MODEL T31999
BISCUIT JOINER
OWNER'S MANUAL
(For models manufactured since 02/20)

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⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance, and service of this machine/tool. Save this document, refer to it often, and use it to instruct other operators.

Failure to read, understand and follow the instructions in this manual may result in fire or serious personal injury—including amputation, electrocution, or death.

The owner of this machine/tool is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, cutting/sanding/grinding tool integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

⚠ WARNING!

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures 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 those dust masks that are specially designed to filter out microscopic particles.

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SECTION 1: SAFETY

⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating This Equipment

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words which are intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.

⚠DANGER **Indicates an imminent hazardous situation which, if not avoided, WILL result in death or serious injury.**

⚠WARNING **Indicates a potentially hazardous situation which, if not avoided, COULD result in death or serious injury.**

⚠CAUTION **Indicates a potentially hazardous situation which, if not avoided, MAY result in minor or moderate injury. It may also be used to alert against unsafe practices.**

NOTICE **This symbol is used to alert the user to useful information about proper operation of the equipment.**

⚠WARNING

Safety Instructions for Power Tools

OWNER'S MANUAL. Read and understand this owner's manual BEFORE using machine.

TRAINED OPERATORS ONLY. Untrained operators have a higher risk of being hurt or killed. Only allow trained/supervised people to use this power tool. When tool is not being used, disconnect power, and store in out-of-reach location to prevent unauthorized use—especially around children. Make workshop kid proof!

DANGEROUS ENVIRONMENTS. Do not use tools in areas that are wet, cluttered, or have poor lighting. Operating tools in these areas greatly increases risk of accidents and injury.

MENTAL ALERTNESS REQUIRED. Full mental alertness is required for safe operation of power tools. Never operate under the influence of drugs or alcohol, when tired, or when distracted.

DISCONNECT POWER FIRST. Always disconnect tool from power supply BEFORE making adjustments, changing tooling, or servicing machine. This prevents an injury risk from unintended startup or contact with live electrical components.

EYE PROTECTION. Always wear ANSI-approved safety glasses or a face shield when operating or observing machinery to reduce the risk of eye injury or blindness from flying particles. Everyday eyeglasses are not approved safety glasses.

⚠WARNING

ELECTRICAL SAFETY. Tool plug must match outlet. Double-insulated tools have a polarized plug (one blade is wider than the other), which must be plugged into a polarized outlet. Never modify plug. Do not use adapter for grounded tools. Use a ground fault circuit interrupter if operation is unavoidable in damp locations. Avoid touching grounded surfaces when operating tool.

WEARING PROPER APPAREL. Do not wear clothing, apparel or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to avoid accidental slips, which could cause loss of workpiece control. Wear hard hat as needed.

HAZARDOUS DUST. Dust created while using tools may cause cancer, birth defects, or long-term respiratory damage. Be aware of dust hazards associated with each workpiece material, always wear a NIOSH-approved respirator, and connect tool to an appropriate dust collection device to reduce your risk.

HEARING PROTECTION. Always wear hearing protection when operating or observing loud machinery. Extended exposure to this noise without hearing protection can cause permanent hearing loss.

REMOVE ADJUSTING TOOLS. Never leave adjustment tools, chuck keys, wrenches, etc. in or on tool—especially near moving parts. Verify removal before starting!

INTENDED USAGE. Only use tool for its intended purpose. Never modify or alter tool for a purpose not intended by the manufacturer or serious injury or death may result!

AWKWARD POSITIONS. Keep proper footing and balance at all times when operating tool. Do not overreach! Avoid awkward hand positions that make tool control difficult or increase the risk of accidental injury.

SAFE HANDLING. Firmly grip tool. To avoid accidental firing, do not keep finger on switch or trigger while carrying.

FORCING TOOLS.. Use right tool for job, and do not force it. It will do job safer and better at rate for which it was designed.

SECURING WORKPIECE. When required, use clamps or vises to secure workpiece. This protects hands and frees both of them to operate tool.

GUARDS & COVERS. Guards and covers reduce accidental contact with moving parts or flying debris. Ensure they are properly installed, undamaged, and working correctly.

CHILDREN & BYSTANDERS. Keep children and bystanders at a safe distance from the work area. Stop using tool if they become a distraction.

USE RECOMMENDED ACCESSORIES. Consult this manual or manufacturer for recommended accessories. Using improper accessories will increase risk of serious injury.

MAINTAIN WITH CARE. Keep cutting tool edges sharp and clean. Follow all maintenance instructions and lubrication schedules to keep tool in good working condition. A tool that is improperly maintained could malfunction, leading to serious personal injury or death. Only have tool serviced by qualified service-personnel using matching replacement parts.

CHECK DAMAGED PARTS. Regularly inspect tool for any condition that may affect safe operation. Immediately repair or replace damaged or mis-adjusted parts before operating tool.

MAINTAIN POWER CORDS. When disconnecting cord-connected tools from power, grab and pull the plug—NOT the cord. Carrying or pulling the cord may damage wires inside. Do not handle cord/plug with wet hands. Avoid cord damage by keeping it away from heated surfaces, high traffic areas, harsh chemicals, sharp edges, moving parts, and wet/damp locations. Damaged cords increase risk of electrocution.

UNATTENDED OPERATION. Never leave tool running while unattended. Turn tool ***OFF*** and ensure all moving parts completely stop before walking away.

EXPERIENCING DIFFICULTIES. If at any time you experience difficulties performing the intended operation, stop using the machine! Contact our Technical Support at (570) 546-9663.

Additional Safety for Biscuit Joiners

⚠WARNING

Serious cuts, amputation, or death can occur from contact with rotating saw blade during operation. Workpieces, broken blades, or flying particles thrown by blade can blind or strike operators or bystanders with great force. To reduce the risk of these hazards, operator and bystanders MUST completely heed the hazards and warnings below.

PROPERLY MAINTAIN BLADE. Always ensure Biscuit Joiner blade is sharp, undamaged, and tightly attached before each use.

AVOID TOUCHING BLADE. Never place hands or fingers between workpiece and blade, and do not perform a cut while supporting workpiece with one hand or balancing it on a leg or any other body part.

PROPERLY SUPPORT WORKPIECE. Properly support all workpieces to reduce risk of workpiece and tool slipping during cutting operation. Place workpiece on supports or workbench and clamp in place.

USE BISCUIT JOINER FOR INTENDED PURPOSE. Only use Biscuit Joiner on wood and wood-based products. Do not attempt to use this tool for any operation other than biscuit joining.

USE RECOMMENDED BLADES. Only use blades rated for speeds greater than 11,000 RPM. Blades not rated for this speed may fly apart. Only use blades that meet the specifications listed in the manual. Do not use blades with different diameters or arbor hole shapes/sizes. They will rotate irregularly, causing ejection of blade fragments and tool damage.

