2-Speed Heavy-Duty Wood Shaper

(Model 43-445)

INSTRUCTION MANUAL

PART NO. 432-02-651-0043 - 09-18-03

DELTA

To learn more about DELTA MACHINERY
visit our website at: **www.deltamachinery.com.**

For Parts, Service, Warranty or other Assistance,

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

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.**

⚠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)

⚠WARNING FAILURE TO FOLLOW THESE RULES MAY RESULT IN SERIOUS PERSONAL 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. **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. **DRESS PROPERLY.** Do not wear tie, gloves, or loose clothing. Remove watch, rings, and other jewelry. Roll up your sleeves. Clothing or jewelry caught in moving parts can cause injury.
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. **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 WOOD SHAPERS

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

1. **DO NOT OPERATE THIS MACHINE UNTIL** it is **assembled** and **installed** according to the instructions.
2. **OBTAIN ADVICE from your supervisor, instructor, or another qualified person** if you are not familiar with the operation of this machine.
3. **FOLLOW ALL WIRING CODES** and recommended electrical connections.
4. **USE THE GUARDS WHENEVER POSSIBLE.** Check to see that they are in place, secured, and working correctly.
5. **NEVER TURN THE MACHINE "ON"** before clearing the table of all objects (tools, scraps of wood, etc.).
6. **AVOID AWKWARD OPERATIONS AND HAND POSITIONS** where a sudden slip could cause a hand to move into the cutter.
7. **KEEP ARMS, HANDS AND FINGERS** away from the cutter.
8. **NEVER START THE MACHINE** with the workpiece contacting the cutter.
9. **NEVER REACH UNDER THE TABLE** while the machine is running.
10. **KEEP CUTTERS SHARP** and free from rust and pitch.
11. **NEVER ADJUST THE FENCE** while the machine is running.
12. **ADJUST THE FENCE HALVES** so that the cutter opening is never more than is required to clear the cutter.
13. **LOCK THE FENCE** hardware after making fence adjustments.
14. **PROPERLY SECURE THE CUTTERS** before starting the machine.
15. **DO NOT PERFORM ANY OPERATION FREE-HAND.** Use the fence for straight-shaping, a miter gauge for end-shaping, and the starting pin and rub collars for curve-shaping.
16. **KEEP THE FRONT MOTOR ACCESS PANEL CLOSED** while the machine is running.
17. **DO NOT FEED A WORKPIECE** that is warped, contains knots, or is embedded with foreign objects (nails, staples, etc.).
18. **NEVER RUN A WORKPIECE** between the fence and the cutter.
19. **USE A MITER GAUGE** and a clamp attachment for end shaping a workpiece whenever possible. Remove the fence during this operation.
20. **PROVIDE SUFFICIENT BEARING SURFACE** when shaping with a starting pin and collar(s) Figs. B and C.

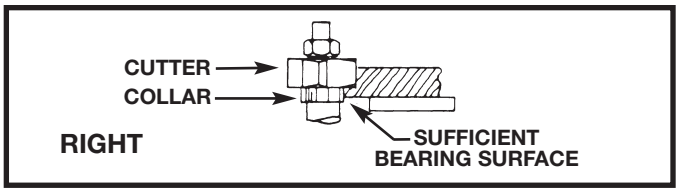

Fig. B

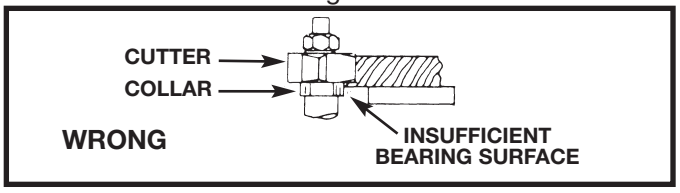

Fig. C

21. **ONLY SHAPE LARGE WORKPIECES** when using starting pin and collar(s). DO NOT SHAPE short or light workpieces when using starting pin and collar(s). (Figs. D and E).

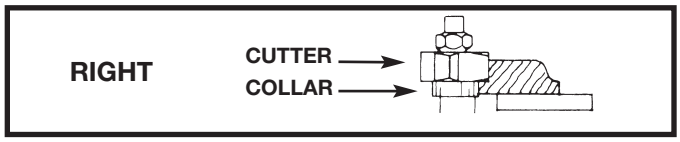

Fig. D

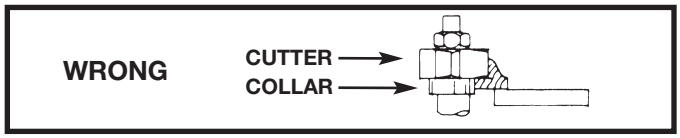

Fig. E

22. **POSITION THE CUTTER** below the collar(s) when shaping with starting pin and collar(s) (Fig. F).

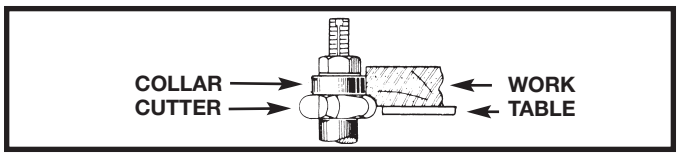

Fig. F

23. **FEED WORKPIECE** against cutter rotation (Fig. G).

Fig. G

24. **NEVER PERFORM LAYOUT,** assembly or set-up work on the table/work area when the machine is running.
25. **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.
26. **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.
27. **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). 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 01.1 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 (s) 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 230 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.

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

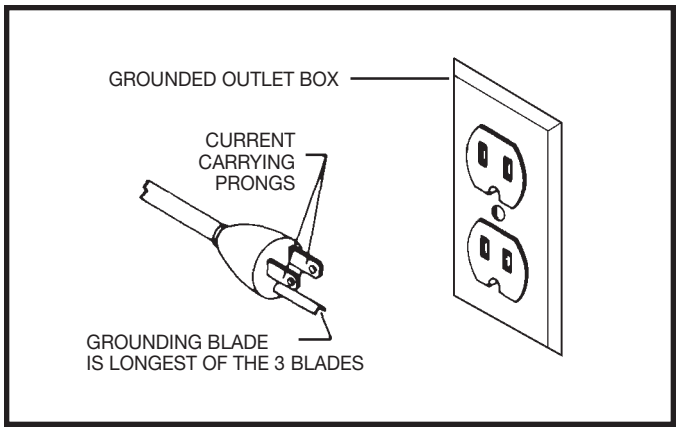

Fig. A

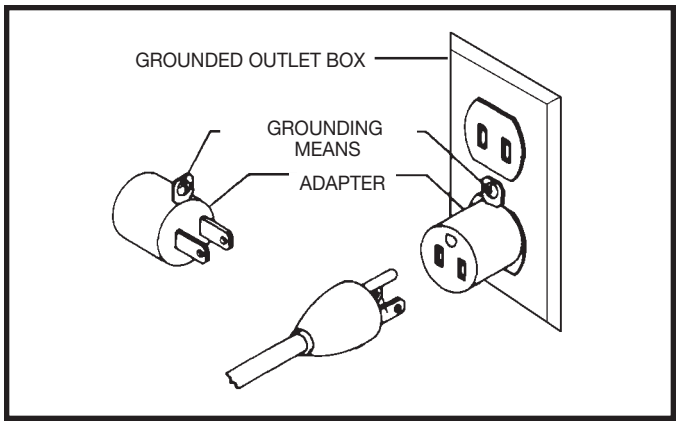

Fig. B

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.

