



Rockwell

MANUFACTURING COMPANY

The Rockwell Building • Pittsburgh, Pa.

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ROCKWELL-DELTA 15" UTILITY DRILL PRESS

Your 15" Utility 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. 2, on left hand side of head, that clamps the head to the column, slide the head up until casting top is level with the top of the column and retighten clamp.

MOTORS AND SPEEDS

Usually a 1725 rpm motor is used, but for exceptional applications an 1140 rpm motor may be used. For average duty, we recommend a 1/2 h.p. constant speed motor. Under production conditions a 3/4 h.p. motor should be used. With a 1725 rpm motor the spindle speeds for high speed models are: 680, 1250, 2400, and 4600 rpm. For slo-speed models the spindle speeds are: 470, 780, 1300 and 1950 rpm. The highest speed is obtained when the belt is on the largest step of the motor pulley and the smallest step of the spindle pulley. Consult your Rockwell Dealer for a six inch frame motor of the correct characteristics to meet your requirements.

When selecting a motor from any other source, be certain that it is capable of taking the end thrust due to the weight of the rotor, and that it is protected against loss of lubricant when operated in the vertical position. This is especially important in sleeve bearing motors.

The motor should turn in a clockwise direction when it is viewed from the top when installed. Rockwell motors should be bolted to the motor plate so that the switch is on the left-hand side as you face the drill press. If you use another motor and it runs the wrong way, either turn it around or reverse its rotation.

MOTOR INSTALLATION

The following procedure is recommended for assembling the motor to the Drill Press Head.

1. Assemble motor pulley to motor. Be sure that the flat on the motor shaft lines up with set screw holes in pulley.

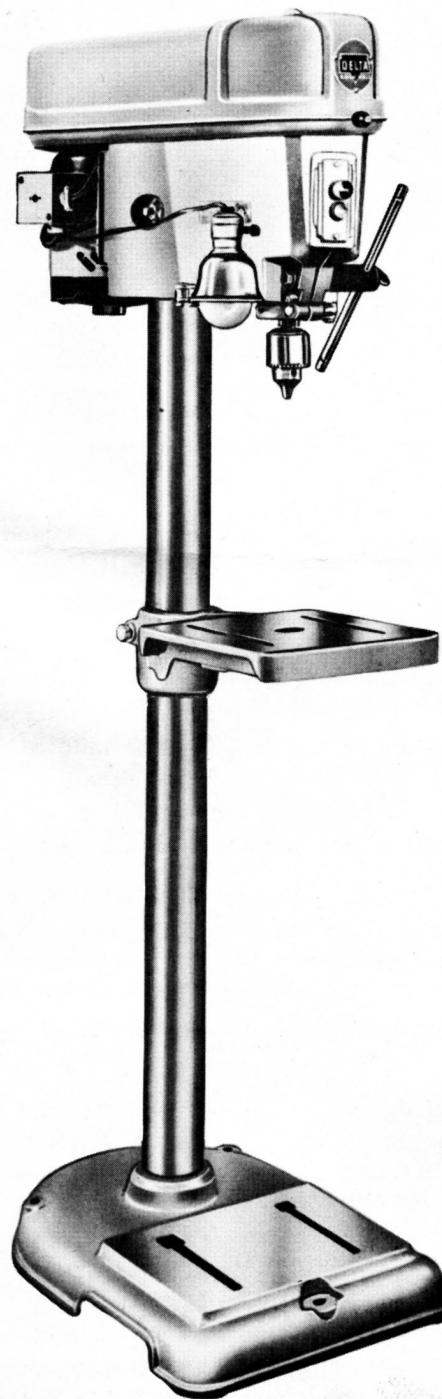


Fig. 1.

