

# WOOD SHAPER

## Model 27 & 27 Super

### Instruction Manual & Parts List

EDP # 0460232



# **POWERMATIC®**

(800) 248-0144  
[www.powermatic.com](http://www.powermatic.com)

This manual has been prepared for the owner and operators of a Powermatic Model 27 or Super 27 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**

The JET 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 JET Group Repair Stations can authorize warranty repair, assist you in obtaining parts, or perform routine maintenance and major repair on your JET, Performax or Powermatic tools.

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

## **More Information**

Remember, the JET Group is consistently adding new products to the line. For complete, up-to-date product information, check with your local JET Group distributor.

## **JET Group Warranty**

The JET Group (including Performax and Powermatic brands) 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 follow: 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.

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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, we 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. We will return repaired product or replacement at JET's expense, but if it is determined there is no defect, or that the defect resulted from causes not within the scope of JET's 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.

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## SAFETY: General Rules

**READ THE MANUAL:** Read, understand, and follow the safety and maintenance instructions found in this manual. Know the limitations and hazards associated with the 27 shaper.

**WORK AREA:** Keep the floor around the machine clean and free of scrap material, saw dust, oil or grease to minimize the danger of tripping or slipping. POWERMATIC recommends the use of anti-skid strips for the operator. Provide ample unobstructed floor area around the machine for free flow of stock from the infeed to the outfeed side of the cutter. Mark off the machine area, and make sure it is well lighted and equipped with a proper exhaust system to minimize dust.

**ELECTRICAL GROUNDING:** Your machine must be electrically grounded. If a cord and plug are used, make certain the grounding lug connects to a suitable ground. Follow the grounding procedure indicated by the National Electrical Code. Keep power tools in dry areas free from moisture.

**PROTECTION:** Take every precaution to protect yourself, others around you, and the machine itself from improper use.

**CARELESS ACTS:** Give the work you are doing your undivided attention. Looking around, talking to someone, and horseplay are careless acts that can result in serious injury.

**IF YOU ARE NOT** thoroughly familiar with the operation of shapers, obtain advice from your supervisor, instructor, or other qualified person.

**DO NOT OVERREACH:** Maintain a balanced stance and keep your body under control at all times. Do not overreach or use excessive force to perform any operation.

**EYES:** Always wear approved safety goggles, glasses, or a face shield when operating the shaper. There are no exceptions to this rule.

**DRESS CODE:** Do not wear loose clothing, neckties, jewelry, or gloves that can get caught in moving parts. Confine long hair. Keep sleeves above the elbow.

**GUARDS:** Be sure shaper guard, feather-boards, hold-downs, and specially designed devices are used whenever possible. If the guard must be removed for any operation, make sure it is replaced

immediately following completion of that operation.

**HOUSEKEEPING:** Before turning on machine, remove all extra equipment such as keys, wrenches, scrap, and cleaning rags away from the shaper. Keep the area around machine clean and free of sawdust to minimize danger of slipping.

**POWER ON:** Before connecting power to the shaper, make sure the start switch is in the "O" position.

**POWER OFF:** Make sure the shaper is unplugged or electrically disconnected and locked out before performing maintenance, changing cutters, or service work.

## SAFETY: Specific Rules

**READ THE MANUAL:** Know the limitations and hazards in using the 27 shaper. SAFETY rules decals (page 6) are placed on each machine as reminders of good safety practice.

**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).

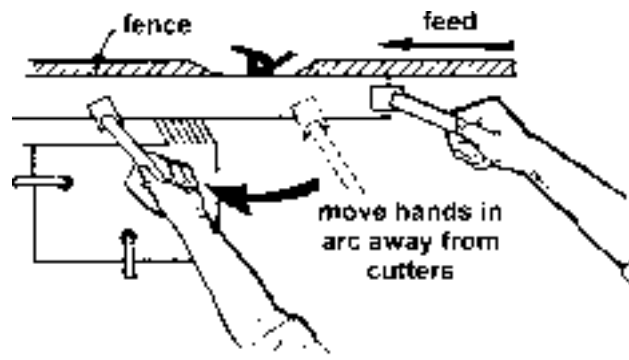


FIGURE 1

**BLIND CUT:** When blind cutting, the workpiece is positioned on top of the template. This keeps the cutter(s) cutting only the underside of the workpiece and providing a "distance" guard for the operator.

**STOCK FEED:** 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, Figure 2.

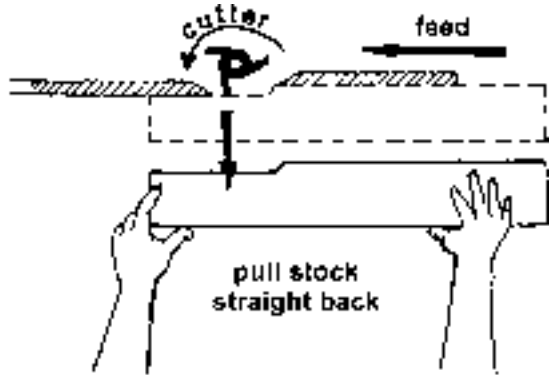


FIGURE 2

**CUTTER CLEARANCE:** With the power disconnected, always rotate the spindle by hand with any new set-up to ensure proper clearance with the cutters. At the same time, check to be sure the cutterhead is turning in the correct direction.

**GUIDE PIN:** Whenever possible, use a guide pin when performing pattern shaping and collar shaping operations.

**TOOL MAINTENANCE:** Clean and sharp tools give safer and better performance. Dull tools can cause kickbacks and excessive chatter. Before making a cut, always check the condition and adjustment of the tools. Never use a tool that is not balanced and rated for the selected RPM.

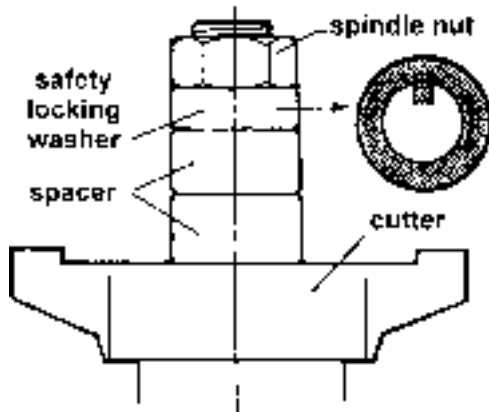


FIGURE 3

**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.

**SPINDLE SPEED:** Do not operate tools at speeds higher than rated by the manufacturer.

**CUTTER SELECTION:** Use only those cutters designed to be used on the machine, and mount only safety type cutters on the spindle.

**STOCK CONDITION:** The danger of kicked back stock can occur when the stock has knots, holes, or foreign objects such as nails. Warped or in-wind stock should first be jointed on one surface before attempting to use it on the shaper.

**JOB COMPLETION:** The operator should never leave the work station for any reason without turning off the shaper and waiting for the spindle to come to a complete stop. When the operation is complete he should clean up the shaper and work area. Never clean the shaper with the power "ON" and never use the hands to clear sawdust and debris - use a brush.

**DO NOT REACH** over shaper. There is danger of kickback which can pull the hand back into the cutter. Use push sticks to assist in pushing the work through. See Figure 4.



FIGURE 4

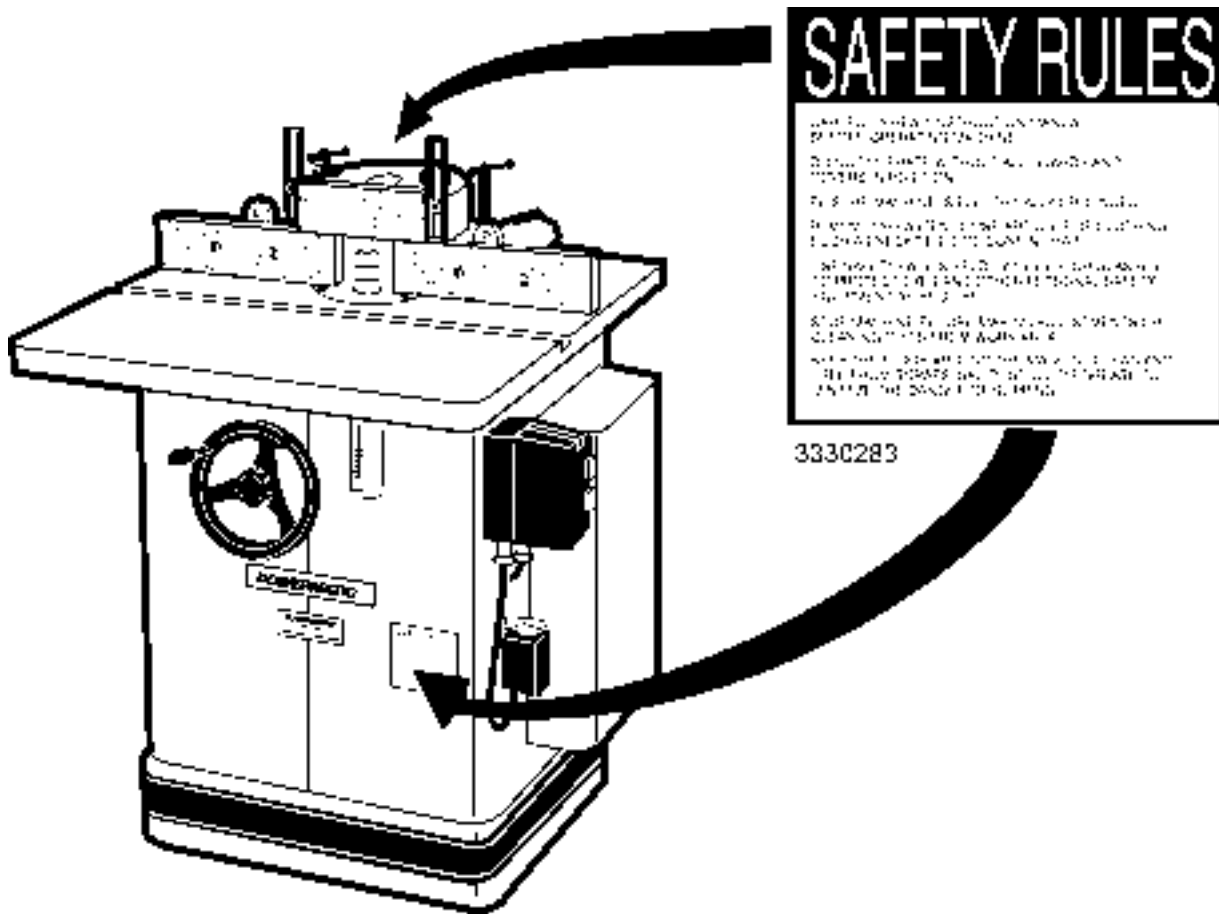
**MISUSE:** Do not use this shaper for other than its intended use. If used for other purposes, POWERMATIC disclaims any real or implied warranty and holds itself harmless for any injury which may result from that use.

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

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

**WARNING:** The dust generated by certain woods and wood products can be dangerous to your health. Always operate machinery in well ventilated areas and provide for proper dust removal. Use wood dust collection systems whenever possible.

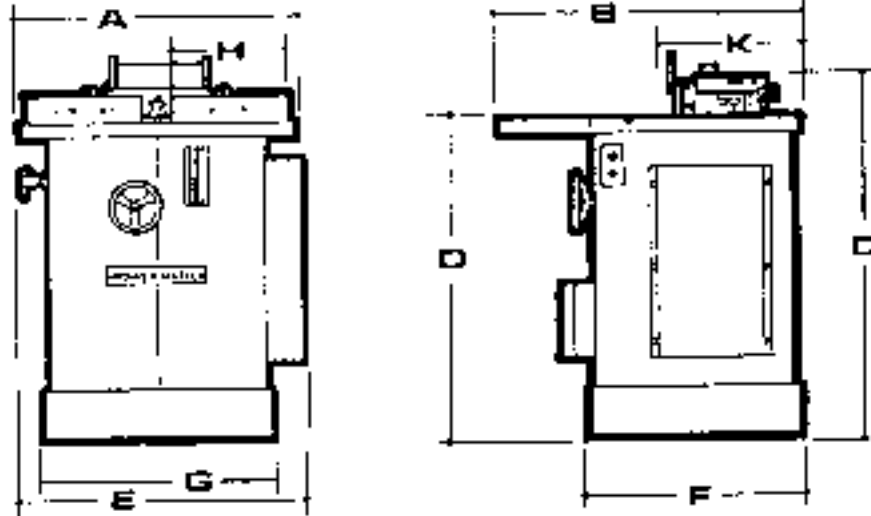
**! SAFETY: DECAL INSTRUCTION**



**FIGURE 5**

# SPECIFICATIONS: Models 27 & 27Super Shapers

FIGURE 6



|     | A  | B      | C  | D  | E  | F      | G      | H  | K      |
|-----|----|--------|----|----|----|--------|--------|----|--------|
| in. | 28 | 29-1/2 | 38 | 34 | 30 | 21-1/2 | 23-1/2 | 12 | 10-1/4 |

- Table size with extension ..... 28" x 29-1/2"
- Table extension ..... 8" x 28"
- Table size Super 27 ..... 30" x 40"
- Table height from floor ..... 34"
- Spindle opening, diameter ..... 5-1/2", 4", 2-3/4" & 1-3/8"
- Spindles available:
  - Interchangeable type, diameter ..... 1/2" x 3/4"
  - Solid spindle type, diameter ..... 1"
  - Solid spindle type, diameter ..... 1-1/4"
- Spindle capacity under nut:
  - 1-1/4" ..... 6"
  - 1" ..... 4-7/8"
  - 3/4" interchangeable ..... 3"
  - 1/2" interchangeable ..... 2-1/4"
- Spindle travel ..... 3"
- Power Stack spindle travel ..... 1-1/4" - 2"
- Spindle speed, RPM ..... 7,000 & 10,000
- Air supply required (min.) ..... 80 psi
- Table counterbore ..... 7" dia. x 11/16" deep
- Fence size each side ..... 3-1/4" x 12"
- Weight, domestic boxed with 3HP motor, Model 27 ..... 488 lbs. app.
- Weight, domestic boxed with 3HP motor, Super 27 ..... 657 lbs. app.

