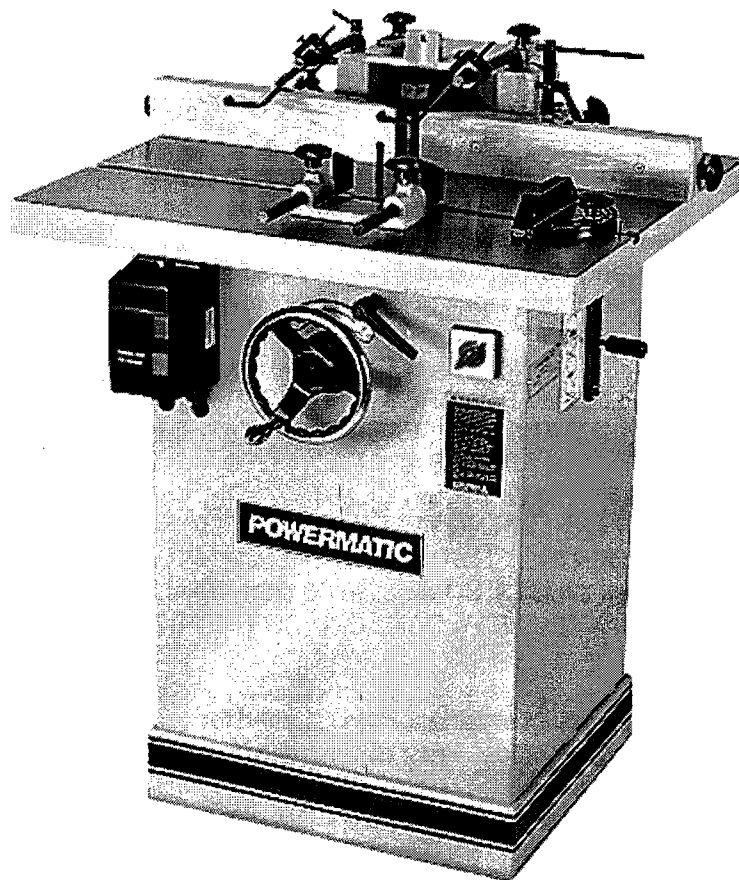


# SPINDLE SHAPER

Model 25A

Instruction Manual & Parts List

M-0460249



# **POWERMATIC<sup>®</sup>**

(800) 274-6848  
[www.powermatic.com](http://www.powermatic.com)

This manual has been prepared for the owner and operators of a Powermatic Model 25A Spindle Shaper. Its purpose, aside from machine operation, is to promote safety through the use of accepted correct operating and maintenance procedures. Completely read the safety and maintenance instructions before operating or servicing the machine. To obtain maximum life and efficiency from your shaper, and to aid in using the machine safely, read this manual thoroughly and follow all instructions carefully.

### Warranty & Service

WMH Tool Group warrants every product it sells. If one of our tools needs service or repair, one of our Authorized Repair Stations located throughout the United States can give you quick service.

In most cases, any one of these WMH Tool Group Repair Stations can authorize warranty repair, assist you in obtaining parts, or perform routine maintenance and major repair on your JET, Powermatic, Performax, or Wilton tools.

For the name of an Authorized Repair Station in your area, call 1-800-274-6848.

### More Information

WMH Tool Group is consistently adding new products to the line. For complete, up-to-date product information, check with your local WMH Tool Group distributor or visit [wmhtoolgroup.com](http://wmhtoolgroup.com).

### Limited Warranty

WMH Tool Group makes every effort to assure that its products meet high quality and durability standards and warrants to the original retail consumer/purchaser of our products that each product be free from defects in materials and workmanship as follows: 1 YEAR LIMITED WARRANTY ON ALL PRODUCTS UNLESS SPECIFIED OTHERWISE. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence or accidents, normal wear-and-tear, repair or alterations outside our facilities, or to a lack of maintenance.

WMH TOOL GROUP LIMITS ALL IMPLIED WARRANTIES TO THE PERIOD SPECIFIED ABOVE, FROM THE DATE THE PRODUCT WAS PURCHASED AT RETAIL. EXCEPT AS STATED HEREIN, ANY IMPLIED WARRANTIES OR MERCHANTABILITY AND FITNESS ARE EXCLUDED. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG THE IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. WMH TOOL GROUP SHALL IN NO EVENT BE LIABLE FOR DEATH, INJURIES TO PERSONS OR PROPERTY, OR FOR INCIDENTAL, CONTINGENT, SPECIAL, OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OF OUR PRODUCTS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

To take advantage of this warranty, the product or part must be returned for examination, postage prepaid, to an Authorized Repair Station designated by our office. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection discloses a defect, WMH Tool Group will either repair or replace the product, or refund the purchase price if we cannot readily and quickly provide a repair or replacement, if you are willing to accept a refund. WMH Tool Group will return repaired product or replacement at our expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of our warranty, then the user must bear the cost of storing and returning the product. This warranty gives you specific legal rights, you may also have other rights which vary from state to state.

WMH Tool Group sells through distributors only. WMH Tool Group reserves the right to effect at any time, without prior notice, those alterations to parts, fittings, and accessory equipment which they may deem necessary for any reason whatsoever.

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## SPECIFICATIONS

Table size .....	29-1/4" x 25-1/2"
Table opening .....	6-3/16"
Insert opening .....	3-1/4"
Spindle size .....	1/2", 3/4", 1"
Table height .....	34"
Undernut capacity .....	1/2" x 3-1/2", 3/4" x 3-1/2", 1" x 3-1/2"
Spindle speeds .....	7,500 & 10,000 RPM
Spindle rotation .....	forward or reverse
Spindle travel .....	3-3/4"
Collet router bit adaptor (standard) .....	1/4" & 1/2"
Dust chute diameter .....	4"
Overall dimensions .....	37" x 29" x 25"
Motor .....	3 HP, 1 Ph, 230V only, or 5 HP, 3 Ph, 230V only
Weight .....	400 lbs.

## SAFETY: General Rules

As with all power tools there is a certain amount of hazard involved with the operation and use of the tool. Use the tool with the respect and caution demanded where safety precautions are concerned. This will considerably lessen the possibility of personal injury. When normal safety precautions are overlooked or completely ignored, personal injury to the operator can result.

**KNOW YOUR TOOL.** Read the owner's manual carefully. Learn the tools applications and limitations, as well as the specific potential hazards peculiar to it.

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

**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 plug must be attached to a known ground. Never remove the third prong.

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

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

**AVOID DANGEROUS ENVIRONMENT.** Don't use power tools in damp or wet locations, or expose them to rain. Keep work area well lighted.

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

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

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

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

**WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, or jewelry that can get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.

**USE SAFETY GLASSES.** Also use face or dust mask if cutting operation is dusty.

**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.

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

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

**DISCONNECT TOOLS** before servicing and when changing accessories such as chisel and bit.

**USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommended accessories. The use of improper accessories may cause hazards.

**AVOID ACCIDENTAL STARTING.** Make sure switch is in "OFF" position before plugging in cord.

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

**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.

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

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

**ADDITIONAL HEALTH HAZARDS:** 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 paint.  
\* crystalline silica from bricks and cement and other masonry products.

\* 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 specifically designed to filter out microscopic particles.

## SAFETY: Specific Rules

**SHORT STOCK:** Never shape stock less than 12 inches in length without special fixtures. Where practical, shape longer stock and cut to size.

**12 INCH RULE:** When shaping, never allow your hands to come closer than 12 inches to the cutters.

**HAND SAFETY:** Never pass the hands directly over or in front of the cutters. As one hand approaches the 12 inch radius point, remove it (or the push stick) in an arc motion and reposition hands 12 inches beyond the cutters, Figure 1.

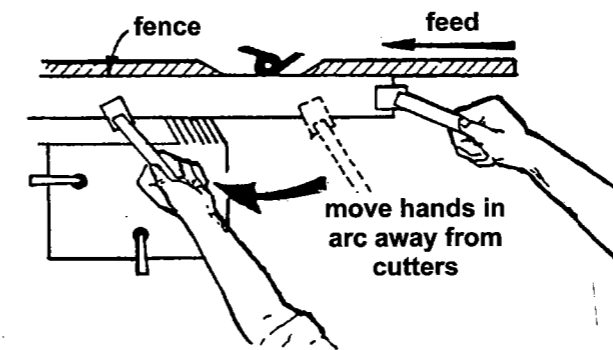


FIGURE 1

**FEED STOCK** opposite to the direction of the cutter rotation. Never back stock out of the cutter once the cut has been started. Instead, pull the stock straight back away from cutter and begin the cut again. See Figure 2.

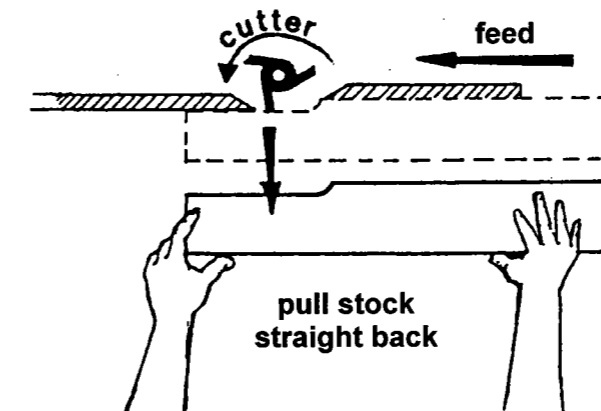


FIGURE 2

**COLLARS:** When shaping with collars, the collar must have sufficient bearing surface (see page 10). The work must also be fairly heavy in proportion to the cut being made. Do not use short, lightweight stock when shaping against collars.

**THE OPENING** between the fence plates should be only just enough to clear the cutter.

**EDGE SHAPING:** Always use the miter gauge and clamp attachment when edge shaping stock less than 6" wide. The fence should be removed during this operation.

**SAFETY LOCK WASHER:** Never operate the shaper without the safety locking keyed washer located immediately under the spindle nut, Figure 3. This prevents the nut from coming loose when the spindle is run in a counterclockwise direction. Do not substitute any other type washer in place of the safety lock washer.

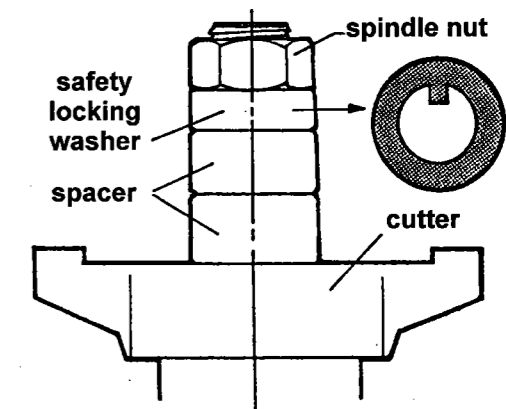


FIGURE 3

**BE SURE** the special arbor nut and the draw bar are tightened on the arbor.

**MISUSE:** Do not use this shaper for other than its intended use. If used for other purposes, POWERMATIC disclaims any real or implied warranty and holds itself harmless for any injury which may result from that use.

