly disclaims any real or implied warranty and is not responsible for any damage or injury which may result from that use.

22. **USE** the correct safety guards.

23. **MAKE** sure that fences, guides, or guards are mounted securely.

24. **ALWAYS USE** jigs, fixtures, or templates whenever possible.

25. **KEEP ANY** unused portion of the cutter below the table surface.

26. **NEVER** attempt to take too much material off in one pass.

27. **WHEN SHAPING CONTOURED WORK** and using a rub collar, NEVER start out at a corner. See the rub collar section further on in the manual.

28. **KEEP** all cutting surfaces sharp.

29. **BE SURE THE SPINDLE** turns freely and all adjustment tools, etc., are off of the table before the machine is turned on.

NOTE: Many manuals and books recommend the use of push sticks. While in some applications they are useful safety devices, in others they can be quite dangerous. If the pushstick comes in contact with the cutter on the end grain, it can fly out of your hand like a bullet – potentially causing serious injury. We recommend using, instead, some type of fixture, jig, or hold-down device as a safer alternative. This does not mean that we recommend using the machine without any safety protection. Use a guard, or other type of protective device at all times. Grizzly carries a number of protective devices for use with shapers. See the current catalog for details and ordering information.

30. **THE SPINDLE** must be adjusted correctly and locked in position before turning on the shaper.

31. **AGAIN, IF THERE IS ANY ASPECT** of this machine's operation you do not understand, DO NOT try to operate the shaper.

REMEMBER: ALWAYS WEAR PROTECTIVE EYEWEAR AND CLOTHING WHEN USING THIS, OR ANY OTHER MACHINERY.

XI. ADJUSTMENT SECTION

Any adjustments or maintenance performed on the Model G1024 should be done with the power off, the plug disconnected from the power source and only after all moving parts have come to a complete stop. Make sure the machine is level and secure.

The following are recommended steps for adjusting the shaper. Please read the following adjustment procedures to ensure the shaper is adjusted and ready for operation.

This section covers adjustment procedures for the following items. Read and follow these directions carefully.

A. Fence
B. Spindle
C. Spindle Elevation
D. Cutter Direction

A. FENCE

The Model G1024 Shaper's fence uses a two-piece adjusting system. Each fence is adjustable to compensate for different cutting thicknesses and special shaping applications, using the locking knob at the rear of the shaper. See Figure 10. One turn of the knob moves the split fence approximately $^{3}/_{64}$" (.040"). When removing material from the whole face of your workpiece, the outfeed fence should be adjusted to the proper offset to provide support for the workpiece as it passes over the cutter. To adjust the fence:

1. Adjust the infeed fence so the cutter will remove the desired amount of stock.

2. Lock the infeed fence in position with the locking bolt.

3. Make a test sample and inspect the results.

4. Adjust the outfeed fence to support the new profiled edge. Lock the outfeed fence into position and re-test. See Figure 11 and Figure 12 for improper and proper outfeed fence positioning.

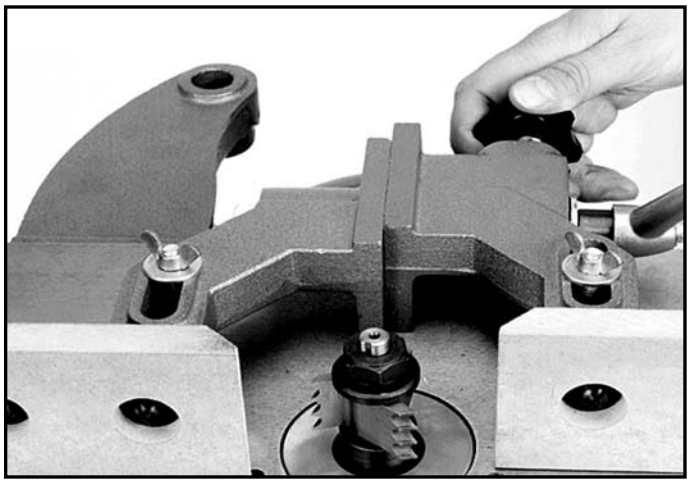


Figure 10

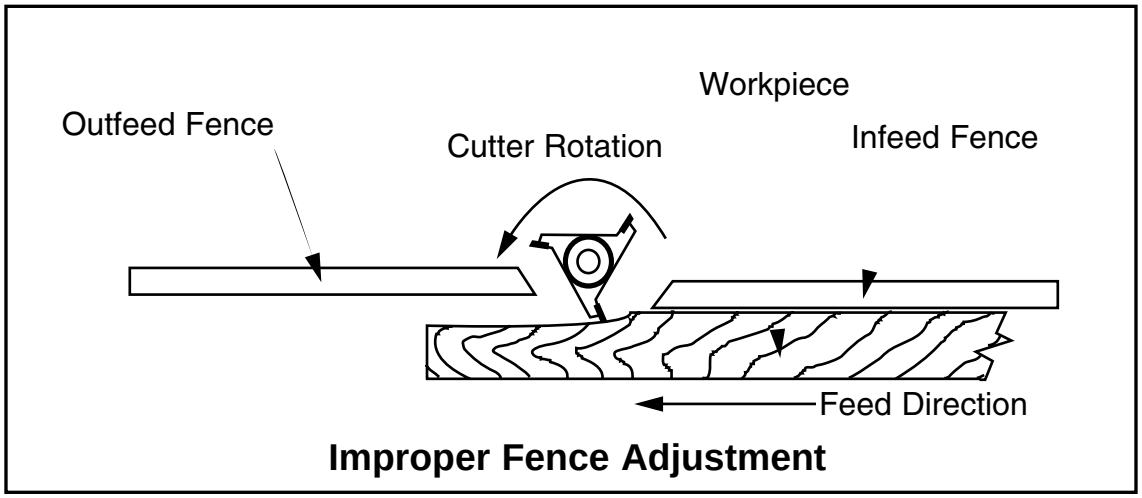


Figure 11

When the shaping operation removes the entire face of the workpiece, the shaped surface will not be supported by the outfeed fence when the fences are paralleled, or mis-aligned, as shown in Figure 11. In this case, a test sample of the desired cut should be advanced to the point shown, then stopped. Once the shaper is turned off and the cutter has come to a complete stop, the outfeed fence can be re-adjusted to provide support for the milled surface of the workpiece. See Figure 12.

