28 TYPING UNIT

ADJUSTMENTS

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1. GENERAL

1.01 This section is reissued to include paper jam alarm and to add recent engineering changes. Since this is a general revision, marginal arrows are omitted.

1.02 The adjustments in this section are divided into basic units, variable features, and earlier design mechanisms. The basic units consist of the friction feed and sprocket feed typing units; the adjustments are sub-divided into major mechanisms most of which are common to both units. All other mechanisms which are of an optional nature to create variations of the 28 typing unit, appear under variable features. When applicable, earlier design mechanisms for the basic units and variable features are cross referenced in their adjustment text.

Note: Remove power from unit before making adjustments.

1.03 The adjustments for the basic units are arranged in a sequence that would be followed if a complete readjustment were undertaken. After an adjustment has been completed, be sure to tighten any nuts or screws that may have been loosened to facilitate the adjustment. If a part that is mounted on shims is to be removed, the number of shims used at each mounting screw should be noted so that the same shim pile up can be replaced when the part is remounted.

1.04 The spring tensions given in this section are indicated values and should be checked with proper spring scales in the position indicated. The adjusting illustrations, in addition to indicating the adjusting tolerances, positions of moving parts, and spring tensions, also show the angle at which the scale should be applied when measuring spring tensions.

1.05 Tools and spring scales required to perform the adjustments are not supplied as part of the equipment but are listed separately in Section 570-005-800TC.

1.06 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.

1.07 Where instructions call for the removal of parts or subassemblies, refer to appropriate section, covering Disassembly and Reassembly.

UNMOUNTED POSITIONS OF TYPING UNIT

1.08 The typing unit may be safely placed in any one of three positions for servicing:

(1) In an upright position, and resting on all four feet.

(2) Tilted backward, and resting on the two rear feet and rear points of side frames.

(3) Bottom upwards, and resting on two upper points on each side frame.

In addition, the typing unit may be placed on either end by using the TP159358 modification kit (not supplied with the unit).

OPERATING CONDITIONS OF CLUTCHES

1.09 When a requirement calls for a clutch to be disengaged, the clutch shoe lever must be fully latched so that the clutch shoes are disengaged from the clutch drum. To become fully latched the trip lever must engage the clutch shoe lever, and the clutch disc must rotate far enough to permit the latch lever to fall into the notch on the clutch disc. The disengaged condition is illustrated in the upper figure of Par. 2.21. When engaged, the clutch shoe lever is unlatched and the clutch shoes are wedged against the clutch drum.

Note 1: 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 clutches and permit the main shaft to rotate freely, apply pressure to the stop lug on each clutch disc with a screwdriver until each latch lever falls into its notch on its clutch disc. Thus each internal expansion clutch becomes fully disengaged. This procedure should be followed before placing the typing unit on the base and switching on the power.

Note 2: After a few weeks (300 to 500 hours) of operation of a new unit, the unit should be relubricated to make sure all operating points have been properly lubricated.

Note 3: Recheck all clutch gaps to insure that the parts, after seating themselves, have not caused the clutch gaps to open up. Reset if necessary. Standard readjustment periods are to be maintained thereafter.

MANUAL SELECTION OF CHARACTERS OR FUNCTIONS

1.10 To manually operate the typing unit while removed from the keyboard or base, hold the selector magnet armature (Par. 2.01) against the pole pieces with an armature clip. Rotate the main shaft in a counterclockwise direction (handwheel listed in Section 570-005-800TC) to bring all clutches to their disengaged position.

Note: The armature clip is attached to the armature by carefully inserting the flat formed end of the clip over the top of the armature and between the pole pieces, and hooking the extruded projection under the edge of the armature. The top end of the clip should then be hooked over the top of the selector coil terminal (bakelite) guard. The spring tension of the clip will hold the armature in the marking (attracted) position.

1.11 Fully disengage all clutches as described in the note following Par. 1.09. Release the armature momentarily to permit the selector clutch to engage. Turn the main shaft slowly until the no. 5 selector lever has just moved to the peak of its cam. Strip from the selector levers all push levers which are spacing in the code combination that is being selected. It should be noted that selector levers (Par. 2.12) move in succession, starting with the inner (no. 1). Continue to rotate the main shaft until all operations initiated by the selector mechanism clear the typing unit.

VARIABLE FEATURES

1.12 In addition to the basic unit adjustments, covered in Part 2, adjustments for a number of variable features appear in Part 3. Where adjustments of these variable features affect the adjustment sequence, cross reference information has been included in Part 2. Variable feature adjustments which do not affect the adjusting sequence, may be done at any time during the adjusting procedure.

EARLIER DESIGN MECHANISMS

1.13 Parts 2 and 3 contain illustrations and adjusting procedures for mechanisms currently being manufactured. Illustrations and adjusting procedures for mechanisms of earlier design are located in Part 4. Where a new mechanism has replaced a mechanism of earlier design, reference has been made in Parts 2 and 3 to the corresponding mechanism in Part 4.

COMPLETE ADJUSTMENT OF TYPING UNIT

1.14 When making a complete adjustment of the typing unit, the following conditioning operations should be performed to prevent damage:

(a) Loosen the clamp screw on the code bar shift lever drive arm (Par. 2.15).

(b) Move the right and left vertical positioning lever eccentric studs (Par. 2.28 and 2.29) in the rocker shaft brackets to their lowest position.

(c) Loosen the two bearing stud mounting screws and two connecting strip clamp screws in the horizontal positioning drive linkage (Par. 2.35).

(d) Loosen the clamp screws and move the reversing slide brackets to their uppermost position (Par. 2.34).

(e) Loosen the function reset bail blade mounting screws (Par. 2.32).

(f) For units equipped with two-stop function clutches: Loosen the shoulder bushings on each function stripper blade arm and move stripper blade and arms to their lowest positions (Par. 4.18).

(g) Loosen the carriage return lever clamp screw (Par. 2.40).

(h) Loosen the clamp screws in the oscillating rail slide (Par. 2.30).

(i) Loosen the reversing slide adjusting stud (Par. 2.34).

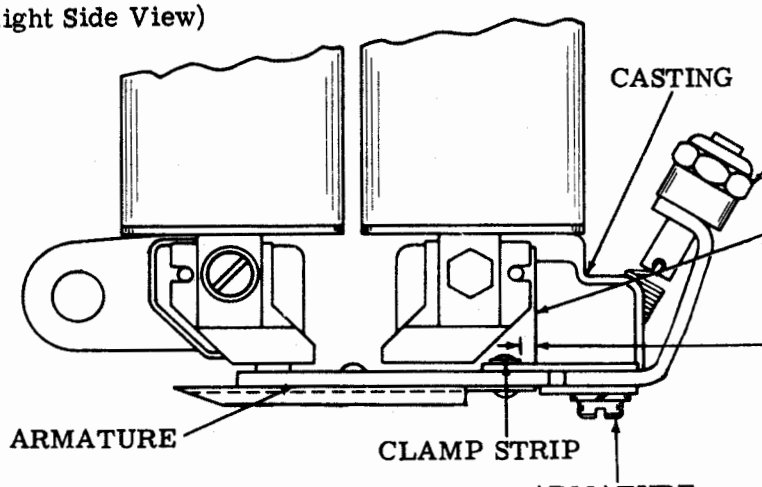
(j) Loosen the clamp nuts on the shift code bar guide plates (Par. 2.33).

2. BASIC UNITS

2.01 Selector Mechanism

Note 1: To facilitate making the following adjustments, remove range finder and selector magnet assemblies. To insure better operation, pull a piece of KS bond paper between armature and pole pieces to remove any oil or foreign matter that may be present. Make certain that no lint or pieces of paper remain between pole pieces and armature.

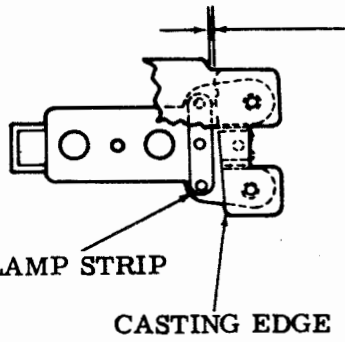
(Right Side View)



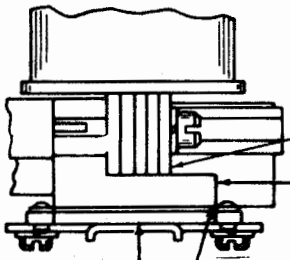
SELECTOR ARMATURE (EARLY DESIGN

Note 2: This requirement need not be made nor checked if selector magnet bracket and receiving margin requirements are met.

(1) Requirement (Armature Clamp Strip)
Clearance between armature clamp strip and casting at their closest point
Min 0.010 inch

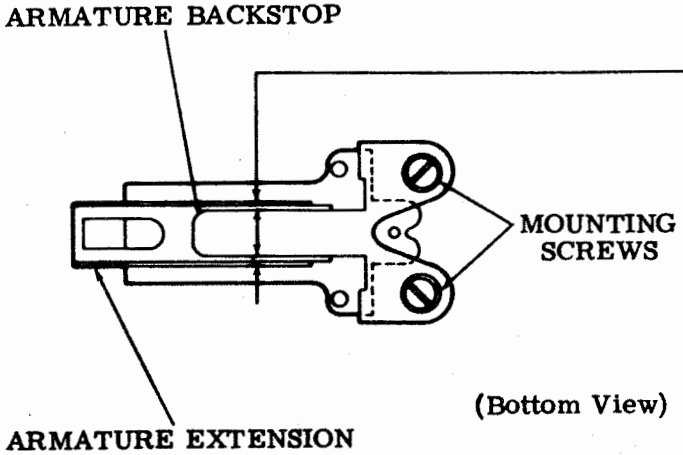


(Top View)



(Front View)

(2) Requirement (Armature Alignment)
Outer edge of armature should be flush within 0.015 inch with outer edge of both pole pieces.



(Bottom View)

(3) Requirement (Armature Backstop Alignment (Early Design) TP152424 Only)
Clearance between sides of backstop and sides of armature extension
Min 0.010 inch

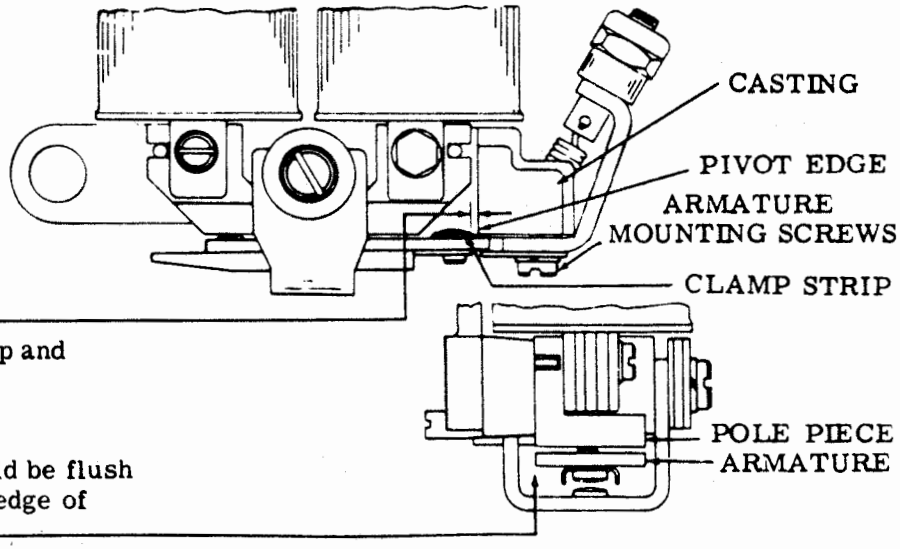
To Adjust
Position armature spring adjusting nut to hold armature firmly against pivot edge of casting. Then position armature and backstop with mounting screws loosened. Tighten screws.

2.02 Selector Mechanism (continued)

SELECTOR ARMATURE

Note: These requirements need not be made nor checked if the selector magnet bracket and receiving margin requirements are met.

(Right Side View) (LATEST DESIGN)



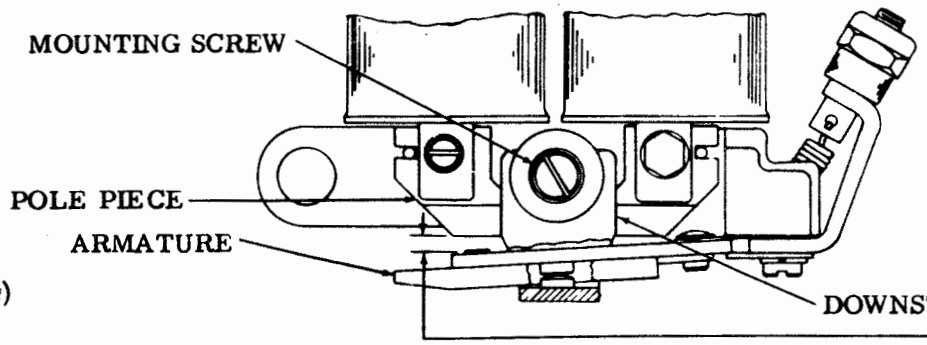
(1) Requirement
Clearance
Min 0.010 inch between armature clamp strip and magnet bracket casting.

(2) Requirement
Outer edge of armature should be flush within 0.015 inch with outer edge of pole pieces.

(Left Side View)

(3) Requirement
Start lever shall drop freely into armature extension slot.

To Adjust
Position armature spring adjusting nut to hold armature firmly against pivot edge of casting. Position armature with mounting screws loosened. Tighten screws.



(Right Side View)

SELECTOR ARMATURE DOWNSTOP (Preliminary)

Requirement
With magnet de-energized, locklevers on high part of their cam, and armature resting against its downstop, clearance between end of armature and left edge of left pole piece
Min 0.030 inch---Max 0.035 inch.

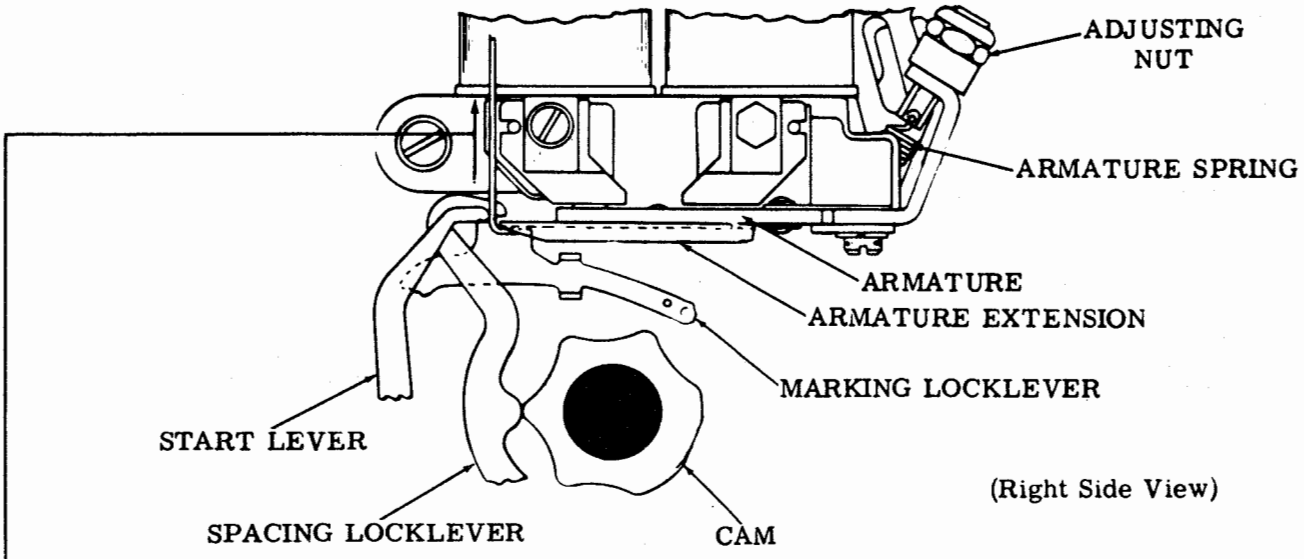
To Adjust
Position downstop with mounting screw loosened. Tighten screw.

2.03 Selector Mechanism (continued)

CAUTION: BEFORE PROCEEDING WITH THE SELECTOR ARMATURE SPRING ADJUSTMENT, THE TYPE OF ARMATURE (ONE ANTIFREEZE BUTTON OR TWO ANTIFREEZE BUTTONS) MUST BE KNOWN. EXCESSIVE TENSION ON, OR THE MISHANDLING OF A TWO BUTTON ARMATURE CAN DAMAGE THE THIN LEAF SPRING ATTACHED TO THE PIVOT END. IF REMOVAL FOR EXAMINATION IS NECESSARY, DISASSEMBLE AS FOLLOWS:

(1) DISCONNECT ARMATURE SPRING.
(2) REMOVE ARMATURE MOUNTING SCREWS.
(3) WITHDRAW ARMATURE FROM SELECTOR.

REASSEMBLE AND RECHECK THE FOLLOWING ADJUSTMENTS:
SELECTOR ARMATURE (2.01, 2.02)
SELECTOR ARMATURE DOWNSTOP BRACKET (2.06)
SELECTOR MAGNET BRACKET (2.05)



SELECTOR ARMATURE SPRING (For Units With Single Anti-Freeze Button on Selector Armature)

Requirement (Preliminary)
With start lever, marking and spacing locklevers on high part of their cams, hook scale under end of armature extension (hold as nearly vertical as possible). It should require
(a) Min 1-1/2 oz---Max 2 oz for 20 MA operation
(b) Min 2-1/2 oz---Max 3 oz for 60 MA operation
to pull armature to marking position.

To Adjust
Position adjusting nut.

Requirement (Final)
Refer to SELECTOR RECEIVING MARGIN (2.11)

Note: Spring tensions shown on this page permit operation of printer prior to measurement of receiving margins. Refine spring tension for maximum selector performance with unit connected to specific circuit in which it is to function (operating at desired speed and line current). See 2.11.

2.04 Selector Mechanism (continued)

SELECTOR ARMATURE SPRING (For Units With Two Anti-Freeze Buttons on Selector Armature)

(1) Requirement (Preliminary)

With start lever, marking and spacing lock levers on high part of their cams, hook scale under end of armature extension (hold as nearly vertical as possible). It should require

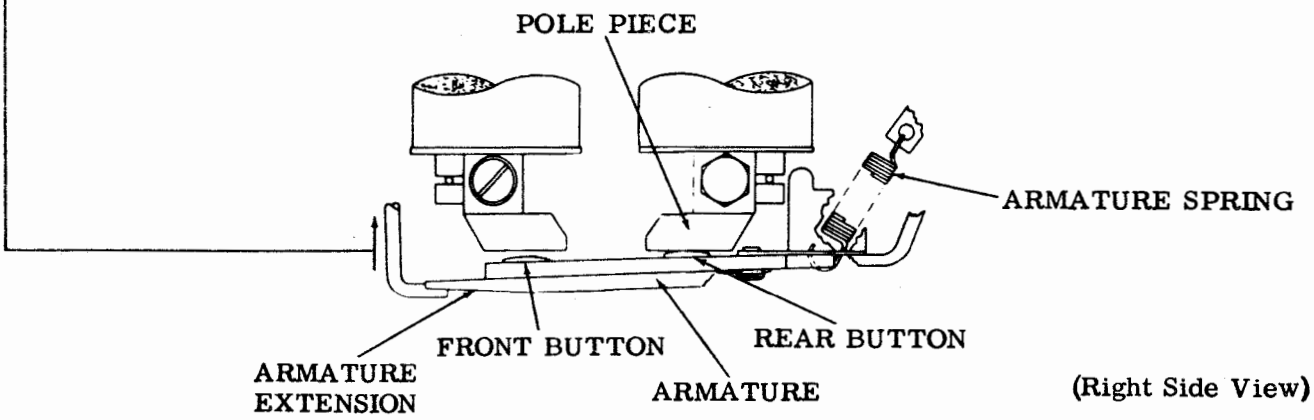
0.020 amperes	0.060 amperes
14 grams	21 grams

to pull rear button against its pole piece.

To Adjust

Position adjusting nut.

Note 1: This spring tension can be adjusted for maximum selector performance only when the printer is connected to the specific circuit over which it is to operate under service conditions. Since there are several operating speeds and since circuits vary widely, it is impossible to adjust the spring for maximum performance at the factory. The foregoing spring tension requirement is given to permit operation prior to measurement of receiving margins. Readjustment made to obtain satisfactory receiving margin should not be disturbed in order to meet the requirements of this adjustment. The final spring tension should be held as close as possible to the values given above — consistent with good receiving margins.



(Right Side View)

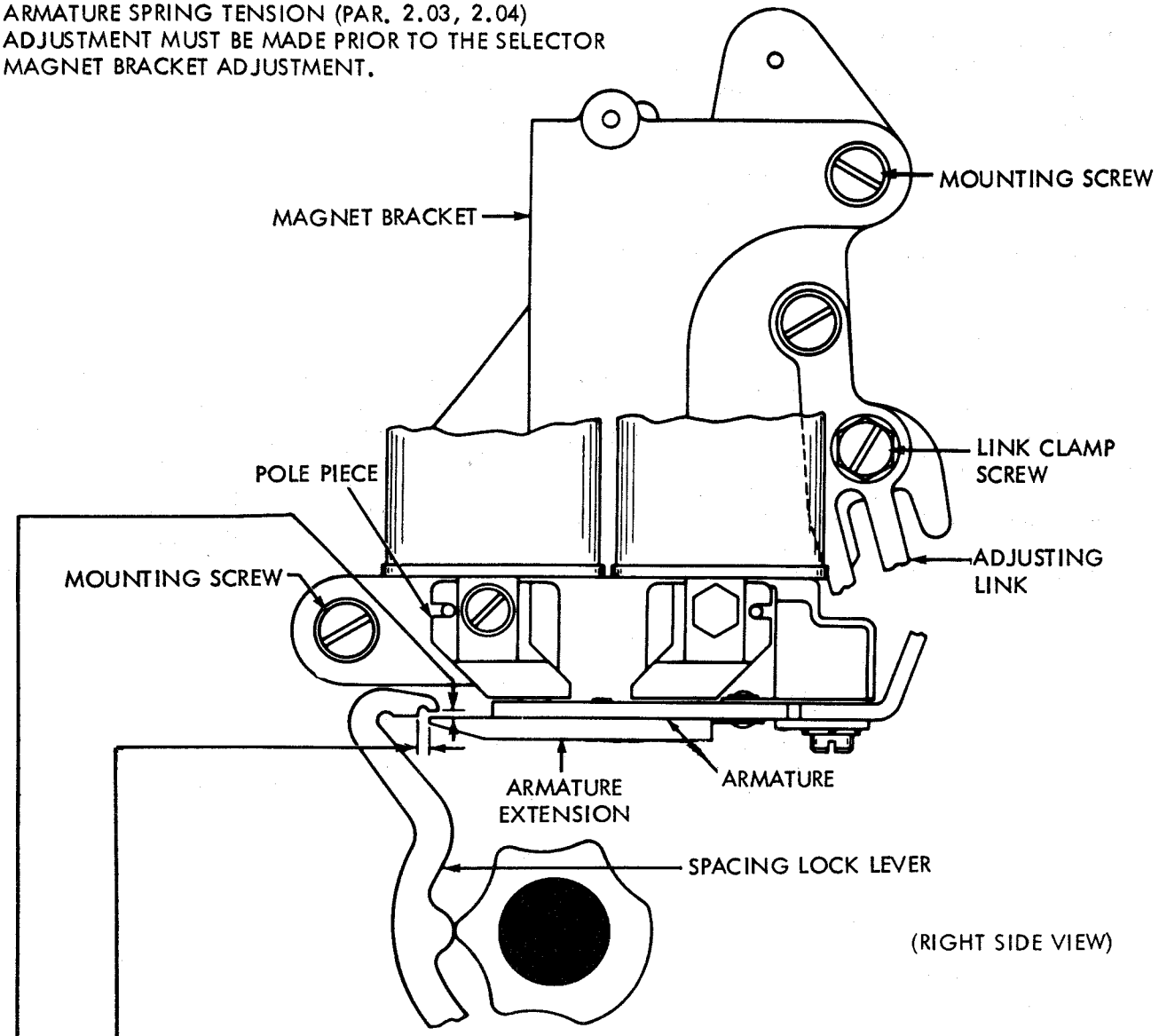
(2) Requirement (Final)

When a distortion test set is available, refine selector armature spring adjustment to meet selector receiving margin (2.11).

Note 2: With selector magnets energized, front anti-freeze button must be in contact with its magnet core.

2.05 Selector Mechanism (Cont.)

NOTE
THE APPROPRIATE PRELIMINARY SELECTOR ARMATURE SPRING TENSION (PAR. 2.03, 2.04) ADJUSTMENT MUST BE MADE PRIOR TO THE SELECTOR MAGNET BRACKET ADJUSTMENT.



SELECTOR MAGNET BRACKET

(1) REQUIREMENT---SPACING LOCK LEVER ON EACH HIGH PART OF CAM. MAGNETS ENERGIZED AND ARMATURE IN CONTACT WITH POLE PIECE. CLEARANCE BETWEEN END OF ARMATURE EXTENSION AND SHOULDER ON SPACING LOCK LEVER.
MIN. 0.020 INCH ——————————————— MAX. 0.035 INCH
TO ADJUST --- LOOSEN TWO MAGNET BRACKET MOUNTING SCREWS AND ADJUSTING LINK CLAMP SCREW. POSITION MAGNET BRACKET BY MEANS OF ADJUSTING LINK AND TIGHTEN LINK CLAMP SCREW ONLY.

(2) REQUIREMENT --- SPACING LOCK LEVER ON EACH HIGH PART OF CAM. ARMATURE IN CONTACT WITH POLE PIECE. SOME CLEARANCE BETWEEN UPPER SURFACE OF ARMATURE EXTENSION AND LOWER SURFACE OF SPACING LOCK LEVER WHEN LOCK LEVER IS HELD DOWNWARD.
MAX. 0.003 INCH
TO ADJUST --- POSITION UPPER END OF MAGNET BRACKET. TIGHTEN TWO MAGNET BRACKET MOUNTING SCREWS. RECHECK REQUIREMENT (1).

2.06 Selector Mechanism (continued)

SELECTOR ARMATURE DOWNSTOP (FINAL)

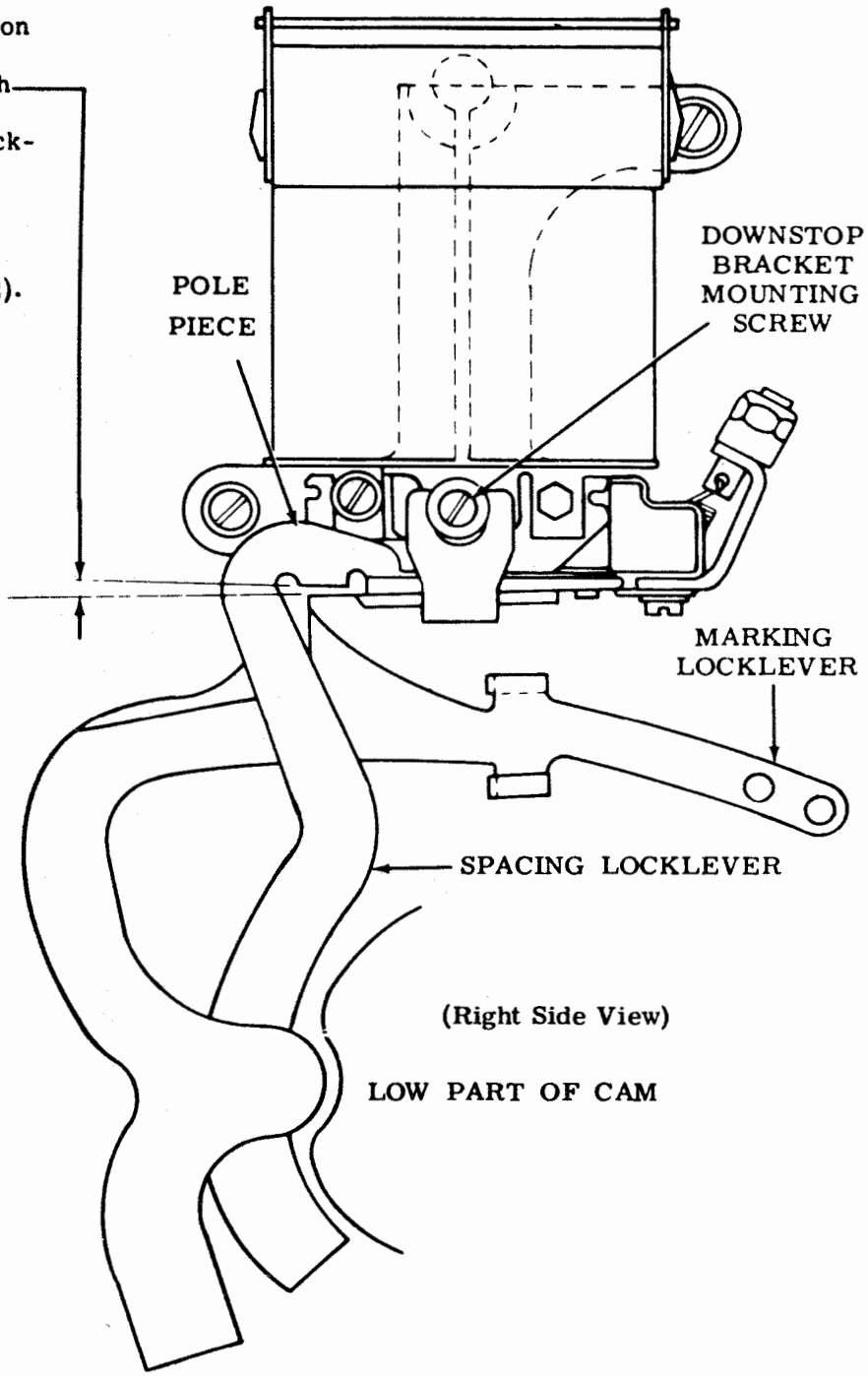
Requirement

Magnet de-energized. Locklevers on low part of their cams

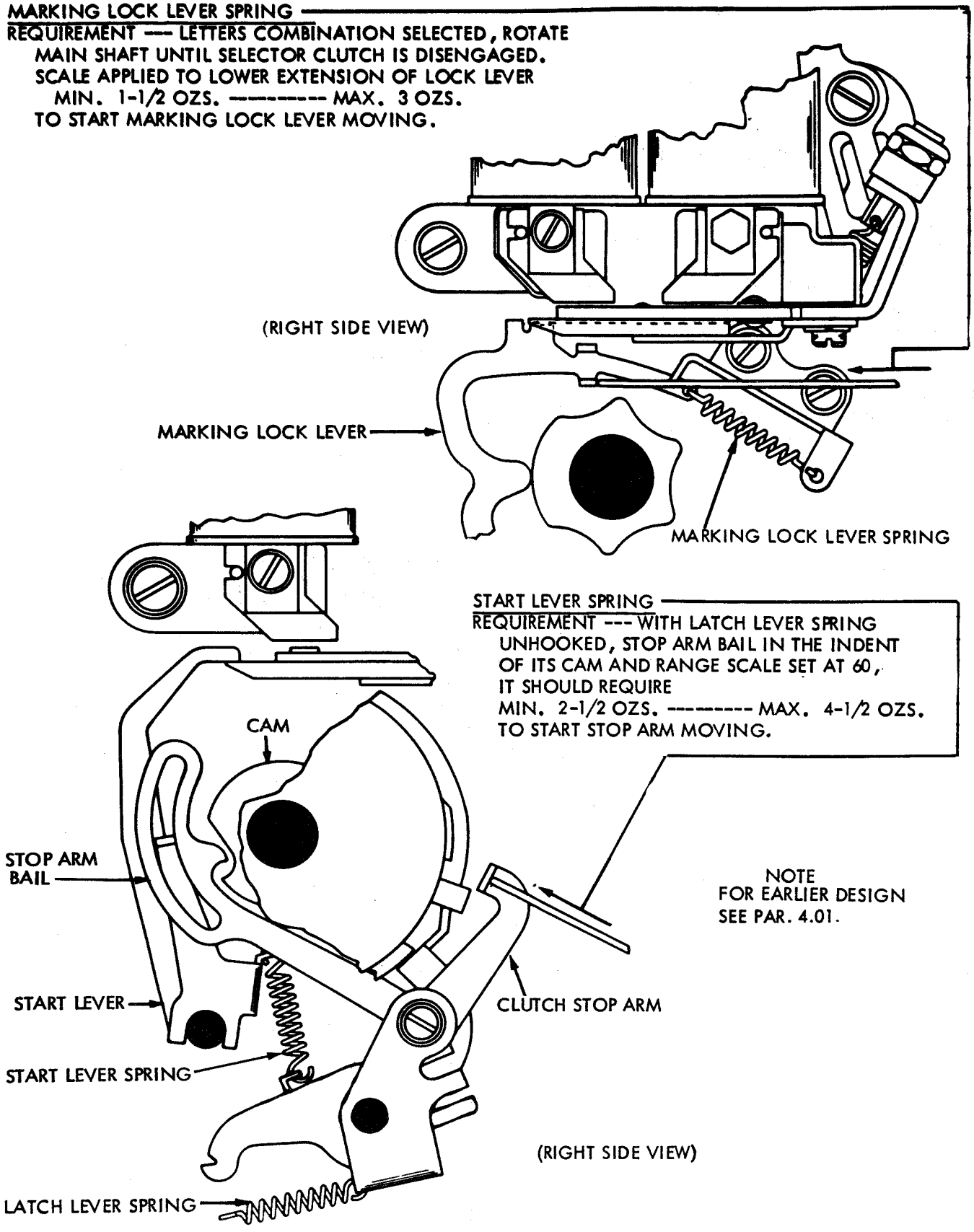
Min 0.005 inch---Max 0.015 inch clearance between top of armature extension and bottom of spacing locklever.

To Adjust

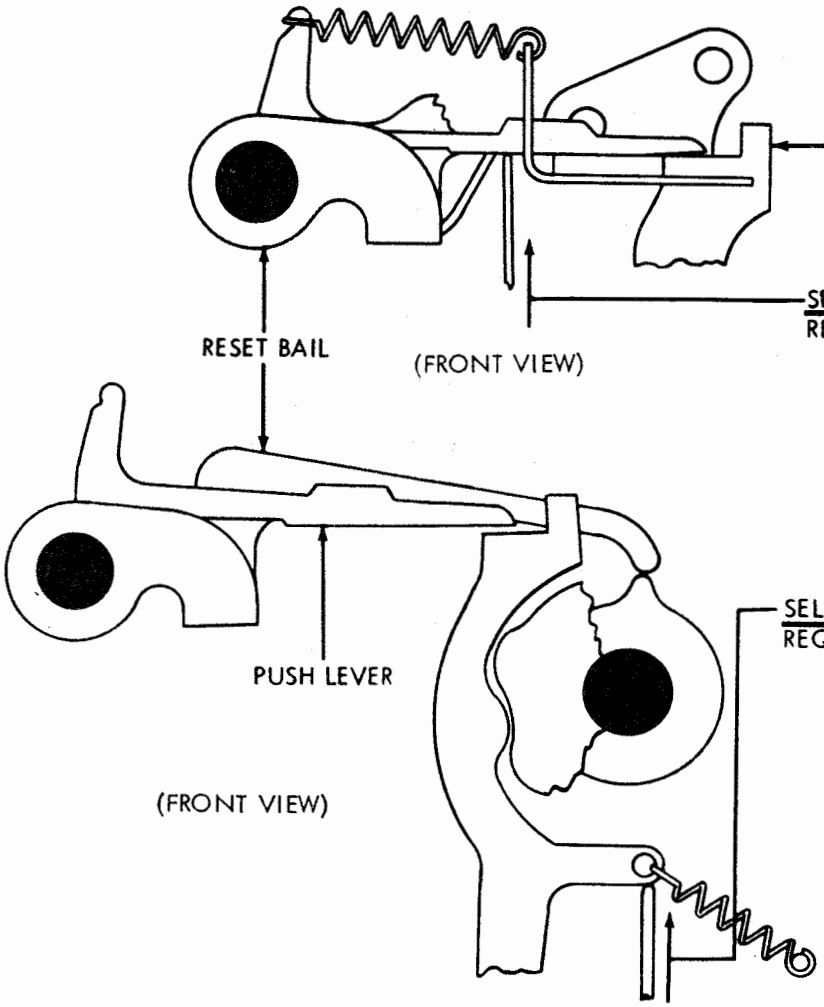
Refine SELECTOR ARMATURE DOWNSTOP (PRELIMINARY) (2.02).



2.07 Selector Mechanism (Cont.)

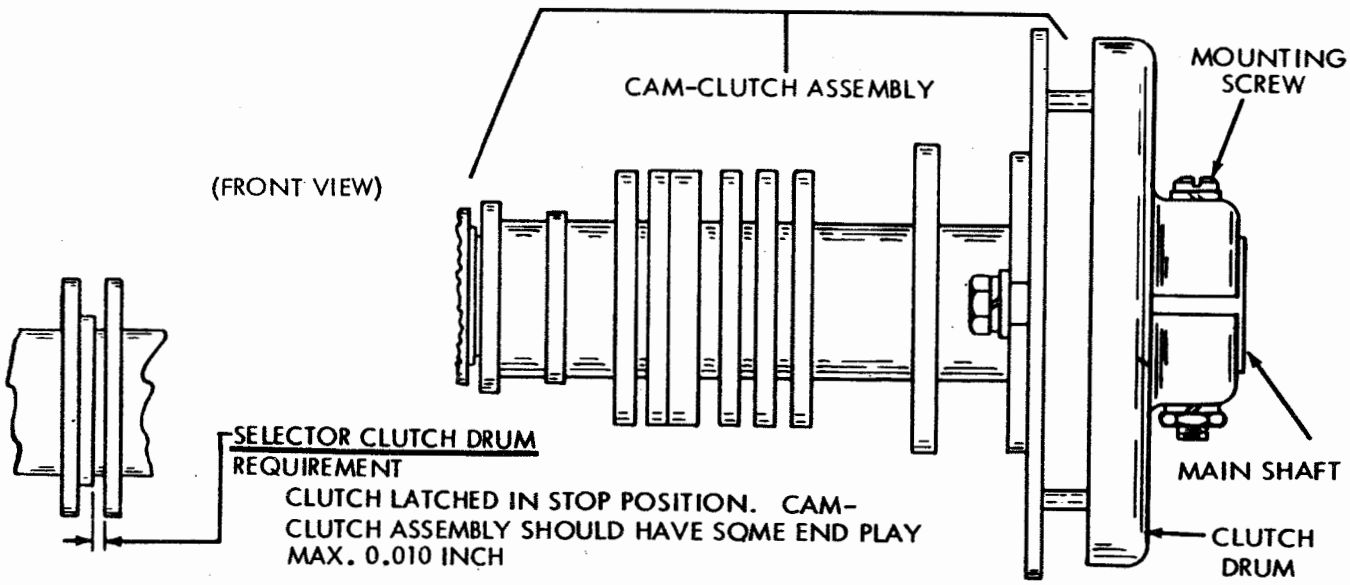


2.08 Selector Mechanism (Cont.)



SELECTOR PUSH LEVER SPRING
REQUIREMENT
PUSH LEVER IN SPACING POSITION
MIN. 3/4 OZ.
MAX. 1-1/2 OZS.
TO MOVE PUSH LEVER FROM SELECTOR LEVER. CHECK FIVE SPRINGS.

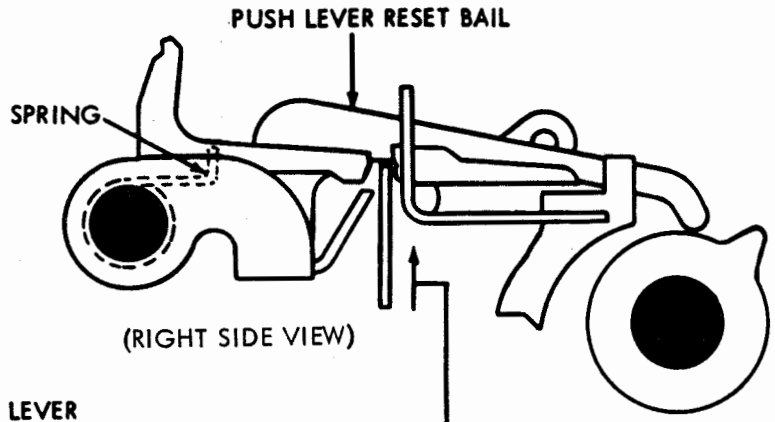
SELECTOR LEVER SPRING
REQUIREMENT
PLACE UNIT UPSIDE DOWN.
RESET BAIL ON PEAK OF ITS CAM.
MIN. 1-1/4 OZS.
MAX. 2-1/2 OZS.
TO START EACH LEVER MOVING, CHECK FIVE SPRINGS. IF NECESSARY, UNHOOK START LEVER SPRING TO CHECK NO. 4 SELECTOR LEVER SPRING.



SELECTOR CLUTCH DRUM
REQUIREMENT
CLUTCH LATCHED IN STOP POSITION. CAM-CLUTCH ASSEMBLY SHOULD HAVE SOME END PLAY MAX. 0.010 INCH

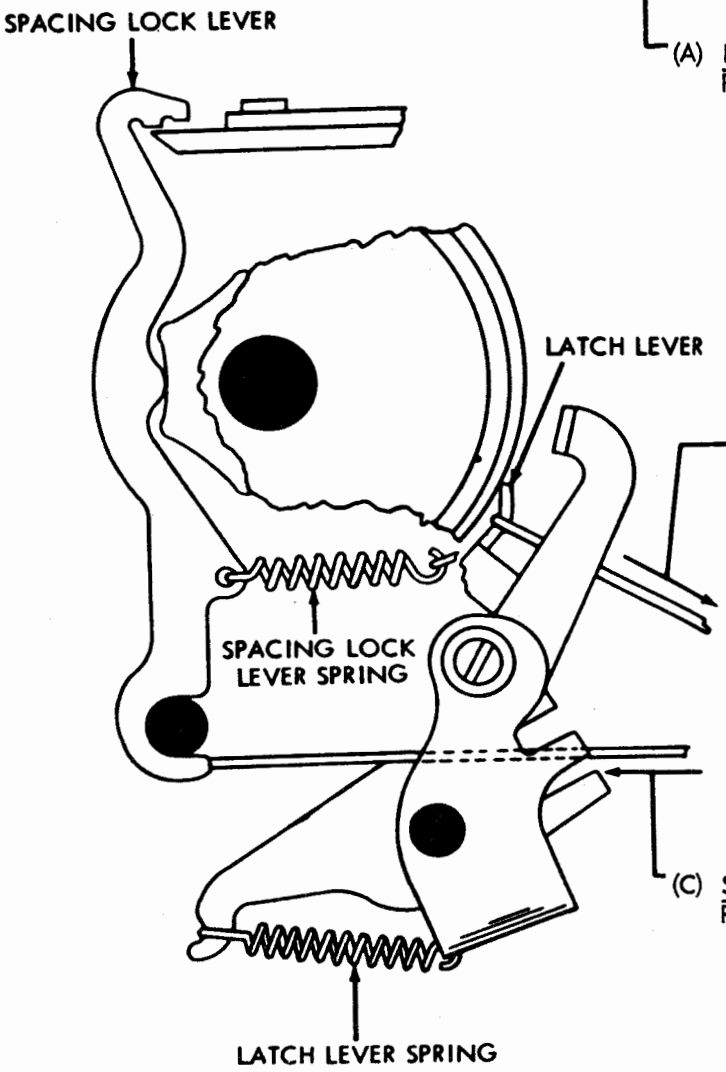
TO ADJUST
POSITION CLUTCH DRUM WITH MOUNTING SCREW LOOSENED. TIGHTEN SCREW.

2.09 Selector Mechanism (Cont.)



(A) PUSH LEVER RESET BAIL SPRING REQUIREMENT

PUSH LEVER RESET BAIL ON LOW PART OF CAM AND 32 OZ. SCALE APPLIED TO RESET BAIL. MIN. 4 OZS. --- MAX. 8 OZS. TO MOVE BAIL FROM CAM.



(B) SELECTOR CLUTCH LATCH LEVER SPRING REQUIREMENT

LATCH RESTING ON LOW PART OF ITS CAM DISK. MIN. 2 OZS. --- MAX. 3-1/2 OZS. TO START LATCH MOVING.

(C) SPACING LOCK LEVER SPRING REQUIREMENT

SELECTOR ARMATURE RELEASED AND SPACING LOCK LEVER ON LOW PART OF ITS CAM. SPRING SCALE APPLIED TO LOWER END OF SPACING LOCK LEVER. MIN. 3 OZS. --- MAX. 6 OZS. TO MOVE SPACING LOCK LEVER FROM ITS PIVOT SHAFT

2.10 Selector Mechanism (Cont.)

NOTE: REPLACE RANGE FINDER AND SELECTOR MAGNET ASSEMBLY

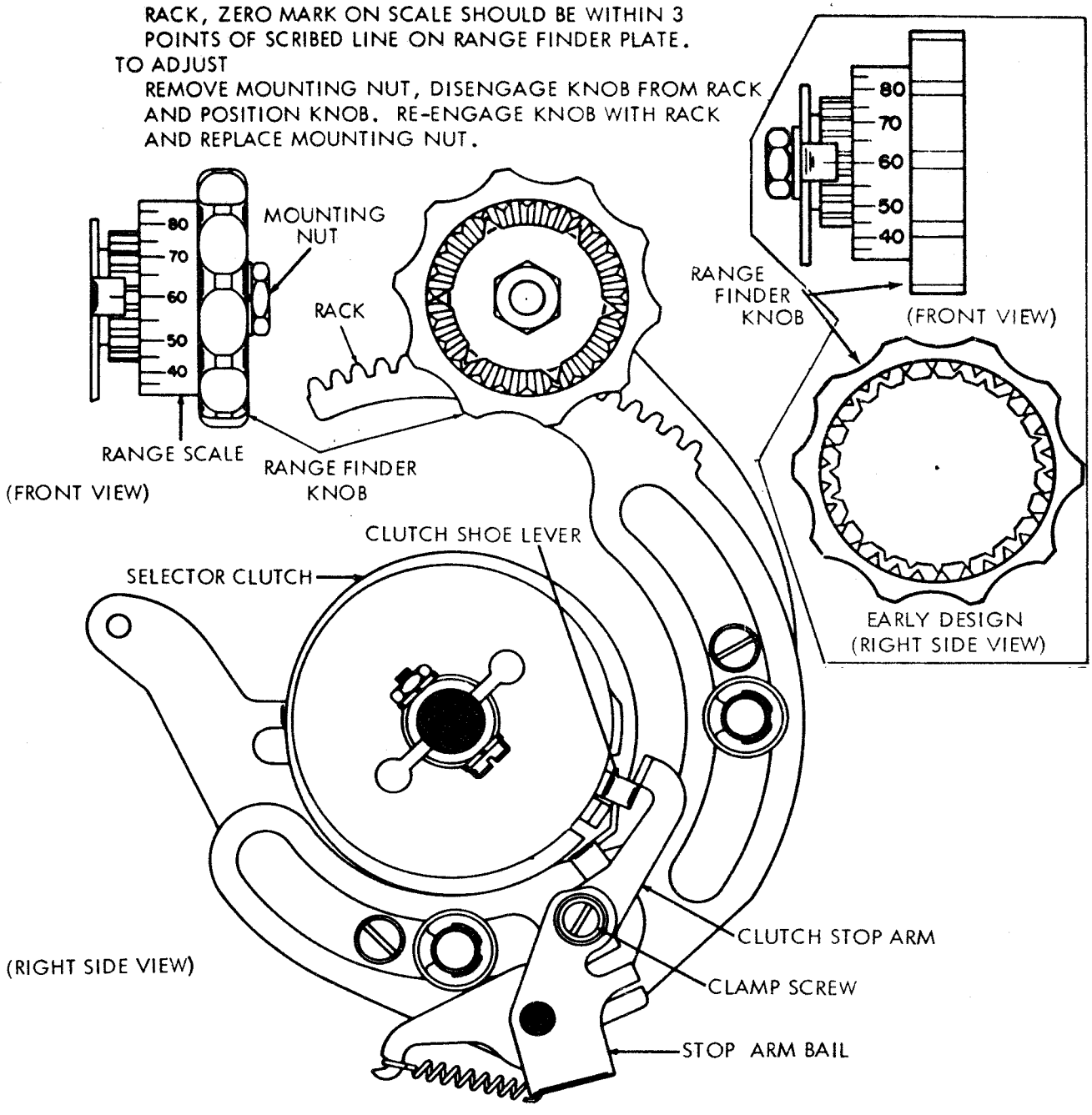
(A) RANGE FINDER KNOB PHASING

REQUIREMENT

WITH RANGE FINDER KNOB TURNED TO EITHER END OF RACK, ZERO MARK ON SCALE SHOULD BE WITHIN 3 POINTS OF SCRIBED LINE ON RANGE FINDER PLATE.

TO ADJUST

REMOVE MOUNTING NUT, DISENGAGE KNOB FROM RACK AND POSITION KNOB. RE-ENGAGE KNOB WITH RACK AND REPLACE MOUNTING NUT.



(B) SELECTOR CLUTCH STOP ARM

REQUIREMENT

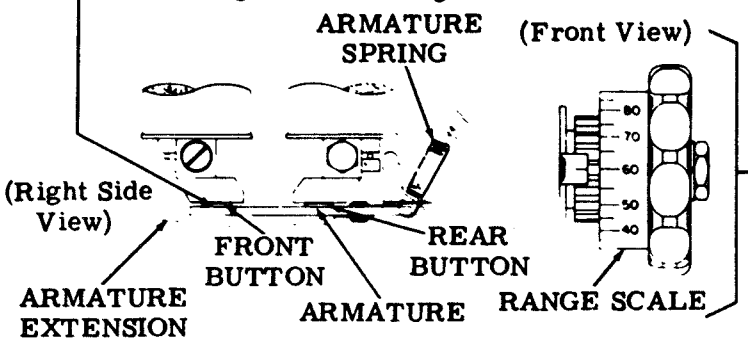
RANGE SCALE SET AT 60. SELECTOR CLUTCH DISENGAGED. ARMATURE IN MARKING POSITION. CLUTCH STOP ARM SHOULD ENGAGE CLUTCH SHOE LEVER BY APPROXIMATELY FULL THICKNESS OF SHOE LEVER.

TO ADJUST

POSITION STOP ARM ON STOP ARM BAIL WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.

2.11 Selector Mechanism (continued)

Note: Armature with two anti-freeze buttons, front button must contact its core when magnets are energized.



SELECTOR RECEIVING MARGIN

Requirement (For Units Employing Armature With One Anti-Freeze Button)

When a signal distortion test is used for determining the receiving margins of the selector, and where the condition of the components is equivalent to that of new equipment, the range and distortion tolerances below should be met.

Requirement (For Units Employing Armature With Two Anti-Freeze Buttons)

When a distortion test set is available, the selector armature spring tension should be refined, if necessary, to meet the selector receiving margins. The front anti-freeze button must contact the magnet core when the magnet coils are energized.

Note 1: (For Bell Service Only) When checking units with single button armature, signal line should be shunted by a switchboard simulator. Simulator should not be used with units employing the two-button armature.

Note 2: Separate 50 or 75 baud tests are not required. Units geared for 75 baud are tested with the usual 74.2 baud 600 OPM 7.42 unit signals.

SELECTOR MARGIN MINIMUM REQUIREMENTS

CURRENT	SPEED WPM	POINTS RANGE (ZERO DISTORTION)	PERCENT MARKING AND SPACING BIAS TOLERATED	END DISTORTION TOLERATED (SCALE SET AT BIAS OPTIMUM)
0.060 amp (windings parallel)	60 75 100 50 + 75 baud	72	40	35
0.020 amp (windings series)	60 75	72	40	35

To Adjust

Refine the SELECTOR ARMATURE SPRING (See 2.04 and 2.05).

RECEIVING MARGIN FOR DUAL SPEED OPERATION (60 and 100 wpm)

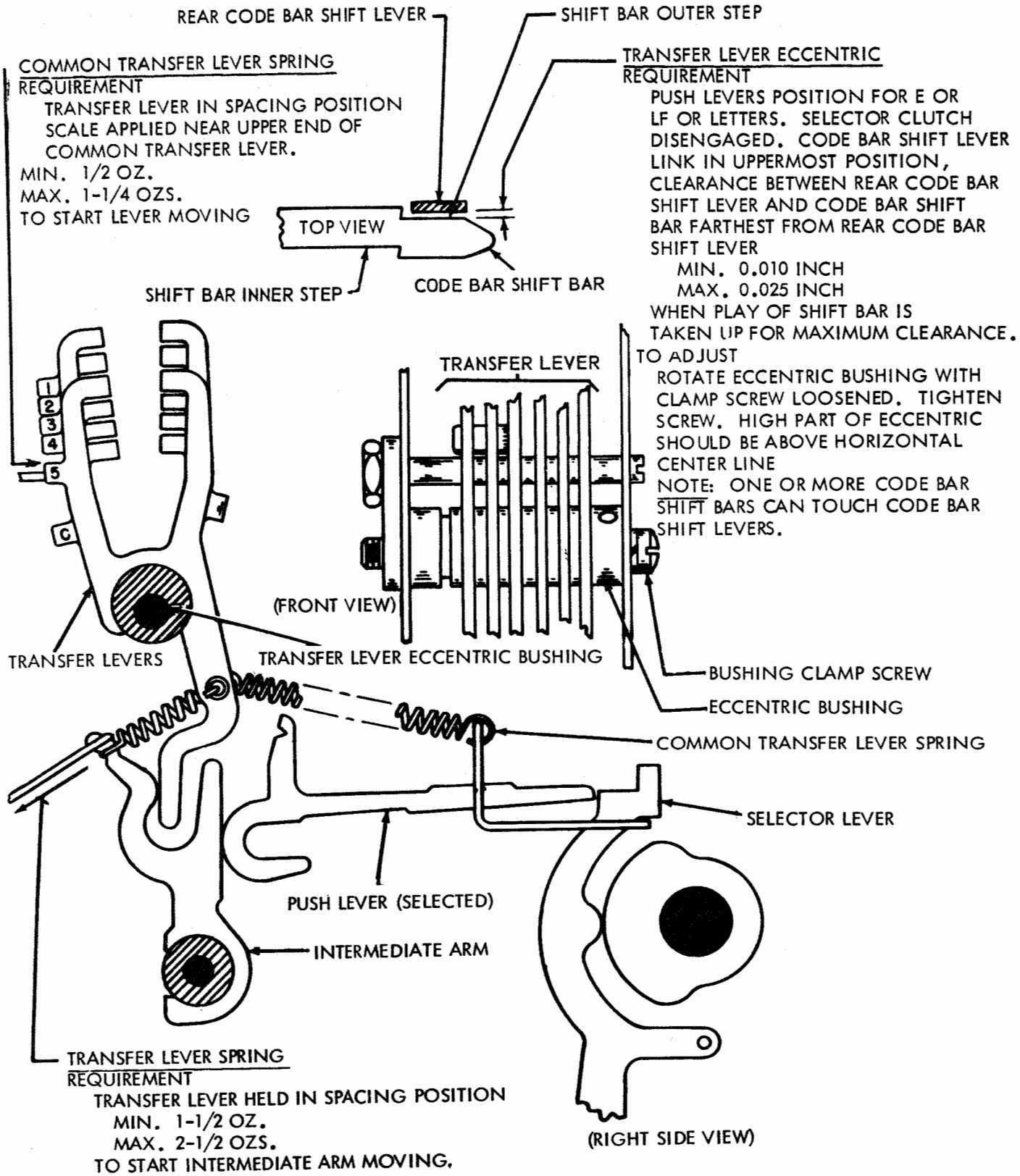
Requirement

With range scale set at common optimum setting for dual speed operation, the page printer should accept signals with 35% bias and end distortion when operated at 60 or 100 wpm.

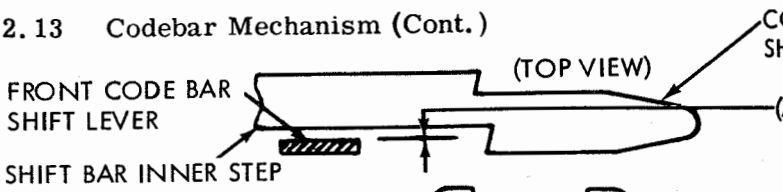
To Adjust

1. Bias selector between limits of 0% to -7% internal bias at 100 wpm. (Do not readjust for 60 wpm).
2. Obtain receiving margins at 60 and 100 wpm.
3. Calculate common optimum bias setting as follows: $O_C = \frac{UMB_{100}+LSB_{60}}{2}$ WHERE
   O_C = common optimum bias setting
   UMB_{100} = upper orient limit marking bias at 100 wpm
   LSB_{60} = lower orient limit spacing bias at 60 wpm

2.12 Codebar Mechanism



2.13 Codebar Mechanism (Cont.)



(A) INTERMEDIATE ARM BACKSTOP BRACKET

REQUIREMENT

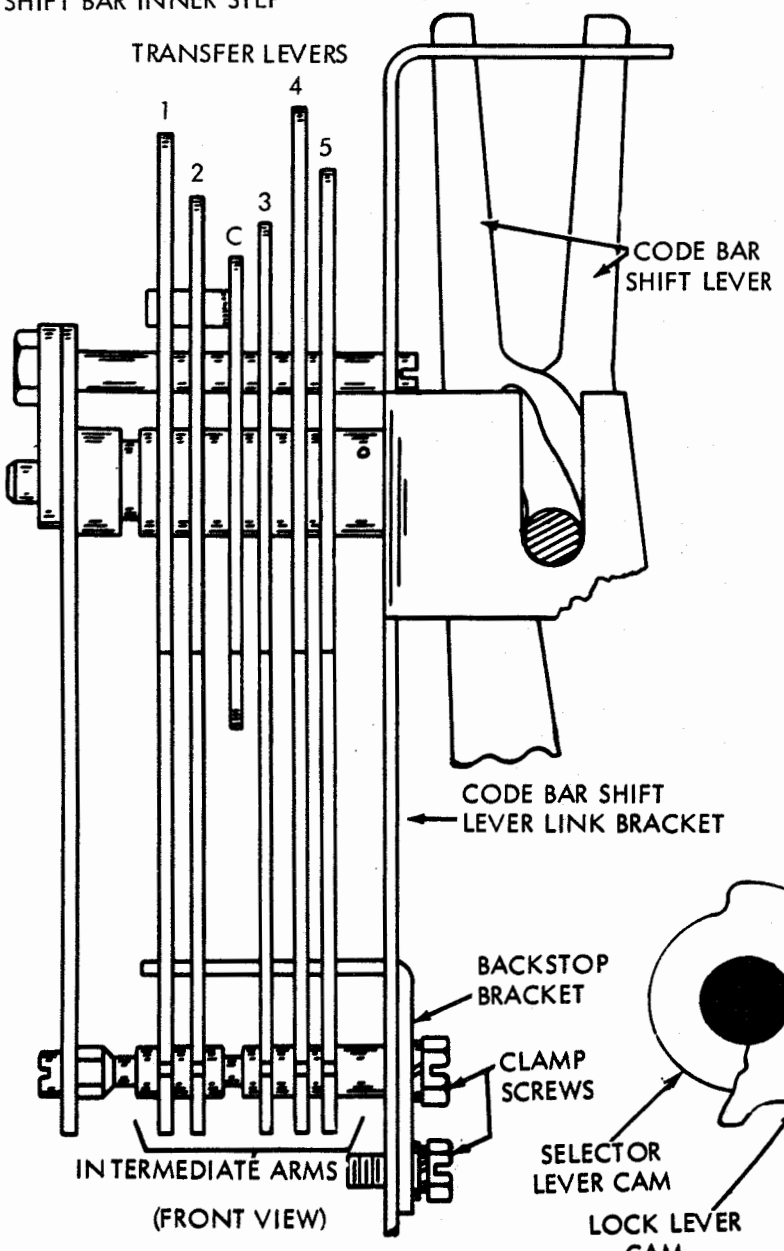
PUSH LEVERS NOT SELECTED. ALL CODE BAR SHIFT BARS TO THE RIGHT. SELECTOR CLUTCH DISENGAGED. CODE BAR SHIFT LEVER LINK IN LOWERMOST POSITION. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND INNER STEP OF CODE BAR SHIFT BAR FARTHEST FROM FRONT CODE BAR SHIFT LEVER

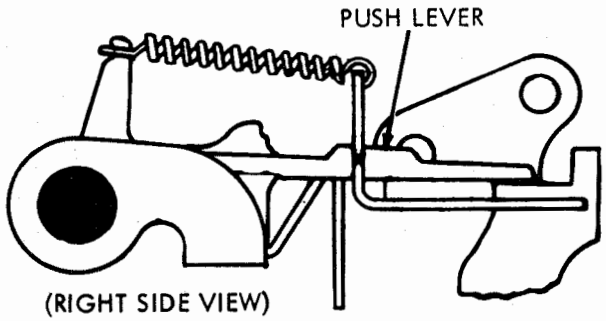
MIN. 0.010 INCH
MAX. 0.025 INCH

WHEN PLAY IN PARTS IS TAKEN UP FOR MAXIMUM CLEARANCE.

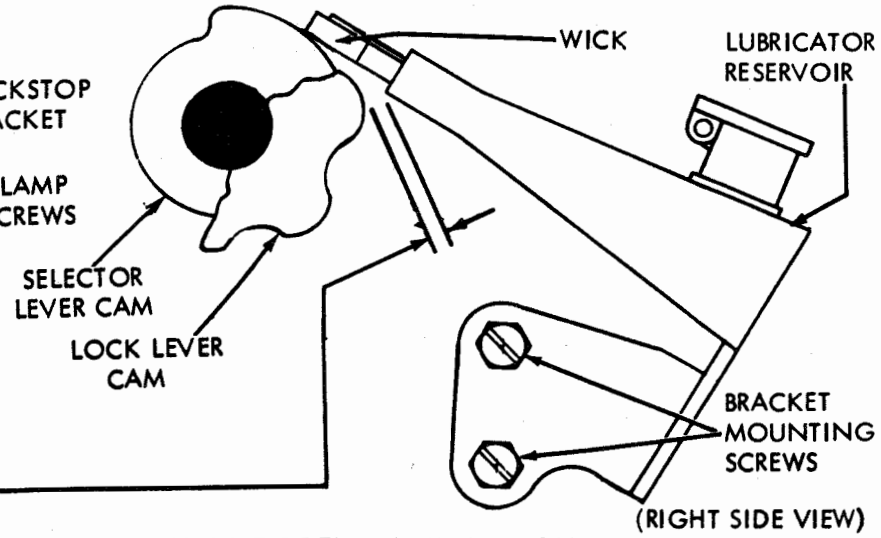
TO ADJUST

POSITION BACKSTOP BRACKET WITH ITS TWO CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.





2.14 Selector Mechanism (Cont.)



(B)

SELECTOR CAM LUBRICATOR

REQUIREMENT

THE LUBRICATOR TUBE SHOULD CLEAR THE HIGH PART OF THE LOCK LEVER CAM

MIN. 0.020 INCH

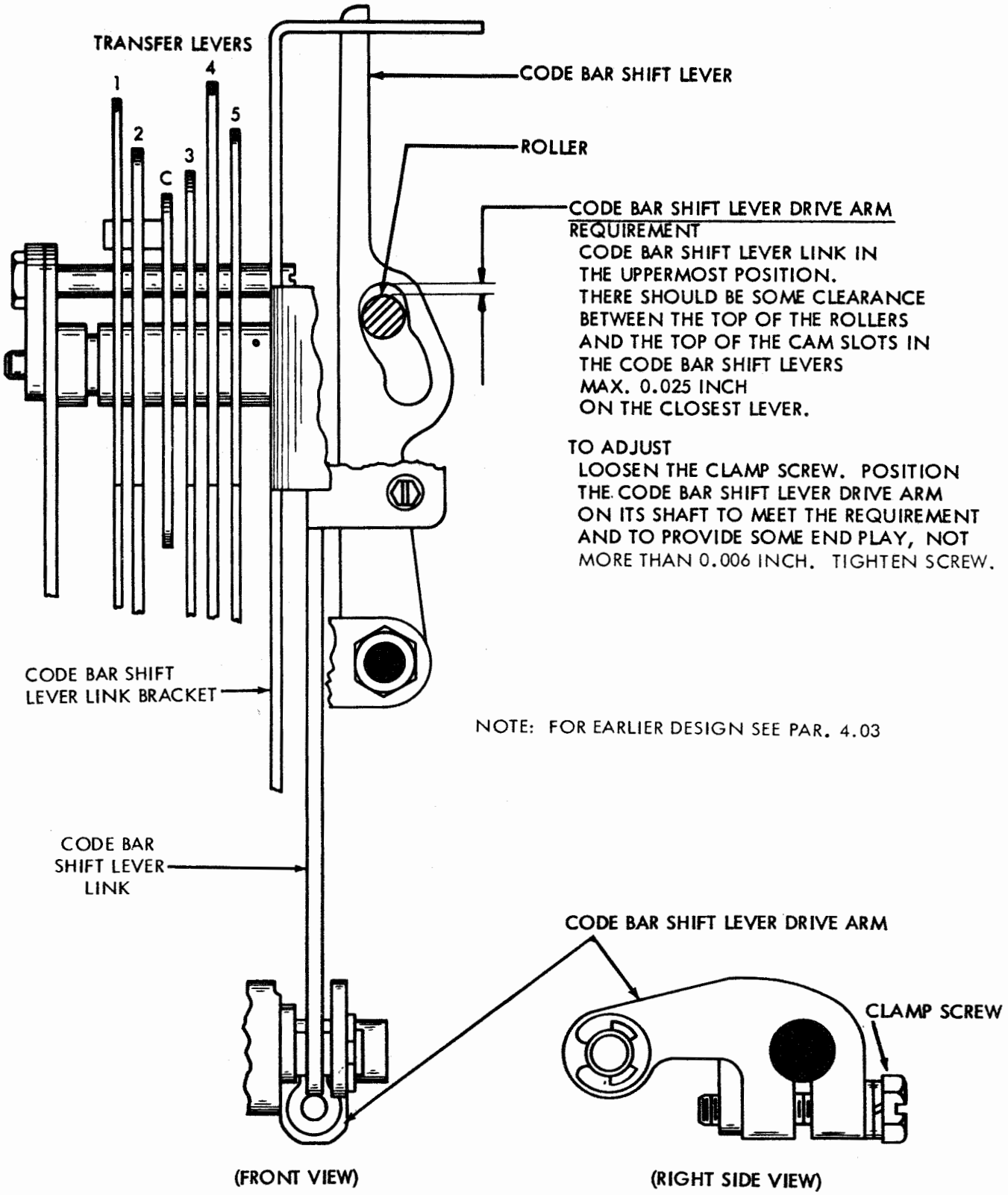
THE HIGH PART OF THE SELECTOR LEVER CAMS SHOULD TOUCH THE LUBRICATOR WICK, BUT SHOULD NOT RAISE IT MORE THAN 1/32 INCH.

NOTE: THERE SHOULD BE SOME CLEARANCE BETWEEN THE MARKING LOCK LEVER SPRING AND THE RESERVOIR.

TO ADJUST

POSITION THE LUBRICATOR BRACKET WITH ITS MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

2.15 Codebar Mechanism (Cont.)



2.16 Codebar Mechanism (Cont.)

CODE BAR SHIFT LEVER LINK BRACKET

REQUIREMENT

MOTION OF FRONT AND REAR CODE BAR SHIFT LEVERS SHOULD BE EQUALIZED WITH RESPECT TO CODE BAR TRAVEL.

TO CHECK (FRONT)

SELECT BLANK COMBINATION AND ROTATE MAINSHAFT UNTIL CODE BAR SHIFT LEVER LINK REACHES HIGHEST TRAVEL. TAKE UP PLAY FOR MAXIMUM CLEARANCE. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND SHOULDER ON NEAREST CODE BAR SHIFT BAR

MIN. 0.002 INCH

MAX. 0.025 INCH

TO CHECK (REAR)

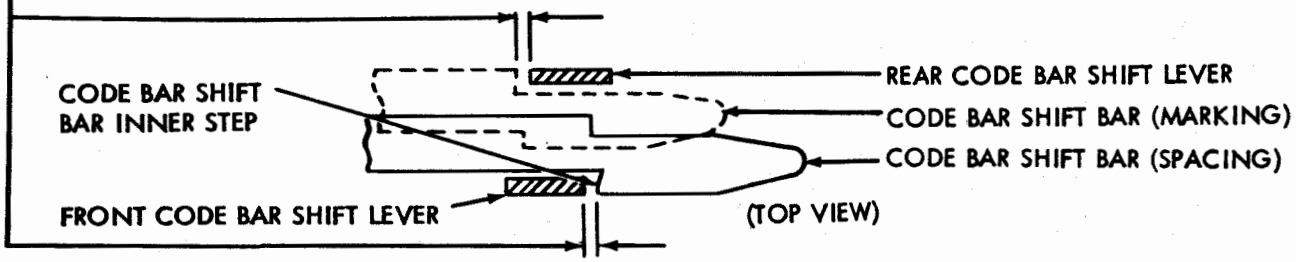
SELECT LETTERS COMBINATION. CHECK CLEARANCE BETWEEN REAR CODE BAR SHIFT LEVER AND SHOULDER ON NEAREST CODE BAR SHIFT BAR IN SAME WAY.

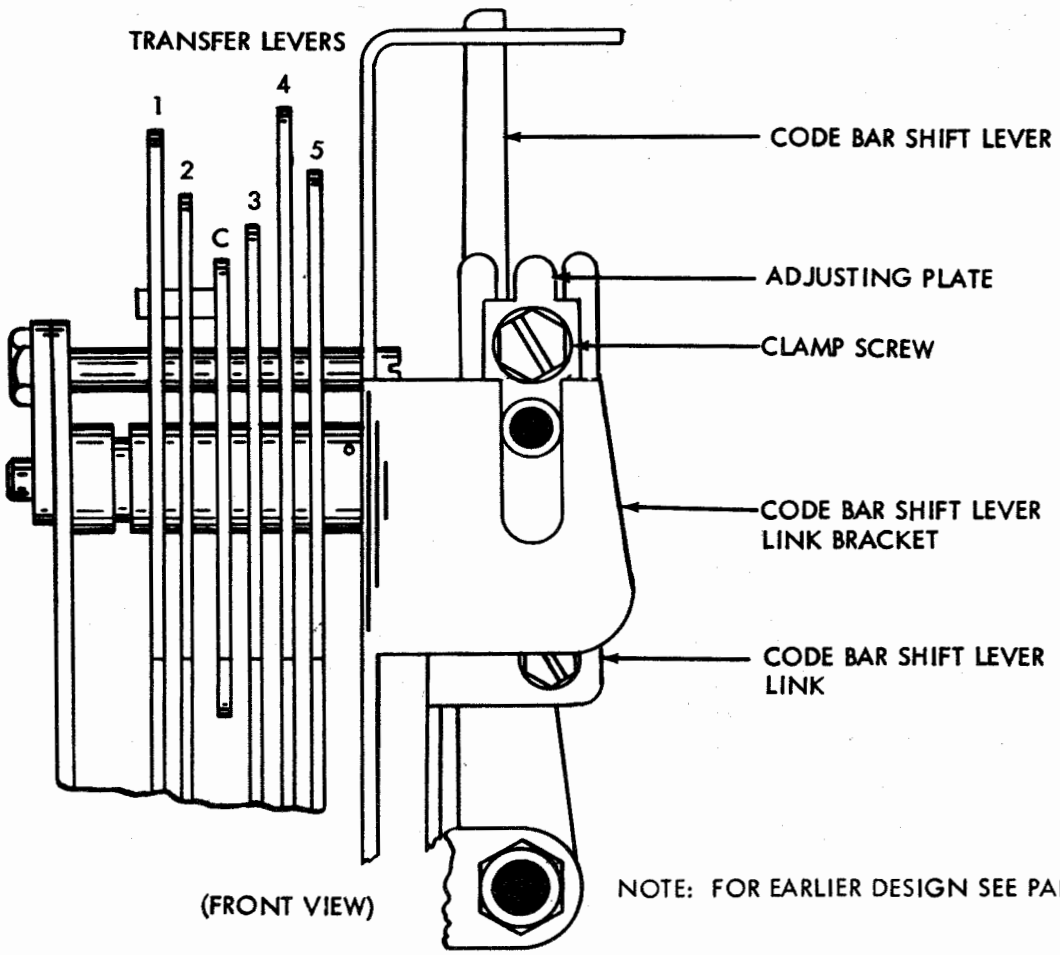
MIN. 0.002 INCH

MAX. 0.025 INCH

TO ADJUST

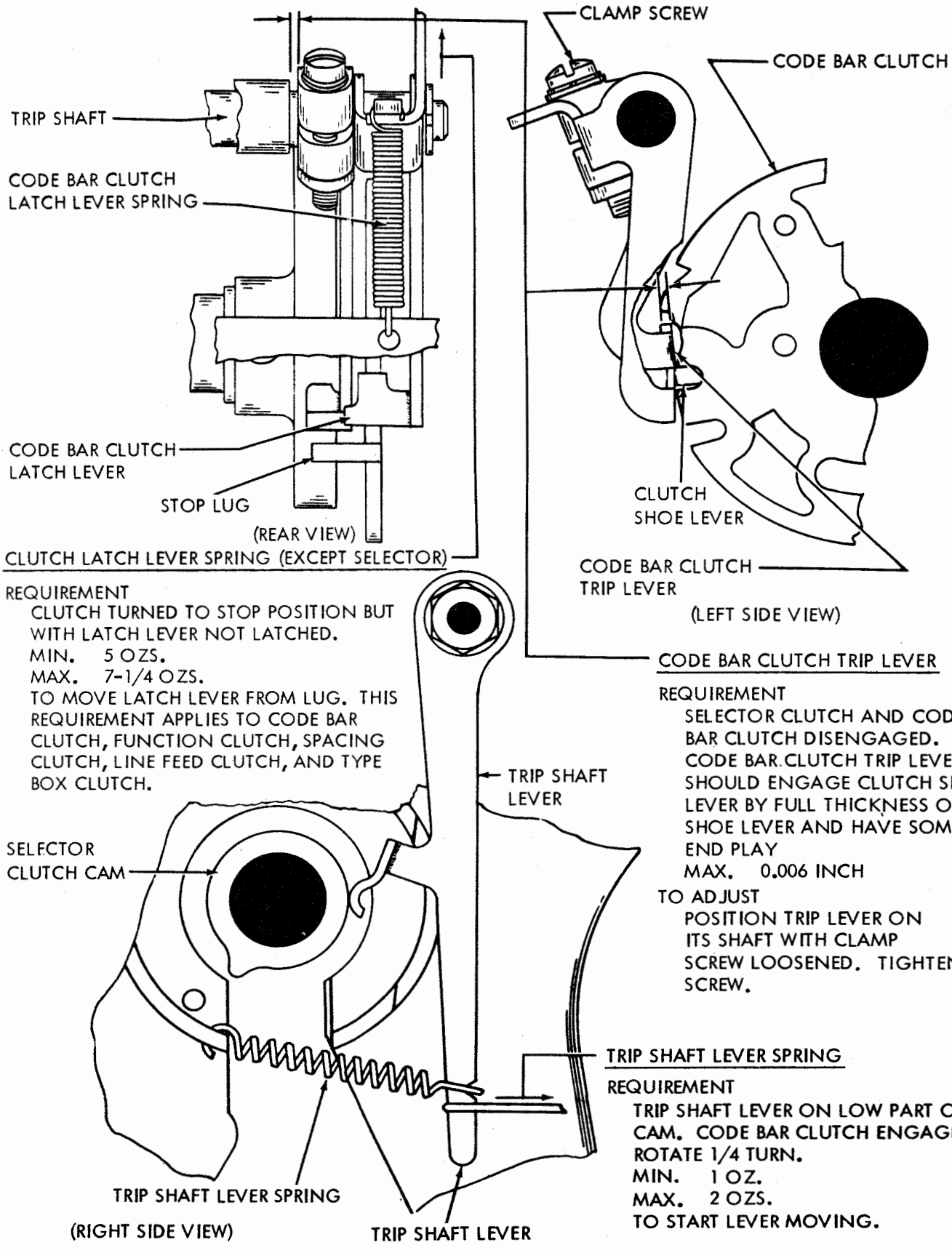
POSITION ADJUSTING PLATES (FRONT AND REAR) WITH CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.



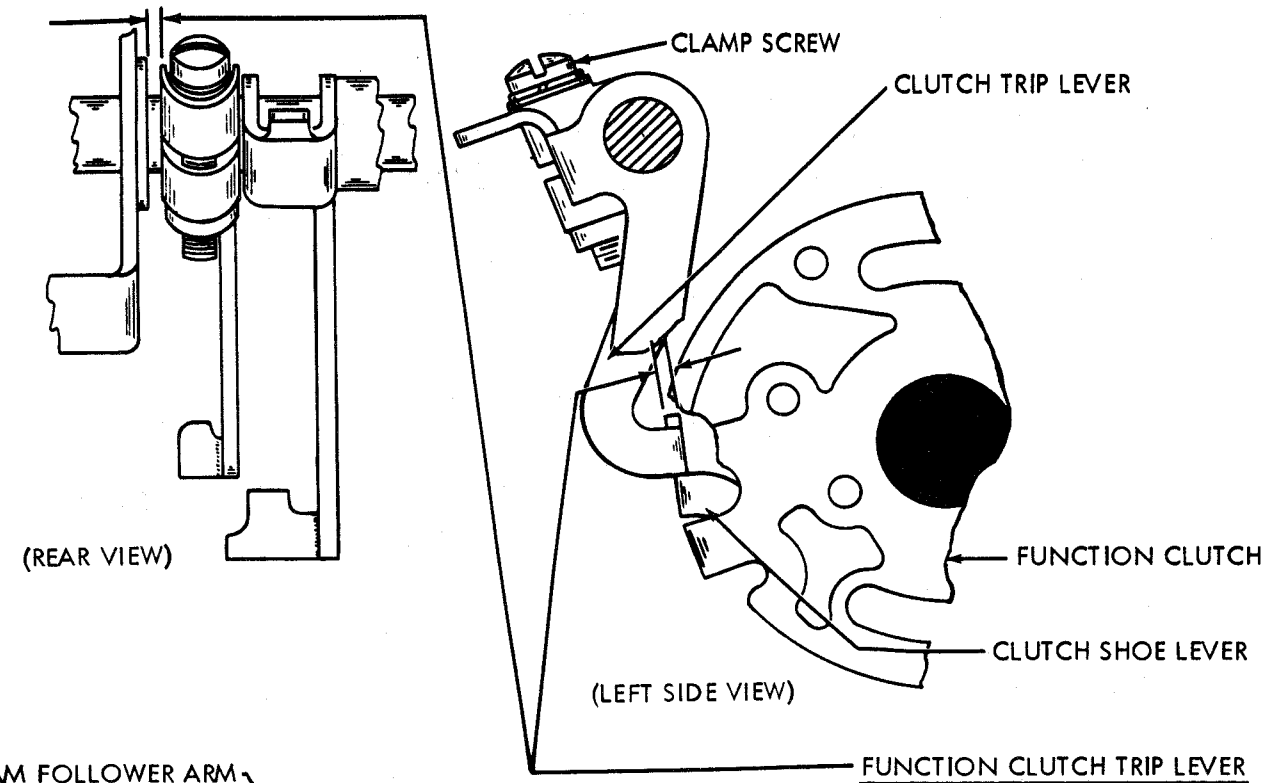


NOTE: FOR EARLIER DESIGN SEE PAR. 4.04

2.17 Main Shaft and Trip Shaft Mechanisms

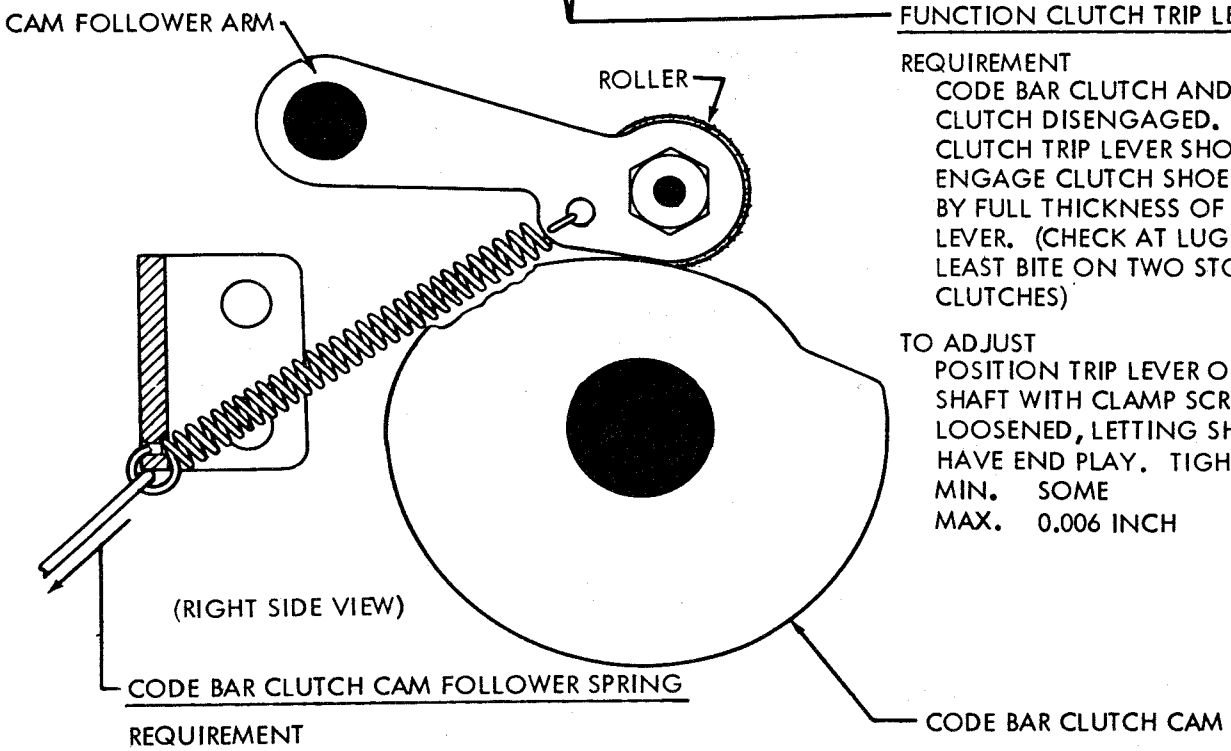


2. 18 Main Shaft and Trip Shaft Mechanisms (Cont.)



REQUIREMENT
CODE BAR CLUTCH AND FUNCTION CLUTCH DISENGAGED. FUNCTION CLUTCH TRIP LEVER SHOULD ENGAGE CLUTCH SHOE LEVER BY FULL THICKNESS OF SHOE LEVER. (CHECK AT LUG WITH LEAST BITE ON TWO STOP CLUTCHES)

TO ADJUST
POSITION TRIP LEVER ON ITS SHAFT WITH CLAMP SCREW LOOSENED, LETTING SHAFT HAVE END PLAY. TIGHTEN SCREW.
MIN. SOME
MAX. 0.006 INCH



REQUIREMENT
CAM FOLLOWER ROLLER ON THE LOW PART OF CAM.
THE SPRING UNHOOKED FROM SPRING BRACKET.
MIN. 20 OZS.
MAX. 24 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

2. 19 Main Shaft and Trip Shaft Mechanisms (Cont.)

(A) CLUTCH TRIP SHAFT SET COLLARS

(1) REQUIREMENT

SPACING CUT-OUT LEVER SHOULD HAVE SIDE PLAY

MIN. SOME
MAX. 0.008 INCH

TO ADJUST

POSITION SPACING CUT-OUT LEVER SET COLLAR. TIGHTEN SCREW.

NOTE: FOR EARLIER DESIGN SEE PAR. 4.05.

(2) REQUIREMENT

APPROXIMATE ALIGNMENT OF RIGHT END OF STOP EXTENSIONS ON TRIP LEVER AND SHOE LEVER.

TO ADJUST

POSITION LINE FEED CLUTCH TRIP LEVER SET COLLAR.

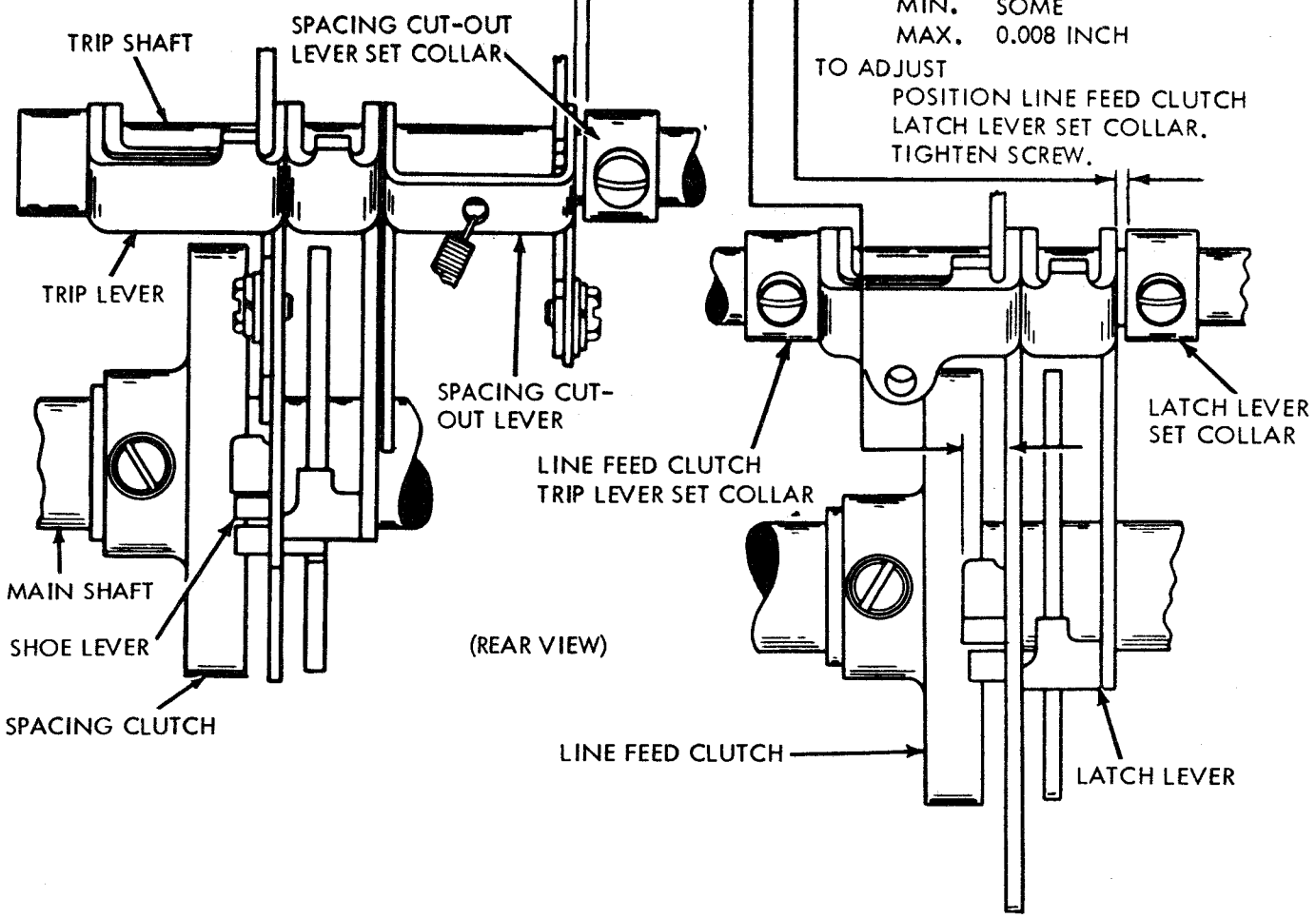
(3) REQUIREMENT

LINE FEED CLUTCH LATCH LEVER SHOULD HAVE SIDE PLAY.