**REPLACEMENT PARTS:** Use only POWERMATIC or factory authorized replacement parts and accessories; otherwise, the shaper warranty and guarantee will be null and void.

## RECEIVING THE SHAPER

Remove shaper and any loose items from their shipping containers. Check for damage and ensure all parts are intact. Any damage should be reported immediately to your distributor and shipping agent. Before assembling, read the manual thoroughly, familiarizing yourself with correct assembly and maintenance procedures and proper safety precautions.

### Contents of shipping container:

- 1 shaper
- 1 fence assembly (mounted)
- 1 mitre gauge (mounted)
- 1 dust chute (shipped inside base)

### Contents of accessory package:

- 4 box wrenches
- 2 Allen wrenches
- 1 spindle wrench
- 1 wheel handle
- 3 spindles (1/2", 3/4" and 1")
- 2 collets (1/4" and 1/2")
- 1 collet nut
- 1 starting pin

## INSTALLATION

Clean all rust-protected surfaces with a mild solvent or kerosene. DO NOT use paint thinner, lacquer thinner or gasoline as these will damage painted surfaces.

Install the shaper in a level, well-lit area where it will have enough room on all sides to be serviced, and you can move long stock pieces freely.

## ELECTRICAL CONNECTIONS

**⚠ WARNING:** All electrical connections must be done by a qualified electrician. Failure to comply may result in serious injury.

The 25A Shaper is rated at 3 HP, 1 Ph, 230V only, or 5 Hp, 3 Ph, 230V only. Confirm that the power source at your site is identical to the rated power for the shaper.

Consult the wiring diagram on page 28.

## ASSEMBLY

1. Attach handle to hand wheel on front of shaper.
2. Remove three hex cap bolts from fence assembly.
3. Attach dust collector hood (A), Figure 4, to fence assembly.

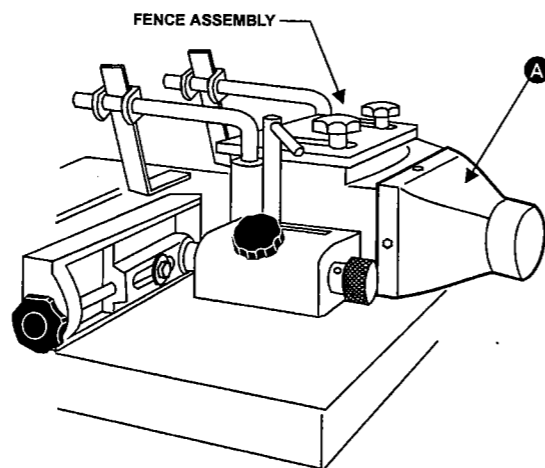


FIGURE 4

4. Using a level placed both side-to-side and front-to-back on the table top, level the shaper using shims under each corner as necessary.
5. If the shaper will not be bolted to the floor, make sure it rests solidly after leveling.

## ADJUSTMENTS

### CHANGING CUTTER SPEED

Your shaper is equipped with pulleys that allow you to change the spindle speed. The upper pulley provides 7,500 RPM spindle speed, and the lower pulley provides 10,000 RPM spindle speed.

1. Disconnect machine from power source.
2. Open door of cabinet.
3. Loosen two hex cap bolts (A), Figure 5.
4. Turn the tensioning knob (B) counter-clockwise to release belt tension. Move the belts to the other set of grooves.

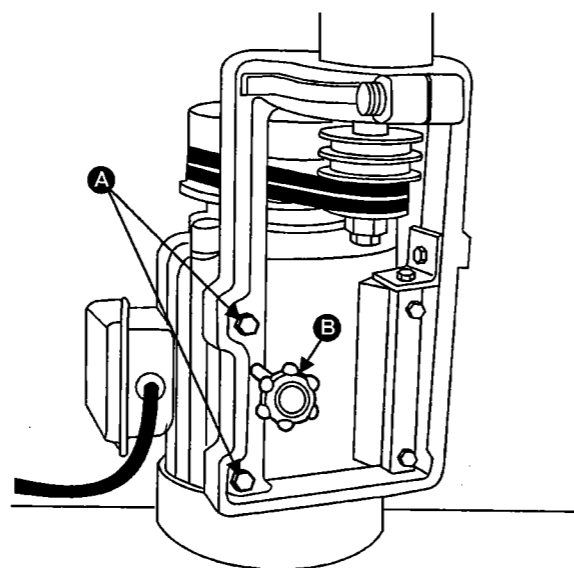


FIGURE 5

5. Turn the tensioning knob clockwise to adjust tension. Adjust tension until light finger pressure deflects the belts 1/4" midway between the pulleys. See Figure 6.
6. Tighten the two hex cap bolts (A).

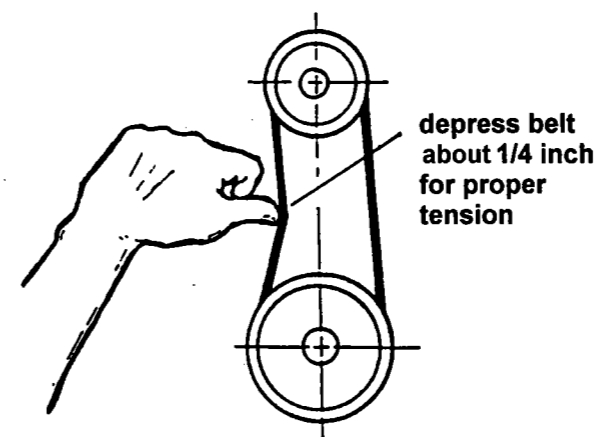


FIGURE 6

### SPINDLE INSTALLATION AND REMOVAL

The spindle is mounted to the main shaft with a draw bar and a nut. Use the following procedure to install the spindle. Reverse the order to remove the spindle.

1. Disconnect machine from power source.
2. Use the locking mandrel on the right side of the machine (A), Figure 7, to lock the shaft in place. Follow the instructions on the label next to the mandrel.

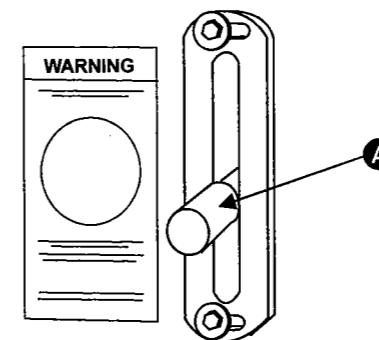


FIGURE 7

3. Select the proper size spindle (B) and install the arbor nut (C), Figure 8, by slipping nut over tapered end of arbor and threading the spindle until hand tight.
4. Clean the spindle shank and bore of the main shaft.

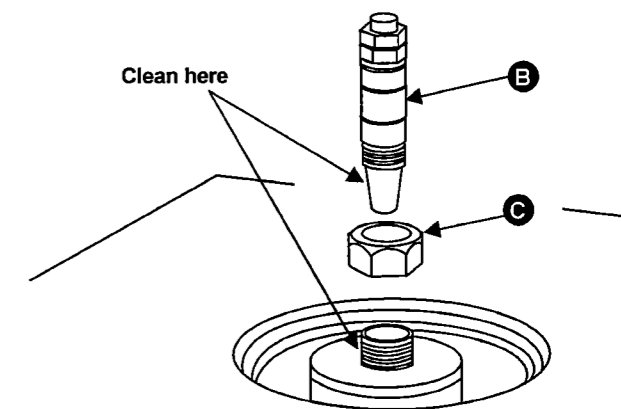


FIGURE 8

5. Place spindle onto the main shaft and thread the arbor nut onto the shaft. Tighten the nut using the supplied spanner wrench.
6. Place the draw bar into the bottom of the main shaft and tighten the nut (D), Figure 10, with the spanner wrench.
7. Pull the locking mandrel out and turn to release the main shaft.
8. Check all around the cabinet for tools, rags, and parts. Close and latch cabinet door.
9. Reconnect machine to the power source.
10. To remove a spindle, loosen the arbor nut (C), Figure 8, then take down the nut on the draw bar (D), Figure 9. Loosen the draw bar by turning 2 or 3 times and use a hammer or other hard material to strike the base of the draw bar to unseat the spindle.

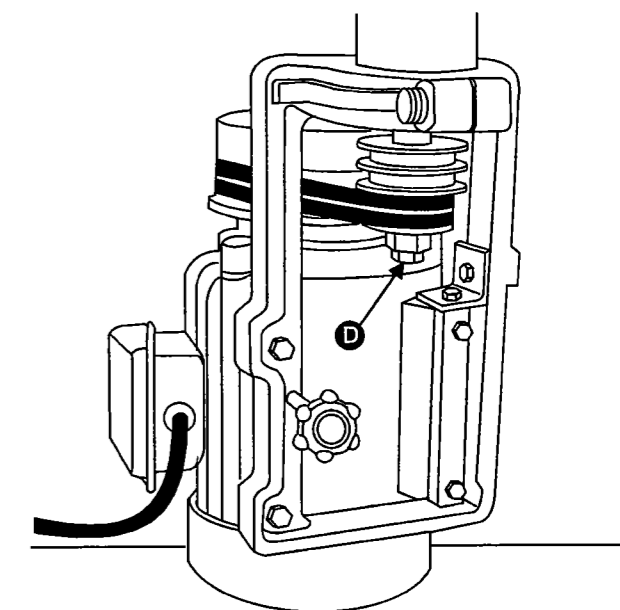


FIGURE 9

## COLLET INSTALLATION

1. Disconnect machine from power source.
2. To set up the shaper for collet use, remove the arbor and clean the spindle taper.
3. Install adaptor in spindle opening by pushing tapered end into spindle followed by the collet and special nut. **NOTE:** Special nut upper internal opening is tapered to mate with the tapered surface of the collet.

## SHAPER CUTTER INSTALLATION

Use the following procedure to install the shaper cutter. Reverse the order to remove the cutter.

1. Disconnect machine from power source.
2. Engage the locking mandrel (A-Figure 7) to lock the main shaft.
3. Place the cutter (A), Figure 10, onto the spindle, orientated in the proper direction.
4. Place the spacers (B), and keyed collar (C) onto the spindle.
5. Place the washers and nuts (D) onto the spindle.
6. Tighten the nuts securely.
7. Pull the locking mandrel and turn to release the main shaft.
8. Connect the machine to the power source.

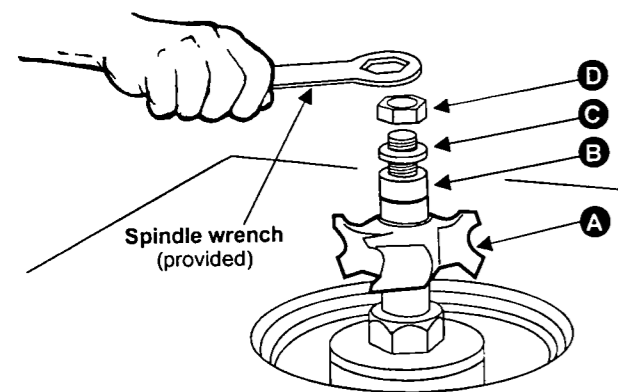


FIGURE 10

## SPINDLE VERTICAL TRAVEL

Spindle height is adjustable to set proper cutting height.

