TELETYPE CORPORATION
Skokie, Illinois, U.S.A.

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28 TYPING UNIT

ADJUSTMENTS

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Printed in U. S. A.

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1. GENERAL

1.01 This section is issued to define the mechanical requirements and adjustments for the 28 typing unit.

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.

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 Teletype Bulletin 1124B.

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 Disassembly and Reassembly, Section 573-115-702.

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

Note: When rotating the main shaft of the typing unit by hand, the clutches do not fully disengage upon reaching their stop positions. In order to relieve the drag on the 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.

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 Bulletin 1124B) 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. 1.10. 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. 2.10) 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. 2.13).

(b) Move the left and right vertical positioning lever eccentric studs (Par. 2.26 and 2.27) 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. 2.33).

(d) Loosen the clamp screws and move the reversing slide brackets to their uppermost position (Par. 2.32).

(e) Loosen the function reset bail blade mounting screws (Par. 2.30).

(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. 4.16).

(g) Loosen the carriage return lever clamp screw (Par. 2.38).

(h) Loosen the clamp screws in the oscillating rail slide (Par. 2.28).

(i) Loosen the reversing slide adjusting stud (Par. 2.32).

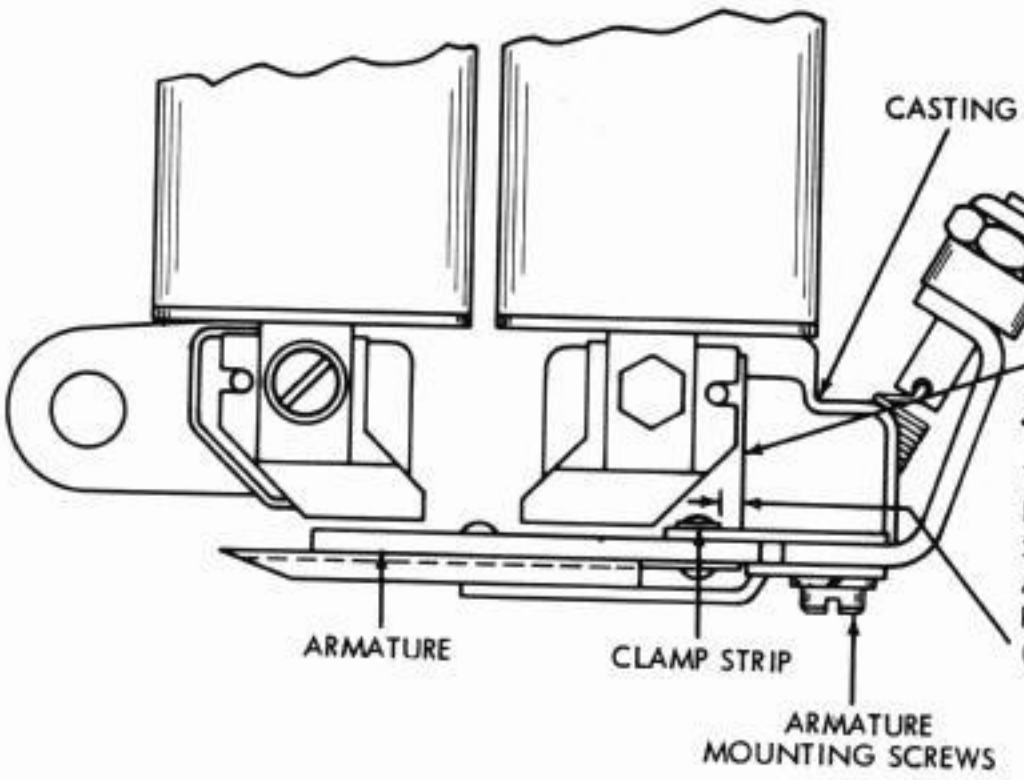
(j) Loosen the clamp nuts on the shift code bar guide plates (Par. 2.31).

2. BASIC UNITS

2.01 Selector Mechanism

NOTE

TO FACILITATE MAKING THE FOLLOWING ADJUSTMENTS, REMOVE THE RANGE FINDER AND SELECTOR MAGNET ASSEMBLIES. TO INSURE BETTER OPERATION, PULL A PIECE OF KS BOND PAPER BETWEEN THE ARMATURE AND THE POLE PIECES TO REMOVE ANY OIL OR FOREIGN MATTER THAT MAY BE PRESENT. MAKE CERTAIN THAT NO LINT OR PIECES OF PAPER REMAIN BETWEEN THE POLE PIECES AND ARMATURE.

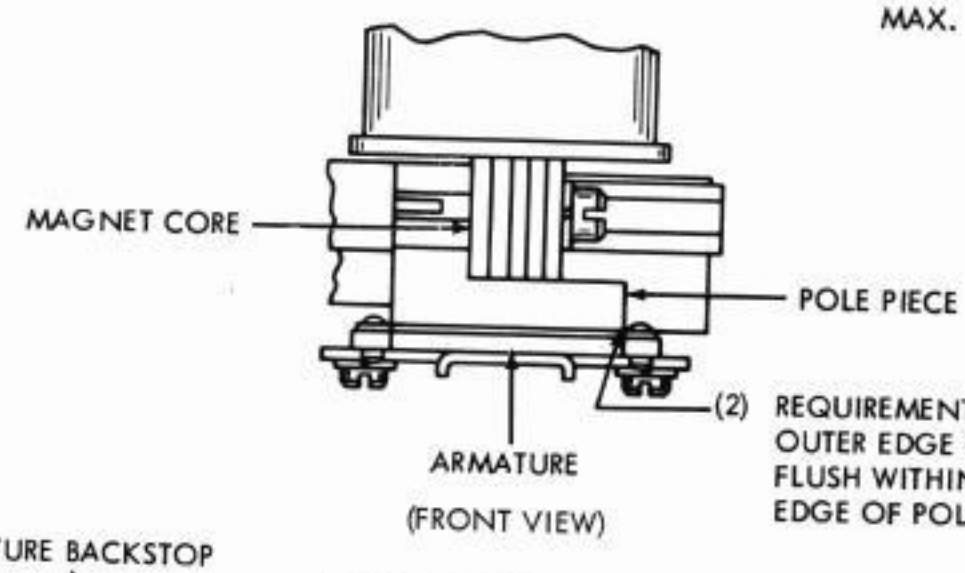


SELECTOR ARMATURE

NOTE

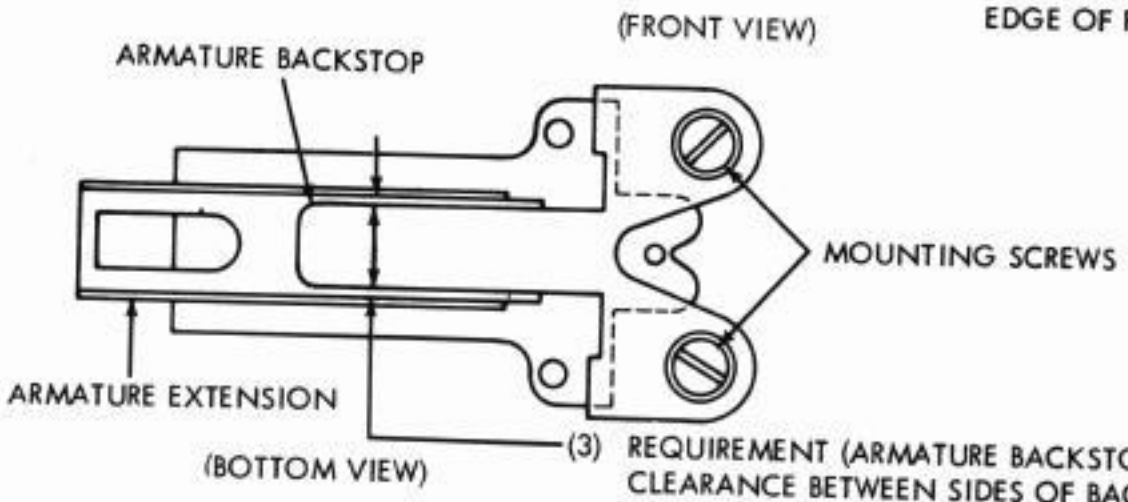
THIS REQUIREMENT NEED NOT BE MADE NOR CHECKED IF THE SELECTOR MAGNET BRACKET AND RECEIVING MARGIN REQUIREMENTS ARE MET.

(1) REQUIREMENT (ARMATURE CLAMP STRIP)
CLEARANCE BETWEEN ARMATURE CLAMP STRIP AND CASTING.
MIN. 0.025 INCH
MAX. 0.045 INCH



(FRONT VIEW)

(2) REQUIREMENT (ARMATURE ALIGNMENT)
OUTER EDGE OF ARMATURE SHOULD BE FLUSH WITHIN 0.015 INCH WITH OUTER EDGE OF POLE PIECES.



(BOTTOM VIEW)

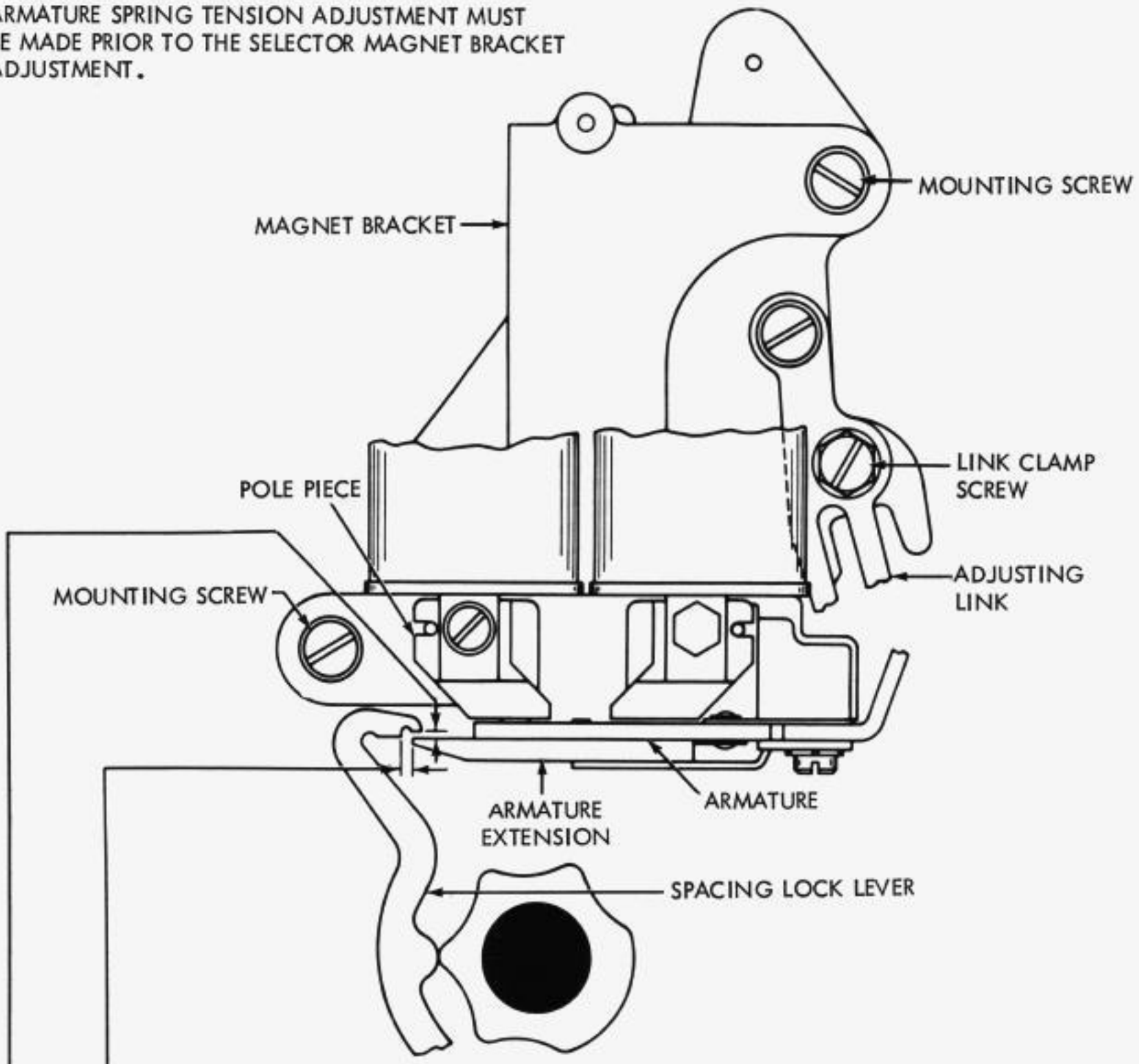
(3) REQUIREMENT (ARMATURE BACKSTOP ALIGNMENT)
CLEARANCE BETWEEN SIDES OF BACKSTOP AND SIDES OF ARMATURE EXTENSION.
MIN. 0.010 INCH

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.

2.02 Selector Mechanism (Cont.)

NOTE
THE APPROPRIATE PRELIMINARY SELECTOR ARMATURE SPRING TENSION ADJUSTMENT MUST BE MADE PRIOR TO THE SELECTOR MAGNET BRACKET ADJUSTMENT.



SELECTOR MAGNET BRACKET (MAGNETS ENERGIZED)

(1) REQUIREMENT --- SPACING LOCK LEVER ON HIGH PART OF CAM. 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 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).

2.03 Selector Mechanism (Cont.)

SELECTOR ARMATURE SPRING (FOR UNITS WITH SINGLE ANTI-FREEZE BUTTON ON SELECTOR ARMATURE)

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

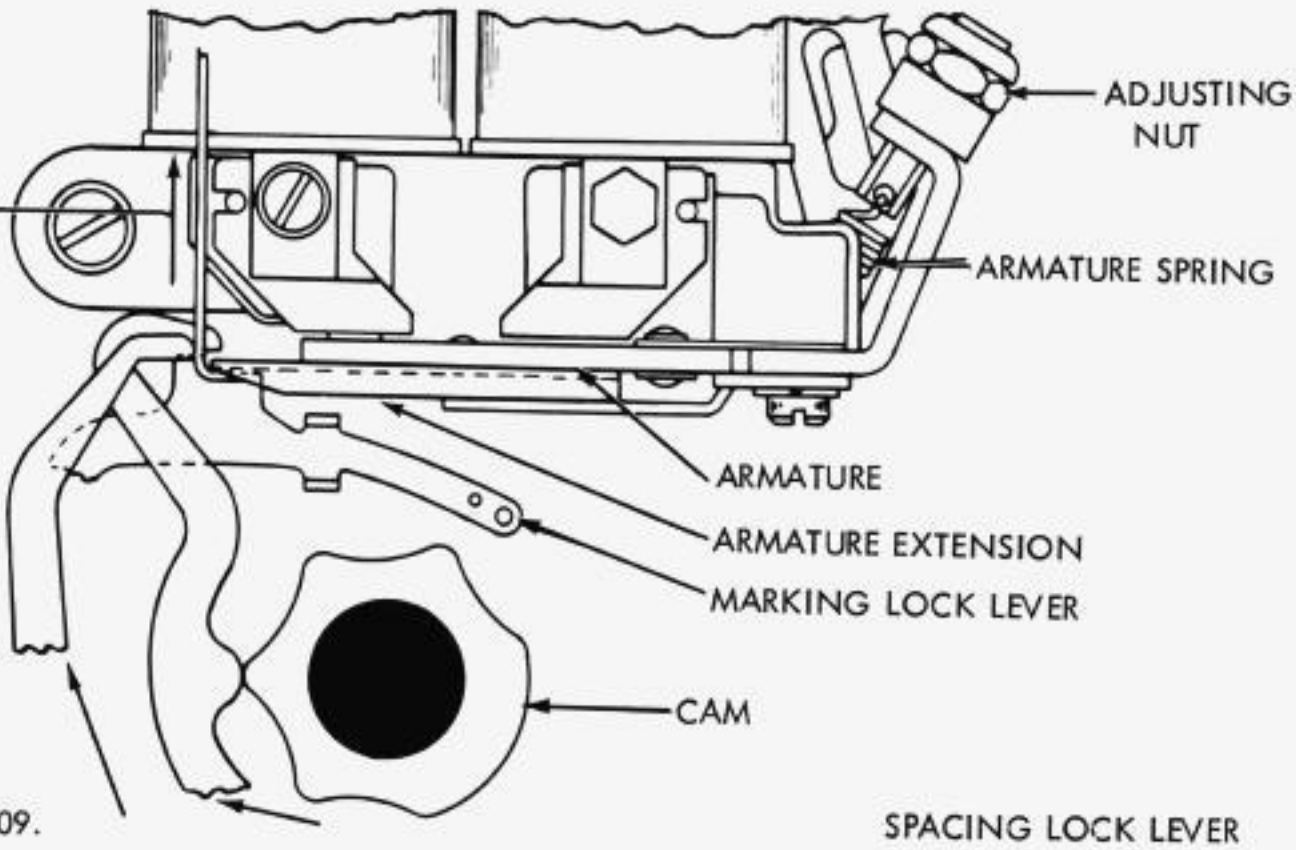
(a) MIN. 1-1/2 OZS. ---------- MAX. 2 OZS. FOR 20 MA OPERATION.

(b) MIN. 2-1/2 OZS. ---------- MAX. 3 OZS. FOR 60 MA OPERATION.

TO PULL ARMATURE TO MARKING POSITION.

TO ADJUST --- POSITION ADJUSTING NUT.

REQUIREMENT --- (FINAL) REFER TO SELECTOR RECEIVING MARGIN PAR. 2.09.



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 PAR. 2.09.

SELECTOR ARMATURE SPRING (FOR UNITS WITH TWO ANTI-FREEZE BUTTONS ON SELECTOR ARMATURE)

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

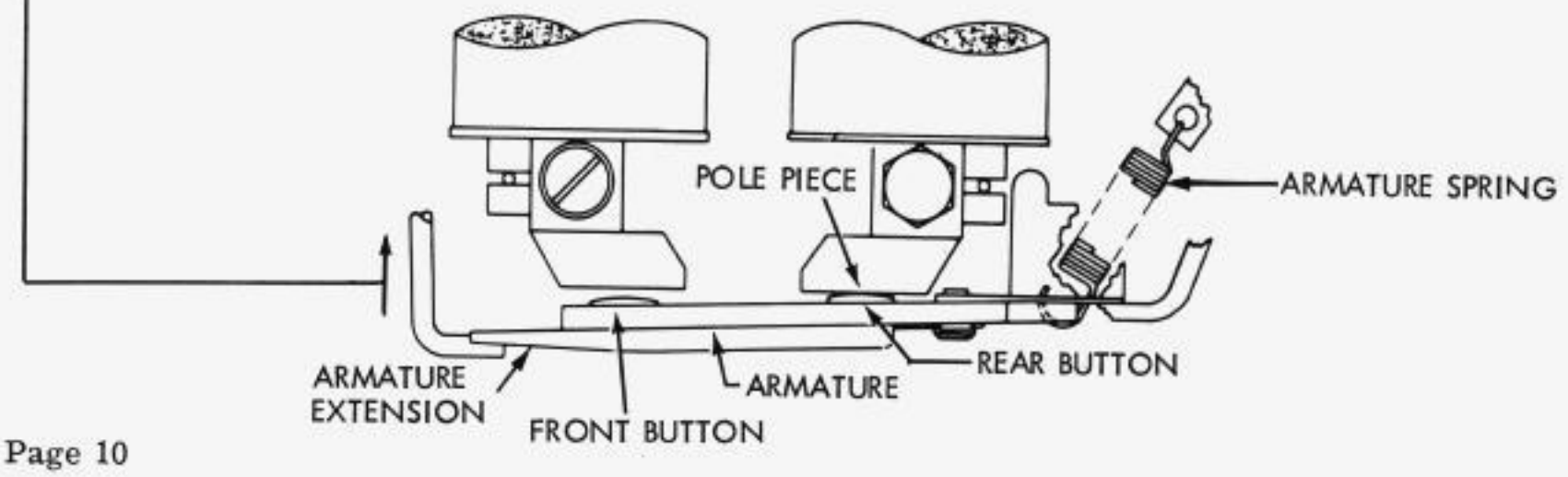
(a) APPROXIMATELY 1/2 OZ. FOR 20 MA. OPERATION.

(b) APPROXIMATELY --- 3/4 OZ FOR 60 MA OPERATION

TO PULL REAR BUTTON AGAINST ITS POLE PIECE

TO ADJUST --- POSITION ADJUSTING NUT.

REQUIREMENT --- (FINAL) WHEN A DISTORTION TEST SET IS AVAILABLE, REFINE SELECTOR ARMATURE SPRING ADJUSTMENT TO MEET SELECTOR RECEIVING MARGIN PAR. 2.09. NOTE --- WITH SELECTOR MAGNETS ENERGIZED, FRONT ANTI-FREEZE BUTTON MUST BE IN CONTACT WITH ITS MAGNET CORE.



2.04 Selector Mechanism (Cont.)

SELECTOR ARMATURE SPRING (500 MA SELECTOR COILS)
REFER TO PAR. 2.03 USING THE FOLLOWING:

SINGLE BUTTON ARMATURE
500 MA; MIN 4-1/2 OZS --- MAX 5-1/2 OZS

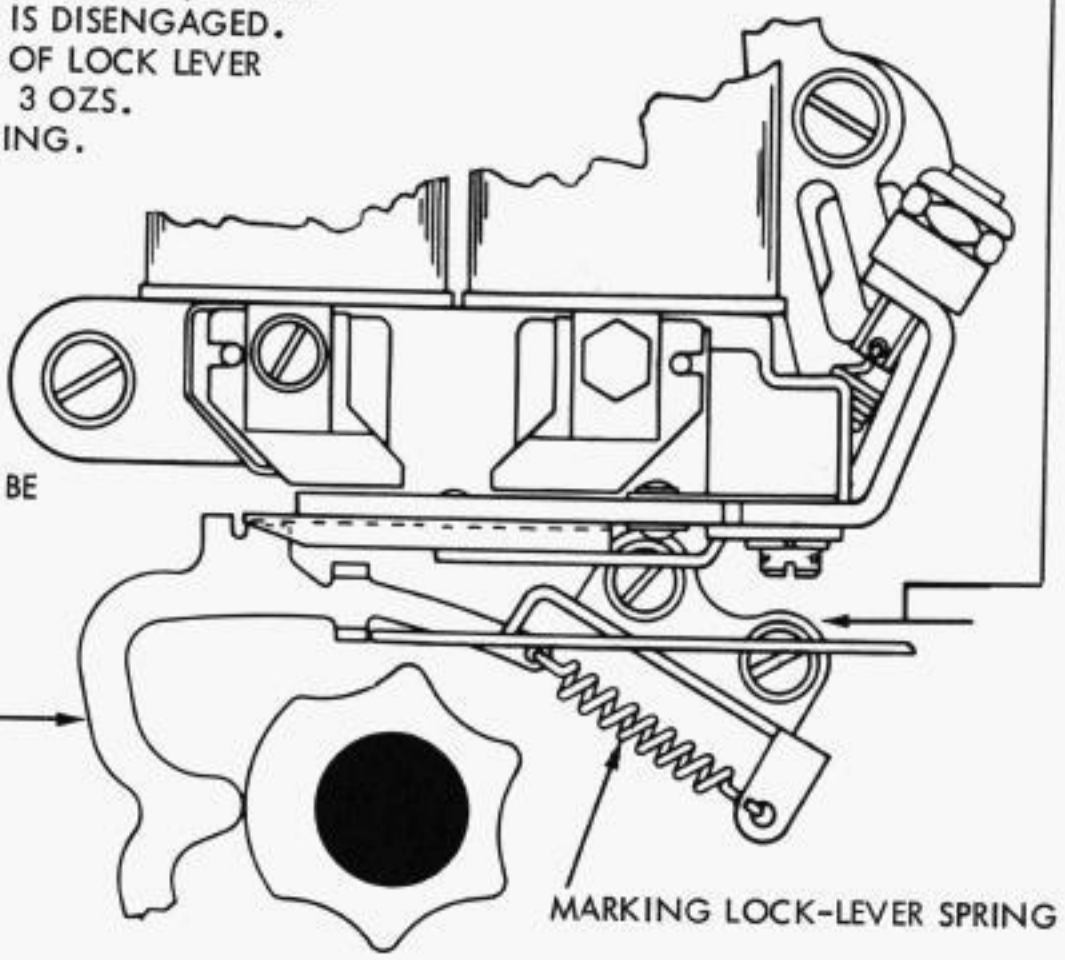
BOUBLE BUTTON ARMATURE
500 MA; APPROXIMATELY --- 1-1/8 OZ
TO PULL REAR BUTTON AGAINSTS ITS POLE PIECE

2.05 Selector Mechanism (Cont.)

MARKING LOCK LEVER SPRING

REQUIREMENT --- LETTERS COMBINATION SELECTED, ROTATE MAIN SHAFT UNTIL SELECTOR CLUTCH IS DISENGAGED. SCALE APPLIED TO LOWER EXTENSION OF LOCK LEVER
MIN. 1-1/2 OZS. ---------- MAX. 3 OZS.
TO START MARKING LOCK LEVER MOVING.

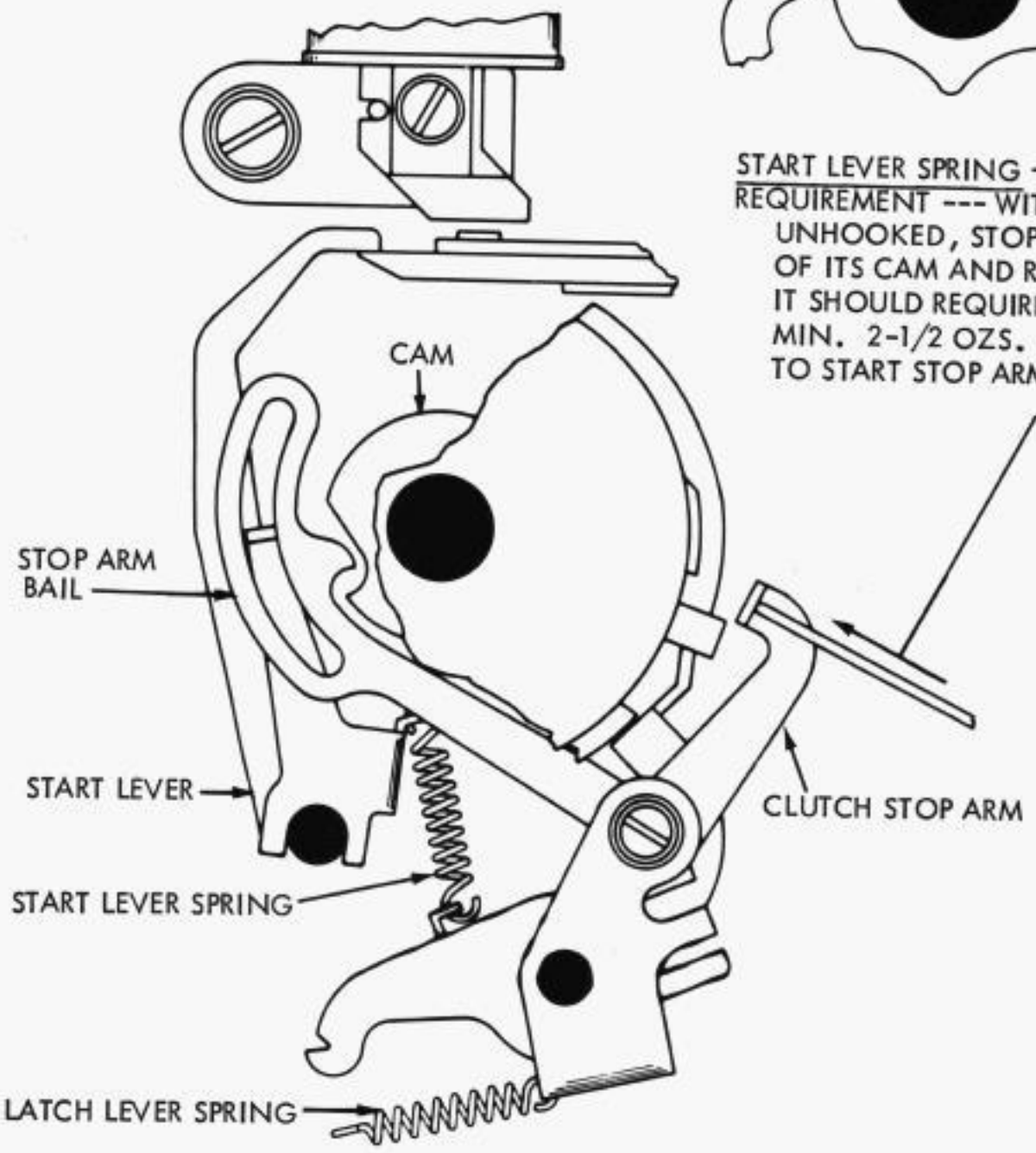
NOTE FOR BELL SERVICE ONLY
WHEN CHECKING UNITS WITH SINGLE BUTTON ARMATURE, SIGNAL LINE SHALL BE SHUNTED BY A TWX SWITCHBOARD SIMULATOR. SIMULATOR SHALL NOT BE USED WITH UNITS EMPLOYING THE TWO BUTTON ARMATURE.



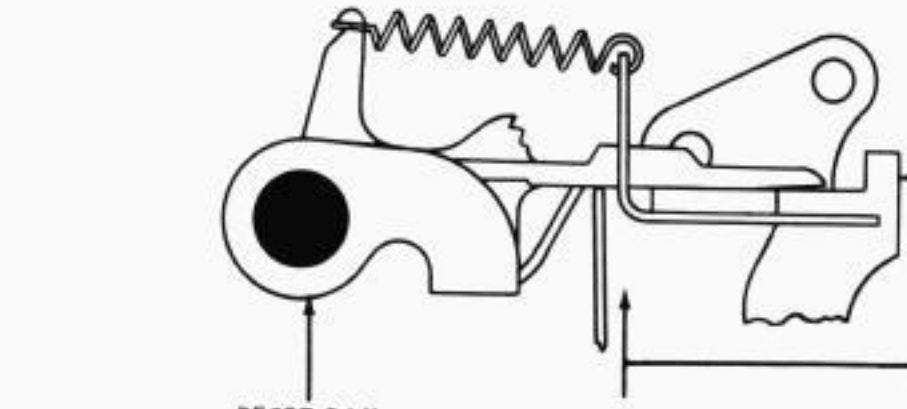
START LEVER SPRING

REQUIREMENT --- WITH LATCH LEVER SPRING UNHOOKED, STOP ARM BAIL IN THE INDENT OF ITS CAM AND RANGE SCALE SET AT 60, IT SHOULD REQUIRE
MIN. 2-1/2 OZS. --------- MAX. 4-1/2 OZS.
TO START STOP ARM MOVING.

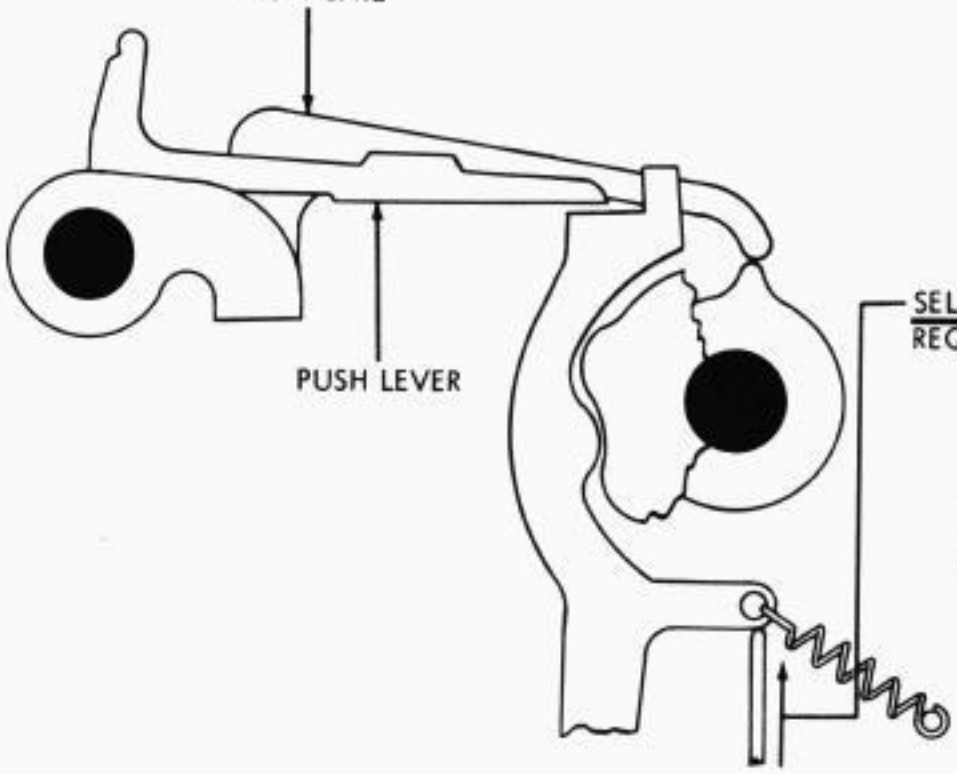
NOTE
FOR EARLIER DESIGN
SEE PAR. 4.01.



