

# 16½" Floor Model Drill Press (Model DP400)



PART NO. 907453 - 04-13-04  
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 **DELTA**<sup>®</sup> *ShopMaster*<sup>™</sup>

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please call **1-800-223-7278** (In Canada call **1-800-463-3582**).

**ESPAÑOL: PÁGINA 21**

# SAFETY GUIDELINES - DEFINITIONS

This manual contains information that is important for you to know and understand. This information relates to protecting YOUR SAFETY and PREVENTING EQUIPMENT PROBLEMS. To help you recognize this information, we use the symbols to the right. Please read the manual and pay attention to these sections.

- ▲ 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.
- CAUTION** Used without the safety alert symbol indicates potentially hazardous situation which, if not avoided, may result in property damage.

**▲ WARNING** **SOME DUST CREATED BY POWER SANDING, SAWING, GRINDING, DRILLING, AND OTHER CONSTRUCTION ACTIVITIES** contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- 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, always wear **MSHA/NIOSH** approved, properly fitting face mask or respirator when using such tools.

## GENERAL SAFETY RULES



**▲ WARNING** **READ AND UNDERSTAND ALL WARNINGS AND OPERATING INSTRUCTIONS BEFORE USING THIS EQUIPMENT.** Failure to follow all instructions listed below, may result in electric shock, fire, and/or serious personal injury or property damage.

### IMPORTANT SAFETY INSTRUCTIONS

Woodworking can be dangerous if safe and proper operating procedures are not followed. As with all machinery, there are certain hazards involved with the operation of the product. Using the machine with respect and caution will considerably lessen the possibility of personal injury. However, if normal safety precautions are overlooked or ignored, personal injury to the operator may result. Safety equipment such as guards, push sticks, hold-downs, featherboards, goggles, dust masks and hearing protection can reduce your potential for injury. But even the best guard won't make up for poor judgment, carelessness or inattention. Always use common sense and exercise caution in the workshop. If a procedure feels dangerous, don't try it. Figure out an alternative procedure that feels safer. **REMEMBER:** Your personal safety is your responsibility. For additional information please visit our website [www.deltamachinery.com](http://www.deltamachinery.com).

**▲ WARNING** This machine was designed for certain applications only. Delta Machinery strongly recommends that this machine not be modified and/or used for any application other than that for which it was designed. If you have any questions relative to a particular application, **DO NOT** use the machine until you have first contacted Delta to determine if it can or should be performed on the product.

**Technical Service Manager**  
**Delta Machinery**  
**4825 Highway 45 North**  
**Jackson, TN 38305**  
**(IN CANADA: 505 SOUTHGATE DRIVE, GUELPH, ONTARIO N1H 6M7)**

# GENERAL SAFETY RULES

**⚠ WARNING FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS INJURY.**

- 1. FOR YOUR OWN SAFETY, READ THE INSTRUCTION MANUAL BEFORE OPERATING THE MACHINE.** Learning the machine's application, limitations, and specific hazards will greatly minimize the possibility of accidents and injury.
- 2. WEAR EYE PROTECTION. ALWAYS USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses are NOT safety glasses. **USE CERTIFIED SAFETY EQUIPMENT.** Eye protection equipment should comply with ANSI Z87.1 standards, hearing equipment should comply with ANSI S3.19 standards, and dust mask protection should comply with MSHA/NIOSH certified respirator standards. Splinters, air-borne debris, and dust can cause irritation, injury, and/or illness.
- 3. WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
- 4. DO NOT USE THE MACHINE IN A DANGEROUS ENVIRONMENT.** The use of power tools in damp or wet locations or in rain can cause shock or electrocution. Keep your work area well-lit to prevent tripping or placing arms, hands, and fingers in danger.
- 5. MAINTAIN ALL TOOLS AND MACHINES IN PEAK CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories. Poorly maintained tools and machines can further damage the tool or machine and/or cause injury.
- 6. CHECK FOR DAMAGED PARTS.** Before using the machine, check for any damaged parts. Check for alignment of moving parts, binding of moving parts, breakage of parts, and any other conditions that may affect its operation. A guard or any other part that is damaged **should be properly repaired or replaced.** Damaged parts can cause further damage to the machine and/or injury.
- 7. KEEP THE WORK AREA CLEAN.** Cluttered areas and benches invite accidents.
- 8. KEEP CHILDREN AND VISITORS AWAY.** Your shop is a potentially dangerous environment. Children and visitors can be injured.
- 9. REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure that the switch is in the "OFF" position before plugging in the power cord. In the event of a power failure, move the switch to the "OFF" position. An accidental start-up can cause injury.
- 10. USE THE GUARDS.** Check to see that all guards are in place, secured, and working correctly to prevent injury.
- 11. REMOVE ADJUSTING KEYS AND WRENCHES BEFORE STARTING THE MACHINE.** Tools, scrap pieces, and other debris can be thrown at high speed, causing injury.
- 12. USE THE RIGHT MACHINE.** Don't force a machine or an attachment to do a job for which it was not designed. Damage to the machine and/or injury may result.
- 13. USE RECOMMENDED ACCESSORIES.** The use of accessories and attachments not recommended by Delta may cause damage to the machine or injury to the user.
- 14. USE THE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. See the Extension Cord Chart for the correct size depending on the cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.
- 15. SECURE THE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. Loss of control of a workpiece can cause injury.
- 16. FEED THE WORKPIECE AGAINST THE DIRECTION OF THE ROTATION OF THE BLADE, CUTTER, OR ABRASIVE SURFACE.** Feeding it from the other direction will cause the workpiece to be thrown out at high speed.
- 17. DON'T FORCE THE WORKPIECE ON THE MACHINE.** Damage to the machine and/or injury may result.
- 18. DON'T OVERREACH.** Loss of balance can make you fall into a working machine, causing injury.
- 19. NEVER STAND ON THE MACHINE.** Injury could occur if the tool tips, or if you accidentally contact the cutting tool.
- 20. NEVER LEAVE THE MACHINE RUNNING UNATTENDED. TURN THE POWER OFF.** Don't leave the machine until it comes to a complete stop. A child or visitor could be injured.
- 21. TURN THE MACHINE "OFF", AND DISCONNECT THE MACHINE FROM THE POWER SOURCE** before installing or removing accessories, before adjusting or changing set-ups, or when making repairs. An accidental start-up can cause injury.
- 22. MAKE YOUR WORKSHOP CHILDPROOF WITH PADLOCKS, MASTER SWITCHES, OR BY REMOVING STARTER KEYS.** The accidental start-up of a machine by a child or visitor could cause injury.
- 23. STAY ALERT, WATCH WHAT YOU ARE DOING, AND USE COMMON SENSE. DO NOT USE THE MACHINE WHEN YOU ARE TIRED OR UNDER THE INFLUENCE OF DRUGS, ALCOHOL, OR MEDICATION.** A moment of inattention while operating power tools may result in injury.
- 24. TAKE PRECAUTIONS AGAINST DUST INHALATION.** The dust generated by certain woods and wood products can be injurious to your health. Always operate machinery in well-ventilated areas, and provide for proper dust removal. Use wood dust collection systems whenever possible.

# ADDITIONAL SAFETY RULES FOR FOR DRILL PRESSES

## ▲ WARNING

FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS INJURY.