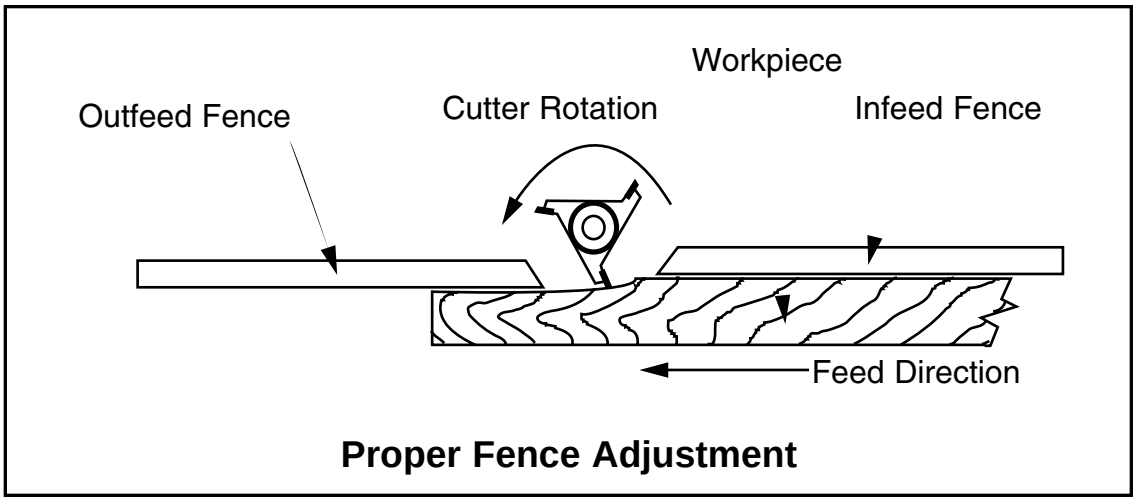


Figure 12

When performing work which requires that both fences be in-line – such as a cut where only a portion of the workpiece's surface comes in contact with the cutter – you should begin by adjusting the infeed fence to the point where only the desired amount of the workpiece comes in contact with the knives. Use a test piece to determine your ideal setting. Once your positioning is correct, lock the infeed fence in place.

Once you adjust the infeed fence to your liking, adjust the outfeed fence to the same plane as the infeed. Use a high-quality straight edge to ensure parallelism. Lock the outfeed fence in place. Once again, run a test piece through the shaper to check your results. See Figure 13. Remember to unplug your shaper while making fence adjustments.

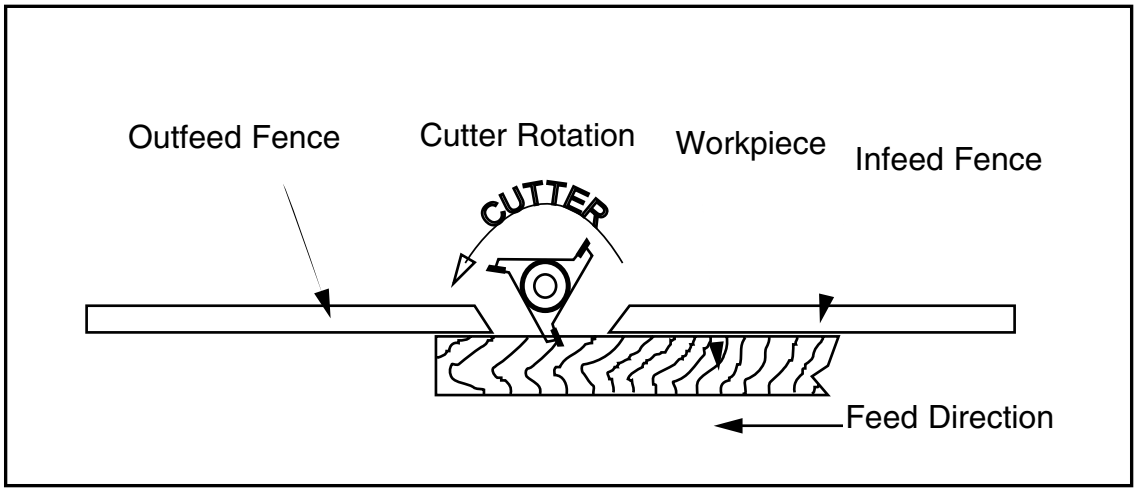


Figure 13

Take your time when adjusting the fence. Always use a piece of scrap wood to make a first run sample. Micro-adjust accordingly. Double check yourself to make sure all hold-down devices are secure. Remember to use appropriate guards when using the fence system.

B. SPINDLE

The standard 1/2" spindle on your Model G1024 Shaper is capable of using most available 1/2" cutters with maximum diameters of 2 7/8" and 2 3/8" maximum height. To install a cutter on your shaper:

1. Remove the spindle nut and safety washer from the spindle shaft. Some Model G1024 Shapers may feature a lock nut instead of a safety washer.

2. Select the proper shaper cutter for the application you desire and place it on the spindle. Make sure the cutter's direction of rotation is correct for your application.

3. Once the cutter is properly seated on the spindle shaft, replace the safety washer, making sure that it aligns properly with the notch in the spindle shaft.

4. Return the spindle nut to its position on the spindle shaft and tighten it. Use an appropriate wrench on the squared head of the spindle shaft to hold the shaft in place while you tighten the spindle nut. See Figure 14. If your shaper features a lock nut, tighten it over the spindle nut.

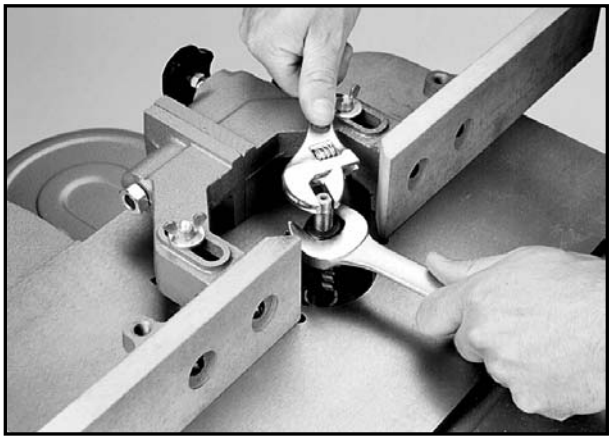


Figure 14

C. SPINDLE ELEVATION

The Model G1024 Shaper features a locking spindle which can be adjusted for up to $^{7}/_{8}$" of vertical movement. To adjust the height of the spindle:

1. Loosen the locking knob on the right-hand side of the shaper.

2. Reaching under the shaper table, move the vertical adjustment lever right or left until the spindle reaches its desired height. See Figure 15.

3. Re-tighten the locking knob.

4. Run a test piece through the shaper to verify that the spindle is set at the desired height and re-adjust as necessary.

