37 TYPING UNIT

DISASSEMBLY AND REASSEMBLY

CONTENTS PAGE

CONTENTS PAGE

1. GENERAL

1.01 This section describes the procedures for the disassembly and reassembly of the principal subassemblies which comprise the late design Model 37 Typing Unit (Figure 1).

1.02 Photographs and line drawings are used to identify mechanisms and specific parts. Refer to parts Section 574-320-801TC for exploded views, for detailed disassembly and reassembly illustrations, and for identifying parts.

1.03 Refer to maintenance tools Section 570-005-800TC for information on tools necessary to perform the disassembly and reassembly procedures.

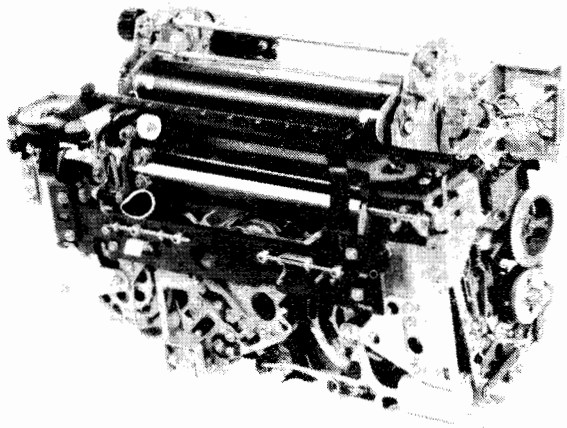


Figure 1 - 37 Typing Unit

1.04 Use maintenance pad TP124828 to protect furniture and floor coverings from oil, grease, and dirt, during the disassembly and reassembly of the typing unit.

1.05 After disassembly and reassembly of certain mechanisms, specific adjustments must be rechecked. These adjustments are listed in appropriate paragraphs in the text. See Section 574-320-703TC for all adjustment requirements to insure that the unit is operating properly.

1.06 Lubricate the typing unit according to lubrication Section 574-320-704TC, before placing unit back in service. Make a visual inspection of the unit for general lubrication requirements. Check oil locations on felt washers, oil cups, and in locations where parts rub or move with respect to each other. Apply grease to gears, rollers, points of heavy pressure, and on some ball bearings.

1.07 If a part is mounted on shims, the number of shims used at each mounting screw must be noted; when the part is remounted, the same shim pile-up must be used.

1.08 Retaining rings are made of spring steel and have a tendency to release suddenly on removal. To minimize loss of these retainers, use the following removal procedures.

(1) Hold the retainer in one hand to prevent it from rotating.

(2) Place the blade of a screwdriver in one of the slots of the retainer.

(3) Rotate the screwdriver in a direction to increase the diameter of the retainer, allowing easy removal of the retainer.

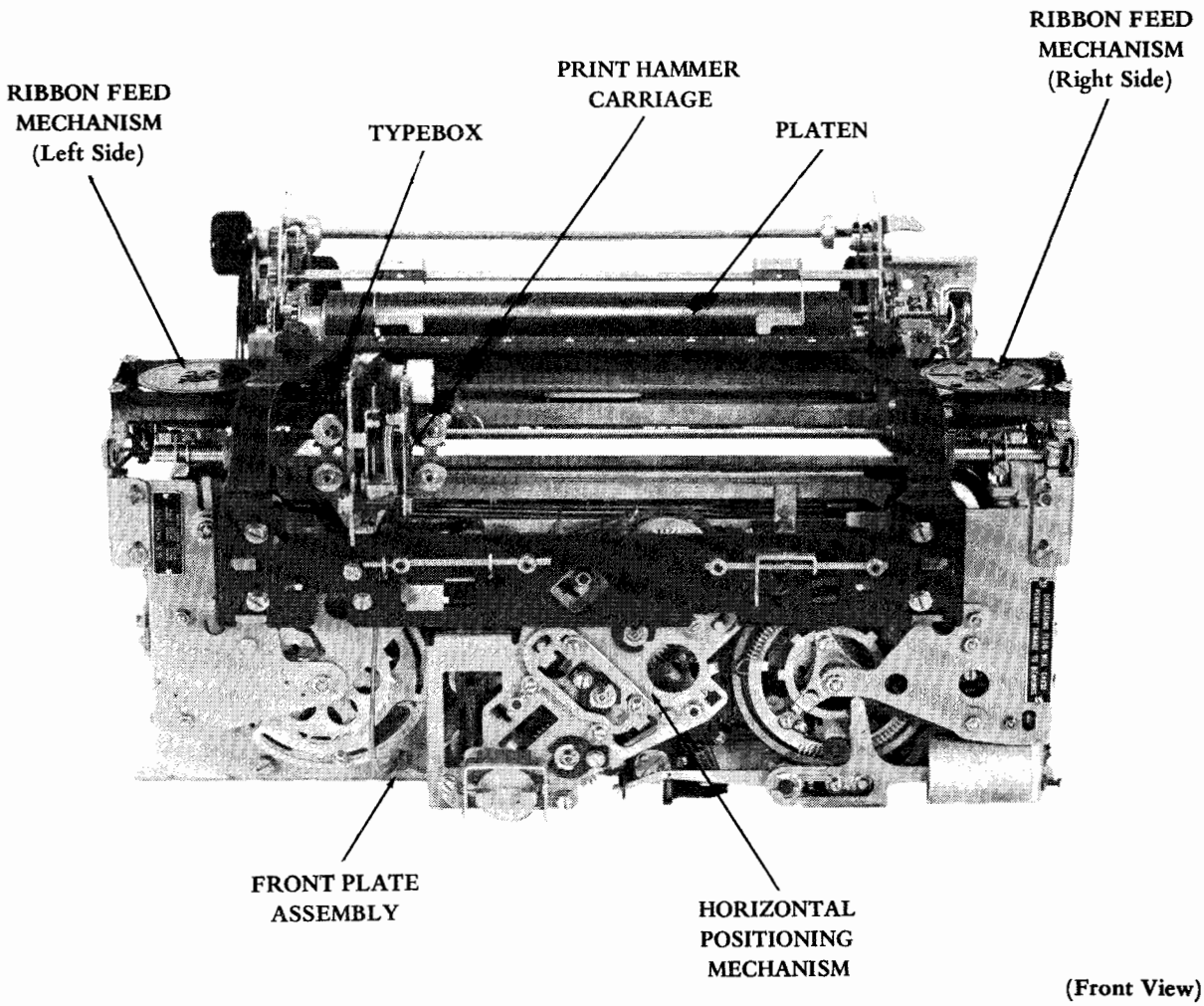


Figure 2 - 37 Typing Unit (Friction Feed)

1.09 Avoid loss of springs in disassembly by holding one spring loop with one hand while gently removing the opposite loop with a spring hook. Do not stretch or distort springs.

1.10 Reference in the procedures to left or right, up or down, top or bottom, etc, refer to the unit as viewed facing the front plate assembly (Figures 1 and 2).

CAUTION: DISCONNECT POWER BEFORE REMOVING THE TYPING UNIT FROM THE KEYBOARD AND BASE ASSEMBLY.

2. SUBASSEMBLIES

2.01 In removing a subassembly from the unit, the procedure followed and the location from where the part is removed must be carefully noted, so that proper reassembly can be accomplished. For reassembly, reverse the procedure used in removing the subassembly, except when different instructions are stated.

TYPEBOX

2.02 To remove the typebox from the carriage (Figure 3), trip the typebox latch toggle to the right. Lift the right end of the typebox up to an angle of 45 degrees, and pull the typebox toward the right to disengage it from the left hand bearing stud.

CAUTION: DO NOT OPERATE TYPING UNIT WITH TYPEBOX REMOVED, UNLESS TYPEBOX LATCH TOGGLE IS CAMMED OVER THE TYPEBOX CARRIAGE.

Typebox Disassembly

2.03 If it is necessary to replace the pallet or pallet spring TP157238, the typebox must be disassembled (Figure 3). The method used is as follows.

(1) Remove both screws and nuts that secure the front plate to the rear plate assembly. Separate the two plates and the typebox cover TP326183.

