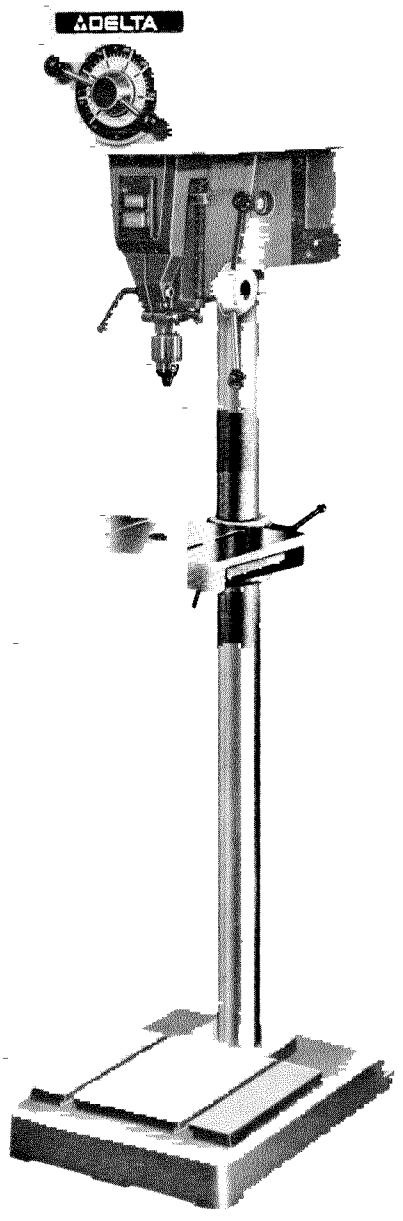
"VS6" Variable Speed 15" Drill Press



INSTRUCT ON MANUAL

The Serial No. and Model No. plate is attached to the left side of the drill press head. Locate this plate and record the Serial No. and Model No. in your manual for future reference.

SERIAL NO. _____

MODEL NO. _____

(Beginning with serial #139-3001)

DATED 12-12-90

PART NO. 402-04-651-5009

DELTA

SAFETY RULES

As with all machinery there are certain hazards involved with operation and use of the machine. 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.

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 for which it was designed. If you have any questions relative to its application DO NOT use the machine until you have written Delta Machinery and we have advised you.

DELTA INTERNATIONAL MACHINERY CORP.
MANAGER OF TECHNICAL SERVICES
246 ALPHA DRIVE
PITTSBURGH, PENNSYLVANIA 15238
(IN CANADA: 644 IMPERIAL ROAD, 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. GROUND ALL TOOLS. If tool is equipped with three-prong plug, it should be plugged into a three-hole electrical receptacle. If an adapter is used to accommodate a two-prong receptacle, the adapter lug must be attached to a known ground. Never remove the third prong.

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 foot wear is recommended. Wear protective hair covering to contain long hair.

12. ALWAYS USE SAFETY GLASSES. Wear safety glasses (must comply with ANSI Z87.1). Everyday eyeglasses only have impact resistant lenses; they are not safety glasses. Also use face or dust mask if cutting operation is dusty.

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 improper accessories may cause hazards.

18. AVOID ACCIDENTAL 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 drug, alcohol or any medication.

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

25. WARNING: 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 DRILL PRESSES

1. BE SURE drill bit or cutting tool is securely locked in the chuck.

2. BE SURE chuck key is removed from the chuck before turning on power.

3. ADJUST the table or depth stop to avoid drilling into the table.

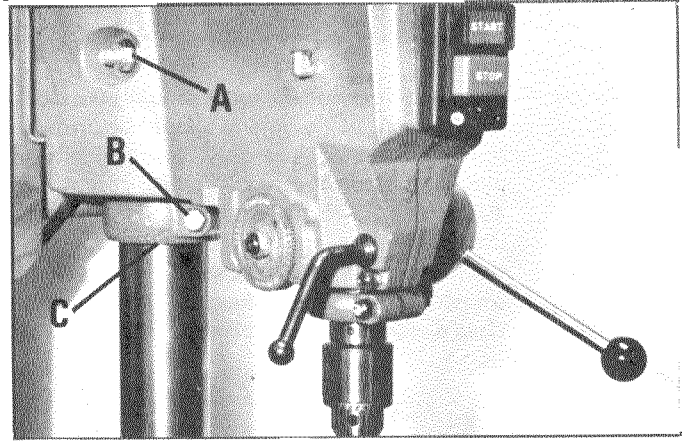
4. SHUT OFF the power, remove the drill bit or cutting tool, and clean the table before leaving the machine.