The above specifications, dimensions and design characteristics are subject to change without notice.

**! WARNING:** DO NOT EQUIP OR USE THIS SHAPER WITH A MOTOR LARGER THAN 5 HORSE-POWER AT 3600 RPM OR OPERATE THE CUTTERHEAD IN EXCESS OF 10,000 RPM. USE OF A LARGER HORSEPOWER MOTOR OR HIGHER CUTTERHEAD SPEED VOIDS THE WARRANTY AND POWERMATIC HOLDS ITSELF HARMLESS FOR ANY INJURY WHICH MAY RESULT.

## RECEIVING THE SHAPER

Remove the shaper assembly from its respective shipping cartons and inspect for damage. Any damage should be reported to your distributor and shipping agent immediately.

Before proceeding further, read your manuals thoroughly to familiarize yourself with proper assembly, operation, set-up, maintenance and safety procedures.

## INSTALLATION

### Tools required:

screwdriver, adjustable wrench, Allen wrenches, spindle wrench (provided), quill wrench (provided).

If you are mounting the shaper to the floor, use high quality anchor bolts attached through the mounting holes on the inside corners of the base. If using a mobile base, be sure to lock the wheels before assembling, operating or making adjustments to the shaper.

### BELT TENSION

Attach the drive belt as follows:

Loosen the two hex head cap screws (A) that hold the motor base to the quill side, and slide the motor base towards the quill (B), Figure 8. Attach the belt and tighten by sliding the motor base away from the quill. Proper belt tension is reached when the belt can be depressed about 1/8" to 1/4" between the pulleys, Figure 9. Tighten the two hex head cap screws.

**NOTE:** Check to see that the sheaves of the motor and the spindle line up absolutely level with each other.

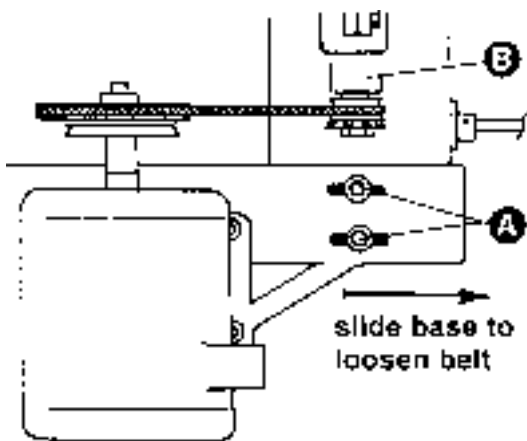


FIGURE 8

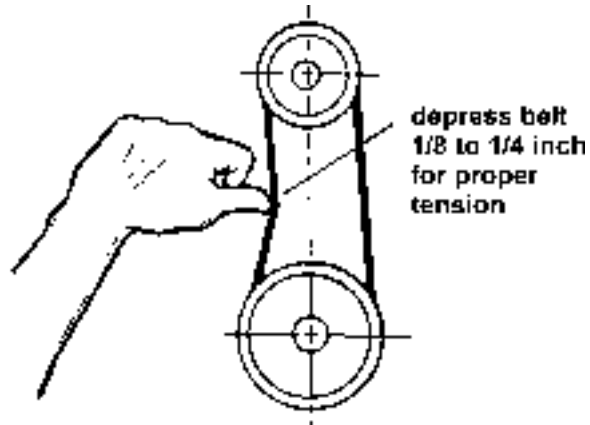


FIGURE 9

### ELECTRICAL

Check the voltage and phase of the shaper. Be absolutely sure they correspond with the power supply.

**! DANGER:** If the machine does not come wired to run, the electricals and motor wiring must be done by a qualified electrician. The machine must be properly grounded to help avoid electrical shock and possible death. Follow the recommendations of the National Electrical Code for grounding.

### INSPECTION

Before connecting power to the shaper, check all mounting screws and bolts to see that they are tight. Since the spindle and quill assembly have permanently sealed bearings, lubrication is not necessary. Turn the spindle by hand to see that it turns freely. Regularly inspect the shaper to ensure that the machine is in proper adjustment and free of dust in the electrical enclosure. Make sure all mechanical functions work freely, and there are no loose or worn electrical connections. Inspect the cutters, collars, and spacers for rust, nicks, and flaws. Be sure to read, understand, and follow the recommendations in the OPERATING INSTRUCTIONS MANUAL before operating the shaper.

### EXHAUST SYSTEM

POWERMATIC recommends the use of an exhaust system with a wood shaper. The system should be large enough to remove from 400 to 1400 cubic feet of air per minute. The operator is cautioned against the health hazard and limitations in OSHA regulations for exposure to dust particles.



## SHAPER ADJUSTMENTS

Check all mounting screws and bolts to see that they are tight. When changing tools, adjusting the drive belt, or doing clean-up and maintenance, always turn the machine off and unplug the machine from its power source.

### SQUARING THE FENCE

Periodically the wood fence will have to be squared with the mounting surface and adjusted parallel to each other. To correct, do the following:

1. Check the two mounting screws (A) holding the fence assembly to the table and make sure they are tight, Figure 10.

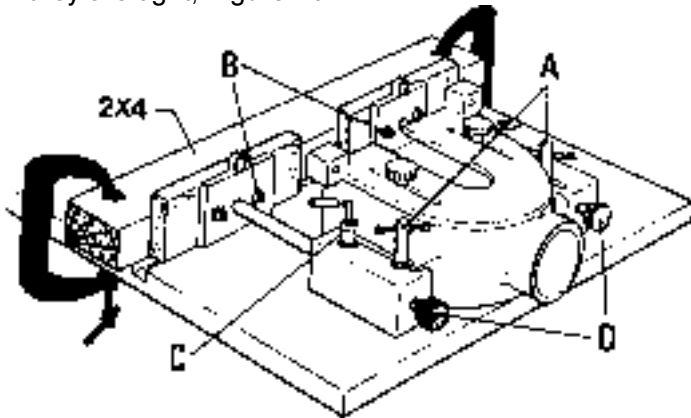


FIGURE 10

2. Check the four countersink flat head bolts (B) that secure the wooden fences and make sure they are tight.

3. Take a 2 x 4 with a jointed edge and clamp it to the shaper table making sure the jointed edge is absolutely on line with the miter groove and close to the fence as shown in Figure 10.

4. Loosen the two lock handles (C) and turn the fence adjustment knobs (D) to move both fences against the jointed edge of the 2 x 4. After this adjustment the fences should make flush contact with the jointed edge and square with the table.

NOTE: Periodically the wooden fences may require resurfacing in order to remain parallel and square with the table. This can be accomplished by removing the entire fence assembly and resurfacing the fences on a jointer, as shown in Figure 11. Make sure the fence is held square with the jointer table with the bottom of the shaper fence held firmly against the jointer fence in order for the cut to be square with the shaper table.

This procedure can be used several times to renew the fences before they require replacement.

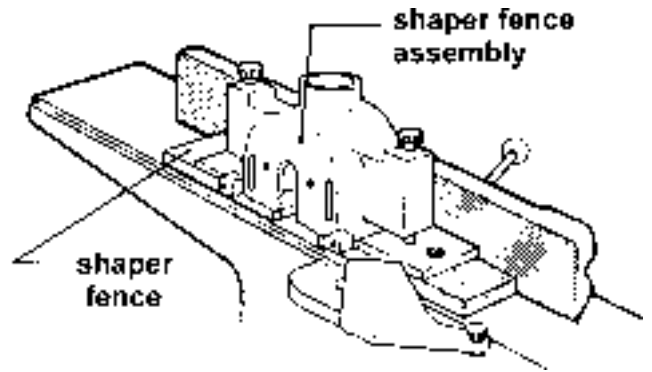


FIGURE 11

### SPINDLE REPLACEMENT

To remove the interchangeable spindle, select the proper rectangular hole in the standard shaper wrench and place it over the flats on the top of the spindle, Figure 12.

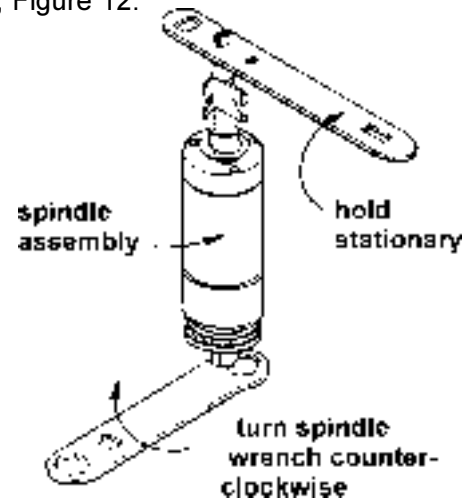


FIGURE 12

### SPINDLE ASSEMBLY REMOVAL

To remove spindle assembly, first remove the belt from spindle sheave (see "BELT TENSION", page 9). Loosen the split casting locking screws and remove the spindle assembly out the bottom, Figure 13. To reinstall, reverse the above procedure.

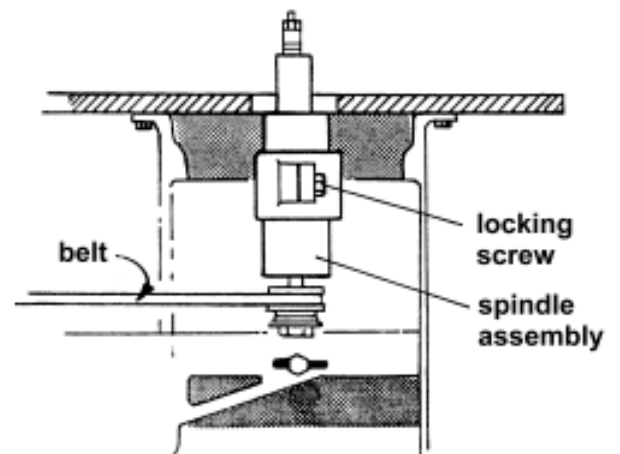


FIGURE 13

## REPLACING THE CUTTERS

To replace the cutter(s), select the proper rectangular hole in the standard shaper wrench and place it over the flats on the top of the spindle, Figure 14. Place a hexagonal wrench on the spindle nut, hold the top of the spindle stationary and turn the spindle nut counterclockwise. Remove the spindle nut and the slotted washer. Remove the cutter(s) vertically and replace with the size of your choice.

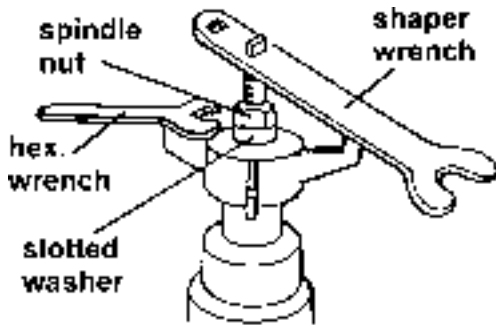


FIGURE 14

## QUILL SLIDE ADJUSTMENT

Periodically, due to wear, the quill slide will develop side play. To adjust the slide, loosen the three gib screw hex nuts, Figure 15, and lightly tighten the gib screws with an Allen wrench. Lock the gib nuts down to provide the slight play required to allow the slide free movement. Readjust gib screws if the slide is difficult to move.