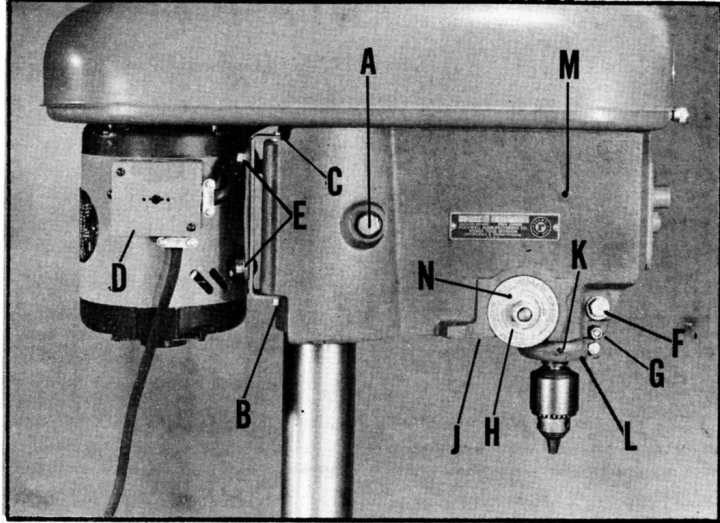


Fig. 2.

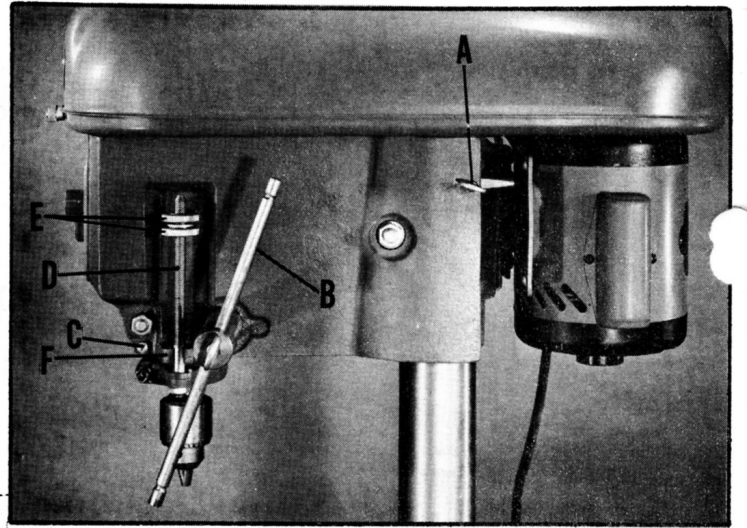


Fig. 3.

2. Remove the two hexagon head cap screws (B) and (C) Fig. 2, and remove motor plate from drill press head.
3. Mount motor to motor plate. Switch box (D) Fig. 2, on motor, should be on left hand side as shown.
4. Tighten finger tight the four motor mounting nuts (E) Fig. 2, that fasten motor to motor plate.
5. Lift whole unit to drill press head and replace the two hexagon head cap screws (B) and (C) Fig. 2.
6. Loosen thumb screw (A) Fig. 3, and push motor and motor plate in towards Drill Press Head as far as it will go. Then tighten thumb screw (A).
7. Visually line up the motor so that it is in parallel alignment with the spindle. In most cases it will be necessary to raise the motor all the way and move it to the extreme right of head when looking from front of drill press. Tighten the four motor mounting nuts (E) Fig. 2, and line up the motor pulley with the spindle pulley.
8. To install V-belt, push motor toward Drill Press as far as possible (See Step #6). Assemble belt, loosen thumb screw (A) Fig. 3, and push motor back to desired belt tension and retighten thumb screw.

SPINDLE ADJUSTMENTS

The spindle is raised and lowered by the hand lever (B) Fig. 3. The quill can be locked at any desired point in its travel by tightening the quill locking screw (F) Fig. 2. This is an especially desirable feature for router and shaper work.

The adjusting screw (C) Fig. 3 and nut (G) Fig. 2, 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 (G) Fig. 2 is loosened, adjustment is made with the screw (C) Fig. 3, and the nut is again tightened to prevent the screw from turning. Hold the screw

with a screw driver 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 stop rod (D) Fig. 3, removed.

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 (H) Fig. 2. This spring has been properly adjusted at the factory and the adjustment 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 (J) Fig. 2 which is located underneath the head, clockwise. CAUTION: BE CAREFUL NOT TO BOTTOM RETURN SPRING WHILE TURNING SCREW (J) FIG. 2, CLOCKWISE. THERE SHOULD BE ENOUGH SLACK LEFT IN SPRING TO PERMIT LOWERING THE SPINDLE THE FULL AMOUNT OF TRAVEL.
2. To decrease the tension of the spring, turn the screw (J) Fig. 2, counterclockwise.
3. The tension of the spring can be tested by pulling down the feed lever (B) Fig. 3, and testing to see if the quill will return to the up position. Be sure the quill locking screw (F) Fig. 2, is loose while testing. NOTE: Before determining if this adjustment is necessary make sure the stop rod (D) Fig. 3, runs freely up and down and is not twisted in the slot or guide of the head casting.

