37 TYPING UNIT (EARLY DESIGN)

ADJUSTMENTS

CONTENTS PAGE

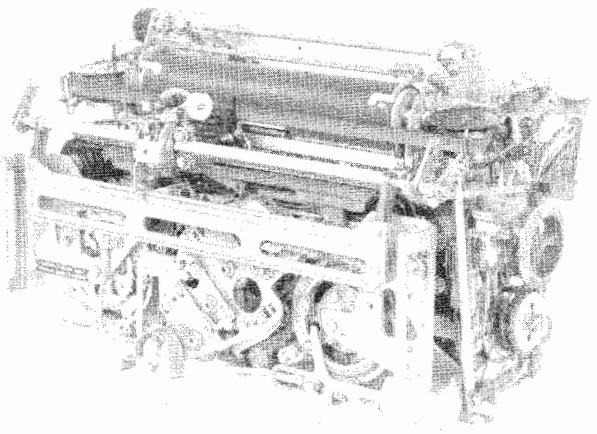

Figure 1 - 37 Typing Unit with Variable Features

Prepared for American Telephone and Telegraph Company by Teletype Corporation

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1. GENERAL

1.01 This section provides the mechanical requirements and adjustments for the early design 37 typing unit (Figure 1). It also provides information required for maintenance and training purposes. The section is reissued to include the latest engineering changes and additions, indicated by marginal and/or bracketed arrows. For similar information on late design 37 typing units, refer to Section 574-320-703.

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 and 3.

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 570-005-800.

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.

1.06 The adjustments of the basic unit are arranged in a sequence that should be followed if a complete readjustment of the unit is undertaken.

Note: Unless otherwise specified, remove all power from the unit when performing adjustments.

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 pileup can be replaced when the part is remounted.

1.07 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 (2.17) adjustment is changed. Under Affected Adjustments the FUNCTION CLUTCH TRIP LEVER (2.19) and PRINT HAMMER AND SPACING CLUTCH TRIP CLAMPS (2.22) adjustments are listed. Check these adjustments before considering the TRIP SHAFT CAM FOLLOWER (2.17) adjustment complete.

1.08 The spring tensions given in this 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.

1.09 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

1.10 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 latchlever 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 latchlever 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 and the clutch shoes are wedged against the clutch drum.

MANUAL INSERTION OF CHARACTERS

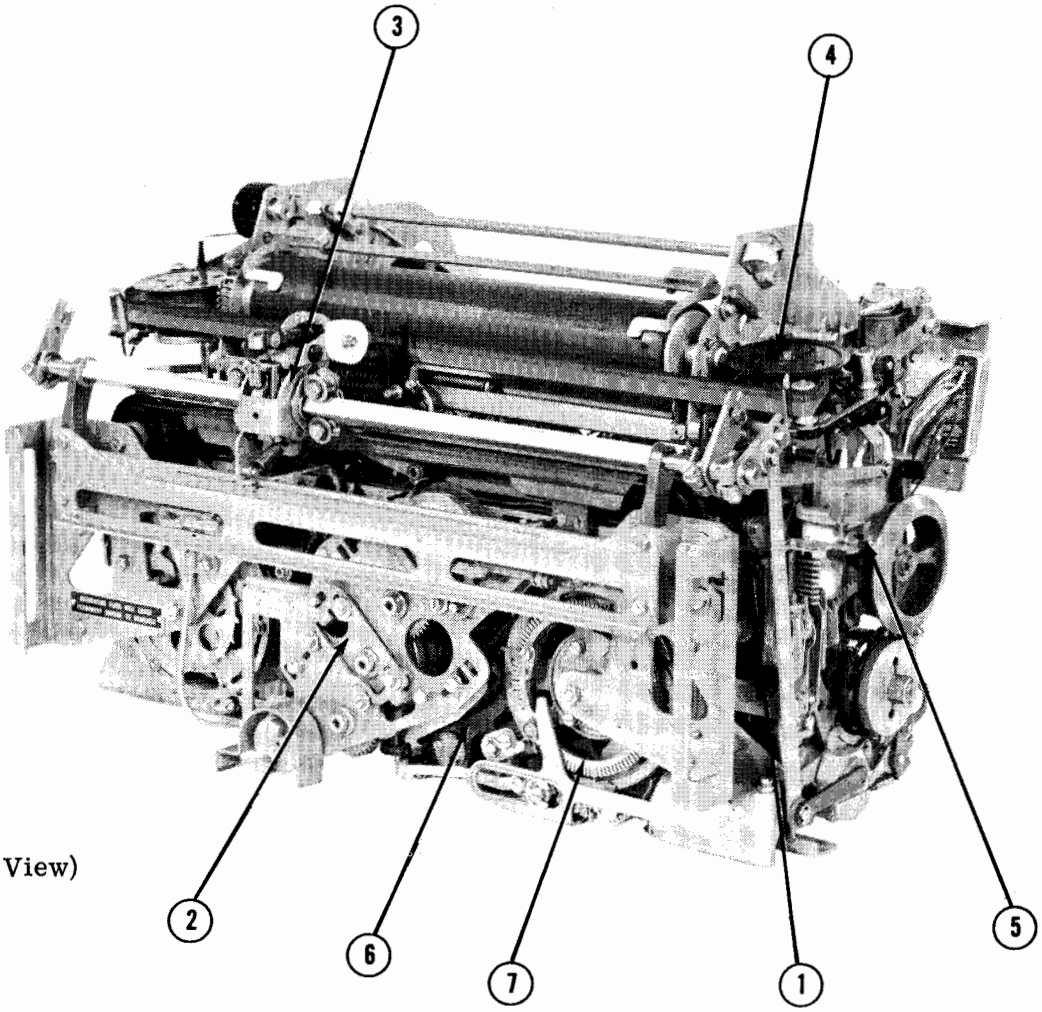
1.11 When a procedure specifies a particular codebar arrangement or character, it must be manually inserted in the selector and codebar mechanisms. To manually insert the particular arrangement, attach armature clip TP321071 on the selector mechanism to simulate a marking condition. Prevent the retraction 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 pushlevers are marking and clutch is again disengaged. Set up desired character in selector by moving the pushlevers, associated with spacing bits, on top of selector levers to simulate a spacing condition (there is no change in the transfer levers).

1.12 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 bails toward the rear of the unit to permit the transfer levers to be repositioned.

1.13 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.

1.14 Removing the handwheel and armature clip and engaging the blocking and feed pawls with the ratchet wheel places the typing unit in the operating condition.



(Right Front View)

BASIC UNIT

(1) CODEBAR MECHANISM

(2) HORIZONTAL POSITIONING MECHANISM

(3) PRINTING MECHANISM

(4) RIBBON FEED MECHANISM

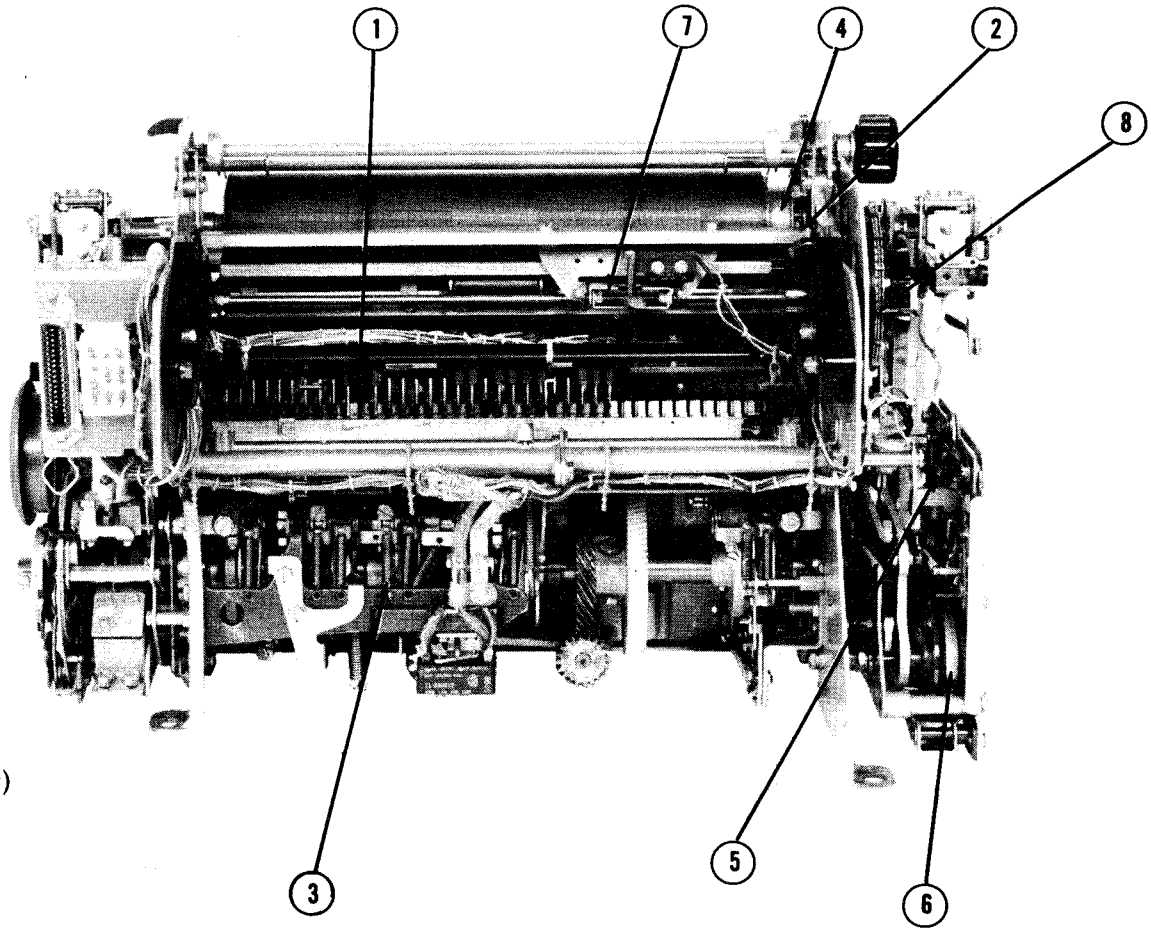
(5) SELECTOR MECHANISM

(6) SPACING AND CARRIAGE RETURN MECHANISM

VARIABLE FEATURE

(7) HORIZONTAL TABULATION MECHANISM

Figure 2 - Major Mechanisms of 37 Typing Unit



(Rear View)

BASIC UNIT

(1) FUNCTION MECHANISM

(2) LINE FEED MECHANISM

(3) MAIN SHAFT AND TRIP SHAFT MECHANISM

(4) PLATEN MECHANISM

(5) RETRACTION MECHANISM

(6) VERTICAL POSITIONING MECHANISM

VARIABLE FEATURES

(7) LOW PAPER SWITCH

(8) VERTICAL TABULATOR MECHANISM

Figure 3 - Major Mechanisms of 37 Typing Unit

2. BASIC UNITS

2.01 Selector Mechanism

SELECTOR ARMATURE

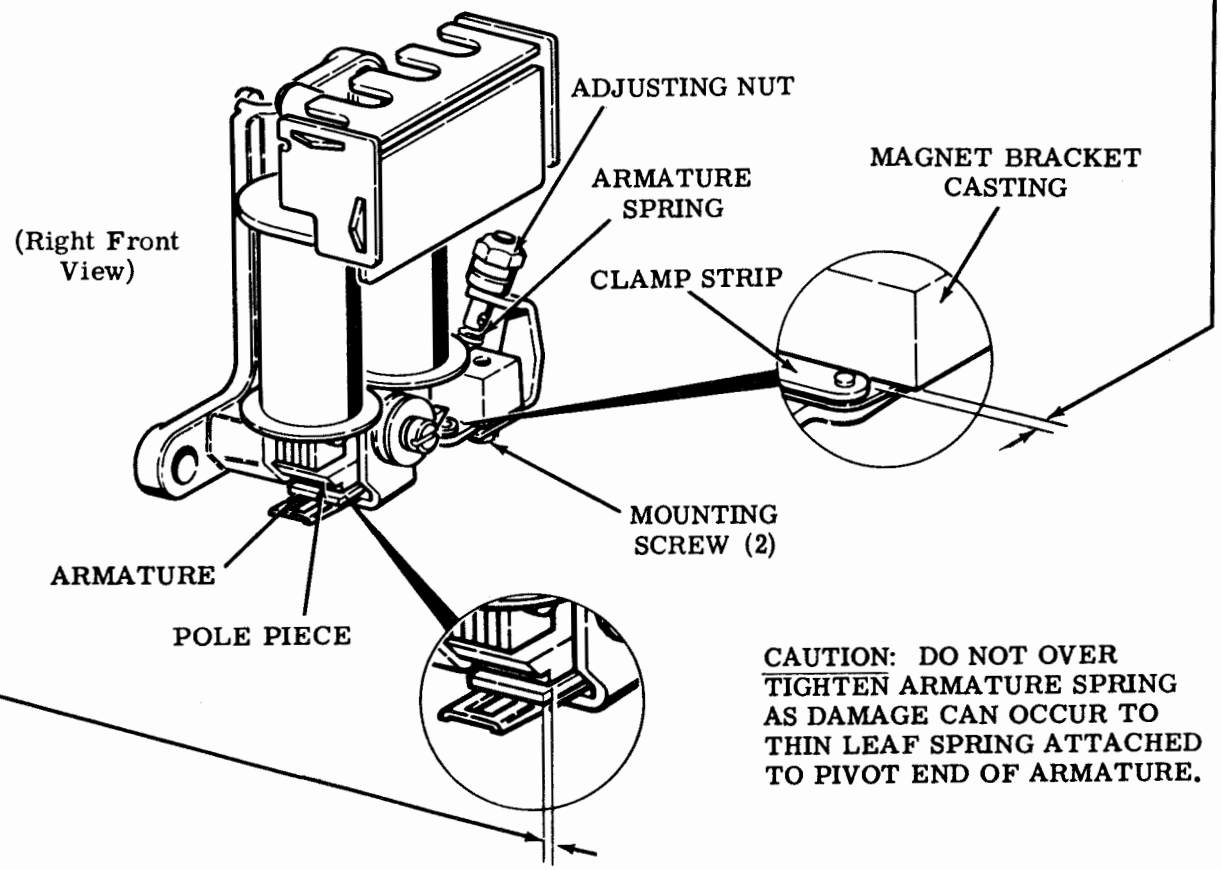
Note 1: This requirement need not be made (nor checked) if SELECTOR MAGNET BRACKET (2.06) and SELECTOR RECEIVING MARGIN (2.10) adjustments are met.

Note 2: To facilitate adjustment, remove rangefinder 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 rangefinder 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.

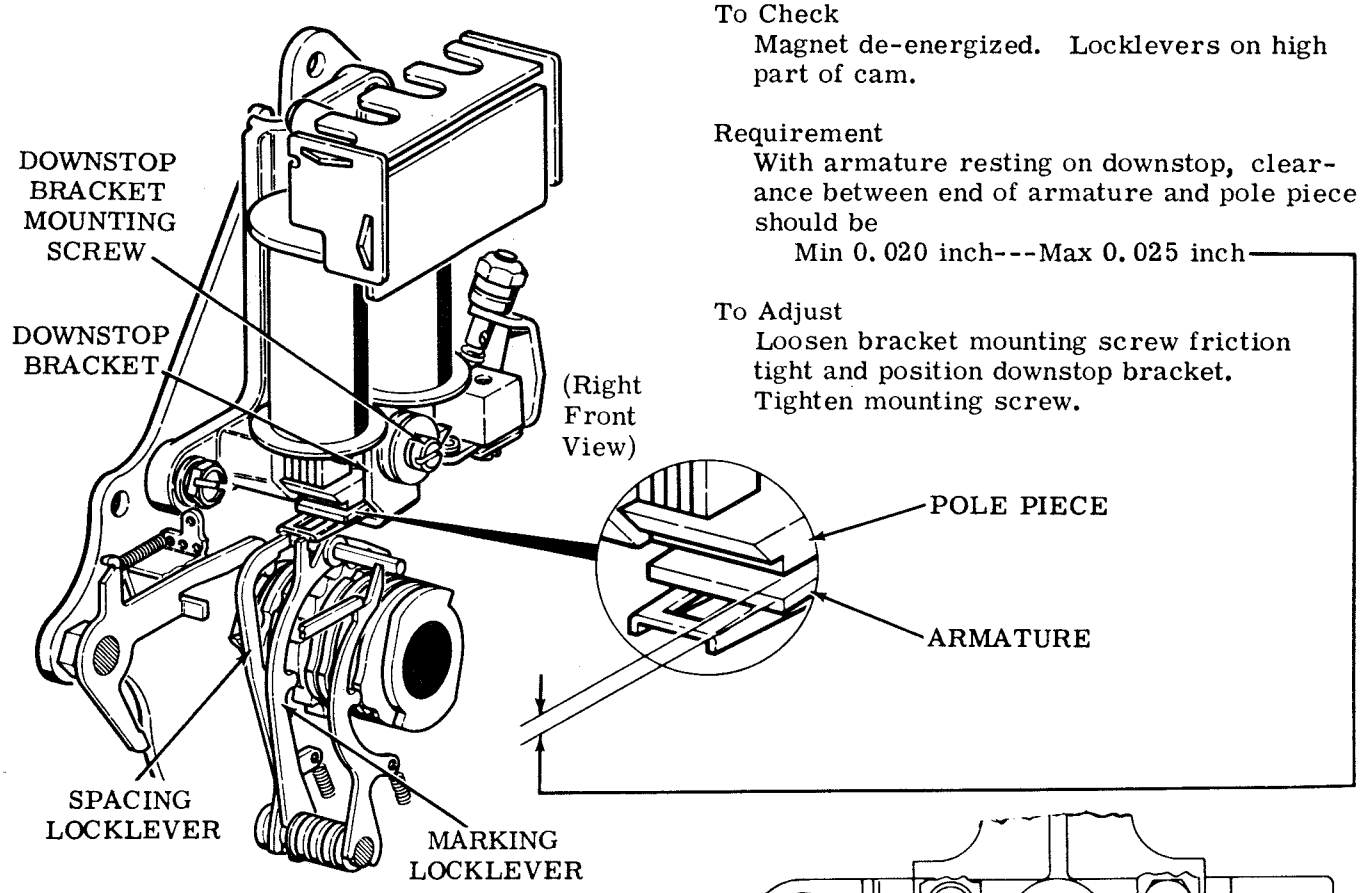
2.02 Selector Mechanism (continued)

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.



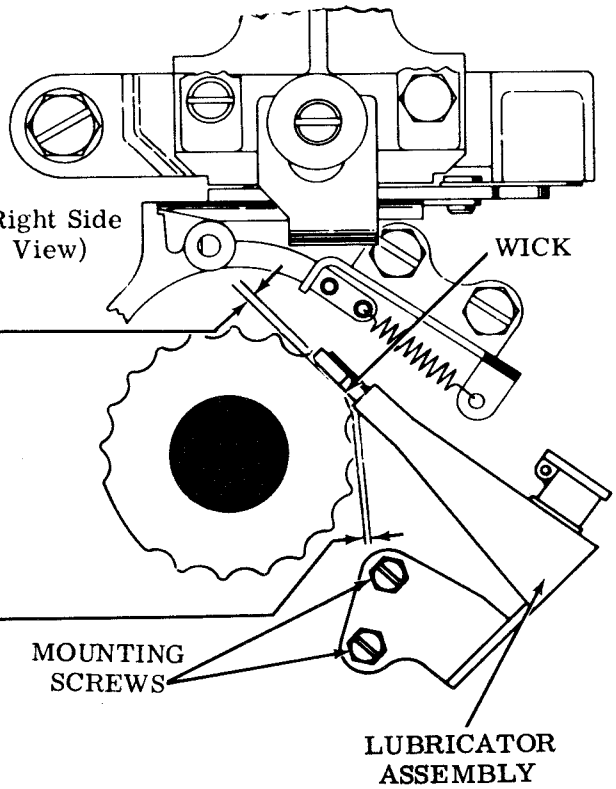
SELECTOR CAM LUBRICATOR (EARLY DESIGN)

(1) 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 screws friction tight. Rotate lubricator assembly about lower screw and tighten mounting screws.

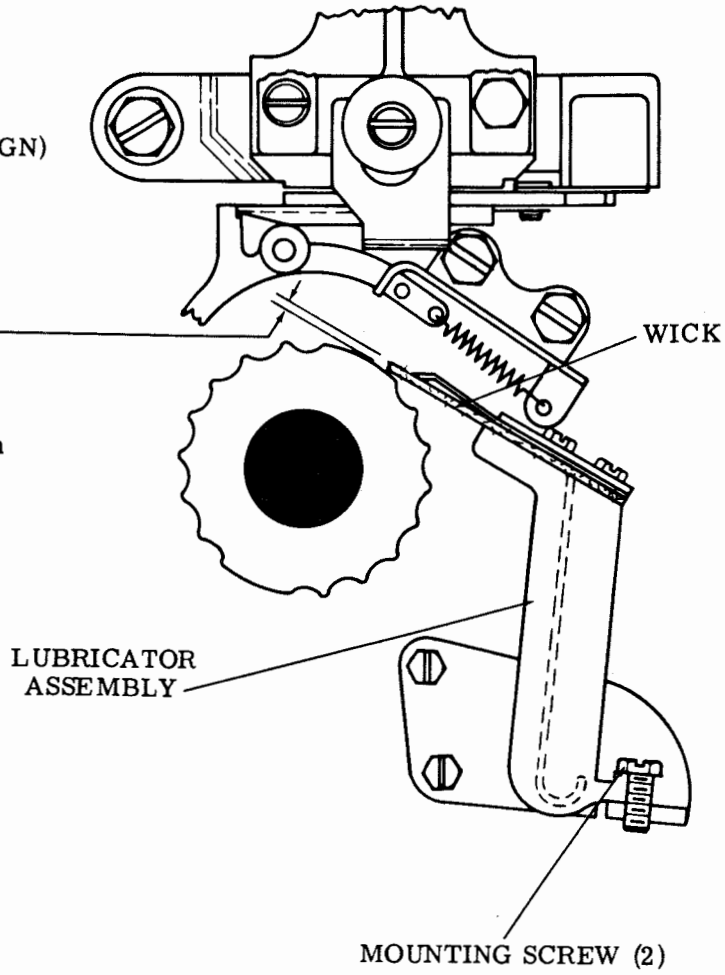
(2) Requirement
Space between high part of cam and lubricator assembly should be
Min 0.020 inch

To Adjust
Loosen lubricator mounting screws friction tight. Move lubricator assembly up and down and tighten mounting screws.



2.03 Selector Mechanism (continued)

(Right Side View)



SELECTOR CAM LUBRICATION (LATE DESIGN)

Requirement

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

Max 1/32 inch

as gauged by eye.

To Adjust

Loosen lubricator mounting screws friction tight. Rotate lubricator assembly about lower screw and tighten mounting screws.

2.04 Selector Mechanism (continued)

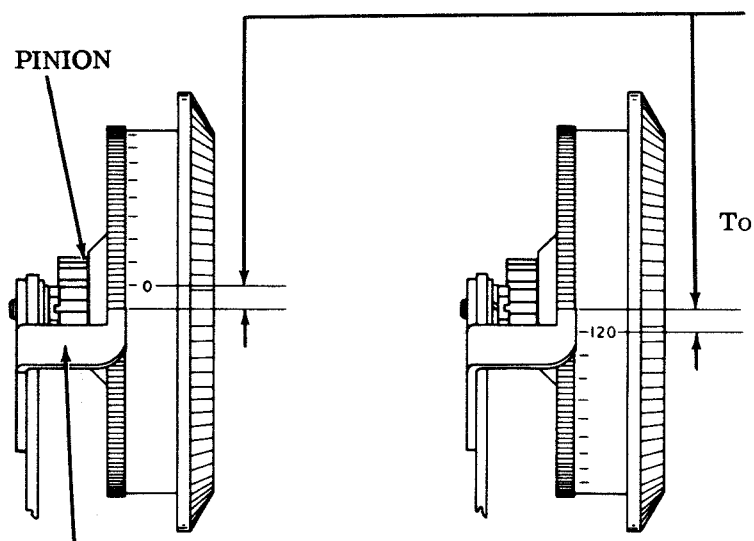
RANGEFINDER KNOB PHASING

Requirement

With rangefinder knob turned to maximum clockwise or counterclockwise position, zero or 120 mark should be approximately opposite of index. Overtravel and undertravel of knob should be approximately equal at each end position.

To Adjust

Rotate rangefinder knob clockwise until rack is stopped by the rack stop. Loosen mounting nut and pull rangefinder knob and pinion from engagement with rack. Position rangefinder knob so that 0 mark is closely aligned with index mark. Re-engage pinion with rack and tighten mounting nut.



SELECTOR CLUTCH STOP ARM

To Check

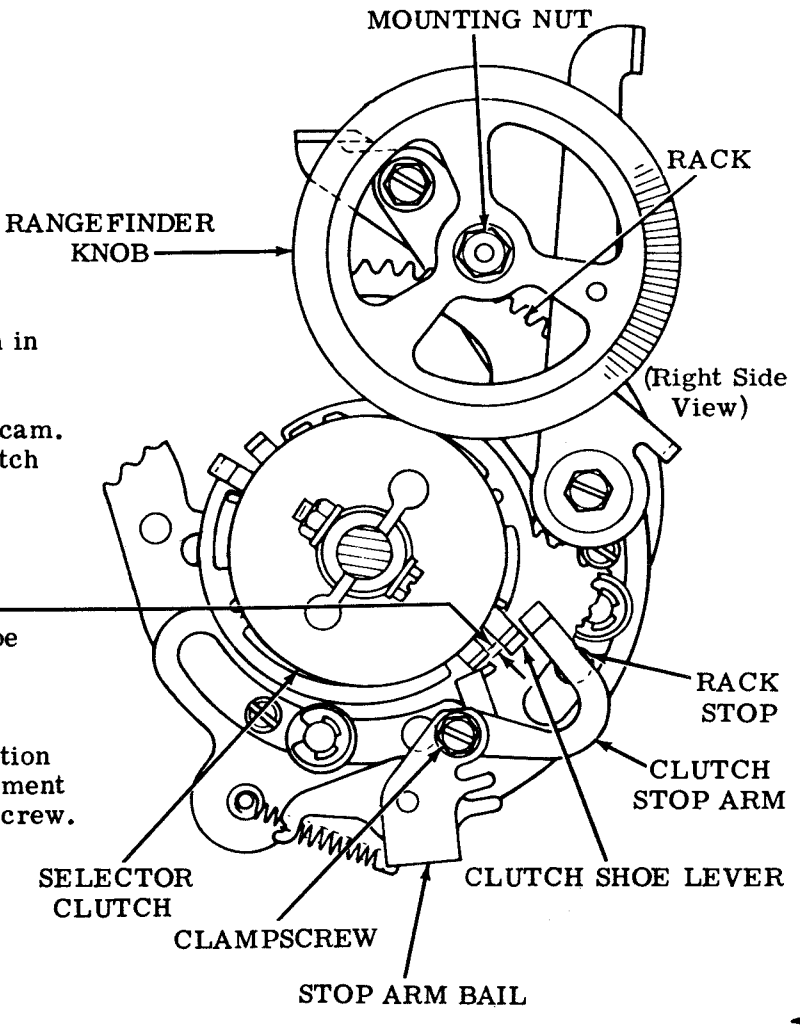
All codebars spacing and selector clutch in stop position. Do not latch the clutch. Rotate range scale to position number 8 selector lever and to highest part of its cam. Set selector armature to marking and latch selector clutch.

Requirement

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

To Adjust

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



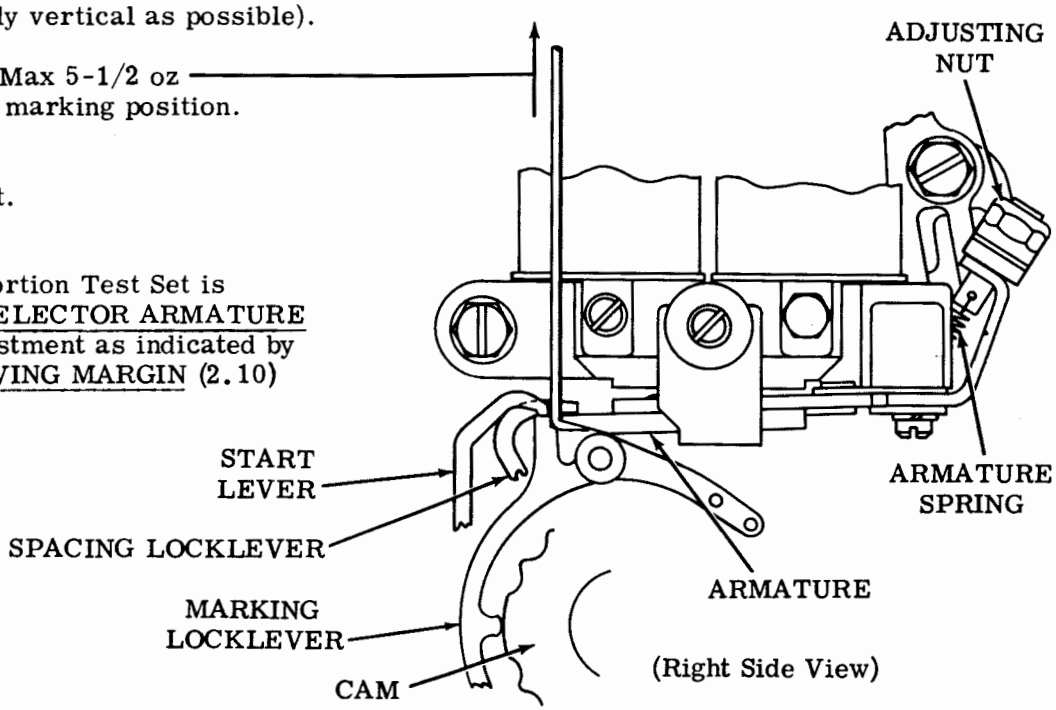
2.05 Selector Mechanism (continued)

SELECTOR ARMATURE SPRING

Requirement (Preliminary)
With marking locklever, spacing locklever, and start lever on high part of their cams, hook scale under end of armature extension (hold scale as nearly vertical as possible). It should require
Min 4-1/2 oz---Max 5-1/2 oz
to pull armature to marking position.

To Adjust
Rotate adjusting nut.

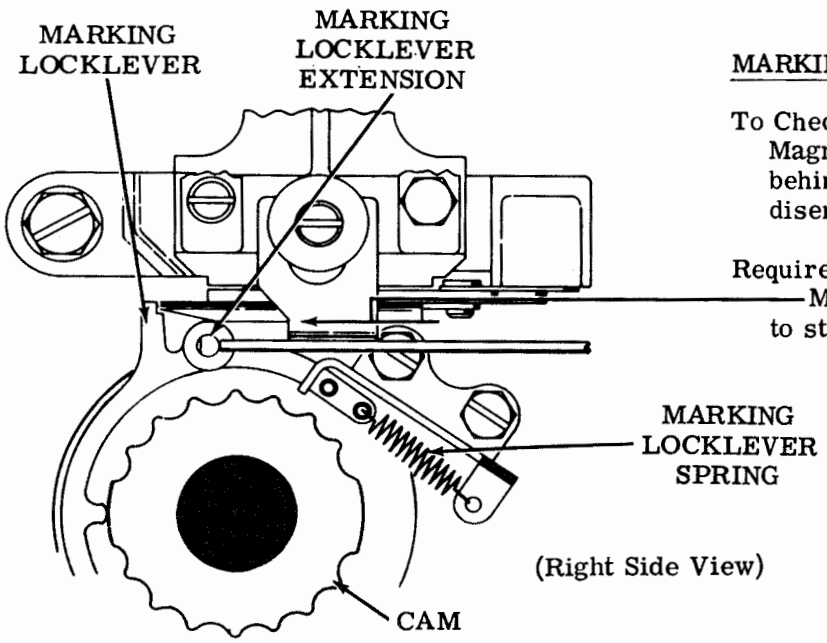
Requirement (Final)
When a Signal Distortion Test Set is available, refine SELECTOR ARMATURE SPRING (2.05) adjustment as indicated by SELECTOR RECEIVING MARGIN (2.10) adjustment.



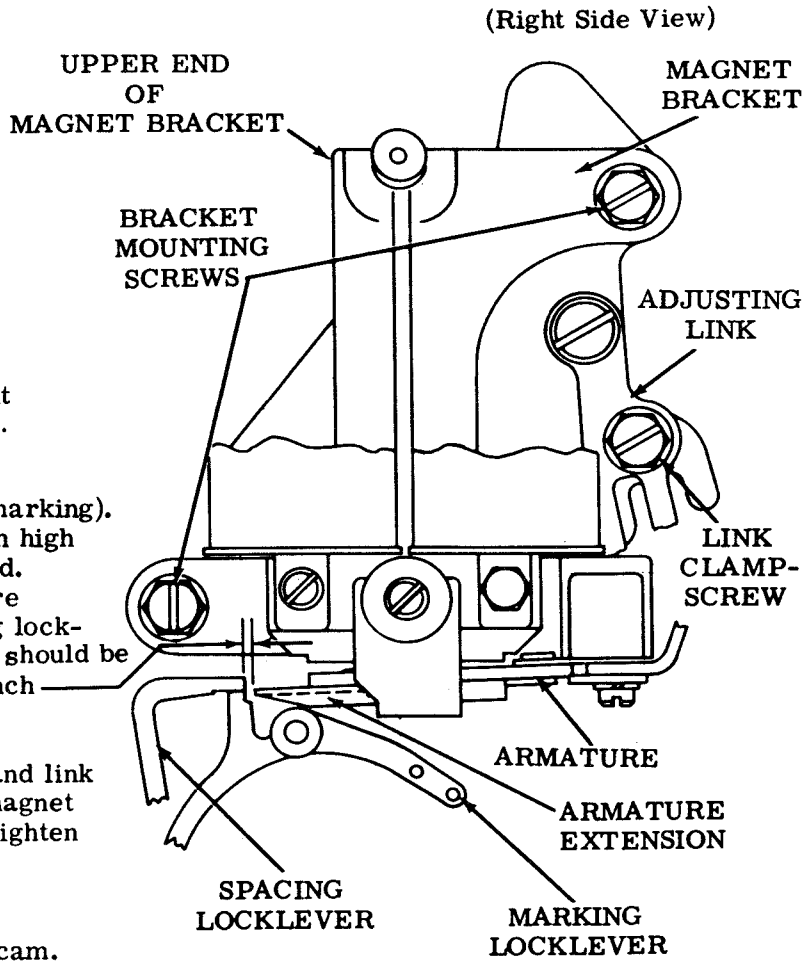
MARKING LOCKLEVER SPRING

To Check
Magnet energized. All pushlevers latched behind selector levers. Selector clutch disengaged.

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



2.06 Selector Mechanism (continued)



SELECTOR MAGNET BRACKET

Note: The preliminary SELECTOR ARMATURE SPRING (2.05) adjustment must be made prior to this adjustment.

(1) Requirement

Delete combination selected (all marking). Marking and spacing locklevers on high part of cam. Magnet de-energized. Clearance between end of armature extension and shoulder of marking locklever and tip of spacing locklever should be

Min 0.009 inch---Max 0.016 inch

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) Requirement

Marking locklever on low part of cam. Magnet energized. Armature in contact with front pole piece. Clearance between lower surface of armature and upper surface of marking locklever should be

Min some---Max 0.003 inch

To Adjust

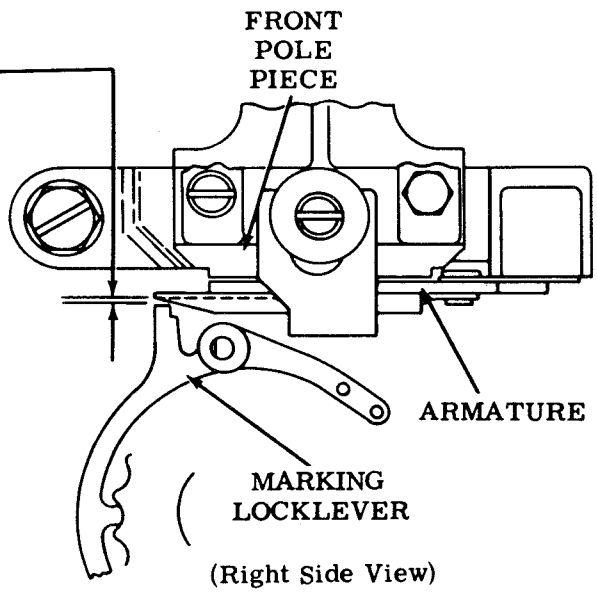
With bracket mounting screws friction tight, position upper end of magnet bracket. Tighten mounting screws. Recheck requirement (1).

(3) Requirement

With selector clutch engaged, rotate shaft and check for smooth operation of start lever on armature.

To Adjust

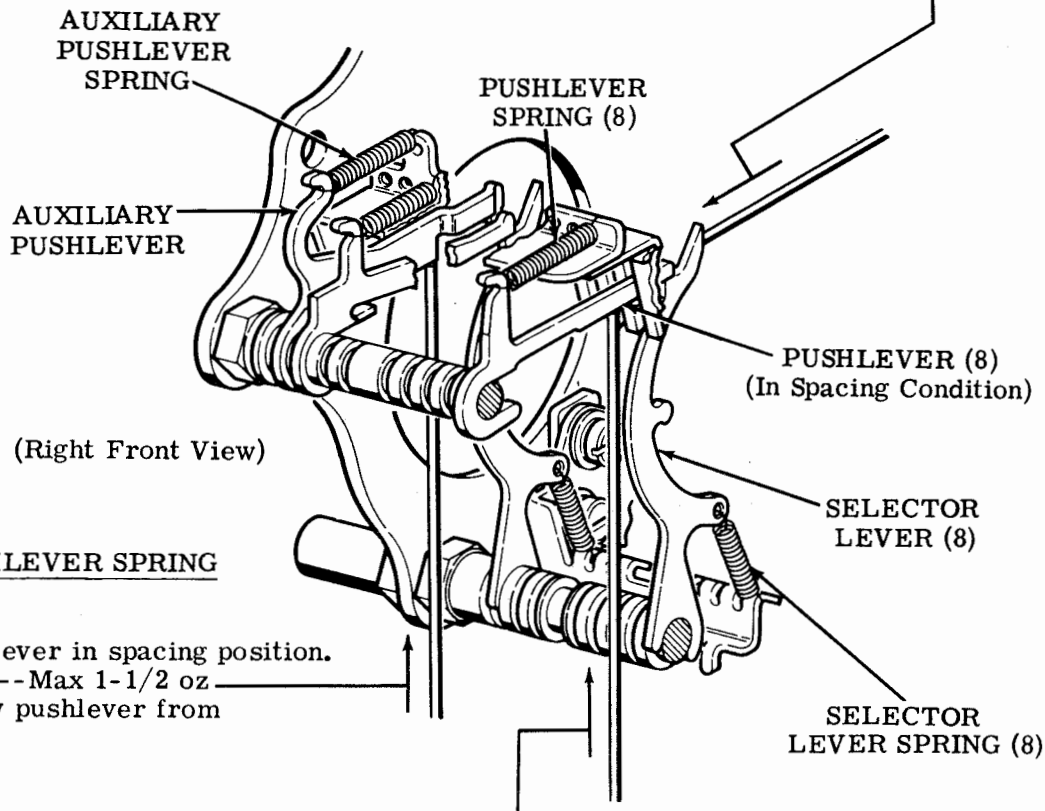
Refine adjustments for requirements (1) and (2).



2.07 Selector Mechanism (continued)

SELECTOR LEVER SPRING

Requirement
Selector levers on high part of their cams.
Pushlever reset bail latched on lever guide.
Min 1-1/2 oz---Max 2-1/2 oz
to start each selector lever moving. Check eight springs.



(Right Front View)

AUXILIARY PUSHLEVER SPRING

Requirement
Auxiliary pushlever in spacing position.
Min 1/2 oz---Max 1-1/2 oz
to lift auxiliary pushlever from selector lever.

SELECTOR PUSHLEVER SPRING

Requirement
Pushlever in spacing position.
Min 1 oz---Max 2-1/2 oz
to lift pushlever from selector lever.
Check eight springs.

2.08 Selector Mechanism (continued)

Note 1: Spring tension measured with range scale at 60, stop arm bail in cam indent, and latchlever spring unhooked. Replace latchlever spring after checking tensions.

LIFT LEVER SPRING

Note 1: Applicable

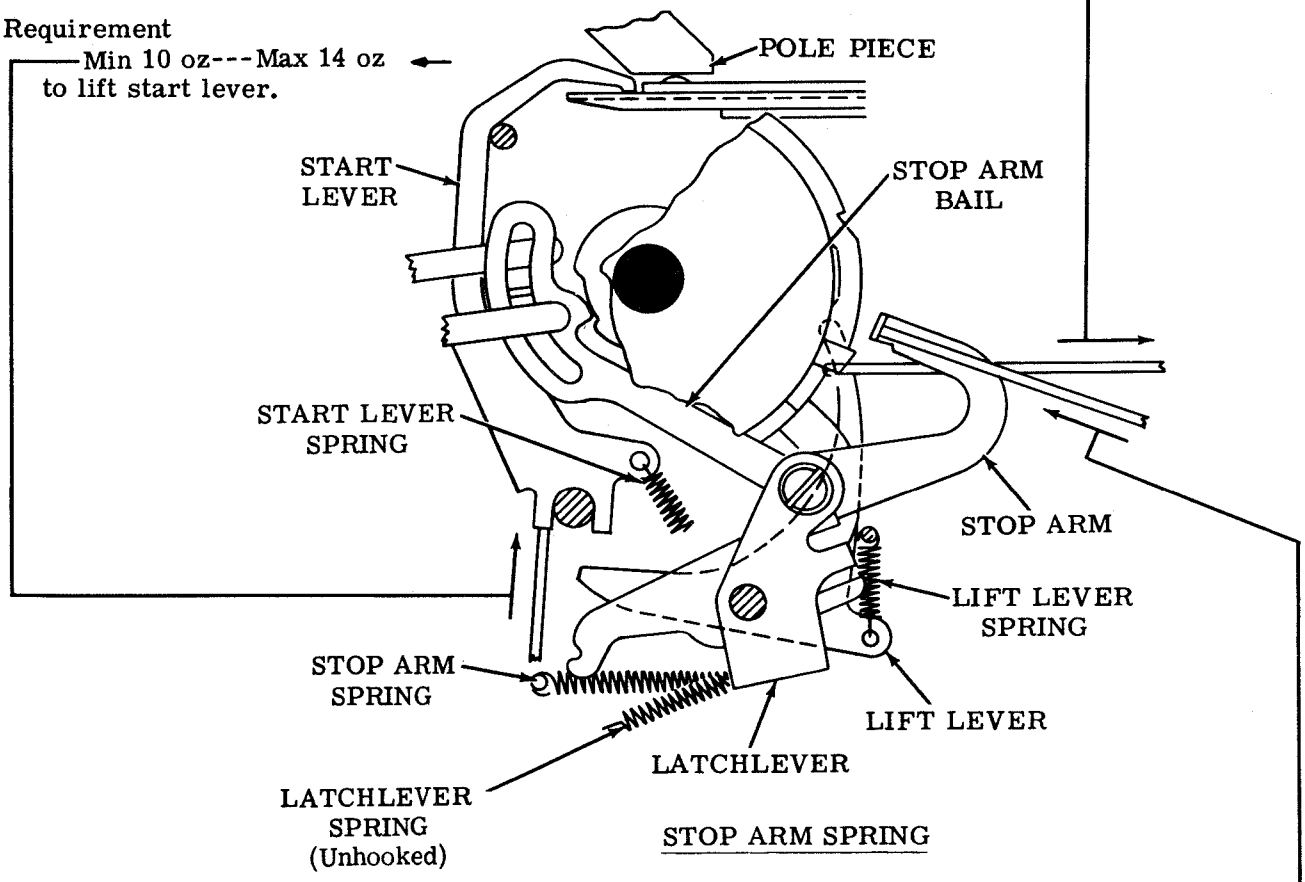
Requirement
With start lever held upward and out of engagement with lift lever
Min 3 oz---Max 5 oz
to start lift lever moving.

START LEVER SPRING

Note 1: Applicable

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

(Right Side View)



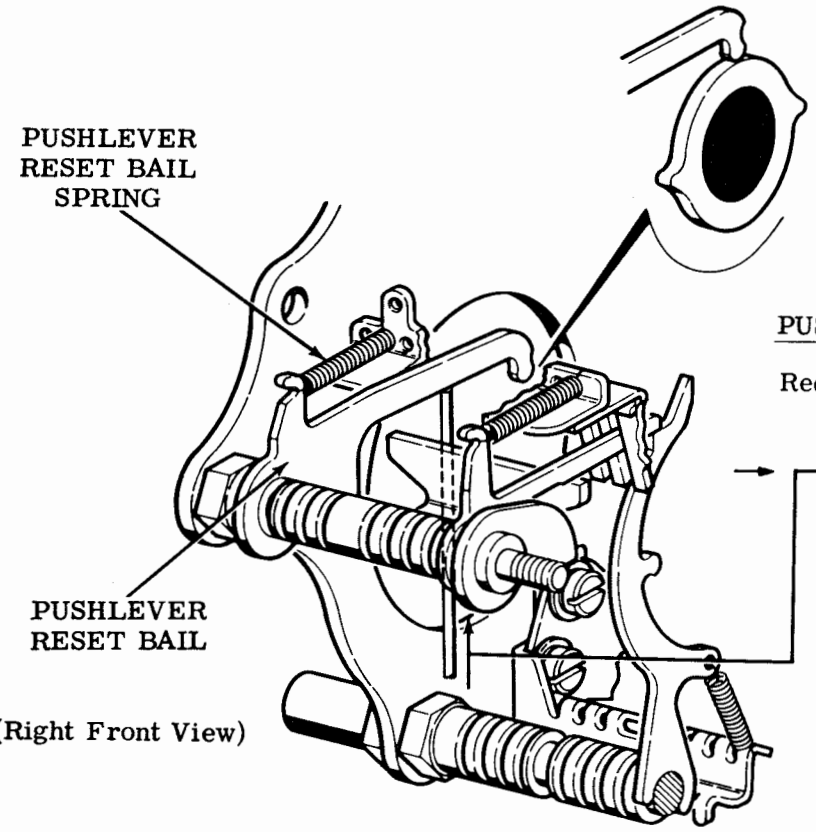
STOP ARM SPRING

Note 1: Applicable

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

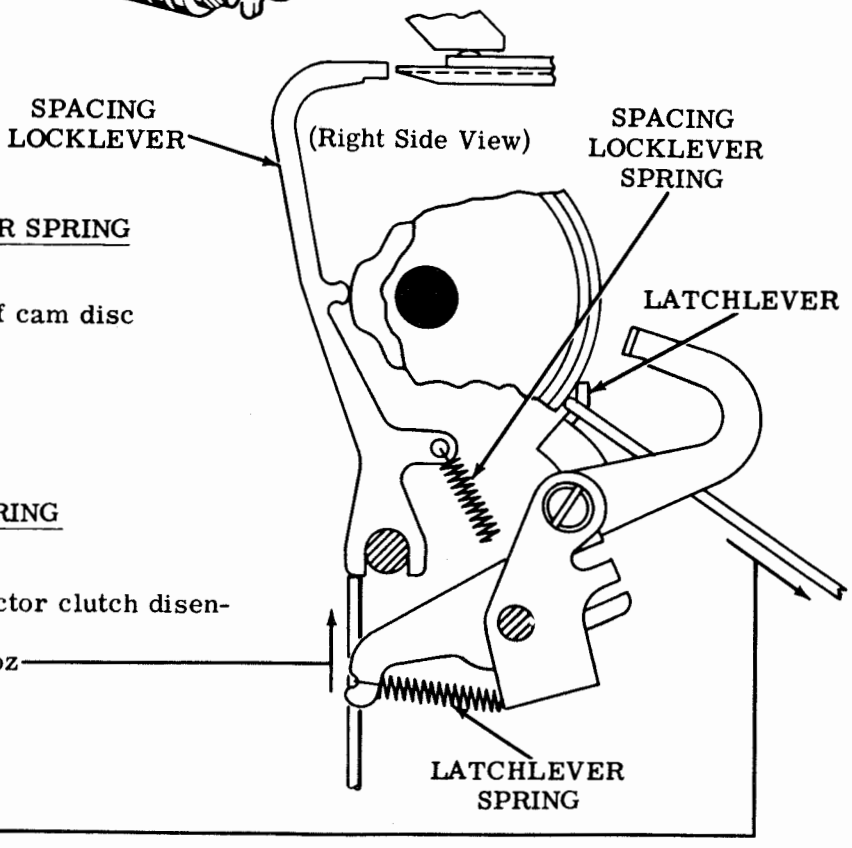
Requirement
Min 9-1/2 oz---Max 13 oz
to start the stop arm moving.

2.09 Selector Mechanism (continued)



PUSHLEVER RESET BAIL SPRING

Requirement
Pushlevers in spacing position. Pushlever reset bail on low part of cam
Min 1-1/2 oz---Max 2-1/2 oz
to move bail from cam.



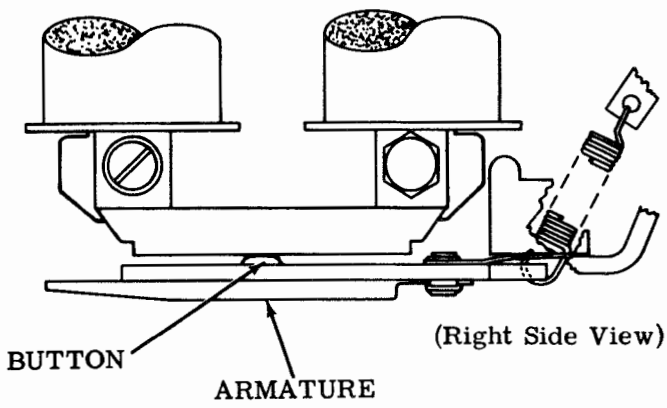
SELECTOR CLUTCH LATCHLEVER SPRING

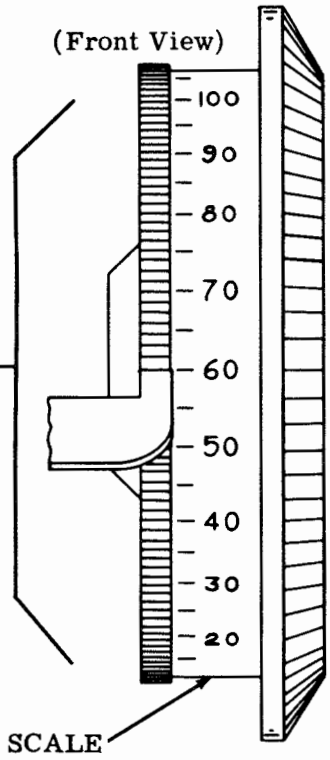
Requirement
Latchlever resting on low part of cam disc
Min 2 oz---Max 4 oz
to start latchlever moving.

SPACING LOCKLEVER SPRING

Requirement
Magnet energized. Selector clutch disengaged and latched
Min 18 oz---Max 26 oz
to start lever moving.

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	26	26

To Adjust

Refine the SELECTOR ARMATURE SPRING (2.05) adjustment. Adjust spring tension for maximum of 5 percent internal bias.

SELECTOR CLUTCH DRUM

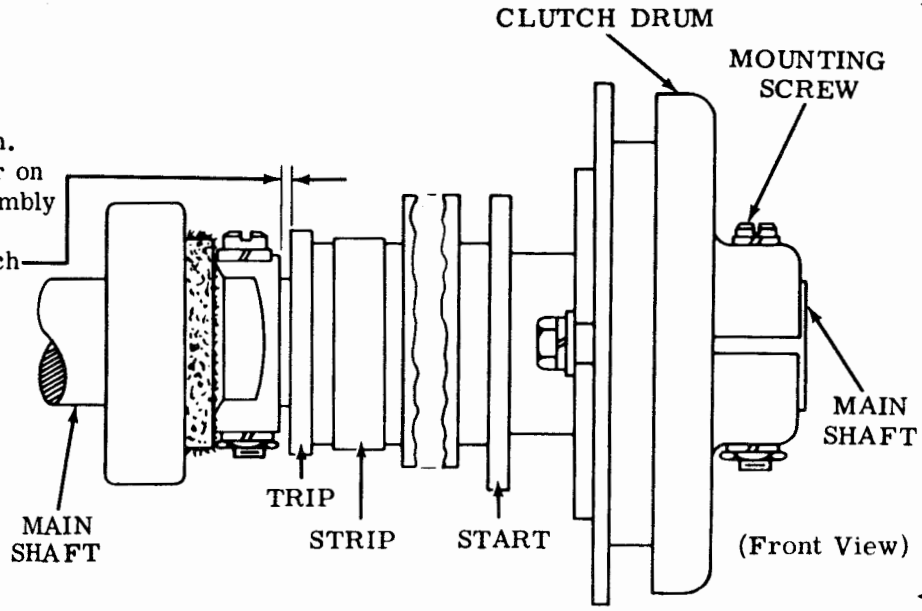
Requirement

Clutch latched in stop position. Selector cam against shoulder on main shaft. Cam clutch assembly should have endplay.

