

17" DRILL PRESS

Operating and Maintenance Instructions

The 17" drill press is shipped completely assembled. On floor-type drills without raising mechanism in the head, loosen clamp nuts DP-828, raise head to position by sliding upward on the column, then retighten clamp nuts. On drills with raising mechanism in head, loosen clamp bolt on thrust collar below rack and operate ball-crank handle DDL-160-S to feed rack up through head. When rack is through head as far as necessary, re-tighten collar clamp bolt, then loosen the head clamp nuts and operate ball-crank handle to move head upward on the column. By alternately feeding the rack through the head and the head up and down on the column in this manner, the head and the rack can be set in the most convenient manner for the job. It is not necessary to move the rack, once set, except for extreme movements of the head.

POWER REQUIRED

For light shop work up to $\frac{1}{2}$ " in cast iron, a $\frac{1}{2}$ -H.P. motor may be used. For medium duty work a $\frac{3}{4}$ -H.P. motor is recommended. Use only a ball-bearing motor, preferably one with sealed ball bearings. For work up to $\frac{3}{4}$ " in cast iron, and for heavy continuous work a 1-H.P. motor is recommended. The motor should turn in a clockwise direction, viewed from the top of the motor, when installed. Our motors with built-in switches should be installed so that the switch is at the left-hand side as you face the machine. If motor turns the wrong way, reverse its rotation in accordance with the instructions on motor nameplate.

Install the motor pulley with the largest step at the top, and align it carefully with the spindle pulley. The motor bracket is adjustable back and forward for correct belt tension. Longer belt life will be obtained if the tension is not too great.

OPERATING DRILL PRESSES IN GANGS

When a number of drill presses are to be used in gangs, they should be provided with three-phase motors for the following reasons: Three-phase motors will save from 20 to 30 percent of the current required by ordinary single-phase motors, besides delivering more power. Since they have no brushes, commutators, starting switches or short-circuit switches they are practically trouble-free. They are installed on a power line and thus do not flicker lights. A number of drill presses should not be operated with single-phase motors, taking the current from the lighting circuit; in fact, this practice is prohibited by many electric companies.

Three-phase motors, being wound for 220 volts, must be operated from a power line. They should be wired by a licensed electrician and provided with three-phase switches, as they have no built-in switches or extension cords.

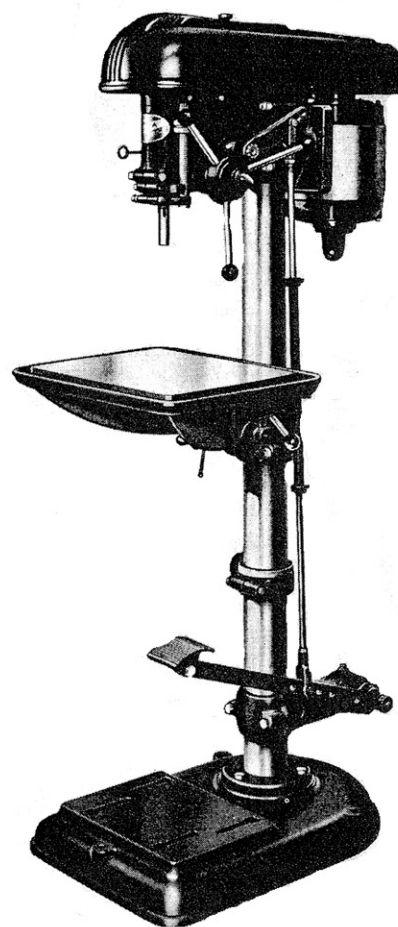


Fig. 1. 17" Drill Press

INSTALLING PRODUCTION TABLE

Production table No. 1372 may be installed on the floor-type machine instead of the regular tilting table. To install, remove index pin DP-666-S and clamp nut and washer SP-1245 and SP-1707, then remove the regular table. Install production table and replace clamp nut and washer and index pin.

CHANGING SPINDLES

Drill presses fitted with No. 2 Morse-taper sockets may be changed to $\frac{1}{2}$ " capacity key-chuck equipment, or vice versa.