DRILLING HOLES TO DEPTH

When drilling one or two holes to a predetermined depth, the calibrations on the face of the depth stop rod (D) Fig. 3, can be used.

Where a number of holes are to be drilled to exactly the same depth, the stop nuts (E) Fig. 3 on the threaded stop rod (D) are used. After the first hole has been drilled to depth, the lower stop nut is set against the lug (F) on the head through which the stop rod passes. Return the quill to the up position and tighten the upper stop nut against the lower stop nut and all subsequent holes will be drilled to exactly the same depth.

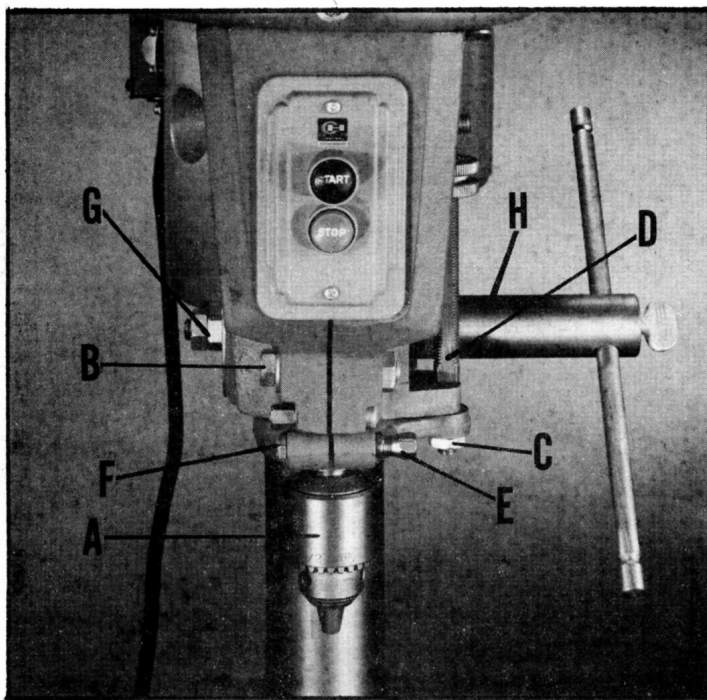


Fig. 4.

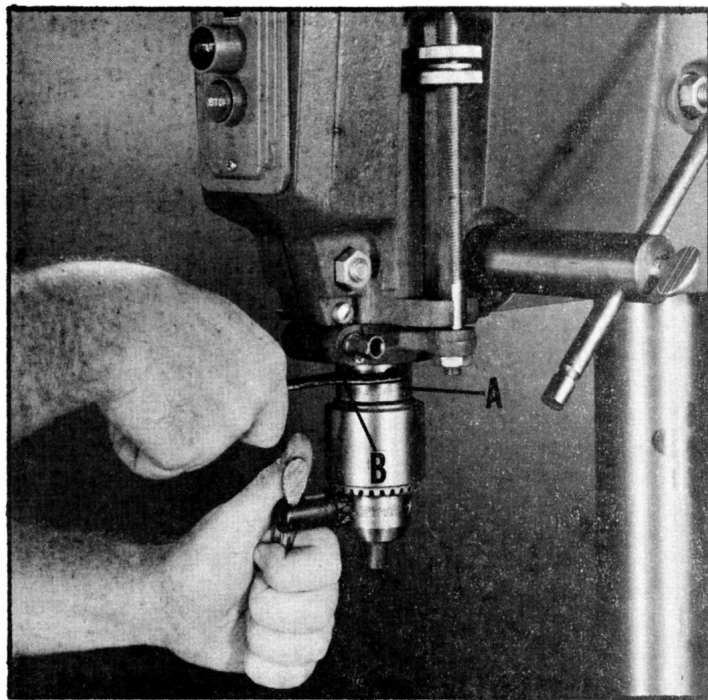


Fig. 6.

HOW TO USE SPINDLE ADAPTERS

One of the unique features of the 15" Utility Drill Press is the ease with which various spindle adapters may be used. Changing these adapters is simple if instructions are followed.

