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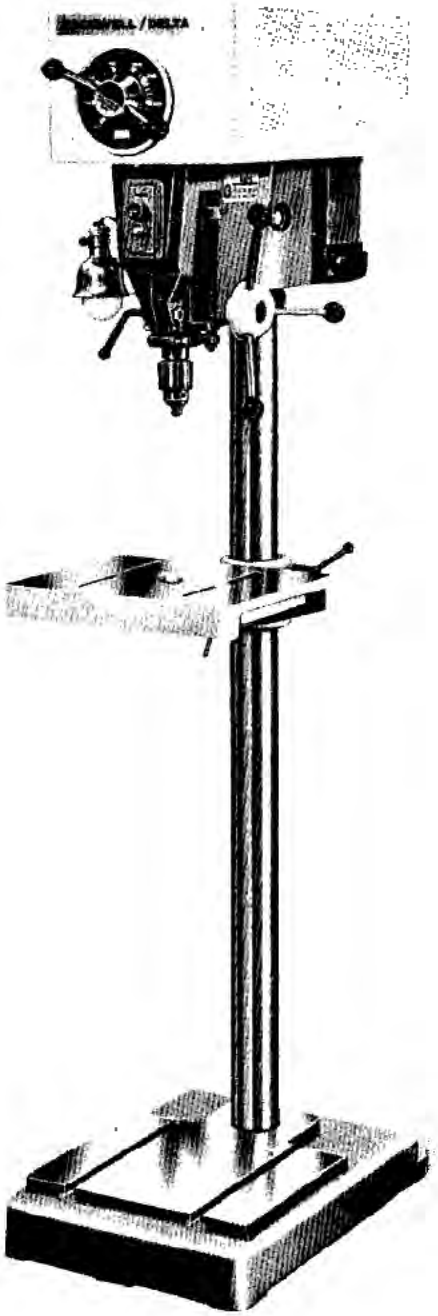
MANUFACTURING COMPANY
The Rockwell Building • Pittsburgh, Pa.

PM-402-04-651-5009

DATED IM-6-1-69

# ROCKWELL–DELTA
# "VS6"
# 15" VARIABLE SPEED DRILL PRESS
## (beginning with serial #139–3001)



### SETTING UP

Your 15" Drill Press has been completely assembled and tested at the factory. All that is necessary for you to do is loosen the clamp nut (A) Fig. 6, on left hand side of head, that holds the head to the column, slide the head up until casting top is level with the top of the column and retighten clamp nut. Then loosen clamp nut (B) Fig. 6, move support collar (C) up against bottom of head, and tighten clamp nut. The table and all other machined or unpainted surfaces of the drill press are protected with a coating of rust preventive. This coating may be removed with a soft cloth moistened with kerosene (do not use acetone, gasoline or lacquer thinner for this purpose.) After cleaning, cover all unpainted surfaces with a light film of good machine oil.

### MOTORS AND SPEEDS

A 1/2 hp, 1140 rpm or 3/4 hp, 1725 rpm motor is recommended for use on your drill press. With a 1140 rpm motor the spindle speeds will be 300 to 3100 rpm. With a 1725 rpm motor the spindle speeds will be 450 to 4700 rpm.

When selecting a motor from any other source, be certain that it has the above specifications and is a NEMA 56 frame motor. Also be sure it is protected against loss of lubricant when operated in a vertical position.

When assembled to the drill press, the motor should turn in a clockwise direction as viewed from the top.

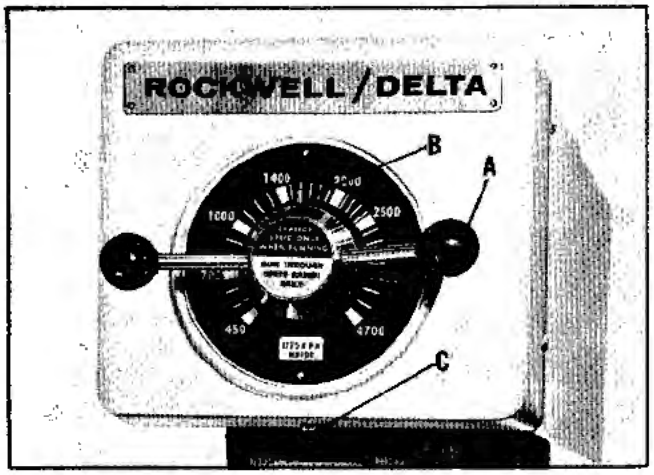



Fig. 2

## VARIABLE SPEED CONTROL

The pilot wheel (A) Fig. 2, for Variable Speed Drive, should not be turned except when the motor is running, to avoid putting unnecessary strain on the variable speed drive belt and variable speed drive pulley assembly. The pilot wheel is turned clockwise to make the drill press run faster, and counter-clockwise to slow it down.

While changing speeds the pointer (B) Fig. 2, will indicate the speed of the drill press.