PROPERLY INSTALL COMPONENTS. Ensure sliding base, faceplate, and fence are in place and operating correctly before each cut.

STARTING AND STOPPING CUTS. Allow blade to reach full speed before cutting. Always allow blade to come to a complete stop before setting tool down.

MAINTAIN CONTROL OF TOOL. Hold tool with both hands and do not allow the Biscuit Joiner base to shift while performing plunge cuts.

⚠CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment or poor work results.

⚠CAUTION

Like all machinery there is potential danger when operating this tool. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this tool with respect and caution to decrease the risk of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

SECTION 2: INTRODUCTION

Foreword

We are proud to offer this manual with your new Model T31999 Biscuit Joiner! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the joiner we used when writing this manual. However, sometimes we still make an occasional mistake.

Also, owing to our policy of continuous improvement, your biscuit joiner may not exactly match the manual. If you find this to be the case, and the difference between the manual and the joiner leaves you in doubt, check our website for the latest manual update or call technical support for help.

For your convenience, we post all available manuals and manual updates for free on our website at www.grizzly.com. Any updates to your model of machine will be reflected in these documents as soon as they are complete.

Contact Info

We stand behind our machines! If you have questions or need help, contact us with the information below. Before contacting, make sure you get the serial number and manufacture date from the machine ID label. This will help us help you faster.

Grizzly Technical Support
1815 W. Battlefield
Springfield, MO 65807
Phone: (570) 546-9663
Email: techsupport@grizzly.com

We want your feedback on this manual. What did you like about it? Where could it be improved? Please take a few minutes to give us feedback.

Grizzly Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

MACHINE DATA SHEET

Customer Service #: (570) 546-9663 · To Order Call: (800) 523-4777 · Fax #: (800) 438-5901

MODEL T31999
BISCUIT JOINER

Product Dimensions:

Weight	6 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	18 x 5-1/2 x 6 in.

Shipping Dimensions:

Type	Cardboard Box
Content	Machine
Weight	8 lbs.
Length/Width/Height	15 x 6 x 7 in.

Electrical:

Power Requirement	120V, Single-Phase, 60 Hz
Full-Load Current Rating	5.9A
Minimum Circuit Size	15A
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	10 ft.
Power Cord Gauge	18 AWG
Plug Included	Yes
Included Plug Type	NEMA 1-15
Switch Type	ON/OFF Toggle Switch

Motor:

Horsepower	1 HP
Phase	Single-Phase
Amps	5.9A
Speed	11,600 RPM
Type	Universal
Power Transfer	Gear
Bearings	Shielded & Permanently Lubricated

Main Specifications:

Operation Info

Maximum Cutting Depth	23/32 in.
Maximum Cutting Height	3/4 in.
Fence Tilt Angle	0 – 90 deg.
Blade Diameter	4 in.
Blade Thickness	5/32 in.
Arbor Size	20mm/22mm

Other

Number of Dust Ports	1
Dust Port Size	1 in.

Other Specifications:

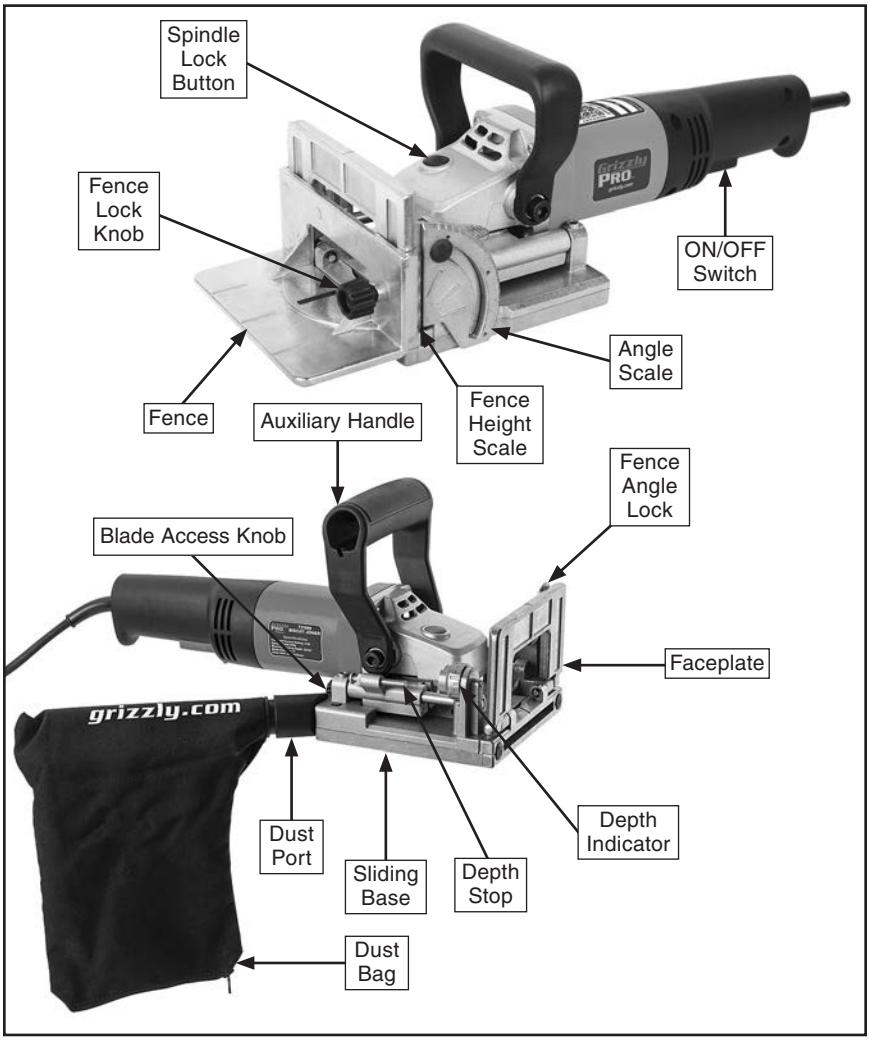
Country Of Origin	China
Warranty	1 Year
Approximate Assembly & Setup Time	20 Minutes
Serial Number Location	ID Label

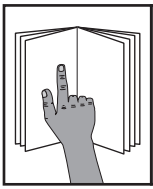
Features:

Includes 4" 6T Blade
Accepts 4" Blades with 20mm or 22mm Bore
Adjustable Depth Stop with Maximum Cutting Depth of 23/32"
Removable Fence with Cutting-Height Adjustment of 0 – 1-9/16"
Cutting Angle of 0° – 90° with Stops at 0°, 45°, and 90°
Six-Position Turret Stop for Biscuit Depth (0, 10, 20, S, D, and MAX)
Hinged Base for Easy Blade Removal
Dust Extraction Through Blade Housing

Identification

Become familiar with the names and locations of the controls and features shown below to better understand the instructions in this manual.