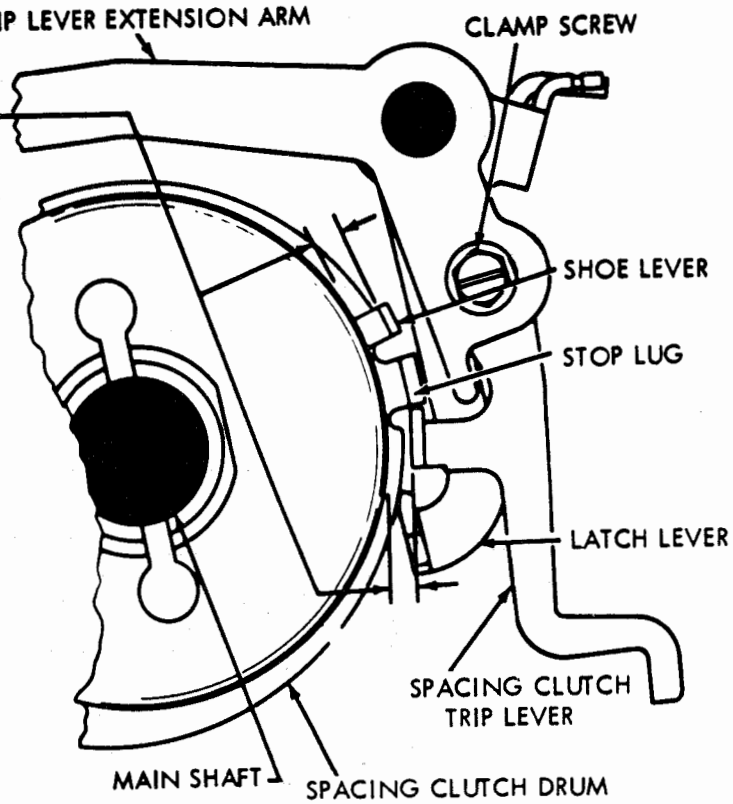
MIN. SOME
MAX. 0.008 INCH

TO ADJUST

POSITION LINE FEED CLUTCH LATCH LEVER SET COLLAR. TIGHTEN SCREW.



2.20 Main Shaft and Trip Shaft Mechanisms (Cont.)



(RIGHT SIDE VIEW)

SPACING CLUTCH TRIP LEVER

REQUIREMENT

CLEARANCE BETWEEN TRIP LEVER AND CLUTCH DRUM SHOULD BE 0.018 TO 0.035 INCH LESS THAN CLEARANCE BETWEEN SHOE LEVER AND DRUM AT STOP SHOWING GREATEST CLEARANCE. THERE SHOULD BE SOME OVERBITE ON ALL STOP LUGS. GAUGE BY EYE.

TO CHECK

DISENGAGE THE CLUTCH. TRIP CLUTCH TRIP LEVER AND ROTATE MAIN SHAFT UNTIL TRIP LEVER IS OVER THE SHOE LEVER. TAKE UP PLAY OF SHOE LEVER INWARD BY SNAPPING THE TRIP LEVER OVER THE SHOE LEVER. CHECK CLEARANCE BETWEEN SHOE LEVER AND DRUM AT EACH STOP POSITION. WITH THE TRIP LEVER AT THE STOP POSITION WHICH YIELDS GREATEST CLEARANCE, ROTATE MAIN SHAFT SLOWLY UNTIL THE TRIP LEVER JUST FALLS OFF THE STOP LUG. CHECK CLEARANCE BETWEEN TRIP LEVER AND DRUM.

TO ADJUST

POSITION THE TRIP LEVER BY MEANS OF ITS CLAMP SCREW. TIGHTEN SCREW.

NOTE: FOR EARLIER DESIGN
SEE PAR. 4.06.

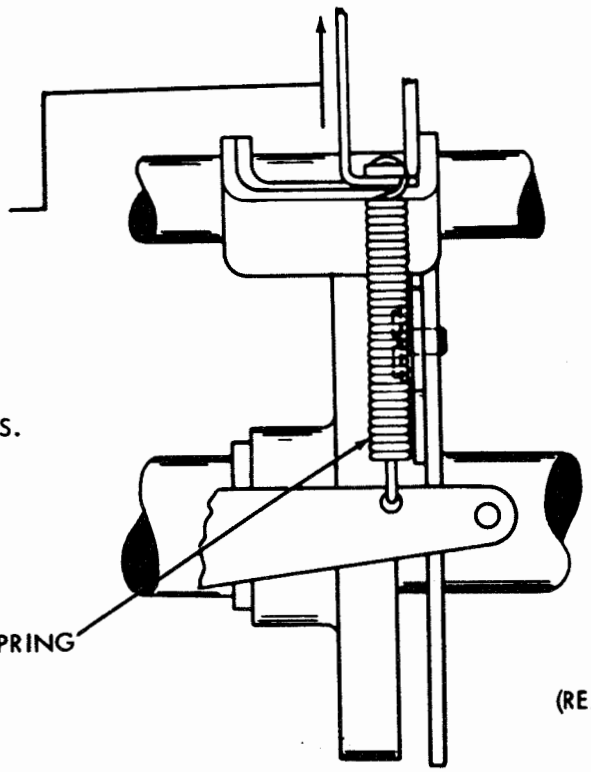
CLUTCH TRIP LEVER SPRING

REQUIREMENT

CLUTCH ENGAGED AND ROTATED UNTIL TRIP LEVER RESTS ON STOP LUG

CLUTCH	MIN.	MAX.
SPACING	11 OZS.	16 OZS.
LINE FEED	9 OZS.	12 OZS.
TYPE BOX	5 OZS.	7-1/4 OZS.

TO MOVE LEVER AWAY FROM STOP LUG.



(REAR VIEW)

2.21 Main Shaft and Trip Shaft Mechanisms (Cont.)

(A) TYPE BOX CLUTCH TRIP LEVER ECCENTRIC POST

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. TRIP LEVER SHOULD ENGAGE THE CLUTCH SHOE LEVER BY THE FULL THICKNESS OF THE SHOE LEVER.

TO ADJUST

POSITION THE TRIP LEVER ECCENTRIC POST. TIGHTEN NUT.

(C) LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW

REQUIREMENT

LINE FEED FUNCTION SLIDE ARM IN REAR POSITION.

CLUTCH TRIP LEVER AGAINST ITS ECCENTRIC POST.

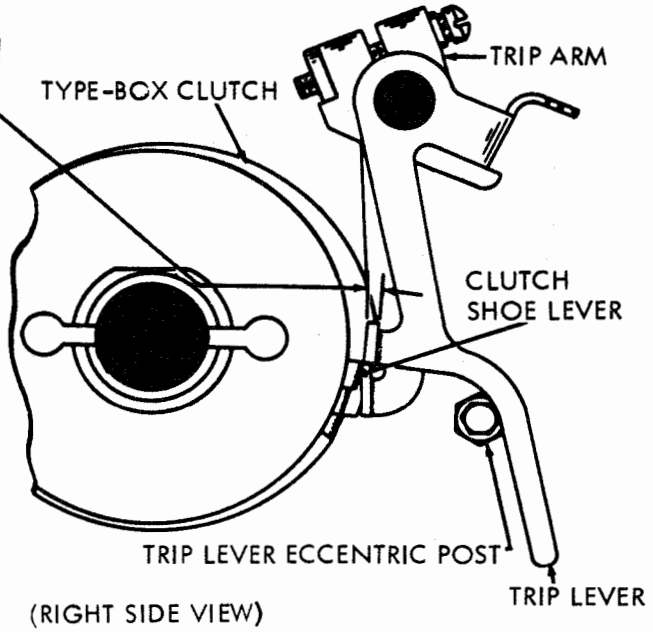
TRIP ARM HELD AGAINST ITS FUNCTION SLIDE ARM.

SOME CLEARANCE BETWEEN THE END OF THE TRIP LEVER ADJUSTING SCREW AND THE TRIP ARM.

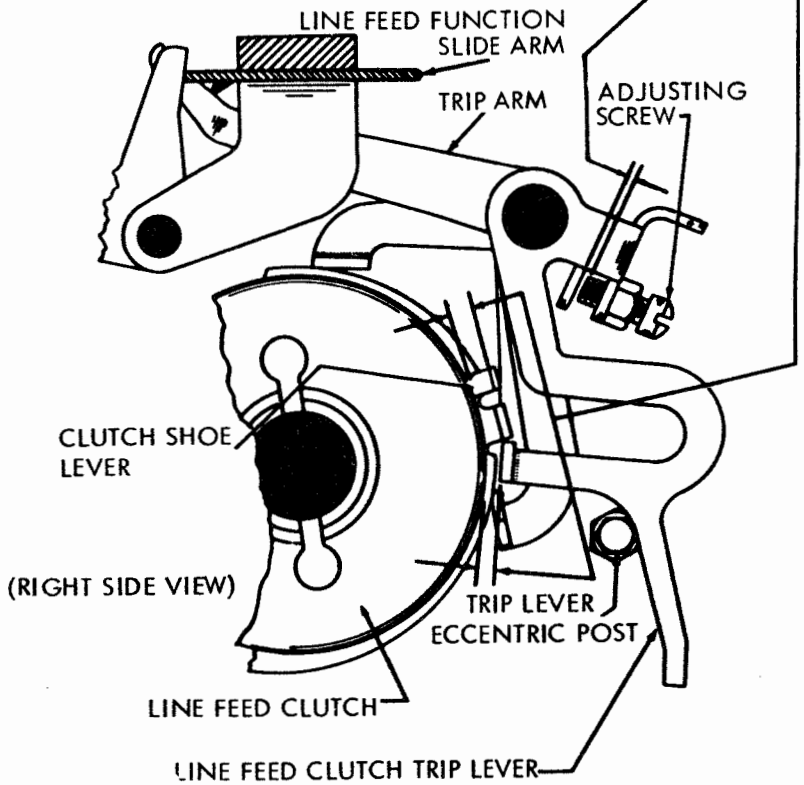
MAX. 0.006 INCH

TO ADJUST

POSITION THE ADJUSTING SCREW. TIGHTEN NUT.



(RIGHT SIDE VIEW)



(RIGHT SIDE VIEW)

(B) LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST

REQUIREMENT

CLEARANCE BETWEEN TRIP LEVER AND CLUTCH DRUM SHOULD BE 0.018 TO 0.035 INCH LESS THAN CLEARANCE BETWEEN SHOE LEVER AND DRUM AT STOP WHICH SHOWS GREATEST CLEARANCE. THERE SHOULD BE SOME OVERBITE ON ALL THREE STOP LUGS AS GAUGED BY EYE.

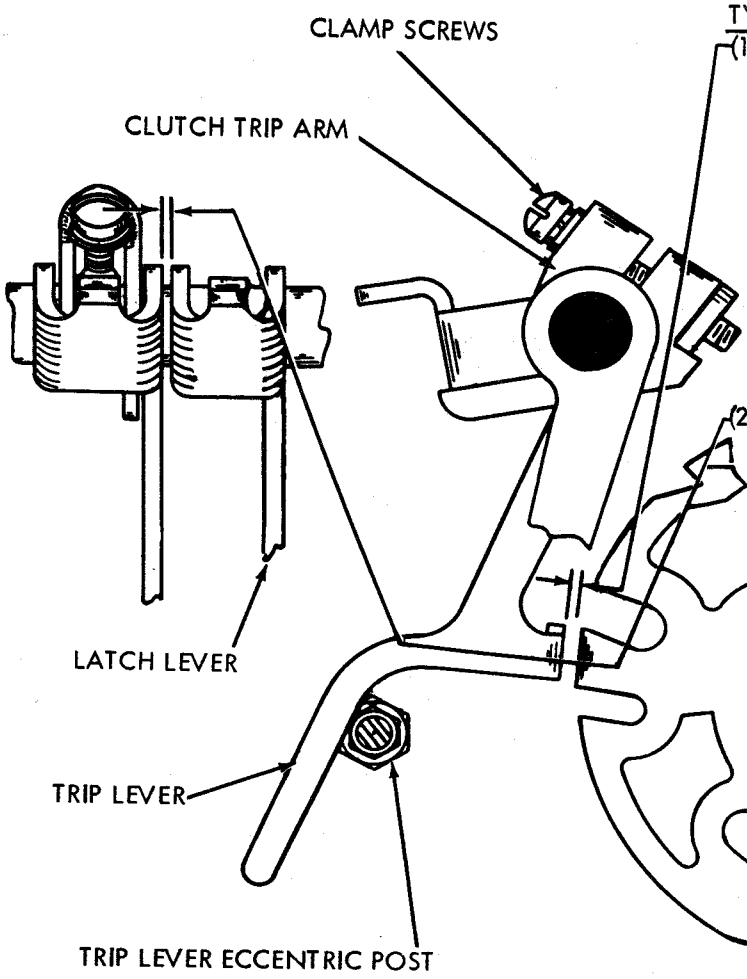
TO CHECK

DISENGAGE THE CLUTCH. TRIP CLUTCH TRIP LEVER AND ROTATE MAIN SHAFT UNTIL TRIP LEVER IS OVER THE SHOE LEVER. TAKE UP PLAY OF SHOE LEVER INWARD BY SNAPPING THE TRIP LEVER OVER THE SHOE LEVER. CHECK CLEARANCE BETWEEN SHOE LEVER AND DRUM AT EACH STOP POSITION. WITH TRIP LEVER AT THE STOP POSITION WHICH YIELDS GREATEST CLEARANCE, ROTATE MAIN SHAFT SLOWLY UNTIL THE TRIP LEVER JUST FALLS OFF THE STOP LUG. CHECK CLEARANCE BETWEEN TRIP LEVER AND DRUM.

TO ADJUST

BACK OFF TRIP LEVER ADJUSTING SCREW AND POSITION TRIP LEVER ECCENTRIC STOP POST. TIGHTEN NUT.

2.22 Main Shaft and Trip Shaft Mechanisms (Cont.)



(LEFT SIDE VIEW)

TYPE BOX CLUTCH TRIP LEVER

(1) REQUIREMENT

CLUTCH TRIP SHAFT CAM FOLLOWER ROLLER (SEE PAR. 2.18) ON LOWEST SURFACE OF CAM (LOCATED ON CODE BAR CLUTCH). CLEARANCE BETWEEN INNER FACE OF TYPE BOX CLUTCH TRIP LEVER AND THE CLUTCH DISC STOP LUG.

MIN. 0.025
MAX. 0.045

TO ADJUST

LOOSEN CLAMP SCREW AND POSITION STOP. TIGHTEN SCREW.

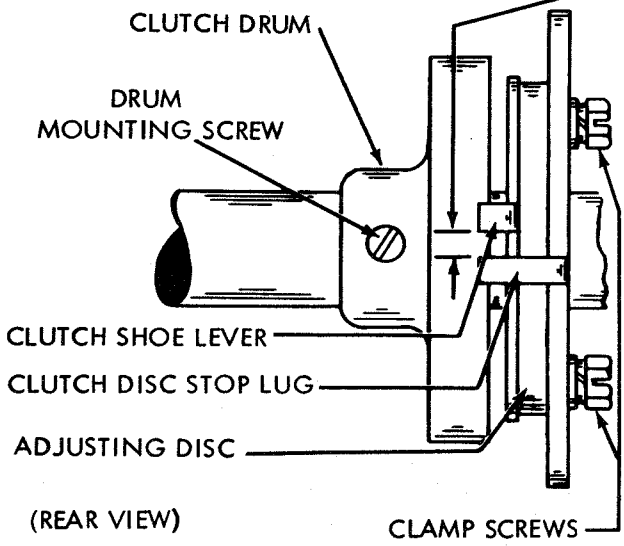
(2) REQUIREMENT

WHEN POSITIONING THE TRIP ARM DETERMINE THAT THE LATCH LEVER HAS SOME SIDE PLAY

MAX. 0.008 INCH

TO ADJUST

POSITION THE CLUTCH TRIP ARM ON ITS SHAFT WITH THE CLAMP SCREW LOOSENED. TIGHTEN SCREW.



(REAR VIEW)

CLUTCH SHOE LEVER

REQUIREMENT

GAP BETWEEN CLUTCH SHOE LEVER AND ITS STOP LUG SHOULD BE 0.055 INCH TO 0.085 INCH GREATER WHEN CLUTCH IS ENGAGED THAN WHEN THE CLUTCH IS DISENGAGED.

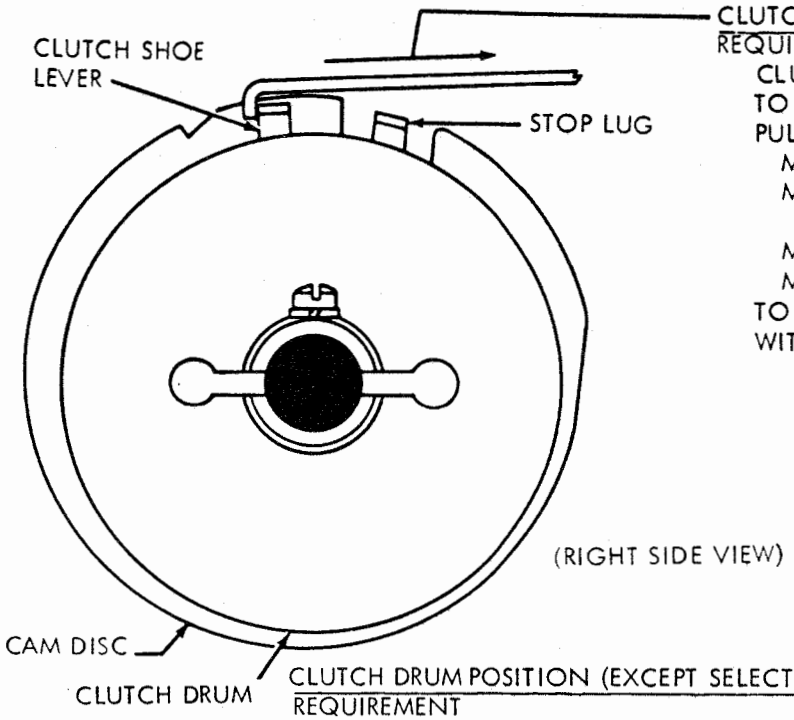
TO CHECK

DISENGAGE THE CLUTCH AND MEASURE THE GAP. TRIP THE CLUTCH AND ROTATE IT UNTIL THE CLUTCH SHOE LEVER IS TOWARD THE BOTTOM OF THE UNIT. AGAIN MEASURE THE GAP WITH THE CLUTCH THUS ENGAGED.

TO ADJUST

LOOSEN THE TWO CLAMP SCREWS ON THE CLUTCH DISC. ENGAGE A WRENCH OR SCREWDRIVER ON THE LUG OF THE ADJUSTING DISC AND ROTATE THE DISC. TIGHTEN SCREWS.

2.23 Main Shaft and Trip Shaft Mechanisms (Cont.)



CLUTCH SHOE LEVER SPRING

REQUIREMENT

CLUTCH ENGAGED. HOLD CAM DISC TO PREVENT TURNING. SPRING SCALE PULLED AT TANGENT TO CLUTCH.

MIN. 15 OZS.
MAX. 20 OZS. — ONE-STOP CLUTCHES

MIN. 16 OZS.
MAX. 22 OZS. — MULTIPLE-STOP CLUTCHES

TO MOVE THE SHOE LEVER IN CONTACT WITH THE STOP LUG.

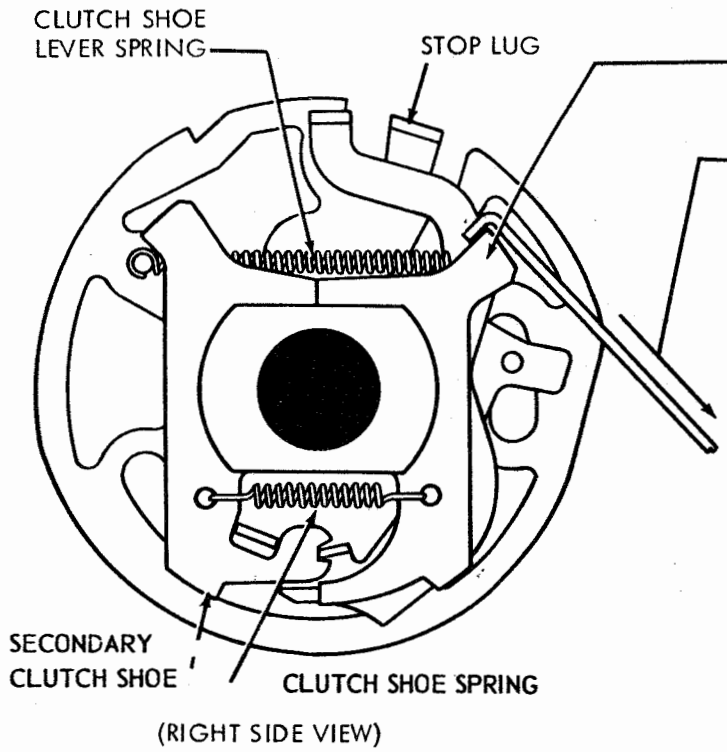
CLUTCH DRUM POSITION (EXCEPT SELECTOR)

REQUIREMENT

CLUTCH SHOE LEVER HELD DISENGAGED. CLUTCH SHOULD HAVE SOME END PLAY
MAX. 0.015 INCH

TO ADJUST

POSITION EACH DRUM AND SPACING CLUTCH SET COLLAR WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.



CLUTCH SHOE SPRING

NOTE

IN ORDER TO CHECK THIS SPRING TENSION, IT IT NECESSARY TO REMOVE THE CLUTCH FROM THE MAIN SHAFT. THEREFORE, IT SHOULD NOT BE CHECKED UNLESS THERE IS GOOD REASON TO BELIEVE THAT IT DOES NOT MEET ITS REQUIREMENT.

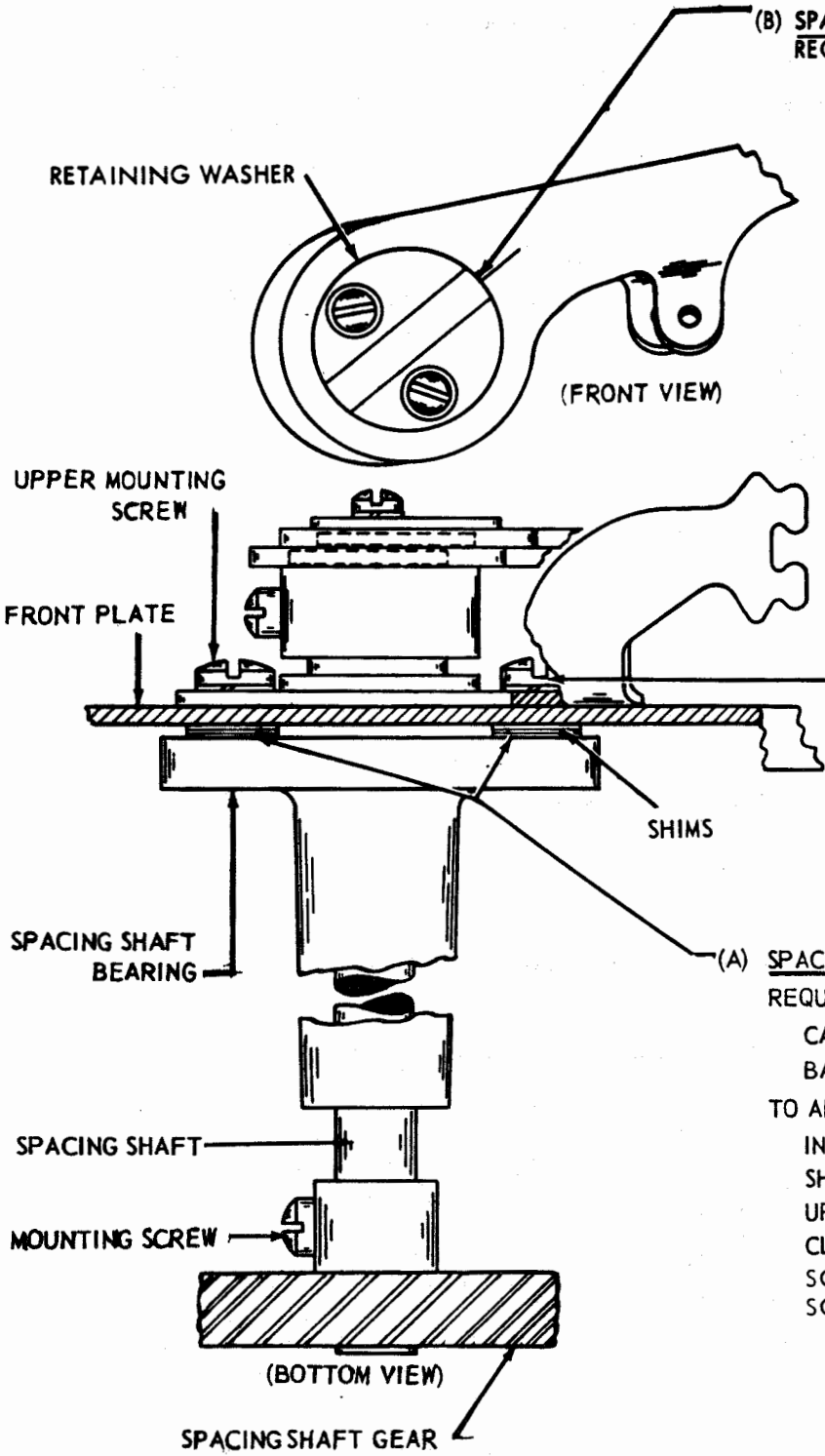
REQUIREMENT

CLUTCH DRUM REMOVED. SPRING SCALE APPLIED TO PRIMARY SHOE AT A TANGENT TO THE FRICTION SURFACE.

MIN. 3 OZS.
MAX. 5 OZS.

TO START THE PRIMARY SHOE MOVING AWAY FROM SECONDARY SHOE AT POINT OF CONTACT

2.24 Spacing Mechanism



(B) SPACING GEAR PHASING REQUIREMENT

SPACING CLUTCH DISENGAGED. INDEX LINE ON THE SPACING PAWL SHOULD BE AS NEAR AS POSSIBLE TO THE CENTER OF THE TWO LINES ON THE PAWL RETAINING WASHER.

TO ADJUST

REMOVE THE MOUNTING SCREW FROM THE SPACING SHAFT GEAR. HOLD THE PAWLS IN ALIGNMENT AND ENGAGE THE SPACING SHAFT GEAR WITH THE CLUTCH GEAR AT A POINT WHERE THE SPACING SHAFT GEAR MOUNTING SCREW HOLE IS IN LINE WITH THE TAPPED HOLE IN THE SPACING SHAFT AND INSERT THE MOUNTING SCREW. TIGHTEN SCREW.

(A) SPACING GEAR CLEARANCE

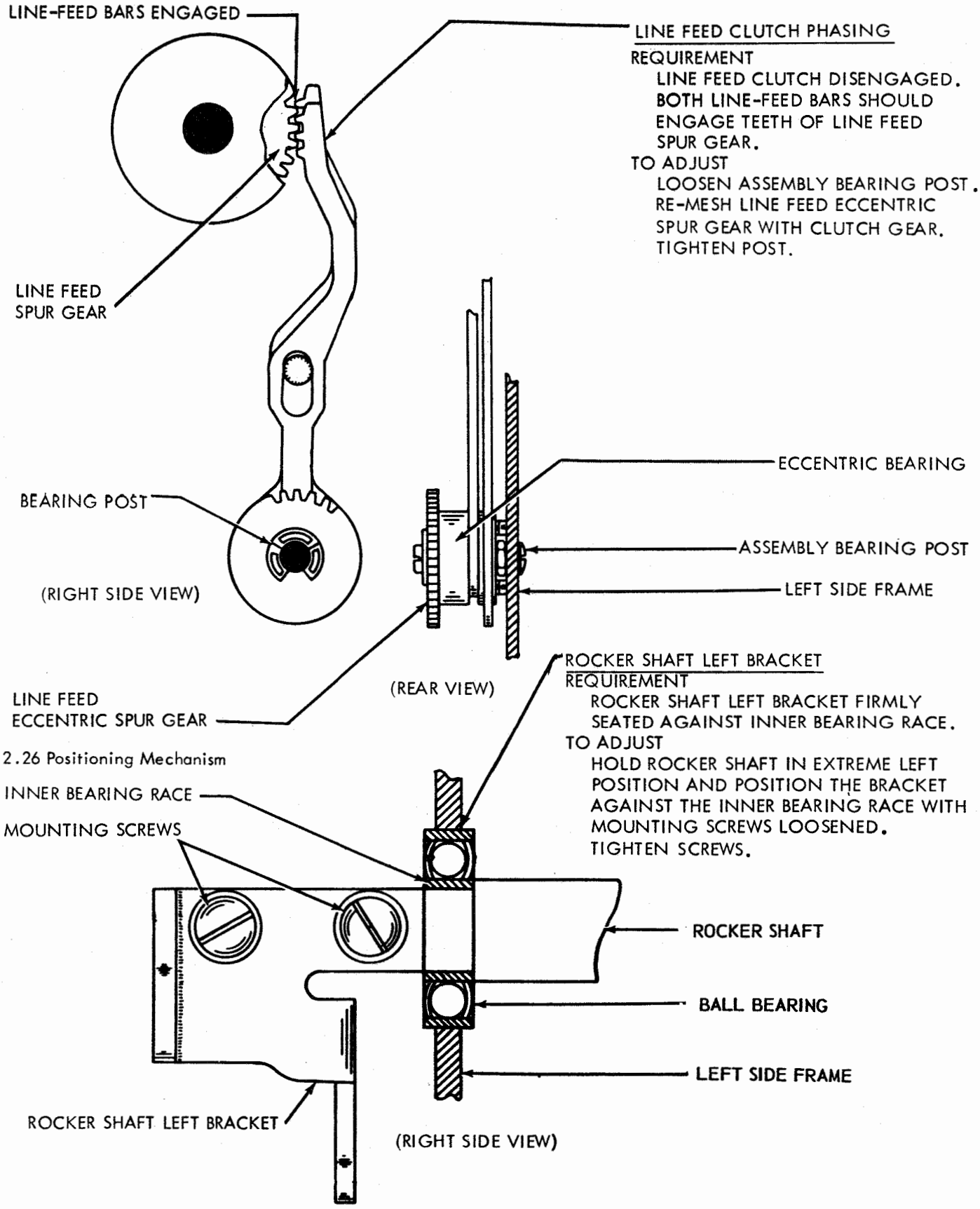
REQUIREMENT

CARRIAGE FULLY RETURNED. MINIMUM BACKLASH OF SPACING GEARS WITHOUT BIND.

TO ADJUST

INSERT SHIMS BETWEEN THE SPACING SHAFT BEARING AND FRONT PLATE AT UPPER MOUNTING SCREW TO INCREASE CLEARANCE AND AT LOWER MOUNTING SCREW TO DECREASE BACKLASH. TIGHTEN SCREW.

2.25 Line Feed and Platen Mechanism



2.27 Positioning Mechanism (Cont.)

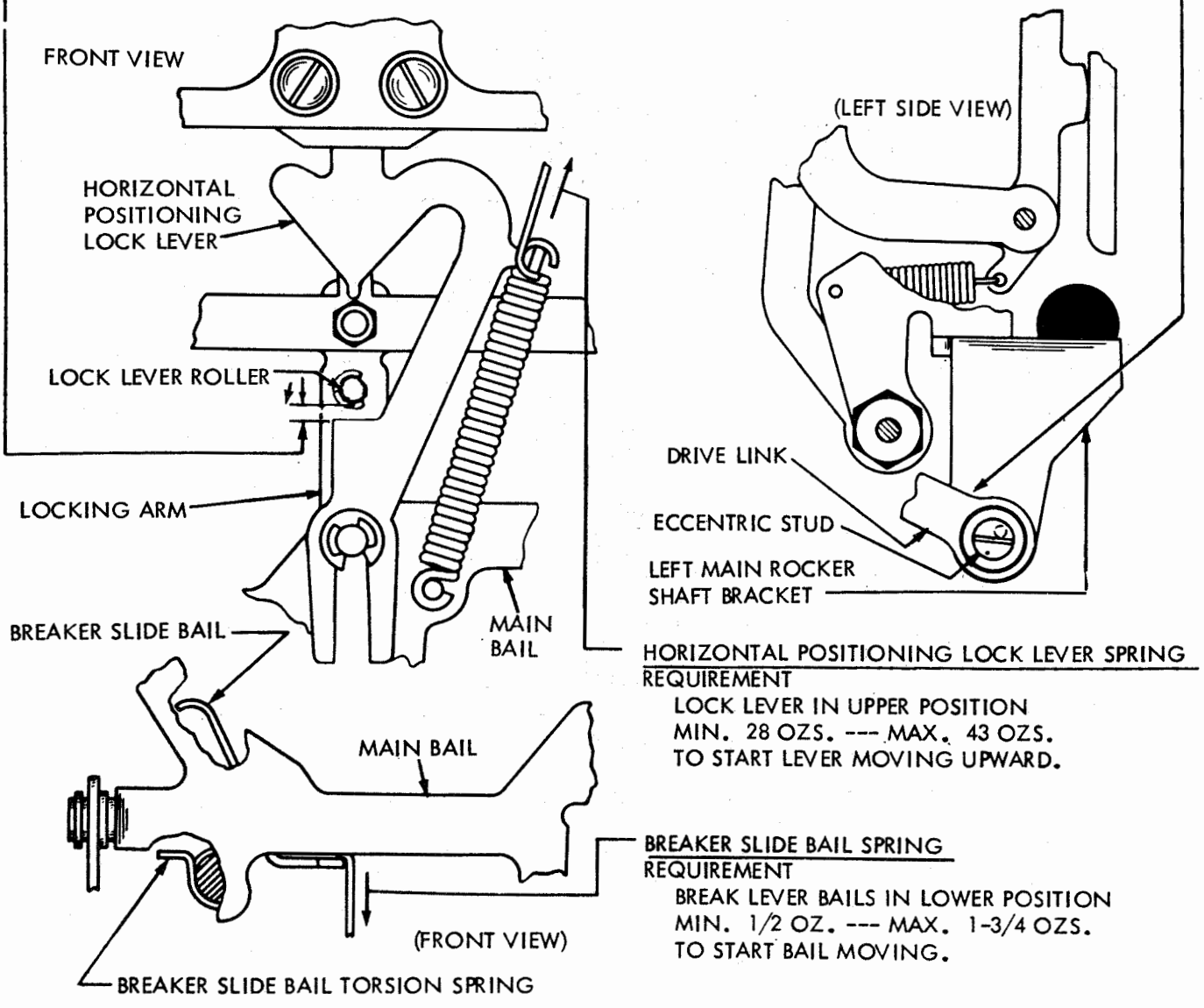
ROCKER SHAFT BRACKET ECCENTRIC STUD

(1) REQUIREMENT --- WITH TYPE BOX CLUTCH DISENGAGED AND PLAY IN LOCKING ARM TAKEN UP TOWARD FRONT, GAP BETWEEN LOWER SIDE OF LOCK LEVER ROLLER AND TOP EDGE OF SHOULDER ON HORIZONTAL POSITIONING LOCK LEVER SHOULD BE:
MIN. 0.055 INCH ---------- MAX. 0.090 INCH

(2) REQUIREMENT --- MAKE SURE THAT ROCKER SHAFT DRIVE LINK IS FREE IN ITS BEARINGS (NOT UNDER LOAD) WHEN CLUTCH IS IN (a) ITS STOP POSITION; (b) WHEN IT IS ROTATED 180 DEGREES FROM STOP POSITION.

TO ADJUST --- (1) POSITION ECCENTRIC STUD IN LOWER END OF ROCKER-SHAFT LEFT BRACKET. TIGHTEN NUT. KEEP HIGH PART OF ECCENTRIC (MARKED WITH DOT) BELOW CENTER LINE OF DRIVE LINK. (2) MAKE SURE THAT STUD IS FREE IN TYPE BOX CLUTCH BEARING AT POSITIONS (a) AND (b) ABOVE (NO PUSHING OR PULLING FORCE ON DRIVE LINK). CHECK MANUALLY BY MOVING LINK TOWARD LEFT SIDE FRAME AND THEN IN REVERSE DIRECTION.

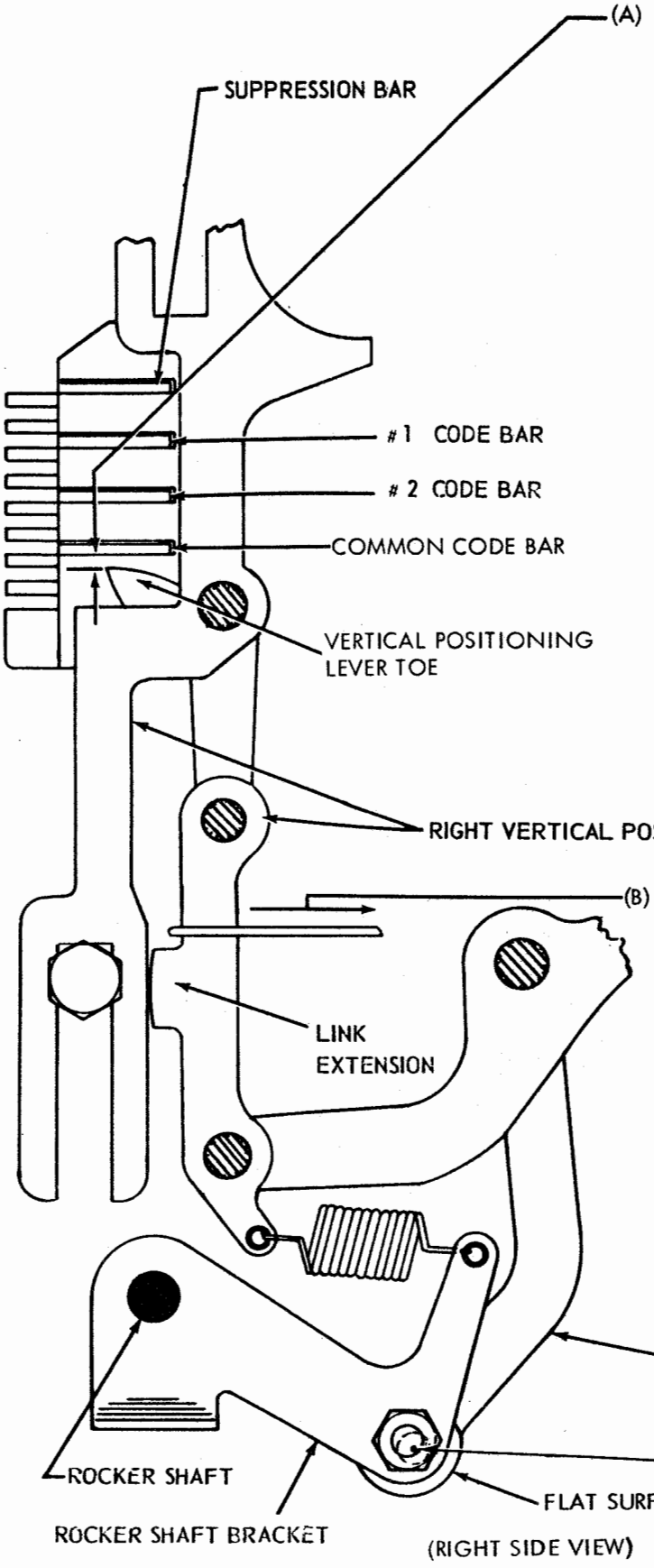
NOTE --- ANY CHANGE IN THIS ADJUSTMENT WILL REQUIRE THAT THE FOLLOWING RELATED ADJUSTMENTS BE RECHECKED: HORIZONTAL POSITIONING DRIVE LINKAGE (PAR. 2.35) RIGHT VERTICAL POSITIONING LEVER ECCENTRIC STUD (PAR. 2.28), LEFT VERTICAL POSITIONING LEVER ECCENTRIC STUD (PAR. 2.29) VERTICAL POSITIONING LOCK LEVER (PAR. 2.36), RIBBON FEED LEVER BRACKET (PAR. 2.53), FUNCTION STRIPPER BLADE ARMS (PAR. 4.18), SPACING TRIP LEVER BAIL CAM PLATE (PAR. 2.31). REVERSING SLIDE BRACKETS (PAR. 2.34) AND RIBBON REVERSE SPUR GEAR (PAR. 2.52) PRINTING TRACK (PAR. 2.49) AND PRINTING ARM (PAR. 2.50).



HORIZONTAL POSITIONING LOCK LEVER SPRING
REQUIREMENT
LOCK LEVER IN UPPER POSITION
MIN. 28 OZS. --- MAX. 43 OZS.
TO START LEVER MOVING UPWARD.

BREAKER SLIDE BAIL SPRING
REQUIREMENT
BREAK LEVER BAILS IN LOWER POSITION
MIN. 1/2 OZ. --- MAX. 1-3/4 OZS.
TO START BAIL MOVING.

2.28 Positioning Mechanism (Cont.)



RIGHT VERTICAL POSITIONING LEVER ECCENTRIC STUD

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED, COMMON CODE BAR IN SPACING POSITION. PLAY TAKEN UP BY PRESSING DOWNWARD ON COMMON CODE BAR AT GUIDE BLOCK.

MIN. 0.030 INCH
MAX. 0.050 INCH

CLEARANCE BETWEEN THE TOE OF VERTICAL POSITIONING LEVER AND THE BOTTOM OF THE COMMON CODE BAR WHEN PLAY IS TAKEN UP TO MAKE CLEARANCE A MINIMUM

TO ADJUST

POSITION THE ECCENTRIC STUD IN THE RIGHT ROCKER SHAFT BRACKET. POSITION HIGH PART OF ECCENTRIC (MARKED WITH DOT) TOWARD THE REAR. THE HIGH PART OF THE ECCENTRIC CAN ALSO BE IDENTIFIED BY THE EXPOSED PORTION OF THE FLAT SURFACE OF THE VERTICAL POSITIONING LINK. TIGHTEN NUT.

(B) VERTICAL POSITIONING LEVER SPRING

REQUIREMENT

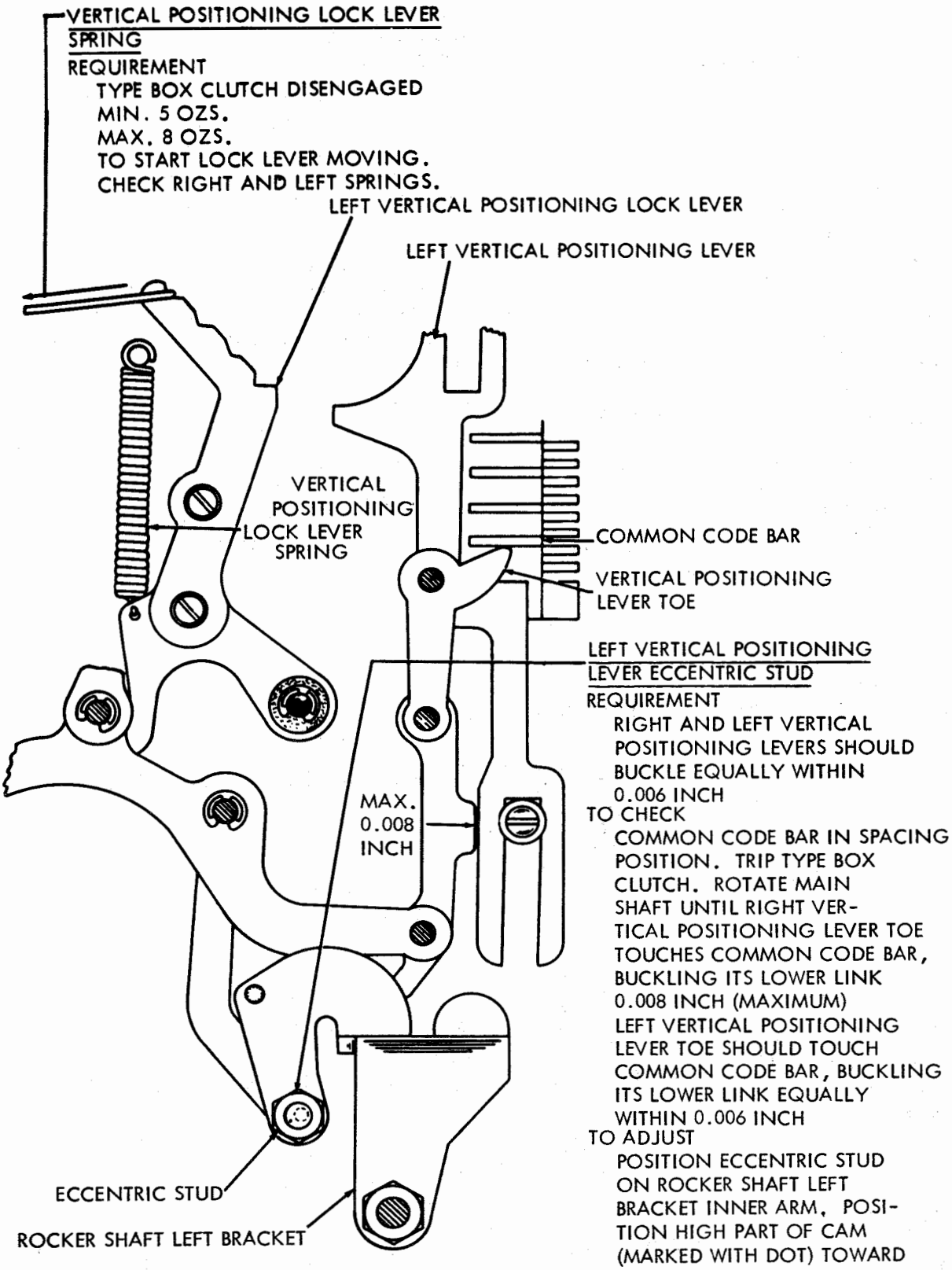
VERTICAL POSITIONING LEVER TOES (RIGHT AND LEFT) IN CONTACT WITH THE SUPPRESSION CODE BAR, LEVERS NOT BUCKLED.

MIN. 4 OZS.
MAX. 12 OZS.

TO MOVE THE LINK EXTENSION AWAY FROM THE VERTICAL POSITIONING LEVER.

CHECK BOTH RIGHT AND LEFT SPRINGS.

2.29 Positioning Mechanism (Cont.)



(LEFT SIDE VIEW)

2.30 Spacing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 2.43, 2.44, AND 2.47, IF THE FOLLOWING ADJUSTMENTS ARE REMADE.

OSCILLATING RAIL SLIDE POSITION

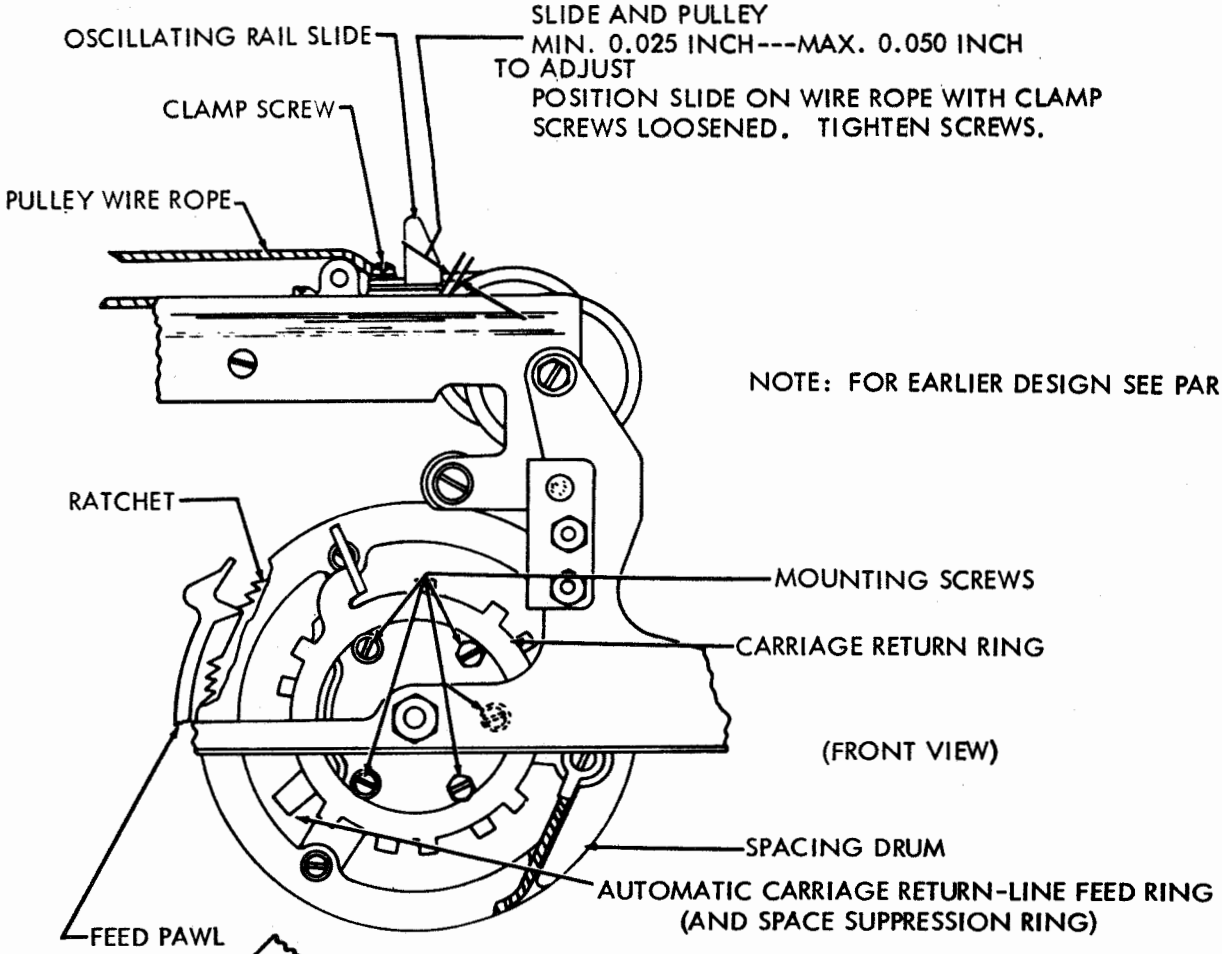
REQUIREMENT

CARRIAGE RETURN RING AND AUTOMATIC CARRIAGE RETURN-LINE FEED RING FREE IN MAXIMUM COUNTER-CLOCKWISE POSITION ON SPACING DRUM, SPACING CLUTCH DISENGAGED. FEED PAWL, WHICH IS FARTHEST ADVANCED, ENGAGING TOOTH IMMEDIATELY ABOVE CUT-AWAY SECTION OF RATCHET. CLEARANCE BETWEEN SLIDE AND PULLEY

MIN. 0.025 INCH---MAX. 0.050 INCH

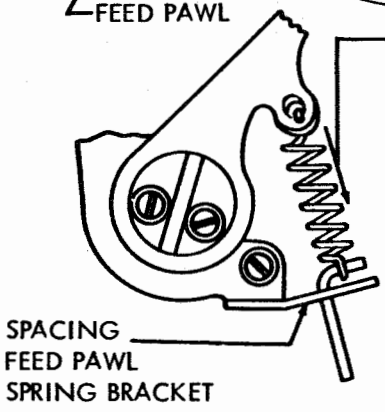
TO ADJUST

POSITION SLIDE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.



(FRONT VIEW)

NOTE: FOR EARLIER DESIGN SEE PAR. 4.07.



(FRONT VIEW)

SPACING FEED PAWL SPRING

REQUIREMENT

EACH SPACING PAWL IN LEAST ADVANCED POSITION RESTING AGAINST RATCHET WHEEL. EACH SPRING UNHOOKED FROM BRACKET

MIN. 2-1/2 OZS.

MAX. 6 OZ.

TO PULL SPRINGS TO INSTALLED LENGTH.

NOTE: ON UNITS EQUIPPED FOR 5 OR 6 SPACES PER INCH THIS TENSION SHOULD BE

MIN. 7-1/2 OZS.

MAX. 11 OZS.

TO PULL SPRINGS TO INSTALLED LENGTH.

CHECK THE OTHER SPACING PAWL SPRING IN THE SAME MANNER.

2. 31 Spacing Mechanism (Cont.)

(A) SPACING TRIP LEVER BAIL CAM PLATE

REQUIREMENT

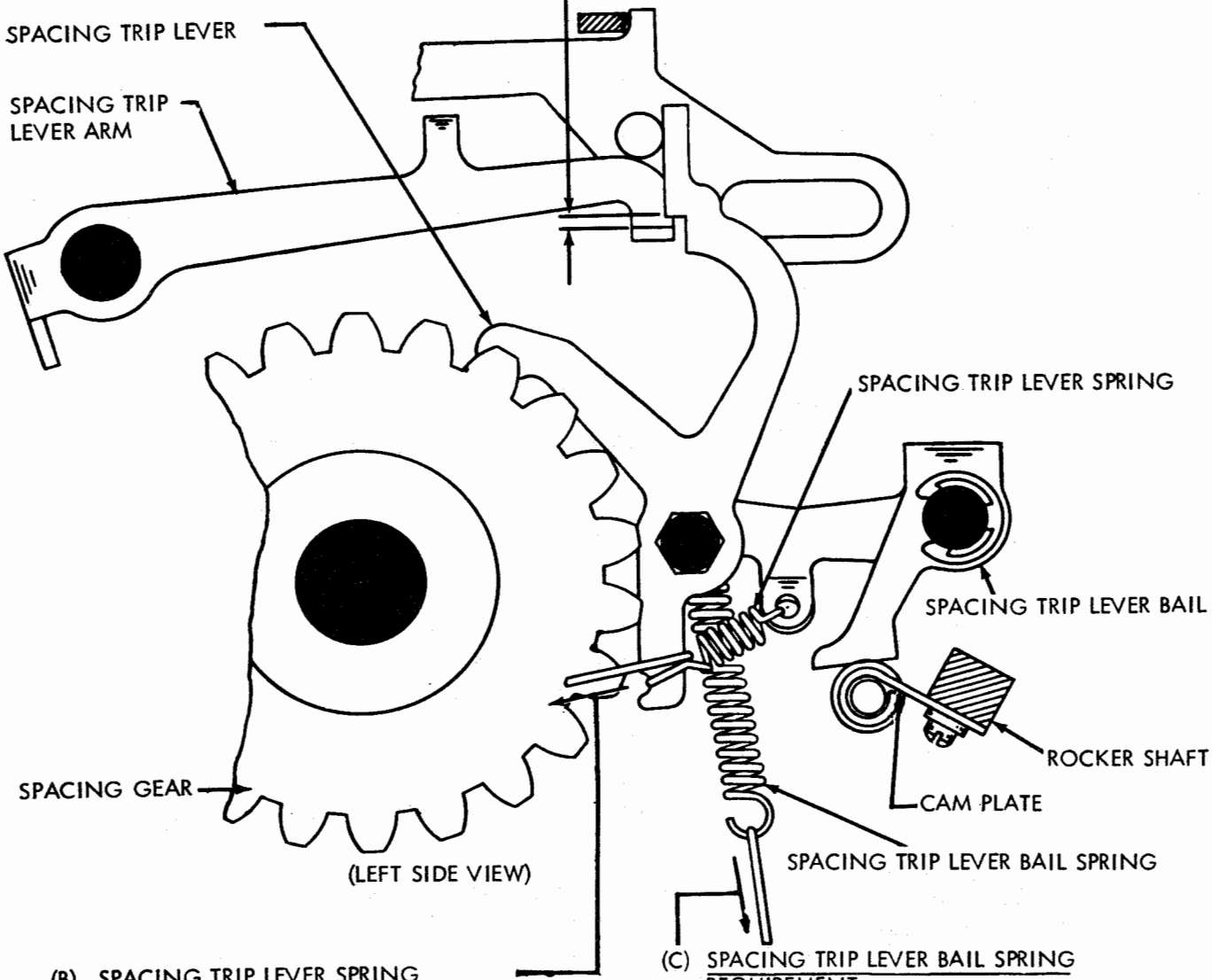
SPACING TRIP LEVER ARM IN UPWARD POSITION. TYPE BOX CLUTCH ROTATED THROUGH APPROXIMATELY ONE-HALF OF ITS CYCLE. ALL FUNCTION PAWLS DISENGAGED FROM FUNCTION BAR. CLEARANCE BETWEEN TOP SURFACE OF TRIP LEVER ARM EXTENSION AND SPACING TRIP LEVER SHOULDER.

MIN. 0.010 INCH

MAX. 0.040 INCH

TO ADJUST

POSITION CAM PLATE ON ROCKER SHAFT WITH MOUNTING SCREWS LOOSENED. POSITION FORWARD EDGE OF CAM PLATE PARALLEL TO SHAFT. TIGHTEN SCREWS.



(B) SPACING TRIP LEVER SPRING

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.

MIN. 2-1/2 OZS.

MAX. 5 OZS.

TO START LEVER MOVING.

(C) SPACING TRIP LEVER BAIL SPRING

REQUIREMENT

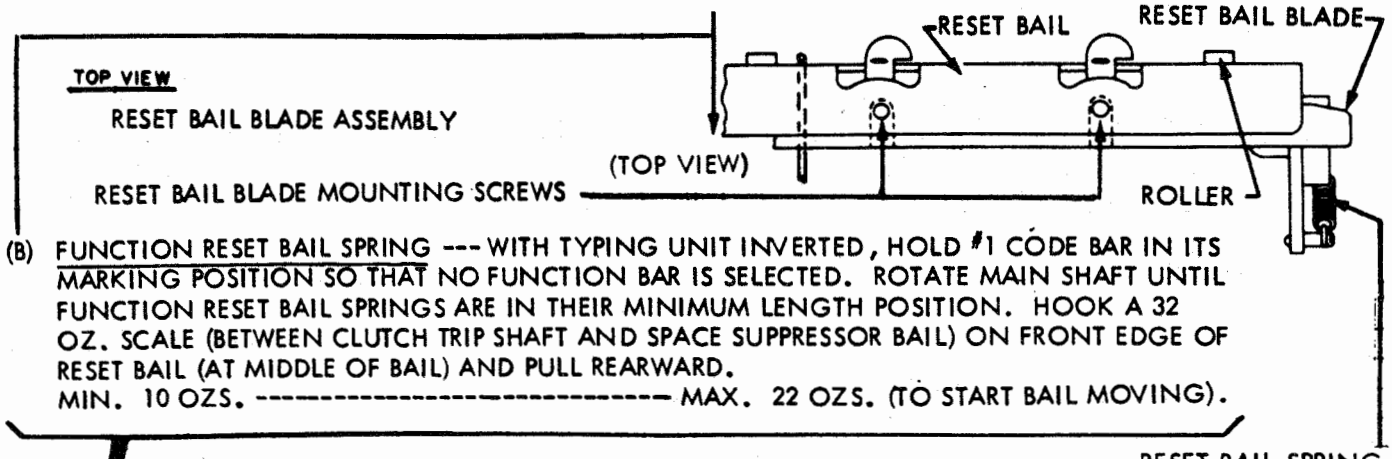
SPACING TRIP LEVER BAIL AGAINST STOP. SPACING TRIP LEVER BAIL SPRING UNHOOKED.

MIN. 8 OZS.

MAX. 12 OZS.

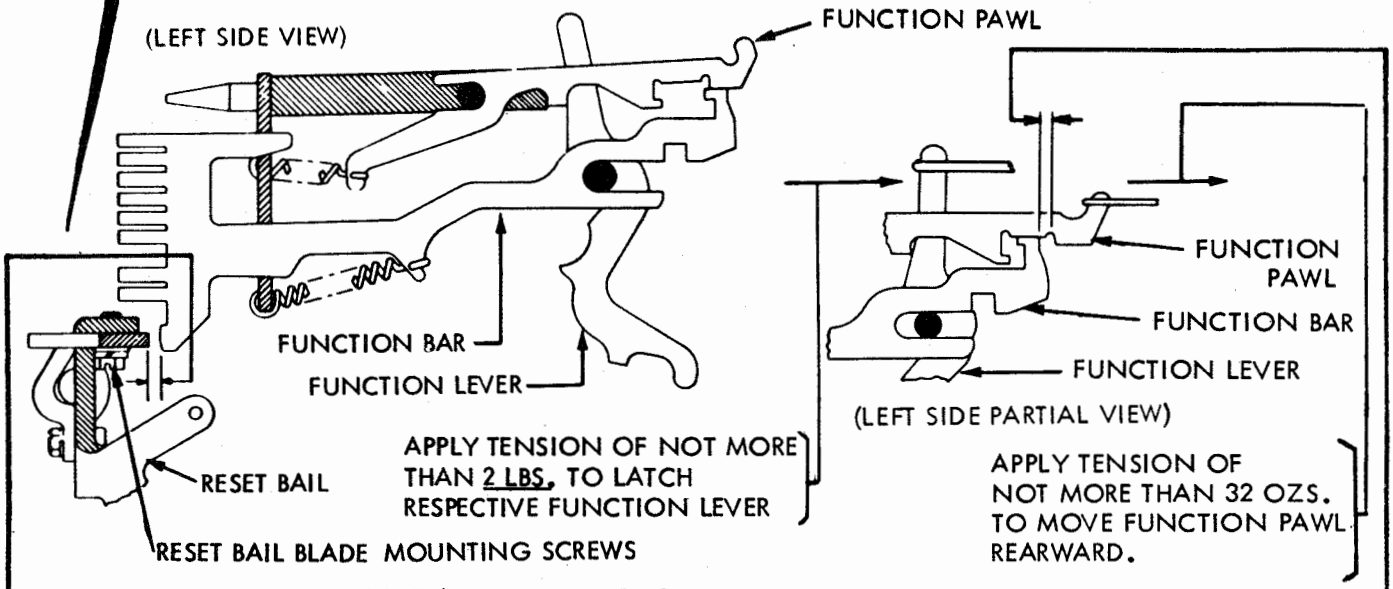
TO PULL SPRING TO INSTALLED LENGTH.

2.32 Function Mechanism



(B) FUNCTION RESET BAIL SPRING --- WITH TYPING UNIT INVERTED, HOLD #1 CODE BAR IN ITS MARKING POSITION SO THAT NO FUNCTION BAR IS SELECTED. ROTATE MAIN SHAFT UNTIL FUNCTION RESET BAIL SPRINGS ARE IN THEIR MINIMUM LENGTH POSITION. HOOK A 32 OZ. SCALE (BETWEEN CLUTCH TRIP SHAFT AND SPACE SUPPRESSOR BAIL) ON FRONT EDGE OF RESET BAIL (AT MIDDLE OF BAIL) AND PULL REARWARD.
MIN. 10 OZS. ---------- MAX. 22 OZS. (TO START BAIL MOVING).

RESET BAIL SPRING



(A) FUNCTION RESET BAIL BLADE (FOR UNITS WITH 2-STOP FUNCTION CLUTCH SEE PAR. 4.09)

(1) REQUIREMENT --- WITH ALL CLUTCHES DISENGAGED, TRIP CODE BAR CLUTCH AND TURN MAIN SHAFT UNTIL CODE-BAR CLUTCH TRIP LEVER JUST TOUCHES ITS STOP LUG. UNLATCH ALL FUNCTION PAWLS FROM THEIR FUNCTION BARS. HOLD RESPECTIVE FUNCTION BAR IN ITS EXTREME REARWARD POSITION WITH SPRING HOOK; CLEARANCE BETWEEN FUNCTION BAR AND RESET BAIL BLADE SHOULD BE
MIN. 0.018 INCH ---------- MAX. 0.035 INCH

TO CHECK --- MEASURE CLEARANCE AT BARS IN STUNT BOX SLOTS, NO'S 1, 4, 11, 18, 23, 33, 38 AND 41. IF A DESIGNATED SLOT IS VACANT, USE NEAREST BAR OR SELECT BAR WITH HIGHEST NUMBERED SLOT WHEN A BAR IS LOCATED ON BOTH SIDES OF VACANT SLOT. (VIEW SLOTS FROM REAR, NUMBERING FROM LEFT TO RIGHT).

TO ADJUST --- POSITION BLADE ON RESET BAIL WITH ITS MOUNTING SCREWS FRICTION TIGHT. TIGHTEN SCREWS.

(2) REQUIREMENT --- EACH FUNCTION PAWL SHOULD OVER TRAVEL ITS FUNCTION BAR BY AT LEAST 0.002 INCH WITH INDICATED TENSIONS APPLIED. CHECK PAWLS ONE AT-A-TIME AT SLOT NO'S. USED ABOVE.

TO CHECK --- IF CARRIAGE RETURN LEVER ADJUSTMENT HAS NOT BEEN MADE, LOOSEN ITS CLAMP SCREW. LATCH FUNCTION PAWLS BY LOWERING STRIPPER BLADE; TRIP CODE BAR CLUTCH AND POSITION ITS RELEASE LEVER AS IN (1) ABOVE. STRIP OFF ANY FUNCTIONS WHICH MAY HAVE BEEN SELECTED.

TO ADJUST --- REFINE REQUIREMENT (1) ABOVE, HOLDING THE READJUSTMENT WITHIN LIMITS
MIN. 0.018 INCH ---------- MAX. 0.035 INCH

NOTE: IF THE FUNCTION RESET BAIL BLADE IS REPOSITIONED, CHECK THE ADJUSTMENT OF THE FIGS-LTRS SHIFT CODE BAR OPERATING MECHANISM (PAR. 2.33).

2. 33 Function Mechanism (Cont.)

NOTE 1. FOR UNITS WITH ADJUSTABLE GUIDE PLATES AND ONE-STOP FUNCTION CLUTCHES, PROCEED AS SPECIFIED.

NOTE 2. FOR UNITS WITH ADJUSTABLE GUIDE PLATES AND TWO-STOP FUNCTION CLUTCHES, CHANGE FIRST SENTENCE IN REQUIREMENT (1) TO "DISENGAGE FUNCTION CLUTCH AT STOP GIVING LEAST CLEARANCE." THEN PROCEED AS SPECIFIED.

FIGS - LTRS SHIFT CODE BAR OPERATING MECHANISM

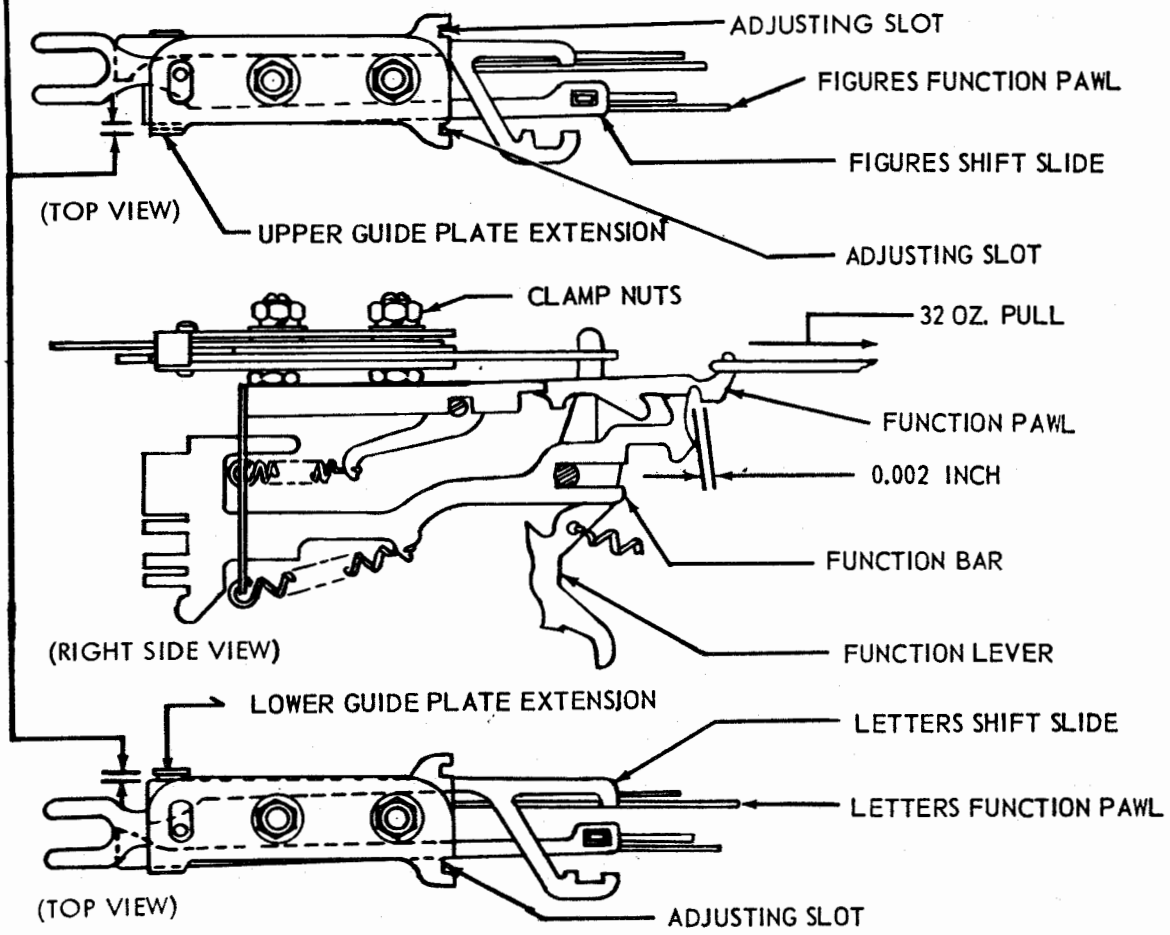
(1) REQUIREMENT
WITH FUNCTION CLUTCH ROTATED UNTIL CLUTCH DISC STOP LUG IS TOWARD BOTTOM OF UNIT, HOOK FIGURES FUNCTION PAWL OVER THE END OF THE FUNCTION BAR. CLEARANCE BETWEEN UPPER GUIDE PLATE EXTENSION AND SHIFT SLIDE.
MAX. 0.020 WHEN PLAY IS TAKEN UP FOR MAXIMUM.

(2) REQUIREMENT
WITH 32 OZ. PULL APPLIED TO FUNCTION PAWL THERE SHOULD BE
MIN. 0.002 INCH
BETWEEN SHOULDER OF FIGURES FUNCTION PAWL AND FACE OF FUNCTION BAR.

(3) REQUIREMENT
REPEAT REQUIREMENT (1) & (2) FOR THE LETTERS FUNCTION PAWL. CHECK MAX. CLEARANCE BETWEEN LOWER GUIDE PLATE EXTENSION AND SHIFT SLIDE. CHECK MIN. CLEARANCE BETWEEN SHOULDER OF LETTER FUNCTION PAWL AND FACE OF FUNCTION BAR.

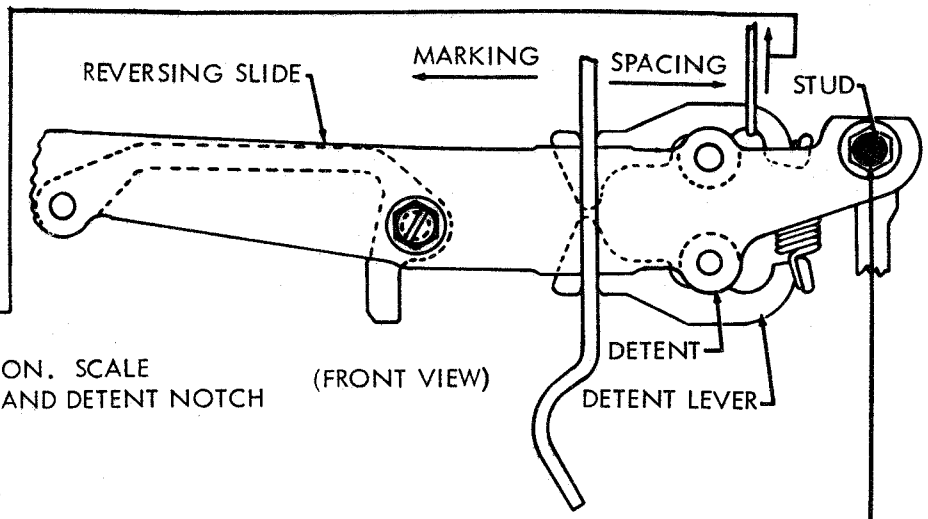
NOTE 3: THERE SHOULD BE SOME CLEARANCE BETWEEN THE UNOPERATED SHIFT SLIDE AND ITS GUIDE PLATE, WHEN THE SHIFT SLIDE HAS REACHED ITS POSITION OF MAXIMUM TRAVEL.

TO ADJUST
POSITION UPPER AND/OR LOWER GUIDE PLATE BY THE ADJUSTING SLOT WITH THE CLAMP NUTS LOOSENED. TIGHTEN NUTS.



NOTE 4: FOR EARLIER DESIGN SEE PAR. 4.08.

2.34 Positioning Mechanism (Cont.)



(A) REVERSING SLIDE DETENT SPRING REQUIREMENT

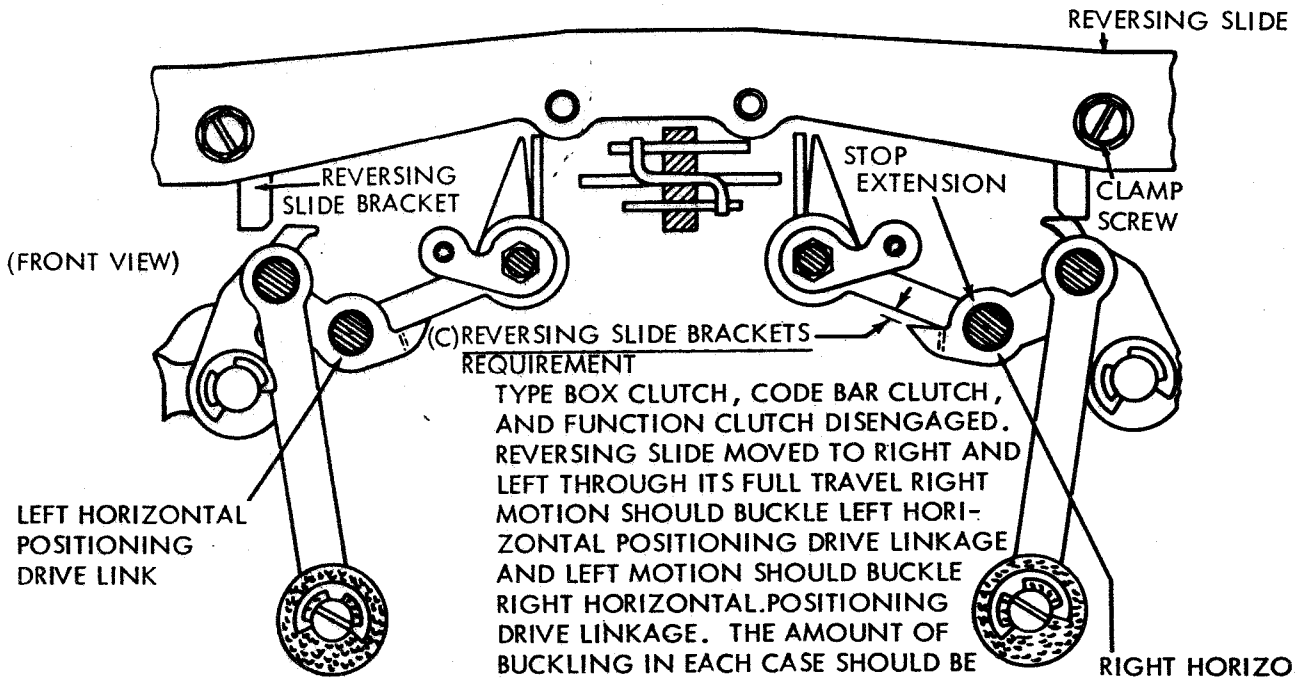
SLIDE IN LEFT HAND POSITION. SCALE HOOKED IN UPPER RIGHT HAND DETENT NOTCH
MIN. 2 OZS.
MAX. 4-1/2 OZS.
TO START DETENT MOVING

(B) REVERSING SLIDE ADJUSTING STUD REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.
WITH NO. 3 CODE BAR IN SPACING POSITION (RIGHT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE RIGHT-HAND NOTCHES OF THE DETENT LEVER.
WITH NO. 3 CODE BAR IN MARKING POSITION (LEFT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE LEFT-HAND NOTCHES OF THE DETENT LEVER.

TO ADJUST

POSITION THE REVERSING SLIDE STUD IN ITS ELONGATED HOLE WITH ITS MOUNTING NUT LOOSENED. TIGHTEN NUT.



(C) REVERSING SLIDE BRACKETS REQUIREMENT

TYPE BOX CLUTCH, CODE BAR CLUTCH, AND FUNCTION CLUTCH DISENGAGED. REVERSING SLIDE MOVED TO RIGHT AND LEFT THROUGH ITS FULL TRAVEL RIGHT MOTION SHOULD BUCKLE LEFT HORIZONTAL POSITIONING DRIVE LINKAGE AND LEFT MOTION SHOULD BUCKLE RIGHT HORIZONTAL.POSITIONING DRIVE LINKAGE. THE AMOUNT OF BUCKLING IN EACH CASE SHOULD BE
MIN.0.030 INCH
MAX.0.050 INCH
MEASURED AT POINT OF MAXIMUM CLEARANCE

TO ADJUST

POSITION EACH REVERSING SLIDE BRACKET WITH ITS CLAMP SCREW LOOSENED. TIGHTEN SCREW.

2. 35 **Positioning Mechanism (Cont.)**

NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS WITH LATER DESIGNED DRIVE LINKAGE AND TORSION SPRINGS. FOR EARLIER DESIGN SEE PAR. 4.10 AND 4.11.

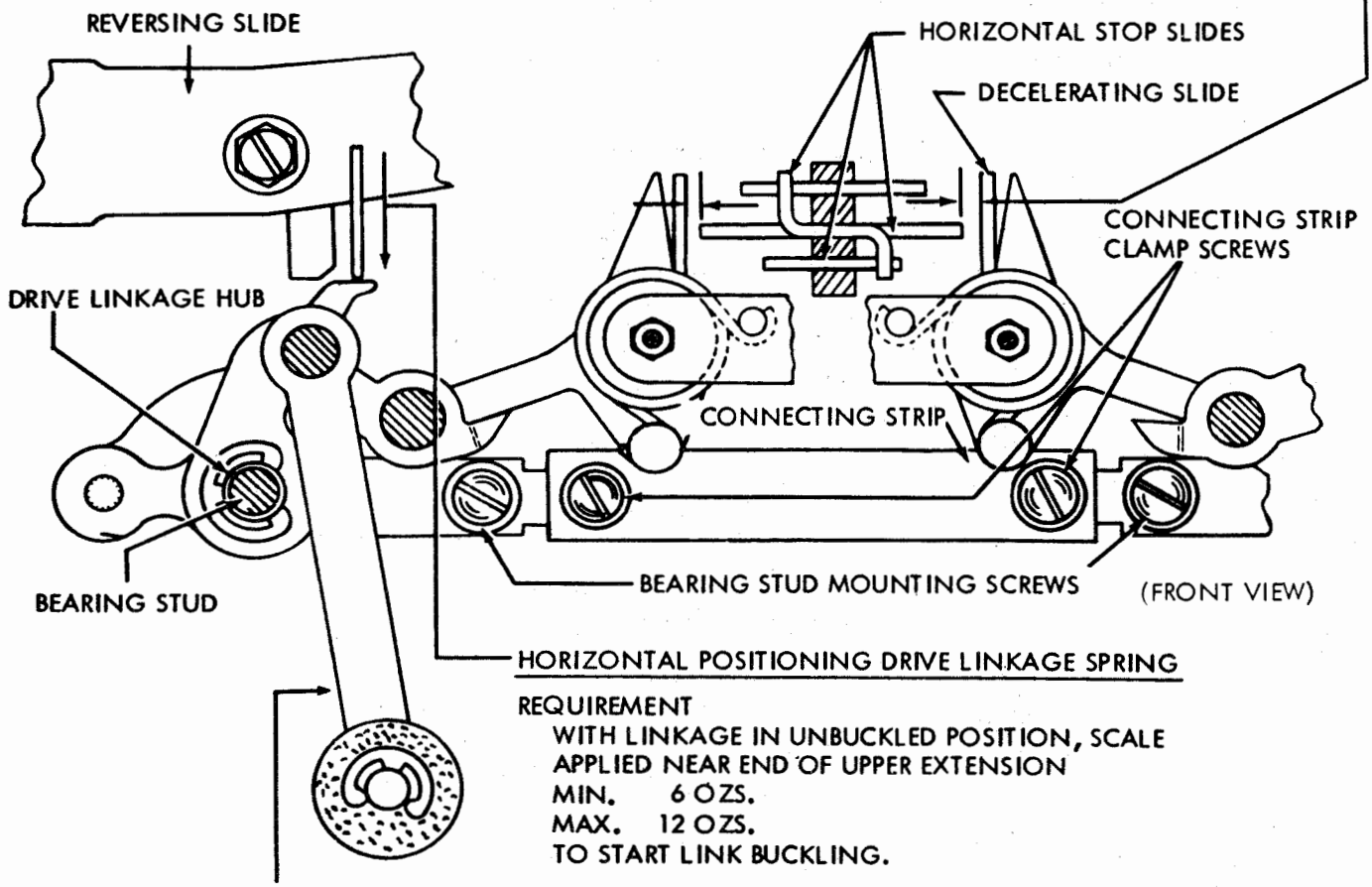
HORIZONTAL POSITIONING DRIVE LINKAGE

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.
CODE BARS 4 AND 5 TO SPACING (RIGHT).
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES, ON SIDE WHERE KNEE LINK IS STRAIGHT SHOULD BE EQUAL (WITHIN 0.008 INCH)
MIN. 0.090 INCH
MAX. 0.110 INCH

TO ADJUST

LOOSEN BEARING STUD MOUNTING SCREWS AND CONNECTING STRIP MOUNTING SCREWS FRICTION TIGHT. POSITION ONE OR BOTH BEARING STUDS ON THE CONNECTING STRIP TO PROVIDE 0.095 INCH TO 0.105 INCH BETWEEN THE CENTER HORIZONTAL SLIDE AND THE DECELERATING SLIDE ON THE SIDE WHERE THE LINKAGE IS NOT BUCKLED. TIGHTEN THE TWO INNER MOUNTING SCREWS. CHANGE POSITION OF REVERSING SLIDE AND CHECK OPPOSITE CLEARANCE. EQUALIZE BY SHIFTING BOTH STUDS AND CONNECTING STRIP AS A UNIT. HOLD THE DRIVE LINKAGE HUB AGAINST THE LOWER VERTICAL LINK OF THE DRIVE LINKAGE. TIGHTEN THE TWO OUTER BEARING STUD MOUNTING SCREWS. CHECK THE LINKAGE FOR FREENESS THROUGHOUT A COMPLETE CYCLE. THE TYPE BOX CLUTCH DISC SHOULD HAVE SOME MOVEMENT IN THE NORMAL DIRECTION OF ROTATION IN THE STOP POSITION.

