



## WALKER-TURNER 16" BAND SAW No. 3331 Variable Speed and No. 3341 Woodworking Models

All Walker-Turner Band Saws are carefully inspected and tested before shipment. While in transit, however, it is possible that the machine may get out of alignment. Therefore, before putting machine into operation, give it a careful check and make adjustments where necessary. A carefully set up machine will save you time, trouble and money.

### OPERATION

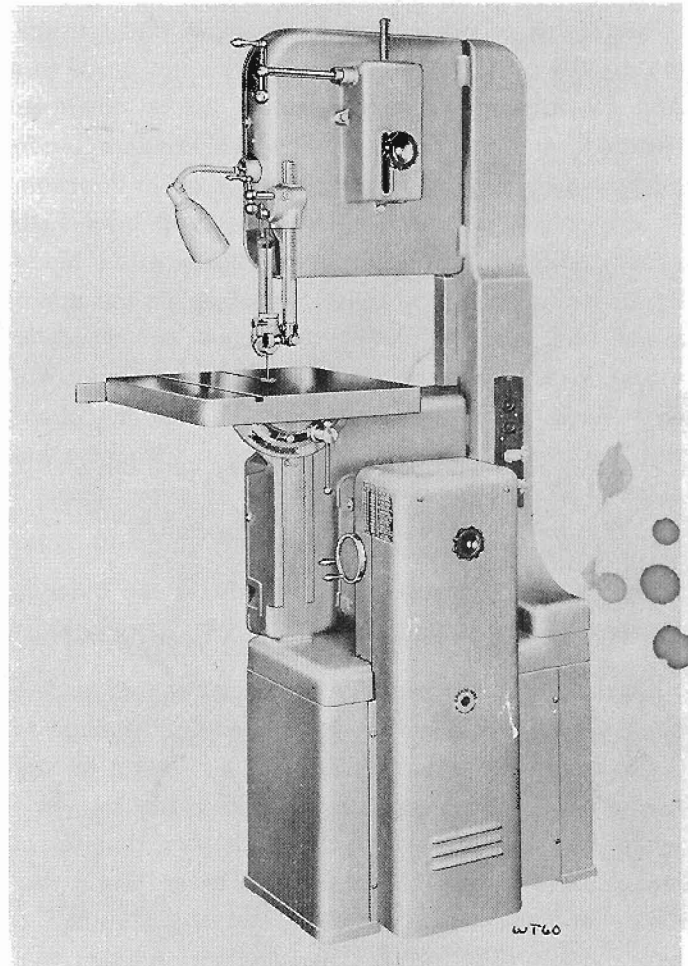
Before operating the machine, make sure the following parts are correctly adjusted: Blade, Blade Guides and Table. When cutting, stand close to machine and hold work firmly. For metal cutting, best results will be obtained by selecting the proper blade and surface speed for the character of work being cut.

The wood cutting band saws are furnished with one blade speed, 3515FPM, with standard 1725 rpm motor, which is the best speed for all around wood sawing.

The variable speed band saw has speeds from 50 to 3500 FPM, providing a wide range of speeds to fit the type of work being done.

### TABLE

The table tilts 45 degrees to the right and 5 degrees to the left. The tilting is controlled by a locking handle which is located under the table. The tilt scale is located under the table at the locking handle. Stop studs are located on both left and right under sides of the table providing positive stops at 90 and 45 degrees respectively. **After adjusting the blade and guide**, adjust table to 90 degrees by means of a tri-square. Loosen the locking handle and rest one side of square firmly on the table. Tilt the table until the other side of the square is flush against the saw blade. Lock in this



position and adjust the left hand stop stud until it makes firm contact with the table. The indicator should now point to 90 degrees on the tilt scale. If it does not, move the indicator until it does. Now loosen locking handle and tilt table until pointer indicates 45 degrees on tilt scale and relock. Adjust right hand stop stud firmly against table. Any degree of tilt to the right between 90 and 45 degrees may now be accurately made with positive stops at the extreme positions. To tilt to the left, loosen the left hand stop stud and tilt to desired degree.

## BLADE ADJUSTMENTS—ALIGNMENT AND TENSION

The band saw blade should track on the center of the rim of both upper and lower wheels. It should run with enough tension to hold this position and to maintain it when pressure is applied to it.

To insure proper tracking, each wheel is designed with a crowned face. The wheel is also rubber tired to prevent dulling of the blade which would occur were it to run directly on a metal surface.

The points of adjustment for tracking and tensioning are the hand crank, which controls the blade tension by moving the upper wheel up or down as required, and the hand knob which controls blade alignment by tilting the upper wheel in either direction. To check blade alignment tracking, withdraw both upper and lower saw guide assemblies from the blade by loosening the guide roller lock knob on the upper guide and the 3/8" hollow set screw on the lower guide. With handcrank, apply moderate tension to the saw blade. Turn wheel by hand, so that the blade travels down through the table, and not tracking position of blade. Use the hand crank to correct tension, and the hand knob to correct alignment.

Only a slight adjustment one way or the other is necessary to align the blade.

Correct tension is necessary for good operation. The general rule is to have the blade just tight enough to do its work. The safest procedure is to begin by applying just enough tension to hold blade in place while the wheels revolve. If, with this amount of tension, the operator finds that the blade has a tendency to twist when going around small curves, a little more tension may be supplied and another trial cut made. Continue to make adjustments until blade is under sufficient tension to prevent twisting. Narrow blades require more tension than wider ones. Knowledge of the correct tension to apply comes only with experience, but the operator will soon get the "feel" of a properly tensioned blade.

## MOTOR MOUNTING

Band Saws are furnished with a base in which is included the motor mounting rails and necessary hardware for installing the motor. Care should be taken in locating the motor on the rails so that the motor pulley and driven pulley are in line. This can be done by placing a straight edge flush on the side of the driven

pulley and bringing the motor out until the motor pulley touches the straight edge.

Correct belt tension is obtained by raising or lowering the motor rails at the end where Part No. 33-169 Bridge is attached. (Fig. 8, Page 9). The motor, motor rails and bridge are supported by Part No. 211A40 Bridge Stud Assembly and are held by the friction between this stud and the rubber coupling Part No. 75-12.

Motor pulley Catalog No. 341-53, (Fig. 3, Page 5) is an adjustable pitch pulley. If operating speeds are normally at upper end of speed range, adjust pulley so that belt O.D. is flush with pulley O.D. If operating speeds are normally at lower range, adjust pulley so that belt O.D. is 3/4".

## BLADE GUIDES

The blade guide assembly consists of an upper and lower guide block, saw blade guides and guide rollers. Before starting to adjust blade guides the saw blade should be adjusted to track properly, and the blade guides and roller should be clear of the blade.

Begin your adjustments with the roller. To adjust it, loosen the roller lock knob and move the roller until it just clears the back of the blade, lock in this position.

The purpose of the roller is to absorb the thrust or pressure against the blade when the blade is cutting. At all other times the roller should just clear the blade.

Now adjust the saw blade guides. There are a total of twelve, six on the upper and six on the lower guide block. The purpose of the guides is to prevent the blade from twisting, especially when going around small curves. Begin by determining the number of guides to be used according to the width of the blade. With narrow blades, only the inside guides would be used. For wider blades, use the inside and middle guides; or all three, always **making sure that the saw blade guides are behind the gullet of the blade teeth** to prevent the teeth from scraping.

Now set the necessary guides with slight clearance between them and the blade. This can best be accomplished by inserting a piece of paper between each side of the blade and guides and then adjusting the guides snugly against the blade. Removal of the paper will provide the proper clearance. Lock in this position.

