MODEL T33903/T33904
17" & 20" FLOOR DRILL PRESS w/LED LIGHT & LASER GUIDE

OWNER'S MANUAL

(For models manufactured since 07/23)

#CS22755 PRINTED IN CHINA V1.01.24

******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.

Table of Contents

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

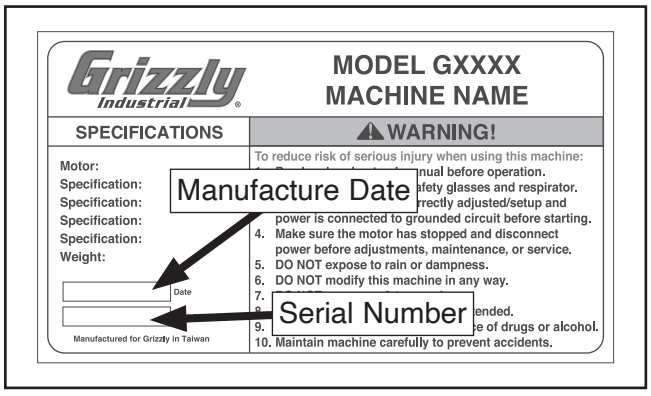
Manual Accuracy

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**.

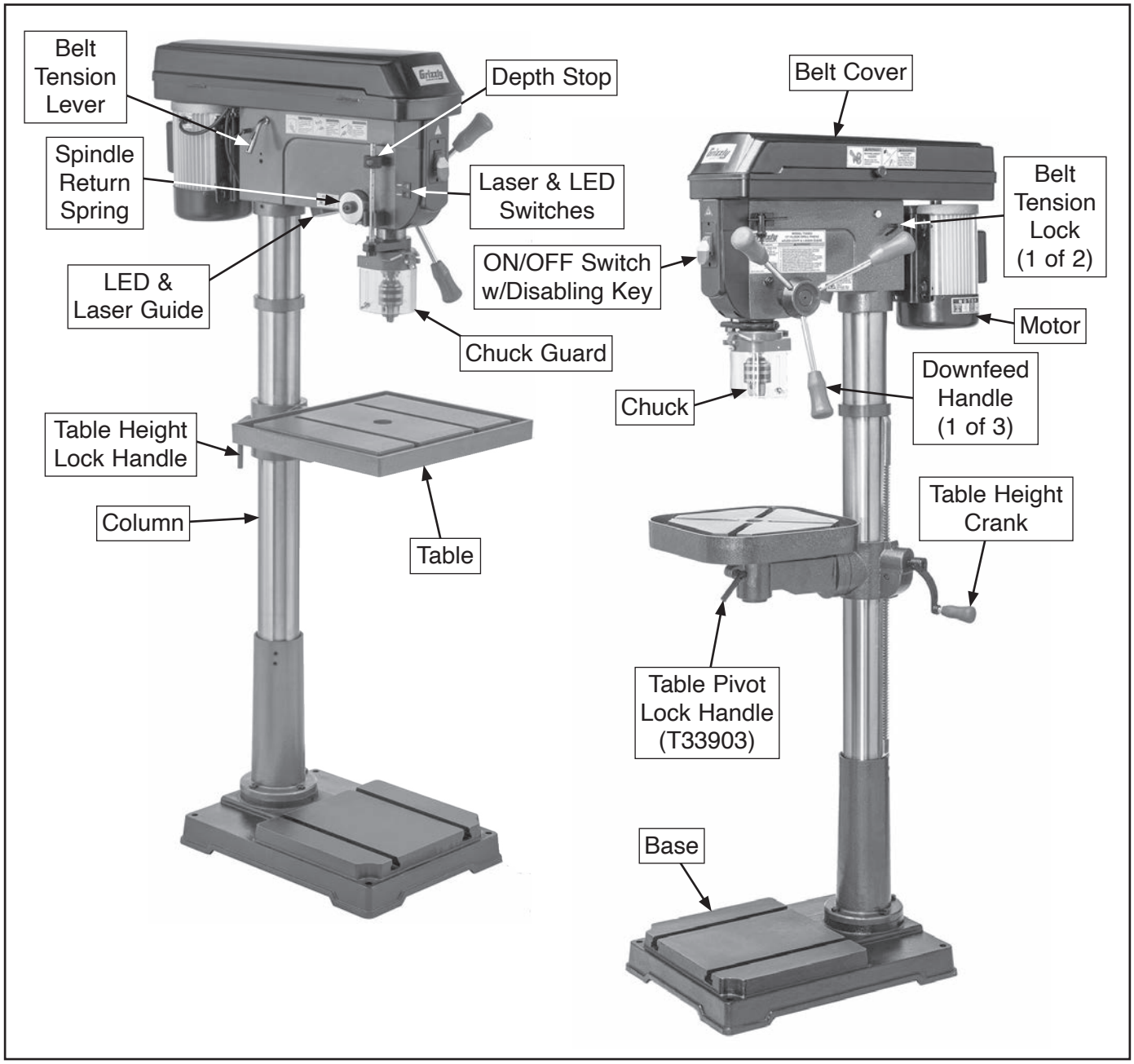
If you find this to be the case, and the difference between the manual and machine leaves you confused or unsure about something, check our website for an updated version. We post current manuals and manual updates for free on our website at **www.grizzly.com**.

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.



⚠WARNING

For Your Own Safety Read Instruction Manual Before Operating Drill Press

a) Wear eye protection.
b) Do not wear gloves, necktie, or loose clothing.
c) Clamp workpiece or brace against column to prevent rotation.
d) Use recommended speed for drill accessory and workpiece material.

Controls & Components

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.

Power Controls

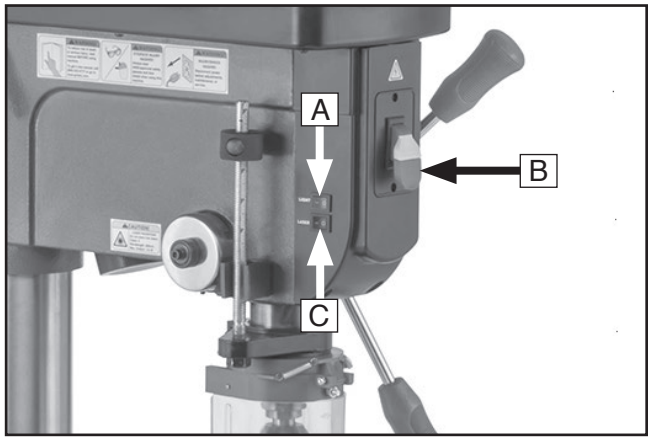


Figure 1. Power controls.

A. LED Switch: Turns LED ***ON*** or ***OFF***.

B. ON/OFF Switch w/Disabling Key: Turns motor ***ON*** when moved up; turns motor ***OFF*** when moved down. Removal of yellow key disables switch so motor cannot start.

C. Laser Switch: Turns laser guide ***ON*** or ***OFF***.

Spindle Speed

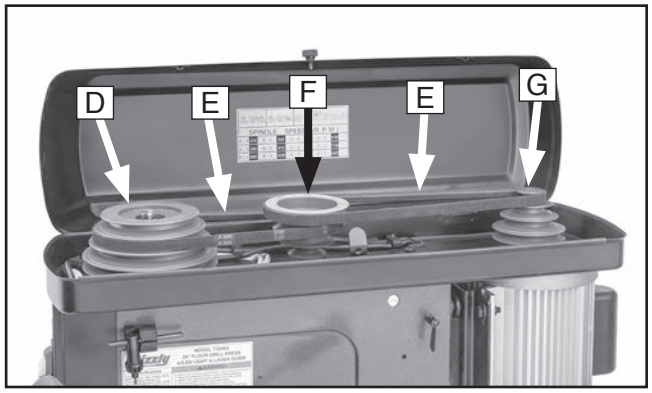


Figure 2. Spindle speed components.

D. Spindle Pulley: Holds V-belt and transfers motor power from idler pulley to spindle.

E. V-Belts: Control spindle speed.

F. Idler Pulley: Hold V-belts and transfers motor power from motor pulley to spindle pulley.

G. Motor Pulley: Holds V-belt and transfers motor power to idler pulley.

Headstock

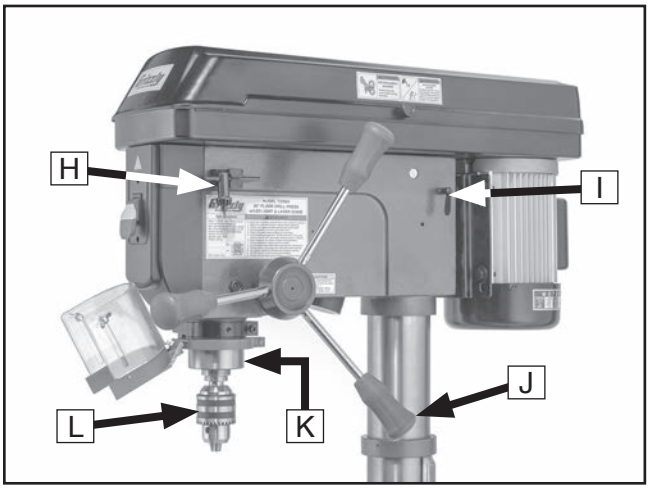


Figure 3. Right headstock components.

H. Chuck Key: Adjusts jaws on chuck for drill bit changes.

I. Belt Tension Lock (1 of 2): Locks motor position.

J. Downfeed Handle (1 of 3): Moves spindle down when pulled down. Spindle automatically returns to top position when released.

K. Quill: Houses spindle and spindle bearings.

L. Chuck: Accepts drill bits with shanks from 1/8"–5/8".

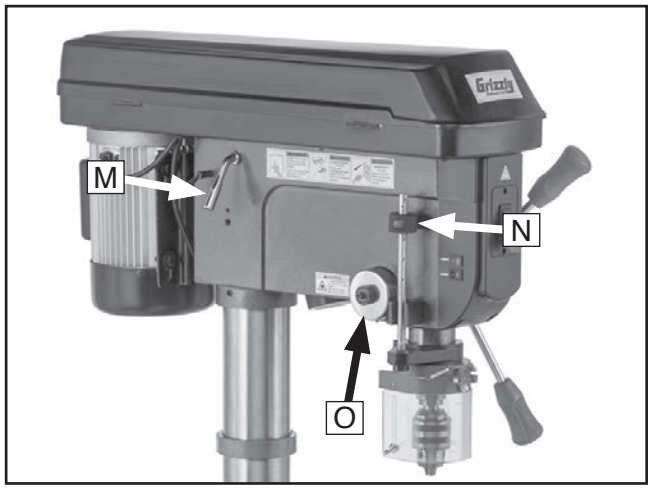


Figure 4. Left headstock components.

M. Belt Tension Lever: Adjusts motor position to tension and release belts for changing spindle speed, and for servicing.

N. Depth Stop: Stops spindle travel at predetermined drilling depth. Top of depth stop nut indicates depth on scale.

O. Spindle Return Spring: Automatically returns quill into headstock.

LED & Laser Guide

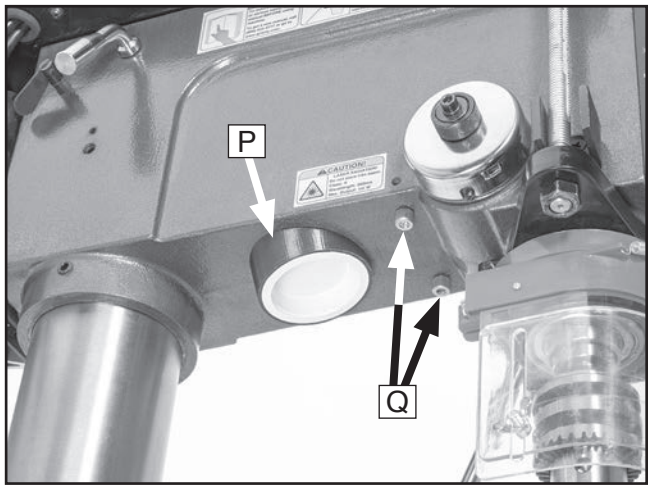


Figure 5. LED and laser guide.

P. LED: Illuminates work area.

Q. Laser Guide: Projects crosshairs on table to align workpiece to drill bit.

Table

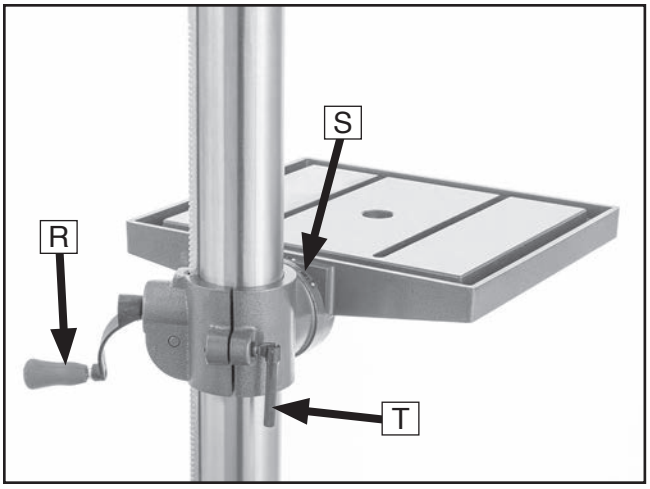


Figure 6. Table components (T33904 shown).

R. Table Height Crank: Adjusts table up and down.

S. Tilt Scale: Displays current table tilt angle.

T. Table Height Lock Handle: Loosens to allow adjustment of table position on column; tightens to lock table position.

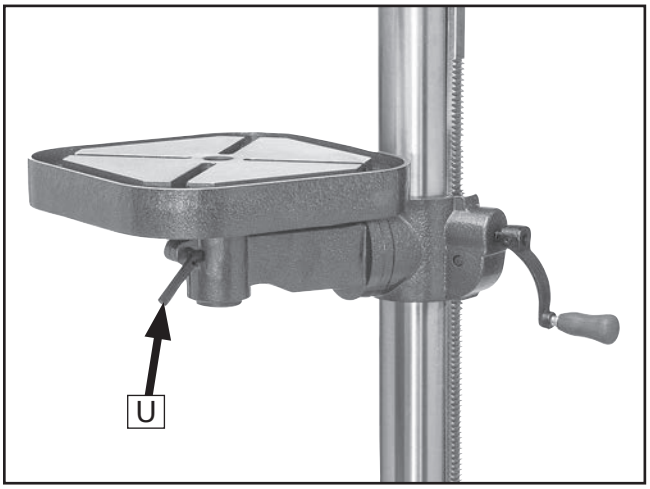


Figure 7. Table pivot lock handle.

U. Table Pivot Lock Handle (T33903 Only): Loosens to allow rotation of table; tightens to lock table rotation.

MACHINE DATA SHEET

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

MODEL T33903 17" FLOOR DRILL PRESS WITH LED LIGHT & LASER GUIDE

Product Dimensions:

Weight	223 lbs.
Width (side-to-side) x Depth (front-to-back) x Height	17 x 31 x 68 in.
Footprint (Length x Width)	22-1/2 x 17 in.

Shipping Dimensions:

Type	Cardboard Box
Content	Machine
Weight	245 lbs.
Length x Width x Height	57 x 26 x 14 in.
Must Ship Upright	Yes

Electrical:

Power Requirement	120V, Single Phase, 60 Hz
Full-Load Current Rating	13A
Minimum Circuit Size	15A
Connection Type	Cord & Plug
Power Cord Included	Yes
Power Cord Length	70 in.
Power Cord Gauge	16 AWG
Plug Included	Yes
Included Plug Type	5-15
Switch Type	Paddle Safety Switch w/Disabling Key

Motors:

Main

Horsepower	1-1/4 HP
Phase	Single-Phase
Amps	13A
Speed	1700 RPM
Type	TEFC Capacitor-Start Induction
Power Transfer	Belt
Bearings	Shielded & Permanently Lubricated
Centrifugal Switch/Contacts Type	External

Main Specifications:

Operation Information

Type	Floor
Swing	17 in.
Spindle Taper	MT#4
Spindle Travel	4-3/4 in.
Max. Distance From Spindle to Column	8-1/2 in.
Max. Distance From Spindle to Table	27 in.
Number of Spindle Speeds	12
Range of Spindle Speeds	210 - 3020 RPM
Drilling Capacity (Mild Steel)	1 in.
Drilling Capacity (Cast Iron)	1-1/4 in.
Drill Chuck Type	JT3 Key Chuck
Drill Chuck Size	1/8 - 5/8 in.

Spindle Information

Distance From Spindle to Base	48 in.
Quill Diameter	2.043 in.

Table Information

Max. Table Tilt (Left/Right)	0 - 45 deg.
Table Swing	360 deg.
Table Swivel Around Center	360 deg.
Table Swivel Around Column	360 deg.
Max. Movement of Work Table	22-1/4 in.
Table Length	14-1/8 in.
Table Width	14-1/8 in.
Table Thickness	2-1/8 in.
Vertical Table Travel	Crank Handle
Number of T-Slots	4
T-Slot Size	5/8 in.
Floor-To-Table Height	24-1/2 - 46-3/4 in.

Construction

Table	Precision-Ground Cast Iron
Column	Steel
Spindle Housing	Cast Iron
Head	Cast Iron
Base	Cast Iron
Paint Type/Finish	Powder Coated

Other Related Information

Base Length	22-1/2 in.
Base Width	16-5/8 in.
Column Diameter	3-5/8 in.
Quill Flange/Collar Diameter	3 in.
Quill Hold Type	Slotted Set Screw
Depth Stop Type	Threaded Rod w/Positive Stop
Has Work Light	Yes
Light Socket Type	LED 12V
Maximum Bulb Wattage	3W
Has Laser Guide	Yes
Laser Classification	Class II
Laser Wavelength	650 nm
Laser Maximum Output	1mW

MACHINE DATA SHEET

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

MODEL T33904 20" FLOOR DRILL PRESS WITH LED LIGHT & LASER GUIDE

Product Dimensions:

Weight..... 235 lbs.
Width (side-to-side) x Depth (front-to-back) x Height..... 18-1/2 x 33 x 67-1/2 in.
Footprint (Length x Width)..... 22-1/2 x 16-1/2 in.

Shipping Dimensions:

Type..... Cardboard
Content..... Machine
Weight..... 257 lbs.
Length x Width x Height..... 57 x 26 x 14 in.
Must Ship Upright..... Yes

Electrical:

Power Requirement..... 120V, Single-Phase, 60 Hz
Full-Load Current Rating..... 13A
Minimum Circuit Size..... 15A
Connection Type..... Cord & Plug
Power Cord Included..... Yes
Power Cord Length..... 70 in.
Power Cord Gauge..... 16 AWG
Plug Included..... Yes
Included Plug Type..... 5-15
Switch Type..... Paddle Safety Switch w/Disabling Key

Motors:

Main

Horsepower..... 1-1/4 HP
Phase..... Single-Phase
Amps..... 13A
Speed..... 1720 RPM
Type..... TEFC Capacitor-Start Induction
Power Transfer ..... Direct
Bearings..... Shielded & Permanently Lubricated
Centrifugal Switch/Contacts Type..... External

Main Specifications:

Operation Information

Type	Floor
Swing	20 in.
Spindle Taper	MT#4
Spindle Travel	4-1/2 in.
Max. Distance From Spindle to Column	10 in.
Max. Distance From Spindle to Table	28-5/8 in.
Number of Spindle Speeds	12
Range of Spindle Speeds	210 - 3020 RPM
Drilling Capacity (Mild Steel)	1 in.
Drilling Capacity (Cast Iron)	1-1/4 in.
Drill Chuck Type	JT3 Key Chuck
Drill Chuck Size	1/8 - 5/8 in.

Spindle Information

Distance From Spindle to Base	47-1/8 in.
Quill Diameter	2.441 in.

Table Information

Max. Table Tilt (Left/Right)	0 - 45 deg.
Table Swing	360 deg.
Table Swivel Around Column	360 deg.
Max. Movement of Work Table	22-3/8 in.
Table Length	16-5/16 in.
Table Width	18-1/2 in.
Table Thickness	1-1/2 in.
Vertical Table Travel	Crank Handle
Number of T-Slots	2
T-Slot Size	9/16 in.
T-Slot Centers	7-1/8 in.
Floor-To-Table Height	22-1/8 - 44-1/2 in.

Construction

Table	Precision-Ground Cast Iron
Column	Steel
Spindle Housing	Cast Iron
Head	Cast Iron
Base	Cast Iron
Paint Type/Finish	Powder Coated

Other Related Information

Base Length	22-1/2 in.
Base Width	16-1/2 in.
Column Diameter	3-5/8 in.
Quill Flange/Collar Diameter	3 in.
Quill Hold Type	Slotted Set Screw
Depth Stop Type	Threaded Rod w/Positive Stop
Has Work Light	Yes
Light Socket Type	LED 12V
Maximum Bulb Wattage	3W
Has Laser Guide	Yes
Laser Classification	Class II
Laser Wavelength	650 nm
Laser Maximum Output	1mW

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 Drill Presses

⚠WARNING

Serious injury or death can occur from getting clothing, jewelry, or long hair entangled in rotating spindle or bit/cutting tool. Contact with rotating bit/cutting tool can result in severe cuts or amputation of fingers. Flying metal chips can cause blindness or eye injuries. Broken bits/cutting tools, unsecured workpieces, chuck keys, or other adjustment tools thrown from rotating spindle 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.