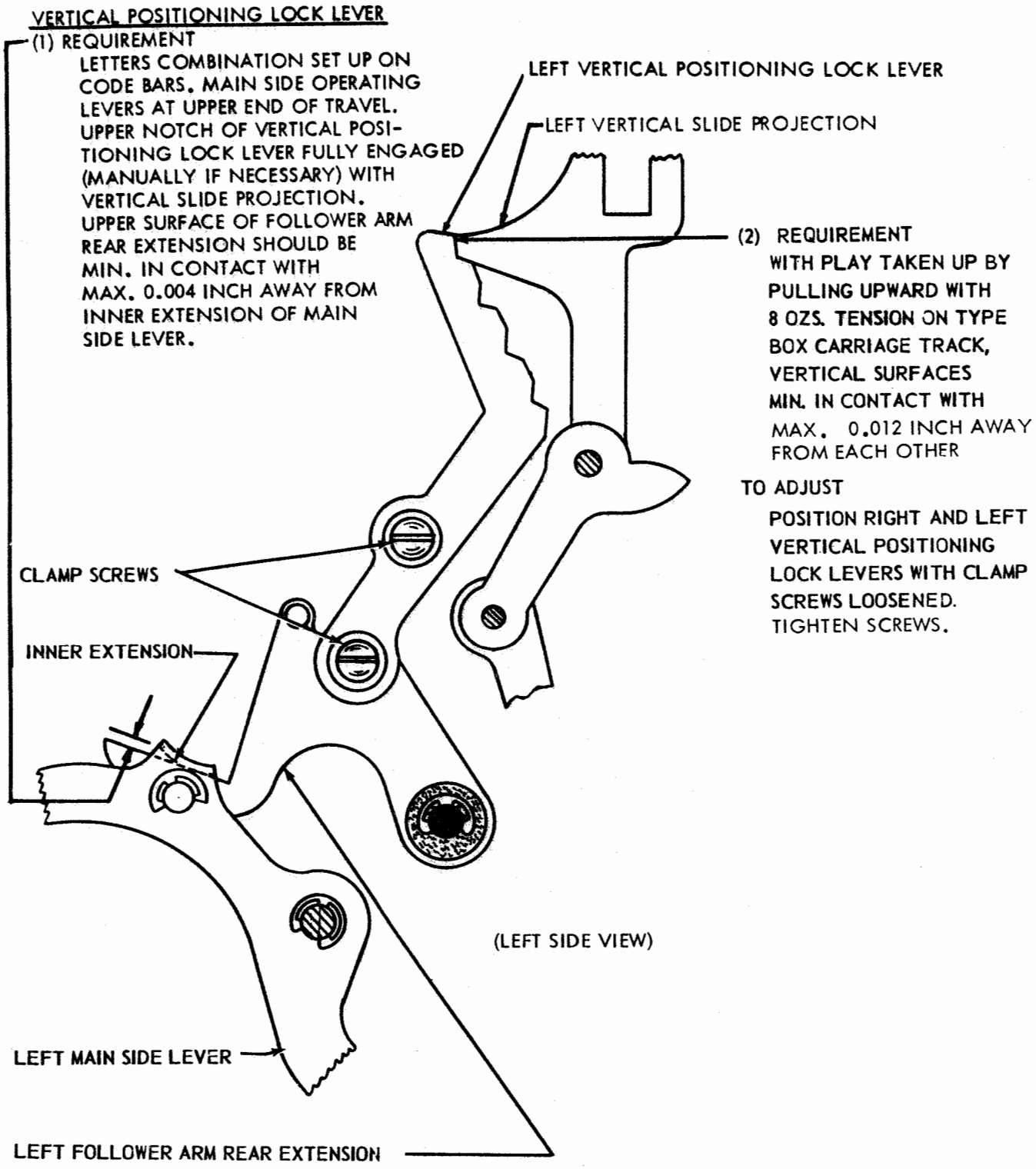


REQUIREMENT

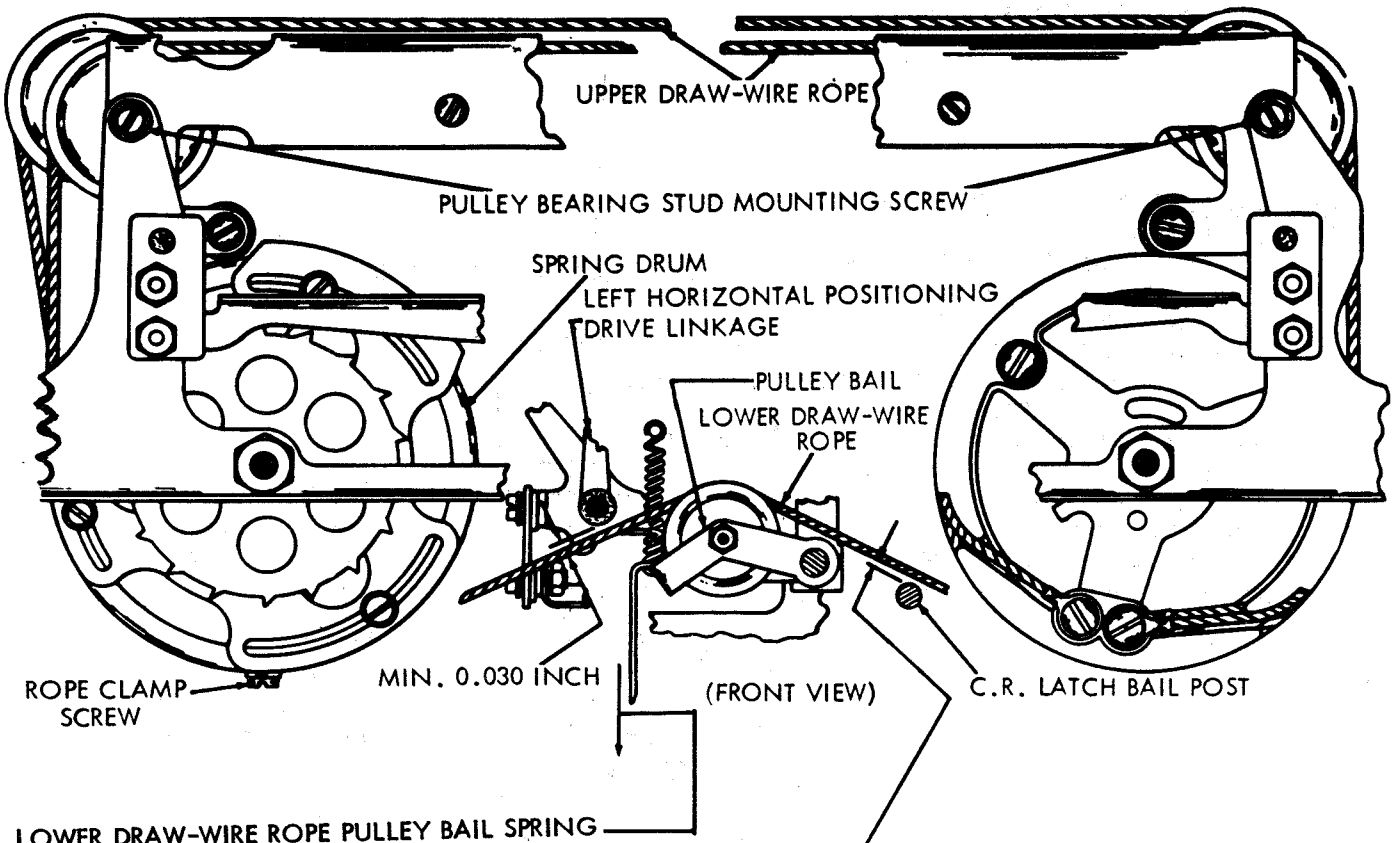
WITH LINKAGE IN UNBUCKLED POSITION, SCALE APPLIED NEAR END OF UPPER EXTENSION
MIN. 6 OZS.
MAX. 12 OZS.
TO START LINK BUCKLING.

NOTE: FOR EARLIER DESIGN SEE PAR. 4.10

2. 36 **Positioning Mechanism (Cont.)**



2.37 Spacing Mechanism (cont.)



LOWER DRAW-WIRE ROPE PULLEY BAIL SPRING

REQUIREMENT

SPRING UNHOOKED FROM PULLEY BAIL, BAIL EXTENSION RESTING ON OPENING IN FRONT PLATE.
MIN. 18 OZS.
MAX. 22 OZS.
TO PULL SPRING TO POSITION LENGTH.

CARRIAGE DRAW-WIRE ROPE

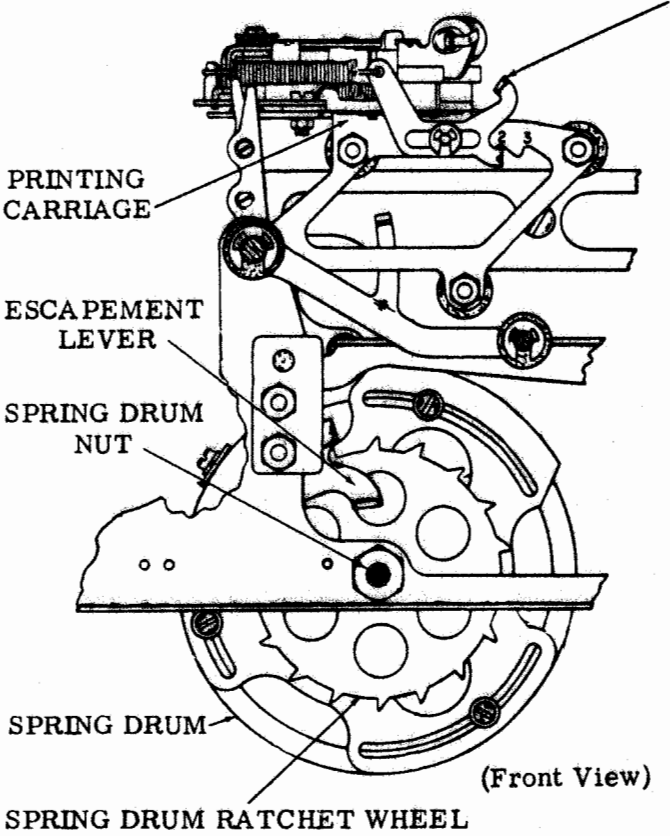
REQUIREMENT

CLEARANCE BETWEEN LOWER DRAW-WIRE ROPE AND CARRIAGE RETURN LATCH BAIL POST SHOULD BE AT LEAST 0.006 INCH. WITH THE HORIZONTAL POSITIONING MECHANISM IN ITS LOWEST POSITION, CLEARANCE BETWEEN THE LOWER DRAW-WIRE ROPE AND THE LEFT HORIZONTAL POSITIONING DRIVE LINKAGE SHOULD BE MIN. 0.030 INCH

TO ADJUST

ADVANCE PRINTING CARRIAGE TO EXTREME RIGHT HAND POSITION. ROTATE TYPE BOX CLUTCH 1/2 REVOLUTION. LOOSEN ROPE CLAMP SCREW ONE TURN ONLY. POSITION PULLEY BEARING STUDS, WITH THEIR MOUNTING SCREWS LOOSENED, TO MEET REQUIREMENT. CHECK THAT CABLE HAS MOVED AROUND ITS EQUALIZING CLAMP SO THAT REAR CABLE HAS SLIGHTLY GREATER TENSION THAN FRONT CABLE, GAUGED BY FEEL. TIGHTEN THE CLAMP SCREW.

2.38 Spacing Mechanism (continued)



CARRIAGE RETURN SPRING

Requirement
Pull required to start spring drum moving
Min 3-1/2 lb---Max 4-1/4 lb

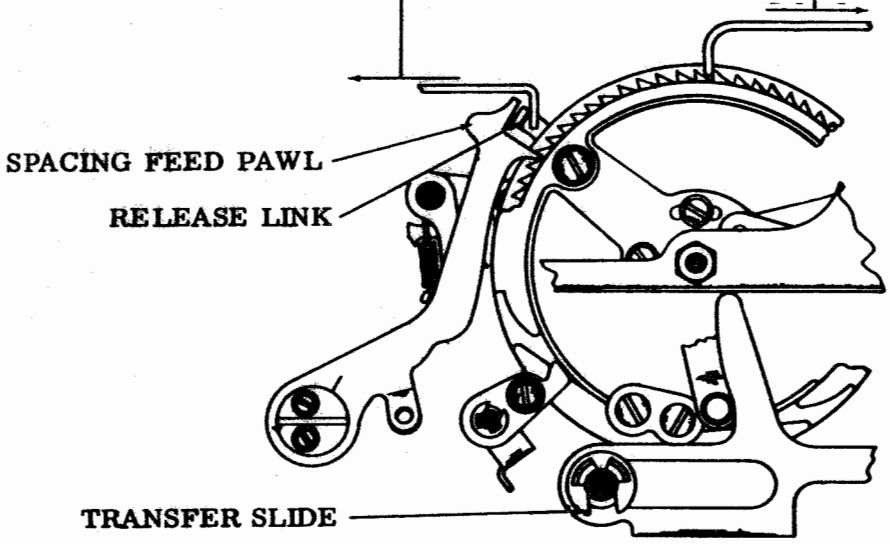
To Check
Spacing drum in its returned position. Printing track in lower position. Remove lower cable roller spring. Hold spacing pawl, buffer slide and carriage return latch to prevent interference with spacing drum.

To Adjust
Spring drum nut loosened. Rotate spring drum ratchet wheel to increase tension. Operate escapement lever to decrease tension. Tighten nut.

Note: At altitudes higher than 2000 feet above sea level keep spring tension to the minimum.

SPACING FEED PAWL RELEASE LINK SPRING

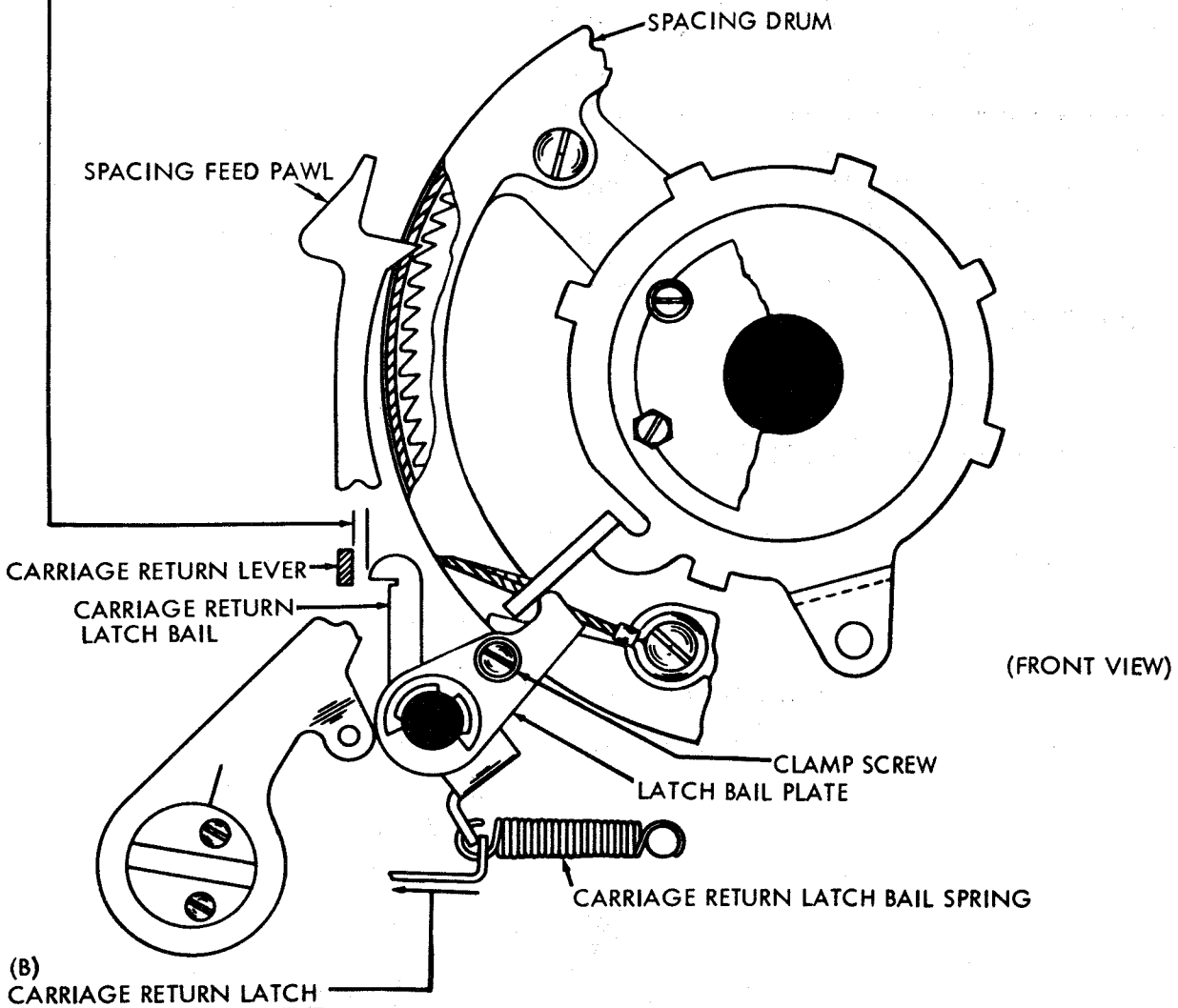
Requirement
Min 1/2 oz---Max 2-1/2 oz
to start spring stretching.



(Front View)

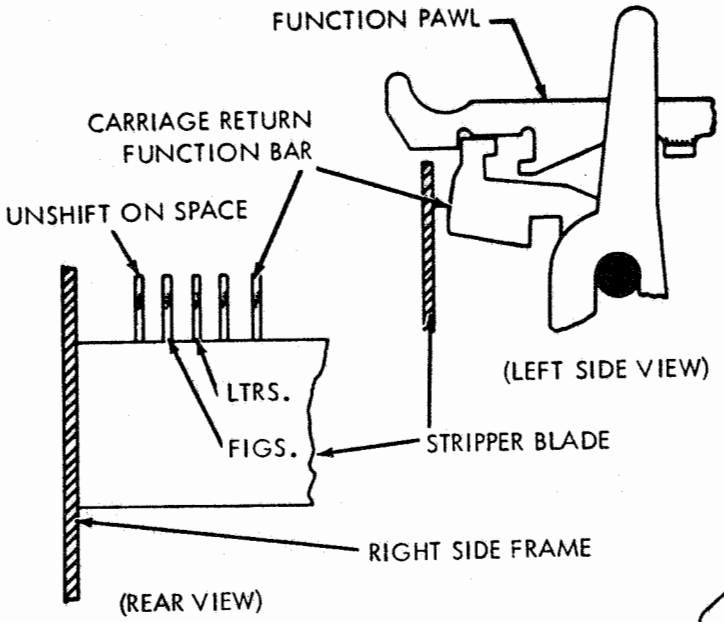
2.39 Spacing Mechanism (Cont.)

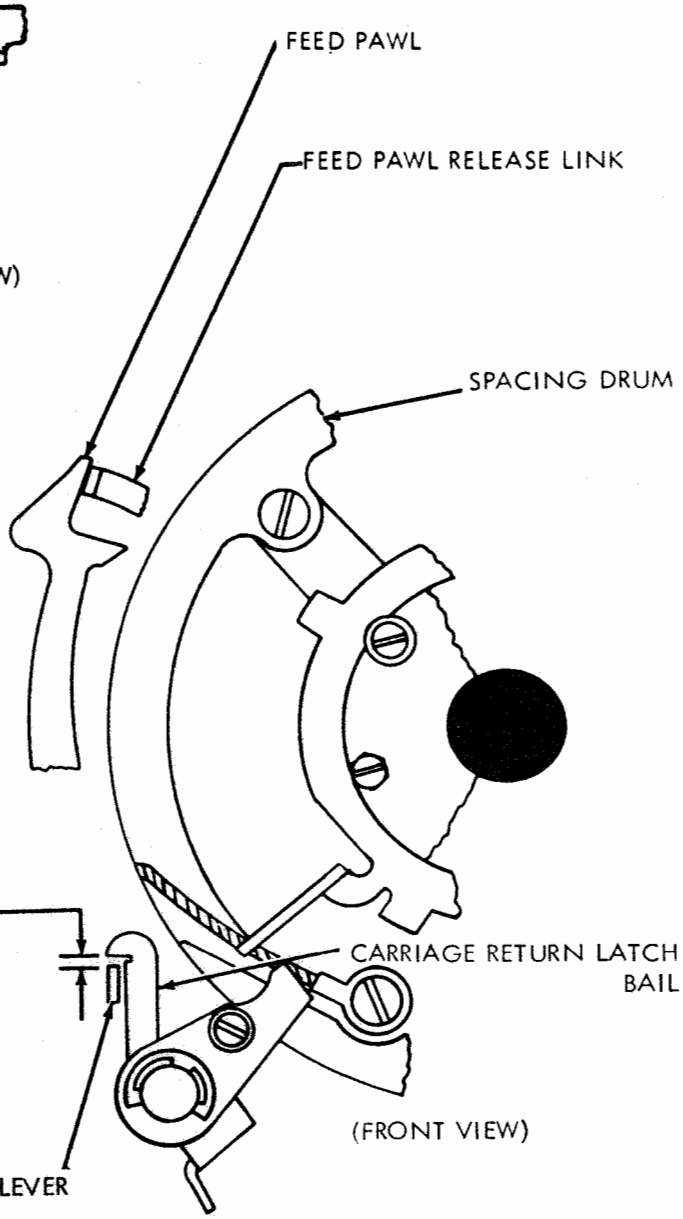
(A)
CARRIAGE RETURN LATCH BAIL
REQUIREMENT
CARRIAGE FULLY RETURNED (SEE PAR. 2.43)
PLAY IN CARRIAGE RETURN BAIL TAKEN UP TO RIGHT BY HOLDING RIGHT SIDE OF BAIL AGAINST ITS RETAINER. CLEARANCE BETWEEN CARRIAGE RETURN LATCH BAIL AND CARRIAGE RETURN LEVER.
MIN. 0.004 INCH
MAX. 0.040 INCH
TO ADJUST
POSITION LATCH BAIL PLATE WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.



(B)
CARRIAGE RETURN LATCH BAIL SPRING
REQUIREMENT
SPACING DRUM FULLY RETURNED
MIN. 3 OZS.
MAX. 4-1/2 OZS.
TO START LATCH BAIL MOVING

2.40 Spacing Mechanism (Cont.)





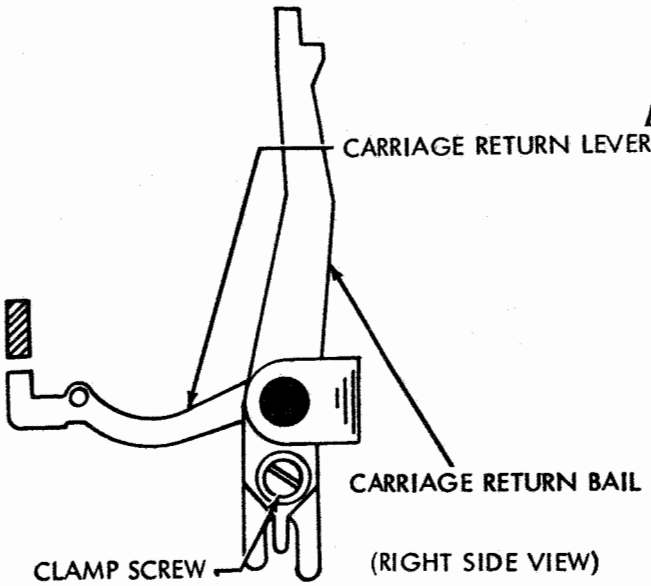
CARRIAGE RETURN LEVER

REQUIREMENT (UNITS EQUIPPED WITH ONE-STOP FUNCTION CLUTCH)

CARRIAGE RETURN FUNCTION SET UP ON SELECTOR. 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.

CLEARANCE BETWEEN LATCH BAIL AND CARRIAGE RETURN LEVER.

MIN. 0.006 INCH — MAX. 0.035 INCH



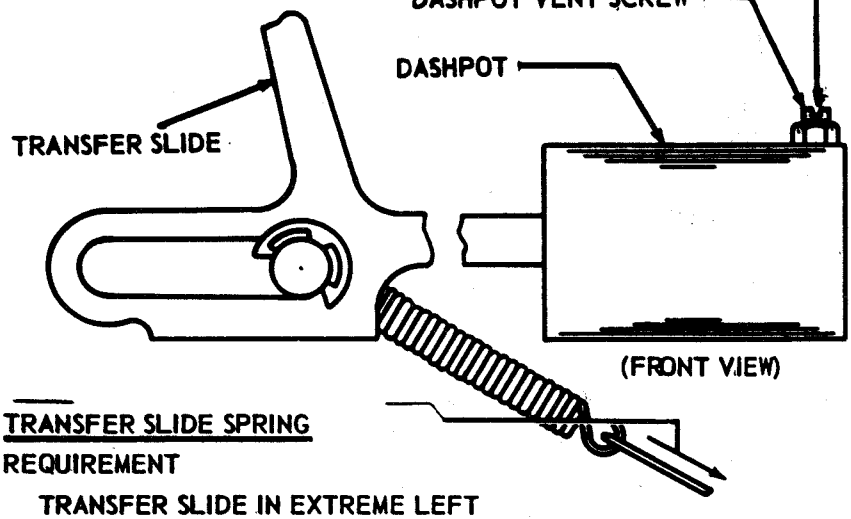
REQUIREMENT (UNITS EQUIPPED WITH TWO-STOP FUNCTION CLUTCH)

SAME EXCEPT MAIN SHAFT SHOULD BE ROTATED UNTIL FUNCTION CLUTCH IS DISENGAGED IN STOP POSITION THAT RESULTS IN LEAST CLEARANCE.

TO ADJUST

POSITION CARRIAGE RETURN LEVER ON CARRIAGE RETURN BAIL WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.

2.41 Spacing Mechanism (Cont.)



DASH POT VENT SCREW

REQUIREMENT

TYPE BOX CARRIAGE SHOULD RETURN FROM ANY LENGTH OF LINE WITHOUT BOUNCING.

TO CHECK

PRINTER OPERATED AT ANY SPEED FROM AUTOMATIC TRANSMISSION WITH ONE CR AND ONE LF SIGNAL BETWEEN LINES. FIRST CHARACTER OF EACH LINE SHOULD BE PRINTED IN SAME LOCATION AS IF UNIT WAS MANUALLY OPERATED SLOWLY.

TO ADJUST

TURN DOWN VENT SCREW UNTIL SLIGHT PNEUMATIC BOUNCE IS PERCEPTIBLE. BACK OFF SCREW UNTIL EFFECT DISAPPEARS.

FOR DASHPOTS WITH ONE VENT HOLE: THEN BACK SCREW OFF ONE FULL TURN. TIGHTEN NUT.

FOR DASHPOTS WITH TWO VENT HOLES: THEN BACK SCREW OFF 1/4 TURN. TIGHTEN NUT.

NOTE: AT ALTITUDES HIGHER THAN 2000 FT. ABOVE SEA LEVEL IT MAY ALSO BE NECESSARY TO REDUCE THE CARRIAGE RETURN SPRING REQUIREMENT (PAR. 2.38) TOWARDS THE MINIMUM.

TRANSFER SLIDE SPRING

REQUIREMENT

TRANSFER SLIDE IN EXTREME LEFT POSITION.

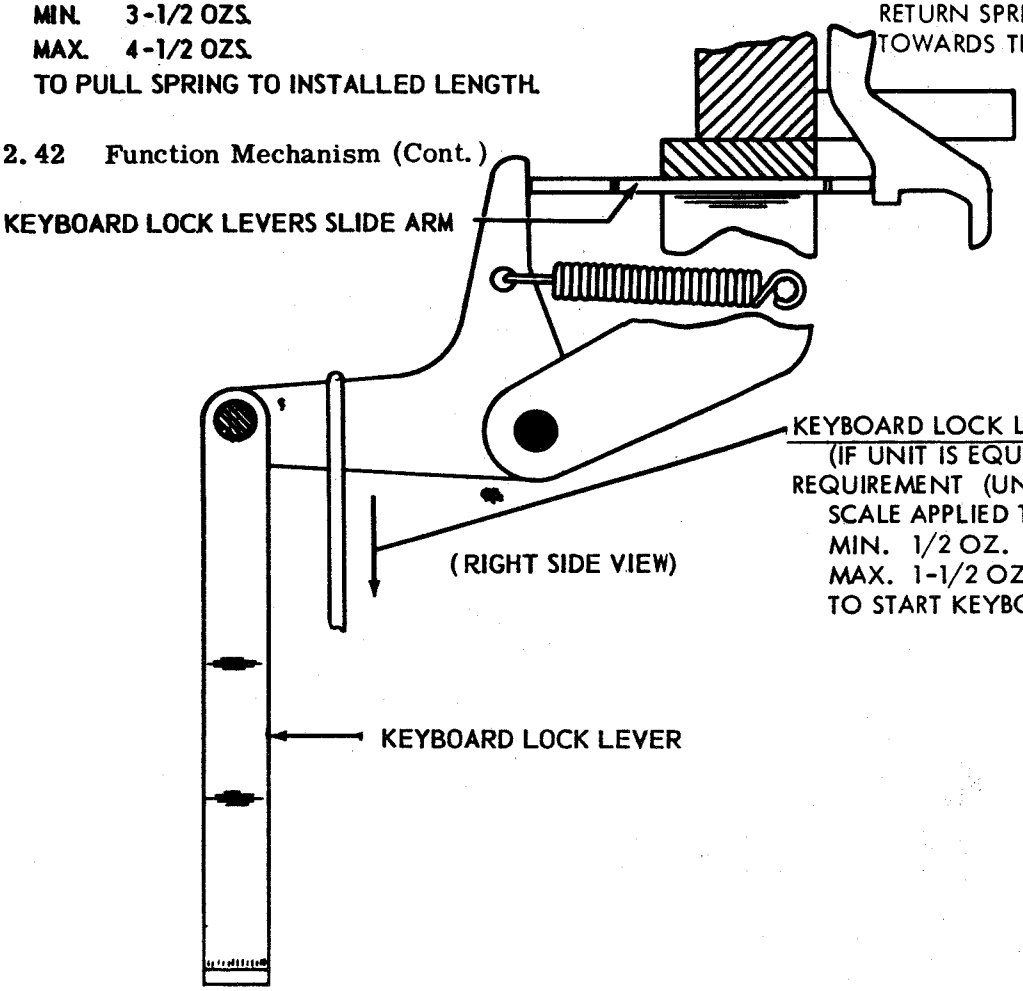
SPRING UNHOOKED.

MIN. 3-1/2 OZS.

MAX. 4-1/2 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

2.42 Function Mechanism (Cont.)



KEYBOARD LOCK LEVER SPRING

(IF UNIT IS EQUIPPED)

REQUIREMENT (UNIT UPSIDE DOWN)

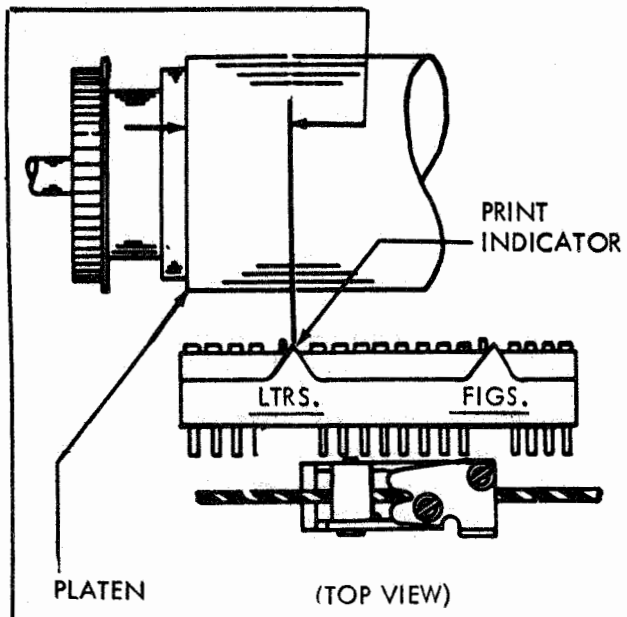
SCALE APPLIED TO BELL CRANK

MIN. 1/2 OZ.

MAX. 1-1/2 OZS.

TO START KEYBOARD LOCK LEVER MOVING

2.43 Spacing Mechanism (Cont.)



NOTES

1. WHEN ADJUSTMENTS ON THIS PAGE ARE MADE CHECK RELATED REQUIREMENTS IN PARS. 2.30, 2.44, AND 2.47.
2. FOR SPROCKET FEED PRINTER REQUIREMENTS REFER TO ADJUSTMENTS IN PARS. 2.71 THROUGH 2.75.
3. LEFT MARGIN MAY BE VARIED AS REQUIRED FROM ZERO TO ONE INCH. MAXIMUM RANGE OF ADJUSTMENT FOR MECHANISMS WITH STANDARD (10 CHARACTERS-PER-INCH) SPACING IS AS FOLLOWS:
   (a) FRICTION FEED PLATEN - 85 CHARACTERS
   (b) SPROCKET FEED PLATEN - 74 CHARACTERS
4. PRINTING CARRIAGE POSITION REQUIREMENT
   REFER TO STANDARD ADJUSTMENT --- PAR. 2.47
5. FOR EARLY DESIGN REFER TO PAR. 4.12.

LEFT MARGIN
REQUIREMENTS --- (72 CHARACTER TYPICAL LINE).

(1) WITH TYPE BOX CLUTCH DISENGAGED, SPACING DRUM IN ITS RETURN POSITION AND TYPE BOX SHIFTED TO LETTERS POSITION; CLEARANCE BETWEEN LEFT EDGE OF PLATEN AND LETTERS PRINT INDICATOR. (SEE NOTE 3).
MIN. 15/16 INCH --- MAX. 1-1/16 INCH.

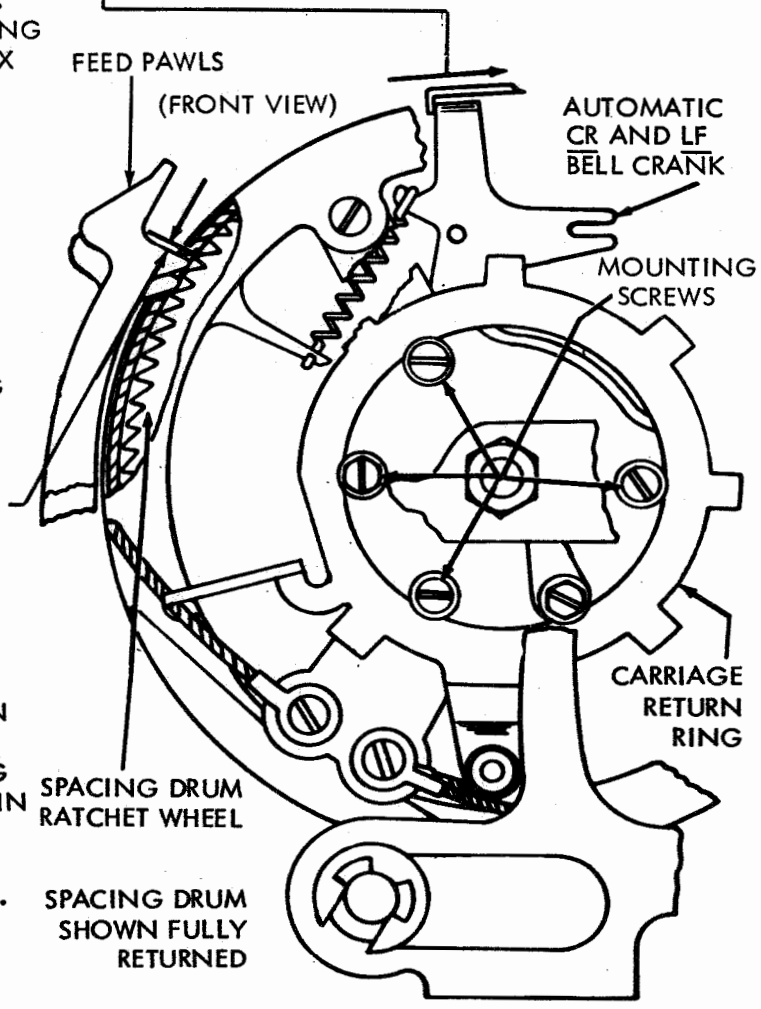
TO ADJUST --- POSITION STOP ARM OF SPACING DRUM* WITH ITS CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.

(2) WITH SPACING CLUTCH DISENGAGED, FRONT SPACING FEED PAWL FARTHEST ADVANCED, SPACING DRUM FULLY RETURNED (DASH POT PLUNGER DEPRESSED FULLY) PLAY IN SPACING SHAFT GEAR (PAR. 2.24) TAKEN UP IN CLOCK WISE DIRECTION; CLEARANCE BETWEEN PAWL AND SHOULDER OF RATCHET WHEEL TOOTH IMMEDIATELY AHEAD.
MIN. SOME --- MAX. 0.008 INCH

(3) THE REAR PAWL, WHEN FARTHEST ADVANCED, SHOULD DROP INTO INDENTATION BETWEEN RATCHET WHEEL TEETH AND SHOULD BOTTOM FIRMLY IN NOTCH.

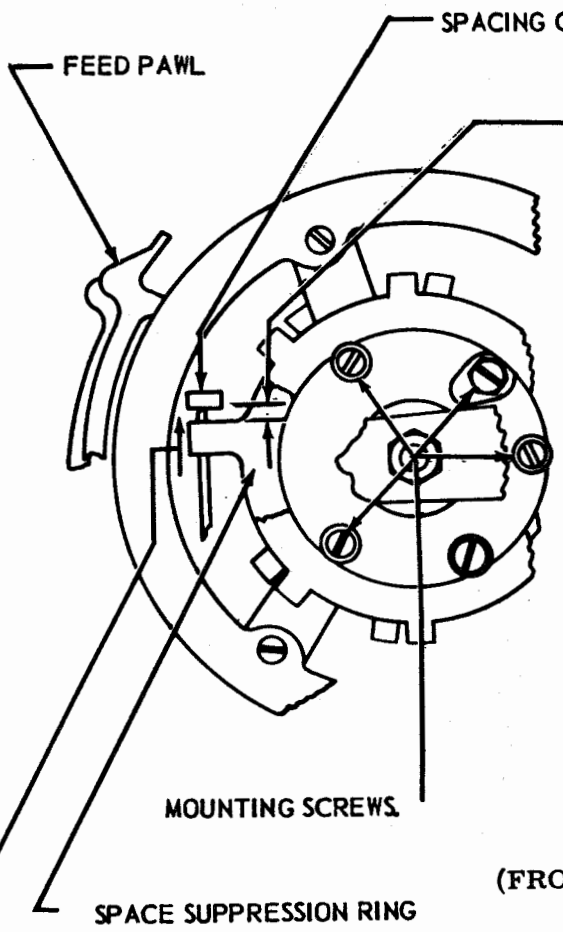
TO ADJUST --- REFINE REQUIREMENT (1) ABOVE.
*SHIFT TYPE BOX TO LTRS. POSITION, RETURN PRINT CARRIAGE TO ITS LEFT POSITION AND LOOSEN CARRIAGE RETURN RING MOUNTING SCREWS (4). HOLD CARRIAGE RETURN RING IN ITS COUNTER-CLOCKWISE POSITION, AND POSITION TYPE BOX SO THAT ITS LTRS. INDICATOR ALIGNS WITH REQUIRED MARGIN. TIGHTEN MOUNTING SCREWS.

AUTOMATIC CR/LF BELL CRANK SPRING REQUIREMENT --- (FOR UNITS SO EQUIPPED).
WITH FUNCTION CLUTCH DISENGAGED.
MIN. 2-1/2 OZS. --- MAX. 7 OZS.
TO MOVE THE BELL CRANK.



2.44 Spacing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 2.30, 2.43 AND 2.47 IF THE FOLLOWING ADJUSTMENTS ARE REMADE.



(FRONT VIEW)

RIGHT MARGIN

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. CARRIAGE IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUTOUT IS TO OCCUR. FRONT FEED PAWL FARTHEST ADVANCED. SPACING CUTOUT TRANSFER BAIL HELD IN ITS UPPERMOST POSITION. ON UNITS HAVING TWO PIECE SPACING CUTOUT BAIL PUSH THE CUTOUT BAIL TOWARDS REAR OF UNIT THROUGH HOLE IN FRONT PLATE. CLEARANCE BETWEEN EXTENSION ON SPACE SUPPRESSION RING AND TRANSFER BAIL

MIN. 0.006 INCH — MAX. 0.025 INCH

TO ADJUST

POSITION SPACE SUPPRESSION RING WITH FOUR INDICATED MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

NOTE

(1) RANGE OF ADJUSTMENT IS FROM 0 TO 85 CHARACTERS.

(2) ON UNITS EQUIPPED WITH AUTOMATIC CARRIAGE RETURN - LINE FEED RING, THIS ADJUSTMENT IS NOT APPLICABLE. (SEE PAR. 2.62)

SPACING CUTOUT TRANSFER BAIL SPRING

REQUIREMENT

MIN. 1 OZ.
MAX. 3-1/2 OZS.
TO START BAIL MOVING.

NOTE: FOR EARLIER DESIGN SEE PAR. 4.13

2.45 Positioning Mechanism (Cont.)

DECELERATING SLIDE SPRING

REQUIREMENT

PRINTING BAIL IN DOWNWARD POSITION. PRINTING CARRIAGE AND DECELERATING SLIDE ASSEMBLY IN RIGHT HAND POSITION.

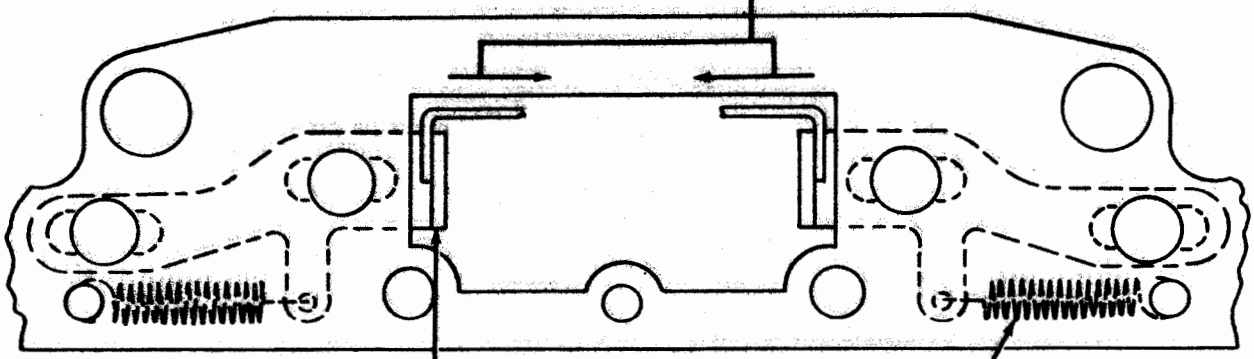
MIN. 1/2 OZ.

MAX. 1-1/2 OZS.

TO START THE SLIDE MOVING.

WITH THE PRINTING CARRIAGE AND DECELERATING SLIDE IN THEIR LEFT HAND POSITION

CHECK THE LEFT HAND DECELERATING SLIDE SPRING



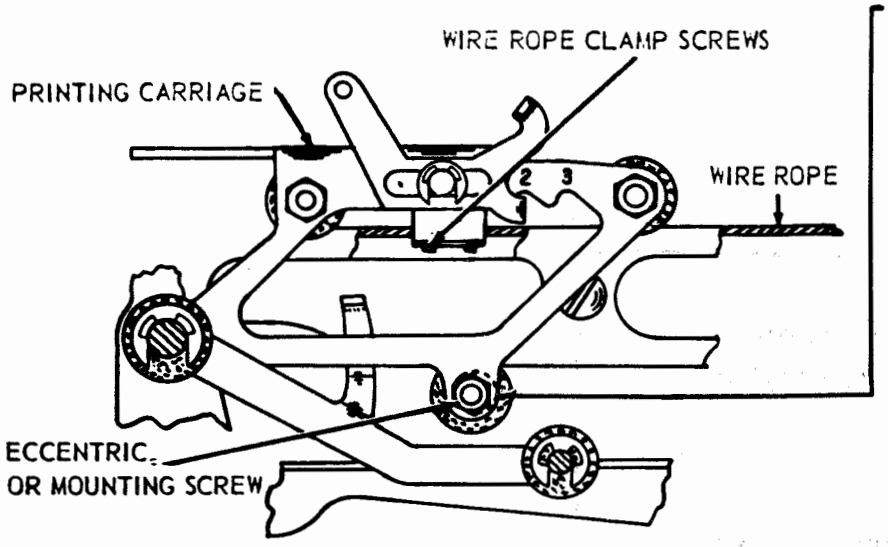
DECELERATING SLIDE

(FRONT VIEW)

DECELERATING SLIDE SPRING

NOTE: FOR EARLIER DESIGN SEE PAR. 4.13

2.46 Printing Mechanism



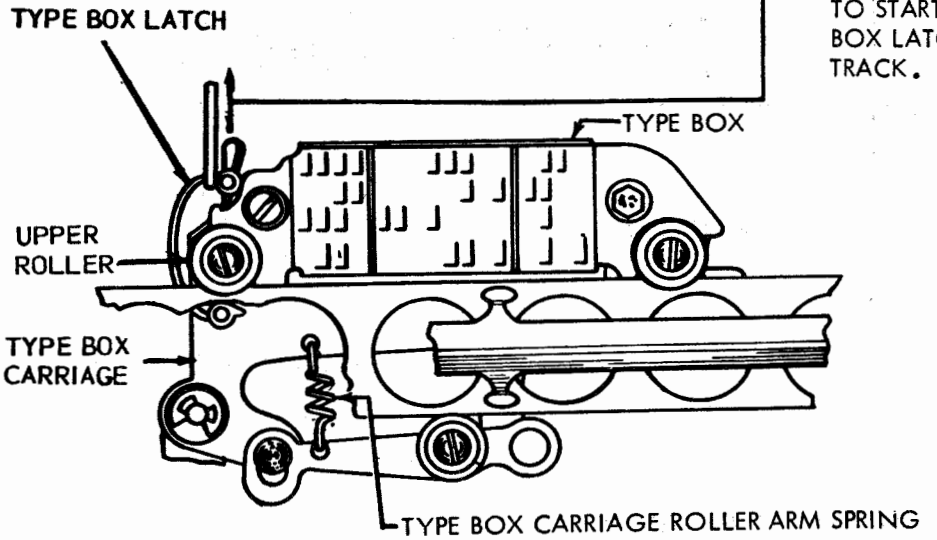
(FRONT VIEW)

PRINTING CARRIAGE LOWER ROLLER REQUIREMENT

CARRIAGE WIRE ROPE CLAMP SCREWS LOOSENED. PLAY OF CARRIAGE ON TRACK-MIN. WITHOUT BIND, THROUGHOUT TRACK'S FULL LENGTH

TO ADJUST (ECCENTRIC BUSHING) POSITION LOWER ROLLER WITH SCREW NUT LOOSENED. KEEP HIGH PART OF ECCENTRIC (CHAMFERED CORNER) TOWARD THE RIGHT. TIGHTEN NUT.

TO ADJUST (SLIDING SCREW) POSITION LOWER ROLLER WITH MOUNTING SCREW LOOSENED. TIGHTEN SCREW.



(FRONT VIEW)

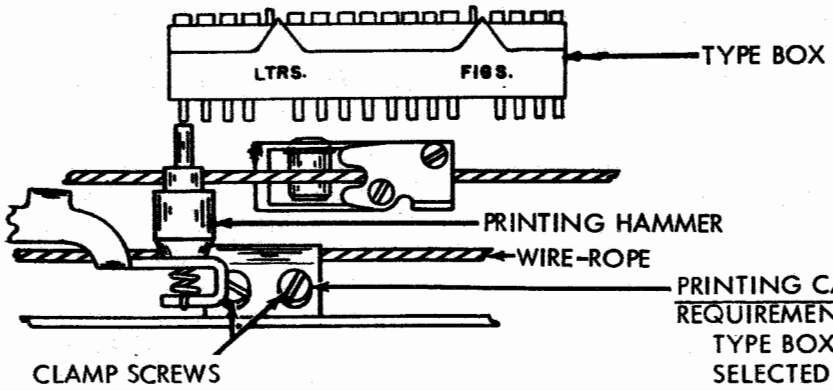
TYPE BOX CARRIAGE ROLLER ARM SPRING REQUIREMENT

MIN. 28 OZS.
MAX. 36 OZS.
TO START UPPER ROLLER, NEAREST TYPE BOX LATCH, MOVING AWAY FROM CARRIAGE TRACK.

NOTE: FOR EARLIER DESIGN SEE PAR. 4.14

2.47 Printing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 2.30, 2.38, AND 2.44, IF THE FOLLOWING ADJUSTMENTS ARE REMADE. FOR TYPING UNITS OF EARLIER DESIGN, CHECK RELATED ADJUSTMENTS, PARS. 4.07, 2.38, 2.39, AND 4.13.



(TOP VIEW)

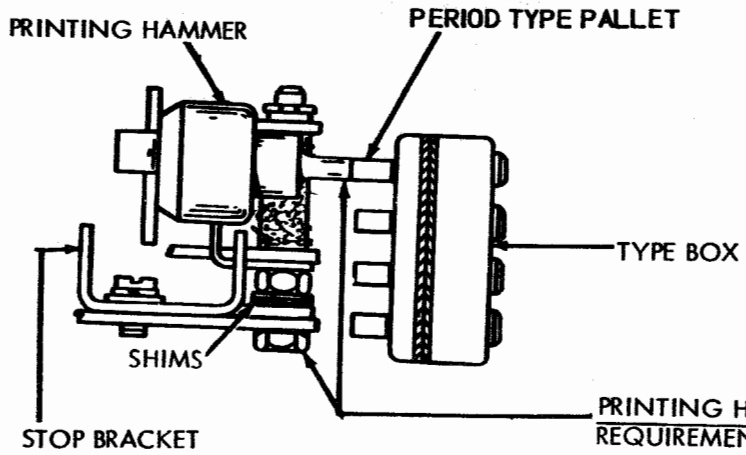
PRINTING CARRIAGE POSITION

REQUIREMENT

TYPE BOX IN LETTERS POSITION. M TYPE PALLET SELECTED. CARRIAGE AT APPROXIMATE MIDPOINT OF PLATEN. TYPE BOX IN PRINTING POSITION. M TYPE PALLET SHOULD BE APPROXIMATELY IN CENTER OF PRINTING HAMMER WHEN HAMMER IS JUST TOUCHING M TYPE PALLET. TAKE UP PLAY IN TYPE BOX CARRIAGE IN EACH DIRECTION AND SET HAMMER IN CENTER OF PLAY.

TO ADJUST

POSITION PRINTING CARRIAGE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.



(RIGHT SIDE VIEW)

PRINTING HAMMER BEARING STUD

REQUIREMENT

TYPE BOX AT MIDPOINT OF PLATEN AND IN POSITION TO PRINT PERIOD. PRINTING HAMMER IN CONTACT WITH TYPE PALLET AND PRESSED DOWNWARD AT BEARING POST. FACE OF HAMMER SHOULD BE FULLY ON END OF TYPE PALLET.

TO ADJUST

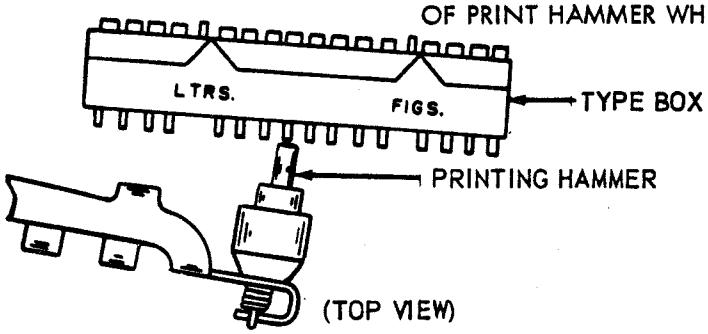
ADD OR REMOVE SHIMS BETWEEN SHOULDER ON BEARING POST AND STOP BRACKET. TIGHTEN NUT.

2.48 Positioning Mechanism (Cont.)

(A) SHIFT LINKAGE

REQUIREMENT

CARRIAGE NEAR MIDPOINT OF PLATEN. TYPE BOX IN POSITION TO PRINT LETTER "O". MANUALLY BUCKLE RIGHT SHIFT LINKAGE. SHIFT TYPE BOX TO LEFT. FIGURE "9" TYPE PALLET SHOULD BE APPROXIMATELY IN CENTER OF PRINT HAMMER WHEN HAMMER IS JUST TOUCHING "9" TYPE PALLET.

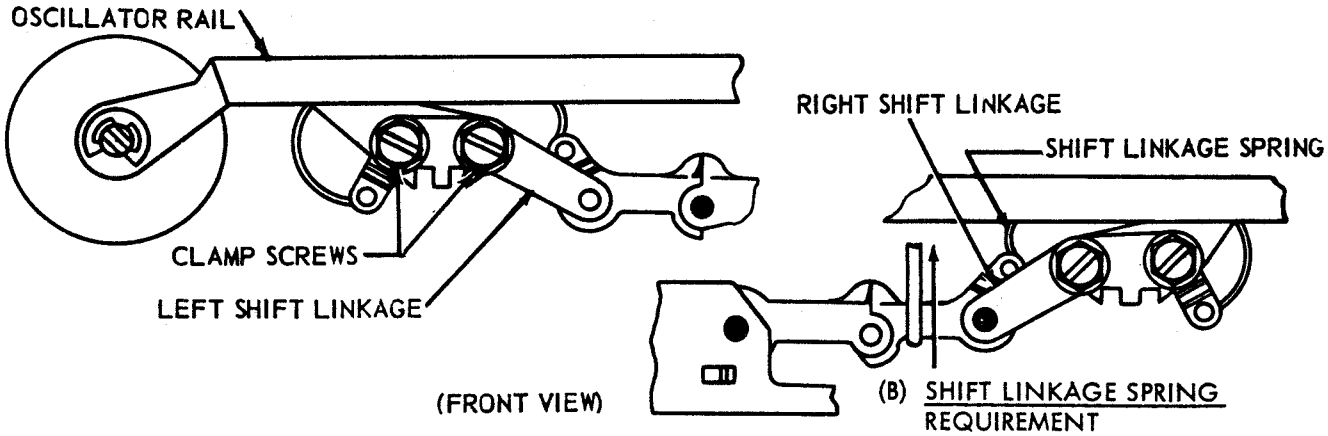


TO ADJUST

POSITION LEFT SHIFT LINKAGE ON OSCILLATOR RAIL WITH TWO CLAMP SCREWS LOOSENED. TIGHTEN SCREWS

TO RECHECK

SHIFT ALTERNATELY FROM "W" TO "2". TAKE UP PLAY IN EACH DIRECTION. REFINE ADJUSTMENT IF NECESSARY.



(B) SHIFT LINKAGE SPRING

REQUIREMENT

LINK IN STRAIGHT POSITION

MIN. 6 OZS.

MAX. 14 OZS.

TO START EACH LINK MOVING.

NOTE: FOR SHIFT MECHANISMS WITH TORSION SPRINGS SEE PAR. 4.15

2.49 Printing Mechanism (Cont.)

(A) PRINTING TRACK

REQUIREMENT

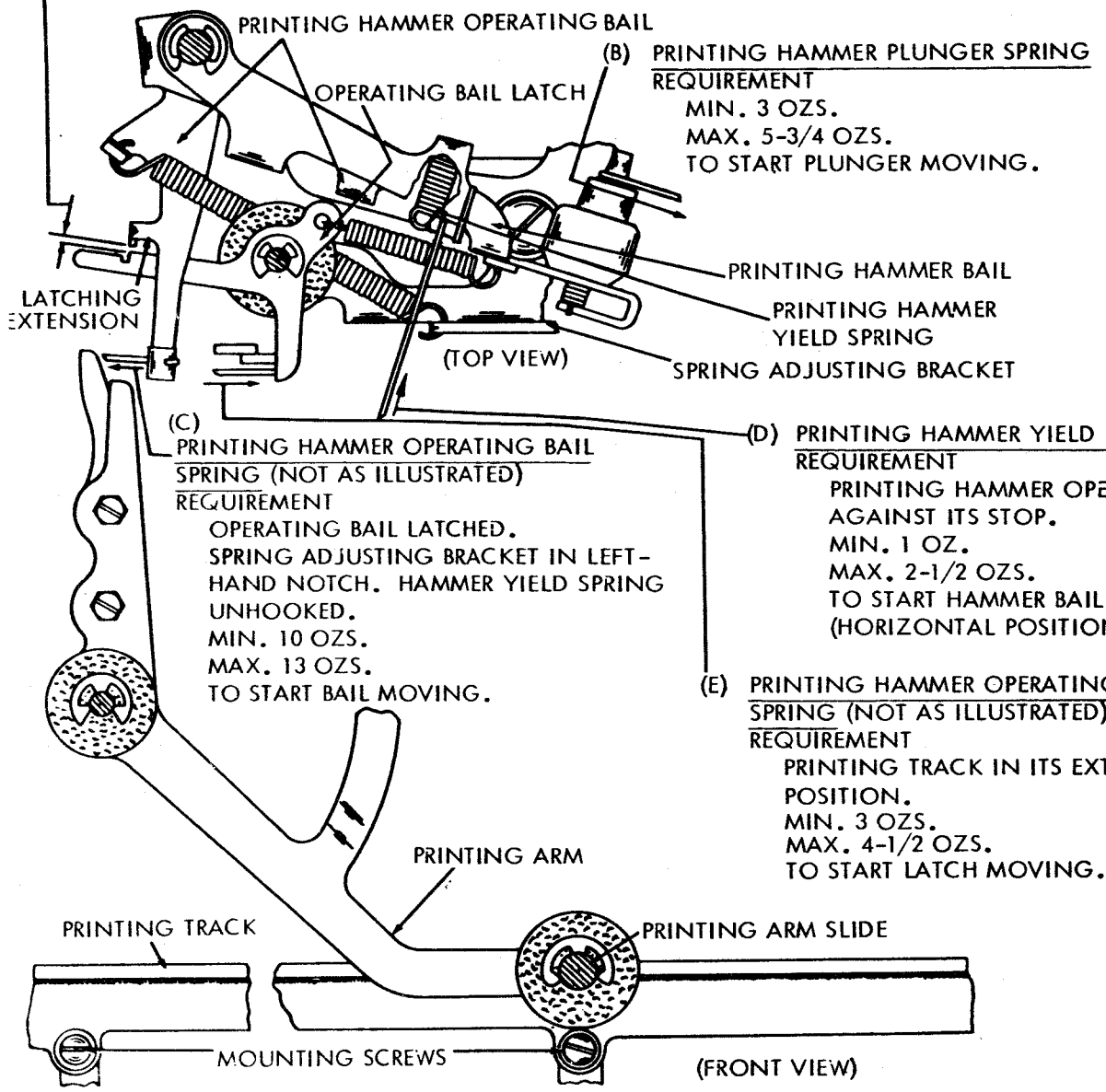
PRINTING TRACK IN ITS EXTREME DOWNWARD POSITION. BLANK SELECTION IN FIGURES. PRINTING HAMMER OPERATING BAIL LATCHING EXTENSION HELD WITH LEFT FACE IN LINE WITH THE LATCH SHOULDER. PRINTING ARM SLIDE POSITIONED ALTERNATELY OVER EACH TRACK MOUNTING SCREW. PRINTING BAIL RESET EACH TIME. CLEARANCE BETWEEN LATCHING EXTENSION AND OPERATING BAIL LATCH SHOULD BE

MIN. 0.015 INCH

MAX. 0.040 INCH

TO ADJUST

POSITION THE PRINTING TRACK UP OR DOWN WITH ITS MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.



(B) PRINTING HAMMER PLUNGER SPRING

REQUIREMENT

MIN. 3 OZS.

MAX. 5-3/4 OZS.

TO START PLUNGER MOVING.

(C) PRINTING HAMMER OPERATING BAIL SPRING (NOT AS ILLUSTRATED)

REQUIREMENT

OPERATING BAIL LATCHED. SPRING ADJUSTING BRACKET IN LEFT-HAND NOTCH. HAMMER YIELD SPRING UNHOOKED.

MIN. 10 OZS.

MAX. 13 OZS.

TO START BAIL MOVING.

(D) PRINTING HAMMER YIELD SPRING

REQUIREMENT

PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP.

MIN. 1 OZ.

MAX. 2-1/2 OZS.

TO START HAMMER BAIL MOVING (HORIZONTAL POSITION).

(E) PRINTING HAMMER OPERATING BAIL LATCH SPRING (NOT AS ILLUSTRATED)

REQUIREMENT

PRINTING TRACK IN ITS EXTREME UPWARD POSITION.

MIN. 3 OZS.

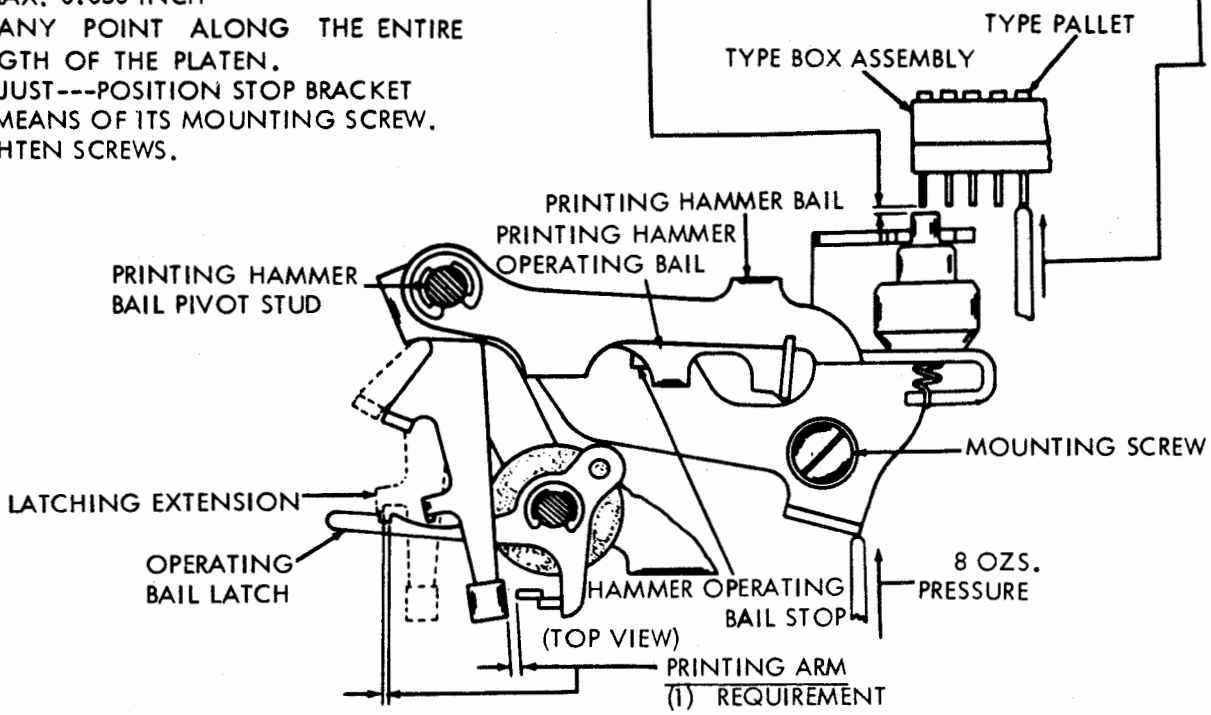
MAX. 4-1/2 OZS.

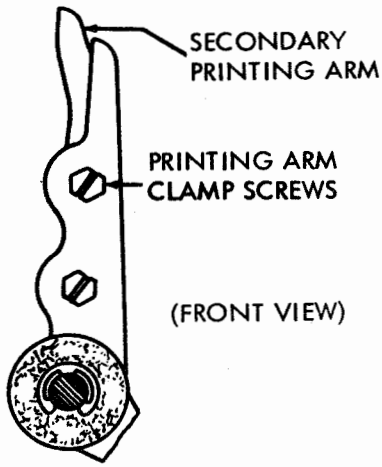
TO START LATCH MOVING.

2.50 Printing Mechanism (Cont.)

PRINTING HAMMER STOP BRACKET
REQUIREMENT --- WITH TYPE BOX IN POSITION TO PRINT CHARACTER "M", PRINTING TRACK IN ITS MAXIMUM DOWNWARD POSITION, AND PRINTING HAMMER STOP BRACKET HELD TOWARD THE PLATEN WITH PRESSURE OF 8 OZS; CLEARANCE BETWEEN PRINTING HAMMER AND "M" TYPE PALLET.
MIN. 0.005 INCH
MAX. 0.050 INCH
AT ANY POINT ALONG THE ENTIRE LENGTH OF THE PLATEN.
TO ADJUST---POSITION STOP BRACKET BY MEANS OF ITS MOUNTING SCREW. TIGHTEN SCREWS.

TYPE PALLET SPRING
REQUIREMENT
TYPE BOX REMOVED FROM THE UNIT. 8 OZS. SCALE APPLIED VERTICALLY TO THE END OF THE PALLET SHANK.
MIN. 1/4 OZS;
MAX. 3/4 OZS.
TO START PALLET MOVING.





(1) REQUIREMENT
PRINTING TRACK IN MAXIMUM DOWNWARD POSITION.
PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP.
SOME CLEARANCE BETWEEN SECONDARY PRINTING ARM AND FORWARD EXTENSION OF HAMMER OPERATING BAIL.
MAX. 0.015 INCH
WHEN PRINTING ARM SLIDE IS HELD DOWNWARD OVER EACH PRINTING TRACK MOUNTING SCREW FOR MAXIMUM CLEARANCE.

(2) REQUIREMENT
PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAIL SHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY MIN. 0.006 INCH
CHECK RIGHT AND LEFT POSITIONS
TO ADJUST
POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.

NOTE 1
THE PRINTING ARM ADJUSTMENT SHOULD ALWAYS BE MADE WITH THE PRINTING HAMMER OPERATING BAIL SPRING BRACKET IN THE NO. 1 POSITION. POSITIONS NO. 2 AND 3 ARE TO BE USED ONLY FOR MAKING MULTIPLE COPIES.

NOTE 2
FOR EARLIER DESIGN SEE PAR. 4.16

2.51 Printing Mechanism (Cont.)

NOTE 1: THIS ADJUSTMENT APPLIES ONLY TO UNITS SO EQUIPPED AND SHOULD BE MADE WITH THE TYPEBOX IN ITS UPPER POSITION.

NOTE 2: RECHECK PRINTING STOP BRACKET ADJUSTMENT PAR. 2.50, AND READJUST IF NECESSARY.

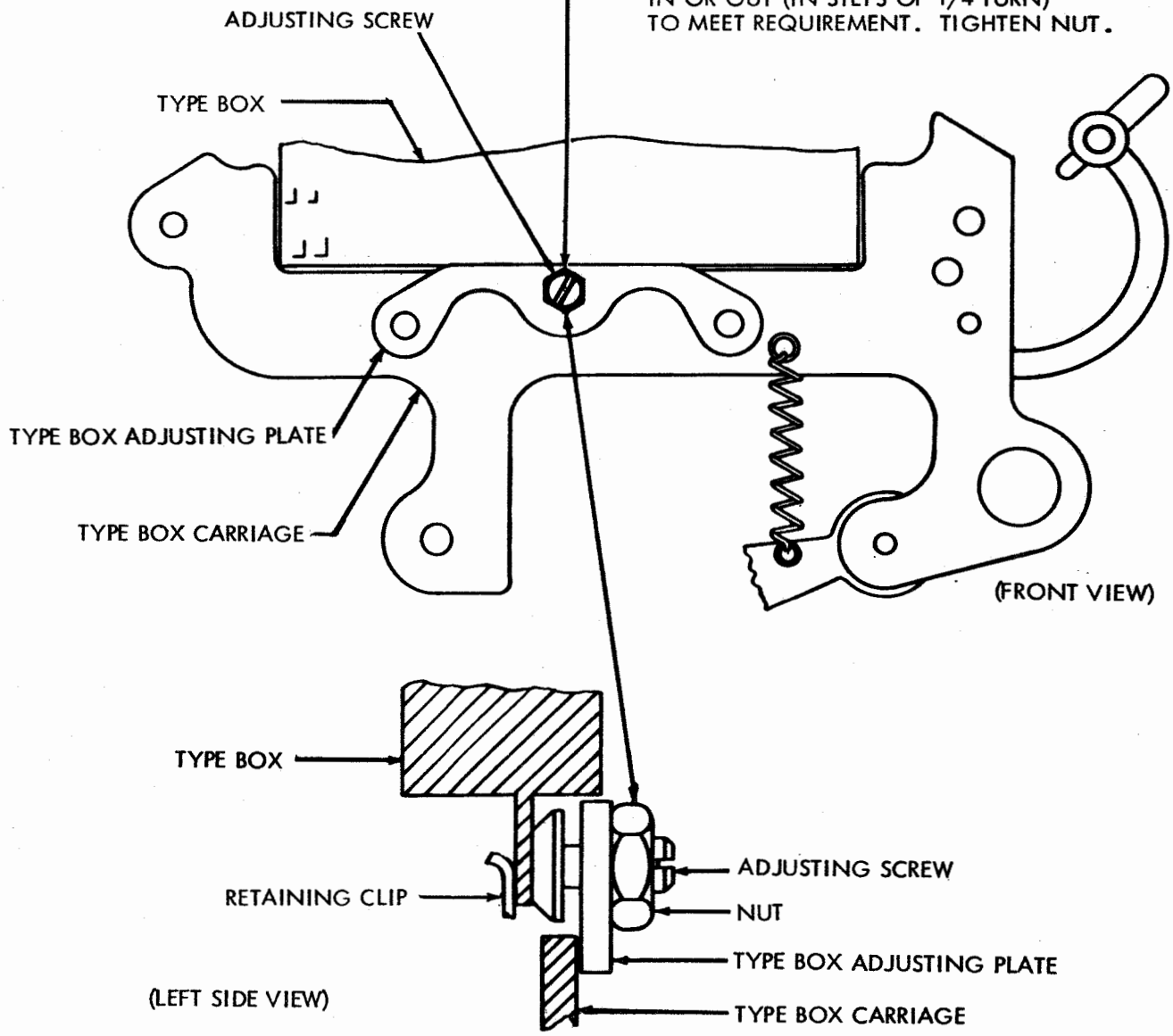
TYPE BOX ALIGNMENT

REQUIREMENT

PRINTED IMPRESSION OF CHARACTERS AT TOP AND AT BOTTOM SHOULD BE EQUAL. (GAUGE VISUALLY)

TO ADJUST

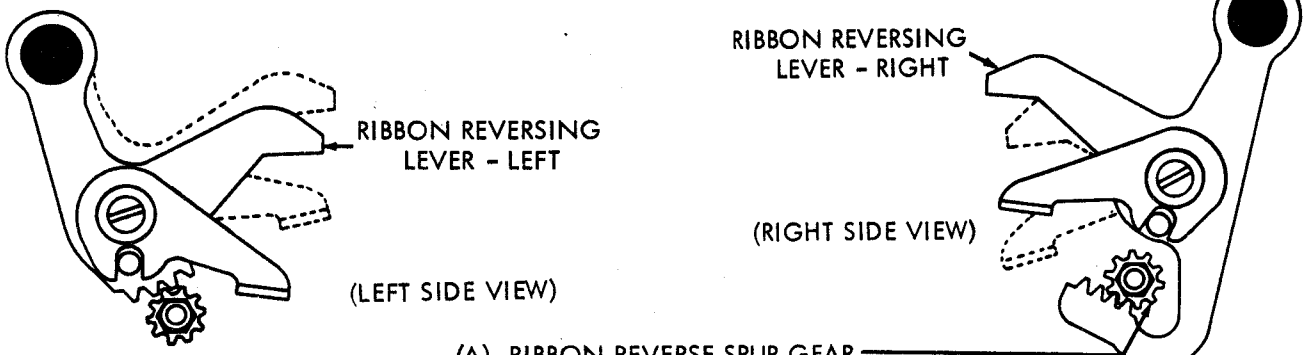
LOOSEN NUT. OPERATE PRINTER UNDER POWER. REPEAT CHARACTERS E AND Z. TURN ADJUSTING SCREW IN OR OUT (IN STEPS OF 1/4 TURN) TO MEET REQUIREMENT. TIGHTEN NUT.



NOTE 3: SOME TYPING UNITS ARE EQUIPPED WITH A RIBBON GUIDE WHICH HAS A TYPE BOX RETAINING CLIP WITH A LIMITED YIELD. IN CASES WHERE IT IS NECESSARY TO BACK THE ADJUSTING SCREW OUT TO PROVIDE HEAVIER PRINTING AT THE TOP OF A CHARACTER, IT MAY BE NECESSARY TO BEND THE SPRING CLIP ON THE RIBBON GUIDE TOWARD THE FRONT SO THAT THE TAB AT THE BOTTOM OF THE TYPE BOX IS HELD AGAINST THE HEAD OF THE ADJUSTING SCREW.

2.52 Printing Mechanism (Cont.)

CHECK THE TWO COLOR RIBBON REQUIREMENTS PARS. 3.44 AND 3.45 ON UNITS SO EQUIPPED.



(A) RIBBON REVERSE SPUR GEAR

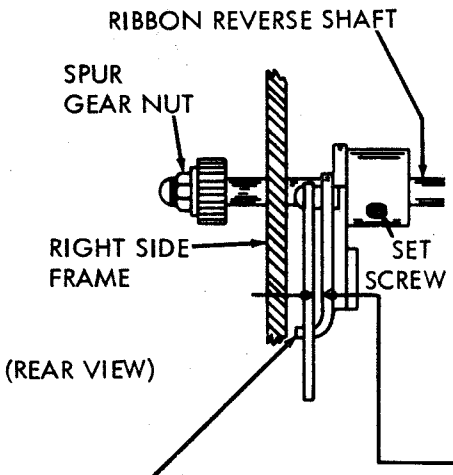
REQUIREMENT

WHEN RIGHT REVERSING LEVER IS IN MAXIMUM DOWNWARD POSITION, THE LEFT REVERSING LEVER SHOULD BE IN ITS MAXIMUM UPWARD POSITION.

TO ADJUST

LOOSEN THE SET SCREWS IN THE DETENT CAM. LOOSEN THE LEFT SPUR GEAR NUT. SECURELY TIGHTEN THE RIGHT SPUR GEAR NUT. MOVE THE RIGHT REVERSING LEVER TO ITS MAXIMUM DOWNWARD POSITION AND HOLD LEFT REVERSING LEVER IN ITS MAXIMUM UPWARD POSITION. THEN TIGHTEN THE LEFT SPUR GEAR NUT.

NOTE 1: ROTATE TYPE BOX CLUTCH 1/2 TURN AND MOVE RIGHT REVERSING LEVER UNDER THE SEGMENT. THERE SHOULD BE SOME CLEARANCE BETWEEN SEGMENT AND THE LEVER. REFINE ADJ. IF NECESSARY



(B) RIBBON REVERSE DETENT

REQUIREMENT

RIBBON REVERSE DETENT LINK BUCKLED IN ITS DOWNWARD POSITION, CLEARANCE BETWEEN DETENT LINK AND DETENT LEVER.

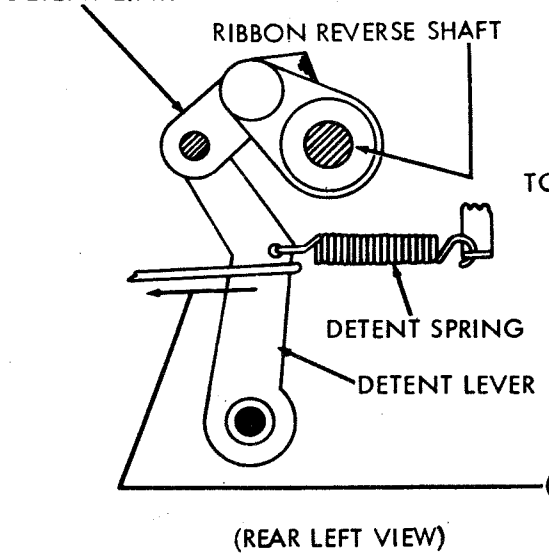
MIN. SOME---MAX. 0.055 INCH

WHEN PLAY IN THE LEVER IS TAKEN UP LIGHTLY TOWARD THE RIGHT SIDE OF THE PRINTER.

TO ADJUST

HOLD LEFT RIBBON REVERSING LEVER IN ITS DOWNWARD POSITION, POSITION DETENT LINK, AND TIGHTEN THE UPPER SET SCREW IN THE HUB OF THE DETENT LINK. BUCKLE THE DETENT LINK UPWARD AND TIGHTEN LOWER SET SCREW.

NOTE 2: FOR EARLIER DESIGN SEE PAR. 4.17.



(C) RIBBON REVERSE DETENT LEVER SPRING (IF UNIT IS EQUIPPED)

REQUIREMENT

DETENT LINK BUCKLED IN UPWARD POSITION

MIN. 10 OZS.

MAX. 18 OZS.

TO START DETENT LEVER MOVING TOWARD REAR.

2.53 Printing Mechanism (Cont.)

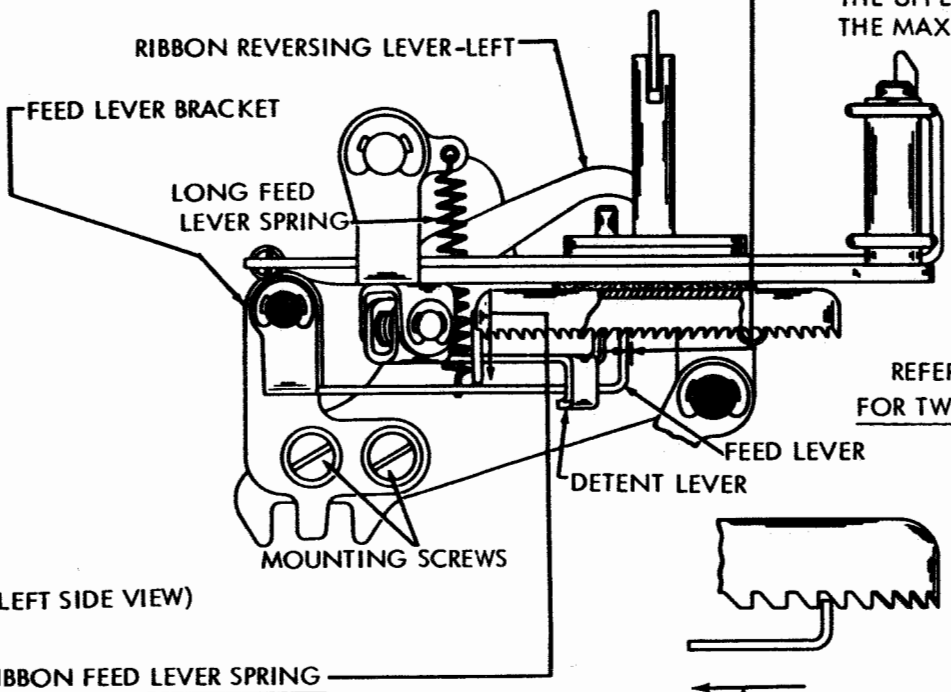
RIBBON FEED LEVER BRACKET

(1) REQUIREMENT (LEFT-HAND MECHANISM)
LEFT REVERSING LEVER IN UPWARD POSITION.
RIBBON MECHANISM IN UPPER POSITION.
RATCHET WHEEL HELD AGAINST THE DETENT LEVER.
CLEARANCE BETWEEN THE FRONT FACE OF THE FEED LEVER AND THE SHOULDER OF A TOOTH ON THE RATCHET WHEEL.
MIN. 0.015 INCH
MAX. 0.035 INCH
TO ADJUST
POSITION THE FEED LEVER BRACKET WITH ITS MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

(2) REQUIREMENT (RIGHT-HAND MECHANISM)
RIGHT REVERSING LEVER AND RIBBON MECHANISM IN UPWARD POSITION.
ADJUST FEED LEVER BRACKET IN THE SAME MANNER

NOTE 1:
ROTATE THE MAIN SHAFT. THE RATCHET WHEEL SHOULD STEP ONE TOOTH ONLY WITH EACH OPERATION.

NOTE 2:
ON UNITS WITH TWO COLOR RIBBON, POSITION THE FEED LEVER BRACKET TO THE UPPER FORWARD POSITION TO MEET THE MAXIMUM REQUIREMENT.



(LEFT SIDE VIEW)

REFER TO PARS. 3.44 AND 3.45 FOR TWO COLOR RIBBON MECHANISM

RIBBON FEED LEVER SPRING

REQUIREMENT
RIBBON FEED LEVERS IN UPPERMOST POSITION.
FOR LONG LEVER: PUSH DOWNWARD NEAR ITS SPRING.
FOR SHORT LEVER: PUSH DOWNWARD AT POINT NEAR LONG LEVER SPRING.
MIN. 3/4 OZ.
MAX. 2 OZS.
TO START FEED LEVERS MOVING.
MEASURE ALL FOUR PAWLS.

NOTE 3: IF MINIMUM REQUIREMENT OF SHORT LEVER IS NOT MET, PULL LOWER END OF TORSION SPRING TO REAR.

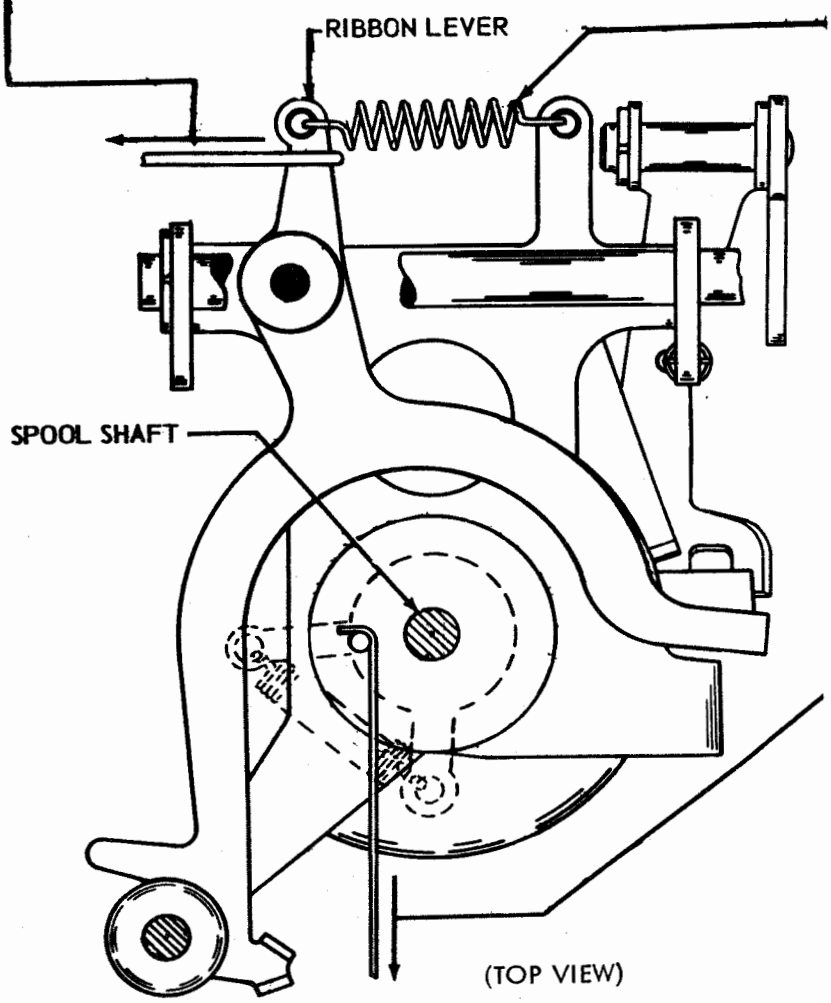
RIBBON RATCHET WHEEL FRICTION SPRING

REQUIREMENT
FEED LEVERS DISENGAGED.
MIN. 3 OZS.
MAX. 8-1/2 OZS.
TO START THE RATCHET WHEEL MOVING.

*TWO COLOR RIBBON REQUIREMENT
MIN. 3 OZS.---MAX. 4 OZS.
TO START RATCHET WHEEL MOVING.

2.54 Printing Mechanism (Cont.)

RIBBON LEVER SPRING
REQUIREMENT
MIN. 1-1/2 OZS.
MAX. 3 OZS.
TO START THE LEVER MOVING. CHECK BOTH RIGHT AND LEFT SPRINGS



RIBBON TENSION SPRING
REQUIREMENT
RIBBON RATCHET WHEEL POSITIONED SO THAT EACH DRIVING PIN IS TOWARD THE OUTSIDE OF THE SPOOL SHAFT.
MIN. 3 OZS.
MAX. 5-1/2 OZS.
TO START SPOOL SHAFT MOVING.

2.55 **Function Mechanism (Cont.)**

NOTE: REFER TO BULLETIN 1149B FOR INSTRUCTIONS ON CODING THE UNCODED FUNCTION BAR.

(A)
FUNCTION LEVER SPRING

NOTE: IF A FUNCTION LEVER OPERATES A CONTACT OR A SLIDE, HOLD OFF THE CONTACT OR SLIDE WHEN CHECKING THE SPRING TENSION

REQUIREMENT

FUNCTION LEVER IN UNOPERATED POSITION.
SUPPRESSION BAIL HELD FORWARD.

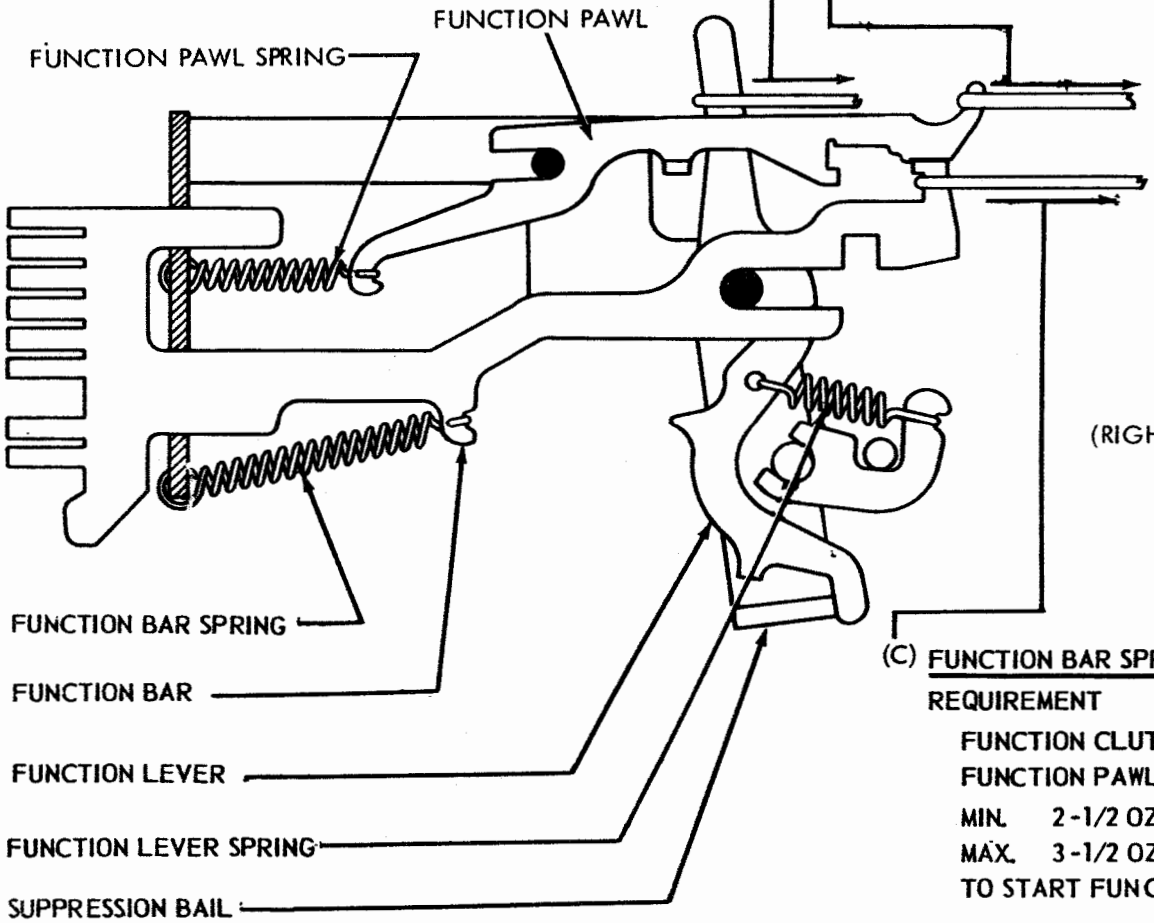
	STANDARD	LEVER WITH STUD THAT OPERATES TWO CONTACTS
MIN.	1-1/2 OZS.	2 OZS.
MAX.	2-3/4 OZS.	3-1/2 OZS.

