

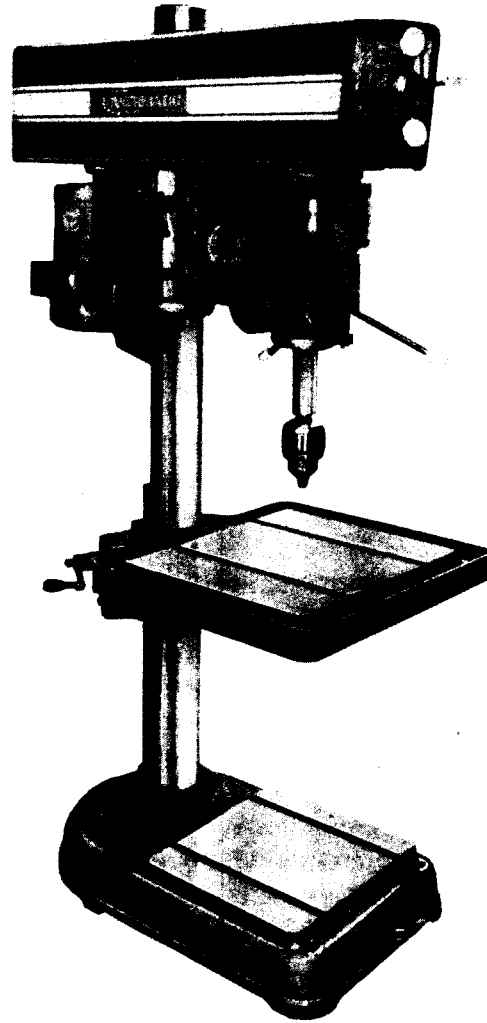
Price \$2.50

Serl. # 66-2294

Model 1200

20" Drill Press

MAINTENANCE INSTRUCTIONS AND PARTS LIST



POWERMATIC

615-473-5501

POWERMATIC  OUDAILLE
McMinnville, Tennessee 37110

FORWARD

SAFETY FIRST

This manual has been prepared for the owner and those responsible for the maintenance of a Powermatic Model 1200 Drill Press. Its purpose aside from proper maintenance and operations is to promote safety through the use of accepted practice. Read the safety and operating instructions thoroughly before operating the machine.

In order to obtain maximum life and efficiency from your Powermatic Drill Press follow all the instructions in the operating instructions and maintenance manuals carefully.

The specifications put forth in this manual were in effect at the time of publication. However, owing to Powermatic's policy of continuous improvement, changes to these specifications may be made at any time without obligation on the part of Powermatic Houdaille, Inc.

WARRANTY

This machine and its component parts have been carefully inspected and performance tested at various stages of production and each finished machine is subjected to a final inspection before shipment. We agree that for a period of eighteen (18) months or 3000 hours of use, whichever occurs first from date of delivery from our authorized dealer to repair or replace, at our option, any machine (or component part thereof) proving defective within the above period, F.O.B. our plant, providing such machine (or component part) is returned prepaid to our plant, or to a designated service center of the undersigned, for our examination. This warranty does not include repair or replacement required because of misuse, abuse, or because of normal wear and tear. Nor does it include electrical motors and electrical components which are warranted by their manufacturer and which should be taken to their local authorized repair station for service. Costs of removal, shipment and reinstallation are not covered hereby. Further, we cannot be responsible for the cost of repairs made or attempted outside of our factory or designated service center without our authorization. No claims for defects will be honored if Serial No. plate has been removed. **THIS WARRANTY IS MADE EXPRESSLY IN PLACE OF ALL OTHER WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, WITH RESPECT TO FITNESS, MERCHANTABILITY, QUALITY OR OPERATIVENESS. THIS WARRANTY IS MADE ONLY TO THE ORIGINAL PURCHASER AND BECOMES EFFECTIVE ONLY WHEN THE ACCOMPANYING CARD IS FULLY AND PROPERLY FILLED OUT AND RETURNED TO THE FACTORY WITHIN TEN (10) DAYS FROM DATE OF DELIVERY.**

DRILL PRESS SAFETY INSTRUCTIONS

1. **Read, understand and follow** the safety and operating instructions found in this manual. Know the limitations and hazards associated with a 1200 Drill Press. A safety rules decal is installed on the belt guard of this machine to serve as a reminder of basic safety practice.
2. **Grounding the drill press:** Make certain that the machine frame is electrically grounded and that a grounding lead is included in the incoming electrical service. In cases where a cord and plug are used, make certain that the grounding lug connects to a suitable ground. Follow the grounding procedure indicated by the National Electric Code.

3. **Eye Safety:** Wear an approved safety face shield, goggles or glasses to protect eyes when operating the drill press.
4. **Personal Protection:** Before operating the machine, remove tie, rings, watch and other jewelry and roll up sleeves above the elbow. Remove all outer loose clothing and confine long hair. Protective-type footwear should be worn. Hearing protectors should be used where noise exceeds the level of exposure allowed in Section 1910.95 of the OSHA regulations. **Do Not Wear Gloves.**
5. **Work Area:** Keep the floor around the machine clean and free of tools, tooling, stock scrap and other foreign material, and oil, grease or coolant to minimize the danger of tripping or slipping. Be sure the table is free of chips, tools and everything else not required for the task to be performed. Powermatic recommends the use of anti-skid floor strips on the floor area where the operator normally stands and that each machine's work area be marked off. Make certain the work area is well lighted and ventilated. Provide for adequate work space around the machine.
6. **Guards:** Keep all machine guards in place at all times when the machine is in use. **Do Not Operate the Machine with the Guard Off.**
7. **Do Not Overreach:** Maintain a balanced stance and keep your body under control at all times.
8. **Maintain Tools in Top Condition:** Keep tools sharp and clean for safe and best performance. Dull tools can increase the feed force required and can result in burning the stock or seizing up, causing the work to be pulled free from its holding device. Dull or improperly sharpened drills will not produce a straight hole.
9. **Use the Proper Speed and Feed:** A table is provided in the operating instruction manual as a guide in selecting the correct speed and feed rate for a variety of materials. For materials not shown, consult the material supplier for correct speed and feed rate. Adjust speed on variable speed models only with the power on. On step cone models, make sure power is off and the spindle has come to a complete stop before opening the access door to change speeds.
10. **Never Drill Freehand:** Always block or clamp the work piece. A drill bit or tap can seize up causing the work piece, jig, or fixture to rotate with the spindle and can cause serious injury.
11. **Remove Key Chucks:** When a key chuck is used, remove it immediately after using it to lock or unlock a tool in the chuck. If it is not removed, starting the spindle can cause it to be thrown off the chuck and could result in serious injury.
12. **Hand Safety:** Keep hands away from the spindle when the machine is under power. Never clear chips when the spindle is under power and never use the hands to clear chips; use a brush or chip rake. Chips are razor sharp and can cause serious injury. **Do Not Change Tools with the Spindle Rotating Under Power.**
13. **Spindle Rotation:** Be sure the rotation of the spindle is correct for the tool being used.
14. **Machine Adjustments:** Make all machine adjustments with power off except speed on a variable speed model or feed rate on machine equipped with power feed.
15. **Machine Capacity:** Do Not attempt to use the machine beyond its stated capacity or for operations requiring more than the rated horsepower of the motor. This type use will reduce the productive life of the machine and could cause the breakage of parts which could result in personal injury.
16. **Avoid Accidental Starting:** Make certain the motor switch is in the "off" position before connecting power to the machine.
17. **Careless Acts:** Give the work you are doing your undivided attention. Looking around, carrying on a conversation, and "horseplay" are careless acts that can result in serious injury.

18. **Job Completion:** If the operator leaves the machine area for any reason, the drill press should be turned off and the spindle come to a complete stop before he departs. In addition, if the operation is complete, he should clean the machine and work area. **Never** clean the machine with power on and **never** clean chips with the hands; use a brush or chip rake.
19. **Disconnect Machine:** Before performing any service or maintenance.
20. **Replacement Parts:** Use only Powermatic or factory authorized replacement parts and accessories; otherwise, the drill press warranty and guarantee will be null and void.
21. **Misuse:** Do Not use the 1200 Drill Press 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 that may result from the use. Do Not equip a 1200 Drill Press with a motor larger than 2 horsepower nor with a motor with a speed greater than 1800 rpm unless specifically authorized to do so in writing by Powermatic.

MACHINE INSTALLATION ADJUSTMENTS AND MAINTENANCE

RECEIVING:

Remove drill press from shipping container and check for damage. Report any damage to the carrier and to your distributor immediately. Attach accessories shipped with drill press, then clean protective coating from table, column, base and spindle with a good commercial solvent. Read instruction manual thoroughly for assembly alignment, maintenance and safety instructions.

INSTALLATION:

Mount machine on a solid foundation and lag to the floor through holes provided in base of drill press. The head and table of the machine have been lowered on the column for convenience in packaging.

1. Using a crane and a sling with blocks to prevent damage to the guard, place a sling under the head near the column on the spindle side.
2. Loosen the two binders clamping the head to the column and raise the head to the desired height. Move the safety collar to a position under the head by loosening the two setscrew, sliding the collar up, and relocking setscrews.
3. Remove the sling and clamp the head in position.
4. Using the crane and sling, unlock the table binder and raise the table height enough to install the table raising rack.
5. Install the rack by placing it in the notched area in the lower collar and driving the roll pin through the hole in the rack and through both ears on the collar.
6. Position the rack to engage the table raising gearing and lower the table until the rack engages the rack pinion.
7. Lower the crane to put slack in the sling, engage the table raising lever and lower the table on to the rack. Visually align the table with the base, lock the table binder and remove the sling.

MULTIPLE SPINDLE MODELS:

In the case of multiple spindle models, the legs are not attached to the table, they are packed separately. To assemble the legs to multiple spindle models, carefully support machine on forklift tines or other temporary supports and bolt legs securely into position. The tables of multiple spindle models are at

Multiple Spindle Models: (Continued)

times shipped in more than one piece. In joining table halves, use alignment pins provided before securing bolts. These pins guarantee precision table surfaces. It is imperative that multiple spindle tables be carefully leveled. Use a precision level and level using the jackscrews provided in the legs. Lag machine to floor through holes provided in leveling screws (3/8" dia. lag screws).

MOTOR INSTALLATION:

Step Pulley Models –

If your machine was ordered less motor, or if the motor is being replaced, the following instructions will make installation easier. **NOTE:** The spindle drive belts between the countershaft and spline driver must be adjusted first before adjusting the motor belt.

- a. Place motor pulley on motor shaft and insert key.
- b. Raise drill press table as shown in Fig. 1. Place motor upright on table and install motor to motor mount, using (4) 5/16" x 5/8" long hex head cap screws. Align motor and spindle pulley and tighten motor pulley setscrews.
- c. Rotate clamp handle clockwise to free motor base. Place the belt in the second groove up from the bottom. Loosen the setscrews locking the supports posts to the head casting and jack the motor base assembly back with the lock nut on the adjusting stud. Check the belt tension by rotating the clamp handle counterclockwise to cam the motor base back. Do not over tension the belt. Lock the post setscrews and the jam nuts of the adjusting stud on each side of the motor base support.

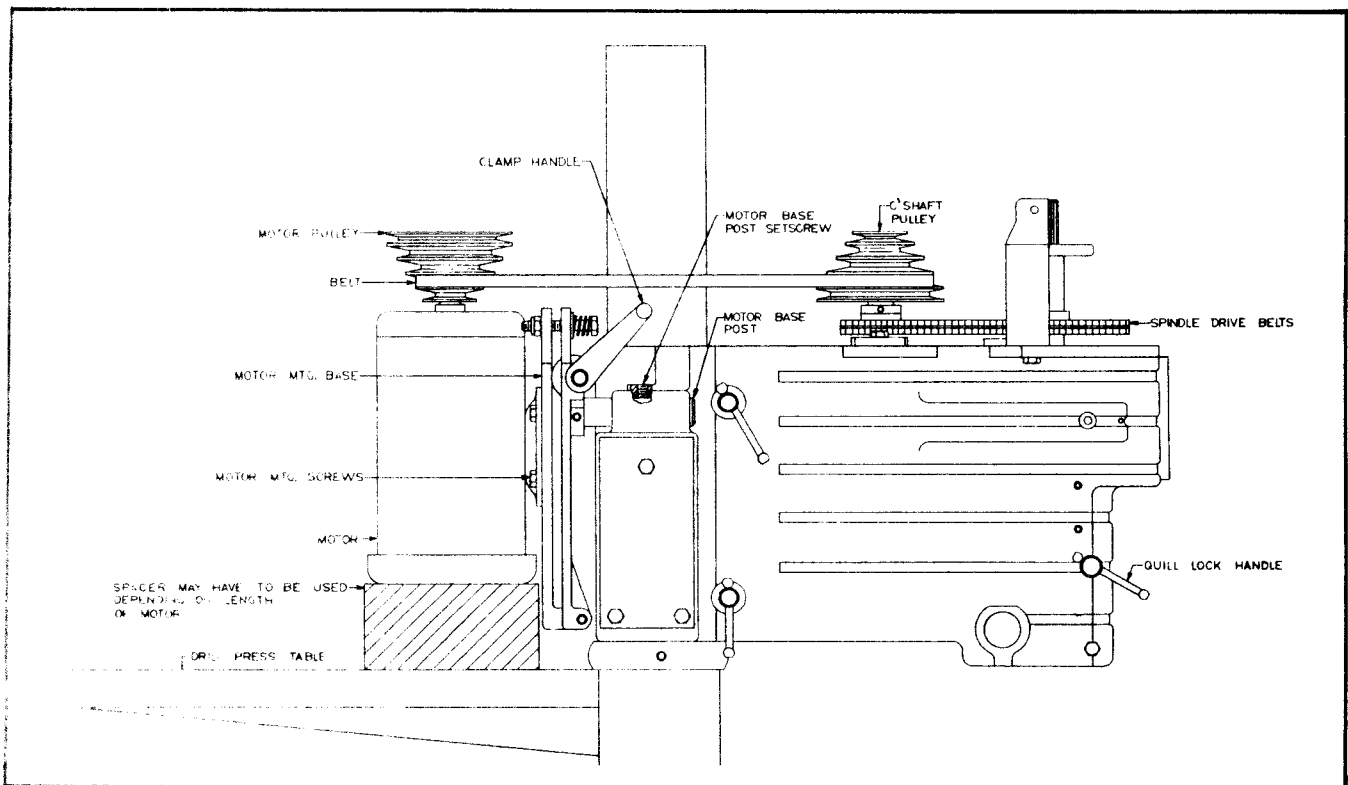


FIGURE 1
MOTOR INSTALLATION – Step Pulley Models

Variable Speed Models —

Powermatic prefers to ship all variable speed drill presses with the motors installed. However, if the machine is ordered less motor or if the motor is being replaced, follow the instructions listed below (Fig. 2).

