

37 AUTOMATIC SEND-RECEIVE (ASR) TELETYPEWRITER SET
REMOVAL AND REPLACEMENT OF COMPONENTS

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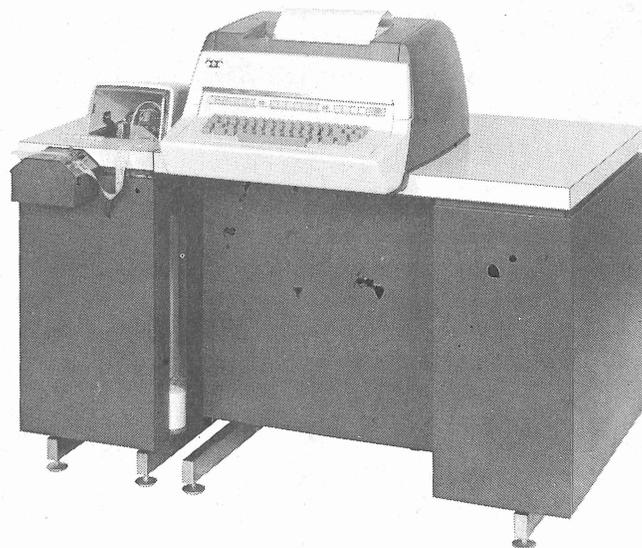


Figure 1 - 37 Automatic Send-Receive
(ASR) Teletypewriter Set

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1.02 Photographs and line drawings are used to identify the mechanisms and specific parts mentioned in the procedures. Refer to the appropriate parts section for illustrations and part numbers of parts and assemblies.

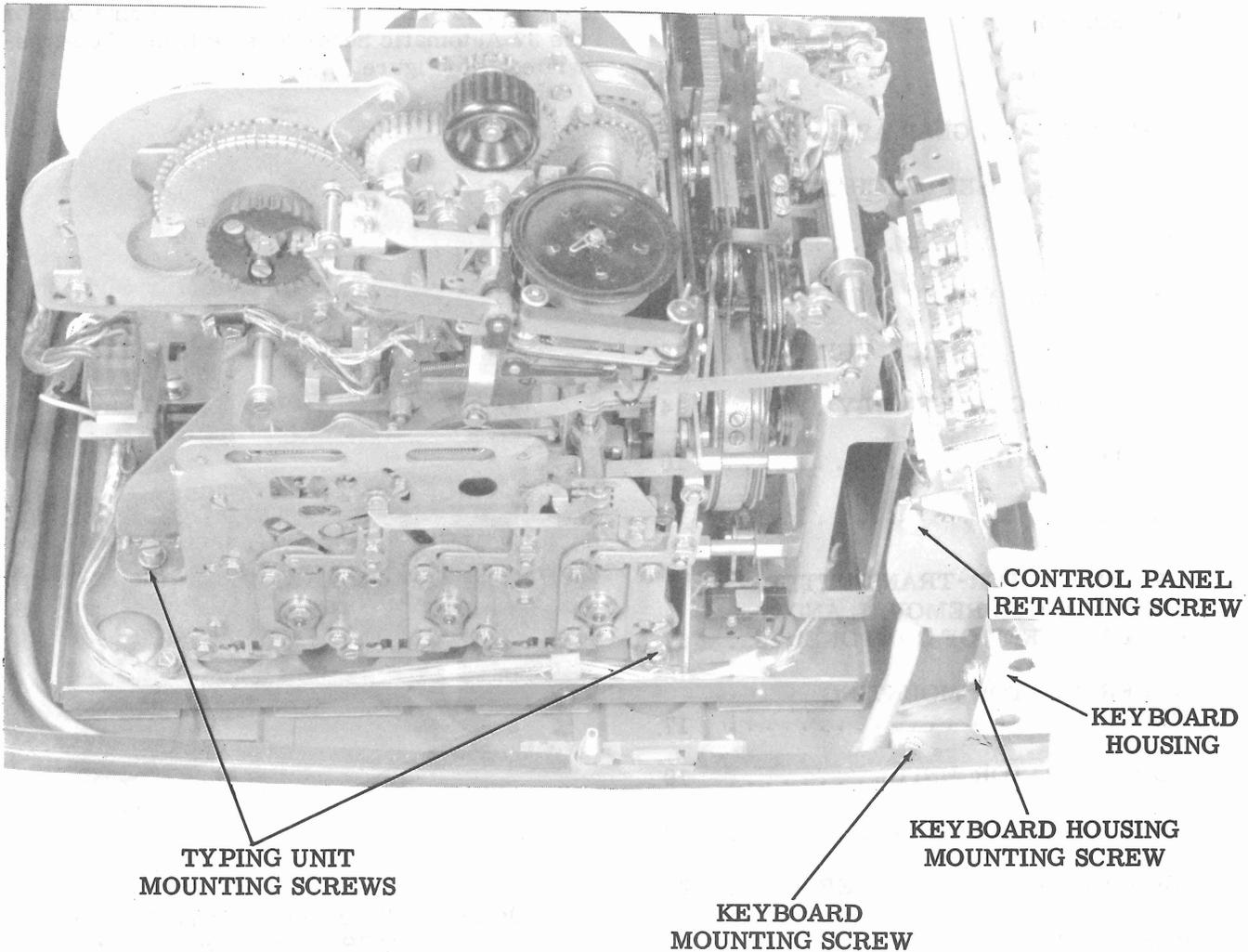
1.03 References in the procedures to left or right, up or down, top or bottom, etc, refer to the unit viewed with the keytops and controls facing the front (Figure 1).

1.04 Most maintenance, lubrication, and adjustments can be accomplished after a component has been removed with no further disassembly. If possible, disassembly should be confined to subassemblies which do not require

adjustment, or which can be removed without disturbing adjustments. When reassembling the subassemblies, all requirements for adjustments, clearances, and spring tensions must be observed.

1.05 Refer to maintenance tools Section 570-005-800 for information on the tools necessary to perform the removal and replacement of components.

1.06 Use maintenance pad TP124828 to protect furniture and floor coverings from oil, grease, and dirt during the removal and replacement of component parts.



(Left Side View)

Figure 2 - Typing Unit and Control Panel

1.07 The loss of retaining rings and springs should be avoided during disassembly by holding the items with one hand while it is released with the other. Springs should not be stretched or distorted more than is necessary for removal or their effective spring tension may be altered.

CAUTION: REMOVE POWER BEFORE DISASSEMBLING THE SET.

2. KEYBOARD SEND-RECEIVE UNIT REMOVAL AND REPLACEMENT OF COMPONENTS

TYPING UNIT

2.01 To remove the typing unit from the base, proceed as follows (Figures 2 through 4).

- (1) Depress the cover latches on both sides of the typing unit cover and tilt the cover back until it rests on the table.

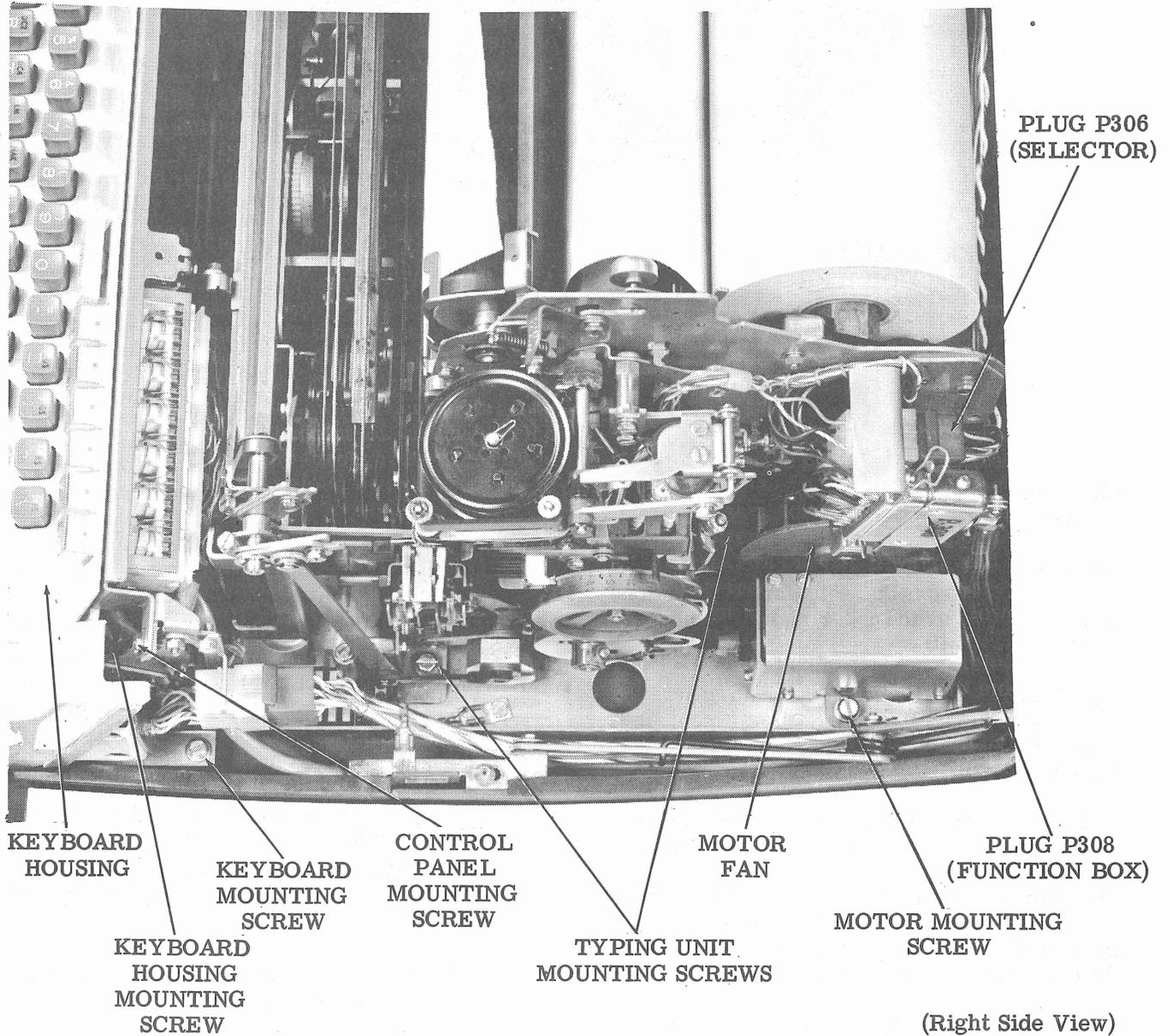


Figure 3 - Typing Unit and Control Panel

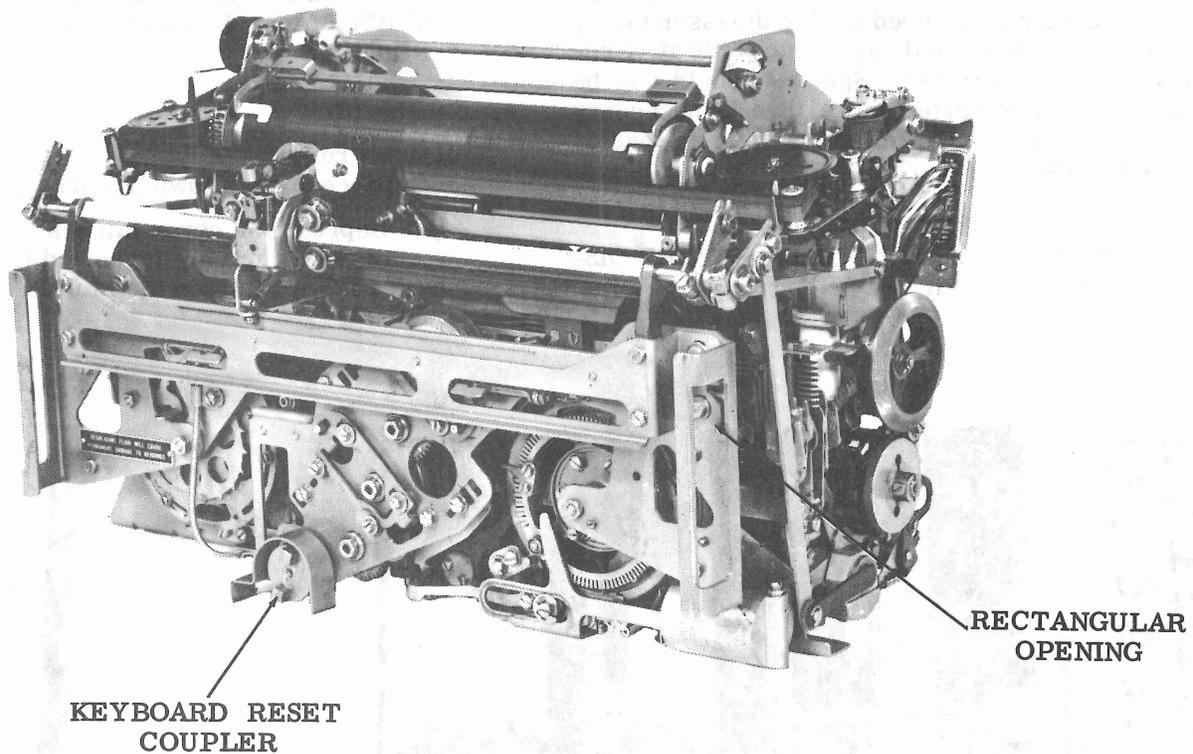


Figure 4 - Typing Unit

- (2) Remove the paper roll from the typing unit.
- (3) Disconnect electrical cable plugs P306 and P308 from the selector and function box connectors at the upper right rear corner of the typing unit.
- (4) Remove four typing unit mounting screws from the feet at the bottom front and rear corners of the left and right sides of the typing unit.