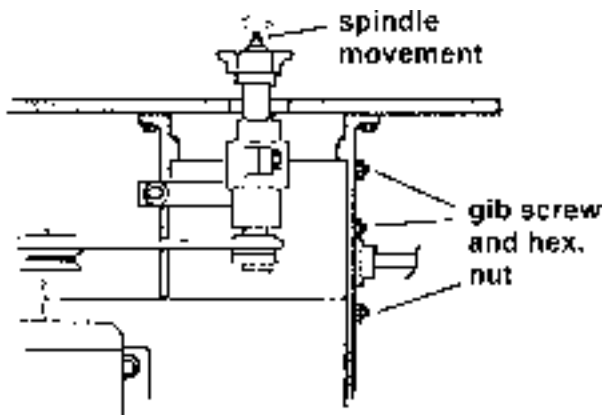
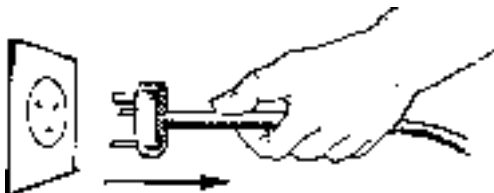


FIGURE 15

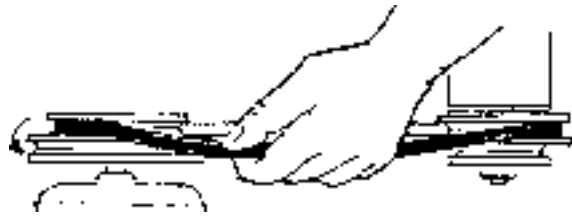
## CHANGING SPEEDS

With the belt properly tensioned, changing speeds is an easy operation (Figures 16A, B, C).

A. Disconnect power from the machine.



B. Roll the belt off one pulley to the other on the motor side.



C. Rotate that pulley and roll pulley until the belt snaps into the groove of the other spindle pulley.



FIGURE 16

## MITRE GAUGE ADJUSTMENT

The mitre gauge is used when doing accurate end grain cutting and to assist in handling certain types of parts. To adjust the stops to exact 90 degree and 45 degree angles, use a combination square as a gauge along with a screwdriver and 5/16" open end wrench, Figure 17A, B.

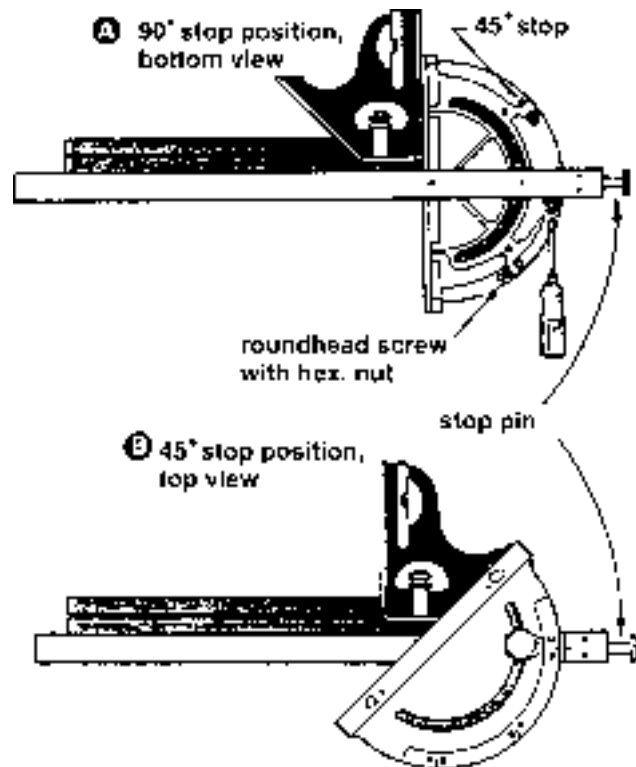


FIGURE 17

## FENCE ASSEMBLY REMOVAL

Completely loosen the two mounting screws shown in Figure 18 and remove the fence assembly from the table. Store the fence in a safe place and clean before remounting.

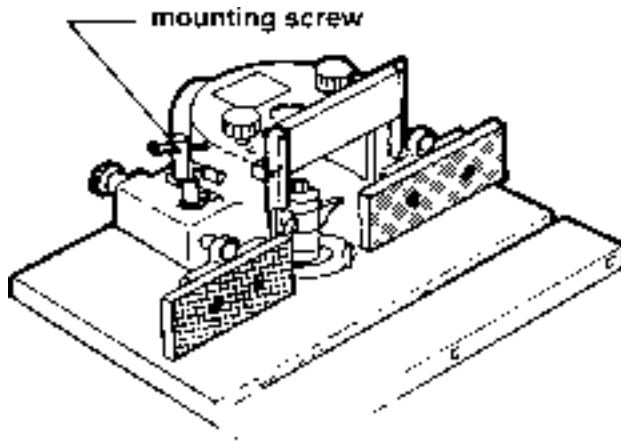


FIGURE 18

## BEFORE OPERATING

Check the motor and switch wiring diagrams for proper voltage connections before applying power to the machine.

Turn the main drive motor on momentarily to check for proper rotation. The spindle should rotate counterclockwise when looking down on the spindle. Correct as required. Run the machine for a short period of time to ensure that the moving parts are working properly with no excessive vibration. If a problem develops, correct before turning the shaper over for general use.

Be sure to read, understand, and follow the recommendations in the OPERATING INSTRUCTIONS manual when operating the shaper.

## TROUBLE-SHOOTING

| TROUBLE                              | POSSIBLE CAUSE   | SOLUTION  |
|--------------------------------------|--|---|
| SHAPER WILL NOT START                | <ol style="list-style-type: none"> <li>1. Shaper not plugged in.</li> <li>2. Fuse blown or circuit breaker tripped.</li> <li>3. Cord damaged.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Plug in shaper.</li> <li>2. Replace fuse or reset circuit breaker.</li> <li>3. Have cord replaced.</li> </ol>   |
| OVERLOAD KICKS OUT FREQUENTLY        | <ol style="list-style-type: none"> <li>1. Extension cord too tight or too long.</li> <li>2. Feeding stock too fast.</li> <li>3. Cutter needs cleaning or replacing, see also "unsatisfactory cuts" below.</li> </ol>   | <ol style="list-style-type: none"> <li>1. Replace with adequate size cord.</li> <li>2. Feed stock more slowly.</li> <li>3. Clean or replace cutter.</li> </ol>  |
| SHAPER MAKES UNSATISFACTORY CUTS     | <ol style="list-style-type: none"> <li>1. Dull cutter</li> <li>2. Feeding work in wrong direction.</li> <li>3. Gum or pitch on cutter.</li> <li>4. Gum or pitch on table causing erratic feed.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace cutter.</li> <li>2. Feed work against the cutter rotation.</li> <li>3. Remove cutter and clean with turpentine and steel wool.</li> <li>4. Clean table with turpentine and steel wool.</li> </ol>   |
| CUTTERHEAD DOES NOT COME UP TO SPEED | <ol style="list-style-type: none"> <li>1. Extension cord too light or long.</li> <li>2. Low supply voltage.</li> <li>3. Motor not wired for correct voltage.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Replace with adequate size cord.</li> <li>2. Contact your electric company.</li> <li>3. Refer to motor name plate for correct wiring.</li> </ol>  |
| MACHINE VIBRATES EXCESSIVELY         | <ol style="list-style-type: none"> <li>1. Machine not mounted securely to stand or workbench.</li> <li>2. Stand or bench on uneven floor.</li> <li>3. Damaged cutterhead.</li> <li>4. Bad V-belt.</li> <li>5. V-belt not tensioned correctly.</li> <li>6. Bent pulley.</li> <li>7. Improper motor mounting.</li> </ol> | <ol style="list-style-type: none"> <li>1. Tighten all mounting hardware.</li> <li>2. Reposition on flat level surface. Fasten to floor if necessary.</li> <li>3. Replace cutterhead.</li> <li>4. Replace belt.</li> <li>5. Adjust belt tension by moving motor and motor bracket.</li> <li>6. Replace pulley.</li> <li>7. Check and adjust motor mounting.</li> </ol> |
| CUTTERHEAD DOES NOT RAISE FREELY     | <ol style="list-style-type: none"> <li>1. Saw dust and dirt in raising mechanisms.</li> </ol>  | <ol style="list-style-type: none"> <li>1. Brush or blow out loose dust and dirt.</li> </ol>   |

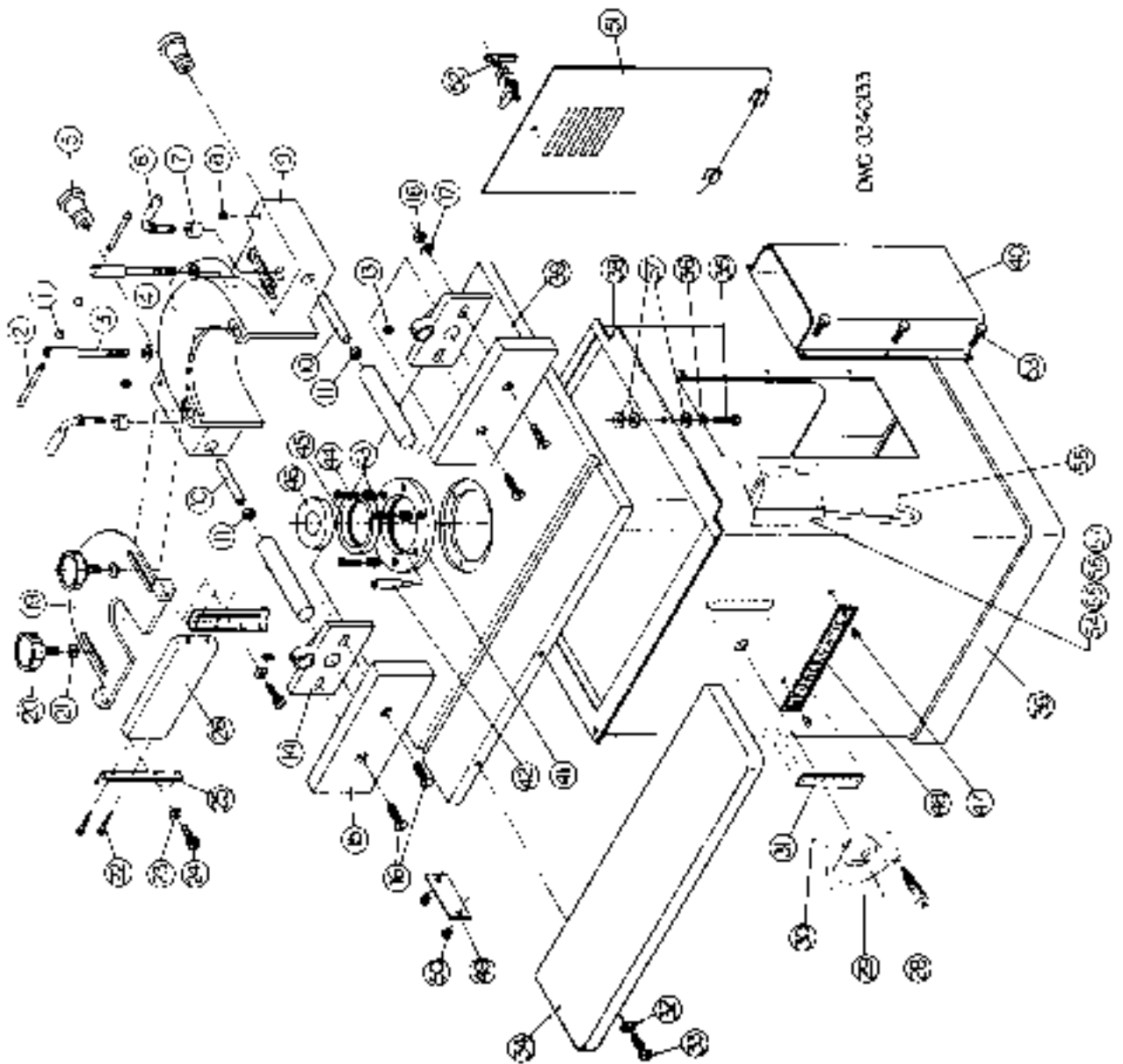
## OPTIONAL ACCESSORIES: MODEL 27

|         |   |
|---------|---|
| 2195037 | Accu-Fence Retrofit                         |
| 2253016 | Work Hold-Down Guides                       |
| 2471010 | Mitre Gauge                                 |
| 2749003 | 3/4" Interchangeable Spindle                |
| 2749004 | 1/2" Interchangeable Spindle                |
| 2749050 | 1-1/4" Solid Spindle & Quill Assembly       |
| 2749052 | 3/4" Solid Spindle & Quill Assembly         |
| 2749053 | 1" Solid Spindle & Quill Assembly           |
| 3186008 | 8" X 28" Cast Iron Extension Wing           |
| 3585014 | Starting Pins                               |
| 6028024 | 1/2" Router Bit Adaptor                     |
| 6028025 | 1/4" Adaptor Sleeve for use with Router Bit |
| 2042336 | Mobile Base                                 |
| 2749051 | Interchangeable Spindle Assembly            |
| 3140001 | Spindle Draw Bar                            |
| 3526202 | Draw Bar Nut                                |

