

37 TYPING UNIT
ADJUSTMENTS

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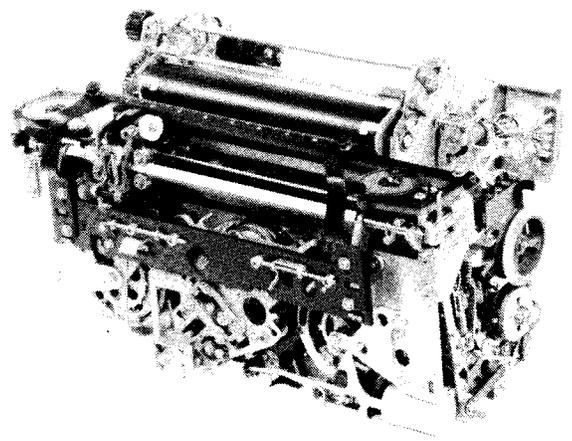


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1. GENERAL

1.01 This section provides adjustment procedures for the late design 37 typing unit (Figure 1). For similar information about the early design 37 typing unit, refer to Section 574-320-700TC.

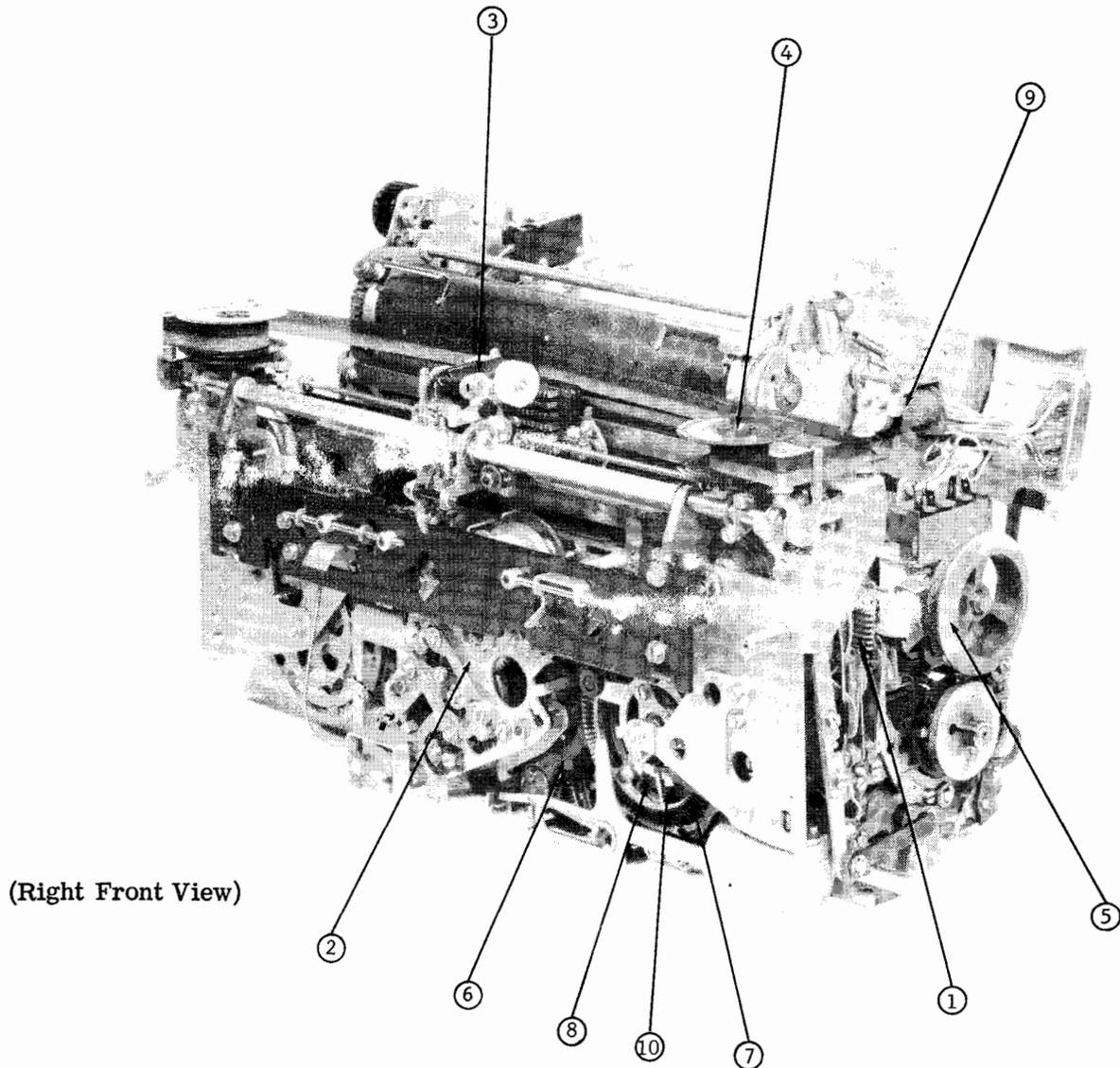
1.02 The adjustments in this section are divided into the basic unit and variable features. The basic unit is subdivided into major mechanisms.

1.03 Each adjustment is associated with a major mechanism. Both the major mechanisms and the subordinated adjustments are indexed in the table of contents. The major mechanisms and variable features are identified in Figures 2, 3, and 4.

1.04 Tools required to make the adjustments and check the spring tensions are not supplied with the equipment, but are listed separately in Section 570-005-800TC.

Note: Use maintenance pad TP124828 to protect furniture and floor coverings from oil and grease while adjusting the unit.

1.05 References made to left or right, up or down, and front or rear apply to the typing unit in its normal operating position as viewed by the operator facing the unit.



(Right Front View)

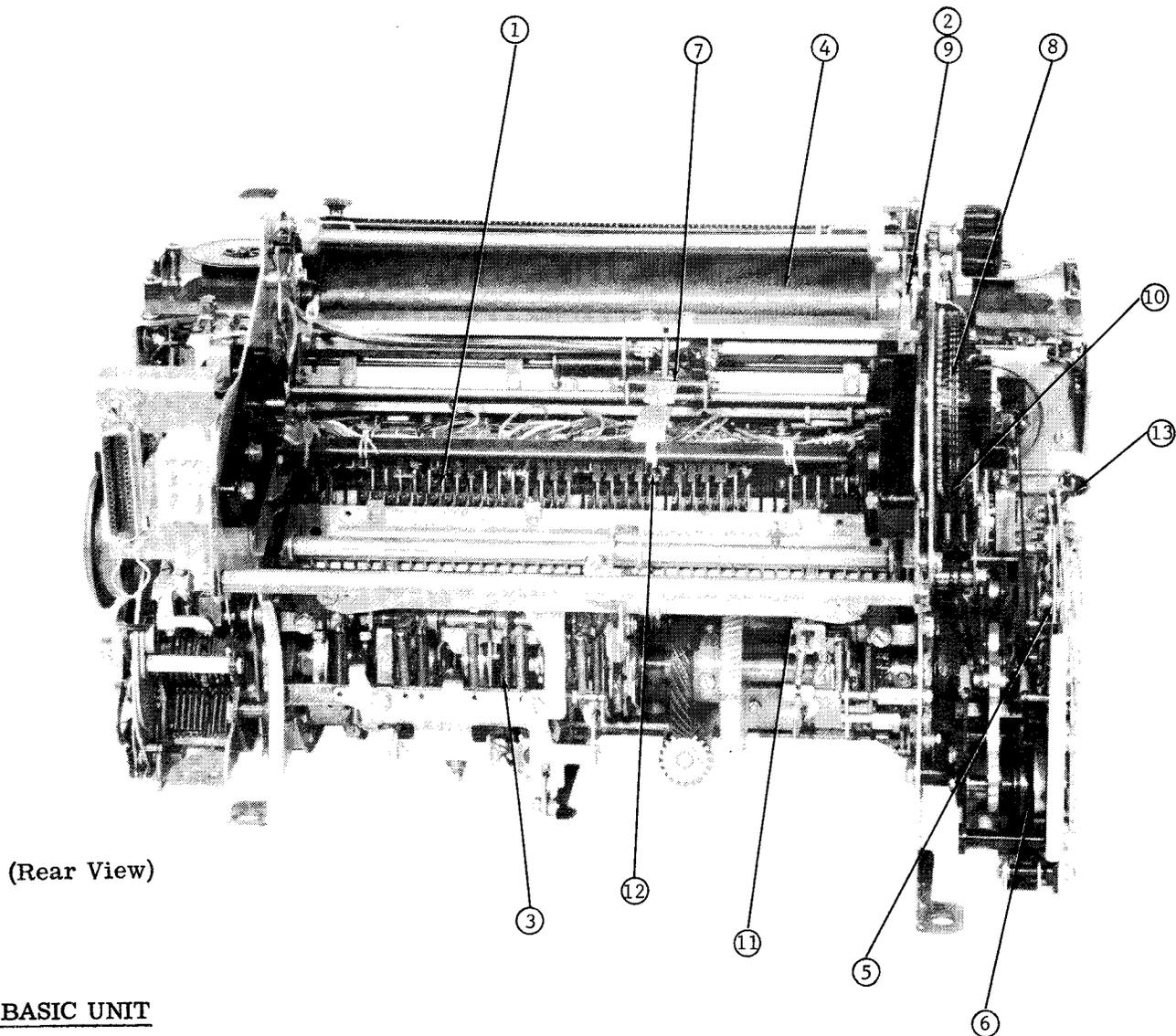
BASIC UNIT

- ① CODE BAR MECHANISM
- ② HORIZONTAL POSITIONING MECHANISM
- ③ PRINTING MECHANISM
- ④ RIBBON FEED MECHANISM
- ⑤ SELECTOR MECHANISM
- ⑥ SPACING AND CARRIAGE RETURN MECHANISM

VARIATIONS

- ⑦ HORIZONTAL TABULATION MECHANISM
- ⑧ HORIZONTAL TAB STOP CONTROL MECHANISM
- ⑨ TWO-COLOR RIBBON MECHANISM
- ⑩ AUTOMATIC CARRIAGE RETURN — LINE FEED MECHANISM

Figure 2 - Major Mechanisms of 37 Typing Unit



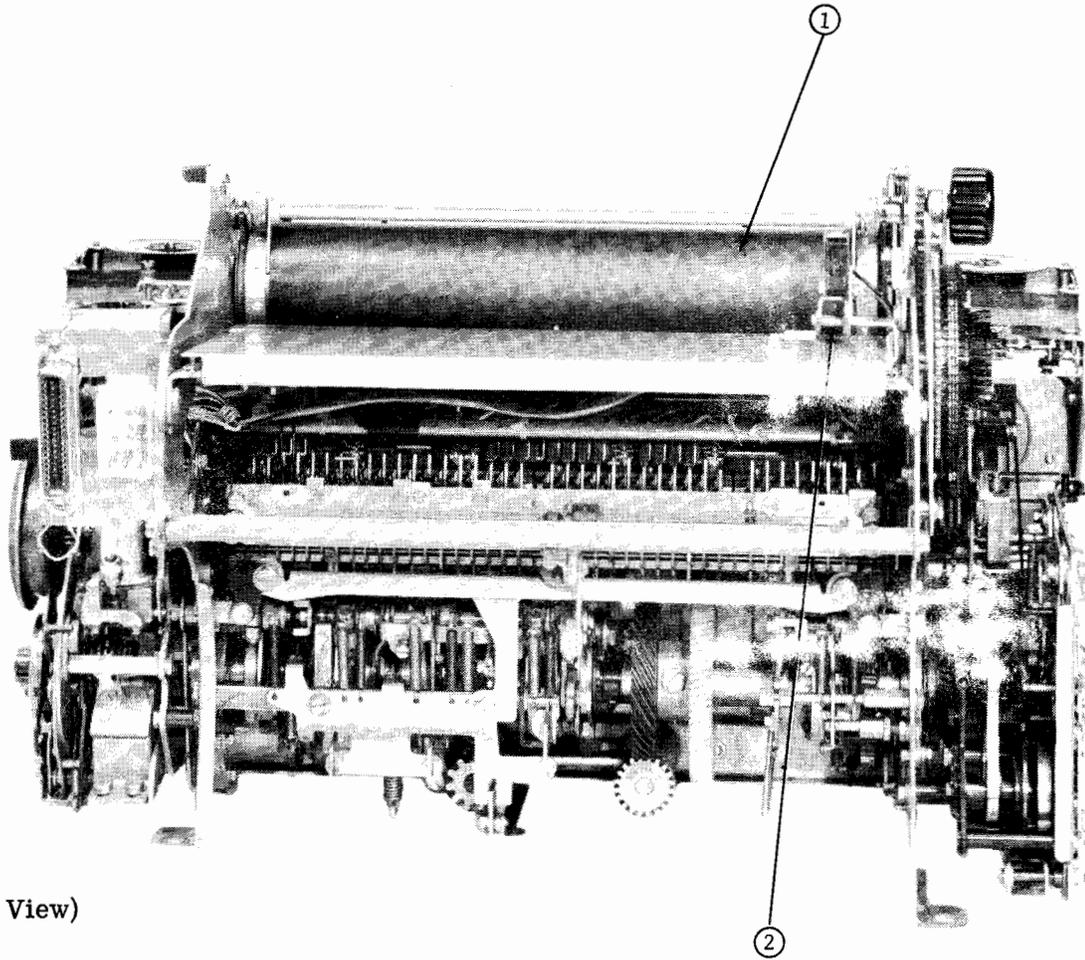
BASIC UNIT

- ① FUNCTION MECHANISM
- ② LINE FEED MECHANISM
- ③ MAIN SHAFT AND TRIP SHAFT MECHANISMS
- ④ PLATEN MECHANISM (FRICTION FEED)
- ⑤ RETRACTION MECHANISM
- ⑥ VERTICAL POSITIONING MECHANISM

VARIATIONS

- ⑦ LOW-PAPER ALARM (FRICTION FEED)
- ⑧ VERTICAL TABULATION MECHANISM
- ⑨ HALF FORWARD AND REVERSE LINE FEED MECHANISM
- ⑩ VERTICAL TAB STOP CONTROL MECHANISM
- ⑪ LINE FEED CLUTCH TRIPBAIL MECHANISM
- ⑫ ESCAPE SEQUENCE MECHANISM
- ⑬ SHIFT-IN — SHIFT-OUT MECHANISM

Figure 3 - Major Mechanisms of 37 Typing Unit



(Rear View)

BASIC UNIT

- ① PLATEN MECHANISM (SPROCKET FEED)

VARIATIONS

- ② PAPER-OUT ALARM (SPROCKET FEED)

Figure 4 - Major Mechanisms of 37 Typing Unit

1.06 The adjustments for the basic unit and variations are arranged in a sequence that should be followed if a complete readjustment of the typing unit is undertaken. A complete adjusting procedure should be read before attempting to make the adjustment. After an adjustment has been completed, be sure to tighten any nuts or screws that may have been loosened to facilitate the adjustment, unless otherwise instructed. If a part mounted on shims is to be removed, the number of shims at each mounting screw should be noted so that the same pile-up can be replaced when the part is remounted.

CAUTION: UNLESS OTHERWISE SPECIFIED, REMOVE ALL POWER FROM THE UNIT WHEN PERFORMING ADJUSTMENTS.

1.07 Some adjustments require that the lost motion (play) between operating elements be removed (taken up) before checking the requirement. Under these circumstances, play is considered taken up whenever a 4-ounce force is applied to the operating elements to create the condition specified in the adjustment.

1.08 If an adjustment is changed, be sure to check all affected adjustments. Affected adjustments are listed below pertinent adjustment titles and text. As an example, suppose the TRIP SHAFT CAM FOLLOWER (2.20) adjustment is changed. Under Affected Adjustments the FUNCTION CLUTCH TRIP ARM (2.22) and PRINT HAMMER CLUTCH TRIP ARM (2.23) adjustments are listed. Check these adjustments before considering the TRIP SHAFT CAM FOLLOWER (2.20) adjustment complete.

1.09 The spring tensions given in the section are indicated values and should be checked with proper spring scales. The adjusting illustrations, in addition to indicating adjustment tolerances, show the angle at which the scale should be applied when measuring spring tensions. Springs which do not meet the requirements, and for which there are no adjusting procedures, should be discarded and replaced with new springs.

1.10 All electrical contacts should meet squarely. Contacts with the same diameter should not be out of alignment by more than 25 percent of the contact diameter. Avoid sharp kinks or bends in the leaf springs.

CAUTION: KEEP ALL ELECTRICAL CONTACTS FREE OF OIL OR GREASE.

OPERATING CONDITION OF CLUTCHES

1.11 When a requirement specifies a disengaged clutch, the clutch must be fully latched so that the clutch shoes are completely disengaged from the clutch drum. To become fully latched, the trip lever (or stop arm) must engage the clutch shoe lever, and the clutch disc must rotate far enough to permit the latch lever to fall into the notch in the clutch disc.

Note: When rotating the main shaft of the typing unit by hand, the clutches do not fully disengage upon reaching their stop positions. In order to relieve the drag on the clutch drums and permit the main shaft to rotate freely, apply pressure to the stop-lug on each clutch disc with a screwdriver until each latch lever falls into its notch on its clutch disc. Thus, each internal expansion clutch becomes fully disengaged. This procedure should be followed before placing the typing unit on the base and switching on the power.

When engaged, the clutch shoe lever is unlatched (tripped), and the clutch shoes are wedged against the clutch drum.

MANUAL INSERTION OF CHARACTERS

1.12 When a procedure specifies a particular codebar arrangement or character, it must be manually inserted in the selector and codebar mechanisms. To manually insert the particular arrangement, attach armature clip TP312709 on the selector mechanism to simulate a marking condition. Prevent the retraction mechanism from working by stripping the blocking and feed pawls from the ratchet wheel and tying in place. Attach handwheel TP161430 to drum of selector clutch and rotate main shaft until clutch is disengaged. Momentarily move armature down to simulate a start pulse and then rotate main shaft until all push levers are marking and clutch is again disengaged. Set up desired character in selector by moving the push levers, associated with spacing bits, on top of selector levers to simulate a spacing condition (there is no change in the transfer levers).

1.13 Place spring hook TP142554 through the hole located in the selector mechanism frame and just to the front of the selector clutch. Rotate the intermediate arm latch bail toward the rear of the unit to permit the transfer levers to be repositioned.

1.14 To place the character in the codebar mechanism so as to accomplish desired function, engage the codebar clutch and rotate the main shaft until codebar clutch disengages.

Note: Do not release armature in selector mechanism once the desired character is set up. Releasing the armature will result in a new code combination being placed in typing unit.

1.15 Occasionally a procedure will specify that a function be fully selected. A function is considered fully selected whenever

the function clutch is engaged (tripped) and the main shaft rotated, until just prior to the time the stripper blade removes the function pawl from its function bar.

CAUTION: AFTER THE TYPING UNIT HAS BEEN IN OPERATION 200 HOURS:

(1) RELUBRICATE ACCORDING TO SECTION 574-320-704TC.

(2) READJUST MAIN SHAFT CLUTCHES PER MAIN SHAFT CLUTCH SHOE LEVERS (2.15) ADJUSTMENT.

2. BASIC UNIT

2.01 Selector Mechanism

SELECTOR ARMATURE

Note 1: Requirement (1) need not be made (nor checked) if SELECTOR MAGNET BRACKET (2.05) and SELECTOR RECEIVING MARGIN (2.10) adjustments are met.

Note 2: To facilitate adjustment, remove range finder assembly and selector magnet assembly.

(1) Requirement

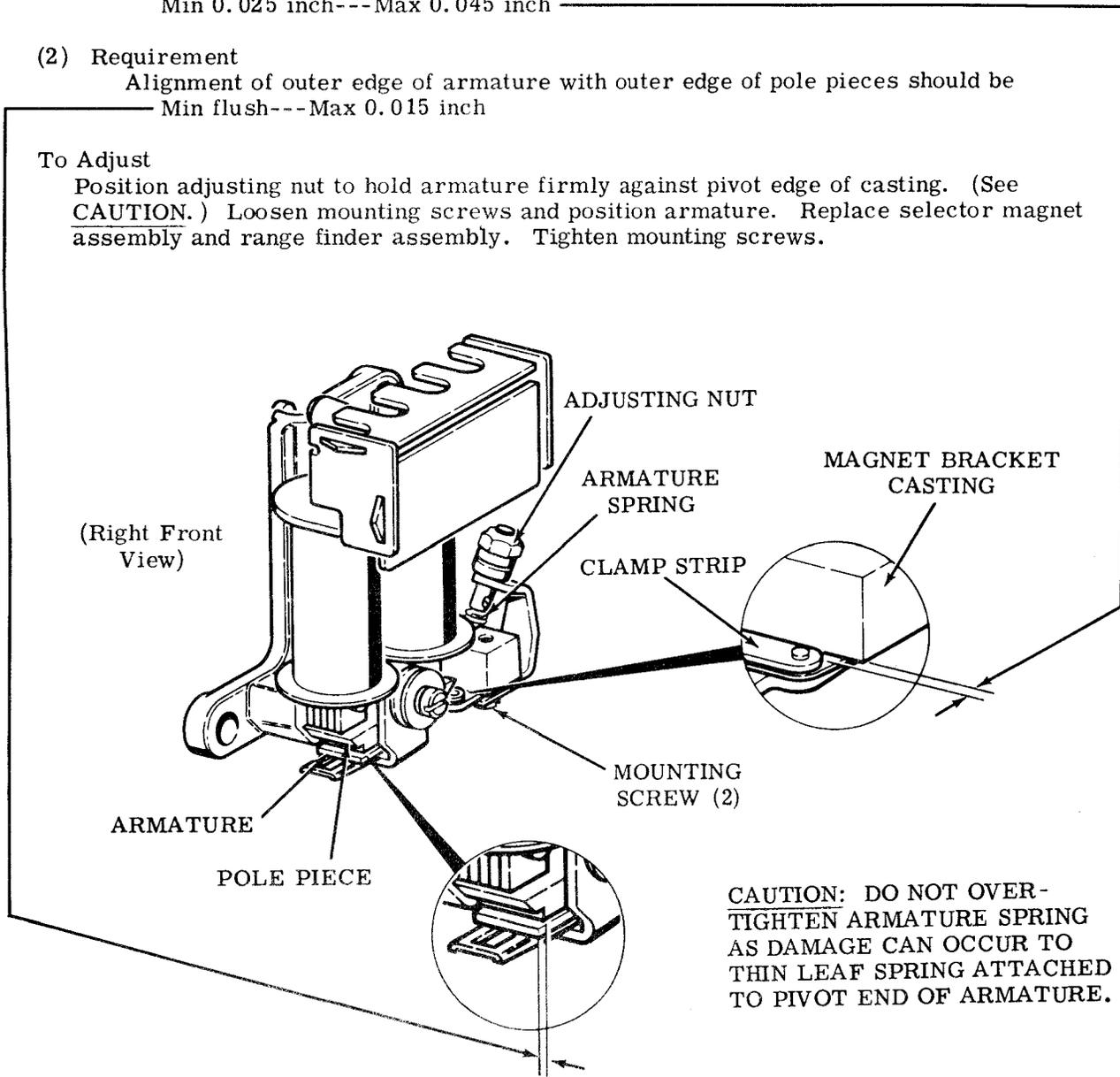
Clearance between clamp strip and magnet bracket casting should be
Min 0.025 inch---Max 0.045 inch

(2) Requirement

Alignment of outer edge of armature with outer edge of pole pieces should be
Min flush---Max 0.015 inch

To Adjust

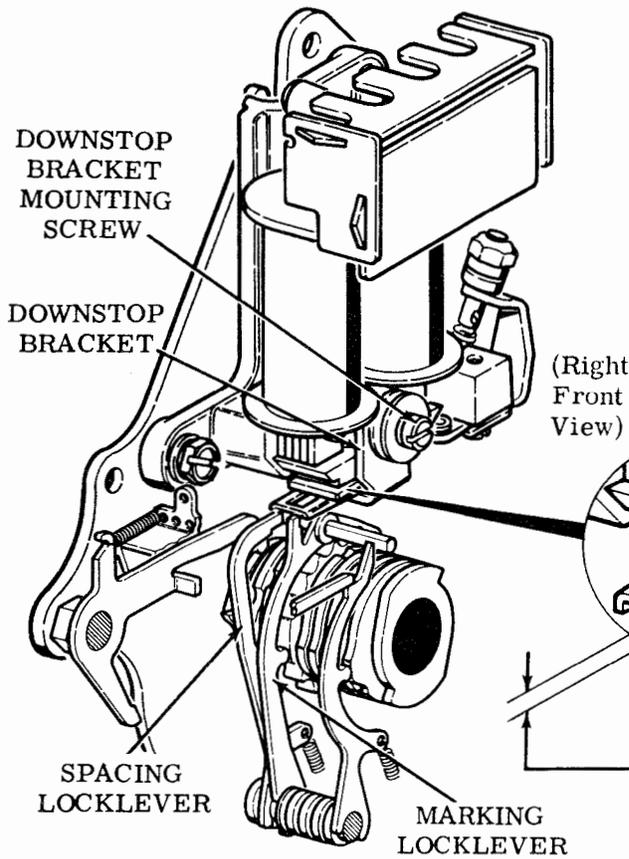
Position adjusting nut to hold armature firmly against pivot edge of casting. (See CAUTION.) Loosen mounting screws and position armature. Replace selector magnet assembly and range finder assembly. Tighten mounting screws.



CAUTION: DO NOT OVER-TIGHTEN ARMATURE SPRING AS DAMAGE CAN OCCUR TO THIN LEAF SPRING ATTACHED TO PIVOT END OF ARMATURE.

2.02 Selector Mechanism (continued)

SELECTOR ARMATURE DOWNSTOP



To Check

Magnet de-energized. Locklevers on high part of cam.

Requirement

With armature resting on downstop, clearance between end of armature and pole piece should be

Min 0.020 inch---Max 0.025 inch

To Adjust

Loosen bracket mounting screw friction tight and position downstop bracket. Tighten mounting screw.

SELECTOR CAM LUBRICATOR

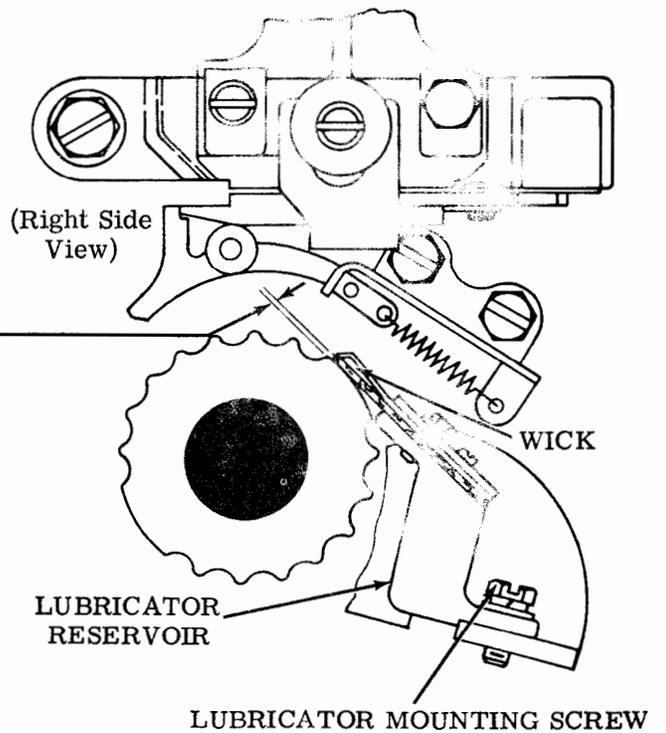
Requirement

Wick should be in contact with high part of selector lever cams but should not be deflected more than

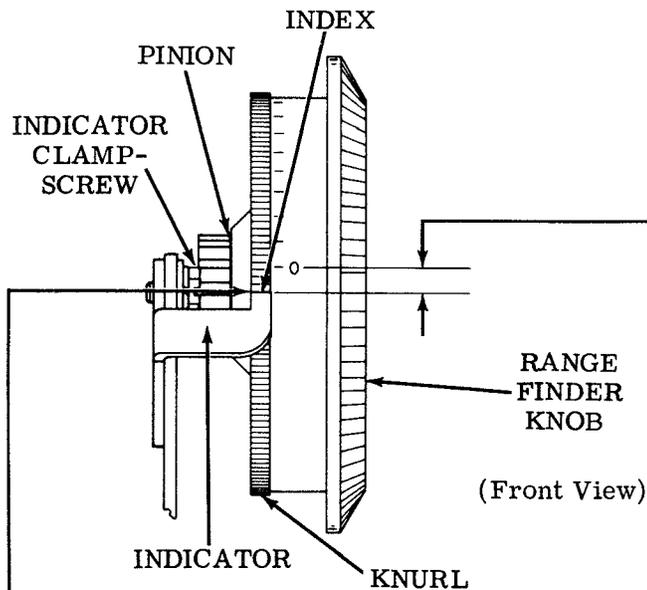
Max 1/32 inch
as gauged by eye.

To Adjust

Loosen lubricator mounting screw friction tight. Slide lubricator to correct position. Tighten mounting screws.



2.03 Selector Mechanism (continued)



INDICATOR POSITION

Requirement

Indicator should permit range finder knob to rest against its flat washer stop and engage knurl so scale setting will not change.

To Adjust

Loosen indicator clampscrew. Make sure range finder knob is against its flat washer stop. Press indicator into bottom of knurl and hold it there. Tighten clampscrew.

SELECTOR CLUTCH STOP ARM

To Check

All codebars spacing and the selector clutch in stop position. Do not latch the clutch. Rotate the range scale to position the no. 8 selector lever to the high part of its cam. Set the selector armature to marking and latch the selector clutch.

Requirement

Inner surface of stop arm should be Min flush---Max 0.010 inch over flush on the inner surface of the clutch shoe lever as gauged by eye.

To Adjust

Loosen clampscrew friction tight. Position stop arm. Recycle and recheck the requirement on both sides of the clutch. Tighten clampscrew.

RANGE FINDER KNOB PHASING

To Check

Range finder knob turned to maximum clockwise position.

(1) Requirement

Zero should be aligned with index within 10 divisions.

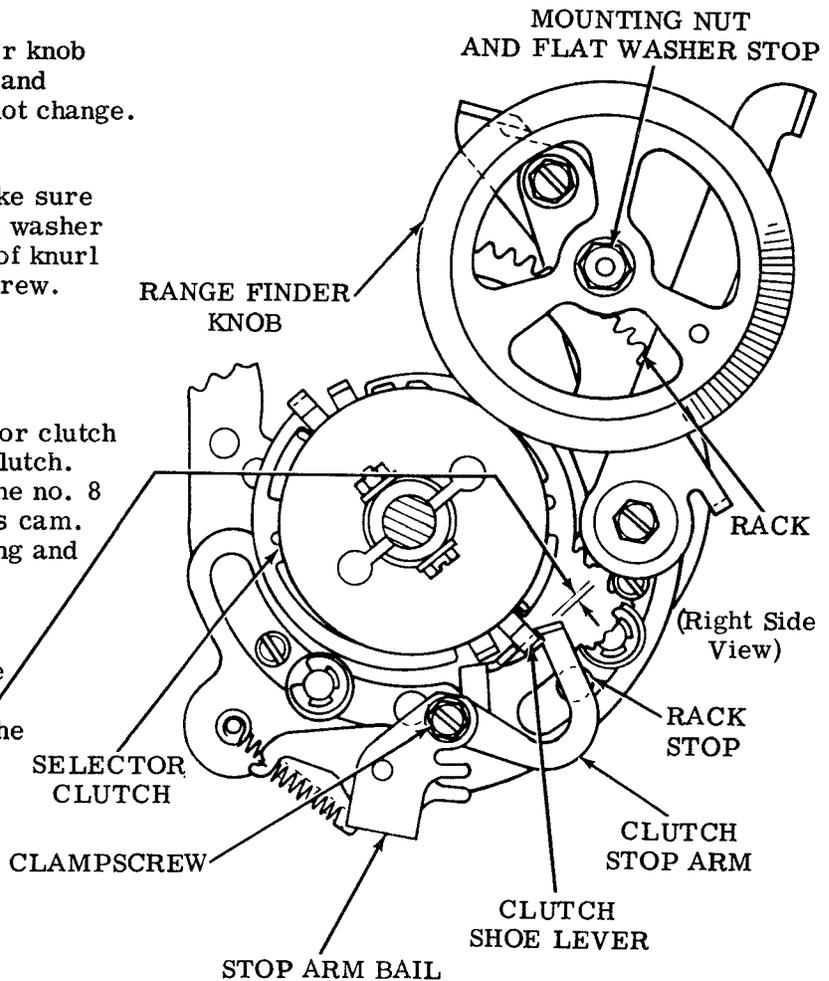
(2) Requirement

Rack should be pivoted against rack stop.

To Adjust

Pivot rack counterclockwise against rack stop. Loosen mounting nut and position range finder knob.

Note: Insure adequate motion of range finder knob prior to rack reaching upper and lower limits of travel.



2.04 Selector Mechanism (continued)

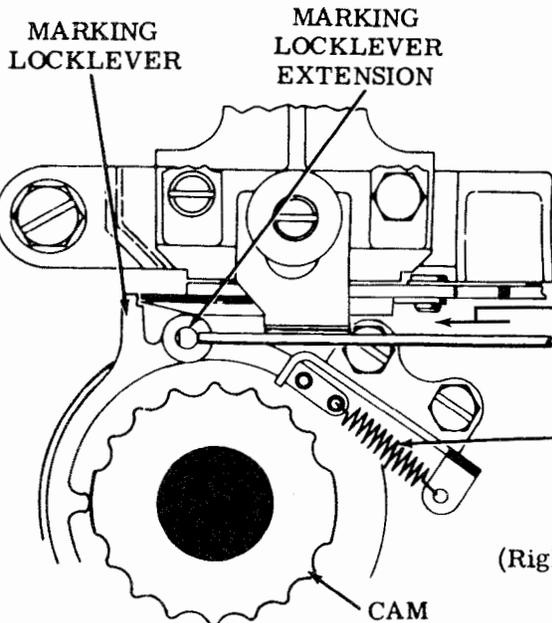
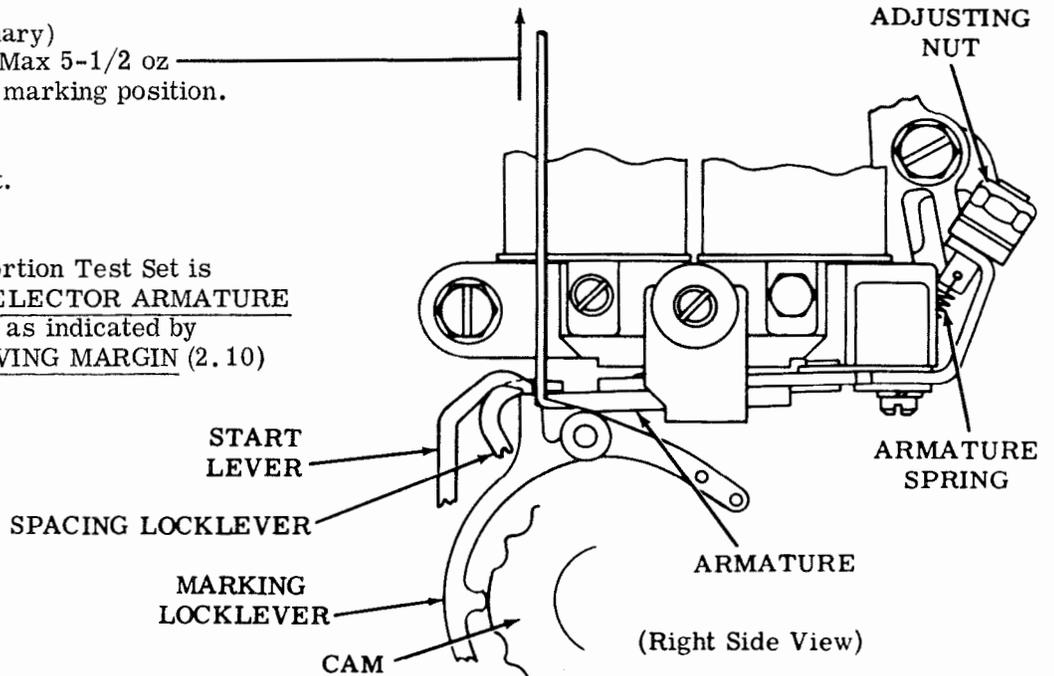
SELECTOR ARMATURE SPRING

To Check
 Marking locklever, spacing locklever,
 and start lever on high part of their
 cams.

Requirement (Preliminary)
 Min 4-1/2 oz---Max 5-1/2 oz
 to pull armature to marking position.

To Adjust
 Rotate adjusting nut.

Requirement (Final)
 When a Signal Distortion Test Set is
 available, refine SELECTOR ARMATURE
SPRING adjustment as indicated by
SELECTOR RECEIVING MARGIN (2.10)
 adjustment.



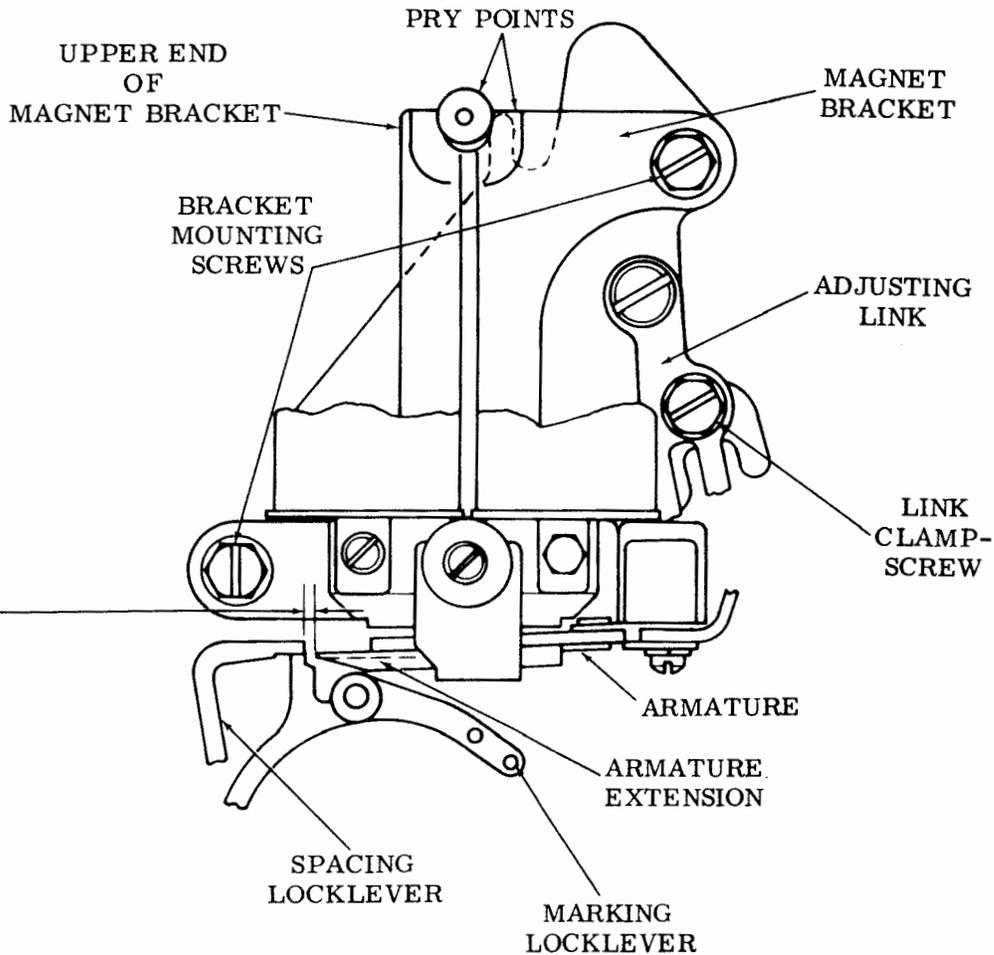
MARKING LOCKLEVER SPRING

To Check
 Magnet energized. All push levers latched
 behind selector levers. Selector clutch
 disengaged (latched).

Requirement
 Min 4 oz---Max 9 oz
 to start lever moving.

2.05 Selector Mechanism (continued)

(Right Side View)

SELECTOR MAGNET BRACKET

Note: The preliminary SELECTOR ARMATURE SPRING (2.04) adjustment must be made prior to this adjustment.

(1) To Check

"Delete" (all marking) code combination selected. Main shaft rotated until marking and spacing locklevers are on high part of cam (stop position). Permit armature to assume its spacing (down) position.

Note: Check requirement at both high parts of selector cam.

Requirement

—Min 0.009 inch---Max 0.016 inch
clearance between end of armature extension and shoulder of marking locklever and tip of spacing locklever.

To Adjust

Loosen two bracket mounting screws and link clampscrew friction tight. Position magnet bracket by means of adjusting link. Tighten link clampscrew only.

2.06 Selector Mechanism (continued)

SELECTOR MAGNET BRACKET (continued)

(2) To Check

Hold armature in marking (up) position. Rotate main shaft and observe marking locklever movement. If the marking locklever passes freely under armature extension, the "some" part of requirement (1) is met. With armature held in marking position, disengage (latch) all main shaft clutches. Engage (trip) selector clutch and rotate main shaft until no. 8 push lever just falls marking. Check "0.003" part of requirement (1). Permit armature to assume its spacing (down) position. Check requirement (2).

(1) Requirement

Min some---Max 0.003 inch clearance between lower surface of armature and upper surface of marking locklever.

(2) Requirement

Max 0.010 inch between magnet pole face and front edge of armature when armature is resting on marking locklever.

To Adjust

With bracket mounting screws friction tight, position upper end of magnet bracket using pry points. Tighten mounting screws. Recheck all requirements for the selector magnet bracket.

(3) To Check

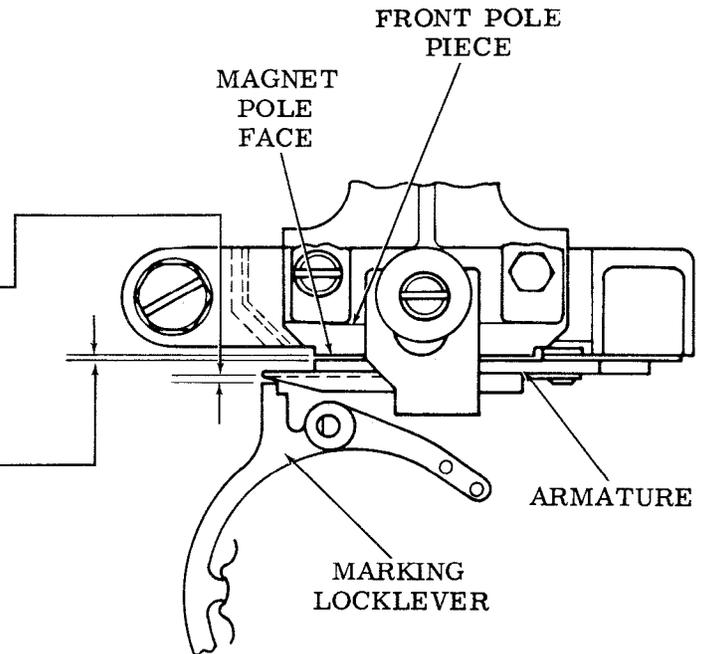
Engage (trip) selector clutch and rotate shaft. Check operation of start lever on armature.

Requirement

Smooth operation of start lever on armature.

To Adjust

Refine adjustments for all requirements for the selector magnet bracket.



(Right Side View)

2.07 Selector Mechanism (continued)

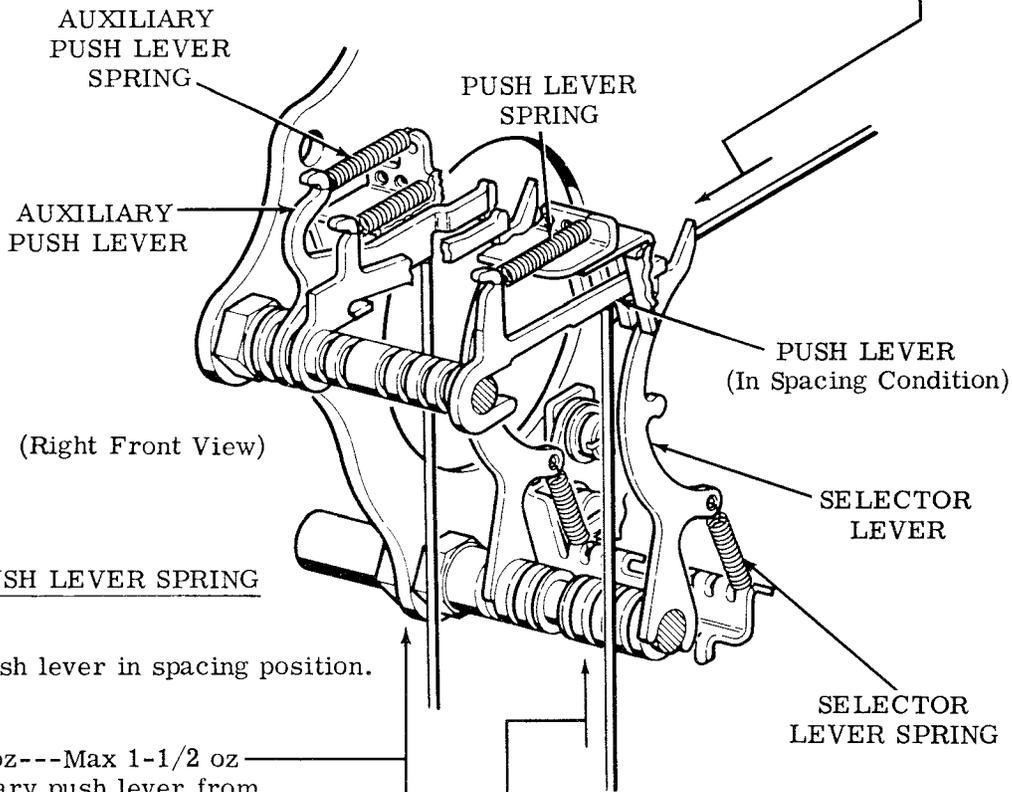
SELECTOR LEVER SPRING

To Check

Selector levers on high part of their cams. Push lever reset bail latched on lever guide.

Requirement

Min 1-1/2 oz---Max 2-1/2 oz to start each selector lever moving. Check eight springs.



AUXILIARY PUSH LEVER SPRING

To Check

Auxiliary push lever in spacing position.

Requirement

Min 1/2 oz---Max 1-1/2 oz to lift auxiliary push lever from selector lever.

SELECTOR PUSH LEVER SPRING

To Check

Push lever in spacing position.

Requirement

Min 1 oz---Max 2-1/2 oz to lift push lever from selector lever. Check eight springs.

2.08 Selector Mechanism (continued)

START LEVER CAM FOLLOWER SPRING

To Check
Cam follower on high part of cam.

Requirement
Min 3 oz---Max 5 oz
To pull lift lever spring to installed length.

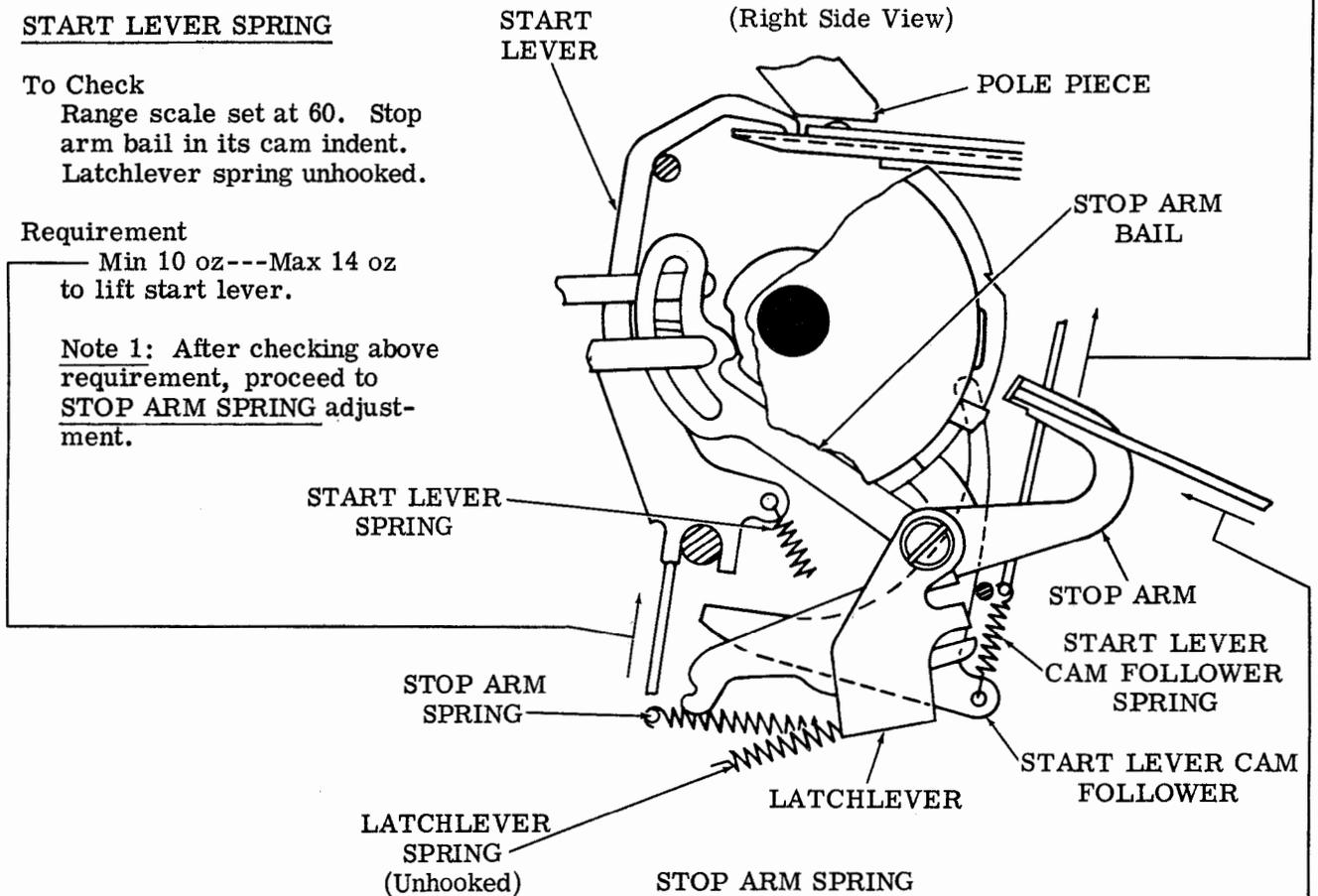
START LEVER SPRING

To Check
Range scale set at 60. Stop arm bail in its cam indent. Latchlever spring unhooked.

Requirement
Min 10 oz---Max 14 oz
to lift start lever.

Note 1: After checking above requirement, proceed to STOP ARM SPRING adjustment.

(Right Side View)



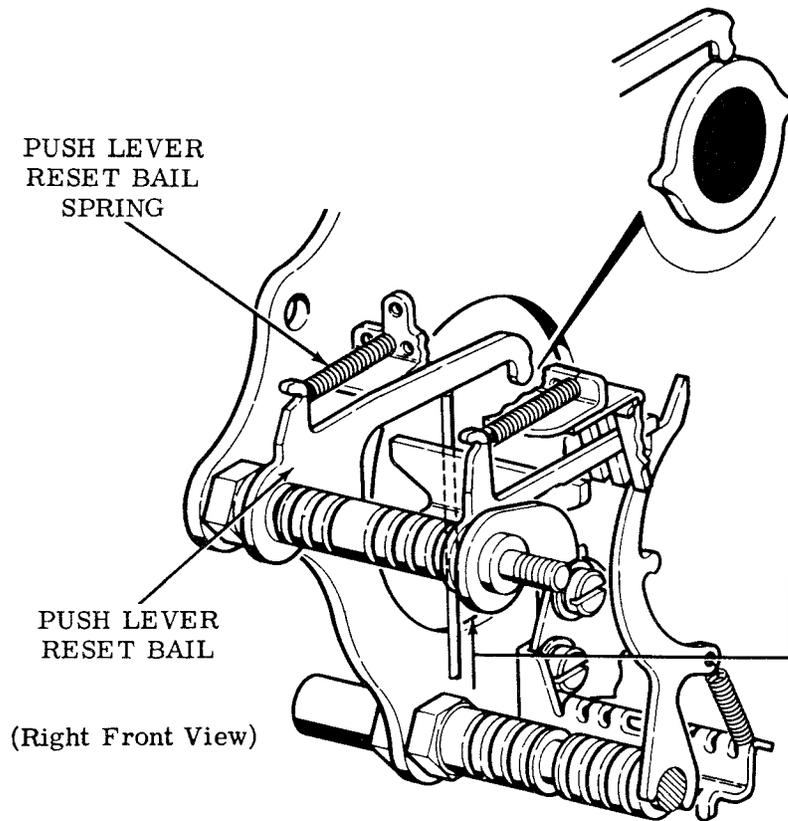
STOP ARM SPRING

Note 2: START LEVER SPRING must be checked and meet its requirement before checking this requirement.

Requirement
Range scale set at 60. Stop arm bail in its cam indent. Latchlever spring unhooked.

Min 9-1/2 oz---Max 13 oz
to start the stop arm moving.

2.09 Selector Mechanism (continued)



PUSH LEVER RESET BAIL SPRING

To Check

Push levers in spacing position. Push lever reset bail on low part of cam.

Requirement

Min 1-1/2 oz---Max 2-1/2 oz to move push lever reset bail from cam.

SELECTOR CLUTCH LATCHLEVER SPRING

To Check

Latchlever resting on low part of cam disc.

Requirement

Min 2 oz---Max 4 oz to start latchlever moving.

SPACING LOCKLEVER SPRING

To Check

Magnet energized. Selector clutch disengaged (latched).

Requirement

Min 18 oz---Max 26 oz to start spacing locklever moving.

SPACING LOCKLEVER

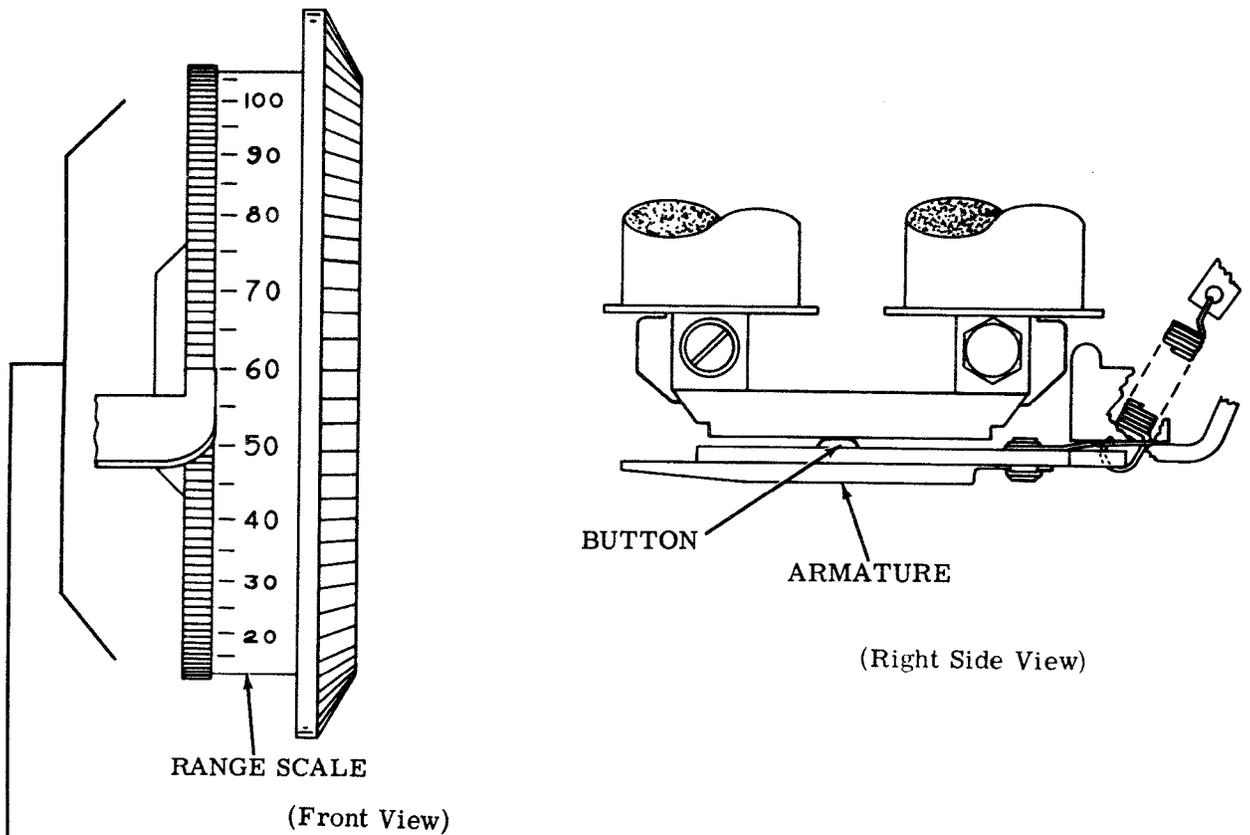
(Right Side View)

SPACING LOCKLEVER SPRING

LATCHLEVER

LATCHLEVER SPRING

2.10 Selector Mechanism (continued)



SELECTOR RECEIVING MARGIN

Requirement

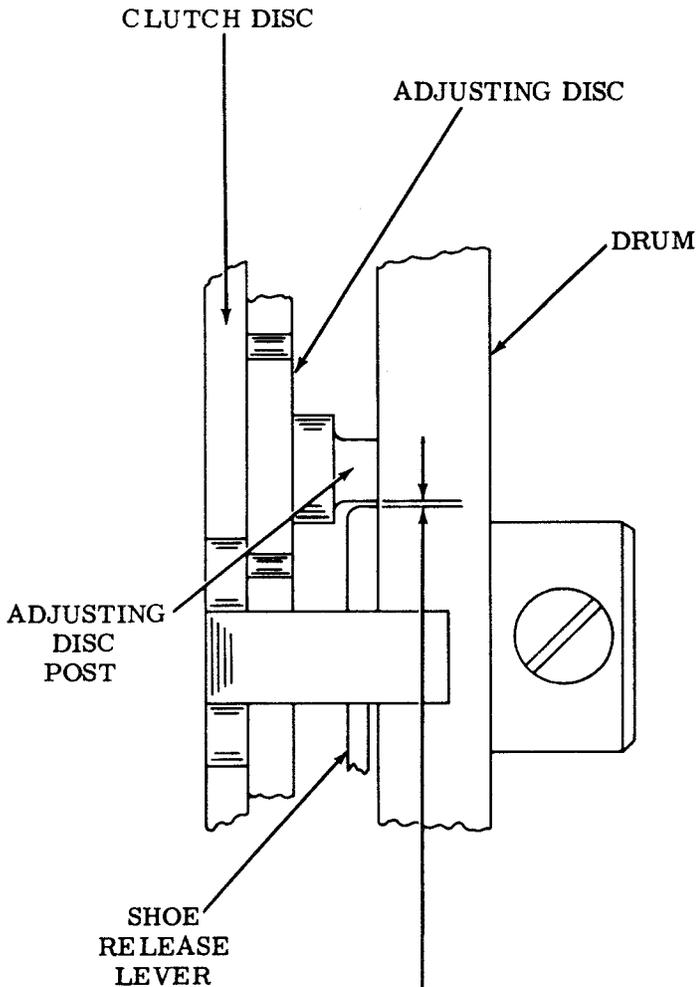
When a Signal Distortion Test Set is available, selector armature spring tension should be refined, if necessary, to meet the following selector receiving margin.

SPEED (WPM)	PERCENT MARKING AND SPACING BIAS TOLERATED	PERCENT MARKING AND SPACING END DISTORTION TOLERATED (SCALE SET AT BIAS OPTIMUM) TOLERANCE WITHOUT RECEIVING SIGNAL REGENERATION
100	35	35
150	25	25

To Adjust

Refine the SELECTOR ARMATURE SPRING (2.04) adjustment.
Adjust spring tension for maximum of 5 percent internal bias.

2.11 Main Shaft and Trip Shaft Mechanisms and Vertical and Horizontal Positioning Mechanisms



Note 1: "BIDREC" means bidirectional regenerative clutch.

(Bottom View - Main Shaft Clutches)

(Left Side View - Horizontal Positioning Clutches)

(Rear View - Vertical Positioning Clutches)

CLUTCH "BIDREC" GAP

Note 2: The following requirement applies to all typing unit clutches.

To Check

Engage clutch. Check gap between adjusting disc post and shoe lever.

Requirement

Less than 100 typing unit operational hours

Min 0.002 inch---Max 0.015 inch
between adjusting disc post and shoe lever.

More than 100 typing unit operational hours

Min 0.002 inch---Max 0.025 inch
between adjusting disc post and shoe lever.

To Adjust

Replace clutch shoes and/or drum.

2.12 Main Shaft and Trip Shaft Mechanisms (continued)

MAIN SHAFT CLUTCH ENDPLAY

(1) Requirement

Min some---Max 0.006 inch clearance between:

- Codebar and print hammer clutch assemblies.
- Print hammer and spacing clutch assemblies.
- Function clutch assembly and collar.

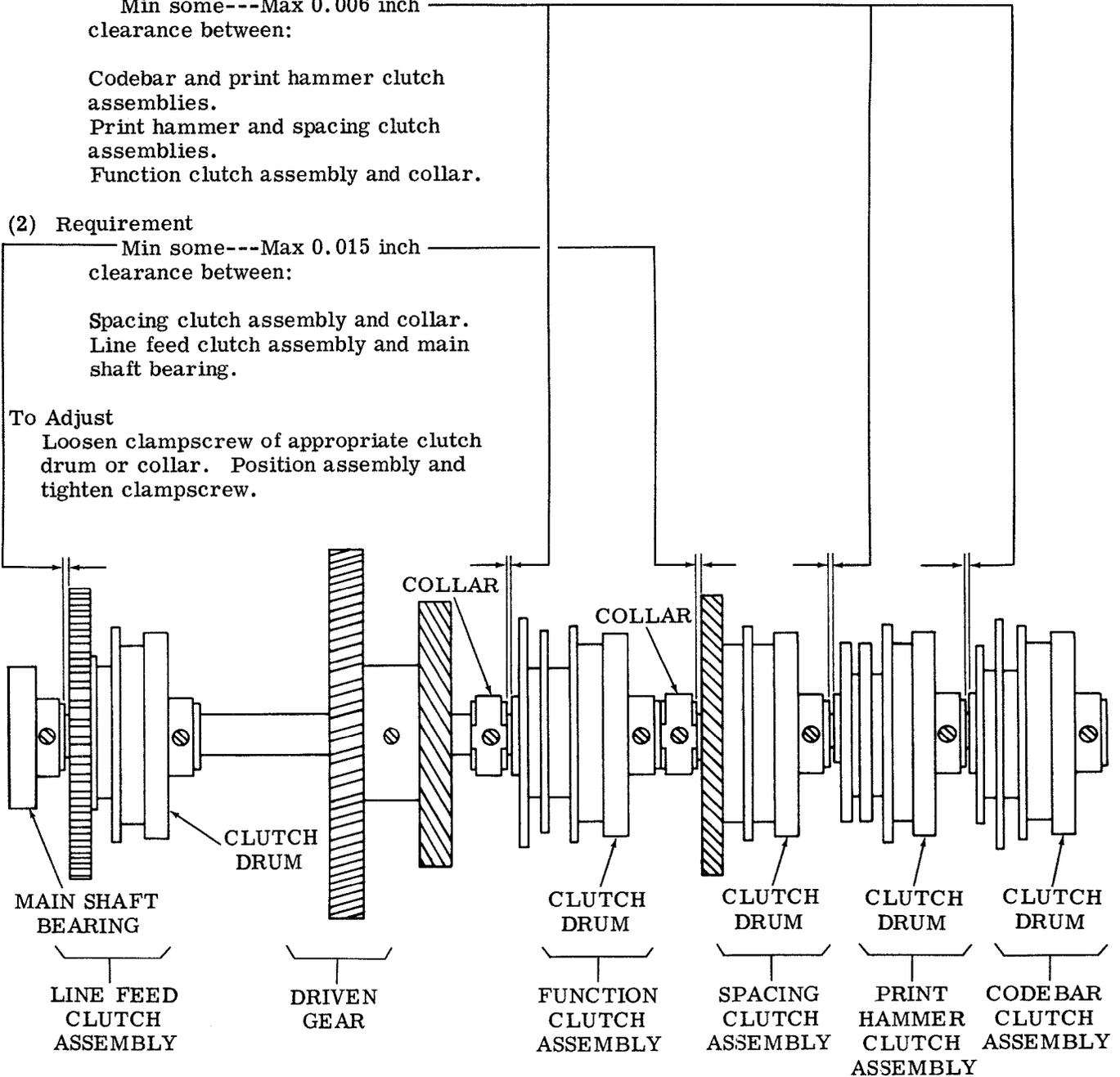
(2) Requirement

Min some---Max 0.015 inch clearance between:

- Spacing clutch assembly and collar.
- Line feed clutch assembly and main shaft bearing.

To Adjust

Loosen clampscrew of appropriate clutch drum or collar. Position assembly and tighten clampscrew.



(Bottom View)

Note: When the typing unit is mated with the keyboard, refer to Section 574-321-703TC for the required information concerning the adjustment between the main shaft driven gear and the intermediate gear assembly.

2.13 Main Shaft and Trip Shaft Mechanisms (continued)

SELECTOR CLUTCH ENDPLAY

To Check

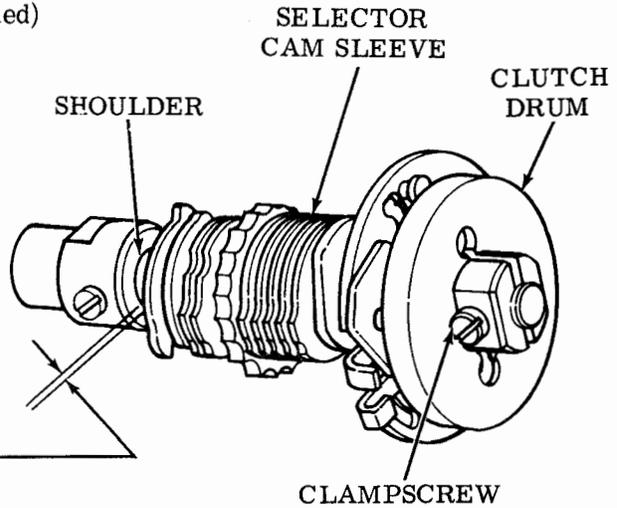
Selector clutch disengaged (latched). Move selector cam sleeve to left (shoulder) and then to right.

Requirement

Selector clutch should have
Min some---Max 0.012 inch
endplay.

To Adjust

Loosen clampscrew and position clutch drum. Tighten clampscrew.



2.14 Vertical and Horizontal Positioning Mechanisms (continued)

CLUTCH SHOE LEVER SPRING

To Check

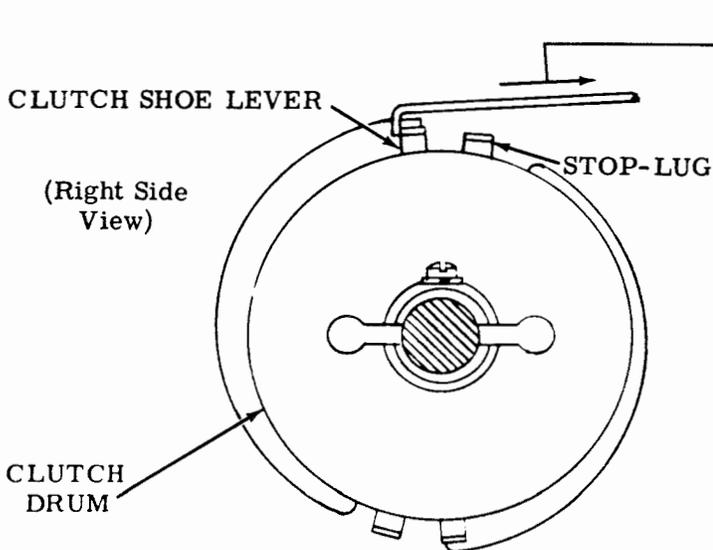
Engage (trip) clutch. Hold the disc. Hook a scale to shoe lever, and pull at a tangent to the clutch.

Requirement

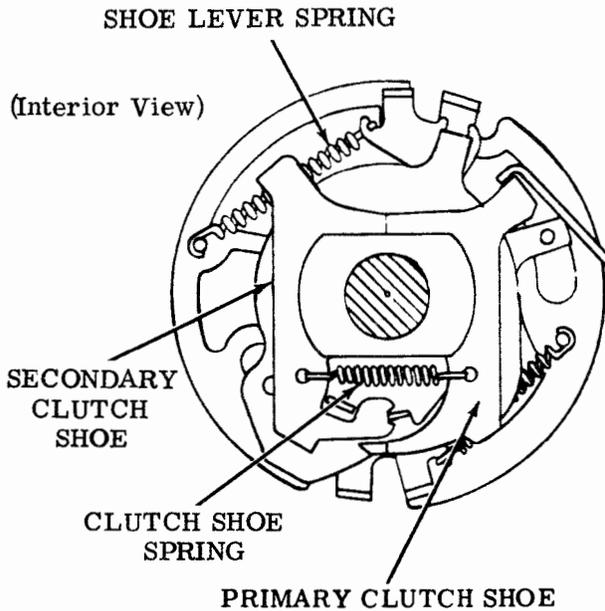
Min 8 oz---Max 12 oz
to move the shoe lever into contact with the stop-lug.

Note 1: Line feed and spacing clutches have six stop-lugs and clutch shoe levers equally spaced around the periphery.

Note 2: Offset loop at spring should be hooked over pin on clutch disc.



2.15 Main Shaft and Trip Shaft Mechanisms and Vertical and Horizontal Positioning Mechanisms (continued)



CLUTCH SHOE SPRING

Note 1: In order to check this spring tension, it is necessary to remove the clutch drum. It therefore should not be checked unless there is good reason to believe that it does not meet requirements.

Requirement

Min 8 oz---Max 12 oz
to start primary shoe moving away from secondary shoe at their point of contact.

MAIN SHAFT CLUTCH SHOE LEVERS

Note 2: Check on side of clutch where shoe lever engages shoe.

To Check

Disengage (latch) clutch. Measure gap between shoe lever and stop-lug. Engage (trip) clutch and momentarily place 16 ounces of tension on shoe lever to give maximum gap. Remove tension and measure gap while applying 32 ounces to stop-lug to give minimum gap.

Requirement

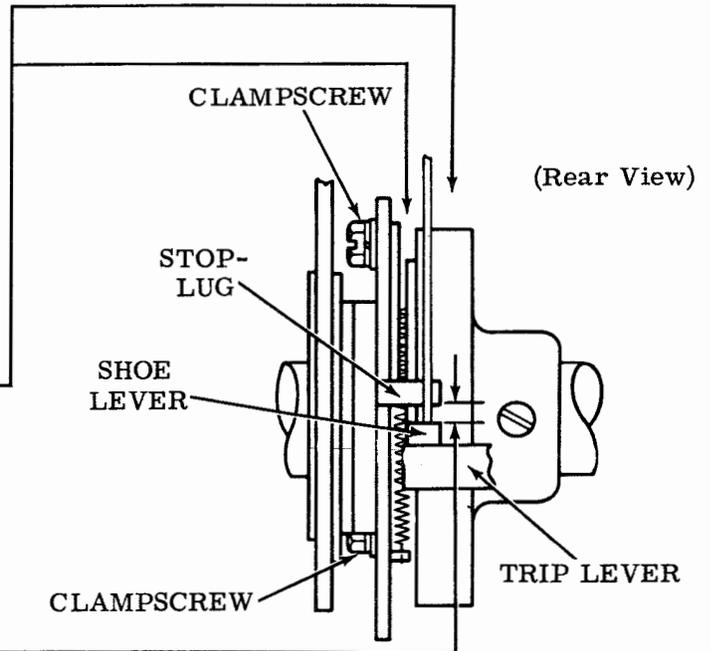
New Shoes and Drums:

Min 0.075 inch---Max 0.085 inch

After 200 Hours of Operation:

Min 0.055 inch---Max 0.085 inch

greater gap when clutch is engaged (tripped) than when clutch is disengaged (latched).