EYE/FACE/HAND PROTECTION. Flying chips created by drilling can cause eye injuries or blindness. Always wear a face shield in addition to safety glasses. Always keep hands and fingers away from drill bit/cutting tool. Avoid awkward hand positions, where a sudden slip could cause hand to move into bit/cutting tool.

AVOIDING ENTANGLEMENT. DO NOT wear loose clothing, gloves, or jewelry. Tie back long hair. Keep all guards in place and secure. Always allow spindle to stop on its own. DO NOT stop spindle using your hand or any other object.

REMOVING ADJUSTMENT TOOLS. Chuck key, wrenches, and other tools left on machine can become deadly projectiles when spindle is started. Remove all loose items or tools used on spindle immediately after use.

CORRECT SPINDLE SPEED. Using wrong spindle speed can cause bits/cutting tools to break and strike operator or bystanders. Follow recommended speeds and feeds for each size/type of bit/cutting tool and workpiece material.

SECURING BIT/CUTTING TOOL. Firmly secure bit/cutting tool in chuck so it cannot fly out of spindle during operation or startup.

DRILLING PREPARATION. To avoid loss of drilling control or bit breakage, only drill into a flat surface that is approximately perpendicular to bit. Clear table of all objects before starting spindle. Never start spindle with bit pressed against workpiece.

SECURING TABLE AND HEADSTOCK. To avoid loss of control leading to accidental contact with tool/bit, tighten all table and headstock locks before operating drill press.

WORKPIECE CONTROL. An unsecured workpiece may unexpectedly shift, spin out of control, or be thrown if bit/cutting tool "grabs" during operation. Clamp workpiece to table or in table-mounted vise, or brace against column to prevent rotation. NEVER hold workpiece by hand during operation. NEVER start machine with bit/cutting tool touching workpiece; allow spindle to gain full speed before drilling.

INSPECTING BIT/CUTTING TOOL. Damaged bits/cutting tools may break apart during operation and hit operator or bystanders. Dull bits/cutting tools increase cutting resistance and are more likely to grab and spin/throw workpiece. Always inspect bits/cutting tools for sharpness, chips, or cracks before each use. Replace dull, chipped, or cracked bits/cutting tools immediately.

⚠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.

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 ..... 13 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 ..... 15 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!

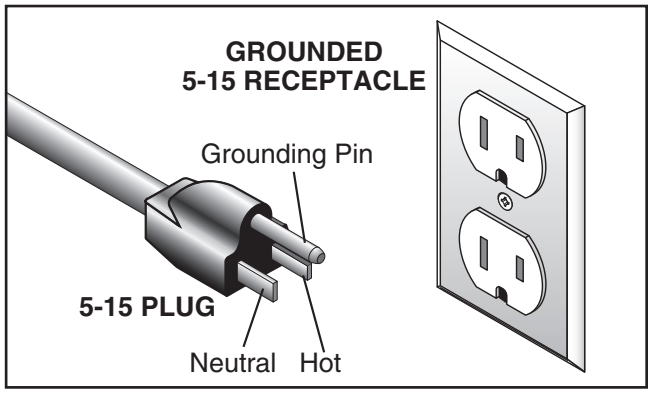
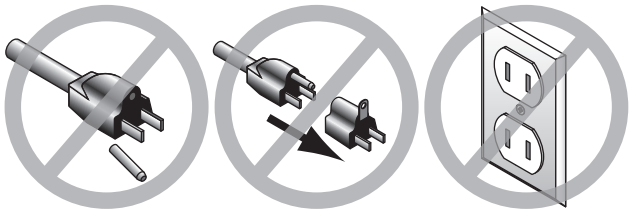


Figure 8. Typical 5-15 plug and receptacle.

⚠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 tool 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

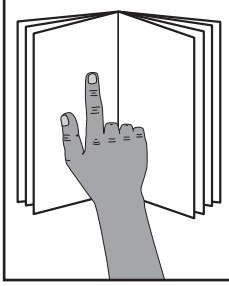
We do not recommend using an extension cord with this machine. If you must use an extension cord, only use it if absolutely necessary and only on a temporary basis.

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

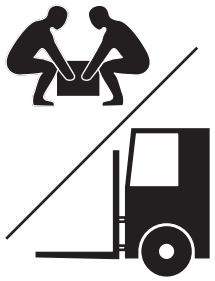


⚠WARNING

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

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

Needed for Setup

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

Description	Qty
• Safety Glasses (for each person)	1 Pr.
• Cleaner/Degreaser	As Needed
• Acetone/Lacquer Thinner	As Needed
• Disposable Rags	As Needed
• Disposable Gloves	As Needed
• Lifting Equipment (Rated for at least 325 lbs.)	1
• Another Person	1
• Wrench or Socket 17mm	1
• Open-End Wrench 7mm	1
• Phillips Head Screwdriver #2	1
• Plumb Bob	1
• Ruler or Measuring Tape	1
• Marker	1
• Block of Wood	1
• Mounting Hardware	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.

Box 1 (Figure 9)		Qty
A.	Headstock	1
B.	Column Assembly	1
C.	Table Support Bracket (T33903 Only)	1
D.	Table (T33903 Only)	1
E.	Table Assembly (T33904 Only)	1
F.	Table Height Crank	1
G.	Downfeed Handles	3
H.	Base	1
I.	Arbor MT#4 x JT3	1
J.	Drill Chuck JT3 1/8"–5/8"	1
K.	Chuck Guard	1
L.	Drift Key	1
M.	Drill Chuck Key	1
N.	Combo Wrench 30mm	1
O.	Hex Wrenches 3, 4, 5mm	1 Ea.
P.	Hex Bolts M10-1.5 x 30	4

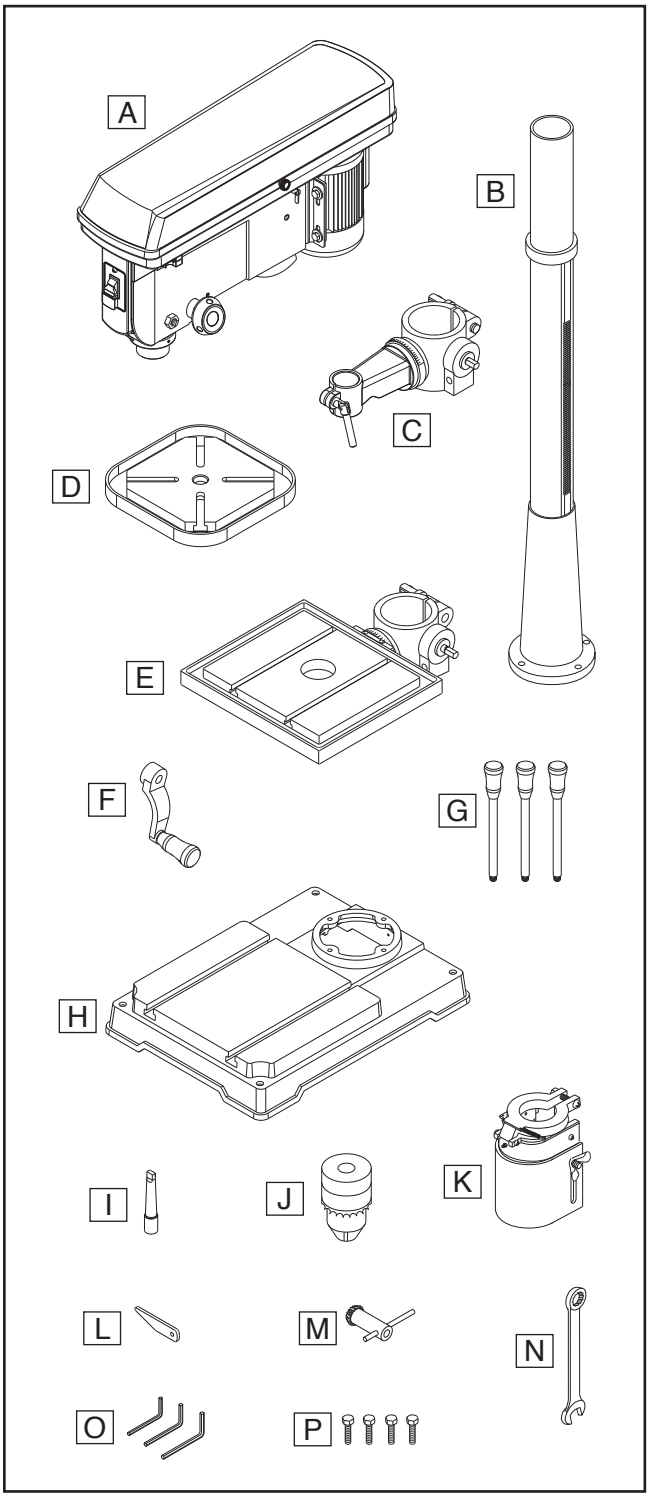


Figure 9. Inventory.

Cleanup

The unpainted surfaces of your machine are coated with a heavy-duty rust preventative that prevents corrosion during shipment and storage. This rust preventative works extremely well, but it will take a little time to clean.

Be patient and do a thorough job cleaning your machine. The time you spend doing this now will give you a better appreciation for the proper care of your machine's unpainted surfaces.

There are many ways to remove this rust preventative, but the following steps work well in a wide variety of situations. Always follow the manufacturer's instructions with any cleaning product you use and make sure you work in a well-ventilated area to minimize exposure to toxic fumes.

Before cleaning, gather the following:
- Disposable rags
- Cleaner/degreaser (WD•40 works well)
- Safety glasses & disposable gloves
- Plastic paint scraper (optional)

Basic steps for removing rust preventative:

1. Put on safety glasses.

2. Coat the rust preventative with a liberal amount of cleaner/degreaser, then let it soak for 5–10 minutes.

3. Wipe off the surfaces. If your cleaner/degreaser is effective, the rust preventative will wipe off easily. If you have a plastic paint scraper, scrape off as much as you can first, then wipe off the rest with the rag.

4. Repeat **Steps 2–3** as necessary until clean, then coat all unpainted surfaces with a quality metal protectant to prevent rust.

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. Avoid using these products to clean machinery.

⚠CAUTION

Many cleaning solvents are toxic if inhaled. Only work in a well-ventilated area.

NOTICE

Avoid harsh solvents like acetone or brake parts cleaner that may damage painted surfaces. Always test on a small, inconspicuous location first.

T23692—Orange Power Degreaser
A great product for removing the waxy shipping grease from the ***non-painted*** parts of the machine during clean up.

Figure 10. T23692 Orange Power Degreaser.

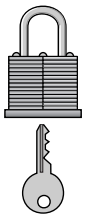
Site Considerations

Weight Load

Refer to the **Machine Data Sheet** for the weight of your machine. Make sure that the surface upon which the machine is placed will bear the weight of the machine, additional equipment that may be installed on the machine, and the heaviest workpiece that will be used. Additionally, consider the weight of the operator and any dynamic loading that may occur when operating the machine.

Space Allocation

Consider the largest size of workpiece that will be processed through this machine and provide enough space around the machine for adequate operator material handling or the installation of auxiliary equipment. With permanent installations, leave enough space around the machine to open or remove doors/covers as required by the maintenance and service described in this manual. **See below for required space allocation.**



⚠CAUTION

Children or untrained people may be seriously injured by this machine. Only install in an access restricted location.

Physical Environment

The physical environment where the machine is operated is important for safe operation and longevity of machine components. For best results, operate this machine in a dry environment that is free from excessive moisture, hazardous chemicals, airborne abrasives, or extreme conditions. Extreme conditions for this type of machinery are generally those where the ambient temperature range exceeds 41°–104°F; the relative humidity range exceeds 20%–95% (non-condensing); or the environment is subject to vibration, shocks, or bumps.

Electrical Installation

Place this machine near an existing power source. Make sure all power cords are protected from traffic, material handling, moisture, chemicals, or other hazards. Make sure to leave enough space around machine to disconnect power supply or apply a lockout/tagout device, if required.

Lighting

Lighting around the machine must be adequate enough that operations can be performed safely. Shadows, glare, or strobe effects that may distract or impede the operator must be eliminated.

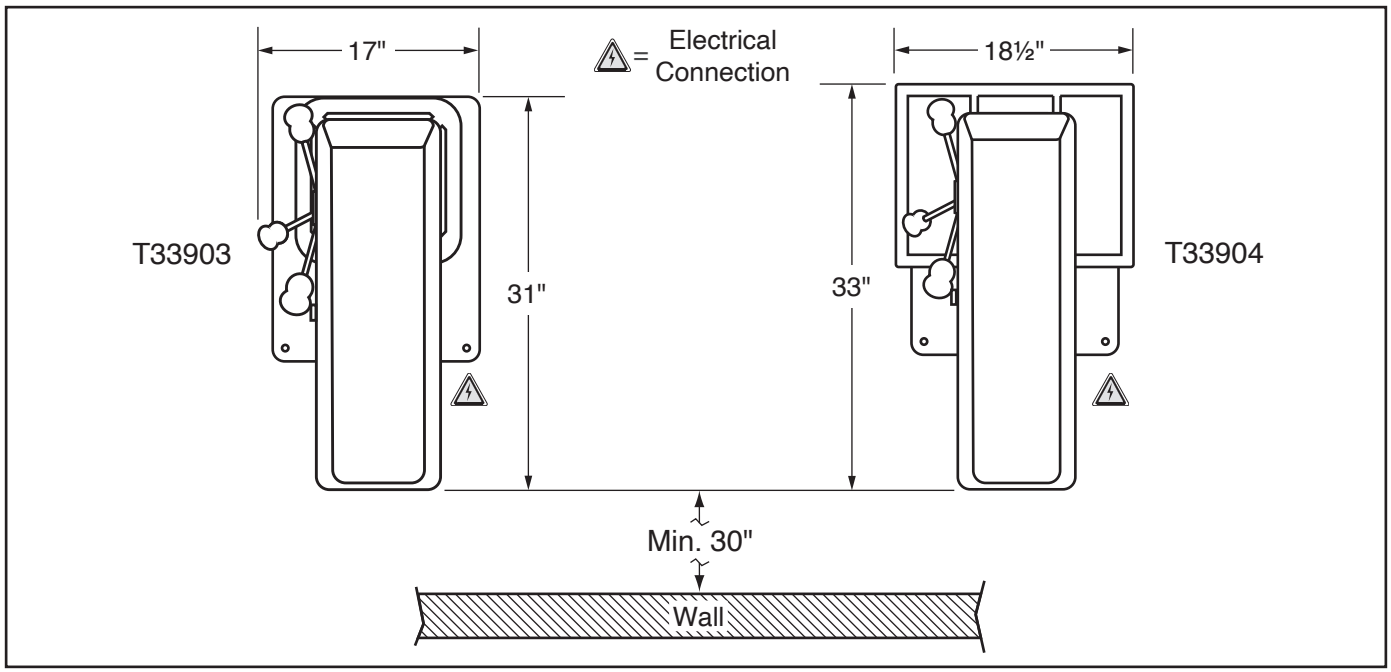


Figure 11. Minimum working clearances.

Anchoring to Floor

Number of Mounting Holes 4
Diameter of Mounting Hardware..... ½"

Anchoring machinery to the floor prevents tipping or shifting and reduces vibration that may occur during operation, resulting in a machine that runs slightly quieter and feels more solid.

If the machine will be installed in a commercial or workplace setting, or if it is permanently connected (hardwired) to the power supply, local codes may require that it be anchored to the floor.

If not required by any local codes, fastening the machine to the floor is an optional step. If you choose not to do this with your machine, we recommend placing it on machine mounts, as these provide an easy method for leveling and they have vibration-absorbing pads.

Anchoring to Concrete Floors

Lag shield anchors with lag screws (see below) are a popular way to anchor machinery to a concrete floor, because the anchors sit flush with the floor surface, making it easy to unbolt and move the machine later, if needed. However, anytime local codes apply, you MUST follow the anchoring methodology specified by the code.

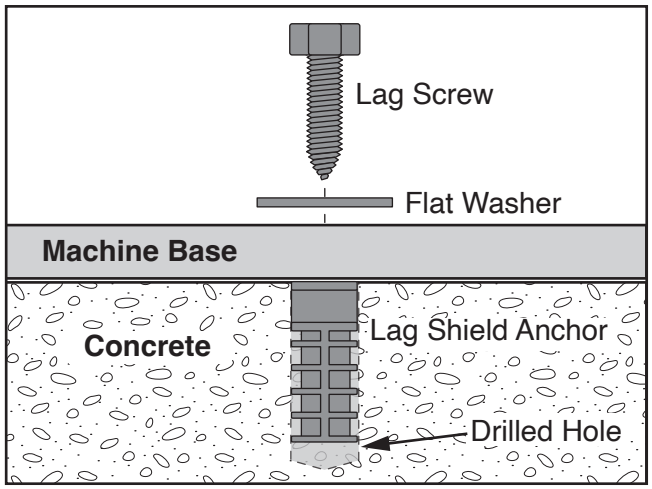


Figure 12. Popular method for anchoring machinery to a concrete floor.

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. Attach column assembly to base with M10-1.5 x 30 hex bolts (see **Figure 13**).

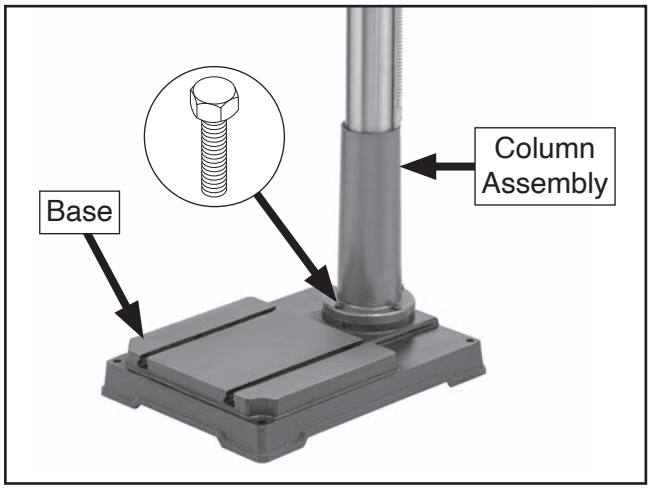


Figure 13. Column assembly attached to base.

2. Mark top of rack, as shown in **Figure 14**, to keep track of which end is up.

3. Loosen set screw shown in **Figure 14** to remove column collar.

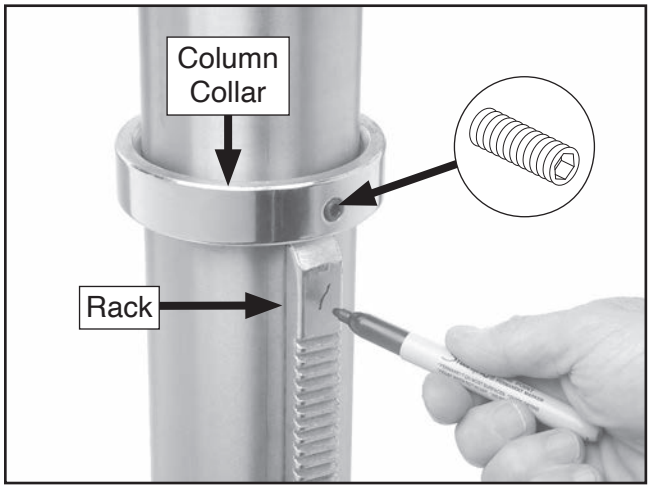


Figure 14. Example of marking top of rack.

4. **T33903:** Place rack inside of table support bracket, mesh it with pinion, and slide bracket over column, as shown in **Figure 15**.

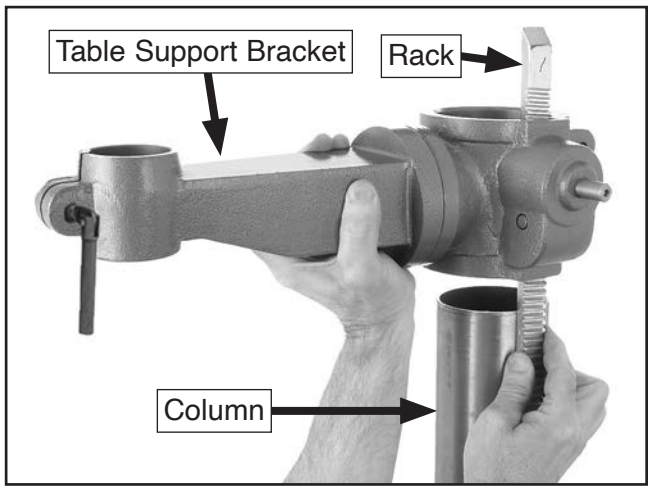


Figure 15. Example of sliding table support bracket and rack over column.

T33904: Place rack inside of table assembly, mesh it with pinion, and slide table assembly over column, as shown in **Figure 16**.

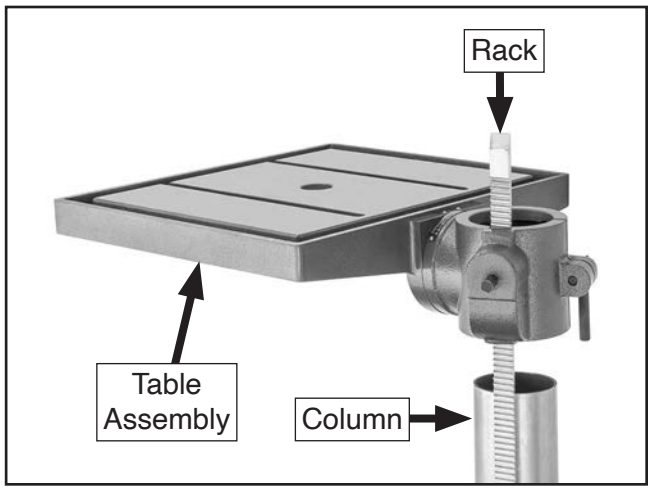


Figure 16. Sliding table assembly and rack over column.

