MODEL G0431
12½" 2 HP BENCHTOP PLANER w/SPIRAL CUTTERHEAD
OWNER'S MANUAL
(For models manufactured since 07/26)



C US
262149

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******Keep for Future Reference******

⚠ 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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INTRODUCTION

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

⚠WARNING

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

⚠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.

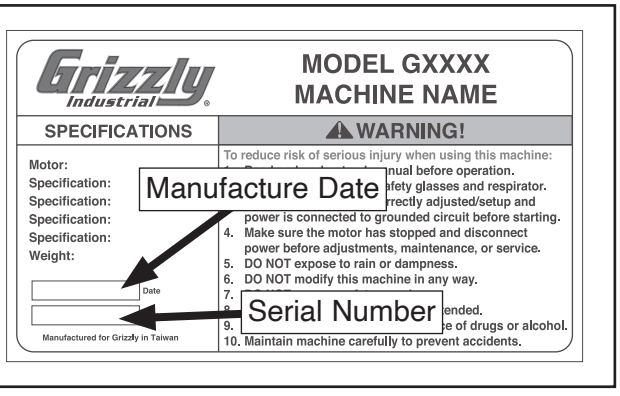
Manual Accuracy

We are proud to provide a high-quality owner's manual with your new machine!

We made every effort to be exact with the instructions, specifications, drawings, and photographs in this manual. Sometimes we make mistakes, but our policy of continuous improvement also means that **sometimes the machine you receive is slightly different than shown in the manual**.

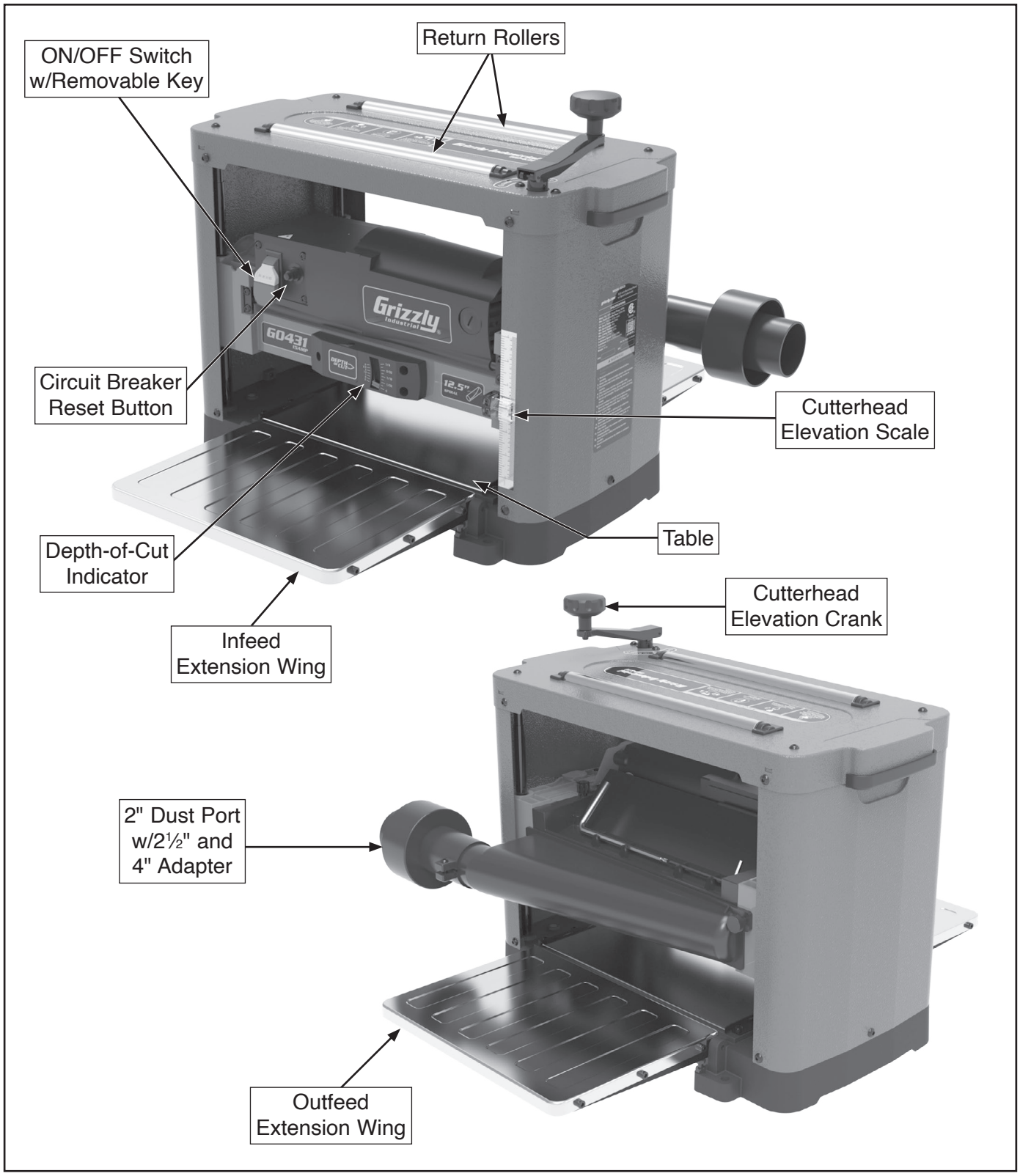
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

Alternatively, you can call our Technical Support for help. Before calling, make sure you write down the **manufacture date** and **serial number** from the machine ID label (see below). This information is required for us to provide proper tech support, and it helps us determine if updated documentation is available for your machine.

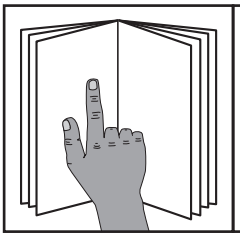


Identification

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



Controls & Components



⚠WARNING

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

Refer to the following figures and descriptions to become familiar with the basic controls and components of this machine. Understanding these items and how they work will help you understand the rest of the manual and minimize your risk of injury when operating this machine.

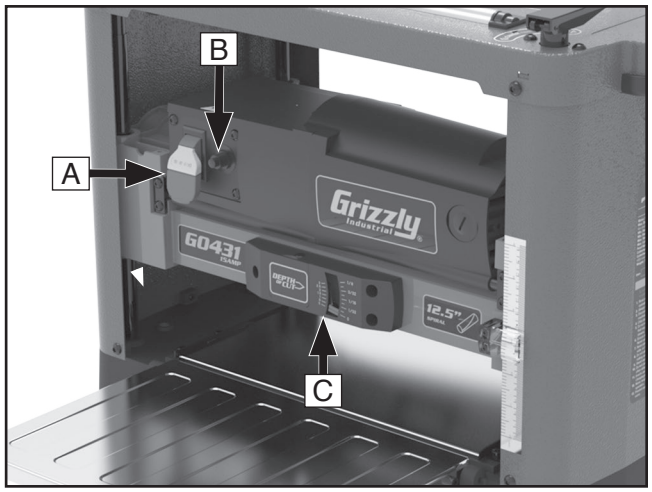


Figure 1. ON/OFF switch and reset button.

A. ON/OFF Switch: Turns motor ***ON*** and ***OFF***. Remove yellow key to disable switch.

B. Circuit Breaker Reset Button: Allows machine to be restarted after thermal overload protection has tripped motor. To reset button, place ON/OFF switch in OFF position, wait a few minutes for motor to cool, then press reset button. If button does not stay depressed, allow motor to cool longer, then try again.

C. Depth-of-Cut Indicator: Shows depth of cut as workpiece enters machine.

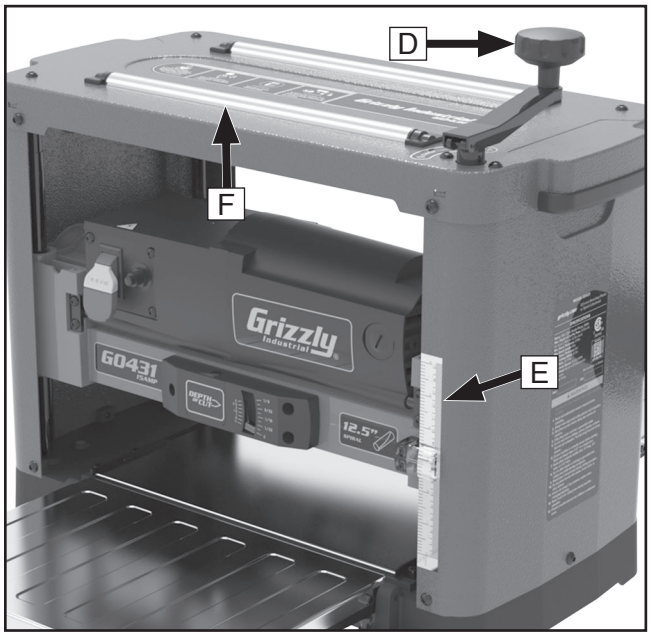


Figure 2. Elevation controls and return rollers.

D. Cutterhead Elevation Crank: Raises and lowers cutterhead. Turning clockwise raises cutterhead; turning counterclockwise lowers it.

E. Cutterhead Elevation Scale: Shows elevation of cutterhead above table. Measurement indicated is effective thickness of board *after* planing.

F. Return Roller (1 of 2): For assistant to slide workpiece back to operator following planing operation.

MACHINE DATA SHEET

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

MODEL G0431 12-1/2" 2 HP BENCHTOP PLANER W/ SPIRAL CUTTERHEAD

Product Dimensions:

Weight	57 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	22 x 28 x 18-1/2 in.
Footprint (Length x Width)	20 x 12 in.

Shipping Dimensions:

Type	Cardboard Box
Content	Machine
Weight	62 lbs.
Length x Width x Height	25 x 16 x 19 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	120V, Single-Phase, 60Hz
Full-Load Current Rating	15A
Minimum Circuit Size	20A
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	72 in.
Power Cord Gauge	14 AWG
Plug Included	Yes
Included Plug Type	5-15
Switch Type	Paddle Safety Switch w/Disabling Key

Motors:

Main

Horsepower	2 HP
Voltage	120V
Phase	Single-Phase
Amps	15A
Speed	23,000 RPM
Type	Universal
Power Transfer	Belt
Bearings	Shielded & Permanently Lubricated

Main Specifications:

Main Specifications

Planer Size	12-1/2 in.
Max. Cut Width	12-1/2 in.
Min. Stock Length	10 in.
Min. Stock Thickness	3/16 in.
Max. Stock Thickness	6 in.
Number of Cuts Per Inch	32
Number of Cuts Per Minute	60,000
Cutterhead Speed	10,000 RPM
Planing Feed Rate	26 FPM
Max. Cut Depth Planing Full Width	1/16 in.
Max. Cut Depth Planing 6-Inch Wide Board	3/32 in.

Cutterhead Info

Cutterhead Type	Spiral
Cutterhead Diameter	2 in.
Number of Cutter Rows	6
Number of Indexable Cutters	24

Cutter Insert Information

Cutter Insert Type	HSS, Indexable
Cutter Insert Size Length	14.25mm
Cutter Insert Size Width	14.25mm
Cutter Insert Size Thickness	2mm

Table Info

Table/Headstock Movement	6 in.
Table Bed Size Length	9-1/2 in.
Table Bed Size Width	12-1/2 in.
Table Bed Size Thickness	1/32 in.
Floor-to-Table Height	2-1/2 in.
Table Wings Size Length	9 in.
Table Wings Size Width	12-1/2 in.

Construction

Table	Stainless Steel
Body	Aluminum
Cutterhead Assembly	Steel/Aluminum
Infeed Roller	Rubber
Outfeed Roller	Rubber
Paint Type/Finish	Chromium Plated

Other

Measurement Scale	Inch & Metric
Number of Dust Ports	1
Dust Port Size	2 in.

Other Specifications:

Country of Origin	Taiwan
Warranty	1 Year
Approximate Assembly & Setup Time	15 Minutes
Serial Number Location	ID Label
Sound Rating	90 dB
ISO 9001 Factory	Yes

Features:

Spiral Cutterhead w/24 Indexable HSS Inserts
Depth-of-Cut Indicator
12-1/2" Wide Planing Capacity
2" Dust Port with 2" to 2-1/2" & 4" Adapter
Material Thickness Capacity of 3/16" to 6"
Dual Return Rollers
Convenient Grab Handles for Mobility
Stainless Steel Table w/Extension Wings
Cutterhead Elevation Scale w/Dimensions Shown in Standard and Metric

SECTION 1: SAFETY

For Your Own Safety, Read Instruction Manual Before Operating This Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words 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. Always use common sense and good judgment.