Note: Steps (5) and (6) may be omitted unless the control panel is to be replaced.

- (5) Remove two screws securing the control panel trim plate to the top of the control panel and remove the plate. Be careful not to drop the screws into the base.
- (6) Loosen the control panel retaining screws at the right and left upper rear corners of the control panel. Raise the control panel upward and forward.

- (7) Look straight down along the front plate of the typing unit and locate the keyboard reset coupler. The lug on the coupler must be located at the top facing forward. If it is not in this position, turn the motor fan counterclockwise until alignment is obtained.
- (8) Grasp the typing unit under the curve at the top rear of the left side frame, and in the rectangular opening at the right top corner of the front plate. Lift the typing unit straight up away from the base. Be careful that the keyboard reset coupling guard clears the control panel components. Set the typing unit aside in a protected area.

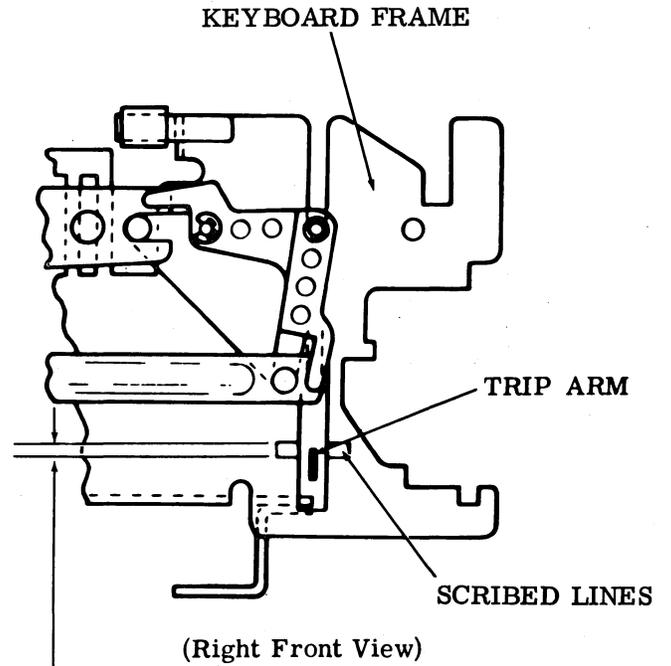
CAUTION: REMOVE THE TYPING UNIT ONLY IN THE MANNER DESCRIBED IN 2.01(8).

- 2.02 To replace the typing unit, proceed as follows (Figures 2 through 5).
 - (1) Locate the selector clutch on the right end of the typing unit main shaft, and the keyboard reset coupler at the lower center

Note: The typing unit must be installed on the base and secured to make these adjustments, and the keyboard housing must be removed.

To Check

Engage clutch. Rotate shaft until reset bail roller peaks on one of the high points of the cam. Note position of top edge of trip arm relative to scribed lines. Rotate the shaft until reset bail roller peaks on other high point of cam and note the trip position again.



Requirement

The lowest of the two trip arm positions obtained should be between the scribed lines.

To Adjust

Loosen the clamp screw friction tight. Insert screwdriver blade between the pry point and the appropriate arm of the adjusting plate and position trip arm to meet requirement. Tighten clamp screw.

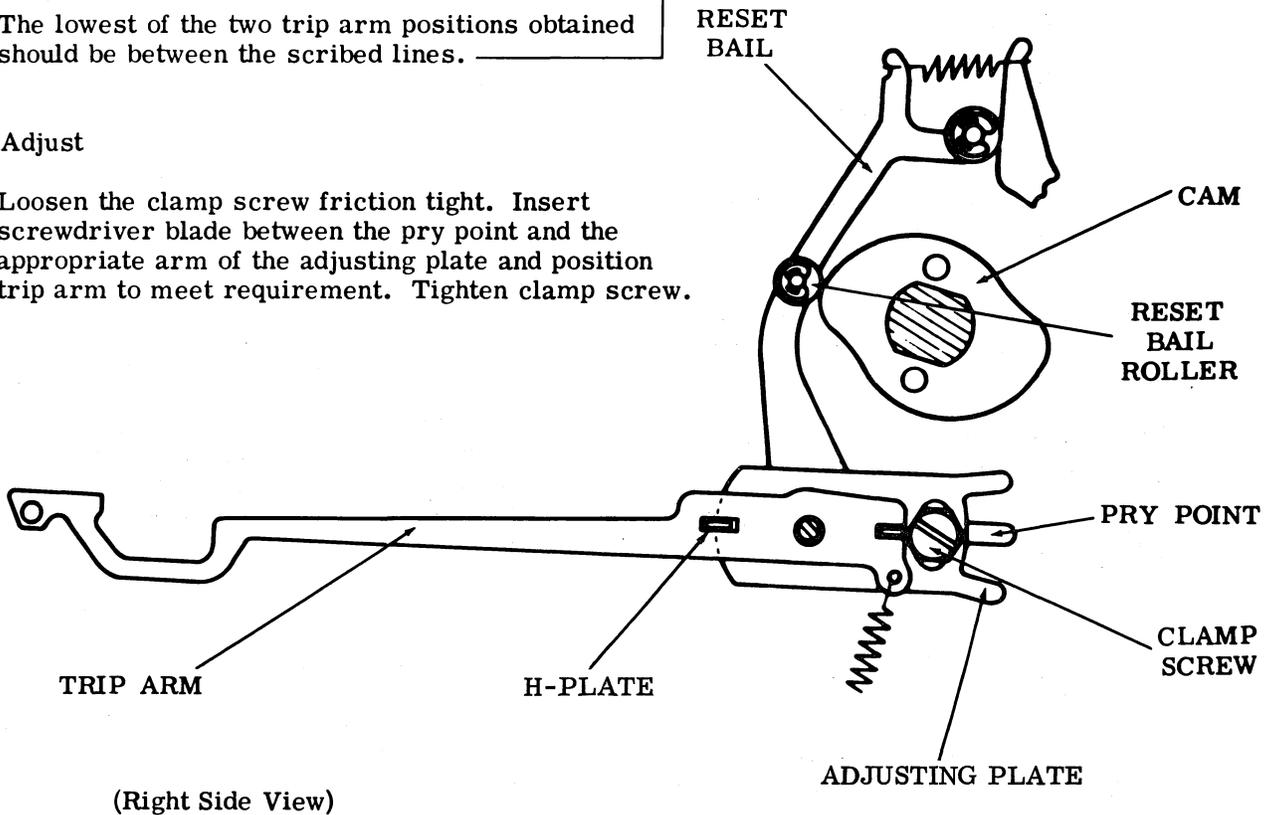


Figure 5 - Keyboard Trip Arm Adjustment

front. Facing the right end of the typing unit, rotate the selector clutch in a counterclockwise direction until the lugs on the keyboard reset coupler are vertical.

Note: Use handwheel TP161430, part of tool kit TP151940, to turn the selector shaft.

(2) Viewing the keyboard from the right side, rotate the mechanical reset shaft in a clockwise direction until the open slots in the plastic universal joint member are vertical to the base.

(3) Loosen the control panel retaining screws at the right and left upper rear corners of the control panel. Raise the control panel upward and forward.

(4) Grasp the typing unit under the curve at the top rear of the left side of the frame, and in the rectangular opening at the right top corner of the front plate. Raise the typing unit and position it directly over the base. Tilt the typing unit slightly forward (toward the keyboard) from a normal level attitude. Align the reset coupler with the slot in the plastic universal joint member, and carefully lower the typing unit onto the locating studs and tilt back to engage the intermediate gear assembly. Be certain that the main shaft driven gear and the intermediate gear mesh properly.

(5) Secure the typing unit to the base with the four typing unit mounting screws, beginning with the left rear screw.

Note: If a replacement typing unit (other than the original) is installed, the following adjustments are required.

(6) Adjust keyboard trip arm following the procedures given in Figure 5.

(7) Remove the two screws and lockwashers holding the intermediate gear guard to the typing unit base and remove the guard. Loosen the five motor mounting screws and move the motor away from engagement with the intermediate gear assembly.

(8) Using the pry points at the rear of the intermediate gear assembly, adjust the intermediate gear assembly from front to rear until there is a barely perceptible backlash between the main shaft driven gear and the intermediate drive gear. This backlash

can be from 0.004 inch to 0.015 inch. Tighten the three intermediate gear assembly mounting screws.

(9) Using the back left edge of the motor cradle and the rear flange of the base as a pry point, move the motor forward to fully engage the motor pinion and the intermediate driven gear. Then using the pry point located forward of the left rear mounting screw, ease the motor unit back to establish a barely perceptible backlash. Tighten the five motor mounting screws. Make sure the fan guard does not interfere with free rotation of fan.

(10) Install the gear guard over the intermediate gear assembly with the two screws and lockwashers taken out during the removal procedures. Align guard to clear gears and motor unit, and tighten.

(11) Install the keyboard housing at this time by aligning it with the keyboard cover and sliding it back against the housing brackets.

(12) Secure keyboard housing with one keyboard housing mounting screw, lockwasher, and flat washer inserted from the rear center of the right and left housing brackets. Check housing for proper fit and secure screws.

(13) The remaining replacement procedures are the reverse of the removal procedures.

CONTROL PANEL

2.03 To remove the control panel, proceed as follows (Figures 2, 3, 6, and 7).

(1) Detach the control panel cable clamps from the rear of the keyboard by taking out the screw, lockwasher, and flat washer securing each (one clamp for each switch assembly).

(2) Disconnect the control panel cable plugs from the control panel by pulling them straight out, using care to avoid bending the connector pins. Wrap the plugs with a protective covering and tape it securely to protect the plug.

(3) Take out the control panel mounting screw, lockwasher, and flat washer at the upper right and left sides of the control panel securing the panel to the arc slides.

(4) Lift the control panel free from the keyboard and store it in a closed container to protect the switch and connector contacts.

2.04 To replace the control panel, reverse the procedures used for removal.

Note: After installing and attaching the cable clamps on the control panel cables closest to the plugs, position the lower cable clamp 4 inches down the cable to allow a loop in the cable before securing the lower clamp.

KEYBOARD

2.05 To remove the keyboard from the base assembly, proceed as follows (Figures 2, 3, and 6).

(1) Remove the keyboard housing mounting screws, lockwashers and flat washers from the rear center of the left and right housing brackets. Slide the keyboard housing straight forward to remove.