1. Remove the chuck (A) Fig. 4. This may be done by first lowering the spindle about two or three inches and locking the quill locking screw (B) Fig. 4.
2. Remove the nut (C) and stop rod (D), Fig. 4.
3. Loosen the nut (E) and screw (F) Fig. 4.
4. Loosen set screw (K) and remove the stop collar (L), Fig. 2.

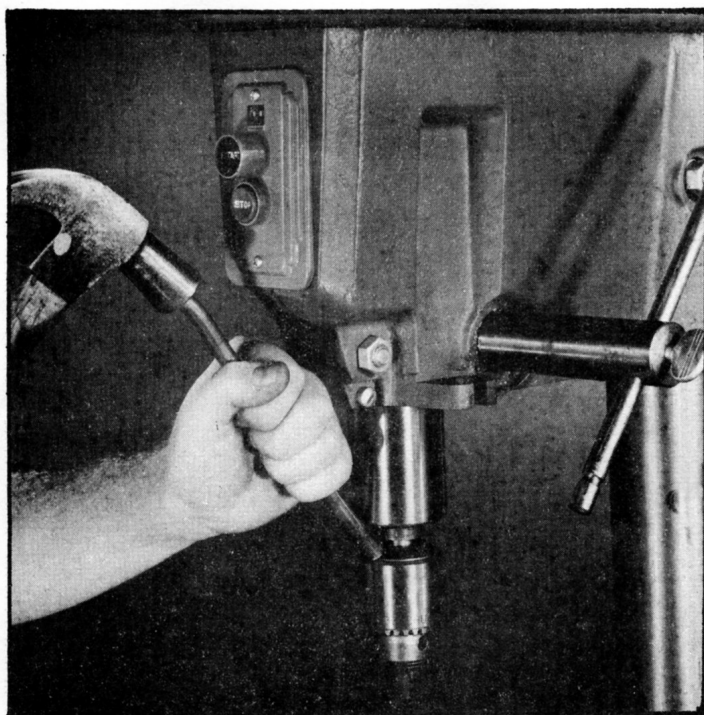


Fig. 5.

5. Using a hammer and a brass rod, tap once on the chuck as shown in Fig. 5. Then turn the chuck with your hand about a quarter of a turn and tap again. Repeat this until the chuck is free from the spindle.

6. 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. 6. 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.

7. When removing either the spindle adapters or the Cat. #15-830 chuck, we recommend the use of Cat. #15-838 spanner wrench (B), Fig. 6, which is available as an accessory. 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.

REPLACING SPINDLE OR SPINDLE BEARINGS
If it becomes necessary to remove or replace the spindle of your drill press, proceed as follows:

1. Remove the guard and spindle pulley from the drill press head.
2. Lock the quill in place by tightening the quill locking screw (B) Fig. 4.

3. Remove nut (A) and stop rod (B), Fig. 7.
4. Loosen the screw (C) and nut (D) Fig. 7.
5. Loosen set screw (E) Fig. 7, and remove the stop collar (F).
6. Release tension on clock spring by turning screw (J) Fig. 2 counterclockwise.
7. Remove the two nuts (G) Fig. 4, and remove the pinion shaft (H)
8. Loosen the quill locking screw (B) Fig. 4, and remove the quill and spindle from the drill press head.
9. Using a screw driver and a hammer remove the bearing closure nut (G) Fig. 7, by turning it counterclockwise as viewed from the spindle end.
10. Remove the retaining ring (I) Fig. 7, and with a soft hammer tap the top of the spindle (H) until it comes free from the quill (J). The bearing (L) remains in the quill, and can be extracted with your fingers.
11. When replacing the spindle reverse the above instructions.