To remove the quill, remove knob NJ-220 holding the return spring housing on the left of the head. Loosen the screw holding the depth indicator pointer and turn the pointer down out of the way. Remove the spring housing, carrying the depth scale, the plate covering the spring and the washer inside the plate. Now release the tension on the spindle return spring by turning the worm screw DP-621 (Fig. 3). This will be found in the head at the rear of the spring housing and is turned with a screwdriver. Back the worm screw completely out, when the entire spring in its case may be withdrawn. Quill-pinion shaft DP-618-A (Fig. 3) may then be withdrawn with one hand while holding the quill with the other. Run off the knurled stop nuts DP-629 and withdraw the quill and spindle assembly.

To re-install, insert the quill assembly from the bottom of the head and install the pinion shaft. Install stop-rod bracket, then slip the spring and its casing into the head. Insert the worm screw, and screw up until the proper spring-return tension is obtained. This should be just sufficient to return the quill to the top position; do not make this tension too strong. Replace the spring-housing washer, cover, knob and spring, and set the indicator pointer at zero when the spindle is at the top position. Travel of the quill on standard drill press is 5".

INSTALLING RAISING MECHANISM

Referring to Figs. 3 and 4, loosen the clamp bolts holding table bracket to column and remove bracket. Remove table from bracket. Slide worm-shaft through bearing, keeping the flats to the outside. Push shaft through opposite plain bearing, putting a drop of oil on it first. Put collar on shaft outside of spanner nut and fasten in place with taper pin. Fasten ball-crank handle in place.

Set compound gear assembly DP-640-F in place to mesh with worm, and slide shaft DP-642 through worm gear and collar into the bearing. Place table bracket in position against column, put clamp cap in place, replace clamp bolts and tighten socket setscrew SP-207 against worm shaft DP-642. Loosen thrust collar DP-678-S, slip safety hook of DP-641-S over clamp collar and thrust bearing as in Fig. 4, then slide rack

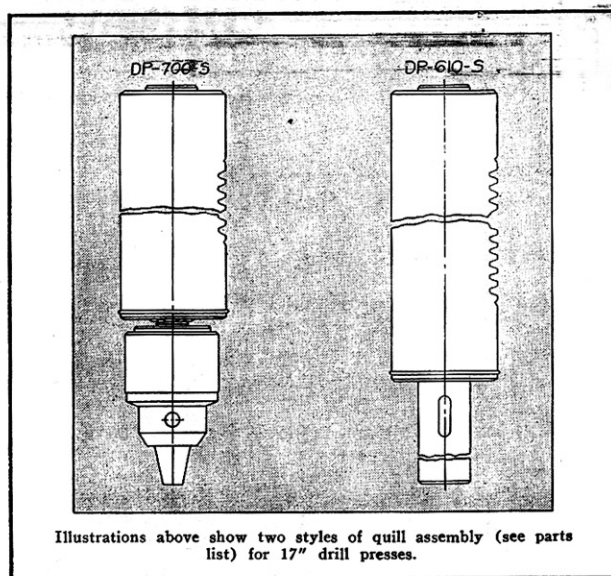


Fig. 2.

DP-641-S through bracket from below. Tighten thrust collar on column.

To remove mechanism, reverse these instructions, removing rack, clamp cap, bracket, worm gear and shaft, worm and shaft in the order named. To install mechanism in head, follow the same instructions, first removing head from column and sliding thrust collar and bearing over the end of the column.

LUBRICATION

The self-sealed ball bearings in the quill and spindle-pulley are packed at the factory with enough lubricant for the life of the bearings, and require no attention. A drop of oil may occasionally be placed on the pinion shaft and quill rack and on the raising-mechanism shafts, as well as on the pivots of the foot-feed mechanism. No other lubrication is necessary.