## PARTS LIST: Table, Stand & Fence (Models 27/Super 27)

| No. | Part No. | Description                      | No. | Part No. | Description                          |
|-----|----------|----------------------------------|-----|----------|--------------------------------------|
|     | 2195038  | Fence Assembly (Items 1-26)      | 30  | 6715013  | Socket Set Screw                     |
|     | 2195039  | Fence Assembly for 30X40 Table   | 31  | 3684203  | Plate Scale                          |
|     | 2695040  | Lock Assembly Screw (Items 1-3)  | 34  | 3186008  | 8" Table Extension                   |
| 1   | 3406016  | Handle Knob                      | 35  | 6716031  | Hex Head Screw                       |
| 2   | 3268002  | Handle                           | 36  | 6861300  | Lock Washer                          |
| 3   | 3695207  | Lock Screw                       | 37  | 6861301  | Flat Washer                          |
| 4   | 3838008  | Washer, 1/2                      | 38  | 2759006  | Shaper Stand Assembly,<br>(Weldment) |
| 5   | 3406235  | Adjustment Knob                  | 39  | 3797042  | Shaper Table                         |
| 6   | 3268001  | Handle                           |     | 3797422  | 30X40 Table less Mitre Slot          |
| 7   | 3728005  | Quill Lock Sleeve                |     | 3797423  | 30X40 Table with Mitre Slot          |
| 8   | 6716100  | Set Screw                        | 40  | 2104003  | Motor Cover Assembly (Weldment)      |
| 9   | 3056026  | Fence Body                       | 41  | 3595013  | Shaper Table Plate                   |
| 10  | 3773326  | Stud                             | 42  | 3585014  | Starter Pin                          |
| 11  | 6516009  | Hex Head Jam Nut                 | 43  | 3696201  | Set Screw                            |
| 13  | 6715013  | Set Screw                        | 44  | 6714037  | Fillister Head Screw (Plated)        |
| 14  | 2063173  | Rod and Bracket Assembly         | 45  | 3328202  | Ring Insert                          |
| 15  | 3195025  | Wood Fence                       | 46  | 3078007  | Cap                                  |
|     | 3195026  | Wood Fence, 30X40 Table RH       |     | 2388035  | Shaper Kit Plate (Items 47-54)       |
|     | 3195027  | Wood Fence, 30X40 Table LH       | 47  | 6680020  | Rivet                                |
| 16  | 6715051  | Flat Head Screw                  | 48  | 3312251  | I.D. Plate, Powermatic               |
| 17  | 6861205  | Washer                           | 49  | 3312228  | I.D. Plate, Serial & Model Number    |
| 18  | 6715007  | Nut                              | 50  | 6747000  | Drive Screw (Nickel Plated)          |
| 19  | 3104618  | Top Cover                        |     | 2136001  | Door Assembly (Items 51 & 52)        |
| 20  | 6430041  | Knob                             | 51  | 2136004  | Door Assembly (Weldment)             |
| 21  | 6861205  | Washer                           | 52  | 6440003  | Latch                                |
| 22  | 6749008  | Wood Screw                       | 53  | 6746023  | Hex Head Screw (Self-Tapping)        |
| 23  | 6861200  | Lock Washer                      |     | 3330283  | Safety Plate (not shown)             |
| 24  | 6715024  | Socket Head Cap Screw            | 54  | 6816292  | Starter, 3 HP, 1 Ph, 230V            |
| 25  | 3019071  | Fence Angle                      | 55  | 6816294  | Starter, 5 HP, 1 Ph, 230V            |
| 26  | 3195024  | Guard                            | 56  | 6816295  | Starter, 5 HP, 3 Ph, 230V            |
|     | 2271008  | Handwheel Assembly (Items 28-30) | 57  | 6816296  | Starter, 5 HP, 3 Ph, 460V            |
| 28  | 6350032  | Handle Assembly                  | 58  | 6821069  | Switch                               |
| 29  | 3271039  | Handwheel, 8" Dia.               |     |          |                                      |

# Table, Stand & Fence (Models 27/Super 27)

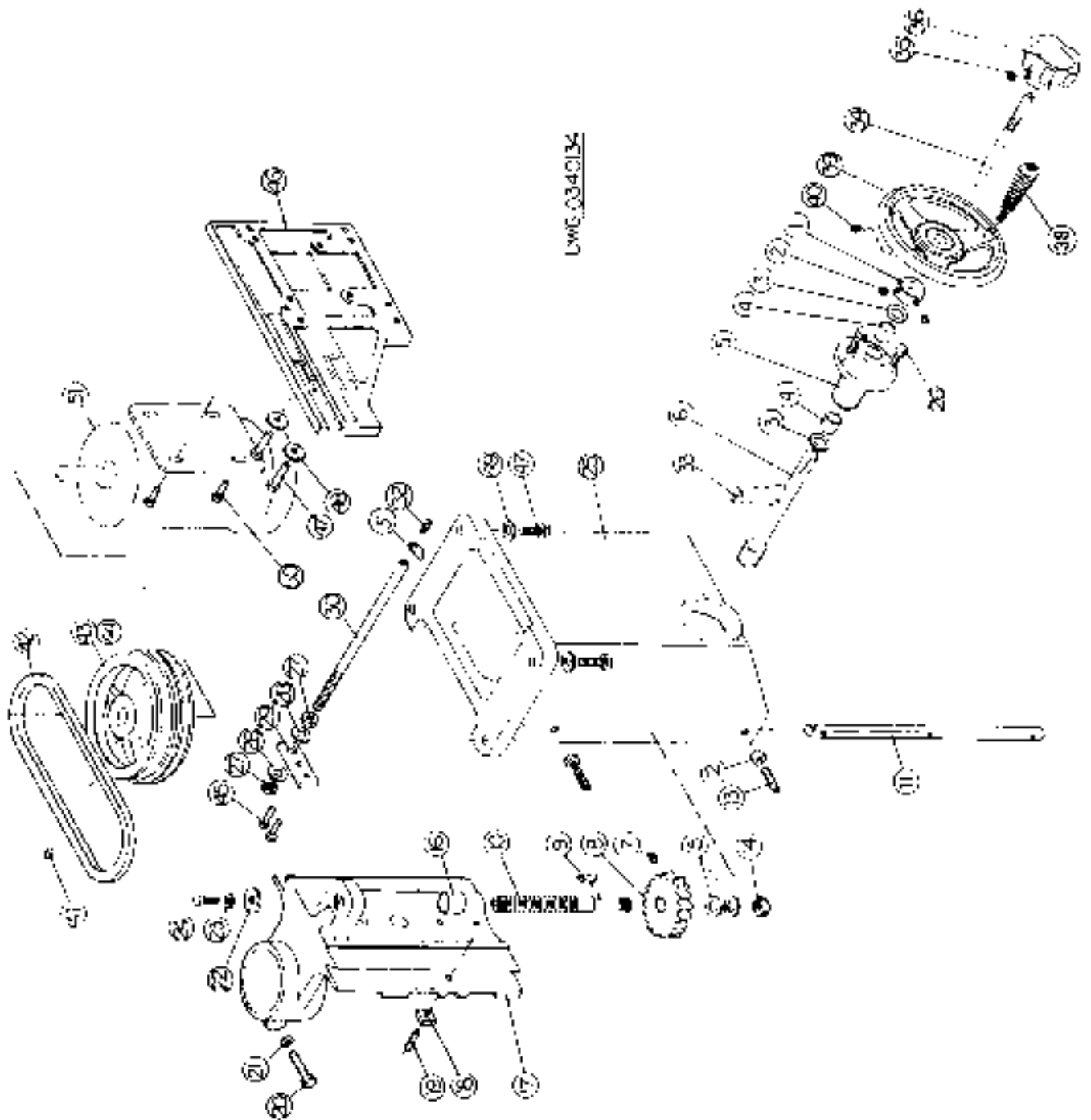


## PARTS LIST: Head, Motor & Slide Assembly (Models 27 & 27 Super)

| No. | Part No. | Description                              | No. | Part No. | Description   |
|-----|----------|--|-----|----------|---|
|     | 2277001  | Slide Head Assembly (Items 1-26)         | 31  | 3604001  | Pointer   |
|     | 2586002  | Worm Gear Pinion Assembly (#1-6)         | 32  | 6706035  | Round Head Machine Screw,<br>6-32 X 1/4                     |
| 1   | 3096244  | Collar                                   | 33  | 6420002  | Woodruff Key 608  |
| 2   | 6715015  | Socket Set Screw, 5/16-18 X 1/4          | 34  | 3582009  | Locking Pin   |
| 3   | 6861901  | Flat Nylatron Washer, 3/4"E-12           | 35  | 6760078  | Socket Set Screw, #10-32 X 3/8                              |
| 4   | 6095025  | Bronze Bushing, 3/4 ID X 7/8 OD<br>X 3/4 | 36  | 6406018  | Plastic Knob  |
| 5   | 3070006  | Adjustable Shaft Bushing                 |     | 2271008  | Handwheel Assembly (Items 38-40)                            |
| 6   | 3586008  | Pinion                                   | 38  | 6350032  | Handle Assembly   |
| 7   | 6714004  | Socket Set Screw, 1/4-20 X 1/4           | 39  | 3271039  | Handwheel, 8" Diameter                                      |
| 8   | 3237003  | Head Raising Spiral Gear                 | 40  | 6715013  | Socket Head Set Screw,<br>5/16-18 X 3/8                     |
| 9   | 6420001  | Woodruff Key No. 606                     | 41  | 6715016  | Cup Point Socket Set Screw,<br>5/16-18 X 5/16               |
| 10  | 3691003  | Elevating Screw                          | 42  | 6077220  | Belt, 3V315 3HP, 3Ph  |
| 11  | 3244039  | Head Slide Gib                           |     | 6077223  | Belt, 3V X 300 5HP & 3HP, 1Ph                               |
| 12  | 6515007  | Hex Jam Nut, 5/16                        | 43  | 3718042  | Motor Step Sheave, 1-1/8 BORE                               |
| 13  | 6715008  | Socket Head Set Screw,<br>5/16-18 X 1    | 44  | 3718043  | Motor Step Sheave, 7/8 BORE                                 |
| 14  | 6520009  | Hex Thin Height Nut, 5/8                 | 45  | 6714127  | Hex Head Screw, 1/4-20 X 1/2                                |
| 15  | 6861702  | Nylatron Washer, 5/8                     | 46  | 3042047  | Motor Base  |
| 16  | 3735006  | Elevating Screw Spacer                   | 47  | 6718010  | Hex Head Cap Screw,<br>1/2-13 X 1-1/2                       |
| 17  | 3730012  | Head Slide                               | 48  | 3838008  | Bevel Washer  |
| 18  | 3387002  | Motor Base Key                           | 49  | 6861500  | Lock Washer, 1/2  |
| 19  | 6626028  | Spring Pin, 3/16 X 1/2                   | 50  | 6715006  | Hex Washer Head Screw,<br>5/16-18 X 3/4"                    |
| 20  | 6716032  | Hex Head Screw, 3/8-16 X 1-1/2           | 51  | 6472013  | Electric Motor, 3 HP, 1 Ph, 3600<br>RPM, 230V, 145T FR.     |
| 21  | 6861300  | Lock Washer, 3/8                         |     | 6472026  | Electric Motor, 3 HP, 3 PH, 3600<br>RPM, 230/460V, 145T FR. |
| 22  | 6861251  | Elevating Screw Stop Washer              |     | 6472328  | Electric Motor, 5 HP, 1 PH, 3600<br>RPM 230V, 182TFR.       |
| 23  | 6861200  | Lock Washer, 5/16                        |     | 6472319  | Electric Motor, 5 HP, 3 PH, 3600<br>RPM 230/460V, 182T FR.  |
| 24  | 6715042  | Hex Head Screw, 5/16-18 X 1              |     |          |   |
| 25  | 3057006  | Shaper Body                              |     |          |   |
| 26  | 6715032  | Hex Head Screw, 5/16-18 X 1              |     |          |   |
| 27  | 6516009  | Hex Jam Nut, 3/8-16                      |     |          |   |
| 28  | 6861301  | Flat Washer, 3/8                         |     |          |   |
| 29  | 3042004  | Pointer Rod Base                         |     |          |   |
| 30  | 3670009  | Pointer Rod                              |     |          |   |

