

PAPER WINDERS - 15 TYPE

DESCRIPTION

1. GENERAL

1.01 This section describes the 15-type paper winders recommended for use in the handling of teletypewriter paper. This section also contains a brief description of the associated modification kits used with these paper winders to adapt them for specific purposes.

1.02 The double asterisk (**) following a part or assembly number included in this section designates a two-number suffix (Bell System codes) which denotes the color of the finish in which the apparatus is available. These numbers, together with the corresponding two-letter suffix used with Teletype Corporation codes, are as follows:

<u>Finish</u> <u>(See Note)</u>	<u>Bell</u> <u>System</u> <u>Suffix</u>	<u>Teletype</u> <u>Corp</u> <u>Suffix</u>
Black Wrinkle	37	AA
Gray-green Wrinkle	40	AB
Light Brown Wrinkle	39	AC
Dark Brown Wrinkle	38	AD
Walnut Grain	35	CA

Note: In addition to the colors listed, other colors may be obtained on request.

2. DESCRIPTION - PAPER WINDERS - 15 TYPE

2.01 Paper winders (formerly sometimes called page winders) are motor-driven mechanisms provided to wind the printed-page copy on a cylinder as the copy emerges from a friction-feed typing unit. The 15A** to 15F**, inclusive, paper winders are intended to mount on a 15 teletypewriter cover, and with the addition of a modification kit can be adapted for use on a 28 teletypewriter cabinet containing a 28 friction-feed typing unit. Descriptive information on 15-type paper winders is given in Table A.

TABLE A

15-TYPE PAPER WINDERS

Code No.	Paper Width (Inches)	Capacity of Spindle (Feet of Paper)	Motor Drive	Notes
15A**	6 to 8-1/2	400	60-Cy AC	1, 2, 3
15B**	4-1/2 to 5	400	60-Cy AC	1, 2, 3
15C**	6 to 8-1/2	400	DC or 25- or 60-Cy AC	1, 2, 3 4, 5
15D**	4-1/2 to 5	400	DC or 25- or 60-Cy AC	1, 2, 3 4, 6
15E**	6 to 8-1/2	400	60-Cy Sync	1, 3, 7
15F**	4-1/2 to 5	400	60-Cy Sync	1, 3, 8

Notes:

- Width of paper to be wound must be specified, since spindles are cut to size required when paper winders are ordered.
- All the paper winders except the 15E** and 15F** have the same universal motor. With the 15C** and 15D** paper winders, however, a TP104851 resistor set of parts is furnished when the winder is to be operated on dc or 25-cycle ac power supply and the internal wiring is modified to connect 250 ohms across the motor armature instead of the 500 ohms used in the case of 60-cycle ac power supply.
- There are approximately 400 feet of paper in a full 5-inch diameter roll of KS-1920 paper.
- Where 60-cycle ac power supply is available, it is preferable to use a 15A**, 15B**, 15E**, or 15F** paper winder, since less motor heat is developed on 60-cycle ac power than on dc or 25-cycle ac power supply.
- Similar to 15A** paper winder except a mesh-cage resistor assembly is added for operation on dc and 25-cycle ac installations.

Notes (Continued):

6. Similar to 15B** paper winder except a mesh-cage resistor assembly is added for operation on dc and 25-cycle ac installations.
7. Similar to 15A** paper winder except that it is equipped with a 60-cycle synchronous motor.
8. Similar to 15B** paper winder except that it is equipped with a 60-cycle synchronous motor.

3. DESCRIPTION - MODIFICATION KITS AND ASSEMBLIES

3.01 The TP123925 paper guide is available for use with a paper winder on a 15 teletypewriter cover to permit feeding paper toward the back of the cover when it is not desired to accumulate paper on the paper winder. The paper guide is of 0.025-inch sheet steel, approximately 4-1/2 inches wide by 9-1/2 inches long, and is arranged to be clamped under the thumb-screws which normally secure the paper winder to the top of the cover. It extends forward and down to guide the paper up over the winder base toward the rear of the teletypewriter without catching on the base or its mounting screws. After installation, the proper clearance between the guide plate and the cover glass may be obtained easily by readjusting the cover lip and then bending the guide plate to make contact with it.

3.02 The TP104851 modification kit contains a 100-ohm mesh-cage resistor and is furnished with 15C** and 15D** paper winders when the winder is to be operated on 110-volt dc or 25-cycle ac power supply and the internal wiring is modified to connect 250 ohms across the mo-

tor armature instead of the 500 ohms used in the case of 60-cycle ac power supply.

3.03 The TP129428 modification kit when installed on a paper winder mounted on a 15 teletypewriter cover provides reverse rotation of the winder to allow the use of 2-copy paper with interleaved carbon. The reverse rotation of the paper winder permits winding the carbon copy on the spindle of the paper winder, passing the carbon paper over the top of the winder into a container in the rear, and tearing off the original.

Note: The TP129428 modification kit is intended for shop installation only.

3.04 The TP136146 modification kit is intended for use where it is necessary to convert a 15 paper winder from operation by a universal motor (brush type) to operation by a synchronous speed-reducer motor (brushless). The modification kit consists of a synchronous gear-reduction motor, two 3-wire cord connectors, and the bracket and mounting parts necessary for mounting the motor. The synchronous motor operates on 115 volts, 60 cycles, single-phase alternating current. It has a 30 to 1 speed reduction and has an output shaft speed of 60 revolutions per minute. The paper spindle of the paper winder is directly connected to the motor through a friction-clutch mechanism.

3.05 The 153901** modification kit provides the means of adapting a 15 paper winder for use on a 28 teletypewriter cabinet to accumulate typed copy from a 28 friction-feed teletypewriter. The kit contains a bracket designed to mount the paper winder and also includes the parts necessary to install the bracket on a 28 teletypewriter cabinet.

PAPER WINDERS - 15 TYPE

INSTALLATION

CONTENTS	PAGE
1. GENERAL	1
2. INSTALLATION	1
A. On a 15 Teletypewriter Cover	1
B. On a 28 Teletypewriter Cabinet (TP153901 Modification Kit)	2
TP104851 modification kit (resistor for dc or 25 cycles)	4
TP129428 modification kit (provides for carbon copy)	4
TP136146 modification kit [converts from universal (series) motor to synchronous motor]	5
Three-conductor grounding cord assemblies	8

(3) Mount the paper winder on the top of the cover, with the motor to the left (when viewing the cover from the front) by means of the two thumbscrews and washers that are furnished; and before tightening the thumbscrews, position the paper winder so that the spindle lines up with the paper as it leaves the platen. Care should be taken in tightening the thumbscrews, as excessive tightening may buckle the mounting plate and bind the paper spindle.

(4) Feed the paper under the paper-winder slack rod and then fold back the leading corners of the paper to form a dart and insert it in the paper-spindle slot. Turn the spindle by hand one turn in the direction in which the paper is to be wound until the next turn of the paper, as it winds on the cylinder, overlaps the paper-spindle slot.

1. GENERAL

1.01 This section gives the installation instructions for mounting a 15-type paper winder on a 15 teletypewriter cover or a 28 teletypewriter cabinet. The section also gives installation instructions for modification kits that adapt the winder for specific purposes.

2.02 Spacer Bushings: If narrow paper (4-1/2 to 5-inch width) is used, the pressure rollers that do not bear on the paper should be removed and replaced as follows by the four TP104473 spacer bushings that are furnished with the 15B and 15D paper winders.

2. INSTALLATION

A. On a 15 Teletypewriter Cover

Note: The necessary two each of the nuts, flat washers, TP3900 bushings, lockwashers, and thumbscrews used for mounting the paper winder are furnished with the winder.

(1) Remove the typebar carriage from the typing unit.

(2) Unhook the line-feed detent-lever spring from its spring post.

(3) Back off the three setscrews, located in the right-hand hub of the platen, that hold the platen to its shaft.

2.01 Preparation and Installation

(1) The 15 teletypewriter cover on which the paper winder is to be mounted should be drilled in accordance with Figure 1.

(4) Withdraw the platen shaft and remove the platen.

(2) In the drilled holes, secure the TP3900 bushings, using the nuts and lockwashers. Care should be taken not to tighten the nuts too much, as excessive tightening may distort the bushings.

(5) Unhook the two tape-chute springs from their spring posts.

(6) Loosen the pressure-roller release-lever-shaft setscrews and withdraw the shafts sufficiently to release the paper chute; remove the chute.

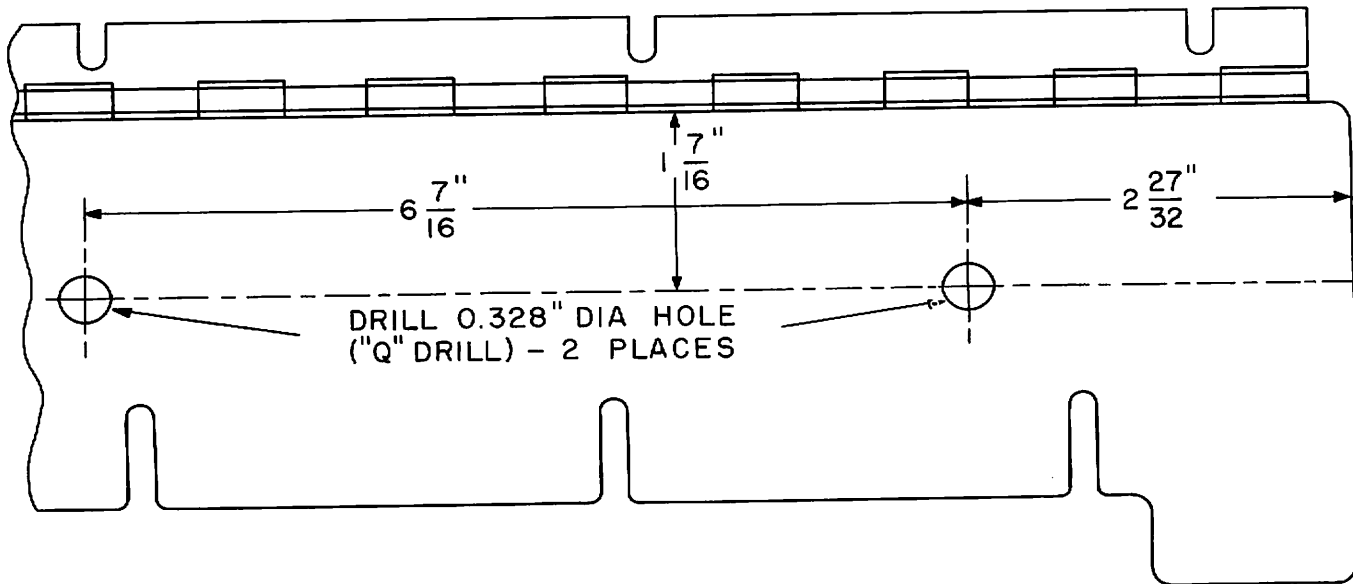


Figure 1 - 15 Teletypewriter Cover - Layout of Holes

(7) Remove from their shafts, the front and rear pressure rollers that do not bear on the paper, and dispose of them as provided by local instructions.

(8) Position the TP104473 bushings on the pressure-roller shafts and then reassemble the parts, referred to in 2.02(1) through 2.02(6), in the reverse order of their removal.

Note: The outer ends of the pressure-roller release-lever shafts should not project more than 1/32 inch beyond the outer surfaces of the paper chute.

2.03 Pressure-roller-spring Tension: The pressure-roller spring should have a tension as described in the section covering the 15 typing unit requirements and adjustments for the case where a paper winder is used.

B. On a 28 Teletypewriter Cabinet

2.04 A 15 paper winder can be mounted on a 28 teletypewriter cabinet by the use of the TP153901 modification kit which contains the necessary mounting parts shown in Figure 2.