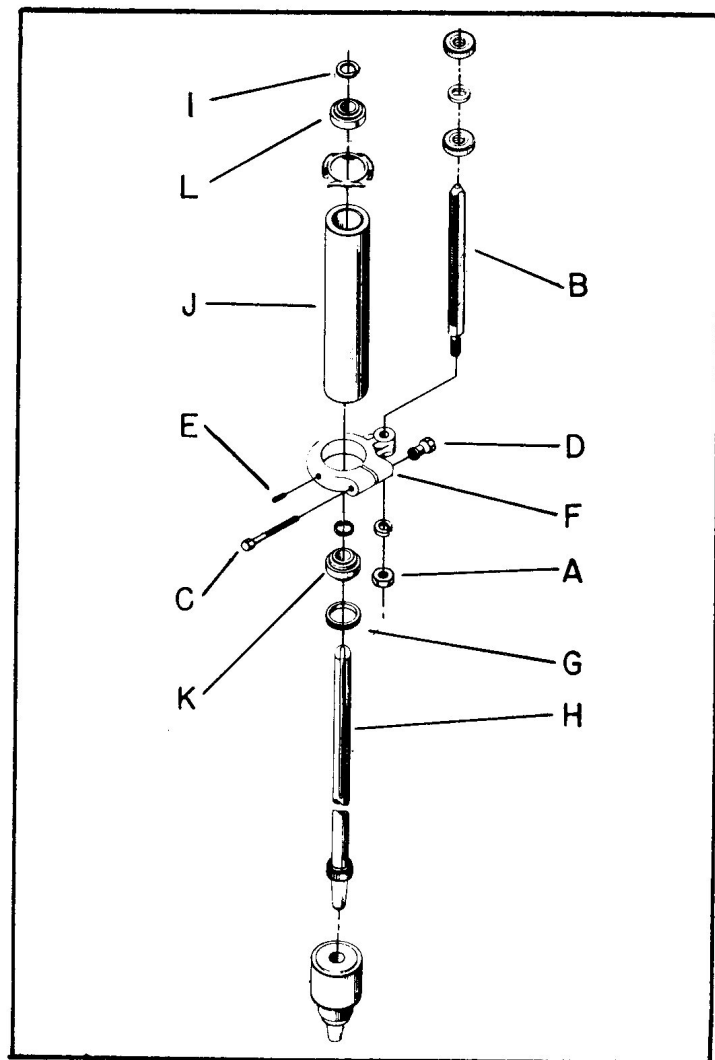


Fig. 7.