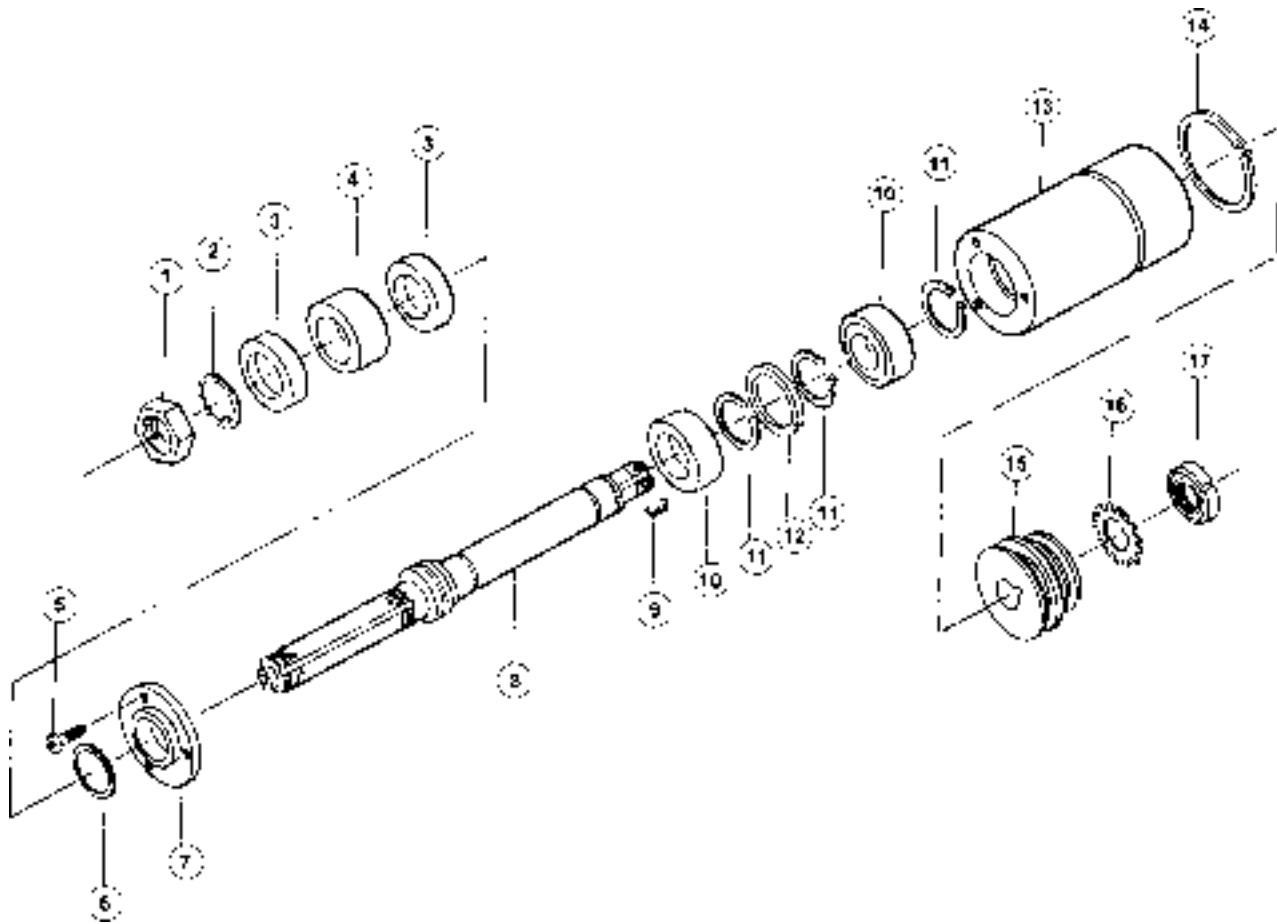


EXPLODED VIEW: MODEL 27 & SUPER 27 HEAD, MOTOR, & SLIDE ASSY.



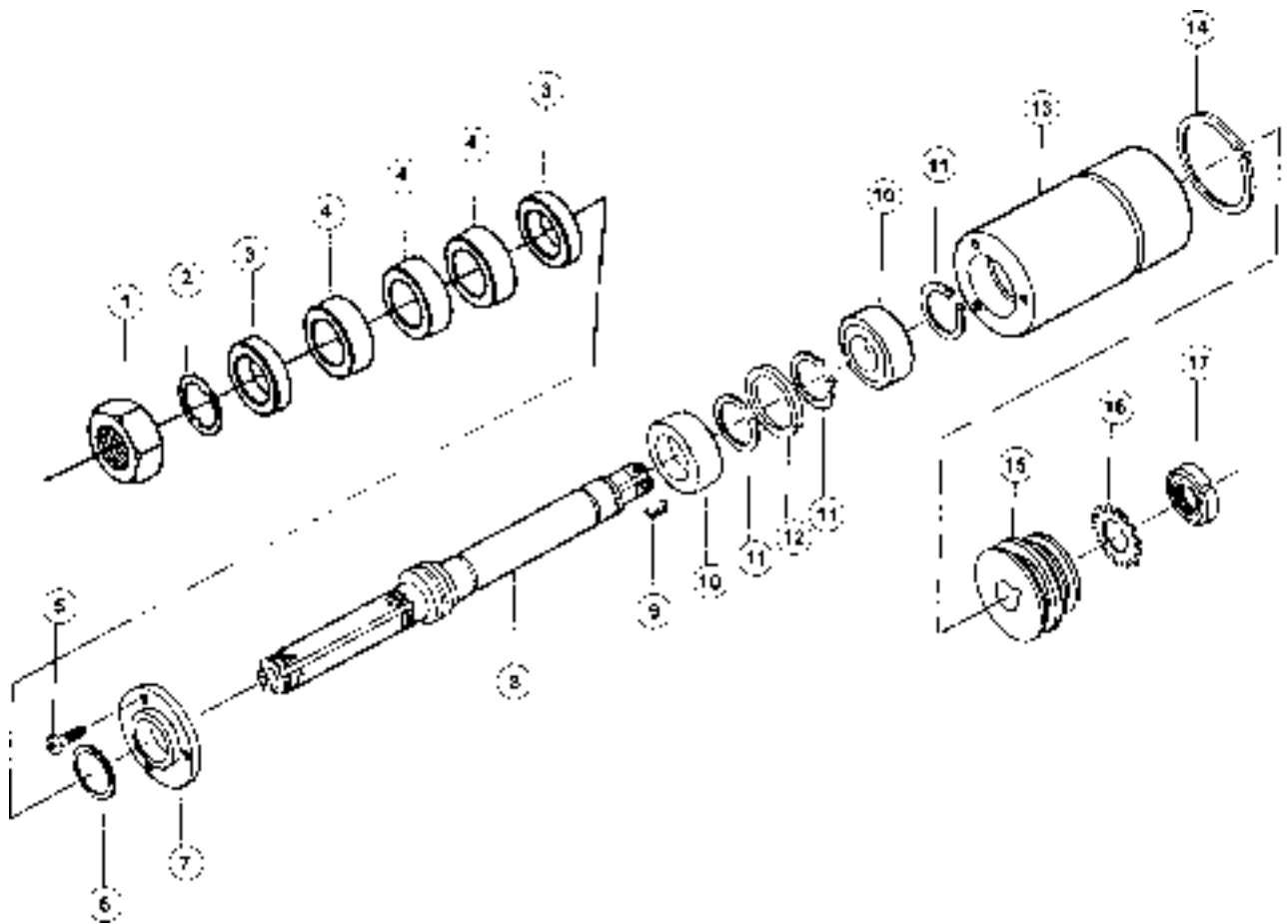
# PARTS LIST: 3/4" Spindle Assembly - 2749052

| No. | Part No. | Description                             | No. | Part No. | Description                             |
|-----|----------|---|-----|----------|---|
| 1   | 3526005  | Spindle Nut, 3/4                        | 10  | 6060191  | Bearing, 6205 - 2 RSTG                  |
| 2   | 3840003  | Spindle Lockwasher, 3/4                 | 11  | 6670014  | 5100 98 Truarc External                 |
| 3   | 3742004  | Spindle Spacer, 3/4 X 1/2               | 12  | 6670128  | Retainer Ring, IN - 206                 |
| 4   | 3742005  | Spindle Spacer, 3/4 X 3/4               | 13  | 3298253  | Quill                                   |
| 5   | 6708067  | Button Head Socket Screw,<br>8-32 X 1/2 | 14  | 6670130  | Retainer Ring, 5100 - 275               |
| 6   | 6670129  | RSN Retainer Ring - 137                 | 15  | 3718044  | Spindle Sheave                          |
| 7   | 3659024  | Bearing Retainer                        | 16  | 6864004  | Lockbearing Steel Plain Washer,<br>WD 4 |
| 8   | 3749115  | Solid Spindle, 3/4                      | 17  | 6549004  | Bearing Lock Nut, N - 04                |
| 9   | 3388062  | Square Key                              |     |          |   |



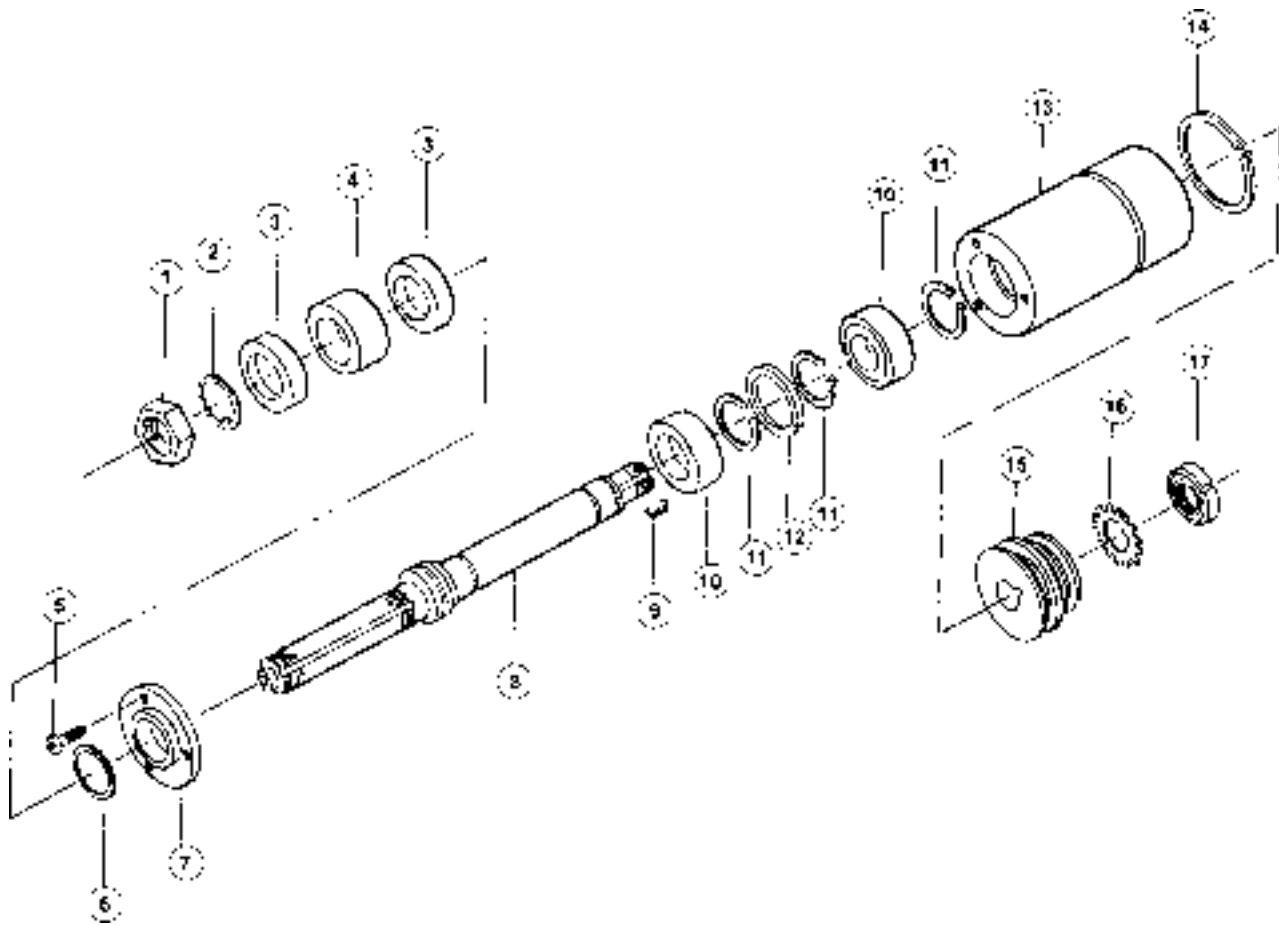
## PARTS LIST: 1" Spindle Assembly - 2749053

| No. | Part No. | Description                             | No. | Part No. | Description                    |
|-----|----------|---|-----|----------|--------------------------------|
| 1   | 3526006  | Spindle Nut, 1                          | 9   | 3388062  | Square Key                     |
| 2   | 3840004  | Spindle Lockwasher, 1                   | 10  | 6060191  | Bearing, 6205 - 2RSTG          |
| 3   | 3742006  | Spindle Spacer, 1 X 1/2                 | 11  | 6670014  | 5100 98 Truarc External        |
| 4   | 3742007  | Spindle Spacer, 1 X 3/4                 | 12  | 6670128  | Retainer Ring, IN - 206        |
| 5   | 6708067  | Button Head Socket Screw,<br>8-32 X 1/2 | 13  | 3298253  | Quill                          |
| 6   | 6670129  | Retainer Ring, RSN - 137                | 14  | 6670130  | Retainer Ring, 5100 - 275      |
| 7   | 3659024  | Bearing Retainer                        | 15  | 3718044  | Spindle Sheave                 |
| 8   | 3749111  | Solid Spindle, 1                        | 16  | 6864004  | Lockbearing Steel Plain Washer |
|     |          |   | 17  | 6549004  | Bearing Lock Nut, N - 04       |



