

20" Drill Press

(Model 70-200)



PART NO. 900615 (0012)
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ESPAÑOL: PÁGINA 17

SAFETY RULES

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.

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
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Jackson, TN 38305

(IN CANADA: 505 SOUTHGATE DRIVE, GUELPH, ONTARIO N1H 6M7)



WARNING: FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL INJURY

1. **FOR YOUR OWN SAFETY, READ INSTRUCTION MANUAL BEFORE OPERATING THE TOOL.** Learn the tool's application and limitations as well as the specific hazards peculiar to it.

2. **KEEP GUARDS IN PLACE** and in working order.

3. **ALWAYS WEAR EYE PROTECTION.**

4. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from tool before turning it "on".

5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.

6. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well-lighted.

7. **KEEP CHILDREN AND VISITORS AWAY.** All children and visitors should be kept a safe distance from work area.

8. **MAKE WORKSHOP CHILDPROOF** – with padlocks, master switches, or by removing starter keys.

9. **DON'T FORCE TOOL.** It will do the job better and be safer at the rate for which it was designed.

10. **USE RIGHT TOOL.** Don't force tool or attachment to do a job for which it was not designed.

11. **WEAR PROPER APPAREL.** No loose clothing, gloves, neckties, rings, bracelets, or other jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

12. **ALWAYS USE SAFETY GLASSES.** Wear safety glasses. Everyday eyeglasses only have impact resistant lenses; they are not safety glasses. Also use face or dust mask if cutting operation is dusty. These safety glasses must conform to ANSI Z87.1 requirements. Note: Approved glasses have Z87 printed or stamped on them.

13. **SECURE WORK.** Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.

14. **DON'T OVERREACH.** Keep proper footing and balance at all times.

15. **MAINTAIN TOOLS IN TOP CONDITION.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.

16. **DISCONNECT TOOLS** before servicing and when changing accessories such as blades, bits, cutters, etc.

17. **USE RECOMMENDED ACCESSORIES.** The use of accessories and attachments not recommended by Delta may cause hazards or risk of injury to persons.

18. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure switch is in "OFF" position before plugging in power cord.

19. **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is accidentally contacted.

20. **CHECK DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function – check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.


21. **DIRECTION OF FEED.** Feed work into a blade or cutter against the direction of rotation of the blade or cutter only.

22. **NEVER LEAVE TOOL RUNNING UNATTENDED. TURN POWER OFF.** Don't leave tool until it comes to a complete stop.

23. **DRUGS, ALCOHOL, MEDICATION.** Do not operate tool while under the influence of drugs, alcohol or any medication.

24. **MAKE SURE TOOL IS DISCONNECTED FROM POWER SUPPLY** while motor is being mounted, connected or re-connected.

25. **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.

26.  **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, such as those dust masks that are specially designed to filter out microscopic particles.

SAVE THESE INSTRUCTIONS

ADDITIONAL SAFETY RULES FOR DRILL PRESSES

1. **DO NOT** operate your drill press until it is completely assembled and installed according to the instructions.
2. **IF YOU ARE NOT** thoroughly familiar with the operation of drill presses, obtain advice from your supervisor, instructor or other qualified person.
3. **YOUR DRILL PRESS MUST** be securely fastened to a stand, workbench or floor. If there is any tendency for the stand or workbench to move during operation, the stand or workbench **MUST** be fastened to the floor.
4. **NEVER** turn the drill press “on” before clearing the table of all objects (tools, scrap pieces, etc.).
5. **NEVER** start the drill press with the drill bit or cutting tool in contact with the workpiece.
6. **USE ONLY** drill bits, cutters, sanding drums, and other accessories with 5/8" shank or less.
7. **ALWAYS** keep hands and fingers away from the drill bit or cutting tool.
8. **DO NOT ATTEMPT** to drill material that does not have a flat surface, unless a suitable support is used.
9. **AVOID** awkward hand positions where a sudden slip could cause a hand to move into the drill bit or cutting tool.
10. **TO PREVENT ROTATION OF THE WORKPIECE, ALWAYS** clamp work securely to the table if it is too short to contact the column (see “**OPERATION**” section of this manual) or when using hole saw or cutting tools larger than 1/2" in diameter.
11. **WHENEVER POSSIBLE** use clamps or vise to keep workpiece from rotating with the drill bit or cutting tool.
12. **USE** recommended speed for drill, accessory or work-piece material.
13. **WARNING:** The use of accessories or attachments not recommended by Delta may result in risk of injury.
14. **MAKE CERTAIN** all lock handles are tightened before starting the machine.
15. **NEVER** perform layout, assembly or set-up work on the table while the drill is operating.
16. **BE SURE** drill bit or cutting tool is not damaged and is properly locked in the chuck before operating.
17. **MAKE SURE** chuck key is removed from chuck before starting drill press. **ONLY** use chuck key provided with your drill press. It is equipped with a self-ejecting pin which eliminates the hazard of the key being left in the chuck.
18. **ADJUST** the table or depth stop to avoid drilling into the table.
19. **ALWAYS** stop the drill press before removing scrap pieces from the table.
20. **WHEN** drilling large workpieces, **MAKE SURE** the material is supported at table height.
21. **SHUT OFF** the power, remove the drill bit or cutting tool, and clean the table and work area before leaving the machine.
22. **DO NOT** wear gloves, necktie, or loose clothing when operating the drill press.
23. **SHOULD** any part of your drill press be missing, damaged or fail in any way, or any electrical component fail to perform properly, shut off switch and remove plug from power supply outlet. Replace missing, damaged or failed parts before resuming operation.
24. **ADDITIONAL INFORMATION** regarding the safe and proper operation of this product is available from the National Safety Council, 1121 Spring Lake Drive, Itasca, Illinois 60143-3201, in the Accident Prevention Manual for Industrial Operations and also in the Safety Data Sheets provided by the NSC. Please also refer to the American National Standards Institute ANSI O1.1 Safety Requirements for Woodworking Machinery and the U.S. Department of Labor OSHA 1910.212 and 1910.213 Regulations.
25. **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use them to instruct others.

CONNECTING DRILL PRESS TO POWER SOURCE

POWER CONNECTIONS

A separate electrical circuit should be used for your tools. 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 3-pole receptacles which accept the tool's plug. Before connecting the motor 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 tool. All line connections should make good contact. Running on low voltage will damage the motor.

MOTOR SPECIFICATIONS

Your drill press is designed to use a 1720 RPM motor. It is wired at the factory for 110-120 Volts, 60 Hz alternating current. Never use a motor that runs faster than 1720 RPM. Your drill press may be converted for 220-240 volt operation. The conversion of your drill press for 220-240 volt operation must be done by qualified electrical personnel.

