

PAPER WINDERS - 15 TYPE

INSTALLATION

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(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.

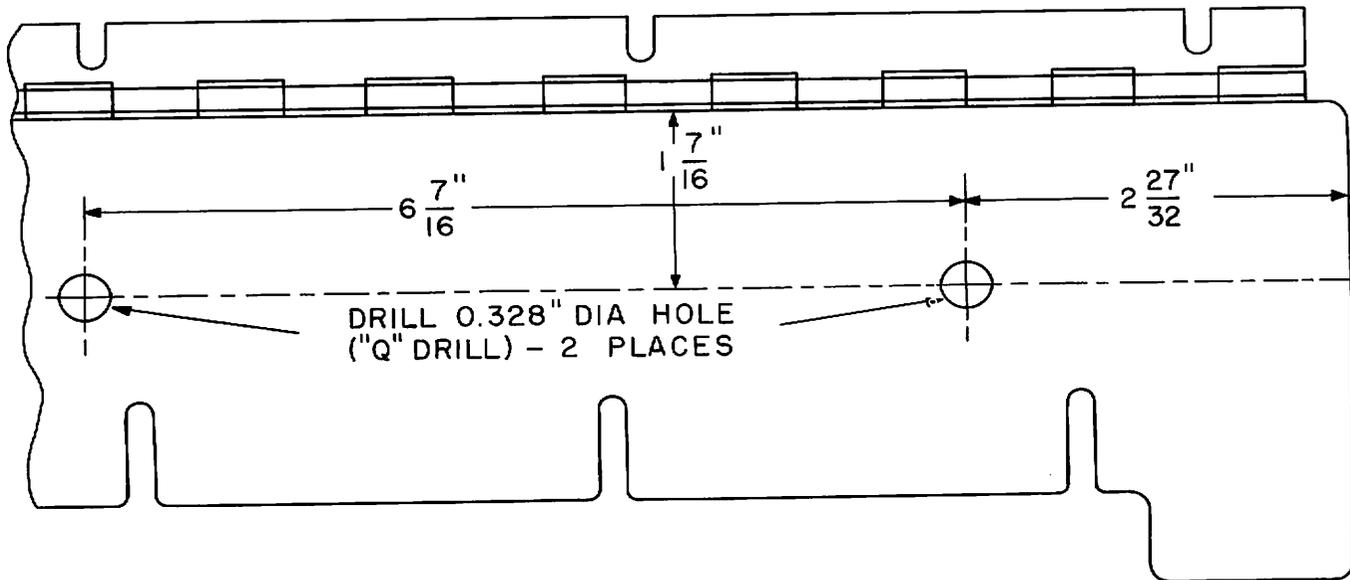


Figure 1 - 15 Teletypewriter Cover - Layout of Holes

(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

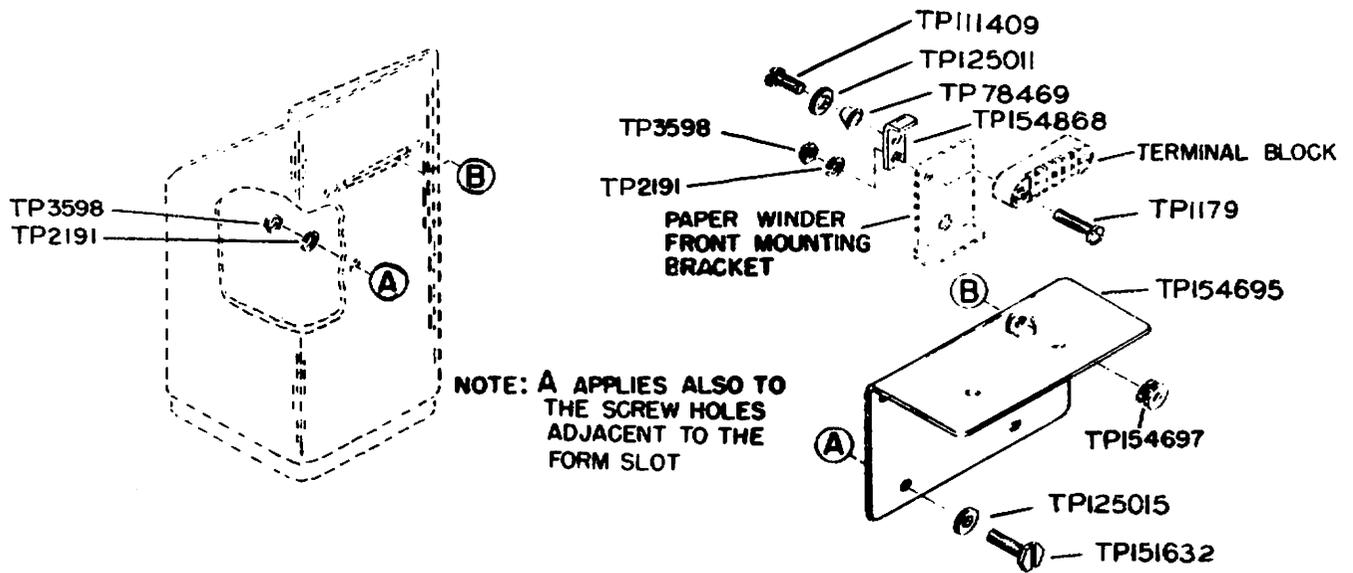


Figure 2 - TP153901 Modification Kit

to the TP154868 plate, using the TP11409 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.