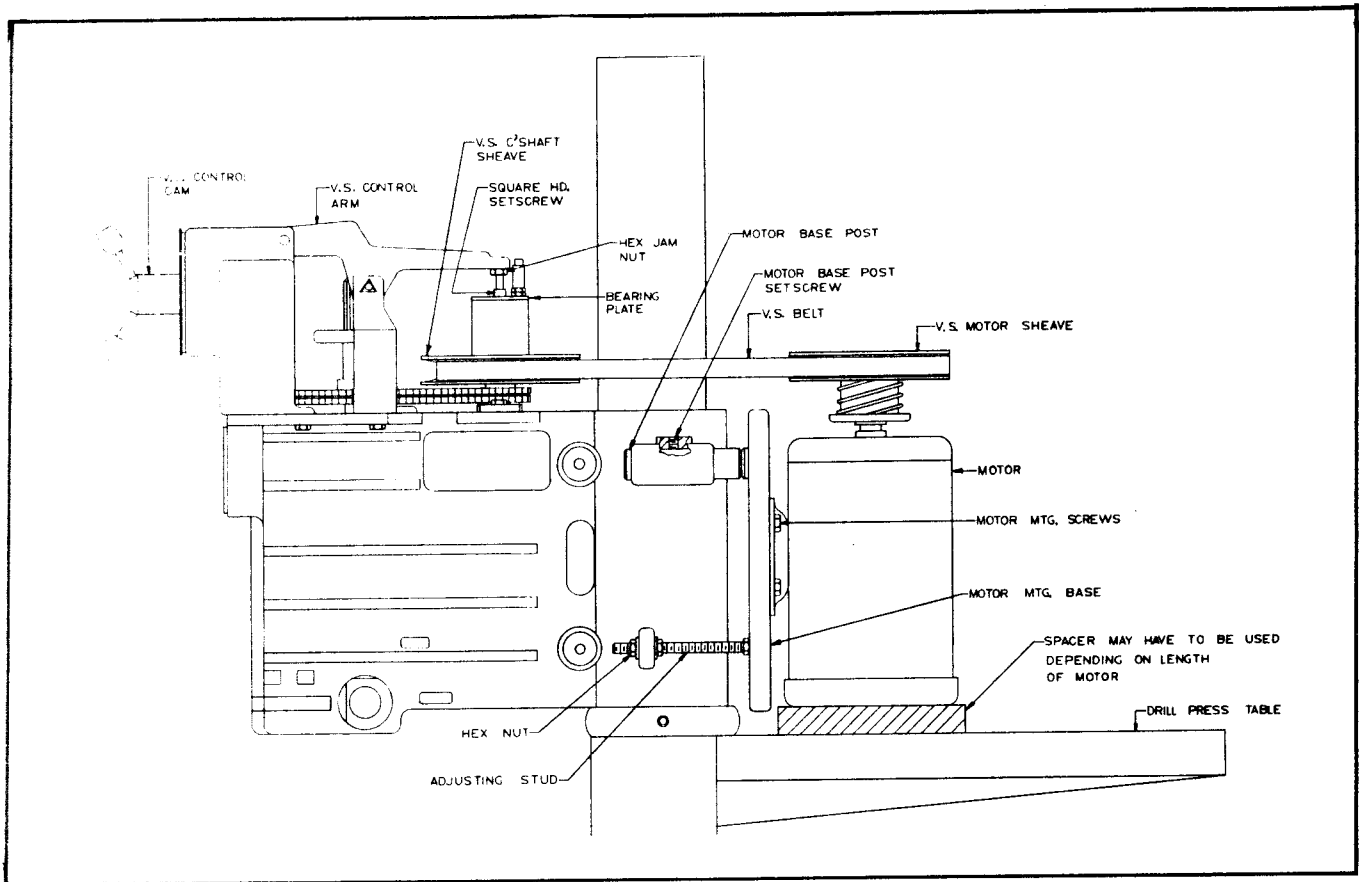


FIGURE 2
MOTOR INSTALLATION — Variable Speed Models

- a. Remove variable speed control cam (Fig. 3) by removing the center shoulder bolt, spring and washers. Remove the 4 (5/16) guard retaining screws and lift the guard from the machine.
- b. Install the variable speed sheave on the motor with the spring side towards the motor approximately 5/16" away from the shoulder on the motor shaft. Install the key and lock the sheave to the motor shaft using the two setscrews provided on the spring cap end.
- c. Raise the drill press table with it swung around to support the motor. Place the motor on the table in an upright position. Raise or lower the table to the point where the motor mounting screws (5/16—18 x 5/8) line up with the tapped holes in the motor base and fasten the motor on to the base.
- d. Reinstall the variable speed control cam and rotate the cam to maximum r.p.m. and back off the square head setscrew in control arm to allow the belt to bottom against the hub on the male half of the variable speed pulley on the countershaft.
- e. Install the belt over the motor pulley. Loosen the setscrews locking the motor base posts to the head casting and adjust the motor base by using the jam nuts on the adjusting stud. Position the belt to be flush with the outside diameter of the motor pulley by squeezing the belt halves towards each other just behind the column. Adjust the base back until there is light tension in the belt. Mark one post with a felt pen or equivalent on its forward side where it sticks through the head casting and readjust the base 1/16 in towards the front of the drill press. Keep in mind that correct center distance of the pulleys is essential to obtaining the full speed range.

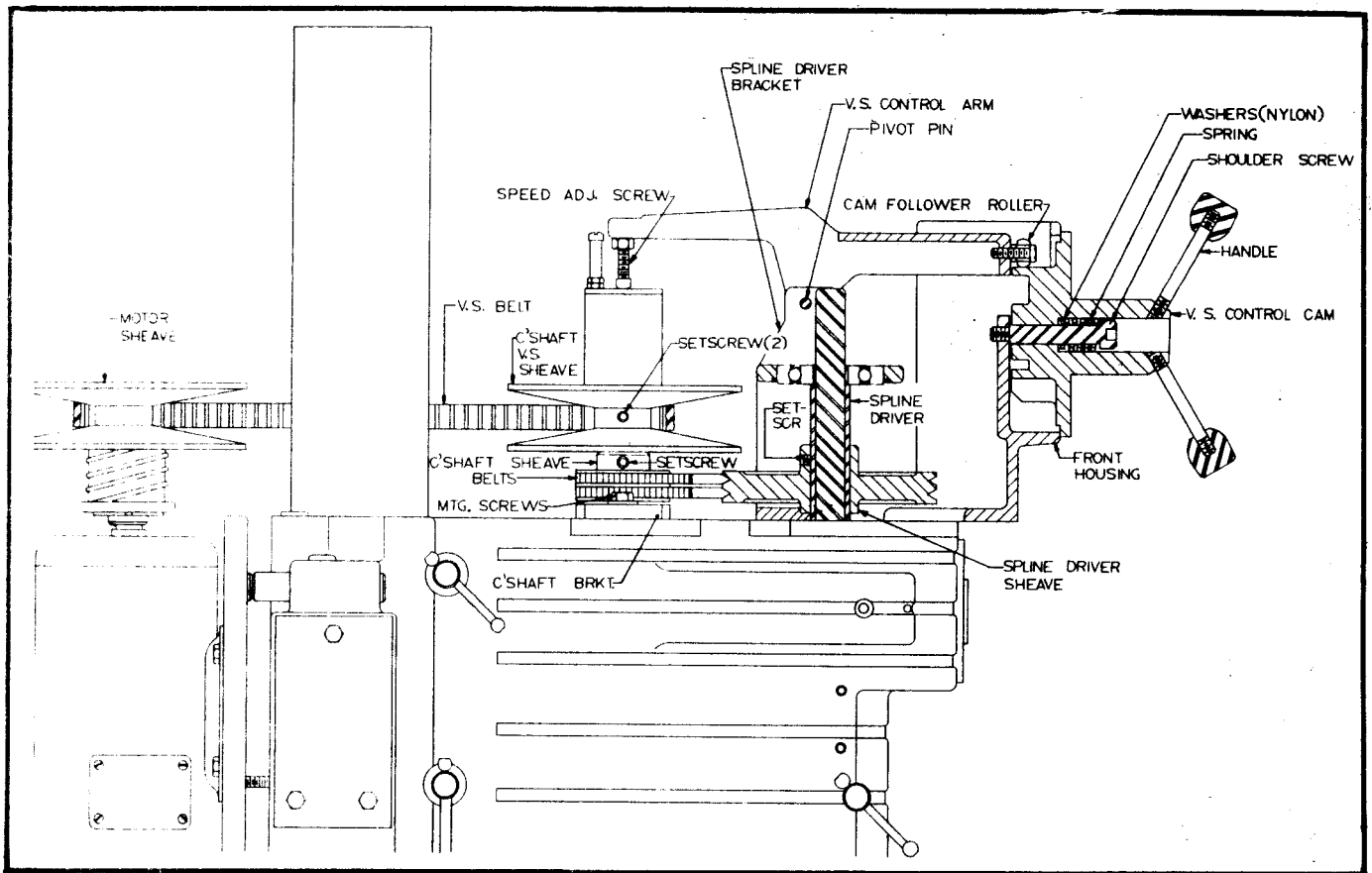


FIGURE 3
VARIABLE SPEED MODELS ADJUSTMENT

- f. Adjust the square head setscrew in the control arm to be in contact with the bearing plate on top of the countershaft variable speed sheave with the sheave halves in contact with the belt.
- g. Start the machine and continue to adjust the setscrew downwards to the point where it just starts to move the belt in on the motor sheave. Lock the setscrew with its jam nut.
- h. If it is apparent that the belt is still bottoming on the countershaft when it is flush with the motor sheave outside diameter, squeeze the belt side together to force it into the motor sheave to release belt tension and readjust the base towards the front. If the maximum speed is not reached the same procedure would be followed except the motor base would be moved back.

CHANGING SPEEDS:

Speed changes on step pulley models are to be made with the machine not running -- rotate the clamp handle clockwise (Fig. 1). Belt is now free to move to any of the 5 speeds available. When speed choice is made, rotate clamp handle counterclockwise for proper tension.

Speed change on variable speed models are to be made **ONLY WHILE MACHINE IS RUNNING**. Damage to variable drive mechanism will result if speed is adjusted while machine is not running.

If spindle speed does not appear to match the dial speed on variable speed unit -- check speed with a tachometer and adjust by turning bolt on control arm (See Fig. 3) clockwise and/or readjusting motor position to increase speed and counterclockwise to decrease.

Using another method to set speeds, adjust cam to minimum RPM, adjust by means of screw in control arm to flush belt with outside diameter of spindle sheave. Move motor back until belt has minimum of play. Pull out on one side of the belt. When there is a minimum of slack, the motor and belt system are properly adjusted.

QUILL ADJUSTMENT:

Lateral play or bellmouthing can develop between the quill and head casting bands due to wear. To compensate for wear between the quill and head, proceed as follows:

- a. Be sure quill lock handle (Fig. 4) is loose.
- b. Squeeze slotted head casting together slightly by tightening bolt (A). Apply just enough pressure to compensate for wear but do not restrict free motion down or return.

QUILL RETURN SPRING ADJUSTMENT:

Spring tension for return of spindle, after hole drilling, has been pre-set at the factory. No further adjustment should be attempted unless absolutely necessary. Adjustment will probably be required if a multiple spindle drilling or tapping head is used. If adjustment is necessary, loosen lock screw (A) (Fig. 5) while holding quill spring housing (B). Do not allow the housing to turn in your hand, or spring will unwind. Turn entire housing assembly clockwise the number of turns necessary to cause the quill to return to its up position. (NOTE: The flat of the spring housing pilot is lined up with the spring loading hole on the body of the spring housing.) Reset lock screw (A), make sure point of screw mates to flat on the housing journal.

REPLACING SPINDLES ON QUILL ASS'Y:

To change the quill assembly for any reason, proceed as follows:

1. Hold quill return spring housing (B) in left hand (See Fig. 5) and loosen lock-screw (A). Let spring unwind slowly, by allowing can to turn in hand.
2. Loosen setscrew (C) (Fig. 4) and remove nut (D) on bottom of depth stop rod. Unscrew and remove depth stop.
3. Hold quill assembly and remove the turret pinion shaft (E). Entire quill assembly will slide out of head.

To change spindles, follow the above steps, then (Fig. 6):

1. Loosen setscrew in collar (A) to reach this screw, insert a 5/32" Allen wrench.
2. With a hard rubber mallet or block of wood, tap spline end of spindle. The spindle, with bearing (C) will come out of quill.
3. Use an arbor press to remove bearing (C).
4. To replace spindle, reverse above procedure.
5. When replacing collar (A), remove all end play from spindle.
6. When replacing quill in head casting, rotate spindle, if necessary, to engage spline in pulley driver.

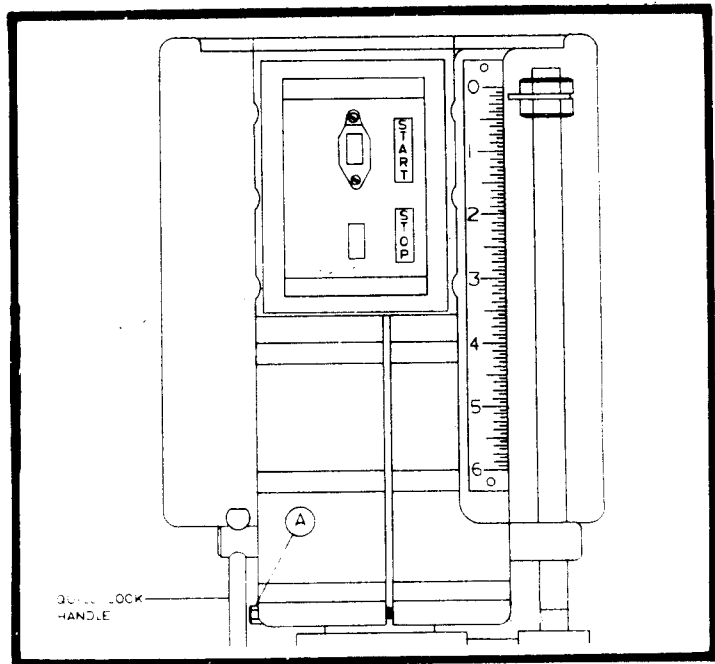


FIGURE 4
QUILL FIT UP ADJUSTMENT

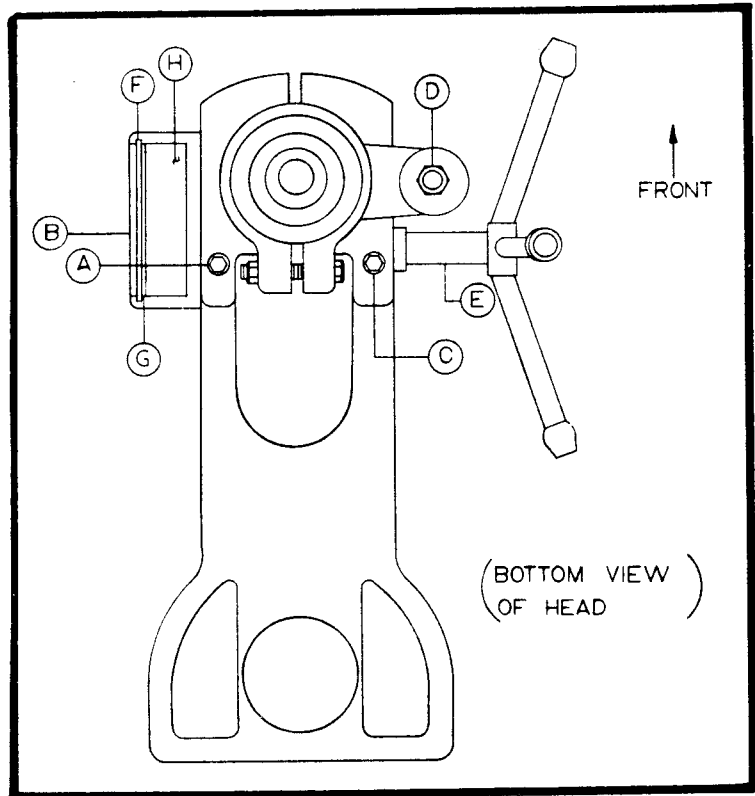


FIGURE 5
QUILL REMOVAL

- Remove lock ring (F) and cover plate (G) (Fig. 5) from spring housing and make certain tongue on return spring is properly inserted in slotted end of pinion shaft. Replace cover and adjust spring tension as instructed under heading "QUILL RETURN SPRING ADJUSTMENT".

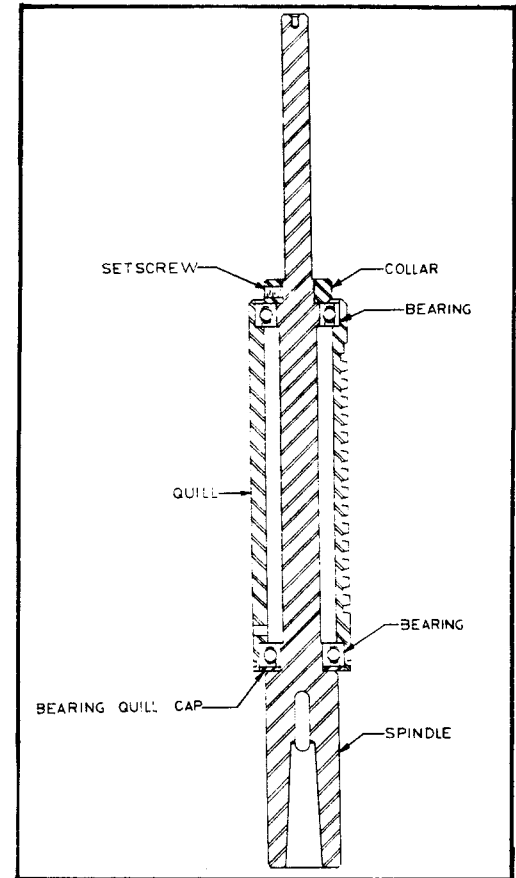
LUBRICATIONS:

All ball bearings in your Powermatic drill press are sealed for life, requiring no lubrication. Points requiring lubrication are:

- Internal spline drive assembly. Keep this area well lubricated with a good grade non-hardening grease, such as Fiske Company "Lubriplate". Insert grease in the hole at the top of spindle pulley spline driver. Lube twice yearly.
- A light film of oil applied to the quill and column will reduce wear, prevent rust and assure ease of operation.
- Quill return spring should receive oil (SAE 20) once yearly. Remove cover plate and apply oil with squirt can or small brush.
- IMPORTANT:** This hub area of variable speed pulleys should be oiled with a light lubricant such as SAE 10W or automatic transmission oil every 90 days.
- Apply Lubriplate to quill pinion every 90 days.
- Occasional dressing of belt with spray can type belt dressing or parafin wax will promote longer belt life and quieter operation.