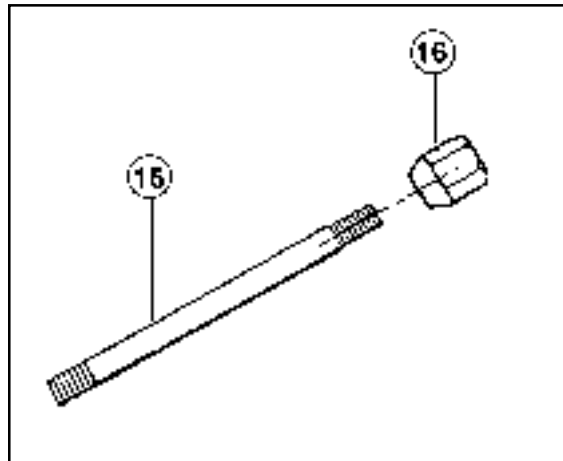
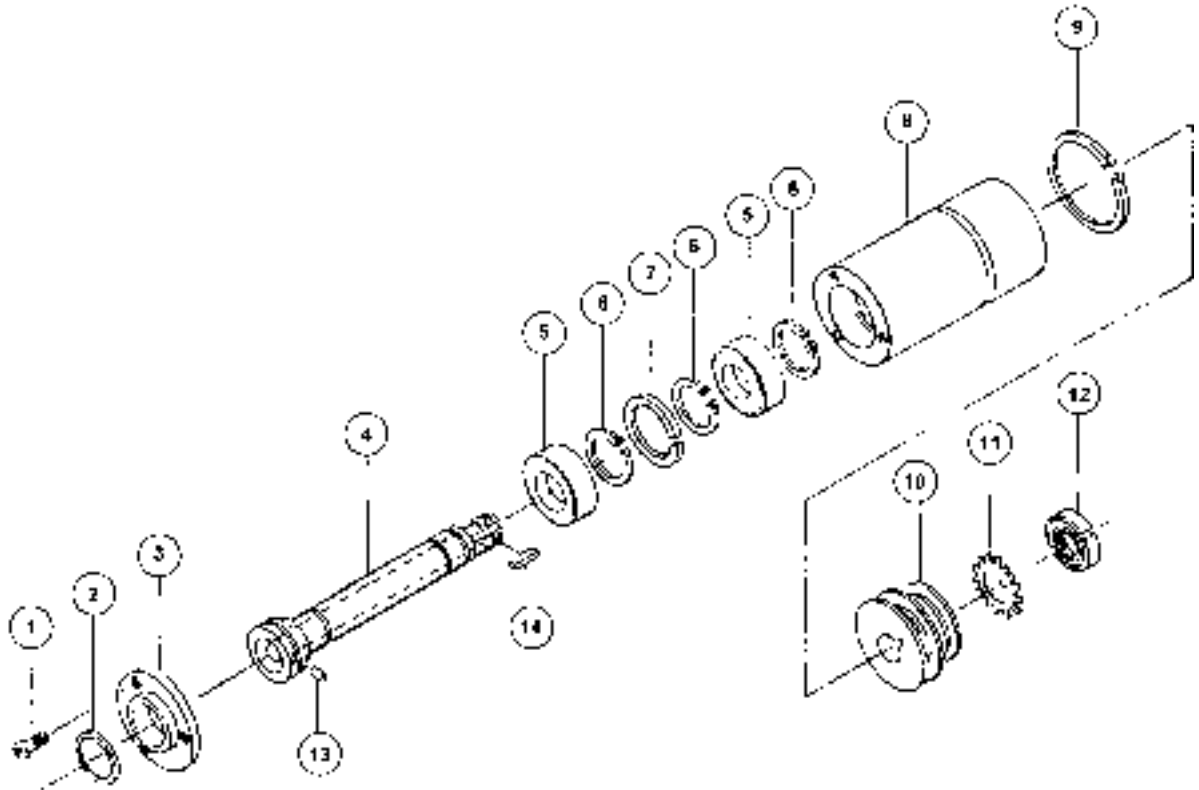
# PARTS LIST: 1-1/4" Spindle Assembly - 2749050

| No. | Part No. | Description                          | No. | Part No. | Description                          |
|-----|----------|--------------------------------------|-----|----------|--------------------------------------|
| 1   | 3526235  | Spindle Nut, 1-1/4                   | 10  | 6060191  | Bearing, 6205 - 2 RSTG               |
| 2   | 3840005  | Spindle Lockwasher, 1-1/4            | 11  | 6670014  | 5100 98 Truarc External              |
| 3   | 3745030  | Spindle Spacer, 1-1/4 X 1/2          | 12  | 6670128  | Retainer Ring, IN - 206              |
| 4   | 3745031  | Spindle Spacer, 1-1/4 X 3/4          | 13  | 3298253  | Quill                                |
| 5   | 6708067  | Button Head Socket Screw, 8-32 X 1/2 | 14  | 6670130  | Retainer Ring, 5100 - 275            |
| 6   | 6670168  | Retainer Ring, RSN - 162             | 15  | 3718044  | Spindle Sheave                       |
| 7   | 3659120  | Bearing Retainer                     | 16  | 6864004  | Lockbearing Steel Plain Washer, WD 4 |
| 8   | 3749128  | Solid Spindle, 1-1/4                 | 17  | 6549004  | Bearing Lock Nut, N - 04             |
| 9   | 3388062  | Square Key                           |     |          |                                      |

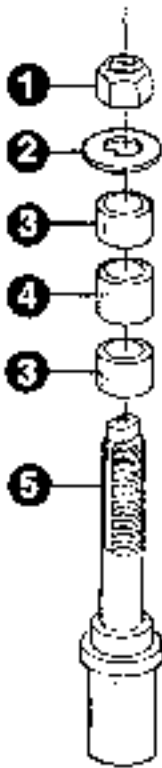


**PARTS LIST: Interchangeable Spindle Assembly - 2749051**  
**(Items 1 Thru 14)**

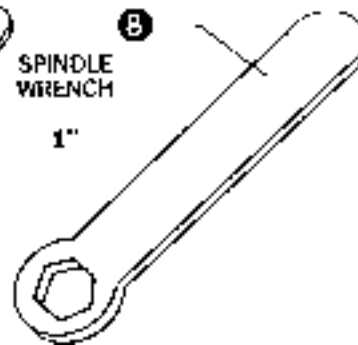
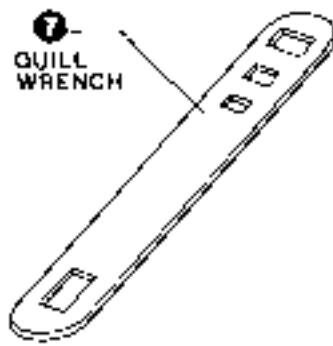
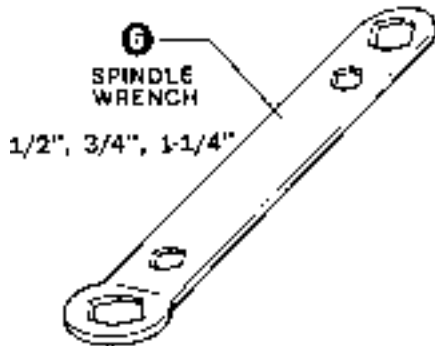
| NO. | PART NO. | DESCRIPTION                               | NO. | PART NO. | DESCRIPTION                               |
|-----|----------|---|-----|----------|---|
| 1   | 6708067  | BOTTOM HEAD SOC. 8-32 X 1/2"              | 9   | 6670130  | RING RETAINER IN - 206                    |
| 2   | 6670129  | RING, RETAINER RSN - 137                  | 10  | 3718044  | SHEAVE, SPINDLE                           |
| 3   | 3659024  | RETAINER, BEARING                         | 11  | 6864004  | WASHER, WD 4, BEARING LOCK<br>STEEL PLAIN |
| 4   | 3749112  | SPINDLE INTERCHANGEABLE<br>STRAIGHT SHANK | 12  | 6549004  | NUT, BEARING LOCK N - 04                  |
| 5   | 6060191  | BEARING 6205 - 2RSTG                      | 13  | 3583208  | PIN, DOWEL                                |
| 6   | 6670014  | 5100 98 TRUARC EXTERNAL                   | 14  | 3388062  | KEY, SQUARE                               |
| 7   | 6670128  | RING, RETAINER 5100 - 275                 | 15  | 3140001  | DRAWBAR                                   |
| 8   | 3298253  | QUILL                                     | 16  | 3526202  | NUT, DRAWBAR                              |



## PARTS LIST: Spindle Assemblies: Shank Arbors, Wrenches



| No. | Part No. | Description                       |
|-----|----------|-----------------------------------|
|     | 2749004  | Spindle Assembly, 1/2 (#1-5 STD.) |
| 1   | 3526004  | Spindle Nut, 1/2"                 |
| 2   | 3840002  | Spindle Lock Washer, 1/2          |
| 3   | 3742002  | Spindle Spacer, 1/2 X 1/2         |
| 4   | 3742003  | Spindle Spacer, 1/2 X 3/4         |
| 5   | 3749a016 | Spindle, 1/2                      |
|     | 2749003  | Spindle Assembly, 3/4 (#1-5 STD.) |
| 1   | 3526005  | Spindle Nut, 3/4                  |
| 2   | 3840003  | Spindle Lock Washer, 3/4          |
| 3   | 3742004  | Spindle Spacer                    |
| 4   | 3742005  | Spindle Spacer                    |
| 5   | 3749017  | Spindle, 3/4                      |
| 6   | 3868004  | Spindle Wrench                    |
| 7   | 3868005  | Quill Wrench                      |
| 8   | 3868025  | 1" Spindle Wrench                 |



## PARTS LIST: Guard, Safety Ring

### Guard for Interchangeable Spindle

| No. | Part No. | Description                |
|-----|----------|----------------------------|
| 1   | 3096325  | 3" Diameter, 1/2" Bore     |
| 2   | 3096326  | 4" Diameter, 3/4" Bore     |
| 3   | 3096328  | 5-1/2" Diameter, 3/4" Bore |

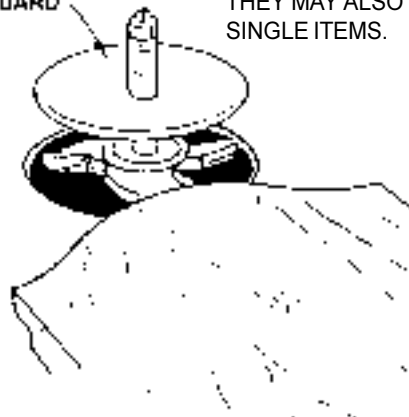
### Guard for 1" Spindle

|   |         |                 |
|---|---------|-----------------|
| 1 | 3096330 | 4-1/2" Diameter |
| 2 | 3096331 | 6" Diameter     |

### Guard for 1-1/4" Spindle

|   |         |                 |
|---|---------|-----------------|
| 1 | 3096327 | 4-1/2" Diameter |
| 2 | 3096329 | 6" Diameter     |