4. Permanently connected machines:

If the machine is intended to be permanently connected, the machine should be connected to a grounded metal permanent wiring system, or to a system having an equipment-grounding conductor.

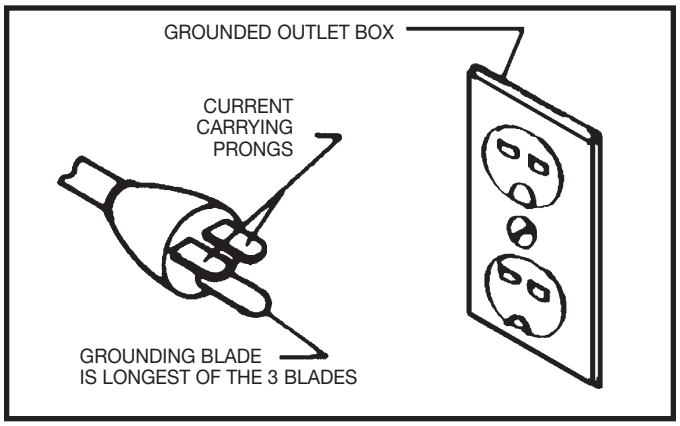

Fig. C

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 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	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

FUNCTIONAL DESCRIPTION

FOREWORD

Delta Model 43-445 is a 3 HP, single phase, 230V wood shaping tool. It utilizes a Poly V-belt drive system that transmits more efficient torque to the spindle and has a capacity (under nut) of 5".

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.

CARTON CONTENTS

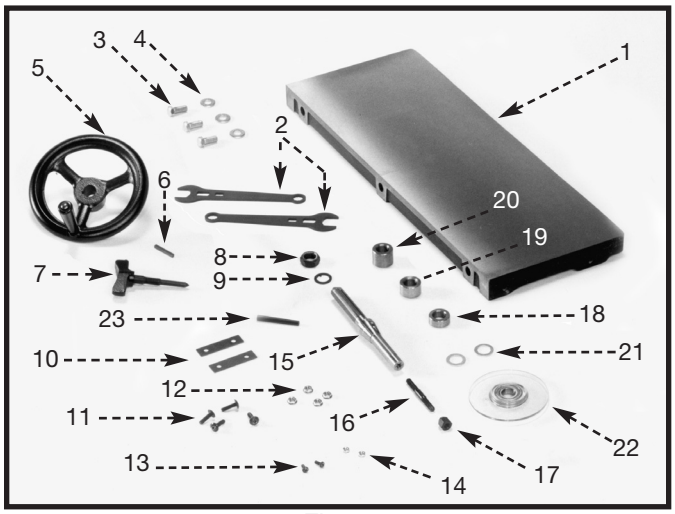

Fig. 1

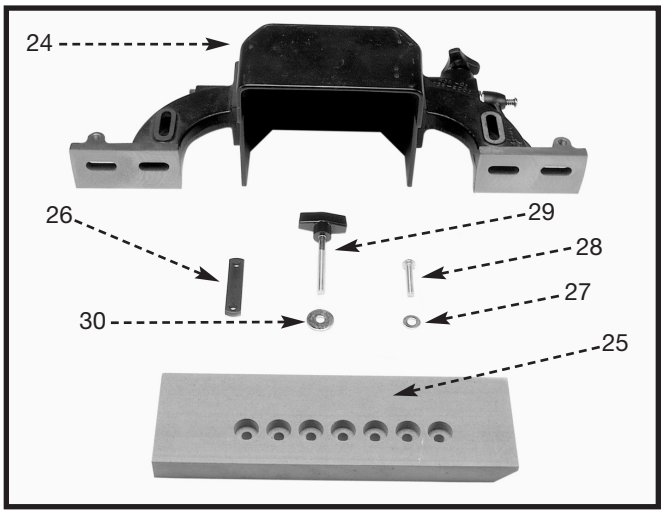

Fig. 2

1. 10" Wide Cast Iron Extension Wing
2. Wrenches (2)
3. 7/16-20 x 1" Hex Head Screws (3) for mounting extension wing
4. Flat Washers (3) for mounting extension wing
5. Handwheel
6. Key for Handwheel
7. Lock Knob
8. Spindle Nut
9. 3/4" Keyed Washer
10. Switch Adapter plates for mounting switch mounting bracket to shaper
11. 1/4-20 x 7/8" Truss Head Machine Screws (4) for mounting switch mounting bracket
12. 1/4-20 Flange Nuts (4) for mounting switch mounting bracket to shaper
13. 10/32 x 1/2" Phillips Head Screws (2) for mounting switch to switch mounting bracket.
14. 10/32 Keps Nuts (4) for mounting switch to switch mounting bracket.
15. 3/4" Spindle
16. Tie Rod
17. Tie Rod Nut
18. 3/4" I.D. x 1/2" thick collar
19. 3/4" I.D. x 3/4" thick collar
20. 3/4" I.D. x 1" thick collar
21. 3/4" I.D. Washer (2)
22. Spindle Guard
23. Starting Pin
24. Fence Body
25. Fence (2)
26. Clamp Plates (2) for mounting fence
27 Flat washers (4)
28. 5/16-18 x 1-1/2" Round Head Screws (4)
29. Fence Clamp Knobs (2)
30. Fence Clamp Washers (2)

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.**

ATTACHING SPINDLE RAISING AND LOWERING HANDWHEEL

1. Insert the key (A) Fig. 3 into the slot in the spindle raising and lowering shaft (B).
2. Place the handwheel (C) Fig. 3 on the spindle shaft (B). Fit the key (A) into the slot (D) in the handwheel. Firmly tighten the set screw in the handwheel against the key to secure the handwheel to the shaft.
3. Thread the lock knob (E) Fig. 4 into the spindle shaft (B).

ATTACHING EXTENSION WING TO SHAPER TABLE

Attach the extension wing (A) Fig. 5 to shaper table (B) using three 7/16-20 x 1" hex head screws (C) and flat washers (D). Use a straight edge (E) Fig. 5 to level the extension wing with the shaper table before tightening the three screws (C).