⚠DANGER **Indicates an imminently 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 **Alerts the user to useful information about proper operation of the machine to avoid machine damage.**

Safety Instructions for Machinery

⚠WARNING

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 machine. When machine is not being used, disconnect power, remove switch keys, or lock-out machine to prevent unauthorized use—especially around children. Make your workshop kid proof!

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

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

ELECTRICAL EQUIPMENT INJURY RISKS. You can be shocked, burned, or killed by touching live electrical components or improperly grounded machinery. To reduce this risk, only allow qualified service personnel to do electrical installation or repair work, and always disconnect power before accessing or exposing electrical equipment.

DISCONNECT POWER FIRST. Always disconnect machine 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

WEARING PROPER APPAREL. Do not wear loose clothing, gloves, neckties, or jewelry that can become entangled in moving parts. Always tie back or cover long hair. Wear non-slip footwear to reduce risk of slipping and losing control or accidentally contacting cutting tool or moving parts.

HAZARDOUS DUST. Dust created by machinery operations 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 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. Tools left on machinery can become dangerous projectiles upon startup. Never leave chuck keys, wrenches, or any other tools on machine. Always verify removal before starting!

USE CORRECT TOOL FOR THE JOB. Only use this tool for its intended purpose—do not force it or an attachment to do a job for which it was not designed. Never make unapproved modifications—modifying tool or using it differently than intended may result in malfunction or mechanical failure that can lead to personal injury or death!

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

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

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

FORCING MACHINERY. Do not force machine. It will do the job safer and better at the rate for which it was designed.

NEVER STAND ON MACHINE. Serious injury may occur if machine is tipped or if the cutting tool is unintentionally contacted.

STABLE MACHINE. Unexpected movement during operation greatly increases risk of injury or loss of control. Before starting, verify machine is stable and mobile base (if used) is locked.

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

UNATTENDED OPERATION. To reduce the risk of accidental injury, turn machine ***OFF*** and ensure all moving parts completely stop before walking away. Never leave machine running while unattended.

MAINTAIN WITH CARE. Follow all maintenance instructions and lubrication schedules to keep machine in good working condition. A machine that is improperly maintained could malfunction, leading to serious personal injury or death.

DAMAGED PARTS. Regularly inspect machine for damaged, loose, or mis-adjusted parts—or any condition that could affect safe operation. Immediately repair/replace BEFORE operating machine. For your own safety, DO NOT operate machine with damaged parts!

MAINTAIN POWER CORDS. When disconnecting cord-connected machines from power, grab and pull the plug—NOT the cord. Pulling the cord may damage the 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, and wet/damp locations.

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 Planers

⚠WARNING

Amputation, serious cuts, entanglement, or death can occur from contact with rotating cutterhead or other moving parts! Flying chips can cause eye injuries or blindness. Workpieces or knives thrown by cutterhead can strike nearby operator or bystanders with deadly force. To reduce the risk of these hazards, operator and bystanders MUST completely heed hazards and warnings below.

KICKBACK. Know how to reduce risk of kickback and kickback-related injuries. "Kickback" occurs during operation when the workpiece is ejected back through infeed side of machine at a high rate of speed. Kickback is commonly caused by poor workpiece selection, unsafe feeding techniques, or improper machine setup/maintenance. Kickback injuries typically occur as follows: (1) operator/bystanders are struck by workpiece, resulting in impact injuries (i.e., blindness, broken bones, bruises, death); (2) operator's hands are pulled into blade from outfeed side, resulting in amputation or severe lacerations.

AVOID CONTACT WITH MOVING PARTS. Never remove guards/covers or reach inside planer during operation or while connected to power. You could be seriously injured if you accidentally touch spinning cutterhead or get entangled in moving parts. If a workpiece becomes stuck or sawdust removal is necessary, turn planer ***OFF***, allow cutterhead to stop, disconnect power before clearing.

DULL/DAMAGED KNIVES/INSERTS. Only use sharp, undamaged knives/inserts. Dull or damaged knives/inserts increase the risk of kickback.

INSPECTING STOCK. To reduce the risk of kickback injuries or machine damage, thoroughly inspect and prepare the workpiece before cutting. Verify workpiece is free of nails, staples, loose knots, or foreign material. Workpieces with minor warping should be jointed first or planed with the cupped side facing the table.

BODY PLACEMENT. Stand to one side of planer during entire operation to avoid getting hit if kickback occurs.

GRAIN DIRECTION. Planing across grain is hard on planer and may cause kickback. Plane in same direction or at a slight angle with wood grain.

PLANING CORRECT MATERIAL. Only plane natural wood stock with this planer. DO NOT plane MDF, OSB, plywood, laminates or other synthetic materials that can break up inside the planer and be ejected towards the operator.

LOOKING INSIDE PLANER. Wood chips fly around inside the planer at a high rate of speed during operation. To avoid injury from flying material, DO NOT look inside planer during operation.

CUTTING LIMITATIONS. To reduce the risk of kickback hazards or damage to the machine, do not exceed the maximum depth of cut or minimum board length and thickness found in the **Data Sheet**. Only feed one board at a time.

INFEED ROLLER CLEARANCE. The infeed roller is designed to pull material into the spinning cutterhead. To reduce the risk of entanglement, keep hands, clothing, jewelry, and long hair away from the infeed roller during operation.

FEED WORKPIECE PROPERLY. To reduce the risk of kickback, never start planer with workpiece touching cutterhead. Allow cutterhead to reach full speed before feeding, and do not change feed speed during cutting operation.

WORKPIECE SUPPORT. To reduce the risk of kickback, always make sure workpiece can move completely across table without rocking or tipping. Use auxiliary support stands for long stock.

SECURE KNIVES/INSERTS. Loose knives or improperly set inserts can become dangerous projectiles or cause machine damage. Always verify knives/inserts are secure and properly adjusted before operation.

SECTION 2: 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, fire, shock, or equipment damage 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 at 120V ..... 15 Amps

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 specified circuit requirements.

⚠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:

Nominal Voltage 110V, 115V, 120V
Cycle ..... 60 Hz
Phase ..... Single-Phase
Power Supply Circuit ..... 20 Amps
Plug/Receptacle ..... NEMA 5-15

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: *Circuit requirements in this manual apply to a dedicated circuit—where only one machine will be running on the circuit at a time. If machine will be connected to a shared circuit where multiple machines may be running at the same time, consult an electrician or qualified service personnel to ensure circuit is properly sized for safe operation.*

Grounding & Plug Requirements

This machine MUST be grounded. In the event of certain malfunctions or breakdowns, grounding reduces the risk of electric shock by providing a path of least resistance for electric current.

This machine is equipped with a power cord that has an equipment-grounding wire and a grounding plug. Only insert plug into a matching receptacle (outlet) that is properly installed and grounded in accordance with all local codes and ordinances. DO NOT modify the provided plug!

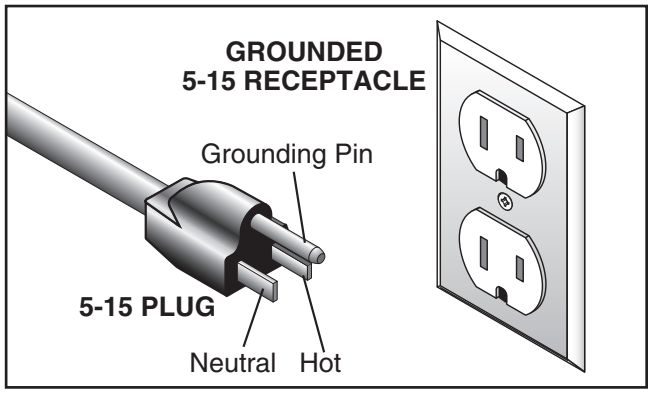
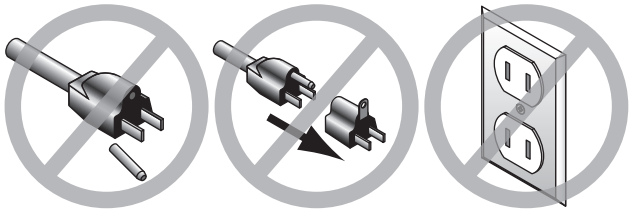


Figure 3. Typical 5-15 plug and receptacle.

⚠CAUTION



SHOCK HAZARD!
Two-prong outlets do not meet the grounding requirements for this machine. Do not modify or use an adapter on the plug provided—if it will not fit the outlet, have a qualified electrician install the proper outlet with a verified ground.

Improper connection of the equipment-grounding wire can result in a risk of electric shock. The wire with green insulation (with or without yellow stripes) is the equipment-grounding wire. If repair or replacement of the power cord or plug is necessary, do not connect the equipment-grounding wire to a live (current carrying) terminal.

Check with a qualified electrician or service personnel if you do not understand these grounding requirements, or if you are in doubt about whether the machine is properly grounded. If you ever notice that a cord or plug is damaged or worn, disconnect it from power, and immediately replace it with a new one.

Extension Cords

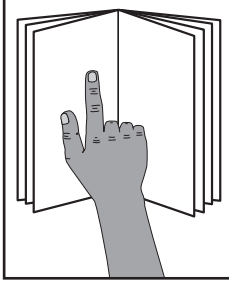
We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

Extension cords cause voltage drop, which can 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).

Any extension cord used with this machine must be in good condition and contain a ground wire and matching plug/receptacle. Additionally, it must meet the following size requirements:

Minimum Gauge Size.....12 AWG
Maximum Length (Shorter is Better).....50 ft.

SECTION 3: SETUP



⚠WARNING

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



⚠WARNING

Wear safety glasses during the entire setup process!



⚠WARNING

This machine and its components are heavy. Get lifting help if needed.

Needed for Setup

The following items are needed, but not included, for the setup/assembly of this machine.

Required **Qty**

- Safety Glasses (For Each Person)..... 1

Optional

- Dust Collection System/Shop Vacuum..... 1
- Dust Hose 2", 2½", or 4" 1
- Hose Clamps 2", 2½", or 4" ..... As Needed
- Mounting Hardware (**Page 14**) ... As Needed

Unpacking

This machine 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 machine 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 your machine later.*

Inventory

The following is a list of items shipped with your machine. 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 machine and packaging materials. Often, these items get lost in packaging materials while unpacking or they are pre-installed at the factory.

Boxed Inventory (Figure 4)	Qty
A. Planer (Not Shown)	1
B. Dust Chute w/2" Dust Port	1
C. Dust Port Adapter	1
D. Elevation Crank Handle	1
E. Hex Wrench 4mm	1
F. L-Handle Torx Wrench T-25	1
G. Knob Bolts M6-1 x 10	2
H. Cap Screw M5-.8 x 20 (P0431087)	1

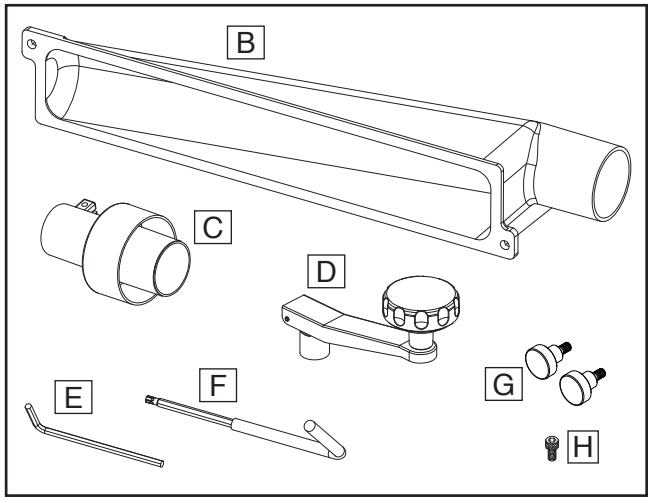


Figure 4. Inventory.

Site Considerations

Workbench Load

Refer to the **Machine Data Sheet** for the weight and footprint specifications of your machine. Some workbenches may require additional reinforcement to support the weight of the machine and workpiece materials.

Placement Location

Consider anticipated workpiece sizes and additional space needed for auxiliary stands, work tables, or other machinery when establishing a location for this machine in the shop. Below is the minimum amount of space needed for the machine.