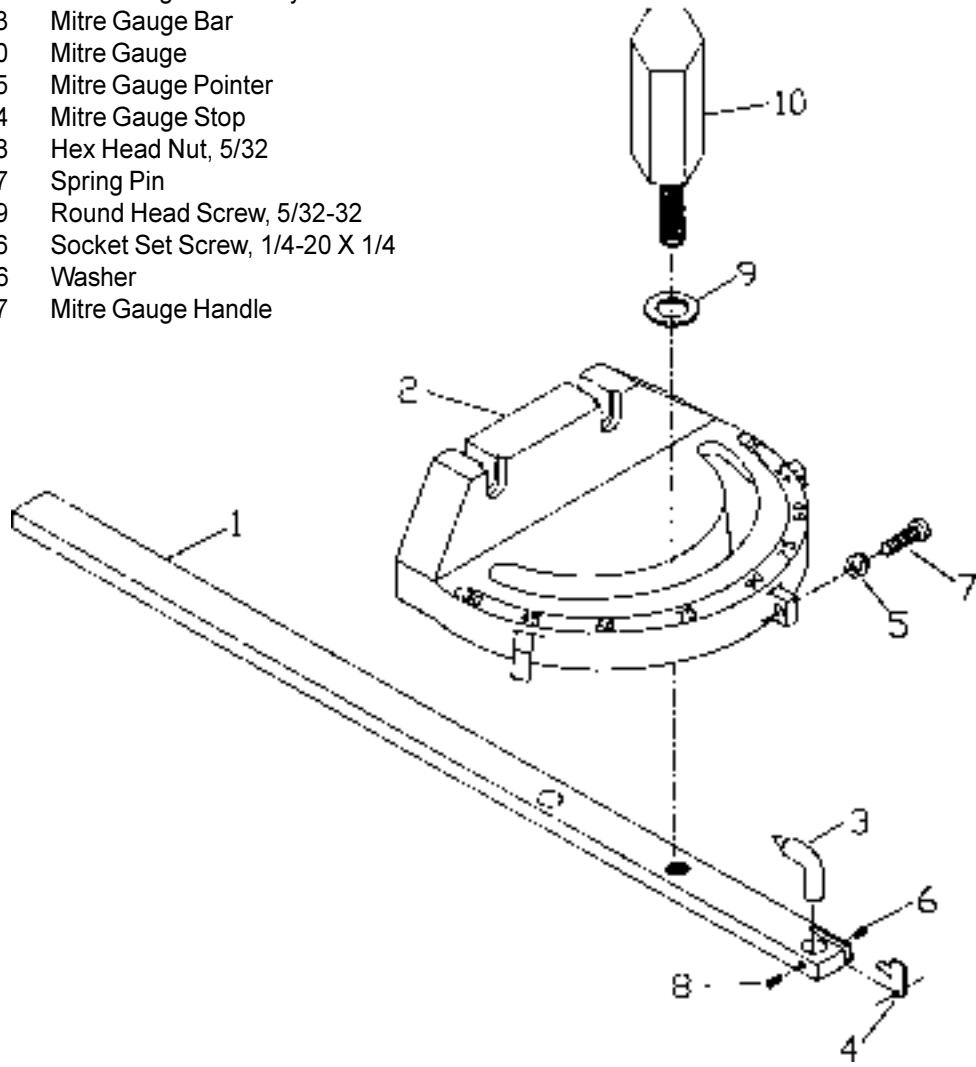
RING GUARD



SAFETY RING GUARDS ARE SHIPPED IN SETS ACCORDING TO SPINDLE SIZE AS STANDARD EQUIPMENT; HOWEVER, THEY MAY ALSO BE PURCHASED AS SINGLE ITEMS.

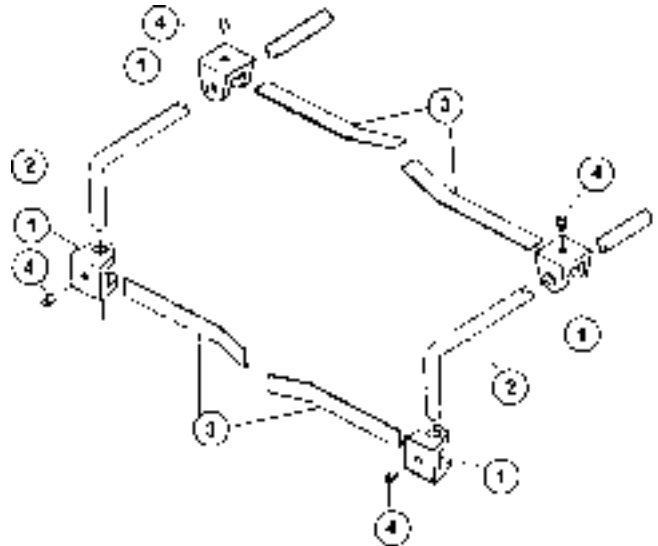
## PARTS LIST: Mitre Gauge Assembly (Optional) - 27/27 Super

| No. | Part No. | Description                    |
|-----|----------|--------------------------------|
|     | 2471010  | Mitre Gauge Assembly           |
| 1   | 6290553  | Mitre Gauge Bar                |
| 2   | 6290550  | Mitre Gauge                    |
| 3   | 6290555  | Mitre Gauge Pointer            |
| 4   | 6290554  | Mitre Gauge Stop               |
| 5   | 6290548  | Hex Head Nut, 5/32             |
| 6   | 6290557  | Spring Pin                     |
| 7   | 6290549  | Round Head Screw, 5/32-32      |
| 8   | 6290556  | Socket Set Screw, 1/4-20 X 1/4 |
| 9   | 6290546  | Washer                         |
| 10  | 6290547  | Mitre Gauge Handle             |



## PARTS LIST: Hold-Down (Optional)

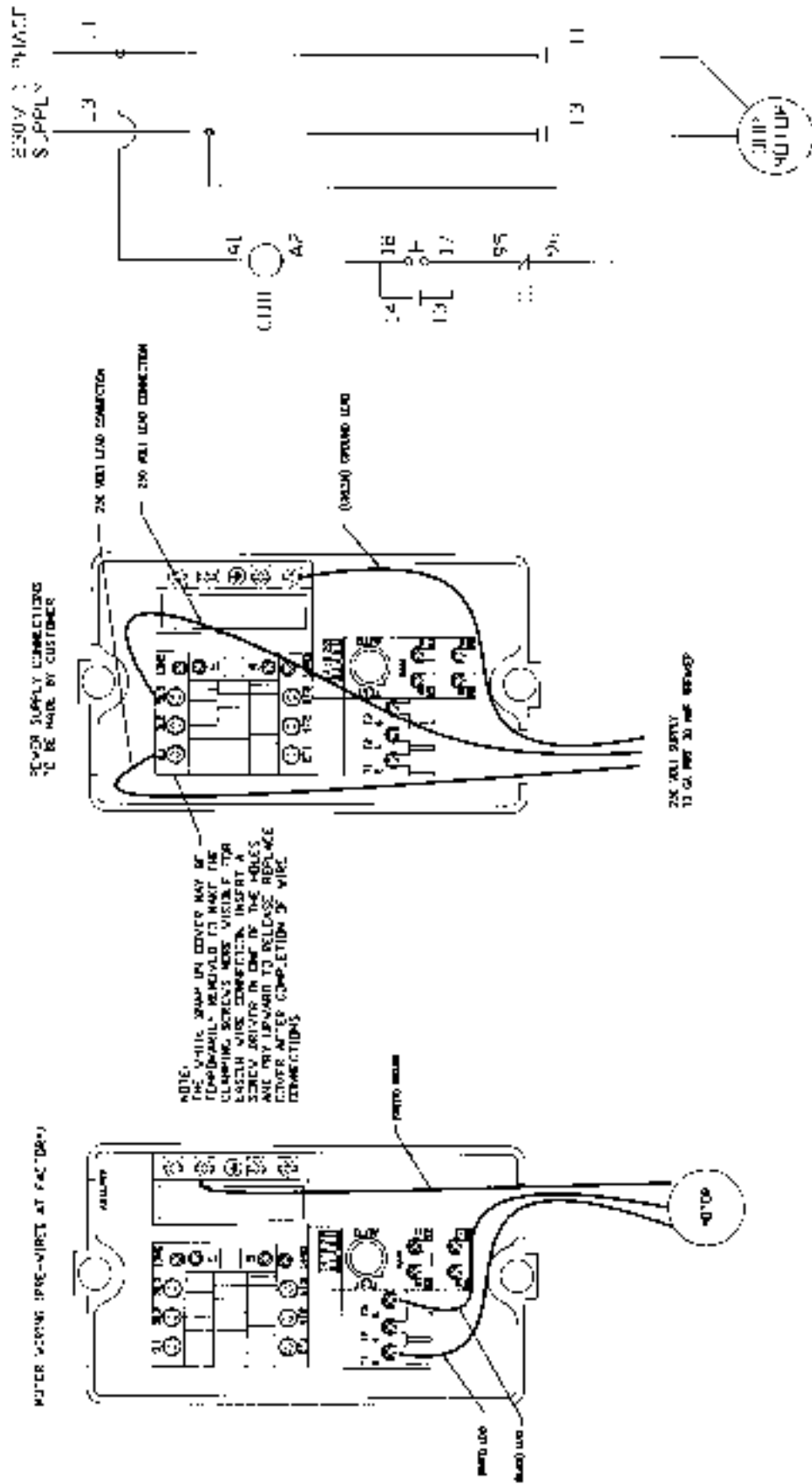
| No. | Part No. | Description                |
|-----|----------|----------------------------|
| 1   | 3289008  | Spring Holder              |
| 2   | 3670057  | Material Hold-down Rod     |
| 3   | 3767008  | Fence Strap                |
| 4   | 6715014  | Cup Point Socket Set Screw |