NOTE: Use extreme care when performing this operation and keep hands clear of pinch points. When using parafin bar, do this only by turning the sheaves by hand. **DO NOT** apply with motor running.

- When equipped with mechanical power feed unit, periodically coat the gears with a good open gear lubricant.



**FIGURE 6
SPINDLE ASS'Y**

REPLACING OR ADJUSTING SPINDLE DRIVE BELTS:

Replacing the spindle drive belts:

- Remove the variable speed control cam by removing the center shoulder screw, spring and washers.
- Remove the guard by removing the (4) 5/16" guard retaining screws and lift the guard off the machine.
- Remove the front housing by removing its two 5/16" hex head mounting screws.
- Remove the variable speed control arm by removing its pivot pin.
- Remove the variable speed belt and the countershaft variable speed sheave assembly by loosening the two setscrews in the male hub and sliding the sheave off the shaft.
- Loosen the countershaft bracket mounting screws and slip the belts off its sheave.
- Remove the spline driver assembly by removing its two mounting screws and lift it off the machine.
- Loosen the setscrews in the spline driver sheave, slide it upward on the spline driver and remove the belts.
- Install new belts and reassembly in reverse order through step 3.
- Tension the belts by using a pry bar between the spline driver bracket and the countershaft bracket. The belts must be string tight to provide proper driving power. Lock the countershaft bracket to the head casting with its mounting screws.
- Install the front housing and variable speed cam. Position the cam for maximum speed.
- Adjust the speed range by following the instructions indicated in the section of this manual on motor installation.

MECHANICAL POWER FEED ATTACHMENT INSTALLATION & ADJUSTMENT: (OPTIONAL)

To install a power feed unit to a standard drill press, it is necessary to remove the standard quill pinion and replace it with the one supplied with the attachment. The following steps are required to install the attachment:

- 1 Hold the quill return spring housing (B) Fig. 5 in the left hand and loosen lock screw (A). Let spring slowly unwind by allowing the housing to rotate in the hand.
- 2 Clamp the quill with the quill binder so that it will not fall out of the head. Unlock and remove setscrew (A) and remove the standard pinion. Install the power feed pinion and its locking sleeve. Install the setscrew in the outside tapped hole and lock the sleeve in position.
- 3 Install a 5/16-18 x 1" setscrew with jam nuts in the two ears on the lower right-hand side of the head immediately behind the pinion hub. Install No. 3610006 pulley on the bottom of the countershaft assembly and lock in place with the setscrew provided.
- 4 Mount the power feed housing and worm gear on the drill press piloting the casting on the feed pinion locking sleeve. Adjust the casting to be parallel with the head cast with the setscrews mounted on the head casting ears and lock in place. Install the sheet metal bracket to the motor base adjusting stud and lock it down against the feed box castings with the screw provided. (Figures 7 & 8).

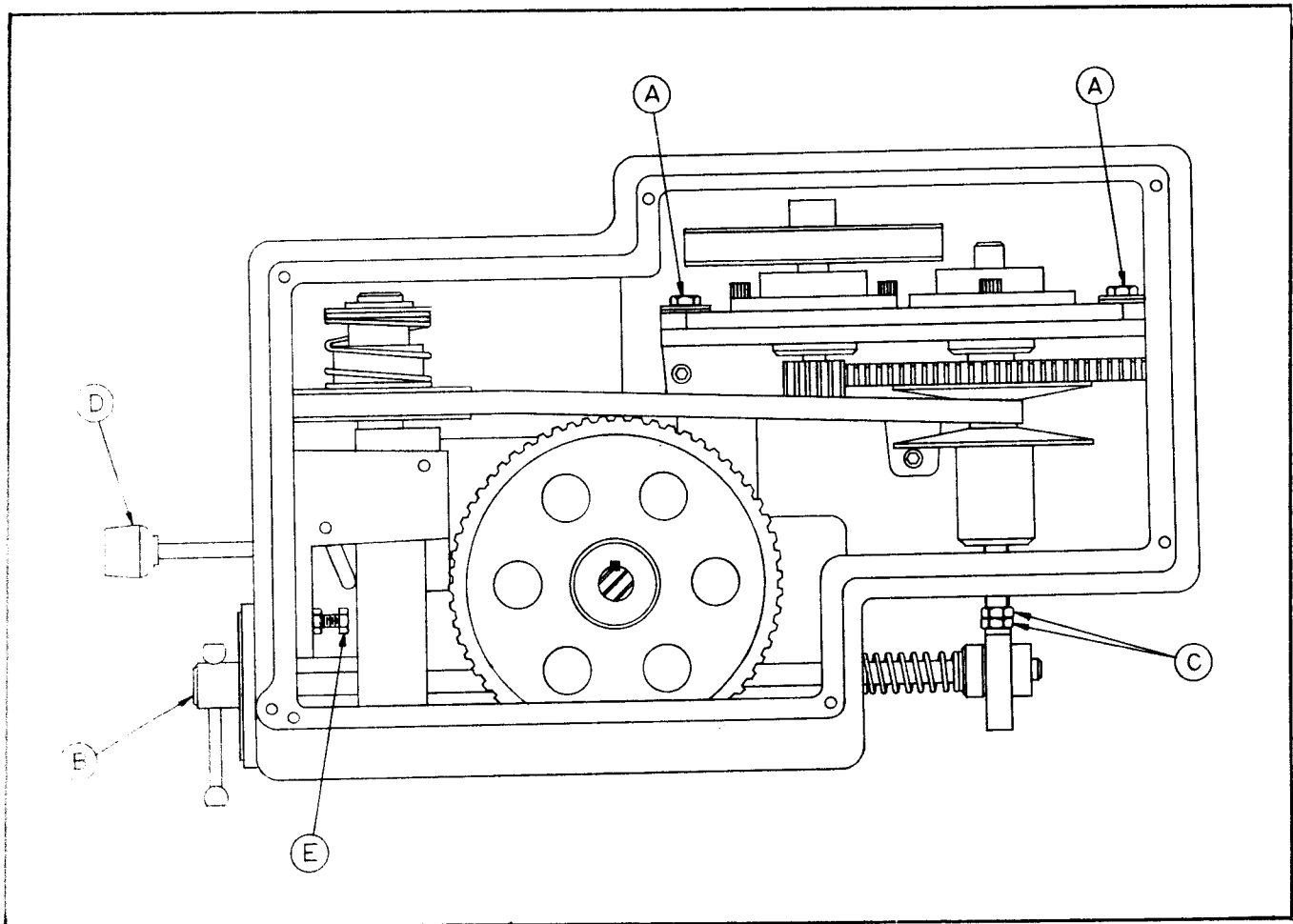


FIGURE 7

5. Align the worm gear to the worm by meshing the worm and centralizing the worm wheel. Lock in place with the setscrews provided.
6. Install the belt from the head to the power feed unit and adjust the sheave bracket mounting screws (A) to properly tension the belt.
7. Coat all gears with a good open gear grease.
8. Unscrew the handles and knobs from the standard pinion hub and install them in the power feed hub. Insert the key into the pinion shaft, install the hub and lock in place with the setscrew provided.
9. Unlock the quill and retension the return spring by rotating the spring housing until the spring provides enough torque to return the quill to its up position. Reset lock screw (A) making sure the point of the screw mates with the flat on the spring housing hub.

10. Start the machine keeping the hands away from the internal power feed parts and check the action of the variable speed sheaves by rotating the variable feed cam (B). At minimum feed rate the belts should be flush with the driven sheave. If it is not, adjust the follower screw (C) at the bottom rear of the power feed unit. Check at maximum feed rate; the belt should be flush with the outside diameter of the driving pulley.

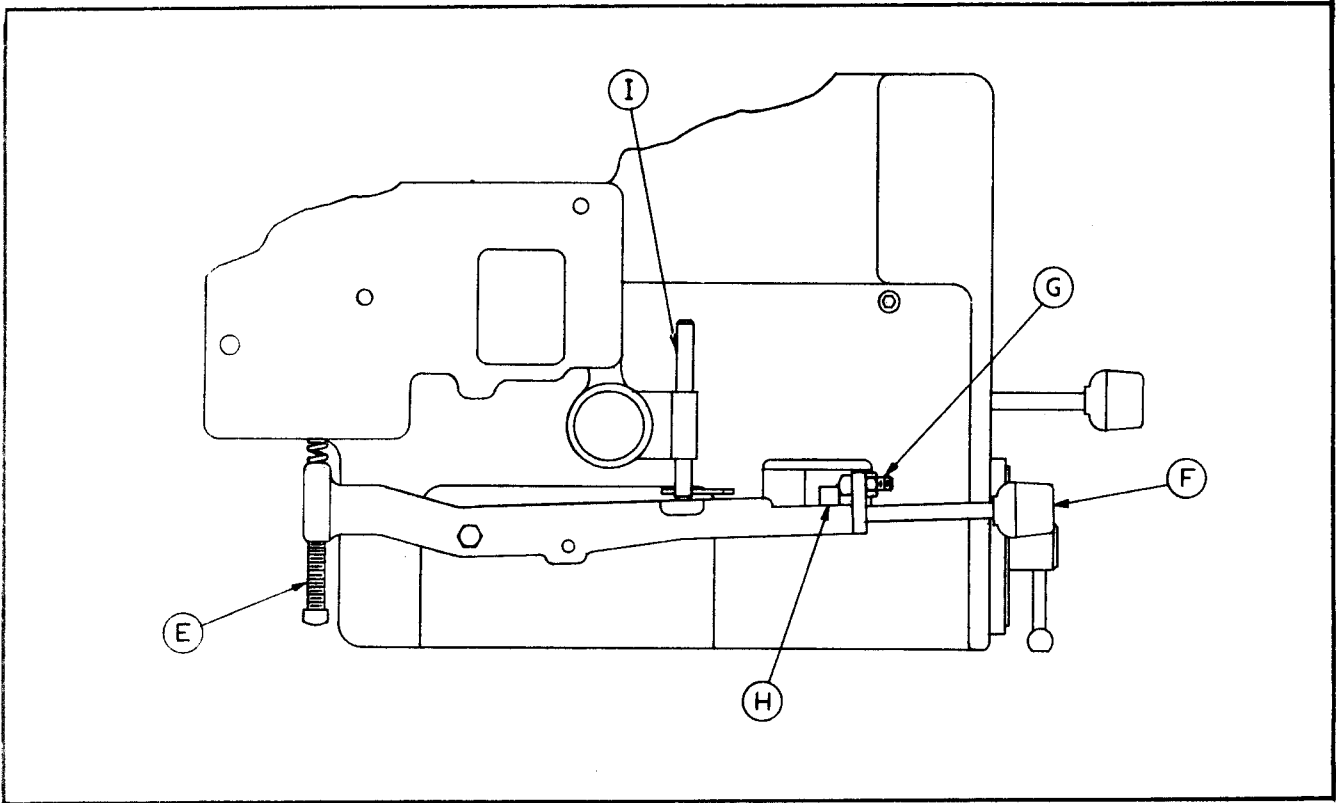


FIGURE 8

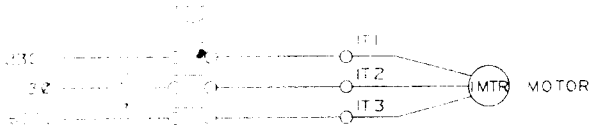
11. Check stop screw (D) it is factory set to provide a stop when the unit is kicked out of mesh. If the action is somewhat sluggish increase spring tension with adjusting screw (D).
12. With power off engage the power feed lever and observe the action of the latching arm and handle (F) and the setting of the adjusting screws (G & H) adjusting screw (G) should be set so that on engagement it just clears adjusting screw (H) and maintains full mesh of the worm. Powered disengagement occurs when the down stop tab moves rod (I) down to the trip position. Lever (F) can be used to manually trip the feed.
13. Engage the power feed lever (D) and note the action of all parts including the kick off of the power feed. Turn the power off and make any adjustments required. Install a 1/2 drill and test the unit under power drilling a hole in mild steel at .010 in/rev. and 500 r.p.m.
14. Install the outside cover of the unit.

TROUBLE SHOOTING HINTS

TROUBLE	PROBABLE CAUSE	REMEDY
<u>Excessive Vibration</u>	<ol style="list-style-type: none"> 1. Improper belt tension 2. Uneven belt wear (hard spots) 3. Motor or spindle pulley out-of-balance 4. Bad motor 	<ol style="list-style-type: none"> 1. Adjust belt tension 2. Replace belt 3. Balance or replace problem pulley 4. Replace motor
<u>Motor Stalls</u>	<ol style="list-style-type: none"> 1. Over Feeding 2. Dull drill 3. V/S belt riding on inner cone 4. Motor not building up to running speed 5. Bad motor 	<ol style="list-style-type: none"> 1. Reduce feed rate 2. Sharpen drill and keep sharp 3. Re-adjust V/S belt 4. Replace or repair motor. Check fuses in all three legs on three phase motor and replace if necessary. 5. Replace motor
<u>Noisy Operation</u>	<ol style="list-style-type: none"> 1. Excessive vibration 2. Improper quill adjustment 3. Noisy spline 4. Noisy motor 	<ol style="list-style-type: none"> 1. Check remedy under excessive vibration 2. Adjust quill (refer to paragraph on quill adjustment) 3. Lubricate spline 4. Check motor bearings or for loose motor fan
<u>Drill or Tool Heats up or Burns Work</u>	<ol style="list-style-type: none"> 1. Excessive speed 2. Chips not clearing 3. Dull tool 4. Feed rate too slow 5. Rotation of drill incorrect 6. Failure to use cutting oil or coolant (on steel) 	<ol style="list-style-type: none"> 1. Reduce speed 2. Use pecking operation to clear chips 3. Sharpen tool or replace 4. Increase feed enough to clear chips 5. Reverse motor rotation (refer to motor wiring diagram) 6. Use cutting oil or coolant on steel
<u>Drill Leads Off</u>	<ol style="list-style-type: none"> 1. No drill spot 2. Cutting lips on drill off center 3. Quill loose in head 4. Bearing play 	<ol style="list-style-type: none"> 1. Center punch or center drill work piece 2. Regrind drill 3. Tighten quill (refer to quill adjustment) 4. Check bearings and reseal or replace if necessary
<u>Excessive Drill Run-out or Wobble</u>	<ol style="list-style-type: none"> 1. Bent drill 2. Bearing play 3. Drill not seated properly in chuck 	<ol style="list-style-type: none"> 1. Replace drill. Do not attempt to straighten 2. Replace or reseal bearings 3. Loosen, reseal and tighten chuck
<u>Work or Fixture Comes Loose or Spins</u>	<ol style="list-style-type: none"> 1. Failure to clamp workpiece or work holding device to table 	<ol style="list-style-type: none"> 1. Clamp workpiece or work holding device to table surface

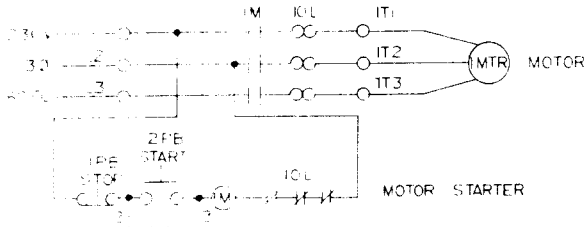
ELECTRICAL SCHEMATIC

Manual



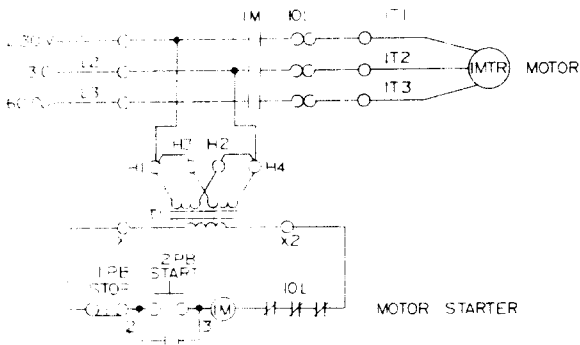
REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
S1	1	3Ø 6821155	SWITCH, FURNAS, 12BA106606
		1Ø 6821154	SWITCH, FURNAS, 12BA106605