2.06 Selector Mechanism (Cont.)

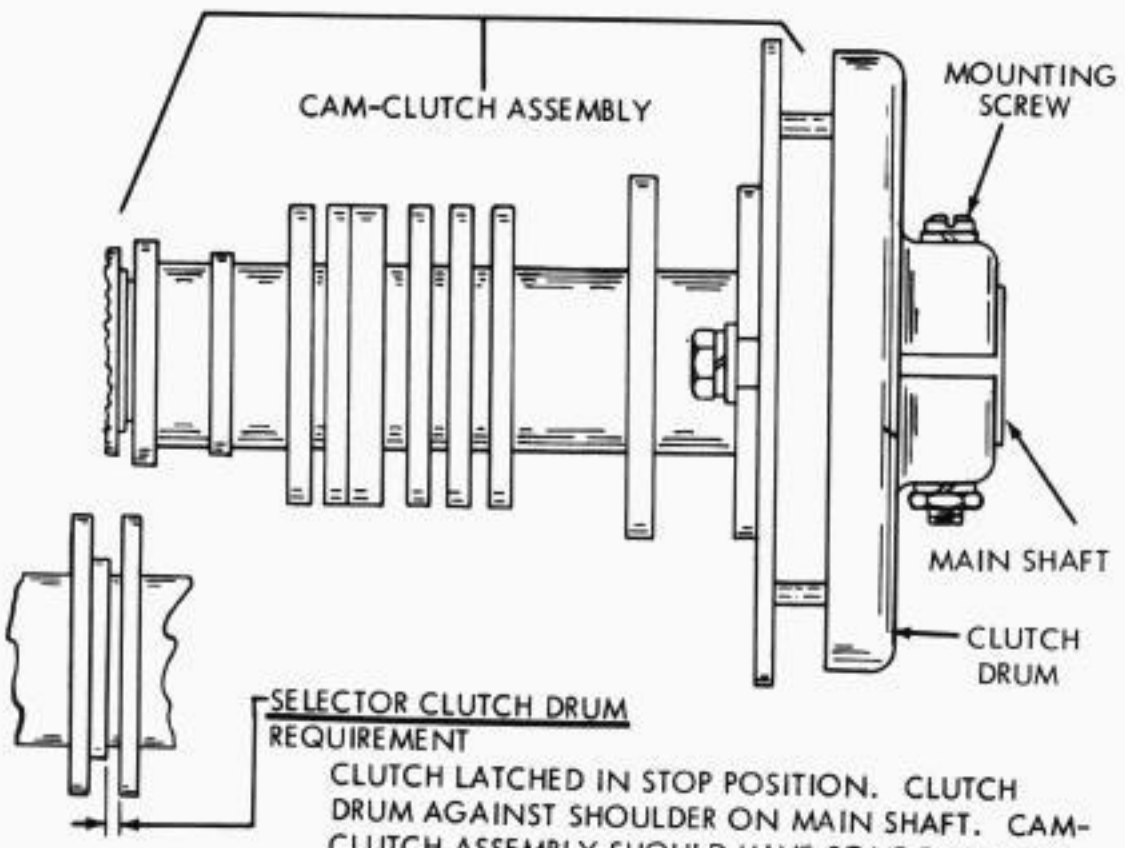


SELECTOR PUSH LEVER SPRING
REQUIREMENT
PUSH LEVER IN SPACING POSITION
MIN. 3/4 OZ.
MAX. 1-1/2 OZS.
TO MOVE PUSH LEVER FROM SELECTOR LEVER. CHECK FIVE SPRINGS.



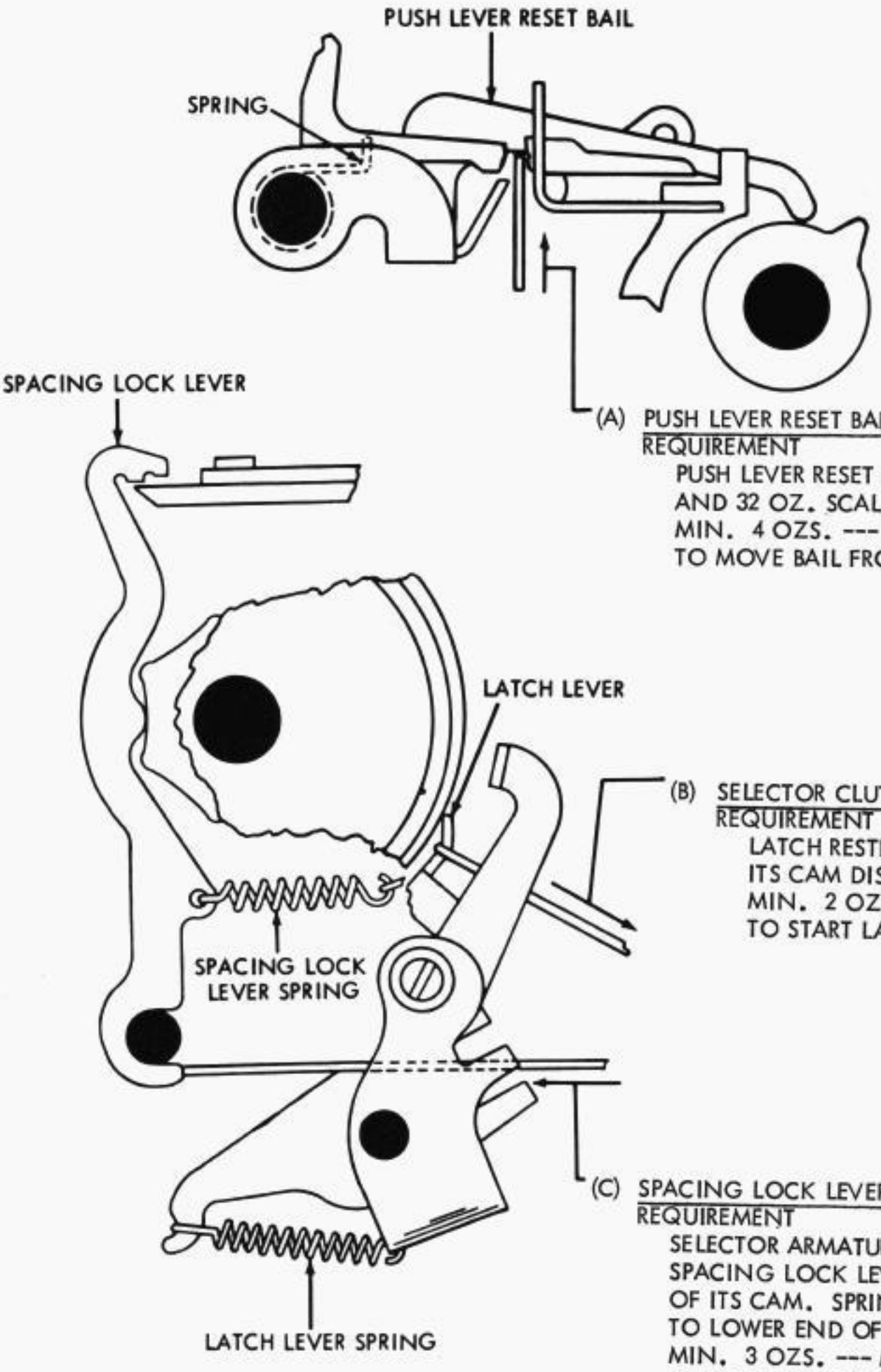
SELECTOR LEVER SPRING
REQUIREMENT
PLACE UNIT UPSIDE DOWN.
RESET BAIL ON PEAK OF ITS CAM.
MIN. 1-1/4 OZS.
MAX. 2-1/2 OZS.
TO START EACH LEVER MOVING.
CHECK FIVE SPRINGS. IF NECESSARY, UNHOOK START LEVER SPRING TO CHECK NO. 4 SELECTOR LEVER SPRING.

FRONT VIEW



SELECTOR CLUTCH DRUM
REQUIREMENT
CLUTCH LATCHED IN STOP POSITION. CLUTCH DRUM AGAINST SHOULDER ON MAIN SHAFT. CAM-CLUTCH ASSEMBLY SHOULD HAVE SOME END PLAY
MAX. 0.010 INCH
TO ADJUST
POSITION CLUTCH DRUM WITH MOUNTING SCREW LOOSENED.

2.07 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

NOTE: REPLACE RANGE FINDER AND SELECTOR MAGNET ASSEMBLY

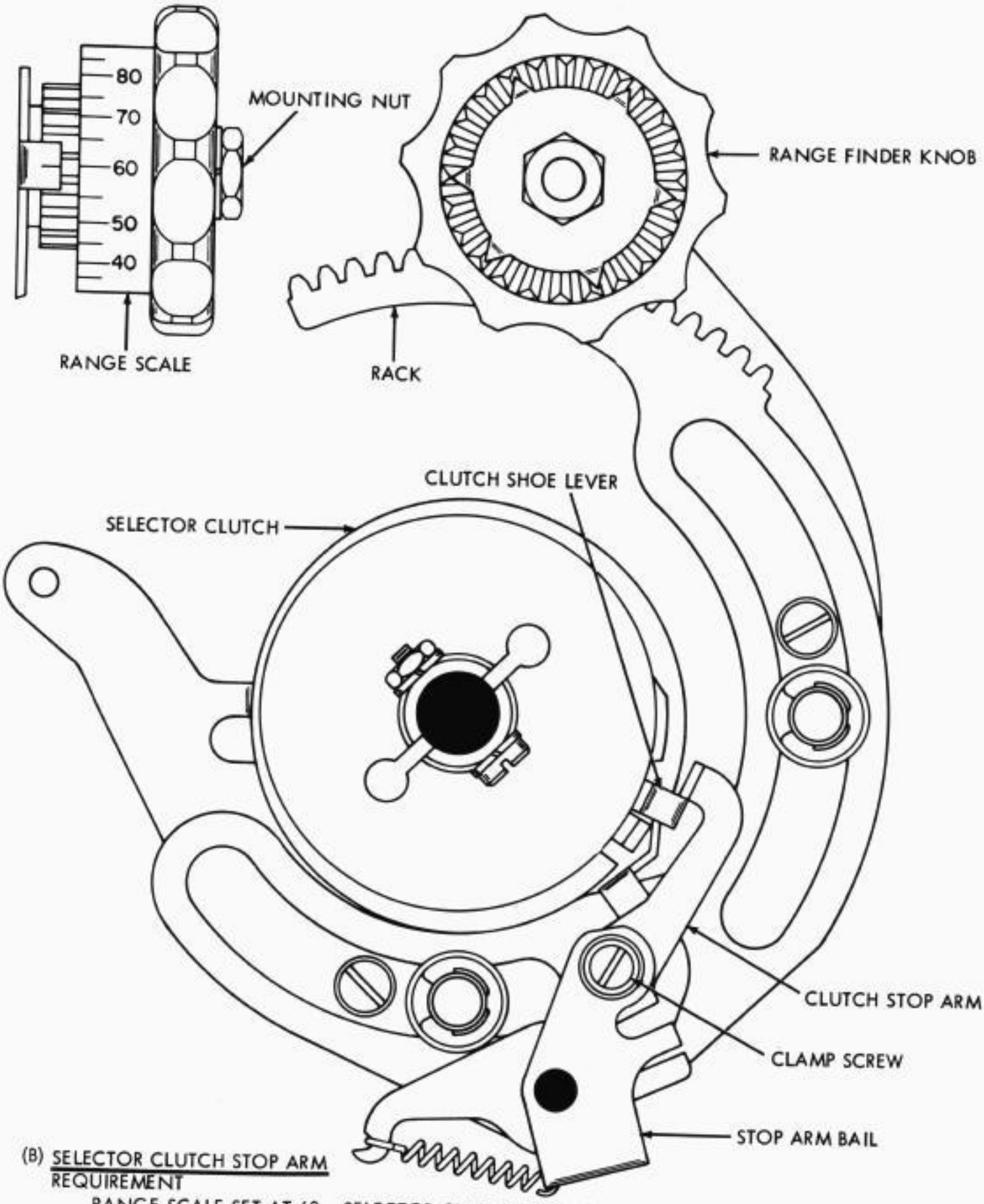
(A) RANGE FINDER KNOB PHASING

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

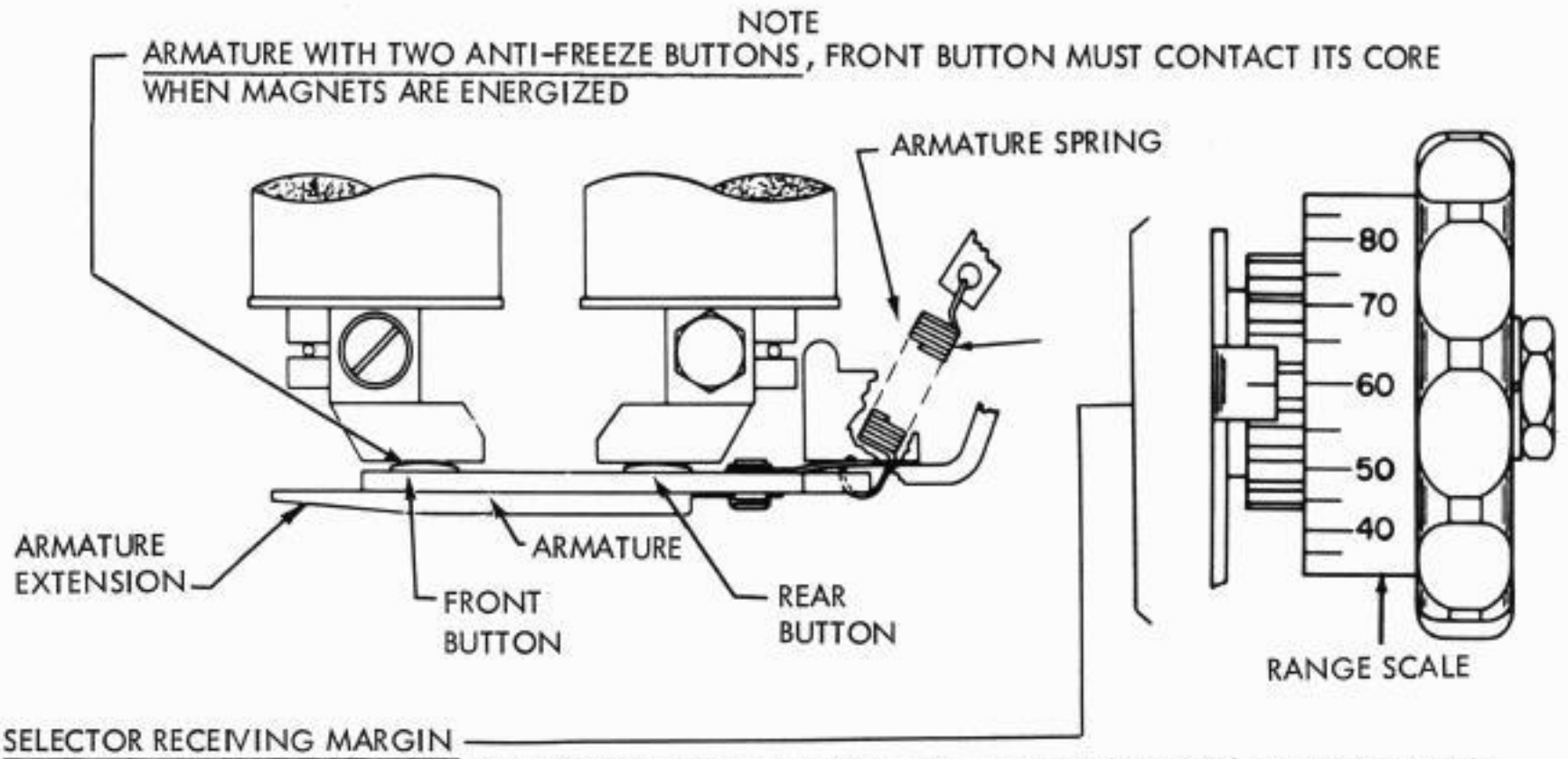
REQUIREMENT

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.

2.09 Selector Mechanism (Cont.)



SELECTOR RECEIVING MARGIN

REQUIREMENT (FOR UNITS EMPLOYING ARMATURE WITH ONE ANTI-FREEZE BUTTON) WHEN A SIGNAL DISTORTION TEST SET 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.

SELECTOR RECEIVING 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	72	40	35
0.020 AMP. (WINDINGS SERIES)	60 75	72	40	35

TO ADJUST: REFINE THE SELECTOR ARMATURE SPRING (SEE PAR. 2.03 and 2.04).

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

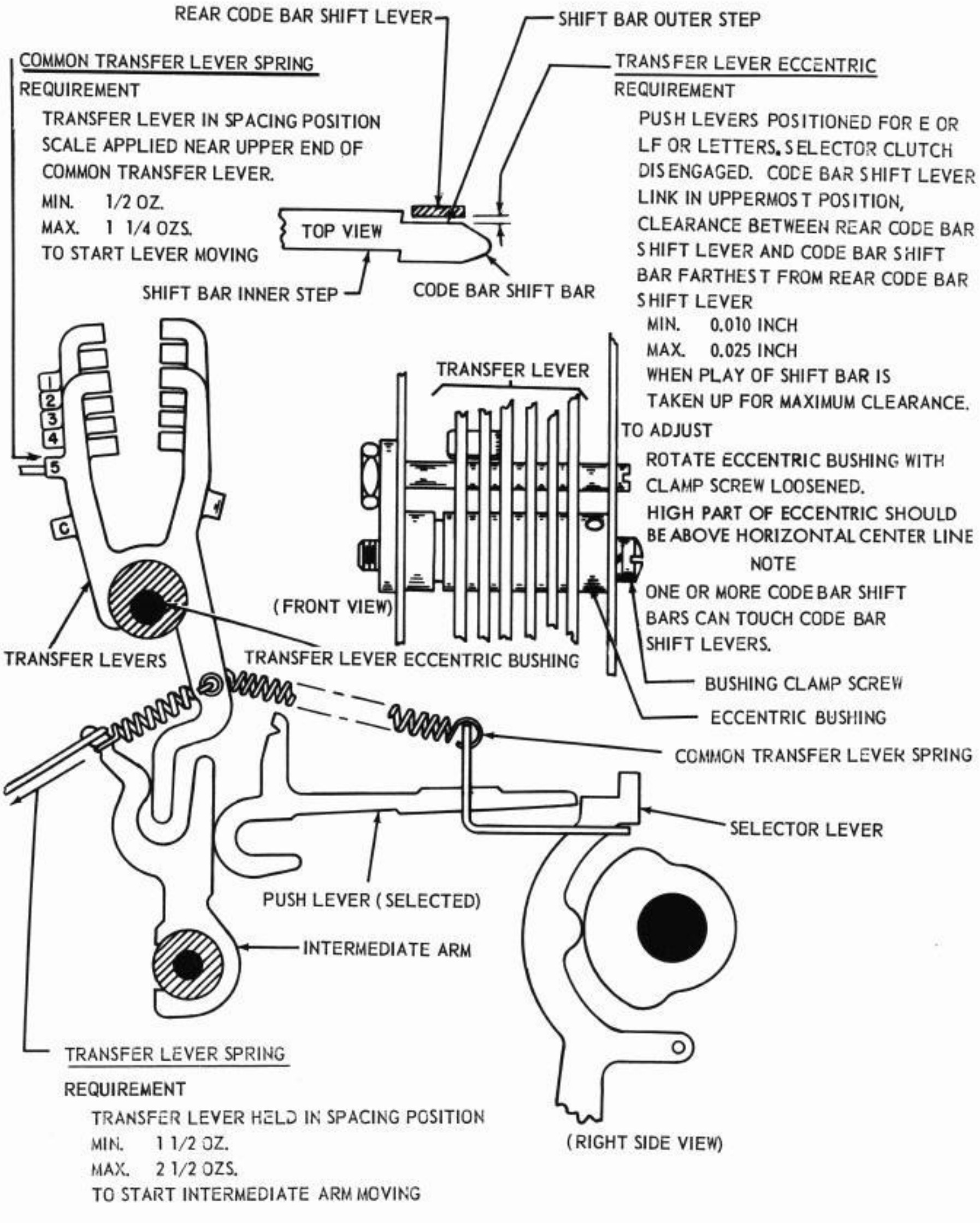
1. BIAS SELECTOR BETWEEN LIMITS OF 0% TO -7% INTERNAL BIAS AT 100 WPM. (DO NOT READJUST FOR 60 WPM).
2. OBTAIN RECEIVING MARGINS AT 60 AND 100 WPM.
3. CALCULATE COMMON OPTIMUM BIAS SETTING AS FOLLOWS: $O_c = \frac{UMB_{100} + LSB_{60}}{2}$ WHERE

   O_c = COMMON OPTIMUM BIAS SETTING

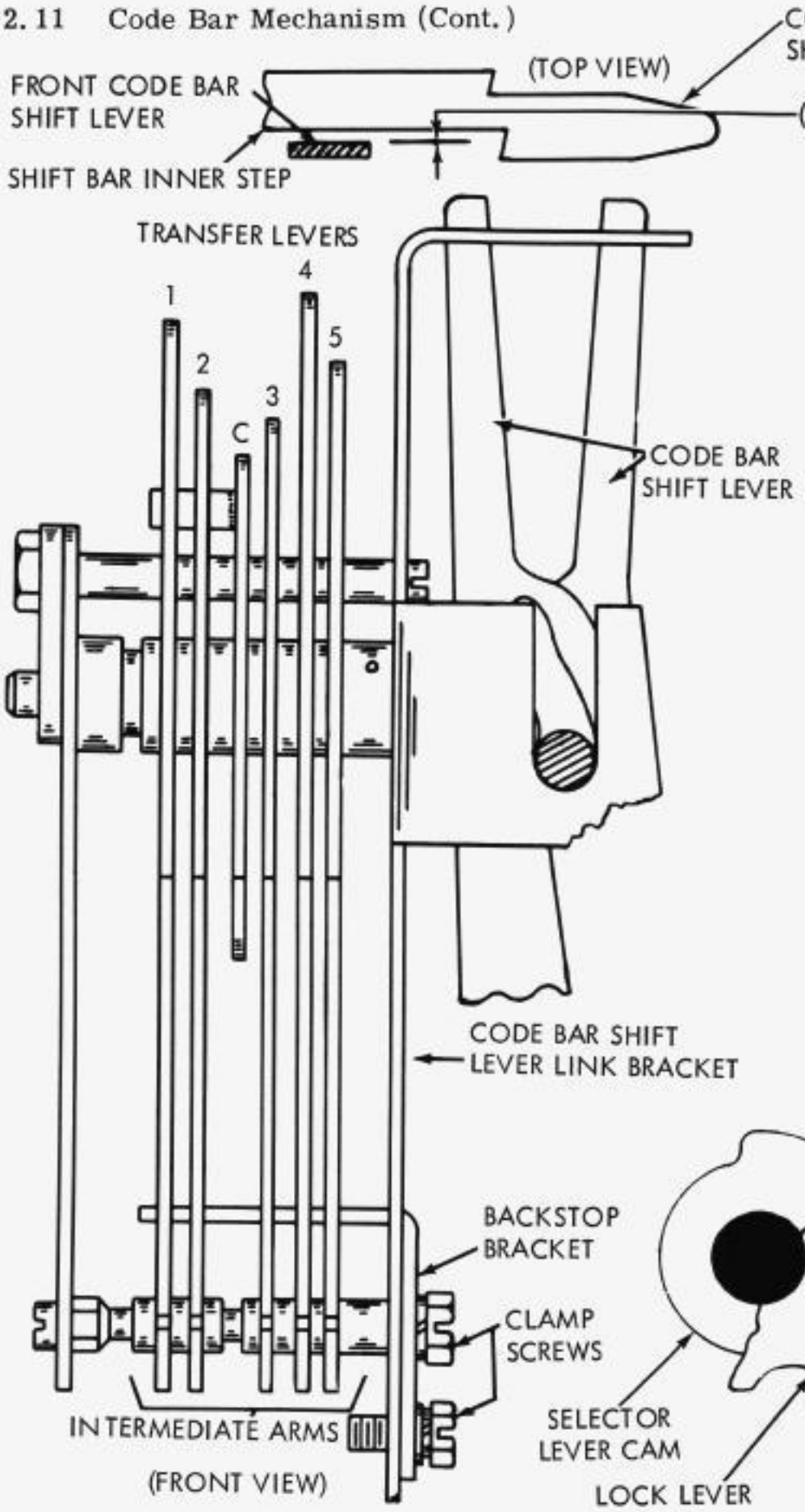
   UMB_{100} = UPPER ORIENT LIMIT MARKING BIAS AT 100 WPM

   LSB_{60} = LOWER ORIENT LIMIT SPACING BIAS AT 60 WPM

2.10 Code Bar Mechanism



2.11 Code Bar Mechanism (Cont.)



(A) INTERMEDIATE ARM BACKSTOP BRACKET

REQUIREMENT

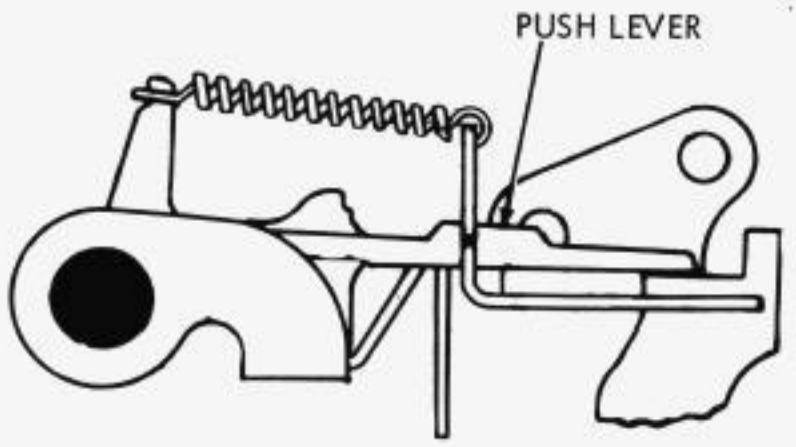
PUSH LEVERS NOT SELECTED. ALL CODE BAR SHIFT BARS TO THE RIGHT. SELECTOR CLUTCH DISENGAGED. CODE BAR SHIFT LEVER LINK IN LOWERMOST POSITION. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND INNER STEP OF CODE BAR SHIFT BAR FARTHEST FROM FRONT CODE BAR SHIFT LEVER

MIN. 0.010 INCH
MAX. 0.025 INCH

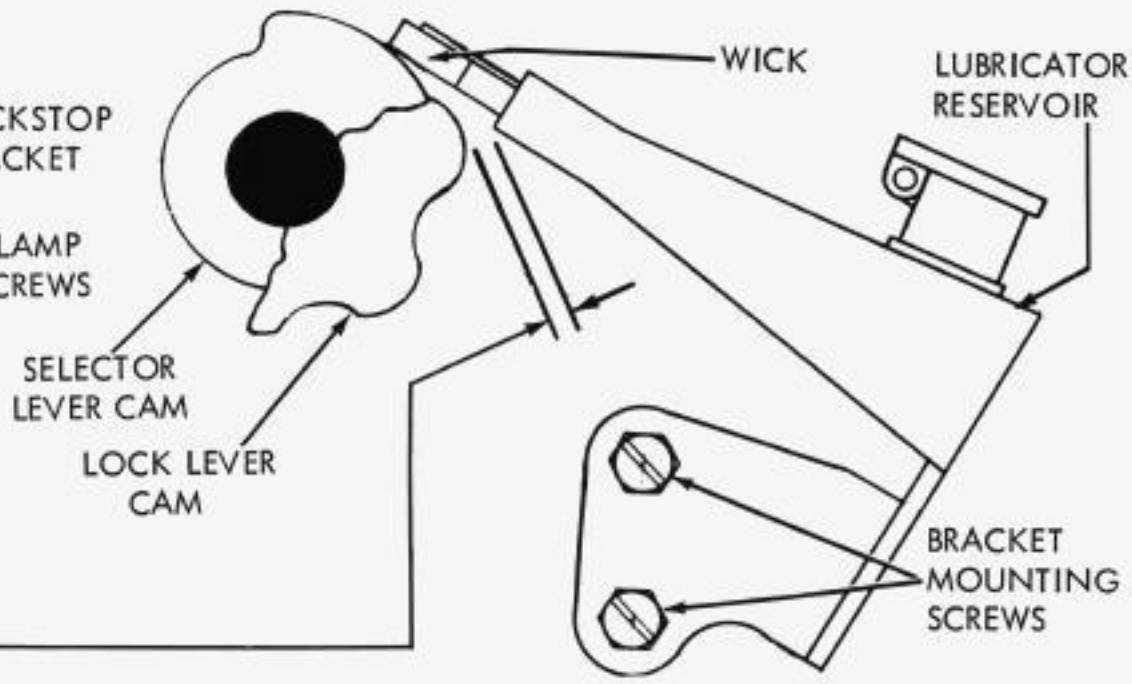
WHEN PLAY IN PARTS IS TAKEN UP FOR MAXIMUM CLEARANCE.

TO ADJUST

POSITION BACKSTOP BRACKET WITH ITS TWO CLAMP SCREWS LOOSENED.



2.12 Selector Mechanism (Cont.)



(B)

SELECTOR CAM LUBRICATOR

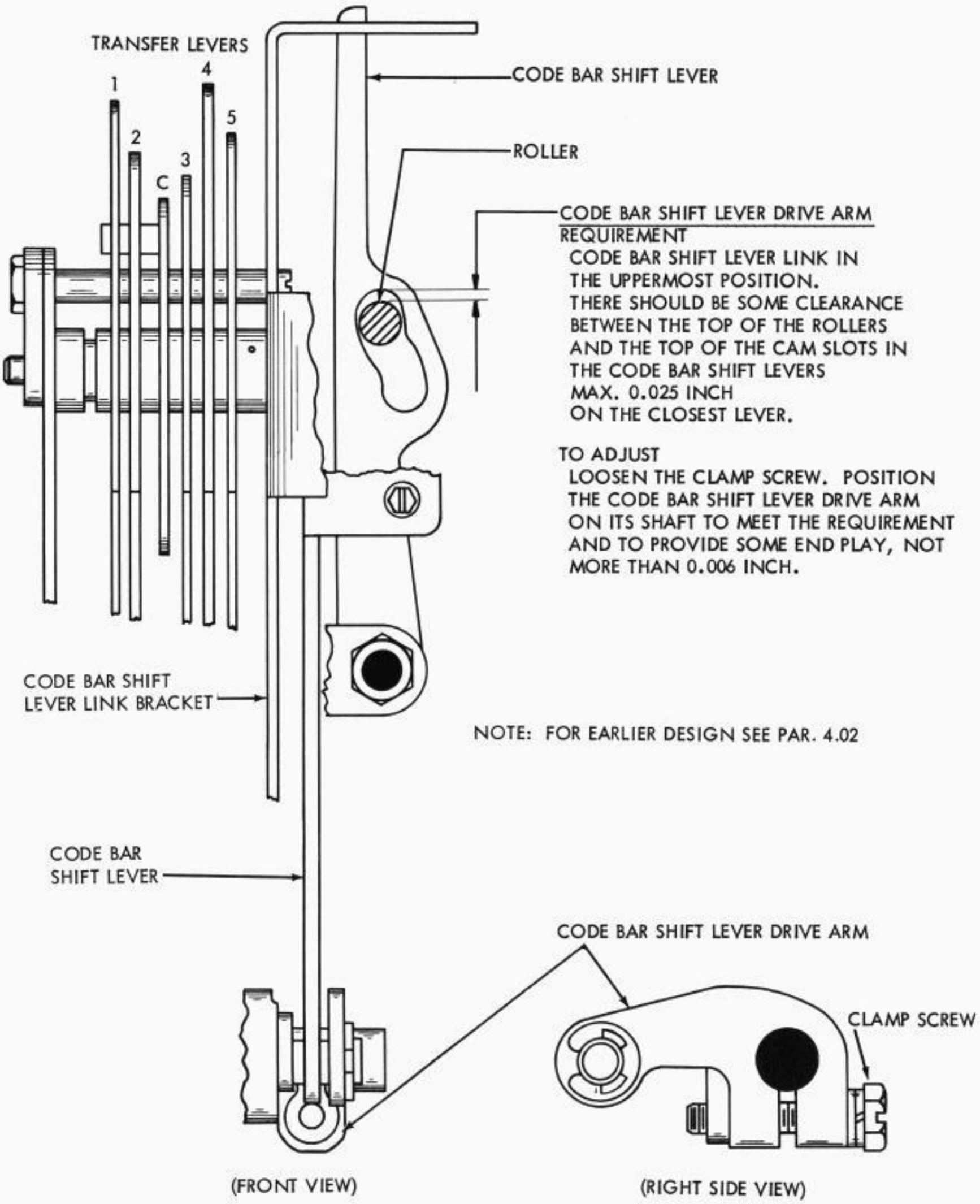
REQUIREMENT

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.