5. Slide column collar over column with beveled edge facing down, as shown in **Figure 17**, then fit beveled edge of collar over rack and tighten set screw to secure.

Note: *Do not overtighten set screw or you may split column collar. Also make sure rack is seated firmly between column collar and column base.*

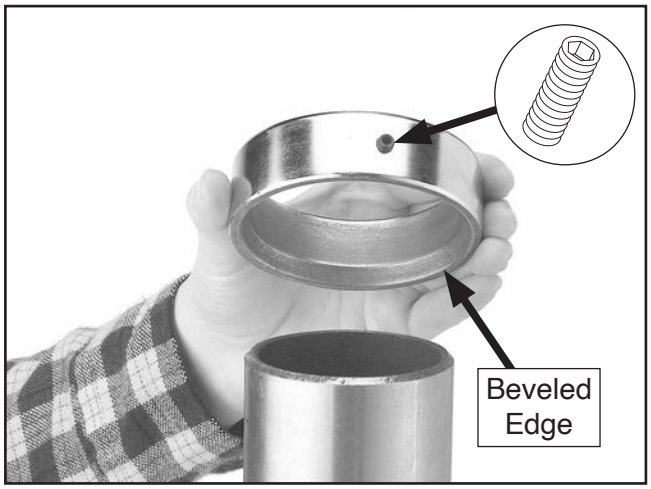


Figure 17. Correct column collar orientation.

6. Install table height crank over worm shaft shown in **Figure 18**, then tighten set screw in crank against flat part of shaft to secure.

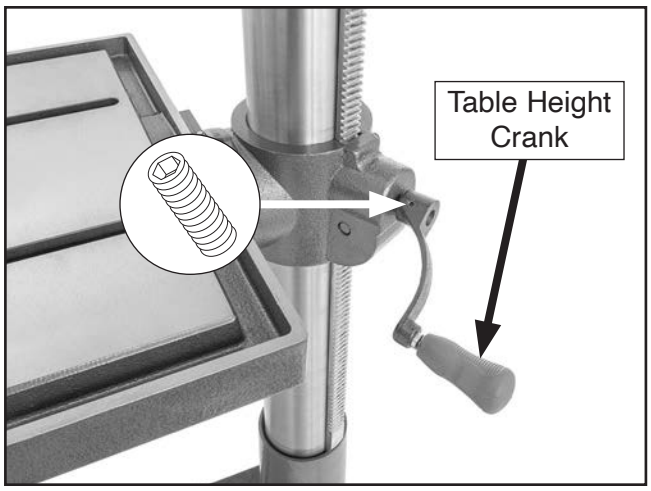


Figure 18. Table height crank installed (T33904 shown).

7. **T33903 Only:** Install table in table support bracket, then tighten table pivot lock handle to secure (see **Figure 19**).

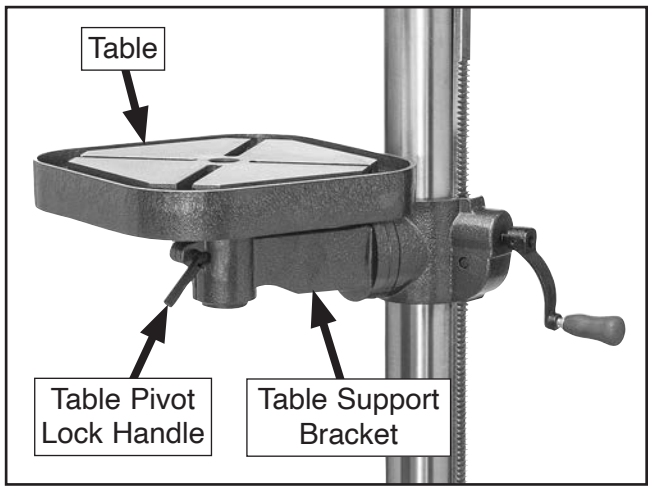
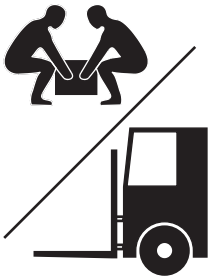


Figure 19. T33903 table installed.



⚠WARNING

HEAVY LIFT!

Straining or crushing injury may occur from improperly lifting machine or some of its parts. To reduce this risk, get help from other people and use a forklift (or other lifting equipment) rated for weight of this machine.

8. With lifting help, carefully lift headstock and slide it onto column (see **Figure 20**).

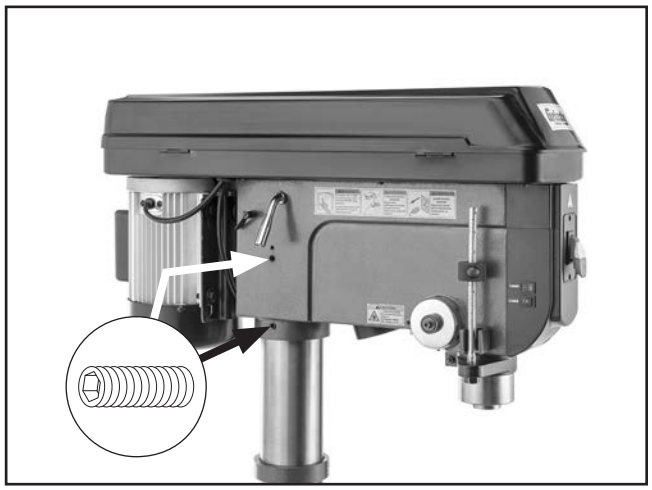


Figure 20. Headstock placed on column and location of headstock set screws.

9. Use measuring tape or ruler to find and mark center of base, then suspend plumb bob from center of headstock spindle over base, as shown in **Figure 21**.

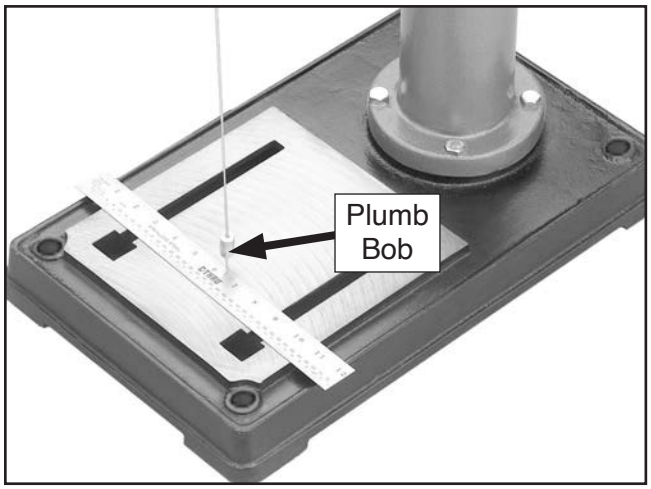


Figure 21. Example of aligning headstock with center of base.

10. Adjust headstock on column until it is directly over center of base, as indicated by plumb bob, then secure headstock by tightening (2) set screws shown in **Figure 20**.

11. Place chuck guard over quill and secure by tightening Phillips head screw and hex nut (see **Figure 22**).

    Tip: *Use table height crank to adjust table up and to hold guard in place while you tighten fasteners.*

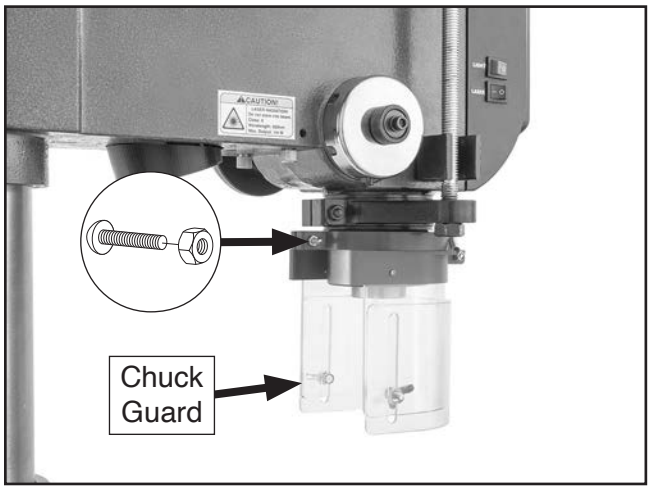


Figure 22. Chuck guard installed.

12. Thread downfeed handles into spindle hub (see **Figure 23**).

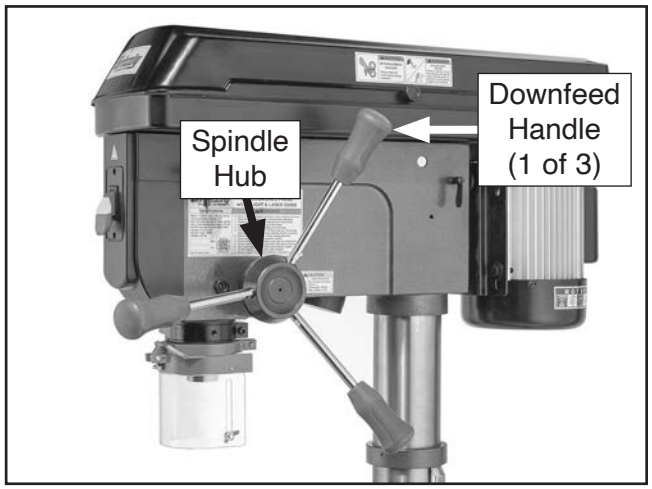


Figure 23. Downfeed handles installed.

Joining Drill Chuck & Arbor

An arbor is included for the drill chuck that comes with this machine. The following procedure describes how to install the arbor in the chuck.

After the arbor is installed in the drill chuck, it is very difficult to separate the assembly. If you would like to use a different chuck in the future, we recommend obtaining a new arbor.

IMPORTANT: DO NOT install the drill chuck and arbor assembly into the spindle until **AFTER** the test run.

To join drill chuck and arbor:

1. Use acetone or lacquer thinner to clean drill chuck and arbor mating surfaces, especially the bore.

2. Retract chuck jaws completely into chuck.

3. Insert small end of arbor into chuck.

4. Hold assembly by the arbor and tap chuck onto a block of wood with medium force, as illustrated below.

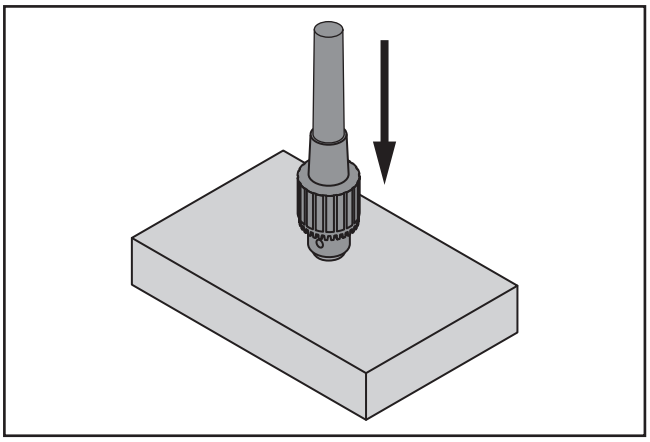


Figure 24. Tapping drill chuck/arbor on block of wood.

5. Attempt to separate drill chuck and arbor by hand—if they separate, repeat **Steps 3–4**.

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, and then turn machine ***OFF***.

   Motor should run smoothly and without unusual problems or noises.

4. Remove switch disabling key, as shown in **Figure 25**.

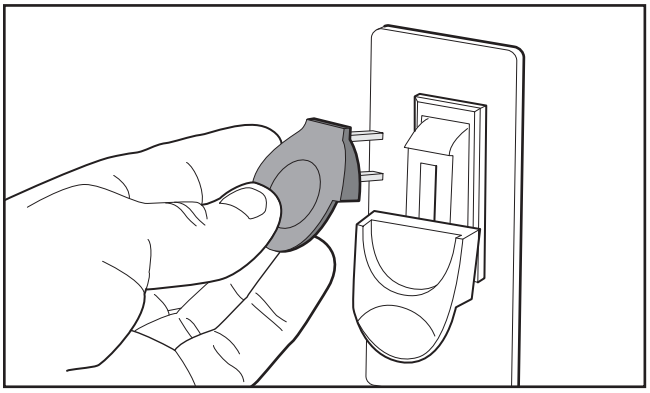


Figure 25. Removing switch key from ON/OFF switch.

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

   — If machine *does not* start, switch disabling feature is working correctly. Congratulations! Test Run is complete. Complete **Spindle Break-In** before proceeding with operations.

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

Spindle Break-In

The spindle break-in procedure distributes lubrication throughout the bearings to reduce the risk of early bearing failure if there are any "dry" spots or areas where lubrication has settled in the bearings. You ***must*** complete this procedure ***before*** placing operational loads on the spindle for the first time when the machine is new or if it has been sitting idle for longer than 6 months.

Always start the spindle break-in at the lowest speed to minimize wear if there *are* dry spots. Allow the spindle to run long enough to warm up and distribute the bearing grease, then incrementally increase spindle speeds and repeat this process at each speed until reaching the maximum spindle speed. Following the break-in procedure in this progressive manner helps minimize any potential wear that could occur before lubrication is fully distributed.

NOTICE

Complete spindle bearing break-in procedure to prevent rapid wear and tear of spindle components once drill press is placed into operation.

To perform spindle break-in:

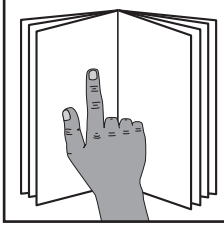
1. Make sure spindle area is free of obstructions.
2. Configure V-belts for a spindle speed of 210 RPM. Refer to **Changing Spindle Speed** on **Page 29**.
3. Connect machine to power and run spindle for 10 minutes.
4. Turn machine ***OFF***, allow spindle to come to a complete stop, then DISCONNECT MACHINE FROM POWER!
5. Configure V-belts for spindle speed of 390 RPM (refer to **Changing Spindle Speed** on **Page 29**), then connect machine to power.
6. Run spindle for 5 minutes at 390 RPM.
7. Repeat Steps **4**–**6** for each speed listed below in progressive order.

   a. 1130 RPM
   b. 1735 RPM
   c. 3020 RPM

8. Turn machine ***OFF***.

Congratulations! Spindle break-in is now complete.

SECTION 4: OPERATIONS

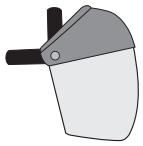


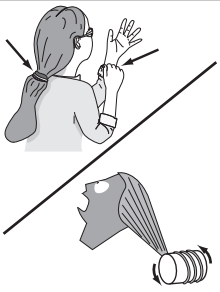
⚠WARNING

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

⚠WARNING

To reduce risk of eye or face injury from flying chips, always wear approved safety glasses and a face shield when operating this machine.





⚠WARNING

Keep hair, clothing, and jewelry away from moving parts at all times. Entanglement can result in death, amputation, or severe crushing injuries!

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.

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.

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

2. Puts on required safety glasses and face shield.

3. Firmly secures workpiece to table using a vise or T-slot clamps.

4. Installs correct drill bit for operation.

5. Adjusts table to correct height, then locks it in place.

6. Selects appropriate spindle speed according to drill bit speed chart located on **Page 28**, and adjusts belts to required pulley sheaves.

7. Connects machine to power, and turns machine ***ON***.

8. Performs drilling operation.

9. When finished, turns machine ***OFF*** and disconnects it from power.

Installing/Removing Arbor

Usually, once the chuck and arbor have been properly mounted together, they are considered semi-permanent connections. If you would like to install a different chuck, we recommend getting a new arbor for that chuck.

Installing Arbor in Spindle

Items Needed	Qty
Phillips Head Screwdriver #2	1
Open-End Wrench 7mm	1
Acetone or Lacquer Thinner	As Needed
Rubber Mallet	1

To install arbor in spindle:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen screw and hex nut shown in **Figure 26** to slide chuck guard off of quill and remove.

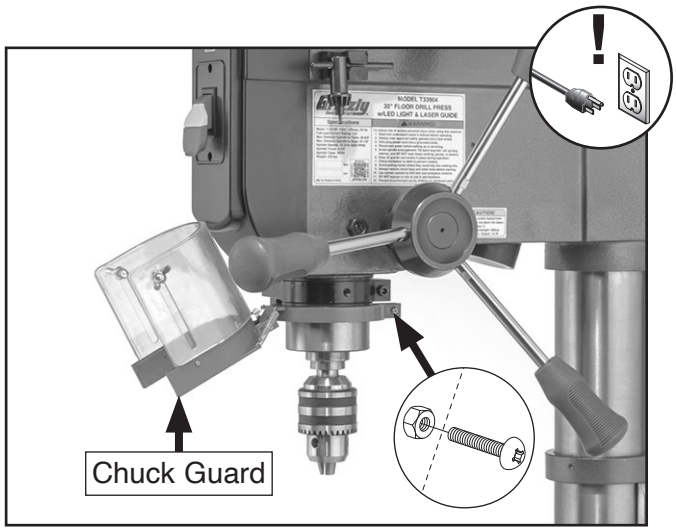


Figure 26. Location of chuck guard fasteners.

3. Join chuck and arbor (refer to **Joining Drill Chuck & Arbor** on **Page 22**).

4. Rotate chuck on arbor until chuck jaws retract into drill chuck body.

5. Use acetone or lacquer thinner to clean mating surfaces of arbor and spindle socket.

6. Slide arbor into spindle socket while slowly rotating chuck to line up tang on arbor with slot in socket (see **Figure 27**).

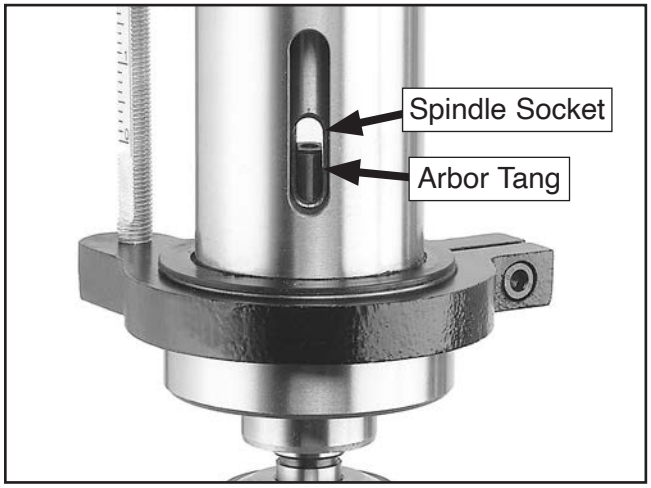


Figure 27. Example of arbor tang aligned with spindle socket.

7. Strike face of chuck from below with rubber-faced mallet to seat arbor in spindle.

8. Check seat by gently pulling down on chuck.

9. Install chuck guard, then tighten screw and hex nut from **Step 2** to secure.

   Tip: *Use table to hold guard in place while you tighten fasteners.*

Scan this code to see a video of this installation process!

Removing Arbor from Spindle

The arbor can be removed to install other Morse Taper #4 tooling in the spindle. A drift key is included to help remove the arbor or other tooling from the spindle.

Items Needed	Qty
Drift Key	1
Metal Hammer	1
Towel or Cloth	As Needed

To remove arbor from spindle:

1. DISCONNECT MACHINE FROM POWER!

2. Rotate downfeed handles until drift key slot is exposed in side of quill (see **Figure 28**).

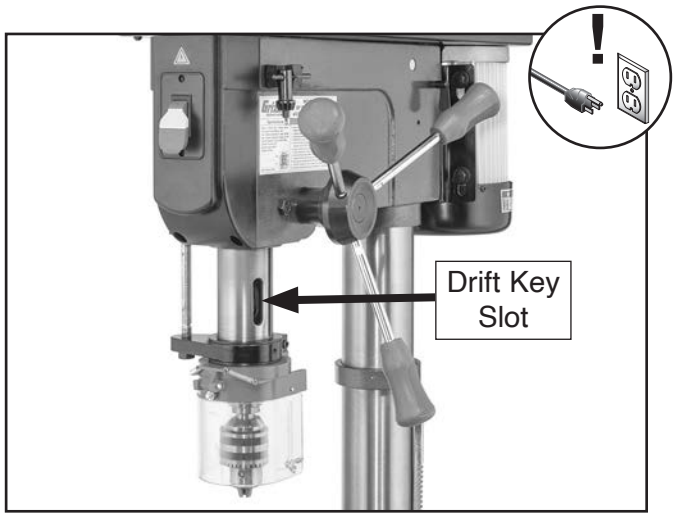


Figure 28. Drift key slot exposed.

3. Move table up until it is ¼" below bottom of chuck, and place towel or cloth under chuck.

4. Rotate spindle until inner drift key slot is aligned with outer slot (see **Figure 29**). You will see through spindle when slot is properly aligned.