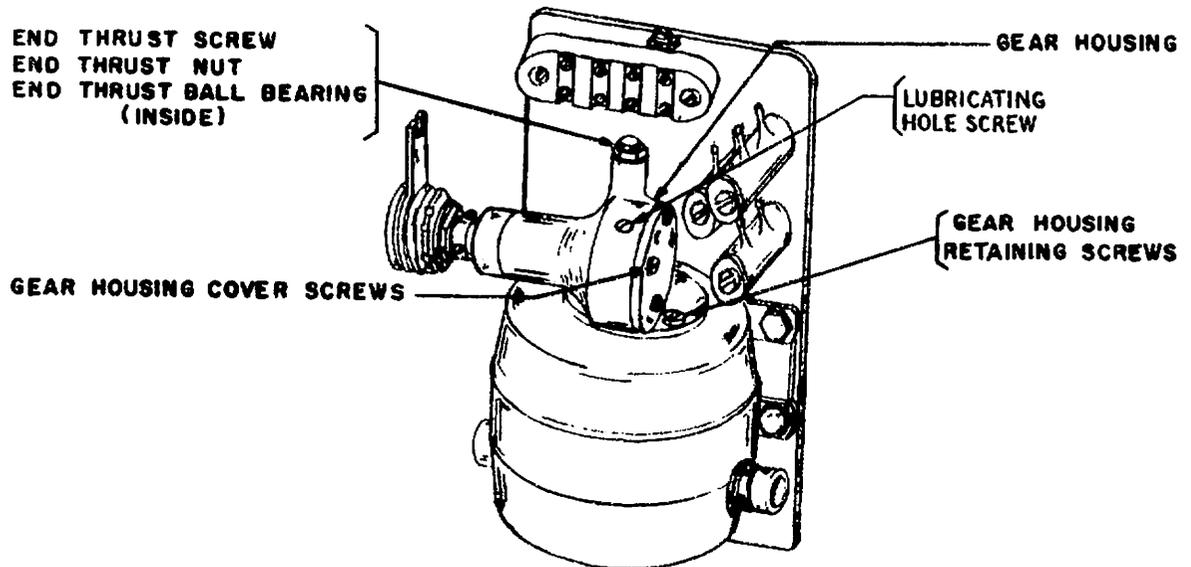


Figure 3 - Gear Housing Assembly

- (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