2.13 Code Bar Mechanism (Cont.)



2.14 Code Bar 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

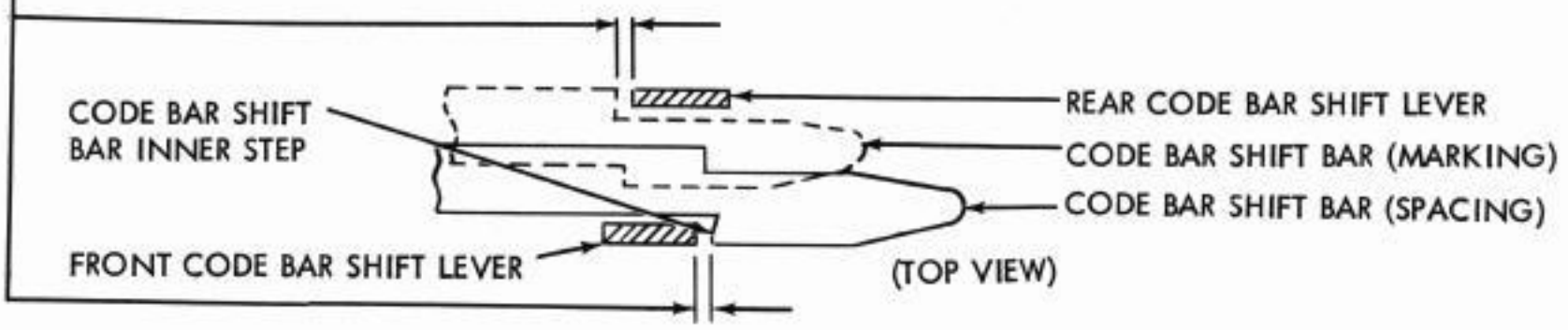
TO CHECK (REAR)

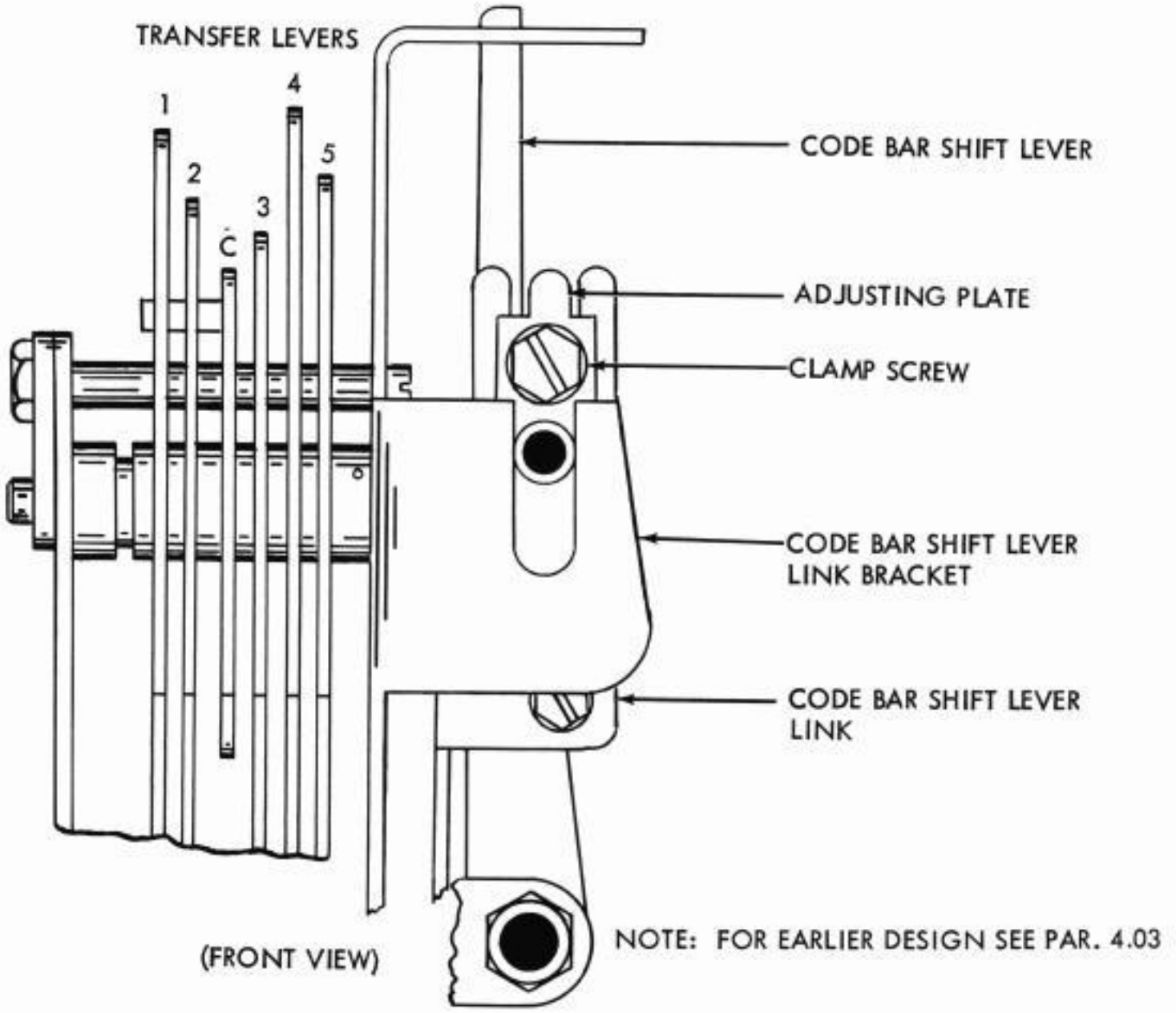
SELECT LETTERS COMBINATION. CHECK CLEARANCE BETWEEN REAR CODE BAR SHIFT LEVER AND SHOULDER ON NEAREST CODE BAR SHIFT BAR IN SAME WAY.

MIN. 0.002 INCH
MAX. 0.025 INCH

TO ADJUST

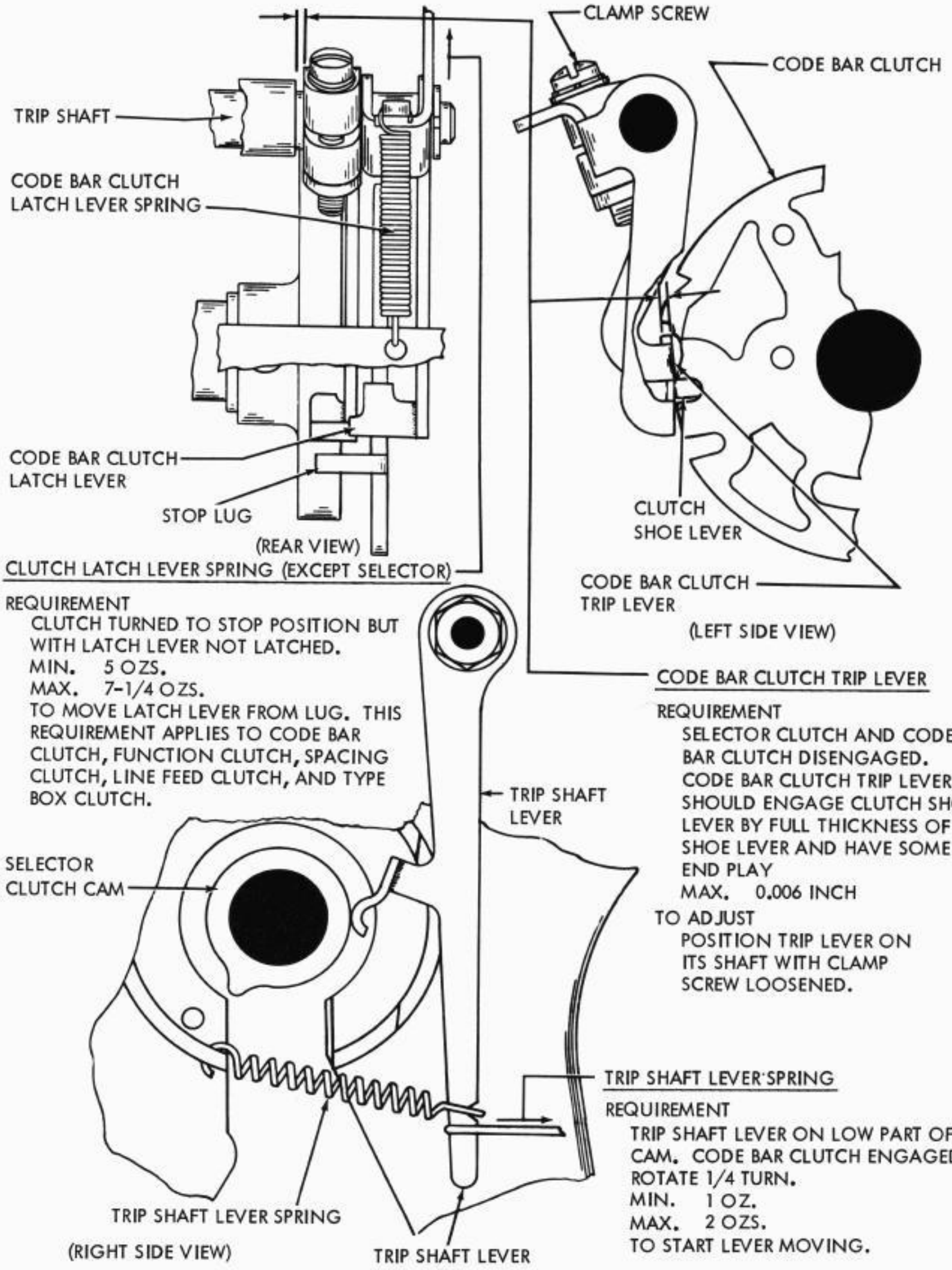
POSITION ADJUSTING PLATES (FRONT AND REAR) WITH CLAMP SCREWS LOOSENED.





NOTE: FOR EARLIER DESIGN SEE PAR. 4.03

2.15 Main Shaft and Trip Shaft Mechanisms



CLUTCH LATCH LEVER SPRING (EXCEPT SELECTOR)

REQUIREMENT
CLUTCH TURNED TO STOP POSITION BUT WITH LATCH LEVER NOT LATCHED.
MIN. 5 OZS.
MAX. 7-1/4 OZS.
TO MOVE LATCH LEVER FROM LUG. THIS REQUIREMENT APPLIES TO CODE BAR CLUTCH, FUNCTION CLUTCH, SPACING CLUTCH, LINE FEED CLUTCH, AND TYPE BOX CLUTCH.

CODE BAR CLUTCH TRIP LEVER

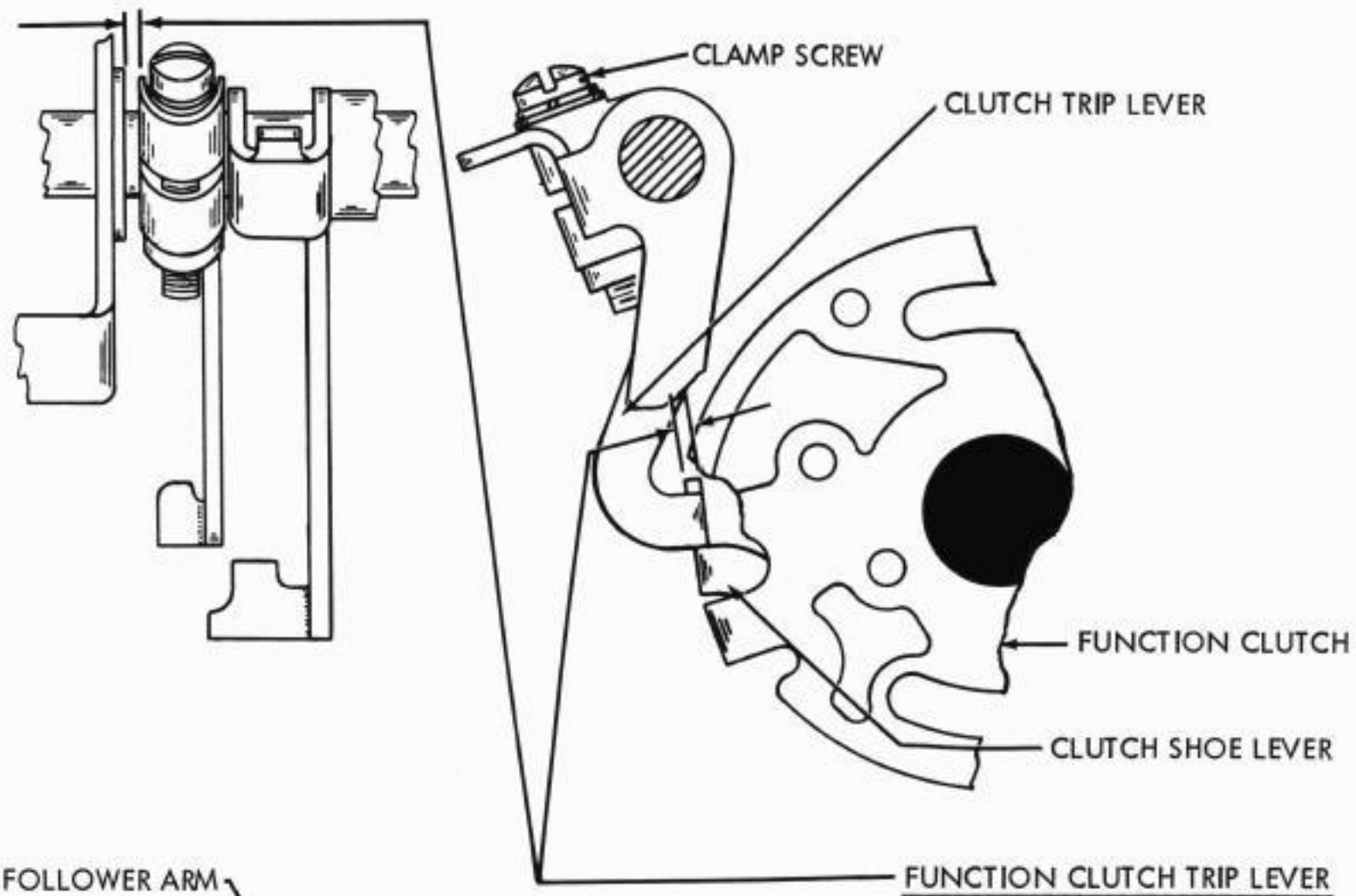
REQUIREMENT
SELECTOR CLUTCH AND CODE BAR CLUTCH DISENGAGED. CODE BAR CLUTCH TRIP LEVER SHOULD ENGAGE CLUTCH SHOE LEVER BY FULL THICKNESS OF SHOE LEVER AND HAVE SOME END PLAY
MAX. 0.006 INCH

TO ADJUST
POSITION TRIP LEVER ON ITS SHAFT WITH CLAMP SCREW LOOSENED.

TRIP SHAFT LEVER SPRING

REQUIREMENT
TRIP SHAFT LEVER ON LOW PART OF CAM. CODE BAR CLUTCH ENGAGED. ROTATE 1/4 TURN.
MIN. 1 OZ.
MAX. 2 OZS.
TO START LEVER MOVING.

2.16 Main Shaft and Trip Shaft Mechanisms (Cont.)



FUNCTION CLUTCH TRIP LEVER

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
MIN. SOME
MAX. 0.006 INCH

CODE BAR CLUTCH CAM FOLLOWER SPRING

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.

2.17 Main Shaft and Trip Shaft Mechanisms (Cont.)

(A) CLUTCH TRIP SHAFT SET COLLARS

(1) REQUIREMENT

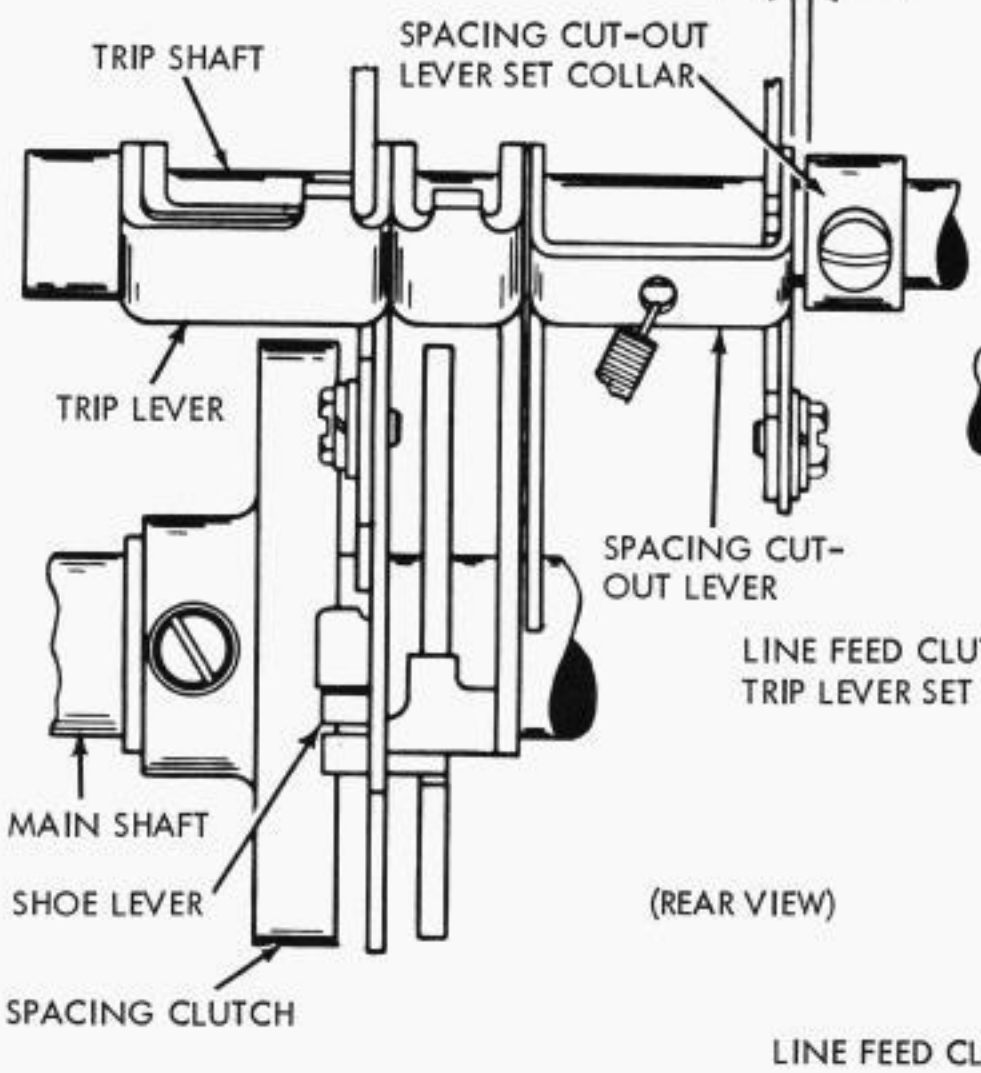
SPACING CUT-OUT LEVER SHOULD HAVE SIDE PLAY

MIN. SOME
MAX. 0.008 INCH

TO ADJUST

POSITION SPACING CUT-OUT LEVER SET COLLAR

NOTE: FOR EARLIER DESIGN SEE PAR. 4.04.



(REAR VIEW)

(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.

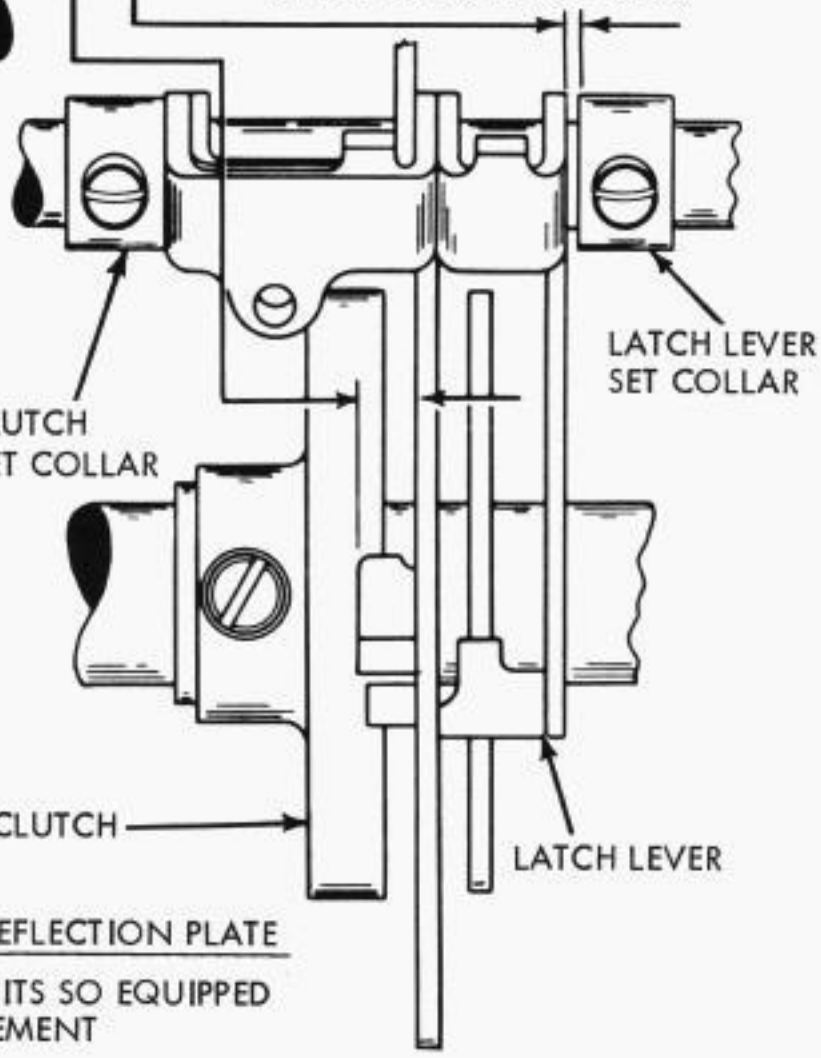
(3) REQUIREMENT

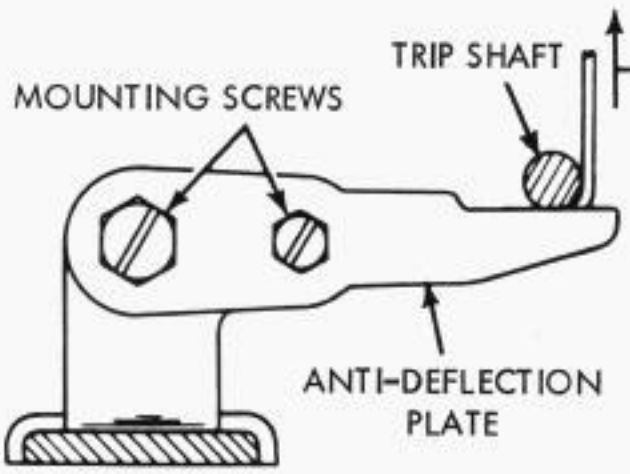
LINE FEED CLUTCH LATCH LEVER SHOULD HAVE SIDE PLAY.

MIN. SOME
MAX. 0.008 INCH

TO ADJUST

POSITION LINE FEED CLUTCH LATCH LEVER SET COLLAR.





(LEFT SIDE VIEW, UPSIDE DOWN)

(B) ANTI-DEFLECTION PLATE

FOR UNITS SO EQUIPPED
REQUIREMENT

WITH TYPING UNIT UPSIDE DOWN AND FUNCTION, SPACING, LINE FEED, AND TYPE BOX CLUTCHES DISENGAGED AND LATCHED

MIN. 1 LB. MAX. 5 LBS.

TO PULL TRIP SHAFT AWAY FROM ANTI-DEFLECTION PLATE

TO ADJUST

POSITION PLATE WITH MOUNTING SCREWS LOOSENED.

2.18 Main Shaft and Trip Shaft Mechanisms (Cont.)

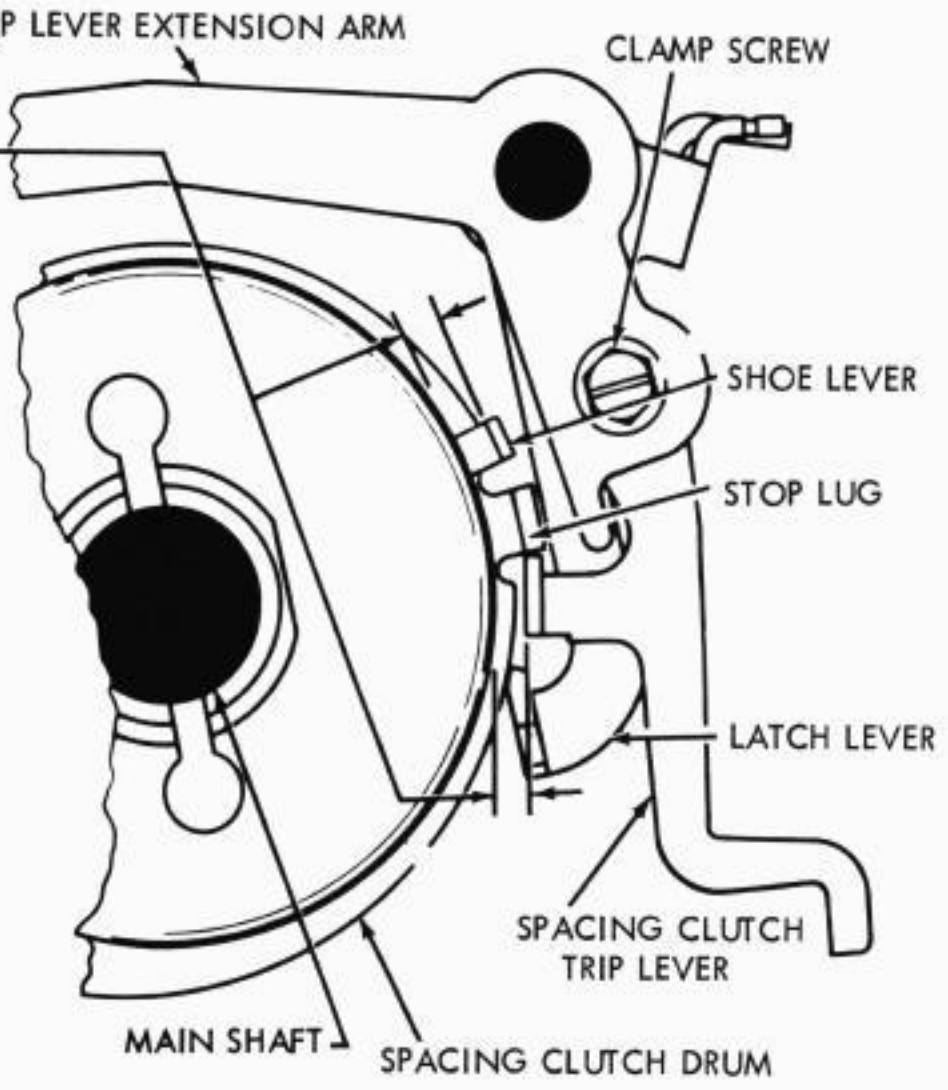
SPACING CLUTCH TRIP LEVER

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.



(RIGHT SIDE VIEW)

TO ADJUST

POSITION THE TRIP LEVER BY MEANS OF ITS CLAMP SCREW.

NOTE: FOR EARLIER DESIGN SEE PAR. 4.05.

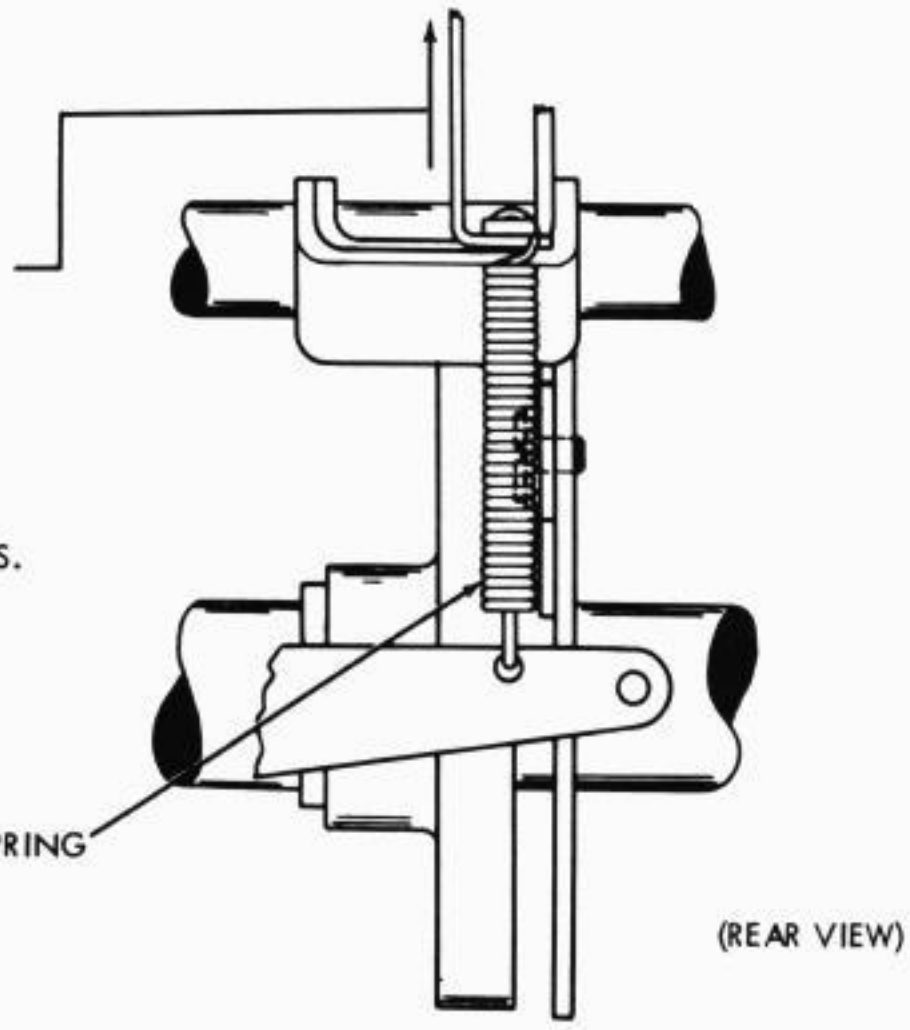
CLUTCH TRIP LEVER SPRING

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)

2.19 Main Shaft and Trip Shaft Mechanisms (Cont.)

(A)
TYPE BOX CLUTCH TRIP LEVER ECCENTRIC POST

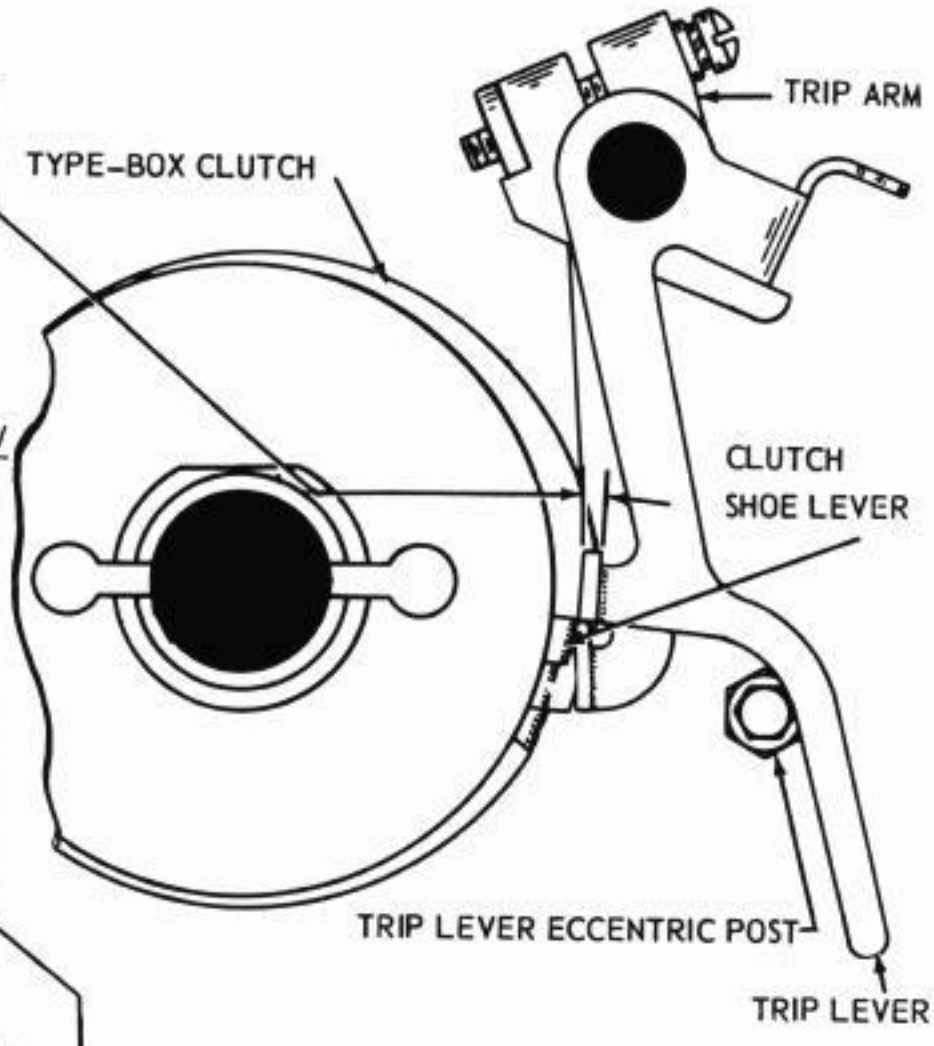
REQUIREMENT
TYPE BOX CLUTCH DISENGAGED. TRIP LEVER SHOULD ENGAGE THE CLUTCH SHOE LEVER BY THE FULL THICKNESS OF THE SHOE LEVER.