To Adjust

Loosen plate clampscrews friction tight. Rotate adjusting plate by means of screwdriver or wrench. Tighten clampscrews.

2.16 Horizontal Positioning Mechanism (continued)

AGGREGATE MOTION SPRING (HORIZONTAL POSITIONING)

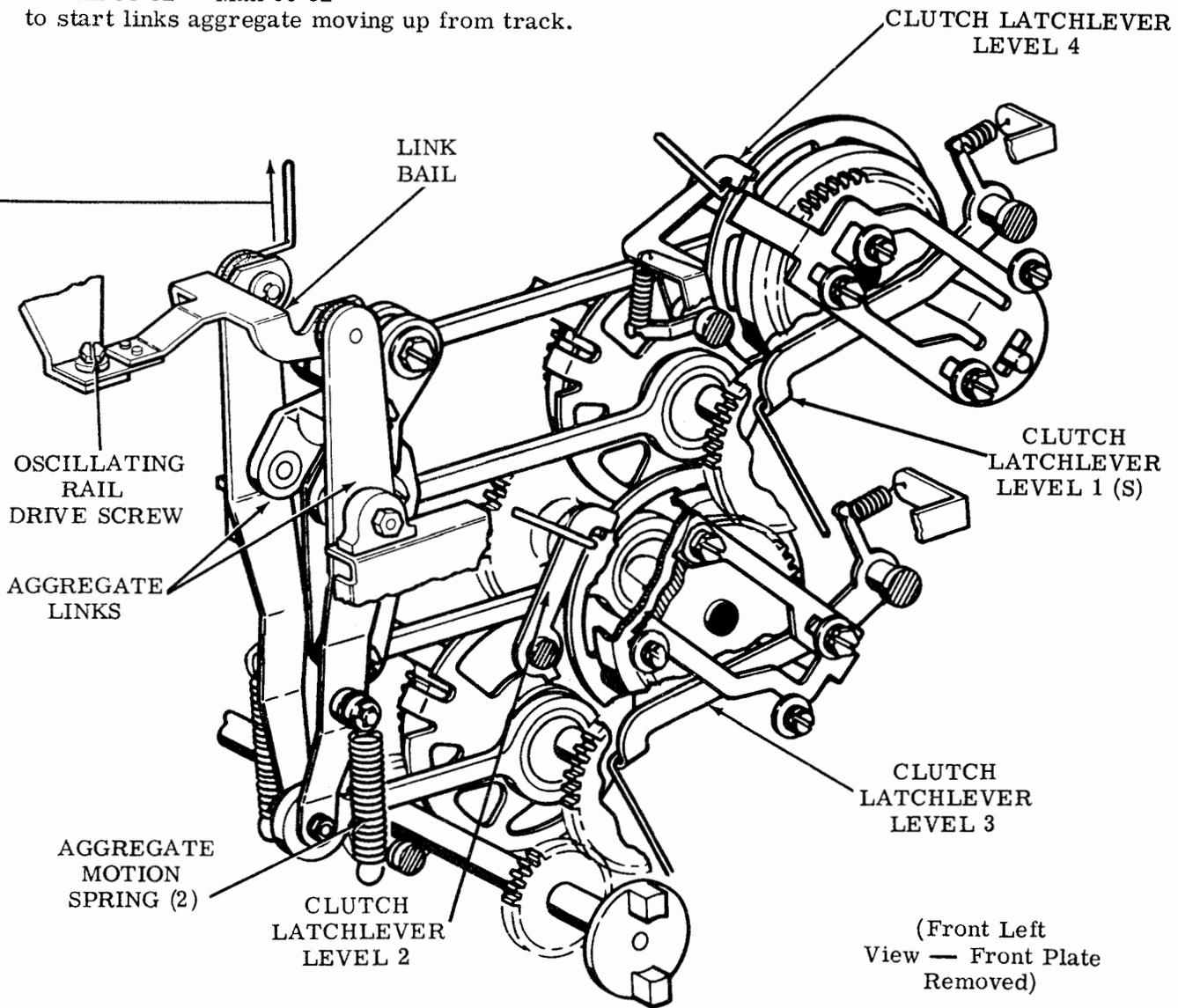
Note: Do not check this adjustment unless there is reason to believe that these springs are causing operating failure.

To Check

All clutches disengaged (latched). All code-bars spacing. Oscillating rail drive screw removed.

Requirement

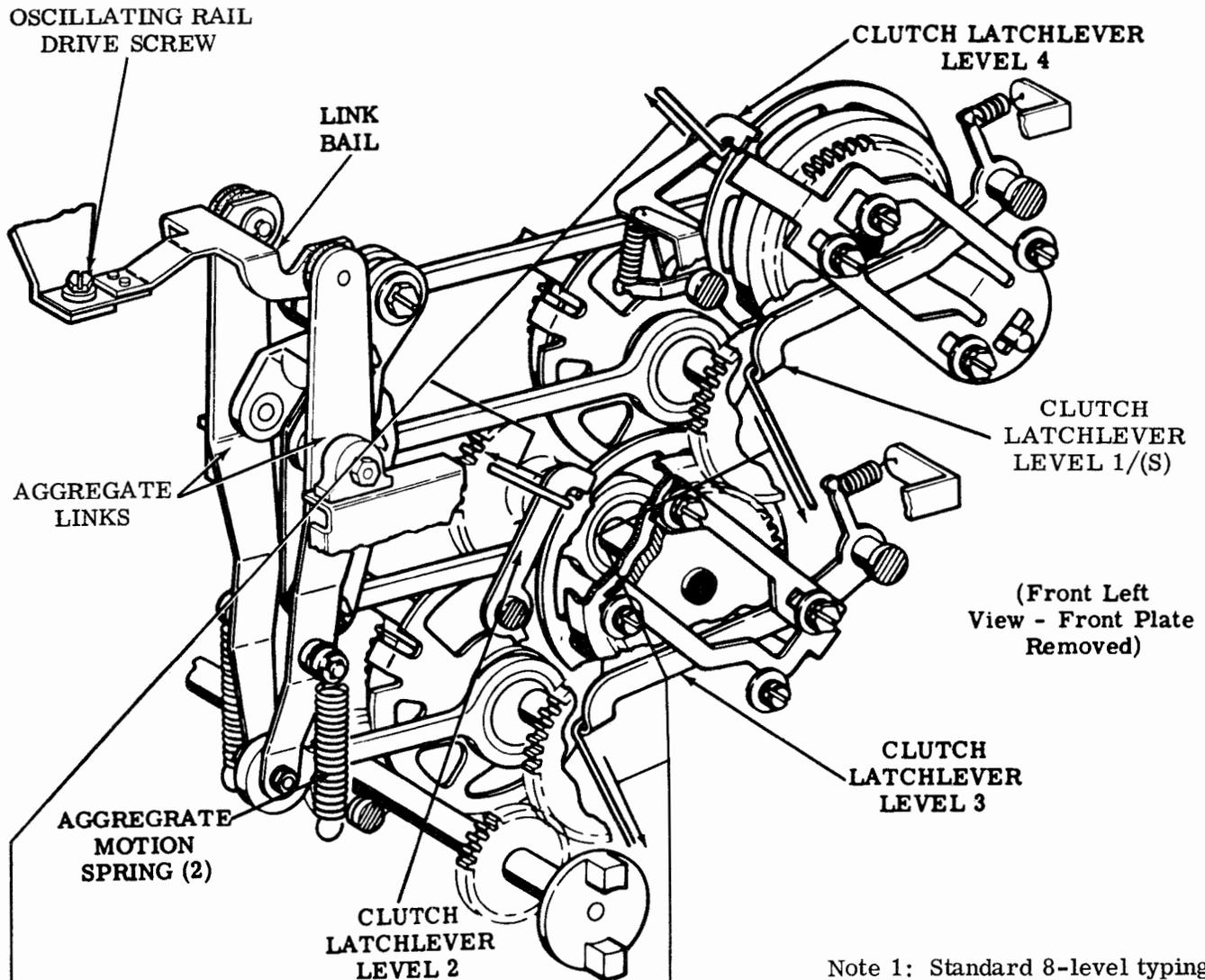
Min 38 oz---Max 50 oz
to start links aggregate moving up from track.



Affected Adjustment

AGGREGATE-DAMPENER SYNCHRONIZATION (2.50)

2.17 Horizontal Positioning Mechanism (continued)



CLUTCH LATCHLEVER SPRING
(HORIZONTAL POSITIONING
LEVELS 2 AND 4)

To Check

Clutch engaged (tripped). Rotate 1/4 turn from stop.

Requirement

Min 4-1/2 oz---Max 6 oz to start latchlever moving.

CLUTCH LATCHLEVER SPRING
(HORIZONTAL POSITIONING
LEVELS 1, (S), AND 3)

To Check

Clutch engaged (tripped). Rotate 1/4 turn from stop.

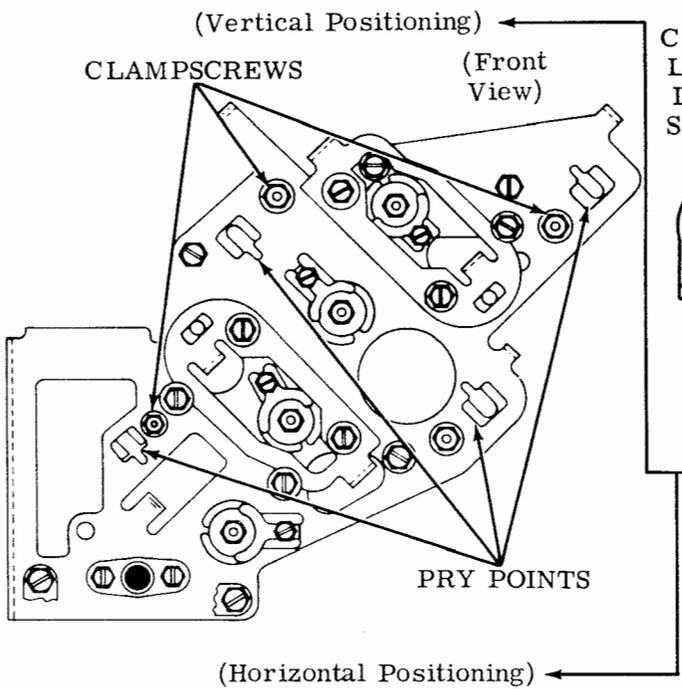
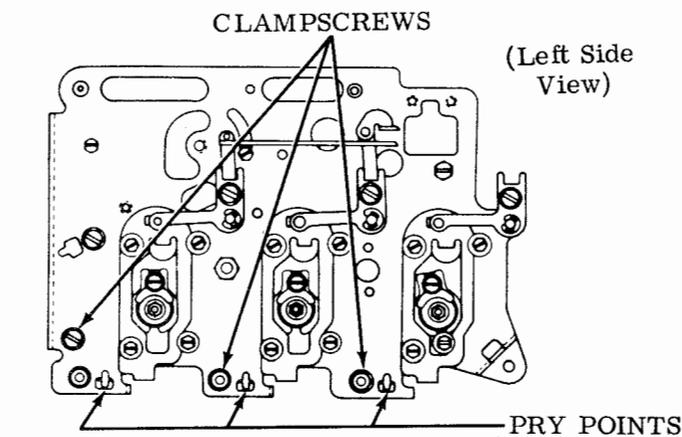
Requirement

Min 1 oz---Max 2 oz to start latchlever moving.

Note 1: Standard 8-level typing unit operation uses levels 1, 2, 3, and 4 for horizontal position; 6-level machines use levels 2, 3, 4, and Shift (S).

Note 2: Check level 7 or the shift clutch, when equipped.

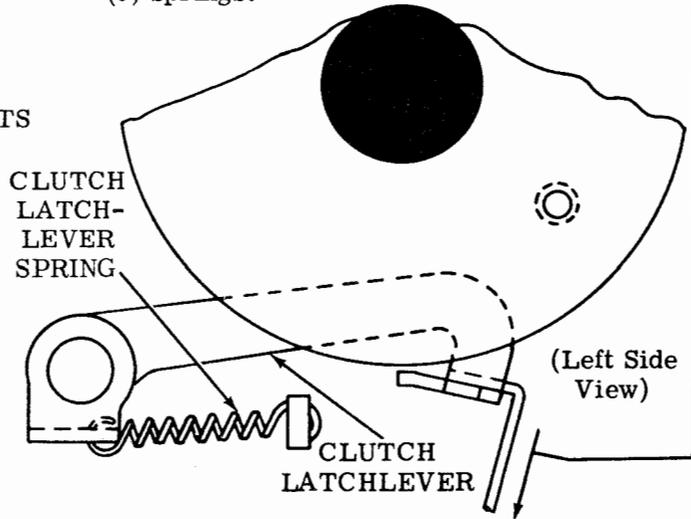
2.18 Vertical and Horizontal Positioning Mechanisms (continued)



CLUTCH LATCHLEVER SPRING (VERTICAL POSITIONING)

To Check
Clutch engaged (tripped). Latchlever on high part of disc.

Requirement
Min 3/4 oz---Max 1-3/4 oz to pull latchlever from disc. Check three (3) springs.



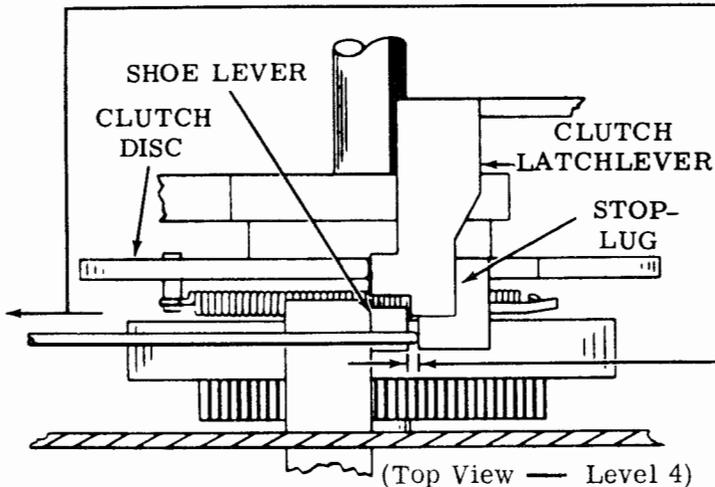
CLUTCH SHOE LEVERS

Note: This adjustment applies to the three vertical positioning clutches and the four horizontal positioning clutches.

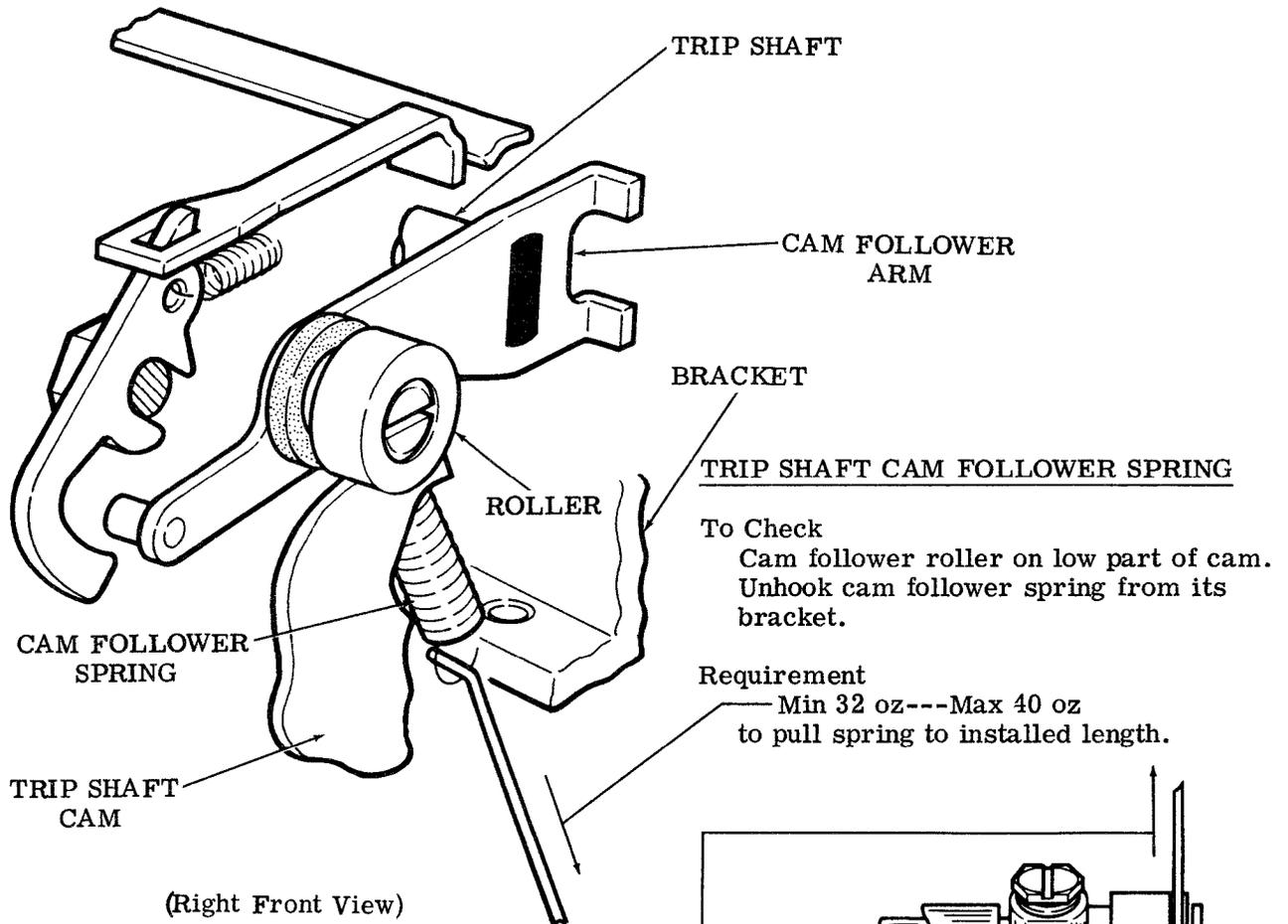
To Check
Engage (trip) clutch and momentarily place 32 ounces of tension on shoe lever. Measure gap between clutch shoe lever and stop-lug. Disengage (latch) clutch and remeasure.

Requirement
Min 0.040 inch---Max 0.070 inch greater gap when clutch is engaged (unlatched) than when clutch is disengaged (latched). A disengaged (latched) gap of not less than 0.015 inch must be maintained.

To Adjust
Loosen clampscrew friction tight. Position latchlever, while latched, by means of pry point. Tighten clampscrew.



2.19 Main Shaft and Trip Shaft Mechanisms (continued)

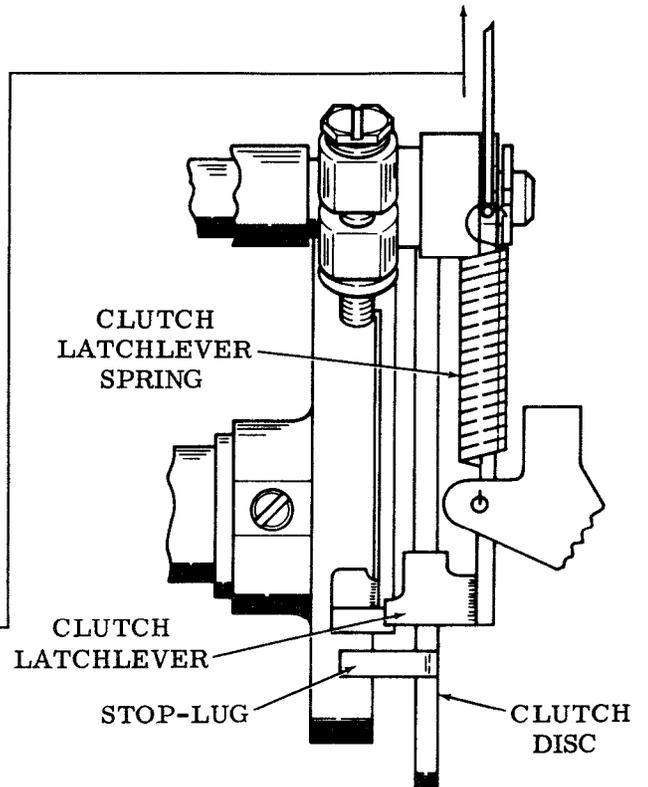


CLUTCH LATCHLEVER SPRING
(EXCEPT SELECTOR)

Note: This requirement applies to codebar clutch, print hammer clutch, spacing clutch, function clutch, and line feed clutch.

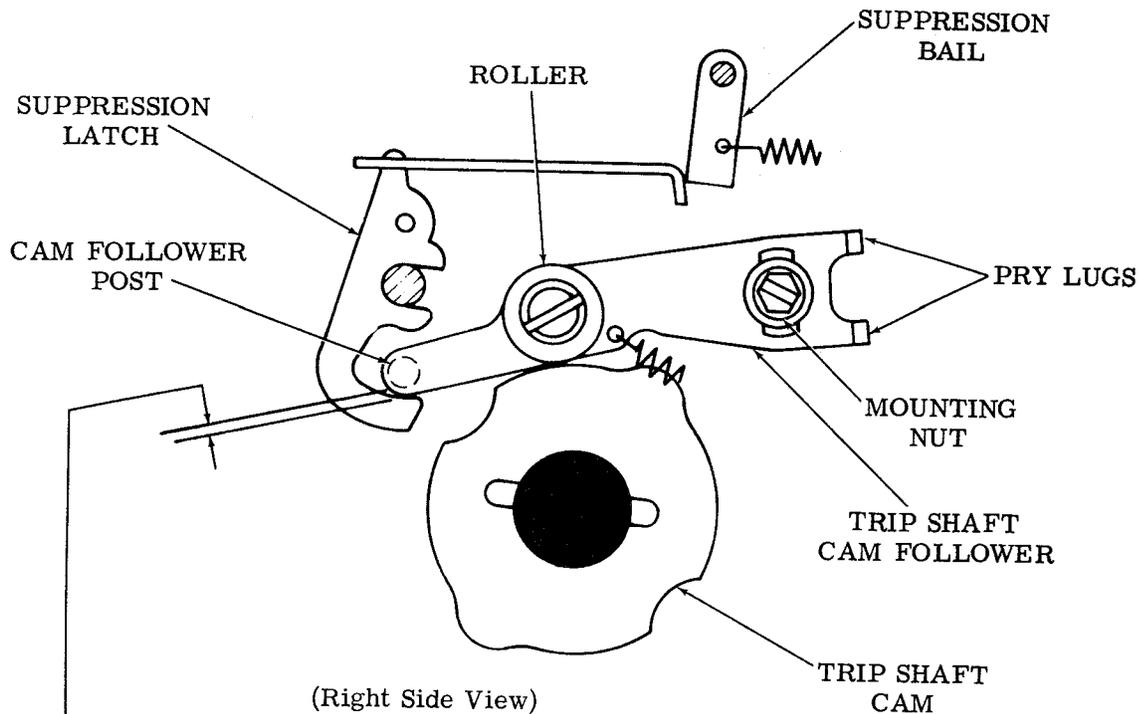
To Check
Clutch latchlever on high part of clutch disc.

Requirement
Min 5 oz---Max 8 oz
to pull clutch latchlever spring to installed length.



(Rear View)

2.20 Main Shaft and Trip Shaft Mechanisms (continued)



TRIP SHAFT CAM FOLLOWER

To Check

All clutches disengaged (latched). Push suppression latch under cam follower post.

Requirement

Min 0.010 inch---Max 0.025 inch clearance between cam follower post and suppression latch.

To Adjust

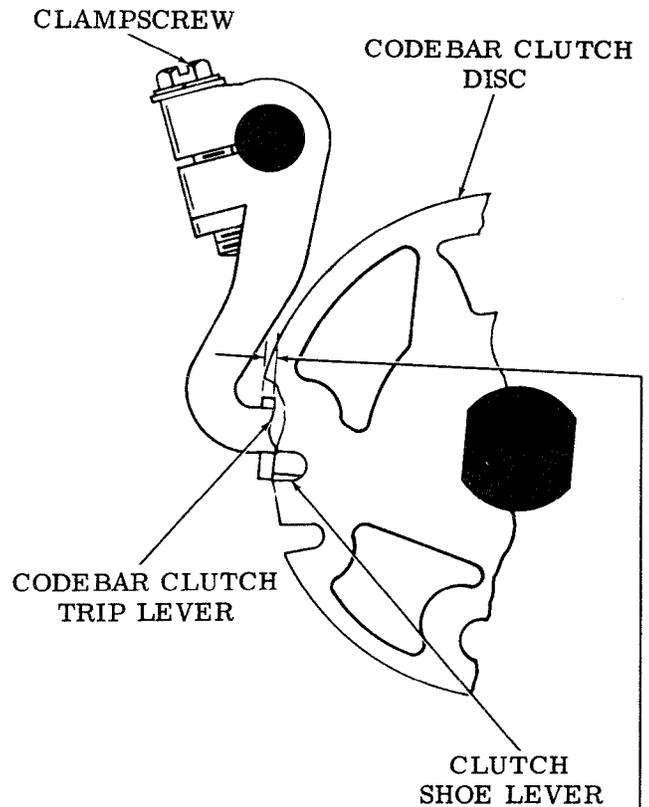
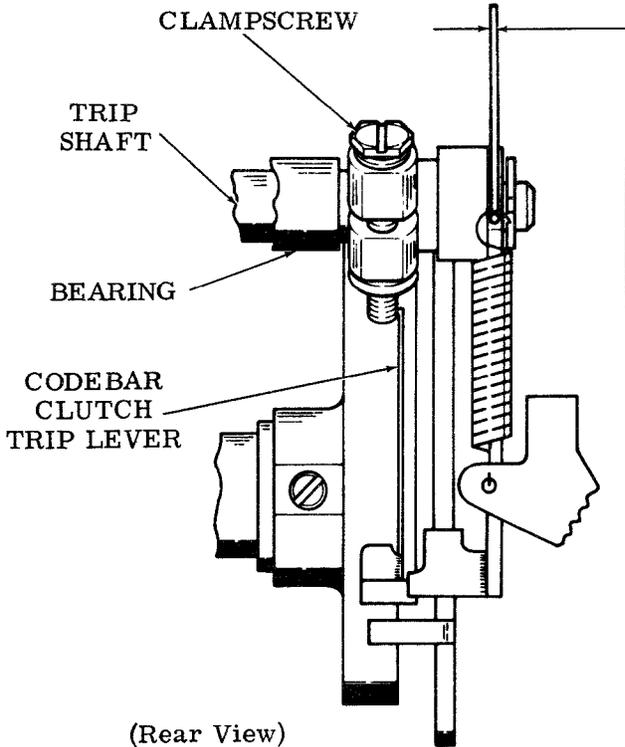
Loosen mounting nut friction tight. Adjust for clearance by prying with a screwdriver between pry lugs and mounting nut. Tighten mounting nut and recheck adjustment. Also check adjustment of second cycle of trip shaft cam.

Affected Adjustments

FUNCTION CLUTCH TRIP ARM (2.22)

PRINT HAMMER CLUTCH TRIP ARM (2.23)

2.21 Main Shaft and Trip Shaft Mechanisms (continued)



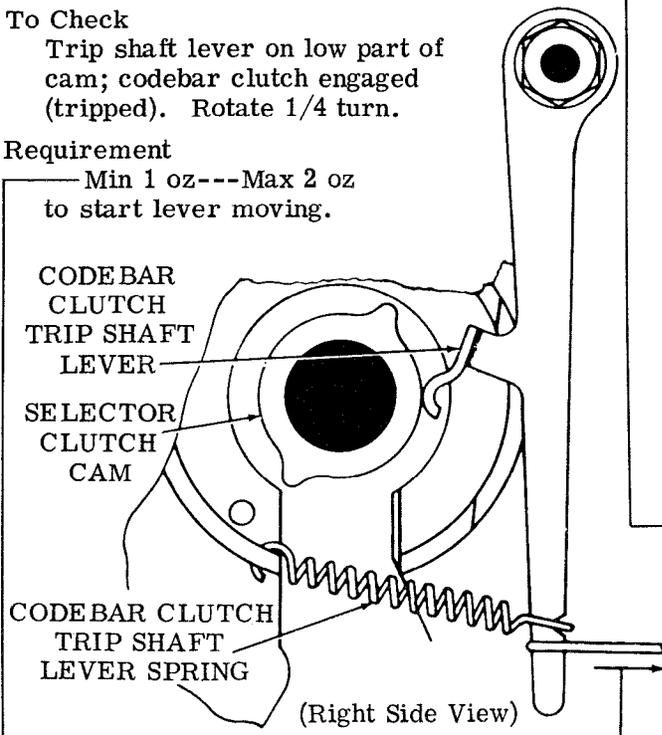
CODEBAR CLUTCH TRIP SHAFT LEVER SPRING

To Check

Trip shaft lever on low part of cam; codebar clutch engaged (tripped). Rotate 1/4 turn.

Requirement

Min 1 oz---Max 2 oz to start lever moving.



CODEBAR CLUTCH TRIP LEVER

To Check

Selector clutch and codebar clutch disengaged (latched). Check requirement (1) at clutch shoe lever with least bite.

(1) Requirement

Inner surface of trip lever should be Min flush---Max 0.010 inch over flush with inner surface of clutch shoe lever.

(2) Requirement

Endplay between bearing and codebar clutch trip lever should be Min some---Max 0.006 inch

To Adjust

Loosen clampscrew friction tight and position trip lever shaft. Tighten clampscrew.

2.22 Main Shaft and Trip Shaft Mechanisms (continued)

Note 1: Remove the trip shaft brace and replace its mounting screw when making FUNCTION CLUTCH TRIP ARM and PRINT HAMMER CLUTCH TRIP ARM (2.23) adjustments.

FUNCTION CLUTCH TRIP ARM

- (1) To Check
All clutches disengaged (latched). Play between function clutch trip arm and intermediate lever post taken up to make a maximum clearance.

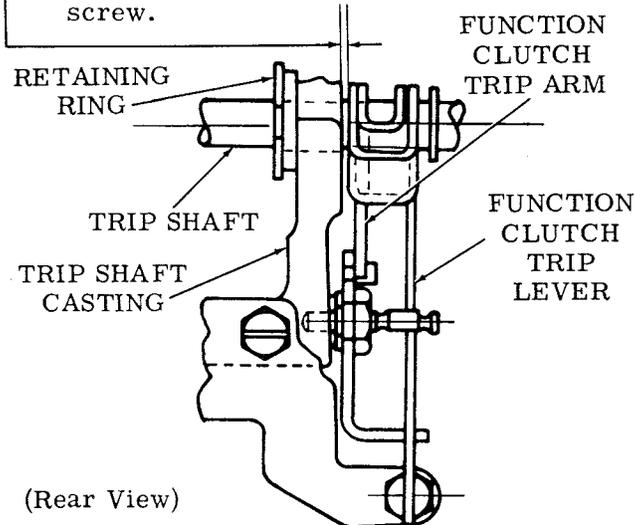
Requirement
Min some---Max 0.005 inch clearance between function clutch trip arm and intermediate lever post.

Note 2: The minimum requirement is considered met when there is no gap between clutch trip lever and backstop screw.

- (2) To Check
All clutches disengaged (latched). Play between tip shaft casting and function clutch trip lever taken up to make a maximum clearance.

Requirement
Min some---Max 0.010 inch clearance between trip shaft casting and function clutch trip lever.

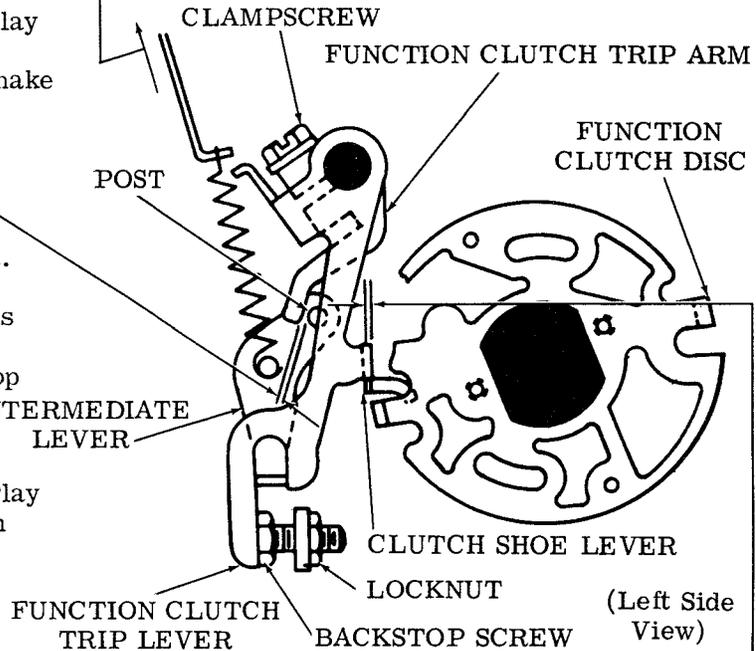
To Adjust
Loosen clampscrew and position function clutch trip arm on shaft. Tighten clampscrew.



FUNCTION CLUTCH TRIP LEVER SPRING

To Check
Function clutch disengaged (latched).

Requirement
Min 9-1/2 oz---Max 12-1/2 oz to pull spring to installed length.



FUNCTION CLUTCH TRIP LEVER

To Check
All clutches disengaged (latched). Check requirement at clutch shoe lever with least bite.

Requirement
Inner surface of function clutch trip lever should be
Min flush---Max 0.010 inch over flush with inner surface of clutch shoe lever.

To Adjust
Loosen locknut. Position function clutch trip lever using backstop screw. Tighten locknut.

Affected Adjustment
FUNCTION CLUTCH TRIP ARM

2.23 Main Shaft and Trip Shaft Mechanisms (continued)

Note: Remove the trip shaft brace and replace its mounting screw when making FUNCTION CLUTCH TRIP ARM (2.22) and PRINT HAMMER CLUTCH TRIP ARM adjustments.

PRINT HAMMER CLUTCH TRIP ARM

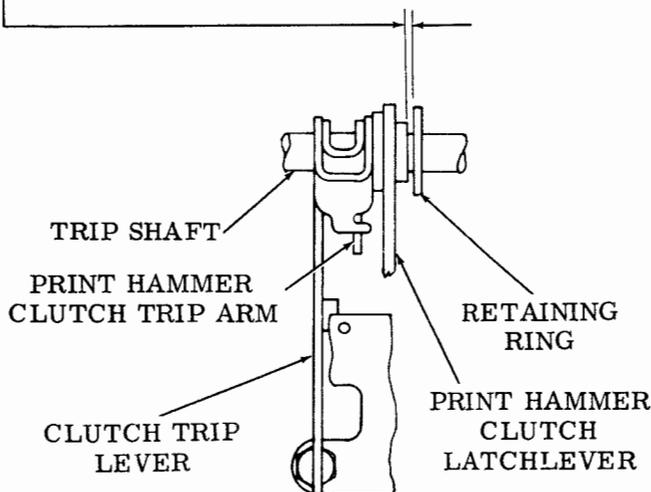
- (1) To Check
All clutches disengaged (latched).

Requirement
Min 0.010 inch---Max 0.020 inch
clearance between print hammer
clutch trip arm and print hammer
clutch trip lever.

- (2) To Check
All clutches disengaged (latched).
Play between print hammer clutch
latchlever and retaining ring taken
up to make a maximum clearance.

Requirement
Min some---Max 0.010 inch
clearance between print hammer
clutch latchlever and retaining
ring.

To Adjust
Loosen clampscrew and position print
hammer clutch trip arm on shaft.
Tighten clampscrew. Replace trip
shaft brace with its mounting screw.
See note above.

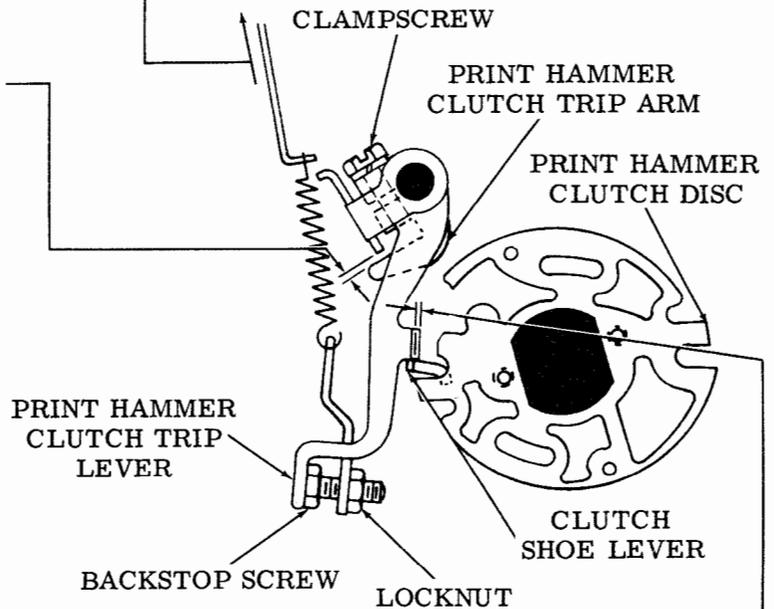


(Rear View)

PRINT HAMMER CLUTCH TRIP LEVER
SPRING

To Check
Print hammer clutch disengaged (latched).

Requirement
Min 9-1/2 oz---Max 12-1/2 oz
to pull spring to installed length.



(Left Side View)

PRINT HAMMER CLUTCH TRIP LEVER

To Check
All clutches disengaged (latched). Check
requirement at clutch shoe lever with least
bite.

Requirement
Inner surface at print hammer clutch trip
lever should be
Min flush---Max 0.010 inch
over flush with inner surface of clutch shoe
lever.

To Adjust
Loosen locknut. Position print hammer
clutch trip lever using backstop screw.
Tighten locknut.

Affected Adjustment
PRINT HAMMER CLUTCH TRIP ARM

2.24 Main Shaft and Trip Shaft Mechanisms (continued)

SPACING CLUTCH TRIP LEVER

To Check

All clutches disengaged (latched). Check spacing clutch at stop (of the six-stop clutch disc) with least bite.

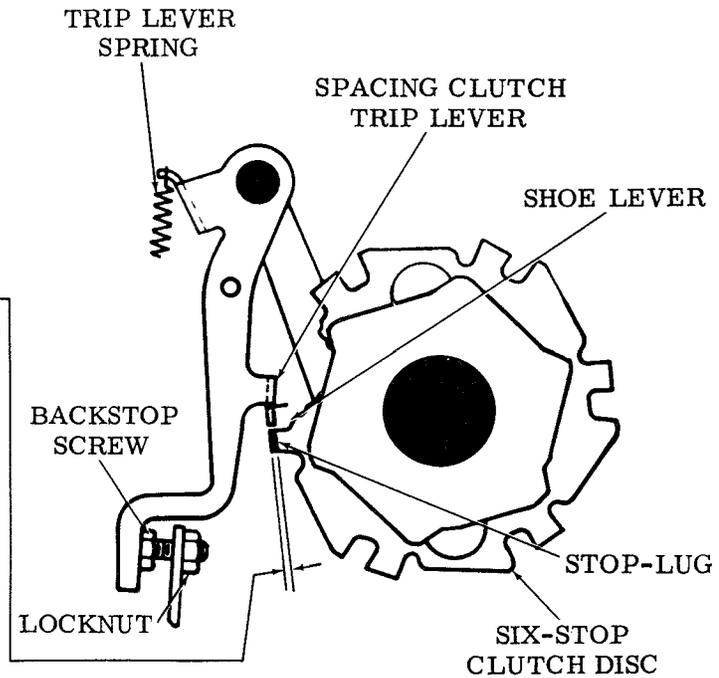
Requirement

Inner surface of spacing clutch trip lever should be

Min flush---Max 0.010 inch
over flush with inner surface of shoe lever.

To Adjust

Loosen locknut. Position spacing clutch trip lever using backstop screw. Tighten locknut.



(Left Side View)

SPACING CLUTCH TRIP LEVER SPRING

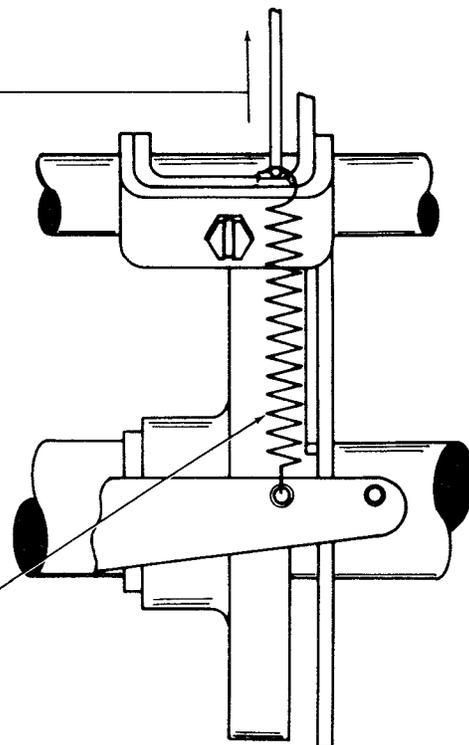
To Check

Spacing clutch disengaged (latched).

Requirement

Min 9-1/2 oz---Max 12-1/2 oz
to pull spring to installed length.

SPACING CLUTCH
TRIP LEVER SPRING



(Rear View)

2.25 Main Shaft and Trip Shaft Mechanisms (continued)

LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST**To Check**

All clutches disengaged (latched). Check line feed clutch at stop (of six-stop clutch disc) with least bite.

Requirement

Inner surface of line feed clutch trip lever should be
 Min flush---Max 0.010 inch
 over flush with inner surface of clutch shoe lever.

To Adjust

Rotate trip lever eccentric post.

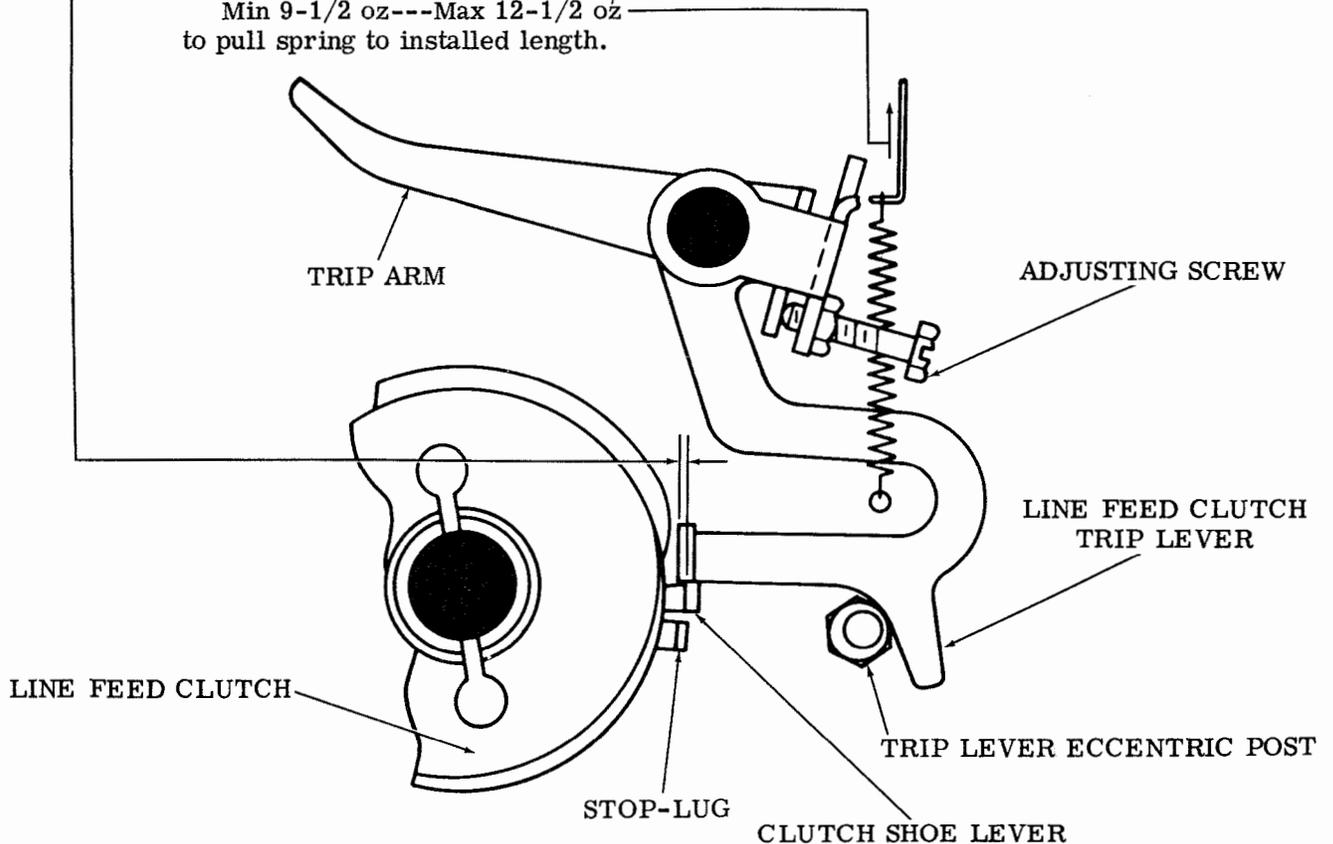
Note: If requirement cannot be met, reposition local line feed cable or back out adjusting screw. Do one or the other depending upon which is limiting the travel of the line feed clutch trip lever.

LINE FEED CLUTCH TRIP LEVER SPRING**To Check**

Line feed clutch disengaged (latched).

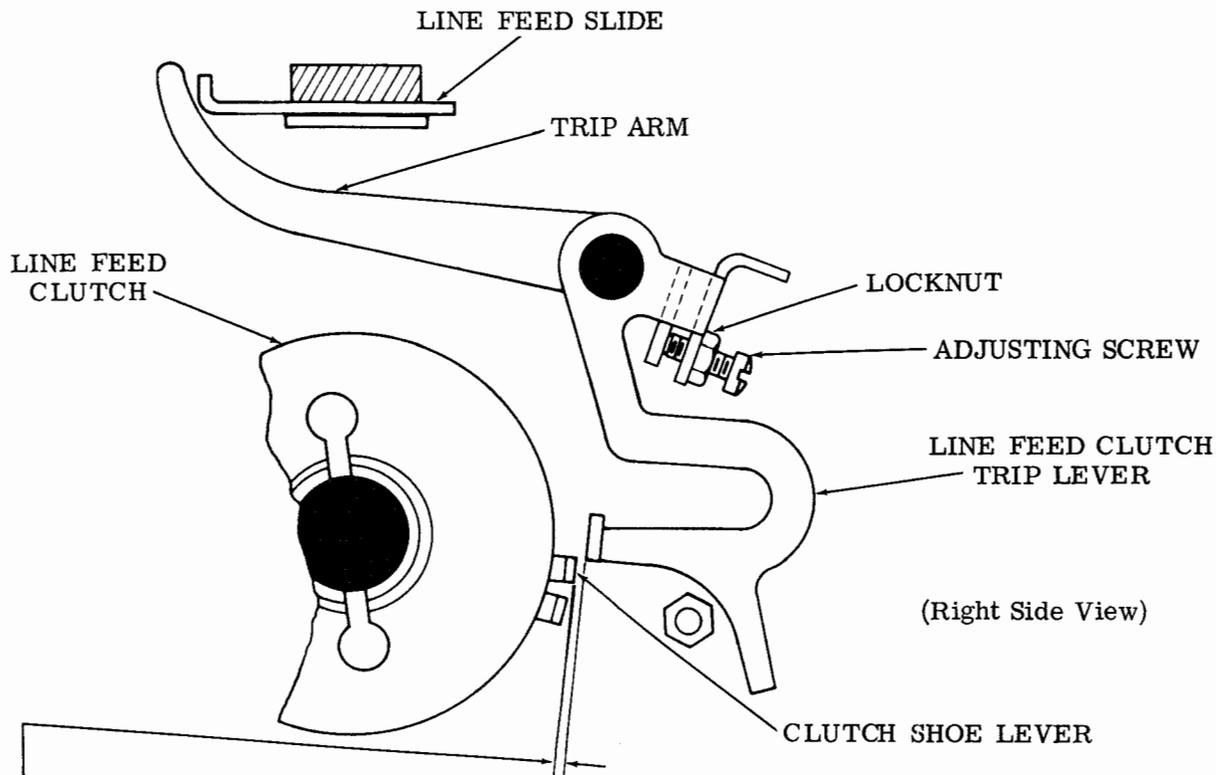
Requirement

Min 9-1/2 oz---Max 12-1/2 oz
 to pull spring to installed length.



(Right Side View)

2.26 Main Shaft and Trip Shaft Mechanisms (continued)

LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW

Note: If typing unit is equipped with a line feed clutch trip bail mechanism, perform LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW (3.13) instead of this adjustment.

To Check

Single-double line feed lever in double line feed position. All clutches disengaged (latched). Manually trip function clutch and rotate main shaft until stripper blade moves to midpoint of its downward travel. Pull line feed function pawl back to latch on function bar. Continue rotating main shaft until function bar moves to its rearmost position.

Requirement

Min 0.055 inch---Max 0.070 inch
clearance between line feed clutch trip lever and clutch shoe lever with least bite.

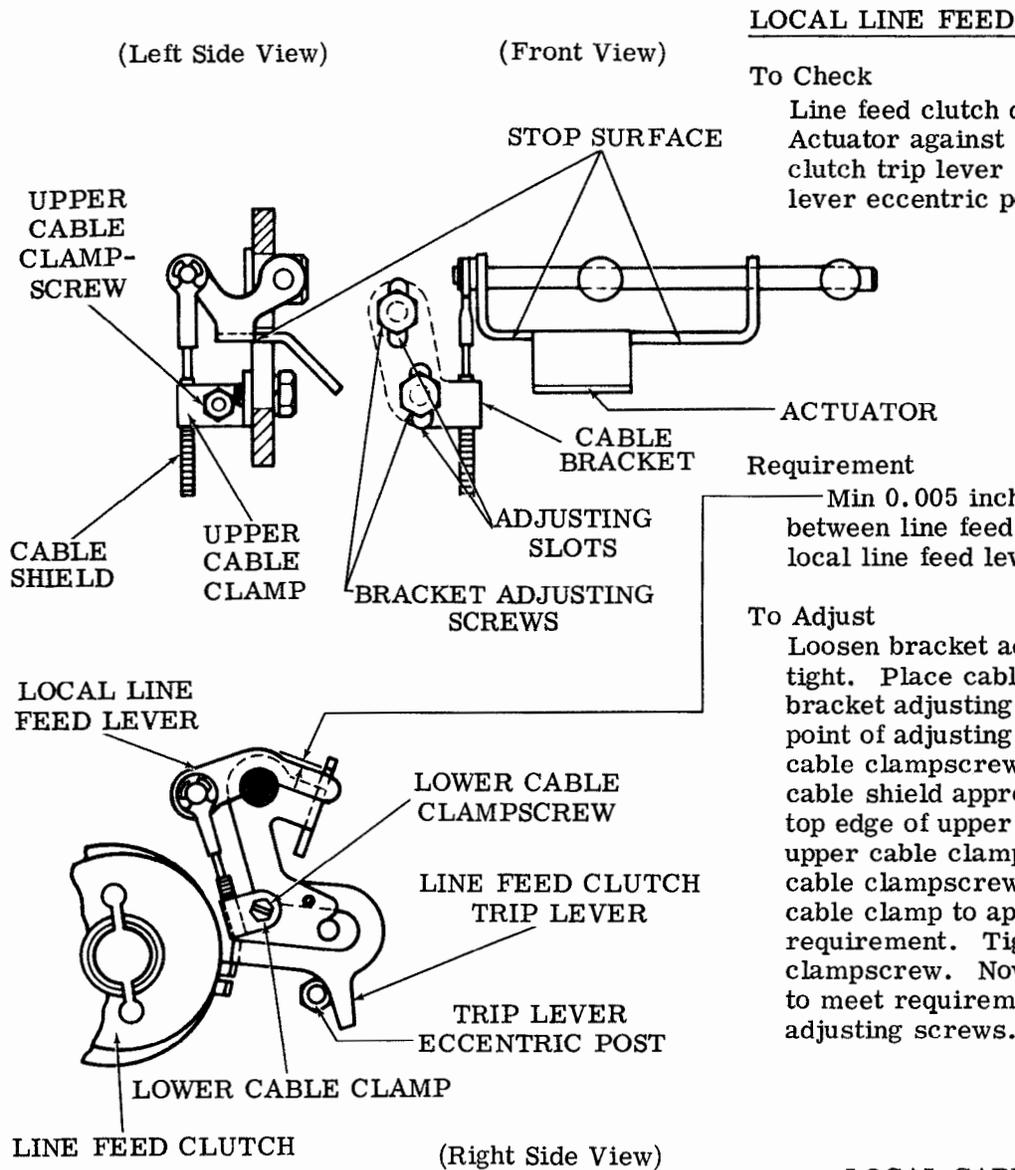
To Adjust

Loosen locknut. Rotate adjusting screw. Tighten locknut.

Affected Adjustment

LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST (2.25)

2.27 Line Feed and Carriage Return Mechanisms



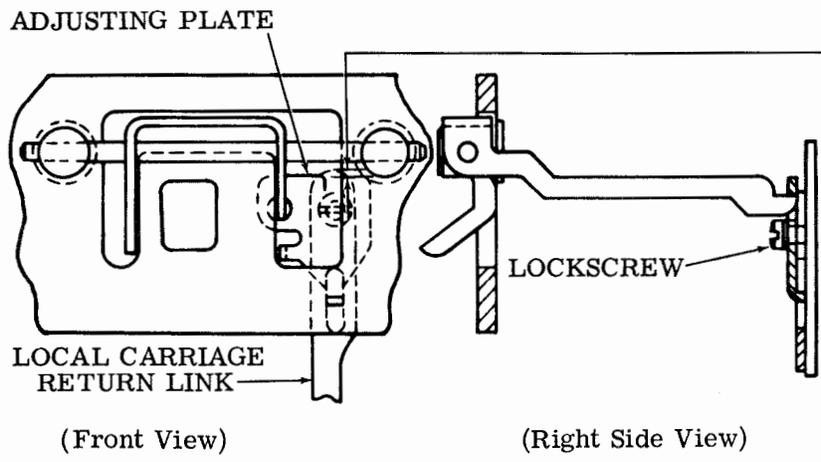
LOCAL LINE FEED

To Check
 Line feed clutch disengaged (latched). Actuator against its stop. Line feed clutch trip lever resting against trip lever eccentric post.

Requirement
 Min 0.005 inch---Max 0.020 inch between line feed clutch trip lever and local line feed lever.

To Adjust
 Loosen bracket adjusting screws friction tight. Place cable bracket so that bracket adjusting screws are at mid-point of adjusting slots. Loosen upper cable clampscrew and position end of cable shield approximately even with top edge of upper cable clamp. Tighten upper cable clampscrew. Loosen lower cable clampscrew and position lower cable clamp to approximately meet requirement. Tighten upper cable clampscrew. Now move cable bracket to meet requirement and tighten bracket adjusting screws.

LOCAL CARRIAGE RETURN

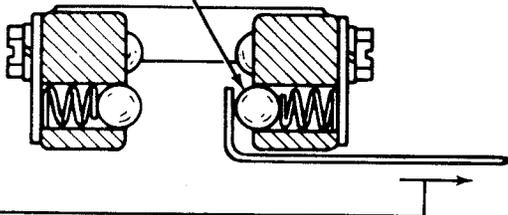


Requirement
 The outline of the top of the local carriage return link and the top of the adjusting plate should be approximately even.

To Adjust
 Loosen lock screw and position adjusting plate. Tighten lock screw.

2.28 Codebar Mechanism

DETENT BALL



(Top Cross Section)

CODEBAR DETENT SPRING

Note: Unless there is reason to believe that these springs are causing operating failures, do not check this requirement.

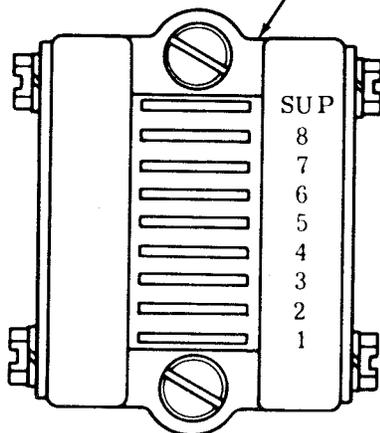
To Check

Codebar detent bracket carefully removed. Codebars removed from detent bracket. Scale applied to detent ball and pulled in direction of ball travel.

Requirement

Min 1-1/2 oz---Max 3-1/2 oz to start ball moving against compression of spring. Check each ball.

CODEBAR
DETENT
BRACKET



(Left Side View)

CODEBAR DETENT

To Check

All main shaft clutches disengaged (latched). All codebars spacing. All position clutches (vertical and horizontal) rotated 1/4 turn from stop position.

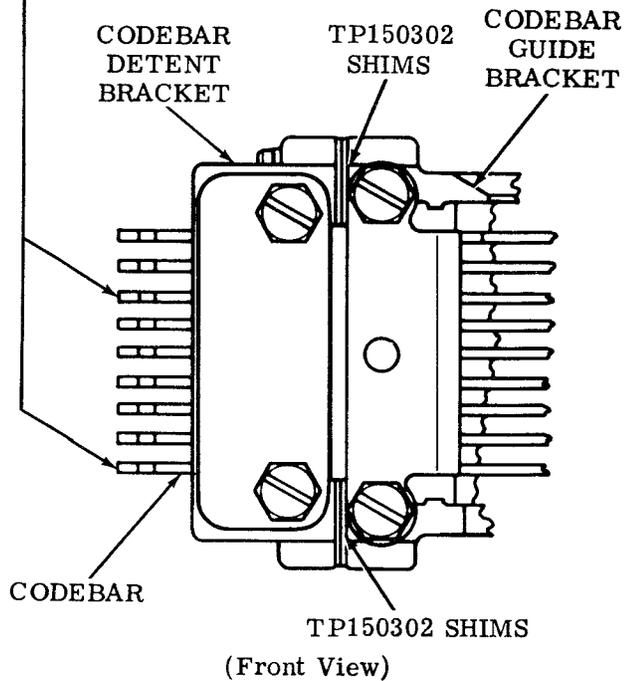
Requirement

Codebars 1 and 7 (S) should detent equally as gauged by eye.

Note: Check codebars 1 and 7 for 8-level typing units; 1 and Shift (S) for 6-level machines.

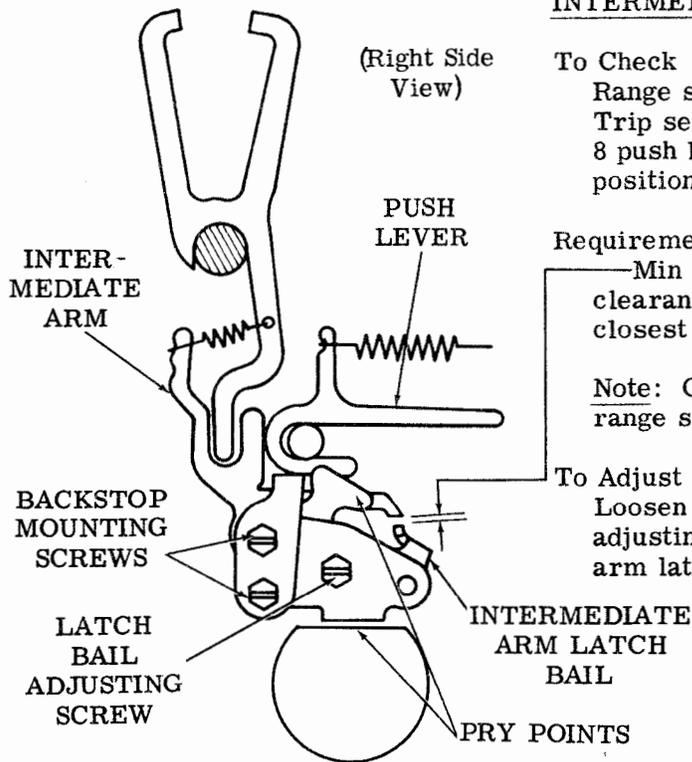
To Adjust

Equalize detenting of codebars by adding or removing TP150302 shims between codebar detent bracket and codebar guide bracket.



(Front View)

2.29 Codebar Mechanism (continued)



INTERMEDIATE ARM LATCH BAIL

To Check

Range scale set to 0. All clutches disengaged (latched). Trip selector clutch and rotate main shaft until number 8 push lever is fully selected (maximum forward position).

Requirement

Min 0.008 inch---Max 0.015 inch clearance between intermediate arm latching surface closest to the outside frame and the latch bail.

Note: Gap can be viewed through hole in selector range scale plate.

To Adjust

Loosen two backstop mounting screws and latch bail adjusting screw friction tight. Position intermediate arm latch bail by means of pry points. Tighten screws.

Affected Adjustment

INTERMEDIATE ARM BACKSTOP BRACKET (2.31)

CODEBAR POSITIONING CAM FOLLOWER SPRING

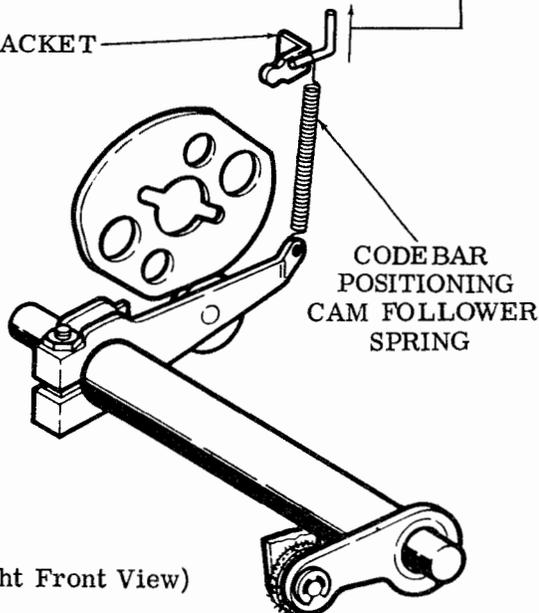
To Check

All clutches disengaged (latched). Unhook spring from bracket.

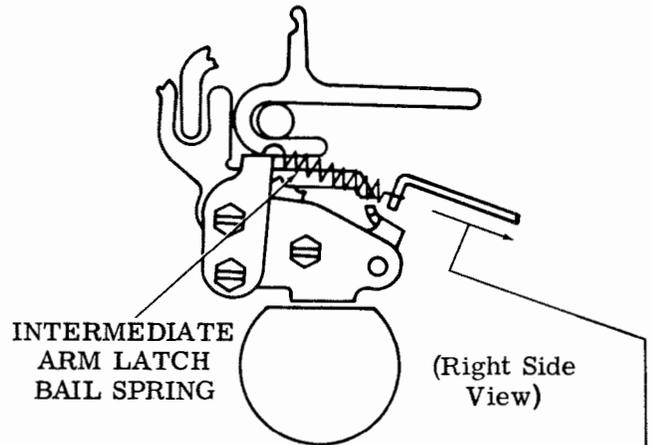
Requirement

Min 9 oz---Max 13 oz to pull spring to installed length.

BRACKET



(Right Front View)



INTERMEDIATE ARM LATCH BAIL SPRING

Note: Since removal of selector is necessary to check spring tension, do not check unless there is reason to believe it is causing malfunction.

To Check

All clutches disengaged (latched). All selector push levers marking.

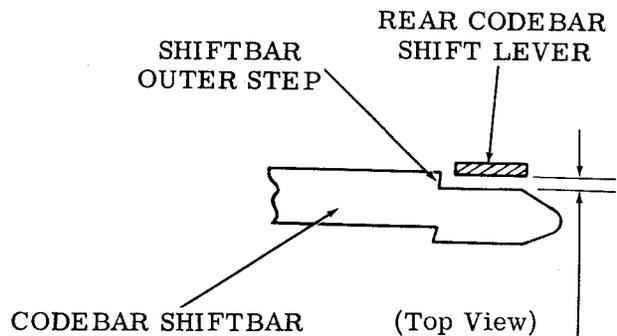
(1) Requirement

Min 3/4 oz---Max 1-3/4 oz to start bail moving.

(2) Requirement

With the small bail held away from large bail
Min 1 oz---Max 2 oz to start large bail moving.

2.30 Codebar Mechanism (continued)



TRANSFER LEVER ECCENTRIC

To Check

Push levers selected and then stripped so the intermediate arms rest on the latch bail. Selector clutch disengaged (latched). Codebar shift lever link in uppermost position. Play in codebar shiftbar taken up for maximum clearance.

Requirement

Min 0.010 inch---Max 0.025 inch clearance between rear codebar shift lever and codebar shiftbar farthest from rear codebar shift lever.

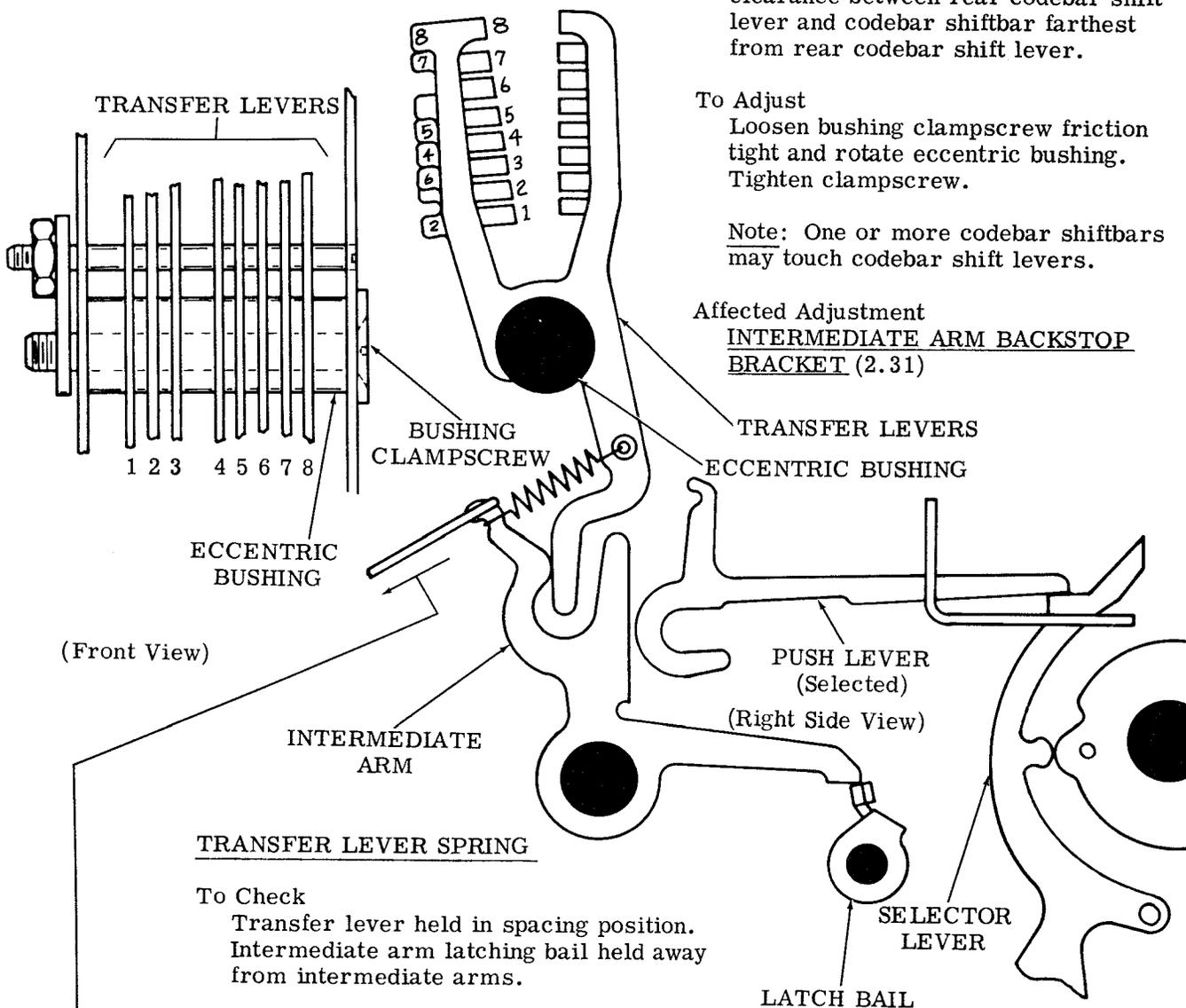
To Adjust

Loosen bushing clampscrew friction tight and rotate eccentric bushing. Tighten clampscrew.

Note: One or more codebar shiftbars may touch codebar shift levers.

Affected Adjustment

INTERMEDIATE ARM BACKSTOP BRACKET (2.31)



TRANSFER LEVER SPRING

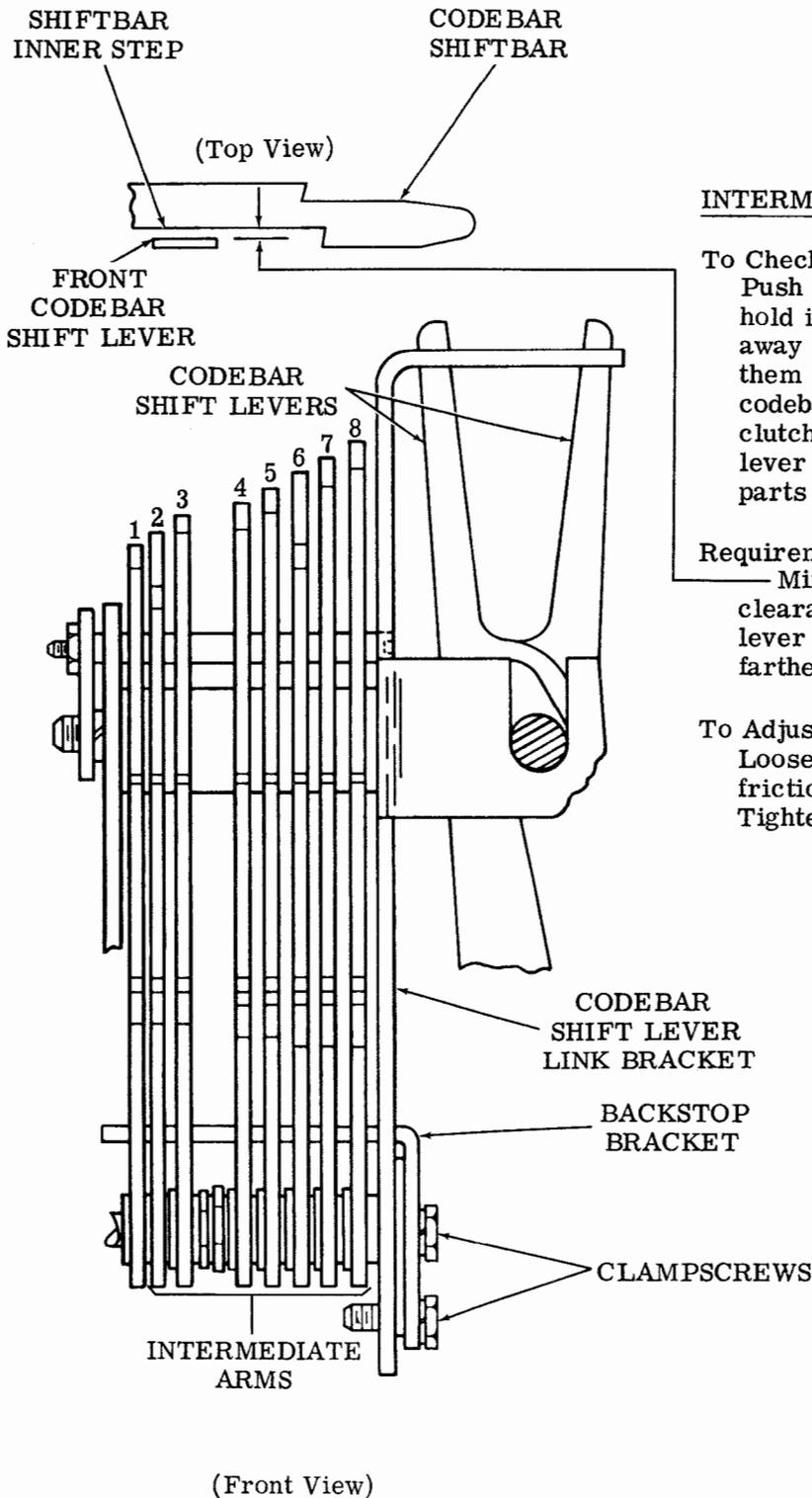
To Check

Transfer lever held in spacing position. Intermediate arm latching bail held away from intermediate arms.