TO START FUNCTION LEVER MOVING.
CHECK EACH SPRING.

(B) FUNCTION PAWL SPRING

REQUIREMENT

REAR END OF FUNCTION PAWL RESTING ON FUNCTION BAR
ONE STOP FUNCTION CLUTCH UNITS:
MIN. 3 OZS.
MAX. 5 OZS.
TWO STOP FUNCTION CLUTCH UNITS:
MIN. 7 OZS.
MAX. 10-1/2 OZS.
TO START PAWL MOVING.
CHECK EACH SPRING.



(RIGHT SIDE VIEW)

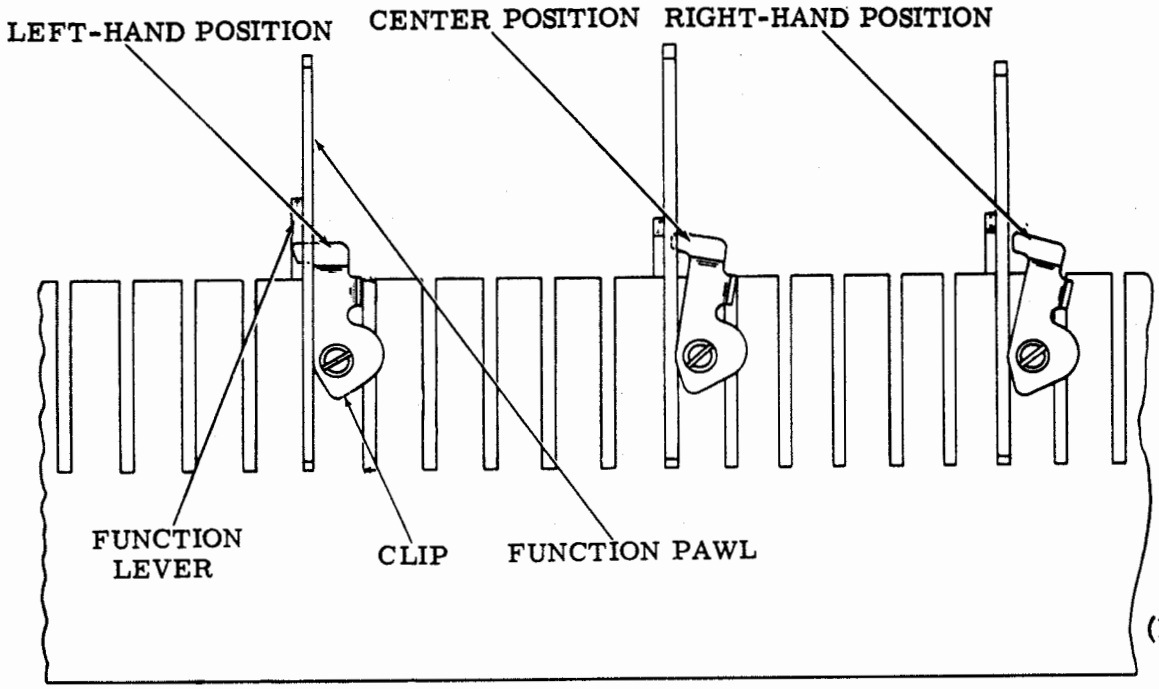
(C) FUNCTION BAR SPRING

REQUIREMENT

FUNCTION CLUTCH DISENGAGED.
FUNCTION PAWL HELD AWAY.
MIN. 2-1/2 OZS.
MAX. 3-1/2 OZS.
TO START FUNCTION BAR MOVING.

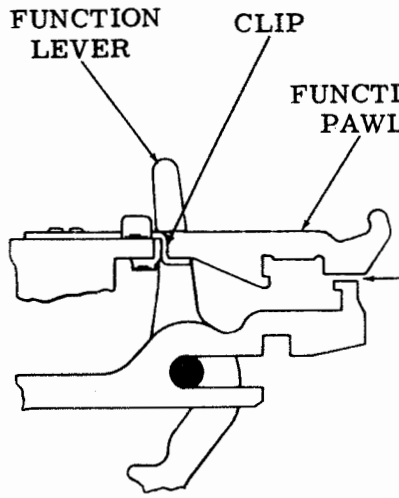
CAUTION: SEVERE WEAR TO THE POINT OF OPERATIONAL FAILURE WILL RESULT IF THE TELETYPEWRITER IS OPERATED WITHOUT EACH FUNCTION PAWL HAVING EITHER A RELATED FUNCTION BAR OR, WHERE A FUNCTION BAR IS MISSING, A RELATED FUNCTION PAWL CLIP TO HOLD THE FUNCTION PAWL AWAY FROM THE STRIPPER BLADE.

2.56 Function Mechanism (continued)



(Front Top View)

STUNT BOX CLIP (For Units Equipped With Clips Only)

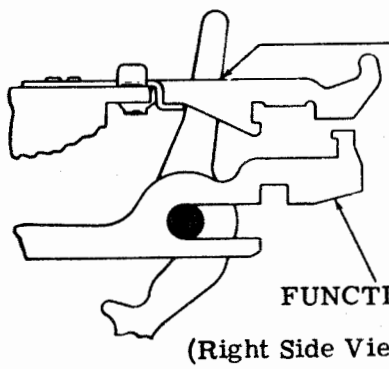


(1) Requirement (Right-Hand Position)
The clip should not prevent the associated function pawl from engaging its function bar.

To Adjust
Position the clip to its extreme right-hand position. Tighten screw.

(2) Requirement (Center Position)
The clip should hold function pawl out of engagement with its function bar but should not interfere with function lever.

To Adjust
Position clip with its mounting screw loosened. Tighten screw.

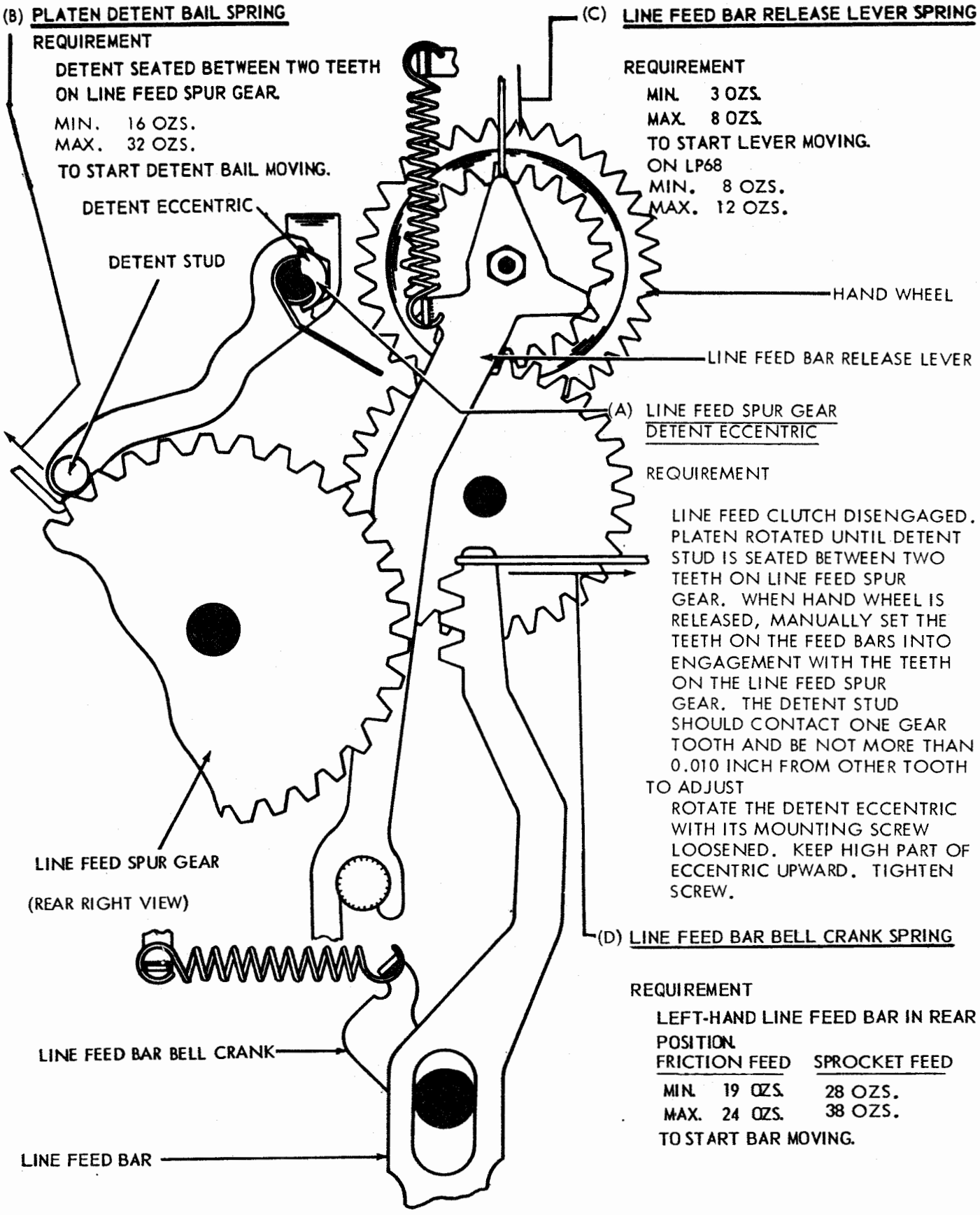


(Right Side View)

(3) Requirement (Left-Hand Position)
The clip should hold function pawl upward out of engagement with its function bar. It should also hold top end of function lever in its rear position.

To Adjust
Position clip to its extreme left-hand position. Tighten screw.

2.57 **Line Feed and Platen Mechanism (Cont.)**



2.58 Function Mechanism (Cont.)

STRIPPER BLADE DRIVE CAM POSITION

REQUIREMENT

STRIPPER BLADE DRIVE CAM SHOULD MOVE EACH STRIPPER BLADE CAM ARM AN EQUAL DISTANCE ABOVE AND BELOW CENTER LINE OF ITS PIVOT (GAUGE BY EYE)

A. UPWARD DIRECTION

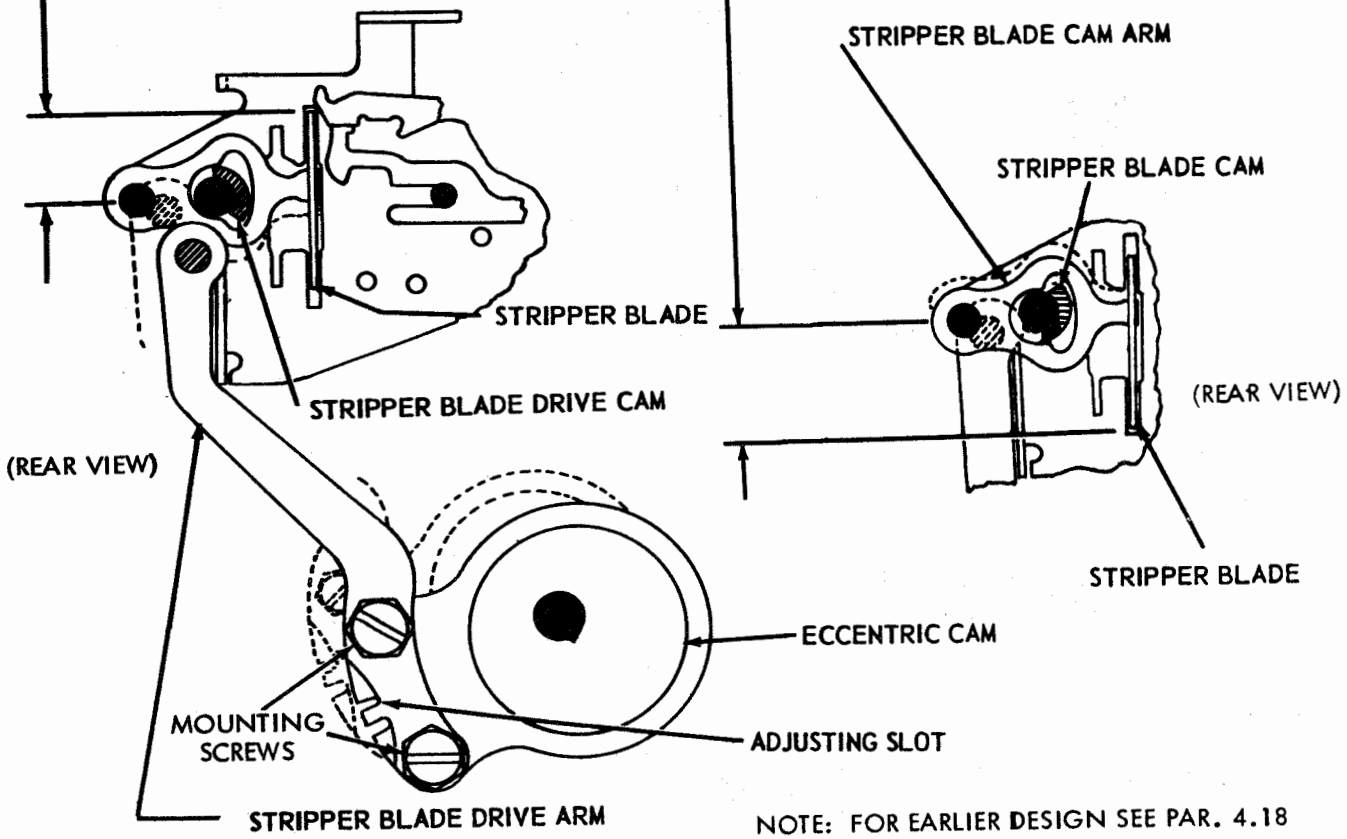
B. DOWNWARD DIRECTION

TO CHECK

WITH FUNCTION CLUTCH DISENGAGED OBSERVE ENGAGEMENT OF STRIPPER BLADE DRIVE CAM (UPPER PEAK) WITH STRIPPER BLADE CAM ARM. THEN ROTATE CLUTCH TO TURN CAM TO ITS EXTREME DOWNWARD POSITION AND OBSERVE ENGAGEMENT OF LOWER CAM PEAK.

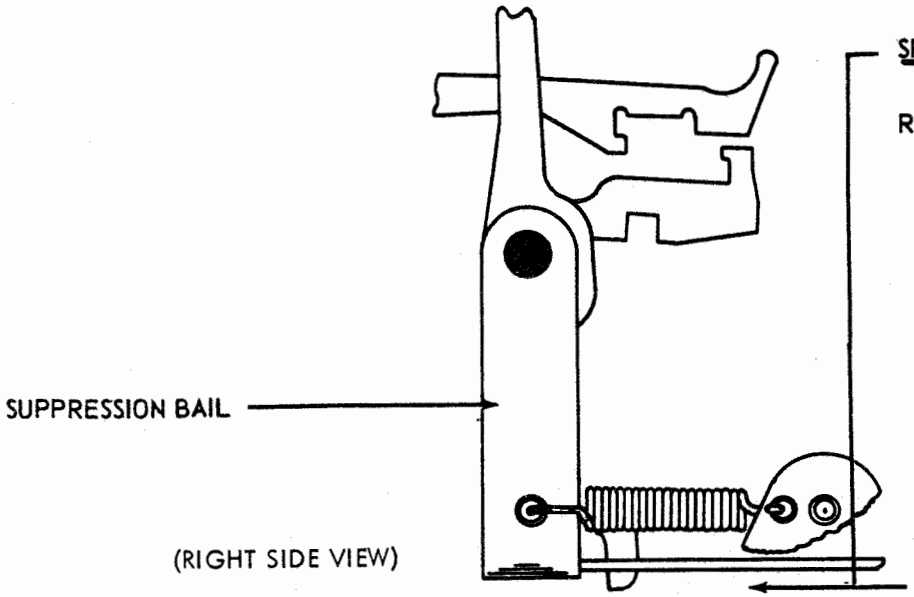
TO ADJUST

WITH STRIPPER BLADE DRIVE ARM MOUNTING SCREWS LOOSENED, EQUALIZE THE OVERTRAVEL OF EACH CAM PEAK. TIGHTEN SCREWS.



NOTE: FOR EARLIER DESIGN SEE PAR. 4.18

2.59 Spacing Mechanism (Cont.)



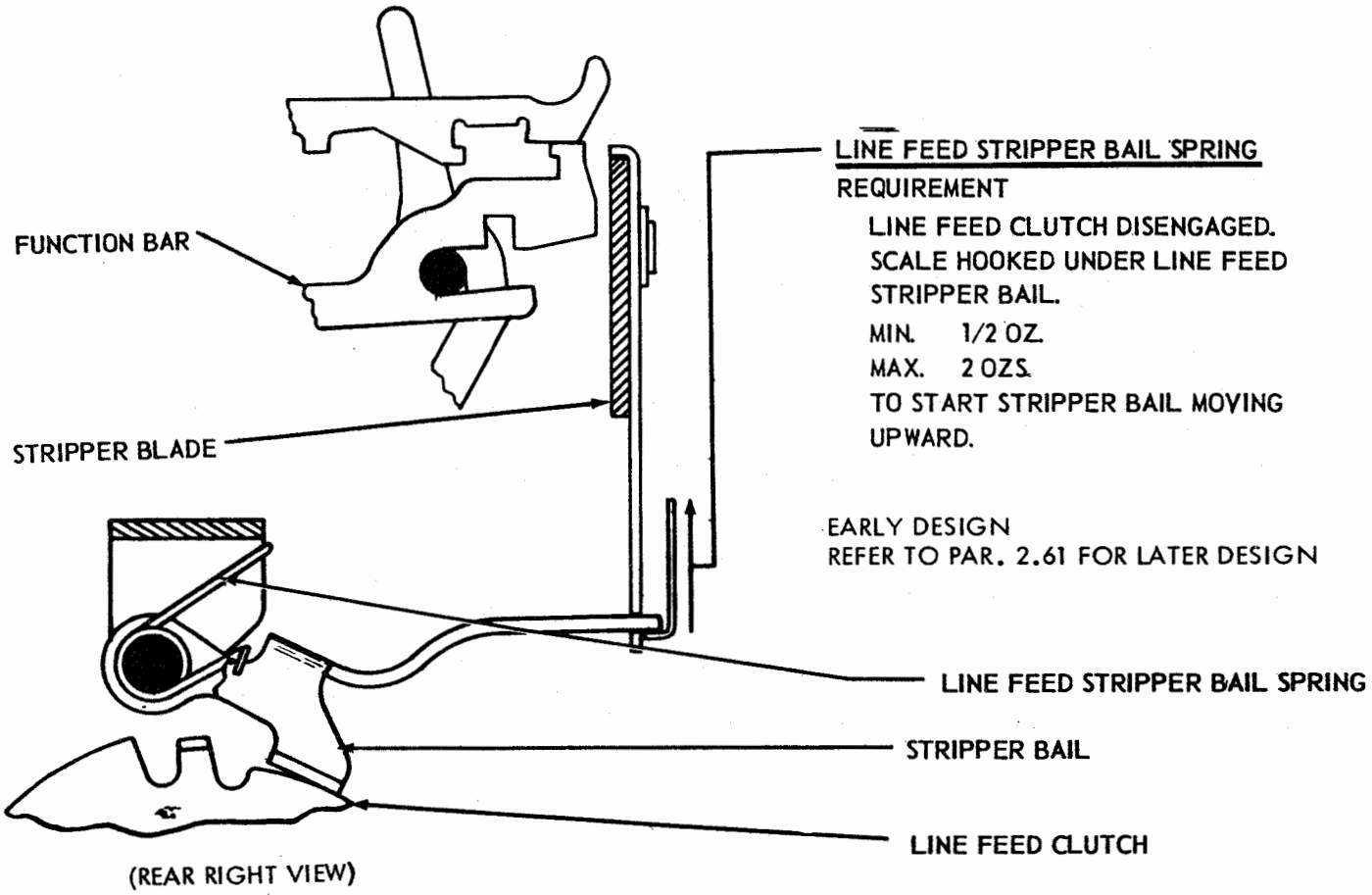
SPACING SUPPRESSION BAIL SPRING

REQUIREMENT

SPACING SUPPRESSION BAIL IN REAR POSITION. SCALE APPLIED NEAR CENTER OF HORIZONTAL PORTION OF BAIL.

MIN. 1/2 OZ.
MAX. 1-1/2 OZS.
TO START BAIL MOVING.

2.60 Line Feed and Platen Mechanism (Cont.)



LINE FEED STRIPPER BAIL SPRING

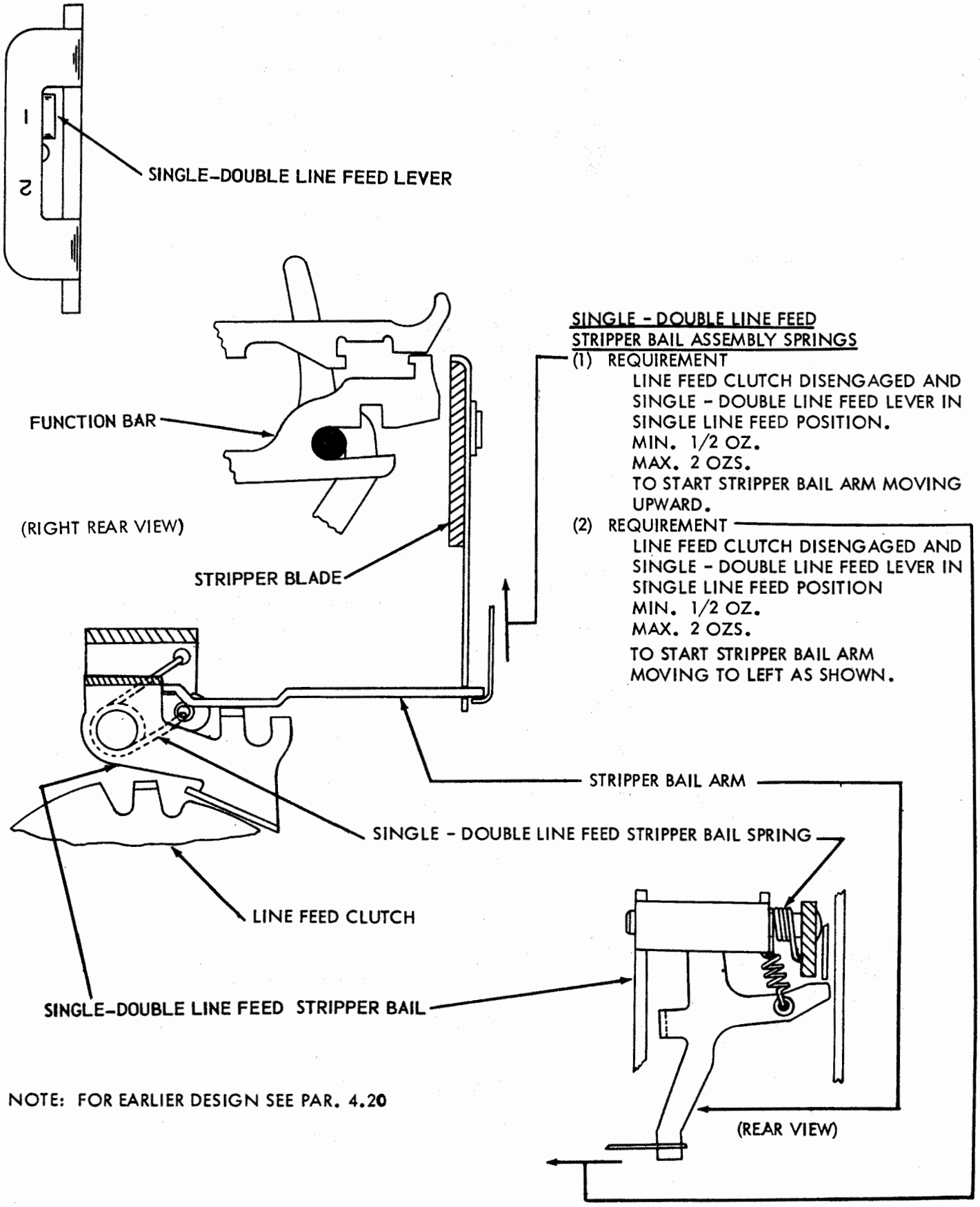
REQUIREMENT

LINE FEED CLUTCH DISENGAGED. SCALE HOOKED UNDER LINE FEED STRIPPER BAIL.

MIN. 1/2 OZ.
MAX. 2 OZS.
TO START STRIPPER BAIL MOVING UPWARD.

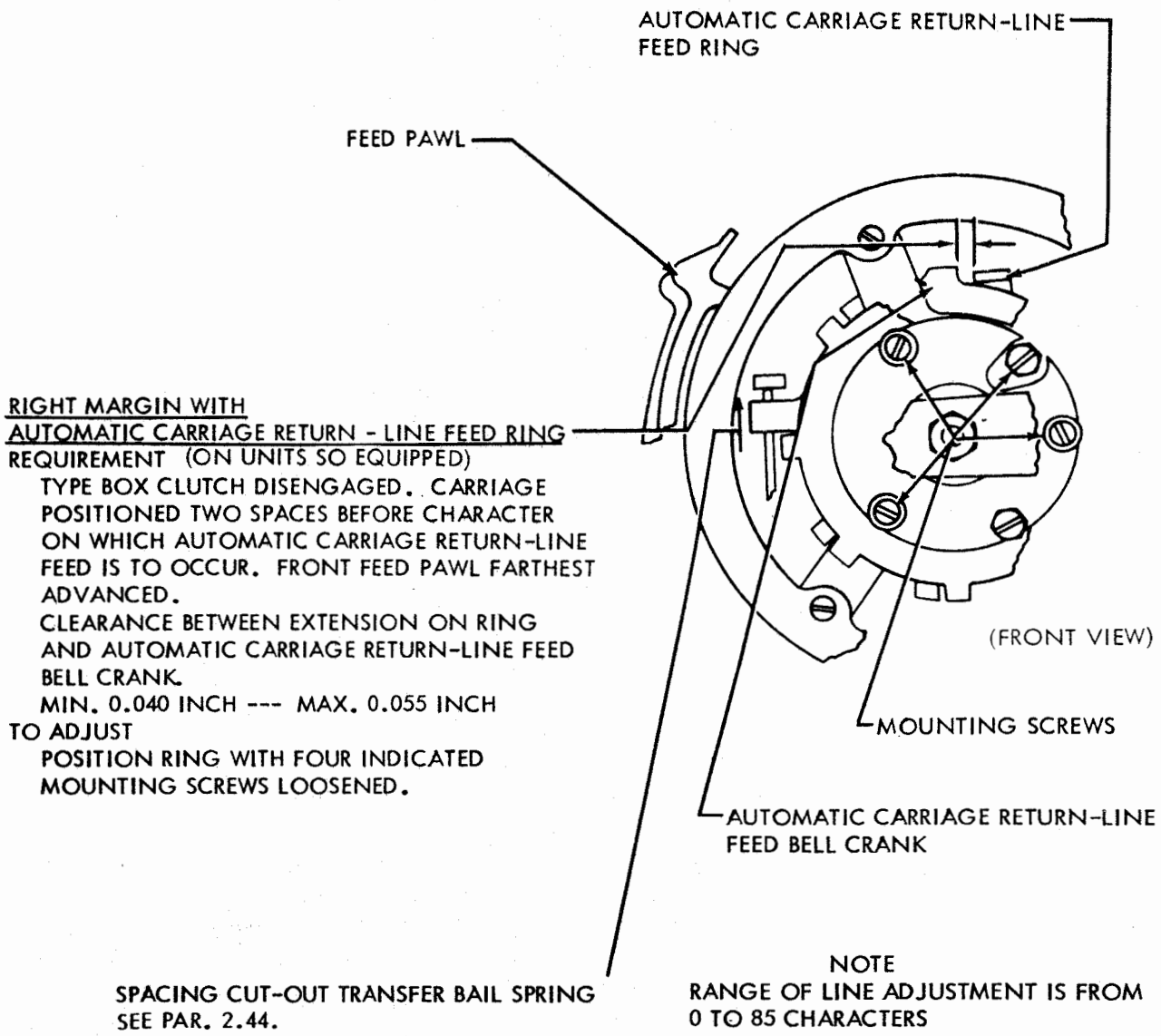
EARLY DESIGN
REFER TO PAR. 2.61 FOR LATER DESIGN

2.61 Line Feed and Platen Mechanism (Cont.)



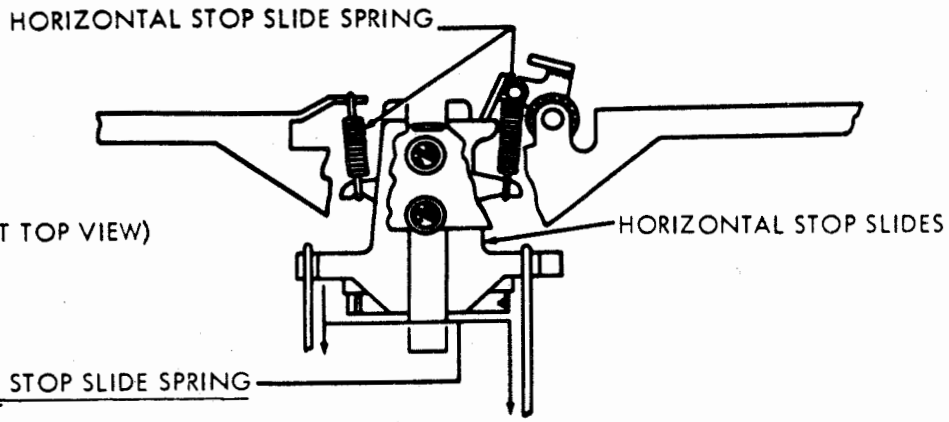
NOTE: FOR EARLIER DESIGN SEE PAR. 4.20

2.62 Spacing Mechanism (Cont.)



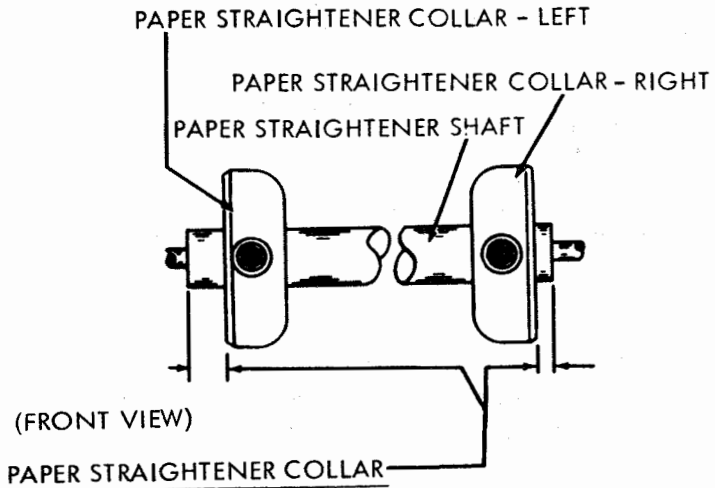
NOTE: FOR ADJUSTMENT ON EARLIER MODELS SEE PAR. 4.19

2.63 Positioning Mechanism (Cont.)

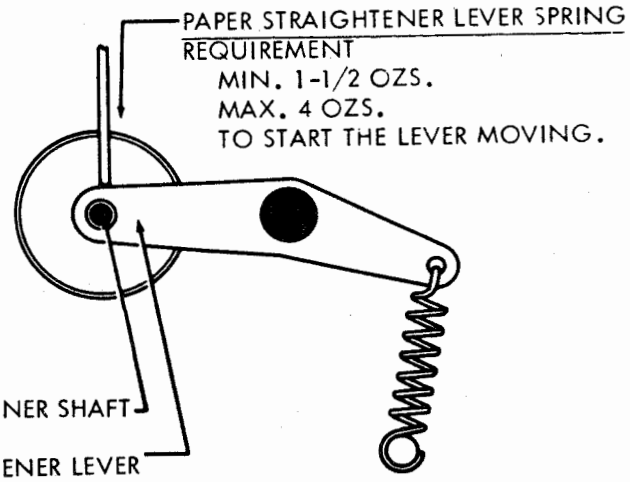


REQUIREMENT
CODE BARS IN MARKING POSITION (LEFT)
TYPE BOX CLUTCH ROTATED 1/4 TURN FROM ITS STOP POSITION
HORIZONTAL MOTION DECELERATING SLIDES (PAR. 2.35) HELD
AWAY FROM HORIZONTAL STOP SLIDES
MIN. 1/2 OZ. MAX. 1-1/2 OZS. FOR UPPER AND LOWER SLIDES
MIN. 1-3/4 OZS. MAX. 3 OZS. FOR MIDDLE SLIDE
TO START SLIDE MOVING.
NOTE: WHEN CHECKING UPPER AND LOWER SLIDES, HOLD MIDDLE
SLIDE 1/32 INCH FORWARD.

2.64 Line Feed and Platen Mechanism (Cont.)



REQUIREMENT
LEFT COLLAR SPACE
MIN. 9/32 INCH
MAX. 21/64 INCH
FROM THE LEFT SHOULDER ON THE
PAPER STRAIGHTENER SHAFT.
RIGHT COLLAR SPACED.
MIN. 1/16 INCH
MAX. 5/64 INCH
FROM THE RIGHT SHOULDER.
TO ADJUST
POSITION COLLARS ON SHAFT WITH
SET SCREWS LOOSENED. TIGHTEN SCREWS.

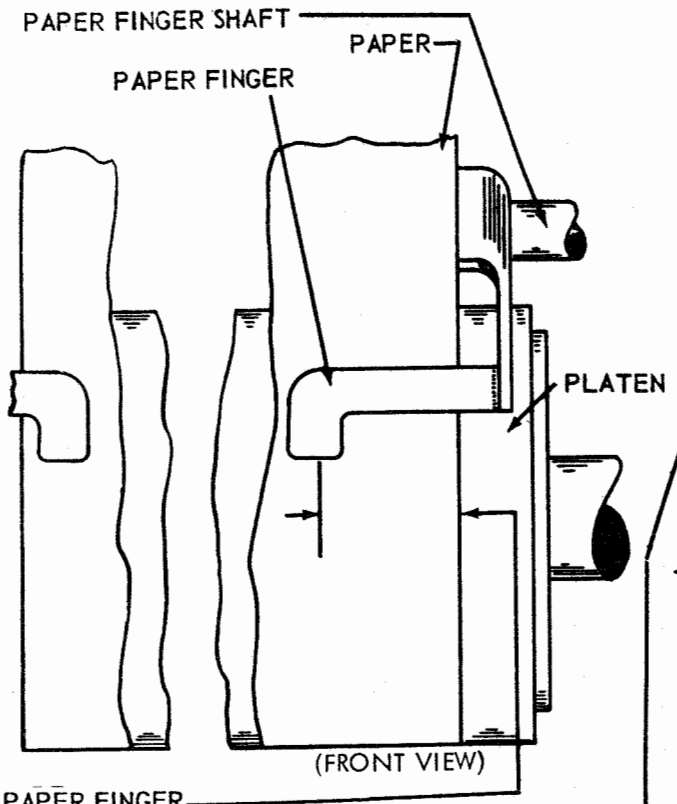


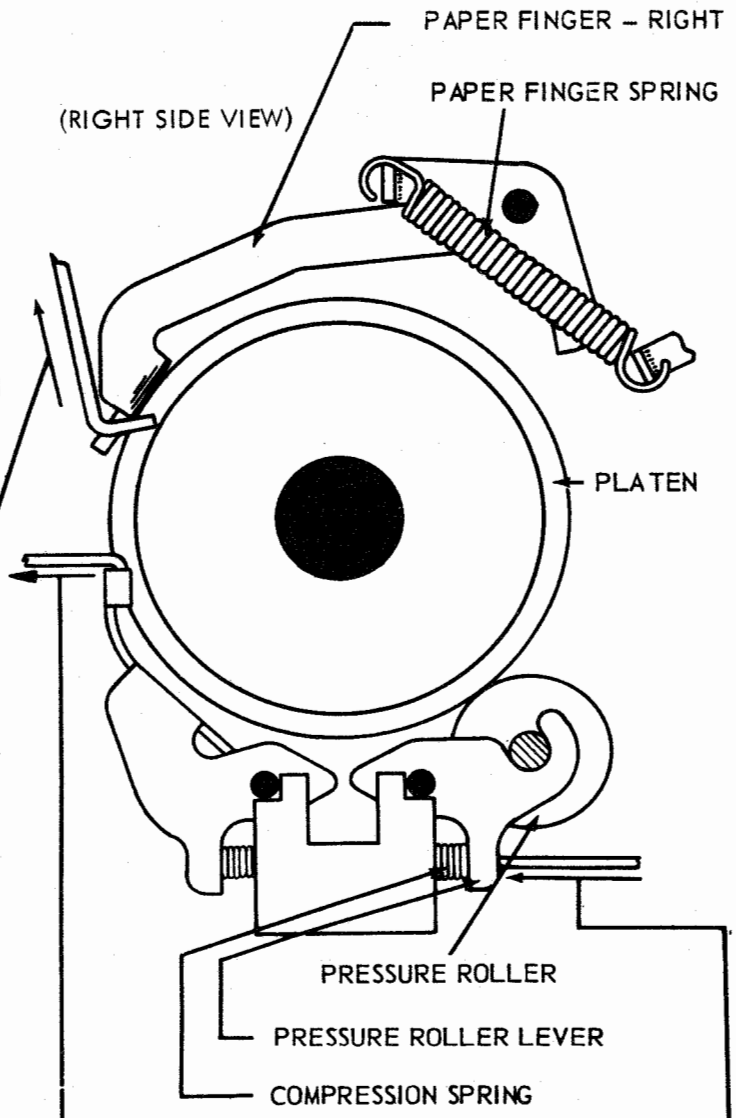
REQUIREMENT
MIN. 1-1/2 OZS.
MAX. 4 OZS.
TO START THE LEVER MOVING.

(RIGHT SIDE VIEW)

NOTE: FOR SPROCKET FEED MECHANISM SEE PAR. 2.75

2.65 Line Feed and Platen Mechanism (Cont.)





PAPER FINGER

REQUIREMENT

THE PRESSURE END OF THE PAPER FINGERS SHOULD OVERLAP THE PAPER FROM 3/8 INCH TO 1/2 INCH.

TO ADJUST

POSITION THE PAPER FINGERS BY SLIDING THEM ON THEIR SHAFT.

PAPER FINGER SPRING

REQUIREMENT

PULL UPWARD ON RIGHT PAPER FINGER TO START LEFT PAPER FINGER MOVING FROM PLATEN.

MIN. 3 OZS.

MAX. 6 OZS.

PRESSURE ROLLER LEVER SPRING

REQUIREMENT

MIN. 28 OZS.

MAX. 36 OZS.

TO START EACH CENTER LEVER MOVING. ALTERNATELY

PAPER PRESSURE BAIL SPRING

REQUIREMENT

SCALE HOOKED OVER PRESSURE BAIL AT EACH END OF PLATEN.

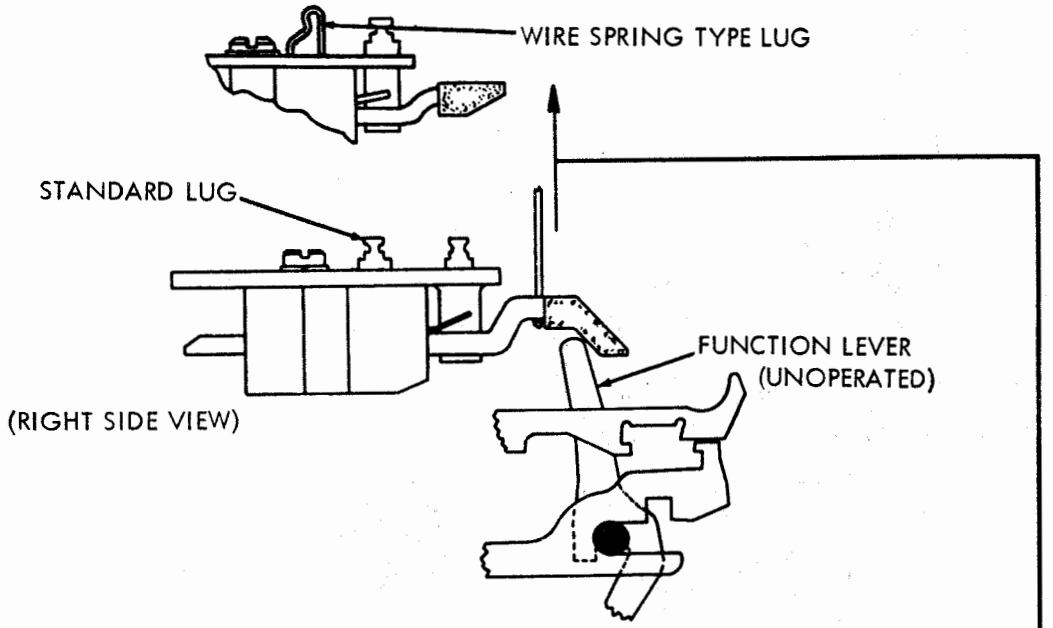
MIN. 7 OZS.

MAX. 20 OZS.

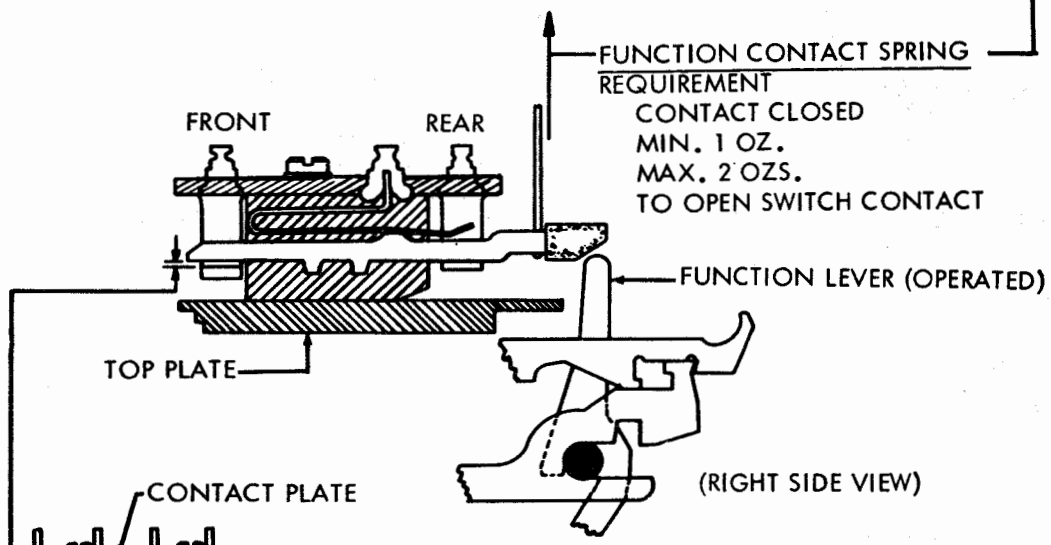
TO MOVE PRESSURE BAIL FROM PLATEN.

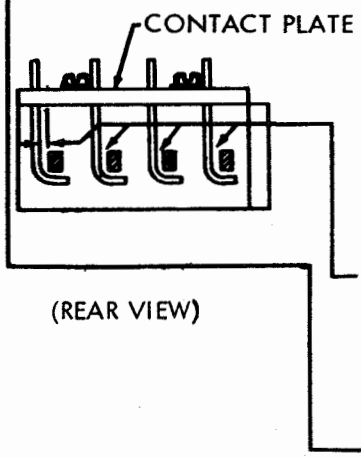
NOTE: FOR SPROCKET FEED MECHANISM SEE PAR. 2.73

2.66 Function Mechanism (Cont.)



NOTE: FOR EARLIER DESIGN SEE PAR. 4.21 AND 4.22





NOTE: IF THE SWITCHES ARE REMOVED FROM THE STUNT BOX, THE FOLLOWING REQUIREMENTS APPLY:

(1) PROVIDE AT LEAST 0.006 INCH CLEARANCE BETWEEN THE CONTACT ARM AND THE VERTICAL PORTION OF THE CONTACT CLIP. IF THE SWITCH HAS CONTACTS FRONT AND REAR, THIS CLEARANCE APPLIES TO BOTH FRONT AND REAR. TO OBTAIN THIS CLEARANCE, POSITION THE CONTACT PLATE BEFORE TIGHTENING THE CONTACT PLATE SCREWS. THE CONTACT MUST BE MADE BEFORE THE FUNCTION LEVER TOUCHES THE TOP PLATE.

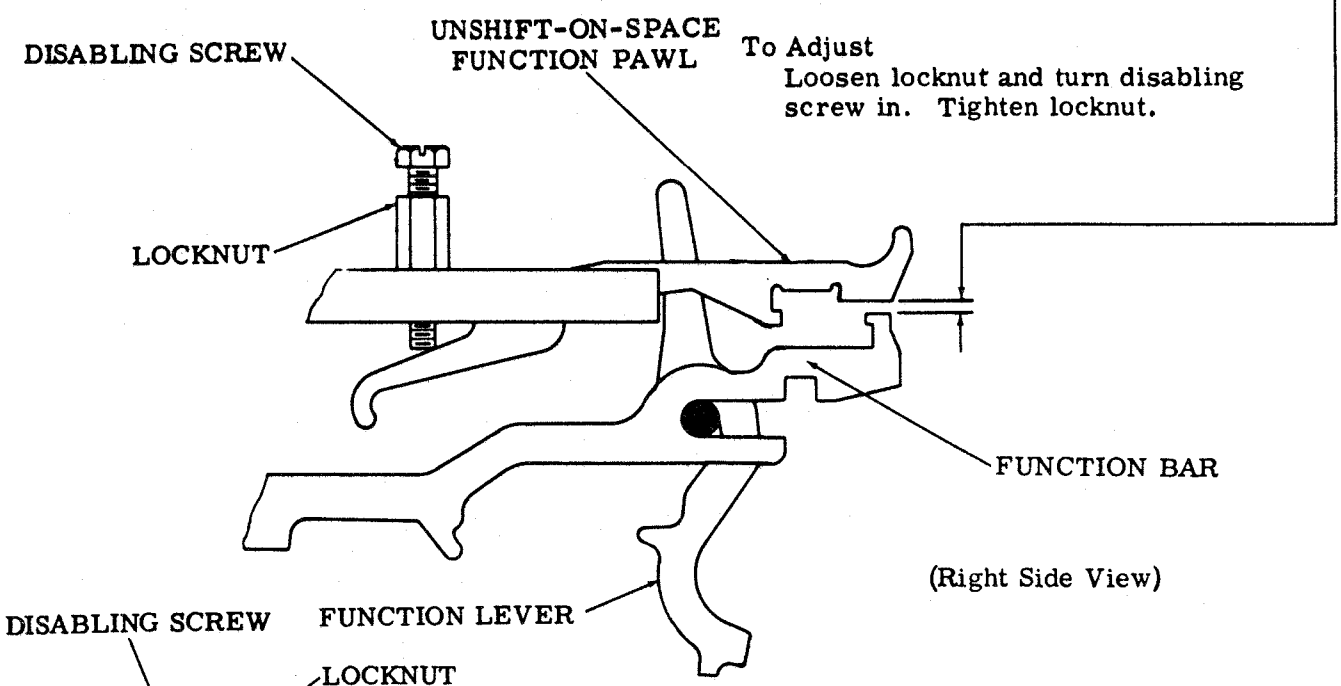
(2) ON SWITCHES WITH CONTACTS FRONT AND REAR, CHECK TO SEE THAT THERE IS A GAP OF 0.008 TO 0.028 INCH BETWEEN THE FORMED-OVER END OF THE FRONT CONTACT CLIP AND THE BOTTOM OF THE CONTACT ARM WHEN THE REAR CONTACT IS CLOSED

2.67 Function Mechanism (continued)

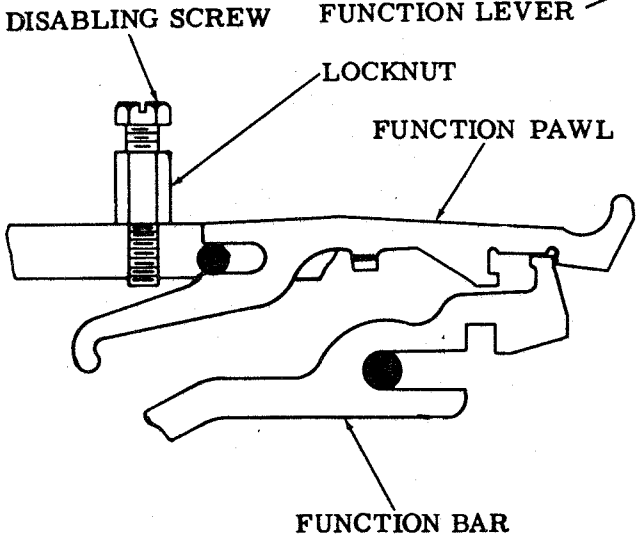
UNSHIFT-ON-SPACE FUNCTION PAWL

(1) Requirement
To prevent unshift-on-space function, provide clearance between lower edge of the unshift-on-space function pawl and its function bar
Min 0.015 inch---Max 0.060 inch

To Adjust
Loosen locknut and turn disabling screw in. Tighten locknut.



(Right Side View)



(Right Side View)

(2) Requirement
To restore unshift-on-space function, back off screw so that pawl fully engages function bar. Then continue to turn screw out one to three turns. Tighten locknut.

2.68 Codebar Mechanism (Cont.)

CODE BAR DETENT

REQUIREMENT

FRONT PLATE REMOVED. ALL CLUTCHES DISENGAGED. SUPPRESSION AND SHIFT CODE BARS SHOULD DETENT EQUALLY (GAUGED BY EYE)

TO ADJUST

EQUALIZE THE DETENTING OF THE CODE BARS BY ADDING OR REMOVING SHIMS BETWEEN THE CASTING AND THE CODE BAR BRACKET. TIGHTEN SCREWS.

CODE BAR DETENT SPRING

NOTE

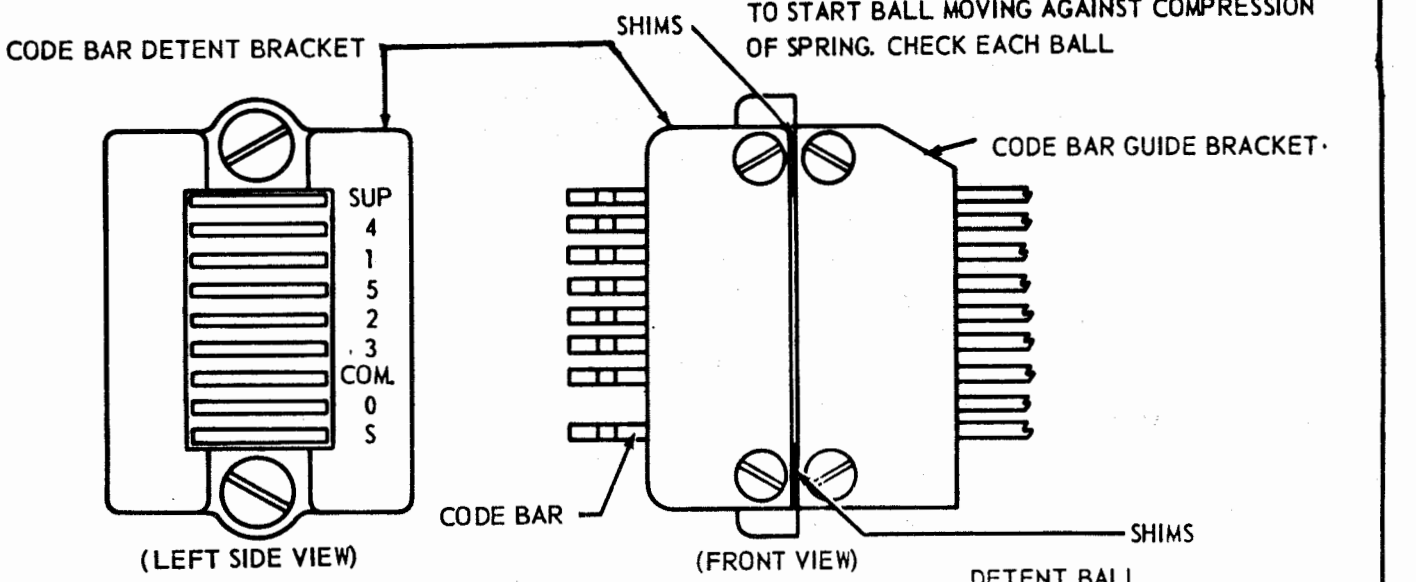
UNLESS THERE IS REASON TO BELIEVE THAT THESE SPRINGS ARE CAUSING OPERATING FAILURE DO NOT CHECK THIS REQUIREMENT.

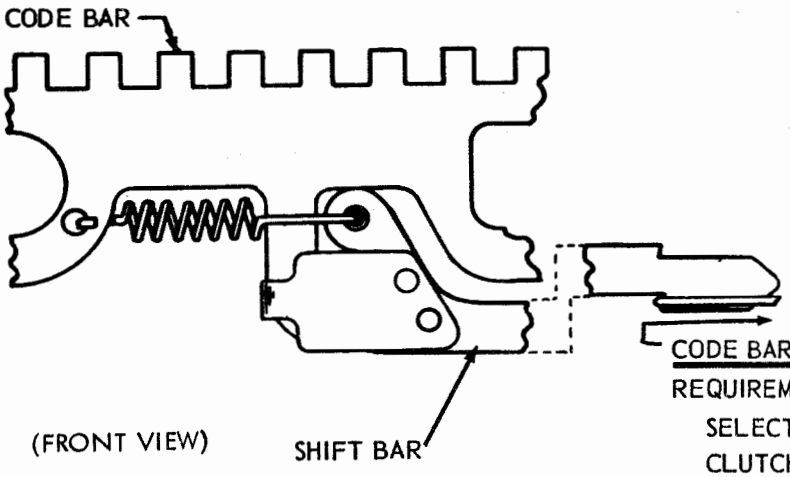
REQUIREMENT

CODE BAR DETENT BRACKET CAREFULLY REMOVED AND CODE BARS REMOVED FROM DETENT BRACKET. SCALE APPLIED TO DETENT BALL AND PULLED IN DIRECTION OF BALL TRAVEL

MIN. 1-1/2 OZS.
MAX. 3-1/2 OZS.

TO START BALL MOVING AGAINST COMPRESSION OF SPRING. CHECK EACH BALL





CODE BAR YIELD SPRING (IF SO EQUIPPED)

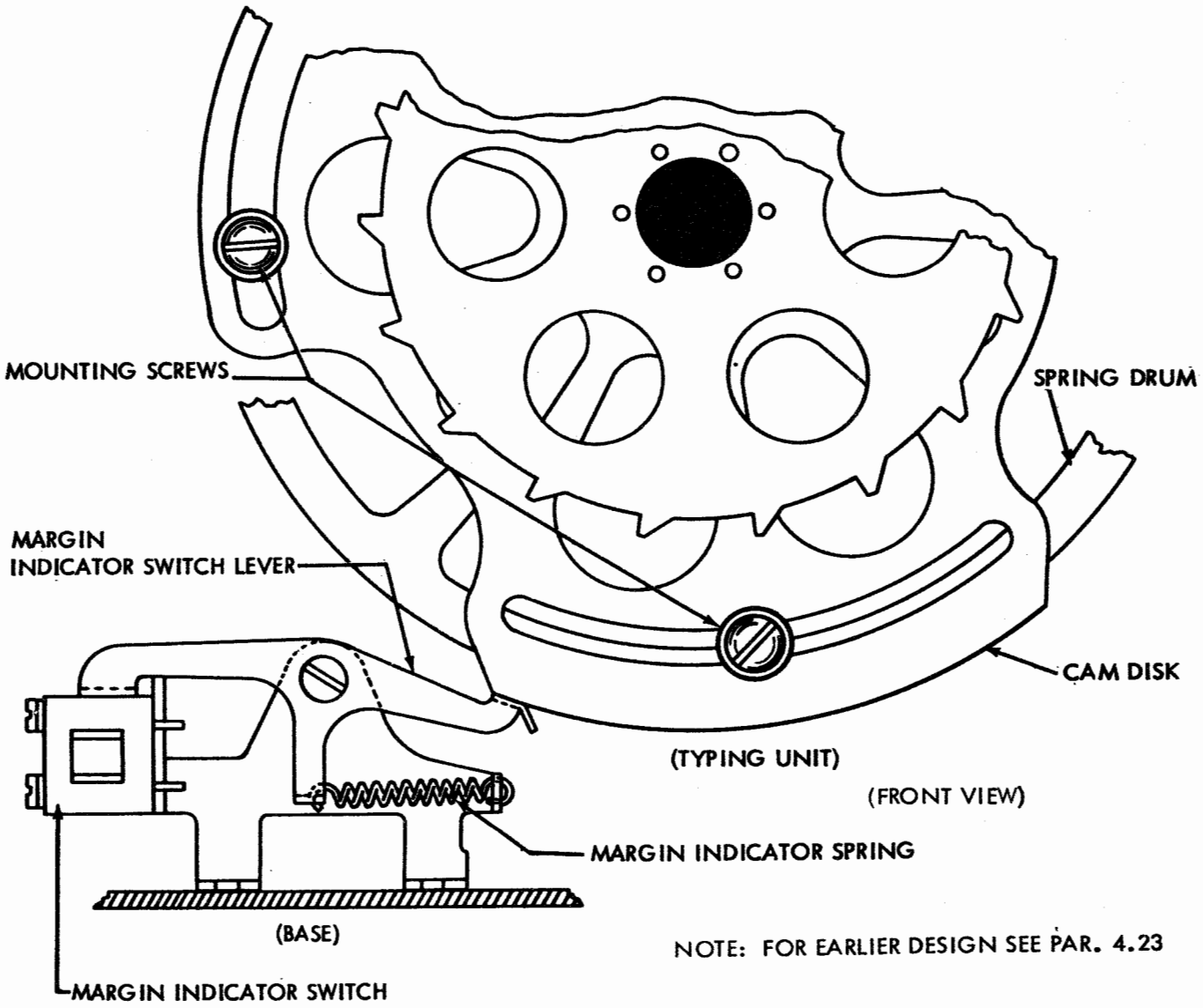
REQUIREMENT

SELECTOR CLUTCH, CODE BAR CLUTCH, AND TYPE BOX CLUTCH DISENGAGED. NO. 1 CODE BAR IN SPACING POSITION

MIN. 14 OZS.
MAX. 23 OZS.

TO START CODE BAR SHIFT BAR PIVOT MOVING AWAY FROM CODE BAR. CHECK NO. 2 AND COMMON CODE BAR SHIFT BAR IN THE SAME MANNER.

2.69 Spacing Mechanism (Cont.)



NOTE: FOR EARLIER DESIGN SEE PAR. 4.23

MARGIN INDICATOR LAMP

REQUIREMENT

OPERATING UNDER POWER, THE LAMP SHOULD LIGHT ON THE DESIRED CHARACTER.

TO ADJUST

SET THE TYPE BOX CARRIAGE TO PRINT THE DESIRED CHARACTER AND POSITION THE CAM DISC COUNTERCLOCKWISE ON THE SPRING DRUM WITH ITS THREE MOUNTING SCREWS LOOSENED SO THAT THE SWITCH JUST OPENS. IF A LINE SHORTER THAN 72 CHARACTERS IS REQUIRED, IT MAY BE NECESSARY TO REMOVE THE CAM DISC SCREWS AND INSERT THEM IN ADJACENT SLOTS IN THE DISC IF THE RANGE OF ROTATION IN ONE SLOT IS NOT ENOUGH. TIGHTEN SCREWS.

2.70 Positioning Mechanism (continued)

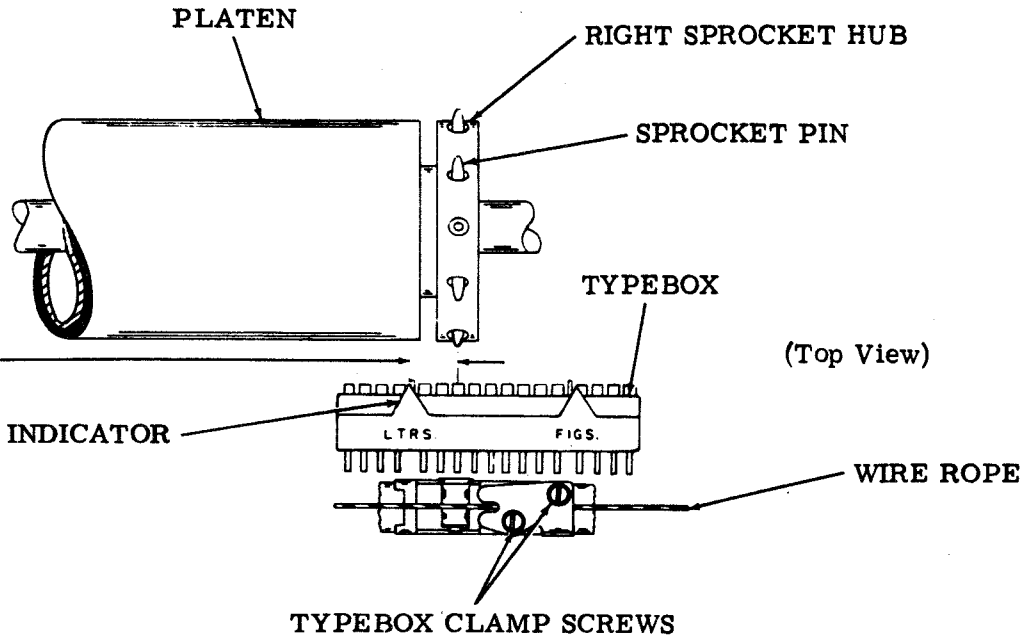
TYPEBOX POSITION

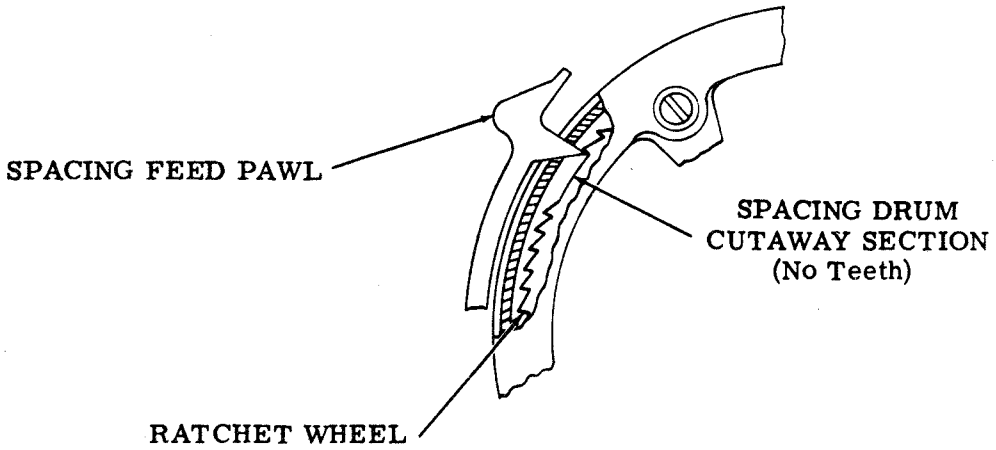
Requirement

Typebox and spacing clutches disengaged. Typebox shifted to letters position. Four mounting screws loosened so that space suppression ring, or automatic carriage return line feed ring, is free to rotate on drum. (Units equipped with limited adjustment spacing drum: spacing cut out and automatic carriage return line feed arms in maximum counterclockwise position. Farthest advanced feed pawl engaged with tooth above drum cut-away section.) Clearance between letters print indicator and center line of sprocket pins in right hub: Min 5/16 inch---Max 7/16 inch

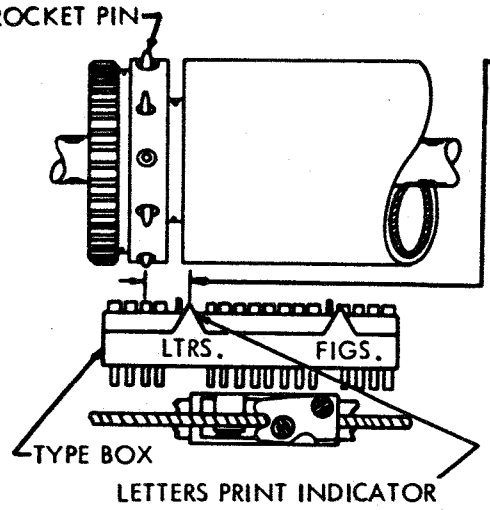
To Adjust

Loosen two typebox clamp screws and two printing carriage clamp screws. Position typebox. Tighten typebox clamp screws. Do not tighten printing carriage clamp screws until printing carriage position (2.47) adjustment is made.





2.71 Line Feed and Platen Mechanism (Con't)



(TOP VIEW)

(A) LEFT MARGIN
REQUIREMENT

(1) TYPE BOX CLUTCH DISENGAGED, SPACING DRUM FULLY RETURNED, AND TYPE BOX SHIFTED TO LETTERS POSITION: CLEARANCE BETWEEN CENTER OF LETTERS PRINT INDICATOR ON TYPE BOX AND CENTER LINE OF SPROCKET PINS AT LEFT HUB SHOULD BE:
MIN. 5/16 INCH --- MAX. 7/16 INCH
TO ADJUST --- POSITION CARRIAGE RETURN RING WITH ITS MOUNTING SCREWS LOOSENED.

(2) SPACING CLUTCH DISENGAGED, FRONT SPACING FEED PAWL IN ITS FARTHEST ADVANCED POSITION, SPACING DRUM FULLY RETURNED, AND PLAY IN SPACING GEAR (PAR. 2.24) TAKEN UP-CLOCKWISE: CLEARANCE BETWEEN PAWL AND SHOULDER OF RATCHET WHEEL TOOTH IMMEDIATELY AHEAD:
MIN. SOME --- MAX. 0.008 INCH

(3) THE REAR PAWL WHEN FARTHEST ADVANCED SHOULD DROP INTO THE INDENTATION BETWEEN RATCHET WHEEL TEETH AND SHOULD BOTTOM FIRMLY IN NOTCH.

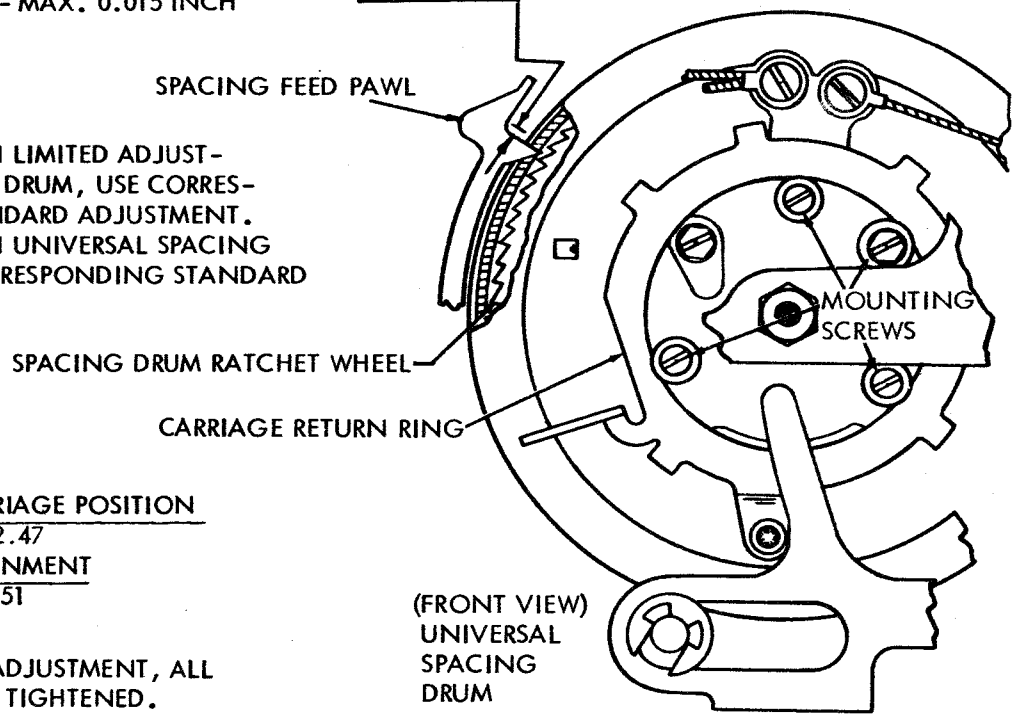
(B) PRINTING HAMMER STOP BRACKET

(1) FOR UNITS WITH THICK TYPEBOX AND DUMMY TYPE PALLETS USE CORRESPONDING STANDARD ADJUSTMENT EXCEPT CLEARANCE BETWEEN PRINTING HAMMER AND DUMMY TYPE PALLET SHOULD BE
MIN. SOME --- MAX. 0.020 INCH

(2) FOR UNITS WITH THIN TYPEBOX - NO DUMMY TYPE PALLETS, USE CORRESPONDING STANDARD ADJUSTMENT.

(3) CERTAIN MULTIPLE FORM UNITS WILL REQUIRE A REFINEMENT OF STANDARD ADJUSTMENT FOR THE STOP BRACKET TO
MIN. 0.005 INCH --- MAX. 0.015 INCH

TO ADJUST --- REFINE REQUIREMENT (1) ABOVE



(FRONT VIEW)
UNIVERSAL SPACING DRUM

(C) RIGHT MARGIN

(1) FOR UNITS WITH LIMITED ADJUSTMENT SPACING DRUM, USE CORRESPONDING STANDARD ADJUSTMENT.

(2) FOR UNITS WITH UNIVERSAL SPACING DRUM, USE CORRESPONDING STANDARD ADJUSTMENT.

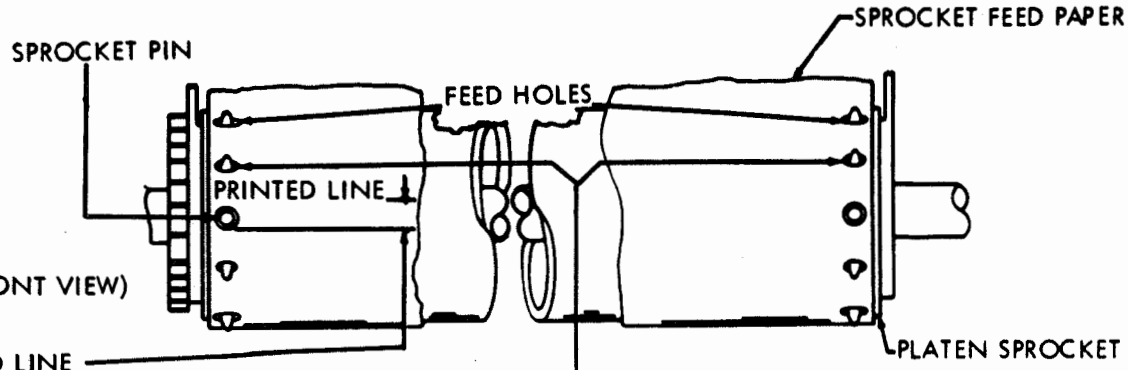
(D) PRINTING CARRIAGE POSITION
USE PAR. 2.47

(E) TYPE BOX ALIGNMENT
USE PAR. 2.51

FOLLOWING THIS ADJUSTMENT, ALL SCREWS SHOULD BE TIGHTENED.

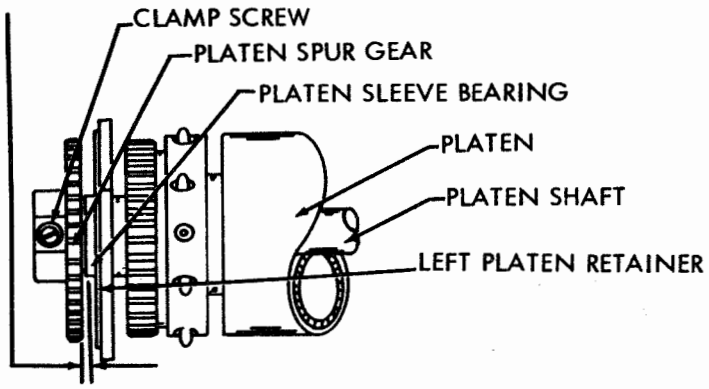
2.72 Line Feed and Platen Mechanism (Con't)

(A) LINE FEED SPUR GEAR DETENT ECCENTRIC
USE PAR. 2.57

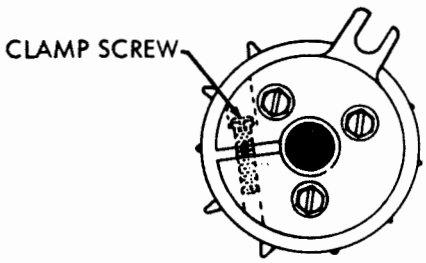


(B) PRINTED LINE
REQUIREMENT
THE BOTTOM OF THE PRINTED LINE SHOULD BE 1/32 INCH ± 1/64 INCH (PLUS A MULTIPLE OF 1/6 INCH IF REQUIRED) ABOVE A HORIZONTAL LINE DRAWN EVEN WITH THE BOTTOM EDGE OF ANY SPROCKET HOLE.
TO ADJUST
LOOSEN SCREWS AND POSITION LEFT SPROCKET. IF OTHER THAN STANDARD PAPER IS USED, IT MAY BE NECESSARY TO MAKE A VARIATION IN THIS ADJUSTMENT. TIGHTEN SCREWS.
NOTE: THE PRINTED LINE ADJUSTMENT IS A FIELD ADJUSTMENT.

(C) PLATEN END PLAY
REQUIREMENT
LINE FEED PAWLS DISENGAGED. PLATEN SHAFT SHOULD HAVE SOME END PLAY
MAX. 0.010 INCH
TO ADJUST
POSITION PLATEN SPUR GEAR WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.



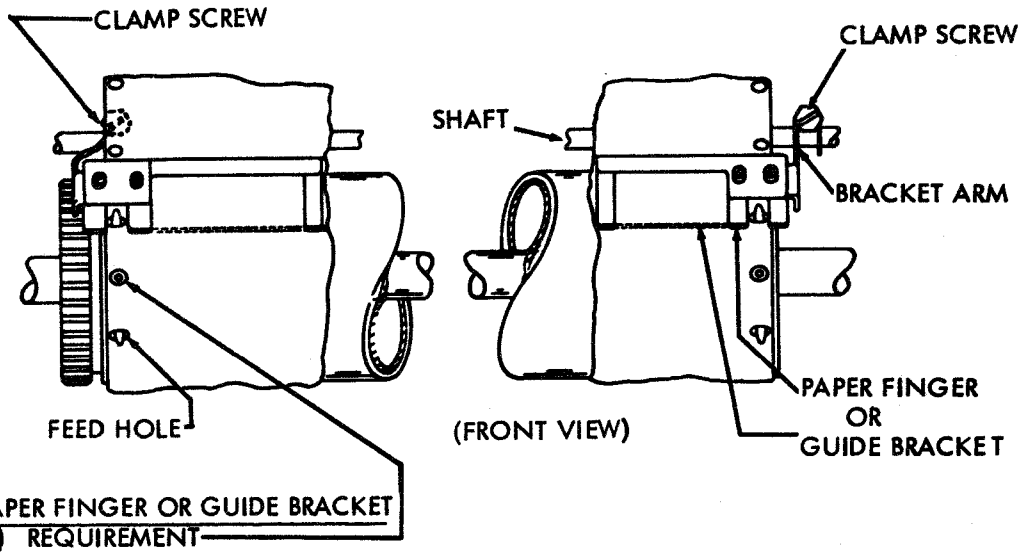
(D)
SPROCKET PIN SEPARATION
(1) REQUIREMENT
WITH SINGLE SHEET OF SPROCKET FEED PAPER PLACED ON THE PLATEN THE SPROCKET PINS SHOULD BE CENTRALLY LOCATED IN THE FEED HOLES OF THE PAPER
(2) REQUIREMENT
PRINTED LINE SHOULD BE PARALLEL TO A LINE DRAWN PERPENDICULAR TO EDGE OF PAPER WITHIN PLUS OR MINUS 1/32 INCH
TO ADJUST
POSITION RIGHT SPROCKET WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.



(RIGHT SIDE SPROCKET)

(LEFT SIDE SPROCKET)

2.73 Line Feed and Platen Mechanism (Con't)



(1) REQUIREMENT

SPROCKET PIN SHOULD BE CENTRALLY LOCATED IN THE PAPER FINGER OR GUIDE BRACKET SLOT.

(2) REQUIREMENT *

THE GAP BETWEEN THE PLATEN AND THE PAPER FINGER OR GUIDE BRACKET SHOULD BE

STAPLED MULTIPLE COPY	SINGLE COPY OR UNSTAPLED MULTIPLE COPY
MIN. 0.050 INCH	0.020 INCH
MAX. 0.105 INCH	0.060 INCH

TO ADJUST

WITH PAPER FINGER OR GUIDE BRACKET ASSEMBLY IN LATCHED POSITION, LOOSEN BOTH CLAMP SCREWS, POSITION ASSEMBLY HORIZONTALLY TO MEET REQUIREMENT (1). ROTATE ASSEMBLY TO MEET REQUIREMENT (2).

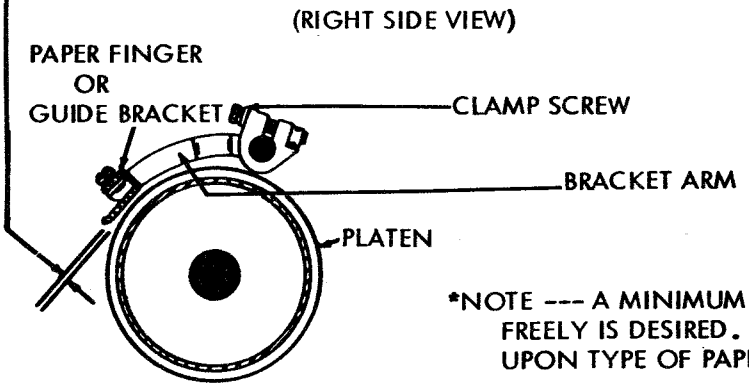
(3) REQUIREMENT (NOT ILLUSTRATED)

MIN. 0.035 INCH

BETWEEN LEADING EDGE OF PAPER FINGER OR GUIDE BRACKET AND RIBBON GUIDE. BOTH RIGHT AND LEFT PAPER FINGERS MUST BE PARALLEL TO THE SAME PRINTED LINE AS GAUGED BY EYE.

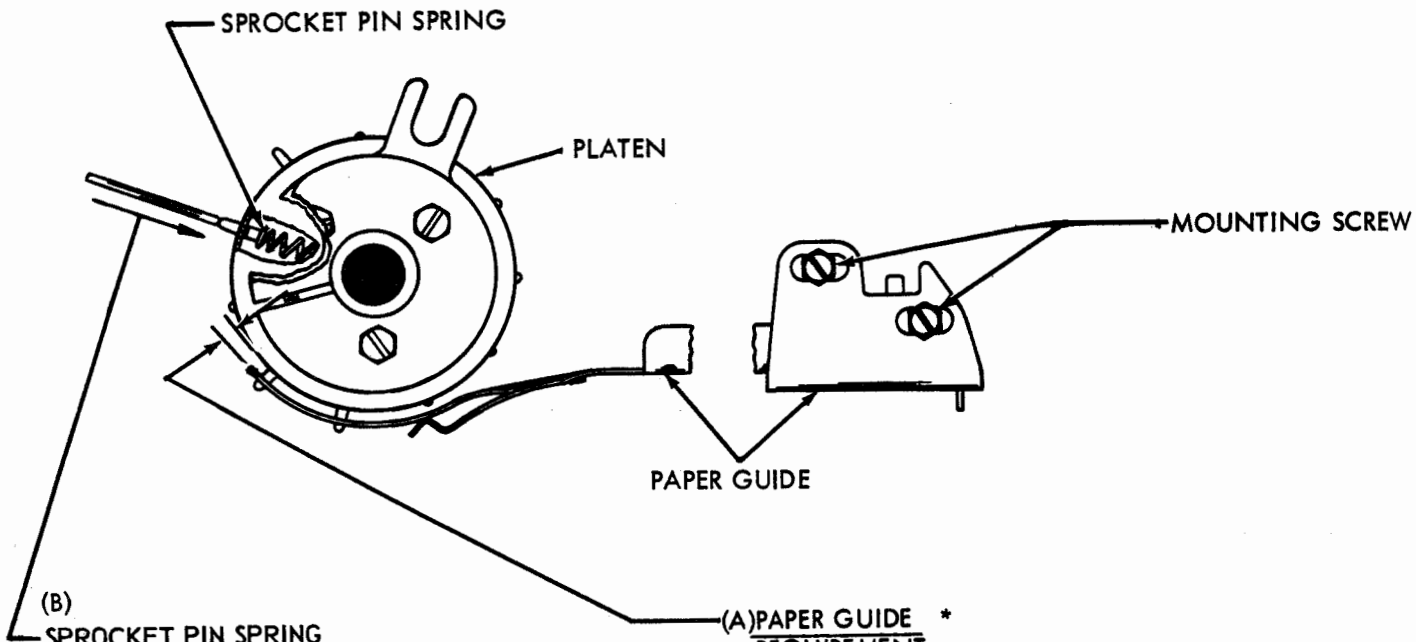
TO ADJUST

SELECT LETTERS COMBINATION AND ROTATE TYPE BOX CLUTCH 1/2 REVOLUTION. POSITION PAPER FINGERS BY MEANS OF ELONGATED MOUNTING HOLES. AFTER TIGHTENING THE SCREWS RECHECK THESE REQUIREMENTS.



*NOTE --- A MINIMUM CLEARANCE THAT WILL PASS STATIONERY FREELY IS DESIRED. THIS MINIMUM VALUE IS DEPENDENT UPON TYPE OF PAPER, NUMBER OF COPIES, STAPLING ETC.

2.74 Line Feed and Platen Mechanism (Cont.)



(B)
SPROCKET PIN SPRING

REQUIREMENT

MIN. 6 OZS.
MAX. 8 OZS.
TO START DEPRESSING THE PIN.

(A)PAPER GUIDE *

REQUIREMENT

THE CLEARANCE BETWEEN THE PLATEN AND THE FRONT EDGE OF THE PAPER GUIDE SHOULD BE

	STAPLED MULTIPLE COPY	SINGLE COPY OR UNSTAPLED MULTIPLE COPY
MIN.	0.050 INCH	0.020 INCH
MAX.	0.105 INCH	0.060 INCH

TO ADJUST

POSITION THE GUIDE WITH ITS REAR MOUNTING SCREWS LOOSENED.
TIGHTEN SCREWS.

*NOTE --- A MINIMUM CLEARANCE THAT WILL PASS STATIONERY FREELY IS DESIRED. THIS MINIMUM VALUE IS DEPENDENT UPON TYPE OF PAPER, NUMBER OF COPIES, STAPLING ETC.

(C)RIBBON REVERSE SPUR GEAR

USE PAR. 2.52

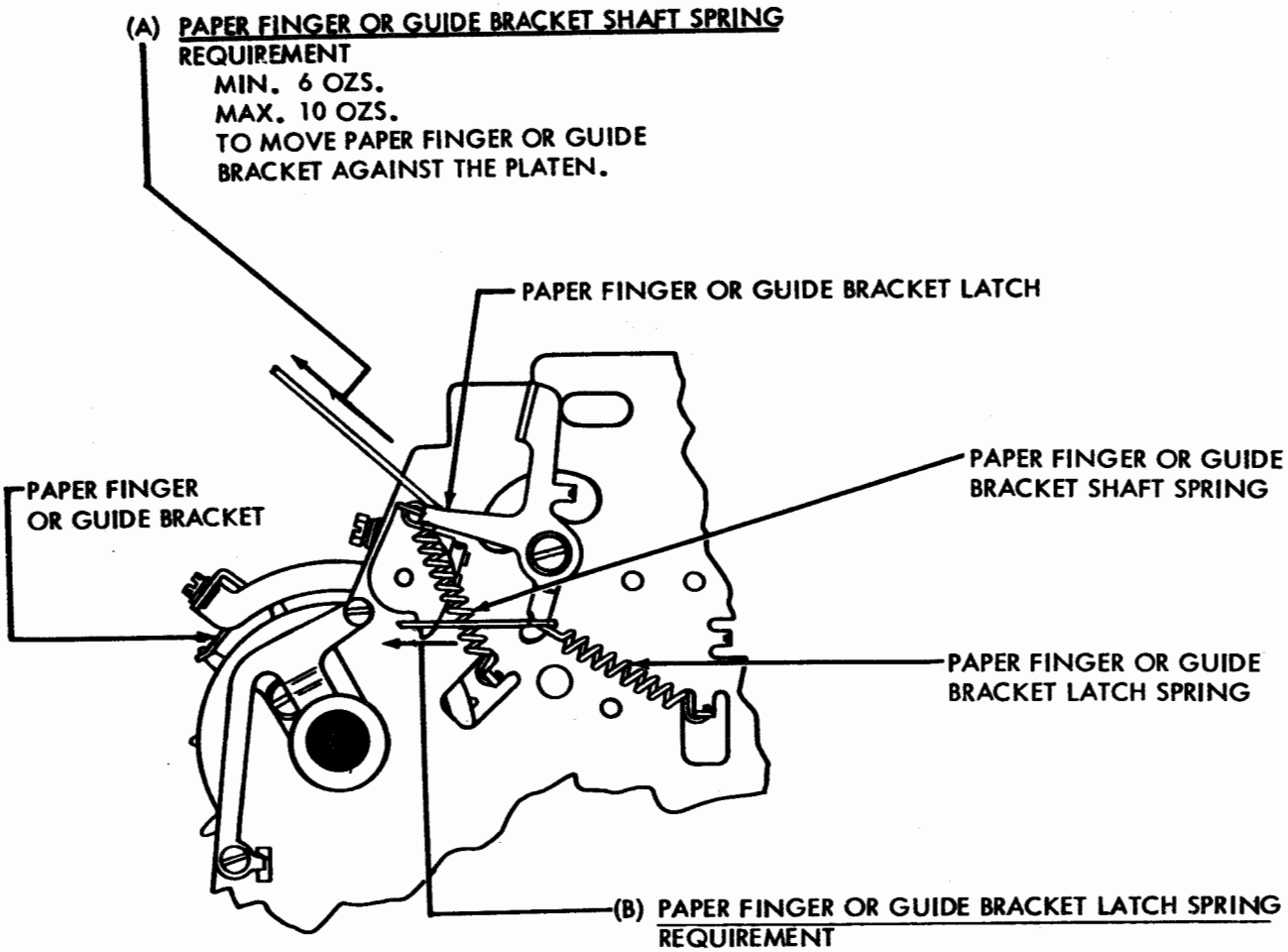
(D)RIBBON REVERSE DETENT

USE PAR. 2.52

(E) LINE FEED BAR BELL CRANK SPRING

USE PAR. 2.57 EXCEPT
MIN. 28 OZS.
MAX. 38 OZS.
TO START BAR MOVING.

