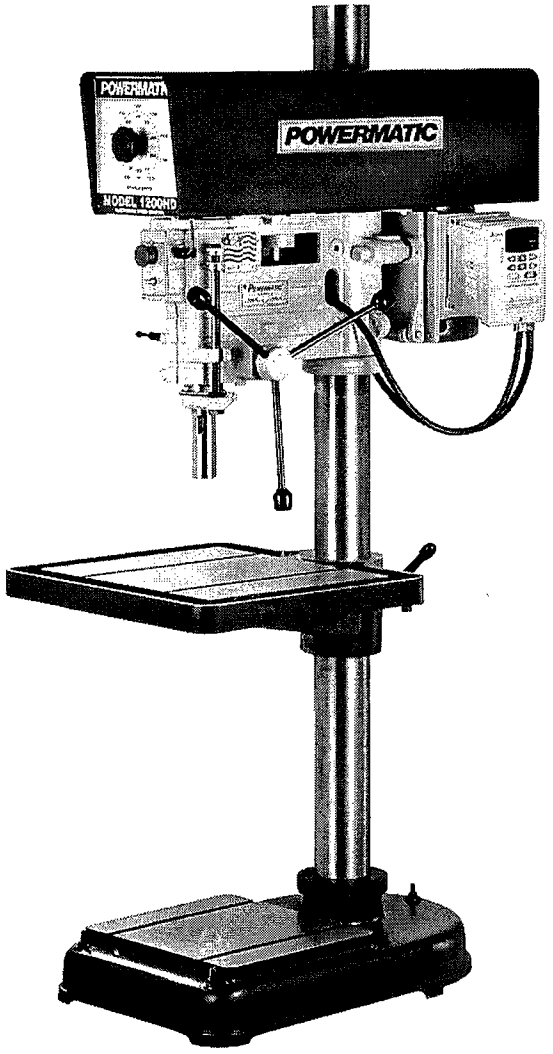
20" DRILL PRESS
Model 1200HD

Instruction Manual & Parts List

M-0460237



POWERMATIC®

(800) 274-6848
www.powermatic.com

This manual has been prepared for the owner and operators of a Powermatic Model 1200HD Drill Press. 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 drill press and to aid in using the machine safely, read this manual thoroughly and follow all instructions carefully.

Warranty & Service

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

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

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

More Information

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

Limited Warranty

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

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

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

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

TABLE OF CONTENTS

⚠ SAFETY INSTRUCTIONS

Read, understand and follow the safety and operating instructions found in this manual. Know the limitations and hazards associated with a 1200HD Drill Press. A safety rules decal is installed on the belt guard of this machine to serve as a reminder of basic safety practice.

Electrical Grounding. 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.

Eye Safety. Wear an approved safety face shield, goggles or glasses to protect eyes when operating the drill press.

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.

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.

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.

Do Not Overreach. Maintain a balanced stance and keep your body under control at all times.

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.

Use the Proper Speed and Feed. A table is provided in the 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.

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.

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.

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.**

Spindle Rotation. Be sure the rotation of the spindle is correct for the tool being used.

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.

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.

Avoid Accidental Starting. Make certain the motor switch is in the "off" position before connecting power to the machine.

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.

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.

Disconnect Machine before performing any service or maintenance and when changing tools.

Replacement Parts. Use only Powermatic or factory authorized replacement parts and accessories; otherwise, the drill press warranty and guarantee will be null and void.

Misuse. Do not use the 1200HD 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 1200HD 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.

If you are not thoroughly familiar with the operation of drill presses, obtain advice from your supervisor, instructor or other qualified person.

Drugs, alcohol, medication. Do not operate this machine while under the influence of drugs, alcohol, or any medication.

Health hazards. Some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

* Lead from lead-based paint.
* Crystalline silica from bricks and cement and other masonry products.
* Arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals, work in a well-ventilated area, and work with approved safety equipment, such as those dust masks that are specifically designed to filter out microscopic particles.

Familiarize yourself with the following safety notices used in this manual:

 CAUTION: (This means that if precautions are not heeded, it may result in minor or moderate injury and/or possible machine damage)

 **WARNING:** (This means that if precautions are not heeded, it could result in serious injury or possibly even death).

⚠ SAFETY

Familiarize yourself with the location of these safety decals on your drill press.

⚠WARNING

1. This machine is designed and intended for use by trained personnel only.
2. Carefully read instruction manual before operating machine.
3. Always wear approved safety glasses and/or face shields while operating this machine.
4. Operators must not wear clothing, jewelry or unrestrained hair styles that may get caught in moving parts of the machine. NEVER wear gloves while operating this machine.
5. Never place hands near or around a revolving tool or part.
6. Never use this machine with a cover open, removed or damaged. Close open covers, replace removed covers, replace or repair damaged covers before further use of this machine.
7. Be sure machine is electrically grounded.
8. Disconnect machine from power source before performing any maintenance or when changing tooling.
9. DO NOT operate this machine when under the influence of drugs or alcohol.
10. Keep the floor around the machine clean and free from scraps, sawdust, oil, or grease to minimize the danger of slipping.
10. Failure to comply with these warnings may result in personal injury.
11. Follow and observe all safety requirements set forth by the American National Standards Institute, ANSI B11.8 Milling, Drilling, and Boring Machines.
    To obtain a copy of these ANSI standards, write to:
    Attn: Publications Department
    American National Standards Institute
    1430 Broadway
    New York, NY 10018

3408259

DANGER

HEAD WILL FALL IF UNCLAMPED WITH THE SAFETY COLLAR LOOSE. MAKE SURE SAFETY COLLAR IS LOCKED TO COLUMN BEFORE UNCLAMPING HEAD WITH COLUMN CLAMP SCREWS. SEE INSTRUCTIONS FOR PROPER SPINDLE HEAD RAISING AND LOWERING.

3408211

SPECIFICATIONS (Model 1200HD Drill Press)

Spindle Travel	6"
Quill Diameter	2-3/4"
Column Diameter	4-1/2"
Column Wall Thickness	1/2"
Column Length	66"
Table Working Surface	
Production Table	15-1/2" x 18"
Base Working Surface	13-1/2" x 18"
Drilling Capacity (Cast Iron)	1-1/2"
Tapping Capacity (Cast Iron)	1"
Drilling Capacity (Steel)	1-1/4"
Tapping Capacity (Steel)	3/4"
Throat Depth	Drills to center of 20" diameter
Spindle Speeds:	
Electronic Variable Speed Model	
Low Range	50-500 rpm
High Range	200-1820 rpm
Height (overall)	75"
Front to Rear	33-1/2"
Weight	606 lbs
Motor (horsepower)	2 hp

DIMENSIONAL DRAWINGS (Model 1200HD Drill Press)