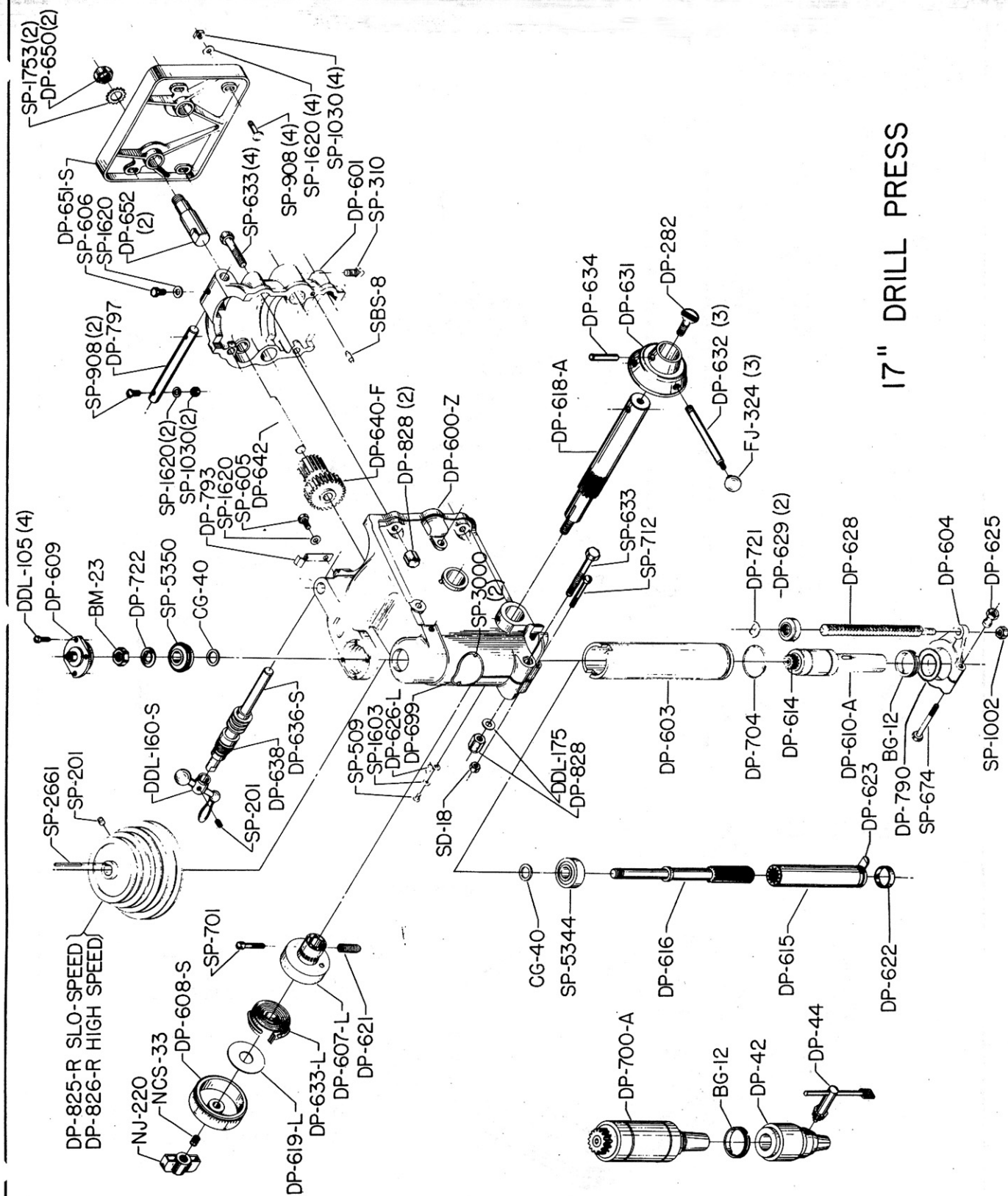


Fig. 3.