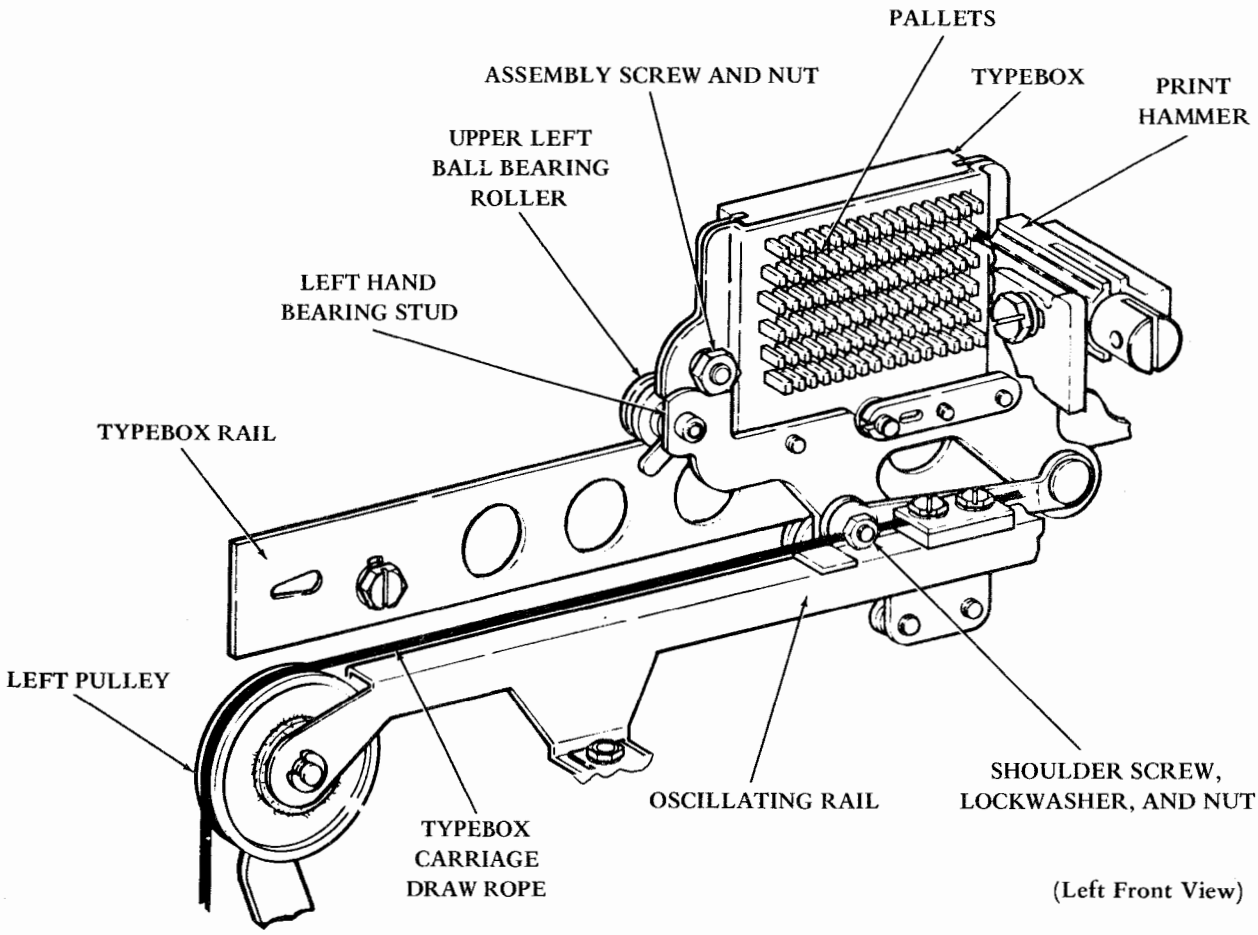


Figure 3 - Typebox, Typebox Carriage and Oscillating Rail

(2) To remove the pallet spring TP157238 from the pallet, compress the pallet spring slightly and pull the formed-end (hooked-end) out of the slot in the pallet.

(3) Remove the pallet from the typebox.

Note: Discard the pallet spring TP157238 once it has been removed.

(4) Replace the pallet (raised mark indicates top of pallet).

(5) Install a new pallet spring; make certain that the formed-end (hooked-end) of the pallet spring extends through the slot in the pallet and hooks onto the other side.

Typebox Reassembly

2.04 After replacing the pallet or pallet spring TP157238, the typebox must be reassembled (Figure 3). The method used is as follows.

(1) Line up the front plate with the rear plate assembly and draw the two plates together until the head of the pallet leaves the rear plate by 1/16 inch. Use two 6-40 screws (11/32-inch long) and nuts, in place of the two screws and nuts removed in 2.03(1) and tighten them only enough to hold the pallets as specified above. Do not clamp the plates together until all the pallets have been moved into their correct position.

(2) Manipulate the pallets until they fall into their respective openings in the front plate. Press the plates together.

(3) Replace the aligning screws and nuts used in 2.04(1) with the mounting screws and nuts removed in 2.03(1). Rebuilt typeboxes must be dipped in KS7470 oil; all excess oil must be drained before installing.

2.05 To replace the typebox (Figure 3), reverse the procedure used for removal.

CAUTION: TO AVOID SPRINGING THE TYPEBOX LATCH, THE TYPEBOX SHOULD BE FIRMLY SEATED ON THE BEARING STUDS AND THE POINT OF THE LATCH TOGGLE SHOULD BE PLACED IN THE NOTCH OF THE TYPEBOX PLATE BEFORE MOVING THE TOGGLE TO ITS LATCHED POSITION.

TYPEBOX CARRIAGE

2.06 To remove the typebox carriage from the unit proceed as follows (Figure 3).

(1) Set all codebars to the marking position and turn the main shaft until the typebox is in the uppermost position.

(2) Remove the shoulder screw, lockwasher, and nut which are used to connect the oscillating rail slide to the typebox arm.

(3) Loosen the screw, which mounts the upper left ball bearing roller, and slide it upward in its slots; then remove the carriage from the track.

2.07 To replace the typebox carriage (Figure 3), reverse the procedure used for removal. Check Carriage Roller adjustment.

RIBBON FEED MECHANISM

2.08 To remove the ribbon feed mechanism (Figure 2) from the unit – left side, proceed as follows.

(1) Remove the two ribbon spools from the ribbon feed mechanism.

(2) Loosen the ribbon feed drive arm clampscrew on the left side.

(3) Remove one locknut and sleeve from the left blocking lever and connecting rod connection.

(4) Remove the left ribbon bracket mounting screws and lift assembly.

2.09 To replace the ribbon feed mechanism – left side (Figure 2), reverse the procedure used in removal. Check the following adjustments:

(a) Ribbon Feed Main Brackets Left and Right

(b) Ribbon Feed Lever Left and Right

(c) Ribbon Reversing Connecting Rod

2.10 To remove the ribbon feed mechanism from the unit – right side (Figure 2), remove the retaining ring from the post on the drive arm. Remove one locknut and sleeve from the right blocking lever and connecting rod connection.

Note: If the left ribbon mechanism has been removed, it is not necessary to remove the locknut and sleeve from the right blocking lever and connecting rod connection.

Remove the right ribbon bracket mounting screws and lift assembly from unit.

2.11 To replace the ribbon feed mechanism – right side (Figure 2), reverse the procedure used in removal. Check Ribbon Reversing Connecting Rod adjustment.

PRINT HAMMER CARRIAGE

2.12 To remove the print hammer carriage from the unit (Figure 2), proceed as follows.

(1) Remove the two screws which mount the ribbon positioning bracket to the print hammer carriage; the bracket does not have to be removed from the unit. Loosen the print hammer carriage cable clampscrew and disconnect the cable; remove the left ribbon feed mechanism as described in 2.08.

(2) Remove the right ribbon bracket mounting screws. Take off the retaining ring from the print hammer lower drive arm and link connection. Separate the link and arm. Loosen the coordinating cable spring adjustment arm clamp nut to reduce tension on the pulleys. Also reduce carriage return spring tension to a minimum by loosening the nut on the front of the spring drum bearing post and then operating the ratchet escape lever. Remove the four print carriage guideplate mounting screws and then remove the guideplate. The left bearing bracket is now removed, and the print carriage is removed from the square shaft.