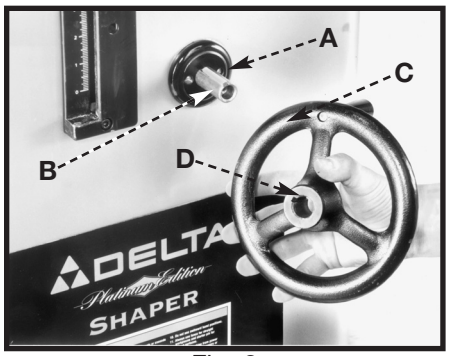

Fig. 3

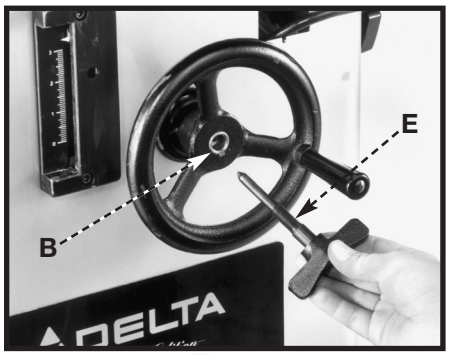

Fig. 4

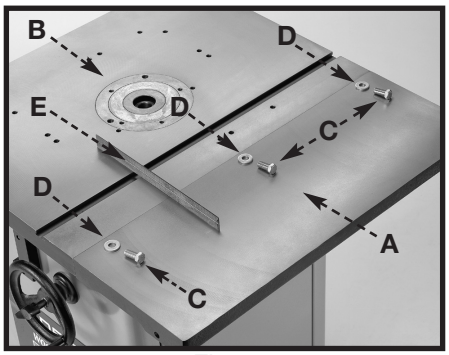

Fig. 5

ATTACHING SWITCH BRACKET AND ON/OFF SWITCH

1. The on/off switch (A) Fig. 6 and switch mounting bracket (B) are shipped inside the shaper cabinet. Open the side door of the shaper cabinet, remove the switch package, and remove all packaging material.
2. Position the switch mounting bracket (B) Fig. 7 with the holes (C) over hole (D) in the shaper cabinet (E). Fasten the bracket (B) to the cabinet (E) using the four 1/4-20 x 7/8" truss head screws (F) Fig. 6, 1/4-20 flange nuts, (G) and the two switch adapter plates (H) Fig. 8.

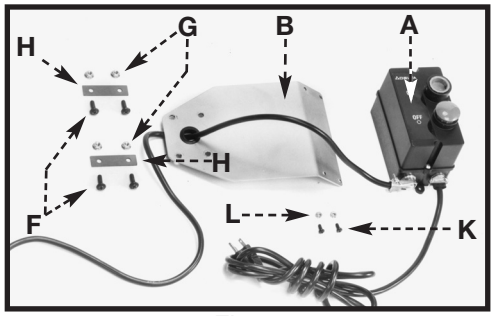

Fig. 6

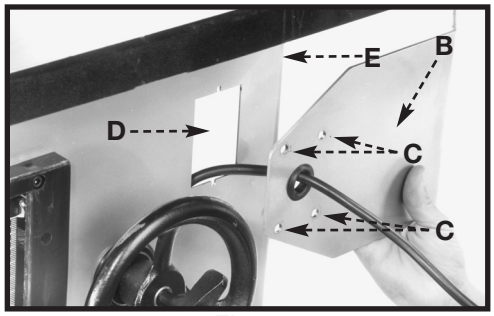

Fig. 7

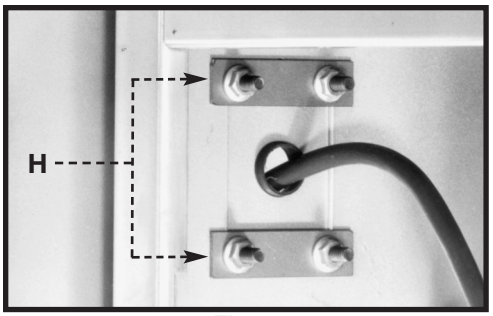

Fig. 8

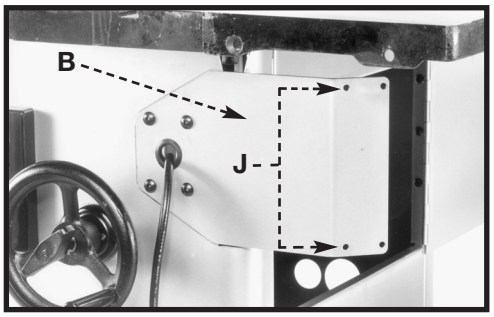

Fig. 9

NOTE: Position the switch adapter plates (H) inside the shaper cabinet (Fig. 8).

4. Attach the on/off switch (A) Fig. 6 to the switch mounting bracket (B) Fig. 9, through the two holes (J). Use two #10-32 x 1/2" Phillips head screws (K) Fig. 6 and secure with #10-32 Keps nuts (L).

ATTACHING AND CHANGING SPINDLES

⚠WARNING DISCONNECT MACHINE FROM POWER SOURCE.

1. Thread one end of the tie rod (A) Fig. 10 into the threaded hole in the bottom of the spindle (B).
2. Insert the tie rod and spindle into the spindle cartridge. Line up the pin (C) Fig. 11 with the notch (D) in the spindle.
3. Thread the nut (E) Figs. 10 and 13 on the bottom end of the tie rod (A).
4. Use a wrench on the flats (F) Fig. 12 to hold the spindle while tightening the nut (E) Fig. 13 on the bottom of the tie rod.

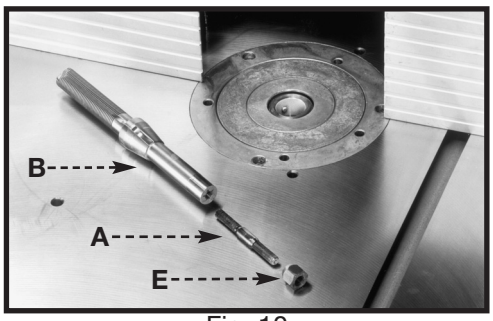

Fig. 10

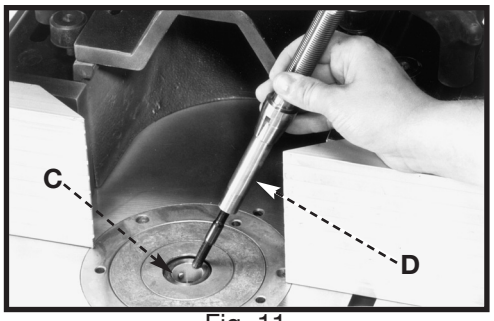

Fig. 11

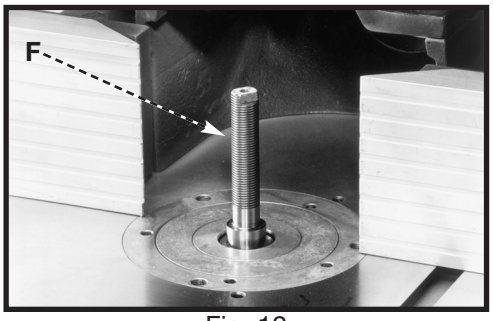

Fig. 12

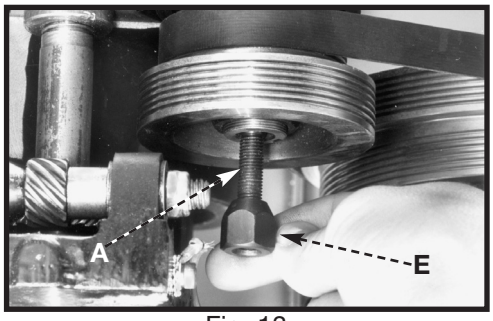

Fig. 13

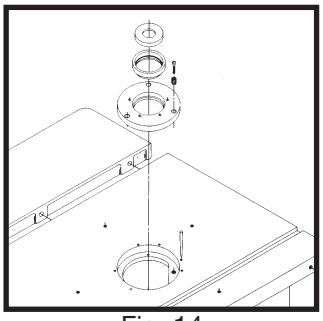
Fig. 14

ATTACHING TABLE INSERTS

Three table inserts are provided for various size cutters (Fig. 14). The large insert is adjustable. To set it flush with the table:

1. Remove the three slotted head screws (A) Fig. 14.
2. Use a screwdriver to turn the three adjusting screws (B) Fig.14 until the insert is flush with the table.
3. Replace the slotted head screws (A).