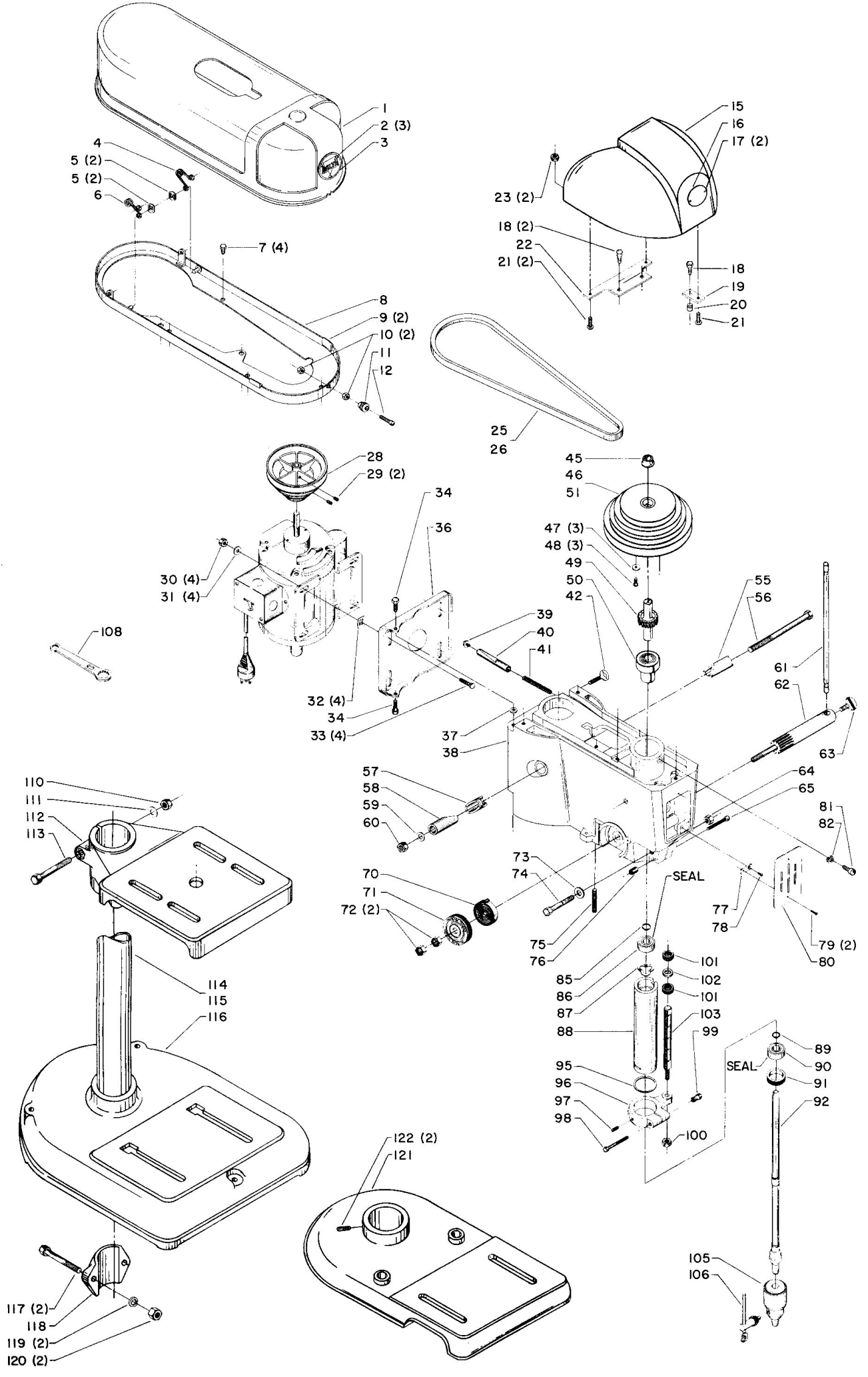
LUBRICATION

The spindle ball bearings in the quill, and the ball bearing in the spindle pulley, do not require lubrication. These sealed ball bearings are lubricated for life, at the factory.

About once a week, squirt machine oil into the oil hole (M) Fig. 2, on the left side of the drill press head, while feeding the quill up and down. This will lubricate the quill in the head, and concentrate oil on the rack of the quill and the teeth of the pinion shaft.

Once a month oil the clock spring and the left end of the pinion shaft, by squirting machine oil in the hole (N) Fig. 2 which is provided in the housing of the spindle return clock spring. Also oil the pinion shaft where it passes through the head on the right.

Once a month lubricate the splines on the top end of the spindle with a tacky lubricant such as the special grease available from Rockwell in one pound cans under Part No. 999-02-021-5018.