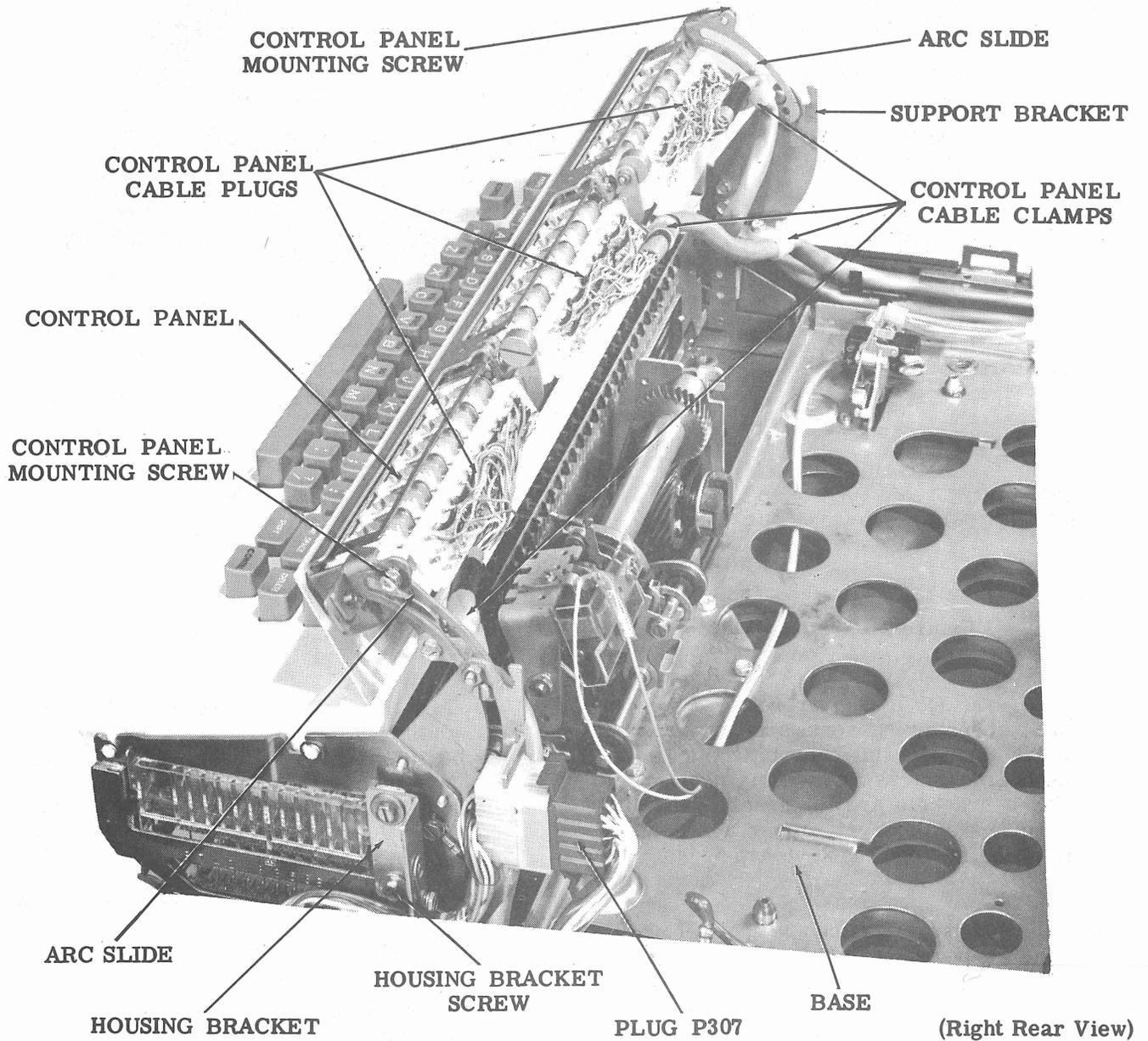


Figure 6 - Control Panel and Keyboard

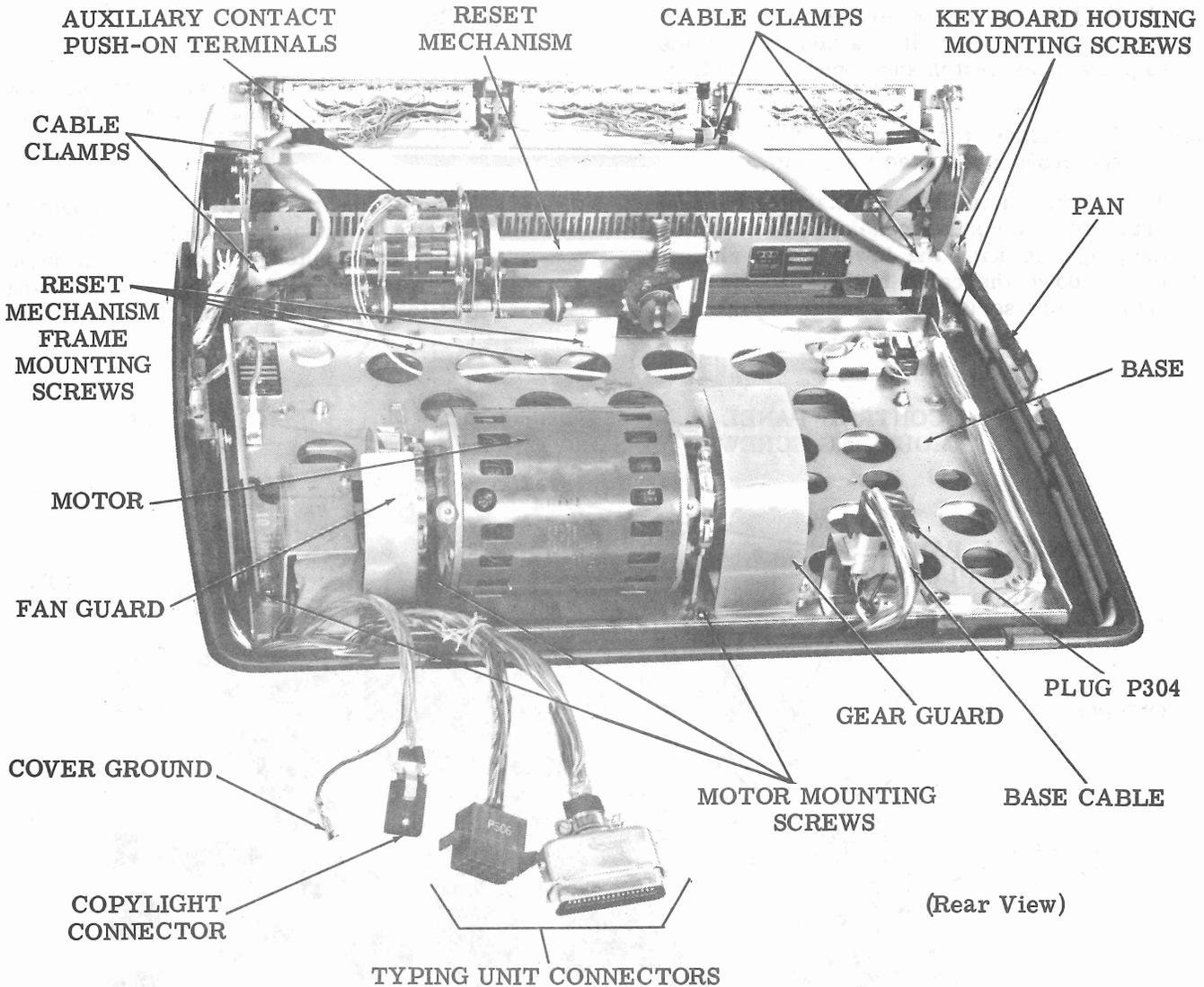


Figure 7 - Keyboard, Control Panel, Reset Mechanism, and Motor Unit

Note: Do not loosen or remove the two bracket retaining screws in the housing brackets that secure the brackets to the keyboard, unless removal is necessary. If the brackets are disturbed, they will require realignment during reassembly to properly align the keyboard housing.

(2) Disconnect electrical plug P307 from the keyboard connector.

(3) Support the lower front of the keyboard and remove the two keyboard mounting screws, lockwashers, and flat washers from each side securing the keyboard to the base.

(4) Lift the keyboard up very slowly, tilting the right side up slightly, and moving the keyboard a little to the right until the H-plate disengages from the trip arm in the keyboard. Holding the H-plate to the left as the keyboard is lifted will assist the disengagement process.

(5) Store the keyboard in a protected area.

2.06 To replace the keyboard, reverse the procedures used for removal.

Note: Use great care to assure the H-plate is properly engaged in the front and rear slots of the trip arm before lowering the keyboard and moving it to the left to its proper position on the base.

MOTOR UNIT

2.07 To remove the motor unit from the base, proceed as follows (Figure 7).

- (1) Remove typing unit as described in 2.01.
- (2) Disconnect the two motor leads from the two leads originating from the bottom of connector J304 mounted on the left rear of the base.
- (3) Remove the fan guard by taking out the motor mounting screws securing it in the right rear corner of the base.
- (4) Take out the remaining four motor mounting screws and lift the motor unit from the base. Set motor unit aside.

2.08 To replace the motor unit, reverse the procedures used for removal. Adjust the motor to the intermediate gear assembly as described in 2.02(8).

INTERMEDIATE GEAR ASSEMBLY

2.09 To remove the intermediate gear assembly from the base, proceed as follows (Figures 7 and 8).

- (1) Remove typing unit as described in 2.01.
- (2) Remove two screws and lockwashers securing the gear guard to the base.
- (3) Remove the gear guard.
- (4) Remove the three intermediate gear assembly mounting screws, lockwashers, and flat washers securing the intermediate gear assembly to the base.
- (5) Lift the intermediate gear assembly from the base and set aside.

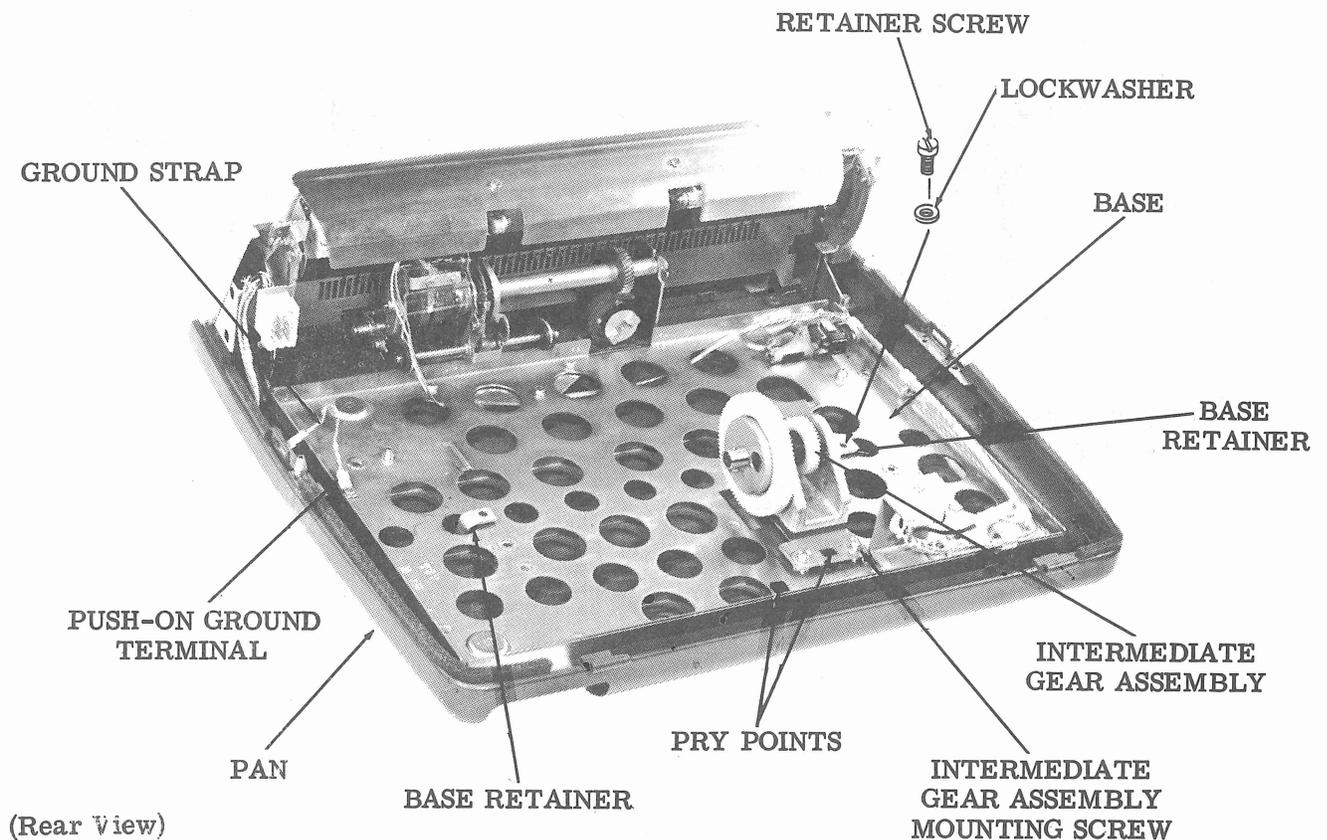
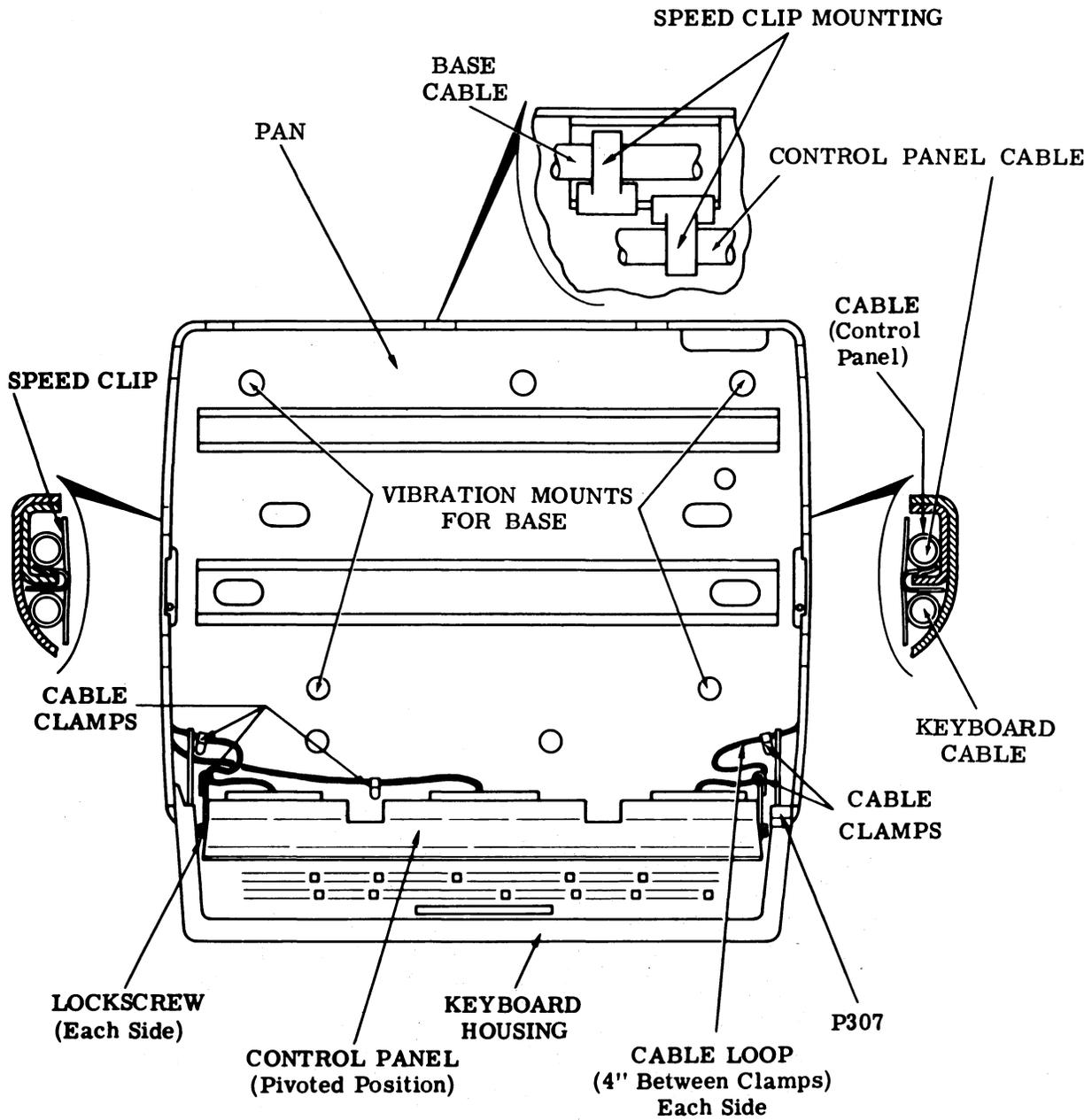


