MODEL G0520
DRILL PRESS w/POWER FEED & CROSS SLIDE TABLE
OWNER'S MANUAL

#TS10964 PRINTED IN CHINA

⚠ WARNING!

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

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

The owner of this machine/equipment 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, blade/cutter integrity, and the usage of personal protective equipment.

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

⚠ WARNING!

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

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

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

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INTRODUCTION

Manual Accuracy

We are proud to offer this manual with your new machine! We've made every effort to be exact with the instructions, specifications, drawings, and photographs of the machine we used when writing this manual. However, sometimes errors do happen and we apologize for them.

Also, owing to our policy of continuous improvement, **your machine may not exactly match the manual**. If you find this to be the case, and the difference between the manual and machine leaves you in doubt, immediately call our technical support for updates or clarification.

For your convenience, we always keep current Grizzly manuals and most updates available on our website at **www.grizzly.com**. Any updates to your machine will be reflected in these documents as soon as they are complete. Visit our site often to check for the latest updates!

Contact Info

We stand behind our machines. If you have any service questions, parts requests or general questions about the machine, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com

If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
C/O Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

Functional Overview

The Model G0520 Drill Press is designed to vertically lower a cutting tool into a workpiece that is clamped to the table or base to remove material from the workpiece. The drill press is used when precision and repetitive drilling operations are required.

The head and the table can be positioned vertically up and down and 360° horizontally around the column. The table moves longitudinally (X-axis) or cross-wise (Y-axis) to the spindle. Also, there is a power feed unit to provide consistent powered longitudinal table movement.

The workpiece is clamped to the table or base using vises, clamps, or mounted jigs. The operator installs a cutting tool, such as a drill bit or tap, into the spindle, which is lowered with manual controls into the workpiece. The table can be moved to repeat the operation in precise locations along the workpiece.

Identification

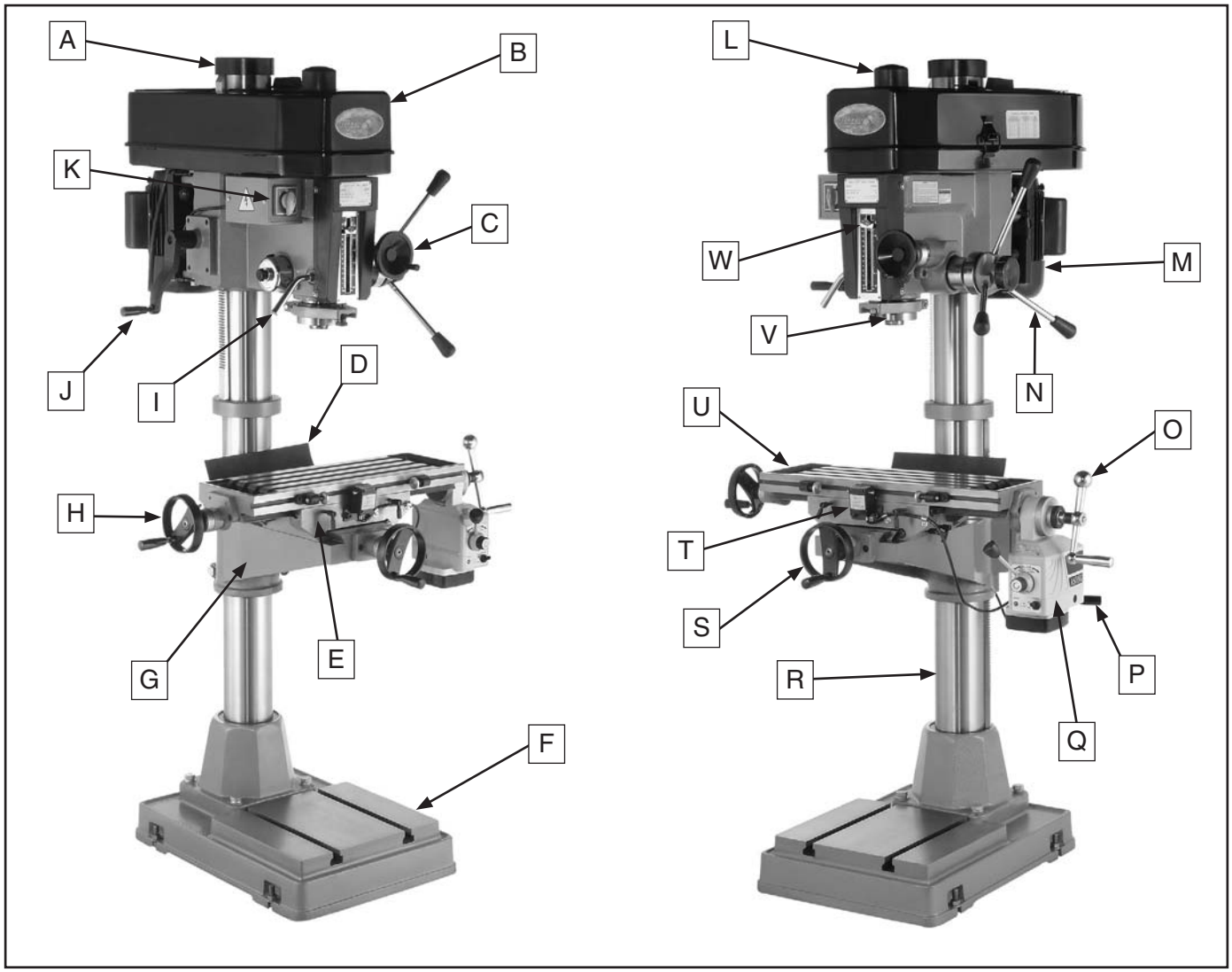


Figure 1. Model G0520 identification.

A. Column Cap
B. V-Belt Cover
C. Fine Downfeed Handwheel
D. Way Cover
E. Cross Slide
F. Slotted Base
G. Knee
H. Longitudinal (X-Axis) Handwheel
I. Quill Lock
J. Head Elevation (Z-Axis) Crank
K. Spindle ON/OFF Switch
L. Drawbar Cap
M. Spindle Motor 2HP, 220V, Single-Phase
N. Coarse Downfeed Handle
O. Longitudinal Ball Handle
P. Knee Elevation (Z-Axis) Crank
Q. Longitudinal Power Feed (refer to **Power Feed** on **Page 23** for detailed instructions)
R. Column
S. Cross (Y-Axis) Handwheel
T. Power Feed Limit Switch
U. Slotted Table
V. Quill & Spindle
W. Depth Stop & Scale

MACHINE DATA SHEET

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

MODEL G0520 DRILL PRESS W/ CROSS SLIDING TABLE & POWER FEED

Product Dimensions:

Weight..... 672 lbs.
Length/Width/Height.....39 x 37-1/4 x 74-3/8 in.
Foot Print (Length/Width)..... 25 x 18 in.

Shipping Dimensions:

Type.....Wood Crate
Content.....Machine
Weight..... 780 lbs.
Length/Width/Height..... 29 x 33 x 76 in.

Electrical:

Switch.....Forward/Reverse
Switch Voltage.....220V
Cord Length..... 7 ft.
Cord Gauge.....14 gauge
Minimum Circuit Size..... 15 amp
Plug Included.....No

Motors:

Main

Type.....TEFC Capacitor Start Induction
Horsepower.....2 HP
Voltage.....220V
Phase.....Single
Amps.....8A
Speed.....1725 RPM
Cycle.....60 Hz
Number Of Speeds..... 1
Power Transfer ..... V-Belt Drive
Bearings.....Sealed and Lubricated

Main Specifications:

Construction

Table Construction.....Precision Ground Cast Iron
Spindle Housing Construction..... Cast Iron
Column Construction..... Cast Iron
Head Construction.....Cast Iron
Base Construction..... Precision Ground Cast Iron
Paint..... Epoxy

Head Information

Head Swivel..... 360 deg.

Other Related Information

Base Length	25 in.
Base Width	18 in.
Quill Hold Type	Lever Lock with Gib
Quill Diameter	3 in.
Depth Stop Type	Threaded Rod with Positive Stop
Column Diameter	4-1/2 in.
Mobile Base	G7314

Spindle Information

Spindle Taper	MT#3
Spindle Travel	5-1/8 in.
Dist From Spindle To Column	8 in.
Dist From Spindle To Table	31 in.
Dist From Spindle To Base	51-1/8 in.

Table Information

Table Length	23 in.
Table Width	7-1/2 in.
Table Thickness	1-3/4 in.
Floor To Table Height	23-7/8 - 43-1/4 in.
Vertical Table Movement	Crank Handle Operate
Table Swivel Around Column	360 deg.
Longitudinal Travel	14-1/2 in.
Cross Travel	7 in.
Maximum Movement Of Work Table	19-3/8 in.
No. Of T Slots	4
T Slot Width	1/2 in.
T Slot Length	18 in.

Operation Information

Swing	16 in.
Drilling Capacity	1-1/4 in. in Mild Steel
No Of Spindle Speeds	12
Range Of Spindle Speeds	140 - 2570 RPM
Drill Chuck Type	JT3 Key Chuck
Drill Chuck Size	5/8 in.
End Milling Cap	7/8 in. in Mild Steel
Face Milling Cap	3 in. in Mild Steel

Other Specifications:

Country Of Origin	China
Warranty	1 Year
Serial Number Location	Name Label on Headstock

Features:

Equipped with a Cross Sliding Table and Power Feed
Head is Adjustable on Column
Equipped with a Drawbar for Threaded End-Mill Tooling
13" x 15-3/8" Base Table Size
Reverse Switch
12 Speeds
Precision Ground Cast Iron Table
2HP Motor

SECTION 1: SAFETY

⚠WARNING

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.

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

⚠WARNING

Safety Instructions for Machinery

1. **READ THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.
2. **ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.
3. **ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Most types of dust (wood, metal, etc.) can cause severe respiratory illnesses.
4. **ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing loss.
5. **WEAR PROPER APPAREL.** DO NOT wear loose clothing, gloves, neckties, rings, or jewelry that can catch in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
6. **NEVER OPERATE MACHINERY WHEN TIRED OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.

⚠WARNING
Safety Instructions for Machinery

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.

8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.

9. **MAKE WORKSHOP CHILDPROOF.** Use padlocks, master switches, and remove start switch keys.

10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power ***OFF*** and allow all moving parts to come to a complete stop before leaving machine unattended.

11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.

12. **KEEP WORK AREA CLEAN AND WELL LIGHTED.** Clutter and dark shadows may cause accidents.

13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Grounded cords minimize shock hazards. Undersized cords create excessive heat. Always replace damaged extension cords.

14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY**. Make sure switch is in OFF position before reconnecting.

15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**

17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery ***ON***.

18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding or misaligned parts, broken parts, loose bolts, and any other conditions that may impair machine operation. Repair or replace damaged parts before operation.

19. **USE RECOMMENDED ACCESSORIES.** Refer to the instruction manual for recommended accessories. Improper accessories increase risk of injury.

20. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.

21. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.

22. **DO NOT OVERREACH.** Maintain stability and balance at all times.

23. **MANY MACHINES CAN EJECT WORKPIECES TOWARD OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."

24. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY**.

25. **CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Be aware of the type of dust you are exposed to and always wear a respirator designed to filter that type of dust.

⚠WARNING
Additional Safety Instructions for Drill Presses

1. **EYE/FACE/HAND PROTECTION.** Protect yourself from flying chips or debris. Wear a face shield and safety glasses. Always keep hands and fingers away from the spinning cutting tool. To avoid entanglement hazards, DO NOT wear gloves when operating the machine.

2. **DRILL BIT.** A loose bit could become a deadly missile. Always properly secure the drill bit in the chuck. Use only round, hex, or triangular shank drill bits that can be tightly locked in the chuck. Always follow the manufacturer's specifications for speed and workpiece material.

3. **CHUCK KEYS & TOOLS.** To avoid injury from a fast moving tool, always remove the chuck key and tools from the machine before turning it ***ON***.

4. **WORKPIECE MATERIAL.** Inspect the workpiece for flaws or contaminates that could cause it to break apart resulting in injuries. DO NOT drill sheet metal unless it is firmly clamped to the table on all sides of the drilling point. DO NOT drill material that cannot be oriented with a flat and level surface to the drill bit.

5. **DAMAGED TOOLS.** Dull or damaged drill bits are hard to control and may break apart, causing serious injury. Never use dull or damaged cutting tools.

6. **OPERATING SPEED.** Always operate your drill press at speeds that are appropriate for the drill bit size and the material that you are drilling.

7. **DRILLING OPERATION.** To avoid tool breakage and possible injury, feed the drill bit slowly and evenly into the workpiece. Never start the drill press with the bit pressed against the workpiece. To prevent the bit from binding, back it out frequently to clear deep holes.

8. **CLEARING CHIPS.** Metal chips and debris build-up prevents good results and presents an injury hazard. Turn the machine ***OFF*** and clear away chips and scrap with a brush or vacuum. Disconnect power, remove the drill bit, and clean the machine before leaving it.

9. **MOUNTING WORKPIECES.** Workpieces that move while drilling mean possible injury and poor results. Always securely clamp the workpiece to the table or base. Use vise, jigs, or other devices if necessary.

10. **TABLE LOCK.** To avoid unexpected movement during operation, always lock the table and head before starting the drill press.

11. **ADJUSTMENTS/MAINTENANCE/SERVICE.** To avoid inadvertently starting the machine or electrocution, always disconnect the drill press from power before performing adjustments, maintenance, or service.

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

⚠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.

SECTION 2: CIRCUIT REQUIREMENTS

220V Operation

⚠WARNING

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

⚠WARNING

Electrocution or fire could result if machine is not grounded and installed in compliance with electrical codes. Compliance MUST be verified by a qualified electrician!

Full Load Amperage Draw

This machine draws the following amps under maximum load:

Amp Draw.....8 Amps

Power Supply Circuit Requirements

You MUST connect your machine to a grounded circuit that is rated for the amperage given below. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**

Minimum Circuit Size..... 15 Amps

Power Connection Device

The type of plug required to connect your machine to power depends on the type of service you currently have or plan to install. We recommend using the plug shown in **Figure 2**.

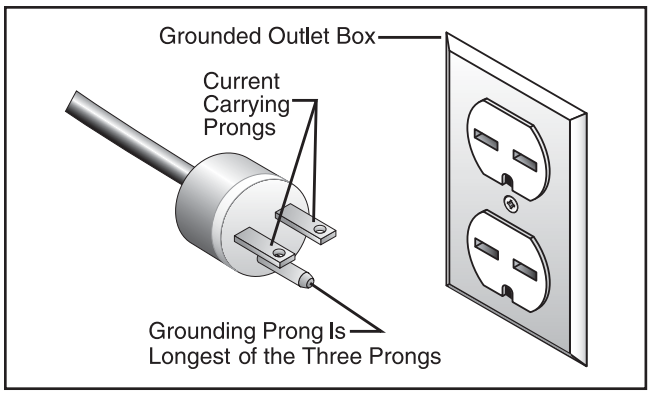


Figure 2. NEMA 6-15 plug and receptacle.

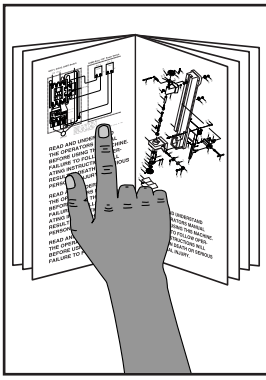
Extension Cords

Using extension cords may reduce the life of the motor. Instead, place the machine near a power source. If you must use an extension cord:

- Use at least a 14 gauge cord that does not exceed 50 feet in length!
- The extension cord must also have a ground wire and plug pin.
- A qualified electrician MUST size cords over 50 feet long to prevent motor damage.

SECTION 3: SETUP

Setup Safety

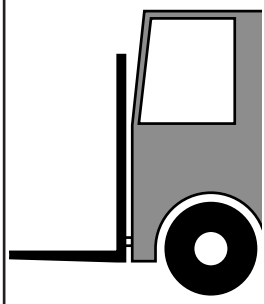


⚠WARNING

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

The Model G0520 is a heavy machine. Serious personal injury may occur if safe moving methods are not used. To be safe, get assistance and use power equipment to move the shipping crate and remove the machine from the crate.

⚠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.

Items Needed for Setup

The following items are needed to complete the setup process, but are not included with your machine:

Description	Qty
Assistant	1
Safety Glasses	1 per person
Precision Level	1
Wrench 7mm	1
Wrench 12mm	1
Standard Screwdriver #1	1
2x4 Board 3' Long (in good condition)	1
4x4 Board 3' Long (in good condition)	1
Forklift (rated for at least 750 lbs.)	1
Cleaning Solvent & Rags	As Needed
Machine Mounting Hardware	As Needed

Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover the machine is damaged, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.