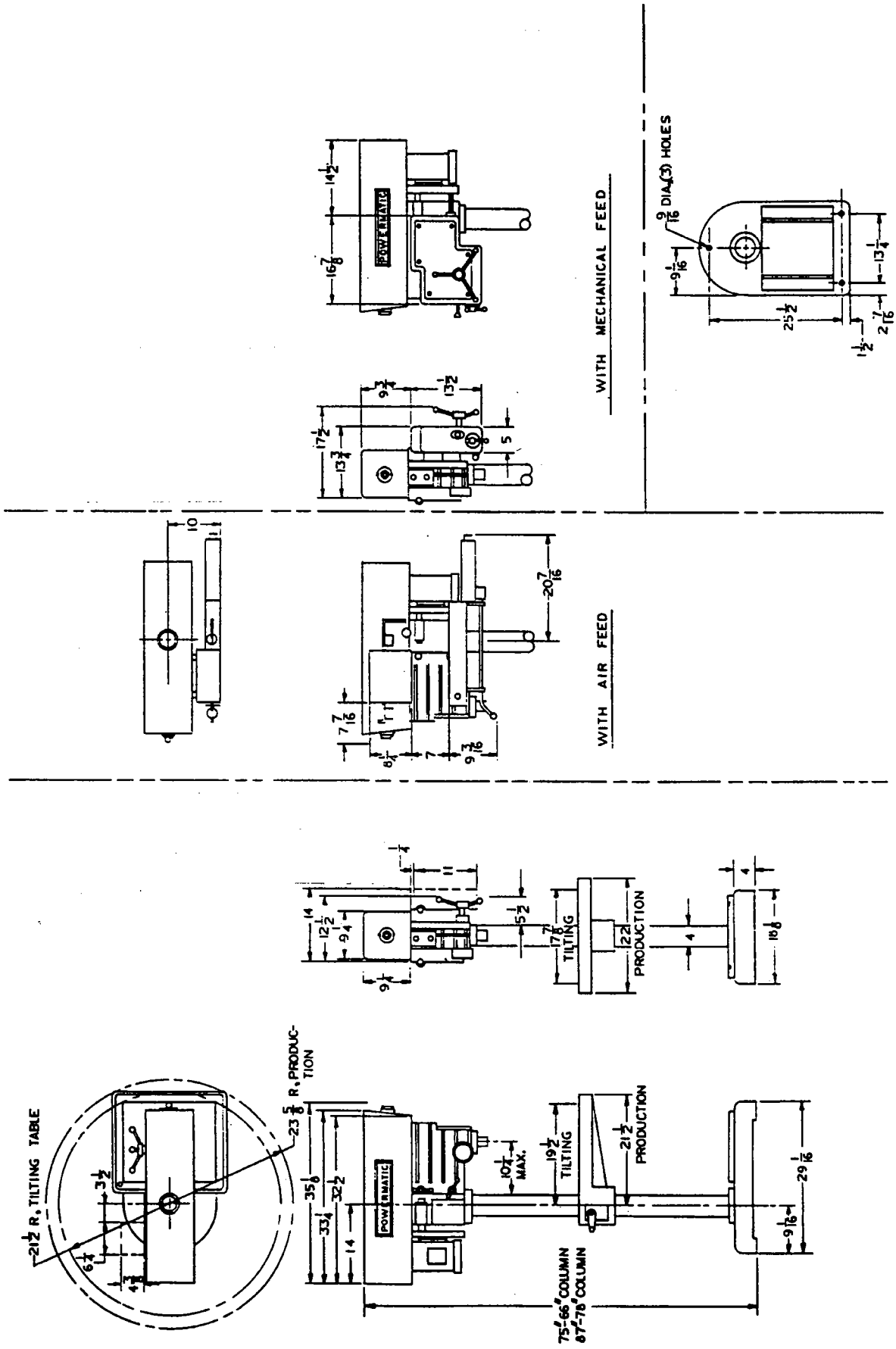


FIGURE 1

INSTALLATION, MAINTENANCE AND ADJUSTMENTS

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 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 set screws, 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.

SPINDLE TABLE MODELS

In the case of spindle table models, the legs are not attached to the table, they are packed separately. To assemble the legs to the spindle table, carefully support machine on forklift tines or other temporary supports and bolt legs securely into position. It is imperative that a spindle table be carefully leveled. Use a precision level, and adjust the level using the jackscrews provided in the legs. Lag machine to floor through holes provided in leveling screws (3/8" dia. lag screws).

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:

1. Be sure quill lock handle (**Figure 2**) is loose.
2. 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.

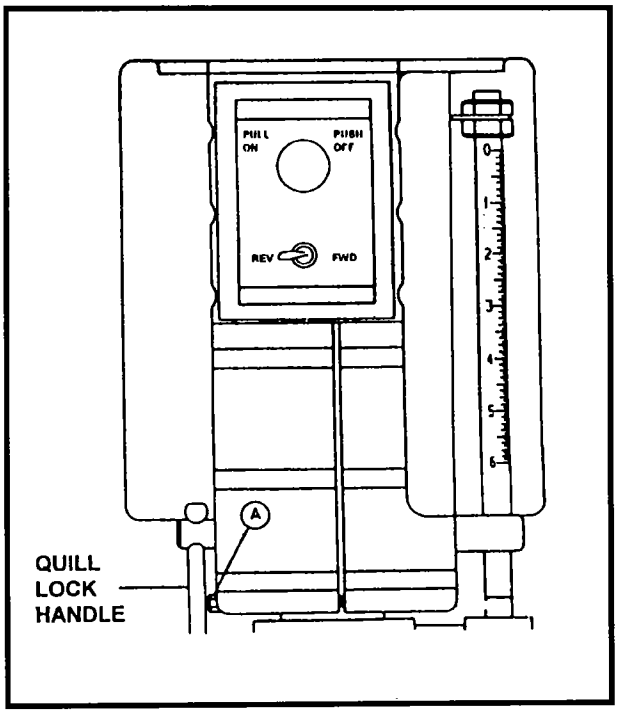


FIGURE 2
Quill Fit Up Adjustment

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) (**Figure 3**) 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 lockscrew (A), make sure point of screw mates to flat on the housing journal.

REPLACING SPINDLES ON QUILL ASSEMBLY

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

1. Hold quill return spring housing (B) in left hand (**Figure 3**) and loosen lockscrew (A). Let spring unwind slowly, by allowing cam to turn in hand.
2. Loosen setscrew (C) 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 (**Figure 4**):

1. Loosen setscrew in collar (J). To reach this screw, insert a 5/32" hex head wrench.
2. With a hard rubber mallet or block of wood, tap spline end of spindle. The spindle, with bearing (K), will come out of quill.
3. Use an arbor press to remove bearing (K).
4. To replace spindle, reverse above procedure.
5. When replacing collar (J), remove all end play from spindle.
6. When replacing quill in head casting, rotate spindle, if necessary, to engage spline in pulley driver.
7. Remove lock ring (F) and cover plate (G) (**Figure 3**) 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:

1. 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.
2. A light film of oil applied to the quill and column will reduce wear, prevent rust and assure ease of operation.
3. Quill return spring should receive oil (SAE 20) once yearly. Remove cover plate and apply oil with squirt can or small brush.

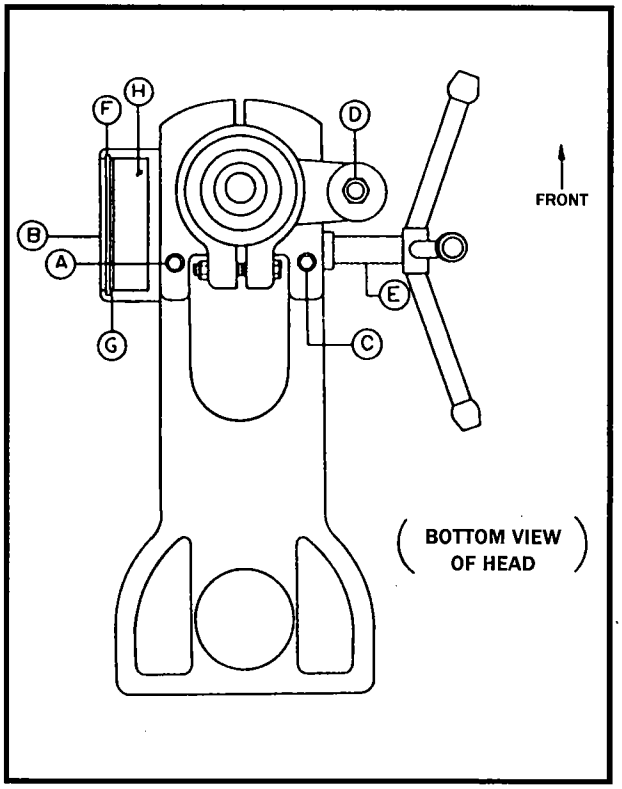


FIGURE 3
Quill Removal

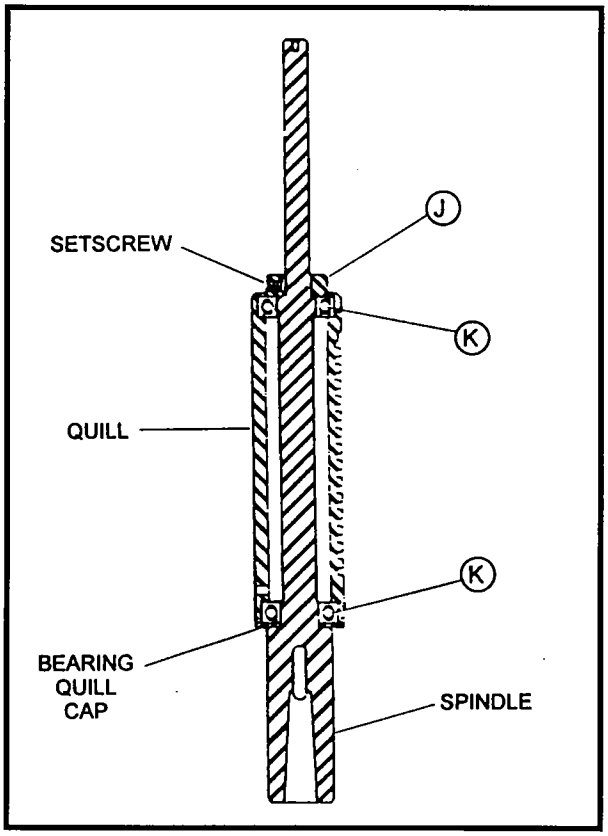


FIGURE 4
Spindle Assembly

4. IMPORTANT: The hub area of variable speed pulleys should be oiled with a light lubricant such as SAE 10W or automatic transmission oil every 90 days.
5. Apply Lubriplate to quill pinion every 90 days.
6. 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.
7. When equipped with mechanical power feed unit, periodically coat the gears with a good open gear lubricant.

DRILL PRESS OPERATIONS

Familiarize yourself with all operating controls before attempting use of this machine.

CONTROLS (see **Figure 5**)

1. The spindle (A) in this machine has a No. 3 Morse Taper.
2. A depth stop rod (B) is provided to control hole depth and to prevent drilling through material into table surfaces.
3. A quill lock (C) is located on the left side of the head and is used to hold quill at any position.
4. The turret handle (D) is used to lower the spindle and quill a total depth of 6"
5. A safety collar (E) is provided to prevent head from falling when locks are released.
6. Starting switch (F) is mounted on the front of drill press head within easy reach of the operator.
7. A speed selection chart (G) is located on the front of the head. This chart is to provide assistance in determining proper drill speed.
8. On all 1200HD models, a knob (I) is used to change speed.
9. On production table models, binder (J) locks the table to the column and handle (H) is used to raise and lower the table.
10. The model 1200HD is provided with an AC-inverter (K) which is pre-programmed from the factory and requires no changing or adjustment.