## CHANGING BLADES

To remove blade, open upper and lower wheel housing covers. Remove table clip and lower the upper wheel assembly by means of the hand crank, until sufficient slack permits the blade to be easily slipped off.

To replace blade, place blade on center of wheel rims and draw the blade taut by means of the hand-wheel. Be sure to replace table clip. It is needed to keep the table true. Track and align blades as described previously.

## BLADE SELECTION

In selecting a blade, its width is determined by the diameter of the smallest curve to be cut. In very general terms, a  $\frac{1}{4}$ " blade properly set will cut a circle of about 2" diameter; a  $\frac{3}{8}$ " blade, a circle of about 3" diameter; and a  $\frac{1}{2}$ " blade, a circle of about 6" diameter.

When considerable straight cutting is to be done, a  $\frac{1}{2}$ " or  $\frac{3}{4}$ " blade will make it easier to follow a straight line.

For metal cutting, selection of both blade and cutting speed are important.  $\frac{1}{2}$ " wide metal cutting blades are available with either 10, 14 or 18 teeth. Handy blade and speed chart mounted on the machine aids in selecting the proper speed and saw blade for cutting 58 different materials.

## MACHINE LIGHT

To eliminate breakage of the machine light, it is packed in a separate carton and enclosed in the accessory package. All necessary fastenings and wire connectors are packed with the light.

**INSTALLATION:** The two leads for the light are brought out to the point where the lights are attached to the machine. Connect these leads to the two wires projecting from the base of the light and secure connections with the wire nuts packed with the light.

After connections are made, the light can be attached to the machine by using the two SP-7740 round head screws and nuts which are supplied.

## 16" VARIABLE SPEED BAND SAW

The variable speed model is for cutting all types of ferrous and non-ferrous metals, wood and plastic.

With the variable speed drive, you get exactly the right speed for the material being cut. Turn the convenient hand wheel to get any speed from 50-to-3500 FPM. A glance at the easy-to-read scale tells you the exact speed.

"Free Floating" variable speed drive pulley is mounted between motor and drive shaft to permit steady power transmission and accurate speed control.

### CAUTION:

1. Do not operate variable speed pulley when machine is not running.
2. Never change gear train while it is in operation.

## LUBRICATION

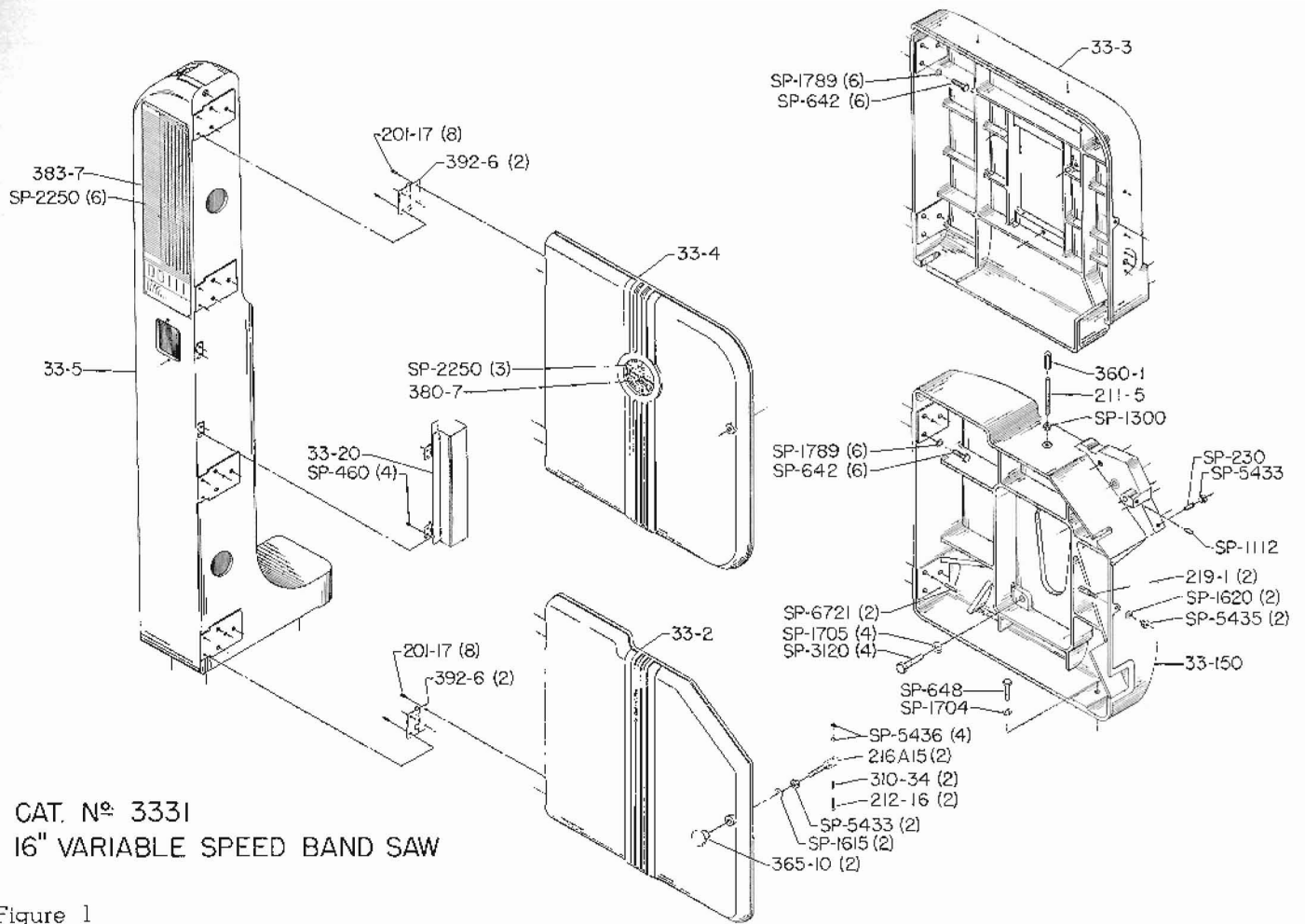
The machine is thoroughly lubricated at the factory—all bearings are grease sealed. Under normal operation, it is only necessary to apply a few drops of oil, about once a month to the following points:

**Guide Elevating Screw:** Oil rack and pinion occasionally.

The tensioning mechanism is packed with grease at the factory which should be satisfactory for years of service, however, a drop of oil on the tensioning screw from time to time will help keep the action loose.