Inventory

The following is a description of the main components shipped with your machine. Lay the components out to inventory them.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for shipping purposes.*

Inventory: (Figure 3)		Qty
A.	Coarse Downfeed Handles	3
B.	Socket Wrench 24mm	1
C.	Crank Handles	2
D.	Arbor MT#3–JT#3	1
E.	Sleeve MT#3–MT#2	1
F.	Drift Key #3	1
G.	Handwheels	2
H.	Hex Wrenches 4, 5, 6mm	1 Each
I.	Handles	4
J.	Power Feed Manual	1
K.	Face Mill (3⅛") & Arbor MT#3	1 Each
L.	Drill Chuck & Key JT#3	1 Each

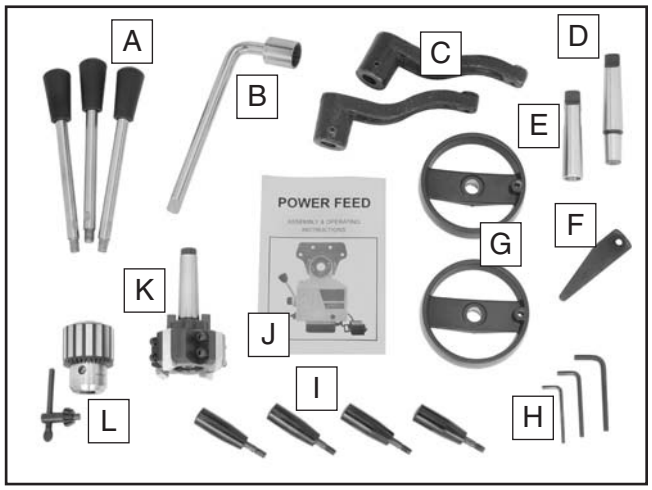
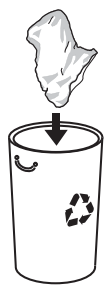


Figure 3. Model G0520 inventory.



⚠WARNING

SUFFOCATION HAZARD!

Immediately discard all plastic bags and packing materials to eliminate choking/suffocation hazards for children and animals.

Clean Up

The unpainted surfaces are coated with a waxy oil to prevent corrosion during shipment. Remove this protective coating with a solvent cleaner or degreaser, such as shown in **Figure 4**. For thorough cleaning, some parts must be removed. **For optimum performance, clean all moving parts or sliding contact surfaces.** Avoid chlorine-based solvents, such as acetone or brake parts cleaner that may damage painted surfaces. Always follow the manufacturer's instructions when using any type of cleaning product.

⚠WARNING

Gasoline and petroleum products have low flash points and can explode or cause fire if used to clean machinery. DO NOT use these products to clean the machinery.

⚠CAUTION

Many cleaning solvents are toxic if inhaled. Minimize your risk by only using these products in a well ventilated area.

G2544—Solvent Cleaner & Degreaser
H9692—Orange Power Degreaser
Great products for removing shipping grease.

Figure 4. Cleaner/degreasers available from Grizzly.

Site Considerations

Floor Load

Refer to the **Machine Data Sheet** for the weight and footprint specifications of your machine. Some residential floors may require additional reinforcement to support both the machine and operator.

Placement Location

Consider existing and anticipated needs, size of material to be processed through each machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your new machine. See **Figure 5** for the minimum working clearances.

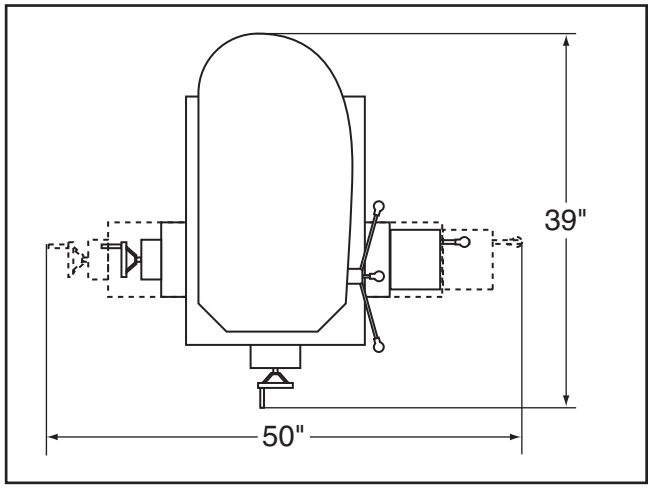
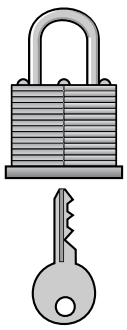


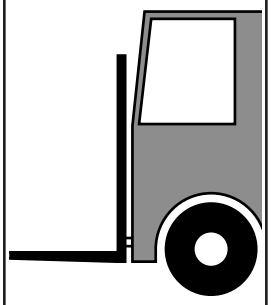
Figure 5. Minimum working clearances.



⚠CAUTION

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

Moving & Placing Base Unit



⚠WARNING

The Model G0520 is a heavy machine. Serious personal injury may occur if safe moving methods are not used. To be safe, get assistance and use power equipment to move the shipping crate and remove the machine from the crate.

To move and place your drill press:

1. Using the 24mm socket wrench, fully tighten the head locking hex nuts to securely lock the head to the column (see **Figure 6**).

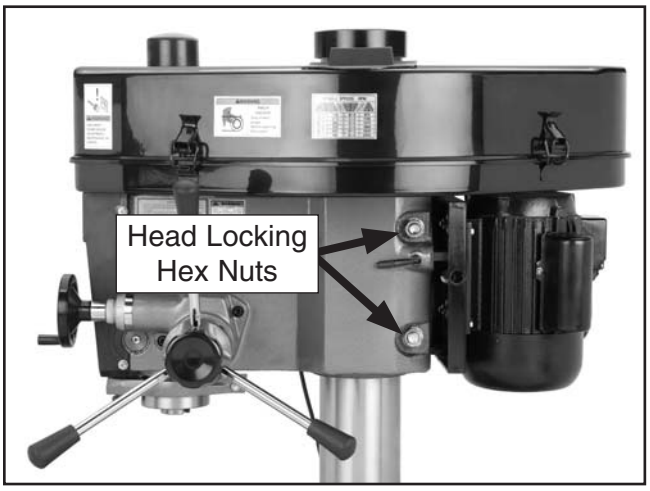


Figure 6. Head locking hex nuts.

⚠WARNING

Only use boards that are solid and in good condition. Make sure the fork lift is rated for at least 750 lbs. and in good working condition. Only raise the machine enough to clear shipping pallet and floor obstacles. If the drill press falls or tips over while moving it, serious personal injury and property damage could result.

2. With assistance, place the 3' long 4x4 under the head just forward of the column, and the 3' long 2 x 4 under the head just behind the column, then make light contact with the forks of the lift evenly under the boards, as shown in **Figure 7**.

   Note: *Make sure the 2x4 behind the column is not resting on the motor fan cover to avoid damaging it when lifting the machine.*

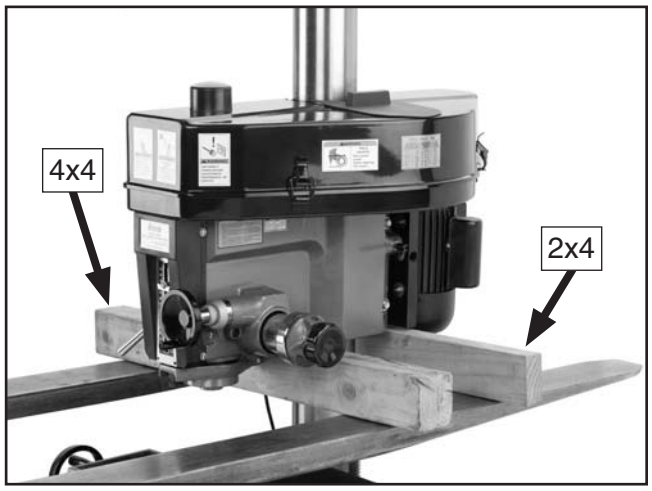


Figure 7. Positioning the boards and forks to lift the machine.

3. With assistance to steady the machine, unbolt it from the shipping pallet.

4. Use the fork lift to raise the machine just enough to clear the shipping pallet and any floor obstacles, then move it to the prepared location.

5. When mounting the machine to the floor, use a precision level to make sure the base is level from side-to-side and front-to-back.

   —If necessary, place shims in the gaps between the base and the floor to avoid warping or cracking the cast iron.

Mounting to Shop Floor

The drill press is top heavy and could tip with a heavy or long workpiece on the table. We STRONGLY recommend that you mount your new drill press to the floor. However, because this is an optional step and floor materials may vary, floor mounting hardware is not included.

Bolting to Concrete Floors

Anchor studs and lag shield anchors with lag bolts (**Figure 8**) are two popular methods for anchoring an object to a concrete floor. We suggest you research the many options and methods for mounting your machine and choose the best that fits your specific application. Whichever option you choose, it is necessary to level your machine with a precision level.

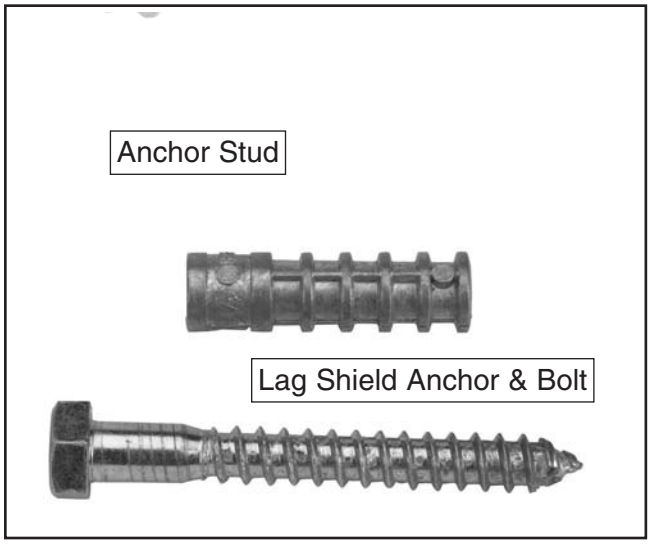


Figure 8. Typical fasteners for mounting to concrete floors.

Assembly

Assembly of your drill press consists of installing the handles, cranks, and handwheels onto the machine.

Tools Needed	Qty
Wrench 7mm	1
Wrench 12mm	1
Hex Wrench 4mm	1
Standard Screwdrivers #1, #2	1 Each

To assemble your drill press:

1. Install two of the handles into the elevation cranks.

2. Slide the head and knee elevation cranks onto the shafts, then tighten the set screws (see **Figure 9**).

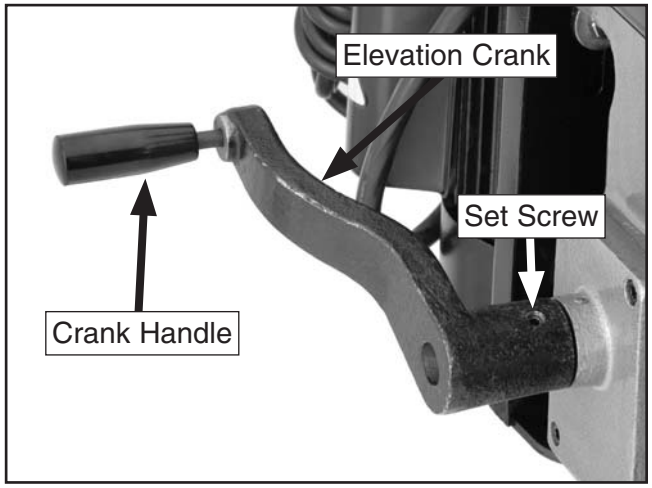


Figure 9. Crank handle installed.

3. Install the three coarse downfeed handles into the hub (see **Figure 10**).

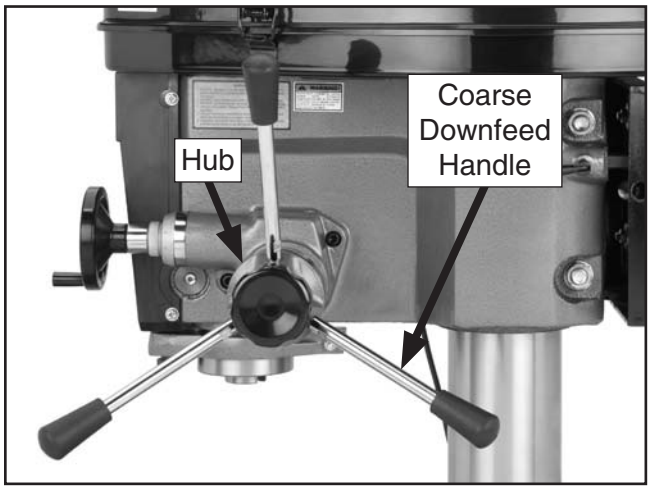


Figure 10. Coarse downfeed handles installed.

4. Reverse the position of the handle on the fine downfeed handwheel, as shown in **Figure 11**.

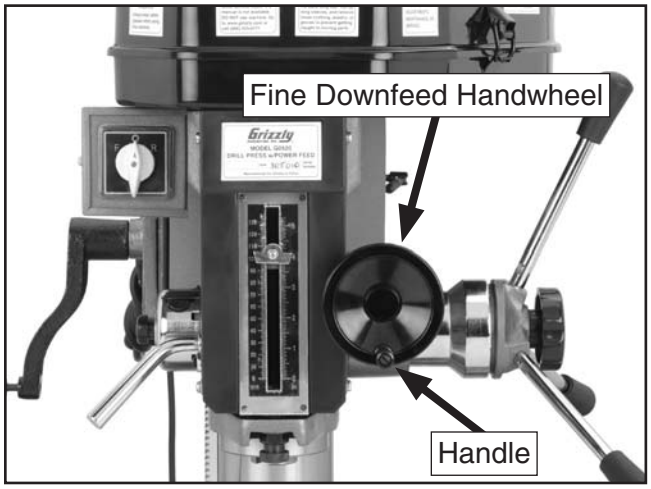


Figure 11. Fine downfeed handle properly installed.

5. Attach the remaining two handles to the longitudinal and cross handwheels.

6. Slide the handwheels onto the longitudinal and cross leadscrews, then secure them in place by tightening the set screws (see **Figure 12**).

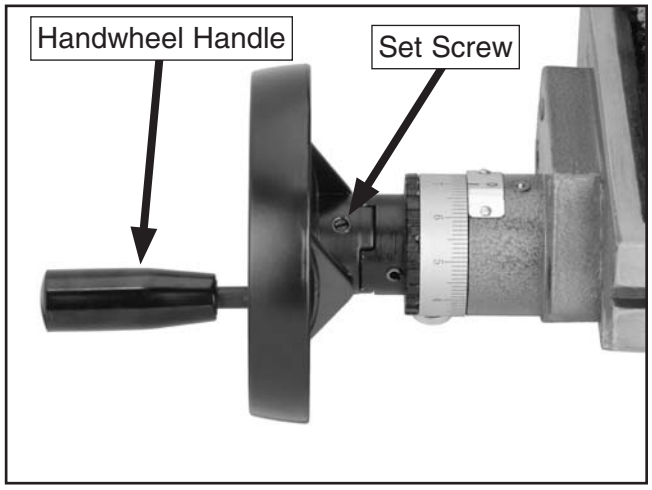


Figure 12. Leadscrew handwheel properly installed.

Test Run

Once the assembly is complete, test run your machine to make sure it runs properly.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review the **Troubleshooting** on **Page 34**.

If you still cannot remedy a problem, contact our Tech Support at (570) 546-9663 for assistance.

To test run the machine:

1. Make sure you have read the safety instructions at the beginning of the manual and that the machine is setup properly.

2. Make sure all tools and objects used during setup are cleared away from the machine.

3. Connect the machine to the power source.

4. Move the spindle direction switch left or right to turn the machine ***ON*** (see **Figure 13**).

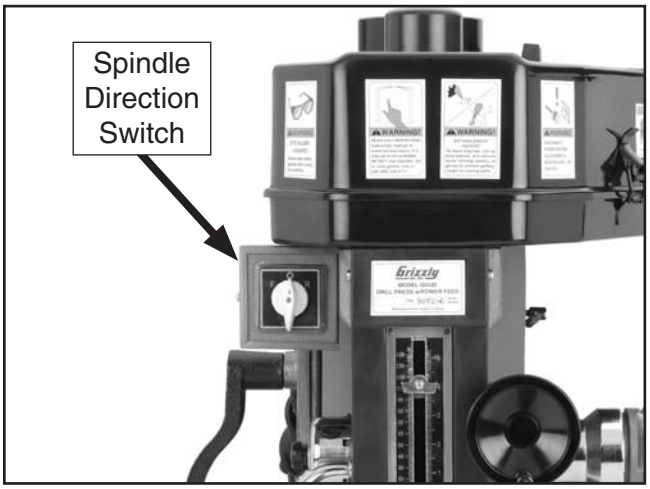


Figure 13. Spindle direction switch.

5. Listen and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.

   —Strange or unusual noises must be investigated and corrected before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.

6. Move the spindle direction switch to the center position to turn the machine ***OFF***.

7. Flip the power feed ON/OFF switch up and move the direction handle left or right to turn the power feed ***ON***—the table should move evenly to the left or right (refer to **Power Feed** on **Page 23** for detailed instructions).

8. Turn the power feed ***OFF***.

9. The **Test Run** procedure is finished for your drill press. Perform the following **Spindle Break-In** steps.

Spindle Break-In

NOTICE

Successfully complete the spindle break-in procedure to avoid rapid wear of spindle components when placed into operation.