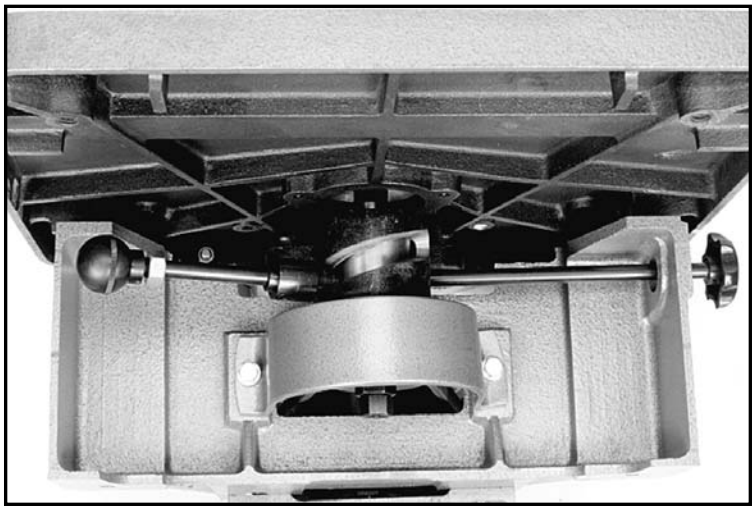


Figure 15

Figure 16

REMEMBER: Always make sure that the shaper's power switch is in in the "OFF" position and that the machine is disconnected from its power source before attempting to make adjustments to the machine or the shaper cutter. **Never** attempt to adjust the machine while the cutters are spinning.

E. CUTTER DIRECTION

Your shaper is equipped with a toggle FORWARD/REVERSE switch, located at the rear of the shaper. See Figure 16. Many shaper cutters are manufactured for both clockwise and counter-clockwise rotation, allowing you to cut above or below the board. Whenever possible, attach the cutter so the board is milled on the bottom side. This does a better job and it is safer for the operator.

CAUTION: Always check the direction of cutter rotation before any shaping operation. While many cutters are designed to be used in both directions, some are not. Make sure that the cutter you're using is intended for use in both directions before attempting to reverse it. Whenever using your shaper, make sure that your workpiece is fed against the direction of the cutter rotation. A workpiece fed into a cutter from the wrong direction may be thrown by the cutter, possibly causing injury to the user or any bystanders.

XII. RUB COLLARS

Rub collars are used when shaping curved or irregular workpieces, such as arched doors or round table tops. They also allow you to perform freehand work.

There are two types of rub collars; solid and ball-bearing. Don't confuse spacers with solid rub collars. Spacers aren't always machined to close tolerances and not every ball-bearing can be used as a rub collar. Grizzly carries an extensive line of spacers and rub collars designed for use with Grizzly shapers. See the current catalog for listings.

IMPORTANT: The diagrams shown on the following pages denote different methods and arrangements for spindle stacking. These diagrams are intended as a source of general reference. Remember to apply all of the safety considerations we have covered to this point, as well as those to come – as they apply to your situation. If you are confused about any of the configurations, DO NOT attempt them. Seek adequate instruction before attempting complex shaper operations.

NOTE: the following illustrations are shown with the guard removed for clarity. DO NOT attempt to operate the shaper without guards or protective devices in place.

A. HOW RUB COLLARS ARE USED

Collars are used to limit the depth of your cuts and are particularly useful when doing pattern work or irregular shaping. The amount of wood to be removed from the workpiece is determined by the diameter of the rub collar and the cutting circle of the cutter. Some hints for the selection of rub collars are listed below. PLEASE FOLLOW THE SAFETY MEASURES WE HAVE NOTED THROUGHOUT THE MANUAL.

1. Select the appropriate shaper cutter to match your desired profile.

2. Determine if you will be working with a pattern or if the workpiece will rub against the collar.

3. Determine how much wood must be removed to achieve the desired profile.

When only part of an edge is to be milled, as in Figures 17-19, the workpiece will guide itself along the collar. If that is the case with your operation, you'll want to select a rub collar that will allow just the desired amount of wood to be removed. When shaping with a pattern, the shape and size of the pattern will limit the amount of wood removed from the workpiece. The pattern gives you the option of selecting the number of rub collars that best suits your application...depending on the size of the pattern.

B. EXAMPLES

Rub collars may be used in any of the following positions:

1. Below the cutter.

2. Above the cutter.

3. Between two cutters.

Suppose you want to mill a 3/8" x 1/2" rabbet. You must have a sufficient amount of uncut wood to provide adequate contact with the rub collar. Remember that the width of the rabbet is controlled by the diameter of the rub collar and the depth of the rabbet is controlled by the spindle height adjustment. A rabbet cut is a good example, since you'll get the same result with the rub collars either above or below the cutter. The following diagrams illustrate different spindle configurations.

Rub collar below the cutter:

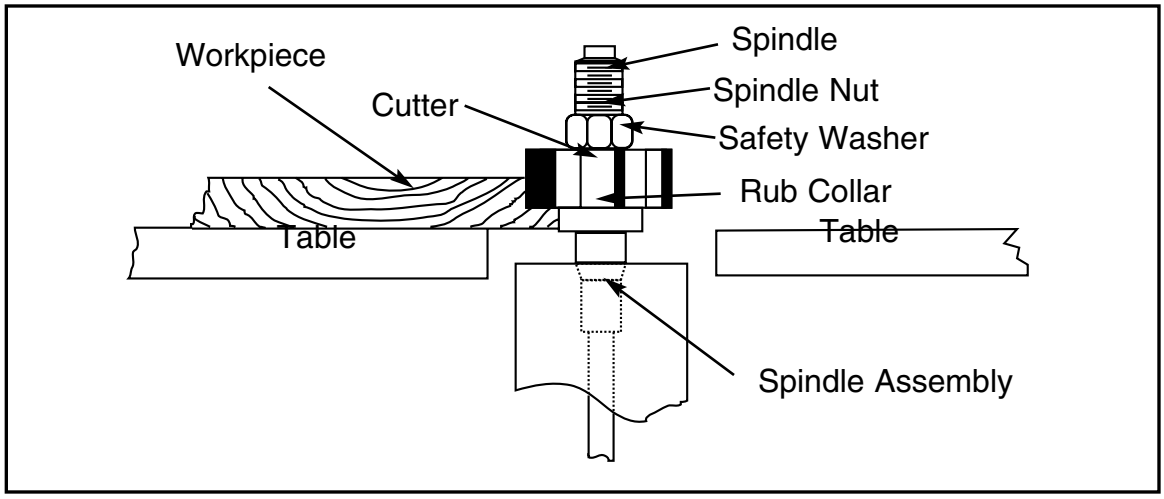


Figure 17

When the rub collar is used below the cutter, as shown in Figure 17, the progress of the cut can be observed. However, any unintentional movement may lift the workpiece into the cutter, damaging your work and creating an unsafe situation.