To change the spindle height, loosen the clamping handwheel (A), Figure 11, and turn handwheel (B) to raise or lower the spindle. Tighten the clamping handwheel after the spindle is at the desired height.

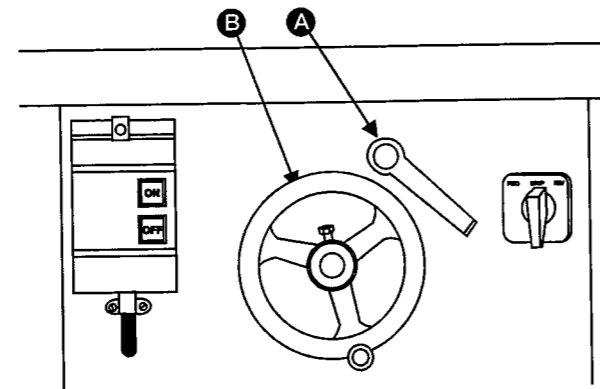


FIGURE 11

## TABLE INSERTS

Two table inserts (A), Figure 12, are included for use with your shaper. The two inserts have openings of 3-1/4" and 2". The smaller insert also has a guide shoulder for shaping without using a collar.

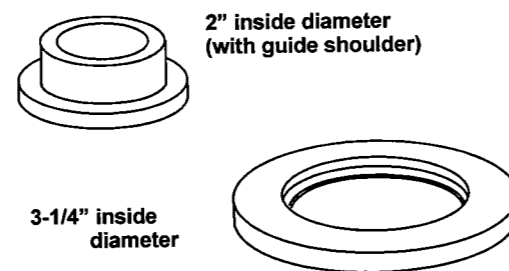


FIGURE 12

## ADJUSTING THE FENCE

Have a scrap workpiece available to allow proper positioning of the fence and hold-down guides.

**Adjust both fence ends to support your workpiece before and after passing the cutter.**

To move the fence forward or back, loosen the lock knob (A), Figure 13, and turn adjuster knob (B) to move the fence to the desired position. Tighten the lock knob to lock the fence in position.

**Adjust both infeed and outfeed fences as close to the cutter as possible but without interfering with cutter rotation.**

To move a fence end left or right, loosen the hex cap bolt (C), turn knob (D) to move fence into position, and tighten the hex cap bolt.

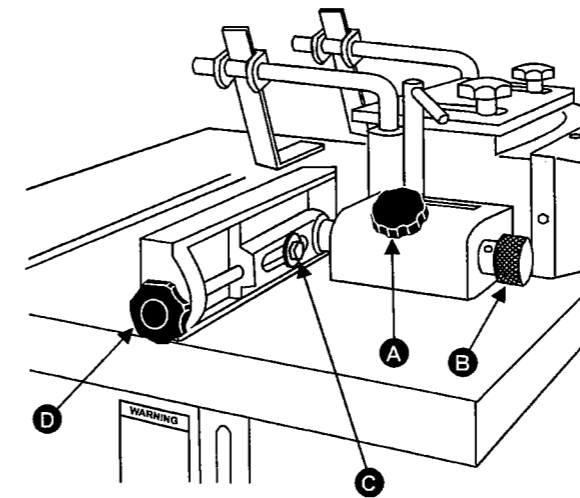


FIGURE 13

## WORK HOLD-DOWN GUIDES

1. Loosen the hex cap bolts (A), Figure 14, turn the spring plate (B) to the desired angle, and tighten the hex cap bolts.
2. Loosen the locking lever (C), adjust the jack stay to put moderate pressure on the workpiece, and tighten the locking lever.

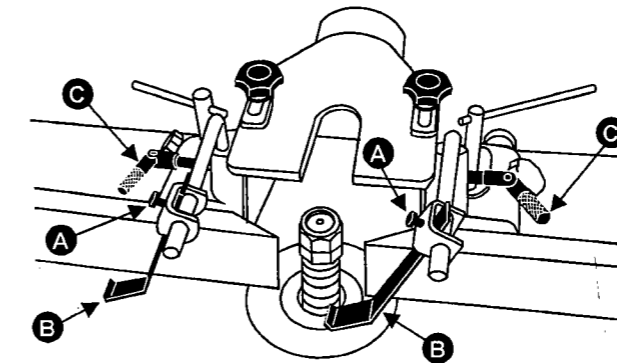


FIGURE 14

3. On the auxiliary support assembly, Figure 15, loosen the locking knob (D), slide the spring guide plates (E) to put moderate pressure on the workpiece, and tighten the locking knob.

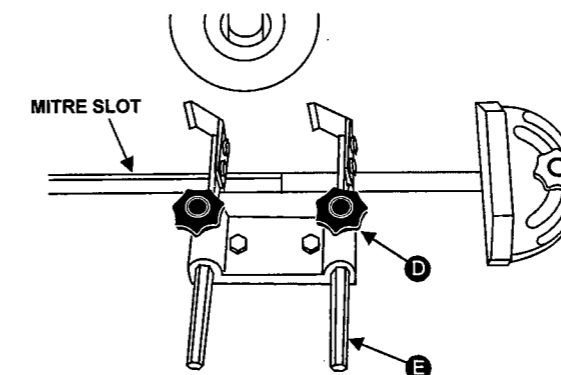


FIGURE 15

## OPERATING THE SHAPER

### ELECTRICAL CONTROLS

The shaper is equipped with a push-button control system (A) and reversing switch (B), Figure 16. The green "start" and red "stop" buttons are mounted in a control enclosure on the front of the machine.

To reverse the rotation of the spindle, shut off the motor, allow it to come to a complete stop, and turn the reversing switch.

**CAUTION:** Do not operate the reversing switch while the motor is running as this may damage your machine! Wait until motor comes to a complete stop before reversing.

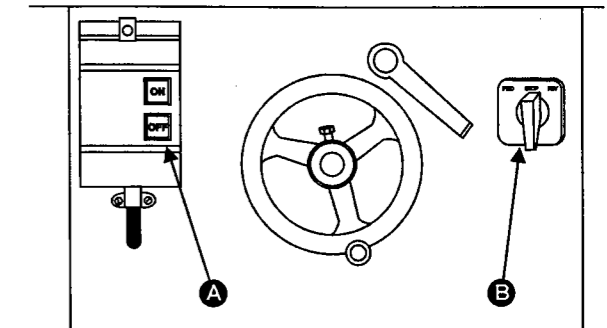


FIGURE 16

Use the following as a guide to using the shaper, fence, collars, and starting pin.

### USING THE FENCE

Using the fence is the safest and most satisfactory method of shaping, and should always be used when the work permits. Almost all straight work can be used with the fence.

1. For average work, where a portion of the original edge of the work is not to be touched by the cutter, both the front and rear fences are set in a straight line as shown in Figure 17.

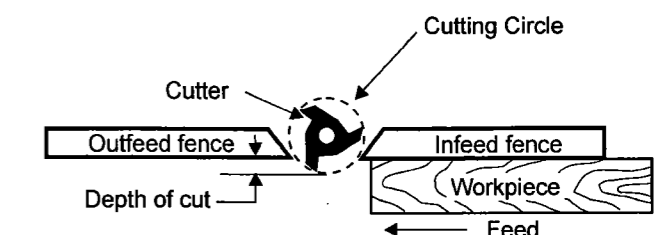


FIGURE 17

2. When the shaping operation removes the entire edge of the work, e.g. in jointing or making a full bead, the shaped edge will not be supported by the outfeed fence when both fences are in line, Figure 18. In this case, the stock should be advanced to the position shown in Figure 18 and stopped. Turn off the machine and move the outfeed fence forward to contact the workpiece, Figure 19. Remove the workpiece, start the motor, and then continue the operation.

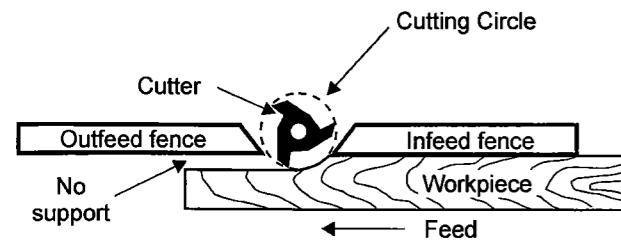


FIGURE 18

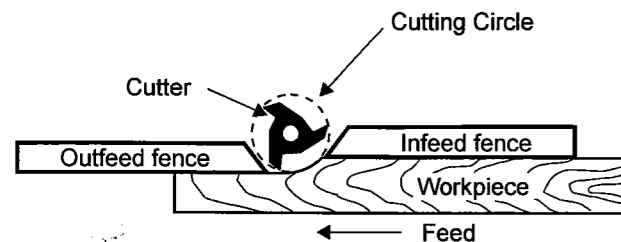


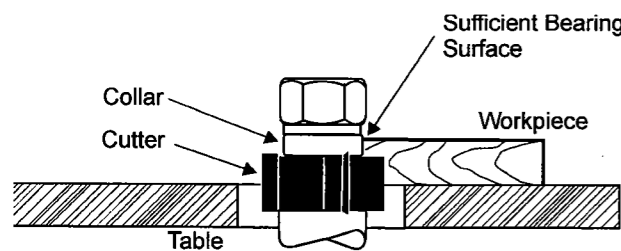
FIGURE 19

**WARNING:** Always remove workpiece before starting the machine! This will prevent kickback and potential serious injury.

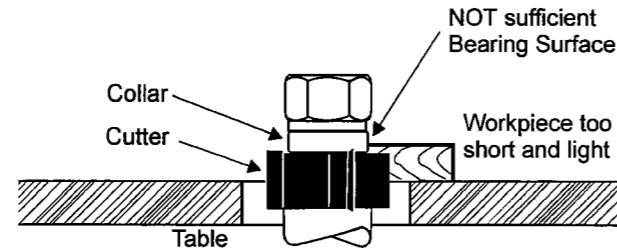
### SHAPING WITH COLLARS

When shaping with collars and starting pin, always adhere to the following rules for good work and safe operation:

1. The collar must have sufficient bearing surface, as shown in Figure 20. Also, the stock must be fairly heavy in proportion to the cut being made. Under no circumstances should a short, light workpiece be shaped against the collars, as in Figure 21.



RIGHT  
FIGURE 20



WRONG  
FIGURE 21

NOTE: The edge of the work to be shaped must be smooth. Any irregularity on the surface which rides against the collar will be duplicated on the molded surface. Collars must be smooth and free from pitch and other substances.

### POSITION OF COLLARS

Collars may be used above, below or between cutterheads.

1. When the collar is used below the cutter, as shown in Figure 22, the progress of the cut can be seen throughout the operation. However, any accidental lifting of the work will gouge the wood and ruin the workpiece.

