



MODEL CX618 – USER MANUAL



TABLE OF CONTENTS

| | |
|---|----|
| Introduction | 3 |
| General Safety Instructions for Machines..... | 4 |
| Specific Safety Instructions..... | 5 |
| Features..... | 6 |
| Physical Features..... | 8 |
| Assembly & Adjustments..... | 10 |
| Feed Handles..... | 11 |
| Proper Grounding..... | 7 |
| Mounting the Drill Press..... | 12 |
| Installing the Arbor and Chuck..... | 12 |
| Removing the Chuck..... | 13 |
| Raise or lower the table..... | 13 |
| Tilt the table..... | 13 |
| Squaring the Table to the Drill Bit..... | 14 |
| Installing a Drill Bit..... | 14 |
| Adjusting the Laser..... | 15 |
| Spindle Return Spring..... | 15 |
| Angular Play of the Spindle..... | 16 |
| Drive Belt Replacement..... | 16 |
| Drilling Speeds..... | 19 |
| Maintenance..... | 21 |
| Troubleshooting..... | 22 |
| Parts List..... | 23 |
| Warranty..... | 24 |

INTRODUCTION

Welcome the Family of quality machinery from Busy Bee Tools. The CX618 is a robust drill press that will provide you with years of excellent service. As will all our products we strive to attain the best quality and the best possible price. This CX618 is the newest addition to the family and with its many features you will find that it is well suited for a variety of tasks and operations. The variable speed mechanism will allow for easy and quick speed changes without the need to change the position of the belts on different sheaves of the pulley. Thereby allowing more time spent on your projects than on the setup and re-setup of the machine every time your conditions change.

Every attempt has been made to ensure that the information in this users manual is accurate and up to date. As there are always some changes to manufacturing processes and procedures it is possible that changes made are not immediately reflected in the current manual. We welcome feedback from our users to assist us in keeping our manuals current. Should you discover something that we could improve or any features of your drill press that is not in the manual please contact our customer service department at cs@busybeetools.com to advise us of any discrepancies between the manual and the actual product.

In the event that you discover that there are any parts missing or something isn't quite right with your machine please call us at Customer Service 905 738 5115 x 6506 and we will be happy to assist you.

GENERAL SAFETY INSTRUCTIONS FOR MACHINES

Extreme caution should be used when operating all power tools. Know your power tool, be familiar with its operation, read through the user manual, and practice safe usage procedures at all times.

- ⊠ **Read** and become familiar with this entire instruction manual. Learn the tools applications, limitations, and possible hazards.
- ⊠ **CONNECT** your machine ONLY to the matched and specific power source.
- ⊠ **ALWAYS** wear safety glasses respirators, hearing protection and safety shoes, when operating your machine.
- ⊠ **DO NOT** wear loose clothing or jewelry when operating your machine. Wear protective hair covering.
- ⊠ **ALWAYS** keep your work area clean, uncluttered and well lit. DO NOT work on floor surfaces that are slippery with sawdust or wax
- ⊠ **BE ALERT! DO NOT** use prescription or other drugs that may affect your ability or judgment to safely use your machine.
- ⊠ **DISCONNECT** the power source when changing drill bits, hollow chisels, router bits, shaper heads, blades, knives or making other adjustments or repairs.
- ⊠ **NEVER** leave a tool unattended while it is in operation.
- ⊠ **NEVER** allow unsupervised or untrained person to operate the machine.
- ⊠ **NEVER** reach over the table when the tool is in operation.
- ⊠ **ALWAYS** keep blades, knives and bits sharpened and properly aligned.
- ⊠ **ALWAYS** keep the guards in place when operating your drill press.
- ⊠ **ALWAYS** use push sticks and feather boards to safely feed your work through the machine.
- ⊠ **ALWAYS** make sure that any tools used for adjustments are removed before operating the machine.
- ⊠ **ALWAYS** keep bystanders safely away while the machine is in operation.
- ⊠ **NEVER** attempt to remove jammed cutoff pieces until the blade has come to a full stop.

SPECIFIC SAFETY INSTRUCTIONS FOR CX618

- ❖ **READ AND UNDERSTAND** the user manual before operating the CX617.
- ❖ **ALWAYS WEAR** safety glasses for the protection of your eyes while operating this machine.
- ❖ **WEAR PROPER APPAREL.** Loose clothing, gloves neckties, rings, bracelets, or other jewelry may get caught in moving parts of the machine. Wear protective hair covering to contain long hair. Do not wear gloves and keep your fingers and hair away from rotating parts.
- ❖ **KEEP GUARDS** in place. Safeguards must be kept in place and in working order. Do not operate the drill press unless the chuck guard is in its position, guarding the chuck.
- ❖ **MAKE SURE** the workpiece is properly clamped to the table before operating the machine. Never hold the workpiece by hand when using the mill.
- ❖ **MAKE SURE** the cutting tool is sharp, not damaged and properly secured in the chuck before you start the machine.
- ❖ **SELECT** The proper spindle speed for the type of work and material you are cutting. Let the spindle reach to its full speed before beginning a cut.
- ❖ **NEVER LEAVE** the machine unattended while it is running.
- ❖ **ALWAYS** turn off the power before removing scrap pieces and cleaning the machine.
- ❖ **SHOULD ANY PART** of your tool be missing, damaged or fail in any way, shut off the machine immediately and remove the plug from power source. Replace any damaged or missing parts before resuming operation.
- ❖ **MAKE SURE** before installing and removing any parts, servicing, cleaning, or making any adjustments, the switch is in the "OFF" position and the cord is unplugged from the power source.
- ❖ **BEFORE OPERATING** your drill press make sure you have read and understood all the safety instructions in the manual and you are familiar with your
- ❖ **DO NOT** force the machine to do a job for which it is not designed Always use the machine for the purpose for which it was designed.
- ❖ **NEVER** turn the power ON with the cutting tool contacting the workpiece



CRAFTEX CX-SERIES

CX618 – DRILL PRESS

Features

Shipping Dimensions:

| | |
|--------------------------|---------------|
| ◆ Type..... | Carton |
| ◆ Content..... | Machine |
| ◆ Dimensions..... | 12 x 17 x 60" |
| ◆ Weight..... | 156 lbs. |
| ◆ Must Ship Upright..... | No |

Electrical:

| | |
|---------------------------------|-----------------------------|
| ◆ Power Requirement..... | 110V, Single-Phase, 60 Hz |
| ◆ Full-Load Current Rating..... | 8.6A |
| ◆ Minimum Circuit Size..... | 15A |
| ◆ Connection Type..... | Cord & Plug |
| ◆ Power Cord Included..... | Yes |
| ◆ Power Cord Length..... | 6 ft. |
| ◆ Power Cord Gauge..... | 18 AWG SJT |
| ◆ Plug Included..... | Yes |
| ◆ Included Plug Type..... | 5-15 |
| ◆ Switch Type..... | Paddle Safety Switch w/ Key |