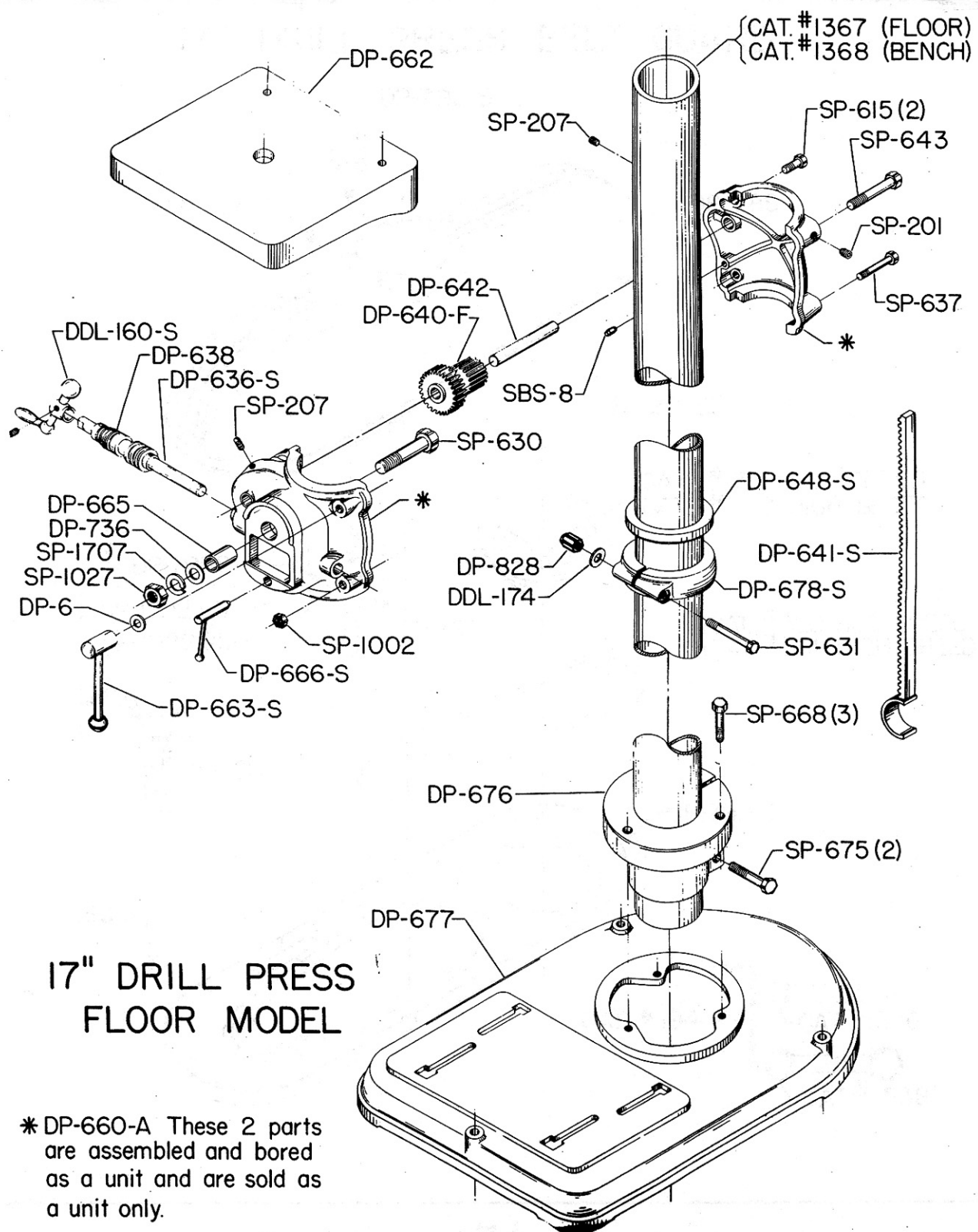


Fig. 4.