GROUNDING INSTRUCTIONS



WARNING: THIS TOOL MUST BE GROUNDED WHILE IN USE TO PROTECT THE OPERATOR FROM ELECTRIC SHOCK.

1. All grounded, cord-connected tools: 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 tool 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 tool is properly grounded.

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

Repair or replace damaged or worn cord immediately.

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

This tool is intended for use on a normal 120-volt circuit and has a grounded plug that looks like the plug illustrated in Fig. A.

If a properly grounded outlet is not available, a temporary adapter, shown in Fig. B, may be used for connecting the 3-prong grounding type plug to a 2-prong receptacle. 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, or the like extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. 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.

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

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



WARNING: IN ALL CASES, MAKE CERTAIN THE RECEPTACLE IN QUESTION IS PROPERLY GROUNDED. IF YOU ARE NOT SURE HAVE A CERTIFIED ELECTRICIAN CHECK THE RECEPTACLE.

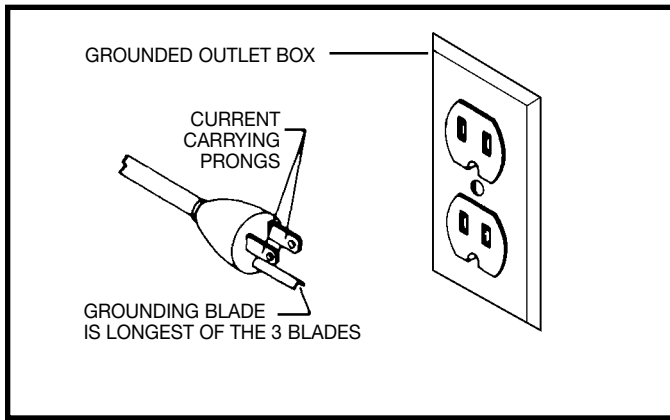


Fig. A

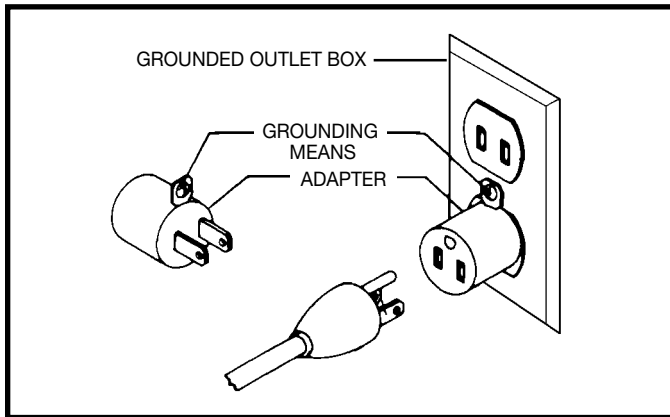


Fig. B

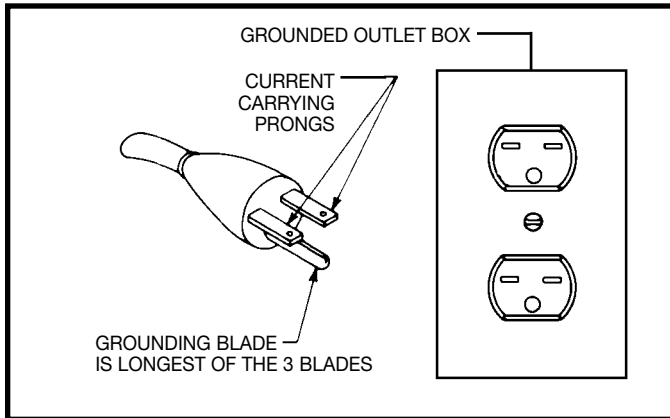


Fig. C

EXTENSION CORDS

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 a 3-pole receptacle which will accept the tool's plug. When using an extension cord, be sure to use one heavy enough to carry the current of the saw. An undersized cord will cause a drop in line voltage, resulting in loss of power and overheating. Fig. D, 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.

RECOMMENDED EXTENSION CORD SIZES FOR USE WITH STATIONARY ELECTRIC TOOLS

MINIMUM GAUGE EXTENSION CORD			
Ampere Rating	Volts	Total Length of Cord in Feet	Gage 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' NOT RECOMMENDED	
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' NOT RECOMMENDED	

Fig. D

OPERATING INSTRUCTIONS

FOREWORD

The Delta Model 70-200 Drill Press provides production capacity drilling and includes; 1 hp single phase 115/230 volt induction motor, pulleys, belts, 0 - 5/8" capacity chuck, 45 degree tilt table L/R, rack and pinion table raising mechanism and #3 Morse Taper spindle adaptor. A quick release motor mount makes changing the nine spindle speeds (150, 260, 300, 440, 490, 540, 1150, and 2200 rpm) fast and easy.

UNPACKING AND CLEANING

Carefully unpack the drill press and all loose items from the carton. Remove the protective coating from the machined surfaces of the drill press and all loose items. This coating may be removed with a soft cloth moistened with kerosene. **DO NOT USE ACETONE, GASOLINE, OR LACQUER THINNER FOR THIS PURPOSE.**

ASSEMBLING THE DRILL PRESS

1. Assemble column (A) Fig. 2, to base (B) using four M-12 x 45mm long hex head screws (three of which are shown at [C]). Loosen set screw in collar (D) and remove collar (D) and raising rack (E).