Requirement

Min 2-1/2 oz---Max 3-1/2 oz to start intermediate arm moving.

2.31 Codebar Mechanism (continued)



INTERMEDIATE ARM BACKSTOP BRACKET

To Check

Push levers not selected. Momentarily hold intermediate arm latch bail (2.29) away from intermediate arms to allow them to go to unselected positions. All codebar shiftbars to right. Selector clutch disengaged (latched). Codebar shift lever link in lowermost position. Play in parts taken up for maximum clearance.

Requirement

Min 0.010 inch---Max 0.025 inch clearance between front codebar shift lever and inner step of codebar shiftbar farthest from front codebar shift lever.

To Adjust

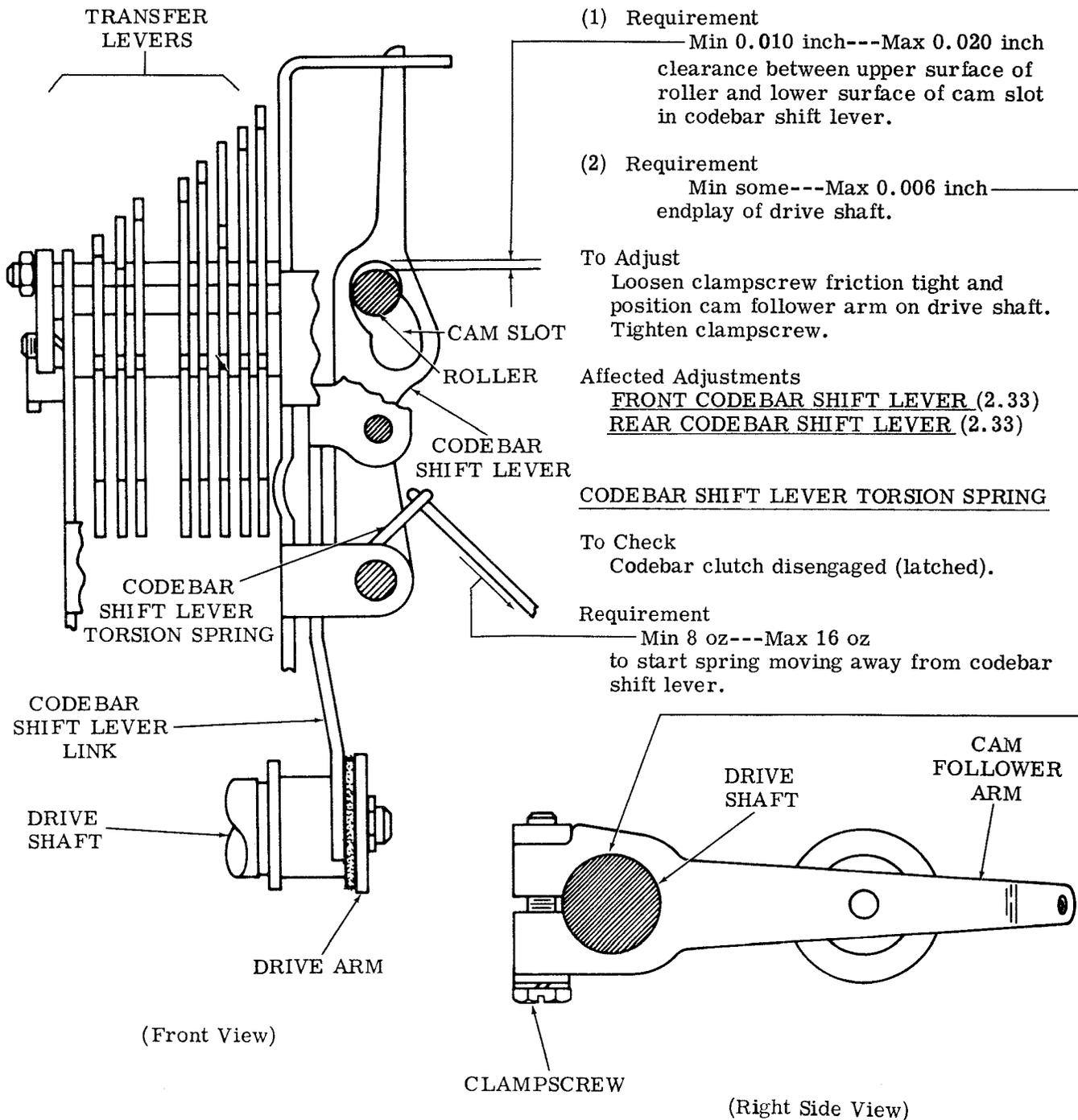
Loosen backstop bracket clampscrews friction tight. Position backstop bracket. Tighten clampscrews.

2.32 Codebar Mechanism (continued)

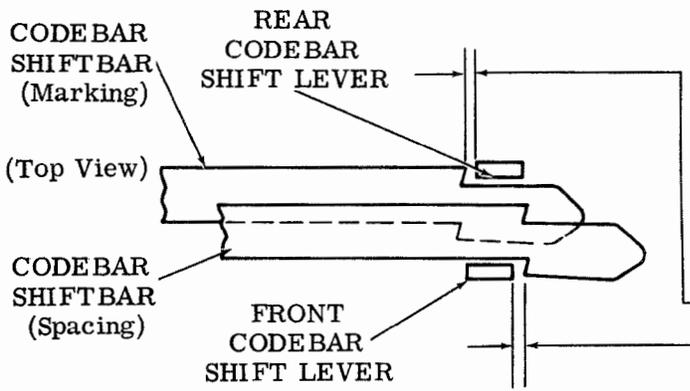
CODEBAR SHIFT LEVER AND CAM FOLLOWER ARM

To Check

Codebar shift lever link in uppermost position. Play in codebar shift lever and codebar shift lever link taken up toward top of typing unit. Check cam slot which gives least clearance.



2.33 Codebar Mechanism (continued)

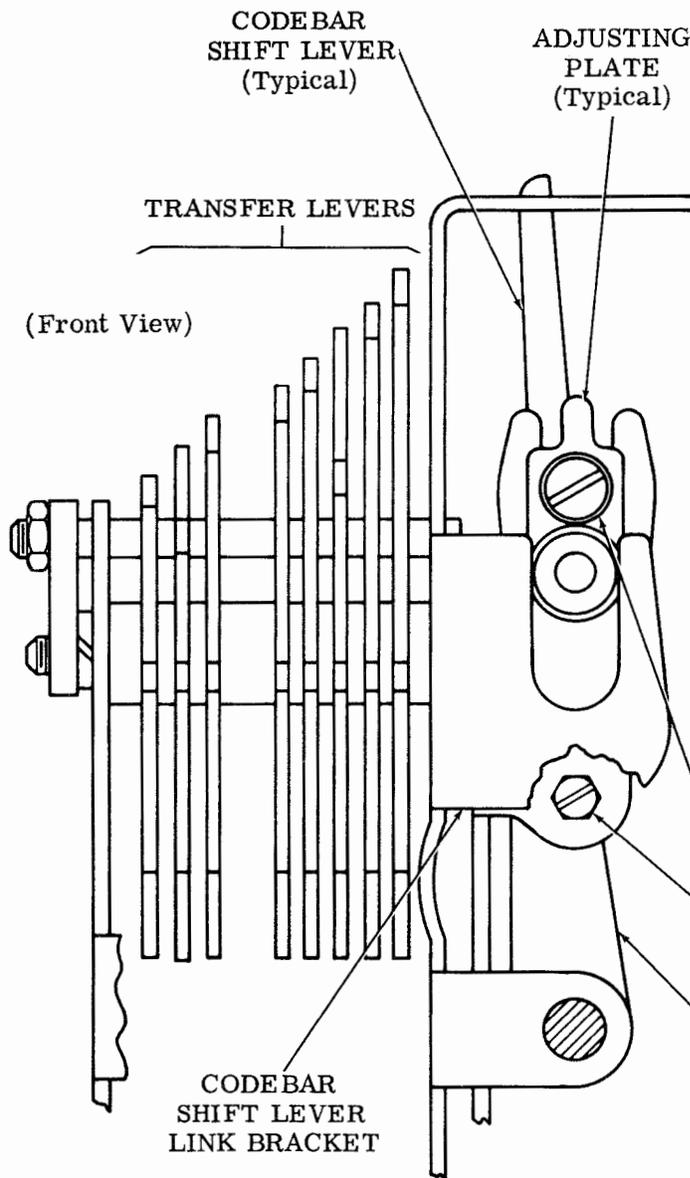


REAR CODEBAR SHIFT LEVER

To Check
 Selector push levers marking. Codebar shift lever link in uppermost position. Play in parts taken up to make maximum clearance.

Requirement
 Min some---Max 0.012 inch clearance between rear codebar shift lever and shoulder of nearest codebar shiftbar (marking).

To Adjust
 Loosen adjusting plate clampscrews friction tight. Position adjusting plate. Tighten clampscrews.



FRONT CODEBAR SHIFT LEVER

To Check
 Selector push levers spacing. Codebar shift lever link in uppermost position. Play in parts taken up to make maximum clearance.

Requirement
 Min some---Max 0.012 inch clearance between front codebar shift lever and shoulder of nearest codebar shiftbar (spacing).

To Adjust
 Loosen adjusting plate clampscrews friction tight. Position adjusting plate. Tighten clampscrews.

2.34 Vertical Positioning Mechanism (continued)

RACK AND PINION PHASING

To Check

Codebars 5, 6, and 7 (1, 5, and 6) marking.
All clutches disengaged (latched).

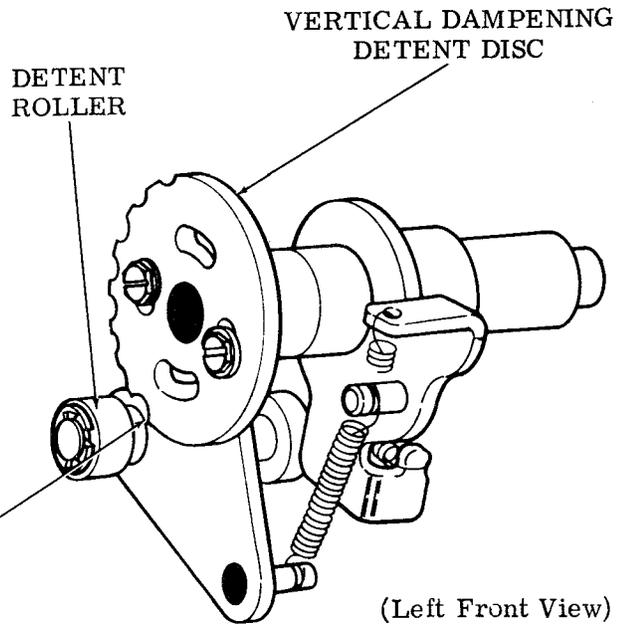
Note: Use codebars 5, 6, and 7 for 8-level typing units; 1, 5, and 6 for 6-level machines.

(1) Requirement

Detent roller should be centered above eighth notch of vertical dampening detent disc (last notch of disc in clockwise direction when viewed from the right).

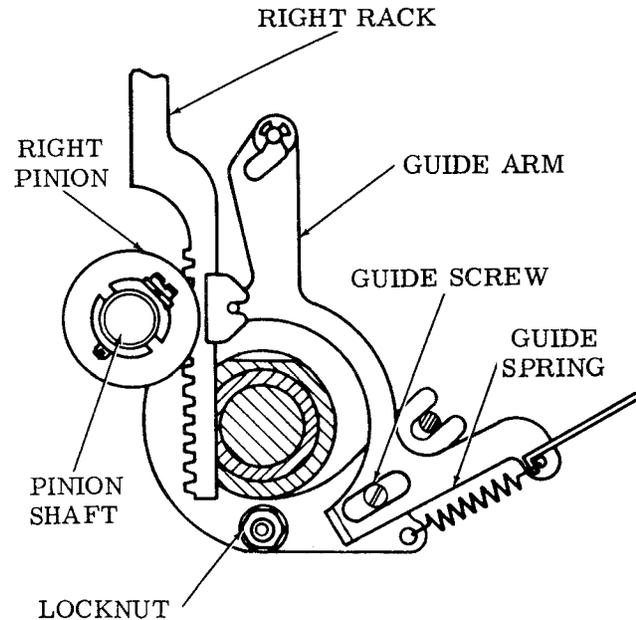
(2) Requirement

Left and right pinion should engage corresponding tooth in respective racks.



To Adjust

Loosen locknut on left stop plate. Remove guide screw from right stop plate. Remove both left and right guide springs. Disengage left rack from left pinion (push toward rear). Disengage right rack from right pinion (push guide arm upward and toward front). Rotate pinion shaft until vertical dampening detent disc is in required position. See requirement (1). Re-engage left rack and reinstall guide spring. Re-engage right rack in corresponding tooth. Reinstall guide spring and guide screw. Tighten guide screw and locknut.



(Right Side View)

2.35 Vertical Positioning Mechanism (continued)

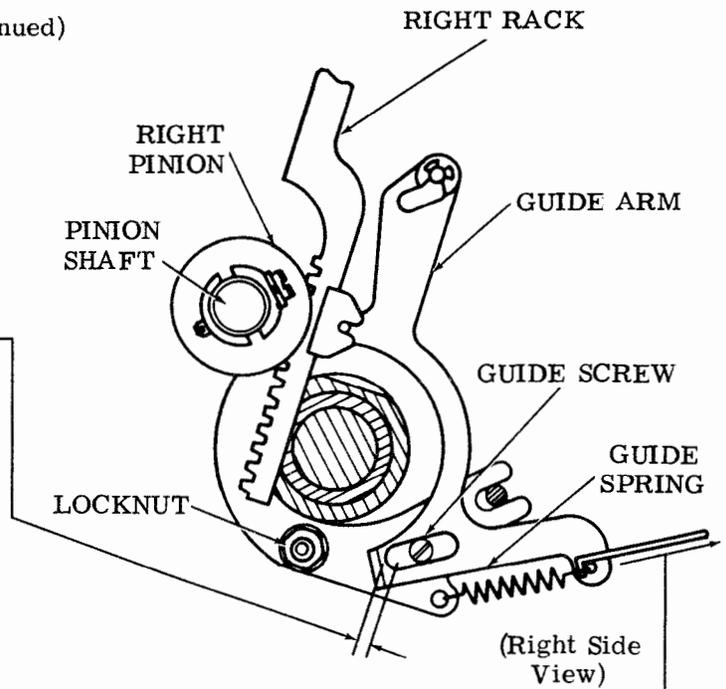
RIGHT RACK GUIDE

Requirement

Min some---Max 0.012 inch
clearance between guide screw and guide
arm.

To Adjust

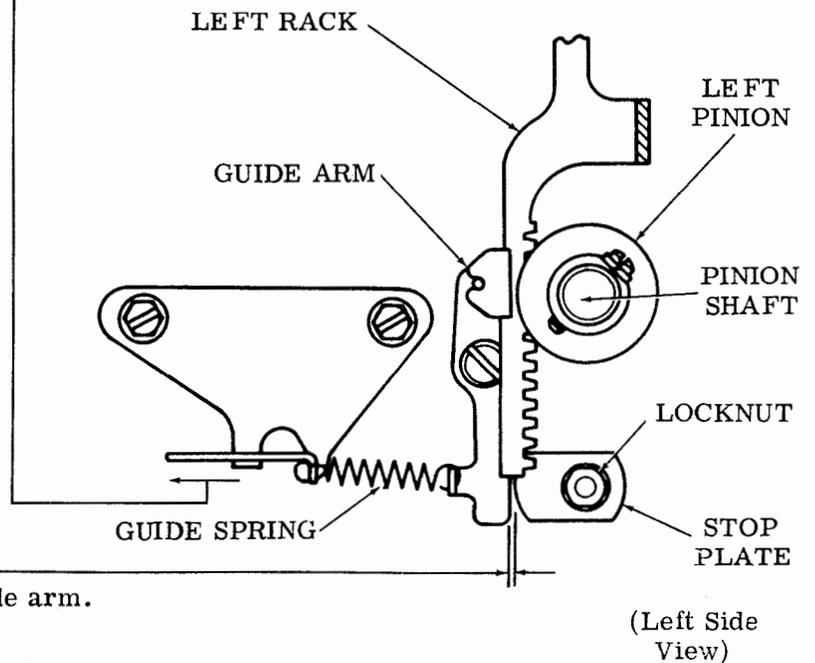
Loosen locknut. Pry stop plate until re-
quirement is met. Tighten locknut.



RACK GUIDE SPRING

Requirement

Min 22 oz---Max 40 oz
Min 26 oz---Max 46 oz
to pull spring to installed length.



LEFT RACK GUIDE

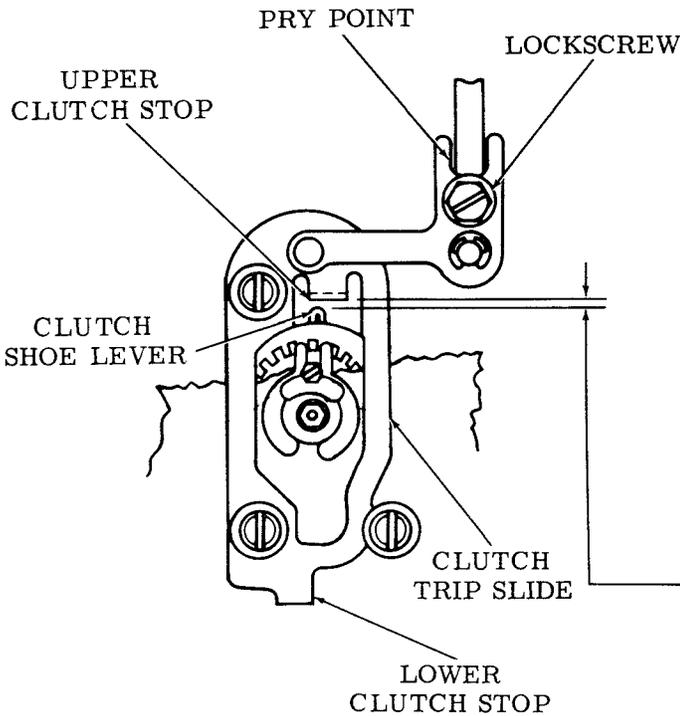
Requirement

Min some---Max 0.012 inch
clearance between stop plate and guide arm.

To Adjust

Loosen locknut. Pry stop plate until re-
quirement is met. Tighten locknut.

2.36 Vertical Positioning Mechanism (continued)



(Left Side View)

CLUTCH BITE

Note 1: The following procedure applies to the three vertical positioning clutches.

To Check

All clutches disengaged (latched). Engage (trip) one vertical positioning clutch and view clearance between clutch shoe lever and clutch stop. Rotate main shaft and disengage (latch) same clutch on opposite side. Engage (trip) same clutch again and view clearance between clutch shoe lever and clutch stop. Repeat this procedure while checking the remaining vertical positioning clutches.

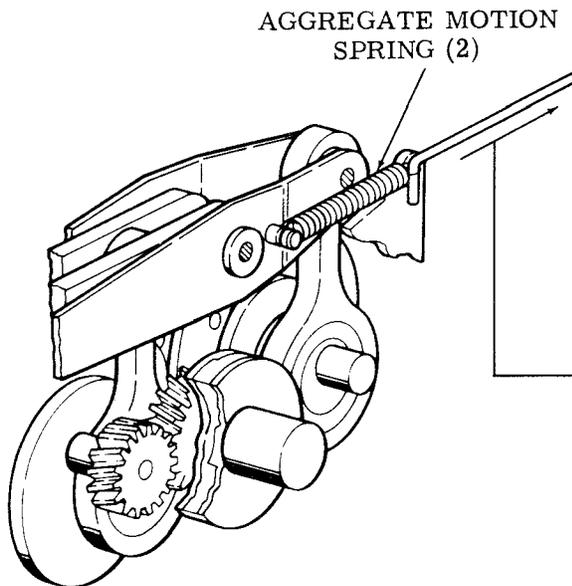
Note 2: When checking, take up play in the parts to make clearance a minimum.

Requirement

Clearances of upper clutch stop and lower clutch stop should be equal as gauged by eye.

To Adjust

Loosen lock screw friction tight. Move clutch trip slide up or down using pry point. Tighten lock screw.



(Right Front View)

AGGREGATE MOTION SPRING (VERTICAL POSITIONING)

To Check

Unhook aggregate motion springs one at a time and check (2 springs total).

Requirement

Min 18 oz---Max 22 oz to extend spring to installed length.

2.37 Retraction Mechanism

RATCHET RETURN SPRING

To Check

Ratchet wheel at maximum feed position (on last tooth). Ratchet return spring unhooked.

Requirement

Min 2 oz---Max 5 oz to extend spring to installed length.

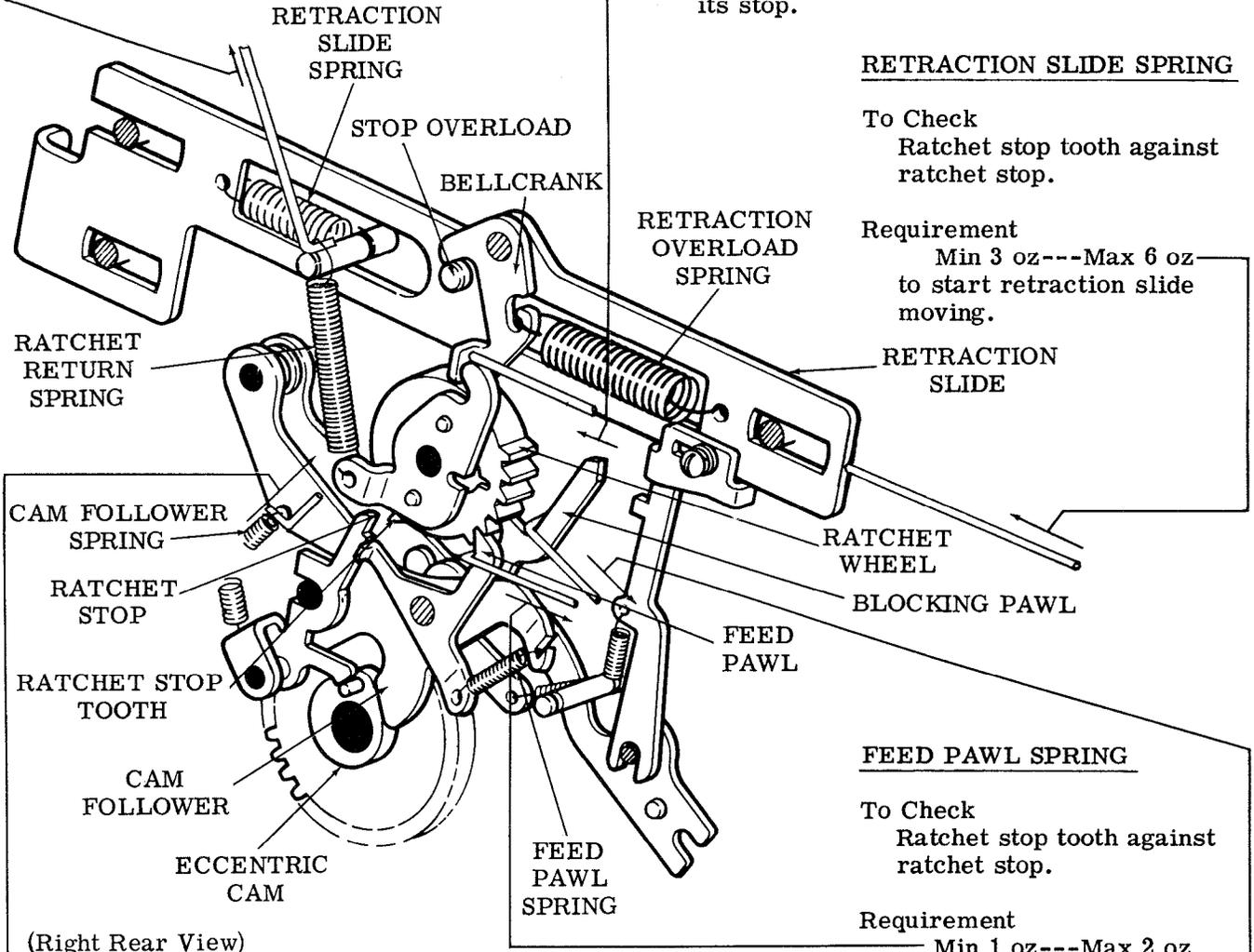
RETRACTION OVERLOAD SPRING

To Check

Ratchet stop tooth against ratchet stop. Retraction slide held manually toward rear of typing unit.

Requirement

Min 5-1/2 lb---Max 7-1/2 lb to start overload bellcrank moving from its stop.



RETRACTION SLIDE SPRING

To Check

Ratchet stop tooth against ratchet stop.

Requirement

Min 3 oz---Max 6 oz to start retraction slide moving.

FEED PAWL SPRING

To Check

Ratchet stop tooth against ratchet stop.

Requirement

Min 1 oz---Max 2 oz to start feed pawl moving from ratchet wheel.

CAM FOLLOWER SPRING

To Check

Eccentric cam in maximum feed position. Cam follower spring unhooked.

Requirement

Min 14 oz---Max 20 oz to extend spring to installed length.

BLOCKING PAWL SPRING

To Check

Ratchet stop tooth against ratchet stop.

Requirement

Min 1 oz---Max 2 oz to start blocking pawl moving from ratchet wheel.

2.38 Retraction Mechanism (continued)

RETRACTION RESET SLIDE

To Check

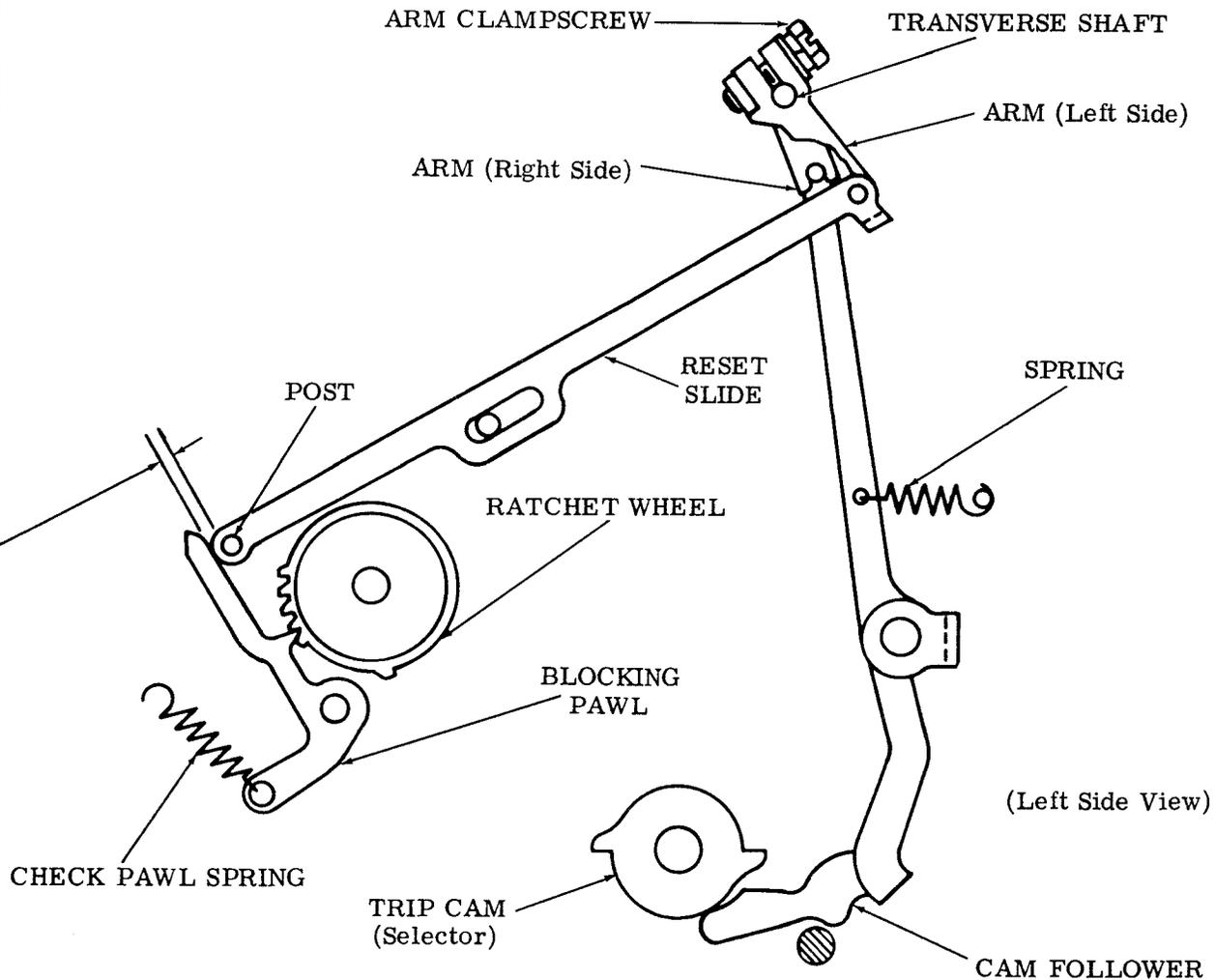
Selector clutch disengaged (latched). Blocking pawl fully engaging ratchet wheel. Take up play in reset slide linkage to make a maximum clearance. Be sure that cam follower is resting on selector trip cam.

Requirement

Min some---Max 0.020 inch
clearance between reset slide post and blocking pawl.

To Adjust

Disengage (latch) selector clutch and rotate main shaft at least two complete revolutions. Loosen arm clampscrew and position arm (left side).



2.39 Retraction Mechanism (continued)

RETRACTION SLIDE**To Check**

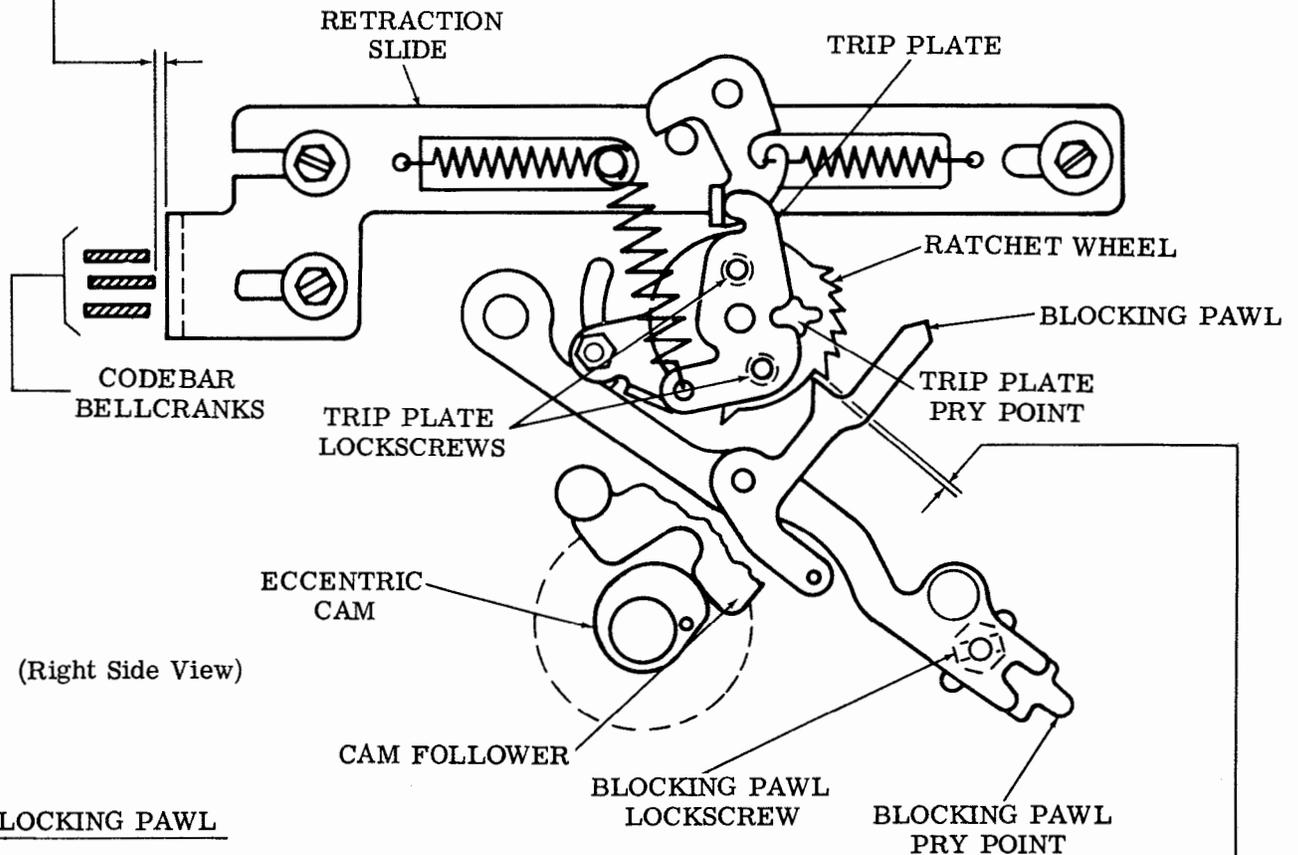
All codebars in spacing position. Feed pawl engaged with last tooth of ratchet wheel. Eccentric cam in maximum feed position. All clutches disengaged (latched). Play in bellcranks taken up toward front.

Requirement

Min some---Max 0.015 inch
clearance between retraction slide and closest codebar bellcrank.

To Adjust

Loosen trip plate lock screws. Rotate trip plate by means of its pry point. Tighten lock screws.

BLOCKING PAWL**To Check**

All clutches disengaged (latched). Feed pawl engaged with the last tooth of ratchet wheel. Eccentric cam in maximum feed position.

Requirement

Min 0.005 inch---Max 0.010 inch
clearance between blocking pawl and ratchet wheel tooth.

To Adjust

Loosen blocking pawl lock screw friction tight. Position blocking pawl using its pry point. Tighten lock screw.

2.40 Retraction Mechanism (continued)

RATCHET STOP

To Check

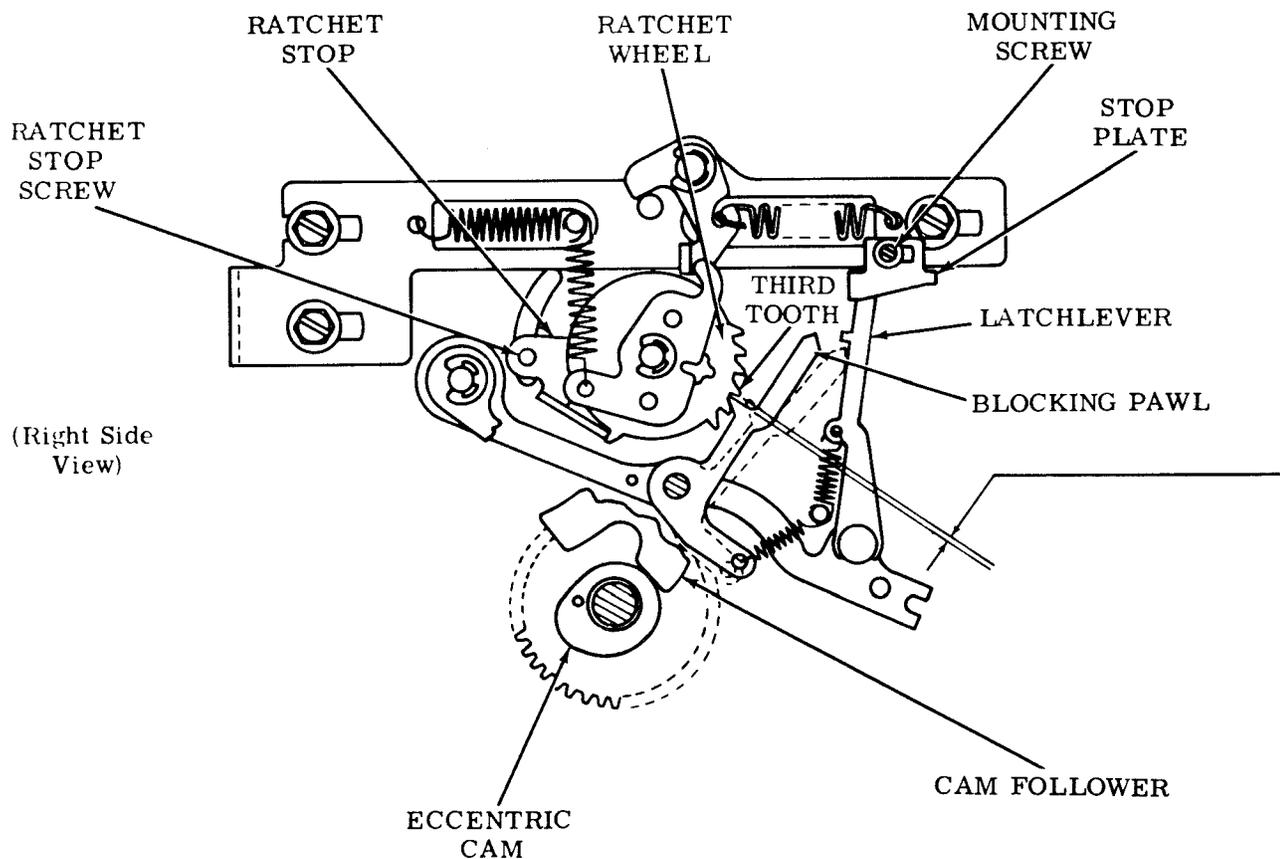
All clutches disengaged (latched). Eccentric cam in minimum feed position. Feed pawl disengaged from ratchet wheel teeth.

Requirement

Min 0.005 inch---Max 0.015 inch
clearance between blocking pawl and flank of third tooth on ratchet wheel.

To Adjust

Loosen ratchet stop screw friction tight. Position ratchet stop. Tighten ratchet stop screw.



2.41 Retraction Mechanism (continued)

STOP PLATE

To Check

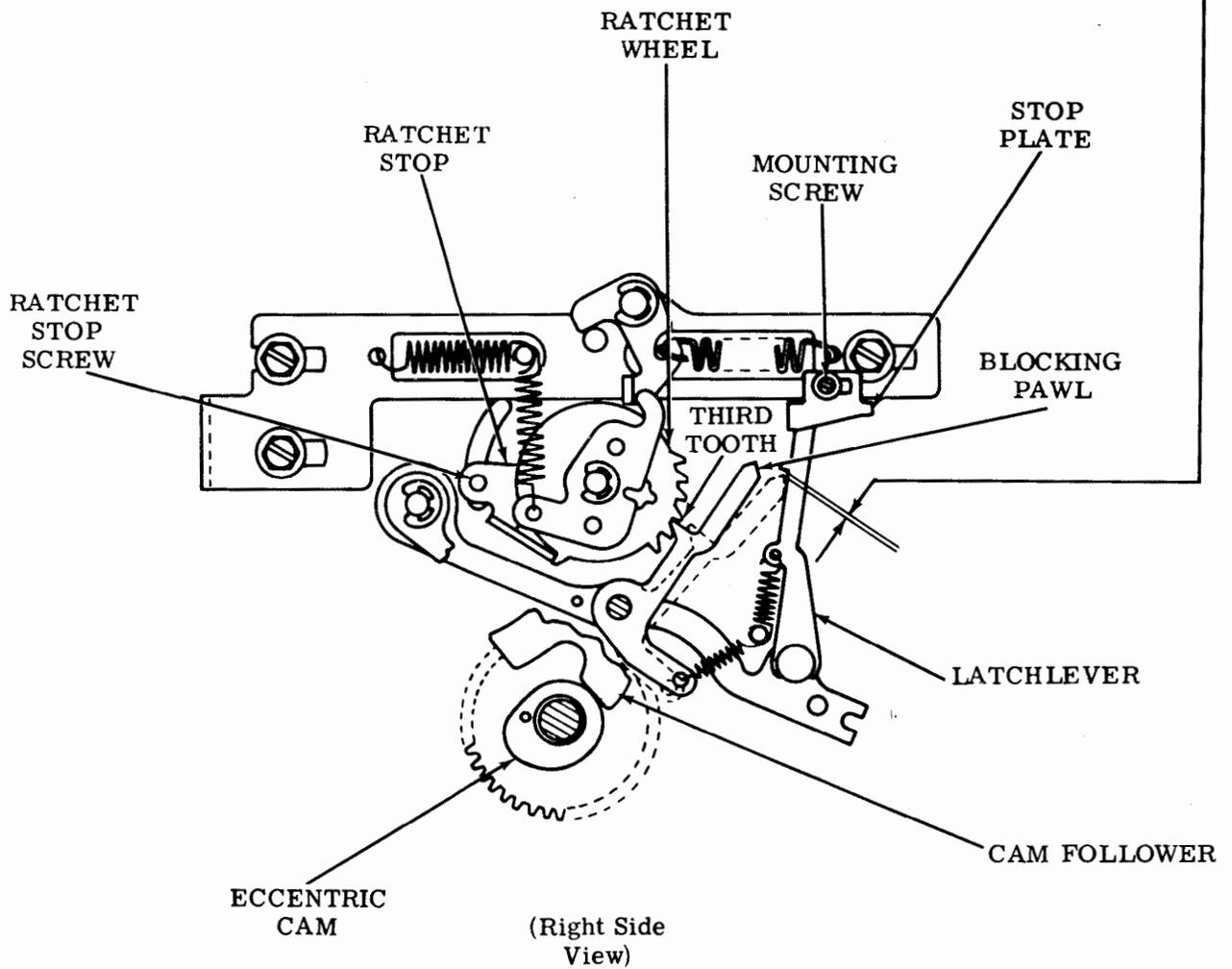
All clutches disengaged (latched). Feed pawl disengaged from ratchet wheel teeth.
Manually bring blocking pawl into position.

Requirement

Min some---Max 0.010 inch _____
clearance between corners of latchlever and blocking pawl.

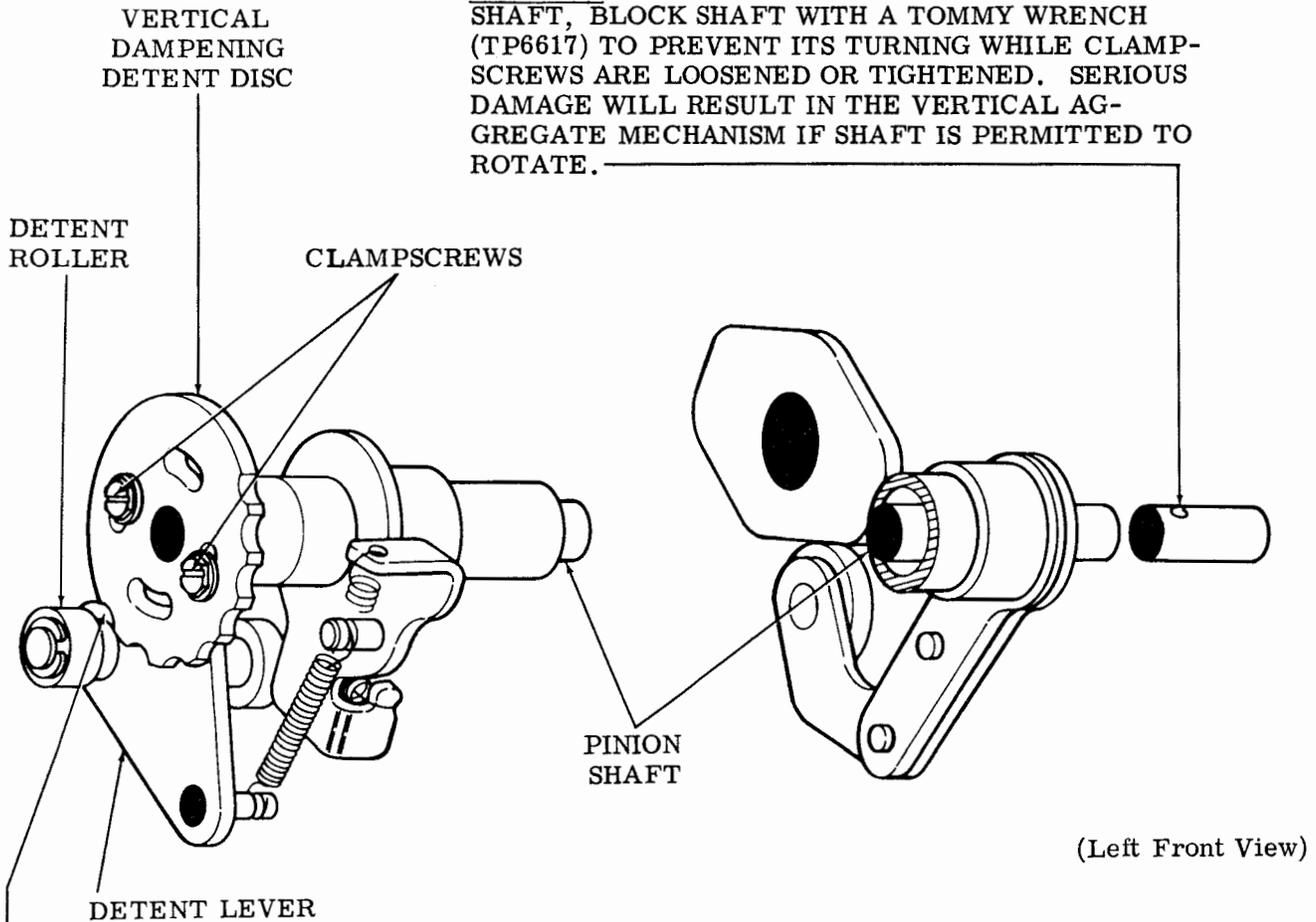
To Adjust

Loosen stop plate mounting screw friction tight. Position stop plate.
Tighten stop plate mounting screw.



2.42 Vertical Positioning Mechanism (continued)

CAUTION: USING HOLE NEAR RIGHT END OF PINION SHAFT, BLOCK SHAFT WITH A TOMMY WRENCH (TP6617) TO PREVENT ITS TURNING WHILE CLAMPSCREWS ARE LOOSENED OR TIGHTENED. SERIOUS DAMAGE WILL RESULT IN THE VERTICAL AGGREGATE MECHANISM IF SHAFT IS PERMITTED TO ROTATE.



VERTICAL AGGREGATE - DAMPENING SYNCHRONIZATION

To Check
 All codebars spacing. All clutches disengaged (latched). Engage (trip) print hammer clutch. Slowly rotate main shaft.

Requirement
 Detent roller should drop squarely into first notch on vertical dampening detent disc (end notch above a web of vertical dampening detent disc).

To Adjust
 Loosen clampscrews on vertical dampening detent disc. Rotate disc until detent roller is squarely seated in first notch. Without disturbing unit, tighten one clampscrew. Turn typing unit to a convenient position and tighten other clampscrew.

Note: If this adjustment cannot be met, due to lack of motion in adjusting slots, reset vertical dampening detent disc to center of adjustment and check the RACK AND PINION PHASING (2.34).

2.43 Vertical and Horizontal Positioning Mechanism (continued)

VERTICAL DAMPENING
DETENT DISC

VERTICAL
DETENT
SPRING

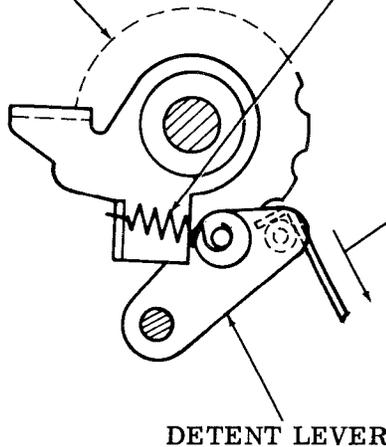
VERTICAL DETENT SPRING

To Check

Print hammer clutch disengaged (latched).
Dampener cam follower on low part of
dampener cam.

Requirement

Min 24 oz---Max 32 oz
to start detent lever moving.



(Right Side View)

HORIZONTAL DAMPENING
DETENT DISC

DETENT LEVER

HORIZONTAL DETENT SPRING

To Check

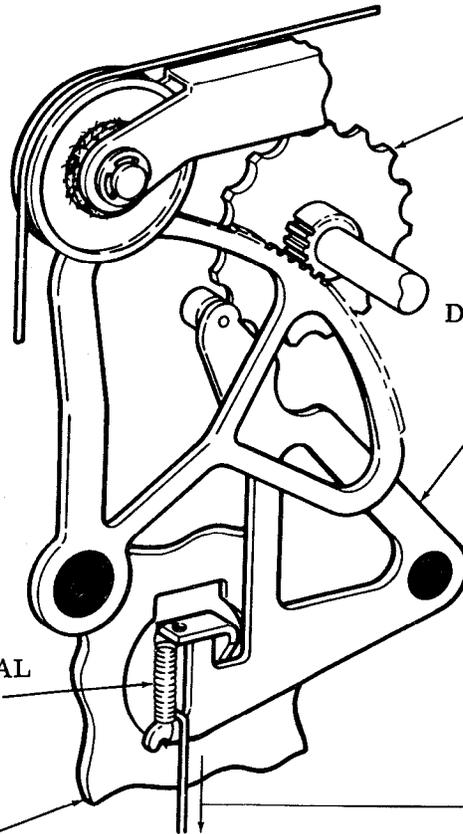
Print hammer clutch disengaged (latched).
Dampener cam follower on low part of
dampener cam.

Requirement

Min 48 oz---Max 64 oz
to start detent lever moving.

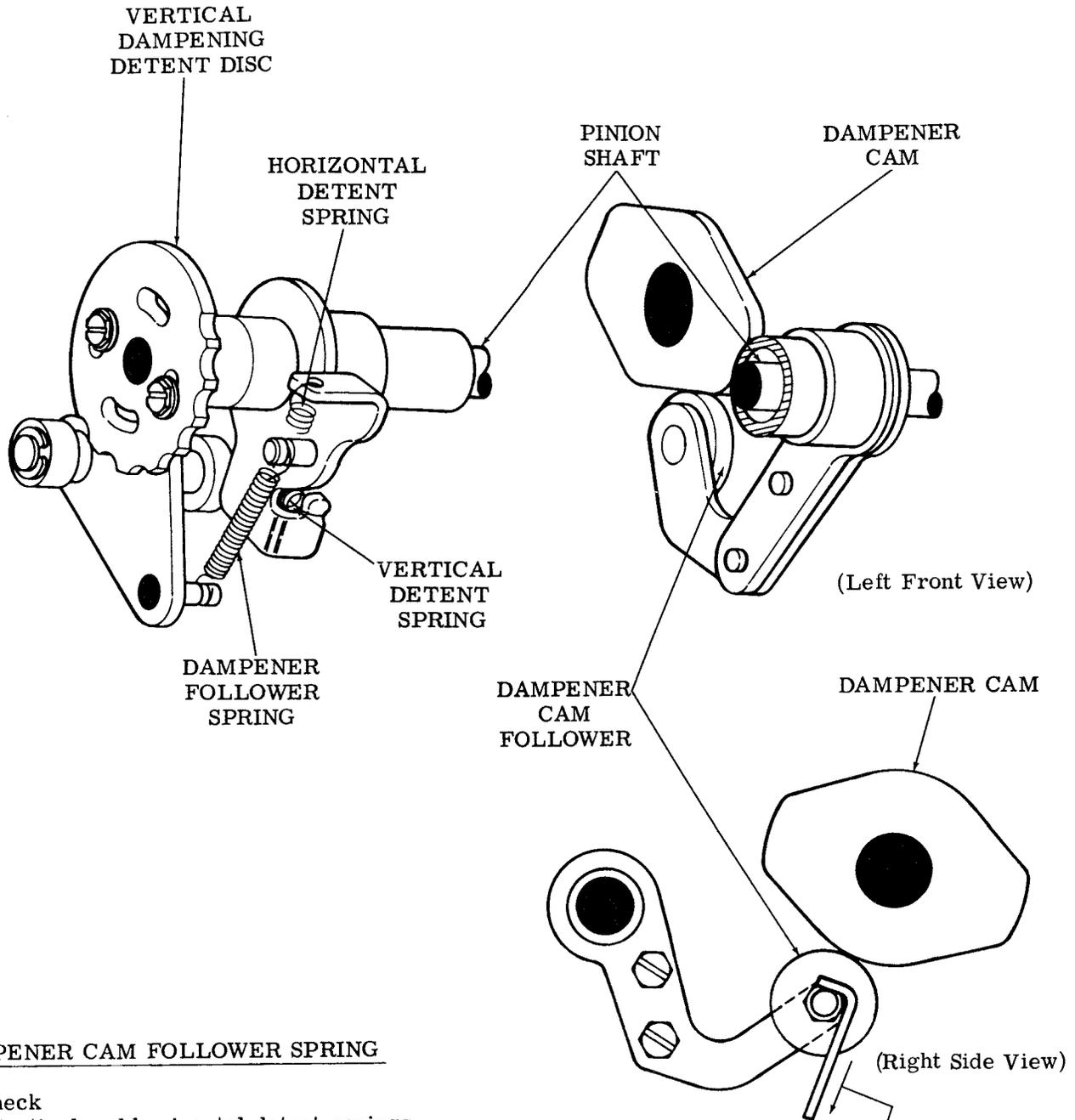
HORIZONTAL
DETENT
SPRING

FRONT
PLATE



(Left Front View)

2.44 Vertical and Horizontal Positioning Mechanisms (continued)



DAMPENER CAM FOLLOWER SPRING

To Check

Vertical and horizontal detent springs installed. Print hammer clutch disengaged (latched). Dampener cam follower on low part of dampener cam.

Requirement

Min 5 oz---Max 8 oz
to start dampener cam follower moving.

2.45 Horizontal Positioning Mechanism (continued)

SLED SLIDE CLEARANCE**To Check**

Inner and outer slides assembled to oscillating rail with spacer and at least one TP332266 shim between the two.

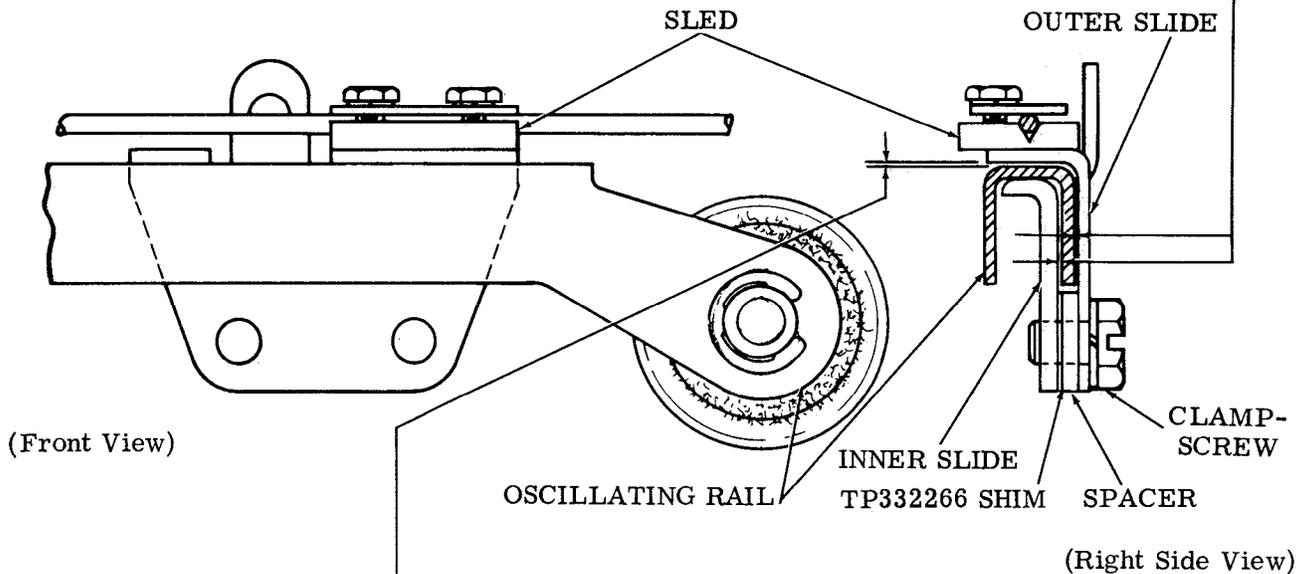
Requirement

Min some---Max 0.003 inch
clearance between oscillating rail and vertical slides.

To Adjust

Remove inner slide and add or remove TP332266 shims to make sled slide freely along the oscillating rail. Replace inner slide and position it and outer slide to obtain maximum top clearance between oscillating rail and outer slide. See SLED TOP CLEARANCE.

Note: Use a minimum number of TP332266 shims.

Affected AdjustmentSLED TOP CLEARANCESLED TOP CLEARANCE**Requirement**

Min some---Max 0.002 inch
clearance between top of oscillating rail
and upper sliding surface of outer slide.

To Adjust

Loosen clampscrews friction tight.
Position inner and outer slides.
Tighten clampscrews.

2.46 Vertical and Horizontal Positioning Mechanisms (continued)

TYPEBOX RAIL ALIGNMENT (PRELIMINARY)

Note 1: This adjustment need not be made unless the typebox rail clampscrews are loosened. If this adjustment is changed, check TYPEBOX RAIL ALIGNMENT (Final) (2.102)

To Check

Codebars 1 and 7 spacing. All other codebars marking. All clutches disengaged (latched). Remove shoulder screw and disconnect typebox link from sled. Reassemble shoulder screw to sled. Position sled and typebox carriage to far left side with shoulder screw directly below shoulder rivet on typebox carriage. Take up play between shoulder screw and mounting hole in sled in a downward direction. Check requirement (1). Position sled and typebox carriage to far right side with shoulder screw directly below shoulder rivet on typebox carriage. Take up play between shoulder screw and mounting hole in sled in a downward direction. Again check requirement (1).

Note 2: If necessary, remove indicator bracket of ribbon mechanism to facilitate shoulder screw removal.

(1) Requirement

Min some---Max 0.002 inch
clearance between head of shoulder screw and head of shoulder rivet at tooth far left and far right positions.

(2) Requirement

Min 0.002 inch
must be maintained between left-hand rack and upper rack guide in both upper and lower rack positions.

Note 3: Before checking, play should be taken up to make a maximum clearance and slowly released.

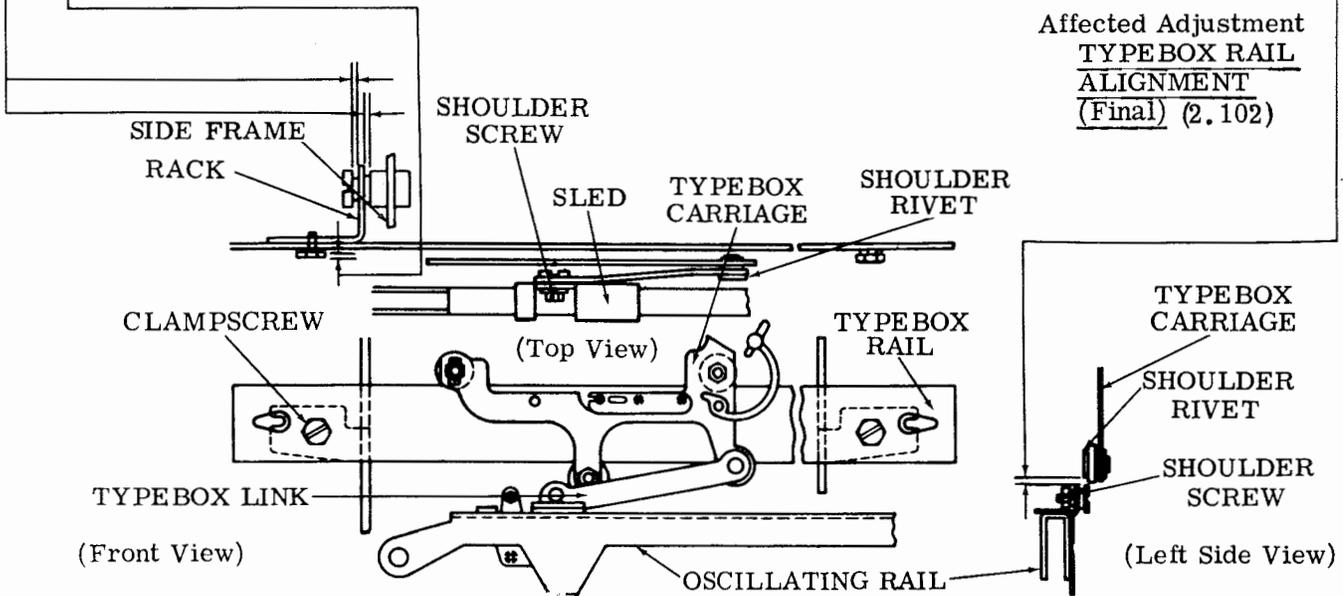
(3) Requirement

With typebox rail clampscrews tightened
Min 0.010 inch
clearance between clampscrew head and backside of typebox carriage at both sides.

To Adjust

Loosen clampscrews friction tight. Raise or lower typebox rail to meet requirement (1). Move typebox rail with respect to rack to meet requirement (2). Tighten clampscrews to meet requirement (3).

Affected Adjustment
TYPEBOX RAIL ALIGNMENT
(Final) (2.102)



2.47 Horizontal Positioning Mechanism (continued)

OSCILLATING ARM - DETENT DISC PHASING

To Check

Codebar 1 spacing. All other codebars marking. All clutches disengaged (latched). Spring drum rotated to permit viewing of detent roller and horizontal dampening detent disc through hole provided in front bearing plate.

(1) Requirement

Oscillating arm gear tooth marked with O (third tooth) should be meshed with pinion gear on horizontal dampening detent disc.

(2) Requirement

No. 1 notch on horizontal dampening detent disc (notch below small hole) should be centered above detent roller.

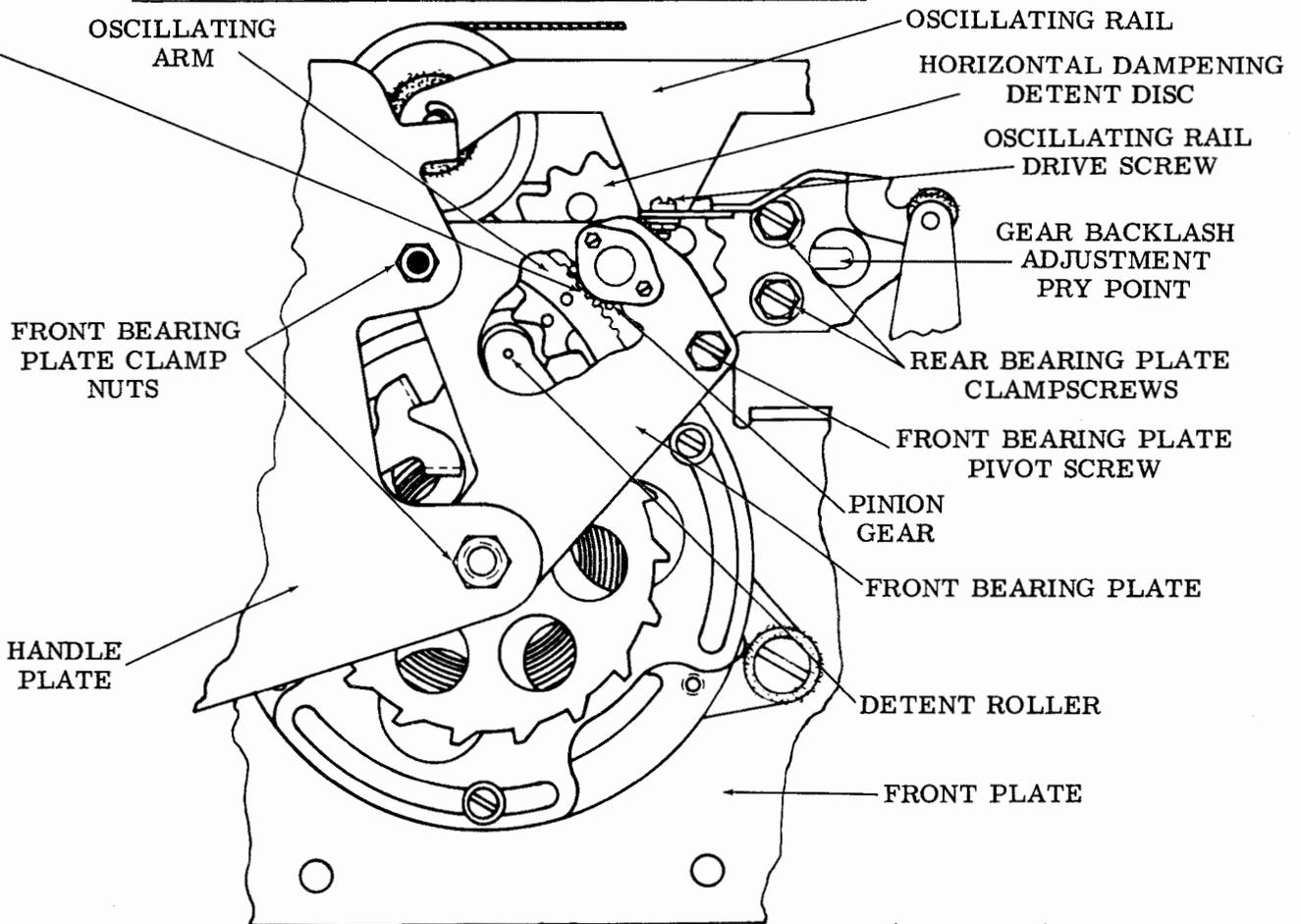
To Adjust

Loosen two rear bearing plate clampscrews and two front bearing plate clamp nuts. Separate oscillating arm from pinion gear using gear backlash adjustment pry point. Rephase oscillating arm and pinion gear. Tighten clampscrews and clamp nuts.

Affected Adjustments

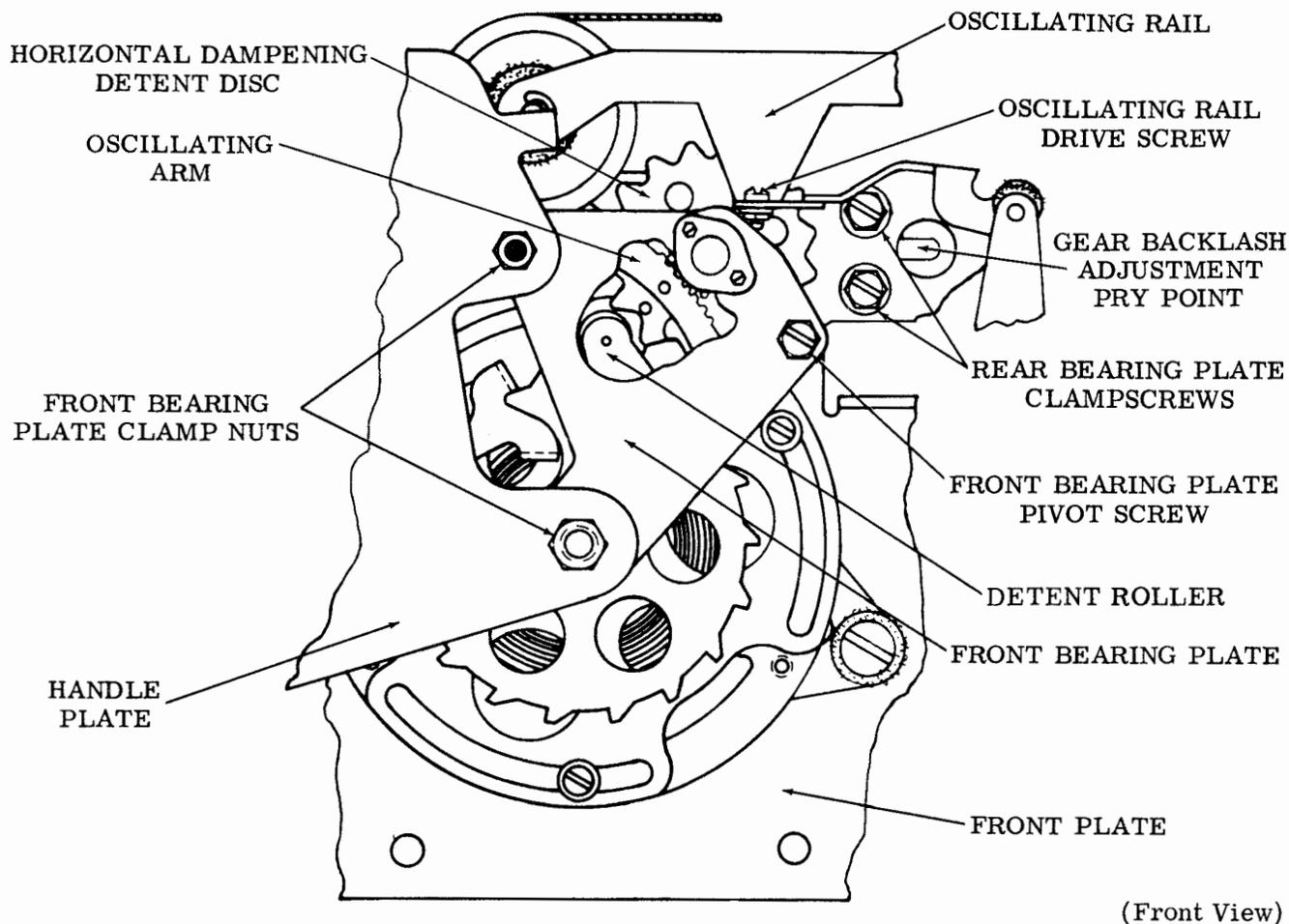
FRONT BEARING PLATE ALIGNMENT (2.48)

OSCILLATING ARM - DETENT DISC GEAR BACKLASH (2.49)



(Front View)

2.48 Horizontal Positioning Mechanism (continued)



(Front View)

FRONT BEARING PLATE ALIGNMENT**To Check**

Codebar 1 spacing. All other codebars marking. All clutches disengaged (latched).
Oscillating rail drive screw removed.

Requirement

Oscillating rail should move smoothly through its full range of travel without binding.

To Adjust

Loosen rear bearing plate clampscrews. Loosen front bearing plate clamp nuts. Loosen front bearing plate pivot screw. Obtain some backlash in horizontal dampening detent disc - oscillating arm gear set using gear backlash adjustment pry point. Rotate front bearing plate downward about its pivot screw while manually moving oscillating rail back and forth until horizontal dampening detent disc binds slightly on front bearing plate. Rotate front bearing plate upward until horizontal dampening detent disc turns freely. Tighten front bearing plate pivot screw, front bearing plate clamp nuts, and rear bearing plate clampscrews. Do not replace oscillating rail drive screw until OSCILLATING ARM-DETENT DISC GEAR BACKLASH (2.49) adjustment is checked.

Affected Adjustment

OSCILLATING ARM - DETENT DISC GEAR BACKLASH (2.49)

2.49 Horizontal Positioning Mechanism (continued)

OSCILLATING ARM - DETENT DISC GEAR BACKLASH**To Check**

Codebar 1 spacing. All other codebars marking. All clutches disengaged (latched). Oscillating rail drive screw removed. Engage (trip) print hammer clutch. Rotate main shaft until detent roller fully seats into a notch of horizontal dampening detent disc.