1. **DO NOT OPERATE THIS MACHINE** until it is completely assembled and installed according to the instructions. A machine incorrectly assembled can cause serious injury.
2. **OBTAIN ADVICE** from your supervisor, instructor, or another qualified person if you are not thoroughly familiar with the operation of this machine. Knowledge is safety.
3. **FOLLOW ALL WIRING CODES** and recommended electrical connections to prevent shock or electrocution.
4. **SECURE THE MACHINE TO A SUPPORTING SURFACE.** Vibration can cause the machine to slide, walk, or tip over.
5. **NEVER START THE MACHINE BEFORE CLEARING THE TABLE OF ALL OBJECTS** (tools, scrap pieces, etc.). Debris can be thrown at high speed.
6. **NEVER START THE MACHINE** with the drill bit, cutting tool, or sanding drum against the workpiece. Loss of control of the workpiece can cause serious injury.
7. **PROPERLY LOCK THE DRILL BIT, CUTTING TOOL, OR SANDING DRUM IN THE CHUCK** before operating this machine.
8. **REMOVE THE CHUCK KEY BEFORE STARTING THE MACHINE.** The chuck key can be thrown out at a high speed.
9. **TIGHTEN ALL LOCK HANDLES** before starting the machine. Loss of control of the workpiece can cause serious injury.
10. **USE ONLY DRILL BITS, CUTTING TOOLS, SANDING DRUMS, OR OTHER ACCESSORIES** with shank size recommended in your instruction manual. The wrong size accessory can cause damage to the machine and/or serious injury.
11. **USE ONLY DRILL BITS, CUTTING TOOLS, OR SANDING DRUMS** that are not damaged. Damaged items can cause malfunctions that lead to injuries.
12. **USE RECOMMENDED SPEEDS** for all operations. Other speeds may cause the machine to malfunction causing damage to the machine and/or serious injury.
13. **AVOID AWKWARD OPERATIONS AND HAND POSITIONS.** A sudden slip could cause a hand to move into the bit.
14. **KEEP ARMS, HANDS, AND FINGERS** away from the bit. Serious injury to the hand can occur.
15. **HOLD THE WORKPIECE FIRMLY AGAINST THE TABLE.** Do not attempt to drill a workpiece that does not have a flat surface against the table, or that is not secured by a vise. Prevent the workpiece from rotating by clamping it to the table or by securing it against the drill press column. Loss of control of the workpiece can cause serious injury.
16. **TURN THE MACHINE "OFF" AND WAIT FOR THE DRILL BIT, CUTTING TOOL, OR SANDING DRUM TO STOP TURNING** prior to cleaning the work area, removing debris, removing or securing work-piece, or changing the angle of the table. A moving drill bit, cutting tool, or sanding drum can cause serious injury.
17. **PROPERLY SUPPORT LONG OR WIDE** workpieces. Loss of control of the workpiece can cause severe injury.
18. **NEVER PERFORM LAYOUT, ASSEMBLY OR SET-UP WORK** on the table/work area when the machine is running. Serious injury can result.
19. **TURN THE MACHINE "OFF"**, disconnect the machine from the power source, and clean the table/work area before leaving the machine. **LOCK THE SWITCH IN THE "OFF" POSITION** to prevent unauthorized use. Someone else might accidentally start the machine and cause serious injury to themselves.
20. **ADDITIONAL INFORMATION** regarding the safe and proper operation of power tools (i.e. a safety video) is available from the Power Tool Institute, 1300 Sumner Avenue, Cleveland, OH 44115-2851 ([www.powertoolinstitute.com](http://www.powertoolinstitute.com)). Information is also available from the National Safety Council, 1121 Spring Lake Drive, Itasca, IL 60143-3201. Please refer to the American National Standards Institute ANSI O1.1 Safety Requirements for Woodworking Machines and the U.S. Department of Labor OSHA 1910.213 Regulations.

## SAVE THESE INSTRUCTIONS.

Refer to them often  
and use them to instruct others.

# POWER CONNECTIONS

A separate electrical circuit should be used for your machines. This circuit should not be less than #12 wire and should be protected with a 20 Amp time lag fuse. If an extension cord is used, use only 3-wire extension cords which have 3-prong grounding type plugs and matching receptacle which will accept the machine's plug. Before connecting the machine to the power line, make sure the switch is in the "OFF" position and be sure that the electric current is of the same characteristics as indicated on the machine. All line connections should make good contact. Running on low voltage will damage the machine.

**⚠ DANGER DO NOT EXPOSE THE MACHINE TO RAIN OR OPERATE THE MACHINE IN DAMP LOCATIONS.**

# MOTOR SPECIFICATIONS

Your machine is wired for 120 volt, 60 HZ alternating current. Before connecting the machine to the power source, make sure the switch is in the "OFF" position.

# GROUNDING INSTRUCTIONS

**⚠ DANGER THIS MACHINE MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.**

1. All grounded, cord-connected machines:

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This machine is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided - if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

Improper connection of the equipment-grounding conductor can result in risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the machine is properly grounded.

Use only 3-wire extension cords that have 3-prong grounding type plugs and matching 3-conductor receptacles that accept the machine's plug, as shown in Fig. A.

Repair or replace damaged or worn cord immediately.

2. Grounded, cord-connected machines intended for use on a supply circuit having a nominal rating less than 150 volts:

If the machine is intended for use on a circuit that has an outlet that looks like the one illustrated in Fig. A, the machine will have a grounding plug that looks like the plug illustrated in Fig. A. A temporary adapter, which looks like the adapter illustrated in Fig. B, may be used to connect this plug to a matching 2-conductor receptacle as shown in Fig. B if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician. The green-colored rigid ear, lug, and the like, extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box. Whenever the adapter is used, it must be held in place with a metal screw.

**NOTE: In Canada, the use of a temporary adapter is not permitted by the Canadian Electric Code.**

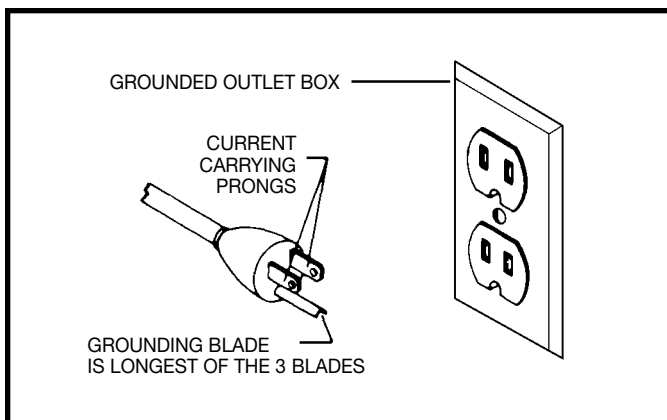


Fig. A

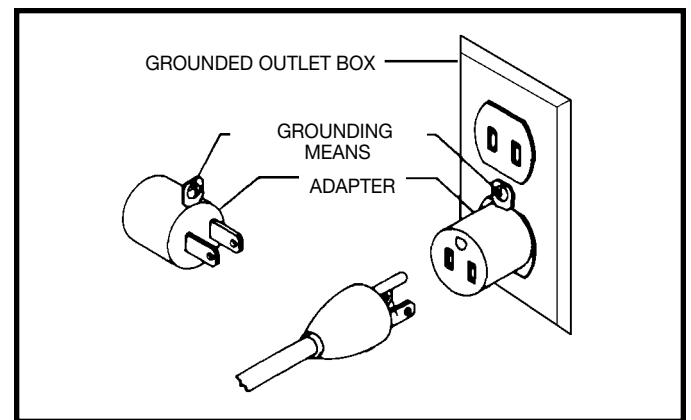


Fig. B

3. Grounded, cord-connected machines intended for use on a supply circuit having a nominal rating between 150 - 250 volts, inclusive:

If the machine is intended for use on a circuit that has an outlet that looks like the one illustrated in Fig. C, the machine will have a grounding plug that looks like the plug illustrated in Fig. C. Make sure the machine is connected to an outlet having the same configuration as the plug. No adapter is available or should be used with this machine. If the machine must be re-connected for use on a different type of electric circuit, the re-connection should be made by qualified service personnel; and after re-connection, the machine should comply with all local codes and ordinances.

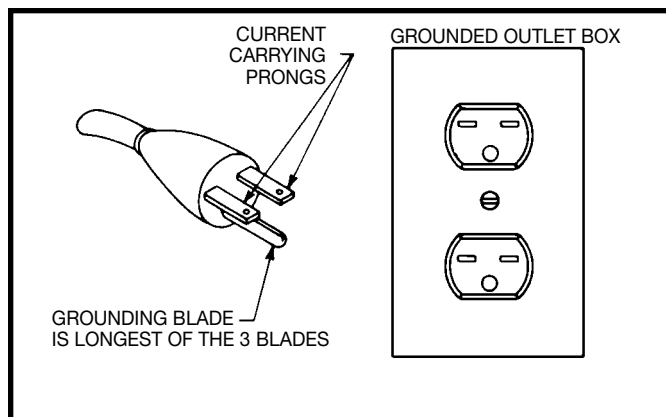


Fig. C

**⚠ DANGER** IN ALL CASES, MAKE CERTAIN THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE HAVE A QUALIFIED ELECTRICIAN CHECK THE RECEPTACLE.