Figure 8 - Keyboard, Control Unit, Reset Mechanism, and Intermediate Gear Assembly



(Top View)

Figure 9 - Pan Cable Routing

2.10 To replace the intermediate gear assembly, reverse the procedures used during removal. If original intermediate gear assembly is installed, make sure there is a barely perceptible amount of backlash between the motor and intermediate gear assembly before tightening screws. If other than original intermediate gear assembly is installed, replace the typing unit and follow the adjustment information described in 2.02(7) and 2.02(8). Replace the gear guard.

KEYBOARD RESET MECHANISM

2.11 To remove the keyboard reset mechanism from the base, proceed as follows (Figure 6 and 7).

- (1) Remove the typing unit as described in 2.01.
- (2) Remove the control panel cables as described in 2.03(3) and 2.03(4).
- (3) Remove the keyboard as described in 2.05.
- (4) Pull the two push-on lead terminals straight off from the auxiliary contacts on the top rear of the keyboard reset mechanism.
- (5) Remove the three reset mechanism frame mounting screws, lockwashers, and flat washers securing the reset mechanism to the base.
- (6) Pull the keyboard reset mechanism forward until the frame extension clears the base. Set the keyboard reset mechanism aside in a protected area.

2.12 To replace the keyboard reset mechanism, reverse the procedures used for removal.

Note: Route the leads down through the first hole in the left front corner of the base, bring them back up through the front center hole, then pass leads back down through the second hole from the right front of the base, and finally bring them up through the hole in the right front center before attaching them to the auxiliary contacts.

BASE

2.13 To remove the base from the typing unit cover and pan, proceed as follows (Figure 8)

- (1) Remove the typing unit (2.01), control panel cables (2.03(3) and (4)), and keyboard (2.05).
- (2) Remove the two base retainers by taking out the retainer screws and lockwashers securing each to the pan.

Note: If the screw and lockwasher attaching each base retainer to the base for immobility during shipment are still in place, they should be removed and discarded at this time.

- (3) Lift base retainers from the pan through holes in base.
- (4) Remove the ground strap from the base by pulling the push-on ground terminal straight off from the terminal tab mounted on the right side of the base.
- (5) Lift the base free from the pan one corner at a time. The shock mounts may hold the base firmly due to a suction formed in the cup in the base. A little force will break the base loose.

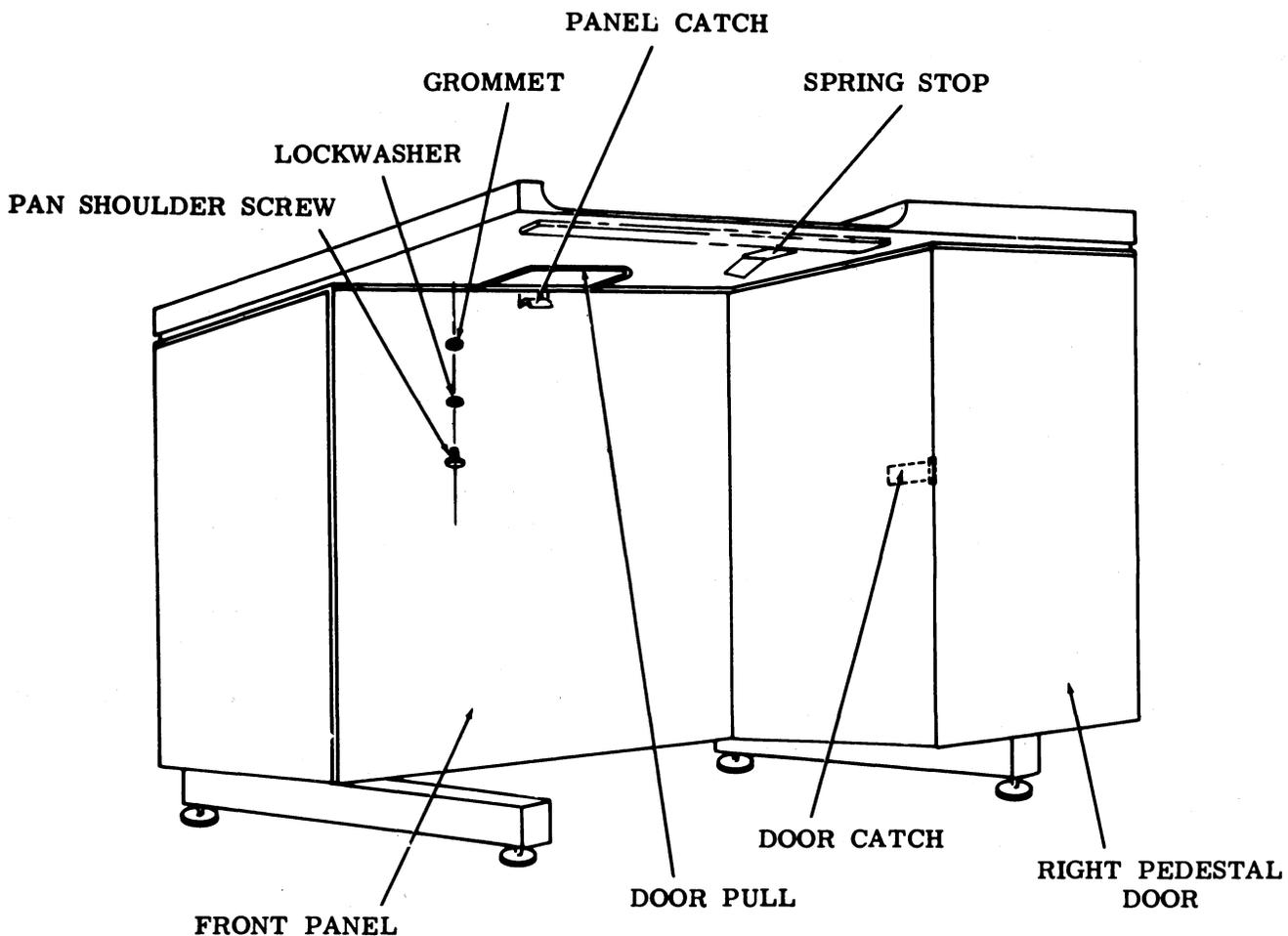
Note: No further disassembly of the base is recommended unless parts require replacement.

2.14 To replace the base, reverse the procedures used during removal.

TYPING UNIT COVER AND PAN

2.15 To remove the typing unit cover and pan, from the table, proceed as follows (Figures 9 and 11).

- (1) Remove the typing unit pan (2.13).
- (2) Disconnect the copyright cable plug P302 from the 2-pin connector in the cover.
- (3) Pull the push-on ground terminal free from the ground terminal tab in the cover.
- (4) Use a screwdriver blade or needle nose pliers to spring the upper speed clip at the rear of the pan inward, and pull the base cable free. In a similar manner release the control panel cable from the lower speed clip.
- (5) Release the control cable(s) from the speed clips on the left side of the pan.



(Left Oblique Front View)

Figure 10 - Table

- (6) Release the control cable and keyboard cable from the speed clips on the right side of the pan.
- (7) Open the front panel of the table by pressing upward on the panel catch while pulling outward on the door pull. The panel will be stopped by the spring stop, but can be released by pressing upward on the strip. Lower the panel until the door pull rests on the floor.
- (8) Locate the copyright cable under the table. Draw the cable down and carefully feed the plug P302 and ground terminal through the oblong slots in the pan and table.
- (9) Draw the base cable down and feed its plug P304 through the slots.
- (10) Draw the selector cable and its plug P306, and the function box cable and its plug P308 down through the hole.
- (11) Draw the keyboard cable and its plug P307 back and down through the table slot.
- (12) Very carefully work the control panel cables and connector plugs down through the slot.

(13) Remove the four pan shoulder screws and lockwashers from the grommets in the lower side of the table to release the typing unit pan and cover.

(14) Lift the typing unit pan and cover out of the recess in the table and set aside.

2.16 To replace the typing unit pan and cover, reverse the procedures used during removal.

ELECTRICAL SERVICE UNIT

2.17 To remove the electrical service unit from the left compartment in the base of the table proceed as follows (Figures 10 through 13).

(1) Open the front panel of the table and draw all electrical service unit cables back through the oblong slot in the table as directed in 2.15.

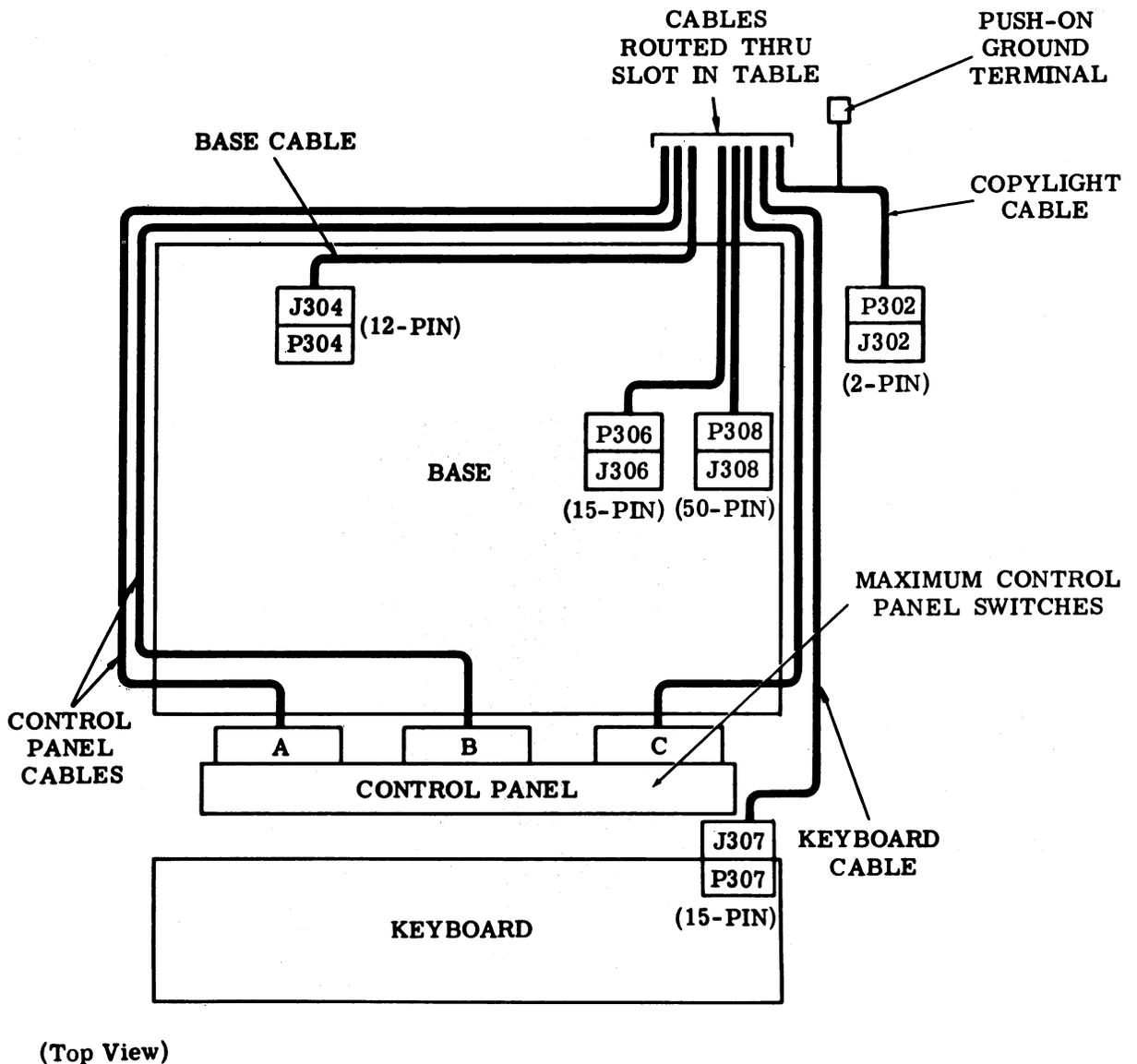


Figure 11 - Cable Routing Above Table

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- (2) Disconnect the power cord plug from the utility strip.
- (3) Remove three service unit retaining screws, lockwashers, and flat washers from the retaining flanges at the front top and bottom of the unit.
- (4) If the shipping bracket secured to the floor of the left table compartment for shipment has not been removed, take out the mounting screw and lockwasher holding it in place and discard this hardware.
- (5) Lift the electrical cables out of the cable hanger at the top rear wall of the compartment.
- (6) Pull the electrical service unit straight forward out of the table.