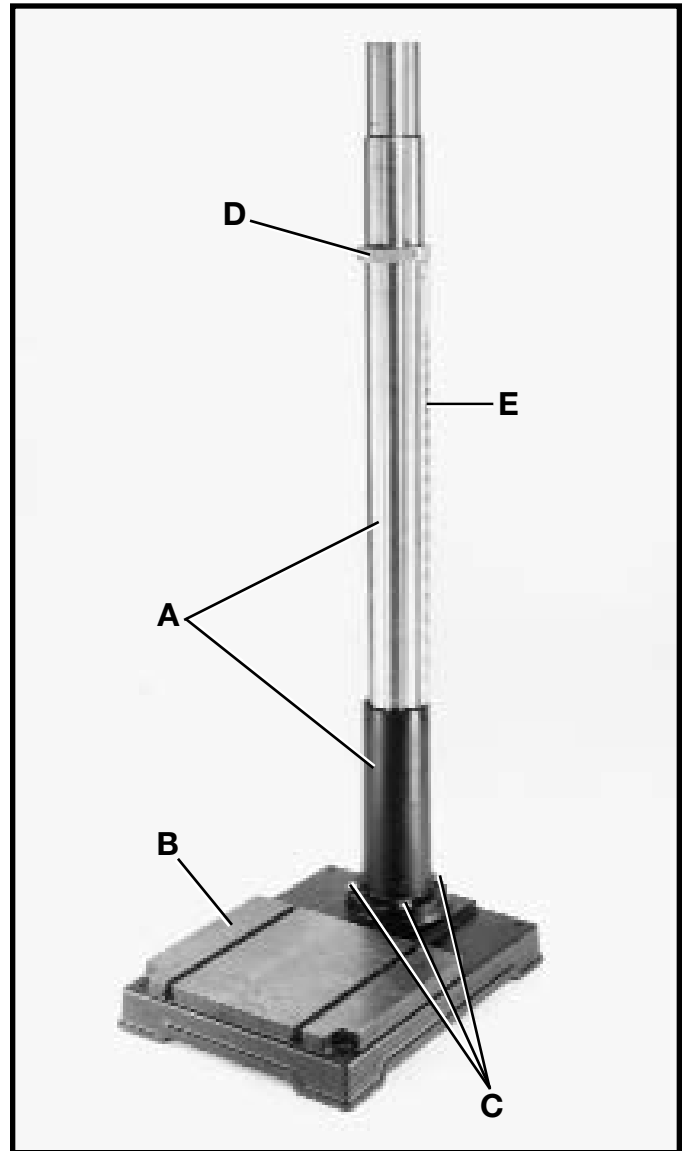


Fig. 2

2. Remove bolt (F) Fig. 3, and remove table (G) from table bracket (H).

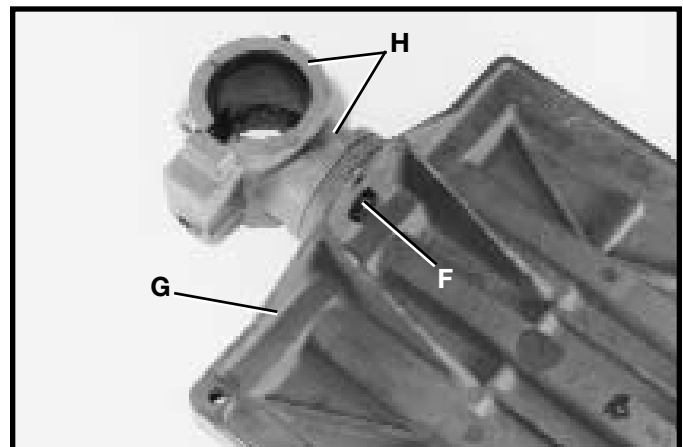


Fig. 3

3. Assemble worm gear (J) Fig. 4, to the inside of hole (K) in table bracket (H).
4. Thread table lock lever (M) Fig. 4, into hole in table bracket, as shown.

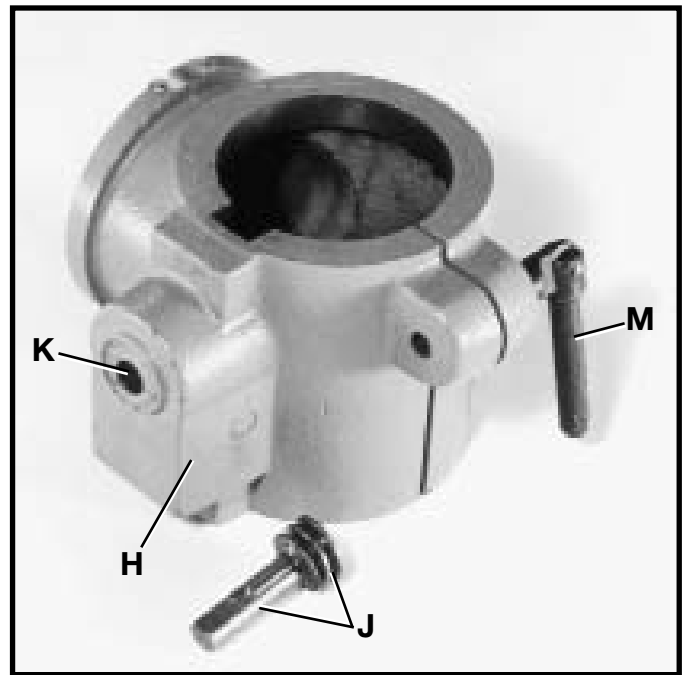


Fig. 4

5. Place raising rack (E) Fig. 5, in position inside table bracket (H) making sure gear on inside of table bracket is engaged with teeth of raising rack.

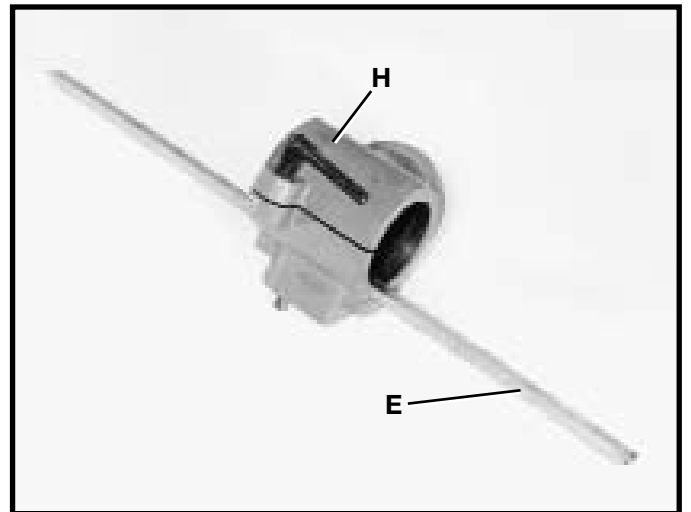


Fig. 5

6. Slide table bracket (H) Fig. 6, with raising rack (E) onto column (A), as shown.
7. Engage bottom of rack (E) Fig. 6, with flange (L) on column. Tighten table lock lever to lock table bracket (H) to column.