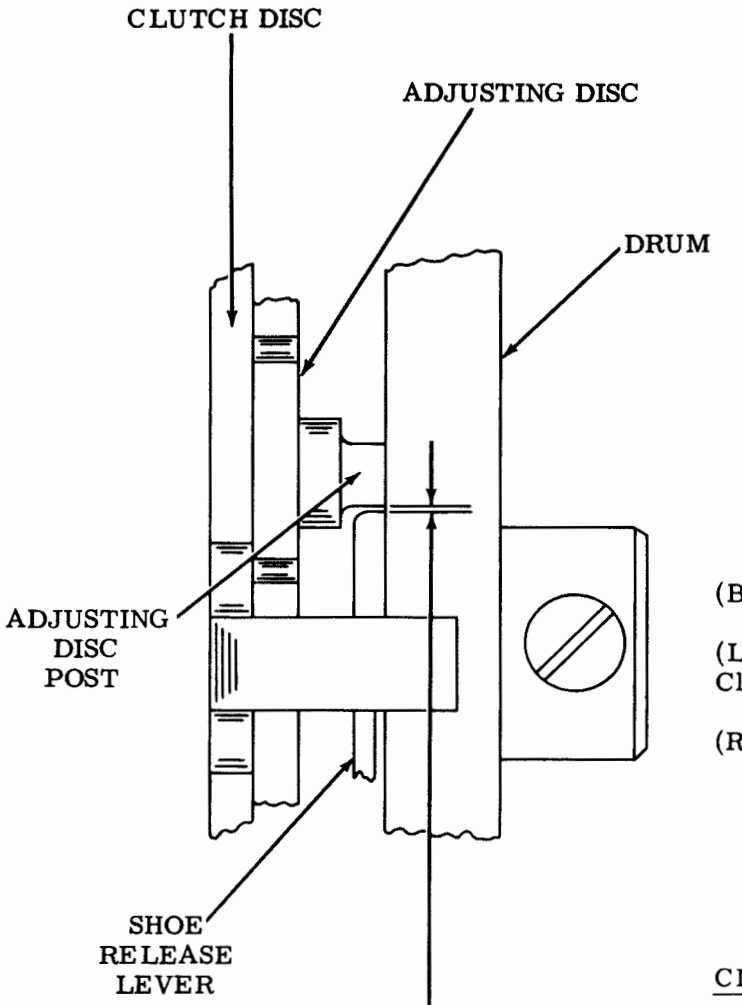
Min some---Max 0.012 inch

To Adjust

Position clutch drum on main shaft with mounting screw loosened. Tighten screw.



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



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

Requirement
Min some---Max 0.015 inch clearance between:

Codebar and print hammer clutch assemblies.

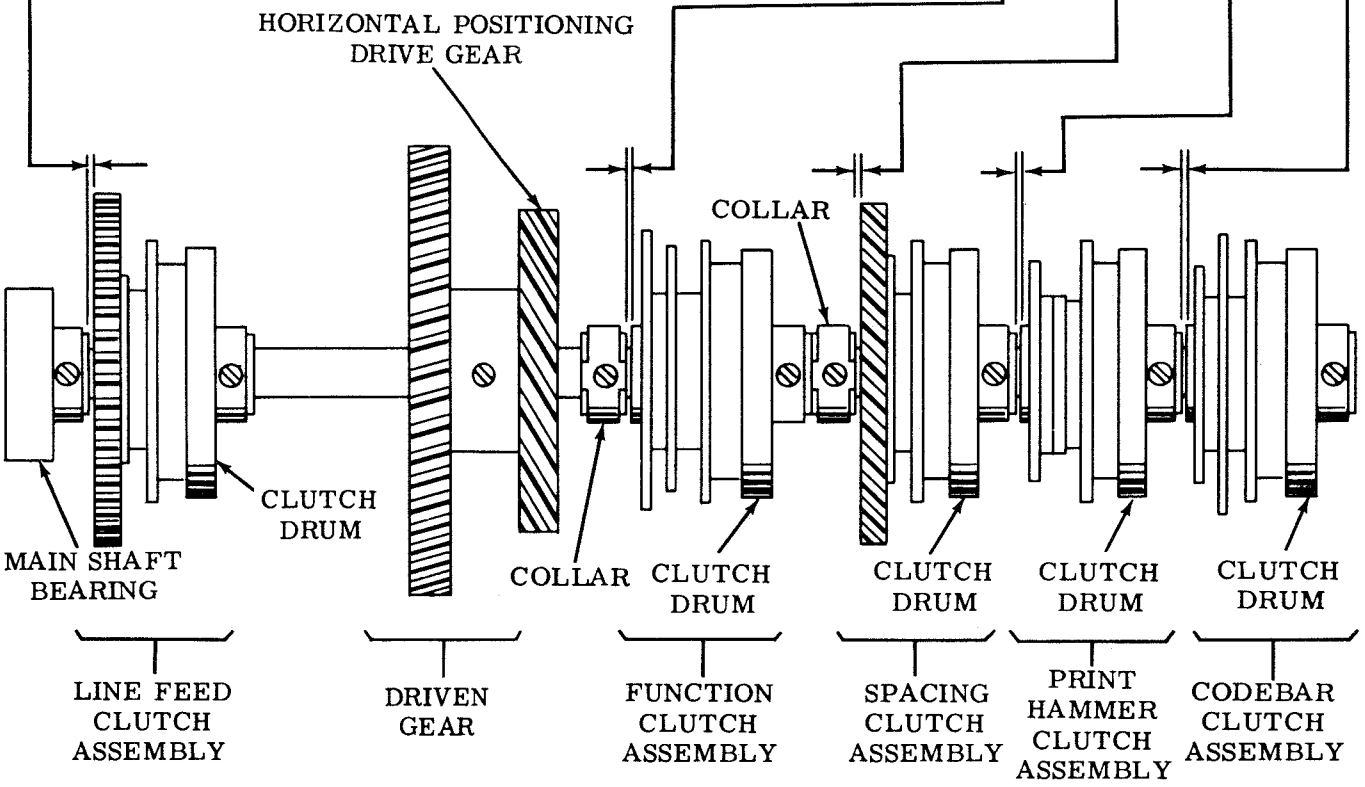
Print hammer and spacing clutch assemblies.

Spacing clutch assembly and collar.

Function 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.

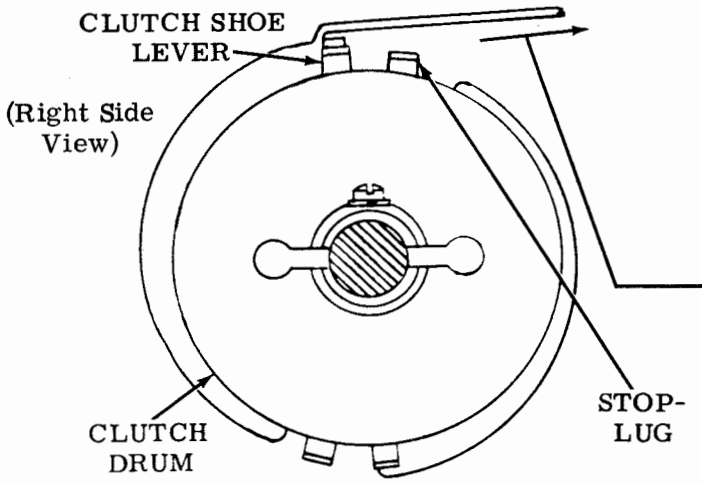


(Bottom View)

Note: When the typing unit is mated with the keyboard, refer to Section 574-321-703 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, Horizontal Positioning Mechanism, and Vertical Positioning Mechanism (continued)

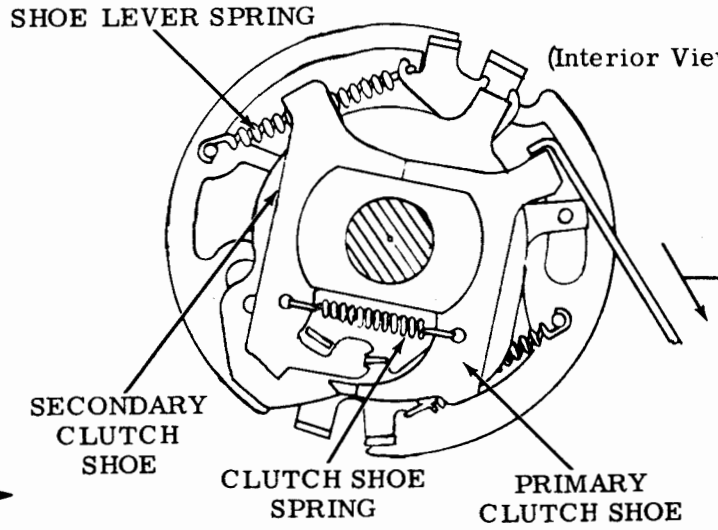
Note 1: Line feed and spacing clutches have six stop-lugs and clutch shoe levers equally spaced around the periphery.



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.

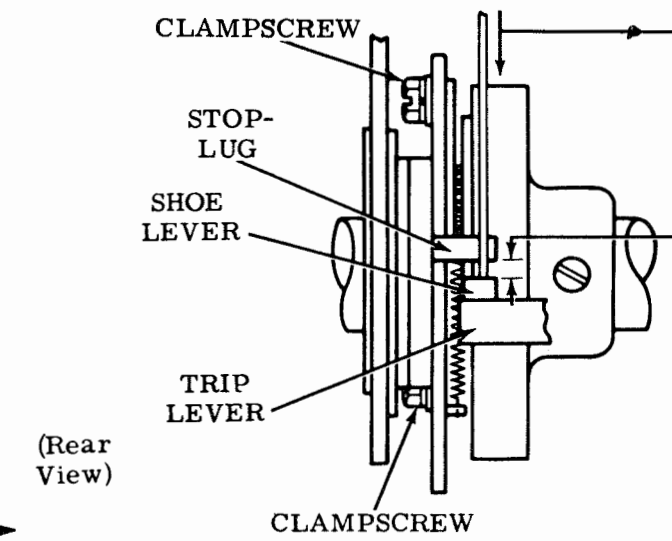
Requirement
Min 16 oz---Max 22 oz Main Shaft
Min 9 oz---Max 11 oz Vertical and Horizontal Positioning
to move the shoe lever into contact with the stop-lug.



CLUTCH SHOE SPRING

Note 2: 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 3 oz---Max 5 oz
to start primary shoe moving away from secondary shoe at their point of contact.



MAIN SHAFT CLUTCH SHOE LEVERS

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

Requirement
Min 0.055 inch---Max 0.085 inch greater gap when clutch is engaged (unlatched) than when clutch is disengaged (latched).

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

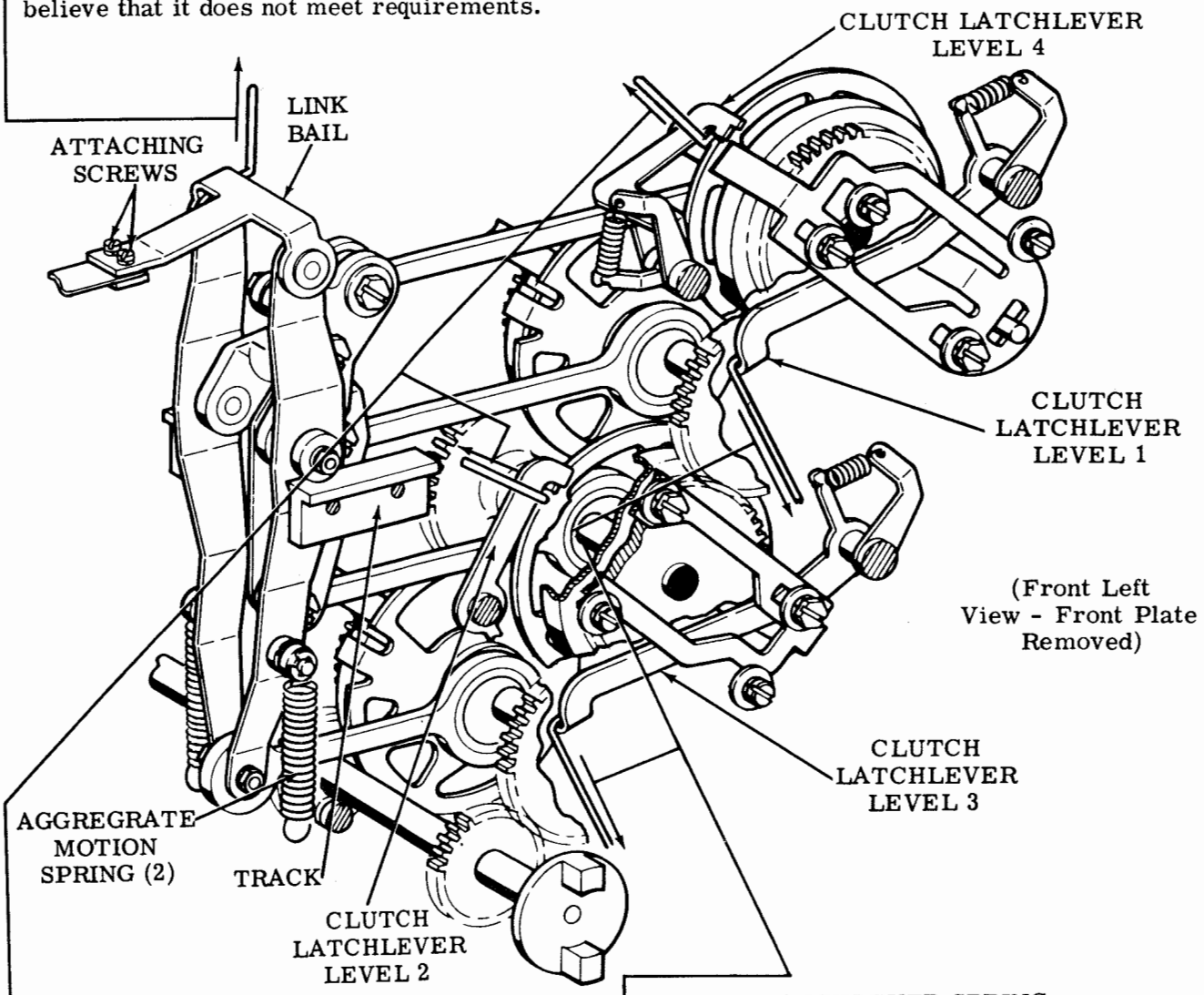
2.14 Horizontal Positioning Mechanism (continued)

AGGREGRATE MOTION SPRING (HORIZONTAL POSITIONING)

To Check
All clutches disengaged. All codebars spacing.

Requirement
Min 44 oz---Max 58 oz
to start link moving up from track.

Note: To check this adjustment it is necessary to remove the two screws which attach the link bail to the oscillating rail. It therefore should not be checked unless there is good reason to believe that it does not meet requirements.



CLUTCH LATCHLEVER SPRING (HORIZONTAL POSITIONING LEVELS 2 AND 4)

To Check
Clutch engaged. Rotate 1/4 turn from stop.

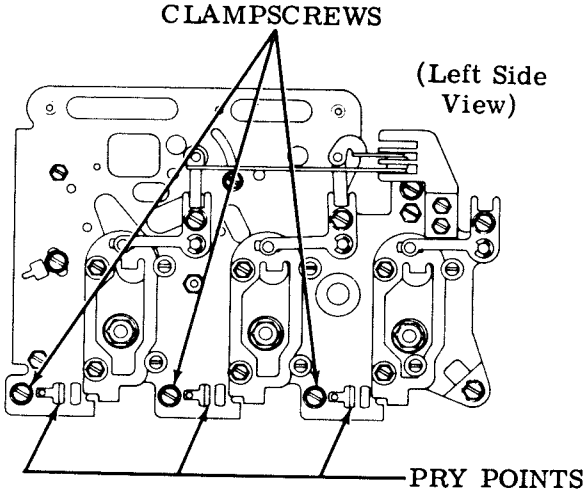
Requirement
Min 4-1/2 oz---Max 6 oz
to start latchlever moving.

CLUTCH LATCHLEVER SPRING (HORIZONTAL POSITIONING LEVELS 1 AND 3)

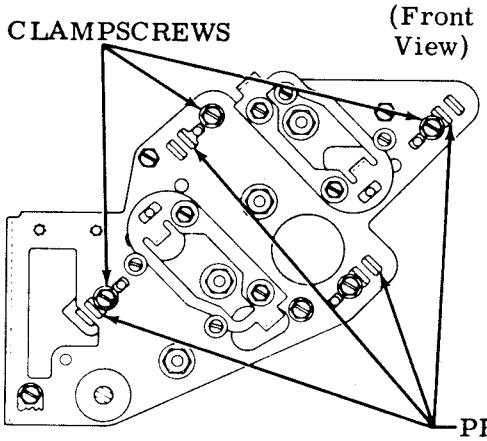
To Check
Clutch engaged. Rotate 1/4 turn from stop.

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

2.15 Horizontal Positioning Mechanism and Vertical Positioning Mechanism (continued)



(VERTICAL POSITIONING)



(HORIZONTAL POSITIONING)

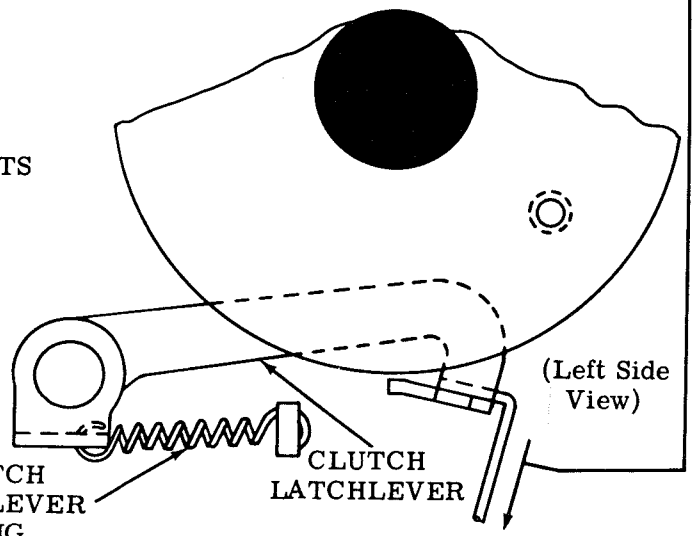
CLUTCH LATCHLEVER SPRING (VERTICAL POSITIONING)

To Check

Clutch engaged. 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.

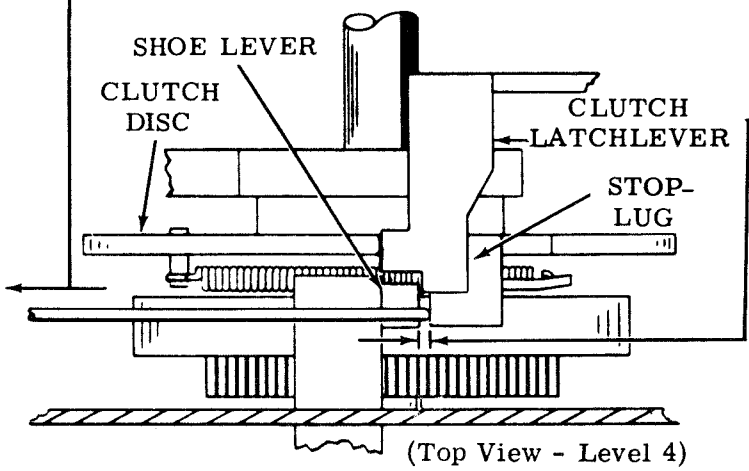


CLUTCH SHOE LEVERS

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

To Check

Engage 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.



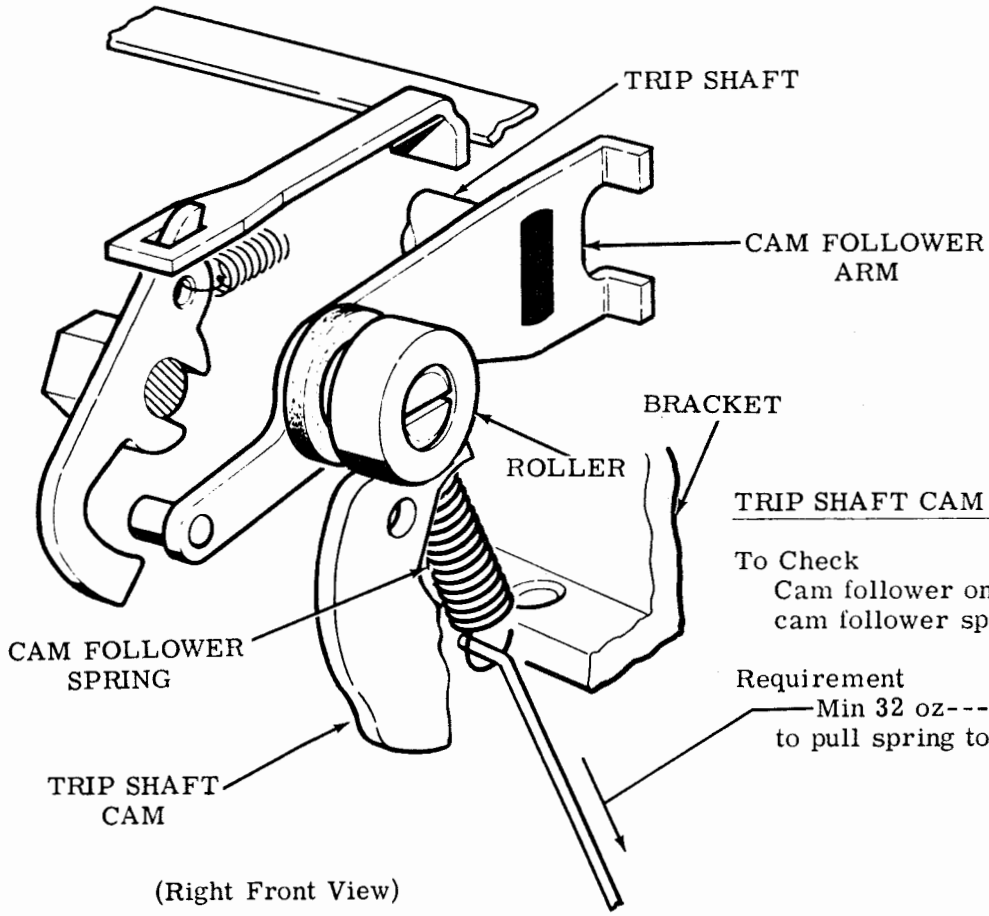
Requirement

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.

2.16 Main Shaft and Trip Shaft Mechanisms (continued)



(Right Front View)

TRIP SHAFT CAM FOLLOWER SPRING

To Check
Cam follower on low part of cam. Unhook cam follower spring from its bracket.

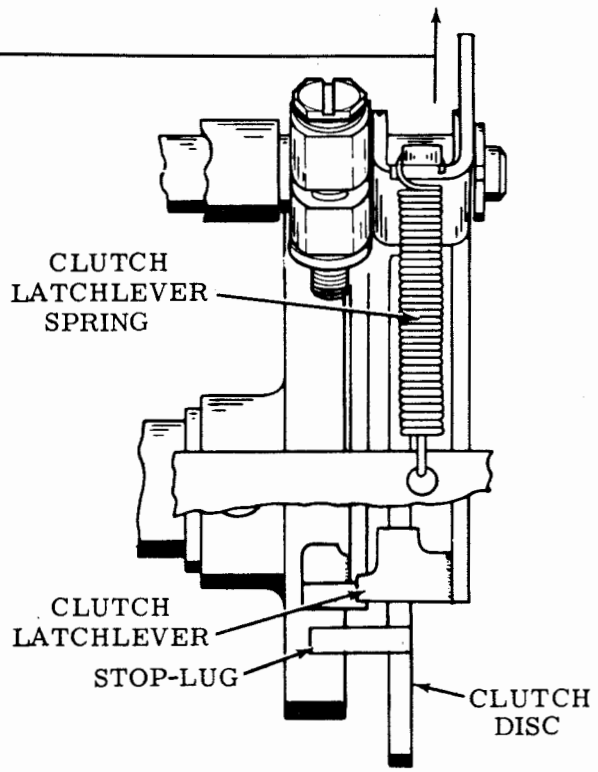
Requirement
Min 32 oz---Max 40 oz
to pull spring to installed length.

CLUTCH LATCHLEVER SPRING (EXCEPT SELECTOR)

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

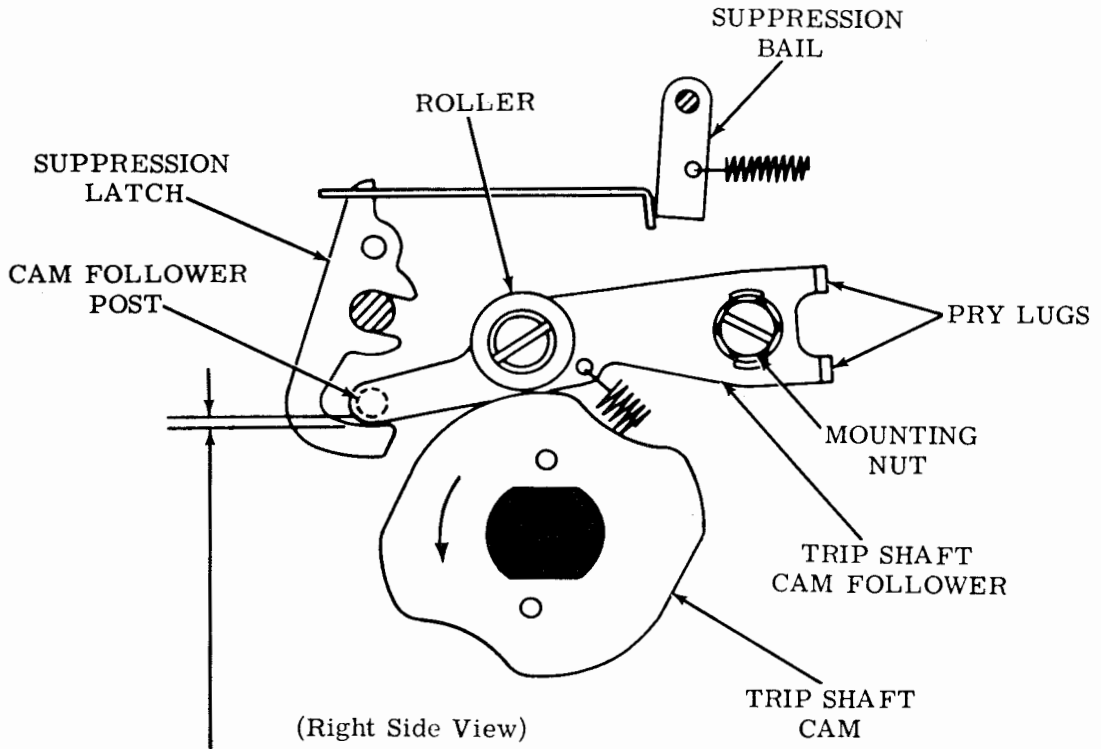
To Check
Clutch latchlever on high part of clutch disc.

Requirement
Min 5 oz---Max 8 oz
to move latchlever from disc.



(Rear View)

2.17 Main Shaft and Trip Shaft Mechanisms (continued)



TRIP SHAFT CAM FOLLOWER

To Check

All clutches disengaged (latched). Trip codebar clutch and rotate main shaft until roller of trip shaft cam follower rests on first step of trip shaft cam (approximately 1/4 turn). Push suppression latch positioned under cam follower post.

Requirement

With suppression bail manually operated, clearance between cam follower post and suppression latch should be

Min 0.010 inch---Max 0.025 inch

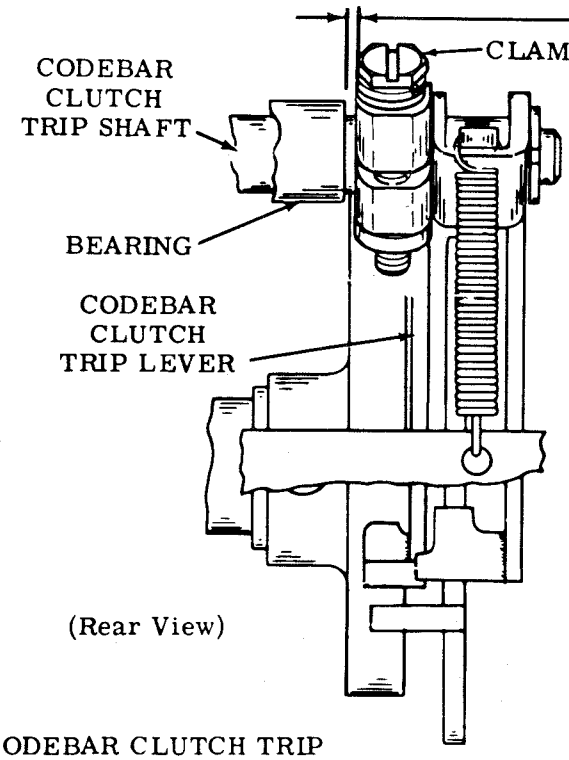
To Adjust

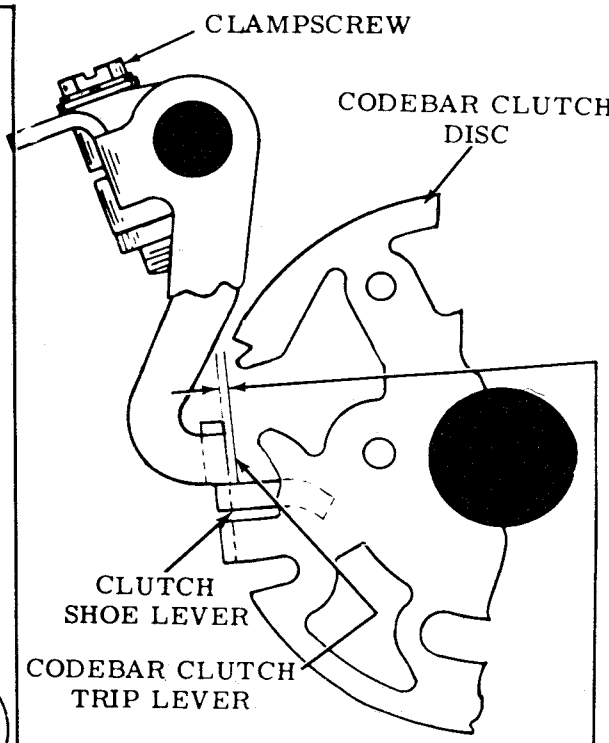
Loosen mounting nut friction tight. Adjust for clearance by prying with a screwdriver between pry lugs and mounting nut. Tighten mounting nut and recheck adjustment. Also check adjustment of second cycle of trip shaft cam.

Affected Adjustments

FUNCTION CLUTCH TRIP LEVER (2.19)
PRINT HAMMER AND SPACING CLUTCH TRIP CLAMPS (2.22)

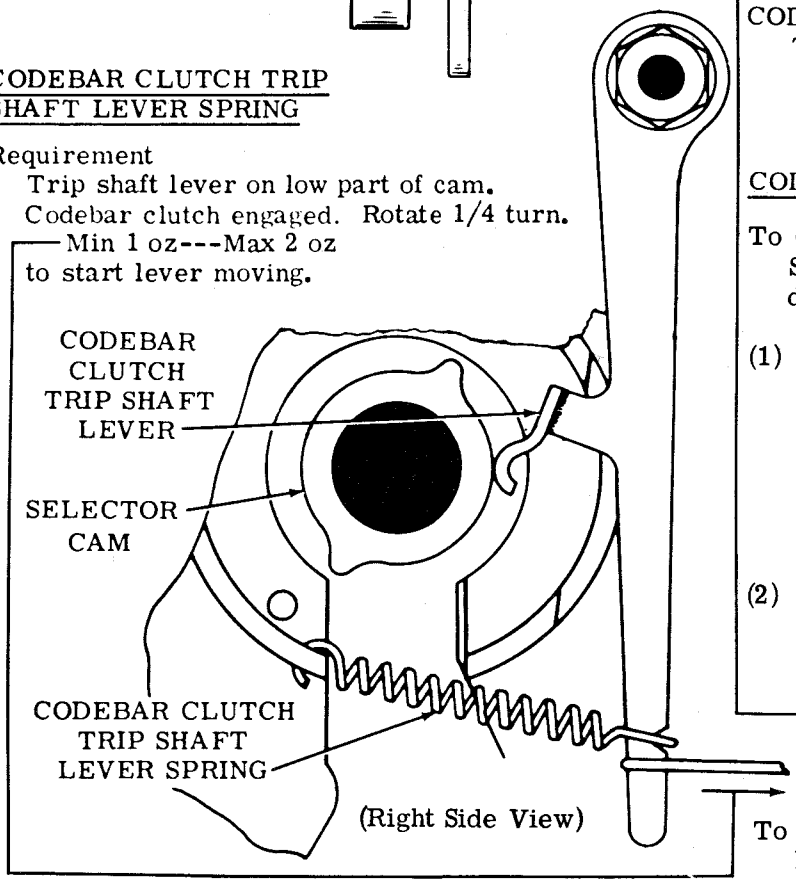
2.18 Main Shaft and Trip Shaft Mechanisms (continued)





CODEBAR CLUTCH TRIP SHAFT LEVER SPRING

Requirement
Trip shaft lever on low part of cam. Codebar clutch engaged. Rotate 1/4 turn.
Min 1 oz---Max 2 oz to start lever moving.



CODEBAR CLUTCH TRIP LEVER

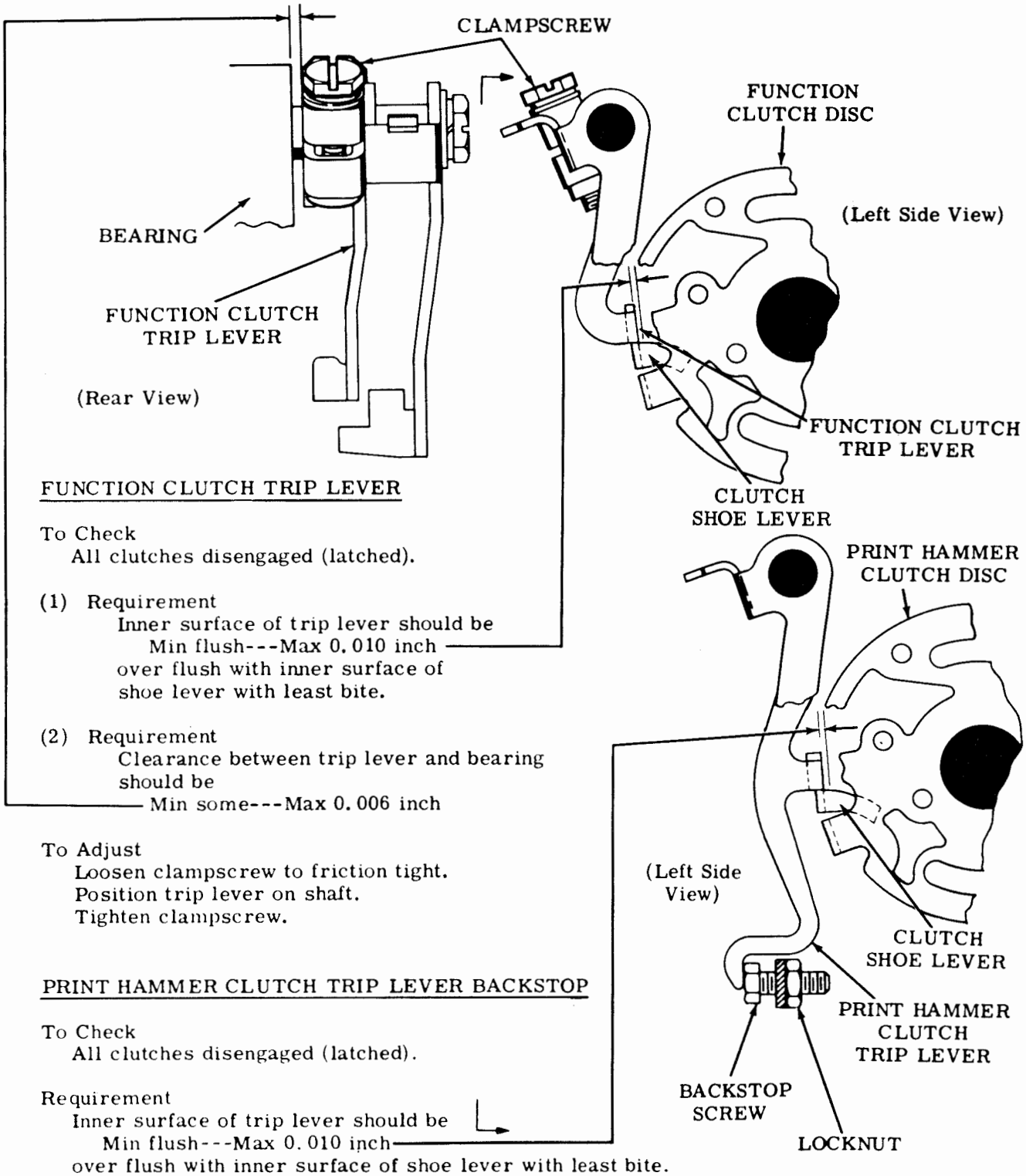
To Check
Selector clutch and codebar clutch disengaged (latched).

(1) Requirement
Inner surface of trip lever should be
Min flush---Max 0.010 inch over flush with inner surface of shoe lever. Check at shoe lever with least bite.

(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.

2.19 Main Shaft and Trip Shaft Mechanism (continued)



FUNCTION CLUTCH TRIP LEVER

To Check
All clutches disengaged (latched).

(1) Requirement
Inner surface of trip lever should be
Min flush---Max 0.010 inch
over flush with inner surface of shoe lever with least bite.

(2) Requirement
Clearance between trip lever and bearing should be
Min some---Max 0.006 inch

To Adjust
Loosen clampscrew to friction tight.
Position trip lever on shaft.
Tighten clampscrew.

PRINT HAMMER CLUTCH TRIP LEVER BACKSTOP

To Check
All clutches disengaged (latched).

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

To Adjust
Loosen locknut. Turn backstop screw to meet requirement. Tighten locknut.

Related Adjustment
PRINT HAMMER AND SPACING CLUTCH TRIP CLAMPS (2.22)

2.20 Main Shaft and Trip Shaft Mechanisms (continued)

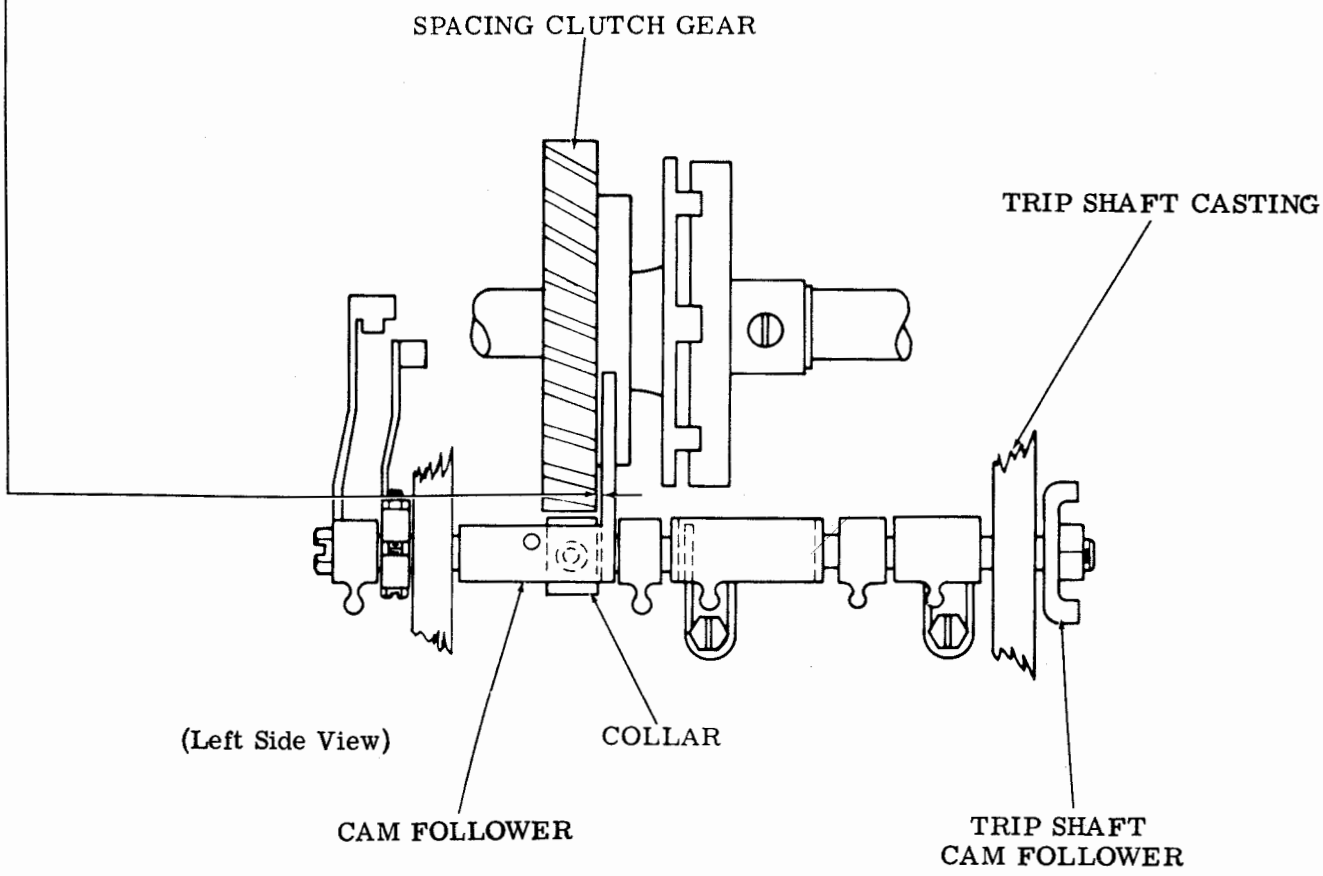
SPACING CLUTCH TRIP LEVER ENDPLAY

To Check

Play in spacing clutch taken up to the right, and endplay in trip shaft taken up to the left, to make clearance a minimum. Cam follower against side of collar.

Requirement

Min 0.005 inch---Max 0.020 inch clearance between cam follower and side of spacing gear.



To Adjust

Loosen setscrew in collar, and position collar with cam follower held against collar. Tighten setscrew.

2.21 Main Shaft and Trip Shaft Mechanisms (continued)

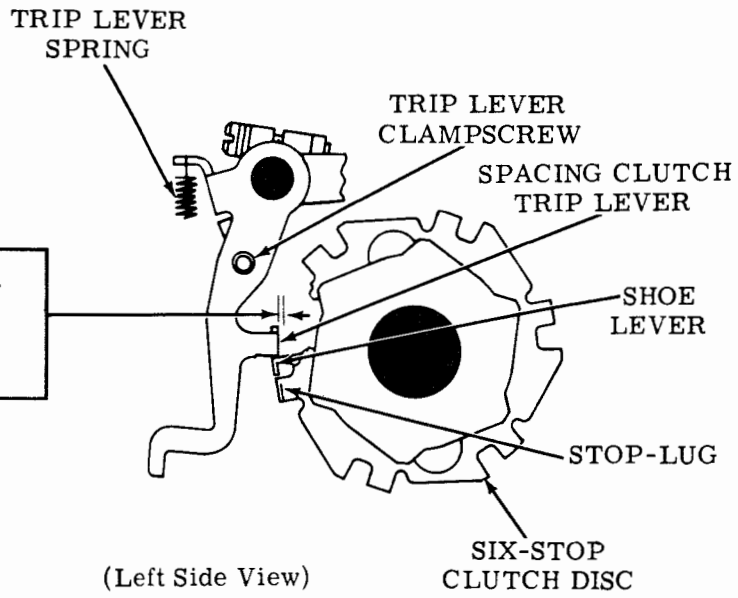
SPACING CLUTCH TRIP LEVER

To Check
Spacing clutch disengaged (latched). Trip lever arm in upward position.

Requirement
Inner surface of trip lever should be
Min flush---Max 0.005 inch
over flush with inner surface of shoe lever. Check at stop (of the six-stop clutch disc) with least bite for horizontal tab. Typing unit without horizontal tab should be
Min flush---Max 0.010 inch

To Adjust
Loosen trip lever clampscrew and position trip lever. Tighten clampscrew.

Related Adjustment
PRINT HAMMER AND SPACING CLUTCH TRIP CLAMPS (2.22)



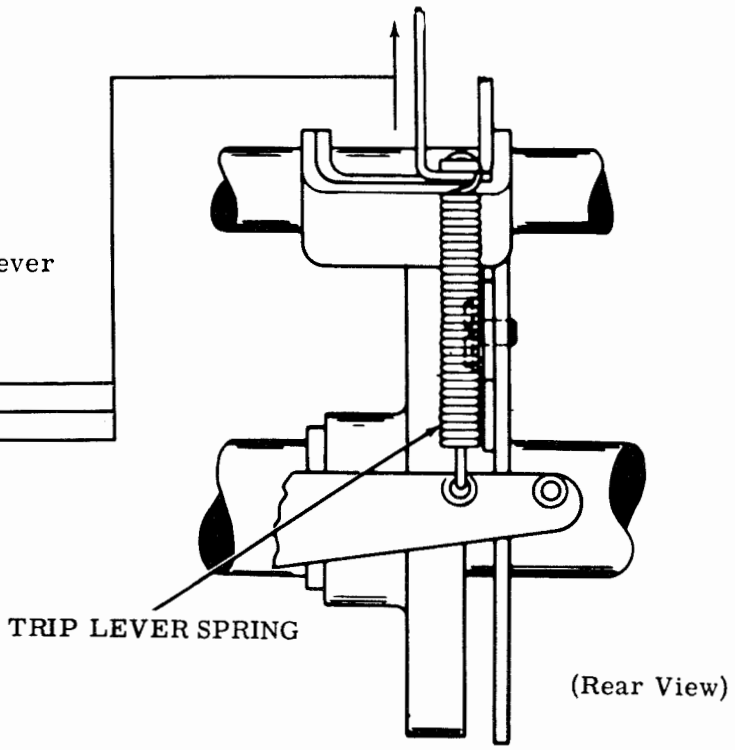
(Left Side View)

CLUTCH TRIP LEVER SPRING

Requirement
Clutch engaged and rotated until trip lever rests on stop-lug.

Clutch	Min	Max
Print Hammer	9 oz	15 oz
Spacing	9 oz	15 oz
Line Feed	9 oz	15 oz

to move lever from stop-lug.



(Rear View)

2.22 Main Shaft and Trip Shaft Mechanisms (continued)

PRINT HAMMER AND SPACING CLUTCH TRIP CLAMPS

To Check

All clutches disengaged (latched). Engage codebar clutch and rotate main shaft until trip shaft cam follower is in first indent of trip shaft cam.

(1) Requirement

Clearance between clutch trip clamps and clutch trip levers should be

Min 0.010 inch---Max 0.020 inch

(2) Requirement

Clearance between print hammer clutch trip lever and clutch trip clamp should be

Min some---Max 0.025 inch

when the play in the trip shaft and the trip lever is taken up to make the clearance a maximum.

(3) Requirement

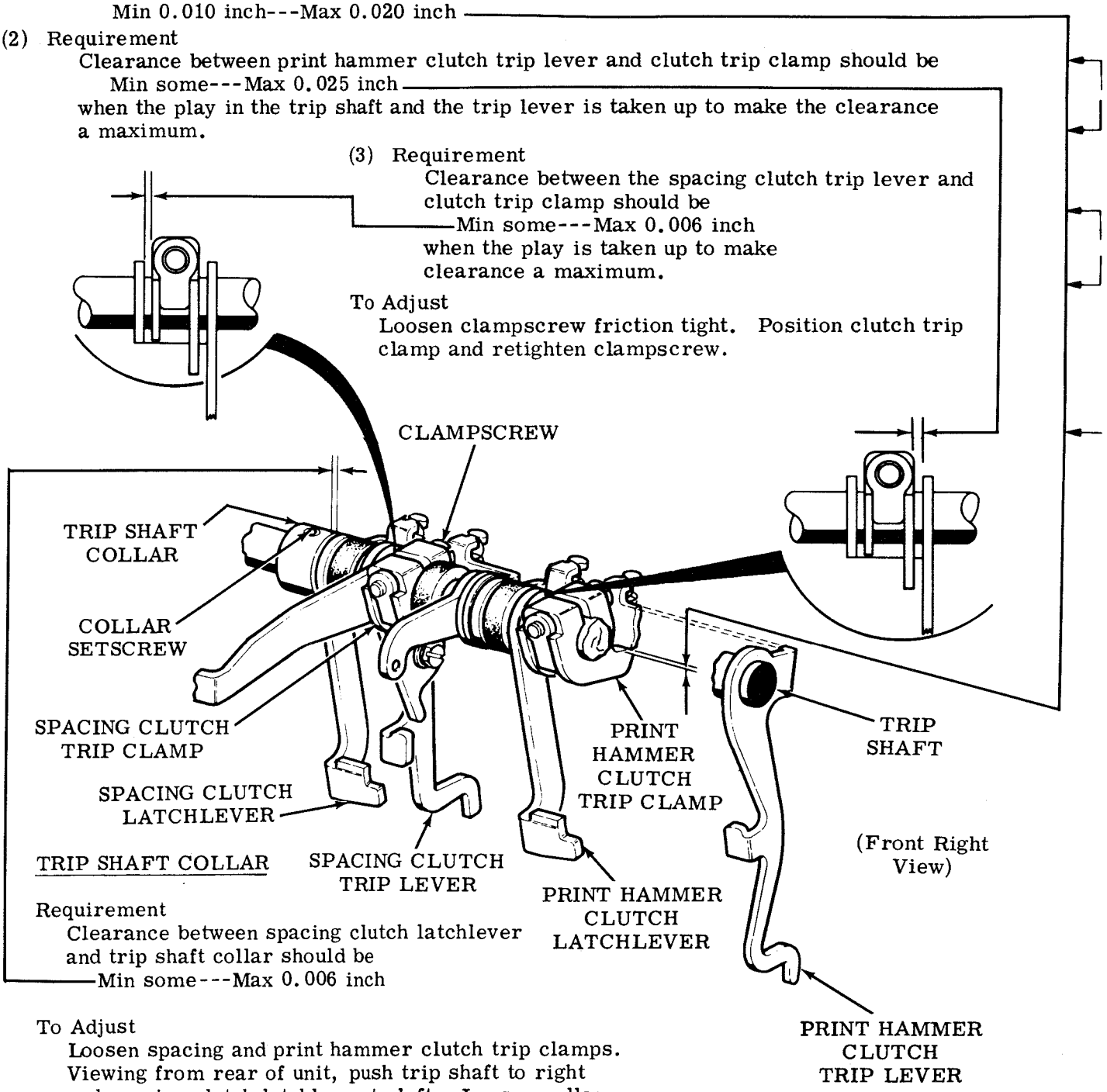
Clearance between the spacing clutch trip lever and clutch trip clamp should be

Min some---Max 0.006 inch

when the play is taken up to make clearance a maximum.

To Adjust

Loosen clampscrew friction tight. Position clutch trip clamp and retighten clampscrew.



TRIP SHAFT COLLAR

Requirement

Clearance between spacing clutch latchlever and trip shaft collar should be

Min some---Max 0.006 inch

To Adjust

Loosen spacing and print hammer clutch trip clamps. Viewing from rear of unit, push trip shaft to right and spacing clutch latchlever to left. Loosen collar setscrew and position collar. Tighten setscrew and spacing and print hammer clutch trip clamps.

2.23 Main Shaft and Trip Shaft Mechanisms (continued)

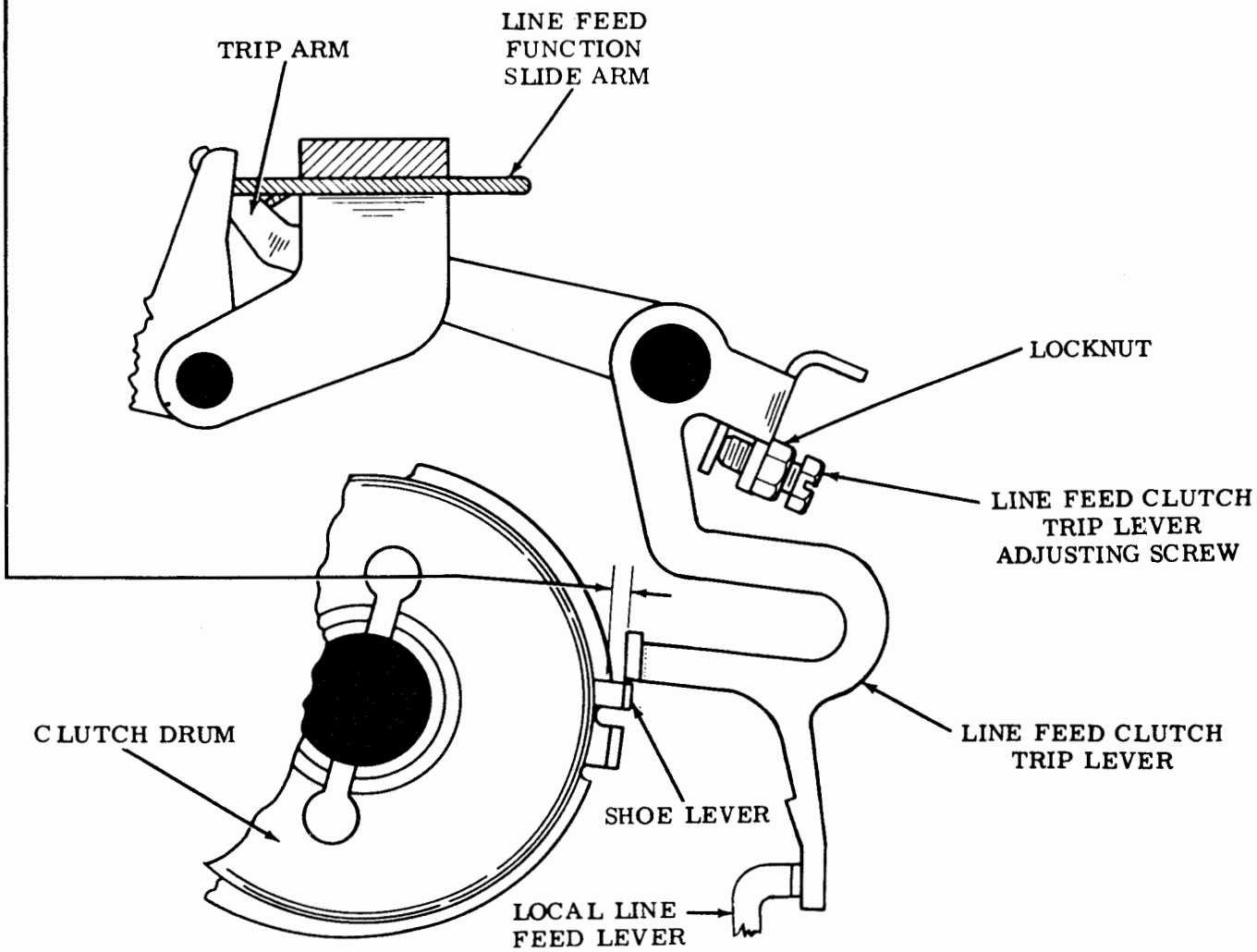
LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW

To Check
All clutches disengaged (latched). Line feed function slide arm in rear position.