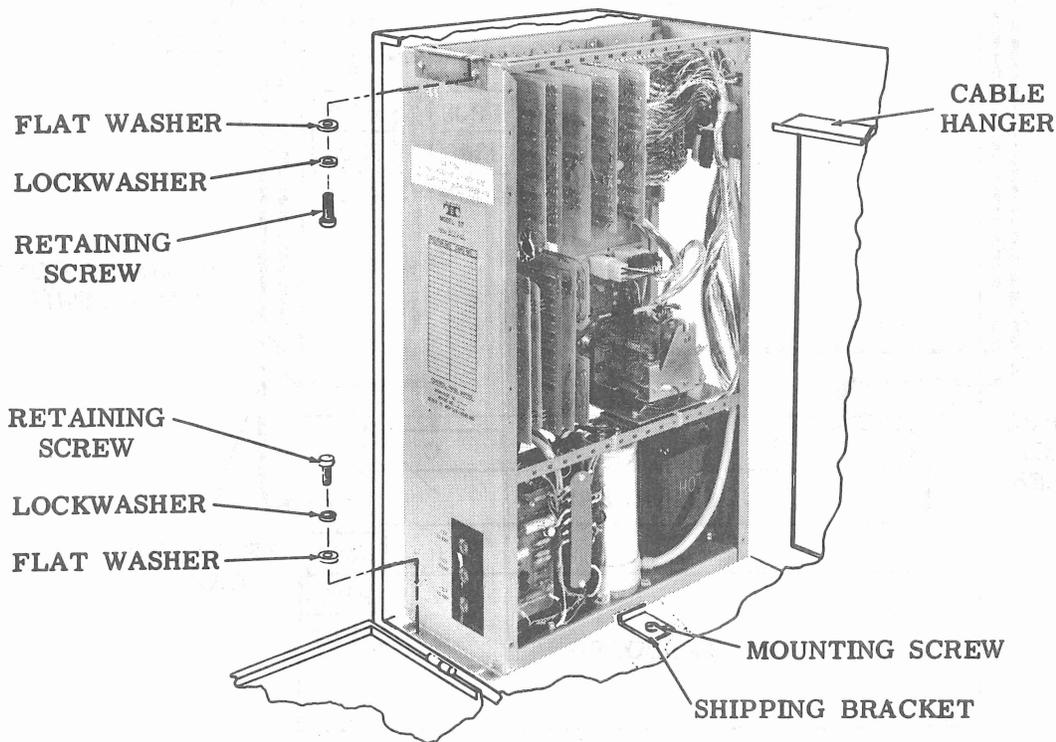
2.18 To replace the electrical service unit, reverse the removal procedures.

ANSWER-BACK ASSEMBLY

2.19 To remove the answer-back assembly from the electrical service unit, proceed as follows (Figure 11).

- (1) Carefully pull plug connectors from the top of the printed circuit card on the answer-back assembly.
- (2) Remove four answer-back mounting screws, lockwashers, and flat washers from the corners of the answer-back mounting plate.
- (3) Lift the answer-back assembly out of the electrical unit, and set aside.

2.20 To replace the answer-back assembly, reverse the removal procedures.



(Right Oblique Cut-Away View of Table)

Figure 12 - Electrical Service Unit

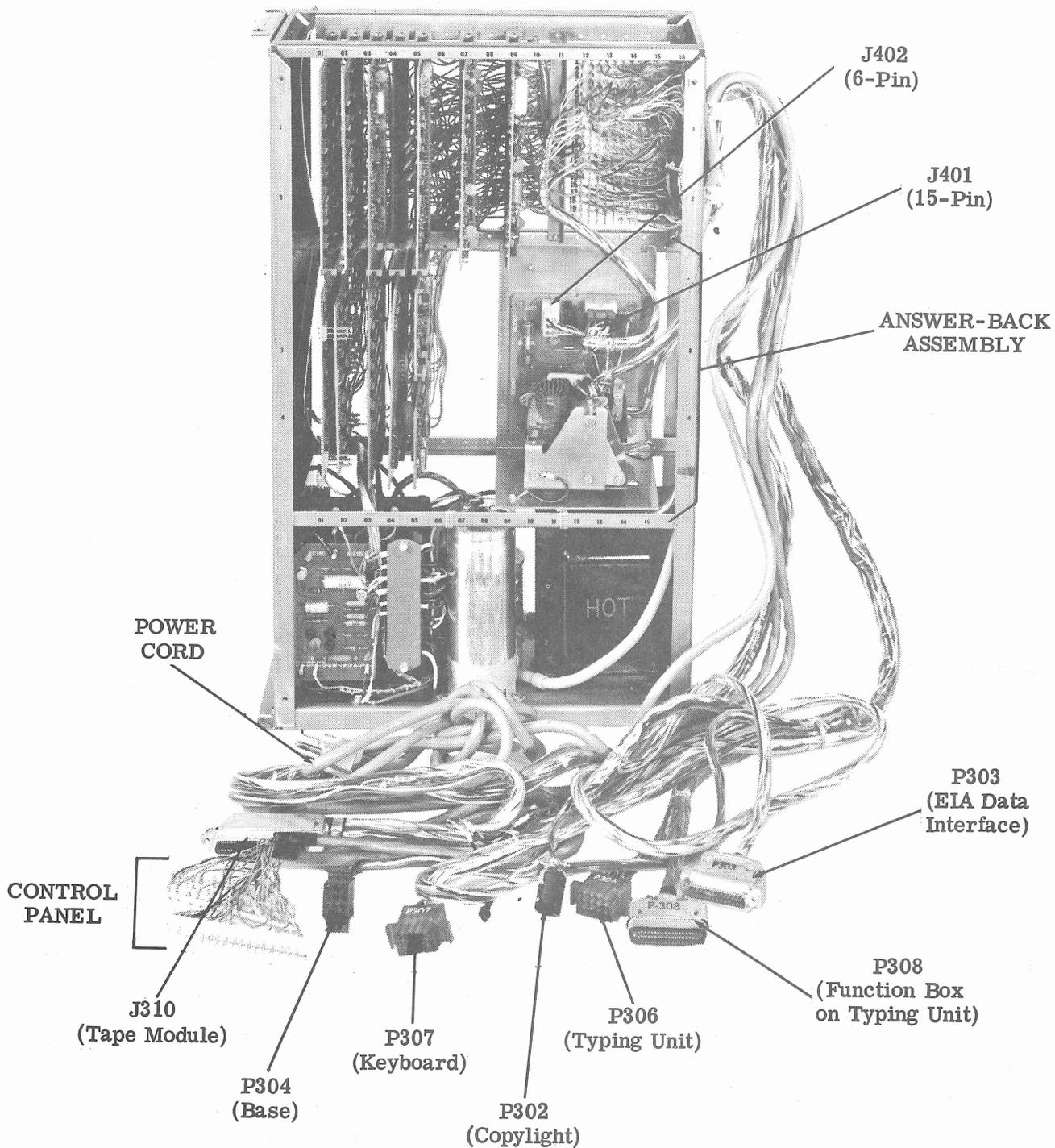
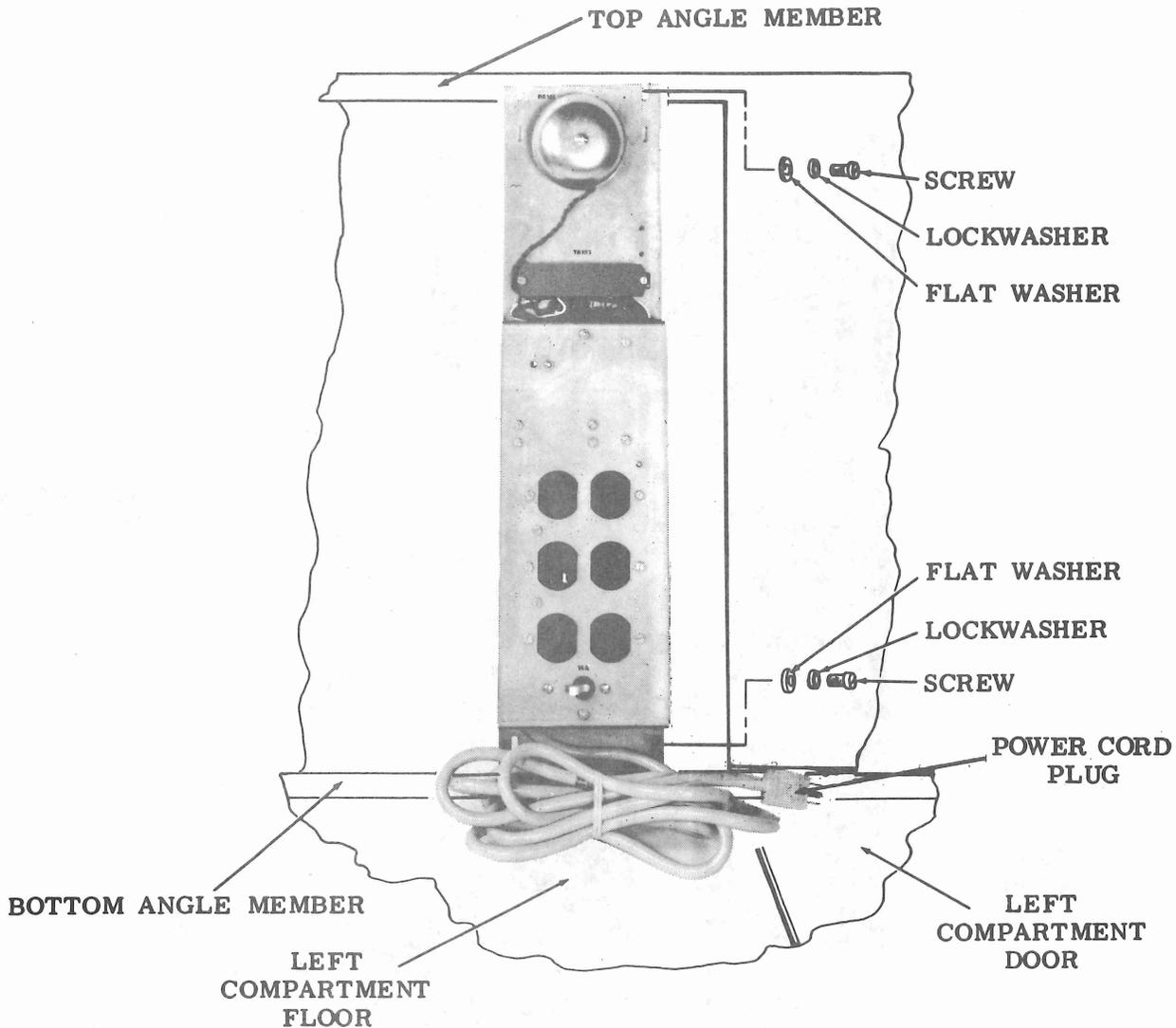


Figure 13 - Electrical Service Unit



(Left Cut-Away View of Table)

Figure 14 - Utility Strip

UTILITY STRIP

2.21 To remove the utility strip from the left compartment in the base of the table, proceed as follows (Figures 8 and 12).

- (1) Open the front panel of the table by pressing upward on the panel catch, and pull forward on the door pull.
- (2) Press upward on the spring stop, and continue to swing the panel outward and downward until the door pull rests on the floor.
- (3) Disconnect the utility strip power cord plug, if it is connected to power.

(4) Remove two utility strip mounting screws, lockwashers, and flat washers securing the utility strip to the top and bottom angle members of the table on the right side of the left compartment.

(5) Remove the utility strip from the table and store.

2.22 To replace the utility strip, reverse the removal procedures.

TABLE

2.23 No removal or replacement procedures are required for the table since all areas are accessible through the front panel and the right pedestal door.