2.75 Line Feed and Platen Mechanism (Con't)



NOTE
SPROCKET FEED MECHANISM WITH RETRACTABLE PINS

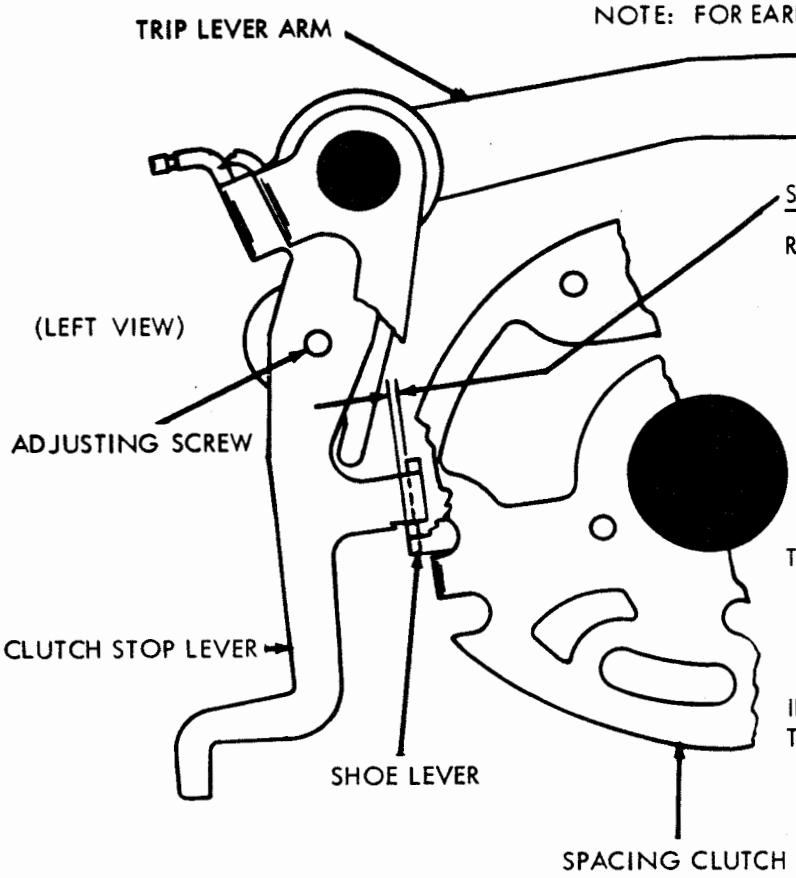
PAPER FINGER LOCKING ARM SPRING
REQUIREMENT --- IT SHALL REQUIRE
MIN 1 OZ --- MAX 1-1/2 OZS
TO MOVE ARM AWAY FROM PLATEN

PLATEN DETENT BAIL SPRING
USE PAR. 2.57

3. VARIABLE FEATURES

3.01 Horizontal Tabulator Mechanism

NOTE: FOR EARLIER DESIGN SEE PARS. 4.24 THROUGH 4.29.



SPACING CLUTCH STOP LEVER

REQUIREMENT

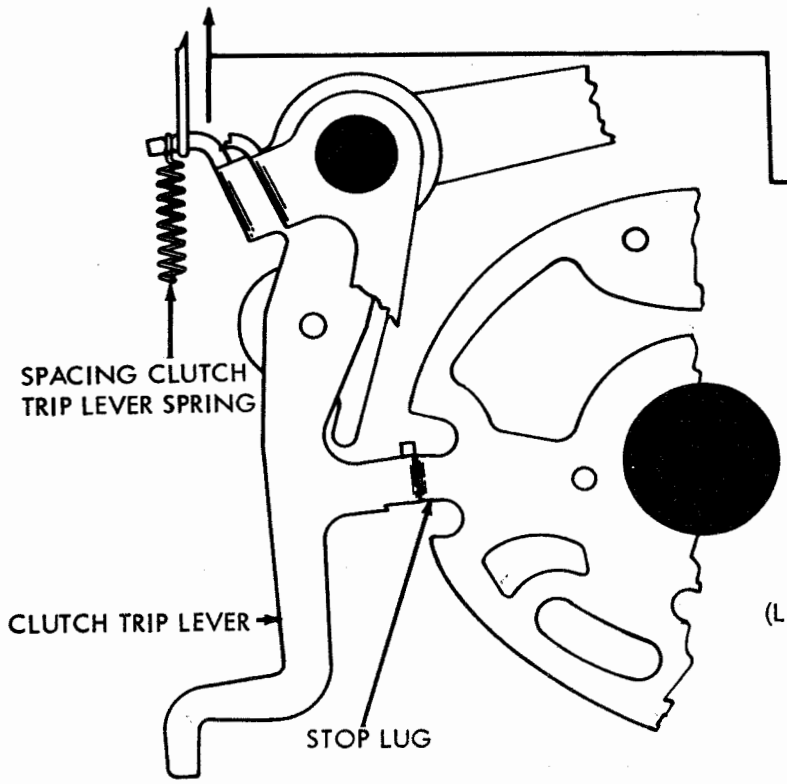
SPACING CLUTCH DISENGAGED. TRIP LEVER ARM AND INTERMEDIATE BAIL IN THEIR UPWARD POSITION. THE OUTER SURFACE OF THE TRIP LEVER SHOULD BE FLUSH WITH THE OUTER SURFACE OF THE SHOE LEVER OR UNDER FLUSH TO .010 INCH. CHECK AT STOP LUG WITH LEAST BITE.

TO ADJUST

WITH ADJUSTING SCREW FRICTION TIGHT POSITION SPACING CLUTCH STOP LEVER. TIGHTEN SCREW.

NOTE

IF THIS ADJUSTMENT IS CHANGED, CHECK THE LATCH BAIL ADJUSTING PLATE - PAR. 3.03



CLUTCH STOP LEVER SPRING

REQUIREMENT

SPACING CLUTCH ENGAGED. ROTATE CLUTCH UNTIL STOP LEVER RESTS ON STOP LUG.

MIN. 11-1/4 OZS.
MAX. 14-1/4 OZS.
TO MOVE STOP LEVER AWAY FROM STOP LUG.

3.02 Horizontal Tabulator Mechanism (Con't)

OPERATING LEVER EXTENSION LINK

NOTE

PRIOR TO THIS ADJUSTMENT CHECK THE FUNCTION RESET BAIL BLADE ADJUSTMENT.

REQUIREMENT

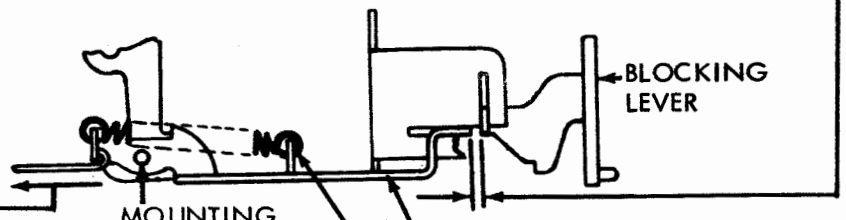
ON UNITS WITH TWO-STOP FUNCTION CLUTCHES. FUNCTION CLUTCH DISENGAGED. TYPE BOX CLUTCH ROTATED 1/2 REVOLUTION PAST STOP POSITION. ON UNITS WITH ONE-STOP FUNCTION CLUTCH, ROTATE FUNCTION CLUTCH UNTIL FUNCTION PAWL STRIPPER BLADE IS IN ITS LOWER POSITION AND THE FUNCTION RESET BAIL ROLLER IS ON THE HIGH PART OF ITS CAM. HORIZONTAL TABULATOR FUNCTION PAWL PULLED TO REAR UNTIL LATCHED ON ITS FUNCTION BAR. CLEARANCE BETWEEN FRONT END OF OPERATING LEVER EXTENSION LINK AND BLOCKING SURFACE OF BLOCKING LEVER MIN. 0.015 INCH---MAX. 0.035 INCH

TO ADJUST

POSITION EXTENSION LINK ON OPERATING LEVER WITH MOUNTING STUD FRICTION TIGHT. TIGHTEN STUD.

NOTE: WHEN PULLING FUNCTION PAWL TO THE REAR, IF THE OPERATING LEVER CAM ARM SHOULD BE STRIPPED OFF THE TABULATOR SLIDE ARM BEFORE THE FUNCTION PAWL IS LATCHED ON THE FUNCTION BAR, TEMPORARILY DISABLE CAM PLATE STRIPPER BAIL ARM BY LOOSENING ITS ADJUSTING SCREW.

(LEFT SIDE VIEW)



OPERATING LEVER EXTENSION LINK SPRING

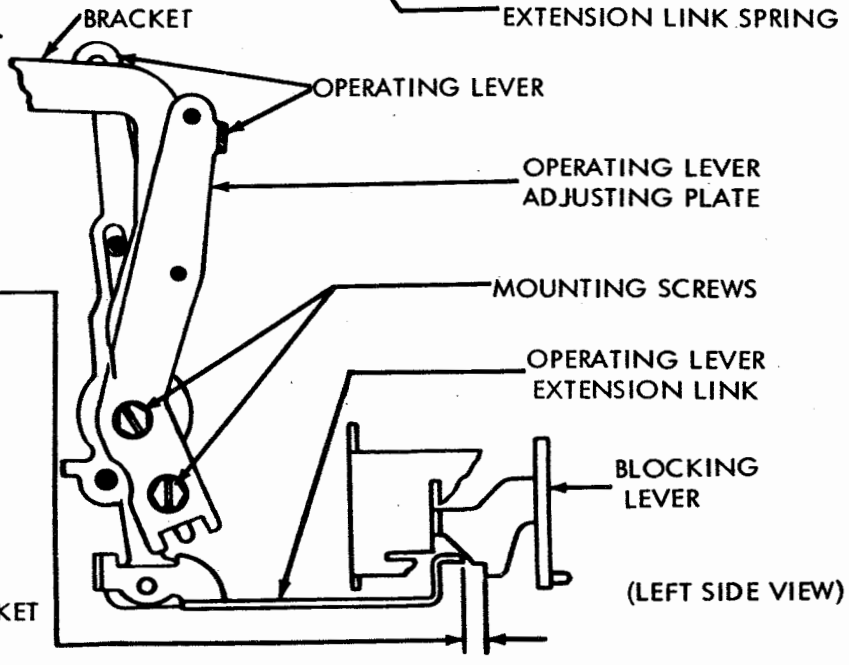
REQUIREMENT

TRIP ARM LATCH LEVER SPRING UNHOOKED. OPERATING LEVER IN OPERATED POSITION WITH EXTENSION LINK AGAINST BLOCKING LEVER

MIN. 8-3/4 OZS.---MAX. 10-3/4 OZS. TO START LINK MOVING.

NOTE

ON UNITS EQUIPPED WITH TRANSMITTER CONTROL CONTACT, HOLD CONTACT SPRING AWAY FROM STUD WHEN MEASURING TENSION.



OPERATING LEVER ADJUSTING PLATE

REQUIREMENT

OPERATING LEVER IN UNOPERATED POSITION. TAKE UP PLAY IN EXTENSION LINK AND BLOCKING LEVER TO MINIMIZE CLEARANCE. CLEARANCE BETWEEN FRONT END OF EXTENSION LINK AND LOWER PROJECTION OF BLOCKING LEVER

MIN. 0.020 INCH---MAX. 0.045 INCH

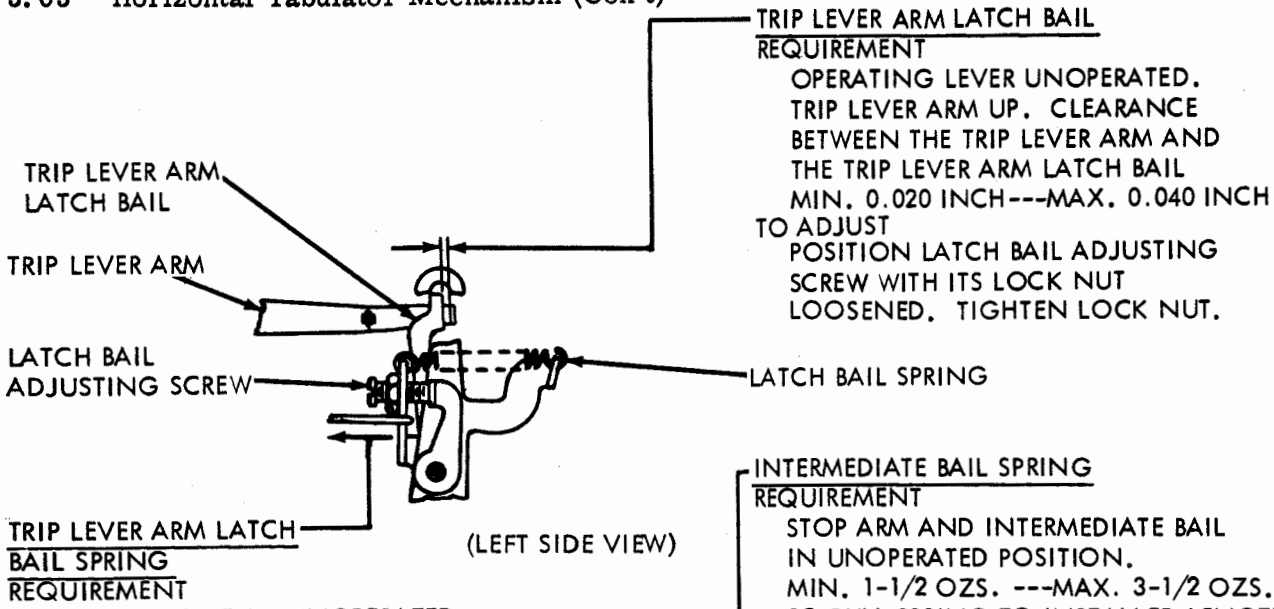
TO ADJUST

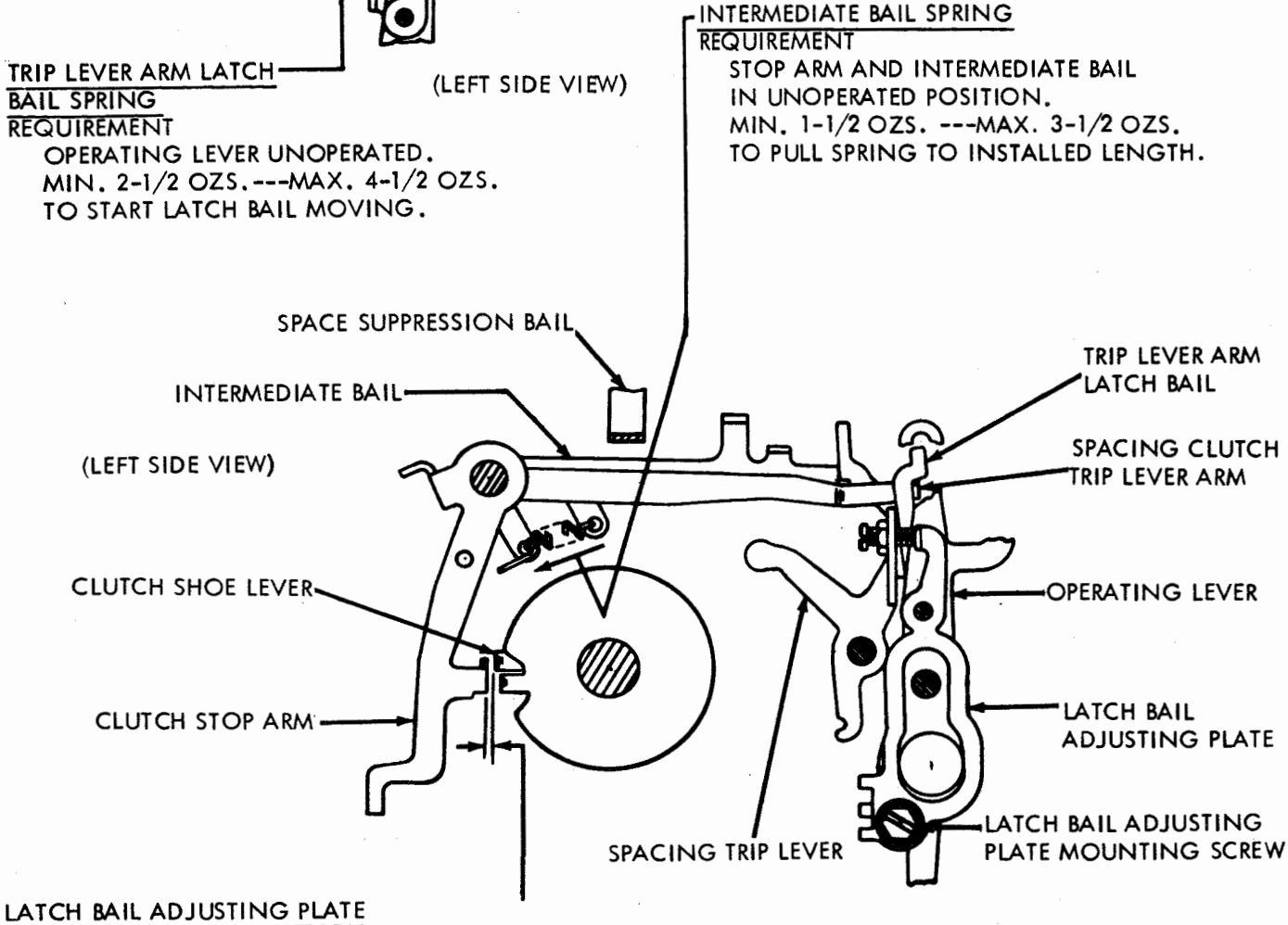
POSITION ADJUSTING PLATE ON BRACKET WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

NOTE

IF OPERATING LEVER EXTENSION LINK OR OPERATING LEVER ADJUSTING PLATE ADJUSTMENT IS CHANGED ON UNITS EQUIPPED WITH TRANSMITTER CONTROL CONTACT, CHECK CONTROL CONTACT GAP (PAR. 3.10) AND REMAKE IF NECESSARY.

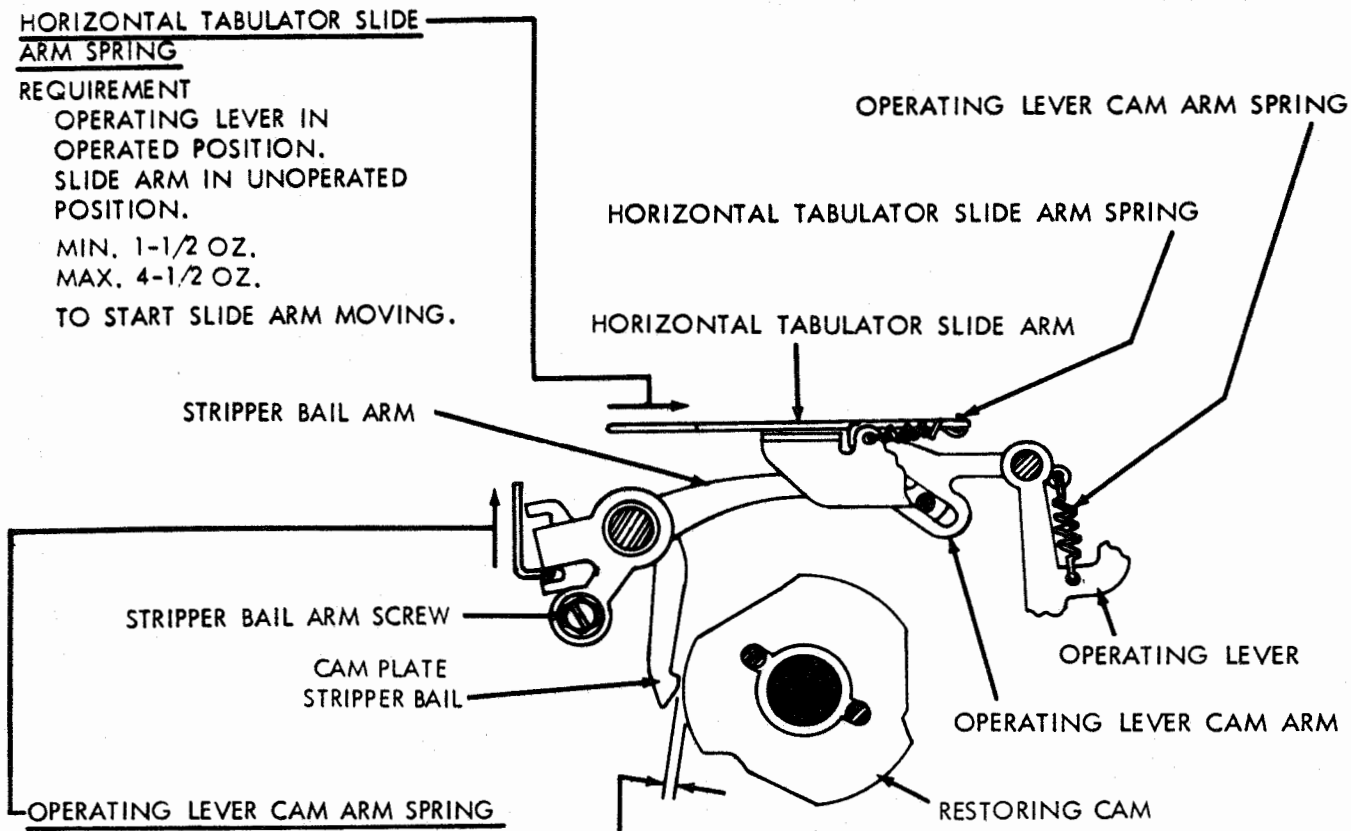
3.03 Horizontal Tabulator Mechanism (Con't)





LATCH BAIL ADJUSTING PLATE
REQUIREMENT
OPERATING LEVER EXTENSION LINK POSITIONED TO REAR AND LATCHED ON BLOCKING LEVER. LATCH BAIL IN FULLY LATCHED POSITION. SPACING TRIP LEVER DISENGAGED FROM INTERMEDIATE BAIL BY PUSHING FORWARD ON SPACE SUPPRESSION BAIL. CLEARANCE BETWEEN CLUTCH STOP ARM AND CLUTCH SHOE LEVER
MIN. SOME---MAX. 0.008 INCH
TO ADJUST
POSITION LATCH BAIL ADJUSTING PLATE WITH MOUNTING SCREWS LOOSENED. CHECK AT THE CLUTCH SHOE LEVER WITH THE LEAST CLEARANCE. TIGHTEN SCREWS.

3.04 Horizontal Tabulator Mechanism (Cont.)



(LEFT SIDE VIEW)

HORIZONTAL TABULATOR SLIDE ARM SPRING

REQUIREMENT
OPERATING LEVER IN OPERATED POSITION. SLIDE ARM IN UNOPERATED POSITION.

MIN. 1-1/2 OZ.
MAX. 4-1/2 OZ.

TO START SLIDE ARM MOVING.

OPERATING LEVER CAM ARM SPRING

REQUIREMENT
OPERATING LEVER IN UNOPERATED POSITION. HORIZONTAL TABULATOR FUNCTION PAWL UNLATCHED.

MIN. 4 OZS.
MAX. 9 OZS.

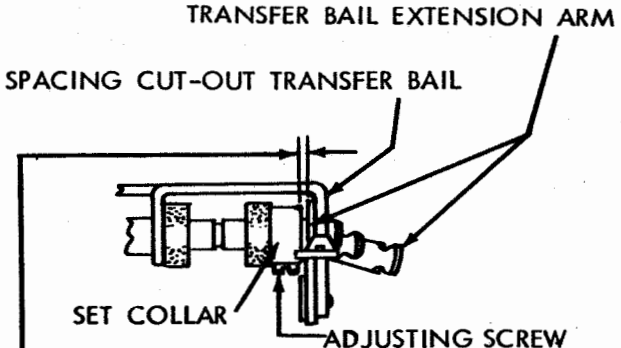
TO START STRIPPER BAIL MOVING.

CAM PLATE STRIPPER BAIL

REQUIREMENT
OPERATING LEVER AND TABULATOR SLIDE ARM IN UNOPERATED POSITIONS. SPACING CLUTCH ROTATED UNTIL HIGH PART OF RESTORING CAM IS OPPOSITE STRIPPER BAIL. CLEARANCE BETWEEN RESTORING CAM AND STRIPPER BAIL.

MIN. 0.010 INCH
MAX. 0.025 INCH

TO ADJUST
POSITION STRIPPER BAIL PLATE ON STRIPPER BAIL WITH STRIPPER BAIL ARM SCREW FRICTION TIGHT. TIGHTEN SCREW.



(BOTTOM VIEW)

SPACING CUT-OUT TRANSFER BAIL

SET COLLAR

REQUIREMENT
TRANSFER BAIL SHOULD HAVE SOME END PLAY.
MAX. 0.008 INCH

TO ADJUST
POSITION SET COLLAR WITH SCREW LOOSENED. TIGHTEN SCREW.

3.05 Horizontal Tabulator Mechanism (Cont.)

RIGHT MARGIN

REQUIREMENT
CLEARANCE BETWEEN SPACING CUT-OUT LEVER ON SPACING DRUM AND BAIL EXTENSION ARM

MIN. 0.006 INCH
MAX. 0.025 INCH

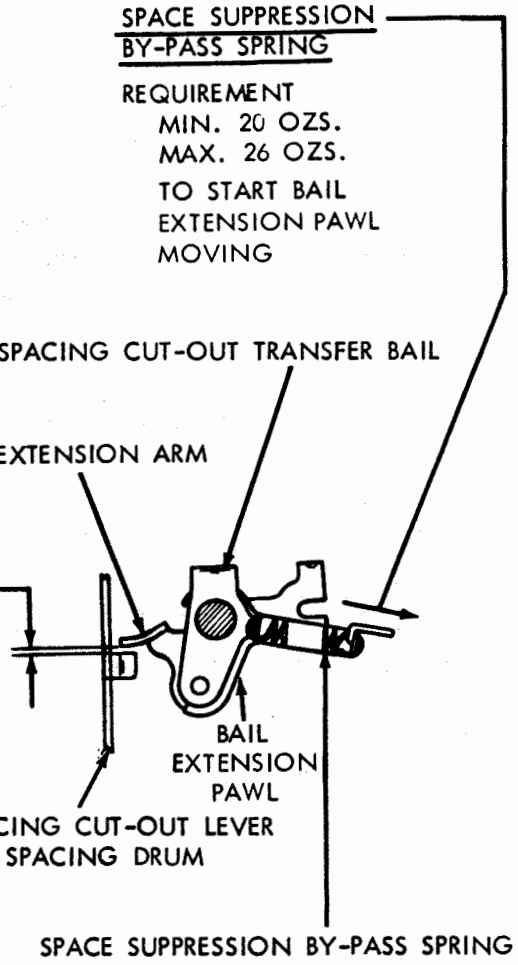
TO CHECK
PLACE TYPE BOX IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUT-OUT IS DESIRED. PULL FORWARD ON PART OF TRANSFER BAIL EXTENDING BELOW MOUNTING SHAFT UNTIL BAIL IS IN FULLY OPERATED POSITION. GAGE CLEARANCE.

TO ADJUST
POSITION CUT-OUT LEVER WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.

NOTE
FOUR SCREWS MUST BE LOOSENED TO ADJUST CIRCULAR CUT-OUT LEVERS. DO NOT LOOSEN HEX. HEAD SCREW THAT CLAMPS FRONT RING.

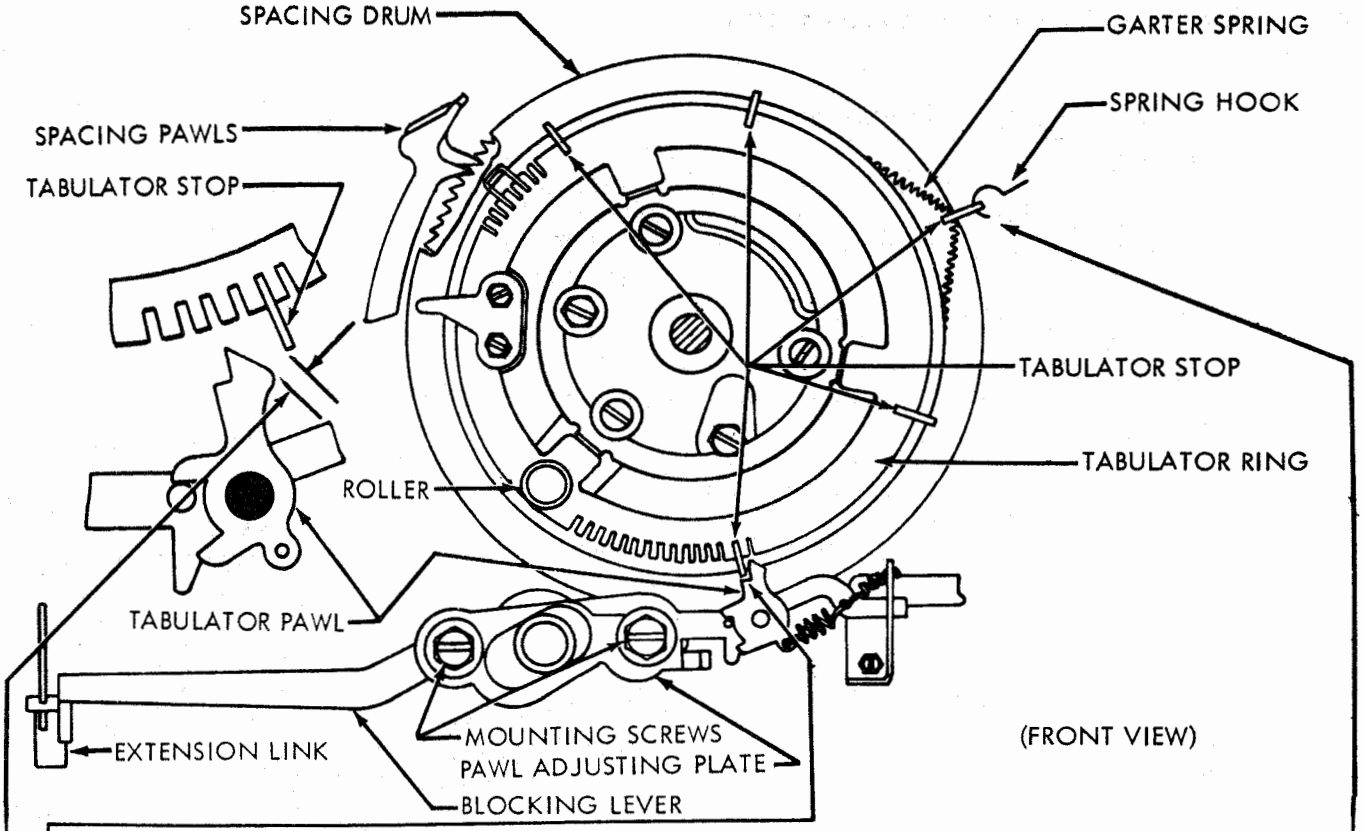
SPACE SUPPRESSION BY-PASS SPRING

REQUIREMENT
MIN. 20 OZS.
MAX. 26 OZS.
TO START BAIL EXTENSION PAWL MOVING



(RIGHT SIDE VIEW)

3.06 Horizontal Tabulator Mechanism (Con't)



TABULATOR PAWL (PRELIMINARY)

NOTE:

BEFORE MAKING THIS ADJUSTMENT, CHECK LEFT MARGIN (PAR. 2.43) AND SPACING GEAR PHASING (PAR. 2.24) ADJUSTMENTS.

PURPOSE

TO SELECT TABULATOR STOP TO BE USED AS REFERENCE IN MAKING FINAL TABULATOR PAWL HORIZONTAL AND VERTICAL ADJUSTMENTS.

PROCEDURE

(1) BEGINNING WITH 15TH SLOT COUNTERCLOCKWISE FROM ROLLER ON TABULATOR RING, PLACE TABULATOR STOPS APPROXIMATELY AN EQUAL NUMBER OF SLOTS APART AROUND REMAINING SLOTTED PERIPHERY OF RING CORRESPONDING TO LENGTH OF PRINTED LINE.

(2) TO MOVE STOPS, HOOK SMALL SPRING HOOK IN HOLE AND PULL OUT RADIALLY FROM DRUM. HOLDING STOP AWAY FROM DRUM, SLIDE IT ON GARTER SPRING TO DESIRED LOCATION AND INSERT IN SLOT. SPACING DRUM MAY HAVE TO BE ROTATED TO MAKE SOME SLOTS ACCESSIBLE. CAUTION: MAKE SURE ALL STOPS ARE FIRMLY SEATED AND NOT TURNED SIDEWAYS. DO NOT USE PLIERS TO MOVE STOPS.

(3) DISENGAGE ALL CLUTCHES SO FRONT SPACING FEED PAWL IS IN LOWER POSITION. PLACE PAWL ADJUSTING PLATE AT CENTER OF HORIZONTAL AND VERTICAL ADJUSTMENT: TO ADJUST VERTICALLY, LOOSEN BOTH MOUNTING SCREWS: TO ADJUST HORIZONTALLY, LOOSEN ONLY LEFT SCREW. HORIZONTAL ADJUSTMENT SHOULD BE MADE AFTER VERTICAL. DISENGAGE SPACING FEED PAWLS AND ALLOW DRUM TO ROTATE TO EXTREME COUNTERCLOCKWISE POSITION. KEEPING SPACING CLUTCH DISENGAGED, MANUALLY ADVANCE DRUM UNTIL FIRST STOP IS IMMEDIATELY TO LEFT OF PAWL. POSITION ADJUSTING PLATE HORIZONTALLY SO THAT STOP IS ALIGNED WITH LEFT EDGE OF PAWL SHOULDER.

(4) PLACE BLOCKING LEVER AND OPERATING LEVER SLIDE ARM IN UNBLOCKED POSITION. DISENGAGE FEED PAWLS AND LET DRUM ROTATE TWO SPACES COUNTERCLOCKWISE. BOTH FEED PAWLS SHOULD BE FULLY ENGAGED. BLOCK EXTENSION LINK WITH BLOCKING LEVER. GAUGE AND NOTE CLEARANCE BETWEEN STOP AND SLOPE ON PAWL.

(5) ROTATE DRUM CLOCKWISE UNTIL NEXT STOP IS JUST TO LEFT OF PAWL. REPEAT PROCEDURE DESCRIBED IN PARAGRAPH (4) FOR THIS STOP. REPEAT PROCEDURE FOR REMAINING STOPS, NOTING EACH CLEARANCE.

(6) STOP WITH MAXIMUM CLEARANCE SHOULD BE USED AS REFERENCE IN MAKING FINAL HORIZONTAL AND VERTICAL PAWL ADJUSTMENTS.

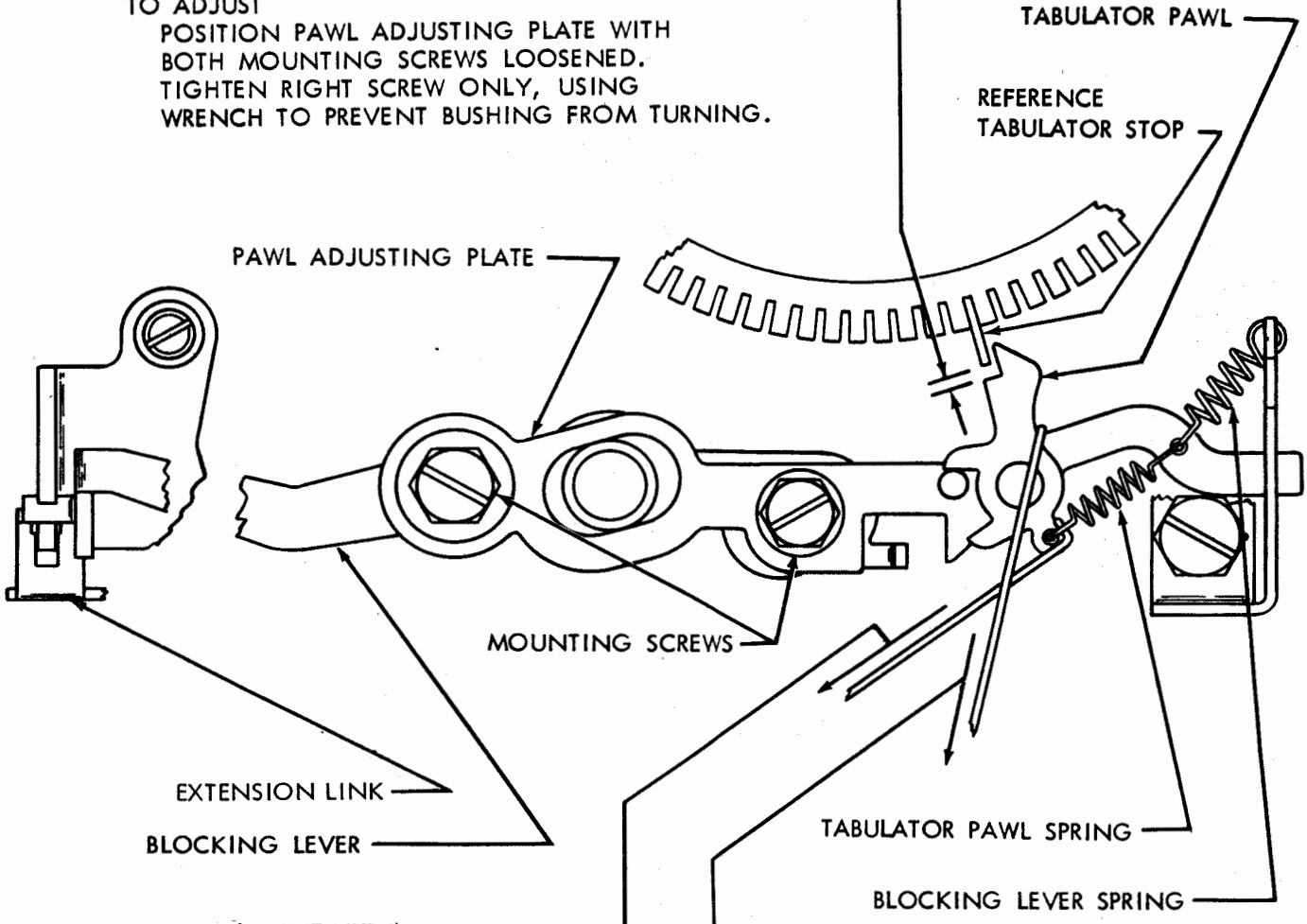
3.07 Horizontal Tabulator Mechanism (Cont.)

TABULATOR PAWL - VERTICAL (FINAL)

TO CHECK
POSITION SPACING DRUM SUCH THAT REFERENCE TABULATOR STOP, AS DETERMINED BY PRELIMINARY TABULATOR PAWL ADJUSTMENT (PAR. 3.06), IS OPPOSITE SHOULDER ON PAWL. BLOCK EXTENSION LINK WITH BLOCKING LEVER.

REQUIREMENT
CLEARANCE BETWEEN PAWL AND STOP:
MIN. 0.055 INCH MAX. 0.075 INCH

TO ADJUST
POSITION PAWL ADJUSTING PLATE WITH BOTH MOUNTING SCREWS LOOSENED. TIGHTEN RIGHT SCREW ONLY, USING WRENCH TO PREVENT BUSHING FROM TURNING.



(FRONT VIEW)

TABULATOR PAWL SPRING

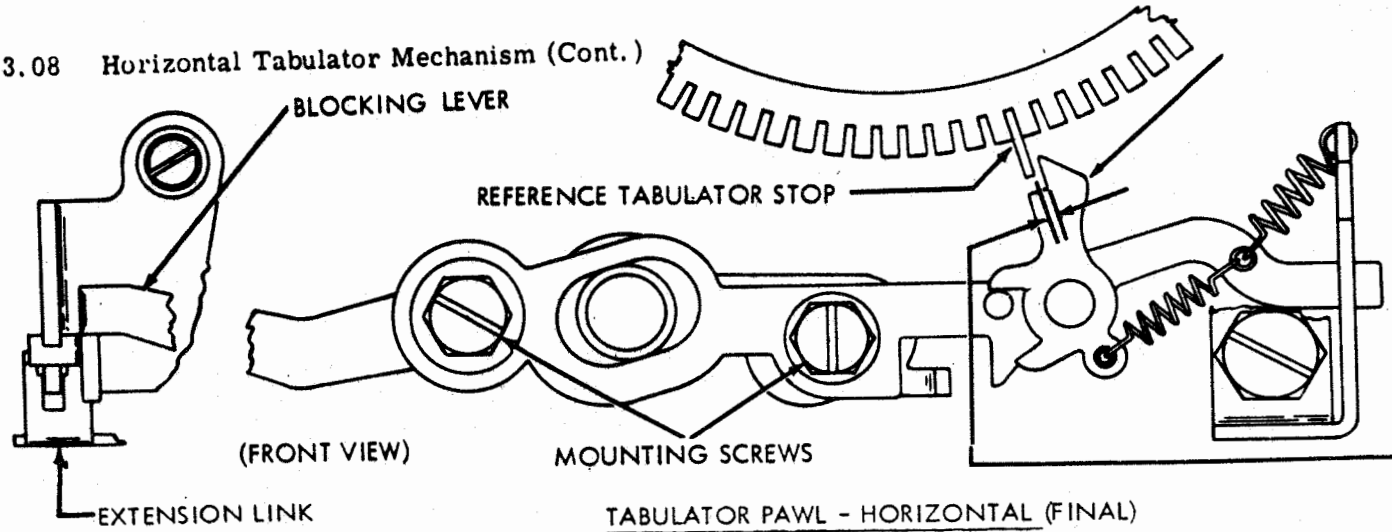
REQUIREMENT
MIN. 3 OZS. MAX. 5 OZS.
TO START PAWL MOVING.

BLOCKING LEVER RETURN SPRING

TO CHECK
HOLD EXTENSION LINK TO THE REAR.

REQUIREMENT
MIN. 2-1/2 OZS. MAX. 4-1/2 OZS.
TO START BLOCKING LEVER MOVING.

3.08 Horizontal Tabulator Mechanism (Cont.)



TABULATOR PAWL - HORIZONTAL (FINAL)

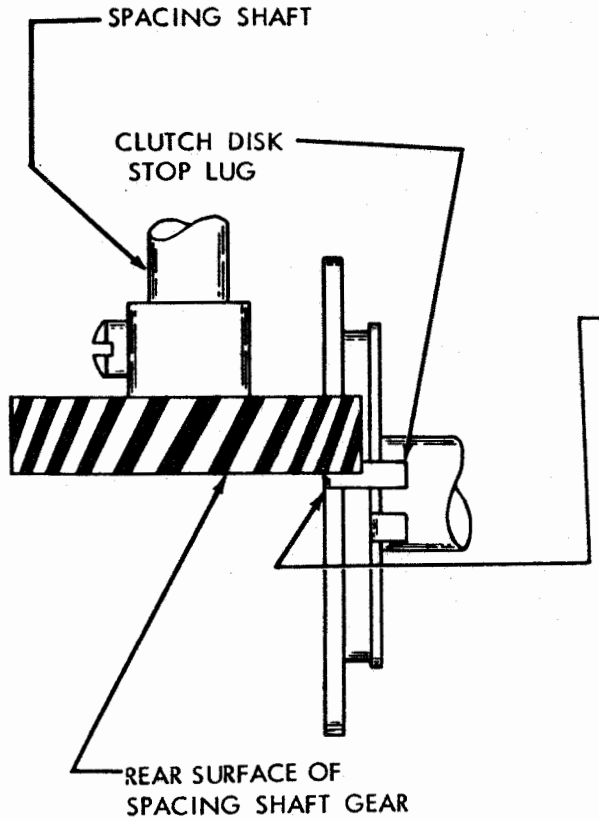
TO CHECK

(1) DISENGAGE ALL CLUTCHES SO THAT FRONT SPACING FEED PAWL IS IN LOWER POSITION (AS SHOWN IN PAR. 3.06). POSITION SPACING DRUM SO THAT REFERENCE TABULATOR STOP, AS DETERMINED IN PRELIMINARY TABULATOR PAWL ADJUSTMENT (PAR. 3.06), IS IMMEDIATELY TO LEFT OF PAWL. OPERATING LEVER SLIDE ARM SHOULD BE FORWARD IN UNBLOCKED POSITION. DISENGAGE FEED PAWLS AND ALLOW DRUM TO ROTATE ONE SPACE COUNTER-CLOCKWISE. BOTH FEED PAWLS SHOULD BE FULLY ENGAGED. MOVE EXTENSION LINK TO REAR TO BLOCKED POSITION.

(2) TRIP SPACING CLUTCH STOP LEVER AND SLOWLY ROTATE MAIN SHAFT UNTIL BLOCKING LEVER IS JUST TRIPPED. TAKE UP PLAY IN SPACING SHAFT TOWARD REAR.

REQUIREMENT

SOME PORTION OF CLUTCH DISC STOP LUG SHOULD BE ALIGNED WITH REAR SURFACE OF SPACING SHAFT GEAR.



TO ADJUST

REPEAT PROCEDURE SET FORTH IN PARAGRAPH (1) ABOVE. TRIP SPACING CLUTCH AND ROTATE SHAFT UNTIL MIDDLE OF STOP LUG IS IN LINE WITH REAR SURFACE OF GEAR. IF BLOCKING LEVER TRIPPED TOO SOON, WITH LEFT MOUNTING SCREW LOOSENED, POSITION PAWL ADJUSTING PLATE TO LEFT UNTIL EXTENSION LINK CAN BE BLOCKED. SLOWLY MOVE PLATE TO RIGHT UNTIL BLOCKING LEVER JUST TRIPS. WHEN ADJUSTING TRIP-OFF POINT, CARE SHOULD BE TAKEN THAT BLOCKING LEVER IS CAMMED DOWN BY STOP AND NOT MANUALLY MOVED OUT OF BLOCKED POSITION. RECHECK REQUIREMENT.

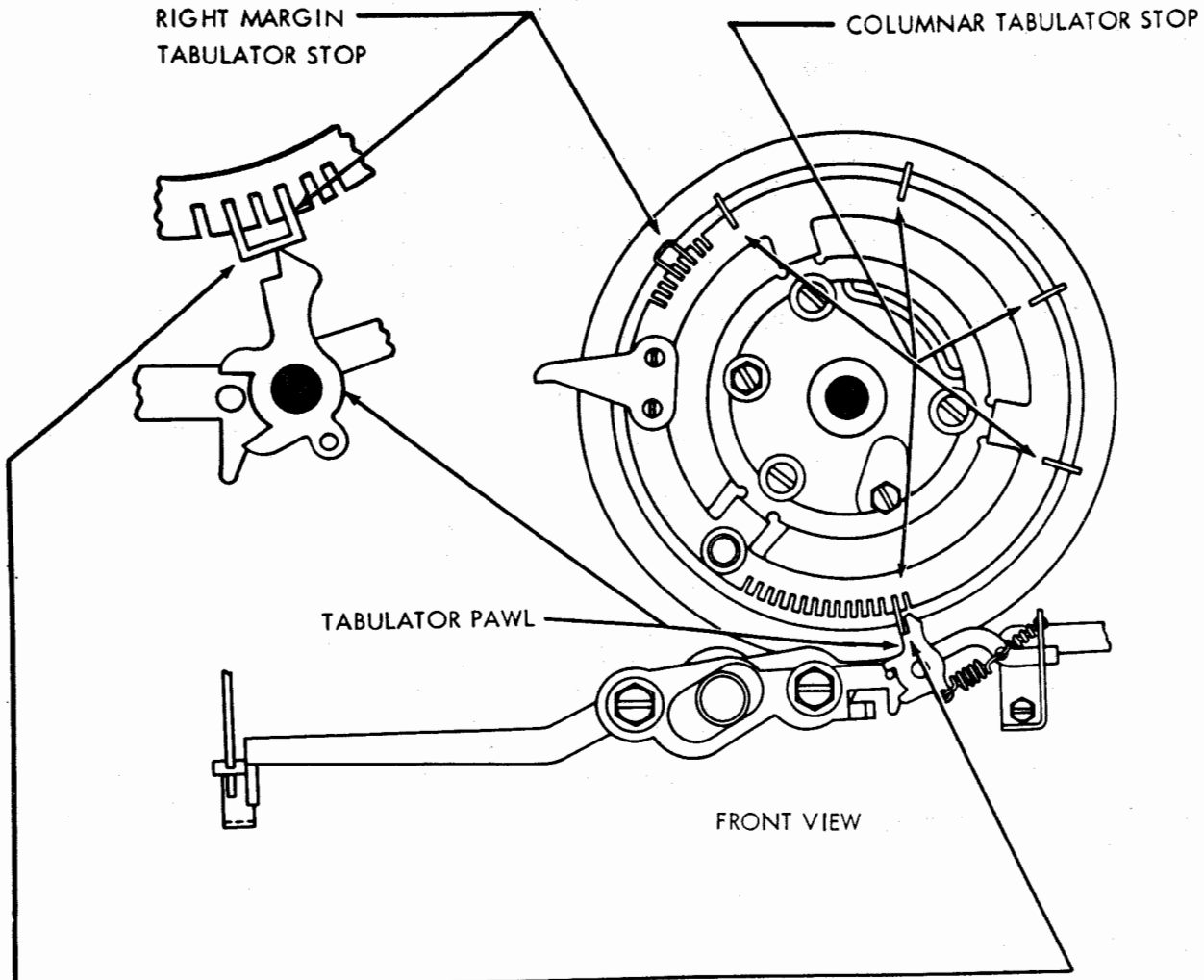
NOTE:

AFTER OBTAINING TRIP-OFF POINT, CONTINUE ROTATING MAIN SHAFT UNTIL SPACING CLUTCH IS DISENGAGED. PAWL SHOULD BE TO RIGHT OF STOP. WHEN EXTENSION LINK IS MOVED TO REAR, BLOCKING LEVER SHOULD MOVE TO BLOCKED POSITION. IF TIP OF PAWL SHOULD REST ON END OF STOP, READJUST PLATE TO RIGHT SO THAT CLEARANCE BETWEEN PAWL AND STOP IS:

MIN. 0.003 INCH --- MAX. 0.008 INCH

TIGHTEN SCREW.

3.09 Horizontal Tabulator Mechanism (Cont.)



TABULATOR STOP SETTINGS

NOTE 1:
FOR INSTRUCTIONS ON HOW TO MOVE TABULATOR STOPS, SEE TABULATOR PAWL PRELIMINARY ADJUSTMENT. PAR. 3.06 (2)

(1) COLUMNAR TABULATOR STOPS

PLACE CARRIAGE IN POSITION TO PRINT FIRST CHARACTER IN COLUMN. PLACE STOP IN SLOT IMMEDIATELY TO LEFT OF PAWL. TO FACILITATE INSERTING STOPS, MARK DESIRED SLOT AND ROTATE DRUM TO MORE ACCESSIBLE POSITION. FOR SETTINGS NEAR LEFT MARGIN, COUNT NUMBER OF SPACING OPERATIONS FROM LEFT MARGIN AND PLACE STOP CORRESPONDING NUMBER OF SLOTS COUNTERCLOCKWISE FROM ROLLER.

NOTE 2: WHEN PRINTING FORMS, CHECK STOP SETTINGS IN RELATION TO COLUMNS. CORRESPONDING STOPS ON ALL MACHINES ON A CIRCUIT MUST BE THE SAME NUMBER OF SLOTS FROM LEFT MARGIN.

(2) RIGHT MARGIN TABULATOR STOP (WITH WIDE SHELF)

NOTE 3: BEFORE MAKING THIS ADJUSTMENT, CHECK RIGHT MARGIN AND TABULATOR PAWL ADJUSTMENTS.

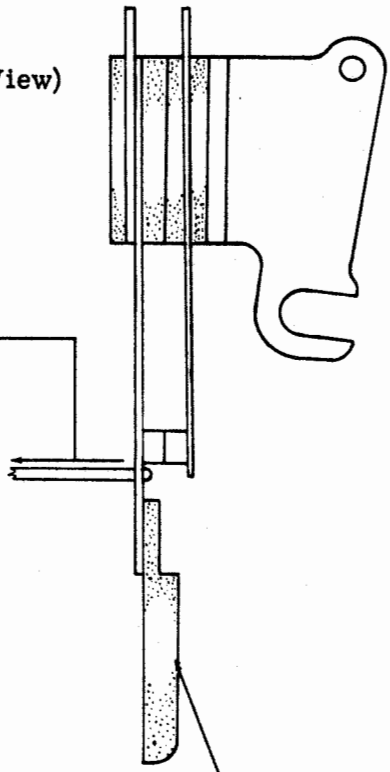
POSITION PRINTING CARRIAGE AT RIGHT MARGIN (SPACING CUTOUT OPERATED). INSERT STOP WITH WIDE SHELF IN SLOT IMMEDIATELY TO LEFT OF PAWL. SHELF SHOULD EXTEND TO RIGHT SO THAT PAWL RESTS ON IT.

3.10 Horizontal Tabulator Mechanism (continued)

Note: The following two horizontal tabulator mechanism adjustments should be checked before making the transmitter control adjustments shown below.

1. Operating lever extension link (3.02)
2. Operating lever adjusting plate (3.02)

If either of the above adjustments are changed, the transmitter control adjustments should be rechecked.

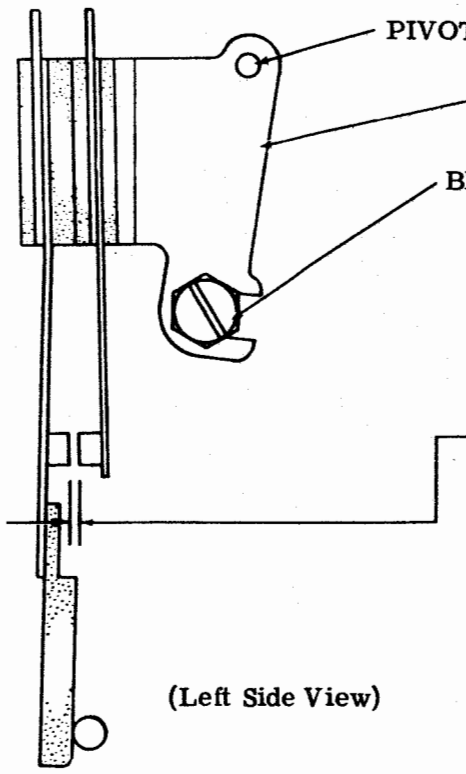


TRANSMITTER CONTROL CONTACT SPRING

Requirement
Operating lever in unoperated position.
Min 3-1/2 oz---Max 4-1/2 oz
to just open contacts.

To Adjust
Bend the long contact spring.

Note 1: To facilitate bending contact spring, the contact bracket assembly may be removed from its mounting plate and taken partially out of typing unit. Loosen mounting screw, pivot contact bracket toward rear until it is clear of screw, slide bracket to left off pin in upper end of bracket mounting plate and lift switch out to a more accessible position. Install contact bracket assembly in reverse procedure after adjusting spring tension. Tighten screw.



TRANSMITTER CONTROL CONTACT GAP

Requirement
Operating lever extension link pulled to rear until blocked by blocking lever. Clearance between contacts
Min 0.010 inch---Max 0.020 inch

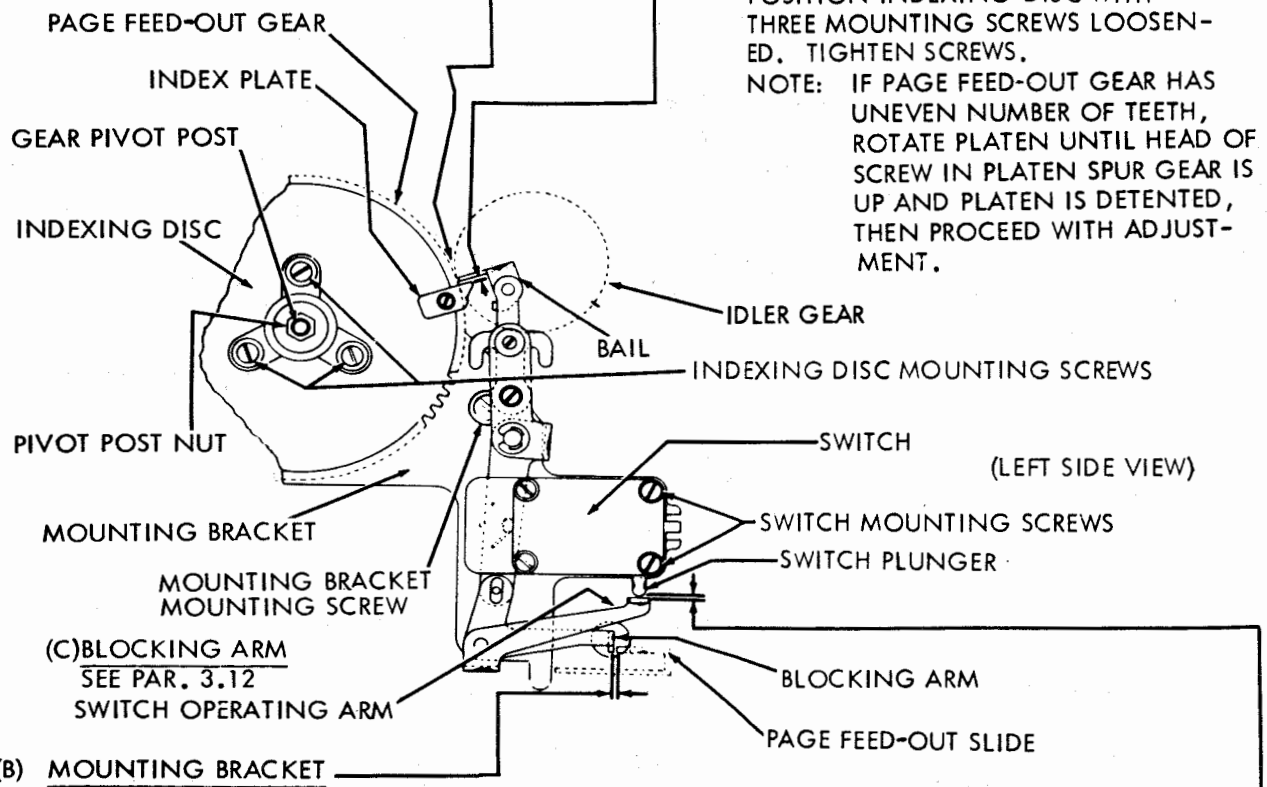
To Adjust
Position contact assembly bracket with mounting screw loosened. The bracket pivots about a pin at upper end of bracket.

Note 2: If there is not enough slack in switch cable assembly to permit access to mounting screw, loosen ties along cable and reposition cable to obtain a slight amount of slack at switch end.

3.11 Page Feed-Out Mechanism

(A) PAGE FEED-OUT GEAR PLAY
REQUIREMENT
BARELY PERCEPTIBLE BACKLASH.
TO ADJUST
POSITION GEAR PIVOT POST WITH NUT LOOSENED. TIGHTEN NUT.

(D) INDEXING DISC
REQUIREMENT
CLEARANCE BETWEEN HIGHEST NUMBERED INDEX PLATE AND BAIL
MIN. 0.020 INCH
MAX. 0.040 INCH
TO CHECK
LINE FEED CLUTCH DISENGAGED. INDEX PLATE ADJACENT TO BAIL. TAKE UP PLAY BETWEEN GEARS TO MAKE CLEARANCE MINIMUM.
TO ADJUST
DISENGAGE GEAR FROM IDLER. TURN HANDWHEEL CLOCKWISE UNTIL INDEX PLATE JUST OPERATES BAIL. ENGAGE FIRST TOOTH ON IDLER. POSITION INDEXING DISC WITH THREE MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.
NOTE: IF PAGE FEED-OUT GEAR HAS UNEVEN NUMBER OF TEETH, ROTATE PLATEN UNTIL HEAD OF SCREW IN PLATEN SPUR GEAR IS UP AND PLATEN IS DETENTED, THEN PROCEED WITH ADJUSTMENT.

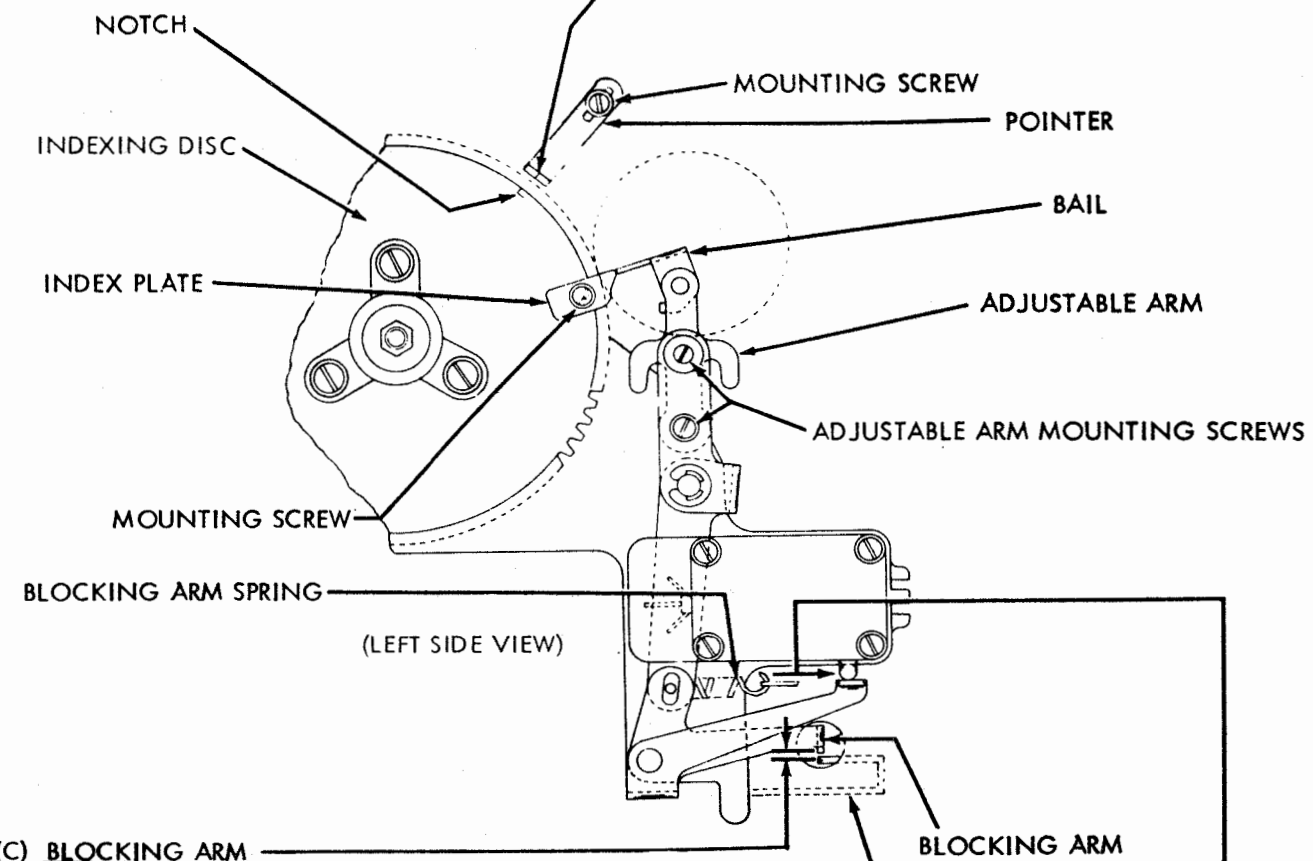


(B) MOUNTING BRACKET
REQUIREMENT
CLEARANCE BETWEEN BLOCKING ARM AND PAGE FEED-OUT SLIDE.
MIN. 0.002 INCH
MAX. 0.015 INCH
TO CHECK
SELECT FEED-OUT SEQUENCE CODE BAR CLUTCH DISENGAGED. TAKE UP PLAY IN BLOCKING ARM AND FEED-OUT SLIDE TO MAKE CLEARANCE MINIMUM.
TO ADJUST
POSITION LOWER PORTION OF MOUNTING BRACKET WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

(E) SWITCH OPERATING ARM (USED ONLY WITH TRANSMITTER CONTROL)
REQUIREMENT
BLOCKING ARM IN POSITION TO BLOCK SLIDE. CLEARANCE
MIN. SOME
MAX. 0.005 INCH
TO ADJUST
POSITION SWITCH WITH TWO MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

3.12 Page Feed-Out Mechanism (Cont.)

(F) POINTER
REQUIREMENT
LINE FEED CLUTCH DISENGAGED. INDEX PLATE ADJACENT TO BAIL AS SHOWN IN PAR. 3.11. POINTER SHOULD LINE UP WITH NOTCH IN INDEXING DISC AND CLEAR DISC BY APPROXIMATELY 1/16 INCH.
TO ADJUST
POSITION POINTER WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.



(C) BLOCKING ARM
REQUIREMENT
BAIL ON PEAK OF INDEX PLATE. CLEARANCE
MIN. 0.005 INCH
MAX. 0.045 INCH
TO ADJUST
POSITION ADJUSTABLE ARM WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.
NOTE
IF REQUIREMENT CANNOT BE MET FOR EACH PLATE, REPOSITION PLATE WITH MOUNTING SCREW LOOSENED.

(H) BLOCKING ARM SPRING
REQUIREMENT
BLOCKING ARM IN UNBLOCKED POSITION.
MIN. 3 OZS.
MAX. 5 OZS.
TO PULL SPRING TO OPERATING LENGTH.

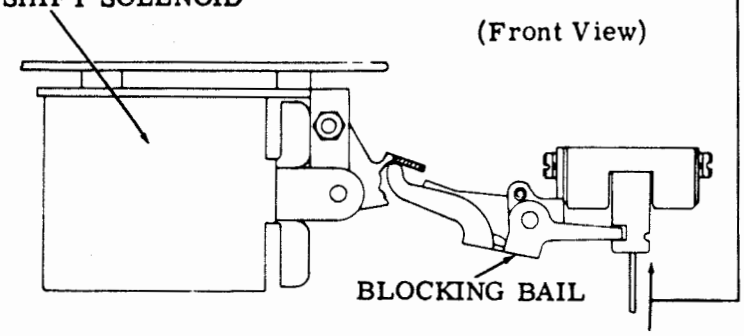
3.13 Selective Calling Mechanism

TYPEBOX CLUTCH TRIP LEVER (Selective Calling Units With or Without Off Line Shift Solenoid)

Clearance between typebox clutch trip lever and clutch disc stop lug should be
Min 0.040 inch---Max 0.055 inch
See (2.22).

PRINT SUPPRESSOR CODEBAR SPRING

Requirement
Suppressor codebar to left
Min 4-1/2 oz---Max 7-1/2 oz
to start codebar moving. Codebar should be free of binds.



Note 1: To check requirements (A, B, and D), set function clutch in stop position and all codebars to the right.

(A) CODEBAR SHIFT MECHANISM

(1) Requirement
With function clutch in stop position, latch function lever (shift mech.) on its lower releasing latch. Notch in supp. codebar should align with notches in other codebars when all codebars are shifted to the right.

To Adjust
Position upper or lower guideplate (2.33) with its clamp nuts loosened. Tighten nuts.

(2) Requirement
Repeat for each stunt case codebar shift mechanism.

Note: Position the associated guideplate so that the movement of the fork is not restricted within the range of adjustment.

(D) OFF LINE SHIFT SOLENOID BRACKET ASSEMBLY (Off Line Only)

Requirement
Notch in suppression codebar should align with notches in other codebars when all codebars are shifted to the right.

To Adjust
Position the solenoid bracket assembly with its mounting screws loosened. Tighten screws.

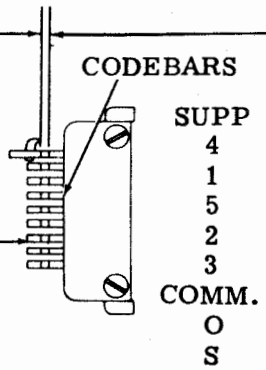
(C) TYPEBOX CLUTCH SUPPRESSION ARM
See (3.14)

(B) CONDITION CODE (ZERO) CODEBAR SHIFT MECHANISM

Requirement
With function clutch in stop position, latch function lever (shift mech.). The notch in condition code (zero) codebar should align with notches in other codebars when all codebars are shifted to the right.

To Adjust
Position the upper or lower guideplate (2.33) with its clamp nuts loosened. Tighten nuts.

Note 2: Position the associated guideplate so that the movement of the fork is not restricted.



(Front View)

3.14 Selective Calling Mechanism (Con't)

(C) TYPE BOX CLUTCH SUPPRESSION ARM (WITH OR WITHOUT SOLENOID SHIFT)

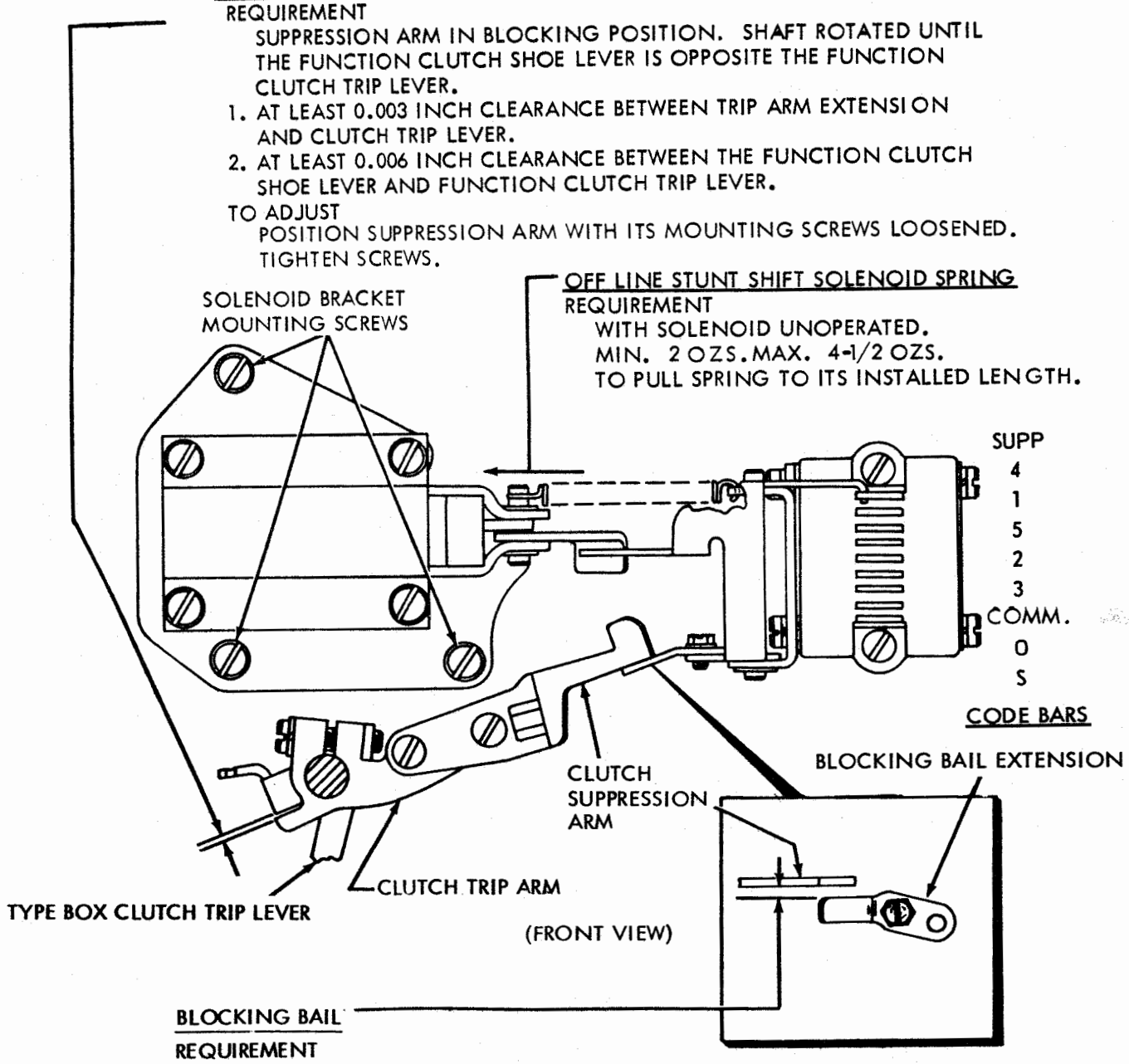
REQUIREMENT

SUPPRESSION ARM IN BLOCKING POSITION. SHAFT ROTATED UNTIL THE FUNCTION CLUTCH SHOE LEVER IS OPPOSITE THE FUNCTION CLUTCH TRIP LEVER.

1. AT LEAST 0.003 INCH CLEARANCE BETWEEN TRIP ARM EXTENSION AND CLUTCH TRIP LEVER.
2. AT LEAST 0.006 INCH CLEARANCE BETWEEN THE FUNCTION CLUTCH SHOE LEVER AND FUNCTION CLUTCH TRIP LEVER.

TO ADJUST

POSITION SUPPRESSION ARM WITH ITS MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.



REQUIREMENT

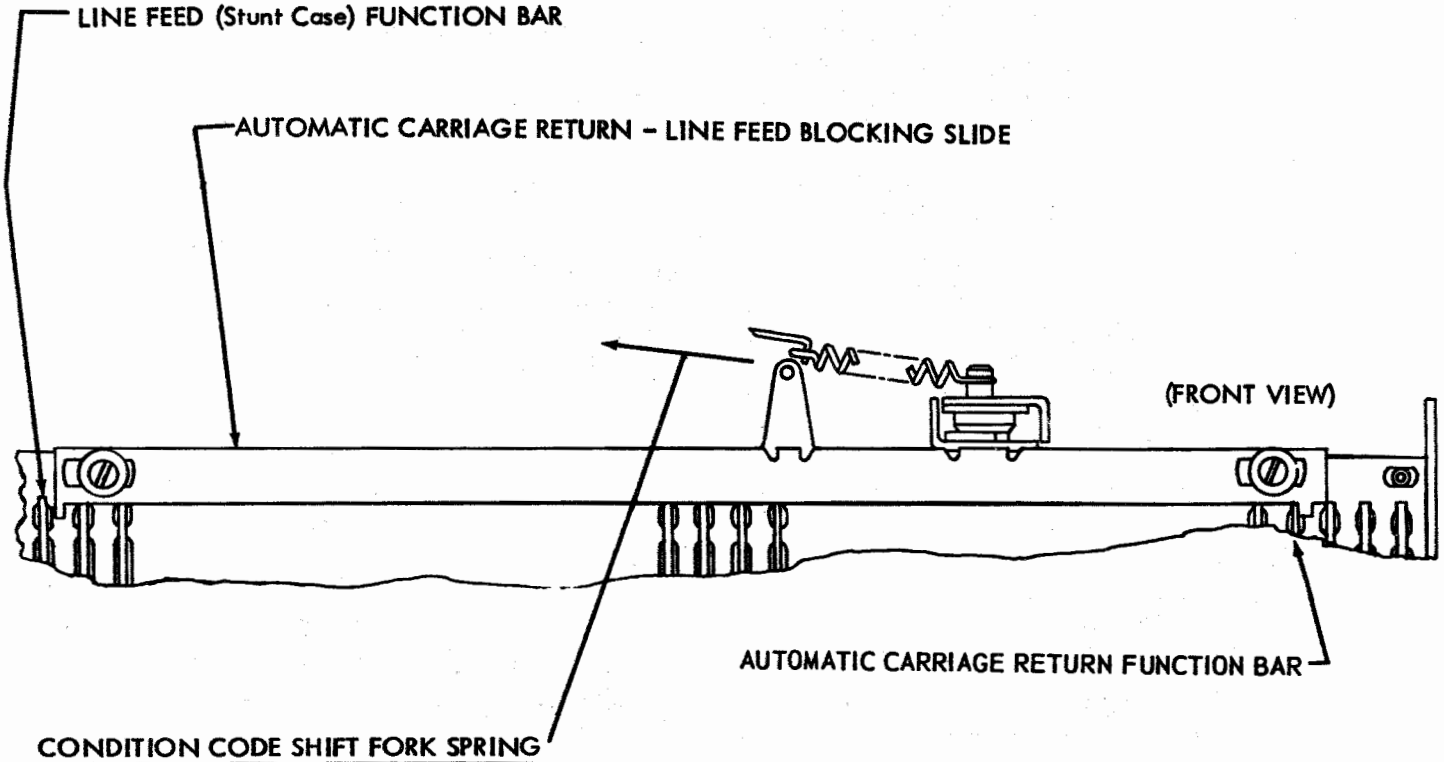
1. LATCH FUNCTION LEVER OF ANY STUNT CASE CODE BAR SHIFT MECHANISM AND ROTATE MAIN SHAFT UNTIL LOWER SURFACE OF THE SUPPRESSION ARM IS ALIGNED (APPROX) WITH BOTTOM SURFACE OF BLOCKING BAIL EXTENSION. CLEARANCE BETWEEN SUPPRESSION ARM AND BLOCKING BAIL EXTENSION, WITH PLAY TAKEN UP TO PRODUCE MINIMUM CLEARANCE.
   MIN. 0.008 INCH ——————————— MAX. 0.055 INCH

TO ADJUST

POSITION EXTENSION WITH ITS MOUNTING SCREW LOOSENED. TIGHTEN SCREW. REFINE THE ADJUSTMENT IF NECESSARY, AND RECHECK EACH SHIFT MECHANISM.

2. REFINE THE STUNT CASE CODE BAR SHIFT MECHANISM ADJUSTMENT OF ANY SHIFT MECHANISM THAT DOES NOT MEET THE ABOVE REQUIREMENT.

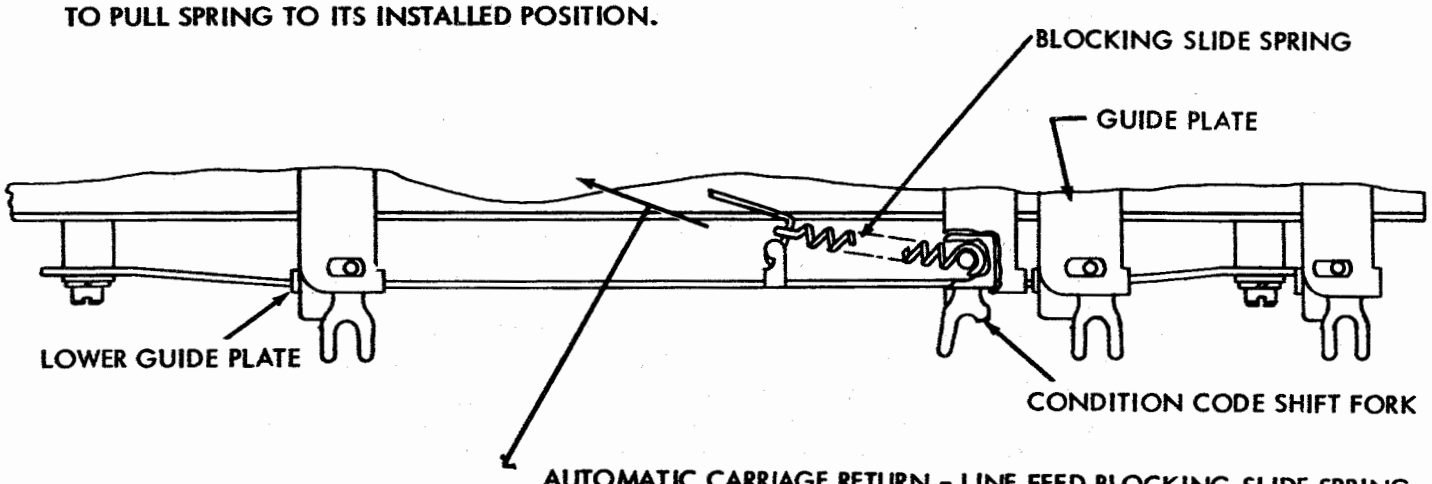
3.15 Selective Calling Mechanism (Cont.)



CONDITION CODE SHIFT FORK SPRING

REQUIREMENT

WITH CONDITION CODE SHIFT IN ITS UNOPERATED POSITION.
MIN. 1 OZ.
MAX. 3 OZS.
TO PULL SPRING TO ITS INSTALLED POSITION.



(TOP VIEW)

AUTOMATIC CARRIAGE RETURN - LINE FEED BLOCKING SLIDE SPRING

REQUIREMENT

WITH CONDITION CODE SHIFT FORK IN ITS UNOPERATED POSITION.
MIN. 1 OZ.
MAX. 3 OZS.
TO PULL SPRING TO ITS INSTALLED POSITION

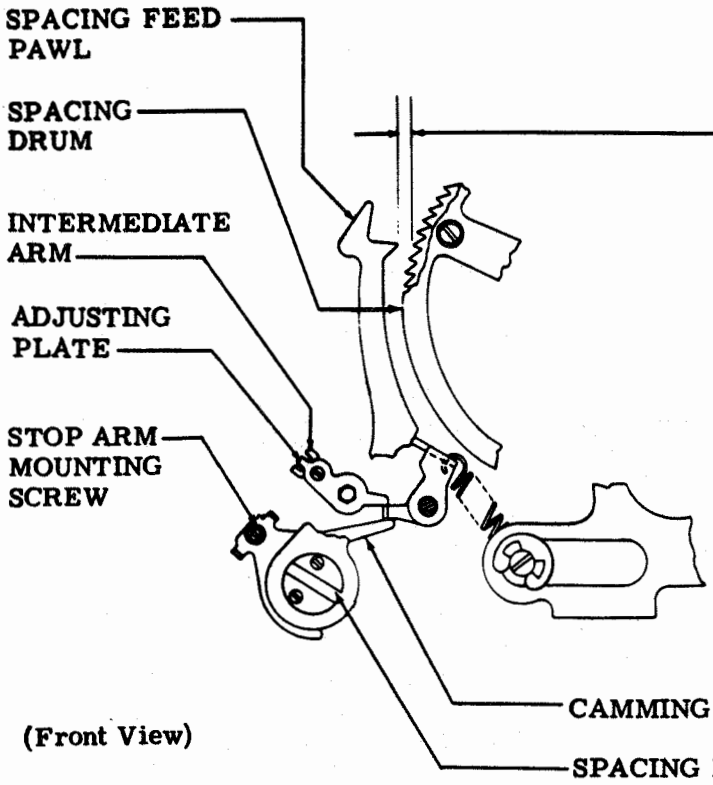
3.16 Local Backspace Mechanism

CAMMING BAIL STOP ARM

(1) Requirement (Preliminary)
Spacing clutch disengaged, front feed pawl in lower position, backspace bail held operated, clutch tripped and main shaft rotated until the front and rear feed pawl teeth are in line. Clearance between pawl and the tooth on the spacing drum ratchet wheel
Min 0.015 inch---Max 0.035 inch

To Adjust
Position the adjusting plate on the intermediate arm in the center of its adjusting range. Then position the camming bail stop arm with its mounting screw friction tight to meet the requirement. Tighten screw.

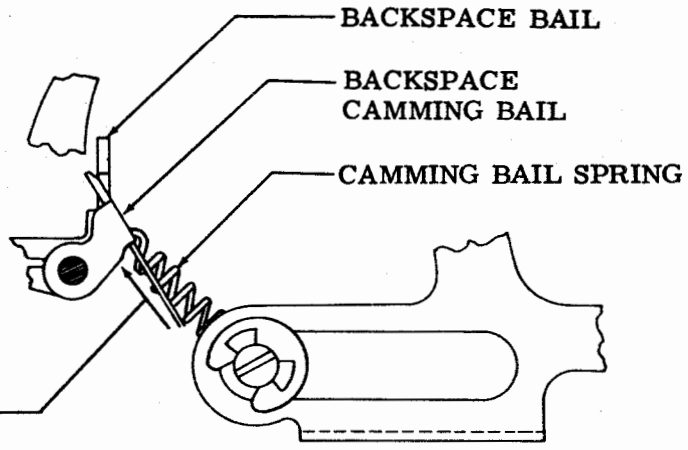
(2) Requirement (Final)
Min some
clearance between feed pawl teeth and ratchet throughout travel of carriage from left to right. Refine above adjustment.



(Front View)

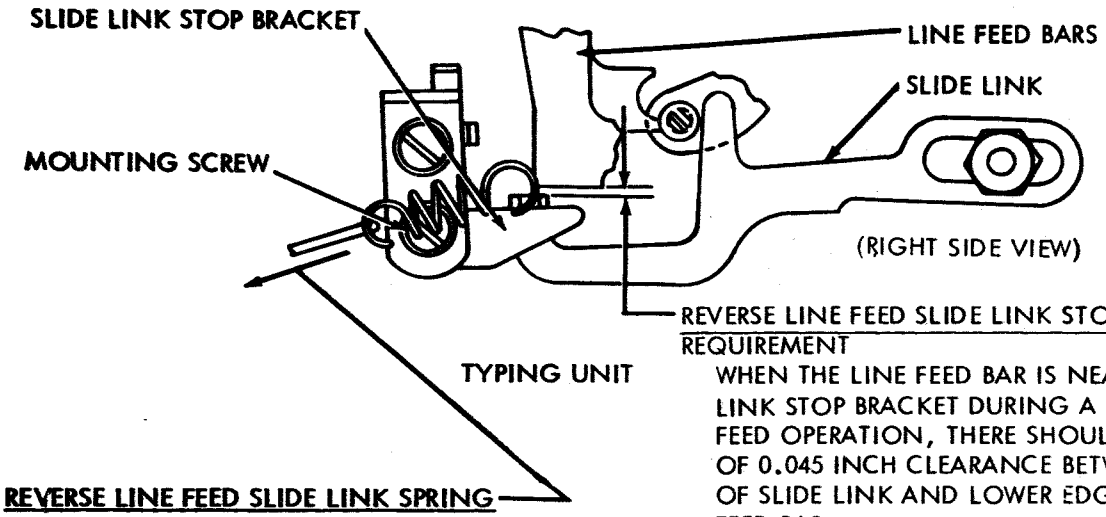
CAMMING BAIL SPRING

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



(Front View)

3. 17 Reverse Line Feed Mechanism



REVERSE LINE FEED SLIDE LINK SPRING
REQUIREMENT
SLIDE LINK RESTING ON ITS STOP BRACKET, LINE FEED CLUTCH DISENGAGED.
MIN. 1-1/2 OZS.
MAX. 3-1/2 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

REVERSE LINE FEED SLIDE LINK STOP BRACKET
REQUIREMENT
WHEN THE LINE FEED BAR IS NEAREST THE SLIDE LINK STOP BRACKET DURING A FORWARD LINE FEED OPERATION, THERE SHOULD BE A MINIMUM OF 0.045 INCH CLEARANCE BETWEEN TOP SURFACE OF SLIDE LINK AND LOWER EDGE OF CLOSEST LINE FEED BAR.