## EXTENSION CORDS

**CAUTION** Use proper extension cords. Make sure your extension cord is in good condition and is a 3-wire extension cord which has a 3-prong grounding type plug and matching receptacle which will accept the machine's plug. When using an extension cord, be sure to use one heavy enough to carry the current of the machine. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. Fig. D-1 or D-2, shows the correct gauge to use depending on the cord length. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

MINIMUM GAUGE EXTENSION CORD			
RECOMMENDED SIZES FOR USE WITH STATIONARY ELECTRIC MACHINES			
Ampere Rating	Volts	Total Length of Cord in Feet	Gauge of Extension Cord
0-6	120	up to 25	18 AWG
0-6	120	25-50	16 AWG
0-6	120	50-100	16 AWG
0-6	120	100-150	14 AWG
6-10	120	up to 25	18 AWG
6-10	120	25-50	16 AWG
6-10	120	50-100	14 AWG
6-10	120	100-150	12 AWG
10-12	120	up to 25	16 AWG
10-12	120	25-50	16 AWG
10-12	120	50-100	14 AWG
10-12	120	100-150	12 AWG
12-16	120	up to 25	14 AWG
12-16	120	25-50	12 AWG
12-16	120	GREATER THAN 50 FEET NOT RECOMMENDED	

Fig. D-1

MINIMUM GAUGE EXTENSION CORD			
RECOMMENDED SIZES FOR USE WITH STATIONARY ELECTRIC MACHINES			
Ampere Rating	Volts	Total Length of Cord in Feet	Gauge of Extension Cord
0-6	240	up to 50	18 AWG
0-6	240	50-100	16 AWG
0-6	240	100-200	16 AWG
0-6	240	200-300	14 AWG
6-10	240	up to 50	18 AWG
6-10	240	50-100	16 AWG
6-10	240	100-200	14 AWG
6-10	240	200-300	12 AWG
10-12	240	up to 50	16 AWG
10-12	240	50-100	16 AWG
10-12	240	100-200	14 AWG
10-12	240	200-300	12 AWG
12-16	240	up to 50	14 AWG
12-16	240	50-100	12 AWG
12-16	240	GREATER THAN 100 FEET NOT RECOMMENDED	

Fig. D-2

## FUNCTIONAL DESCRIPTION

### FOREWORD

Delta ShopMaster DP400 is a 16½" drill press with a 120/240 V, 3/4 H.P. induction motor, a flexible work lamp and a tilting table with c-clamp edges and diagonal slots. The Delta ShopMaster Model DP400 has a 5/8" capacity chuck and a 3 3/8" stroke. There are 12 speed options, ranging from 250 rpm to 3000 rpm for optimum drilling performance in a variety of materials.

# UNPACKING AND CLEANING

Carefully unpack the machine and all loose items from the shipping container(s). Remove the protective coating from all unpainted surfaces. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose). After cleaning, cover the unpainted surfaces with a good quality household floor paste wax.

**NOTICE: THE MANUAL COVER PHOTO ILLUSTRATES THE CURRENT PRODUCTION MODEL. ALL OTHER ILLUSTRATIONS ARE REPRESENTATIVE ONLY AND MAY NOT DEPICT THE ACTUAL COLOR, LABELING OR ACCESSORIES AND MAY BE INTENDED TO ILLUSTRATE TECHNIQUE ONLY.**

## DRILL PRESS PARTS

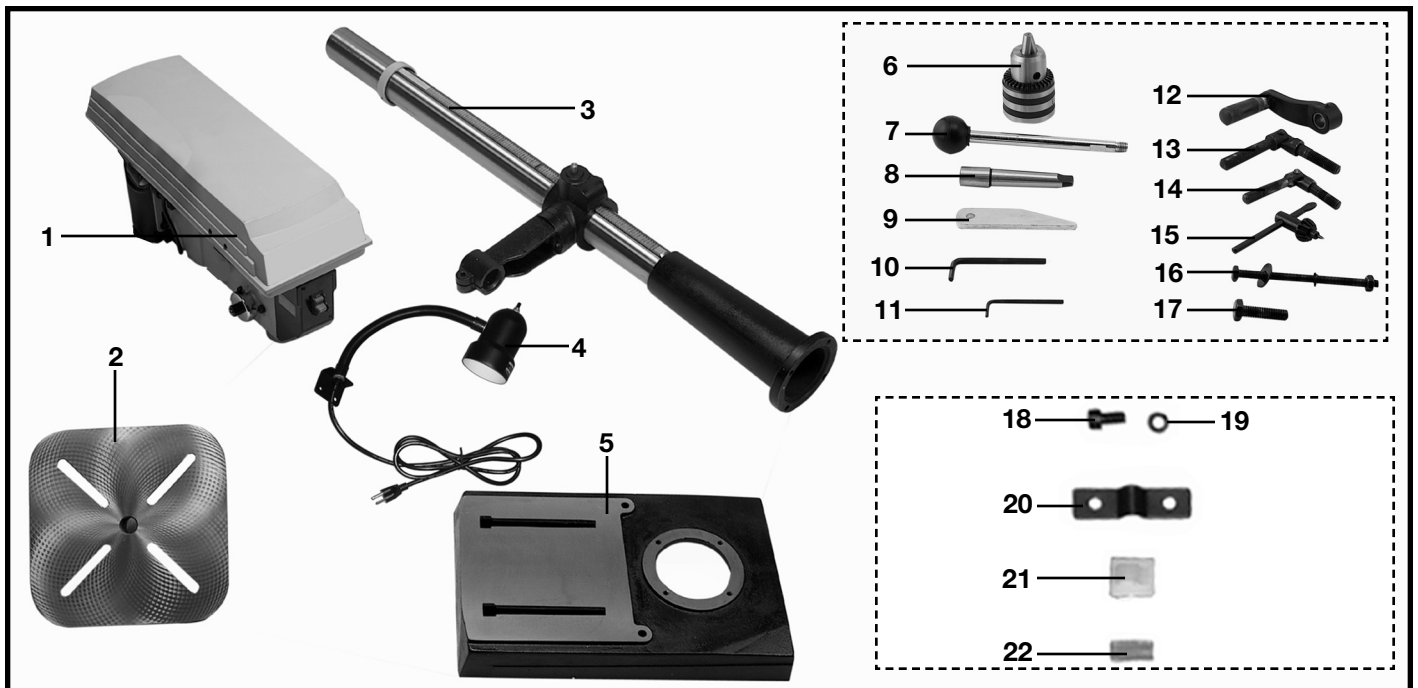


Fig. 2

- |                                       |   |
|---------------------------------------|---|
| 1. Drill Press Head                   | 13. Table Raising and Lowering Lock Lever   |
| 2. Table                              | 14. Table Lock Lever  |
| 3. Table Bracket and Column           | 15. Chuck Key   |
| 4. Light                              | 16. M8x1.25x125mm carriage head screw, flat washer, lockwasher, and hex nut (2 ea.) (for fastening drill press to a supporting surface) |
| 5. Base                               | 17. M10x1.5x40mm Hex Head Screws (4)  |
| 6. Chuck                              | 18. M6x1x12mm Hex Cap Head Screw (2)  |
| 7. Handle (3)                         | 19. 1/4" Washer   |
| 8. Spindle Adapter                    | 20. Cord Strain Relief  |
| 9. Spindle Adapter Remover            | 21. Cord Clamp (2)  |
| 10. 5mm Hex Wrench                    | 22. Cord Bushing  |
| 11. 3mm Hex Wrench                    |   |
| 12. Table Raising and Lowering Handle |   |

# ASSEMBLY

**⚠ WARNING** FOR YOUR OWN SAFETY, DO NOT CONNECT THE MACHINE TO THE POWER SOURCE UNTIL THE MACHINE IS COMPLETELY ASSEMBLED AND YOU READ AND UNDERSTAND THE ENTIRE INSTRUCTION MANUAL.

1. If your drill press is to be used in a permanent location, the drill press base must be secured to the supporting surface with fasteners through the two mounting holes, (A) Fig. 3, in the drill press base.

**⚠ WARNING** IF YOU DO NOT FASTEN YOUR DRILL PRESS IN A PERMANENT MANNER, THE DRILL PRESS MUST BE FASTENED TO A PLYWOOD MOUNTING BOARD TO PREVENT THE DRILL PRESS FROM TIPPING OVER DURING NORMAL USE.

**⚠ WARNING** USE A GOOD GRADE OF PLYWOOD WITH A MINIMUM 3/4" THICKNESS. DO NOT MAKE THE MOUNTING BOARD FROM PARTICLE BOARD SINCE PARTICLE BOARD BREAKS EASILY.

2. Use a plywood board base, with the minimum dimensions as shown in Fig. 4 for mounting the drill press base to a supporting surface.

3. Place the drill press base (D) Fig. 5, centered on the supporting surface (E).

**⚠ WARNING** MAKE SURE THERE IS AT LEAST 3" ON ALL FOUR SIDES OF THE BASE AS SHOWN IN FIG. 5.

4. Drill two 3/8" diameter holes through the holes (A) Fig. 3 in the drill press base, and in the supporting surface (E) Fig. 5.

**CAUTION** PLACE A PIECE OF SCRAP WOOD UNDERNEATH THE SUPPORTING SURFACE WHEN DRILLING THE THROUGH HOLES SO THAT THE DRILL BIT WILL NOT DAMAGE THE MATERIAL BENEATH THE SUPPORTING SURFACE.

5. Fasten the drill press base to the mounting board using the carriage bolts, flat washers, lockwashers, and hex nuts (C) Fig. 4, furnished with your drill press. The holes for the carriage bolt heads must be countersunk so that the bolt heads are flush or below the bottom surface of the mounting board.

**⚠ WARNING** THE PLYWOOD BASE MUST BE SECURED TO THE FLOOR OR SUPPORTING SURFACE IF THERE IS ANY TENDENCY OF THE DRILL PRESS TO VIBRATE, SLIDE OR WALK DURING NORMAL OPERATION.