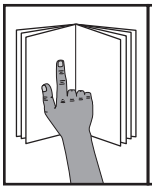




⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using tool.

Controls & Components



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

Refer to **Figures 1** & **2** and the following descriptions to become familiar with the basic controls of this tool.

A. Spindle Lock Button: When pressed, locks spindle for removing/replacing blade.

B. Fence Lock Knob: Locks fence at desired height of cut.

C. Fence: Orients tool to workpiece at specified angle.

D. Fence Height Scale: Indicates distance between center of blade and bottom of fence.

E. Angle Scale: Indicates angle of cut.

F. ON/OFF Switch: Starts and stops motor. Tool will remain running while switch is held until released.

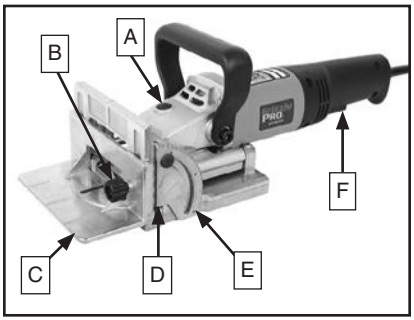


Figure 1. Fence adjustment and power controls.

G. Dust Port: Connects dust extraction system to blade housing and prevents dust build up during cutting operations.

H. Sliding Base: Houses blade. Spring action retracts blade after cut.

I. Depth Stop: Contacts turret stop during operation, limiting depth of cut.

J. Depth Indicator: Six-position turret for selecting biscuit cut depth (0, 10, 20, S, D, and MAX).

K. Faceplate: Contacts edge of workpiece at desired location of biscuit groove.

L. Angle Lock: Locks faceplate to desired angle of cut.

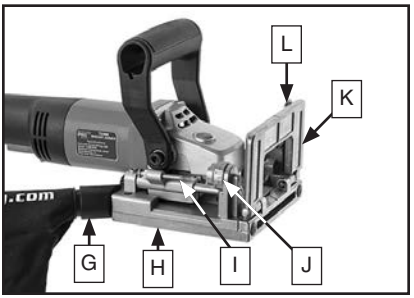


Figure 2. Depth adjustment, angle lock, and dust port.

SECTION 3: POWER SUPPLY

Availability

Before installing the machine, consider the availability and proximity of the required power supply circuit. If an existing circuit does not meet the requirements for this machine, a new circuit must be installed. To minimize the risk of electrocution, fire, or equipment damage, installation work and electrical wiring must be done by an electrician or qualified service personnel in accordance with all applicable codes and standards.

⚠WARNING

Electrocution, shock, fire or damage to equipment may occur if machine is not properly grounded and connected to power supply.

Full-Load Current Rating

The full-load current rating is the amperage a machine draws at 100% of the rated output power. On machines with multiple motors, this is the amperage drawn by the largest motor or sum of all motors and electrical devices that might operate at one time during normal operations.

Full-Load Current Rating.....5.9A

The full-load current is not the maximum amount of amps that the machine will draw. If the machine is overloaded, it will draw additional amps beyond the full-load rating. If the machine is overloaded for a sufficient length of time, damage, overheating, or fire may result—especially if connected to an undersized circuit. To reduce the risk of these hazards, avoid overloading the machine during operation and make sure it is connected to a power supply circuit that meets the requirements in the following section.

⚠WARNING

Serious injury could occur if you connect machine to power before completing setup process. DO NOT connect to power until instructed later in this manual.

120V Circuit Requirements

This machine is prewired to operate on a power supply circuit that has a verified ground and meets the following requirements:

Voltage.....110V, 115V, 120V
Cycle.....60 Hz
Phase.....Single-Phase
Power Supply Circuit ..... 15 Amps

A power supply circuit includes all electrical equipment between the breaker box or fuse panel in the building and the machine. The power supply circuit used for this machine must be sized to safely handle the full-load current drawn from the machine for an extended period of time. (If this machine is connected to a circuit protected by fuses, use a time delay fuse marked D.)

⚠CAUTION

For your own safety and protection of property, consult an electrician if you are unsure about wiring practices or electrical codes in your area.

Note: *The circuit requirements listed in this manual apply to a dedicated circuit—where only one machine will be running at a time. If this machine will be connected to a shared circuit where multiple machines will be running at the same time, consult a qualified electrician to ensure that the circuit is properly sized for safe operation.*

Polarized Plug

To reduce the risk of electric shock, this equipment has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

When servicing use only identical replacement parts.

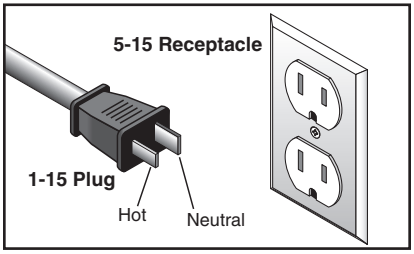


Figure 3. Typical 1-15 plug and receptacle.

Extension Cords

When using extension cords, make sure the cords are rated for outdoor use. Outdoor use cords are marked with a "W-A" or a "W" to signify their rating. Always check to make sure that the extension cords are in good working order and free of any type of damage, such as exposed wires, cuts, creased bends, or missing prongs.

Extension cords cause voltage drop, which may damage electrical components and shorten motor life. Voltage drop increases as the extension cord size gets longer and the gauge size gets smaller (higher gauge numbers indicate smaller sizes. When using extension cords, always choose the shortest cord possible, with the greatest-sized gauge.

Below is a list of minimum gauge sizes needed for running this tool at different lengths:

25 Feet 16AWG
50 Feet 14AWG
100 Feet 12AWG
Over 100 Feet..... Not Recommended

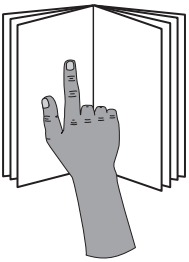
SECTION 4: SETUP

Unpacking

This tool was carefully packaged for safe transport. When unpacking, separate all enclosed items from packaging materials and inspect them for shipping damage. ***If items are damaged, please call us immediately at (570) 546-9663.***

IMPORTANT: Save all packaging materials until you are completely satisfied with the tool and have resolved any issues between Grizzly or the shipping agent. *You MUST have the original packaging to file a freight claim. It is also extremely helpful if you need to return the tool later.*

⚠WARNING



This tool presents serious injury hazards to untrained users. Read through this entire manual to become familiar with the controls and operations before starting the tool!

Inventory

The following is a list of items shipped with your tool. Before beginning setup, lay these items out and inventory them.

If any non-proprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.