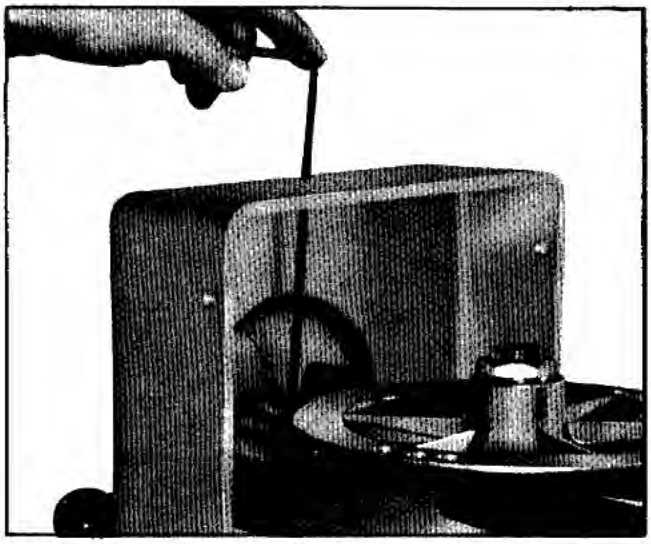


Fig. 3

A drag plug or "dampener" is provided to restrict the free rotation of the pilot wheel. The drag plug is properly adjusted at the factory so that the drill press will hold a constant speed and will not change speeds even on long production runs, but still the pilot wheel can be turned manually to change speeds as desired. If it ever becomes necessary to change the adjustment, use a long allen wrench and insert it down through the hole located in the top of the guard, as shown in Fig. 3. Turn the set screw (A) Fig. 3, clockwise to increase or counter-clockwise to decrease the "dampener" pressure on the pilot wheel.

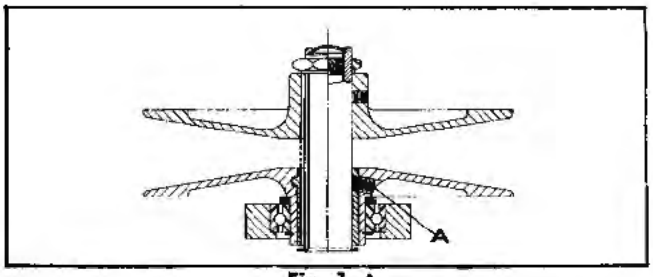



Fig. 3-A

Similar drag plugs or "dampeners" are provided in the spindle pulley and motor pulley assemblies, and are adjusted at the factory. After long service, it may be desirable to increase the pressure on the drag plugs by tightening set screws (A) Fig. 3A for the spindle pulley, and (M) Fig. 8 for the motor pulley. This adjustment does not have to be made, unless normal wear has resulted in noisy operation of the pulleys.

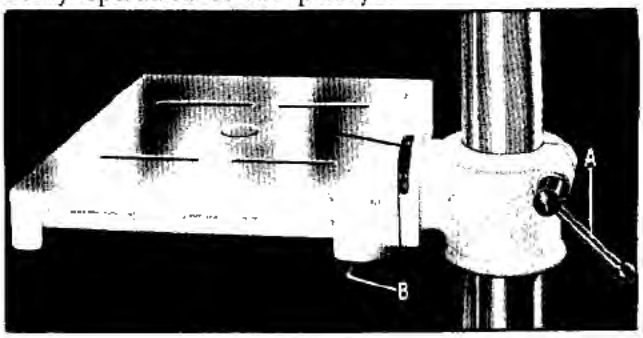



Fig. 4

## TABLE ADJUSTMENTS

**To adjust the table up or down loosen the lock bolt (A) Fig. 4, on the table bracket. Hold the table while doing so.**

To tilt the table to the right or left, loosen the pivot nut located under the table, remove the pin (B) and tilt the table to the required angle and tighten the pivot nut. To set the table vertical, accurately, move the table to a vertical position, insert the pin (B) through one of the side holes in the apron of the table proper, and into the hole in the table bracket, then tighten the pivot nut. To return the table to the horizontal position, loosen the pivot nut, withdraw the pin (B), set the table level, then reinsert the pin through its holes and tighten the pivot nut.

**The table has been designed with ledges, one on each side, to facilitate the clamping of work pieces.**

The table may also be tilted to any degree between horizontal and vertical positions. A scale (C) Fig. 4, is located at the rear of the table, and is graduated in degrees. When the table is tilted between horizontal and vertical positions, the pin (B) must be removed. The table can be tilted either right or left.

## QUILL ADJUSTMENTS

The spindle is raised and lowered by the pilot wheel (A) Fig. 5. The quill can be locked at any desired point in its travel by tightening the quill lever (B) Fig. 5. This is an especially desirable feature for router and shaper work.

The adjusting screw (C) Fig. 5 and nut (D) are set at the factory to give the quill the proper sliding fit in the head casting. After long service play between quill and head casting can be removed without the need to replace these parts. The nut (D) Fig. 5 is loosened, adjustment is made with the screw (C), and the nut is again tightened to prevent the screw from turning. Hold the screw with a screwdriver when nut is tightened, and check by moving the quill up and down several times to be sure the quill does not bind. This adjustment should be made with the stop rod (E) Fig. 5 removed.