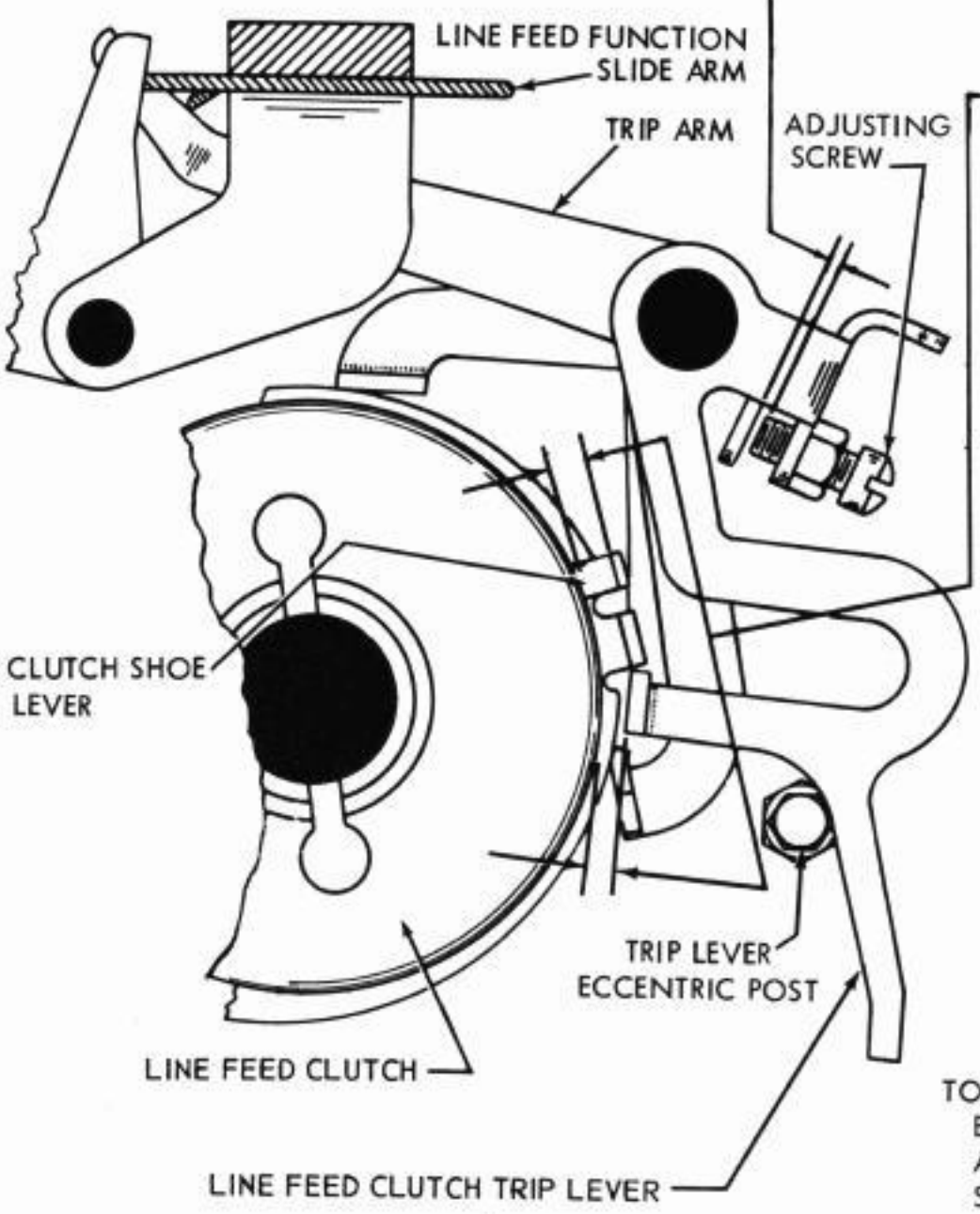
TO ADJUST
POSITION THE TRIP LEVER ECCENTRIC POST.

(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.





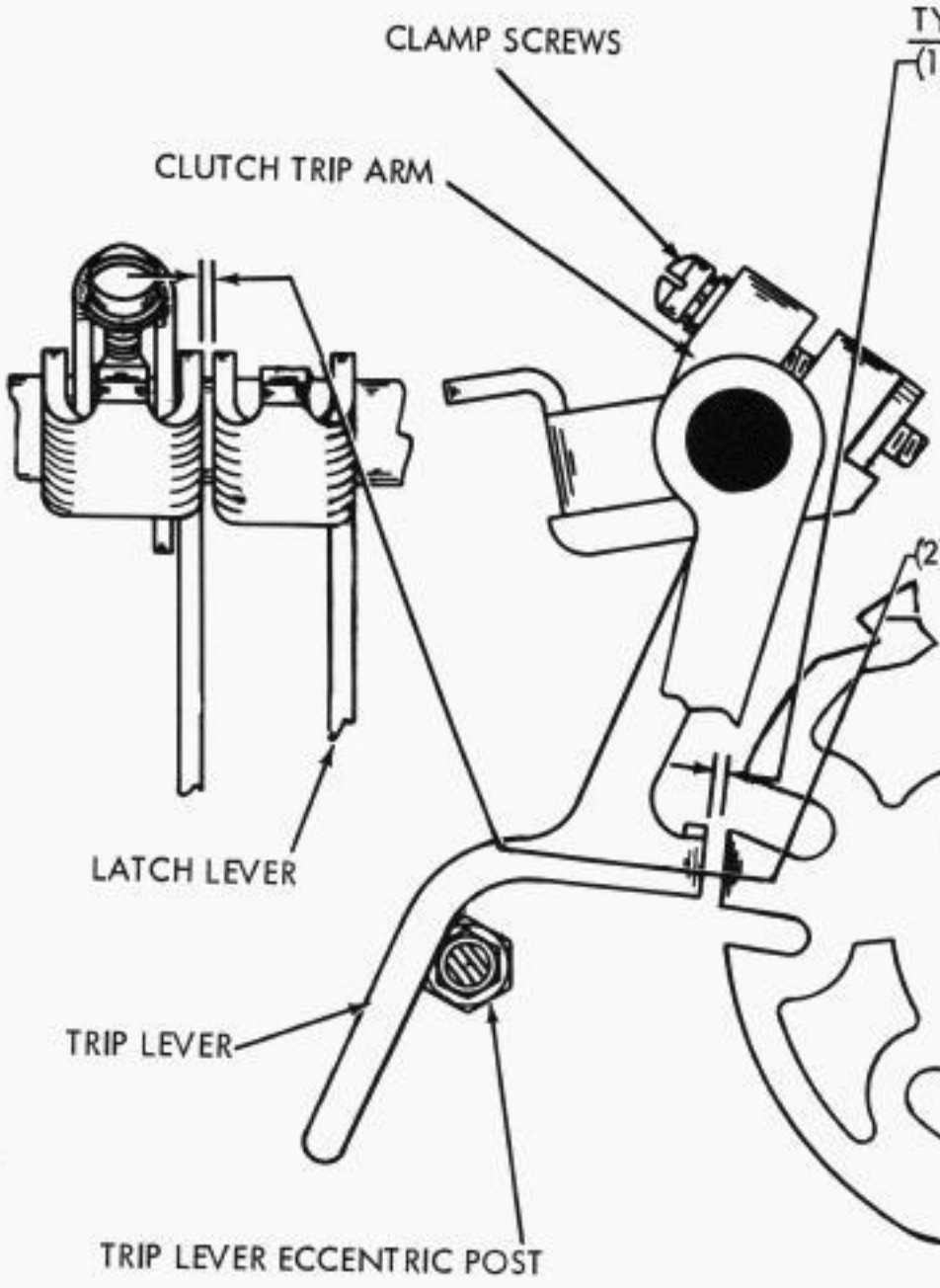
(B)
LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST

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

2. 20 Main Shaft and Trip Shaft Mechanisms (Cont.)



TYPE BOX CLUTCH TRIP LEVER

(1) REQUIREMENT

CLUTCH TRIP SHAFT CAM FOLLOWER ROLLER (SEE PAR. 2.16) ON LOWEST SURFACE OF CAM (LOCATED ON CODE BAR CLUTCH). CLEARANCE BETWEEN INNER FACE OF TYPE BOX CLUTCH TRIP LEVER AND THE CLUTCH DISK STOP LUG.

	STANDARD	WITH STUNT BOX MECH.
MIN.	0.045	0.030
MAX.	0.080	0.065

TO ADJUST

LOOSEN CLAMP SCREW AND POSITION STOP.

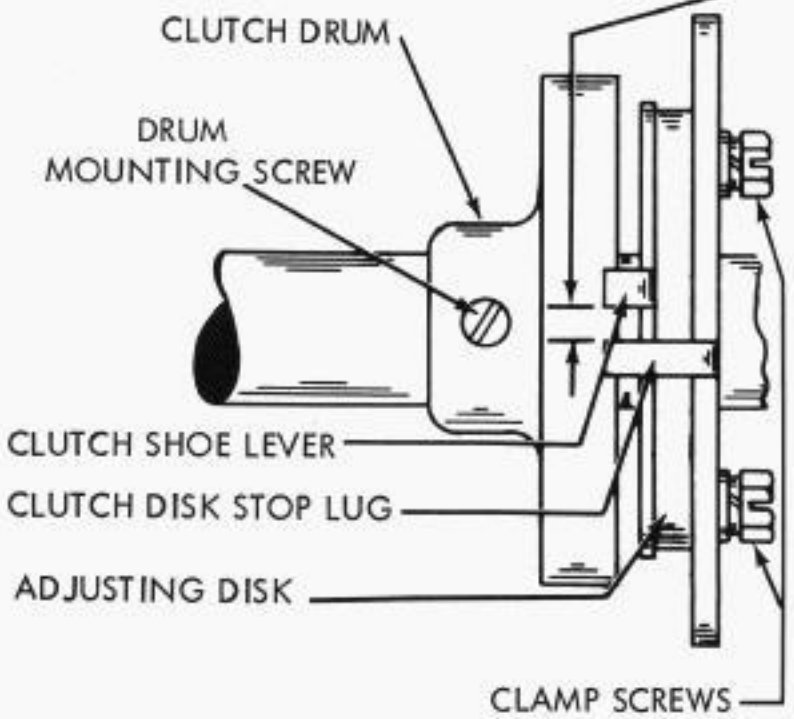
(2) REQUIREMENT

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.



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.

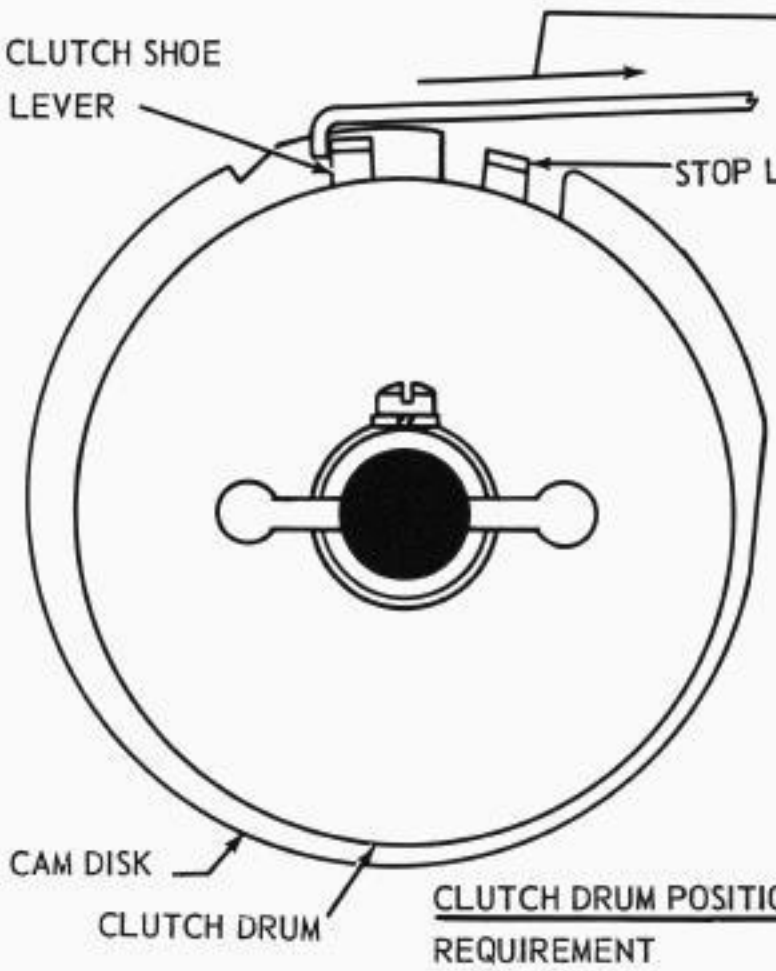
NOTE

ON MULTIPLE STOP CLUTCHES CHECK THE CLEARANCE AT THE STOP LUG THAT IS ADJACENT TO THE FORM IN THE CLUTCH ADJUSTING DISK.

TO ADJUST

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

2.21 Main Shaft and Trip Shaft Mechanisms (Cont.)



CLUTCH SHOE LEVER SPRING

REQUIREMENT

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

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

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

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

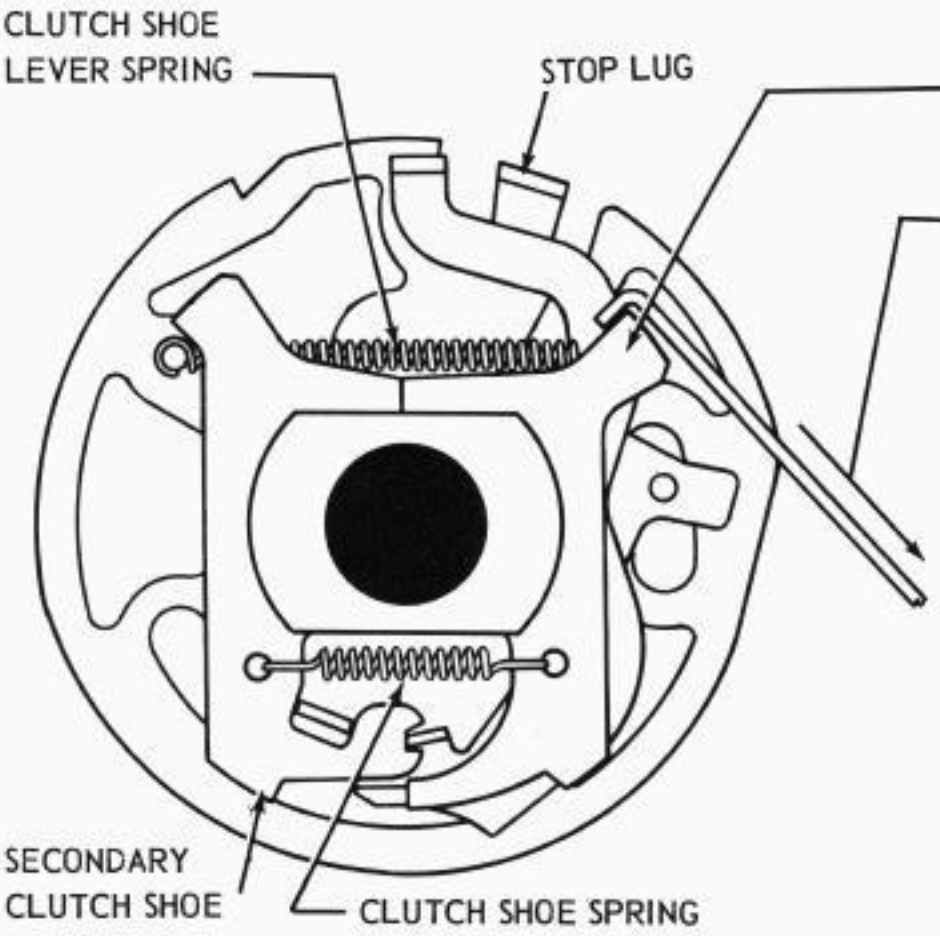
CLUTCH DRUM POSITION (EXCEPT SELECTOR)

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.



CLUTCH SHOE SPRING

NOTE

IN ORDER TO CHECK THIS SPRING TENSION, IT IS 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.

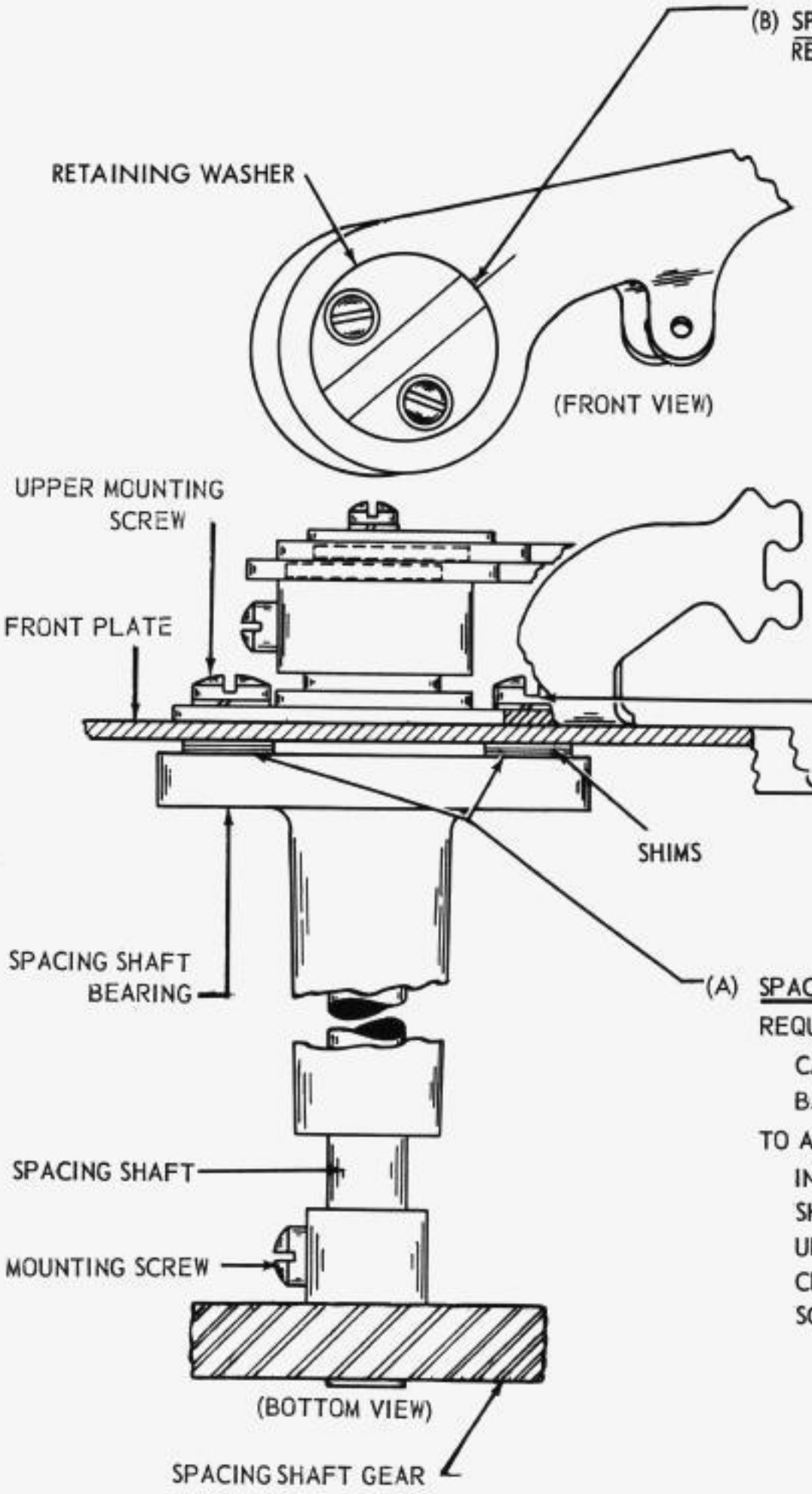
REQUIREMENT

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.

2.22 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

(A) SPACING GEAR CLEARANCE

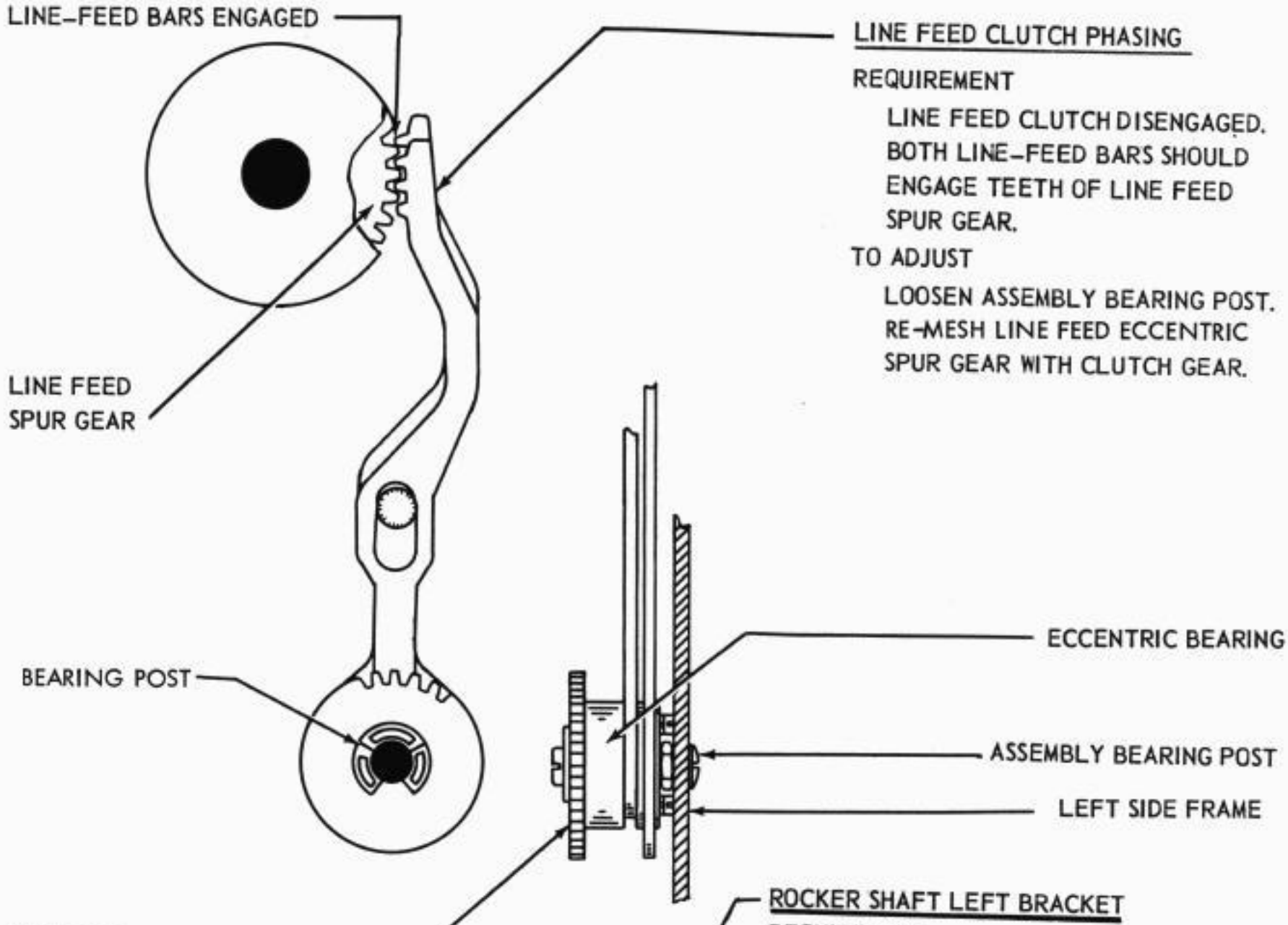
REQUIREMENT

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

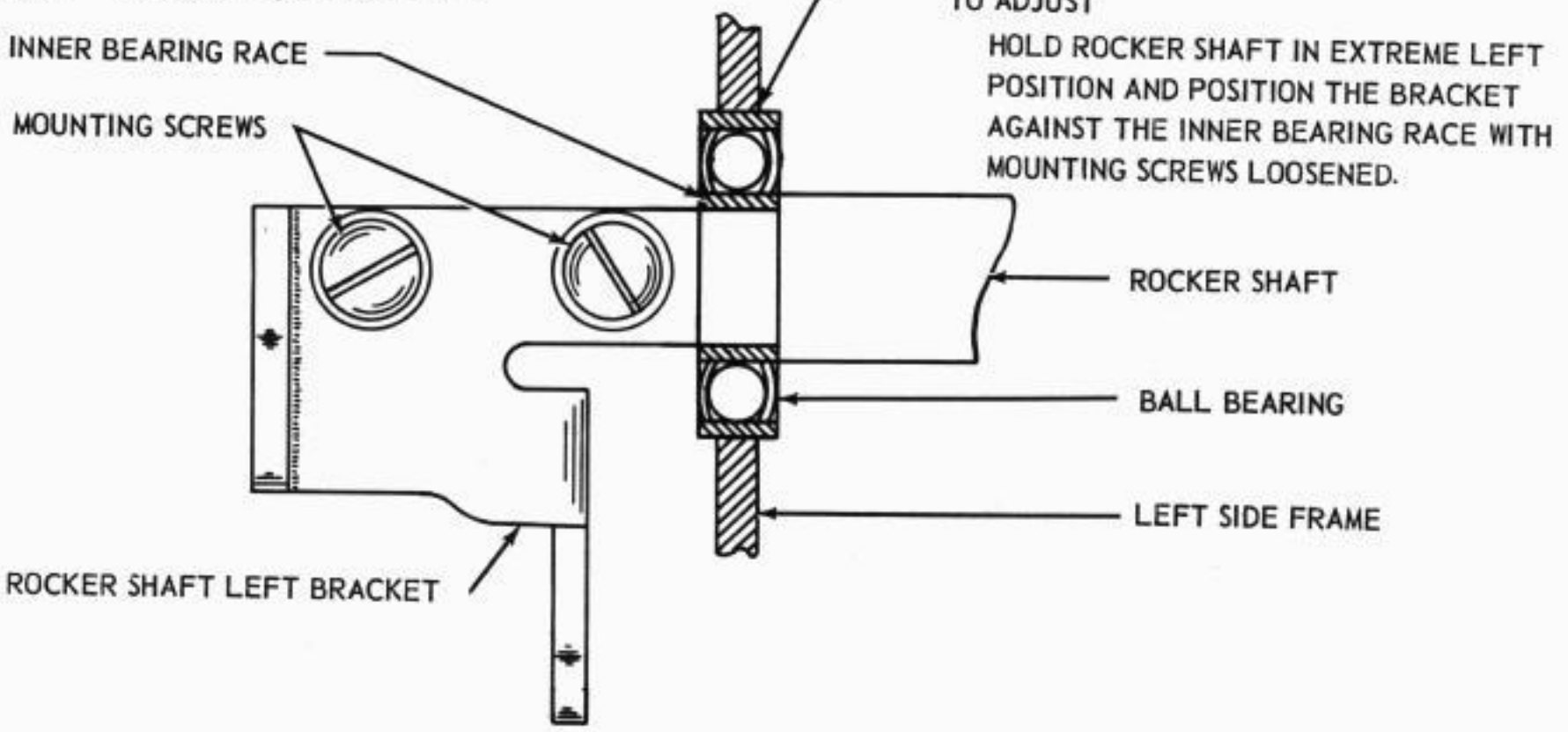
TO ADJUST

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.

2.23 Line Feed and Platen Mechanism



2.24 Positioning Mechanism



2.25 Positioning Mechanism (Cont.)

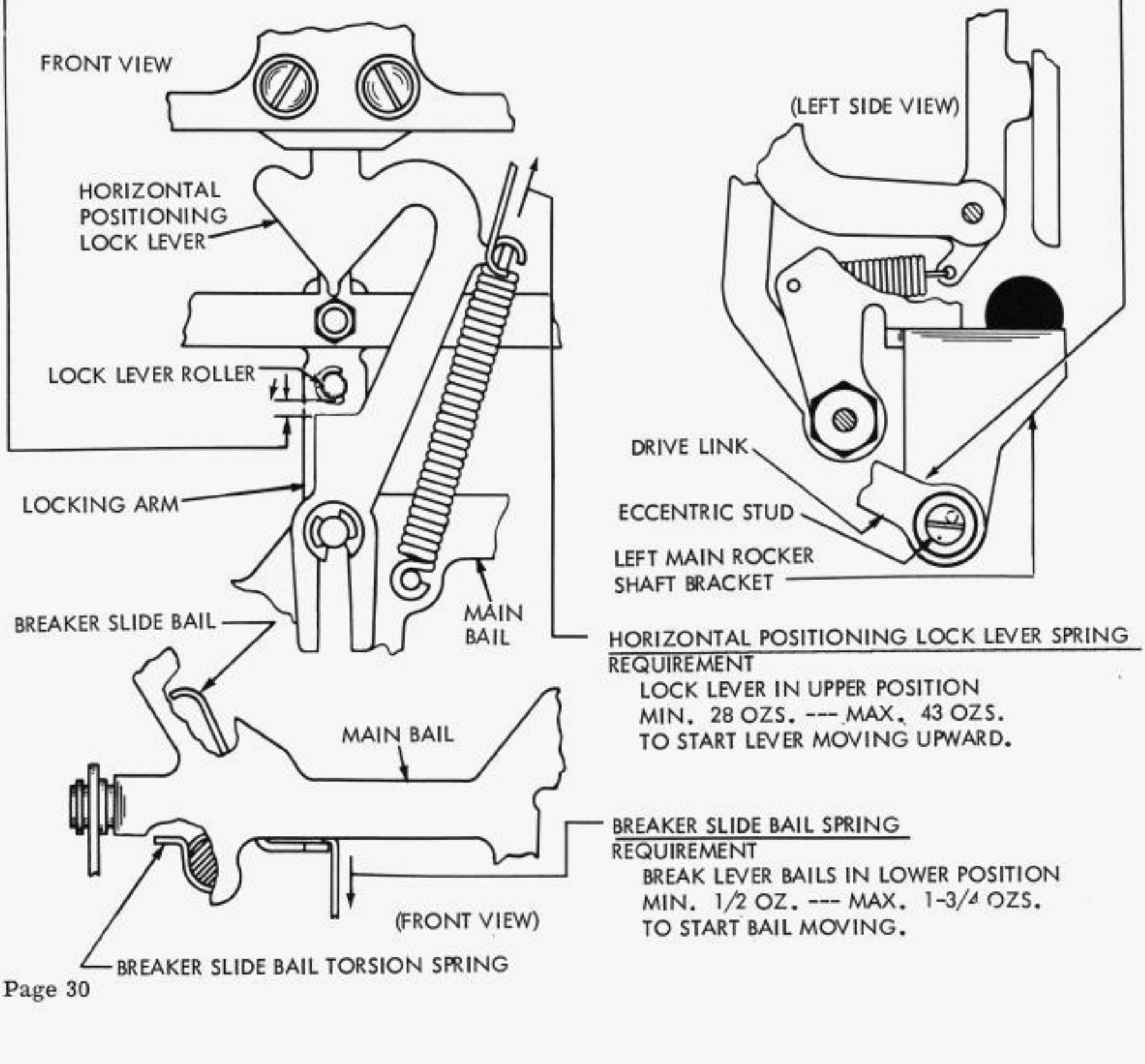
ROCKER SHAFT BRACKET ECCENTRIC STUD

(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. 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. 2.33) RIGHT VERTICAL POSITIONING LEVER ECCENTRIC STUD (PAR 2.26), LEFT VERTICAL POSITIONING LEVER ECCENTRIC STUD (PAR. 2.27) VERTICAL POSITIONING LOCK LEVER (PAR. 2.34), RIBBON FEED LEVER BRACKET (PAR. 2.51), FUNCTION STRIPPER BLADE ARMS (PAR. 4.16), SPACING TRIP LEVER BAIL CAM PLATE (PAR. 2.29). REVERSING SLIDE BRACKETS (PAR. 2.32) AND RIBBON REVERSE SPUR GEAR (PAR. 2.50) PRINTING TRACK (PAR. 2.47) AND PRINTING ARM (PAR. 2.48).