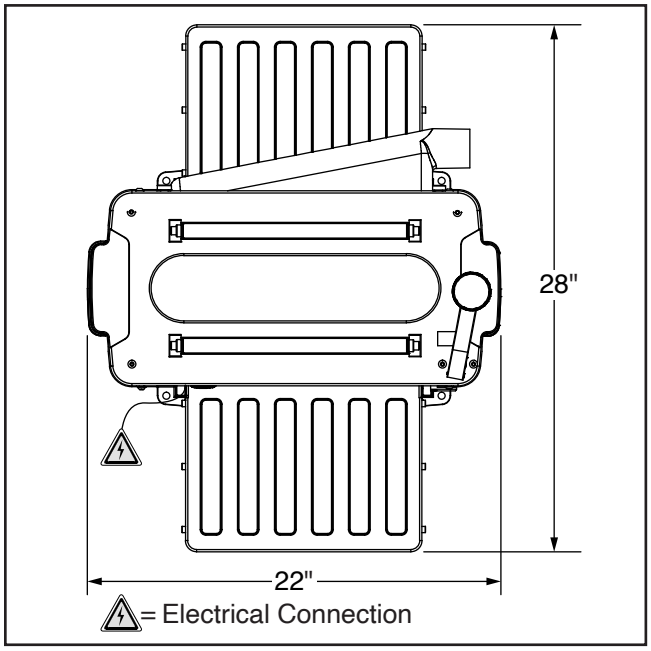
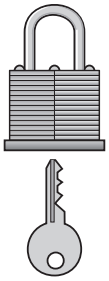


Figure 5. Minimum working clearances.



CAUTION

Children and visitors may be seriously injured if unsupervised around this machine. Lock entrances to the shop or disable start switch or power connection to prevent unsupervised use.

Bench Mounting

Number of Mounting Holes 4
Diameter of Mounting Hardware Needed... 5/16"

The base of this machine has mounting holes that allow it to be fastened to a workbench or other mounting surface to prevent it from moving during operation and causing accidental injury or damage.

The strongest mounting option is a "Through Mount" (see example below) where holes are drilled all the way through the workbench—and hex bolts, washers, and hex nuts are used to secure the machine in place.

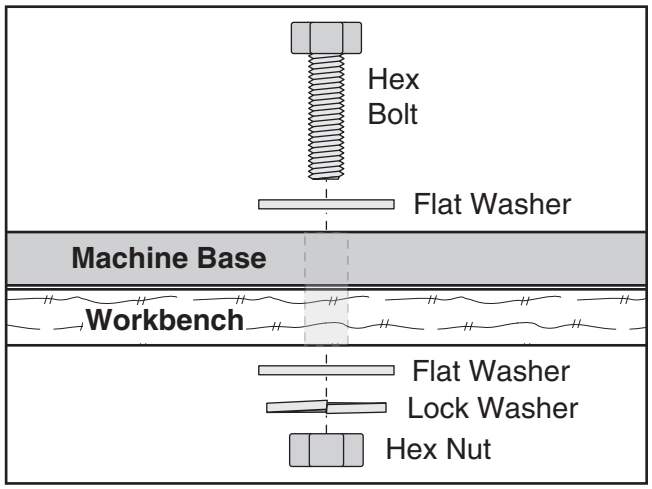


Figure 6. "Through Mount" setup.

Another option is a "direct mount" (see example below) where the machine is secured directly to the workbench with lag screws and washers.

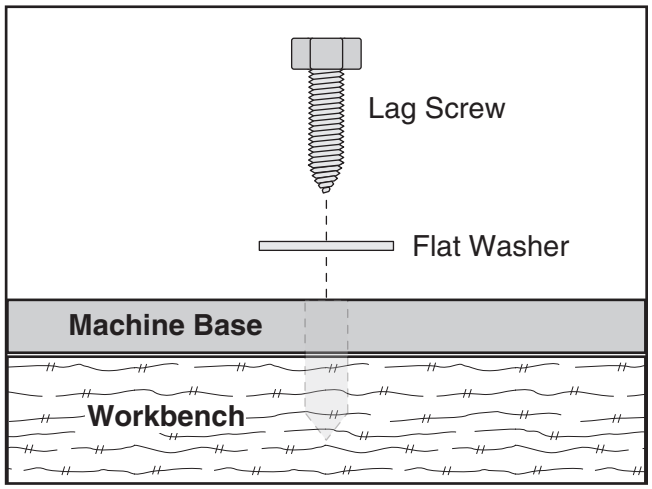


Figure 7. "Direct Mount" setup.

Assembly

The machine must be fully assembled before it can be operated. Before beginning the assembly process, refer to **Needed for Setup** and gather all listed items. To ensure the assembly process goes smoothly, first clean any parts that are covered or coated in heavy-duty rust preventative (if applicable).

To assemble machine:

1. Unfold elevation crank handle and align flat of crank handle bore with flat on elevation shaft as shown in **Figure 8**.

2. Secure crank handle with M5-.8 x 20 cap screw (see **Figure 8**). Do not over-tighten.

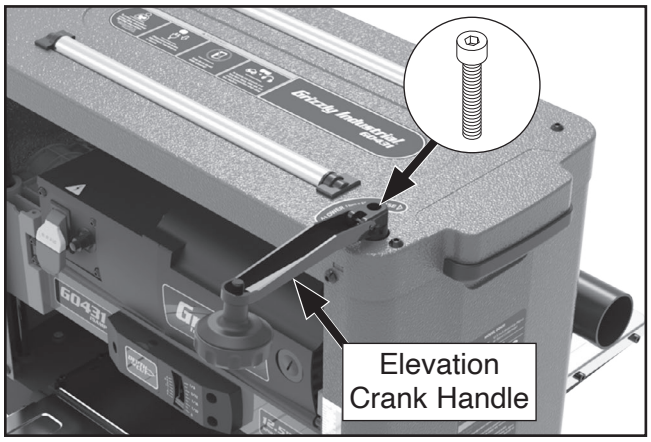


Figure 8. Elevation crank handle installed.

3. Install dust chute with (2) M6-1 x 10 knob bolts (see **Figure 9**).

   Tip: *Place included hex wrench and Torx wrench in tool storage clips when not in use.*

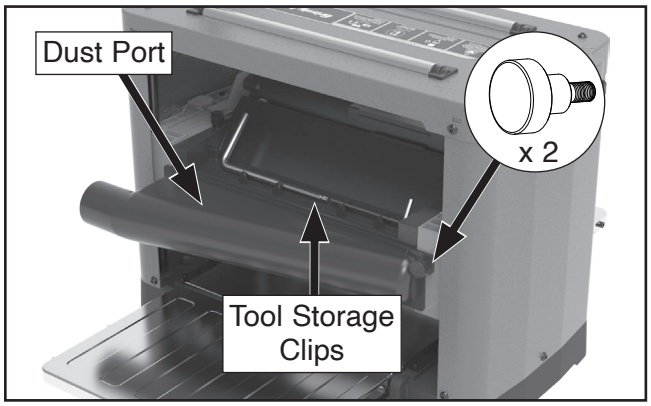


Figure 9. Dust chute installed.

Dust Collection

The G0431 is designed to work with a 2", 2½", or 4" dust collection hose, allowing connection to a shop vacuum or dust collector to suit your dust collection setup.

⚠CAUTION

This machine creates a lot of wood chips/dust during operation. Breathing airborne dust on a regular basis can result in permanent respiratory illness. Reduce your risk by wearing a respirator and capturing the dust with a dust-collection system.

Recommended CFM at Dust Port: 150 CFM with 2"–2½" dust hose or 400 CFM with 4" dust hose.

Do not confuse this CFM recommendation with the rating of the dust collector. To determine the CFM at the dust port, you must consider these variables: (1) CFM rating of the dust collector, (2) hose type and length between the dust collector and the machine, (3) number of branches or wyes, and (4) amount of other open lines throughout the system. Explaining how to calculate these variables is beyond the scope of this manual. Consult an expert or purchase a good dust collection "how-to" book.

Installing Dust Port Adapter

To install the dust port adapter, slide the adapter over the dust port (see **Figure 10**), and secure with the pre-installed screw.

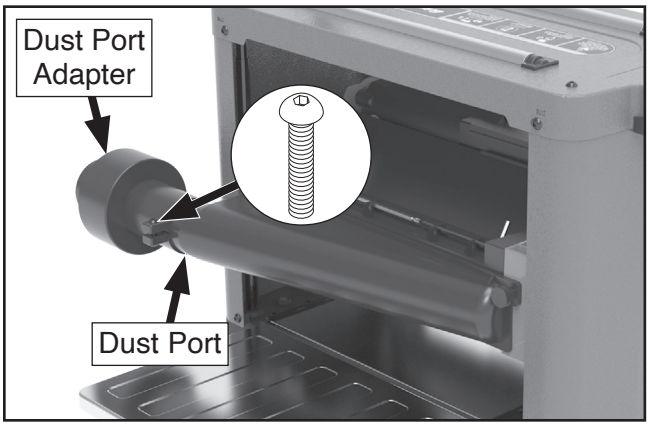


Figure 10. Dust port adapter installed.

Connecting Dust Hose

To connect a dust hose, fit a 2", 2½", or 4" dust hose over the dust port/adapter and secure with a hose clamp (see **Figure 11**). Tug the hose to make sure it does not come off.

Note: *A tight fit is necessary for proper performance.*

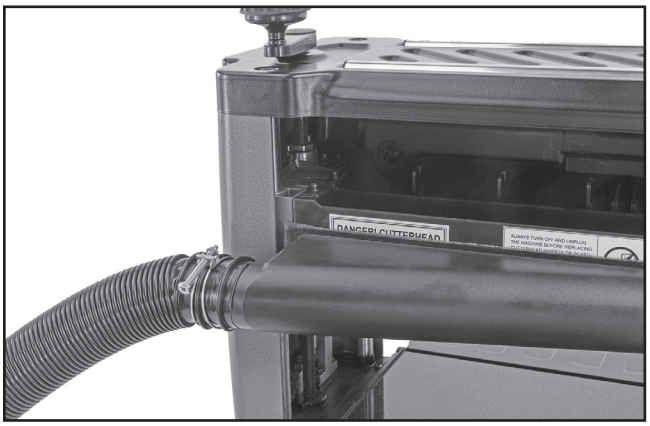


Figure 11. Example of dust hose installed.

Test Run

Once assembly is complete, test run the machine to ensure it is properly connected to power and safety components are functioning correctly.

If you find an unusual problem during the test run, immediately stop the machine, disconnect it from power, and fix the problem BEFORE operating the machine 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, and 2) the switch disabling key disables the switch properly.

⚠WARNING

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

⚠WARNING

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

To test run machine:

1. Clear all setup tools away from machine.

2. Connect machine to power supply.

3. Turn machine ***ON***, verify motor operation, then turn machine ***OFF***.

   Motor should run smoothly and without unusual problems or noises.

4. Remove switch disabling key, as shown in **Figure 12**.

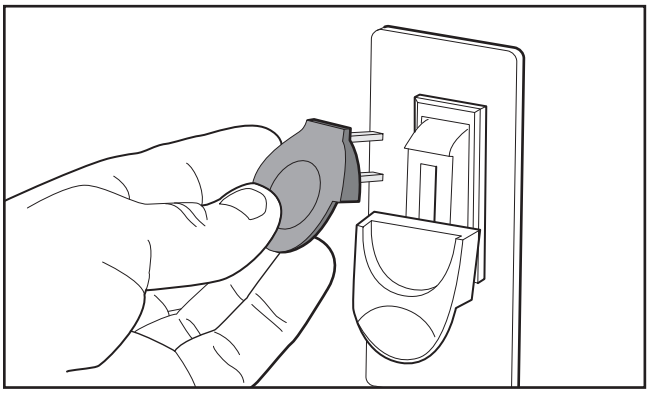


Figure 12. Removing switch disabling key from ON/OFF switch.

5. Try to start machine with ON/OFF switch. Machine should not start.

   — If machine *does not* start, switch disabling feature is working correctly.

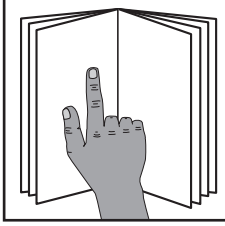
   — If machine *does* start, immediately stop machine and disconnect from power. Switch disabling feature is not working correctly. This safety feature must work properly before proceeding with regular operations. Call Tech Support for help.