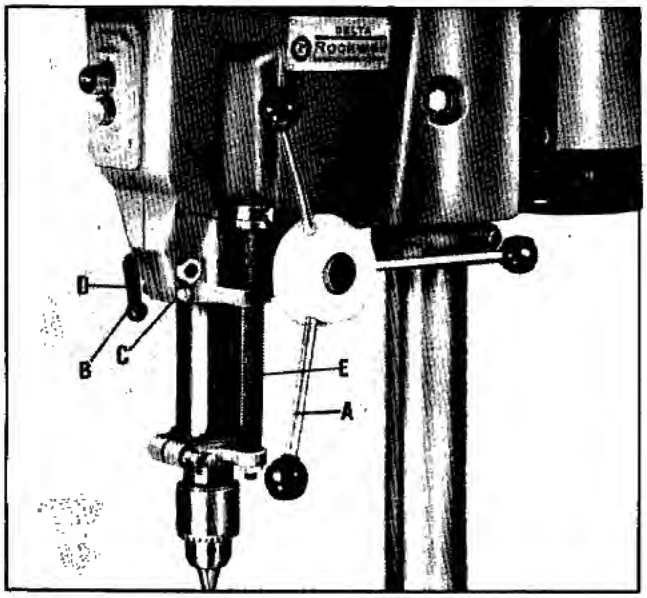



Fig. 5

## DRILLING HOLES TO DEPTH

When drilling one or two holes to a predetermined depth, the calibrations on the face of the depth stop rod (E) Fig. 5, can be used.

When drilling a number of holes to a predetermined depth, or if a more exact setting is required, proceed as follows:

1. Raise the locking sleeve (F) Fig. 5, and turn the micro-nut (G) to the desired position on the stop rod (E).

2. Lower the locking sleeve (F) so it will engage micro-nut (G) Fig. 5. Lock sleeve in place with thumb screw if drill press head is mounted in other than vertical position. When the drill press is mounted with the chuck pointing up the locking sleeve (F) and micro-nut (G) Fig. 5, should be reversed on the stop rod (E).

3. When locking sleeve (F) is in place on the micro-nut (G) Fig. 5, the micro-nut can not be turned. When a change in depth is required, the locking sleeve (F) must be raised and while it is raised, turn the micro-nut (G) the necessary calibration marks. Each mark represents .002".Then lower the locking sleeve.

4. The use of the micro-set stop nut will maintain the same hole depth, no matter how many holes are to be drilled. However, we recommend that the hole depth be checked whenever a drill has to be sharpened or changed.

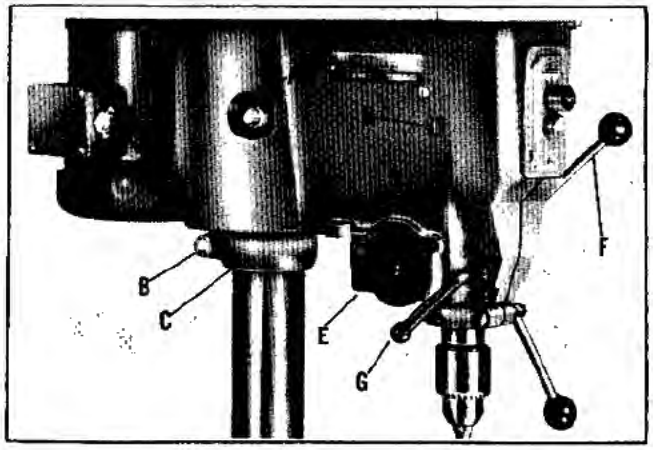



Fig. 6

## ADJUSTING SPINDLE RETURN SPRING

For the purpose of automatically returning the spindle upward after the hole has been drilled, a clock spring is provided enclosed in the case (D) Fig. 6. This spring has been properly adjusted at the factory and should not be disturbed unless absolutely necessary. If at any time it is necessary to adjust it proceed as follows:

1. To increase the tension of the spring, turn the screw (E) Fig. 6, which is located underneath the head, clockwise. CAUTION: BE CAREFUL NOT TO BOTTOM RETURN SPRING WHILE TURNING SCREW (E) FIG. 6, CLOCKWISE, THERE SHOULD BE ENOUGH SLACK LEFT IN SPRING TO PERMIT LOWERING THE SPINDLE THE FULL AMOUNT OF TRAVEL.

2. To decrease tension of the spring, turn the screw (E) Fig. 6, counterclockwise.

3. The tension of the spring can be tested by pulling down the pilot wheel lever (F) Fig. 6, and testing to see if the quill will return to the up position. Be sure the quill locking lever (G) Fig. 6, is loose while testing. NOTE: Before determining if this adjustment is necessary, make sure the stop rod (E) Fig. 5, runs freely up and down and is not twisted in the slot or guide of the head casting.

## HOW TO CHANGE SPINDLE ADAPTERS

One of the unique features of the Variable Speed 15" Drill Press is the ease with which various spindle adapters may be used.

Fig. 7

When removing either the chuck or the spindle adapters, we recommend the use of the Cat. No. 15-838 spanner wrench which is supplied with your drill press. Turn the locking collar of the adapter or chuck with the spanner wrench while keeping the spindle from turning by either holding V-belt or holding the chuck with the chuck key in one of the pilot holes in the nose of the chuck, as shown in Fig. 7.