NOTICE

If you cannot find an item on this list, carefully check around/inside the tool and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Box 1 (Figures 4 & 5)	Qty
A. Biscuit Joiner	1
B. Dust Bag	1
C. Fence	1
D. Hex Wrench 6mm	1
E. Motor Brushes	2
F. Spanner Wrench	1

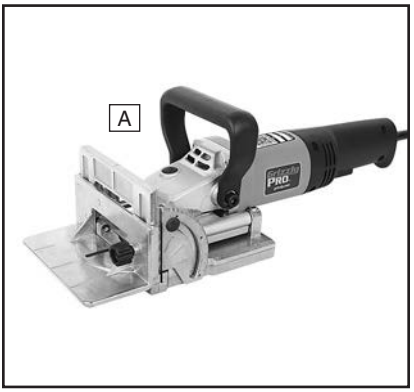


Figure 4. Model T31999 Biscuit Joiner.

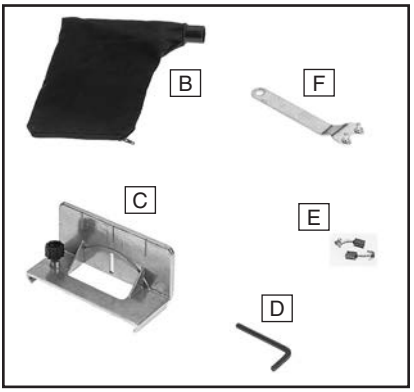


Figure 5. Loose inventory.

Assembly

To assemble tool:

1. Loosen fence lock knob, and slide fence onto faceplate (see **Figure 6**).

2. Tighten fence lock knob (see **Figure 6**).

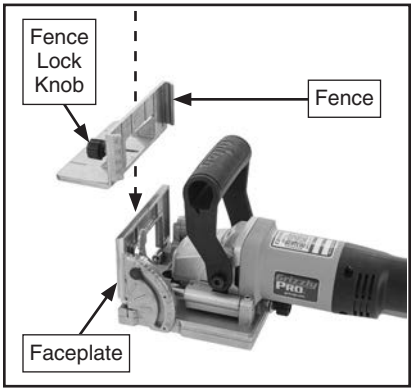


Figure 6. Fence attached to faceplate.

Dust Collection

The Model T31999 is equipped with a 1" dust port that can attach to a dust collection system (not included) or the included dust bag.

To install dust bag:

1. Push plastic end of dust bag into dust port, as shown in **Figure 7**.

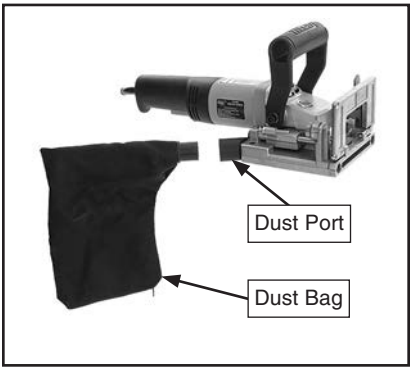


Figure 7. Installing dust bag into dust port.

2. Verify dust bag is closed before operating tool.

Test Run

Once assembly is complete, test run the tool to ensure it is properly connected to power and safety components are working properly.

If you find an unusual problem during the test run, immediately stop the tool, disconnect it from power, and fix the problem BEFORE operating the tool again. The **Troubleshooting** table in the **SERVICE** section of this manual can help.

The test run consists of verifying the following: 1) The motor powers up and runs correctly.

⚠WARNING

Serious injury or death can result from using tool BEFORE understanding its controls and related safety information. DO NOT operate, or allow others to operate, tool until information is understood.

⚠WARNING

DO NOT start tool until all preceding setup instructions have been performed. Operating an improperly set up tool may result in malfunction or unexpected results that can lead to serious injury, death, or tool/property damage.

To test run tool:

1. Clear away all setup/adjustment tools.
2. Verify blade is properly installed (see **Changing Blade** on **Page 20**).
3. Connect tool to power supply.
4. While firmly holding auxiliary handle (see **Figure 8**) in one hand, squeeze ON/OFF switch with opposite hand. Motor should run smoothly and without unusual problems or noises.

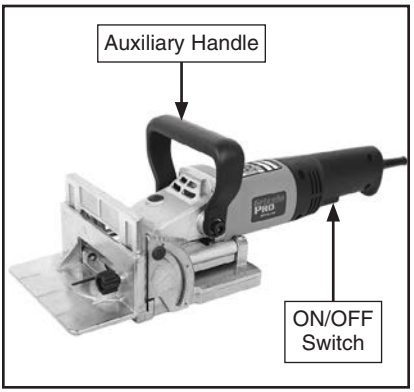
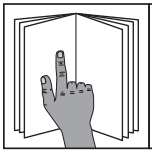


Figure 8. Location of auxiliary handle and ON/OFF switch.

5. Release ON/OFF switch. Motor should immediately stop running.

Congratulations! Test run is complete.

SECTION 5: OPERATIONS



⚠WARNING

To reduce your risk of serious injury, read this entire manual BEFORE using machine.

⚠WARNING

To reduce risk of eye injury from flying chips or lung damage from breathing dust, always wear safety glasses and a respirator when operating this tool.

NOTICE

If you are not experienced with this type of tool, WE STRONGLY RECOMMEND that you seek additional training outside of this manual. Read books/magazines or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Adjusting Depth of Cut

The biscuit joiner can be adjusted to cut slots for standard #0, #10 and #20 biscuits, simplex fittings, and duplex hinges. Refer to the table in **Figure 9** to determine biscuit size and cutting depth.

Biscuit #	Material Thickness (mm)	Cut Depth (mm)	Depth Indicator Marking
#0	4	8	0
#10	4	10	10
#20	4	12.5	20
Simplex	4	13	S
Duplex	4	15	D
N/A	N/A	18	MAX

Figure 9. Biscuit cut depth and depth scale marking table.

Setting Cutting Depth

1. Rotate depth indicator (see **Figure 10**) until desired depth marking on indicator aligns with arrow mark.

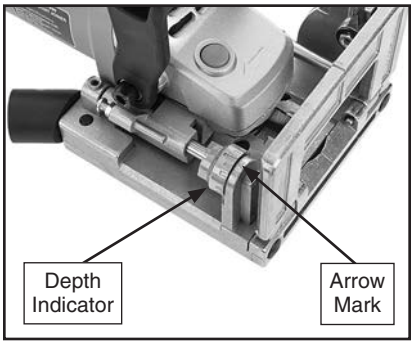


Figure 10. Depth indicator aligned with arrow mark.

Adjusting Cutting Depth

1. DISCONNECT TOOL FROM POWER!

2. Rotate depth indicator until position "10" is aligned with arrow mark.

3. Push forward on auxiliary handle until depth stop contacts depth indicator and measure length of exposed blade from blade tooth tip to sliding base.