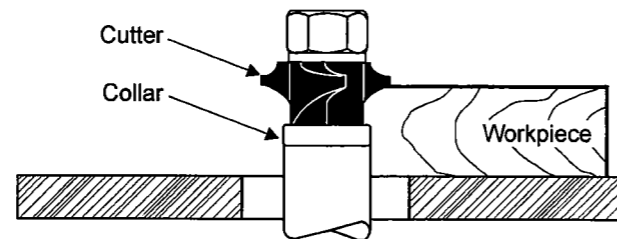


FIGURE 22

2. When the collar is used above the cutter, as shown in Figure 23, the cut cannot be seen. But this method offers an advantage in that the cut is not affected by slight variations in the thickness of the stock. Also, accidental lifting of the workpiece will not gouge the workpiece; simply repeat the operation to correct the mistake.

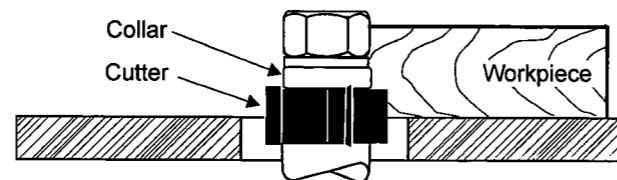


FIGURE 23

3. Using the collar between the two cutters has the advantages and disadvantages of the first two procedures, and is frequently used where both edges of the work are to be molded, Figure 24.

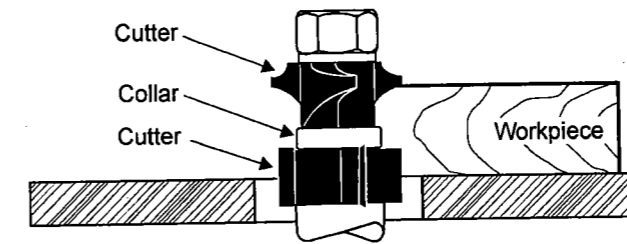


FIGURE 24

NOTE: It is advisable to place the cutter as low as possible on the spindle to reduce spindle deflection and ensure the best possible finish. Also make sure that the contacting surfaces of the cutter are smooth, clean and without dents.

### STARTING PIN

**WARNING:** Use of the starting pin should only be attempted by advanced users. If you have never used this method, it is recommended you get training from a qualified person. Failure to comply may result in serious injury.

The starting pin is used to support the work when starting the cut.

1. The work should be placed in the first position, Figure 25, using the starting pin as a support.

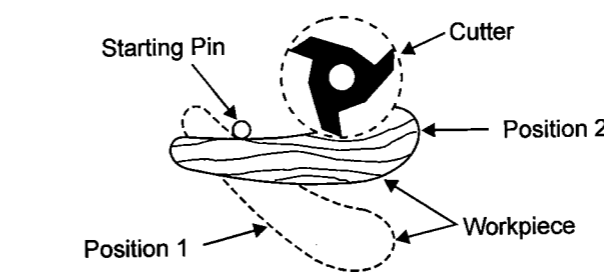


FIGURE 25

2. Swing the work into the cutter as shown in the second position. The work is now supported by the starting pin and the collar.

3. After the cut has been started, the work is swung free of the starting pin and only rides against the collar, Figure 26. Always feed against the cutterhead rotation.

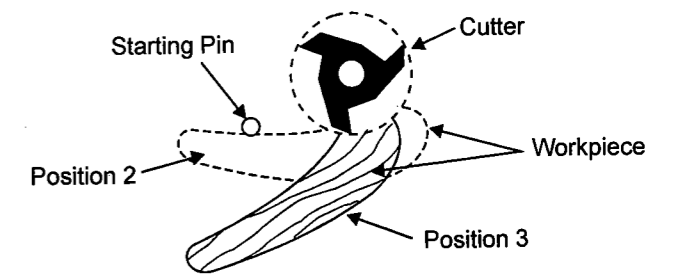


FIGURE 26

### MAINTENANCE

Periodically lubricate the following components:  
Spindle Cartridge (daily - SAE 30W machine oil)  
Elevating Shaft (bi-weekly - SAE 30W machine oil)  
Adjusting Plate (monthly) - #2 Tube Grease, lithium based)

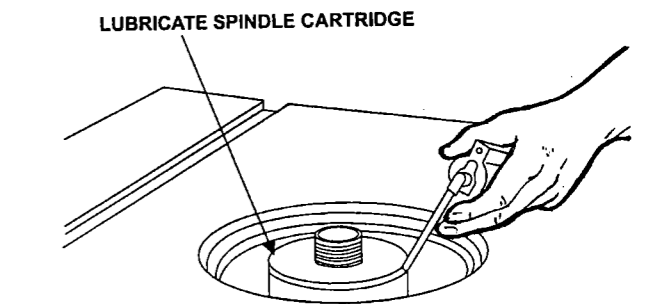


FIGURE 27

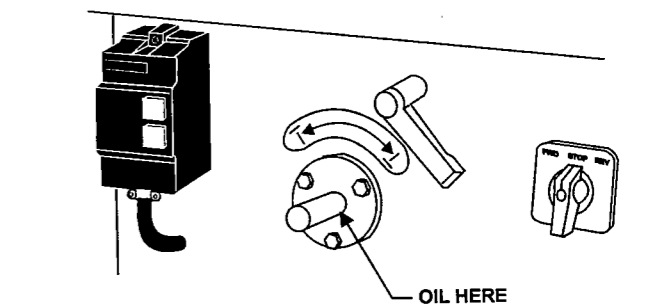


FIGURE 28

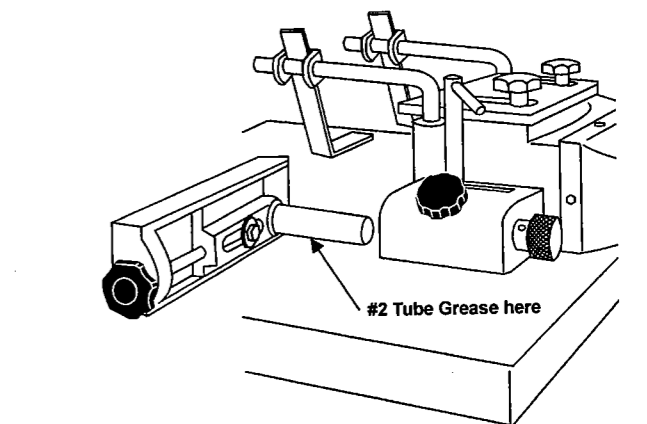


FIGURE 29

## TROUBLE SHOOTING

PROBLEM	POSSIBLE CAUSE	REMEDY
Shaper will not start.	<ol style="list-style-type: none"> <li>1. Fuse blown or circuit breaker tripped.</li> <li>2. Cord damaged.</li> <li>3. Cord unplugged from the power source.</li> <li>4. Reversing switch is in the OFF position.</li> <li>5. Overload tripped.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace fuse or reset circuit breaker.</li> <li>2. Replace cord.</li> <li>3. Plug in power cord.</li> <li>4. Turn switch to forward or reverse.</li> <li>5. Reset overload by depressing red stop button.</li> </ol>
Overload kicks out frequently.	<ol style="list-style-type: none"> <li>1. Extension cord or wiring inadequate size.</li> <li>2. Feeding stock too fast.</li> <li>3. Cutterhead is dull.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace cord or wiring with proper gauge wire.</li> <li>2. Reduce stock feed rate.</li> <li>3. Use only sharp cutters.</li> </ol>
Cutter does not come up to full speed.	<ol style="list-style-type: none"> <li>1. Shop wire gauge is too small.</li> <li>2. Extension cord too light or too long.</li> <li>3. Power source is not adequate.</li> <li>4. Motor not wired for correct voltage.</li> <li>5. Spindle is locked with mandrel lever.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace cord or wiring with proper gauge wire.</li> <li>2. Replace with adequate size cord.</li> <li>3. Contact local electrical utility.</li> <li>4. Refer to motor name plate for correct wiring.</li> <li>5. Unlock spindle - see label next to lever on base.</li> </ol>
Cuts are unsatisfactory.	<ol style="list-style-type: none"> <li>1. Dull cutter.</li> <li>2. Gum or pitch on cutter.</li> <li>3. Cutterhead rotating in wrong direction.</li> <li>4. Feeding work in the wrong direction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace cutter.</li> <li>2. Remove cutter and clean with solvent.</li> <li>3. Check for proper rotation at start up.</li> <li>4. Feed work against the cutter rotation.</li> </ol>
Machine vibrates	<ol style="list-style-type: none"> <li>1. Cutterhead damaged.</li> <li>2. Stand on uneven surface.</li> <li>3. Defective V-belt.</li> <li>4. V-belt incorrectly tensioned.</li> <li>5. Bent pulley.</li> <li>6. Motor mounted improperly.</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace cutterhead.</li> <li>2. Stand must rest solidly on level surface, bolt to floor if necessary.</li> <li>3. Replace V-belt.</li> <li>4. Apply proper tension.</li> <li>5. Replace pulley.</li> <li>6. Motor must be properly mounted with snug nuts and bolts.</li> </ol>
Edge splits off on cross grain cut.	<ol style="list-style-type: none"> <li>1. Characteristic of this type of cut.</li> </ol>	<ol style="list-style-type: none"> <li>1. Make cross grain cuts first, then finish cut with the grain. Use scrap block to support end of cut.</li> </ol>
Raised areas on shaped edge.	<ol style="list-style-type: none"> <li>1. Variation of pressure holding work against cutter.</li> </ol>	<ol style="list-style-type: none"> <li>1. Hold work firmly against table and fence. Use holddowns and push sticks</li> </ol>
Work pulled from hand.	<ol style="list-style-type: none"> <li>1. Feeding work in wrong direction.</li> </ol>	<ol style="list-style-type: none"> <li>1. Always feed work against the rotation of the cutterhead.</li> </ol>
Depth of cut not uniform.	<ol style="list-style-type: none"> <li>1. Fence misalignment.</li> <li>2. Side pressure not uniform.</li> </ol>	<ol style="list-style-type: none"> <li>1. Align outfeed fence.</li> <li>2. Use holddowns; keep constant pressure against fence and use push sticks.</li> </ol>

## TROUBLE SHOOTING (cont.)

PROBLEM	POSSIBLE CAUSE	REMEDY
Work burns.	<ol style="list-style-type: none"> <li>1. Cutting too deep on one pass.</li> <li>2. Forcing work.</li> </ol>	<ol style="list-style-type: none"> <li>1. On hardwoods take light cuts; attain full depth with several passes.</li> <li>2. Feed work slowly and steadily.</li> </ol>
Cut height not uniform.	<ol style="list-style-type: none"> <li>1. Variation in pressure holding work to table.</li> </ol>	<ol style="list-style-type: none"> <li>1. Keep pressure firm throughout pass. Use holddowns. Make pass slowly and steadily. Keep work under cutter whenever possible.</li> </ol>
Cuts not smooth.	<ol style="list-style-type: none"> <li>1. Wrong R.P.M.</li> <li>2. Feed too fast.</li> <li>3. Working against the grain.</li> <li>4. Cutting too deep on one pass.</li> </ol>	<ol style="list-style-type: none"> <li>1. Use faster speed.</li> <li>2. Slow feed speed.</li> <li>3. Work with the grain whenever possible.</li> <li>4. Take several passes on very deep cuts.</li> </ol>
Spindle does not raise freely.	<ol style="list-style-type: none"> <li>1. Sawdust or dirt in raising mechanism.</li> </ol>	<ol style="list-style-type: none"> <li>1. Brush or blow out dirt and sawdust. Lubricate regularly.</li> </ol>

