

OPERATING INSTRUCTIONS AND PARTS LIST

Model 1200-20" Drill Press



For Serial Numbers From 1001 Up



POWERMATIC, COMPANY

A DIVISION OF HOUDAILLE INDUSTRIES, INC.

McMinnville, Tennessee

SAFETY RULES

This 20" Drill Press is one of the safest, best guarded machines available, however, the following safety precautions are necessary for your own personal protection:

1. Remove neckties and finger rings before operation.
2. Roll sleeves inward and remove any loose jackets.
3. Always keep goggles handy.
4. Always clamp work securely—do NOT attempt to hold work being drilled by hand.
5. Pull main switch when servicing machine.
6. Make SURE machine is properly grounded to water pipe, radiator or any convenient metal object.
7. NEVER try to remove loose metal shavings with your hand. Use a long object that will keep hands away from working area.

II. GENERAL SET-UP AND ALIGNMENT

1. RECEIVING

Uncrate and check for shipping damage. Clean all coated and greased surfaces. Read instructions thoroughly. Locate all lubrication points; adjustments; methods of drive.

2. MOUNTING

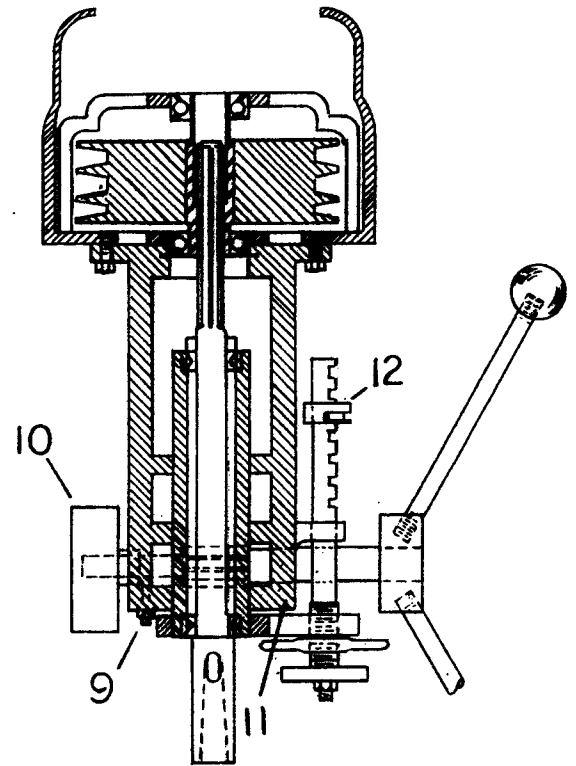
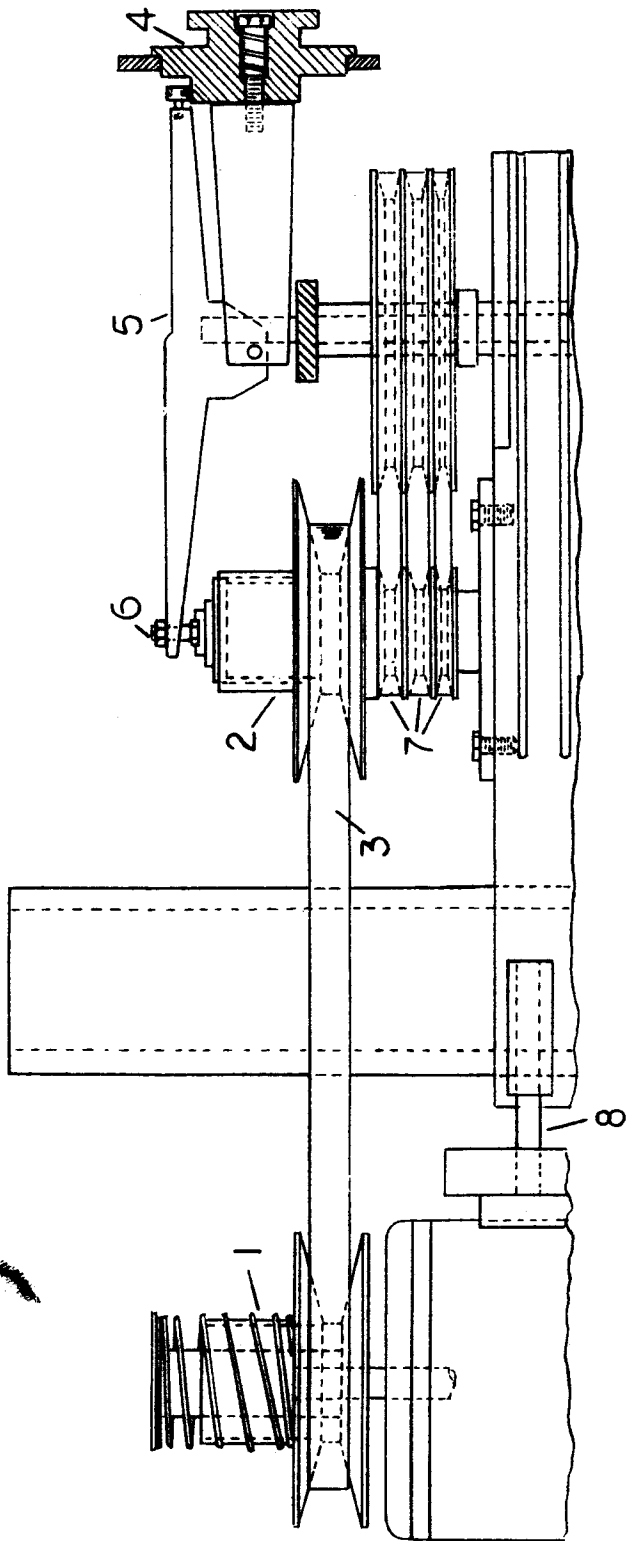
Mount machine securely to solid foundation. Concrete base mounting preferred. Locate in clean, dry and well ventilated building if possible. Motor and electrical connections should be protected when not in operation or if exposed to weather elements.