Requirement

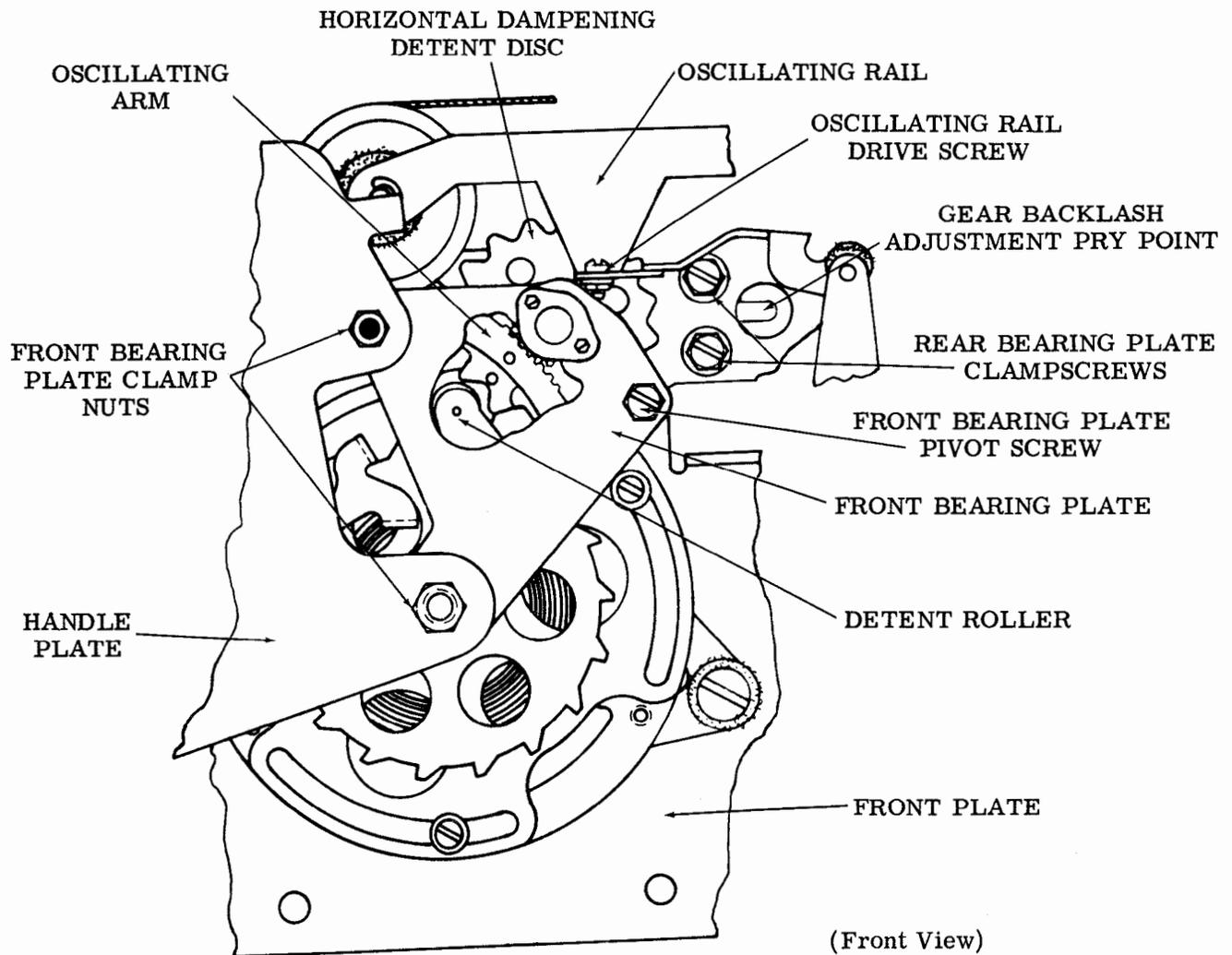
There should be no noticeable backlash in the horizontal dampening detent disc - oscillating arm gear set when pressure is manually applied to oscillating rail. Oscillating rail should move freely when detent roller is retracted.

To Adjust

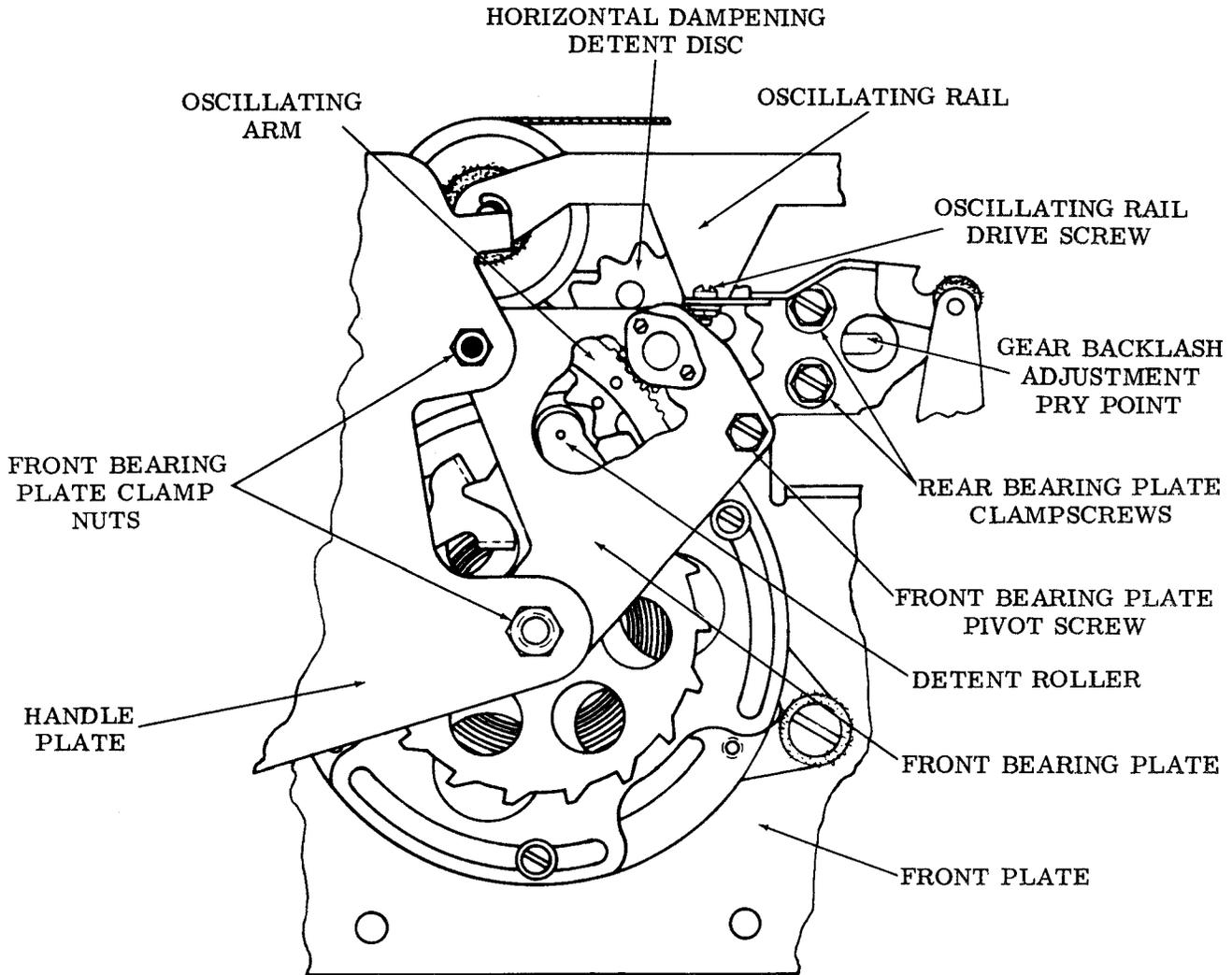
Loosen rear bearing plate clampscrews. Loosen front bearing plate clamp nuts. Close backlash using gear backlash adjustment pry point until slight tooth contact is felt while manually moving oscillating rail back and forth. Tighten rear bearing plate clampscrews and front bearing plate clamp nuts. Replace oscillating rail drive screw.

Affected Adjustment

FRONT BEARING PLATE ALIGNMENT (2.48)



2.50 Horizontal Positioning Mechanism (continued)



(Front View)

AGGREGATE - DAMPENER SYNCHRONIZATION**To Check**

Codebar 1 spacing. All other codebars marking. All clutches disengaged (latched). Engage (trip) print hammer clutch and slowly rotate main shaft until detent roller drops into notch of horizontal dampening detent disc.

Requirement

Detent roller should drop squarely into the notch of horizontal dampening detent disc with no deflection or barely perceptible deflection of the detent disc.

To Adjust

Loosen oscillating rail drive screw. Engage (trip) print hammer clutch and rotate main shaft until detent roller is fully down. Without disturbing the setting, tighten oscillating rail drive screw.

2.51 Line Feed Mechanism (continued)

LINE FEED CLUTCH PHASING

To Check

Line feed clutch disengaged (latched).

Requirement

Both line feed bars should engage teeth of spur gear.

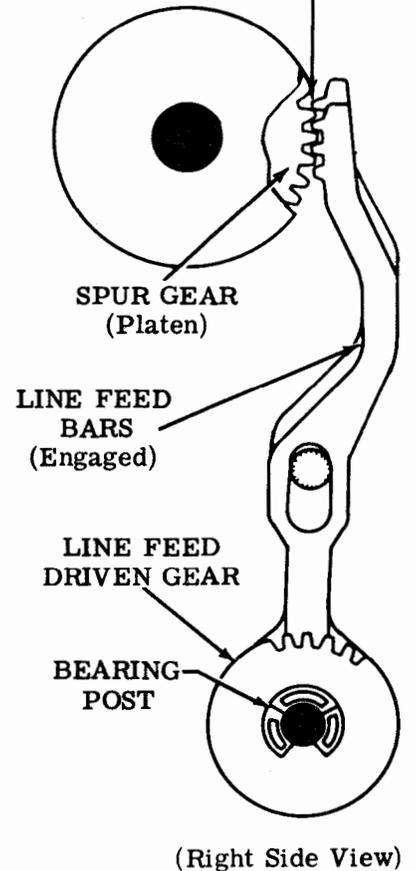
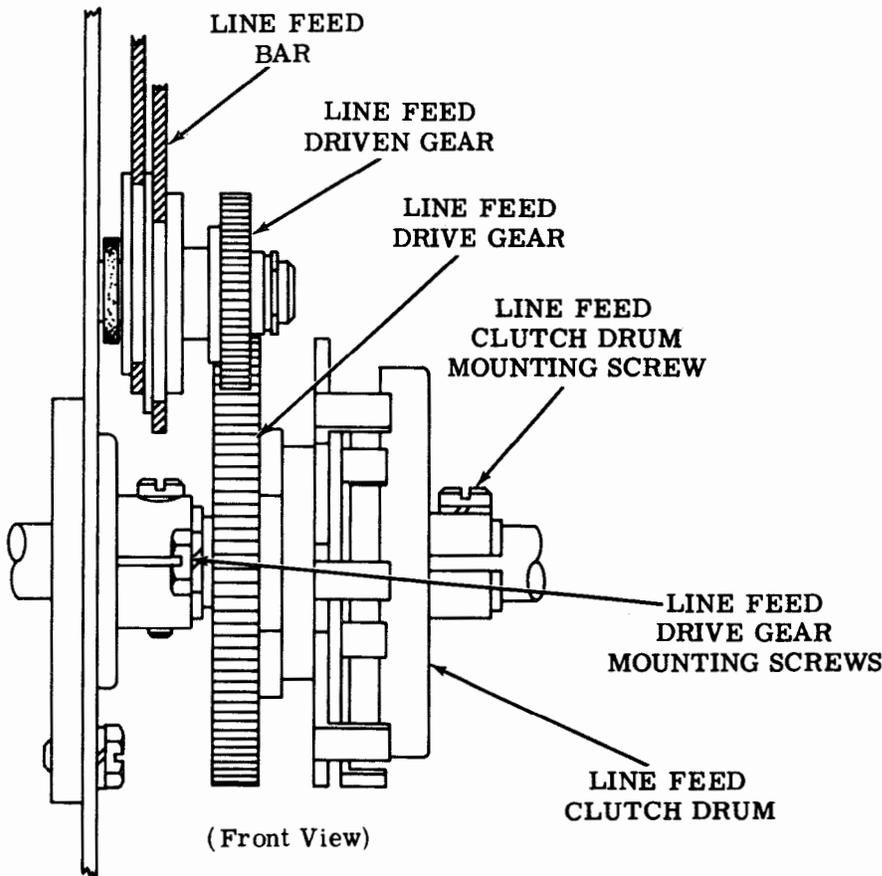
To Adjust

Remove line feed clutch drum mounting screw. Disengage the line feed drive gear from the line feed driven gear. Advance the line feed driven gear until requirement is met. Move line feed drive gear and line feed clutch to left as a unit and remesh the line feed drive and driven gears. Use line feed clutch drum mounting screw and remount line feed clutch drum.

Note: When moving the line feed clutch be careful not to disengage the clutch and separate the clutch shoe lever assembly from the drum.

Affected Adjustment

SPUR GEAR DETENT ECCENTRIC (2.52)



2.52 Line Feed Mechanism (continued)

PLATEN DETENT BAIL SPRING

To Check

Detent seated between two teeth on line feed spur gear.

Requirement

Min 19 oz---Max 22 oz
to start detent bail moving.

LINE FEED BAR RELEASE LEVER SPRING

Requirement

Min 3 oz---Max 6 oz
to start line feed bar release lever moving.

SPUR GEAR DETENT ECCENTRIC

To Check

Line feed clutch disengaged (latched). Platen rotated until detent stud is seated between two teeth on spur gear. When handwheel is released, manually set teeth of line feed bars into engagement with teeth of spur gear.

Requirement

Detent stud should contact one gear tooth and be
Max 0.010 inch
from other gear tooth.

To Adjust

Loosen detent eccentric mounting screw and rotate detent eccentric until requirement is met. Keep high part of eccentric upward. Tighten mounting screw.

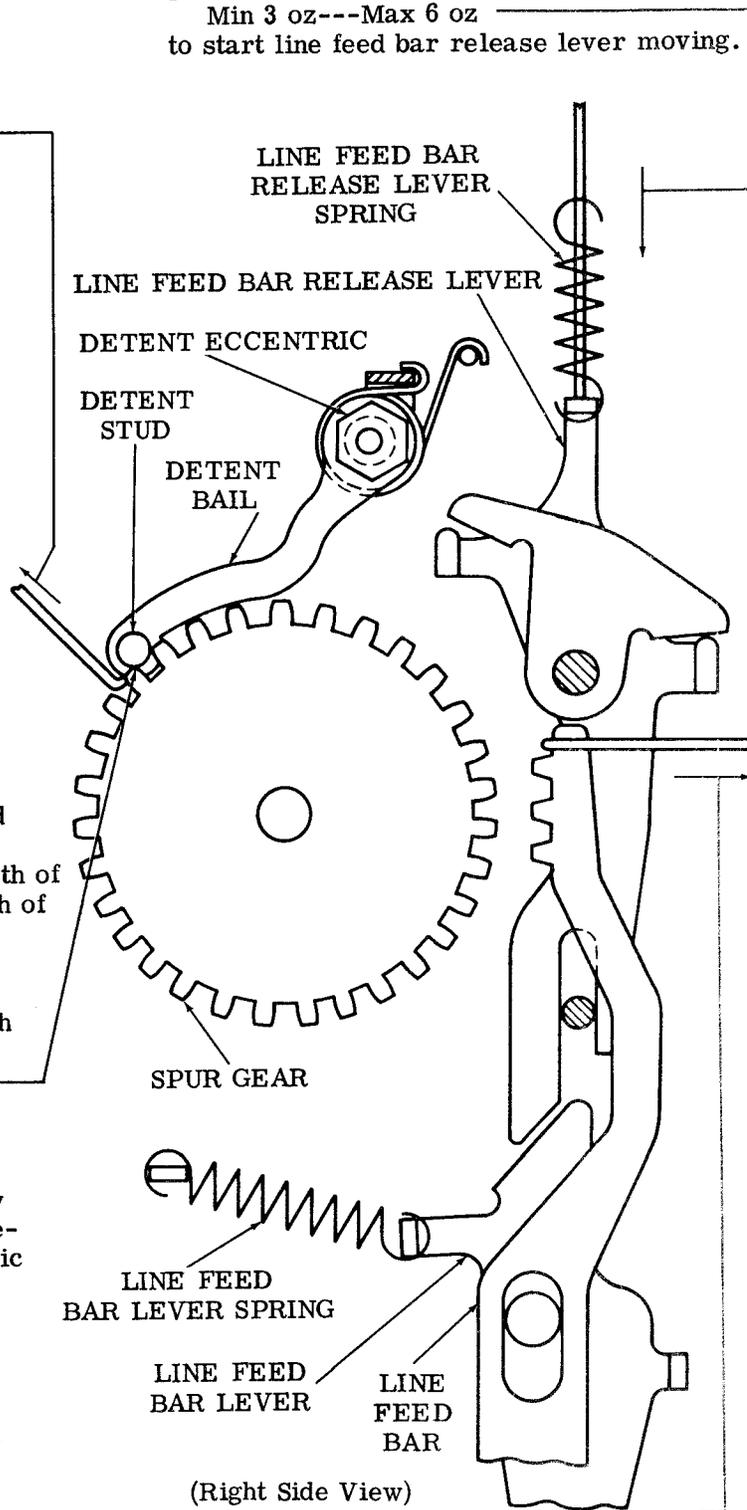
LINE FEED BAR LEVER SPRING

To Check

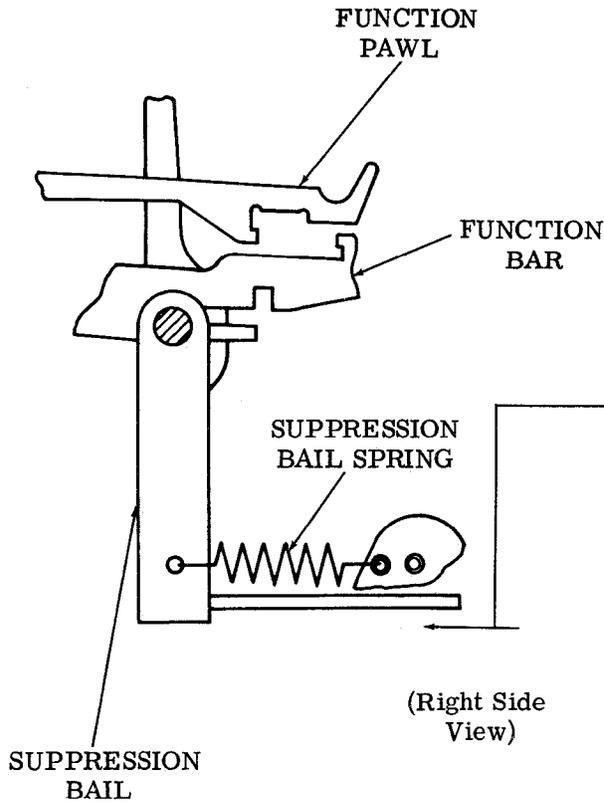
Left hand line feed bar in rear position.

Requirement

Min 20 oz---Max 26 oz
to start line feed bar moving.



2.53 Function Mechanism



SUPPRESSION BAIL SPRING

To Check

All clutches disengaged (latched). Suppression slide held toward front of unit and all function pawls stripped. Unit in normal operating position. Apply scale near middle of suppression bail.

Requirement

Min 1-1/2 oz---Max 3 oz to start suppression bail moving.

(Right Side View)

SUPPRESSION LATCH SPRING

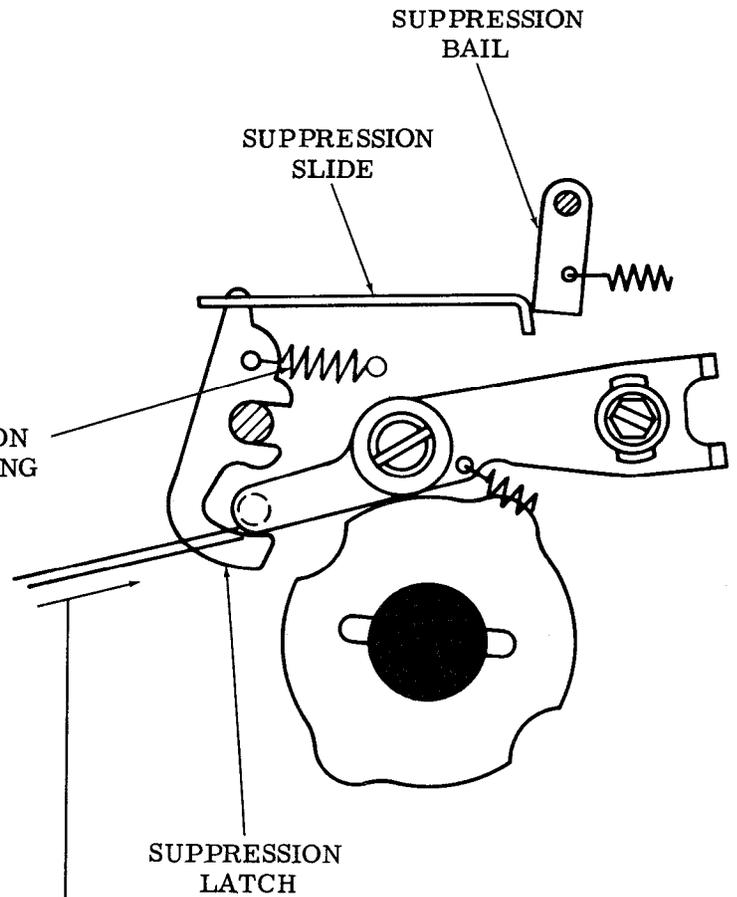
SUPPRESSION LATCH SPRING

To Check

All clutches disengaged (latched) and all function pawls stripped.

Requirement

Min 3 oz---Max 5 oz to start suppression slide moving toward front of unit.



(Right Side View)

2.54 Function Mechanism (continued)

CAUTION: SEVERE WEAR TO THE POINT OF OPERATIONAL FAILURE WILL RESULT IF THE TYPING UNIT IS OPERATED WITHOUT EACH FUNCTION PAWL HAVING EITHER A RELATED FUNCTION BAR OR, WHERE A FUNCTION BAR IS MISSING, A RELATED FUNCTION PAWL CLIP TO HOLD THE FUNCTION PAWL AWAY FROM THE STRIPPER BLADE.

FUNCTION LEVER SPRING

Note: If a function lever operates either a contact or a slide, hold the contact or slide away from the function lever when checking the spring tension.

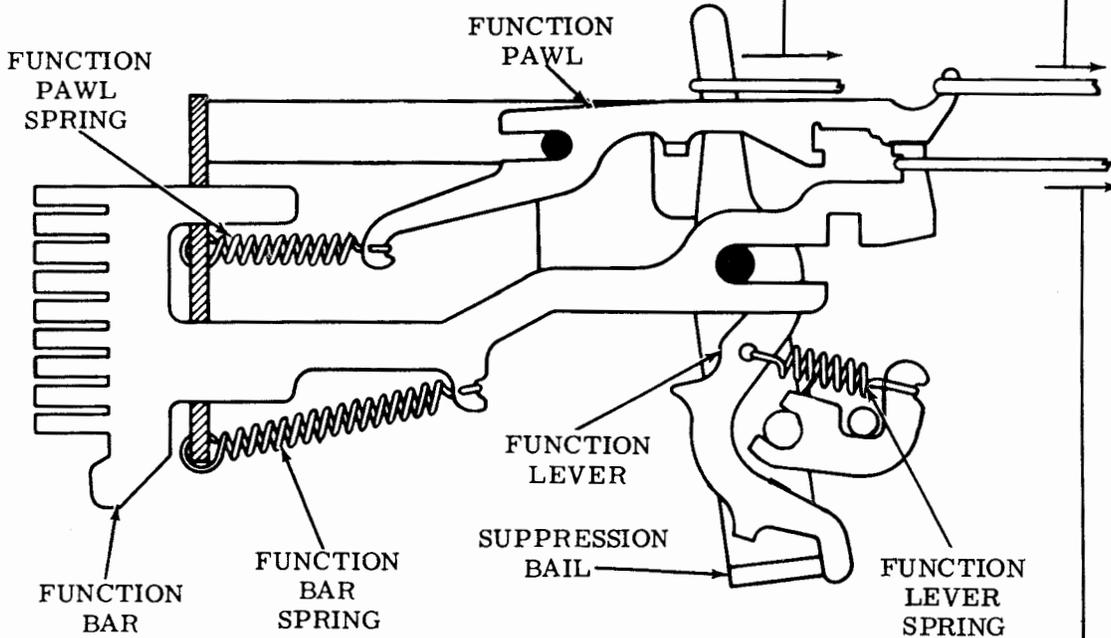
To Check
Function lever in unoperated position.
Suppression bail held forward. Check each function lever spring.

Requirement
Min 1-1/2 oz---Max 2-3/4 oz
to start function lever moving.

FUNCTION PAWL SPRING

To Check
Rear end of function pawl resting on function bar. Check each function pawl spring.

Requirement
Min 3 oz---Max 5 oz
to start pawl moving.



(Right Side View)

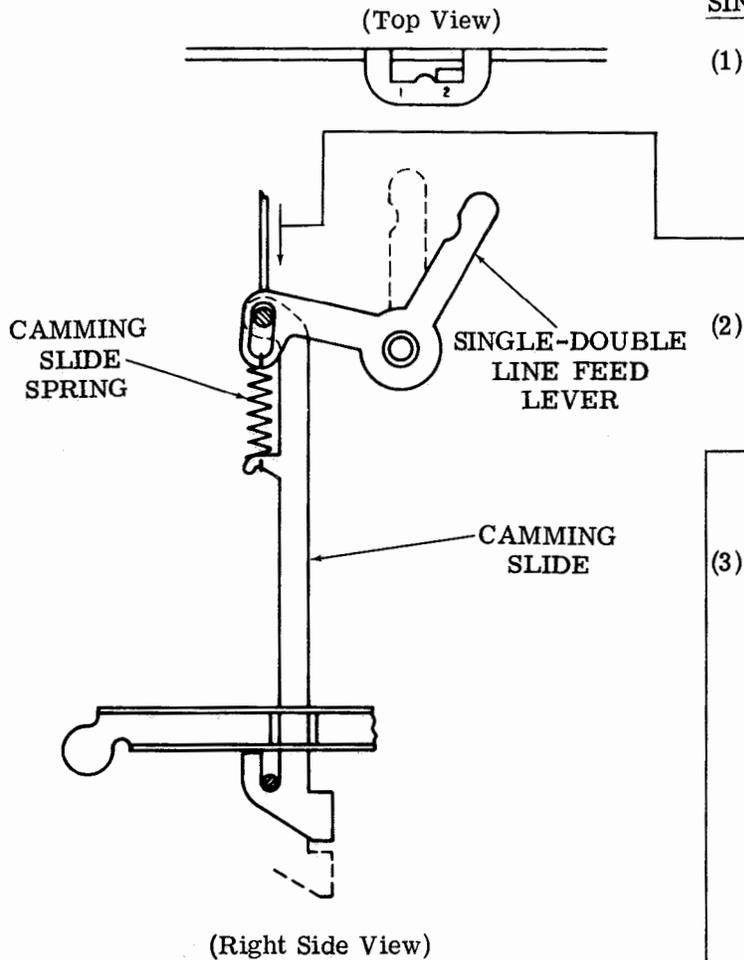
FUNCTION BAR SPRING

To Check
Function clutch disengaged (latched).
Function pawl held away.

Requirement
Min 2-1/2 oz---Max 3-1/2 oz
to start function bar moving.

2.55 Function Mechanism (continued)

SINGLE-DOUBLE LINE FEED SPRINGS



- (1) To Check
Line feed clutch disengaged (latched).
Single-double line feed lever in double
line feed position.

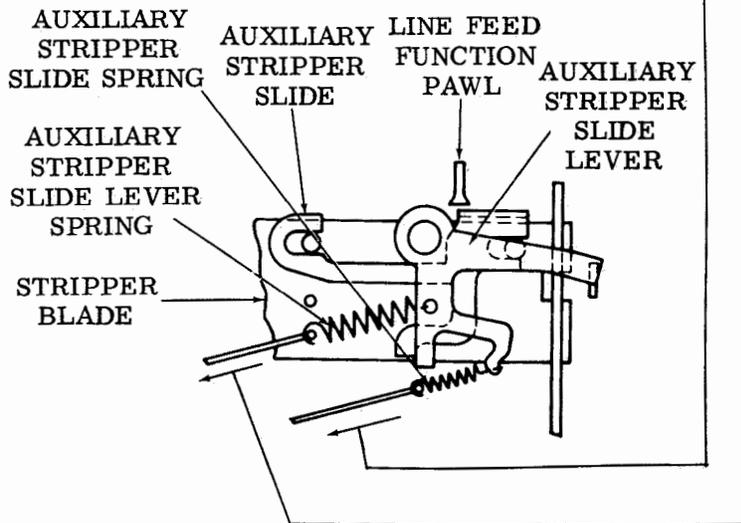
Requirement
Min 9 oz---Max 12 oz
to start camming slide moving down.

- (2) To Check
Line feed clutch disengaged (latched).

Requirement
Min 3/4 oz---Max 1-1/2 oz
to extend auxiliary stripper slide
spring to installed length.

- (3) To Check
Line feed clutch disengaged (latched).

Requirement
Min 3 oz---Max 4 oz
to extend auxiliary stripper slide lever
spring to installed length.



(Rear View)

2.56 Function Mechanism (continued)

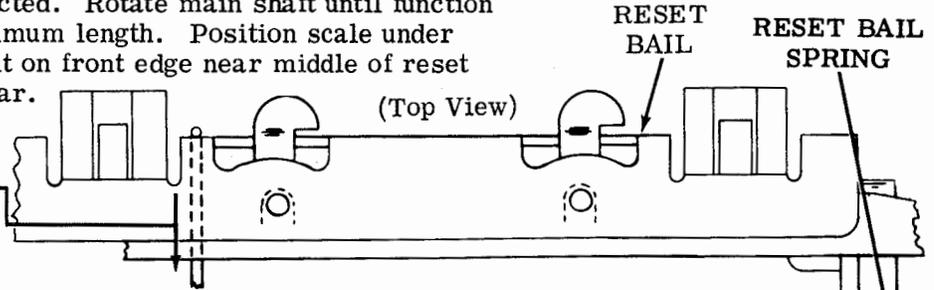
FUNCTION RESET BAIL SPRING

To Check

With typing unit upside down, hold suppression codebar marking so that no function bar is selected. Rotate main shaft until function reset bail springs are minimum length. Position scale under suppression bail and hook it on front edge near middle of reset bail. Pull scale toward rear.

Requirement

Min 7 oz---Max 20 oz to start reset bail moving.



FUNCTION RESET BAIL BLADE

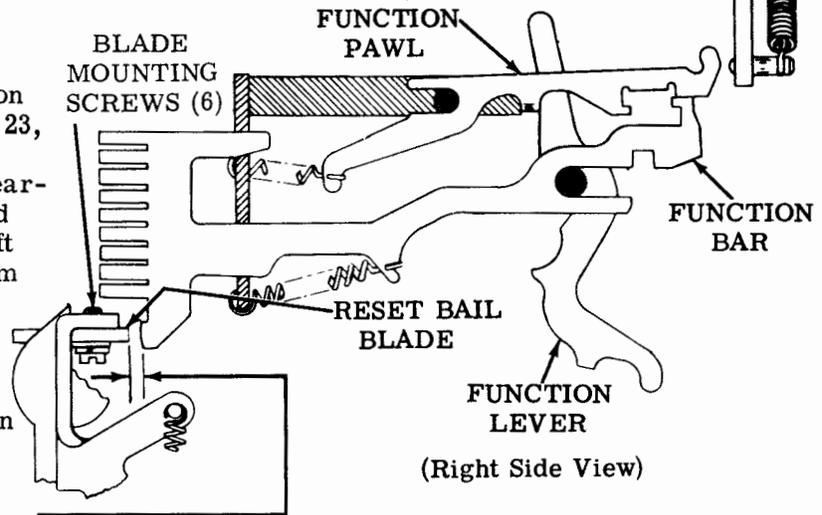
Note: Measure clearance of function bars located in slots 1, 4, 11, 18, 23, 33, and 41. If there is no function bar in a designated slot, use the nearest function bar in higher numbered slot. (Slots are numbered from left to right when facing typing unit from rear).

To Check

All clutches disengaged (latched). Function pawls unlatched. Function bar held in maximum rearward position.

Requirement

Min 0.015 inch---Max 0.025 inch clearance between function bar and reset bail blade.



To Adjust

Loosen reset bail blade mounting screws friction tight and position blade on reset bail. Tighten mounting screws.

To Check

Position function clutch so that stop-lug on clutch disc is toward bottom of typing unit. Function pawls unlatched. Hold function lever in maximum rearward position (do not apply more than 2 pounds of tension on lever) and hold function pawl toward rear with a tension of 32 ounces. Repeat for each function bar in function box.

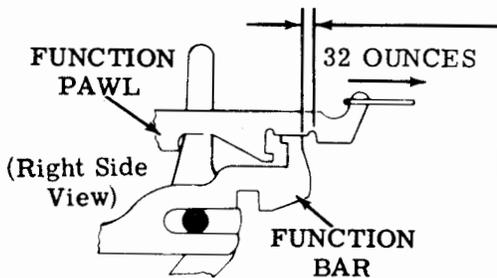
Note: As function bar load on reset bail affects overtravel, do not latch more than one pawl at a time.

Requirement

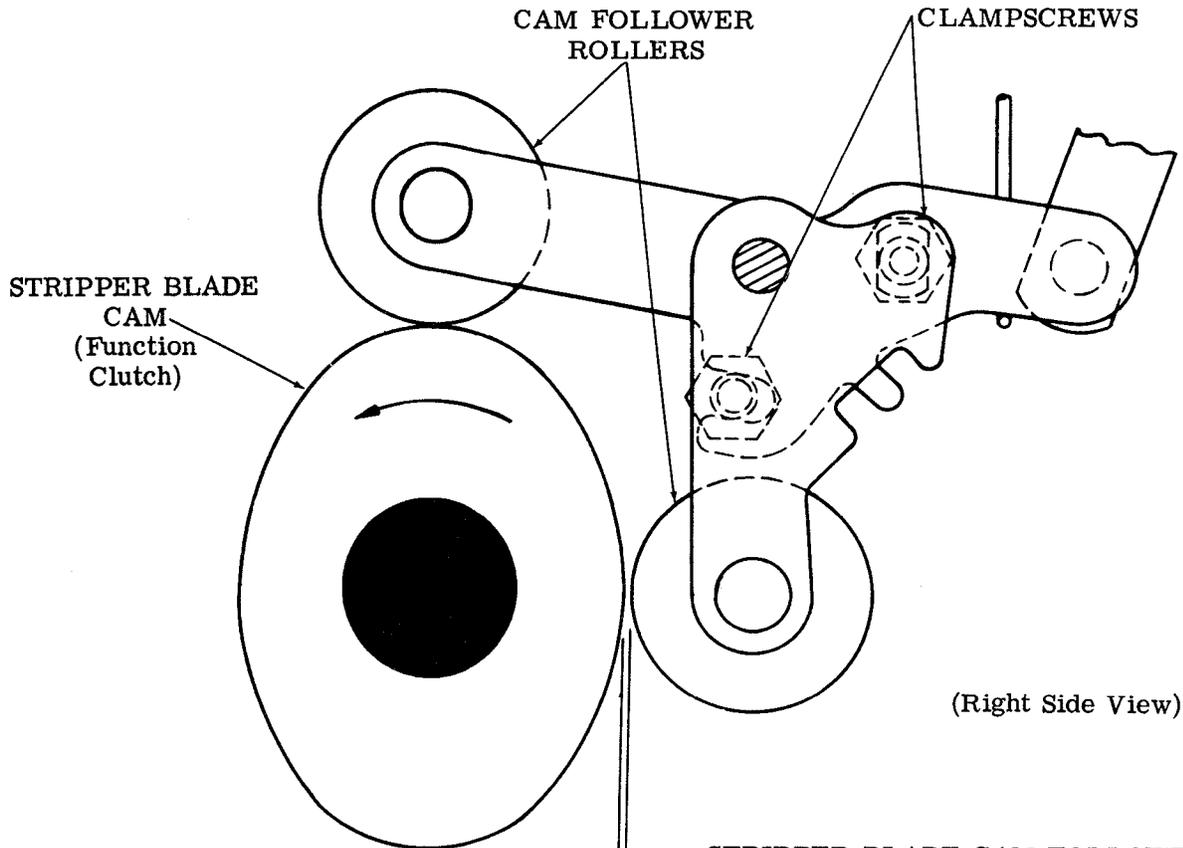
Function pawl should overtravel function bar by Min 0.002 inch

To Adjust

Refine FUNCTION RESET BAIL BLADE adjustment.



2.57 Function Mechanism (continued)



STRIPPER BLADE CAM FOLLOWER

To Check

Hold one cam follower roller against stripper blade cam. Check requirement. Repeat for other cam follower roller.

Requirement

Min some---Max 0.002 inch clearance between second cam follower roller and stripper blade cam.

Note: The "some" requirement is considered met when cam follower roller being checked turns freely while a 16-ounce force is applied upwards at end of lever.

To Adjust

Loosen clampscrews friction tight. Position cam followers. Tighten clampscrews.

Affected Adjustment

STRIPPER BLADE (2.58)

2.58 Function Mechanism (continued)

STRIPPER BLADE

To Check

Single-double line feed lever positioned in single line feed position.
Function clutch disengaged (latched). A function pawl pulled back and held down against stripper blade.

Requirement

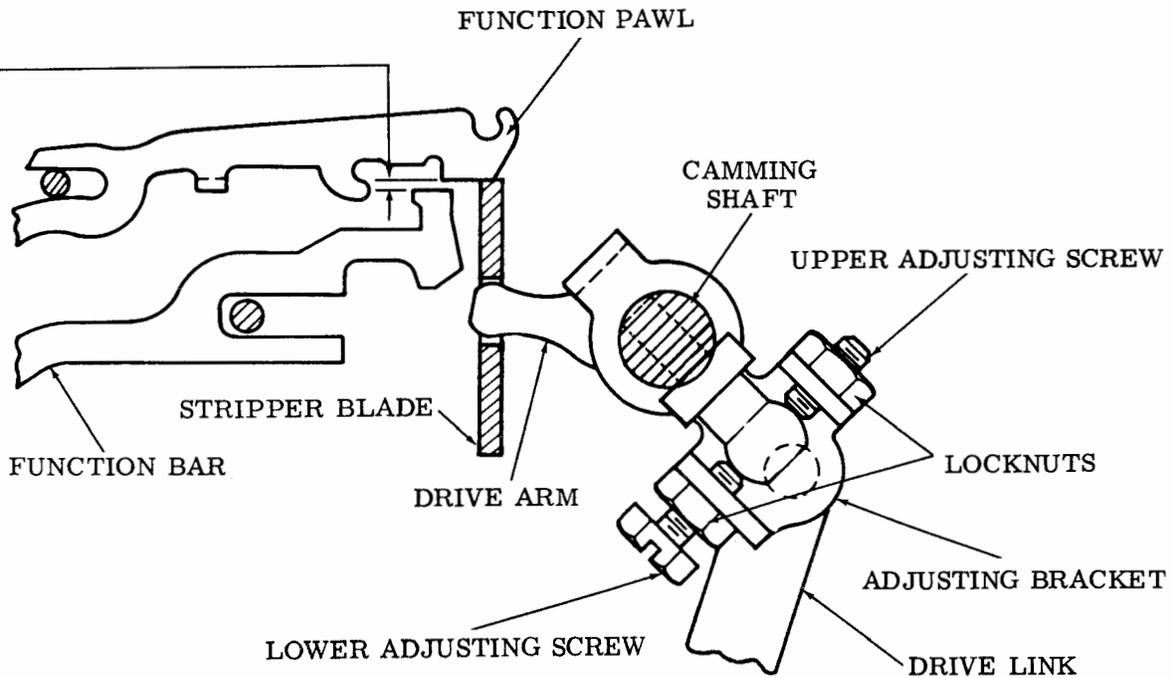
Min some---Max 0.015 inch clearance between function pawl and function bar when the play is taken up to make clearance a maximum.

Note: The some condition is considered met when the function pawl is resting against the stripper blade and allowed to move forward without catching on the function bar.

To Adjust

Loosen locknuts. Rotate adjusting screws. Tighten adjusting screws and locknuts.

CAUTION: DO NOT TIGHTEN ADJUSTING SCREW SO HARD AS TO DEFORM ADJUSTING BRACKET. CHECK CLEARANCE AT BOTH ENDS OF FUNCTION (STUNT) BOX.



(Right Side View)

2.59 Function Mechanism (continued)

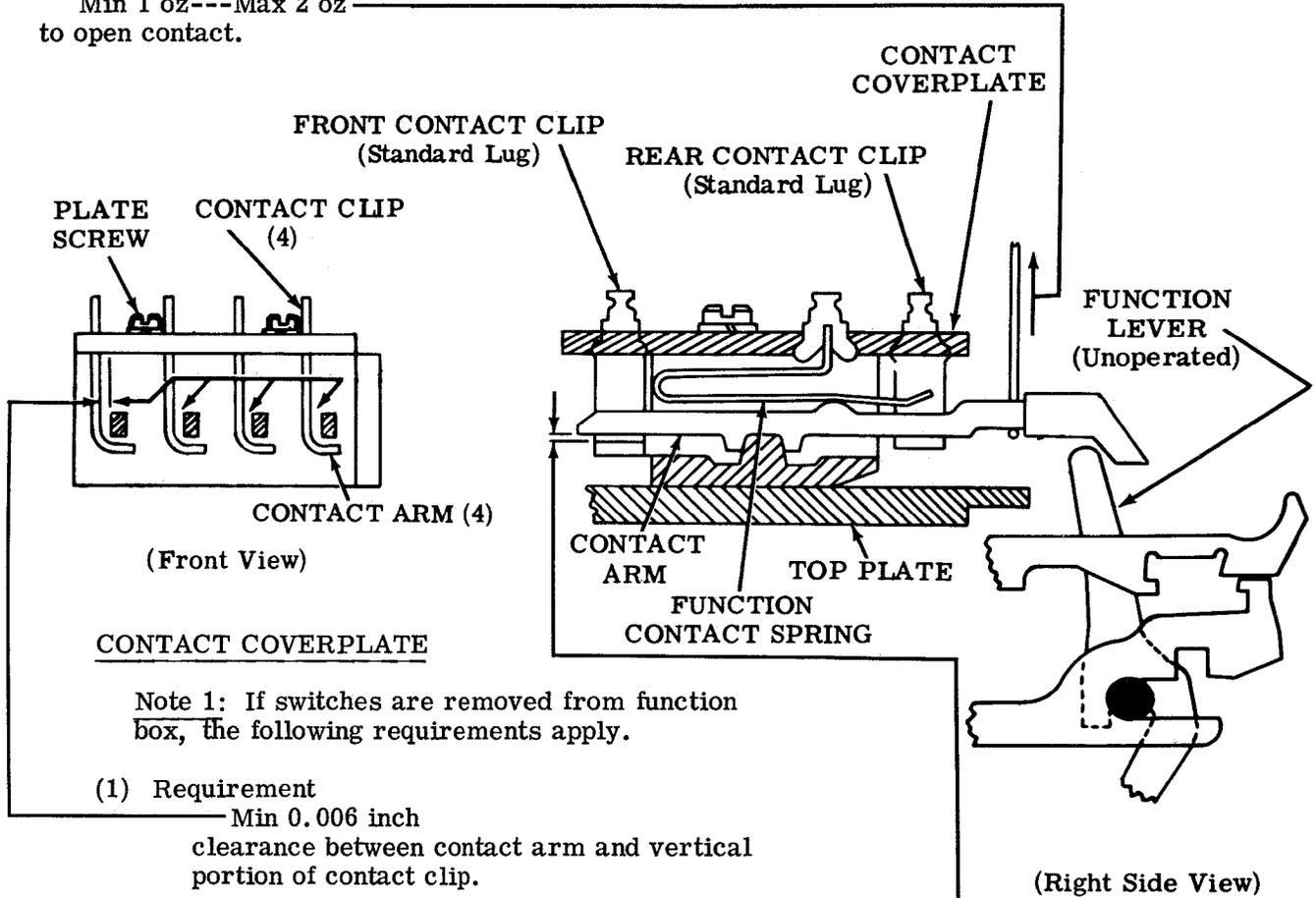
FUNCTION CONTACT SPRING

To Check

Function lever in position shown to close contact.

Requirement

Min 1 oz---Max 2 oz
to open contact.



Note 1: If switches are removed from function box, the following requirements apply.

(1) Requirement

Min 0.006 inch
clearance between contact arm and vertical
portion of contact clip.

Note 2: If switch has front and rear contact clips,
clearance applies to both front and rear.

(2) Requirement (for switches with front and rear contacts)

Min 0.008 inch
gap between formed-over end of front contact clip and
bottom of contact arm when rear contact is closed.

To Adjust

Loosen plate screws and position contact coverplate.
Tighten screws.

Note 3: If requirement (2) cannot be met, replace switch.

2.60 Spacing Mechanism

SPACING GEAR PHASING

To Check

Spacing clutch disengaged (latched).

Requirement

Index line should be as near as possible to center of two lines on pawl retaining washer.

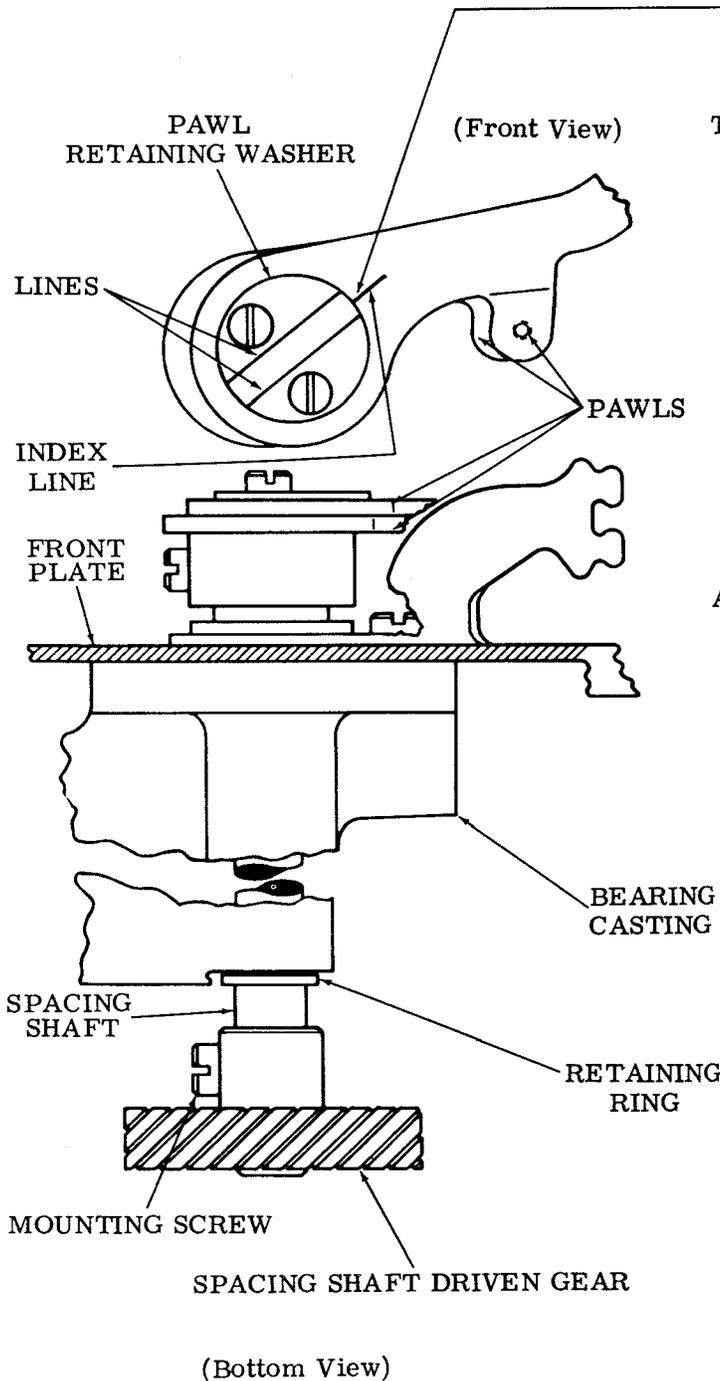
To Adjust

Remove mounting screw from spacing shaft driven gear. Hold pawls in alignment and engage spacing shaft driven gear with spacing drive gear at a point where spacing shaft driven gear mounting screw hole is in line with tapped hole in spacing shaft. Start, run down, and tighten mounting screw.

Note: If requirement cannot be met, engage (trip) spacing clutch and rotate main shaft to next stop. Disengage (latch) spacing clutch and repeat adjusting procedure.

Affected Adjustment

LEFT HAND MARGIN (2.73 and 2.74)

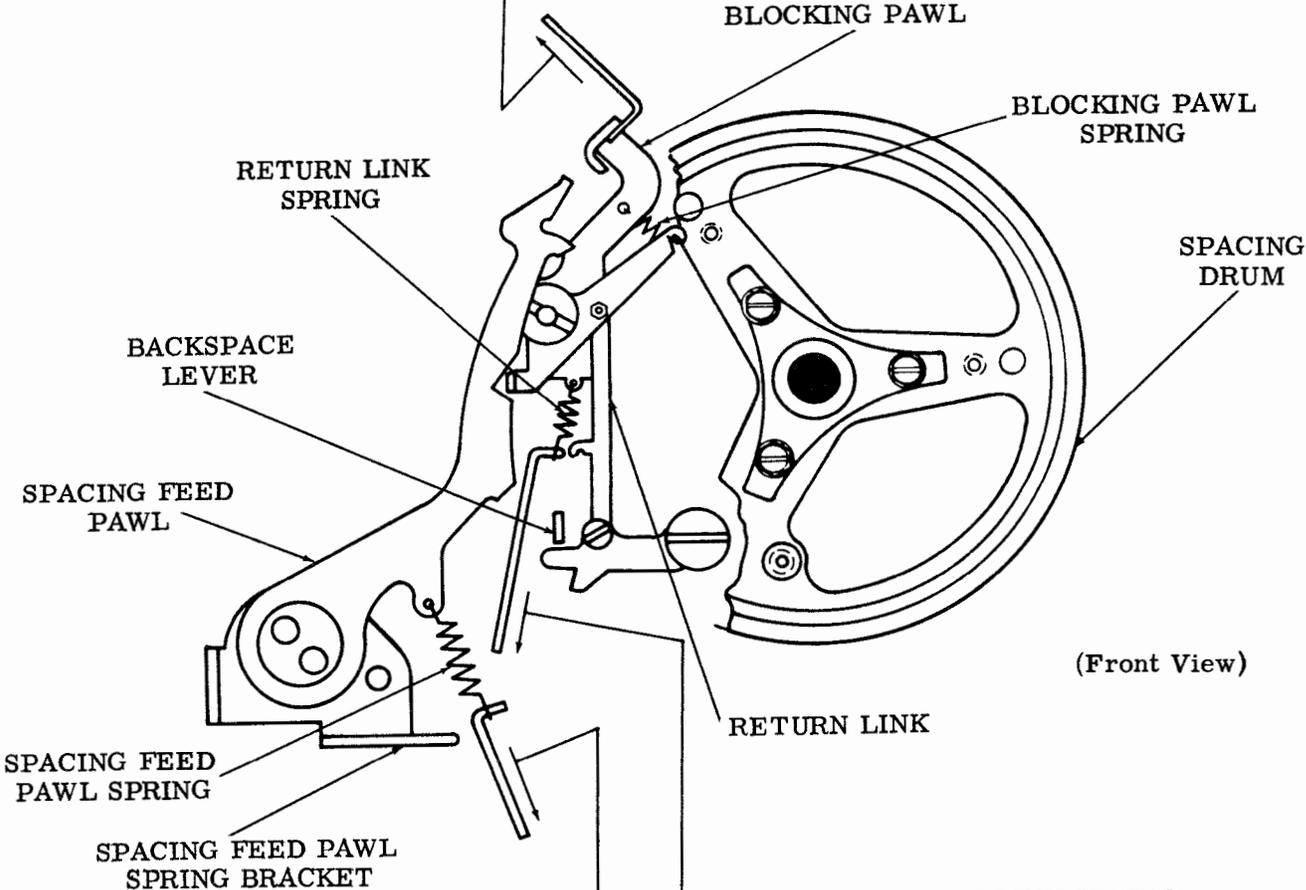


2.61 Spacing Mechanism (continued)

BLOCKING PAWL SPRING

Requirement

Min 8 oz---Max 10 oz
to start blocking pawl moving.



RETURN LINK SPRING

Requirement

Min 4 oz---Max 6 oz
to pull return link spring to
installed length.

SPACING FEED PAWL SPRING

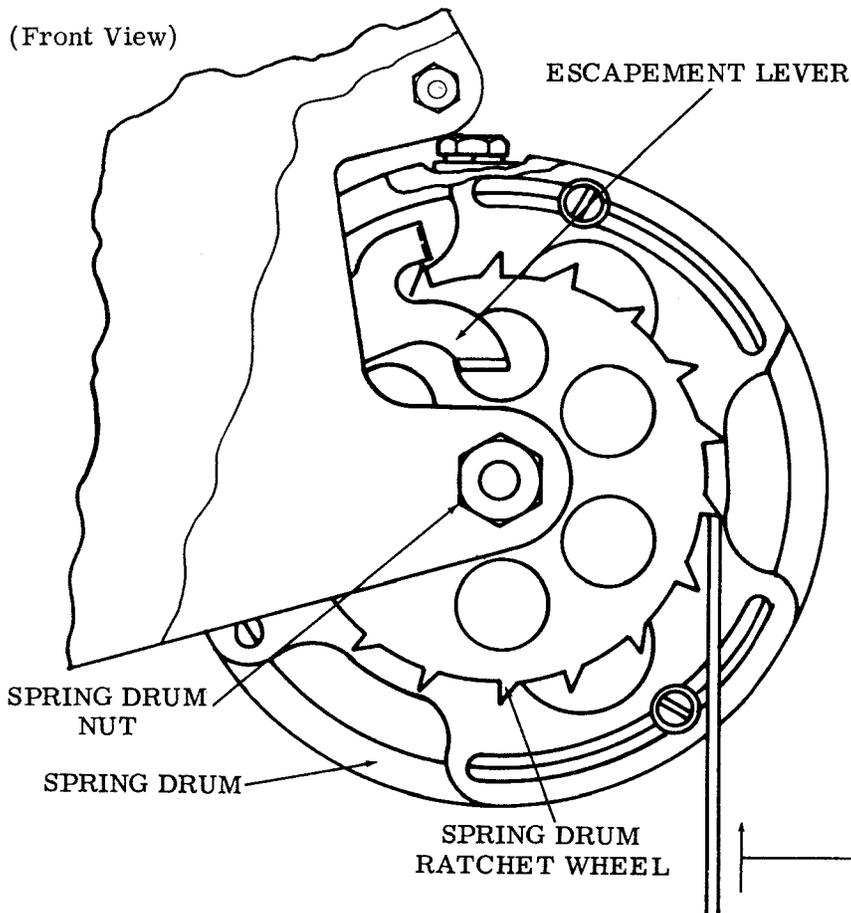
Requirement

Min 6 oz---Max 7-1/2 oz
to pull spacing feed pawl spring.

Note: Check two springs.

2.62 Spacing Mechanism (continued)

(Front View)



CARRIAGE RETURN SPRING

To Check
Spacing drum fully returned.
Spring drum nut removed.

Requirement
— Min 5-1/4 lb---Max 5-3/4 lb
to start spring drum ratchet
wheel moving.

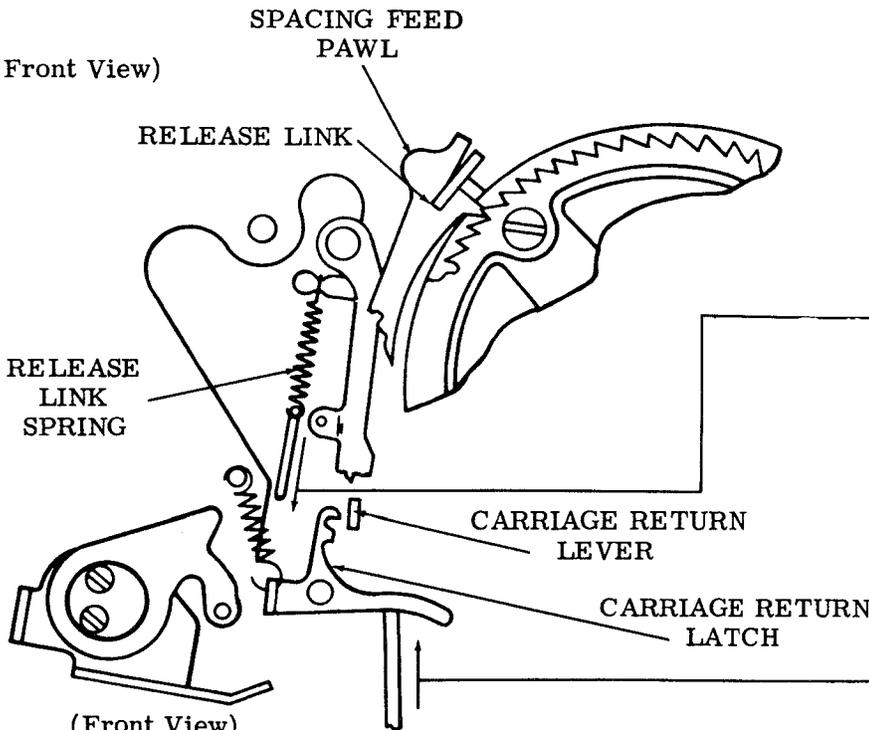
To Adjust
Rotate spring drum ratchet
wheel to increase tension.
Operate escapement lever to
decrease tension.

CARRIAGE RETURN LATCH
SPRING

To Check
Carriage fully returned.

Requirement
Min 1-1/2 oz---Max 3 oz
to start carriage return latch
moving.

(Front View)



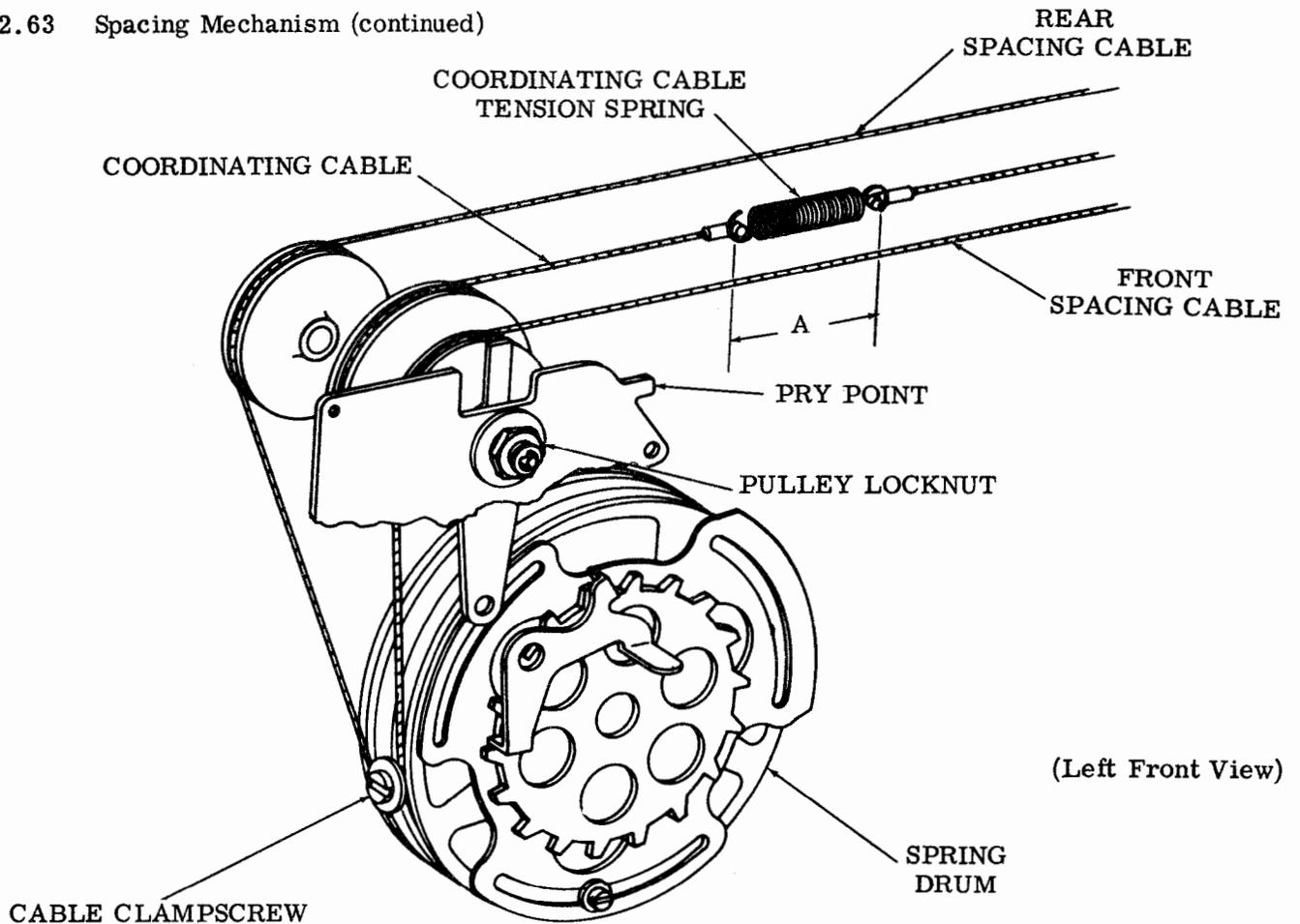
SPACING FEED PAWL RELEASE
LINK SPRING

To Check
Carriage fully returned.

Requirement
— Min 2 oz---Max 4 oz
to pull release link spring
to installed length.

(Front View)

2.63 Spacing Mechanism (continued)

COORDINATING CABLE SPRING TENSION AND EQUALIZATION**To Check**

Carriage at left hand margin.

(1) Requirement

Length "A" (see illustration) should measure $1\text{-}1/2 \pm 1/32$ inches.

(2) Requirement

Tension in front and rear spacing cables should be approximately equal.

To Adjust

Loosen cable clampscrew and pulley locknut. Using pry point, apply tension to the cables until requirement (1) is met. Equalize tension in front and rear spacing cables by lightly pulling on cable that is the tightest. Tighten pulley locknut and cable clampscrew.

Note 1: Cable spring tension should be removed before removing print hammer mounting plate.

Note 2: Coordinating cable tension spring should require $7 \pm 1/2$ pound to extend it $1\text{-}1/2$ inch.

Affected Adjustment

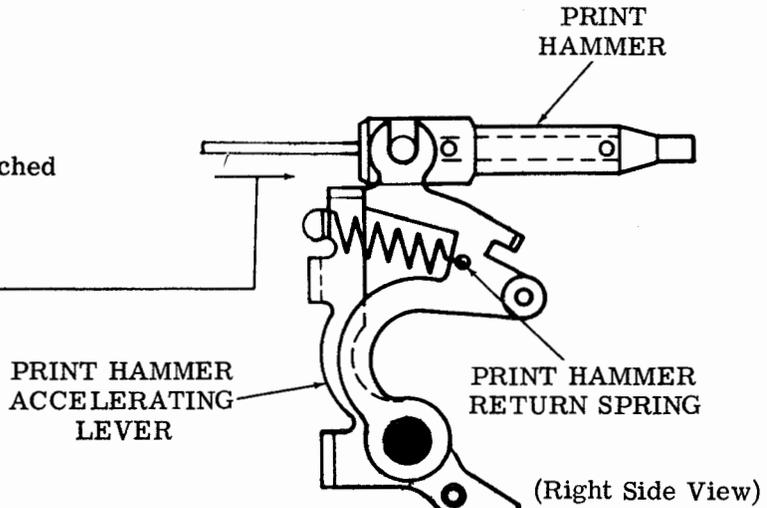
LEFT HAND MARGIN (2.73, 2.74, and 2.75)

2.64 Printing Mechanism

PRINT HAMMER RETURN SPRING

To Check
Print hammer accelerating lever in latched position.

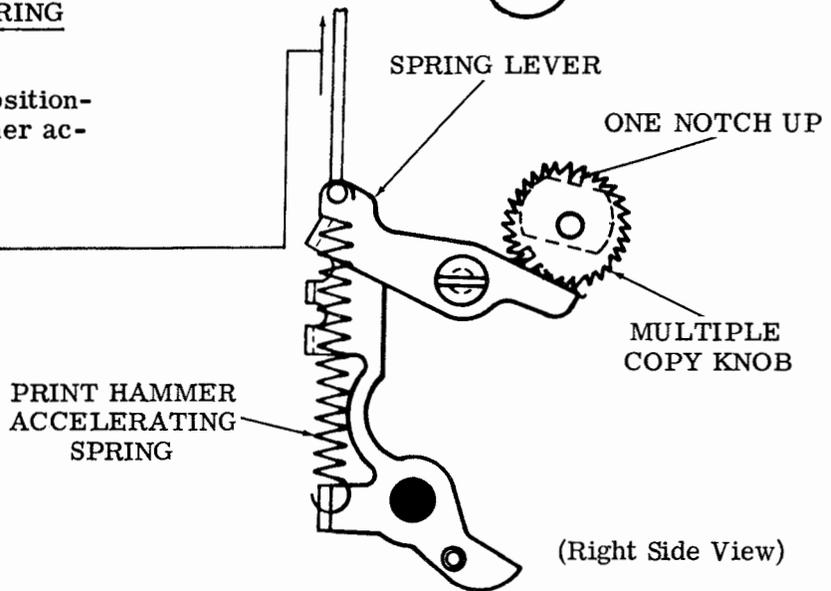
Requirement
Min 1-1/2 oz---Max 3 oz
to start print hammer moving.



PRINT HAMMER ACCELERATING SPRING

To Check
Multiple copy knob in single copy position-
on knob, one notch up. Print hammer ac-
celerating lever in latched position.

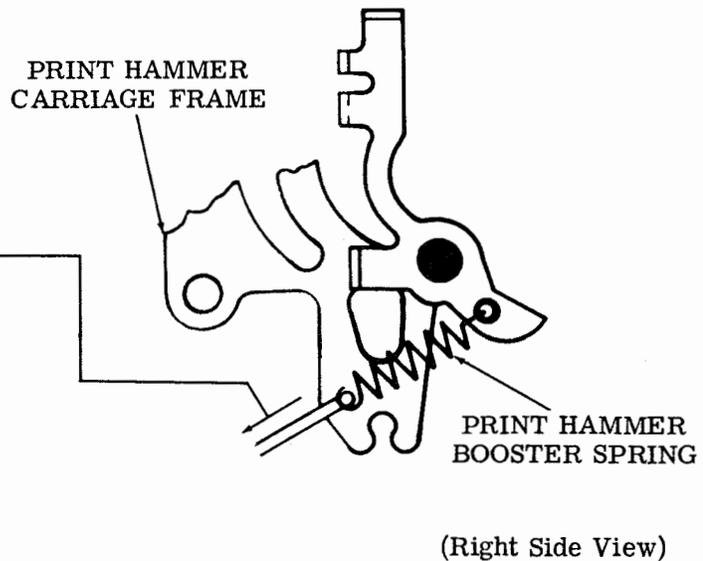
Requirement
Min 25 oz---Max 32 oz
to start spring lever moving.



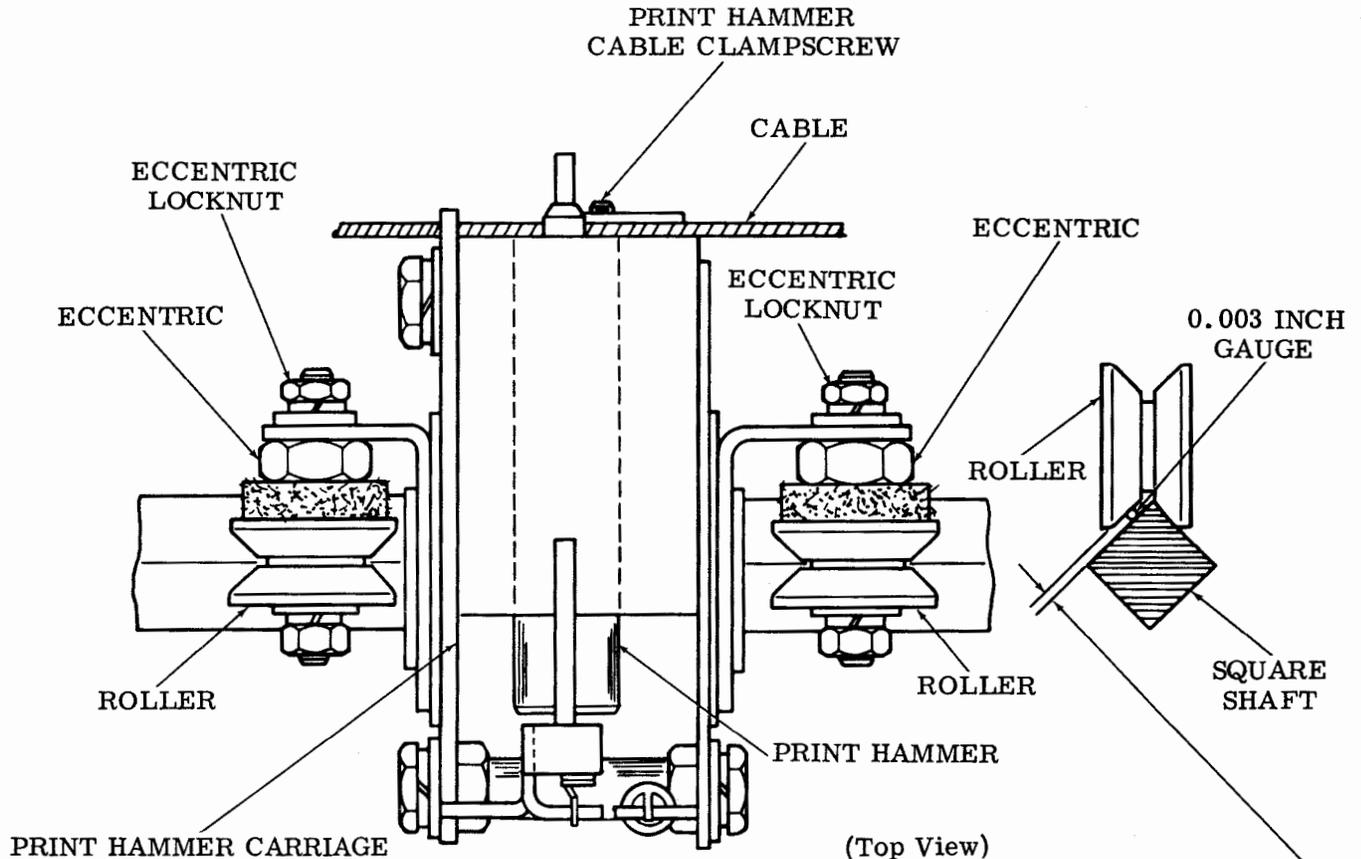
PRINT HAMMER BOOSTER SPRING

To Check
Print hammer accelerating lever in
unlatched position. Print hammer booster
spring unhooked from post.

Requirement
Min 30 oz---Max 40 oz
to extend print hammer booster spring to
installed length.



2.65 Printing Mechanism (continued)

PRINT HAMMER ROLLERS**To Check**

Print hammer clutch disengaged (latched). Loosen print hammer cable clampscrew. Move print hammer carriage over its entire square shaft travel.

(1) Requirement

Print hammer carriage should be free from all binds over entire square shaft travel.

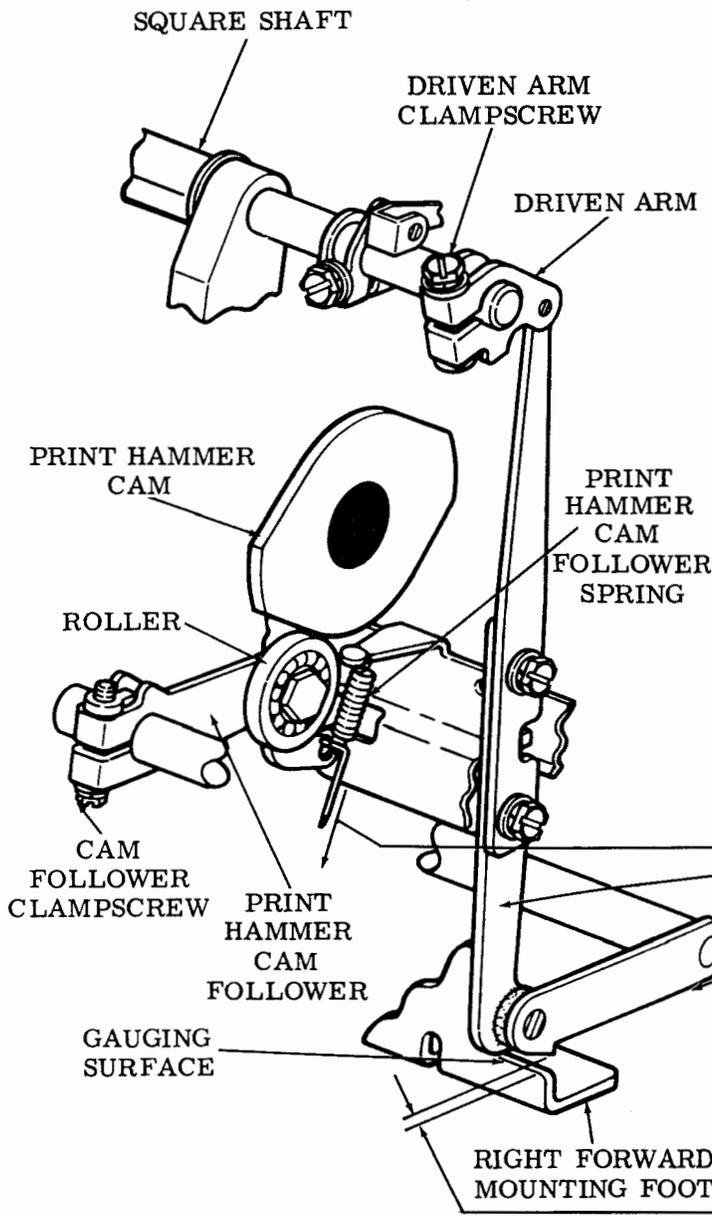
(2) Requirement

Min some---Max 0.007 inch
play between print hammer carriage rollers and any portion of square shaft.