TO ADJUST
POSITION THE SLIDE LINK STOP BRACKET WITH ITS MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

3.18 Reverse Line Feed Mechanism (Cont.)

LINE FEED CLUTCH SPUR GEAR

REQUIREMENT

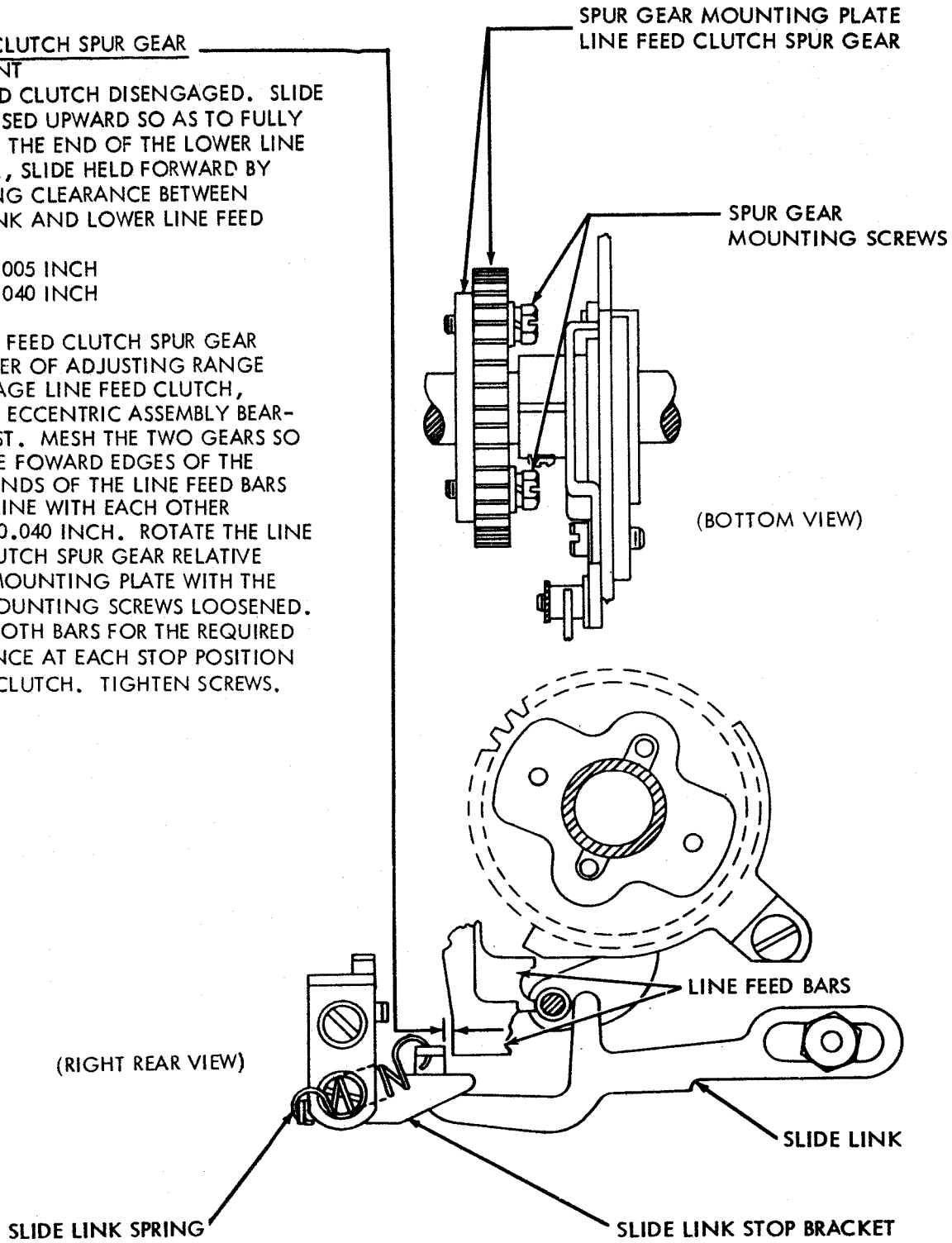
LINE FEED CLUTCH DISENGAGED. SLIDE LINK RAISED UPWARD SO AS TO FULLY ENGAGE THE END OF THE LOWER LINE FEED BAR, SLIDE HELD FORWARD BY ITS SPRING CLEARANCE BETWEEN SLIDE LINK AND LOWER LINE FEED BAR.

MIN. 0.005 INCH

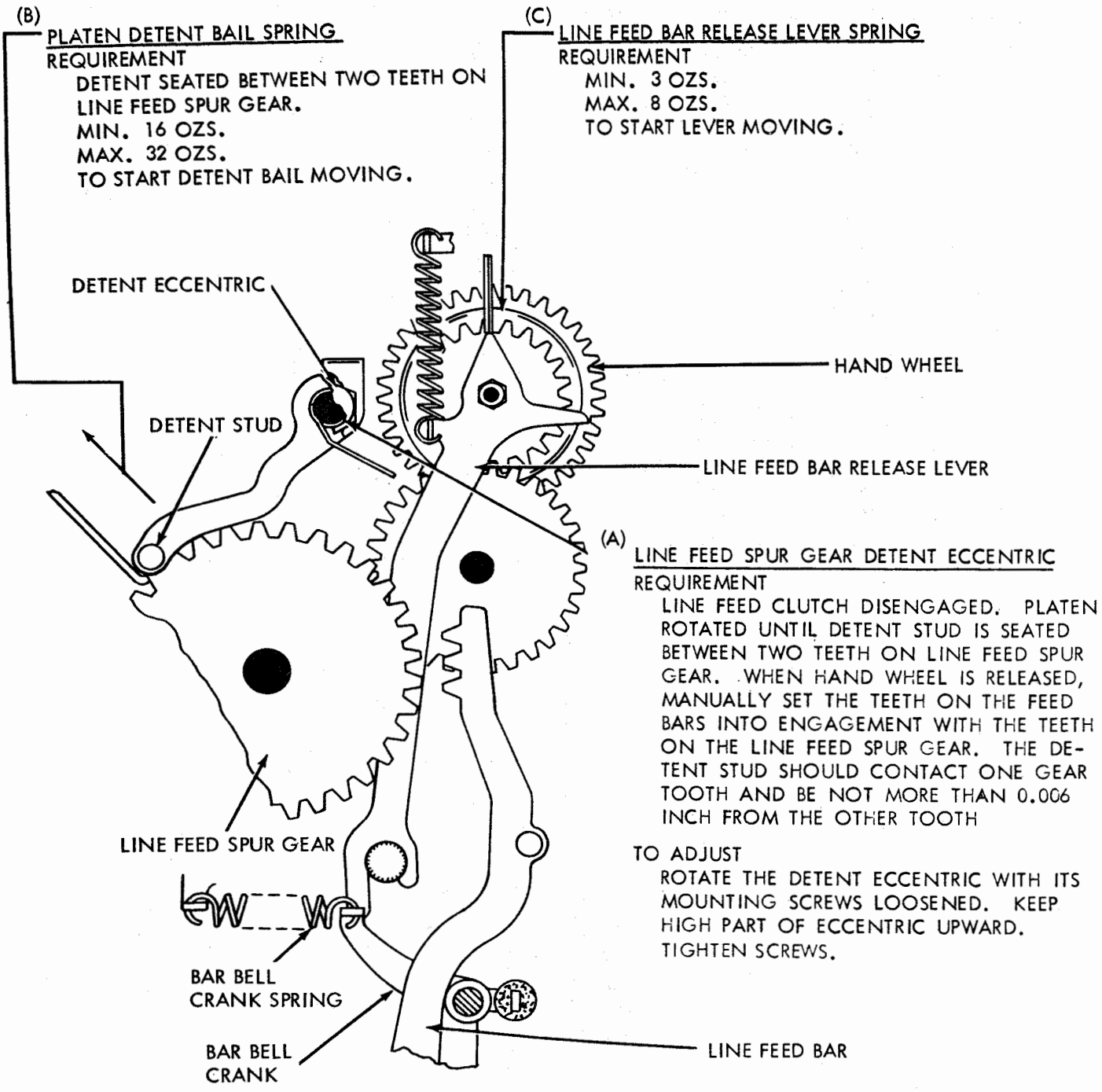
MAX. 0.040 INCH

TO ADJUST

SET LINE FEED CLUTCH SPUR GEAR AT CENTER OF ADJUSTING RANGE DISENGAGE LINE FEED CLUTCH, LOOSEN ECCENTRIC ASSEMBLY BEARING POST. MESH THE TWO GEARS SO THAT THE FOWARD EDGES OF THE LOWER ENDS OF THE LINE FEED BARS ARE IN LINE WITH EACH OTHER WITHIN 0.040 INCH. ROTATE THE LINE FEED CLUTCH SPUR GEAR RELATIVE TO ITS MOUNTING PLATE WITH THE GEAR MOUNTING SCREWS LOOSENED. CHECK BOTH BARS FOR THE REQUIRED CLEARANCE AT EACH STOP POSITION OF THE CLUTCH. TIGHTEN SCREWS.

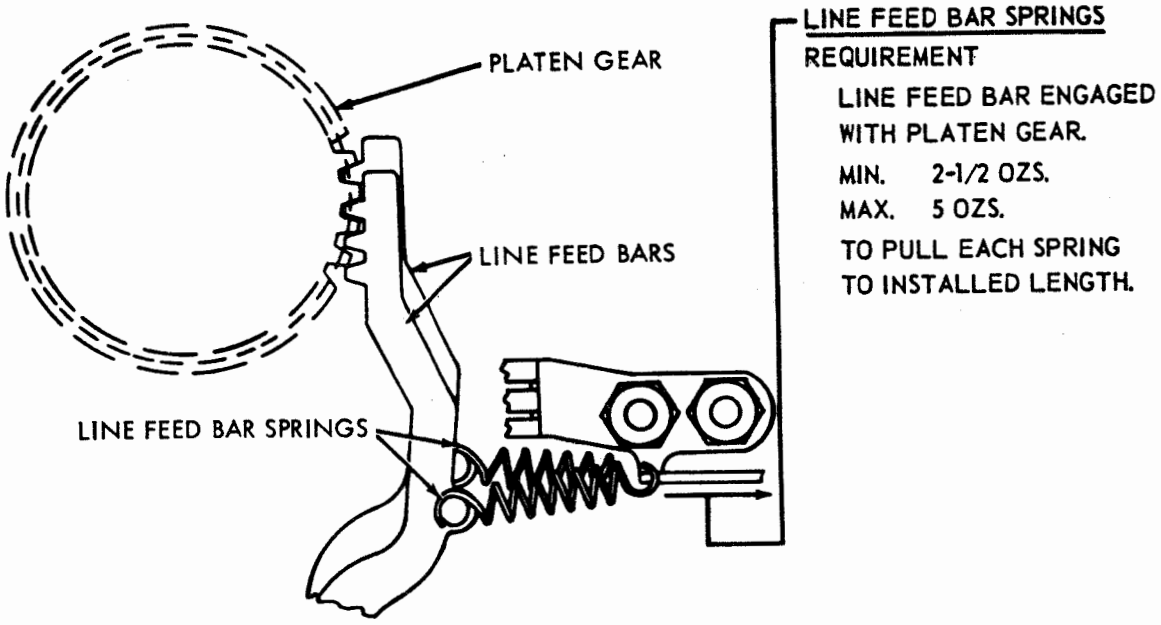


3.19 Reverse Line Feed Mechanism (Cont.)



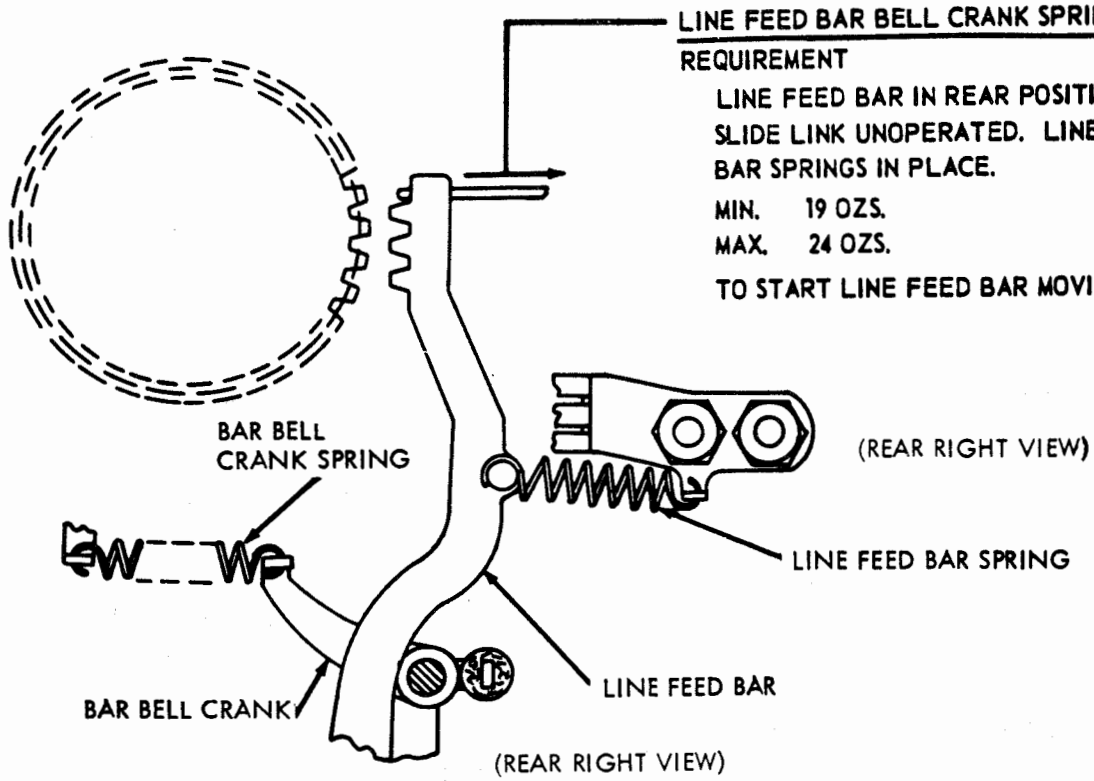
(RIGHT REAR VIEW)

3.20 **Reverse Line Feed Mechanism (Cont.)**

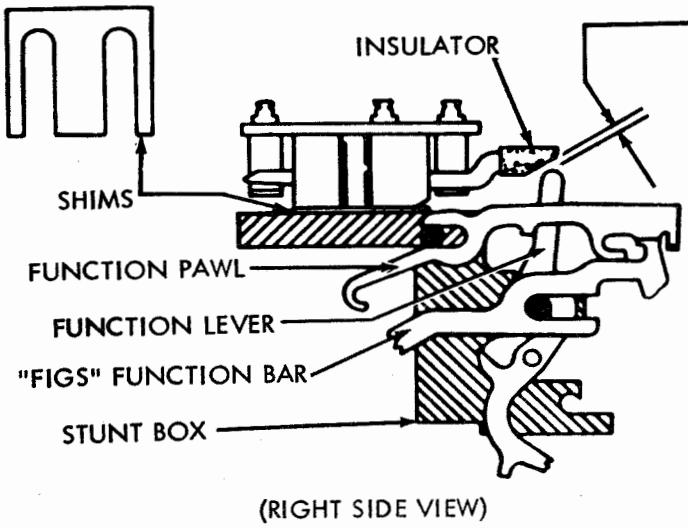


(REAR RIGHT VIEW)

3.21 Reverse Line Feed Mechanism (Cont.)

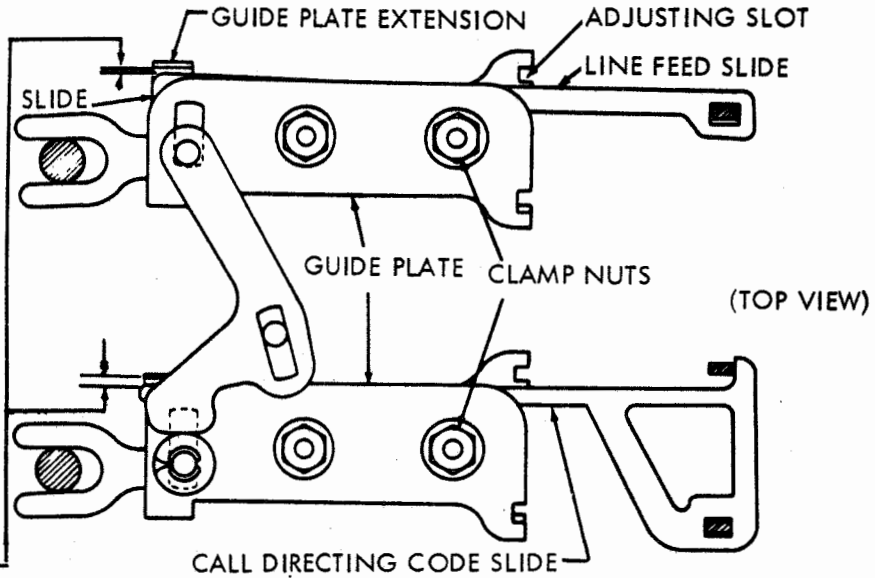


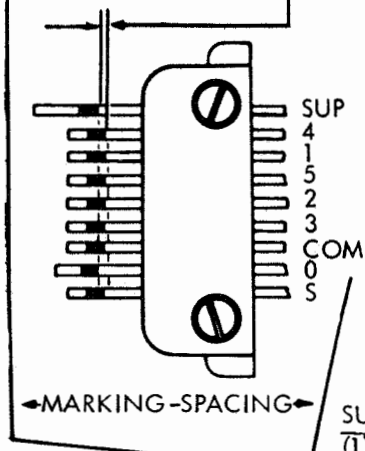
3.22 Answer-Back Mechanism (Switched Circuit Network)

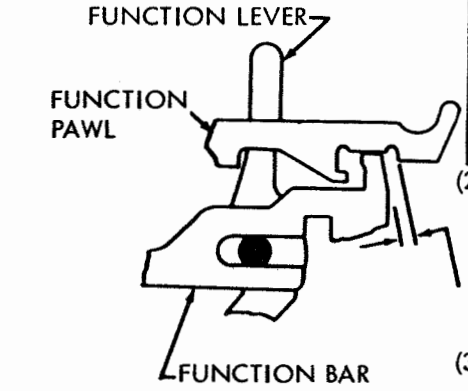


"FIGURES" STUNT BOX CONTACT
(STUNT BOX SLOT 32)
REQUIREMENT
CLEARANCE BETWEEN CONTACT INSULATOR AND FUNCTION LEVER SHOULD BE MIN. SOME --- MAX. 0.010 INCH
TO CHECK
STUNT BOX MOUNTED ON TYPING UNIT AND "LETTERS" COMBINATION MANUALLY SET UP ON TYPING UNIT SELECTOR. ROTATE TYPING UNIT MAIN SHAFT UNTIL FUNCTION LEVER IS IN EXTREME FORWARD POSITION TOWARD CONTACT INSULATOR.
TO ADJUST
WITH CONTACT MOUNTING SCREWS LOOSENED, ADD OR REMOVE SHIMS AS REQUIRED. TIGHTEN SCREWS.

3.23 Print Suppression Mechanism







ZERO CODE BAR SHIFT MECHANISM

(1) REQUIREMENT

FUNCTION CLUTCH ROTATED UNTIL FUNCTION BARS ARE IN EXTREME REAR POSITION. LINE FEED FUNCTION PAWL HOOKED OVER ITS FUNCTION BAR AND THEN STRIPPED. THE NOTCH IN THE ZERO CODE BAR SHOULD LINE UP VERTICALLY WITH THE NOTCHES IN THE 4, 1, 5, 2, 3 CODE BARS BUT MAY BE OUT OF ALIGNMENT

MAX. 0.010 INCH

IN THE MARKING DIRECTION.

(2) REQUIREMENT

MAX. 0.002 INCH

CLEARANCE BETWEEN GUIDE PLATE EXTENSION AND SLIDE.

TO ADJUST

POSITION THE GUIDE PLATE BY ITS LOWER ADJUSTING SLOT WITH ITS CLAMP NUTS LOOSENED. TIGHTEN NUTS.

SUPPRESSION CODE BAR MECHANISM

(1) REQUIREMENT

FUNCTION BARS IN REAR POSITION. CALL DIRECTING FUNCTION PAWL HOOKED OVER ITS FUNCTION BAR AND STRIPPED. NOTCH IN SUPPRESSION CODE BAR SHOULD LINE UP VERTICALLY WITH NOTCHES IN 4, 1, 5, 2, 3 CODE BARS BUT MAY BE OUT OF ALIGNMENT

MAX. 0.010 INCH

IN THE MARKING DIRECTION

(2) REQUIREMENT

MAX. 0.002 INCH

CLEARANCE BETWEEN GUIDE PLATE EXTENSION AND SLIDE.

TO ADJUST

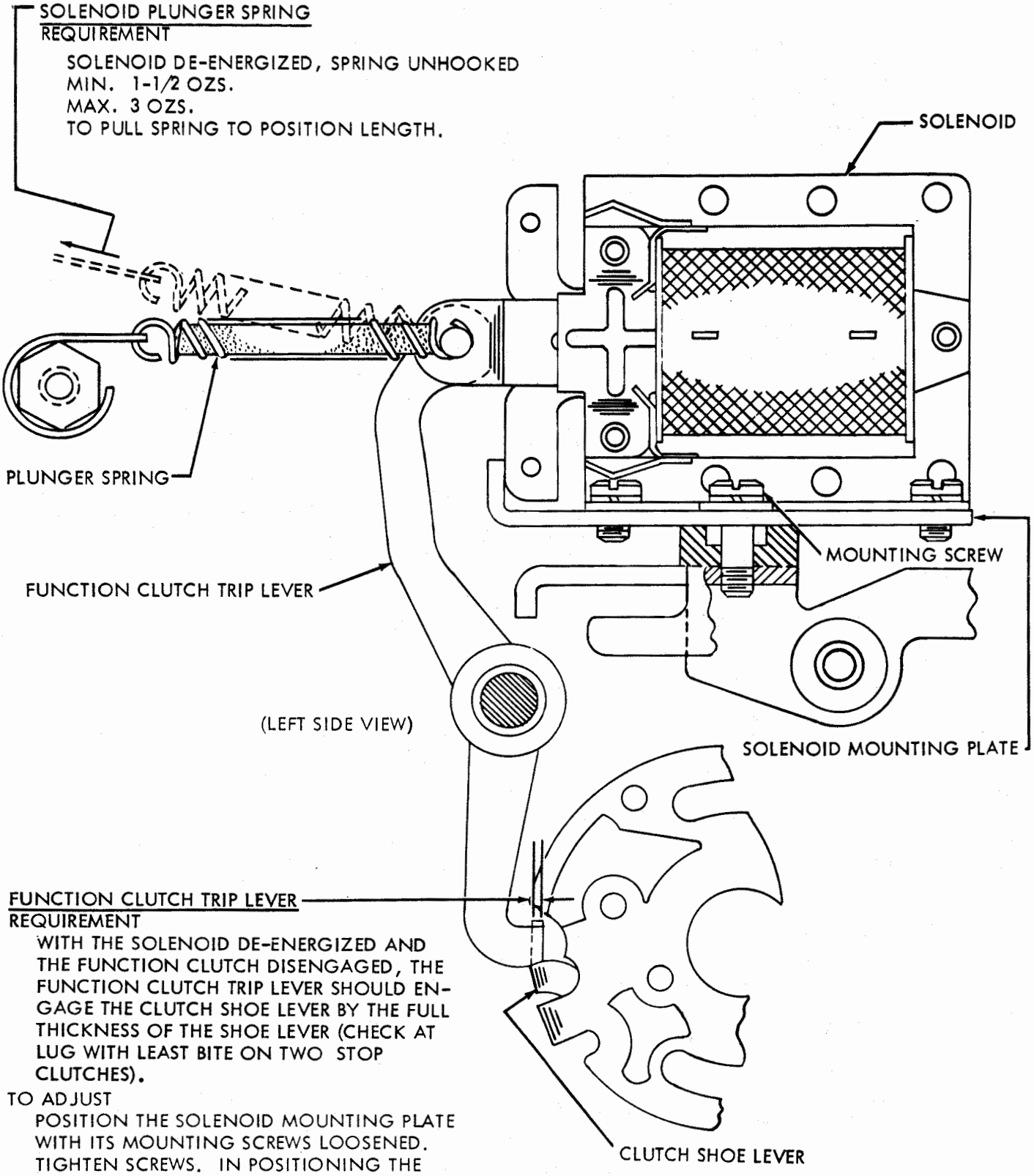
POSITION THE GUIDE PLATE BY ITS LOWER ADJUSTING SLOT WITH ITS CLAMP NUTS LOOSENED. TIGHTEN NUTS.

(3) REQUIREMENT

THERE SHOULD BE SOME CLEARANCE BETWEEN THE REAR END OF THE FUNCTION BAR AND THE FACE OF THE NOTCH ON THE FUNCTION PAWL WHEN THE LINE FEED FUNCTION PAWL AND CALL DIRECTING FUNCTION PAWL ARE ALTERNATELY HOOKED OVER THEIR RESPECTIVE FUNCTION BAR.

REFINE THE TWO ADJUSTMENTS ABOVE IF NECESSARY.

3.24 Continuous Spacing Mechanism



3.25 Continuous Spacing Mechanism (Cont.)

SUPPRESSION BAIL ADJUSTING BRACKET

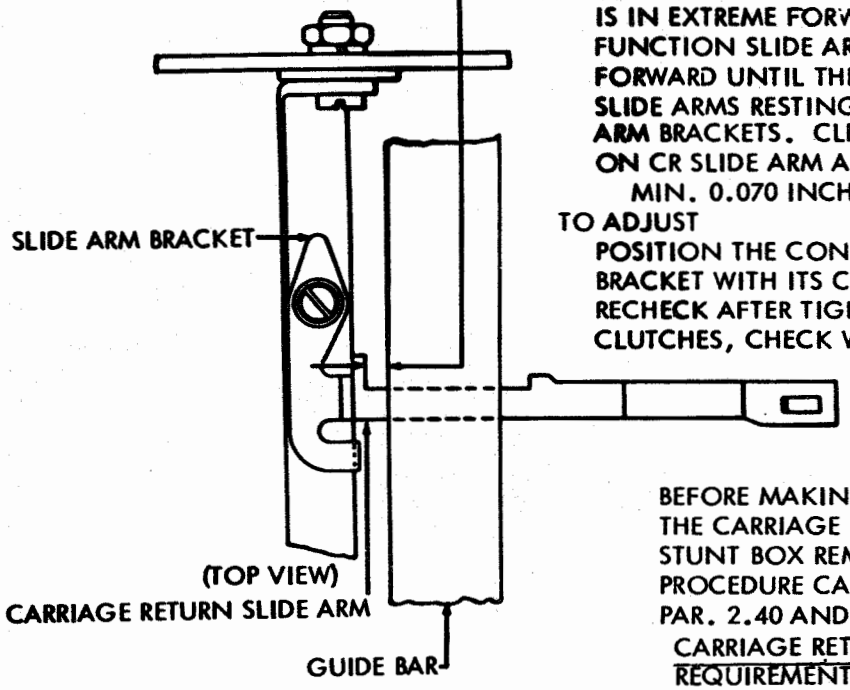
REQUIREMENT

FUNCTION CLUTCH ROTATED UNTIL SUPPRESSION BAIL IS IN EXTREME FORWARD POSITION. CR AND LF FUNCTION SLIDE ARMS MANUALLY PUSHED FORWARD UNTIL THE CR AND LF LEVERS ARE TRIPPED. SLIDE ARMS RESTING BACK AGAINST THEIR SLIDE ARM BRACKETS. CLEARANCE BETWEEN PROJECTION ON CR SLIDE ARM AND GUIDE BAR

MIN. 0.070 INCH --- MAX. 0.095 INCH

TO ADJUST

POSITION THE CONNECTING LINK ON THE ADJUSTING BRACKET WITH ITS CLAMP SCREW LOOSENED. RECHECK AFTER TIGHTENING SCREW. ON TWO-STOP CLUTCHES, CHECK WITH CLUTCH IN EACH POSITION.



NOTE

BEFORE MAKING THE FOLLOWING ADJUSTMENT CHECK THE CARRIAGE RETURN LEVER ADJUSTMENT. WITH THE STUNT BOX REMOVED, THE STANDARD ADJUSTING PROCEDURE CANNOT BE FOLLOWED. REFER TO PAR. 2.40 AND USE THE FOLLOWING PROCEDURE.

CARRIAGE RETURN LEVER

REQUIREMENT

CLEARANCE BETWEEN CARRIAGE RETURN LATCH BAIL AND CARRIAGE RETURN LEVER (PAR. 2.40) SHOULD BE

MIN. 0.006 INCH---MAX. 0.040 INCH

TO CHECK

PRINTING CARRIAGE IN RETURNED POSITION. TRIP FUNCTION CLUTCH AND ROTATE MAIN SHAFT UNTIL SUPPRESSION BAIL IS IN EXTREME FORWARD POSITION. LOCATE SPACING DRUM SO THAT CARRIAGE RETURN LATCH BAIL RESETS AGAINST CARRIAGE RETURN LEVER EXTENSION.

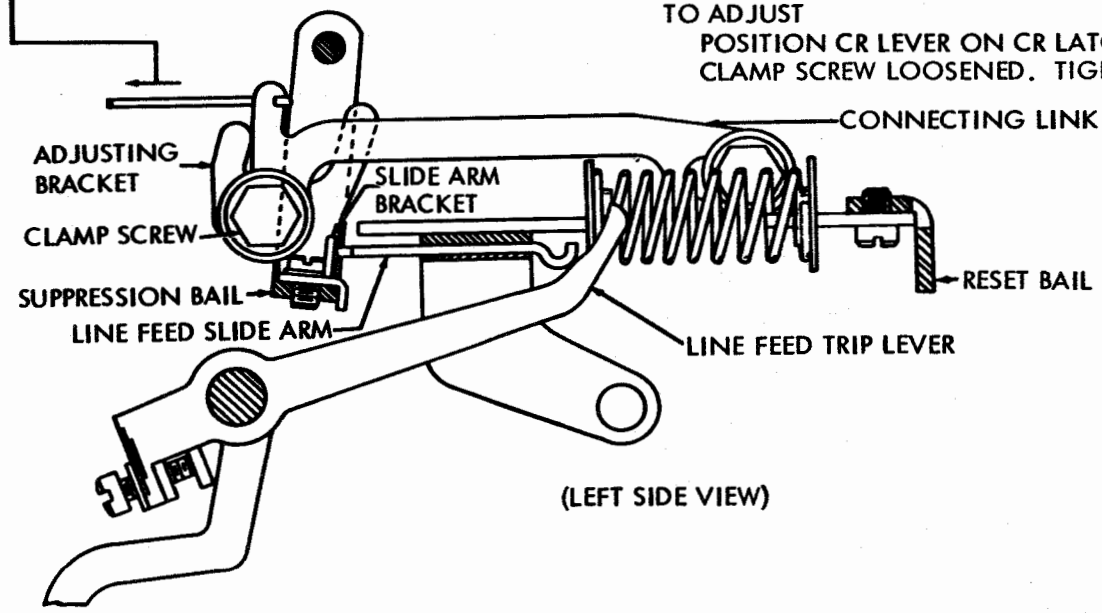
TO ADJUST

POSITION CR LEVER ON CR LATCH BAIL WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.

RESET BAIL OPERATING SPRING

REQUIREMENT

FUNCTION RESET BAIL IN FORWARD POSITION MIN. 2-1/4 LBS.---MAX. 3-1/2 LBS. TO START BAIL MOVING.



(LEFT SIDE VIEW)

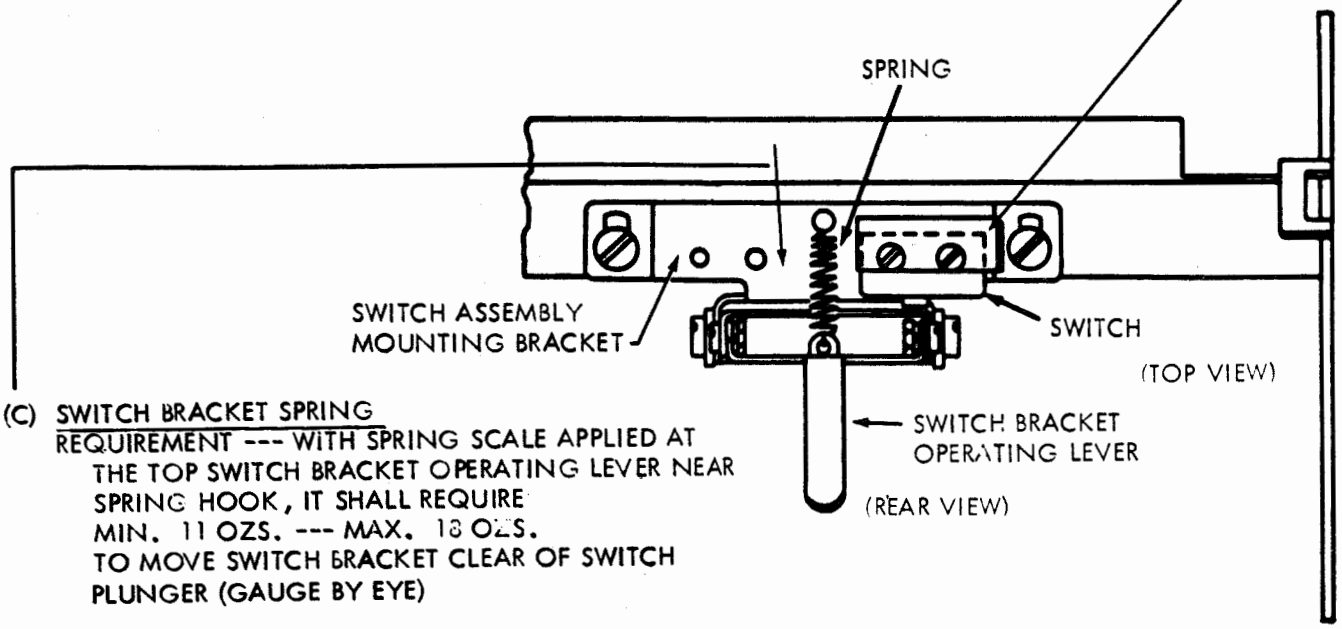
3.26 Paper-Out Alarm Mechanism

FOR EARLY DESIGN
SEE PARAGRAPH 4.30

(A) SWITCH POSITION

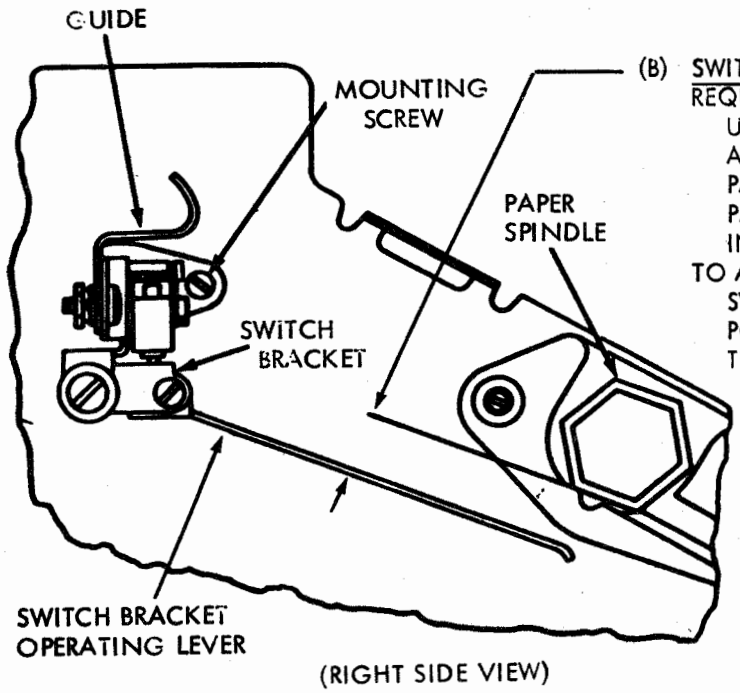
REQUIREMENT --- HORIZONTAL AXIS OF SWITCH SHALL LIE IN A PLANE PARALLEL TO THE SWITCH BRACKET WHEN THE SWITCH IS MOVED TOWARD UPPER LIMIT OF ITS TRAVEL IN THE MOUNTING HOLES.

TO ADJUST --- WITH ITS MOUNTING SCREWS (2) LOOSENED, POSITION AND ALIGN THE SWITCH. TIGHTEN SCREWS.



(C) SWITCH BRACKET SPRING

REQUIREMENT --- WITH SPRING SCALE APPLIED AT THE TOP SWITCH BRACKET OPERATING LEVER NEAR SPRING HOOK, IT SHALL REQUIRE MIN. 11 OZS. --- MAX. 18 OZS. TO MOVE SWITCH BRACKET CLEAR OF SWITCH PLUNGER (GAUGE BY EYE)



(RIGHT SIDE VIEW)

(B) SWITCH OPERATING LEVER

REQUIREMENT --- WITH PAPER ROLL REMOVED, UPPER SURFACE OF SWITCH BRACKET OPERATING LEVER SHALL LIE IN A PLANE THAT IS PARALLEL WITH UNDER SIDE OF HEXAGONAL PAPER SPINDLE AND REST APPROXIMATELY 1/4 INCH FROM THE SPINDLE.

TO ADJUST --- LOOSEN SCREW THAT SECURE THE SWITCH ASSEMBLY MOUNTING BRACKET AND POSITION THE ASSEMBLY UPWARD OR DOWNWARD. TIGHTEN SCREW.

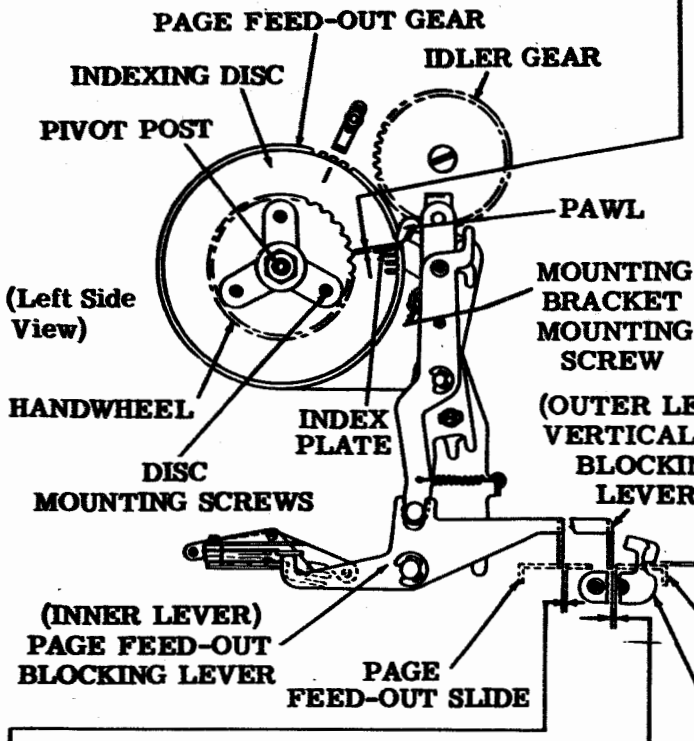
3.27 Vertical Tabulation and Transmitter Distributor Control Mechanism

(C) PAGE FEED-OUT GEAR PLAY

Requirement
Barely perceptible backlash between idler gear and feed-out gear.

To Adjust
Position gear pivot post with nut loosened. Tighten nut.

Note: Gears should mesh accurately when checked at 3 equal distances around circumference of gear.



(D) BLOCKING LEVER
See 3.28

(E) INDEXING DISC

Requirement
Clearance between index plate and pawl should be
Min 0.015 inch---Max 0.040 inch

To Check
Line feed clutch disengaged. Index plate adjacent to pawl. Slack in gears taken up to make gap a minimum.

To Adjust
Pull feed-out gear out of engagement with idler gear. Turn feed-out gear handwheel clockwise until index plate just operates the pawl, then engage first tooth on idler. Position indexing disc with three mounting screws loosened. Tighten screws.

(A) VERTICAL TABULATOR SLIDE RETAINER (On Units So Equipped)

Requirement
Clearance between vertical tab slide and retaining edge of retainer should be
Min some---Max 0.012 inch

To Adjust
Position retainer forward and locate it up or down with mounting screws loosened. Tighten screws.

(B) MOUNTING BRACKET

(1) Requirement
Clearance between feed-out blocking lever (inner lever) and feed-out slide
Min some---Max 0.020 inch

To Check
Select upper case "Z", hold stripper blade and rotate main shaft until page feed-out slide is in its most forward position. Take up play in page feed-out blocking lever to make clearance a minimum.

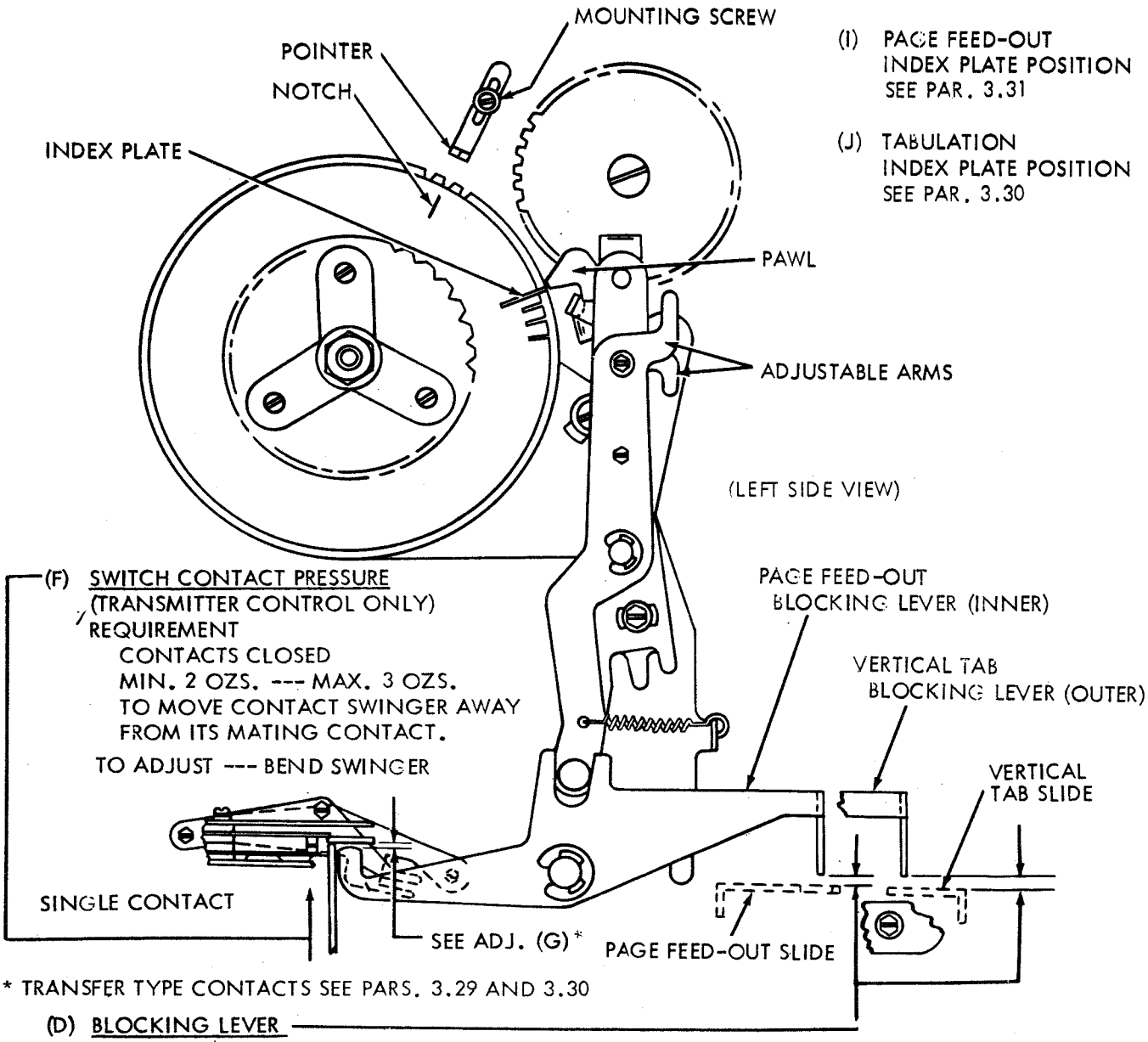
(2) Requirement
Clearance between vertical tab slide and vertical tab blocking lever (outer lever)
Min 0.002 inch

To Check
Select upper case "J" and rotate main shaft until vertical tab slide is in its most forward position. Take up play in vertical tab blocking lever to make clearance a minimum.

To Adjust
Position lower portion of mounting bracket with mounting screws loosened. Tighten screws.

3.28 Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)

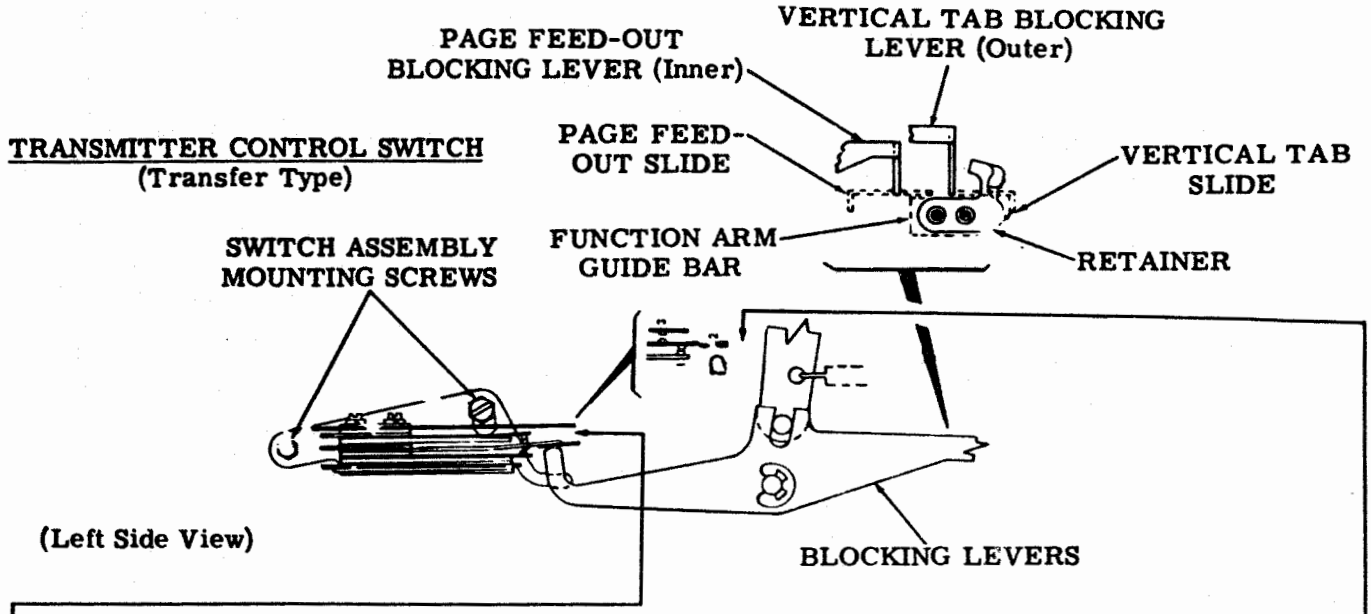
(H) POINTER
REQUIREMENT
LINE FEED CLUTCH DISENGAGED. INDEX PLATE ADJACENT TO PAWL. POINTER SHOULD LINE UP WITH NOTCH IN INDEXING DISC AND CLEAR ANY INDEX PLATE BY APPROXIMATELY 1/16 INCH.
TO ADJUST
POSITION POINTER ON SIDE FRAME WITH ITS MOUNTING SCREW LOOSENED. TIGHTEN SCREW.



* TRANSFER TYPE CONTACTS SEE PARS. 3.29 AND 3.30

(D) BLOCKING LEVER
REQUIREMENT
CLEARANCE BETWEEN BOTTOM OF BLOCKING LEVER AND TOP OF SLIDE WHEN PAWL IS ON PEAK OF INDEX PLATE SHOULD BE
MIN. 0.005 INCH --- MAX. 0.045 INCH
TO ADJUST
TRIP LINE FEED CLUTCH. ROTATE MAIN SHAFT UNTIL PAWL IS ON PEAK OF INDEX PLATE. POSITION ADJUSTABLE ARM WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS. MAKE ADJUSTMENT FOR EACH BLOCKING LEVER.

3.29 Vertical Tabulation and Transmitter Distributor Control Mechanism (continued)



TRANSMITTER CONTROL SWITCH (Transmitter Control Only)

(1) Requirement (For Transfer Type Contacts)

With normally closed (lower) contacts closed, clearance between insulated extension of swinger and lobes of feed-out and vertical tabulator blocking lever shall be

Min some clearance---Max 0.005 inch

To Check

Rotate main shaft until feed-out and vertical tabulator blocking levers are unoperated (blocking levers resting on slides).

To Adjust

With transmitter control switch mounting screws loosened, position the contact assembly. Tighten screws.

(2) Requirement

With the normally open (upper) contacts closed

(a) Lobe of feed-out blocking lever (inner lever) shall fully engage insulated extension of contact swinger.

(b) The feed-out blocking lever shall rest firmly on the function arm guide bar (internal — check by lifting lever lightly at contact end) and also separate the normally open contact spring from its stiffener as the upper contact closes.

To Check

Select feed-out code combination, rotate main shaft until feed-out slide is in its extreme forward position and feed-out blocking lever drops behind its slide to close normally opened contacts.

To Adjust

With contact pile-up mounting screws loosened, position the assembly. Tighten screws.

(3) Requirement

With the normally open (upper) contacts closed

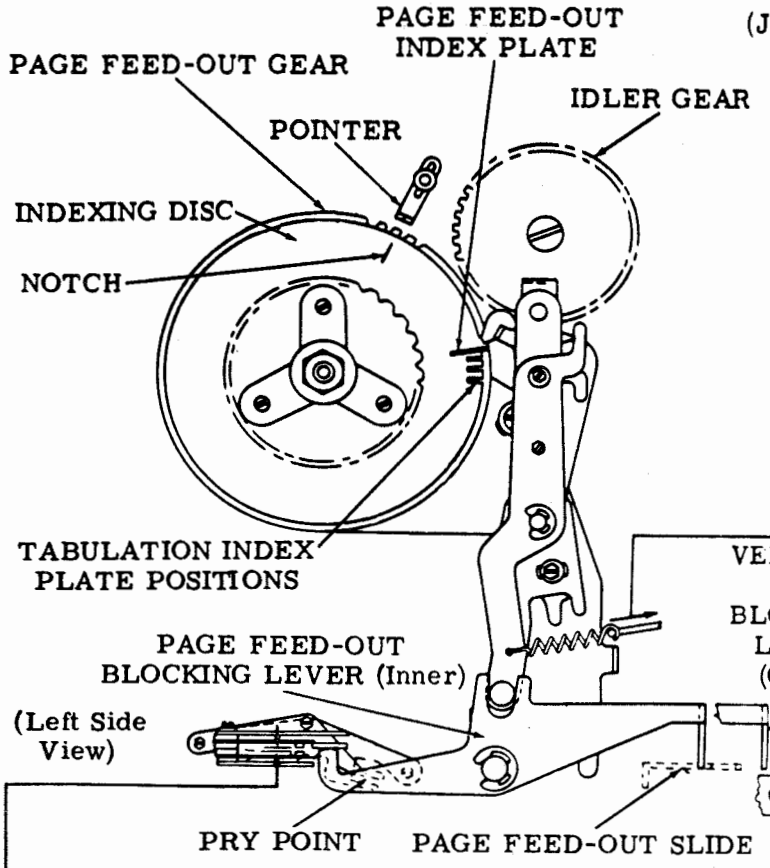
(a) Lobe of vertical tabulator blocking lever (outer) shall fully engage the insulated extension of the swinger.

(b) The vertical tabulator blocking lever shall rest firmly on the function arm guide bar (internal — check by lifting lever lightly at contact end) and also separate normally open contact spring from its stiffener as upper contact closes.

To Check

Select vertical tabulator combination and proceed as in item To Check of Requirement (2) above.

3.30 Vertical Tabulation and Transmitter Distributor Control Mechanism (continued)



(J) TABULATION INDEX PLATE POSITION

Requirement
With requirement (I) met, line feed platen to desired first line of printing in that form.

To Position
Place tabulation index plate to align with pointer on side of printer. Install additional tab index plates at succeeding desired printing lines within the form. When tabulation at a given point is not needed, rotate tab index plates (1/4 turn) on their sides.

(K) BLOCKING LEVER SPRING*

Requirement
With spring unhooked and blocking lever on top of slide
Min 9 oz---Max 11 oz
to pull respective spring to position length.

*Blocking lever springs used with transfer type switch (3.31)
Min 12 oz---Max 13-1/2 oz

(G) TRANSMITTER CONTROL SWITCH
(Transmitter Control Only)

(1) Requirement (For Single-Contact Type Control)
With transmitter control contacts closed, there should be some clearance between insulated extension of swinger and lobe of feed-out and vertical tabulator blocking levers.

To Check
Rotate main shaft until feed-out and vertical tabulator blocking levers are unoperated (resting on top of slides).

To Adjust
Position the contact assembly with its mounting screws loosened. Tighten screws.

(2) Requirement
With transmitter control contacts opened by feed-out blocking lever, clearance between switch contacts shall be
Min 0.010 inch---Max 0.020 inch

To Check
Select feed-out code combination. Rotate main shaft until feed-out slide is in its extreme forward position and feed-out blocking lever drops behind its slide to open contacts.

To Adjust
Refine requirement (1).

(3) Requirement
With control contacts opened by vertical tabulator blocking lever clearance between switch contacts should be
Min 0.010 inch---Max 0.020 inch

To Check
Select vertical tabulator code combination. Rotate main shaft until vertical tab slide is in its extreme forward position and vertical tabulator blocking lever drops behind its slide.

To Adjust
Refine requirement (1).

3.31 **Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)**

(l) PAGE FEED-OUT INDEX PLATE POSITION

REQUIREMENT --- PLACE AN INDEX PLATE IN THE NUMBERED SLOTS ON DISC CORRESPONDING TO LENGTH OF PAGE FORM TO BE USED. SYNCHRONIZE PAGE FEED-OUT WITH A FORM BY POSITIONING FORM SO THAT TYPING UNIT WILL PRINT IN FIRST TYPING LINE OF THE FORM. WHEN TYPING UNIT IS IN STOP POSITION, TOP OF RIBBON GUIDE SHOULD ALIGN WITH BOTTOM OF PRINTING LINE.

TO POSITION --- WITH PAGE FORM IN DESIRED POSITION, DISENGAGE PAGE FEED-OUT GEAR FROM ITS IDLER GEAR. ROTATE FEED-OUT GEAR UNTIL NOTCH IN INDEXING DISC ALIGNS WITH POINTER ON SIDE OF PRINTER, RE-ENGAGE GEARS.

SWITCH CONTACTS (TRANSMITTER CONTROL ONLY)

REQUIREMENTS --- FOR TRANSFER TYPE CONTROL SWITCH

1. WITH NORMALLY CLOSED (LOWER) CONTACTS CLOSED, LIFT SWINGER FREE OF MATING CONTACT. IT SHALL REQUIRE A MINIMUM OF 30 GRAMS TO MOVE LOWER CONTACT SPRING AWAY FROM ITS STIFFENER.

   TO ADJUST - FORM THE LOWER CONTACT SPRING BY BENDING.

2. WITH LOWER CONTACT CLOSED
   MIN 30 GRAMS---MAX 45 GRAMS
   TO MOVE SWINGER FROM ITS MATING CONTACTS.

   TO ADJUST - FORM THE SWINGER BY BENDING.

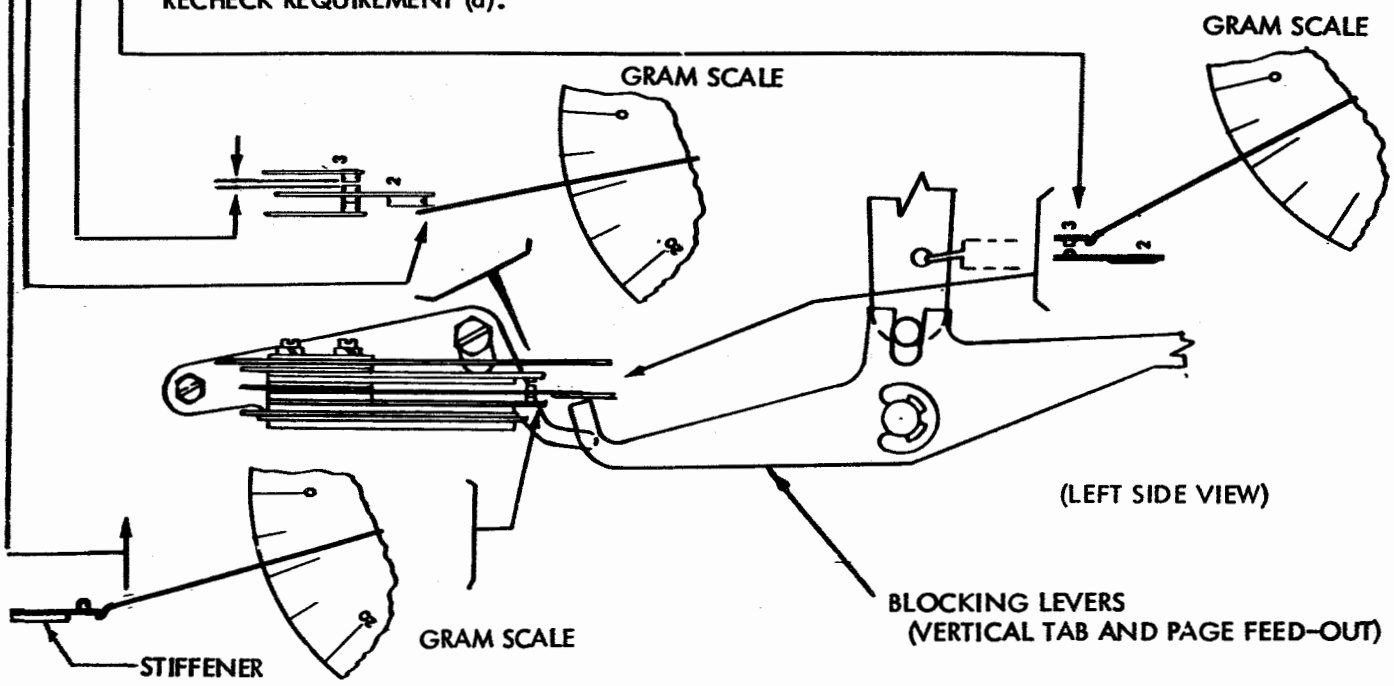
3. WITH LOWER CONTACT CLOSED

   (a) GAP BETWEEN UPPER CONTACT AND MATING CONTACT OF SWINGER
   MIN 0.008 INCH--- MAX 0.015 INCH

   TO ADJUST - POSITION STIFFENER OF NORMALLY CLOSED CONTACT.

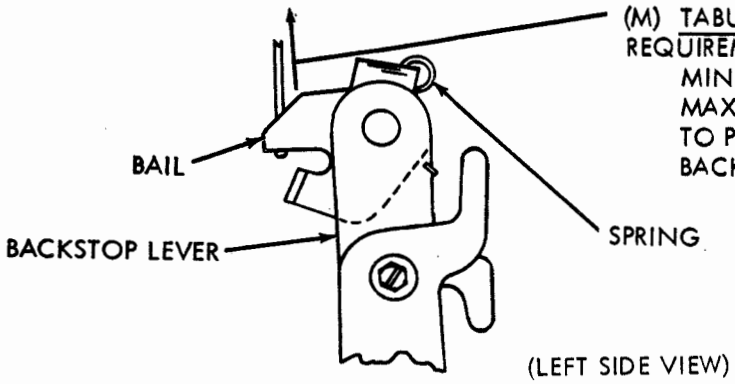
   (b) WITH A GAP OF 0.008 TO 0.015 INCH, IT SHALL REQUIRE
   MIN 25 GRAMS---MAX 35 GRAMS
   TO PULL UPPER CONTACT AWAY FROM ITS STIFFENER

   TO ADJUST - FORM THE UPPER CONTACT SPRING BY BENDING.
   RECHECK REQUIREMENT (a).

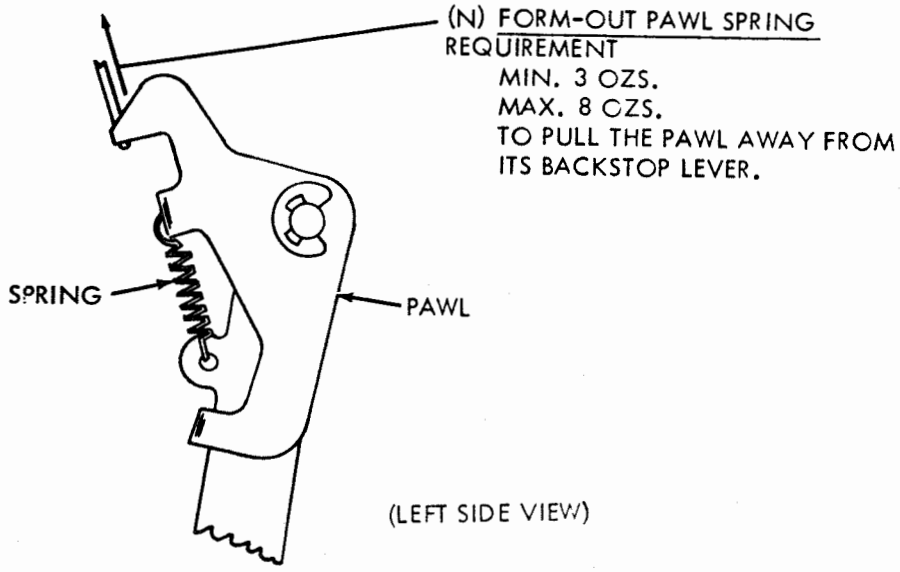


3. 32 Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)

(L) LINE FEED CLUTCH TRIP LEVER SPRING
SEE PAR. 2.20



(O) STUNT BOX SWITCH SPRING
SEE PAR. 2.66



3.33 Universal Contact (Selector) Mechanism

(A) CONTACT MOUNTING BRACKET

Requirement
The drive arm linkage should be vertically aligned to prevent binds.

To Adjust
Position the contact mounting bracket with its mounting screws loosened. Tighten screws.

(B) CONTACT BLOCK

Requirement
The contact faces should be in a vertical straight line.

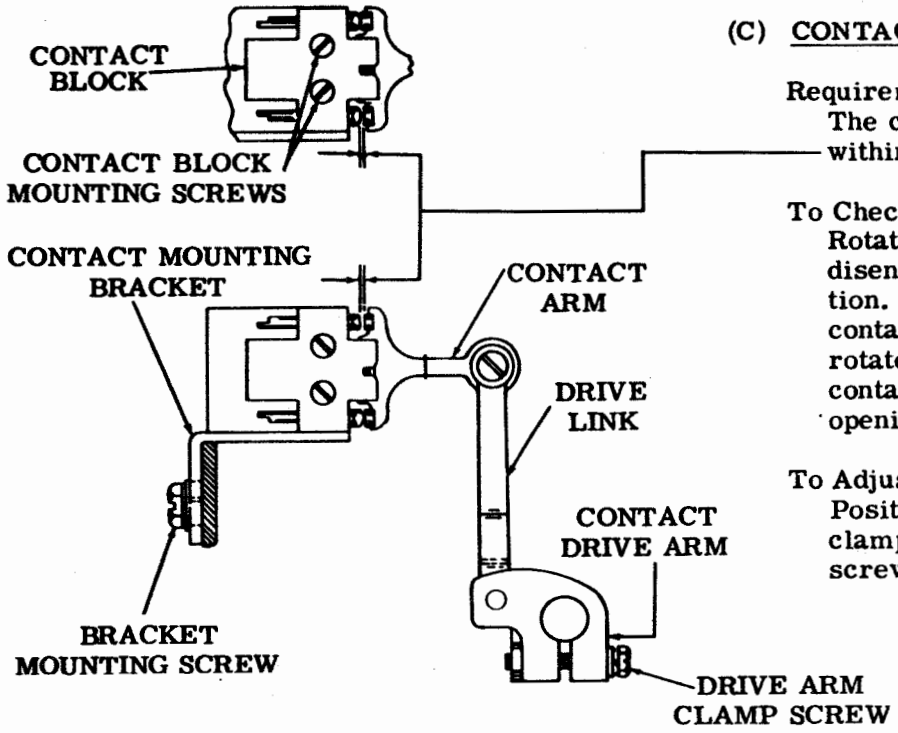
To Adjust
Loosen two contact mounting screws. Press contact block toward rear of typing unit firmly against screws and tighten screws.

(C) CONTACT DRIVE ARM POSITION

Requirement
The contacts should open equally within 0.010 inch.

To Check
Rotate codebar clutch until it is disengaged and latched in stop position. Measure gap between upper contacts. Trip codebar clutch and rotate 180 degrees or until lower contact gap reaches its maximum opening. Measure the gap.

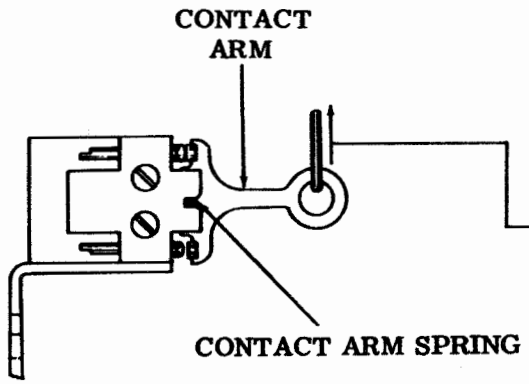
To Adjust
Position contact drive arm with its clamp screw loosened. Tighten screw.



(Right Side View)

(D) CONTACT ARM SPRING

Requirement
With shoulder screw which connects contact arm to drive link removed and spring scale applied vertically upward or downward
Min 2 oz---Max 5 oz
to open either contact.



(Right Side View)

3.34 Universal Contact (Stunt Box) Mechanism

Note 1: These adjustments should be made with contact bracket assembly removed.

Note 2: If contact screws are disturbed to obtain a requirement, they must be retightened and all preceding requirements rechecked.

CAUTION: IF IT IS NECESSARY TO INCREASE CONTACT SPRING TENSIONS, IT IS ADVISABLE TO REMOVE CONTACT SPRING TO INCREASE ITS CURVATURE. AVOID DAMAGE TO CONTACT SPRINGS WHEN ADJUSTING STIFFENERS IN ASSEMBLY.

(A) CONTACT

(1) Requirement
Contact springs and stiffeners mounted vertically and contact points in alignment (gauge by eye).

To Adjust
Position contact springs and stiffeners with assembly screws loosened. Tighten screws.

(2) Requirement
Stiffeners should be parallel with contact brackets.

To Adjust
Form stiffener.

(3) Requirement
Contact springs should rest against their stiffeners throughout their width.

To Adjust
Bend top formed section of stiffener. If necessary, bend contact springs.

(B) NORMALLY OPEN CONTACT GAP

Requirement
With the normally closed contacts closed, the normally open contact should be open
Min 0.020 inch---Max 0.025 inch

To Adjust
Bend stiffener.

(C) CONTACT SPRING (Two Springs)

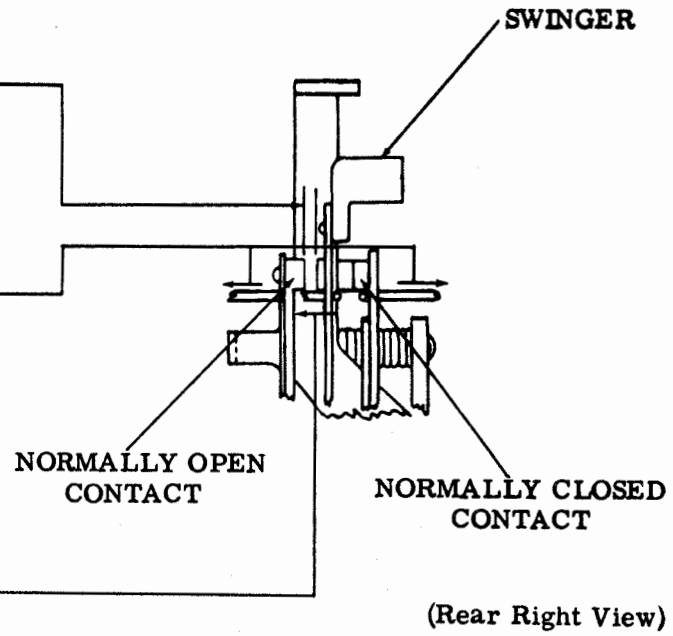
Requirement
Min 2 oz---Max 3 oz
to move each contact spring away from its stiffener, with the swinger held away.

To Adjust
Remove and form the spring.

(D) SWINGER SPRING

Requirement
Min 4 oz---Max 6 oz
to move swinger from normally closed contact.

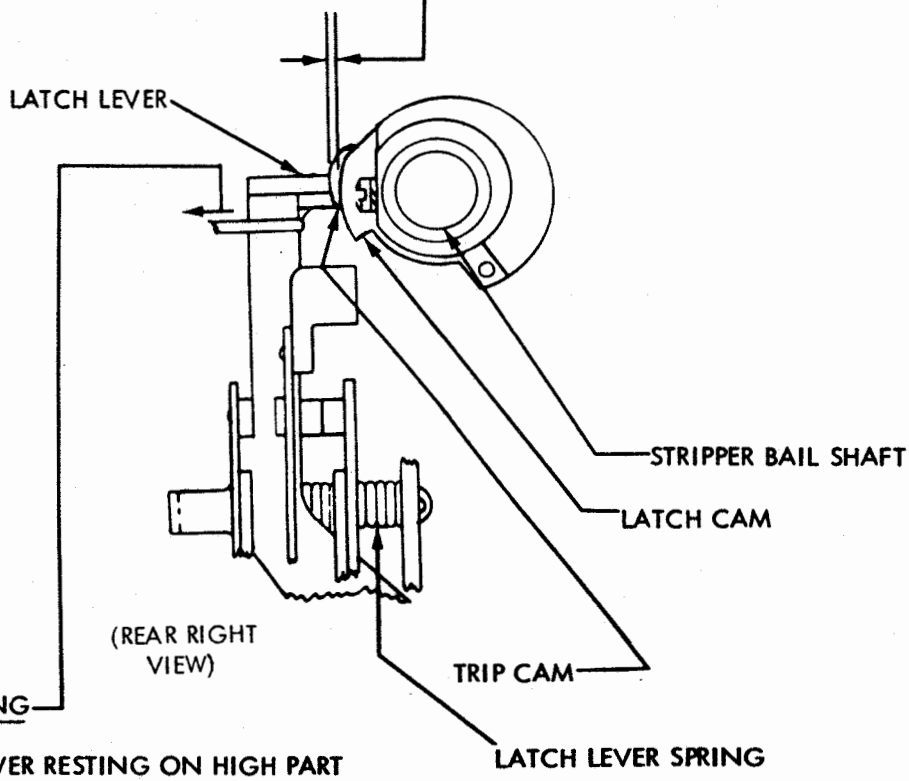
To Adjust
Bend swinger.



(Rear Right View)

3.35 **Universal Contact (Stunt Box) Mechanism (continued)**

TRIP CAM
REQUIREMENT
WITH STRIPPER BAIL SHAFT DRIVE LINK AT ITS LOWEST POINT, THE CLEARANCE BETWEEN THE LATCH LEVER AND THE LATCH CAM SHOULD BE
MIN 0.003 INCH
TO ADJUST
ROTATE THE TRIP CAM WITH ITS MOUNTING SCREW LOOSENED. TIGHTEN SCREW.
NOTE: AS A CHECK TO SEE THAT THE TRIP CAM IS NOT INSTALLED 180° OUT OF PLACE, THE MAIN SHAFT SHOULD BE ROTATED SO THAT THE STRIPPER SHAFT DRIVE LINK MOVES DOWNWARD.



LATCH LEVER SPRING
REQUIREMENT
WITH LATCH LEVER RESTING ON HIGH PART OF TRIP CAM
MIN 1/2 OZ
MAX 2 OZ
TO MOVE LATCH LEVER AWAY FROM TRIP CAM.

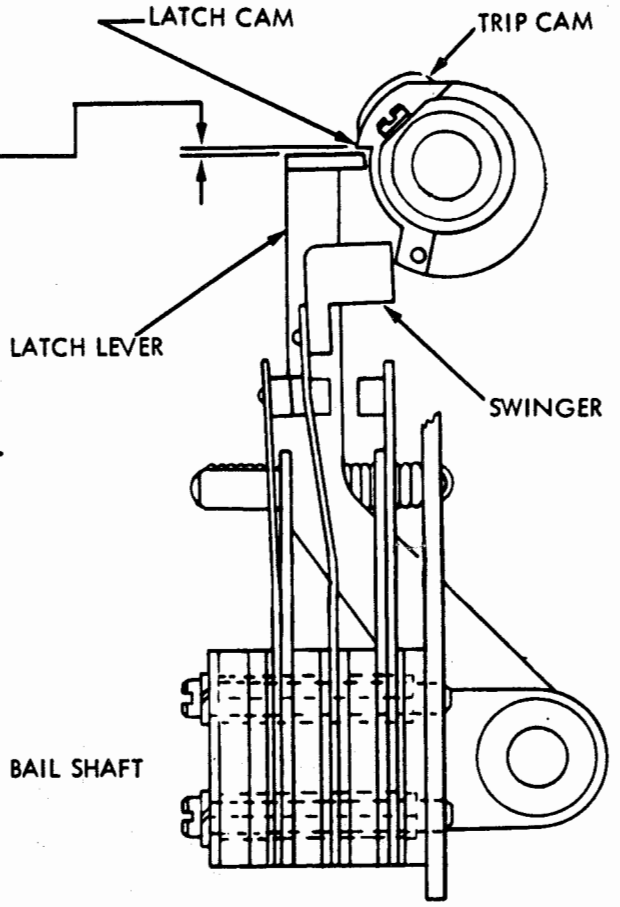
3. 36 Universal Contact (Stunt Box) Mechanism (continued)

NOTE: THE FOLLOWING ADJUSTMENTS ARE TO BE MADE WITH THE CONTACT ASSEMBLY INSTALLED ON THE STUNT BOX

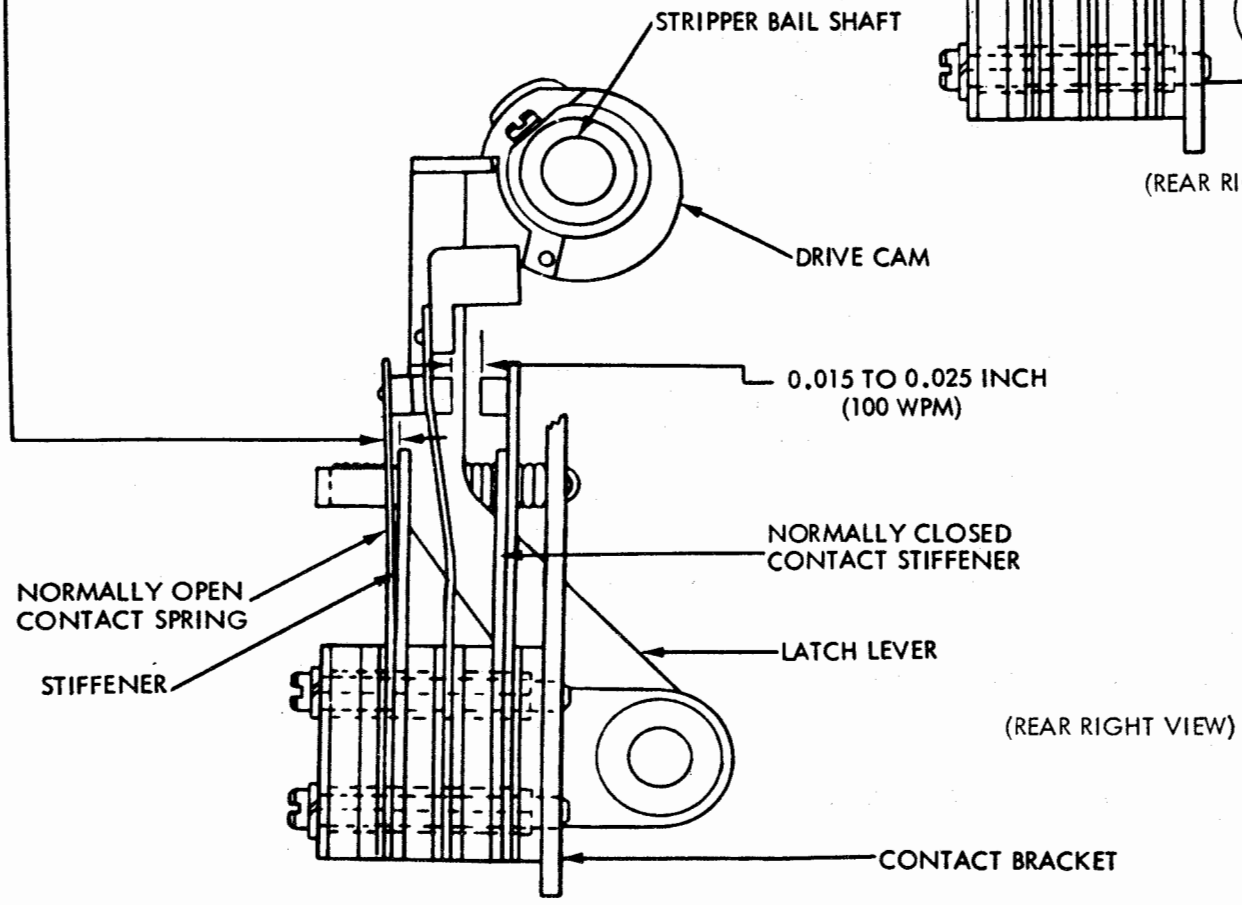
CONTACT BRACKET AND DRIVE CAM

1. REQUIREMENT
   WITH DRIVE LINK IN ITS UPPERMOST POSITION, CLEARANCE BETWEEN TOP OF LATCH LEVER AND LATCH CAM
   MIN 0.003 INCH
   MAX 0.008 INCH
2. REQUIREMENT
   WITH THE MAIN SHAFT ROTATED ON UNTIL THE CLEARANCE IN REQUIREMENT 1. IS CLOSED AND THE LATCH CAM RESTS FIRMLY ON THE LATCH LEVER. CLEARANCE BETWEEN THE NORMALLY OPEN CONTACT SPRING AND THE UPPER END OF ITS STIFFENER
   MIN 0.005 INCH
   MAX 0.010 INCH

   TO ADJUST
   REPOSITION THE CONTACT BRACKET, AND, IF NECESSARY, THE DRIVE CAM. TIGHTEN SCREWS.



(REAR RIGHT VIEW)



(REAR RIGHT VIEW)

3.37 Universal Contact (Stunt Box) Mechanism (continued)

GENERAL APPLICATION TIMING — FINAL (USING DISTORTION TEST SET OR SIMILAR EQUIPMENT)

CONTACT BRACKET AND DRIVE CAM POSITION

Requirement

The normally open universal contacts should close within ±5 milliseconds of the closure of the normally open stunt box contact.

To Adjust

Refine the drive cam (and if necessary, the bracket) (3.36) adjustment by rotating the drive cam within the specified limits.

TRIP CAM

Requirement

The normally open universal contacts should open within -5 +0 milliseconds of the opening of the normally open stunt box contact.

To Adjust

Refine the trip cam (3.35) adjustment by rotating the trip cam on its shaft within the specified limits. Tighten screw.

SPECIAL APPLICATION TIMING (USING DISTORTION TEST SET OR SIMILAR EQUIPMENT)

A. NORMALLY CLOSED CONTACTS (100 WPM FOR 83B2 SWITCHING SYSTEM)

1. The normally closed contacts should close within 50 to 80 divisions after the start of the stop pulse.
2. The normally open contact should close prior to the end of the no. 3 pulse.
3. The normally open contacts should remain closed for at least 238 divisions (100 wpm DXD with 742 scale divisions).

Note: The relation between the normally closed universal contact marking pulse and the stop impulse of the received signal varies with the range scale setting of the unit.

3.38 Universal Contact (Stunt Box) Mechanism (continued)

B. NORMALLY CLOSED CONTACTS (100 WPM USED IN DELTA AND UNITED AIRLINES SYSTEM)

WHEN NORMALLY OPEN CONTACTS ARE NOT USED, THE NORMALLY CLOSED CONTACTS SHOULD REMAIN OPEN FOR 53.88 MILLISECONDS OR 400 + 15 DISTORTION TEST SET DIVISIONS.

TO ADJUST

REFINE THE DRIVE CAM (3.36), TRIP CAM (3.35) AND, IF NECESSARY, THE BRACKET POSITIONS TO MEET THE TIMING REQUIREMENTS. TIGHTEN SCREWS.

NOTE 1:
THE NORMAL 0.003 TO 0.008 INCH OVERTRAVEL OF THE LATCH CAM OVER THE LATCH LEVER WITH THE DRIVE LINK IN ITS UPPERMOST POSITION MUST BE INCREASED IN ORDER TO DECREASE NORMALLY CLOSED CONTACT GAP IN THE LATCHED POSITION OF THE LATCH CAM. THIS PREVENTS THE CONTACT FROM BOUNCING WHEN THE LATCH LEVER IS RELEASED.
NOTE 2:
WITH THE LATCH CAM IN ITS LATCHED POSITION, THERE SHOULD BE 0.015 INCH MINIMUM CONTACT GAP BETWEEN THE NORMALLY CLOSED CONTACTS.

GENERAL REQUIREMENTS AFTER TIMING ADJUSTMENTS

NOTE: IT IS VERY IMPORTANT THAT THE FOLLOWING REQUIREMENTS BE MET

A. WITH THE DRIVE LINK IN ITS UPPERMOST POSITION:

1. THE LATCH CAM SHALL NOT OVERTRAVEL OR HANG UP ON THE SWINGER INSULATOR.

2. THERE SHALL BE AT LEAST 0.003 INCH CLEARANCE BETWEEN THE LATCHING SURFACE OF THE LATCH CAM AND THE LATCHING SURFACE OF THE LATCH LEVER.

3. THE CLEARANCE BETWEEN THE NORMALLY OPEN CONTACT SPRING AND ITS STIFFENER SHALL NOT EXCEED 0.025 INCH.

B. WITH THE DRIVE LINK IN ITS LOWERMOST POSITION:

1. THE TOP OF THE SWINGER INSULATOR MUST CLEAR THE CUT-OUT SECTION OF THE LATCH CAM.

2. THERE SHALL BE AT LEAST 0.003 INCH CLEARANCE BETWEEN THE FRONT EDGE OF THE LATCH LEVER LATCHING SURFACE AND THE HIGH PART OF THE LATCH CAM.

C. WITH THE LATCH CAM IN ITS LATCHED POSITION, THERE SHALL BE AT LEAST 0.005 INCH CLEARANCE BETWEEN THE NORMALLY OPEN CONTACT SPRING AND THE UPPER END OF ITS STIFFENER.

D. THE LATCHING SURFACE OF THE LATCH LEVER SHALL COVER THE WIDTH OF THE TRIP CAM AND LATCH CAM.

3.39 Form Alignment Switch Mechanism

(A) FORM FEED-OUT ADJUSTMENT
See (3.11 and 3.12).

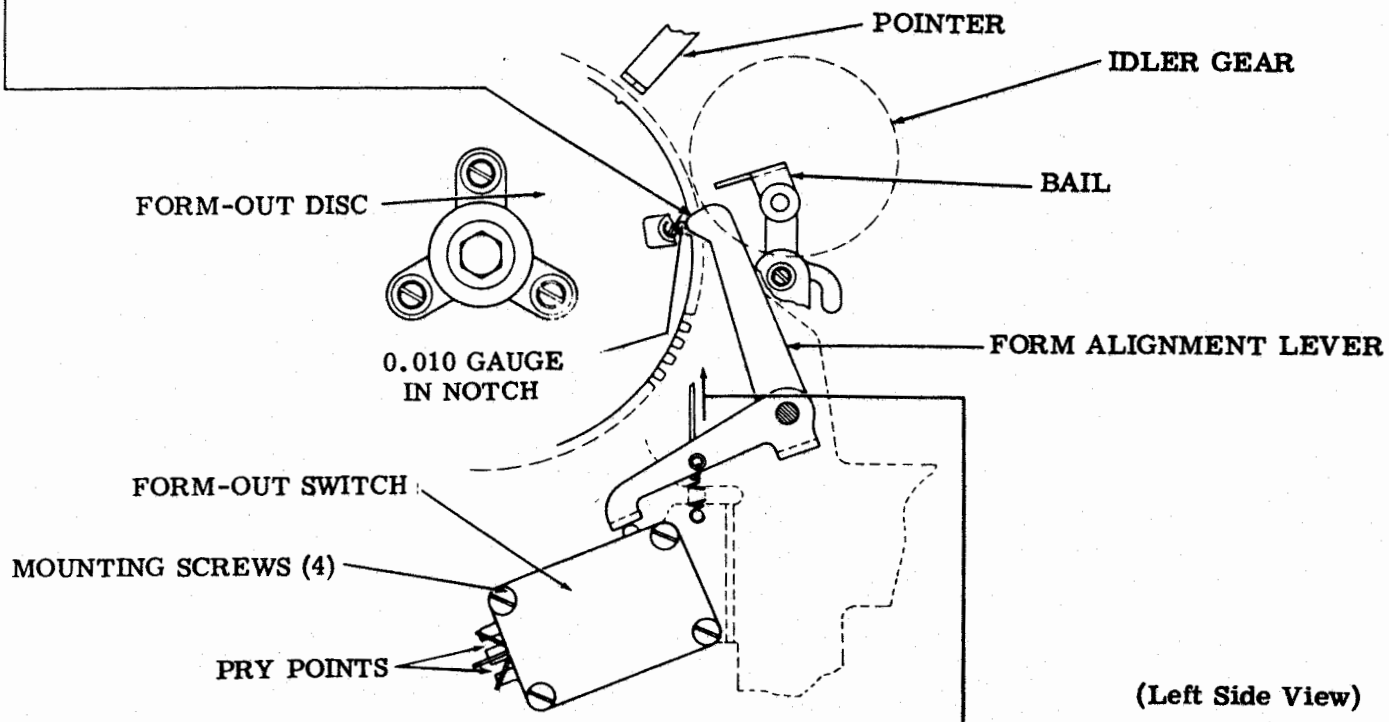
(B) FORM ALIGNMENT SWITCH (Remove Power From Switch)

Requirement
Switch should be operated when switch lever is within 0.010 inch of bottom of notch in form-out disc and should not be operated when lever is on outer edge of disc.