Motor:

| | |
|------------------------|-----------------------------------|
| ◆ Horsepower..... | 1 HP |
| ◆ Phase..... | Single-Phase |
| ◆ Amps..... | 8.6 A |
| ◆ Speed..... | 1720 RPM |
| ◆ Type..... | TEFC Capacitor-Start Induction |
| ◆ Power Transfer | V-Belt Drive |
| ◆ Bearings..... | Shielded & Permanently Lubricated |

General Specifications

| | |
|---|----------------|
| ◆ Type..... | Floor |
| ◆ Swing..... | 15 in. |
| ◆ Spindle Taper..... | MT2 |
| ◆ Spindle Travel..... | 4 in. |
| ◆ Max. Distance from Spindle to Column..... | 7.5 in. |
| ◆ Max. Distance from Spindle to Table..... | 31-1/2 in. |
| ◆ Number of Spindle Speeds..... | Variable |
| ◆ Range of Spindle Speeds..... | 280 – 3300 RPM |
| ◆ Max. Head Swivel..... | 360 deg. |
| ◆ Drilling Capacity (Mild Steel) | 3/4 in. |
| ◆ Drill Chuck Type..... | JT33 Key Chuck |
| ◆ Drill Chuck Size..... | 3/64 – 5/8 in. |

Spindle Information

| | |
|---------------------------------------|------------|
| ◆ Distance From Spindle to Base | 48 3/4 in. |
| ◆ Quill Diameter | 2.040 in. |



Table Information

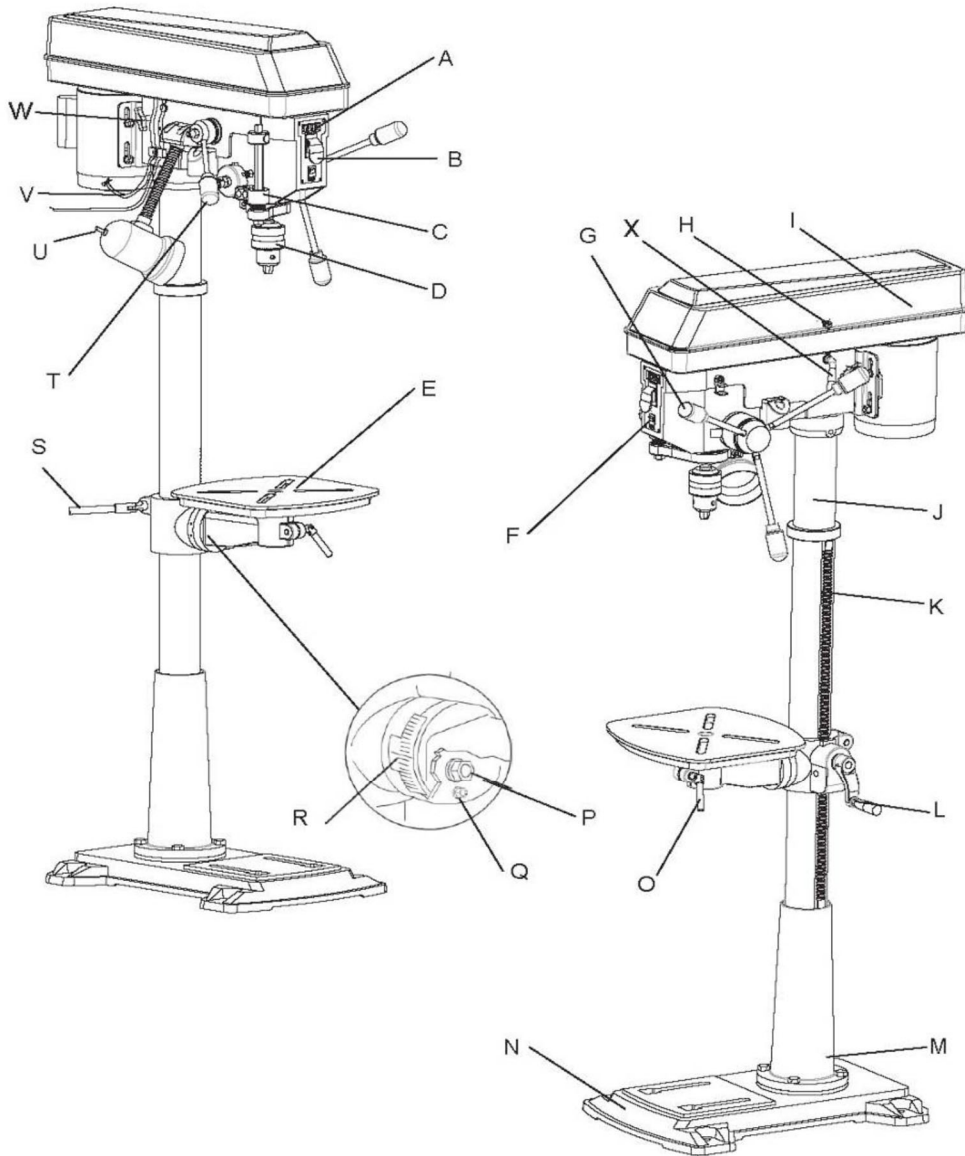
| | |
|--------------------------------------|-------------|
| ◆ Max. Table Tilt (Left/Right) | 90 deg. |
| ◆ Table Swing..... | 360 deg. |
| ◆ Table Swivel Around Center..... | 360 deg. |
| ◆ Table Swivel Around Column..... | 360 deg. |
| ◆ Max. Movement of Work Table..... | 26 in. |
| ◆ Table Length..... | 11-3/8 in. |
| ◆ Table Width..... | 11-3/8 in. |
| ◆ Floor-To-Table Height..... | 20 – 46 in. |

Construction

| | |
|--------------------------|----------------------------|
| ◆ Table..... | Precision-Ground Cast Iron |
| ◆ Column..... | Steel |
| ◆ Spindle Housing..... | Cast Iron |
| ◆ Head..... | Cast Iron |
| ◆ Base..... | Cast Iron |
| ◆ Paint Type/Finish..... | Powder Coat |

Other Related Information

| | |
|---------------------------|-----------|
| ◆ Base Length..... | 18 in. |
| ◆ Base Width..... | 11 in. |
| ◆ Column Diameter..... | 3.150 in. |
| ◆ Depth Stop Type..... | Hub |
| ◆ Country of Origin | China |
| ◆ Warranty | 3 Year |