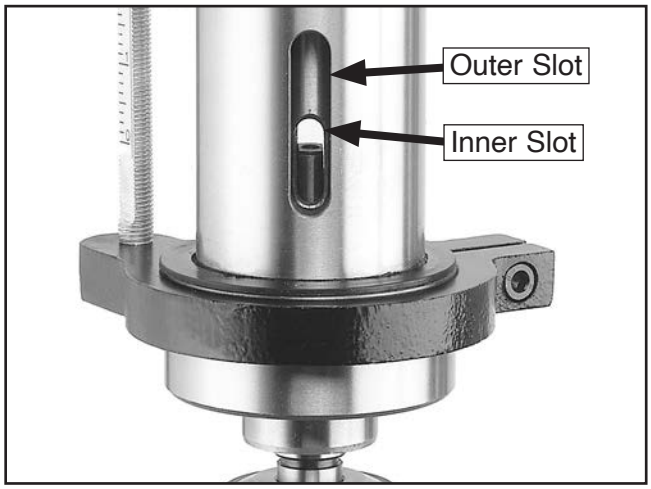


Figure 29. Example of inner and outer drift key slots aligned.

5. Insert drift key into drift key slot, then tap drift key with metal hammer (see **Figure 30**) until chuck releases.

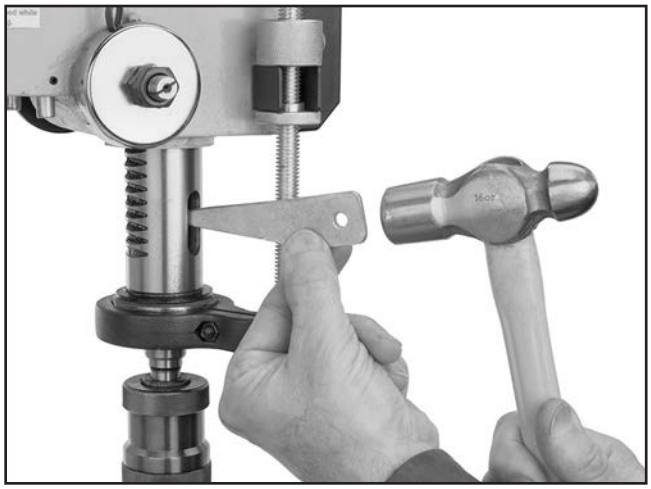


Figure 30. Example of using drift key to remove arbor from spindle.

6. Use downfeed handles to retract quill back into headstock.

Choosing Spindle Speed

Using Drill Bit Speed Chart

The chart shown in **Figure 31** is intended as a generic guide only. Always follow the manufacturer's speed recommendations if provided with your drill bits, cutters, or hole saws. Exceeding the recommended speeds may be dangerous to the operator.

The speeds shown here are intended to get you started. The optimum speed will always depend on various factors, including tool diameter, drilling pressure, material hardness, material quality, and desired finish.

Often, when drilling materials other than wood, some type of lubrication is necessary.

Lubrication Suggestions

Wood .....None
Plastics .....Soapy Water
Brass .....Water-Based Lubricant
Aluminum..... Paraffin-Based Lubricant
Mild Steel..... Oil-Based Lubricant

⚠CAUTION

Larger bits turning at slower speeds tend to grab workpiece aggressively. This can result in operator's hand being pulled into bit or workpiece being thrown with great force. Always clamp workpiece to table to prevent reduce risk of injury.

Twist/Brad Point Drill Bits	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1/16" – 3/16"	3000	2500	2500	2500	3000	2500
13/64" – 3/8"	2000	1500	2000	1250	2500	1250
25/64" – 5/8"	1500	750	1500	750	1500	600
11/16" – 1"	750	500	1000	400	1000	350

Spade/Forstner Bits	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1/4" – 1/2"	2000	1500				
9/16" – 1"	1500	1250				
1-1/8" – 1-7/8"	1000	750				
2–3"	500	350				

Hole Saws	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
1/2" – 7/8"	500	500	600	600	600	500
1" – 1-7/8"	400	400	500	500	500	400
2" – 2-7/8"	300	300	400	400	400	300
3" – 3-7/8"	200	200	300	300	300	200
4" – 5"	100	100	200	200	200	100

Rosette Cutters	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
Carbide Insert Type	350	250				
One-Piece Type	1800	500				

Tenon/Plug Cutters	Soft Wood	Hard Wood	Plastic	Brass	Aluminum	Mild Steel
3/8" – 1/2"	1200	1000				
5/8" – 1"	800	600				

Figure 31. Drill bit speed chart (RPMs).

Changing Spindle Speed

The spindle has twelve speeds that operate between 210–3020 RPM. Spindle speed is controlled by the configuration of V-belts and pulleys located inside the belt cover (refer to the speed chart located under the belt cover).

⚠CAUTION

Use care when changing V-belts as they could pinch your fingers. They may also get hot after extended use so wait to change speeds if drill has been in use.

Tools Needed	**Qty**
Open-End Wrenches 14mm	2

To change spindle speed:

1. DISCONNECT MACHINE FROM POWER!
2. Open belt cover.
3. Determine correct spindle speed for operation (see **Choosing Spindle Speed** on **Page 28**).
4. Loosen (2) belt tension locks, and loosen (2) hex nuts shown in **Figure 32**.

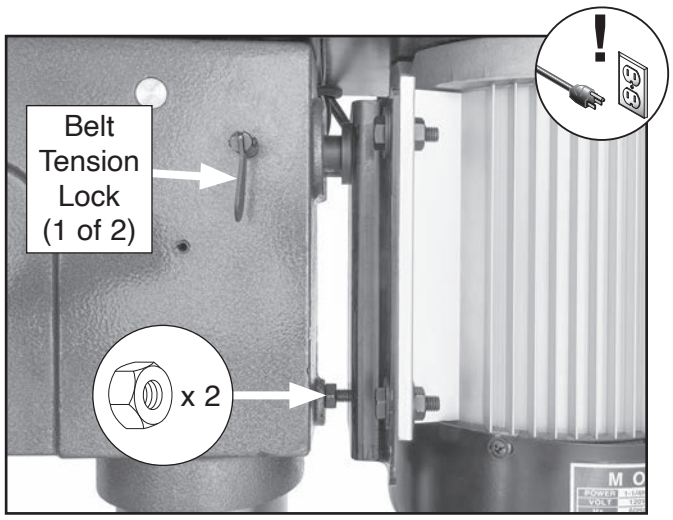


Figure 32. Location of belt tension locks and hex nut.

5. Rotate belt tension lever counterclockwise to take tension off V-belts (see **Figure 33**).

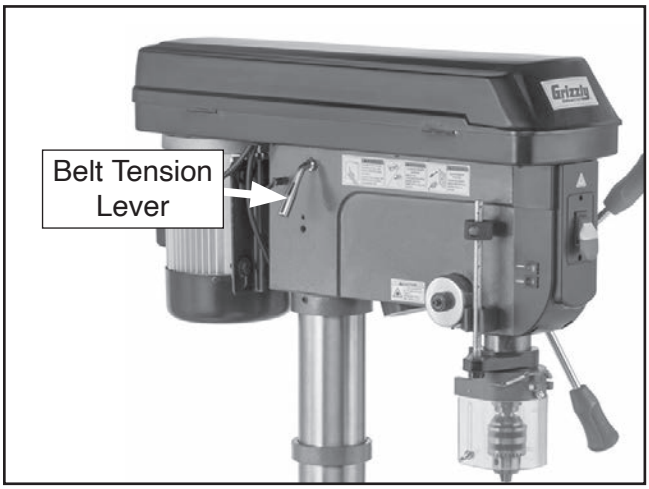


Figure 33. Location of belt tension lever.

— If V-belt is cracked, torn, excessively worn, or damaged, replace it.

6. Move V-belts onto desired sheaves on motor, idler, and spindle pulleys (see **Figure 34**).

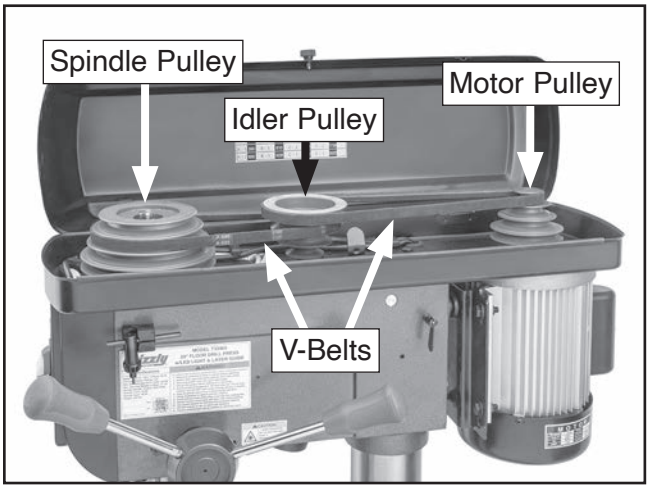


Figure 34. V-belt components.

For Example: As indicated on speed chart inside belt cover, a belt combination of **B-3** creates **610 RPM**. "**B**" refers to belt position between spindle and idler pulley. "**3**" refers to belt position between idler and motor pulley.

7. Rotate belt tension lever clockwise until V-belts are tight.
8. Tighten belt tension locks, tighten (2) hex nuts shown in **Figure 32**, then close belt cover.

Installing/Removing Drill Bit

Any drill bit you install in the chuck must be tight enough that it will not come loose during operation.

Item Needed	Qty
Chuck Key	1
Rag	1

Installing Drill Bit

1. DISCONNECT MACHINE FROM POWER!

2. Open drill chuck wide enough to accept shank of drill bit.

3. Insert drill bit as far as possible into chuck WITHOUT allowing chuck jaws to touch fluted portion of bit, then hand-tighten chuck.

   Note: *Make sure small bits are not trapped between edges of two jaws; if they are, re-install drill bit or it will not be secure enough to use for drilling.*

4. Tighten chuck firmly with chuck key (see **Figure 35**), then remove chuck key from chuck.

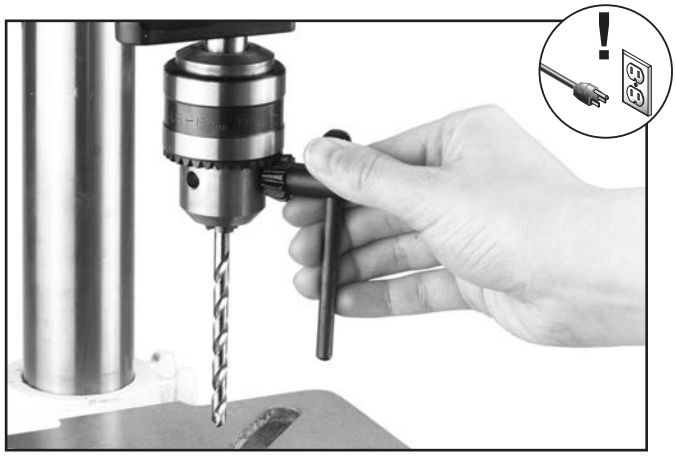


Figure 35. Example of tightening chuck with chuck key.

Removing Drill Bit

1. DISCONNECT MACHINE FROM POWER!

2. Use chuck key to open drill chuck, and catch drill bit with rag to protect your hands.

Adjusting Depth Stop

The Model T33903/T33904 has a depth stop that allows you to drill repeat non-through holes to the same depth every time. The scale on the front of the depth stop shows the depth in inches.

The depth stop consists of a threaded rod attached to the quill with a depth stop nut that can be lowered or raised against a stop bracket to control drilling depth. **Figure 36** shows the various components of the depth stop.

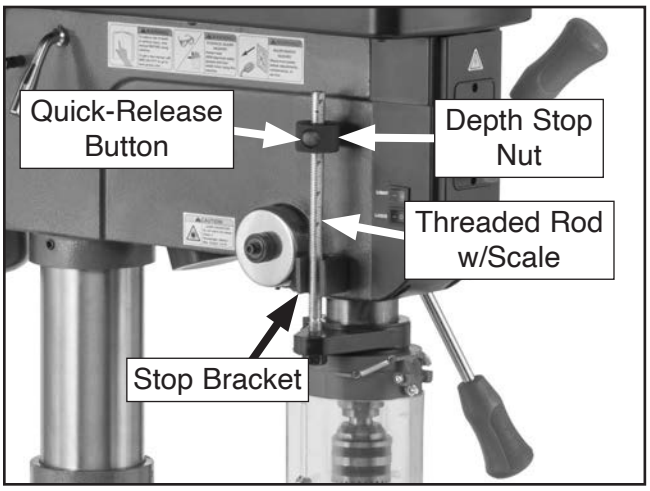


Figure 36. Depth stop components.

To adjust depth stop:

1. Lower drill bit to required height.

2. Thread depth stop nut down against stop bracket.

   Tip: *Press quick-release button on depth stop nut to quickly adjust nut up or down on rod.*

   Note: *Scale on depth stop can be calibrated if it gets moved or has changed since the factory setting. Refer to* ***Calibrating Depth Stop*** *on* ***Page 43*** *for instructions on how this is done.*

Positioning Table (T33903)

The Model T33903 table moves vertically, rotates 360° around its center, rotates 360° around the column, and tilts 45° left or right. Remove any loose objects from the table surface before adjusting the table position using the controls shown in **Figure 37**.

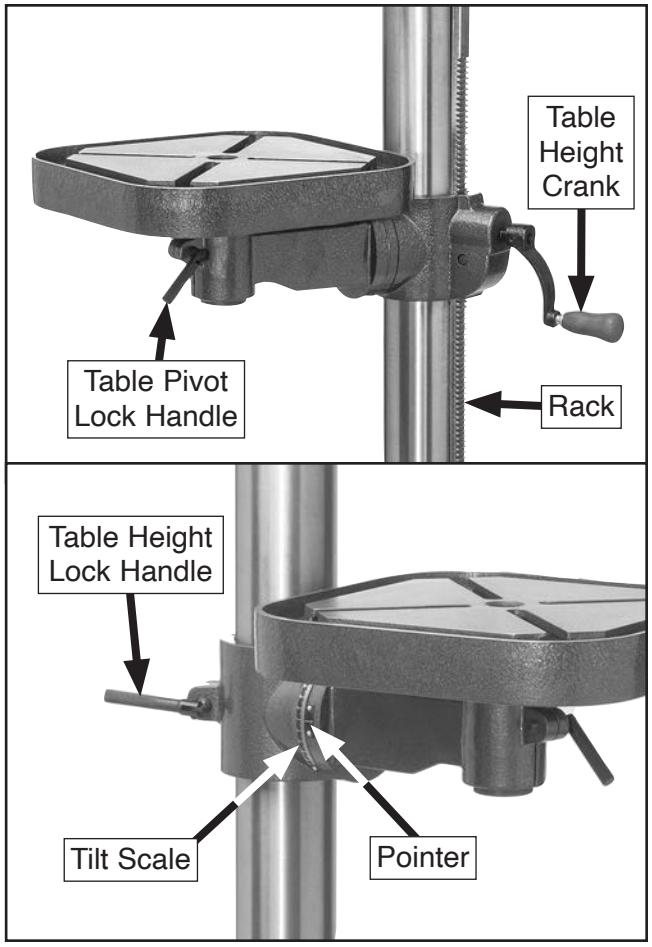


Figure 37. Table adjustment components.

Raising/Lowering Table

1. Loosen table height lock handle (see **Figure 37**).

2. Raise or lower table by rotating table height crank (see **Figure 37**), then tighten table height lock handle to secure.

Rotating Table Around Center

1. Loosen table pivot lock handle (see **Figure 37**).

2. Rotate table to desired position, then tighten table pivot lock handle to secure.

Rotating Table Around Column

1. Loosen table height lock handle (see **Figure 37**).

2. Rotate table to desired location on column, making sure to guide column rack with table (see **Figure 37**), then tighten table height lock handle to secure.

Tilting Table

Tool Needed **Qty**
Wrench or Socket 30mm..... 1

To tilt table:

1. Loosen hex bolt shown in **Figure 38**.

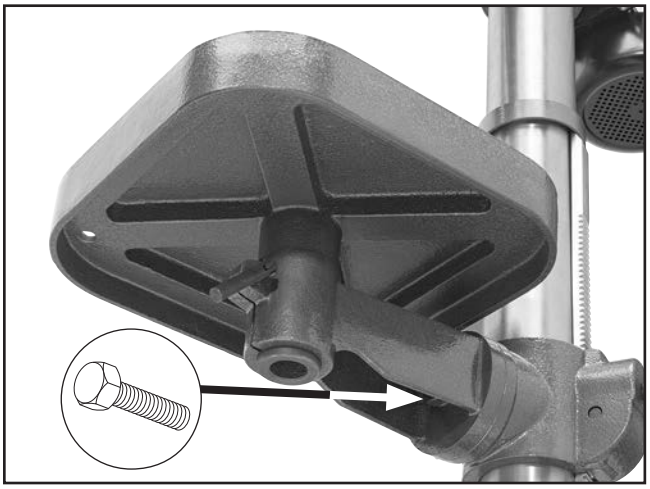


Figure 38. Location of hex bolt.

2. Tilt table until pointer aligns with desired angle on tilt scale (see **Figure 37**).

3. Tighten hex bolt from **Step 1** to secure table angle.

Positioning Table (T33904)

The Model T33904 table moves vertically, rotates 360° around the column, and tilts 45° left or right. Remove any loose objects from the table surface before adjusting the table position.

Raising/Lowering Table

1. Loosen table height lock handle (see **Figure 39**).

2. Raise or lower table by rotating table height crank (see **Figure 39**), then tighten table height lock handle to secure.

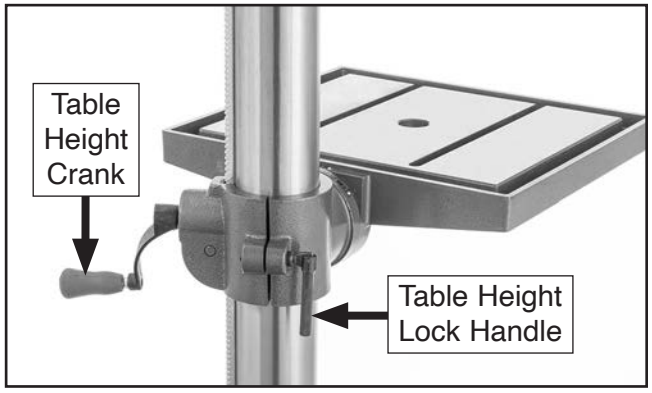


Figure 39. Table height controls.

Tilting Table

Tool Needed	Qty
Wrench or Socket 30mm	1

To tilt table:

1. Loosen hex bolt shown in **Figure 40**.

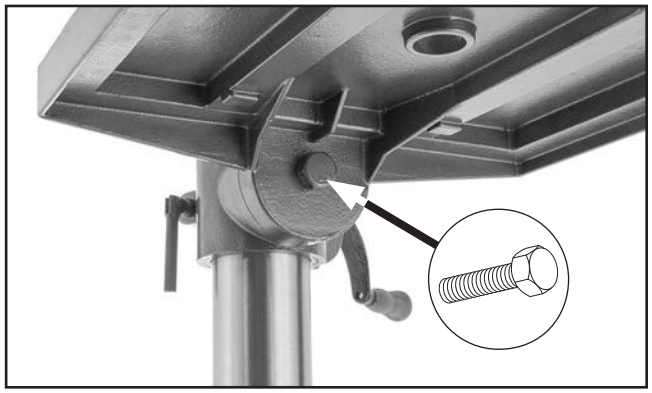


Figure 40. Location of hex bolt.

2. Tilt table until pointer aligns with desired angle on scale (see **Figure 41**).

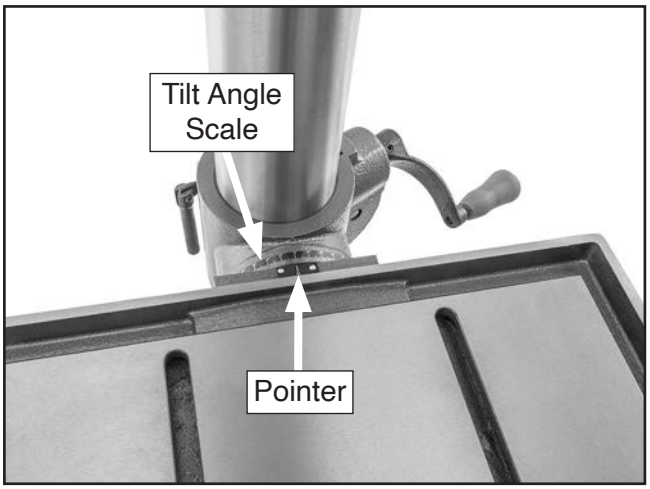


Figure 41. Location of table tilt scale and pointer.

3. Tighten hex bolt from **Step 1** to secure table angle.

Rotating Table Around Column

1. Loosen table height lock handle (see **Figure 42**).

2. Rotate table to desired location on column, making sure to guide column rack with table (see **Figure 42**), then tighten table height lock handle to secure.

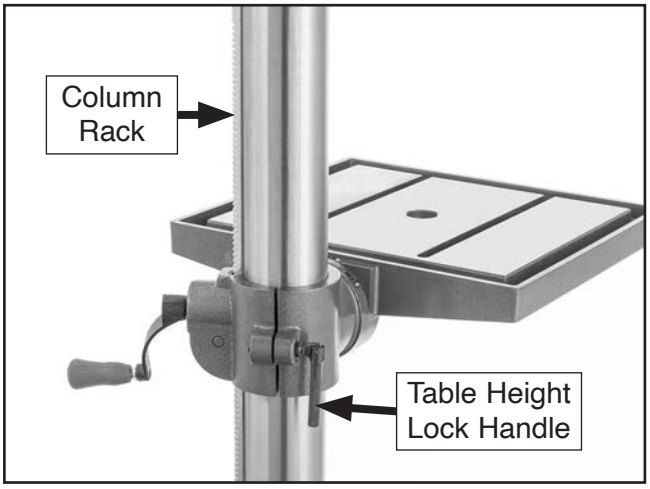


Figure 42. Location of table height lock handle and column rack.