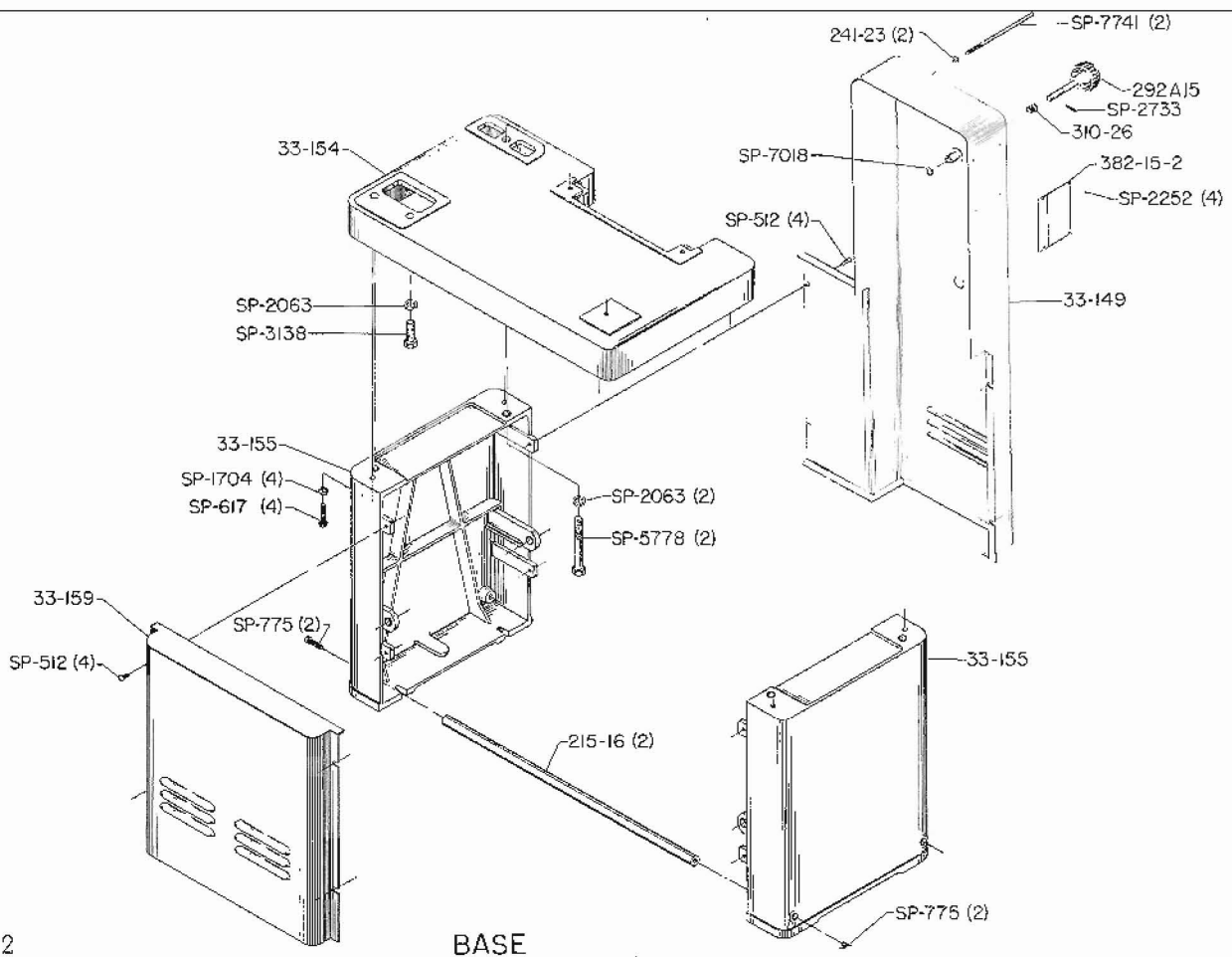
The variable speed drive screw should be oiled from time to time to allow free movement of drive mechanism.

On metal cutting band saws, the gear unit is packed with grease before shipment and need for additional greasing depends entirely on the type of service applied to this unit. A good rule to follow is to inspect it every six months and if necessary, repack the gear box with  $1\frac{3}{4}$  pounds of adhesive pressure grease or equal.