ATTACHING CUTTERS AND COLLARS TO SPINDLE

⚠WARNING DISCONNECT MACHINE FROM POWER SOURCE.

1. Three different-sized collars (A) Fig. 15 are supplied with the machine. These collars allow the cutter and/or the 4-1/2" diameter spindle guard to be positioned at various locations on the spindle.
2. When attaching cutters to the spindle, position the cutter as close to the bottom of the spindle as possible to reduce the possibility of spindle run-out, which can affect the appearance of the cut.
3. Determine which, if any, collars are needed. Then attach the cutter (B) Fig. 15, keyed washer (C), and spindle nut (D) Fig. 15). Place one wrench on the flats (A) Fig. 16 on top of the spindle and one wrench on the spindle nut (D). Tighten as shown in Fig. 17.
4. **IMPORTANT: Always place "keyed" washer (C) Fig. 16, on spindle before screwing on nut (D). The "keyed" washer (C) prevents the nut (D), from loosening when spindle turns counterclockwise.**

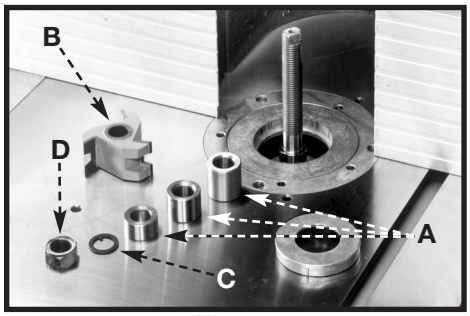

Fig. 15

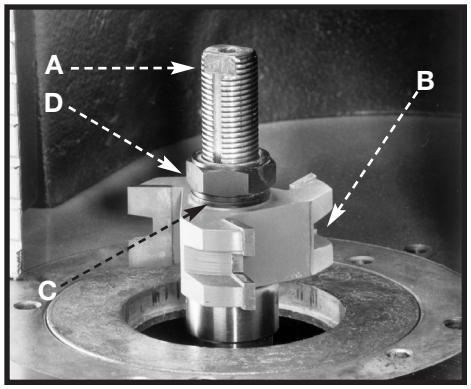

Fig. 16


Fig. 17

ATTACHING SPINDLE GUARD

A 4-1/2” spindle guard is supplied with this machine. A 6-1/2" spindle guard is available as an accessory when using cutters greater than 3-1/2" in diameter.

⚠CAUTION **The diameter of the spindle guard should be at least 1" more than the maximum cutting circle of the shaper cutter and the height of the guard should not exceed 1/4" above the material.**

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

1. Two 3/4" I.D. washers are supplied with the 4-1/2" spindle guard. Place one of the washers (A) on the spindle (Fig.18).
2. Place the spindle guard (B) Fig. 19 on the spindle. Install the other washer (C) and the “keyed” washer (D) on the spindle.
3. Thread the spindle nut (E) Fig. 20 on the spindle. Place one wrench on the flats at the top of the spindle and one wrench on spindle nut (E) and tighten.
4. **IMPORTANT: Always place the “keyed” washer (D) Fig. 19, on the spindle before screwing on the spindle nut (E) Fig. 20. The “keyed” washer (D) Fig.19 prevents the spindle nut (E) Fig. 20 from loosening when the spindle turns counterclockwise**.

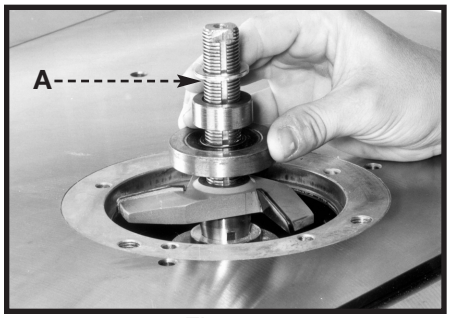

Fig. 18

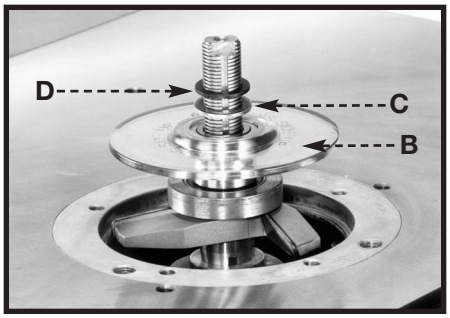

Fig. 19

Fig. 20

ATTACHING FENCE TO SHAPER TABLE

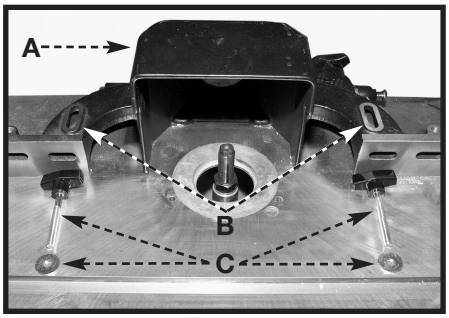

Fig. 21

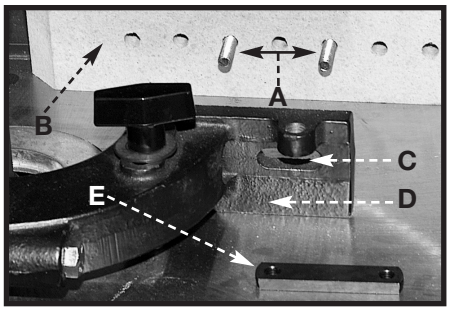

Fig. 22

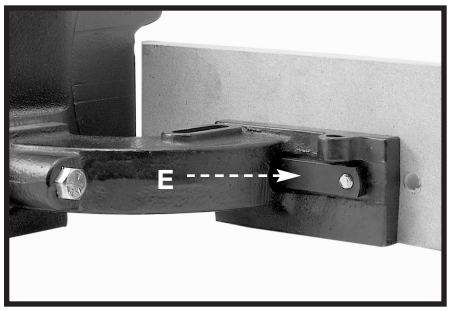

Fig. 23

1. Attach the fence assembly (A) Fig. 21 to the table. Align the holes in the table with the slots in the fence body (B) and secure with two washers and knobs (C). **NOTE**: Position the fence assembly (A) Fig. 21 either parallel to the miter gauge slot, as shown in Fig. F1, or 90 degrees to the miter gauge slot.
2. Insert two 5/16-18 x 1-1/2” round head screws (A) Fig. 22 into two of the holes in the wooden fence (B) and through the slotted holes, one of which is shown at (C) in the fence casting (D). Thread the two screws (A) into the threaded holes in strap (E) Fig. 22 and (E) Fig. 23.

OPERATING CONTROLS AND ADJUSTMENTS

STARTING AND STOPPING THE MACHINE

To start the machine, push “ON” button (A) Fig. 24. To stop the machine, push “OFF” button (B).

IMPORTANT: When the machine is not in use, the switch should be locked in the “OFF” position to prevent unauthorized use, using a padlock (C) Fig. 25 with a 3/16" diameter shackle.

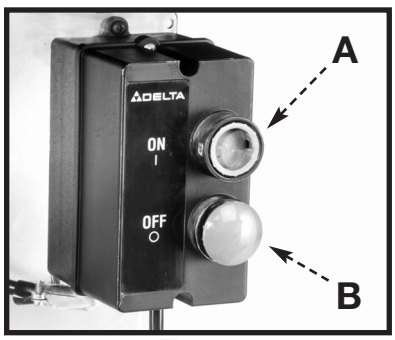

Fig. 24

Fig. 25

RAISING AND LOWERING SPINDLE

The spindle can be raised or lowered by loosening the lock knob (A) Fig. 26 and turning the handwheel (B). To raise the spindle height, turn the handwheel (B) clockwise. To lower the spindle height, turn the handle (B) counterclockwise.