Adjusting Laser Guide

The laser guide should be checked and adjusted for accuracy when you change drill bits, raise or lower the table, or change workpiece thickness.

⚠CAUTION

DO NOT look directly into laser. Eye injury may result.

Item Needed	Qty
Hex Wrench 3mm	1

To adjust laser guide:

1. DISCONNECT MACHINE FROM POWER!

2. Install drill bit in chuck (see **Installing/ Removing Drill Bit** on **Page 30**).

3. Clamp workpiece to table.

4. Adjust table so workpiece is just below drill bit, then lock table in position.

5. Lower drill bit so it touches workpiece, making slight indentation in surface, then raise bit.

6. Connect drill press to power. Use laser switch to turn laser guide ***ON*** (see **Figure 43**).

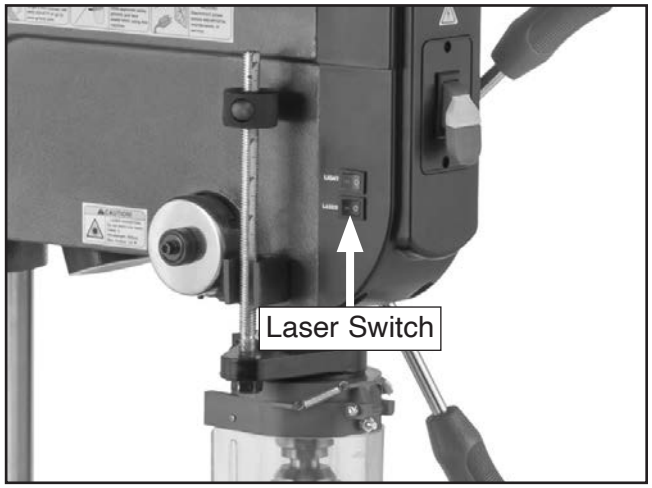


Figure 43. Location of laser switch.

— If laser crosshairs align with indentation you made in **Step 5** (see **Figure 44**), no adjustment is necessary.

— If laser crosshairs *do not* align with indentation you made in **Step 5** (see **Figure 44**), proceed to **Step 7**.

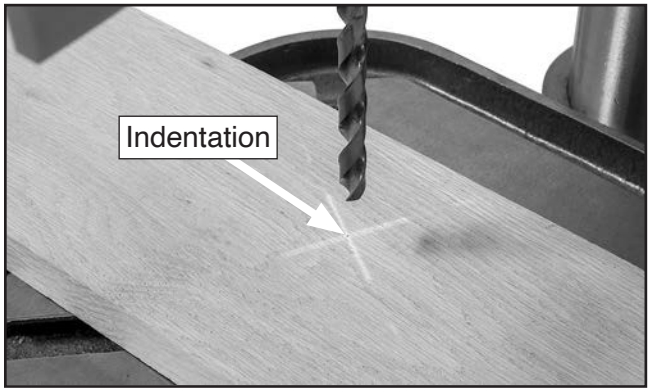


Figure 44. Example of laser crosshairs aligned with indentation on workpiece.

7. Loosen (2) set screws shown in **Figure 45**, then adjust laser modules by hand, positioning them so crosshairs align with indentation you made in **Step 5**.

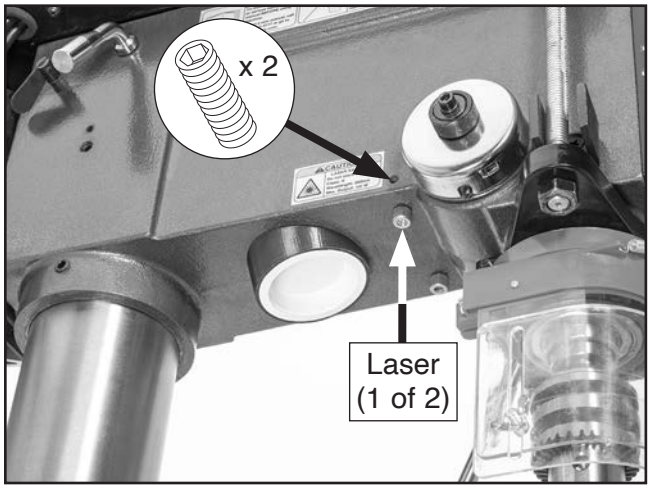


Figure 45. Laser module adjustment components.

— Turning each laser module will adjust each crosshair line angle.

— Adjusting laser module position in seat will adjust crosshair line positions.

8. Once crosshairs are aligned with indentation in workpiece, tighten screws loosened in **Step 7** to secure laser module positions.

SECTION 5: ACCESSORIES

⚠WARNING

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

NOTICE

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

SB1365—South Bend Way Oil-ISO 68
T26419—Syn-O-Gen Synthetic Grease

Figure 46. Recommended lubrication products.

G5562—SLIPIT® 1 Qt. Gel
G5563—SLIPIT® 11 Oz. Spray

Figure 47. Recommended products for protecting unpainted cast-iron and steel.

T32710—Drill Press Table w/Flip-Stop Fence
This table will increase your usable workspace. The 26" long fence features a T-slot with two adjustable flip stops and an easy-to-read scale with imperial measurements. Fence slides in 23¾" x 15¾" table embedded T-slots.

Figure 48. T32710 Drill Press Table w/Flip-Stop Fence.

T33682—Drill Press Tray
This tray keeps all you drill press accessories ready to go at your fingertips, making projects more efficient and enjoyable. It will hold a 29-piece drill bit set in the embossed holes and has room for other accessories. Easy to install and use with mount clamps to attach to your drill press column.

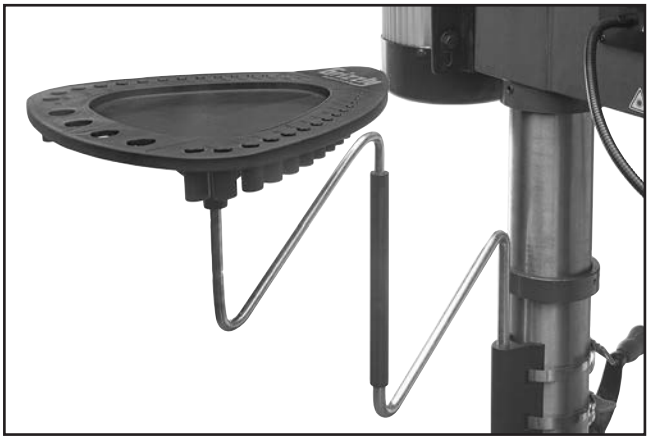


Figure 49. T33682 Drill Press Tray.

Table T-Slot Nuts for T33903

G9515—T-Slot Nuts, 4-Pk., 5/8" Slot, 1/2"-13

Table T-Slot Nuts for T33904

G9513—T-Slot Nuts, 4-Pk., 9/16" Slot, 3/8"-16
G9514—T-Slot Nuts, 4-Pk., 9/16" Slot, 1/2"-13

Heat-treated steel T-slot nuts with black oxide finish feature an imperfect thread in the base of the nut to eliminate any danger of screwing the clamping stud through and damaging the table slot.

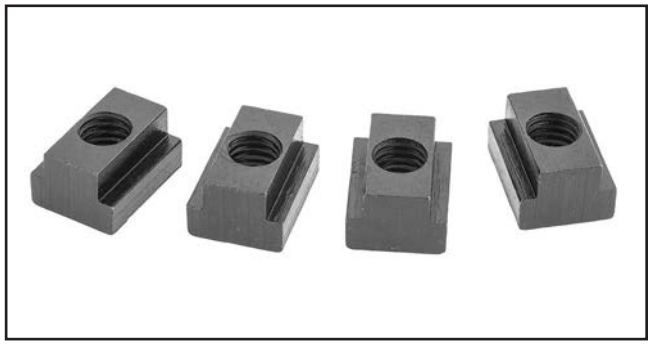


Figure 50. G9514 T-Slot Nuts.

G8583—1/32"–5/8" x JT3 Keyless Drill Chuck
Industrial-grade keyless chucks are excellent for quick bit changes. Knurled grips and exceptional accuracy make these chucks an indispensable part of any shop. Use on drill presses, lathe tailstocks and milling machines. 1/32"–5/8" capacity with a Jacobs Taper #3 in back.

Figure 51. G8583 1/32"–5/8" x JT3 Keyless Drill Chuck.

T30015—HSS M35 Cobalt 115-Pc. Drill Bit Set
The bits in this 115-piece set all have 135° split points and fully ground flutes. Fractional sizes 1/16"–1/2" in increments of 1/64", letter bits from A–Z, and 60 number bits.

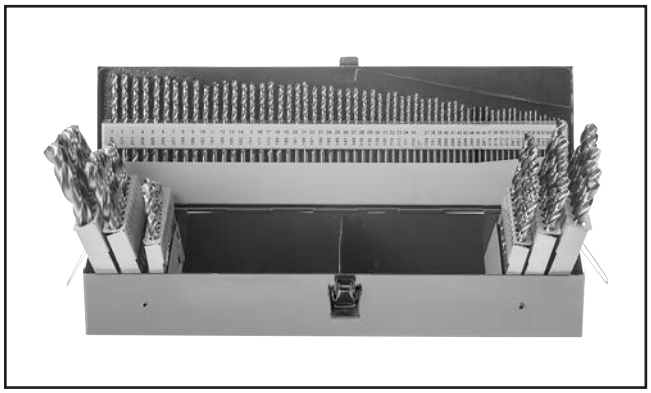


Figure 52. T30015 115-Pc. HSS M35 Cobalt Drill Bit Set.

T10169—Adjustable Circle Cutter
Produce precision circles in sheet metal, brass, wood, plastic, aluminum, and soft steel with this adjustable circle cutter. The diameter if adjustable up to 8" and includes HSS center and drill bit and double-ended tool bit. Always use the appropriate cutting speed for the circle diameter to prolong tool life.

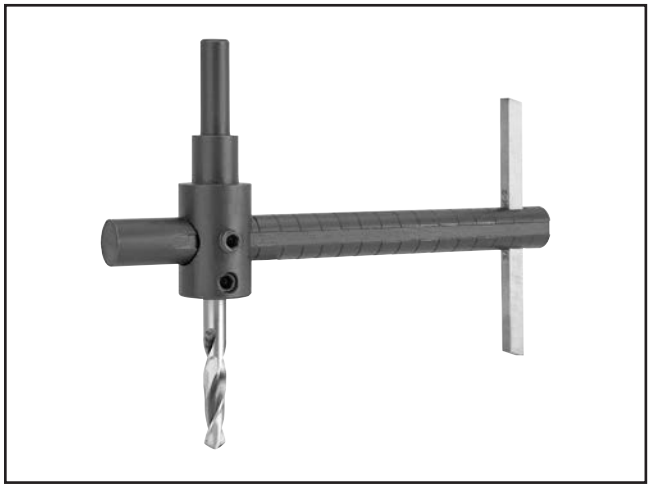
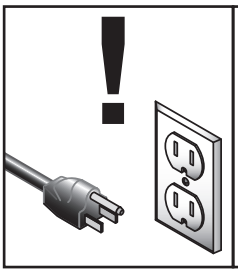


Figure 53. T10169 Adjustable Circle Cutter.

SECTION 6: 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 this machine, this maintenance schedule must be strictly followed.

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.
- Worn switch.
- Worn or damaged wires.
- Damaged V-belt.
- Any other unsafe condition.

Weekly Maintenance
- Lubricate quill and column surfaces (**Page 37**).

Monthly Maintenance
- Check V-belt for damage or wear.
- Lubricate column rack and quill rack and pinion (**Page 37**).
- Clean/vacuum dust buildup off motor.

Cleaning & Protecting

Cleaning your drill press 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.

Protect the unpainted cast iron table and base by wiping it clean after every use—this ensures moisture from wood dust does not remain on bare metal surfaces. Keep the table and base rust-free with regular applications of metal protectant products like SLIPIT® (see **Figure 47** in **Accessories** on **Page 34**).

Lubrication

An essential part of lubrication is cleaning the components before lubricating them.

This step is critical because grime and chips build up on lubricated components, which makes them hard to move. Simply adding more lubricant will not result in smooth moving parts.

Lubricate components with recommended products like those shown **Figure 46** in **Accessories** on **Page 34**.

DISCONNECT MACHINE FROM POWER BEFORE PERFORMING LUBRICATION!

Quill & Column Surfaces

Oil Type .... Grizzly SB1365 or ISO 68 Equivalent
Oil Amount.....Thin Coat
Lubrication Frequency.....8 Hrs. of Operation

Items Needed	Qty
Mineral Spirits	As Needed
Shop Rags	As Needed

Move the spindle all the way down to access the smooth surfaces of the quill. Adjust the table height as necessary to access the entire length of the column (see **Figures 54–55**). Clean both with mineral spirits and shop rags.

Note: *Avoid removing the grease from the column and quill racks during cleaning.*

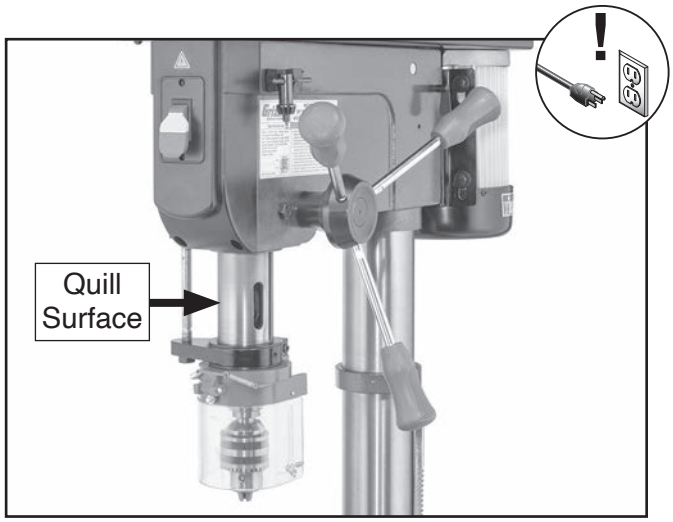


Figure 54. Spindle moved down to expose quill surface.

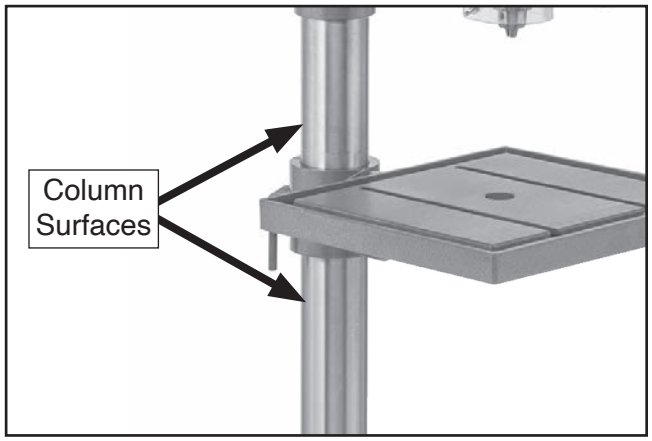


Figure 55. Column surface locations (T33904 shown).

After cleaning, allow mineral spirits to dry, then apply a thin coat of oil to the surfaces.

Column Rack, Quill Rack & Pinion

Grease Type.... Grizzly T26419 or NLGI#2 Equiv.
Grease Amount .....Thin Coat
Lubrication Frequency..... 90 hrs. of Operation

Items Needed	Qty
Mineral Spirits	As Needed
Shop Rags	As Needed
Stiff Brushes	2

Move spindle all the way down to gain access to quill rack (see **Figure 56**), then clean teeth with mineral spirits, shop rags, and a brush.

Clean the column rack teeth (see **Figure 56**) in a similar manner with mineral spirits, shop rags, and a brush.

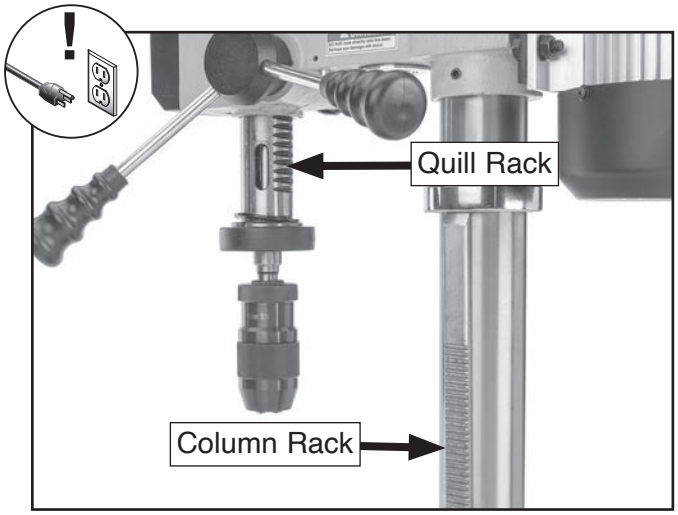


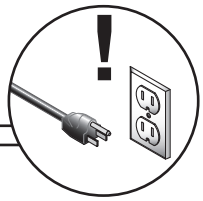
Figure 56. Example of quill and column racks exposed.

Allow mineral spirits to dry, then use a brush to apply a thin coat of grease to the rack teeth, then fully raise/lower the quill and table to distribute the grease.

SECTION 7: 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. Incorrect power supply voltage or circuit size. 3. Power supply circuit breaker tripped or fuse blown. 4. Motor wires connected incorrectly. 5. Start capacitor at fault. 6. Centrifugal switch adjustment/contact points at fault. 7. Wiring broken, disconnected, or corroded. 8. ON/OFF switch at fault. 9. Motor or motor bearings at fault.	1. Install switch disabling key. 2. Ensure correct power supply voltage and circuit size (**Page 13**). 3. Ensure circuit is free of shorts. Reset circuit breaker and replace fuse. 4. Correct motor wiring connections (**Page 47**). 5. Test/replace if at fault. 6. Adjust centrifugal switch/clean contact points. Replace either if at fault. 7. Fix broken wires or disconnected/corroded connections (**Page 47**). 8. Replace switch. 9. Replace motor.
Machine stalls or is underpowered.	1. Workpiece material unsuitable for machine. 2. Feed rate/cutting speed too fast. 3. Belt(s) slipping/pulleys misaligned. 4. Motor wires connected incorrectly. 5. Pulley slipping on shaft. 6. Machine undersized for task. 7. Motor overheated. 8. Run capacitor at fault. 9. Extension cord too long. 10. Centrifugal switch/contact points at fault. 11. Motor or motor bearings at fault.	1. Only cut wood with moisture below 20% and correct type/size of metal. 2. Decrease feed rate/cutting speed (**Page 29**). 3. Clean/tension/replace belt(s) (**Page 29**); ensure pulleys are aligned (**Page 42**). 4. Correct motor wiring connections (**Page 47**). 5. Tighten/replace loose pulley/shaft. 6. Use sharp bits/reduce feed rate/reduce spindle RPM (**Page 29**). 7. Clean motor, let cool, and reduce workload. 8. Test/repair/replace. 9. Move machine closer to power supply; use shorter extension cord (**Page 14**). 10. Adjust centrifugal switch/clean contact points. Replace either if at fault. 11. Replace motor.
Machine has vibration or noisy operation.	1. Motor or component loose. 2. V-belt(s) worn, loose, pulleys misaligned or belt slapping cover. 3. Pulley loose. 4. Motor mount loose/broken. 5. Spindle loose, improperly installed or damaged. 6. Workpiece loose.	1. Replace damaged or missing bolts/nuts or tighten if loose. 2. Inspect/replace belts with a new matched set (**Page 29**). Realign pulleys if necessary (**Page 42**). 3. Secure pulley on shaft. 4. Tighten/replace. 5. Tighten loose spindle, re-install spindle ensuring mating surfaces are clean, replace spindle if damaged. 6. Use correct holding fixture and reclamp workpiece.

Motor & Electrical (Cont.)

Symptom	Possible Cause	Possible Solution
Machine has vibration or noisy operation.	7. Chuck or cutter at fault. 8. Motor fan rubbing on fan cover. 9. Spindle bearings at fault. 10. Centrifugal switch needs adjustment/at fault. 11. Motor bearings at fault.	7. Replace out-of-round chuck, dull, or bent cutter. 8. Fix/replace fan cover; replace loose/damaged fan. 9. Test by rotating spindle; rotational grinding/loose shaft requires bearing replacement. 10. Adjust/replace if at fault. 11. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.
LED does not illuminate.	1. Lens covered with dust. 2. Wiring broken, disconnected, or corroded. 3. LED or LED driver damaged/at fault. 4. LED switch at fault.	1. Clean lens. 2. Fix broken wires or disconnected/corroded connections (**Page 47**). 3. Replace LED or driver (**Page 44**). 4. Replace switch.
Laser guide does not illuminate.	1. Lens covered with dust. 2. Wiring broken, disconnected, or corroded. 3. Laser module(s) damaged/at fault. 4. Laser switch at fault. 5. Laser LED driver at fault.	1. Clean lens. 2. Fix broken wires or disconnected/corroded connections (**Page 47**). 3. Replace lase module(s) (**Page 44**). 4. Replace switch. 5. Replace laser LED driver.