When attaching adapters to the spindle, it is very important to wipe clean both the spindle taper and taper hole in adapter. Then place the adapter on the spindle and tighten the locking collar (A) Fig. 7. If in checking the spindle for accuracy, there should be a run out, we suggest that the adapter be removed and turned perhaps one quarter or one-half turn and replaced. This may reduce or eliminate the run out, it may also increase it, in which case, remove the adapter and turn it some more on the spindle.

INSTALLING MOTOR

1. When installing a Rockwell 6" Frame Motor, insert the key in the keyway of the motor shaft and place the pulley on the motor shaft until the edge of the pulley sleeve is against the shoulder of the motor shaft.

2. When installing a NEMA 56 Frame Motor, insert the key in the keyway of the motor shaft and place the pulley on the motor shaft, with the edge of the pulley sleeve 1/8" from the shoulder on the motor shaft.

3. If you are installing a NEMA 56 Frame Motor, it is necessary to remove the two upper motor mounting studs (A) Fig. 8, and reposition them in in the holes (B) directly below.

4. Make sure the key is in place aud tighten the two set screws (C) against the motor shaft.

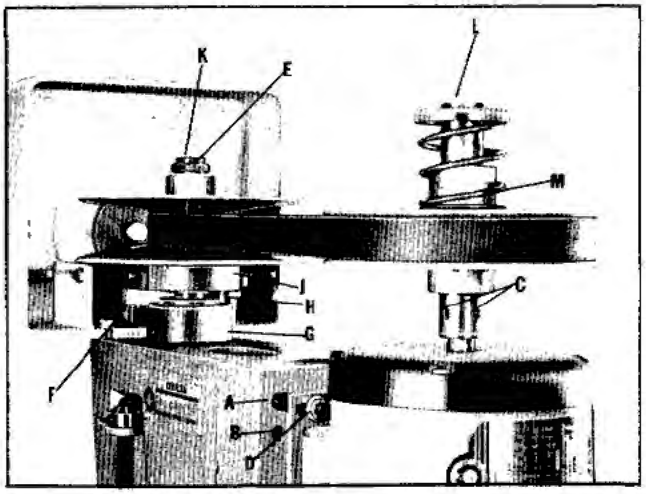



Fig. 8

5. Place the motor on the four motor mounting studs (A) Fig. 8, and install belt.

6. Visually line up the motor shaft so that it is in parallel alignment with the spindle. If the motor must be tilted to the front or rear, it is necessary to loosen the four nuts (D) and move studs (A) in or out as desired until the motor shaft is parallel with the spindle. Then tighten the four nuts (D) Fig. 8.

7. After the motor shaft is in parallel alignment with the spindle, adjust the belt tension. The correct tension is obtained when the distance from the center of the spindle to the center of the motor shaft is approximately15 1/8". This may be done by following Steps 8 and 9. When making this adjustment it is important that the motor is kept in parallel alignment with the spindle pulley.

8. If the motor must be moved further away from the spindle, back off each of the four nuts (D) and back off the four studs (A) an equal number of turns against the motor base plate.

9. If the motor must be moved forward turn in each of the four studs (A) an equal number of turns and tighten nuts (D) against the motor base plate.

10. The spindle nut (E) Fig. 8, should then be adjusted so that the distance from the top of the nut to the top of the spindle is 1/4 to 5/16".

11. TO CALIBRATE THE SPINDLE SPEED turn the drill press on and turn pilot wheel clockwise. When the outside circumference of the belt extends 1/32" beyond the outside circumference of the motor pulley, turn off the power, loosen locknut (G) Fig. 8, and adjust the stop screw (H) until it is bearing against the bottom of the bearing retainer (J). With a 1725 rpm motor the speed of the drill press will be approximately 4700 rpm. With a 1140 rpm motor the speed of the drill press will be approximately 3100 rpm. Now set the poiuter (B)Fig. 2,

to the corresponding speed on the spindle speed chart by unscrewing and removing the pilot wheel hand levers(A) Fig. 2,and loosening the set screws located directly under the hand levers.The hub of the pilot wheel assembly can then be rotated until the pointer points to the corresponding speed on the spindle speed chart (B) Fig. 2. Then tighten the set screws and replace the pilot wheel hand levers (A) Fig. 2.

12. Turn the drill press on and rotate the pilot wheel counterclockwise until the pointer is pointing to the lowest rpm mark on the speed dial and turn off the drill press. Adjust the stop screw (F) Fig. 8, against the roller cam follower on the pilot wheel cam assembly. To adjust stop screw (F) Fig. 8, first loosen locknut (C) Fig. 2.

13. For a more accurate check, use a tachometer to check the spindle speeds.

## LUBRICATION

The pulleys should be lubricated weekly in the oil holes located at (K and L) Fig. 8. Oil the holes when the drill press is turned off. Then turn on the drill press and run the machine from low speed to high speed a few times.

The ball bearings in the quill and spindle pulley are grease-sealed for life. The quill is oiled through oiler (H) Fig. 6, which is on the left side of the drill press head. The head has a groove on the inside to allow the oil from the oiler (H) to flow down and oil the pinion shaft and rack.

The spindle return clock spring should be oiled three or four times a year. This is lubricated through the oil holes provided in the clock spring housing (D) Fig. 6.

## COMPENSATION FOR BELT AND PULLEY WEAR

After a long period of time pulley and belt wear and stretching of the belt may cause a slight change in the speed of the drill press. To compensate for this change in speed, use a tachometer and move the motor toward or away from the spindle pulley until the correct speed is obtained.