To Adjust

Loosen tooth top eccentric locknuts. Rotate left eccentric for maximum clearance. Place 0.003 inch gauge between right roller and square shaft. Rotate right eccentric until print hammer carriage binds. Tighten right hand eccentric locknut. Move print hammer carriage over its entire square shaft travel. Refine adjustment if necessary. Place 0.003 inch gauge between left roller and square shaft. Rotate left eccentric until print hammer carriage binds. Tighten left hand eccentric locknut. Move print hammer carriage over its entire square shaft travel. Refine adjustment if necessary.

2.66 Printing Mechanism (continued)



(Right Front View)

PRINT HAMMER CAM FOLLOWER SPRING

To Check
Drive link removed. All clutches dis-
engaged (latched).

Requirement
Min 36 oz---Max 50 oz
to pull print hammer cam follower away
from print hammer cam.

SQUARE SHAFT DRIVE ARM

To Check
Print hammer cam follower on low part
of its cam.

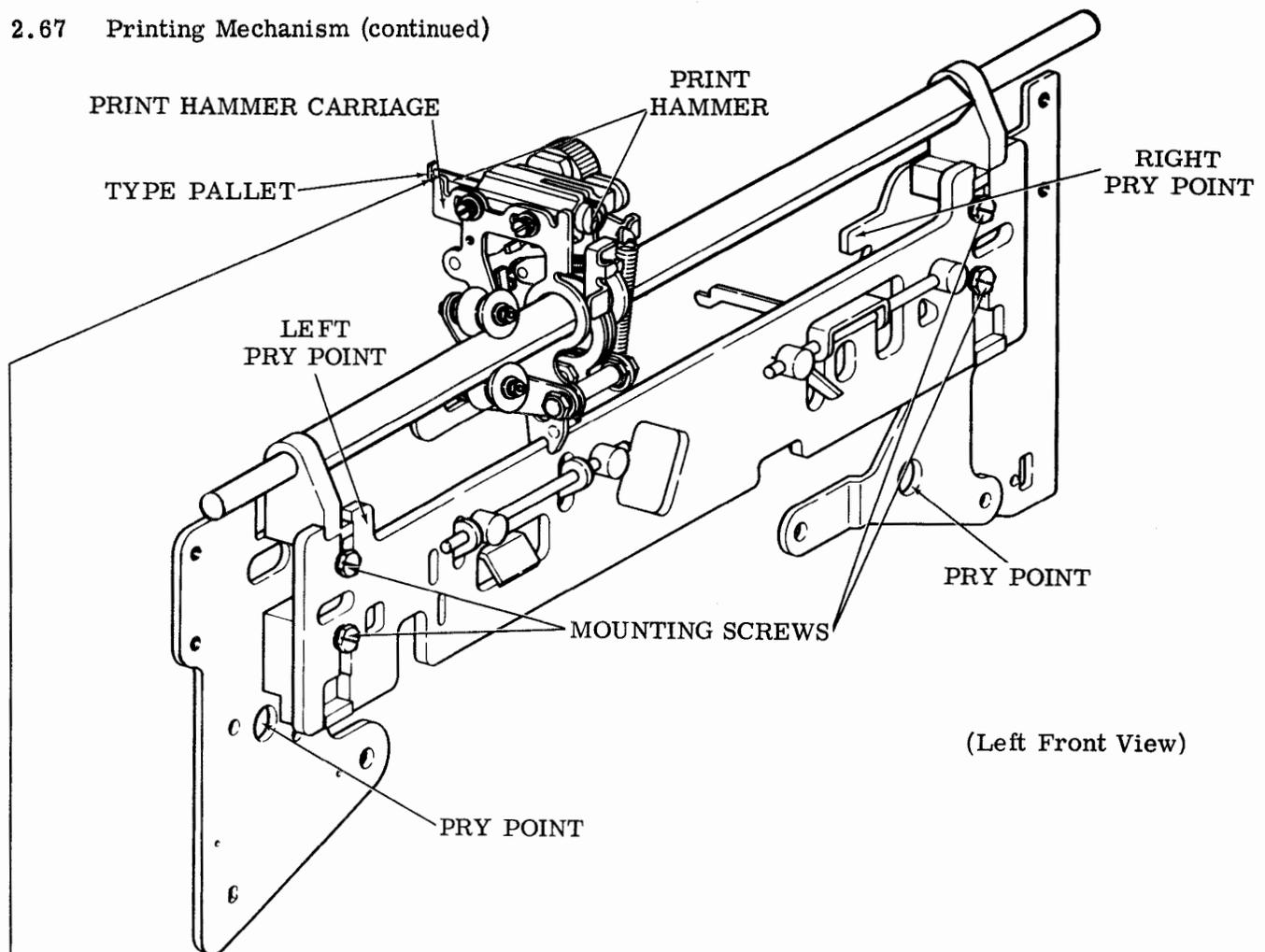
Requirement
Min 0.050 inch---Max 0.070 inch
clearance between gauging surface and
lower portion of drive arm.

To Adjust
Loosen driven arm clampscrew. Loosen
cam follower clampscrew. Rotate drive
arm to meet requirement. Tighten cam
follower clampscrew and driven arm
clampscrew.

Affected Adjustments

- CONNECTING ROD (FINAL) (2.87)
- FEED PAWL DRIVE CLAMP (RIGHT) (2.85)
- FEED PAWL DRIVE CLAMP (LEFT) (2.86)

2.67 Printing Mechanism (continued)



(Left Front View)

VERTICAL PRINT HAMMER ALIGNMENT**To Check**

Codebars 1 and 7 marking. All other codebars spacing. Horizontal and vertical positioning clutches disengaged (latched). Engage (trip) print hammer clutch and rotate main shaft until print hammer clutch stop-lug is towards bottom of typing unit.

Requirement

Print hammer should strike center of type pallet within 0.015 inch at both ends of print hammer carriage travel.

To Adjust

Loosen four mounting screws friction tight. With print hammer carriage and typebox carriage fully returned, engage (trip) print hammer clutch and rotate main shaft until print hammer cam follower is on low part of print hammer cam. Place print hammer to center of a type pallet using left pry point. Position print hammer and typebox carriage to the extreme right. Place print hammer to center of same type pallet using right pry point. Tighten four mounting screws. Return both carriages to left hand margin. Recheck requirement. Refine if necessary.

Affected Adjustments

FRONT SPACING CABLE ALIGNMENT (2.72)

PRINT HAMMER LATCH (2.68)

RIBBON FEED MAIN BRACKET (LEFT AND RIGHT) (2.80)

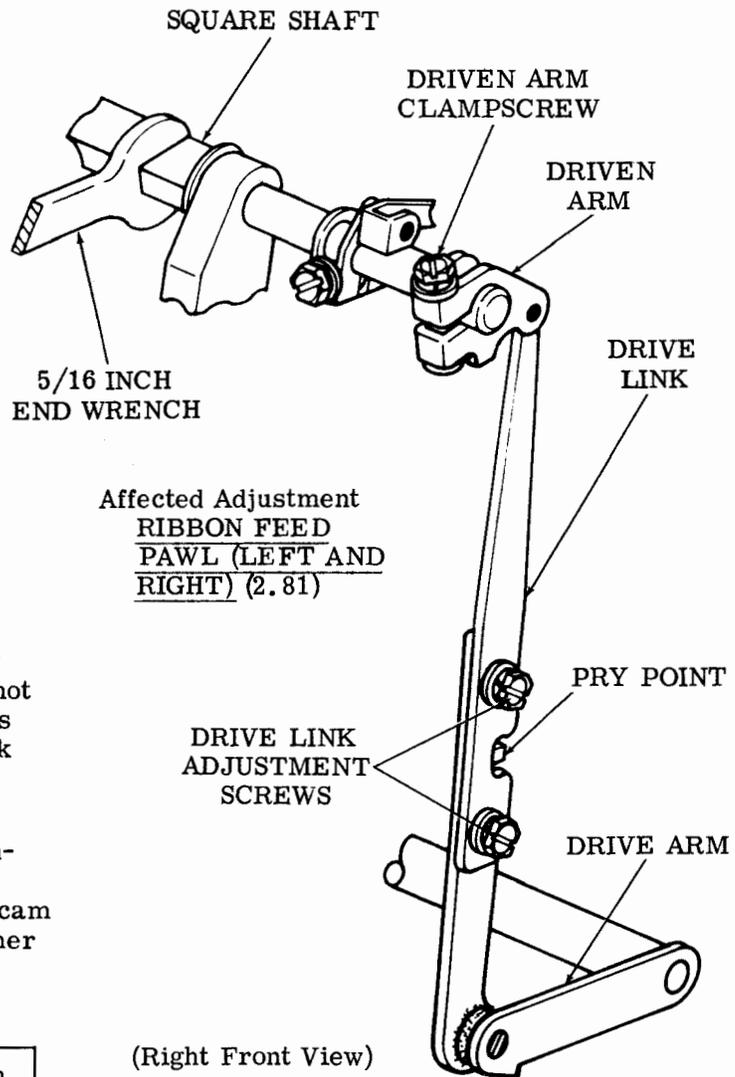
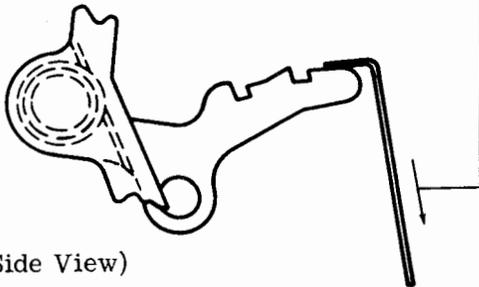
RIBBON FEED PAWL (LEFT AND RIGHT) (2.81)

2.68 Printing Mechanism (continued)

PRINT HAMMER LATCH SPRING

Requirement

Min 2 oz---Max 4 oz
to start print hammer latch moving.



PRINT HAMMER LATCH

Note: Start adjustment with drive link pry point at center of its adjustment. If it is not there, loosen drive link adjustment screws and pry it into position. Tighten drive link adjustment screws.

- (1) To Check
All clutches disengaged (latched). Engage (trip) pring hammer clutch and rotate main shaft until print hammer cam follower is on high part of print hammer cam.

Requirement

Min some---Max 0.010 inch
clearance between print hammer latch
and print hammer lever.

To Adjust

Loosen driven arm clampscrew. Rotate square shaft using 5/16 inch and wrench. Tighten driven arm clampscrew.

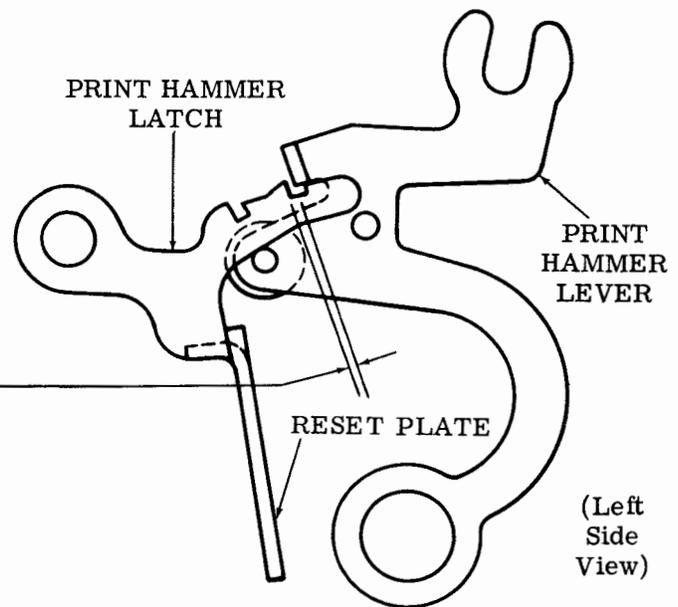
- (2) To Check
All clutches disengaged (latched). Engage (trip) print hammer clutch and rotate main shaft until print hammer cam follower is on high part of print hammer cam.

Requirement

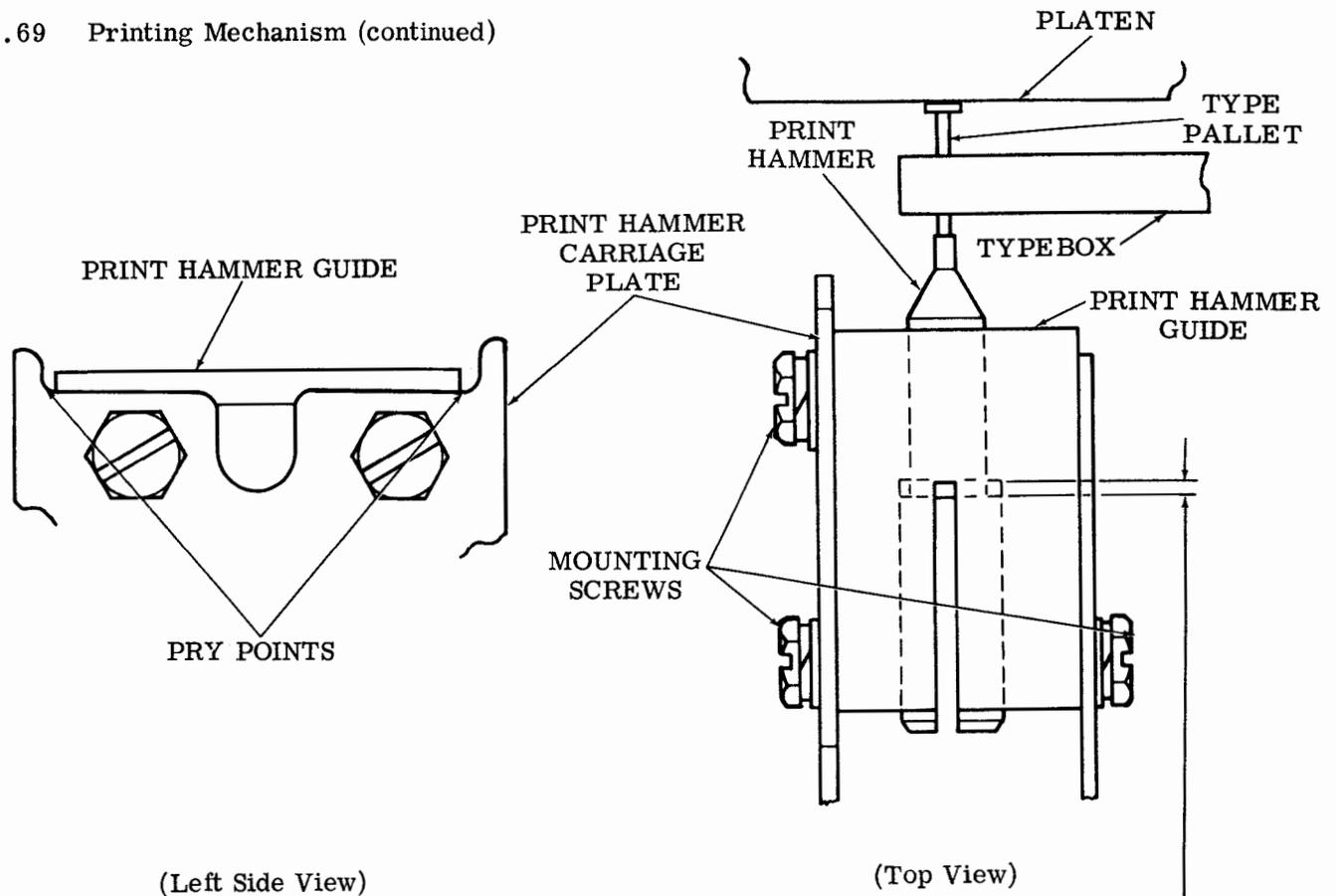
Min some---Max 0.010 inch
clearance between print hammer latch
and print hammer lever.

To Adjust

Loosen drive link adjustment screws friction tight. Position drive link using pry points. Tighten adjustment screws.



2.69 Printing Mechanism (continued)

PRINT HAMMER GUIDE**To Check**

Any type pallet selected. All clutches disengaged (latched). Engage (trip) print hammer and rotate main shaft until a print hammer clutch stop-lug is toward bottom of typing unit. Depress print hammer toward rear of typing unit so that type pallet engages platen.

Requirement

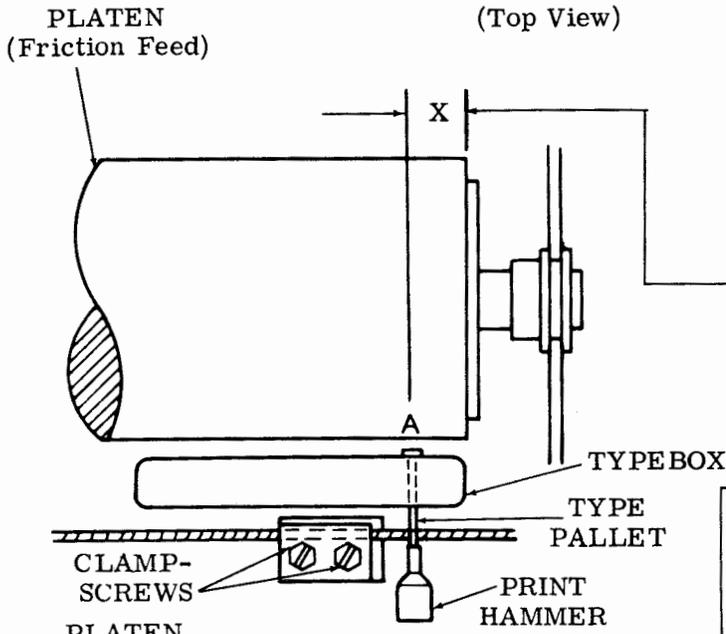
Min 0.030 inch---Max 0.050 inch
clearance between stop on print hammer and print hammer guide.

To Adjust

Loosen three print hammer guide mounting screws. Position print hammer guide using pry points. Tighten mounting screws.

2.70 Printing Mechanism (continued)

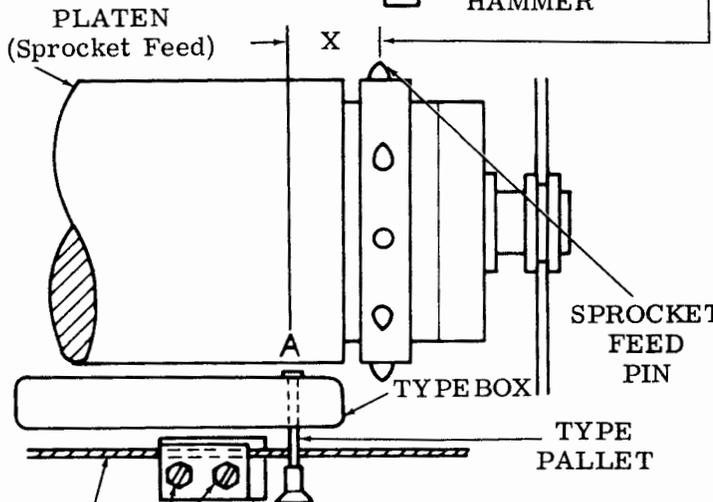
RIGHT HAND MARGIN



To Check
 Spacing clutch disengaged (latched). Spacing feed pawl furthest advanced engaging ratchet tooth immediately above cut-away section. Codebars 1 and 7 marking. All other codebars spacing.

Requirement
Friction Feed:
 The distance from the right edge of the platen to the center of type pallet located in upper right hand corner of typebox (see note 1) should be "X" +0.025 inch (see note 2).
 -0.050 inch

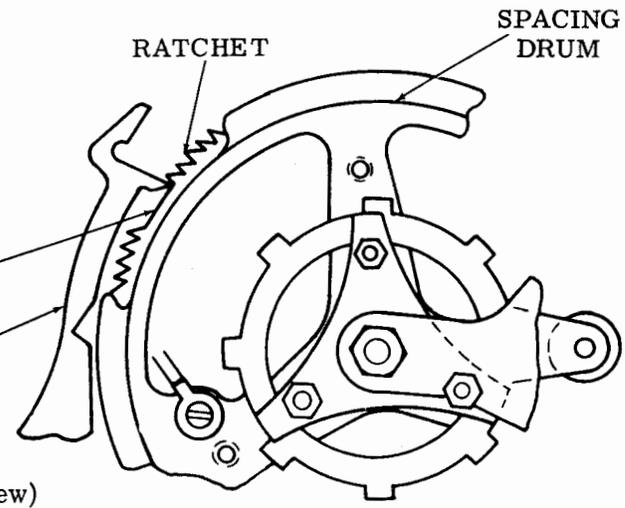
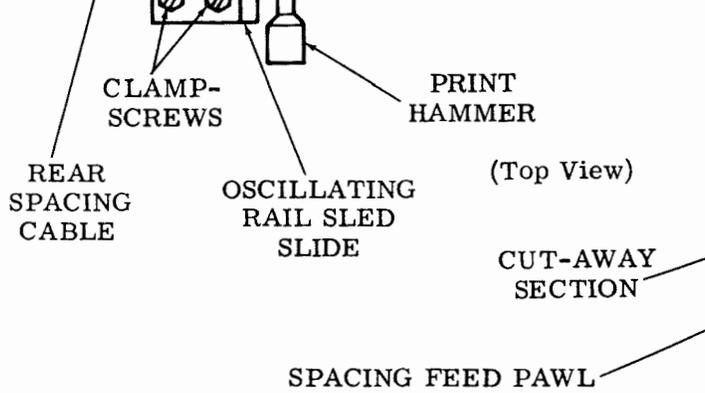
Sprocket Feed:
 The distance from the center of right sprocket feed pins to the center of type pallet located in upper right hand corner of typebox (see note 1) should be "X" +0.025 inch (see note 2).
 -0.050 inch



To Adjust
 Loosen clampscrews and position typebox and oscillating rail sled slide on rear spacing cable. Tighten clampscrews.

Note 1: Check requirement at type pallet located in typebox at junction of sixth horizontal row from bottom and first vertical row from right.

Note 2: See LEFT AND RIGHT HAND MARGIN (TABLE) (2.75) for "X" dimension.



2.71 Printing Mechanism (continued)

PRINT HAMMER POSITION

To Check

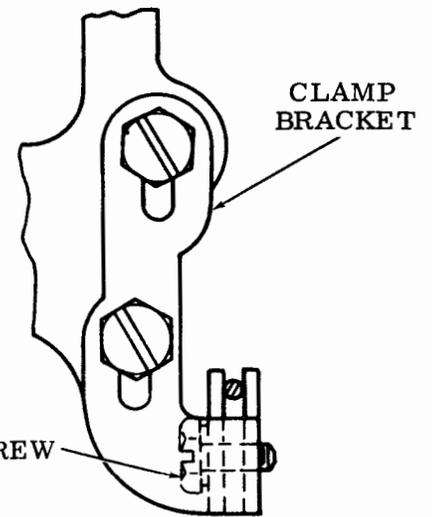
Codebars 1 and 7 marking. All other codebars spacing. All horizontal and vertical positioning clutches disengaged (latched). Engage (trip) print hammer clutch. Rotate main shaft until stop-lug is toward bottom of typing unit.

Requirement

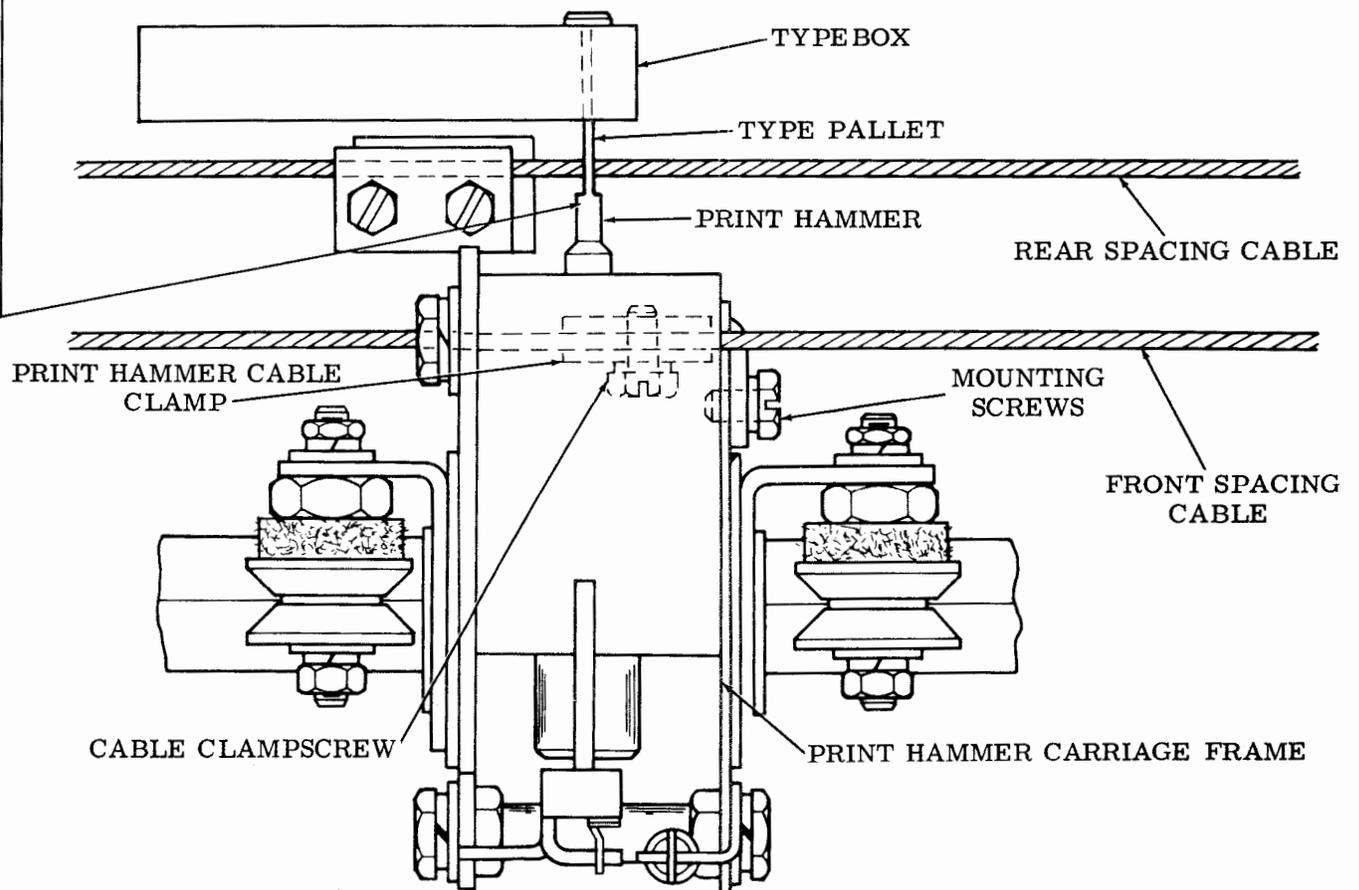
Print hammer should line up with type pallet located in typebox at junction of sixth horizontal row from bottom and first vertical row from right.

To Adjust

Loosen cable clampscrew. Position print hammer carriage on spacing cable. Tighten cable clampscrew.

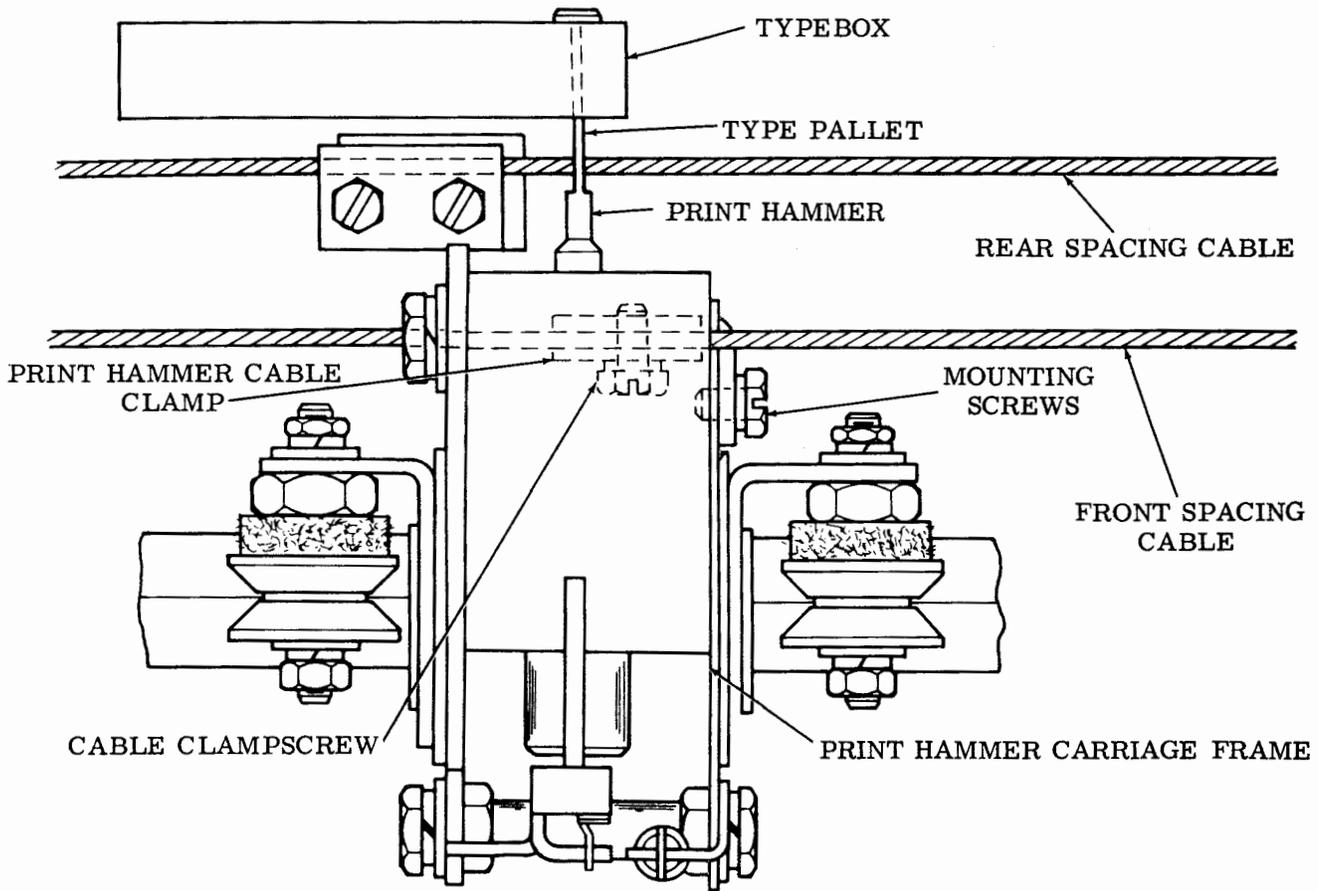


(Right Side View)



(Top View)

2.72 Printing Mechanism (continued)



(Top View)

FRONT SPACING CABLE ALIGNMENT

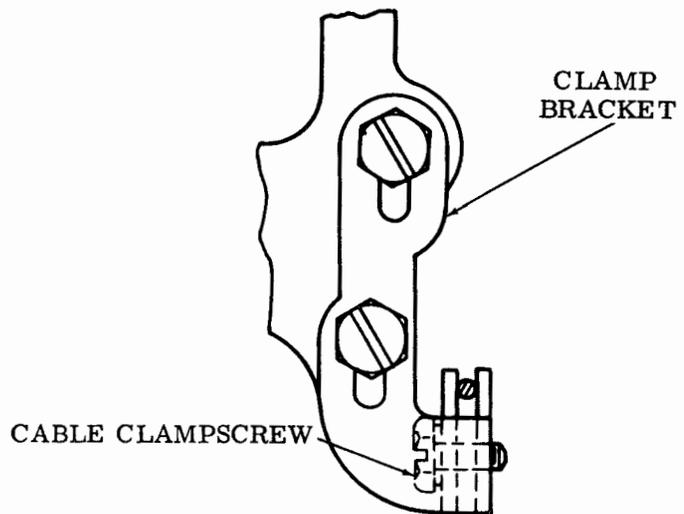
Requirement

Front spacing cable should form a straight line tangent to top of its two pulleys.

To Adjust

Loosen two mounting screws. Permit clamp bracket to seek its own height. Tighten mounting screws.

Note: Access to mounting screws can be obtained by rotating square shaft after removing retaining ring from print hammer drive link and print hammer lower drive shaft.



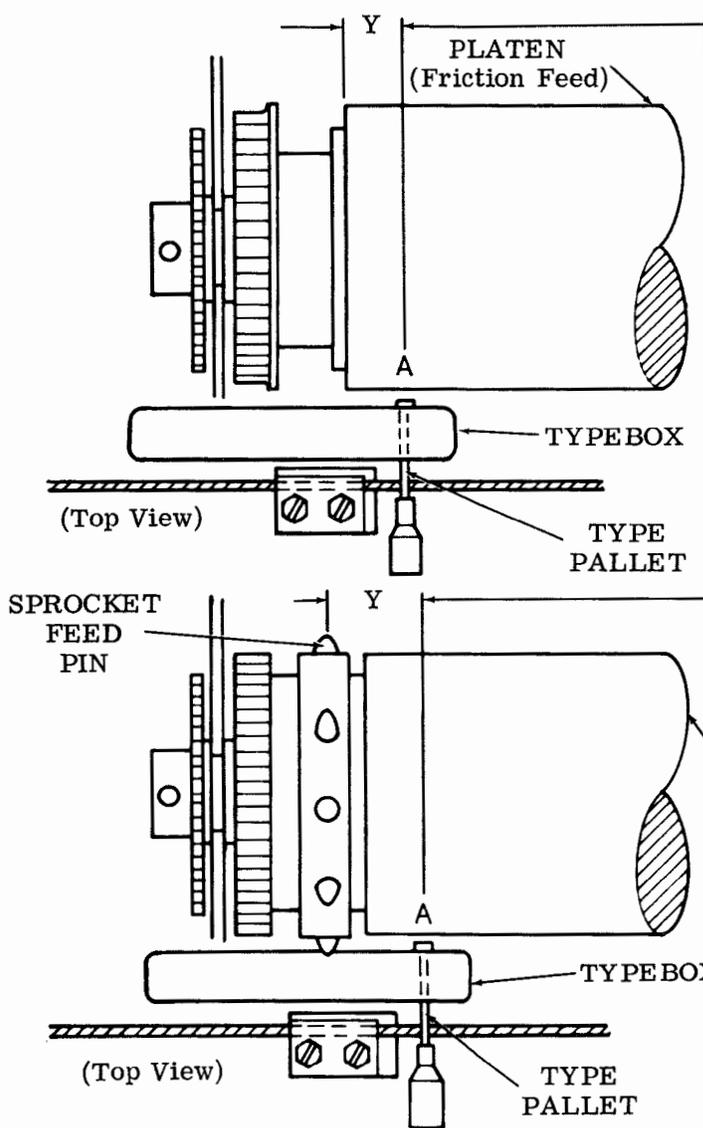
(Right Side View)

2.73 Printing Mechanism (continued)

LEFT HAND MARGIN

(1) To Check

Codebars 1 and 7 marking. All other codebars spacing. All clutches disengaged (latched). Carriage fully returned.



Requirement

Friction Feed:

The distance from the left edge of the platen to the center of the type pallet located in upper right hand corner of typebox (see note 1) should be "Y" +0.025 inch -0.050 inch (see note 2).

Sprocket Feed:

The distance from the center of left sprocket feed pins to the center of the type pallet located in upper right hand corner of typebox (see note 1) should be "Y" +0.025 inch -0.050 inch (see note 2).

Note 1: Check requirement (1) at type pallet located on typebox at junction of sixth horizontal row from bottom and first vertical row from right.

Note 2: See LEFT AND RIGHT HAND MARGIN (TABLE) (2.75) for "Y" dimension.

PLATEN (Sprocket Feed)

(Adjustment continued on following page.)

2.74 Printing Mechanism (continued)

LEFT HAND MARGIN (continued)

(2) To Check

Spacing clutch disengaged (latched). Front spacing feed pawl farthest advanced. Spacing drum fully returned. Play in spacing shaft gear taken up clockwise.

Requirement

Min some---Max 0.010 inch clearance between spacing feed pawl and shoulder of ratchet tooth immediately ahead.

Note 3: To Check for "some" requirement, apply a 3-pound force counterclockwise to spacing drum. The spacing pawl farthest advanced should move freely in and out of ratchet.

(3) To Check

Rear spacing feed pawl farthest advanced.

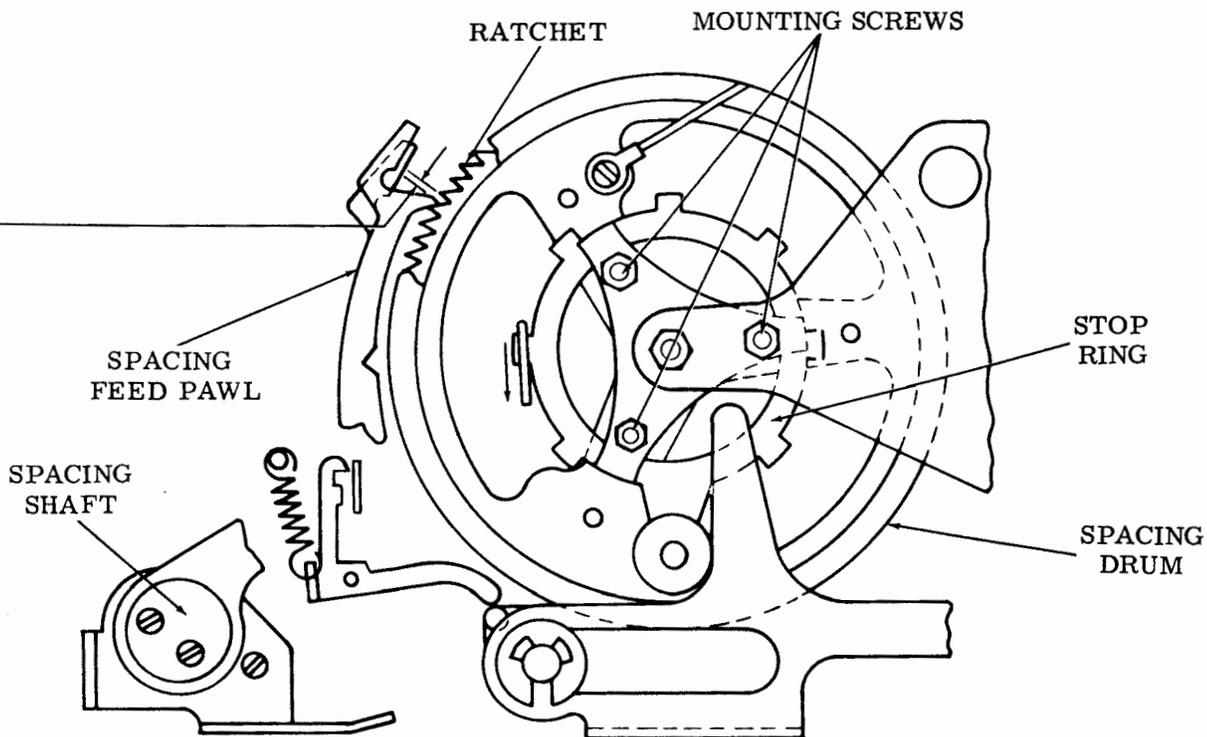
Requirement

Rear spacing feed pawl should rest at bottom of indentation between ratchet wheel teeth.

To Adjust

Return print hammer carriage to its left hand position. Loosen three stop ring mounting screws. Hold stop ring in its counterclockwise position and locate typebox per requirement (1). Tighten mounting screws.

Note 4: The number of characters in a line may vary by one more than is indicated in LEFT AND RIGHT HAND MARGIN (TABLE) (2.75).



(Front View)

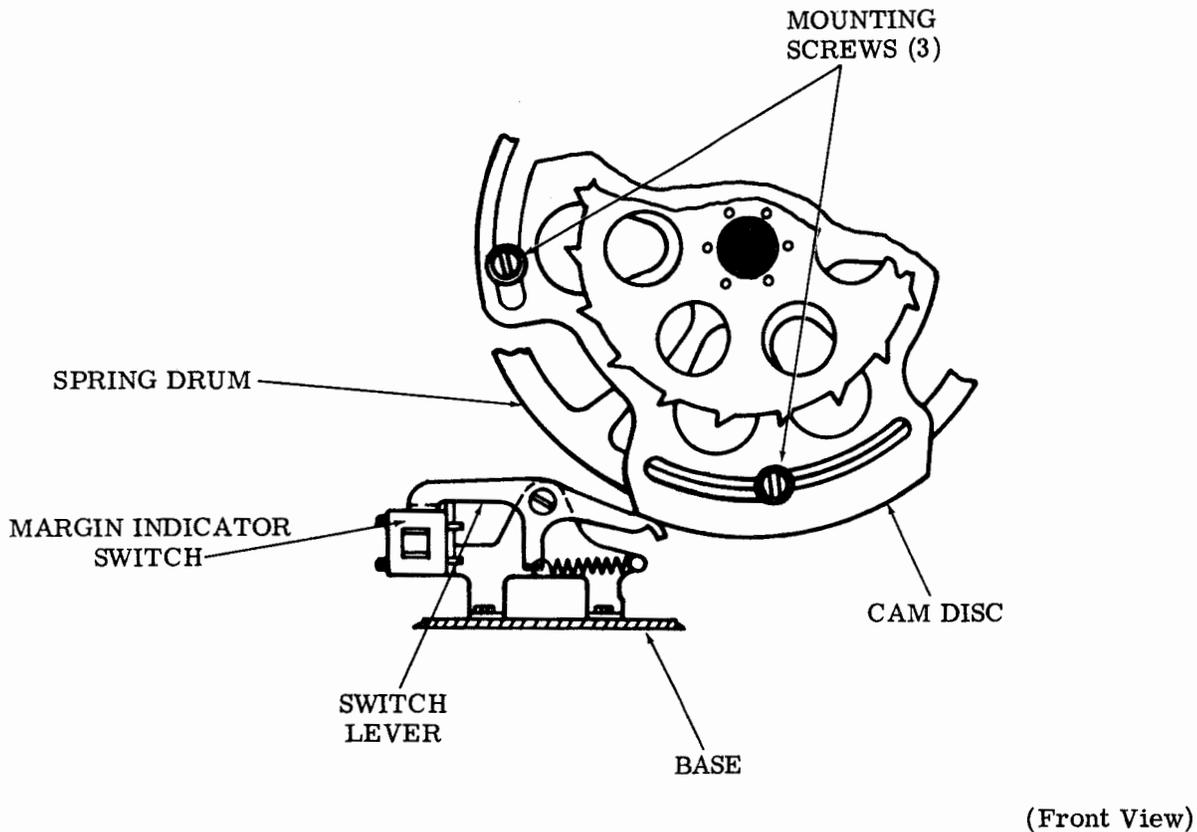
2.75 Printing Mechanism (continued)

LEFT AND RIGHT HAND MARGIN (TABLE)

Note: The following table provides requirement information for RIGHT HAND MARGIN (2.70) and LEFT HAND MARGIN (2.73 and 2.74) adjustment procedures. Dimensions are in inches.

COL		1	2	3	4	5	6	7	8	9									
CHAR LINE		PAPER WIDTH																	
10/IN		FRICTION FEED						SPROCKET FEED											
		8 1/2"						9 1/2"		9"		8 1/2"							
		Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X
A	60	1.300	1.550					1.450	1.650			1.450	0.650						
B	69	1.000	0.950					1.150	1.050			0.600	0.600						
C	72	1.000	0.650					1.150	0.750			0.600	0.300						
D	80	0.400	0.450					0.600	0.500			----	----						
E																			
F																			
G																			
H																			
I																			
J																			
K																			
L																			
M																			
	12/IN	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X	Y	X
N	80	1.000	1.150					1.000	1.400			1.000	0.400						
O	95	0.400	0.500					0.600	0.550			----	----						
P																			
Q																			
R																			
S																			
T																			
U																			

2.76 Printing Mechanism (continued)



MARGIN INDICATOR LAMP

Note 1: The typing unit must be placed onto its base prior to making this adjustment. For instructions on assembling the typing unit onto its base, see Section 574-301-702TC (Removal and Replacement of Components).

To Check

Print hammer carriage positioned to print eighth (+ one character) character from right hand margin.

Requirement

Indicator lamp should light.

To Adjust

Loosen three mounting screws. Position cam disc on spring drum so that margin indicator switch just opens. Tighten mounting screws.

Note 2: If a line shorter than 72 characters is required and the range of rotation with mounting screws in one set of tapped holes is not enough, remove through slots in cam disc into adjacent tapped holes.

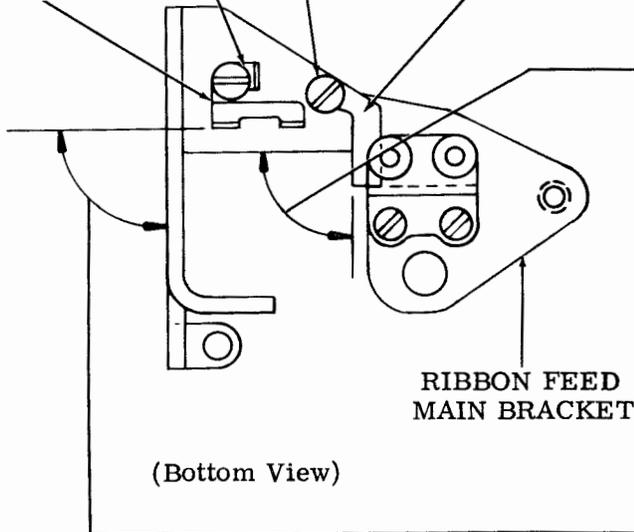
2.78 Ribbon Feed Mechanism — Early Design

REVERSING TOGGLE
STOP BRACKET
MOUNTING SCREW

FEED ARM GUIDE
MOUNTING SCREW

REVERSING
TOGGLE
STOP
BRACKET

FEED ARM GUIDE



RIBBON FEED
MAIN BRACKET

Note: Check FEED ARM GUIDE (LEFT AND RIGHT), REVERSING TOGGLE STOP BRACKET (LEFT AND RIGHT), REVERSING TOGGLE MOUNTING BRACKET (LEFT AND RIGHT), BLOCKING SLIDE GUIDE (LEFT AND RIGHT) (2.79), and BLOCKING SLIDE MOUNTING BRACKET (LEFT AND RIGHT) (2.79) adjustments only if screws mounting part concerned are loosened or if there is some reason to believe the adjustments are causing failures.

FEED ARM GUIDE (LEFT AND RIGHT)

Requirement

Feed arm guide should be square to ribbon feed main bracket as gauged by eye.

To Adjust

Loosen feed arm guide mounting screw and position feed arm guide. Tighten screw.

REVERSING TOGGLE STOP BRACKET (LEFT AND RIGHT)

Requirement

Two lugs of reversing toggle stop bracket should be square to ribbon feed main bracket as gauged by eye.

To Adjust

Loosen reversing toggle stop bracket mounting screw and position reversing toggle stop bracket. Tighten mounting screw.

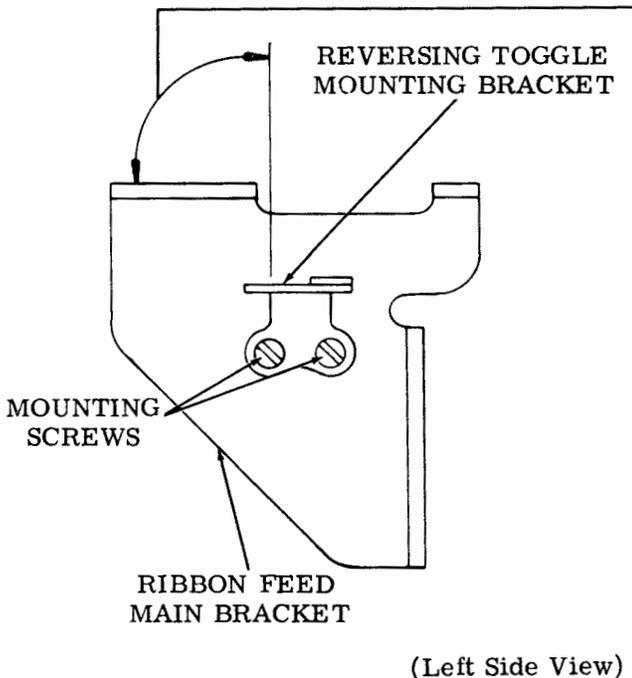
REVERSING TOGGLE MOUNTING BRACKET (LEFT AND RIGHT)

Requirement

Reversing toggle mounting bracket should be square to ribbon feed main bracket as gauged by eye.

To Adjust

Loosen the two mounting screws and position the reversing toggle mounting bracket. Tighten the mounting screws.

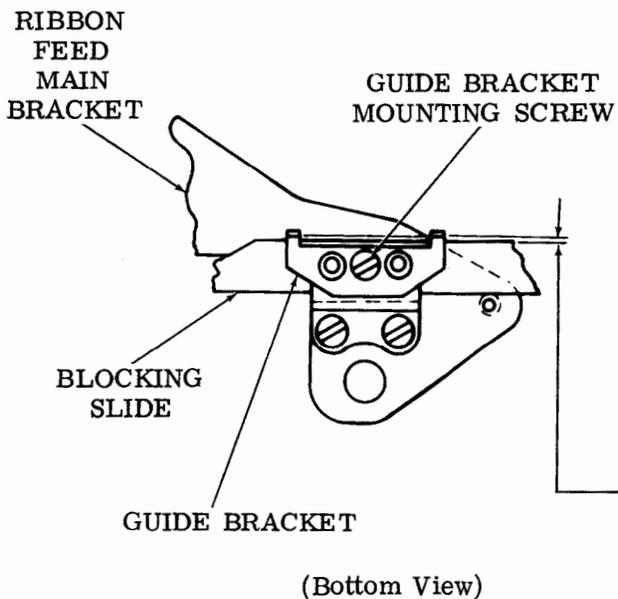


REVERSING TOGGLE
MOUNTING BRACKET

MOUNTING
SCREWS

RIBBON FEED
MAIN BRACKET

2.79 Ribbon Feed Mechanism — Early Design (continued)



Note: Check FEED ARM GUIDE (LEFT AND RIGHT) (2.78), REVERSING TOGGLE STOP BRACKET (LEFT AND RIGHT) (2.78), REVERSING TOGGLE MOUNTING BRACKET (LEFT AND RIGHT) (2.78), BLOCKING SLIDE GUIDE (LEFT AND RIGHT) and BLOCKING SLIDE MOUNTING BRACKET (LEFT AND RIGHT) adjustments only if screws mounting part concerned are loosened or if there is some reason to believe the adjustments are causing failures.

BLOCKING SLIDE GUIDE (LEFT AND RIGHT)

Requirement

Min some---Max 0.003 inch clearance between guide bracket and blocking slide.

To Adjust

Loosen guide bracket mounting screw and insert a 0.002 inch shim at two end points. Hold guide bracket against blocking slide and tighten mounting screw. Check for binds and refine if necessary.

BLOCKING SLIDE MOUNTING BRACKET (LEFT AND RIGHT)

To Check

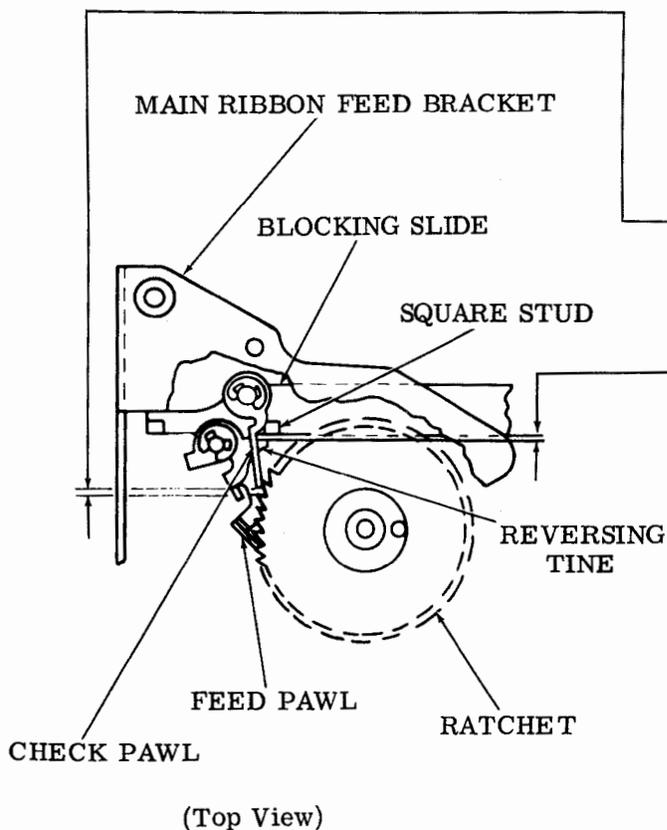
Feed pawl positioned against tooth on ratchet with
 — Min 0.015 inch---Max 0.040 inch clearance between ratchet and fourth tooth back from feed pawl.

Requirement

— Min 0.005 inch---Max 0.020 inch clearance between the square stud on blocking slide and the reversing tine on feed pawl.

To Adjust

Loosen ribbon feed main bracket mounting screws (2.78) and position main bracket. Tighten tine mounting screw.



2.80 Ribbon Feed Mechanism — Early Design (continued)

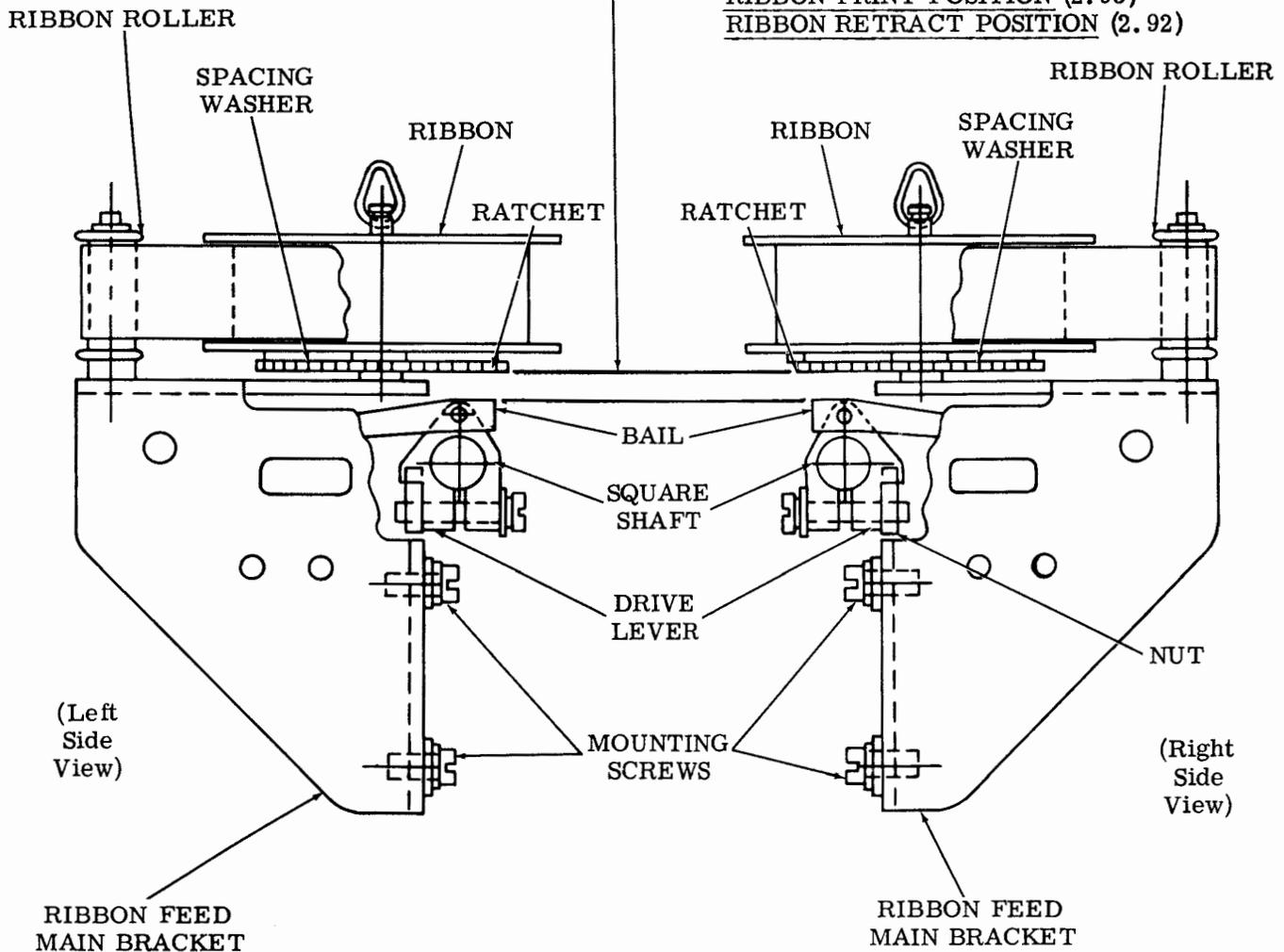
RIBBON FEED MAIN BRACKET (LEFT AND RIGHT)

(1) Requirement
 Min 0.060 inch---Max 0.075 inch
 clearance between underside of
 ratchet and top side of bail.

(2) Requirement
 Ratchet must be parallel to square
 shaft as gauged by eye from front of
 typing unit.

To Adjust
 Loosen ribbon feed main bracket mount-
 ing screws and position ribbon feed main
 bracket. Tighten mounting screws.

Affected Adjustments
RIBBON PRINT POSITION (2.93)
RIBBON RETRACT POSITION (2.92)



2.81 Ribbon Feed Mechanism — Early Design (continued)

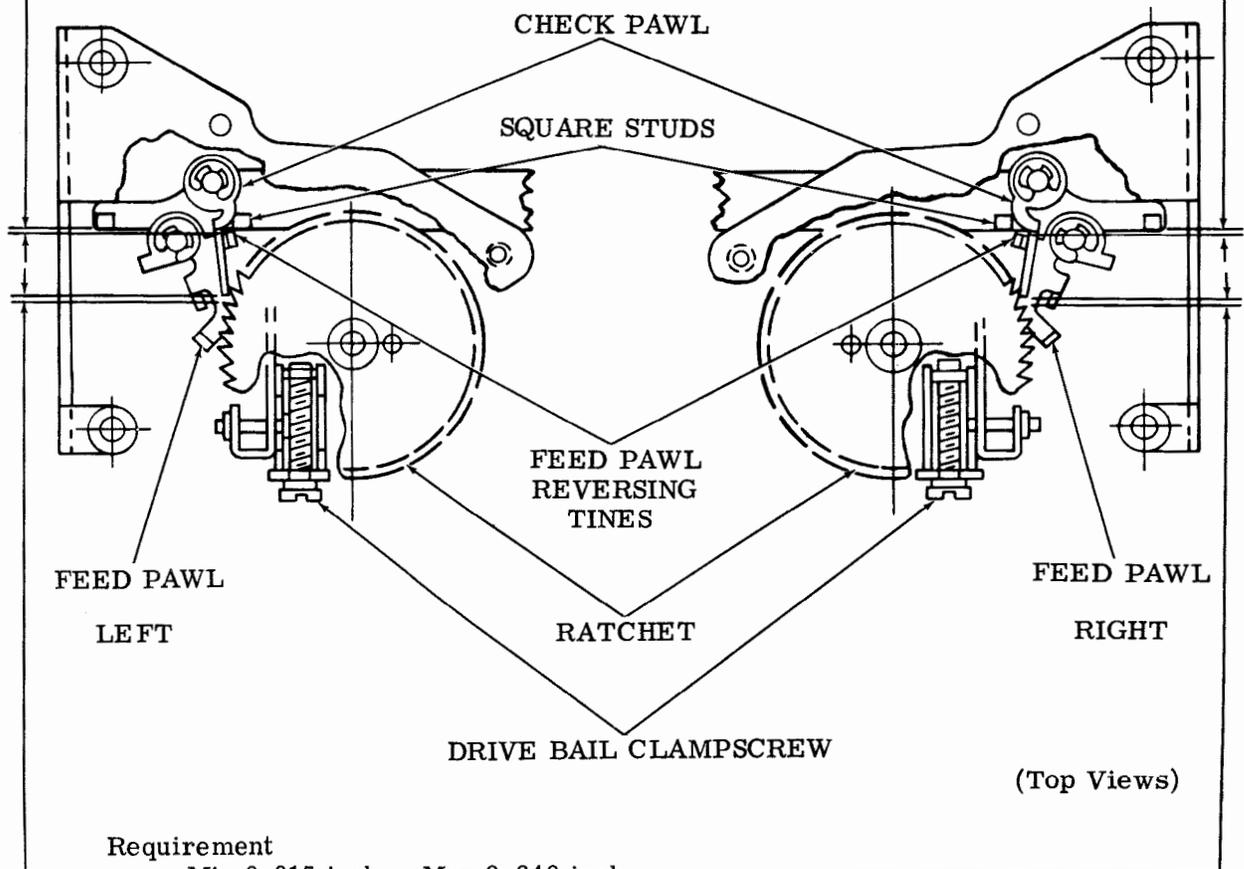
RIBBON FEED PAWL (LEFT AND RIGHT)

- (1) To Check
Feed pawl in farthest forward position.

Requirement

Min 0.005 inch---Max 0.025 inch
clearance between feed pawl reversing tine closest to ratchet and its associated square stud on blocking slide.

- (2) To Check
With first requirement met, there should be four teeth between feed pawl and check pawl.



Note: If the second requirement cannot be met, refine first requirement, recheck second requirement.

To Adjust

Loosen drive bail clampscrew and rotate square shaft. Tighten clampscrew.

2.82 Ribbon Feed Mechanism — Early Design (continued)

RIBBON REVERSING CONNECTING ROD

(1) To Check

Right blocking slide positioned on ribbon reversing connecting rod so that there is
 Min 0.125 inch---Max 0.188 inch

thread to right of locking nut. Disengage (latch) all clutches. Engage (trip) print hammer clutch and rotate main shaft until feed pawls are in maximum forward position. Move right reversing slide to maximum rearward position. Back off left locking nut so as not to restrict movement of left blocking slide.

Requirement (Left Side)

Left feed pawl tine closest to ratchet should be centered with its associated square stud on left blocking slide.

To Adjust

With left locking nut backed off, position left blocking slide to meet requirement. Tighten locking nuts.

(2) To Check

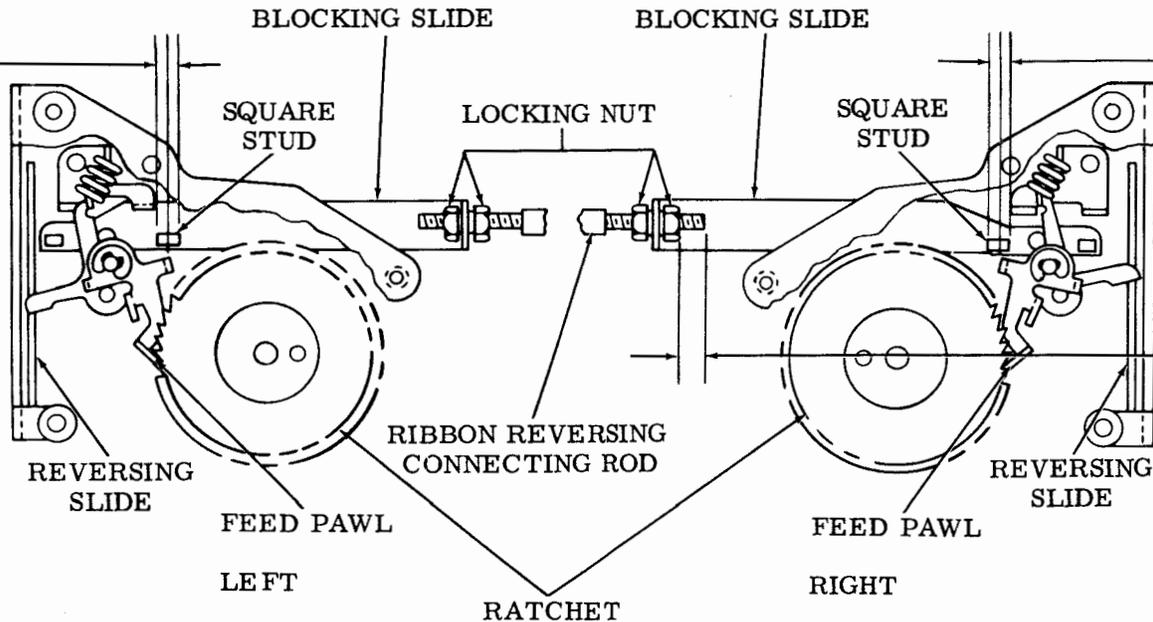
Move left reversing slide to maximum rearward position. Back off right locking nut so as not to restrict movement of right blocking slide.

Requirement (Right Side)

Right feed pawl tine closest to ratchet should be centered with its associate square stud on right blocking slide.

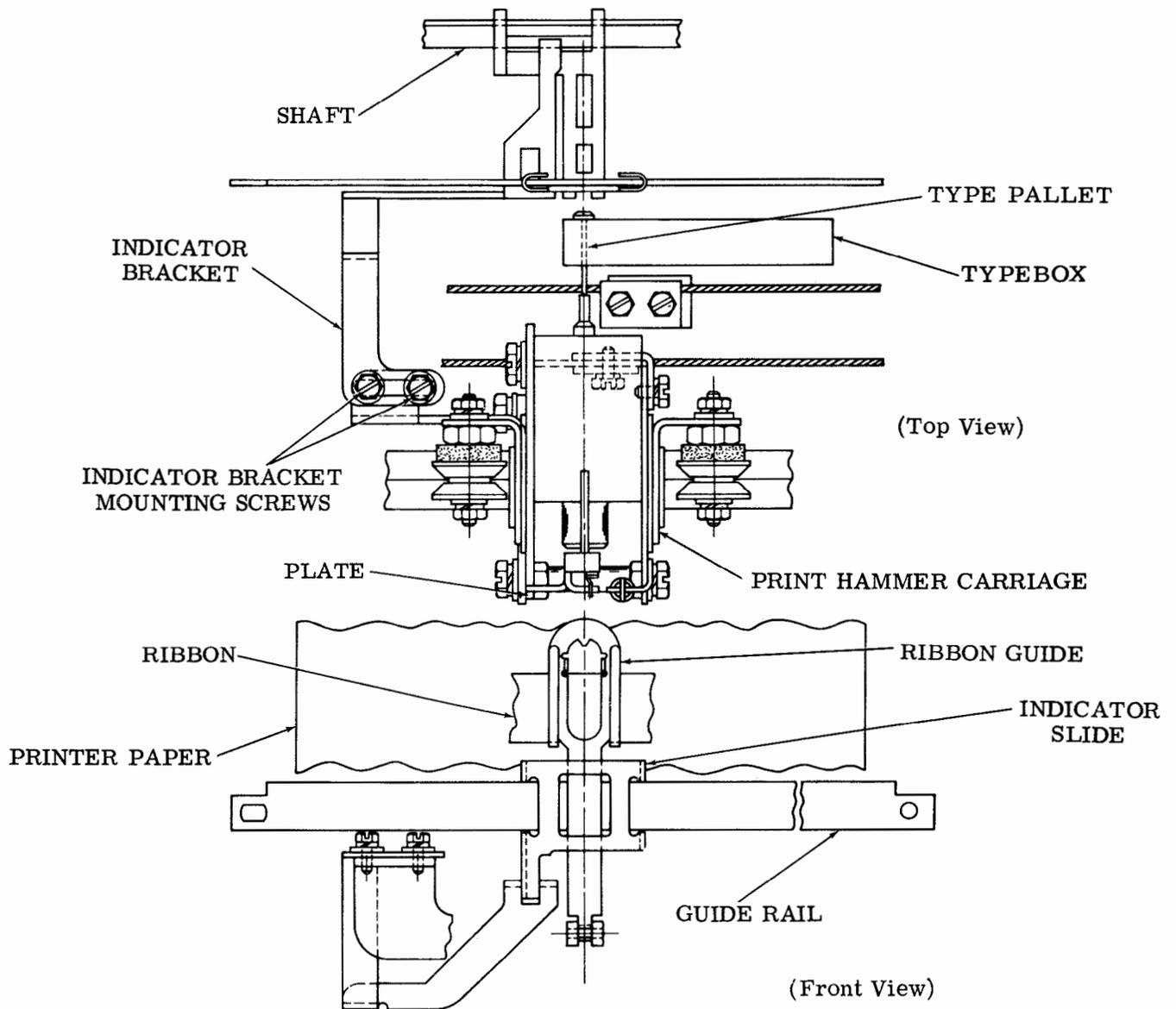
To Adjust

With right locking nut backed off position right blocking slide to meet requirement. Tighten locking nuts.



(Top View)

2.83 Ribbon Feed Mechanism — Early Design (continued)

RIBBON GUIDE ALIGNMENT**To Check**

Ribbon guide in print position.

Requirement

Selected type pallet should be horizontally centered in guide opening.

To Adjust

Loosen two indicator bracket mounting screws.
 Position indicator bracket to meet requirement.
 Be careful that lower rear portion of indicator bracket does not touch codebar tie bracket. Refine front and rear, if necessary.

2.84 Ribbon Feed Mechanism — Late Design

RIBBON FEED BRACKETS (LEFT AND RIGHT)

Requirement

The bracket extension should rest on the lower surface of the cut-out of the sintered bearing bracket. The top surface of the main bracket must be parallel to the square shaft as gauged by eye.

To Adjust

Loosen mounting screws friction tight. Position the bracket. Tighten screws.

CONNECTING ROD — (PRELIMINARY)

To Check

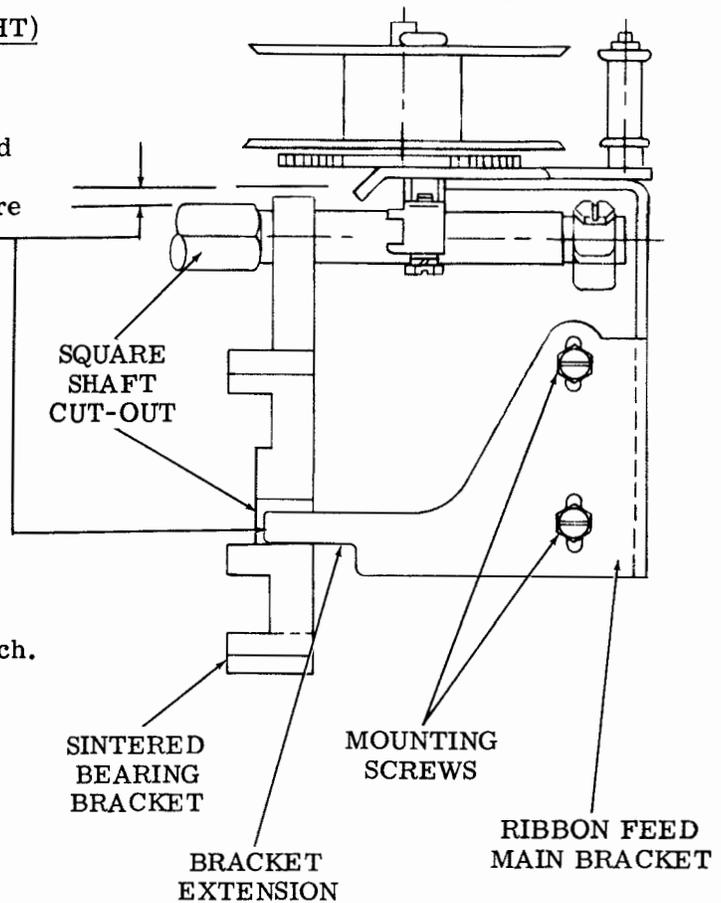
The left and right connecting rod must be assembled to the turnbuckles.