OPERATING TIPS

1. Determine drill size, inspect for sharpness, insert and lock securely in chuck or Morse taper.
2. Arrange at this point to protect table surface from drill breakthrough. A piece of scrap material under the workpiece will prevent marring table surface and eliminate splintering at breakthrough point. Lock table securely to prevent movement.
3. Prevent the work from being torn from operator's hand, by always securing the workpiece, jig, fixture, or holding device to table by clamping or blocking on the table. DO NOT use the column as a stop. Clamp all light workpieces, jigs, fixtures, or holding devices to the table to prevent them from being picked up as the quill returns.
4. Select the proper RPM for the tool being used, the material being machined, the operations to be performed, and other conditions as indicated. (See Tables 1; 2, and 3 on pages 26 thru 29 for recommendations.) If drill press is the step pulley type, raise door and set drive belt in proper ration position. If the machine is a variable speed model, turn machine on the turn control cam to proper speed. (NEVER attempt speed adjustment of variable speed machines unless machine is running.) Turn machine off.

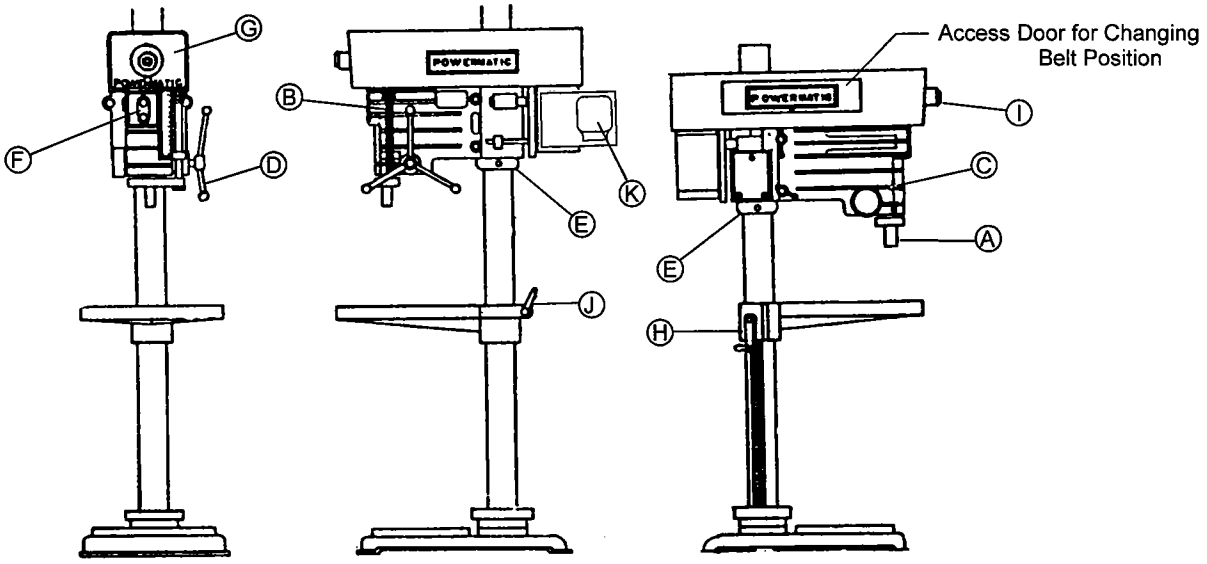


FIGURE 5

5. Set depth stop for desired hole depth. Fine adjustment is made by turning the fine adjustment collar directly under pointer on depth rod. Use upper jam nut to lock stop setting position.
6. Start coolant, if coolant is being used.
7. Turn spindle on and begin drilling operation. As the breakthrough point is reached, always slow feed rate down slightly to assist in elimination of burring underside of workpiece and to help prevent a sudden break through which can cause the drill to grab and pull the workpiece free of its clamping device.
8. Perform all operations with a minimum extension of the quill. Adjust table or head position rather than using excessive quill travel.
9. On tilting table models be sure to block the part or holding fixture from sliding off the table when it is used tilted at an angle. In addition, be sure the table is clamped.

INVERTER DRIVE SYSTEM

The 1200HD Drill Press utilizes the latest technology in A.C. inverter drives to provide the infinitely variable spindle speeds. The inverter controls the speed of the motor by varying the frequency of the voltage supplied to the motor. The inverter provides an acceleration ramp that eliminates the shock of normal across-the-line starting. Also a braking feature eliminates long coasting periods when the drill press is turned off.

The 2 HP Baldor motor is wound with "Inverter Spike Resistant" magnet wire to give extended motor life when used with inverter drives. The motor is also specially balanced to reduce noise and minimize vibration.

The A.C. Inverter does not require any programming; it is pre-programmed from the factory. The buttons on the face of the inverter should NEVER be pushed at anytime. Use ONLY the controls on the front of the head assembly.

POWER CONNECTION - ELECTRONIC VARIABLE SPEED

The 1200HD Drill Press will operate on single or three phase 230V or 460V, depending on inverter, without any adjustments or programming. For single phase power connect hot leads to R and S, and for three phase power connect hot leads to R, S and T as shown in the wiring diagram on page 30. Remember to always connect the ground lead.

Before connecting to the power source make sure the ON/OFF switch is in the OFF position and turn the speed dial counterclockwise. If the switch is in the ON position when the power is connected, the inverter will trip out. If this happens, disconnect power, turn switch OFF, wait thirty seconds and then reconnect power.

NOTE: If there is a power outage while operating the 1200HD Drill Press, turn the switch to the OFF position, disconnect power source, wait thirty seconds then reconnect power source and resume normal operation.

FOOT SWITCH OPERATION (OPTIONAL)

The optional foot switch (**Figure 6**) is used only for reversing the spindle in tapping operations. Before using the foot switch, place the control switch in the FWD position. When performing a tapping operation and the tap needs to be reversed or retracted out of a hole, press the foot switch and hold it down. The spindle will ramp down and immediately reverse direction. Once the tap has completely exited or retracted from the hole, release the foot switch and the spindle will ramp down and immediately return to forward rotation.

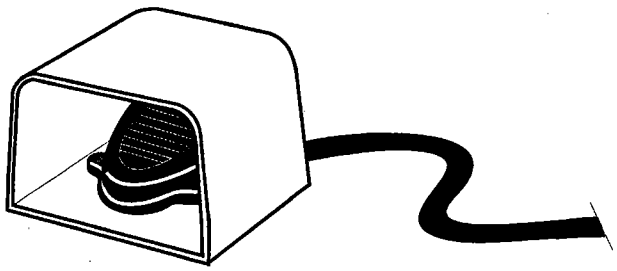
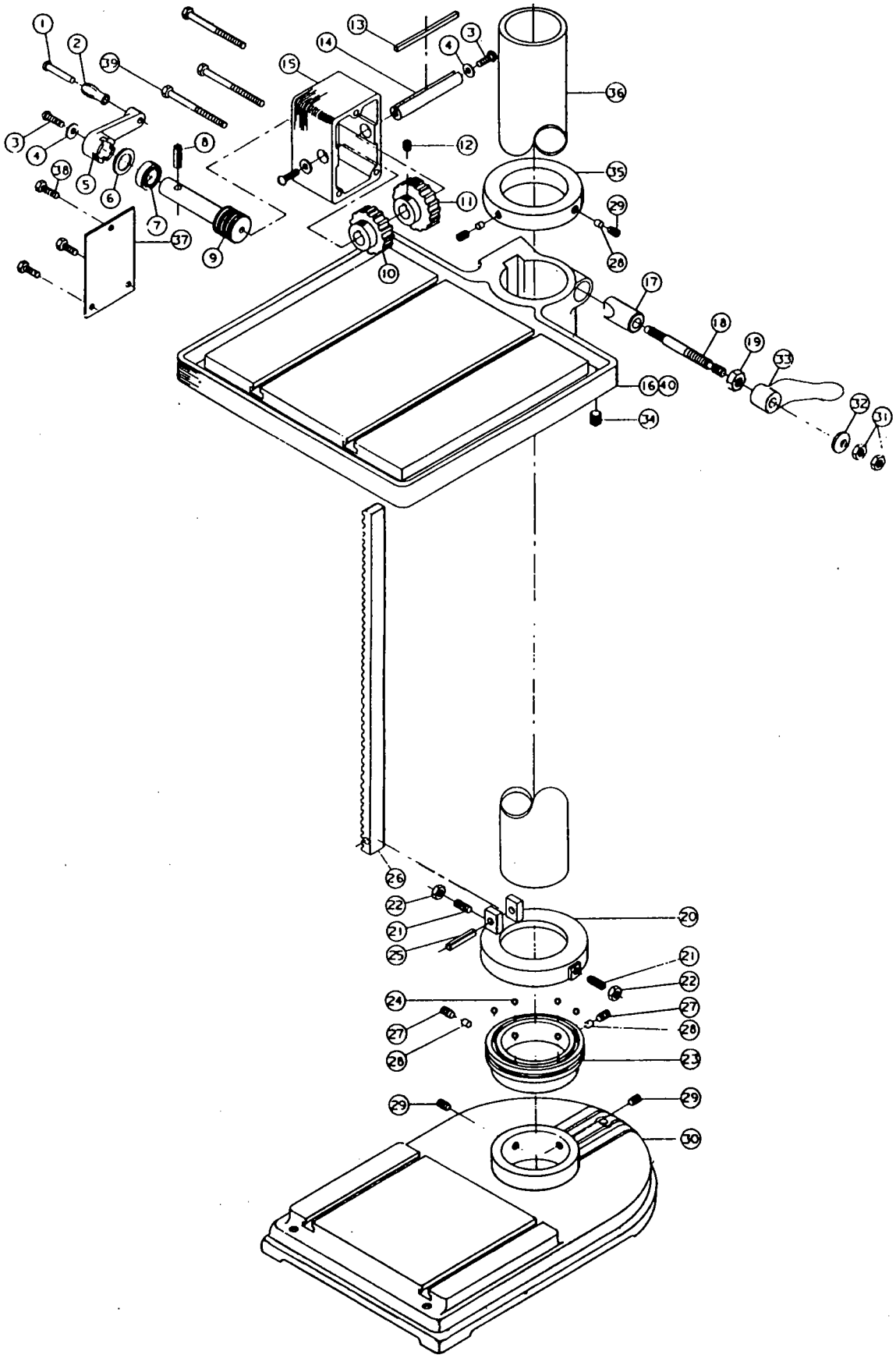