## ROCKWELL GUARANTEE

Rockwell is proud of the quality of the power tools which it sells. The component parts of our tools are inspected at various stages of production, and each finished tool is subjected to a final inspection before it is placed in its specially designed carton to await shipment. Because of our confidence in our engineered quality, we agree to repair or replace any part or parts of Rockwell Power Tools or Rockwell Power Tool Accessories which examination proves to be defective in workmanship or material. In order to take advantage of this guarantee, the complete portable power tool or accessory, or in the case of machinery, the part must be returned prepaid to the appropriate factory, factory branch, or authorized service station for our examination. This guarantee, of course, does not include repair or replacement required because of misuse, abuse, or normal wear and tear. Repairs made by other than our factory, factory branch, or authorized service station, relieves Rockwell of further liability under this guarantee. This guarantee is made expressly in place of all other guarantees expressed or implied with respect to fitness, merchantability or quality.

### *MOTORS*

***Motors are built to Rockwell's specifications by only leading motor manufacturers. A service station list is supplied with your motor and all defective motors (both in and out of guarantee) should be taken to the local authorized repair station when service is desired.***

# AUTHORIZED PARTS DISTRIBUTORS

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Phone: 404 351-5434

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Karle Saw Company, Incorporated
138-150 Chicago Street, Cor. So. Park Avenue
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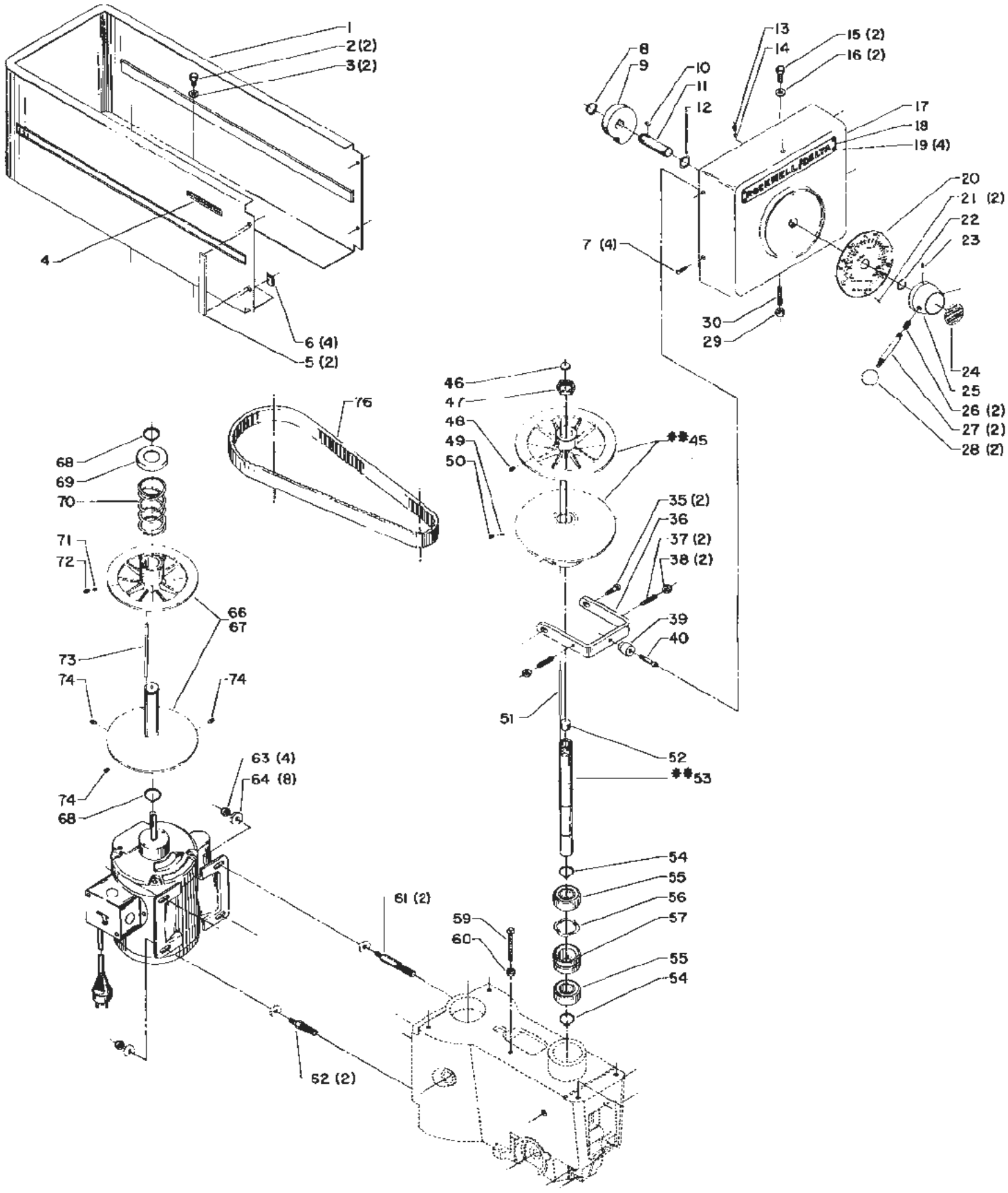
**Authorized Parts Distributors stock a complete line of replacement parts. To save time and shipping cost send your parts orders to your nearest distributor and in most cases they will be filled and shipped within 48 hours. We do not fill any parts orders direct from the factory.**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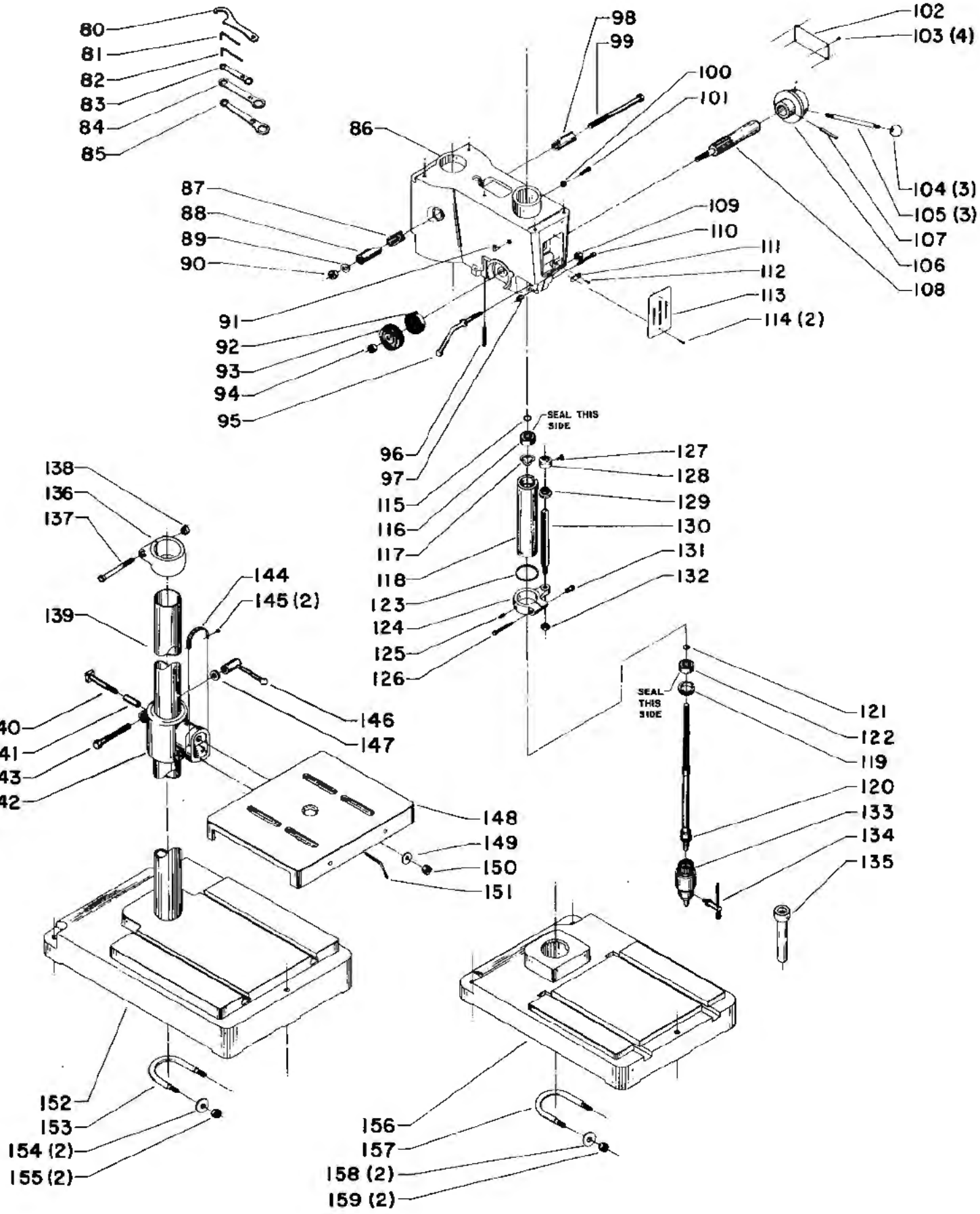
# Replacement Parts