2.13 To replace the print hammer carriage (Figure 2), reverse the procedure used in removal. Check the following adjustments:

(a) Carriage Return Spring

(b) Coordinating Cable Spring Tension and Equalization

(c) Vertical Print Hammer Alignment

(d) Print Hammer Latch

(e) Print Hammer Position

(f) Spacing Rope Alignment

(g) Print Point Indicator

(h) Pointer Clearance

(i) Ribbon Feed Main Brackets Left and Right

(j) Ribbon Feed Lever Left and Right

(k) Ribbon Guide Alignment.

FRONT PLATE ASSEMBLY

2.14 To remove the front plate assembly from the unit, proceed as follows (Figures 2, 4, 5, and 6).

(1) Set all codebars to the marking position and turn the main shaft until the typebox is in the upper most position. Remove the shoulder screw, lockwasher, and nut used to connect the oscillating rail slide to the typebox arm. Remove the two screws used to mount the ribbon positioning bracket to the print hammer carriage; the bracket does not have to be removed from the unit. Take off the retaining ring from the print hammer lower drive arm and link connection. Separate the link and arm. Disconnect the line feed cable at the back of the unit by loosening the screw at the end of the line feed clutch trip support post and remove bracket and lever (Figure 5).

(2) Loosen the screw (under the printer) used to mount the print hammer lower drive shaft bearing clamp (Figure 4); rotate clamp to the left side. Center the bearing under the clamp when replacing the clamp. Remove the horizontal dampener spring TP78823, located at the lower left hand corner of the front plate (Figure 6).

(3) If the unit has horizontal tab-stop control, disconnect the horizontal control cables from the function levers in slots 15 and 16. Loosen the cable clamp on the codebar assembly and slip the cables from under the cable clamp. When the unit is equipped with horizontal tab-stop control, remove the horizontal tab connecting link; also remove the retaining ring which connects the link to the horizontal tab arm. Remove the four front plate mounting screws and remove the front plate.

2.15 To replace the front plate assembly (Figures 2, 4, 5, and 6), reverse the procedure used in removal. The carriage return lever must be in the slot in the carriage return link assembly. The horizontal positioning slide trip levers must be connected to their respective codebars.

Note: Make sure the horizontal dampener spring TP78823 has been replaced.

Before tightening the plate mounting screws, there must be some backlash in the horizontal drive gears and in the spacing drive gears. Check the following adjustments:

(a) Ribbon Guide Alignment

(b) Spacing Gear Phasing.

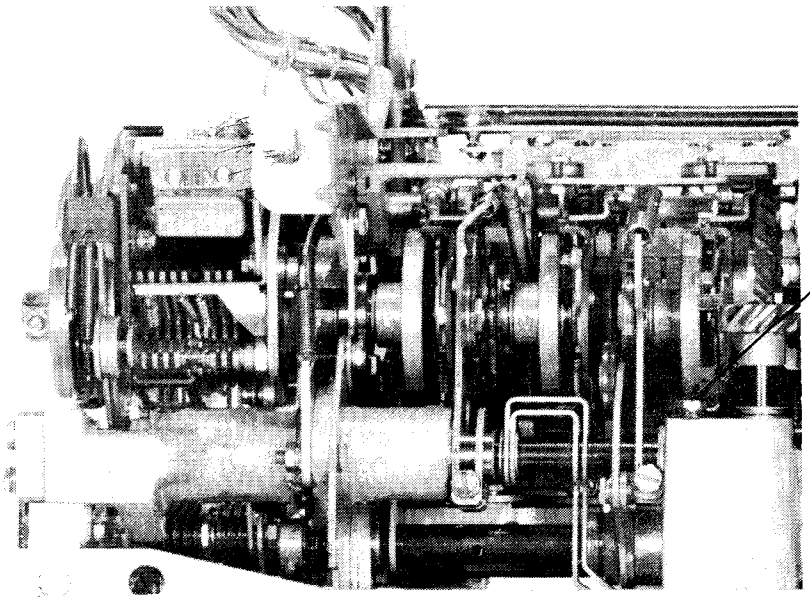


Figure 4 - Bottom Section of Unit Used in Connection With Front Plate Assembly Removal

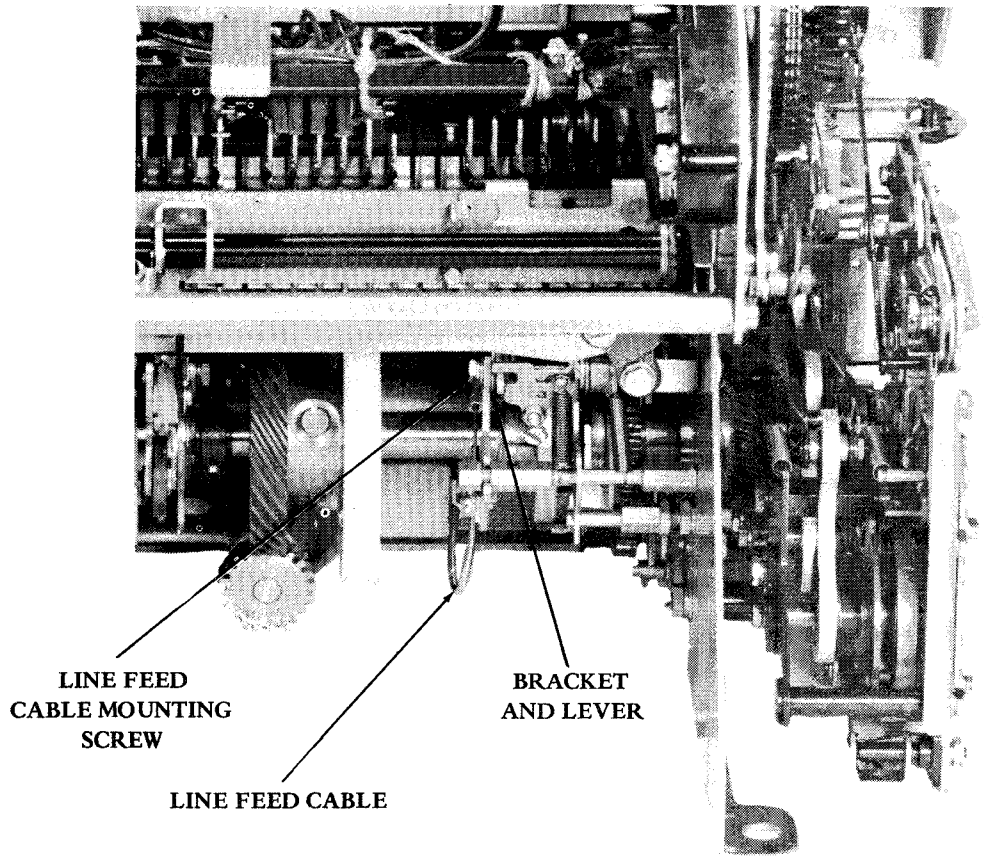
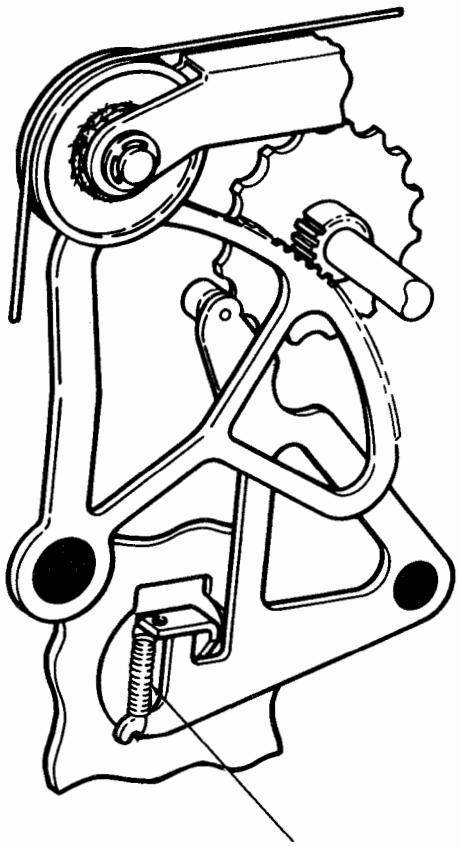


Figure 5 - Rear Section of Unit Used in Connection With Front Plate Assembly Removal



HORIZONTAL DAMPENING SPRING
(Front View)

Figure 6 - Horizontal Detent Dampening Assembly

HORIZONTAL POSITIONING MECHANISM

2.16 To remove the horizontal positioning mechanism (Figure 2) from the unit, proceed as follows.

(1) Remove the front plate assembly as described in 2.14. Loosen the coordinating cable spring adjustment arm clamp nut to reduce tension on the pulleys. To reduce carriage return spring tension to a minimum, loosen the nut on the front of the spring drum bearing post and then operate the ratchet escape lever.