**PARTS LIST: Base Assembly (Model 25A)**

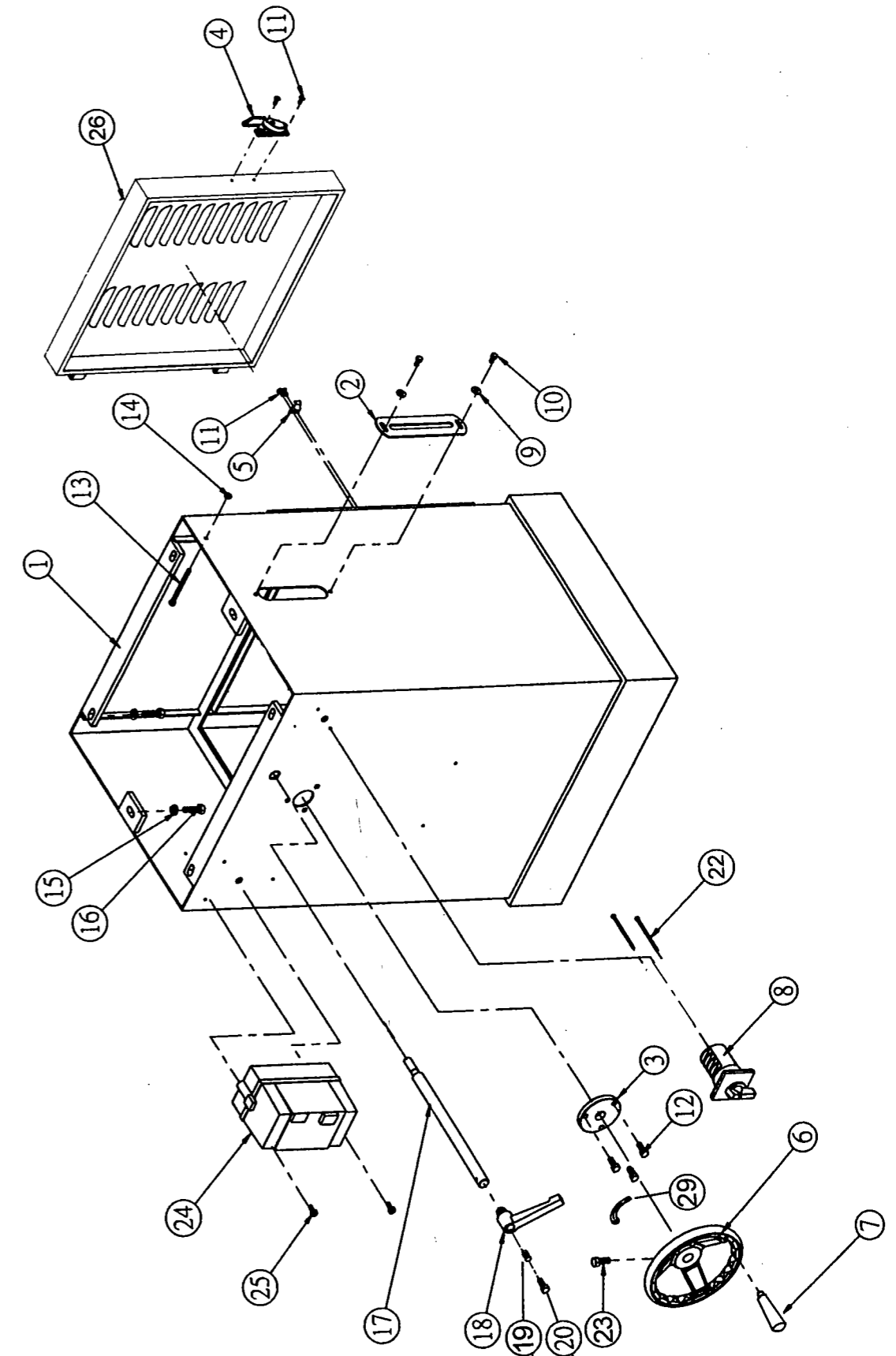
NO. PART NO. DESCRIPTION

- 1 6295368 Base
- 2 6295369 Plate
- 3 6295370 Flange
- 4 6295371 Handle Catch
- 5 6295372 Catch
- 6 6295373 Handwheel
- 7 6295374 Handle
- 8 6295375 For/Rev Switch, 5 HP 3 Ph
- 6295390 For/Rev Switch, 3 HP 1 Ph
- 9 6295376 Washer 1/4"
- 10 6295377 Hex Head Bolt, 1/4" x 1/2"
- 11 6295378 Screw, 3/16" x 1/2"
- 12 6295379 Hex Head Bolt, 5/16" x 3/4"
- 13 6295380 Hex Screw, 1/4" x 3"
- 14 6295381 Hex Nut, 1/4"
- 15 6295382 Spring Washer, 3/8"

NO. PART NO. DESCRIPTION

- 16 6295383 Hex Head Screw, 3/8" x 1-1/4"
- 17 6295384 Bar
- 18 6295385 Knob
- 19 6295386 Spring
- 20 6295387 Bolt
- 22 6295548 Crosshead Bolt, M4 x 80mm
- 23 6295389 Hex Head Screw, 3/8" x 1"
- 24 6295391 Switch Assembly, 5HP, 3Ph
- 6295549 Magnetic Control, 3 HP, 1 Ph
- 25 6295392 Crosshead Bolt, M6 x 15mm
- 26 6295542 Door
- 29 6295543 Index Plate
- 6295521 On-Off Switch Box Only
- 6295523 Thermal Relay

**EXPLODED VIEW: Base Assembly (Model 25A)**





**PARTS LIST: Table Assembly (Model 25A)**

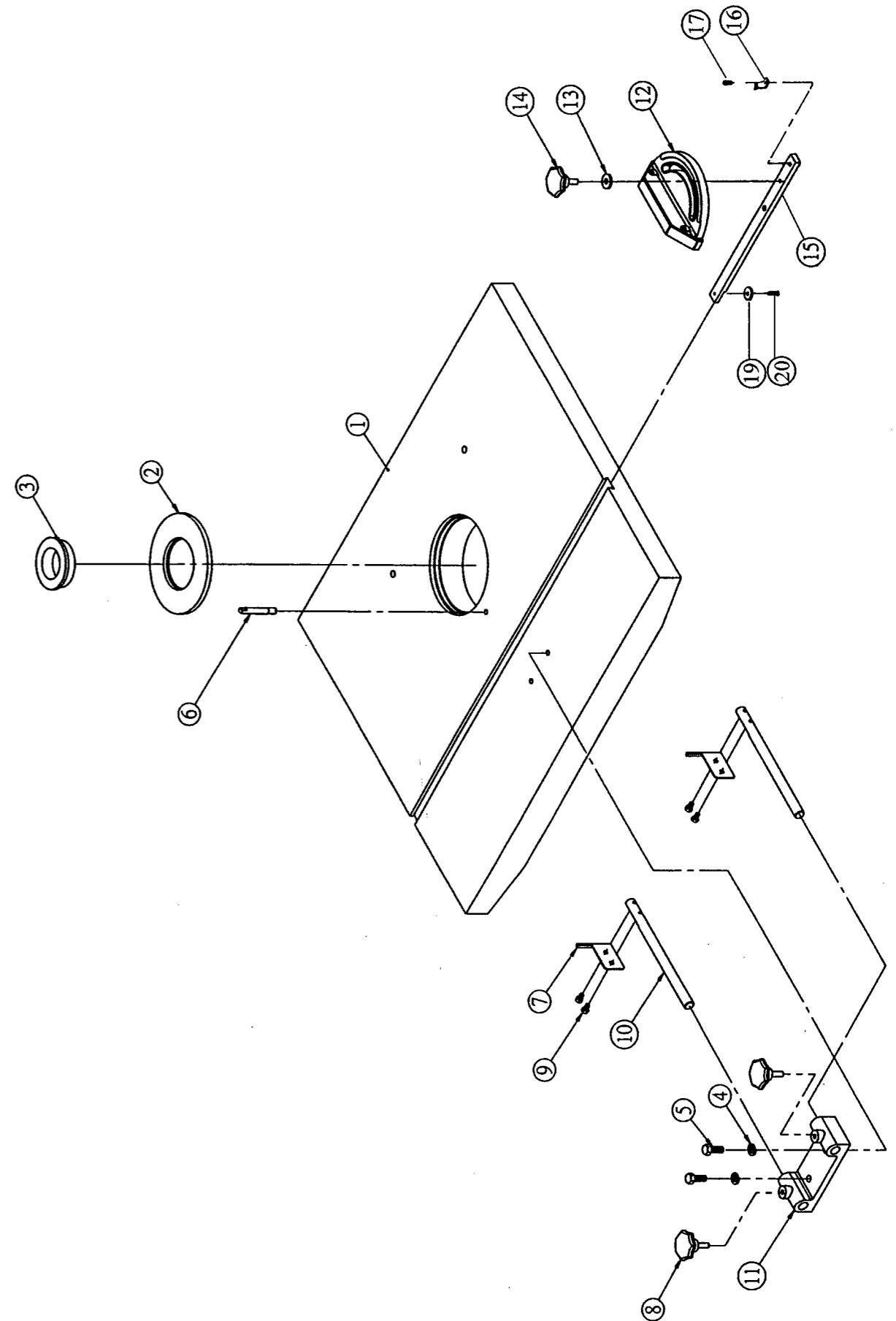
**NO. PART NO. DESCRIPTION**

- 1 6295393 Table
- 2 6295394 Table Ring
- 3 6295395 Table Ring
- 6295525 Auxiliary Support Assembly  
(Items 4 & 5, 7 thru 11)
- 4 6295396 Spring Washer, 3/8"
- 5 6295397 Hex Head Screw, 3/8" x 1"
- 6 6295398 Starting Pin
- 7 6295399 Spring Plate
- 8 6295400 Knob
- 9 6295401 Hex Head Bolt, 1/4" x 3/8"
- 10 6295402 Rod

**NO. PART NO. DESCRIPTION**

- 11 6295403 Bracket Support
- 6295524 Mitre Gauge Assembly (Items 12  
thru 20)
- 12 6295404 Mitre Gauge
- 13 6295405 Washer, 5/16"
- 14 6295406 Lock Knob
- 15 6295407 Guide Bar
- 16 6295535 Index Pointer
- 17 6295536 Screw
- 19 6295538 Washer
- 20 6295539 Screw