The scale (C) Fig. 26 indicates the spindle travel range from 0" to 3" and is marked in 1/16" increments. Minor cutter height adjustments can be measured using the pointer (D) along the scale (C).

⚠CAUTION Always tighten lock knob (A) after adjusting spindle height.

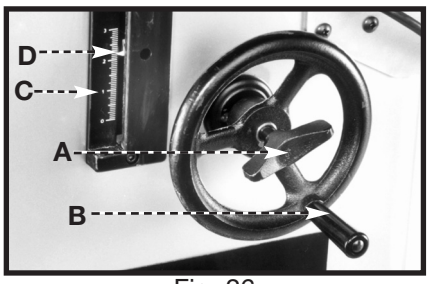

Fig. 26

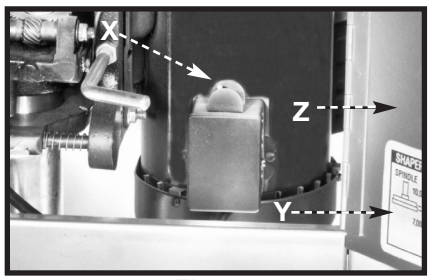

Fig. 27

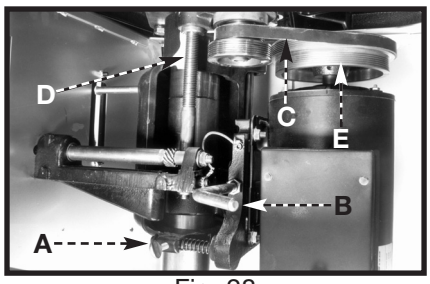

Fig. 28

CHANGING SPEEDS AND ADJUSTING BELT TENSION

The machine is supplied with a 2-step motor pulley and a 2-step spindle pulley that provide spindle speeds of 7,000 and 10,000 RPM. With the belt on the largest step of the motor pulley and the smallest step of the spindle pulley, the spindle speed will be 10,000 RPM. With the belt on the smallest step of the motor pulley and the largest step of the spindle pulley, the spindle speed will be 7,000 RPM.

A chart (Y) Fig. 27 that illustrates the correct belt placement for 7,000 or 10,000 RPM is located on the inside panel of the motor access door.

To change speeds and adjust belt tension:

⚠WARNING DISCONNECT MACHINE FROM POWER SOURCE.

1. Open motor access door (Z) Fig. 27.
2. Loosen the thumb screw (A) Fig. 28. Release tension on the belt by moving the lever (B) to the left. Position the belt (C) on the desired steps of the spindle pulley (D) and the motor pulley (E), and apply belt tension by moving the lever (B) to the right. When the desired belt tension is attained, tighten the thumb screw (A).
3. Proper belt tension is approximately a 3/32" deflection when using light finger pressure on the belt between pulleys. **IMPORTANT:** Pulleys (D) and (E) Fig. 28 should always be aligned with each other to provide maximum belt performance and reduce belt wear. To check pulley alignment, refer to section **"REPLACING SPINDLE CARTRIDGE".**

REVERSING SPINDLE ROTATION

⚠WARNING DISCONNECT MACHINE FROM POWER SOURCE.

The motor is equipped with a reversing switch (X) Fig. 27, located on the motor junction box.

⚠CAUTION Never attempt to reverse the rotation of the spindle with the motor running.

FENCE CONTROLS AND ADJUSTMENTS

⚠CAUTION Adjust the wooden fence so that the opening is just large enough to clear the spindle guard.

To adjust the fence, loosen the screws (A) Fig. 29 from both fences. Move the fences to the required positions and tighten the screws (A). If necessary, remove the screws (A) and reposition them in different holes in the fence to get the required results.

Each fence can move separately in our out, depending on the shaping operation. To move the fence, loosen lock handle (A) Fig. 30 and loosen the corresponding knob (B). Turn the knob (C) for the correct setting, then tighten both the knob (B) and the lock handle (A).

The lock handle (A) Fig. 30 is spring-loaded and can be repositioned by pulling it out and changing its position on the serrated nut.

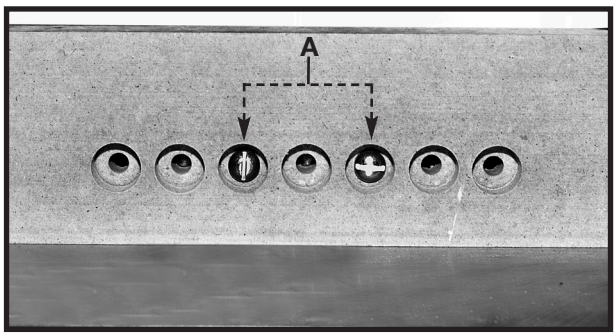

Fig. 29

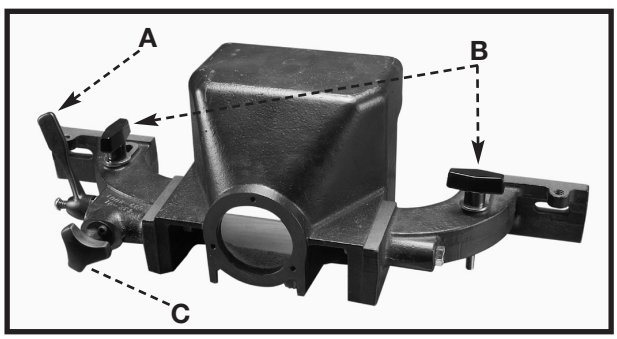

Fig. 30

OPERATIONS

The following examples show set-up and operational procedures when using the fence, collars, and starting pin. Please review this information carefully before turning on the power to avoid personal injury and/or damage to the machine.

SHAPING WHEN USING THE FENCE AS A GUIDE

Using the fence is the safest and most satisfactory method of shaping. Most straight work can be shaped using the fence described below.

1. For average work, where a portion of the original edge of the work is not touched by the cutter, both the front and rear fences are in a straight line (Fig. 31).

2. When the shaping operation removes the entire edge of the work (jointing or making a full bead), the shaped edge will not be supported by the rear fence when both fences are in line (Fig. 32). In this case, advance the work to the position shown in Fig. 32 and stop.

3. Advance the rear fence to contact the work (Fig. 33), putting it in line with the cutting circle.

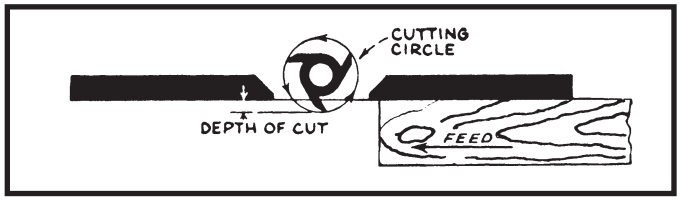

Fig. 31

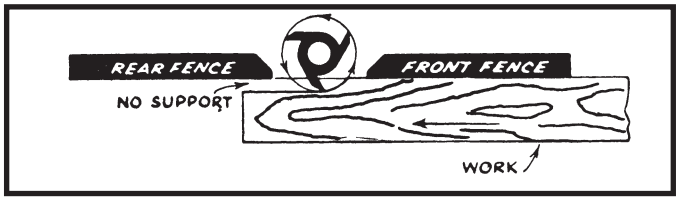

Fig. 32

Fig. 33

SHAPING WITH COLLARS AND STARTING PIN

When shaping with collars and starting pin, follow the rules below for superior finishing and safety in operation.