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | 402-04-054-5014 | Rear Guard |
| | SP-605 | 5/16-18 x 1/2 Hex. Hd. Scr. |
| | SP-1620 | 11/32 x 11/16 x 1/16 Washer |
| 4 | 960-03-010-2415 | Decal |
| 5 | 402-07-104-5004 | Spacer |
| 6 | 902-03-050-2974 | Speed Nut |
| 7 | 901-06-171-7368 | #10-24 x 5/8 Truss Hd. Self-Tapping Screw |
| 8 | SP-7008 | Retaining Ring |
| 9 | 402-04-019-5001 | Cam |
| 10 | 927-01-010-2633 | Key |
| 11 | 402-04-106-5010 | Shaft |
| 12 | 928-06-011-8888 | Spring Washer |
| 13 | SP-208 | 1/4-20 x 1/4 Soc. Set Scr. |
| 14 | 402-04-063-5001 | Drag Plug |
| 15 | SP-607 | 5/16-18 x 3/4 Hex. Hd. Scr. |
| 16 | SP-1620 | 11/32 x 11/16 x 1/16 Washer |
| 17 | 402-04-054-5013 | Front Guard |
| 18 | 960-01-012-0019 | Guard Nameplate |
| 19 | SP-2250 | #4 x 3/16 Drive Screw |
| 20 | 402-04-037-5006 | Speed Dial |
| 21 | SP-2250 | #4 x 3/16 Drive Screw |
| 22 | 928-06-011-8888 | Spring Washer |
| 23 | 402-04-075-5003 | Pointer |
| 24 | 402-04-072-5008 | Instruction Plate |
| 25 | 402-04-107-5001 | Hub |
| 26 | SP-1111 | 3/8-16 x 3/8 Soc. Set Screw |
| | 402-04-108-5009 | Rod |
| 28 | FJ-324 | Ball |
| 29 | SP-5435 | 5/16-18 Hex. Jam Nut |
| 30 | SP-287 | 5/16-18 x 1-1/4 Soc. Set Scr. |
| 35 | 901-03-061-2470 | 5/16 x 3/8 Soc. Hd. Shoulder Screw |
| 36 | 402-04-014-5013 | Bracket |
| 37 | SP-4558 | 5/16-18 x 1-1/4 Headless Set Screw |
| 38 | SP-5435 | 5/16-18 Hex. Jam Nut |
| 39 | 402-04-080-5001 | Roller |
| 40 | 901-03-061-2471 | 5/16 x 3/4 Soc. Hd. Shoulder Screw |
| ** 45 | 402-04-405-5012 | Spindle Assembly, incl.: |
| 46 | 402-04-074-5002 | Plug |
| 47 | CBS-116 | Special Nut |
| 48 | SP-208 | 1/4-20 x 1/4 Hex. Soc. Set Scr. |
| 49 | 402-04-063-5001 | Drag Plug |
| 50 | 901-04-150-9439 | 1/4-20 x 1/4 Hex. Soc. Set Scr. |
| 51 | 402-04-108-5011 | Rod (3/16 dia. x 3-3/8 lg. Nylon) |
| 52 | 402-04-099-5001 | Wick |
| ** 53 | 402-04-105-5012 | Spindle Sleeve |
| 54 | SP-7025 | Retaining Ring |
| 55 | SP-5360 | Bearing |
| 56 | SP-7352 | Spring Washer |
| 57 | DP-514 | Retainer |
| 59 | SP-317 | 5/16-18 x 2 Sq. Hd. Set Scr. |
| 60 | SP-5435 | 5/16-18 Hex. Jam Nut |
| 61 | 901-07-251-8538 | 3-1/4 Stud |
| 62 | 901-07-251-8539 | 2-1/8 Stud |
| 63 | SP-5435 | 5/16-18 Hex. Jam Nut |
| 64 | 240-87 | 21/64 x 15/16 x 1/8 Washer |
| 66 | Cat. #41-952 | Motor Pulley Assembly (1/2 Bore), incl.: |
| 68 | SP-7017 | Retaining Ring |
| 69 | 402-04-020-5001 | Cap |
| 70 | 928-01-601-8887 | Spring |
| 71 | 402-04-063-5001 | Drag Plug |
| 72 | SP-9415 | 1/4-20 x 1/4 Hex. Soc. Set Scr. |
| 73 | 402-04-108-5010 | Rod (3/16 dia. x 4" lg. Nylon) |
| 74 | SP-208 | 1/4-20 x 1/4 Hex. Soc. Set Scr. |
| 67 | Cat. #41-953 | Motor Pulley Assembly (5/8 Bore), including: |
| 68 | SP-7017 | Retaining Ring |
| 69 | 402-04-020-5001 | Cap |
| 70 | 928-01-601-8887 | Spring |
| 71 | 402-04-063-5001 | Drag Plug |
| 72 | SP-9415 | 1/4-20 x 1/4 Hex. Soc. Set Scr. |
| 73 | 402-04-108-5010 | Rod (3/16 dia. x 4" lg. Nylon) |
| 74 | SP-208 | 1/4-20 x 1/4 Hex. Soc. Set Scr. |
| 76 | Cat. #49-415 | Variable Speed Belt |

** When replacing the spindle sleeve or the spindle pulleys on machines with serial numbers between 139-3001 and 146-4269, the complete spindle pulley assembly, 402-04-405-5012, must be ordered.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# Replacement Parts