(2) Check and RECORD Ribbon Feed Main Brackets Left and Right adjustment. Remove the four print hammer carriage guideplate screws to release the guideplate. Remove the screw used to connect the aggregate motion output bail to the oscillating rail. Remove the screws from the three aggregate motion drive shaft gears and remove the shaft.

Note: Thrust washers and bearing with sleeve can remain on the shaft.

(3) Remove the eight nuts from the back and front ends of the clutch shafts. Unhook the clutch latch springs. Take off the two springs from the aggregate linkage. Remove the auxiliary plate by removing the four front auxiliary plate mounting screws. Remove the two idler gears from the clutch shafts. Check gears on the clutch drums. Remove the horizontal positioning mechanism from the front plate.

2.17 To replace the horizontal positioning mechanism (Figure 2), reverse the procedure used in removal. Make sure that the third idler gear is placed in position before mounting the horizontal positioning mechanism to the front plate. Remount print carriage guideplate; then set Ribbon Feed Main Brackets Left and Right adjustment to setting, recorded in 2.16(2), by moving the print carriage guide up or down. Check the following adjustments:

(a) Aggregate – Dampener Synchronization

(b) Carriage Return Spring

(c) Coordinating Cable Spring Tension and Equalization

(d) Ribbon Guide Alignment

FUNCTION BOX

2.18 To remove the function box from the unit, proceed as follows (Figures 7 and 8). (On units with sprocket feed, remove the paper tray.) Remove the connector mounting screws and feed connector through the side frame.

Note 1: Do not remove connector TP161238 if complete separation of function box from unit is not intended.

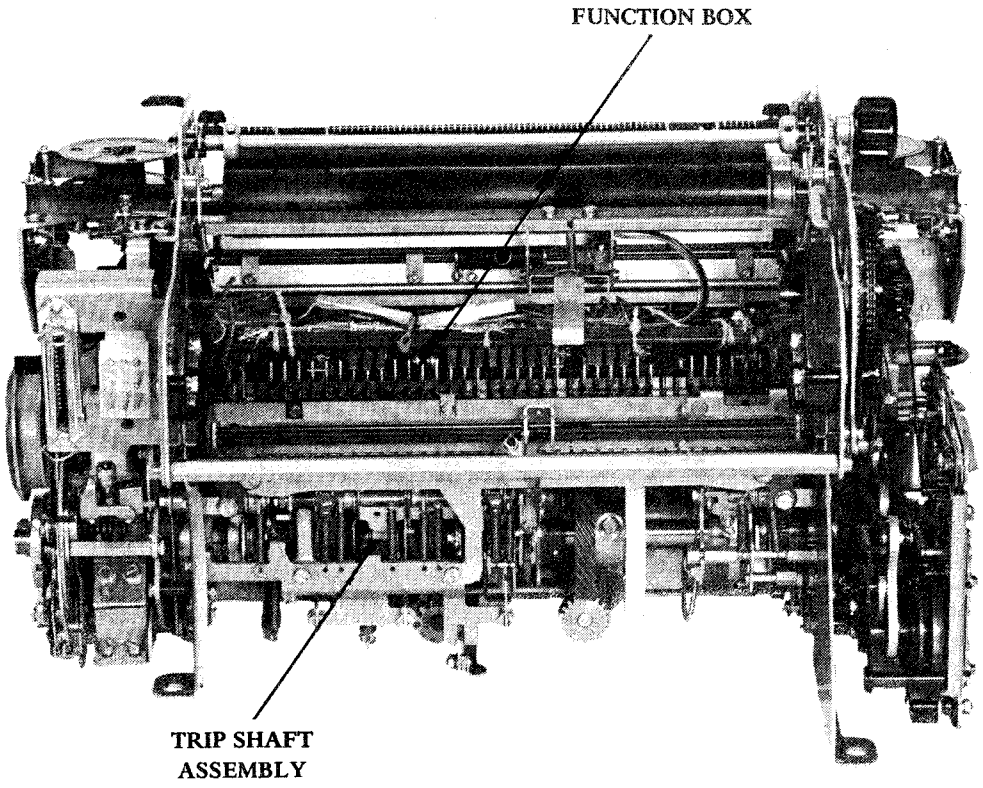
When the unit is equipped with horizontal and/or vertical tab-stop control, disconnect control cables from function levers in slots 15 and 16 and in slots 39 and 40. From the stripper blade drive mechanism, take off the two retaining rings, felt washers, and link. Remove the two mounting screws from the rear of the function box side plates. Remove one screw used to mount the function box brace to the trip shaft casting. Remove the function box from the unit.

Note 2: When removing function box, hold the line feed clutch trip lever in the tripped position to prevent the function box from catching on the trip arm.

Function Bar Removal

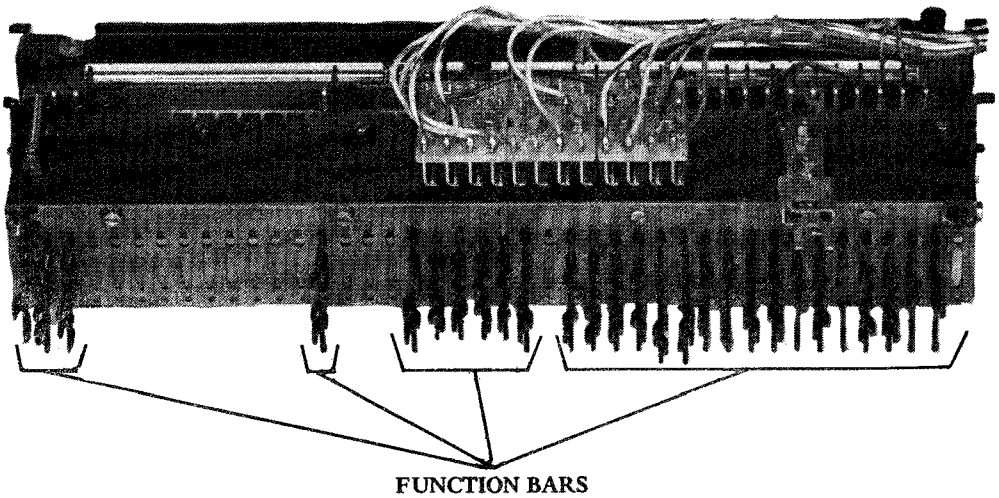
2.19 After removal of the function box (Figure 8), the function bar is removed by the following method.

(1) Unhook the function bar spring from the function bar.



(Back View)

Figure 7 - Function Box and Trip Shaft Assembly Mounted in Typing Unit



(Front Top View)

Figure 8 - Function Box

(2) Hold the function bar toward the rear of the function box and disengage the function pawl from the function bar.

(3) Pull the function bar toward the front to remove the function bar from the function box.

Function Bar Replacement

2.20 Reverse the procedure used in removal (Figure 8) in 2.19.

2.21 To replace the function box, reverse the procedure used in removal (Figures 7 and 8).

(1) During installation of the function box, the function clutch should be tripped and the main shaft rotated until the reset blade is toward the front of the unit. The shift forks must be in line with their respective posts on the codebar mechanism. Push the function box forward on its guide rails to 1/8 inch of its final position. Next manually disengage the function pawls from their function bars and push the function box into its final position.

(2) If the unit has horizontal and/or vertical tab-stop control, the bottom of the function levers in slots 17 and 41 must be inserted into the slot in their respective slides. To do this, raise the function lever to its maximum uppermost position, and push the function lever forward until it drops into the slot in the slide.

VERTICAL POSITIONING MECHANISM

2.22 To remove the vertical positioning mechanism from the unit (Figure 9), remove the retaining ring from the retraction reset arm post. Remove the screw from the upper right hand corner of the vertical positioning rear mounting plate. Remove the nuts from the bottom two posts on the inside of the left side frame. Now remove the mechanism from the unit. Notice the position of the loose gear and coupling assembly from the rear of the mechanism.