Magnetic

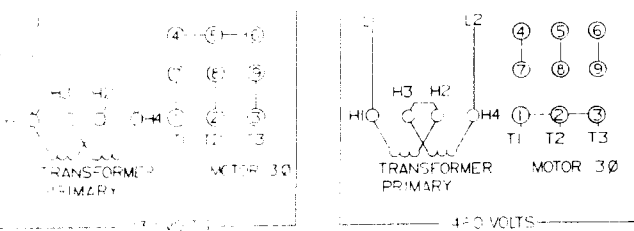


REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
M1	1	3Ø 6816112	STARTER, MAG., FURNAS, 14CF32BC71
		2HP @ 230V	
		3Ø 6816111	STARTER, MAG., FURNAS, 14BF32BC71
		1Ø 6816105	STARTER, MAG., FURNAS, 14CF12BA7
(PB2)	1	6821014	SWITCH, FURNAS, MOMENTARY PB, B28731B

Magnetic W/ Low Voltage Control

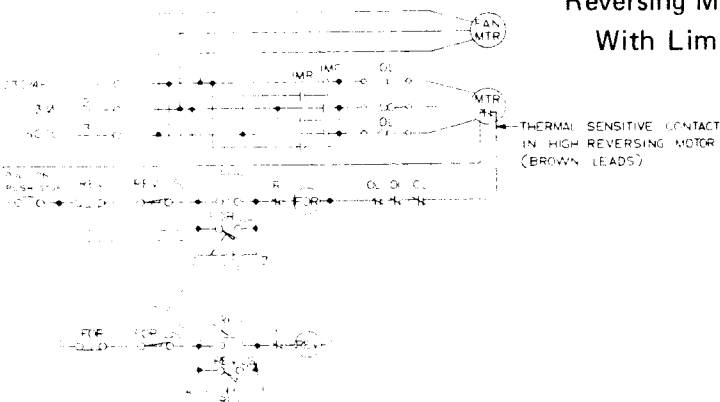


NOTE:
FOR SINGLE PHASE UNITS,
OMT LINE L3



REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
PB1	1	6821014	SWITCH, FURNAS, MOMENTARY PB, B28731B
PB2	1	6831068	TRANSFORMER, 115/230-24V, 50 VA
T1	1	6831069	" 230/460-24V, 75 VA
		6831070	" 230/460-115V, 50 VA
1M (WITH XMR)	1	6816119	STARTER MAG W/XMR, 1Ø, 24V, FURNAS, 14CF107013
		6816138	" " " 1Ø, 115V, FURNAS, 14CF107017
		6816123	" " " 1Ø, 24V, FURNAS, 14CF32BJ71BD
		6816122	" " " 3Ø, 24V, FURNAS, 14BF32BJ71BD
		6816127	" " " 3Ø, 115V, FURNAS, 14CF32BA71BA
		6816126	" " " 3Ø, 115V, FURNAS, 14BF32BA71BA
MTR	1	6471207	MOTOR, ELECTRIC, 1/2 HP, 3Ø, 1200 RPM, 230/460V, 1Ø2T, TEFC
		6471206	" " " 1/2 HP, 3Ø, 1200 RPM, 200V, 1Ø2T, TEFC
		6471027	" " " 1 HP, 3Ø, 1800 RPM, 230/460V, 1Ø3T, TEFC
		6471026	" " " 1 HP, 3Ø, 1800 RPM, 200V, 1Ø3T, TEFC
		6471322	" " " 1/2 HP, 3Ø, 1800 RPM, 200V, 1Ø5T, TEFC
		6471317	" " " 1/2 HP, 3Ø, 1800 RPM, 575V, 1Ø5T, TEFC
		6471304	" " " 1/2 HP, 3Ø, 1800 RPM, 230/460V, 1Ø5T, TEFC
		6471301	" " " 1/2 HP, 1Ø, 1800 RPM, 115/230V, 1Ø5T, TEFC
		6470920	" " " 1HP, 3Ø, 1200 RPM, 200V, 1Ø5T, TEFC
		6470912	" " " 1HP, 1Ø, 1200 RPM, 115/230V, 1Ø5T, TEFC
		6470901	" " " 1HP, 3Ø, 1200 RPM, 230/460V, 1Ø5T, TEFC
		6471617	" " " 2HP, 3Ø, 1800 RPM, 200V, 1Ø5T, TEFC
		6471616	" " " 2HP, 3Ø, 1800 RPM, 575V, 1Ø5T, TEFC
		6471603	" " " 2HP, 3Ø, 1800 RPM, 230/460V, 1Ø5T, TEFC
		6473012	" " " 2 1/2 HP, 3Ø, 1800 RPM, 230/460V, 1Ø4T, QDP
	6472902	" " " 1 1/2 HP, 3Ø, 1800 RPM, 230/460V, 1Ø4T, QDP	
	6471202	" " " HI. REV. 1/2 HP, 3Ø, 1200 RPM, 230/460V, 1Ø4T, QDP	
	6471501	" " " HI. REV. 2 HP, 3Ø, 1200 RPM, 230/460V, 1Ø2T, QDP	

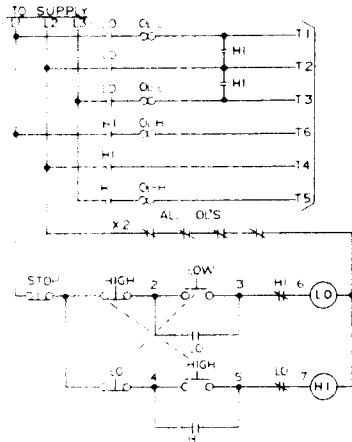
Reversing Magnetic Strater With Limit Switch



REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
LSC	2	6821037	SWITCH, LIMIT, MICRO " 115V
2PB	2	6821067	P. SH. BUTTON, FURNAS " 8. PB
1PB	1	6821276	PUSH BUTTON, STOP, FURNAS " 51JAFP2
M1	1	6816142	STARTER, REV-MAG, FURNAS " 22CF32BC71
S1	1	6821004	SWITCH, A.H. " 7510

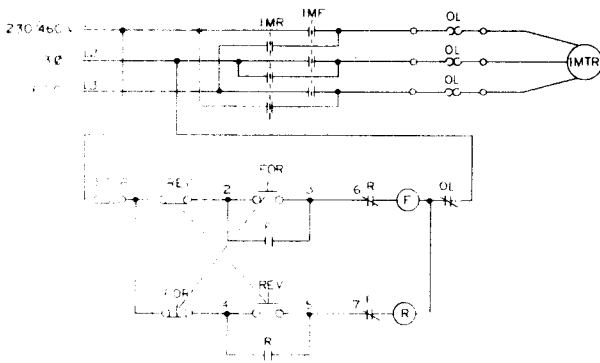
ELECTRICAL SCHEMATIC (Continued)

Two Speed Magnetic Starter



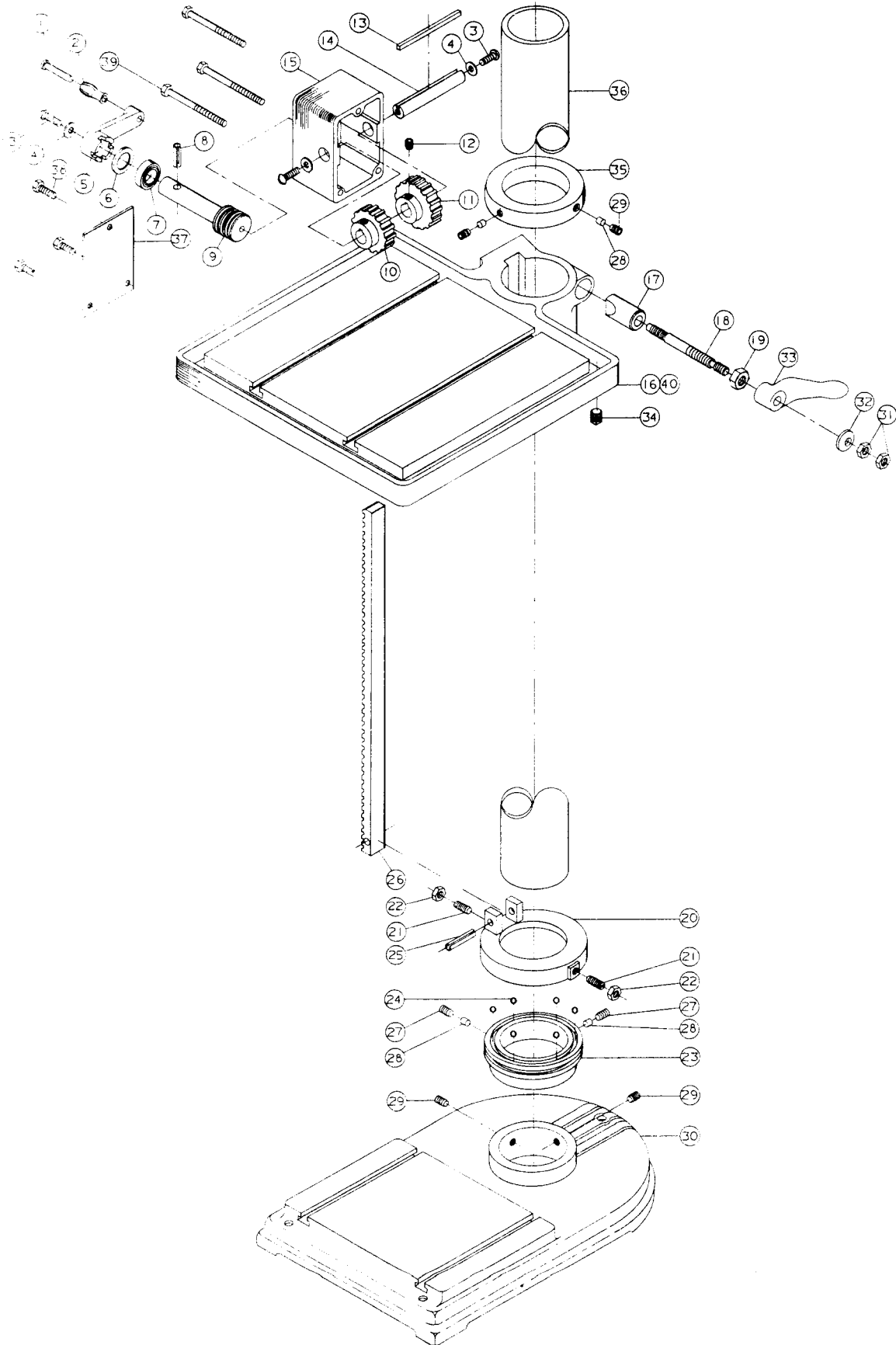
REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
M1	1	6816155	STARTER, 2 SPEED MAG, FURNAS # 30CF32B2VC71
1PB	1	6821161	PUSH BUTTON STATION, FURNAS # 50MA3TUE
2PB			
3PB			

Reversing Magnetic Starter



REF.	QTY.	POWERMATIC NO.	MFG. DESCRIPTION
M1	1	6816142	STARTER, REV-MAG, FURNAS # 22CF32BC71
1PB	1	6821160	PUSH BUTTON STATION, FURNAS # 50MA3KLE
2PB			
3PB			

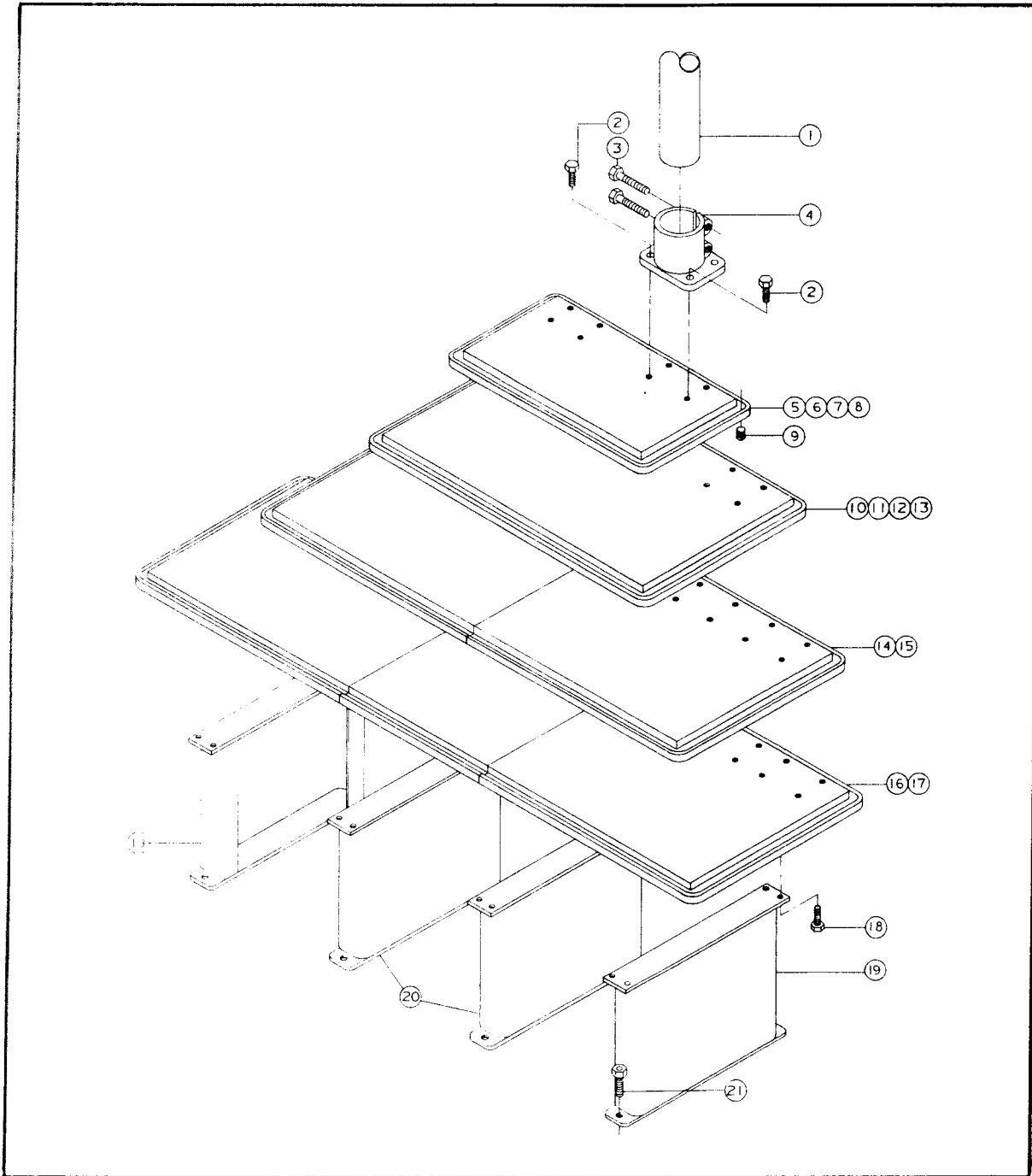
PRODUCTION & TILTING TABLE W/TABLE RAISING RACK



PRODUCTION & TILTING TABLE W/TABLE RAISING RACK

NO.	PART NO.	DESCRIPTION	QTY.
	2298013	ELEVATING GEAR BOX HOUSING ASS'Y (ITEMS 1 THRU 15)	
1	6624006	GROOVE PIN, 1/4 x 3	1
2	3268201	NYLON HANDLE	1
3	6715132	RD HD SCR, 5/16-18 x 1/2	3
4	6861201	FLAT WASHER, 5/16	3
5	3268005	ELEVATING HANDLE, D-21	1
6	3741211	FLAT SHAFT SPACER, 1/2"	1
7	6064001	THRUST BEARING, NICE 605	1
8	6626040	SPRING PIN, 1/4 x 1-1/4	1
9	3237013	PINION GEAR	1
10	3237002	WORM GEAR	1
11	3237001	SPUR GEAR	1
12	6714004	SOC SET SCR, 1/4-20 x 1/4	2
13	3388015	SQUARE KEY, 3/16 x 3/16 x 2-1/4	1
14	3701004	GEAR SHAFT	1
15	3298017	GEAR BOX HOUSING	1
	2797026	PRODUCTION TABLE ASS'Y (ITEMS 16 THRU 19)	
16	3797030	PRODUCTION TABLE	1
17	3728010	TABLE LOCKING SLEEVE	1
18	3773012	TABLE LOCKING STUD	1
19	3528001	TABLE STUD LOCK NUT	1
	2645002	TABLE RAISING RACK ASS'Y (ITEMS 20 THRU 26)	
20	3096040	BEARING ELEVATING RACK COLLAR	1
21	6715118	SOC SET HALF DOG PT SCR, 5/16-18 x 3/4	2
22	6515001	HEX NUT, 5/16-18	2
23	3046003	THRUST COLLAR BEARING	1
24	6054002	STEEL BALL BEARING, 3/8	41
25	6626033	SPRING PIN, 3/16 x 2	1
26	3650005	GEAR RACK, 24"	1
27	6718056	CUP PT SOC SET SCR, 1/2-13 x 3/4	2
28	3598023	PROTECTOR PLUG, 7/16 x 3/16	4
29	6718055	CUP PT SOC SET SCR, 1/2-13 x 1/2	4
30	3042037	DRILL PRESS BASE	1
31	6517006	HEX JAM NUT, 7/16-14	2
32	3338008	TABLE LOCKING BEVEL WASHER	1
33	3268008	TABLE LOCKING HANDLE	1
34	6638004	PIPE PLUG, 1/2-14	1
35	3096039	COLUMN COLLAR	1
36	3098004	FLOOR MODEL COLUMN	1
37	3104014	HEAD & TABLE COVER	1
38	6717038	HEX HD CAP SCR, 3/8-16 x 1/2	3
39	6716042	HEX HD CAP SCR, 3/8-16 x 3	3
		NOTE: ITEMS 1 THRU 39 ARE PART OF B/M & ASS'Y NUMBER 2042028	
40	2797028	TILTING TABLE ASS'Y (NOT SHOWN)	1