FIGURE 6

PARTS LIST: **Production & Tilting Table** with Table Raising Rack (1200HD)

No.	Part No.	Description	Quantity
	2298013	Elevating Gear Box Housing Assembly (Items 1 thru 15)	1
1	6624006	Groove Pin, 1/4 x 2-3/4 Lg.	
2	3268201	Nylon Handle	1
3	6715132	Round Head Screw, 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	Socket Set Screw, 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 Assembly (Items 16 thru 19)	1
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 Assembly (Items 20 thru 26)	1
20	3096040	Bearing Elevating Rack Collar	1
21	6715118	Half Dog Point Socket Set Screw, 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 Point Socket Set Screw, 1/2-13 x 3/4	2
28	3598023	Protector Plug, 7/16 x 3/16	4
29	6718055	Cup Point Socket Set Screw, 1/2-13 x 1/2	4
30	3042037	Drill Press Base	1
31	6517006	Hex Jam Nut, 7/16-14	2
32	3838008	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	6716038	Hex Head Cap Screw, 3/8-16 x 1/2	3
39	6716042	Hex Head Cap Screw, 3/8-16 x 3	3
40	2797028	Tilting Table Assembly (not shown)	1

Production & Tilting Table with TABLE RAISING RACK



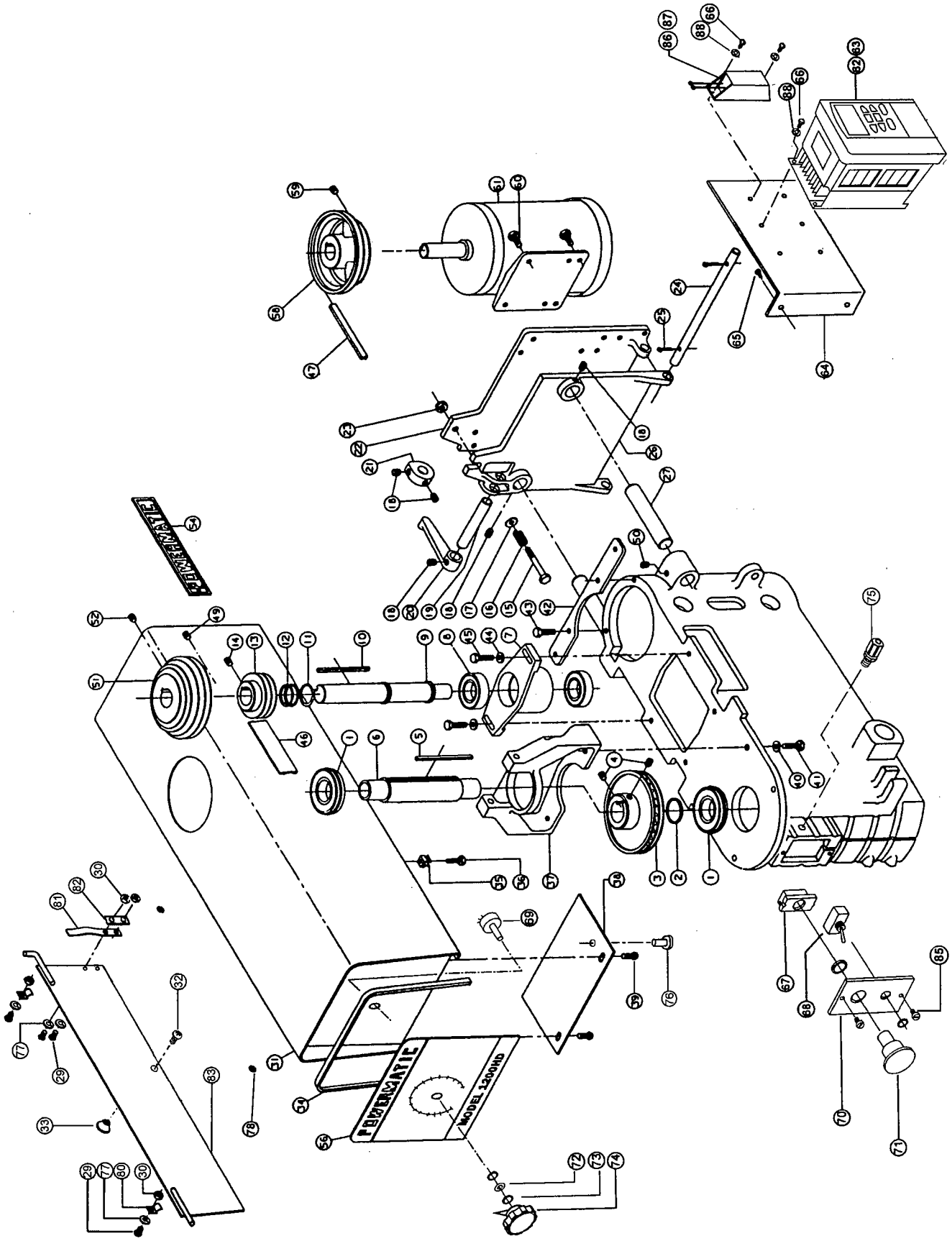
PARTS LIST: **Electronic Variable Speed Assembly** (1200HD)

No.	Part No.	Description	Quantity
	2387006	Step Cone Sheave Kit Assembly (Items 1 thru 52)	1
	2144004	Drive Spline Sheave Assembly (Items 1 thru 6)	1
1	6060054	Ball Bearing, NTN	2
3	6807136	Sheave - HTD Spindle	1
4	6715013	Socket Set Screw, 5/16-18 x 3/8	2
5	3388102	Square Key, 3/8 x 1-3/4	1
6	3749133	Spline Drive Shaft	1
	2298005	Countershaft Housing Assembly (Items 7 thru 14)	1
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	Steel Arbor Spacer, 1 x 1-1/2 x .062	1
13	6807137	Sheave - HTD Countershaft	1
14	6714004	Socket Set Screw, 1/4-20 x 1/4	1
	2042021	Step Cone Tilting Motor Base (Items 15 thru 27)	1
15	6716114	Hex Head Cap Screw, 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 Point Socket Set Screw, 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	1
26	3042056	Motor Mounting Base	1
27	3670032	Tilting Motor Base Rod	2
	2250061	Step Cone Belt Guard Assembly (Items 28 thru 31)	1
28	2136034	Step Cone Door Guard Assembly (Weldment)	1
29	6710034	Round Head Screw, #10-24 x 1/2	4
30	6510001	Hex Nut, No. 10-24	4
31	2250165	Guard Assembly	1
32	6760046	Round Head Screw, #10-32 x 3/8	1
33	6430017	Knob	1
34	6458002	Rubber Molding	1
35	6514014	Self Retaining Nut	1
36	6714127	Hex Head Cap Screw, 1/4-20 x 1/2	1
37	3063246	Upper Spindle Bearing Bracket	1
38	3595271	Safety Plate	1
39	6714154	Round Head Screw, 1/4-20 x 1/4	2
40	6861200	Lock Washer, 5/16	2
41	6715032	Hex Head Screw, 5/16-18 x 1	2
42	3767211	Guard Mounting Strap	2
43	6715033	Hex Head Cap Screw, 5/16-18 x 1/2	4
44	6861401	Flat Washer, 7/16	2
45	6717017	Hex Head Cap Screw, 7/16-14 x 1	2
46	6077230	Belt, HTD 720-8M-3	10
47	6077229	V-Motor Belt, 3VX450	1
49	6714004	Socket Set Screw, 1/4-20 x 1/4	1
50	6716009	Cup Point Socket Set Screw, 3/8-16 x 1/2	2
51	3719191	Step Cone Sheave	1