2.05 Preparation for Installation of TP153901 Modification Kit

(1) Remove the typing unit from the cabinet.

(2) Remove and dispose of the following parts which seal the form slot in the back of the cabinet: two TP6345 nuts, two TP2191 lockwashers, two TP7002 washers, the TP152797 plate retainer, and the TP151532 cover and plate.

Note: The plate is located inside the cabinet, below the cabinet terminal block.

(3) Remove and dispose of the two TP103120 retainers and the two TP89515 screws located in the rear panel of the cabinet, just above the electrical service unit.

(4) Mount the TP154695 bracket on the back of the cabinet, using six each of the TP151632 screws, TP125015 flat washers, TP2191 lockwashers, and TP3598 nuts that are furnished. (See Figure 2.)

(5) Remove the paper-winder cover by removing the screw from the rear of the paper winder and backing off the other two screws. (The cover has two slotted mounting holes.)

(6) Viewing the paper winder from the rear, replace the left-hand mounting screw of the terminal block with the TP1179 screw that is furnished. Mount the TP154868 plate, using the remaining TP2191 lockwasher and TP3598 nut. Secure the TP78469 rubber foot

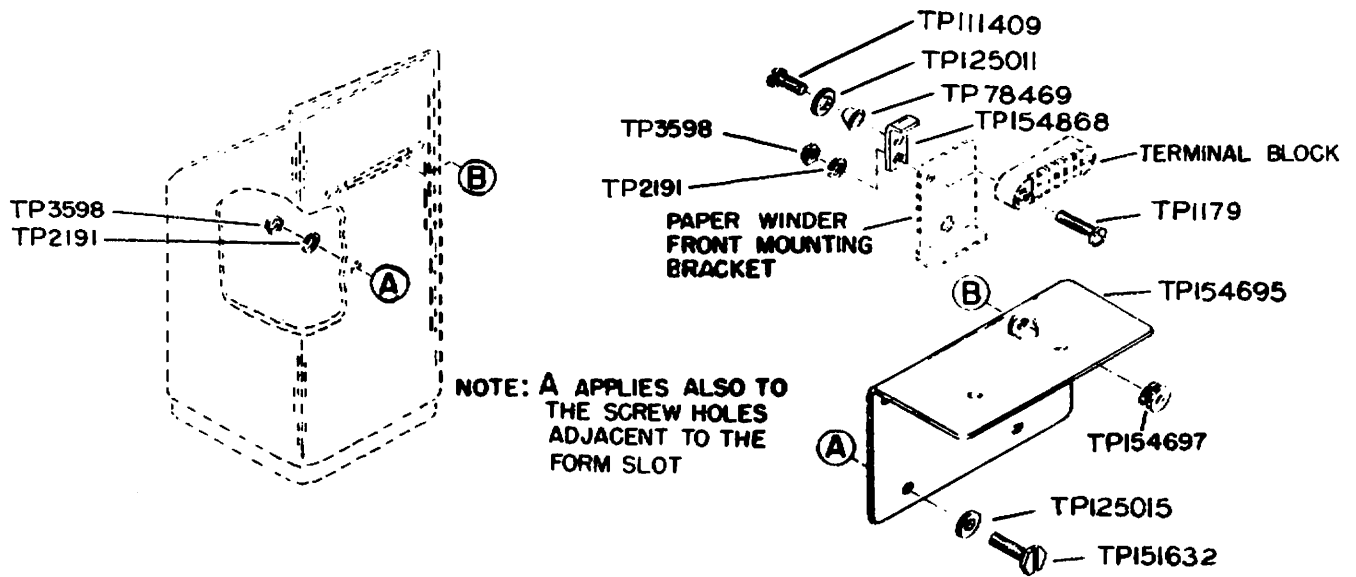


Figure 2 - TP153901 Modification Kit

to the TP154868 plate, using the TP111409 screw and TP125011 flat washer. (See Figure 2.)

(7) Reinstall the paper-winder cover.

2.06 Installation of TP153901 Modification kit

Note: The necessary two each of the nuts, flat washers, TP3900 bushings, lockwashers, and thumbscrews used for mounting the paper winder are furnished with the winder.

- (1) Secure the two TP3900 bushings in the holes in the TP154695 bracket, using the two lockwashers and nuts, taking care not to tighten the nuts too much, as excessive tightening may distort the bushings.
- (2) Mount the paper winder on the bracket, with the motor to the right (when viewing the cabinet from the rear) by means of the two thumbscrews and flat washers; and before tightening the thumbscrews, position the paper winder so that the spindle lines up with the paper as it leaves the platen. Care should be taken in tightening the thumbscrews, as excessive tightening may buckle the mounting plate and bind the paper spindle.
- (3) Feed the paper under the paper-winder slack rod and then fold back the leading corners of the paper to form a dart and insert it in the paper-spindle slot. Turn the spindle

by hand one turn in the direction in which the paper is to be wound until the next turn of the paper, as it winds on the cylinder, overlaps the paper-spindle slot.

- (4) Route the cord through the rubber grommet, through the large hole in the TP154695 bracket, through the slot into the cabinet, and along the bottom of the terminal-block bracket to the right side of the cabinet.
- (5) Insert the rubber grommet into the large hole in the TP154695 bracket.
- (6) Connect the terminal lugs in accordance with the section covering the wiring arrangements.
- (7) Put the typing unit in the cabinet.
- (8) Coil the surplus length of electrical cord and tie it together.
- (9) Check that the paper-winder motor is controlled by the proper switch.
 - (a) For the 28A teletypewriter cabinet, the paper-winder motor should be controlled by the winder switch, since this cabinet does not have switched power.
 - (b) For 28 teletypewriter cabinets other than the 28A cabinet, the motor should be controlled by the teletypewriter power switch when the paper-winder switch is turned on.

2.07 The TP104851 modification kit (100-ohm resistor) which is furnished with 15C and 15D paper winders, to adapt these winders for operation on 110-volts dc or 25-cycles ac, should be mounted as follows:

- (a) Wooden Table: Select an appropriate location on the table and mount the resistor and transite base, fastening them by means of the wood screws that are furnished.
- (b) All-metal Table: Select an appropriate location on the table and mount the resistor and transite base, fastening them by means of the machine screws, lockwashers, and nuts that are furnished.

2.08 The TP129428 modification kit (Shop installation only) when installed on a paper winder equipped with the series motor provides reverse rotation to allow the use of 2-copy paper with interleaved carbon. The original copy is torn off while the carbon copy is wound up. The carbon passes over the top of the paper winder and accumulates in a basket at the rear. The TP129428 modification kit should be installed in accordance with 2.09 and 2.10.

2.09 Preparation

- (1) Disconnect the plug from the power supply.
- (2) Remove the paper-winder cover by removing the screw from the rear of the paper winder and backing off the other two screws. (The cover has two slotted mounting holes.)
- (3) Depress the latch and remove the paper-winder spindle from its mounting to allow easier installation of the new parts.
- (4) Remove the four screws, flat washers, and lockwashers which hold the motor to the bracket, taking care not to loosen any electrical connections.
- (5) Remove the end-thrust screw, nut, and ball bearing from the gear housing, shown in Figure 3, taking care not to mislay the bearing.
- (6) Remove the gear housing from the motor end bell by removing the three screws, shown in Figure 3, taking care not to damage or mislay the gasket. Then remove all excess grease from the pinion and motor end bell.

- (7) Remove all grease from the gear housing.
- (8) Drive out and dispose of the pins that hold the pinion to the motor shaft and the fiber gear to the gear housing shaft. Remove and discard both the pinion and the fiber gear.

2.10 Installation

- (1) Install the fiber gear that is furnished, on the gear housing shaft, using the longer (3/16 inch) setscrew of the two that are supplied. Do not tighten the setscrew fully at this time.
- (2) Install the pinion that is furnished, on the motor shaft, using the remaining setscrew (1/8 inch) that is also furnished. Do not tighten the setscrew fully at this time.
- (3) Reinstall the gear housing and gasket on the motor end bell.
- (4) Reinstall the end-thrust ball bearing, nut, and screw. Turn in the screw until the motor shaft has only 1/32-inch endplay; then tighten the nut.
- (5) Looking through the opening provided by the removal of the gear housing cover, position either the pinion or the fiber gear so that the teeth of the fiber gear engage the teeth located in the middle section of the pinion. Check to see that there are no binds. Line up the setscrew in the fiber-gear hub with the lubricating hole located on top of the gear-housing casting, insert the longer section of a standard No. 8 Allen wrench through the hole, and tighten the setscrew of the fiber-gear hub. Tighten the pinion setscrew. Reinstall the gear-housing cover and gasket.
- (6) Remount and position the motor on the bracket so that the gear-housing shaft is in line with the spindle cradle at the other end of the paper-winder bracket.
- (7) Lubricate the gears as specified in the lubrication section.
- (8) Reinstall the spindle and check the alignment and the paper-spindle shaft endplay as specified in the section covering the requirements and adjustments.
- (9) Plug in and start the winder. Observe the operating characteristics, and check that there are no binds and that the motor runs quietly and does not overheat.

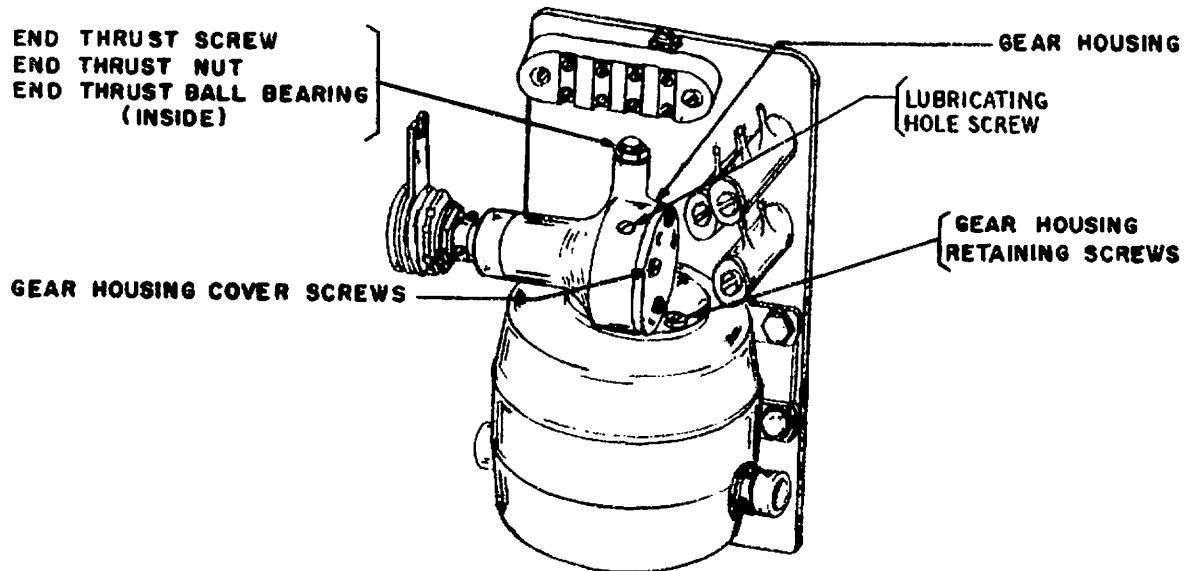


Figure 3 - Gear Housing Assembly

- (10) Stop the motor; then reinstall the paper-winder cover.

2.11 TP136146 Modification Kit: To convert paper winders equipped with universal motors (15A through 15D) to operation by synchronous motors (15E or 15F). (See Figures 4 and 5.)