5. CAUTION: When practical, use clamps or a vise to secure workpiece to keep the workpiece from rotating with the drill bit or cutting tool.

6. WARNING: For Your Own Safety - Don't wear gloves when operating a drill press.

SETTING UP

Your 15" Drill Press has been completely assembled and tested at the factory. All that is necessary for you to do is loosen the clamp nut (A) Fig. 1, on left hand side of head, that holds the head to the column, slide the head up until casting top is level with the top of the column and retighten clamp nut. Then loosen clamp nut (B) Fig. 1, move support collar (C) up against bottom of head, and tighten clamp nut. The table and all other machined or unpainted surfaces of the drill press are protected with a coating of rust preventive. 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 all unpainted surfaces with a light film of good machine oil.



Fig

MOTORS AND SPEEDS

A 1/2 hp, 1140 rpm or 3/4 hp, 1725 rpm motor is recommended for use on your drill press. With a 1140 rpm motor the spindle speeds will be 300 to 3100 rpm. With a 1725 rpm motor the spindle speeds will be 450 to 4700 rpm.

When selecting a motor from any other source, be certain that it has the above specifications and is a NEMA 56 frame motor. Also be sure it is protected against loss of lubricant when operated in a vertical position.

When assembled to the drill press, the motor should turn in a clockwise direction as viewed from the top.

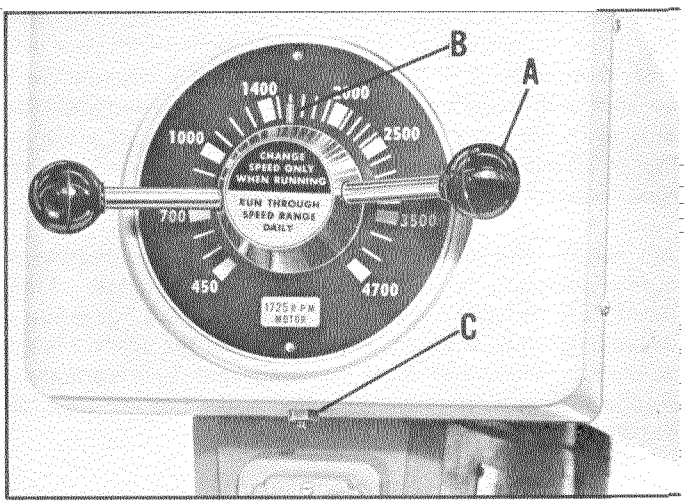


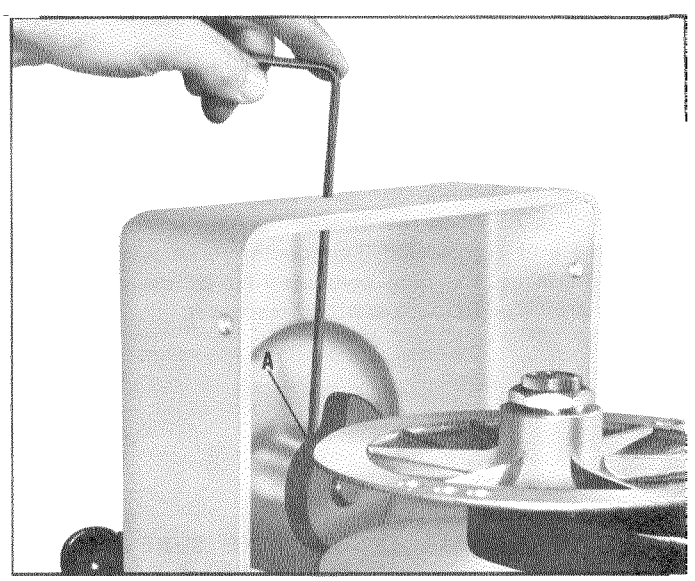
Fig. 2

VARIABLE SPEED CONTROL

The pilot wheel (A) Fig. 2, for Variable Speed Drive, should not be turned except when the motor is running, to avoid putting unnecessary strain on the variable speed drive belt and variable speed drive pulley assembly. The pilot wheel is turned clockwise to make the drill press run faster, and counter-clockwise to slow it down.