PARTS LIST: **Electronic Variable Speed Assembly** (1200HD)

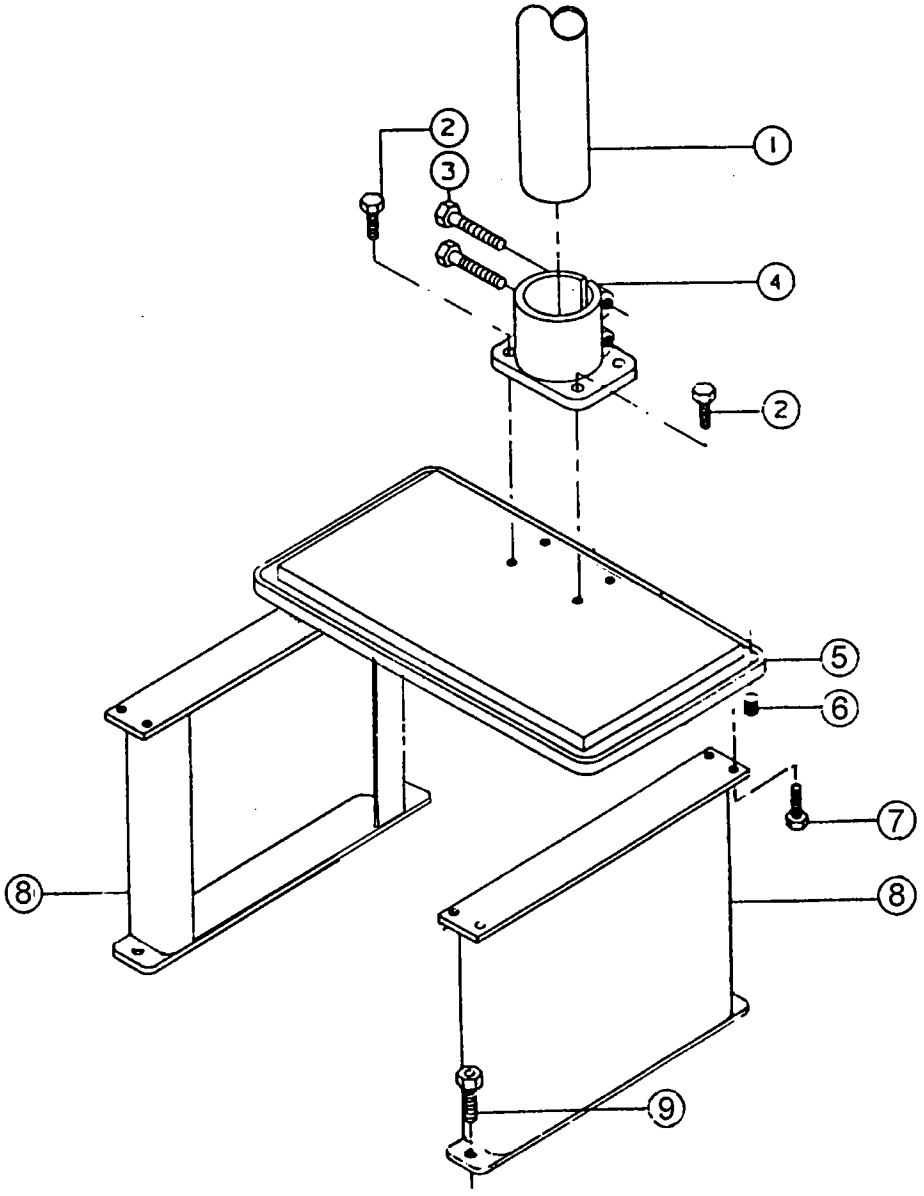
No.	Part No.	Description	Quantity
52	6715016	Cup Point Socket Set Screw, 5/16-18 x 5/16	1
54	3312343	Powermatic Logo Label (one not shown)	2
55	3408259	Warning Label (not shown)	1
56	3330368	Instruction Plate 1200HD	1
58	3719190	Step Cone Sheave	1
59	6715016	Cup Point Socket Set Screw, 5/16-18 x 5/16	1
60	6715180	Hex Washer Head Cap Screw, 5/16-18 x 5/8	4
61	6471603	Electric Motor, 2 HP, 3 Ph, 1800 RPM, 230/460V, 145T, TEFC	1
62	6399016	Inverter, 230V	1
63	6399014	Inverter, 460V	1
64	3064737	Inverter Mounting Bracket	1
65	6716038	Screw, 3/8	2
66	6760092	Screw, #10-32 x 1/2	6
67	6083021	Contact Block	1
68	6821492	Fwd/Rev Switch	1
69	6643000	Control Pot	1
70	3578353	Control Panel	1
71	6821491	Push/Pull Switch	1
72	6860800	Washer	1
73	6601000	"O" Ring	2
74	6430054	Control Panel Knob	1
75	6095272	Strain Relief Connector Bushing	1
76	6095271	Strain Relief Bushing	1
77	6860802	Lock Washer, #10	2
78	4709259	Rubber Bumper	2
79	6861100	Lock Washer, 1/4	2
80	6122038	Clamp	2
81	3755258	Spring	1
82	3595381	Plate (Stiffening)	2
84	3408211	Danger Label (not shown)	1
85	6706035	Round Head Machine Screw, #6-32 x 1/4	2
86	6295733	Brake Resistor (230V)	1
87	6661023	Brake Resistor (460V)	1
88	6860802	Lock Washer #10	6

Electronic Variable Speed Assembly (1200HD)



PARTS LIST: **Spindle Table, Legs & Column Mounting Bracket Assy.** (1200HD)

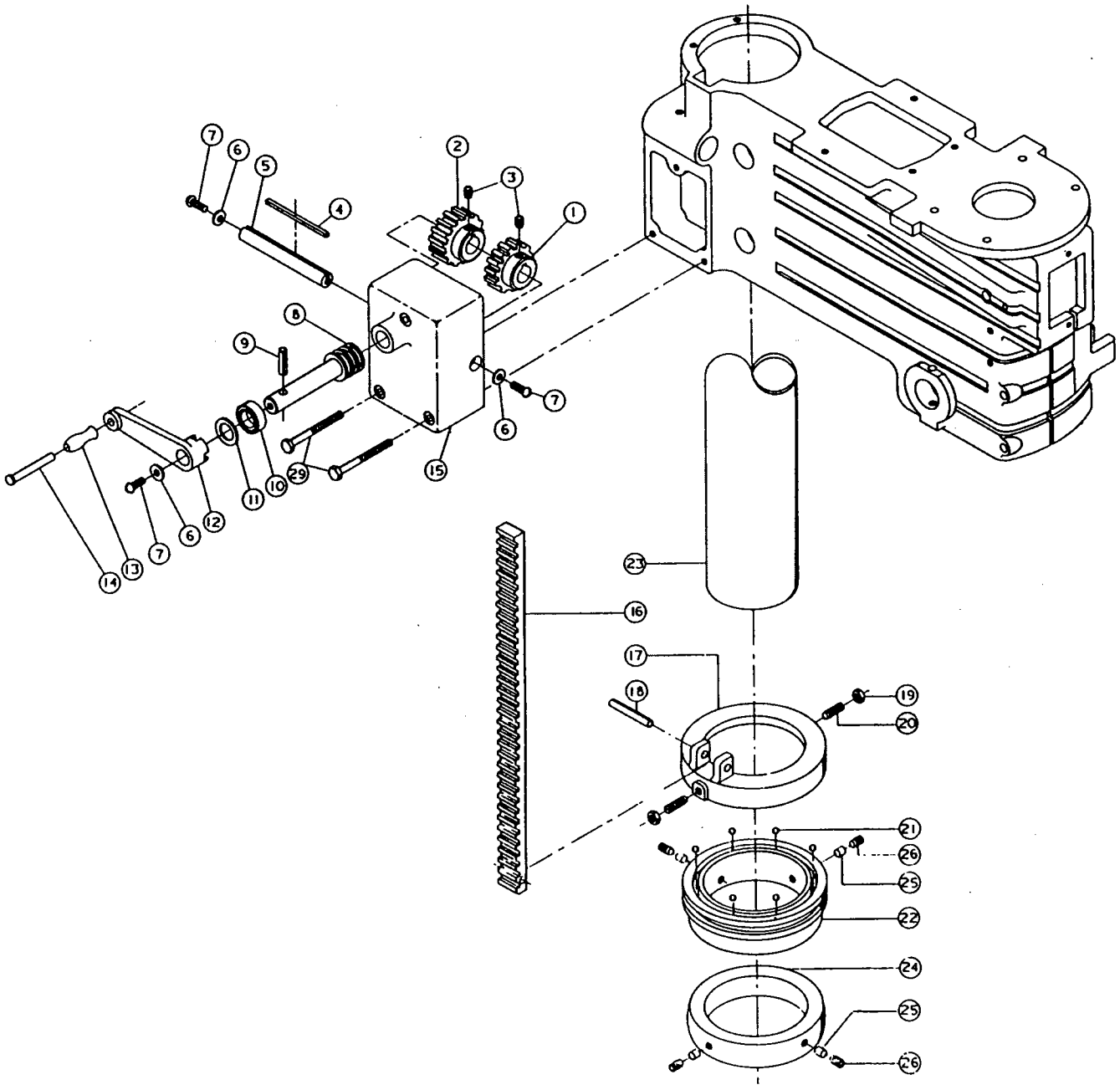
No.	Part No.	Description	Quantity
1	3098005	Bench Model Column for Spindle Table	1
2	6718009	Hex Head Cap Screw, for Spindle Table	4
3	6718025	Hex Head Cap Screw, 1/2-13 x 2-1/2 for Spindle Table	2
4	3064078	Column Mounting Bracket for Spindle Table	1
5	3797015	1 Spindle Table with T-Slots	1
6	6638004	Pipe Plug, 1/2-14 NPT	1
7	6718015	Hex Head Cap Screw, 1/2-13 x 1 for Spindle Table	4
8	2423003	Table End Leg Assembly (Weldment) for Spindle Table	2
9	3694006	Table Leveling Hex Head Bolt for Spindle Table	4