1. Free the collars of **ALL** gum or other substances, and confirm that they are smooth.

2. Confirm that the edge of the work is smooth. **ANY** irregularity in the surface that rides against the collar will be duplicated on the molded surface.

3. A portion of the edge of the work **MUST** remain untouched by the cutters in order for the collar to have sufficient bearing surface. The wrong method is shown in Fig. 34, while Fig. 35 illustrates the right method.

4. The work **MUST** be fairly heavy in proportion to the cut being made (Fig. 35). Under **NO** circumstances should short work of light body be shaped against the collars (Fig. 37).

5. When shaping with collars and starting pin, use the spindle guard supplied with the machine.

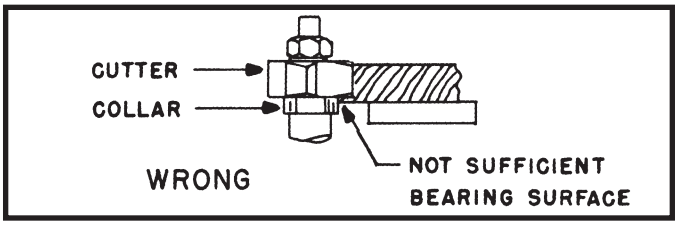

Fig. 34

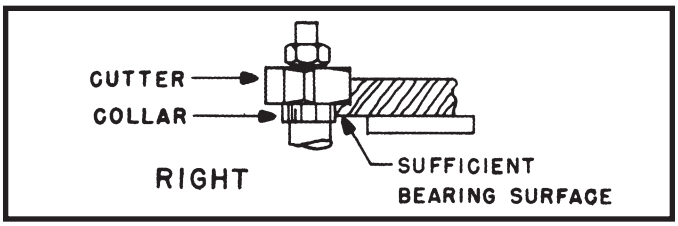

Fig. 35

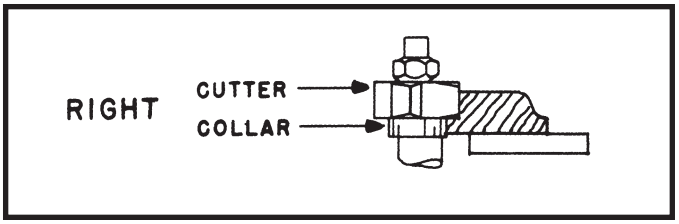

Fig. 36

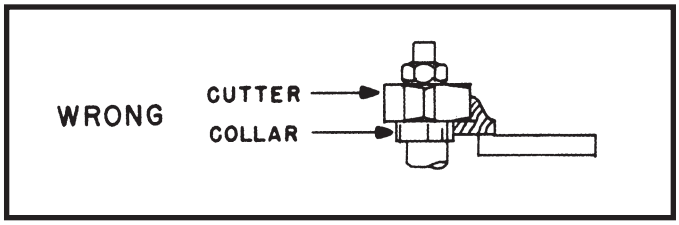

Fig. 37

POSITION OF COLLARS

1. The collars may be used in any of three positions: above, below, or between two cutters.

2. When the collar is used below the cutter (Fig. 35), the operator can see the progress of the cut. **NOTE**: Any accidental lifting of the work will gouge the wood and ruin the workpiece.

3. When the collar is used above the cutter (Fig. 36), the operator will be unable to see the cut. However, the advantage in this method is that the cut is not affected by slight variations in the thickness of the stock. Also, accidental lifting of the work will not gouge the workpiece. Simple correction for the mistake is to repeat the operation.

4. The collar between cutters method (Fig. 40) utilizes the advantages of the first two methods and is frequently used when both edges of the workpiece are to be shaped.

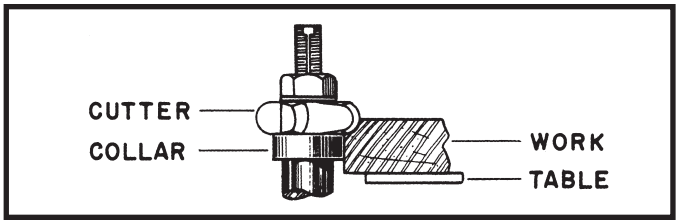

Fig. 38

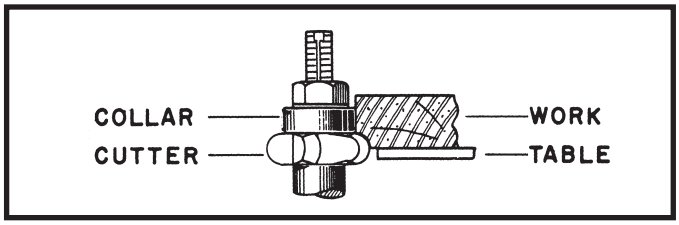

Fig. 39

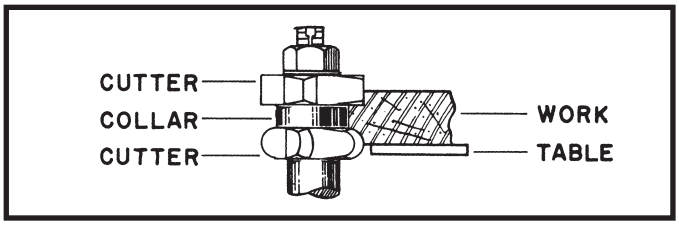

Fig. 40

END SHAPING

Maintain sufficient support of the workpiece during all shaping operations. **USE A MITER GAUGE OR BACK-UP BLOCK** (Figs. 41 and 42) when end shaping a workpiece that is too short to be sufficiently supported halfway through the cut,

⚠WARNING **Shaping a narrow workpiece without sufficient support could result in serious injury**.

The infeed fence assembly must be parallel to the miter slot when using the miter gauge. Adjust the outfeed fence so that it will not contact the workpiece after it has passed the cutter. Place the workpiece firmly against the miter gauge and the infeed fence, and feed the cutter by pushing the miter gauge.

⚠WARNING **Failure to hold the workpiece firmly against the miter gauge during the cut could result in slippage of the workpiece, causing serious personal injury and/or damage to the workpiece.**

CROSS GRAIN SHAPING

Shaping across the grain will usually cause some splitting at the end of the cut. Feeding the workpiece slowly across the cutter at the end of the cut can minimize the splitting. Shape the cross-grain cuts first. Shaping with the grain last will usually remove the splintered end.

SHAPING NARROW MATERIAL

Clamp a support (Fig. 43) to the machine when shaping narrow material (less than 3" wide) Feed the workpiece under this support with a push stick. **NOTE:** The push stick should be slightly narrower and thinner than the workpiece.