2.12 Preparation

- (1) Disconnect the plug from the power supply.
- (2) Remove the paper-winder cover by removing the screw from the rear of the paper winder and backing off the other two screws. (The cover has two slotted mounting holes.)
- (3) Remove the ground lead, if any, from under the head of one of the mounting screws of the universal motor.
- (4) Depress the latch and remove the paper-winder spindle from its mounting to allow easier installation of the new parts.
- (5) Loosen the two setscrews mounting the friction clutch (assembled) onto the universal motor shaft.
- (6) Remove the universal motor leads from the TP76117 terminal board.

- (7) Remove the four TP151723 screws, TP3438 flat washers, and TP2382 lockwashers which fasten the universal motor to the TP102490 bracket. Discard one screw, two lockwashers and the universal motor.

- (8) Remove and discard resistor mounting on which the TP93635 and TP77808 resistors (both 250 ohms) are mounted.

- (9) Remove and discard the TP88085 cable and the TP105635 switch.

- (10) At the base of the TP102490 bracket, on the side nearest to the spindle, remove the two TP151723 screws, TP3438 flat washers, and TP2382 lockwashers.

- (11) If the paper winder is equipped with TP93642 and TP93643 two-conductor cord assemblies, replace these with TP142556 and TP142557 three-conductor cord assemblies respectively as explained in 2.14.

2.13 Installation

- (1) Install the TP142551 bracket to the spindle side of the TP102490 bracket using two TP151723 screws, TP2382 lockwashers, and TP3438 flat washers. Install two TP151724 screws, using TP2382 lockwashers and TP3438 flat washers, through the TP142551 bracket and the TP102490 bracket into the

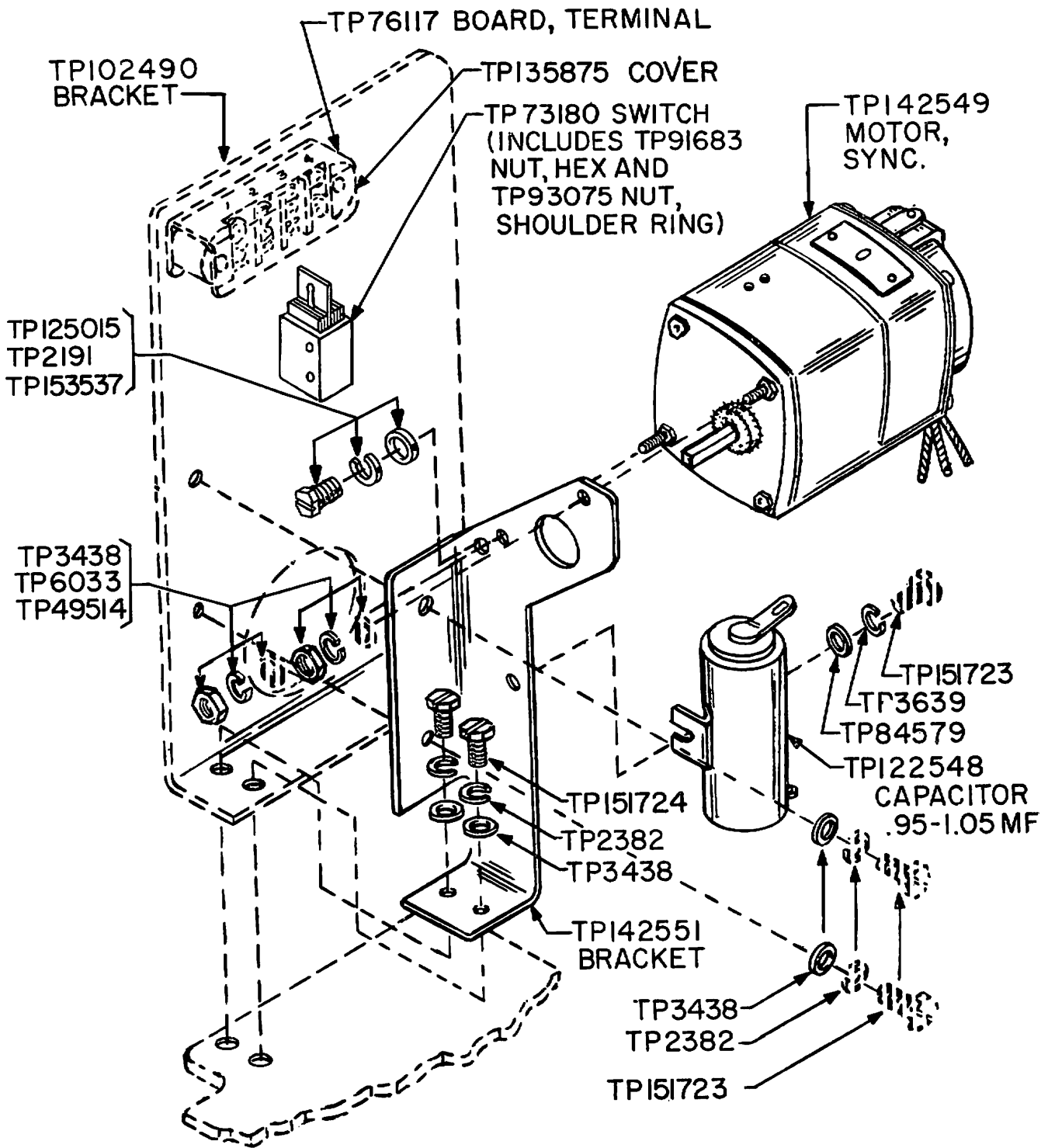


Figure 4 - TP136146 Modification Kit

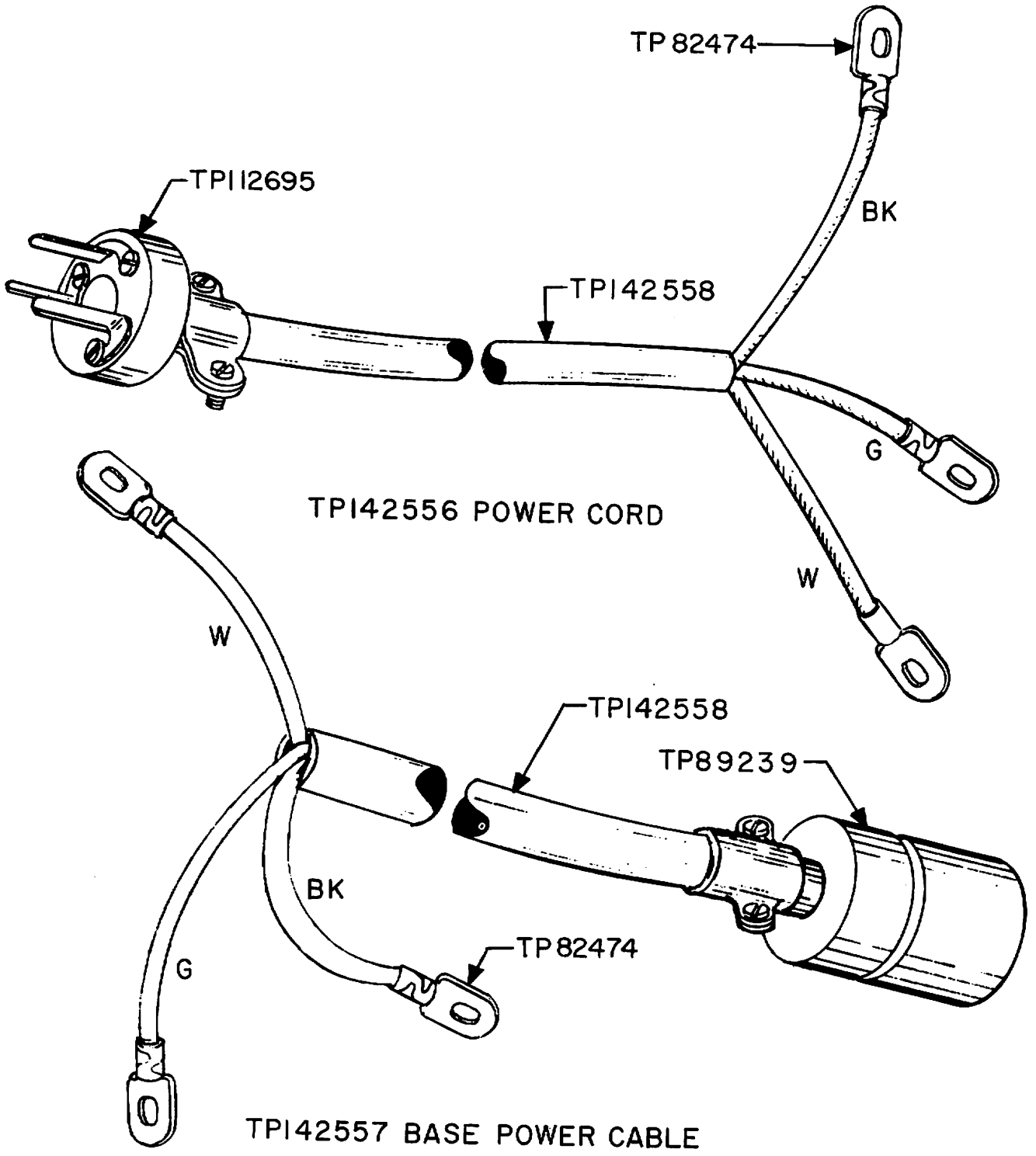


Figure 5 - Three-conductor Grounding Cord Assemblies

SECTION 570-301-220

TP101023 base plate (for 6-, 6-1/2, or 8-inch paper) or the TP110996 base plate (for 5-inch paper).

(2) Install the TP153537 ground screw, TP2191 lockwasher and TP125015 flat washer onto the TP142551 bracket.

(3) Mount the TP122548 capacitor in a vertical position to the TP142551 bracket on the side opposite to the spindle re-using one TP151723 screw, TP3639 lockwasher, and TP84579 flat washer.

(4) Cut two lengths from the TP31551RM wire, one of 4 inches and the other 8 inches. Skin, twist, and tin approximately 1/8 inch on each of the four ends, also the three lead ends on the TP142549 motor.

(5) Mount the TP73180 switch (includes TP91683 nut and TP93075 nut) to the TP102490 bracket with the terminals facing up.

(6) Attach and solder one TP151626 terminal to one end of the 4-inch wire and connect this end to terminal No. 1 on the TP76117 terminal board. The other end solder to the left terminal of the TP73180 switch. Solder one end of the 8-inch wire to the right terminal of the switch (viewed from the rear of the unit), and the other end to the bottom terminal of the TP122548 capacitor along with the black lead from the TP142549 motor. Solder the red motor lead to the top terminal of the capacitor. Attach and solder one TP151626 terminal to the blue motor lead and connect to terminal No. 4 on the TP76117 terminal board.

Note: The terminal lugs must be inserted under the terminal block screws with the wires extended down from the terminals. For counterclockwise rotation of the paper winder, remove the wire from the bottom of the capacitor that leads to the TP73180 switch and resolder to the top of the capacitor. Refer to the section covering the wiring arrangements for the 15-type paper winders.

(7) On paper winders 15A35 (formerly 15A) and 15C35 (formerly 15C) replace the TP120458 Bell System code designation plate by means of the two TP93597 screws with the TP146358 identification plate stamped 15E. Discard the TP146359 plate. On paper winders 15B35 (formerly 15B) and 15D35 (formerly

15D) replace the TP120458 Bell System code designation plate with the TP146359 designation plate stamped 15F. Discard the TP146358 designation plate.

(8) Install the TP142549 synchronous motor on the TP142551 bracket using two TP3438 flat washers, TP6033 lockwashers, and TP49514 nuts. Mount the motor so that the shaft extends toward the paper spindle with the oil holes and name plate located on the top of the motor.