Operation

Symptom	Possible Cause	Possible Solution
Tool falls out or loose in chuck.	1. Chuck jaws loose. 2. Excessive feed pressure.	1. Tighten chuck jaws. 2. Decrease feed pressure and allow chips to clear.
Chuck and arbor fall out or loose in spindle.	1. Debris on chuck, arbor, or in spindle taper. 2. Excessive feed pressure.	1. Clean chuck, arbor, and spindle taper, then re-install (**Page 22**). 2. Decrease feed pressure and allow chips to clear.
Breaking tools or cutters.	1. Spindle speed/feed rate too fast. 2. Taking too big of cut at one time. 3. Improper cutting technique or type of cut for tool/machine. 4. Cutting tool too small. 5. Cutting tool getting too hot. 6. Spindle extended too far down during or at beginning of operation.	1. Reduce spindle speed (**Page 29**); reduce feed rate. 2. Decrease feed pressure and allow chips to clear. 3. Use right technique, tool, or machine for job. 4. Use larger cutting tool and slower feed rate. 5. Use coolant or oil for appropriate application; reduce cutting speed (**Page 29**). 6. Fully retract spindle and raise table to increase rigidity.
Workpiece or tool vibrates or chatters during operation.	1. Spindle extended too far down during or at beginning of operation. 2. Table lock handles not tight. 3. Workpiece not secure. 4. Spindle speed/feed rate too fast. 5. Quill shaft lock screw not adjusted correctly.	1. Fully retract spindle and raise table to increase rigidity. 2. Tighten table lock handles (**Page 32**). 3. Properly clamp workpiece on table or in vise. 4. Reduce spindle speed (**Page 29**); reduce feed rate. 5. Adjust quill shaft lock screw (**Page 46**).
Table hard to move.	1. Table locked. 2. Dirty or dry rack and pinion.	1. Disengage table locks (**Page 32**). 2. Clean away chips/debris. Lubricate rack and pinion (**Page 37**).
Backside of workpiece splinters.	1. Scrap board not installed between table and workpiece.	1. Install scrap board between table and workpiece.

Operation (Cont.)

Symptom	Possible Cause	Possible Solution
Bad surface finish.	1. Spindle speed/feed rate too fast. 2. Dull or incorrect cutting tool/bit. 3. Workpiece not secure. 4. Spindle extended too far down during or at beginning of operation.	1. Reduce spindle speed (**Page 29**); reduce feed rate. 2. Sharpen cutting tool or select one that better suits operation. 3. Properly clamp workpiece on table or in vise. 4. Fully retract spindle and raise table to increase rigidity.
Spindle overheats.	1. Machine operated at high speeds for extended period.	1. Allow drill to cool.
Spindle does not fully retract.	1. Poorly adjusted return spring. 2. Debris on spindle/quill rack. 3. Worn return spring.	1. Increase return spring tension (**Page 41**). 2. Clean and lubricate spindle/quill rack (**Page 37**). 3. Replace return spring.
Drill bit drifts.	1. Dull/incorrectly sharpened drill bit. 2. Tool/bit/chuck incorrectly installed.	1. Correctly sharpen drill bit. 2. Correctly install tool/bit (**Page 30**)/chuck (**Page 26**).
Drill bit slips in chuck or stuck in workpiece.	1. Chuck jaws loose. 2. Workpiece squeezing drill bit. 3. Feed rate too fast. 4. Spindle speed/feed rate to slow.	1. Tighten chuck jaws. 2. Properly clamp workpiece on table or in vise. 3. Decrease feed rate. 4. Increase spindle speed (**Page 29**)/feed rate.
Workpiece thrown from table.	1. Workpiece not secure. 2. Tool/bit too large for feed speed.	1. Properly clamp workpiece in table or in vise. 2. Use smaller tool/bit or decrease feed speed.
Excessive runout or wobbling in chuck/drill bit.	1. Debris on chuck, arbor, or in spindle taper. 2. Tool/bit bent. 3. Tool/bit installed incorrectly. 4. Spindle bearings worn.	1. Remove chuck and arbor, clean chuck, arbor, and spindle taper, then re-install (**Page 26**). Deburr mating surfaces, if necessary. 2. Replace with straight tool/bit. 3. Install tool/bit correctly (**Page 30**) or replace. 4. Replace spindle bearings.

Adjusting Return Spring Tension

The spring tension for automatic quill recoil has been pre-set at the factory. In most cases, it will never need to be re-adjusted during the life of the machine. However, if the quill stops automatically recoiling, the spring may need to be adjusted for additional tension. If it does need adjustment, the spring housing is located on the left side of the headstock (see **Figure 57**).

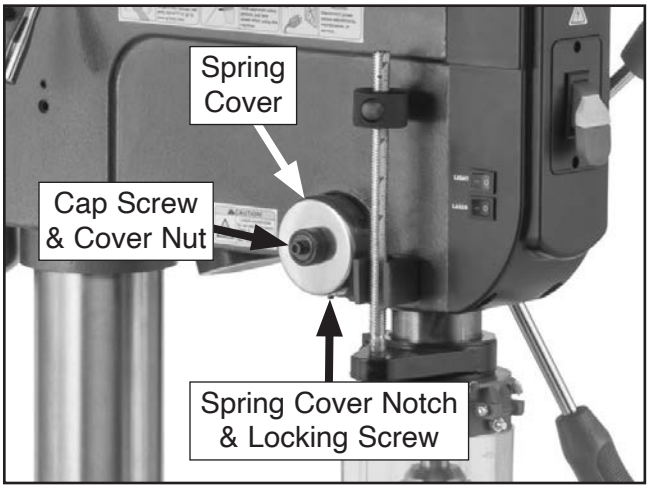
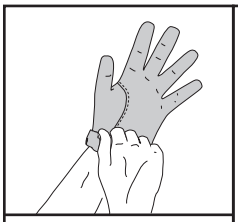
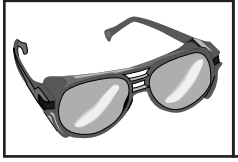


Figure 57. Spring adjustment components.





⚠WARNING

If return spring should come loose from spring cover and rapidly unwind, laceration or impact injuries could occur. Always wear heavy leather gloves and safety glasses when adjusting return spring tension.

Items Needed	Qty
Heavy Leather Gloves	1 Pr.
Safety Glasses	1 Pr.
Shop Rags	As Needed
Hex Wrench 5mm	1

To adjust spring tension:

1. DISCONNECT MACHINE FROM POWER!

2. Wipe any oil off spring cover so it does not slip in your fingers in following steps (see **Figure 57**).

3. Hold spring cover against side of headstock so cover stays splined with locking screw, then loosen cap screw and cover nut approximately ¼" each (see **Figure 57**).

IMPORTANT: Hold spring cover tightly during **Step 4**, or force of spring will cause cover to spin out of your hands.

4. Wearing gloves, pull spring cover outward just enough to disengage spring cover notch from locking screw (see **Figure 57**).

5. Rotate cover counterclockwise to increase tension, or clockwise to reduce spring tension.

6. Engage next available spring cover notch with locking screw (see **Figure 58**) and hold spring cover tightly to side of headstock.

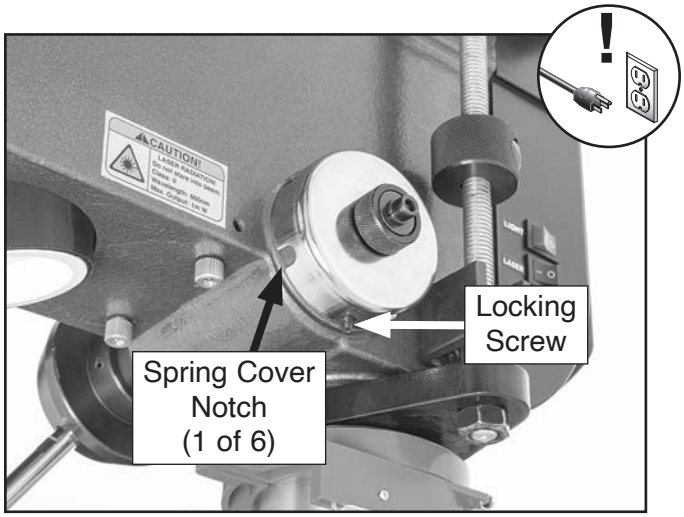


Figure 58. Location of spring cover notches and locking screw.

7. Tighten cover nut and cap screw.

8. Check tension adjustment by downfeeding spindle. Spindle should return quickly when downward pressure is released.

— If spindle does not retract quickly, repeat **Steps 3–7**, and re-check tension until return speed is adequate.

Aligning Pulleys

Pulley alignment is an important factor in power transmission and belt life. The pulleys should be parallel to each other and in the same plane (coplanar) for optimum performance.

The spindle and motor pulleys can be adjusted by loosening the set screws that secure them to their respective shafts.

Tools Needed	Qty
Open-End Wrenches 14mm	2
Hex Wrenches 3, 4mm	1 Ea.
Straightedge 12"	1

To align pulleys:

1. DISCONNECT MACHINE FROM POWER!

2. Open belt cover.

3. Place straightedge against spindle and idler pulleys (see **Figure 59**) and check that they are aligned. There should be no space anywhere between straightedge or pulleys.

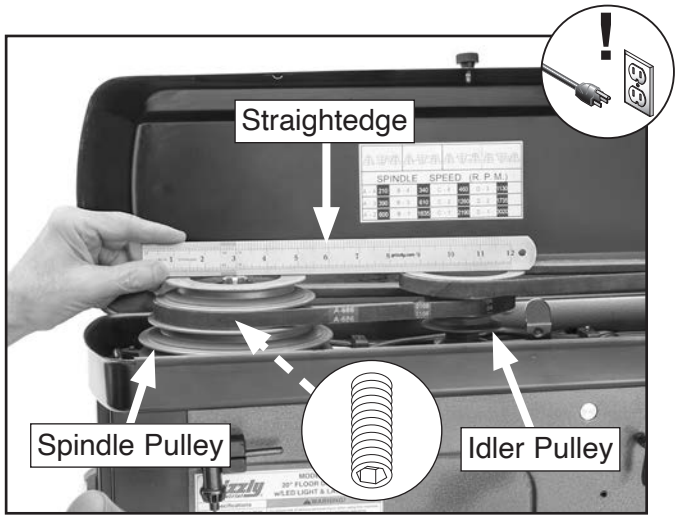


Figure 59. Checking pulley alignment.

— If pulleys *are* aligned, proceed to **Step 6**.

— If pulleys *are not* aligned, proceed to **Step 4**.

⚠CAUTION

Use care when handling V-belts as they could pinch your fingers. They may also get hot after extended use so wait to handle if drill has been in use.

4. Remove V-belts (refer to **Changing Spindle Speed** on **Page 29** for instructions on releasing V-belt tension).

— If V-belt is cracked, torn, excessively worn, or damaged, replace it.

5. Loosen set screw on spindle pulley, adjust pulley on shaft until it aligns with idler pulley, then tighten set screw (see **Figure 59**).

6. Place straightedge against idler and motor pulleys and check that they are aligned.

— If pulleys *are* aligned, proceed to **Step 9**.

— If pulleys *are not* aligned, proceed to **Step 7**.

7. If you have not already done so, remove V-belts (refer to **Changing Spindle Speed** on **Page 29** for instructions on releasing V-belt tension).

— If V-belt is cracked, torn, excessively worn, or damaged, replace it.

8. Loosen set screw on motor pulley and adjust pulley on shaft until it aligns with idler pulley, then tighten set screw.

9. If V-belt were removed, install V-belts for desired spindle speed. Refer to **Changing Spindle Speed** on **Page 29** for more information.

10. Close belt cover.

Calibrating Depth Stop

The depth stop allows you to drill multiple holes at the same depth. The scale on this depth stop can be calibrated if it ever becomes incorrect.

Tool Needed	Qty
Wrench or Socket 19mm	1

To calibrate depth stop:

1. DISCONNECT MACHINE FROM POWER!

2. Adjust depth stop nut all the way down so it sits against stop bracket (see **Figure 60**).

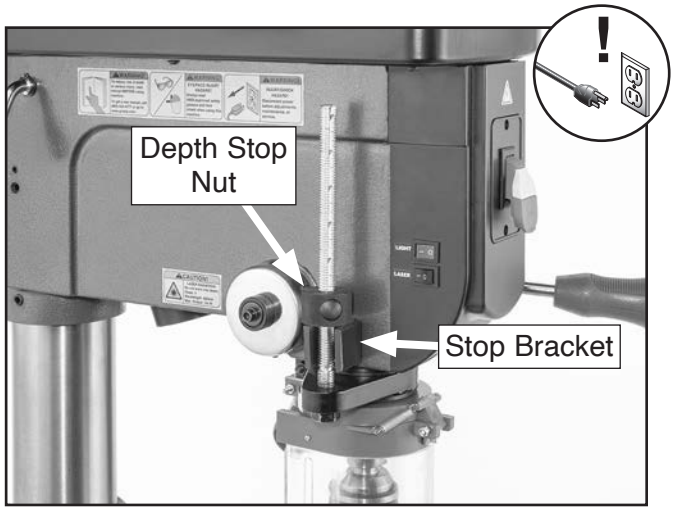


Figure 60. Depth stop nut adjusted all the way down.

— If top of depth stop nut indicates 0" on scale, no adjustment is necessary.

— If top of depth stop nut *does not* indicate 0" on scale, proceed to **Step 3**.

3. Loosen hex nut shown in **Figure 61**.

4. Adjust depth rod up in depth collar a couple turns (see **Figure 61**).

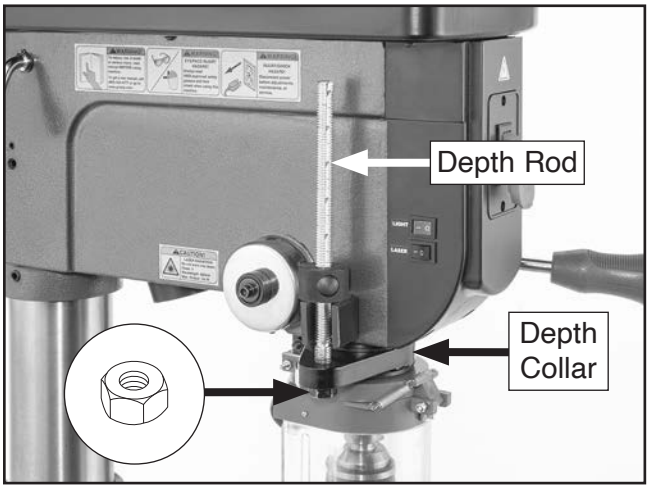


Figure 61. Depth stop calibration components.

5. Adjust depth stop nut until top of nut indicates 0" on scale.

6. Adjust depth rod until depth stop nut sits against stop bracket and scale is visible.

7. While holding depth rod in place, tighten hex nut from **Step 3** to secure setting.

8. Test depth stop by measuring how far spindle moves with respect to where you set depth stop nut.

Replacing Laser Modules & LED

If either one of the laser modules or the LED burns out and needs to be replaced, use the following sections. A wiring diagram is provided on **Page 48** for your reference.

Replacing Laser Module

Items Needed	Qty
Hex Wrench 3mm	1
Replacement Laser Module (#PT33904104)	1
Electrical Tape	As Needed
Cable Ties	As Needed

To replace laser module:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen set screw securing faulty laser module and pull laser module just enough to remove it from headstock (see **Figure 62**).

3. Turn light seat counterclockwise to release LED assembly and pull it down through headstock hole to reveal laser module and LED wires (see **Figure 62**).

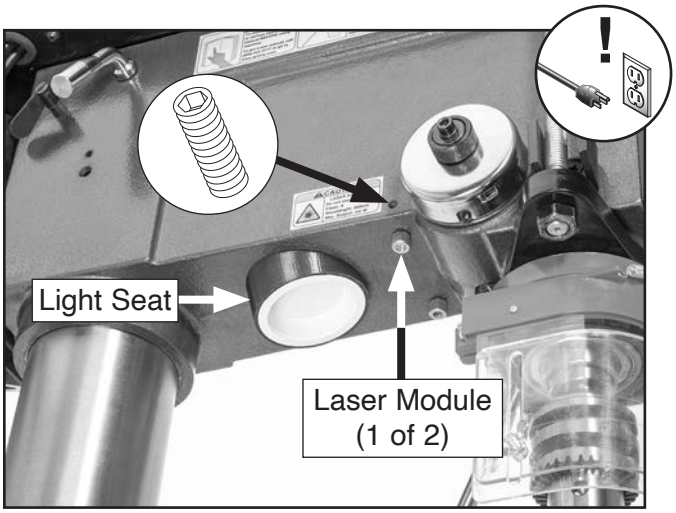


Figure 62. Location of laser modules and light seat.

4. Disconnect faulty laser module wires from their wire nut connections (see **Figure 63**), then fully remove laser module from headstock, pulling wires with it.

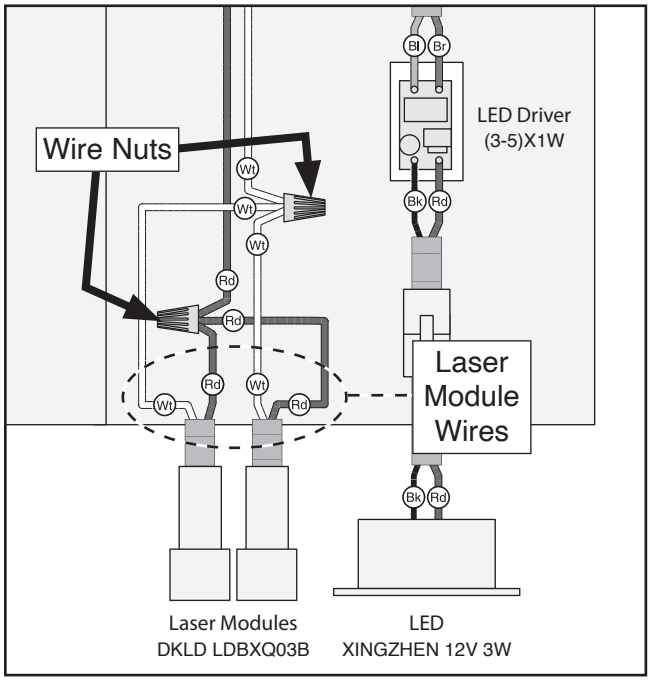


Figure 63. Laser module wiring.

5. Insert new laser module wires up through hole in headstock, and attach wires to wire nuts as they were connected in **Step 4**. Wrap wires at wire nuts with electrical tape so they will not come loose during operation.

6. Bind any stray laser module or LED wires and cords together with electrical tape or cable ties to keep electrical components from being caught in moving headstock parts.

7. Feed laser module and LED wires and cords back into headstock, install light seat in headstock, then turn clockwise to secure.

8. Refer to **Adjusting Laser Guide** on **Page 33** to secure and adjust laser modules.

Replacing LED

Items Needed **Qty**
Replacement LED (#PT33904106-1) 1
Electrical Tape or Cable Ties ..... As Needed

To replace LED:

1. DISCONNECT MACHINE FROM POWER!

2. Turn light seat counterclockwise to release seat and pull it down through headstock hole (see **Figure 64**).

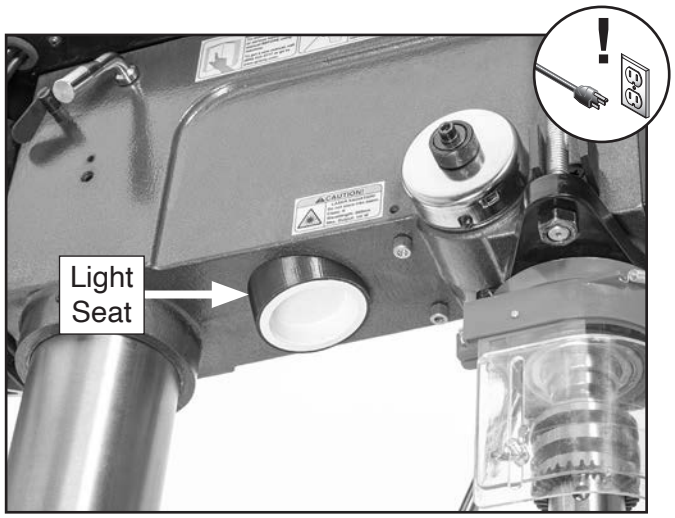


Figure 64. Location of light seat.

3. Move light seat tabs away from LED to remove LED from light seat (see **Figure 65**).

4. Disconnect LED from wire connector shown in **Figure 65** and replace with new LED.

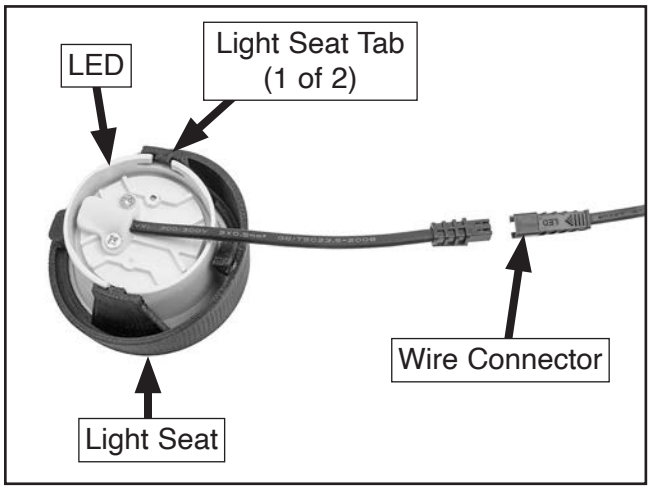


Figure 65. LED disconnect components.