While cha ing speeds th oint B) Fig. 2, will indicate speed of t drill press.

A drag plug or "dampener" is provided to restrict the free rotation of the pilot wheel. The drag plug is properly adjusted at the factory so that the drill press will hold a constant speed and will not change speeds even on long production runs, but still the pilot wheel can be turned manually to change speeds as desired. If it ever becomes necessary to change the adjustment, use a long allen wrench and insert it down through the hole located in the top of the guard, as shown in Fig. 3. Turn the set screw (A) Fig. 3, clockwise to increase or counter-clockwise to decrease the "dampener" pressure on the pilot wheel.



Fig

Similar drag plugs or "dampeners" are provided in the spindle pulley and motor pulley assemblies, and are adjusted at the factory. After long service, it may be desirable to increase the pressure on the drag plugs by tightening set screws (A) Fig. 4 for the spindle pulley, and (M) Fig. 12 for the motor pulley. This adjustment does not have to be made, unless normal wear has resulted in noisy operation of the pulleys.

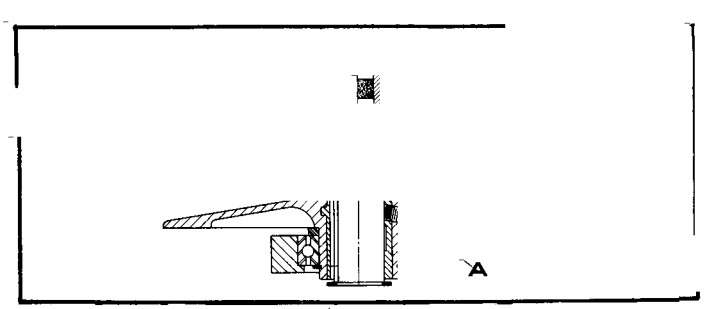


Fig. 4

CONNECTING DRILL PRESS TO POWER SOURCE

A separate electrical circuit should be used for your power 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 tools plug. For distances up to 100 feet use #12 wire. For distances up to 150 feet use #10 wire. 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 stamped on motor nameplate. All line connections should make good contact. Running on low voltage will injure the motor. Have a registered electrician replace or repair damaged or worn cords immediately.

GROUNDING INSTRUCTIONS - 115 VOLT

This tool must be grounded while in use to protect the operator from electric shock. If the motor supplied with your drill press is wired for 115 Volt, Single Phase it is equipped with an approved 3-conductor cord and 3-prong grounding type plug to fit the proper grounding type receptacle, as shown in Fig. 5. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal.

An adapter, shown in Fig. 6, is available for connecting 3-prong grounding type plugs to 2-prong receptacles. THIS ADAPTER IS NOT APPLICABLE IN CANADA. The green-colored rigid ear, lug, etc., extending from the adapter is the grounding means and must be connected to a permanent ground such as to properly grounded outlet box, as shown in Fig. 6.

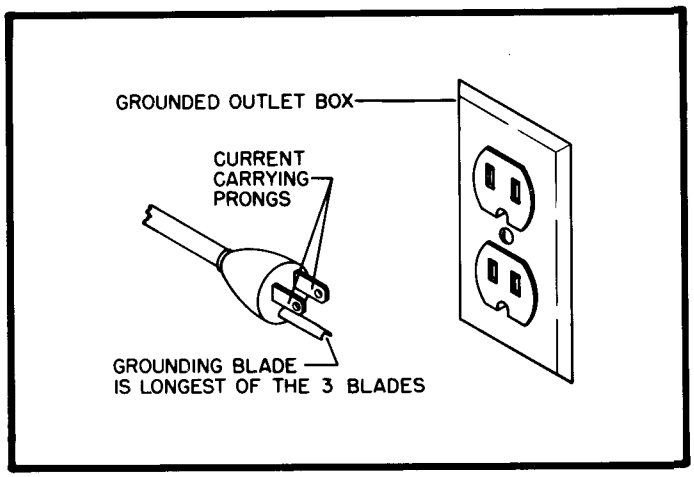


Fig. 5

GROUNDING INSTRUCTIONS - 230 VOLT

If the motor on your machine is wired for 230V single phase, the power cord must be equipped with a plug that has two flat, current-carrying prongs in tandem, and one round or "U"-shaped longer ground prong. This is used only with the proper mating 3-conductor grounding type receptacle, as shown in Fig. 7. When the three-prong plug on your machine is plugged into a grounded 3-conductor receptacle, the long ground prong on the plug contacts first so the machine is properly grounded before electricity reaches it.