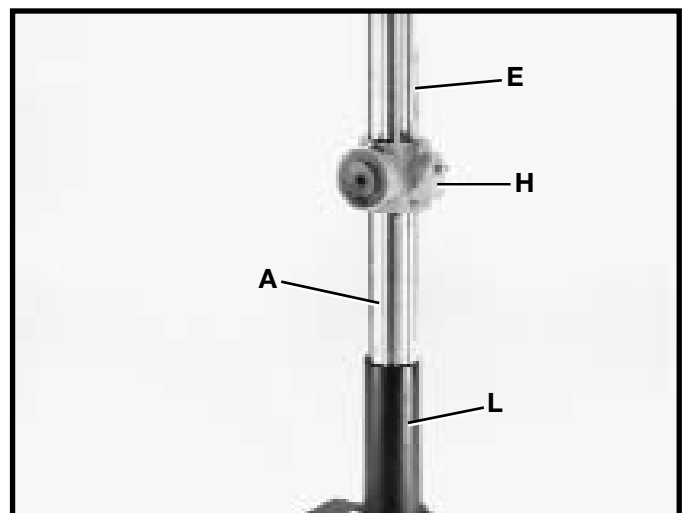


Fig. 6

8. Reassemble collar (D) Fig. 7, which was removed in **STEP 1**, to column. **IMPORTANT:** Bottom of collar (D) **MUST NOT** be pushed all the way down onto top of raising rack (E). **MAKE SURE** top of raising rack (E) is under bottom of collar (D) and that there is enough clearance to allow rack (E) to rotate around the column. Then tighten set screw (Q) being careful not to overtighten.

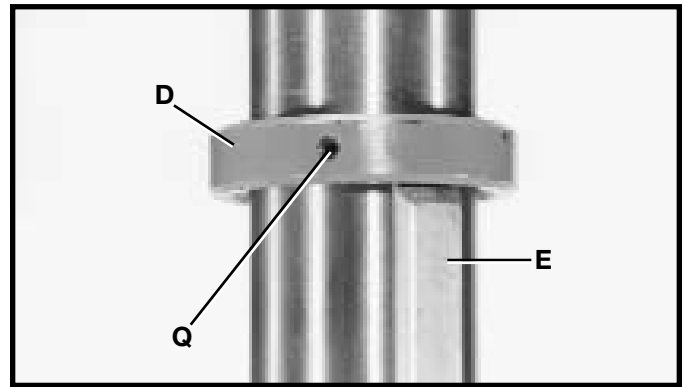


Fig. 7

9. Assemble table (G) Fig. 8, to table bracket (H) using bolt (F). Line up hole (S) in table with hole in table bracket and insert pin (P) Fig. 9.

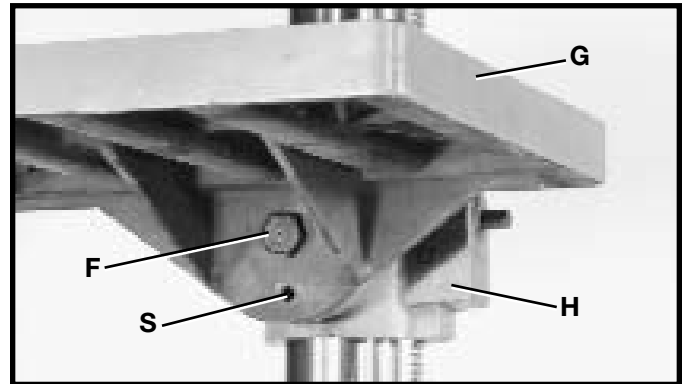


Fig. 8

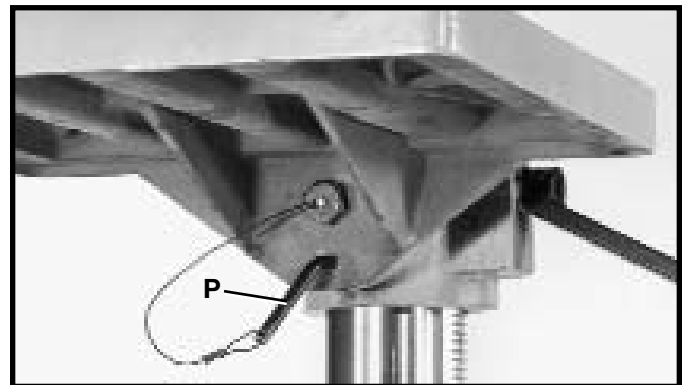


Fig. 9

10. Assemble table raising and lowering handle (N) Fig. 10, to shaft on table bracket. Line up flat on shaft with screw (O) and tighten screw (O).

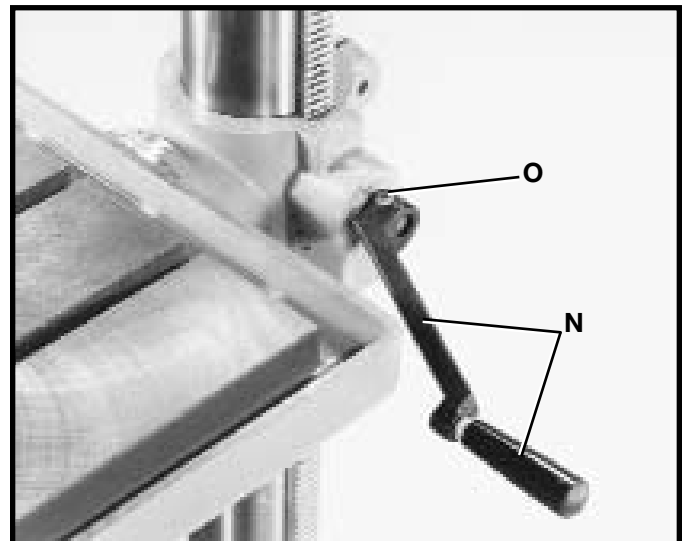


Fig. 10

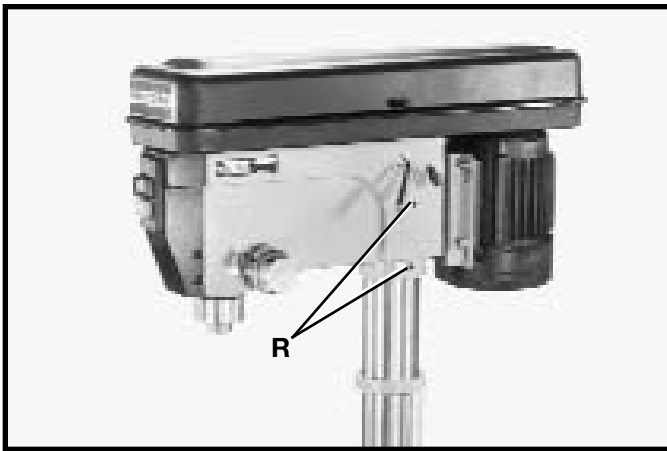


Fig. 11

11. Place the drill press head on column, as shown. Line up head with base and tighten two head locking screws (R) Fig. 11.

12. Thread the three pinion wheel handles (Z) Fig. 12, into the three threaded holes in the pinion shaft, as shown.

13. Make certain the tapered hole in the bottom of the spindle (T) Fig. 13, and the taper on the spindle adapter (U) are clean and push the spindle adapter (U) up into the spindle, making certain the tang (V) engages and locks with the mating slot inside the spindle.