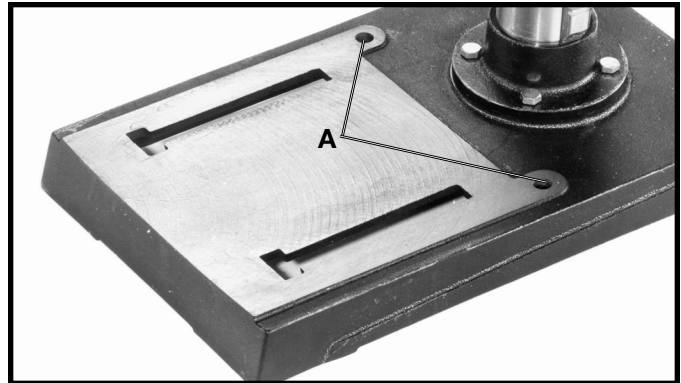


Fig. 3

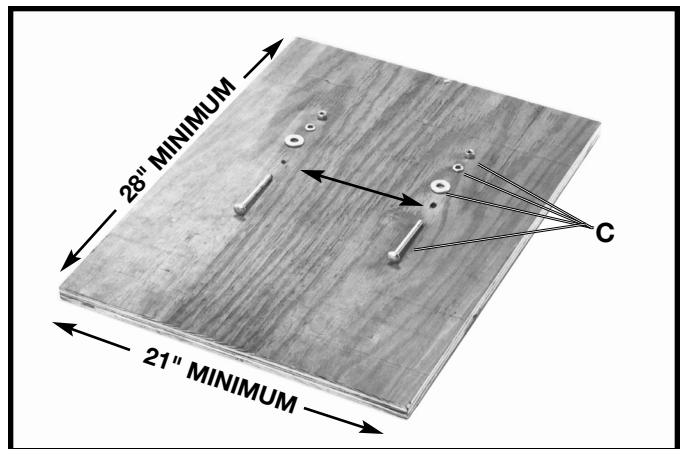


Fig. 4

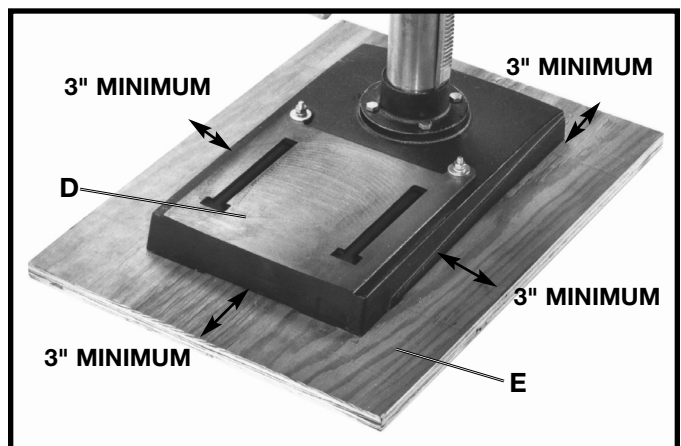


Fig. 5



6. Assemble the column (A) Fig. 6, to the base (B) using the four M10x40mm hex head screws (C), three of which are shown.

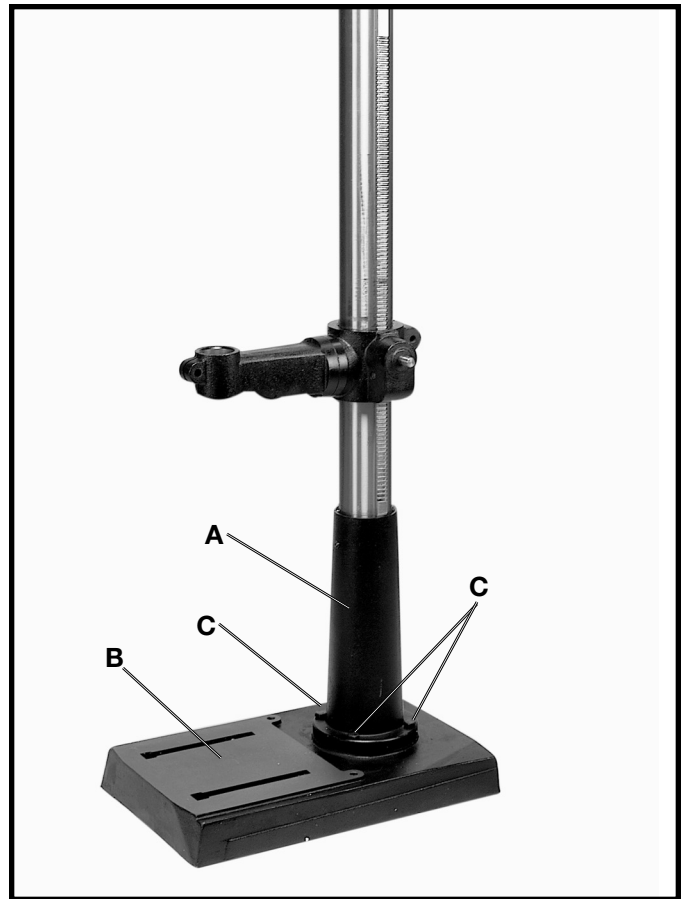


Fig. 6

7. Assemble table raising and lowering handle (D) Fig. 7, to worm gear shaft (E) and tighten screw (F) against flat on shaft with 3mm wrench supplied.

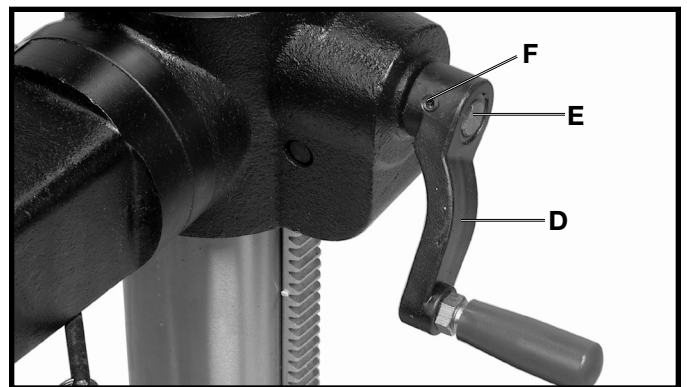


Fig. 7

8. Thread table clamp handle (G) Fig. 8, into hole in rear of table bracket, as shown.



Fig. 8

9. Insert table (H) Fig. 9, into hole in table bracket as shown.

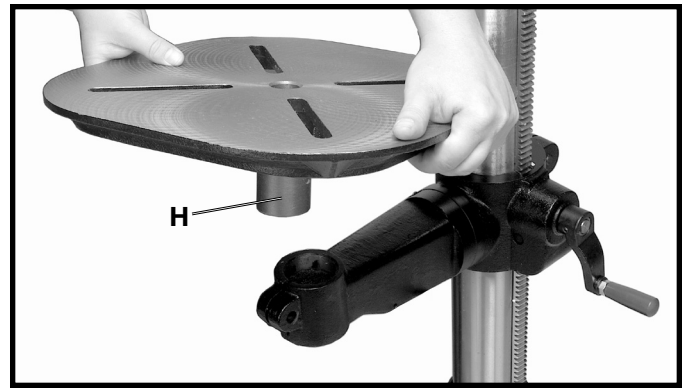


Fig. 9

10. Thread table locking lever (J) Fig. 10, into hole in front of table bracket as shown.

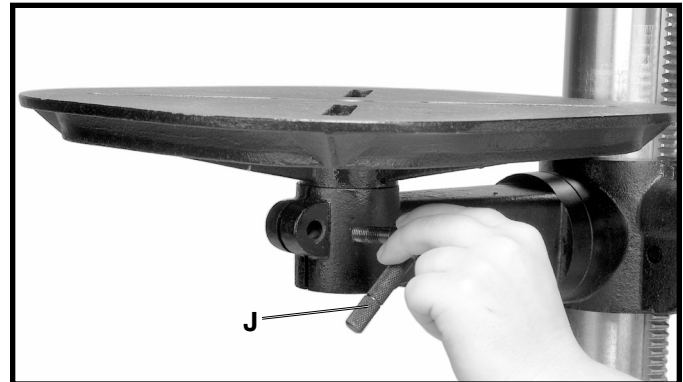


Fig. 10

11. Place the drill press head (K) Fig. 11, onto the column as far as it will go. Align head (K) Fig. 12, with table (L) Fig. 12, and base (M) Fig. 12, and tighten the two head locking screws (N) Fig. 11 with the 5mm wrench supplied.



Fig. 11

12. **IMPORTANT:** Make certain the tapered hole in the bottom of spindle (T) Fig. 13, and the taper on spindle adapter (U) are clean and free of any grease, lacquer or rust preventive coatings. **NOTE:** If necessary, household oven cleaner can effectively remove these coatings from the spindle and spindle adapter; however, carefully follow the manufacturer's safety rules regarding its use.

13. Push spindle adapter (U) Fig. 13, up into spindle (T) making certain the tang (V) engages the mating slot inside spindle (T).