17" DRILL PRESS BELT GUARD

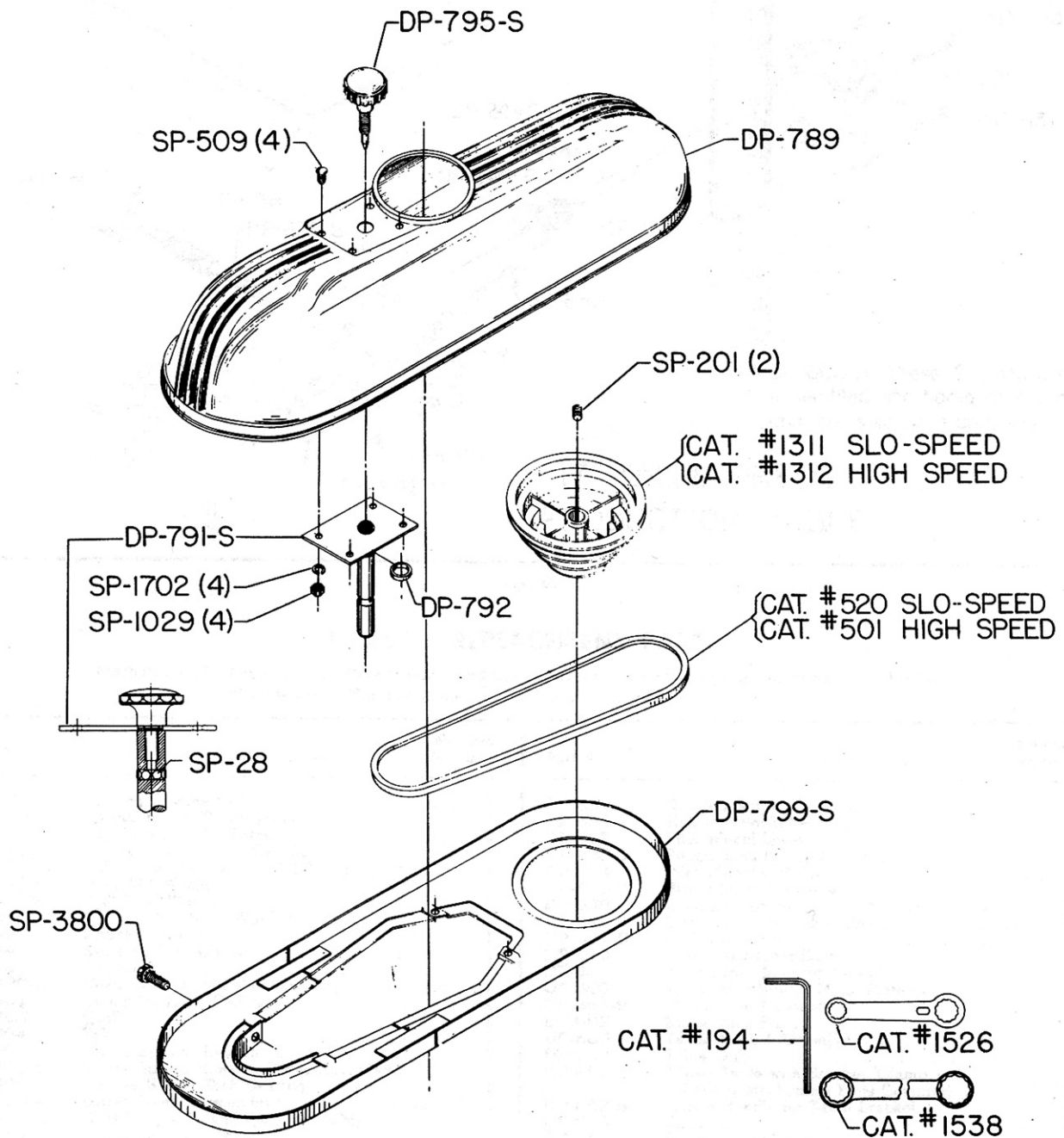


Fig. 5.