⚠WARNING **Shaping narrow material without proper support and push stick could result in serious injury.**

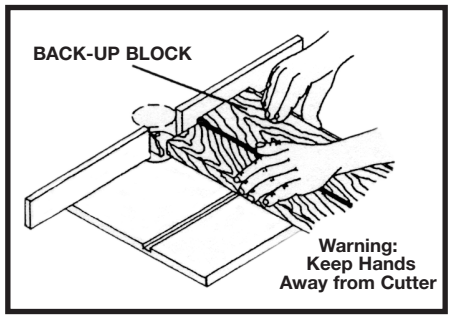

Fig. 41

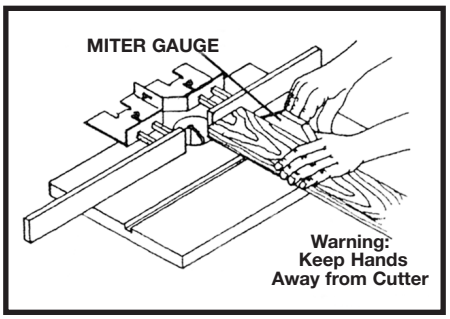

Fig. 42

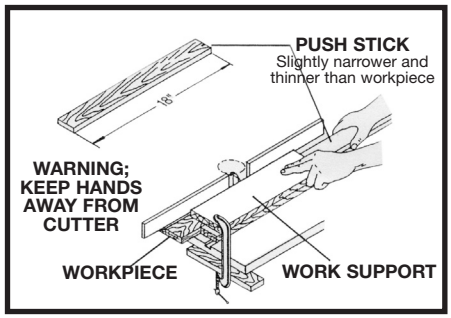

Fig. 43

STARTING PIN

1. The machine is supplied with a tapered starting pin (A) Fig. 44, which is used as a support when starting the cut. The starting pin (A) is placed in one of the tapered holes (B) in the table.
2. Place the work in the first position using the guide pin as a support (Fig. 45). Swing the work into the cutter as shown in the second position (Fig. 45). The work will be supported by the collar and starting pin (Fig. 45).
3. After the cut has started, swing the work free of the starting pin and let it ride only against the collar (third position, Fig. 45). **ALWAYS FEED THE WORK-PIECE AGAINST THE ROTATION OF THE CUTTER**.

⚠WARNING **Advancing the work to the cutter without the side support of the starting pin will provide serious kickback. ALWAYS USE THE STARTING PIN.**

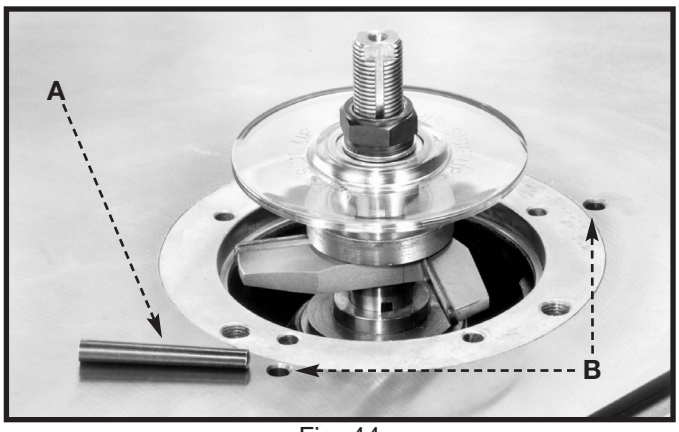

Fig. 44

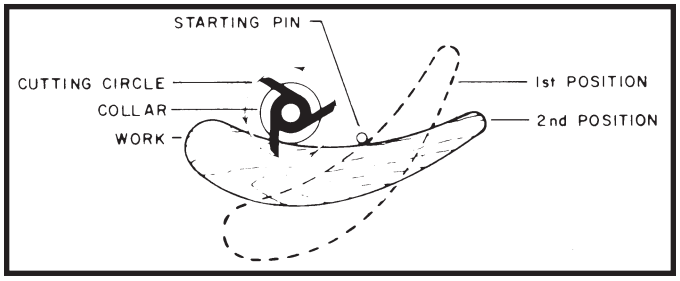

Fig. 44A

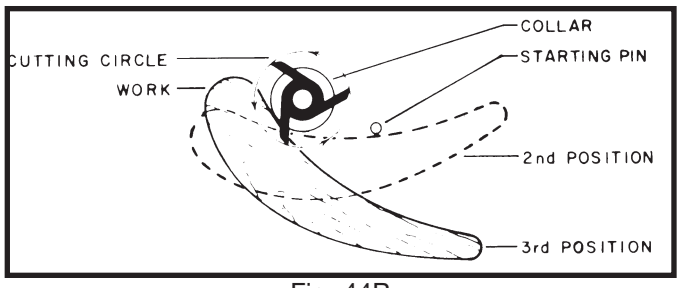

Fig. 44B

REPLACING SPINDLE CARTRIDGE

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

1. **IMPORTANT:** When replacing the spindle cartridge (B) Fig. 45A, loosen the bolt (A). Remove the spindle cartridge. Replace with a new spindle cartridge. Tighten the bolt (A) **ONLY** 7 to 10 foot pounds.
2. Always align the spindle pulley (D) Fig. 45B, and motor pulley (E) to provide maximum belt performance and to reduce belt wear. To check the pulley alignment, place a straight edge against the underside of both pulleys (Fig. 45B). If an adjustment is necessary, loosen the set screw (F) and move the motor pulley up or down until the two pulleys (D) and (E) are aligned. Tighten the set screw.
3. Using light finger pressure on the belt between pulleys (D) and (E) Fig. 48, a deflection of approximately 3/32" will constitute proper belt tension.

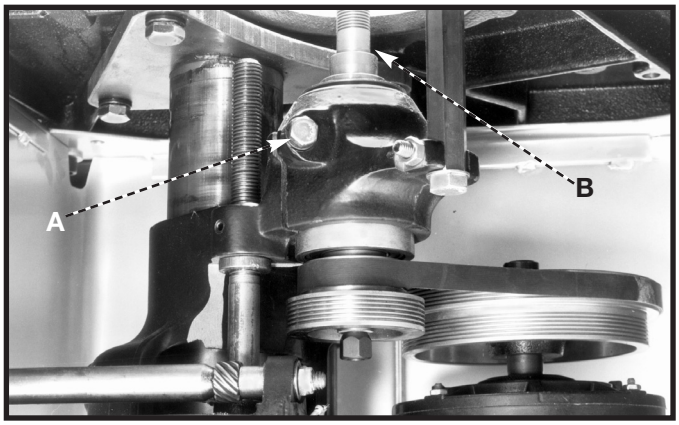

Fig. 45A

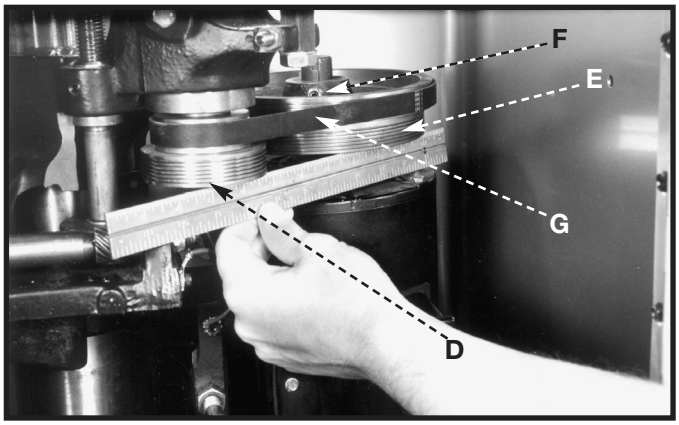

Fig. 45B

ACCESSORIES

A complete line of accessories is 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 **S**ince 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.