3. INSPECTION

The above machine requires the minimum amount of attention in service. Periodic or regular inspections are recommended to insure machine is in proper adjustment, positive electrical connections; worn or loose "V" belts or bearings heating or loose.

4. BEFORE OPERATING

Check motor nameplate data or wiring diagram of motor and switch for proper voltage connection before wiring into line. Run motor without load to check the connections and direction of rotation. Always refer to motor nameplate for rotation connections.



OPERATING INSTRUCTIONS

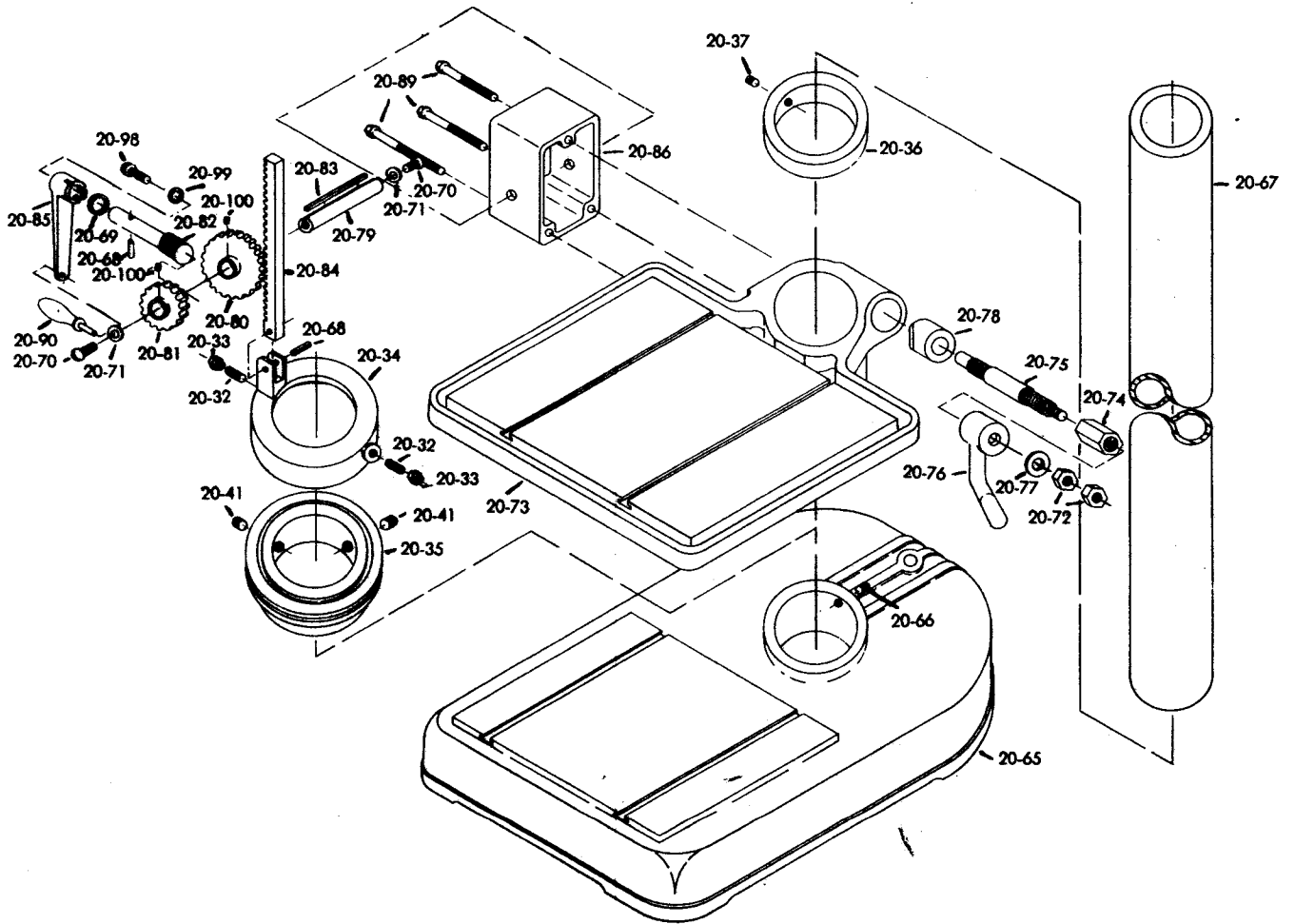
- STEP PULLEY DRIVE:** Mount motor on motor base and slip motor pulley on to shaft with small pulley groove pointing downward. Place drive belt in top groove of driving and driven pulleys and level drive by adjusting motor pulley. Set motor mount bars until belt has enough tension to keep from slipping under load.
- VARIABLE DRIVE ADJUSTMENT:** Variable speed is achieved by means of two variable speed sheaves; one spring loaded and the other operated by a cam. Speed range is changed by turning variable speed cam (4) to the right to increase speed and to the left to decrease speed. When cam (4) is turned to the right, sheave (2) is forced together, overcoming spring tension on sheave (1), causing belt (3) to run on the small diameter of the motor drive sheave and the large diameter of the driven sheave, thus reducing speed. To get maximum speed from the variable speed range, turn speed dial (4) to slowest speed. Adjust screw (6) until belt (3) runs to the outside of driven sheave (2). Adjust motor mount bars (8) until belt (3) runs at the bottom of the taper on driving sheave (1).
- QUILL ASSEMBLY:** To remove and/or replace Quill assembly—Release spring tension on rack pinion by loosening lock screw (9), letting spring housing turn slowly until tension is relieved. Remove pinion lock screw (11). Remove the feed depth stop (12), holding hand under spindle. Remove pinion shaft and the entire quill assembly will slide out of the head. When re-assembling parts, be sure pinion shaft slot fits into the return spring properly. To adjust spring tension on rack pinion, turn spring housing (10) to the left until pinion will return to the "up" position quickly and positively.
- TABLE & HEAD ADJUSTMENT:** Table is raised and lowered by means of a worm gear and rack, supported with a ball bearing thrust ring which permits swiveling of table. To raise the head, loosen head clamp bolts and place a wooden block between table and head. Turn table raising handle. When head has been raised to the proper height, re-set safety collar under head and tighten head clamp bolts.
- LUBRICATION:** Quill bearings are sealed and lubricated for life. Quill and rack pinion shaft should be lubricated with a few drops of SAE 20 oil once a day. When the drill is not in use, column, base and table should be covered with oil.