PARTS LIST: **Head Raising Assembly** (1200HD)

No.	Part No.	Description	Quantity
	2298016	Head Raising Mechanism (Items 1 thru 15) 1 Spindle Table	1
1	3237002	Gear	1
2	3237001	Gear	1
3	6714004	Socket Set Screw, 1/4-20 x 1/4	2
4	3388015	Square 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 Head Screw, 5/16-18 x 1/2	3
8	3237013	Pinion Gear	1
9	6626040	Spring Pin, 1/4-1-1/4	1
10	6064001	Thrust Bearing, Nice 605	1
11	6861602	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 2-3/4	1
15	3298018	Elevating Gear Box Housing	1
	2645001	Head Raising Rack Assembly (Items 16 thru 22) 1 Spindle Table	1
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 Point Socket Set Screw, 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	1
24	3096039	Column Collar, 1 Spindle	1
25	3598023	Protector Plug, 7/16 x 3/16, 1 Spindle	2
26	6718055	Cup Point Socket Set Screw, 1/2-13 x 1/2, 1 Spindle	2
29	6716042	Hex Head Cap Screw, 3/8-16 x 3, 1 Spindle	3

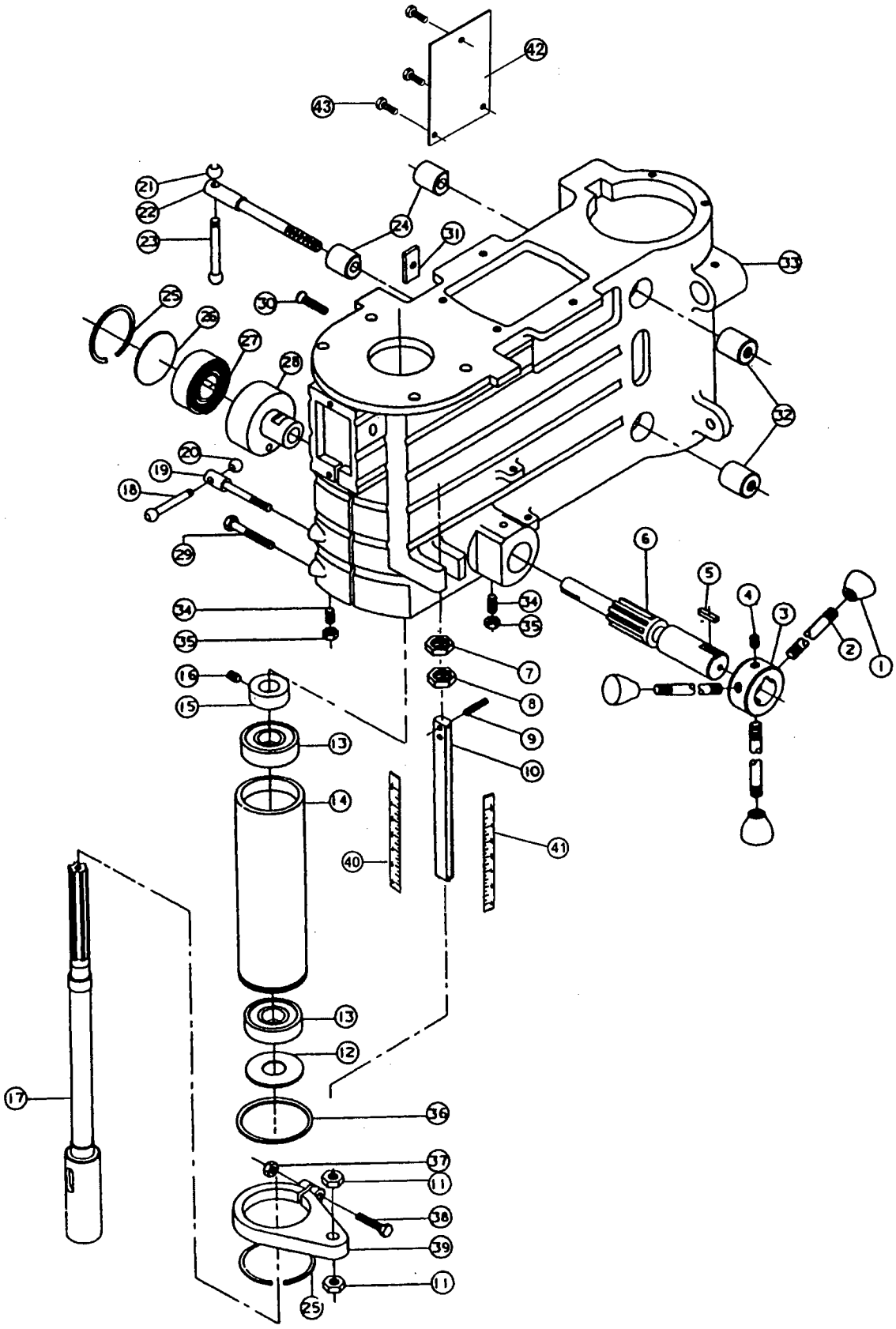
Head Raising Assembly (1200HD)



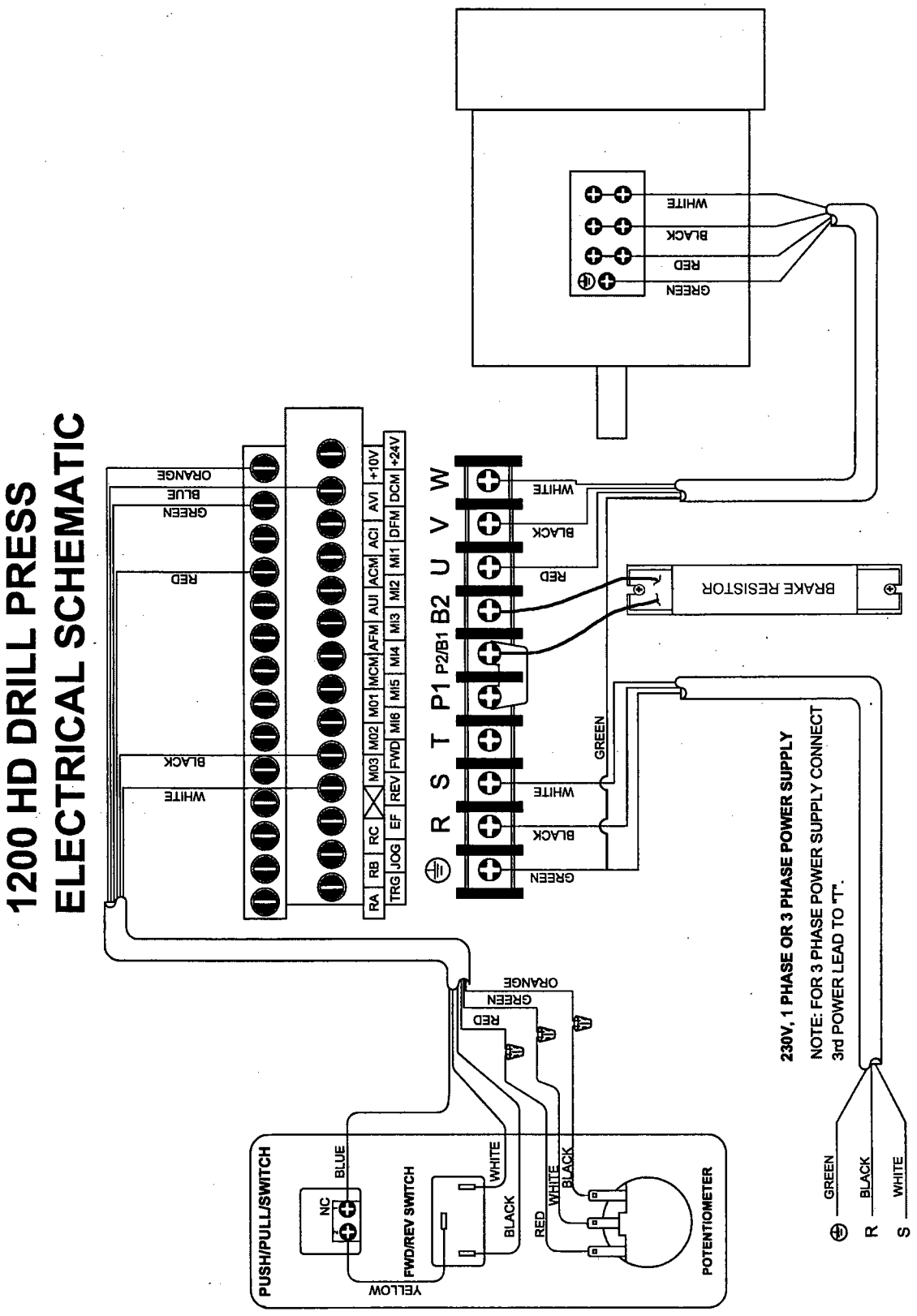
PARTS LIST: **Head Assembly** (1200HD)