Requirement
Min flush---Max 0.010 inch over flush of shoe lever closest to drum.

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

Note: If requirement cannot be met, loosen local line feed cable clamp and move cable toward rear of unit so that gap exists between the local line feed lever and clutch trip lever.



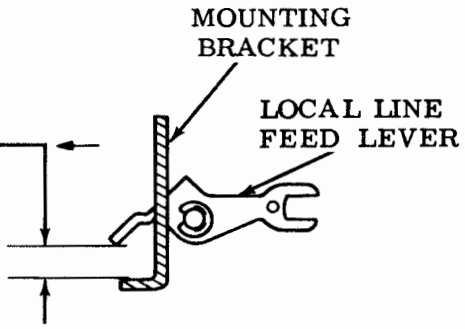
(Right Side View)

2.24 Line Feed Mechanism

LOCAL LINE FEED LEVER

Requirement
Min 1/4 inch---Max 5/16 inch between local line feed lever and mounting bracket with play at a maximum.

To Adjust
Loosen clamp 1 and position cable assembly to meet requirement. Tighten clamp.



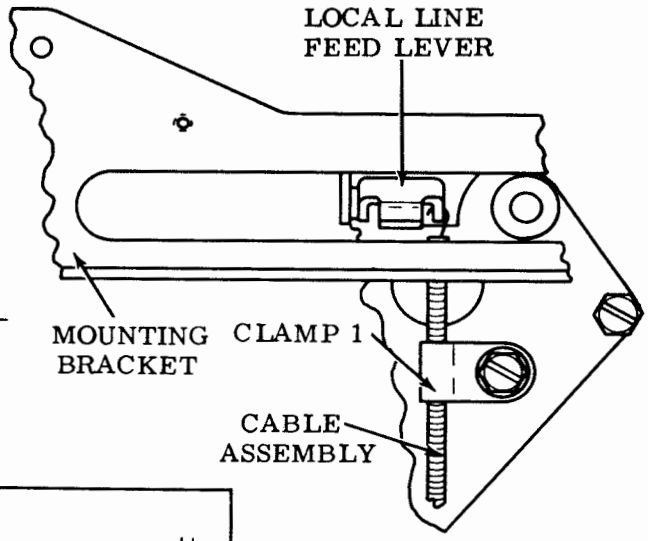
(Right Side View)

LOCAL LINE FEED CLUTCH TRIP LEVER

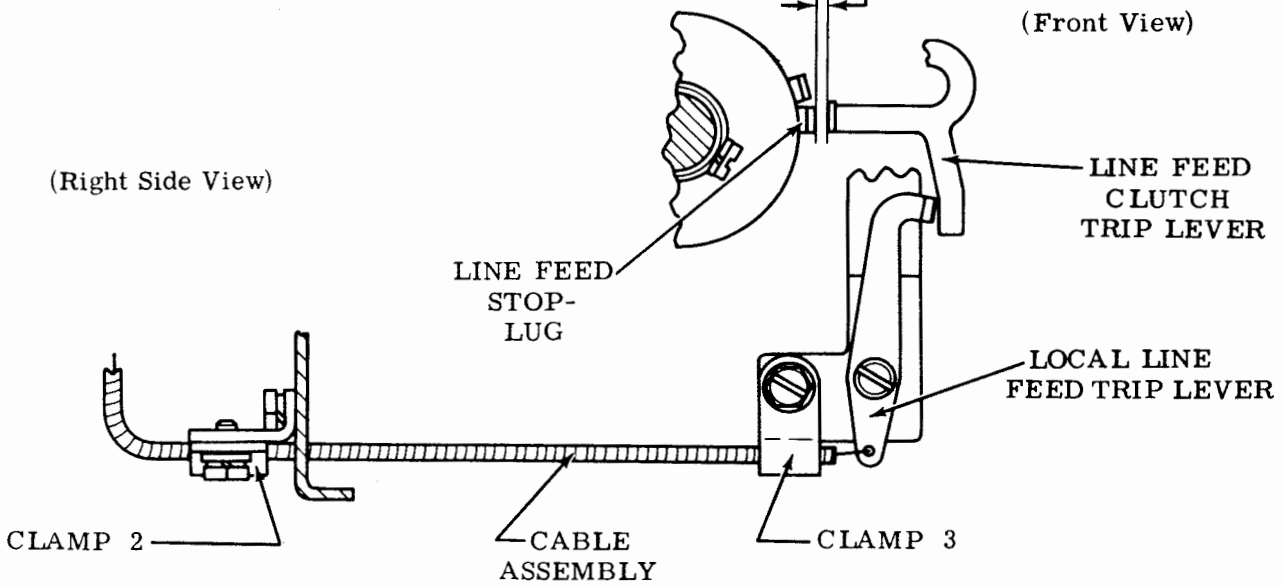
To Check
Line feed clutch disengaged. Local line feed lever fully depressed.

Requirement
Min 0.065 inch---Max 0.125 inch clearance between clutch stop lug and line feed clutch trip lever.

To Adjust
Loosen clamps 2 and 3 and position cable assembly to meet requirement. Tighten clamps.

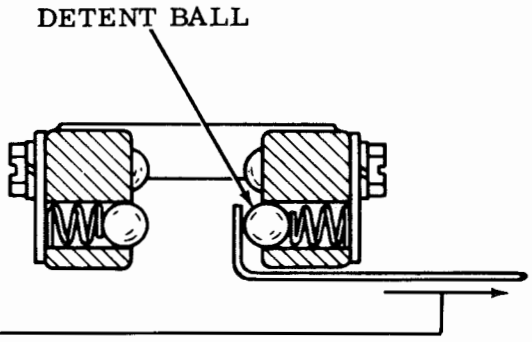


(Front View)

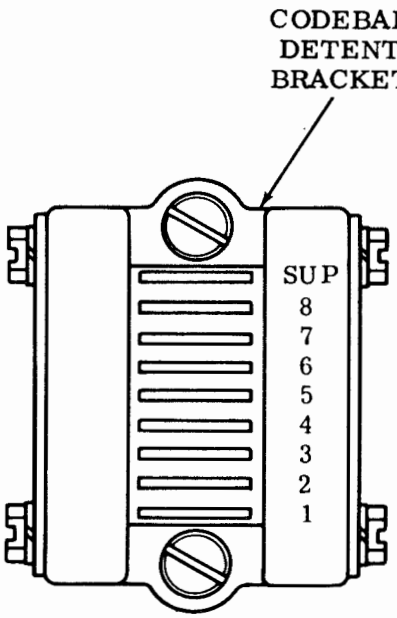


(Right Side View)

2.25 Codebar Mechanism



(Top Cross Section)



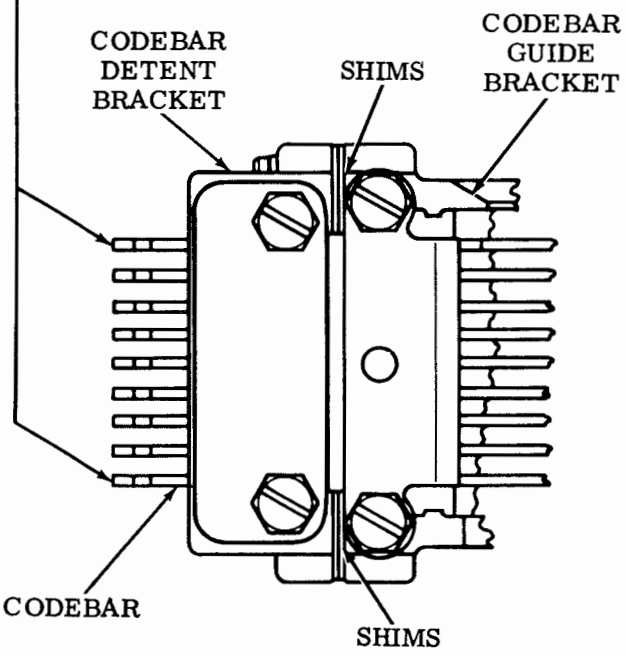
(Left Side View)

CODEBAR DETENT

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

Requirement
Codebars 1 and 8 should detent equally as gauged by eye.

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



(Front View)

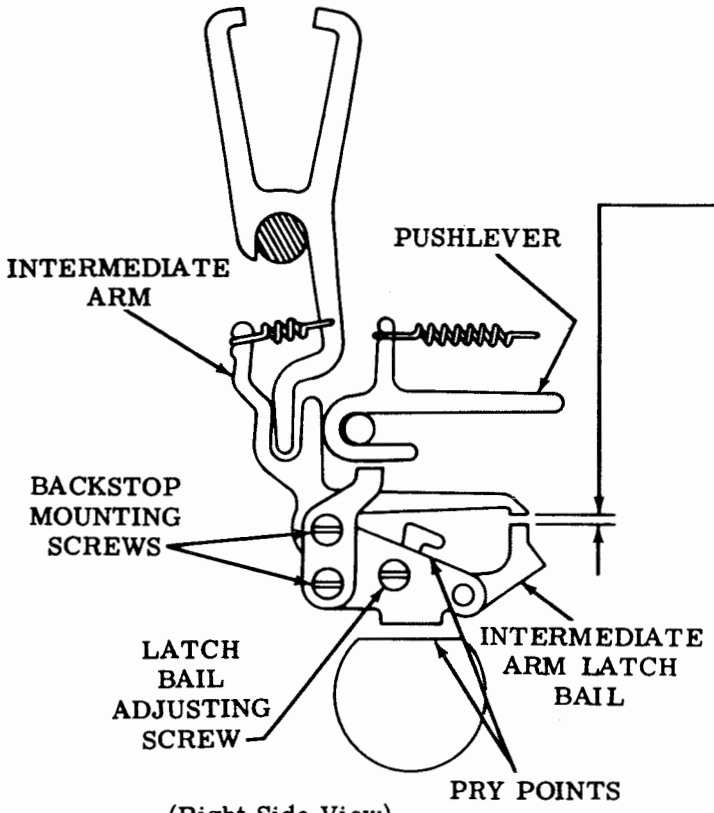
CODEBAR DETENT SPRING

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.

2.26 Codebar Mechanism (continued)



(Right Side View)

INTERMEDIATE ARM LATCH BAIL

To Check

Set range scale at 0. All clutches disengaged. Trip selector clutch and rotate main shaft until number 8 pushlever is selected (maximum forward position).

Requirement

Min 0.008 inch---Max 0.015 inch clearance between the intermediate arm latching surface closest to outside frame and latch bail (use cam which makes smallest gap).

Note: Gap to be adjusted 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 latch bail, by means of pry points, to meet requirement. Tighten screws.

Affected Adjustment

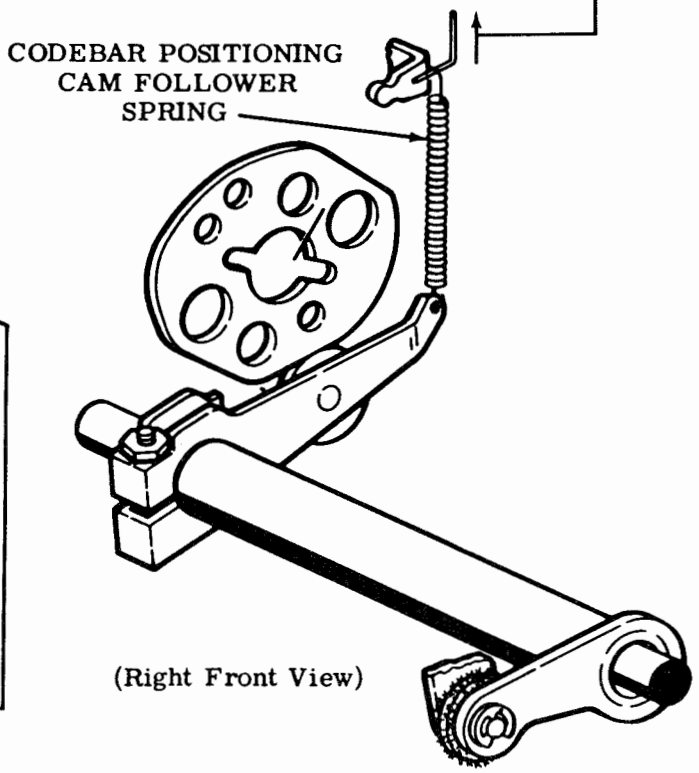
INTERMEDIATE ARM BACKSTOP BRACKET (2.28)

CODEBAR POSITIONING CAM FOLLOWER SPRING

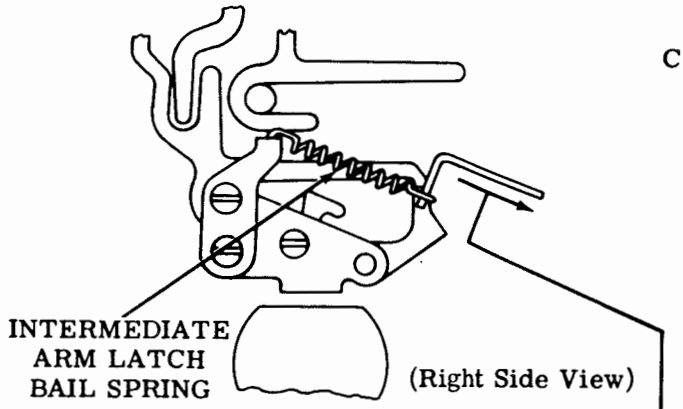
Requirement

All clutches disengaged. Unhook spring.

Min 8 oz---Max 12 oz to pull spring to installed length.



(Right Front View)



(Right Side View)

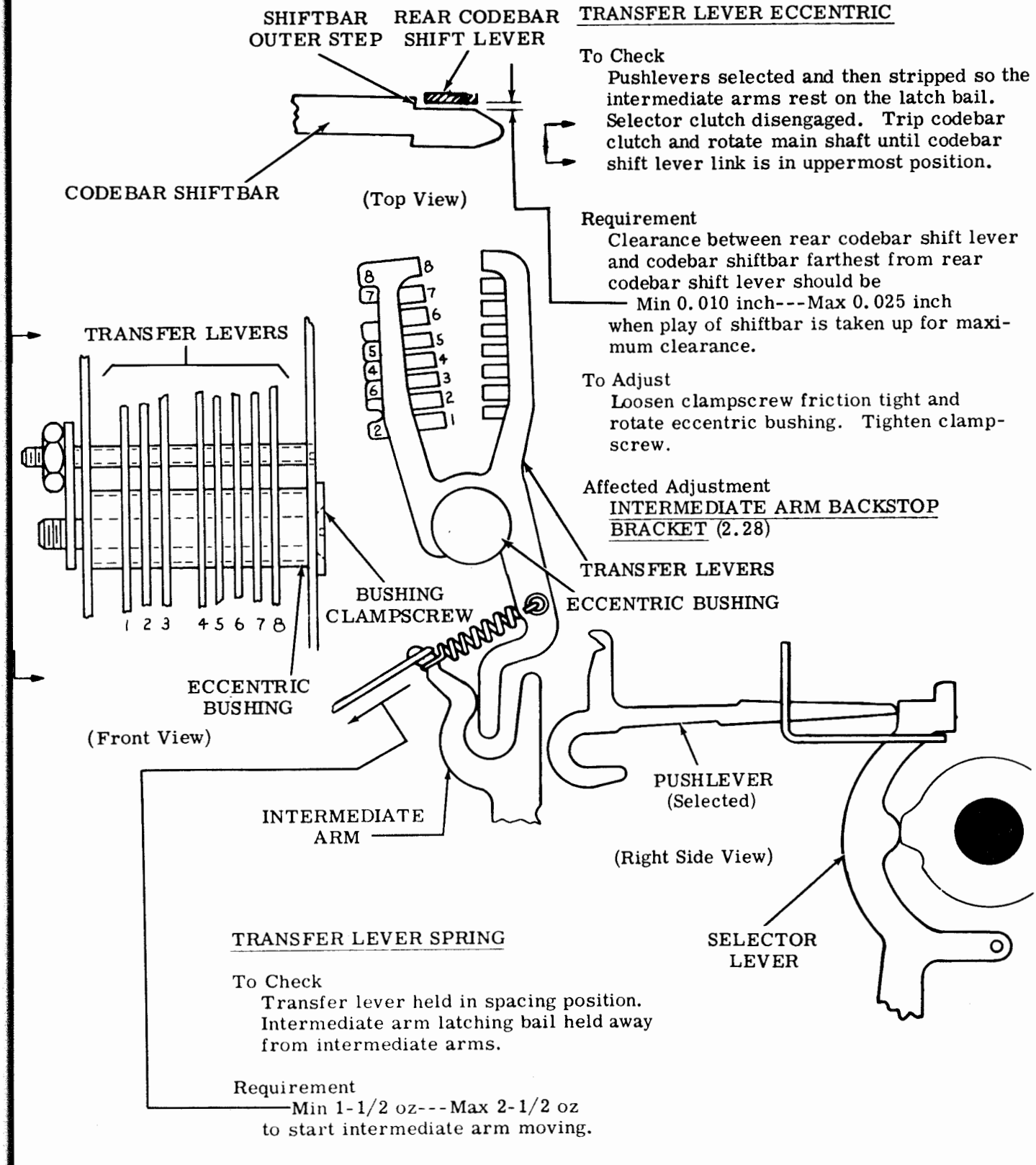
INTERMEDIATE ARM LATCH BAIL SPRING

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

Requirement

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

2.27 Codebar Mechanism (continued)



TRANSFER LEVER ECCENTRIC

To Check
Pushlevers selected and then stripped so the intermediate arms rest on the latch bail. Selector clutch disengaged. Trip codebar clutch and rotate main shaft until codebar shift lever link is in uppermost position.

Requirement
Clearance between rear codebar shift lever and codebar shiftbar farthest from rear codebar shift lever should be
Min 0.010 inch---Max 0.025 inch
when play of shiftbar is taken up for maximum clearance.

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

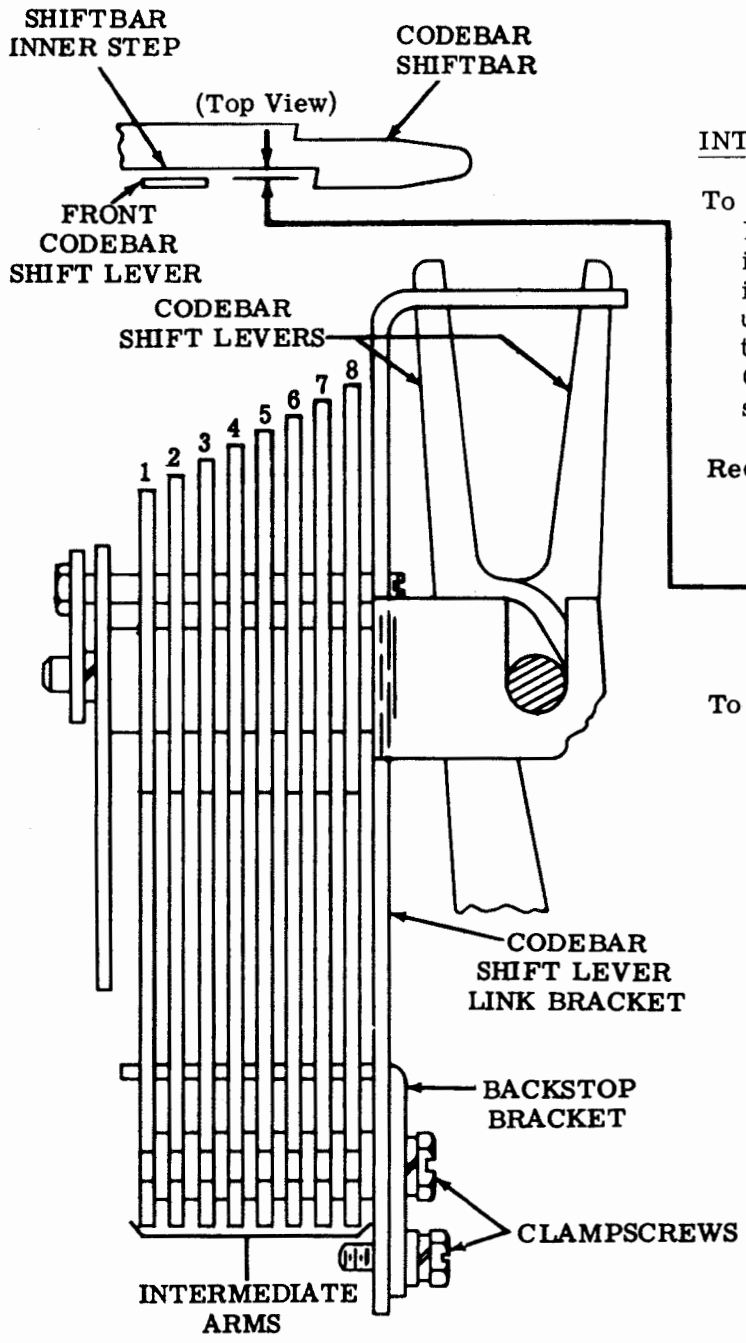
Affected Adjustment
INTERMEDIATE ARM BACKSTOP BRACKET (2.28)

TRANSFER LEVER SPRING

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

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

2.28 Codebar Mechanism (continued)



INTERMEDIATE ARM BACKSTOP BRACKET

To Check

Pushlevers not selected. Momentarily hold intermediate arm latch bail (2.26) away from intermediate arms to allow them to go to unselected positions. All codebar shiftbars to right. All clutches engaged (unlatched). Codebar clutch in stop position. Codebar shift lever link in lowermost position.

Requirement

Clearance between front codebar shift lever and inner step of codebar shiftbar farthest from front codebar shift lever should be Min 0.010 inch---Max 0.025 inch when play in parts is taken up for maximum clearance.

To Adjust

Loosen backstop bracket clampscrews friction tight. Position backstop bracket to meet requirement. Tighten clampscrews.

2.29 Codebar Mechanism (continued)

CODEBAR SHIFT LEVER AND CAM FOLLOWER ARM

To Check

Rotate main shaft until codebar shift lever link is in uppermost position. Play in shift lever and link taken up toward top of typing unit.

(1) Requirement

Clearance between upper surface of rollers and lower surface of cam slot in codebar shift lever which provides minimum clearance, should be

Min 0.010 inch---Max 0.020 inch

(2) Requirement

Endplay of drive shaft should be

Min some---Max 0.006 inch

To Adjust

Loosen clampscrew friction tight and position cam follower arm on drive shaft. Tighten clampscrew.

Affected Adjustments

FRONT CODEBAR SHIFT LEVER (2.30)
REAR CODEBAR SHIFT LEVER (2.30)

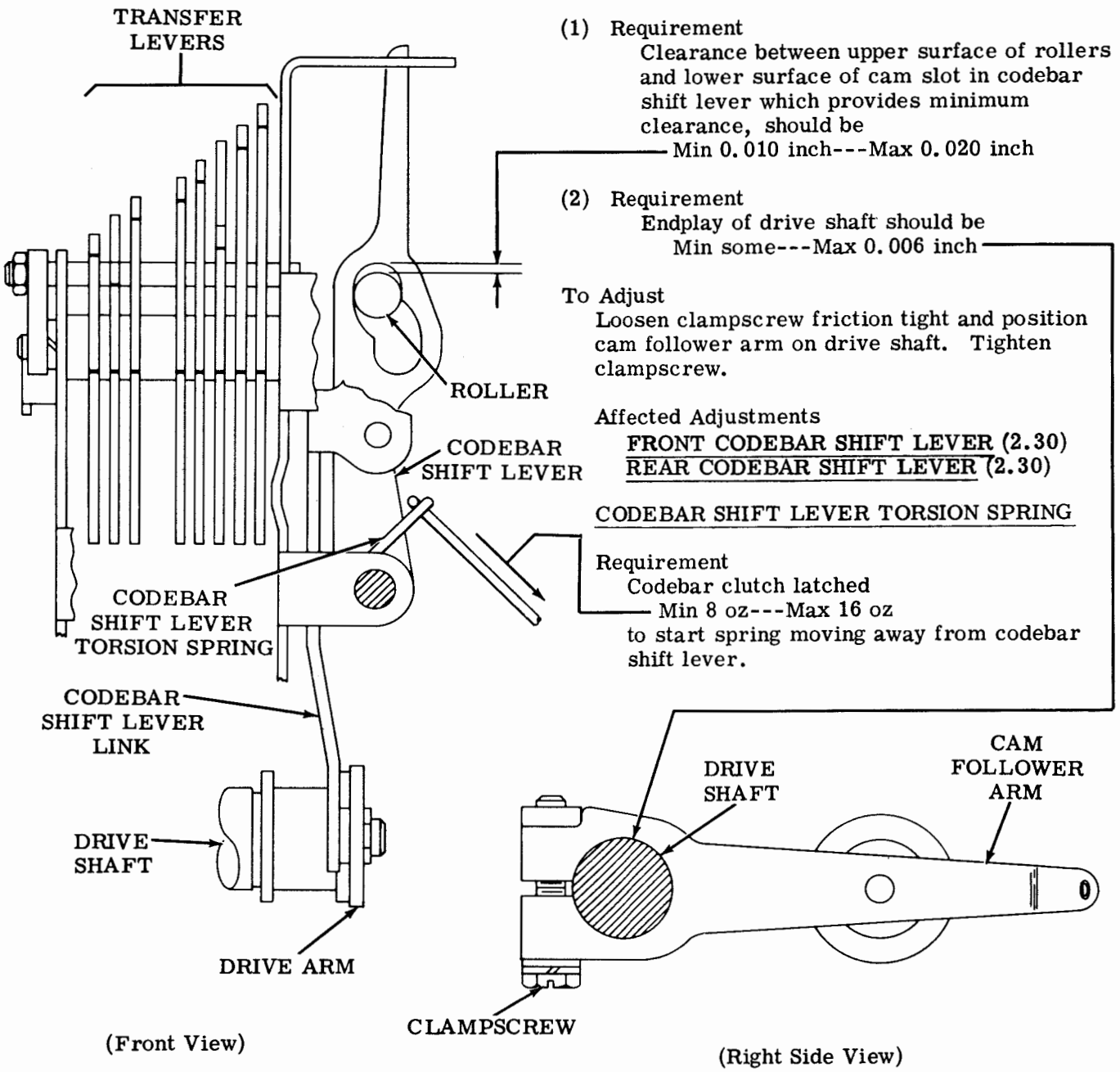
CODEBAR SHIFT LEVER TORSION SPRING

Requirement

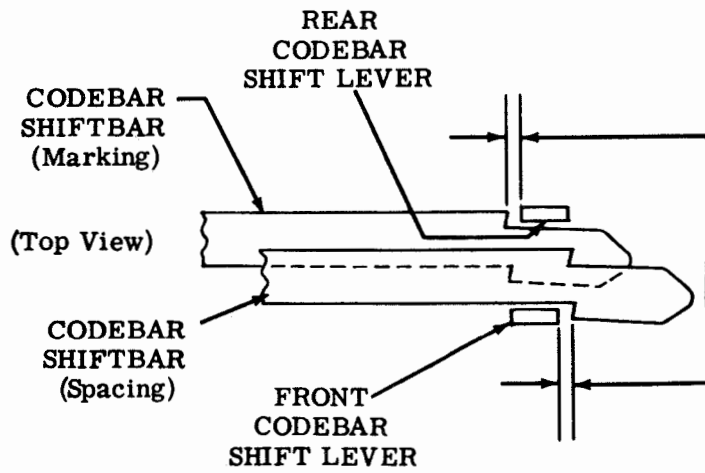
Codebar clutch latched

Min 8 oz---Max 16 oz

to start spring moving away from codebar shift lever.



2.30 Codebar Mechanism (continued)

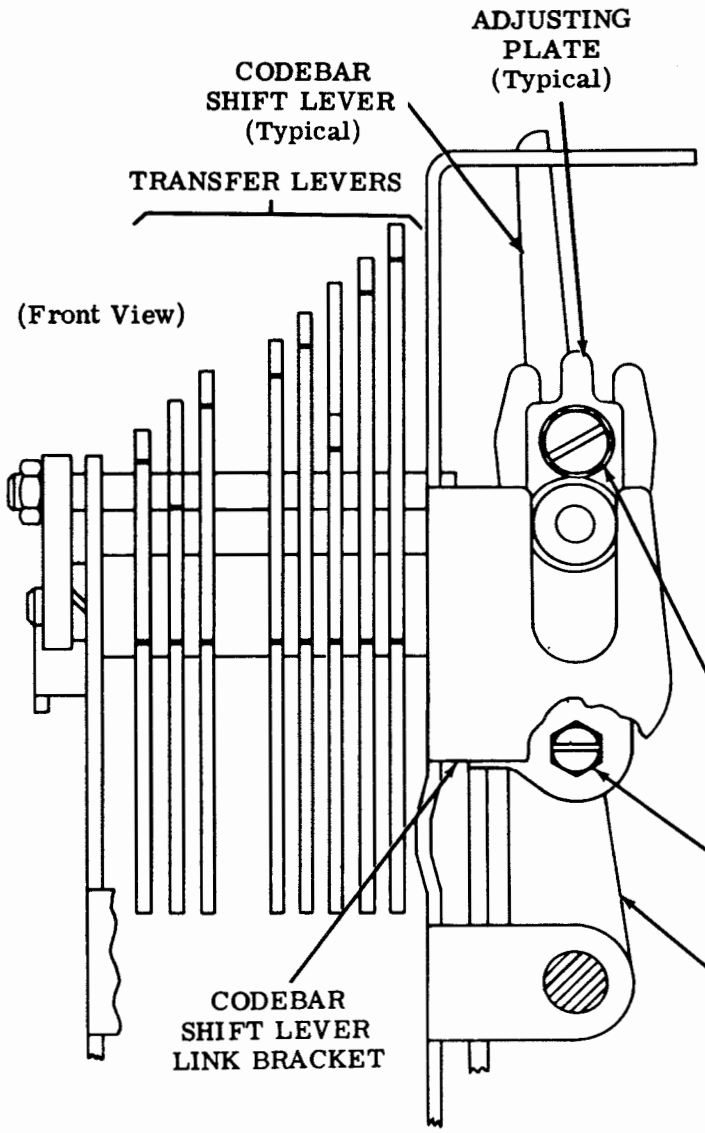


REAR CODEBAR SHIFT LEVER

To Check
Selector pushlevers marking.
Rotate main shaft until codebar shift lever link reaches uppermost position.

Requirement
Clearance between rear codebar shift lever and shoulder of nearest codebar shiftbar (marking) should be
Min 0.002 inch---Max 0.012 inch
when play is taken up to make clearance maximum.

To Adjust
Loosen adjusting plate clampscrews friction tight. Position adjusting plate to meet requirement. Tighten clampscrews.



FRONT CODEBAR SHIFT LEVER

To Check
Selector pushlevers spacing.
Rotate main shaft until codebar shift lever link reaches uppermost position.

Requirement
Clearance between front codebar shift lever and shoulder of nearest codebar shiftbar (spacing) should be
Min 0.002 inch---Max 0.012 inch
when play is taken up to make clearance maximum.

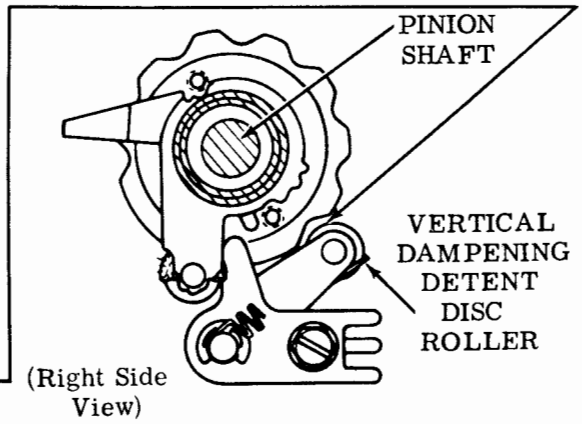
To Adjust
Loosen adjusting plate clampscrews friction tight. Position adjusting plate to meet requirement. Tighten clampscrews.

2.31 Vertical Positioning Mechanism (continued)

RACK AND PINION PHASING

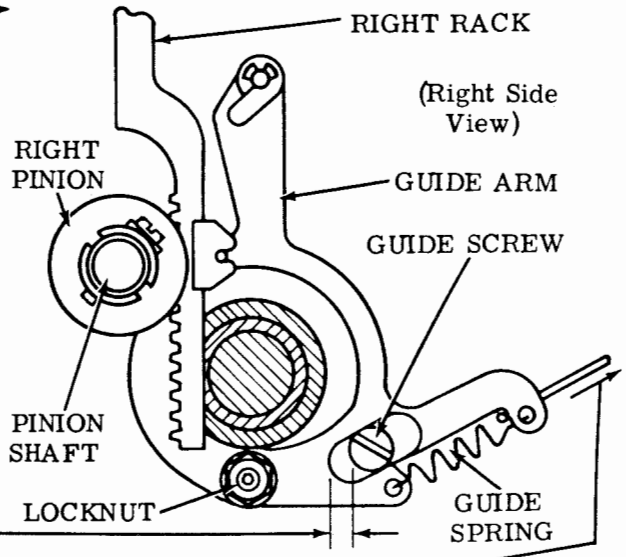
To Check
Codebars 5, 6, and 7 marking. All clutches disengaged (latched).

(1) Requirement
Vertical dampening detent disc roller should be centered above eighth notch of vertical dampening detent disc (first notch 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 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, 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 RACK GUIDE

To Check
Remove guide spring.

Requirement
Min some---Max 0.012 inch clearance between guide screw and end of slot in guide arm.

To Adjust
Loosen locknut friction tight. Pry stop plate until requirement is met. Tighten locknut.

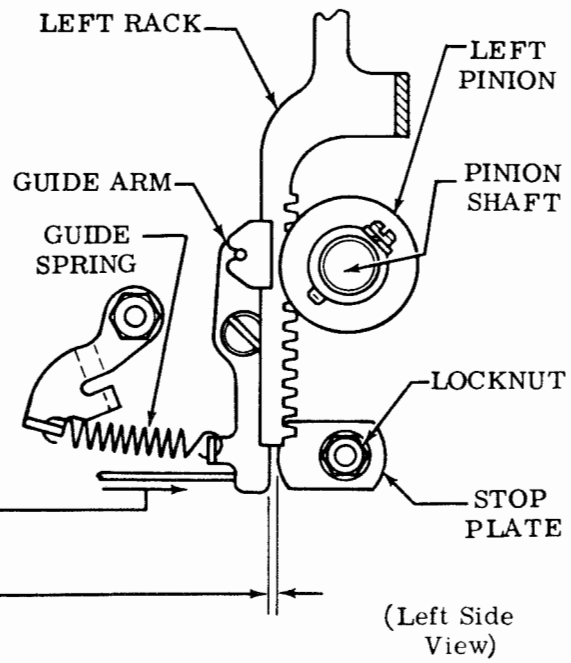
RACK GUIDE SPRING

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 friction tight. Pry stop plate until requirement is met. Tighten locknut.



2.32 Retraction Mechanism

RETRACTION OVERLOAD SPRING

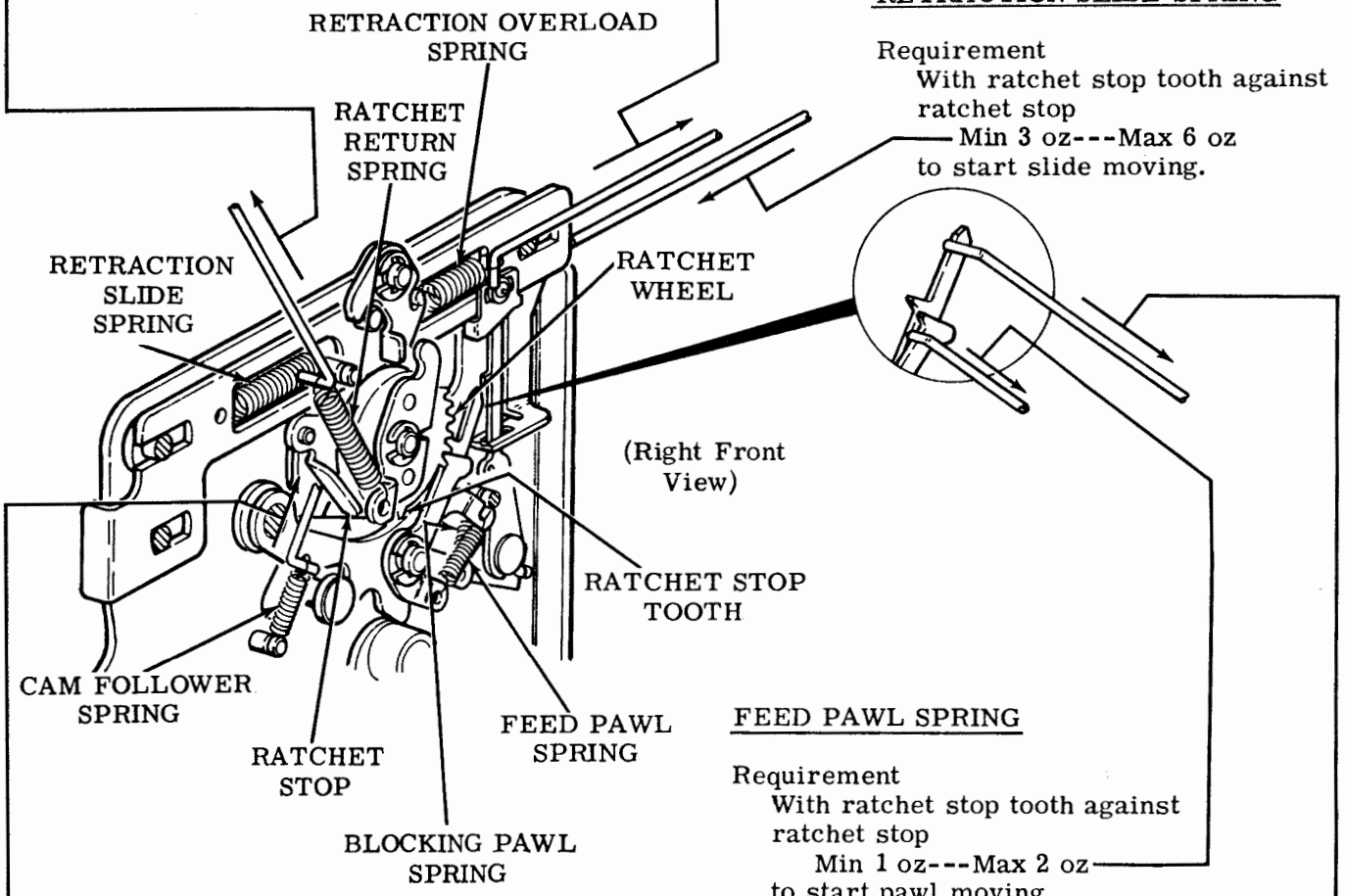
Requirement
With ratchet stop tooth against ratchet stop
—Min 5-1/2 lb---Max 7-1/2 lb
to start moving overload bellcrank from its stop.

RATCHET RETURN SPRING

Requirement
With ratchet wheel at maximum feed position (on last tooth) and ratchet return spring unhooked
—Min 2 oz---Max 5 oz
to extend spring to installed length.

RETRACTION SLIDE SPRING

Requirement
With ratchet stop tooth against ratchet stop
—Min 3 oz---Max 6 oz
to start slide moving.



FEED PAWL SPRING

Requirement
With ratchet stop tooth against ratchet stop
Min 1 oz---Max 2 oz
to start pawl moving.

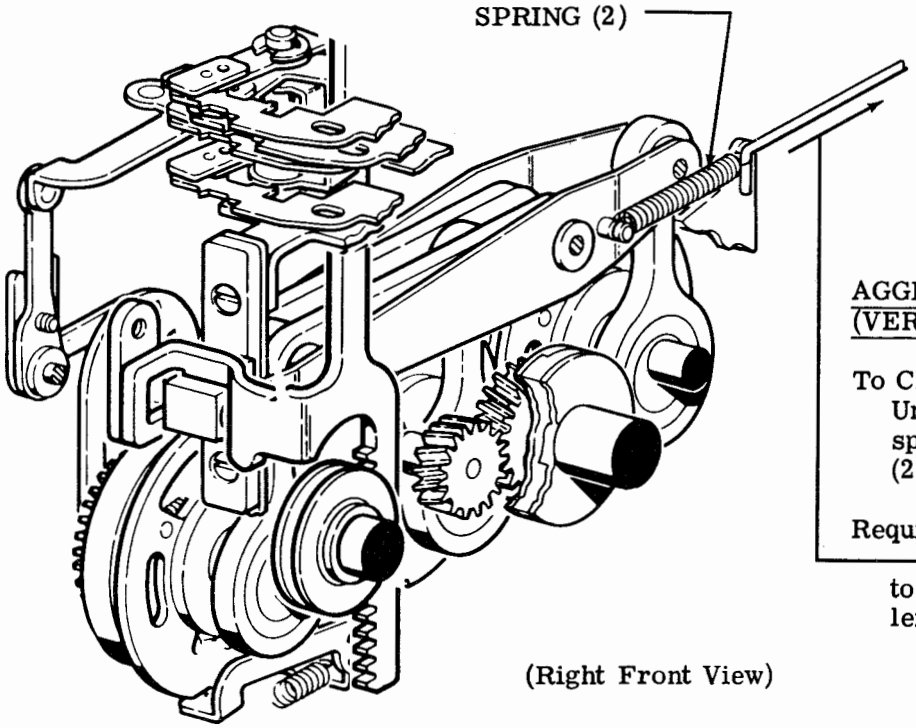
CAM FOLLOWER SPRING

Requirement
Eccentric in maximum feed position.
Spring unhooked
—Min 14 oz---Max 20 oz
to extend spring to installed length.

BLOCKING PAWL SPRING

Requirement
With ratchet stop tooth against ratchet stop
Min 1 oz---Max 2 oz
to start pawl moving.

2.33 Vertical Positioning Mechanism (continued)

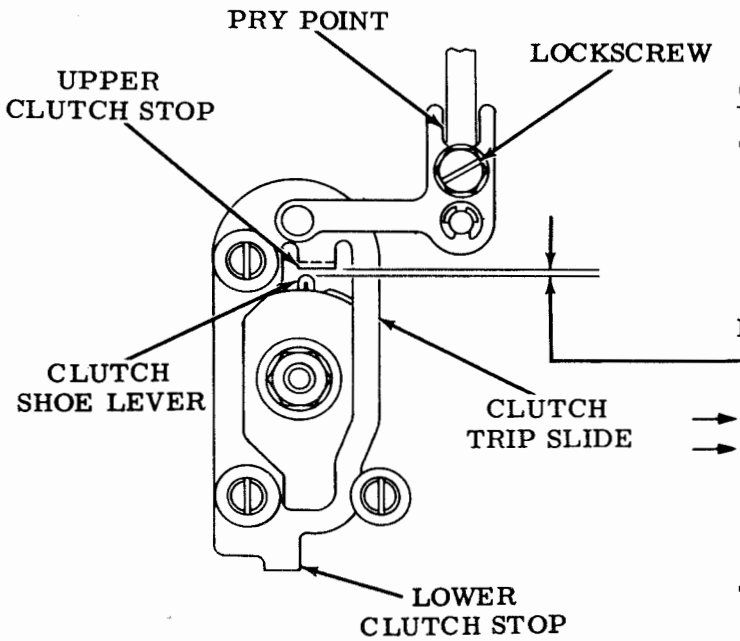


(Right Front View)

AGGREGATE MOTION SPRING (VERTICAL POSITIONING)

To Check
Unhook aggregrate motion springs one at a time and check (2 springs total).

Requirement
Min 21 oz---Max 25 oz to extend spring to installed length.



(Left Side View)

CLUTCH BITE

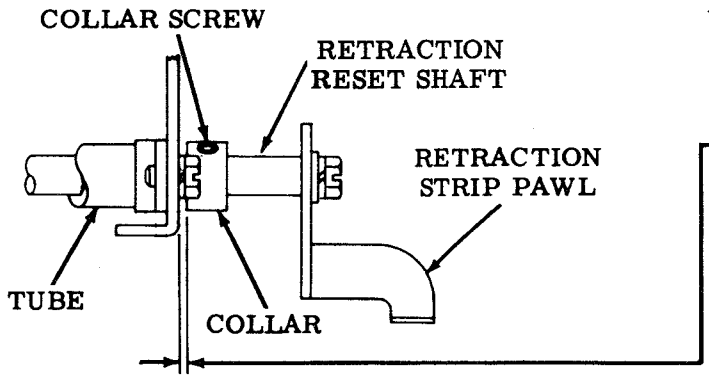
To Check
Disengage clutch. Engage clutch and view clearance between clutch shoe lever and clutch stop. Rotate main shaft and disengage clutch on opposite side. View clearance.

Requirement
Clearance of upper clutch stop and lower clutch stop should be equal (gauge by eye), when play in slide taken up to make gap a minimum.

Note: Check all three vertical positioning clutches.

To Adjust
Loosen lockscrew friction tight. Move clutch trip slide up or down by means of pry point. Tighten lockscrew.

2.34 Retraction Mechanism (continued)



(Rear View)

RETRACTION RESET SHAFT ENDPLAY

Requirement
Clearance between tube facing and collar should be
Min some---Max 0.012 inch

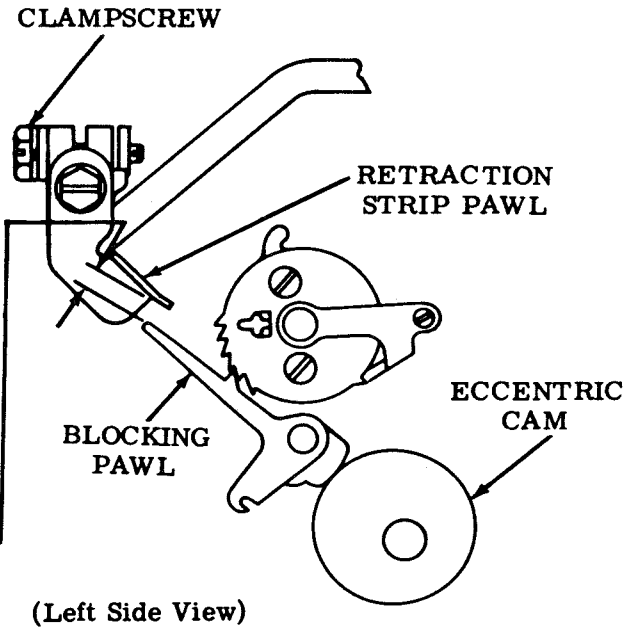
To Adjust
Loosen collar screw and set gap. Tighten screw.

RETRACTION STRIP PAWL

To Check
All clutches latched. Blocking pawl on base of ratchet tooth. Rotate retraction reset shaft counterclockwise to take up play and make clearance a maximum.

Requirement
Clearance between retraction strip pawl and blocking pawl should be
Min some---Max 0.020 inch

To Adjust
Loosen clampscrew and position retraction strip pawl. Tighten clampscrew.

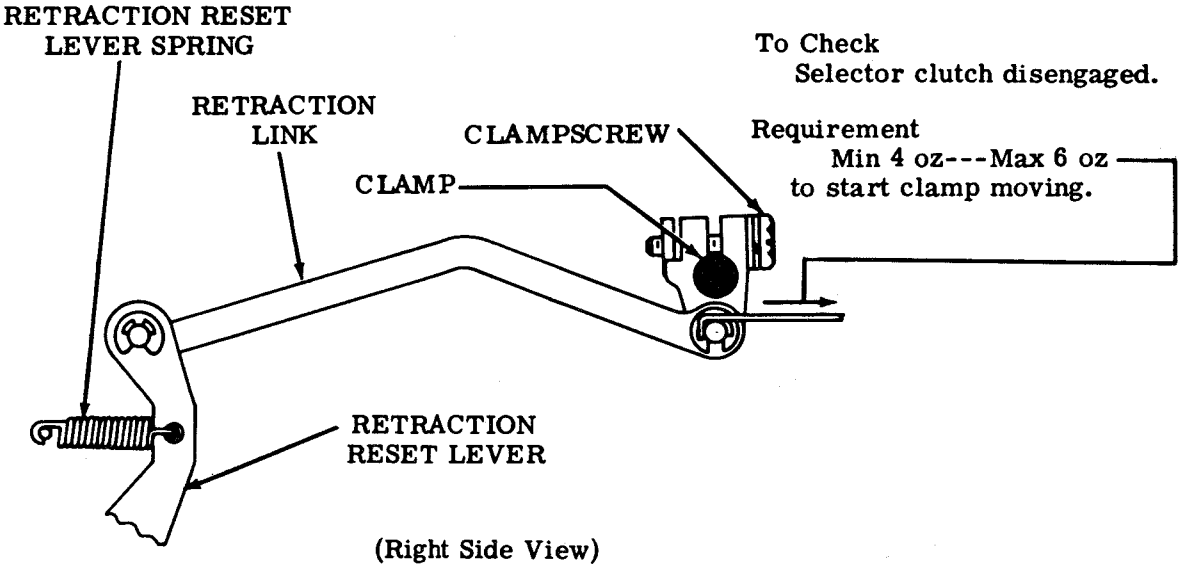


(Left Side View)

RETRACTION RESET LEVER SPRING

To Check
Selector clutch disengaged.

Requirement
Min 4 oz---Max 6 oz
to start clamp moving.



(Right Side View)

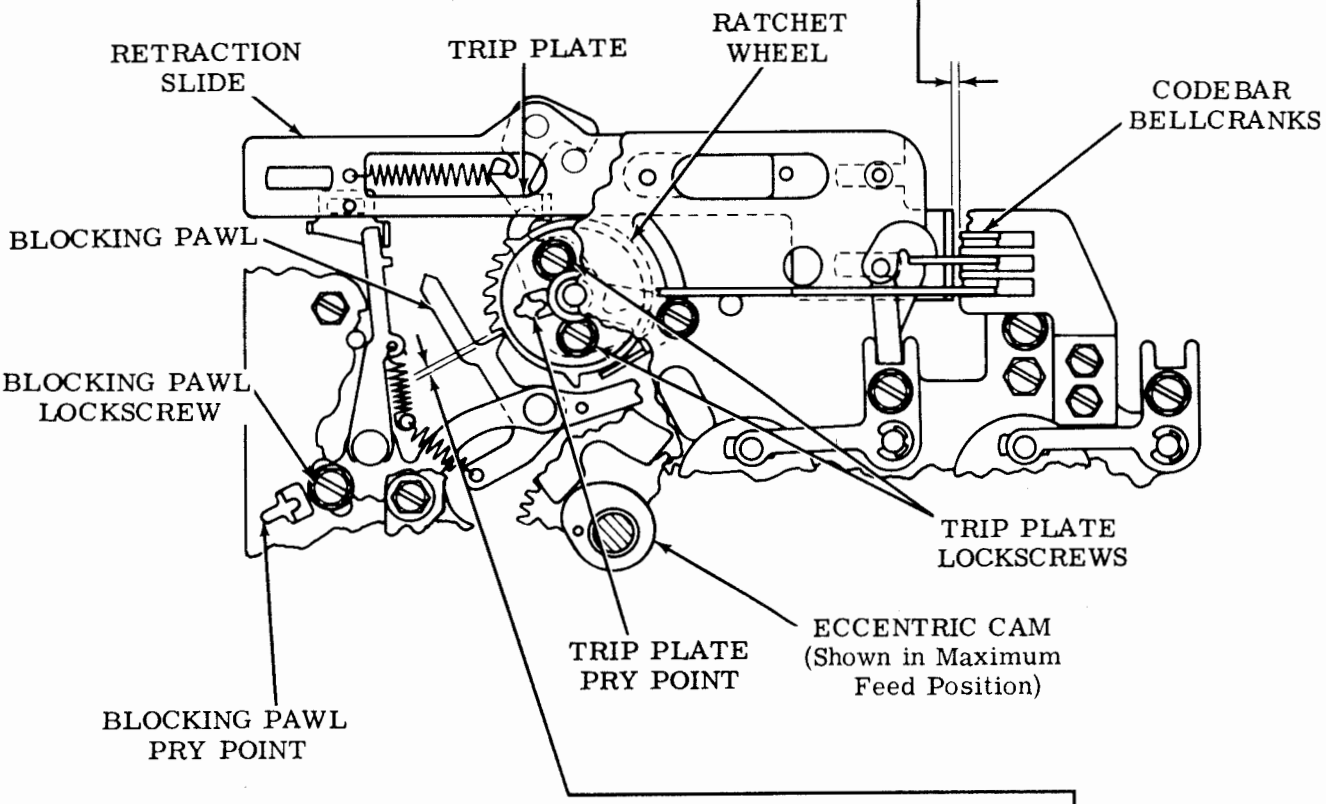
2.35 Retraction Mechanism (continued)

RETRACTION SLIDE

To Check
With all codebars in spacing position, feed pawl engaging last tooth of ratchet, and eccentric cam in maximum feed position, disengage (latch) all clutches.