Requirement

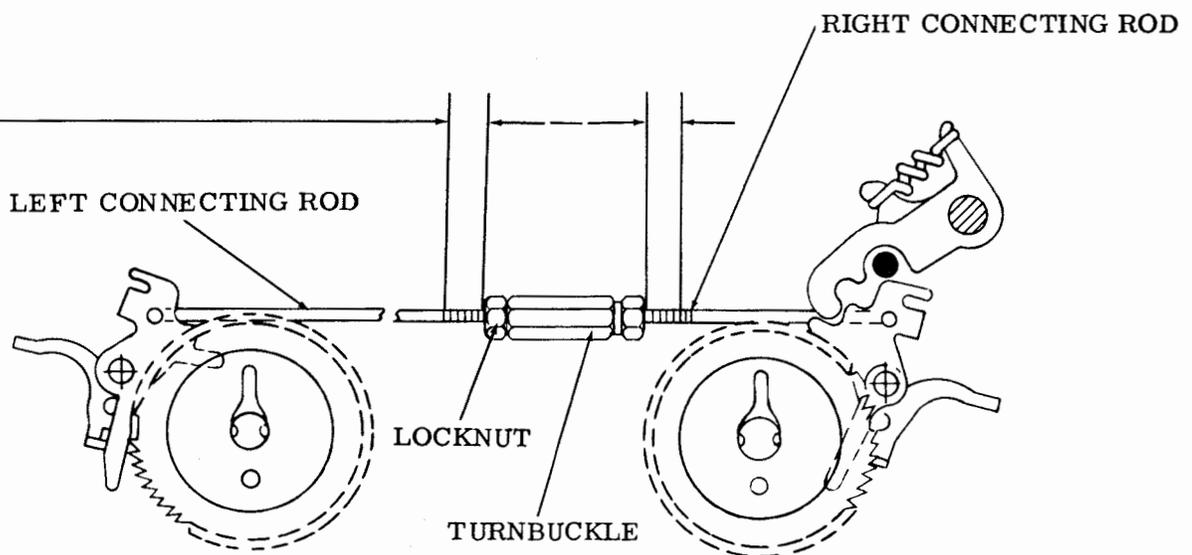
The visible thread on each side of the turnbuckle should be approximately 1/4 inch.

To Adjust

Rotate the turnbuckle.



(Front View)



(Top View)

2.85 Ribbon Feed Mechanism — Late Design (continued)

FEED PAWL DRIVE CLAMP (RIGHT)

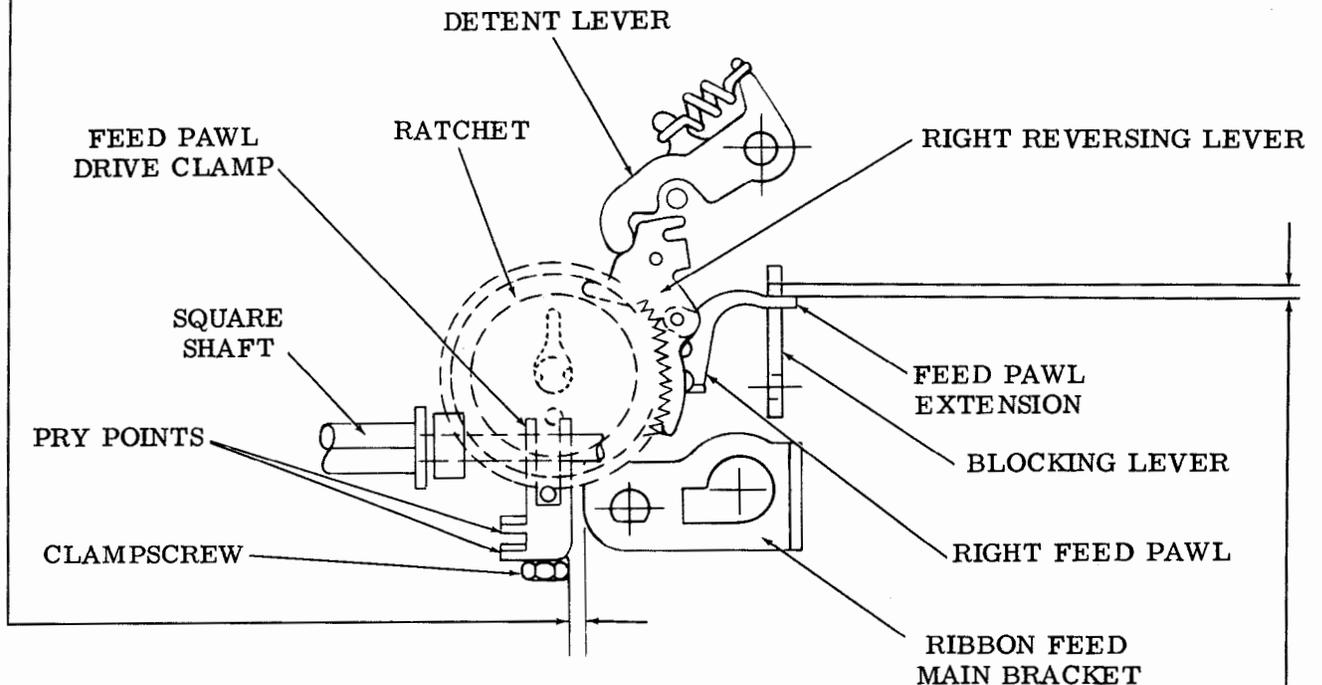
- (1) To Check
Take up the play in the square shaft to the left.

Requirement

Min 0.060 inch---Max 0.080 inch
clearance between the drive clamp and the ribbon feed main bracket.

To Adjust

ClampscREW friction tight. Move the drive clamp sideways to meet requirement.



- (2) To Check
Hold the right reversing lever in the detented position; the right feed pawl should be away from the ratchet. Trip the print hammer clutch and rotate the main shaft until the print hammer cam follower is on the high part of its cam. Move the blocking lever up to the feed pawl extension.

Requirement

Min 0.010 inch---Max 0.030 inch
clearance between the latching surface of the blocking lever and the feed pawl extension.

To Adjust

ClampscREW friction tight. Rotate the drive clamp to meet the requirement. Tighten clampscREW.

Note: The tightening of the clampscREW should not restrict the end play of the square shaft. If the end play is restricted, refine requirement.

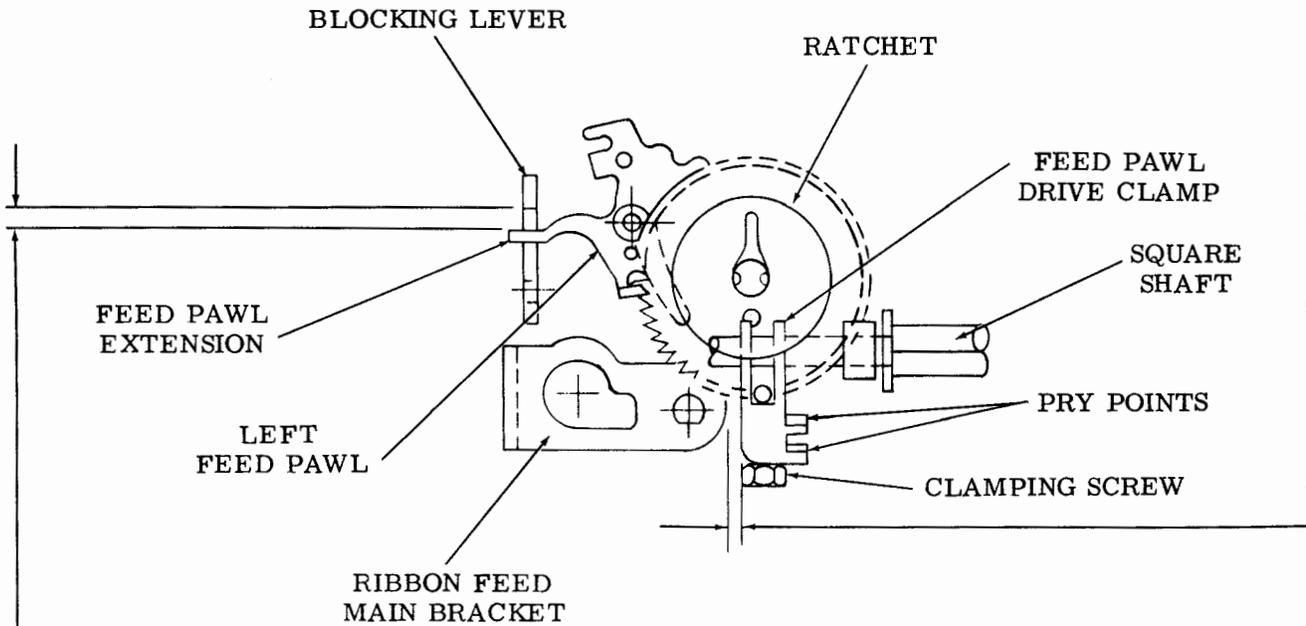
2.86 Ribbon Feed Mechanism — Late Design (continued)

FEED PAWL DRIVE CLAMP (LEFT)

- (1) To Check
Take up the play in the square shaft to the right.

Requirement
Min 0.030 inch---Max 0.050 inch
clearance between the drive clamp and ribbon feed main bracket.

To Adjust
Clampscrew friction tight. Move the drive clamp sideways to meet the requirement.



- (2) To Check
Hold the right reversing lever in the detented position; the left feed pawl should engage the ratchet. Trip the print hammer clutch and rotate the main shaft until the pivot hammer cam follower is on the low part of its cam. Move the blocking lever up to the feed pawl extension.

Requirement
Min 0.040 inch---Max 0.060 inch
clearance between the latching surface of the blocking lever and the feed pawl extension, when the feed pawl is fully engaged with the ratchet.

To Adjust
Clampscrew friction tight. Rotate the drive clamp to meet the requirement. Tighten clampscrew.

Note: The tightening of the clampscrew should not restrict the end play of the square shaft. If the end play is restricted refine requirement.

2.87 Ribbon Feed Mechanism — Late Design (continued)

CONNECTING ROD (FINAL)

To Check

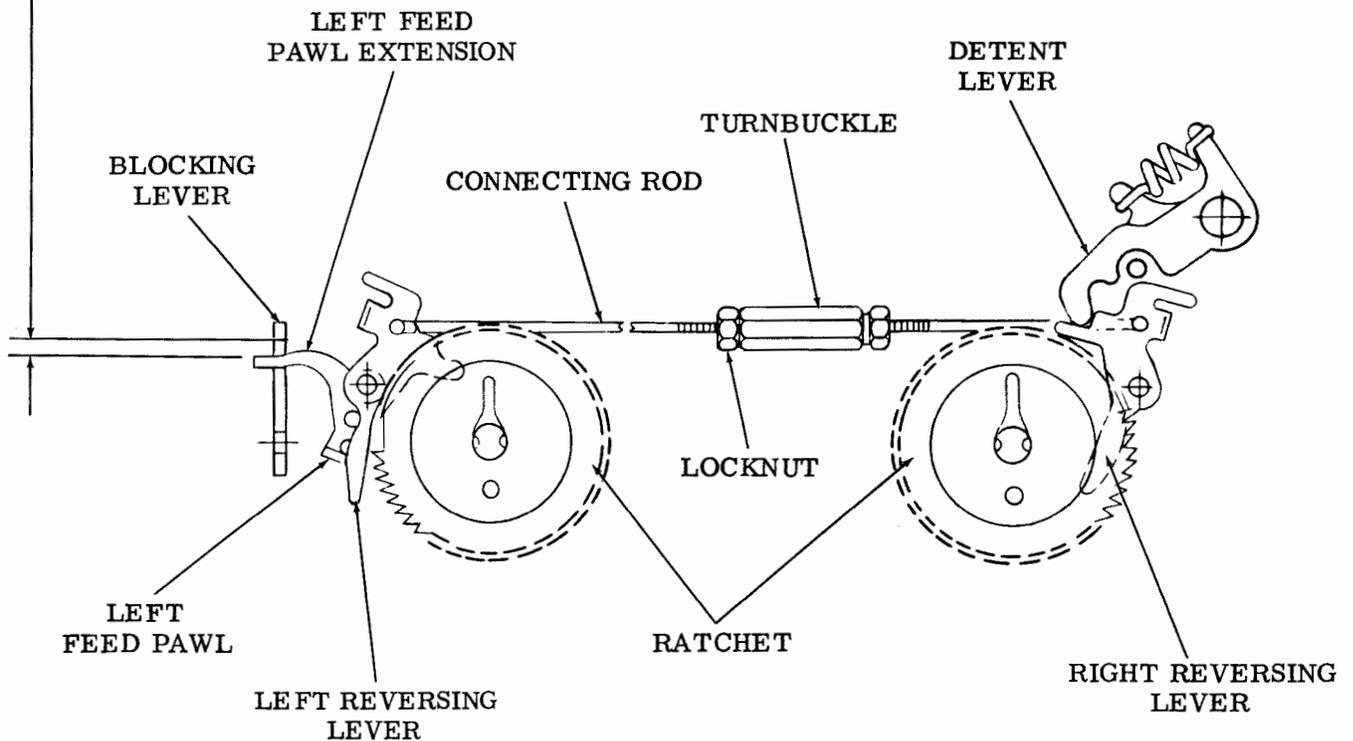
All clutches disengaged (latched). Hold the right reversing lever in the detented position; the left feed pawl should be away from the ratchet. Trip the print hammer clutch and rotate the main shaft until the print hammer cam follower is on the high part of its cam. Move the blocking lever up to the feed pawl extension.

Requirement

Min 0.010 inch---Max 0.030 inch
clearance between the latching surface of the blocking lever and the left feed pawl extension.

To Adjust

Back off locknut and rotate the turnbuckle to meet the requirement. Hold turnbuckle and tighten the locknut.



2.88 Ribbon Feed Mechanism — Late Design (continued)

CHECK PAWL (LEFT AND RIGHT)

To Check

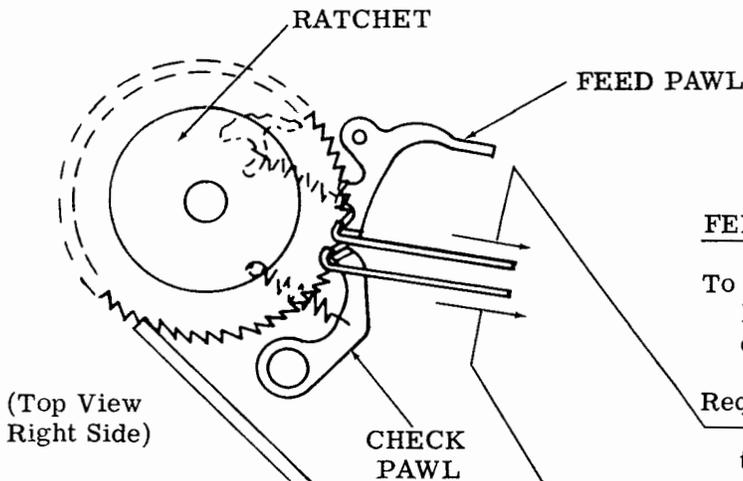
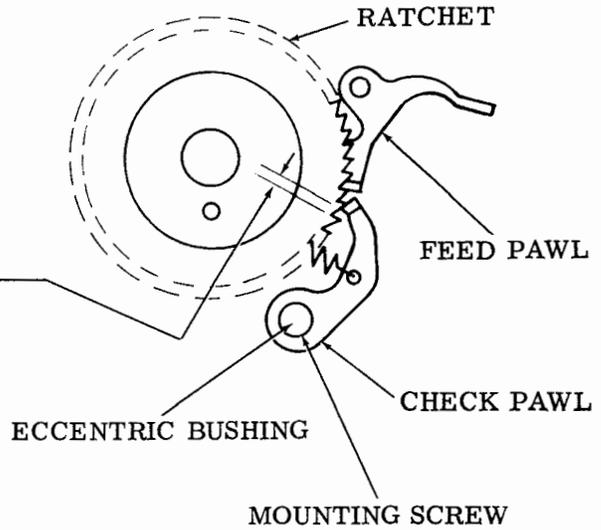
Print hammer cam follower on the high part of its cam, and the feed pawl engaging the ratchet.

Requirement

Min 0.010 inch---Max 0.030 inch clearance between the check pawl and the second tooth from the feed pawl.

To Adjust

Mounting screw friction tight. Rotate eccentric bushing to meet the requirement.



FEED PAWL SPRING (LEFT AND RIGHT)

To Check

Printing clutch disengaged, and feed pawl engaging the ratchet.

Requirement

Min 15 grams---Max 30 grams to start feed pawl moving.

CHECK PAWL SPRING (LEFT AND RIGHT)

To Check

Check pawl engaging the ratchet.

Requirement

Min 5 grams---Max 20 grams to start check pawl moving.

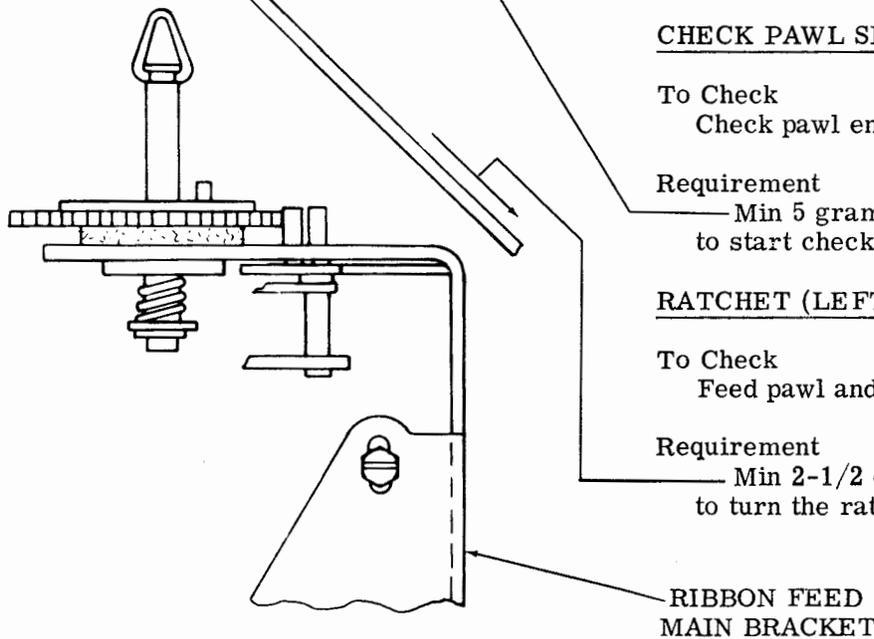
RATCHET (LEFT AND RIGHT)

To Check

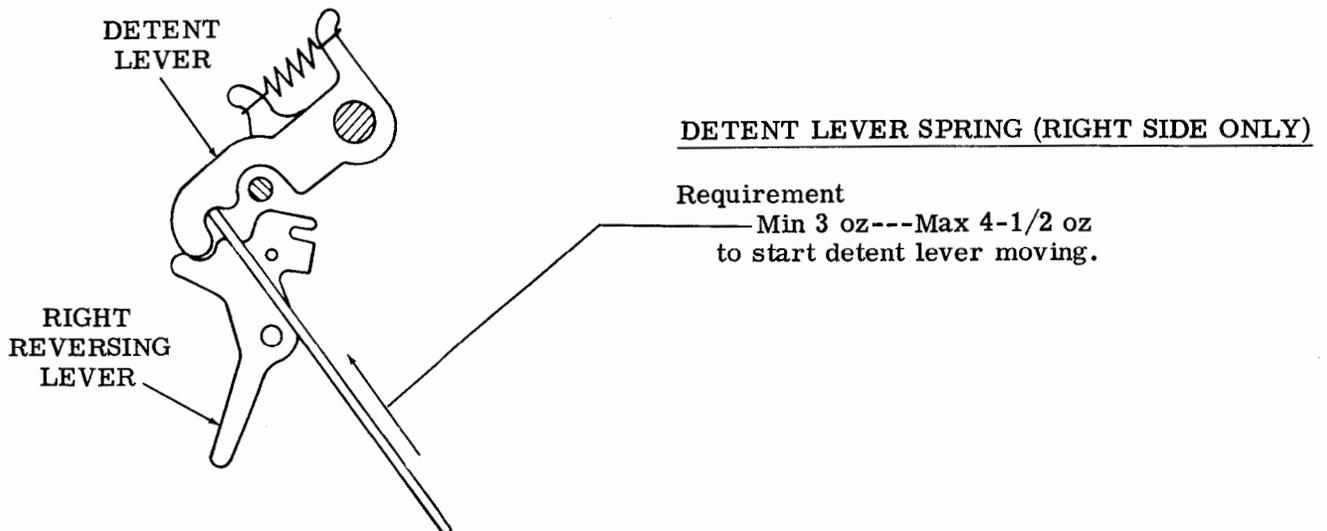
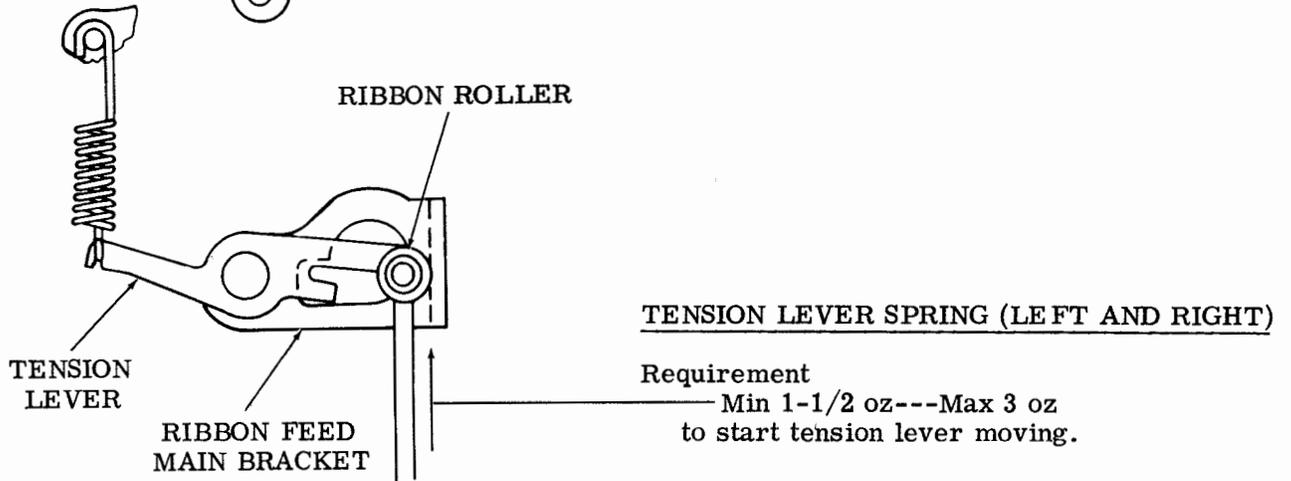
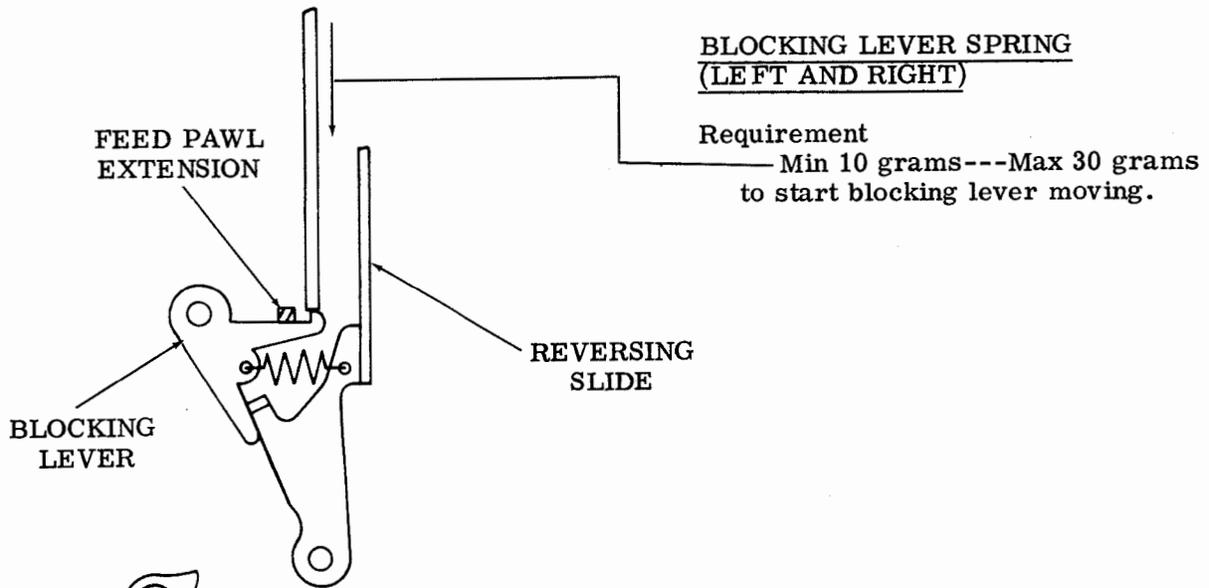
Feed pawl and check pawl disengaged.

Requirement

Min 2-1/2 oz---Max 6-1/2 oz to turn the ratchet.



2.89 Ribbon Feed Mechanism — Late Design (continued)



2.90 Ribbon Feed Mechanism — Late Design (continued)

VERTICAL POSITION OF INDICATOR BRACKET

(1) Requirement

Edge of indicator bracket should be even with the top edge of tie bracket as gauged by eye.

To Adjust

Loosen the two adjusting screws. Position the adjusting bracket up or down by the pry points (the bracket pivots about the front screw). Tighten the adjusting screws.

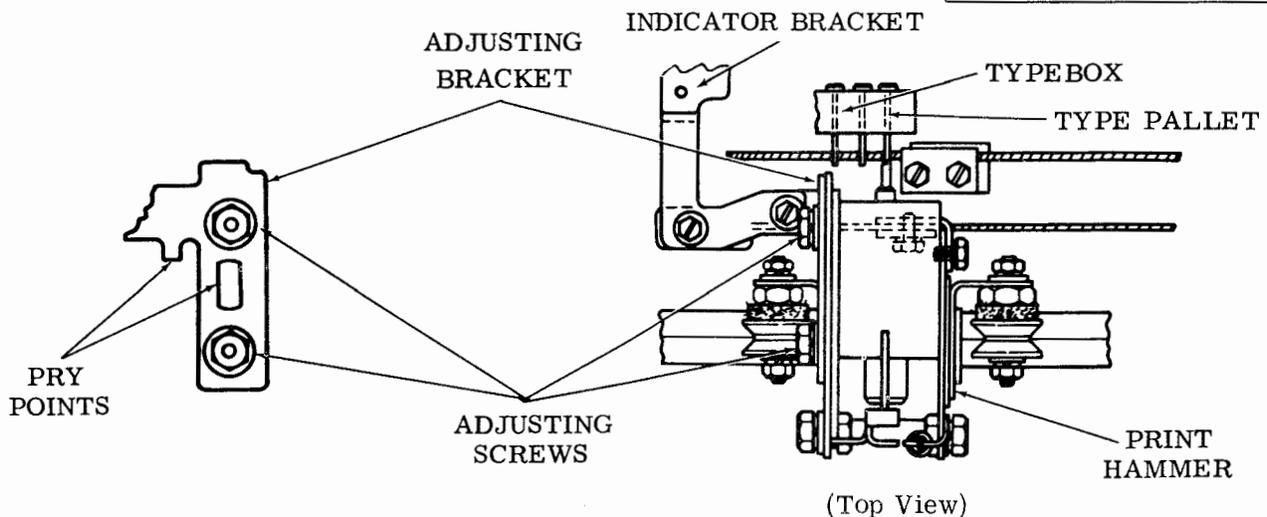
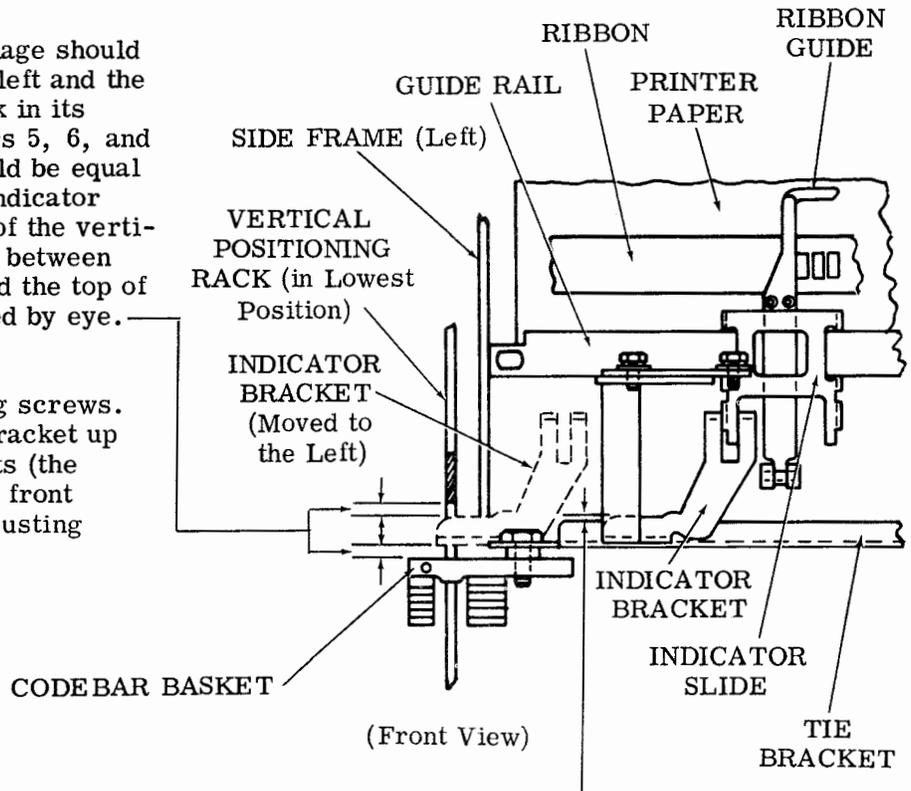
Note: Perform requirement (2) if the indicator bracket passes under the vertical positioning rack when the print hammer carriage is fully returned to the left.

(2) Requirement

The print hammer carriage should be fully returned to the left and the vertical positioning rack in its lowest position (codebars 5, 6, and 7 spacing). There should be equal clearance between the indicator bracket and the bottom of the vertical positioning rack and between the indicator bracket and the top of codebar basket as gauged by eye.

To Adjust

Loosen the two adjusting screws. Position the adjusting bracket up or down by the pry points (the bracket pivots about the front screw). Tighten the adjusting screws.



2.91 Ribbon Feed Mechanism — Late Design (continued)

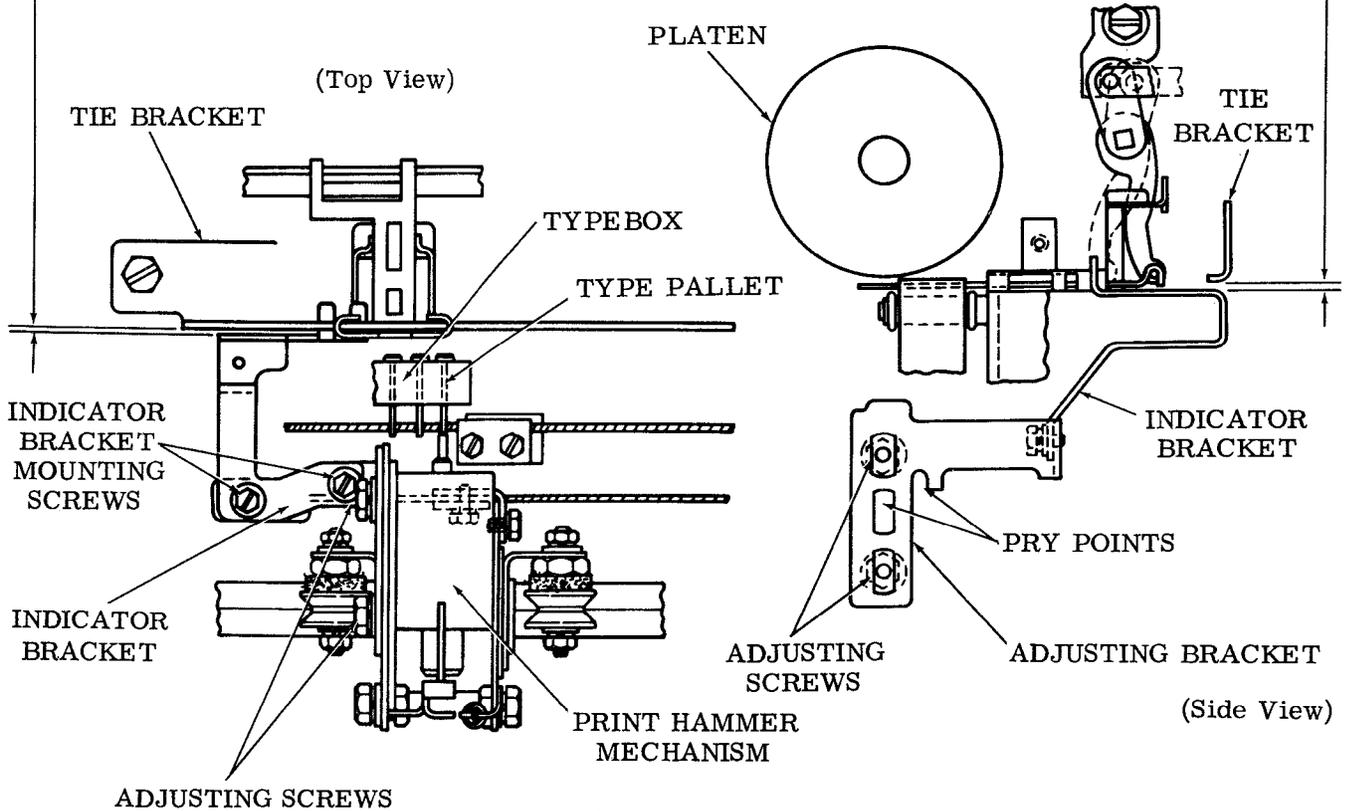
HORIZONTAL POSITION OF INDICATOR BRACKET

Requirement

—Min 0.020 inch---Max 0.045 inch—
clearance between the codebar tie bracket and the indicator bracket.

To Adjust

Loosen the two adjusting screws. Position the adjusting bracket forward or back by the pry points, to meet the requirement. Tighten adjusting screws.



RIBBON GUIDE POSITION

To Check

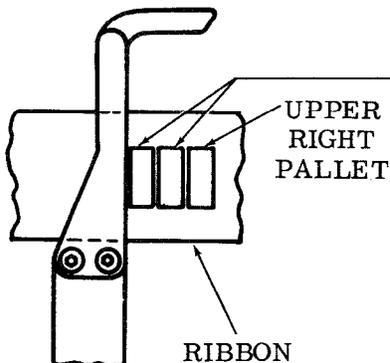
Position typebox so the upper right pallet is presented for printing.

Requirement

A space of two pallet widths between the upper right pallet and the right edge of the ribbon guide.

To Adjust

Loosen the two indicator bracket mounting screws. Position ribbon guide sideways to meet the requirement. Tighten indicator bracket mounting screws.



Note: Recheck VERTICAL POSITION OF INDICATOR BRACKET (2.90) and HORIZONTAL POSITION OF INDICATOR BRACKET adjustments.

2.92 Ribbon Feed Mechanism — Early and Late Design

RIBBON GUIDE TO PLATEN

To Check

Ribbon guide in uppermost (print) position. Ribbon in position and under tension.

Requirement

Min 0.025 inch---Max 0.040 inch clearance between ribbon guide and platen.

To Adjust

Loosen screw that secures slide block to each side frame. Pivot slide blocks until requirement is met along entire travel of ribbon guide. Maintain position of slide blocks and tighten screws.

RIBBON RETRACT POSITION

To Check

Print hammer clutch disengaged (latched). Take up play in ribbon guide in a downward direction.

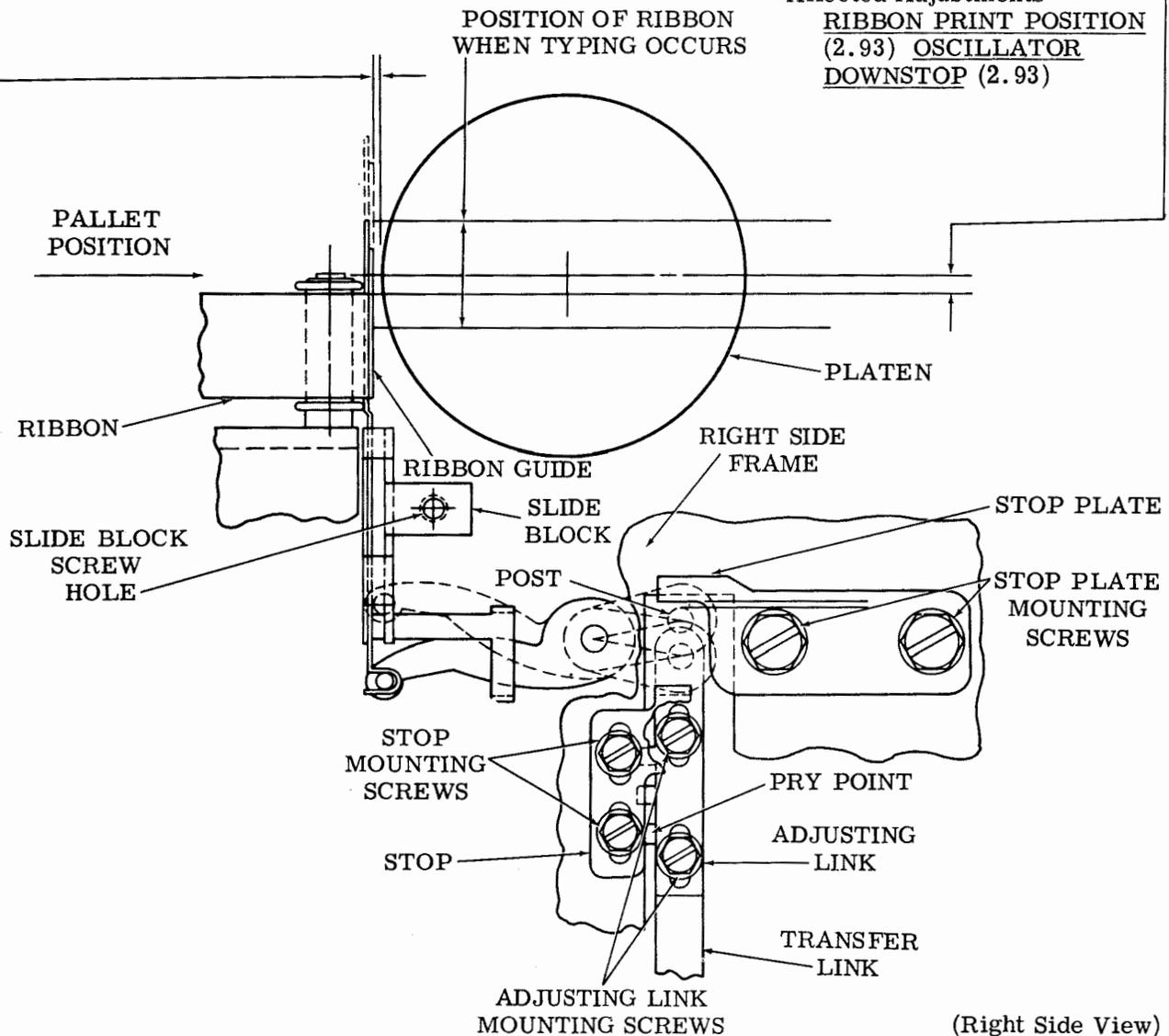
Requirement

Ribbon positioned so that top edge is in line with bottom of an upper case printed character as gauged by eye.

To Adjust

Loosen two adjusting link mounting screws. Position ribbon guide using pry point. Tighten adjusting link mounting screws.

Affected Adjustments
RIBBON PRINT POSITION
 (2.93) OSCILLATOR
DOWNSTOP (2.93)



2.93 Ribbon Feed Mechanism — Early and Late Design (continued)

RIBBON PRINT POSITION

Requirement
When typing occurs, type pallet should strike about center of ribbon.

To Adjust
Loosen two stop mounting screws. Raise or lower stop to meet requirement. Tighten stop mounting screws.

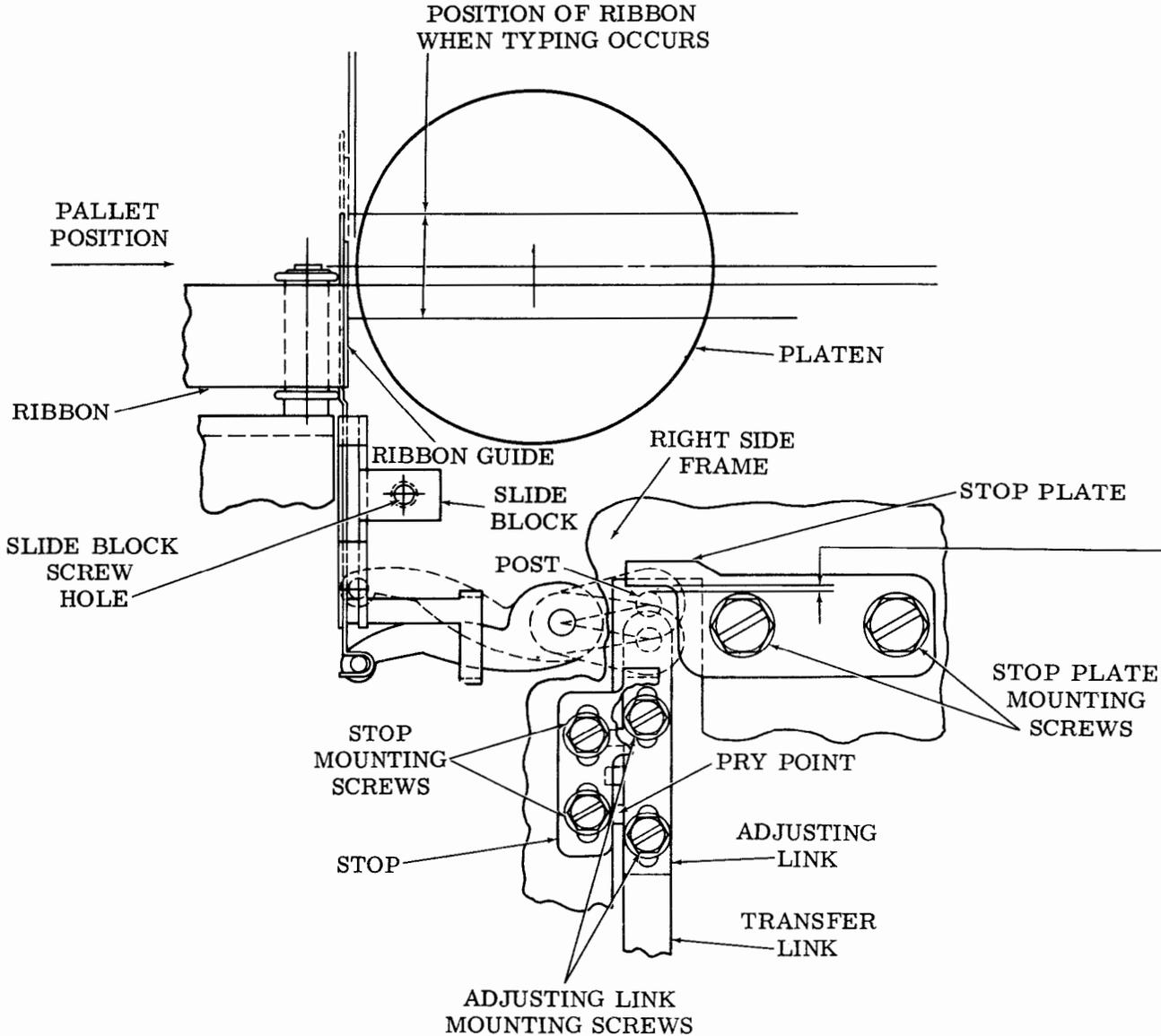
Affected Adjustment
OSCILLATOR DOWNSTOP

OSCILLATOR DOWNSTOP

To Check
Print hammer clutch disengaged (latched).

Requirement
Min some---Max 0.010 inch clearance between post and stop plate.

To Adjust
Loosen stop plate mounting screws. Position stop plate to meet requirement. Tighten stop plate mounting screws.



(Right Side View)

2.94 Printing Mechanism (continued)

TYPEBOX CARRIAGE ROLLER

(1) Requirement

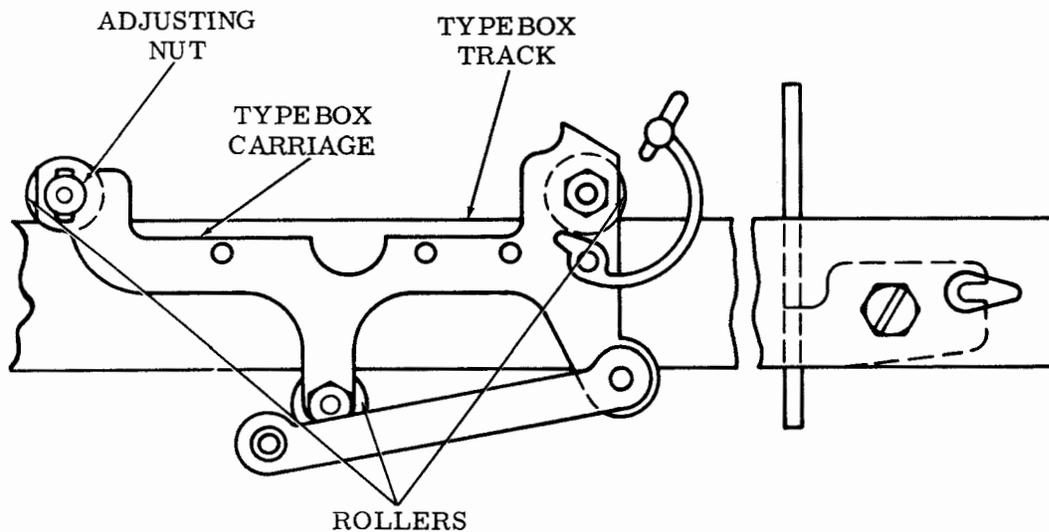
Typebox carriage should ride freely on typebox track.

(2) Requirement

Minimum play between rollers and typebox track in both vertical and front and rear directions.

To Adjust

Loosen adjusting nut and position roller in area where typebox track is widest. Tighten adjusting nut. Check for excessive play or binds along entire length of typebox track. Refine if necessary.



(Front View)

2.95 Printing Mechanism (continued)

TYPEBOX ALIGNMENT

- (1) To Check
Several characters printed.

Requirement

Printed impression of characters at top and bottom should be equal as gauged by eye.

To Adjust

Operate typing unit under power. Alternately select type pallet in top and bottom row. Turn adjusting screw in or out a quarter-turn at a time.

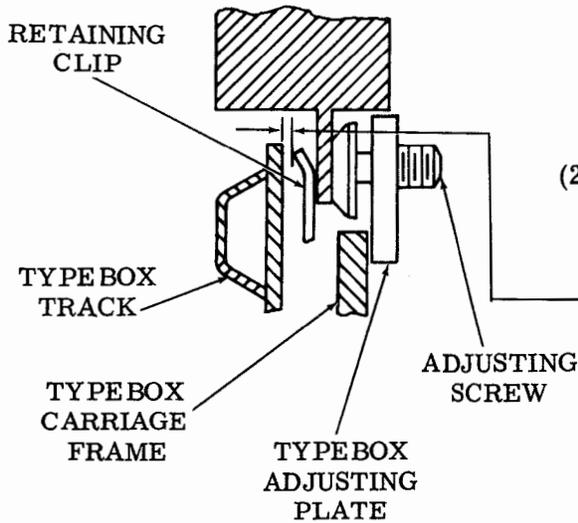
- (2) To Check
Typebox removed.

Requirement

Min 0.030 inch between typebox retaining clip and typebox track.

To Adjust

Refine (1) To Check requirement.



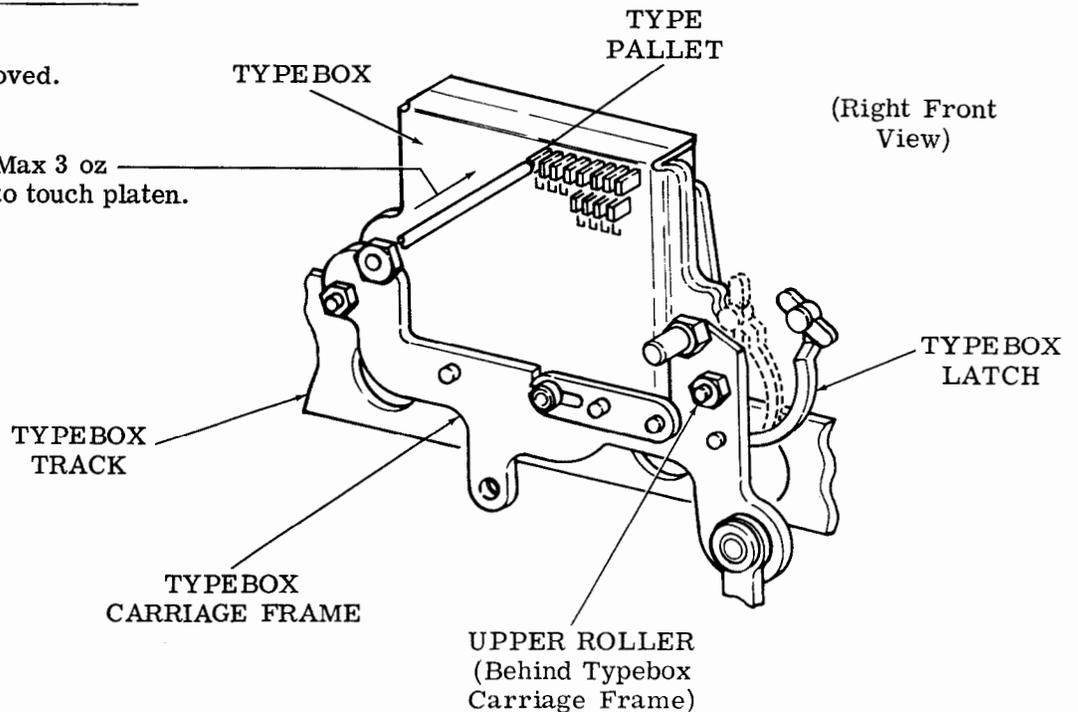
(Left Side View)

TYPEBOX PALLET SPRING

- To Check
Ink ribbon removed.

Requirement

Min 1 oz---Max 3 oz
for type pallet to touch platen.



(Right Front View)

2.96 Platen Mechanism (Friction Feed)

RIGHT PAPER STRAIGHTENER COLLAR

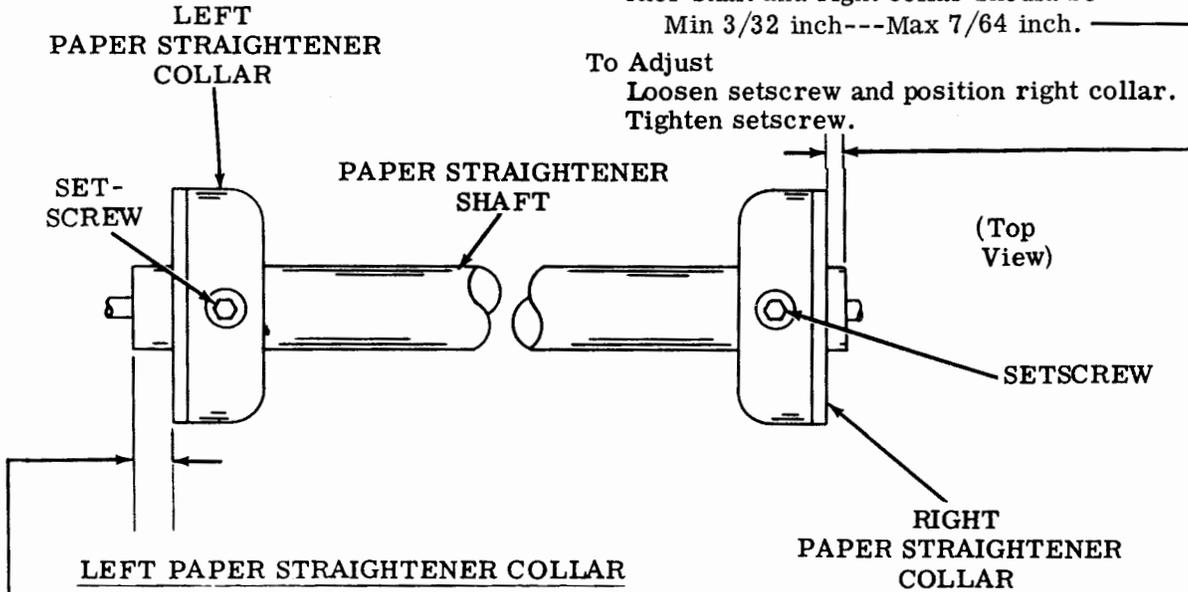
Requirement

Space between right shoulder of paper straightener shaft and right collar should be

Min $3/32$ inch---Max $7/64$ inch.

To Adjust

Loosen setscrew and position right collar. Tighten setscrew.



LEFT PAPER STRAIGHTENER COLLAR

Requirement

Space between left shoulder of paper straightener shaft and left collar should be

Min $1/4$ inch---Max $19/64$ inch.

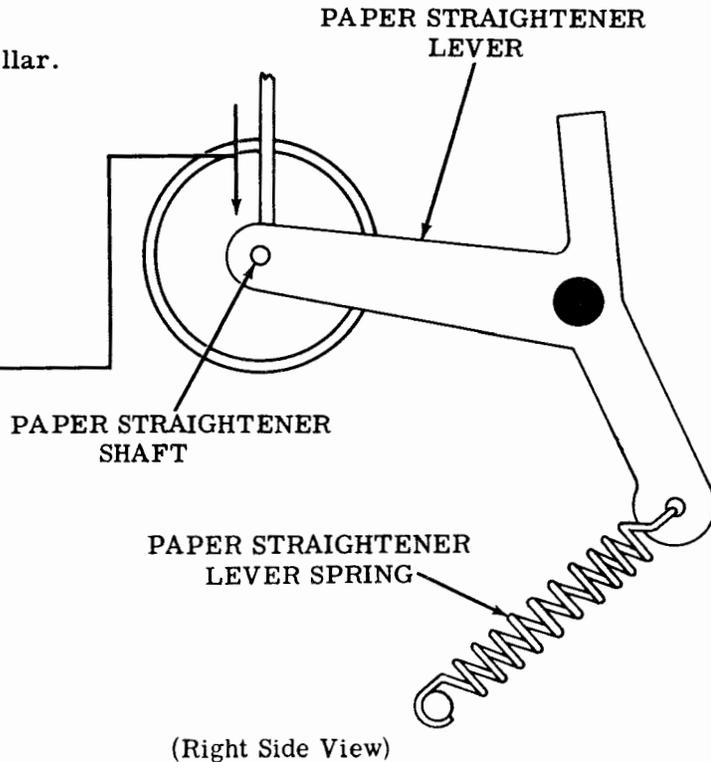
To Adjust

Loosen setscrew and position left collar. Tighten setscrew.

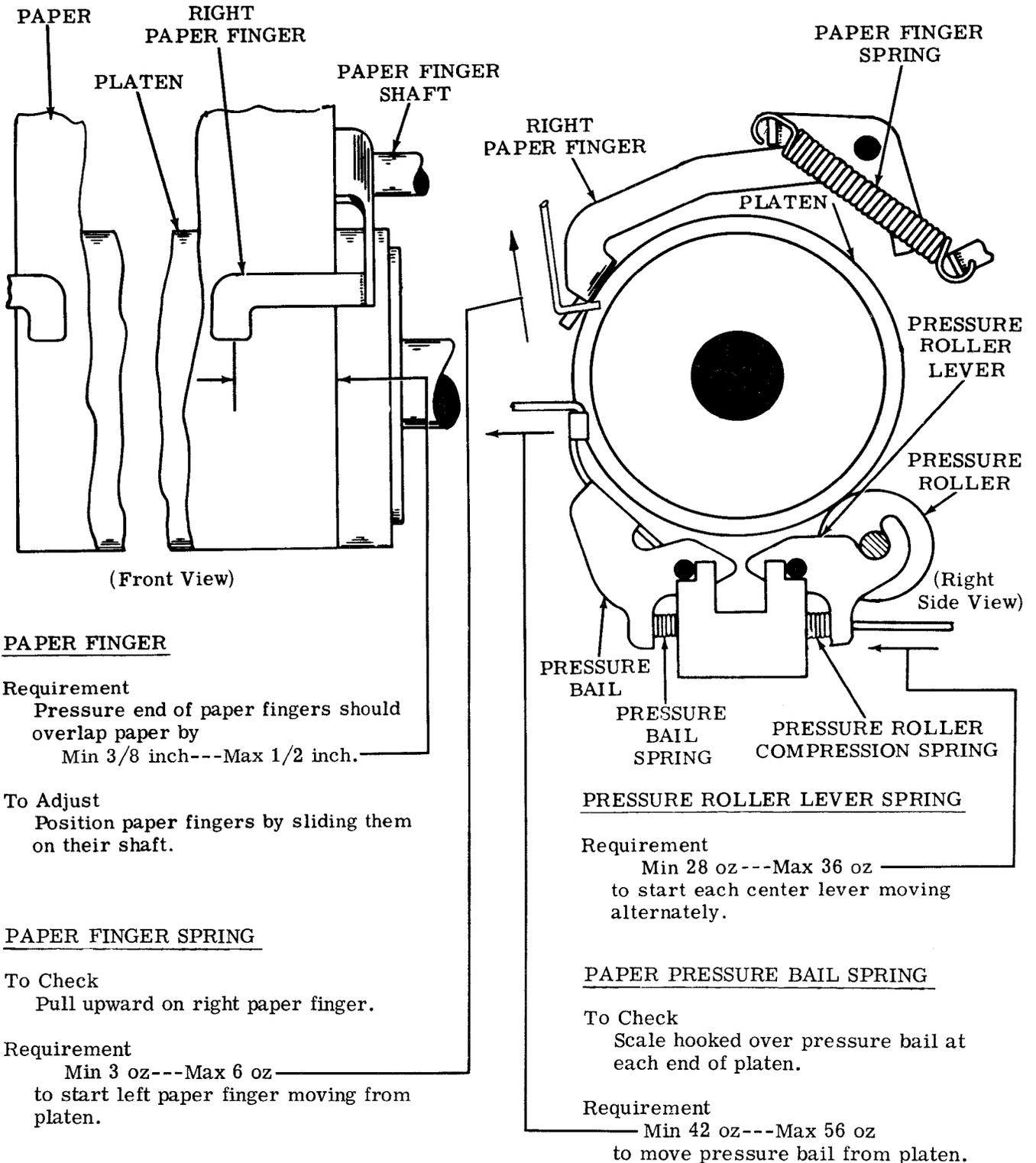
PAPER STRAIGHTENER LEVER SPRING

Requirement

Min $3-1/2$ oz---Max $6-1/2$ oz to start lever moving.



2.97 Platen Mechanism (Friction Feed) (continued)



PAPER FINGER

Requirement

Pressure end of paper fingers should overlap paper by
Min 3/8 inch---Max 1/2 inch.

To Adjust

Position paper fingers by sliding them on their shaft.

PAPER FINGER SPRING

To Check

Pull upward on right paper finger.

Requirement

Min 3 oz---Max 6 oz
to start left paper finger moving from platen.

PRESSURE ROLLER LEVER SPRING

Requirement

Min 28 oz---Max 36 oz
to start each center lever moving alternately.

PAPER PRESSURE BAIL SPRING

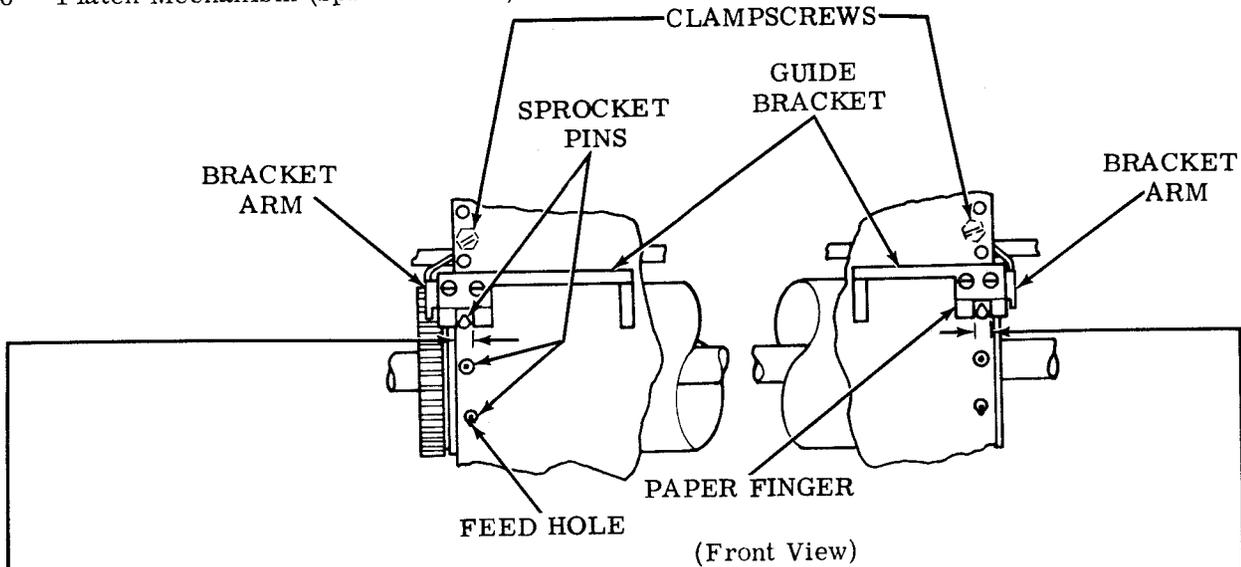
To Check

Scale hooked over pressure bail at each end of platen.

Requirement

Min 42 oz---Max 56 oz
to move pressure bail from platen.

2.98 Platen Mechanism (Sprocket Feed)



PAPER FINGER

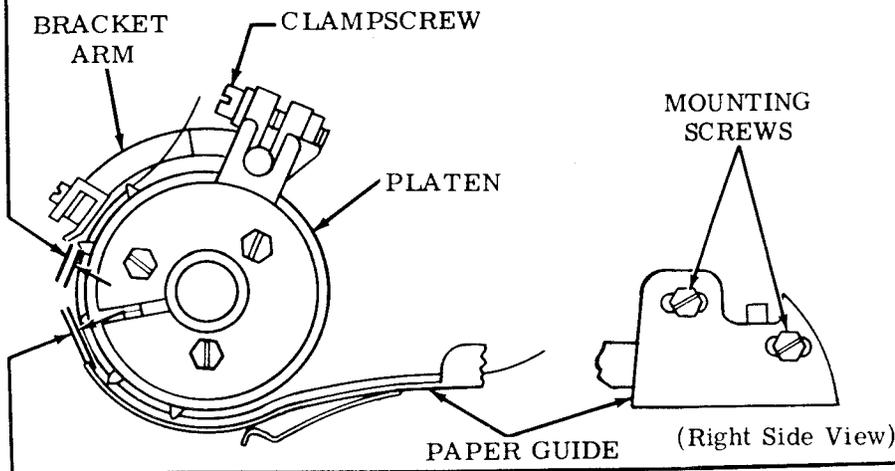
To Check
Guide bracket down in latched position.

(1) Requirement
Sprocket pins should be centrally located in guide slot.

(2) Requirement
Gap between platen and paper finger should be:
Stapled Multiple Copy;
Min 0.050 inch---Max 0.105 inch
Single and Unstapled Multiple Copy;
Min 0.020 inch---Max 0.060 inch

To Adjust
Loosen clampscrews. Position guide bracket horizontally to meet requirement (1). Rotate guide bracket to meet requirement (2). Tighten clampscrews.

Note: The desired clearance should be the minimum which will pass stationery freely.

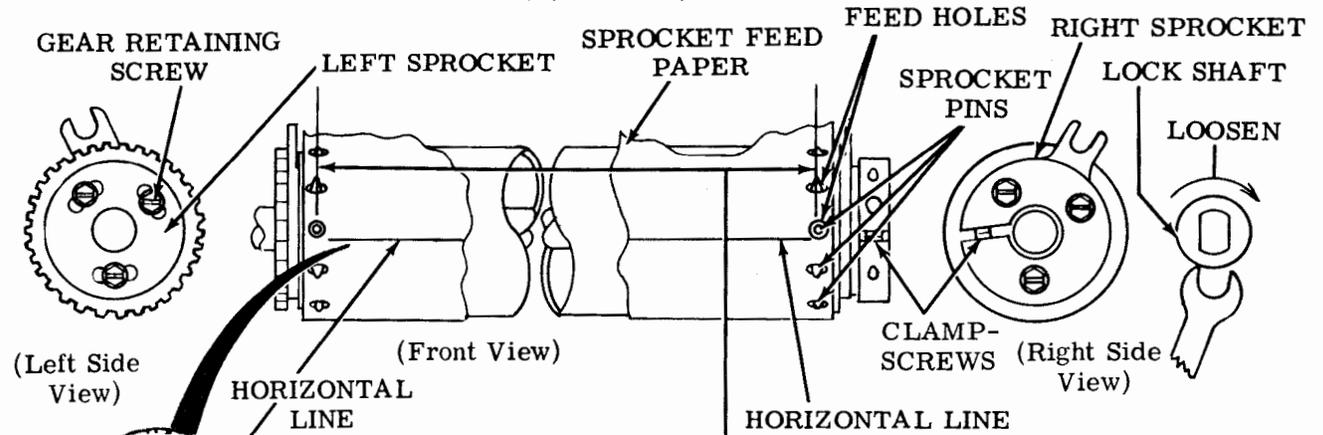


PAPER GUIDE

Requirement
Clearance between platen and front edge of paper guide should be same as requirement (2), PAPER FINGER adjustment.

To Adjust
Loosen mounting screws and position paper guide. Tighten mounting screws

2.99 Platen Mechanism (Sprocket Feed) (continued)



SPROCKET PIN SEPARATION

To Check

A single sheet of sprocket feed paper on platen.

(1) Requirement

Sprocket pins should be centrally located in feed holes of paper.

(2) Requirement

Printed line should be parallel to a line drawn perpendicular to edge of sprocket feed paper ($\pm 1/32$ inch).

To Adjust

All Except 9-1/2 Inch Form Width:
Loosen clampscrew and position right sprocket. Tighten clampscrew.
With 9-1/2 Inch Form Width:
Loosen lock shaft and rotate right sprocket to required position.
Hold right sprocket hub in position and tighten lock shaft.

Note: The 9-1/2 inch platens do not use a clampscrew on the right sprocket.

PRINTED LINE
To Check
A standard sheet of sprocket feed paper on platen, type a printed line. Draw a horizontal line on sprocket feed paper even with bottom edge of first feed hole below printed line.
Requirement
Bottom edge of printed line should be $1/32$ inch $\pm 1/64$ inch above horizontal line plus a multiple of $1/6$ inch if required.
To Adjust
Loosen gear retaining screws and position left sprocket. Tighten gear retaining screws.
Note: If nonstandard paper is used, a variation in requirement may be necessary.

PLATEN ENDPLAY

To Check

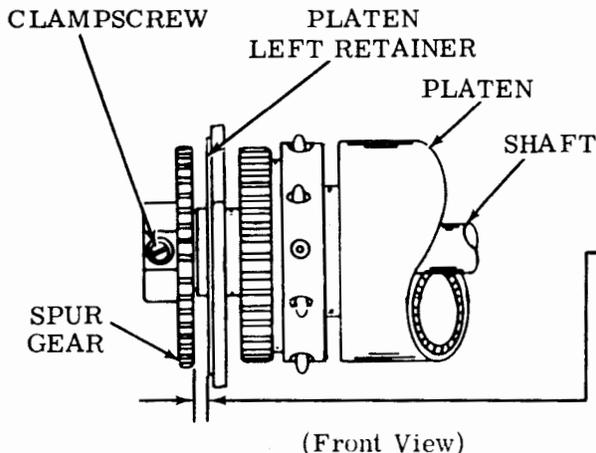
Line feed bars disengaged.

Requirement

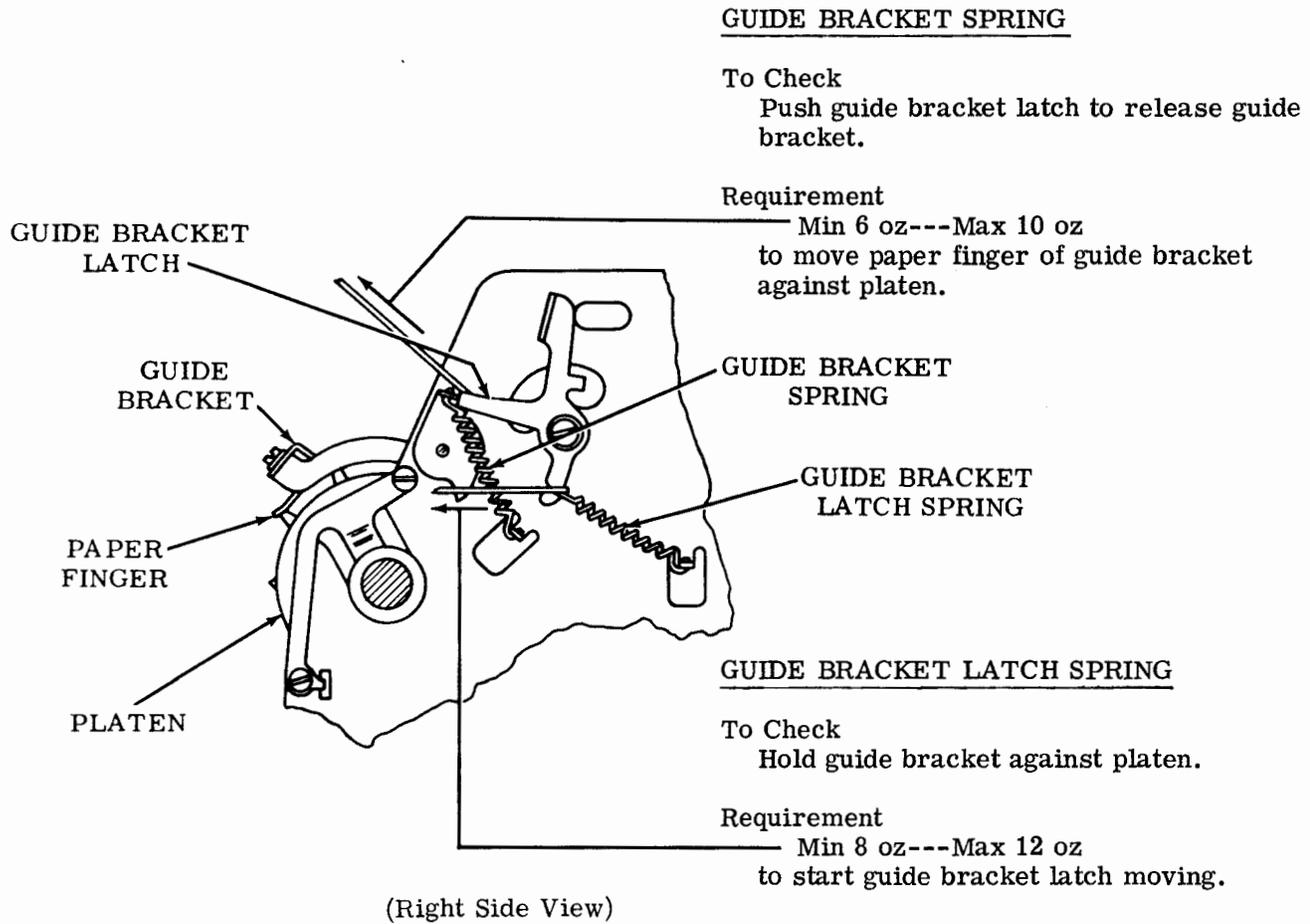
Min some---Max 0.010 inch endplay in platen shaft.