It is essential to closely follow the proper break-in procedures to ensure trouble-free performance of your drill press.

To perform the spindle break-in procedure:

1. After successfully completing the **Test Run** procedure, make sure the machine is turned ***OFF*** and the spindle is stopped.

2. Disconnect the machine from power, then lift the V-belt cover and configure the V-belts for a spindle speed of 140 RPM (refer to **Setting Spindle Speed** on **Page 26** for detailed instructions).

3. Close and lock the V-belt cover, then reconnect the machine to power.

4. Start the spindle rotation and let the machine run for 20 minutes.

5. Turn the spindle ***OFF*** and let the spindle come to a complete stop.

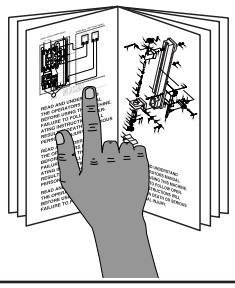
6. Reverse the spindle rotation and let the machine run for another 20 minutes.

7. Repeat **Steps 2–6** for the spindle speeds of 485 and 2570 RPM.

8. Turn the machine ***OFF***. The spindle break-in is now complete and the machine is ready for operation.

SECTION 4: OPERATIONS

Operation Safety

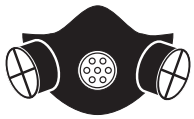


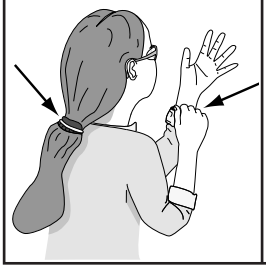
⚠WARNING

To reduce the risk of serious injury when using this machine, read and understand this entire manual before beginning any operations.

⚠WARNING

Damage to your eyes and lungs could result from using this machine without proper protective gear. Always wear safety glasses and a respirator when operating this machine.





⚠WARNING

Loose hair, clothing, or jewelry could get caught in machinery and cause serious personal injury. Keep these items away from moving parts at all times to reduce this risk.

NOTICE

If you have never used this type of machine or equipment before, we strongly recommend that you read books, trade 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.

Installing Drill Chuck & Bit

The Model G0520 is shipped with a JT#3 drill chuck, which can be opened and securely closed around a cutting tool by using the included chuck key. Any drill bit you install in the chuck must be installed tightly enough that it will not come loose during operation.

Tools Needed	Qty
Chuck Key	1
Rubber or Wooden Mallet	1

To install the drill chuck and drill bit:

1. DISCONNECT MACHINE FROM POWER!

2. If you have not already done so, lift the V-belt cover and remove the drawbar from the top of the spindle—it is not used when mounting an arbor with a tang.

   Note: *Be sure to close and secure the V-belt cover before continuing.*

3. Use mineral spirits to thoroughly clean the tapered mating surfaces of the drill chuck, arbor, and spindle, then use a clean rag to dry all surfaces.

⚠WARNING

Failure to properly clean the tapered mating surfaces of the drill chuck, arbor, and spindle could cause the tapered fit to loosen and separate during operation, which could lead to serious injury and property damage.

4. Hand-turn the chuck to draw the chuck jaws fully into the body.

5. Place the drill chuck face down on a piece of wood.

6. Insert the short taper of the arbor into the tapered socket of the drill chuck, then lightly tap it with a rubber or wooden mallet, as shown in **Figure 14**.

   —If the chuck fails to remain secure on the arbor, repeat **Steps 2–5** until it does.

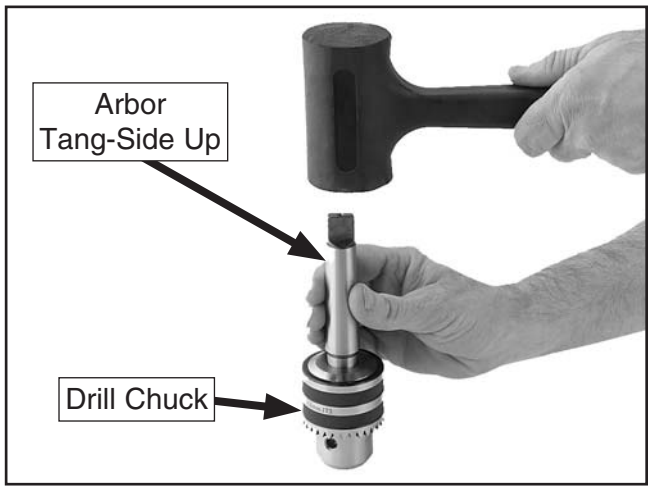


Figure 14. Seating the arbor into the drill chuck.

7. Slide the arbor into the spindle while slowly rotating the assembly until the arbor tang inserts into the slot inside the spindle.

⚠CAUTION

Drill bits and cutting tools are sharp! To avoid lacerations, always protect your hands when handling drill bits and cutting tools.

NOTICE

DO NOT use a steel hammer on the drill chuck or the arbor to seat them. You will damage the chuck, arbor or spindle, which may make them unusable or unsafe.

8. Once you have properly inserted the arbor into the spindle, lightly tap the bottom of the drill chuck with a rubber or wooden mallet until it is securely seated, as shown in **Figure 15**. Tug on the assembly to make sure that it is secure in the spindle.

Figure 15. Seating arbor and drill chuck into the spindle.

9. Open the drill chuck wide enough to accept the shank of the drill bit.

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

11. Once you are sure the drill bit is correctly inserted into the chuck, fully tighten the chuck with the chuck key.

12. Remove the chuck key.

Removing Drill Chuck & Bit

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

Tools Needed	Qty
Chuck Key	1
Drift Key	1
Steel Hammer	1

To remove the drill chuck and arbor:

1. DISCONNECT MACHINE FROM POWER!

2. While wearing heavy leather gloves, hold the drill bit in one hand, and use the chuck key to loosen the drill chuck with the other hand until the bit can be removed.

3. Remove the chuck key from the chuck.

4. Loosen the quill lock, extend the quill down until the drift key slot is exposed in the side of the quill, then re-tighten the quill lock to keep it extended.

5. Open the V-belt cover and rotate the spindle pulley until the inner drift key slot of the spindle is aligned with the quill slot, as shown in **Figure 16**. You will see the top of the arbor through the slots when they are properly aligned.

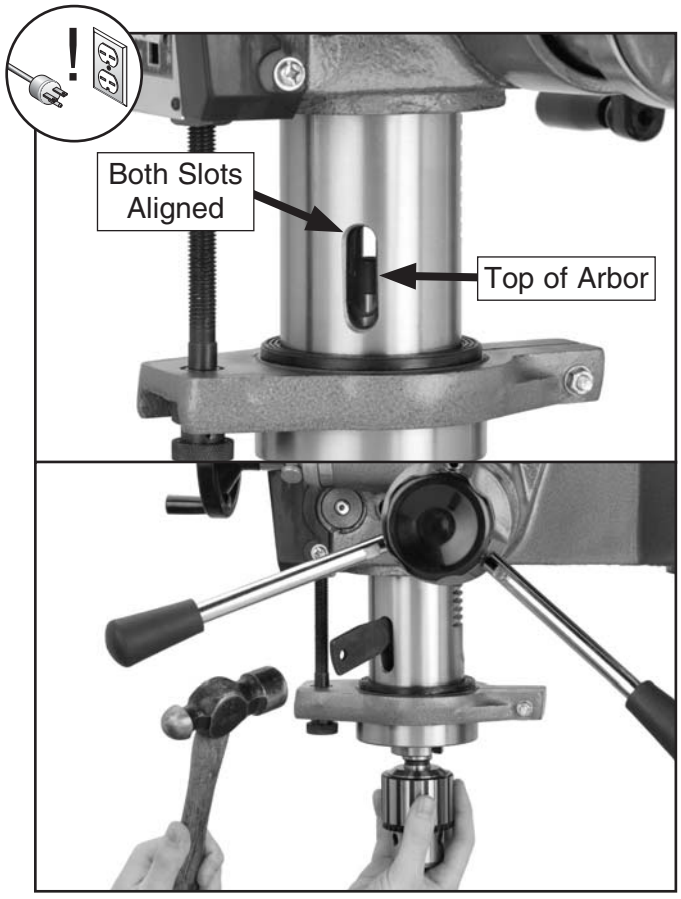


Figure 16. Using the drift key to remove the arbor.

6. Insert the drift key into the drift key slot, loosen the quill lock, then slowly raise the quill to trap the drift key in position.

7. Hold the drill chuck with one hand and strike the drift key with a steel hammer, as shown in **Figure 16**, until the arbor releases from the spindle.

8. Remove the drift key and fully raise the quill.

9. Close and secure the V-belt cover.

Using a Drawbar

Some arbors or cutting tool holders are threaded and require the use of a drawbar. Your drill press ships with an M12-1.75 x 420mm drawbar

Tools Needed	Qty
Wrench 17mm	1

Securing Tooling With Drawbar

1. DISCONNECT MACHINE FROM POWER!

2. Open the V-belt cover and insert the drawbar through the top of the spindle, as shown in **Figure 17**.

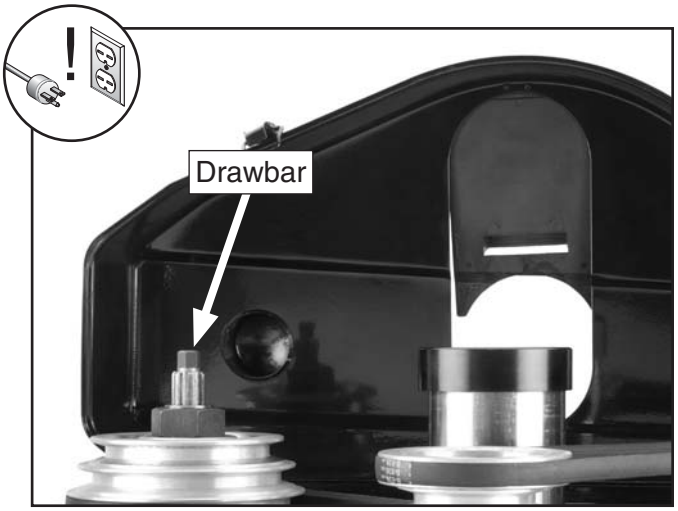


Figure 17. Drawbar inserted into the spindle.

⚠CAUTION

Cutting tools are sharp and can cut your hands. Always protect your hands when handling cutting tools.

3. Clean away debris and oily substances from the mating surfaces of the arbor and spindle.

4. Wearing heavy leather gloves, align the lugs on the tooling with the slots on the spindle, then push the tool firmly into the spindle taper to seat it (see **Figure 18**).

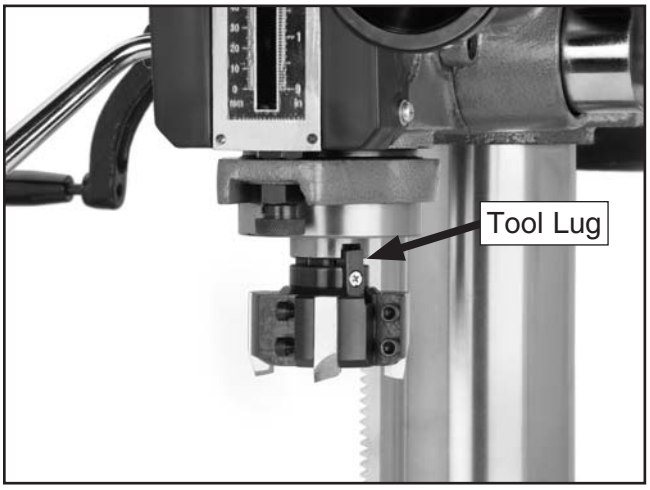


Figure 18. Large diameter cutter properly inserted into the spindle.

5. While holding the tool in place, thread the drawbar into the arbor. Only tighten it until it is snug.

   Note: *Over-tightening the drawbar could make removing the arbor from the spindle difficult.*

Removing Tooling Secured With Drawbar

1. DISCONNECT MACHINE FROM POWER!

2. Support the tool with one hand, then unthread the drawbar until the tooling can be removed from the spindle.

   —If the tooling does not release from the spindle taper when the drawbar is unthreaded, thread the drawbar back into the tooling one or two threads, then tap the top of the drawbar with a dead-blow hammer or wooden mallet until the tooling releases.

Table Travel

There are four travel paths of the Model G0520 table: 1) Longitudinal or left-and-right (X-axis), 2) cross or in-and-out (Y-axis), 3) vertical or up-and-down the column (Z-axis), and 4) around the column.

Resolution of Graduated Dials	Table Travel
Each Increment	0.001"
One Full Revolution	0.100"

Longitudinal Table Travel

1. Loosen the two table locks shown in **Figure 19**.

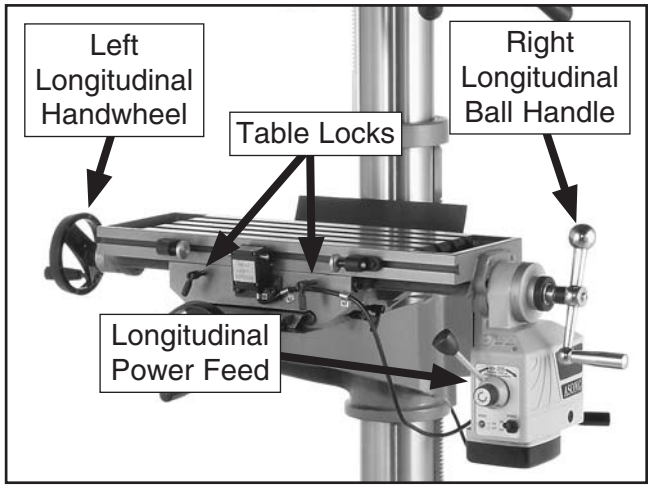


Figure 19. Longitudinal table movement controls.

2. Use the longitudinal handwheel or ball handle to manually control the left-and-right table travel. Alternately, use the longitudinal power feed for a consistent rate of table travel (refer to **Power Feed** on **Page 23** for detailed instructions).

3. Secure the table in position by re-tightening the table locks before drilling if controlled movement of the table is not necessary for the operation.

Cross Table Travel

1. Loosen the two cross slide locks shown in **Figure 20**.

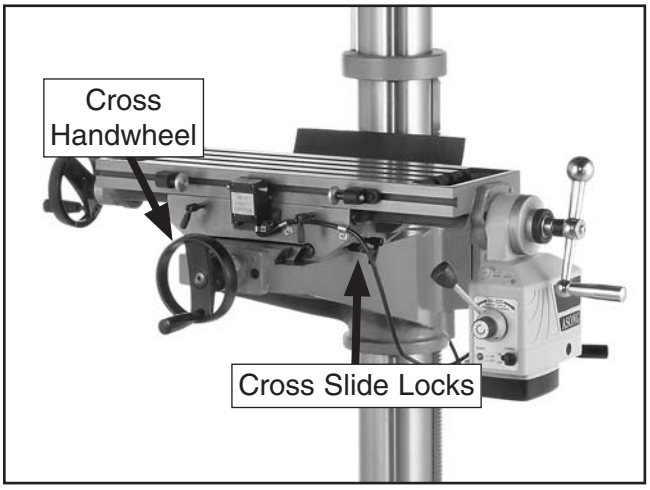


Figure 20. Cross table movement controls.

2. Rotate the cross handwheel to control in-and-out table travel.

3. Re-tighten the cross slide locks to secure the table in place.

⚠WARNING

Drill presses are top heavy. To avoid creating a tipping hazards, always mount heavy or large workpieces on the base or the table in a lowered position, then lower the head to a working height above the workpiece. If the drill press should tip or fall, serious personal injury or property damage could result.

⚠CAUTION

Always keep the knee locked in place after positioning it. Always keep the table locked in place unless controlled movement of it is required for your operation. Unexpected table movement during operations could cause the bit or cutter to bind with the workpiece resulting in personal injury or property damage.

Moving the Table Around/Along the Column

The knee supports the cross slide and table and can be moved 360° around the column or up-and-down the bottom length of the column.

For large or heavy workpieces, the knee and table can be rotated to the rear of the column so that the workpiece can be mounted on the base.

Tools Needed **Qty**
Socket Wrench 24mm 1

To move table around/along the column:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen the two knee locking bolts shown in **Figure 21**.

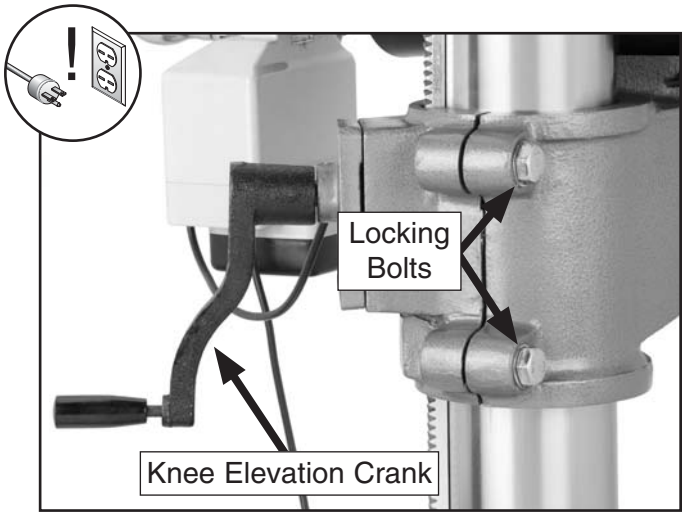


Figure 21. Knee locking bolts and crank.