Replacement Parts

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
*	Cat. #15-825	Belt Guard Complete, Consisting of:	60	SP-1282	1/2-13 Hex. Nut
1	402-04-354-5013	Belt Guard, Including:	61	DP-233	Rod
2	SP-2250	#4 x 3/16 Drive Screw	62	DP-234-S	Pinion Shaft, Including:
3	960-02-021-8316	Nameplate	*	SP-28	1/4 Steel Ball
4	928-03-011-8878	Spring, R. H.	*	DDL-123	Spring
5	902-03-010-2971	Tinnerman Nut	63	DP-282	3/8-24 x 5/8 Thumb Screw
6	928-03-011-8879	Spring L. H.	64	SP-1232	7/16-20 Hex. Nut
7	SP-629	5/16-18 x 3/8 Hex. Hd. Cap Scr.	65	SP-703	1/4-20 x 1 3/4 Fil. Hd. Screw
8	402-04-354-5014	Guard Pan, Including:	70	DP-520-L	Pinion Clock Spring
9	DP-906	Bumper	71	DP-528	Clock Spring Cover
10	SP-1203	#10-32 Hex. Nut	72	SP-1227	1/2-20 Hex. Jam Nut
11	DP-544	Lock Knob	73	CBL-447	33/64 x 7/8 x 1/16 Washer
12	SP-749	#10-32 x 7/8 Fil. Hd. Screw	74	901-01-060-9971	7/16-20 x 2 1/4 Hex. Hd. Cap Scr.
15	DP-916-S	Front Belt Guard, Including:	75	DP-527	Adjusting Screw
16	CBL-486	Nameplate	76	SD-18	1/4-20 Special Nut
17	SP-2250	#4 x 3/16 Drive Screw	77	438-01-021-0081	Switch Bracket
18	SP-606	5/16-18 x 5/8 Hex. Hd. Cap Scr.	78	SP-3016	#6 x 7/16 Rd. Hd. Self-Tapping Scr.
19	402-04-072-5007	Plate	79	SP-3015	#6 x 1/4 Rd. Hd. Self-Tapping Scr.
20	402-04-104-5003	Spacer	80	DP-572	Switch Opening Cover
21	SP-503	1/4-20 x 5/8 Rd. Hd. Screw	81	901-02-551-2884	3/8-24 x 7/8 Fil. Hd. Screw
22	402-04-014-5012	Bracket	82	SP-1709	3/8 Lockwasher
23	SP-1034	1/4-20 Hex. Nut	*	402-04-377-5002	Quill Assembly, consisting of:
25	Cat. #49-167	Belt (Slo-Speed)	85	SP-7411	Retaining Ring
26	Cat. #49-168	Belt (Hi-Speed)	86	SP-5384	Bearing
28	Cat. #985	Motor Pulley (Specify 1/2", 5/8" or 3/4" Bore,)Including:	87	N L-306	Spring Washer
29	SP-201	5/16-18 x 5/16 Hex. Soc. Set Scr.	88	DP-533	Quill
30	SP-1300	5/16-18 Hex. Nut	89	SP-7410	Retaining Ring
31	SP-1620	11/32 x 11/16 x 1/16 Washer	90	SP-5384	Bearing
32	SP-2951	Tinnerman Nut	91	BG-12	Bearing Nut
33	SP-834	5/16-18 x 3/4 Carriage Bolt	92	402-04-385-5005	Spindle
34	SP-609	5/16-18 x 1 1/2 Hex. Hd. Cap Scr.	95	SP-3769	Special Gasket
36	DP-515	Motor Plate	96	DP-524-R	Stop Collar, Including:
37	SP-1620	11/32 x 11/16 x 1/16 Washer	97	SP-112	#10-32 x 1/2 Headless Set Scr.
38	400-00-057-5001	Head Casting	98	SP-622	1/4-20 x 2 Hex. Hd. Cap Scr.
39	SP-2851	Rubber Bumper	99	DP-221	1/4-20 Spec. Nut
40	DP-874	Motor Plate Plunger	100	SP-1005	3/8-16 Hex. Nut
41	DP-519	Spring	101	DP-274	Knurled Nut
42	901-04-261-4006	5/16-18 x 1 1/4 Thumb Screw	102	DP-318	Washer
*	DP-283-T	Slo-Speed Pulley, consisting of:	103	DP-273-X	Stop Rod
45	DP-267	Spindle Sleeve Cover	105	DP-903	Chuck
46	DP-283	Slo-Speed Pulley	106	DP-905	Chuck Key
47	240-14	Special Washer	108	Cat. #1538	Box Wrench
48	SP-3801	#8-32 x 3/8 Rd. Hd. Screw	*	Cat. #15-801	Table Assembly Complete, Consisting of:
49	DP-264	Spindle Sleeve	110	SP-1282	1/2-13 Hex. Jam Nut
50	SP-5373	Bearing	111	DP-6	Washer
*	DP-265-U	Hi-Speed Pulley, consisting of:	112	402-04-091-5003	Table
45	DP-267	Spindle Sleeve Cover	113	SP-643	1/2-13 x 4 Hex. Hd. Cap Scr.
47	240-14	Special Washer	114	DP-213	Column (Bench Model)
48	SP-3801	#8-32 x 3/8 Rd. Hd. Screw	115	DP-554	Column (Floor Model)
49	DP-264	Spindle Sleeve	116	DP-287	Base (Floor Model)
50	SP-5373	Bearing	117	SP-2300	7/16-14 x 3 1/2" Hex. Hd. Cap Scr.
51	DP-265	Hi-Speed Pulley	118	DP-288	Clamp
55	SDP-22	Sleeve	119	SP-1716	7/16 Lockwasher
56	SP-621	1/2-13 x 5 1/2 Hex. Hd. Cap Scr.	120	SP-5437	7/16-14 Hex. Nut
57	SDP-49	Column Clamp	121	DP-567	Base (Bench Model)
58	SDP-21	Clamp Sleeve	122	SP-1107	5/16-18 x 1 Hex. Soc. Set Scr.
59	CBL-447	33/64 x 7/8 x 1/16 Washer	*	999-02-021-5018	1 lb. Can Special Grease
			*	Not Shown	