3. REPERFORATOR-TRANSMITTER TAPE MODULE REMOVAL AND REPLACEMENT OF COMPONENTS

REPERFORATOR MOUNTING PLATE

3.01 To remove the nontyping reperforator unit (reperforator unit), reperforator motor, and reperforator mounting plate from the tape module cabinet as an assembly, proceed as follows (Figures 15 and 16).

(1) Depress the cover latches in the recess on both sides of the cover assembly near the front.

(2) Raise the cover until the cover slide safety latch passes the stop, and the slide drops into the upstop position.

CAUTION: IF THE COVER IS NOT PROPERLY LATCHED, IT MAY DROP DURING REMOVAL OR REPLACEMENT PROCEDURES CAUSING INJURIES.

(3) Remove tape from the reperforator unit.

(4) Disconnect plug P315 from the connector located on the bracket above the drive gear hub.

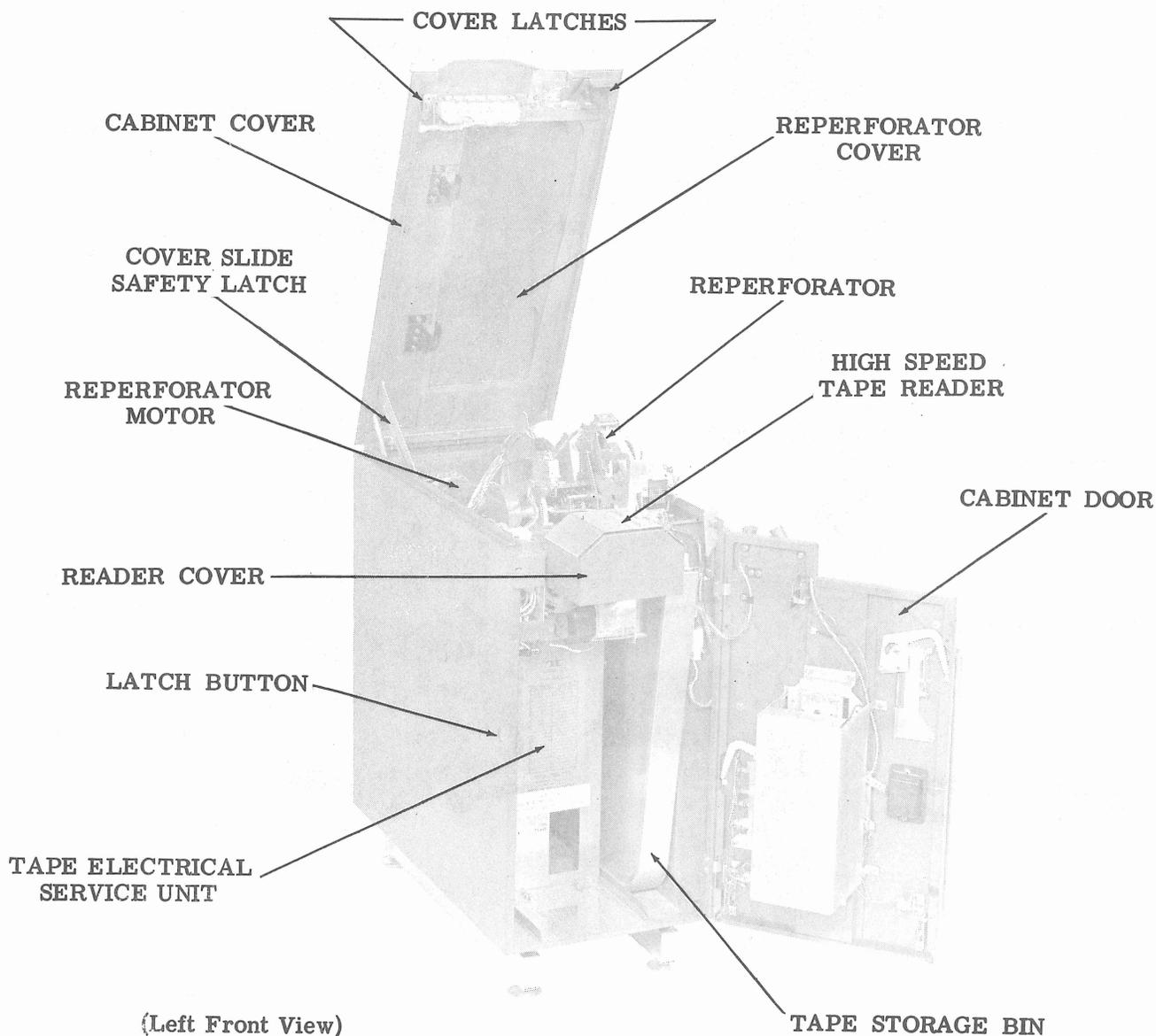
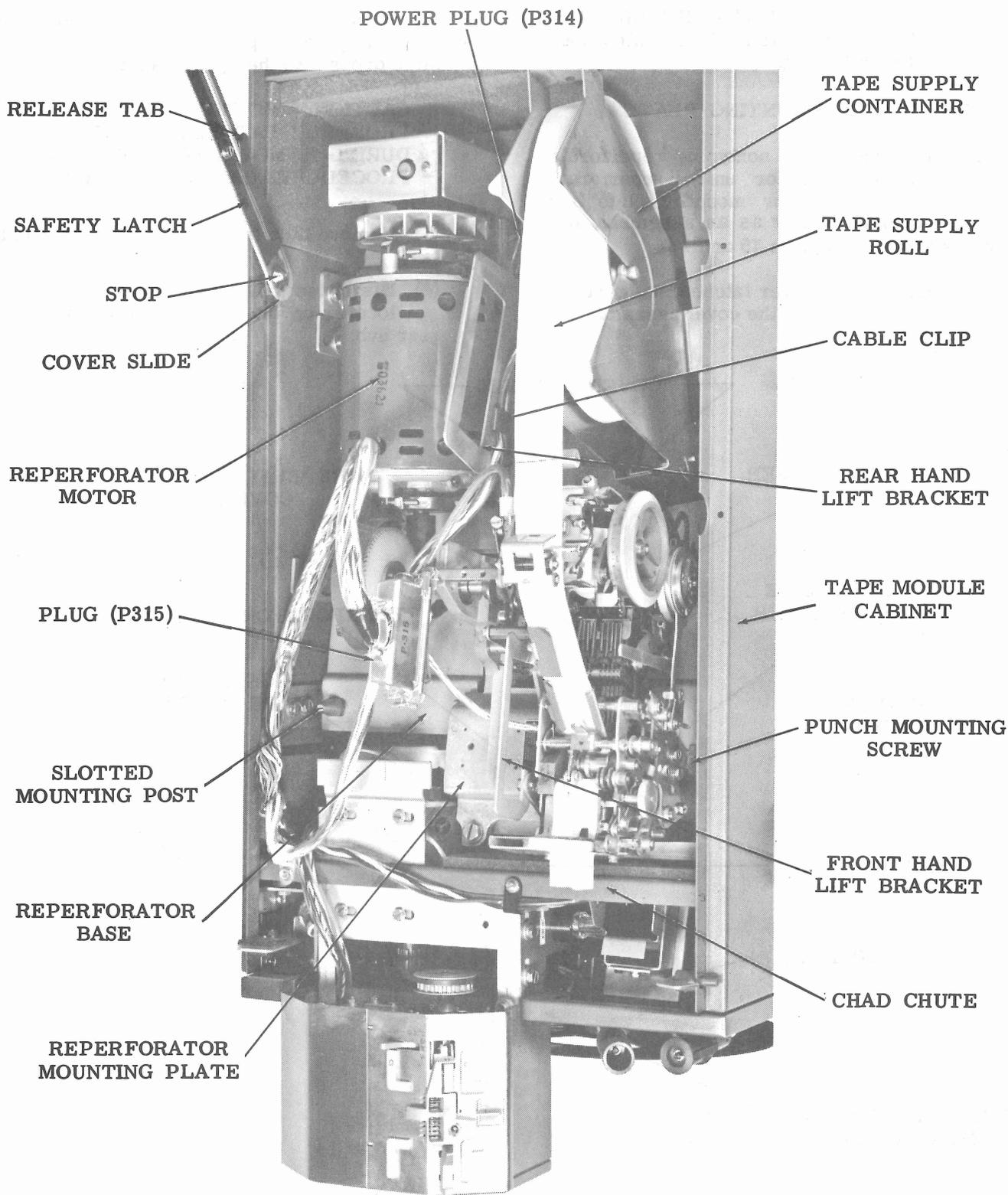


Figure 15 - Tape Module



(Top Front View)

Figure 16 - Tape Module (Cabinet Opened)

- (5) Disconnect power plug P314 from the 9-pin connector at the rear center of the reperformer mounting plate.
- (6) Pull the cable out of the spring clip attaching it to the rear hand lift bracket.
- (7) Turn the three slotted mounting posts to align the flats on the posts with the edges of the squared mounting holes in the reperformer mounting plate.
- (8) Lift the reperformer mounting plate with the reperformer and reperformer motor attached straight up out of the cabinet, lifting by means of the front and rear hand lift brackets. Use care to avoid damaging the chad chute.

3.02 To replace the reperformer mounting plate with the reperformer unit and the reperformer motor attached, reverse the removal procedures. Use great care in guiding the chad chute in place to avoid damaging the chute.

REPERFORATOR UNIT

3.03 To remove the reperformer unit from the reperformer mounting plate, proceed as follows (Figures 16 through 18).

- (1) Remove the two pilot screws from the feet at the front of the reperformer unit.
- (2) Remove the reperformer mounting screw and flat washer from the left rear of the unit casting, and the lockwasher and nut from the channel in the center bottom of the reperformer mounting plate.
- (3) Remove the punch mounting screw, lockwasher, and flat washer from the right of the front punch plate.
- (4) Remove the two chad chute mounting screws, lockwashers, and flat washers from the upper front right, and pull the chad chute away from the punch block assembly.
- (5) Loosen the gear guard retaining screws, and slide the gear guard to the left until it clears the screw heads. Lift the gear guard free from the reperformer mounting plate and store.
- (6) Lift the reperformer unit straight away from the reperformer mounting plate. Store in a protected area.

3.04 To replace the reperformer unit, reverse the removal procedures, except that the motor pinion and reperformer gear engagement must be checked for a barely perceptible backlash, and there must be some clearance between the motor pinion retainer and the reperformer gear. If necessary, proceed as follows (Figure 17).

- (1) With the front motor plate mounting screws loose, loosen the locknuts and adjust the threaded bushings to obtain the required backlash.
- (2) If there is any interference between the pinion and gear, loosen the two rear motor plate mounting screws, position the plate, and tighten the screws.
- (3) Replace the gear cover and adjust it to clear the reperformer gear at all points.
- (4) Tighten both gear guard retaining screws.
- (5) Complete replacement procedures in reverse of removal procedures.

REPERFORATOR MOTOR

3.05 To remove the reperformer motor from the reperformer mounting plate proceed as follows (Figures 16 through 18).

- (1) Detach the green motor ground lead from the ground terminal tab on the reperformer mounting plate by pulling the push-on terminal straight off.
- (2) Disconnect the two motor leads from the two pendant leads originating from the base of the 9-pin connector mounted in the rear center of the reperformer mounting plate.
- (3) Remove the five motor mounting screws, lockwashers, and flat washers, and lift the reperformer motor from the reperformer mounting plate.
- (4) If the motor mounting plate requires removal from the reperformer mounting plate, take out the two front motor plate mounting screws, two lockwashers, and two flat washers; and the two rear motor plate mounting screws, and two flat washers. Lift the motor mounting plate out of the reperformer mounting plate. Do not disturb the threaded bushings or locknuts.