3. Manually move the knee and table around the column, or use the knee elevation crank to raise or lower the knee along the column.

   Note: *Make sure you do not entangle the electrical cables as you re-position the knee.*

4. When you are satisfied with the position of the knee and table, re-tighten the knee locking bolts.

Head Movement

The head can be positioned 360° around the column or anywhere along the upper length of the column.

Tools Needed **Qty**
Socket Wrench 24mm 1

To position the head around/along the column:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen the two head locking hex nuts shown in **Figure 22**.

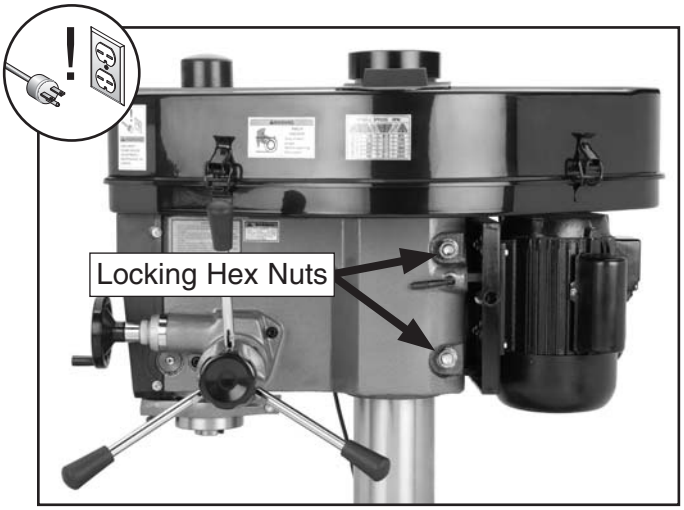


Figure 22. Head locking hex nuts.

3. Rotate the head elevation crank on the other side of the head to raise or lower the head, or manually move the head around the column.

   Note: *Make sure you do not entangle the electrical cables as you position the head.*

4. Re-tighten the head locking hex nuts to secure the head in place.

⚠CAUTION

Always keep the head firmly locked to the column after positioning it. Unexpected table movement during operations could cause the bit or cutter to bind with the workpiece resulting in personal injury or property damage.

Power Feed

Your mill is equipped with a longitudinal power feed and limit switch for controlled X-axis table movement. Refer to **Figure 23** and the following descriptions to understand the functions of these devices.

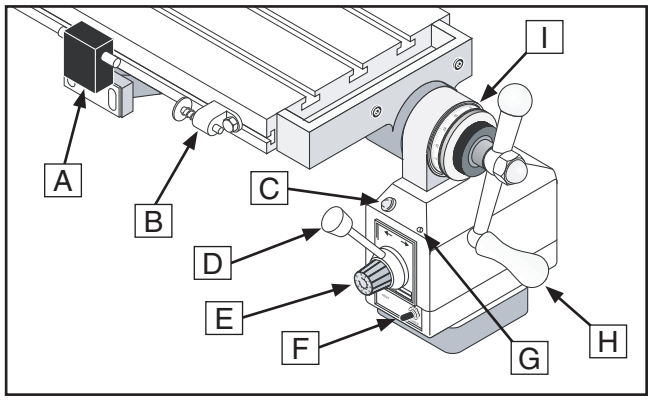


Figure 23. Longitudinal power feed system.

A. Limit Switch: Stops powered table movement when either limit stop presses a plunger on the switch.

B. Limit Stop: Activates the limit switch. Secure these devices along the limit slot to confine table movement.

C. Rapid Movement Button: When pressed, moves the table at the maximum speed in the direction selected.

D. Direction Lever: Starts, reverses, and stops longitudinal table movement.

E. Speed Dial: Controls the speed that the table moves—turn the dial clockwise to increase the speed.

F. ON/OFF Switch: The master power switch for the power feed.

G. Power Lamp: Lights when the power feed is turned ***ON***.

H. Ball Handle: Manually positions the table.

I. Graduated Dial: Marked in 0.001" increments, each complete revolution is equal to 0.100" of longitudinal table travel.

⚠CAUTION

Stay away from the spinning longitudinal handwheel and ball handle when using the power feed to avoid entanglement and personal injury.

Tools Needed **Qty**
Hex Wrench 5mm..... 1

To operate the longitudinal power feed:

1. Loosen the table locks (see **Figure 24**).

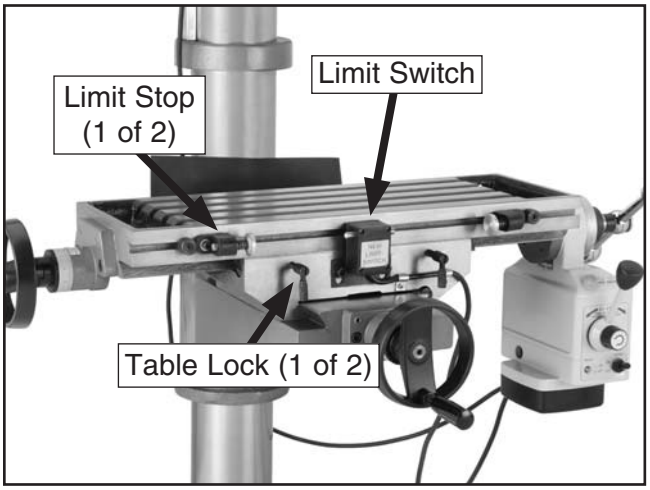


Figure 24. Table lock, limit switch, and limit stop.

2. Position the limit stops to confine the longitudinal distance you want the table to travel, then tighten the cap screws to secure them in place.

⚠CAUTION

Be sure there is enough running clearance between the table, spindle, vise/clamps, or jigs before turning the power feed *ON*. Be aware that all of these objects represent potential pinch points.

3. Rotate the speed dial all the way to the left, then use the direction lever to select the direction of table travel.

4. Flip the ON/OFF switch up to turn the power feed ***ON***.

5. Adjust the speed dial to move the table at the correct speed for your operation.

   Note: *Power feed rates are difficult to precisely adjust. We recommend that you experiment with different dial settings to find the feed rate that best works for your operation.*

6. When you are through using the power feed, move the direction lever to the center neutral position, then flip the ON/OFF switch down to turn the power feed ***OFF***.

Depth Stop

The depth stop on the Model G0520 is used to drill repeated non-through holes to the same depth.

The depth stop consists of a threaded stud attached to the quill and a quill dog that can be positioned on the stud at the desired depth of cut (see **Figure 25**). A pointer attached to the quill dog is used with the depth scale that is marked in inches and millimeters.

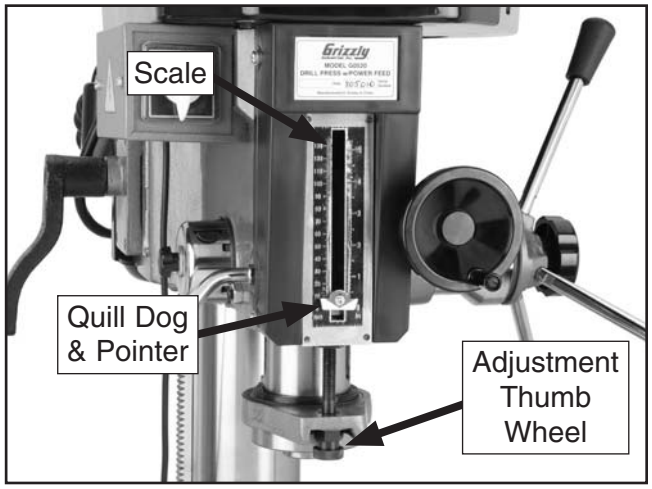


Figure 25. Depth stop controls.

To set the depth stop, rotate the adjustment thumb wheel until the pointer bottom is positioned at the correct depth of cut on the depth scale.

Downfeed Selector

The star knob on the coarse downfeed handle hub is used to select either coarse or fine downfeed control of the quill (see **Figure 26**).

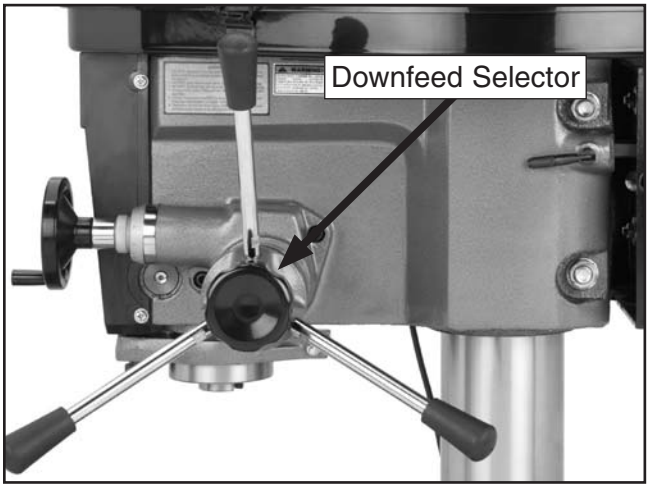


Figure 26. Downfeed selector.

Enable coarse downfeed control by rotating the downfeed selector counterclockwise until it is loose. Enable the use of the fine downfeed handwheel to raise or lower the quill by turning the selector clockwise until it is tight.

The fine downfeed graduated dial is marked in 0.001" increments with one full revolution moving the quill 0.100".

Choosing Spindle Speeds

Using the Drill Bit Speed Chart

Always follow the manufacturer's specifications for speed and workpiece material. Exceeding these capacities could be dangerous to the operator and produce poor drilling results.

The chart shown in **Figure 27** is intended as a general guide only. The optimum speed will always depend on various factors including tool diameter, drilling pressure, material hardness, material quality, and desired finish. Experiment with scrap pieces to find the correct combination of tool and spindle speeds to produce the desired results.

Often, when drilling materials other than wood, some type of lubrication is necessary to reduce the wear on the tool from heat and to ease the load on the drill press.

Lubrication Suggestions

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

⚠WARNING

Some lubricants are potent and extremely poisonous to humans and animals. Follow Federal, State, and the lubricant manufacturer's requirements to properly use and dispose of lubricants.

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				

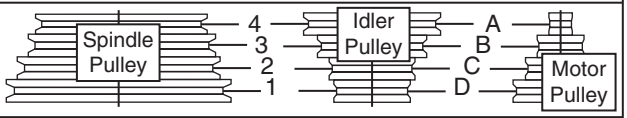
Figure 27. Drill bit speed chart.

Setting Spindle Speed

The two V-belts are arranged on the motor, idler, and spindle pulleys to produce the desired spindle speed. Refer to the chart in **Figure 28** and the steps below to configure your drill press for the correct spindle speed.

Note: *This spindle speed chart is also on the side of the V-belt cover.*

SPINDLE SPEEDS RPM



A – 1	140	B – 4	875
A – 2	215	C – 3	1140
B – 1	265	D – 2	1275
A – 3	320	C – 4	1600
B – 2	420	D - 3	1910
C – 1	485	D - 4	2570

Figure 28. Model G0520 spindle speed chart.

To configure the V-belts for the desired spindle speed:

1. DISCONNECT MACHINE FROM POWER!

2. Lift the V-belt cover.

3. Loosen the motor lock and push the motor toward the column to release tension on the V-belts, as shown in **Figure 29**.

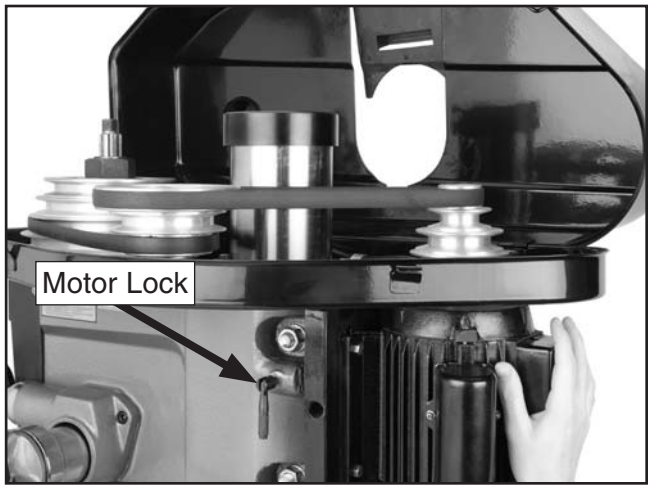


Figure 29. Releasing the V-belt tension.

4. Configure the V-belts as needed for the chosen spindle speed. **Figure 30** shows an example of a V-belt setup for a spindle speed of 140 RPM.

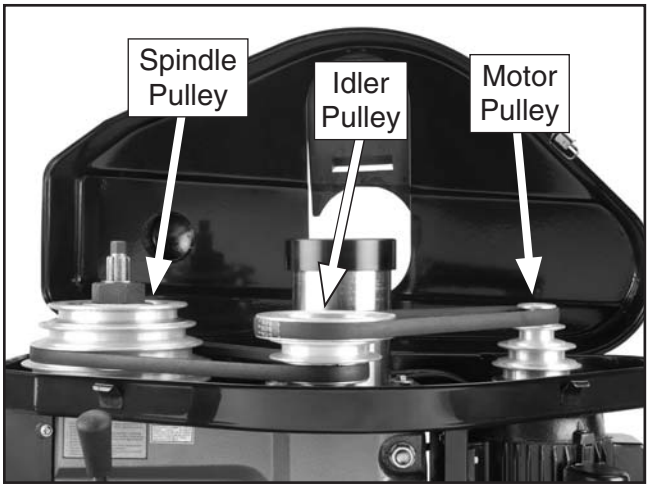


Figure 30. V-belts configured for a spindle speed of 140 RPM.

5. Pull the motor away from the column to re-tension the V-belts, then re-tighten the motor lock.

Note: *The V-belts are properly tensioned when there is approximately ¾" deflection of the belt midway between the pulleys when you apply moderate pressure with your finger (see **Figure 31**).*

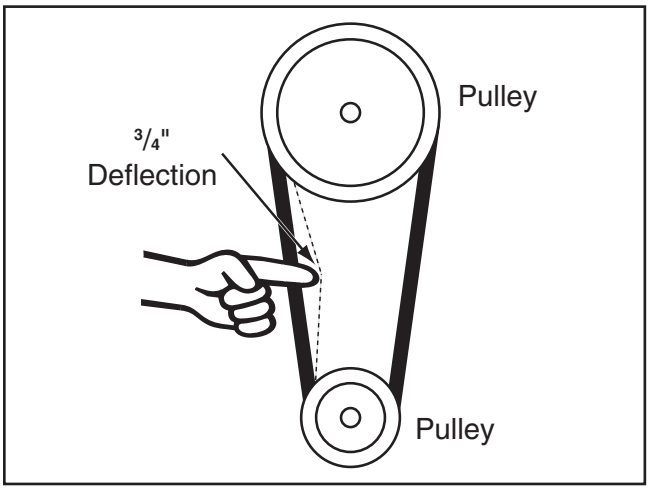


Figure 31. Correct deflection when V-belt is properly tensioned.

6. Close and secure the V-belt cover before beginning operations.

Basic Drilling Operations

The Model G0520 is designed for drilling holes in wood, plastics or metal. The basic operation of a drill press is to securely clamp the workpiece to the table or base, line up the drill bit with the intended hole location, then turn the drill press ***ON*** and use the downfeed handles to move the spinning drill bit into the workpiece at a steady and controlled feed rate.

For safe operation and optimum results, it is very important to follow these guidelines when drilling:

- **SECURING WORKPIECE TO BASE:** Before drilling, always securely clamp the workpiece to the table or base, or in a vise that is secured to the table or base.

- **CLEARING CHIPS:** Raise the drill bit often to clear chips from the hole and cool the drill bit. This will ease the work of the drill press motor and extend the life of your drill bits.

- **PROTECTING TABLE OR BASE:** Protect the base by clamping scrap material underneath the workpiece. Also, use the depth stop so that the drill bit goes no deeper than necessary.

- **USING CORRECT SPEEDS:** Use the correct speed for the diameter of the drill bit being used and the type of material being drilled. Refer to the **Drill Bit Speed Chart** on **Page 25** to help you choose the correct speed for your application.

- **HARD MATERIAL:** The harder the material, (steel vs. wood) use a slower spindle speed.

- **SOFT MATERIAL:** The softer the material, the faster the spindle may turn. (Plastics can melt at too high of a spindle speed!)

- **LUBRICANT:** Use some form of lubricant on all materials except wood and cast iron. Refer to **Lubrication Suggestions** on **Page 25** to find the recommended lubrication for your application.

- **DRILLING ACCURACY:** To prevent the drill bit from wandering and to ensure accurate placement of the holes, mark the hole location with a center punch before drilling. Also consider using a center-point bit to drill a pilot hole.

- **PLUG/ROSETTE CUTTERS:** Plug cutters and rosette cutters are for wood only. However, some carbide-tipped tools of this type cut at a higher speed and can cut materials other than wood, depending on the cutter type. Always follow the manufacturer's specifications for the cutter.