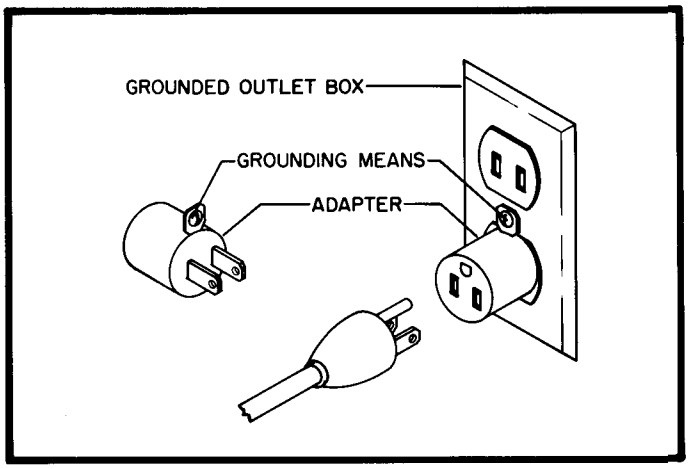


Fig. 6

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

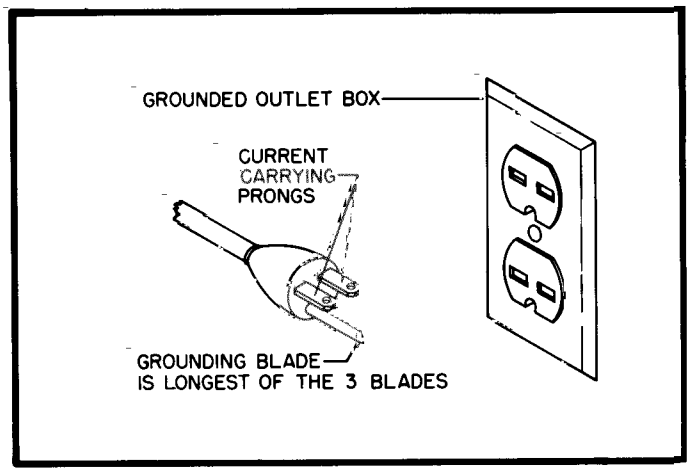


Fig. 7

TABLE ADJUSTMENTS

To adjust the table up or down loosen the lock bolt (A) Fig. 8 on the table bracket. Hold the table while doing so.

To tilt the table to the right or left, loosen the pivot nut located under the table, remove the pin (B) and tilt the table to the required angle and tighten the pivot nut. To set the table vertical, accurately, move the table to a vertical position, insert the pin (B) through one of the side holes in the apron of the table proper, and into the hole in the table bracket, then tighten the pivot nut. To return the table to the horizontal position, loosen the pivot nut, withdraw the pin (B), set the table level, then reinsert the pin through its holes and tighten the pivot nut.

The table has been designed with ledges, one on each side, to facilitate the clamping of work pieces. The table may also be tilted to any degree between horizontal and vertical positions. A scale (C) Fig. 8, is located at the rear of the table, and is graduated in degrees. When the table is tilted between horizontal and vertical positions, the pin (B) must be removed. The tabled can be tilted either right or left.