SECTION 4: OPERATIONS

Operation Overview

The purpose of this overview is to provide the novice machine operator with a basic understanding of how the machine is used during operation, so the machine controls/components discussed later in this manual are easier to understand.

Due to the generic nature of this overview, it is **not** intended to be an instructional guide. To learn more about specific operations, read this entire manual, seek additional training from experienced machine operators, and do additional research outside of this manual by reading "how-to" books, trade magazines, or websites.



⚠WARNING

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

⚠WARNING

Eye injuries, respiratory problems, or hearing loss can occur while operating this tool. Wear personal protective equipment to reduce your risk from these hazards.





NOTICE

If you are not experienced with this type of machine, 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.

To complete a typical operation, the operator does the following:

1. Examines workpiece to make sure it is suitable for planing.

2. Puts on safety glasses or face shield, a respirator, and ear protection.

3. Places workpiece on table with flat side down and correctly adjusts cutterhead elevation for workpiece thickness and depth of cut.

— If workpiece is bowed, operator flattens one side with jointer or hand plane.

4. When all safety precautions have been taken, starts dust collection system, then turns planer ***ON***.

5. Stands to one side of planer path to reduce risk of kickback injuries, then feeds workpiece into planer until infeed roller grabs it.

Note: *Infeed and outfeed rollers control feed rate of workpiece as it passes through planer. Operator does not push or pull on workpiece.*

— If cut is too deep and bogs down planer, operator immediately reduces depth of cut.

6. Once workpiece is clear of outfeed roller and stops moving, operator removes workpiece from outfeed table and measures workpiece thickness. If further planing is required, operator typically lowers cutterhead approximately ¼ to ½ turn of the cutterhead elevation crank, then feeds workpiece into front of planer again.

7. Operator continues process until desired thickness is achieved, then turns machine and dust collector ***OFF***.

Workpiece Inspection

Some workpieces are not safe to use or may require modification before they are. **Before planing, inspect all workpieces for the following:**

- **Material Type:** This machine is only intended for workpieces of natural wood fiber. Attempting to use workpieces of any other material that may break apart during operation could lead to serious personal injury and property damage.

- **Foreign Objects:** Inspect lumber for defects and foreign objects (nails, staples, embedded gravel, etc.). If you have any question about the quality of your lumber, DO NOT use it. Remember, wood stacked on a concrete floor can have small pieces of stone or concrete pressed into the surface.

- **Large/Loose Knots:** Loose knots can become dislodged during operation. Large knots can cause kickback and machine damage. Always use workpieces that do not have large/loose knots.

- **Wet or "Green" Stock:** Avoid using wood with a high water content. Wood with more than 20% moisture content or wood exposed to excessive moisture (such as rain or snow), will cut poorly and cause excessive wear to the machine. Excess moisture can also hasten rust and corrosion of the machine and/or individual components.

- **Excessive Warping:** Workpieces with excessive cupping, bowing, or twisting are dangerous to plane because they are unstable and often unpredictable when being planed. DO NOT use workpieces with these characteristics!

- **Minor Cupping:** Always true a cupped workpiece with a jointer prior to planing. Workpieces with slight cupping can be safely supported if the cupped side is facing the table. On the contrary, a workpiece supported on the bowed side will rock during operation and could cause severe injury from kickback.

Wood Types

The species of wood, as well as its condition, greatly affects the depth of cut the planer can effectively take with each pass.

The chart in the figure below shows the Janka Hardness Rating for a number of commonly used species. The larger the number, the harder the workpiece, and the less material should be removed in any one pass for good results.

Note: *The Janka Hardness Rating is expressed in pounds of force required to embed a 0.444" steel ball into the surface of the wood to a depth equal to half the ball's diameter.*

Species	Janka Hardness
Ebony	3220
Red Mahogany	2697
Rosewood	1780
Red Pine	1630
Sugar Maple	1450
White Oak	1360
White Ash	1320
American Beech	1300
Red Oak	1290
Black Walnut	1010
Teak	1000
Black Cherry	950
Cedar	900
Sycamore	770
Douglas Fir	660
Chestnut	540
Hemlock	500
White Pine	420
Basswood	410
Eastern White Pine	380
Balsa	100

Figure 13. Janka Hardness Rating for some common wood species.

Planing Tips

- Inspect your lumber for twisting or cupping, and surface one face on a jointer if necessary before planing workpiece.
- Scrape off all glue when planing glued-up panels. Dried glue can quickly dull knives/inserts.
- DO NOT plane multiple pieces side by side.
- Never remove more than the recommended amount of material on each pass. Only remove a small amount of material on each pass when planing wide or dense stock.
- Support the workpiece on both ends. Get assistance from another person if you are planing long lumber, or use roller stands to support the workpiece.
- Measure the workpiece thickness with calipers to get exact results.
- Carefully inspect all stock to make sure it is free of large knots or foreign objects that may damage your knives/inserts, cause kickback, or be ejected from the planer.
- When possible, plane equal amounts on each side of the board to reduce the chance of twisting or cupping.
- Use the entire width of the planer to wear knives/inserts evenly. With narrow workpieces, alternate between far left, far right, and the middle of the table. Your knives/inserts will remain sharp much longer.
- To avoid "chip marks," always plane WITH the grain direction of the wood. Never plane cross-grain or end-grain.
- Plane ONLY natural wood fiber. Do not plane wood composites or other materials that could break up in the planer and cause operator injury or damage to planer.

Common Planing Problems

Below is a list of wood characteristics you may encounter when planing. The following descriptions of defects will give you some possible answers to problems you may encounter while planing different materials. Possible solutions follow the descriptions.

Chipped Grain

Problem: Usually a result of cutting against the grain, planing lumber with knots or excessive amount of cross grain, or using dull knives/inserts.

Note: *Some amount of chipping is normal with highly figured wood.*

Solution: Decrease the depth of cut. Reduce the feed rate. Inspect your lumber and determine if its grain pattern is causing the problem. If the lumber does not show substantial crossgrain, inspect your knives/inserts.

Fuzzy Grain

Problem: Usually caused by surfacing lumber with too high of a moisture content. Sometimes fuzzy grain is an unavoidable characteristic of some woods, such as basswood. Fuzzy grain can also be caused by dull knives/inserts.

Solution: Check the lumber with a moisture meter. If moisture is greater than 20%, sticker the lumber and allow it to dry. Otherwise, inspect the knife/insert condition.

Snipe

Problem: Occurs when board ends have more material removed than the rest of the board. Usually caused when the workpiece is not properly supported as it goes through the machine. In many cases, however, a small amount of snipe is inevitable.

Solution: Hold workpiece up slightly as it leaves the outfeed end of the planer. The best way to deal with snipe is by planing lumber longer than your intended work length and then cutting off the excess after planing is completed.

Pitch & Glue Build-up

Problem: Glue and resin buildup on the rollers and cutterhead will cause overheating by decreasing cutting sharpness while increasing drag in the feed mechanism. The result can include scorched lumber, uneven knife/insert marks, and chatter.

Solution: Clean the rollers and cutterhead.

Chip Marks or Indentations

Problem: Chip indentation or chip bruising is the result of wood chips not being thrown away from the cutterhead and out of the machine. Instead they are carried around the cutterhead, deposited on the planed surface and crushed by the outfeed roller. Some of the causes of chip indentation are:

- Wood chips/sawdust not being properly expelled from the cutterhead.
- The type of lumber being planed. Certain species have a tendency to chip bruise.
- A high moisture content (over 20%) or surface moisture (refer to **Workpiece Inspection**).
- Dull knives/inserts.
- Excessive depth of cut.

Solution:

- Use a proper dust-collection system.
- Lumber must be completely dry, preferably kiln-dried (KD). Air-dried (AD) lumber must be seasoned properly and have no surface moisture. DO NOT surface partially-air-dried (PAD) lumber.
- Make sure planer knives/inserts are sharp.
- Reduce depth of cut.

Adjusting Depth of Cut

Table Movement per Handwheel Revolution
One Full Revolution .....1/16"

The depth of cut on a planer means the amount of material that is removed from the top of the workpiece as it passes underneath the cutterhead.

The depth of cut is set by adjusting the distance of the cutterhead above the table. Rotating the elevation crank clockwise raises the cutterhead, while rotating the crank counterclockwise lowers it (see **Figure 14**). This distance is the thickness of the workpiece minus the depth of cut. The range of material thickness that can be planed is 3/16"–6".

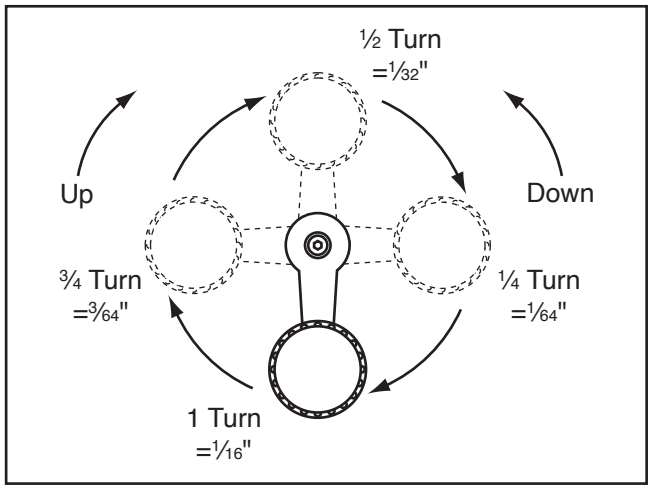


Figure 14. Handwheel elevation increments.

A small amount of backlash may be present with the cutterhead elevation crank after switching directions. Switching elevation direction may cause slightly less than 1/16" backlash during the first rotation of the crank. As the elevation crank is turned more rotations in the same direction, backlash will not be a factor.

Although the correct depth of cut varies according to wood hardness and workpiece width, we recommend the maximum depth of cut (per pass) be no more than 1/16" for a full width board and no more than 3/32" for a 6" board. A series of light cuts will give better end results and put less stress on the planer than trying to take off too much material in a single pass.

Cutterhead Elevation Scale

The cutterhead elevation scale (see **Figure 15**) on the front of the machine shows workpiece thickness after it leaves the planer. The thickness measurement is indicated by the top edge of the pointer.

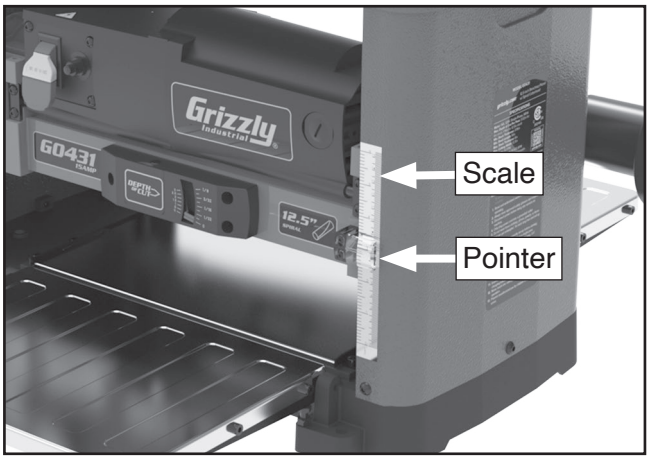


Figure 15. Cutterhead elevation scale.

Note: *The cutterhead elevation scale does not provide a precise measurement and should only be used for approximate measurements. If precise workpiece thicknesses are needed, use calipers to ensure your workpieces meet your standards.*

Depth-of-Cut Indicator

The depth-of-cut indicator (see **Figure 16**) on the front of the machine shows the depth of cut as stock enters the machine.

Maximum Cut Depth (Full Width).....1/16"
Maximum Cut Depth at (6" Width).....3/32"

Note: *Any cut depths above 1/16" for full width stock will bog down the motor and affect cut quality.*

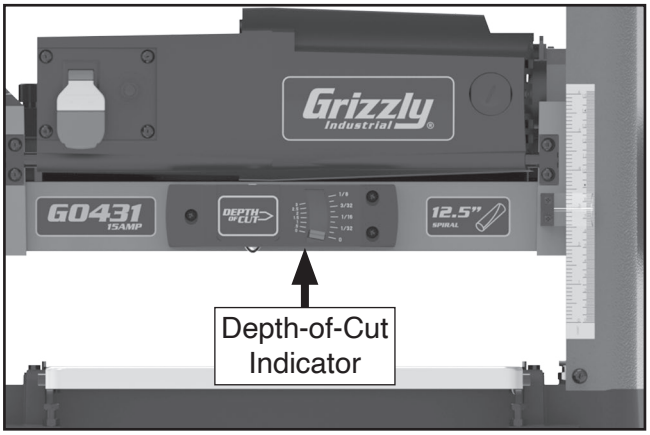


Figure 16. Depth-of-cut indicator.