14. Make certain the bottom taper of the spindle adapter (U) Fig. 14, and the tapered hole in the chuck (W) are clean and push the chuck up onto the spindle adapter (U) as far as it will go. **NOTE:** Household oven cleaner can effectively remove any substance from the spindle and chuck; however, carefully follow the manufacturer's safety rules concerning its use.

15. Open the chuck jaws as wide as possible by turning the chuck sleeve (X) Fig. 15.

16. Place a block of wood (Y) Fig. 15, on the drill press table and lower the spindle until the chuck contacts the piece of wood. Exert pressure to properly seat the chuck.

CHUCK KEY

This drill press is provided with a self-ejecting type chuck key. Use only this key or a duplicate. The use of the self-ejecting chuck key ensures that the chuck key is removed before the chuck is rotated.

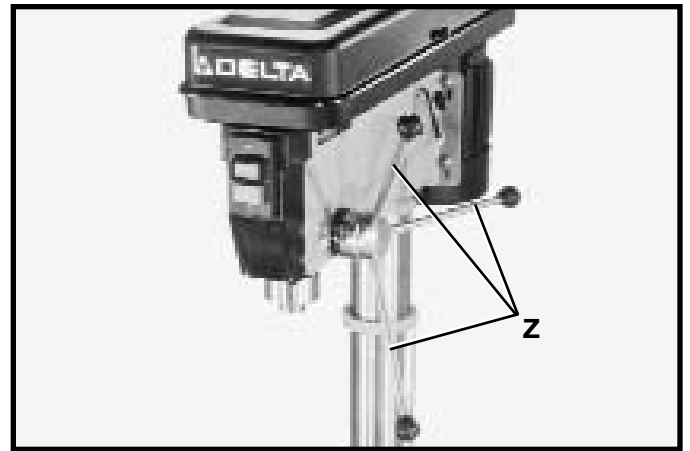


Fig. 12

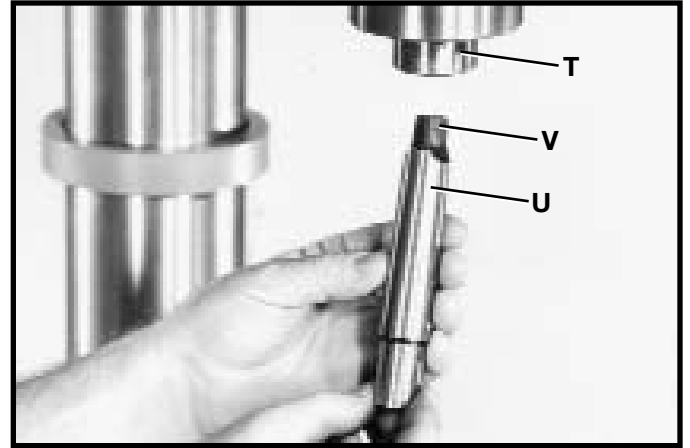


Fig. 13

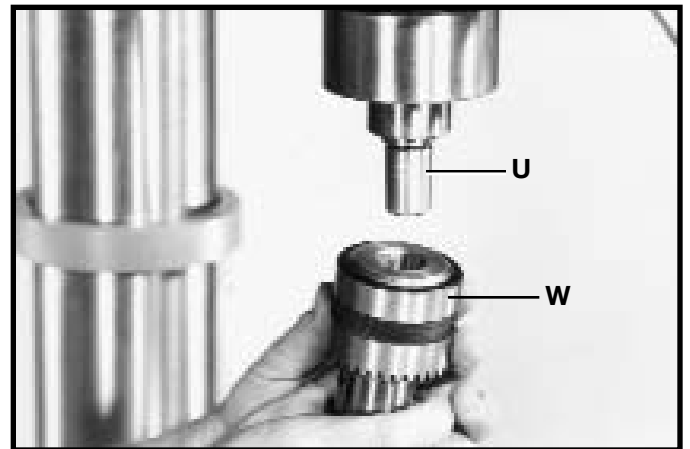


Fig. 14

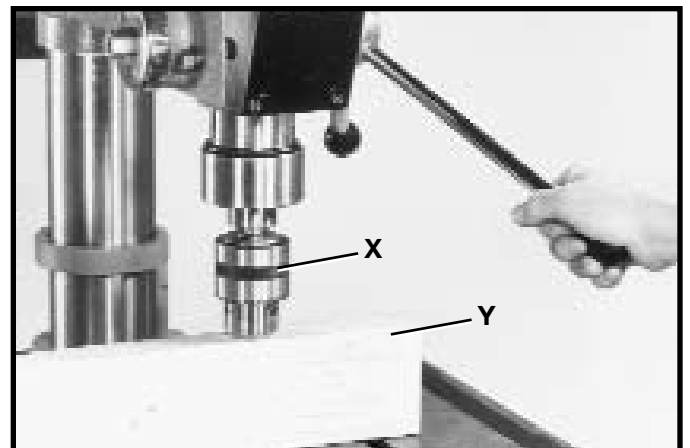


Fig. 15

FASTENING DRILL PRESS BASE TO A SUPPORTING SURFACE

PERMANENT MOUNTING

If your drill press is to be used in one permanent location, the drill press base must be secured to the supporting surface with fasteners through the four mounting holes, (A) Fig. 16, in the drill press base.

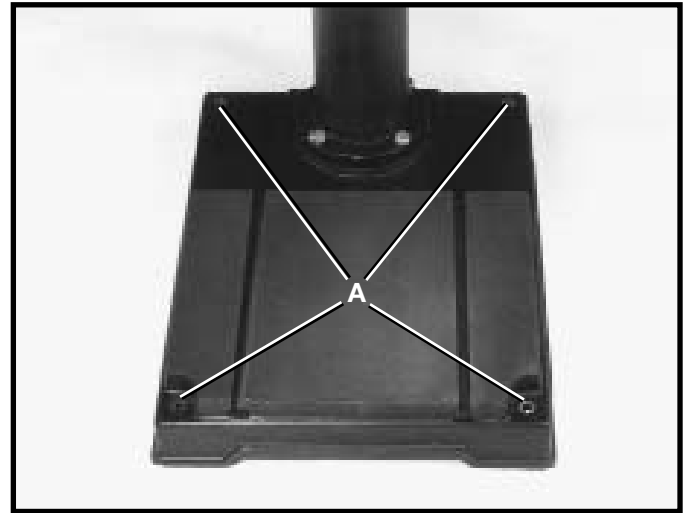


Fig. 16

MOUNTING YOUR DRILL PRESS TO A PLYWOOD BASE

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. Use a good grade of plywood with a minimum 3/4" thickness. Do not make the mounting board from particle board since particle board can unexpectedly break.