CAT. N° 3331  
16" VARIABLE SPEED BAND SAW

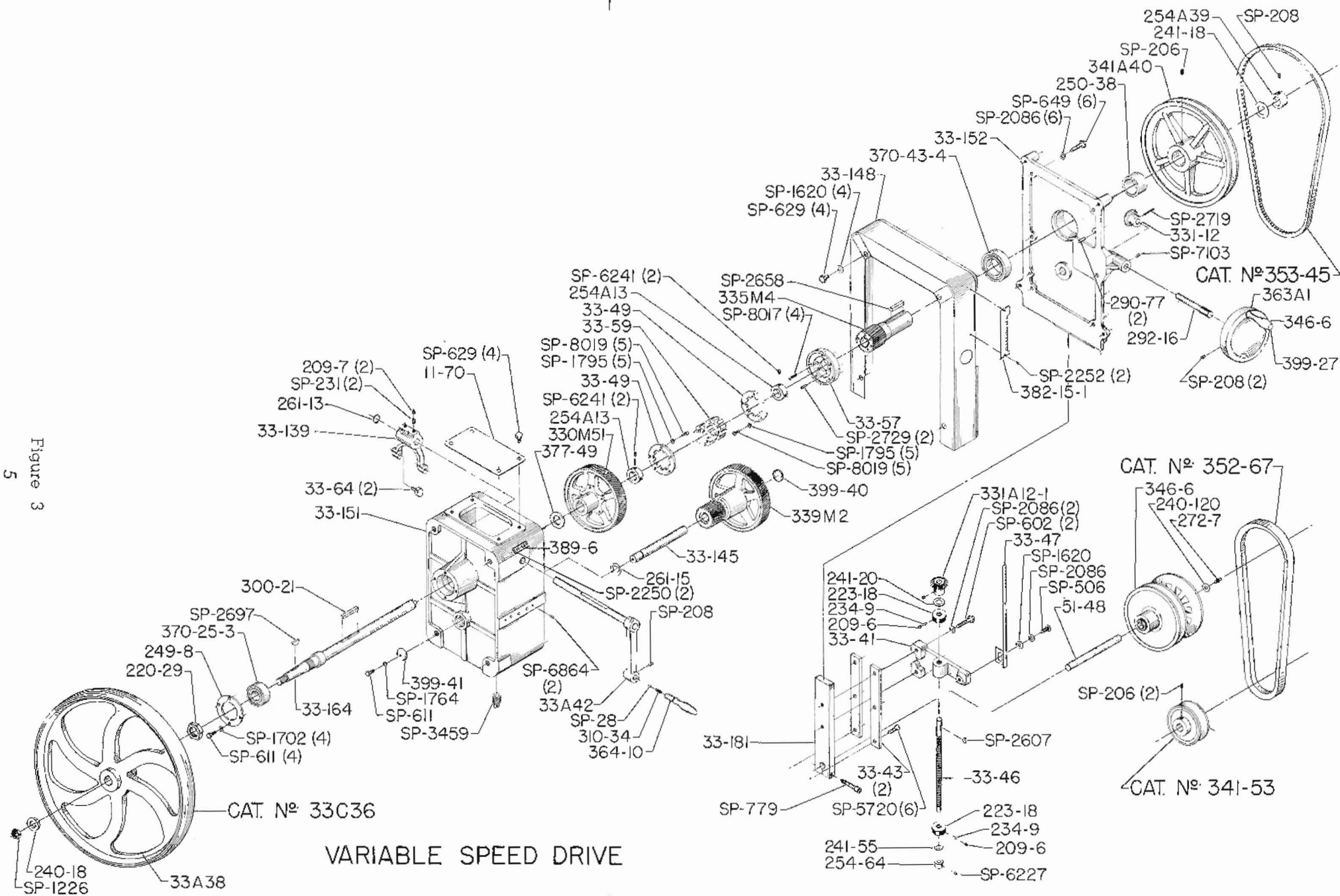
Figure 1

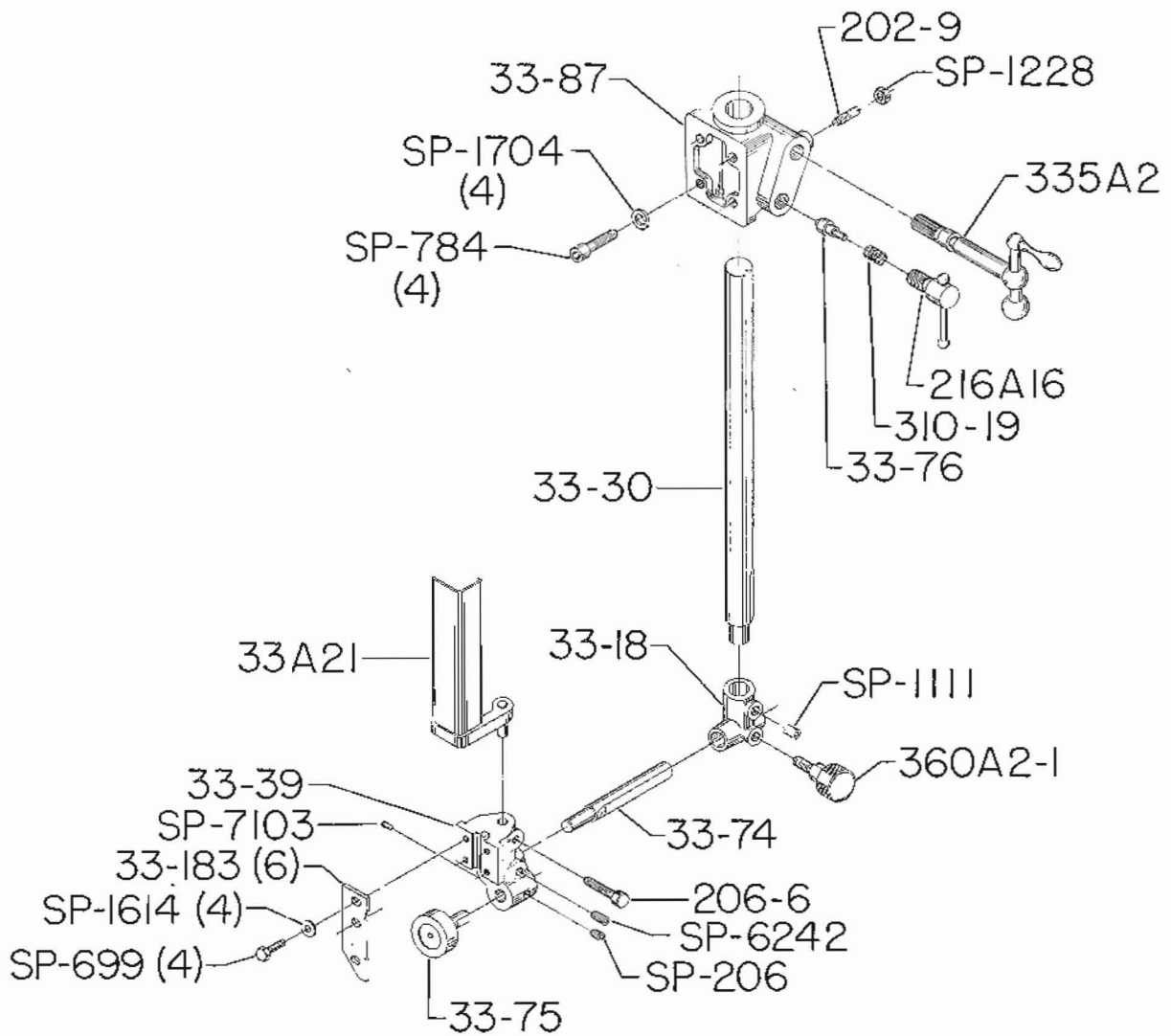


BASE

Figure 2

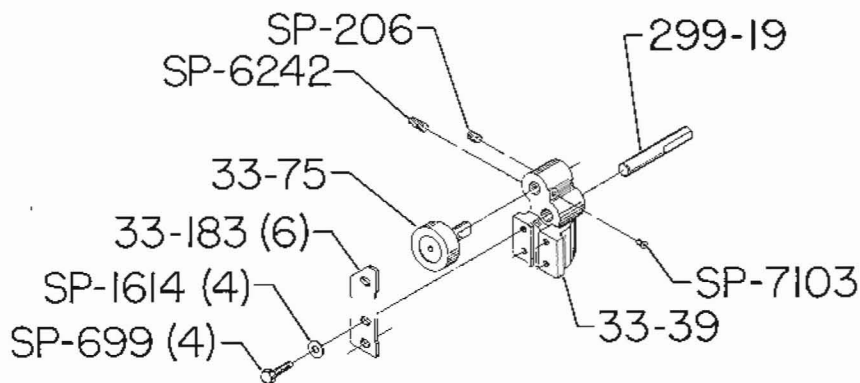
Figure 3  
5





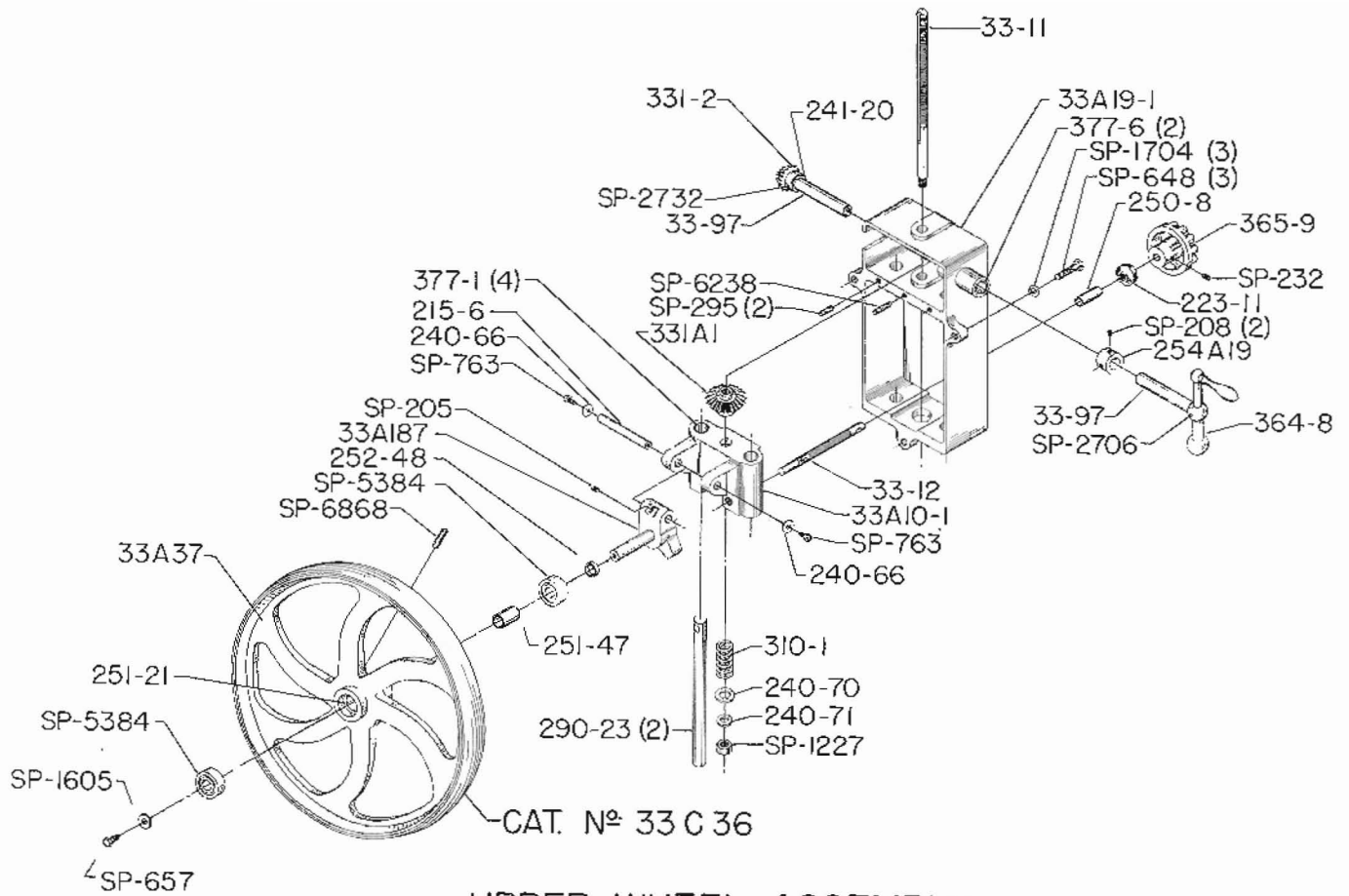
## UPPER SAW GUIDE

Figure 4



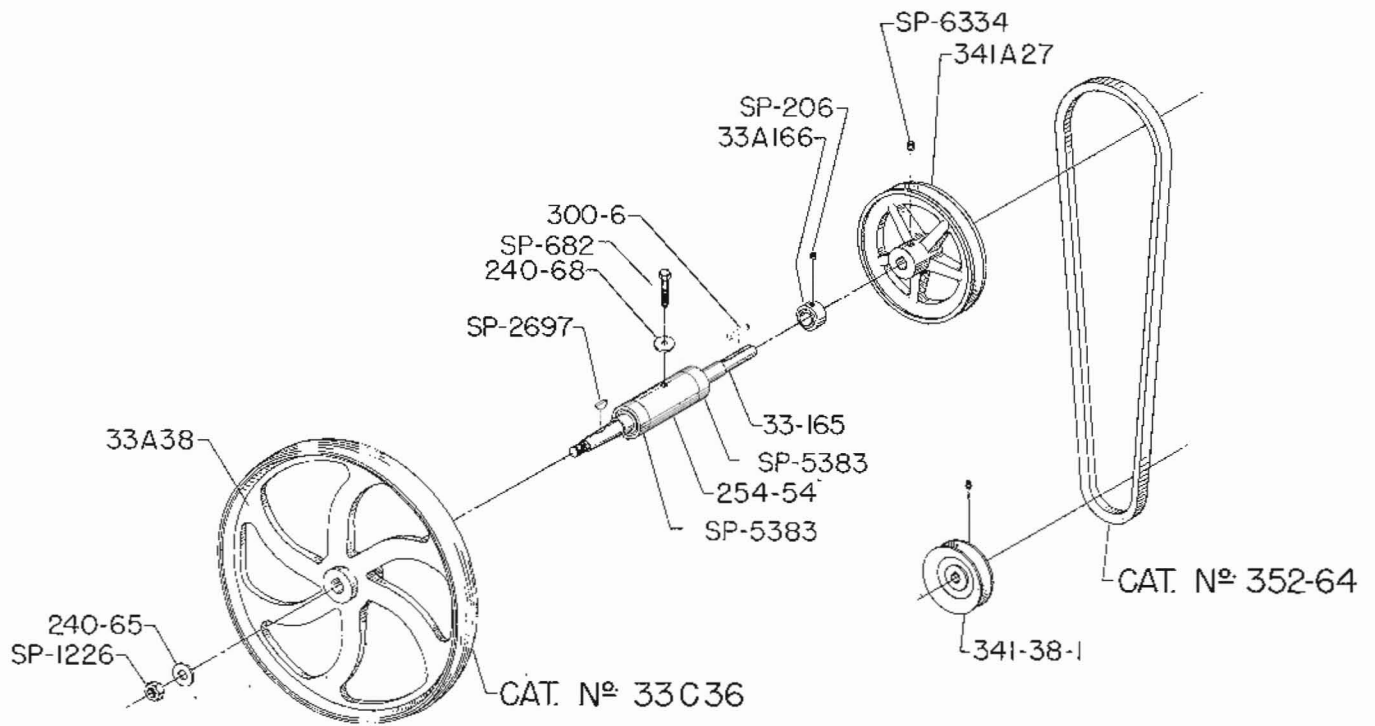
## LOWER SAW GUIDE

Figure 4A



### UPPER WHEEL ASSEMBLY

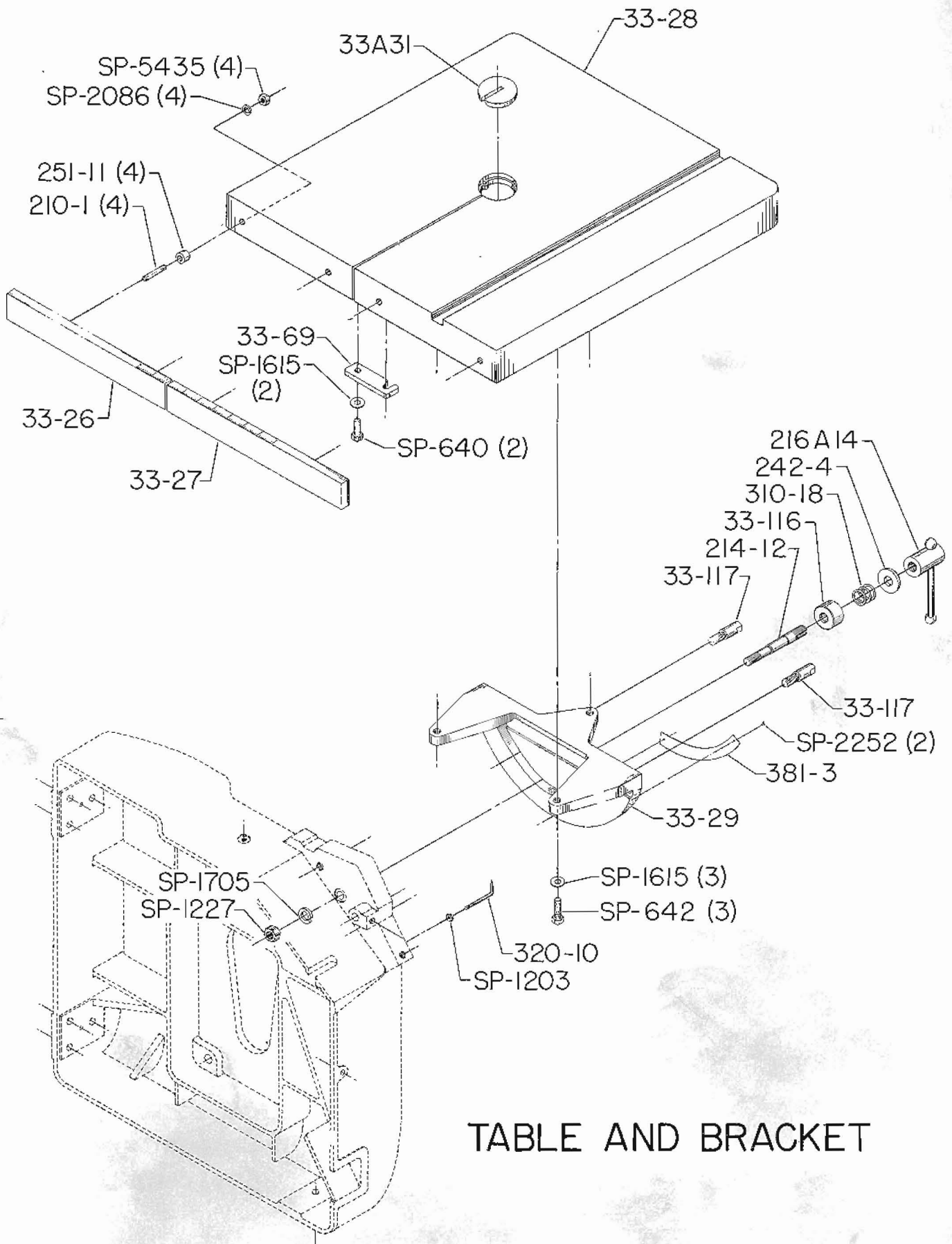
Figure 5



### BOTTOM WHEEL ASSEMBLY

USED WITH CAT. N° 3341 16" WOODWORKING BAND SAW

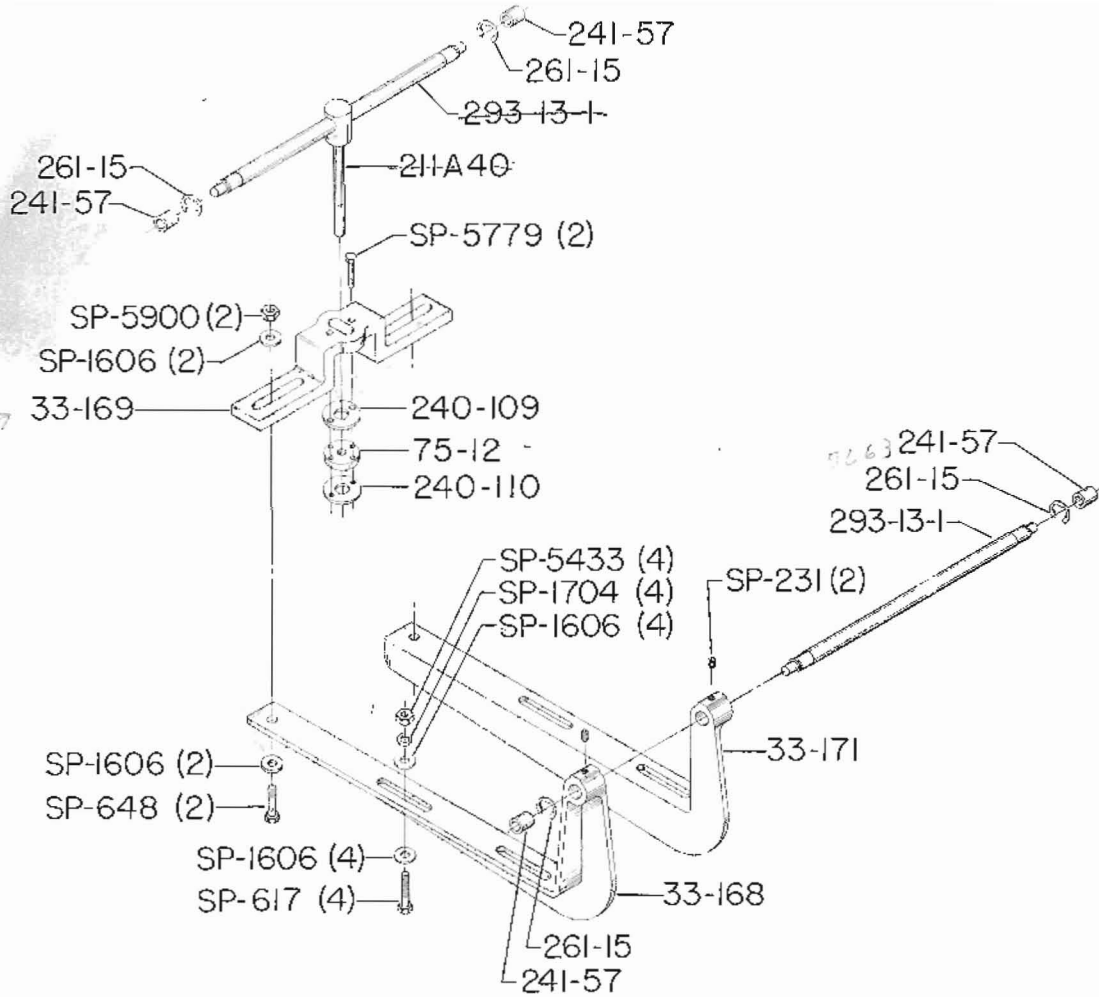
Figure 6



# TABLE AND BRACKET

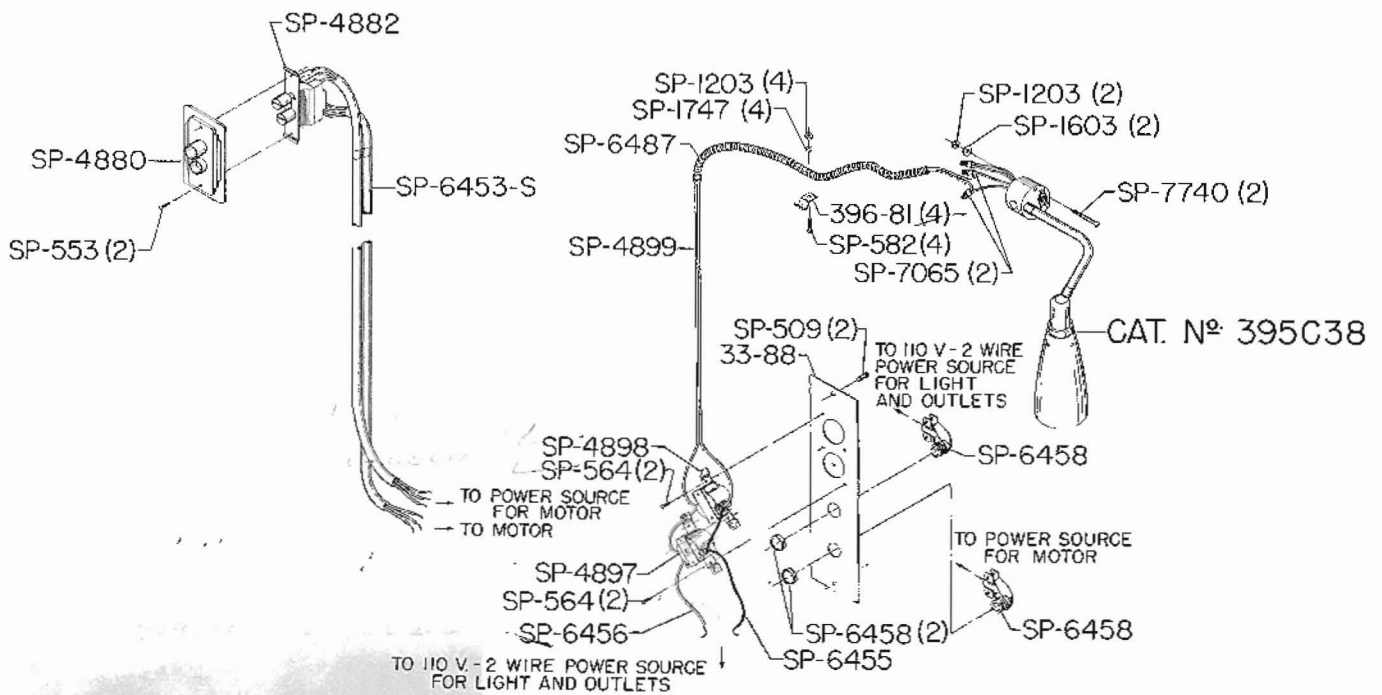
Figure 7





## MOTOR MOUNTING

Figure 8



## ELECTRICAL SYSTEM

Figure 9

## PARTS LIST

Part No.	Description	No. Required	Part No.	Description	No. Required
<b>Replacement Parts</b> (See Fig. 1)			<b>Variable Speed Drive</b> (See Fig. 3)		
33-2	Bottom Wheel Housing Cover	1	11-70	Cover Plate	1
33-3	Top Wheel Housing	1	33A38	Bottom Wheel and Tire, including	1