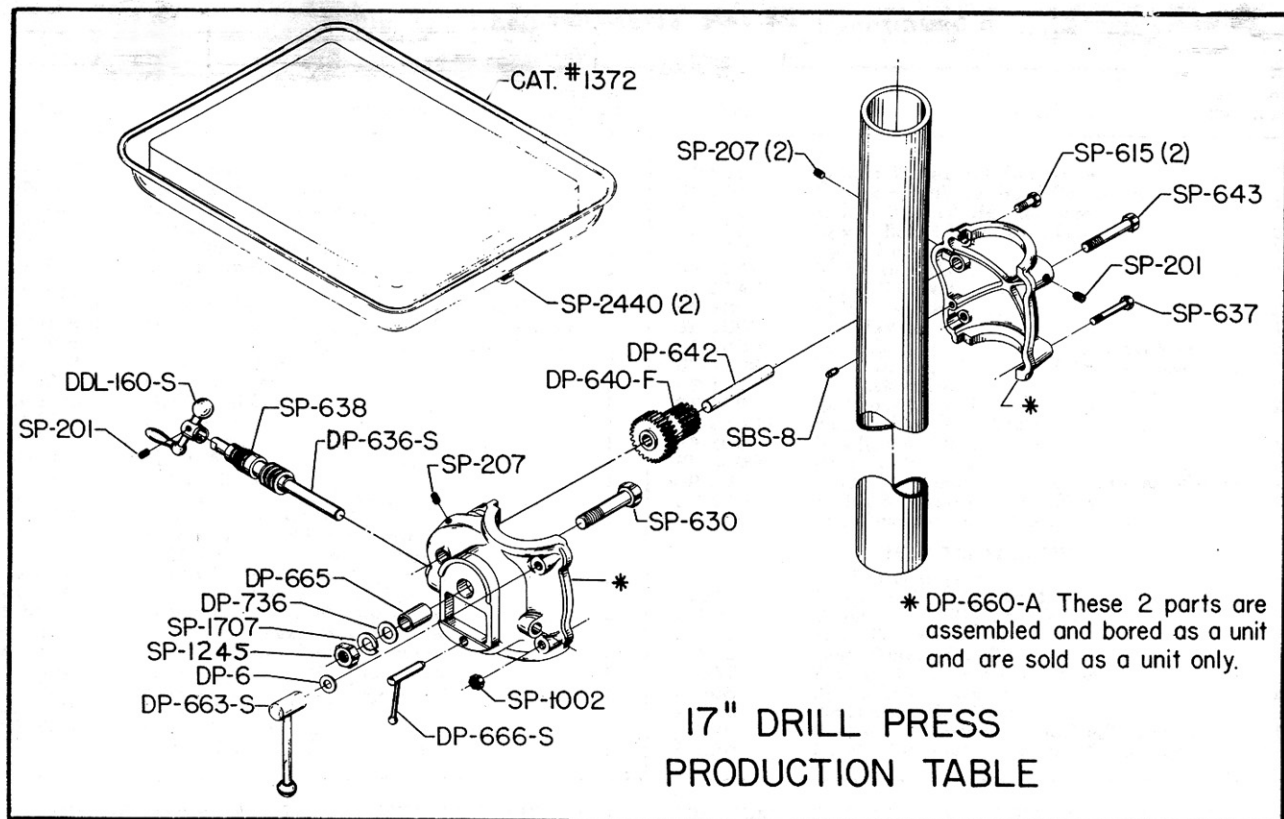


Fig. 6.

Table 1. REPLACEMENT PARTS

IMPORTANT: Give both the Part Number and the Description of each item when ordering from this list; also the Serial Number of the machine on which the parts are to be used.