2.23 To replace the vertical positioning mechanism (Figure 9), set all codebars in the marking position. Rotate the main shaft so that the male portion of the coupling on the end of the main shaft is in the vertical position. Check that the gear and coupling on the back of the mechanism are in place and in position to line up with the main shaft coupling. Place vertical slides in the downward position and rotate clutches until aggregate is in the uppermost position. Also check that the racks and typebox rail are in the uppermost position. Replace the mechanism.

CODEBAR ASSEMBLY

2.24 To remove the codebar assembly from the unit, proceed as follows.

(1) Remove the front plate assembly as in 2.14. Remove the two mounting screws from the rear of the function box side plates. Remove one screw used to

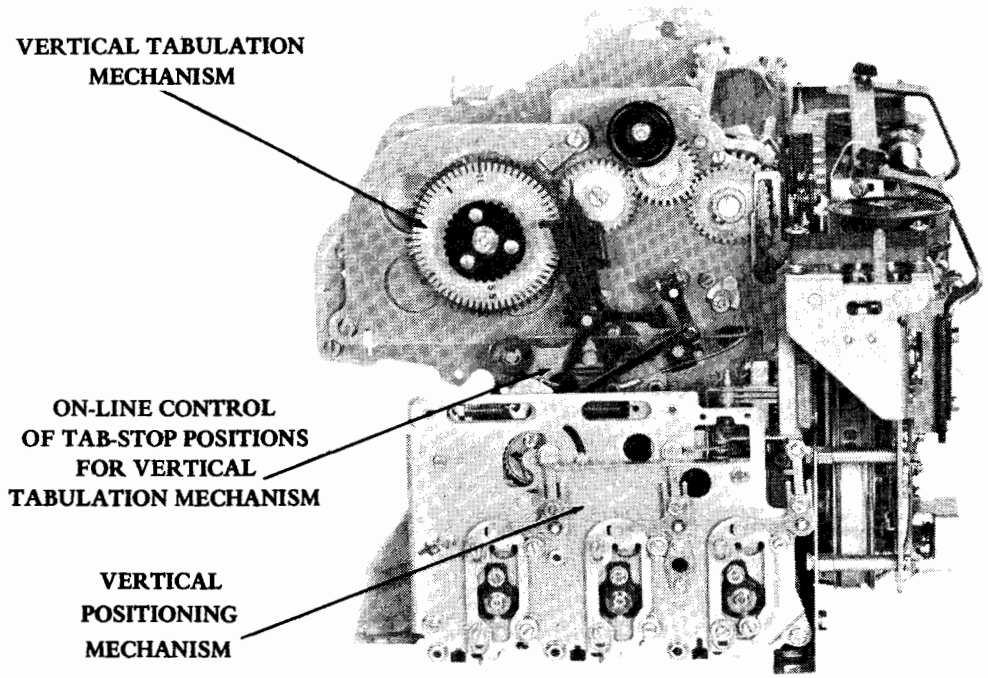


Figure 9 - Interrelated Positions of Three Vertical Movement Mechanisms

mount the function box brace to the trip shaft casting. Pull the function box toward the rear of the unit to take the pressure of the function bars off of the codebars.

(2) Remove one screw and loosen the other screw that mount the codebar shiftbar guideplate. Remove the two screws on either side frame used to mount the codebar guide castings.

(3) Pull the codebar shiftbars forward and to the right, to allow the codebar assembly to pass by the codebar shiftbars.

2.25 To replace the codebar assembly, reverse the procedure used in removal. If either tie bar mounting screw is loose, make sure both are loosened friction tight before mounting codebar assembly. Replace and tighten the four screws mounting the codebar assembly. Tighten the tie bar mounting screws. Replace the function box as described in 2.21. Replace the front plate assembly as described in 2.15.

SELECTOR CAM SLEEVE ASSEMBLY AND CLUTCH

2.26 To remove selector cam sleeve assembly and clutch from unit, remove selector clutch drum mounting nut, screw, and washers. Remove the selector clutch and cam sleeve assembly.

Note: Perform the following operations to insure easy removal of the cam sleeve assembly.

(1) Latch the pushlever reset bail up and out of the way on the notch (maintenance step) provided in the lever guide slot.

(2) Push the mark locklever to the left and insert a pin in the hole provided on the lever extension, so that the lever (and consequently the selecting levers) is held away from the cam by the mark locklever guide bracket.

(3) Hold the space locklever and start lever to the left. Hold lifter lever down. Slip the selector cam sleeve assembly off the shaft, at the same time rotating the assembly counterclockwise.

2.27 To replace the selector cam sleeve assembly and clutch, reverse the procedure used in removal, but rotate the selector cam sleeve assembly counterclockwise. To insure easy replacement when the sleeve is almost in place, pull the trip lever arm and selector clutch latchlever away from their respective cams.

SELECTOR ASSEMBLY

2.28 To remove the selector assembly from the unit, proceed as follows (Figure 10).

(1) Remove the selector cam sleeve assembly and clutch as in 2.26. Next remove the screw that secures the selector assembly to the intermediate bracket on the code positioning mechanism.

(2) Remove the retract arm cam follower spring TP90260 from the cam follower. Disconnect the cam follower arm from the retract oscillating shaft.

(3) Remove the three remaining selector assembly mounting nuts and lift the selector assembly from the main shaft bearing housing.

2.29 To replace the selector assembly (Figure 10), reverse the procedure used in removal. Replace the selector cam sleeve assembly and clutch as in 2.27. Check the following adjustments:

(a) Selector Magnet Bracket

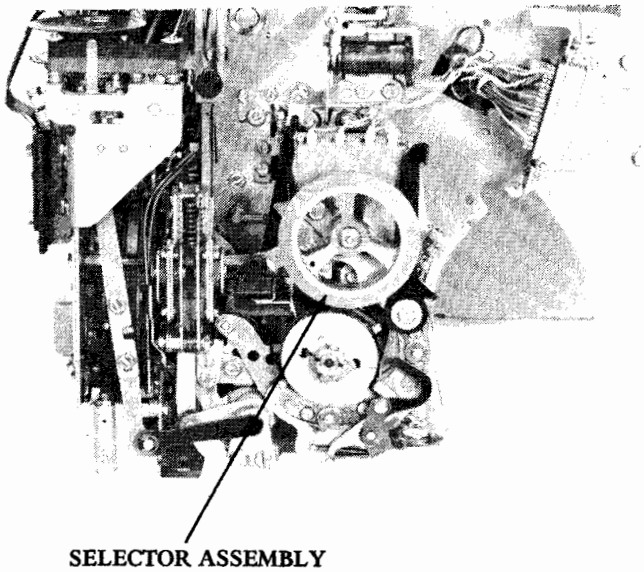
(b) Intermediate Arm Latch Bail

(c) Intermediate Arm Back Stop Bracket

MAIN SHAFT ASSEMBLY

2.30 To remove the main shaft assembly from the unit, proceed as follows (Figures 11 and 12).

(1) Remove the selector cam sleeve assembly and clutch as in 2.26. Remove the vertical positioning mechanism as in 2.22.



(Right Lower Side View)

Figure 10 - Selector Assembly Mounted in Typing Unit

(2) Next engage all clutches; then remove all main shaft clutch drum mounting screws. From the selector end of the main shaft, remove screw and collar.

(3) Remove the screws from the two collars at the center of the main shaft. Remove the main shaft drive gear mounting screw and loosen the two setscrews. Take out the screw from the bearing collar at the left end of the main shaft.

(4) Take off the retaining ring used to connect the codebar shift lever link and separate the link and arm. Remove the retaining ring that connects the print hammer lower drive shaft arm to the square shaft drive links and separate the link and arm.

(5) Take off the print hammer cam follower spring TP334339 and codebar positioning cam follower arms spring TP82861. Tap the right end of the shaft with the handle of a screwdriver or soft hammer, until the shaft loosens up from the bearing in the right side frame.