| Ref. No. | Part No. | Description |
|---|---|---|
| 80 | Cat. #15-838 | Spanner Wrench |
| 81 | Cat. #1534 | 1/8" Hex. Socket Wrench |
| 82 | Cat. #194 | 5/32" Hex. Socket Wrench |
| 83 | Cat. #1524 | Double End Wrench |
| 84 | Cat. #1526 | Double End Wrench |
| 85 | Cat. #1538 | Double End Wrench |
| 86 | 402-04-057-5009 | Head Casting |
| 87 | SDP-49 | Column Clamp |
| 88 | SDP-21 | Clamp Sleeve |
| 89 | CBL-447 | 33/64 x 7/8 x 1/16" Washer |
| 90 | SP-1282 | 1/2"-13 Hex. Nut |
| 91 | 907-01-050-5239 | Oiler |
| 92 | 928-08-011-8868 | Pinion Clock Spring |
| 93 | DP-528 | Clock Spring Housing |
| 94 | 902-01-281-7295 | 1/2"-20 Hex. Lock Nut |
| 95 | DP-675 | Ball Crank |
| 96 | DP-527 | Adjusting Screw |
| 97 | SD-18 | 1/4"-20 Hex. Nut |
| 98 | SDP-22 | Clamp Sleeve |
| 99 | SP-621 | 1/2-13 x 5-1/2" Hex. Hd. Scr. |
| 100 | SP-5435 | 5/16"-18 Hex. Jam Nut |
| 101 | SP-378 | 5/16-18 x 7/8" Sq. Hd. Set Scr. |
| 102 | 960-02-012-1450 | Nameplate |
| 103 | SP-2250 | #4 x 3/16" Drive Screw |
| 104 | FJ-324 | Knob |
| 105 | DP-632 | Rod |
| * | 402-04-407-5004 | Hub Assembly, consisting of: |
| 106 | 402-04-107-5002 | Hub |
| 107 | 905-01-010-6745 | 3/16 x 1-7/8 Roll Pin |
| 108 | 402-04-051-5008 | Pinion Shaft |
| 109 | SP-1232 | 7/16"-20 Hex. Nut |
| 110 | SP-703 | 1/4-20 x 1-3/4" Fil. Hd. Scr. |
| 111 | 438-01-021-0081 | Switch Bracket |
| 112 | SP-3019 | #6 x 1/2" Rd. Hd. Self-Tapping Screw |
| 113 | DP-572 | Switch Opening Cover |
| 114 | SP-3015 | #6 x 1/4" Rd. Hd. Self-Tapping Screw |
| * | 402-04-377-5003 | Quill Assembly, consisting of: |
| 115 | SP-7411 | Retaining Ring |
| 116 | SP-5384 | Bearing |
| 117 | NL-306 | Bearing Loading Spring |
| 118 | 402-04-077-5002 | Quill |
| 119 | BG-12 | Bearing Nut |
| 120 | 402-04-385-5006 | Spindle Assy., including: |
| 121 | SP-7410 | Retaining Ring |
| 122 | SP-5384 | Bearing |
| 123 | SP-3769 | Gasket |
| 124 | DP-524-R | Stop Collar, including: |
| 125 | SP-112 | #10-32 x 1/2" Headless Set Screw |
| 126 | SP-622 | 1/4-20 x 2" Hex. Hd. Screw |
| * | 402-04-408-5005 | Stop Rod Assy., consisting of: |
| 127 | SP-1534 | #6-32 x 1/4" Thumb Screw |
| 128 | DP-561 | Holding Nut |
| 129 | 402-04-088-5005 | Micro-Nut |
| 130 | 402-04-108-5007 | Stop Rod |
| 131 | DP-221 | 1/4"-20 Special Nut |
| 132 | SP-1005 | 3/8-16 Hex. Nut |
| 133 | Cat. #15-830 | Chuck, including: |
| 134 | DP-597 | Key |
| 135 | Cat. #15-833 | #2 Morse Taper Spindle Adapter |
| 136 | Cat. #1010 | Support Collar, including: |
| 137 | SP-641 | 7/16-14 x 3-1/2" Hex. Hd. Scr. |
| 138 | SP-1004 | 7/16"-14 Hex. Nut |
| 139 | Cat. #15-804 | 2-3/4" dia. x 33-3/4" Column (Bench Model) |
| 139 | Cat. #15-805 | 2-3/4" dia. x 38-3/4" Column (Bench Model) |
| 139 | Cat. #15-806 | 2-3/4" dia. x 65-1/4" Column (Floor Model) |
| 139 | Cat. #15-810 | 2-3/4" dia. x 78" Column (Floor Model) |
| * | Cat. #15-809 | Table Complete, consisting of: |
| 140 | SP-2360 | 1/2"-13 x 3-1/4" Sq. Hd. Bolt |
| 141 | 402-04-105-5005 | Sleeve |
| 142 | DP-204-A | Bracket Assy., including: |
| 143 | SP-618 | 1/2-13 x 3-1/2" Hex. Hd. Screw |
| 144 | DP-560 | Scale |
| 145 | SP-2849 | #6 x 1/4" Drive Screw |
| 146 | DP-205-S | Lock Bolt |
| 147 | DP-6 | Special Washer |
| 148 | 402-04-001-5004 | Table |
| 149 | SP-1636 | 17/32 x 1-1/16 x .095" Washer |
| 150 | SP-1028 | 1/2"-13 Hex. Nut |
| 151 | DP-8 | Index Pin |
| 152 | 402-04-005-5006 | Base (Floor Model) |
| 153 | 402-04-027-5003 | Column Clamp |
| 154 | SD-27 | 1/2 x 1-1/2 x 1/8 Washer |
| 155 | SP-5437 | 7/16"-14 Hex. Nut |
| 156 | 402-04-005-5008 | Base (Bench Model) |
| 157 | 402-04-027-5003 | Column Clamp |
| 158 | SD-27 | 1/2 x 1-1/2 x 1/8 Washer |
| 159 | SP-5437 | 7/16"-14 Hex. Nut |

* Not shown assembled.

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