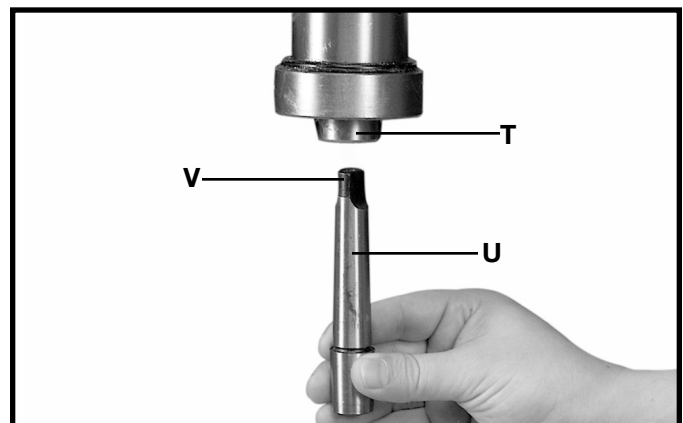


Fig. 13

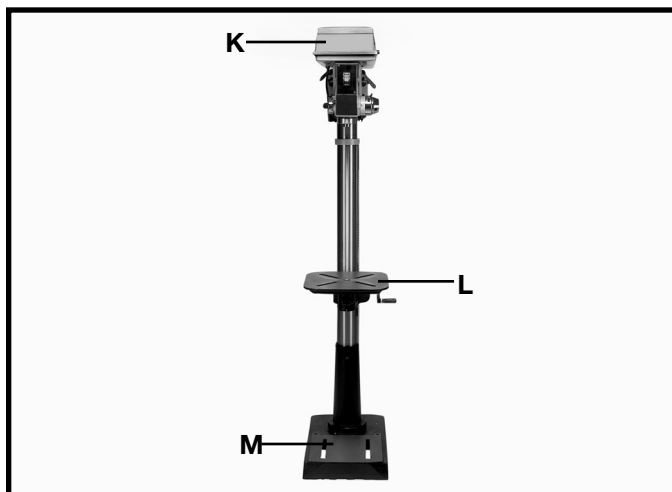


Fig. 12

14. **IMPORTANT:** Make certain the spindle taper (O) Fig. 14, and tapered hole in chuck (P) are clean and free of any grease, lacquer or rust preventive coatings. **NOTE:** Household oven cleaner can effectively remove any substance from the chuck; however, carefully follow the manufacturer's safety rules concerning its use.

15. **IMPORTANT: OPEN THE CHUCK JAWS AS WIDE AS POSSIBLE MAKING SURE THE CHUCK JAWS ARE INSIDE THE CHUCK.**

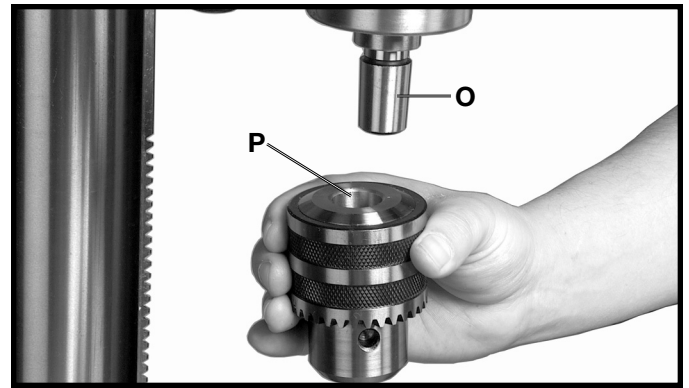


Fig. 14

16. Holding chuck on taper of spindle, tap with a soft tip hammer (Q) or a block of wood and hammer to set chuck, as shown in Fig. 15.

**CAUTION** To avoid damage to the chuck, **NEVER** drive the chuck onto the spindle with a metal hammer.

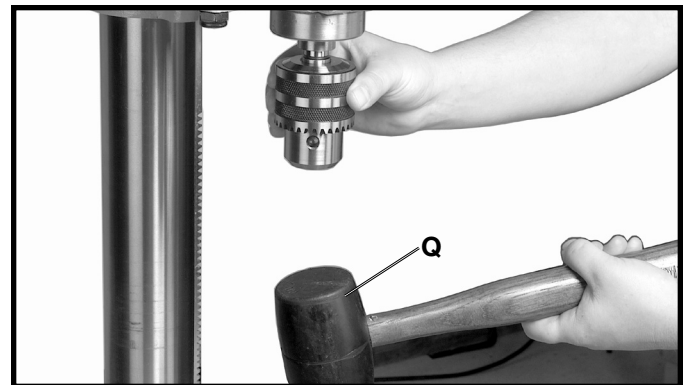


Fig. 15

17. Thread the three pinion shaft handles (R) into the three holes located in the pinion shaft hub (S), as shown in Fig. 16.

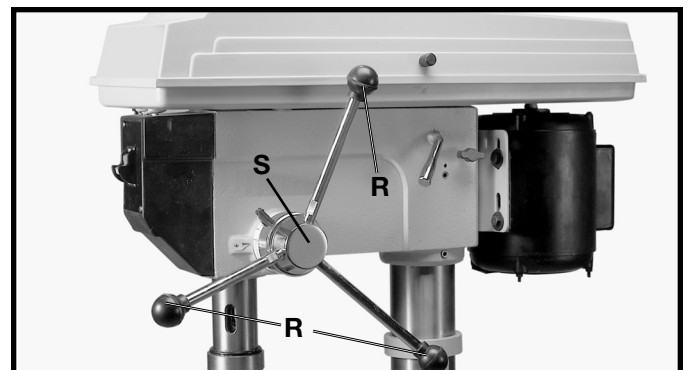


Fig. 16

18. Align the two holes in the lamp bracket (A) Fig. 17, with the two holes (B) on the side of the drill press head.

19. Place the cord bushing (C) Fig. 17, around the top of the lamp cord (D).

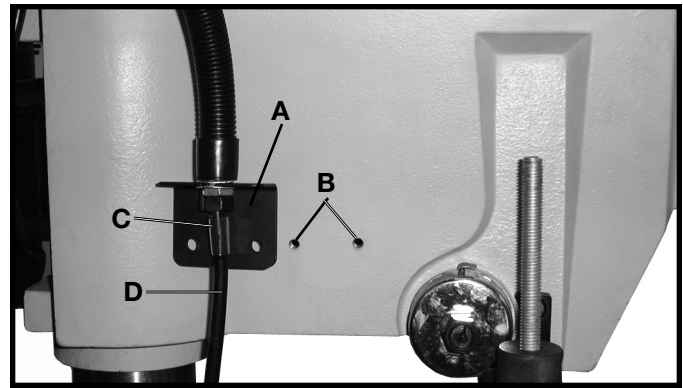


Fig. 17

20. Align the two holes in the lamp cord bracket (F) Fig. 18 with the two holes in the lamp bracket (A) and drill press head.

21. Place a 1/4" washer onto a M6x1x12mm cap head screw. Insert the screw (G) Fig. 18 through the hole in the cord strain relief bracket and the lamp bracket and thread the screw into the drill press head. Repeat this process for the remaining hole in the cord strain relief bracket and tighten both screws securely.

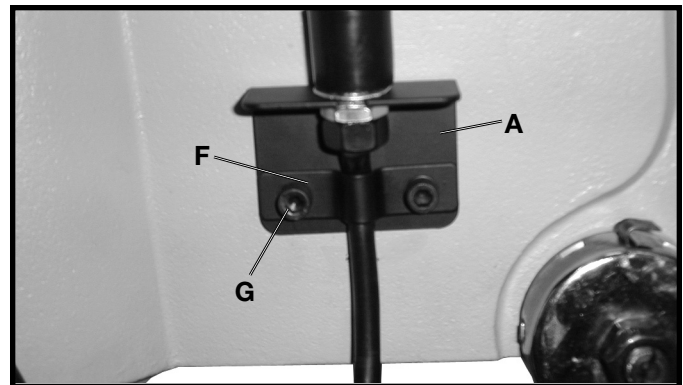


Fig. 18

22. Peel backing from cord clamp (H) Fig. 19, and apply clamp at the location shown. Make certain the lamp cord is routed out of the way of the drill, then secure cord (J) to cord clamp (H) as shown in Fig. 19.