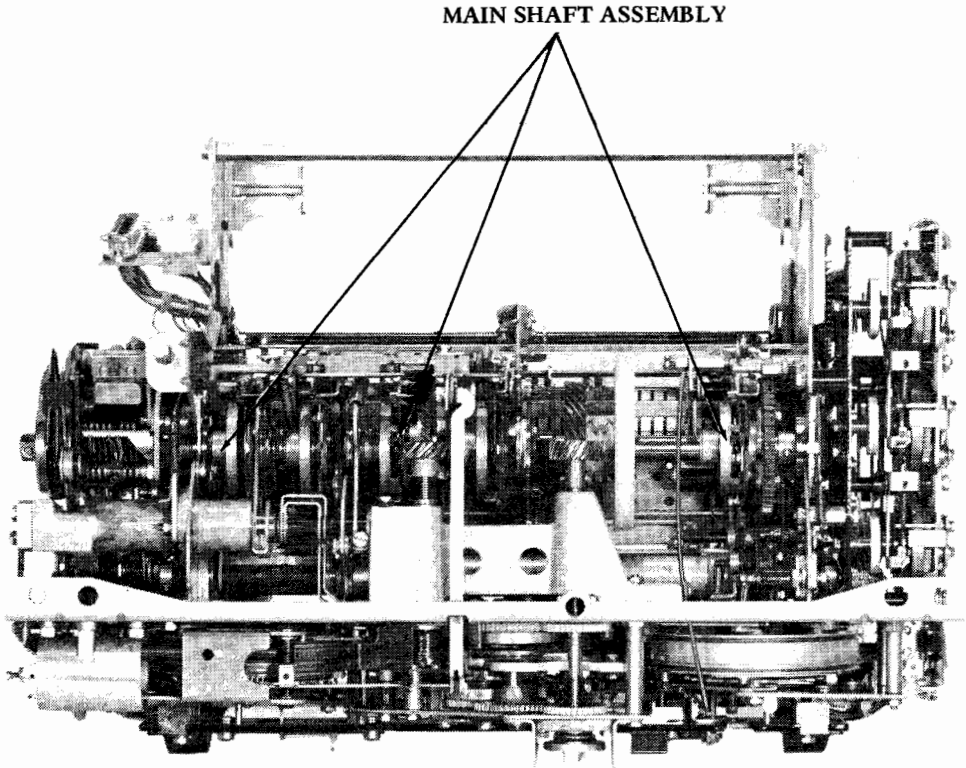
(6) Pull the shaft out of the left end of the unit, leaving the clutches in their plate. Remove all clutches that are required.

Note: When removing cams from clutches, note that the round circle stamped on the face of the cam should face toward the left end of the unit.

2.31 To replace the main shaft assembly (Figures 11 and 12), reverse the procedure used in removal. Do not disengage the clutch drum from the shoes when feeding the clutch onto the shaft. Replace the selector cam sleeve assembly and clutch as in 2.27. Replace the vertical positioning mechanism as in 2.23. Check the following adjustments:

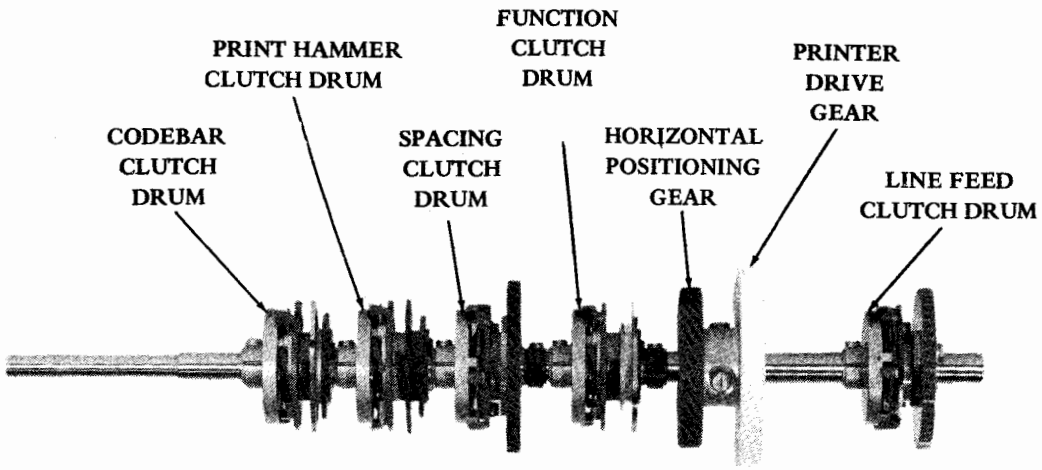
(a) Main Shaft Clutch Disc End Play

(b) Line Feed Clutch Phasing



(Bottom View)

Figure 11 - Main Shaft Assembly Mounted in Typing Unit



Note: Installation position shown; trip levers in up positions.

(Bottom View)

Figure 12 - Main Shaft Assembly

CODEBAR POSITIONING MECHANISM

2.32 To remove the codebar positioning mechanism from the unit, proceed as follows (Figure 13).

(1) Remove the front plate assembly as in 2.14. Remove the two range finder plate assembly mounting screws, nut, and washers; then remove the range finder plate assembly. Remove the retaining ring from the codebar positioning drive arm and shift lever drive link connection and separate link and arm.

(2) Remove the three mounting screws: The one on the selector, codebar positioning drive shaft casting, and side frame flange.

(3) Manipulate the transfer levers and codebar shiftbars, while gently twisting and sliding the mechanism off of the codebar shiftbars.

2.33 Replace the codebar positioning mechanism (Figure 13) by reversing the procedure used in removal, except push the shiftbars to the marking position (left/pushed in). Manipulate the shiftbars and transfer levers so that the shiftbars line up with their respective slots in the guide bracket and slide shiftbars one at a time through the slots. Replace the front plate assembly as described in 2.15.

PLATEN

2.34 To remove the platen from the unit (Figure 2), remove the platen bearing retainers. Remove the paper finger shaft (friction feed) or the guide bracket (sprocket feed, Figure 14). Remove driving gear. Hold off the detent and lift the platen out of the side frame.

2.35 To replace the platen (Figure 2), reverse the procedure used in removal. First put in the retainer upper screw when replacing the platen bearing retainers. Leave the retainer upper screw slightly loose. Press the lower end of the retainer down and hook it into the elongated hole in the side frame. Replace the lower screw; tighten both screws.

TRIP SHAFT ASSEMBLY

2.36 To remove the trip shaft assembly from the unit, proceed as follows (Figure 7).

(1) Remove the function box as in 2.18. Disconnect all springs from the spring bracket which is mounted on the trip shaft casting. Remove the two screws used to mount the spring bracket and remove the spring bracket. Loosen the print hammer clutch trip clamp mounting screw.

(2) For units equipped with horizontal tab, remove the retaining ring used to connect the horizontal tab blocking slide. Remove the screw used to mount the horizontal tab arm to the horizontal tab bail. Remove the horizontal tab arm.

(3) Loosen the two trip shaft bearing clamp plates and remove. Lift the trip shaft assembly up and out of the unit.