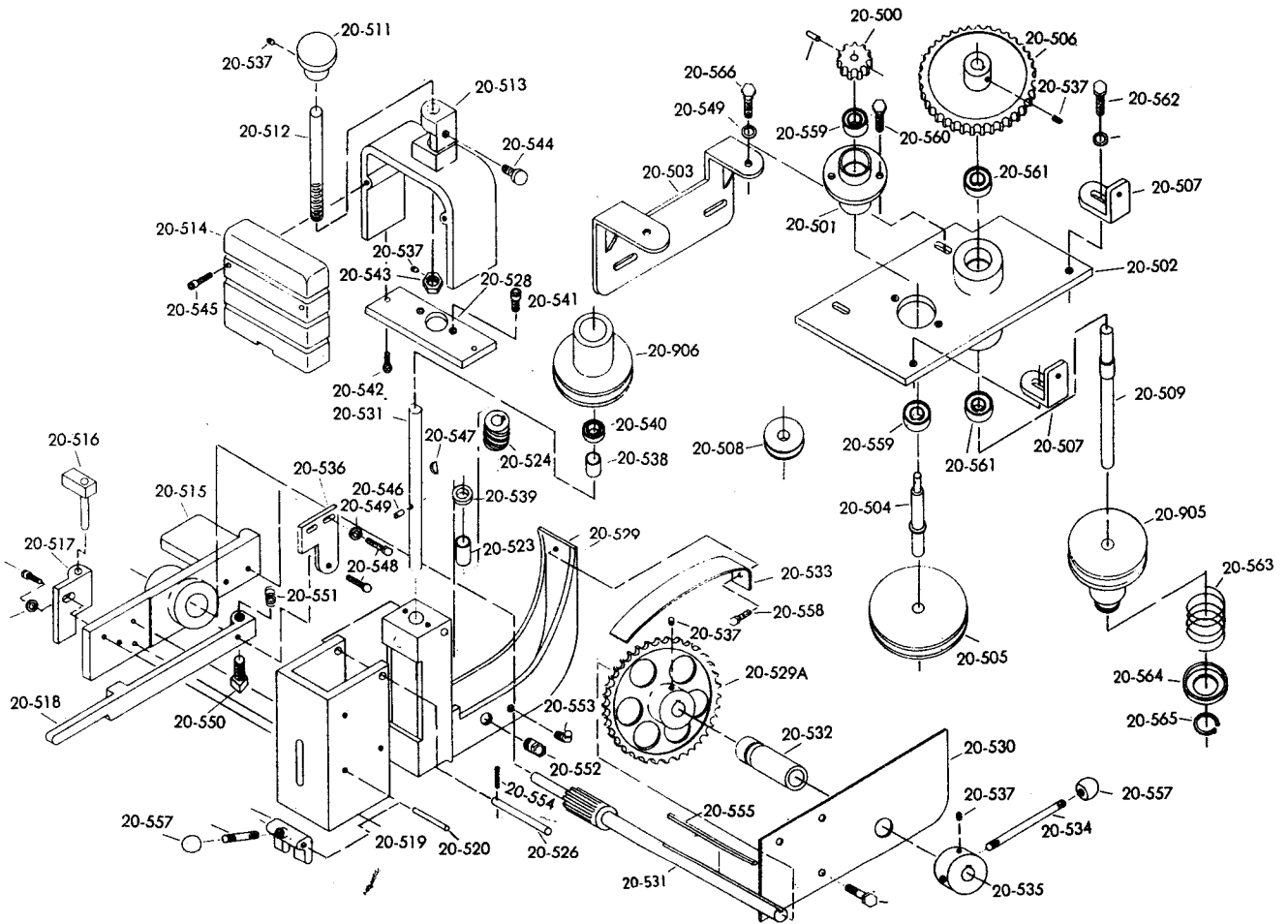
DRILL SPEEDS:

Proper drill speed depends upon the material to be drilled and the diameter of hole. A chart on the front of the drill head gives suggested speeds for different size drills. It is important that drill be properly sharpened for best performance. When placing drill in chuck, be sure the chuck is properly tightened and that the drill runs true in the chuck. If drill press has a morse taper, be sure drill chuck adapter and spindle taper are free from burrs and dirt before inserting adapter.

POWER FEED:

Mechanical feed is used to give a uniform pressure to drill bit as it feeds into work. The feed is driven from the spindle drive pulley and varies with spindle speed. Power feed unit has a variable speed range from .002" to .012" per spindle revolution, and is regulated by a knob mounted on top of the power feed. A graduated gauge indicates feed speed and should usually be operated at .006" to .008". Oil reservoir on worm gear should be filled with SAE 30 oil or equivalent. No other Mechanical feed points require lubrication.