# ELECTRICAL SCHEMATIC (Model 27)

## FOR NHD ELECTRICALS ONLY (3HP SINGLE PHASE 230 VOLT)

6816292

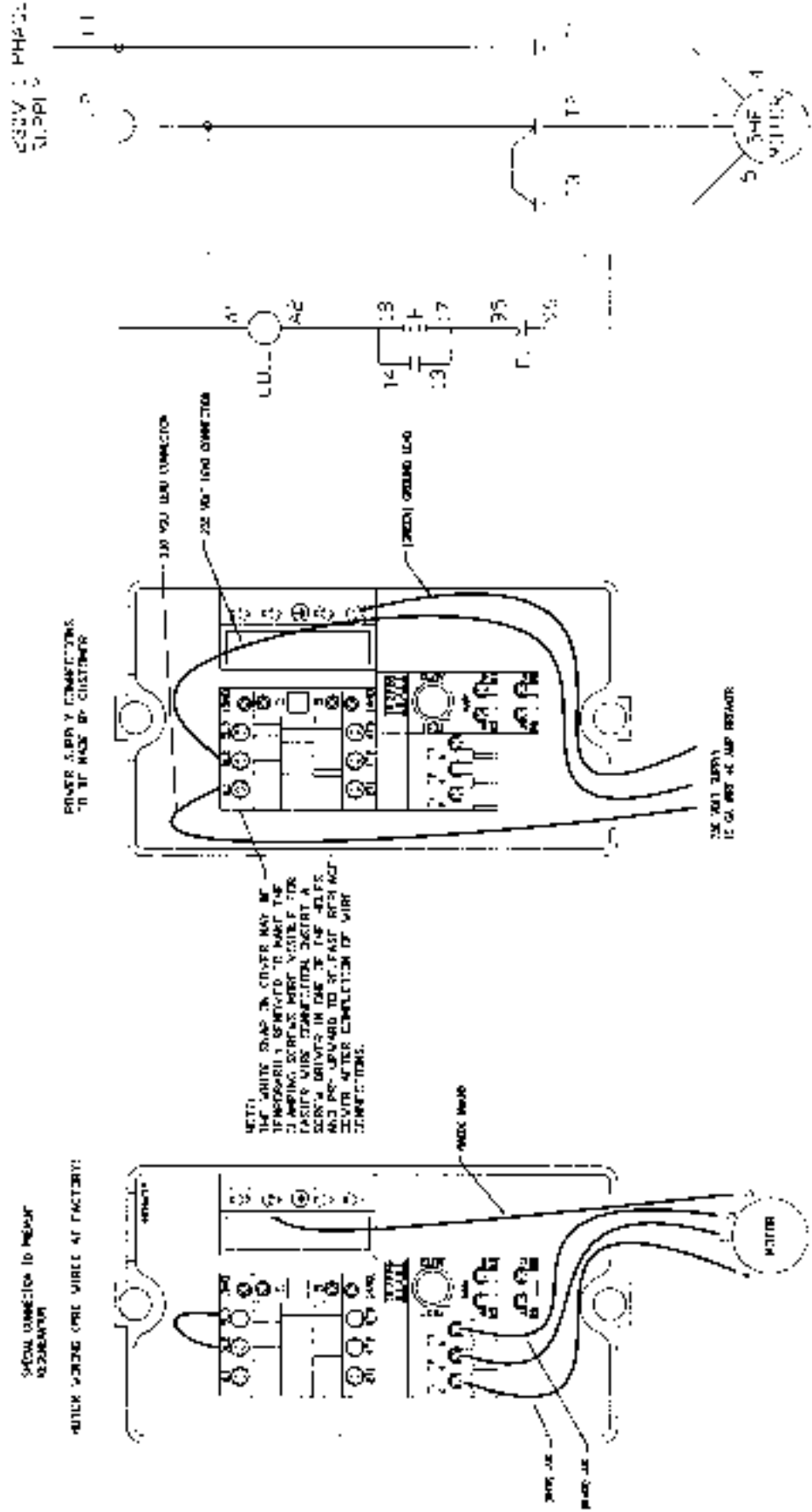




# ELECTRICAL SCHEMATIC (Model 27 & 27 Super)

## FOR NHD ELECTRICALS ONLY (5HP SINGLE PHASE 230 VOLT)

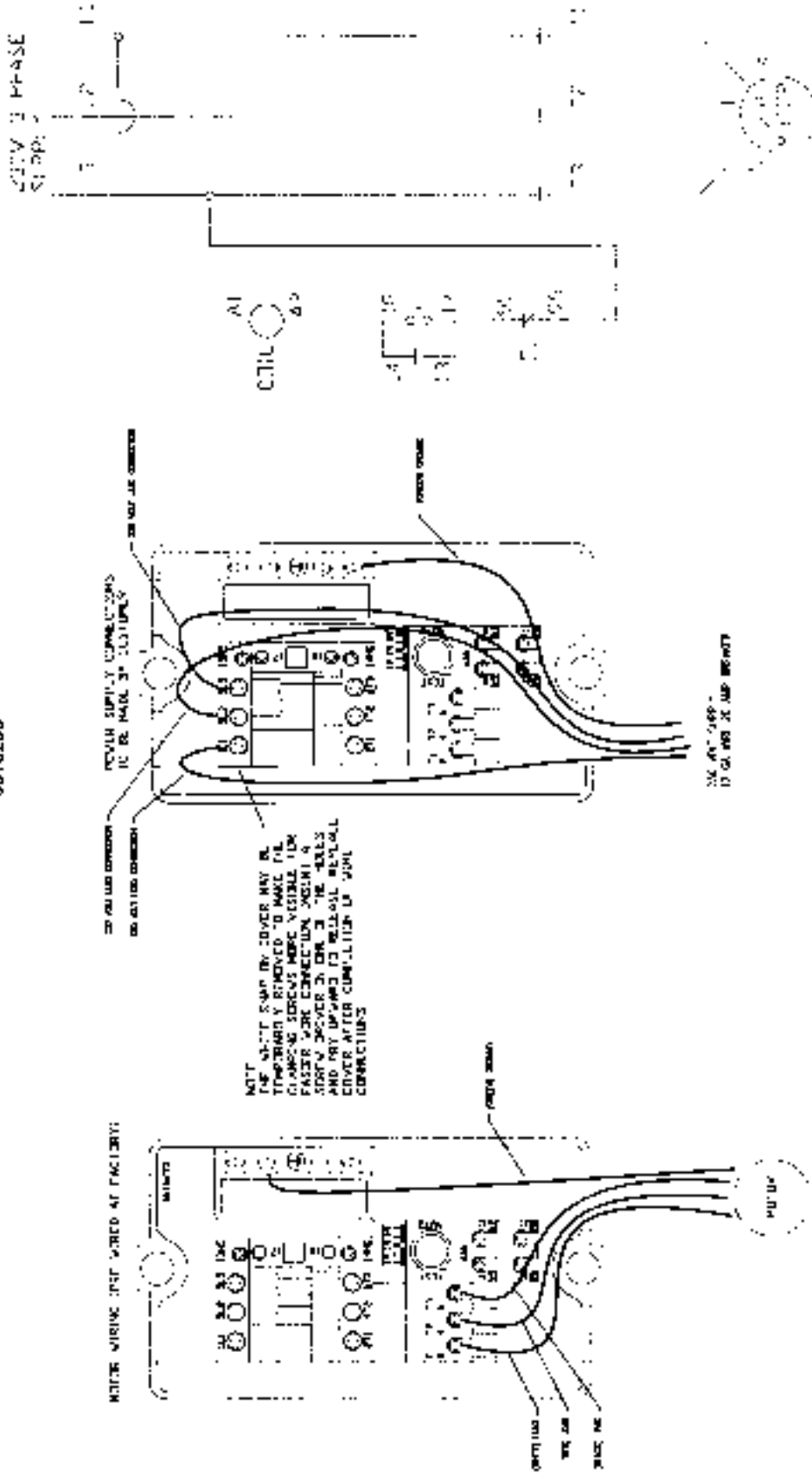
6816294



# ELECTRICAL SCHEMATIC (Model 27 & 27 Super)

## FOR NHD ELECTRICALS ONLY (5HP THREE PHASE 230 VOLT)

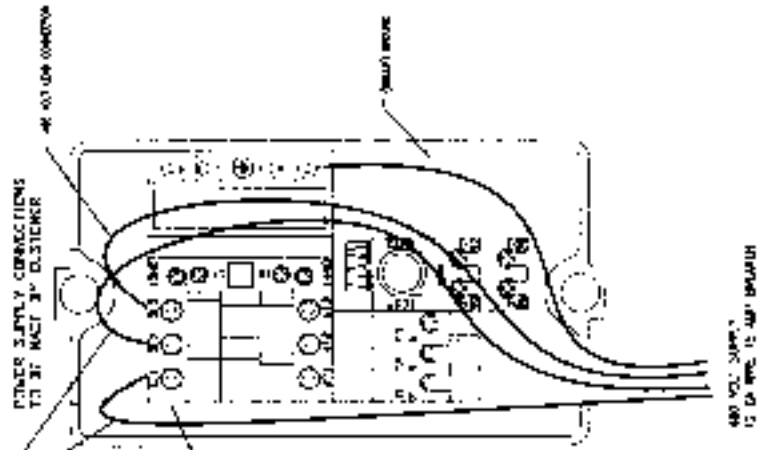
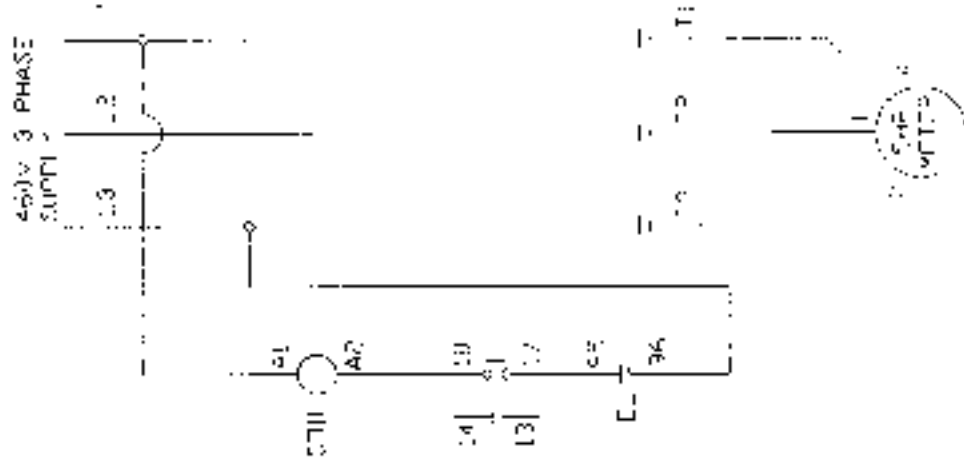
5816285



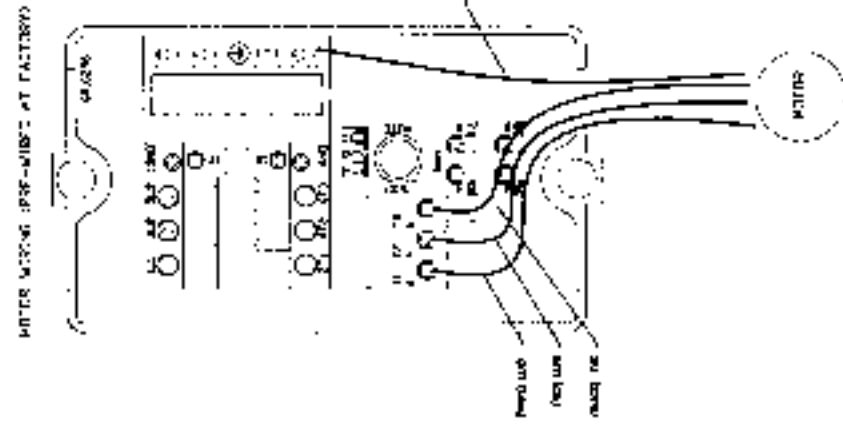
# ELECTRICAL SCHEMATIC (Model 27 & 27 Super)

## FOR NHD ELECTRICALS ONLY (5HP THREE PHASE 460 VOLT)

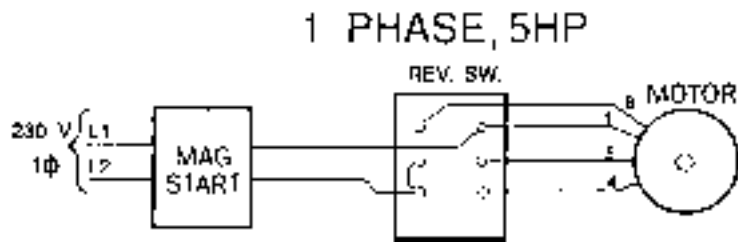
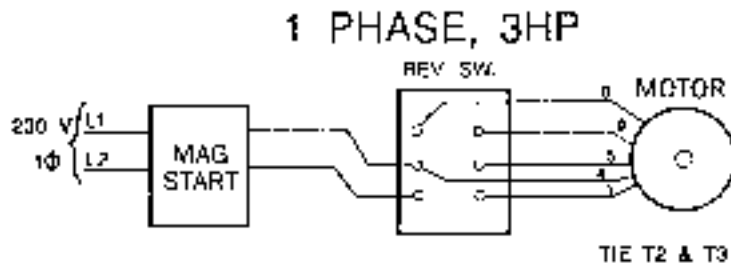
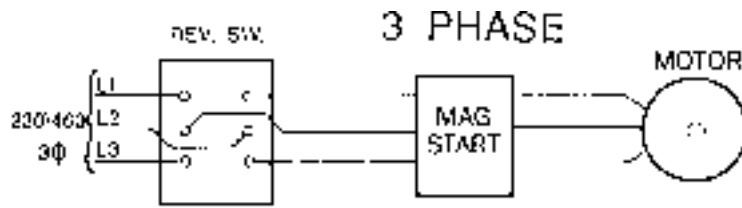
6816286



NOTE:  
THE WHITE STRAP ON COVER MAY BE  
REMOVED IF REQUIRED TO MAKE THE  
CLAMPING POINTS MORE VISIBLE FOR  
EASIER WIRE CONNECTION. INSERT A  
Screw DRIVER IN ONE OF THE HOLES  
AND TRY TO LEAN IT AGAINST  
COVER AFTER ESTABLISHING WIRE  
CONNECTIONS.



# REVERSING SWITCH DIAGRAMS (Model 27 & Super 27)



# PERIODIC MAINTENANCE CHECK LIST

OPERATOR \_\_\_\_\_ DATE: \_\_\_\_\_  
 MODEL NO. \_\_\_\_\_ S/N \_\_\_\_\_ ASSET NO. \_\_\_\_\_

S - SATISFACTORY; A - ACCEPTABLE, BUT NEEDS ATTENTION U - UNSATISFACTORY - RED TAG

|   |   |   |   |
|---|---|---|---|
| The lock ring, cutter(s), and arbor locked securely on.               | S | A | U |
| Cutters sharp and free of nicks and flaws.                            | S |   | U |
| Guard in place and working properly.                                  | S |   | U |
| Fences properly aligned and square with table.                        | S |   | U |
| All safety decals in place.   | S |   | U |
| Working area round machine matted off.                                | S | A | U |
| Anti-skid strips on floor area where operator normally stands.        | S |   | U |
| Various types of push blocks and sticks readily available to operator | S |   | U |
| Kickback path not aimed at other work areas, aisles, or doorways.     | S | A | U |
| Wood fence attached tightly to fence shoulders.                       | S |   | U |
| No missing parts or loose screws                                      | S | A | U |
| Machine stable in operation   | S | A | U |
| Foot pedals have proper adjustment.                                   | S |   | U |
| Belt adjusted to proper tension                                       | S |   | U |
| Table free of pitch, resin, or any foreign material.                  | S | A | U |
| Shaper lubricated where necessary.                                    | S | A | U |
| Collars and spacers free of nicks, rust, and flaws.                   | S | A | U |
| Keyed collar in use directly under locking nut on arbor.              | S | A | U |
| Spindle taper socket free of nicks, rust, and flaws.                  | S | A | U |
| Shaper properly grounded.   | S | A | U |
| Arbor and locking nut thread free of nicks, rust, dings, and flaws.   | S | A | U |
| Fixtures, templates, and clamps in good working order.                | S | A | U |

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To order parts or reach our service department, please call our toll-free number between 8:00 a.m. and 4:30 p.m. (CST), Monday through Friday. Having the Model Number and Serial Number of your machine available when you call will allow us to serve you quickly and accurately. Locating the EDP number of the part(s) required from your parts manual will also expedite your order.

Phone No.: (800) 248-0144

Fax No. (800) 274-6840

If you are calling from Canada, please call 800-238-4746

E-mail: [powermatic@powermatic.com](mailto:powermatic@powermatic.com)

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# **POWERMATIC®**

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