Feeding Workpiece

Infeed and outfeed rollers move the workpiece through the planer at a rate of 26 feet per minute while keeping it firmly against the table and providing a consistent rate of movement.

⚠WARNING

Bowed, twisted, or cupped workpieces can cause kickback, leading to serious injury.

To feed workpiece:

1. Place workpiece on table with side to be planed facing *up* toward cutterhead.

   Note: *Boards more than 24" long should be supported on both ends of planer.*

2. Lower cutterhead until depth-of-cut indicator button (see **Figure 17**) just touches workpiece, then remove workpiece from planer.

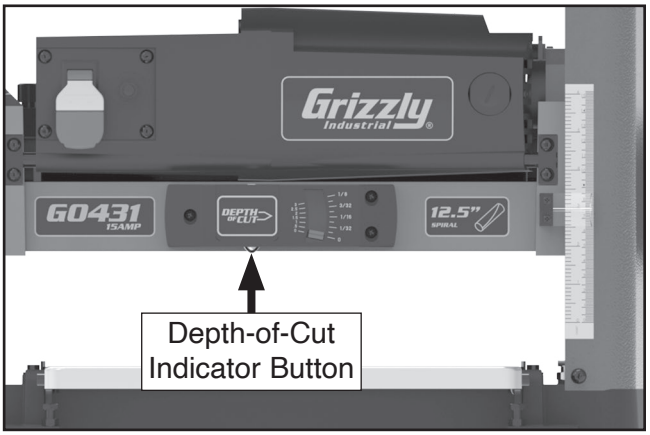


Figure 17. Depth-of-cut indicator button.

Note: *Whenever elevation direction is changed , there will be a small amount of backlash—so first rotation of crank after switching directions will be slightly less than 1/16". However, as long as you move crank in same direction during operation, backlash will not be a factor.*

3. Rotate cutterhead elevation crank counterclockwise approximately ½ turn to set depth of cut to 1/32".

4. Turn machine ***ON***.

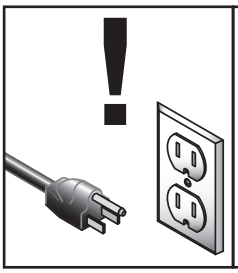
5. Feed workpiece into front of planer, making sure not to stand directly in front or behind workpiece to reduce the risk of a kickback injury.

   — If cut is too deep and bogs down planer, rotate elevation crank clockwise to raise reduce depth of cut.

   Note: *Infeed and outfeed rollers will control feed rate of workpiece as it passes through planer. Do not push or pull on workpiece as it passes through planer.*

6. Once workpiece is clear of outfeed roller, measure workpiece thickness. If further planing is needed, lower cutterhead by turning elevation crank handle ½ turn (1/32"), and repeat **Step 5**.

SECTION 5: MAINTENANCE



⚠WARNING
To reduce risk of shock or accidental startup, always disconnect machine from power before adjustments, maintenance, or service.

Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Ongoing
To minimize your risk of injury and maintain proper machine operation, shut down the machine immediately if you ever observe any of the items below, and fix the problem before continuing operations:

- Loose mounting bolts.
- Build-up of dust and debris.
- Worn or damaged inserts.
- Worn or damaged wires.
- Any other unsafe condition.

Monthly
- Clean infeed and outfeed rollers with mineral spirits.
- Clean and lubricate elevation leadscrews (**Page 24**).
- Clean and lubricate feed roller chains and sprockets (**Page 25**).
- Remove dust chute and cutterhead guard and thoroughly clean built-up sawdust and chips.

Cleaning & Protecting

Cleaning the Model G0431 is relatively easy. Vacuum excess wood chips and sawdust, and wipe off the remaining dust with a dry cloth. If any resin has built up, use a resin dissolving cleaner to remove it.

Lubrication

There are three primary systems that require periodic lubrication: the cutterhead elevation leadscrews, the feed roller drive chain and sprockets, and the elevation chain. Clean the components with an oil/grease solvent cleaner or mineral spirits before applying lubrication.

Items Needed	Qty
Hex Wrench 4mm	1
Soft Wire Brush	1
Mineral Spirits	As Needed
Shop Rags	As Needed

For clear access to the leadscrews, feed roller chains, and sprockets, remove the top cover and side panels.

Removing Top Cover & Side Panels

1. DISCONNECT MACHINE FROM POWER!

2. Remove screw securing crank handle (see **Figure 18**) and remove crank handle.

3. Remove (6) screws securing bottom of side panels (see **Figure 18**).

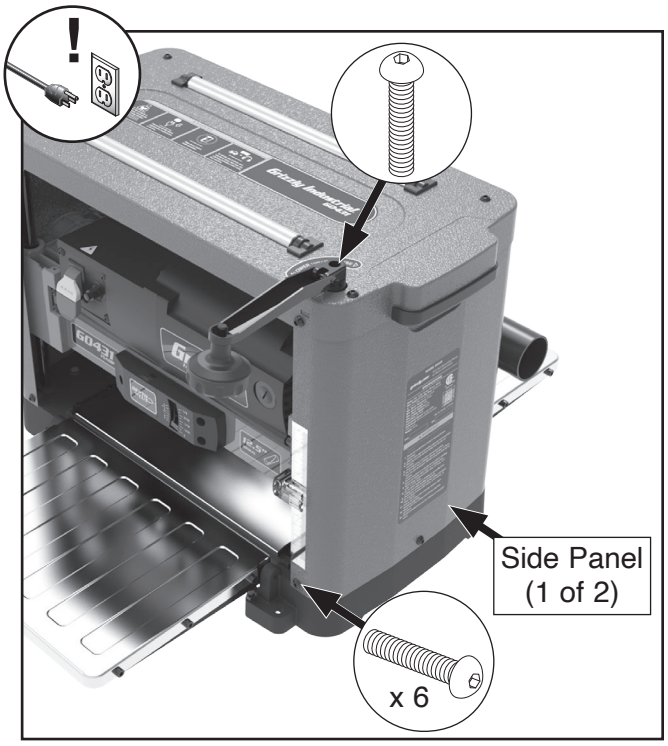


Figure 18. Location of crank handle and side cover fasteners.

4. Carefully lift top cover and side panel assembly straight up and away from machine.

Installing Top Cover & Side Panels

To install top cover and side panels, carefully slide top cover and side panel assembly over machine until it is seated at the base and secure, then install crank handle.

Elevation Leadscrews

Lubrication Type ..... Dry Coating Lubricant
Frequency.....Monthly

Gently brush the leadscrews (see **Figure 19**) with mineral spirits and wipe them clean with a shop rag. Spray lubricant onto each leadscrew. Adjust the headstock up and down to distribute the lubricant.

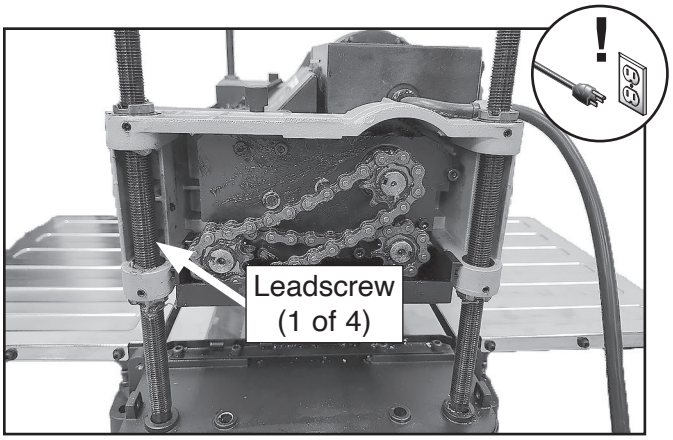


Figure 19. Location of leadscrews.

Wipe off any spills or excess lubricant from the machine to reduce sawdust buildup.

Feed Roller Drive Chains & Sprockets

Lubrication Type ... T26419 or NLGI#2 Equivalent
Lubrication Frequency .....Monthly

Gently brush the chains and sprockets (see **Figure 20**) with mineral spirits and wipe them clean with a shop rag, then apply a thin layer of fresh grease to the chains. The grease will distribute to the sprockets as the machine is operated.

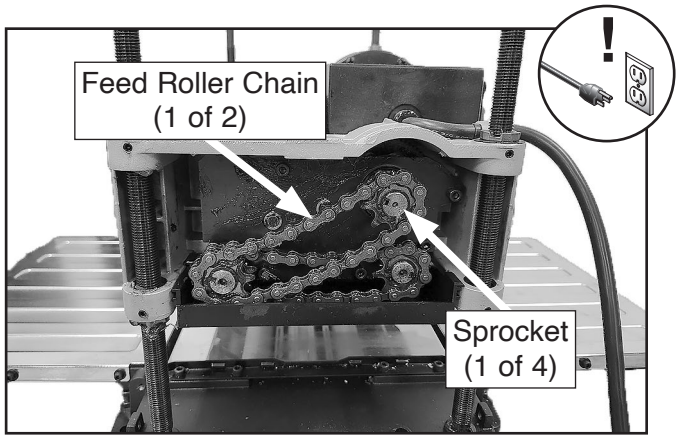


Figure 20. Location of feed roller chains and sprockets.

Wipe off any spills or excess lubricant from the machine to reduce sawdust buildup.

Elevation Chain & Sprockets

Lubrication Type ... T26419 or NLGI#2 Equivalent
Lubrication Frequency .....Monthly

Carefully tilt machine onto its side, as shown in **Figure 21**. Gently brush the chains and sprockets with mineral spirits and wipe them clean with a shop rag, then apply a thin layer of fresh grease to the chain. The grease will distribute to the sprockets as the headstock is adjusted up and down.

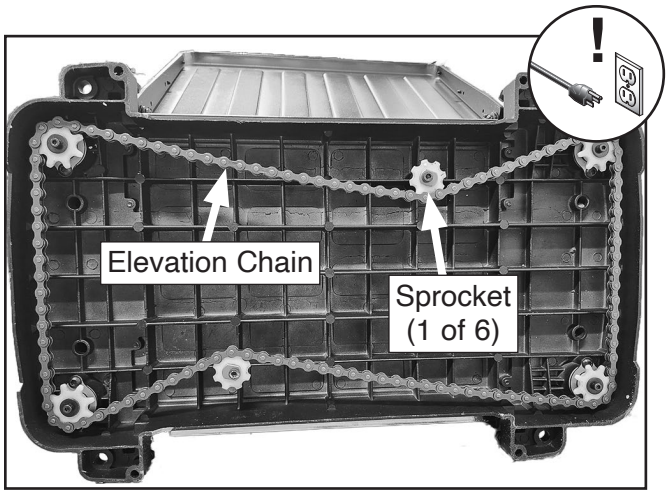


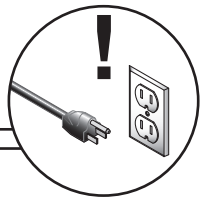
Figure 21. Location of elevation chain and sprockets

Wipe off any spills or excess lubricant from the machine to reduce sawdust buildup.

SECTION 6: SERVICE

Review the troubleshooting procedures in this section if a problem develops with your machine. If you need replacement parts or additional help with a procedure, call our Technical Support. **Note:** *Please gather the serial number and manufacture date of your machine before calling.*

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start, or power supply breaker immediately trips after startup.	1. Switch disabling key removed. 2. Power supply circuit breaker tripped or fuse blown. 3. Machine circuit breaker tripped. 4. Incorrect power supply voltage or circuit size. 5. Wiring broken, disconnected, or corroded. 6. Motor brushes worn out. 7. Motor or motor bearing at fault.	1. Install switch disabling key. 2. Ensure circuit is free of shorts. Reset circuit breaker or replace fuse. 3. Reset circuit breaker on switch. 4. Ensure correct power supply voltage and circuit size. 5. Fix broken wires or disconnected/corroded connections. 6. Replace brushes (**Page 29**). 7. Replace motor.
Machine stalls or is underpowered.	1. Motor brushes worn out. 2. Motor overheated, tripping machine circuit breaker. 3. Extension cord too long. 4. Motor or motor bearings at fault.	1. Replace brushes (**Page 29**). 2. Clean motor, let cool, and reduce workload. Reset breaker. 3. Move machine closer to power supply; use shorter extension cord. 4. Replace motor.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. Motor bearings at fault.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Operations

Symptom	Possible Cause	Possible Solution
Motor overheats or operates at limited RPM.	1. Motor overloaded during operation. 2. Motor brushes worn or at fault.	1. Reduce depth of cut (**Page 21**); reduce cutting depth when planing hard woods. 2. Replace motor brushes (**Page 29**).
Machine stalls or is underpowered.	1. Workpiece material unsuitable for machine. 2. Gearbox at fault. 3. V-belt slipping/pulleys misaligned. 4. Pulley slipping on shaft. 5. Machine undersized for task.	1. Only cut wood/ensure moisture is below 20%. 2. Replace broken or slipping gearbox component. 3. Clean/tension/replace V-belt; ensure pulleys are aligned. 4. Tighten/replace loose pulley. 5. Use sharp inserts; reduce depth of cut (**Page 21**), reduce cutting depth when planing hard woods.