To Adjust

Loosen clampscrew and position spur gear. Tighten clampscrew.



2.100 Platen Mechanism (Sprocket Feed) (continued)



2.101 Spacing and Carriage Return Mechanisms (continued)

DASHPOT AND SIDE VENT SCREW

Note: Before checking this adjustment, see that distance from end of side vent screw to side of dashpot is 5/16 inch. Also check that dashpot vent screw is started and run down seven turns into tapped hole.

To Check

Return carriage from various points along line of travel. Note carriage bounce as carriage returns to left hand margin.

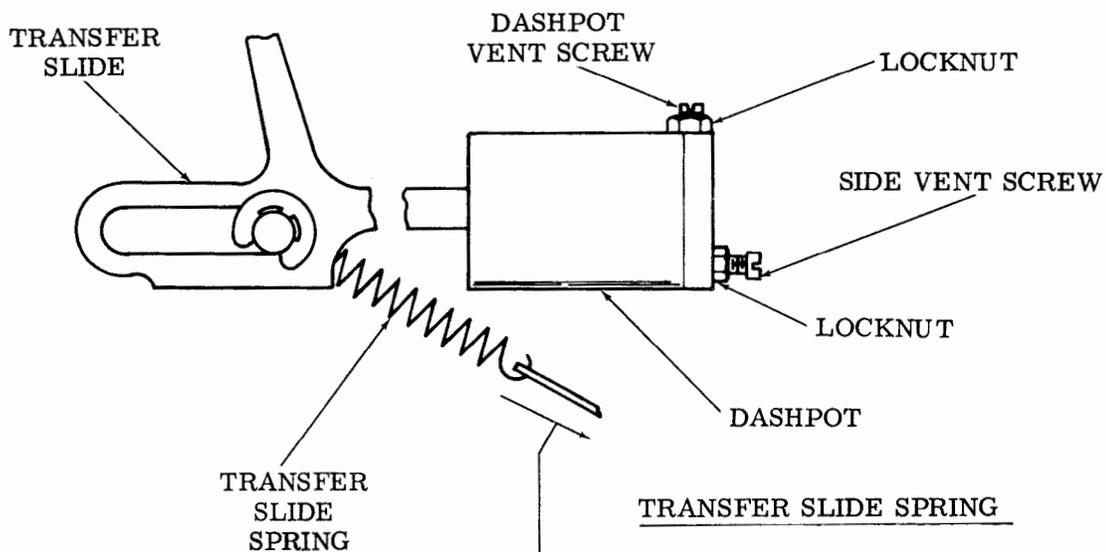
Requirement

Typebox carriage should return from any length of line without bouncing.

To Adjust

Turn dashpot vent screw until slight carriage bounce is seen. Back off screw until effect disappears. Back off screw a quarter turn more and tighten locknut. If this procedure does not fix the trouble, turn side vent screw a half turn at a time and repeat adjustment of dashpot vent screw. Tighten side vent screw locknut, but do not over tighten.

CAUTION: THE SIDE VENT SCREW SHOULD NEVER BE REMOVED UNLESS CARRIAGE IS SECURELY TIED TO PREVENT IT FROM RETURNING TO LEFT HAND MARGIN.



(Front View)

To Check

Transfer slide in extreme left and spring unhooked.

Requirement

Min 3-1/2 oz---Max 4-1/2 oz to pull spring to installed length.

2.102 Vertical and Horizontal Positioning Mechanisms (continued)

TYPEBOX RAIL ALIGNMENT (FINAL)

Note: First check TYPEBOX RAIL ALIGNMENT (PRELIMINARY) (2.46).

To Check

Hold retraction reset arm to rear of typing unit to disable typebox retraction mechanism. Print "EuEuEu" across page. Consider left and right halves of page separately.

Requirement

Printed characters should be evenly spaced as gauged by eye.

To Adjust

Loosen typebox rail clampscrews friction tight. If printed characters are offset as follows:

- (1) E uE uE uE where "u" is misplaced to right — raise typebox rail using pry points.
- (2) Eu Eu Eu Eu where "u" is misplaced to left — lower typebox rail using pry points.

Tighten clampscrews. Recheck requirement and refine if necessary.

3. VARIATIONS

3.01 Low-Paper Alarm (Friction Feed)

SWITCH POSITION

Requirement

Low-paper switch should be in lowermost position in its mounting holes and parallel with actuating lever.

To Adjust

Loosen two switch mounting screws and move switch to lowermost position. Visually align the switch parallel with actuating lever. Tighten mounting screws.

ACTUATING LEVER CLEARANCE

(1) Requirement

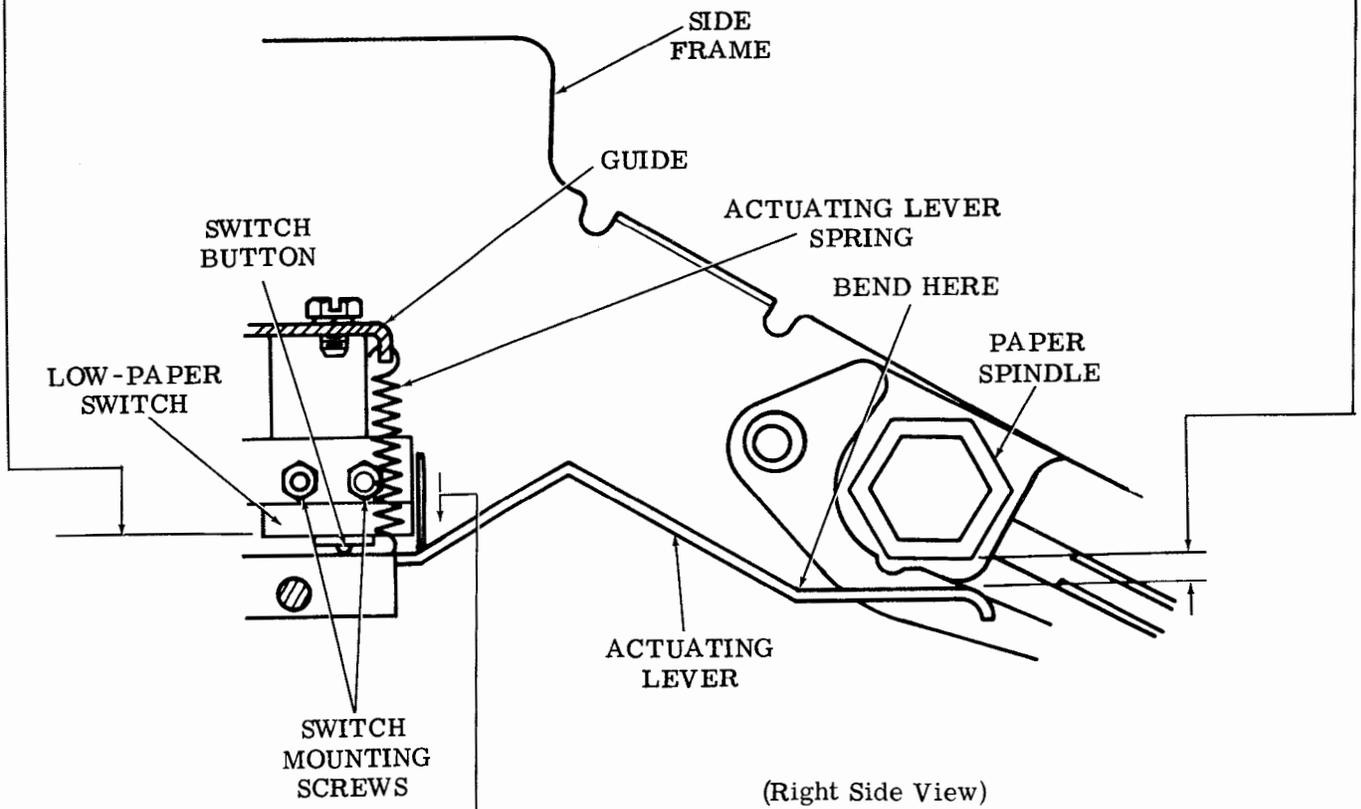
Actuating lever extension should be parallel to flat surface of empty paper spindle.

(2) Requirement

Actuating lever should be about 1/4 inch below flat surface of empty paper spindle.

To Adjust

Bend actuating lever at point indicated.



ACTUATING LEVER SPRING

Requirement

Min 2-1/2 oz---Max 4-1/2 oz to move actuating lever clear of low-paper switch button.

3.02 Paper-Out Alarm (Sprocket Feed)

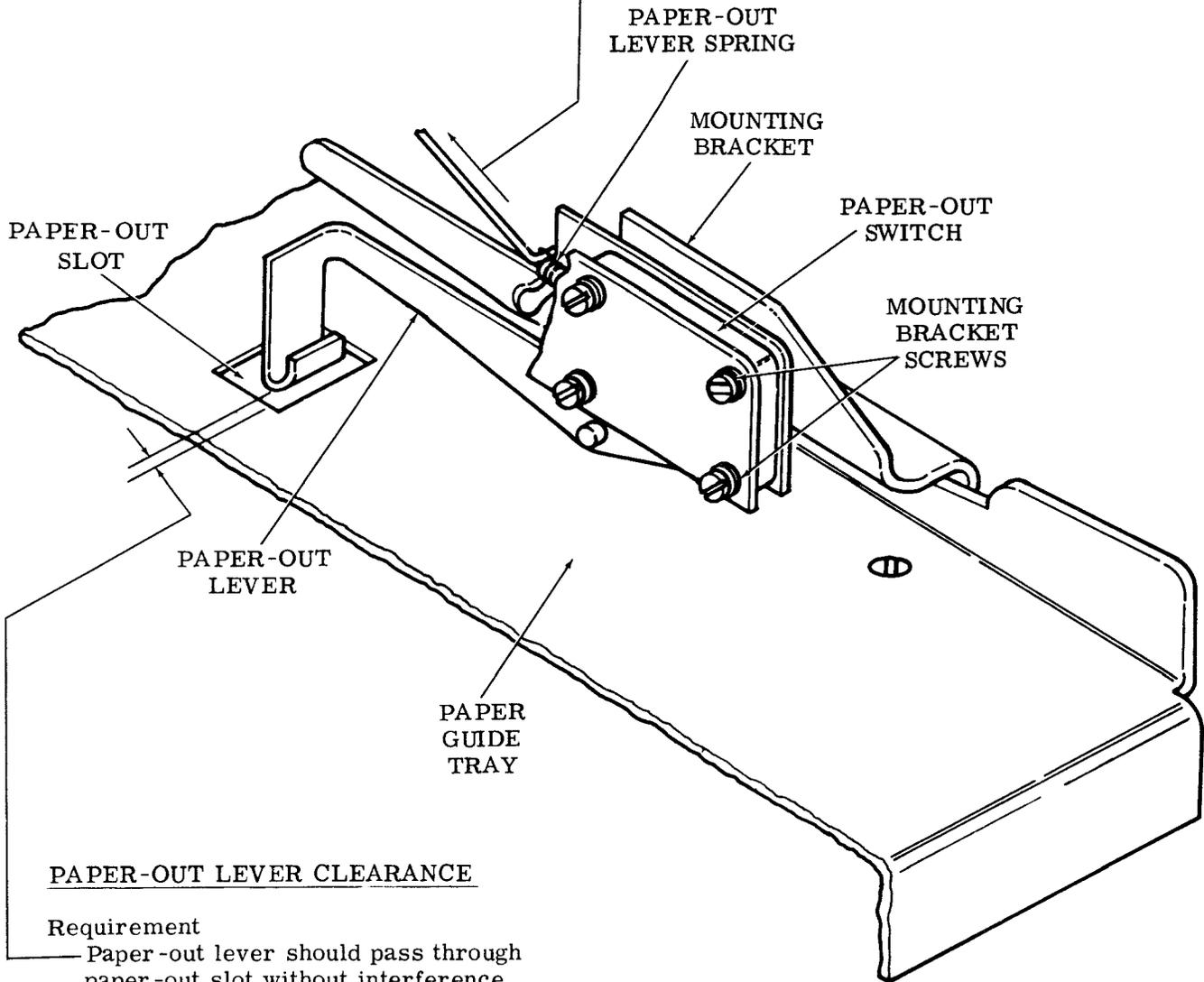
PAPER-OUT LEVER SPRING

To Check

Paper-out lever in paper-out position. Paper-out lever spring unhooked from spring post.

Requirement

Min 3/4 oz---Max 1-1/2 oz
to pull spring to installed length.



(Right Rear View)

To Adjust

Loosen two nuts of mounting bracket screws. Align mounting bracket with respect to paper guide tray. Tighten mounting bracket screw nuts.

3.03 Horizontal Tabulation Mechanism

SENSING ARM

To Check

Four tabs set on tab wheel (approximately equal distance between tabs). Carriage positioned with selected tab stop just past tabulator pawl. Spacing feed pawl on high part of eccentric cam engaging ratchet. (Check by moving spacing feed pawl on low part of eccentric cam away from ratchet.) Spacing clutch disengaged (latched). Push back operating lever extension link until it is blocked by blocking lever.

(1) Requirement

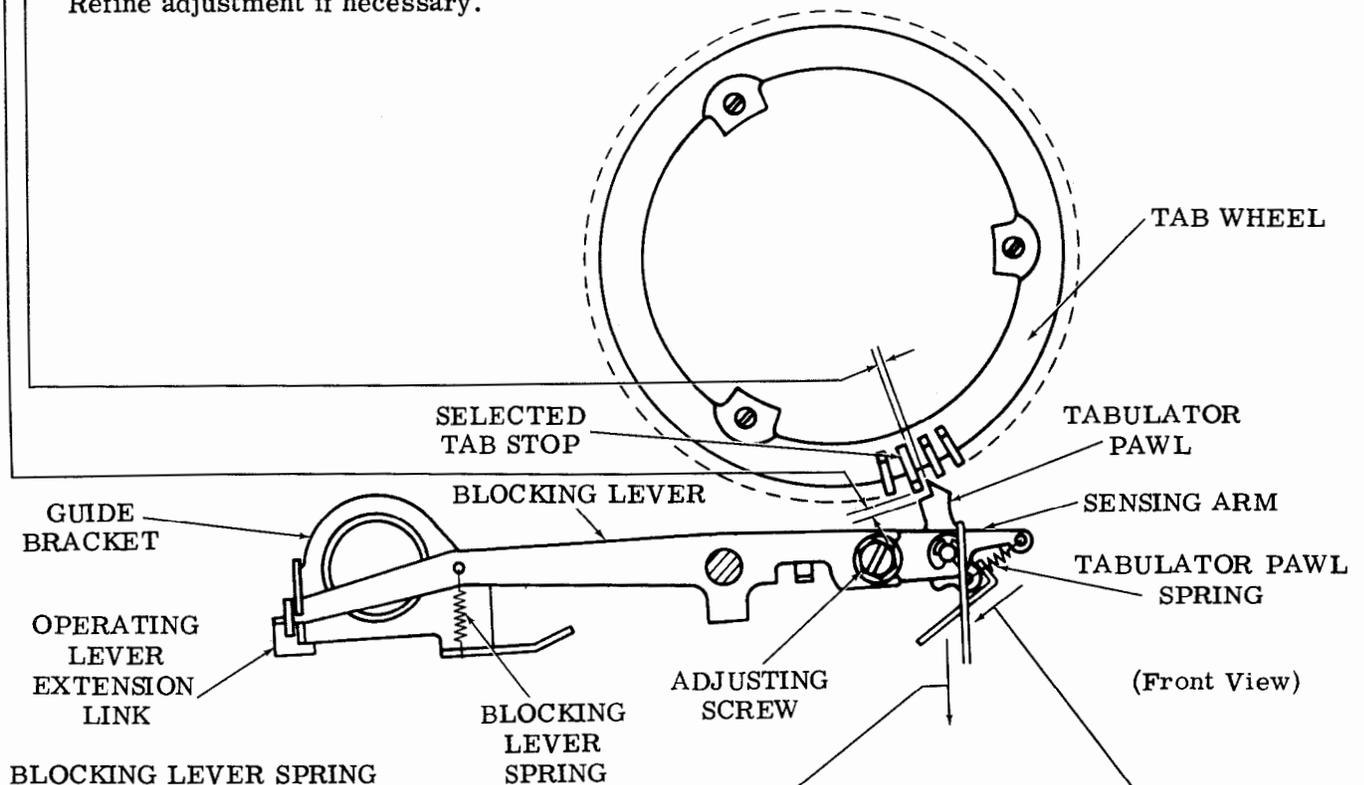
Min 0.040 inch---Max 0.050 inch
clearance between head of selected tab stop.

(2) Requirement

Min 0.005 inch---Max 0.015 inch
clearance between side of selected tab stop and tabulator pawl.

To Adjust

Loosen adjusting screw friction tight. Position sensing arm. Tighten adjusting screw and recheck requirements. Check requirements for each of the three other tab stops previously set. Refine adjustment if necessary.



BLOCKING LEVER SPRING

To Check

Operating lever extension link unblocked by blocking lever.

Requirement

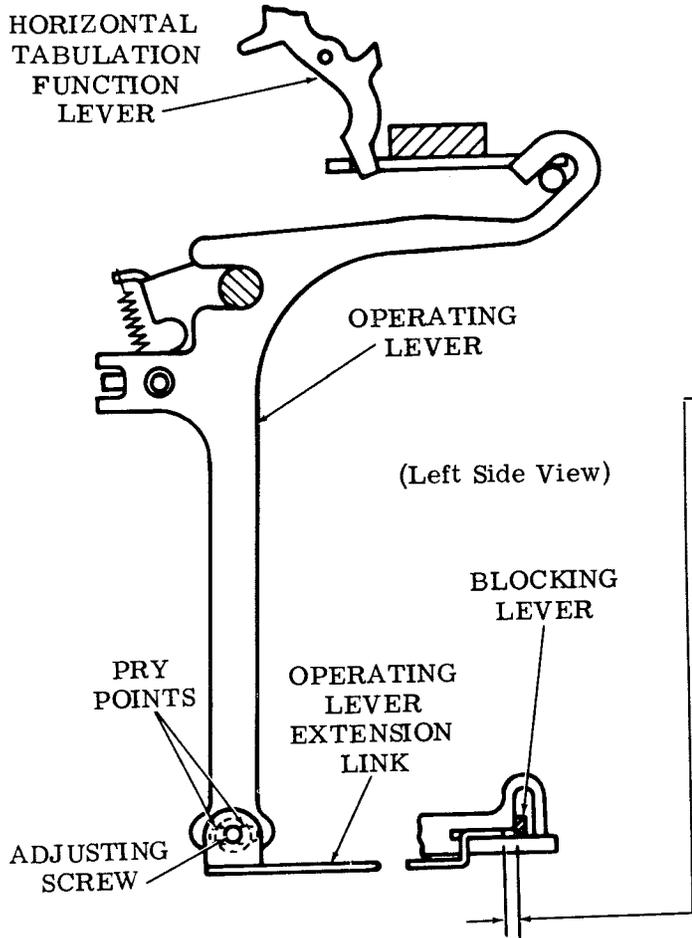
Min 2-1/2 oz---Max 4-1/2 oz
to move blocking lever away from its stop on guide bracket.

TABULATOR PAWL SPRING

Requirement

Min 3 oz---Max 5 oz
to move tabulator pawl away from its stop.

3.04 Horizontal Tabulation Mechanism (continued)



OPERATING LEVER EXTENSION LINK

To Check

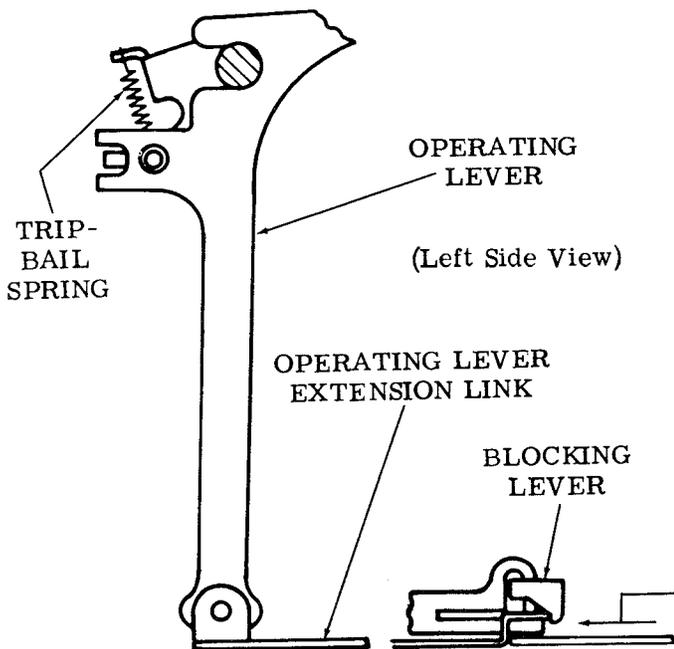
Codebars 1 and 4 marking and all other codebars spacing (HT). Engage (trip) codebar clutch and rotate main shaft until horizontal tabulation function lever is fully selected. Take up play in blocking lever to make gap between operating lever extension link and blocking lever a minimum.

Requirement

Min 0.015 inch---Max 0.025 inch gap between operating lever extension link and blocking lever.

To Adjust

Loosen adjusting screw. Position operating lever extension link using pry points. Tighten adjusting screw.



TRIPBAIL SPRING

To Check

Operating lever extension link unblocked by blocking lever.

Requirement

Min 2 oz---Max 4 oz to start operating lever extension link moving.

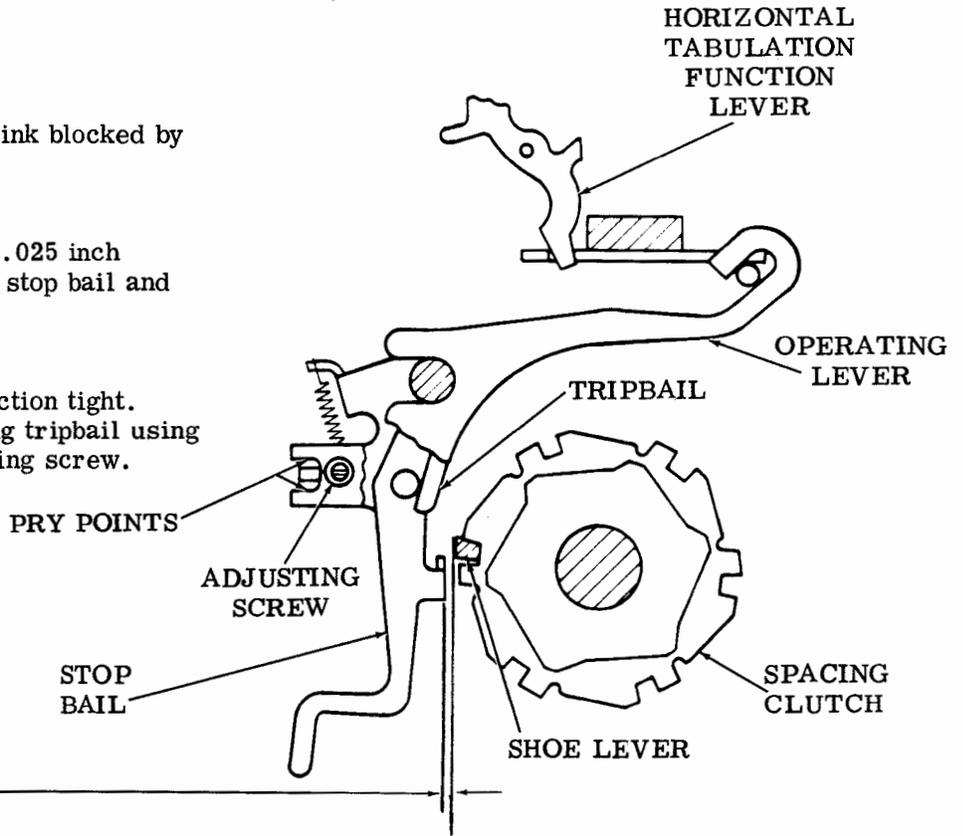
3.05 Horizontal and Vertical Tabulation Mechanism (continued)

TRIPBAIL

To Check
Operating lever extension link blocked by blocking lever.

Requirement
Min 0.010 inch---Max 0.025 inch gap between spacing clutch stop bail and shoe lever.

To Adjust
Loosen adjusting screw friction tight. Position stop bail by moving tripbail using pry points. Tighten adjusting screw.

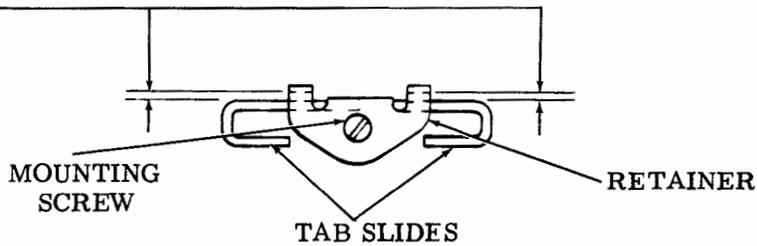
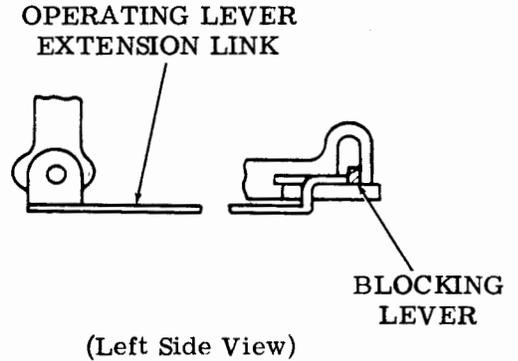


SLIDE RETAINER

Requirement
Min some---Max 0.010 inch clearance tab slides and retainer.

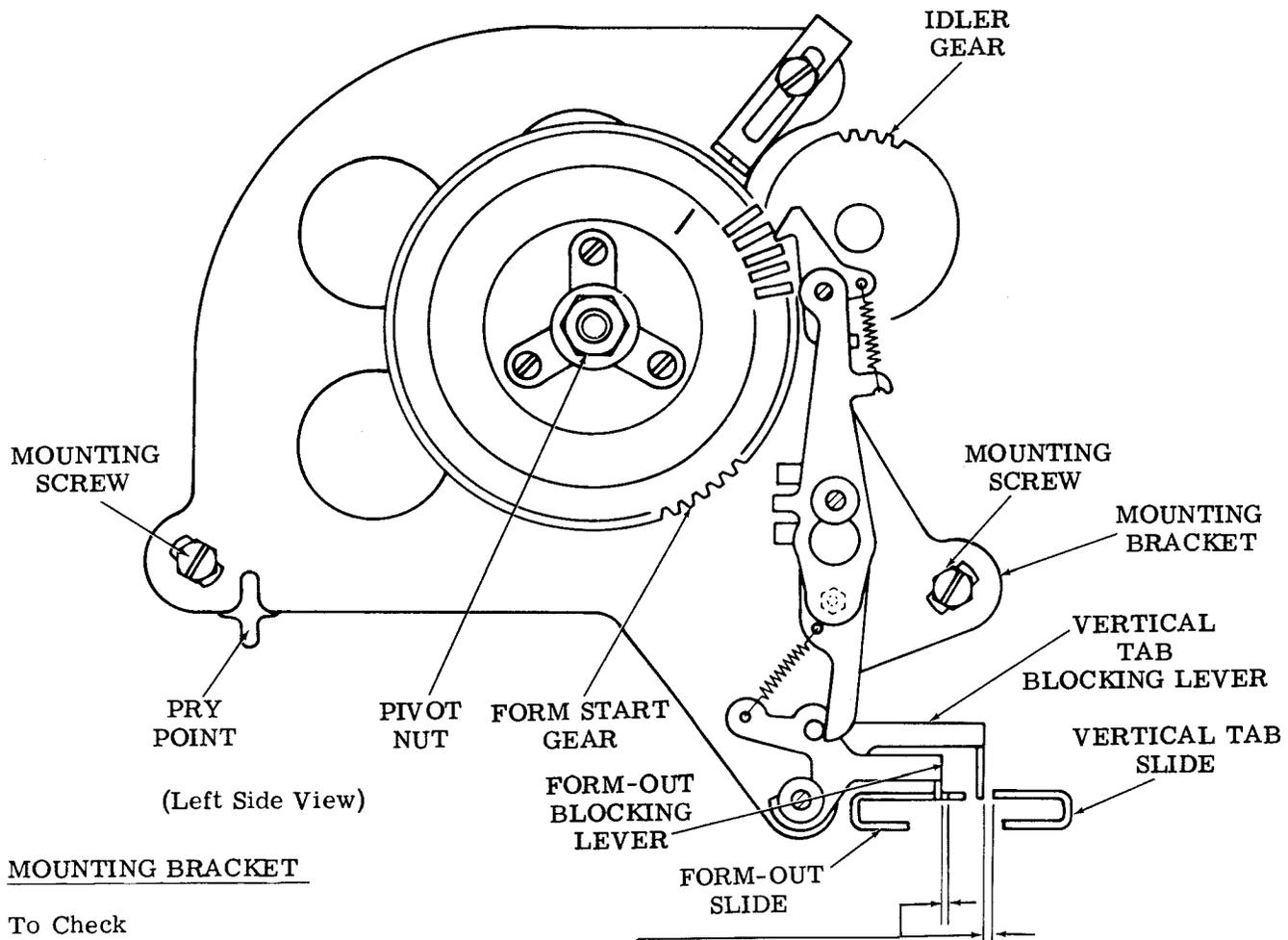
To Adjust
Loosen mounting screw. Position retainer to meet requirement. Tighten mounting screw.

Note: Tab slides should move freely through their full length of travel.



(Left Side View)

3.06 Vertical Tabulation Mechanism (continued)



MOUNTING BRACKET

To Check

Vertical tab function lever fully selected. Measure clearance between vertical tab slide and vertical tab blocking lever. Then, with form-out function lever fully selected, measure clearance between form-out slide and form-out blocking lever.

Requirement

Min 0.010 inch---Max 0.015 inch
clearance between the slide and blocking lever which gives closest gap.

To Adjust

Disengage (latch) all clutches. Select code combination first for the vertical tab (1, 2, 4, 8 marking, all others spacing) and then the form-out (3 and 4 marking, all others spacing). Trip the function clutch and turn main shaft until the stripper blade just touches the selected function pawl on its way up. Loosen three mounting bracket mounting screws. Position mounting bracket to meet requirement. Tighten mounting screws.

FORM START GEAR BACKLASH

Note 1: MOUNTING BRACKET adjustment must be made prior to this adjustment.

To Check

Hold the idler gear stationary and check backlash in tab wheel. Check in four positions approximately 90° apart by turning platen knob to change positions.

Requirement

Barely perceptible backlash between idler gear and form start gear.

To Adjust

Loosen pivot nut. Position form start gear to meet requirement. Tighten pivot nut.

Note 2: The form start gear should remesh properly when checked in at least three positions (120° apart).

3.07 Vertical Tabulation Mechanism (continued)

POINTER

Note: FORM START GEAR BACKLASH (3.06) and TAB WHEEL adjustments must be made prior to this adjustment.

To Check

Line feed clutch disengaged (latched).
Detent bail fully detenting line feed spur gear. Form-out tab stop spaced just beyond sensing pawls.

(1) Requirement

Pointer should be in line with tab wheel mark.

(2) Requirement

Pointer should clear form-out tab stop about 1/16 inch.

To Adjust

Loosen pointer mounting screw. Position pointer to meet requirement. Tighten mounting screw.

TAB WHEEL

Note: MOUNTING BRACKET (3.06) and FORM START GEAR BACKLASH (3.06) adjustments must be made prior to this adjustment.

To Check

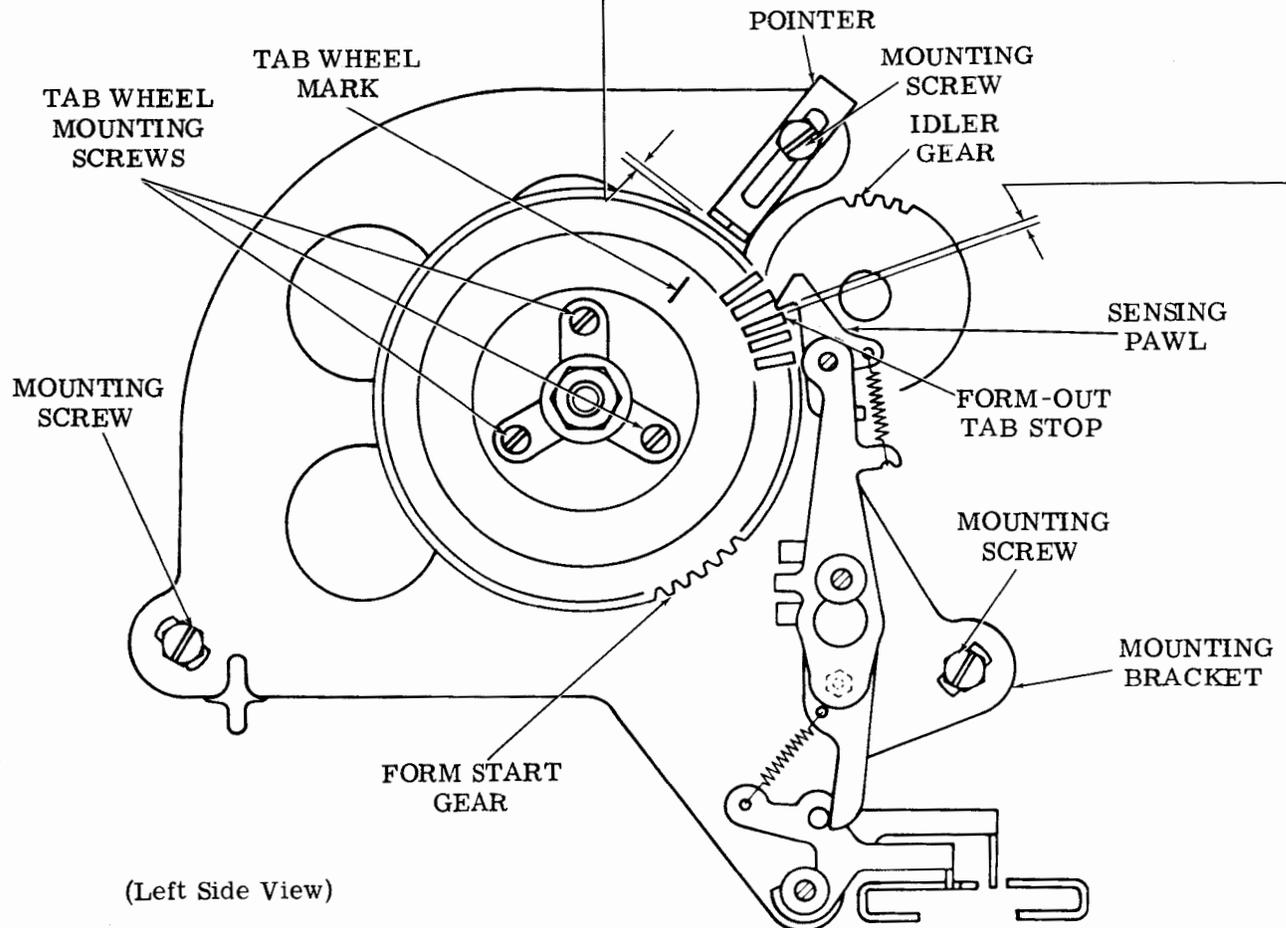
Line feed clutch disengaged (latched).
Detent bail fully detenting line feed spur gear. Gear play taken up to make clearance between form-out tab stop and sensing pawls a minimum.

Requirement

Min some---Max 0.005
clearance between form-out tab stop and sensing pawls.

To Adjust

Pull form start gear out of engagement with idler gear. Turn tab wheel clockwise and locate form-out tab stop under sensing pawls. Loosen three tab wheel mounting screws and position tab wheel to meet requirement. Tighten mounting screws.



3.08 Vertical Tabulation Mechanism (continued)

TAB WHEEL SYNCHRONIZATION

Note: SLIDE RETAINER (3.05), MOUNTING BRACKET (3.06), FORM START GEAR BACKLASH (3.06), TAB WHEEL (3.07), POINTER (3.07), and BLOCKING LEVERS (3.09) adjustments must be made prior to this adjustment.

SENSING PAWL SPRING

Requirement

Min 2 oz---Max 4 oz
to lift each sensing pawl off form-out tab stop.

Note: Check each sensing pawl spring.

Requirement

Tab wheel should be synchronized with paper form after each paper insertion.

To Adjust

Position paper form in typing unit so that it will print in first typing line of the form. The printing line is outlined by the pointer in front of platen. Disengage (latch) line feed clutch. Detent bail fully detenting line feed spur gear. Pull form start gear out of engagement with idler gear. Turn tab wheel clockwise and locate form-out tab stop under sensing pawls. Remesh form start gear with idler gear.

TAB SENSING ARM SPRING

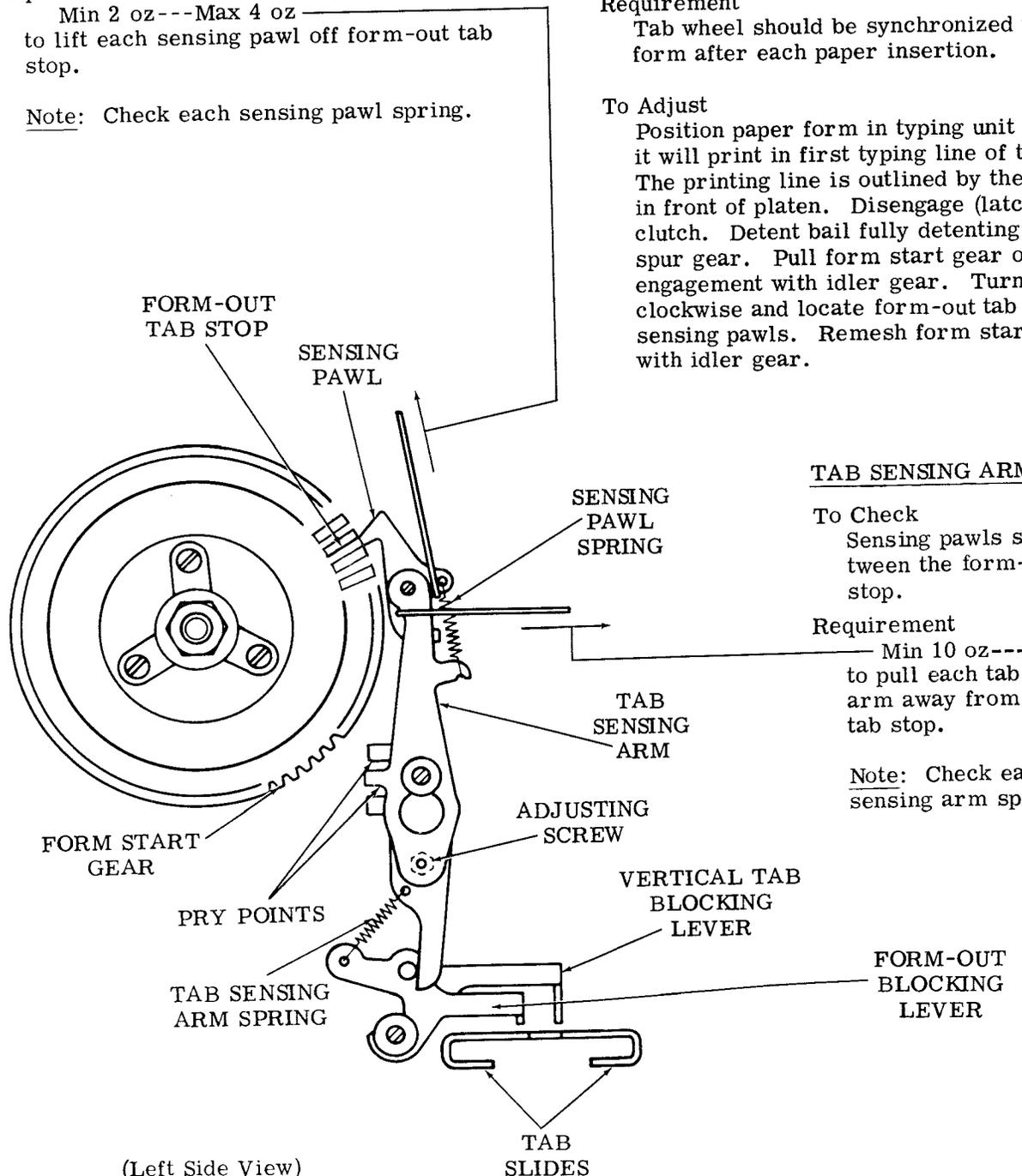
To Check

Sensing pawls spaced between the form-out tab stop.

Requirement

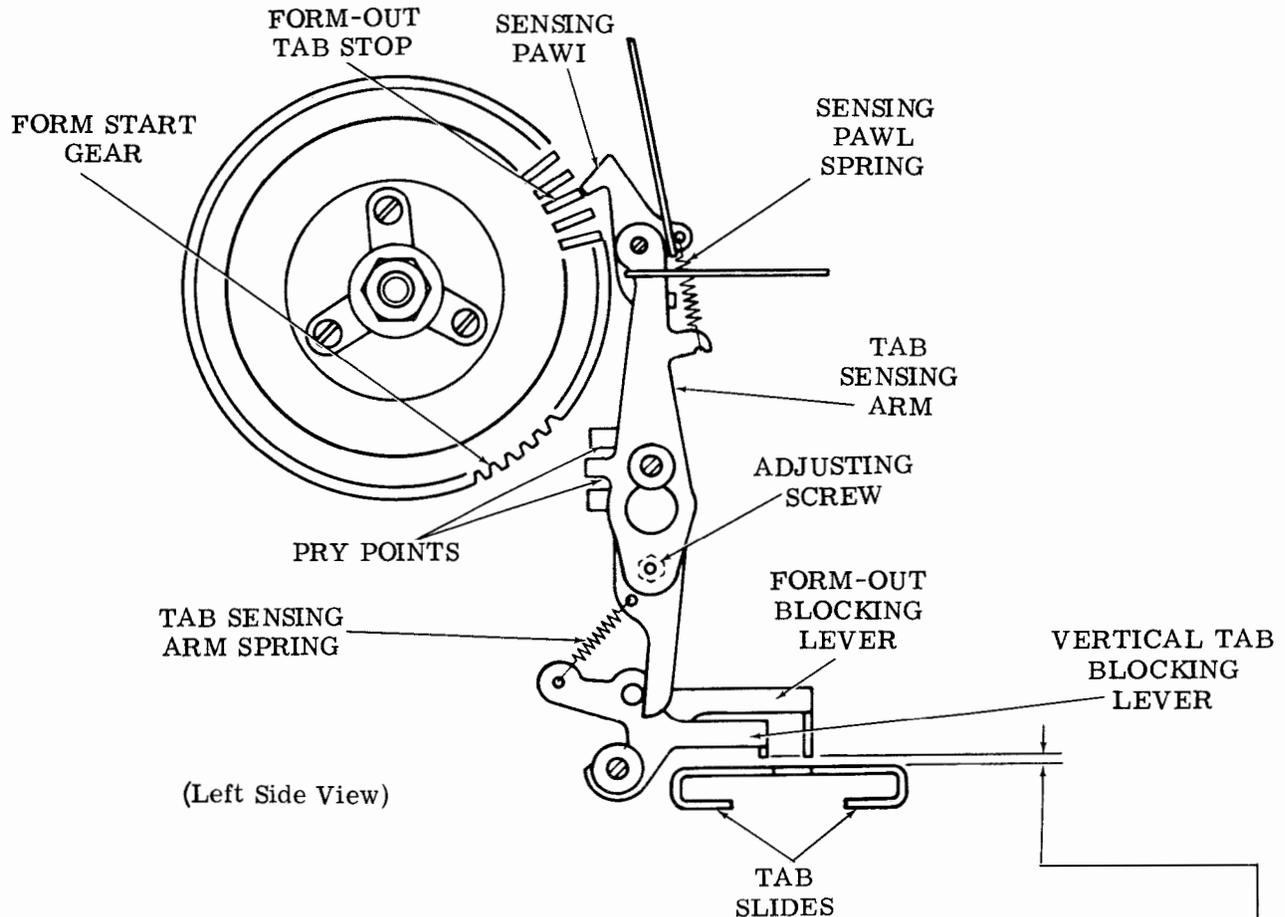
Min 10 oz---Max 15 oz
to pull each tab sensing arm away from form-out tab stop.

Note: Check each tab sensing arm spring.



(Left Side View)

3.09 Vertical Tabulation Mechanism (continued)

BLOCKING LEVERS

Note: SLIDE RETAINER (3.05), MOUNTING BRACKET (3.06), FORM START GEAR BACKLASH (3.06) adjustments must be made prior to this adjustment.

To Check

Sensing pawls resting on top of form-out tab stop. Play in tab slides taken up against retainer to make clearance between blocking levers and top of their respective tab slide a minimum.

Note: On units with only one form-out tab, check a vertical tab approximately 180° from the form-out tab.

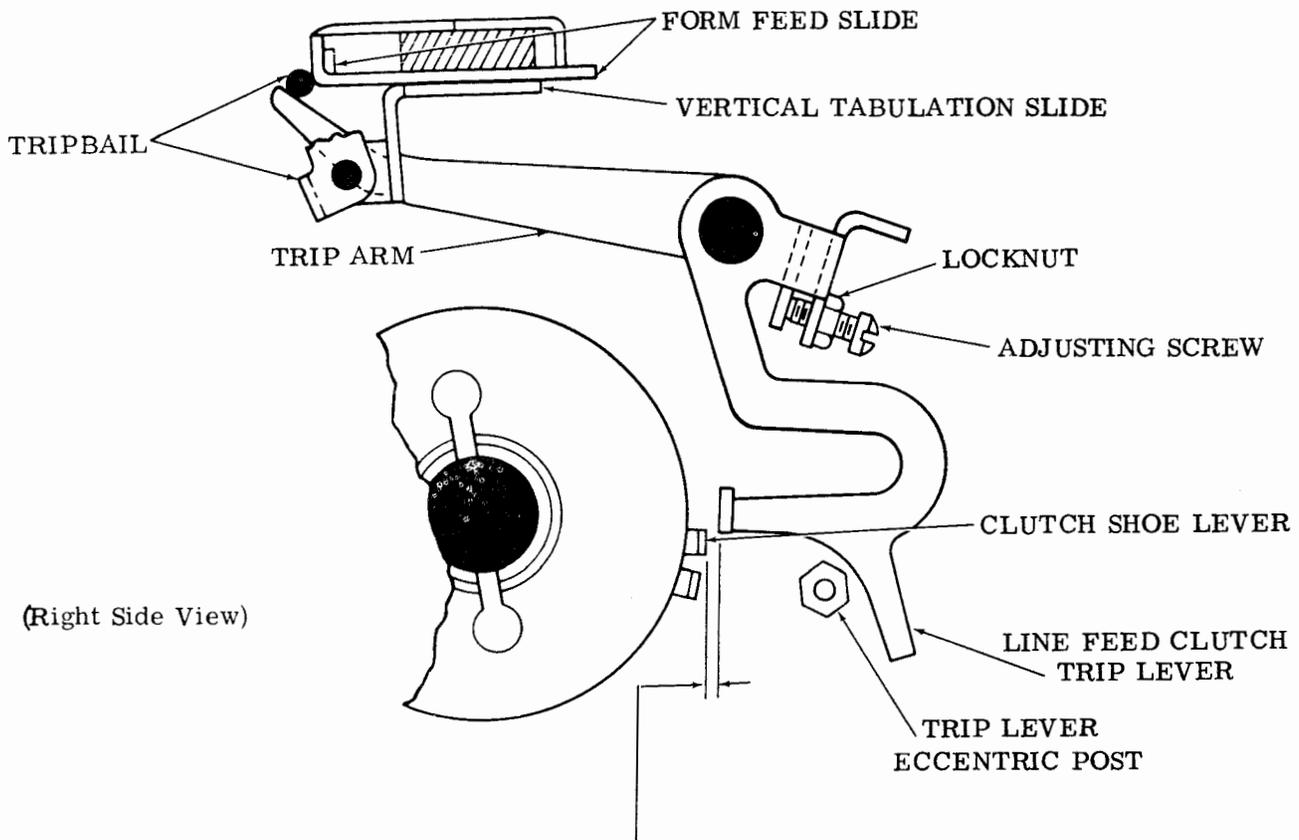
Requirement

Min 0.015 inch---Max 0.030 inch _____
clearance between blocking levers and top of their respective tab slides.

To Adjust

Line feed clutch engaged (tripped). Rotate main shaft until both sensing pawls come to rest on top of form-out tab stop. Loosen adjusting screw on both tab sensing arms. Position tab sensing arms using pry points. Tighten adjusting screws.

3.10 Vertical Tabulation Mechanism (continued)

LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW

(1) To Check

All clutches disengaged (latched). Codebars 1, 2, 4, and 8 marking and all others spacing (vertical tabulation). Engage (trip) codebar clutch and rotate main shaft until vertical tabulation function pawl is stripped by stripper blade.

Requirement

Min 0.005 inch---Max 0.008 inch
clearance between line feed clutch trip lever and clutch shoe lever.

(2) To Check

All clutches disengaged (latched) codebars 3 and 4 marking and all others spacing (form feed). Engage (trip) codebar clutch and rotate main shaft until form feed function pawl is stripped by stripper blade.

Requirement

Min 0.005 inch---Max 0.008 inch
clearance between line feed clutch trip lever and clutch shoe lever.

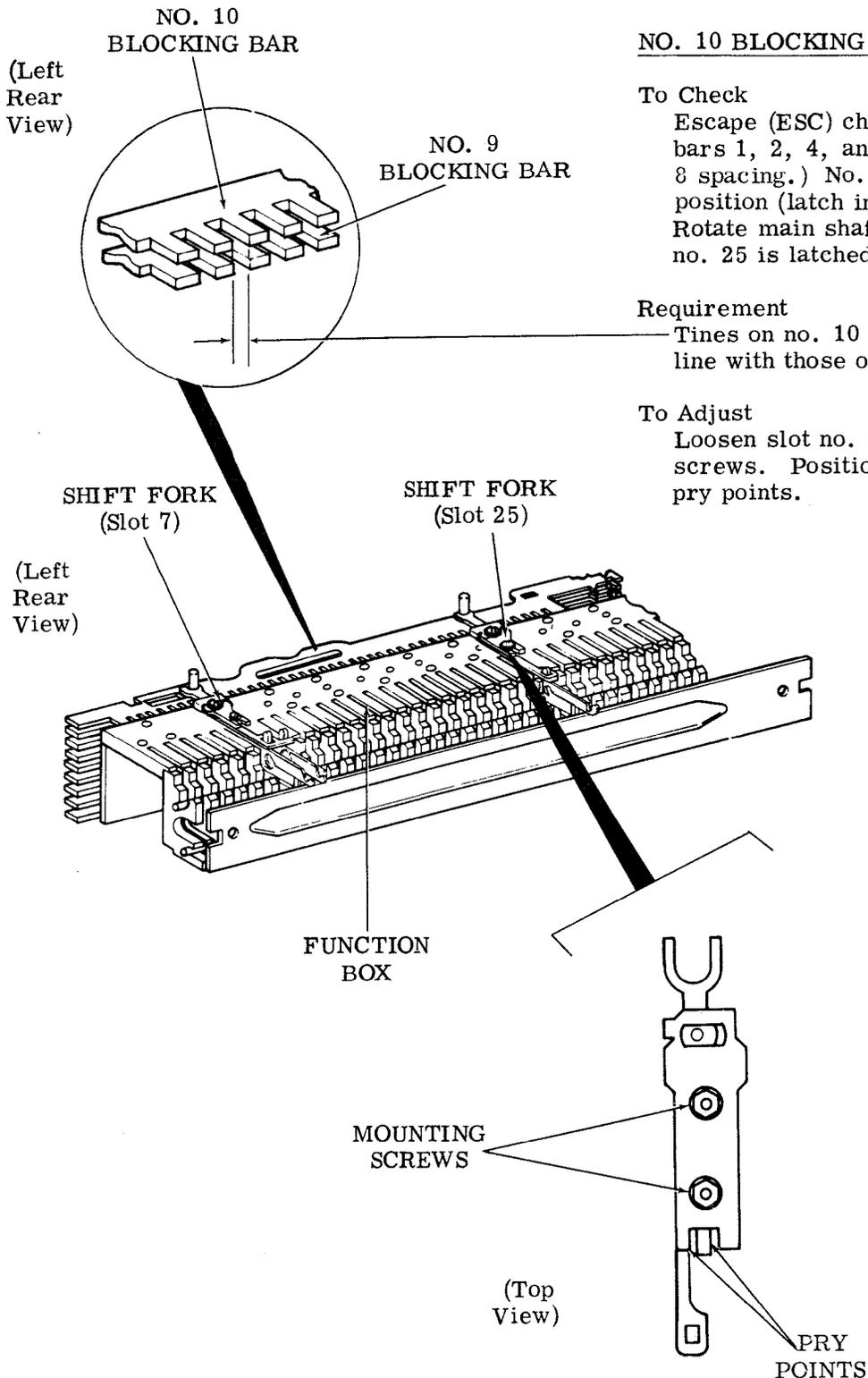
To Adjust

Loosen locknut. Rotate adjusting screw. Tighten locknut.

Affected Adjustment

LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST (2.25)

3.11 Escape Sequence Mechanism



NO. 10 BLOCKING BAR

To Check

Escape (ESC) character selected. (Code-bars 1, 2, 4, and 5 marking; 3, 6, 7, and 8 spacing.) No. 9 blocking bar in unshifted position (latch in slot no. 7 unlatched). Rotate main shaft until function bar in slot no. 25 is latched by associated latch.

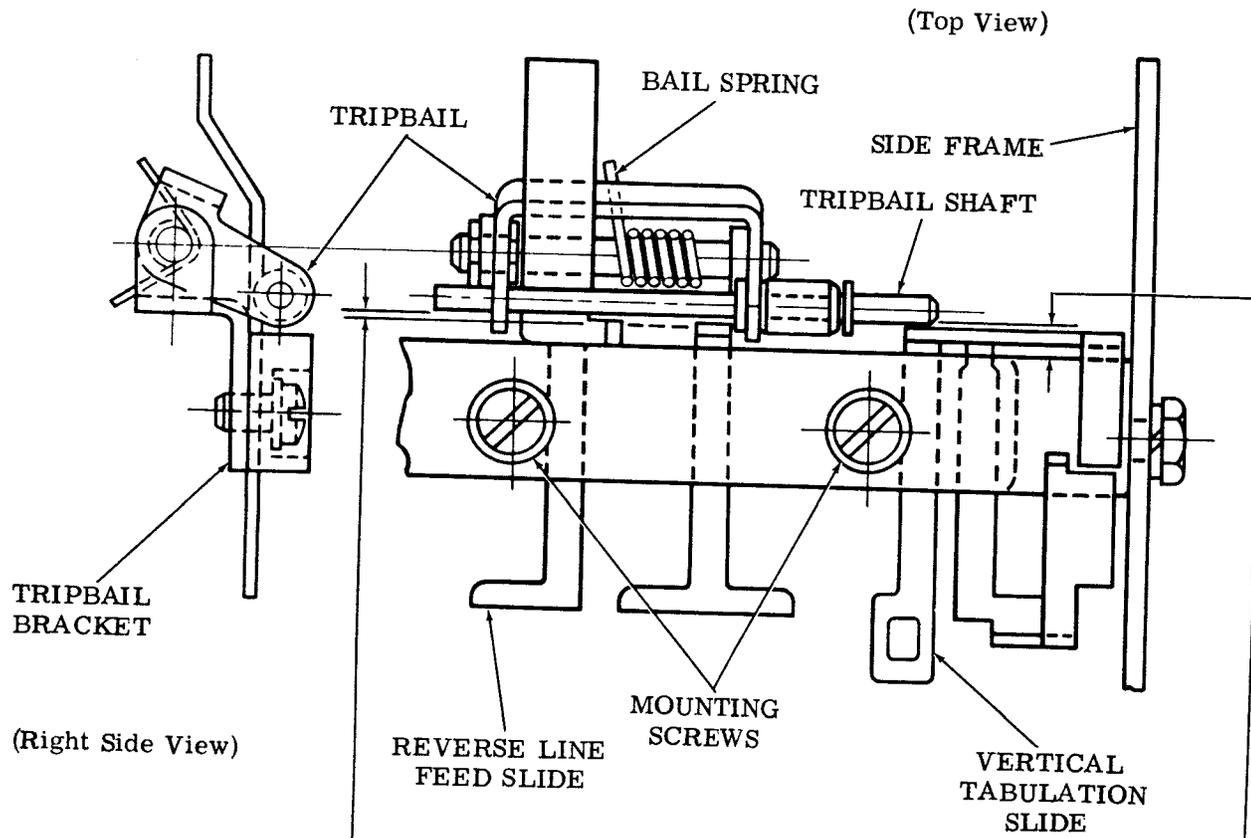
Requirement

Tines on no. 10 blocking bar should be in line with those of no. 9 blocking bar.

To Adjust

Loosen slot no. 25 shift fork mounting screws. Position no. 10 blocking bar using pry points.

3.12 Line Feed Clutch Tripbail Mechanism



TRIPBAIL BRACKET

To Check

Reverse line feed slide and vertical tabulation slide in rearmost position. Tripbail shaft against one of the two slides.

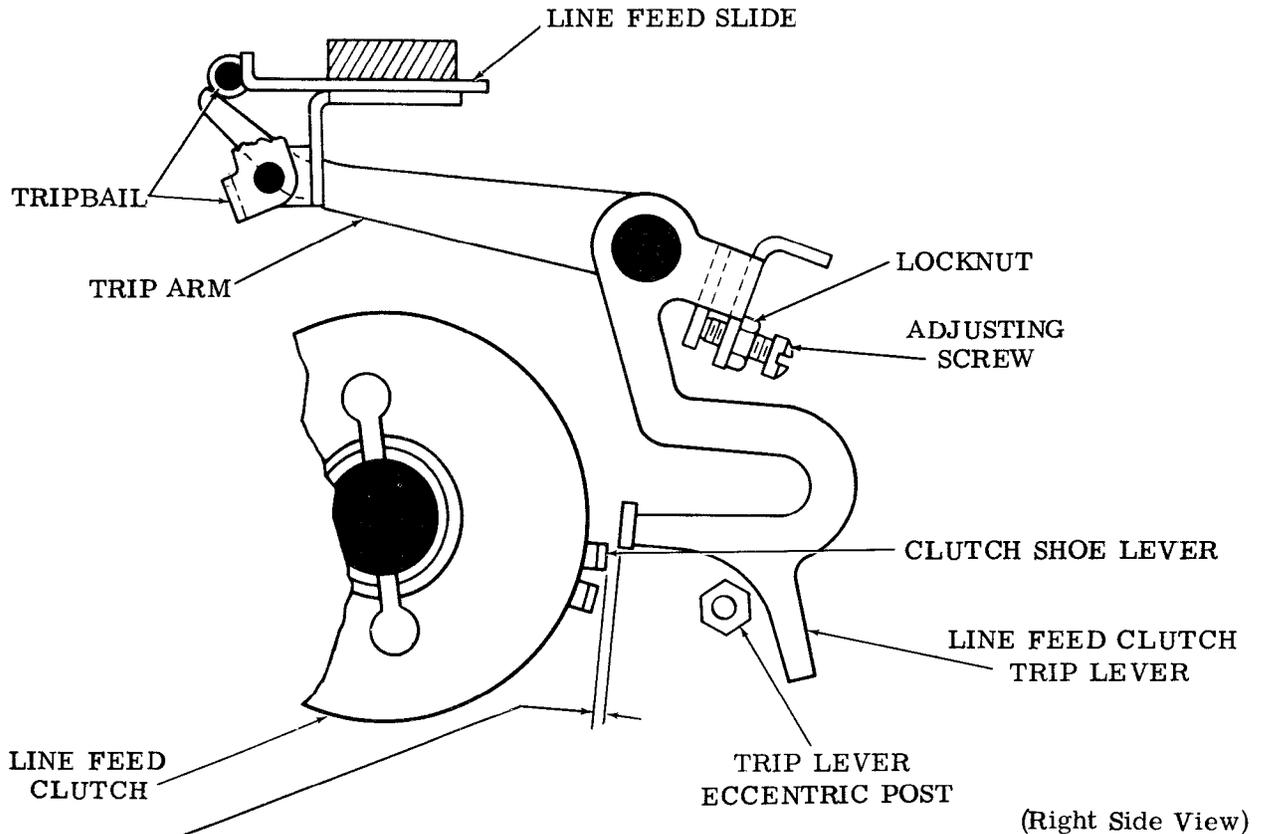
Requirement

— Max 0.005 inch —
clearance between other slide and tripbail shaft.

To Adjust

Loosen tripbail bracket mounting screws. Position tripbail bracket. Tighten mounting screws.

3.13 Line Feed Clutch Tripbail Mechanism (continued)

LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW

Note: This adjustment is preliminary when typing unit is equipped with vertical tabulation mechanism. For the final adjustment, see LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW (3.10).

To Check

Single-double line feed lever in double line feed position. All clutches disengaged (latched). Manually trip function clutch and rotate main shaft until stripper blade moves to midpoint of its downward travel. Pull line feed function pawl back to latch on function bar. Continue rotating main shaft until function bar moves to its rearmost position.

Requirement

Min 0.015 inch---Max 0.025 inch
clearance between line feed clutch trip lever and clutch shoe lever.

To Adjust

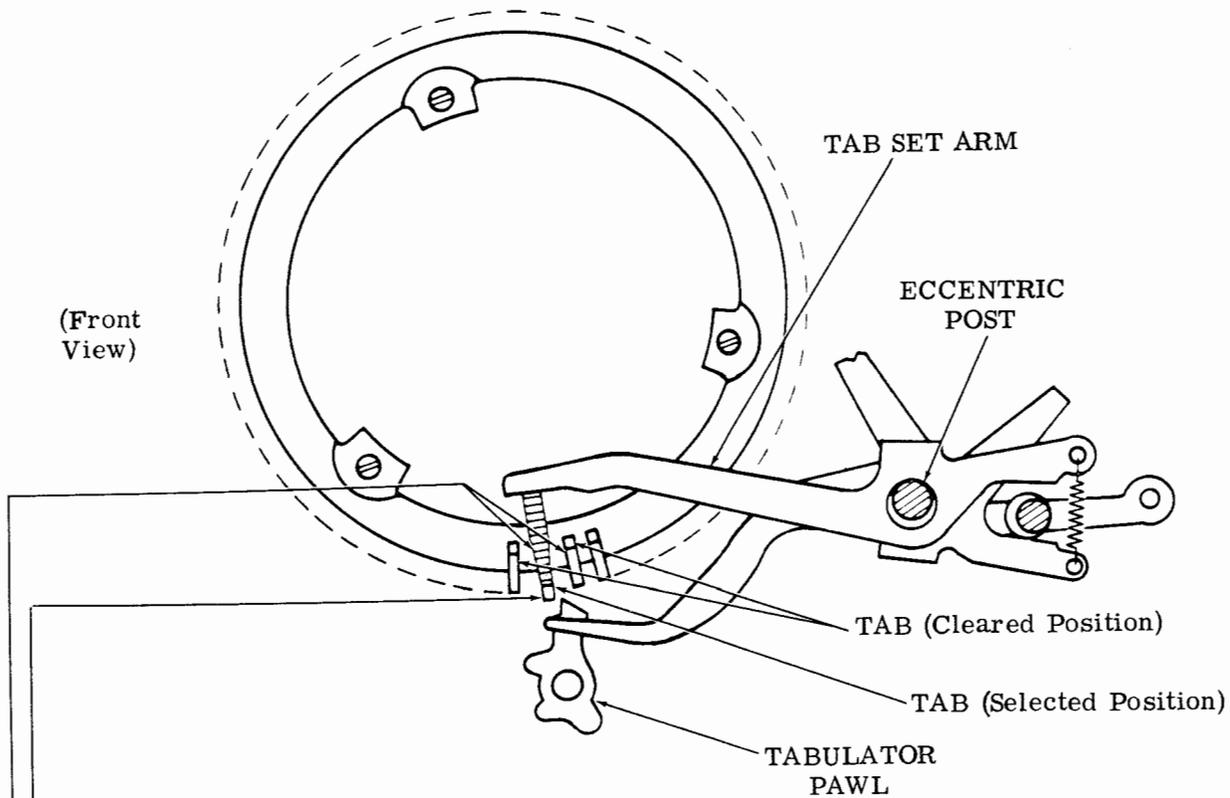
Loosen locknut. Rotate adjusting screw. Tighten locknut.

Affected Adjustment

LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST (2.25)

3.14 Horizontal Tab Stop Control Mechanism

Note: Horizontal tabulation mechanism adjustments (SENSING ARM (3.03), OPERATING LEVER EXTENSION LINK (3.04), and TRIPBAIL (3.05)) and escape sequence mechanism adjustment (NO. 10 BLOCKING BAR (3.11)) should be completed before making the following adjustments for the horizontal tab stop control mechanism

ECCENTRIC POST

(1) Requirement

Tab set arm should set tab to left of tabulator pawl.

(2) Requirement

Tab set arm should be centered between adjacent tabs.

To Adjust

Position carriage at about the center of platen. Engage (trip) spacing clutch and rotate main shaft to advance carriage at least one space. Disengage (latch) spacing clutch. Loosen nuts at both ends of eccentric post. Turn eccentric post to meet requirements. Tighten eccentric post nuts.

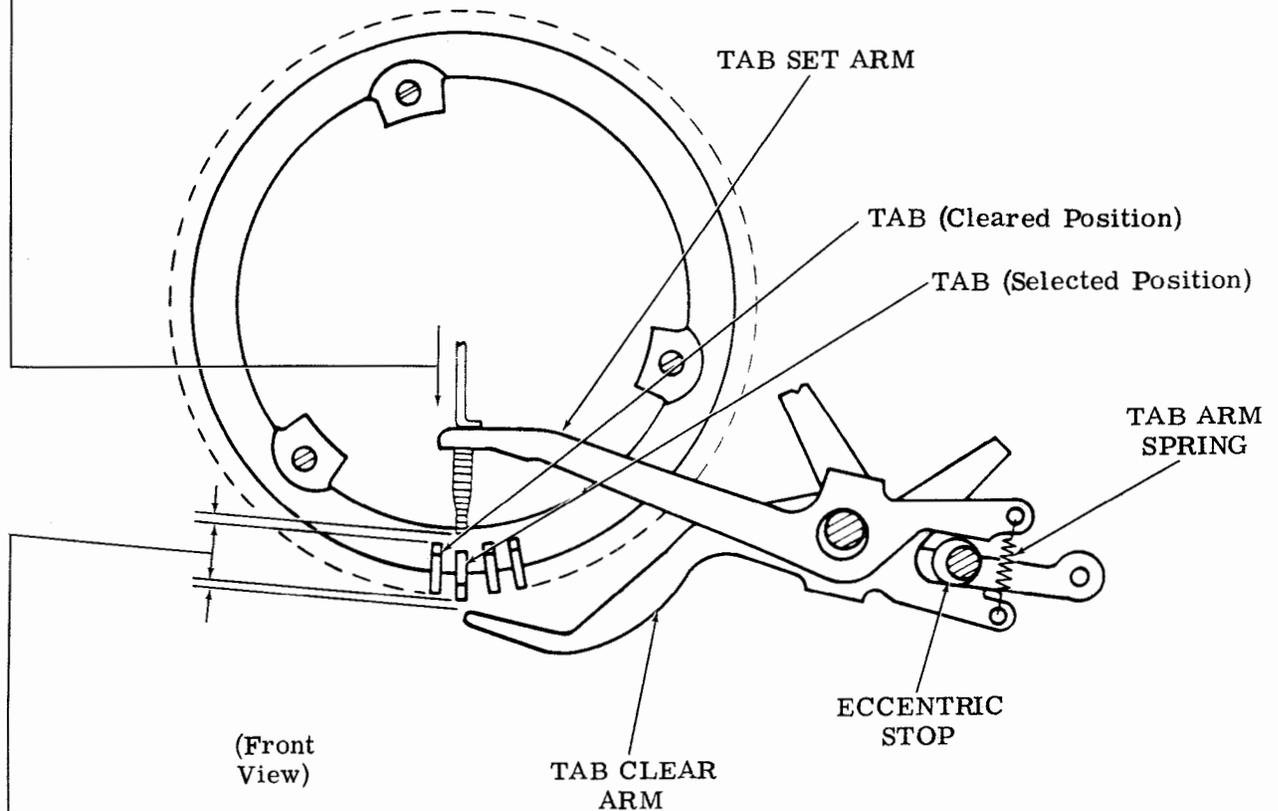
Note: The eccentricity of the eccentric post should be positioned downward.

3.15 Horizontal Tab Stop Control Mechanism (continued)

TAB ARM SPRING

Requirement

Min 1/2 oz --- Max 2 oz
to start tab set arm moving away from eccentric stop.

ECCENTRIC STOP

Requirement

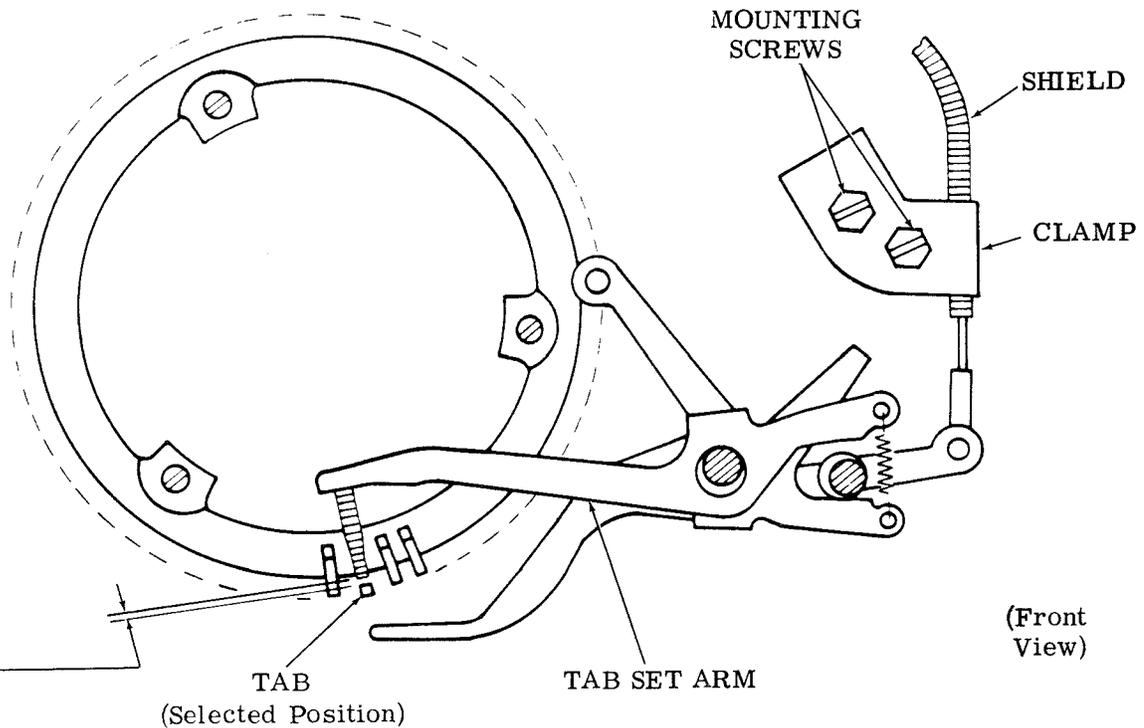
Equal clearance, as gauged by eye, between tab set arm and head of a tab in cleared position, and between tab clear arm and the lead of a tab in selected position.

To Adjust

Loosen eccentric stop mounting nut and turn eccentric stop to meet requirement.
Tighten mounting nut.

Note: The eccentricity of the eccentric stop should be positioned towards the left.