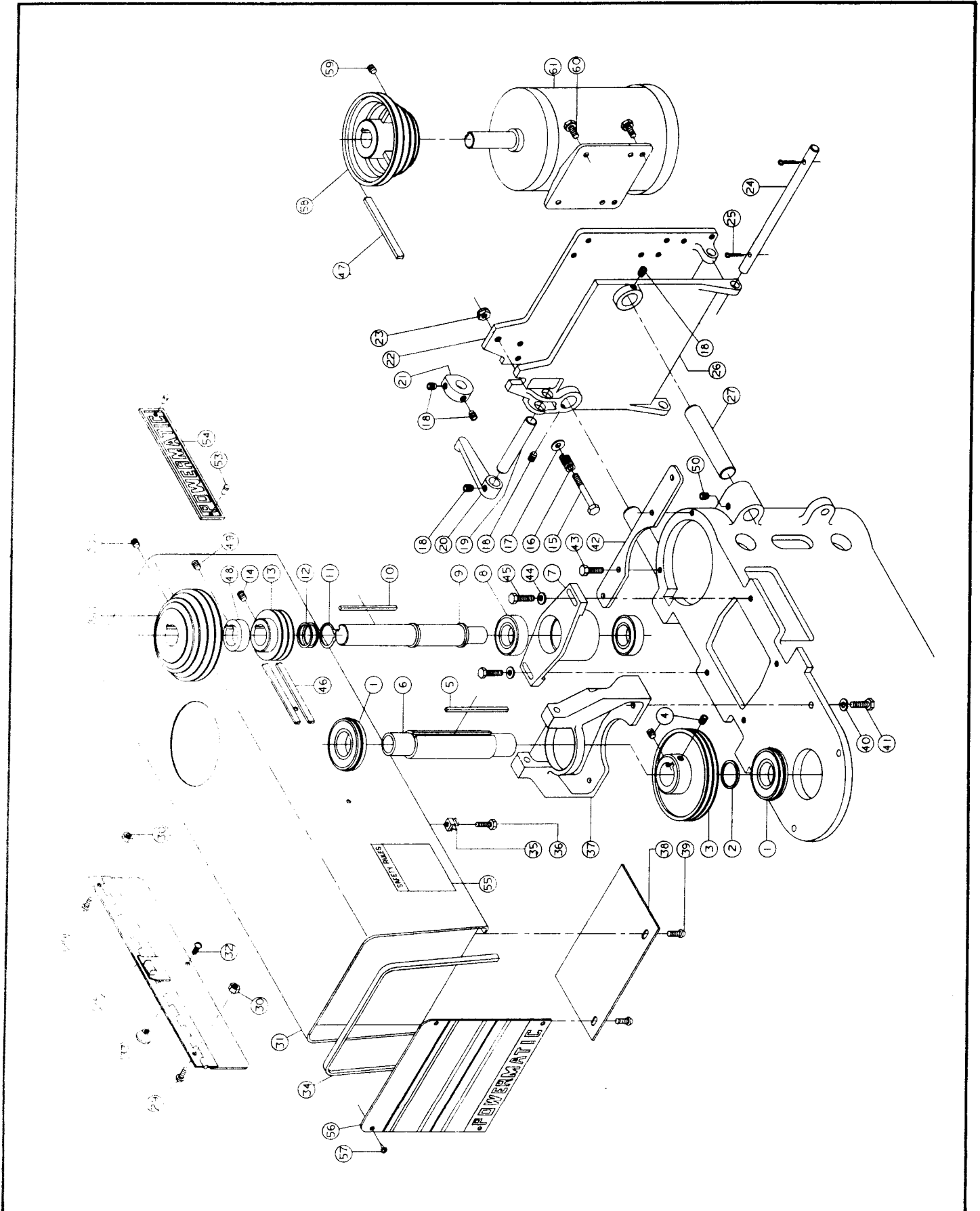
MULT SPINDLE TABLE, LEGS & COLUMN MTG BRKT ASS'Y



MULT SPINDLE TABLE, LEGS & COLUMN MTG BRKT ASS'Y

NO.	PART NO.	DESCRIPTION	QTY.
1	3098005	BENCH MODEL COLUMN	
		1 SPINDLE TABLE	1
		2 SPINDLE TABLE	2
		3 SPINDLE TABLE	3
		4 SPINDLE TABLE	4
		6 SPINDLE TABLE	6
		8 SPINDLE TABLE	8
		2	6718009
1 SPINDLE TABLE	4		
2 SPINDLE TABLE	8		
3 SPINDLE TABLE	12		
4 SPINDLE TABLE	16		
6 SPINDLE TABLE	24		
8 SPINDLE TABLE	32		
3	6718025		
		1 SPINDLE TABLE	2
		2 SPINDLE TABLE	4
		3 SPINDLE TABLE	6
		4 SPINDLE TABLE	8
		6 SPINDLE TABLE	12
		8 SPINDLE TABLE	16
		4	3064078
1 SPINDLE	1		
2 SPINDLE	2		
3 SPINDLE	3		
4 SPINDLE	4		
6 SPINDLE	6		
8 SPINDLE	8		
5	3797014		
6	3797015	1 SPINDLE TABLE W/ T-SLOTS	1
7	3797035	2 SPINDLE TABLE W/O T-SLOTS	1
8	3797064	2 SPINDLE TABLE W/ T-SLOTS	1
9	6638004	PIPE PLUG, 1/2-14 NPT	1
10	3797040	3 SPINDLE TABLE W/O T-SLOTS	1
11	3797069	3 SPINDLE TABLE W/ T-SLOTS	1
12	3797036	4 SPINDLE TABLE W/O T-SLOTS	1
13	3797065	4 SPINDL TABLE W/ T-SLOTS	1
14	2797018	6 SPINDLE TABLE ASS'Y W/O T-SLOTS	1
15	2797127	6 SPINDLE TABLE ASS'Y W/ T-SLOTS	1
16	2797019	8 SPINDLE TABLE ASS'Y W/O T-SLOTS	1
17	2797128	8 SPINDLE TABLE ASS'Y W/ T-SLOTS	1
18	6718015	HEX HD CAP SCR, 1/2-13 x 1	
		1 SPINDLE TABLE	8
		2 SPINDLE TABLE	8
		3 SPINDLE TABLE	8
		4 SPINDLE TABLE	8
		6 SPINDLE TABLE	12
		8 SPINDLE TABLE	16
		19	2423003
1 SPINDLE TABLE	2		
2 SPINDLE TABLE	2		
3 SPINDLE TABLE	2		
4 SPINDLE TABLE	2		
6 SPINDLE TABLE	2		
8 SPINDLE TABLE	2		
20	2423004		
		6 SPINDLE TABLE	1
		8 SPINDLE TABLE	2
21	3694006	TABLE LEVELING HEX HD BOLT	
		1 SPINDLE	4
		2 SPINDLE	4
		3 SPINDLE	4
		4 SPINDLE	4
		6 SPINDLE	6
		8 SPINDLE	8

STEP CONE ASSEMBLY

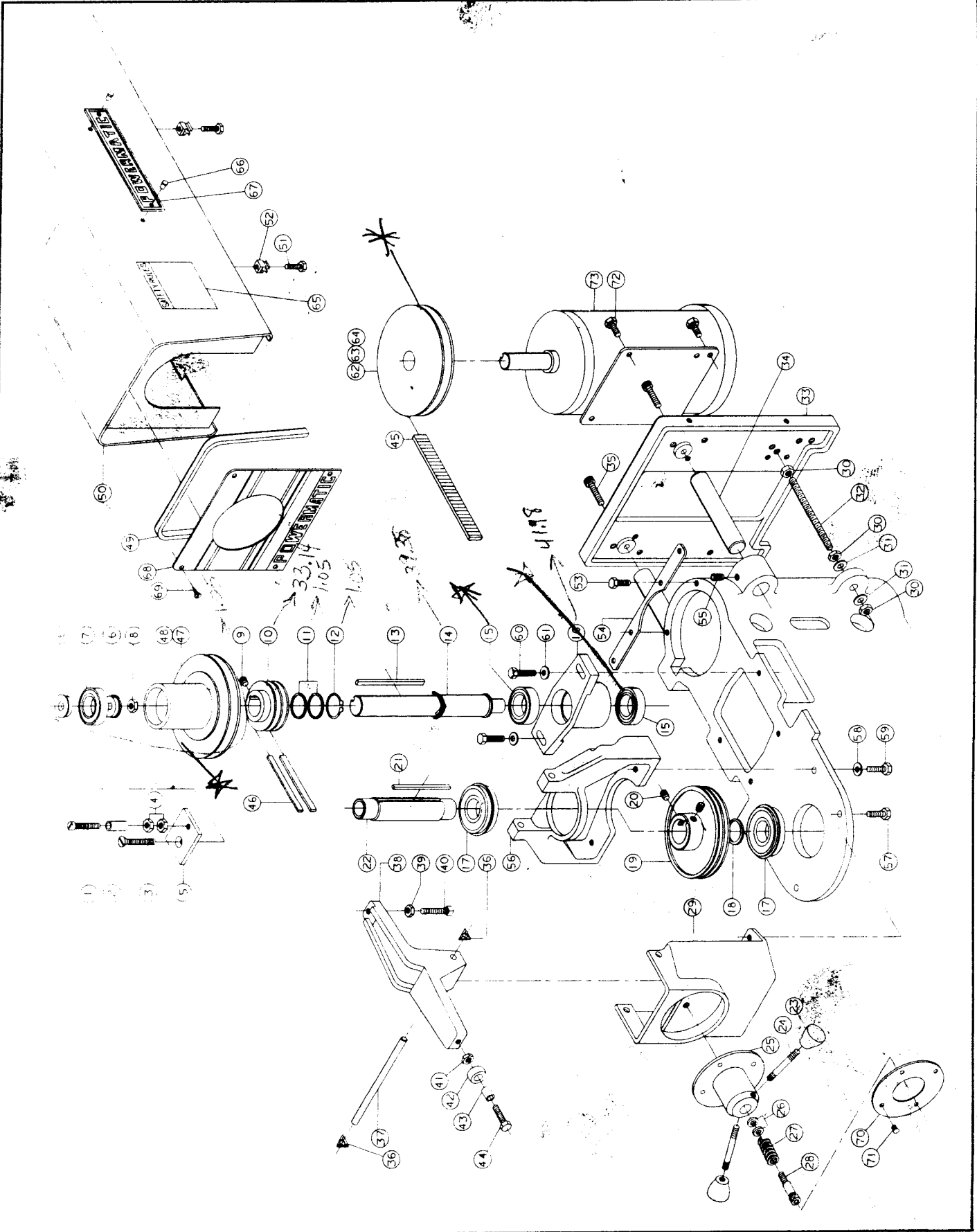


STEP CONE ASSEMBLY

NO.	PART NO.	DESCRIPTION	QTY.
	2387002	STEP CONE SHEAVE KIT ASS'Y (ITEMS 1 THRU 52)	
	2144001	DRIVE SPLINE SHEAVE ASS'Y (ITEMS 1 THRU 6)	
1	6060054	BALL BEARING, MRC 107KSZZG	2
2	6664007	"O" RING (SHOCK ABSORBER)	1
3	3717041	2 GROOVE SHEAVE	1
4	6715013	SOC SET SCR, 5/16-18 x 3/8	2
5	3388039	SQUARE KEY, 3/16 x 3/16 x 2-1/2	1
6	3144002	SPLINE DRIVE SHAFT	1
	2298005	COUNTERSHAFT HOUSING ASS'Y (ITEMS 7 THRU 14)	
7	3298032	V/S SHAFT HOUSING	1
8	6060010	BALL BEARING, FAFNIR 205PP	2
9	3706005	V/S DRIVE SHAFT	1
10	3388019	SQUARE KEY, 3/16 x 3/16 x 3-11/16	1
11	6670005	RETAINING RING, TRUARC NO. 5100-100	1
12	6811326	STL ARBOR SPACER, 1 x 1-1/2 x .062	2
13	3717053	2 GROOVE SHEAVE	1
14	6714004	SOC SET SCR, 1/4-20 x 1/4	1
	2042021	STEP CONE TILTING MOTOR BASE ASS'Y (ITEMS 15 THRU 27)	
15	6716114	HEX HD CAP SCR, 3/8-16 x 2-3/4	1
16	6813068	SPRING, 9/16 x 2	1
17	6861301	FLAT WASHER, 3/8	1
18	6715016	CUP PT SOC SET SCR, 5/16-18 x 5/16	5
19	3670031	MOTOR BASE HANDLE ROD	1
20	3268007	TILTING HANDLE	1
21	3076011	MOTOR BASE HANDLE CAM	1
22	3042057	STEP CONE MOTOR BASE	1
23	6516002	HEX LOCK NUT, 3/8-16	1
24	3711004	TILTING MOTOR BASE SHAFT	1
25	6622002	COTTER PIN, 1/8 x 1	2
26	3042056	MOTOR MOUNTING BASE	1
27	3670032	TILTING MOTOR BASE ROD	2
	2250061	STEP CONE BELT GUARD ASS'Y (ITEMS 28 THRU 31)	
28	2136034	STEP CONE DOOR GUARD ASS'Y (WELDMENT)	1
29	6710033	RD HD SCR, NO. 10-24 x 3/8 (TWO NOT SHOWN)	4
30	6510001	HEX NUT, NO. 10-24 (TWO NOT SHOWN)	4
31	2250089	GUARD ASS'Y (WELDMENT)	1
32	6760046	RD HD SCR, NO. 10-32 x 3/8	1
33	6430017	KNOB, DAVIES NO. 3702SD	1
34	6458001	RUBBER MOLDING	2.5
35	6514014	SELF RETAINING NUT	4
36	6714127	HEX HD CAP SCR, 1/4-20 x 1/2	4
37	3063246	UPPER SPINDLE BEARING BRACKET	1
38	3595271	SAFETY PLATE	1
39	6714066	RD HD SCR, 1/4-20 x 1/4	2
40	6861200	LOCK WASHER, 5/16	2
41	6715032	HEX HD SCR, 5/16-18 x 1	2
42	3767211	GUARD MOUNTING STRAP (ONE NOT SHOWN)	2
43	6715033	HEX HD CAP SCR, 5/16-18 x 1/2 (TWO NOT SHOWN)	4
44	6861401	FLAT WASHER, 7/16	2
45	6717017	HEX HD CAP SCR, 7/16-14 x 1	2
46	6077076	BELT, 7M-710	2
47	6077040	V-MOTOR BELT, SL-450	1
48	3743005	COUNTERSHAFT SPACER	1
49	6714004	SOC SET SCR, 1/4-20 x 1/4	1
50	6716009	CUP PT SOC SET SCR, 3/8-16 x 1/2 (ONE NOT SHOWN)	2
51	3718005	STEP CONE SHEAVE	1