33-4	Top Wheel Housing Cover	1	33C36	Tire	1
33-5	Column	1	33-41	Slide Adjusting Bracket	1
33-20	Saw Blade Guard	1	33A42	Shifter Shaft	1
33-150	Bottom Wheel Housing	1	33-43	Slide Retaining Strip	2
201-17	Slotted Flat Head Screw	16	33-46	Slide Bracket Shaft	1
211-5	Stud	1	33-47	Speed Indicator	1
216A15	Cover Lock Stud Assembly including	1	33-49	Female Spline	2
	212-16 Insert Pin Clip	2	33-57	Spline Ring Holder	1
	310-34 Spring	2	33-59	Male Spline	1
	365-10 Hand Knob	2	33-64	Clutch Fork Shoe	2
	SP-1615 3/8" Flat Washer	2	33-139	Clutch Fork	1
	SP-5433 3/8-16" Hex. Jam Nut	2	33-145	Intermediate Gear Shaft	1
	SP-5436 #8-32 Hex. Nut	4	33-148	Front Belt Guard	1
219-1	Housing Lock Stud	2	33-151	Gear Housing	1
360-1	Table Stop	1	33-152	Gear Housing Cover	1
380-7	Name Plate	1	33-164	Drive Shaft	1
383-7	Speed Chart	1	33-181	Slide Strip	1
392-6	Hinge	4	51-48	Idler Pulley Shaft	1
SP-230	3/8-16 x 3/4" Soc. Hd. Set Screw	1	209-6	Hollow Lock Screw	2
SP-460	#8-32 x 1/4" Flat Hd. Screw	4	209-7	Hollow Lock Screw	2