20" DRILL PRESS PARTS LIST

Part Number	Part Description	Quantity Required	Part Number	Part Description	Quantity Required
20-01	Head Casting	1	20-55	Handle, Cam	2
20-02	Quill	1	20-56	Knob, Cam Handle	2
20-03	Bearing, Quill SKF 6206 or equal	2	20-57	Housing, Front Spindle Drive Guard	1
20-04	Cap, Quill Bearing	1	20-58	Guard, Rear Var. Speed (Not Pictured)	1
20-05	Handle, Quill Lock	1	20-59	Bolt, Bearing Mounting 5/16"-18-NC	1
20-06	Pulley, 3 Groove, Spindle Drive	1	20-60	Bearing, Variable Speed Shift Fork	1
20-07	Spindle, Drive Shaft	1	20-61	Fork, Variable Speed Shift	1
20-08	Switch, Stop & Start	1	20-62	Screw, Rear Variable Speed Guard 5/16"-18NC (Not Pictured)	2
20-09	Screw, Switch Mounting	2	20-63	Lock Ring, Fork Shift Pin	2
20-10	Spindle, No. 3 Morse Taper	1	20-64	Pin, Fork Shift	1
20-10A	Spindle, No. 2 Morse Taper	1	20-65	Base, Drill Press	1
20-11	Shaft, Variable Speed Drive	1	20-66	Set Screw, Base 1/2"-13-NC	1
20-12	Key, Variable Speed Drive	1	20-67	Column, Drill Press	1
20-13	Knob, Depth Adjusting	1	20-68	Drive Pin, Worm & Thrust Bearing	2
20-14	Housing, Variable Speed Shaft	1	20-69	Spacer, Worm	1
20-15	Block, Depth Adjusting	1	20-70	Screw, Elevator Gear Shaft	2
20-15A	Clamp, Switch Wire (Not Pictured)	1	20-71	Washer, Elevating Gear Shaft	2
20-16	Pin, Depth Adjusting Block	1	20-72	Nut, Lock, Table Locking Stud	2
20-17	Finger, Depth Adjusting Block	1	20-73	Table	1
20-18	Spring, Finger	1	20-74	Nut, Table Stud	1
20-19	Star Nut, Stop Rod Lock	1	20-75	Stud, Table Locking	1
20-20	Nut, Depth Adjusting Knob Lock	1	20-76	Handle, Table Locking	1
20-21	Bearing, Drive Shaft Spindle, Fafnir 9106PP or equal	2	20-77	Spacer, Table Locking	1
20-22	Key, Drive Shaft Spindle	1	20-78	Sleeve, Table Locking	1
20-23	Set Screw, Spindle Pulley 5/16"-18-NC	1	20-79	Shaft, Elevating Gear	1
20-24	Pinion, Quill Operating	1	20-80	Gear, Spur	1
20-25	Key, Pinion	1	20-81	Gear, Worm	1
20-26	Handle, Turret	3	20-82	Worm Gear Pinion	1
20-27	Knob, Handle	3	20-83	Key, Elevating Gear Shaft	1
20-28	Sleeve, Head Lock, Plain	2	20-84	Rack Elevating Gear	1
20-28A	Handle, Head Locking	2	20-85	Handle, Elevating	1