(1) To Check
Rotate disc until lever falls into notch. Place 0.010 inch feeler gauge beneath lever. Lift lever and allow it to come to rest on gauge. Switch should be operated.

(2) To Check
Rotate disc until lever rests on outer edge. Switch should not be operated.

To Adjust
Position switch, at pry points, with its mounting screws loosened. Tighten screws.



(Left Side View)

(C) FORM ALIGNMENT SWITCH SPRING

Requirement
Min 6 oz---Max 8 oz to move the lever from outer-edge of disc.

To Check
Switch operating lever on outer edge of disc (not in notch as shown).

3.40 DC Magnet Operated Print Suppression Mechanism

(D) ARMATURE EXTENSION OVERTRAVEL

(1) Requirement
Overtravel of armature extension should be
Min 0.010 inch---Max 0.015 inch

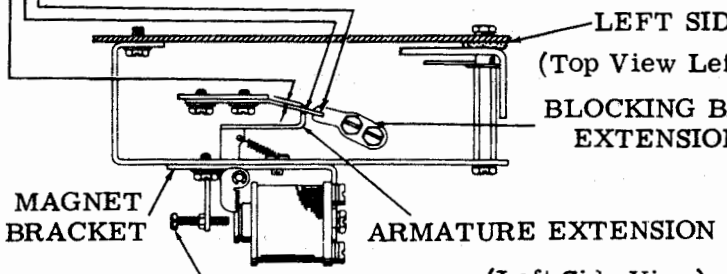
(2) Requirement
There should be no clearance between blocking surface of armature extension and bottom surface of suppression arm.

To Check (Requirements (1) and (2))
Suppression arm blocked by blocking bail extension. Hold armature against pole face of magnet.

(3) Requirement
Rotate blocking bail extension. It should slide under the suppression arm with no perceptible clearance.

To Check (Requirement (3))
Suppression arm blocked by armature extension.

To Adjust
Pivot magnet bracket, up or down and to the front or rear, with its mounting screws loosened, using an eccentric adjusting tool. Tighten screws. Press armature extension firmly against bottom of suppression arm. If necessary, add or remove shims between suppression arm and typebox clutch trip arm. Recheck (B) and (C).

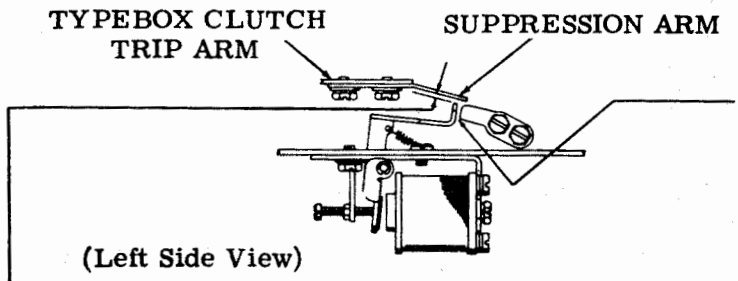


Note: KEEP POLE FACE FREE OF OIL AND GREASE.

(A) TYPEBOX CLUTCH TRIP LEVER
See (2.22) and refine requirement to
Min 0.040 inch---Max 0.055 inch

(B) TYPEBOX CLUTCH SUPPRESSION ARM
See (3.14)

(C) BLOCKING BAIL
See (3.14)



(F) BLOCKING BAIL EXTENSION CLEARANCE

Requirement
There should be no interference between armature extension and blocking bail extension.

To Adjust
Refine above adjustments as necessary.

(E) ARMATURE EXTENSION CLEARANCE

Requirement
Clearance between end of armature extension and suppression arm should be
Min 0.012 inch---Max 0.030 inch

To Check
Armature released.

To Adjust
Position armature with armature stop screw. Tighten nut. Recheck (D).

3.41 Print Suppression and Offline Stunt Shift Control Mechanism

(A) SUPPRESSION CODE BAR POSITION

REQUIREMENT

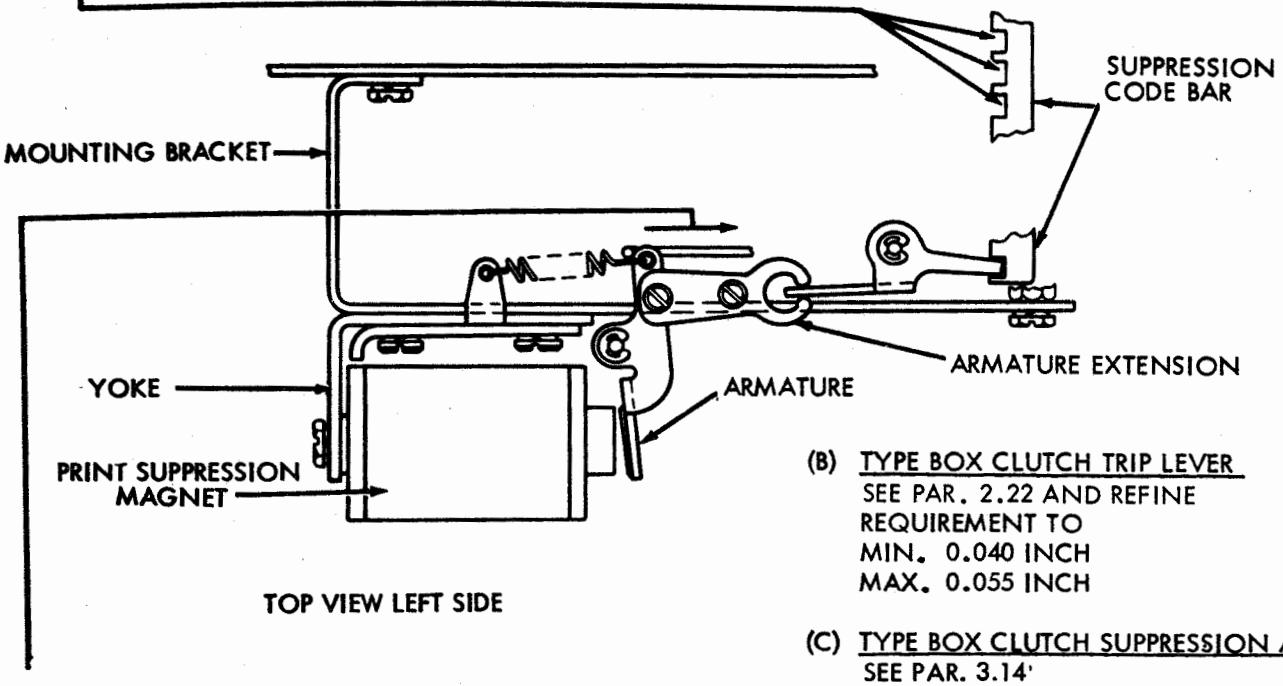
NOTCHES IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS. VIEW FROM REAR OF UNIT ABOVE STUNT BOX. GAUGE BY EYE.

TO CHECK

ENERGIZE THE PRINT SUPPRESSION MAGNET AND PLACE ALL CODE BARS IN SPACING POSITION.

TO ADJUST

OPERATE MAGNET ARMATURE MANUALLY OR ELECTRICALLY. PLACE ALL CODE BARS IN SPACING POSITION. PIVOT THE ARMATURE EXTENSION IN ITS ELONGATED MOUNTING HOLE WITH THE MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.



TOP VIEW LEFT SIDE

(B) TYPE BOX CLUTCH TRIP LEVER

SEE PAR. 2.22 AND REFINE REQUIREMENT TO

MIN. 0.040 INCH

MAX. 0.055 INCH

(C) TYPE BOX CLUTCH SUPPRESSION ARM

SEE PAR. 3.14

(D) BLOCKING BAIL

SEE PAR. 3.14

(E) PRINT SUPPRESSION MAGNET ARMATURE RETURN SPRING

REQUIREMENT

MIN. 7 OZS.

MAX. 10-1/2 OZS.

TO START MAGNET ARMATURE MOVING TOWARD CORE

TO CHECK

PRINT SUPPRESSION MAGNET UNOPERATED

NOTE: KEEP POLE FACE FREE OF OIL AND GREASE.

3.42 Letters-Figures Codebar Shift Magnet Mechanism

(A) SHIFT MAGNET YOKE

Requirement

Clearance between armature and end of heelpiece should be
Min some---Max 0.003 inch

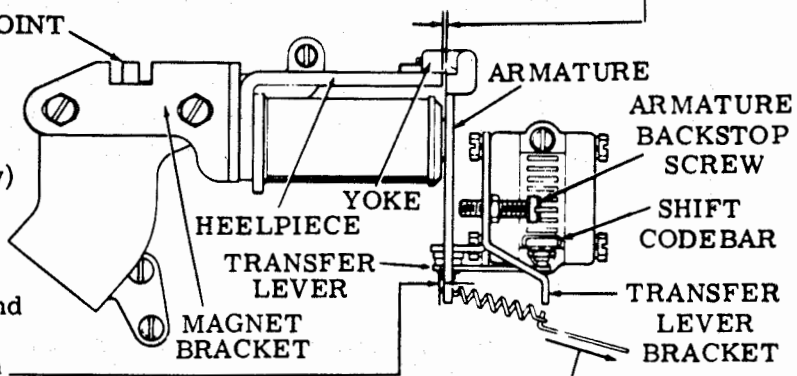
To Check

Magnet armature held against core. Check clearance across end of heelpiece.

To Adjust

Position yoke with its clamp screw loosened.

Note: Keep pole face free of oil and grease.



(Left Side View)

(B) SHIFT MAGNET ARMATURE

(1) Requirement

Clearance between armature and transfer lever should be
Min some---Max 0.005 inch

To Check

Magnet armature attracted. Shift codebar in full marking position.

To Adjust

Position magnet forward or backward with bracket mounting screws loosened. Tighten screws.

(2) Requirement

Clearance between armature and transfer lever should be
Min some---Max 0.010 inch

To Check

Magnet armature unoperated. Shift codebar in full spacing position.

To Adjust

Position armature backstop screw with locknut loosened. Tighten nut.

(C) SHIFT MAGNET ARMATURE RETURN SPRING

Requirement

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

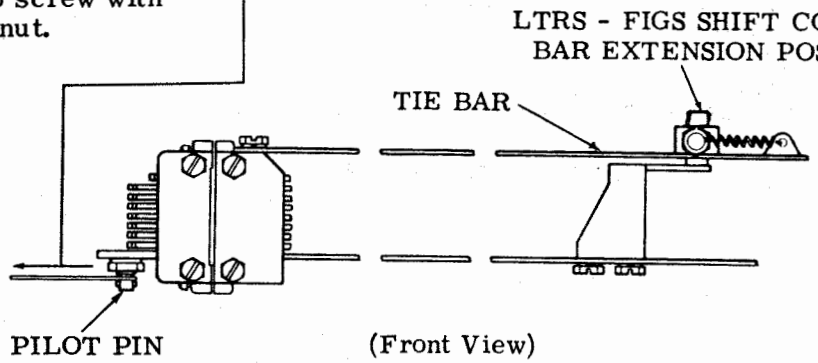
(D) SHIFT CODEBAR RETURN SPRING

Requirement

Min 3 oz---Max 7 oz
to start codebar moving.

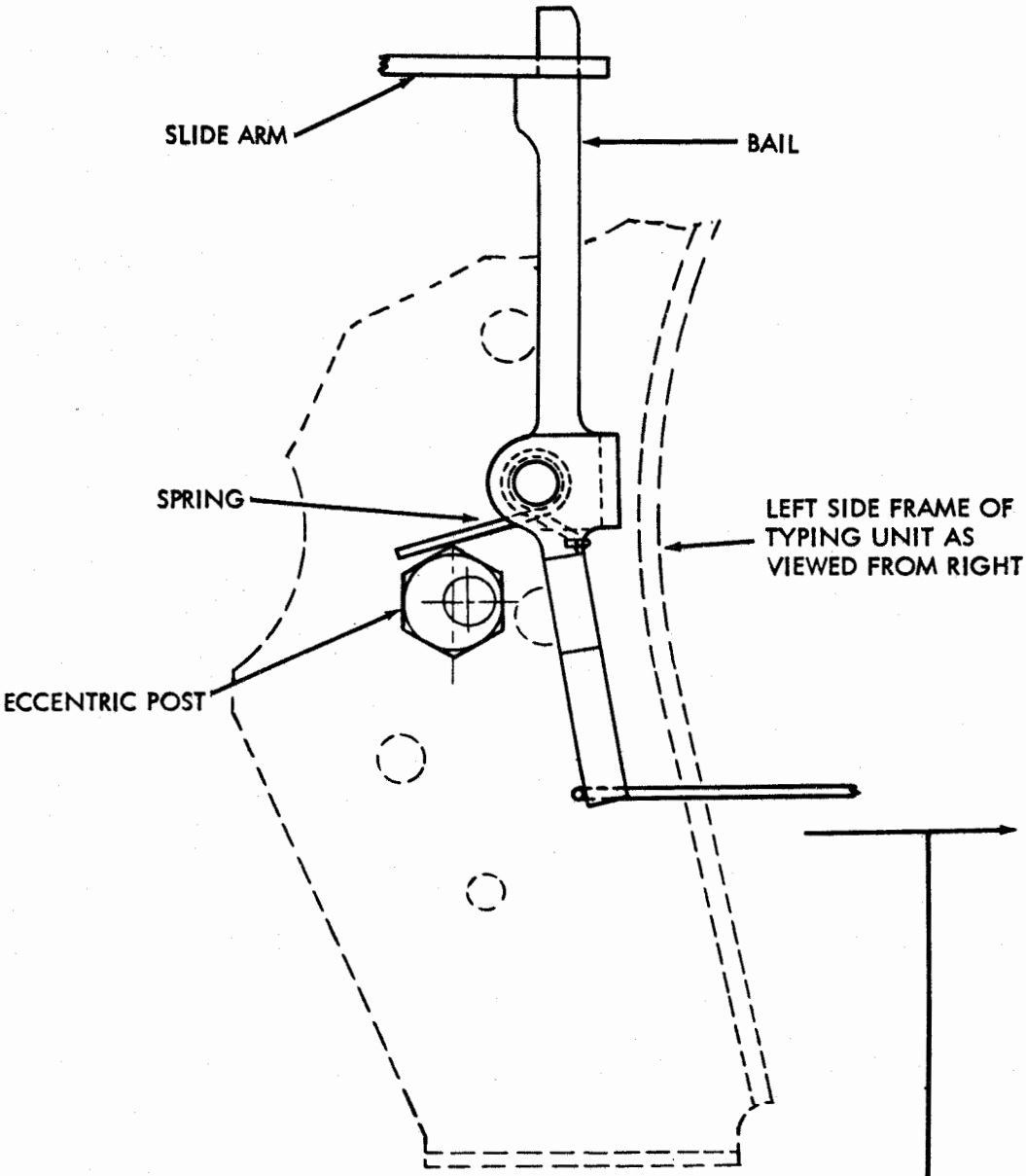
To Check

Trip typebox clutch, rotate main shaft until printing track is in lowest position.



(Front View)

3.43 Form Feed-Out Mechanism



FORM FEED-OUT TORSION SPRING

REQUIREMENT *

MIN. 1/8 OZ.

MAX. 1-1/4 OZ.

TO START BAIL MOVING TOWARDS REAR OF UNIT.

TO CHECK

DISENGAGE LINE FEED CLUTCH TRIP LEVER.

*RECEIVE ONLY UNITS
MIN 2 OZS
MAX 6 OZS

3.44 Two Color Ribbon Mechanism

See Notes 1 through 5 on following page.

(A) RIBBON MAGNET HINGE BRACKET (Left and Right) (Preliminary)

Requirement
Magnet energized or in attracted position, armature on pole piece. Clearance between armature and pole piece should be not more than 0.005 inch.

To Adjust
Position hinge bracket with mounting screws loosened. Tighten screws.

(B) RIBBON MAGNET BRACKET (Left and Right) (Preliminary)

Requirement
Adjusting screw in lowest position, all clutches disengaged, position ribbon magnet bracket as follows:

(1) Hold magnet armature stop lever against magnet core, lever should be parallel to oscillating lever top surface and engage the oscillating lever by at least 1/2 of the stop lever thickness. Gauge by eye.

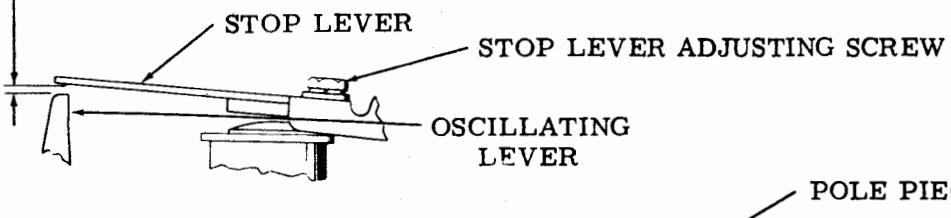
(2) Stop lever held against magnet core. Clearance between stop lever and oscillating lever should be
Min 0.005 inch---Max 0.020 inch
with play taken up toward front of unit.

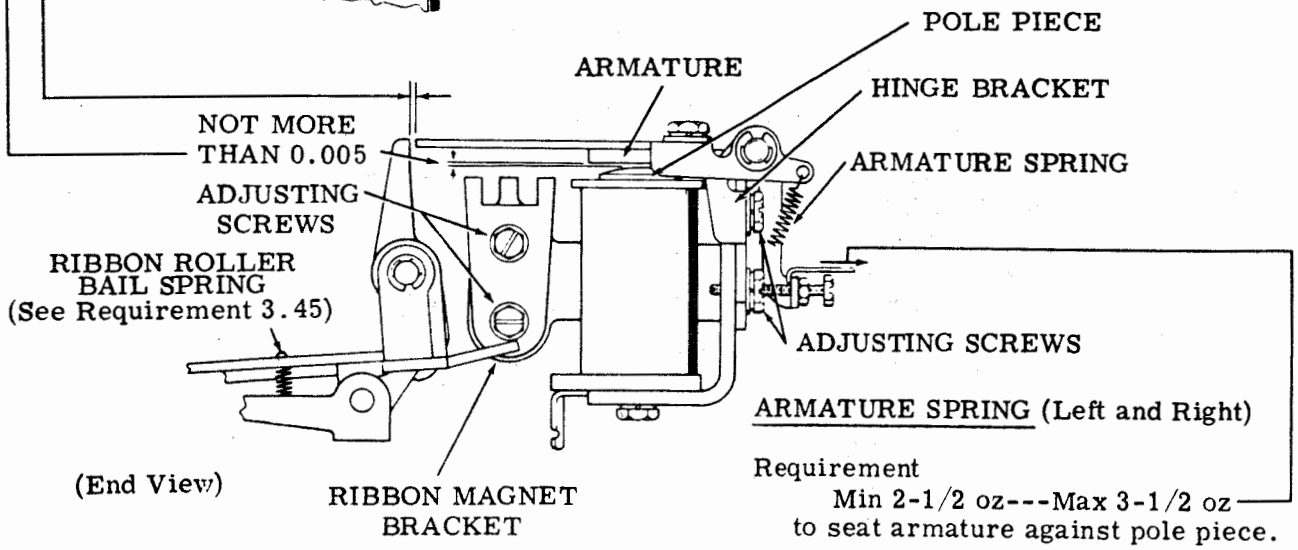
To Adjust
Loosen and position ribbon magnet bracket to meet above requirements.

(C) RIBBON MAGNET HINGE BRACKET (Left and Right) (Final)

Requirement
Magnet de-energized or in released position, rotate main shaft until oscillating lever is fully under stop lever. Clearance between oscillating lever and stop lever should be
Min 0.020 inch---Max 0.040 inch

To Adjust
Position stop lever adjusting screw with locknut loosened. Tighten nut.





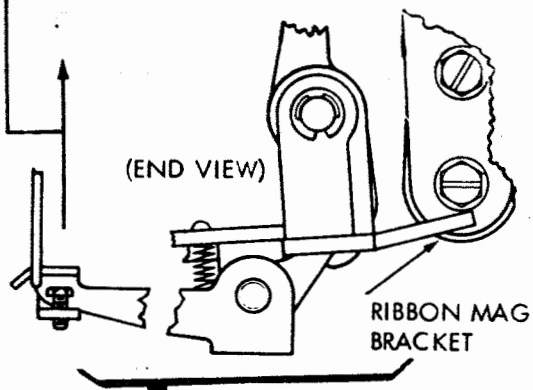
ARMATURE SPRING (Left and Right)

Requirement
Min 2-1/2 oz---Max 3-1/2 oz
to seat armature against pole piece.

3.45 Two Color Ribbon Mechanism (continued)

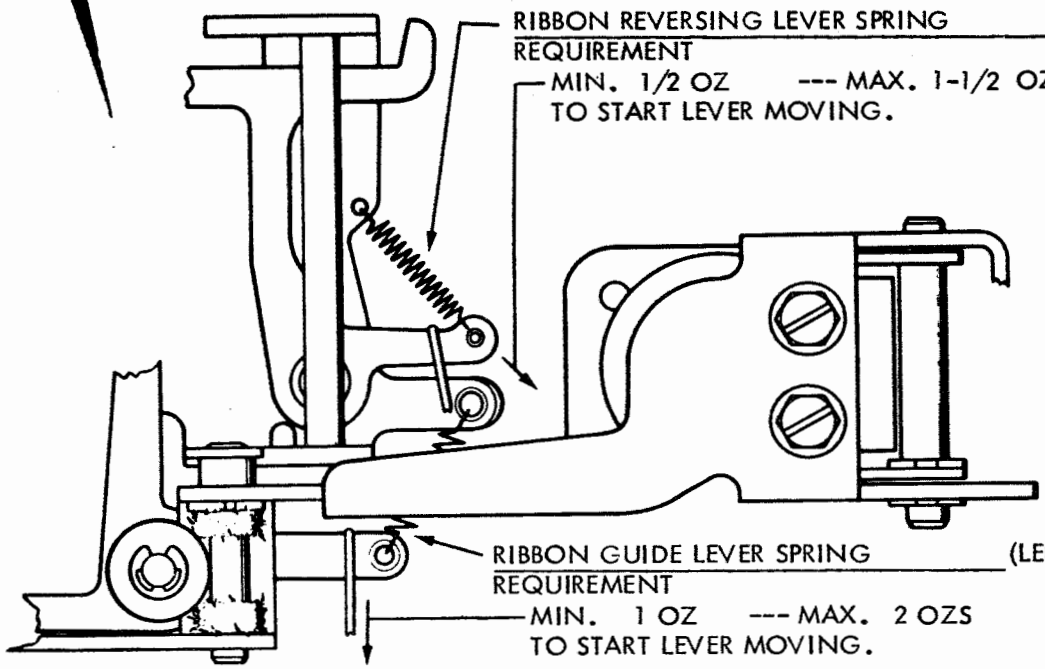
OPERATIONAL REQUIREMENT - RIBBON MAGNET BRACKET (FINAL) (SEE PRECEDING FIGURE)
PRINTER OPERATING AT 60, 75, OR 100 WPM, TEST BEING PRINTED.
REQUIREMENT
PRINTS RED WHEN RIBBON MAGNETS ARE ENERGIZED.
TO ADJUST
TURN LEFT AND RIGHT RIBBON BRACKET ROLLER BAIL ADJUSTING SCREWS 1/2 TURN UP. REFINE RIBBON AND RIBBON HINGE BRACKET ADJUSTMENTS. REPEAT ABOVE PROCEDURE IF BLACK IS PRINTED.

RIBBON ROLLER BAIL SPRING (LEFT AND RIGHT) (SEE PRECEDING FIGURE)
REQUIREMENT
ALL CLUTCHES DISENGAGED, ADJUSTING SCREW IN LOWEST POSITION
MIN. 4 OZS. --- MAX. 6 OZS.
TO START LIFTER BAIL MOVING.

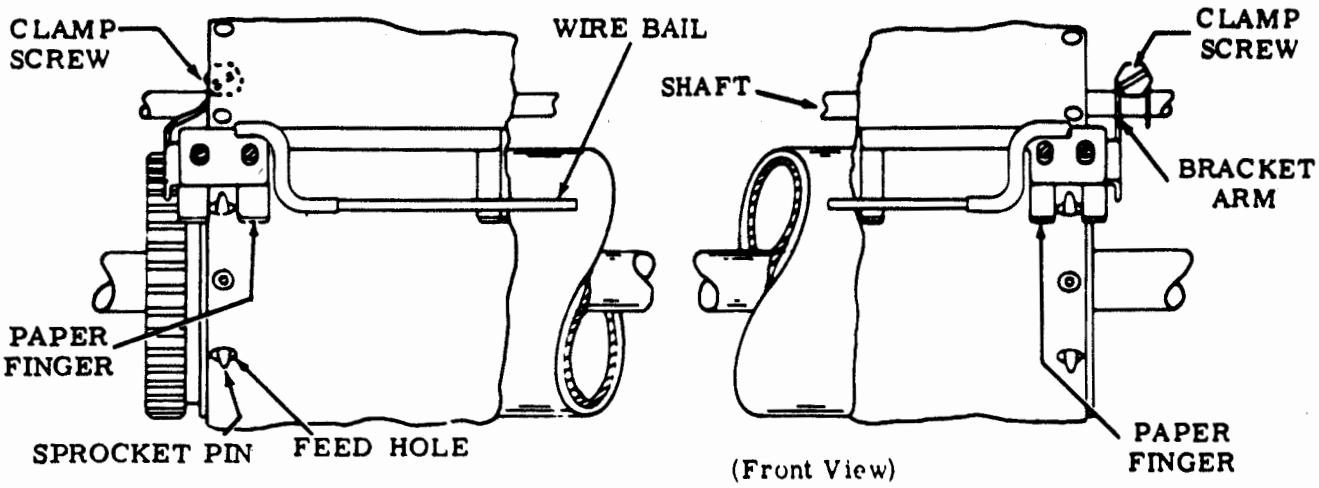


NOTES

REFER TO RELATED REQUIREMENTS
1. VERTICAL POSITION LOCK LEVER EXTENSION - PAR.2.36
2. RIBBON REVERSE SPUR GEAR - PAR. 2.52
3. RIBBON REVERSE DETENT - PAR. 2.52
4. RIBBON FEED LEVER BRACKET - PAR. 2.53
5. RIBBON RATCHET WHEEL FRICTION SPRING - PAR. 2.53 (MIN 3-1/3 OZS --- MAX 4-1/2 OZS).



3.46 Paper Jam Alarm (Sprocket Feed)



Note: Before proceeding with WIRE BAIL adjustment, loosen switch plate mounting screws and rotate switch and latch to a position where they do not interfere with bail. Position the spring post by means of set collar so that spring has some initial tension. Spring post should be approximately 30° from vertical (see 3.47).

WIRE BAIL

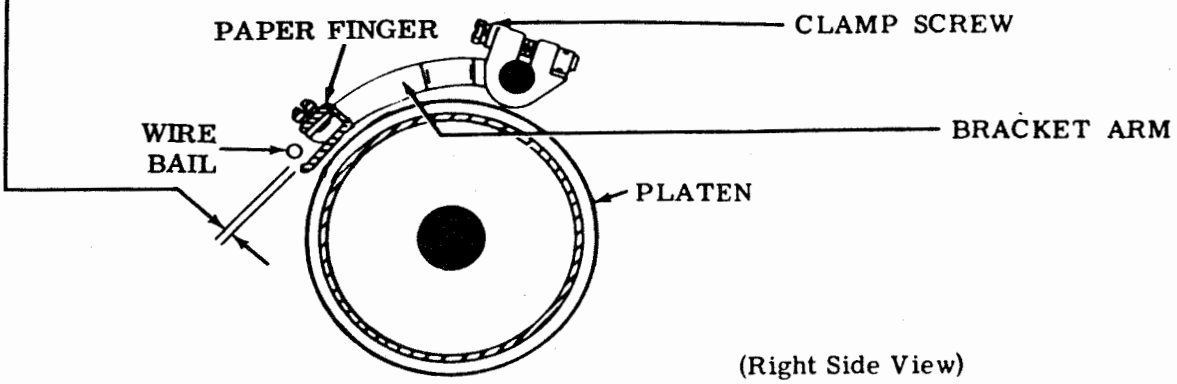
Requirement

Wire bail should rest on paper fingers approximately in radius of fingers. Wire bail should touch at least one finger with not more than Max 0.015 inch clearance between other finger and wire bail.

To Adjust

Bend wire bail to meet requirement.

Note: Make sure there is no bind in the bail after making adjustment.



3.47 Paper Jam Alarm (Sprocket Feed) (continued)

SWITCH POSITION

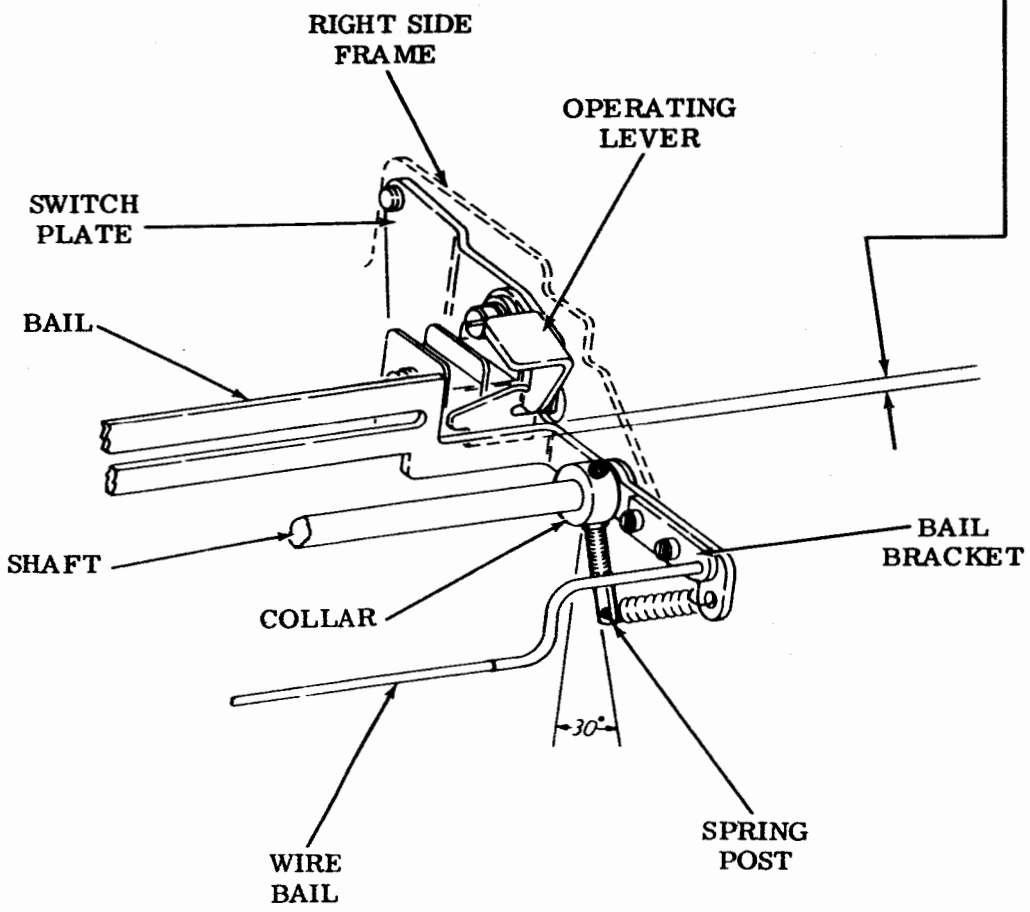
Requirement

With wire bail held against paper fingers and operating lever latched behind operating bail, there should be

Min 0.035 inch---Max 0.065 inch between top of bail and bottom of step in lever. Lever should depress switch plungers sufficiently to operate switches.

To Adjust

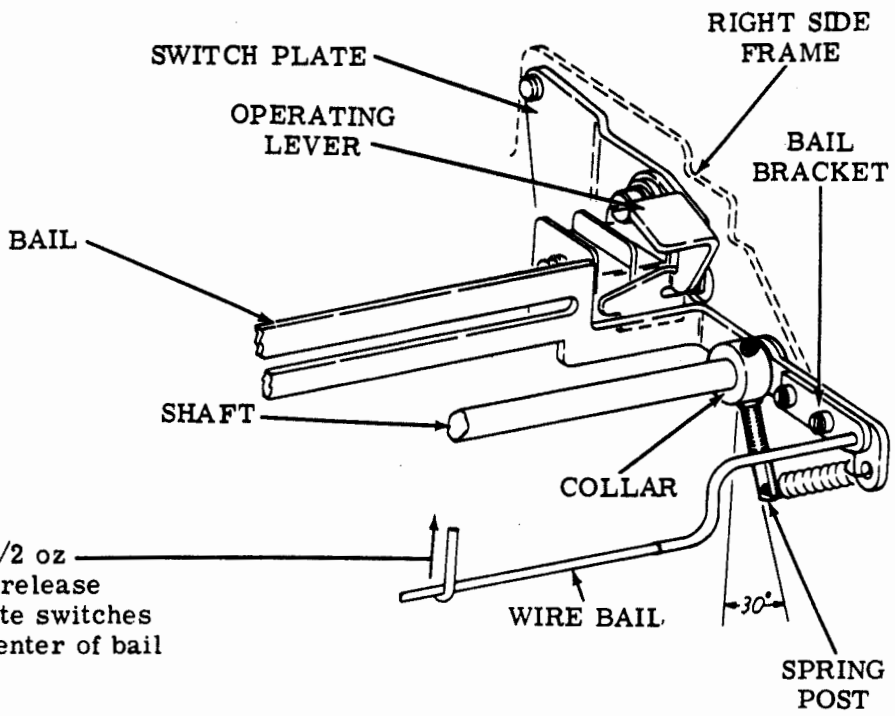
Loosen screws and position switch plate. Tighten screws.



(Right Front View)

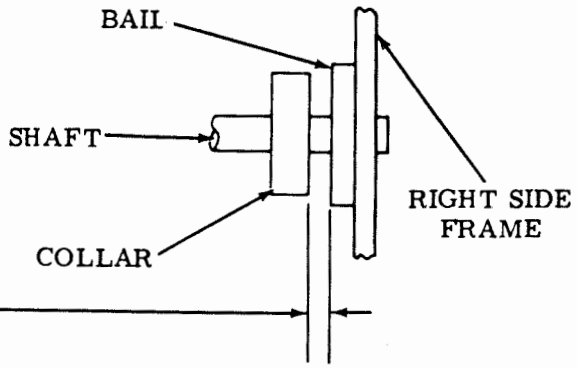
3.48 Paper Jam Alarm (Sprocket Feed) (continued)

(Right Front View)



BAIL SPRING

(1) Requirement
It should require
Min 1/2 oz---Max 1-1/2 oz
to lift bail high enough to release operating lever and operate switches when scale is hooked to center of bail and pulled vertically.



(2) Requirement
Position collar laterally to provide
Min some---Max 0.006
endplay for bail.

To Adjust
Loosen setscrew. Position collar to meet requirements. Tighten setscrew.

(Right Front View)

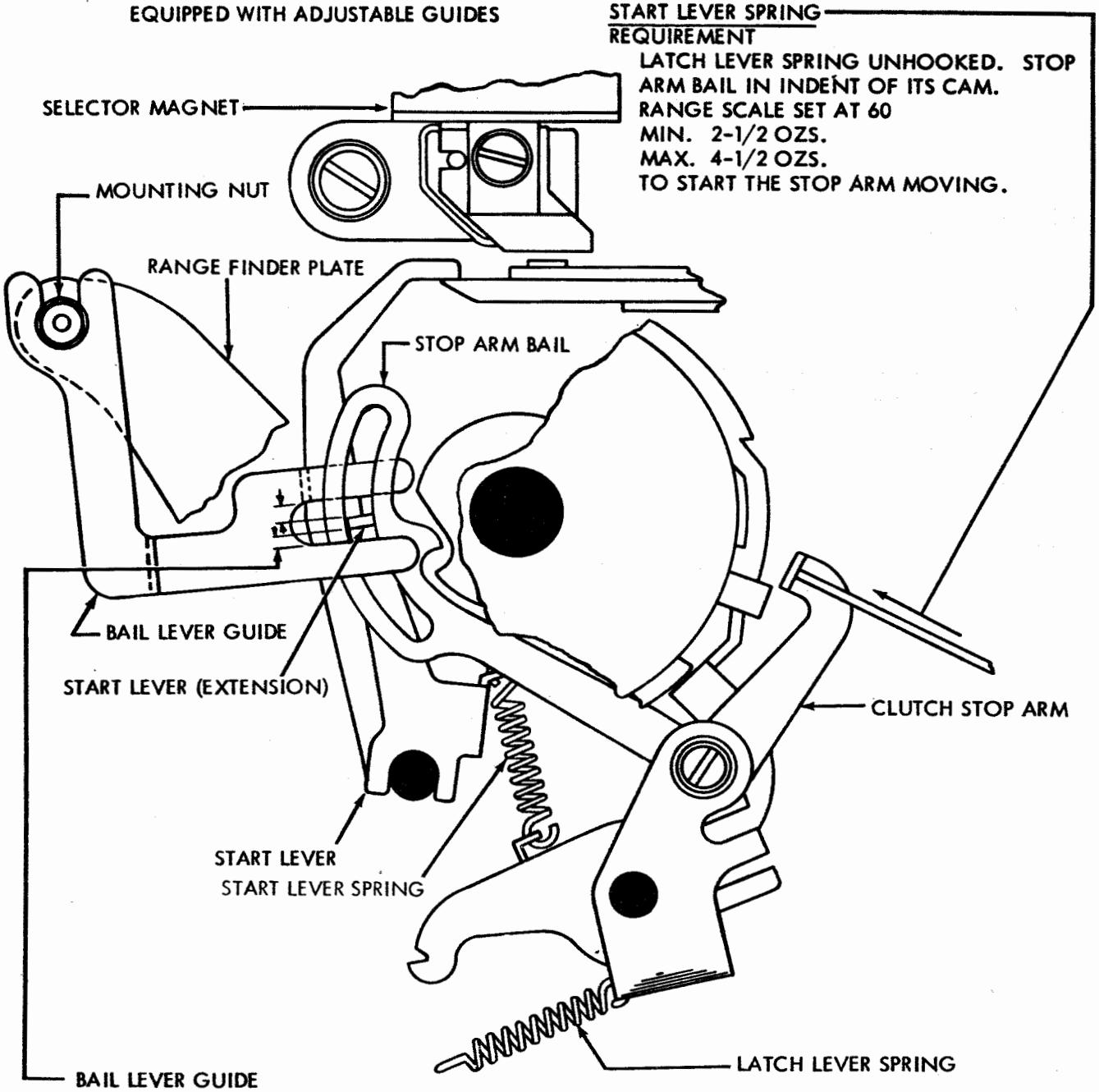
Note 1: With play of bail taken to right, left side of bail should clear left paper finger arm. Refine left PAPER FINGER (SPROCKET FEED) (2.73) adjustment if necessary.

Note 2: With typing unit installed in its cabinet, lift bail to its maximum upward position, there should be some clearance between bail and operating lever.

Note 3: BAIL SPRING adjustments may be refined to make mechanism more or less sensitive to paper buckling.

4. EARLIER DESIGN MECHANISMS
BASIC UNITS
4.01 SELECTOR MECHANISM

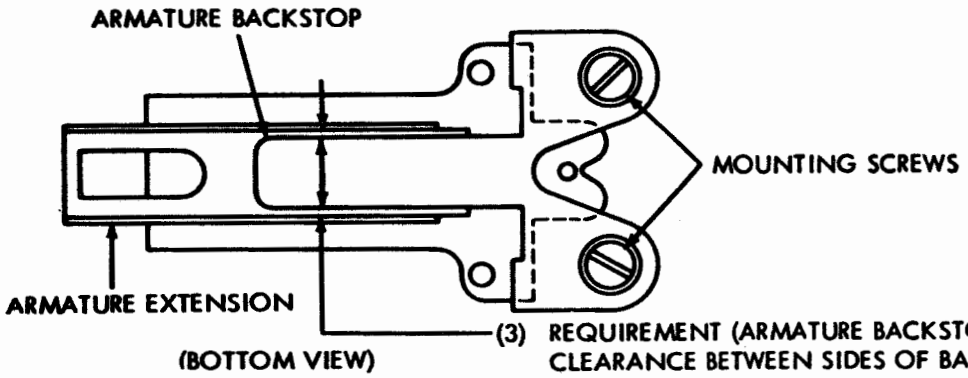
NOTE: BAIL LEVER GUIDE ADJUSTMENT APPLIES ONLY TO UNITS EQUIPPED WITH ADJUSTABLE GUIDES



(RIGHT SIDE VIEW)

4.02 Selector Mechanism (Cont.)

SELECTOR ARMATURE
FOR REQUIREMENTS (1) AND (2) SEE PAR. 2.01 UNDER BASIC UNITS

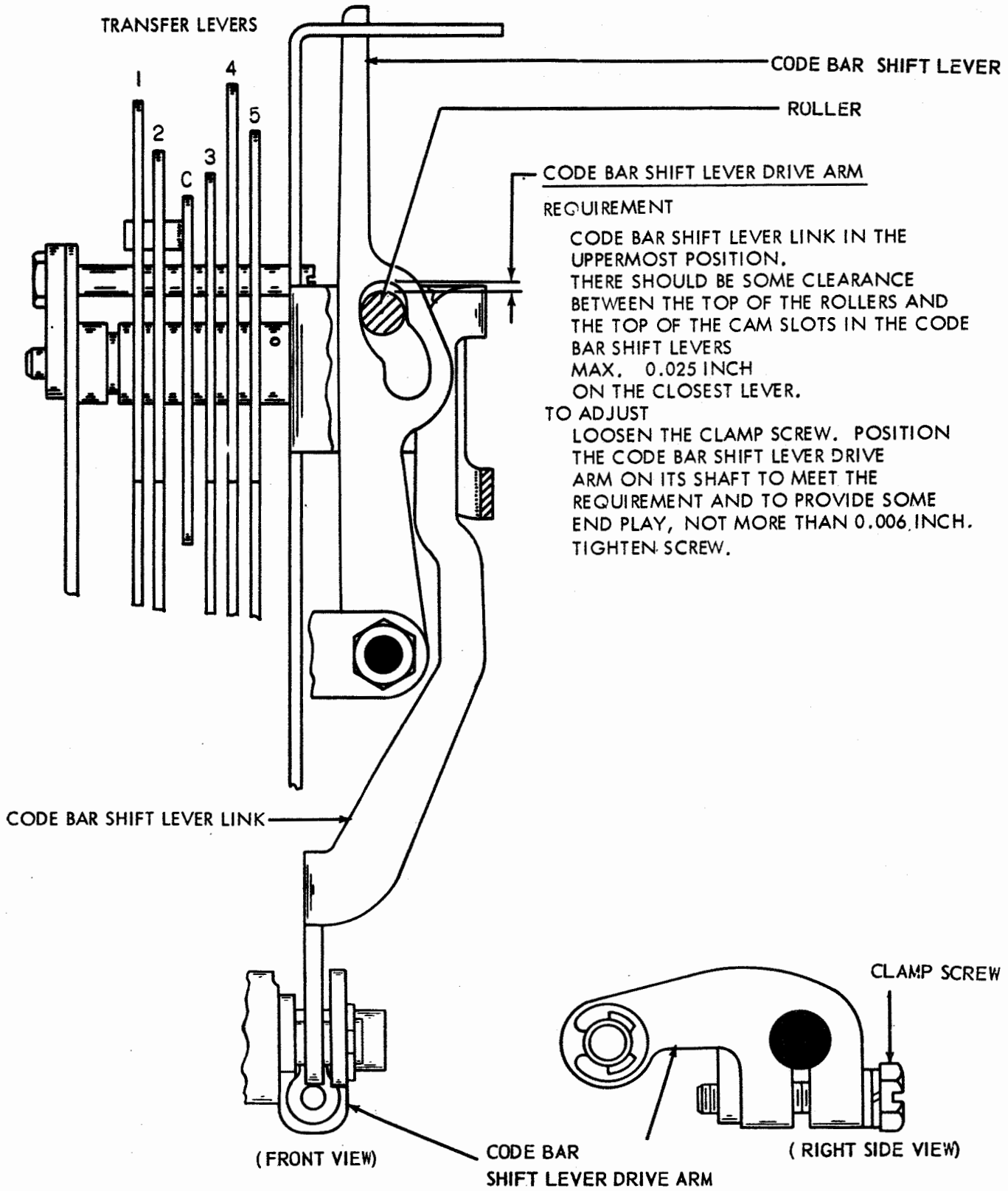


(3) REQUIREMENT (ARMATURE BACKSTOP ALIGNMENT)
CLEARANCE BETWEEN SIDES OF BACKSTOP
AND SIDES OF ARMATURE EXTENSION.
MIN. 0.010 INCH

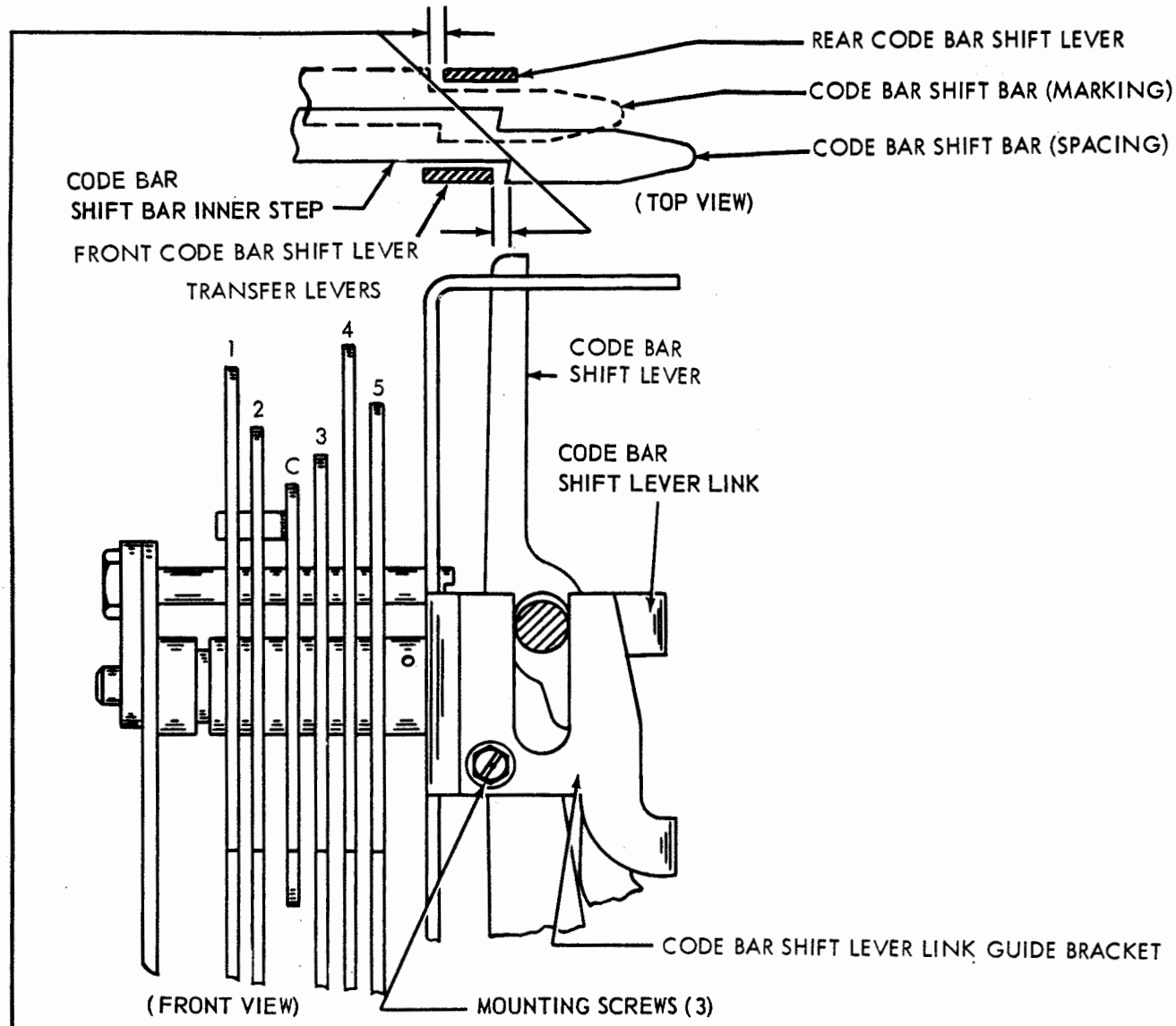
TO ADJUST

1. POSITION ARMATURE SPRING ADJUSTING NUT TO HOLD ARMATURE FIRMLY AGAINST PIVOT EDGE OF CASTING.
2. POSITION ARMATURE AND BACKSTOP WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

4.03 Codebar Mechanism



4.04 Codebar Mechanism (Cont.)



CODE BAR SHIFT LEVER LINK GUIDE BRACKET

REQUIREMENT

MOTION OF FRONT AND REAR CODE BAR SHIFT LEVERS SHOULD BE EQUALIZED WITH RESPECT TO CODE BAR TRAVEL.

TO CHECK (FRONT)

SELECT BLANK COMBINATION AND ROTATE MAIN SHAFT UNTIL CODE BAR SHIFT LEVER LINK REACHES HIGHEST TRAVEL. TAKE UP PLAY FOR MAXIMUM CLEARANCE. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND SHOULDER ON NEAREST CODE BAR SHIFT BAR

MIN. 0.002 INCH---MAX. 0.025 INCH

TO CHECK (REAR)

SELECT LETTERS COMBINATION. CHECK CLEARANCE BETWEEN REAR CODE BAR SHIFT LEVER AND SHOULDER OF CODE BAR SHIFT BAR IN SAME WAY.

MIN. 0.002 INCH---MAX. 0.025 INCH

TO ADJUST

POSITION CODE BAR SHIFT LEVER LINK GUIDE BRACKET BY MEANS OF MOUNTING SCREWS (3). TIGHTEN SCREWS.

4.05 Main Shaft and Trip Shaft Mechanisms

(A) CLUTCH TRIP SHAFT SET COLLARS

(1) Requirement

Spacing clutch latchlever should have side play

Min some---Max 0.008 inch

To Adjust

Position spacing clutch latchlever set collar. Tighten screw.

(2) Requirement

Approximate alignment of right end of stop extensions on trip lever and shoe lever.

To Adjust

Position line feed clutch trip lever set collar. Tighten screw.

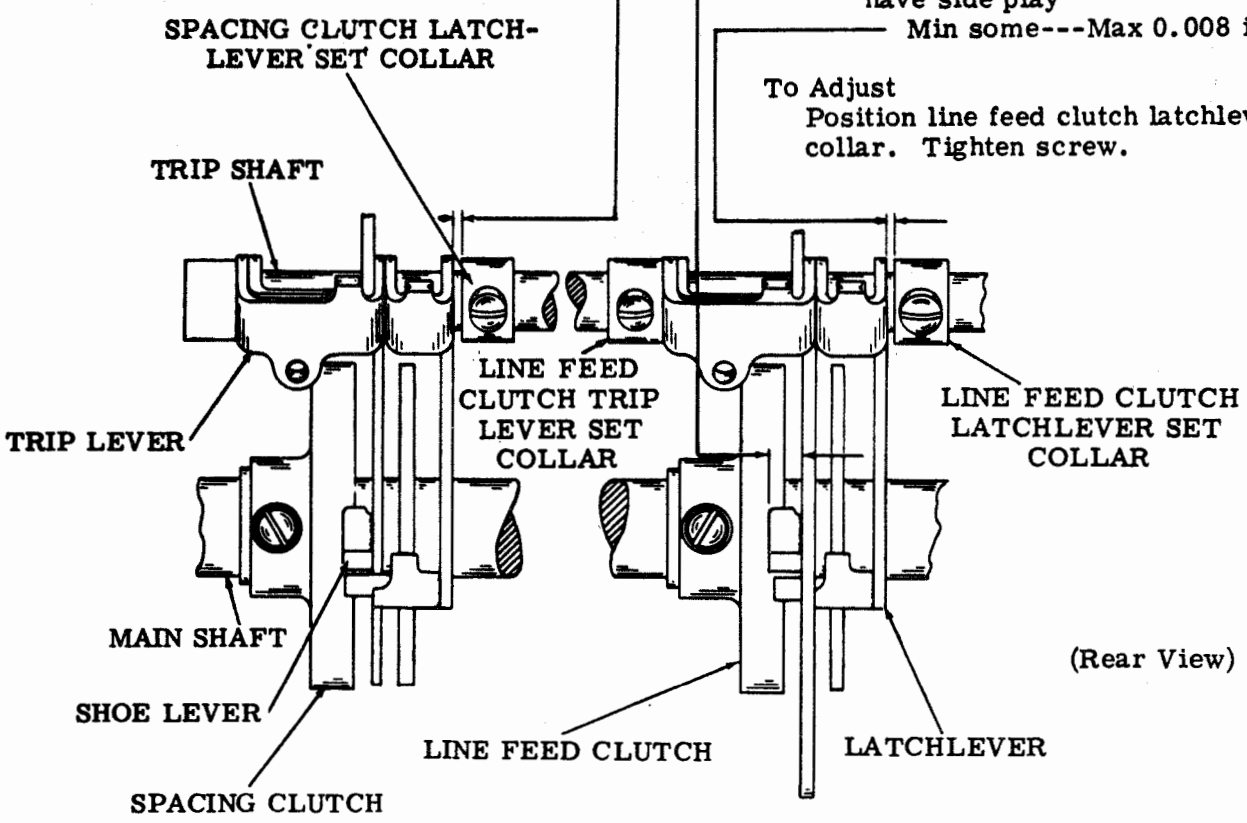
(3) Requirement

Line feed clutch latchlever should have side play

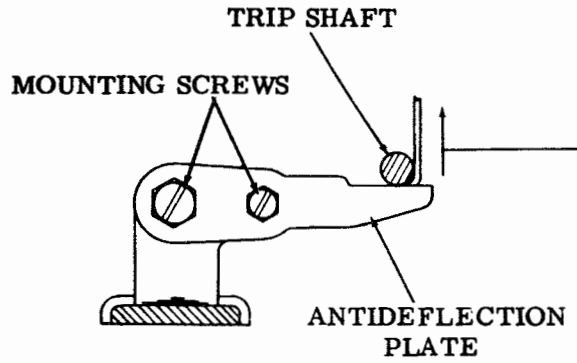
Min some---Max 0.008 inch

To Adjust

Position line feed clutch latchlever set collar. Tighten screw.



Note: Antideflection plate adjustment applies only to units so equipped.



(Left Side View, Upside Down)

(B) ANTIDEFLECTION PLATE

Requirement

With typing unit upside down and function, spacing, line feed, and typebox clutches latched disengaged

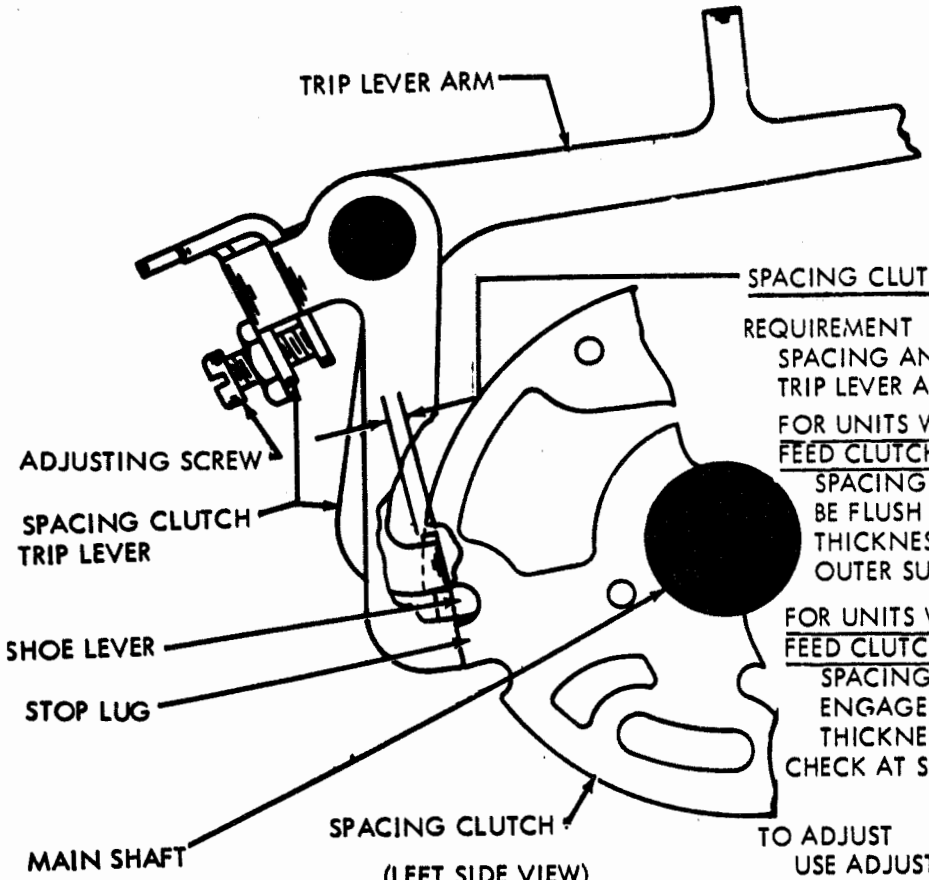
Min 1 lb---Max 5 lb

to pull trip shaft away from antideflection plate.

To Adjust

Position plate with mounting screws loosened. Tighten screws.

4.06 Main Shaft and Trip Shaft Mechanisms (Cont.)



SPACING CLUTCH TRIP LEVER

REQUIREMENT

SPACING AND TYPE BOX CLUTCHES DISENGAGED TRIP LEVER ARM IN UPWARD POSITION.

FOR UNITS WITHOUT U-SHAPED LINE FEED CLUTCH TRIP LEVER:

SPACING CLUTCH TRIP LEVER SHOULD BE FLUSH OR UNDERFLUSH BY 1/2 THICKNESS OF SHOE LEVER WITH OUTER SURFACE OF SHOE LEVER.

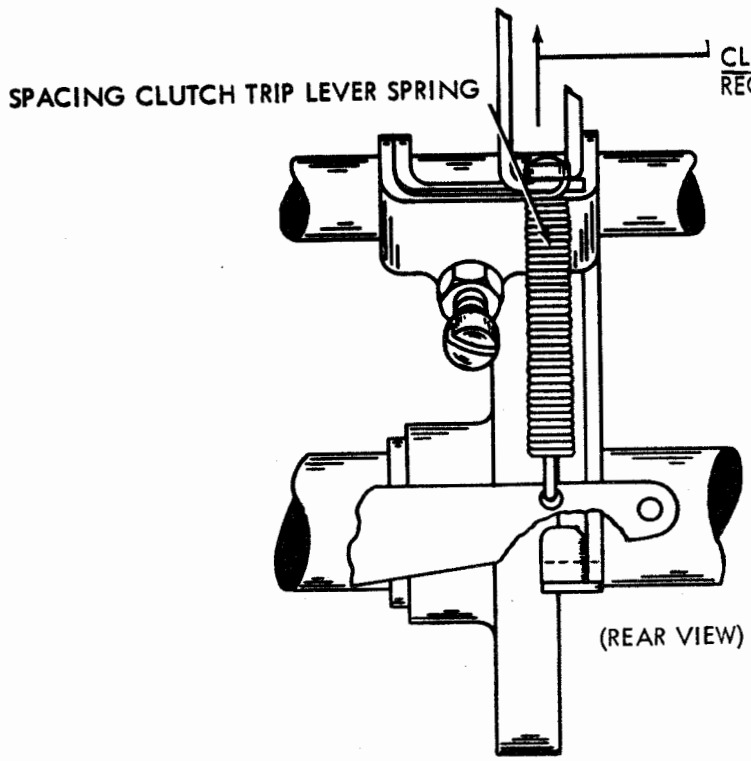
FOR UNITS WITH U-SHAPED LINE FEED CLUTCH TRIP LEVER:

SPACING CLUTCH TRIP LEVER SHOULD ENGAGE SHOE LEVER BY FULL THICKNESS OF SHOE LEVER

CHECK AT STOP LUG WITH LEAST BITE.

TO ADJUST

USE ADJUSTING SCREW TO POSITION SPACING CLUTCH TRIP ARM. TIGHTEN NUT.



CLUTCH TRIP LEVER SPRING

REQUIREMENT

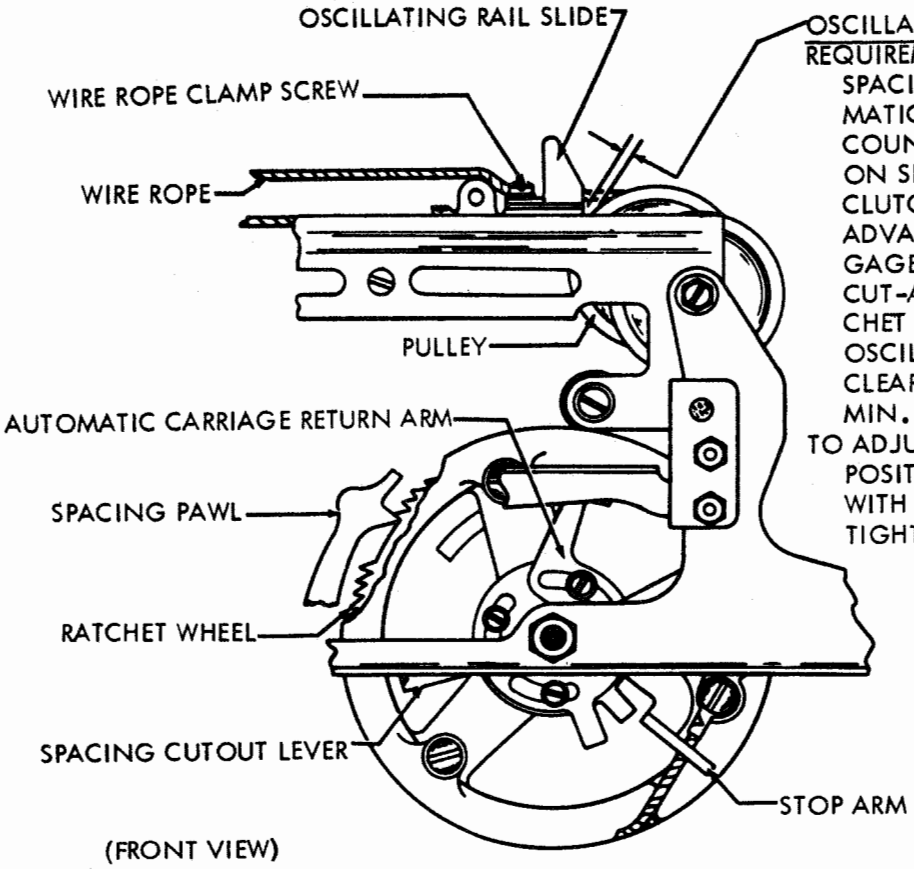
CLUTCH ENGAGED AND ROTATED UNTIL TRIP LEVER RESTS ON STOP LUG.

CLUTCH	MIN.	MAX.
SPACING	11 OZS.	16 OZS.
LINE FEED	9 OZS.	12 OZS.
TYPE BOX	5 OZS.	7-1/4 OZS.

TO MOVE LEVER AWAY FROM STOP LUG.

4.07 Spacing Mechanism

NOTE: CHECK RELATED ADJUSTMENTS, PARS.4.12,4.13,2.47, IF THE FOLLOWING ADJUSTMENTS ARE REMADE.



(FRONT VIEW)

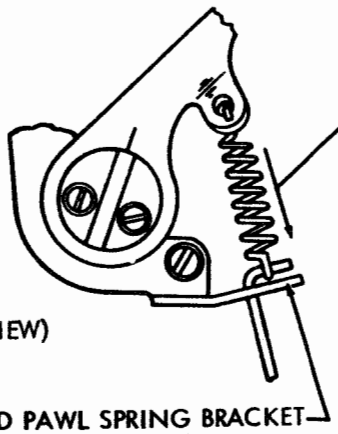
OSCILLATING RAIL SLIDE POSITION REQUIREMENT

SPACING CUTOUT LEVER AND AUTOMATIC CR-LF ARM IN MAXIMUM COUNTERCLOCKWISE POSITION ON SPACING DRUM. SPACING CLUTCH DISENGAGED. FARTHEST ADVANCED SPACING PAWL ENGAGED WITH TOOTH JUST ABOVE CUT-AWAY SECTION IN RATCHET WHEEL. RIGHT END OF OSCILLATING RAIL SLIDE SHOULD CLEAR PULLEY.

MIN. 0.025 INCH---MAX. 0.050 INCH

TO ADJUST

POSITION SLIDE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.



(FRONT VIEW)

SPACING FEED PAWL SPRING REQUIREMENT

EACH SPACING PAWL IN LEAST ADVANCED POSITION, RESTING AGAINST RACHET WHEEL.EACH SPRING UNHOOKED FROM BRACKET

MIN. 2-1/2 OZS.---MAX. 4 OZS.

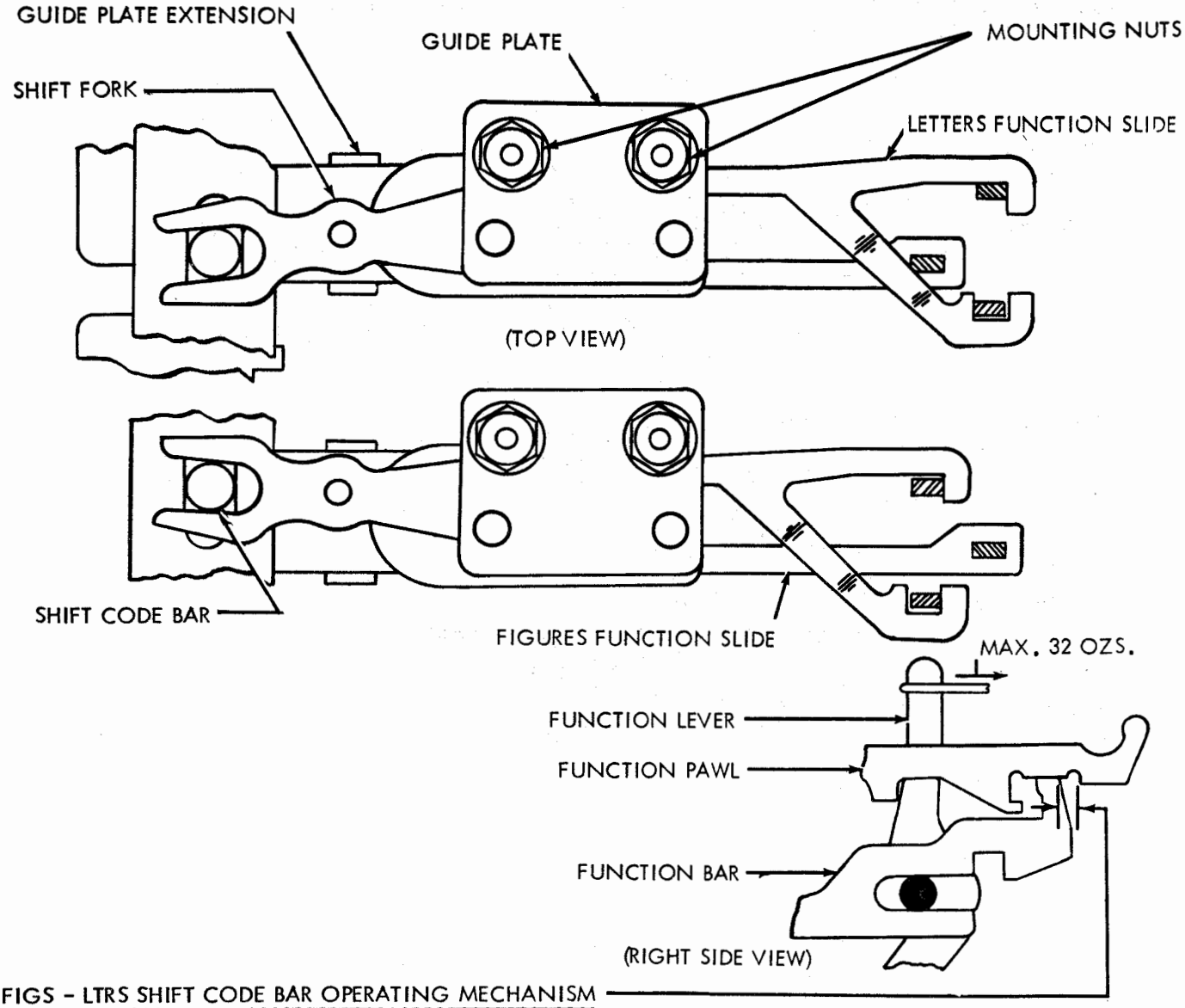
TO PULL SPRINGS TO INSTALLED LENGTH.

NOTE:

ON UNITS EQUIPPED FOR 6 SPACES PER INCH, THIS TENSION SHOULD BE MIN. 8 OZS.---MAX. 10 OZS. TO PULL SPRINGS TO INSTALLED LENGTH.

4.08 Function Mechanism

NOTE 1. THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH NON-ADJUSTABLE GUIDE PLATES
NOTE 2. FOR UNITS WITH ADJUSTABLE GUIDE PLATES SEE PAR. 2.32.



FIGS - LTRS SHIFT CODE BAR OPERATING MECHANISM

REQUIREMENT: (FOR TWO STOP FUNCTION CLUTCH)

DISENGAGE FUNCTION CLUTCH AT POSITION GIVING LEAST CLEARANCE. ROTATE TYPE BOX CLUTCH 1/2 REVOLUTION. HOLD FIGURES FUNCTION LEVER IN REARWARD POSITION WITH TENSION OF 32 OZS. CLEARANCE BETWEEN THE FUNCTION PAWL SHOULDER AND FACE OF FUNCTION BAR

MIN. 0.002 INCH
MAX. 0.015 INCH

WHEN PLAY IN PAWL IS TAKEN FOR MAXIMUM CLEARANCE.

DISENGAGE FIGURES FUNCTION PAWL. CHECK LETTERS FUNCTION PAWL IN SAME MANNER.

TO ADJUST

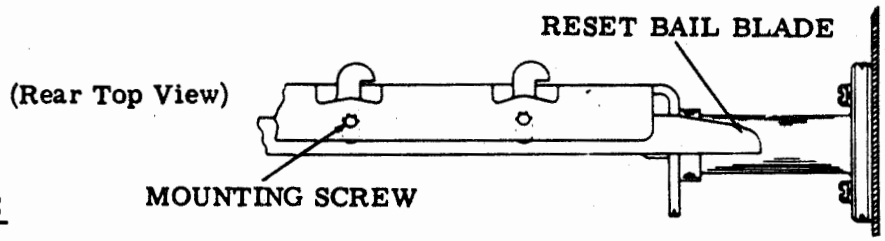
POSITION SHIFT ASSEMBLY WITH CLAMP NUTS LOOSENED. TAKE UP PLAY IN MOUNTING HOLES TO REAR. TIGHTEN NUTS.

CAUTION: MANUALLY OPERATE LETTERS AND FIGURES FUNCTION LEVER ALTERNATELY LEVERS SHOULD BE FREE OF BINDS.

4.09 Function Mechanism (continued)

Note 1: This adjustment applies only to units with a two stop function clutch.

Note 2: For units with a one stop function clutch see (2.33).



FUNCTION RESET BAIL BLADE

(1) Requirement

Function clutch disengaged at stop position giving least clearance. Typebox clutch disengaged. All function pawls unlatched from their function bars. Function bar held in maximum rearward position. Clearance between function bar and reset bail blade

Min 0.018 inch---Max 0.035 inch

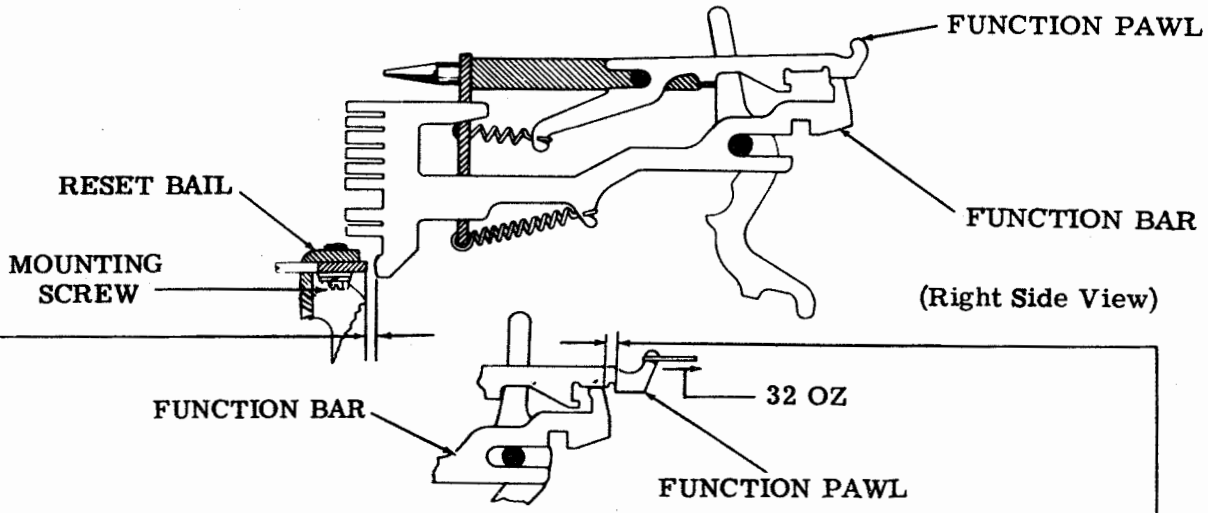
To Check

Measure clearance at bars located in stunt box slots 1, 4, 11, 18, 23, 33, 38, and 41. If there is no bar in a designated slot, use nearest bar. If there is a bar on each side of a designated vacant slot, use bar in highest numbered slot.

Note: Facing rear of unit, slots are numbered from left to right.

To Adjust

Position blade on reset bail with blade mounting screws friction tight. Tighten screws.



(2) Requirement

Typebox clutch rotated 1/2 revolution, function lever held in rearmost position with 2 lbs maximum tension. Latch associated pawl only one at a time. With 32 oz tension applied to function pawl, it should overtravel its bar

Min 0.002 inch

To Adjust

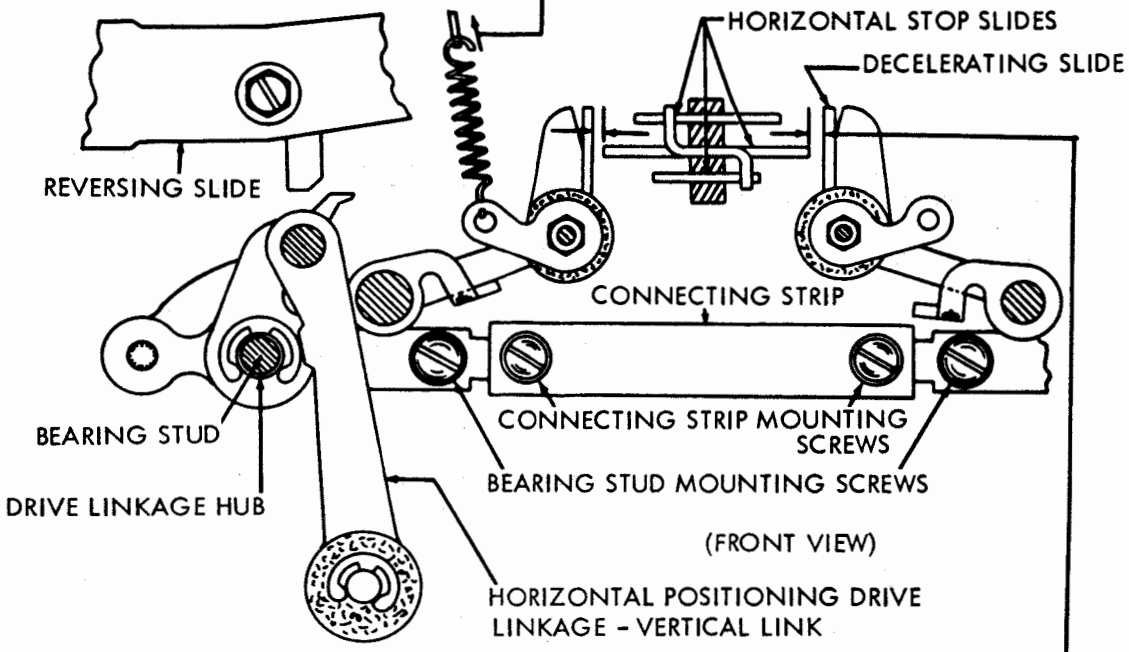
Refine requirement (1).

4.10 Positioning Mechanism

NOTE 1: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS WITH EARLIER DESIGN DRIVE LINKAGE AND TENSION SPRINGS.

NOTE 2: THE LOOPS OF THIS SPRING ARE OFF-SET FROM CENTER IN THE SAME DIRECTION. THE SPRING MUST BE HOOKED ON ITS ANCHORS SO THAT THE SIDE OF THE SPRING ON WHICH THE LOOPS ARE LOCATED, IS TOWARD THE REAR OF THE MACHINE. WHEN REMOVING EITHER SPRING EXERCISE CARE TO AVOID KINKS IN LOOPS.

HORIZONTAL POSITIONING DRIVE LINKAGE SPRING
REQUIREMENT
SPRING UNHOOKED FROM ITS POST.
LINKAGE IN ITS UNBUCKLED POSITION.
MIN. 14 OZS.---MAX. 18 OZS.
TO PULL SPRING TO INSTALLED LENGTH.



HORIZONTAL POSITIONING DRIVE LINKAGE
REQUIREMENT
TYPE BOX CLUTCH DISENGAGED. CODE BARS 4 AND 5 TO SPACING (RIGHT).
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES ON SIDE WHERE KNEE LINK IS STRAIGHT, SHOULD BE EQUAL (WITHIN 0.005 INCH)
MIN. 0.015 INCH---MAX 0.040 INCH
TO ADJUST
LOOSEN BEARING STUD MOUNTING SCREWS AND CONNECTING STRIP MOUNTING SCREWS FRICTION TIGHT. POSITION ONE OR BOTH BEARING STUDS ON THE CONNECTING STRIP TO PROVIDE 0.025 INCH TO 0.035 INCH BETWEEN THE CENTER HORIZONTAL SLIDE AND THE DECELERATING SLIDE ON THE SIDE WHERE THE LINKAGE IS NOT BUCKLED. TIGHTEN THE TWO INNER MOUNTING SCREWS. CHANGE POSITION OF REVERSING SLIDE AND CHECK OPPOSITE CLEARANCE. EQUALIZE BY SHIFTING BOTH STUDS AND CONNECTING STRIP AS A UNIT. HOLD THE DRIVE LINKAGE HUB AGAINST THE LOWER VERTICAL LINK OF THE DRIVE LINKAGE. TIGHTEN THE TWO OUTER BEARING STUD MOUNTING SCREWS. CHECK THE LINKAGE FOR FREENESS THROUGHOUT A COMPLETE CYCLE. THE TYPE BOX CLUTCH DISK SHOULD HAVE SOME MOVEMENT IN THE NORMAL DIRECTION OF ROTATION IN THE STOP POSITION

4.11 Positioning Mechanism (Cont.)

NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS WITH EARLIER DESIGNED DRIVE LINKAGE AND TORSION SPRINGS.

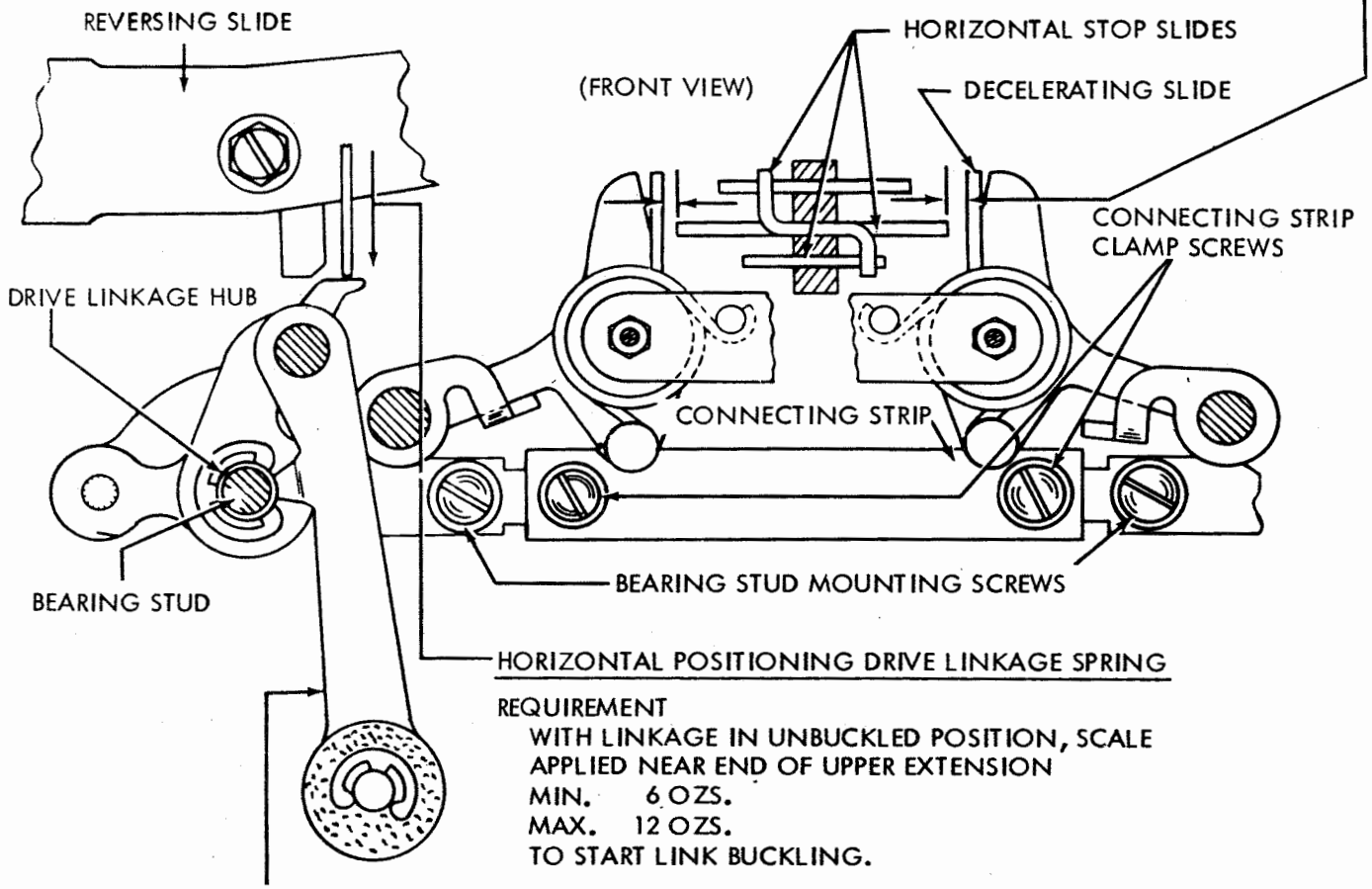
HORIZONTAL POSITIONING DRIVE LINKAGE

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.
CODE BARS 4 AND 5 TO SPACING (RIGHT).
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES, ON SIDE WHERE KNEE LINK IS STRAIGHT SHOULD BE EQUAL (WITHIN 0.008 INCH)
MIN. 0.015 INCH
MAX. 0.040 INCH

TO ADJUST

LOOSEN BEARING STUD MOUNTING SCREWS AND CONNECTING STRIP MOUNTING SCREWS FRICTION TIGHT. POSITION ONE OR BOTH BEARING STUDS ON THE CONNECTING STRIP TO PROVIDE 0.025 INCH TO 0.035 INCH BETWEEN THE CENTER HORIZONTAL SLIDE AND THE DECELERATING SLIDE ON THE SIDE WHERE THE LINKAGE IS NOT BUCKLED. TIGHTEN THE TWO INNER MOUNTING SCREWS. CHANGE POSITION OF REVERSING SLIDE AND CHECK OPPOSITE CLEARANCE. EQUALIZE BY SHIFTING BOTH STUDS AND CONNECTING STRIP AS A UNIT. HOLD THE DRIVE LINKAGE HUB AGAINST THE LOWER VERTICAL LINK OF THE DRIVE LINKAGE. TIGHTEN THE TWO OUTER BEARING STUD MOUNTING SCREWS. CHECK THE LINKAGE FOR FREENESS THROUGHOUT A COMPLETE CYCLE. THE TYPE BOX CLUTCH DISK SHOULD HAVE SOME MOVEMENT IN THE NORMAL DIRECTION OF ROTATION IN THE STOP POSITION.



HORIZONTAL POSITIONING DRIVE LINKAGE SPRING

REQUIREMENT

WITH LINKAGE IN UNBUCKLED POSITION, SCALE APPLIED NEAR END OF UPPER EXTENSION
MIN. 6 OZS.
MAX. 12 OZS.
TO START LINK BUCKLING.

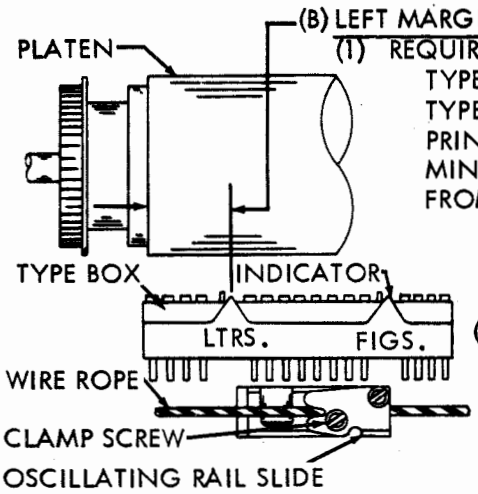
4.12 Spacing Mechanism (Cont.)