SP-642	3/8-16 x 1" Hex. Hd. Screw	12	220-29	Hex. Nut	1
SP-648	3/8-16 x 1 1/4" Hex. Hd. Screw	1	223-18	Knurled Nut	2
SP-1112	3/8-16 x 1/2" Soc. Hd. Set Screw	1	234-9	Plug	2
SP-1300	5/16-18" Hex. Nut	1	240-18	Washer	1
SP-1620	5/16" Flat Washer	2	240-120	Washer	1
SP-1704	3/8" Lockwasher	1	241-18	Washer	1
SP-1705	1/2" Lockwasher	4	241-20	Washer	1
SP-1789	3/8" Int. Tooth Lockwasher	12	241-55	Washer	1
SP-2250	#4 x 3/16" Drive Screw	9	249-8	Housing Flange	1
SP-3120	1/2-13 x 1 3/4" Hex. Hd. Screw	4	250-38	Spacer	1
SP-5433	3/8-16" Hex. Jam Nut	1	254A13	Stop Collar, including	2
SP-5435	5/16-18" Hex. Jam Nut	2		SP-6241 1/4-20 x 1/4" Soc. Hd. Set Screw	4
SP-6721	1/4 x 7/8" Roll Pin	2	254A39	Stop Collar, including	1
				SP-208 1/4-20 x 1/4" Soc. Hd. Set Screw	1
			254-64	Collar	1
			261-13	Snap Ring	1
			261-15	Snap Ring	1
			272-7	Grease Fitting	1
			290-77	Dowell Pin	2
			292-16	Shoulder Pin	1
			300-21	Key	1
			310-34	Insert Pin Spring	1
			330MS1	Reduction Gear Assembly	1
			331-12	Miter Gage	1
			331A12-1	Gear with Set Screw	1