Operations (Cont.)

Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation.	1. Incorrectly mounted on workbench. 2. Cutterhead insert(s) dull or damaged. 3. V-belt worn/loose, pulleys misaligned or belt slapping cover. 4. Cutterhead bearings at fault.	1. Adjust feet, shim, or tighten mounting hardware. 2. Replace cutterhead insert(s) (**Page 28**). 3. Inspect/replace belt. Realign pulleys if necessary. 4. Replace cutterhead bearings.
Excessive snipe (gouge in end of board that is uneven with rest of cut). **Note:** *A small amount of snipe is inevitable with all types of planers—the key is to minimize it.*	1. Rear extension wing (or aftermarket support table) not aligned with main table. 2. Workpiece not supported as it leaves planer. 3. Some snipe is inevitable.	1. Adjust rear extension wing to align with main table (**Page 31**). 2. Support workpiece as it leaves outfeed end of planer. 3. Plane lumber longer than your intended workpiece length, then cut off excess after planing complete.
Workpiece stops/slows in middle of cut.	1. Pitch and glue buildup on planer components.	1. Clean internal cutterhead components with pitch/resin dissolving solvent.
Chipping (consistent pattern).	1. Knots or conflicting grain direction in wood. 2. Excessive depth of cut. 3. Nicked, chipped, or dull cutterhead insert(s)	1. Inspect workpiece for knots and grain direction; only use clean stock, and cut WITH the grain. 2. Reduce depth of cut (**Page 21**); reduce cutting depth when planing hard woods. 3. Replace cutterhead insert(s) (**Page 28**).
Chipping/ indentation in workpiece surface (inconsistent pattern).	1. Chips are not being properly expelled from cutterhead.	1. Use proper dust collection system (**Page 15**).
Fuzzy grain.	1. Wood may have high moisture content or surface wetness. 2. Cutterhead insert(s) dull.	1. Check moisture content is below 20% and allow to dry if moisture is too high. 2. Rotate/replace cutterhead insert(s) (**Page 28**).
Long lines or ridges that run along length of board.	1. Nicked or chipped cutterhead insert(s).	1. Rotate/replace cutterhead insert(s) (**Page 28**).
Uneven cutting marks, wavy surface, or chatter marks across face of board.	1. Cutterhead insert(s) not properly installed. 2. Cutterhead bearings worn.	1. Properly clean mounting surfaces and re-install cutterhead insert(s) (**Page 28**). 2. Replace cutterhead bearings.
Glossy surface.	1. Cutterhead insert(s) dull. 2. Cutting depth too shallow.	1. Rotate/replace cutterhead insert(s) (**Page 28**). 2. Increase depth of cut (**Page 21**).

Rotating/Replacing Cutterhead Inserts

The spiral cutterhead is equipped with indexable inserts with a usable cutting edge on two sides. If one edge of the insert becomes dull or damaged, simply rotate it 90° to reveal a fresh cutting edge. Inserts only need to be replaced when both cutting edges have been worn or damaged.

Items Needed

Work Gloves ..... 1 Pair
Torx Wrench T-25 1
Flat Hd Torx Screws M5-.8 x 15.6
(P0431121) ..... As Needed
Cutterhead Inserts (P0431120)..... As Needed
Clean Shop Rags .....As Needed
Light Machine Oil.....As Needed

⚠CAUTION

Cutterhead inserts are very sharp and can quickly cut hands. ALWAYS use work gloves and extreme caution when handling these parts to reduce risk of personal injury.

To rotate or replace cutterhead inserts:

1. DISCONNECT MACHINE FROM POWER!

2. Remove dust chute and cutterhead guard see (**Figure 22**).

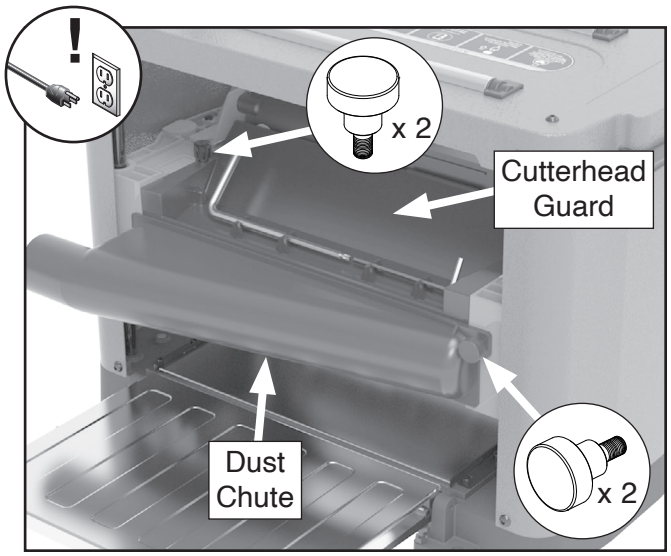


Figure 22. Location of dust chute and cutterhead guard.

3. Remove any sawdust or debris from head of insert, Torx screw, and surrounding area (see **Figure 23**).

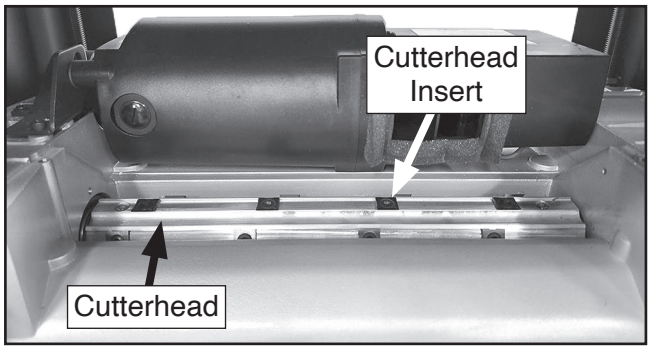


Figure 23. Location of cutterhead.

4. Remove Torx screw and insert, then clean all dust and debris from screw, insert, and cutterhead pocket.

   Note: *Proper cleaning of insert, Torx screw, and cutterhead pocket is critical to achieving a smooth finish. Dirt or dust trapped between insert and cutterhead will raise insert, and make marks on your workpiece when planing.*

5. Install insert so that fresh cutting edge faces direction of cutterhead rotation (see **Figure 24**).

   — If both insert cutting edges have been used, replace insert with a new one.

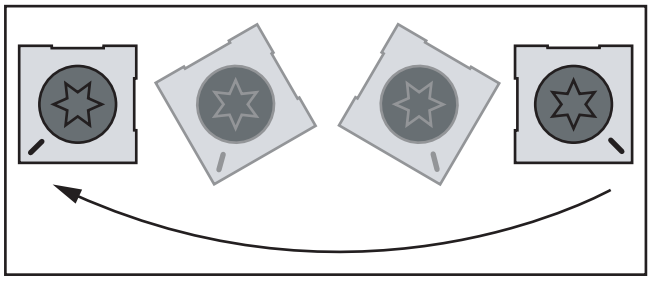


Figure 24. Insert rotation (viewed from rear of machine).

6. Lubricate Torx screw threads with a very small amount of light machine oil, wipe off excess and secure cutterhead insert.

   Note: *If too much oil is applied to threads, excess oil will attempt to squeeze out of threaded hole and raise insert during installation, bringing it out of height alignment.*

7. Install cutterhead guard and dust chute.

Replacing Motor Brushes

This motor is equipped with two long-life carbon brushes. However, brush life expectancy is affected by motor loads and usage. Regularly planing wide, dense boards or cutting too deeply will reduce brush life.

Check brushes if motor loses power or becomes noisy. Replace the carbon brushes as a set when the motor no longer reaches full power or if brushes measure less than ¼" long (new brushes are approximately ⅝" long).

Items Needed	Qty
Flat Head Screwdriver ¼"	1
Motor Brushes (P0431179)	1 Set

To replace motor brushes:

1. DISCONNECT MACHINE FROM POWER!

2. Unscrew brush cap and carefully remove brush from motor (see **Figure 25**).



Figure 25. Example of removing motor brush.

3. Install new brush and re-install brush cap.

4. Repeat **Steps 2–3** to replace motor brush on opposite side of motor housing.

Calibrating Scale

The scale pointer is set at the factory however, it can be adjusted for accuracy if necessary.

Items Needed	Qty
Phillips Head Screwdriver #2	1
Scrap Piece of Stock	1
Calipers	1

To calibrate scale:

1. Plane scrap piece of stock until it is flat on both sides and has even thickness along its length.

   Note: *Turn scrap board over between each pass to make surfaces parallel.*

2. Use calipers to measure board thickness.

3. If there is a discrepancy between board thickness and reading on elevation scale, loosen (2) Phillips head screws securing scale pointer (see **Figure 26**), adjust position of pointer to indicate correct thickness, then tighten screws.

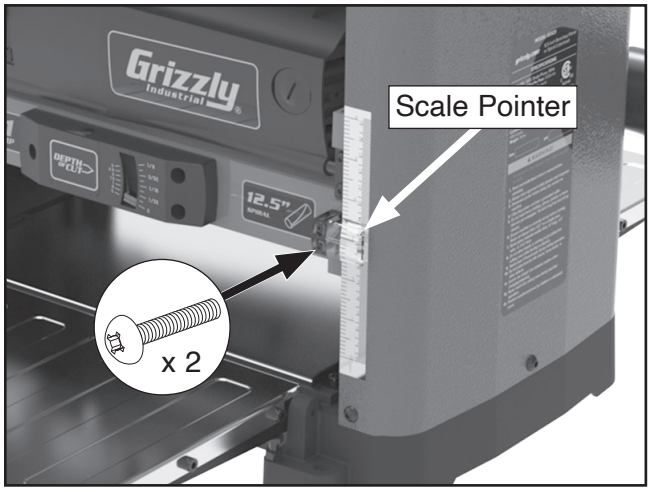


Figure 26. Elevation scale components.

Adjusting Cutterhead/Table Parallelism

The table and cutterhead are checked for parallelism at the factory. However, over long periods of use, parallelism may be affected. To restore parallelism between the table and the cutterhead, perform the following steps.

Items Needed **Qty**
Hex Wrench 4mm..... 1
Scrap Wood Piece..... As Needed

To adjust cutterhead/table parallelism:

1. Plane a test piece of wood. Measure amount of taper side to side and determine which side, if any, needs to be adjusted.

2. DISCONNECT MACHINE FROM POWER!

3. Gently tilt machine onto its side (see **Figure 27**) to expose cutterhead elevation chain and sprockets.

4. Loosen (2) cap screws on idler sprockets (see **Figure 27**) and rotate eccentric shafts to loosen chain. Do not remove chain.

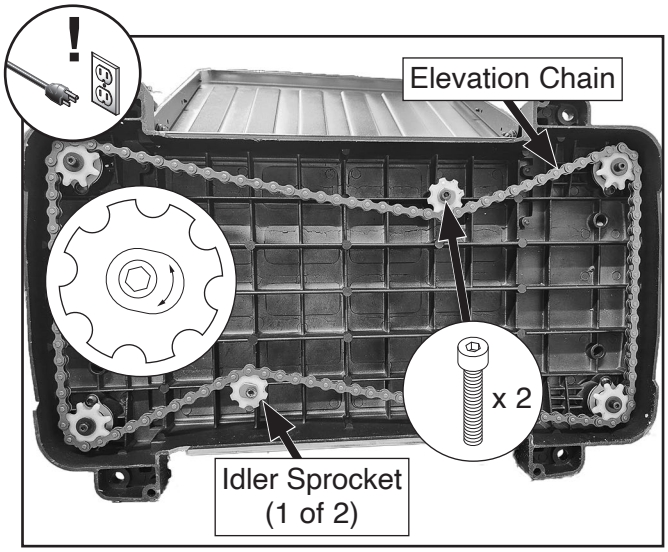


Figure 27. Idler sprockets and chain.