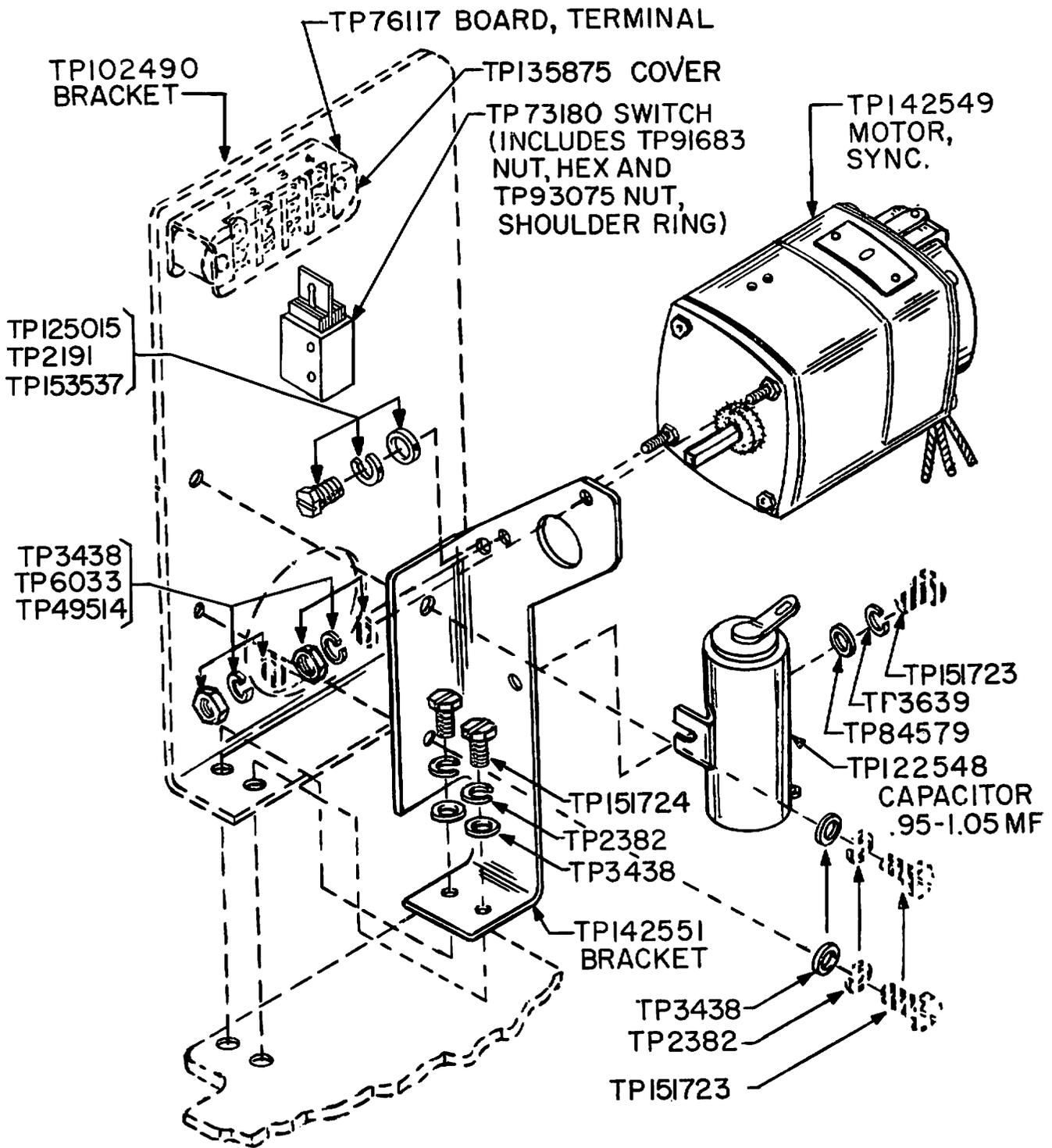


Figure 4 - TP136146 Modification Kit

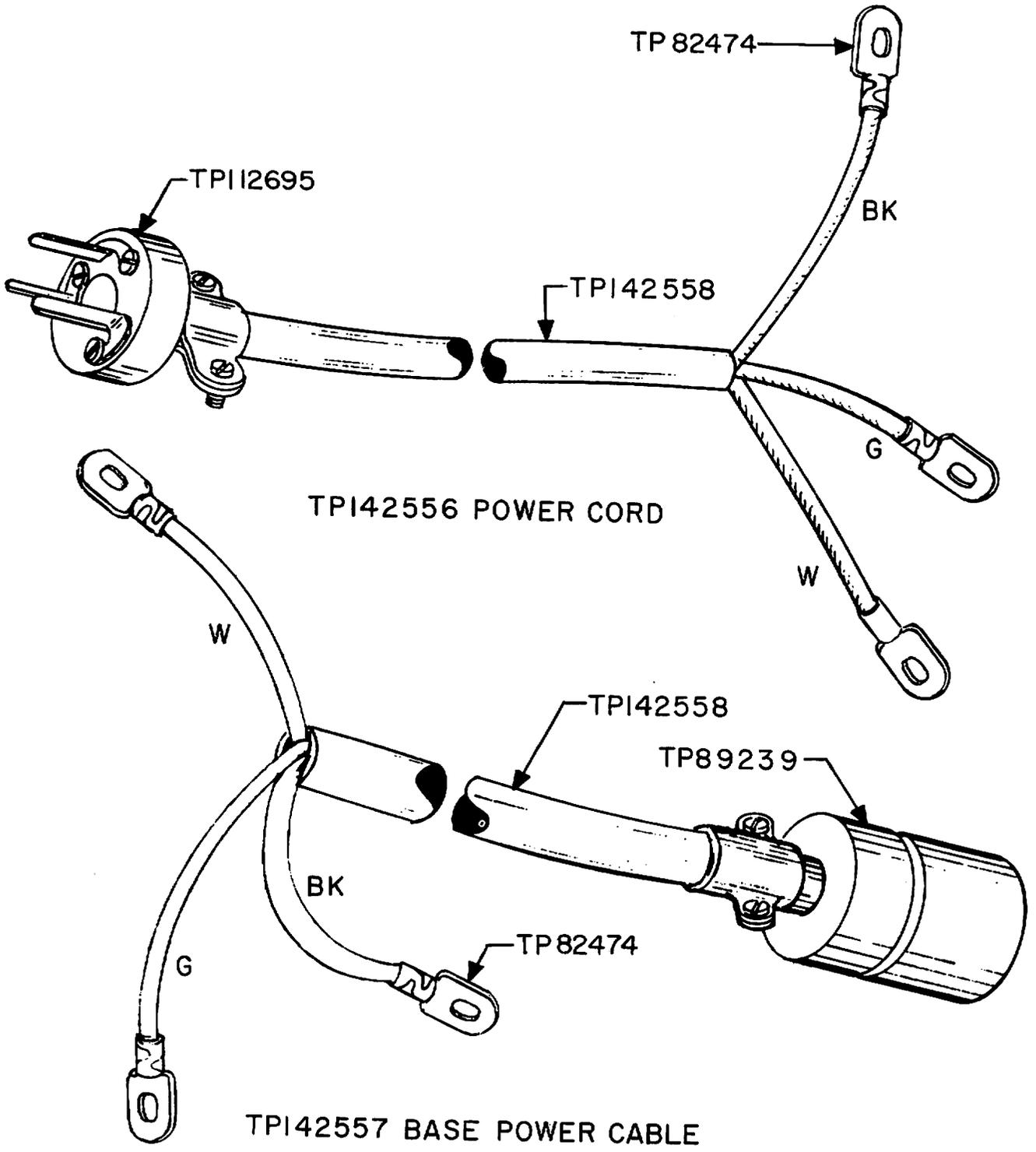


Figure 5 - Three-conductor Grounding Cord Assemblies

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.