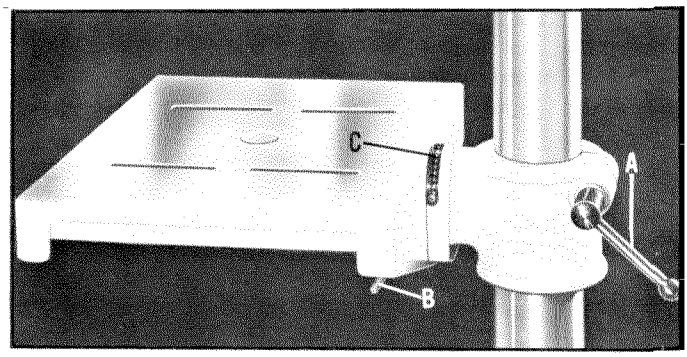


Fig. 8

QUILL ADJUSTMENTS

The spindle is raised and lowered by the pilot wheel (A) Fig. 9. The quill can be locked at any desired point in its travel by tightening the quill lever (B) Fig. 9. This is an especially desirable feature for router and shaper work.

The adjusting screw (C) Fig. 9 and nut (D) are set at the factory to give the quill the proper sliding fit in the head casting. After long service play between quill and head casting can be removed without the need to replace these parts. The nut (D) Fig. 9 is loosened, adjustment is made with the screw (C), and the nut is again tightened o prevent the screw from turning. Hold the screw with a screwdriver when nut is tightened, and check by moving the quill up and down several times to be sure the quill does not bind. This adjustment should be made with the stop rod (E) Fig. 9 removed.

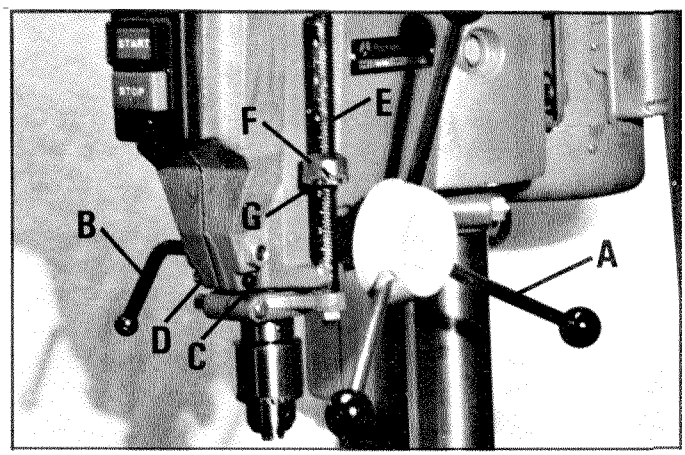


Fig. 9

DRILLING HOLES TO DEPTH

When drilling one or two holes to a predetermined depth, the calibrations on the face of the depth stop rod (E) Fig. 9, can be used.

When drilling a number of holes to a predetermined depth, o if a more exact setting is required, proceed as follows:

1. Raise the locking sleeve (F) Fig. 9, and turn the micro nut (G) to the desired position on the stop rod (E).

2. Lower the locking sleeve (F) so it will engage micro-nut (G) Fig. 9. Lock sleeve in place with thumb screw if drill press head is mounted in other than vertical position. When the drill press is mounted with the chuck pointing up the locking sleeve (F) and micro-nut (G) Fig. 9, should be reversed on the stop rod (E).

3. When locking sleeve (F) is in place on the micro-nut (G) Fig. 9, the micro-nut can not be turned. When a change in depth is required, the locking sleeve (F) must be raised and while it is raised, turn the micro-nut (G) the necessary calibration marks. Each mark represents .002". Then lower the locking sleeve.

4. The use of the micro-set stop nut will maintain the same hole depth, no matter how many holes are to be drilled. However, we recommend that the hole depth be checked whenever a drill has to be sharpened or changed.

ADJUSTING SPINDLE RETURN SPRING

For the purpose of automatically returning the spindle upward after the hole has been drilled, a clock spring is provided enclosed in the case (D) Fig. 10. This spring has been properly adjusted at the factory and should not be distrubed unless absolutely necessary. If at any time it is necessary to adjust it proceed as follows:

1. To increase the tension of the spring, turn the screw (E) Fig. 10, which is located underneath the head, clockwise. CAUTION: BE CAREFUL NOT TO BOTTOM RETURN SPRING WHILE TURNING SCREW (E) FIG. 10, CLOCKWISE, THERE SHOULD BE ENOUGH SLACK LEFT IN SPRING TO PERMIT LOWERING THE SPINDLE THE FULL AMOUNT OF TRAVEL.