1. Drill four 3/8" diameter holes (B) Fig. 17, corresponding to the mounting holes (A) Fig. 16, of the drill press base in a 26" x 32" minimum size plywood board.
2. Fasten the drill press base to the mounting board using the carriage bolts, nuts, and washers (C) Fig.17, furnished with your drill press. The carriage bolt heads must be countersunk such that the bolt heads are flush with the bottom surface of the mounting board in order to guarantee the proper stability.
3. When the drill press is mounted to the supporting board, the board must extend a minimum of 3" beyond each edge of the drill press base, as shown in Fig. 18.
4. 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.

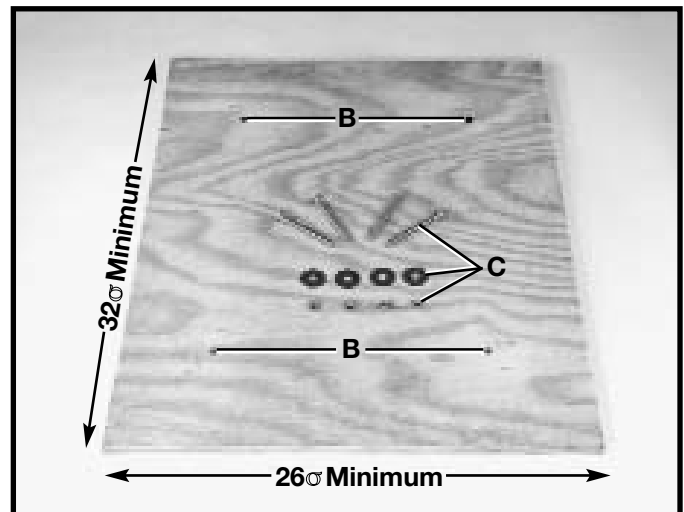


Fig. 17

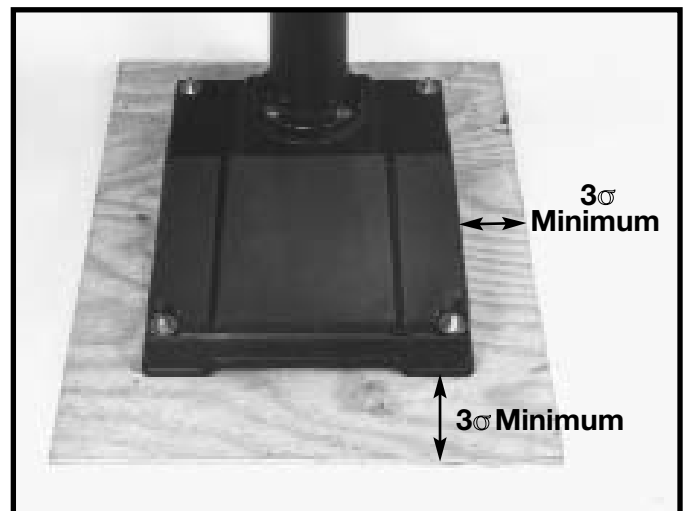


Fig. 18

OPERATING CONTROLS AND ADJUSTMENTS

START/STOP SWITCH

The switch is located on the front of the drill press head. To start the machine, press the start button (A) Fig. 23, and to stop the machine, press the stop button (B).

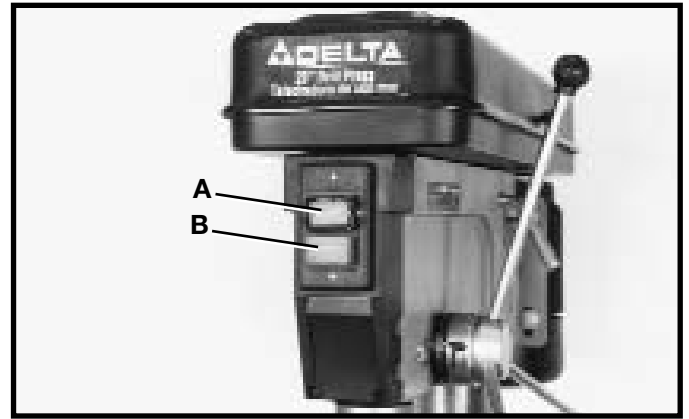


Fig. 23

LOCKING SWITCH IN THE “OFF” POSITION

IMPORTANT: When the machine is not in use, the switch should be locked in the “OFF” position using a padlock (C) Fig. 24, (with 3/16 diameter shackle) through the two holes in the switch plate, as shown in Fig. 24. NOTE: Padlock shown is available as accessory Model 50-325.

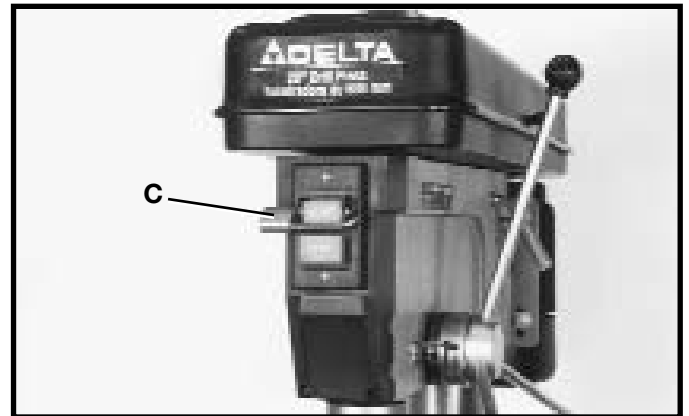


Fig. 24

SPINDLE SPEEDS

Nine spindle speeds of 150, 260, 300, 440, 490, 540, 1150, 1550, and 2200 RPM are available with the 20 Drill Press. Fig. 25, illustrates which steps of the pulleys the belts must be placed to obtain the nine speeds available.

CHANGING SPINDLE SPEEDS AND ADJUSTING BELT TENSION

1. DISCONNECT THE DRILL PRESS FROM THE POWER SOURCE.
2. Lift up the belt and pulley guard (A) Fig. 26.
3. Loosen the two lock knobs, one of which is shown at (B) Fig. 26. The remaining lock knob is located on the opposite side of the head casting.
4. Release belt tension by moving tension lever (C) Fig. 26, forward.
5. Position the two belts (D) Fig. 26, on the desired steps of the motor, center and spindle pulleys.
6. After the belts (D) Fig. 26, are positioned on the desired steps of the motor, center and spindle pulleys, move tension lever (C) to the rear until the belts (D) are properly tensioned and tighten the two tension lock knobs (B). The belts (D) should be just tight enough to prevent slipping. Excessive tension will reduce the life of the belts, pulleys and bearings. Correct tension is obtained when the belts (D) can be flexed about 1 out of line midway between the pulleys using light finger pressure.