HORIZONTAL POSITIONING LOCK LEVER SPRING

REQUIREMENT

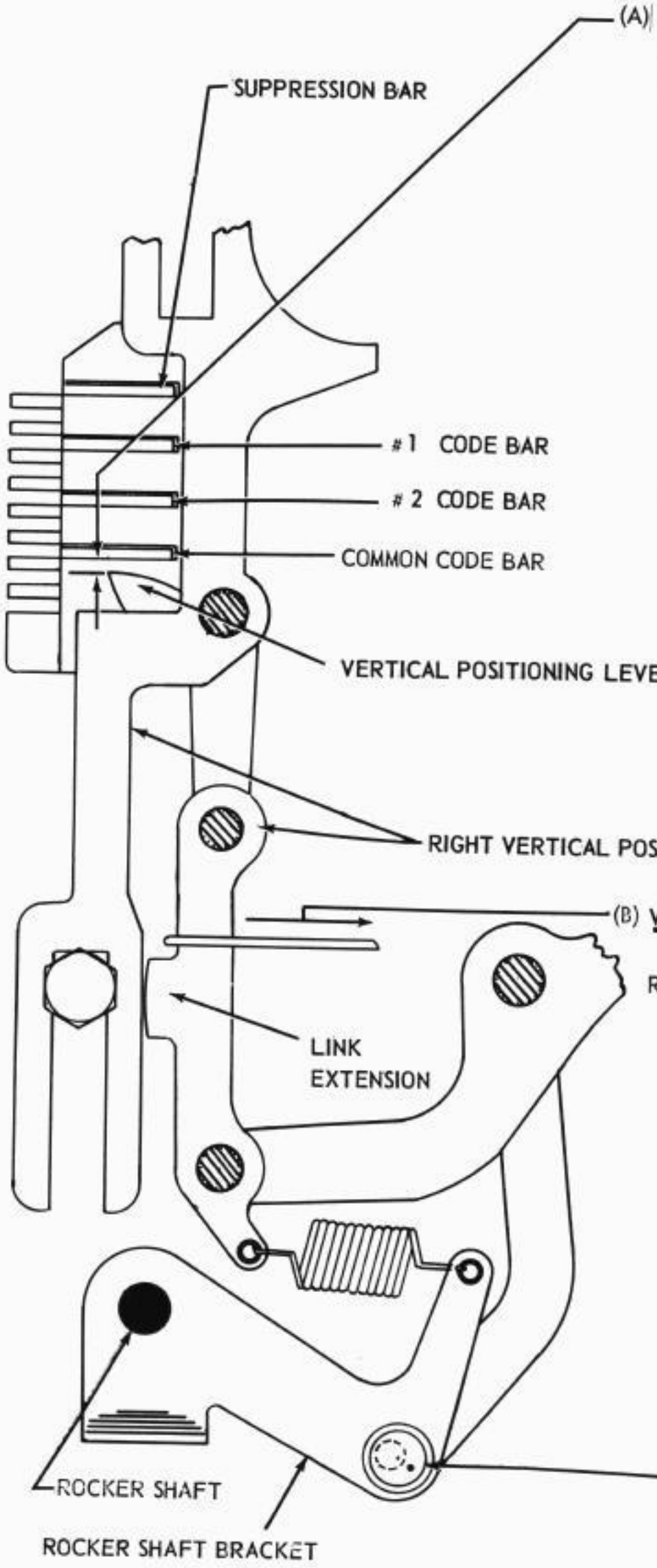
LOCK LEVER IN UPPER POSITION
MIN. 28 OZS. --- MAX. 43 OZS.
TO START LEVER MOVING UPWARD.

BREAKER SLIDE BAIL SPRING

REQUIREMENT

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

2.26 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.

(B) VERTICAL POSITIONING LEVER SPRING

REQUIREMENT

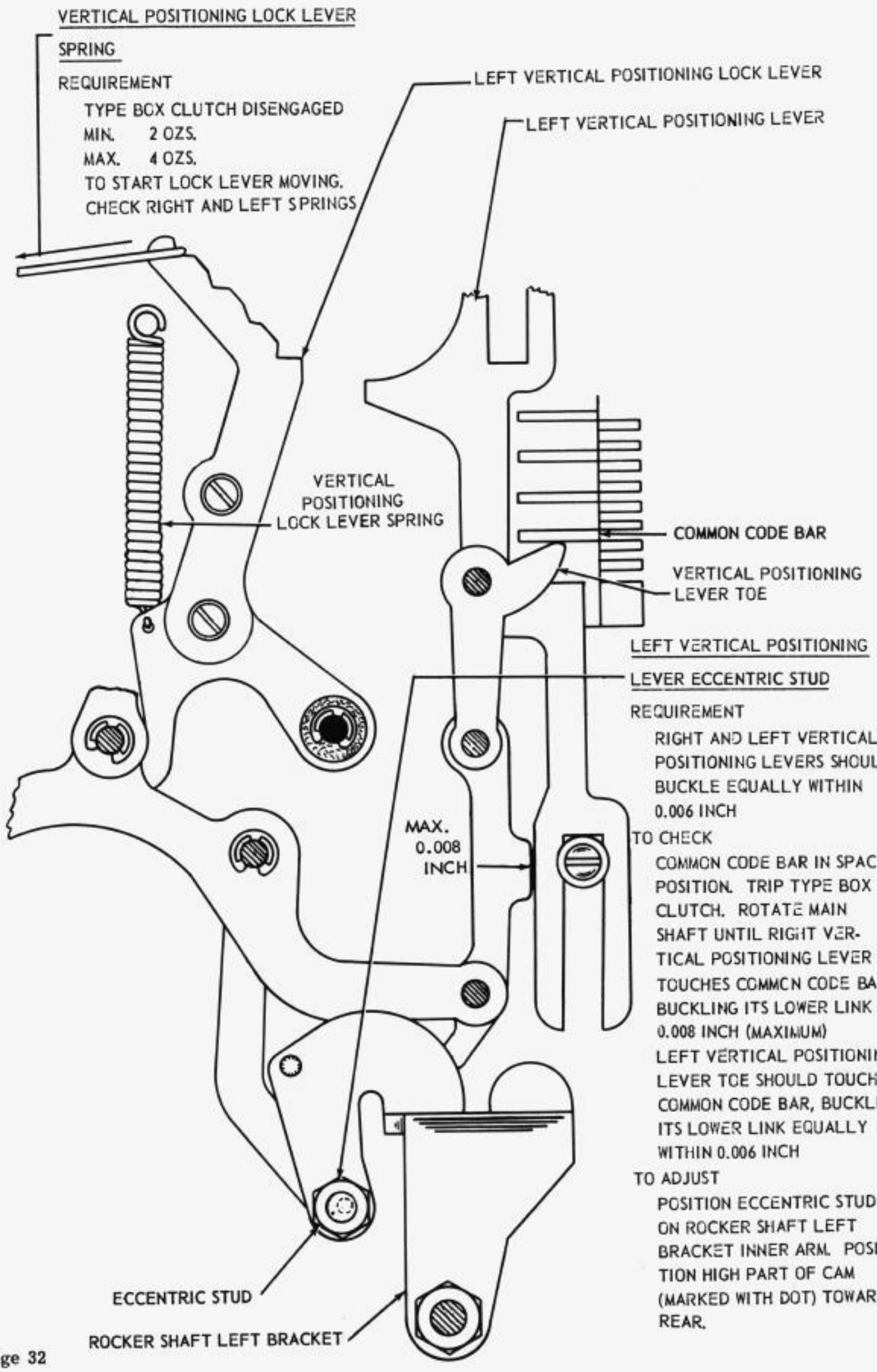
VERTICAL POSITIONING LEVER TOES (RIGHT AND LEFT) IN CONTACT WITH THE SUPPRESSION CODE BAR, LEVERS NOT BUCKLED.

MIN. 4 OZS.
MAX. 12 OZS.

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

CHECK BOTH RIGHT AND LEFT SPRINGS.

2.27 Positioning Mechanism (Cont.)



2.28 Spacing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 2.41, 2.42, AND 2.45, IF THE FOLLOWING ADJUSTMENTS ARE REMADE.

OSCILLATING RAIL SLIDE POSITION

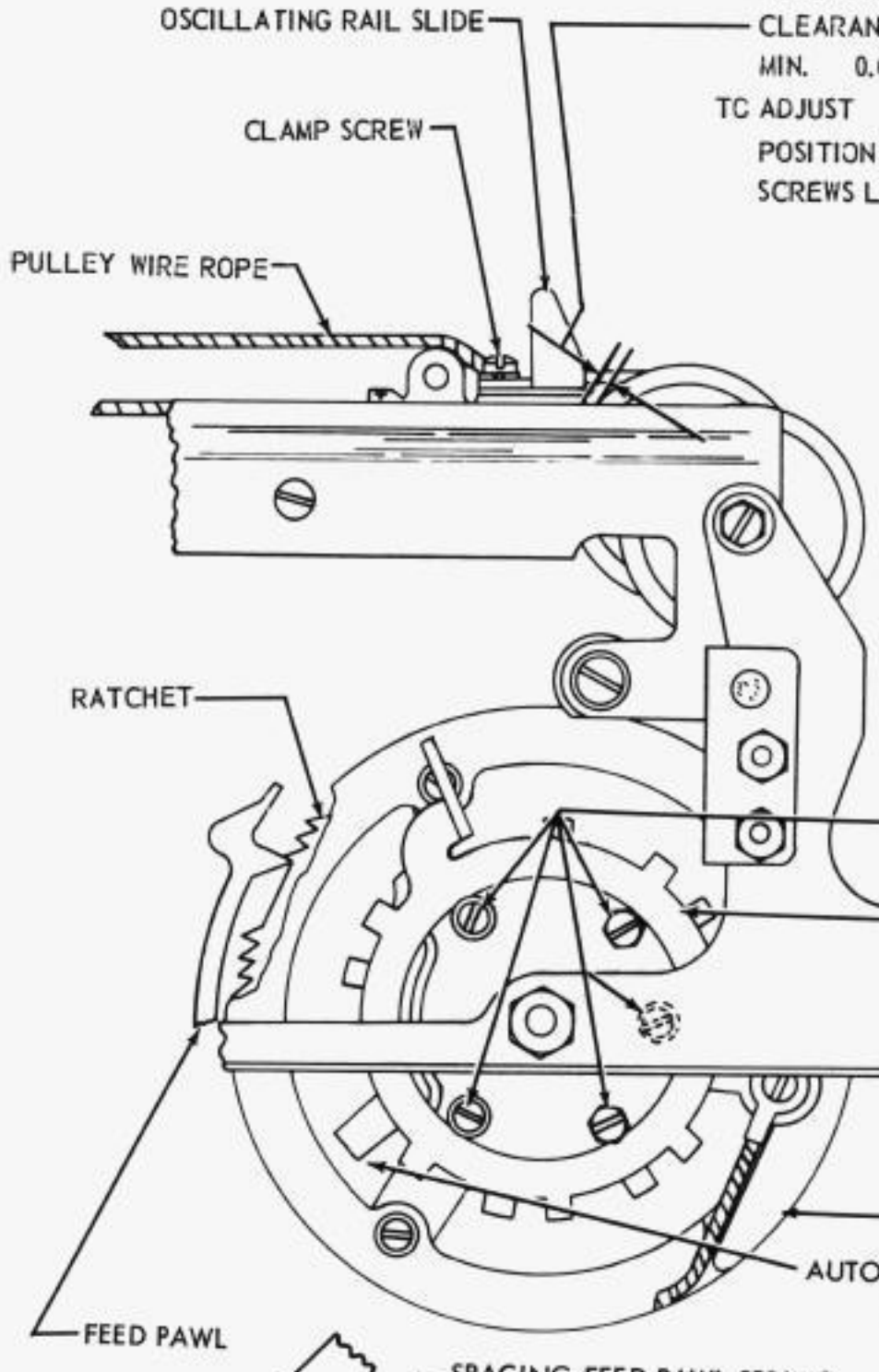
REQUIREMENT

CARRIAGE RETURN RING AND AUTOMATIC CARRIAGE RETURN–LINE FEED RING FREE TO ROTATE ON SPACING DRUM (FIVE MOUNTING SCREWS LOOSENED.) SPACING CLUTCH DISENGAGED. FEED PAWL, WHICH IS FARTHEST ADVANCED, ENGAGING TOOTH IMMEDIATELY ABOVE CUT–AWAY SECTION OF RATCHET. CLEARANCE BETWEEN SLIDE AND PULLEY

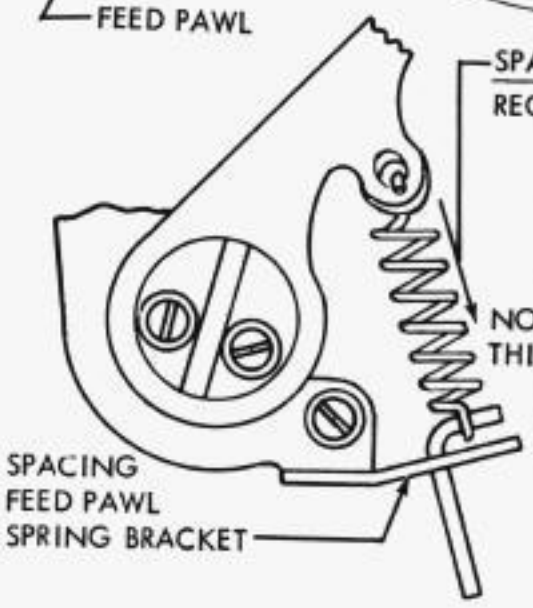
MIN. 0.025 INCH——MAX. 0.050 INCH

TC ADJUST

POSITION SLIDE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED.



NOTE: FOR EARLIER DESIGN SEE PAR. 4.06



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. 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.

2. 29 Spacing Mechanism (Cont.)

(A) SPACING TRIP LEVER BAIL CAM PLATE

REQUIREMENT

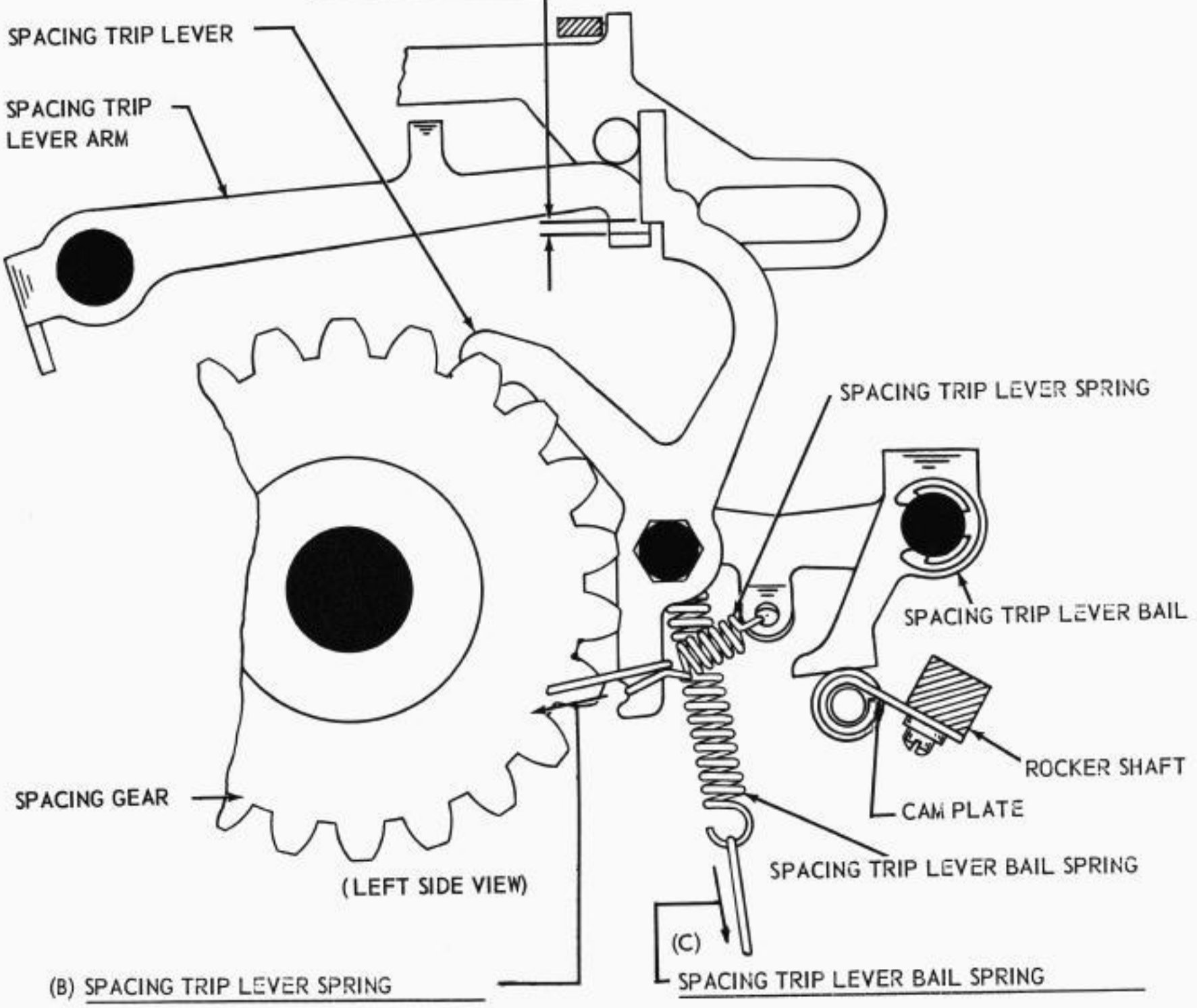
SPACING TRIP LEVER ARM IN UPWARD POSITION. TYPE BOX CLUTCH ROTATED THROUGH APPROXIMATELY ONE-HALF OF ITS CYCLE. ALL FUNCTION PAWLS DISENGAGED FROM FUNCTION BAR. CLEARANCE BETWEEN TOP SURFACE OF TRIP LEVER ARM EXTENSION AND SPACING TRIP LEVER SHOULDER.

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



(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

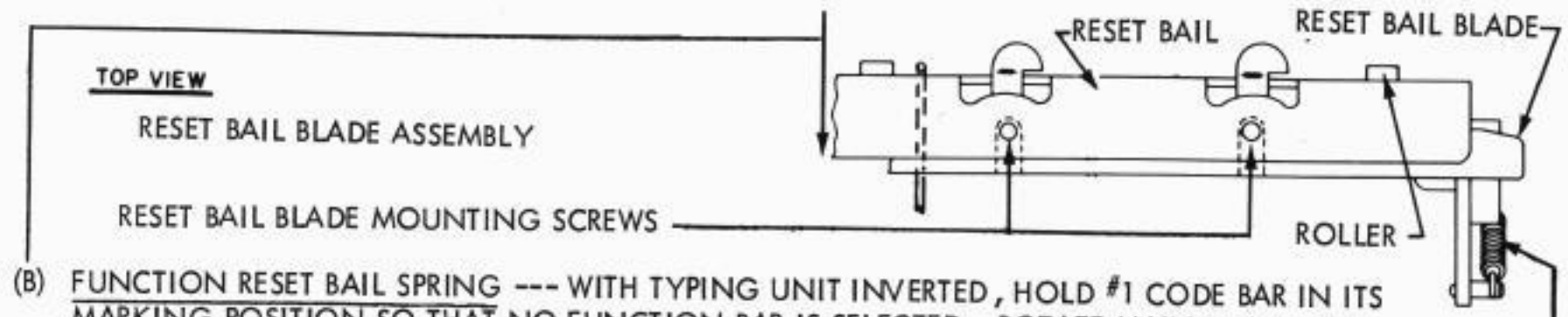
SPACING TRIP LEVER BAIL AGAINST STOP. SPACING TRIP LEVER BAIL SPRING UNHOOKED.

MIN. 8 OZS.

MAX. 12 OZS.

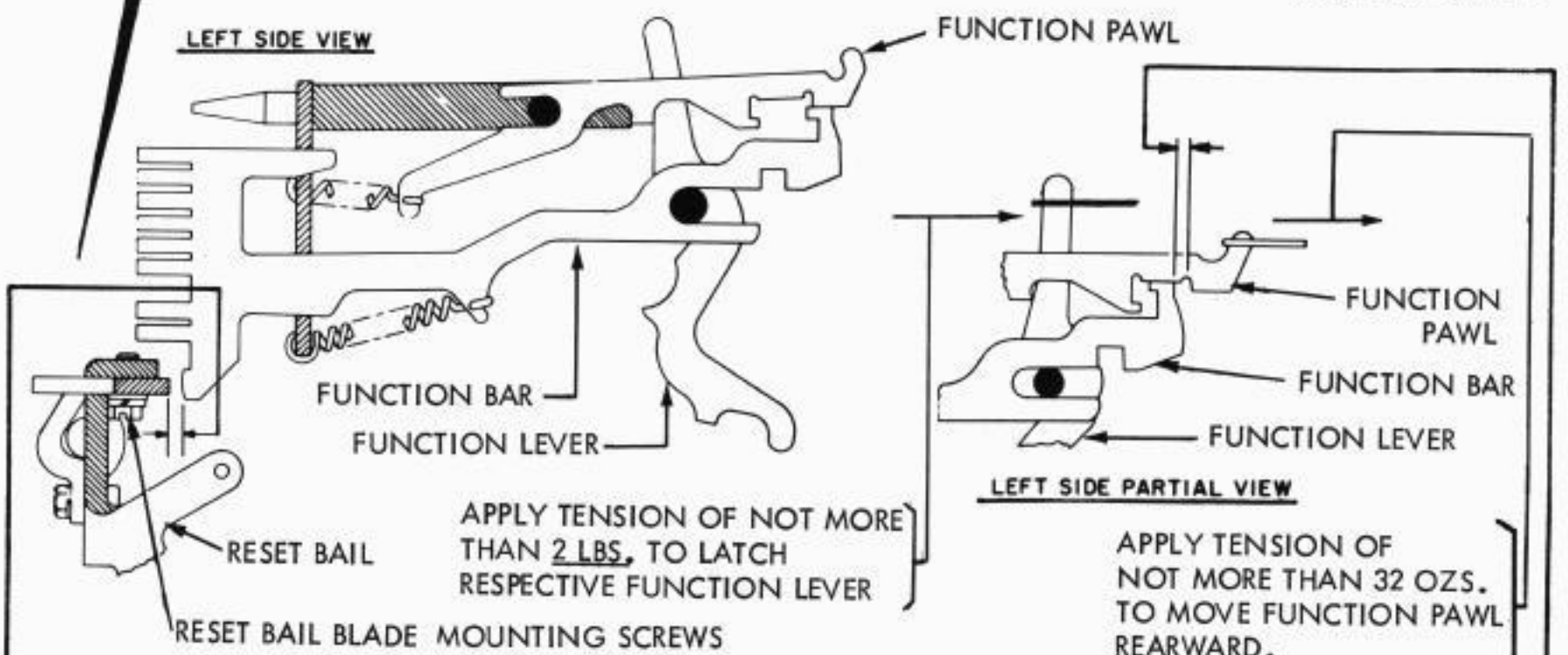
TO PULL SPRING TO INSTALLED LENGTH.

2.30 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. 4.08)

(1) REQUIREMENT --- WITH ALL CLUTCHES DISENGAGED, TRIP CODE BAR CLUTCH AND TURN MAIN SHAFT UNTIL CODE-BAR CLUTCH SHOE-RELEASE LEVER JUST TOUCHES ITS STOP LEVER. 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.

(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

2.31 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 DISK 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

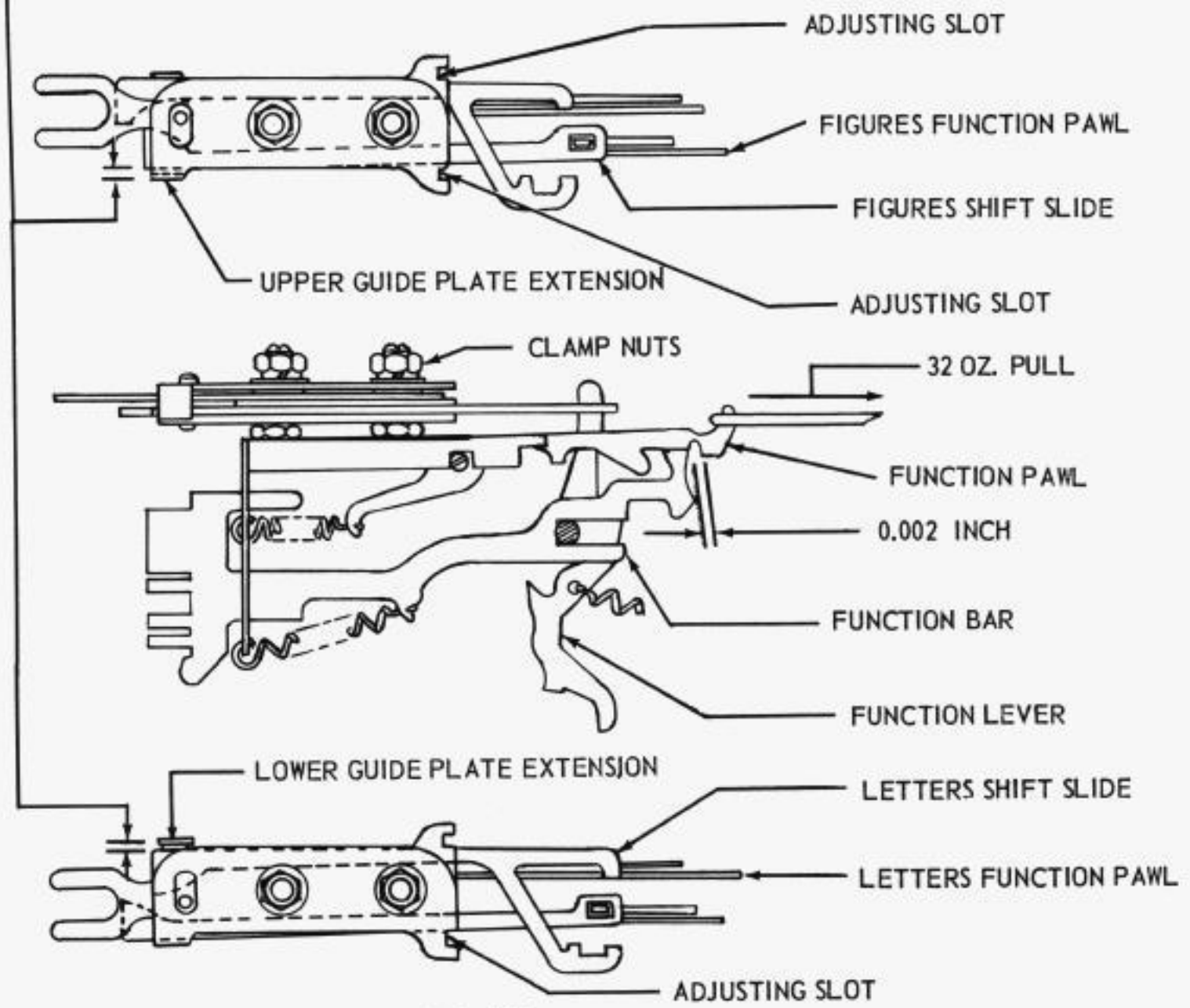
WITH 32 OZ. PULL APPLIED TO FUNCTION PAWL THERE SHOULD BE
MIN. 0.002 INCH
BETWEEN SHOULDER OF FIGURES FUNCTION PAWL AND FACE OF FUNCTION BAR.

(3) REQUIREMENT

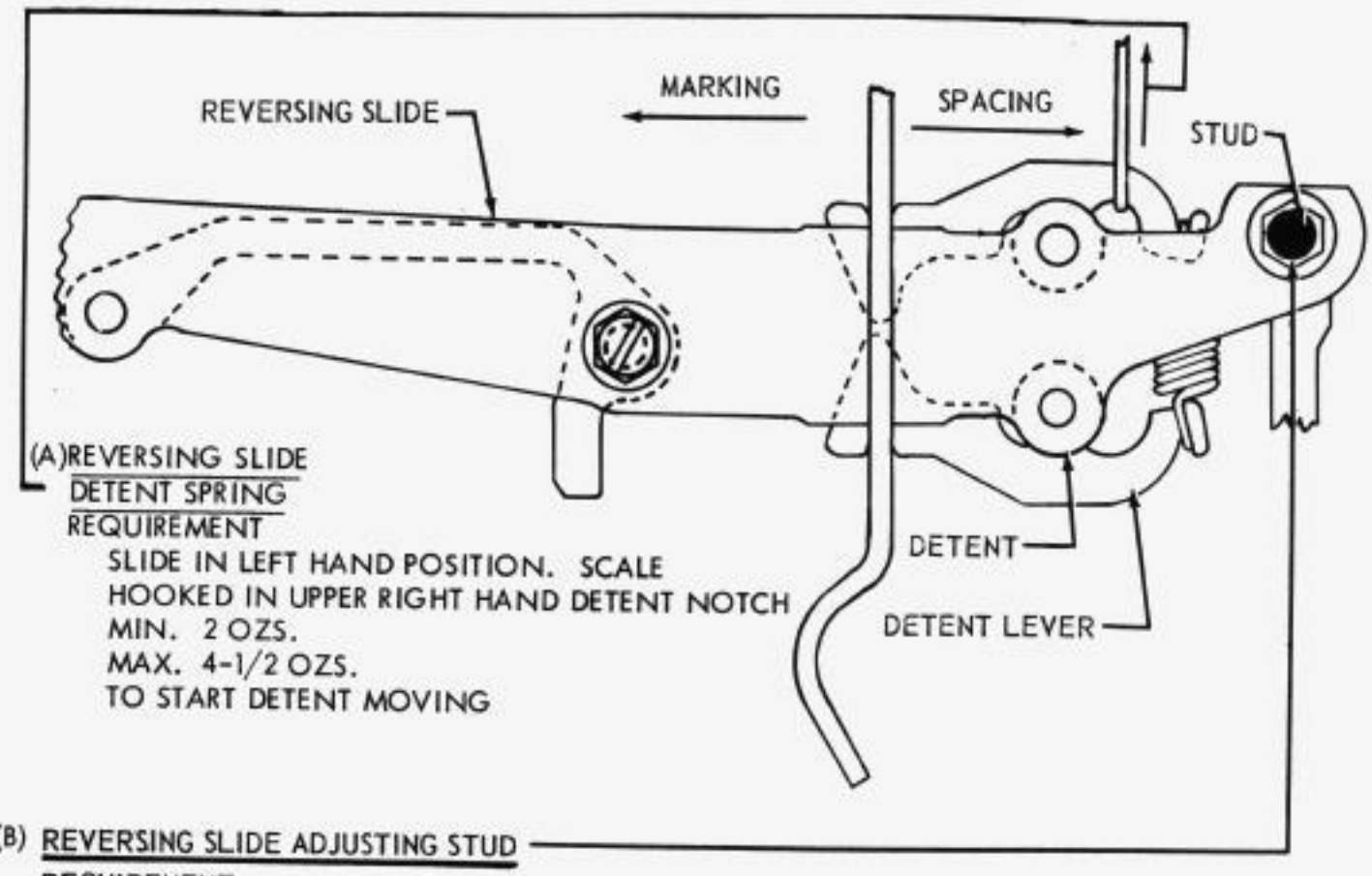
REPEAT REQUIREMENT (1) & (2) FOR THE LETTERS FUNCTION PAWL. CHECK MAX. CLEARANCE BETWEEN LOWER GUIDE PLATE EXTENSION AND SHIFT SLIDE. CHECK MIN. CLEARANCE BETWEEN SHOULDER OF LETTER FUNCTION PAWL AND FACE OF FUNCTION BAR.

TO ADJUST

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



NOTE: FOR EARLIER DESIGN SEE PAR. 4.07



(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

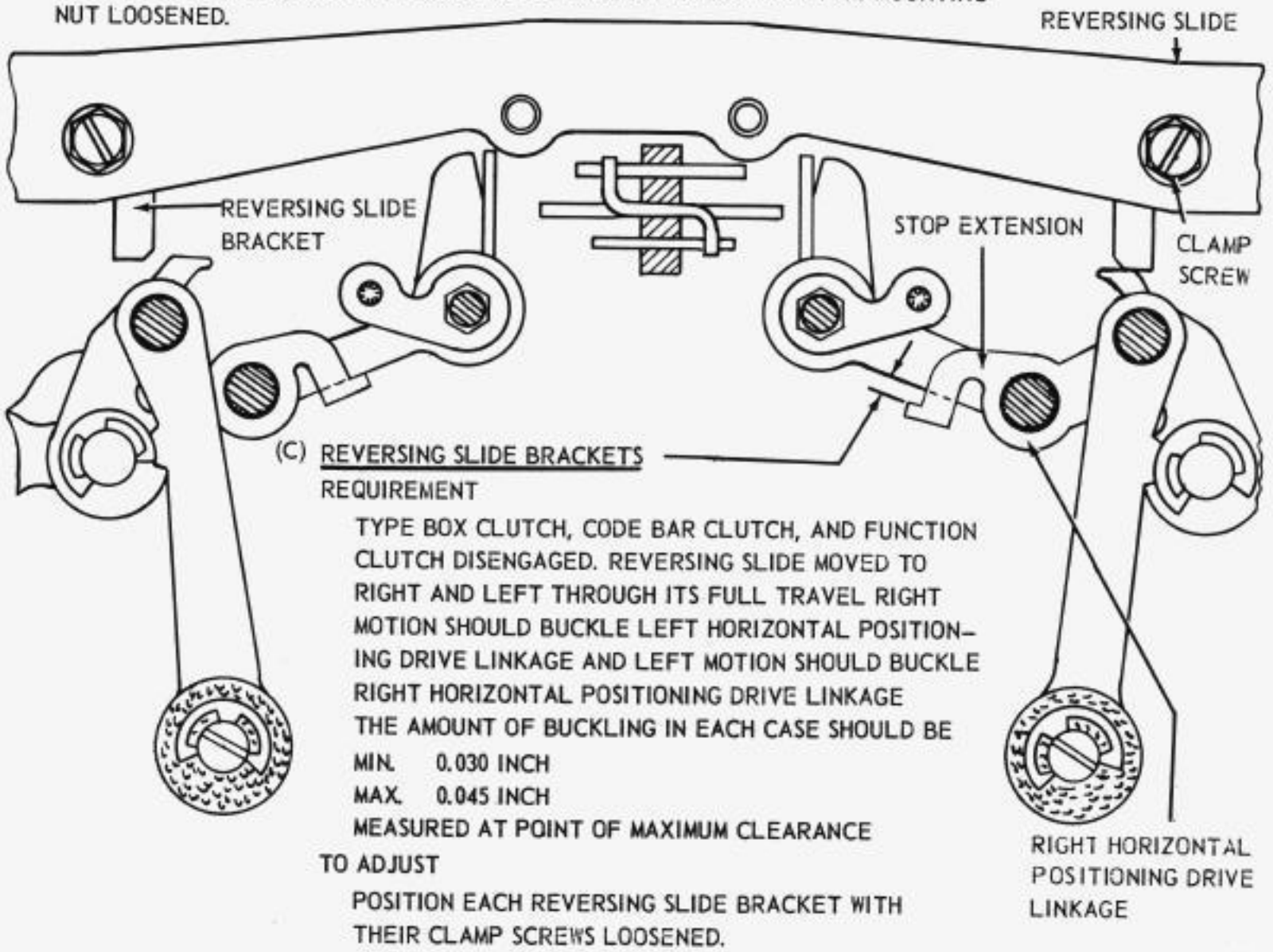
(B) REVERSING SLIDE ADJUSTING STUD

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.