(9) For paper winders which are equipped with the TP104851 resistor modification kit, discard the modification kit. The TP142549 synchronous motor is to be operated on 115 volts, 60 cycles, single-phase, ac only.

(10) Replace the friction clutch (as a unit) approximately 1/2 inch on the motor shaft and tighten the TP74536 setscrews against the shaft flats.

(11) Reinstall the spindle and check the alignment and the paper-spindle-shaft endplay as specified in Section 570-301-720.

(12) Plug in and start the winder. Observe the operating characteristics and be sure that there are no binds, and that the motor runs quietly and does not overheat.

(13) Reinstall the paper-window cover.

2.14 Three-conductor Grounding Cord Assemblies: The TP142556 and TP142557 three-conductor cord assemblies (see Figure 5) have replaced the older two-conductor cord assemblies in order to provide a suitable grounding arrangement for the paper winder. If desired, they may be installed as follows, either separately or as part of the TP136146 modification kit:

(a) Disconnect the external plug from the power supply.

(b) Remove the paper-winder cover.

(c) Remove the TP93642 two-conductor cord assembly from the top terminals No. 1 and No. 4 of the TP76117 terminal board. Discard.

(d) Replace with the TP142556 three-conductor cord assembly. Connect the BLACK lead to the top No. 1 and the WHITE lead to the top No. 4 terminals. The GREEN lead terminal should be placed under the TP125015 flat washer of the TP153537 ground screw (Figure 4) or the nearest motor mounting screw.

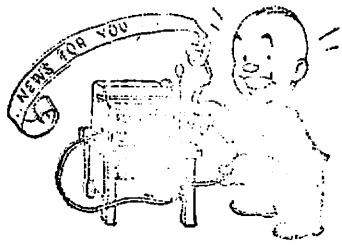
(e) Remove the TP93643 two-conductor cord assembly as follows and discard:

15 TTY base	From Terminals No. 22 and No. 23
28A TTY cabinet	From Terminals No. 29 and No. 30
28B through 28G TTY cabinets	From Terminals No. 35 and No. 40

(f) Replace with the TP142557 three-conductor cord assembly and connect as follows:

15 TTY base	To Terminal No. 22	BLACK
	To Terminal No. 23	WHITE
	To Terminal TTY frame ground	GREEN
28A TTY cabinet	To Terminal No. 29	BLACK
	To Terminal No. 30	WHITE
	To Terminal TTY frame ground	GREEN
28B through 28G TTY cabinets	To Terminal No. 35	BLACK
	To Terminal No. 40	WHITE
	To Terminal TTY frame ground	GREEN

Note: Refer to Figures 4 and 5 and also to the 15-type paper winder wiring arrangements.



PAPER WINDERS - 15 TYPE

WIRING DIAGRAMS

1. GENERAL

1.01 This section gives the wiring arrangements for the 15-type paper winder used with a 15-type teletypewriter cover or a 28 teletypewriter cabinet. The section also gives the wiring instructions for certain modification kits that adapt the winder for specific purposes.

2. WIRING ARRANGEMENTS

A. On a 15 Teletypewriter Cover

2.01 The power cord with receptacle should be connected to terminals 22 and 23 of the 15 teletypewriter base, and, if the paper winder is equipped with a universal motor, the proper strap should be removed from the motor resistors as shown in Figure 1. (See Figures 1 and 2.)

2.02 Figure 3 shows the circuit schematic for the 25-cycle, 110-volt ac or 110-volt dc series motor.

2.03 Figure 4 shows the circuit schematic for the 60-cycle, 110-volt ac synchronous motor arranged for clockwise or counterclockwise direction of rotation.

B. On a 28 Teletypewriter Cabinet

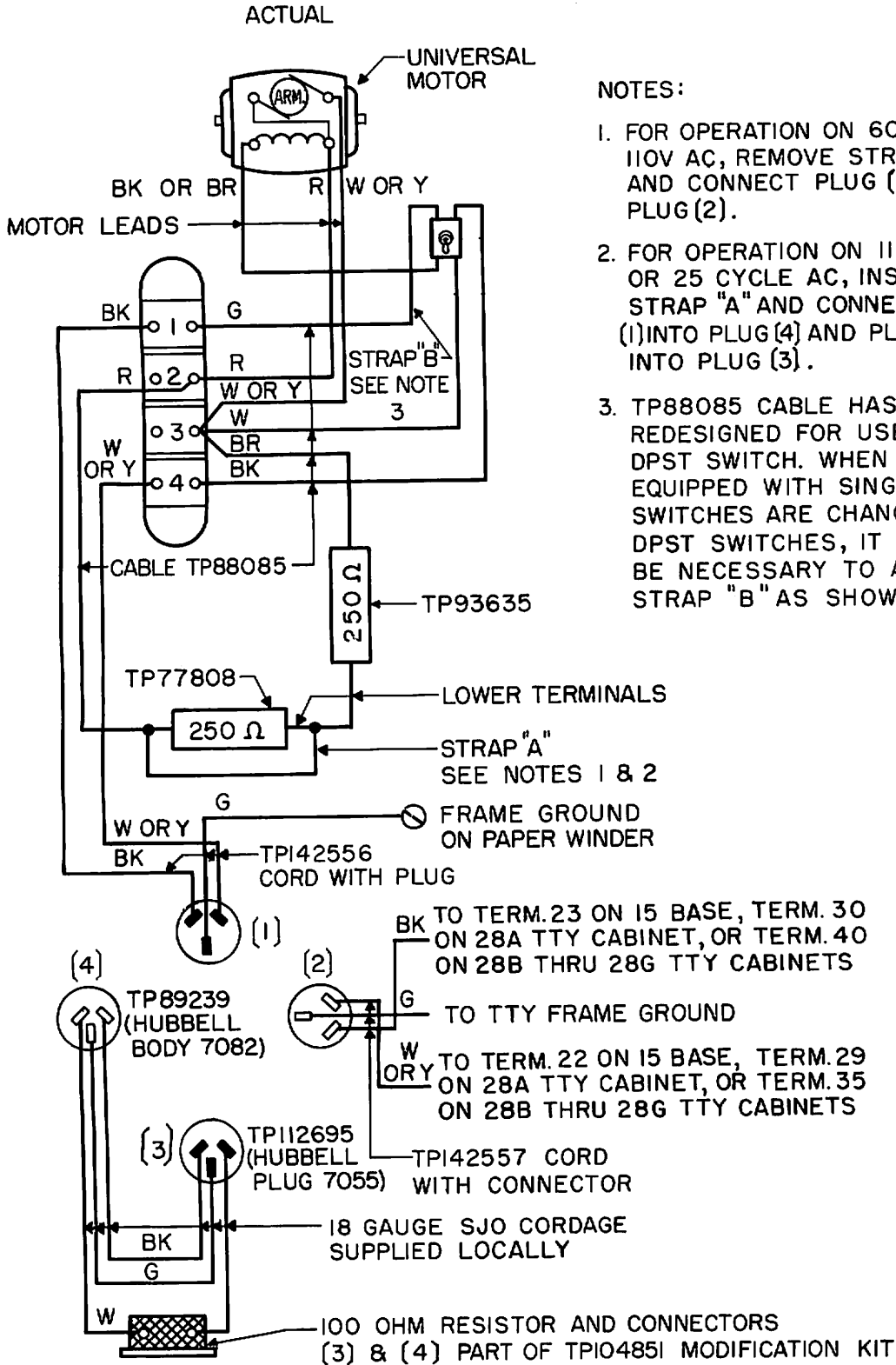
2.04 Wiring of the TP153901 Modification Kit: Connect the terminal lugs as follows.

(a) On the 28A teletypewriter cabinet, (MD), connect the terminal lugs to cabinet terminals 29 and 30.

(b) On 28 teletypewriter cabinets other than the 28A cabinet, connect the terminal lugs to cabinet terminals 35 and 40. (See Figures 1 and 2.)

C. TP104851 Modification Kit (100-ohm Resistor)

2.05 The resistor should be connected in series with one of the power leads of the paper winder as shown in Figure 1. Wherever the outer insulation of the cordage has to be skinned away, the conductors should be taped with electrical insulating tape. (See Figure 1.)



NOTES:

1. FOR OPERATION ON 60 CYCLE 110V AC, REMOVE STRAP "A" AND CONNECT PLUG (1) INTO PLUG (2).
2. FOR OPERATION ON 110V DC OR 25 CYCLE AC, INSTALL STRAP "A" AND CONNECT PLUG (1) INTO PLUG (4) AND PLUG (2) INTO PLUG (3).
3. TP88085 CABLE HAS BEEN REDESIGNED FOR USE WITH DPST SWITCH. WHEN UNITS EQUIPPED WITH SINGLE POLE SWITCHES ARE CHANGED TO DPST SWITCHES, IT MAY BE NECESSARY TO ADD STRAP "B" AS SHOWN.

Figure 1 - Universal (Series) Motor

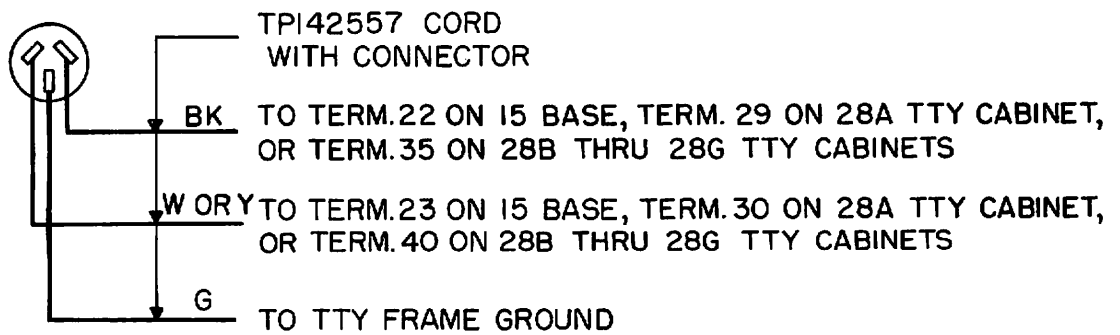
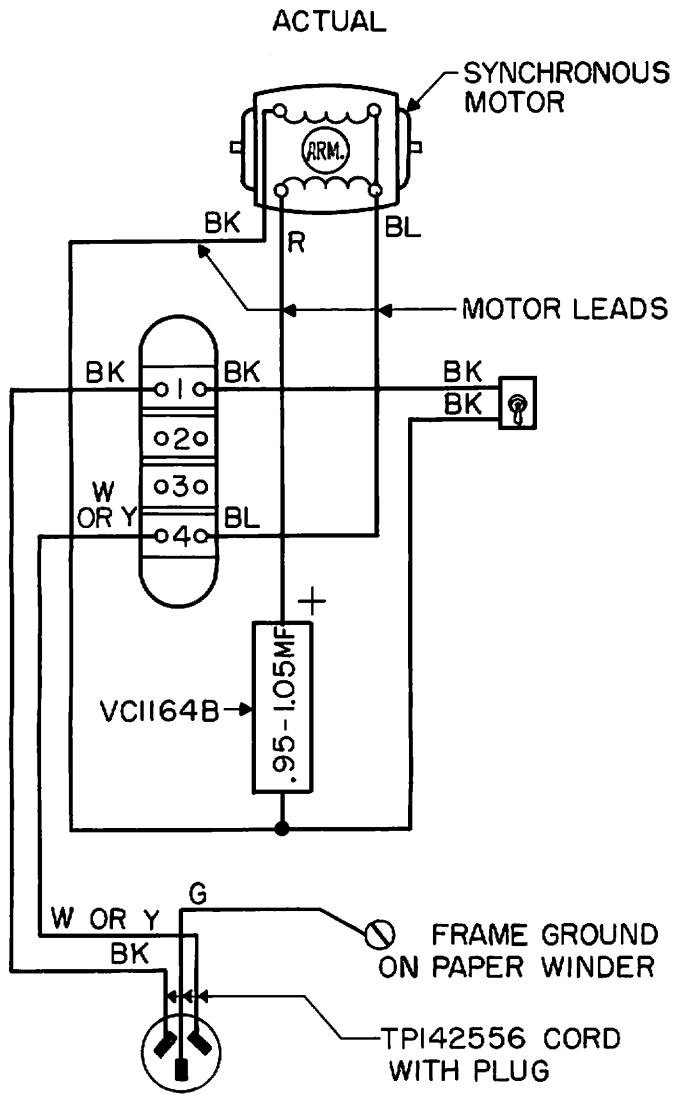
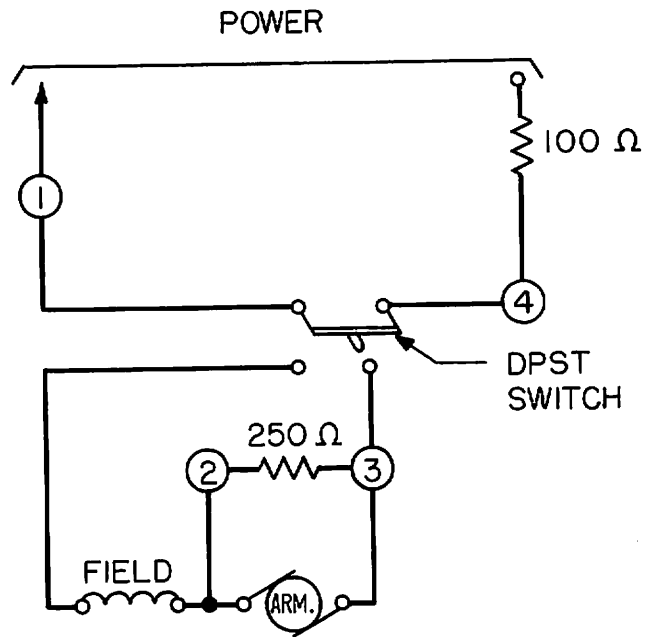