NOTE 1: CHECK RELATED ADJUSTMENTS, PAR. 4.07, 4.13 AND 2.47 IF THE FOLLOWING ADJUSTMENTS ARE REMADE.

(B) LEFT MARGIN (FOR SPROCKET FEED UNITS SEE PAR. 2.71)

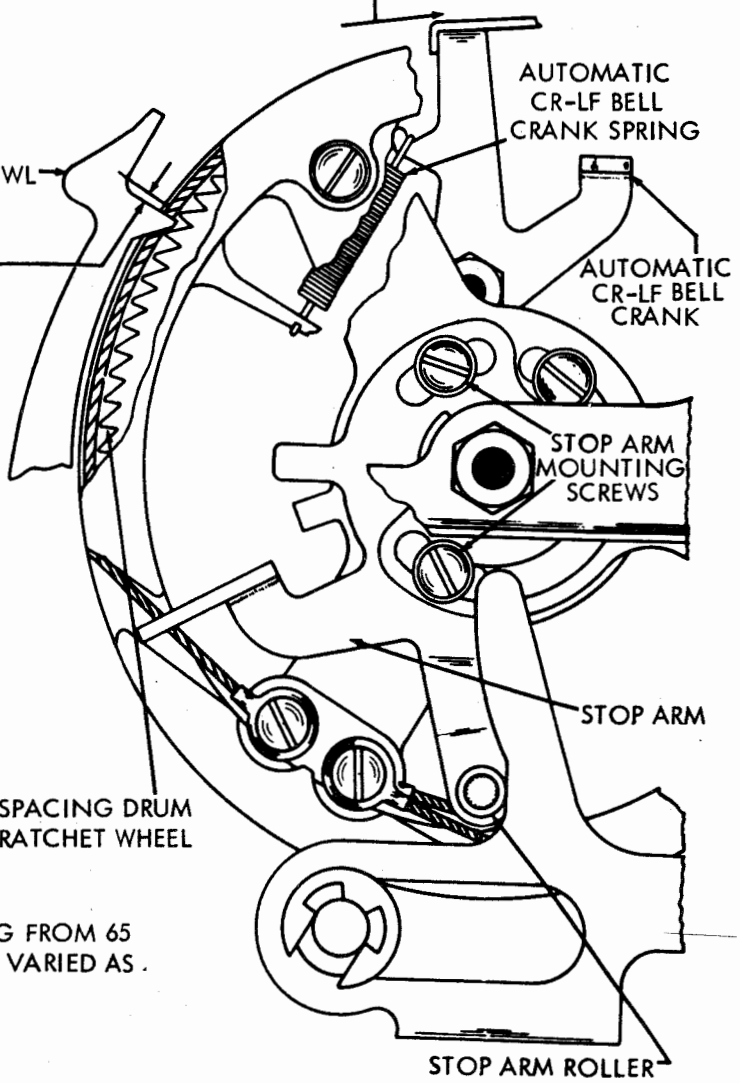
(1) REQUIREMENT (FOR 72 CHARACTER LINE)

TYPE BOX CLUTCH DISENGAGED. SPACING DRUM IN RETURNED POSITION. TYPE BOX SHIFTED TO THE LETTERS POSITION. CENTER OF THE LETTERS PRINT INDICATOR ON THE TYPE BOX SHOULD BE MIN. 15/16 INCH---MAX. 1-1/16 INCH FROM THE LEFT EDGE OF THE PLATEN.



(C) AUTOMATIC CR-LF BELL CRANK SPRING REQUIREMENT

FUNCTION CLUTCH DISENGAGED. MIN. 6-1/2 OZS.---MAX. 11 OZS. TO MOVE THE BELL CRANK.



(2) REQUIREMENT

SPACING CLUTCH DISENGAGED. FRONT SPACING FEED PAWL FARTHEST ADVANCED. SPACING DRUM FULLY RETURNED. PLAY IN SPACING SHAFT GEAR PAR. 2.24 TAKEN UP CLOCKWISE. CLEARANCE BETWEEN PAWL AND SHOULDER OF RATCHET WHEEL TOOTH IMMEDIATELY AHEAD MIN. 0.002 INCH---MAX. 0.015 INCH

(3) REQUIREMENT

REAR PAWL, WHEN FARTHEST ADVANCED, SHOULD REST AT BOTTOM OF INDENTATION BETWEEN RATCHET WHEEL TEETH.

TO ADJUST

POSITION STOP ARM ON SPACING DRUM WITH MOUNTING SCREWS LOOSENED. TIGHTEN SCREWS.

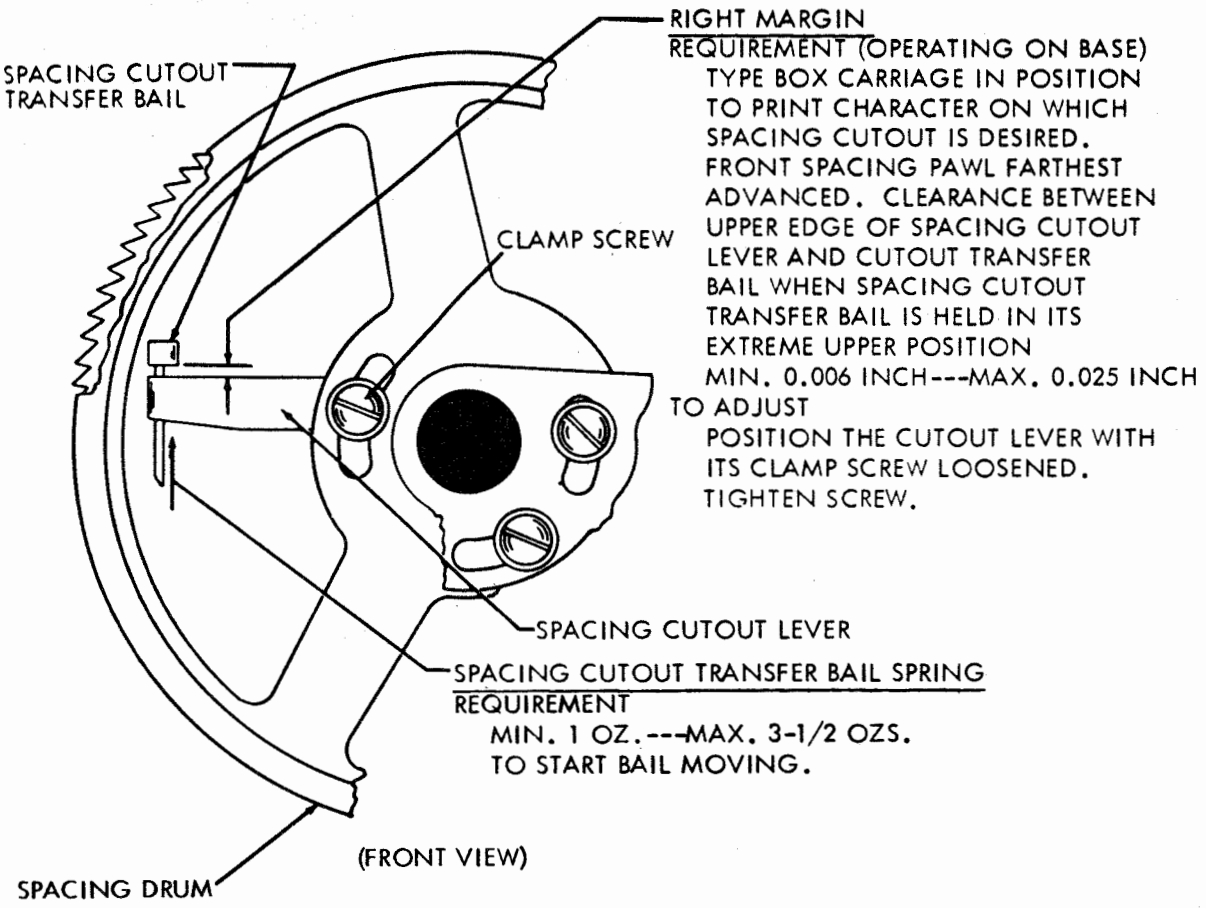
(A) PRINTING CARRIAGE POSITION (USE STANDARD ADJUSTMENT PAR. 2.47)

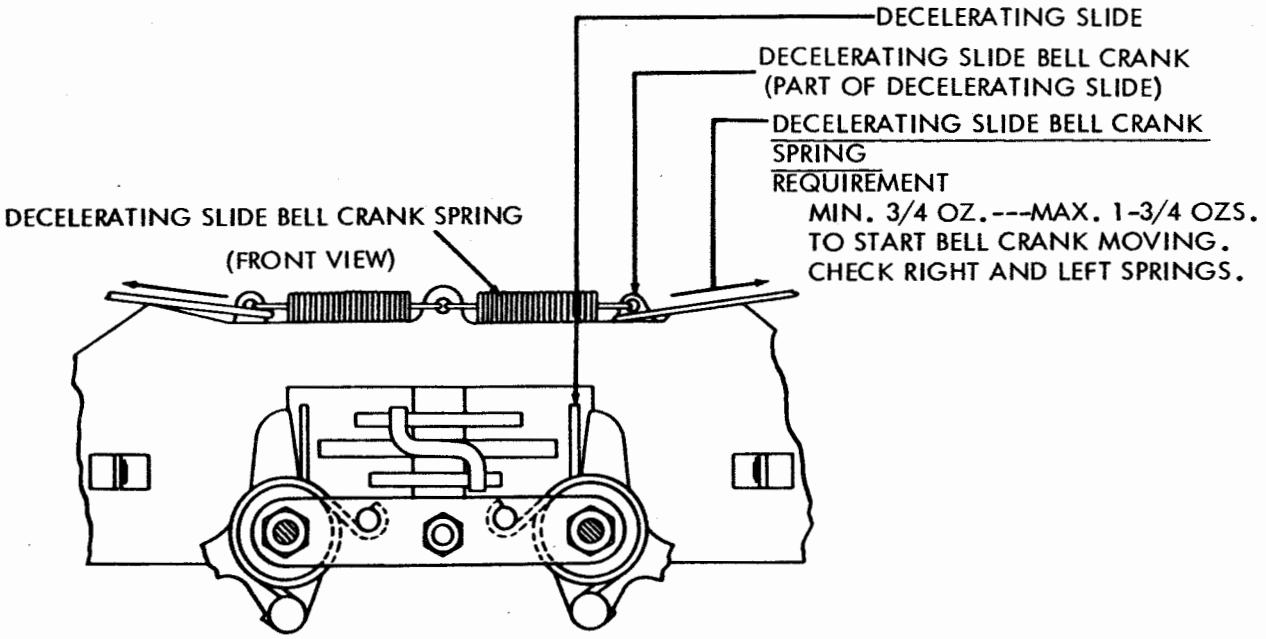
NOTE 2: FOR OTHER LENGTHS OF LINE, RANGING FROM 65 TO 85 CHARACTERS THE MARGIN CAN BE VARIED AS REQUIRED.

NOTE 3: THIS VIEW SHOWS THE SPACING DRUM FULLY RETURNED.

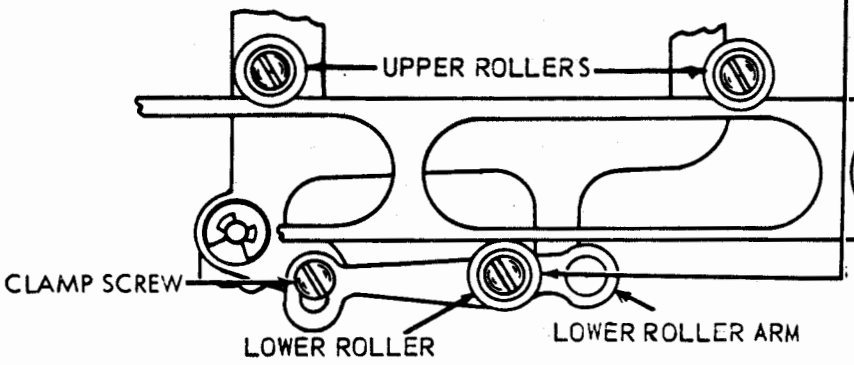
4.13 Spacing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 4.07, 2.38 AND 2.47, IF THE FOLLOWING ADJUSTMENT ARE REMADE.





4. 14 Printing Mechanism



(FRONT VIEW)

TYPE BOX CARRIAGE ROLLER

REQUIREMENT

MINIMUM VERTICAL PLAY WITHOUT BIND IN TYPE BOX CARRIAGE

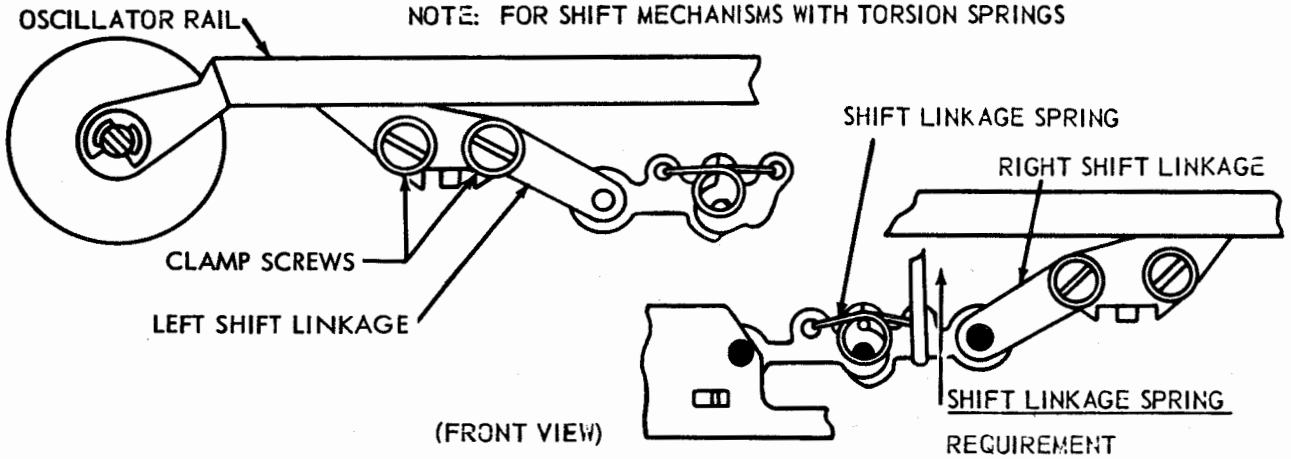
TO CHECK

MOVE CARRIAGE TO RIGHT END OF TRACK. PLACE IN UPPER POSITION. REMOVE DRIVE LINK. CHECK THROUGHOUT ENTIRE TRAVEL OF CARRIAGE.

TO ADJUST

POSITION LOWER ROLLER ARM WITH CLAMP SCREW LOOSENED. TIGHTEN SCREW.

4. 15 Positioning Mechanism (Cont.)



(FRONT VIEW)

SHIFT LINKAGE SPRING

REQUIREMENT

LINK IN STRAIGHT POSITION.

MIN. 7 OZS.

MAX. 16 OZS.

TO START EACH LINK MOVING.

4.16 Printing Mechanism (Cont.)

(A)PRINTING HAMMER STOP BRACKET

(FOR THICK TYPE BOX WITH DUMMY PALLETS)

REQUIREMENT

TYPE BOX IN BLANK OR CR POSITION (WHICHEVER DOES NOT PRINT) AND NEAR CENTER OF PLATEN. PRINTING TRACK IN ITS DOWNWARD POSITION. PRINTING HAMMER HELD AGAINST ITS STOP WITH 8 OZS. OF PRESSURE. CLEARANCE BETWEEN PRINTING HAMMER AND DUMMY TYPE PALLET

FRICTION FEED

MIN. 0.008 INCH

MAX 0.020 INCH

TO ADJUST

POSITION THE STOP BRACKET WITH ITS MOUNTING SCREW AND THE PRINTING HAMMER BAIL PIVOT STUD LOOSENED. TIGHTEN SCREW AND NUT.

(FOR SPROCKET FEED UNITS, SEE PAR. 2.71)

(C)

TYPE PALLET SPRING

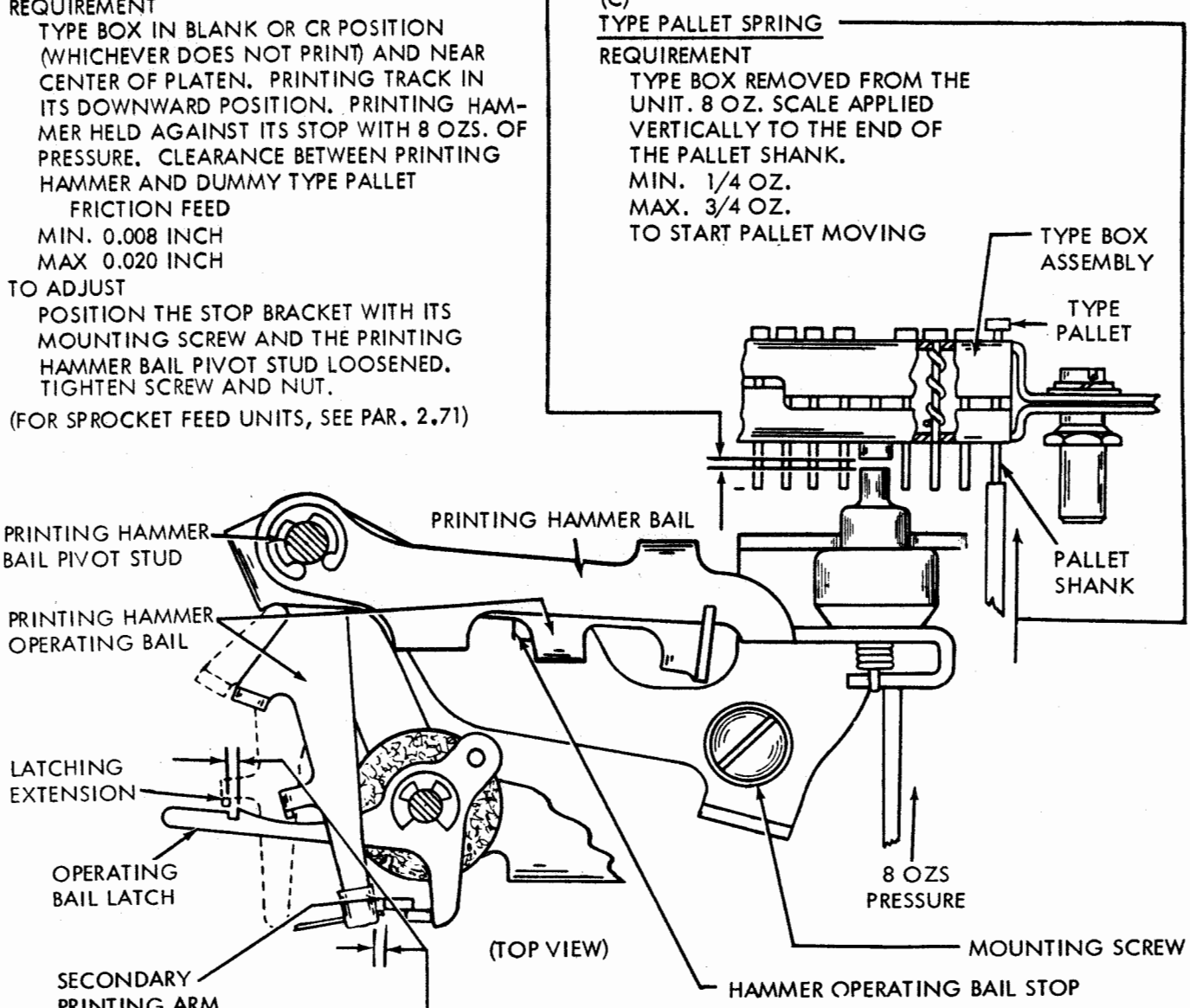
REQUIREMENT

TYPE BOX REMOVED FROM THE UNIT. 8 OZ. SCALE APPLIED VERTICALLY TO THE END OF THE PALLET SHANK.

MIN. 1/4 OZ.

MAX. 3/4 OZ.

TO START PALLET MOVING



(B)PRINTING ARM

(1) REQUIREMENT

PRINTING TRACK IN MAXIMUM DOWNWARD POSITION. PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP. SOME CLEARANCE BETWEEN SECONDARY PRINTING ARM AND FORWARD EXTENSION OF HAMMER OPERATING BAIL.

MAX. 0.015 INCH

WHEN PRINTING ARM SLIDE IS HELD DOWNWARD OVER EACH PRINTING TRACK MOUNTING SCREW FOR MAXIMUM CLEARANCE.

(2) REQUIREMENT

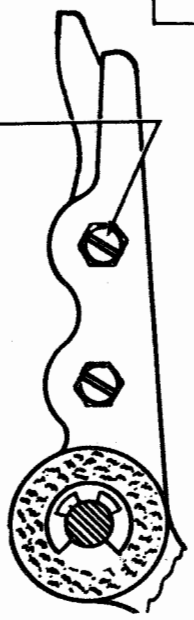
PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAIL SHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY

MIN. 0.006 INCH

CHECK RIGHT AND LEFT POSITION

TO ADJUST

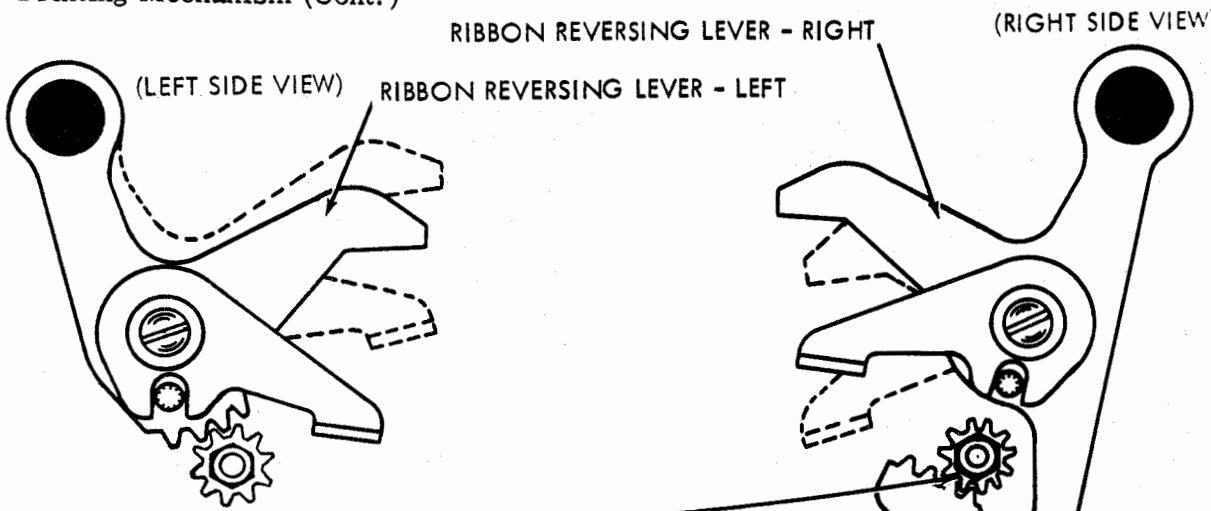
POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED. TIGHTEN SCREWS.



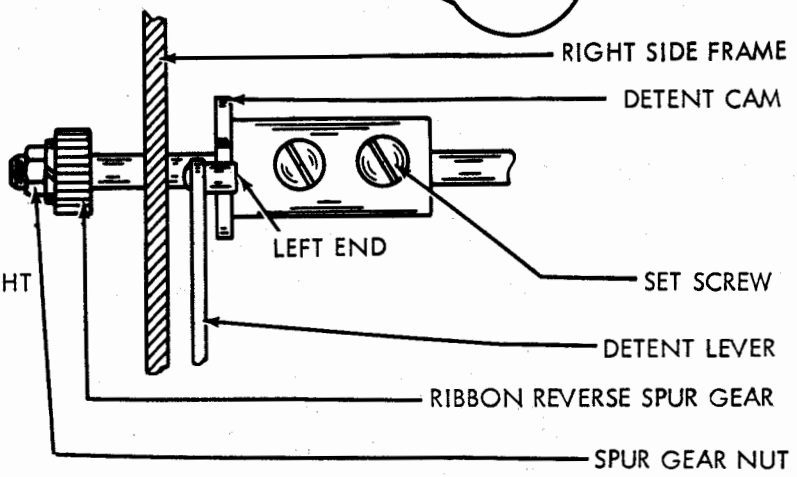
NOTE

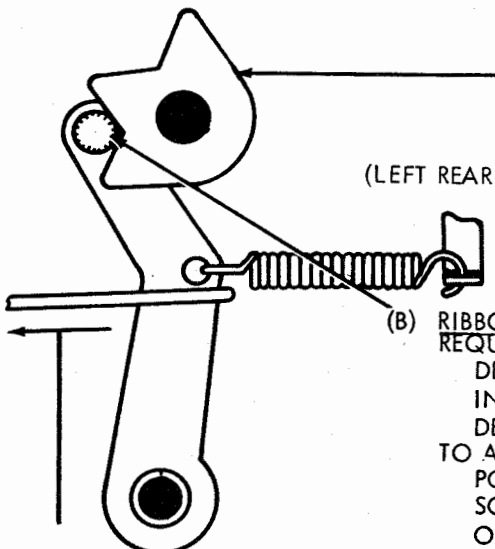
THE PRINTING ARM ADJUSTMENT SHOULD ALWAYS BE MADE WITH THE PRINTING HAMMER OPERATING BAIL SPRING BRACKET (PAR. 2.38) IN THE NO. 1 POSITION POSITIONS NO. 2 AND NO. 3 ARE TO BE USED ONLY FOR MAKING MULTIPLE COPIES.

4. 17 Printing Mechanism (Cont.)



(A) RIBBON REVERSE SPUR GEAR
REQUIREMENT
WHEN RIGHT REVERSING LEVER IS IN MAXIMUM DOWNWARD POSITION, THE LEFT REVERSING LEVER SHOULD BE IN ITS MAXIMUM UPWARD POSITION.
TO ADJUST
LOOSEN THE SET SCREWS IN THE DETENT CAM. LOOSEN THE LEFT SPUR GEAR NUT. SECURELY TIGHTEN THE RIGHT SPUR GEAR NUT. MOVE THE RIGHT REVERSING LEVER TO ITS MAXIMUM DOWNWARD POSITION AND HOLD LEFT REVERSING LEVER IN ITS MAXIMUM UPWARD POSITION. THEN TIGHTEN THE LEFT SPUR GEAR NUT.

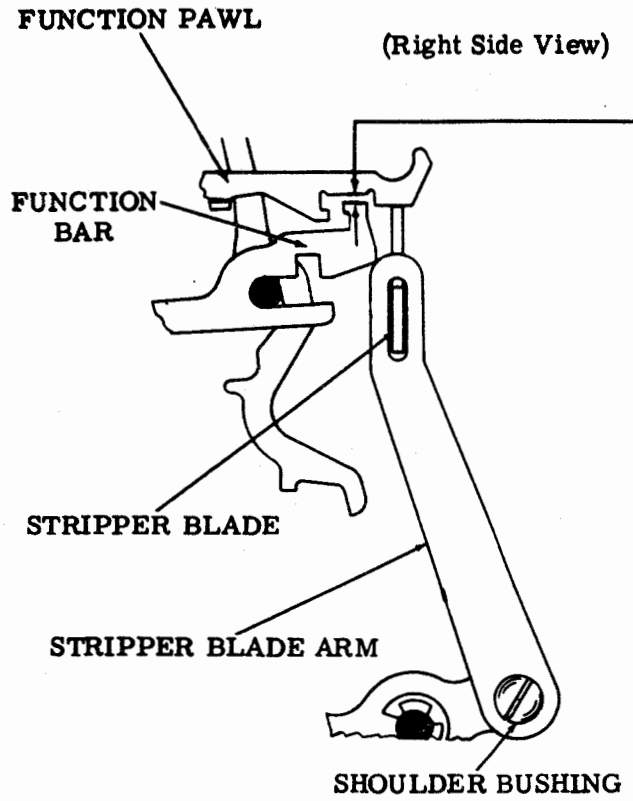




(B) RIBBON REVERSE DETENT
REQUIREMENT
DETENT SEATED APPROXIMATELY EQUAL IN UPPER AND LOWER POSITIONS OF DETENT CAM
TO ADJUST
POSITION CAM ON SHAFT WITH SET SCREWS LOOSENED. LET LEFT END OF DETENT STUD BE APPROXIMATELY FLUSH WITH LEFT FACE OF CAM (PLAY IN DETENT TAKEN TO RIGHT OF PRINTER) TIGHTEN SCREWS.

(C) RIBBON REVERSE DETENT LEVER SPRING
REQUIREMENT
DETENT SEATED IN NOTCH OF CAM. RIGHT RIBBON REVERSING LEVER HELD DOWNWARD.
MIN. 6-1/2 OZS.---MAX. 9 OZS.
TO START THE DETENT LEVER MOVING.

4.18 Function Mechanism (continued)



FUNCTION STRIPPER BLADE ARMS

Requirement

Typebox clutch and function clutch disengaged. Left line feed function pawl held in its rear position and resting on upper edge of stripper blade. Clearance between upper edge of function bar and lower surface of notched section of function pawl

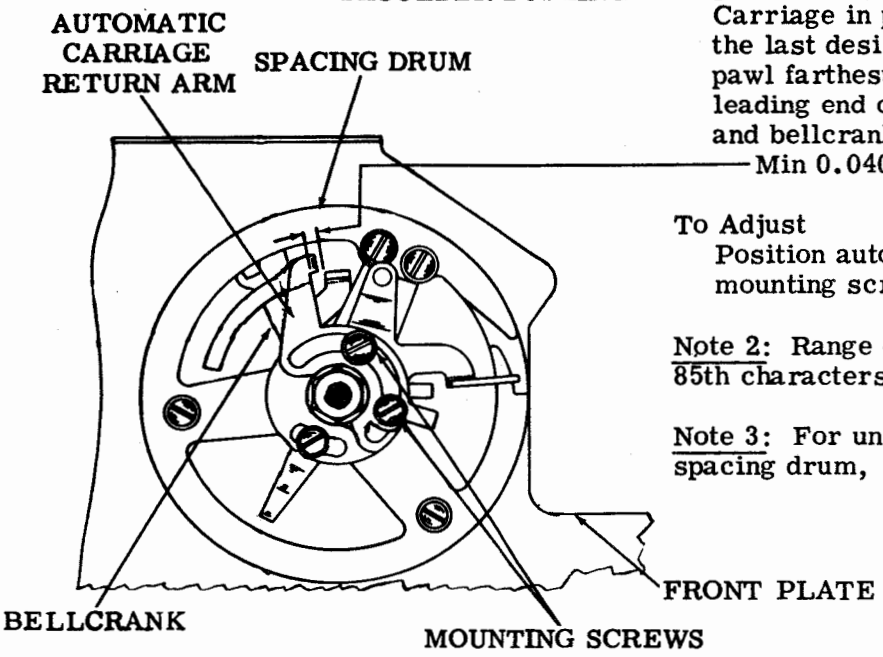
Min 0.055 inch---Max 0.065 inch

The letters function pawl near the opposite end of the stripper blade should have the same clearance.

To Adjust

Position shoulder bushing at lower end of right and left stripper blade arm with the locknut loosened. Tighten nut.

Note 1: When checking this adjustment single-double line feed lever must be in double line feed position.



(Front View)

AUTOMATIC CARRIAGE RETURN AND LINE FEED ARM

Requirement (Operating on Base)

Carriage in position to print two spaces before the last desired characters, and front spacing pawl farthest advanced. Clearance between leading end of automatic carriage return arm and bellcrank

Min 0.040 inch---Max 0.055 inch

To Adjust

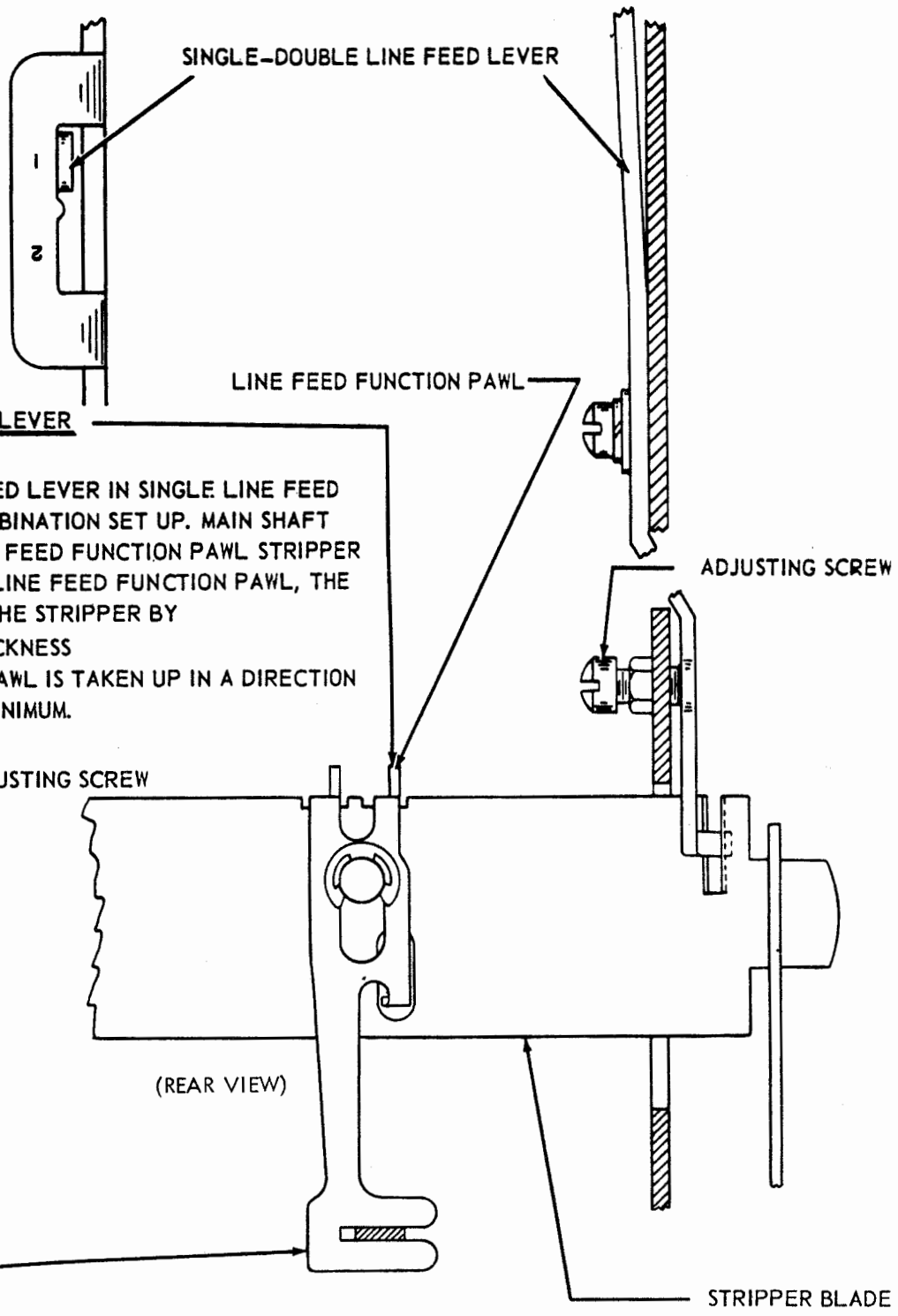
Position automatic carriage return arm with mounting screws loosened. Tighten screw.

Note 2: Range of adjustment is from 65th to 85th characters.

Note 3: For units equipped with universal spacing drum, see (2.62).

4.20 Line Feed Mechanism and Platen Mechanism

NOTE: THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH A TWO-STOP FUNCTION CLUTCH



SINGLE-DOUBLE LINE FEED LEVER

REQUIREMENT

SINGLE-DOUBLE LINE FEED LEVER IN SINGLE LINE FEED POSITION. LINE FEED COMBINATION SET UP. MAIN SHAFT ROTATED UNTIL THE LINE FEED FUNCTION PAWL STRIPPER IS IN CONTACT WITH THE LINE FEED FUNCTION PAWL, THE PAWL SHOULD OVERLAP THE STRIPPER BY

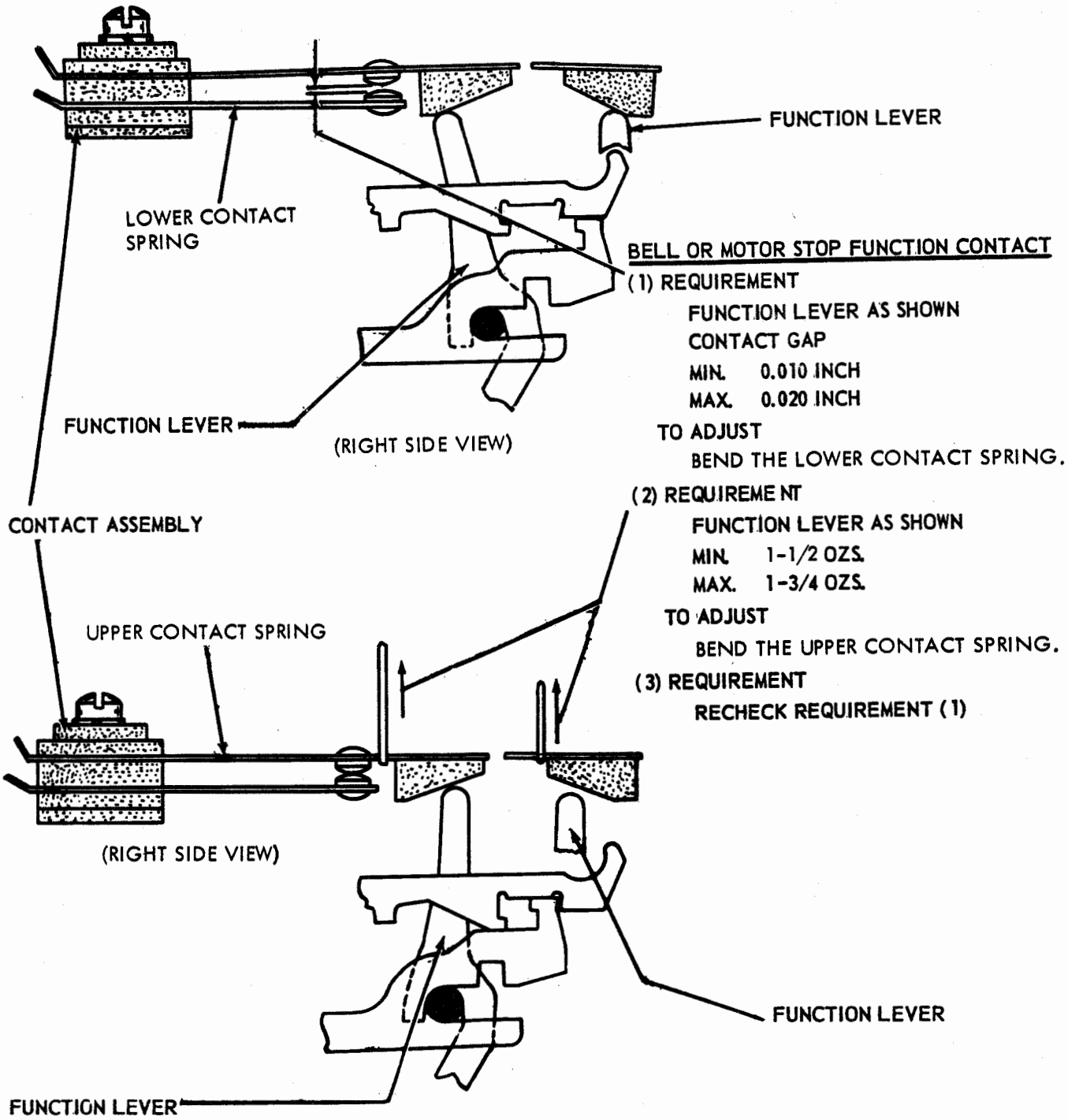
MIN. 1/2 THE PAWL THICKNESS

WHEN THE PLAY IN THE PAWL IS TAKEN UP IN A DIRECTION TO MAKE THE OVERLAP MINIMUM.

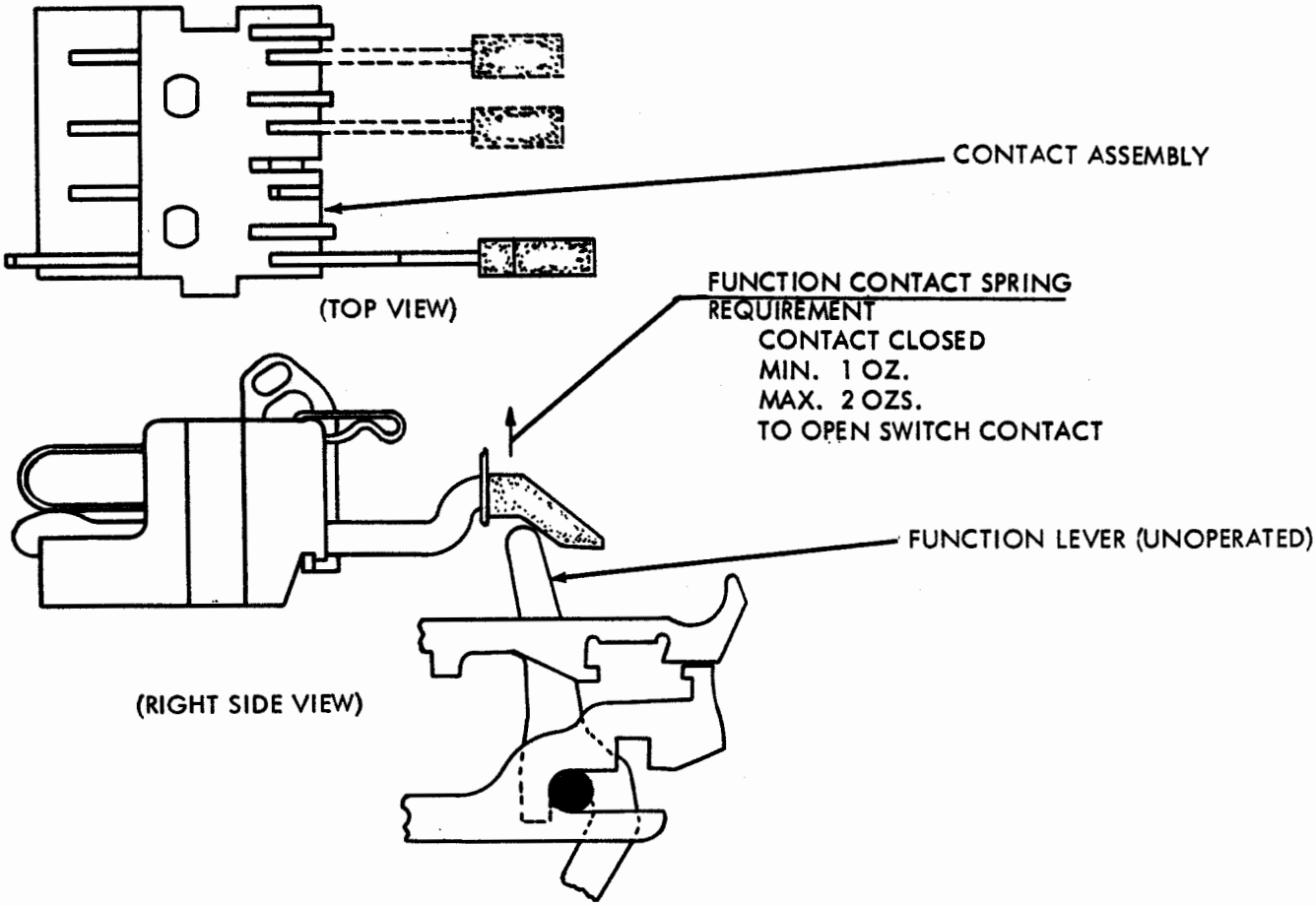
TO ADJUST

POSITION THE LEVER ADJUSTING SCREW
TIGHTEN SCREW.

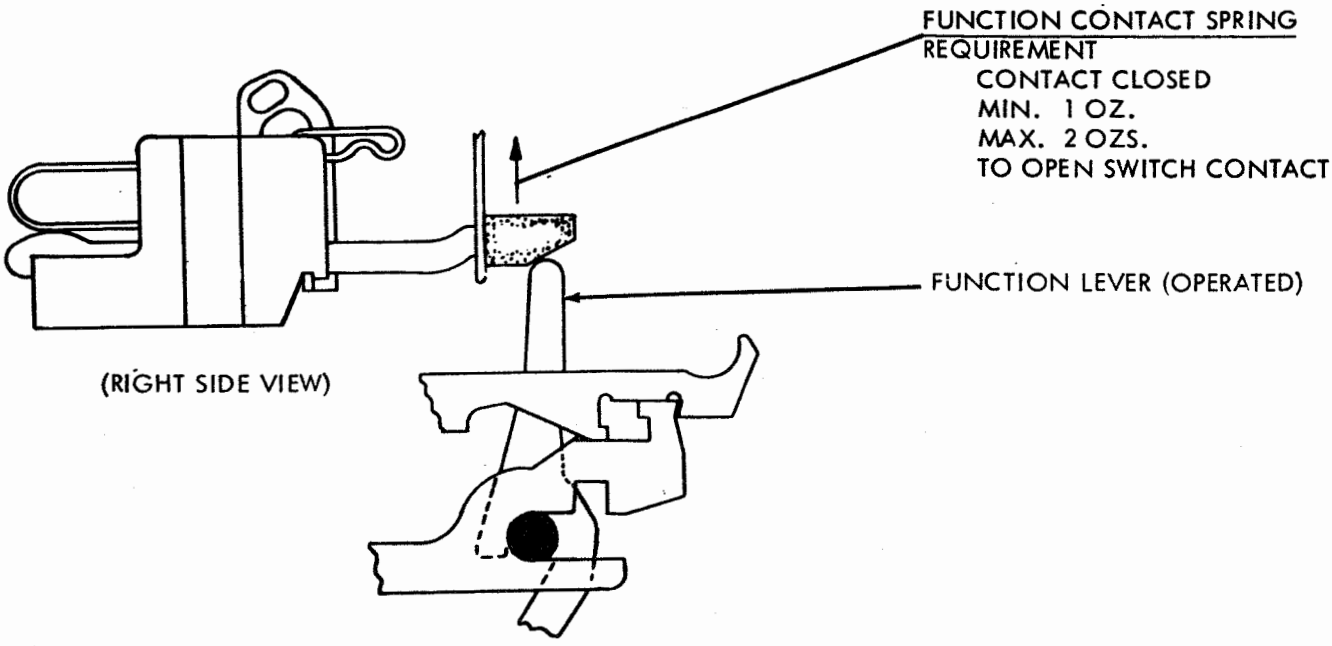
4.21 Function Mechanism (Cont.)



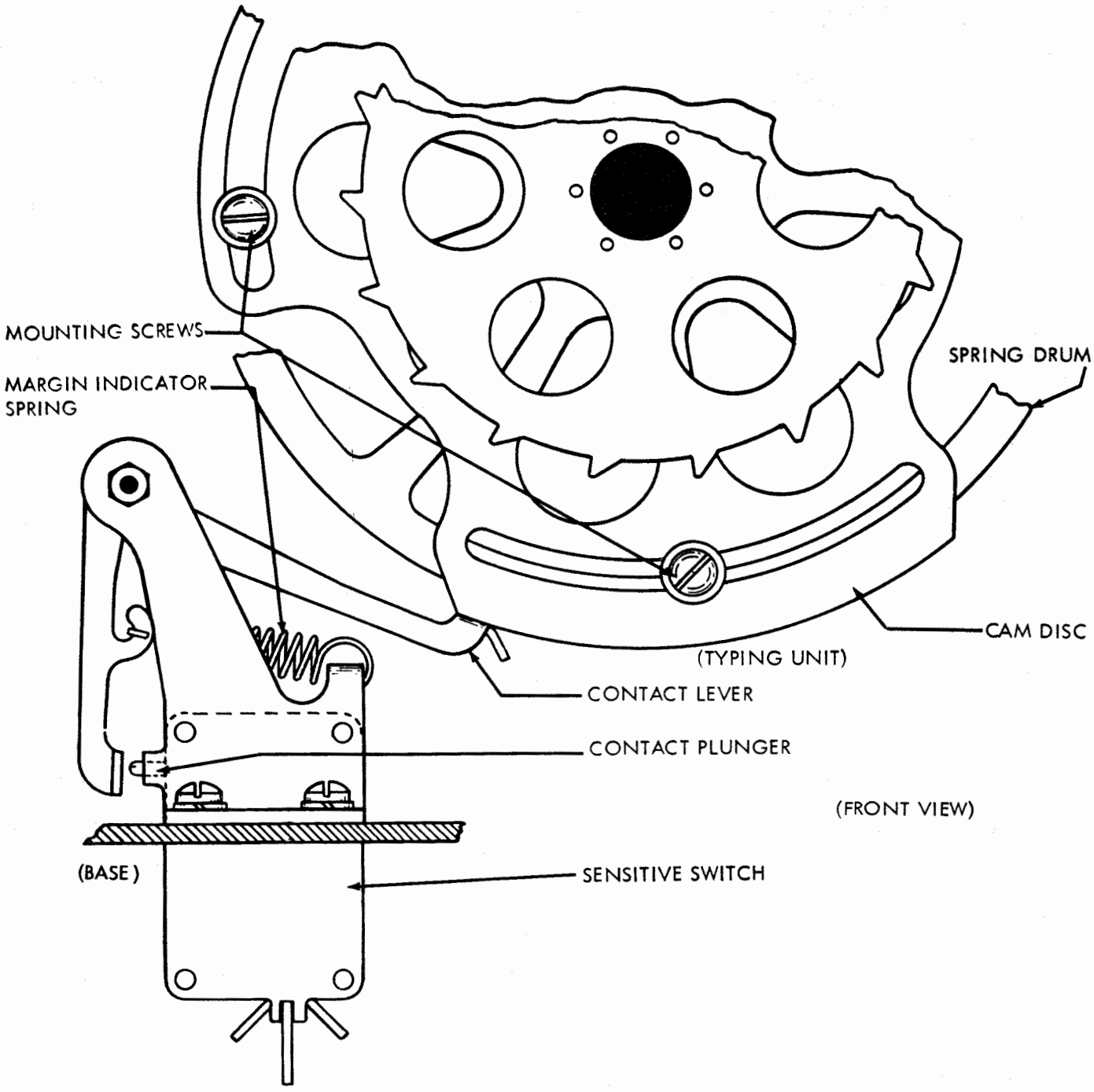
4.22 Function Mechanism (Cont.)



CAUTION: CARE SHOULD BE EXERCISED IN SOLDERING TO CONTACT SPRINGS SINCE EXCESSIVE HEAT WILL ANNEAL THE SPRINGS.



4.23 Spacing Mechanism (Cont.)



MARGIN INDICATOR LAMP

REQUIREMENT

OPERATING UNDER POWER, THE LAMP SHOULD LIGHT ON THE DESIRED CHARACTER.

TO ADJUST

SET THE TYPE BOX CARRIAGE TO PRINT THE DESIRED CHARACTER AND POSITION THE CAM DISC COUNTERCLOCKWISE ON THE SPRING DRUM WITH ITS THREE MOUNTING SCREWS LOOSENED SO THAT THE SWITCH JUST OPENS. IF A LINE SHORTER THAN 72 CHARACTERS IS REQUIRED, IT MAY BE NECESSARY TO REMOVE THE CAM DISC SCREWS AND INSERT THEM IN ADJACENT SLOTS OF THE DISC, IF THE RANGE OF ROTATION IN ONE SLOT IS NOT ENOUGH. TIGHTEN SCREWS.

VARIABLE FEATURES

4.24 Horizontal Tabulator Mechanism

(A)
OPERATING LEVER SLIDE ARM

NOTE

PRIOR TO THIS ADJUSTMENT CHECK FUNCTION RESET BAIL BLADE ADJUSTMENT (PAR.4.09)

REQUIREMENT

ON UNITS WITH TWO-STOP FUNCTION CLUTCHES. FUNCTION CLUTCH DISENGAGED. TYPE BOX CLUTCH ROTATED 1/2 REVOLUTION PAST STOP POSITION. ON UNITS WITH ONE-STOP FUNCTION CLUTCH, ROTATE CLUTCH UNTIL FUNCTION PAWL STRIPPER BLADE IS IN ITS LOWER POSITION AND THE FUNCTION RESET BAIL ROLLER IS ON THE HIGH PART OF CAM. HORIZONTAL TABULATOR FUNCTION PAWL PULLED TO REAR AND LATCHED OVER FUNCTION BAR. CLEARANCE
MIN. 0.015 INCH
MAX. 0.035 INCH

TO ADJUST

POSITION SLIDE ARM ON OPERATING LEVER WITH MOUNTING STUD FRICTION TIGHT. TIGHTEN STUD.

(C)
OPERATING LEVER EXTENSION LINK SPRING

REQUIREMENT

TRIP ARM LATCH BAIL SPRING UNHOOKED. OPERATING LEVER IN OPERATED POSITION. SLIDE ARM AGAINST BLOCKING LINK.
MIN. 8-3/4 OZS.
MAX. 10-3/4 OZS.
TO START LINK MOVING.

(B)
OPERATING LEVER ADJUSTING PLATE

REQUIREMENT

OPERATING LEVER IN UNOPERATED POSITION. CLEARANCE
MIN. 0.070 INCH
MAX. 0.085 INCH

TO ADJUST

POSITION ADJUSTING PLATE ON BRACKET WITH MOUNTING SCREWS LOOSE. TIGHTEN SCREWS.

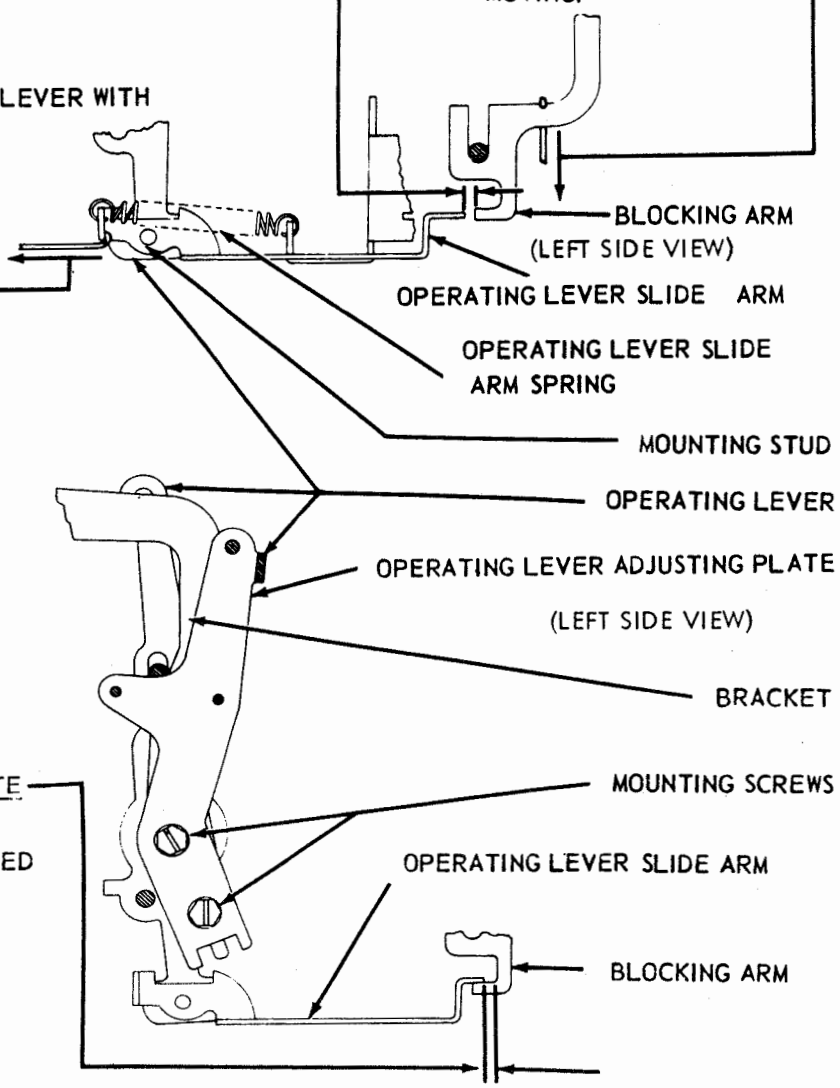
(D) TABULATOR SHAFT SPRING (TORSION)

NOTE

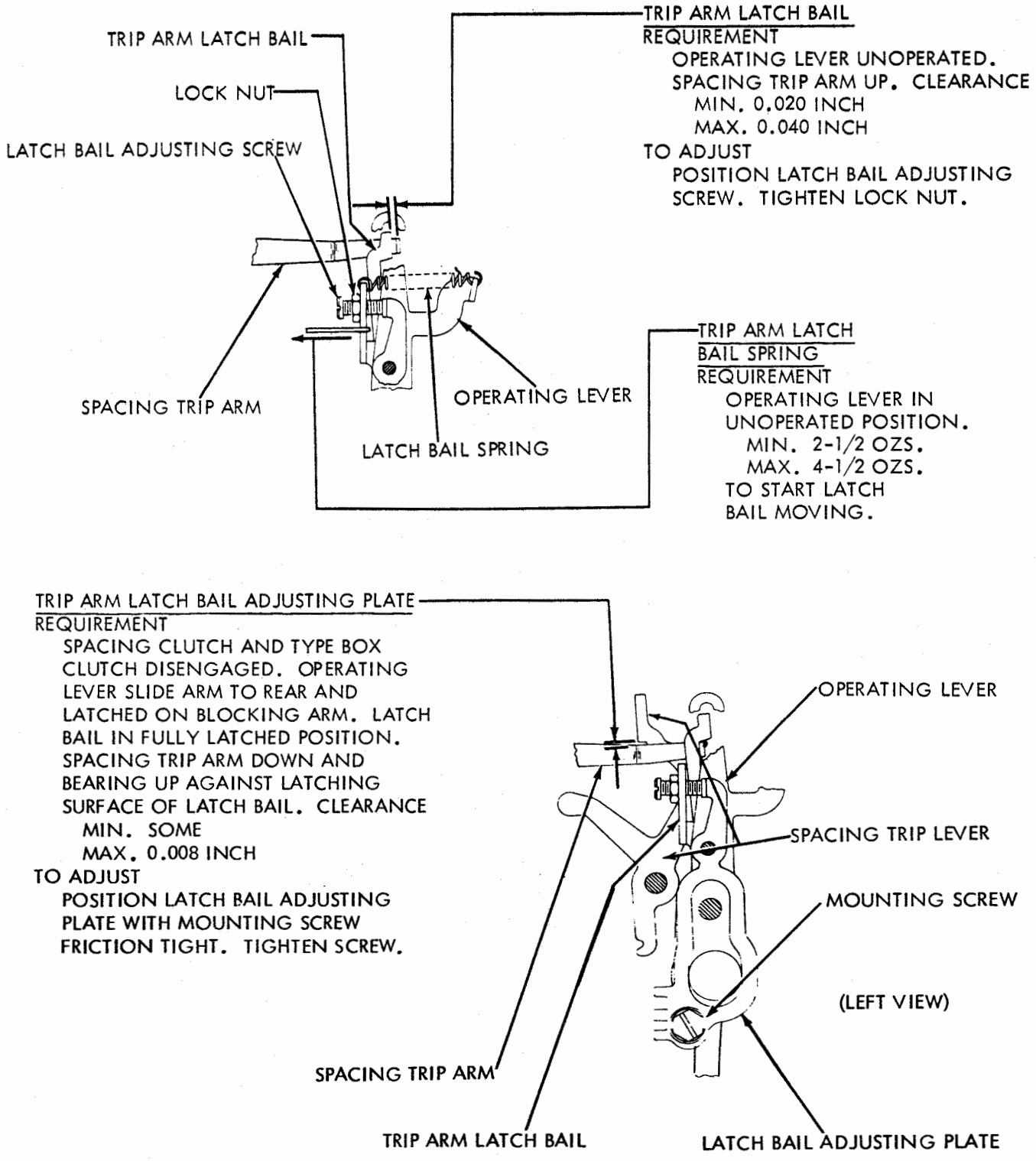
FOR LOCATION OF SPRING SEE PAR.4.27

REQUIREMENT

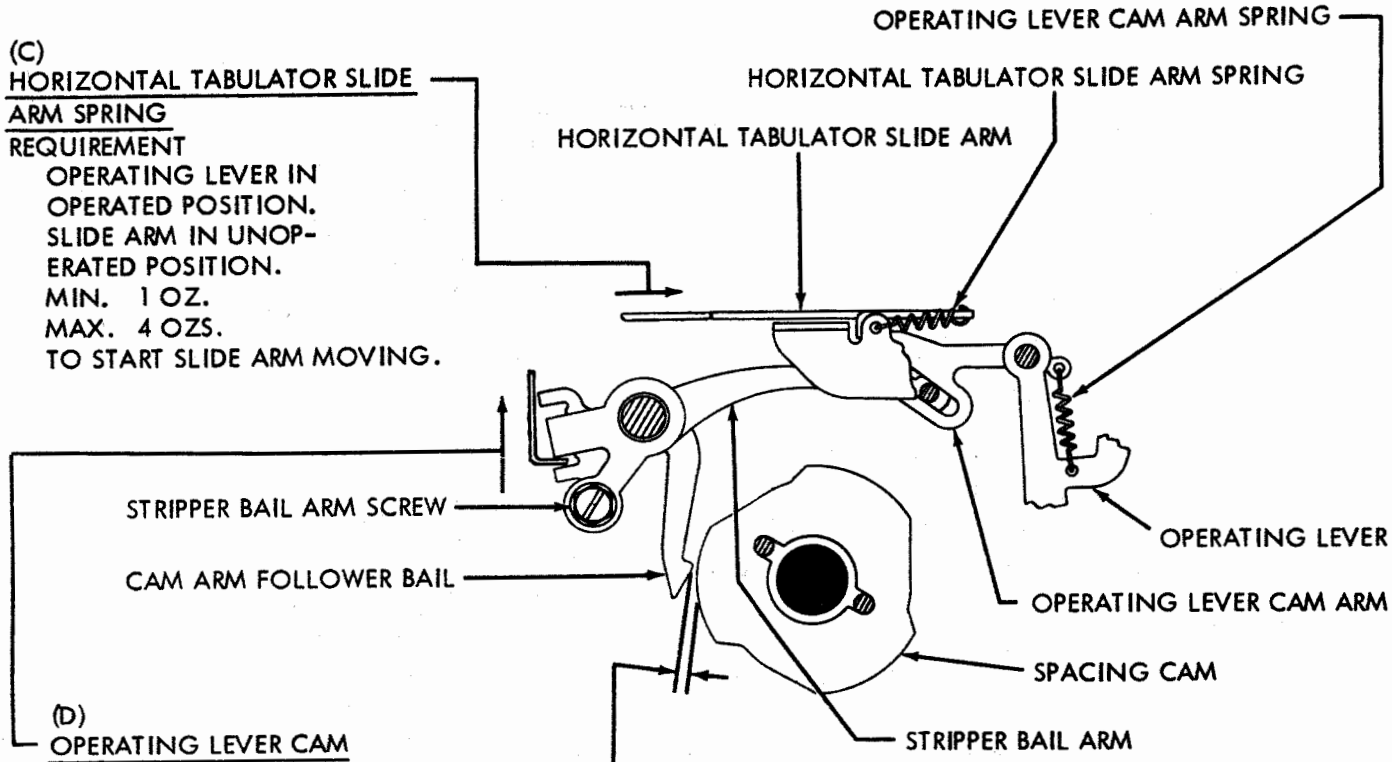
OPERATING LEVER IN UNOPERATED POSITION.
(AS IN LOWER FIGURE)
MIN. 1-1/2 OZS.
MAX. 3-1/2 OZS.
TO START SLIDE ARM MOVING.



4.25 Horizontal Tabulator Mechanism (Cont.)



4.26 Horizontal Tabulator Mechanism (Cont.)

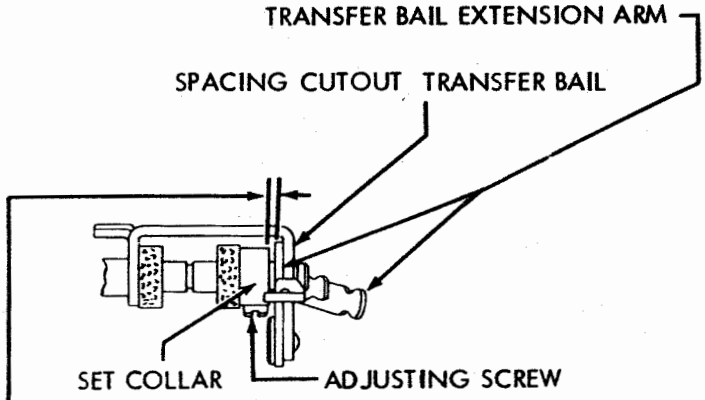


(LEFT SIDE VIEW)

(C)
HORIZONTAL TABULATOR SLIDE ARM SPRING
REQUIREMENT
OPERATING LEVER IN OPERATED POSITION. SLIDE ARM IN UNOPERATED POSITION.
MIN. 1 OZ.
MAX. 4 OZS.
TO START SLIDE ARM MOVING.

(D)
OPERATING LEVER CAM PLATE SPRING
REQUIREMENT
OPERATING LEVER IN UNOPERATED POSITION. HORIZONTAL TABULATOR FUNCTION PAWL UNLATCHED.
MIN. 4 OZS.
MAX. 9 OZS.
TO START STRIPPER BAIL ARM MOVING.

(A)
CAM PLATE STRIPPER BAIL
REQUIREMENT
OPERATING LEVER AND TABULATOR SLIDE ARM IN UNOPERATED POSITIONS. SPACING CLUTCH ROTATED UNTIL HIGH PART OF SPACING CAM IS OPPOSITE CAM ARM FOLLOWER BAIL. CLEARANCE
MIN. 0.010 INCH
MAX. 0.025 INCH
TO ADJUST
POSITION STRIPPER BAIL ARM ON CAM ARM FOLLOWER BAIL WITH STRIPPER BAIL ARM SCREW FRICTION TIGHT. TIGHTEN SCREW.



(BOTTOM VIEW)

(B)
SPACING CUTOUT TRANSFER BAIL SET COLLAR
REQUIREMENT
TRANSFER BAIL SHOULD HAVE SOME END PLAY.
MAX. 0.008 INCH.
TO ADJUST
POSITION SET COLLAR WITH ADJUSTING SCREW LOOSENED. TIGHTEN SCREW.

4.27 Horizontal Tabulator Mechanism (Cont.)

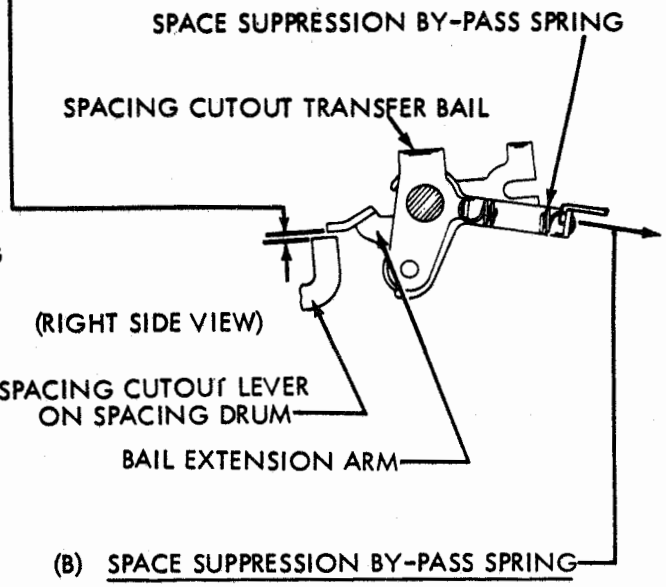
(A) RIGHT MARGIN

REQUIREMENT
CLEARANCE
MIN. 0.006 INCH---MAX. 0.025 INCH

TO CHECK
PLACE TYPE BOX IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUTOUT IS DESIRED. PULL FORWARD ON PART OF TRANSFER BAIL EXTENDING BELOW MOUNTING SHAFT UNTIL BAIL IS IN FULLY OPERATED POSITION. GAUGE CLEARANCE.

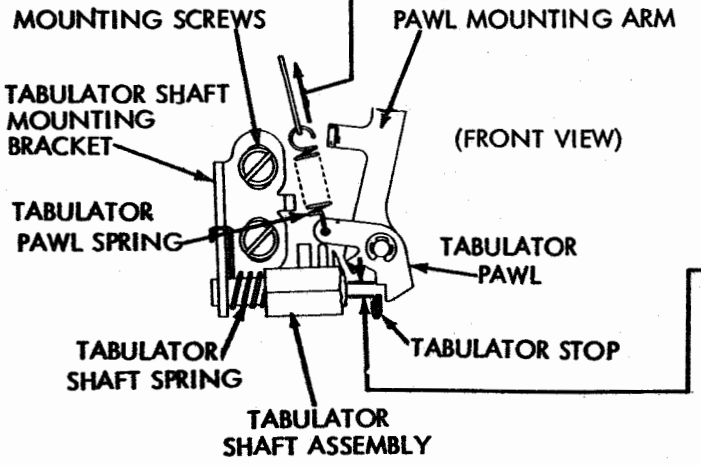
TO ADJUST
POSITION CUTOUT LEVER WITH CLAMP SCREW LOOSENED. (FOR LOCATION OF CLAMP SCREW SEE PAR.4.13)

NOTE 1: FOUR SCREWS MUST BE LOOSENED TO ADJUST CIRCULAR CUTOUT LEVERS.



(B) SPACE SUPPRESSION BY-PASS SPRING

REQUIREMENT
MIN. 20 OZS.
MAX. 26 OZS.
TO START ARM MOVING.



(D) TABULATOR PAWL SPRING

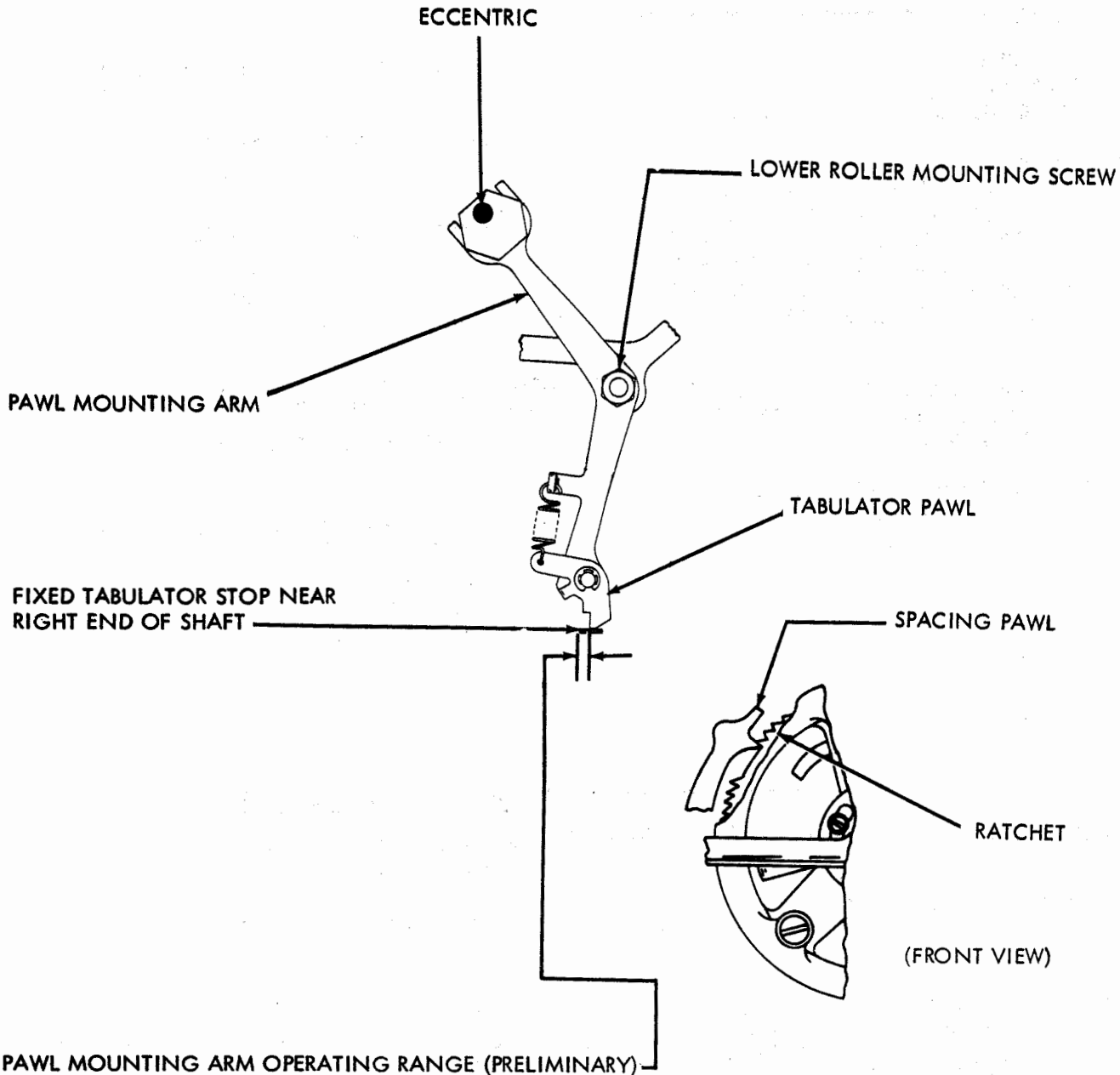
REQUIREMENT
MIN. 1-3/4 OZS.
MAX. 3 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(C) TABULATOR SHAFT MOUNTING BRACKETS

REQUIREMENT
LEVER SLIDE ARM TO REAR SO THAT BLOCKING ARM AND TABULATOR STOP ARE IN EXTREME UPPER POSITION.
CLEARANCE
MIN. 0.050 INCH---MAX. 0.065 INCH
CLEARANCE MEASURED NEAR LEFT AND RIGHT END OF SHAFT EQUAL WITHIN 0.007 INCH.

TO ADJUST
POSITION MOUNTING BRACKETS WITH MOUNTING SCREWS LOOSENED.
NOTE 2: MAKE SURE THAT SHAFT IS FREE OF BINDS.

4.28 Horizontal Tabulator Mechanism (Cont.)



PAWL MOUNTING ARM OPERATING RANGE (PRELIMINARY)

NOTE --- PRIOR TO THIS ADJUSTMENT, CHECK THE FOLLOWING: OSCILLATING RAIL SLIDE (PAR. 2.30), PRINTING CARRIAGE POSITION (PAR. 2.47) AND PRINTING CARRIAGE LOWER ROLLER (PAR. 2.46).

REQUIREMENT (UNITS WITH FRICTION FEED PLATENS)

SPACING CLUTCH DISENGAGED. SPACING PAWL, WHICH IS FARTHEST ADVANCED, ENGAGING TOOTH IMMEDIATELY ABOVE CUTAWAY SECTION OF RATCHET. TABULATOR PAWL RIDING UP ON FIXED STOP. HIGH PART OF ECCENTRIC TOWARD FORK OF MOUNTING ARM. CLEARANCE

MIN. 0.070 INCH MAX. 0.090 INCH

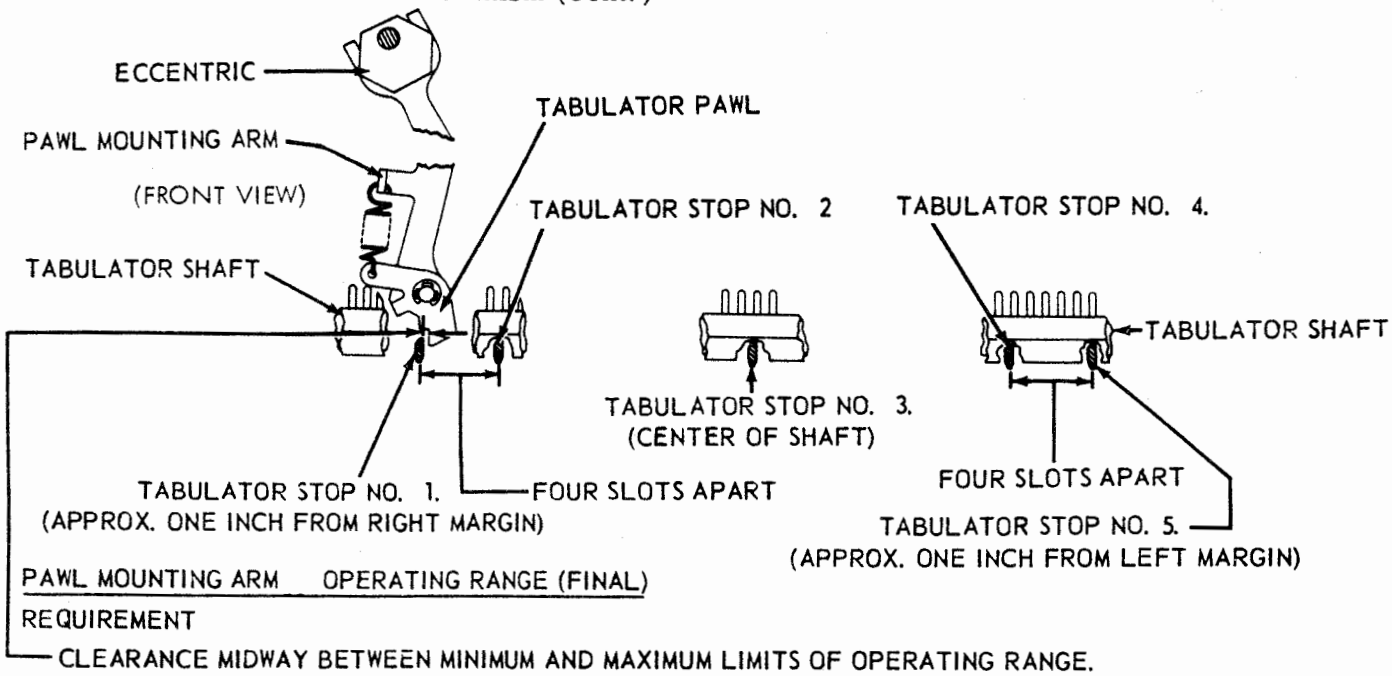
REQUIREMENT (UNITS WITH SPROCKET FEED PLATENS)

HIGH PART OF ECCENTRIC TOWARD LOWER ROLLER MOUNTING SCREW.

TO ADJUST

POSITION ECCENTRIC. TIGHTEN NUT.

4.29 Horizontal Tabulator Mechanism (Cont.)



PAWL MOUNTING ARM OPERATING RANGE (FINAL)

REQUIREMENT

CLEARANCE MIDWAY BETWEEN MINIMUM AND MAXIMUM LIMITS OF OPERATING RANGE.

TO CHECK

TO DETERMINE MAXIMUM LIMIT. . . (A) SET FIVE TABULATOR STOPS AS SHOWN IN FIGURE. (B) POSITION PAWL IMMEDIATELY TO RIGHT OF STOP NO. 1. (C) POSITION ECCENTRIC TO SET CLEARANCE APPROXIMATELY 0.030 INCH. (NOTE - - - MEASURE ALL CLEARANCES AT STOP NO. 1. WITH PLAY TAKEN UP IN CARRIAGE TO REDUCE GAP TO MINIMUM.) (D) MARK COLUMN LOCATION BY PRINTING A CHARACTER ON PAPER. (E) POSITION PAWL IMMEDIATELY TO RIGHT OF STOP NO. 2 AND MARK COLUMN LOCATION AS IN STEP (D). (F) REPEAT STEP (E) FOR OTHER THREE STOPS. (G) GRADUALLY INCREASE CLEARANCE UNTIL CARRIAGE STOPS ONE SPACE BEFORE ANY COLUMN WHILE RECEIVING FIGURES G LETTERS X FROM TRANSMITTER DISTRIBUTOR. (NOTE - - - IF UNIT IS NOT EQUIPPED WITH XD CONTROL, PUT FILL-IN CHARACTERS OF LETTERS OR FIGURES IN TAPE TO DELAY PRINTING UNTIL CARRIAGE COMPLETES TRAVEL.) (H) DECREASE CLEARANCE UNTILTEN LINES OF TABULAR OPERATION CAN BE MADE WITHOUT ERROR. (1) GAUGE AND RECORD VALUES OF CLEARANCE. (2) GAGE ALL CLEARANCES WITH FRONT FEED PAWL FARTHEST ADVANCED.

TO DETERMINE MINIMUM LIMITS - - - (A) REPEAT STEPS (B) AND (C) ABOVE. (B) GRADUALLY DECREASE CLEARANCE UNTIL CARRIAGE STOPS ONE SPACE AFTER ANY COLUMN. (C) INCREASE CLEARANCE UNTIL TEN LINES OF TABULAR OPERATION CAN BE MADE WITHOUT ERROR. (1) GAUGE AND RECORD VALUE OF CLEARANCE.

TO ADJUST

IF MINIMUM LIMIT IS POSITIVE, ADD IT TO MAXIMUM LIMIT AND DIVIDE THE SUM BY TWO. SET RESULTANT AMOUNT AS MIDPOINT OF RANGE. IF MINIMUM LIMIT IS ZERO OR LESS, DIVIDE MAXIMUM LIMIT BY TWO AND SET THIS AMOUNT AS MIDPOINT OF RANGE. THE DIFFERENCES BETWEEN LIMITS NORMALLY IS NOT LESS THAN 0.045 INCH. TIGHTEN NUT.

TABULATOR STOP SETTING (NOT ILLUSTRATED)

RIGHT MARGIN TABULATOR STOP (WITH WIDE SHELF)

NOTE: PRIOR TO THIS ADJUSTMENT, CHECK THE FOLLOWING: RIGHT MARGIN (PAR.4.27) AND PAWL MOUNTING ARM OPERATING RANGE (PAR.4.28 AND 4.29).

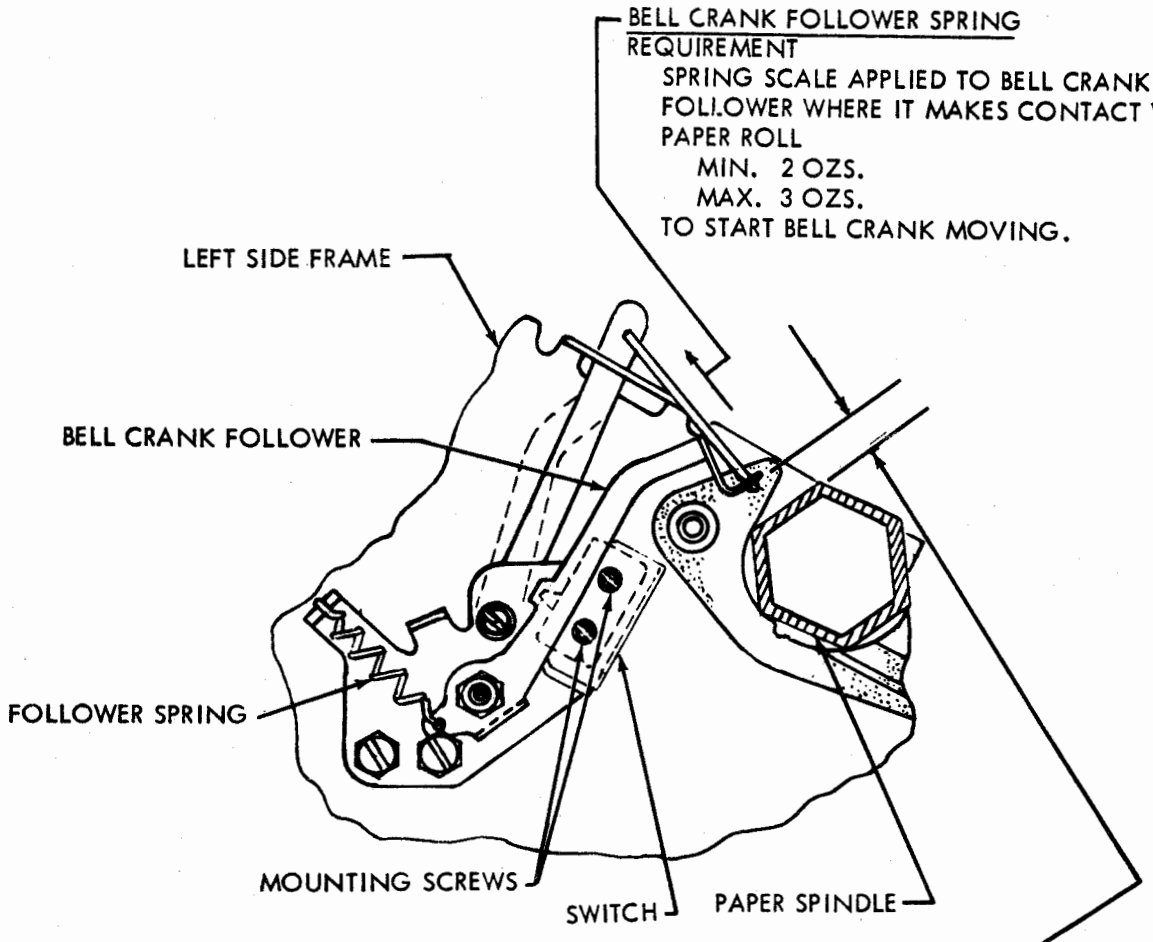
POSITION PRINTING CARRIAGE AT RIGHT MARGIN (SPACING CUTOUT OPERATED). INSERT STOP WITH WIDE SHELF IN SLOT IMMEDIATELY TO LEFT OF TABULATOR PAWL.

COLUMNAR TABULATOR STOPS

PLACE CARRIAGE IN POSITION TO PRINT FIRST CHARACTER IN COLUMN. INSERT STOP IN SLOT IMMEDIATELY TO LEFT OF TABULATOR PAWL. STORE EXTRA STOPS IN SLOTS BEYOND PRINTING LINE AT EITHER END OF SHAFT.

NOTE - - - WHEN PRINTING FORMS, CHECK STOP SETTINGS WITH RELATION TO COLUMNS. CORRESPONDING STOPS ON ALL MACHINES CONNECTED IN A CIRCUIT MUST BE THE SAME NUMBER OF SPACING OPERATIONS FROM LEFT MARGIN.

4.30 Paper-Out Alarm Mechanism



(REAR LEFT VIEW)