NOTICE

During next step, DO NOT let chain fall off sprockets. It can be very difficult to return chain to proper location on sprockets without changing table adjustments.

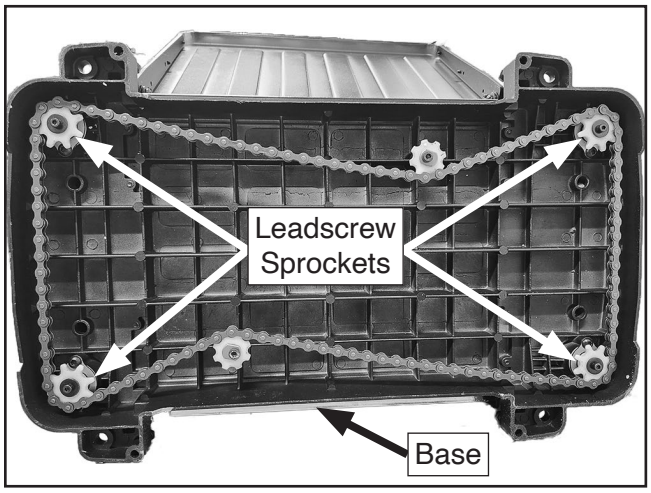


Figure 28. Location of leadscrew sprockets (viewed from bottom).

5. Gently lift chain clear of one leadscrew sprocket at a time. Rotating sprocket by one tooth will move that corner of table by approximately 0.006". Install chain around sprocket.

6. When satisfied with adjustments, tension chain by rotating idler sprocket eccentrics, then tighten cap screws. Set machine back on its base.

7. Perform a test cut to verify parallelism. If cutterhead and table are not parallel, perform **Steps 2–6** again.

Adjusting Extension Wings

The extension wings should support the workpiece as it enters and exits the planer. Begin with the wings level with the main table. If excessive snipe occurs, slightly raise the outer ends of the wings approximately 0.2–0.5mm. Make small, even adjustments and test after each change. Over-adjusting may cause poor feeding or inconsistent cutting results.

Tools Needed	**Qty**
Straight Edge 24"	1
Open-End Wrenches 13mm	2

To adjust extension wings:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen jam nut on each adjustment bolt (see **Figure 29**).

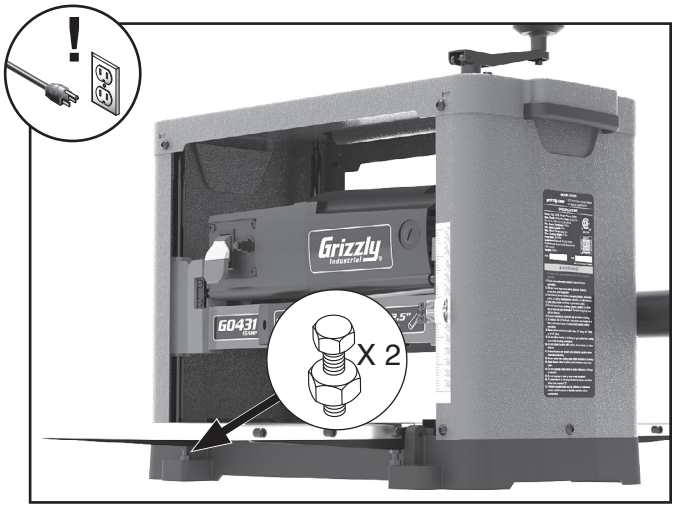


Figure 29. Location of extension wing adjustment bolts (infeed wing shown).

3. Rotate adjustment bolts evenly to raise or lower extension wing.

4. Check extension wing position relative to main table. Repeat **Step 2** as needed until extension wing is properly positioned.

5. Tighten both jam nuts to secure adjustment.

6. Repeat **Steps 2–5** to adjust second extension wing.

SECTION 7: WIRING

These pages are current at the time of printing. However, in the spirit of improvement, we may make changes to the electrical systems of future machines. Compare the manufacture date of your machine to the one stated in this manual, and study this section carefully.

If there are differences between your machine and what is shown in this section, call Technical Support at (570) 546-9663 for assistance BEFORE making any changes to the wiring on your machine. An updated wiring diagram may be available. **Note:** *Please gather the serial number and manufacture date of your machine before calling. This information can be found on the main machine label.*

⚠WARNING
Wiring Safety Instructions

SHOCK HAZARD. Working on wiring that is connected to a power source is extremely dangerous. Touching electrified parts will result in personal injury including but not limited to severe burns, electrocution, or death. Disconnect the power from the machine before servicing electrical components!

MODIFICATIONS. Modifying the wiring beyond what is shown in the diagram may lead to unpredictable results, including serious injury or fire. This includes the installation of unapproved aftermarket parts.

WIRE CONNECTIONS. All connections must be tight to prevent wires from loosening during machine operation. Double-check all wires disconnected or connected during any wiring task to ensure tight connections.

CIRCUIT REQUIREMENTS. You MUST follow the requirements at the beginning of this manual when connecting your machine to a power source.

WIRE/COMPONENT DAMAGE. Damaged wires or components increase the risk of serious personal injury, fire, or machine damage. If you notice that any wires or components are damaged while performing a wiring task, replace those wires or components.

MOTOR WIRING. The motor wiring shown in these diagrams is current at the time of printing but may not match your machine. If you find this to be the case, use the wiring diagram inside the motor junction box.

CAPACITORS/INVERTERS. Some capacitors and power inverters store an electrical charge for up to 10 minutes after being disconnected from the power source. To reduce the risk of being shocked, wait at least this long before working on capacitors.

EXPERIENCING DIFFICULTIES. If you are experiencing difficulties understanding the information included in this section, contact our Technical Support at (570) 546-9663.

NOTICE

The photos and diagrams included in this section are best viewed in color. You can view these pages in color at www.grizzly.com.

COLOR KEY

BLACK	Bk	BLUE	Bl	YELLOW	Yl	LIGHT BLUE	Lb
WHITE	Wt	BROWN	Br	YELLOW GREEN	Yg	BLUE WHITE	Bw
GREEN	Gn	GRAY	Gy	PURPLE	Pu	TURQUOISE	Tu
RED	Rd	ORANGE	Or	PINK	Pk		

Wiring Diagram

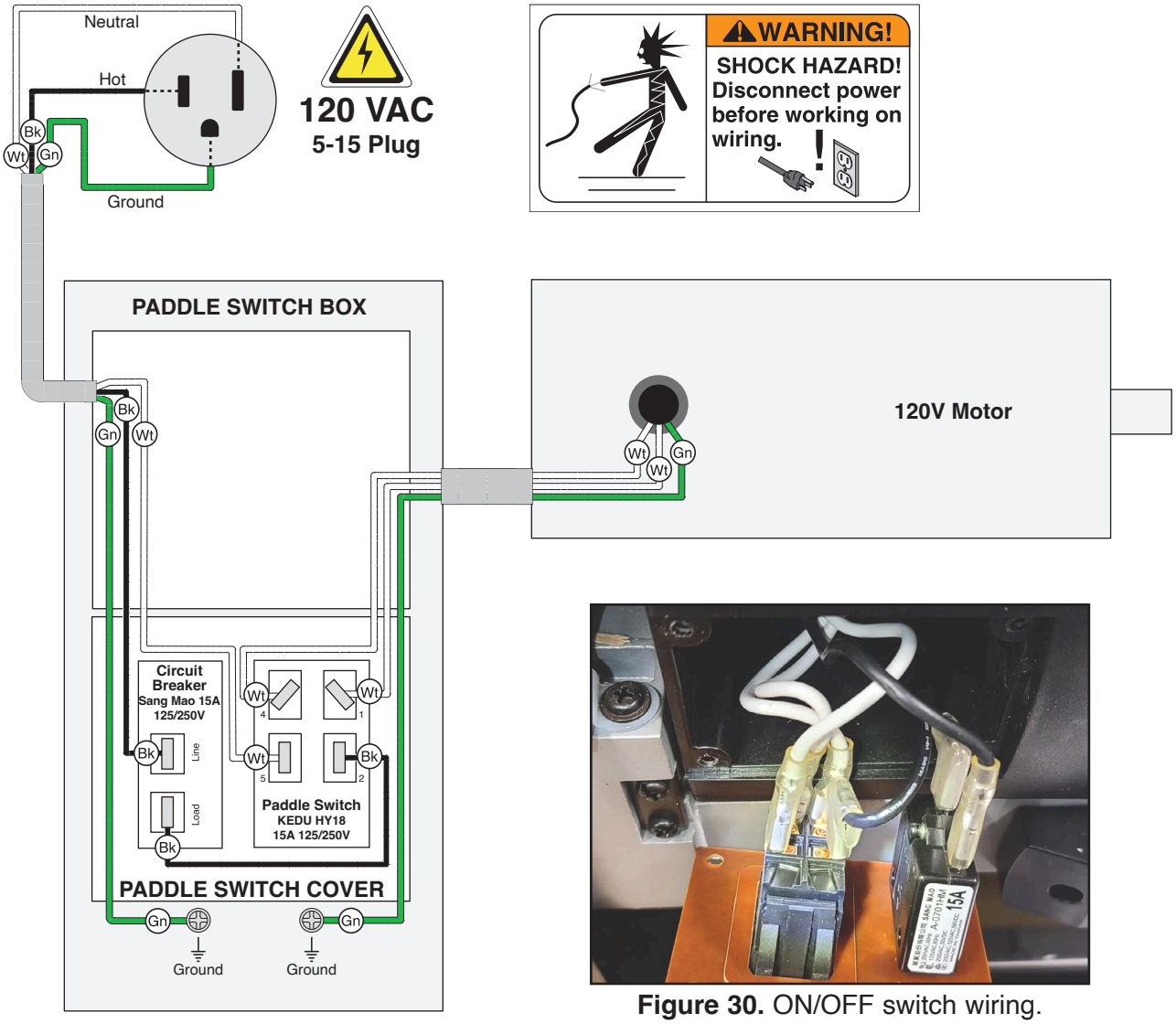
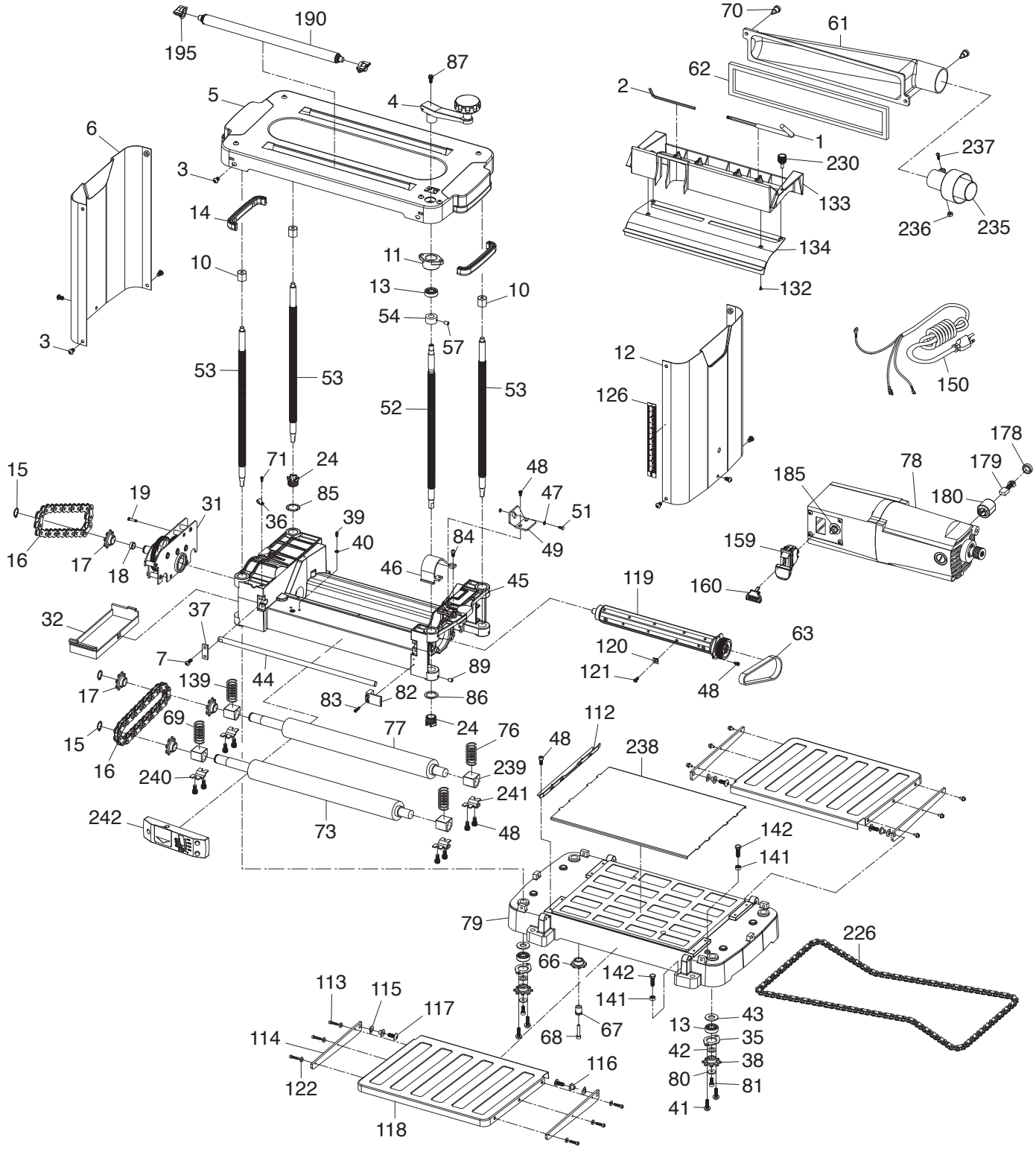


Figure 30. ON/OFF switch wiring.