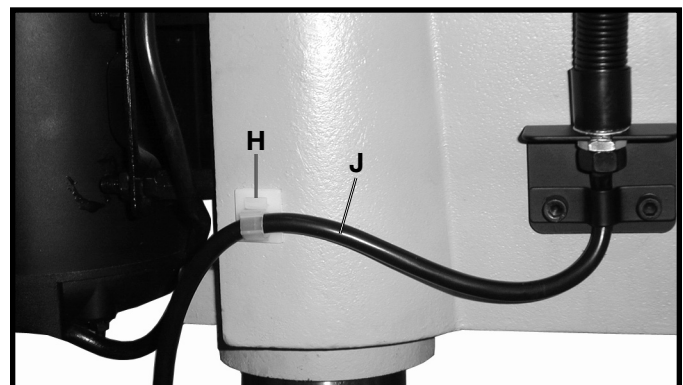


Fig. 19

# OPERATING CONTROLS AND ADJUSTMENTS

## STARTING AND STOPPING DRILL PRESS

The switch (A) Fig. 20, is located on the front of the drill press head. To turn the drill press “ON” move the switch up to the “ON” position. To turn the drill press “OFF” move the switch down to the “OFF” position.

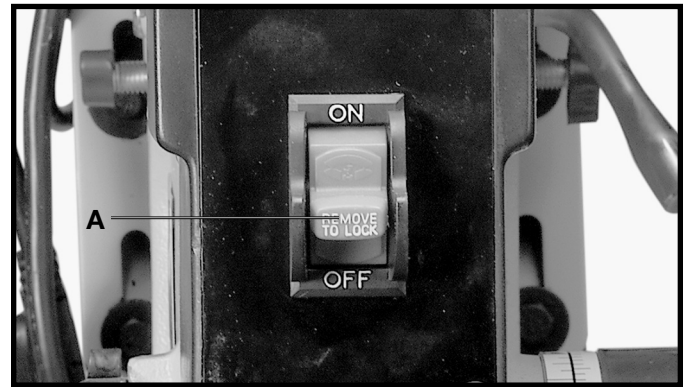


Fig. 20

## LOCKING SWITCH IN THE “OFF” POSITION

**IMPORTANT:** When the machine is not in use, the switch should be locked in the “OFF” position to prevent unauthorized use. This can be done by grasping the switch toggle (B) and pulling it out of the switch, as shown in Fig. 21. With the switch toggle (B) removed, the switch will not operate. However, should the switch toggle be removed while the drill press is operating, the switch can be turned “OFF” once, but cannot be restarted without inserting the switch toggle (B).

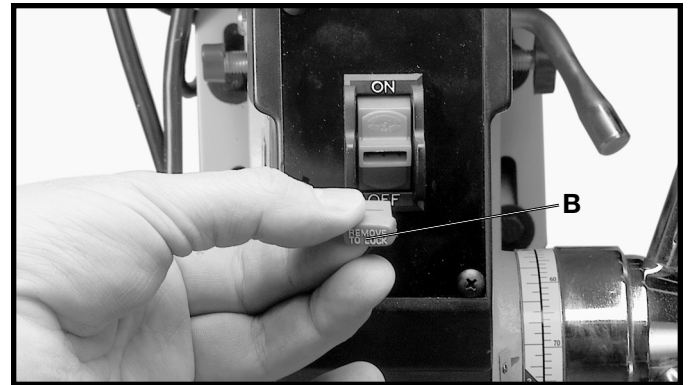


Fig. 21

## FLEXIBLE LAMP

The flexible lamp operates independently of the drill press. To turn the lamp “ON” and “OFF”, rotate switch (A) Fig. 22.

**⚠ WARNING** To reduce the risk of fire, use 40 watt or less, 120 volt, reflector track type light bulb (not supplied). A standard household light bulb should not be used. The reflector track type light bulb should not extend below the lamp shade.

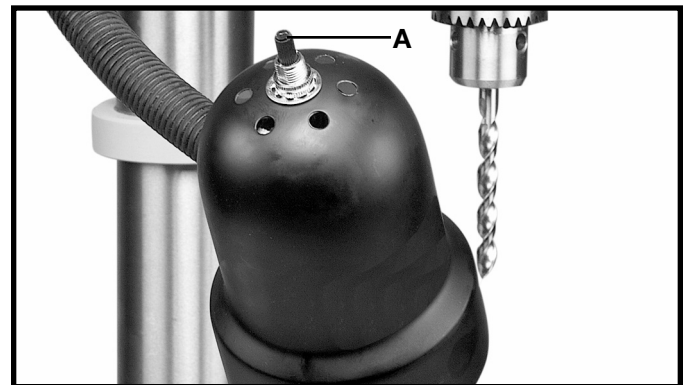


Fig. 22

## TABLE ADJUSTMENTS

1. The table can be raised or lowered on the drill press column by loosening the table clamp (A) Fig. 23, and turning the table raising and lowering handle (B). After the table is at the desired height, tighten clamp (A) Fig. 23. **NOTE:** Final positioning of the drill press table should always be from the bottom to the top position.

2. The table can be rotated 360 degrees by loosening clamp (H) Fig. 23, rotate table to desired position and tighten clamp (H).

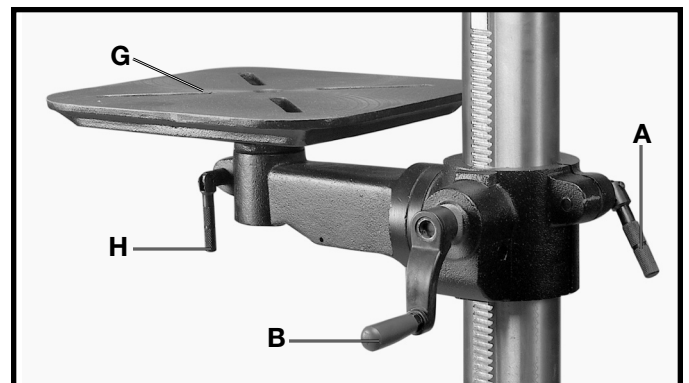


Fig. 23

3. The table can be tilted right or left by pulling out and removing table alignment pin (C) Fig. 24. **NOTE:** If pin (C) is difficult to remove, turn nut (E) clockwise to pull pin out of casting.

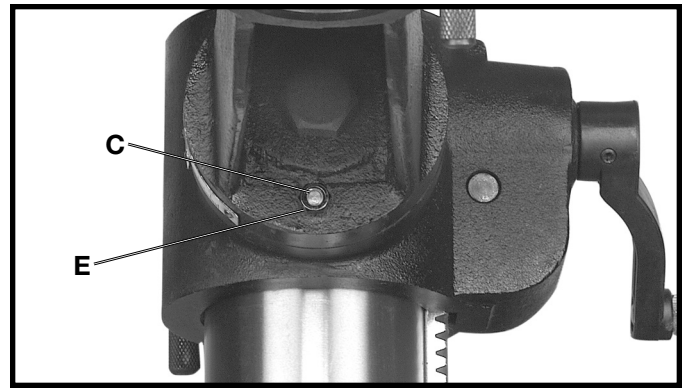


Fig. 24

4. Fig. 25, illustrates the table alignment pin (C) removed. Loosen table locking bolt (D), tilt table to the desired angle and tighten bolt (D). When returning table to the level position, replace table alignment pin (C). This will position the table surface at 90 degrees to the spindle.

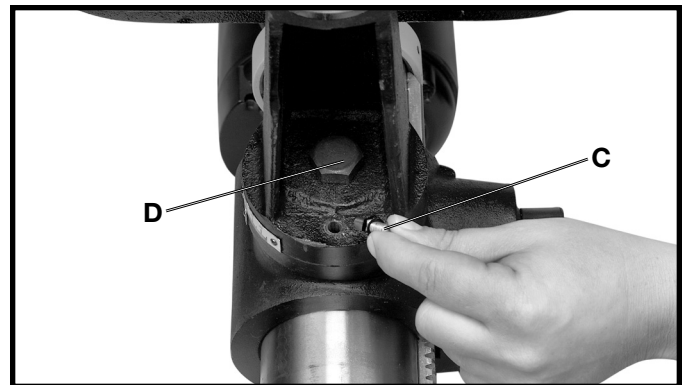


Fig. 25

5. A tilt scale (E) Fig. 26, is provided on the table bracket casting to indicate the degree of tilt. A witness line and zero mark (F) are also provided on the table to line up with the scale (E).

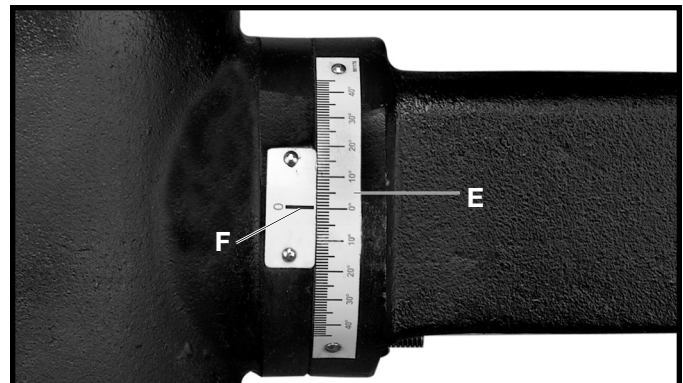


Fig. 26

# SPINDLE SPEEDS

Twelve spindle speeds are available on the drill press. Fig. 27, illustrates which steps of the pulleys the belts must be placed to obtain the twelve speeds available.