   Note: *Rotate saw blade until blade tooth tip is centered at the maximum distance from the sliding base.*

4. Verify depth measurement as follows:

   — If measurement equals 10mm, the cutting depth is properly calibrated.

   — If measurement *does not* equal 10mm, loosen depth stop lock nut (see **Figure 11**) and reduce or extend depth stop until measurement equals 10mm. Tighten depth stop lock nut once depth is reached.

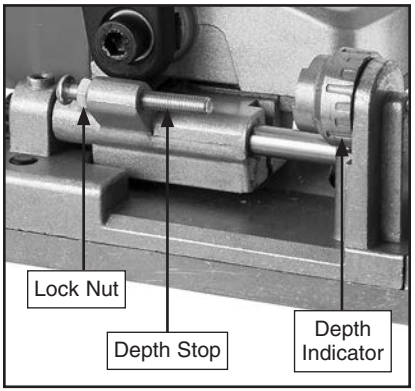


Figure 11. Location of cutting depth adjustment components.

Adjusting Cutting Angle

The faceplate can be adjusted between 0° and 90°, though 90° is the most common angle of cut for biscuit joining. Certain applications, such as joining beveled edges, require the biscuit to be inserted at different angles.

Note: *Ball and groove detents on the angle scale are provided to set the angle at 0°, 45°, and 90°.*

To adjust cutting angle:

1. Release angle lock (see **Figure 12**).

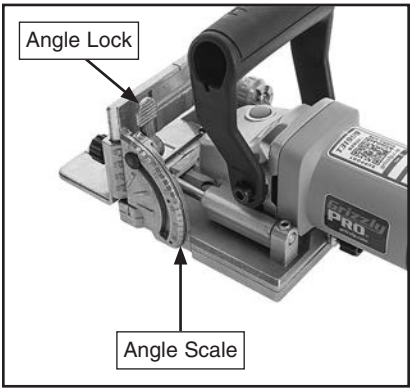


Figure 12. Location of cutting angle adjustment components.

2. Tilt faceplate until desired angle on scale lines up with arrow mark.

3. Tighten angle lock.

Adjusting Cutting Height

The fence can be adjusted to a height of 0–40mm. Cutting height depends on your workpiece thickness. Set the cutting height to half the thickness of your workpiece for the strongest joint.

To adjust cutting height:

1. Set faceplate angle to 90° (see **Adjusting Cutting Angle** on **Page 16**).

2. Loosen fence lock knob and move fence up or down on faceplate until arrow mark on angle scale aligns with desired height on fence height scale (see **Figure 13**).

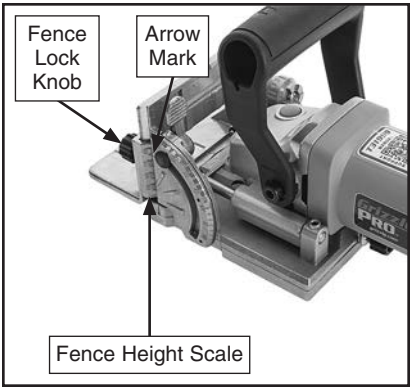


Figure 13. Location of cutting height adjustment components.

3. Tighten fence lock knob once desired height is reached.

Workpiece Preparation

Properly mark your workpieces to avoid incorrect biscuit placement and wasted material. The following example illustrates a typical biscuit joining layout.

Laying Out Cuts

1. Place edges of (2) workpieces flush against each other on a smooth, flat surface. Verify board ends line up.

2. Place marks 2½"–3" from each end of one board.

   Note: *If distance between marks is greater than 6", place additional marks at 4"–6" intervals (see **Figure 14**).*

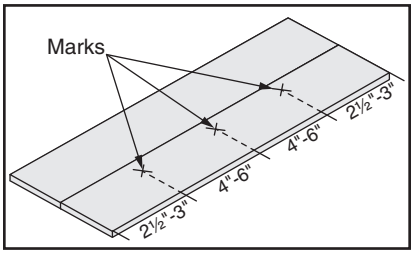


Figure 14. Biscuit location marks.

3. Use a square to draw layout lines across boards through marks, then make registration marks on edge of each board to ensure correct edge is cut (see **Figure 15**).

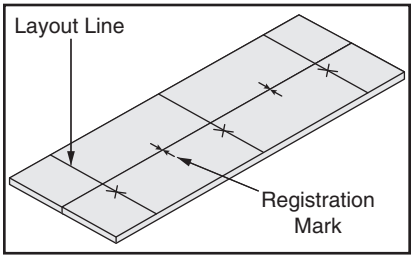


Figure 15. Layout lines and registration marks.

Securing Workpiece

Your workpiece must be properly secured before making cuts. Cutting biscuit grooves with a biscuit joiner places pressure on the edge of the workpiece, which can cause an improperly secured workpiece to shift on the workbench, resulting in personal injury or damage to the tool or workpiece.

Use clamps to secure workpiece on workbench. Edge of workpiece should hang slightly over edge of workbench (see **Figure 16**).

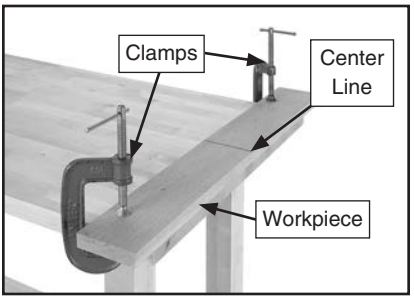


Figure 16. Example of workpiece setup.

Note: *Clamps should be placed at least 3" from any cut marks to prevent interference with joiner.*

Cutting Biscuit Grooves

To cut biscuit grooves:

1. Place fence on workpiece so front groove and rear groove line up with layout line, as shown in **Figure 17**. Make sure faceplate contacts edge of workpiece.

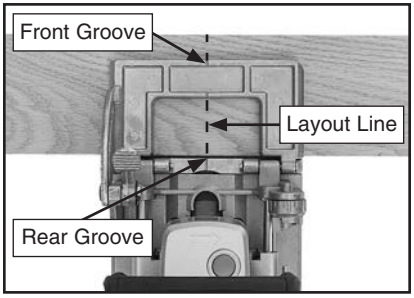


Figure 17. Biscuit joiner aligned with workpiece.

2. Turn biscuit joiner ***ON*** and allow motor to reach full speed.

3. With both hands holding tool, slowly push blade into workpiece, as shown in **Figure 18**, making sure joiner grooves remain aligned with layout line on workpiece, as described in **Step 1**.

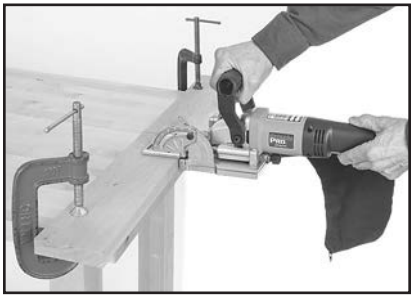


Figure 18. Biscuit joining operation.