Requirement
Clearance between retraction slide and codebar bellcranks should be
Min 0.005 inch---Max 0.015 inch
with play in bellcranks taken up (toward front).

To Adjust
Loosen trip plate lockscrews. Rotate trip plate by means of its pry point to meet requirement. Tighten lockscrews.



BLOCKING PAWL

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

Requirement
Clearance between blocking pawl and ratchet wheel tooth should be
Min 0.005 inch---Max 0.010 inch

To Adjust
Loosen blocking pawl lockscrew friction tight. Position check pawl by means of blocking pawl pry point. Tighten lockscrew.

2.36 Retraction Mechanism (continued)

RATCHET STOP

To Check

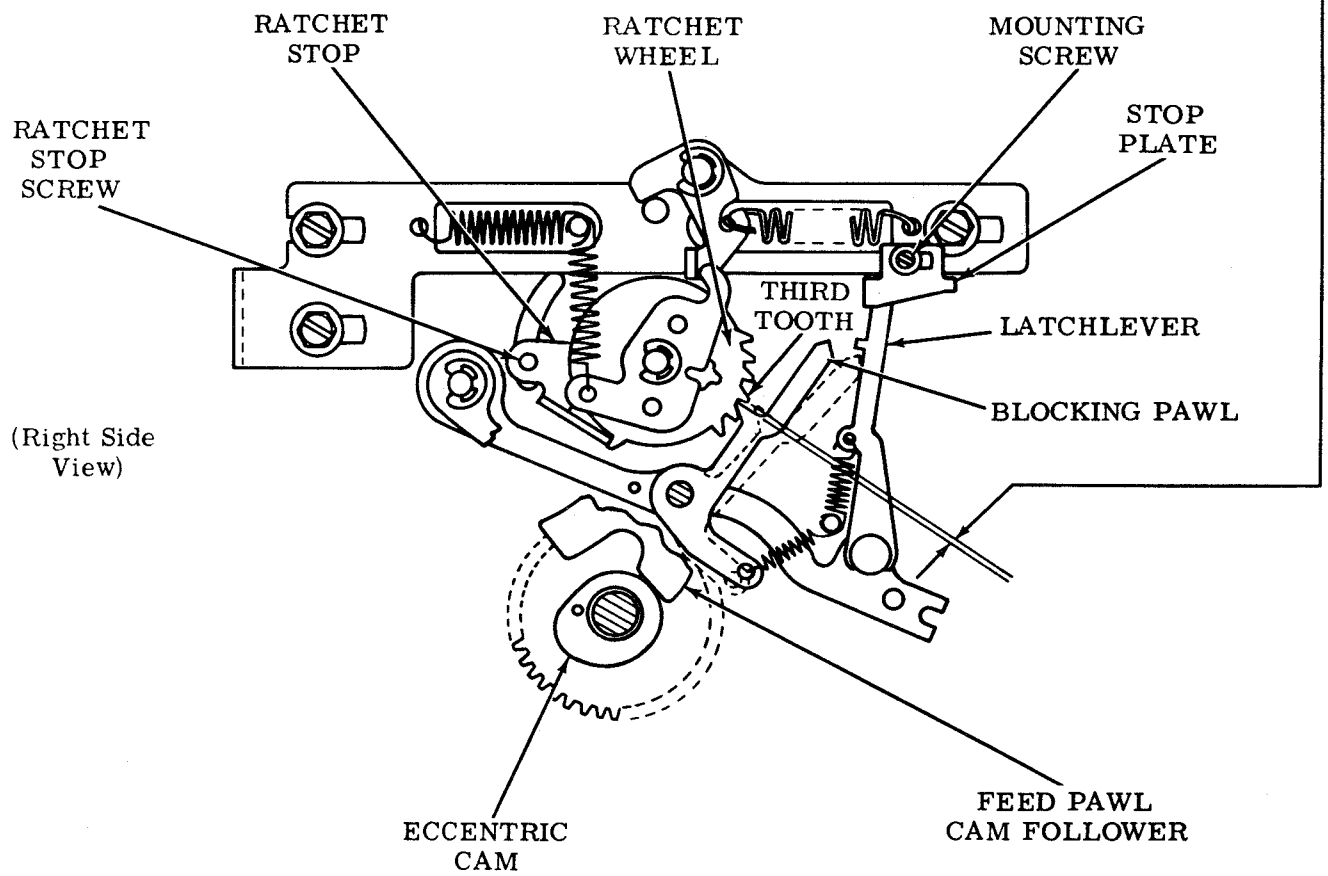
All clutches disengaged (latched). Eccentric cam in minimum feed position. Feed pawl disengaged from ratchet teeth.

Requirement

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

To Adjust

Loosen ratchet stop screw friction tight. Position ratchet stop to meet requirement. Tighten ratchet stop screw.



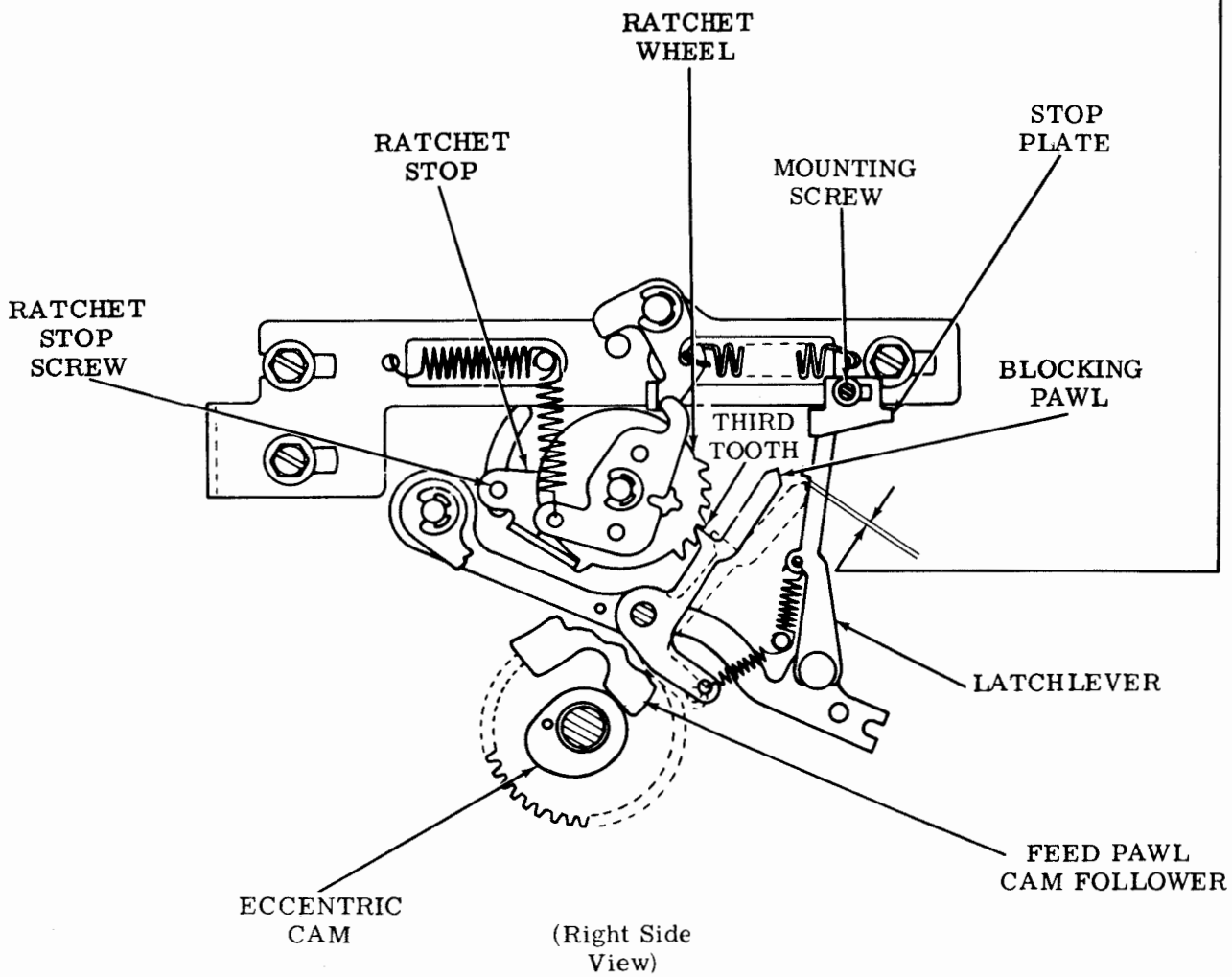
2.37 Retraction Mechanism (continued)

STOP PLATE

To Check
All clutches disengaged (latched). Feed pawl disengaged from ratchet teeth.

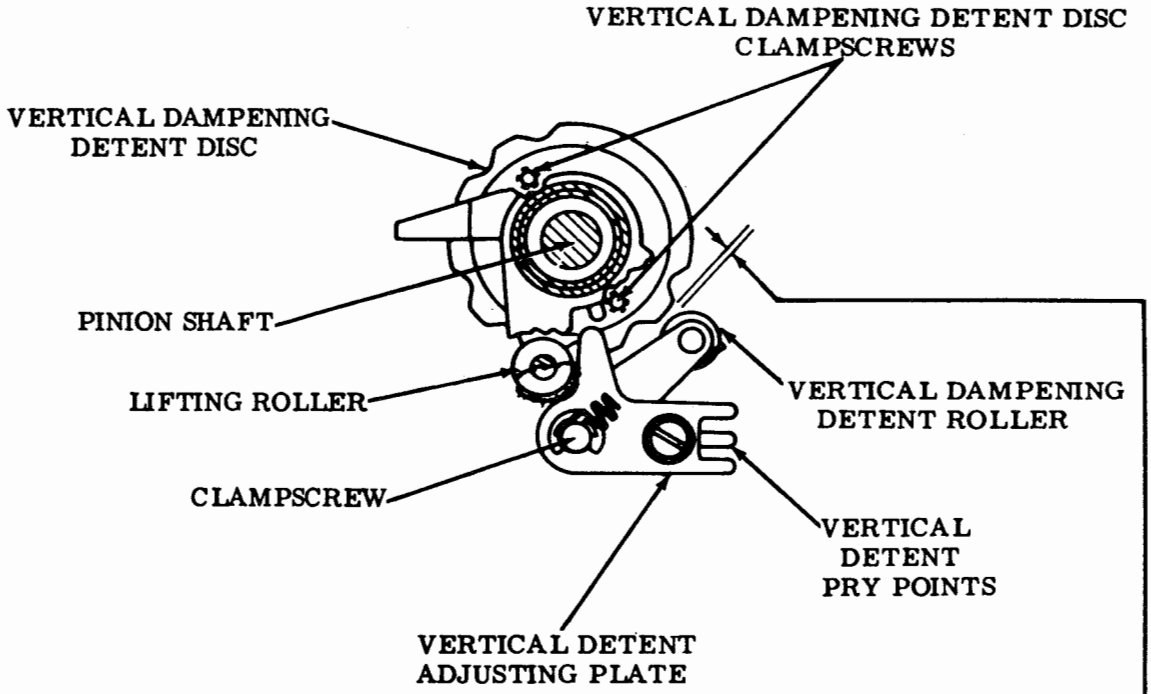
Requirement
Min some---Max 0.010 inch clearance between corners of latchlever and blocking pawl when blocking pawl is manually brought into position.

To Adjust
Loosen stop plate mounting screw friction tight. Position stop plate to meet requirement. Tighten stop plate mounting screw.



(Right Side View)

2.38 Vertical Positioning Mechanism (continued)



(Right Side View)

VERTICAL DAMPENING DETENT DISC AND ROLLER

To Check

All main shaft clutches disengaged. Engage a vertical positioning clutch. Rotate main shaft until detent roller is above a high part of disc.

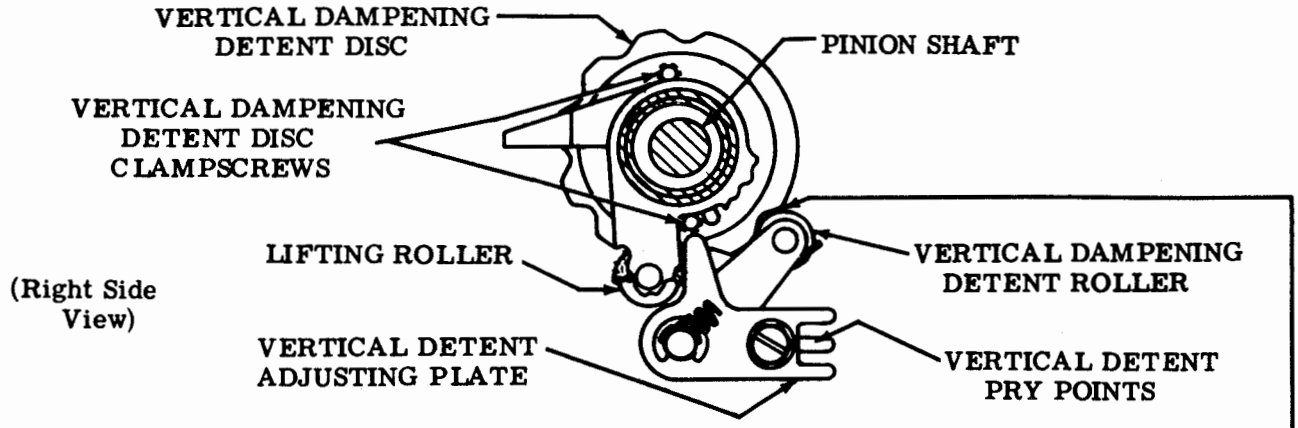
Requirement

Min 0.010 inch---Max 0.020 inch clearance between vertical dampening detent disc and roller.

To Adjust

Loosen clampscrew friction tight. Position vertical dampening detent roller by means of pry points. Tighten clampscrew.

2.39 Vertical Positioning Mechanism (continued)



VERTICAL AGGREGATE - DAMPENER SYNCHRONIZATION

To Check

All codebars spacing. All clutches disengaged. Engage print hammer clutch. Slowly rotate main shaft.

Requirement

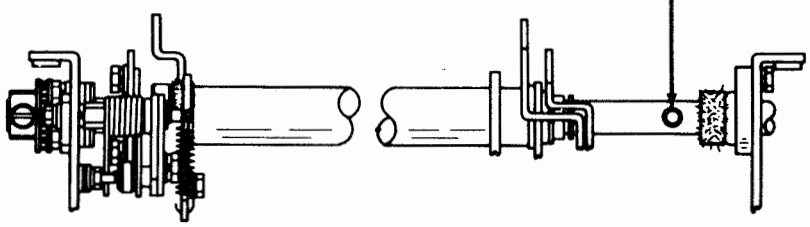
Vertical dampening detent roller should drop squarely into first notch on vertical dampening detent disc (as viewed from the left side).

To Adjust

Loosen clampscrews on vertical dampening detent disc. Rotate disc until roller is squarely seated in first notch. Without disturbing unit, tighten clampscrews.

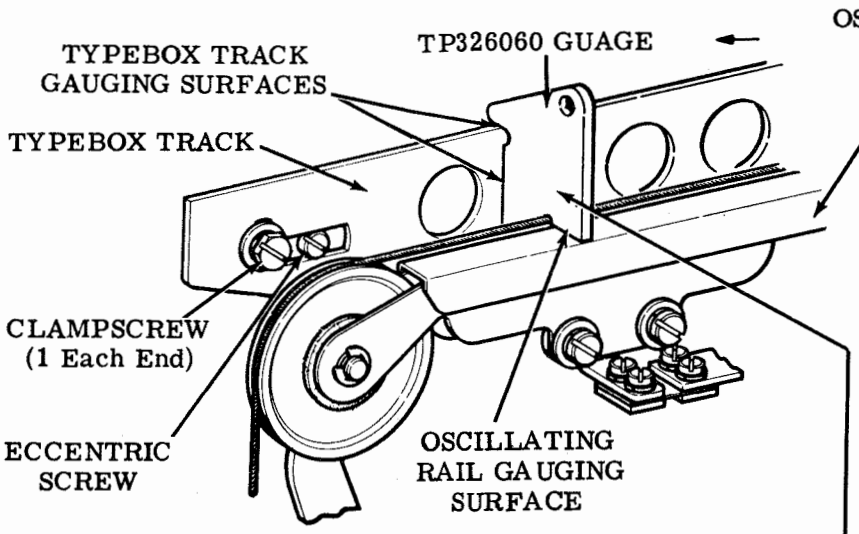
Note: If this adjustment cannot be met, due to lack of motion in adjusting slots, reset disc to center of adjustment and check the RACK AND PINION PHASING (2.31) adjustment.

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

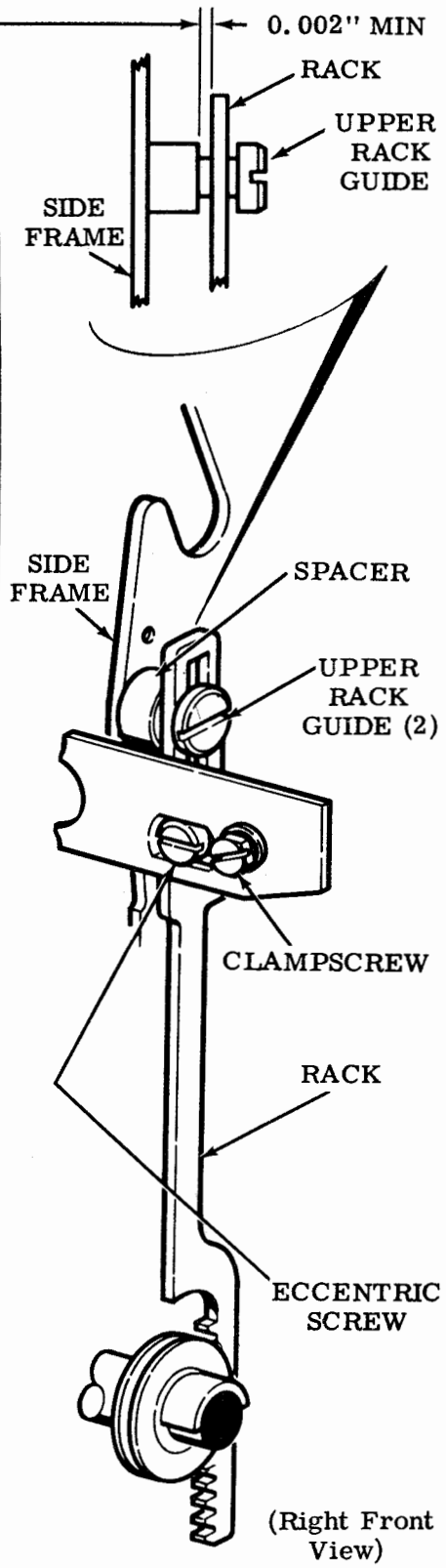


(Bottom View)

2.40 Vertical Positioning Mechanism (continued)



(Left End View)



(Right Front View)

TYPEBOX TRACK

To Check
All codebars in spacing position. All clutches disengaged (latched).

Requirement
Gauge should completely contact typebox track gauging surfaces. Adjust until gauge contacts oscillating rail gauging surface.

To Adjust
Loosen both clampscrews. With gauge on left end of typebox track rotate eccentric screw until surface of gauge touches oscillating rail. Repeat procedure on right end. Recheck left end. Tighten both clampscrews.

Affected Adjustment
PRINT HAMMER MOUNTING BRACKET (2.68)
TYPEBOX ALIGNMENT (2.87)

UPPER RACK GUIDE

To Check
All clutches disengaged (latched). All codebars spacing.

Requirement
Min 0.002 inch clearance on both sides of rack throughout vertical travel (left and right sides).

To Adjust
All codebars marking and clutches disengaged. Loosen clampscrew to position rack. Tighten clampscrew. All codebars spacing, recheck requirement.

Note: Play should be taken up to make the clearance maximum and slowly released before gauging.

2.41 Line Feed Mechanism (continued)

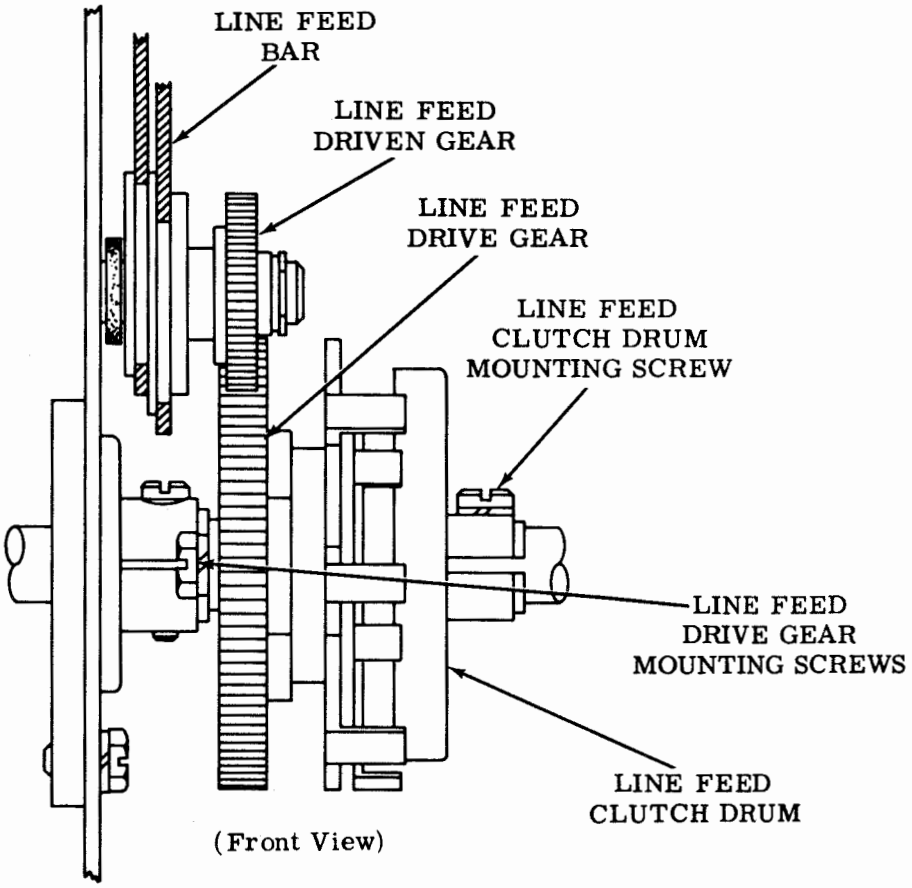
LINE FEED CLUTCH PHASING

Requirement
With line feed clutch disengaged (latched), both line feed bars should engage teeth of spur gear.

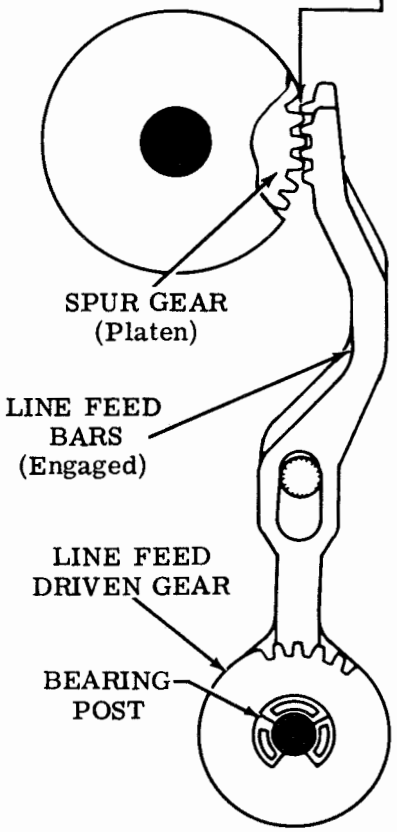
To Adjust
Loosen line feed drive gear mounting screws. Rotate drive gear until requirement is met. Tighten mounting screws.

Note: If requirement cannot be met, rotate line feed drive gear until drive gear mounting screws are in middle of elongation. Tighten mounting screws. Disengage line feed clutch. Pull trip lever away from clutch and rest on shoe lever. Note approximate position of trip lever on shoe lever. Remove line feed clutch drum mounting screw. Remove retaining ring from line feed trip lever mounting post. Slide line feed trip lever and latchlever to the left (as viewed from rear). Disengage line feed drive gear from driver gear. Turn line feed driver gear to meet requirement. Remesh drive gear with driven gear while lining up clutch shoe lever with trip lever as noted above. Replace drum mounting screw and retaining ring. Refine with drive gear mounting screws loosened, if necessary.

Affected Adjustment
SPUR GEAR DETENT ECCENTRIC (2.42)



(Front View)



(Right Side View)

2.42 Line Feed Mechanism (continued)

PLATEN DETENT BAIL SPRING

Requirement
Detent seated between two teeth on line feed spur gear.
Min 19 oz---Max 22 oz
to start detent bail moving.

SPUR GEAR DETENT ECCENTRIC

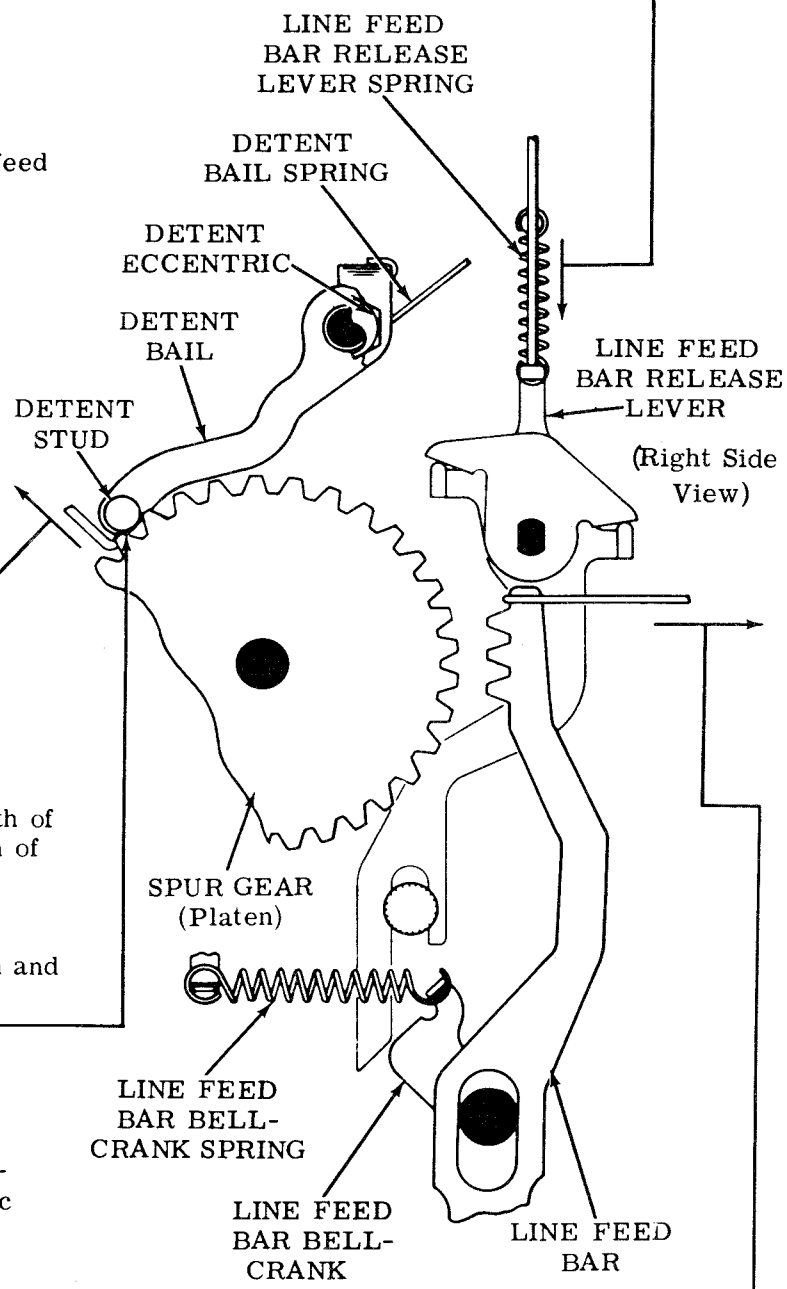
To Check
Line feed clutch disengaged (latched). Platen rotated until detent stud is seated between two teeth on spur gear. When handwheel is released, manually set teeth of line feed bars into engagement with teeth of spur gear.

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 RELEASE LEVER SPRING

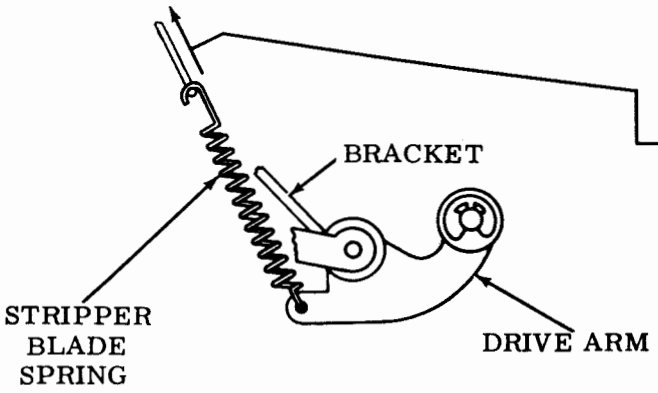
Requirement
Min 3 oz---Max 6 oz
to start lever moving.



LINE FEED BAR BELLCRANK SPRING

Requirement
Left hand line feed bar in rear position.
Min 20 oz---Max 26 oz
to start bar moving.

2.43 Function Mechanism



(Left Side View)

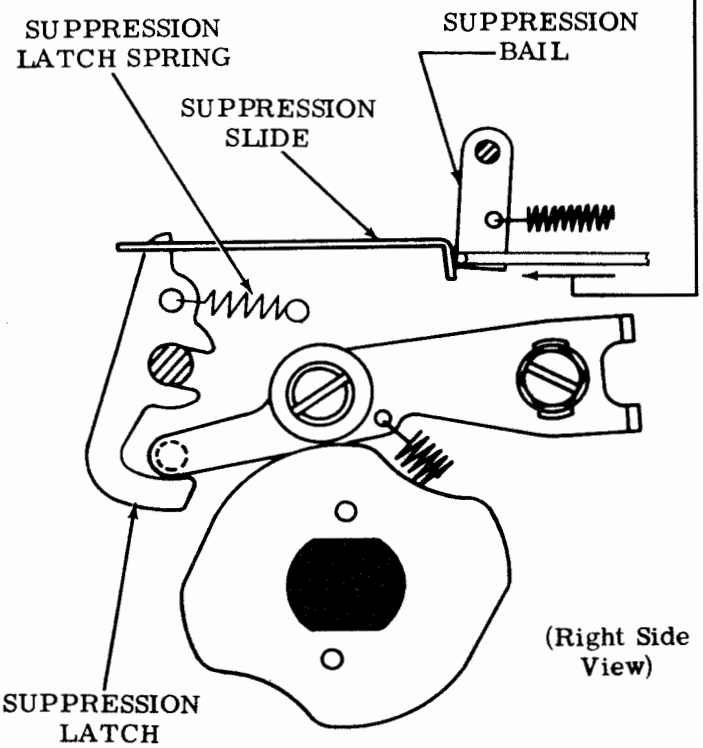
STRIPPER BLADE SPRING

Requirement
All clutches disengaged. Unhook spring.
Min 32 oz---Max 36 oz
to pull spring to installed length.

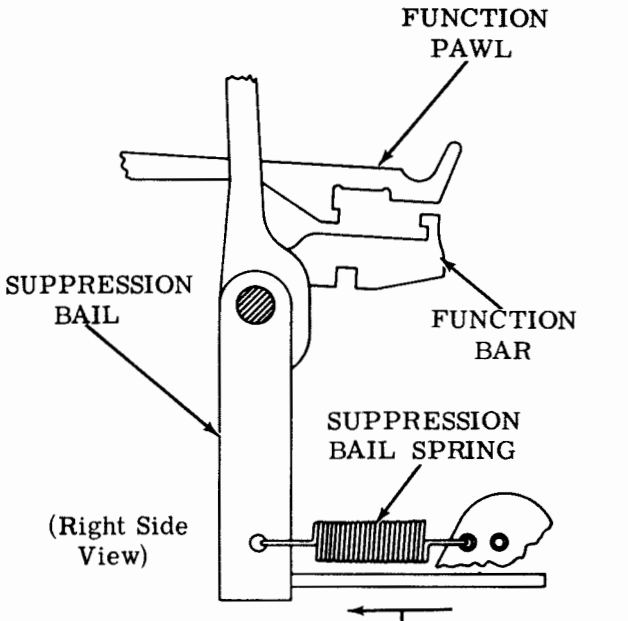
SUPPRESSION LATCH SPRING

To Check
All clutches disengaged and all function pawls stripped.

Requirement
Min 4 oz---Max 6 oz
to start suppression slide moving toward front of unit.



(Right Side View)



(Right Side View)

SUPPRESSION BAIL SPRING

To Check
All clutches disengaged, suppression slide held toward front of unit and all function pawls stripped. Unit in normal operating position.

Requirement
With suppression bail in rear position and scale applied near middle of bail
Min 1-1/2 oz---Max 3 oz
to start bail moving.

2.44 Function Mechanism (continued)

CAUTION: SEVERE WEAR TO THE POINT OF OPERATIONAL FAILURE WILL RESULT IF THE TELETYPEWRITER 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.

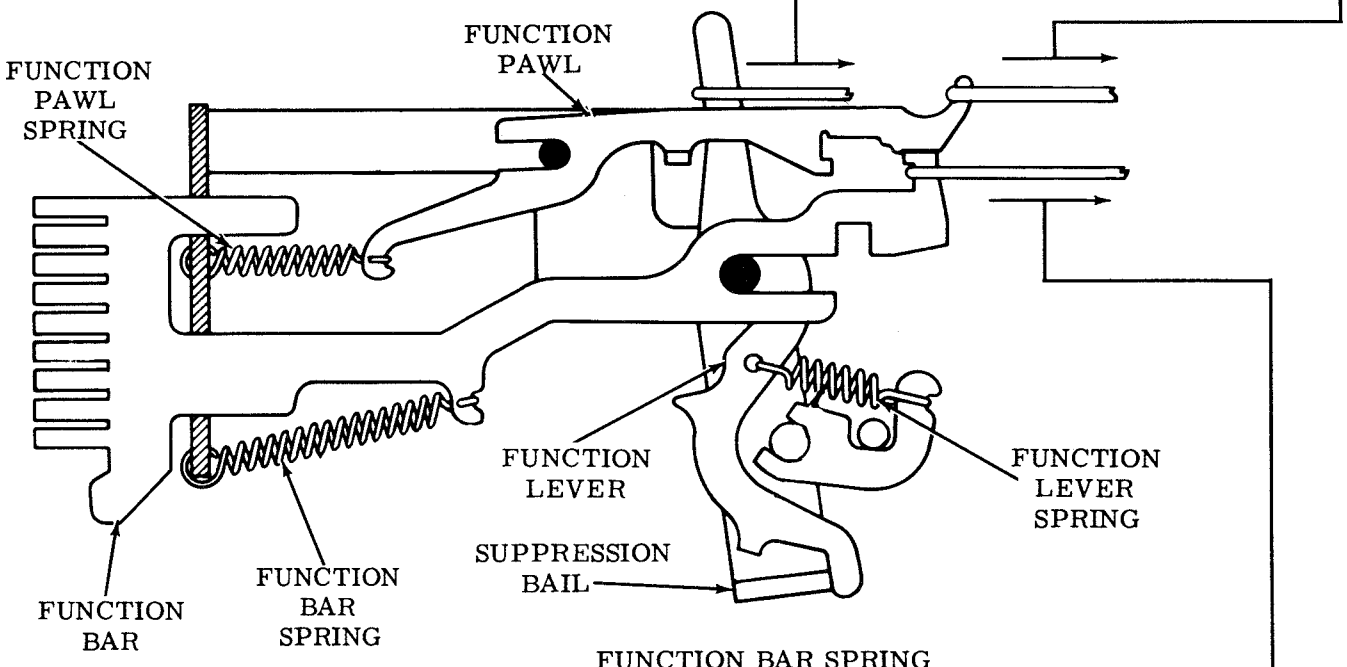
To Check
Function lever in unoperated position. Suppression bail held forward.

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

FUNCTION PAWL SPRING

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

Requirement
Min 3 oz---Max 5 oz to start pawl moving. Check each function pawl spring.



(Right Side View)

FUNCTION BAR SPRING

To Check
Function clutch disengaged. Function pawl held away.

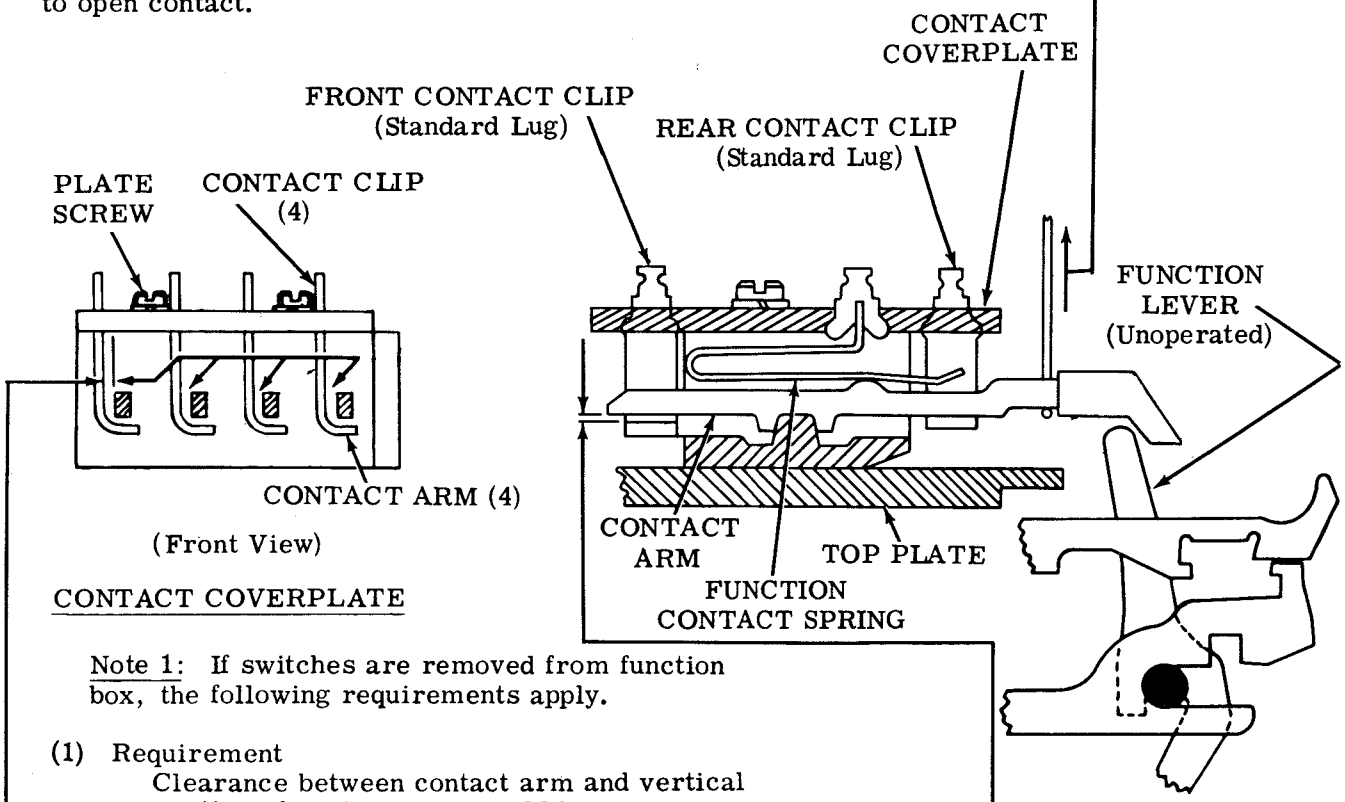
Requirement
Min 2-1/2 oz---Max 3-1/2 oz to start function bar moving.

2.45 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.



CONTACT COVERPLATE

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

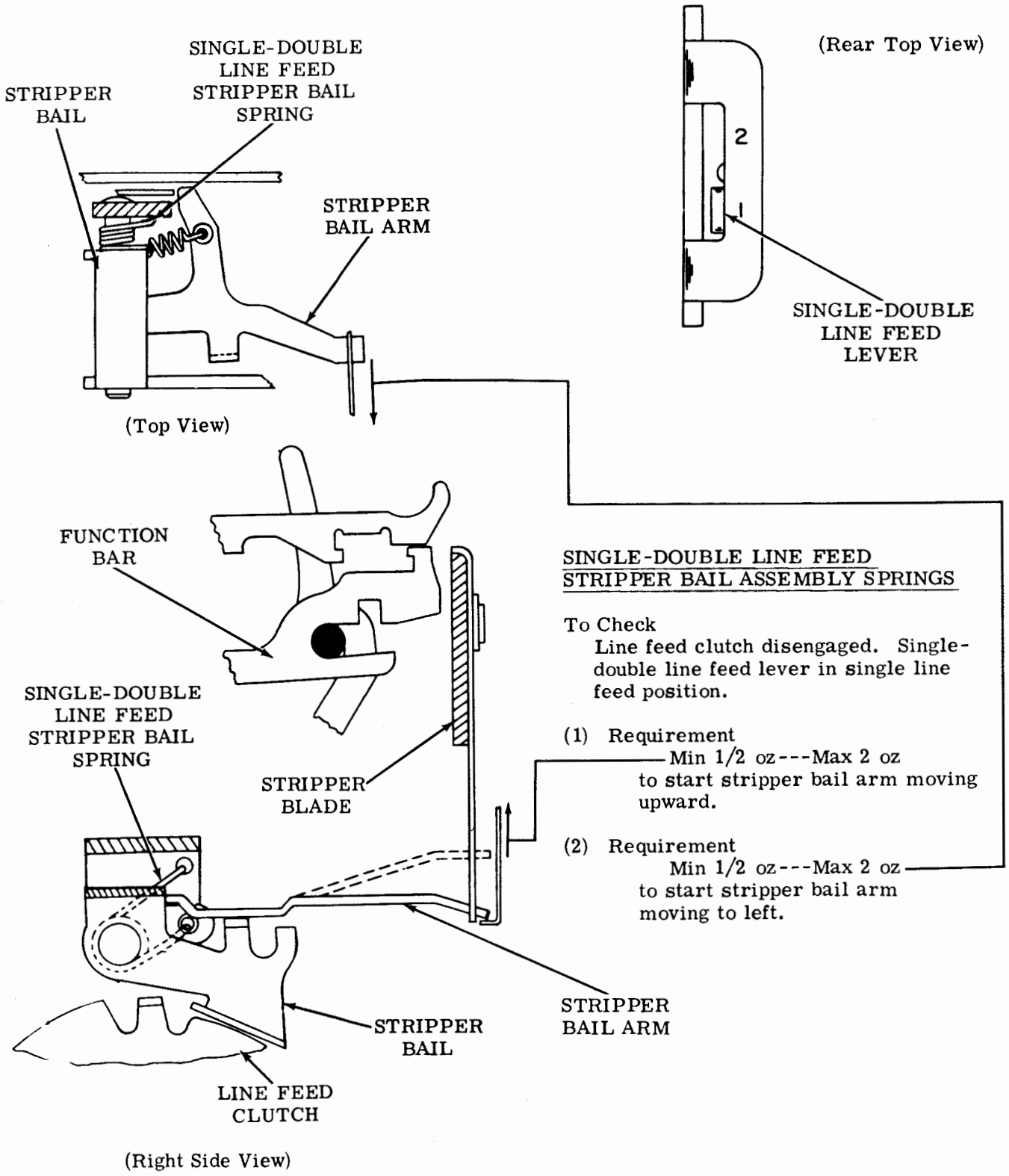
(1) Requirement
Clearance between contact arm and vertical portion of contact clip should be
Min 0.006 inch
If switch has front and rear contact clips, clearance applies to both front and rear.

(2) Requirement (for switches with front and rear contacts)
Gap between formed-over end of front contact clip and bottom of contact arm when rear contact is closed, should be
Min 0.008 inch

To Adjust
Loosen plate screws and position contact coverplate.
Tighten screws.

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

2.46 Line Feed Mechanism (continued)



SINGLE-DOUBLE LINE FEED STRIPPER BAIL ASSEMBLY SPRINGS

To Check
Line feed clutch disengaged. Single-double line feed lever in single line feed position.

(1) Requirement
Min 1/2 oz---Max 2 oz
to start stripper bail arm moving upward.

(2) Requirement
Min 1/2 oz---Max 2 oz
to start stripper bail arm moving to left.

2.47 Function Mechanism (continued)

FUNCTION RESET BAIL SPRING

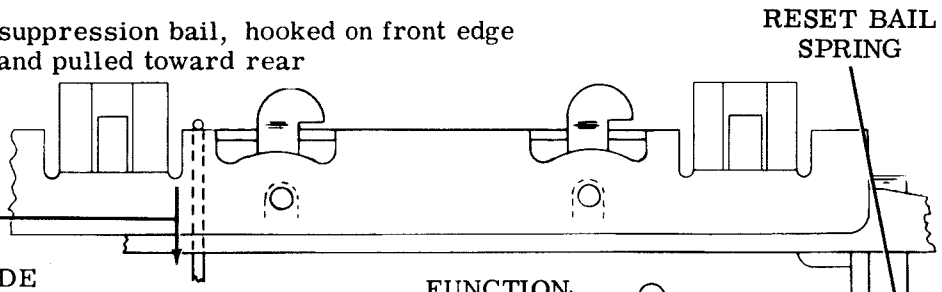
To Check

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.

Requirement

With scale directed under suppression bail, hooked on front edge near middle of reset bail, and pulled toward rear

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



FUNCTION RESET BAIL BLADE

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

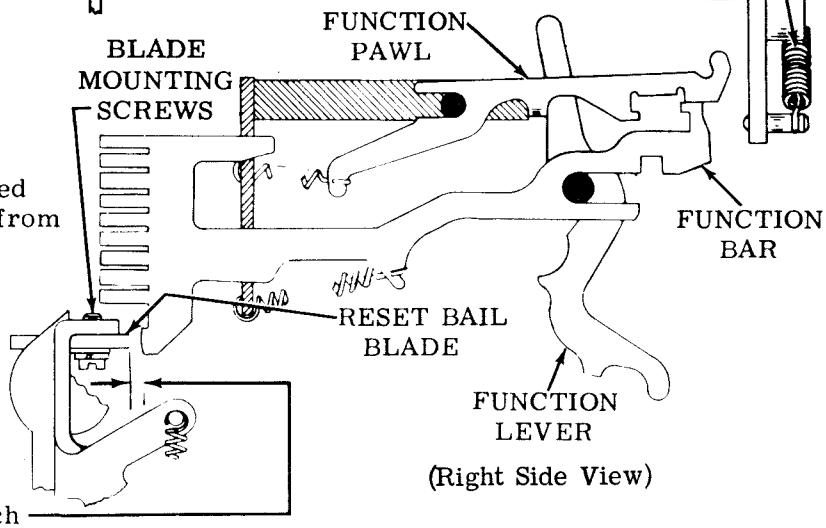
To Check

All clutches disengaged. Function pawls unlatched.

Requirement

With function bar held in maximum rearward position

Min 0.018 inch---Max 0.030 inch between function bar and reset bail blade.



(Right Side View)

To Adjust

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

Affected Adjustment

MOUNTING BRACKET (3.08)

FUNCTION PAWL

To Check

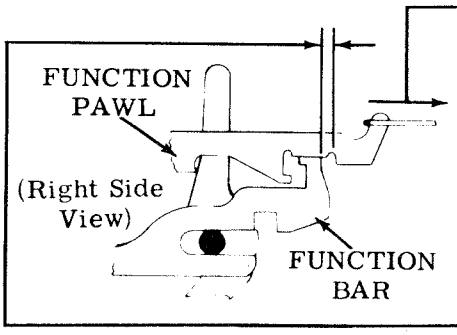
Loosen clampscrew on carriage return lever (2.57). Position function clutch so that stop-lug on clutch disc is toward bottom. Function pawls unlatched.

Requirement

With function lever held in maximum rearward position (do not apply more than 2 pounds of tension on lever) and function pawl held toward rear with a tension of 32 ounces, function pawl should overtravel function bar by Min 0.002 inch

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.



To Adjust

Refine FUNCTION RESET BAIL BLADE adjustment.

Affected Adjustments

CARRIAGE RETURN LEVER (2.57)
SUPPRESSION CODEBAR (2.48)

2.48 Function Mechanism (continued)

SUPPRESSION CODEBAR

Note: This adjustment applies only where shift fork is used.

To Check

Function clutch disengaged (latched). All function pawls stripped. Number 8 codebar in spacing position.

(1) Requirement

Right edge of notch in suppression codebar should line up vertically with right edge of notch in number 8 codebar within ±0.010 inch.

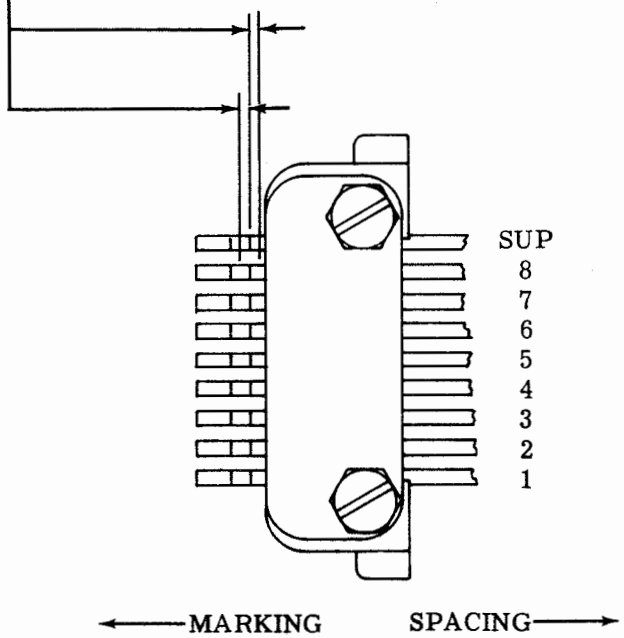
(2) Requirement

Clearance between guideplate extension and slide should be

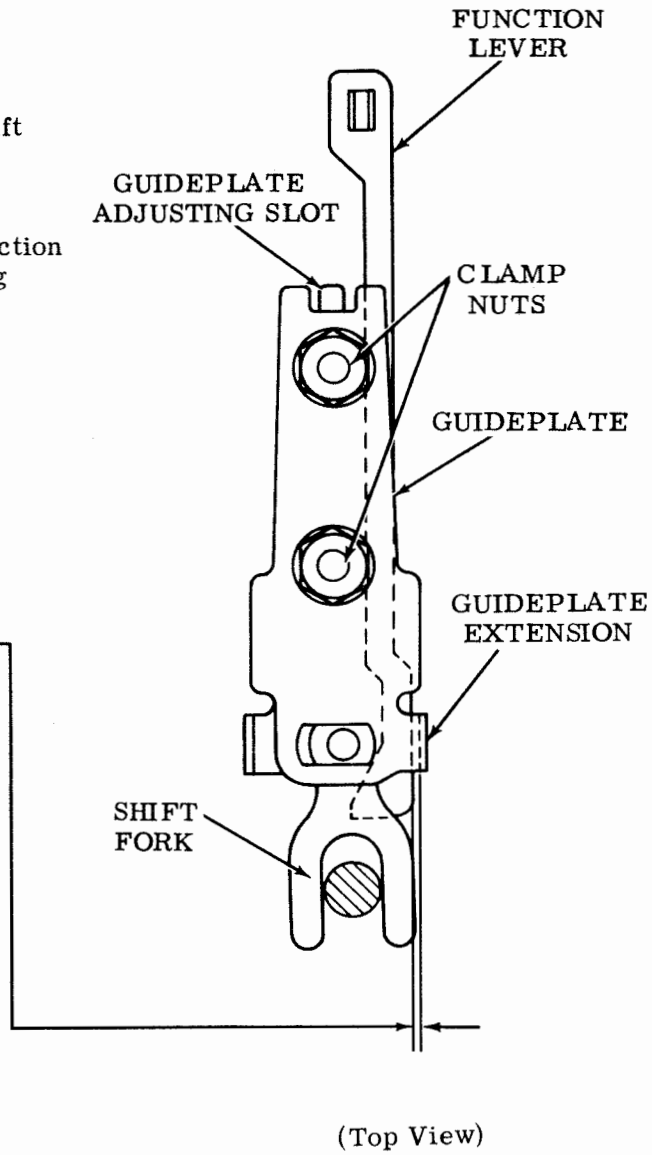
Min 0.002 inch

To Adjust

Loosen clamp nuts and position guideplate by means of adjusting slot. Tighten clamp nuts.