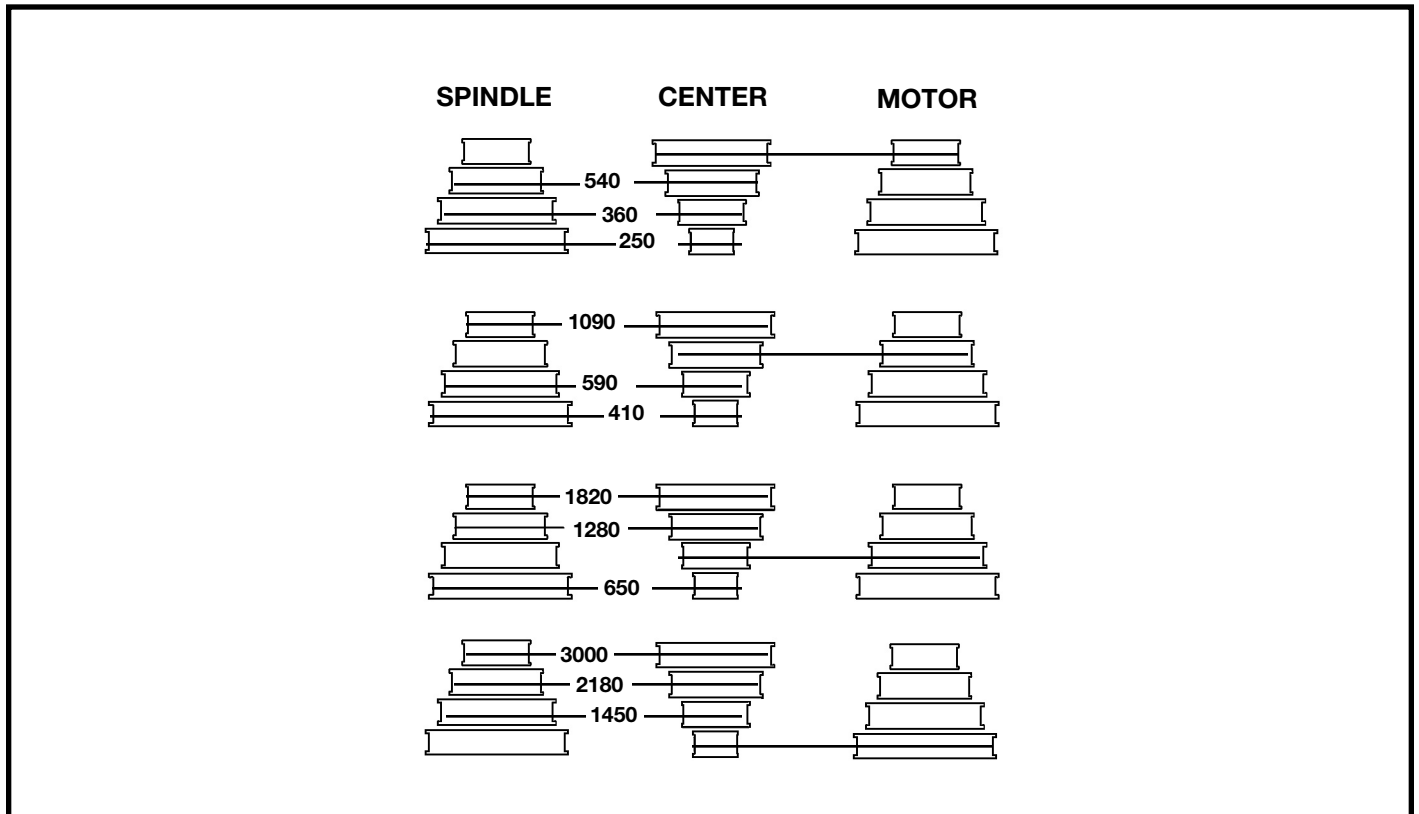


Fig. 27

## CHANGING SPEEDS AND ADJUSTING BELT TENSION

**NOTE:** A BELT POSITIONING SPEED CHART (E) FIG. 28, IS LOCATED ON THE INSIDE TOP COVER OF THE DRILL PRESS.

**⚠ WARNING** DISCONNECT MACHINE FROM POWER SOURCE.

1. Lift up the belt and pulley guard (A) Fig. 28.
2. Release belt tension by loosening tension lock knob (B) Fig. 28, and the tension knob located on the other side of the head casting and moving tension lever (C) forward, pivoting the motor (D) toward the front of the drill press.
3. While holding the motor toward the front of the drill press, position the belts (F) on the desired steps of the motor and spindle pulleys, as shown in Figs. 27 & 28.
4. After the belts are positioned on the desired steps of the motor and spindle pulleys, move motor (D) Fig. 28, to the rear until the belt is properly tensioned and tighten tension lock knob (B). The belt should be just tight enough to prevent slipping. Excessive tension will reduce the life of the belt, pulleys and bearings. Correct tension is obtained when the belts (F) can be flexed about 1" out of line midway between the pulleys.

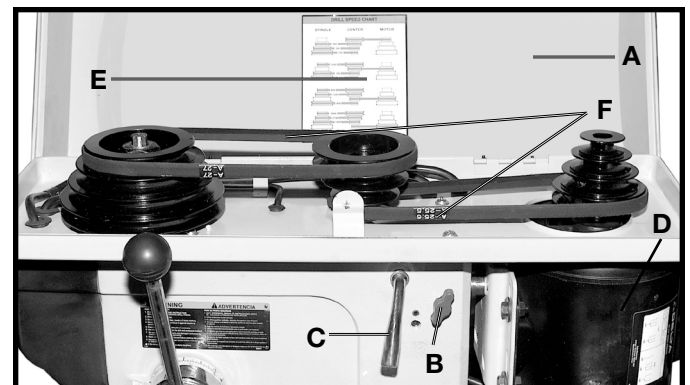


Fig. 28

# DRILLING HOLES TO DEPTH

Where a number of holes are to be drilled to exactly the same depth, a depth stop is provided and is used as follows:

**⚠ WARNING** DISCONNECT MACHINE FROM POWER SOURCE.

1. Install bit in chuck.
2. Loosen lock screw (A) Fig. 29, and rotate pinion assembly (B) until the pointer (C) lines up with the mark on the scale (D) you wish the depth of the holes to be drilled. Then tighten lock screw (A).
3. Place the material to be drilled on the drill press table. Raise the drill press table until the material to be drilled just touches the drill bit.
4. Drill a test hole to check the depth and adjust if necessary. All holes will then be drilled to the exact depth as indicated on scale (D) Fig. 29. **NOTE:** Scale (D) is calibrated in both inches and millimeters.

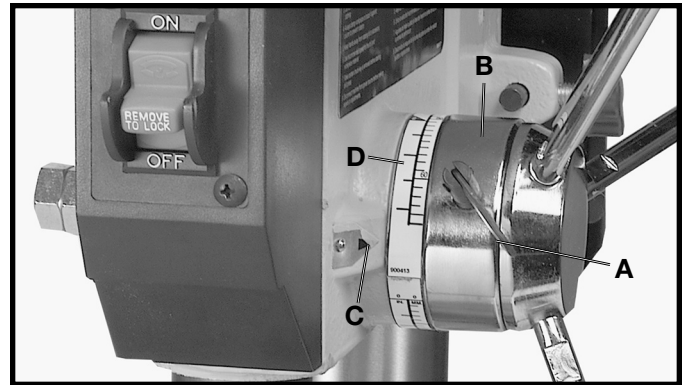


Fig. 29

# ADJUSTING SPINDLE RETURN SPRING

The spindle is automatically returned to its upper most position when the handle is released. It is recommended that the handle be allowed to slowly return to the top position after each hole has been drilled. This spring has been properly adjusted at the factory and should not be disturbed unless absolutely necessary. To adjust the return spring, proceed as follows:

**⚠ WARNING** DISCONNECT MACHINE FROM POWER SOURCE.

1. Loosen nuts (B) and (E) Fig. 30. Make sure spring housing (A) stays engaged with head casting.
2. While **FIRMLY HOLDING** spring housing (A) Fig. 31 pull out housing and rotate it until boss (D) is engaged with the next notch in the housing. Turn the housing counterclockwise to increase or clockwise to decrease spring tension. Turn nut (E) until it contacts spring housing (A), then back nut (E) out a 1/4 turn from spring housing (A). Tighten nut (B) against nut (E), to hold the housing in place. **IMPORTANT: Inside nut (E) should not contact spring housing (A) when tightened.**