- **5-FLUTE/2-FLUTE CUTTERS:** Use a 5-flute cutter when cutting into plastics, brass, aluminum, and mild steel. A 2-flute cutter can aggressively grab the workpiece and damage the tool if used with materials other than wood.

- **SPADE BITS AND PLASTIC:** When drilling plastic with a spade bit, use a spade bit with spurs for good results.

- **HOLE SAWS:** When using hole saws, make sure all of the saw teeth contact the surface at the same time—not at an angle. You can also flip the workpiece and finish cutting from the other side.

SECTION 5: ACCESSORIES

T20501—Face Shield Crown Protector 4"
T20502—Face Shield Crown Protector 7"
T20503—Face Shield Window
T20448—Economy Clear Safety Glasses
T20452—"Kirova" Anti-Reflective Glasses
T20456—"Dakura" Clear Safety Glasses
H0736—Shop Fox® Safety Glasses
These glasses meet ANSI Z87.1-2003 specifications. Buy extras for visitors or employees. You can't be too careful with shop safety!

Figure 32. Our most popular eye protection.

G5749—Drill Press Vise 2½"
G5750—Drill Press Vise 3"
G5751—Drill Press Vise 4"
G5752—Drill Press Vise 5"
G5753—Drill Press Vise 6"
If you use a drill press and value your fingers, you need one of these. Made from high-grade cast iron, these hefty horizontal vises offer support and stability, allowing you to keep your hands well away from fast moving bits and cutters.

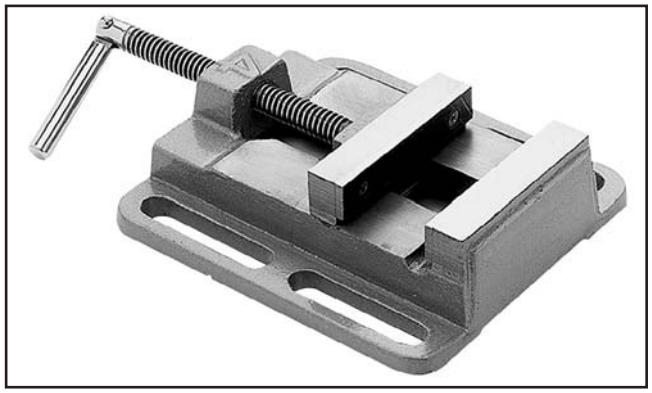


Figure 33. Drill Press Vise.

H8257—Primrose Armor Plate with Moly-D Machine and Way Oil 1 Quart
This superior machine and way lubricant prevents stick slip and chatter due to anti-friction capabilities resulting in greater precision machining capabilities. Provides the thinnest oil film possible while effectively providing needed lubrication and rust/corrosion protection. Adhesive/cohesive components are added for vertical surfaces. Resists squeeze out, running, dripping and non-gumming.

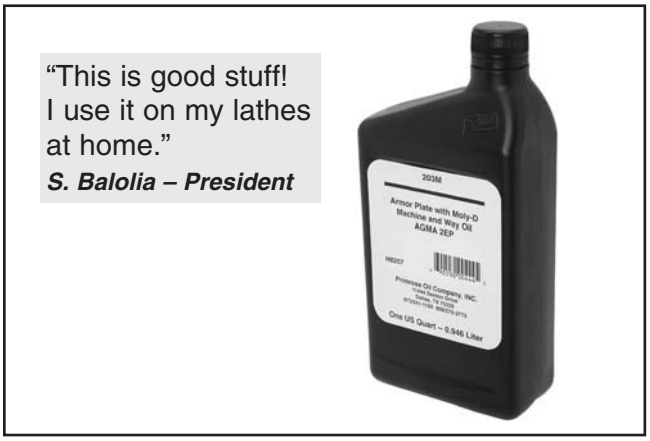


Figure 34. Primrose Armor Plate Lubricant.

H8447—Large ¾" Keyless Chuck JT#3
This precision milled, Large Keyless Chuck has a 0 to ¾" capacity. A large diameter knurled body provides plenty of hand torque for tightening and, if that's not enough, three 5/16" diameter holes are provided for use with a spanner wrench (not included). Overall size is 2¾" diameter x 5" long.

Figure 35. Large ¾" Keyless Chuck.

H8203—Professional Drill Bit Sharpening System

This precision made Drill Bit Sharpening System is so simple to use, anyone can sharpen dull bits in three easy steps. Just set the drill bit in the collet, grind the taper relief angle, then grind the web thinning angle to reduce the center point width. It features a depth adjustment gauge, tapered diamond wheel, 90°–140° angle setting adjustment and built-in collet tray. Collet sizes include 1/8", 5/32", 3/16", 1/4", 9/32", 5/16", 3/8", 25/64", 7/16", 15/32", and 1/2". Patented in the US!

Figure 36. Professional Drill Bit Sharpening System.

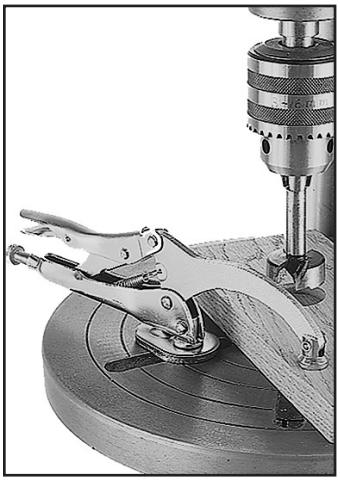
G4821—Drill Press Safety Planer
G4822—Set of 3 Replacement Cutters

Developed for commercial use, this safety shielded rotary planer mounts on your drill press. The 3 1/8" diameter planer uses three high speed steel cutters to surface plane, cut tenons, rabbets, raised panels, tapers, and more—with little or no grab or kickback. Kit includes a special grinding wheel and a 12-page manual.

H8182—170-Pc. Professional Bulk Drill Bit Set

HSS TiN coated drill bits stay sharp longer than conventional bits and 135° split points reduce the tendency to "walk" when drilling metal. Each size includes multiple bits for replacement due to breakage and wear from tough drilling jobs. Sizes include: 10 each of the following: 1/16", 5/64", 3/32", 7/64", 1/8", 9/64", and 9/32", and 5 each of the following: 5/16", 21/64", 11/32", and 3/8". This set is professional quality and made for production. Comes in a steel case!

Figure 37. Professional Bulk Drill Bit Set.

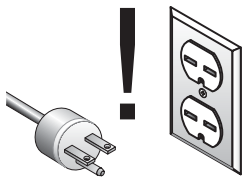


Quick Release Drill Press Clamps
G1872—6"
G8079—10"
H1127—12"

Instant clamping right on your drill press table! Drop forged clamp is fully adjustable and locking lever action provides tremendous gripping power. Mounts through the slot in your drill press table.

Call 1-800-523-4777 To Order

SECTION 6: MAINTENANCE



⚠WARNING
Always disconnect power to the machine before performing maintenance. Failure to do this may result in serious personal injury.

Schedule

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

Every 8 Hours of Operation:
- Clean the machine.
- Lubricate ball oilers (**Page 31**).
- Lubricate ways, column, racks, and quill (**Page 31**).
- Lubricate leadscrews (**Page 32**).
- Check/repair loose mounting bolts.
- Check/sharpen/replace damaged or worn bits or cutters.
- Check/re-tension/replace V-belts (**Page 26**).
- Check/repair/replace worn or damaged wires.
- Any other unsafe condition.

Every 120 Hours of Operation:
- Lubricate downfeed gears (**Page 33**).
- Lubricate power feed gears (**Page 33**).

Note: *This maintenance schedule is based on average usage. Adjust the maintenance schedule to match your actual usage to keep your mill running smoothly and to protect your investment.*

Cleaning & Protecting

Use a brush and shop vacuum to remove chips and debris from the drill press. Never blow off the machine with compressed air, as this will force chips deep into the mechanisms and may injure yourself or bystanders.

Wipe built-up grime from the machine with a rag and a mild solvent. Remove any rust from the unpainted cast iron surfaces of your drill press, then treat them with regular applications of products such as Primrose Armor Plate Way Oil**,** G96® Gun Treatment, SLIPIT®, or Boeshield® T-9 (see **Section 5: Accessories** on **Page 28** for more details).

Lubrication

Your drill press has numerous moving metal-to-metal contacts that require proper lubrication to help ensure efficient and long-lasting operation.

Other than lubrication points covered in this section, all other bearings are internally lubricated and sealed at the factory. Simply leave them alone unless they need to be replaced.

To avoid contaminating the lubrication or damaging the metal contacts, always clean away debris and grime from the parts and entry points before adding new lubricant.

DISCONNECT THE MACHINE FROM POWER BEFORE PERFORMING LUBRICATION!

NOTICE

Follow the lubrication practices outlined in this manual. Failure to do so could lead to premature failure of your drill press and will void the warranty.

Ball Oilers

Lubricant	Frequency	Qty
ISO 68 Lubricant or Equivalent	Every 8 Hours of Operation	1 Squirt

Wipe the ball oilers and the immediate area clean, then depress the ball with the tip of an oil can and squirt once. Refer to **Figures 38–40** for the locations of the five ball oilers.

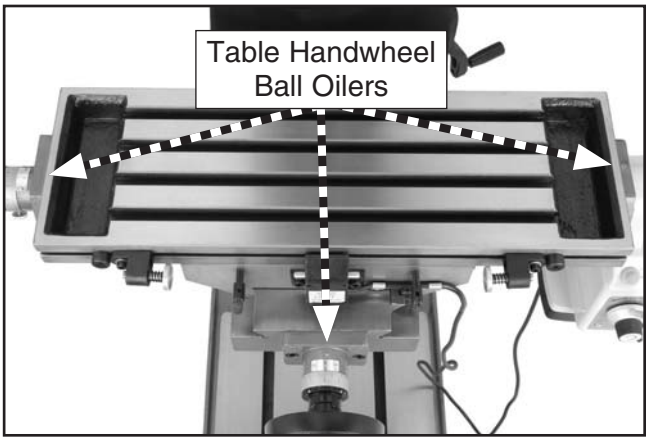


Figure 38. Table handwheel ball oilers.

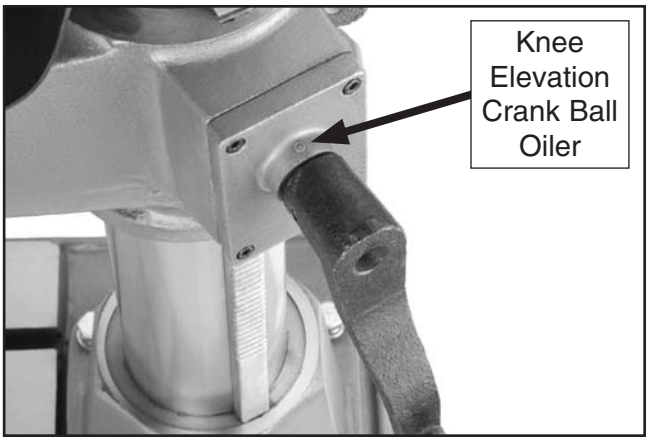


Figure 39. Table elevation crank ball oiler.

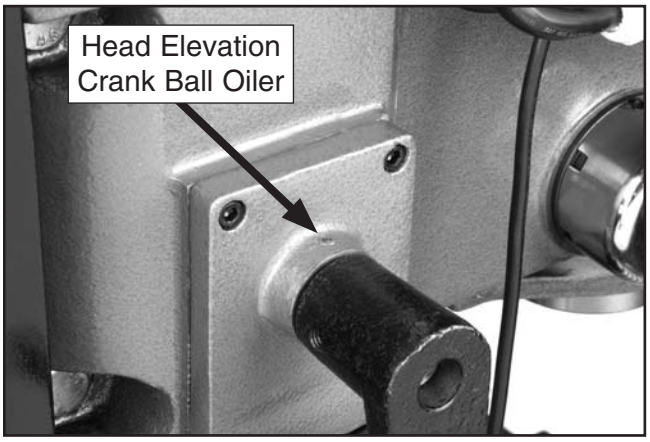


Figure 40. Head elevation crank ball oiler.

Ways, Column, Racks, and Quill

Lubricant	Frequency	Qty
Quality Way Oil	Every 8 Hours of Operation	Thin Coat

Move the table back-and-forth and from left-to-right to access the entire length of the ways shown in **Figures 41–42**, then use a rag and solvent to clean away debris and built-up grime. Apply a thin coat of quality way oil (see **Accessories** on **Page 28**) with a clean rag. Move the table through its full range of longitudinal and cross motion to distribute the lubricant.

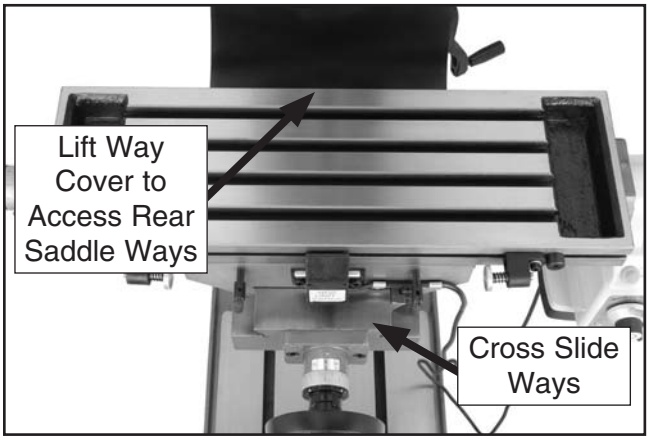


Figure 41. Cross slide ways.

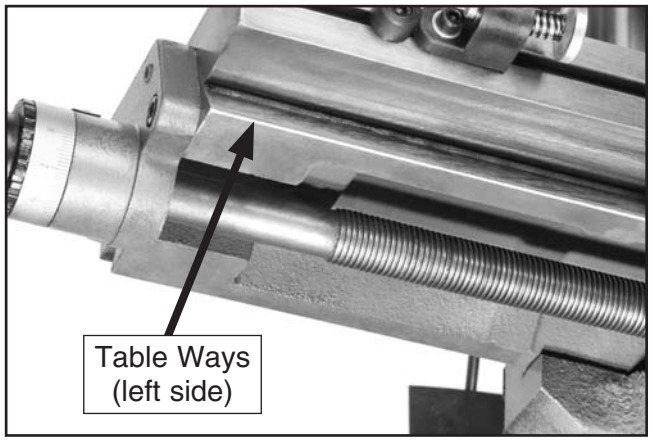


Figure 42. Table ways (left side shown).

Move the head and table up and down to access the full length of the column and the elevation racks (see **Figures 43–44**). Use a shop rag and brush with solvent to clean away debris and grime before applying a thin coat of lubricant to these surfaces. Run the head and table up and down to distribute the oil.

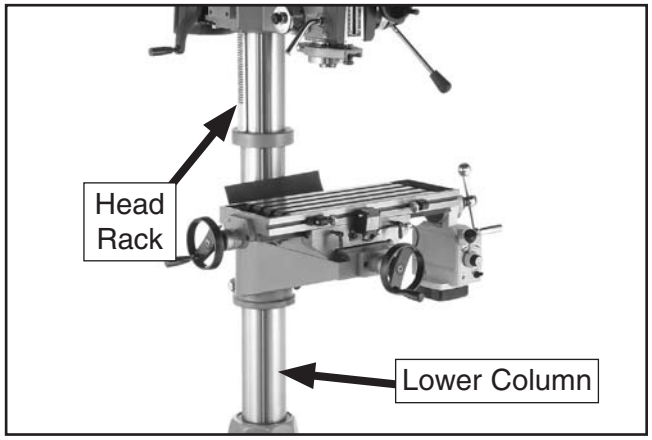


Figure 43. Head rack and lower column.

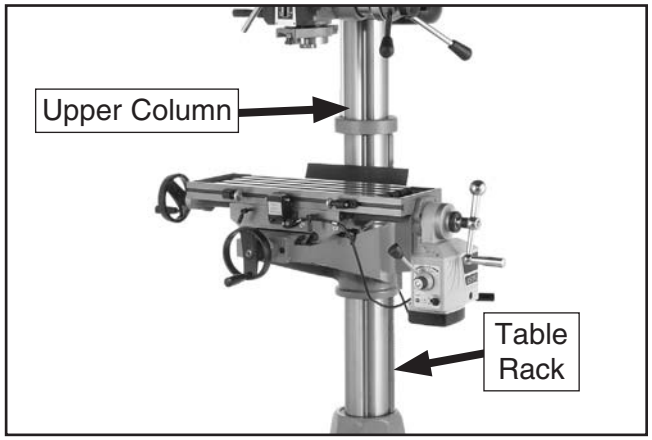


Figure 44. Upper column and table rack.

Fully lower the quill and lock it in place, then clean away built-up grime with a shop rag and solvent from the outside of the quill and the inside of the spindle. Be careful not to get solvent on the inside of the spindle, wipe a thin coat of lubricant on the outside of the quill.

Leadscrews

Lubricant	Frequency	Qty
ISO 68 Lubricant or Equivalent	Every 8 Hours of Operation	Thin Coat

Raise the knee up to access the cross leadscrew from underneath. Move the table from one side to the other to access the full length of the longitudinal leadscrew (see **Figures 45–46**). After cleaning away debris and grime from the leadscrews, brush on a thin coat of lubricant, then move the table through the full range of longitudinal and cross motion to distribute the oil.