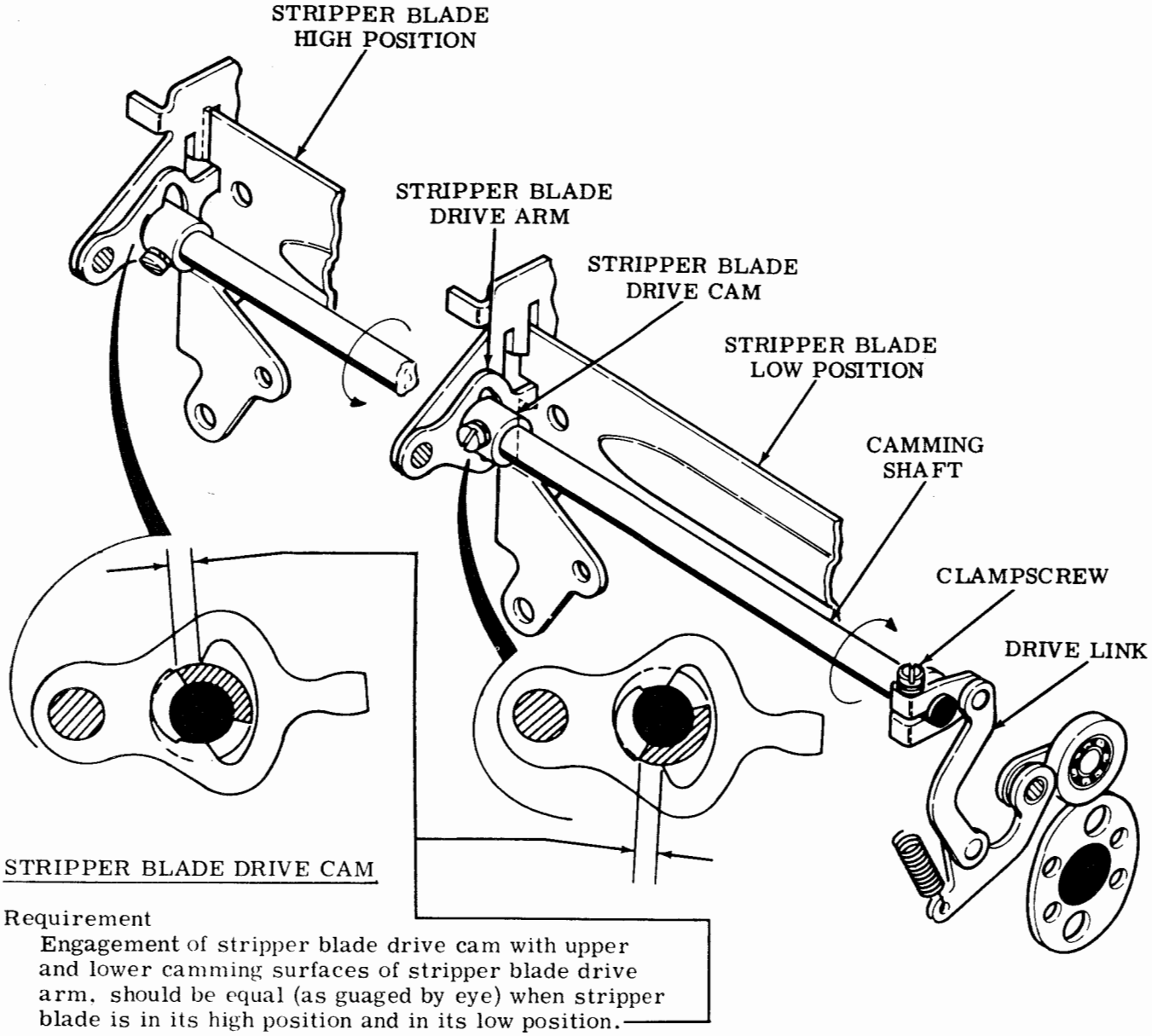


(Front View)



(Top View)

2.49 Function Mechanism (continued)



(Left Rear View)

STRIPPER BLADE DRIVE CAM

Requirement

Engagement of stripper blade drive cam with upper and lower camming surfaces of stripper blade drive arm, should be equal (as guaged by eye) when stripper blade is in its high position and in its low position.

To Check

All clutches disengaged (latched). Observe engagement of stripper blade drive cam with upper camming surface of stripper blade drive arm. With function clutch engaged, manually rotate main shaft until stripper blade drive cam advances to its maximum engagement with lower camming surface of stripper blade drive arm.

To Adjust

Loosen clampscrew and equalize engagement of stripper blade drive cams by positioning camming shaft. Tighten clampscrew.

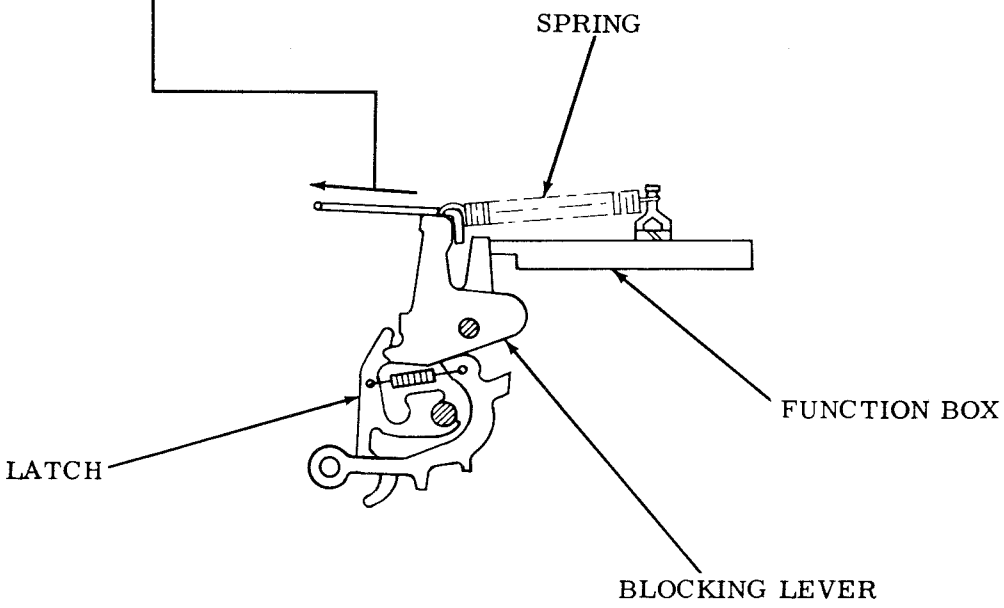
2.50 Function Mechanism (continued)

NONREPEAT FORM FEED SPRING

Note: This adjustment applies only to typing units equipped with the nonrepeat form feed feature.

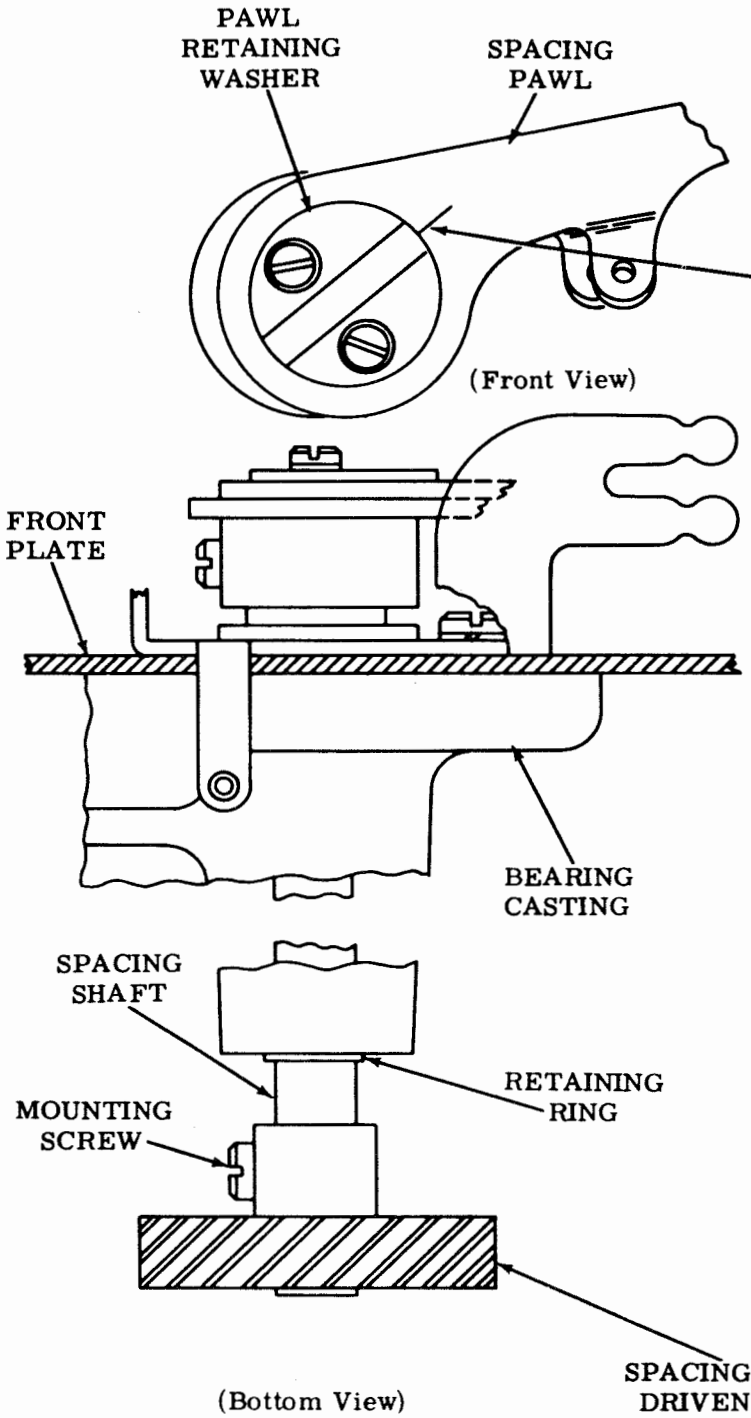
To Check
Disengage all clutches. Hold latch away from blocking lever.

Requirement
Min 1 oz---Max 2-1/2 oz to start blocking lever moving.



(Left Side View)

2.51 Spacing and Carriage Return Mechanisms



SPACING GEAR PHASING

Requirement

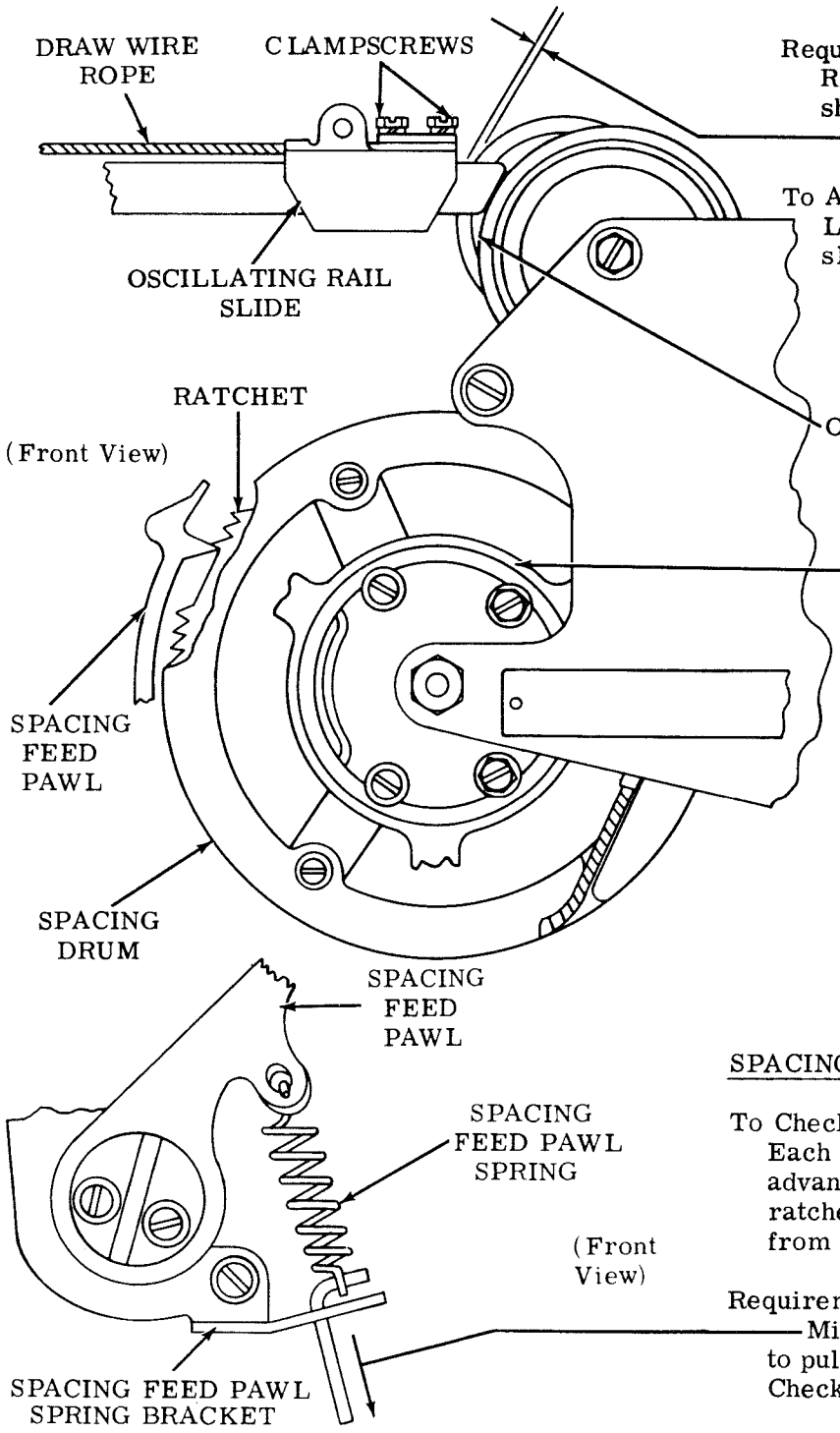
With spacing clutch disengaged (latched), index line on spacing pawl should be as near as possible to center of two lines on pawl retaining washer.

To Adjust

Remove mounting screw from spacing shaft driven gear. Hold pawls in alignment and engage spacing shaft driven gear with spacing drive gear (on main shaft) at a point where tapped hole in spacing shaft is in line with mounting screw hole in spacing shaft driven gear. Insert mounting screw.

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

2.52 Spacing and Carriage Return Mechanisms (continued)



OSCILLATING RAIL SLIDE POSITION — FRICTION FEED

To Check
Spacing clutch disengaged. Spacing feed pawl, which is furthest advanced, engaging tooth immediately above cut-away section of ratchet.

Requirement
Right end of oscillating rail slide should clear edge of pulley by
—Min 0.025 inch---Max 0.050 inch

To Adjust
Loosen clampscrews. Position slide. Tighten clampscrews.

SPACING FEED PAWL SPRING

To Check
Each spacing feed pawl in least advanced position resting against ratchet wheel. Spring unhooked from bracket.

Requirement
—Min 3 oz---Max 5 oz
to pull spring to installed length. Check both springs.

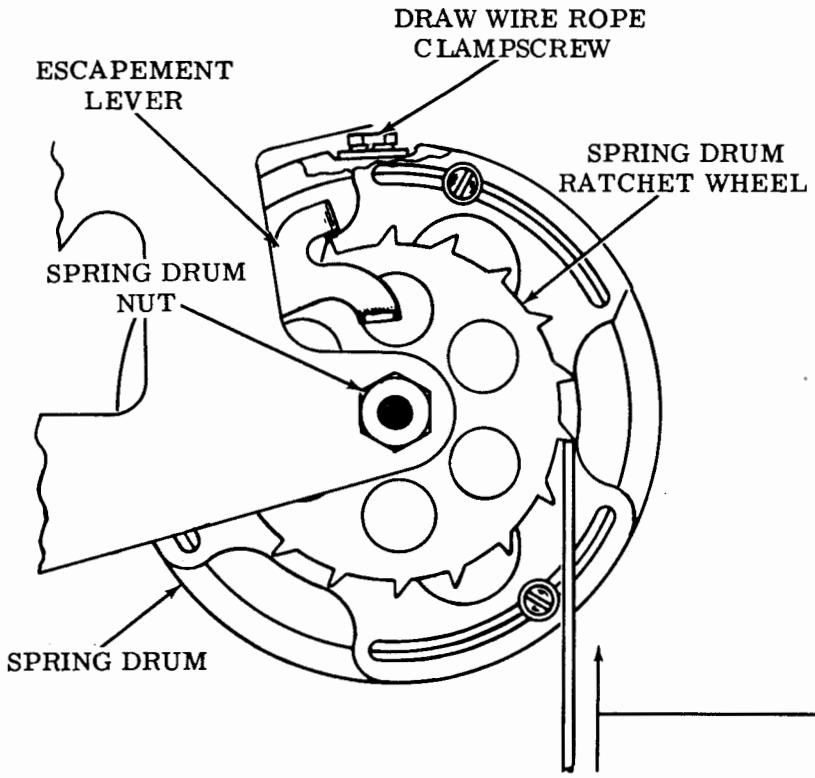
2.53 Spacing and Carriage Return Mechanisms (continued)

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
Move carriage to left hand side. Loosen spring drum nut and rotate spring drum ratchet wheel to increase tension or operate escapement lever to decrease tension. Replace and tighten spring drum nut.



(Front View)

DRAW WIRE ROPE

Requirement
Draw wire rope should have equal tension (gauge by feed).

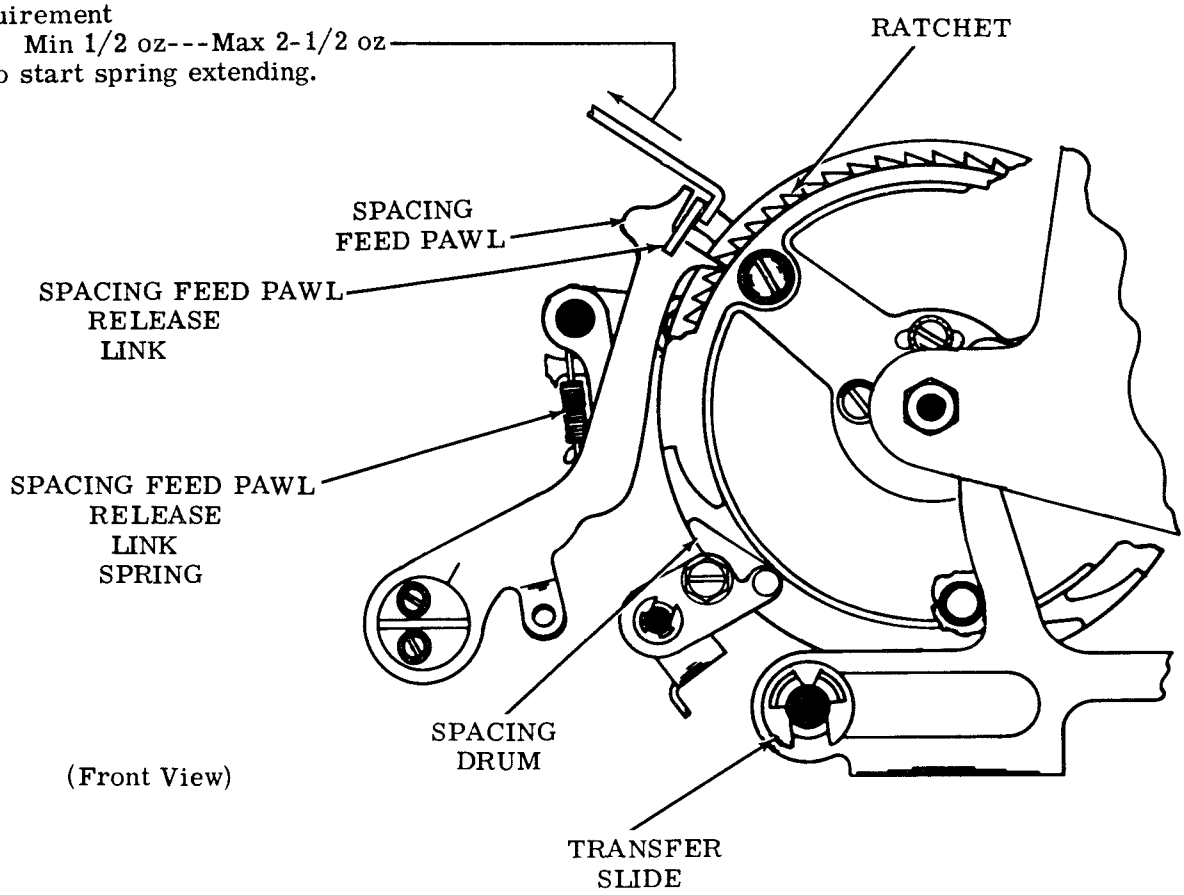
To Adjust
Print hammer carriage and typebox carriage at extreme right-hand position. Loosen carriage draw wire rope clampscrews. Loosen spring drum draw wire rope clampscrew. Adjust draw wire rope for equal tension. Tighten clampscrews.

Affected Adjustments
OSCILLATING RAIL SLIDE POSITION — FRICTION FEED (2.52)
PRINT HAMMER CARRIAGE POSITION (2.69)
SPACING DRAW WIRE ROPE ALIGNMENT (2.69)

2.54 Spacing and Carriage Return Mechanisms (continued)

SPACING FEED PAWL RELEASE LINK SPRING

Requirement
Min 1/2 oz---Max 2-1/2 oz
to start spring extending.



(Front View)

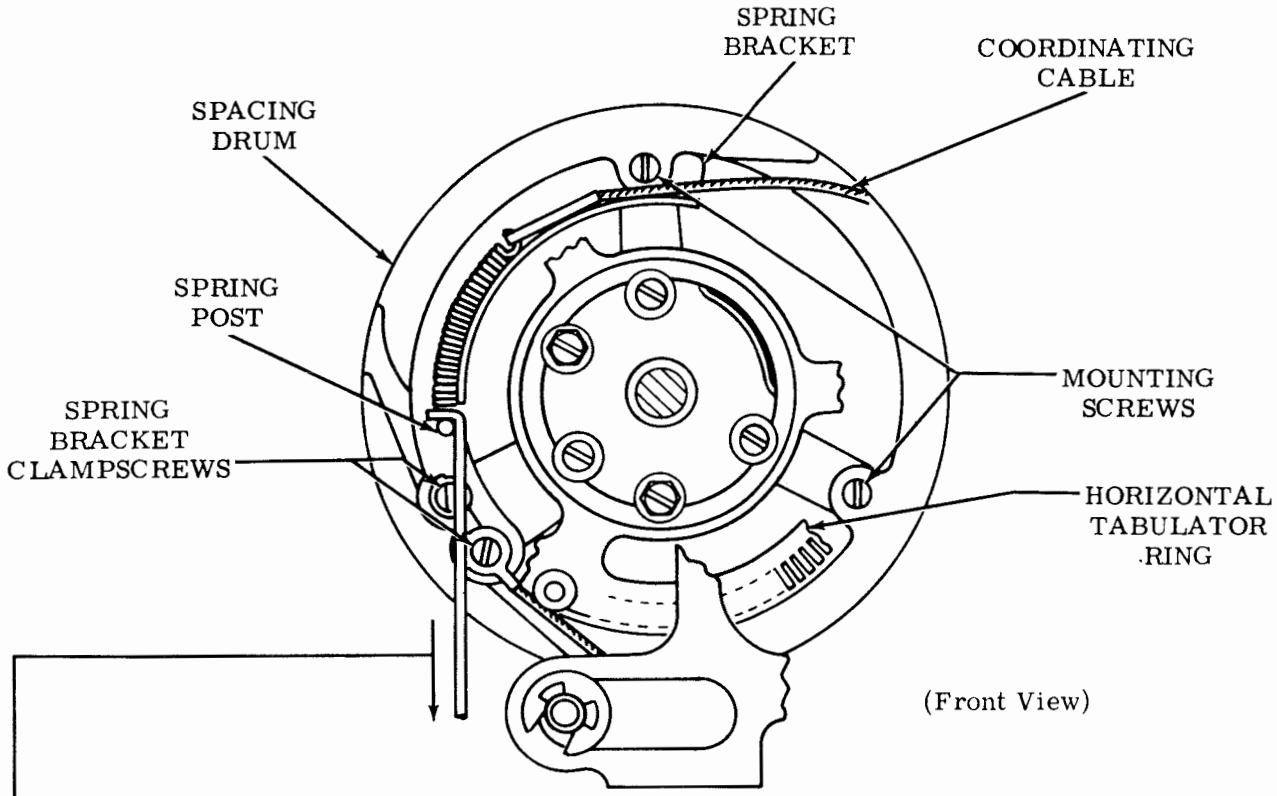
2.55 Spacing and Carriage Return Mechanisms (continued)

COORDINATING CABLE

Note: In order to check this spring tension it is necessary to remove the horizontal tabulator ring. It therefore should not be checked unless there is good reason to believe that it does not meet the requirement. If this check is made, check the following adjustments: PRINT HAMMER CARRIAGE POSITION (2.69), LEFT MARGIN (2.58), DASHPOT TOP VENT SCREW (2.59), and all HORIZONTAL TABULATION MECHANISM adjustments (3.01 through 3.05).

To Check

Mark position of horizontal tabulator ring on spacing drum. Remove horizontal tabulator ring mounting screws and rotate horizontal tabulator ring out of position. Engage spacing feed pawl. Loosen spring bracket clamp and mounting screws.



Requirement

Min 10 lb---Max 11 lb tension on coordinating cable tension spring at spring post.

To Adjust

Holding spring at a tension of 10 to 11 pounds, tighten screws. Replace horizontal tabulation ring.

CAUTION: MOUNTING SCREW SHOULD NOT CLAMP ON COORDINATING CABLE.

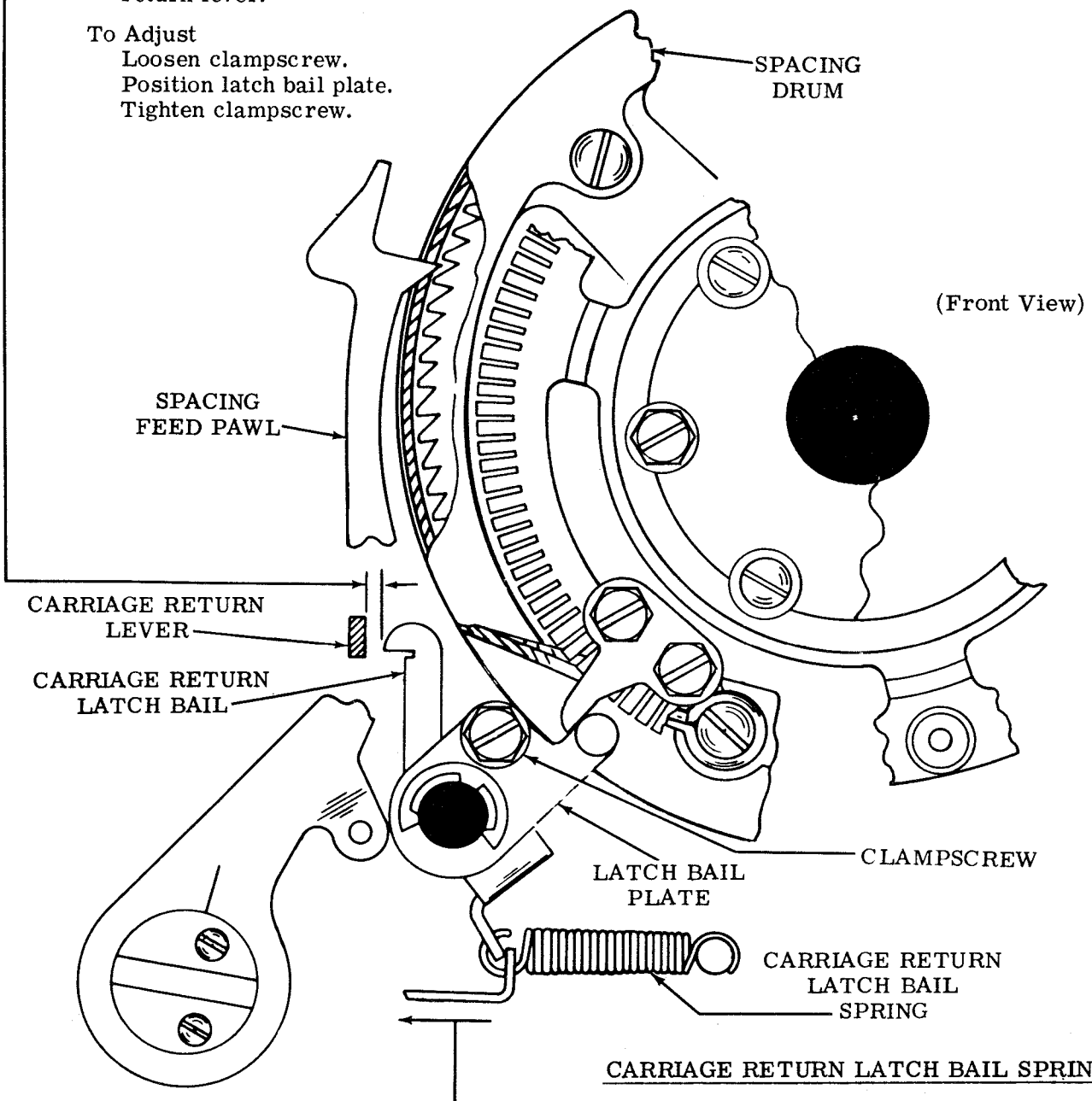
2.56 Spacing and Carriage Return Mechanism (continued)

CARRIAGE RETURN LATCH BAIL

To Check
Carriage fully returned. Play in carriage return bail taken up (2.57), to right, by holding right side of bail against its retainer.

Requirement
Min 0.004 inch---Max 0.040 inch clearance between carriage return latch bail and carriage return lever.

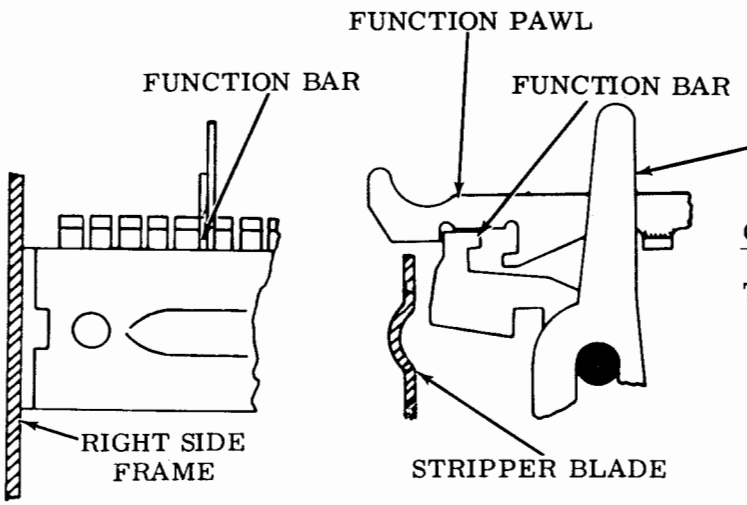
To Adjust
Loosen clampscrew.
Position latch bail plate.
Tighten clampscrew.



CARRIAGE RETURN LATCH BAIL SPRING

Requirement
Spacing drum fully returned.
Min 3 oz---Max 4-1/2 oz to start latch bail moving.

2.57 Spacing and Carriage Return Mechanism (continued)



CARRIAGE RETURN LEVER

To Check

Carriage return function set up on transfer levers. Main shaft rotated until function clutch stop-lug is toward bottom of unit. Carriage return function pawl hooked over its function bar. Spacing drum held so that carriage return latch bail is latched.

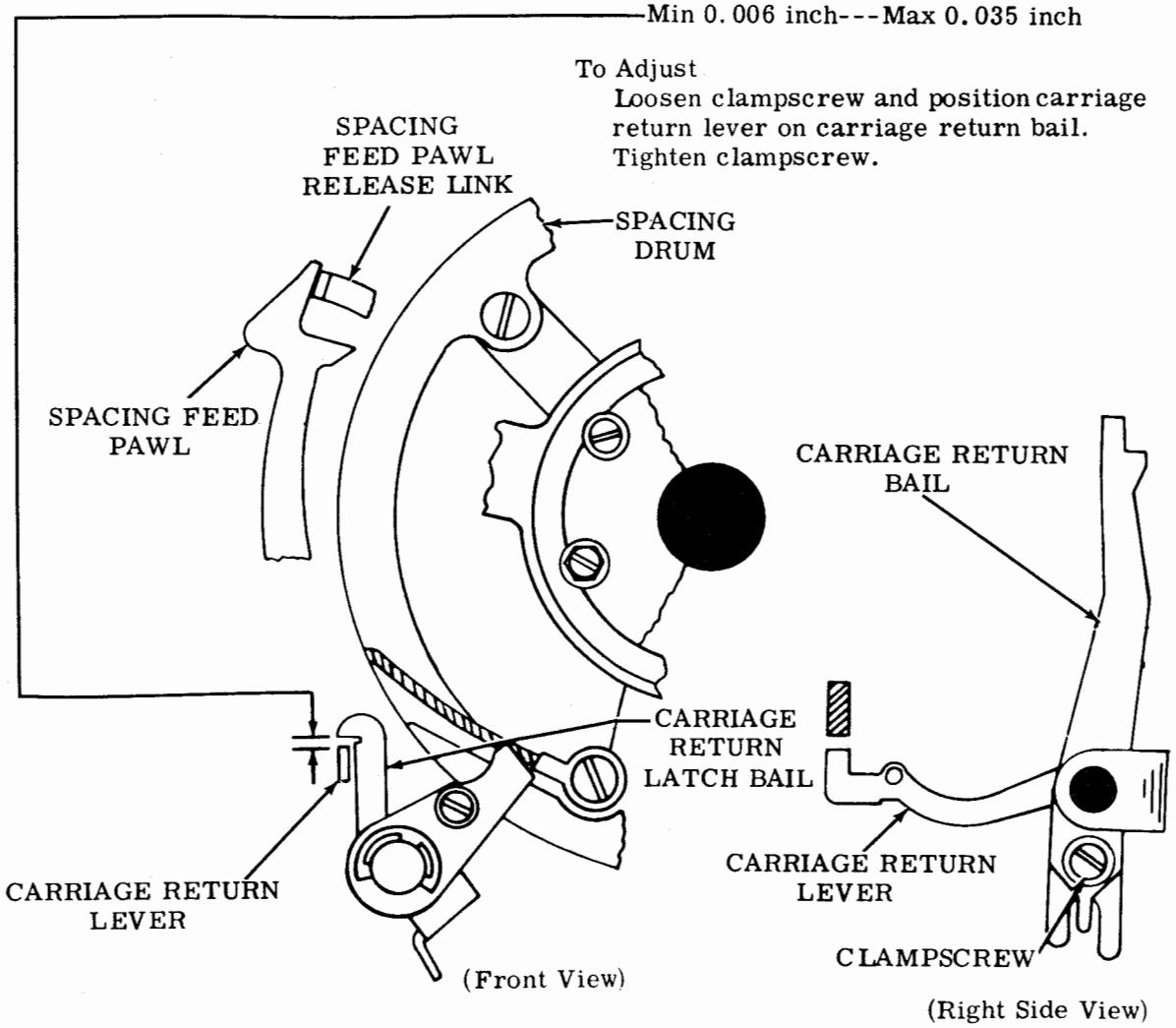
Requirement

Clearance between latch bail and carriage return lever should be

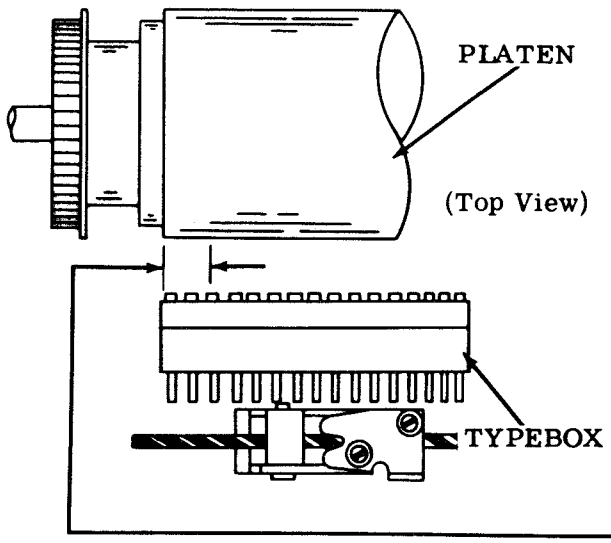
Min 0.006 inch---Max 0.035 inch

To Adjust

Loosen clampscrew and position carriage return lever on carriage return bail. Tighten clampscrew.



2.58 Spacing and Carriage Return Mechanism (continued)



LEFT MARGIN

(1) To Check

All codebars spacing. Rotate main shaft to disengage (latch) all clutches. Carriage fully returned.

Note: Maximum number of characters per line using 10 characters per inch is 72 characters for either friction feed or sprocket feed platens. The following margin requirement is for a typical 72-character line, using a friction feed platen, and may be varied as required to accommodate any number of characters per line up to the maximum. For the corresponding requirement using a sprocket feed platen, see RIGHT AND LEFT MARGINS (2.86) adjustment.

Requirement (for 72-character line)

Left edge of platen and left edge of typebox should be in line as gauged by eye.

(2) To Check

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

(1) Requirement

Clearance between pawl and shoulder of ratchet wheel tooth immediately ahead should be

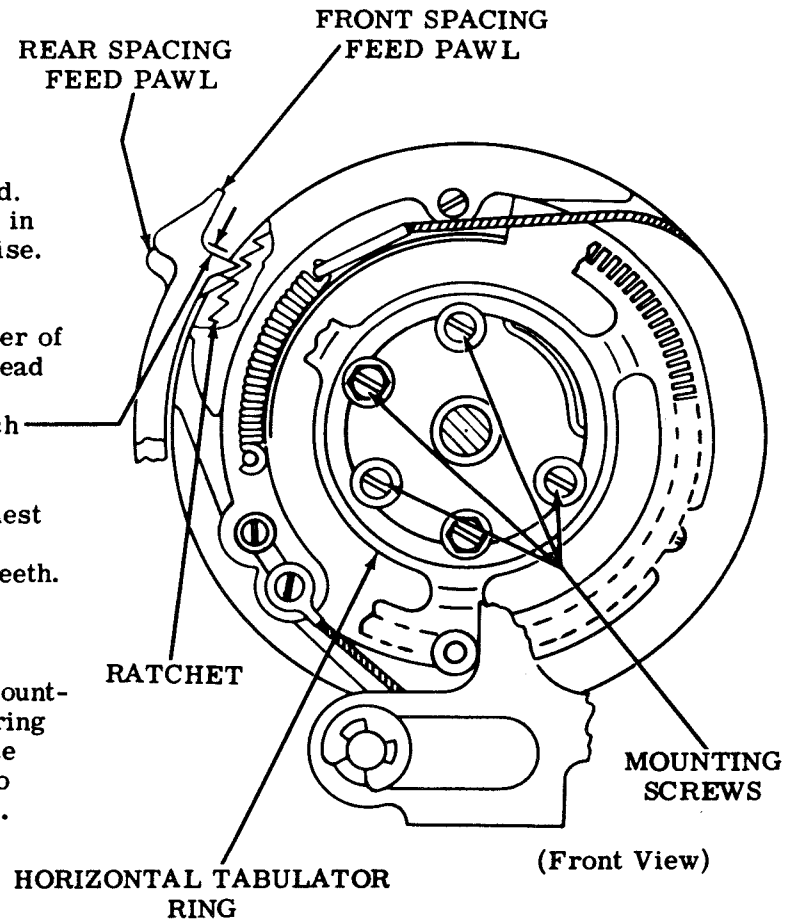
Min 0.002 inch---Max 0.015 inch

(2) Requirement

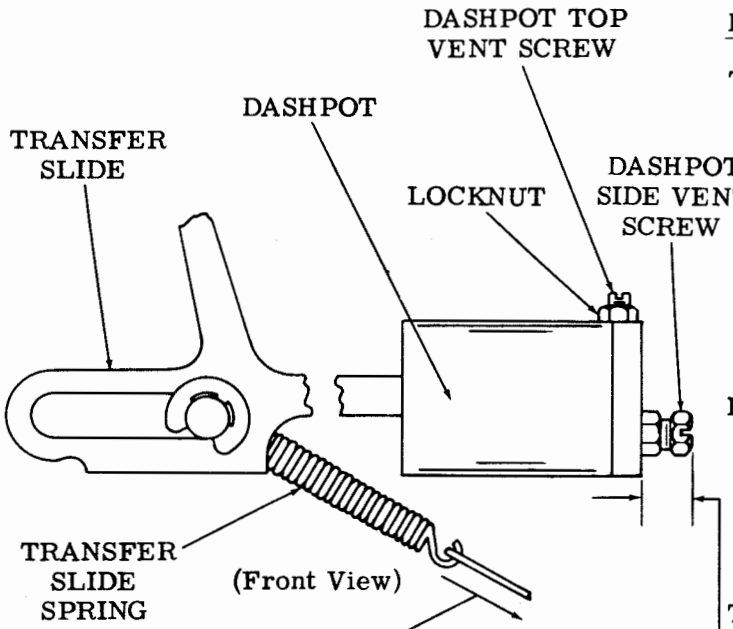
Rear spacing feed pawl, when farthest advanced, should rest at bottom of indentation between ratchet wheel teeth.

To Adjust

Return print carriage to left position. Loosen four horizontal tabulator ring mounting screws. Hold horizontal tabulator ring in its counterclockwise position. Locate typebox as per requirement under (1) To Check above. Tighten mounting screws.



2.59 Spacing and Carriage Return Mechanism (continued)



DASHPOT TOP VENT SCREW

To Check
Printer operated at 150 wpm from automatic transmitting device. End-of-line sequence is CARRIAGE RETURN, LINE FEED, and DELETE. On machines equipped with the new-line-character, end-of-line sequence is NEW-LINE, DELETE, and DELETE. First character of each line must be printed in same location.

Requirement
First graphic character should be printed in same location as if unit were manually operated slowly. Typebox carriage should return from any length of line without bouncing.

To Adjust
Loosen locknut and turn down top vent screw until slight pneumatic bounce is perceptible. Back off screw until effect disappears. Then back screw off 1/4 turn. Tighten locknut.

Note: If unit has side vent screw and above adjustment is not effective, turn in side vent screw 1/2 turn at a time (do not over tighten locknut on side vent screw).

TRANSFER SLIDE SPRING

Requirement
With transfer slide in extreme left and spring unhooked
—Min 1-1/2 oz---Max 2-1/2 oz
to pull spring to installed length.

Note 1: Perform the following adjustment, if unit has side vent screw.

DASHPOT SIDE VENT SCREW

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

Requirement
Side vent screw must be
—Max 0.250 inch
from end of screw to side of dashpot.

To Adjust
Loosen locknut and adjust. Tighten locknut.

Note 2: Do not remove side vent screw, unless printing carriage is securely tied to stop it from returning to the left.

2.60 Horizontal Positioning Mechanism (continued)

OSCILLATING ARM - HORIZONTAL DETENT DISC PHASING

To Check

Codebars 1 and 7 spacing. all other codebars marking. All clutches disengaged (latched).

(1) Requirement

Oscillating arm gear tooth marked with O (3rd tooth) should be meshed with pinion gear on horizontal detent disc.

(2) Requirement

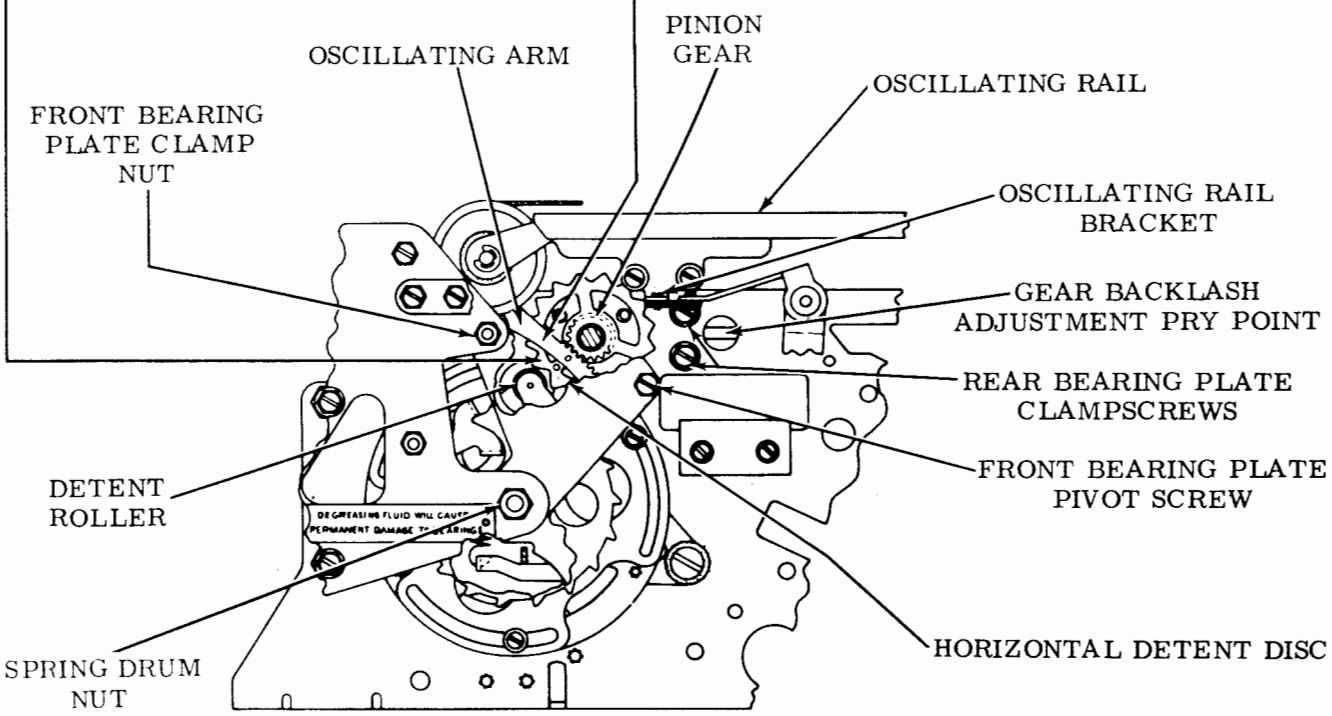
Number 1 notch on horizontal 7 detent disc (notch below small hole) should be centered above detent roller.

To Adjust

Loosen two rear bearing plate clampscrews, front bearing plate clamp nut, and spring drum nut. Separate oscillating arm from pinion gear by means of gear backlash adjustment pry point. Rephase oscillating arm and pinion gear. Tighten clampscrews and nut and spring drum nut.

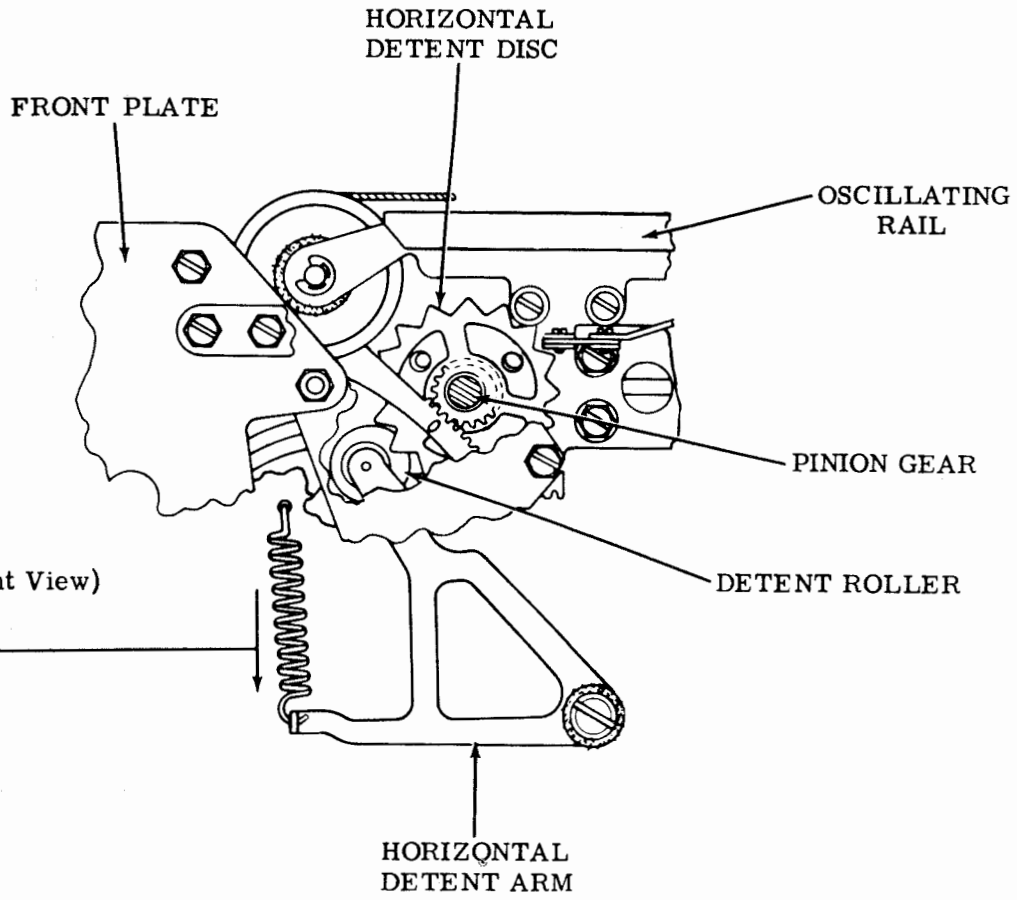
Affected Adjustments

FRONT BEARING PLATE ALIGNMENT (2.63)
OSCILLATING ARM-HORIZONTAL DETENT DISC GEAR BACKLASH (2.64)



(Front View)

2.61 Horizontal Positioning Mechanism (continued)



HORIZONTAL DETENT SPRING

To Check

Print hammer clutch engaged (unlatched). Horizontal detent arm in notch on horizontal disc.

Requirement

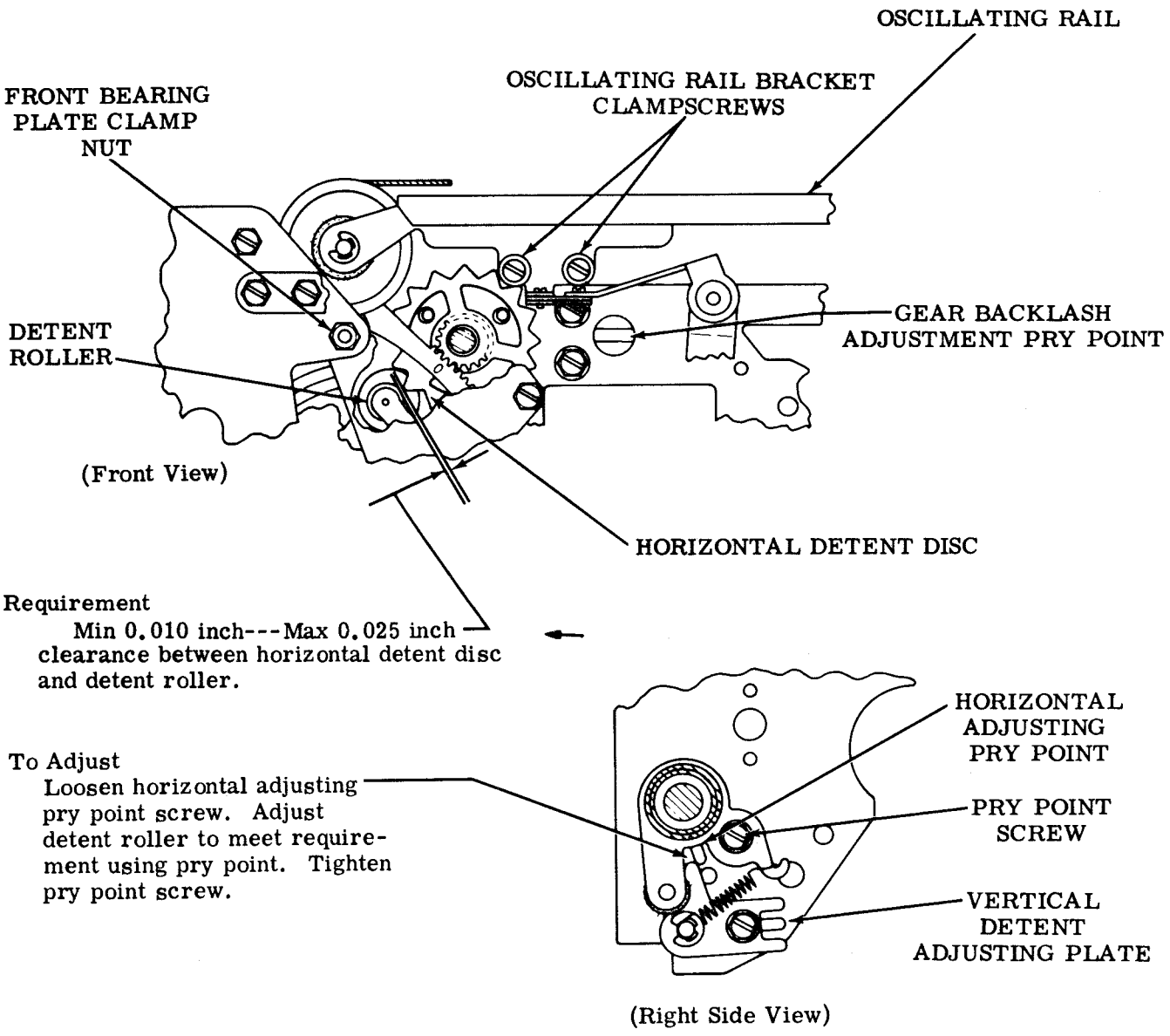
Min 30 oz---Max 34 oz
to start horizontal detent arm moving.