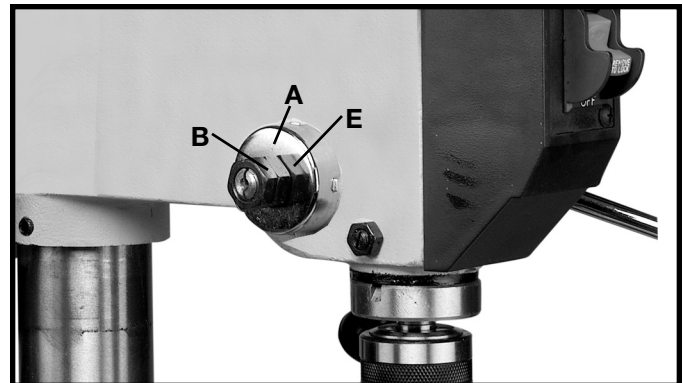


Fig. 30

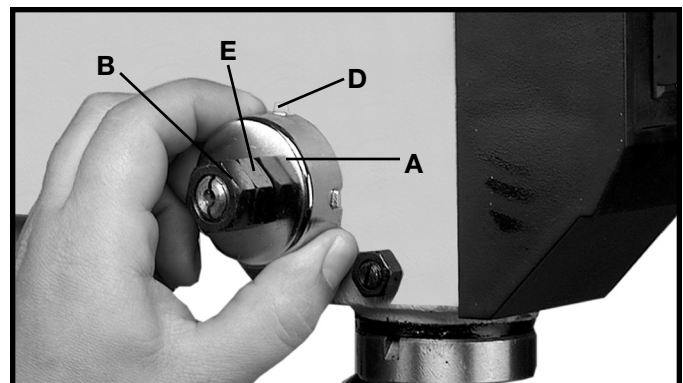


Fig. 31



# OPERATIONS

Your drill press is to be used with drill bits with a shank of 5/8" or less in diameter. The following will give the inexperienced operator a start on common drill press operations. Use scrap material for practice to get a feel of the machine before attempting regular work.

**⚠ WARNING** The use of accessories and attachments not recommended by Delta may result in risk of injury.

**IMPORTANT:** When the workpiece is long enough it should always be positioned on the table with one end against the left side of the column, as shown in Fig. 32. This prevents the workpiece from rotating with the drill bit or cutting tool, causing damage to the workpiece or injury to the operator. If it is not possible to support the workpiece against the column, the workpiece should always be fastened to the table using clamps or a vise.

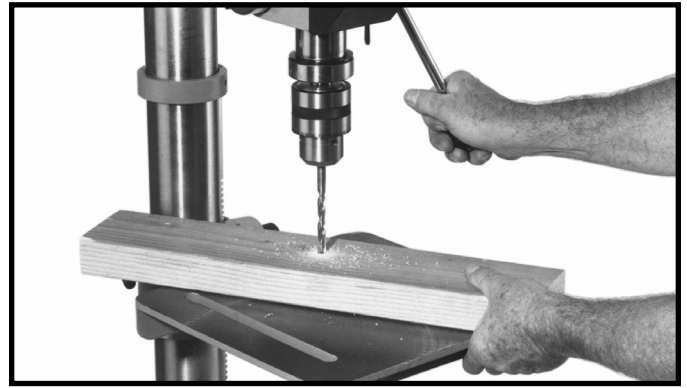


Fig. 32

## INSTALLING AND REMOVING DRILL BITS

**⚠ WARNING** DISCONNECT MACHINE FROM POWER SOURCE.

1. Insert smooth end of drill bit (A) Fig. 33, into chuck (B), as far as it will go, and then back the bit out 1/16", or up to the flutes for small bits.
2. Make certain that the drill bit (A) Fig. 33, is centered in the chuck (B) before tightening the chuck with the key (C).
3. Turn the chuck key (C) Fig. 33, clockwise to tighten and counterclockwise to loosen the chuck jaws.
4. Tighten all three chuck jaws to secure the drill bit sufficiently so that it does not slip while drilling.
5. **⚠ CAUTION MAKE SURE** chuck key (C) Fig. 33, is removed from chuck before starting drill press. Your chuck key (C) is equipped with a self-ejecting pin (D) which helps minimize the hazard of the key being left in the chuck.

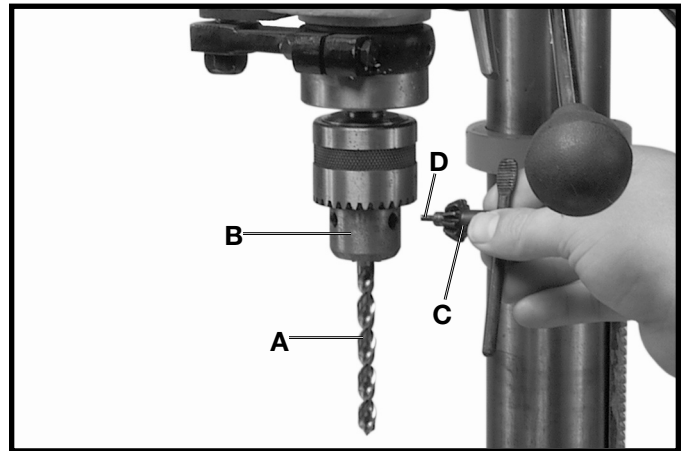


Fig. 33

## CORRECT DRILLING SPEEDS

Factors which determine the best speed to use are: kind of material being worked, size of hole, type of drill or other cutter, and quality of cut desired.

**⚠ WARNING** Use the recommended speed for the drill press bit and workpiece material.

## BORING IN WOOD

Twist drills, although intended for metal drilling, may also be used for boring holes in wood. However, machine spur bits are generally preferred for working in wood; they cut a flat bottom hole and are designed for removal of wood chips. Do not use hand bits which have a screw tip; at drill press speeds they turn into the wood so rapidly as to lift the work off the table and whirl it.

For through boring, line up the table so that the bit will enter the center hole to avoid damage to the table. Scribe a vertical line on the front of the column and a matching mark on the table bracket and the drill press head, so that the table and drill press head can be clamped in the center position at any height.

Feed slowly when the bit is about to cut through the wood to prevent splintering the bottom face. Use a scrap piece of wood as a base block under the work; this helps to reduce splintering and protects the point of the bit.

## DRILLING METAL

Use clamps to hold the work when drilling metal. The work should never be held in the bare hand; the drill bit may seize the work at any time, especially when breaking through the stock. If the piece is whirled out of the operator's hand, the operator may be injured. The drill bit will be broken if the work strikes the column.

The work must be clamped firmly while drilling; any tilting, twisting or shifting results not only in a rough hole, but also increases drill bit breakage. For flat work, lay the piece on a wooden base and clamp it firmly down against the table to prevent it from turning. If the piece is of irregular shape and cannot be laid flat on the table, it should be securely blocked and clamped.

## MAINTENANCE

### REMOVING SPINDLE ADAPTER

The spindle adapter and chuck can be removed for the purpose of using shanks with a #2 morse taper.

**⚠ WARNING DISCONNECT MACHINE FROM POWER SOURCE.**

1. Align the slot in the quill (A) Fig. 34, with the slot in the spindle (B).

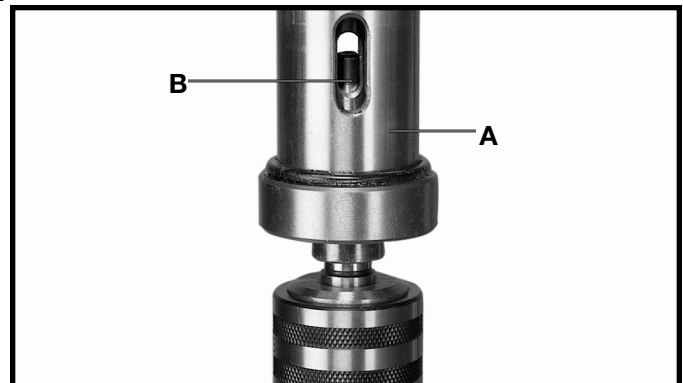


Fig. 34

2. Insert the spindle adapter remover (C) Fig. 35, through the slot in the quill and the slot in the spindle.

3. Tap the spindle adapter remover (C) Fig. 35, with a hammer until the the spindle adapter and chuck fall out from the quill.

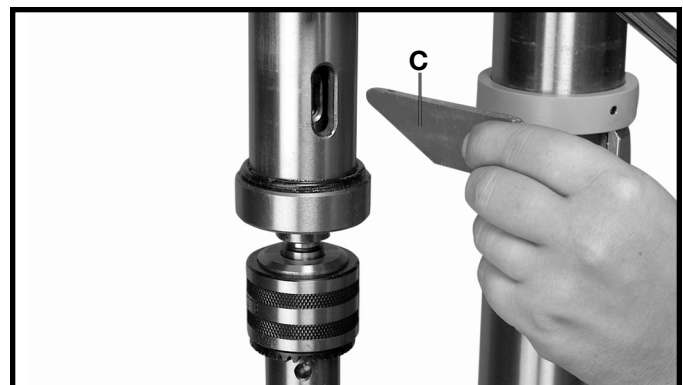


Fig. 35

# NOTES

# ACCESSORIES

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