5. Install new LED in light seat.

6. Bind any stray laser module or LED wires and cords together with electrical tape or cable ties to keep electrical components from being caught in moving headstock parts.

7. Feed laser module and LED wires and cords back into headstock, install light seat in headstock, then turn clockwise to secure.

Adjusting Quill Shaft Lock Screw

While you may never have to adjust the quill shaft lock screw (see **Figure 66**), you should understand its function and know how to adjust it should you ever need to remove the quill for cleaning. This screw can prevent the quill from rotating or from retracting into the headstock. If it is adjusted incorrectly, the quill may lash or bind.

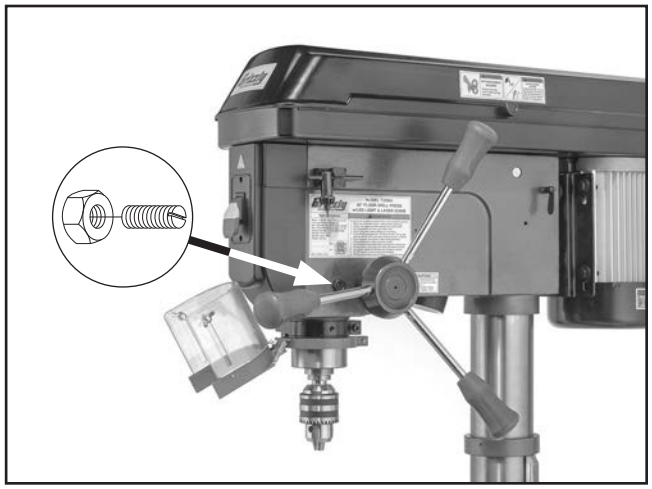


Figure 66. Location of quill shaft lock screw and jam nut.

Tools Needed	Qty
Open-End Wrench 17mm	1
Flat Head Screwdriver ¼"	1

To adjust quill shaft lock screw:

1. DISCONNECT MACHINE FROM POWER!
2. Clean and lubricate quill as described in **Lubrication** on **Page 36**. Quill should travel freely.
3. Loosen jam nut shown in **Figure 66**.
4. Turn quill shaft lock screw (see **Figure 66**) clockwise or counterclockwise to establish free, unbinding travel while moving quill up and down through its entire range of travel.
5. When quill shaft lock screw is screwed inward as far as the screw can go without binding quill, hold screw in place and tighten jam nut.
6. Check for quill binding and looseness while moving quill up and down through its entire range of travel and readjust as required.

SECTION 8: 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.

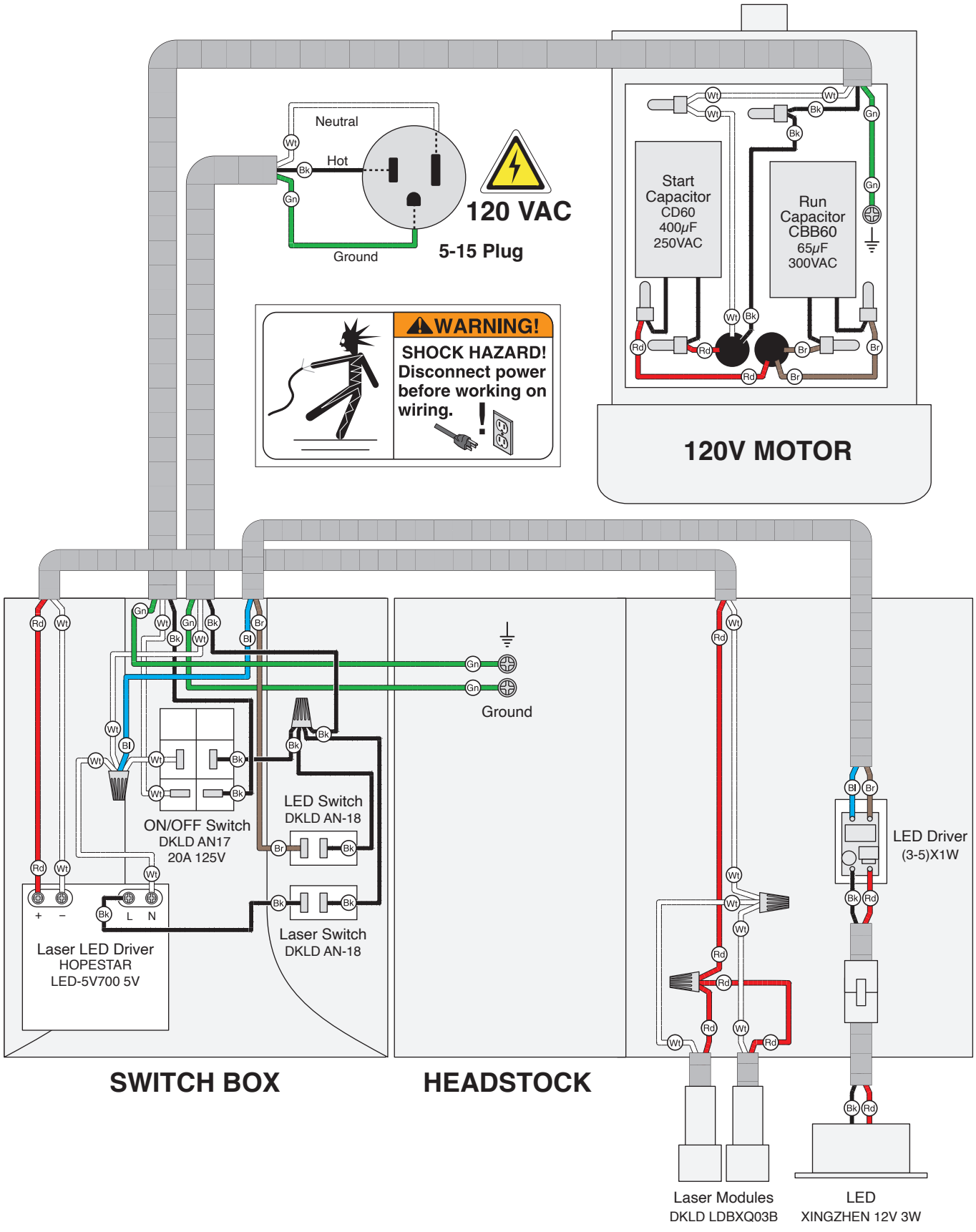
NOTICE

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



STOP *READ ELECTRICAL SAFETY ON PAGE 47!*

Electrical Component Photos

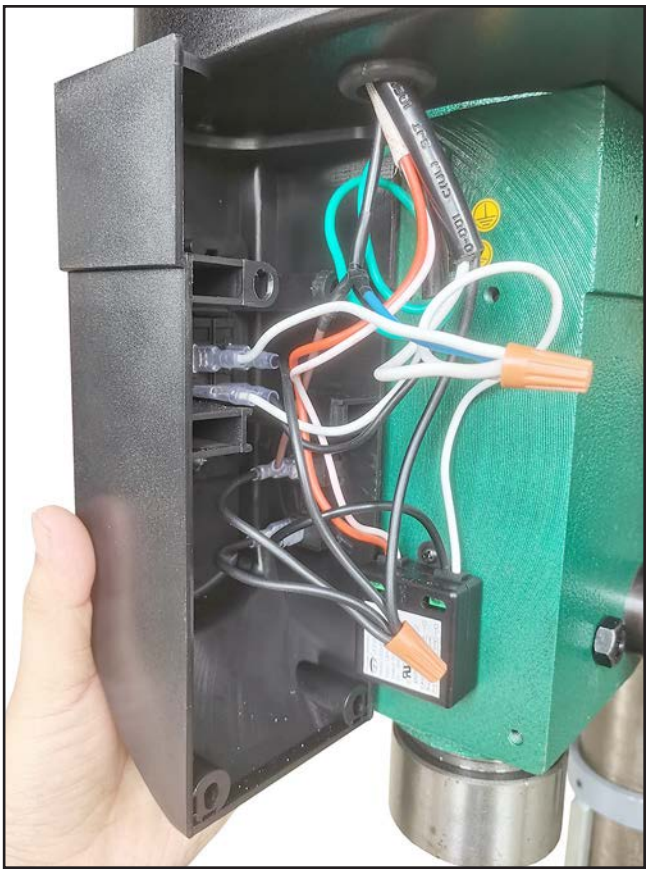


Figure 67. Switch box wiring.

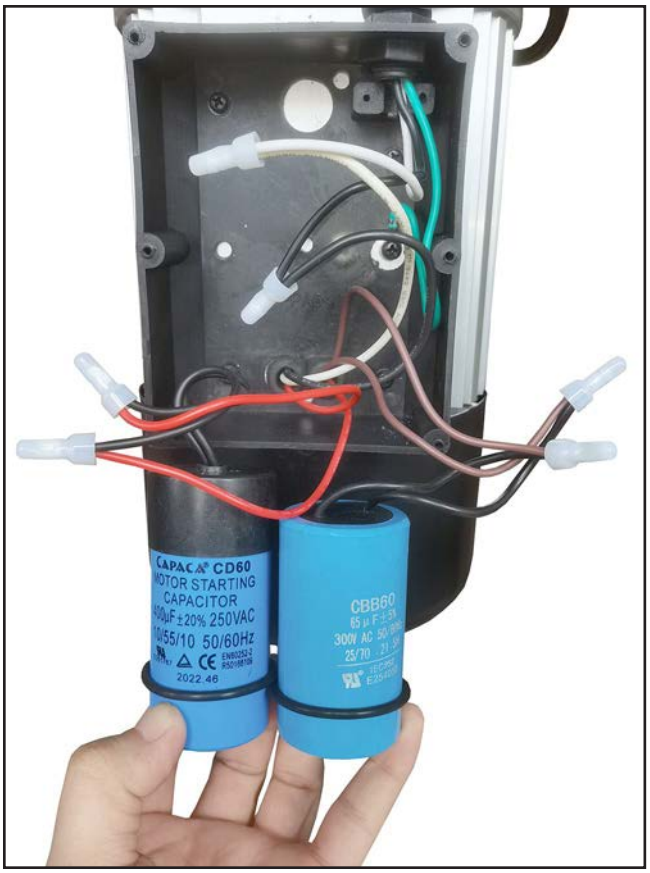


Figure 69. Capacitor wiring.

Figure 68. LED & laser module wiring.

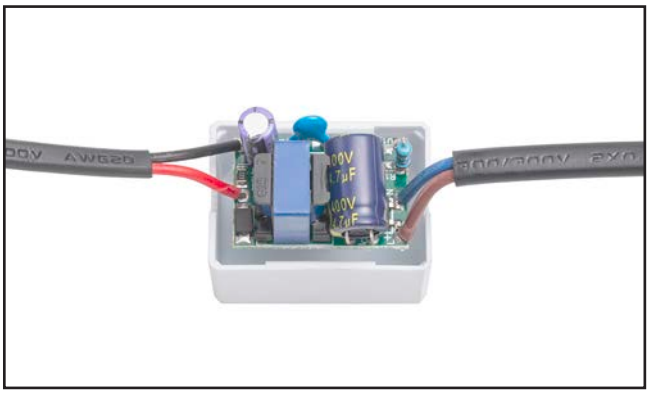
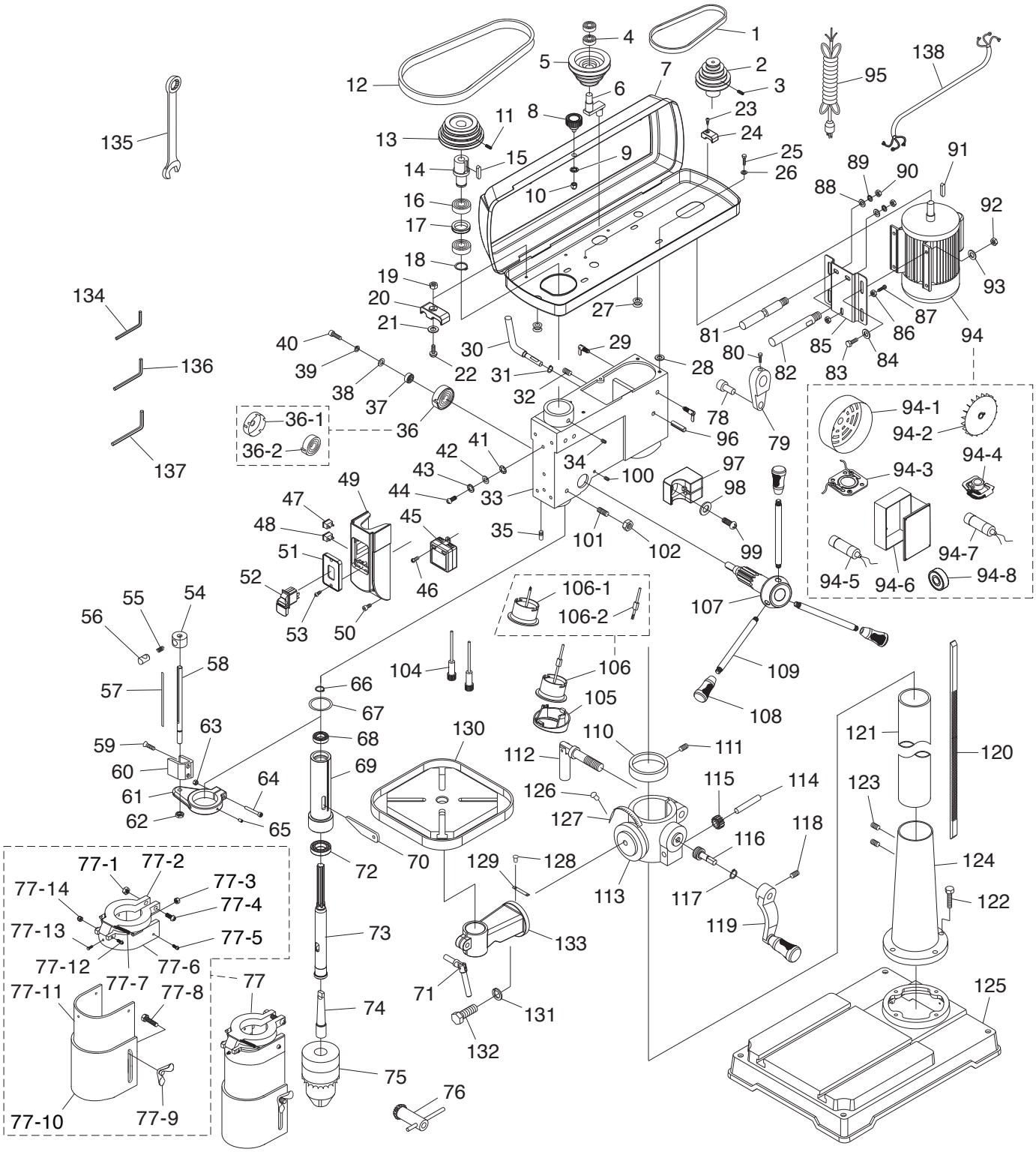


Figure 70. LED driver wiring.

SECTION 9: 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.

T33903 Main



T33903 Main Parts List

REF	PART #	DESCRIPTION
1	PT33903001	V-BELT A-700E
2	PT33903002	MOTOR PULLEY
3	PT33903003	SET SCREW M8-1.25 X 10
4	PT33903004	BALL BEARING 6202-2RS
5	PT33903005	IDLER PULLEY
6	PT33903006	CRANKSHAFT
7	PT33903007	BELT COVER
8	PT33903008	KNOB BOLT M5-.8 X 8, D20, ROUND KD
9	PT33903009	INT TOOTH WASHER 5MM
10	PT33903010	ACORN NUT M5-.8
11	PT33903011	SET SCREW M8-1.25 X 16
12	PT33903012	V-BELT A-700E
13	PT33903013	SPINDLE PULLEY
14	PT33903014	SPINDLE SLEEVE
15	PT33903015	KEY 10 X 8 X 35
16	PT33903016	BALL BEARING 6205-2RS
17	PT33903017	SPACER 46 X 52 X 10MM
18	PT33903018	EXT RETAINING RING 25MM
19	PT33903019	HEX NUT M5-.8
20	PT33903020	CORD CLAMP LARGE
21	PT33903021	FLAT WASHER 5MM
22	PT33903022	PHLP HD SCR M5-.8 X 16
23	PT33903023	TAP SCREW M4.2 X 12
24	PT33903024	CORD CLAMP SMALL
25	PT33903025	HEX BOLT M8-1.25 X 12
26	PT33903026	FLAT WASHER 8MM
27	PT33903027	BUSHING RUBBER
28	PT33903028	FLAT WASHER 9 X 18 X 2.5MM RUBBER
29	PT33903029	FOLDING HANDLE M10-1.5 X 25 DOG-PT, 35L
30	PT33903030	BELT TENSION LEVER
31	PT33903031	EXT RETAINING RING 15MM
32	PT33903032	SET SCREW M10-1.5 X 12
33	PT33903033	HEADSTOCK
34	PT33903034	SET SCREW M10-1.5 X 12
35	PT33903035	STUD-SE M4-.7 X 8, 13.5 SLOTTED
36	PT33903036	RETURN SPRING ASSEMBLY
36-1	PT33903036-1	RETURN SPRING COVER
36-2	PT33903036-2	FLAT COIL SPRING
37	PT33903037	THUMB NUT M6-1 KD
38	PT33903038	FLAT WASHER 6MM
39	PT33903039	LOCK WASHER 6MM
40	PT33903040	CAP SCREW M6-1 X 16
41	PT33903041	EXT TOOTH WASHER 5MM
42	PT33903042	FLAT WASHER 5MM
43	PT33903043	LOCK WASHER 5MM
44	PT33903044	PHLP HD SCR M5-.8 X 8
45	PT33903045	TRANSFORMER HOPESTAR LED-5V700 5V
46	PT33903046	PHLP HD SCR M4-.7 X 8
47	PT33903047	LIGHT ON/OFF SWITCH DKLD AN-18 RED
48	PT33903048	LASER ON/OFF SWITCH DKLD AN-18 BLACK
49	PT33903049	SWITCH BOX
50	PT33903050	CAP SCREW M6-1 X 12
51	PT33903051	SWITCH PLATE
52	PT33903052	ON/OFF SWITCH DKLD AN17
53	PT33903053	TAP SCREW M3.5 X 10
54	PT33903054	DEPTH STOP NUT M12-1.75
55	PT33903055	COMPRESSION SPRING 1.2 X 14 X 11.5