2. To decrease tension of the spring, turn the screw (E) Fig. 10, counterclockwise.

3. The tension of the spring can be tested by pulling down the pilot wheel lever (F) Fig. 10, and testing to see if the quill will return to the up position. Be sure the quill locking lever (G) Fig. 10, is loose while testing. NOTE: Before determining if this adjustment is necessary, make sure the stop rod (E) Fig. 9, runs freely up and down and is not twisted in the slot or guide of the head casting.

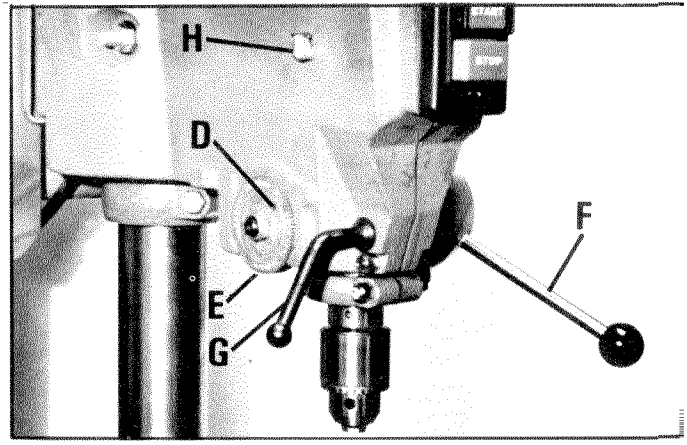
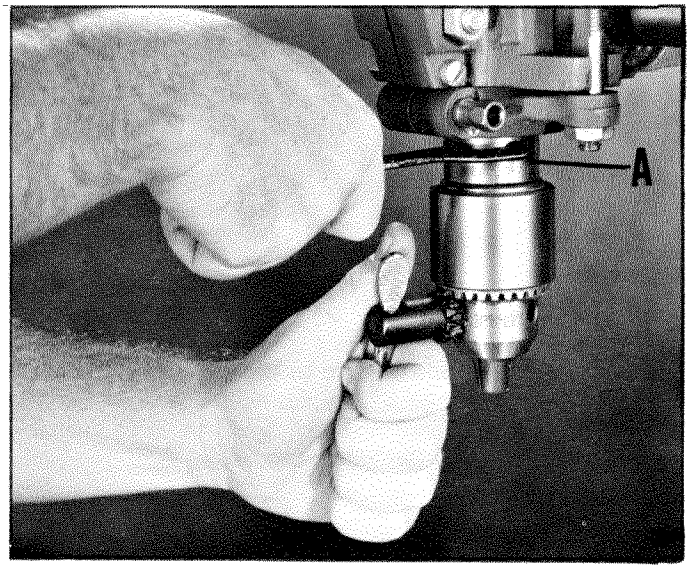


Fig. 10



HOW TO CHANGE SPINDLE ADAPTERS

One of the unique features of the Variable Speed 15" Drill press is the ease with which various spindle adapters may be used.

When removing either the chuck or the spindle adapters, we recommend the use of the Cat. No. 15-838 spanner wrench which is supplied with your drill press. Turn the locking collar of the adapter or chuck with the spanner wrench while keeping the spindle from turning by either holding V-belt or holding the chuck with the chuck key in one of the pilot holes in the nose of the chuck, as shown in Fig. 11.

When attaching adapters to the spindle, it is very important to wipe clean both the spindle taper and taper hole in adapter. Then place the adapter on the spindle and tighten the locking collar (A) Fig. 11. If in checking the spindle for accuracy, there should be a run out, we suggest that the adapter be removed and turned perhaps one quarter or one-half turn and replaced. This may reduce or eliminate the run out, it may also increase it, in which case, remove the adapter and turn it some more on the spindle.

INSTALLING MOTOR

1. When installing a Delta 6" Frame Motor, insert the key in the keyway of the motor shaft and place the pulley on the motor shaft until the edge of the pulley sleeve is against the shoulder of the motor shaft.

2. When installing a NEMA 56 Frame Motor, insert the key in the keyway of the motor shaft and place the pulley on the motor shaft, with the edge of the pulley sleeve 1/8" from the shoulder on the motor shaft.