NO.	PART NO.	DESCRIPTION	QTY.
52	6715016	CUP PT SOC SET SCR, 5/16-18 x 5/16	1
53	6680020	FLAT HD DRIVE RIVET, 5/32 x 1/4 (TWO NOT SHOWN)	4
54	3312251	POWERMATIC I. D. PLATE, (ONE NOT SHOWN)	2
55	3330284	SAFETY RULES PLATE	1
56	3330277	SERIAL NO. I. D. PLATE, (STEP CONE)	1
57	6746020	SELF TAPPING PAN HD SCR, NO. 4 x 1/4	4
58	3718005	STEP CONE SHEAVE	1
59	6715016	CUP PT SOC SET SCR, 5/16-18 x 5/16	1
60	6715180	HEX WASHER HD CAP SCR, 5/16-18 x 5/8	4
61	6471207	ELEC MOTOR, 1-1/2 HP, 3 PH, 1200 RPM, 230/460V, 182T, TEFC	1
	6471206	ELEC MOTOR, 1-1/2 HP, 3 PH, 1200 RPM, 200V, 182T, TEFC	1
	6471027	ELEC MOTOR, 1 HP, 3 PH, 1800 RPM 230/460V, 143T, TEFC	1
	6471026	ELEC MOTOR, 1 HP, 3 PH, 1800 RPM 200V, 143T, TEFC	1
	6471322	ELEC MOTOR, 1-1/2 HP, 3 PH, 1800 RPM, 200V, 145T, TEFC	1
	6471317	ELEC MOTOR, 1-1/2 HP, 3 PH, 1800 RPM, 575V, 145T, TEFC	1
	6471304	ELEC MOTOR, 1-1/2 HP, 3 PH, 1800 RPM, 230/460V, 145T, TEFC	1
	6471301	ELEC MOTOR, 1-1/2 HP, 1 PH, 1800 RPM, 115/230V, 145T, TEFC	1
	6470920	ELEC MOTOR, 1 HP, 3 PH, 1200 RPM, 200V, 145T, TEFC	1
	6470912	ELEC MOTOR, 1 HP, 1 PH, 1200 RPM, 115/230V, 145T, TEFC	1
	6470901	ELEC MOTOR, 1 HP, 3 PH, 1200 RPM, 230/460V, 145T, TEFC	1
	6471617	ELEC MOTOR, 2 HP, 3 PH, 1800 RPM, 200V, 145T, TEFC	1
	6471616	ELEC MOTOR, 2 HP, 3 PH, 1800 RPM, 575V, 145T, TEFC	1
	6471603	ELEC MOTOR, 2 HP, 3 PH, 1800 RPM, 230/460V, 145T, TEFC	1
	6473012	ELEC MOTOR, 2/1 HP, 3 PH, 900 & 1800 RPM, 230/460V, 184T, ODP	1
	6472903	ELEC MOTOR, 1-1/2/3/4 HP, 3 PH, 900 & 1800 RPM, 230/460V, 184T, ODP	1
	6471202	ELEC MOTOR, HI-REV, 1-1/2 HP, 3 PH 1200 RPM, 230/460V, 184T, ODP	1
	6471501	ELEC MOTOR, HI-REV, 2 HP, 3 PH 1200 RPM, 230/460V, 182T, ODP	1

VARIABLE SPEED ASSEMBLY

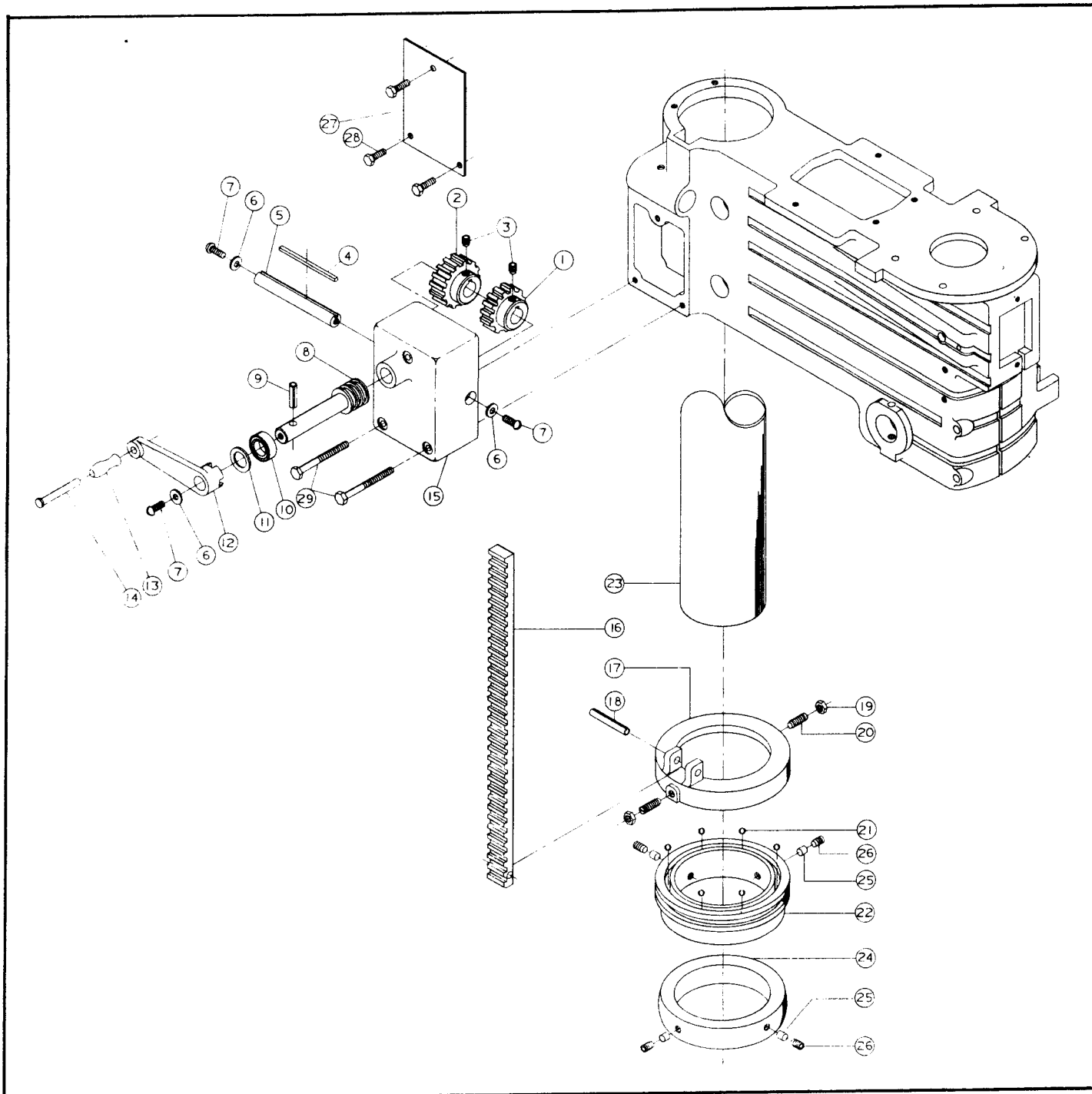


VARIABLE SPEED ASSEMBLY

NO.	PART NO.	DESCRIPTION	QTY.
	2404004	V/S KIT ASS'Y (ITEMS 1 THRU 61)	
	2595018	V/S BEARING PLATE ASS'Y (ITEMS 1 THRU 8)	
1	6714042	FILLISTER HD SCR, 1/4-20 x 2	1
2	3070201	RUBBER BUSHING, 1/4 I. D.	1
3	6714190	FLAT HD MACH SCR, 1/4-20 x 1-1/8	1
4	6514008	HEX JAM NUT, 1/4-20	2
5	3595005	V/S BEARING PLATE	1
6	3598204	V/S BEARING PLUG	2
7	6060009	BALL BEARING, MRC 204SZZ	1
8	6514012	FLEXLOC NUT, 1/4-20	1
	2298005	COUNTERSHAFT HOUSING ASS'Y (ITEMS 9 THRU 16)	
9	6714004	SOC SET SCR, 1/4-20 x 1/4	1
10	3717053	2 GROOVE SHEAVE	1
11	6811326	STL ARBOR SPACER, 1 x 1-1/2 x .062	2
12	6670005	RETAINING RING, TRUARC NO. 5100-100	1
13	3388019	SQUARE KEY, 3/16 x 3/16 x 3-11/16	1
14	3706005	V/S DRIVE SHAFT	1
15	6060010	BALL BEARING	2
16	3298032	V/S SHAFT HOUSING	1
	2144001	DRIVE SPLINE SHEAVE ASS'Y (ITEMS 17 THRU 22)	
17	6060054	BALL BEARING	2
18	6664007	"O" RING (SHOCK ABSORBER)	1
19	3717041	2 GROOVE SHEAVE	1
20	6715013	SOC SET SCR, 5/16-18 x 3/8	2
21	3388039	SQUARE KEY, 3/16 x 3/16 x 2-1/2	1
22	3144002	SPLINE DRIVE	1
	2298026	V/S HOUSING ASS'Y (ITEMS 23 THRU 29)	
	2268005	HANDLE ASS'Y (ITEMS 23 & 24)	2
23	3406201	TEARDROP KNOB	1
24	3670039	HANDLE ROD	1
25	3076033	V/S CAM	1
26	6861702	NYLATRON CAM WASHER	2
27	6813006	COMPRESSION SPRING	1
28	6718029	CAM MOUNTING SHOULDER SCREW	1
29	3298215	CAM HOUSING	1
	2042022	V/S MOTOR BASE ASS'Y (ITEMS 30 THRU 35)	
30	6516001	HEX NUT, 3/8-16	3
31	6861301	FLAT WASHER, 3/8	2
32	3773009	MOTOR BASE ADJUST STUD, 5"	1
33	3042250	MOTOR BASE	1
34	3712005	MOTOR BASE SUPPORT SHAFT	2
35	6716013	SOC HD CAP SCR, 3/8-16 x 1-1/4	2
36	6670078	RETAINING RING	2
37	3584032	PIVOT PIN	1
38	3126008	V/S FORK	1
39	6518001	HEX NUT, 1/2-13	1
40	6718046	SO HD SCR, 1/2-13 x 1-3/4	1
41	6515007	HEX JAM NUT, 5/16-18	1
42	3673032	V/S CAM ROLLER	1
43	6095043	BUSHING, PS-R-306 x 3/8	1
44	6715034	HEX HD CAP SCR, 5/16-18 x 1-1/4	1
45	6077053	V/S BELT, NO. 1922V443	1
46	6077076	BELT, NO. 7M710 POLYFLEX	2
47	2719021	V/S DRIVER SHEAVE ASS'Y	1
48	2719035	V/S HI-REV SHEAVE ASS'Y	1
49	6458001	RUBBER MOLDING	2.5
50	2250060	V/S GUARD ASS'Y (WELDMENT)	1
51	6714117	HEX HD CAP SCR, 1/4-20 x 1/2	4
52	6514014	SELF RETAINING NUT	4
53	6715033	HEX HD CAP SCR, 5/16-18 x 1/2	4
54	3767211	MTG GUARD STRAP (ONE NOT SHOWN)	2
55	6716005	CUP PT SOC SET SCR, 3/8-16 x 1/2	2

NO.	PART NO.	DESCRIPTION	QTY.
56	3063246	UPPER SPINDLE BEARING BRACKET	1
57	6716034	HEX HD CAP SCR, 3/8-16 x 7/8	2
58	6861200	LOCK WASHER, 5/16	2
59	6715032	HEX HD SCR, 5/16-18 x 1	2
60	6717017	HEX HD CAP SCR, 7/16-14 x 1	2
61	6861401	FLAT WASHER, 7/16	2
62	2719009	V/S MOTOR SHEAVE ASS'Y	1
63	2719011	V/S MOTOR SHEAVE ASS'Y (ALT. FOR 2719009)	1
64	2719034	V/S MOTOR HI-REV SHEAVE ASS'Y (ALT. FOR 2719009)	1
65	3330284	SAFETY RULES PLATE	1
66	6680020	FLAT HD DRIVE RIVET, 5/32 x 1/4 (TWO NOT SHOWN)	4
67	3312251	POWERMATIC I. D. PLATE (ONE NOT SHOWN)	2
68	3330278	SERIAL NO. I. D. PLATE (V/S)	1
69	6746020	SELF TAPPING PAN HD SCR, NO. 4 x 1/4	4
70	3684247	SPEED DIAL SCALE	1
71	6747000	DRIVE SCR, NO. 4 x 3/16	4
72	6715180	HEX WASHER HD CAP SCR, 5/16-18 x 5/8	4
73	6471207	ELEC MOTOR, 1-1/2 HP, 3 PH, 1200 RPM 230/460V, 182T, TEFC	1
	6471206	ELEC MOTOR, 1-1/2 HP, 3 PH, 1200 RPM 200V, 182T, TEFC	1
	6471027	ELEC MOTOR, 1 HP, 3 PH, 1800 RPM, 230/460V, 143T, TEFC	1
	6471026	ELEC MOTOR, 1 HP, 3 PH, 1800 RPM, 200V, 143T, TEFC	1
	6471322	ELEC MOTOR, 1-1/2 HP, 3 PH, 1800 RPM 200V, 145T, TEFC	1
	6471317	ELEC MOTOR, 1-1/2 HP, 3 PH, 1800 RPM 575V, 145T, TEFC	1
	6471304	ELEC MOTOR, 1-1/2 HP, 3 PH, 1800 RPM 230/460V, 145T, TEFC	1
	6471301	ELEC MOTOR, 1-1/2 HP, 1 PH, 1800 RPM 115/230V, 145T, TEFC	1
	6470920	ELEC MOTOR, 1 HP, 3 PH, 1200 RPM 200V, 145T, TEFC	1
	6470912	ELEC MOTOR, 1 HP, 1 PH, 1200 RPM, 115/230V, 145T, TEFC	1
	6470901	ELEC MOTOR, 1 HP, 3 PH, 1200 RPM, 230/460V, 145T, TEFC	1
	6471617	ELEC MOTOR, 2 HP, 3 PH, 1800 RPM, 200V, 145T, TEFC	1
	6471616	ELEC MOTOR, 2 HP, 3 PH, 1800 RPM, 575V, 145T, TEFC	1
	6471603	ELEC MOTOR, 2 HP, 3 PH, 1800 RPM, 230/460V, 145T, TEFC	1
	6473012	ELEC MOTOR, 2 1/2 HP, 3 PH, 900 & 1800 RPM, 230/460V, 184T, ODP	1
	6472902	ELEC MOTOR, 1-1/2/3/4 HP, 3 PH, 900 & 1800 RPM, 230/460V, 184T, ODP	1
	6471202	ELEC MOTOR, HI-REV, 1-1/2 HP, 3 PH 1200 RPM, 230/460V, 184T, ODP	1
	6471501	ELEC MOTOR, HI-REV, 2 HP, 3 PH, 1200 RPM, 230/460V, 182T, ODP	1