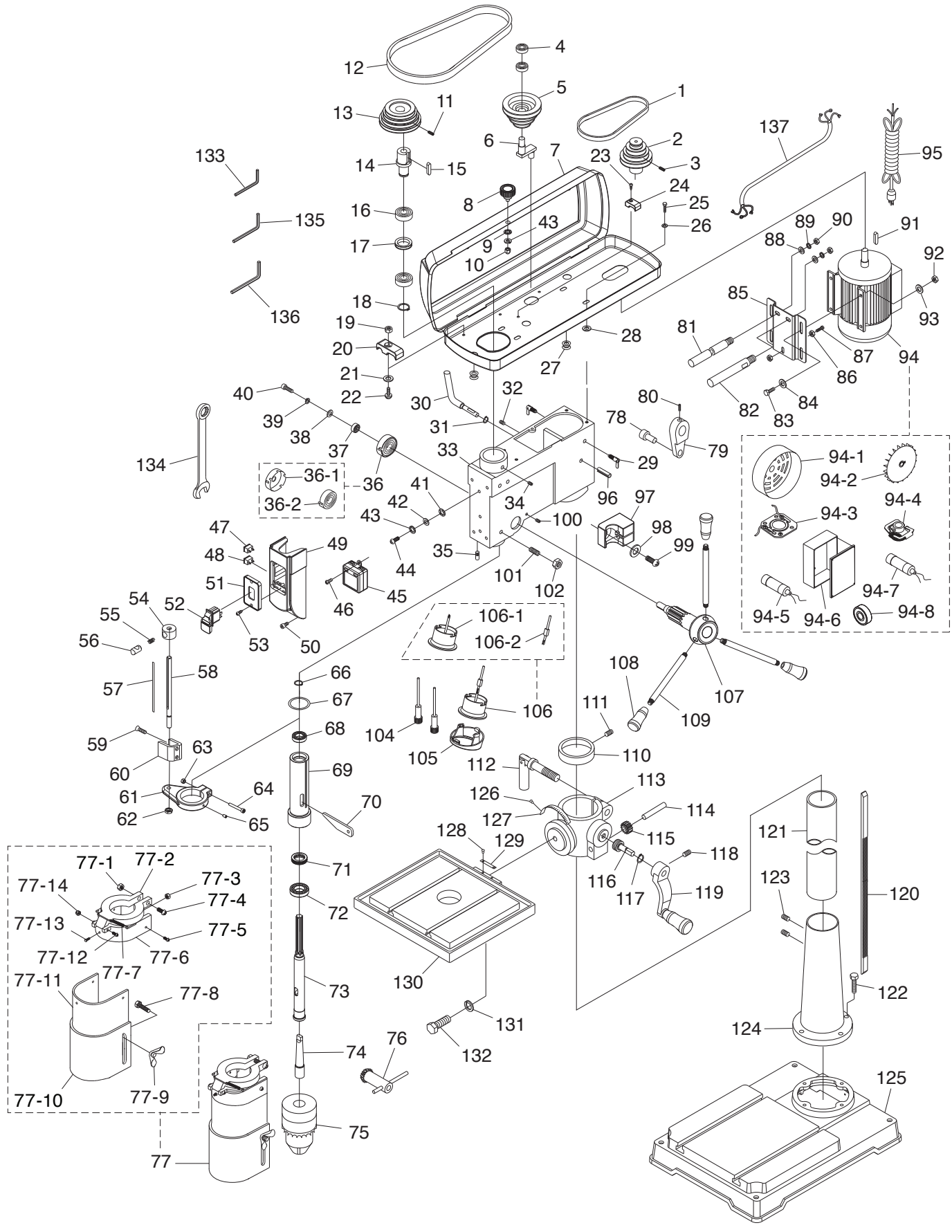
REF	PART #	DESCRIPTION
56	PT33903056	QUICK-RELEASE BUTTON
57	PT33903057	DEPTH SCALE
58	PT33903058	THREADED DEPTH ROD
59	PT33903059	FLAT HD SCR M6-1 X 12
60	PT33903060	DEPTH STOP BRACKET
61	PT33903061	DEPTH COLLAR
62	PT33903062	HEX NUT M12-1.75
63	PT33903063	HEX NUT M6-1
64	PT33903064	CAP SCREW M6-1 X 45
65	PT33903065	SET SCREW M6-1 X 10
66	PT33903066	EXT RETAINING RING 17MM
67	PT33903067	SPACER 52 X 70 X 2.5MM RUBBER
68	PT33903068	BALL BEARING 6203-2RS
69	PT33903069	QUILL
70	PT33903070	DRIFT KEY
71	PT33903071	FOLDING HANDLE M10-1.5 X 36, 70L
72	PT33903072	BALL BEARING 6007-2RS
73	PT33903073	SPINDLE MT#4
74	PT33903074	DRILL CHUCK ARBOR MT#4 X JT3
75	PT33903075	DRILL CHUCK JT3 X 1/8-5/8
76	PT33903076	DRILL CHUCK KEY 5/16" SE 12T SD-11/16"
77	PT33903077	CHUCK GUARD ASSEMBLY
77-1	PT33903077-1	HEX NUT M4-.7
77-2	PT33903077-2	CHUCK GUARD COLLAR
77-3	PT33903077-3	HEX NUT M6-1
77-4	PT33903077-4	PHLP HD SCR M4-.7 X 30
77-5	PT33903077-5	TAP SCREW M2.6 X 6
77-6	PT33903077-6	HINGE BRACKET
77-7	PT33903077-7	EXTENSION SPRING 0.8 X 6.5 X 30
77-8	PT33903077-8	HEX BOLT M5-.8 X 16
77-9	PT33903077-9	WING NUT M5-.8
77-10	PT33903077-10	GUARD LOWER
77-11	PT33903077-11	GUARD UPPER
77-12	PT33903077-12	PHLP HD SCR M4-.7 X 35
77-13	PT33903077-13	HEX BOLT M6-1 X 20
77-14	PT33903077-14	LOCK NUT M4-.7
78	PT33903078	PIVOT PIN 7 X 12, 10.5 X 19MM
79	PT33903079	BELT TENSION BLOCK
80	PT33903080	SET SCREW M8-1.25 X 10
81	PT33903081	SLIDE BAR LEFT
82	PT33903082	SLIDE BAR RIGHT
83	PT33903083	HEX BOLT M8-1.25 X 25
84	PT33903084	FLAT WASHER 8MM
85	PT33903085	MOTOR MOUNT
86	PT33903086	HEX NUT M8-1.25
87	PT33903087	HEX BOLT M8-1.25 X 30
88	PT33903088	FLAT WASHER 12MM
89	PT33903089	LOCK WASHER 12MM
90	PT33903090	HEX NUT M12-1.75
91	PT33903091	KEY 6 X 6 X 40
92	PT33903092	HEX NUT M8-1.25
93	PT33903093	FLAT WASHER 8MM
94	PT33903094	MOTOR 1-1/4HP 120V 1-PH
94-1	PT33903094-1	MOTOR FAN COVER
94-2	PT33903094-2	MOTOR FAN
94-3	PT33903094-3	CENTRIFUGAL SWITCH 3/4 1700
94-4	PT33903094-4	CONTACT PLATE 19 X 26MM EXT

T33903 Main Parts List (Cont.)

REF	PART #	DESCRIPTION
94-5	PT33903094-5	S CAPACITOR 400M 250V 1-9/16 X 3-1/8
94-6	PT33903094-6	JUNCTION BOX
94-7	PT33903094-7	R CAPACITOR 65M 300V 1-5/8 X 3
94-8	PT33903094-8	BALL BEARING 6205-2RS
95	PT33903095	POWER CORD 16G 3W 70" 5-15P
96	PT33903096	ROLL PIN 6 X 20
97	PT33903097	CHUCK KEY SEAT
98	PT33903098	FLAT WASHER 5MM
99	PT33903099	PHLP HD SCR M5-.8 X 10
100	PT33903100	SET SCREW M6-1 X 6
101	PT33903101	SET SCREW M10-1.5 X 25 SLOTTED
102	PT33903102	HEX NUT M10-1.5
104	PT33903104	LASER MODULE DKLD LDBXQ03B
105	PT33903105	LIGHT SEAT
106	PT33903106	LED ASSEMBLY
106-1	PT33903106-1	LED XINGZHEN 12V 3W
106-2	PT33903106-2	LED DRIVER (3-5)X1W
107	PT33903107	PINION SHAFT
108	PT33903108	KNOB M12-1.75, D45
109	PT33903109	STUD-DE M12-1.75 X 198, 15
110	PT33903110	COLUMN COLLAR
111	PT33903111	SET SCREW M6-1 X 10
112	PT33903112	FOLDING HANDLE M12-1.75 X 50, 90L
113	PT33903113	TABLE BRACKET
114	PT33903114	GEAR SHAFT

REF	PART #	DESCRIPTION
115	PT33903115	GEAR 14T
116	PT33903116	WORM SHAFT
117	PT33903117	EXT RETAINING RING 14MM
118	PT33903118	SET SCREW M8-1.25 X 10
119	PT33903119	TABLE HEIGHT CRANK
120	PT33903120	RACK
121	PT33903121	COLUMN
122	PT33903122	HEX BOLT M10-1.5 X 30
123	PT33903123	SET SCREW M10-1.5 X 8
124	PT33903124	COLUMN BASE
125	PT33903125	BASE
126	PT33903126	RIVET 2.5 X 6MM NAMEPLATE, ALUMINUM
127	PT33903127	TABLE TILT SCALE
128	PT33903128	RIVET 2.5 X 6MM NAMEPLATE, ALUMINUM
129	PT33903129	POINTER
130	PT33903130	TABLE
131	PT33903131	LOCK WASHER 20MM
132	PT33903132	HEX BOLT M20-2.5 X 55
133	PT33903133	TABLE MOUNTING ARM
134	PT33903134	HEX WRENCH 3MM
135	PT33903135	WRENCH 30MM COMBO
136	PT33903136	HEX WRENCH 4MM
137	PT33903137	HEX WRENCH 5MM
138	PT33903138	MOTOR CORD 16G 3W 45"

T33904 Main



T33904 Main Parts List

REF	PART #	DESCRIPTION
1	PT33904001	V-BELT A-787
2	PT33904002	MOTOR PULLEY
3	PT33904003	SET SCREW M8-1.25 X 10
4	PT33904004	BALL BEARING 6202-2RS
5	PT33904005	IDLER PULLEY
6	PT33904006	CRANKSHAFT
7	PT33904007	BELT COVER
8	PT33904008	KNOB BOLT M5-.8 X 8, D20, ROUND KD
9	PT33904009	INT TOOTH WASHER 5MM
10	PT33904010	ACORN NUT M5-.8
11	PT33904011	SET SCREW M8-1.25 X 16
12	PT33904012	V-BELT A-686
13	PT33904013	SPINDLE PULLEY
14	PT33904014	SPINDLE SLEEVE
15	PT33904015	KEY 10 X 5 X 35
16	PT33904016	BALL BEARING 6007-2RS
17	PT33904017	SPACER 56 X 62 X 10MM
18	PT33904018	EXT RETAINING RING 35MM
19	PT33904019	HEX NUT M5-.8
20	PT33904020	CORD CLAMP LARGE
21	PT33904021	FLAT WASHER 5MM
22	PT33904022	PHLP HD SCR M5-.8 X 16
23	PT33904023	TAP SCREW M4.2 X 12
24	PT33904024	CORD CLAMP SMALL
25	PT33904025	HEX BOLT M8-1.25 X 12
26	PT33904026	FLAT WASHER 8MM
27	PT33904027	BUSHING RUBBER
28	PT33904028	FLAT WASHER 9 X 18 X 2.5MM RUBBER
29	PT33904029	FOLDING HANDLE M10-1.5 X 25 DOG-PT, 35L
30	PT33904030	BELT TENSION LEVER
31	PT33904031	EXT RETAINING RING 15MM
32	PT33904032	SET SCREW M10-1.5 X 12
33	PT33904033	HEADSTOCK
34	PT33904034	SET SCREW M10-1.5 X 12
35	PT33904035	STUD-SE M4-.7 X 8, 13.5 SLOTTED
36	PT33904036	RETURN SPRING ASSEMBLY
36-1	PT33904036-1	RETURN SPRING COVER
36-2	PT33904036-2	FLAT COIL SPRING
37	PT33904037	THUMB NUT M6-1 KD
38	PT33904038	FLAT WASHER 6MM
39	PT33904039	LOCK WASHER 6MM
40	PT33904040	CAP SCREW M6-1 X 16
41	PT33904041	EXT TOOTH WASHER 5MM
42	PT33904042	FLAT WASHER 5MM
43	PT33904043	LOCK WASHER 5MM
44	PT33904044	PHLP HD SCR M5-.8 X 8
45	PT33904045	TRANSFORMER HOPESTAR LED-5V700 5V
46	PT33904046	PHLP HD SCR M4-.7 X 8
47	PT33904047	LIGHT ON/OFF SWITCH DKLD AN-18 RED
48	PT33904048	LASER ON/OFF SWITCH DKLD AN-18 BLACK
49	PT33904049	SWITCH BOX
50	PT33904050	CAP SCREW M6-1 X 12
51	PT33904051	SWITCH PLATE
52	PT33904052	ON/OFF SWITCH DKLD AN17
53	PT33904053	TAP SCREW M3.5 X 10
54	PT33904054	DEPTH STOP NUT M12-1.75
55	PT33904055	COMPRESSION SPRING 1.2 X 14 X 11.5

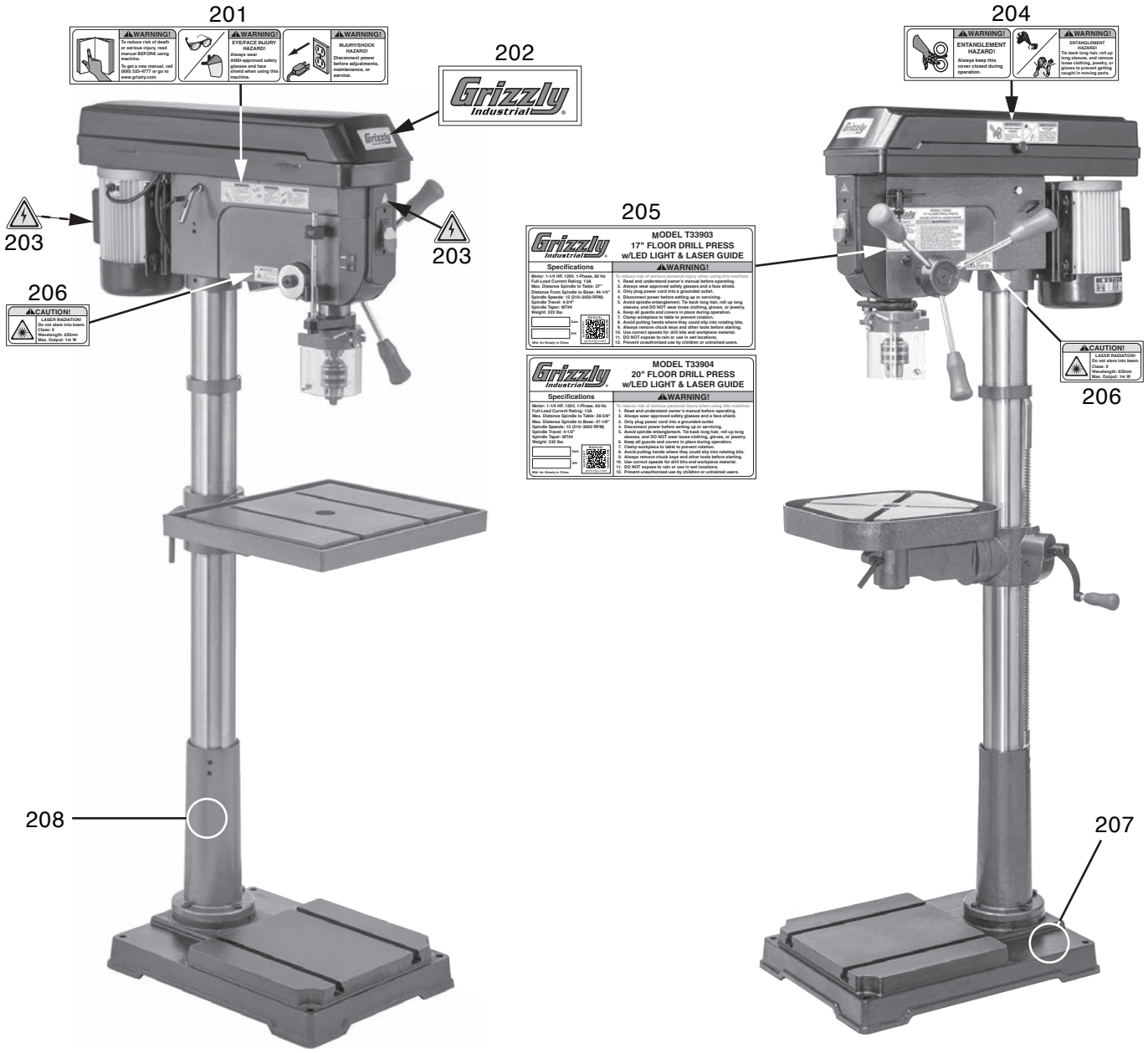
REF	PART #	DESCRIPTION
56	PT33904056	QUICK-RELEASE BUTTON
57	PT33904057	DEPTH SCALE
58	PT33904058	THREADED DEPTH ROD
59	PT33904059	FLAT HD SCR M6-1 X 12
60	PT33904060	DEPTH STOP BRACKET
61	PT33904061	DEPTH COLLAR
62	PT33904062	HEX NUT M12-1.75
63	PT33904063	HEX NUT M6-1
64	PT33904064	CAP SCREW M6-1 X 45
65	PT33904065	SET SCREW M6-1 X 10
66	PT33904066	EXT RETAINING RING 25MM
67	PT33904067	SPACER 62 X 80 X 2.5MM RUBBER
68	PT33904068	BALL BEARING 6005-2RS
69	PT33904069	QUILL
70	PT33904070	DRIFT KEY
71	PT33904071	THRUST BEARING 51107
72	PT33904072	BALL BEARING 6007-2RS
73	PT33904073	SPINDLE MT#4
74	PT33904074	DRILL CHUCK ARBOR MT#4 X JT3
75	PT33904075	DRILL CHUCK JT3 X 1/8-5/8
76	PT33904076	DRILL CHUCK KEY 5/16" SE 12T SD-11/16"
77	PT33904077	CHUCK GUARD ASSEMBLY
77-1	PT33904077-1	HEX NUT M4-.7
77-2	PT33904077-2	CHUCK GUARD COLLAR
77-3	PT33904077-3	HEX NUT M6-1
77-4	PT33904077-4	PHLP HD SCR M4-.7 X 30
77-5	PT33904077-5	TAP SCREW M2.6 X 6
77-6	PT33904077-6	HINGE BRACKET
77-7	PT33904077-7	EXTENSION SPRING 0.8 X 6.5 X 30
77-8	PT33904077-8	HEX BOLT M5-.8 X 16
77-9	PT33904077-9	WING NUT M5-.8
77-10	PT33904077-10	GUARD LOWER
77-11	PT33904077-11	GUARD UPPER
77-12	PT33904077-12	PHLP HD SCR M4-.7 X 35
77-13	PT33904077-13	HEX BOLT M6-1 X 20
77-14	PT33904077-14	LOCK NUT M4-.7
78	PT33904078	PIVOT PIN 7 X 12, 10.5 X 19MM
79	PT33904079	BELT TENSION BLOCK
80	PT33904080	SET SCREW M8-1.25 X 10
81	PT33904081	SLIDE BAR LEFT
82	PT33904082	SLIDE BAR RIGHT
83	PT33904083	HEX BOLT M8-1.25 X 25
84	PT33904084	FLAT WASHER 8MM
85	PT33904085	MOTOR MOUNT
86	PT33904086	HEX NUT M8-1.25
87	PT33904087	HEX BOLT M8-1.25 X 30
88	PT33904088	FLAT WASHER 12MM
89	PT33904089	LOCK WASHER 12MM
90	PT33904090	HEX NUT M12-1.75
91	PT33904091	KEY 6 X 6 X 40
92	PT33904092	HEX NUT M8-1.25
93	PT33904093	FLAT WASHER 8MM
94	PT33904094	MOTOR 1-1/4HP 120V 1-PH
94-1	PT33904094-1	MOTOR FAN COVER
94-2	PT33904094-2	MOTOR FAN
94-3	PT33904094-3	CENTRIFUGAL SWITCH 3/4 1700
94-4	PT33904094-4	CONTACT PLATE 19 X 26MM EXT

T33904 Main Parts List (Cont.)

REF	PART #	DESCRIPTION
94-5	PT33904094-5	S CAPACITOR 400M 250V 1-9/16 X 3-1/8
94-6	PT33904094-6	JUNCTION BOX
94-7	PT33904094-7	R CAPACITOR 65M 300V 1-5/8 X 3
94-8	PT33904094-8	BALL BEARING 6205-2RS
95	PT33904095	POWER CORD 16G 3W 70" 5-15P
96	PT33904096	ROLL PIN 6 X 20
97	PT33904097	CHUCK KEY SEAT
98	PT33904098	FLAT WASHER 5MM
99	PT33904099	PHLP HD SCR M5-.8 X 10
100	PT33904100	SET SCREW M6-1 X 6
101	PT33904101	SET SCREW M10-1.5 X 25 SLOTTED
102	PT33904102	HEX NUT M10-1.5
104	PT33904104	LASER MODULE DKLD LDBXQ03B
105	PT33904105	LIGHT SEAT
106	PT33904106	LED ASSEMBLY
106-1	PT33904106-1	LED XINGZHEN 12V 3W
106-2	PT33904106-2	LED DRIVER (3-5)X1W
107	PT33904107	PINION SHAFT
108	PT33904108	KNOB M12-1.75, D45
109	PT33904109	STUD-DE M12-1.75 X 218, 15
110	PT33904110	COLUMN COLLAR
111	PT33904111	SET SCREW M6-1 X 10
112	PT33904112	FOLDING HANDLE M12-1.75 X 50, 90L
113	PT33904113	TABLE BRACKET

REF	PART #	DESCRIPTION
114	PT33904114	GEAR SHAFT
115	PT33904115	GEAR 14T
116	PT33904116	WORM SHAFT
117	PT33904117	EXT RETAINING RING 14MM
118	PT33904118	SET SCREW M8-1.25 X 10
119	PT33904119	TABLE HEIGHT CRANK
120	PT33904120	RACK
121	PT33904121	COLUMN
122	PT33904122	HEX BOLT M10-1.5 X 30
123	PT33904123	SET SCREW M10-1.5 X 8
124	PT33904124	COLUMN BASE
125	PT33904125	BASE
126	PT33904126	RIVET 2.5 X 6MM NAMEPLATE, ALUMINUM
127	PT33904127	TABLE TILT SCALE
128	PT33904128	RIVET 2.5 X 6MM NAMEPLATE, ALUMINUM
129	PT33904129	POINTER
130	PT33904130	TABLE
131	PT33904131	LOCK WASHER 20MM
132	PT33904132	HEX BOLT M20-2.5 X 55
133	PT33904133	HEX WRENCH 3MM
134	PT33904134	WRENCH 30MM COMBO
135	PT33904135	HEX WRENCH 4MM
136	PT33904136	HEX WRENCH 5MM
137	PT33904137	MOTOR CORD 16G 3W 45"

Labels & Cosmetics



REF	PART #	DESCRIPTION
201	PT33903201	COMBO WARNING LABEL
202	PT33903202	GRIZZLY LOGO LABEL
203	PT33903203	ELECTRICITY LABEL
204	PT33903204	ENTANGLEMENT HAZARD LABEL
205	PT33903205	MACHINE ID LABEL (T33903)

REF	PART #	DESCRIPTION
205	PT33904205	MACHINE ID LABEL (T33904)
206	PT33903206	LASER LABEL
207	PT33903207	TOUCH-UP PAINT, GRIZZLY BLACK
208	PT33903208	TOUCH-UP PAINT, GRIZZLY GREEN

⚠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.

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.

WARRANTY

grizzly.com