Rub collar above the cutter:

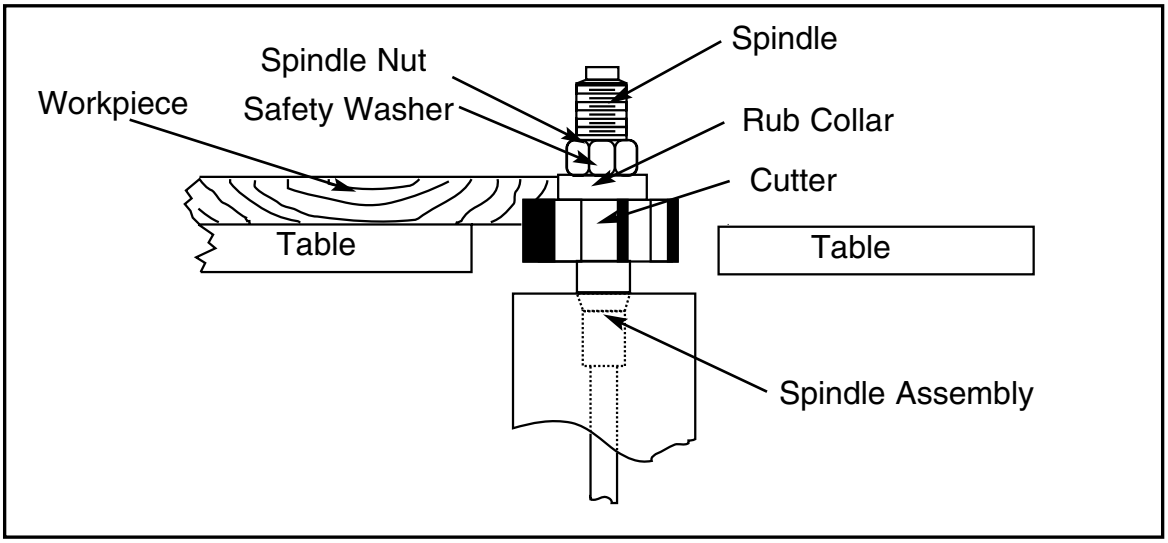


Figure 18

When the collar is used above the cutter, as shown in Figure 18, the cut cannot be seen. Yet, this offers some advantage in that the cut is not affected by slight variations in the stock. Also, accidental lifting will not damage the workpiece. Simply correct the mistake by repeating the operation. The stacking arrangement is considerably safer because the workpiece covers the entire shaper cutter.

Rub collar between two cutters:

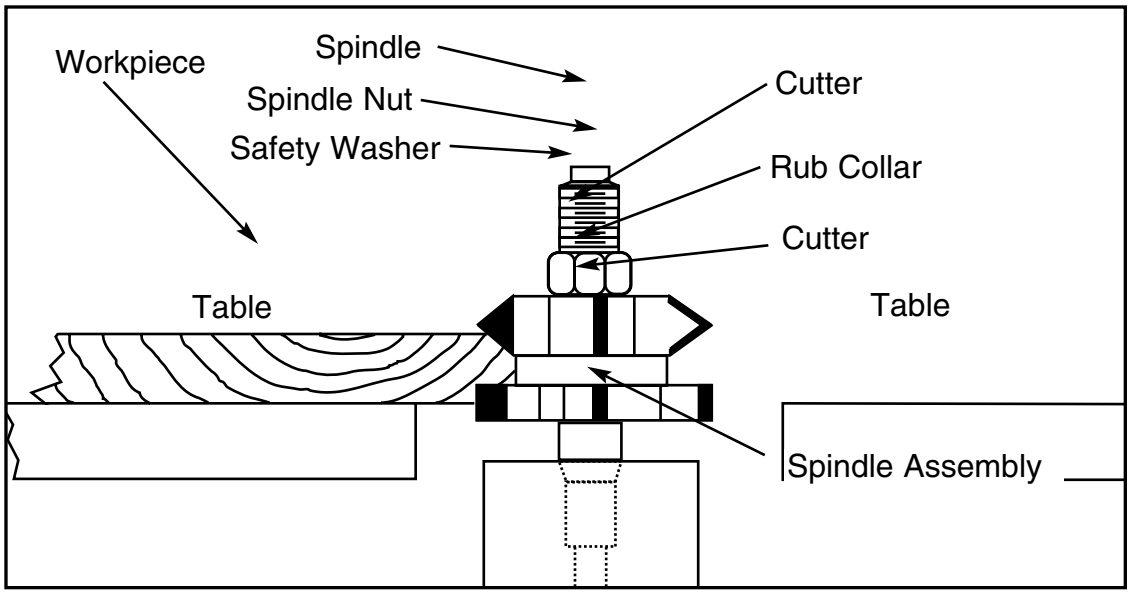


Figure 19

Using a rub collar between two cutters has the distinct advantage of performing two cuts at once or eliminating the need to change cutters for two different operations. See Figure 19. Notice that part of the edge is left uncut. The uncut portion rides on the rub collar. Remember to leave a sufficient amount of wood to offer a safe bearing surface.

C. PATTERN WORK

When using a pattern, the rub collar can be positioned either above, below, or in-between cutters. See Figure 20.

The pattern is usually used when the entire edge is to be shaped or when many duplicate pieces are needed. Pattern work is particularly useful when rough cutting irregular shapes oversize and then shaping the edge in a simple two-step operation. A pattern can be incorporated into a fixture by way of adding toggle clamps, hand holds, or other safety devices.