Figure 2 — Synchronous Motor

SCHMATIC-SERIES MOTOR
25 CYCLE 110V AC OR 110V DC OPERATION



SCHMATIC-SERIES MOTOR
60 CYCLE 110V AC OPERATION

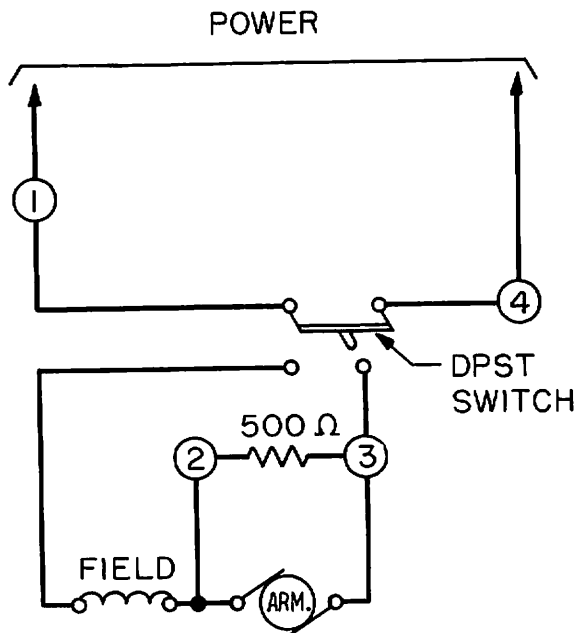
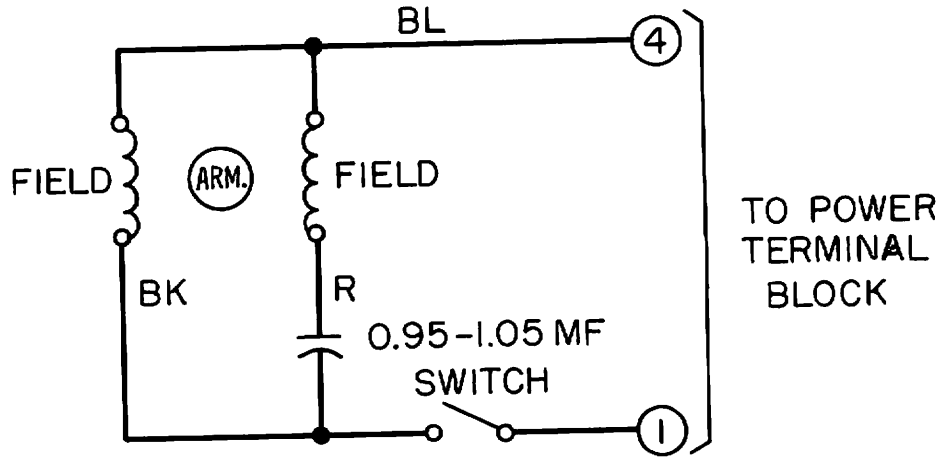


Figure 3

SCHEMATIC-SYNCHRONOUS MOTOR
60 CYCLE 110V OPERATION
CLOCKWISE DIRECTION OF ROTATION



SCHEMATIC-SYNCHRONOUS MOTOR
60 CYCLE 110V OPERATION
COUNTERCLOCKWISE DIRECTION OF ROTATION

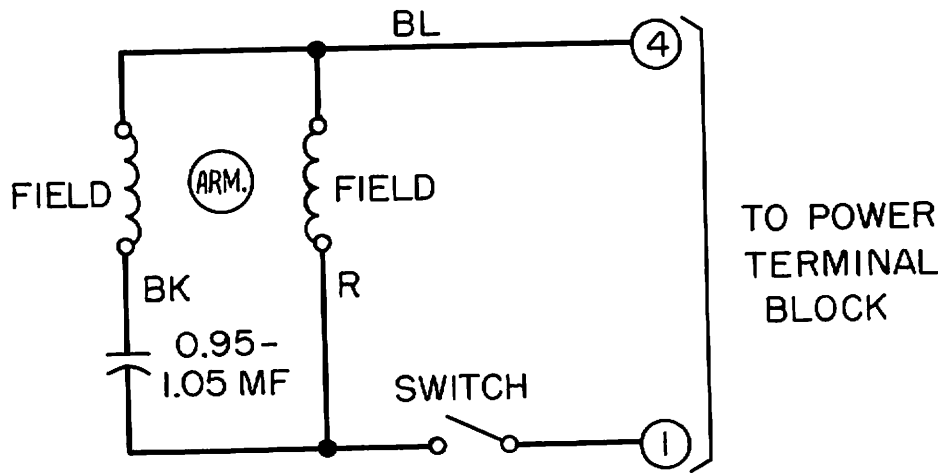
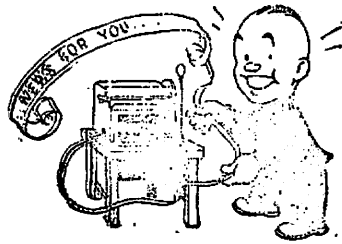


Figure 4



PAPER WINDERS - 15 TYPE
REQUIREMENTS AND ADJUSTMENTS

1. GENERAL

1.01 This section gives the requirements and adjustments for the maintenance of the 15-type paper winders. This section together with the section covering the general requirements and adjustments for teletypewriter apparatus provides complete information for the maintenance of these winders.

1.02 The paper winders are completely adjusted at the factory. The adjustment information that follows should be used by the installer for checking purposes, however, and will be required in connection with subsequent maintenance.

2. REQUIREMENTS AND ADJUSTMENTS

2.01 Spindle Shaft Endplay, Friction Clutch Torque, Paper Cylinder Adjustment, Latch Spring Tension and Slack Rod Lever Spring Tension.

(A) SPINDLE SHAFT END PLAY
 REQUIREMENT

WITH PLAY OF SHAFT TAKEN UP AWAY FROM MOTOR. THERE SHALL BE APPROX. 1/32" CLEARANCE BETWEEN SHOULDER ON SHAFT AND FRICTION DRIVE ASSEMBLY.

TO ADJUST

POSITION BEARING BRACKET BY MEANS OF ITS ELONGATED MOUNTING HOLES.

(C) FRICTION CLUTCH TORQUE
 TO CHECK

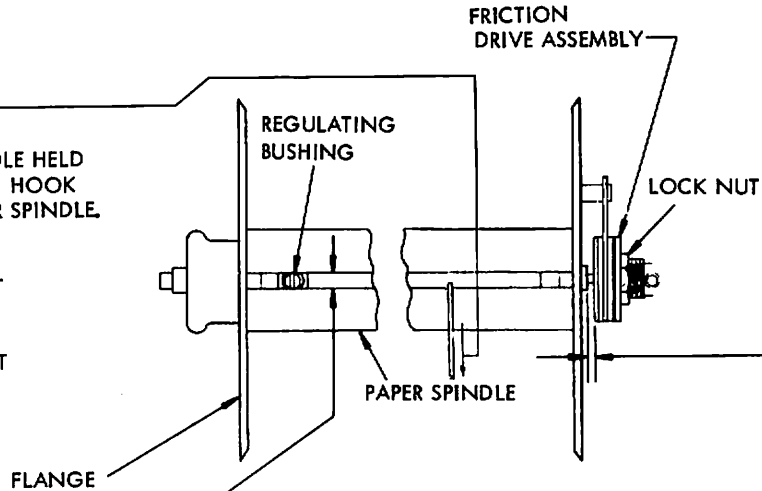
RUN PAPER WINDER WITH SPINDLE HELD STATIONARY FOR 10 MINUTES. HOOK 8 OZ. SCALE IN SLOT OF PAPER SPINDLE.

REQUIREMENT

5 TO 7 OZS. TO HOLD PAPER SPINDLE STATIONARY AGAINST MOTOR ROTATION.

TO ADJUST

WITH LOCK NUT LOOSE ADJUST CAPSTAN NUT TO MEET REQUIREMENT.

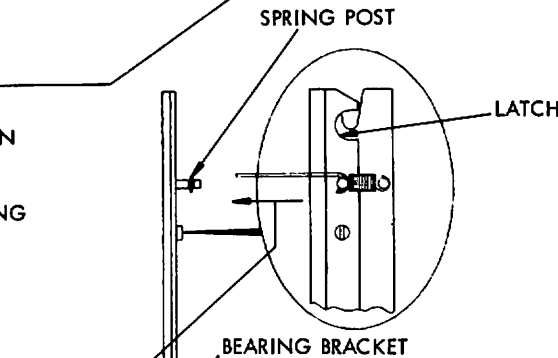


(E) PAPER CYLINDER ADJUSTMENT
 REQUIREMENT

SUFFICIENT TENSION TO RETAIN CYLINDER FLANGE

TO ADJUST

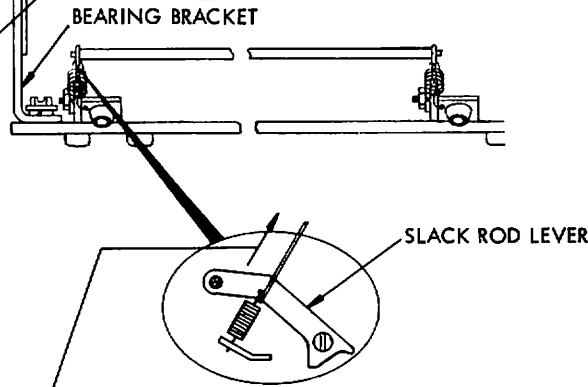
POSITION REGULATING BUSHING WITH SET SCREW LOOSE TO DESIRED TENSION.