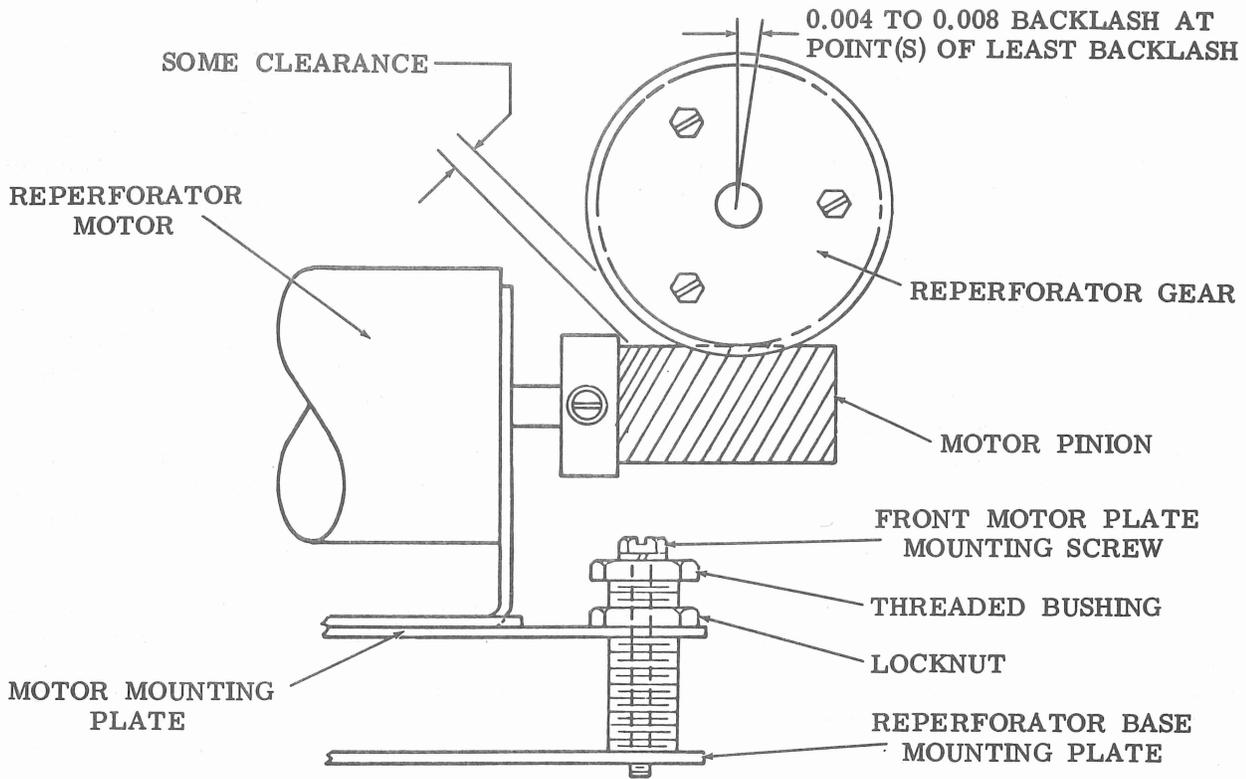


Figure 17 - Reperfurator Motor Pinion and Gear Mesh

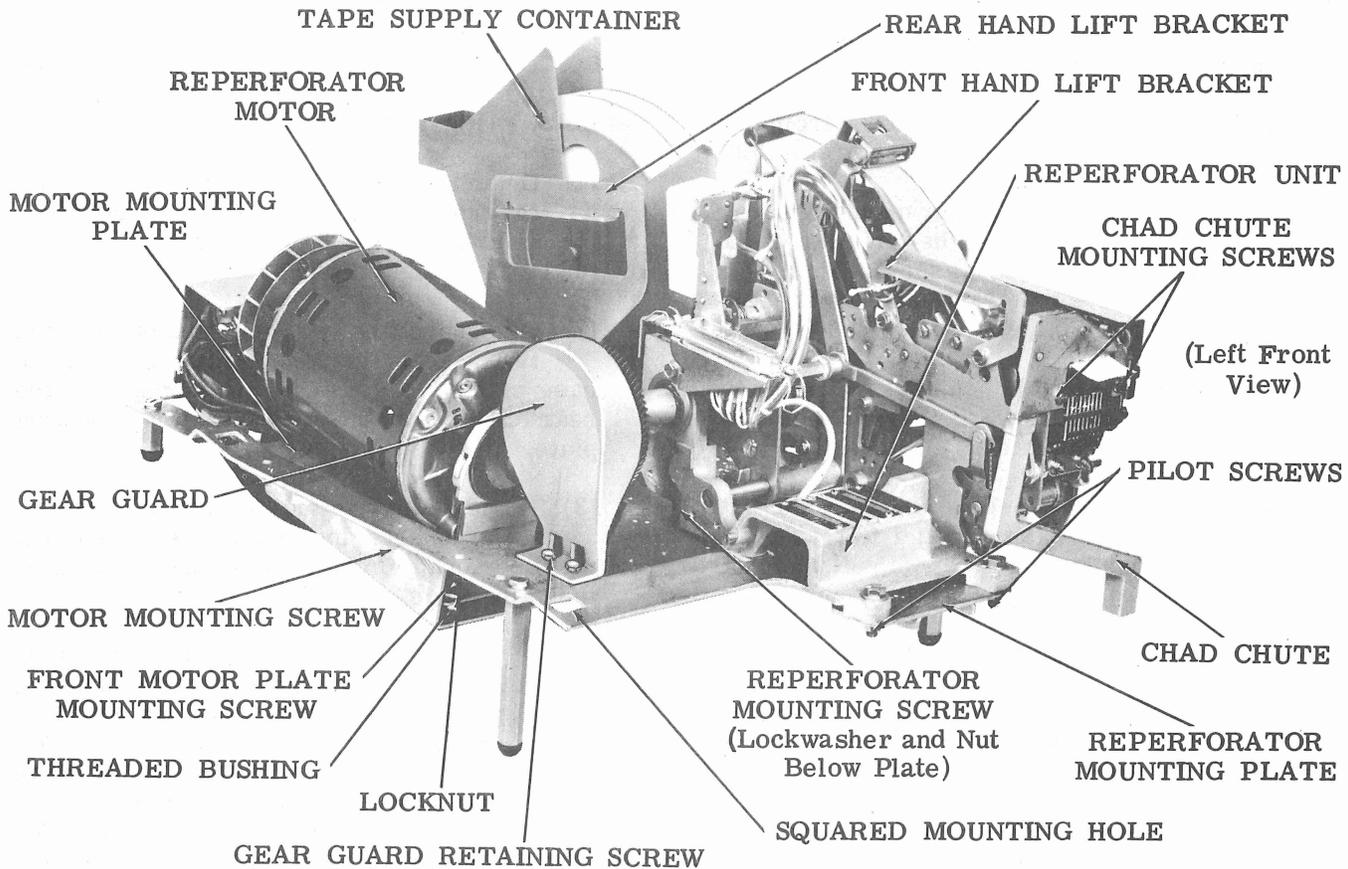


Figure 18 - Reperfurator, Mounting Plate, and Motor

3.06 To replace the reperforator motor, reverse the removal procedures, except, do not tighten the motor plate mounting screws at this time.

HIGH SPEED TAPE READER

3.07 To remove the high speed tape reader from the tape module cabinet, proceed as follows (Figures 16, 19 and 20).

(1) Pull the reader cover straight off from the reader and set it aside.

(2) Take out the three reader mounting screws, lockwashers, and flat washers. The left side screw can be reached by lifting the coverplate of the reader. The two screws on the right are located under the overhanging tape guideplate and may require a wrench or offset screwdriver for removal.

READER DRIVE BELT TENSION

Requirement

Belt should deflect

Min 3/8 inch---Max 5/8 inch
with 5 oz force applied at center of belt span.

To Adjust

Loosen motor mounting screws. Position motor to meet requirement. Tighten mounting screws.

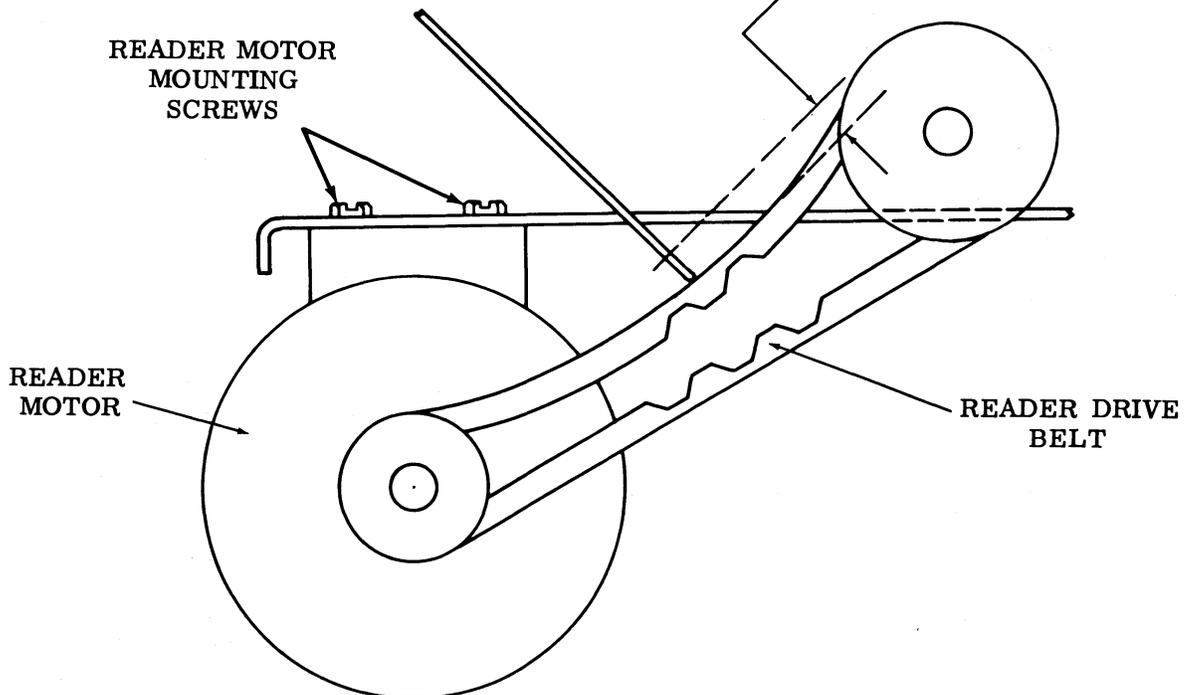


Figure 19 - Reader Drive Belt Tension

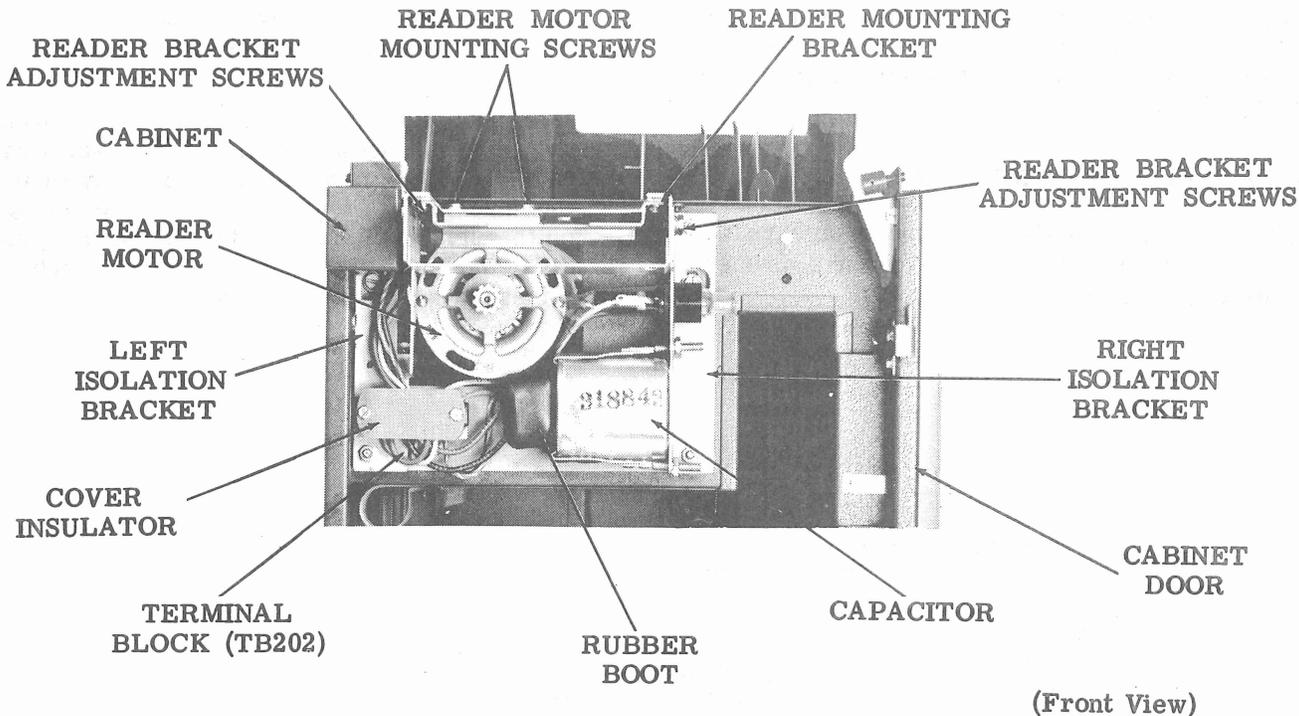


Figure 20 - Reader Motor Removal

- (3) Remove the reader drive belt.
- (4) Lift the reader straight up to separate it from the electrical connector P311, and the reader mounting bracket. Set the reader aside in a protected area.

3.08 To replace the reader, reverse the removal procedure. Adjust the position of the reader motor to the left in the reader mounting bracket until a deflection of $3/8$ to $5/8$ inch is obtained when a 5-ounce force is applied to the center of the belt, then tighten the four reader motor mounting screws (Figure 19).

READER MOTOR

3.09 To remove the reader motor from the reader mounting bracket, proceed as follows (Figures 19 and 20).

- (1) Depress the latch button on the left side of the cabinet and swing the cabinet door open.
- (2) Remove the cover insulator from the terminal block TB202 by taking out the two screws and lockwashers.