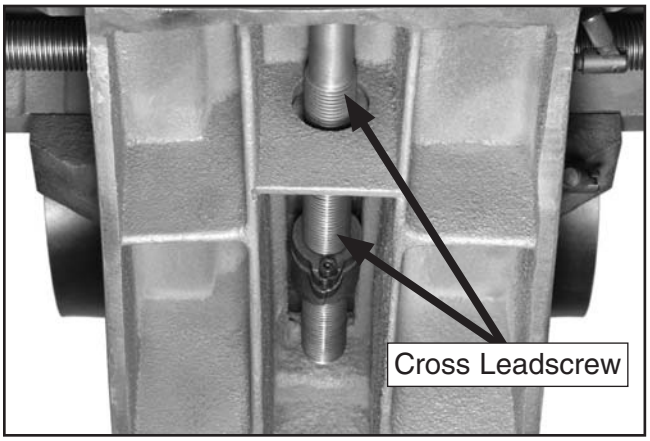


Figure 45. Cross leadscrew.

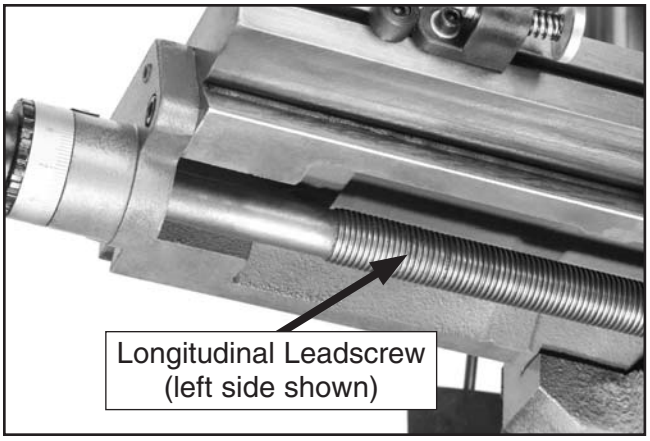


Figure 46. Longitudinal leadscrew.

Downfeed Gears

Lubricant	Frequency	Qty
NLGI #2 Grease	Every 120 Hours of Operation	Thin Coat

To lubricate the downfeed gears:

1. Unthread and remove the downfeed selection star knob from the coarse downfeed handle hub (see **Figure 47**).

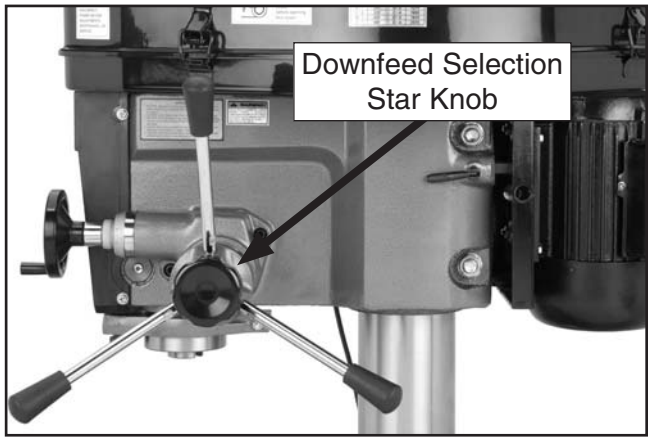


Figure 47. Downfeed selection start knob.

2. Remove the handle hub, spring, and key from the gear shaft, taking care to retain the small parts and note their order of disassembly.

3. Clean the built-up grime from the gear sleeve and the fine downfeed worm gear, then brush a thin coat of lubricant onto the teeth (see **Figure 48**).

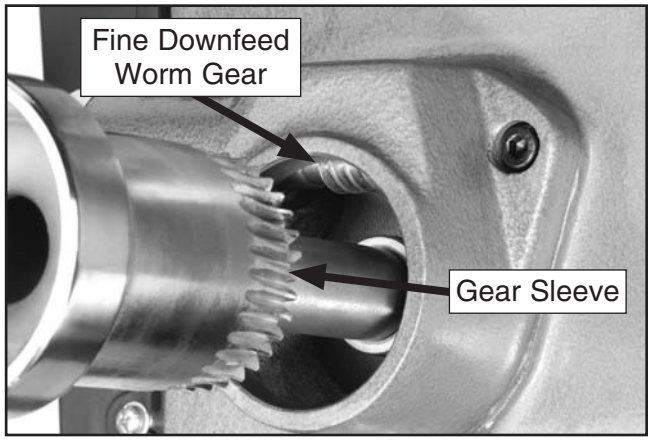


Figure 48. Downfeed gears.

4. Re-assemble the parts removed in **Steps 1–3**.

Longitudinal & Cross Power Feed Gearing

Lubricant	Frequency	Qty
NLGI #2 Grease	Every 120 Hours of Operation	Thin Coat

Remove the ball handles and spacers, then, taking care to retain the key on the leadscrew, slide the graduated dial off. Use a shop rag and mineral spirits to clean the drive and brass gears, apply a thin coat of grease, then re-install the components (see **Figure 49**).

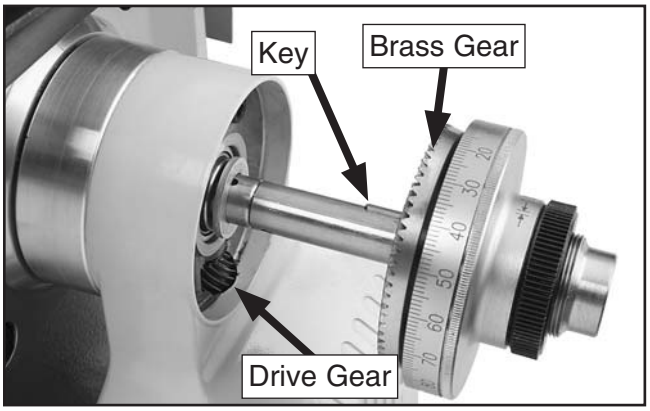


Figure 49. Power feed gearing.

SECTION 7: SERVICE

Review the troubleshooting and procedures in this section to fix or adjust your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Troubleshooting

Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	1. ON/OFF switch is at fault. 2. Plug/receptacle is at fault or wired incorrectly. 3. Power supply is switched ***OFF*** or is at fault. 4. Start capacitor is at fault. 5. Motor connection wired incorrectly. 6. Motor windings or motor is at fault.	1. Replace faulty ON/OFF switch. 2. Test for good contacts; correct the wiring. 3. Ensure hot lines have correct voltage on all legs and main power supply is switched ***ON***. 4. Test/replace start capacitor. 5. Correct motor wiring connections (**Page 39**). 6. Replace motor.
Machine stalls or is overloaded.	1. Machine is undersized for the task. 2. Workpiece alignment is poor. 3. Dull or incorrect cutting tool. 4. Motor connection is wired incorrectly. 5. Plug/receptacle is at fault. 6. Pulley/sprocket slipping on shaft. 7. V-belt(s) are loose. 8. Motor bearings are at fault. 9. Motor has overheated. 10. Motor is at fault.	1. Use smaller sharp tooling; reduce the feed rate; reduce the spindle RPM; use coolant. 2. Eliminate workpiece binding; use vise or clamps as required for workpiece alignment control. 3. Use sharp and correct cutting tool for the operation. 4. Correct motor wiring connections (**Page 39**). 5. Test for good contacts; correct the wiring. 6. Replace loose pulley/shaft. 7. Properly tension the V-belts (**Page 26**), replace if necessary. 8. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 9. Clean off motor, let cool, and reduce workload. 10. Test and repair or replace.
Machine has vibration or noisy operation.	1. Tool holder or cutter is at fault. 2. Workpiece alignment is poor. 3. Motor or component is loose. 4. Pulley is loose. 5. V-belt(s) are loose and slapping against the cover. 6. Machine is incorrectly mounted or sits unevenly. 7. Motor fan is rubbing on fan cover. 8. Motor bearings are at fault.	1. Replace out-of-round tool holder; replace/resharpen cutter; use appropriate feed rate and cutting RPM. 2. Eliminate workpiece binding; use vise or clamps as required for workpiece alignment control. 3. Inspect/replace stripped or damaged bolts/nuts, and re-tighten with thread locking fluid. 4. Realign/replace shaft, pulley, setscrew, and key as required. 5. Properly tension the V-belts (**Page 26**), replace if necessary. 6. Tighten/replace mounting bolts in floor; relocate/shim machine. 7. Replace dented fan cover or fan. 8. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement.

Drill Press Operations

Symptom	Possible Cause	Possible Solution
Drilling stops, but the motor still operates.	1. The belt is loose or worn. 2. Pulley is loose. 3. Bit slips in chuck.	1. Properly tension the V-belts (**Page 26**), replace if necessary. 2. Realign/replace shaft, pulley, setscrew, and key as required. 3. Tighten bit; inspect bit for burrs or other obstructions that might interfere with clamping surface.
The chuck wobbles or is loose on the spindle shaft.	1. Foreign material is stuck between the chuck-to-spindle mating surface. 2. Damaged chuck.	1. Remove the chuck and clean and de-burr the tapered chuck and spindle mating surfaces, then reassemble. 2. Replace chuck and arbor.
The spindle does not retract completely in the uppermost position or it binds.	1. The quill shaft is gummy with sawdust and oil. 2. The downfeed return spring is weak.	1. Clean the gummy substance with penetrating oil and lubricate with a light coat of oil. 2. Increase the quill return spring tension (**Page 38**).
The quill has excessive deflection.	1. The quill bearings are worn.	1. Replace the quill bearings.
Drill bit wobbles, holes are oversized.	1. Drill bit installed incorrectly. 2. Drill bit is bent/damaged. 3. Table/cross slide gibs too loose.	1. Remove drill bit and reinstall. 2. Replace drill bit. 3. Adjust gibs (**Page 36**).
Table or cross slide hard to move.	1. Ways are clogged with debris or are excessively dry. 2. Gibs are too tight.	1. Clean ways; lubricate (**Page 31**). 2. Adjust gibs (**Page 36**).

Adjusting Gibs

Gibs control the accuracy of the table movements along the ways. Tight gibs make the movements more accurate, but harder to move. Loose gibs make the movements sloppy, but easier to move. The goal of gib adjustment is to remove unnecessary sloppiness without causing the ways to bind.

NOTICE

Excessively loose gibs may cause poor workpiece finishes, and may cause undue wear of sliding surfaces and ways. Overtightening the gibs may cause premature wear of these sliding devices.

Each sliding surface for the table and cross slide has a tapered gib that is sandwiched between the stationary and moving surfaces. There is an adjustment screw on each end of the gib that moves it back and forth to increase or decrease the friction on the sliding surfaces.

To adjust the gibs:

1. DISCONNECT MACHINE FROM POWER!

2. Loosen one adjustment screw (see **Figure 50**) and tighten the other the same amount to move the gib until you feel a slight drag in that path of movement by moving the handwheel back-and-forth.

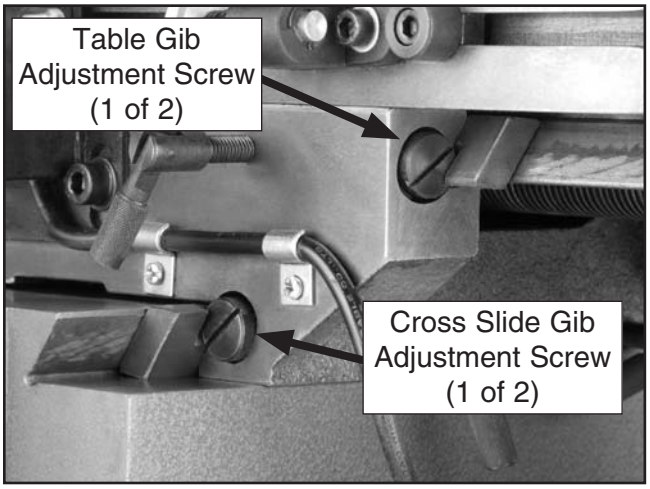


Figure 50. Gib adjustment screws.

Adjusting Backlash

Leadscrew backlash is the amount of play in a lead screw. It is felt when turning a handwheel in one direction, then turning it in the other direction. The distance that the handwheel moves without moving the leadscrew or attached components is the backlash.

When turning the handwheel in only one direction, the backlash is taken up with the initial turn of the handwheel and will not reoccur until the handwheel is rotated in the opposite direction.

When adjusting backlash, tighten the components enough to remove backlash, but not so much that the components bind the leadscrew, making it hard to turn. Overtightening will cause excessive wear to the leadscrew and nut. Generally, 0.005"–0.010" of backlash is acceptable.

The backlash of the longitudinal and cross leadscrew can be adjusted by changing the gap in the leadscrew nuts (see **Figure 51**).

Refer to **Figures 52–53** for the locations of the cross and longitudinal leadscrew nuts.

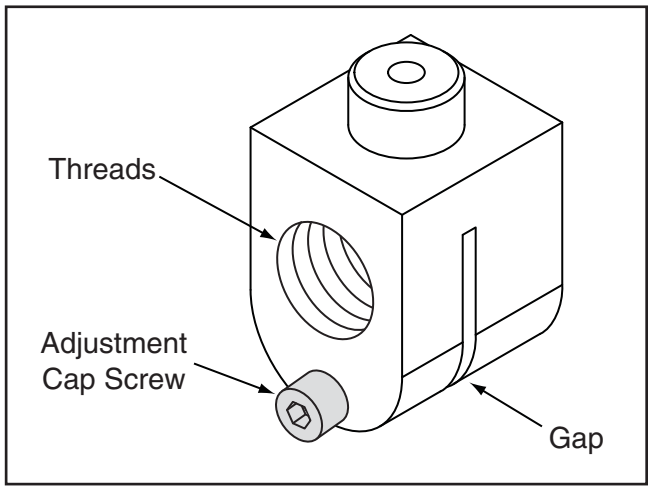


Figure 51. Leadscrew nut.

Refer to **Figures 52–53** for the location of the longitudinal and cross leadscrew nuts.

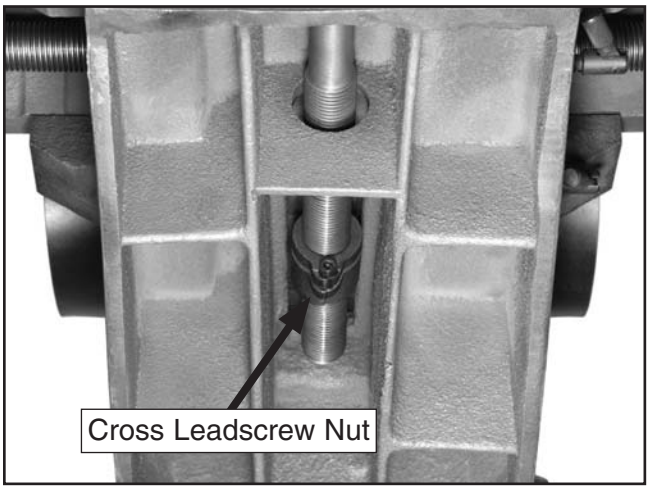


Figure 52. Cross leadscrew nut (viewed from underneath the knee).

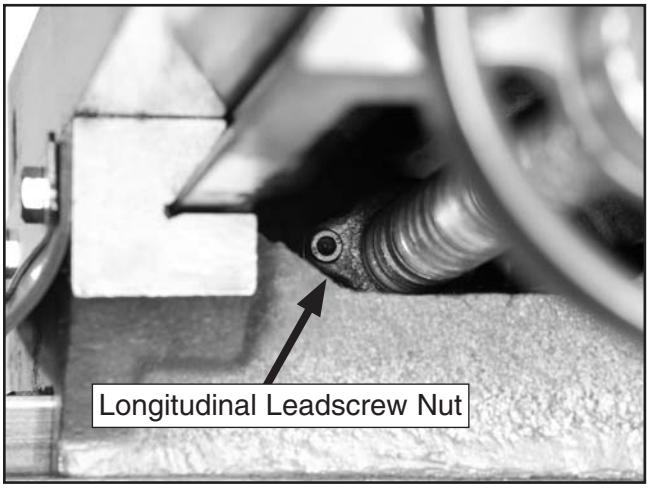


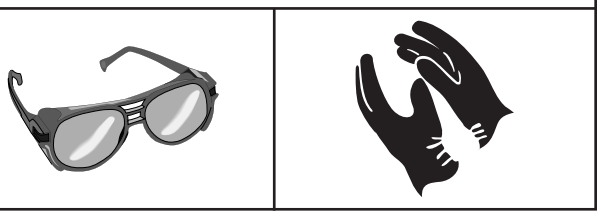
Figure 53. Longitudinal leadscrew nut (viewed from underneath the table on the left side).

Quill Return Spring Tension

The tension of the quill return spring is adjusted at the factory. However, during the life of the drill press you may want to adjust the tension so the quill return pressure suits your needs.

⚠WARNING

Damage to your eyes and hands could result if the quill return spring uncoils unexpectedly. Always wear safety glasses and heavy leather gloves when adjusting the quill return spring tension.