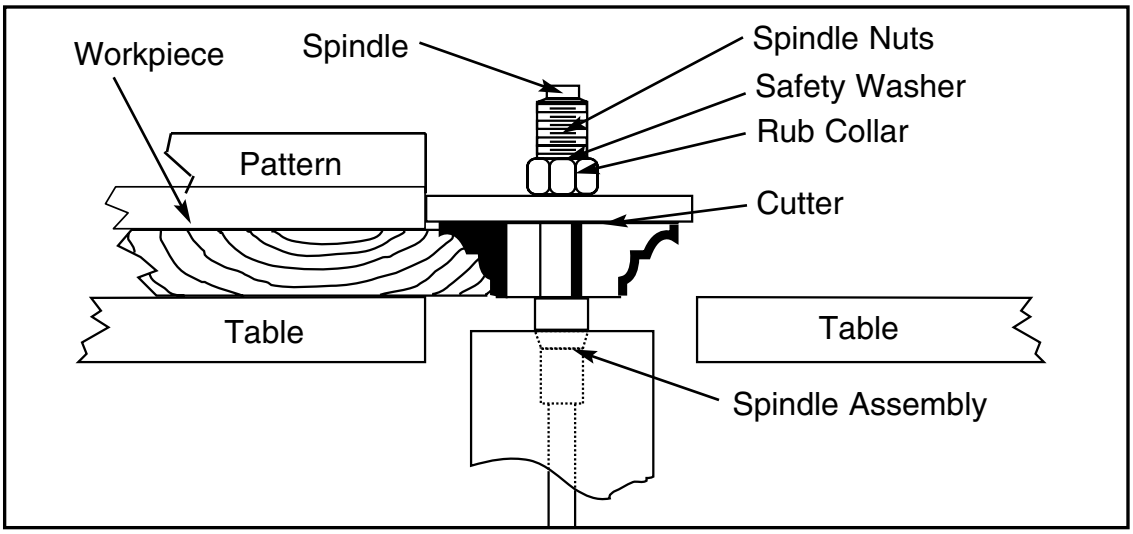


Figure 20

You have greater flexibility when choosing the correct diameter rub collar for pattern work than for non-pattern work. If you look at Figure 20, you'll notice that the position of the pattern determines the depth of cut. In other words, your pattern size is dependent upon the inter-relationship of cutting circle, the desired amount of material removed and the rub collar size. The cutting circle is the given in the equation, while the pattern and the rub collar size are the variables. Changing one or both of these will change the amount of material removed. Planning ahead, you can best decide which rub collars are best suited for your application.

XIII. SHAPING

A. STRAIGHT STOCK

When shaping straight stock, use the fence assembly. See the fence adjustment section for information on aligning fences.

1. Select the appropriate cutter and lock onto the spindle.

2. Check cutter rotation.

3. Adjust the spindle height to align the workpiece to the cutter. See the spindle height section for details.

4. Lock the spindle into position.

5. Position the fences for your desired depth of cut. See the fence adjustment section for details.

6. Use a hold-down, or other safety device. See Figures 21 and 22.

7. Make a sample cut on a scrap piece of wood to check your adjustments.

8. If everything is correct, run your stock through the shaper using your left hand to support the workpiece against the fence and your right to feed (if the rotation is counterclockwise). Switch hands for clockwise rotation.

9. Use the miter gauge to shape the ends of your workpiece.

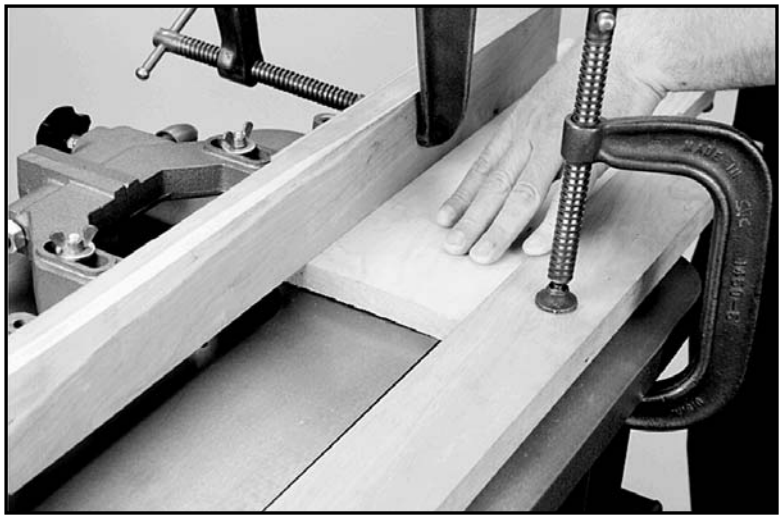


Figure 21

NOTE: Safety devices, as shown here, substantially improve the quality and consistency of your work, as well as ensuring operator safety. Grizzly offers a number of excellent safety devices for use with shapers – such as the Board Buddies™ shown below – which are available as optional equipment on the Model G1024 Shaper. For more information and pricing details, see the latest Grizzly catalog.

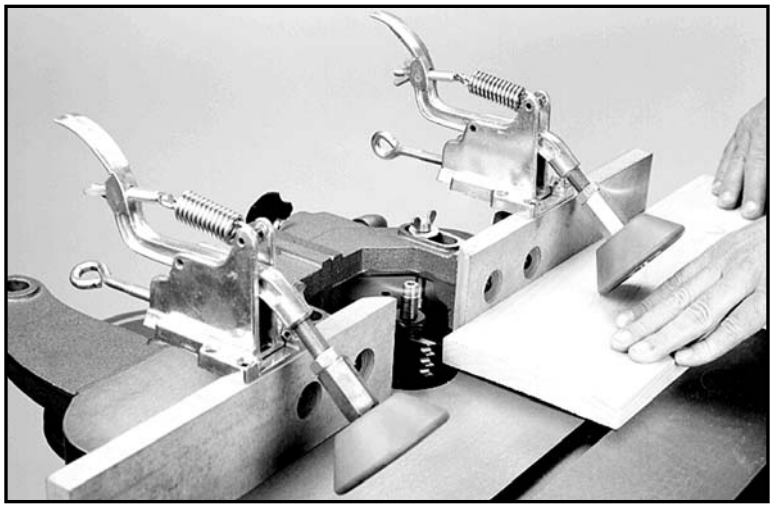


Figure 22

B. IRREGULAR SHAPING

Irregular or freehand shaping takes a high degree of skill and dexterity. This is where the real application of the shaper comes into focus. The fence assembly is not used in irregular shaping, so rub collars must be used. Choose the correct diameter for the appropriate depth of cut. See the rub collar section for details.

CAUTION: Freehand work is one of the most dangerous operations done on a shaper.

When doing freehand work a starting pin must be used. The purpose of the starting pin is to support the workpiece during the beginning of the cut.

1. Your shaper is supplied with a starting pin which is placed in one of the holes located in the shaper table. See the Main Body Diagram for location.

2. The work should be placed in the starting position using the guide pin for support, as shown in Figure 23. Next, swing the work into the cutter while holding the workpiece firmly against the starting pin.

3. After the cut has been started, the work is swung away from the starting pin and is supported just by the collar, as shown by the broken line positions in Figure 23. **ALWAYS FEED AGAINST THE ROTATION OF THE CUTTER.**

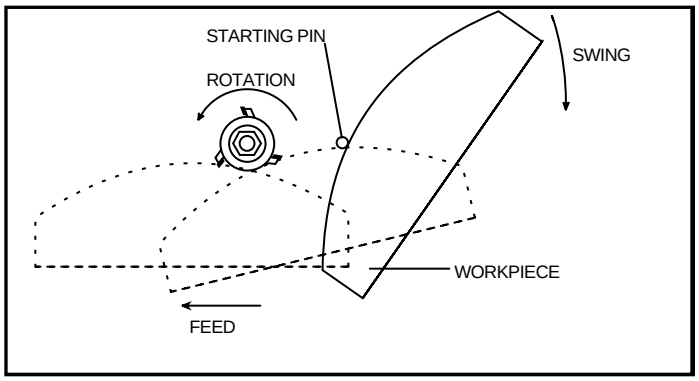


Figure 23

Important: Always use a starting pin or pivot support for freehand work.