3. If you are installing a NEMA 56 Frame Motor, it is necessary to remove the two upper motor mounting studs (A) Fig. 12, and reposition them in the holes (B) directly below.

4. Make sure the key is in place and tighten the two set screws (C) against the motor shaft.

5. Place the motor on the four motor mounting studs (A) Fig. 12, and install belt.

6. Visually line up the motor shaft so that it is in parellel alignment with the spindle. If the motor must be tilted to the front or rear, it is necessary to loosen the four nuts (D) and move studs (A) in or out as desired until the motor shaft is parallel with the spindle. Then tighten the four nuts (D) Fig. 12.

After the motor shaft is in parallel alignment with the

spindle, adjust the belt tension. The correct tension is obtained when the distance from the center of the spindle to the center of the motor shaft is approximately 15 1/8". This may be done by following Steps 8 and 9. When making this adjustment it is important that the motor is kept in parallel alignment with the spindle pulley.

8. If the motor must be moved further away from the spindle, back off each of the four nuts (D) and back off the four studs (A) an equal number of turns against the motor base plate.

9. If the motor must be moved forward turn in each of the four studs (A) an equal number of turns and tighten nuts (D) against the motor base plate.

10. The spindle nut (E) Fig. 12, should then be adjusted so that the distance from the top of the nut to the top of the spindle is 1/4 to 5/16".

11. TO CALIBRATE THE SPINDLE SPEED turn the drill press on and turn pilot wheel clockwise. When the outside circumference of the belt extends 1/32" beyond the outside circumference of the motor pulley, turn off the power, loosen locknut (G) Fig. 12, and adjust the stop screw (H) until it is bearing against the bottom of the bearing retainer (J). With a 1725 rpm motor the speed of the drill press will be approximately 4700 rpm. With a 1140 rpm motor the speed of the drill press will be approximately 3100 rpm. Now set the pointer (B) Fig. 13, to the corresponding speed on the spindle speed chart by unscrewing and removing the pilot wheel hand levers (A) Fig. 13, and loosening the set screws located directly under the hand levers. The hub of the pilot wheel assembly can then be rotated until the pointer points to the corresponding speed on the spindle speed chart (B) Fig. 13. Then tighten the set screws and replace the pilot wheel hand levers (A) Fig. 13.

12. Turn the drill press on and rotate the pilot wheel counterclockwise until the pointer is pointing to the lowest rpm mark on the speed dial and turn off the drill press. Adjust the stop screw (F) Fig. 12, against the roller cam follower on the pilot wheel cam assembly. To adjust stop screw (F) Fig. 12, first loosen locknut (C) Fig. 13.