HEAD RAISING ASSEMBLY

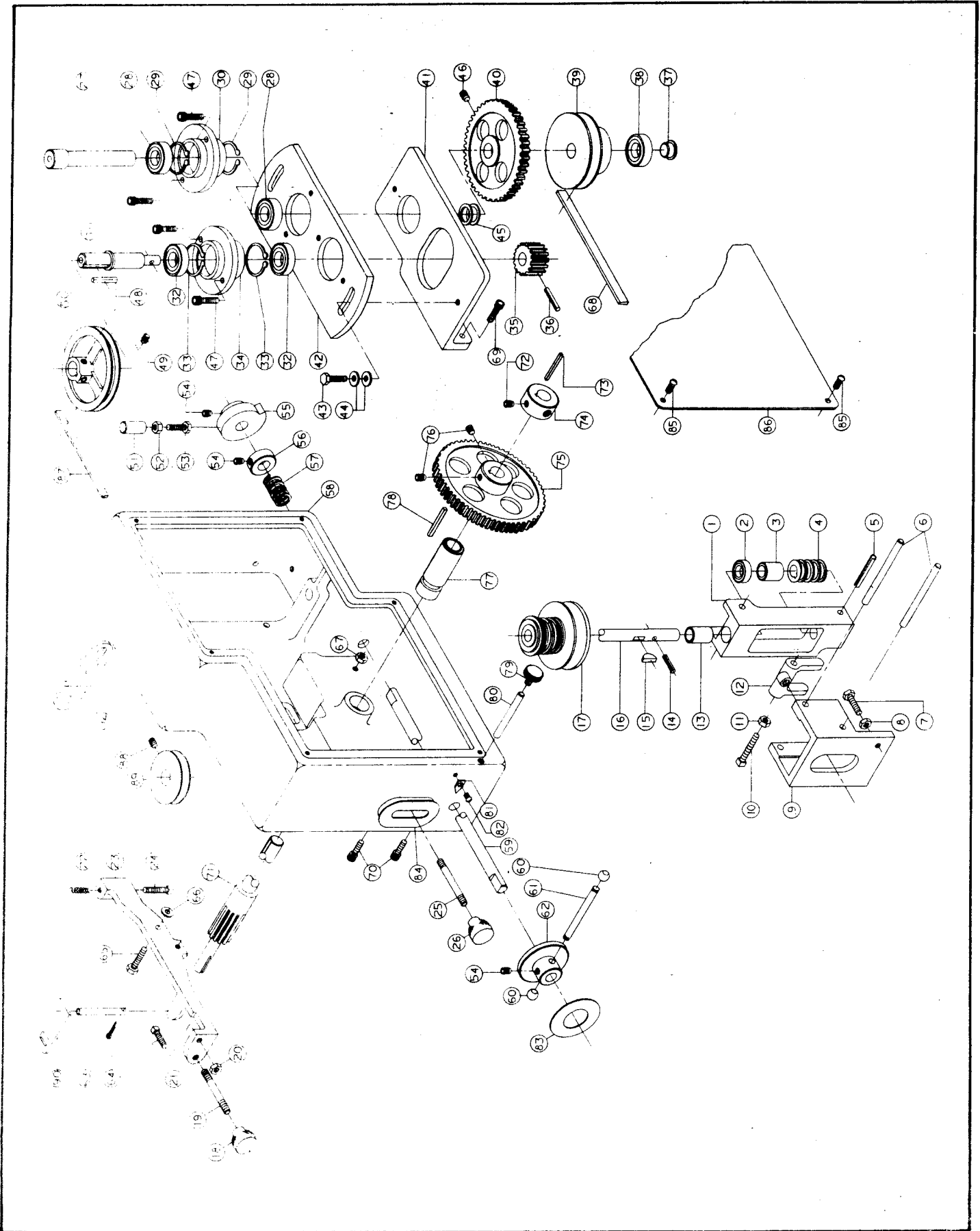


HEAD RAISING ASSEMBLY

NO.	PART NO.	DESCRIPTION	QTY.
	2298016	HEAD RAISING MECHANISM (ITEMS 1 THRU 15) 1 SPINDLE TABLE 2 SPINDLE TABLE 3 SPINDLE TABLE 4 SPINDLE TABLE 6 SPINDLE TABLE 8 SPINDLE TABLE	1 2 3 4 6 8
1	3237002	WORM GEAR	1
2	3237001	SPUR GEAR	1
3	6714004	SOC SET SCR, 1/4-20 x 1/4	2
4	3388015	SQ KEY, 3/16 x 3/16 x 2-1/4	1
5	3701004	GEAR SHAFT	1
6	6861201	FLAT WASHER, 5/16	3
7	6715132	ROUND HD SCR, 5/16-18 x 1/2	3
8	3237013	PINION GEAR	1
9	6626040	SPRING PIN, 1/4 x 1-1/4	1
10	6064001	THRUST BEARING, NICE 605	1
11	3741211	FLAT SHAFT SPACER, 1/2	1
12	3268005	ELEVATING HANDLE, D-21	1
13	3268201	NYLON MACHINE HANDLE	1
14	6624006	GROOVE PIN, 1/4 x 3	1
15	3298018	ELEVATING GEAR BOX HOUSING	1
	2645001	HEAD RAISING RACK ASS'Y (ITEMS 16 THRU 22) 1 SPINDLE TABLE 2 SPINDLE TABLE 3 SPINDLE TABLE 4 SPINDLE TABLE 6 SPINDLE TABLE 8 SPINDLE TABLE	1 2 3 4 6 8
16	3650004	GEAR RACK, 13-1/4	1
17	3096040	ELEVATING RACK BEARING COLLAR	1
18	6626033	SPRING PIN, 3/16 x 2	1
19	6515001	HEX NUT, 5/16-18	2
20	6715118	HALF DOG PT SOC SET SCR, 5/16-18 x 3/4	2
21	6054002	STEEL BEARING BALL 3/8	41
22	3046003	THRUST BEARING COLLAR	1
23	3098005	BENCH MODEL COLUMN 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	1 2 3 4 6 8
24	3096039	COLUMN COLLAR 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	1 2 3 4 6 8
25	3598023	PROTECTOR PLUG, 7/16 x 3/16 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	4 8 12 16 24 32
26	6718055	CUP PT SOC SET SCR, 1/2-13 x 1/2 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	4 8 12 16 24 32

NO.	PART NO.	DESCRIPTION	QTY.
27	3104014	HEAD & TABLE COVER 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	1 2 3 4 6 8
28	6716038	HEX HD CAP SCR, 3/8-16 x 1/2 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	3 6 9 12 18 24
29	6716042	HEX HD CAP SCR, 3/8-16 x 3 1 SPINDLE 2 SPINDLE 3 SPINDLE 4 SPINDLE 6 SPINDLE 8 SPINDLE	3 6 9 12 18 24

MECHANICAL POWERFEED ASSEMBLY

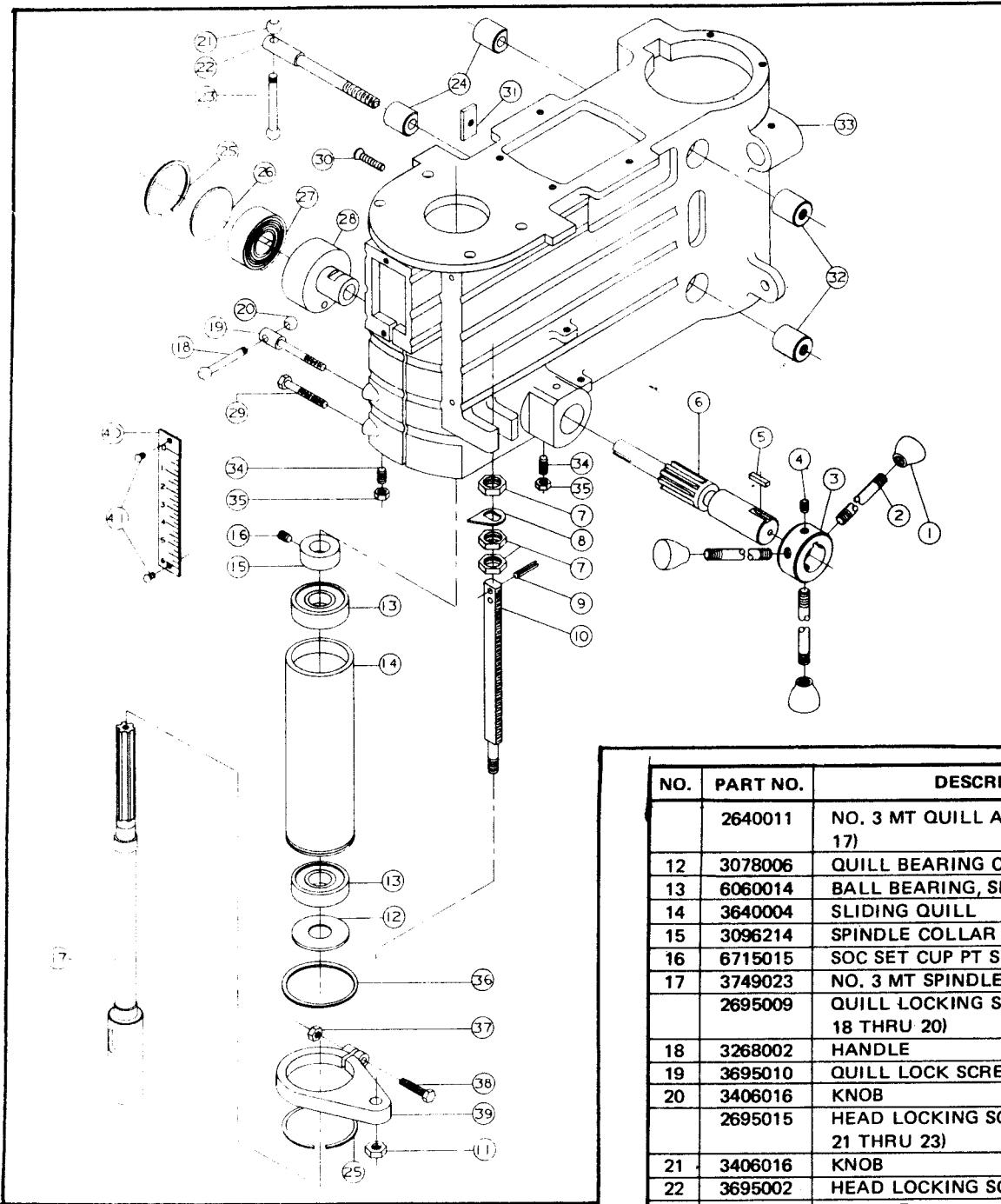


MECHANICAL POWERFEED ASSEMBLY
(OPTIONAL)

NO.	PART NO.	DESCRIPTION	QTY.
	2192013	MECHANICAL FEED ASS'Y (ITEMS 1 THRU 92)	
	2192002	MECHANICAL FEED ASS'Y (ITEMS 1 THRU 70)	
	2036036	MECHANICAL FEED ENGAGING BRKT. ASS'Y (ITEMS 1 THRU 19)	
1	3065011	POWERFEED ENGAGING BRACKET	1
2	6064001	THRUST BEARING, NICE NO. 605	1
3	3741009	WORM GEAR SHAFT SPACER	1
4	6950001	WORM GEAR, W-12P	1
5	6626040	SPRING PIN, 1/4 x 1-1/4	1
6	3584005	PIVOT PIN	2
7	6715032	HEX HD CAP SCR, 5/16-18 x 1	1
8	6515001	HEX NUT, 5/16-18	1
9	3063048	SHEAVE MOUNTING BRACKET	1
10	6716083	SQ HD SCR, 3/8-16 x 1-3/4	1
11	6516001	HEX NUT, 3/8-16	1
12	3065002	OPERATING BRACKET	1
13	6095023	BRONZE BUSHING, 5/8 x 3/4 x 1	1
14	6626004	SPRING PIN, 1/8 x 3/4	1
15	6420000	KEY, WOODRUFF NO. 404	1
16	3706002	WORM GEAR SHAFT	1
17	2719022	V/S DRIVING SHEAV ASS'Y	1
18	3406201	TEARDROP KNOB	1
19	3709009	POWERFEED ENGAGING OPERATING SHAFT	1
	2025011	MECHANICAL FEED ENGAGING ARM ASS'Y (ITEMS 20 THRU 26)	
20	6516001	HEX NUT, 3/8-16	1
21	6716079	SQ HD SCR, 3/8-16 x 1	1
22	6813017	COMP SPRING, NO. C2401	1
23	3025026	MECHANICAL FEED ENGAGING ARM	1
24	6718062	SQ HD SCR, 1/2-13 x 1	1
25	3670039	HANDLE ROD	1
26	3406201	TEARDROP KNOB	1
	2595009	MECH FEED PLATE & SHAFT ASS'Y (ITEMS 27 THRU 50)	
	2709012	V/S DRIVEN SHAFT ASS'Y (ITEMS 27 THRU 30)	
27	3707001	SHEAVE MOUNTING SHAFT	1
28	6060004	BEARING, N.D. NO. Z99R10	2
29	6670043	RETAINING RING, NO. 5000-137	2
30	3298009	BEARING SHAFT HOUSING	1
	2709013	V/S DRIVING SHAFT ASS'Y (ITEMS 31 THRU 36)	
31	3700002	SMALL SHAFT	1
32	6060004	BEARING, N. D. NO. Z99R10	2
33	6670043	RETAINING RING, NO. 5000-137	2
34	3298009	SHAFT BEARING HOUSING	1
35	3237016	FIBER GEAR, 1-1/4 x 3/4	1
36	6626005	SPRING PIN, 1/8 x 7/8	1
37	3598002	BEARING PLUG	1
38	6060005	BALL BEARING, FAFNIR 203 PP	1
39	2719026	V/S DRIVEN SHEAVE	1
40	3237024	UPPER POWERFEED DRIVE GEAR	1
41	3063070	BEARING HOUSING PLATE MOUNTING BRACKET	1
42	3595009	BEARING HOUSING MOUNTING PLATE	1
43	6715032	HEX HD SCR, 5/16-18 x 1 (ONE NOT SHOWN)	2
44	6861205	FLAT WASHER, 5/16 (PLATED) (TWO NOT SHOWN)	4
45	6861702	FLAT WASHER, NYLATRON, 5/8	2
46	6715013	SOC SET CUP PT SCR, 5/16-18 x 3/8	2
47	6715024	SOC HD CAP SCR, 5/16-18 x 5/8	4
48	3388006	SQUARE KEY, 3/16 x 3/16 x 1-1/4	1
49	6715016	CUP PT SOC SET SCR, 5/16-18 x 5/16	1
50	3716017	SINGLE GROOVE SHEAVE, AZ-50 x 5/8	1

NO.	PART NO.	DESCRIPTION	QTY.
	2601008	MECHANICAL FEED PLUNGER ASS'Y (ITEMS 51 THRU 53)	
51	3601010	FEED ADJUST PLUNGER	1
52	6516001	HEX NUT, 3/8-16	1
53	6716031	HEX HD SCR, 3/8-16 x 1	1
54	6715016	CUP PT SOC SET SCR, 5/16-18 x 5/16	3
55	3076013	FEED ADJUST CAM	1
56	3096243	COLLAR, 5/8	1
57	6813006	COMP SPRING, 5/16 x 1-1/2	1
58	3298063	MECHANICAL FEED HOUSING	1
59	3701025	FEED ADJUST SHAFT	1
60	3406016	HANDLE KNOB	2
61	3701022	HUB TURNING SHAFT	1
62	3301008	FEED DIAL HUB	1
63	3582005	TRIP PLUNGER PIN	1
64	6622002	COTTER PIN, 1/8 x 1	1
65	6716031	HEX HD CAP SCR, 3/8-16 x 1	1
66	6861309	FLAT WASHER, 3/8 (PLATED)	1
67	6516001	HEX NUT, 3/8-16	1
68	6077034	V/S BELT, 5L-310	1
69	6716012	CAP SOC HD SCR, 3/8-16 x 1 (ONE NOT SHOWN)	2
70	6715025	SOC HD CAP SCR, 5/16-18 x 3/4	2
	2586006	MECH FEED PINION ASS'Y (ITEMS 71 THRU 74)	
71	3586012	POWERFEED PINION SHAFT	1
72	6715013	CUP PT SOC SET SCR, 5/16-18 x 3/8	1
73	3388004	SQUARE KEY, 3/16 x 3/16 x 1	1
74	3301006	PINION OPERATING TURRET HUB	1
75	3237025	WORM SPUR GEAR	1
76	6715016	CUP PT SOC SET SCR, 5/16-18 x 5/16	2
77	2729001	SHAFT PINION SLEEVE ASS'Y	1
78	3388004	SQUARE KEY, 3/16 x 3/16 x 1	1
79	3695004	LOCK SCREW	1
80	3583017	STOP PIN	1
81	3604008	POINTER	1
82	6706037	RD HD SCR, NO. 6-32 x 3/16	1
83	3684208	PLATE DIAL SCALE	1
84	3330214	MECH FEED PLATE INSTRUCTION	1
85	6714063	RD HD SCR, 1/4-20 x 1/2	6
86	3104034	MECH FEED HOUSING COVER	1
87	6077104	BELT, 4L-230	1
88	6715015	CUP PT SOC SET SCR, 5/16-18 x 1/4	1
89	3610006	DRIVE PULLEY	1
90	3426018	DEPTH STOP ADJUST LEVER	1
91	3868021	DEPTH STOP NUT WRENCH (NOT SHOWN)	1
92	3064078	POWERFEED MOUNTING BRACKET	1