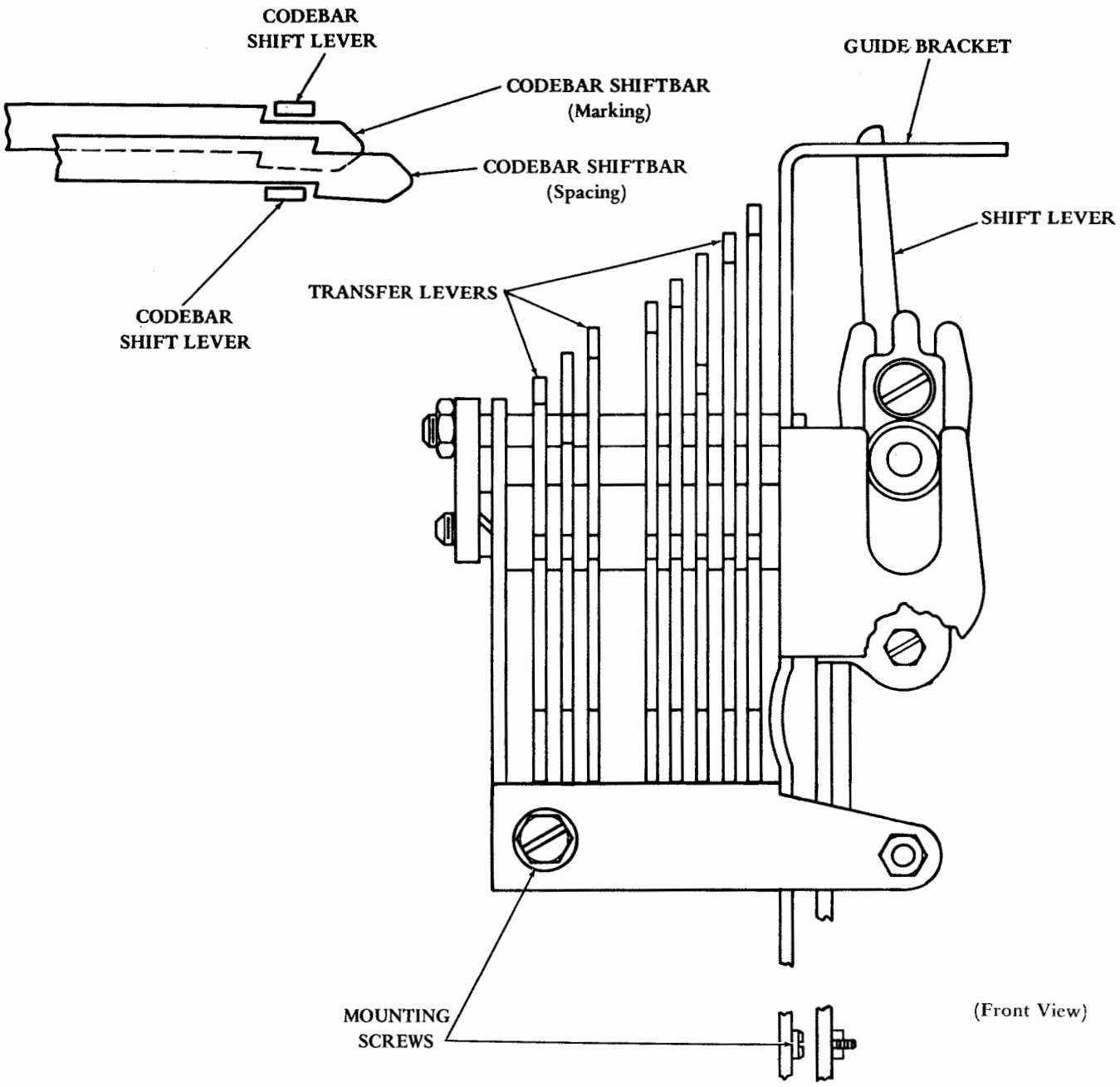


Figure 13 - Codebar Positioning Mechanism

2.37 To replace the trip shaft assembly (Figure 7), proceed as follows.

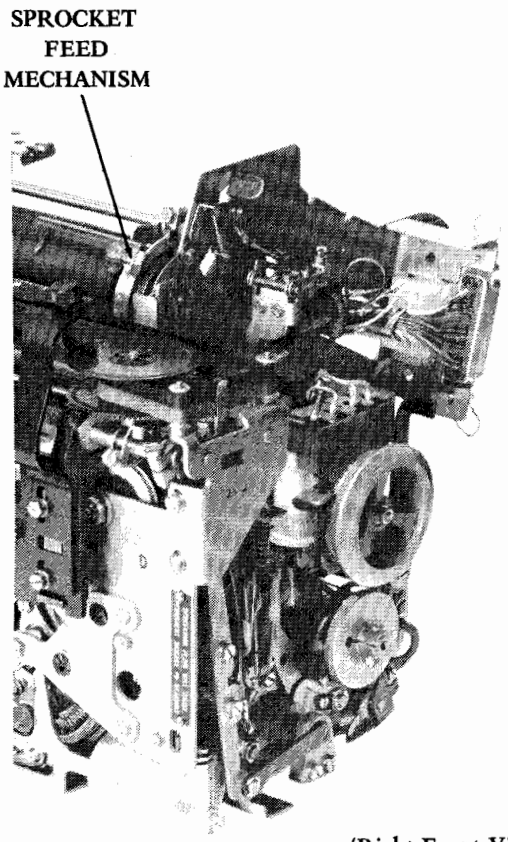
(1) Reverse the procedure used in removal. Check function clutch trip parts for their proper position.

(2) When installing the horizontal tab arm, make sure that the "C" shaped hole is fully seated on the raised portion of the horizontal tab bail.

(3) Before tightening the screws, align the bearing clamps over the center of the bearings. Check the following adjustments:

(a) Function Clutch Trip Arm (requirement no. 2)

(b) Printing Clutch Trip Lever



(Right Front View)

Figure 14 - 37 Typing Unit (Sprocket Feed)

SPACING CABLE

2.38 To remove the spacing cable (Figures 15 and 16) from the front plate, proceed as follows.

(1) Return the carriages to the left position. Unwind the carriage return spring by loosening the nut on the front of the spring drum bearing post and operate the ratchet escapement lever. Release the cable from the clamp on the printing carriage and also from the clamp on the oscillating rail slide. Remove the cable clamp-screw used to secure the spacing cable to the spring drum and remove the cable from the drum.

(2) When equipped with horizontal tab, remove the three screws used to mount the horizontal tab ring on the spacing drum; position the horizontal tab ring to allow access to cable mounting screws. Remove the cable mounting screws from the spacing drum used to secure the ends of the spacing cable; remove the spacing cable from the drum.

2.39 To replace the spacing cable (Figures 15 and 16), reverse the procedure used in removal. Check the following adjustments:

(a) Carriage Return Spring

(b) Right Hand Margin

(c) Print Hammer Position

(d) Spacing Rope Alignment

(e) Left Hand Margin

COORDINATING CABLE

2.40 To remove the coordinating cable from the front plate, proceed as follows (Figures 15 and 16).

(1) Loosen the coordinating cable spring adjusting arm clamp unit. Unhook the coordinating cable spring from the cable eyelets.

(2) Loosen the cam plate mounting screw on the spring drum, and rotate the cam plate to gain access to the cable clamping screw if necessary.

(3) When equipped with horizontal tab, remove the three screws used to mount the horizontal tab ring on the spacing drum; position the horizontal tab ring to allow access to the cable mounting screw. Remove the two cable mounting screws used to secure the ends of the cable to the spacing drum. Remove the coordinating cable from the drum.

2.41 To replace the coordinating cable (Figures 15 and 16), reverse the procedure used in removal.

Note: Check that the short cable is connected to the spring drum.

Check the following adjustments:

(a) Coordinating Cable Tension and Equalization

(b) Margin Indicator Lamp

SPRINGS OR CONTACT ARMS IN SWITCH ASSEMBLY

2.42 To remove the springs or contact arms in the switch assembly, proceed as follows.

(1) Remove the two screws and lockwashers used to secure the switch to the function box. Unsolder any connections to the terminal and spring. When unsoldering the cable to the contact spring and when lacing or routing cables, do not tug or pull on the

contact spring, because this will cause distortion to the spring.

(2) Remove the top plate with spring and the contact arms. To remove the spring from the top plate, clean the solder from the spring and place the end of an orange stick on the shoulder of the spring and push downward.

2.43 To replace the contact spring, proceed as follows.

(1) Place the loop end of the spring into the required position in the terminal plate. Hook a spring hook into the loop of the spring and pull the spring into position. Before mounting the contact plate on the switch block, check that the end of the spring is on top of the formed-over contact end.

(2) Mount the terminal plate with spring and block-in the required location on the function box; replace screws and lockwashers. Resolder the cables to their respective locations. Insert the pointed end of the contact arm between the bent up end of the spring and the formed end of the contact; the notch of the contact arm must be in the downward position. Push the arm into position, so that the notch is engaged. Check that the contact arm insulator is in alignment with the function lever. Loosen the screws and position the switch to meet this requirement.

(3) Also check that there is some clearance between the contact arm and the vertical face of the clip. Check both contacts if the switch is a transfer type with contact on the front and rear.

ON-LINE CONTROL OF TAB-STOP POSITIONS FOR VERTICAL TABULATION MECHANISM

2.44 To remove the on-line control of tab-stop positions for vertical tabulation mechanism, proceed as follows (Figure 9).