20-29	Sleeve, Head Lock, Threaded	2	20-86	Housing, Gear Box, Elevating, R.H.	1
20-30	Base, Motor	1	20-87	Housing, Gear Box, Elevating, L. H. (Not Pictured)	1
20-30A	Special Base, Over size Motor Frames (Not Pictured)	1	20-88	Bracket, Table, Column Mounting (Not Pictured)	1
20-31	Shaft, Motor Base Support	2	20-89	Bolt, Gear Box Housing Mounting 3/8"-16-NC	3
20-31A	Shaft, Motor Base, Support (Not Pictured)	2	20-90	Knob, Elevating Handle	1
20-32	Set Screw, Thrust Bearing Collar 5/16"-18-NC	2	20-91	Table, 2 Spindle (Not Pictured)	1
20-33	Nut, Set Screw Lock 5/16"-18-NC	2	20-92	Table, Single Spindle (Not Pictured)	1
20-34	Collar, Elevating Rack, Thrust Bearing	1	20-93	Pulley, Step Cone (Not Pictured)	1
20-35	Thrust Bearing	1	20-94	Base, Step Pulley Guard (Not Pictured)	1
20-36	Collar, Thrust Bearing Support	1	20-95	Base, Motor (Step Pulley) (Not Pictured)	1
20-37	Set screw, Support Collar; 1/2"-13-NC	1	20-96	Motor Base Mounting (Not Pictured)	1
20-38	Hub, Turret Handle (Int. w/1100-25)	1	20-97	Collar, Spindle	1
20-39	Set screw, Turret Hub 5/16"-18-NC	1	20-98	Screw, Elevating Handle 5/16"-18-NC	1
20-40	Set screw, Motor Base Shaft 5/16"-18-NC	2	20-99	Washer, Elevating Handle	1
20-41	Set screw, Thrust Bearing 1/2"-13-NC	2	20-100	Set Screw, Worm & Spur Gear 5/16"-18-NC	2
20-42	Spring Housing	1	20-101	Spacer, Gear (Not Pictured)	1
20-43	Lock Ring, Spring Housing	1	20-102	Spacer, Shaft (Not Pictured)	1
20-44	Stop Rod, Depth Gauge	1	20-103	Spur Gear, Spindle Drive (Not Pictured)	1
20-45	Nut, Yoke Bolt 5/16"-18-NC	1	20-104	Pinion Gear, High Speed (Not Pictured)	1
20-46	Bolt, Quill Yoke 5/16"-18-NC	1	20-105	Pinion Gear, Low Speed (Not Pictured)	1
20-47	Rubber Washer, Quill	1	20-106	Sheave, Sliding Motor Assy. 912	1
20-48	Yoke, Quill	1	20-107	Sheave, Rigid, Motor 5/8 Bore Assy. 911	1
20-49	Spring, Quill	1	20-108	Sheave, Sliding, Motor Assy. 911	1
20-50	Housing, Spring	1	20-109	Sheave, Rigid, Motor 7/8 Bore Assy. 912	1
20-51	Cam, Variable Speed	1	20-110	Screw, Pulley Adjusting 5/8"-11-NC	1
20-52	Bolt, Cam	1	20-111	Bracket, Upper, Spindle Bearing	1
20-53	Dial, Speed Adjusting	1	20-112	Sheave, Rigid, Driven Assy. 910	1
20-54	Spring, Cam Bolt	1			