**EXPLODED VIEW: Table Assembly (Model 25A)**



**PARTS LIST: Spindle Seat Assembly (Model 25A)**

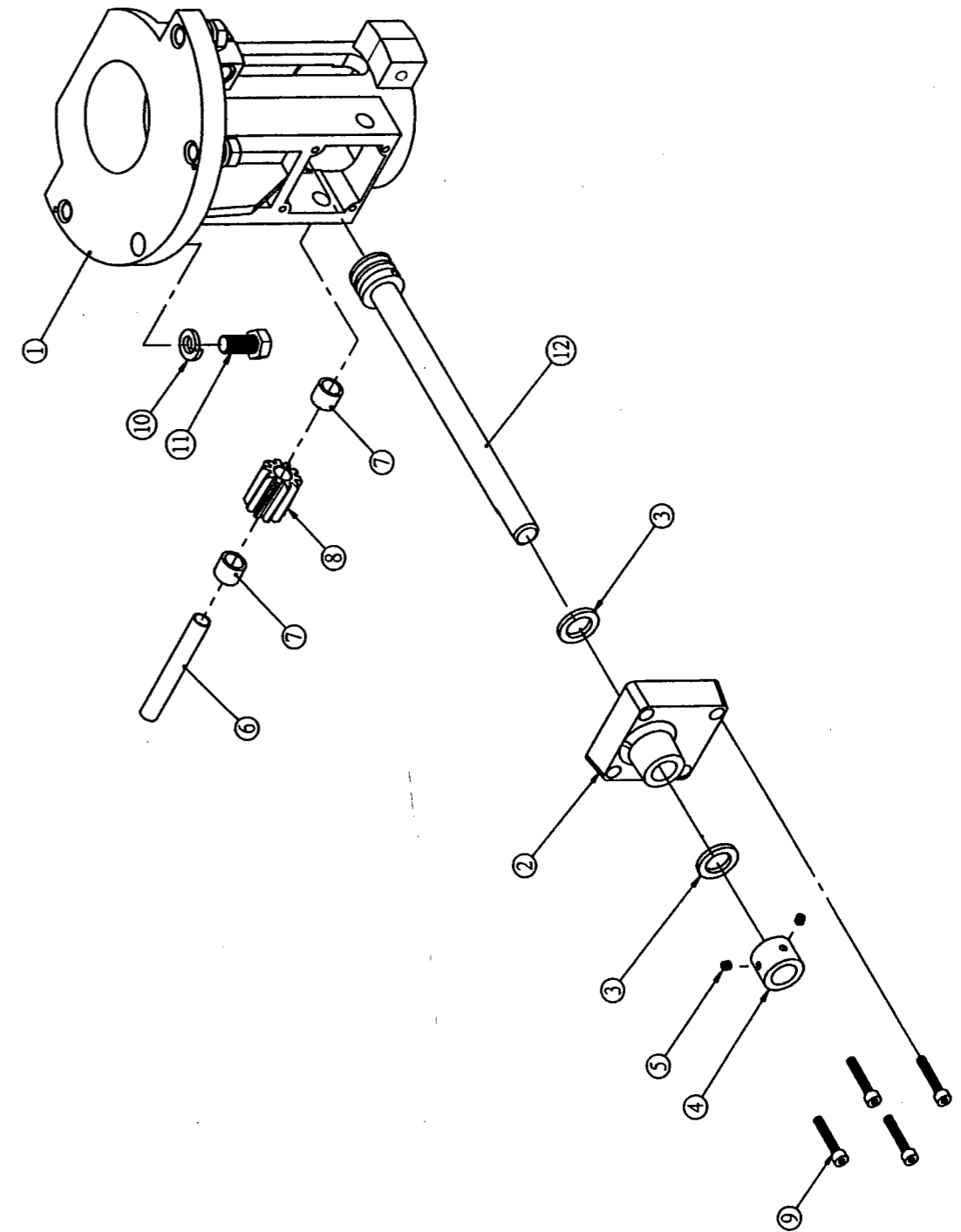
NO. PART NO. DESCRIPTION

1 6295408 Housing  
 2 6295409 Worm Gear Housing  
 3 6295410 Bushing  
 4 6295411 Sleeve  
 5 6295412 Set Screw  
 6 6295413 Shaft

NO. PART NO. DESCRIPTION

7 6295414 Bushing  
 8 6295415 Helical Gear  
 9 6295416 Hex Cap Bolt  
 10 6295417 Spring Washer, 1/2"  
 11 6295418 Hex Screw, 1/2"  
 12 6295419 Worm

**EXPLODED VIEW: Spindle Seat Assembly (Model 25A)**



**PARTS LIST: Spindle Assembly (Model 25A)**

NO. PART NO. DESCRIPTION

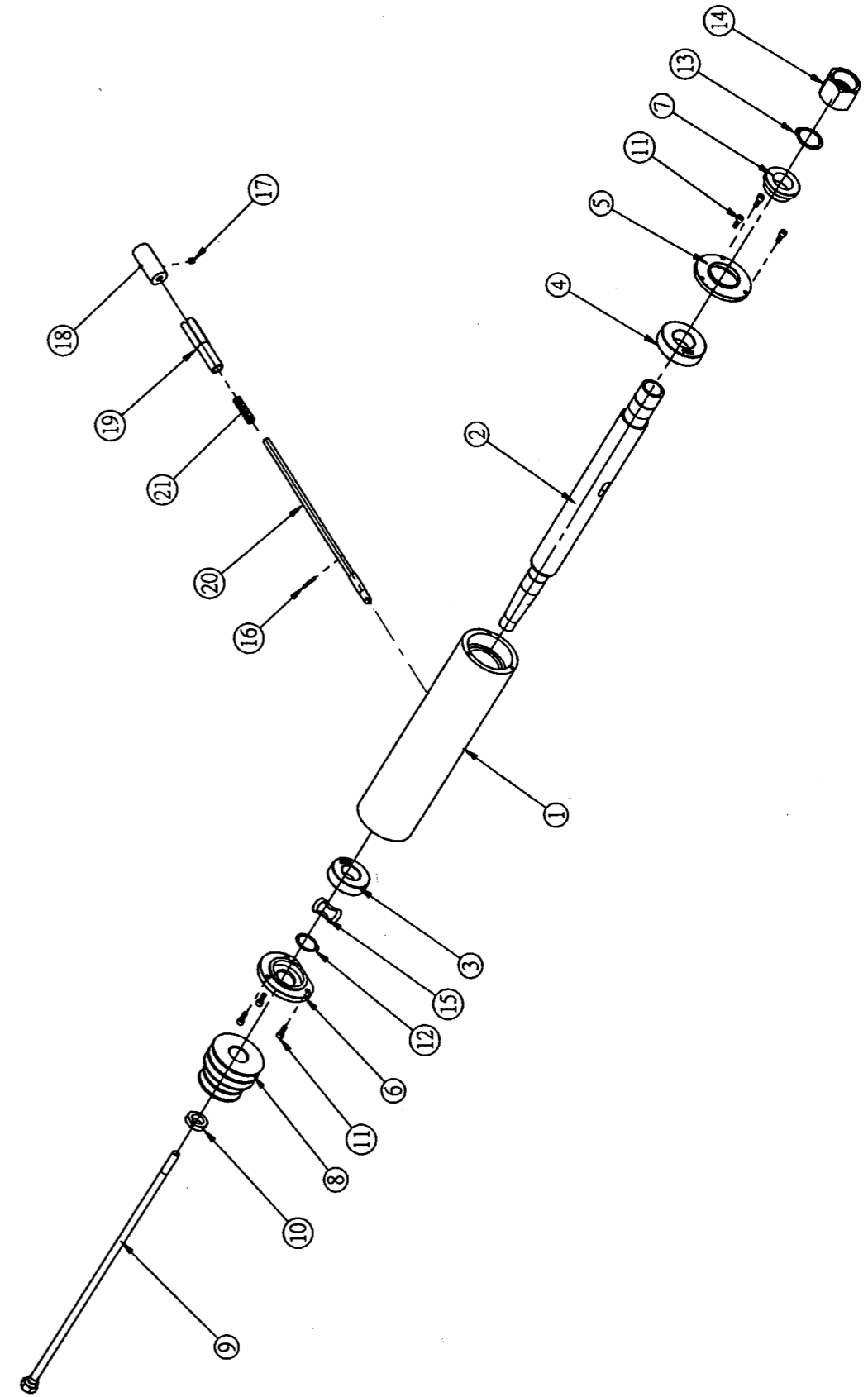
6295527 Quill & Spindle Assembly,  
(Items 1 thru 7, 11 thru 15)

1 6295420 Quill  
 2 6295421 Main Spindle  
 3 6290751 Bearing 6205Z  
 4 6295423 Bearing 6206Z  
 5 6295424 Spindle Collar  
 6 6295425 Down Spindle Collar  
 7 6295426 Front Spindle Collar  
 8 6295427 Pulley  
 9 6295428 Tie Rod  
 10 6295429 Nut

NO. PART NO. DESCRIPTION

11 6295430 Screw, 3/16" x 1/2"  
 12 6295431 C Retainer Ring  
 13 6295432 C Ring  
 14 6295433 Lock Nut  
 15 6295434 Spring Band  
 6295526 Rod Assembly (Items 16 thru 21)  
 16 6295435 Spring Pin  
 17 6295436 Set Screw, 1/4" x 1/4"  
 18 6295437 Rod Sleeve  
 19 6295438 Brake Casing  
 20 6295439 Rod  
 21 6295440 Spring

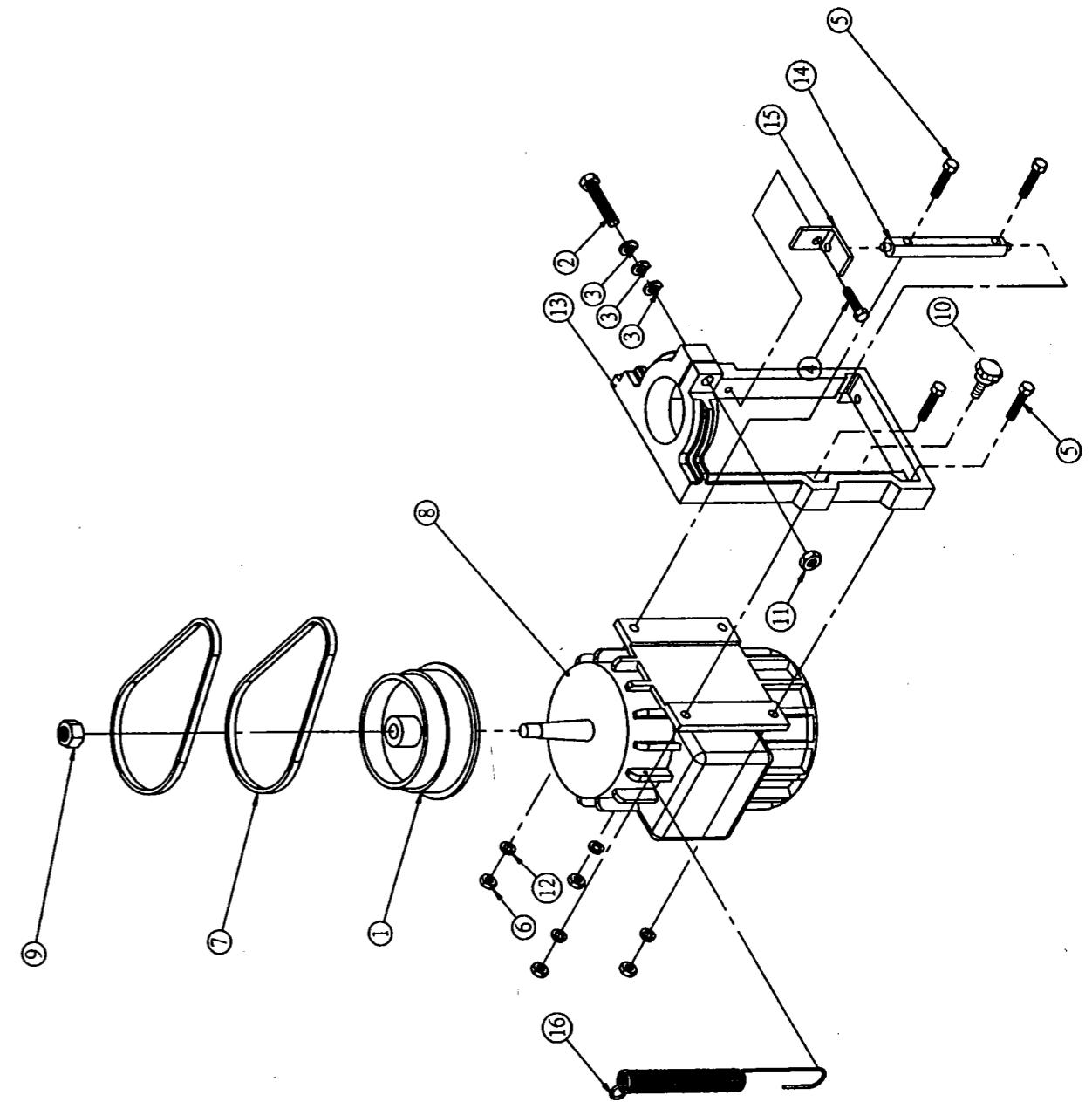
**EXPLODED VIEW: Spindle Assembly (Model 25A)**