(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. 0.045 INCH
MEASURED AT POINT OF MAXIMUM CLEARANCE

TO ADJUST

POSITION EACH REVERSING SLIDE BRACKET WITH THEIR CLAMP SCREWS LOOSENED.

2.33 Positioning Mechanism (Cont.)

NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS EQUIPPED WITH TORSION SPRINGS.

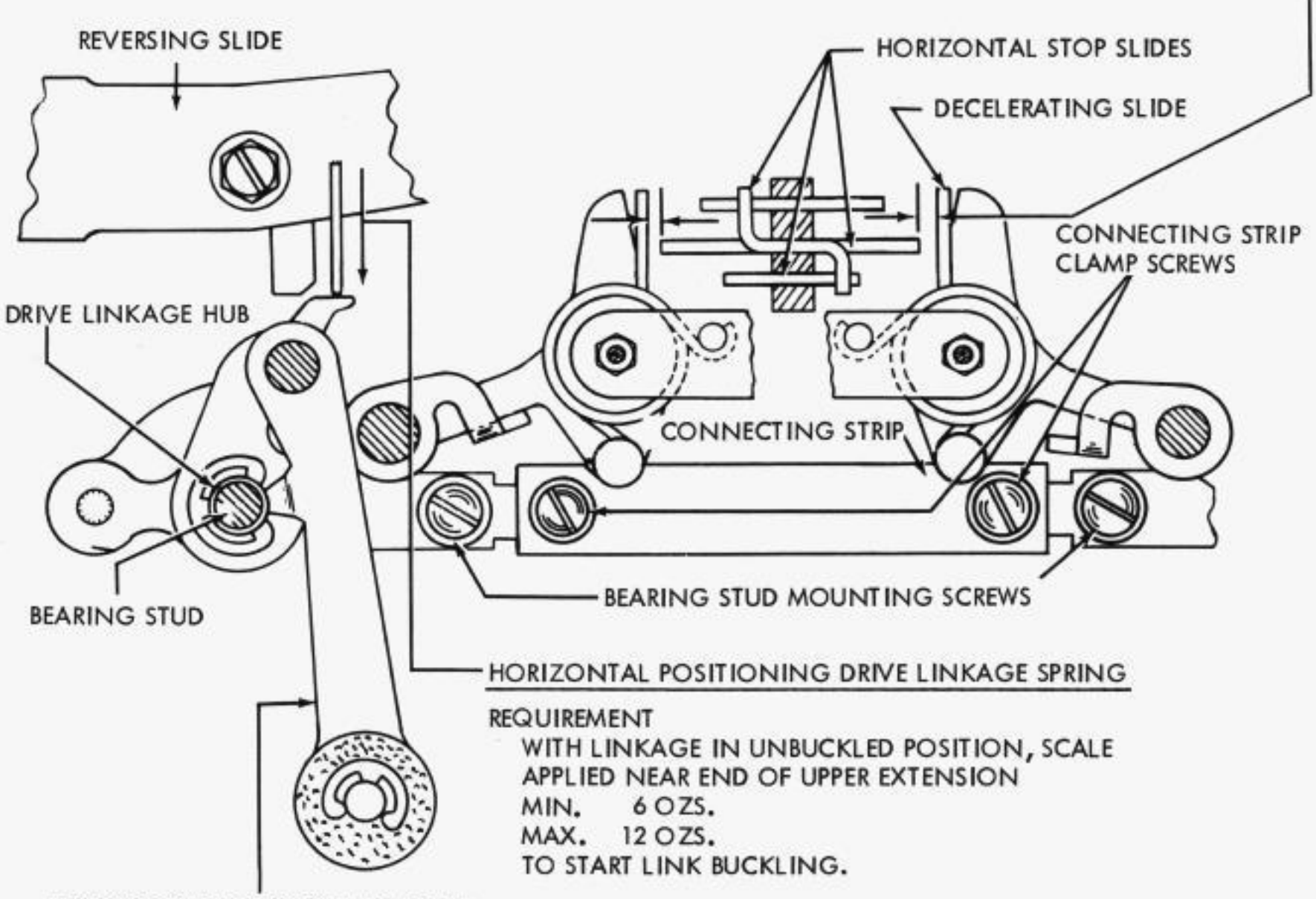
HORIZONTAL POSITIONING DRIVE LINKAGE

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.



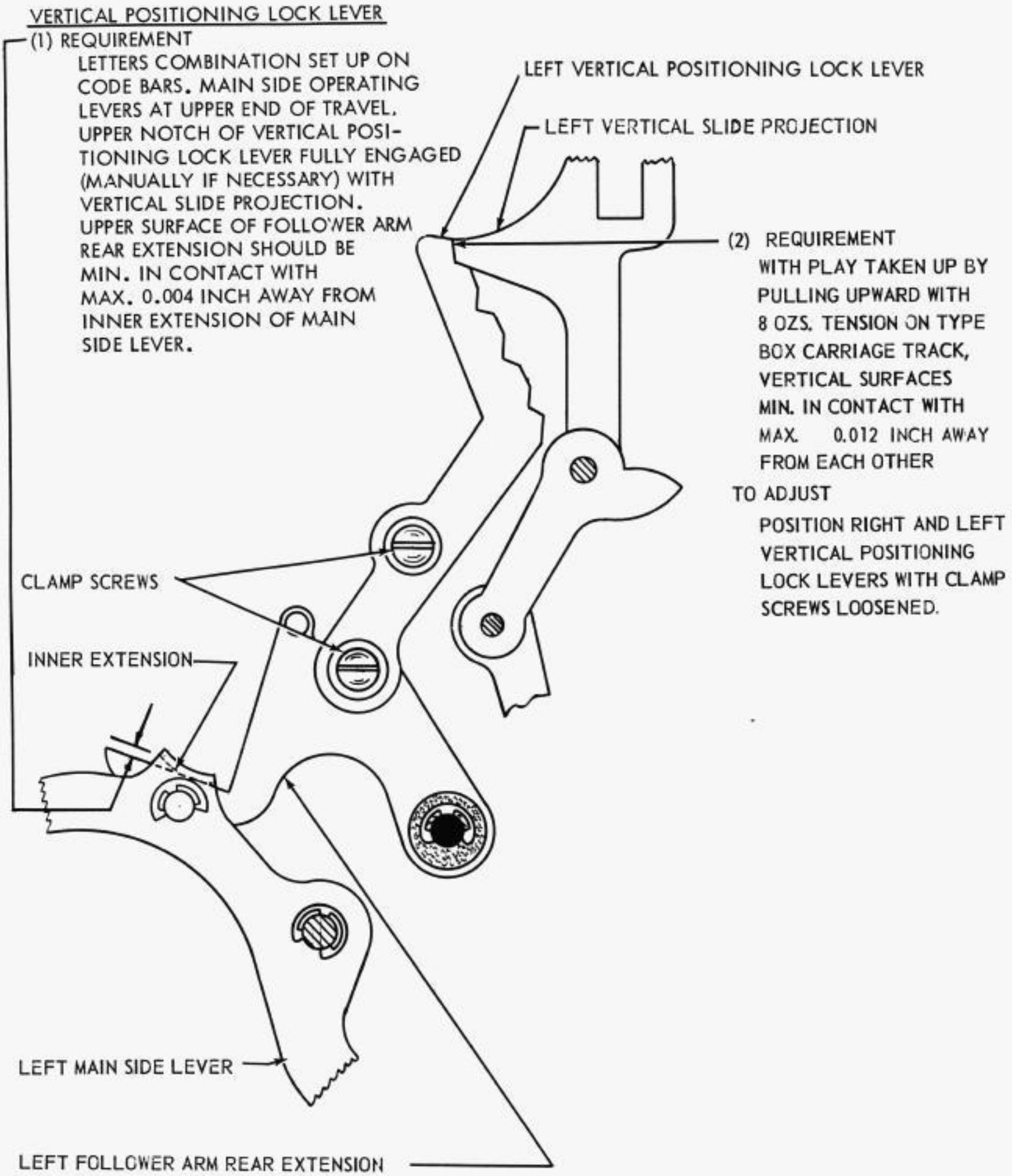
HORIZONTAL POSITIONING DRIVE LINKAGE SPRING

REQUIREMENT

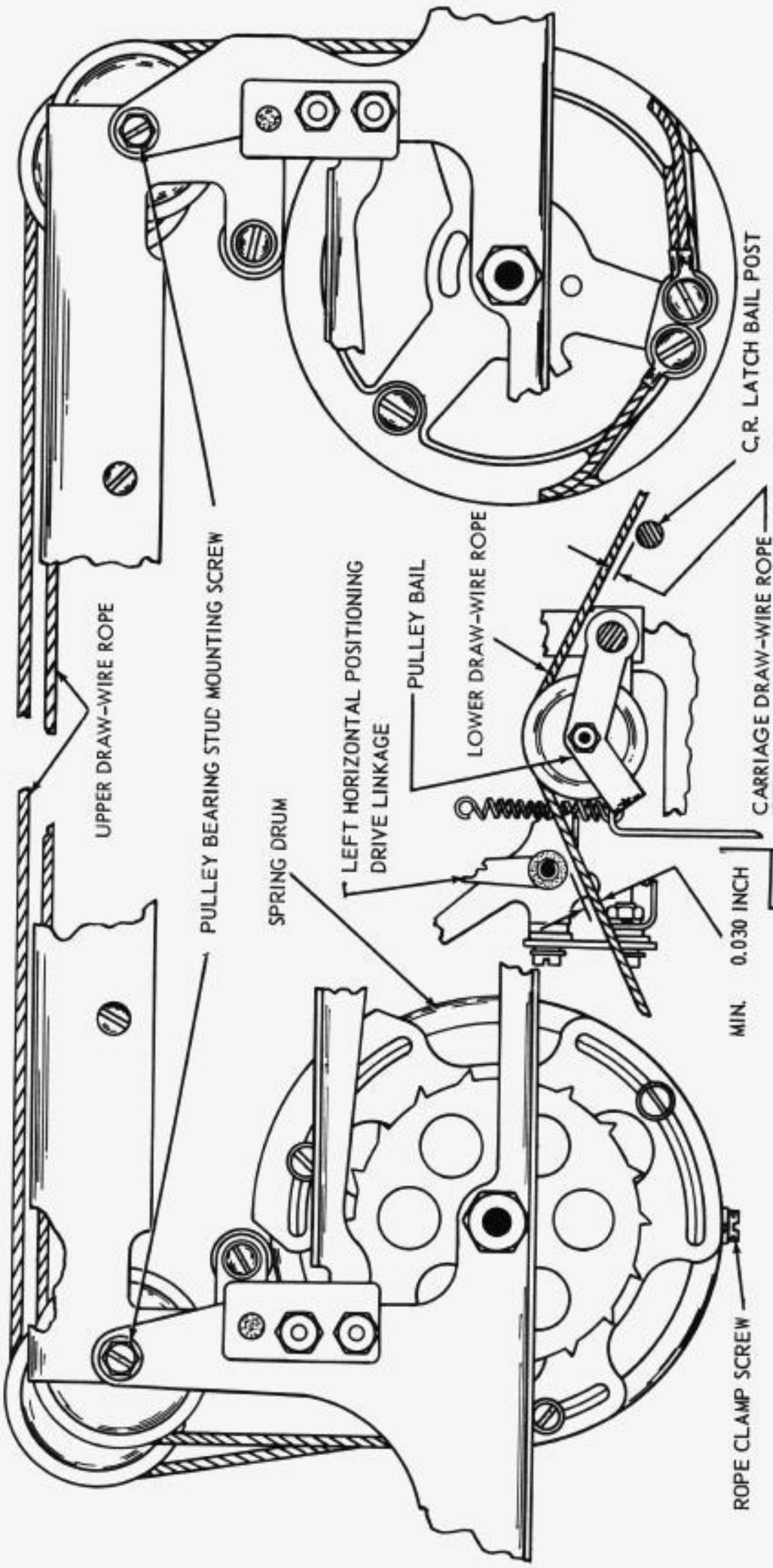
WITH LINKAGE IN UNBUCKLED POSITION, SCALE APPLIED NEAR END OF UPPER EXTENSION
MIN. 6 OZS.
MAX. 12 OZS.
TO START LINK BUCKLING.

NOTE: FOR EARLIER DESIGN SEE PAR. 4.09

2.34 Positioning Mechanism (Cont.)



2.35 Spacing Mechanism (Cont.)



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, GAGED BY FEEL. TIGHTEN THE CLAMP SCREW.

LOWER DRAW-WIRE ROPE PULLEY BAIL SPRING

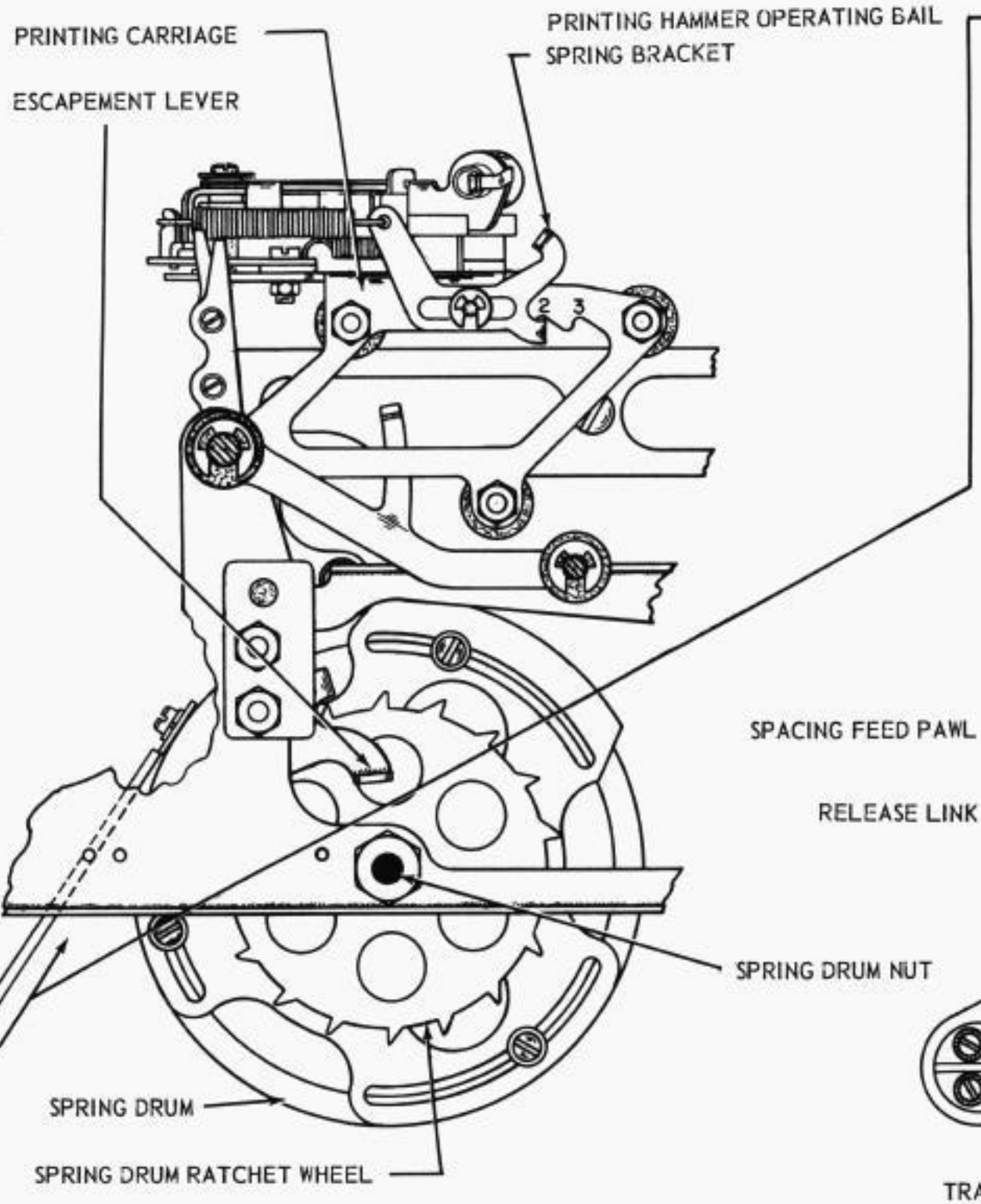
REQUIREMENT

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 RETURN SPRING

REQUIREMENT

SPACING DRUM IN ITS RETURNED POSITION. PRINTING TRACK IN LOWER POSITION TRANSFER SLIDE AND CARRIAGE RETURN LATCH HELD AWAY

MIN. 3 LBS.

MAX. 3 3/4 LBS.

TO START THE SPRING DRUM MOVING.

TO ADJUST

WITH THE SPRING DRUM NUT LOOSENED ROTATE THE SPRING DRUM RATCHET WHEEL TO INCREASE TENSION. OPERATE ESCAPEMENT LEVER TO DECREASE IT.

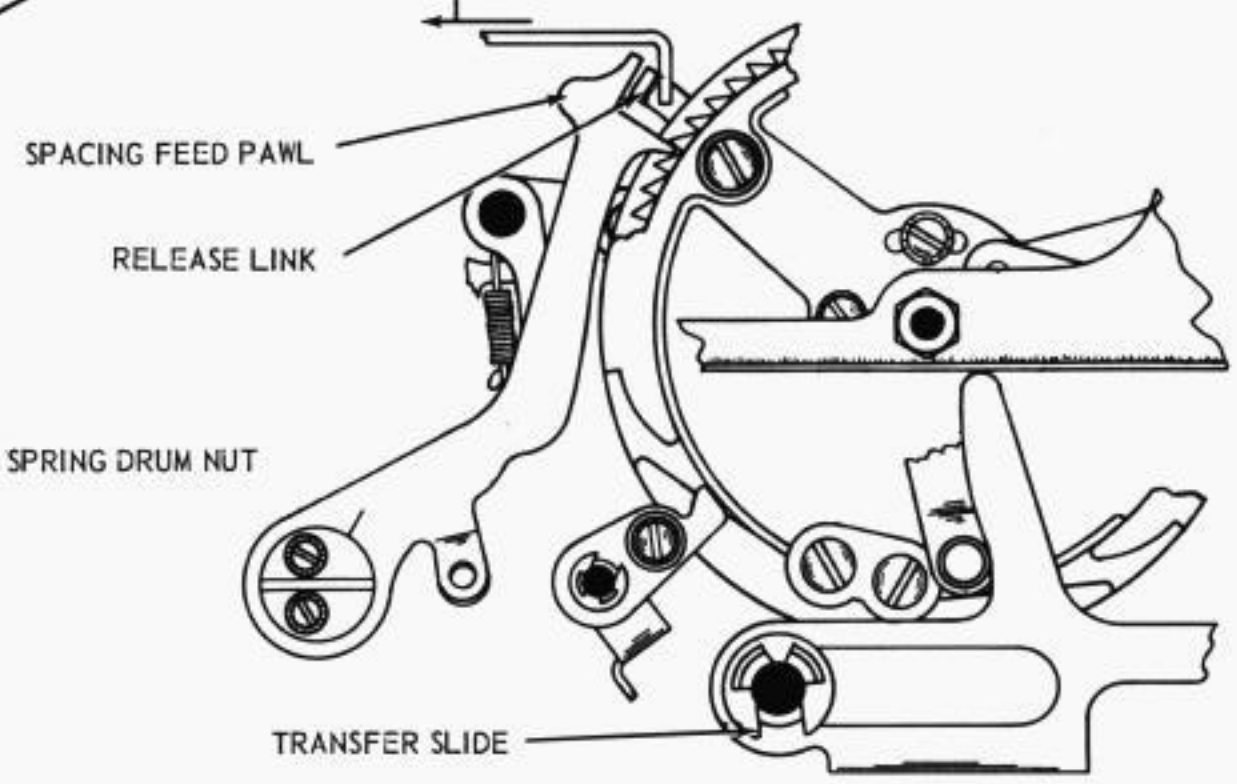
SPACING FEED PAWL RELEASE LINK SPRING

REQUIREMENT

MIN. 1/2 OZ.

MAX. 2 1/2 OZS.

TO START SPRING STRETCHING



2.37 Spacing Mechanism (Cont.)

(A)

CARRIAGE RETURN LATCH BAIL

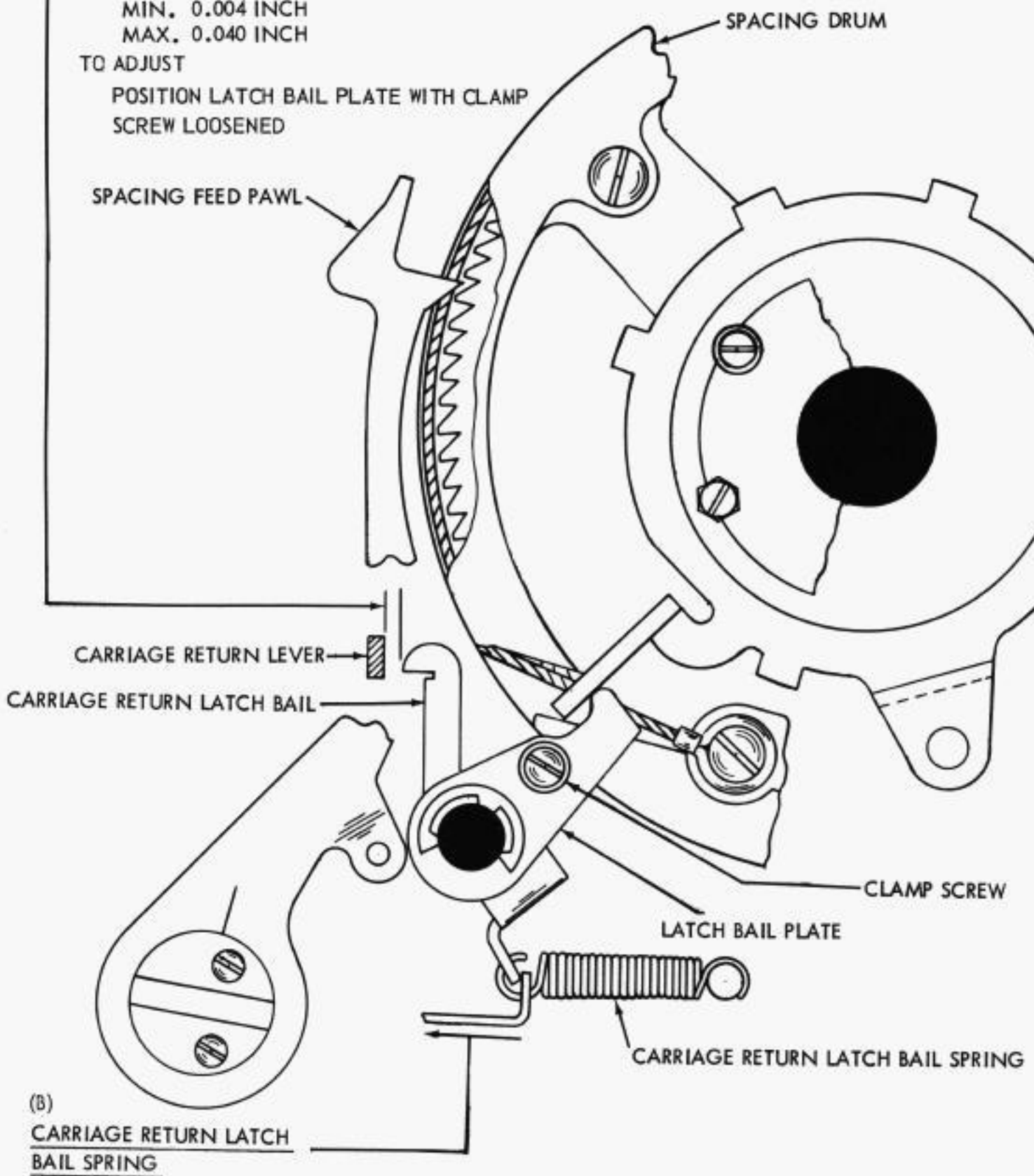
REQUIREMENT

CARRIAGE FULLY RETURNED (SEE PAR. 2.41)
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



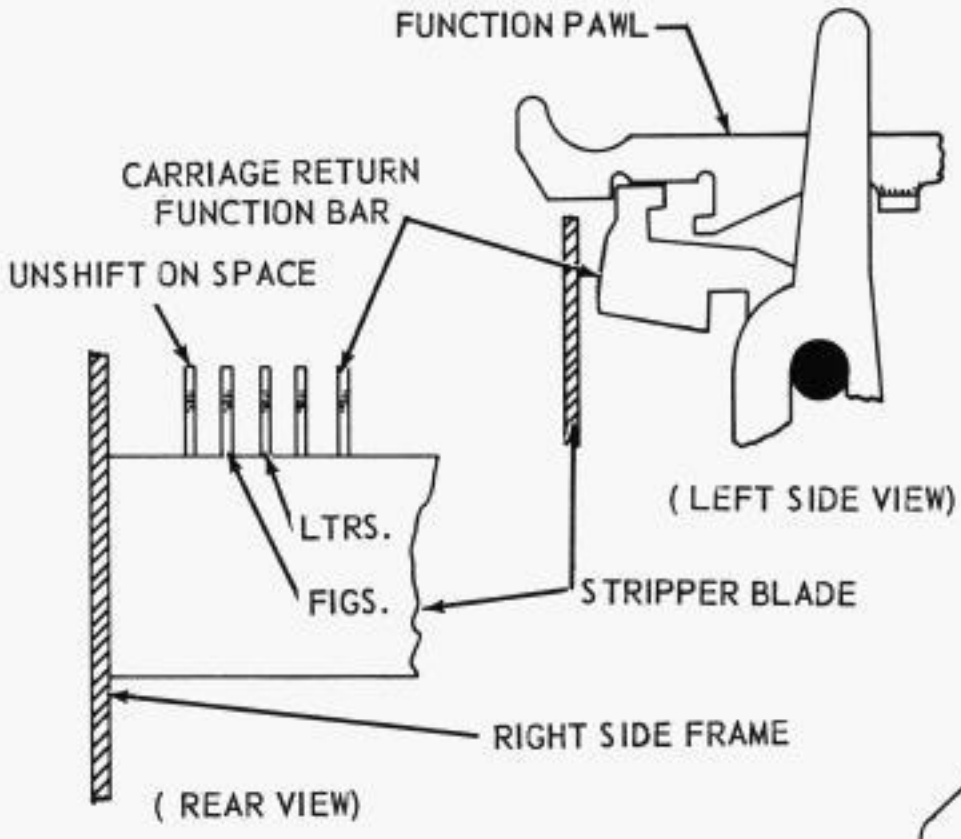
(B)

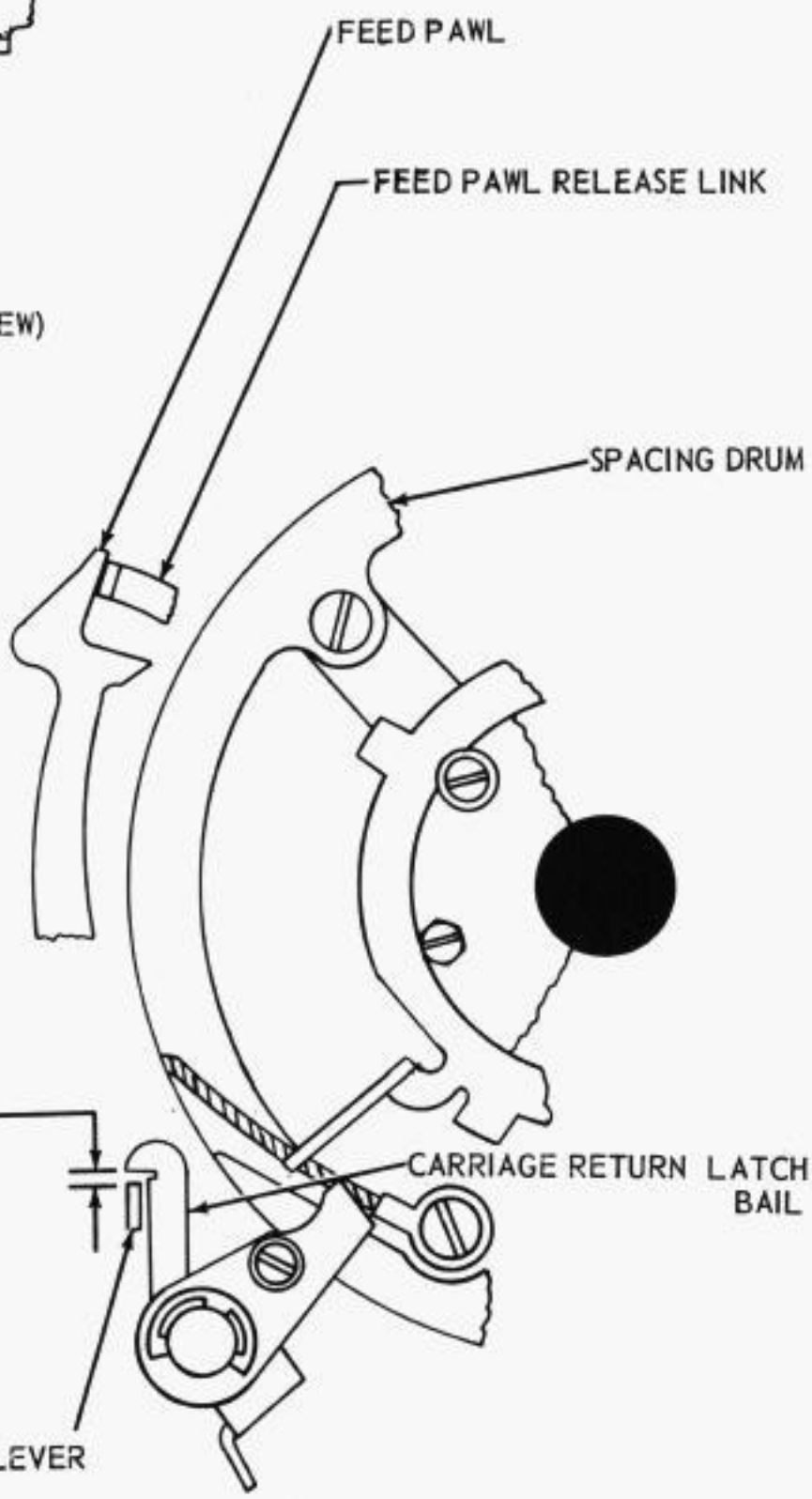
CARRIAGE RETURN LATCH BAIL SPRING

REQUIREMENT

SPACING DRUM FULLY RETURNED
MIN. 3 OZS.
MAX. 4 1/2 OZS.
TO START LATCH BAIL MOVING

2.38 Spacing Mechanism (Cont.)





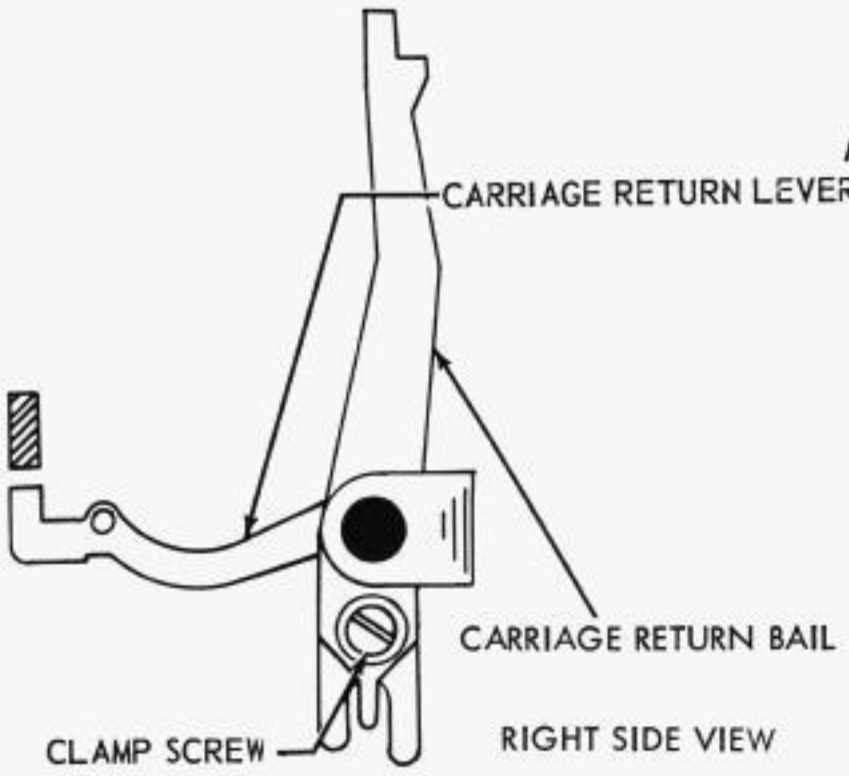
CARRIAGE RETURN LEVER

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



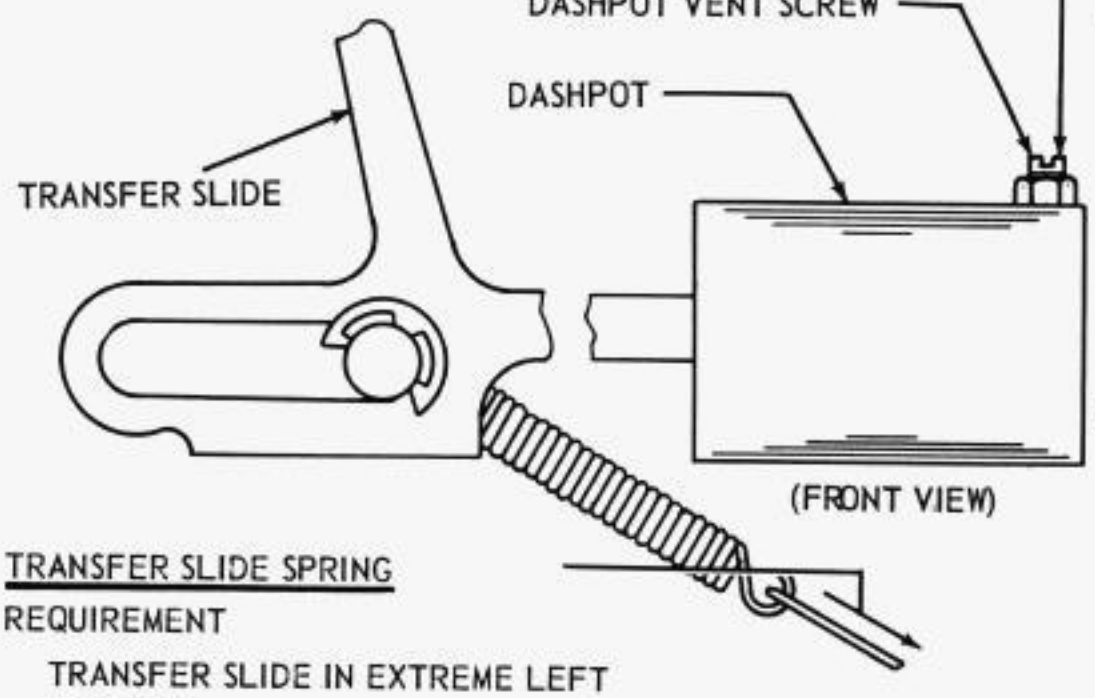
REQUIREMENT (UNITS EQUIPPED WITH TWO-STOP FUNCTION CLUTCH)

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.