(D) LATCH SPRING TENSION
 REQUIREMENT

WITH PAPER SPINDLE REMOVED, HOOK 32 OZ. SCALE OVER SPRING POST ON LATCH. PULL HORIZONTALLY AS INDICATED.

MIN. 22 OZ. --- MAX. 30 OZ. TO START LATCH MOVING.



(B) SLACK ROD LEVER SPRING TENSION
 REQUIREMENT

HOOK 32 OZ. SCALE UNDER SLACK ROD LEVER AT SPRING HOLE AND PULL IN LINE WITH SPRING

MIN. 19 OZS. --- MAX. 23 OZS.

TO START LEVER MOVING. CHECK BOTH SIDES

PAPER WINDERS - 15 TYPE

LUBRICATION

1. GENERAL

1.01 This section gives the lubrication details for 15-type paper winders. This section together with the section covering the general lubrication procedures for teletypewriter apparatus provides complete information for lubricating these winders.

2. LUBRICATION DETAILS

2.01 Unless otherwise specified, one or two drops of oil at each of the places indicated will be sufficient. Use oil for lubrication at all places, except where the use of grease is specified.

2.02 Friction Drive Mechanism, Bearing Bracket Assembly, Motor Assembly (universal series motors only.) See Figure 1.

2.03 Synchronous or Induction Motors:

(1) Motor Bearings: The motor bearings are identified by red holes. Add 10 drops of oil to each bearing before starting motor. Relubricate every 1500 hours.

(2) Gear Reducer: The gear reducer, identified by a yellow hole, is packed at the factory with a soft grease. Relubricate with approximately 50 drops of oil every 1500 hours.

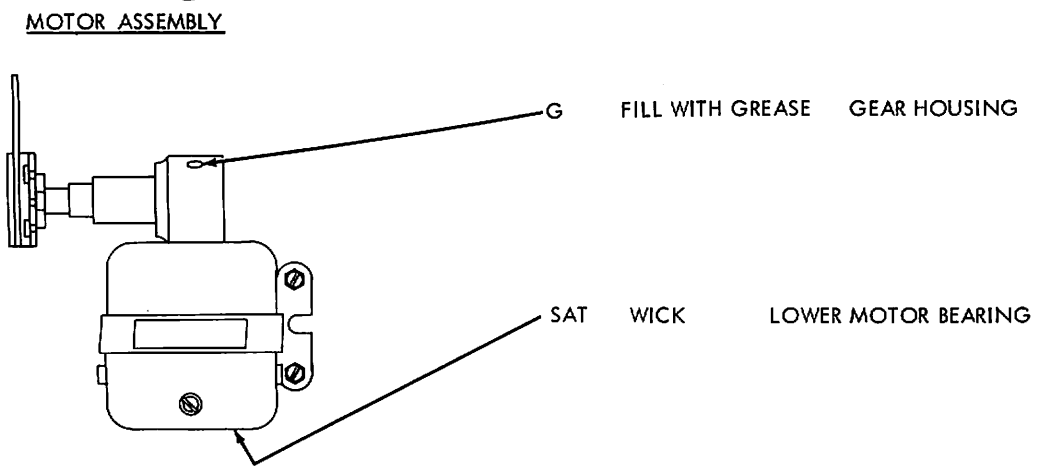
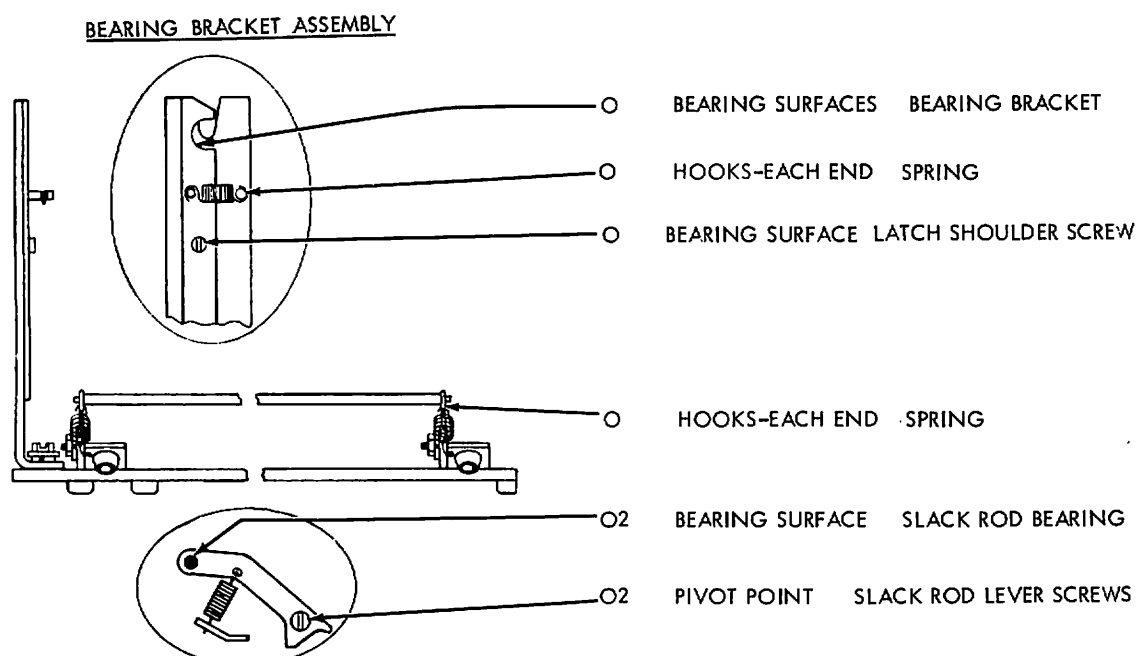
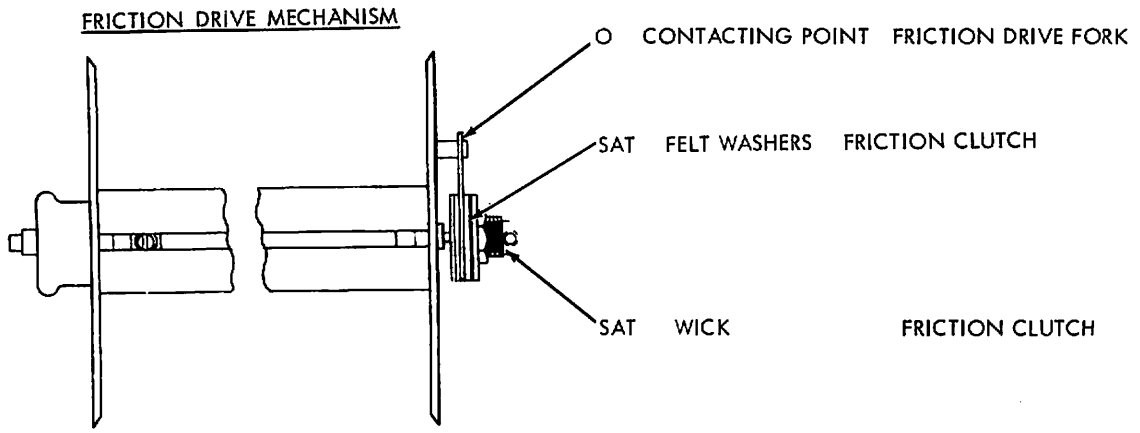


Figure 1

PAPER WINDER (PW)
PARTS

FIGURE	CONTENTS	PAGE
1	Base Assembly	3
2	Motor Mounting Bracket Assembly	4
3	104851 Modification Kit To Provide 100 Ohm Resistance for 110 Volt, DC or 25 Cycle, AC Operated Paper Winder	5
4	129428 Modification Kit To Provide Reverse Rotation of Paper Winder	5
5	Modification Kits To Provide Paper Spindle Shaft Support Brackets and Bearings	6
	Numerical Index	7

PAINT FINISH COLOR CODE CHART (for parts and assemblies requiring a paint finish)									
Color	Finish Suffixes				Color	Finish Suffixes			
	Wrinkle Finish	Smooth Finish	Textured Vinyl	Smooth Vinyl		Wrinkle Finish	Smooth Finish	Textured Vinyl	Smooth Vinyl
Beige		ET			Gray, Federal		BV	GG	
Beige, Light		EL		HC	Gray, Green	AB (40)	BK	GA (45)	
Beige, Rose		ER			Gray, Light		EJ		HB (68)
Black	AA (37)				Gray, Covert				HE
Black, High Gloss		BA (34)			Gray, Olive		EW	GE	HF (46)
Black, Semi Gloss		BB			Gray, Maritime Deck	AJ			
Blue, Aqua		EK			Gray, Oxford		BJ		
Blue, Brussels Light		EC			Green, Gray	AB (40)	EP	GA (45)	
Blue, Medium		ES			Green, Moss		BK		
Brown, Dark	AD (38)				Ivory		EN		HD
Brown, Light	AC (39)			HG	Pink, Rose		EM		
Fawn					Turquoise		EU		
Gray, Beige			GC		White		EV		
Gray, Charcoal	AL	BZ	GF	HA	Yellow, Pastel		EH		
Gray, Dark			GB				EG		

The double asterisk (**) denotes a painted part. Suffix to be applied following the part number. Number in parentheses indicates Bell System Code.

NOTE:
When ordering parts from this section,
prefix each number with the letters TP.

TELETYPE AND BELL SYSTEM CODE REFERENCE CHART FOR UNITS COVERED IN THIS SECTION			
Teletype Code (New)	Teletype Code (Old)	Paper Width	Bell System Code
PW200**	PW4 (Walnut)	4-1/2" to 6"	
PW201**	PW2 (Walnut) PW5 (Walnut) PW7 (Black Wrinkle)	6" to 8-1/2"	15A**
PW202**	PW1 (Walnut) PW6 (Walnut) PW10 (Black Wrinkle)	4-1/2" to 5"	15B**
PW203**	PW3 (Walnut)	4-1/2" to 6-1/2"	
PW204**	PW8 (Walnut)	6" to 8-1/2"	15C**
PW205**	PW9 (Walnut)	4-1/2" to 5"	15D**
PW206**		6" to 8-1/2"	15E**
PW207**		8-1/2"	
PW208**		4-1/4" to 8-1/2"	15F**

**Refer to Chart on Page 1 For Finish Suffix

Description Paper Width Max.	Cylinder	Rod	Base Plate	Shaft Assembly
5"	93655	88886	110996**	93656
6"	93657	89203	101023**	93644
6-1/2"	93646			
8-1/2"	93705			