PARTS, SERVICE OR WARRANTY ASSISTANCE

All Delta Machines and accessories are manufactured to high quality standards and are serviced by a network of Porter-Cable • Delta Factory Service Centers and Delta Authorized Service Stations. To obtain additional information regarding your Delta quality product or to obtain parts, service, warranty assistance, or the location of the nearest service outlet, please call 1-800-223-7278 (In Canada call 1-800-463-3582).

Two Year Limited New Product Warranty

Delta will repair or replace, at its expense and at its option, any new Delta machine, machine part, or machine accessory which in normal use has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to a Delta factory service center or authorized service station with proof of purchase of the product within two years and provides Delta with reasonable opportunity to verify the alleged defect by inspection. For all refurbished Delta product, the warranty period is 180 days. Delta may require that electric motors be returned prepaid to a motor manufacturer's authorized station for inspection and repair or replacement. Delta will not be responsible for any asserted defect which has resulted from normal wear, 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 be liable for incidental or consequential damages resulting from defective products. This warranty is Delta'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.

PORTER-CABLE • DELTA SERVICE CENTERS
(CENTROS DE SERVICIO DE PORTER-CABLE • DELTA)

Parts and Repair Service for Porter-Cable • Delta Machinery are Available at These Locations
(Obtenga Refaccion de Partes o Servicio para su Herramienta en los Siguientes Centros de Porter-Cable • Delta)

ARIZONA
Tempe 85282 (Phoenix)
2400 West Southern Avenue
Suite 105
Phone: (602) 437-1200
Fax: (602) 437-2200

CALIFORNIA
Ontario 91761 (Los Angeles)
3949A East Guasti Road
Phone: (909) 390-5555
Fax: (909) 390-5554

San Leandro 94577 (Oakland)
3039 Teagarden Street
Phone: (510) 357-9762
Fax: (510) 357-7939

COLORADO
Arvada 80003 (Denver)
8175 Sheridan Blvd., Unit S
Phone: (303) 487-1809
Fax: (303) 487-1868

FLORIDA
Davie 33314 (Miami)
4343 South State Rd. 7 (441)
Unit #107
Phone: (954) 321-6635
Fax: (954) 321-6638

Tampa 33609
4538 W. Kennedy Boulevard
Phone: (813) 877-9585
Fax: (813) 289-7948

GEORGIA
Forest Park 30297 (Atlanta)
5442 Frontage Road,
Suite 112
Phone: (404) 608-0006
Fax: (404) 608-1123

ILLINOIS
Addison 60101 (Chicago)
400 South Rohlwing Rd.
Phone: (630) 424-8805
Fax: (630) 424-8895

Woodridge 60517 (Chicago)
2033 West 75th Street
Phone: (630) 910-9200
Fax: (630) 910-0360

MARYLAND
Elkridge 21075 (Baltimore)
7397-102 Washington Blvd.
Phone: (410) 799-9394
Fax: (410) 799-9398

MASSACHUSETTS
Braintree 02185 (Boston)
719 Granite Street
Phone: (781) 848-9810
Fax: (781) 848-6759

Franklin 02038 (Boston)
Franklin Industrial Park
101E Constitution Blvd.
Phone: (508) 520-8802
Fax: (508) 528-8089

MICHIGAN
Madison Heights 48071 (Detroit)
30475 Stephenson Highway
Phone: (248) 597-5000
Fax: (248) 597-5004

MINNESOTA
Minneapolis 55429
5522 Lakeland Avenue North
Phone: (763) 561-9080
Fax: (763) 561-0653

MISSOURI
North Kansas City 64116
1141 Swift Avenue
Phone: (816) 221-2070
Fax: (816) 221-2897

St. Louis 63119
7574 Watson Road
Phone: (314) 968-8950
Fax: (314) 968-2790

NEW YORK
Flushing 11365-1595 (N.Y.C.)
175-25 Horace Harding Expwy.
Phone: (718) 225-2040
Fax: (718) 423-9619

NORTH CAROLINA
Charlotte 28270
9129 Monroe Road, Suite 115
Phone: (704) 841-1176
Fax: (704) 708-4625

OHIO
Columbus 43214
4560 Indianola Avenue
Phone: (614) 263-0929
Fax: (614) 263-1238

Cleveland 44125
8001 Sweet Valley Drive
Unit #19
Phone: (216) 447-9030
Fax: (216) 447-3097

OREGON
Portland 97230
4916 NE 122 nd Ave.
Phone: (503) 252-0107
Fax: (503) 252-2123

PENNSYLVANIA
Willow Grove 19090
520 North York Road
Phone: (215) 658-1430
Fax: (215) 658-1433

TEXAS
Carrollton 75006 (Dallas)
1300 Interstate 35 N, Suite 112
Phone: (972) 446-2996
Fax: (972) 446-8157

Houston 77055
West 10 Business Center
1008 Wirt Road, Suite 120
Phone: (713) 682-0334
Fax: (713) 682-4867

WASHINGTON
Auburn 98001(Seattle)
3320 West Valley HWY, North
Building D, Suite 111
Phone: (253) 333-8353
Fax: (253) 333-9613

Authorized Service Stations are located in many large cities. Telephone **800-438-2486** or **731-541-6042** for assistance locating one. Parts and accessories for Porter-Cable•Delta products should be obtained by contacting any Porter-Cable•Delta Distributor, Authorized Service Center, or Porter-Cable•Delta Factory Service Center. If you do not have access to any of these, call **800-223-7278** and you will be directed to the nearest Porter-Cable•Delta Factory Service Center. Las Estaciones de Servicio Autorizadas están ubicadas en muchas grandes ciudades. Llame al **800-438-2486** ó al **731-541-6042** para obtener asistencia a fin de localizar una. Las piezas y los accesorios para los productos Porter-Cable•Delta deben obtenerse poniéndose en contacto con cualquier distribuidor Porter-Cable•Delta, Centro de Servicio Autorizado o Centro de Servicio de Fábrica Porter-Cable•Delta. Si no tiene acceso a ninguna de estas opciones, llame al **800-223-7278** y le dirigirán al Centro de Servicio de Fábrica Porter-Cable•Delta más cercano.

CANADIAN PORTER-CABLE • DELTA SERVICE CENTERS

ALBERTA
Bay 6, 2520-23rd St. N.E.
Calgary, Alberta
T2E 8L2
Phone: (403) 735-6166
Fax: (403) 735-6144

BRITISH COLUMBIA
8520 Baxter Place
Burnaby, B.C.
V5A 4T8
Phone: (604) 420-0102
Fax: (604) 420-3522

MANITOBA
1699 Dublin Avenue
Winnipeg, Manitoba
R3H 0H2
Phone: (204) 633-9259
Fax: (204) 632-1976

ONTARIO
505 Southgate Drive
Guelph, Ontario
N1H 6M7
Phone: (519) 836-2840
Fax: (519) 767-4131

QUÉBEC
1515 ave.
St-Jean Baptiste,
Québec, Québec
G2E 5E2
Phone: (418) 877-7112
Fax: (418) 877-7123

1447, Begin
St-Laurent, (Montréal),
Québec
H4R 1V8
Phone: (514) 336-8772
Fax: (514) 336-3505

Printed in U.S.A. PC-0403-149