2.39 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.

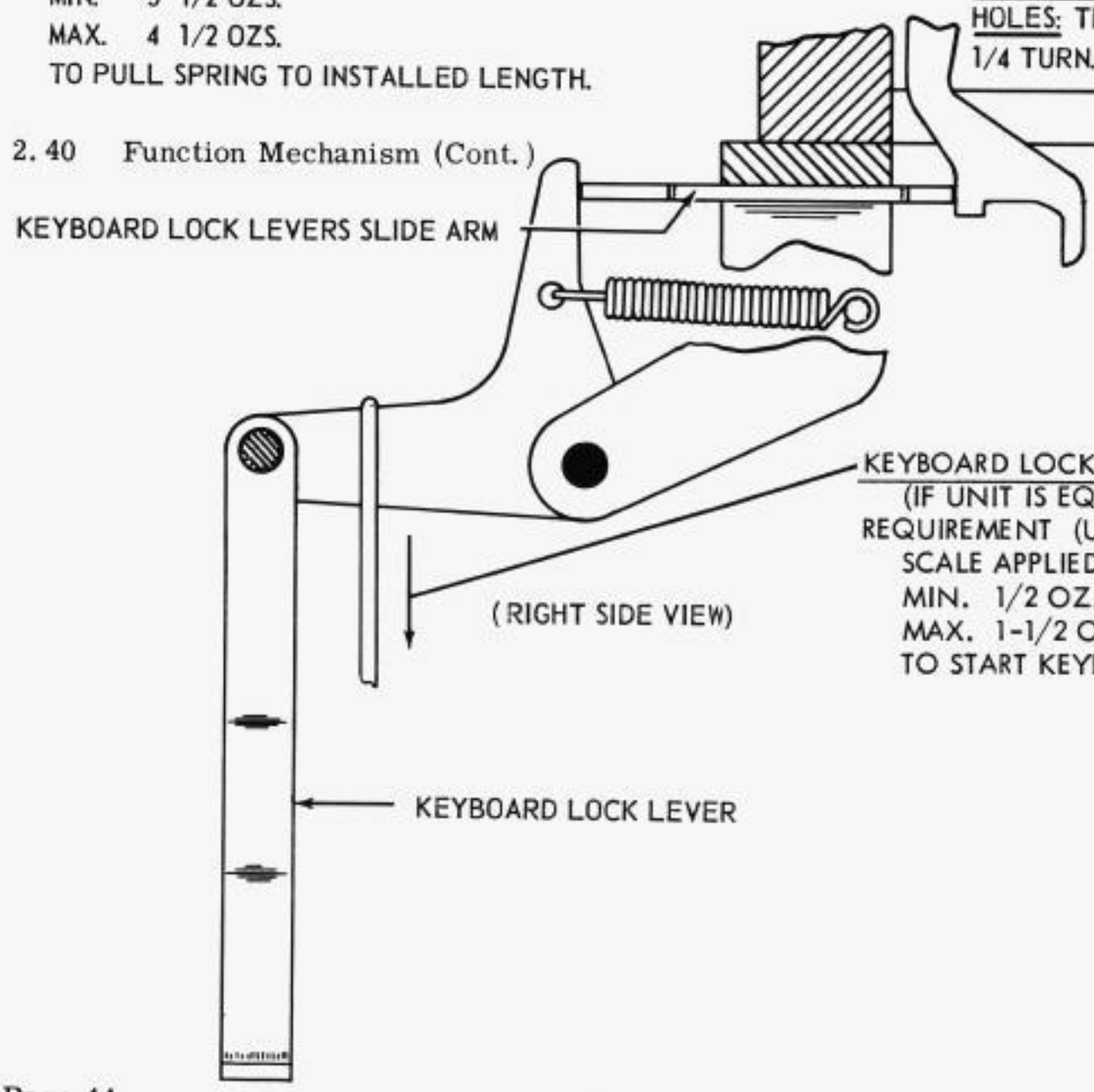
FOR DASHPOTS WITH TWO VENT HOLES: THEN BACK SCREW OFF 1/4 TURN. TIGHTEN NUT.

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.

2.40 Function Mechanism (Cont.)

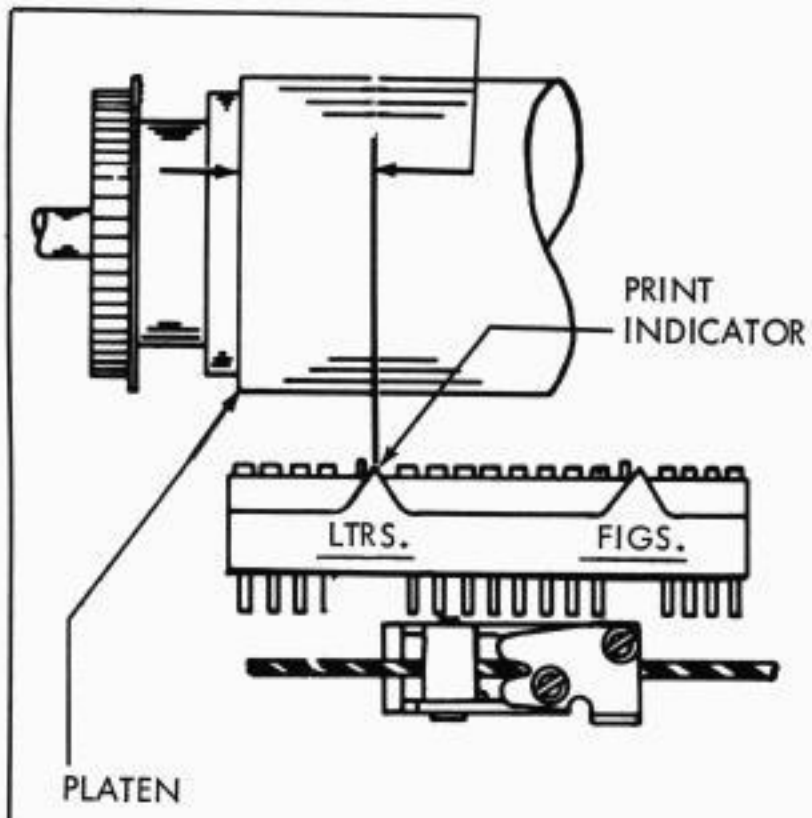


KEYBOARD LOCK LEVER SPRING
(IF UNIT IS EQUIPPED)

REQUIREMENT (UNIT UPSIDE DOWN)

SCALE APPLIED TO BELL CRANK
MIN. 1/2 OZ.
MAX. 1-1/2 OZS.
TO START KEYBOARD LOCK LEVER MOVING

2.41 Spacing Mechanism (Cont.)



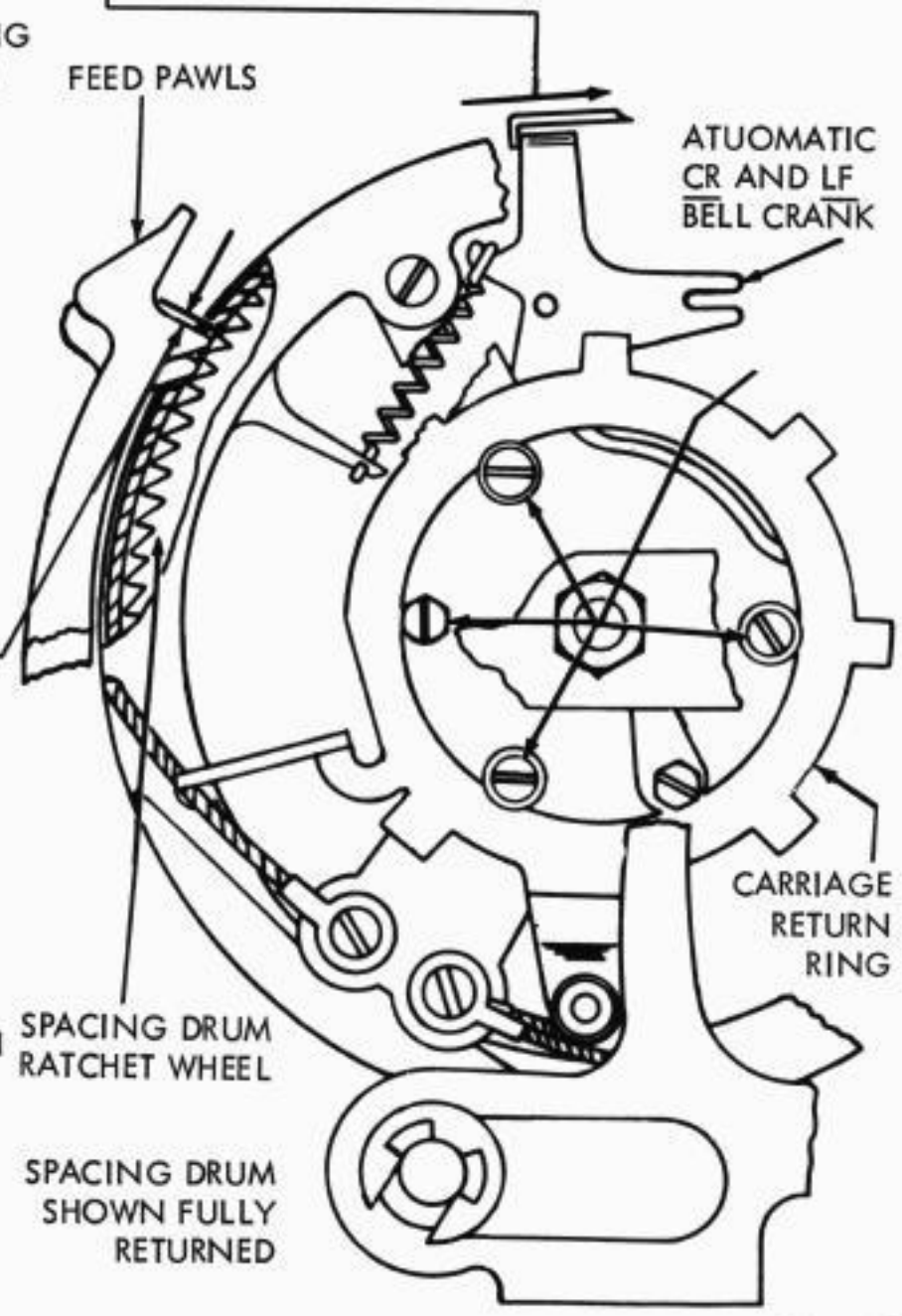
NOTES

1. WHEN ADJUSTMENTS ON THIS PAGE ARE MADE CHECK RELATED REQUIREMENTS IN PARS. 2.28, 2.42, AND 2.45.
2. FOR SPROCKET FEED PRINTER REQUIREMENTS REFER TO ADJUSTMENTS IN PARS. 2.69 THROUGH 2.73.
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. 2.45
5. FOR EARLY DESIGN REFER TO PAR. 4.10.

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.

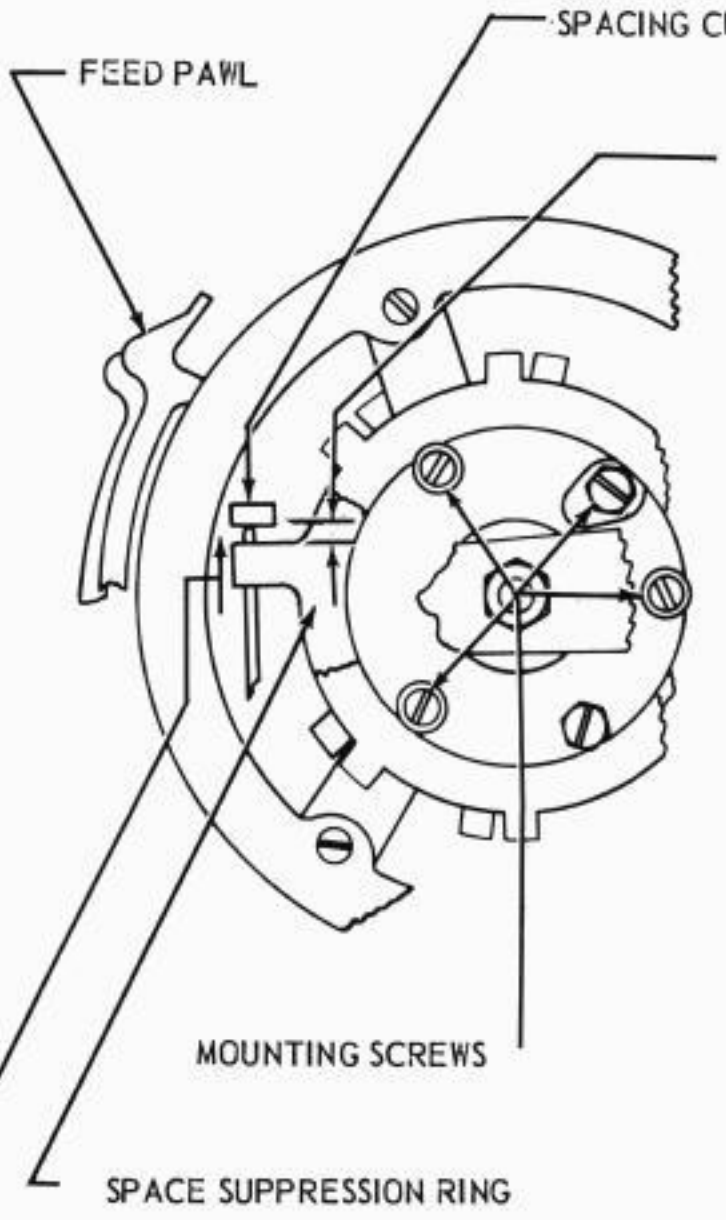
LEFT MARGIN
REQUIREMENTS --- (72 CHARACTER TYPICAL LINE).
(1) WITH TYPE BOX CLUTCH DISENGAGED, SPACING DRUM IN ITS RETURN POSITION AND TYPE BOX SHIFTED TO LETTERS POSITION; CLEARANCE BETWEEN LEFT EDGE OF PLATEN AND LETTERS PRINT INDICATOR. (SEE NOTE 3).
MIN. 15/16 INCH --- MAX. 1-1/16 INCH.
TO ADJUST --- POSITION STOP ARM OF SPACING DRUM* WITH ITS CLAMP SCREWS LOOSENED.
(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. 2.22) 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 INTS COUNTER-CLOCKWISE POSITION, AND POSITION TYPE BOX SO THAT ITS LTRS. INDICATOR ALIGNS WITH REQUIRED MARGIN. TIGHTEN MOUNTING SCREWS.



2.42 Spacing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 2.28, 2.41 AND 2.45 IF THE FOLLOWING ADJUSTMENTS ARE REMADE.



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.

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. 2.60)

SPACING CUTOUT TRANSFER BAIL SPRING

REQUIREMENT

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

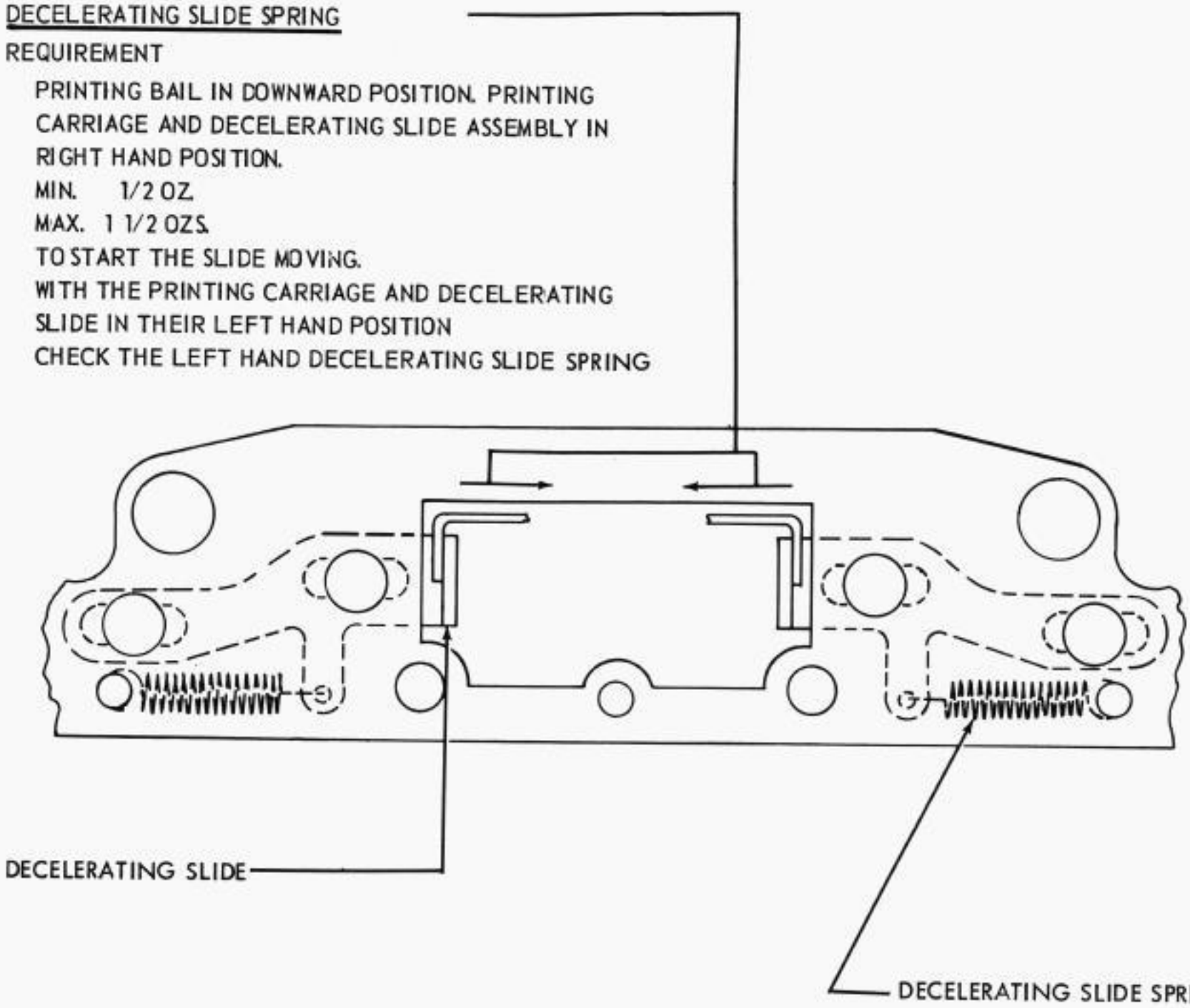
NOTE: FOR EARLIER DESIGN SEE PAR. 4.11

2.43 Positioning Mechanism (Cont.)

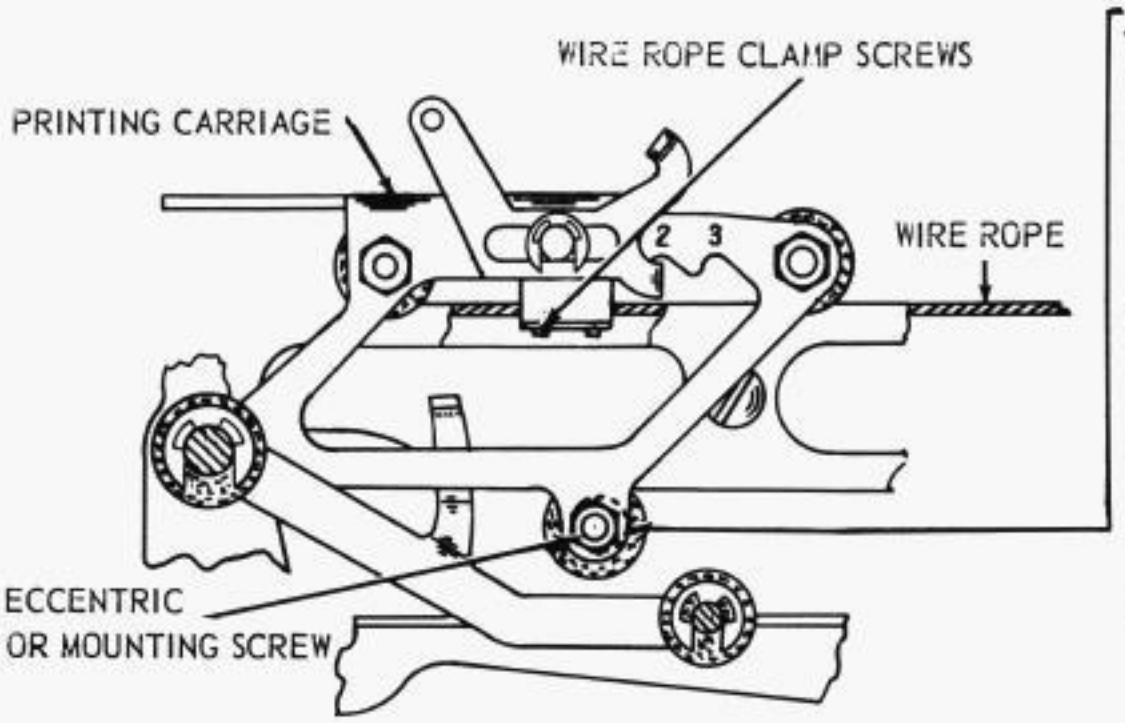
DECELERATING SLIDE SPRING

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



2.44 Printing Mechanism



PRINTING CARRIAGE LOWER ROLLER

REQUIREMENT

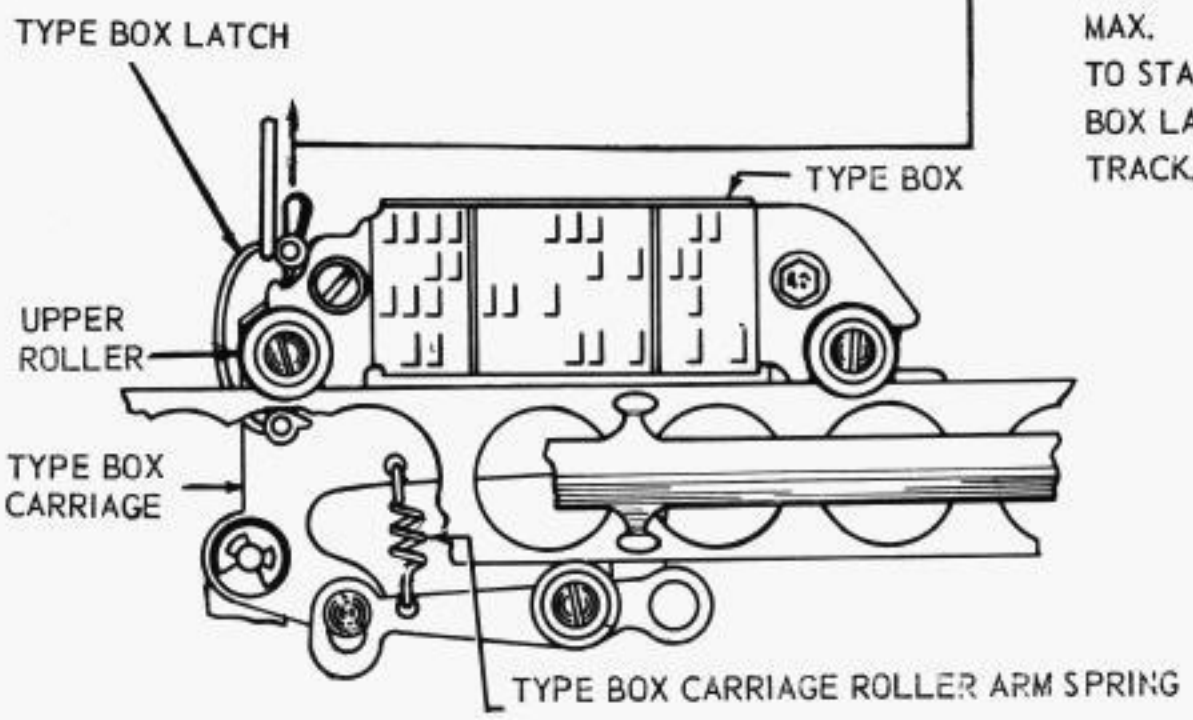
CARRIAGE WIRE ROPE CLAMP SCREWS LOOSENED. PLAY OF CARRIAGE ON TRACK-MIN. WITHOUT BIND, THROUGHOUT TRACKS FULL LENGTH

TO ADJUST (ECCENTRIC BUSHING)

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

TO ADJUST (SLIDING SCREW)

POSITION LOWER ROLLER WITH MOUNTING SCREW LOOSENED.



TYPE BOX CARRIAGE ROLLER ARM SPRING

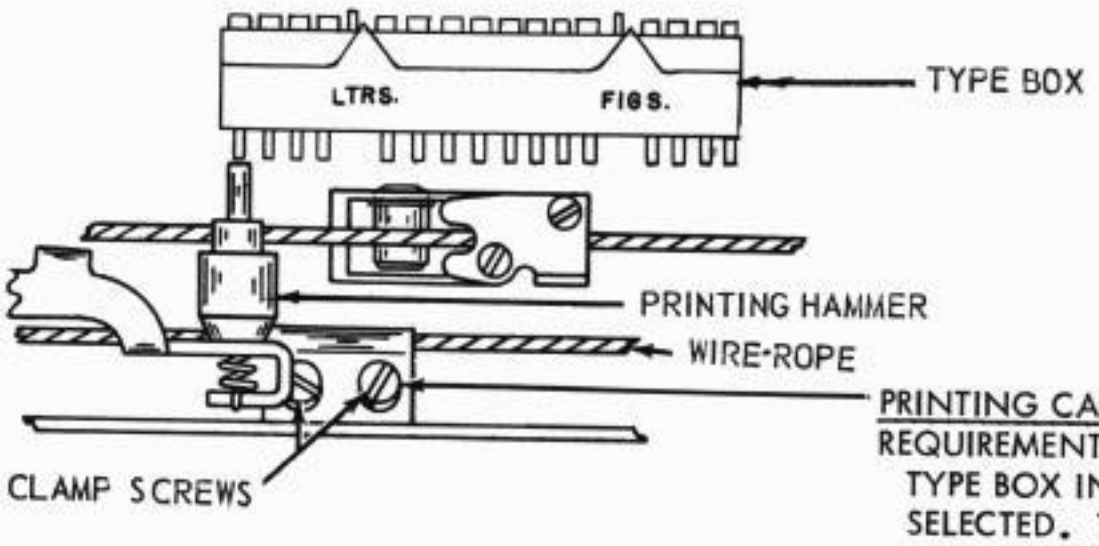
REQUIREMENT

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. 4.12

2.45 Printing Mechanism (Cont.)

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 2.28, 2.36, AND 2.42, IF THE FOLLOWING ADJUSTMENTS ARE REMADE. FOR TYPING UNITS OF EARLIER DESIGN, CHECK RELATED ADJUSTMENTS, PARS. 4.06, 2.36, 2.37, AND 4.11.



(TOP VIEW)

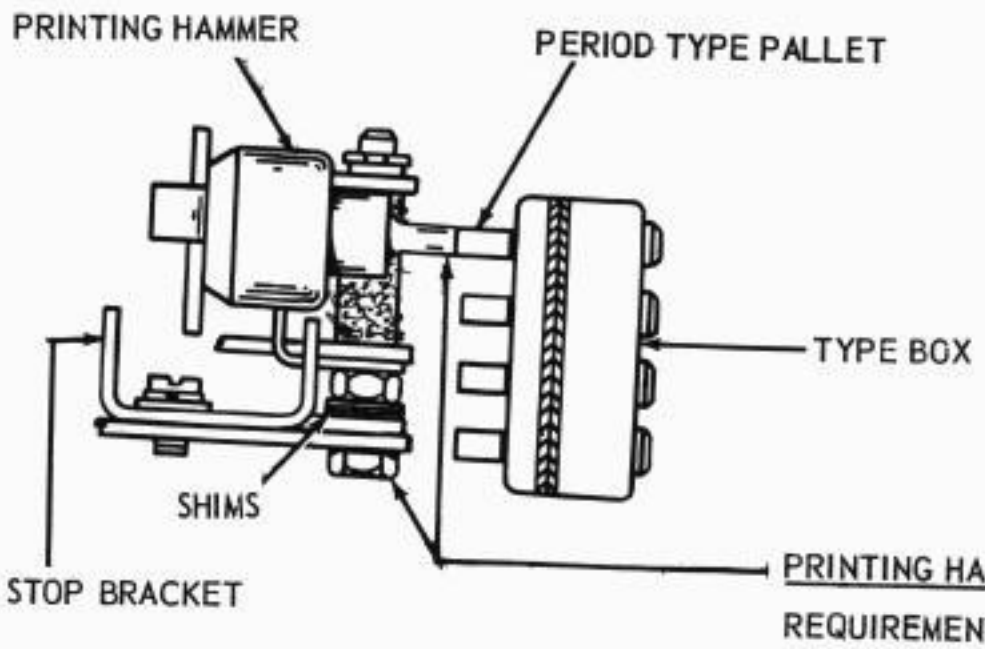
PRINTING CARRIAGE POSITION

REQUIREMENT

TYPE BOX IN LETTERS POSITION. M TYPE PALLET SELECTED. 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.



(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

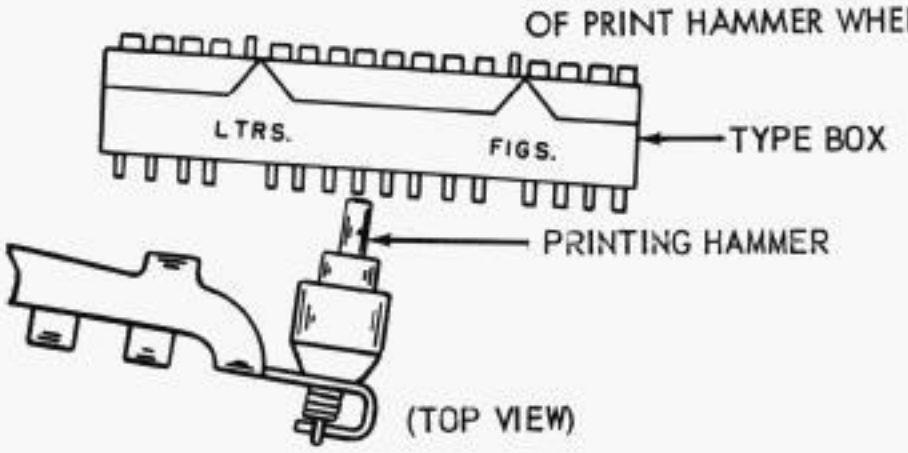
ADD OR REMOVE SHIMS BETWEEN SHOULDER ON BEARING POST AND STOP BRACKET

2.46 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.