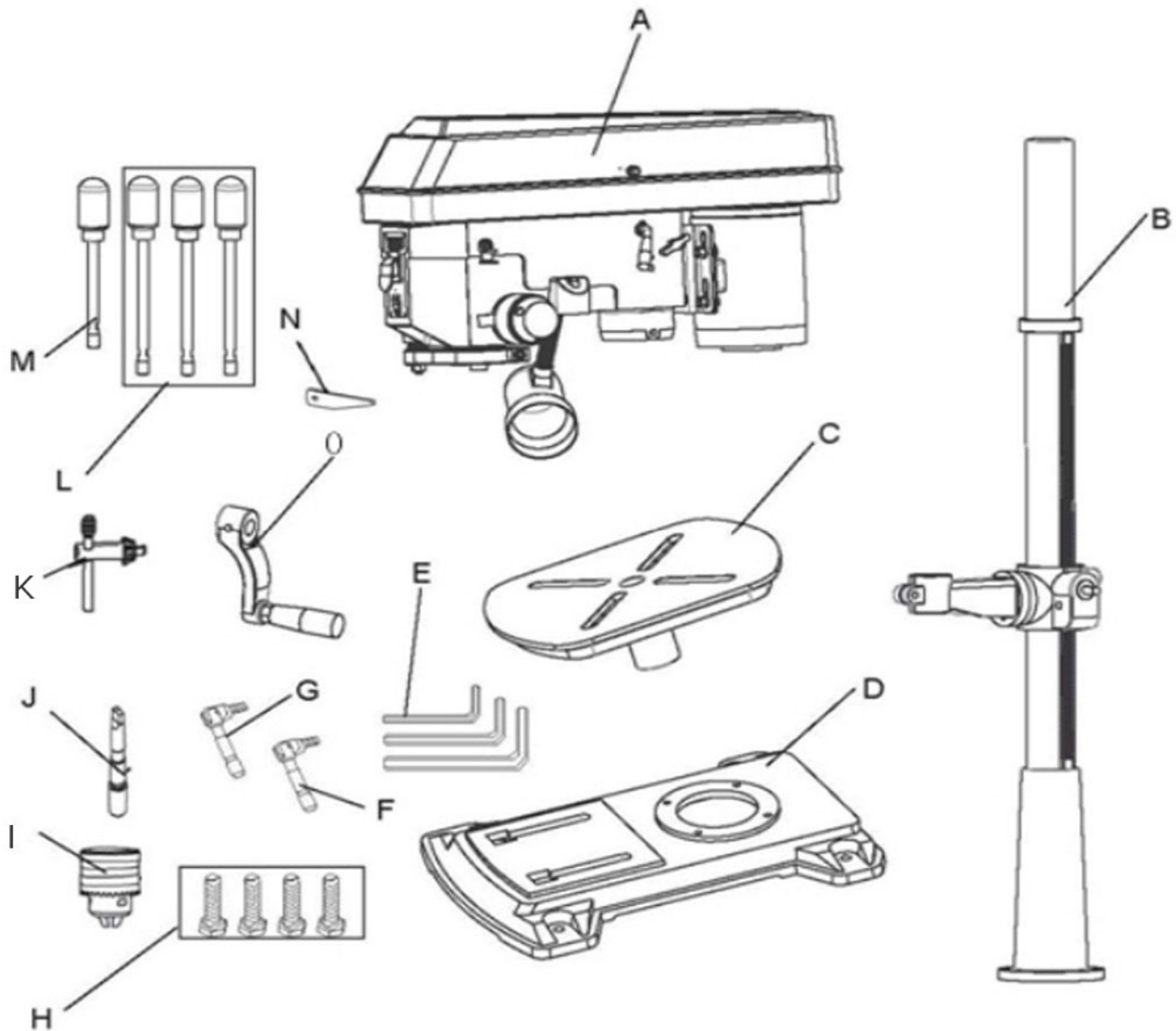


| | | |
|--------------------------------|----------------------------|------------------------------------|
| A Digital Speed Readout | I Pulley Cover | Q Location Pin |
| B ON/OFF Switch | J Column | R Bevel Scale |
| C Depth Scale | K Rack | S Table Support Lock Handle |
| D Chuck | L Crank Handle | T Speed Control Handle |
| E Table | M Column Base | U LED Work light Switch |
| F Laser Switch | N Base | V Power Cord |
| G Feed Handles | O Table Lock Handle | W Tension Knob |
| H Pulley Cover Knob | P Bevel Lock Bold | X Lock Handle |

UNPACKING

Unpack the drill press and all of its parts. Compare against the list below. Do not discard the carton or any packaging until the drill press is completely assembled.

To protect the drill press from moisture, a protective coating has been applied to the machine's surfaces. Remove this coating with a soft cloth moistened with kerosene or WD-40®. Do not use acetone, gasoline, or lacquer thinner to clean. Apply a coat of good paste wax to the table and column. Wipe all parts with a clean dry cloth.



A Head/Motor Assembly
 B Column Assembly
 C Table
 D Base
 E Hex Keys - 3, 4, 5

F Table Support Lock Handle
 G Table Lock Handle
 H Bolt M12 X 35
 I Chuck
 J Chuck Arbor
 F Table Support Lock Handle

Chuck Key
 L Feed Handle
 M Speed Handle
 N Wedge
 O Crank Handle

ASSEMBLY AND ADJUSTMENTS



WARNING: If any part is missing or damaged, do not plug the drill press in until the missing or damaged part is repaired or replaced.

Tools needed for assembly

- Socket wrench
- Screwdriver
- Hammer and block of wood

Assembly:

The column assembly (column, column support, rack, rack collar, and table support bracket) must be attached to the base. The table and table support handles must be attached to the table support bracket. The motor housing must be attached to the column.

COLUMN ASSEMBLY TO BASE (Fig. 3)

- 1.) Place the column column base (1) on the base (2), aligning the column support holes to the base holes.
- 2.) Install a hex head bolt (3) in each column support hole and tighten bolts using the socket wrench.

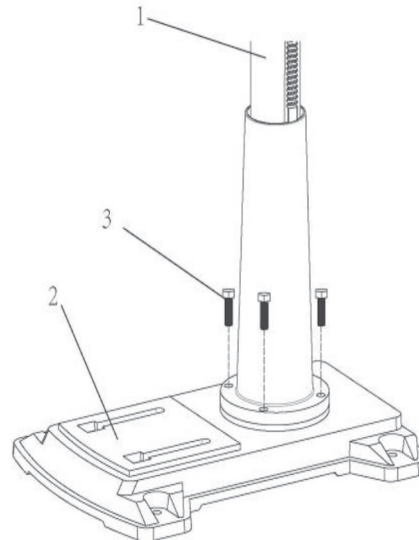


Fig. 3

Insert the pinion into the hole on the side of the table support bracket from the inside, starting with the pinion shaft. **Figure 3.**

Examine the rack and note that the gear teeth extend further on one end than the other. The shorter end must be positioned down. Insert the rack into the table support bracket and align with pocket so that the gear teeth mesh with the rack teeth. The end of the rack where the gear teeth are closest to the end should be positioned down. Slide the table support bracket and rack onto the column.