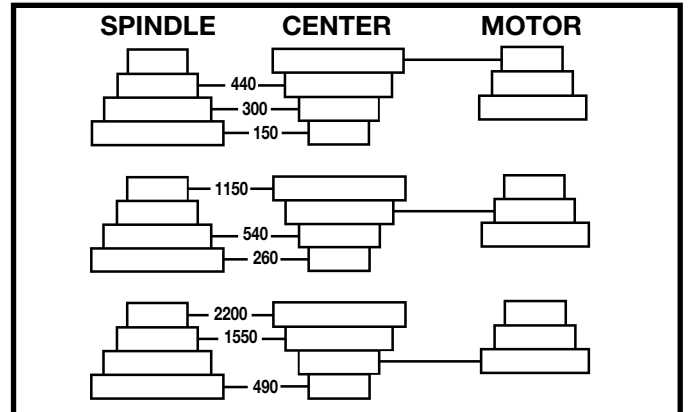


Fig. 25

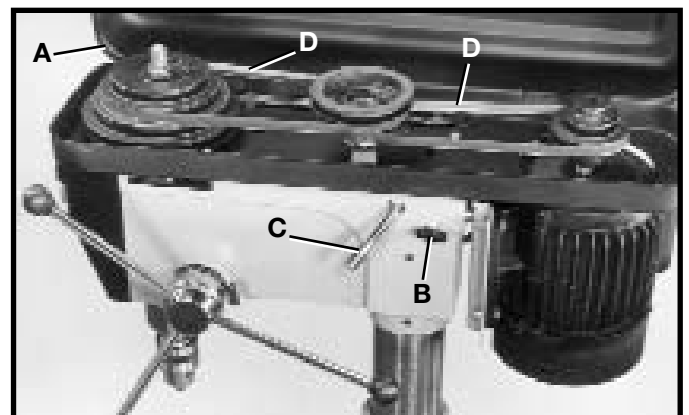


Fig. 26

DRILLING HOLES TO DEPTH

Where a number of holes are to be drilled to exactly the same depth, a depth stop is provided in the pinion shaft housing (A) Fig. 27, and is used as follows:

1. Loosen lock lever (B) Fig. 27, and rotate housing (A) until the pointer (C) lines up with the depth indicated on the English/Metric scale (D) that you want the spindle to lower. Then tighten lock lever (B).
2. The spindle will then lower to the exact depth as indicated on the scale (D) Fig. 27

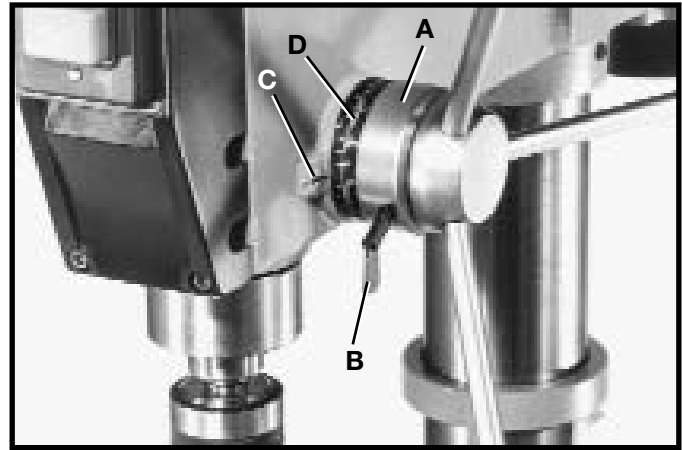


Fig. 27

ADJUSTING SPINDLE RETURN SPRING

For the purpose of automatically returning the spindle upward after a hole has been drilled, a spindle return spring is provided in the spring housing (A) Fig. 28. 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:

1. **DISCONNECT THE DRILL PRESS FROM THE POWER SOURCE.**
2. Loosen the two nuts (B) Fig. 28, approximately one-quarter inch. **IMPORTANT: DO NOT REMOVE NUTS (B) FROM SHAFT.**
3. While **FIRMLY** holding spring housing (A) Fig. 28, pull out housing and rotate it until the roll pin (C) is engaged with the next notch on the housing. Turn the housing counterclockwise to increase and clockwise to decrease spring tension. Then tighten the two nuts (B) to hold the housing in place. **IMPORTANT: NUTS (B) SHOULD NOT CONTACT SPRING HOUSING (A) WHEN TIGHT.**

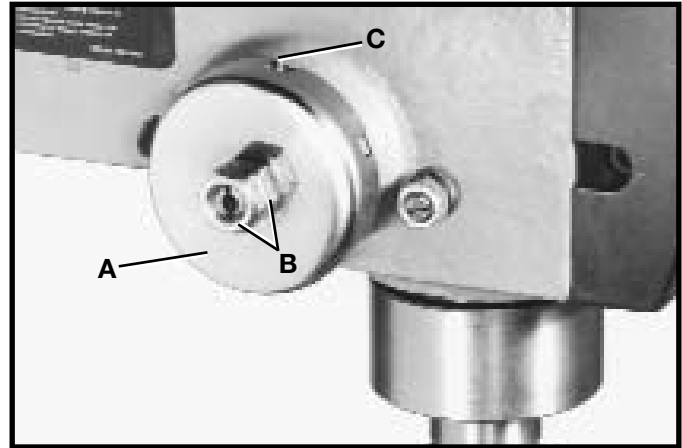


Fig. 28

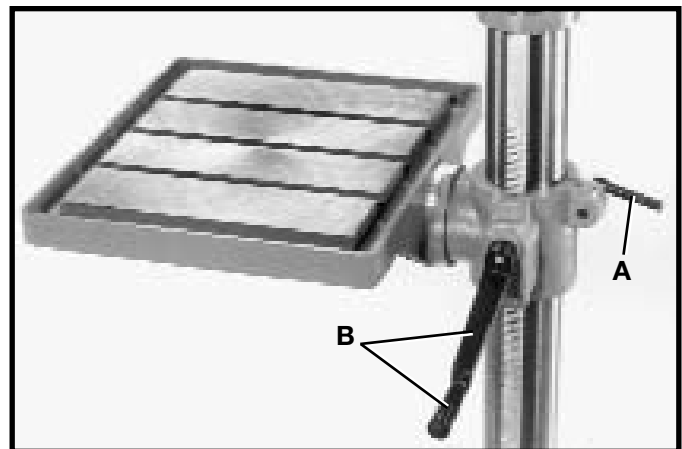


Fig. 29

TABLE ADJUSTMENTS

1. The table can be raised or lowered on the column by loosening table clamp handle (A) Fig. 29, and turning the table raising and lowering handle (B). After the table is at the desired height, tighten handle (A).