For irregular shaping:

1. Remove the fence assembly.

2. Choose the appropriate cutter for your application and lock it in place.

3. Check cutter rotation.

4. Adjust the spindle height to align your workpiece to the cutter.

5. Insert a starting pin into the table surface, using the pin location that best supports your work.

6. Inspect your stock or pattern for any irregularities that might transfer to the cut.

7. Use some type of hold-down fixture and guard when doing freehand work. See Figure 24.

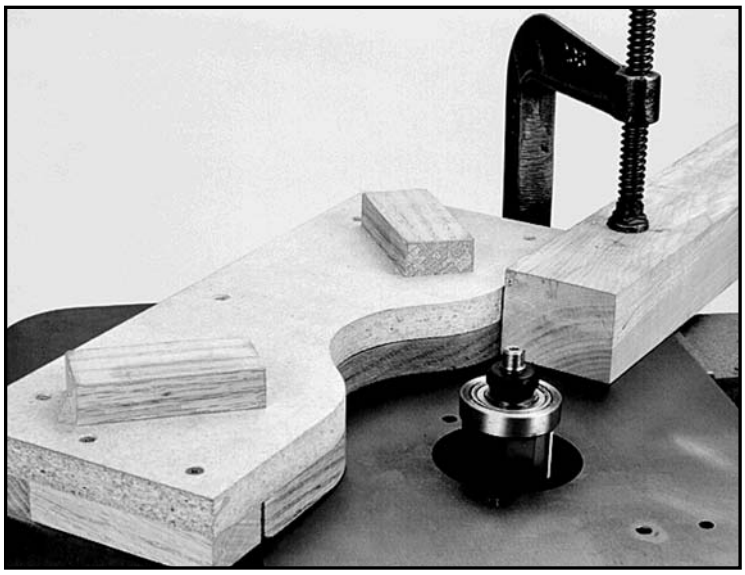


Figure 24

8. Make a sample cut on a piece of scrap wood.

9. If everything is correct, feed your workpiece along the cutter, using firm pressure to keep your work against the rub collar. Feed against the cutter rotation only.

Notice in Figure 24, the operator is not exposed to the cutting edge of the cutter. Cutters are removing material from the bottom of the workpiece.

Sometimes the starting pin will not be in the most advantageous position. Using a board firmly clamped to the shaper table, as shown in Figure 24, will give you the same support as the starting pin, with a better starting position. Always use a starting support when doing freehand work.

When using a solid rub collar, do not use excessive pressure when running your workpiece through the shaper. Otherwise, a groove may burn into your pattern and be transferred to your workpiece. Instead, take several passes, using lighter pressure against the rub collar. If you find this to be a consistent problem, you may consider using ball bearing rub collars instead of solid collars.

When making a pattern, jig, or fixture, here are a few things to consider:

1. Use a material that will smoothly follow the rub collar or fence.

2. Make the fixture stable. Use proven methods and materials.

3. Fasten hand holds for operator comfort and safety.

4. Secure your workpiece on three sides with toggle clamps or fasten the workpiece to the fixture with wood screws. Make sure they do not protrude through the workpiece.

5. Ensure that clamps and hidden screws do not come into contact with the cutter.

6. Design your fixture so that all cutting occurs underneath the workpiece.

7. Always consider cutting circle and rub collar diameter for correct depth of cut when designing your pattern.

8. Make sure the workpiece rests flat on the table, not on the fixture.

9. Remember, there is tremendous cutting force on the workpiece. Fixtures must be solid, stable and the workpiece must be firmly secured. See Figure 25.

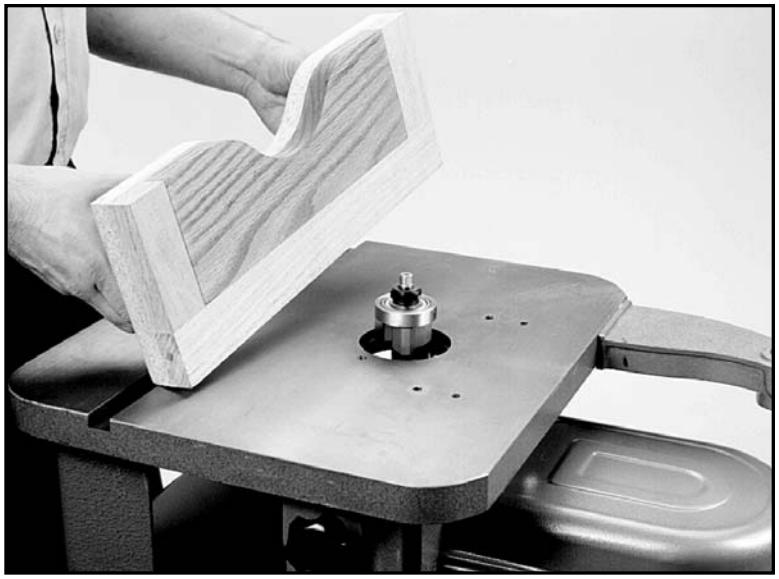


Figure 25

XIV. EQUIPMENT MAINTENANCE

Your Model G1024 Shaper requires very little maintenance. A thorough cleaning, now and again, will increase the machine's durability and efficiency, by removing dust and grime that can gum up moving parts. Sharp cutting surfaces are essential for top performance. If you find that the machine cuts less efficiently than usual, inspect the cutters and repair or replace them as necessary. An occasional application of Top-Cote® protective spray will keep the shaper table and other bare metal parts from rusting and pitting. Remember: When performing maintenance or repairs on this, or other shop equipment, always disconnect the power supply.

A. LUBRICATION

The Model G1024 features factory-sealed bearings. A sealed bearing requires no lubrication during its lifetime.

Should a bearing fail, your shaper will probably develop a noticeable rumble, which will increase when the machine is put under load. If allowed to get worse, overheating of the journal containing the bad bearing could occur. If the bad bearing is not replaced, it will eventually seize – possibly doing damage to other parts of the machine. Bearings are standard sizes and can be replaced through Grizzly.

The only parts on this machine that require periodic lubrication are the ways where the cartridge slide rides on the elevation housing and where the worm gear and bushing are located. Use a light grease or anti-seizing compound on the ways and worm gear and give the shaft mount a shot of light oil. The frequency of lubrication depends on the amount you use the shaper. As a habit, inspect the machine at least one a month.

B. V-BELT MAINTENANCE

Avoid getting grease or oil on the V-belt or pulleys.