To adjust the quill return spring tension:

1. DISCONNECT MACHINE FROM POWER!

2. Wipe any oily substances from the spring lock cover so it does not slip when you hold it. Refer to **Figure 54** for the spring lock cover identification.

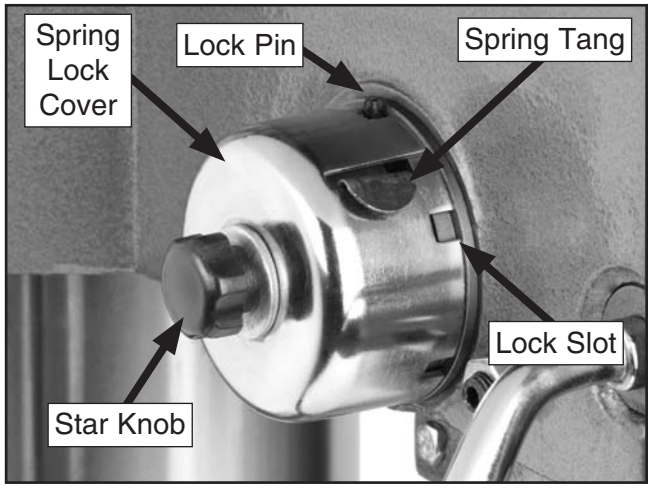


Figure 54. Spring lock cover identification.

3. Put on safety glasses and heavy leather gloves to protect yourself from possible injury if the spring uncoils unexpectedly during the next step.

4. While firmly holding the spring lock cover against the head so the cover stays engaged with the lock pin, loosen the star knob approximately three full turns (see **Figure 55**).

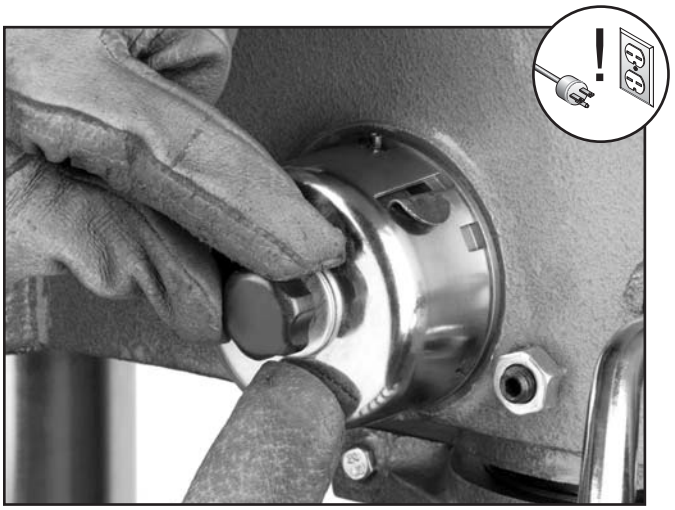


Figure 55. Loosening cover and star knob.

5. Pull the cover away from the head just enough to disengage the spring cover lock slot from the lock pin.

   Note: *It is important to keep a good grip on the spring lock cover and to not let the spring tang slip out of its slot on the cover during this step. Letting go of the cover will cause the spring to rapidly uncoil causing an injury hazard, and it will be very difficult to properly re-coil the spring within the cover.*

6. Keeping the spring tang engaged with the cover, rotate the cover counterclockwise to increase spring tension, or let the cover slowly unwind in the clockwise direction to reduce spring tension.

7. Rotate the cover so that the next lock slot aligns with the lock pin, then press the cover tightly against the head.

8. Tighten the star knob against the spring lock cover until it stops, then back off the knob approximately ⅓ turn, or just enough so there is no binding of the spring with complete quill travel.

Wiring Diagram

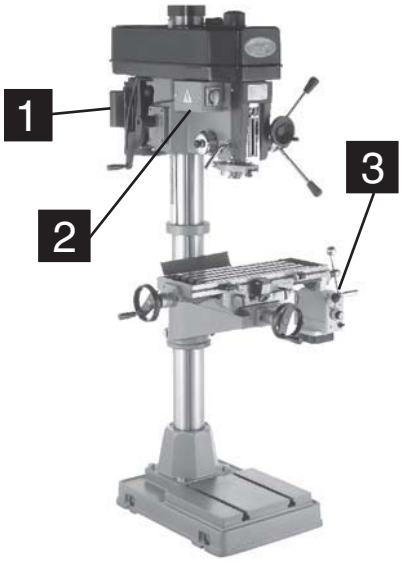
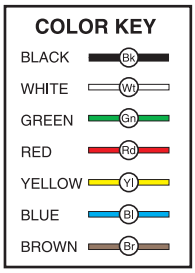
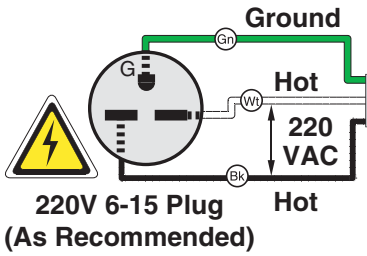


Figure 56. Spindle motor wiring.





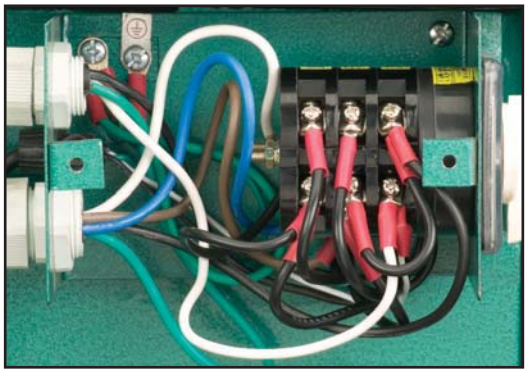
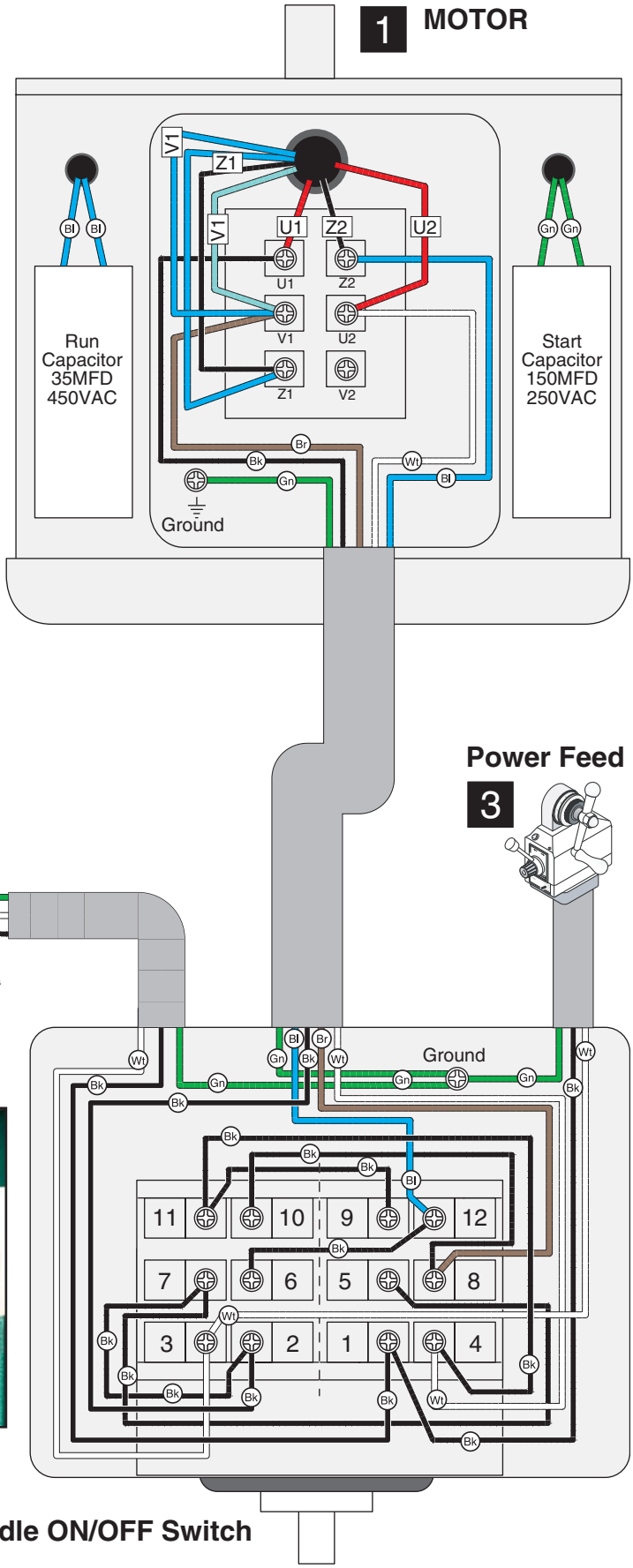


Figure 57. Spindle ON/OFF switch wiring.



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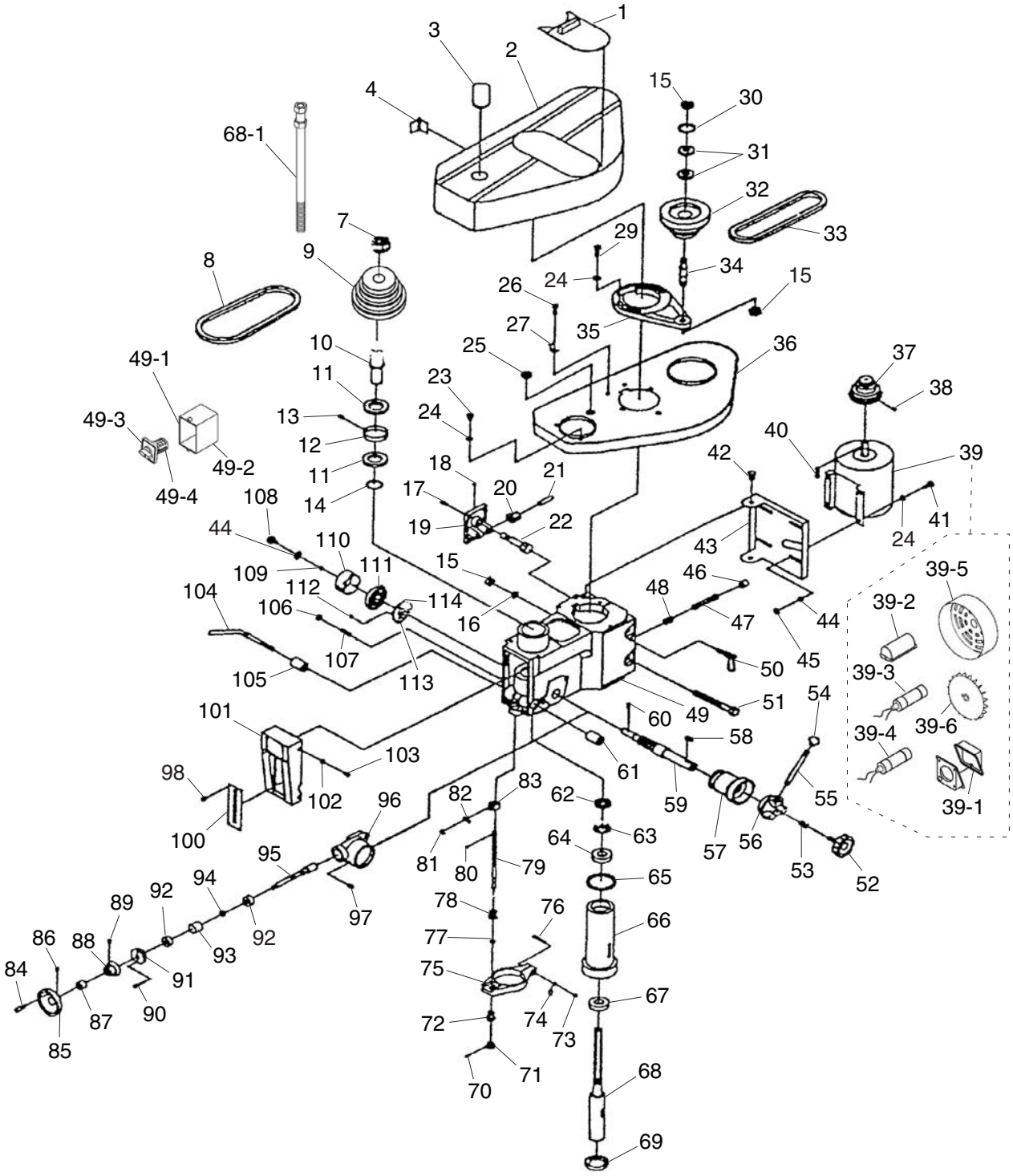
SECTION 8: PARTS

Head Breakdown



Head Parts List

REF	PART #	DESCRIPTION
1	P0520001	COVER BOARD
2	P0520002	UPPER COVER
3	P0520003	DRAWBAR CAP
4	P0520004	HINGE
7	PN12M	HEX NUT M42-1.5
8	PVB46	V-BELT B-46 5L460
9	P0520009	SPINDLE PULLEY
10	P0520010	SPLINED SLEEVE
11	P6009	BALL BEARING 6009ZZ
12	P0520012	COLLAR
13	PB06M	HEX BOLT M8-1.25 X 12
14	PR12M	EXT RETAINING RING 35MM
15	PN13M	HEX NUT M16-2
16	PW08M	FLAT WASHER 16MM
17	PB08M	HEX BOLT M6-1 X 20
18	P0520018	BALL OILER
19	P0520019	BRACKET
20	P0520020	GEAR
21	P0520021	SPECIAL SCREW
22	P0520022	WORM
23	PS16M	PHLP HD SCR M8-1.25 x 16
24	PW01M	FLAT WASHER 8MM
25	P0520025	SEPARATING RING
26	PSB11M	CAP SCREW M8-1.25 X 16
27	P0520027	CABLE CLIP
29	PB26M	HEX BOLT M8-1.25 X 30
30	PR25M	INT RETAINING RING 47MM
31	P6204	BALL BEARING 6204ZZ
32	P0520032	IDLER PULLEY
33	PVB35	V-BELT B-35 5L350
34	P0520034	IDLER PULLEY SHAFT
35	P0520035	PULLEY SUPPORT
36	P0520036	LOWER COVER
37	P0520037	MOTOR PULLEY
38	PB02M	HEX BOLT M6-1 X 12
39	P0520039	MOTOR 2HP 220V 1PH
39-1	P0520039-1	MOTOR WIRING JUNCTION BOX
39-2	P0520039-2	CAPACITOR COVER
39-3	P0520039-3	S CAPACITOR 150M 250V 2 X 3-1/4
39-4	P0520039-4	R CAPACITOR 35M 450V 2 X 3-1/4
39-5	P0520039-5	MOTOR FAN COVER
39-6	P0520039-6	MOTOR FAN
40	PK118M	KEY 8 X 7 X 50
41	PB07M	HEX BOLT M8-1.25 X 25
42	PB25M	HEX BOLT M12-1.75 X 25
43	P0520043	MOTOR MOUNT
44	PW01M	FLAT WASHER 8MM
45	PN03M	HEX NUT M8-1.25
46	P0520046	RUBBER COLLAR
47	P0520047	TENSION PIN