2.62 Horizontal Positioning Mechanism (continued)

HORIZONTAL DETENT DISC - DETENT ROLLER CLEARANCE

To Check

All main shaft clutches disengaged (latched). Engage a horizontal positioning clutch and rotate main shaft until detent roller is above a high part of horizontal detent disc.



2.63 Horizontal Positioning Mechanism (continued)

FRONT BEARING PLATE ALIGNMENT

To Check

Codebars 1, 2, 3, and 4 spacing, all other codebars marking. All clutches disengaged (latched). Oscillating rail bracket clampscrews removed.

Requirement

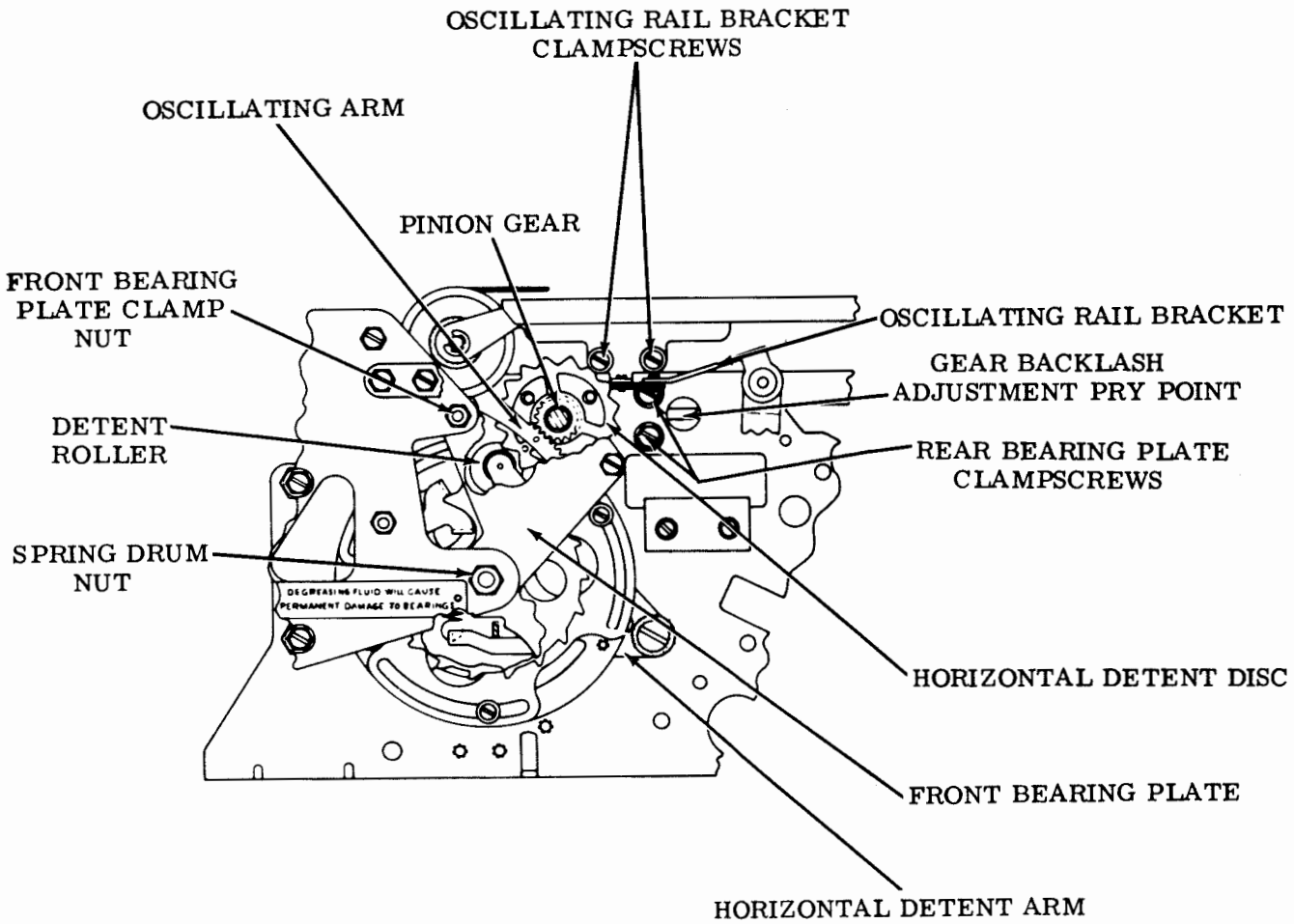
Oscillating rail should move smoothly through its full range of travel without binding.

To Adjust

Loosen rear bearing plate clampscrews. Loosen front bearing plate clamp nut, pivot screw, and spring drum nut. Using gear backlash adjustment pry point, obtain some backlash in horizontal detent disc oscillating arm gearset. Rotate front bearing plate downward about the pivot screw while manually moving oscillating rail back and forth until horizontal detent disc binds slightly on front bearing plate. Rotate front bearing plate upward until horizontal detent disc turns freely. Tighten front bearing plate pivot screw rear bearing plate clampscrews, front bearing plate clamp nut, and spring drum nut.

Affected Adjustments

OSCILLATING ARM-HORIZONTAL DETENT DISC GEAR BACKLASH (2.64)
LOCAL LINE FEED LEVER (2.24)



(Front View)

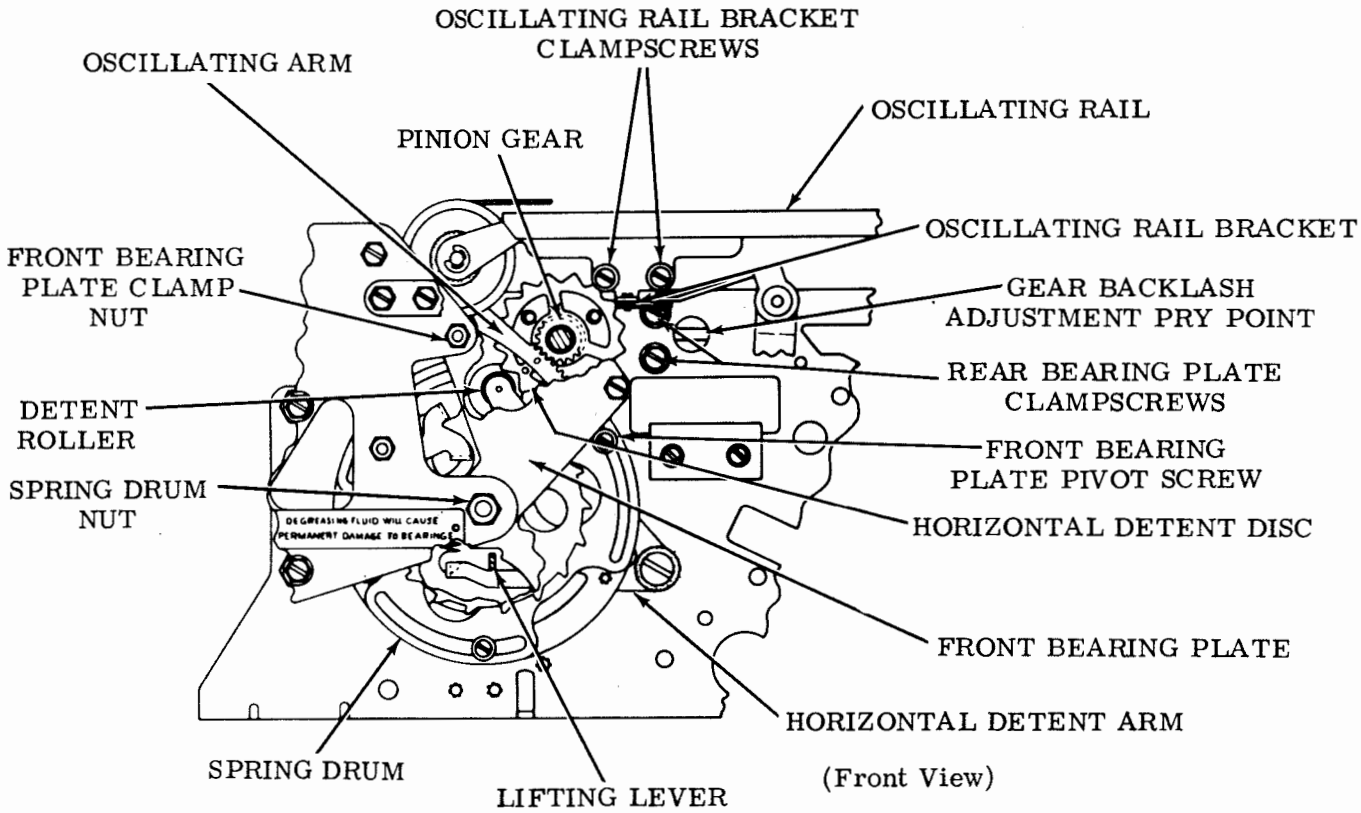
2.64 Horizontal Positioning Mechanism (continued)

OSCILLATING ARM - HORIZONTAL DETENT DISC GEAR BACKLASH

To Check
Codebars 1 and 7 spacing, all other codebars marking. All clutches disengaged (latched). Oscillating rail bracket clampscrews removed.

Requirement
Engage print hammer clutch and rotate main shaft until detent roller is fully seated in a notch of the horizontal detent disc. There should be no noticeable backlash in the horizontal detent disc oscillating arm gearset 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 nut and spring drum nut. Using gear backlash adjustment pry point, close backlash until slight tooth contact is felt while manually moving oscillating rail back and forth. Tighten rear bearing plate clampscrews, front bearing plate clamp nut, and spacing drum nut.



HORIZONTAL AGGREGATE - DAMPENER SYNCHRONIZATION

To Check
Codebars 1 and 7 spacing, all other codebars marking. All clutches disengaged (latched). Engage print hammer clutch.

Requirement
Slowly rotate main shaft until detent roller is fully down. Horizontal detent disc should not be deflected when engaged by detent roller.

To Adjust
Loosen oscillating rail bracket clampscrews. Engage print hammer clutch and rotate main shaft until detent roller is fully down. Without disturbing unit, tighten oscillating rail clampscrews.

2.65 Printing Mechanism

PRINT HAMMER SHAFT

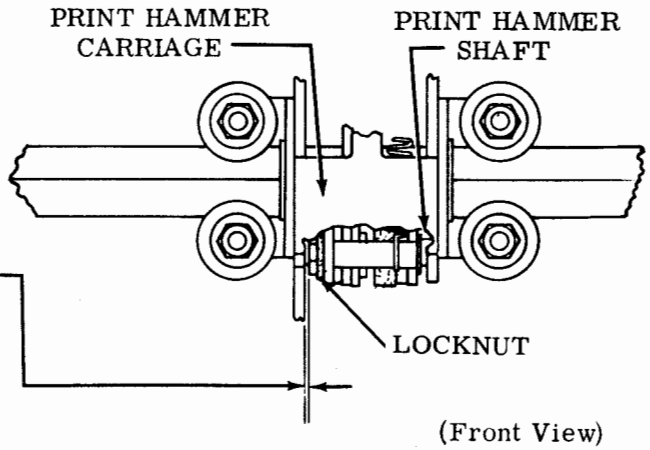
Note: This adjustment should be made only if shaft has been removed or if locknut is found to be loose.

Requirement

Min 0.002 inch---Max 0.006 inch clearance between end of shaft and outer surface of print hammer carriage.

To Adjust

Loosen print hammer shaft locknut. Rotate shaft to meet requirement. Tighten print hammer shaft locknut.



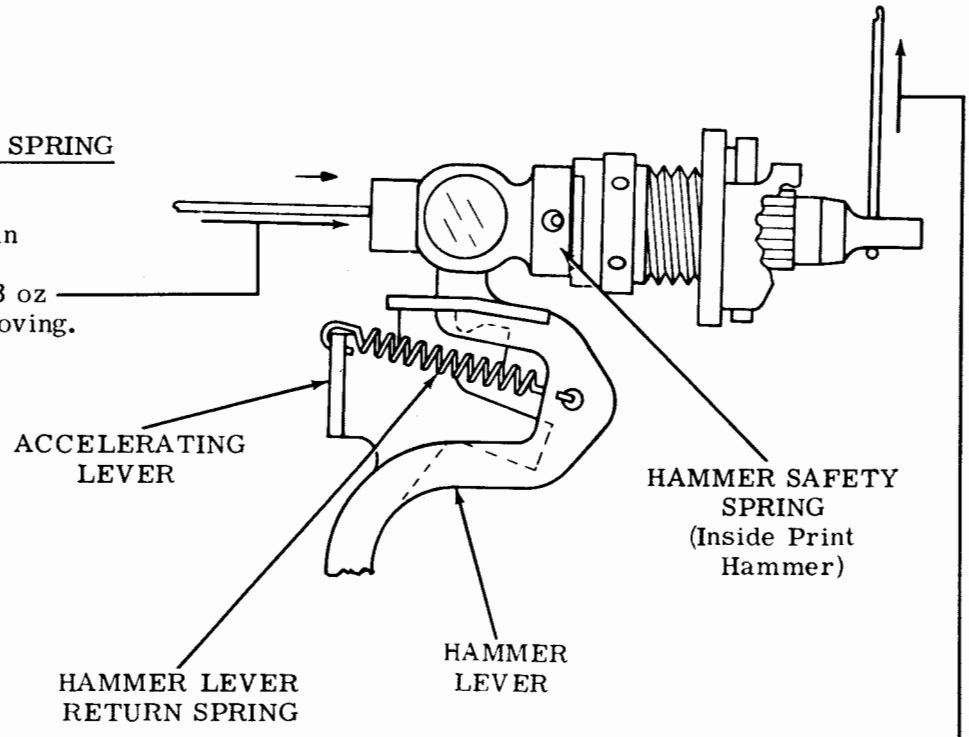
(Front View)

HAMMER LEVER RETURN SPRING

Requirement

With accelerating lever in latched position

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



(Right Side View)

HAMMER SAFETY SPRING

To Check

Manually push print hammer towards platen.

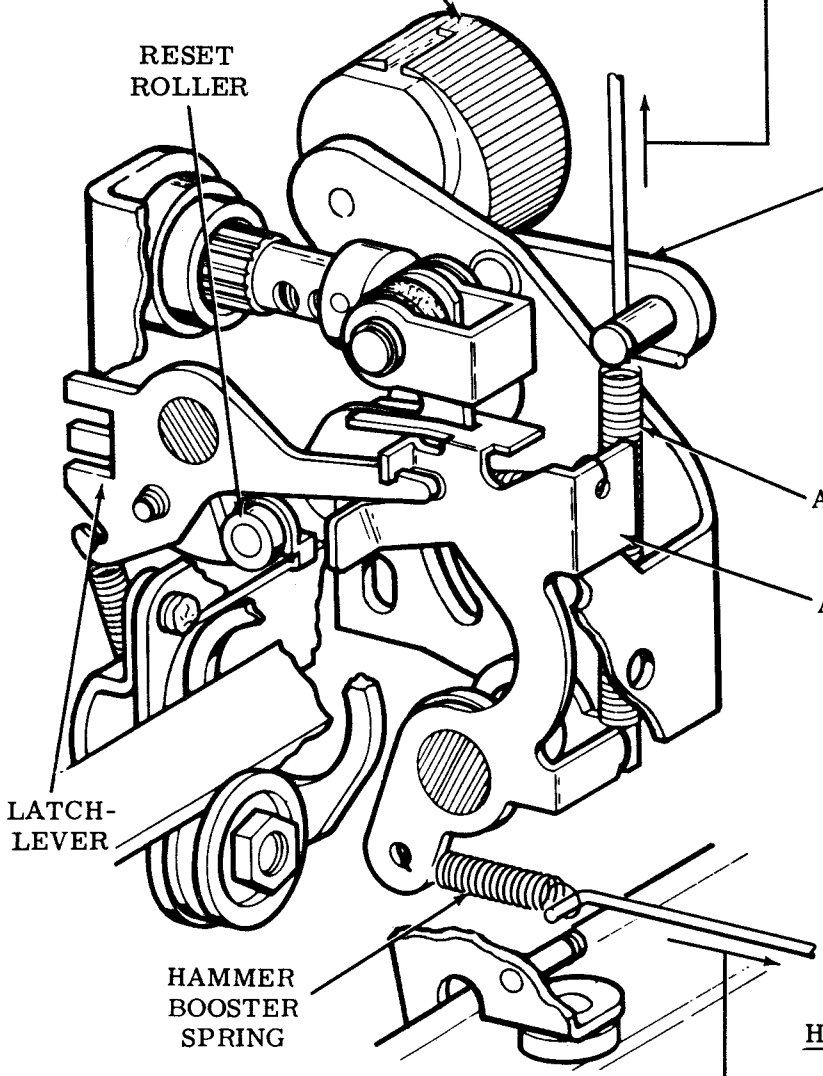
Requirement

Min 8 oz---Max 12 oz to start print hammer moving.

2.66 Printing Mechanism (continued)

HAMMER ACCELERATING SPRING

Requirement
Multiple copy knob in single copy position. Accelerating lever in unlatched position.
Min 25 oz---Max 32 oz
to start spring lever moving.



(Left Front View)

HAMMER BOOSTER SPRING

Requirement
Accelerating lever in unlatched position. Hammer booster spring unhooked from post.
Min 30 oz---Max 40 oz
to extend spring to installed length.

2.67 Printing Mechanism (continued)

PRINT HAMMER ROLLERS

To Check

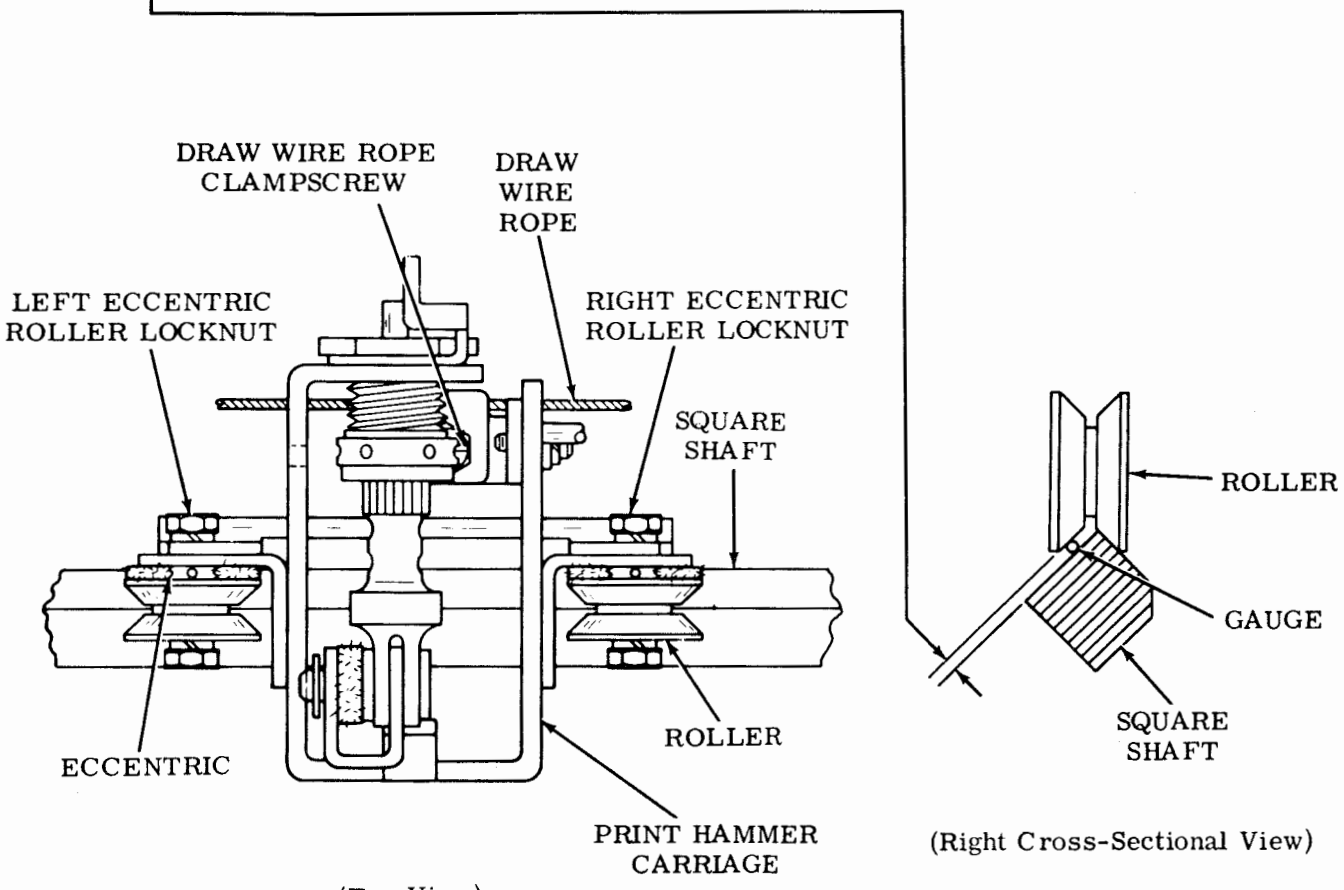
Loosen print hammer draw wire rope clampscrew. Pull print hammer towards front of unit until latchlever engages accelerating lever. Engage codebar clutch and rotate main shaft until there is some clearance between hammer reset roller and accelerating lever.

(1) Requirement

Print hammer carriage should not bind while traversing length of square shaft.

(2) Requirement

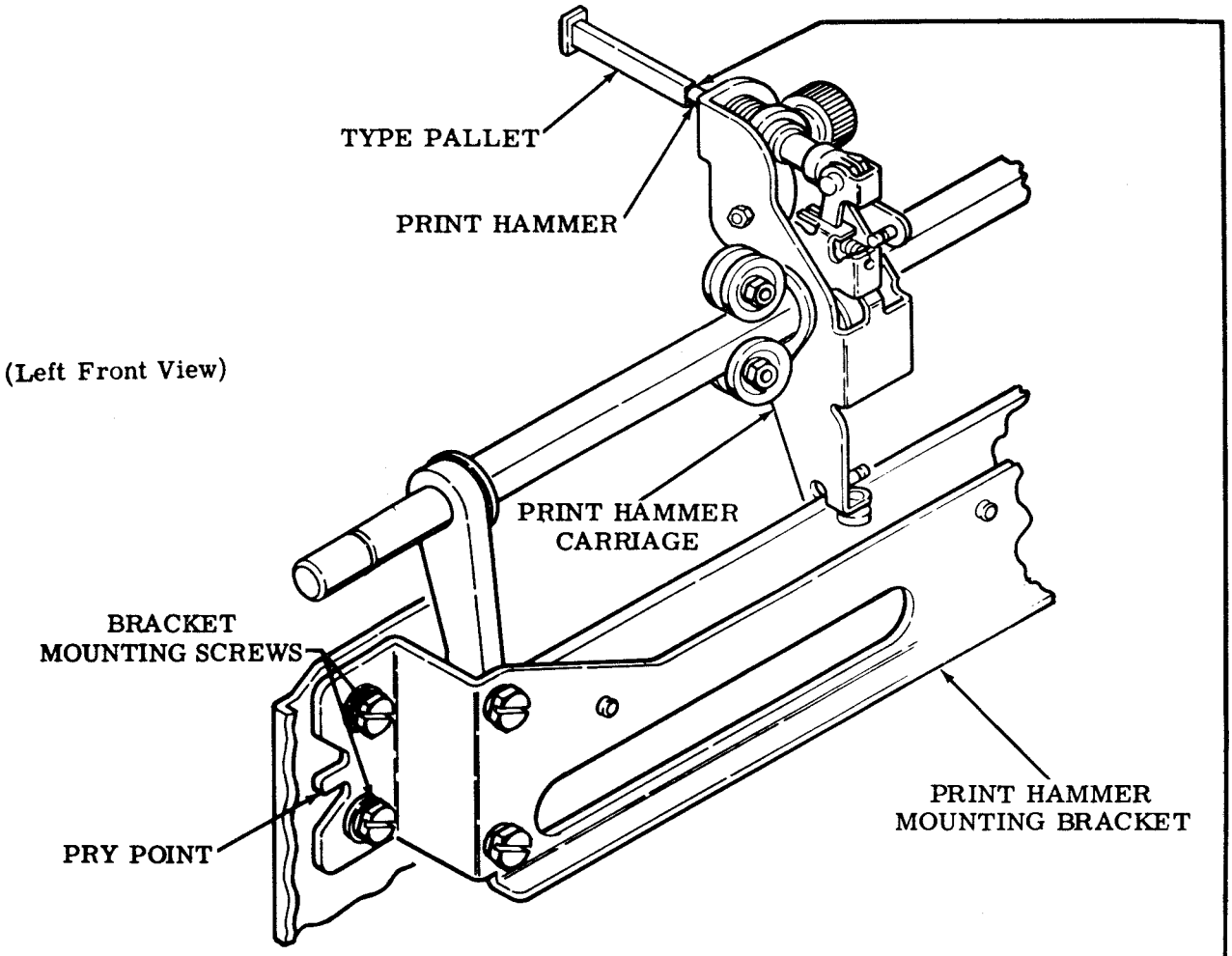
Min some---Max 0.007 inch clearance between carriage rollers and square shaft at any point along square shaft.



To Adjust

Loosen both eccentric locknuts (top). Rotate left eccentric for maximum clearance. With 0.003 inch gauge between right roller and square shaft, rotate right eccentric until carriage binds. Tighten right eccentric locknut. Traverse carriage length of square shaft. Refine adjustment if necessary. With 0.003 inch gauge between left roller and square shaft, rotate left eccentric until carriage binds. Tighten left eccentric locknut. Traverse carriage length of square shaft. Refine adjustment if necessary.

2.68 Printing Mechanism (continued)



PRINT HAMMER MOUNTING BRACKET

Requirement

Print hammer should strike center of type pallet at both extreme ends of hammer carriage travel.

To Adjust

Loosen four bracket mounting screws (two at each end) friction tight. With print hammer and typebox carriages fully returned, trip print hammer clutch and rotate until stop-lug is toward bottom of unit. Position print hammer in center of type pallet by means of left pry point. Repeat procedure with print hammer and typebox carriages at extreme right position. Tighten four bracket mounting screws. Return both carriages at left margin and recheck adjustment.

Affected Adjustments

PRINT HAMMER LATCHLEVER (2.71)
PRINT HAMMER LATCH TRIP (2.72)
RIBBON FEED MAIN BRACKETS (LEFT AND RIGHT) (2.80)
RIBBON FEED PAWL BRACKETS (LEFT AND RIGHT) (2.81)
RIBBON REVERSING LEVER SLIDE (LEFT AND RIGHT) (2.80)
SPACING DRAW WIRE ROPE ALIGNMENT (2.69)

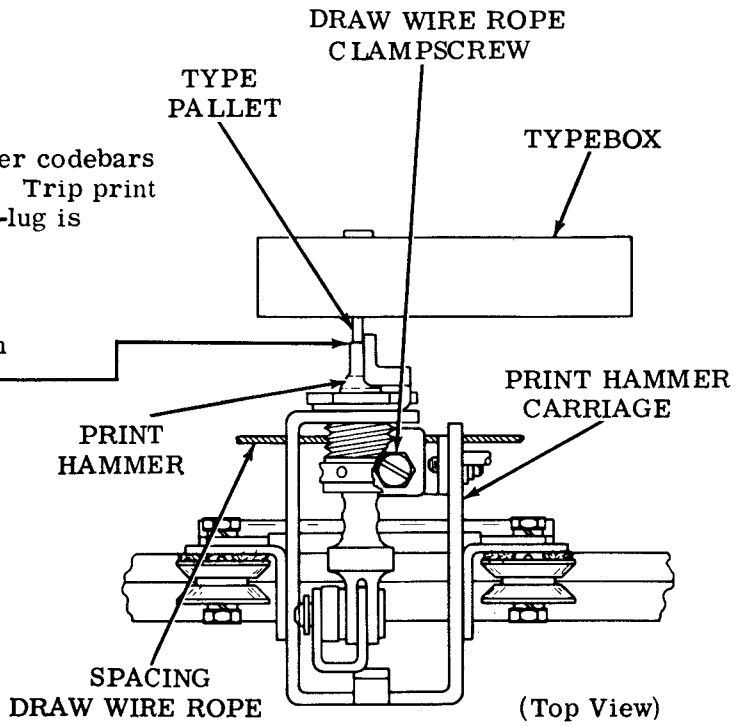
2.69 Printing Mechanism (continued)

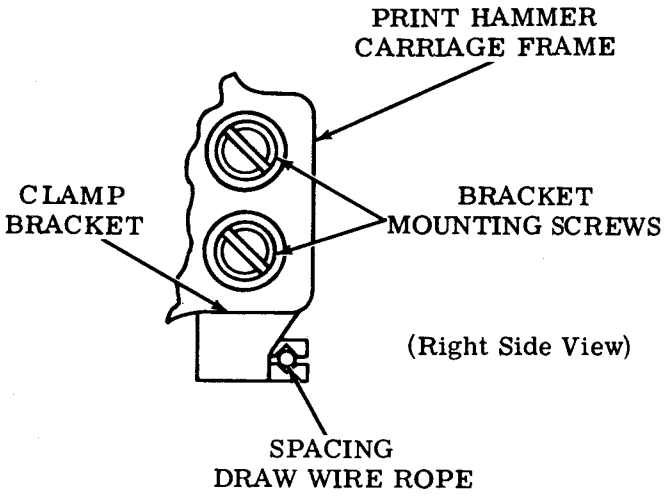
PRINT HAMMER CARRIAGE POSITION

To Check
Codebars 2, 3, 4, and 6 marking. All other codebars spacing. Positioning clutches disengaged. Trip print hammer clutch and rotate clutch until stop-lug is toward bottom of unit.

Requirement
Print hammer should be aligned with type pallet at the far left in the fourth row from the bottom of the typebox.

To Adjust
Loosen rope clampscrew and position print hammer carriage on spacing draw wire rope. Tighten clampscrew.



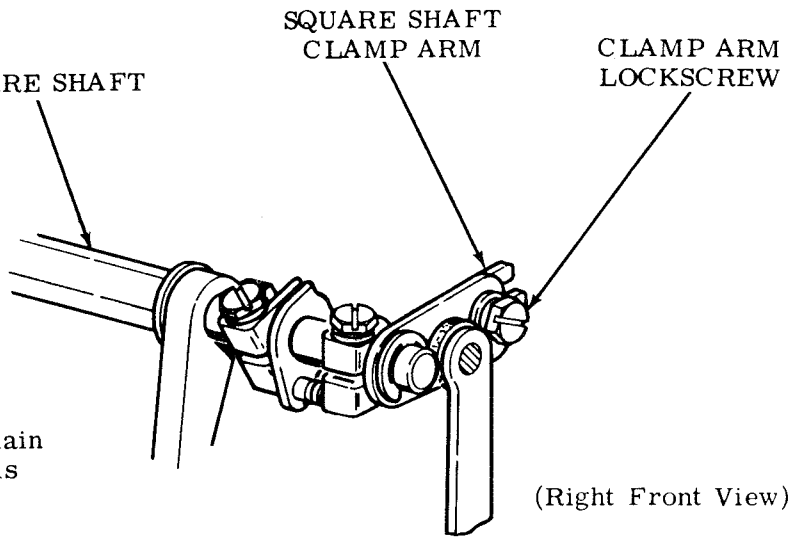


SPACING DRAW WIRE ROPE ALIGNMENT

Requirement
Spacing draw wire rope should form a straight line and be tangent to the top of its two pulleys.

To Adjust
Loosen bracket mounting screws and allow clamp bracket to seek its own height. Tighten bracket mounting screws.

2.70 Printing Mechanism (continued)



(Right Front View)

SQUARE SHAFT DRIVE ARM

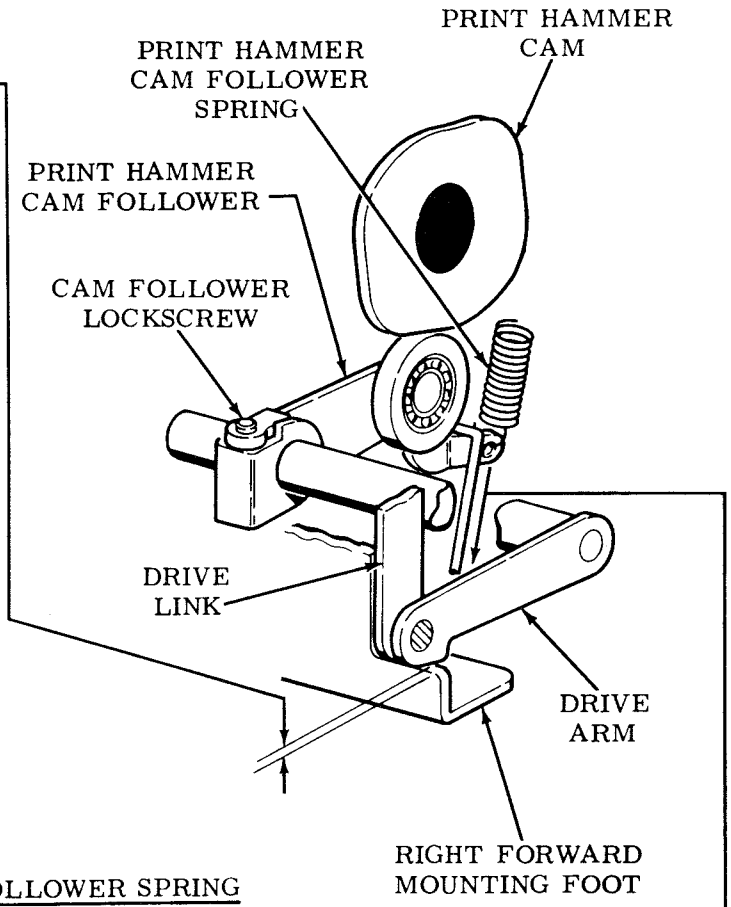
To Check
Engage print hammer clutch. Rotate main shaft until print hammer cam follower is on low part of cam.

Requirement
Clearance between drive arm and right forward mounting foot should be
Min 0.050 inch---Max 0.070 inch

To Adjust
With forward end of drive arm in lowest position, loosen clamp arm lockscrew and cam follower lockscrew. Position drive arm to meet requirement. Tighten lockscrews.

Note: Print hammer cam follower should be centered on print hammer clutch.

Affected Adjustments
PRINT HAMMER LATCHLEVER (2.71)
PRINT HAMMER LATCH TRIP (2.72)
RIBBON FEED MAIN BRACKETS (LEFT AND RIGHT) (2.80)
RIBBON FEED PAWL BRACKETS (LEFT AND RIGHT) (2.81)
RIBBON REVERSING LEVER SLIDE (LEFT AND RIGHT) (2.80)



PRINT HAMMER CAM FOLLOWER SPRING

To Check
Drive link removed. All clutches disengaged.

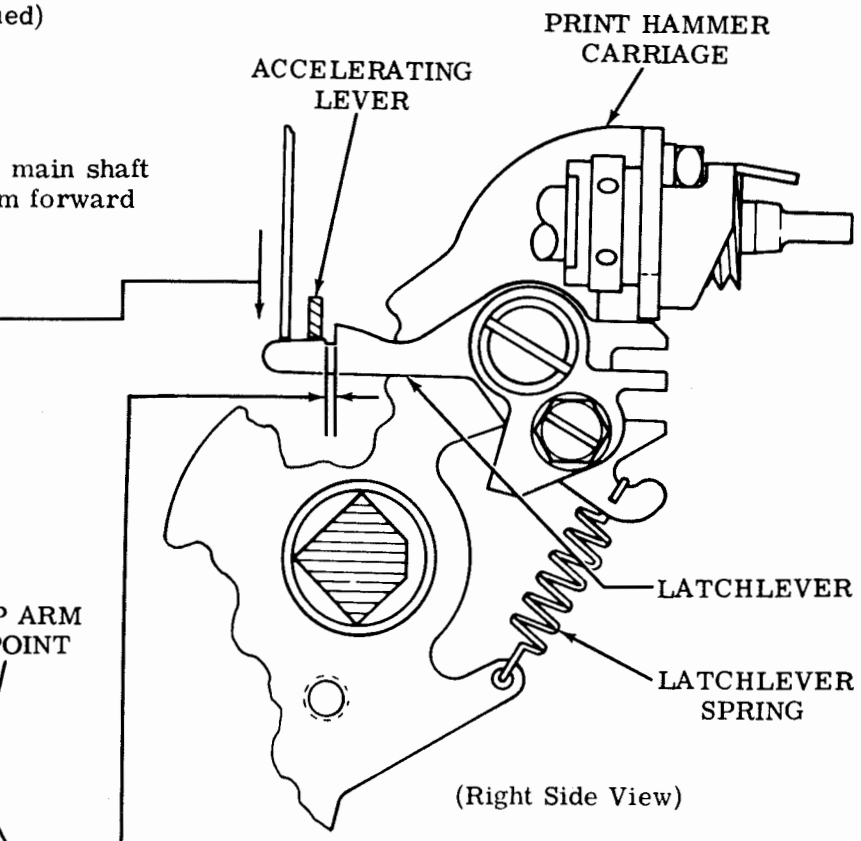
Requirement
Min 5 lb---Max 6-1/2 lb
to pull cam follower away from cam.

2.71 Printing Mechanism (continued)

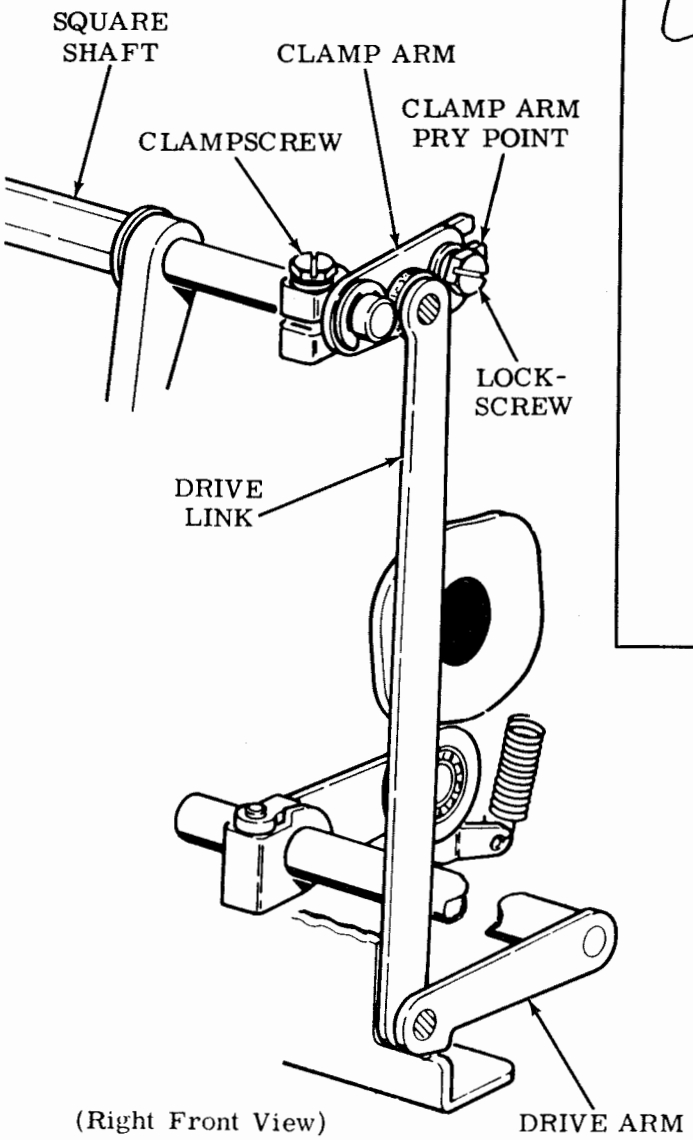
LATCHLEVER SPRING

To Check
Engage codebar clutch and rotate main shaft until print hammer is in maximum forward position.

Requirement
Min 2 oz---Max 5 oz to start latchlever moving.



(Right Side View)



(Right Front View)

PRINT HAMMER LATCHLEVER

To Check
Drive arm in highest position. Play in accelerating lever taken up toward rear of typing unit.

Requirement
Clearance between latchlever and accelerating lever should be
Min 0.005 inch---Max 0.015 inch

To Adjust
Loosen clampscrew securing clamp arm, and position square shaft. Tighten clampscrew. Refine adjustment by means of clamp arm pry point with lockscrew loosened friction tight.

Affected Adjustments
PRINT HAMMER LATCH TRIP (2.72)
RIBBON FEED MAIN BRACKETS (LEFT AND RIGHT) (2.80)
RIBBON FEED PAWL BRACKETS (LEFT AND RIGHT) (2.81)
RIBBON REVERSING LEVER SLIDE (LEFT AND RIGHT) (2.80)

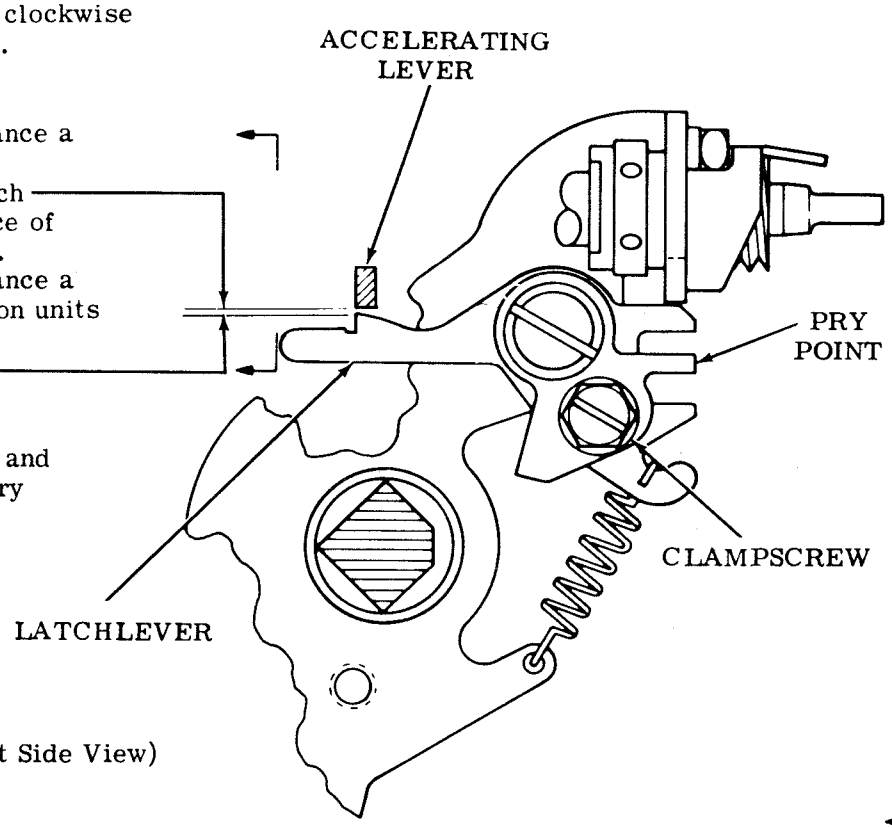
2.72 Printing Mechanism (continued)

PRINT HAMMER LATCH TRIP

To Check
Print hammer held in latched position. Square shaft rotated in maximum clockwise position (viewing from right side).

Requirement
With play taken up to make clearance a minimum and ribbon all black
Min 0.10 inch---Max 0.020 inch clearance between latching surface of latchlever and accelerating lever.
With play taken up to make clearance a minimum and ribbon in red field on units with two-color ribbons
Min some---Max 0.010 inch

To Adjust
Loosen clampscrew friction tight and position latchlever by means of pry point. Tighten clampscrew.



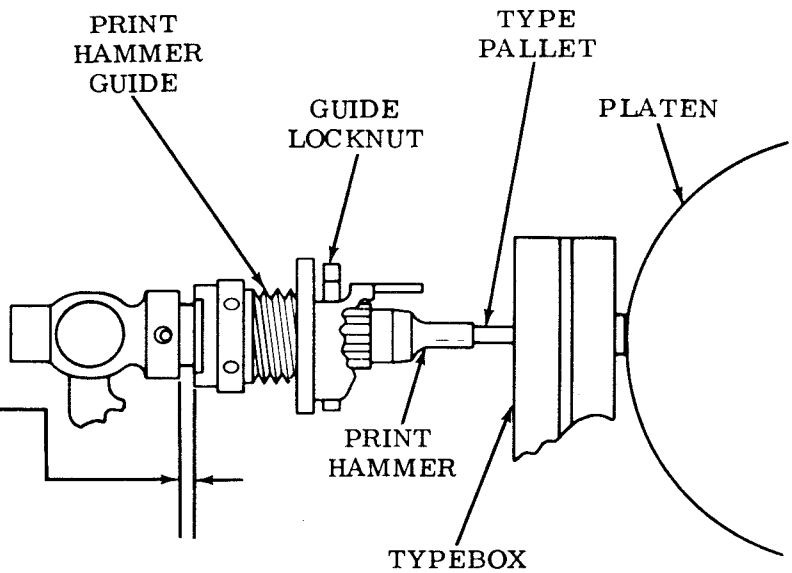
(Right Side View)

PRINT HAMMER GUIDE

Note: This adjustment should be made with carriage at center of platen and without taking up any play in the print hammer carriage frame.

To Check
Min 0.030 inch---Max 0.050 inch between print hammer and print hammer guide, when pallet engages platen.

To Adjust
Loosen guide locknut and rotate print hammer guide to meet requirement. Tighten locknut.



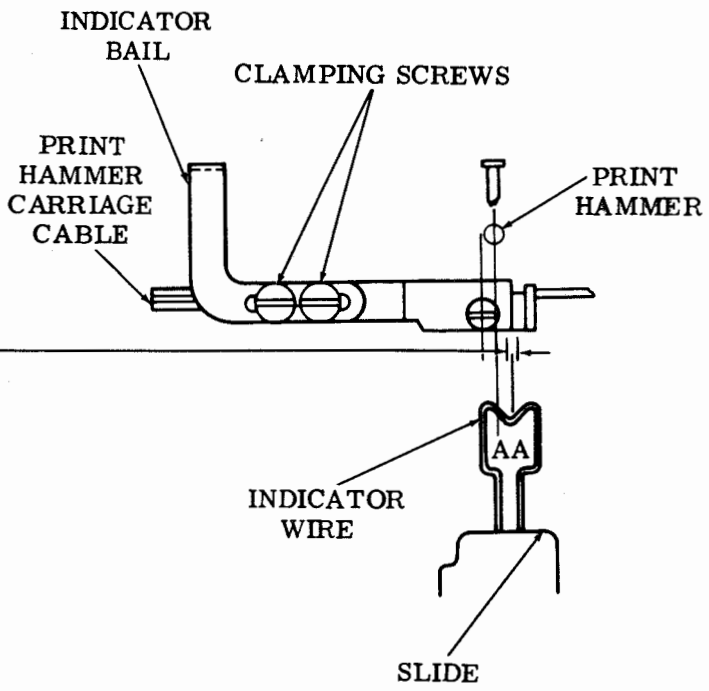
(Right Side View)

2.73 Printing Mechanism (continued)

PRINT POSITION INDICATOR

To Check

Printing carriage in center of platen, retractive mechanism held inoperative, and character "A" selected. Trip codebar clutch to print "A" twice. Manually return carriage then move it to the right, until it is just short of the two letters. Trip spacing clutch so typebox moves to right until the letter "A" pallet is in front of the left "A".



Requirement

Max 1/32 inch center of print point indicator notch in line with center line of second "A".

To Adjust

Loosen the two indicator bail clamping screws. Keep bail rotated clockwise as much as play allows. Position slide to meet requirement. Tighten both screws.

Note: When checking adjustment, make sure indicator slide is not tilted sideways.

2.74 Printing Mechanism (continued)

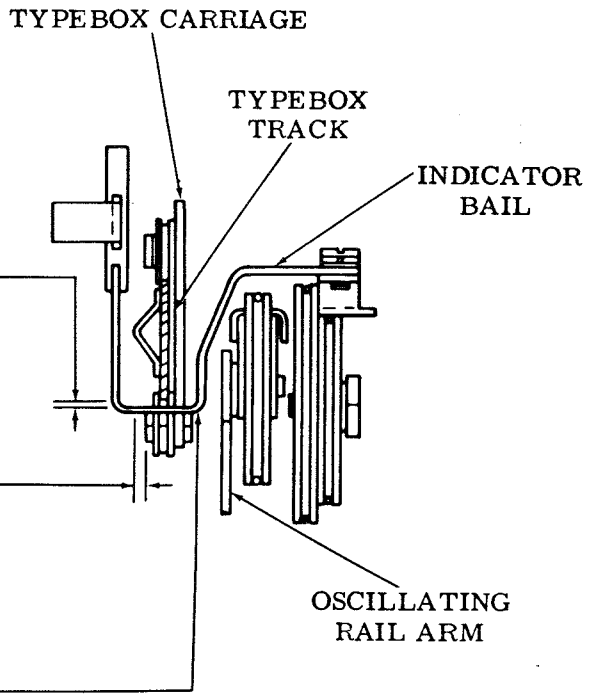
PRINT POSITION INDICATOR BAIL AND TYPEBOX

To Check
Play taken up to make clearance minimum by rocking print hammer carriage forward.

(1) Requirement
With number 1 marking and all other clutches spacing
Min some clearance between bottom of typebox track and top of indicator bail.

(2) Requirement
With number 1 marking and all other clutches spacing
Min some clearance between back side of lower typebox carriage roller and front edge of indicator bail.

To Adjust
Position bottom of indicator bail with long nose pliers to insure clearance.

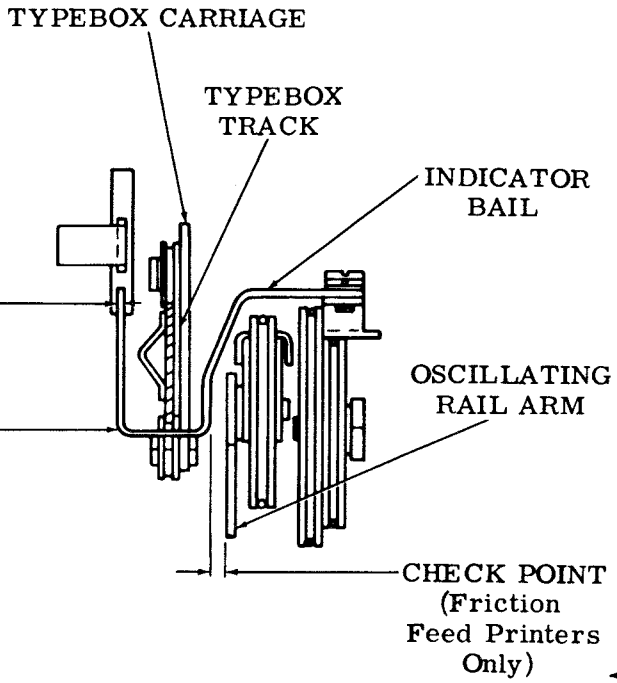


PRINT POSITION INDICATOR BAIL AND OSCILLATING RAIL ARM

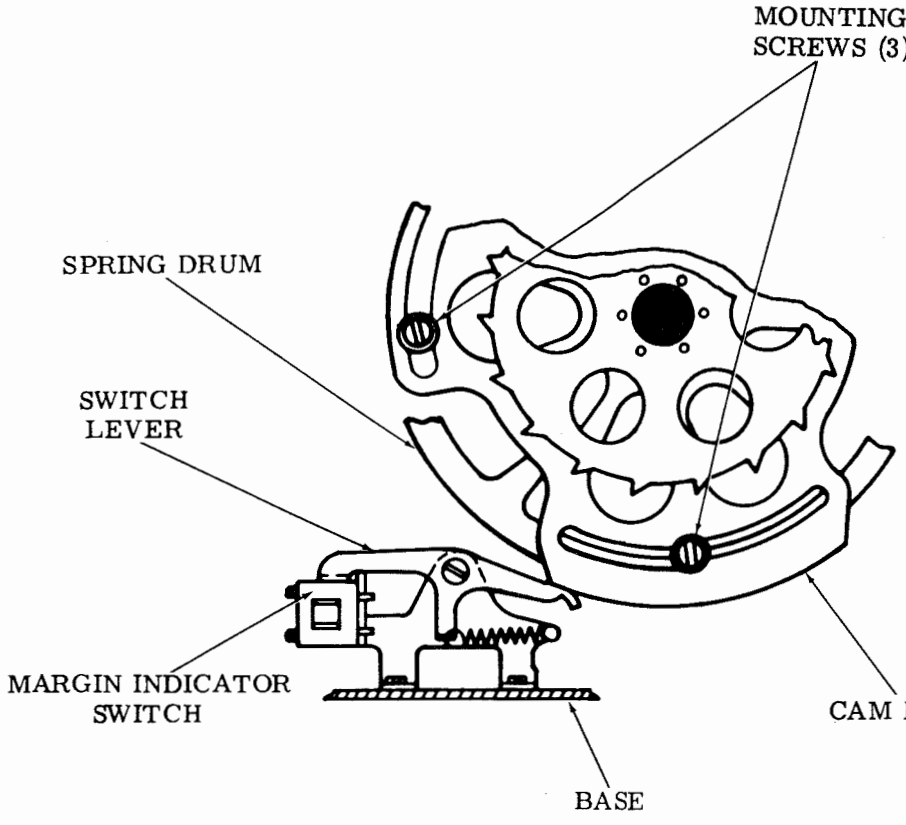
To Check
Select the letter "N"; position carriage to the left hand margin (on friction feed printers push paper release lever to rear). Trip spacing clutch so carriage moves to right, leaving clearance between oscillating rail arm and indicator bail.