4. Once blade reaches full depth, slide joiner body backward, allowing blade to retract into base plate.

5. Turn joiner ***OFF*** and wait for motor to come to a complete stop before setting tool down.

Gluing Biscuits

Once all biscuit grooves have been cut, test-fit biscuits with a "dry fit" prior to the glue-up. Place a biscuit in each groove, and fit the pieces together to check for proper alignment.

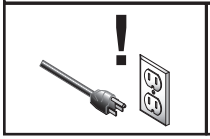
Once a proper fit is verified, apply glue to workpiece edges and grooves, insert biscuits into grooves, then clamp according to the needs of the material and the glue manufacturer's instructions.

Changing Blade

This tool accepts 4" blades with either a 20mm or 22mm bore, depending on the position of the inner flange.

⚠CAUTION

To reduce risk of injury, always disconnect power from joiner before changing blades. Since blade is sharp, use extra care and wear gloves when installing it.



To change blade:

1. DISCONNECT TOOL FROM POWER!

2. Loosen fence lock knob and then slide fence up to remove it from faceplate (see **Figure 19**).

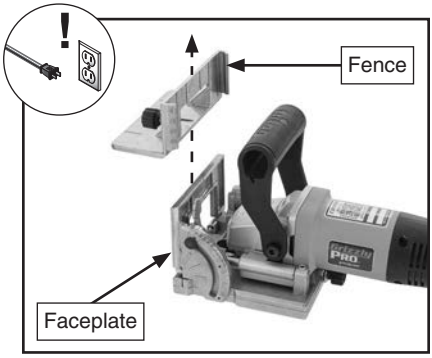


Figure 19. Fence removed from faceplate.

3. Turn tool over so bottom of sliding base is facing upward.

4. Loosen blade access knob (see **Figure 20**) until the sliding base lid can be raised.

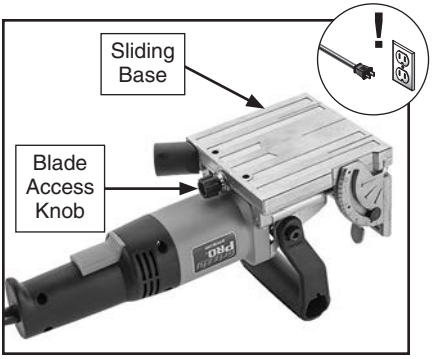


Figure 20. Loosening blade access knob.

5. Press spindle lock button (see **Controls & Components** on **Page 8**) and use spanner wrench to turn outer flange until spindle lock engages spindle (see **Figure 21**).

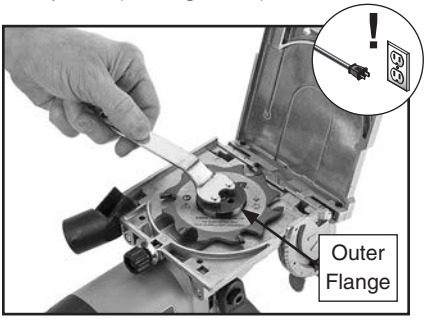


Figure 21. Removing blade with spanner wrench.

6. Continue to press spindle lock button, and use spanner wrench to loosen outer flange.

7. Remove blade and outer flange from spindle.

Note: *If switching between blades with 20mm and 22mm bores, flip inner flange over before installing new blade to accommodate change in bore size (see* ***Figure 22****).*

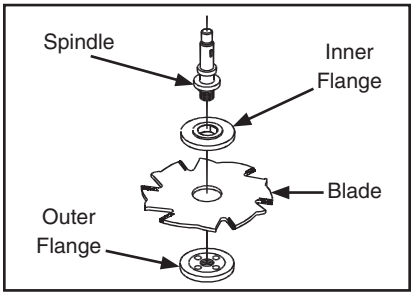


Figure 22. Proper orientation of blade components for assembly.

8. Install new blade, verify teeth face correct direction for rotation of spindle, as shown in **Figure 23**.

Figure 23. Blade installed with teeth facing correct direction.

9. Place outer flange on spindle, press spindle lock button, and tighten outer flange with spanner wrench.

10. Close sliding base lid and tighten blade access knob.

11. Install fence to desired height, as shown in **Adjusting Cutting Height** on **Page 17**.

SECTION 6: ACCESSORIES

⚠WARNING

Installing unapproved accessories may cause tool to malfunction, resulting in serious personal injury or tool damage. To reduce this risk, only install accessories recommended for this tool by Grizzly.

NOTICE

Refer to our website or latest catalog for additional recommended accessories.

G9547—Assorted Biscuits (Box of 1000)
Consistent and uniform from size to size, the Porter-Cable 5554 1000 Assorted Biscuits is a collection of biscuits you can use for a variety of different woodworking projects. These helpful little pieces of beechwood stay in their original shape and size until they soak up water-based glues, resulting in a tighter wood joint. This variety pack includes 500 biscuits of size #20, 250 of size #10, and 250 of size #0.

Figure 24. Assorted Biscuits.

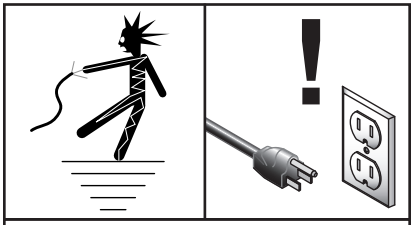
H1165—Polyurethane Glue (36 oz.)
This polyurethane glue is the finest available for bonding wood, stone, metal, ceramics, plastics and more. Gorilla Glue® is waterproof and features an open working time of 20 minutes or more, better coverage than other adhesives, a usable temperature range of 40°–30°, and a 1–4 hour cure time.

Figure 25. Polyurethane Glue.

G3315—Biscuit Glue Bottle
This specially designed glue bottle has a biscuit-shaped head that fits neatly into biscuit slots to ensure adequate glue coverage. Top seals bottle between uses.

Figure 26. Biscuit Glue Bottle.

SECTION 7: MAINTENANCE



⚠WARNING

Always DISCONNECT POWER before servicing, adjusting, or doing maintenance to reduce risk of accidental injury or electrocution.

For optimum performance from this tool, routinely check the condition of the following items and repair or replace as necessary.

- Loose bolts
- Damaged bits
- Worn or damaged wires
- Any other unsafe condition

Cleaning

Use a brush and a shop vacuum to remove wood chips and other debris from the tool, particularly from around the blade slot on the sliding base. Never blow off the tool with compressed air, as this could force wood chips deeper into the motor vents. Use a clean cloth to wipe away any dust remaining after each operation.