(1) Remove retaining rings from function lever in slots 39 and 40. Disconnect cable eyelets from post on function lever. Remove cables from guide brackets and

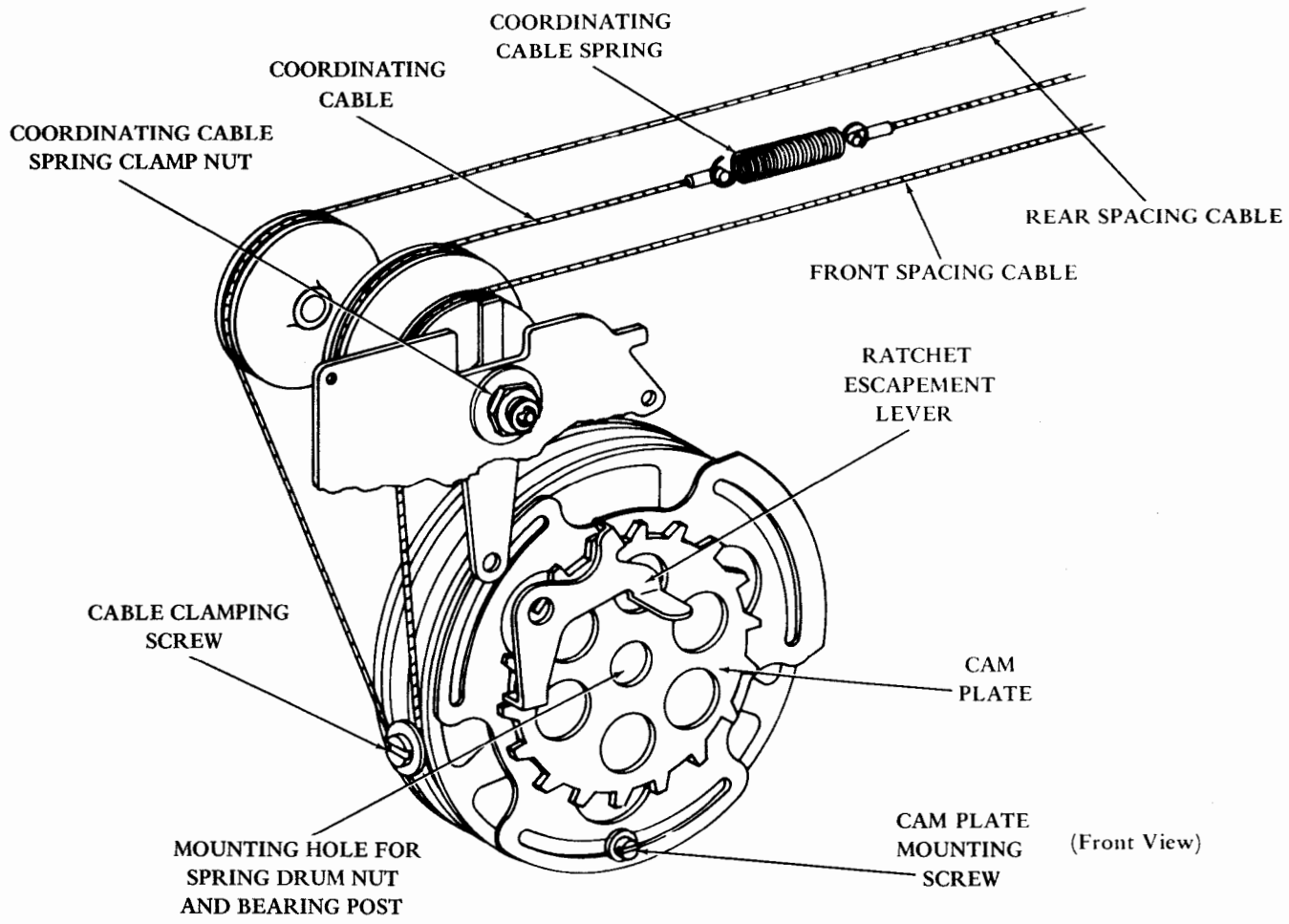


Figure 15 - Spring Drum and Cables

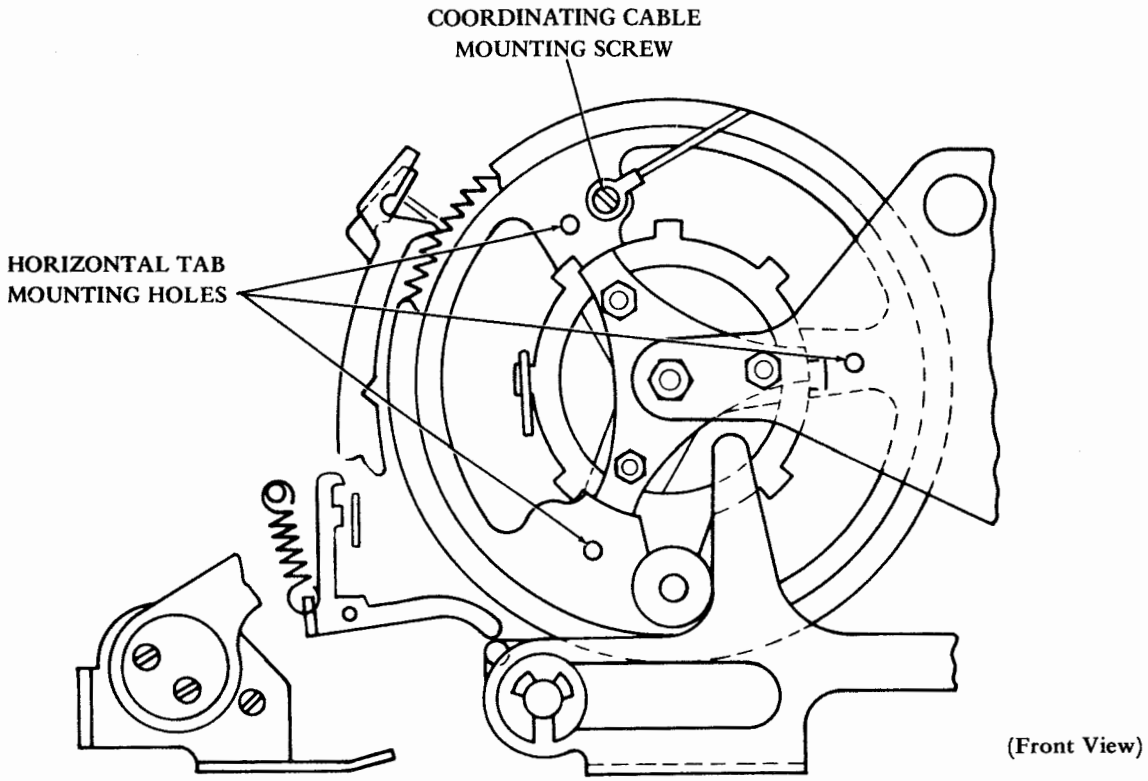


Figure 16 - Spacing Drum

feed out gradually through hole in left side frame, until inner cable can pass through small gap into large opening.

(2) Remove nut, lockwasher, and flat washer from lower post on vertical tabulator. Remove retaining ring from upper post on vertical tabulator. Remove the assembly from the unit.

2.45 To replace the on-line control of tab-stop positions for vertical tabulation mechanism (Figure 9), reverse the procedure used in removal. Check the following adjustments:

(a) Mounting Plate

(b) Tab Arm Spring Tension

(c) Tab Set Arm

(d) Tab Clear Arm

(e) Latch

(f) Latch Release

(g) Latch Spring

VERTICAL TABULATION MECHANISM

2.46 To remove the vertical tabulation mechanism (Figure 9) from the unit, remove the three screws, flat washers, lockwashers, and spacers used to hold the mounting plate assembly to the left side frame. Remove the pointer which is located between the mounting plate and the flat washer on the top mounting screw. Remove the mounting plate. Take out the vertical tabulation mechanism.

2.47 To replace the vertical tabulation mechanism (Figure 9), reverse the procedure used in removal. Check the following adjustments:

(a) Mounting Bracket

(b) Form Gear Play

(c) Tab Wheel

(d) Pointer

(e) Blocking Levers

(f) Sensing Arm Spring Tension

(g) Sensing Pawl Spring Tension

(h) Tab Wheel Synchronization