3.16 Horizontal Tab Stop Control Mechanism (continued)



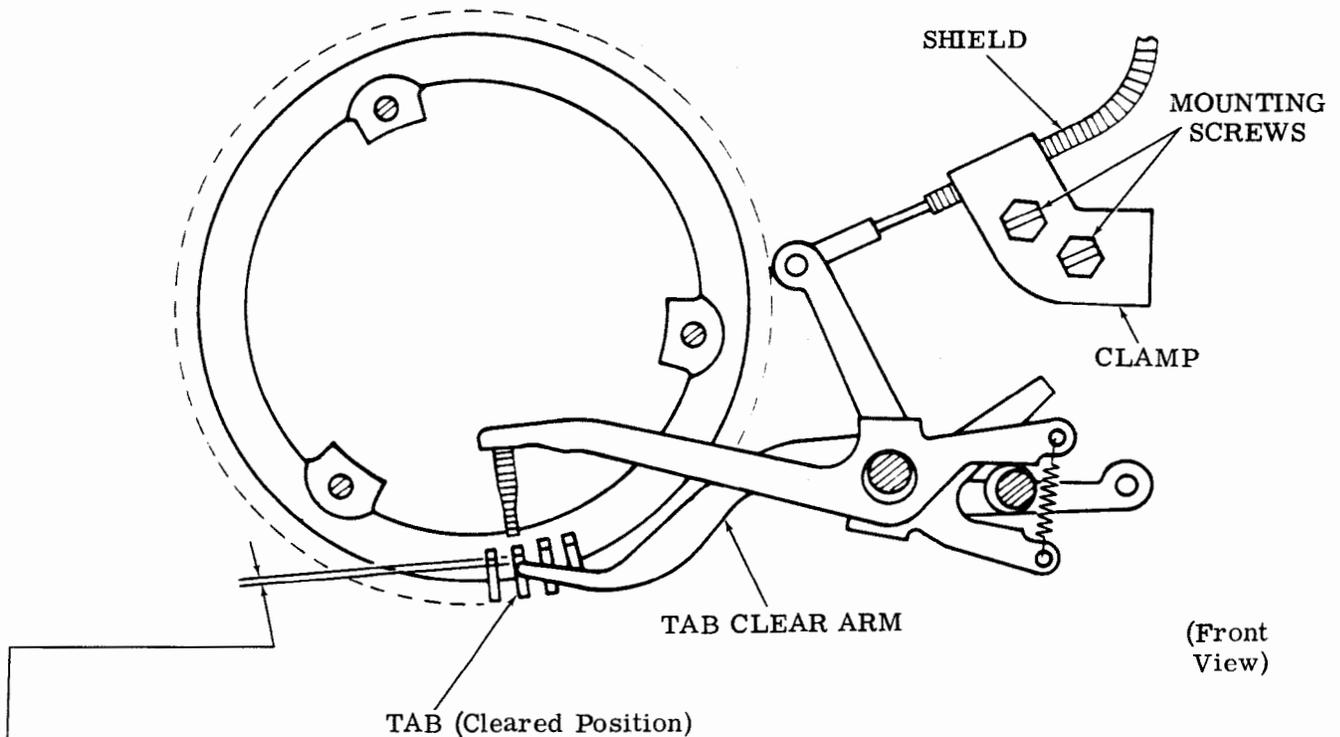
TAB SET ARM CABLE

To Check
Tab set arm fully selected from function box.

Requirement
Min some---Max 0.020 inch
clearance between tab set arm and head of the tab in selected position.

To Adjust
Disengage (latch) all clutches. Position carriage to about the center of platen. Engage (trip) spacing clutch and turn main shaft to advance carriage by at least one space. Disengage (latch) all clutches. Shift no. 9 and no. 10 blocking bars by manually selecting and latching function levers in function box slots no. 7 and 25. Set up character "1" in selector (levels 1, 5, 6, and 8 marking; levels 2, 3, 4, and 7 spacing). Engage (trip) codebar clutch and rotate main shaft until tab set function lever in function box slot no. 15 is fully selected. Loosen clamp mounting screws and position shield to meet requirement. Tighten clamp mounting screws.

3.17 Horizontal Tab Stop Control Mechanism (continued)

TAB CLEAR ARM CABLE**To Check**

Tab clear arm fully selected from function box.

Requirement

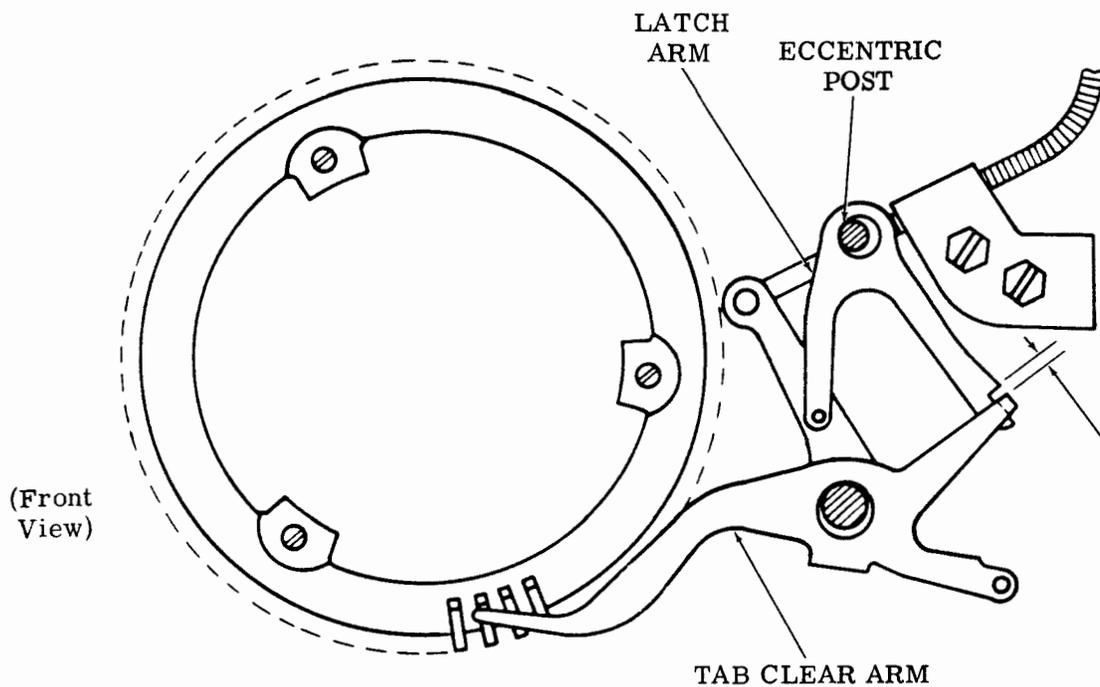
Min some---Max 0.010 inch
clearance between tab clear arm and head of tab in cleared position.

To Adjust

Disengage (latch) all clutches. Position carriage to about the center of platen. Engage (trip) spacing clutch and turn main shaft to advance carriage by at least one space. Disengage (latch) all clutches. Shift no. 9 and no. 10 blocking bars by manually selecting and latching function levers in function box slots no. 7 and 25. Set up character "2" in selector (levels 2, 5, 6, and 8 marking; levels 1, 3, 4, and 7 spacing). Engage (trip) codebar clutch and rotate main shaft until tab clear function lever in function box slot no. 16 is fully selected. Loosen clamp mounting screws friction tight and position shield to meet requirement. Tighten clamp mounting screws. Recheck TAB SET ARM CABLE (3.16) adjustment.

Note: When making above adjustment, be careful not to disturb TAB SET ARM CABLE (3.16) adjustment.

3.18 Horizontal Tab Stop Control Mechanism (continued)



LATCH ARM

To Check

Tab clear arm fully selected from function box.

Requirement

Min 0.005 inch---Max 0.010 inch
clearance between tab clear arm and latch arm.

To Adjust

Disengage (latch) all clutches. Position carriage to about the center of platen. Engage (trip) spacing clutch and turn main shaft to advance carriage by at least one space. Disengage (latch) all clutches. Shift no. 9 and no. 10 blocking bars by manually selecting and latching function levers in function box slots no. 7 and 25. Set up character "2" in selector (levels 2, 5, 6, and 8 marking; levels 1, 3, 4, and 7 spacing). Engage (trip) codebar clutch and rotate main shaft until tab clear function lever in function box slot no. 16 is fully selected. Loosen nut on eccentric post. Turn eccentric post to meet requirement. Tighten eccentric post nut.

Note: The eccentricity of the eccentric post should be positioned towards the right.

3.19 Horizontal Tab Stop Control Mechanism (continued)

LATCH RELEASE

To Check

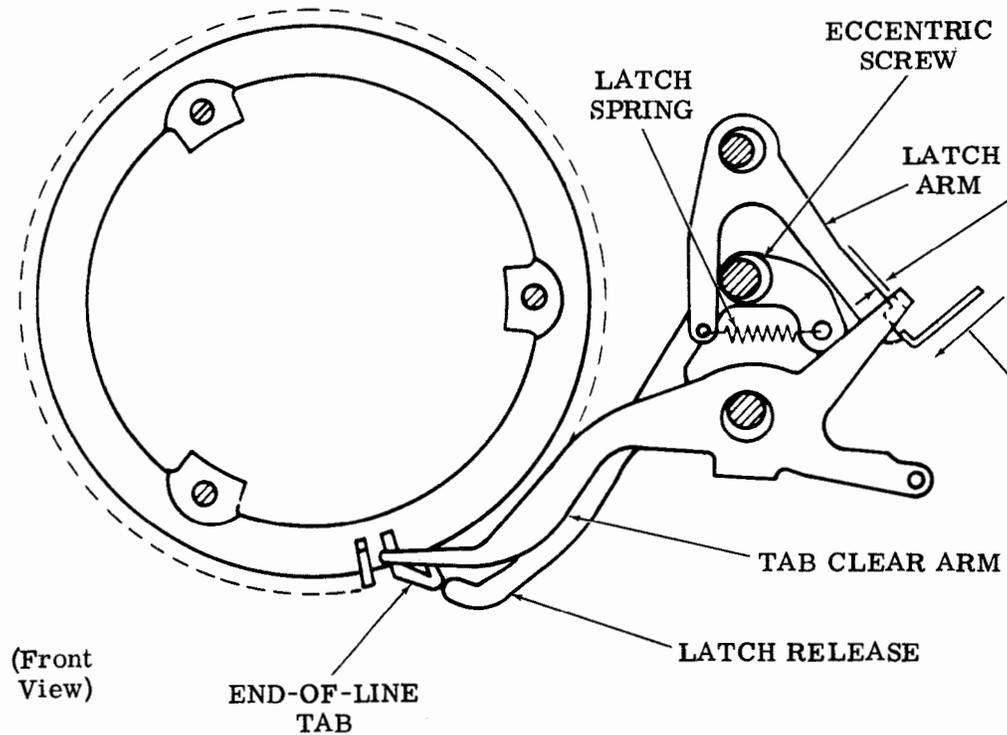
Carriage spaced fully to right hand margin. Spacing clutch disengaged (latched).

Requirement

Min 0.005 inch---Max 0.015 inch
clearance between tab clear arm and latch arm.

To Adjust

Space carriage fully to right hand margin. Disengage (latch) spacing clutch. Loosen nut on eccentric screw and turn eccentric screw until requirement is met. Tighten nut.



LATCH SPRING

Requirement

Min 1 oz---Max 3 oz
to open a gap between latch arm
and tab clear arm.

3.20 Vertical Tab Stop Control Mechanism

Note: Vertical tabulation mechanism adjustments (SLIDE RETAINER (3.05), MOUNTING BRACKET (3.06), FORM START GEAR BACKLASH (3.06), TAB WHEEL (3.07), POINTER (3.07), BLOCKING LEVERS (3.09), TAB WHEEL SYNCHRONIZATION (3.08)), escape sequence mechanism adjustment (NO. 10 BLOCKING BAR (3.11)), line feed clutch tripbail adjustments (TRIPBAIL BRACKET (3.12) and LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW (3.13)) should be completed before making the following adjustments for the vertical tab stop control mechanism.

MOUNTING PLATE

Requirement

Some clearance, within 0.025 inch between tab set arm and head of tab in cleared position and between tab clear arm and head of a tab in selected position when both levers are resting on post on mounting plate.

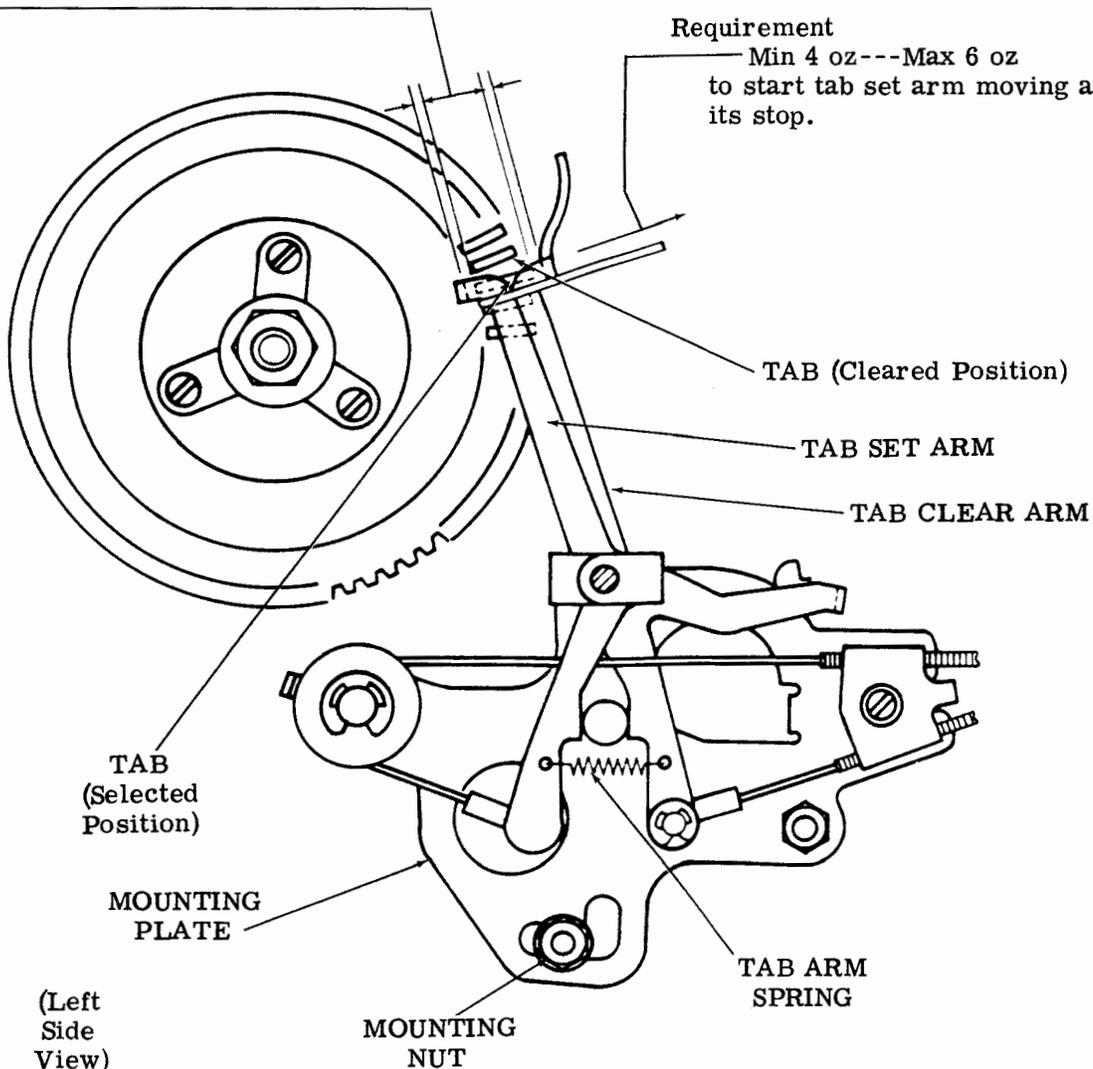
To Adjust

Loosen mounting nut and position mounting plate to meet requirement. Tighten mounting nut.

TAB ARM SPRING

Requirement

Min 4 oz---Max 6 oz
to start tab set arm moving away from its stop.



(Left Side View)

3.21 Vertical Tab Stop Control Mechanism (continued)

TAB SET ARM CABLE

Note: All tabs are in the set position before making this adjustment.

To Check

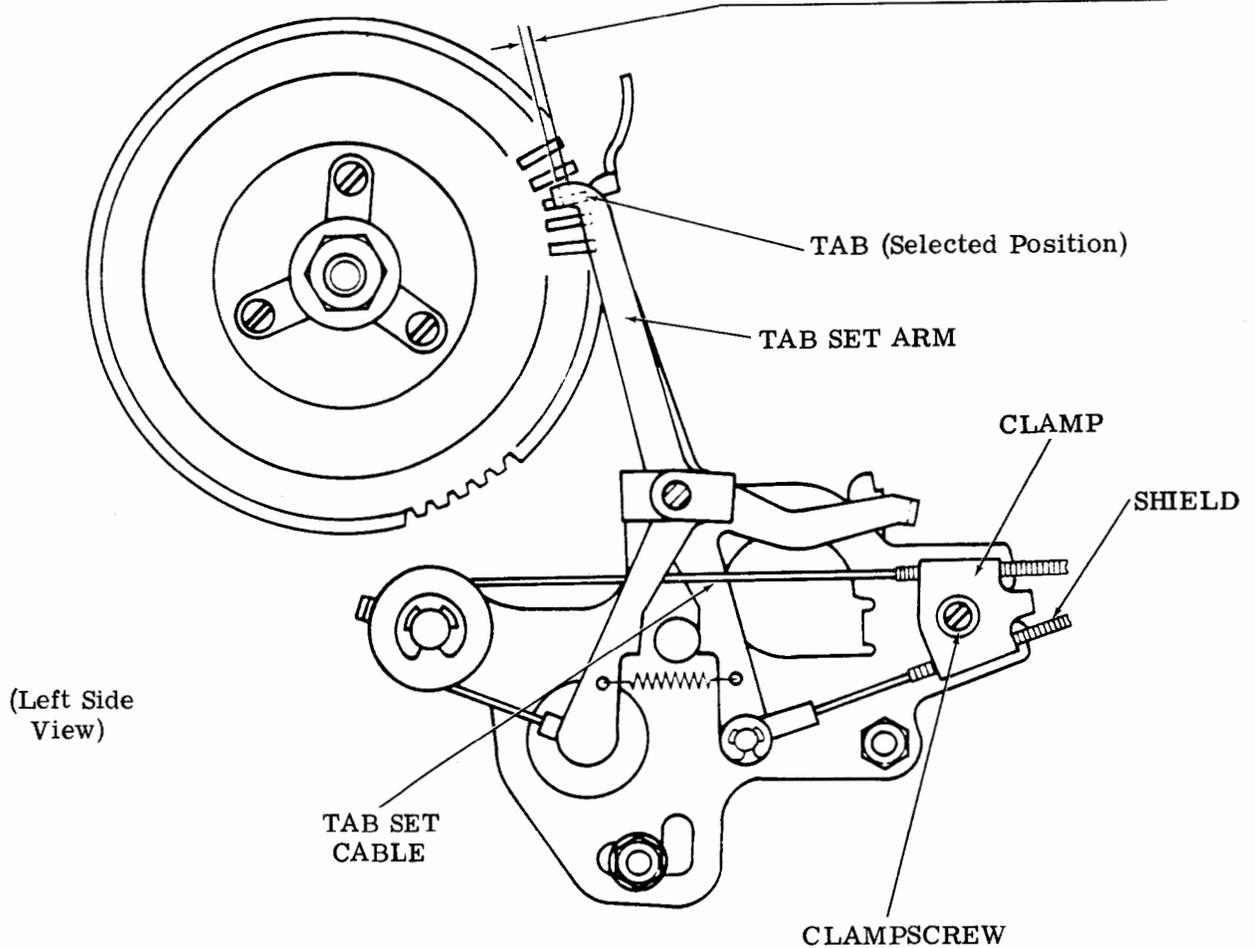
Tab set arm fully selected from function box.

Requirement

Min some---Max 0.030 inch
clearance between tab set arm and head of a tab in selected position.

To Adjust

Disengage (latch) all clutches. Set codebars 1, 3, 5, and 6 marking. Manually shift no. 9 and no. 10 blocking bars by latching the function levers in slots no. 7 and no. 25 of the function box. Manually trip the function clutch and rotate the main shaft until the stripper blade just touches the selected function pawl (slot 39). Loosen clamp-screw and shift the shield on the tab set cable to meet the requirement. Tighten clamp-screw.



3.22 Vertical Tab Stop Control Mechanism (continued)

TAB CLEAR ARM CABLE

To Check

Tab clear fully selected from function box.

Requirement

Min some---Max 0.015 inch
clearance between tab clearance and head of a tab in cleared position.

To Adjust

Disengage (latch) all clutches. Set codebars 2, 3, 5, and 6 marking. Manually shift no. 9 and no. 10 blocking bars by latching the function levers in slots no. 7 and no. 25 in the function box. Manually trip the function clutch and rotate the main shaft until the stripper blade just touches the selected function pawl (slot 40). Loosen clampscrew and shift shield on tab clear cable to meet requirement. Tighten clampscrew. Recheck TAB SET ARM CABLE (3.21) and TAB CLEAR ARM CABLE adjustments.

Note: When making above adjustment, be careful not to disturb TAB SET ARM CABLE (3.21) adjustment.

LATCH

To Check

Tab clear arm fully selected from function box.

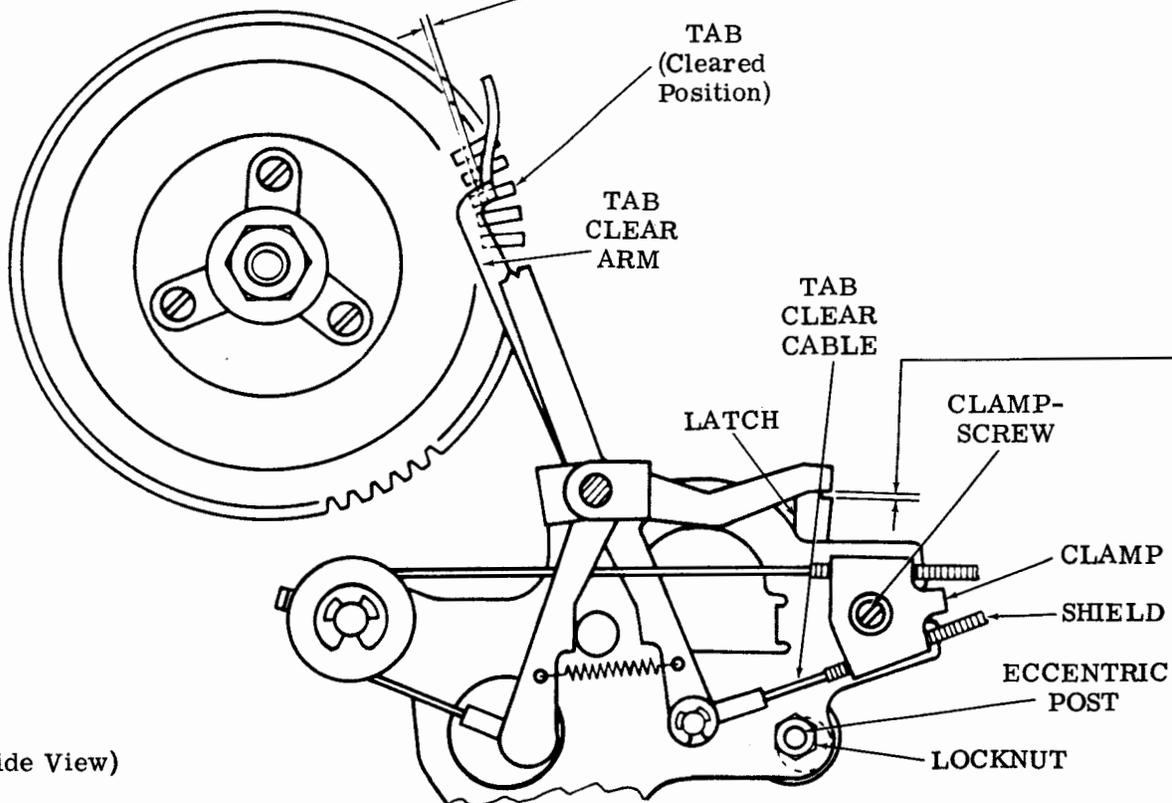
Requirement

Min 0.005 inch---Max 0.015 inch
clearance between tab clear arm and latch.

To Adjust

Disengage (latch) all clutches. Set codebars 2, 3, 5, and 6 marking. Manually shift no. 9 and no. 10 blocking bars by latching the function levers in slots no. 7 and no. 25 in the function box. Manually trip the function clutch and rotate the main shaft until the stripper blade just touches the selected function pawl (slot 40). Loosen locknut on eccentric post. Turn eccentric post with a hex key wrench to meet requirement. Tighten locknut.

Note: The eccentricity of the eccentric post should be positioned toward right.



(Left Side View)

3.23 Vertical Tab Stop Control Mechanism (continued)

LATCH RELEASE

To Check

Vertical tab sensing pawl resting on top of selected tab.

Requirement

Min 0.005 inch---Max 0.015 inch
clearance between tab clear arm and latch.

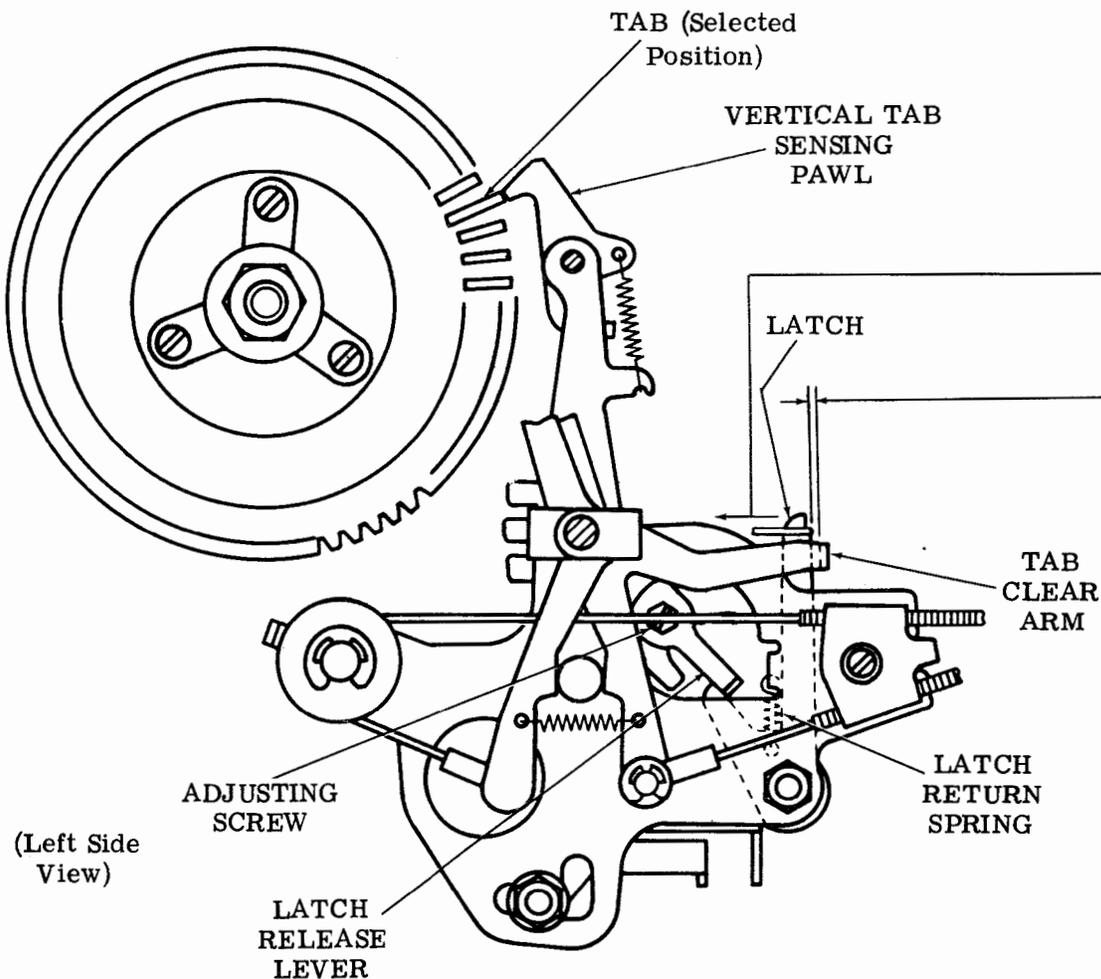
To Adjust

Turn platen knob until vertical tab sensing pawl comes to rest on top of selected tab. Loosen adjusting screw and adjust latch release lever to meet requirement. Tighten adjusting screw.

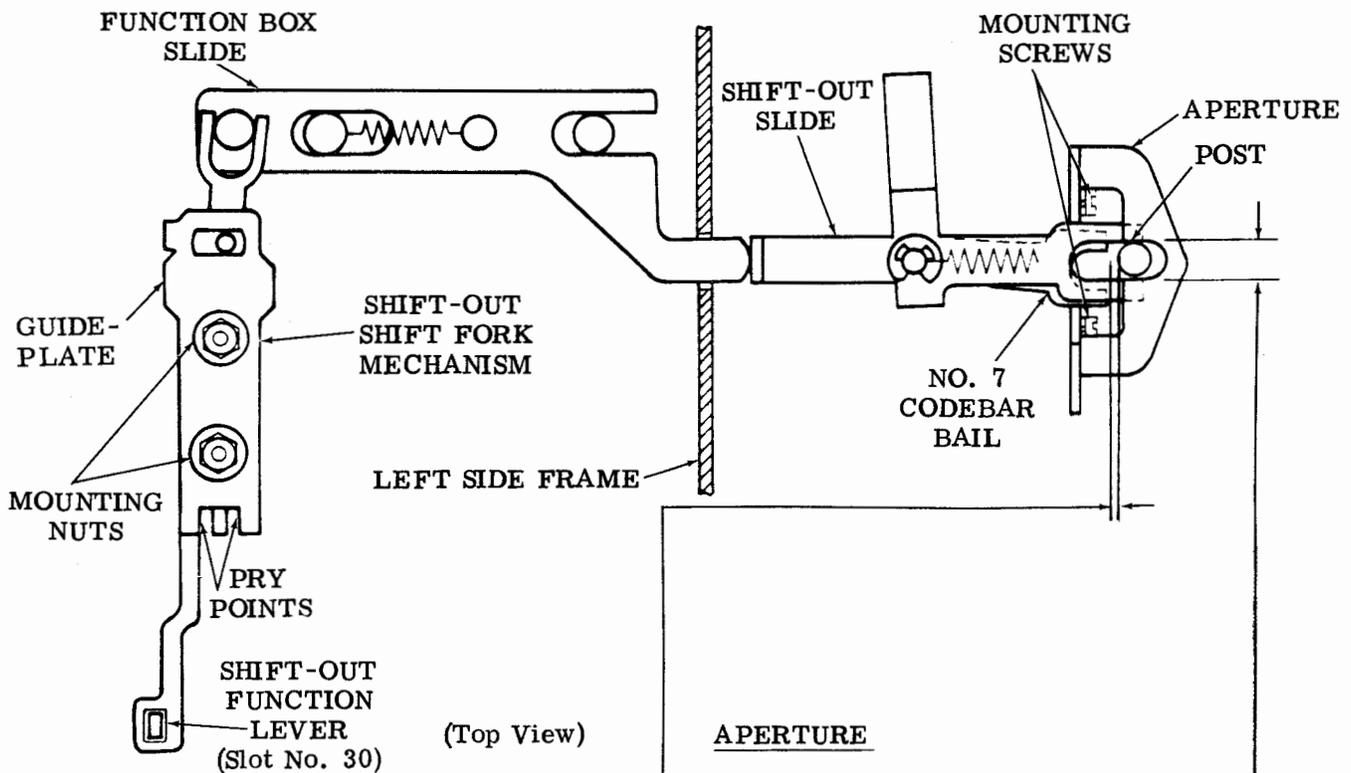
LATCH SPRING

Requirement

Min 1/4 oz---Max 1 oz
to pull latch away from tab clear arm.



3.24 Shift-In Shift-Out Mechanism



SHIFT-OUT SHIFT FORK MECHANISM

To Check
Shift-out function fully selected from function box.

Requirement
Min 0.005 inch---Max 0.010 inch clearance between no. 7 codebar bail and position shift-out slide.

To Adjust
Disengage (latch) all clutches. Manually select and latch shift-out function lever in function box slot no. 30. Loosen mounting nuts and adjust guideplate using pry points. Tighten mounting nuts.

APERTURE

To Check
No. 7 codebar in spacing position.

Requirement
Post on shift-out slide should line up with slot in aperture.

To Adjust
Position no. 7 codebar spacing. Loosen mounting screws and position aperture to meet requirement. Tighten mounting screws.

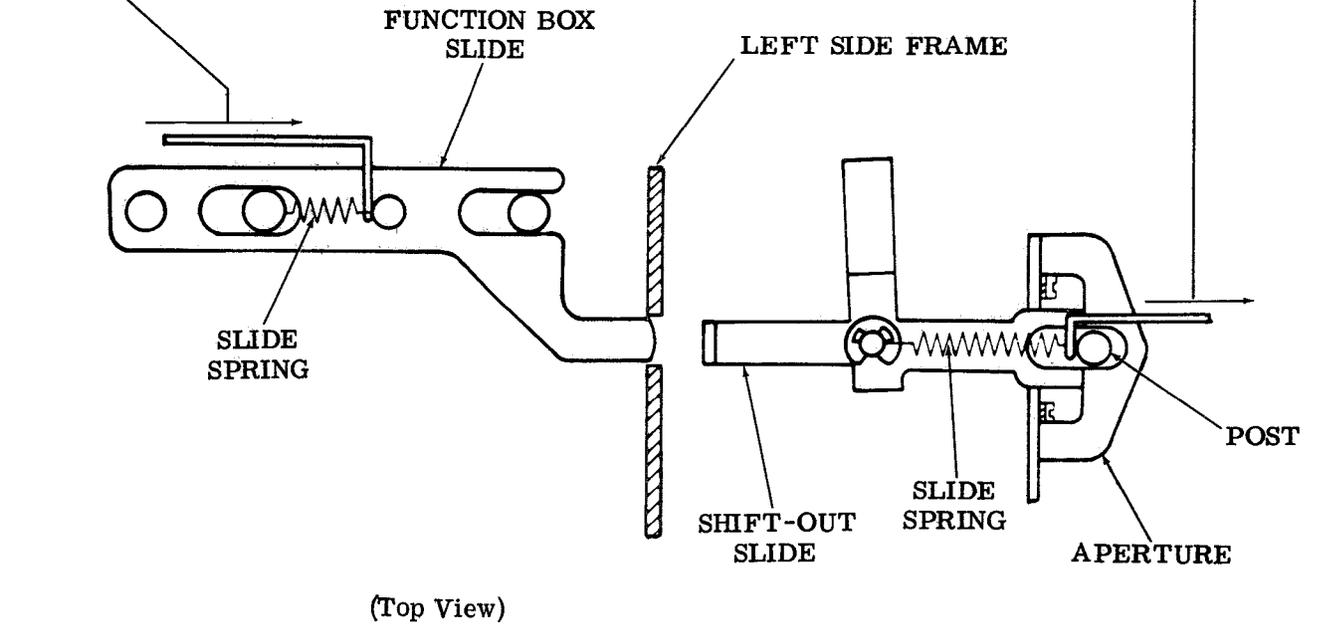
3.25 Shift-in Shift-out Mechanism (continued)

FUNCTION BOX SLIDE SPRING

Requirement
Min 3 oz---Max 5 oz
to move function box slide.

SHIFT-OUT SLIDE SPRING

Requirement
Min 5 oz---Max 8 oz
to move shift-out slide.



3.26 Half Forward and Reverse Line Feed Mechanism

LINE FEED CLUTCH PHASING

To Check

Line feed clutch disengaged (latched) and platen detent disabled. Both line feed bars engaging teeth of platen spur gear. Line feed bar in lower position offset toward front. Manually move blocking roller into slot in lower end-of-line feed bars.

Requirement

Min some---Max 0.005 inch
clearance between blocking roller and nearest slot surfaces.

To Adjust

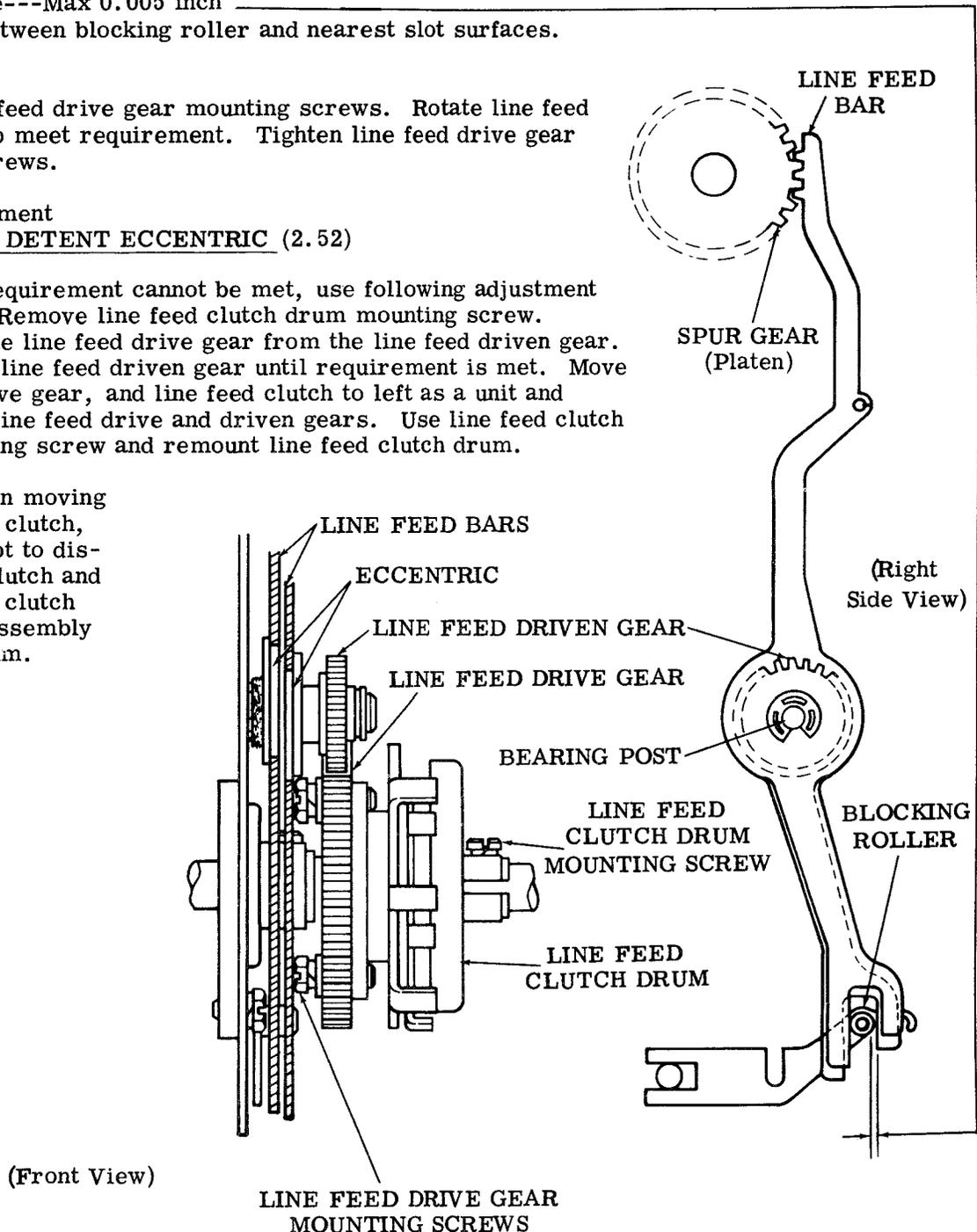
Loosen line feed drive gear mounting screws. Rotate line feed drive gear to meet requirement. Tighten line feed drive gear mounting screws.

Affected Adjustment

SPUR GEAR DETENT ECCENTRIC (2.52)

Note 1: If requirement cannot be met, use following adjustment procedure: Remove line feed clutch drum mounting screw. Disengage the line feed drive gear from the line feed driven gear. Advance the line feed driven gear until requirement is met. Move line feed drive gear, and line feed clutch to left as a unit and remesh the line feed drive and driven gears. Use line feed clutch drum mounting screw and remount line feed clutch drum.

Note 2: When moving the line feed clutch, be careful not to disengage the clutch and separate the clutch shoe lever assembly from the drum.



3.27 Half Forward and Reverse Line Feed Mechanism (continued)

PRESSURE BAIL

Note: This adjustment applies only to friction feed typing units.

To Check

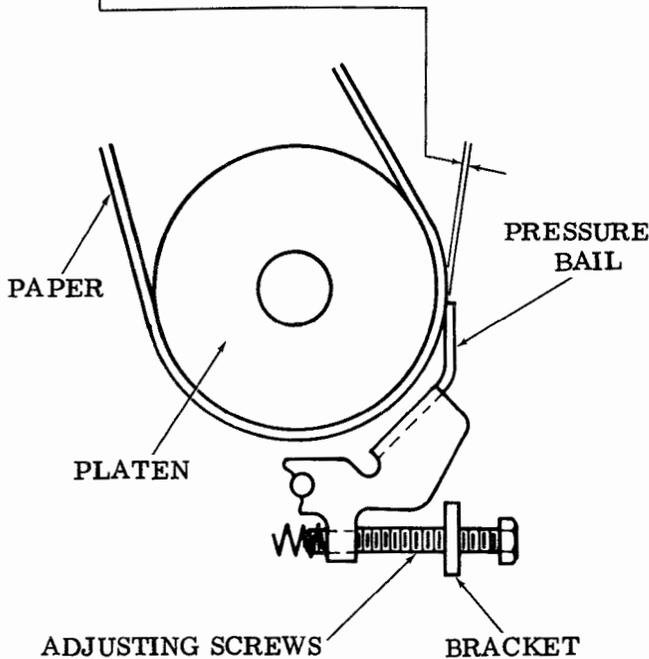
Paper inserted in platen. Paper release lever fully forward.

Requirement

Min some---Max 0.005 inch clearance between pressure bail and paper at the point where the clearance is the least. The clearance at both ends should be approximately equal.

To Adjust

Rotate adjusting screws to meet requirement.



(Left Side View)

BRACKET LINE-UP

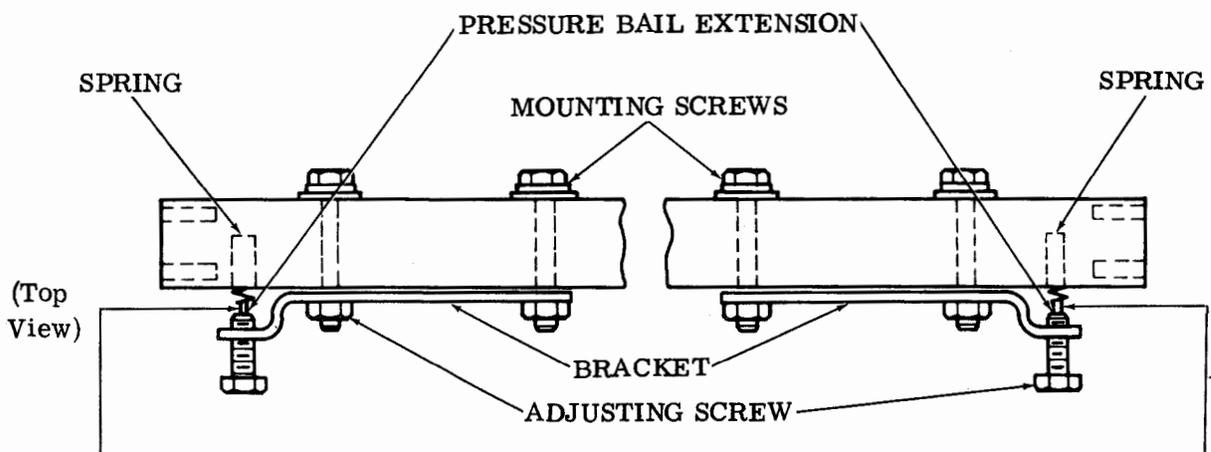
Note: This adjustment applies only to friction feed typing units.

Requirement

Adjusting screws at both ends should be in line with pressure bail extensions as gauged by eye.

To Adjust

Loosen mounting screws friction tight. Position brackets to meet requirement. Tighten mounting screws.



(Top View)

3.28 Half Forward and Reverse Line Feed Mechanism (continued)

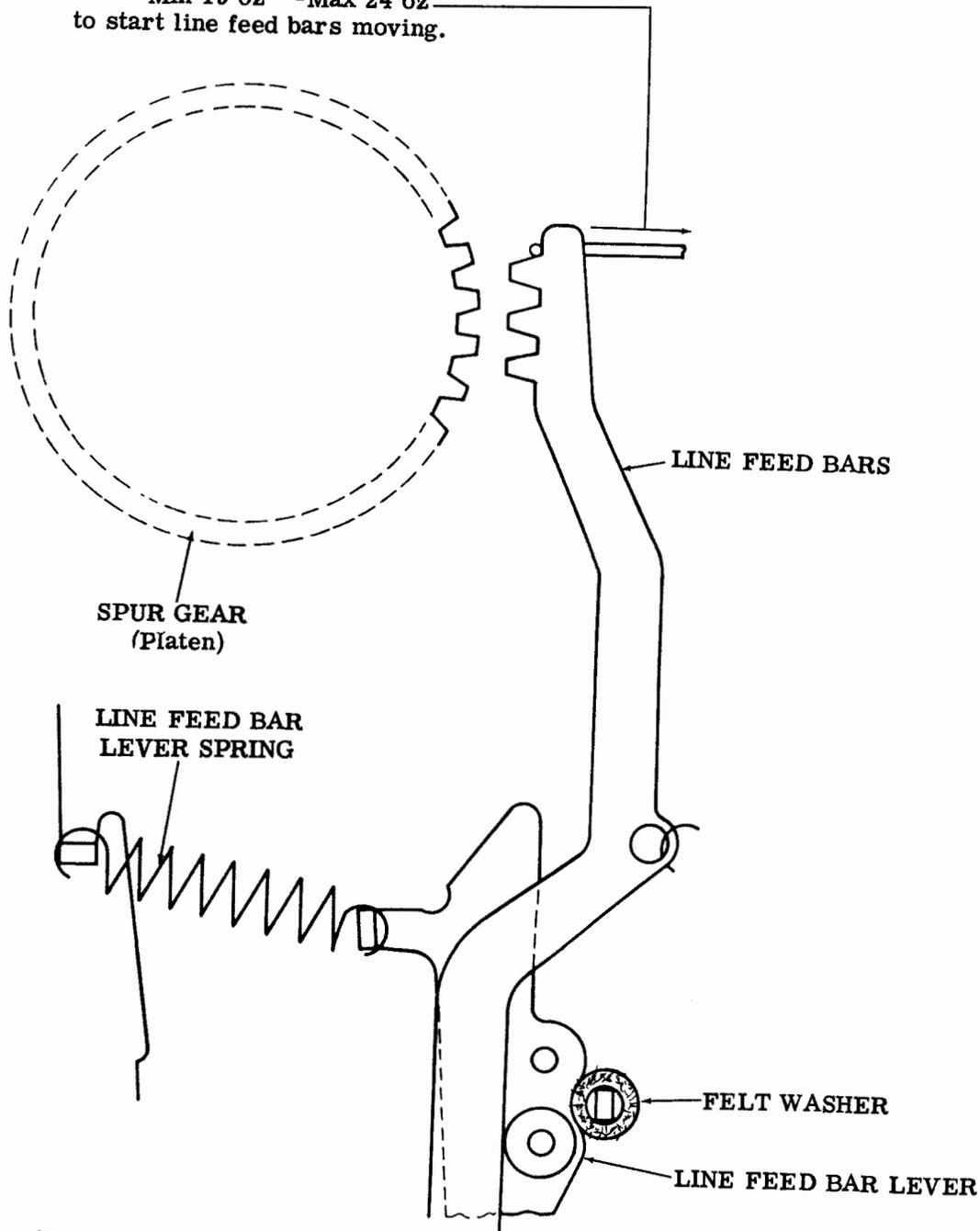
LINE FEED BAR LEVER SPRING

To Check

Line feed bar springs attached. Blocking levers unoperated.

Requirement

Min 19 oz---Max 24 oz
to start line feed bars moving.



(Right Side View)

3.29 Half Forward and Reverse Line Feed Mechanism (continued)

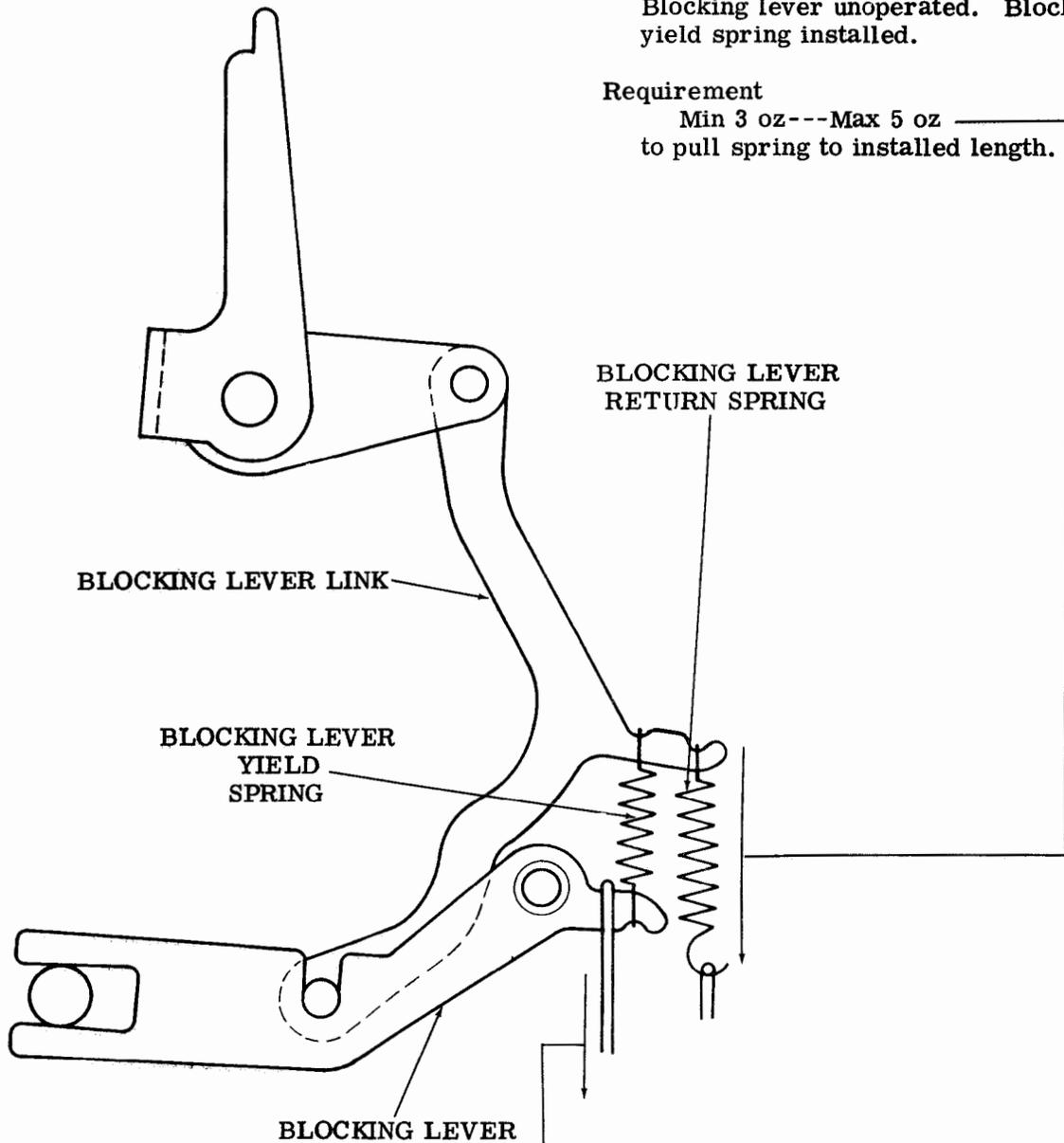
BLOCKING LEVER RETURN SPRING

To Check

Blocking lever unoperated. Blocking lever yield spring installed.

Requirement

Min 3 oz---Max 5 oz
to pull spring to installed length.



(Right Side View)

BLOCKING LEVER YIELD SPRING

To Check

Blocking lever unoperated. Return spring unhooked.

Requirement

Min 3 oz---Max 5 oz
to separate blocking lever from blocking lever link.

3.30 Two-Color Ribbon Mechanism

RIBBON GUIDE TO PLATEN

To Check

Ribbon guide in uppermost (red) print position. Ribbon in position and under tension.

Requirement

Min 0.025 inch---Max 0.040 inch clearance between ribbon guide and platen.

To Adjust

Loosen slide block screws (one on each side of frame). Pivot slide blocks until requirement is met along entire travel of ribbon guide. Maintain position of slide blocks and tighten slide block screws.

RIBBON RETRACT POSITION

To Check

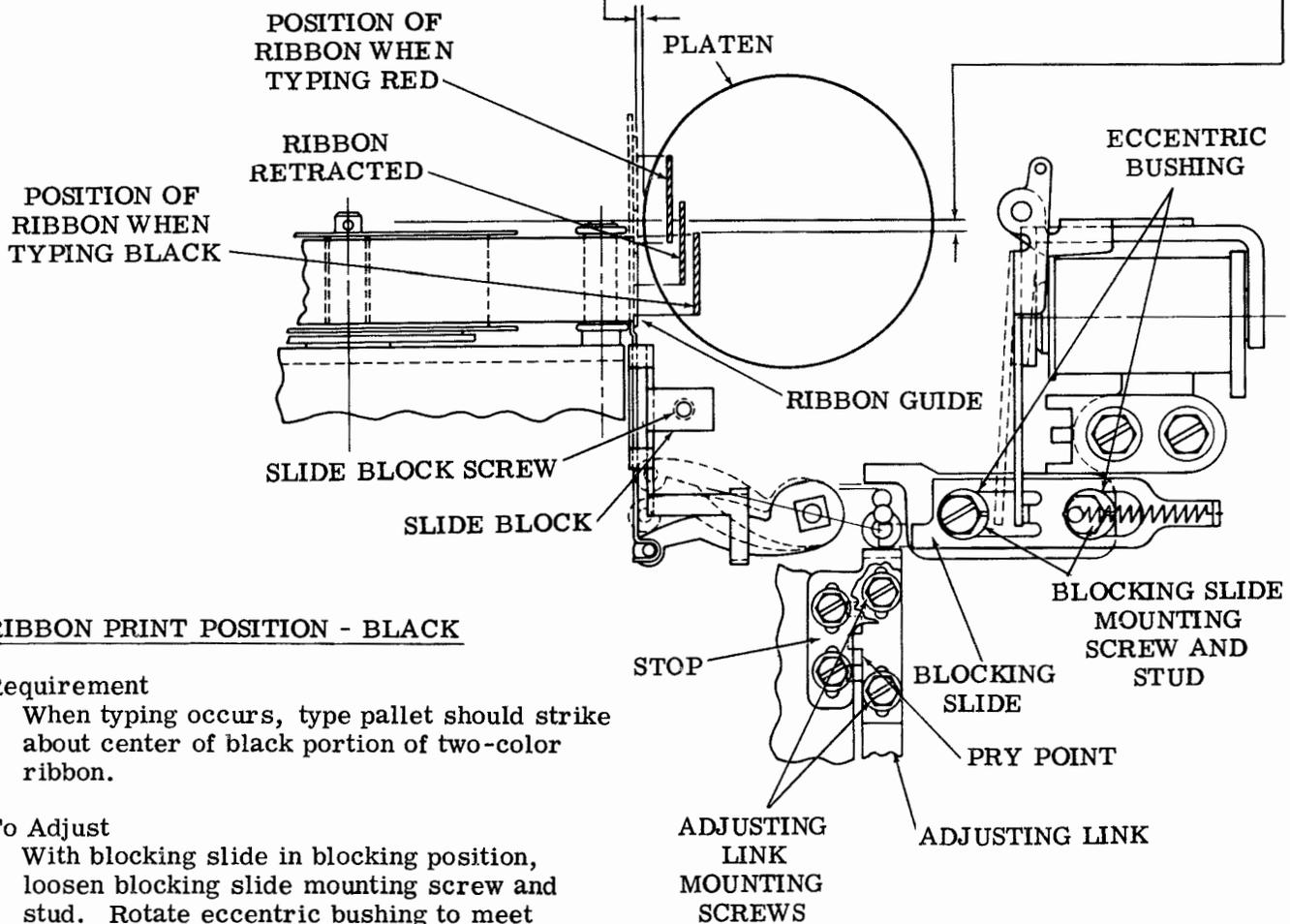
Print hammer clutch disengaged (latched). Take up play in ribbon guide in a downward direction. Ribbon positioned so that the top edge is in line with bottom of an upper case printed character as gauged by eye.

Requirement

Min 0.020 inch between the top of indicator slide and bottom of retaining tab of ribbon guide.

To Adjust

Loosen two adjusting link mounting screws. Position ribbon guide using pry points. Tighten adjusting link mounting screws.



(Right Side View)

RIBBON PRINT POSITION - BLACK

Requirement

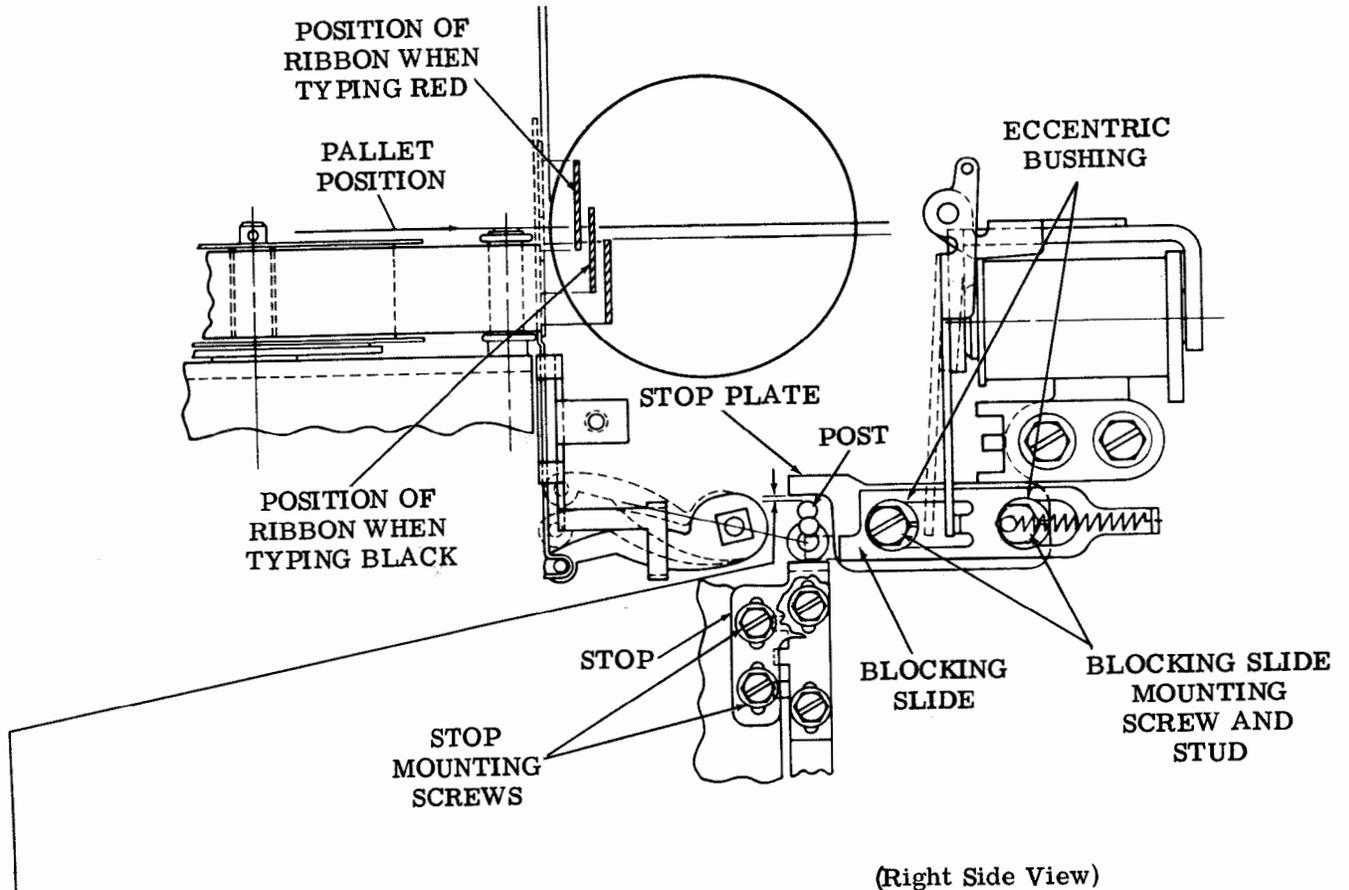
When typing occurs, type pallet should strike about center of black portion of two-color ribbon.

To Adjust

With blocking slide in blocking position, loosen blocking slide mounting screw and stud. Rotate eccentric bushing to meet requirement. Tighten blocking slide mounting screw and stud.

Note: The eccentricity of the eccentric bushings should be positioned towards the front.

3.31 Two-Color Ribbon Mechanism (continued)



OSCILLATOR DOWNSTOP

To Check
Printing clutch disengaged (latched).

Requirement
Min some---Max 0.010 inch
clearance between post and stop plate.

To Adjust
Loosen blocking slide mounting screw and stud and position stop plate to meet requirement. Tighten blocking slide mounting screw and stud. Recheck requirement.

Note: When making above adjustment, be careful not to disturb setting of eccentric bushings.

RIBBON PRINT POSITION — RED

Requirement
When typing occurs, type pallet should strike about center of red portion of two-color ribbon.

To Adjust
Place blocking slide to unblocking position. Loosen two stop mounting screws. Raise or lower stop to meet requirement. Tighten stop mounting screws.

3.32 Two-Color Ribbon Mechanism (continued)

MAGNET ASSEMBLY (ARMATURE ATTRACTED)

To Check
Armature in contact with core face.

Requirement
Armature should rest flush against core face.

To Adjust
Loosen hinge bracket mounting screws.
Position hinge bracket to meet requirement.
Tighten hinge bracket mounting screws.

MAGNET ASSEMBLY (ARMATURE NOT ATTRACTED)

To Check
Armature in disengaged position, ie, not attracted to core face.

Requirement
Min 0.030 inch---Max 0.040 inch
air gap between armature and core face
when measured at about center of core face.

To Adjust
Loosen locknut. Position stop lever adjusting screw. Tighten locknut.

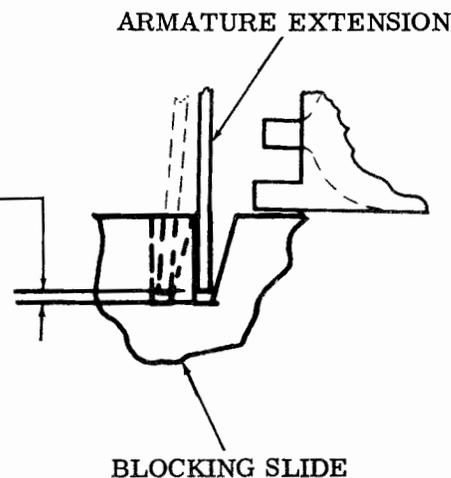
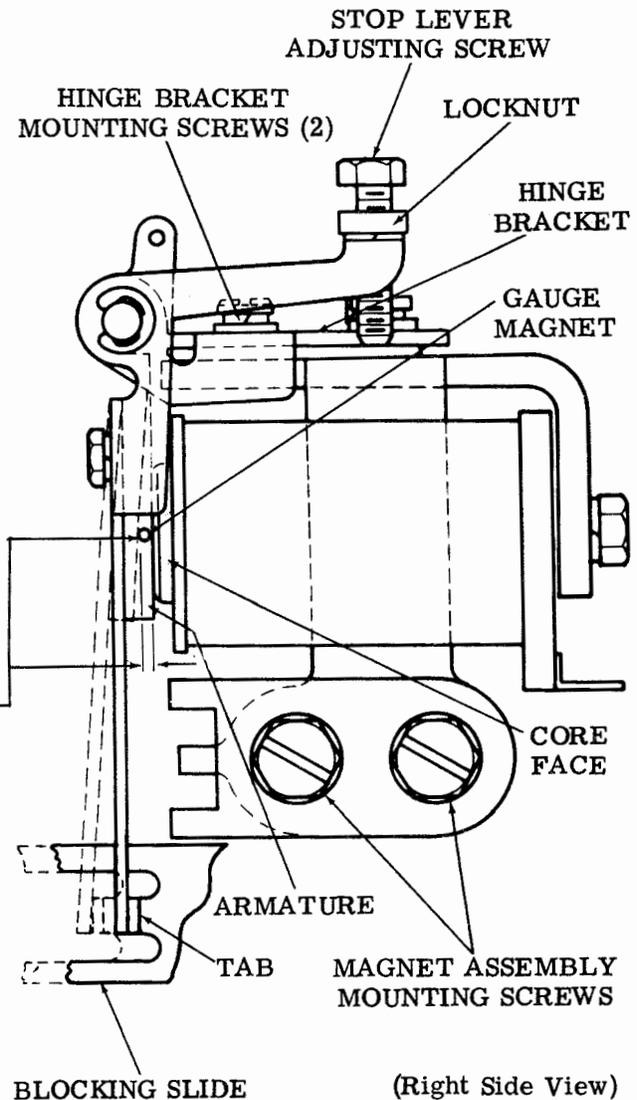
MAGNET ASSEMBLY TO BLOCKING SLIDE

To Check
Magnet assembly mounted to right side frame and armature extension against blocking slide tab. Place armature into attracted position to permit ribbon to be moved to its red position.

Requirement
Armature extension should actuate blocking slide. On some units the clearance between tip of armature extension and bottom of slide cut-out
Min 0.020 inch---Max 0.040 inch.

To Adjust
Loosen magnet assembly mounting screws.
Adjust assembly to meet requirements.

Note: If necessary, refine MAGNET ASSEMBLY TO BLOCKING SLIDE adjustment when typing unit is operated under power.



3.33 Automatic Carriage Return-Line Feed Mechanism

Note: Make the RIGHT HAND MARGIN (2.70) adjustment before making the following SPACING DRUM ACTUATING LEVER adjustment.

SPACING DRUM ACTUATING LEVER

To Check

Spacing clutch disengaged (latched). Farthest advanced spacing feed pawl resting against third tooth above cut-away section of ratchet.

Requirement

Ten-to-inch character spacing:

— Min 0.055 inch---Max 0.070 inch

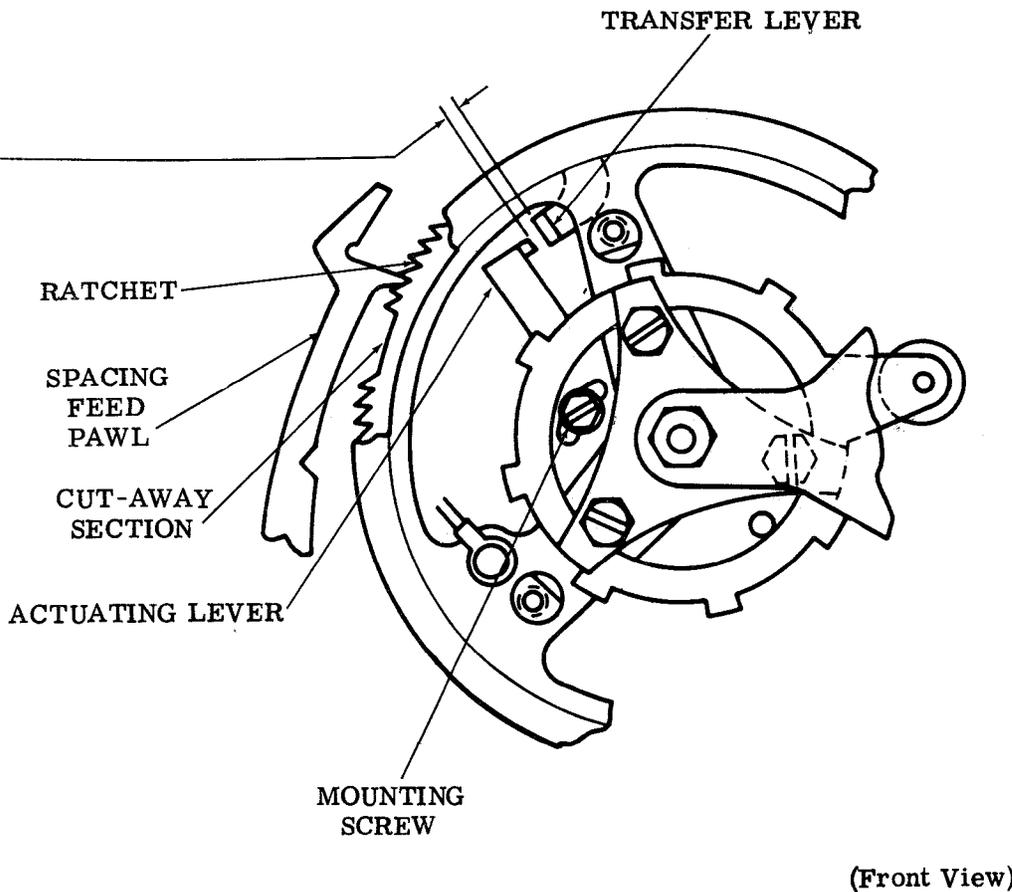
Twelve-to-inch character spacing:

— Min 0.040 inch---Max 0.050 inch

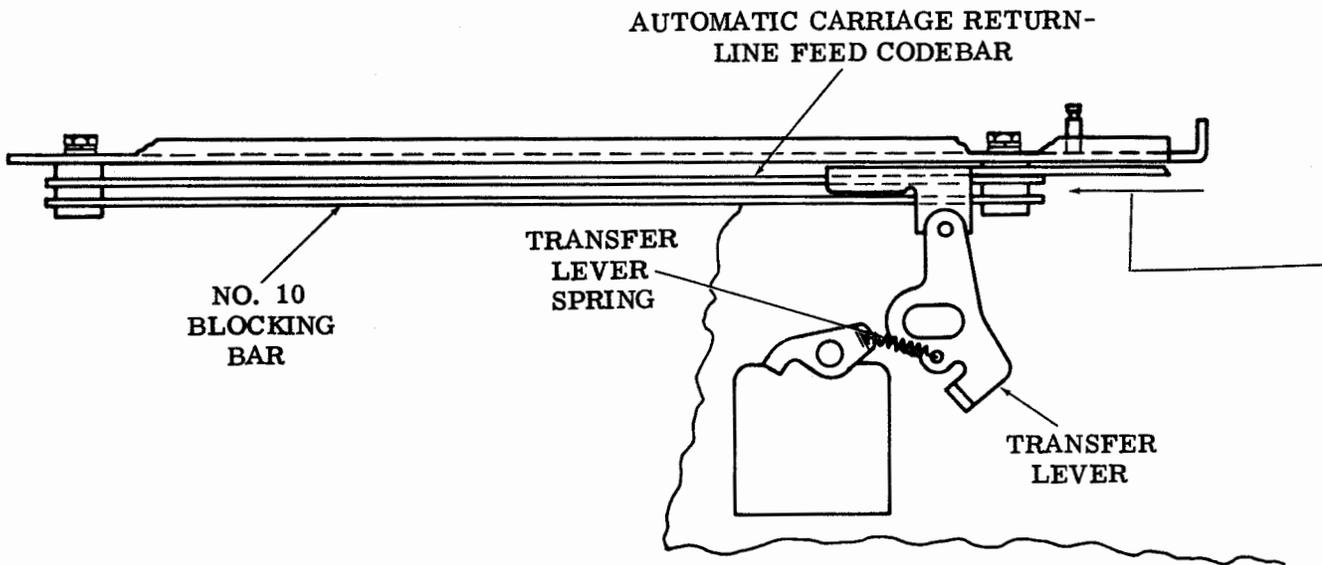
clearance between actuating lever and transfer lever.

To Adjust

Loosen mounting screw friction tight. Position actuating lever. Tighten mounting screw.



3.34 Automatic Carriage Return-Line Feed Mechanism (continued)



(Front View)

TRANSFER LEVER SPRING

Requirement

Min 2 oz --- Max 7 oz
to begin moving automatic carriage return-line feed codebar (codebar no. 11) to left.