Note: *DO NOT use caustic cleaners on plastic parts. If dry cleaning is insufficient, a mild detergent on a damp cloth is recommended. Keep water away from tool at all times.*

Lubrication

Periodically lubricate all moving parts with a light machine oil as needed. Place a drop of oil on the guide rails on both sides of the sliding base (see **Figure 27**), then slide the base back and forth, working the oil across the rails. Use a clean rag to wipe off any excess oil, which can collect sawdust or stain the workpiece.

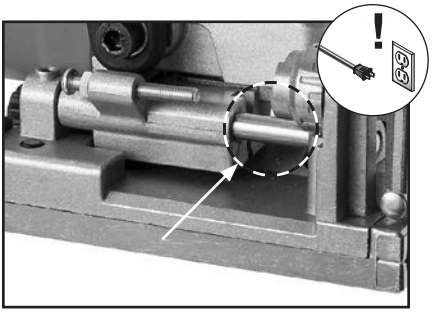


Figure 27. Location of sliding base guide rail (1 of 2).

Replacing Brushes

This tool is equipped with a universal motor that uses two carbon brushes to transmit electrical current inside the motor.

These brushes are considered to be regular "wear items" or "consumables" that will need to be replaced during the life of the motor. The frequency of required replacement is related to how much the motor is used and how hard it is pushed.

Replace both carbon brushes at the same time when the motor no longer reaches full power, or when the brushes measure less than ¼" long (new brushes are ⅝" long).

To replace motor brushes:

1. DISCONNECT TOOL FROM POWER!

2. Remove (4) tap screws from left side of main joiner handle (see **Figure 28**), and separate both sides of handle.

Note: *Make sure not to pull on or damage the wires located in main handle during disassembly.*

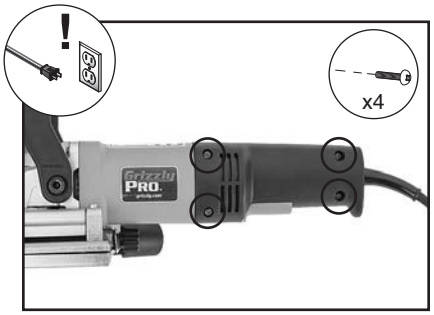


Figure 28. Location of main handle fasteners.

3. Locate and remove (2) motor brushes (see **Figure 29**).

Note: *If removing the brushes by hand is too difficult, carefully use a small screwdriver to push down on the brush holder tabs to release them.*

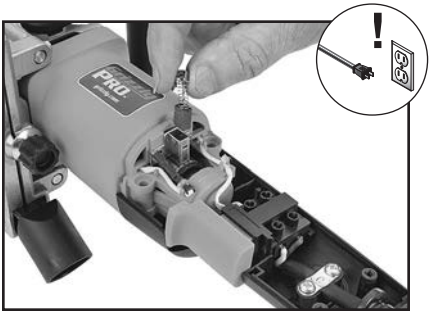
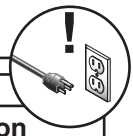


Figure 29. Replacing motor brush (1 of 2).