Requirement
Indicator bail must engage indicator slide by full stock thickness of bail.

To Adjust
Position vertical portion of indicator bail with long nose pliers to meet requirement.



2.75 Printing Mechanism (continued)



(Front View)

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 574-301-702 (Removal and Replacement of Components).

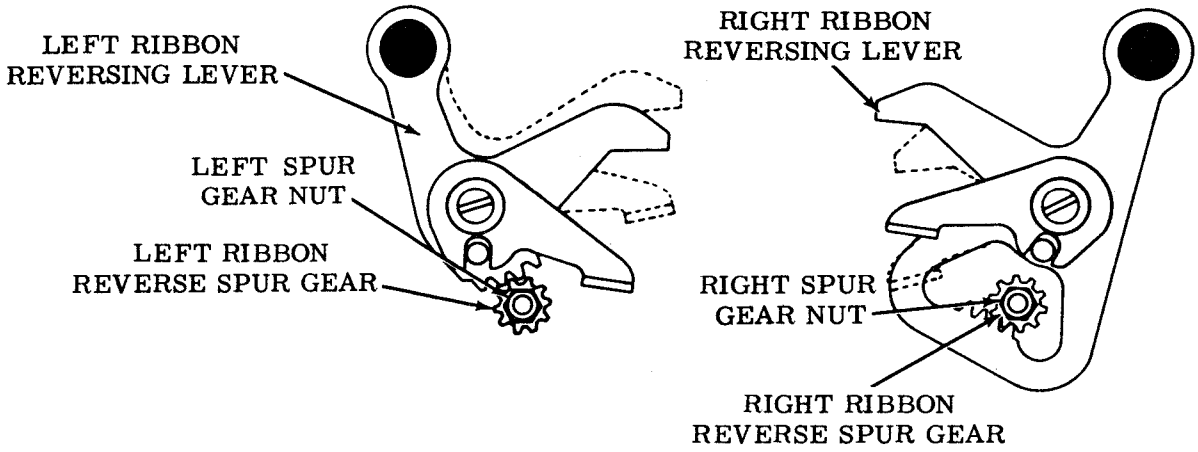
To Check
Print hammer carriage positioned to print eighth (± one character) character from right hand margin.

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.

2.76 Ribbon Feed Mechanism



(Right Side View)

RIBBON REVERSE SPUR GEAR

Requirement

When right ribbon reversing lever is in maximum downward position, left ribbon reversing lever should be in maximum upward position.

To Adjust

Loosen detent linkage screws (2.77). Loosen left spur gear nut. Make certain that right spur gear nut is securely tightened. Move right ribbon reversing lever to its lowermost position and hold left reversing lever in its uppermost position. Tighten left spur gear nut.

Affected Adjustments

DETENT LEVER (2.77)
RIBBON FEED MAIN BRACKETS (LEFT AND RIGHT) (2.80)

2.77 Ribbon Feed Mechanism (continued)

DETENT LEVER

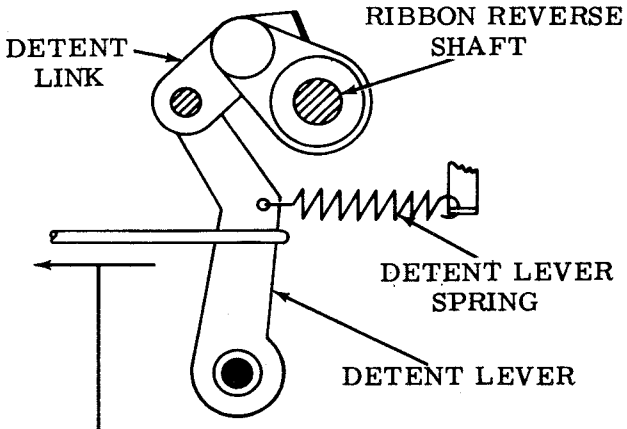
(1) To Check
With ribbon reverse detent link buckled in downward position, take up play in detent lever so that gap between detent link and detent lever is maximum.

(1) Requirement
Min 0.035---Max 0.085 inch between detent link and detent lever.

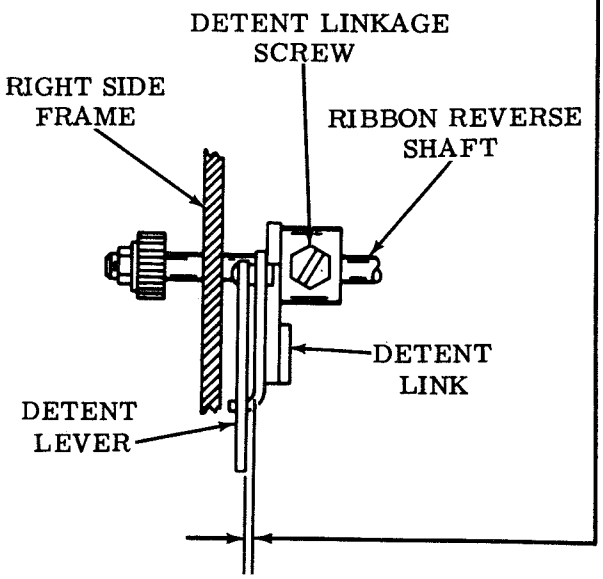
(2) To Check
Operate reversing levers and check buckling of detent links in upper and lower positions.

(2) Requirement
Detent link should buckle equally in upper and lower positions as gauged by eye.

To Adjust
Loosen two screws in detent linkage friction tight. Slide detent link to satisfy requirement (1). Hold left reversing lever in lowermost position. Rotate detent link into position on ribbon reverse shaft, and tighten one screw. Check for equal buckling by operating reversing levers. Tighten second screw. Check reversing under power and refine adjustment if necessary.



(Left Side View)



(Rear View)

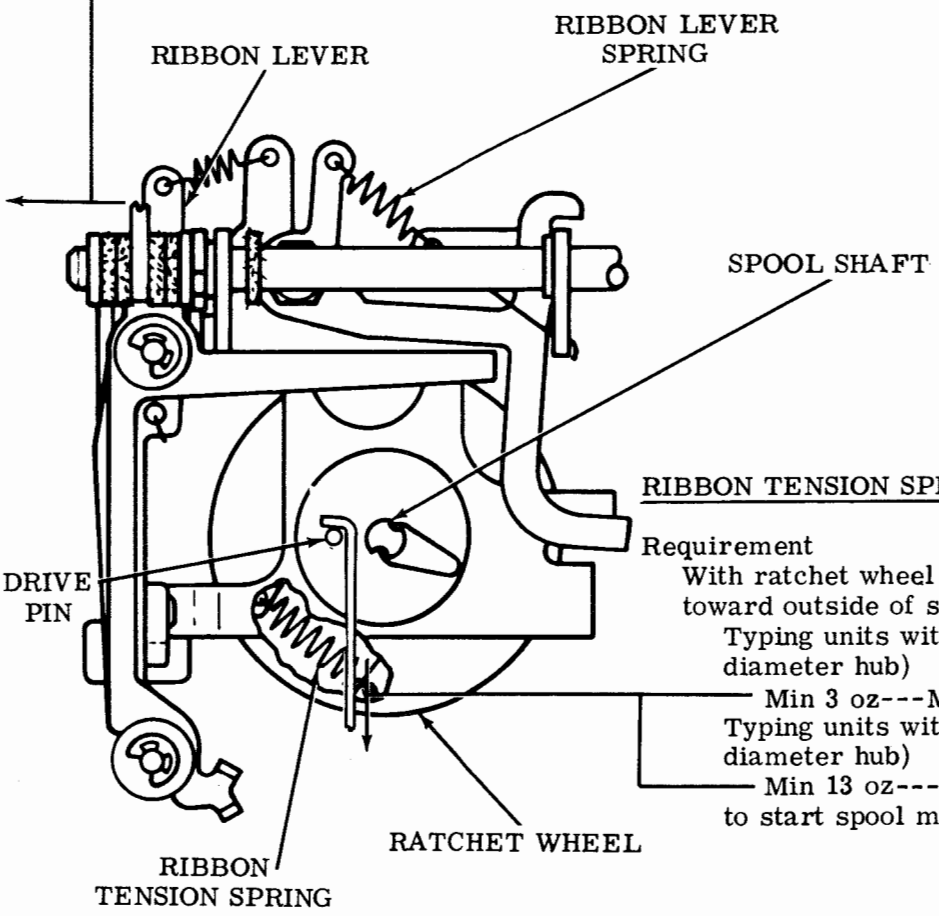
DETENT LEVER SPRING

Requirement
Detent linkage buckled in upward position.
Min 10 oz---Max 19 oz to start detent lever moving toward rear.

2.78 Ribbon Feed Mechanism (continued)

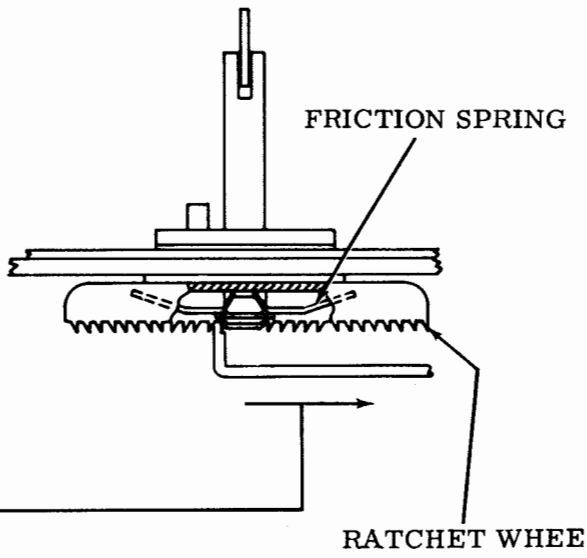
RIBBON LEVER SPRING (LEFT AND RIGHT)

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



RIBBON TENSION SPRING (LEFT AND RIGHT)

Requirement
With ratchet wheel positioned so that driver pin is toward outside of spool shaft.
Typing units with TP71681 spool (5/8 inch diameter hub)
Min 3 oz---Max 5-1/2 oz
Typing units with TP306459 spool (1-1/8 inch diameter hub)
Min 13 oz---Max 17 oz
to start spool moving.

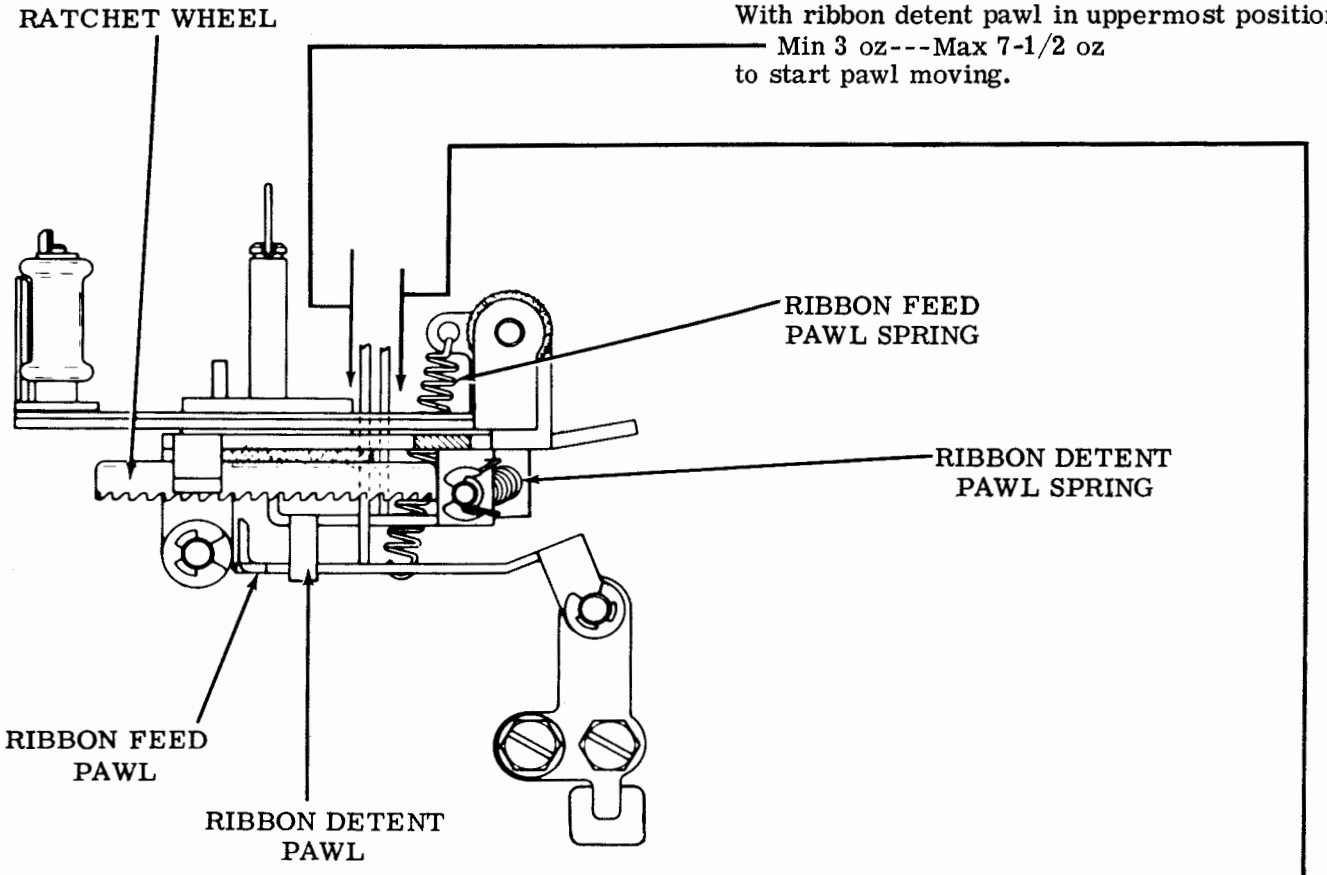


RIBBON RATCHET WHEEL FRICTION SPRING (LEFT AND RIGHT)

Requirement
With ribbon feed pawls disengaged, scale applied on ratchet tooth and tangent to ratchet
Min 4-1/2 oz---Max 7-1/2 oz
to rotate ratchet.

(Right and Left Side Views)

2.79 Ribbon Feed Mechanism (continued)



(Left Side View)

RIBBON DETENT PAWL SPRING (LEFT AND RIGHT)

Requirement
With ribbon detent pawl in uppermost position
Min 3 oz---Max 7-1/2 oz
to start pawl moving.

RIBBON FEED PAWL SPRING (LEFT AND RIGHT)

Requirement
With ribbon feed pawl in uppermost position
Min 3/4 oz---Max 2 oz
to start feed pawl moving.

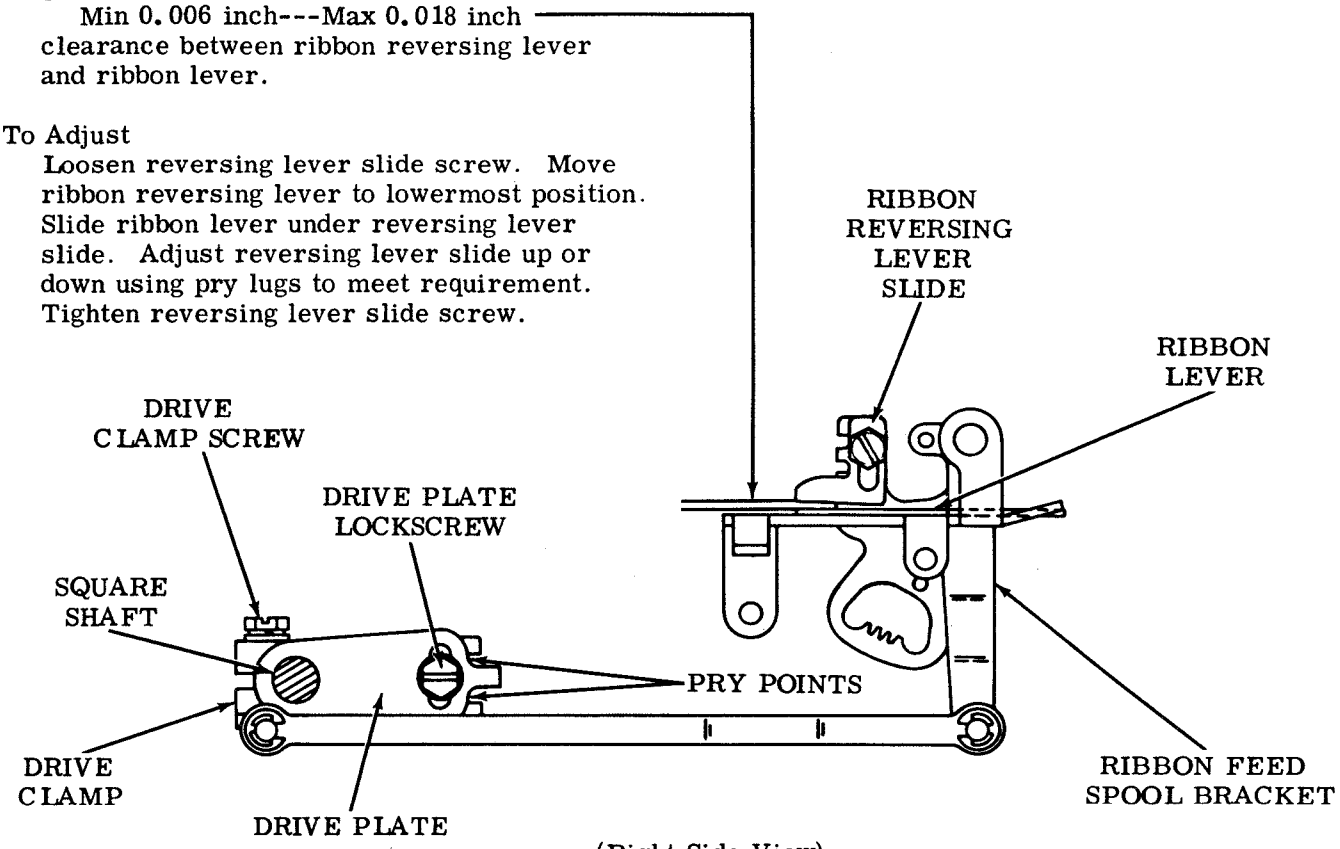
2.80 Ribbon Feed Mechanism (continued)

RIBBON REVERSING LEVER SLIDE (LEFT AND RIGHT)

To Check
Ribbon feed spool bracket in lowermost position.
Ribbon reversing lever in lowermost position.

Requirement
Min 0.006 inch---Max 0.018 inch clearance between ribbon reversing lever and ribbon lever.

To Adjust
Loosen reversing lever slide screw. Move ribbon reversing lever to lowermost position. Slide ribbon lever under reversing lever slide. Adjust reversing lever slide up or down using pry lugs to meet requirement. Tighten reversing lever slide screw.



(Right Side View)

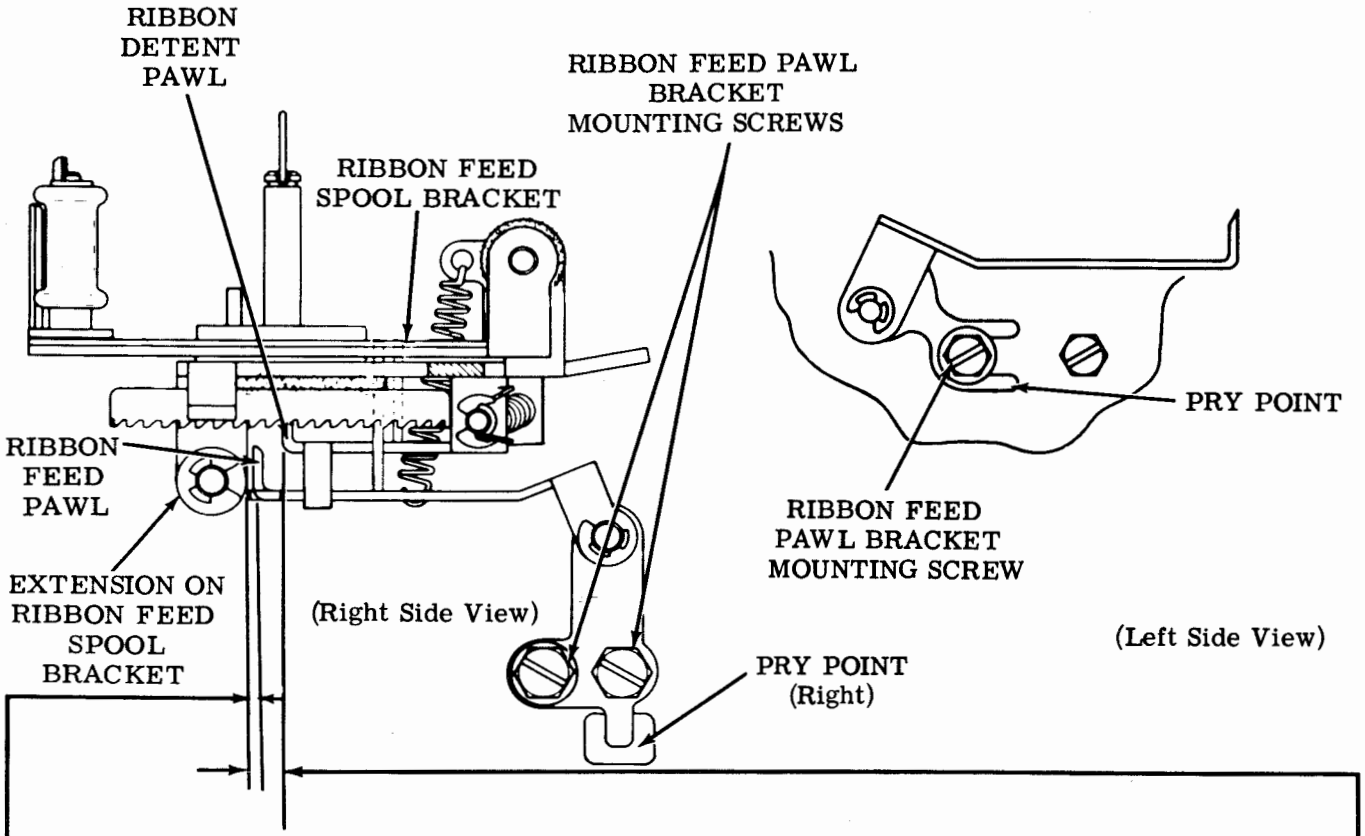
RIBBON FEED MAIN BRACKETS (LEFT AND RIGHT)

Requirement
Type pallet should strike ribbon in upper half of ribbon field during powered operation.

To Adjust (Preliminary)
Loosen drive plate lockscrew. Center drive plate on drive clamp. Tighten drive plate lockscrew. Loosen drive clampscrew friction tight. Position ribbon feed main brackets so that top of ribbon is approximately one-half character, gauge by eye, below a previously typed line of upper case characters. Tighten drive clampscrew.

To Adjust (Final)
With unit operating and printing upper and lower case characters, printing across entire page copy should be centered in upper half of ribbon field. If top of character is incomplete, refine drive clamp adjustment by loosening drive plate lockscrew and, using pry point, rotate the drive plate on drive clamp. Adjust to raise ribbon feed spool bracket. Tighten drive plate lockscrew.

2.81 Ribbon Feed Mechanism (continued)



RIBBON FEED PAWL BRACKETS (LEFT AND RIGHT)

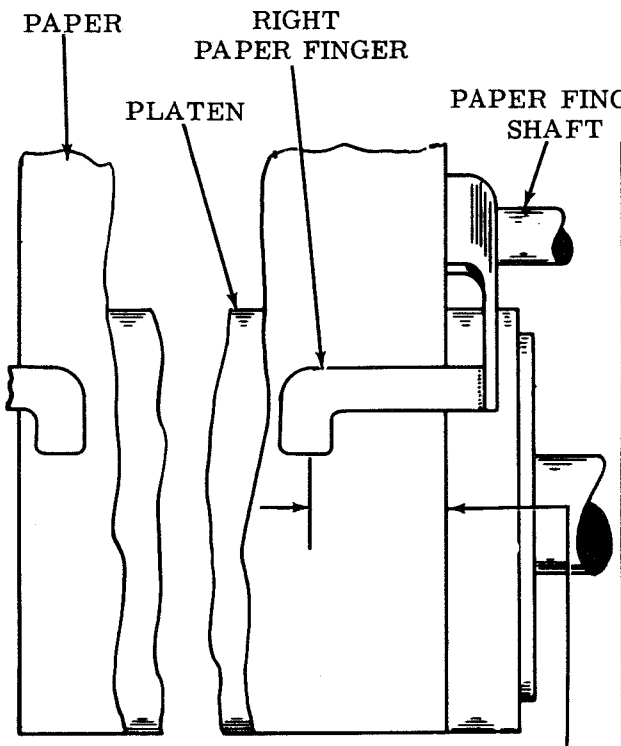
(1) Requirement
Ratchet wheel should step one tooth with each operation of printing clutch.

(2) Requirement
With ribbon feed spool bracket in lowermost position there should be minimum clearance (some) between ribbon feed pawl and extension on ribbon feed spool bracket.

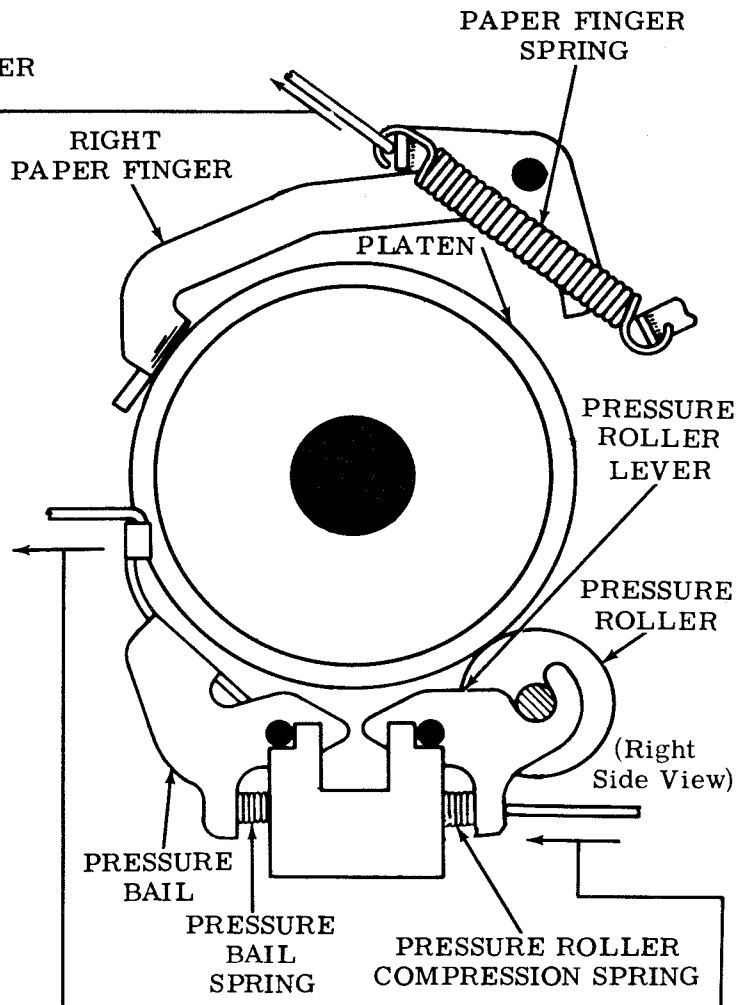
(3) Requirement
With ribbon feed spool bracket in uppermost position there should be minimum clearance (some) between ribbon feed pawl and detent pawl.

To Adjust
Raise ribbon reversing lever at side to be adjusted to uppermost position. Loosen ribbon feed pawl bracket mounting screws friction tight. Rotate main shaft until ribbon feed spool bracket is in uppermost position. Using a screwdriver at pry point, rotate ribbon feed pawl bracket rearward until ribbon feed pawl just touches ribbon detent pawl. Place ribbon in unit. Place spool with least amount of ribbon at side not being adjusted. Operate unit under power with screwdriver at pry point. Slowly rotate ribbon feed pawl bracket forward until ribbon feeds uniformly. Tighten mounting screws. Check for uniform feeding by allowing ribbon to feed to end and reverse.

2.82 Platen Mechanism (Friction Feed)



(Front View)



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
Unhook paper finger spring.

Requirement
Min 42 oz---Max 52 oz
to extend spring to installed length.

PRESSURE ROLLER LEVER SPRING

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

PAPER PRESSURE BAIL SPRING

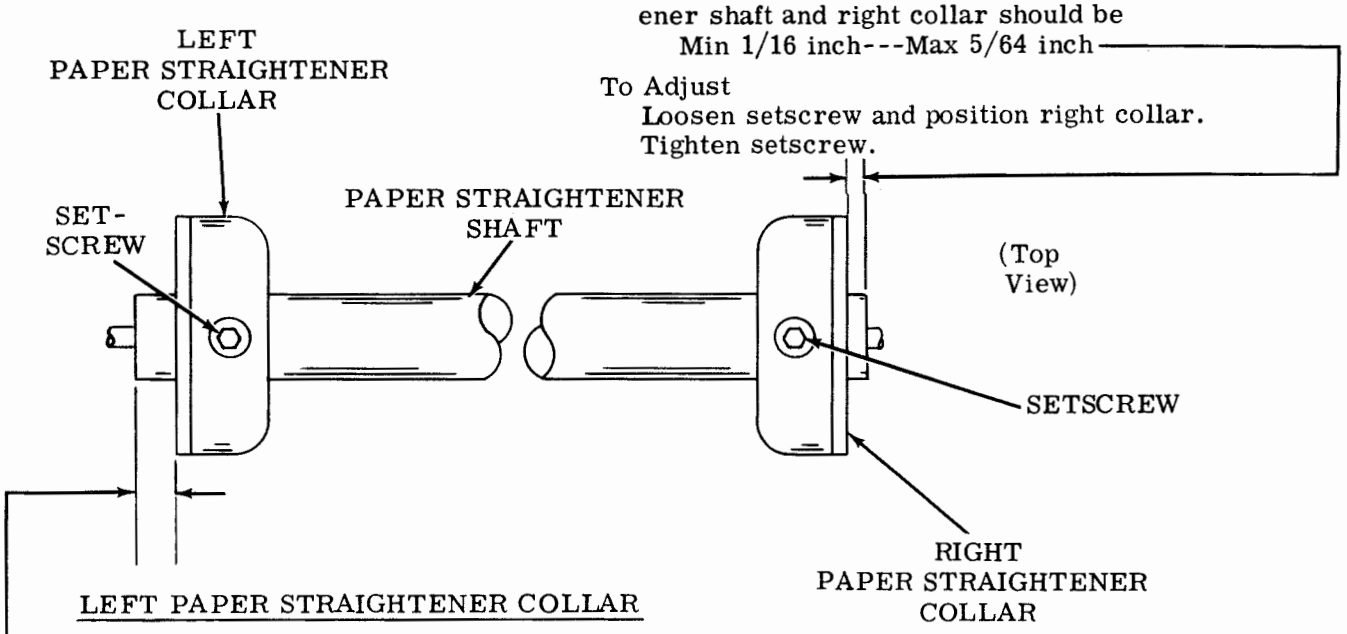
Requirement
Scale hooked over pressure bail at each end of platen
Min 42 oz---Max 56 oz
to move pressure bail from platen.

2.83 Platen Mechanism (Friction Feed) (continued)

RIGHT PAPER STRAIGHTENER COLLAR

Requirement
Space between right shoulder of paper straightener shaft and right collar should be
Min 1/16 inch---Max 5/64 inch

To Adjust
Loosen setscrew and position right collar.
Tighten setscrew.



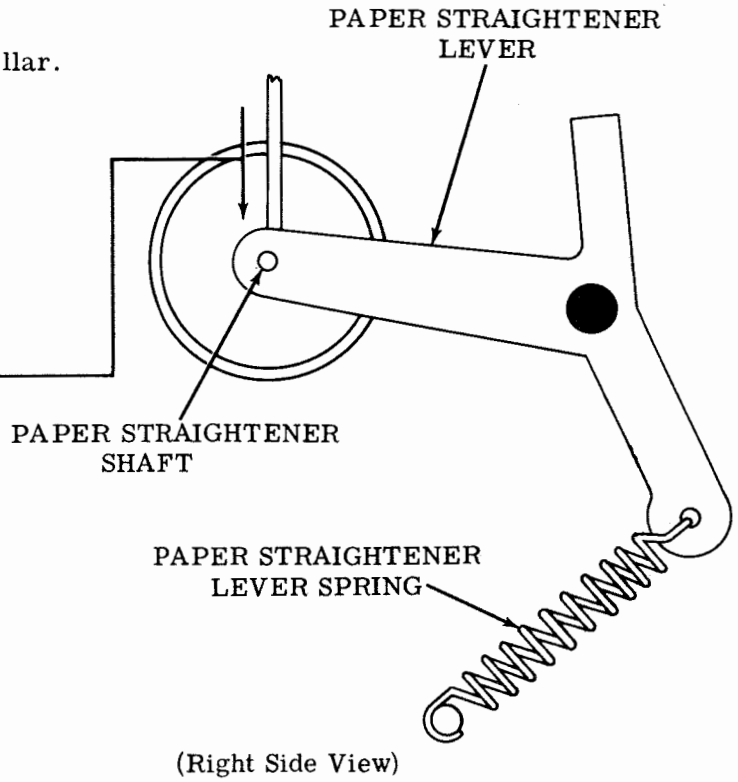
LEFT PAPER STRAIGHTENER COLLAR

Requirement
Space between left shoulder of paper straightener shaft and left collar should be
Min 9/32 inch---Max 21/64 inch

To Adjust
Loosen setscrew and position left collar.
Tighten setscrew.

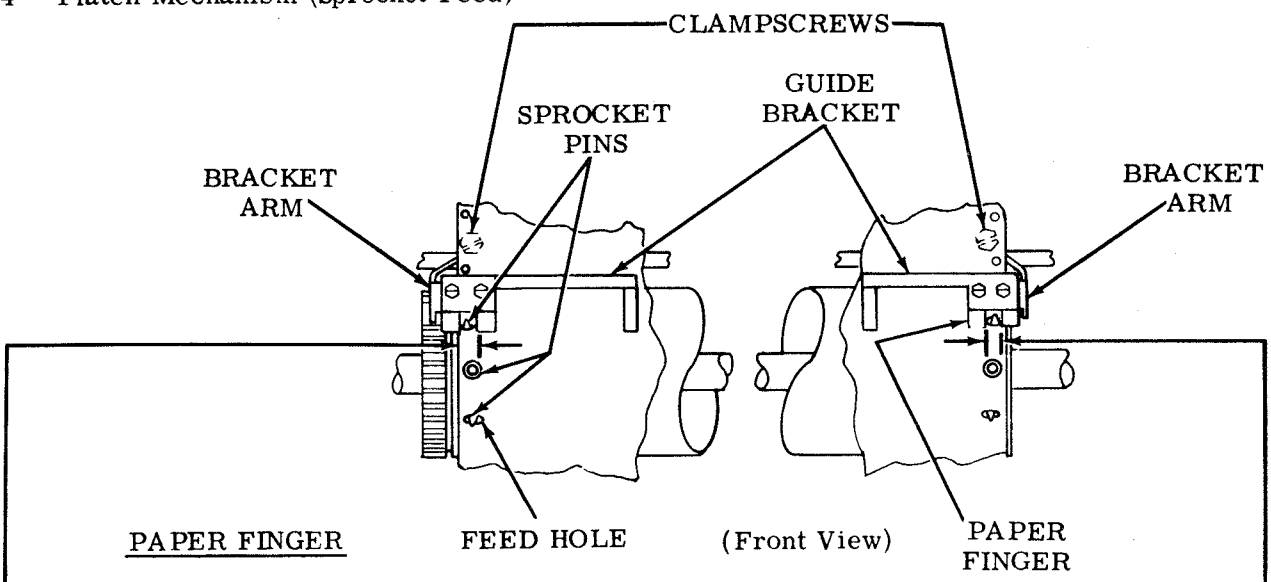
PAPER STRAIGHTENER LEVER SPRING

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



(Right Side View)

2.84 Platen Mechanism (Sprocket Feed)



To Check

Place guide bracket down in latched position.
Play of guide bracket and platen taken up to left.

(1) Requirement

Center lines of both guide slots should be within 0.015 inch of center of sprocket pins.

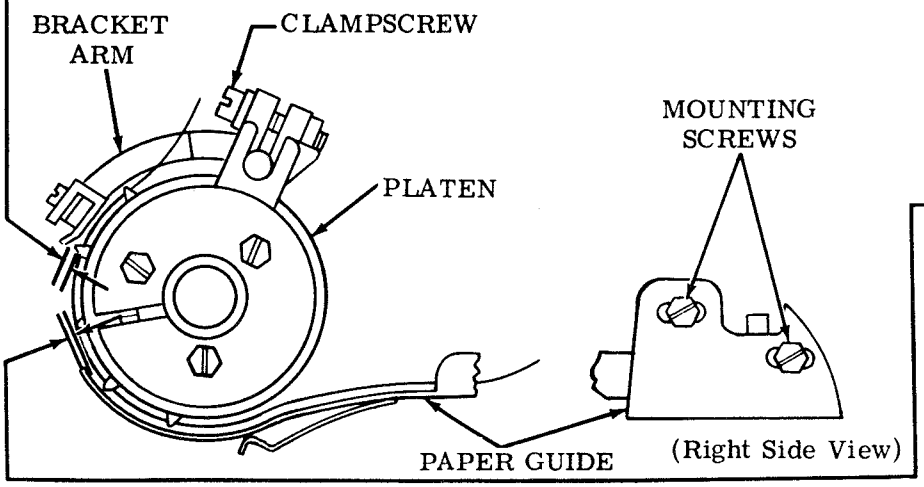
(2) Requirement

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

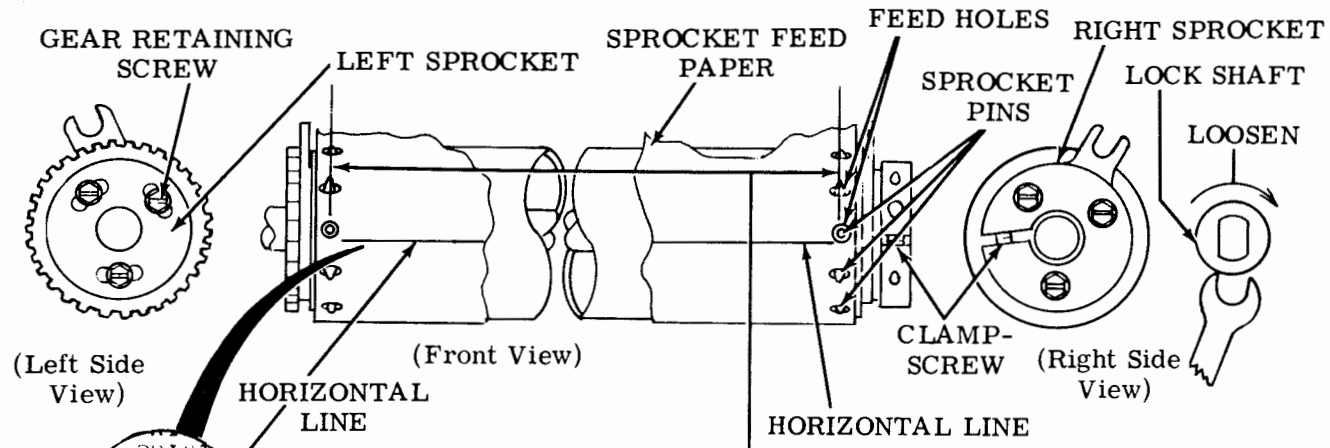
Requirement

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.

2.85 Platen Mechanism (Sprocket Feed) (continued)



PRINTED LINE

To Check
With 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 ±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.

SPROCKET PIN SEPARATION

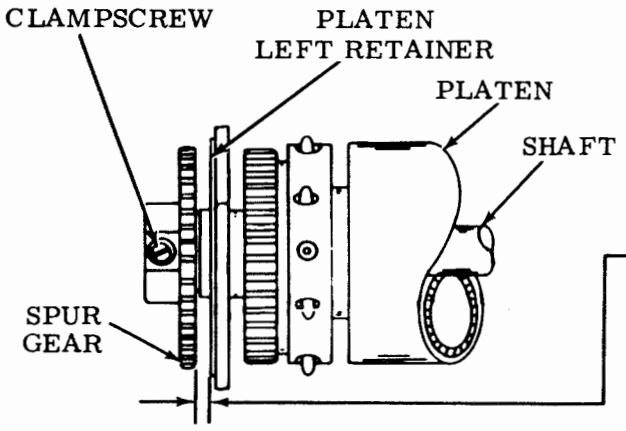
To Check
Place a single sheet of sprocket feed paper on platen.

(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 (±1/32 inch).

To Adjust
All Except 9-1/2 inch Form Width:
Loosen clampscrew and position right sprocket. Tighten clamp-screw.
With 9-1/2 inch Form Width:
Loosen lockshaft and rotate right sprocket to required position. Hold right sprocket hub in posi-tion and tighten lockshaft.

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



PLATEN ENDPLAY

To Check
Disengage line feed bars.

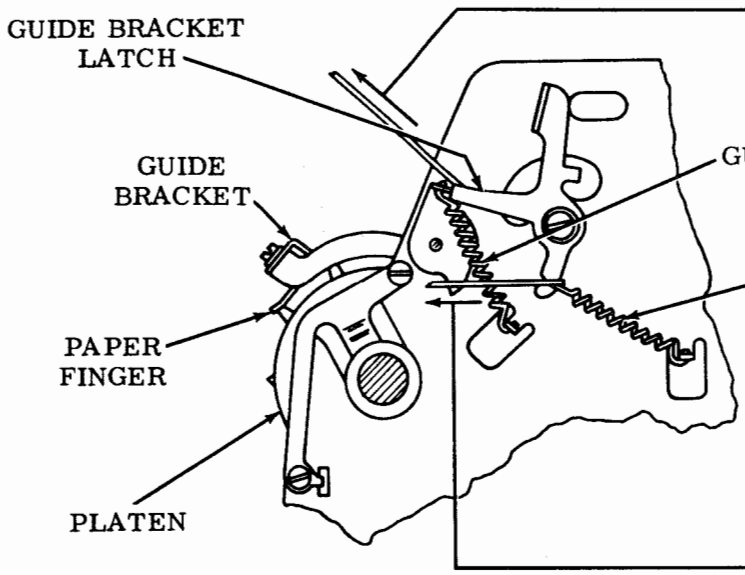
Requirement
Platen shaft should have some endplay.

To Adjust
Loosen clampscrew and position spur gear. Tighten clampscrew.

2.86 Platen Mechanism (Sprocket Feed) (continued)

GUIDE BRACKET SPRING

Requirement
Min 6 oz--- Max 10 oz
to move paper finger of guide bracket against platen.



(Right Side View)

GUIDE BRACKET LATCH SPRING

To Check
Hold guide bracket against platen.

Requirement
Min 8 oz--- Max 12 oz
to start guide bracket latch moving.

RIGHT AND LEFT MARGINS

Requirement
Min 5/16 inch
between center of left and right hand sprocket pins and centerline of first and last characters of printed line respectively.

To Adjust
Right Hand Margin:
Rotate spacing drum until feed pawl engages cutout portion of ratchet. Loosen clampscrews and position oscillating rail slide on draw wire rope. Tighten clampscrews. See OSCILLATING RAIL SLIDE POSITION - FRICTION FEED (2.52) adjustment for illustration.

Left Hand Margin:
Return print carriage to left position. Loosen four horizontal tabulator ring mounting screws. Hold horizontal tabulator ring in its counterclockwise position. Locate typebox per requirement. Tighten mounting screws. See LEFT MARGIN (2.58) adjustment for illustration.

(Front View)

2.87 Printing Mechanism (continued)

TYPEBOX CARRIAGE ROLLER ARM SPRING

Requirement

Min 4 lb---Max 5 lb to start upper roller (nearest typebox latch) moving away from typebox track.

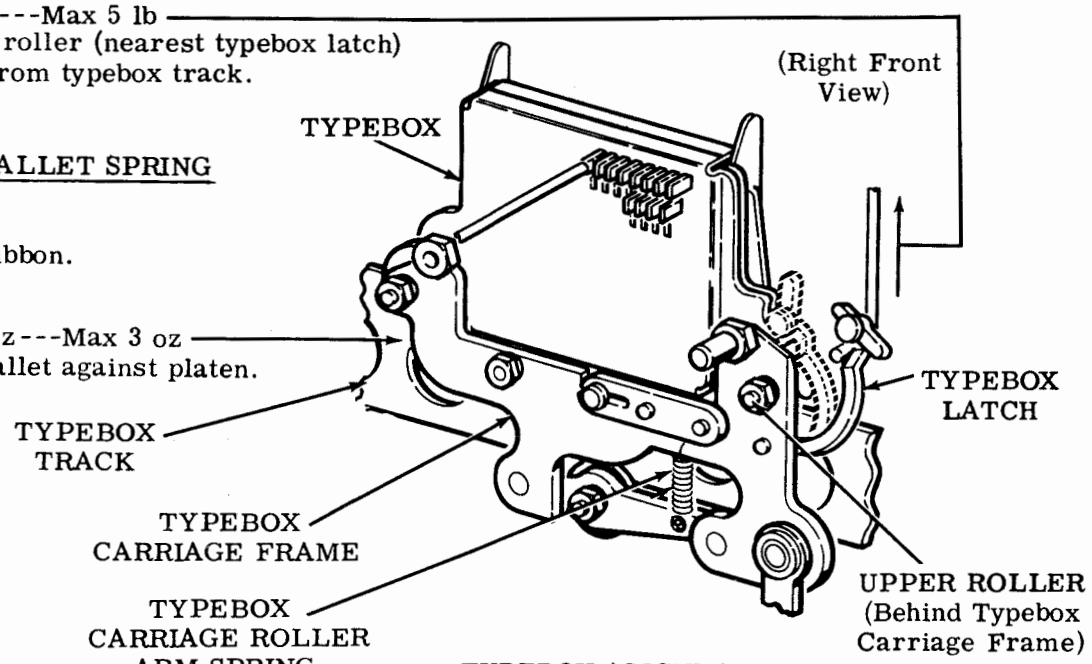
TYPEBOX PALLET SPRING

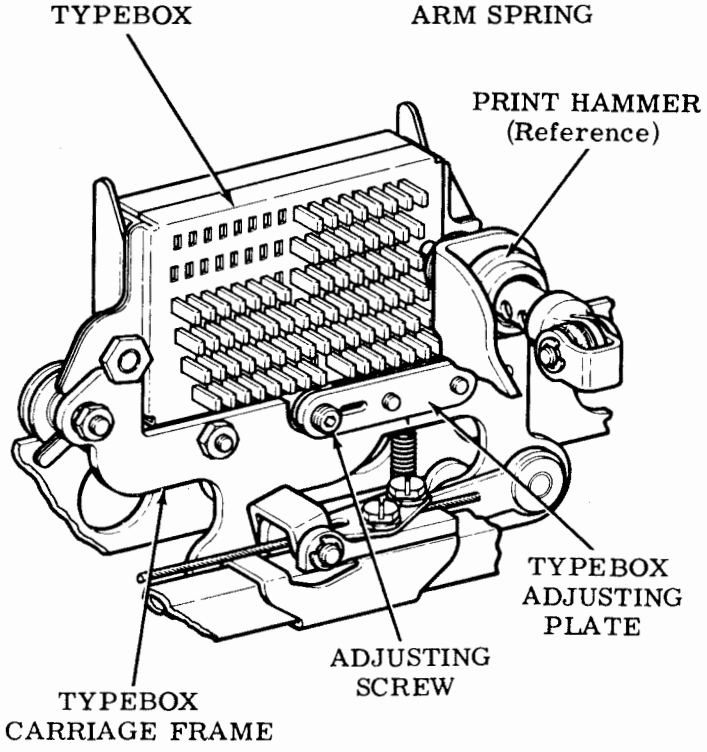
To Check

Remove ribbon.

Requirement

Min 1 oz---Max 3 oz to touch pallet against platen.





(Left Front View)

TYPEBOX ALIGNMENT

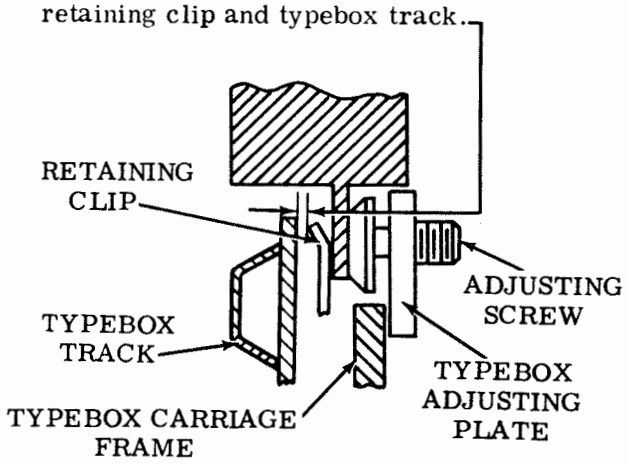
Requirement

Impression of printed characters should be equal at top and at bottom as gauged by eye.

To Adjust

Operate printer under power. Alternately select pallet in top and bottom row. Turn adjusting screw in or out in steps of 1/4 turn to meet requirement.

Note: With typebox removed, there should be at least 0.030 inch clearance between retaining clip and typebox track.



(Left Side View)

3. VARIABLE FEATURE

3.01 Horizontal Tabulator Mechanism

OPERATING LEVER EXTENSION LINK

Requirement (Preliminary)
Transmitter control switch bracket should be positioned to extreme rear of unit.

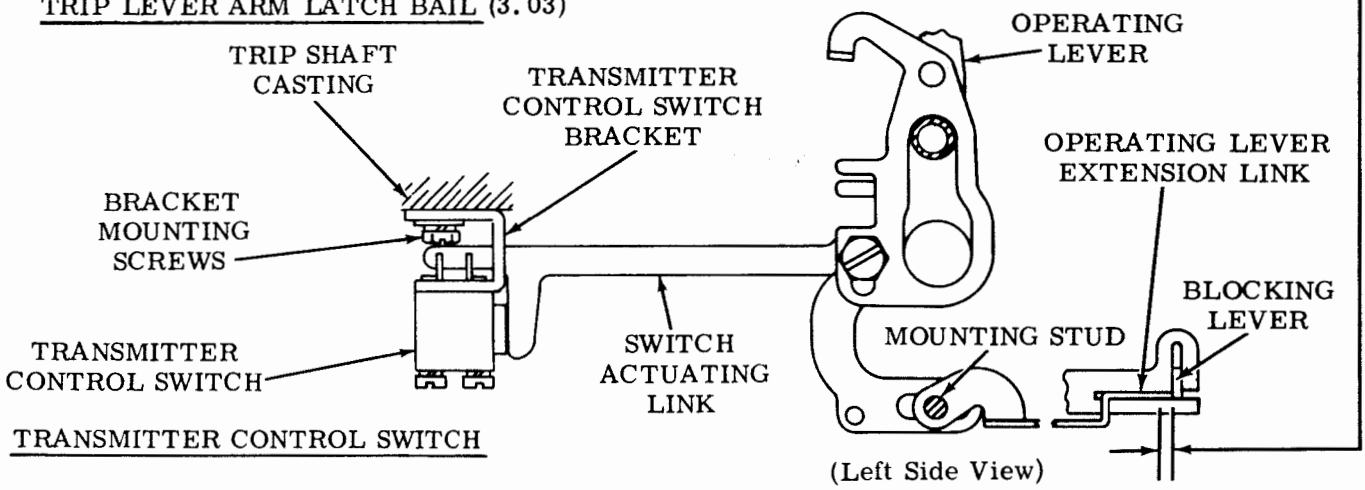
To Adjust
Loosen the two bracket mounting screws and position bracket to meet requirement. Tighten bracket mounting screws.

To Check
All clutches disengaged (latched). Selector magnet engaged. Codebars 1 and 4 marking, all others spacing. Engage codebar clutch and rotate main shaft until function clutch stop-lug is toward bottom of unit.

Requirement (Final)
Min 0.005 inch---Max 0.020 inch clearance between operating lever extension link and blocking lever with play taken up to make gap a minimum and switch actuating link touching lower portion of transmitter control switch bracket.

To Adjust
Loosen mounting stud friction tight. Position operating lever extension link to meet requirement. Tighten mounting stud.

Affected Adjustments
CAM PLATE STRIPPER BAIL (3.04)
LATCH BAIL ADJUSTING PLATE (3.03)
TRIP LEVER ARM LATCH BAIL (3.03)



TRANSMITTER CONTROL SWITCH

To Check
All clutches disengaged (latched). Selector magnet engaged. Codebars 1 and 4 marking, all others spacing. Engage codebar clutch and rotate main shaft until function clutch stop-lug is toward bottom of unit.