No.	Part No.	Description	Quantity
	2268006	Turret Handle Assembly (Items 1 and 2)	1
1	3406206	Phenolic Knob	3
2	3670025	Knob Handle	3
	2277016	Head Assembly (Items 3 thru 39)	1
	2686003	Pinion Hub Assembly (Items 3 thru 6)	1
3	3301003	Turret Hub	1
4	6715016	Cup Point Socket Screw, 5/16-18 x 5/16	1
5	3388004	Key, 3/16 x 3/16 x 1	1
6	3586026	Quill Operating Pinion	1
	2670026	Depth Adjustment Rod Assembly (Items 7 thru 11, 40 & 41)	1
7	3526094	Depth Adjustment Lock Nut-Plain	1
8	3526093	Graduated Depth Adjustment Nut	1
9	6626035	Spring Pin, 3/16 x 5/8	1
10	3670102	Depth Adjustment Rod	1
11	3528005	Hex Nut	2
	2640019	No. 3 Mounting Quill Assembly (Items 12 thru 17)	1
12	3078006	Quill Bearing Cap	1
13	6060014	Ball Bearing, SKF No. 6206 2RS	2
14	3640017	Sliding Quill	1
15	3096214	Spindle Collar	1
16	6715015	Socket Set Cup Point Screw, 5/16-18 x 1/4	1
17	3749110	No. 3 Mounting Spindle	1
	2695009	Quill Locking Screw Assembly (Items 18 thru 20)	1
18	3268002	Handle	1
19	3695010	Quill Lock Screw	1
20	3406016	Knob	1
	2695015	Head Locking Screw Assembly (Items 21 thru 23)	1
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	1
26	3104010	Spring Cover	1
27	6813026	Clock Spring	1
28	3298280	Spring Housing	1
29	6716114	Hex Head Screw, 3/8-16 x 2-3/4	1
30	6714199	Round Head Screw, 1/4-20 x 1-1/4	1
31	3092012	Switch Wire Clamp	1
32	3448015	Threaded Head Locking Sleeve	2
33	3277013	Head	1
34	6718038	Half Dog Point Socket Set Screw, 1/2-13 x 1-1/4	2
35	6518008	Hex Nut, 1/2-13	2
36	6804005	"O" Ring Seal, Rubber	1
37	6515001	Hex Nut, 5/16-18	1
38	6715044	Hex Head Screw, 5/16-18 x 2	1
39	3936021	Quill Yoke	1
40	3119012	Inches Scale Decal	1
41	3119013	Metric Scale Decal	1
42	3104014	Head & Table Cover, 1 Spindle	1
43	6716038	Hex Head Cap Screw, 3/8-16 x 1/2, 1 Spindle	3

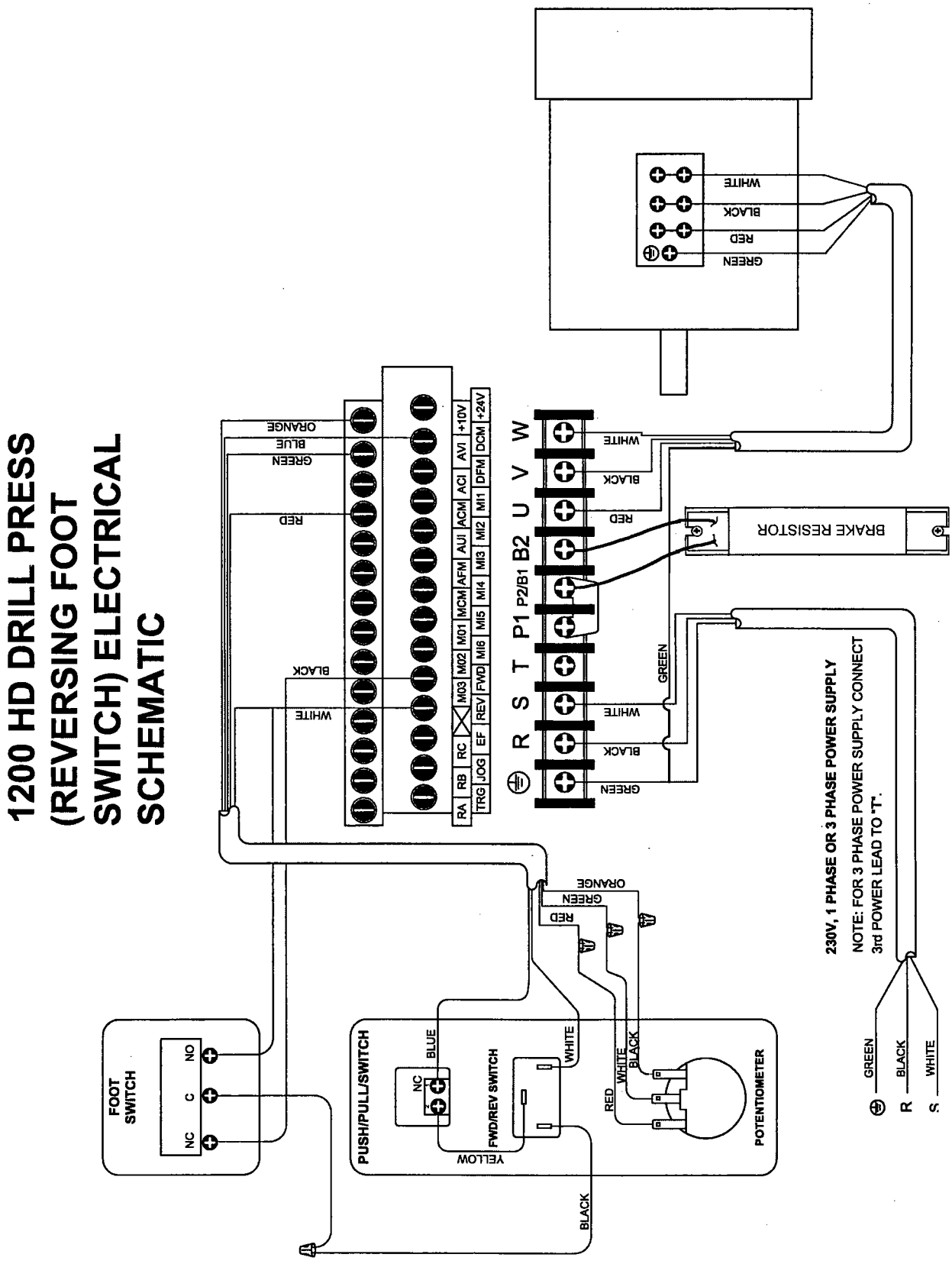
Head Assembly (1200HD)



ELECTRICAL SCHEMATIC 1200HD



ELECTRICAL SCHEMATIC 1200HD (when used with Reversing Foot Switch)



Trouble-Shooting for Model 1200HD Drill Press

PROBLEM	POSSIBLE CAUSE	SOLUTION
Excessive vibration.	1. Improper belt tension. 2. Uneven belt wear (hard spots). 3. Motor or spindle pulley out-of-balance. 4. Bad motor.	1. Adjust belt tension. 2. Replace belt. 3. Balance or repair problem pulley 4. Replace motor.
Motor stalls	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.	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.
Noisy operation.	1. Excessive vibration. 2. Improper quill adjustment. 3. Noisy spline. 4. Noisy motor.	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.
Drill or tool heats up or burns work.	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).	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.
Drill leads off.	1. No drill spot. 2. Cutting lips on drill off center. 3. Quill loose in head. 4. Bearing play.	1. Center punch or center drill work-piece. 2. Regrind drill. 3. Tighten quill (refer to quill adjustment). 4. Check bearings and reseat or replace if necessary.
Excessive drill runout or wobble.	1. Bent drill. 2. Bearing play. 3. Drill not seated properly in chuck.	1. Replace drill. Do not attempt to straighten. 2. Replace or reseat bearings. 3. Loosen, reseat and tighten chuck.
Work or Fixture comes	1. Failure to clamp workpiece or work holding device to table.	1. Clamp workpiece or work holding device to table surface.