Thread the table lock handle (4) into the front of the table support bracket.

Align setscrew in crank handle with flat, **Figure 4**, on pinion shaft and secure using the 3mm Allen® wrench provided.

Thread the table support lock handle into the rear of the table support bracket
Slide the column ring onto the column with the inside bevel in the down position. **Figure 4**. Adjust the ring until the tip of the rack fits inside the bevel. Tighten the setscrew on the ring.

Do not over tighten the setscrew as it can crack the ring.



Fig. 4

Drill Press Column

CAUTION: The drill press head is heavy. To avoid injury, two people should lift it into position.

1.) Carefully lift the drill press head assembly (1) and position it over the column (2).

2.) Place the mounting opening (3) on the drill press head over the top of the column. Make sure the drill press head is seated properly on the column.

3.) Align the direction of the drill press head with the direction of the base and the table.

3.) Tighten the set screw (4) using a hex key.

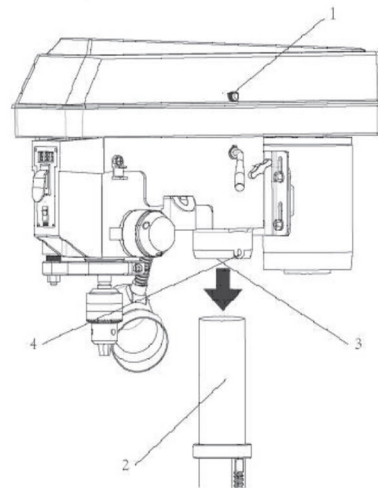


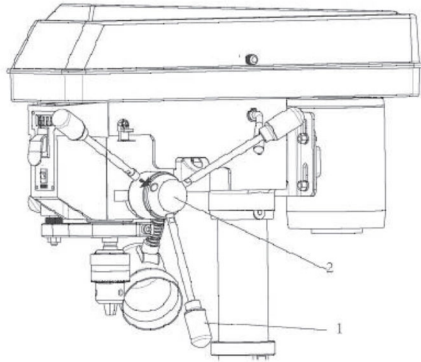
Fig. 5

FEED HANDLES

1.) Insert the three speed handles (1) into the threaded openings on the feed hub (2).

2.) Manually tighten handles into openings.

Note: When using the drill press, one or two of the feed handles may be removed if an unusually shaped workpiece interferes with handle rotation.



SPEED HANDLE (Fig. 7)

1. Insert the feed handle (1) into the threaded opening on the speed hub (2).
2. Manually tighten handle into opening.

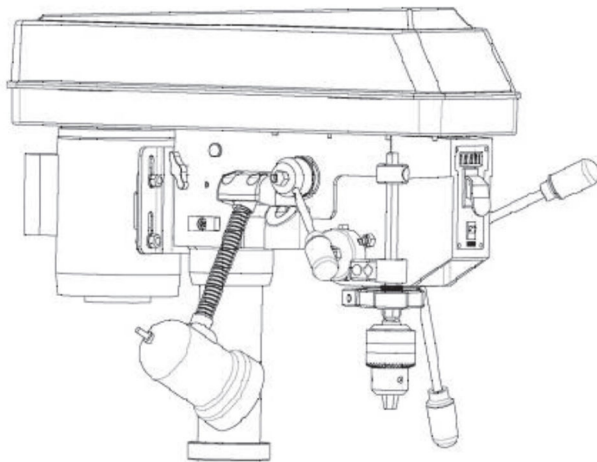


Fig. 8

Mounting the Drill Press

The Drill press should be secured to the floor to give stability to the drill press to prevent the drill press from tipping over

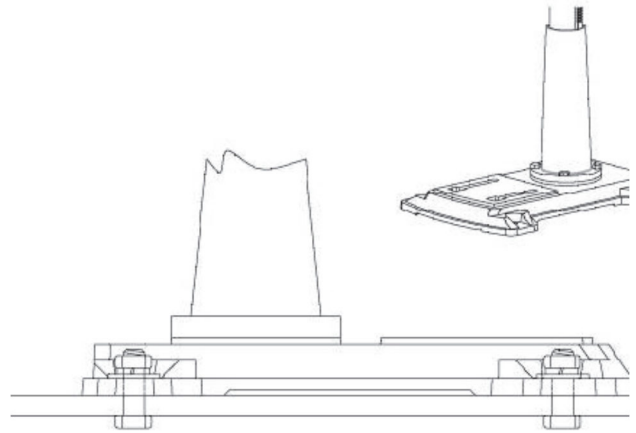


Fig. 9

Install the chuck

1. Inspect and clean the taper hole in the chuck and the spindle. Remove all grease, oil and particles from the chuck and arbor surfaces with a clean cloth.
2. Open the chuck jaws by manually turning the chuck barrel clockwise. Make sure the haws are completely recessed inside the chuck.
3. Insert the chuck arbor into the chuck
4. Seat the chuck and chuck arbor on the spindle by placing a block of wood with a hammer (not included) Or tap the chuck with a rubber mallet (not included)

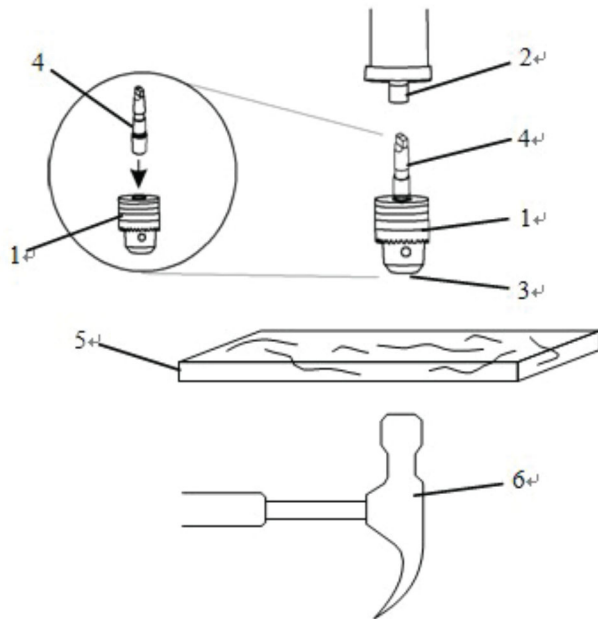
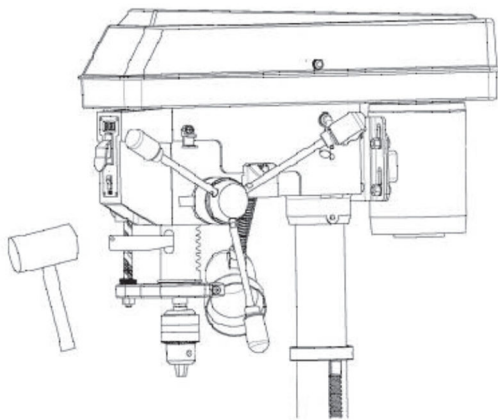