2. The table can be tilted right or left by pulling out and removing table alignment pin (C) Fig. 30, and loosening table locking bolt (D). Tilt the table to the desired angle and tighten bolt (D). A tilt scale and pointer are provided on the table bracket casting to indicate the degree of tilt. When returning table to the level position, replace table alignment pin (C) Fig. 30. This will automatically position the table surface at 90 degrees to the spindle.

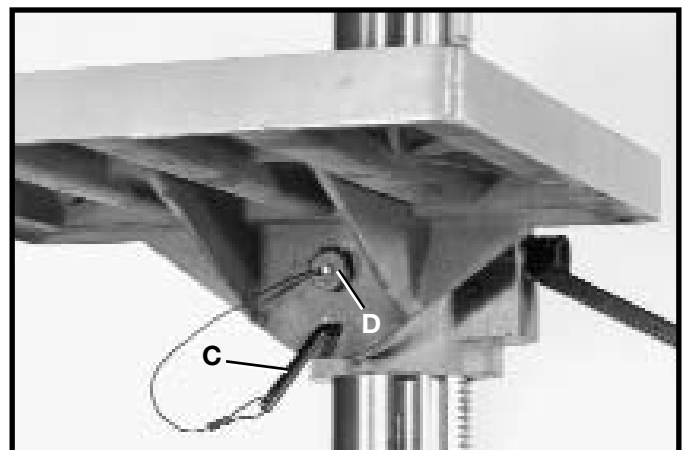


Fig. 30

REMOVING CHUCK AND SPINDLE ADAPTER

If you desire to remove the chuck and spindle adapter, lower spindle and rotate chuck until the slot in the spindle lines up with the slot in the quill, as shown in Fig. 31. Then insert tapered end of drift bar (A) into slot (B) in quill and remove chuck and spindle adapter.

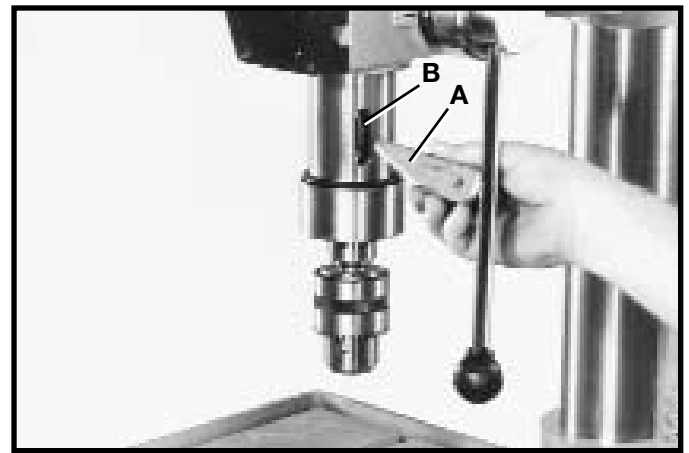


Fig. 31

OPERATION

Your Drill Press should be used with drill bits $5/8\sigma$ or less in diameter.

The following directions 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.

IMPORTANT: When the workpiece is long enough, it should always be positioned on the table with one end against 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 personal 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.

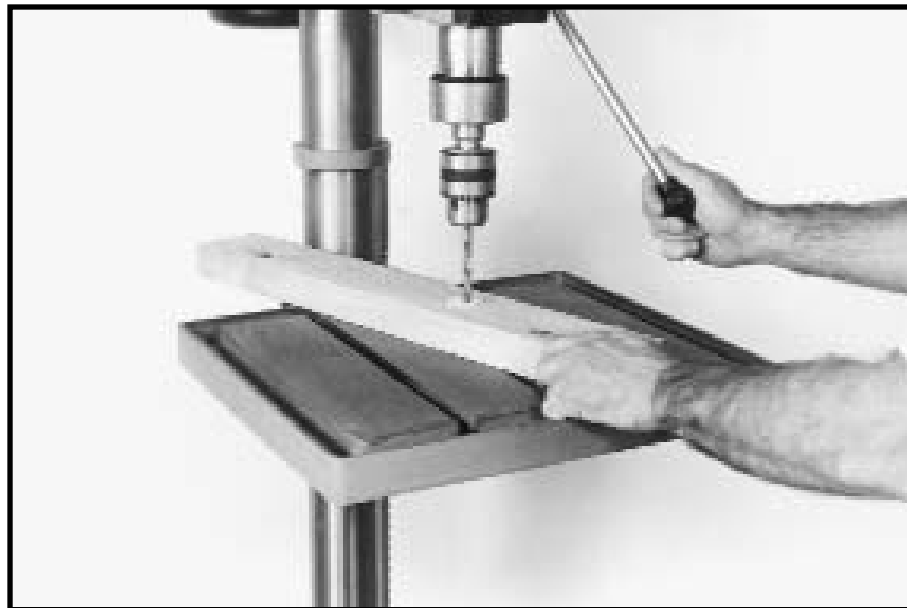


Fig. 32

CORRECT DRILLING SPEEDS

Factors which determine the best speed to use in any drill press operations are: kind of material being worked, size of hole, type of drill or other cutter, and quality of cut desired. The smaller the drill, the greater the required RPM. In soft materials, the speed should be higher than for hard metals.



WARNING: Use the recommended speed for the drill press bit and workpiece material. As a guideline for the speed to use for different drill diameters and materials, refer to the chart located on the inside top cover of the drill press for your convenience.

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 square 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. Scribe a vertical line on the front of the column and a matchmark on the table bracket, so that the table 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 for 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 in metal. The work should never be held in the bare hand; the lips of the drill may seize the work at any time, especially when breaking through the stock. If the workpiece is whirled out of the operator's hand, he may be injured. In any case, the drill will be broken when 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 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.

NOTES

ACCESSORIES

A complete line of Delta accessories are available from your Delta Supplier, Porter-Cable Delta Factory Service Centers, and Delta Authorized Service Stations. Please visit our Web Site www.deltamachinery.com for a catalog or for the name of your nearest supplier.



WARNING: Since accessories, other than those offered by Delta, have not been tested with this product, use of such accessories could be hazardous. For safest operation, only Delta recommended accessories should be used with this product.

Model No. 50-325 Solid Brass Padlock & Key

Model No. 17-985 Drill Press Safety Shield



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