- (3) Disconnect the blue and white motor leads, and the incoming tape module electrical service unit leads from terminal block TB202. Replace the screws and cover.
- (4) Pull the rubber boot off the capacitor.
- (5) Detach the red and black motor lead push-on terminals from the capacitor terminal tabs.
- (6) Remove the four reader bracket adjustment screws, lockwashers, and flat washers from the right and left isolation brackets.
- (7) Remove the two screws, lockwashers, and nuts attaching the reader connector P311 to the connector mounting bracket in the front of the reader mounting bracket.
- (8) Lift the reader mounting bracket with the reader motor attached, and tilt it upward as it is pulled forward out of the tape module cabinet. Be sure the reader connector and cable drop free without hanging up on the motor or bracket.
- (9) Remove the reader motor from the reader mounting bracket by taking out the four reader motor mounting screws, lockwashers, and flat washers.

3.10 To replace the reader motor in the tape module cabinet, reverse the procedures used for removal. In addition, after the reader mounting bracket has been attached to the right and left isolation brackets with the four reader bracket adjustment screws, lockwashers, and flat washers, adjust the bracket so the front face of the rear reader side plate is aligned with the front face of the top front cabinet member before tightening the screws.

TAPE MODULE ELECTRICAL SERVICE UNIT

3.11 Remove the tape module electrical service unit from the tape module cabinet as follows (Figures 21 and 23).

(1) Disconnect the interface cable plug P310, and the power cable plug from their mating connectors in the KSR table. Be sure that power has been removed.

(2) Pull the interface and power cables back into the lower equipment compartment of the cabinet.

(3) Detach the pushbutton control switch P316, that is mounted through the slot in the front left of the cabinet cover, by taking out the four switch mounting screws and lockwashers. Do not disturb the two central alignment screws, or the three height adjustment screws that position the switch in the slot.

(4) Detach the control switch cable from the cabinet cover by removing the nut, lockwasher and cable clamp securing the cable in the cover.

(5) Remove door power plug P312.

(6) Remove four remaining cable clamps by taking off the nuts and lockwashers attaching them.

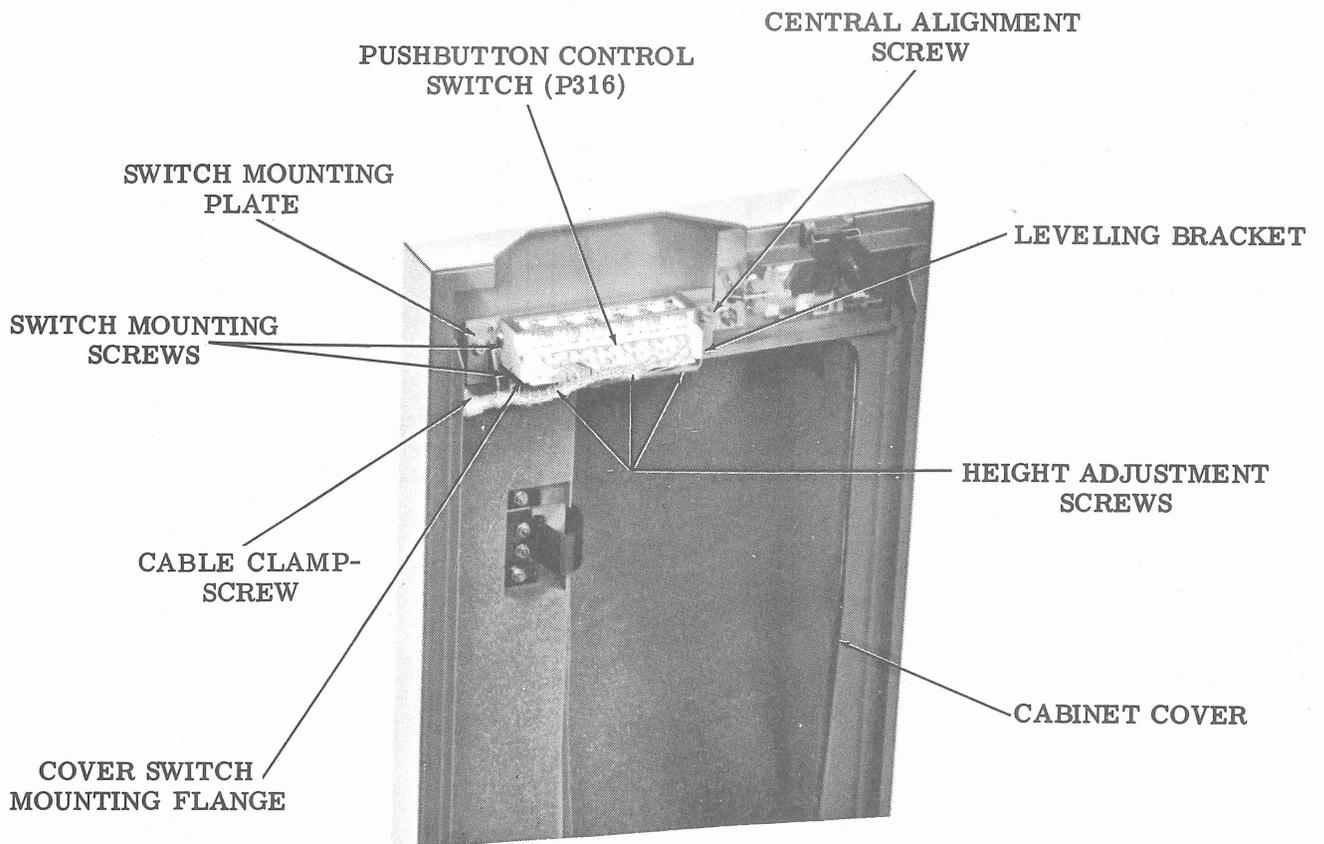


Figure 21 - Pushbutton Switch Removal

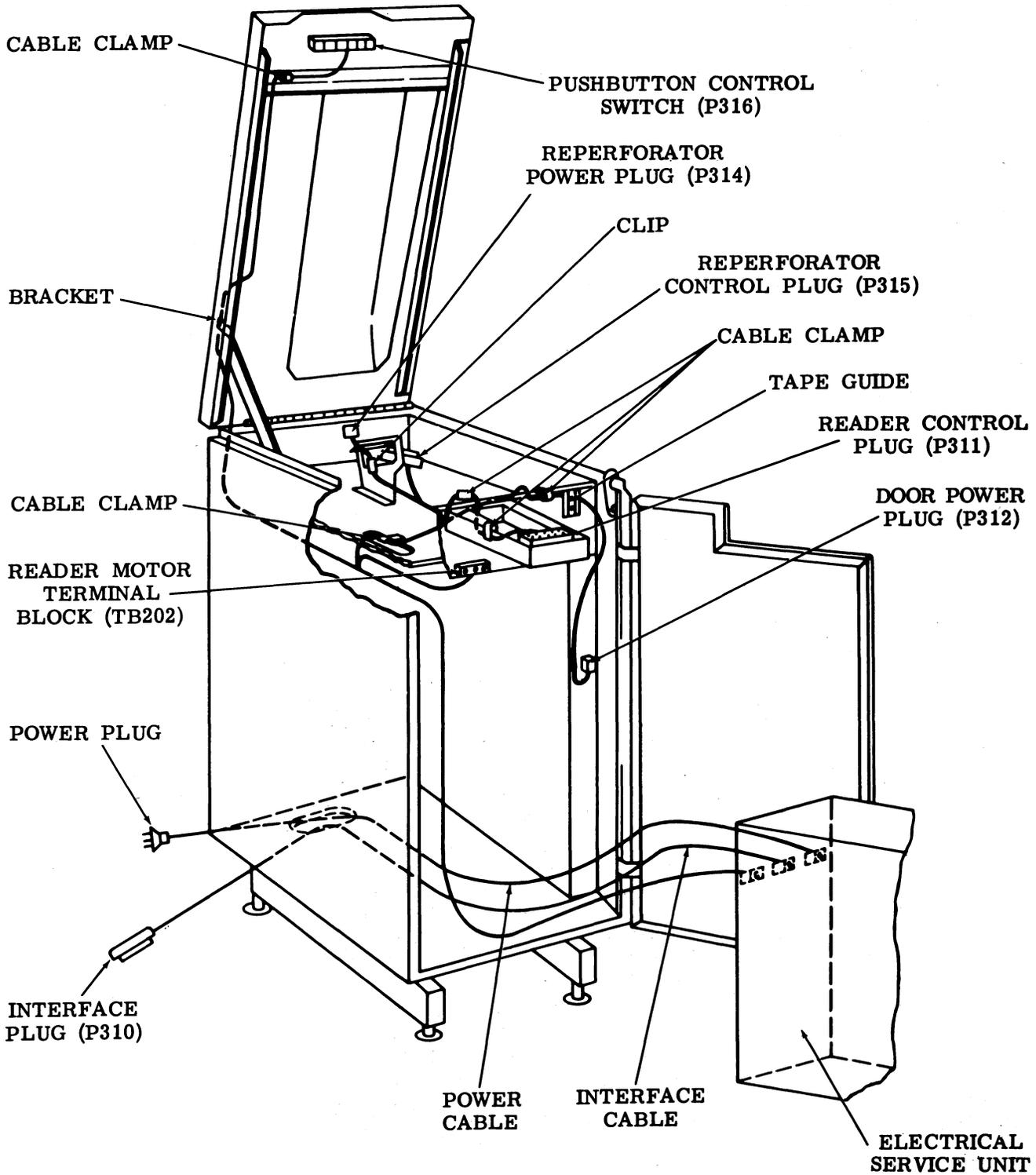


Figure 22 - Tape Module Cable Routing

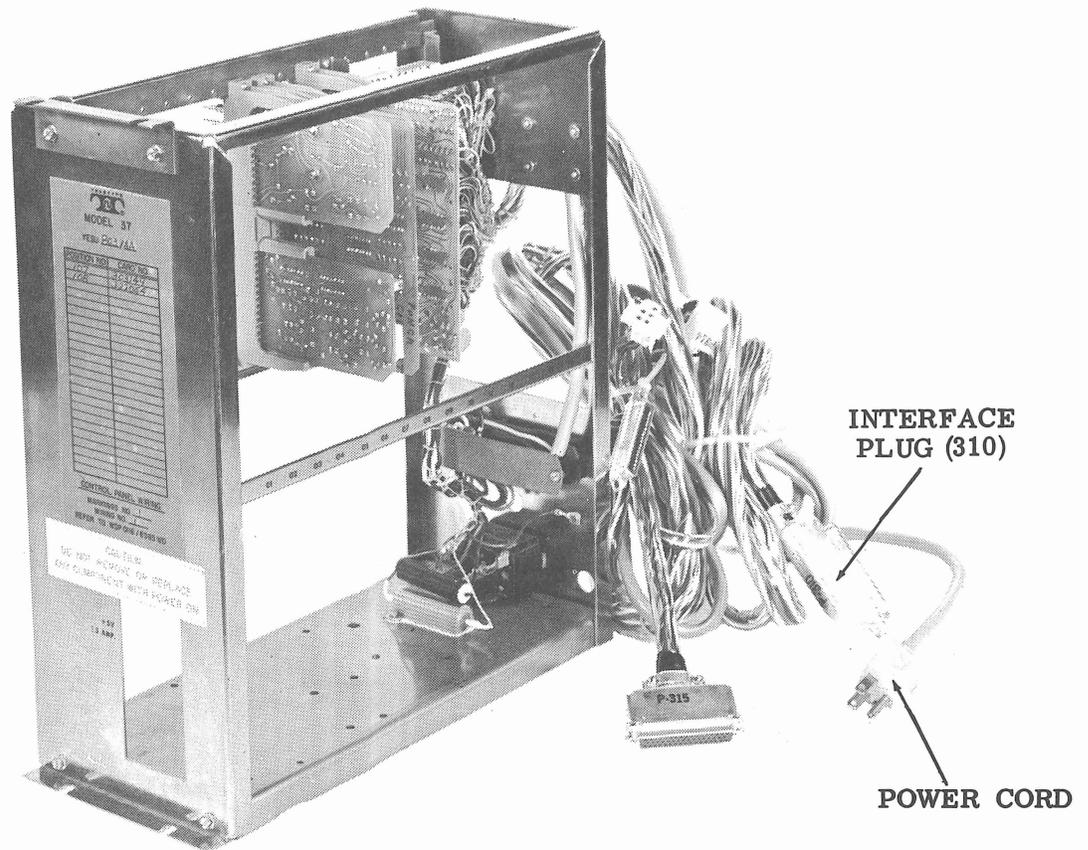


Figure 23 - 37 Tape Module Electrical Service Unit

(7) Remove the four screws, lockwashers, and flat washers from the top and bottom angle brackets on the front of the tape module electrical service unit.

(8) Pull the tape module electrical service unit forward out of the tape module cabinet, at the same time feeding the cables down through the opening at the front of the re-perforator shelf in the cabinet, into the lower equipment compartment.

TAPE MODULE CABINET

3.12 No removal or replacement procedures are required for the tape module cabinet since all areas are accessible through the cover and door. Any further removal is obvious, and alignment procedures are obvious. The intent of any alignment of cabinet parts is to keep edges, corners, and sides of the cover, door, etc, flush, parallel, and in alignment with the adjacent surfaces.