Fig. 10

Remove the Chuck

1. Turn the feed handles to lower the chuck to the lowest position.
2. Slide the wedge into the opening in the quill and tap the wedge with a hammer or mallet. The Chuck arbor will drop out of the quill.

Protect the table with a piece of wood or heavy cardboard to prevent the chuck from dropping onto the table.



RAISE OR LOWER THE TABLE

(Fig. 12)

1. Loosen the support lock handle (1) and turn the crank handle (2) until the table is at the desired height.
2. Tighten the support lock handle before drilling.

ROTATE THE TABLE (Fig. 12)

1. Loosen the support lock handle (1) and turn the table around the column to the desired position.

Note: The rack should rotate around the column with the table support bracket. If the rack binds and does not rotate, slightly loosen the set screw in the rack collar.

2. Tighten the support lock before drilling.

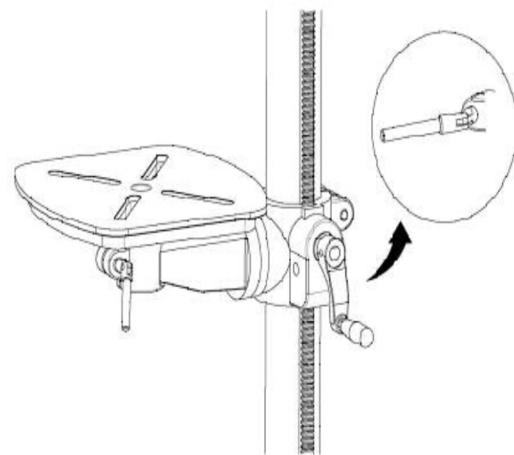


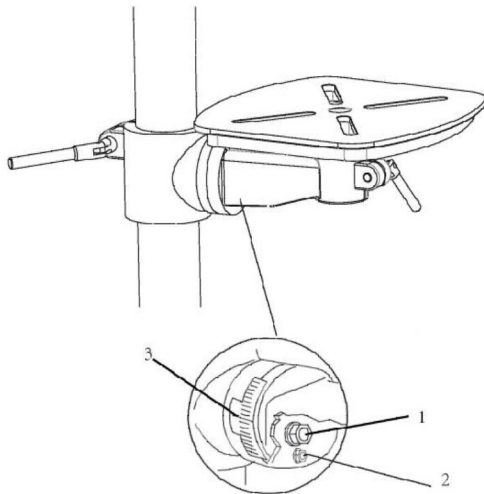
Fig. 12

TILT THE TABLE (Fig. 12)

1. Rotate the table clockwise with the fork wrench. Pull out the location pin. Put the location pin and nut in suitable area.
2. Rotate the bolt (1) counter-clockwise with a wrench to loosen it.
3. Adjust the angle of the table.
4. Tighten the bolt with fork wrench.

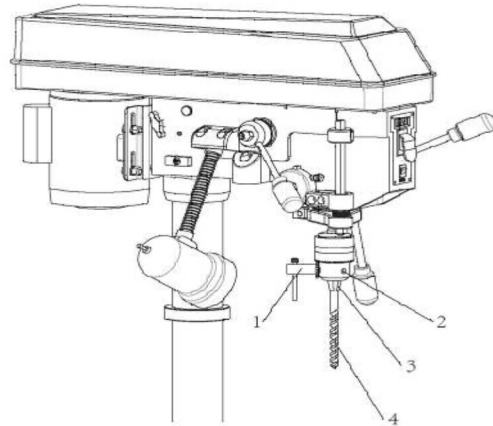
ADJUST THE TABLE TO BE HORIZONTAL

1. Rotate the bolt (1) counter-clockwise with a wrench to loosen it.
2. Rotate the table to 0°.
3. Hit the location pin (2) into the location hole in the table support with a hammer.
4. Tighten the nut of the location pin (2) slightly.
5. Lock the bolt (1) with wrench.



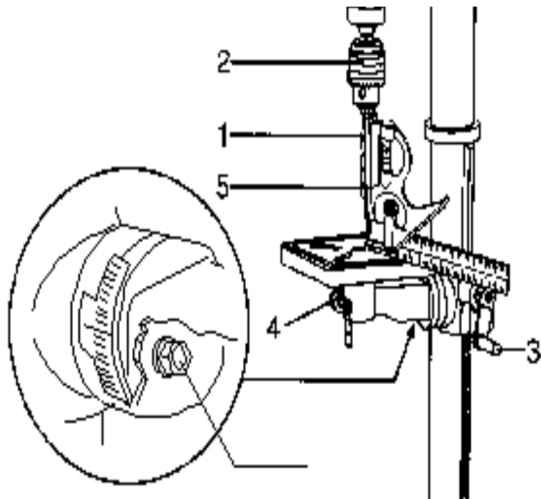
INSTALLING A DRILL BIT (Fig. 13)

1. Place the chuck key (1) into the side keyhole of the chuck (2), meshing the key with the gear teeth.
2. Turn the chuck key counter-clockwise to open the chuck jaws (3).
3. Insert a drill bit (4) into the chuck far enough to obtain the maximum grip of the chuck jaws.
4. Center the drill bit in the chuck jaws before the final tightening of the chuck.
5. Tighten the chuck jaws using the chuck key to ensure that the drill bit will not slip while drilling.
6. Remove the chuck key.