**PARTS LIST: Motor Bracket Assembly (Model 25A)**

NO.	PART NO.	DESCRIPTION	NO.	PART NO.	DESCRIPTION
	6295528	Motor Bracket Assembly, (Items 1 thru 16)	9	6295450	Hex Nut, 3/4"
1	6295441	Motor Pulley	10	6295451	Knob 3/8" x 2-1/2"
2	6295442	Hex Head Bolt, 1/2" x 2-1/2"	11	6295452	Hex Nut, 1/2"
3	6295443	Spring Washer	12	6295453	Spring Washer, 3/8"
4	6295444	Hex Screw, 3/8" x 1-1/2"	13	6295454	Motor Bracket
5	6295445	Hex Head Bolt, 3/8" x 1-3/4"	14	6295455	Rod Truss
6	6295446	Hex Nut, 3/8"	15	6295456	L-Bracket
7	6295447	V-Belt	16	6295457	Spring
8	6295448	Motor, 3 HP, 1 Ph			
	6295449	Motor, 5 HP, 3 Ph			

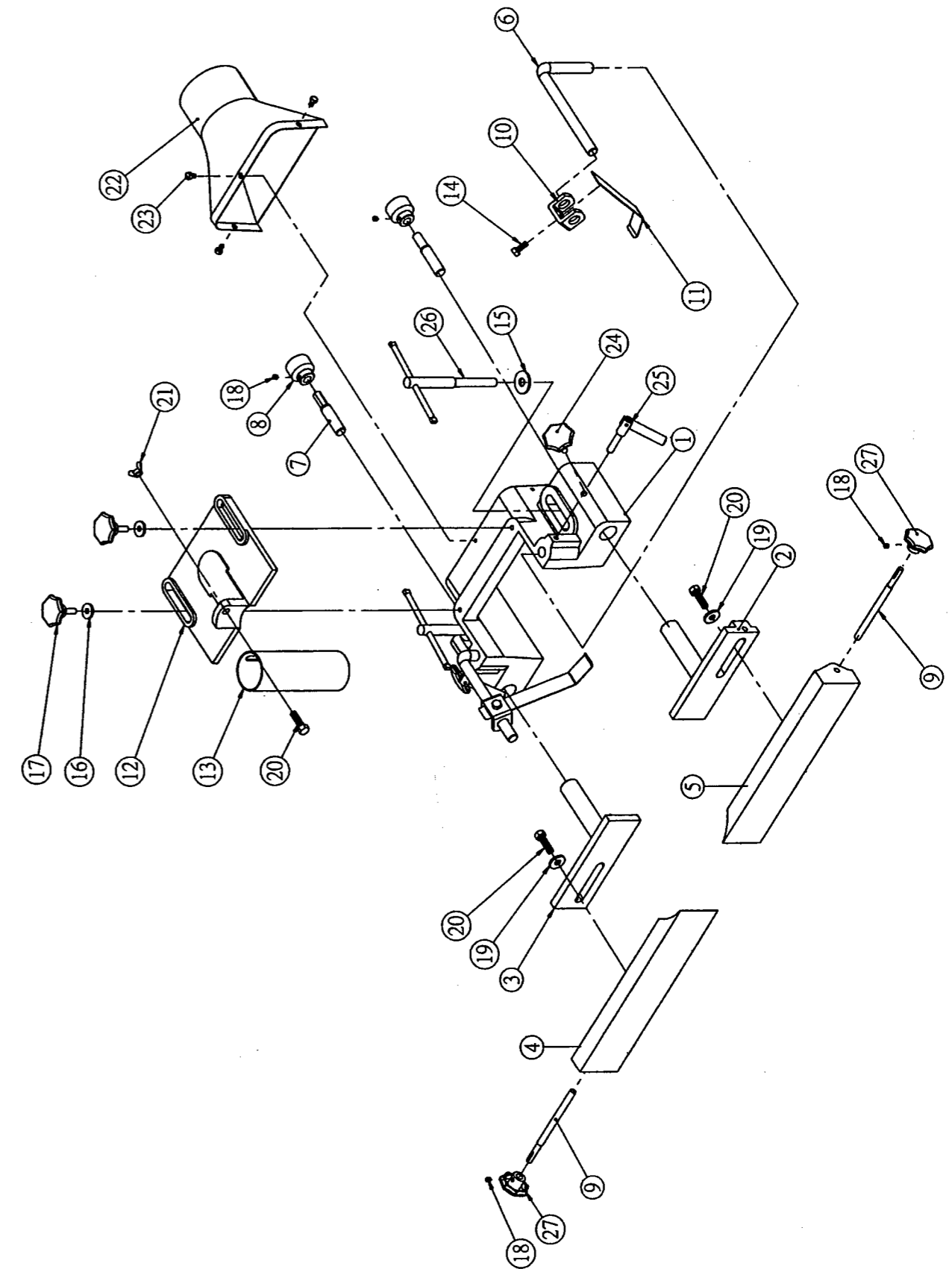
**EXPLODED VIEW: Motor Bracket Assembly (Model 25A)**



**PARTS LIST: Fence Frame Assembly (Model 25A)**

NO.	PART NO.	DESCRIPTION	NO.	PART NO.	DESCRIPTION
	6295529	Fence Assembly (Items 1 thru 5, 7 thru 9, 12, 13, and 15 thru 27)	13	6295470	Spindle Guard
1	6295458	Fence Frame	14	6295471	Hex Head Bolt, 5/16" x 3/4"
2	6295459	Fence (R)	15	6295472	Washer, 1/2"
3	6295460	Fence (L)	16	6295473	Washer, 5/16"
4	6295462	Guide Plate (L)	17	6295474	Knob, 5/16" x 1"
5	6295461	Guide Plate (R)	18	6295475	Set Screw, 1/4" x 1/4"
	6295530	Work Hold-Down Assembly (Items 6, 10, 11, 14)	19	6295476	Washer, 3/8"
6	6295463	Rod	20	6295477	Hex Head Screw, 3/8" x 1-1/4"
7	6295464	Screw	21	6295478	Wing Nut, 3/8"
8	6295465	Adjustment Knob	22	6295479	Dust Hood
9	6295466	Rod	23	6295480	Hex Head Bolt, 1/4" x 3/8"
10	6295467	Slide Block	24	6295481	Lock Knob, 5/16" x 7/8"
11	6295468	Guide Plate	25	6295482	Locking Handle
12	6295469	Fence Frame Plate	26	6295483	Lock Rod
			27	6295484	Knob, 1/2"

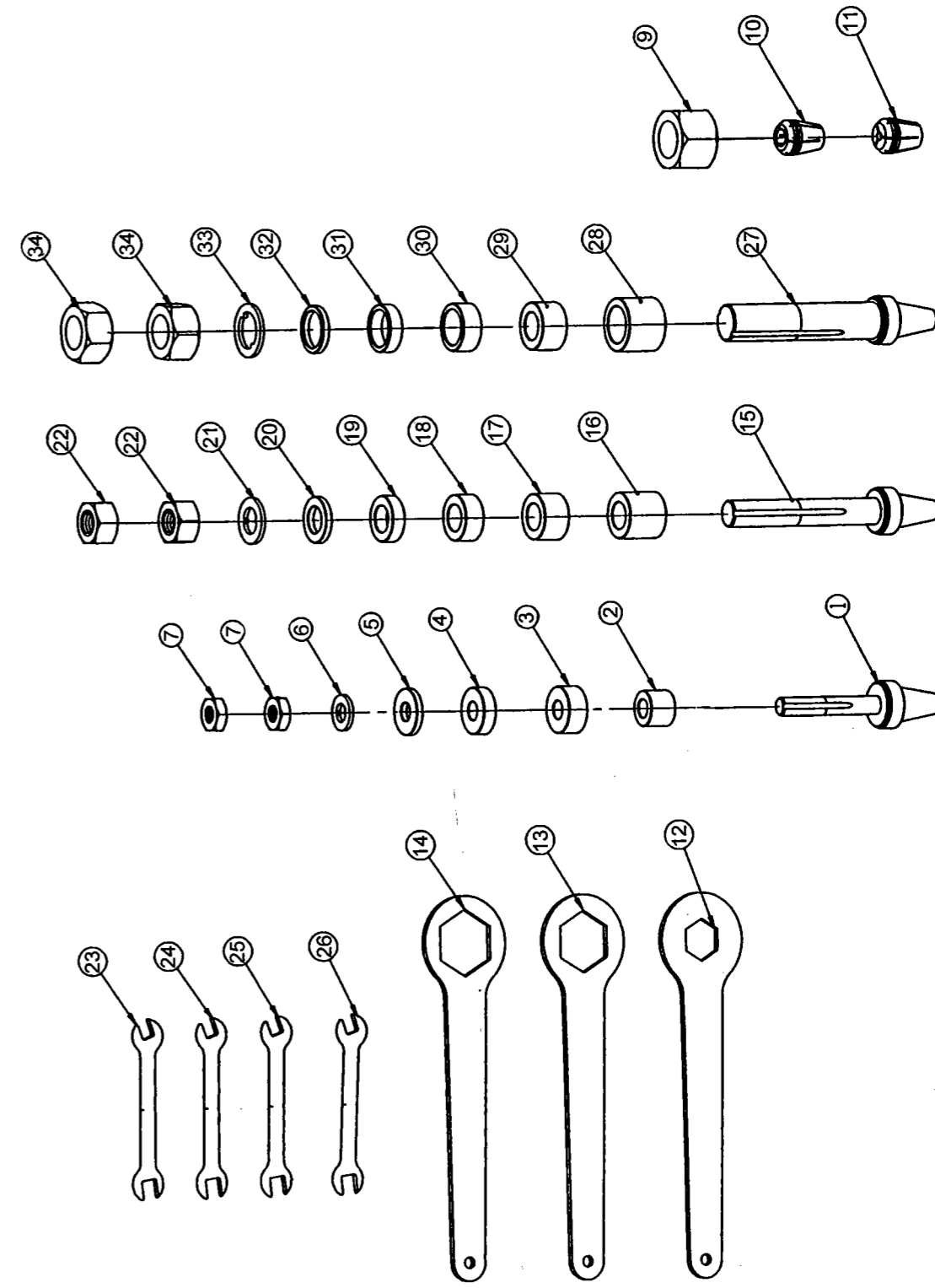
**EXPLODED VIEW: Fence Frame Assembly (Model 25A)**