Check the V-belt, as part of your monthly inspection, for proper tension and belt condition. Cracking and glazing could result in belt failure. Replace the belt if such conditions appear.

XV. CLOSURE

The following pages contain the directory of parts for your Model G1024 Shaper. We have also included a wiring diagram and instructions for using the optional Router Bit Spindle for your convenience.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

XVI. MACHINE DATA

GRIZZLY MODEL G1024 3/4 H.P. SHAPER

Design Type ..... Floor Model

Overall Dimensions:

Table ..... 15” x 18”
Height From Floor to Top of Fence ..... 38"
Height to Table From Floor ..... 34 1/2"
Length ..... 24"
Width ..... 27"
Weight (Shipping) ..... 155 lbs.
Weight (In Place) ..... 145 lbs.

Construction:

Table ..... Ground Cast Iron
Fence Assembly ..... Cast Iron
Body Assembly ..... Cast Iron
Stand ..... Pre-formed Steel

Specifications:

Spindle Travel ..... 3 7/8"
Spindle Diameter ..... 1/2"
Spindle Length ..... 3"
Spindle Capacity under Nuts ..... 2 3/8"
Spindle Speed ..... 10,000 RPM
Table Counterbore ..... 3" Diameter, 3/8" Deep
Spindle Bearings ..... Ball/Shielded and Lubricated-For-Life

Motor:

Type ..... TEFC Capacitor Start Induction
Horsepower ..... 3/4 H.P.
Phase / Cycle ..... Single Phase / 60 HZ
Voltage 110V/220V
Amps 10/5
RPM 3450
Bearings ..... Shielded and Lubricated-For-Life / Ball

Features:

Fence ..... Both Sides Adjustable
Switch ..... ON/OFF
Switch ..... Reversible
Starting Pins ..... Standard
Protective Cover For Freehand Work ..... Standard
Spindle Lock ..... Standard
Miter Gauge ..... Standard

Specifications, while deemed accurate, are not guaranteed.

XVII. WARRANTY AND RETURNS

LIMITED WARRANTY

Grizzly Industrial, Inc. warrants every product it sells for a period of one year on all parts and one year on all electric motors to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty for any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

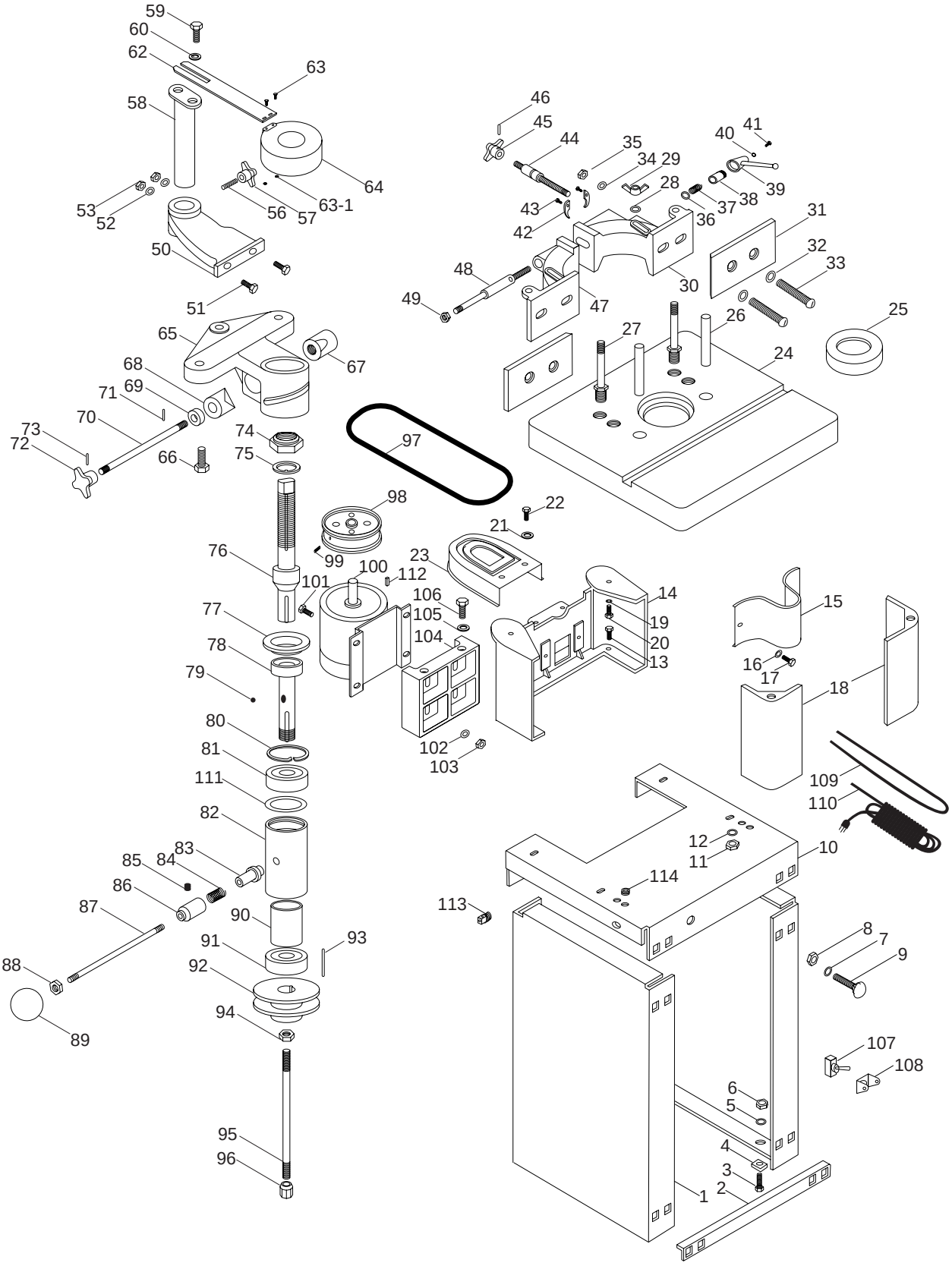
We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, the product or part must be returned to either our Bellingham or Williamsport warehouse, freight pre-paid. Proof of purchase must accompany the merchandise. The manufacturers reserve the right to change specifications at any time as they continually strive to achieve better quality equipment.