SQUARING THE TABLE TO THE DRILL BIT (Fig. 14)

1. Insert a 3" long drill bit (1) into the chuck (2) and tighten the jaws with the chuck key.
 2. Raise the table with the crank handle (3). Lock the table (4) approximately 1" below the drill bit.
 3. Place a combination square (not included) on the table as shown, placing the long straight edge of the combination square against the drill bit. Make sure the drill bit is parallel/aligned exactly to the straight edge of the square.
 4. If an adjustment is needed, loosen the bevel lock bolt (6) with a wrench.
 5. Tilt the table slightly, until the combination straight edge is aligned perfectly with the drill bit.
 6. Tighten the bevel lock when square.
- Note: Adjustments for the correct function of your drill press return spring have been done by the factory. Please do not modify them. However, prolonged use of the drill press may make some readjustments

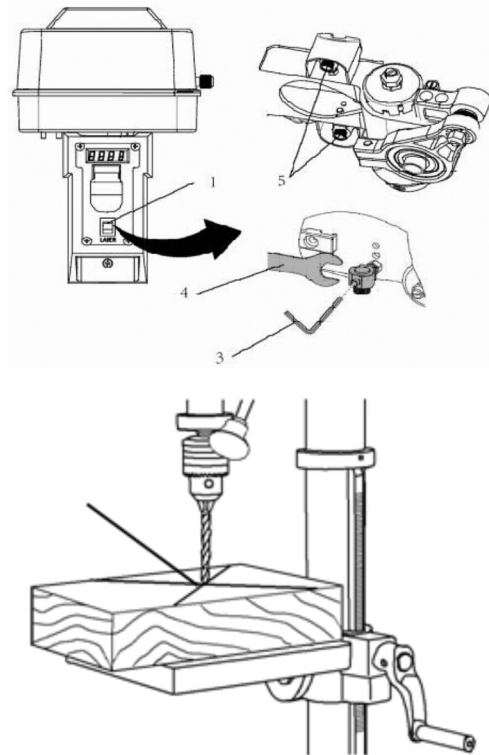


ADJUSTING THE LASER

WARNING: Do not stare directly at the laser beam. Please observe all safety rules.

- Never aim the beam at a person or an object other than the workpiece.
- Do not project the laser beam into the eyes of others.
- Always make sure the laser beam is aimed at a workpiece that does not possess reflective surfaces, as the laser beam could project into your eyes or the eyes of others.

1. Place a workpiece on the table.
2. Turn the laser switch (1) to the ON position.
3. Lower the drill bit to meet the workpiece (2). The two laser lines should cross where the drill meets the workpiece.
4. If the laser needs to be adjusted:
 - a. Using a 3 mm hex key, turn the laser adjustment set screws (3) counter-clockwise.
 - b. Rotate the laser light housing (4) until the two laser lines intersect where the drill meets the workpiece. DO NOT stare directly at the laser lines.
5. Re-tighten the adjustment set screws (3).

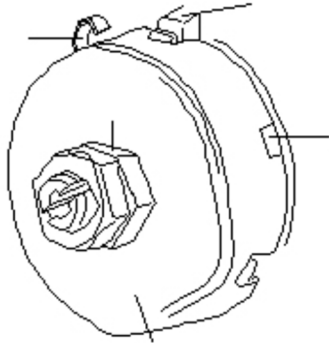


SPINDLE RETURN SPRING

The spindle is equipped with an auto-return mechanism. The main components are a spring and a notched housing. The spring was properly adjusted at the factory and should not be readjusted unless absolutely necessary.

1. Unplug the drill press.
2. Place a screwdriver into the loop (1) to hold the spring in place.
3. Loosen the two housing nuts (2) approximately 1/4" (6 mm). Do not remove the nuts from the threaded shaft. Do not allow the spring or spring housing to slip out of control.
4. While firmly holding the spring housing (3), carefully pull the spring housing out until it clears the raised notch (4).
5. Turn the housing so that the next notch (5) is engaged with the raised notch (4).
 - To increase the spindle return tension, turn the spring housing counter clockwise.
 - To decrease the tension, turn the spring housing clockwise.

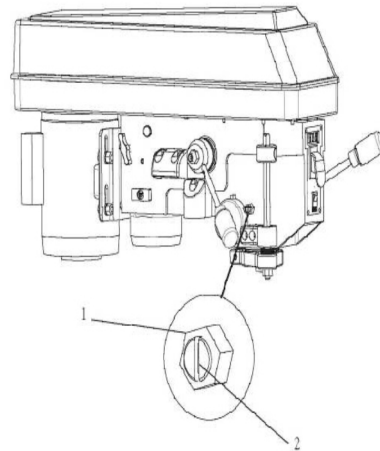
6. Tighten the two housing nuts. Do not overtighten the two nuts. If the nuts are tightened too much, the movement of the spindle and feed handles will become sluggish.



ANGULAR “PLAY” OF THE SPINDLE

Move the spindle to the lowest downward position and hold in place. Try to make the spindle revolve around its axis while also moving it with a side motion. If there is too much “play”, proceed as follows:

1. Loosen the lock nut (1).
2. Without obstructing the upward and downward motion of the spindle, turn the screw (2) clockwise to eliminate the “play.” Note: A little bit of “play” is normal.
3. Tighten the lock nut (1).



REPLACING THE BELT

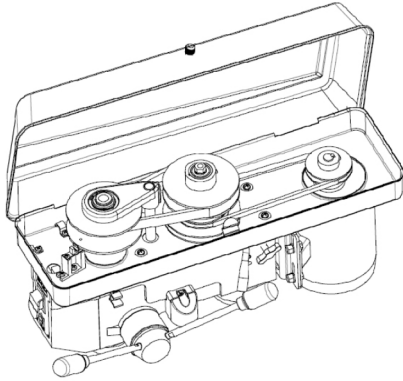
WARNING: Disconnect the drill press from the power source before replacing the belt.

Belt tension and drill press speed is controlled by automatic adjustments made to the diameter of the front spindle when the drive handle is moved.

Note: See page 19 for information on the variable speed function of this drill press.

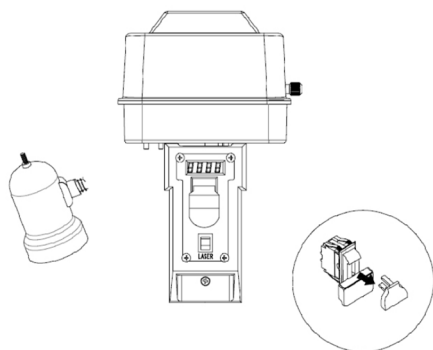
1. Remove the screw that secures the housing cover (1). Open the housing cover.
2. Remove the belt (2) from the housing cover if it is broken. If it is not broken, but is too stretched to operate correctly, work the belt off the drive (motor) spindle (3). Then remove the belt from the front spindle (4).
3. Replace the belt by putting a new belt over the front spindle (4) and carefully sliding the belt over the drive (motor) spindle (3).

WARNING: Do not change the drive speed when the drill press is turned off.