SECTION 8: PARTS

We do our best to stock replacement parts when possible, but we cannot guarantee that all parts shown are available for purchase. Call **(800) 523-4777** or visit **www.grizzly.com/parts** to check for availability.

Main



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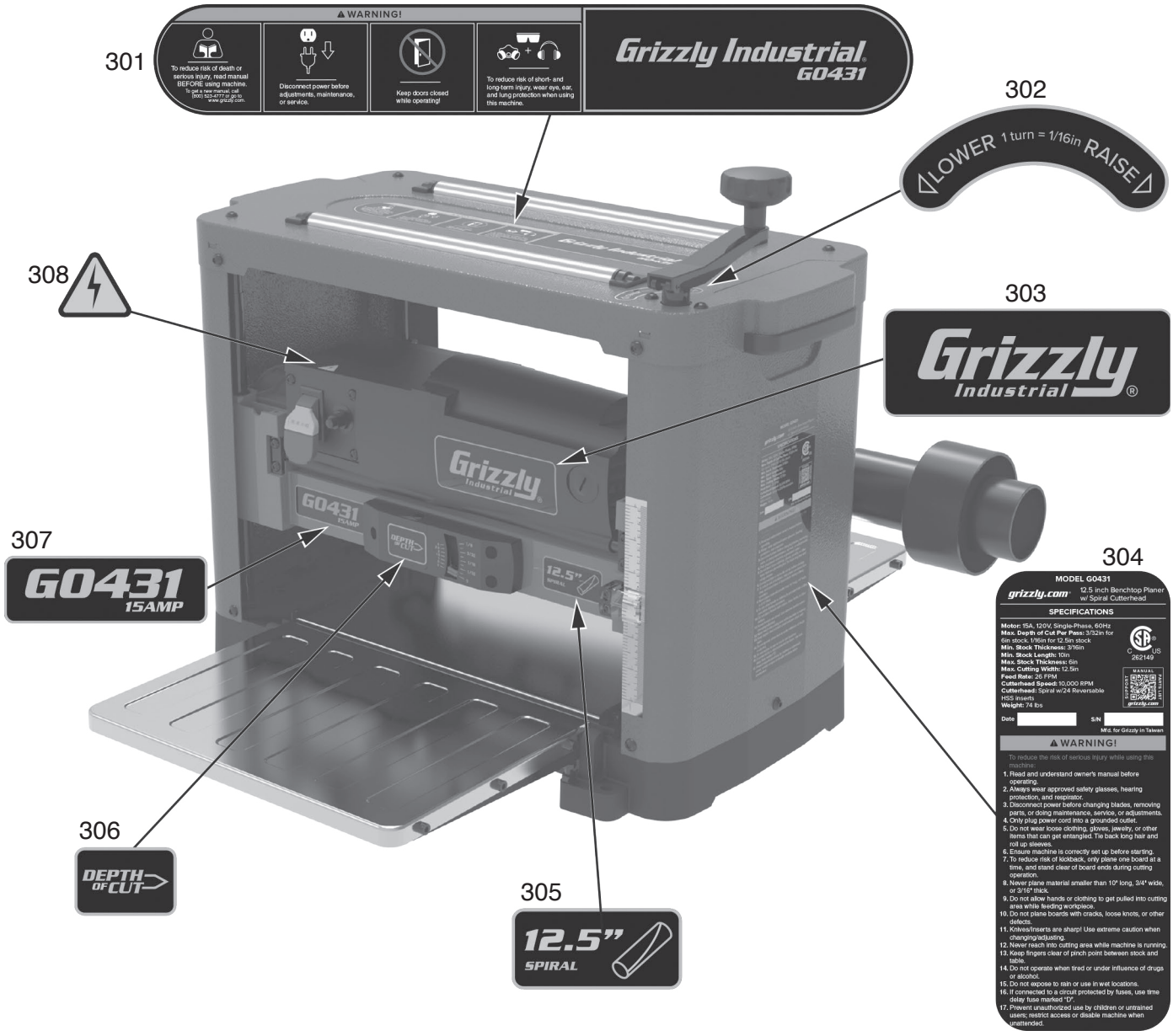
Main Parts List

REF	PART #	DESCRIPTION
1	P0431001	L-HANDLE TORX WRENCH T25
2	P0431002	HEX WRENCH 4MM
3	P0431003	BUTTON HD CAP SCR M6-1 X 8
4	P0431004	ELEVATION CRANK
5	P0431005	TOP COVER
6	P0431006	SIDE PANEL, LEFT
7	P0431007	BUTTON HD CAP SCR M5-.8 X 12
10	P0431010	LEADSCREW END CAP
11	P0431011	BEARING SEAT, UPPER
12	P0431012	SIDE PANEL, RIGHT
13	P0431013	BALL BEARING 6000ZZ
14	P0431014	HANDLE
15	P0431015	EXT RETAINING RING 15MM
16	P0431016	ROLLER CHAIN #410 X 26
17	P0431017	SPROCKET 8T
18	P0431018	SPACER 15 X 20 X 7MM
19	P0431019	CAP SCREW M5-.8 X 35
24	P0431024	LEADSCREW NUT
31	P0431031	GEARBOX
32	P0431032	GEARBOX COVER
35	P0431035	BEARING RETAINER
36	P0431036	CORD CLAMP
37	P0431037	MOTOR MOUNTING PLATE
38	P0431038	LEADSCREW SPROCKET
39	P0431039	PHLP HD SCR M5-.8 X 8
40	P0431040	EXT TOOTH WASHER 5MM
41	P0431041	BUTTON HD CAP SCR M5-.8 X 12
42	P0431042	FLAT WASHER 10.3 X 18 X 1MM
43	P0431043	FLAT WASHER 12.5 X 25.8 X 2MM
44	P0431044	MOTOR PIVOT ROD 10 X 368MM
45	P0431045	HEADSTOCK
46	P0431046	BELT GUARD
47	P0431047	FLAT WASHER 8MM
48	P0431048	CAP SCREW M5-.8 X 12
49	P0431049	MOTOR BRACKET
51	P0431051	HEX BOLT M8-1.25 X 16
52	P0431052	LEADSCREW, PRIMARY
53	P0431053	LEADSCREW, SECONDARY
54	P0431054	SPACER 12 X 19 X 12MM
57	P0431057	SET SCREW M5-.8 X 5 CUP-PT
61	P0431061	DUST CHUTE
62	P0431062	FOAM GASKET 4 X 70 X 365MM
63	P0431063	V-BELT 135J6
66	P0431066	IDLER SPROCKET 8T
67	P0431067	IDLER SPROCKET SHAFT
68	P0431068	CAP SCREW M5-.8 X 25
69	P0431069	COMPRESSION SPRING 2 X 17 X 30
70	P0431070	KNOB BOLT M6-1 X 10
71	P0431071	PHLP HD SCR M5-.8 X 12
73	P0431073	PRESSURE ROLLER, INFEED

REF	PART #	DESCRIPTION
76	P0431076	COMPRESSION SPRING 2 X 15.5 X 30
77	P0431077	PRESSURE ROLLER, OUTFEED
78	P0431078	MOTOR 2 HP 120V 1-PH
79	P0431079	BASE
80	P0431080	FENDER WASHER 4MM
81	P0431081	CAP SCREW M4-.7 X 12
82	P0431082	SCALE POINTER
83	P0431083	PHLP HD SCR M3-.5 X 25
84	P0431084	PHLP HD SCR M4-.7 X 10
85	P0431085	BEARING LOCK WASHER 20 X 28 X 0.5MM
86	P0431086	FLAT WASHER 20 X 28 X 0.5MM
87	P0431087	CAP SCREW M5-.8 X 20
89	P0431089	SET SCREW M5-.8 X 6
112	P0431112	TABLE GUIDE RAIL
113	P0431113	BUTTON HD CAP SCR M4-.7 X 6
114	P0431114	EXTENSION TABLE SUPPORT
115	P0431115	WAVY WASHER 6MM
116	P0431116	FLANGED BUSHING 6.25 X 7.9 X 8, 14 X 2MM
117	P0431117	PHLP HD SCR M6-1 X 16
118	P0431118	EXTENSION TABLE
119	P0431119	CUTTERHEAD SPIRAL 12-1/2"
120	P0431120	HSS INSERT 14.3 X 14.3 X 2MM
121	P0431121	FLAT HD TORX SCR M5-.8 X 15.6
122	P0431122	FLAT WASHER 4MM
126	P0431126	SCALE
132	P0431132	FLAT HD TAP SCR M4 X 8
133	P0431133	CHIP TRAY
134	P0431134	CHIP DEFLECTOR
139	P0431139	COMPRESSION SPRING 2.2 X 18 X 36.5
141	P0431141	HEX NUT M6-1
142	P0431142	HEX BOLT M6-1 X 20
150	P0431150	POWER CORD 14G 3W 72" 5-15P
159	P0431159	ON/OFF SWITCH KEDU-HY18
160	P0431160	SWITCH DISABLING KEY
178	P0431178	MOTOR BRUSH COVER
179	P0431179	CARBON BRUSH 8 X 16 X 17MM
180	P0431180	MOTOR BRUSH HOLDER
185	P0431185	CIRCUIT BREAKER 15A 125V
190	P0431190	RETURN ROLLER
195	P0431195	RETURN ROLLER BRACKET
226	P0431226	ROLLER CHAIN #410 X 112
230	P0431230	KNOB BOLT M5-.8 X 12
235	P0431235	DUST PORT ADAPTER 4" X 2-1/2"
236	P0431236	HEX NUT M5-.8
237	P0431237	BUTTON HD CAP SCR M5-.8 X 25
238	P0431238	MAIN TABLE PLATE
239	P0431239	BEARING BLOCK
240	P0431240	BEARING BLOCK RETAINER, LEFT
241	P0431241	BEARING BLOCK RETAINER, RIGHT
242	P0431242	DEPTH-OF-CUT INDICATOR

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Labels & Cosmetics



REF	PART #	DESCRIPTION
301	P0431301	COMBO WARNING LABEL
302	P0431302	ELEVATION CRANK LABEL
303	P0431303	GRIZZLY INDUSTRIAL LABEL
304	P0431304	MACHINE ID LABEL

REF	PART #	DESCRIPTION
305	P0431305	CUTTERHEAD LABEL
306	P0431306	DEPTH OF CUT LABEL
307	P0431307	MODEL NUMBER LABEL
308	P0431308	ELECTRICITY 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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WARRANTY & RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** 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 and 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.

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.

For further information about the warranty, visit **https://www.grizzly.com/forms/warranty** or scan the QR code below to be automatically directed to our warranty page.

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