4. Replace motor brushes and install main handle.

SECTION 8: SERVICE

Troubleshooting

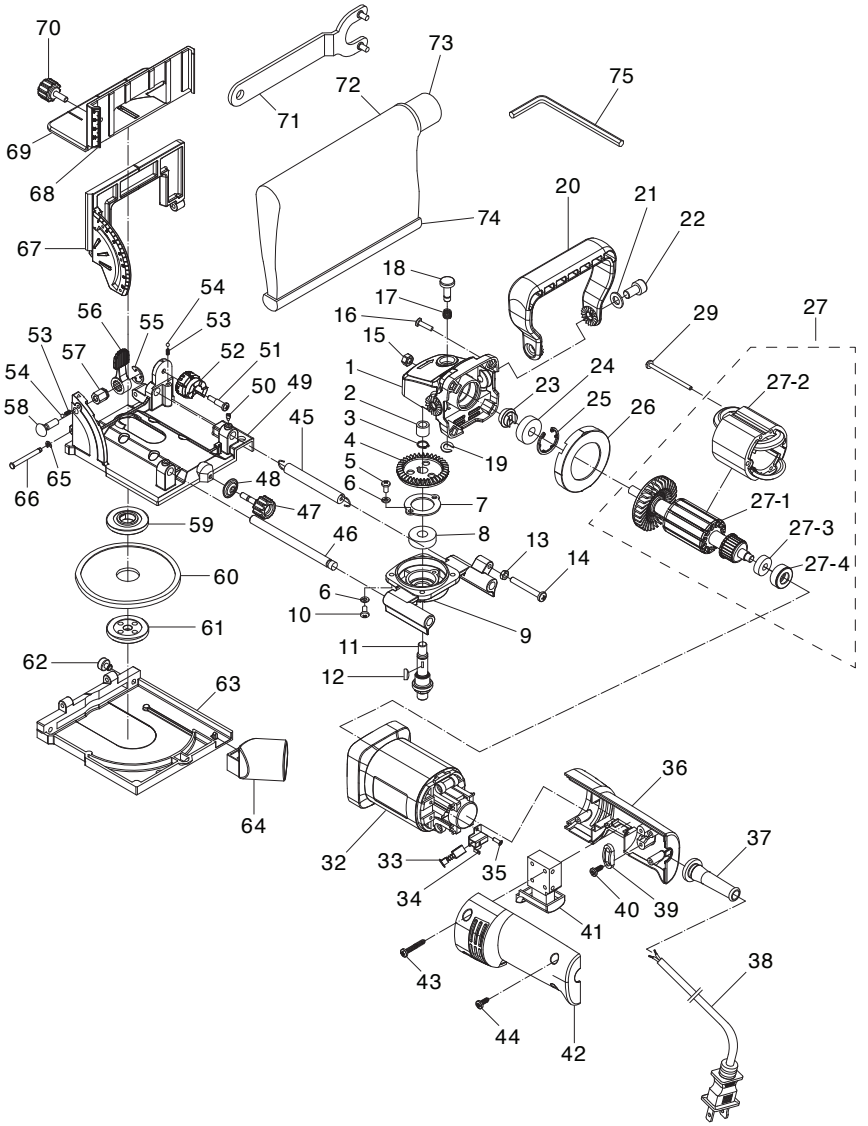


Symptom	Possible Cause	Possible Solution
Tool does not start, or power-supply fuse/ breaker trips after startup.	1. Power supply circuit breaker tripped or fuse blown. 2. Incorrect power supply voltage or circuit size. 3. Wiring broken, disconnected, or corroded. 4. Motor brushes at fault. 5. ON/OFF switch at fault. 6. Motor at fault.	1. Ensure circuit is sized correctly/free of shorts. Reset circuit breaker/replace fuse. 2. Ensure correct power supply voltage and circuit size. 3. Check/fix broken, disconnected, or corroded wires. 4. Remove/replace (**Page 24**). 5. Replace switch. 6. Test/repair/replace.
Tool stalls or is underpowered.	1. Workpiece material not suitable for tool. 2. Tool undersized for task. 3. Dust bag at fault. 4. Blade at fault. 5. Motor brushes at fault. 6. Motor bearings at fault. 7. Motor overheated. 8. Motor at fault.	1. Only cut wood/ensure moisture is below 20%. 2. Reduce feed rate/depth of cut. 3. Empty bag/clear dust port. 4. Remove/replace (**Page 20**). 5. Remove/replace (**Page 24**). 6. Test/repair/replace. 7. Clean motor, let cool, and reduce workload. 8. Test/repair/replace.
Tool has vibration or noisy operation.	1. Motor, blade, or component loose. 2. Blade at fault. 3. Workpiece loose. 4. Motor bearings at fault.	1. Tighten if loose. Replace damaged or missing bolts/ nuts. 2. Remove/replace (**Page 20**). 3. Use the correct holding fixture/re-clamp workpiece. 4. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.
Blade is burning workpiece.	1. Blade at fault.	1. Remove/replace (**Page 20**).

SECTION 9: PARTS

Please Note: *We do our best to stock replacement parts whenever possible, but we cannot guarantee that all parts shown here are available for purchase. Call* ***(800) 523-4777*** *or visit our online parts store at* ***www.grizzly.com*** *to check for availability.*

Main



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Main Parts List

REF	PART #	DESCRIPTION
1	PT31999001	GEARBOX
2	PT31999002	BUSHING 8ID X 12OD X 10L
3	PT31999003	EXT RETAINING RING 10MM
4	PT31999004	RING GEAR
5	PT31999005	PHLP HD SCR M4-.7 X 8
6	PT31999006	LOCK WASHER 4MM
7	PT31999007	GEARBOX BEARING CAP
8	PT31999008	BALL BEARING 6000ZZ
9	PT31999009	FRONT CAP
10	PT31999010	PHLP HD SCR M4-.7 X 14
11	PT31999011	SPINDLE
12	PT31999012	WOODRUFF KEY 3 X 10MM
13	PT31999013	HEX NUT M5-.8
14	PT31999014	PHLP HD SCR M5-.8 X 40
15	PT31999015	HEX NUT M6-1
16	PT31999016	TAP SCREW M4 X 22
17	PT31999017	COMPRESSION SPRING 0.7 X 8.4 X 12
18	PT31999018	SPINDLE LOCK BUTTON
19	PT31999019	SNAP RING 5MM
20	PT31999020	AUXILIARY HANDLE
21	PT31999021	FLAT WASHER 8MM
22	PT31999022	CAP SCREW M8-1.25 X 14
23	PT31999023	PINION GEAR
24	PT31999024	BALL BEARING 629ZZ
25	PT31999025	INT RETAINING RING 26MM
26	PT31999026	FAN BAFFLE
27	PT31999027	MOTOR 1HP 120V 1-PH
27-1	PT31999027-1	MOTOR ARMATURE
27-2	PT31999027-2	MOTOR STATOR
27-3	PT31999027-3	BALL BEARING 607ZZ
27-4	PT31999027-4	MOTOR BEARING CAP
29	PT31999029	TAP SCREW M4 X 55
32	PT31999032	MOTOR HOUSING
33	PT31999033	MOTOR BRUSH
34	PT31999034	MOTOR BRUSH HOLDER
35	PT31999035	RIVET 3 X 8MM BLIND CP
36	PT31999036	HANDLE SHELL (RIGHT)
37	PT31999037	STRAIN RELIEF BOOT 1/4

REF	PART #	DESCRIPTION
38	PT31999038	POWER CORD 18G 3W 72" 1-15P
39	PT31999039	CABLE CLAMP
40	PT31999040	TAP SCREW M4 X 10
41	PT31999041	ON/OFF SWITCH HL-8A
42	PT31999042	HANDLE SHELL (LEFT)
43	PT31999043	TAP SCREW M4 X 35
44	PT31999044	TAP SCREW M4 X 14
45	PT31999045	EXTENSION SPRING 0.5 X 10 X 18.5
46	PT31999046	GUIDE RAIL
47	PT31999047	KNOB BOLT M5-.8 X 22, 10-LOBE, D19
48	PT31999048	CUP WASHER 5 X 20 X 3.5MM
49	PT31999049	UPPER SLIDING BASE
50	PT31999050	SET SCREW M4-.7 X 6
51	PT31999051	PHLP HD SCR M4-.7 X 25
52	PT31999052	DEPTH INDICATOR
53	PT31999053	COMPRESSION SPRING 0.4 X 2.8 X 5.5
54	PT31999054	STEEL BALL 3MM
55	PT31999055	E-CLIP 6MM
56	PT31999056	ANGLE LOCK LEVER
57	PT31999057	COUPLING NUT M6-1 X 12
58	PT31999058	CARRIAGE BOLT M6-1 X 20
59	PT31999059	INNER SPINDLE FLANGE
60	PT31999060	CIRCULAR BLADE 4" X 6T X 5/32
61	PT31999061	OUTER SPINDLE FLANGE
62	PT31999062	RUBBER BUMPER
63	PT31999063	LOWER SLIDING BASE
64	PT31999064	DUST PORT 1"
65	PT31999065	E-CLIP 4MM
66	PT31999066	GROOVED CLEVIS PIN 4 X 39
67	PT31999067	FACEPLATE
68	PT31999068	HEIGHT SCALE
69	PT31999069	FENCE
70	PT31999070	KNOB BOLT M5-.8 X 20, 10-LOBE, D19
71	PT31999071	SPANNER WRENCH 19MM PIN TYPE
72	PT31999072	DUST BAG
73	PT31999073	SEALING PORT
74	PT31999074	DUST BAG CLIP
75	PT31999075	HEX WRENCH 6MM

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Labels & Cosmetics

REF PART #		DESCRIPTION
101	PT31999101	QR CODE LABEL
102	PT31999102	MACHINE ID LABEL

REF PART #		DESCRIPTION
103	PT31999103	GRIZZLY PRO LABEL

⚠WARNING

Safety labels help reduce the risk of serious injury caused by machine hazards. If any label comes off or becomes unreadable, the owner of this machine MUST replace it in the original location before resuming operations. For replacements, contact (800) 523-4777 or www.grizzly.com.

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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.

The manufacturers reserve the right to change specifications at any time because they constantly 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.

In the event you need to use this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number,'' which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

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.

To take advantage of this warranty, you must register it at **https://www.grizzly.com/secureforms/warranty-card**, or you can scan the QR code below to be automatically directed to our warranty registration page. Enter all applicable information for the product.

WARRANTY

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