DRILL PRESS ON/OFF SWITCH (Fig 19)

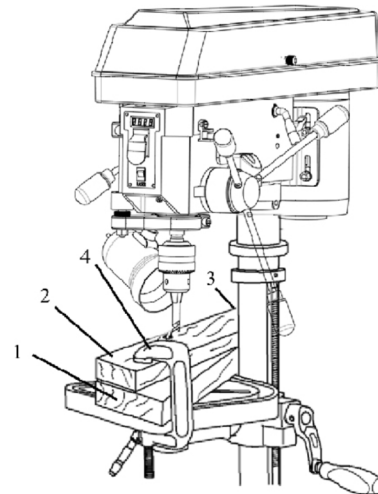
1. To turn the drill press ON, insert the yellow safety key (1) into the switch housing (2). As a safety feature, the switch cannot be turned ON without the safety key.
2. Flip the switch upward to the ON position.
3. To turn the drill press OFF, flip the switch downward.
4. To lock the switch in the OFF position, remove the safety key (1) from the switch. Store the safety key in a safe place.



LIGHT AND LASER LINE ON/OFF SWITCHES (Fig. 20)

The light switch (3) is located on the lamp cover.

The laser switch (4) is located below the ON/OFF switch on the right.

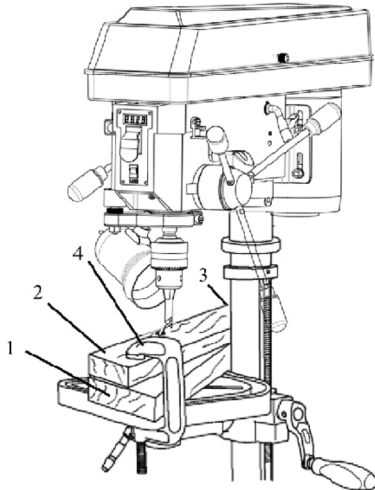


POSITION THE TABLE AND WORKPIECE

Always place a piece of backup material (1) (wood, plywood, etc.) on the table underneath the workpiece (2). This will prevent splintering on the underside of the workpiece as the drill bit breaks through.

To keep the material from spinning out of control, it must contact the left side (3) of the column as illustrated or be clamped (4; not included) to the table.

Note: For small workpieces that cannot be clamped to the table, use a drill press vise (not included). The vise must be clamped or bolted to the table to avoid injury.



GENERAL DRILLING GUIDELINES - DRILLING A HOLE

WARNING: To prevent the workpiece and the backup material from slipping from your hand

while drilling, position the workpiece and backup material to the left side of the column. If the workpiece and the backup material are not long enough to reach the column, clamp the workpiece and backup material to the table. Failure to do this could result in personal injury.

1. Mark where you want to drill in workpiece by using a center punch or a sharp nail or turn ON the laser to mark your drilling point.
2. Before turning the drill press ON, turn the feed handles to bring the drill bit down. Line the drill bit tip up with the mark. Clamp the workpiece in place.
3. Turn ON the drill press and pull down on the feed handles with the appropriate force needed to allow the drill bit to drill the material.

Note: Feeding too slowly might cause the drill bit to turn in the chuck.

Feeding too rapidly

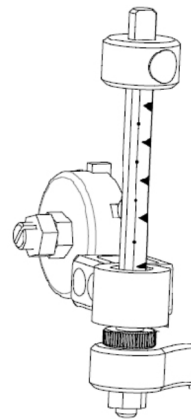
might stop the motor, cause the belt to slip, force the workpiece loose, or break the drill bit. Practice with scrap material to get the feel of the machine before attempting to do any drilling operation.

ADJUST THE DRILLING DEPTH (Fig. 22)

The depth gauge controls the maximum distance the drill bit will move up or down.

To stop the drill bit at a pre-measured depth, loosen the depth scale knob (1) by push button (2) until the bottom of the knob is aligned with the desired depth mark (3) on the gauge scale.

Drilling an unmeasured blind hole (not all the way through the workpiece) to a given depth can be done using either the depth scale method or the workpiece method.



DEPTH SCALE METHOD

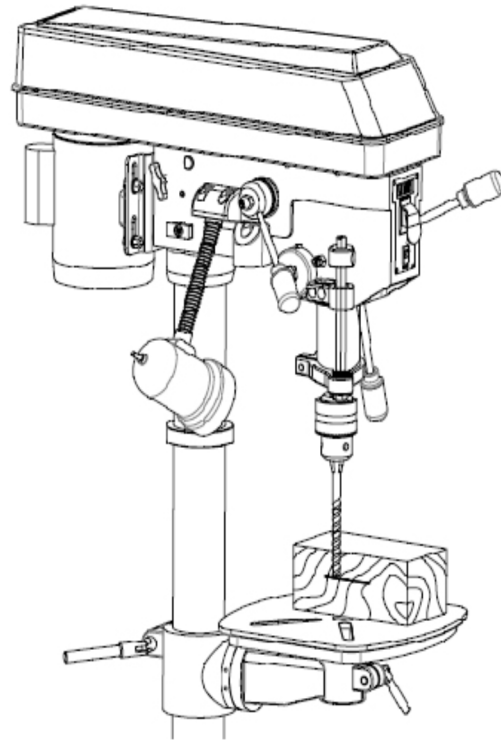
1. Make sure the 0 (" or mm) mark on the depth gauge rests at the top edge of the metal support (4) when the quill is fully retracted.

2. Put the workpiece on the table and raise the table until the tip of the drill bit just touches the top of the workpiece. Lock the table in place.

3. Determine the drill depth for this workpiece.
4. Rotate the depth knob (2) until it is aligned with the desired depth mark (3) (for example, 1") on the gauge scale.
5. The chuck will be stopped at the distance selected on the depth scale.

WORKPIECE METHOD (Fig. 22 and 23)

1. Mark the desired depth (5) of the drill hole on the side of the workpiece.
2. With the drill press in the OFF position, bring the drill bit (6) down until the tip is even with the mark.
3. Holding the feed handles at this position, rotate the depth knob (2) until it meets the metal support.
4. The chuck and the drill bit will now be stopped at the distance selected on the depth scale.



DRILLING SPEEDS

There are a few important factors to keep in mind when determining the best drilling speed:

- Material type
- Hole size
- Drill bit or cutter type
- Quality desired

Smaller drill bits require greater speed than larger drill bits. Softer materials require greater speed than harder materials. See page 19 for recommended speeds for particular materials.

DRILLING METAL

- Use metal-piercing twist drill bits.
- It is always necessary to lubricate the tip of the drill with oil to prevent overheating of the drill bit.
- All metal workpieces should be clamped down securely. Any tilting,

twisting, or shifting causes a rough drill hole, and increases the potential of drill bit breakage.