HEAD ASSEMBLY

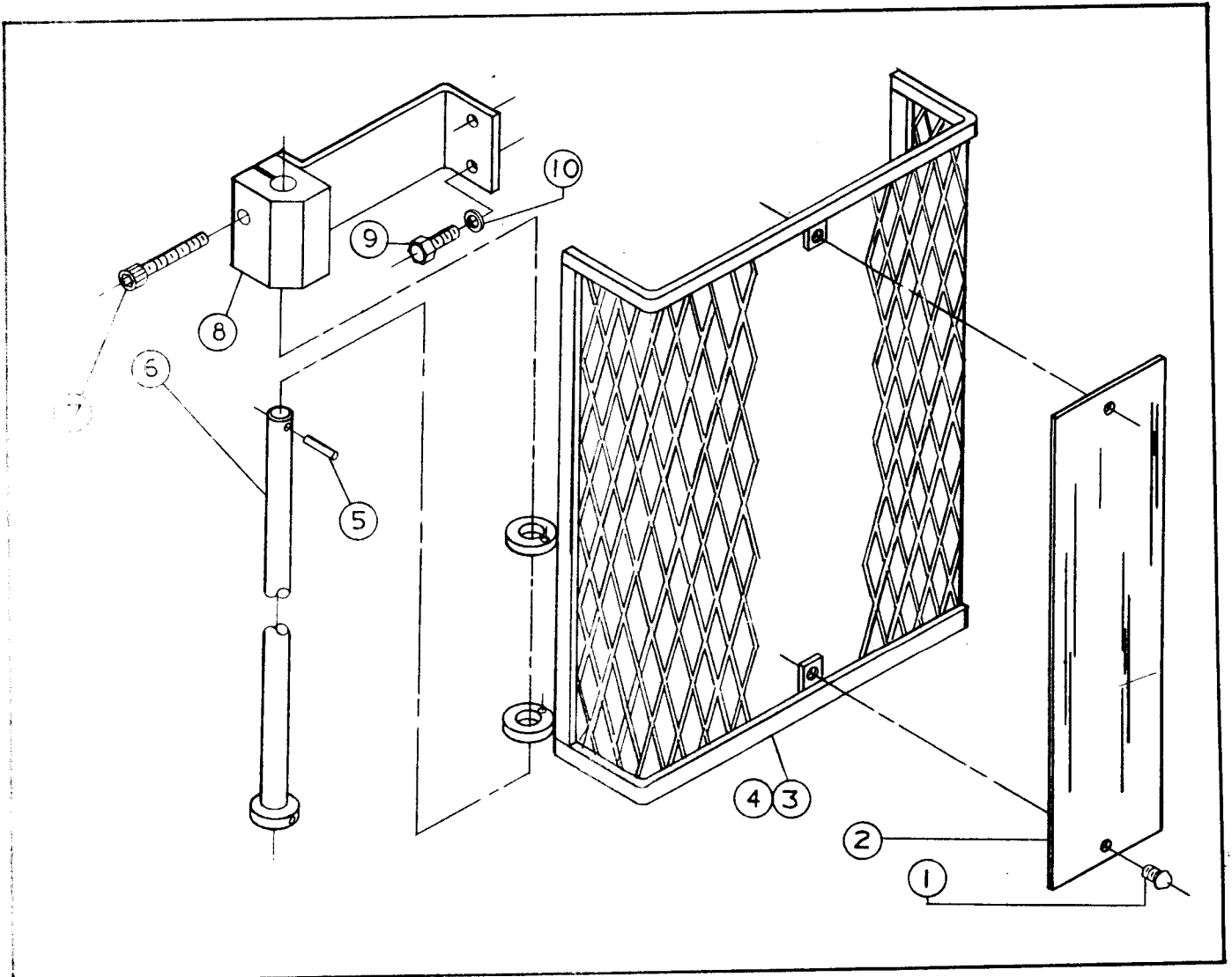


NO.	PART NO.	DESCRIPTION	QTY.
	2268006	TURRET HANDLE ASS'Y, (ITEMS 1 & 2)	3
1	3406206	PHENOLIC KNOB	1
2	3670025	KNOB HANDLE	1
	2277016	HEAD ASS'Y (ITEMS 3 THRU 39)	
	2686003	PINION HUB ASS'Y (ITEMS 3 THRU 6)	
3	3301003	TURRET HUB	1
4	6715016	CUP PT SOC SCR, 5/16-18 x 5/16	1
5	3388004	KEY, 3/16 x 3/16 x 1	1
6	3586009	QUILL OPERATING PINION	1
	2670006	DEPTH ADJ ROD ASS'Y (ITEMS 7 THRU 11)	
7	3528005	DEPTH ADJ LOCK NUT	3
8	3604002	DEPTH ADJ POINTER	1
9	6626035	SPRING PIN, 3/16 x 5/8	1
10	3670016	DEPT ADJ ROD	1
11	6566002	HEX NUT, 3/8-24	1

NO.	PART NO.	DESCRIPTION	Q1
	2640011	NO. 3 MT QUILL ASS'Y (ITEMS 12 THRU 17)	
12	3078006	QUILL BEARING CAP	1
13	6060014	BALL BEARING, SKF NO. 6206 2RS	2
14	3640004	SLIDING QUILL	1
15	3096214	SPINDLE COLLAR	1
16	6715015	SOC SET CUP PT SCR, 5/16-18 x 1/4	1
17	3749023	NO. 3 MT SPINDLE	1
	2695009	QUILL LOCKING SCREW ASS'Y (ITEMS 18 THRU 20)	
18	3268002	HANDLE	1
19	3695010	QUILL LOCK SCREW	1
20	3406016	KNOB	1
	2695015	HEAD LOCKING SCREW ASS'Y (ITEMS 21 THRU 23)	2
21	3406016	KNOB	1
22	3695002	HEAD LOCKING SCREW	1
23	3268002	HANDLE	1
24	3448014	PLAIN HEAD LOCKING SLEEVE	2
25	6670071	RETAINING RING, RS-275	2
26	3104010	SPRING COVER	1
27	6813026	CLOCK SPRING	1
28	3298280	SPRING HOUSING	1
29	6716114	HEX HD SCR, 3/8-16 x 2-3/4	1
30	6714056	FLAT HD SCR, 1/4-20 x 1	1
31	3092012	SWITCH WIRE CLAMP	1
32	3448015	THREADED HEAD LOCKING SLEEVE	2
33	3277013	HEAD CASTING	1
34	6718038	HALF DOG PT SOC SET SCR, 1/2-13 x 1-1/4	2
35	6518001	HEX NUT, 1/2-13	2
36	6804005	"O" RING SEAL, RUBBER	1
37	6515001	HEX NUT, 5/16-18	1
38	6715044	HEX HD SCR, 5/16-18 x 2	1
39	3936004	QUILL YOKE	1
40	3684248	DEPTH ADJ PLATE SCALE	1
41	6746001	SELF TAPPING SCR, NO. 6-32	2

**GUARD ASSEMBLY
(OPTIONAL)**

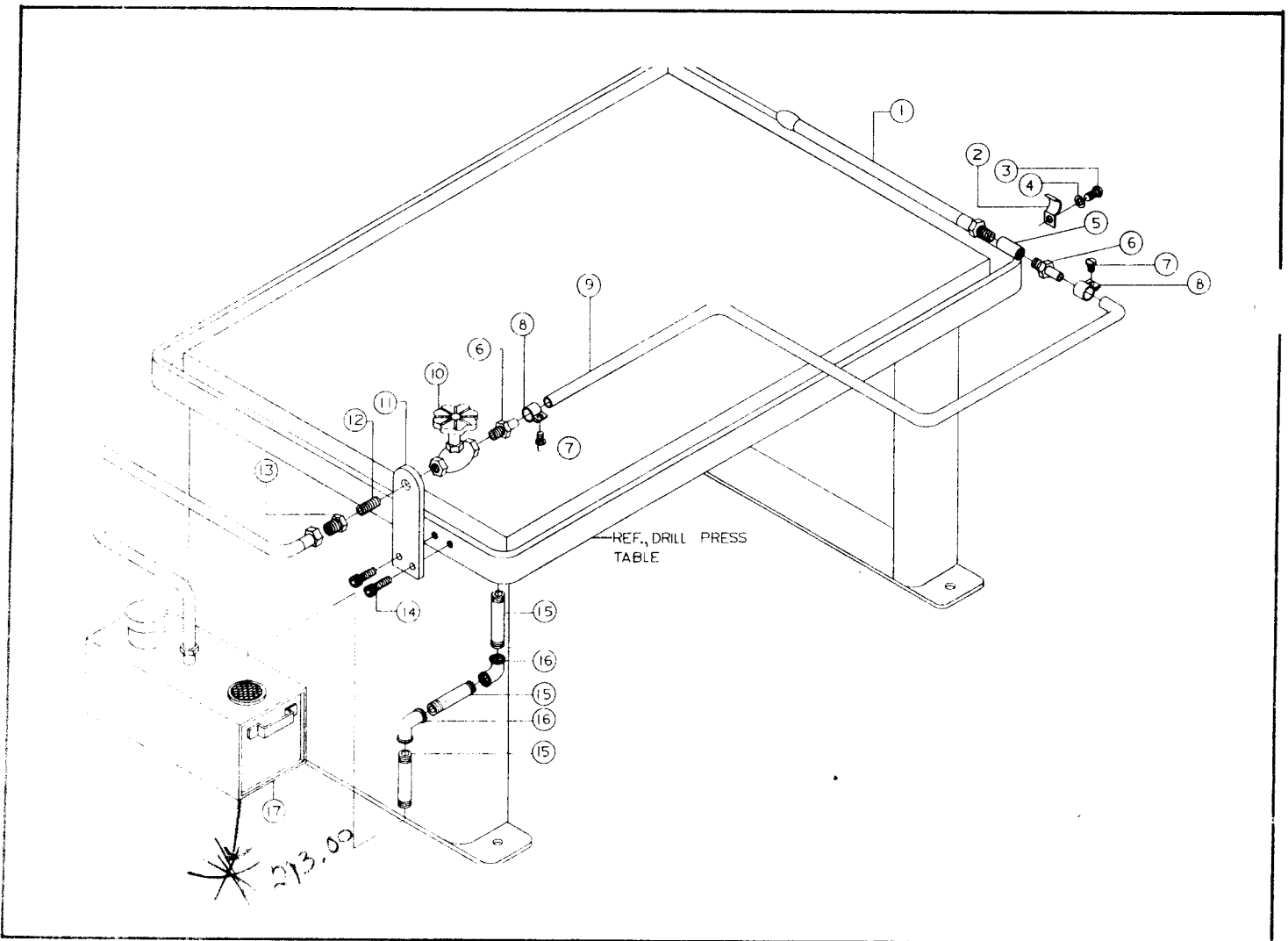
NO.	PART NO.	DESCRIPTION	QTY.
1	6710063	BUTTON HD SOC SCR, NO. 10-24 x 1/2	2
2	3720019	PLASTIC GUARD	1
3	2250118	DRILL PRESS GUARD ASS'Y	1
4	2250124	DRILL PRESS W/POWERFEED GUARD ASS'Y	1
5	6626032	SPRING PIN, 3/16 x 1-1/4 (ONE NOT SHOWN)	2
6	2709026	SHAFT ASS'Y	1
7	6716016	SOC HD CAP SCR, 3/8-16 x 7/8	1
8	2092008	GUARD CLAMP ASS'Y	1
9	6715035	HEX HD SCR, 5/16-18 x 3/4	2
10	6861200	LOCK WASHER, 5/16	2



**COOLANT KIT, 1 SPINDLE
(OPTIONAL)**

NO.	PART NO.	DESCRIPTION	QTY.
1	6498001	NOZZLE, 1/8-27 x 24"	1
2	6122007	CONDUIT CLAMP, 1/4	1
3	6714114	RD HD CAP SCR, 1/4-20 x 3/8	1
4	6861100	LOCK WASHER, 1/4	1
5	6634044	PIPE COUPLING, 1/8	1
6	6284073	TUBE ADAPTOR FITTING, 1/8 MBS 300, 1/8-27	2
7	6716007	SELF TAPPING PAN HD SCR, NO. 8 x 5/8	2
8	6122023	TUBE CLAMP, C3053A-6	2
9	6833009	BLACK PLASTIC TUBE, 3/8	4'

NO.	PART NO.	DESCRIPTION	QTY.
10	6850015	PRESSURE VALVE, GLOBE NO. 13, 1/8	1
11	3462002	SINGLE SPINDLE COOLANT SYSTEM MANIFOLD	1
12	6634071	CLOSE NIPPLE FITTING PIPE, 1/8 x 3/4	1
13	6634081	HEX BUSHING FITTING PIPE, 3/8 x 1/8	1
14	6714018	SOC HD CAP SCR, 1/4-20 x 3/4	2
15	6634020	FITTING PIPE, 1/2 x 4	3
16	6634038	FITTING PIPE, 1/2-14, 90°	2
17	6160002	COOLANT SYSTEM, H-16	1

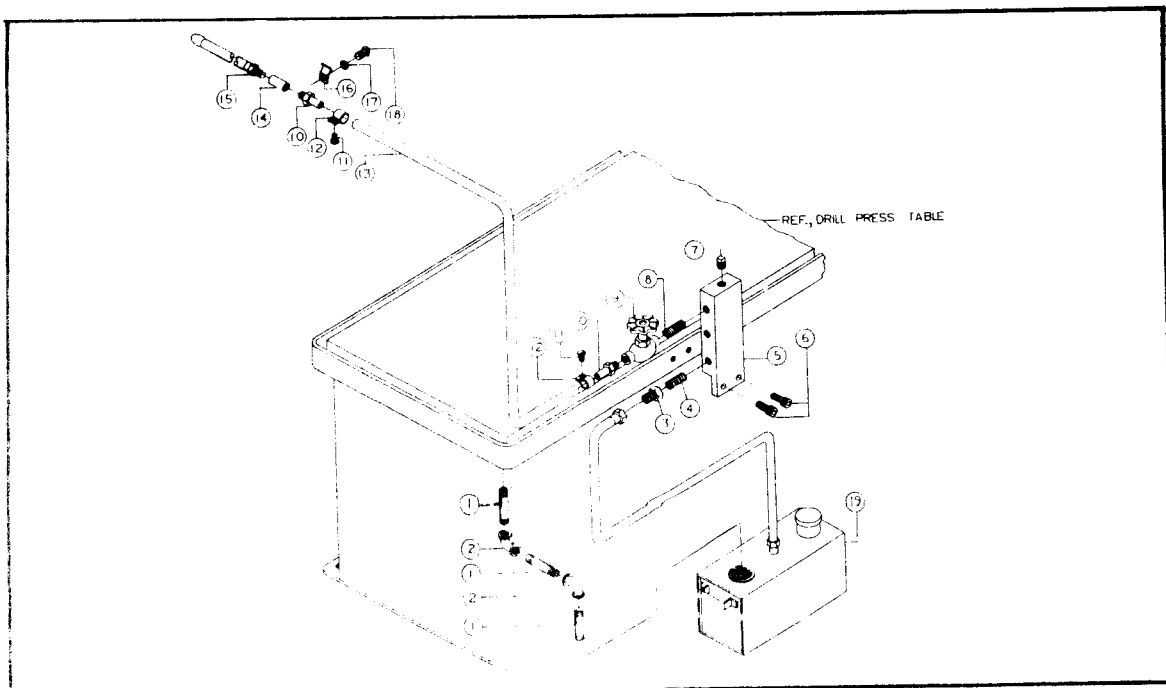


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COOLANT KIT, 2, 3 & 4 SPINDLES
(OPTIONAL)

NO.	PART NO.	DESCRIPTION	QTY.
1	6634020	FITTING PIPE, 1/2 x 4	
		2 SPINDLE	3
		3 SPINDLE	3
		4 SPINDLE	3
2	6634038	FITTING PIPE, 1/2-14, 90° FEMALE ELBOW	
		2 SPINDLE	2
		3 SPINDLE	2
		4 SPINDLE	2
3	6634082	FITTING PIPE, 3/8 x 1/4 HEX BUSHING	
		2 SPINDLE	1
		3 SPINDLE	1
4	6634090	FITTING PIPE, 1/4 CLOSE NIPPLE	
		2 SPINDLE	1
		3 SPINDLE	1
5	3462001	COOLANT SYSTEM MANIFOLD	
		2 SPINDLE	1
		3 SPINDLE	1
6	6714018	SOC HD CAP SCR, 1/4-20 x 3/4	
		2 SPINDLE	2
		3 SPINDLE	2
7	6638001	PIPE PLUG, 1/8-27	
		2 SPINDLE	3
		3 SPINDLE	2
8	6634071	FITTING PIPE, 1/8 x 3/4	
		2 SPINDLE	2
		3 SPINDLE	3
9	6850015	PRESSURE VALVE, GLOBE NO. 13, 1/8	
		2 SPINDLE	2
		3 SPINDLE	3
10	6284073	TUBE ADAPTOR FITTING, 1/8-27	
		2 SPINDLE	4
		3 SPINDLE	6
		4 SPINDLE	8

NO.	PART NO.	DESCRIPTION	QTY.
11	6716007	SELF TAPPING PAN HD SCR, NO. 8 x 5/8	
		2 SPINDLE	4
		3 SPINDLE	6
		4 SPINDLE	8
12	6122023	TUBE CLAMP, C3053A-6	
		2 SPINDLE	4
		3 SPINDLE	6
		4 SPINDLE	8
13	6833009	BLACK PLASTIC TUBE, 3/8	
		2 SPINDLE	9'
		3 SPINDLE	15'
		4 SPINDLE	22'
14	6634044	PIPE COUPLING, 1/8	
		2 SPINDLE	2
		3 SPINDLE	3
		4 SPINDLE	4
15	6498001	NOZZLE, 1/8-27 x 24	
		2 SPINDLE	2
		3 SPINDLE	3
		4 SPINDLE	4
16	6122007	CONDUIT CLAMP, 1/4	
		2 SPINDLE	2
		3 SPINDLE	3
		4 SPINDLE	4
17	6861100	LOCK WASHER, 1/4	
		2 SPINDLE	2
		3 SPINDLE	3
		4 SPINDLE	4
18	6714114	RD HD CAP SCR, 1/4-20 x 3/8	
		2 SPINDLE	2
		3 SPINDLE	3
		4 SPINDLE	4
19	6160002	COOLANT SYSTEM, H-16	
		2 SPINDLE	1
		3 SPINDLE	1
		4 SPINDLE	1



POWERMATIO  **HOUDAILLE**
McMinnville, Tennessee 37110

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