**PARTS LIST: Spindle Assemblies (Model 25A)**

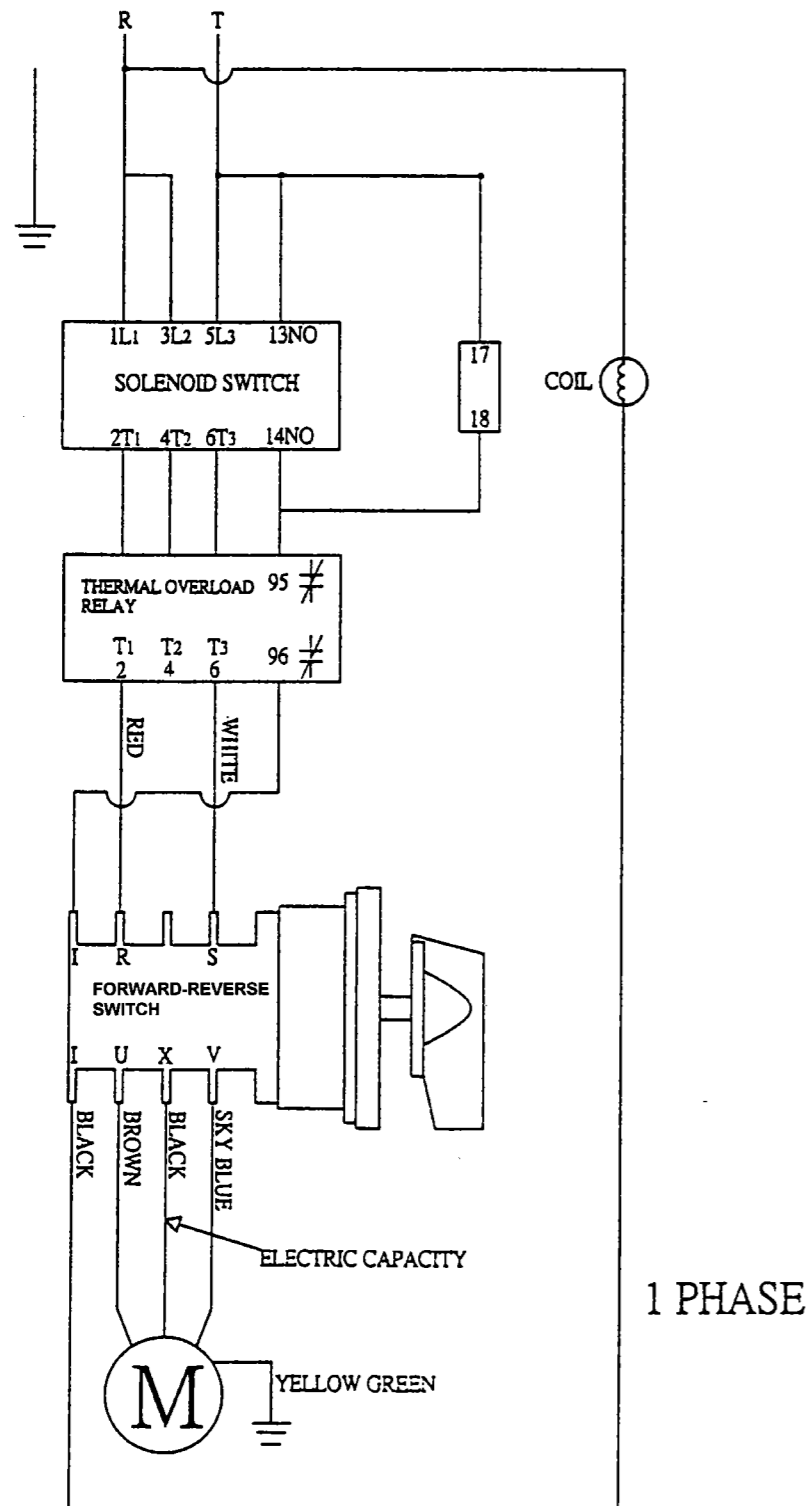
NO.	PART NO.	DESCRIPTION	NO.	PART NO.	DESCRIPTION
	6295531	1/2" Spindle Assembly (Items 1 thru 8)	18	6295500	Spacer Washer, 3/4" x 15mm
1	6295513	Spindle, 1/2"	19	6295501	Spacer Washer, 3/4" x 10mm
2	6295487	Spacer Washer, 1/2" x 20mm	20	6295502	Spacer Washer, 3/4" x 5mm
3	6295488	Spacer Washer, 1/2" x 15mm	21	6295503	Lock Washer
4	6295489	Spacer Washer, 1/2" x 10mm	22	6295505	Hex Nut, 3/4"
5	6295490	Spacer Washer 1/2" x 5mm	23	6295506	Spanner Wrench, 10-12
6	6295491	Lock Washer	24	6295507	Spanner Wrench, 12-14
7	6295492	Hex Nut, 1/2"	25	6295508	Spanner Wrench, 17-19
9	6295493	Router Nut	26	6295509	Spanner Wrench, 19-21
10	6295494	Router Collet, 1/2"	6295533	1" Spindle Assembly (Items 27 thru 34)	
11	6295495	Router Collet, 1/4"	27	6295486	Spindle, 1"
12	6295496	Spanner Wrench, 26mm	28	6295512	Spacer Washer, 1" x 30mm
13	6295497	Spanner Wrench, 38mm	29	6295515	Spacer Washer, 1" x 15mm
14	6295498	Spanner Wrench, 41mm	30	6295514	Spacer Washer, 1" x 20mm
	6295532	3/4" Spindle Assembly (Items 15 thru 22)	31	6295519	Spacer Washer, 1" x 10mm
15	6295485	Spindle, 3/4"	32	6295516	Spacer Washer, 1" x 5mm
16	6295499	Spacer Washer, 3/4" x 30mm	33	6295517	Lock Washer
17	6295504	Spacer Washer, 3/4" x 20mm	34	6295518	Hex Nut, 1"

**EXPLODED VIEW: Spindle Assemblies (Model 25A)**

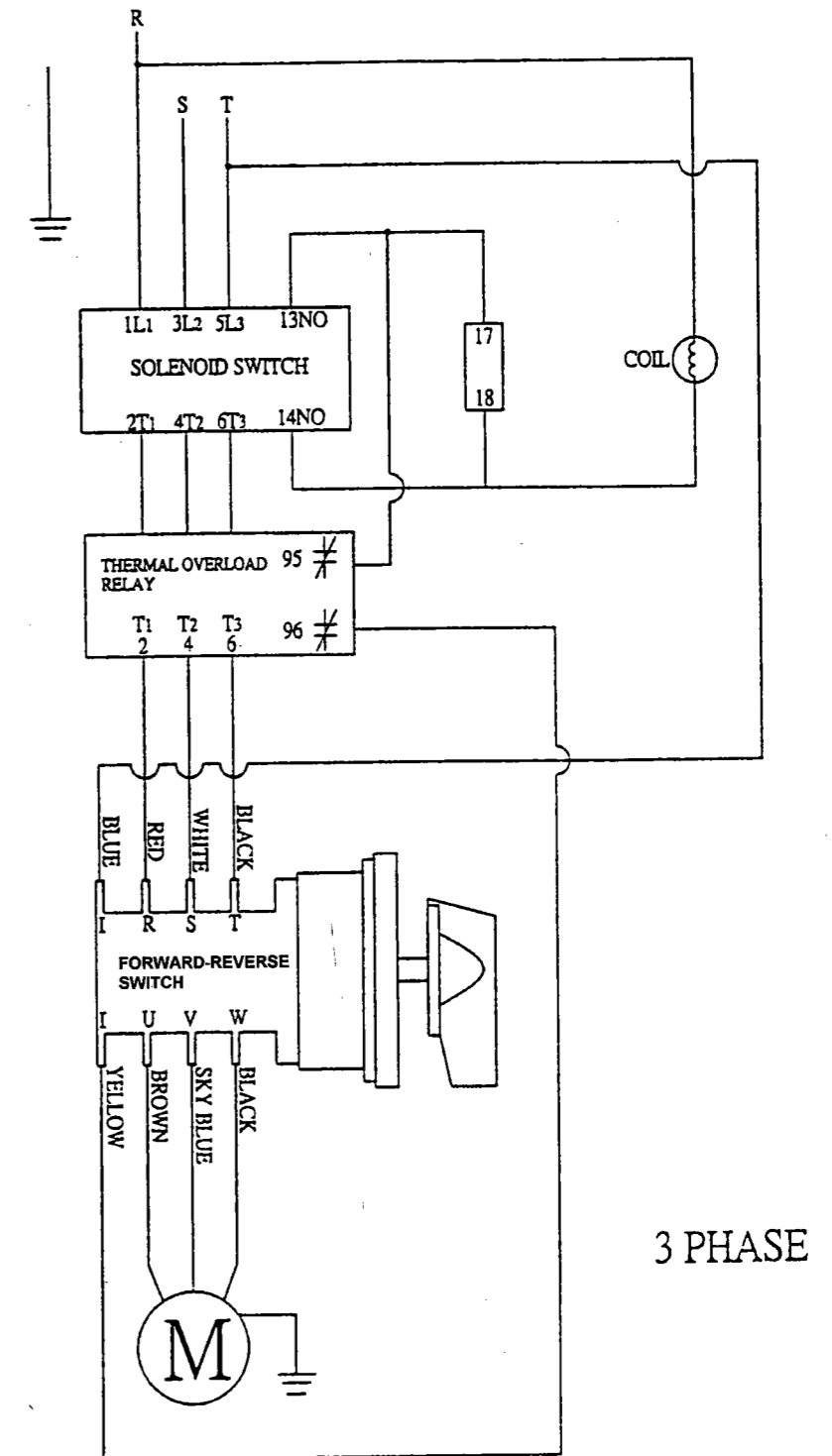


1" Spindle Assy. 6295533  
 3/4" Spindle Assy. 6295532  
 1/2" Spindle Assy. 6295531

ELECTRICAL SCHEMATIC (Model 25A)



ELECTRICAL SCHEMATIC (Model 25A)



# ***POWERMATIC***<sup>®</sup>

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