Part Number	Part Description	Quantity Required	Part Number	Part Description	Quantity Required
20-113	Plate, Var. Speed Bearing	1	20-132	Cap, Spring	1
20-114	Sheave, Sliding, Driven Assy. 910	1	20-133	Lock Ring, Spring Cap	1
20-115	Mounting Bracket, Switch (Not Pictured)	1	20-134	Bolt, Upper Spindle Bearing Bracket 3/8"-16-NC	2
20-116	Pipe Cap, Multiple Spindle (Not Pictured)	1	20-135	Pin, Upper Spindle Bearing Bracket	2
20-117	Plug, Pipe, Multiple Spindle (Not Pictured)	1	20-136	Bolt, Spindle Drive Housing 7/16"-14-NC	2
20-118	Pipe, Multiple Spindle (Not Pictured)	1	20-137	Bolt, Motor Base Mounting 3/8"-16-NC	2
20-119	Set Screw, Spindle Collar 5/16"-18-NC	1	20-138	Bolt, Motor Base Adjusting, 5/16"-18-NC	1
20-120	Housing, Pinion Shaft, 3 Spring (Not Pictured)	1	20-139	Lock Nut, Adjusting Bolt	3
20-121	Housing, Pinion Shaft, 2 Spring (Not Pictured)	1	20-140	Key, Variable Speed Pulley (Not Pictured)	2
20-122	Pinion, Quill Operating, 2 Spring (Not Pictured)	1	20-141	Set Screw, Variable Speed Pulley (Not Pic.)	2
20-123	Pinion, Quill Operating, 3 Spring (Not Pictured)	1	20-143	Guard, Fiber, Stepcone Pulley (Not Pictured)	1
20-124	Bearing, Variable Spring Shaft, Fafnir 205PP or Equal	2	20-199	Set Screw, High Speed Pulley 5/16"-18-NC	1
20-125	Nut, Pulley Adjusting Screw 5/8"-11-NC	1	20-200	Pulley, 3 Groove, High Speed	1
20-126	Bolt, Variable Speed Housing	2	20-910	Variable Speed Pulley Assy. Drive	1
20-127	Lock Washer, Housing Bolt	2	20-911	Variable Speed Pulley Assy. Motor 5/8 Bore	1
20-128	Bearing, Variable Speed Pulley Fafnir 9106PP or Equal	1	20-912	Variable Speed Pulley Assy. Motor 7/8 Bore	1
20-129	Plug, Variable Speed Pulley Bearing	1	20-210	Bracket, Micro-Switch	
20-130	Rivet, Bearing Plug	1	20-211	Bar, Short	
20-131	Spring, Variable Speed Pulley	1	20-212	Bar, Long	
			20-915	Micro-Switch Bracket Assy.	