			335M4	Drive Pinion	1
			339M2	Intermediate Cluster Gear	1
			341A40	Pulley, including	1
				SP-206 5/16-18x5/16" Soc.Hd.Set Screw	1
			346-6	Vari-Speed Pulley	1
			363A1	Handweel, including	1
				364-6 Crank Handle	1
				399-27 Pin	1
				SP-208 1/4-20 x 1/4" Soc. Hd. Set Screw	2
			364-10	Crank Handle	1
			370-25-3	Bearing	1
			370-43-4	Bearing	1
<b>Base</b> (See Fig. 2)					
33-149	Rear Belt Guard	1			
33-154	Base - Top	1			
33-155	Base - Side	2			
33-159	Base - Front	1			
215-16	Stud	2			
241-23	Washer	2			
292A15	Hand Knob Assembly	1			
310-26	Coil Spring	1			
382-15-2	Speed Name Plate	1			
SP-512	5/16-18 x 1/2" Rd. Hd. Screw	8			
SP-617	3/8-16 x 1 1/2" Hex. Hd. Screw	4			
SP-775	3/8-16 x 1" Soc. Hd. Screw	4			
SP-1704	3/8" Lockwasher	4			
SP-2063	3/8" Lockwasher	3			
SP-2252	#2 x 3/16" Drive Screw	4			
SP-2733	5/32 x 7/8" Roll Pin	1			
SP-3138	3/8-11 x 1 1/2" Hex. Hd. Screw	1			
SP-5778	3/8-11 x 4" Hex. Hd. Screw	2			
SP-7018	Snap Ring	1			
SP-7741	5/16-18 x 6" Rd. Hd. Screw	2			