- Never hold a metal workpiece with your bare hands. The cutting edge of the drill bit may seize the workpiece and throw it, causing serious injury. The drill bit will break if the metal piece suddenly hits the column.
- If the metal is flat, clamp a piece of wood under it to prevent turning. If it cannot be laid flat on the table, then it should be blocked and clamped.

DRILLING WOOD

- Brad point bits are preferred. Metal piercing twist bits may be used on wood.
- Do not use auger bits. Auger bits turn so rapidly that they can lift the workpiece off of the table and whirl it around.
- Always protect the drill bit by positioning the table so that the drill bit will enter the center hole when drilling through the workpiece.
- To prevent splintering, feed the drill bit slowly right as the bit is about to cut through to the backside of the workpiece.
- To reduce splintering and protect the point of the bit, use scrap wood as a backing or a base block under the workpiece.

FEEDING THE DRILL BIT

- Pull down on the feed handles with only enough force to allow the drill bit to cut.

ADJUSTING THE MECHANICAL VARIABLE SPEED RANGE

To adjust the variable speed range from 280-1000 RPM to 1000-3300 RPM, first open the belt cover of the drill press. Loosen the spindles using the Lock Handle located on the right side of the drill press. Slide the belt into either Belt A-1 position or Belt B-2

- Feeding too rapidly might stall the motor, cause the belt to slip, damage the workpiece, or break the drill bit.
- Feeding too slowly will cause the drill bit to heat up and burn the workpiece.

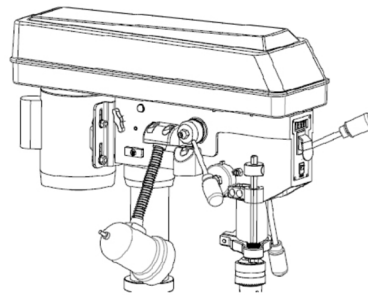
Operations:

MECHANICAL VARIABLE SPEED

This is a mechanical variable speed drill press. To increase or decrease the speed when operating, raise or lower the speed handle (1).



Use the following table to determine the recommended speed for the drill size you are using and the type of material you are to drill. While drilling, check the speed on the digital speed readout (2) located at the front of the drill press.

Warning: Do not change speed using variable speed handle without turning on the machine.



position (seen below in the “Recommended Working Speeds” chart) depending on the RPM range needed. Retighten the spindles using the Lock Handle and then shut the belt cover.

WARNING: Do not manually adjust belt position on the spindles when machine is on.

| Recommended Working Speed | 280-1000 RPM | | 1000-3300 RPM | |
|---------------------------|---|--|---|--|
| |  | |  | |
| Speed Range(RPM) | WOOD Drill bit size (inch) | AL/ZINC/BRASS Drill bit size (inch) | IRON/STEEL Drill bit size (inch) | |
| 2000 - 3100 | 3/8 | 7/32 | 3/32 | |
| 1400 - 2000 | 5/8 | 11/32 | 5/32 | |
| 1000 - 1400 | 7/8 | 15/32 | 1/4 | |
| 800 - 1000 | 1-1/4 | 11/16 | 3/8 | |
| 280 - 800 | 1-5/8 | 3/4 | 5/8 | |

MAINTENANCE

WARNING: For your safety, turn the switch off and remove the plug from the power supply before maintaining or lubricating the drill press. Vacuum sawdust or metal shavings that accumulate in and on the motor, pulley housing, table, and work surface.

Apply a light coat of paste wax to the column and table to help keep these surfaces clean and rust-free.

The ball bearings in the spindle and the V-belt pulley assembly are greased and permanently sealed.

Pull the spindle down and oil the spindle sleeve moderately every three months. Lubricate the table bracket and locking knobs if they become difficult to use.

CAUTION: All servicing of the drill press should be performed by a qualified service technician.

| PROBLEM | CAUSES | SOLUTIONS |
|--|---|--|
| Noisy operation | <ol style="list-style-type: none"> 1) Incorrect belt tension 2) Dry spindle 3) Loosed spindle pulley 4) Loosed motor pulley | <ol style="list-style-type: none"> 1) Adjust the belt tension (See REPLACE THE BELT section) 2) Lubricate the spindle 3) Tighten the retaining nut on the pulley insert 4) Tighten the set screw on the side of the motor pulley |
| The drill bit burns or smokes | <ol style="list-style-type: none"> 1) Drilling at the incorrect speed 2) The wood chips are not coming out of the hole 3) Dull drill bit 4) Feeding the workpiece too slowly 5) Not lubricated | <ol style="list-style-type: none"> 1) Change the speed 2) Retract the drill bit frequently to clear the chips 3) Resharpen or replace the drill bit 4) Feed fast enough to cut the workpiece 5) Lubricate the drill bit with cutting oil or motor oil |
| Excessive drill run out or wobble, drilled hole is not round | <ol style="list-style-type: none"> 1) Bent drill bit 2) Bit improperly installed in the chuck 3) Worn spindle bearings 4) Lengths of cutting flutes or angles not appropriate for the hardness of the wood grain 5) Chuck not properly installed | <ol style="list-style-type: none"> 1) Replace the drill bit 2) Reinstall the bit. 3) Replace the bearing. Take to a qualified service technician 4) Resharpen the drill bit correctly or replace with the appropriate type. 5) Reinstall the chuck. |
| Drill bit binds in the workpiece | <ol style="list-style-type: none"> 1) The workpiece is pinching the bit 2) Excessive feed pressure | <ol style="list-style-type: none"> 1) Support or clamp the workpiece. 2) Feed more slowly. |
| Spindle returns too slowly or too quickly | Coil spring has improper tension | Adjust the coil spring tension |
| Chuck falls off spindle | Dirt, grease, or oil on the tapered surface on the spindle or in the chuck | Clean the tapered surface of both the chuck and spindle with a household detergent. |
| Motor will not run | <ol style="list-style-type: none"> 1) Defective or broken switch 2) Defective or damaged power cord 3) Open circuit, loose connections, or burned-out motor 4) Low voltage | <ol style="list-style-type: none"> 1) Take to a qualified service technician 2) Take to a qualified service technician 3) Take to a qualified service technician 4) Check the power line for the proper voltage. Use another circuit or have a qualified electrician upgrade the service. |
| Motor stalls | <ol style="list-style-type: none"> 1) Short circuit in motor 2) Incorrect fuses or circuit breakers 3) Overloaded circuit 4) Low Voltage | <ol style="list-style-type: none"> 1) Take to a qualified service technician 2) Replace with correct fuse or circuit breaker for the circuit 3) Turn off other machines and retry 4) Check the power line for the proper voltage. Use another circuit or have a qualified electrician upgrade the service. |