13. For a more accurate check, use a tachometer to check the spindle speeds.

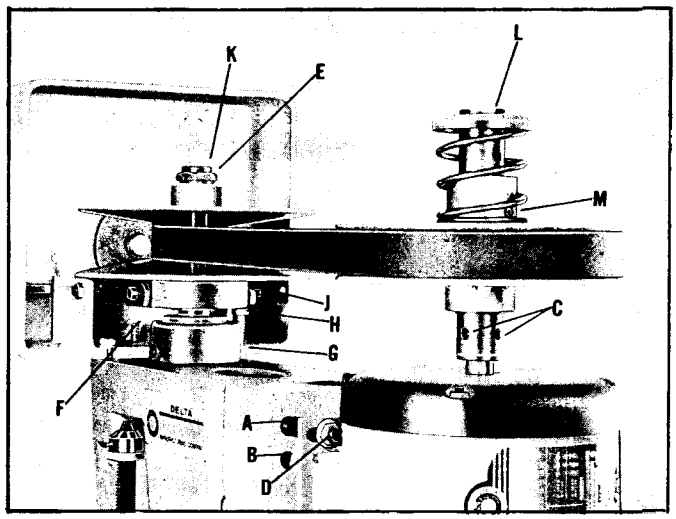


Fig. 12

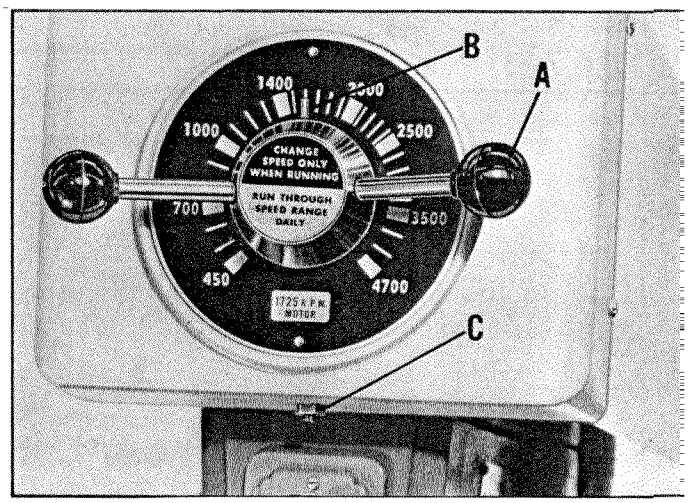


Fig. 13

LUBRICATION

The pulleys should be lubricated weekly in the oil holes located at (K and L) Fig. 12. Oil the holes when the drill press is turned off. Then turn on the drill press and run the machine from low speed to high speed a few times.

The ball bearings in the quill and spindle pulley are grease-sealed for life. The quill is oiled through oiler (H) Fig. 10, which is on the left side of the drill press head. The head has a groove on the inside to allow the oil from the oiler (H) to flow down and oil the pinion shaft and rack.

The spindle return clock spring should be oiled three or four times a year. This is lubricated through the oil holes provided in the clock spring housing (D) Fig. 10.

COMPENSATION FOR BELT AND PULLEY WEAR

After a long period of time pulley and belt wear and stretching of the belt may cause a slight change in the speed of the drill press. To compensate for this change in speed, use a tachometer and move the motor toward or away from the spindle pulley until the correct speed is obtained.

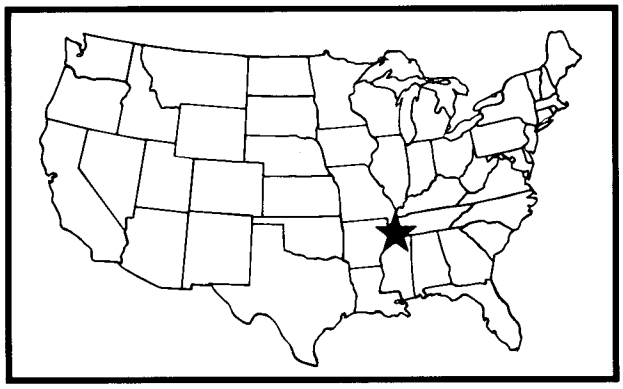
DELTA

PARTS, SERVICE OR WARRANTY ASSISTANCE

All Delta Machines and accessories are manufactured to high quality standards and are serviced by a network of factory service centers and authorized service stations listed in your owner's manual. To obtain additional information regarding your Delta quality product or to obtain parts, service or warranty assistance, please call Delta's toll-free 'hotline' telephone number.

Delta maintains a modern, efficient Parts Distribution Center, maintaining an inventory of over 15,000 parts located in Memphis, Tennessee.

Highly qualified and experienced Customer Service Representatives are standing by to assist you on weekdays from 8:00 A.M. to 5:00 P.M. Memphis time.



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~~HOTLINE~~
800-223-PART

DELTA

Two Year Limited Warranty

Delta Machinery

Delta will repair or replace, at its expense and at its option, any Delta machine, machine part, or machine accessory which in normal use has proven to be defective in workmanship or material, provided that the customer notifies his supplying distributor of the alleged defect within two years from the date of delivery to him, of the product and provides Delta Machinery with reasonable opportunity to verify the defect by inspection. Delta Machinery may require that electric motors be returned prepaid to the supplying distributor or authorized service center for inspection and repair or replacement. Delta Machinery will not be responsible for any asserted defect which has resulted from misuse, abuse or repair or alteration made or specifically authorized by anyone other than an authorized Delta service facility or representative. Under no circumstances will Delta Machinery be liable for incidental or consequential damages resulting from defective products. This warranty is Delta Machinery's sole warranty and sets forth the customer's exclusive remedy, with respect to defective products; all other warranties, express or implied, whether of merchantability, fitness for purpose, or otherwise, are expressly disclaimed by Delta.