We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

XVIII. PARTS LISTS AND DIAGRAMS

A. MAIN BODY ASSEMBLY



B. MODEL G1024 SHAPER PARTS LIST

Ref. #	Part #	Description
001	P1022003	Side Panel
002	P1024002	Tie Bar
003	PB02M	Hex Bolt M6-1.0x12
004	P1024004	Rubber Foot
005	PW02	Flat Washer 3/8"
006	PN01M	Hex Nut M6-1.0
007	PW02	Flat Washer 3/8"
008	PN03M	Hex Nut M8-1.25
009	PCB01M	Carriage Bolt M8-1.25x20
010	P1024010	Shelf
011	PN03M	Hex Nut M8-1.25
012	PW02	Flat Washer 3/8"
013	PB06M	Hex Bolt M8-1.25x12
014	P1024014	Table Support
015	P1024015	Spindle Pulley Guard
016	PW02	Flat Washer 3/8"
017	PB03M	Hex Bolt M8-1.25x16
018	P1024018	Table Leg
019	PW01	Flat Washer 1/2"
020	PB25M	Hex Bolt M12-1.75x25
021	PW02	Flat Washer 3/8"
022	PB06M	Hex Bolt M8-1.25x12
023	P1024023	Belt Guard
024	P1024024	Working Table
025	P1024025	Table Insert
026	P1024026	Taper Pin
027	P1024027	Clamp Stud
028	PW07	Flat Washer 5/16"
029	PWN03	Wing Nut 5/16"-18
030	P1024030	Fence Body Right
031	P1024031	Wooden Fence
032	PW06	Flat Washer 1/4"
033	P1024033	Slot Head Screw
034	PW07	Flat Washer 5/16"
035	PN03M	Hex Nut M8-1.25
036	PW01	Flat Washer 1/2"
037	P1024037	Coil Spring
038	P1024038	Spring Collar
039	P1024039	Lock Handle
040	PW06	Flat Washer 1/4"
041	PS14M	Phil Hd Screw M6-1.0x12
042	P1024042	Half Collar
043	PSB26M	Cap Screw M6-1.0x12
044	P1024044	Adjusting Screw Stud
045	P1024045	Hand Knob
046	PRP16M	Roll Pin 3x25
047	P1024047	Fence Body Left
048	P1024048	Clamp Stud
049	PN09M	Hex Nut M12-1.75
050	P1024050	Mounting Bracket
051	PB26M	Hex Bolt M8-1.25x30
052	PW02	Flat Washer 3/8"
053	PN03M	Hex Nut M8-1.25
056	P1024056	Stud Bolt
057	P1024045	Hand Knob
058	P1024058	Hex Post
059	PB06M	Hex Bolt M8-1.25x12
060	PW02	Flat Washer 3/8"
062	P1024062	Hold Down Bar
063	PS02M	Phil Hd Screw M4-0.7x12
63-1	PN04M	Hex Nut M4-0.7
064	P1024064	See Through Ring Guard
065	P1024065	Spindle Housing Bracket
066	PB27M	Hex Bolt M12-1.75x30
067	P1024067	Clamp Sleeve Right
068	P1024068	Clamp Sleeve Left
069	P1024069	Stuff Ring
070	P1024070	Lock Bar
071	PRP02M	Roll Pin 3x16
072	P1024045	Hand Knob
073	PRP02M	Roll Pin 3x16
074	P1026219	Spindle Nut

B. MODEL G1024 SHAPER PARTS LIST (CONTINUED)

Ref. #	Part #	Description	Ref. #	Part #	Description
075	P1026223	Safety Washer	097	PVA30	V-belt A-30
076	P1024076	Cutter Spindle	098	P1024098	Motor Pulley
077	P1024077	Bearing Cover	099	PSS04M	Setscrew M6-1.0x12
078	P1024078	Spindle Cartridge	100	P1024100	Motor
079	P1024079	Steel Ball	101	P1024101	Carriage Bolt
080	PR23M	Retaining Ring 40mm	102	PW02	Flat Washer 3/8"
081	P6203	Ball Bearing	103	PN03M	Hex Nut M8-1.25
082	P1024082	Spindle Housing	104	P1024104	Motor Mount Plate
083	P1024083	Bearing Cone	105	PW01	Flat Washer 1/2"
084	P1024084	Coil Spring	106	PSB26M	Cap Screw M6-1.0x12
085	PSS20M	Setscrew M8-1.25x8	107	PSW05	Forward/Reverse Switch
086	P1024086	Spring Collar	108	P1024108	Switch Bracket
087	P1024087	Stud	109	P1024109	Wire Cord
088	PN09M	Hex Nut M12-1.75	110	P1024110	Wire Cord
089	P1024089	Knob	111	P1024111	Wavy Washer
090	P1024090	Collar	112	PK01M	Key 5x5x22
091	P6203	Ball Bearing	113	P1024113	Strain Relief
092	P1024092	Spindle Pulley	114	P1024113	Strain Relief
093	PRP13M	Roll Pin 3x25	115	P1024115	Reversing Switch
094	P1022124	Hex Nut 17mm			
095	P1024095	Tie Rod			
096	P1024096	Tie Rod Nut			

XIX. USING THE MODEL G1793 ROUTER BIT SPINDLE

The Model G1793 Router Bit Spindle is a handy accessory available for your Model G1024 shaper, which allows you to use your standard router bits as shaper cutters.

Using the optional router bit spindle does require some minor modifications to the Model G1024. To maximize the effectiveness of the router spindle, it is necessary to build a false table to increase the height of the shaper table by 1 1/2". To make a false table:

1. Cut two sheets of 3/4" hardwood plywood or MDF-grade particle board slightly larger than the size of your shaper table's surface. Face glue the two pieces together. After the glue has dried, you can either cut the pieces down to the exact size of the shaper table, or let them extend beyond its edges.

2. To create a smooth working surface, attach a plastic laminate, such as Formica or Wilsonart, to the top of your false table.

3. Disconnect your shaper from its power source and tape a sheet of tracing paper to the shaper's table. Be sure to align the back edge of the tracing paper with the back edge of the machine to use as a reference guide on the false table.

4. Locate the four fence mounting holes and the opening for the spindle by rubbing a pencil over those areas. Do this for the starting holes as well. Transfer all of your marks to the false table.

5. Drill the four fence mounting holes and the two starting pin holes with an 11/32" drill bit. Cut the spindle opening with a hole saw or saber saw.

6. If you intend to use your miter gauge with your router spindle installed, cut a straight slot 3/4" x 3/8" parallel to the existing miter slot.

7. Mount your false table to the shaper's table top, using two 8mm-1.25 x 150mm fence bolts.

NOTE: If most of your work calls for edge forming bits (roundover, cove, chamfer and so on), a 1 1/2" table should be sufficient. On the other hand, if you desire to use more complicated bits, you might want to add a third layer to the false table, bringing it up to 2 1/4". If you choose to include that extra level of height, remember to make suitable adjustments to the height of both the fence bolts and the starting pins.

CAUTION: The Router Bit Spindle is made for one-direction operation. Reversing the direction of the cutter travel could result in the loosening of the collet, making it possible for the bit to loosen and unexpectedly exit the spindle.