## PARTS LIST (Continued)

Part No.	Description	No. Required	Part No.	Description	No. Required
377-49	Thrust Washer	1			
382-15-1	Speed Name Plate	1			
389-6	Hi-Lo Plate	1			
399-40	Expansion Plug	1			
399-41	Expansion Washer	1			
SP-28	1/4" Steel Ball	1			
SP-208	Soc. Hd. Set Screw	1			
SP-231	Soc. Hd. Set Screw	2			
SP-506	5/16-18 x 5/8" Rd. Hd. Screw	1			
SP-602	5/16-18 x 1 1/4" Hex. Hd. Screw	2			
SP-611	1/4-20 x 1/2" Hex. Hd. Screw	5			
SP-629	5/16-18 x 3/8" Hex. Hd. Screw	8			
SP-649	5/16-18 x 1" Hex. Hd. Screw	6			
SP-779	5/16-18 x 1 1/2" Soc. Hd. Screw	1			
SP-1226	3/8-16" Hex. Nut	1			
SP-1620	5/16" Flat Washer	5			
SP-1702	1/4" Lockwasher	4			
SP-1764	1/4" Internal Tooth Lockwasher	1			
SP-1795	External Tooth Lockwasher	10			
SP-2086	5/16" Lockwasher	9			
SP-2250	Drive Screw	2			
SP-2252	Drive Screw	2			
SP-2607	Woodruff Key	1			
SP-2658	Key	1			
SP-2697	Woodruff Key	1			
SP-2719	Roll Pin	1			
SP-2729	Roll Pin	2			
SP-3459	1/2" Pipe Plug	1			
SP-5720	Slotted Flat Head Screw	6			
SP-6227	Soc. Hd. Set Screw	1			
SP-6864	Groove Pin	2			
SP-7103	Drive Oiler	1			
SP-8017	Soc. Hd. Flat Hd. Screw	4			
SP-8019	Soc. Hd. Button Screw	10			
<b>Upper Saw Guide</b>					
(See Fig. 4)					
33-18	Saw Guide Elbow	1			
33A21	Saw Blade Guard Assembly	1			
33-30	Guide Adj. Rack	1			
33-39	Saw Guide Bracket	1			
33-74	Upper Guide Support Shaft	1			
33-75	Roller Guide	1			
33-76	Guide Rack Lock Plunger	1			
33-87	Saw Guide Adj. Bracket	1			
33-183	Saw Blade Guide	6			
202-9	Set Screw	1			
206-6	Guard Lock Screw	1			
216A16	Guide Rack Lock Screw Assembly	1			
310-19	Plunger Lock Spring	1			
335A2	Pinion Shaft Assembly	1			
360A2-1	Guide Bracket Lock Stud Assembly	1			
SP-206	5/16-18 x 5/16" Soc. Hd. Set Screw	1			
SP-699	1/4-28 x 3/4" Hex. Hd. Screw	4			
SP-784	3/8-16 x 1 1/4" Soc. Hd. Screw	4			
SP-1111	3/8-16 x 3/8" Soc. Hd. Set Screw	1			
SP-1228	5/16-24" Hex. Nut	1			
SP-1614	Washer	4			
SP-1704	3/8" Lockwasher	4			
SP-6242	5/16-18 x 1/2" Soc. Hd. Set Screw	1			
SP-7103	Ball Oiler	1			
				<b>Lower Saw Guide</b>	
				(See Fig. 4A)	
			33-39	Saw Guide Bracket	1
			33-75	Roller Guide	1
			33-183	Saw Blade Guide	6
			299-19	Pin	1
			SP-206	5/16-18 x 5/16" Soc. Hd. Set Screw	1
			SP-699	1/4-28" x 3/4" Hex. Hd. Screw	4
			SP-1614	Washer	4
			SP-6242	5/16-18 x 1/2" Soc. Hd. Set Screw	1
			SP-7103	Ball Oiler	1
				<b>Upper Wheel Assembly</b>	
				(See Fig. 5)	
			33A10-1	Top Wheel Adj. Bracket, including	1
			377-1	Bushing	4
			33-11	Wheel Tension Screw	1
			33-12	Alignment Screw	1
			33A19-1	Wheel Adj. Housing, including	1
			377-6	Sleeve Bearing	2
			33A37	Top Wheel, including	1
			33C36	Tire	1
			251-21	Spacer	1
			SP-6868	3/16 x 1/2" Groove Pin	1
			33-97	Crank Shaft	1
			33A187	Idler Shaft Bracket	1
			215-6	Pin	1
			223-11	Alignment Lock Nut	1
			240-66	Washer	2
			240-70	Washer	1
			240-71	Washer	1
			241-20	Fiber Washer	1
			250-8	Spacer	1
			251-47	Spacer	1
			252-48	Sleeve Bushing	1
			254A19	Collar, including	1
			290-23	Pin	2
			310-1	Spring	1
			331A1	Wheel Position Gear Assembly	1
			331-2	Gear	1
			364-8	Crank	1
			365-9	Hand Knob	1
			SP-205	5/16-18 x 1/4" Soc. Hd. Set Screw	1
			SP-232	1/4-20 x 3/8" Soc. Hd. Set Screw	1
			SP-295	5/16-18 x 3/4" Soc. Hd. Set Screw	2
			SP-648	3/8-16 x 1 1/4" Hex. Hd. Screw	3
			SP-657	5/16-24 x 1/2" Hex. Hd. Screw	1
			SP-763	1/4-20 x 3/8" Soc. Hd. Screw	2
			SP-1227	1/2-20" Hex. Nut	1
			SP-1605	5/16" Washer	1
			SP-1704	Lockwasher	3
			SP-2706	3/16 x 1" Roll Pin	1
			SP-2732	5/32 x 1" Roll Pin	1
			SP-5384	Bearing	2
			SP-6238	5/16-18 x 1" Soc. Hd. Set Screw	1

## PARTS LIST (Continued)

Part No.	Description	No. Required	Part No.	Description	No. Required
<b>Bottom Wheel Assembly (used on Cat. No. 3341)</b> (See Fig. 6)			<b>Motor Mounting</b> (See Fig. 8)		
33A38	Bottom Wheel, including	1	33-168	Motor Rail (front)	1
	33C36 Tire	1	33-169	Bridge	1
33-165	Drive Shaft	1	33-171	Motor Rail (rear)	1
33A166	Slinger, including	1	75-12	Disc Coupling	1
	SP-206 5/16"-18" x 5/16" Soc. Hd. Set Scr.	1	211A40	Bridge Stud Assembly	1
240-65	Washer	1	240-109	Upper Washer	1
240-68	Washer	1	240-110	Lower Washer	1
254-54	Spacer	1	241-57	Rubber Sleeve	4
300-6	Key	1	261-15	Snap Ring	4
341A27	Pulley, including	1	293-13-1	Pin	2
	SP-6334 3/8-16 x 1/4" Soc. Hd. Set Screw	1	SP-231	5/16-18 x 3/8" Soc. Hd. Set Screw	2
341-38-1	Pulley with Set Screw	1	SP-617	3/8-16 x 1 1/2" Hex Hd. Screw	4
SP-682	3/8-24 x 1 1/2" Hex. Hd. Screw	1	SP-648	3/8-16 x 1 1/4" Hex. Hd. Screw	2
SP-1226	5/16-18" Hex. Nut	1	SP-1606	3/8" Flat Washer	12
SP-2697	Woodruff Key	1	SP-1704	3/8" Lockwasher	4
SP-5383	Bearing	1	SP-5433	3/8-16" Hex. Jam Nut	4
			SP-5779	1/4-20 x 1 1/4" Hex. Hd. Screw	2
			SP-5900	3/8-16" Hex. Nut	2
<b>Table and Bracket</b> (See Fig. 7)			<b>Electrical System</b> (See Fig. 9)		
33-26	Rip Fence Guide Bar	1	33-88	Plug-In Plate	1
33-27	Rip Fence Guide Bar	1	396-81	Cable Clip	4
33-28	Table	1	SP-509	1/4-20 x 1/2" Rd. Hd. Screw	2
33-29	Bracket	1	SP-553	#6-32 x 1/2" Rd. Hd. Screw	2
33A31	Insert Assembly	1	SP-564	#6-32 x 3/8" Rd. Hd. Screw	4
33-69	Clip	1	SP-582	#10-32 x 3/8" Rd. Hd. Screw	4
33-116	Cup	1	SP-1203	Hex. Nut 10-32"	6
33-117	Pin	2	SP-1603	#10 Flat Washer	2
210-1	Support Bar Stud	4	SP-1747	#10 Medium Lock Washer	4
214-12	Stud	1	SP-4880	Switch Push Button Cover	1
216A14	Locking Handle Assembly	1	SP-4882	Push Button Switch	1
242-4	Washer	1	SP-4897	Single Receptable	1
251-11	Spacer	4	SP-4898	Single Receptable	1
310-18	Spring	1	SP-4899	Rip Cord	1
320-10	Pointer	1	SP-6453-S	Cable - Rubber Covered 3 wire, #14	1
381-3	Protractor	1	SP-6455	Black Wire #16	1
SP-640	3/8-16 x 3/4" Hex. Hd. Screw	2	SP-6456	White Wire #16	1
SP-642	3/8-16 x 1" Hex. Hd. Screw	3	SP-6458	90° Connector 1/2" Pipe Thread	2
SP-1203	#10-32" Hex. Nut	1	SP-6487	Sq. Lock Tubing	1
SP-1227	1/2-20" Hex. Nut	1	SP-7065	Wire Nut	2
SP-1615	Washer	5	SP-7740	#10-32 x 1 1/2" Rd. Hd. Screw	2
SP-1705	Lockwasher	1	<b>Accessories</b>		
SP-2086	Lockwasher	4	Cat. No. 33C36	Tire	
SP-2252	Drive Screw	2	Cat. No. 341-53	Pulley Assembly	
SP-5435	5/16-18" Hex. Nut	4	Cat. No. 352-64	V-Belt	
			Cat. No. 352-67	V-Belt	
			Cat. No. 353-45	V-Belt	
			Cat. No. 395C38	Side Lamp	

The right is reserved to make changes in design or equipment at any time without incurring any obligation to install these on machines previously sold, and to discontinue models of machines, motors or accessories at any time without notice.



### Rockwell MANUFACTURING COMPANY

**WALKER-TURNER POWER TOOL DIVISION**

**PITTSBURGH 8, PENNSYLVANIA**