Requirement
With actuating link touching surface of switch bracket, the transmitter control switch should be operated.

To Adjust
Loosen two mounting screws. Insert 0.020 inch gauge between switch button and switch actuating link. Position switch bracket so switch button is fully depressed. Remove gauge and tighten bracket mounting screws.

3.02 Horizontal Tabulator Mechanism (continued)

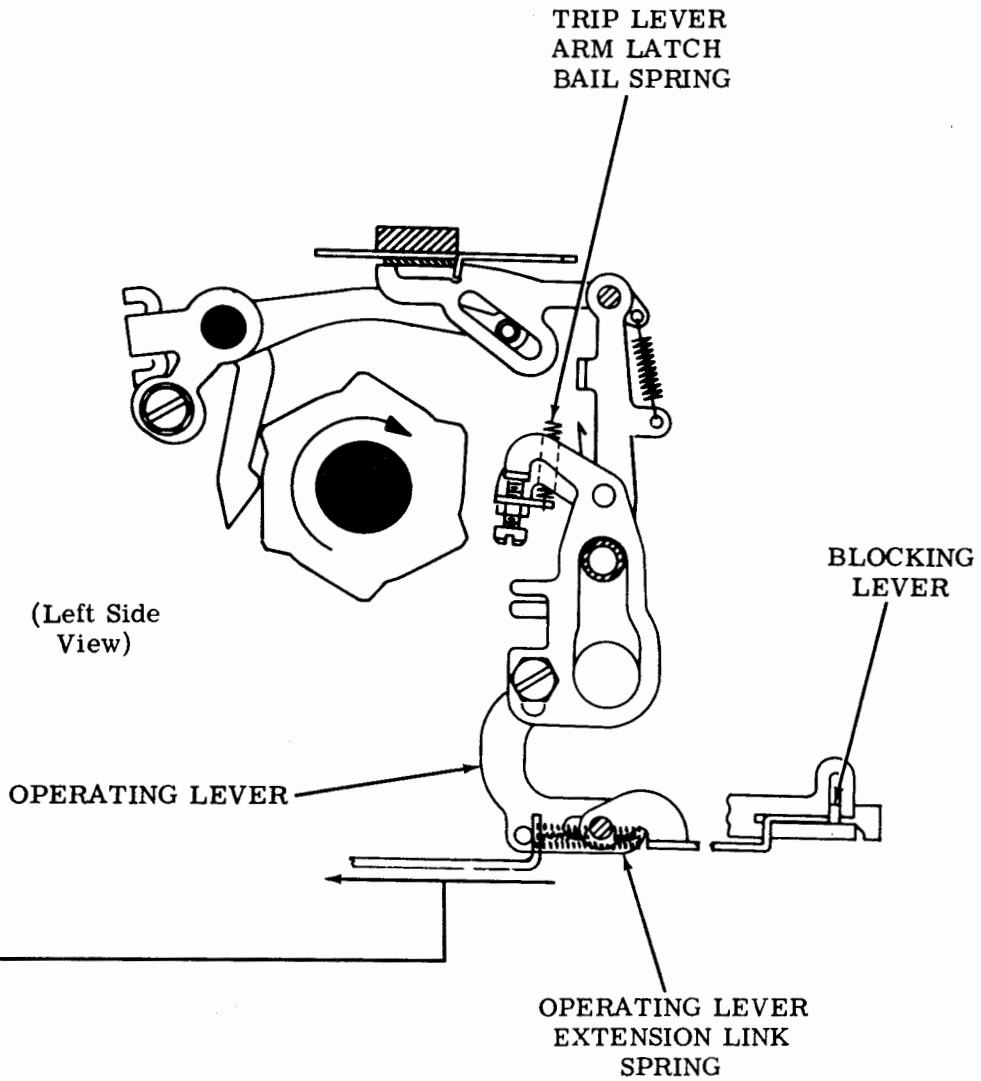
OPERATING LEVER EXTENSION LINK SPRING

To Check

Trip lever arm latch bail spring unhooked. Operating lever extension link in operated position (extension link against blocking lever). Hold transmitter control switch depressed.

Requirement

Min 8-3/4 oz---Max 10-3/4 oz to start extension link moving. Rehook spring.



3.03 Horizontal Tabulator Mechanism (continued)

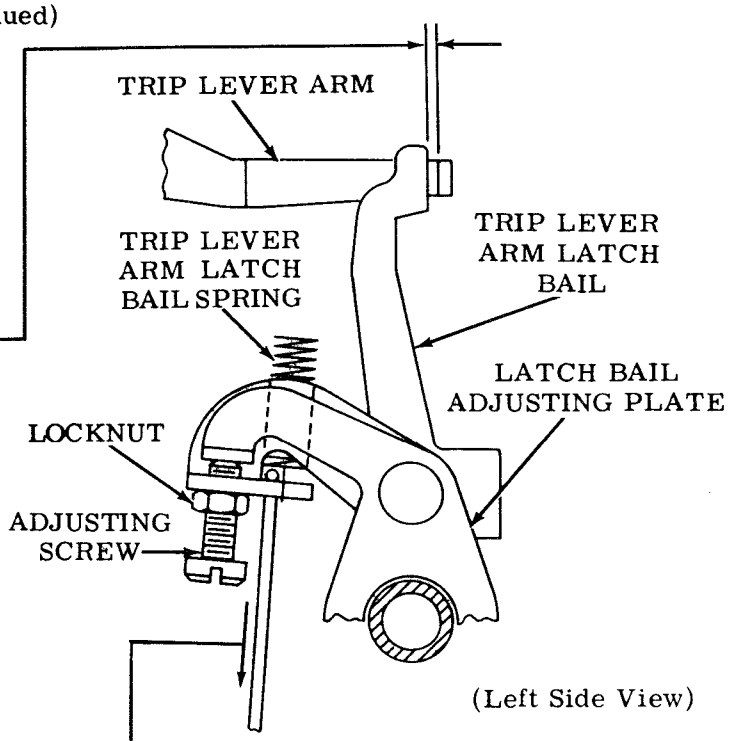
TRIP LEVER ARM LATCH BAIL

To Check
All clutches disengaged (latched). Operating lever extension link in unoperated position.

Requirement
Min 0.050 inch---Max 0.065 inch clearance between trip lever arm and trip lever arm latch bail.

To Adjust
Loosen locknut and turn adjusting screw to meet requirement. Tighten locknut.

Related Adjustment
LATCH BAIL ADJUSTING PLATE



(Left Side View)

LATCH BAIL ADJUSTING PLATE

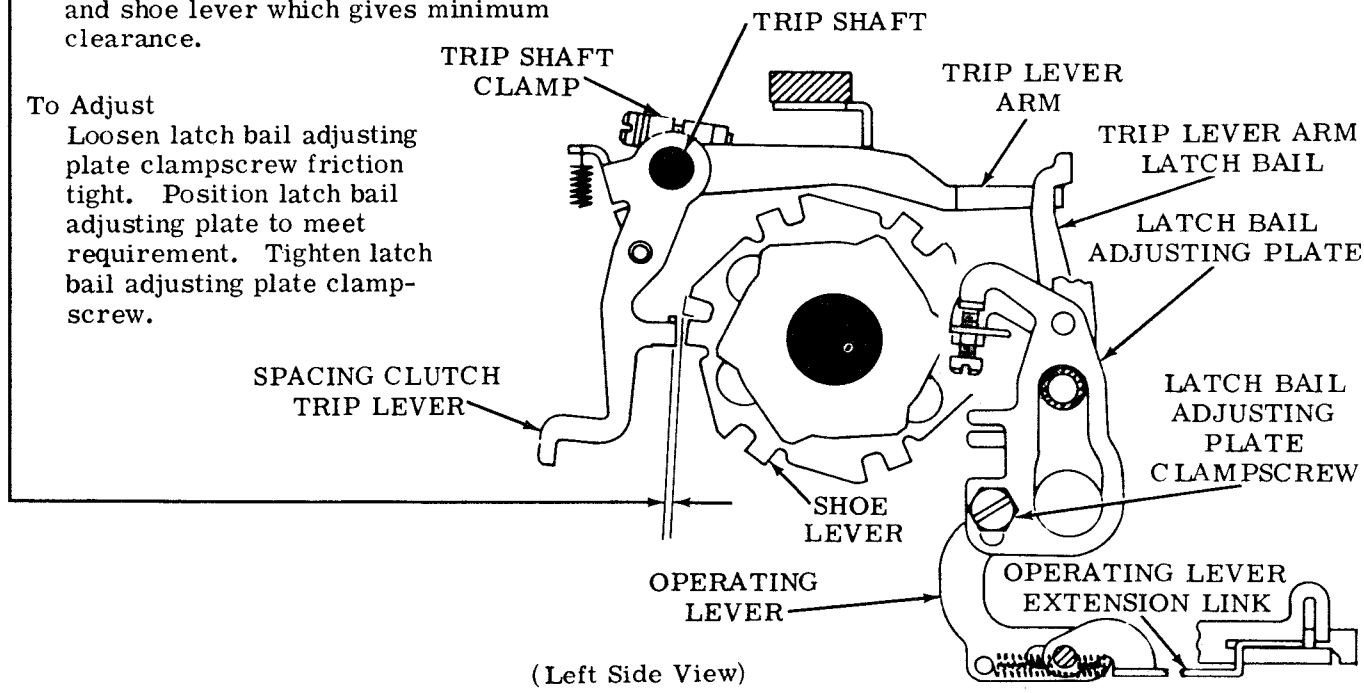
To Check
All clutches disengaged (latched). Operating lever extension link in operated position. Manually trip spacing clutch to place trip lever arm latch bail in fully latched position.

Requirement
Min some---Max 0.008 inch clearance between spacing clutch trip lever and shoe lever which gives minimum clearance.

To Adjust
Loosen latch bail adjusting plate clampscrew friction tight. Position latch bail adjusting plate to meet requirement. Tighten latch bail adjusting plate clampscrew.

TRIP LEVER ARM LATCH BAIL SPRING

Requirement
Operating lever unoperated.
Min 2-1/2 oz---Max 4-1/4 oz to start latch bail moving.



(Left Side View)

3.04 Horizontal Tabulator Mechanism (continued)

HORIZONTAL TABULATOR SLIDE ARM SPRING

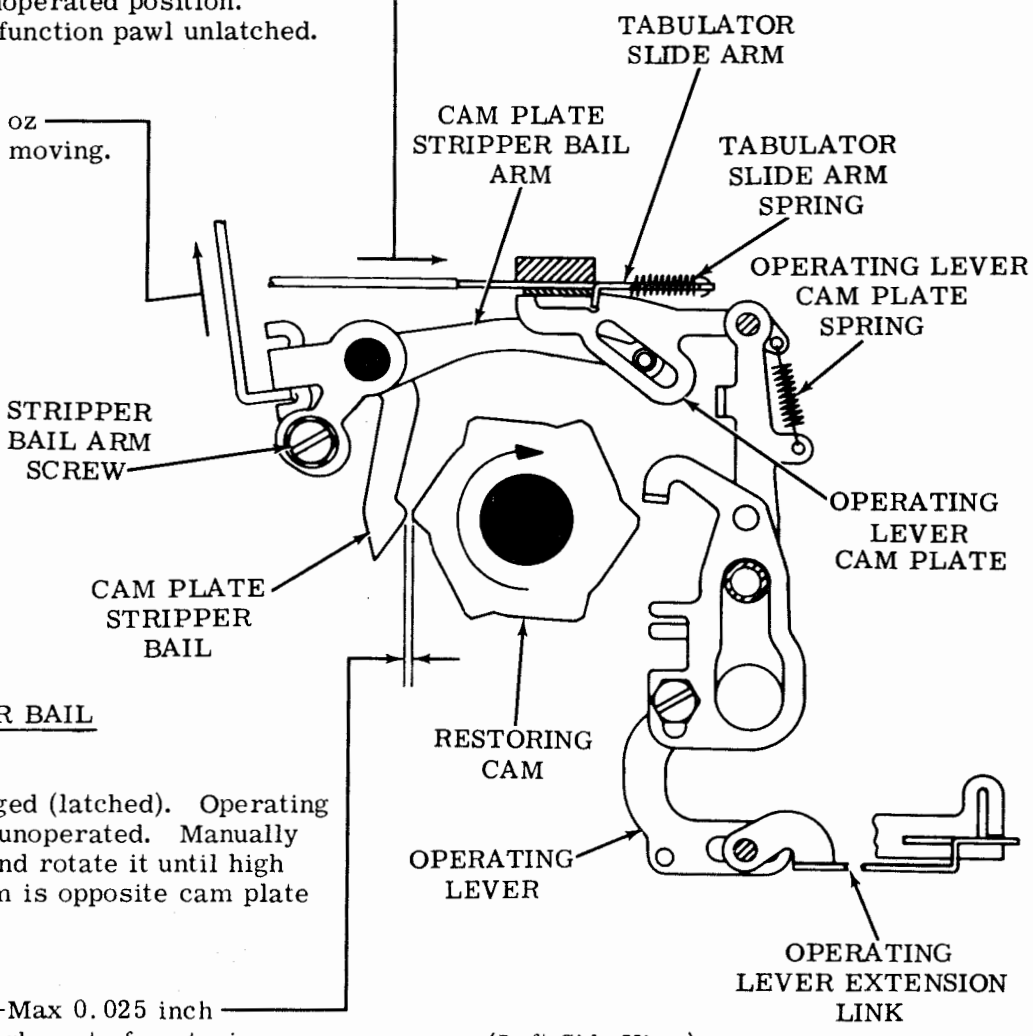
To Check
Operating lever in operated position.
Tabulator slide arm in unoperated position.

Requirement
Min 1-1/2 oz---Max 4 oz
to start slide moving.

OPERATING LEVER CAM PLATE SPRING

To Check
Operating lever in unoperated position.
Horizontal tabulator function pawl unlatched.

Requirement
Min 4 oz---Max 9 oz
to start stripper bail moving.



(Left Side View)

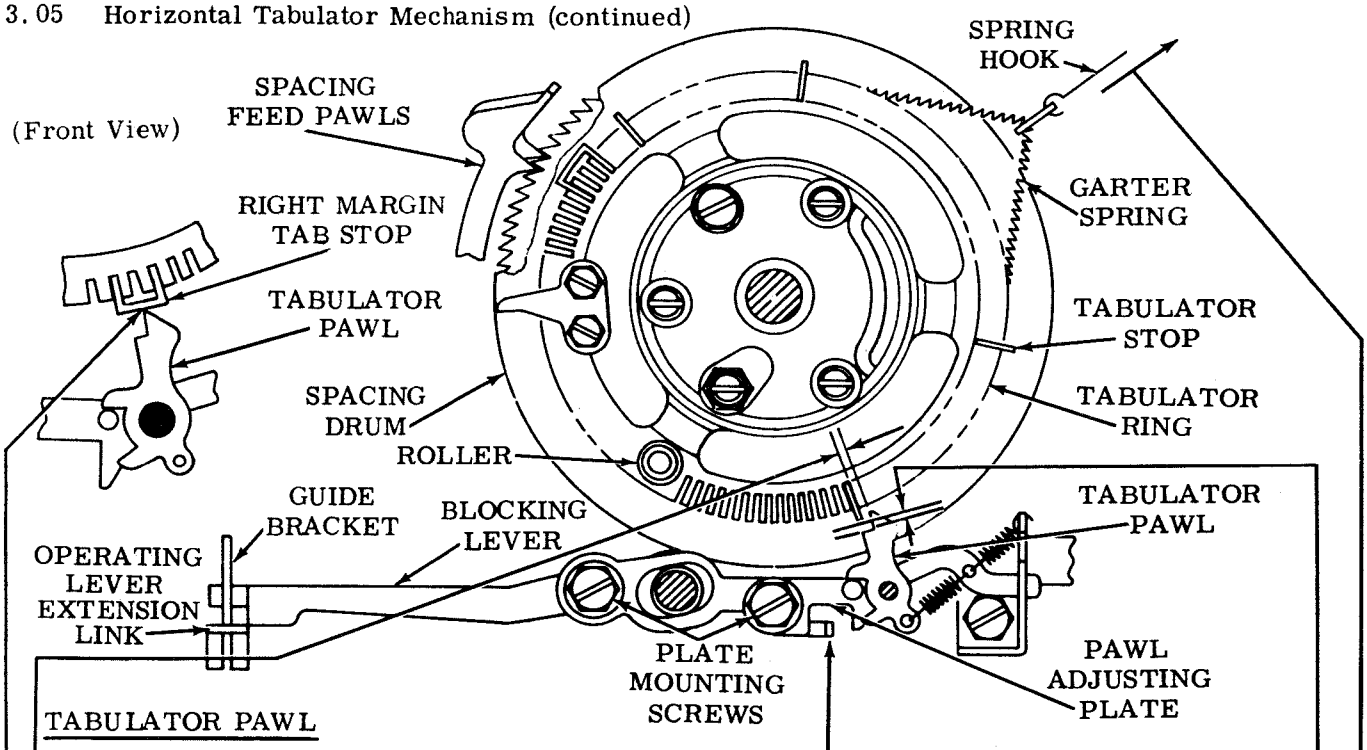
CAM PLATE STRIPPER BAIL

To Check
All clutches disengaged (latched). Operating lever extension link unoperated. Manually trip spacing clutch and rotate it until high part of restoring cam is opposite cam plate stripper bail.

Requirement
Min 0.010 inch---Max 0.025 inch
clearance between high part of restoring cam and cam plate stripper bail. Gauge using high part of cam giving smallest gap.

To Adjust
Loosen stripper bail arm screw friction tight. Position cam plate stripper bail to meet requirement. Tighten stripper bail arm screw.

3.05 Horizontal Tabulator Mechanism (continued)



TABULATOR PAWL

(1) Requirement
The pawl adjusting plate should be in the center of its adjusting range (gauge by eye).

To Adjust
Loosen plate mounting screws. Position pawl adjusting plate to meet requirement Tighten plate mounting screws friction tight and perform final adjustments.

To Check
All clutches disengaged (latched). Position print hammer carriage until the tab stop nearest to center of tabulator ring total rotation is just passed tabulator pawl. The spacing feed pawl on high part of eccentric should engage spacing drum ratchet (check by moving spacing feed pawl on low part of eccentric away from spacing drum). Place operating lever extension link in operated position.

(2) Requirement
Min 0.040 inch---Max 0.060 inch between stop tab and tabulator pawl.

(3) Requirement
Min 0.005 inch---Max 0.020 inch clearance between right side of tab stop and left edge of tabulator pawl tip with play taken up to make gap a minimum. Check first and last tab stops. Refine adjustment if necessary.

To Adjust
Position pawl adjusting plate to meet requirements. Tighten plate mounting screws. (The flat washer on left screw should completely cover slot.)

(4) Requirement
When spacing feed pawls are in cut-away section of spacing drum, the tabulator pawl should be fully on right margin tab stop.

To Adjust
Using a spring hook, pull margin tab stop straight out. Reinsert margin tab stop to meet requirement.

3.06 Low Paper Switch (Friction Feed)

LOW PAPER SWITCH POSITION

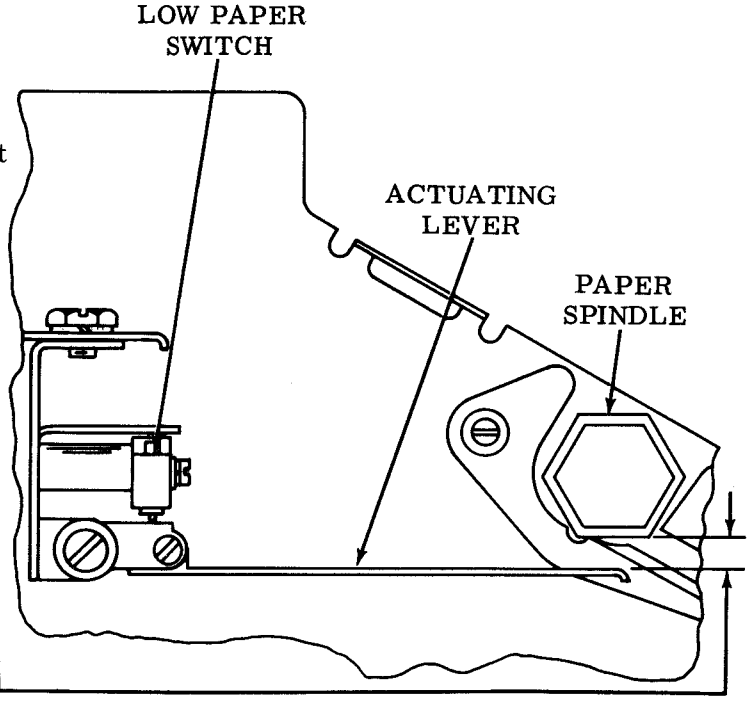
Requirment
Low paper switch should be in uppermost position in mounting holes and parallel to switch bracket.

To Adjust
Loosen switch mounting screws. Position switch to meet requirement. Tighten mounting screws.

ACTUATING LEVER

Requirement
Actuating lever should be approximately 1/4 inch below flat side of empty paper spindle with upper surface of lever parallel with flat surface of spindle.

To Adjust
Bend actuating lever to meet requirement.

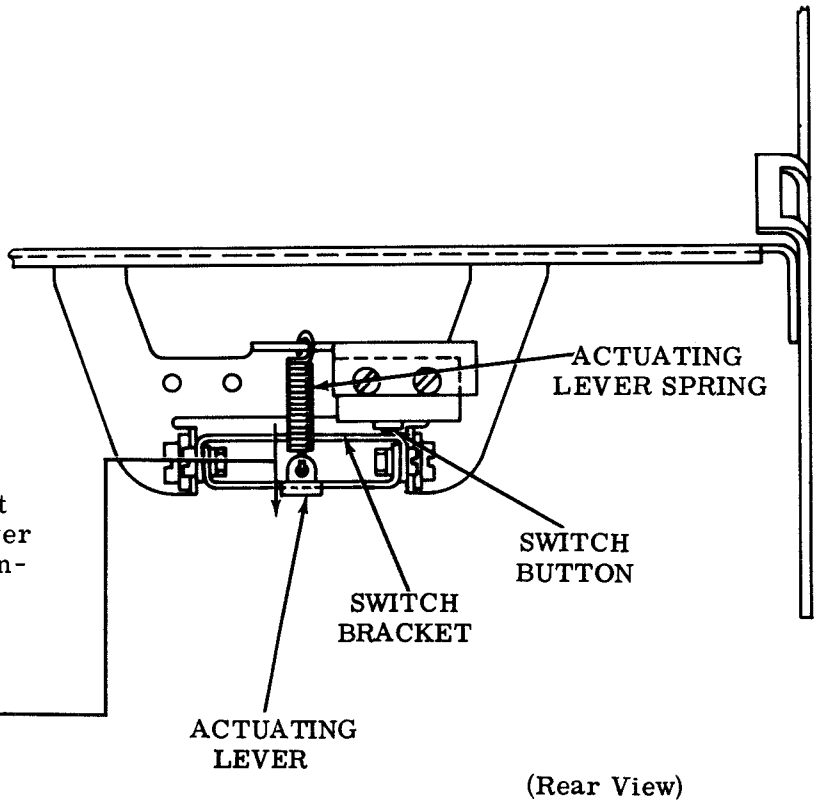


(Right Side View)

ACTUATING LEVER SPRING

To Check
Place a 32 oz spring scale against horizontal portion of actuating lever nearest spring eye, and push downward until switch bracket clears switch button.

Requirement
Min 2-1/2 oz---Max 4-1/2 oz to move switch bracket visually clear of switch button.



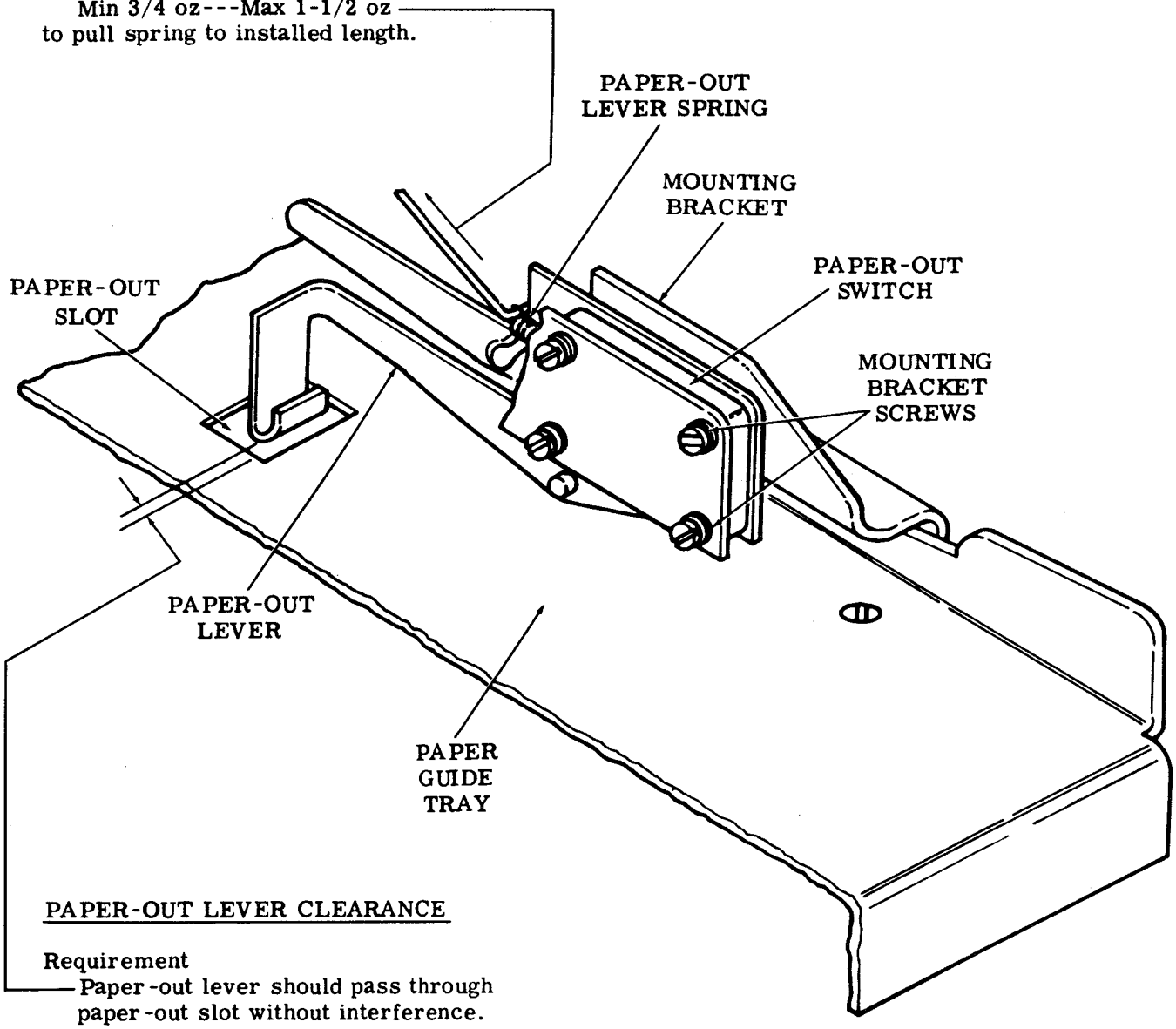
(Rear View)

3.07 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.



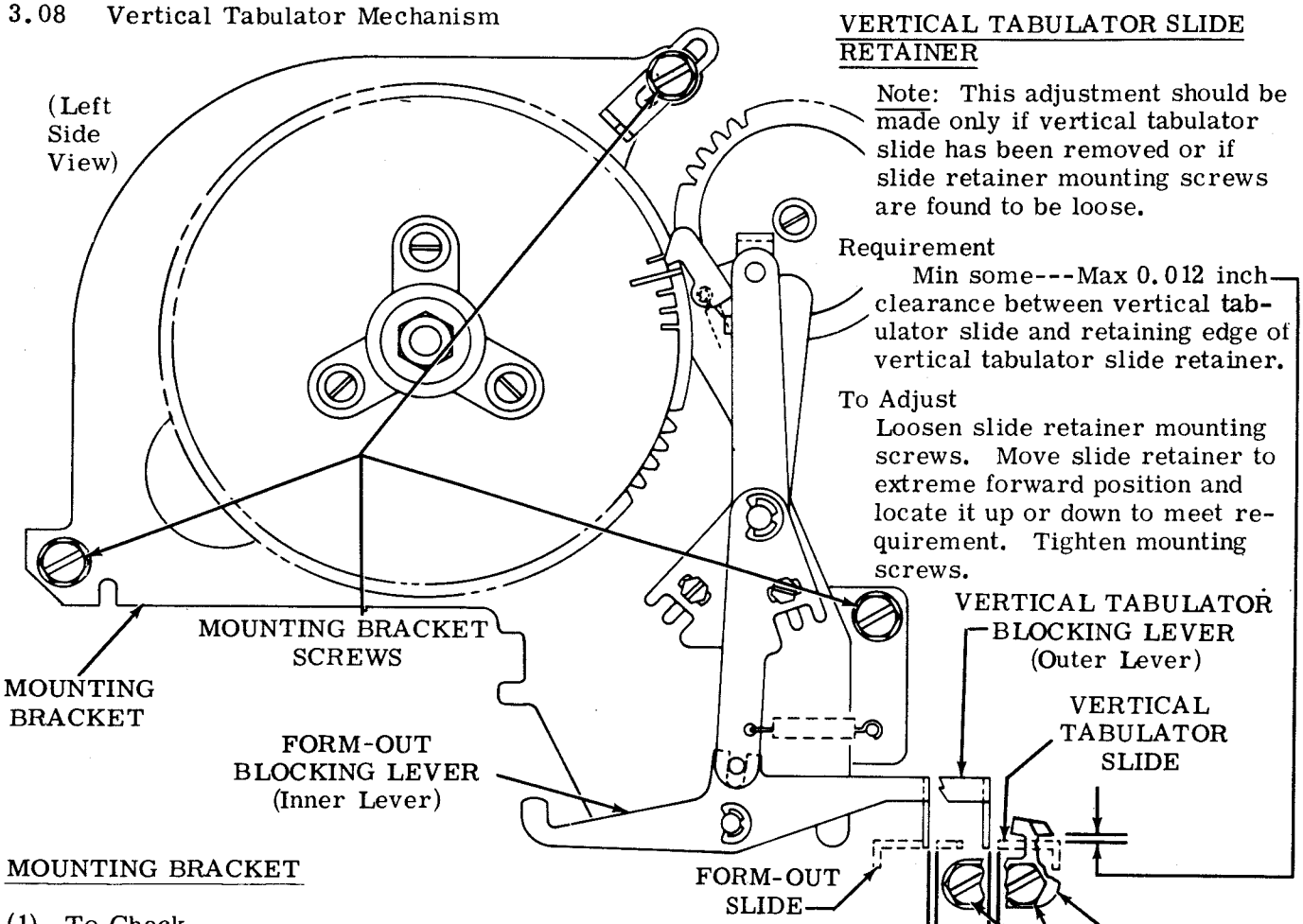
PAPER-OUT LEVER CLEARANCE

Requirement
Paper-out lever should pass through paper-out slot without interference.

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

(Right Rear View)

3.08 Vertical Tabulator Mechanism



VERTICAL TABULATOR SLIDE RETAINER

Note: This adjustment should be made only if vertical tabulator slide has been removed or if slide retainer mounting screws are found to be loose.

Requirement

Min some---Max 0.012 inch clearance between vertical tabulator slide and retaining edge of vertical tabulator slide retainer.

To Adjust

Loosen slide retainer mounting screws. Move slide retainer to extreme forward position and locate it up or down to meet requirement. Tighten mounting screws.

MOUNTING BRACKET

(1) To Check

Select form-out combination and rotate main shaft until form-out slide is in maximum forward position.

Note: For units equipped with nonrepeat form feed, precede each form-feed character with line feed character.

(1) Requirement

With play taken up to make clearance minimum Min some---Max 0.020 inch between form-out blocking lever (inner lever) and form-out slide.

(2) To Check

Select vertical tab combination and rotate main shaft until vertical tabulator slide is in maximum forward position.

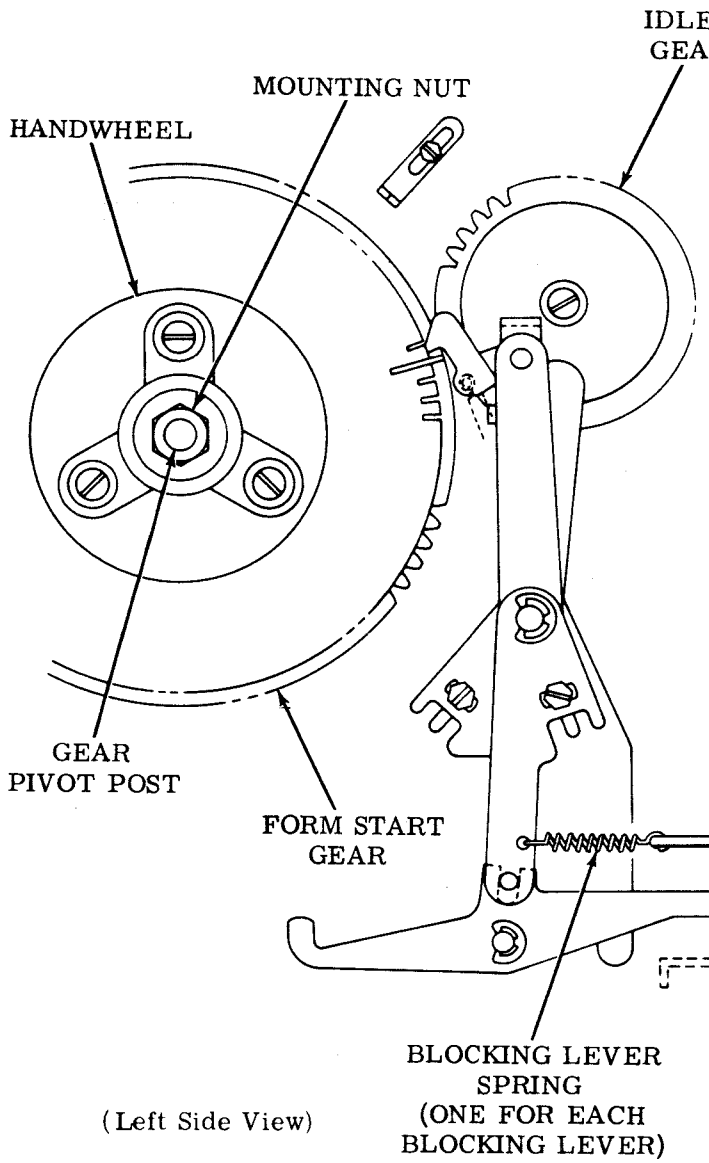
(2) Requirement

With play taken up to make clearance minimum Min 0.002 inch between vertical tabulator slide and vertical tabulator blocking lever (outer lever).

To Adjust

Loosen mounting bracket screws and position lower portion of mounting bracket to meet requirements. Tighten mounting bracket screws.

3.09 Vertical Tabulator Mechanism (continued)



(Left Side View)

FORM START GEAR PLAY

Requirement
Backlash between idler gear and form start gear should be barely perceptible.

To Adjust
Position gear pivot post on its bracket by means of nut in center of handwheel. Gears should remesh properly when checked in at least three positions, 120^{o} apart.

Affected Adjustment
FORM-OUT BLOCKING LEVER (3.10)

BLOCKING LEVER SPRINGS

Requirement
Min 10 oz---Max 15 oz to pull each spring to its operating length when each blocking lever is unoperated (resting on top of its slide).

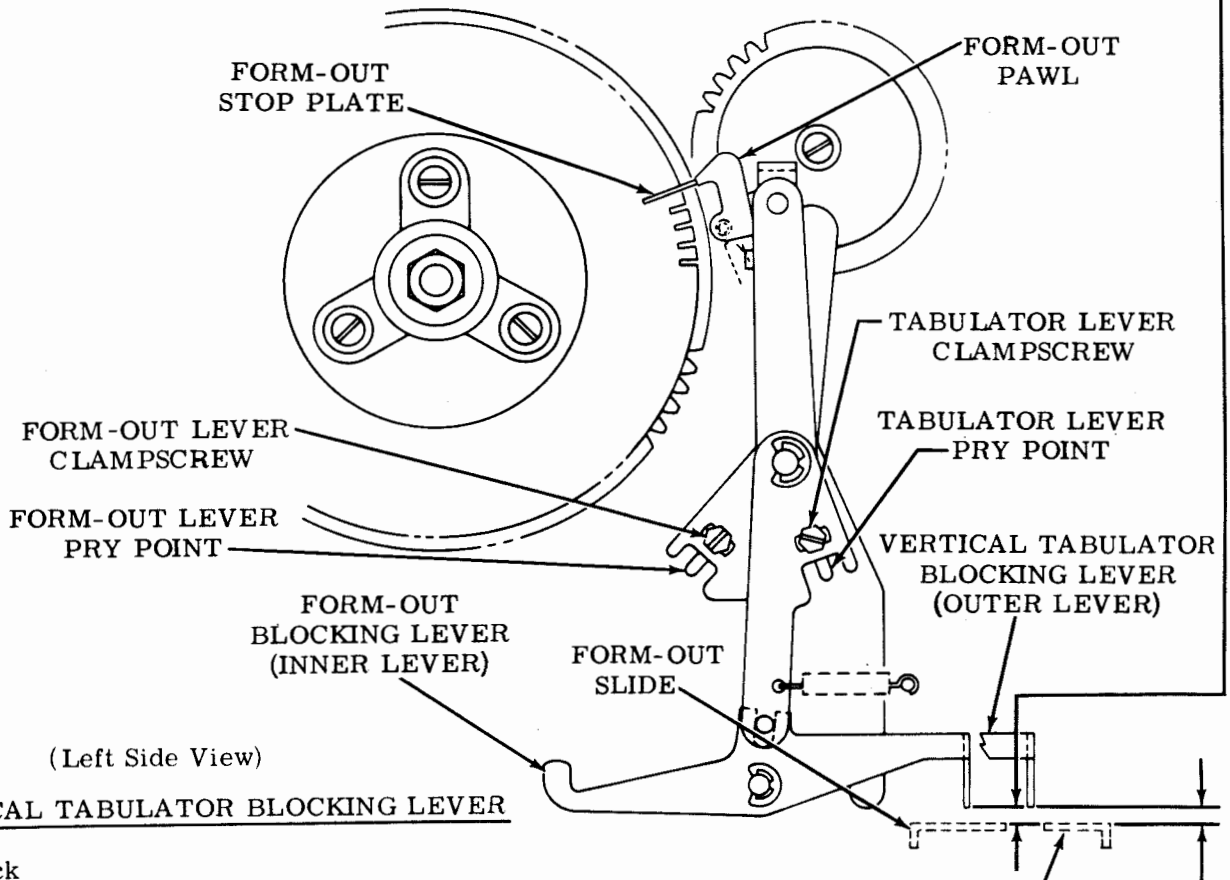
3.10 Vertical Tabulator Mechanism (continued)

FORM-OUT BLOCKING LEVER

To Check
Engage line feed clutch and rotate main shaft until form-out pawl is resting on peak of form-out stop plate.

Requirement
Min 0.005 inch---Max 0.045 inch clearance between bottom of form-out blocking lever and top of form-out slide.

To Adjust
Loosen form-out lever clampscrew and position form-out lever by means of its pry point. Tighten clampscrew.



(Left Side View)

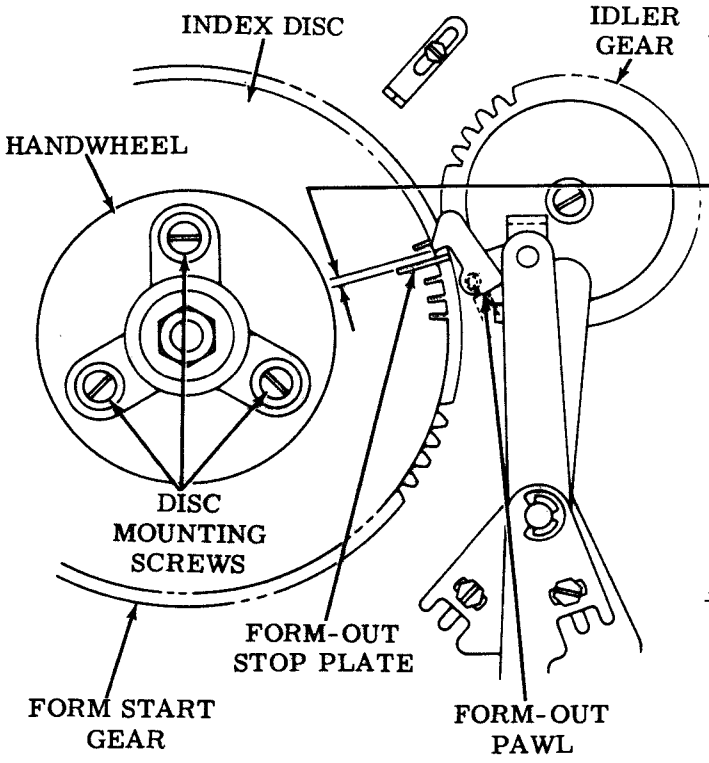
VERTICAL TABULATOR BLOCKING LEVER

To Check
Engage line feed clutch and rotate main shaft until tabulator bail is resting on peak of tabulator stop (condition similar to form-out pawl and stop plate).

Requirement
Min 0.005 inch---Max 0.045 inch between bottom of vertical tabulator blocking lever and vertical tabulator slide.

To Adjust
Loosen tabulator lever clampscrew and position tabulator lever by means of its pry point. Tighten clampscrew.

3.11 Vertical Tabulator Mechanism (continued)



(Left Side View)

INDEX DISC

Requirement

With line feed clutch in stop position and form-out stop plate adjacent to pawl and bail.

Min 0.010 inch---Max 0.025 inch between form-out stop plate and tabulator bail or form-out pawl, whichever is closer. Slack between idler gear, form stop gear, and stop plate should be taken up to make gap a minimum.

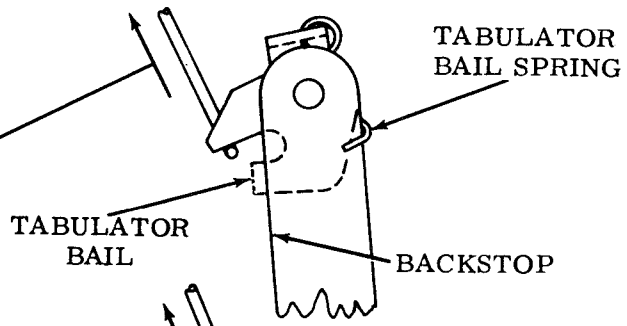
To Adjust

Pull form start gear out of engagement with idler gear. Turn handwheel clockwise until a stop plate just operates pawl, then engage next tooth on idler gear. Position index disc on form start gear by means of disc mounting screws.

LINE FEED CLUTCH TRIP LEVER SPRING

To Check

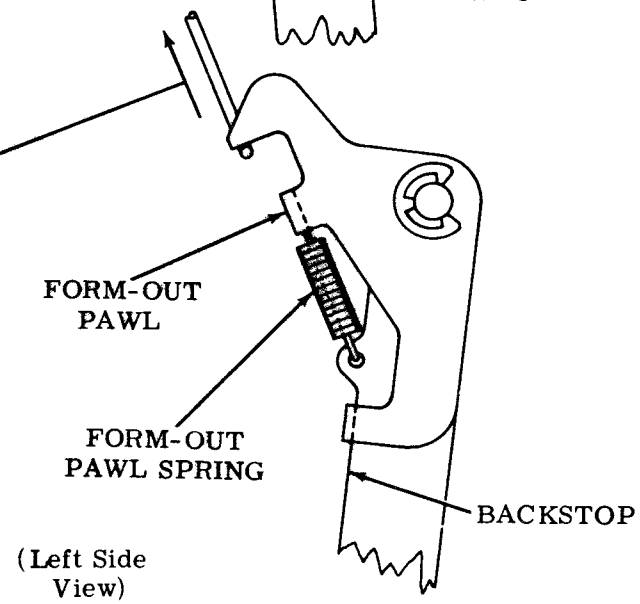
See CLUTCH TRIP LEVER SPRING (2.21) adjustment.



TABULATOR BAIL SPRING

Requirement

Min 3 oz---Max 8 oz to pull tabulator bail away from backstop.



FORM-OUT PAWL SPRING

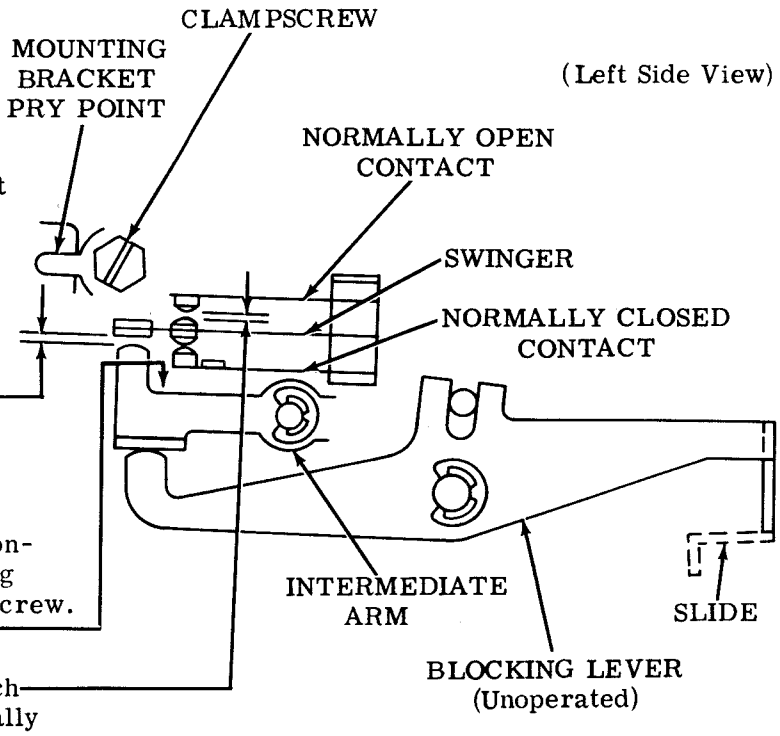
Requirement

Min 3 oz---Max 8 oz to pull form-out pawl away from backstop.

(Left Side View)

3.12 Vertical Tabulator Mechanism (continued)

TRANSMITTER CONTROL SWITCH (BLOCKING LEVER UNOPERATED)



(1) Requirement
Min 12 grams
to separate normally closed contact from swinger contact.

To Adjust
Bend normally closed contact.

(2) Requirement
Min some---Max 0.008 inch
between swinger insulator pad and intermediate arm.

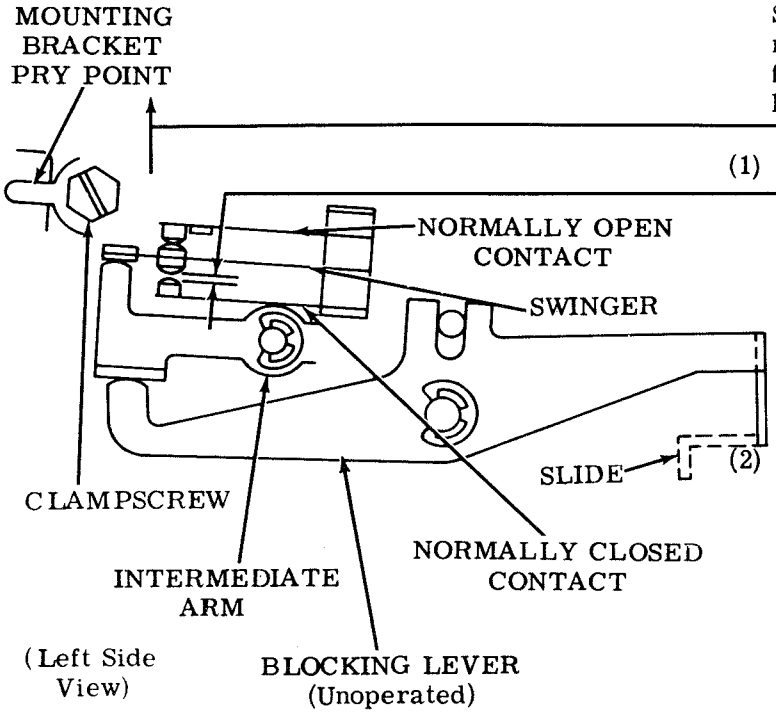
To Adjust
Loosen clampscrew and position contact assembly by means of mounting bracket pry point. Tighten clampscrew.

(3) Requirement
Min 0.010 inch---Max 0.020 inch
between swinger contact and normally open contact.

To Adjust
Bend normally open contact to meet requirement.

TRANSMITTER CONTROL SWITCH (BLOCKING LEVER OPERATED)

To Check
Select form-out code combination and rotate main shaft until form-out slide is in most forward position and form-out blocking lever drops behind slide.



(1) Requirement
Min 0.010 inch
between swinger contact and normally closed contact.

To Adjust
Refine requirement (2), TRANSMITTER CONTROL SWITCH (BLOCKING LEVER UNOPERATED).

(2) Requirement
Min 12 grams
to separate normally open contact from swinger contact.

To Adjust
Refine requirement (3), TRANSMITTER CONTROL SWITCH (BLOCKING LEVER UNOPERATED).

3.13 Vertical Tabulator Mechanism (continued)

POINTER

(1) Requirement
With line feed clutch in stop position and form-out stop plate adjacent to form-out pawl, pointer on mounting bracket should be aligned with notch in index disc.

(2) Requirement
Pointer should clear form-out stop plate by
Min 1/16 inch.

To Adjust
Loosen mounting bracket screw and position pointer. Tighten mounting bracket screw.

FORM-OUT STOP PLATE

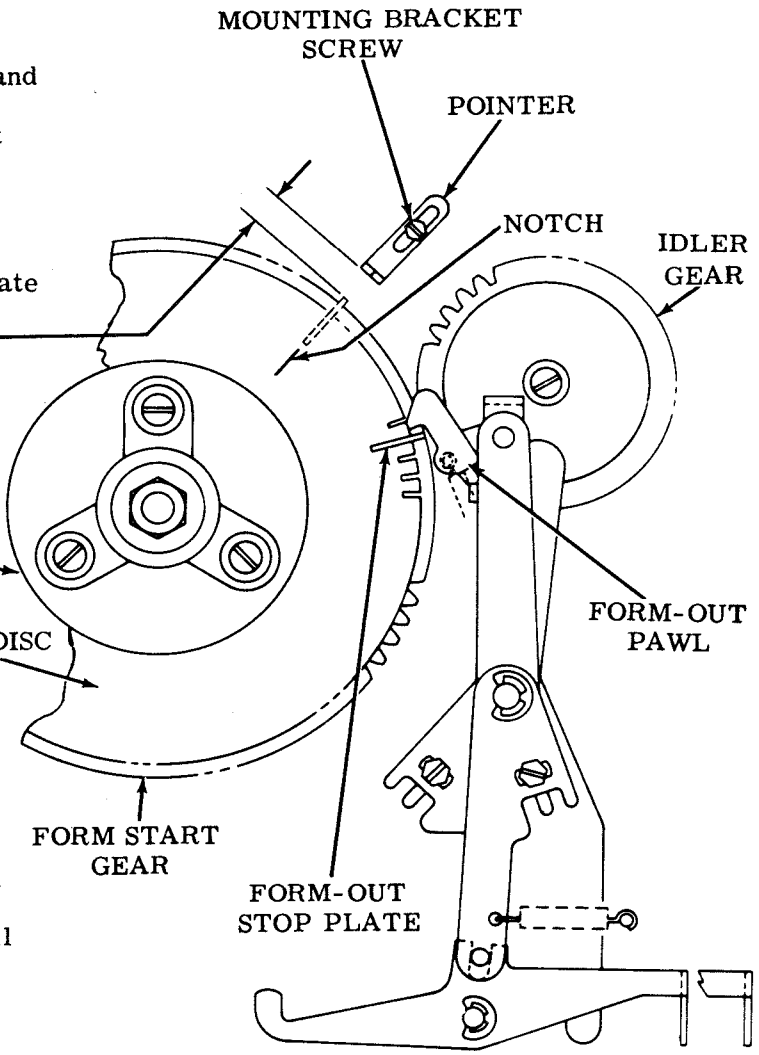
Requirement
A form-out stop plate should be placed on disc in numbered slots corresponding to length of form to be used.

To Adjust
All clutches disengaged. Top of ribbon guide in line with bottom of printing line. Place form in desired start position. Pull form start gear out of engagement with idler gear, and rotate form start gear until pointer lines up with notch in index disc.

TABULATOR STOP

Requirement
Unit should line feed to next desired printing line.

To Adjust
Line feed platen to first printing line on form. Disengage form start gear and rotate it until form-out stop plate is in line with pointer. Engage form start gear. Line feed to next printing line on form, place a tabulator stop tab in index disc slot which is in line with pointer. Repeat procedure until next form-out stop plate is in line with pointer. Repeat procedure for each form-out stop plate used. Unused tabulator stops should be disabled by rotating (1/4 turn) on side in index disc.



(Left Side View)

FORM SYNCHRONIZATION

Requirement
Line feed platen to first printing line on form (printing mechanism should print on this line). Disengage form start gear and rotate until notch in index disc is opposite pointer.