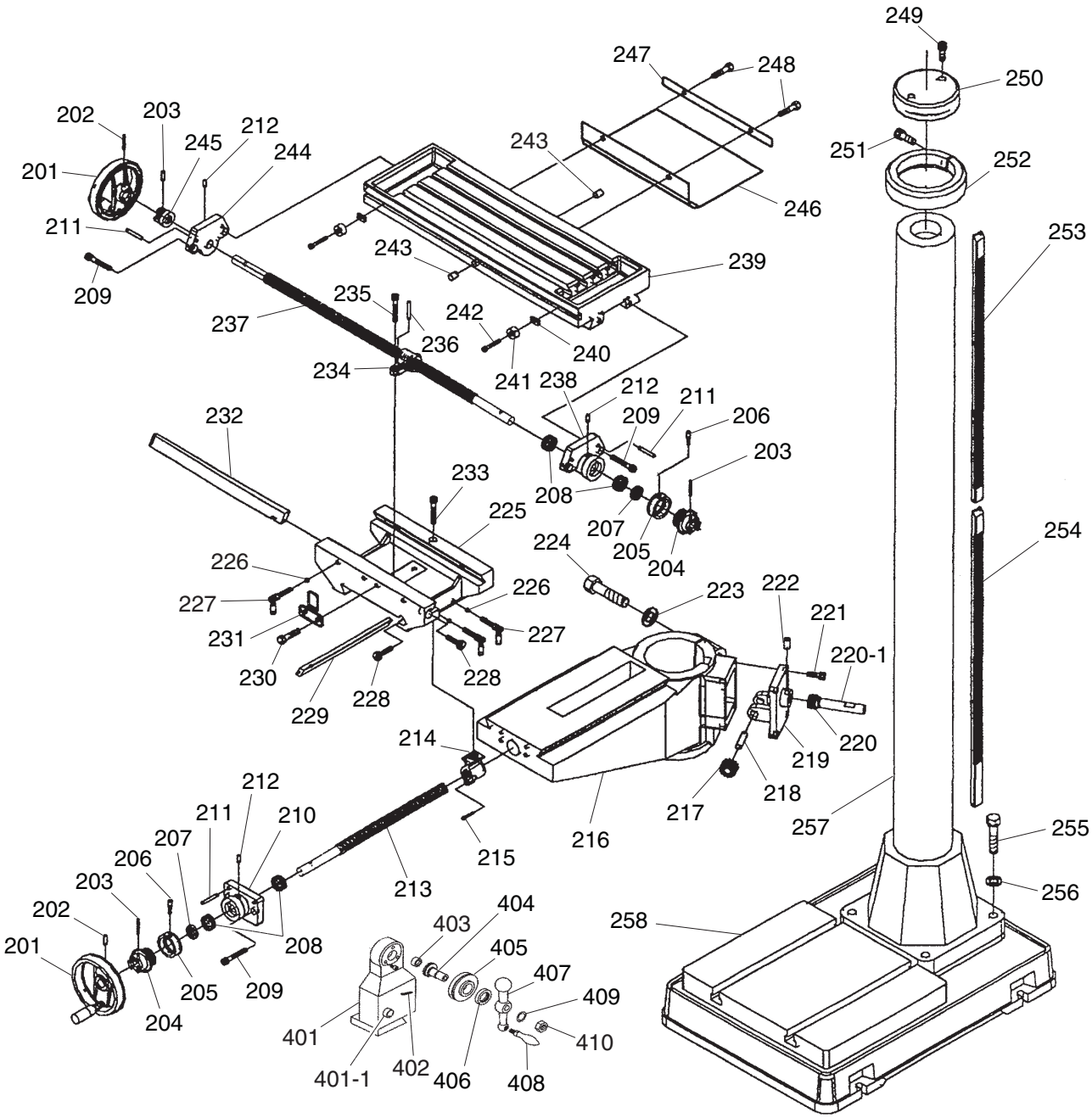
REF	PART #	DESCRIPTION
48	P0520048	SPRING 1.4 X 12 X 80
49	P0520049	HEAD CASTING
49-1	P0520049-1	SWITCH COVER
49-2	P0520049-2	SWITCH BOX
49-3	P0520049-3	CLEAR SWITCH COVER
49-4	P0520049-4	SPINDLE SWITCH
50	P0520050	MOTOR LOCK HANDLE
51	P0520051	HEX BOLT M16-2 X 150
52	P0520052	STAR KNOB
53	P0520053	SPRING 2 X 16 X 25
54	P0520054	KNOB
55	P0520055	HANDLE ROD
56	P0520056	HANDLE BODY
57	P0520057	HOUSING
58	P0520058	KEY 8 X 7 X 22
59	P0520059	GEAR SHAFT
60	PSB17M	CAP SCREW M4-.7 X 10
61	P0520061	THREADED BUSHING
62	P0520062	HEX NUT M30-1.5
63	P0520063	WASHER 30MM
64	P30207	TAPERED ROLLER BEARING 30207
65	PR64M	INT RETAINING RING 72MM
66	P0520066	QUILL
67	P30207	TAPERED ROLLER BEARING 30207
68	P0520068	SPINDLE
68-1	P0520068-1	DRAWBAR
69	P0520069	BEARING CAP
70	P0520070	PIN
71	P0520071	KNOB
72	P0520072	LOCATING SLEEVE
73	PN01M	HEX NUT M6-1
74	PW03M	FLAT WASHER 6MM
75	P0520075	DOWNFEED SUPPORT
76	PB39M	HEX BOLT M6-1 X 50
77	PN13M	HEX NUT M16-2
78	P0520078	FIXED NUT M20-1.5
79	P0520079	ADJUSTABLE ROD
80	P0520080	PIN
81	PS17M	PHLP HD SCR M4-.7 x 6
82	P0520082	POINTER
83	P0520083	QUILL DOG
84	P0520084	HANDLE
85	P0520085	SMALL HANDWHEEL
86	PSB03M	CAP SCREW M5-.8 X 8
87	P0520087	ADAPTER SLEEVE
88	P0520088	GRADUATED DIAL
89	PSB33M	CAP SCREW M5-.8 X 12
90	PSB24M	CAP SCREW M5-.8 X 16
91	P0520091	BEARING CAP
92	P6202	BALL BEARING 6202ZZ

Head Parts List

REF	PART #	DESCRIPTION
93	P0520093	BUSHING
94	P0520094	SPACER
95	P0520095	FEED WORM SHAFT
96	P0520096	DOWNFEED HOUSING
97	PSB14M	CAP SCREW M8-1.25 X 20
98	P0520098	TAP SCREW 2.9 X 9.5
100	P0520100	SCALE
101	P0520101	HEAD COVER
102	PW03M	FLAT WASHER 6MM
103	PSB26M	CAP SCREW M6-1 X 12
104	P0520104	LOCK HANDLE

REF	PART #	DESCRIPTION
105	P0520105	LOCKING PLUNGER
106	PN02M	HEX NUT M10-1.5
107	PB14M	HEX BOLT M10-1.5 X 35
108	P0520108	STAR KNOB
109	PLW03M	LOCK WASHER 6MM
110	P0520110	SPRING CAP
111	P0520111	TORSION SPRING
112	PSB33M	CAP SCREW M5-.8 X 12
113	P0520113	SHAFT SLEEVE
114	P0520114	PIN

Base & Table Breakdown

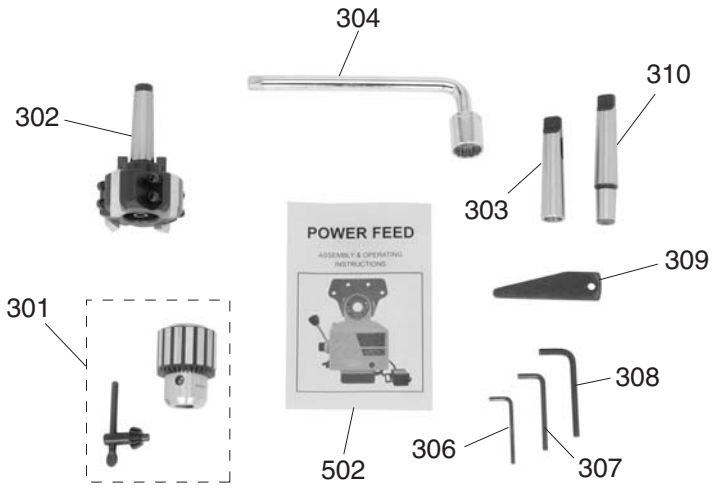


Base & Table Parts List

REF	PART #	DESCRIPTION
201	P0520201	HANDWHEEL
202	PSB68M	CAP SCREW M6-1 X 8
203	P0520203	PIN
204	P0520204	SCALE BASE
205	P0520205	GRADUATED DIAL
206	PSB33M	CAP SCREW M5-.8 X 12
207	P0520207	SPECIAL WASHER
208	P51103	THRUST BEARING 51103
209	PB09M	HEX BOLT M8-1.25 X 20
210	P0520210	CROSS LEADSCREW BRACKET
211	P0520211	PIN
212	P0520018	BALL OILER
213	P0520213	CROSS LEADSCREW
214	P0520214	CROSS LEADSCREW NUT
215	PB107M	HEX BOLT M5-.8 X 12
216	P0520216	KNEE
217	P0520217	PINION GEAR
218	P0520218	PIN
219	P0520219	ELEVATION BRACKET
220	P0520220	ELEVATION WORM
220-1	P0520220-1	ELEVATION SHAFT
221	PB83M	HEX BOLT M6-1 X 16
222	P0520018	BALL OILER
223	PW08M	FLAT WASHER 16MM
224	PB131M	HEX BOLT M16-2 X 70
225	P0520225	SADDLE
226	P0520226	STEEL BALL
227	P0520227	LOCK SCREW M8-1.25 X 35
228	P0520228	GIB ADJUST SCREW M8-1.25 X 35
229	P0520229	SADDLE GIB
230	PB06M	HEX BOLT M8-1.25 X 12
231	P0520231	LIMIT BLOCK
232	P0520232	TABLE GIB
233	PB166M	HEX BOLT M8-1.25 X 50
234	P0520234	LONGITUDINAL LEADSCREW NUT

REF	PART #	DESCRIPTION
235	PB09M	HEX BOLT M8-1.25 X 20
236	P0520236	PIN
237	P0520237	LONGITUDINAL LEADSCREW
238	P0520238	LEADSCREW BRACKET RIGHT
239	P0520239	TABLE
240	P0520240	T-NUT M6-1
241	P9977811	LIMIT STOP
242	PB02M	HEX BOLT M6-1 X 12
243	P0520018	BALL OILER
244	P0520244	LEADSCREW BRACKET LEFT
245	P0520245	HANDWHEEL CLUTCH
246	P0520246	WAY COVER
247	P0520247	WAY COVER BRACE
248	PB06M	HEX BOLT M8-1.25 X 12
249	PB07M	HEX BOLT M8-1.25 X 25
250	P0520250	COLUMN LID
251	PSB77M	CAP SCREW M12-1.75 X 30
252	P0520252	COLLAR
253	P0520253	HEAD RACK
254	P0520254	TABLE RACK
255	PB80M	HEX BOLT M16-2 X 55
256	PW08M	FLAT WASHER 16MM
257	P0520257	COLUMN
258	P0520258	BASE
401	P0520401	POWER FEED
401-1	P0520401-1	POWER FEED BUTTON COVER
402	P0520402	PWR FEED SWITCH FWD/REV
403	P0520403	BUSHING
404	P0520404	GEAR SHAFT
405	P0520405	GEAR
406	P0520406	COLLAR
407	P0520407	BALL HANDLE
408	P0520408	HANDLE
409	P0520409	SPECIAL WASHER
410	P0520410	SPECIAL HEX NUT

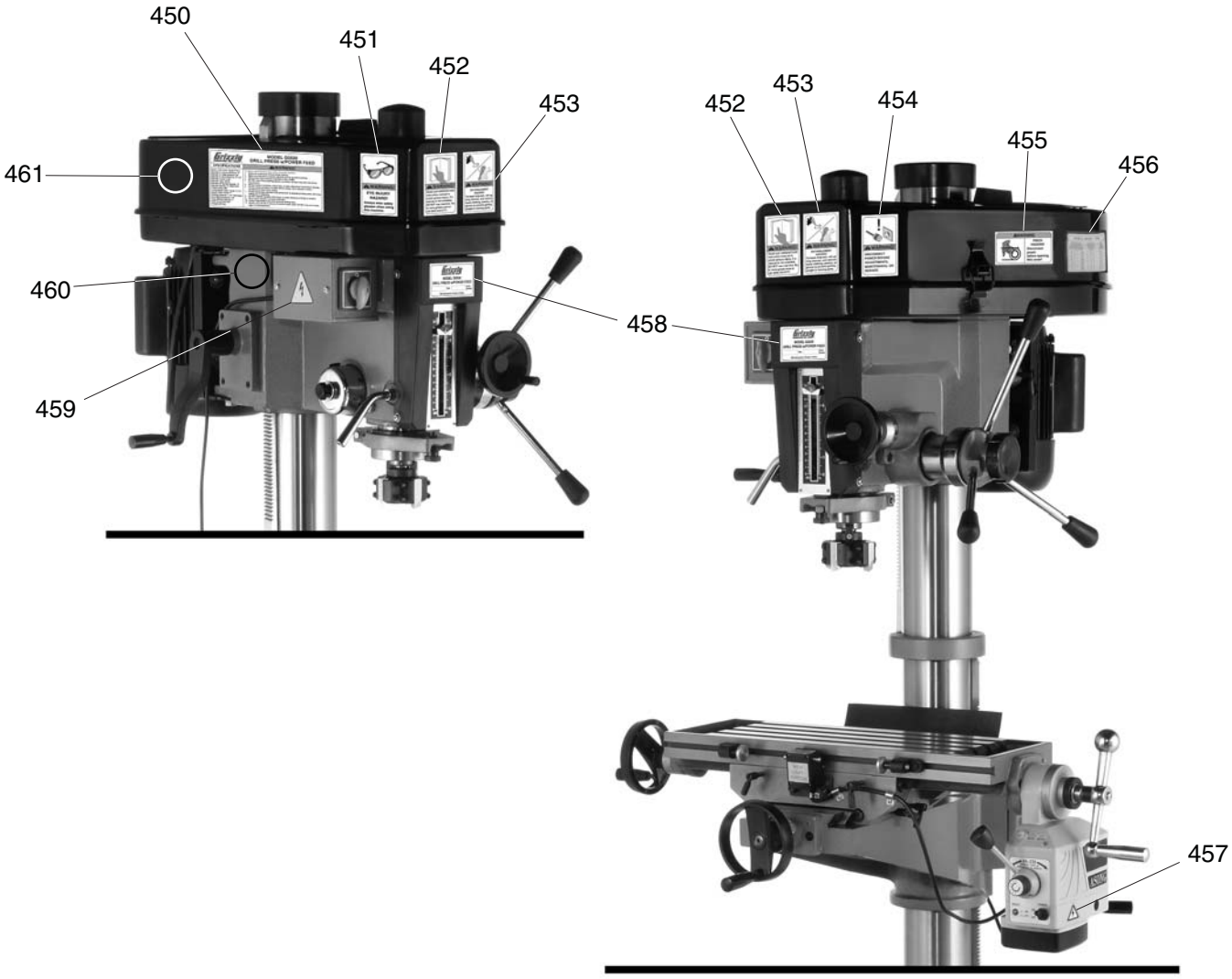
Accessories Breakdown & Parts List



REF	PART #	DESCRIPTION
301	P0520301	DRILL CHUCK W/KEY JT#3
302	P0520302	FACE MILL W/ARBOR MT#3 3-1/8"
303	P0520303	SLEEVE MT#3–MT#2
304	P0520304	SOCKET WRENCH 24MM
306	PAW04M	HEX WRENCH 4MM

REF	PART #	DESCRIPTION
307	PAW05M	HEX WRENCH 5MM
308	PAW06M	HEX WRENCH 6MM
309	P0520309	DRIFT KEY #3
310	P0520310	ARBOR MT#3–JT#3
502	P0520MANUAL-1	MANUAL FOR G0520 PWR FEED

Label Placement



REF	PART #	DESCRIPTION
450	P0520450	MACHINE ID LABEL
451	PLABEL-11A	EYE INJURY LABEL VL
452	PLABEL-12A	READ MANUAL LABEL VL
453	PLABEL-55	ENTANGLEMENT HAZARD LABEL VL
454	PLABEL-63	DISCONNECT LABEL 220V VL
455	P0520455	PINCH HAZARD LABEL

REF	PART #	DESCRIPTION
456	P0520456	SPINDLE SPEED LABEL
457	PLABEL-14B	ELECTRICITY LABEL SM
458	P0520458	MACHINE DATE/SN LABEL
459	PLABEL-14	ELECTRICITY LABEL LG
460	PPAINT-1	GRIZZLY GREEN TOUCH UP PAINT
461	PPAINT-7	GLOSSY BLACK TOUCH UP PAINT

⚠WARNING

Safety labels warn about machine hazards and ways to prevent injury. The owner of this machine MUST maintain the original location and readability of the labels on the machine. If any label is removed or becomes unreadable, REPLACE that label before using the machine again. Contact Grizzly at (800) 523-4777 or www.grizzly.com to order new labels.

Grizzly Industrial, Inc. WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____ Invoice # _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. ***Of course, all information is strictly confidential.***

1. How did you learn about us?

____ Advertisement ____ Friend ____ Catalog
____ Card Deck ____ Website ____ Other:

2. Which of the following magazines do you subscribe to?

____ Cabinet Maker
____ Family Handyman
____ Hand Loader
____ Handy
____ Home Shop Machinist
____ Journal of Light Cont.
____ Live Steam
____ Model Airplane News
____ Modeltec
____ Old House Journal
____ Popular Mechanics
____ Popular Science
____ Popular Woodworking
____ Practical Homeowner
____ Precision Shooter
____ Projects in Metal
____ RC Modeler
____ Rifle
____ Shop Notes
____ Shotgun News
____ Today's Homeowner
____ Wood
____ Wooden Boat
____ Woodshop News
____ Woodsmith
____ Woodwork
____ Woodworker West
____ Woodworker's Journal
____ Other:

3. What is your annual household income?

____ $20,000-$29,000 ____ $30,000-$39,000 ____ $40,000-$49,000
____ $50,000-$59,000 ____ $60,000-$69,000 ____ $70,000+

4. What is your age group?

____ 20-29 ____ 30-39 ____ 40-49
____ 50-59 ____ 60-69 ____ 70+

5. How long have you been a woodworker/metalworker?

____ 0-2 Years ____ 2-8 Years ____ 8-20 Years ____ 20+ Years

6. How many of your machines or tools are Grizzly?

____ 0-2 ____ 3-5 ____ 6-9 ____ 10+

7. Do you think your machine represents a good value? _____ Yes _____ No

8. Would you recommend Grizzly Industrial to a friend? _____ Yes _____ No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: *We never use names more than 3 times.* _____ Yes _____ No

10. Comments: _____

_____

_____

_____

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WARRANTY AND 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.

To take advantage of 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.

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.

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.