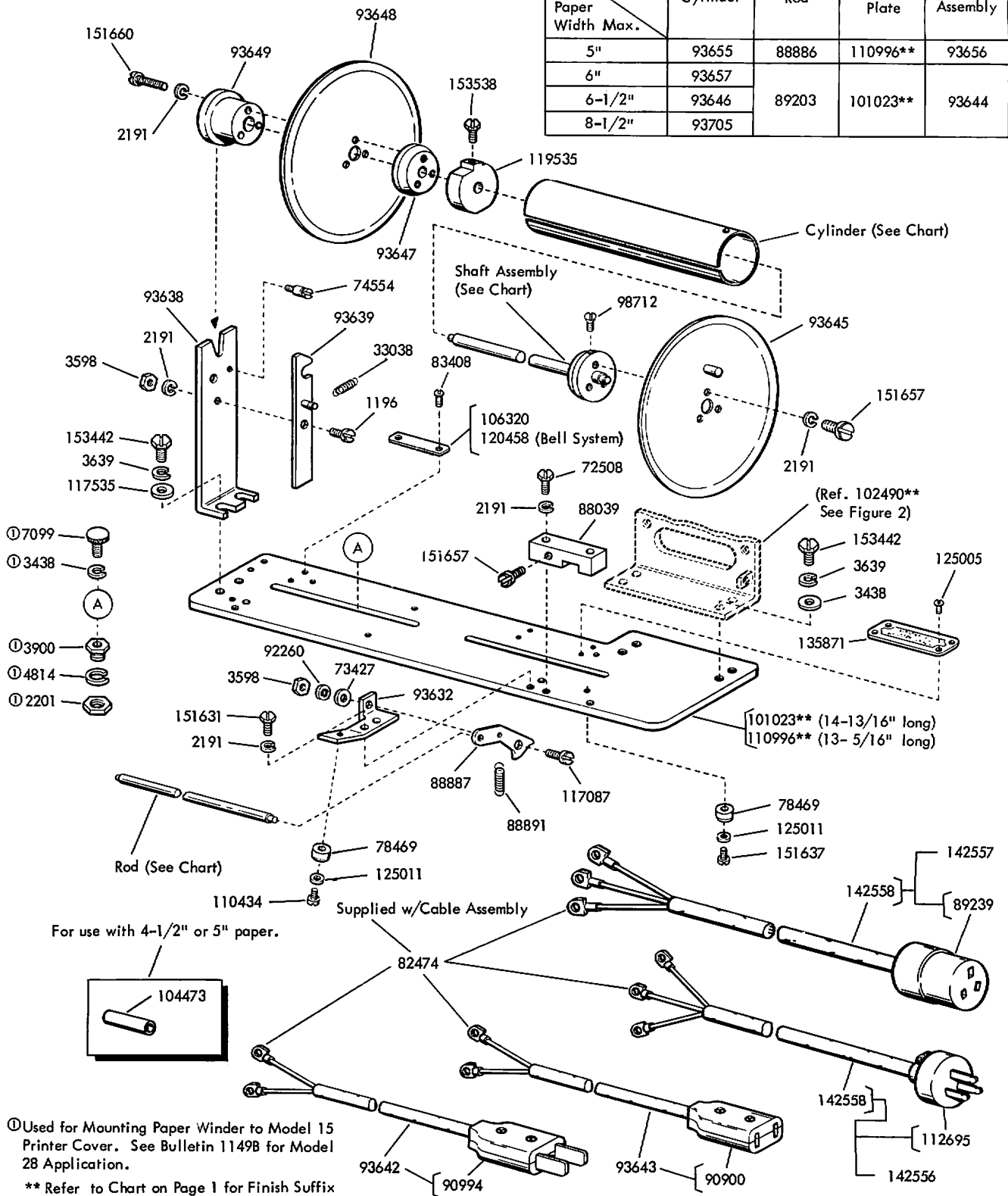
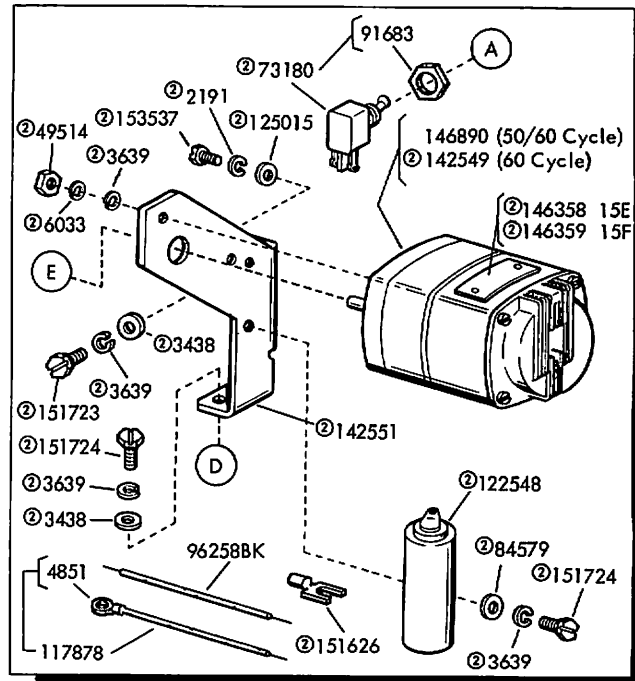
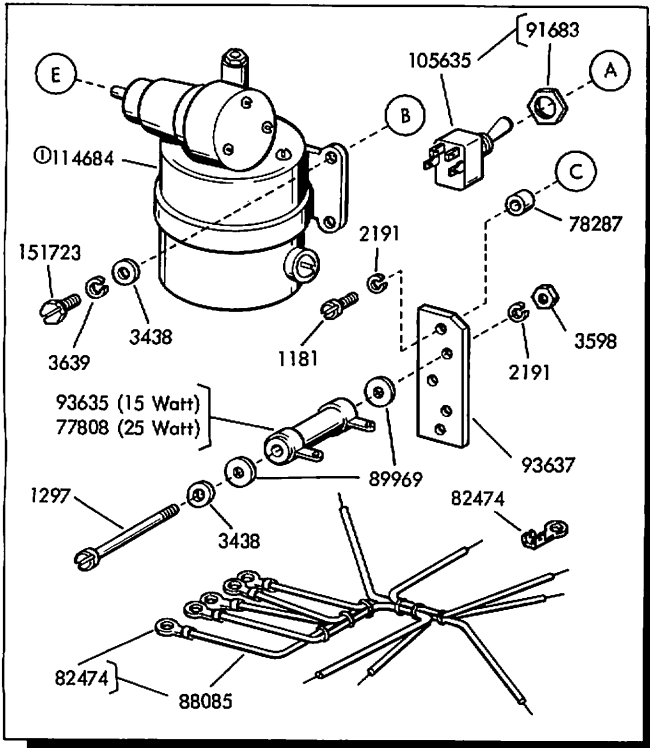
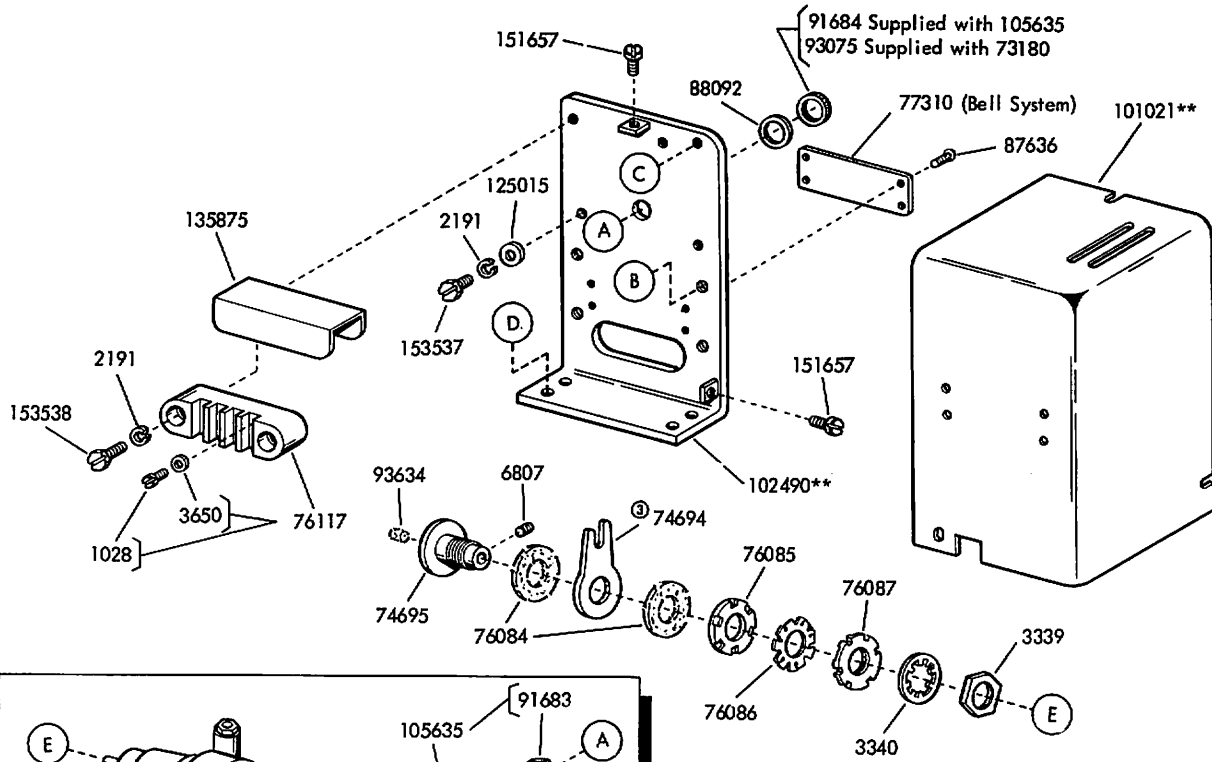


FIGURE 1. BASE ASSEMBLY



① The following maintenance parts are available for the 114684 Motor:

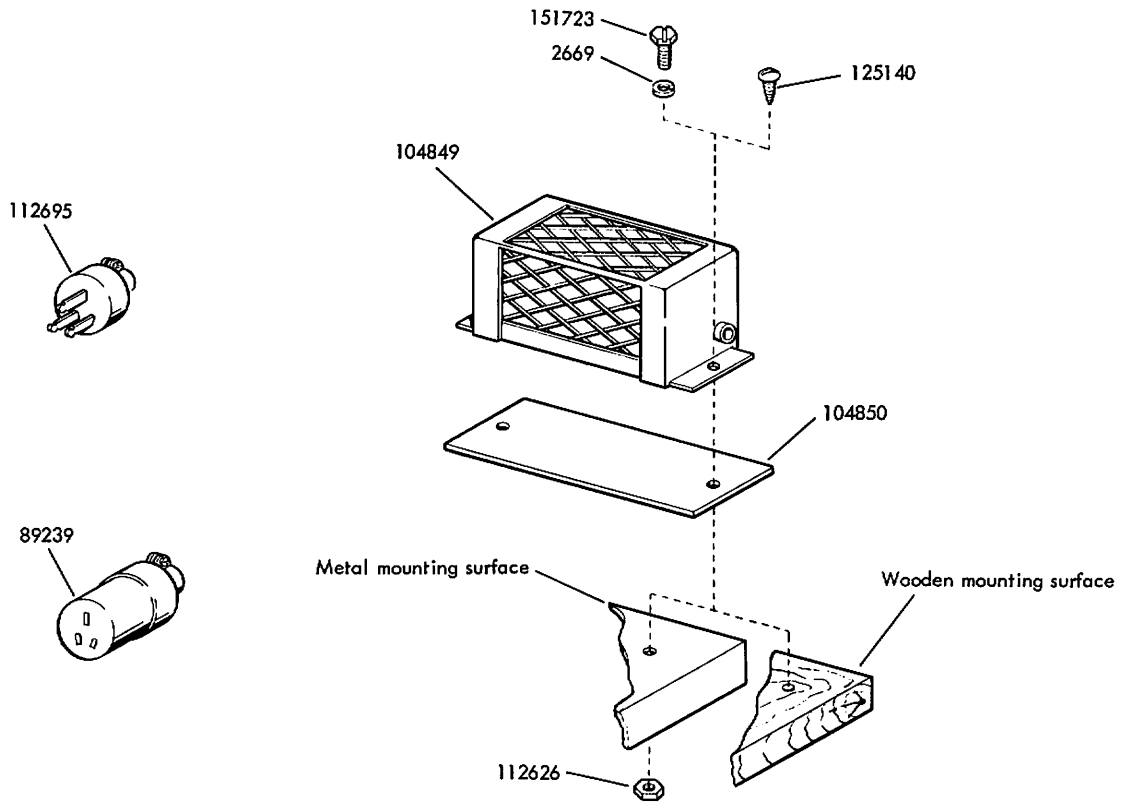
- 113911 Cap, Motor Brush
- 114685 Brush, Motor
- 119477 Gear (60T)
- 129689 Gear (1T)
- 92115 Screw, Set
- 149793 Screw, Phillips Head
- 149794 Insert

② Part of 136146 Modification Kit To Convert Paper Winder Units From Universal Motor To Synchronous Motor, Includes 142556 and 142557 Cables Shown on Figure 1.