Part No.	Description	Number Required	Part No.	Description	Number Required
BG-12	Bearing Closure Nut.....	1	DP-629	Knurled Nut for Stop Rod.....	2
BM-23	Special Nut .679"-28 Thread.....	1	DP-631	Hub for Pilot Wheel.....	1
CG-40	$\frac{43}{64}$ " Washer .09" Thick.....	2	DP-632	Pilot Wheel Lever.....	3
DDL-105	#10-32 x $\frac{1}{16}$ " Fil. Hd. Cap Screw.....	4	DP-633-L	Pinion-Shaft Return Spring.....	1
DDL-160-S	Ball Crank Handle with Set Screw.....	1	DP-634	Pilot Wheel Hub Pin.....	1
DDL-174	$\frac{29}{64}$ x $\frac{1}{8}$ " Washer.....	1	DP-636-S	Worm Shaft Assembly.....	1
DDL-175	$\frac{29}{64}$ " Steel Washer.....	1	DP-638	Bearing Closure Spanner Nut.....	1
DP-6	1 x $\frac{33}{64}$ x $\frac{3}{16}$ " Steel Washers.....	1	DP-640-F	Compound Gear Assembly.....	1
DP-42	Chuck with Key.....	1	DP-641-S	Rack with Hook.....	1
DP-44	Key for DP-42 Chuck.....	1	DP-642	Compound Gear Shaft.....	1
DP-282	Thumb Screw.....	1	DP-648-S	Rack Thrust Bearing Assembly.....	1
DP-600-Z	Head Casting with Matching Cap.....	1	DP-650	$\frac{3}{4}$ -16" Hex Nut for Motor Plate Pin.....	2
DP-601	Clamp for Head Casting.....	1	DP-651-S	Motor Plate Assembly.....	1
DP-603	Quill.....	1	DP-652	Motor Plate Pin.....	2
DP-604	Yoke.....	1	DP-660-A	Table Bracket Assembly.....	1
DP-607-L	Return Spring Housing.....	1	DP-662	Table Only.....	1
DP-608-S	Return Spring Housing Cover Assembly.....	1	DP-662-S	Tilting Table with Bracket, Clamp and Raising Mechanism Parts Complete.....	1
DP-609	Cap for Spline Shaft Bearing.....	1	DP-663-S	Clamp Handle for Table Bracket.....	1
DP-610-A	Lower Spindle Assembly.....	1	DP-665	Sleeve.....	1
DP-610-R	#2 M.T. Spindle and Quill Assembly.....	1	DP-666-S	Index Pin for Table.....	1
DP-614	Pinion for Lower Spindle.....	1	DP-676	Base Flange.....	1
DP-615	Spindle Sleeve.....	1	DP-677	Floor-type Base.....	1
DP-616	Spindle Only.....	1	DP-678-S	Collar for Rack Thrust Bearing.....	1
DP-618-A	Pinion Shaft.....	1	DP-699	Name Plate.....	1
DP-619-L	Spacer Disk.....	1	DP-700-A	Lower Spindle Assembly.....	1
DP-621	Spring-Adjusting Screw.....	1	DP-700-R	Quill and Chuck Assembly.....	1
DP-622	Garter Spring 1" Dia. $\frac{1}{4}$ " Wide.....	1	DP-704	Garter Spring.....	1
DP-623	Drive-Pinion Key.....	1	DP-721	Stop Nut Washer.....	1
DP-625	Nut for Stop Yoke.....	1	DP-722	$\frac{19}{32}$ " I.D., $\frac{13}{16}$ " O.D. x $\frac{1}{32}$ " Th. Lockwasher.....	1
DP-626-L	Indicator Pointer.....	1	DP-736	Washer.....	1
DP-628	Stop Rod.....	1			

(Continued on next page)

Table 1. REPLACEMENT PARTS (Continued)