POWERFEED FOR 20" DRILL PRESS

Part Number	Part Name	Quantity Required	Part Number	Part Name	Quantity Required
20-500	Fiber Gear	1	20-535	Turret, Pinion Operating	1
20-501	Bearing Housing, Shaft	1	20-536	Bracket, Support	1
20-502	Bracket, Support	1	20-537	Setscrew	5
20-503	Bracket, Powerfeed Mounting	1	20-538	Bushing, Worm Gear Shaft	1
20-504	Shaft, Small	1	20-539	Thrust Bearing	1
20-505	Pulley, Small Shaft	1	20-540	Bearing, Worm Gear Shaft	1
20-506	Gear, Upper Powerfeed Drive	1	20-541	Bolt, Adjusting Bracket Plate Mounting	2
20-507	Bracket, Adjusting	2	20-542	Bolt, Feed Adjusting Bracket Mounting	2
20-508	Pulley, Variable Speed Shaft	1	20-543	Nut, Feed Adjusting Screw	1
20-509	Shaft, Pulley Mounting	1	20-544	Lock Screw, Feed Adjusting Screw	1
20-511	Knob, Feed Adjusting Screw	1	20-545	Bolt, Mounting Bracket Cover Mounting	2
20-512	Screw, Feed Adjusting	1	20-546	Splitpin	2
20-513	Mounting Bracket, Feed Adjusting	1	20-547	Key, Worm Gear Shaft	1
20-514	Cover, Mounting Bracket	1	20-548	Bolt, Support Bracket Mounting	4
20-515	Support, Operating Arm	1	20-549	Washer	7
20-516	Trip, Powerfeed	1	20-550	Bolt, Spring Tension Adjusting	1
20-517	Bracket, Trip Mounting	1	20-551	Spring, Operating Arm	1
20-518	Arm, Operating	1	20-552	Gauge, Oil Level	1
20-519	Cover, Worm Gear Housing	1	20-553	Oil Insert	2
20-520	Pin, Operating Bracket	1	20-554	Cotter Key	1
20-521	Bracket, Operating	1	20-555	Key, Quill Operating Pinion	1
20-522	Handle, Operating Bracket	1	20-556	Bolt, Powerfeed Guard Mounting	3
20-523	Collar, Worm Gear Shaft	1	20-557	Knob, Turret and Operating Bracket Handle	4
20-524	Worm Gear	1	20-558	Bolt, Housing Guard Mounting	1
20-525	Shaft, Worm Gear	1	20-559	Bearing, Small Shaft	2
20-526	Pin, Guard Mounting	1	20-560	Bolt, Bearing Housing Mounting	2
20-528	Plate, Feed Adjusting Bracket	1	20-561	Bearing, Pulley Mounting Shaft	2
20-529	Housing, Worm Gear	1	20-562	Bolt, Adjusting Bracket Mounting	2
20-529A	Gear, Spur Worm	1	20-563	Spring, Variable Speed Pulley	1
20-530	Guard, Powerfeed	1	20-564	Cap, Spring	1
20-531	Pinion, Quill Operating	1	20-565	Snap Ring, Cap Retainer	1
20-532	Sleeve, Pinion Shaft	1	20-566	Bolt, Powerfeed Mounting Bracket	2
20-533	Guard, Worm Gear Housing	1	20-905	Variable Speed Pulley, Driving	1
20-534	Handle, Turret	3	20-906	Variable Speed Pulley, Driven	1