**Refer to Chart on Page 1 for Finish Suffix

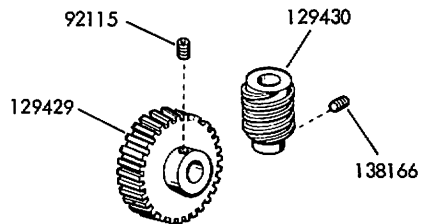
③ Early Design - See Figure 5 for new design

FIGURE 2. MOTOR MOUNTING BRACKET ASSEMBLY



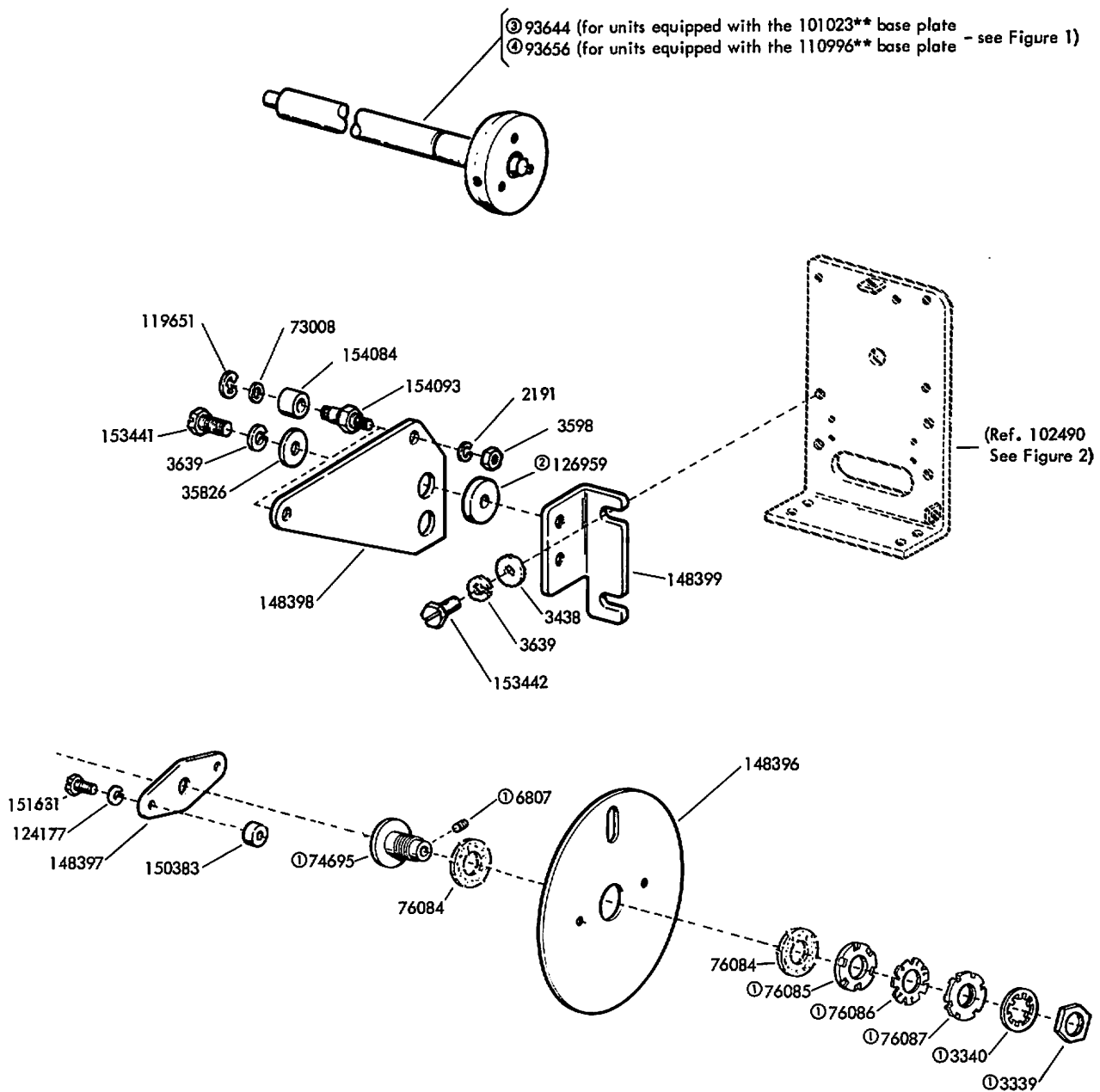
Specification 51485

FIGURE 3. 104851 MODIFICATION KIT TO PROVIDE 100 OHM RESISTANCE FOR 110 VOLT, DC OR 25 CYCLE, AC OPERATED PAPER WINDER



Specification 51485

FIGURE 4. 129428 MODIFICATION KIT TO PROVIDE REVERSE ROTATION OF PAPER WINDER



- ① Not part of Modification Kits
- ② Used with 114684 motor only
- ③ Peculiar to 149670 Modification Kit (for units handling 4-1/2" to 8-1/2" paper)
- ④ Peculiar to 149987 Modification Kit (for units handling 4-1/2" to 5" paper only)

Specification 503185

FIGURE 5. MODIFICATION KITS TO PROVIDE PAPER SPINDLE SHAFT SUPPORT BRACKETS AND BEARINGS

NUMERICAL INDEX

Part Number	Description and Page Number	Part Number	Description and Page Number	Part Number	Description and Page Number
1028	Screw (4-40 x 1/4 Fil) 4	89203	Rod, Paper Slack 3	117878	Jumper (3" Black) 4
1181	Screw (6-40 x 11/16 Fil) 4	89239	Connector, 3 Pt Receptacle 3, 5	119477	Gear (60 T) 4
1196	Screw, Shoulder (6-40) 3	89969	Washer, Insulating 4	119535	Bushing 3
1297	Screw (6-40 x 2-7/16 Fil) 4	90900	Connector, 2 Pt Receptacle 3	119651	Ring, Retaining 6
2191	Washer, Lock 3, 4, 6	90994	Connector, 2 Pt Plug 3	120458	Plate, Identification 3
2201	Nut (5/16-32 Hex) 3	91683	Nut (15/32-32 Hex) 4	122548	Capacitor (1.05 mfd) 4
2669	Washer, Lock 5	91684	Nut (15/32-32 Ring) 4	124177	Washer, Lock 6
3339	Nut (9/16-32 Hex) 4, 6	92115	Screw, Set (8-32) 4, 5	125005	Screw (2-56 x 3/16 Rd) 3
3340	Washer, Lock 4, 6	92260	Washer, Lock 3	125011	Washer, Flat 3
3438	Washer, Flat 3, 4, 6	93075	Nut (15/32-32 Ring) 4	125015	Washer, Flat 4
3598	Nut (6-40 Hex) 3, 4, 6	93632	Bracket, Slack Rod 3	125140	Screw (#8 Wood) 5
3639	Washer, Lock 3, 4, 6	93634	Wick, Felt 4, 6	126959	Washer, Flat 6
3650	Washer, Flat 4	93635	Resistor (250 Ohm) 4	129428	Modification Kit 5
3900	Bushing 3	93637	Plate 4	129429	Gear (60T) 5
4814	Washer, Lock 3	93638	Bracket, Bearing 3	129430	Gear (1T) 5
4851	Terminal 4	93639	Latch w/Post 3	129689	Gear (1T) 4
6033	Washer, Lock 4	93642	Cable Asm 3	135871	Plate, Instruction 3
6807	Screw, Set (6-40) 4, 6	93643	Cable Asm 3	135875	Cover, Block 4
7099	Screw, Thumb (10-32) 3	93644	Shaft 3, 6	136146	Modification Kit 4
33038	Spring 3	93645	Spindle, Left Paper 3	138166	Screw, Set (8-32) 5
35826	Washer, Flat 6	93646	Cylinder, Paper Spindle 3	142549	Motor, 115 V AC Synchronous 4
49514	Nut (8-32 Hex) 4	93647	Hub, Right Paper Spindle 3	142551	Bracket 4
72508	Screw (6-40 x 3/4 Hex) 3	93648	Spindle, Right Paper 3	142556	Cable Asm 3, 4
73008	Washer, Flat 6	93649	Knob 3	142557	Cable Asm 3, 4
73180	Switch, Toggle (SPST) 4	93655	Cylinder, Paper Spindle 3	142558	Cable w/Terminals 3
73427	Washer, Flat 3	93656	Shaft, Paper Spindle 3, 6	146358	Plate, Identification 4
74554	Post, Spring 3	93657	Cylinder, Paper Spindle 3	146359	Plate, Identification 4
74694	Arm 4	93705	Cylinder, Paper Spindle 3	146890	Motor, 115 V AC Synchronous 4
74695	Sleeve, Clutch 4, 6	96258BK	Jumper (3" Black) 4	148396	Disk 6
76084	Washer, Felt 4, 6	98712	Screw (4-40 x 1/4 Flat) 3	148397	Bracket 6
76085	Disk, Friction 4, 6	101021**	Cover 4	148398	Bracket 6
76086	Washer, Spring 4, 6	101023**	Plate, Base 3, 6	148399	Bracket 6
76087	Nut, Friction (9/16-32) 4, 6	102490**	Bracket 4	149670	Modification Kit 6
76117	Block, Terminal 4	104473	Bushing 3	149793	Screw (10-32 x 1/2 Flat) 4
77310	Plate, Name 4	104849	Resistor (100 Ohm) 5	149794	Insert, Self-Locking 4
77808	Resistor (250 Ohm) 4	104850	Insulator (.125" Thk) 5	149987	Modification Kit 6
78287	Collar 4	104851	Modification Kit 5	150383	Spacer (.149" Thk) 6
78469	Foot, Rubber 3	105635	Switch, Toggle (DPST) 4	151626	Terminal 4
82474	Terminal 3, 4	106320	Plate, Name 3	151631	Screw (6-40 x 5/16 Hex) 3, 6
83408	Screw (6-40 x 3/16 Rd) 3	110434	Screw (4-40 x 3/16 Fil) 3	151637	Screw (4-40 x 1/4 Fil) 3
84579	Washer, Flat 4	110996**	Plate, Base 3, 6	151657	Screw (6-40 x 1/4 Fil) 3, 4
87636	Screw (2-56 x 3/16 Rd) 4	112626	Nut (10-32 Hex) 5	151660	Screw (6-40 x 7/8 Fil) 3
88039	Clamp, Cable 3	112695	Connector, 3 Pt Plug 3, 5	151723	Screw (10-32 x 3/8 Hex) 4, 5
88085	Cable 4	113911	Cap, Motor Brush 4	151724	Screw (10-32 x 5/8 Hex) 4
88092	Washer, Flat 4	114684	Motor, 115V AC/DC Series 4, 6	153441	Screw (10-32 x 7/16 Hex) 6
88886	Rod, Paper Slack 3	114685	Brush, Motor 4	153442	Screw (10-32 x 1/2 Hex) 3, 6
88887	Lever, Slack Rod 3	117087	Screw, Shoulder (6-40) 3	153537	Screw (6-40 x 9/32 Hex) 4
88891	Spring 3	117535	Washer, Flat 3	153538	Screw (6-40 x 7/16 Hex) 3, 4
				154084	Bearing 6
				154093	Stud 6

**Refer to Chart on Page 1 for Finish Suffix