Part No.	Description	Number Required	Part No.	Description	Number Required
DP-789	Upper Belt Guard.....	1	SP-675	$\frac{7}{16}$ -20 x 3" Hex. Hd. Cap Screw.....	2
DP-790	Shock Ring, Leather.....	1	SP-701	$\frac{1}{4}$ -20 x $\frac{3}{4}$ " Fillister Head Cap Screw.....	1
DP-791-S	Mounting Plate Assembly.....	1	SP-712	$\frac{1}{4}$ -20 x 2 $\frac{3}{4}$ " Fil. Hd. Cap Screw.....	1
DP-792	Garter Spring.....	1	SP-908	$\frac{7}{16}$ x 1" Round Head Stove Bolt.....	2
DP-793	Snap-Spring for Guard Support Rod.....	1	SP-1002	$\frac{7}{16}$ -14" Hex. Nut.....	1
DP-795-S	Guard Support Rod with Knob.....	1	SP-1029	$\frac{1}{4}$ -20" Hex. Nut.....	4
DP-797	Pin for Belt Guard.....	1	SP-1245	$\frac{3}{4}$ -10" Hex. Nut.....	1
DP-799-S	Front and Rear Parts for Lower Half Guard.....	1	SP-1300	$\frac{7}{16}$ -18" Hex. Nut.....	2
DP-825-R	Spindle Pulley (Slo-Speed) with Key and Washer.....	1	SP-1603	$\frac{1}{4}$ " Washer.....	1
DP-826-R	Spindle Pulley (Hi-Speed) with Key and Washer.....	1	SP-1620	$\frac{3}{4}$ " O.D. x $\frac{5}{16}$ " I.D. x $\frac{1}{16}$ " Thick Steel Washer....	3
DP-828	$\frac{7}{16}$ -14" Clamp Nut.....	3	SP-1702	$\frac{7}{16}$ " O.D. x $\frac{1}{4}$ " I.D. x $\frac{1}{16}$ " Thick Lockwasher....	2
FJ-324	Pilot Lever Ball.....	3	SP-1707	$\frac{3}{4}$ " Lockwasher.....	1
NCS-33	Star Wheel Spring.....	1	SP-1753	$\frac{3}{64}$ " Lockwasher Internal Teeth.....	2
NJ-220	Hand Knob.....	1	SP-2440	Plug for Production Table.....	1
SBS-8	Dowel Pin.....	1	SP-2661	$\frac{3}{16}$ x $\frac{3}{16}$ x 2" Straight Key.....	1
SD-18	$\frac{1}{4}$ -20" Nut.....	1	SP-3000	No. 6 Rd. Hd. Self-Tapping Screw.....	2
SP-28	$\frac{1}{4}$ " Steel Ball.....	1	SP-3800	$\frac{5}{16}$ -18 x $\frac{7}{8}$ " Trimmed Hex. Head External Washer.....	1
SP-201	$\frac{7}{16}$ -18 x $\frac{3}{16}$ " Soc. Set Screw.....	1	SP-5344	Sealed Ball Bearing — ND-88503.....	1
SP-207	$\frac{7}{16}$ -18 x $\frac{1}{2}$ " Socket Set Screw.....	1	SP-5350	Snap Ring Bearing — ND-C-487503.....	1
SP-310	$\frac{3}{8}$ -16 x $\frac{5}{8}$ " Sq. Hd. Set Screw.....	2		MISCELLANEOUS	
SP-509	$\frac{1}{4}$ -20 x $\frac{1}{2}$ " Rd. Hd. Machine Screw.....	1	#194	$\frac{5}{16}$ " Socket Wrench.....	1
SP-605	$\frac{7}{16}$ -18 x $\frac{1}{2}$ " Hex. Head Cap Screw.....	1	#501	V-Belt Cir. in 49 $\frac{7}{8}$ ", out 51 $\frac{11}{16}$ ".....	1
SP-606	$\frac{7}{16}$ -18 x $\frac{5}{8}$ " Hex. Hd. Cap Screw.....	1	#520	V-Belt Cir. in 52 $\frac{1}{4}$ ", out 54 $\frac{1}{8}$ ".....	1
SP-615	$\frac{7}{16}$ -14 x 1 $\frac{3}{4}$ " Hex. Hd. Cap Screw.....	2	#1311	Motor Pulley, Max. Dia. 6".....	1
SP-630	$\frac{3}{4}$ -10 x 3 $\frac{1}{2}$ " Hex. Hd. Cap Screw.....	1	#1312	Motor Pulley, Max. Dia. 6 $\frac{1}{2}$ ".....	1
SP-631	$\frac{7}{16}$ -14 x 4" Hex. Head Cap Screw.....	1	#1367	3 $\frac{1}{2}$ " x 60" Column — For Floor.....	1
SP-633	$\frac{7}{16}$ -14 x 3 $\frac{1}{4}$ " Hex. Hd. Cap Screw.....	1	#1368	3 $\frac{1}{2}$ " x 38 $\frac{1}{2}$ " Column for Bench Mach.....	1
SP-637	$\frac{7}{16}$ -14 x 3 $\frac{3}{4}$ " Hex. Hd. Cap Screw.....	1	#1372	Production Table Only.....	1
SP-643	$\frac{1}{2}$ -13 x 4" Hex. Hd. Cap Screw.....	1	#1526	Double End Wrench, $\frac{7}{16}$ " and $\frac{9}{16}$ " openings.....	1
SP-668	$\frac{1}{2}$ -20 x 1 $\frac{3}{4}$ " Hex. Hd. Cap Screw.....	3	#1538	Double End Wrench, $\frac{5}{8}$ " and $\frac{3}{4}$ " openings.....	1
SP-674	$\frac{7}{16}$ -18 x 2 $\frac{3}{4}$ " Hex. Hd. Cap Screw.....	1			

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