TABLE 1A: DRILLING FEEDS - SPEED - HORSEPOWER REQUIRED

SIZE OF DRILL	FEED PER REVOLU-TION	BRONZE BRASS	COPPER	ALUMINUM	MALLE-ABLETION	CAST IRON			STEEL CASTING
						MACHINE SURFACE	SCALE SURFACE	DEEP HOLES	
FT. PER MIN.		250 FT.	150 FT.	300 FT.	80 FT.	100 FT.	80 FT.	80 FT.	40 FT.
INCHES	INCHES	RPM	RPM	RPM	RPM	RPM	RPM	RPM	RPM
1/16	0.003	15279	9167	18320	4889	6111	4889	4889	2445
3/32	0.0035	10186	6111	12212	3262	4077	3262	3262	1628
1/8	0.004	7639	4583	9160	2445	3056	2445	2445	1222
5/32	0.0045	6111	3667	7328	1956	2445	1956	1956	976
3/16	0.005	5093	3056	6106	1630	2037	1630	1630	815
7/32	0.0055	4365	2619	5234	1398	1747	1398	1398	698
1/4	0.006	3820	2292	4575	1222	1528	1222	1222	611
9/32	0.0065	3395	2037	4071	1087	1359	1087	1087	542
5/16	0.007	3056	1833	3660	978	1222	978	978	489
11/32	0.0075	2778	1667	3330	889	1111	889	889	444
3/8	0.008	2546	1528	3050	815	1019	815	815	407
13/32	0.0085	2350	1410	2818	752	940	752	752	376
7/16	0.009	2183	1310	2614	698	873	698	698	349
15/32	0.0095	2037	1222	2442	652	815	652	652	326
1/2	0.01	1910	1146	2287	611	764	611	611	306
17/32	0.0102	1798	1079	2157	575	719	575	575	288
9/16	0.0105	1698	1019	2035	543	679	543	543	271
19/32	0.0107	1608	965	1930	515	643	515	515	257
5/8	0.011	1528	917	1830	489	611	489	489	244
21/32	0.0112	1456	873	1746	466	582	466	466	233
11/16	0.0115	1389	833	1665	444	556	444	444	222
23/32	0.0117	1329	797	1594	425	532	425	425	213
3/4	0.012	1273	764	1525	407	509	407	407	204
25/32	0.0122	1222	733	1467	391	489	391	391	196
13/16	0.0125	1175	705	1409	376	470	376	376	188
7/8	0.013	1091	655	1307	349	436	349	349	175
15/16	0.0135	1019	611	1221	326	407	326	326	163
1	0.014	955	573	1143	306	382	306	306	153

TABLE 1B: DRILLING FEEDS - SPEED - HORSEPOWER REQUIRED

SIZE OF DRILL	FEED PER REVOLU-TION	STEEL					CAST IRON		STEEL	
		VERY HARD BRINELL 402-444	HARD BRINELL 302-387	MEDIUM BRINELL 202-293	SOFT BRINELL 101-196	DEAD SOFT BRINELL UNDER 100	CUTTING HP	FEED HP	CUTTING HP	FEED HP
FT. PER MIN.		40 FT.	50 FT.	60 FT.	70 FT.	80 FT.				
INCHES	INCHES	RPM	RPM	RPM	RPM	RPM	HP	HP	HP	HP
1/16	0.003	2445	3056	3667	4278	4889	0.07	0.0043	0.18	0.0076
3/32	0.0035	1628	2039	2446	2852	3262	0.11	0.0044	0.27	0.0079
1/8	0.004	1222	1528	1833	2139	2445	0.14	0.0045	0.36	0.0081
5/32	0.0045	976	1223	1467	1711	1956	0.18	0.0046	0.45	0.0084
3/16	0.005	815	1019	1222	1426	1630	0.22	0.0047	0.54	0.0087
7/32	0.0055	698	874	1048	1222	1398	0.25	0.0049	0.63	0.0089
1/4	0.006	611	764	917	1070	1222	0.29	0.005	0.72	0.0092
9/32	0.0065	542	680	815	950	1087	0.33	0.0051	0.81	0.0095
5/16	0.007	489	611	733	856	978	0.37	0.0053	0.89	0.0097
11/32	0.0075	444	555	667	778	889	0.4	0.0054	0.98	0.01
3/8	0.008	407	509	611	713	815	0.44	0.0055	1.07	0.0102
13/32	0.0085	376	470	564	658	752	0.47	0.0056	1.16	0.0104
7/16	0.009	349	437	524	611	698	0.5	0.0057	1.25	0.0106
15/32	0.0095	326	408	489	570	652	0.54	0.0058	1.34	0.0107
1/2	0.01	306	382	458	535	611	0.57	0.0059	1.43	0.0109
17/32	0.0102	288	360	431	503	575	0.6	0.006	1.51	0.0111
9/16	0.0105	271	340	407	475	543	0.64	0.0061	1.6	0.0112
19/32	0.0107	257	322	382	450	515	0.68	0.0062	1.69	0.0114
5/8	0.011	244	306	367	428	489	0.72	0.00624	1.78	0.0115
21/32	0.0112	233	291	349	407	466	0.75	0.0063	1.87	0.0117
11/16	0.0115	222	278	333	389	444	0.79	0.0064	1.96	0.0118
23/32	0.0117	213	266	319	372	425	0.83	0.0065	2.05	0.012
3/4	0.012	204	255	306	357	407	0.87	0.0066	2.14	0.0121
25/32	0.0122	196	245	293	342	391	0.9	0.00665	2.22	0.0122
13/16	0.0125	188	235	282	329	376	0.94	0.0067	2.31	0.0123
7/8	0.013	175	218	262	306	349	1.01	0.0068	2.49	0.0126
15/16	0.0135	163	204	244	285	326	1.09	0.0069	2.67	0.0128
1	0.014	153	191	229	267	306	1.16	0.007	2.85	0.013

TABLE 2: REAMING SPEEDS - HIGH SPEED STEEL TOOLS
MATERIALS - RPM

	BRASS	BRONZE	MALLE-ABLE IRON	CAST IRON CLASS 30	STEEL CASTING	STEEL				
						VERY HARD BRINELL 400-425	HARD BRINELL 300-375	MEDIUM BRINELL 225-300	SOFT BRINELL 100-200	DEAD SOFT BRINELL UNDER 100
1/8	0.004	1222	1528	1833	2139	2445	0.14	0.0045	0.36	0.0081
1/4	0.006	611	764	917	1070	1222	0.29	0.005	0.72	0.0092
3/8	0.008	407	509	611	713	815	0.44	0.0055	1.07	0.0102
1/2	0.01	306	382	458	535	611	0.57	0.0059	1.43	0.0109
5/8	0.011	244	306	367	428	489	0.72	0.00624	1.78	0.0115
3/4	0.012	204	255	306	357	407	0.87	0.0066	2.14	0.0121
7/8	0.013	175	218	262	306	349	1.01	0.0068	2.49	0.0126
1	0.014	153	191	229	267	306	1.16	0.007	2.85	0.013
NOTE: For Carbide Reamers Use 3 Times Charts Speeds										
Counterboring & Spotfacing - High Speed Steel Tools - Surface Ft./Min.										
	325	100	50	50	40	30	45	55	65	110
NOTE: For Carbide Spotfacers Use 4 Times Chart Values										

TABLE 3: TAPPING AND THREADING FORMULA FOR CALCULATING HORSEPOWER REQUIREMENTS

PPV = Power Pitch Value
SFM = Surface Feet Per Minute
M = Material Factor
TD = Tool Dullness Factor
HP = Horsepower
RPM = Revolutions Per Minute

HP = PPV x SFM x M x TD

TAPPING AND THREADING FACTORS CHART	
Threads per inch	Power Pitch Value* PPV
32	0.002
27	0.0034
24	0.004
20	0.006
18	0.007
16	0.009
14	0.011
13	0.012
12	0.014
11-1/2	0.015
11	0.016
10	0.02
9	0.025
8	0.03
7	0.035
6	0.04
Multiply PPV by 2.2 for Double or Taper Pipe Threads	
TD - Use (1.5 Factor) for Tool Dullness	

MATERIAL AND SPEED FACTORS CHART		
MATERIAL	FACTOR - M	SPEED - S.F.M.
Aluminum	0.5	100
Bakelite	0.6	75
Brass	0.6	90
Bronze	0.6	50
Bronze Mang.	1	40
Copper	0.5	80
Alum. Die Cast	0.6	80
Fiber	0.5	75
Zinc Die Cast	0.6	80
Cast Iron	0.6	70
Malleable Iron	0.6	45
Magnesium	0.5	100
Steel Cast	1.4	35
Steel Fr. Mach.	1	50
Steel Chromium	1.7	30
Steel Alloy	1.7	25
Steel Stainless	1.7	20
REVOLUTIONS PER MINUTE CALCULATION		
R.P.M. = 3.82 X S.F.M. + Dia.		

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 stock number of the part(s) required from your parts manual will also expedite your order.

Phone No.: (800) 274-6848
Fax No. (800) 274-6840
If you are calling from Canada, please call 800-238-4746

E-mail: powermatic@wmhtoolgroup.com
Website: www.powermatic.com

POWERMATIC®

WMH Tool Group
P.O. Box 1349
Auburn, WA 98071-1349
Phone: (800) 274-6848
Fax: (800) 274-6840
E-mail: powermatic@wmhtoolgroup.com
Website: www.powermatic.com