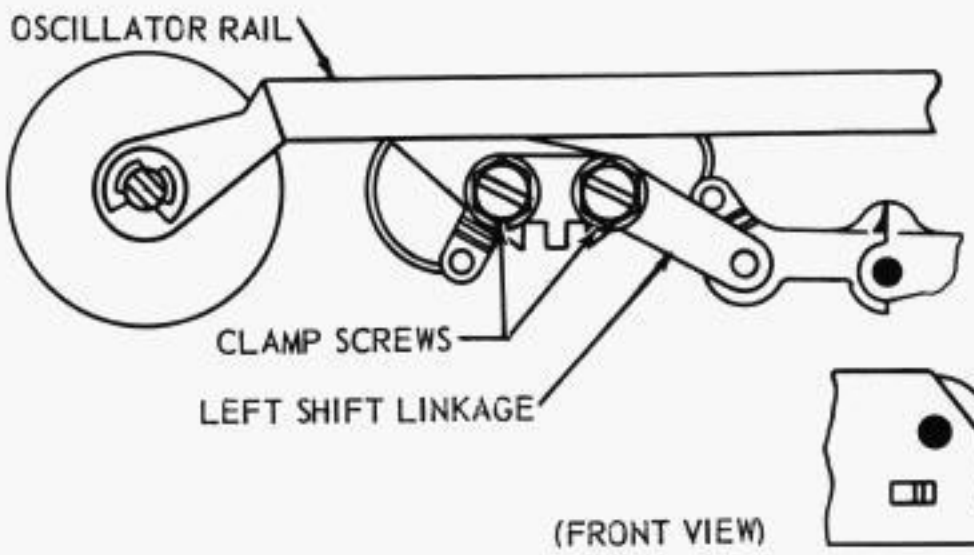


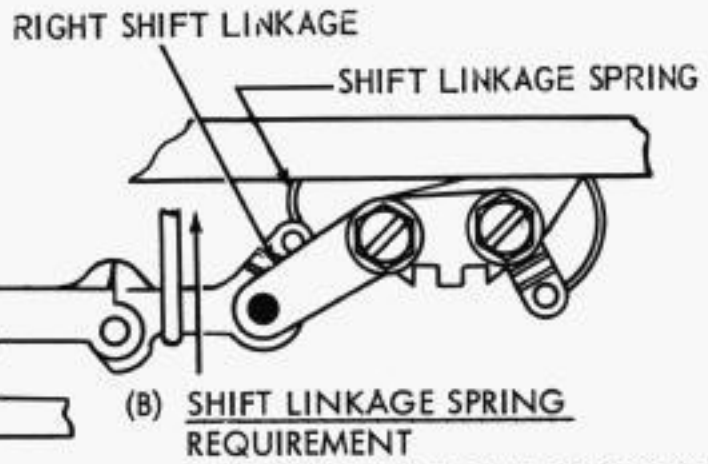
TO ADJUST

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

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. 4.13

2.47 Printing Mechanism (Cont.)

(A) PRINTING TRACK

REQUIREMENT

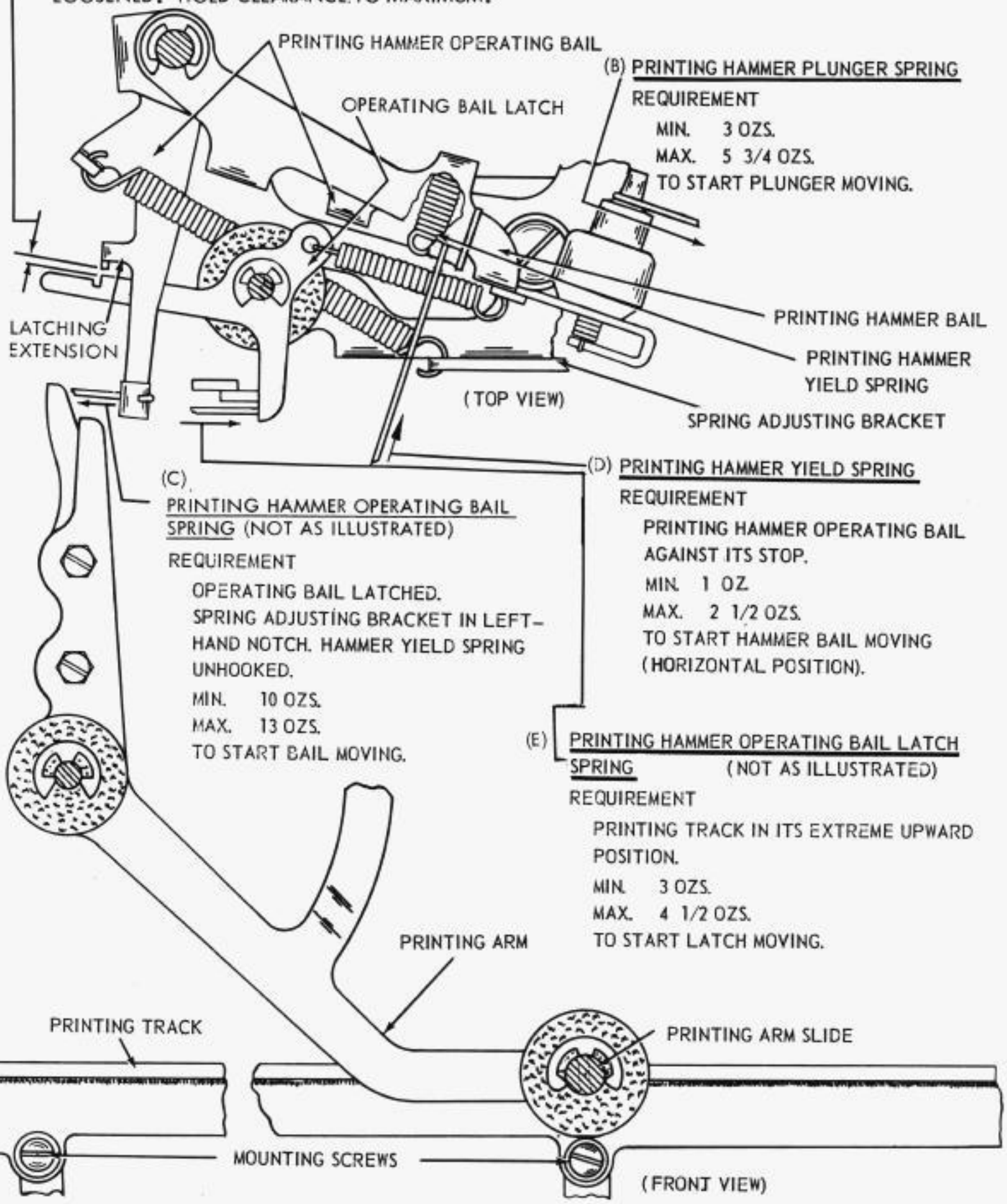
PRINTING TRACK IN ITS EXTREME DOWNWARD POSITION. BLANK SELECTION IN FIGURES. PRINTING HAMMER OPERATING BAIL LATCHING EXTENSION HELD WITH LEFT FACE IN LINE WITH THE LATCH SHOULDER. PRINTING ARM SLIDE POSITIONED ALTERNATELY OVER EACH TRACK MOUNTING SCREW. PRINTING BAIL RESET EACH TIME. CLEARANCE BETWEEN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



(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.

2.48 Printing Mechanism (Cont.)

PRINTING HAMMER STOP BRACKET

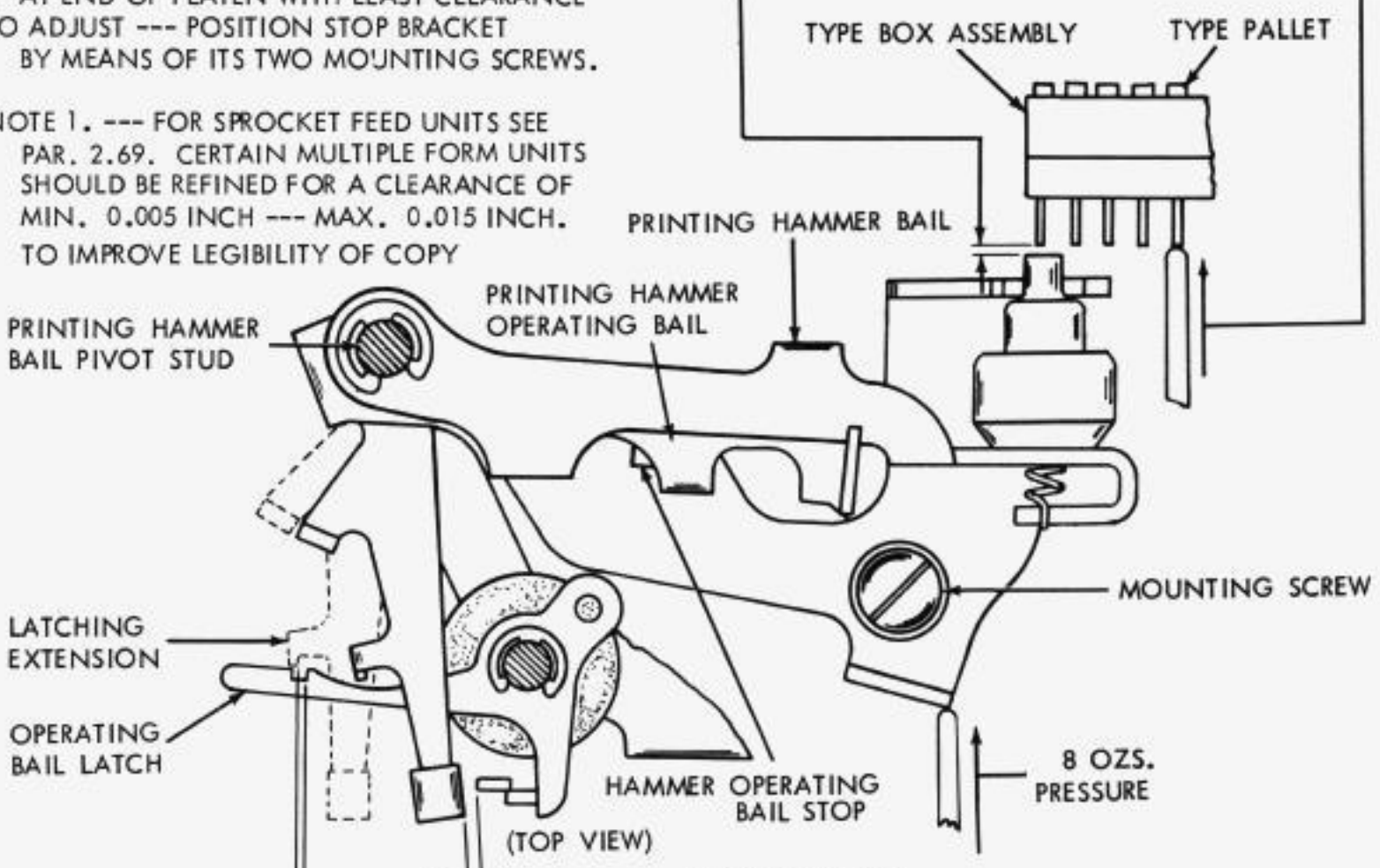
REQUIREMENT --- WITH TYPE BOX IN POSITION TO PRINT CHARACTER " M ", PRINTING TRACK IN ITS MAXIMUM DOWNWARD POSITION, AND PRINTING HAMMER STOP BRACKET HELD TOWARD THE PLATEN WITH PRESSURE OF 8 OZS; CLEARANCE BETWEEN PRINTING HAMMER AND "M" TYPE PALLET. (NOTE 1.)
MIN. 0.005 INCH --- MAX. 0.035 INCH AT END OF PLATEN WITH LEAST CLEARANCE

TO ADJUST --- POSITION STOP BRACKET BY MEANS OF ITS TWO MOUNTING SCREWS.

NOTE 1. --- FOR SPROCKET FEED UNITS SEE PAR. 2.69. CERTAIN MULTIPLE FORM UNITS SHOULD BE REFINED FOR A CLEARANCE OF MIN. 0.005 INCH --- MAX. 0.015 INCH. TO IMPROVE LEGIBILITY OF COPY

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.

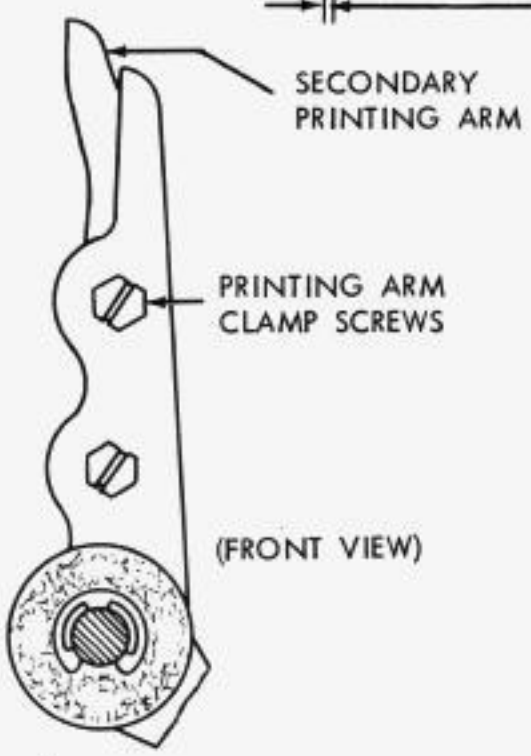


PRINTING ARM

(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 POSITIONS

TO ADJUST
POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.



NOTE 2

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.

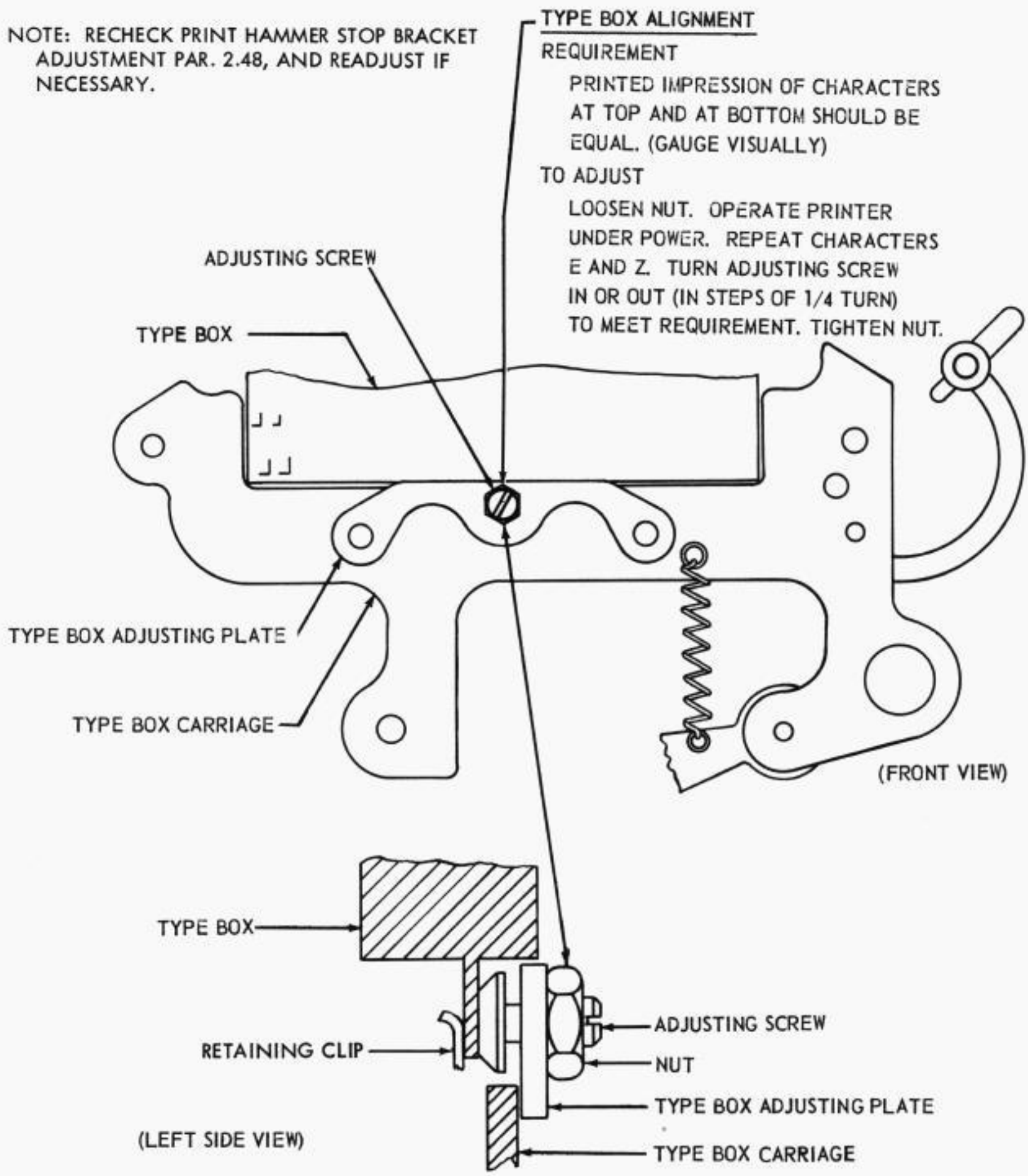
NOTE 3

FOR EARLIER DESIGN SEE PAR. 4.14

2.49 **Printing Mechanism (Cont.)**

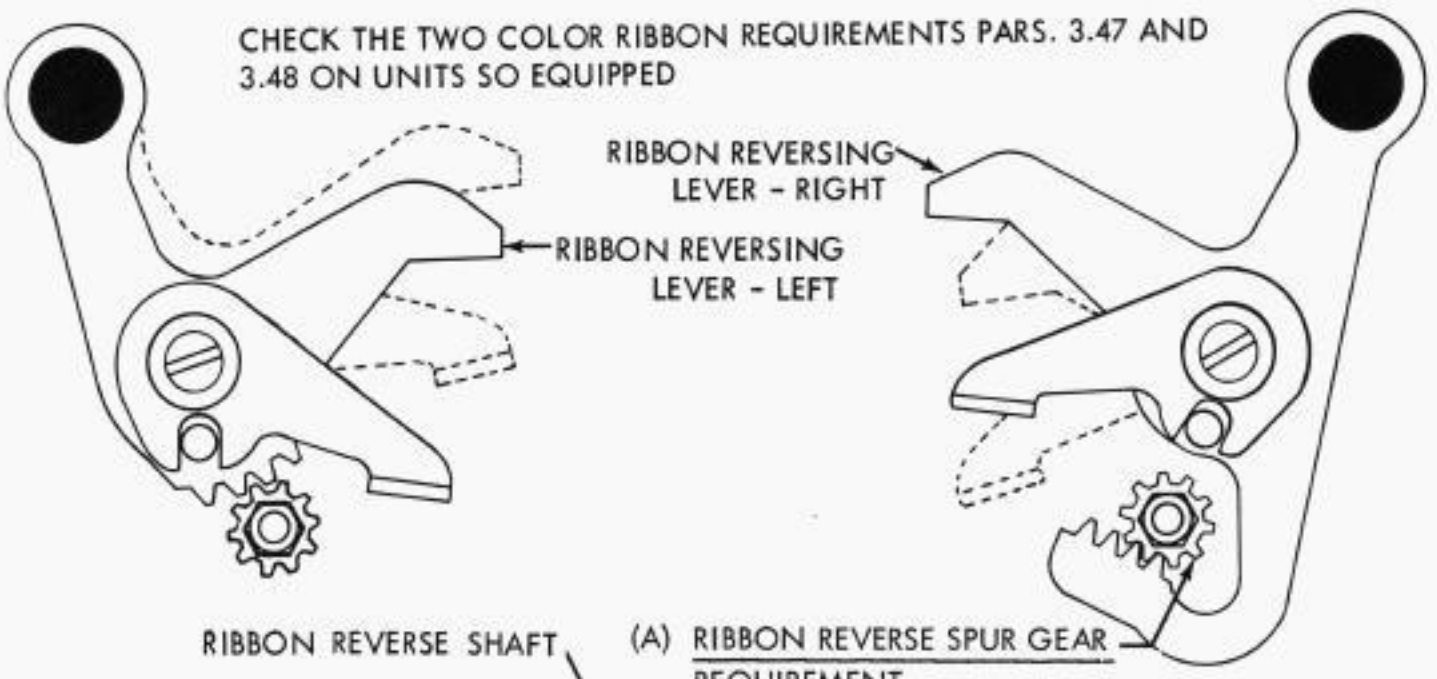
NOTE: THIS ADJUSTMENT APPLIES ONLY TO UNITS SO EQUIPPED AND SHOULD BE MADE WITH THE TYPEBOX IN ITS UPPER POSITION.

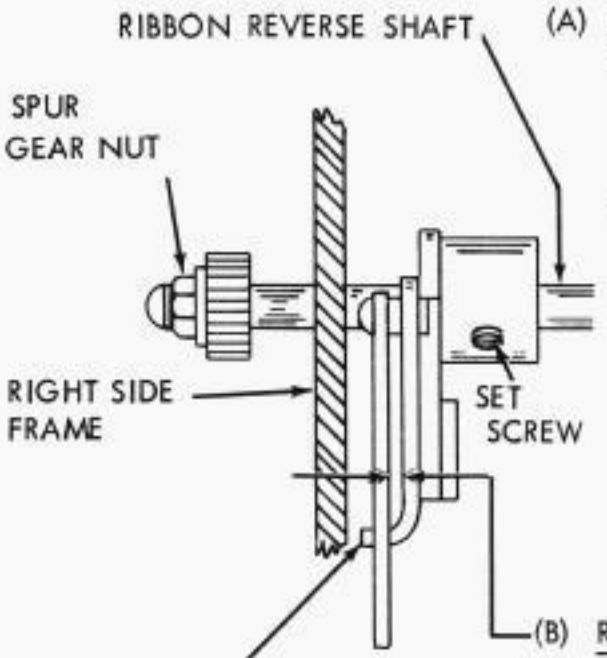
NOTE: RECHECK PRINT HAMMER STOP BRACKET ADJUSTMENT PAR. 2.48, AND READJUST IF NECESSARY.



NOTE: 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.

2.50 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 POSITIION AND HOLD LEFT REVERSING LEVER IN ITS MAXIMUM UPWARD POSITION. THEN TIGHTEN THE LEFT SPUR GEAR NUT.

NOTE: 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

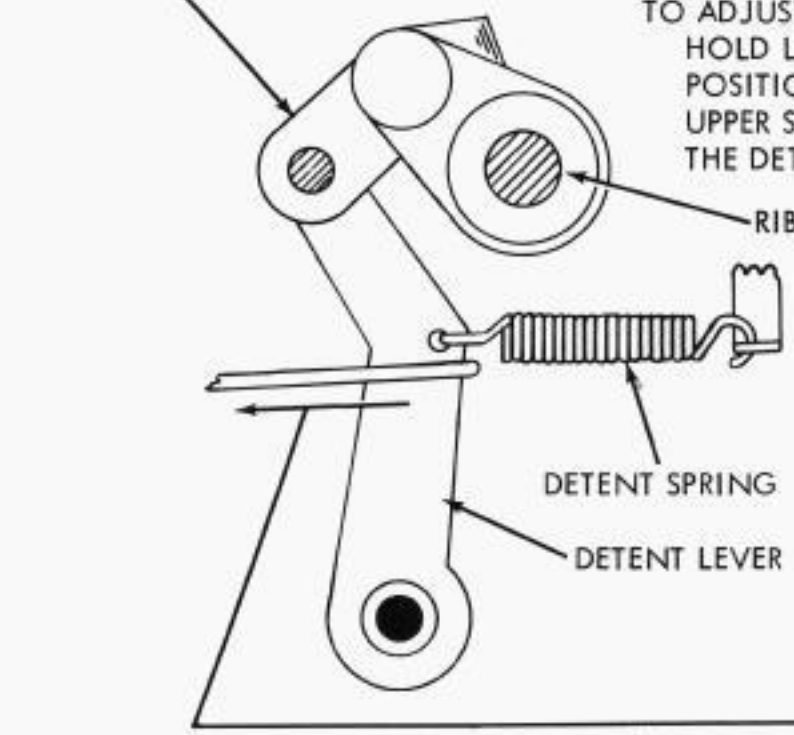
RIBBON REVERSE DETENT LINK BUCKLED IN ITS DOWNWARD POSITION, CLEARANCE BETWEEN DETENT LINK AND DETENT LEVER

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: FOR EARLIER DESIGN SEE PAR. 4.15

(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.

2.51 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

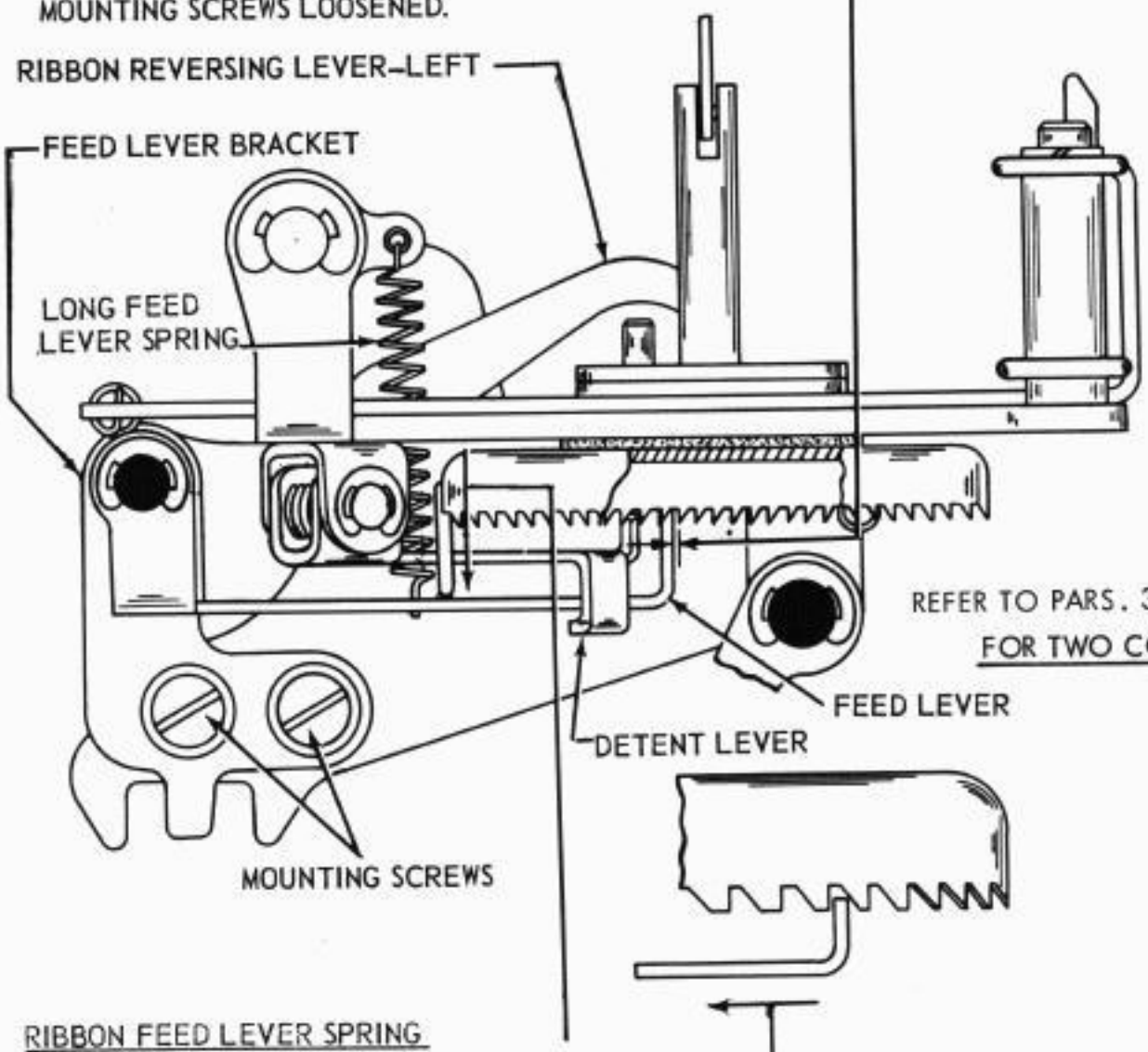
POSITION THE FEED LEVER BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

(2) REQUIREMENT (RIGHT-HAND MECHANISM)

RIGHT REVERSING LEVER AND RIBBON MECHANISM IN UPWARD POSITION.
ADJUST FEED LEVER BRACKET IN THE SAME MANNER

NOTE

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



REFER TO PARS. 3.41 AND 3.42 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: 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. 7 1/2 OZS.
TO START THE RATCHET WHEEL MOVING.

* TWO COLOR RIBBON REQUIREMENT

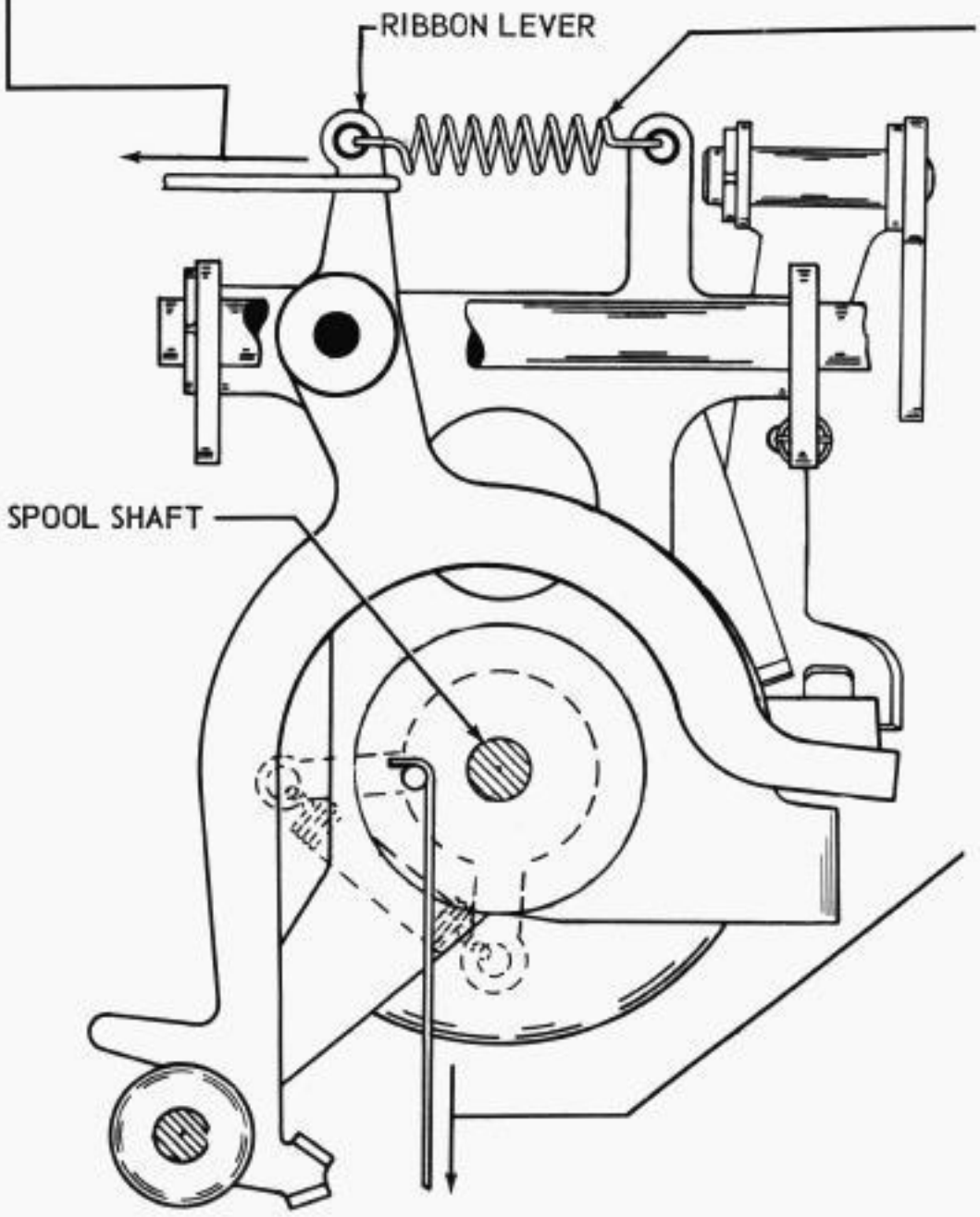
MIN 3 OZS. --- MAX 4 OZS
TO START RATCHET WHEEL MOVING

2.52 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.

2.53 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

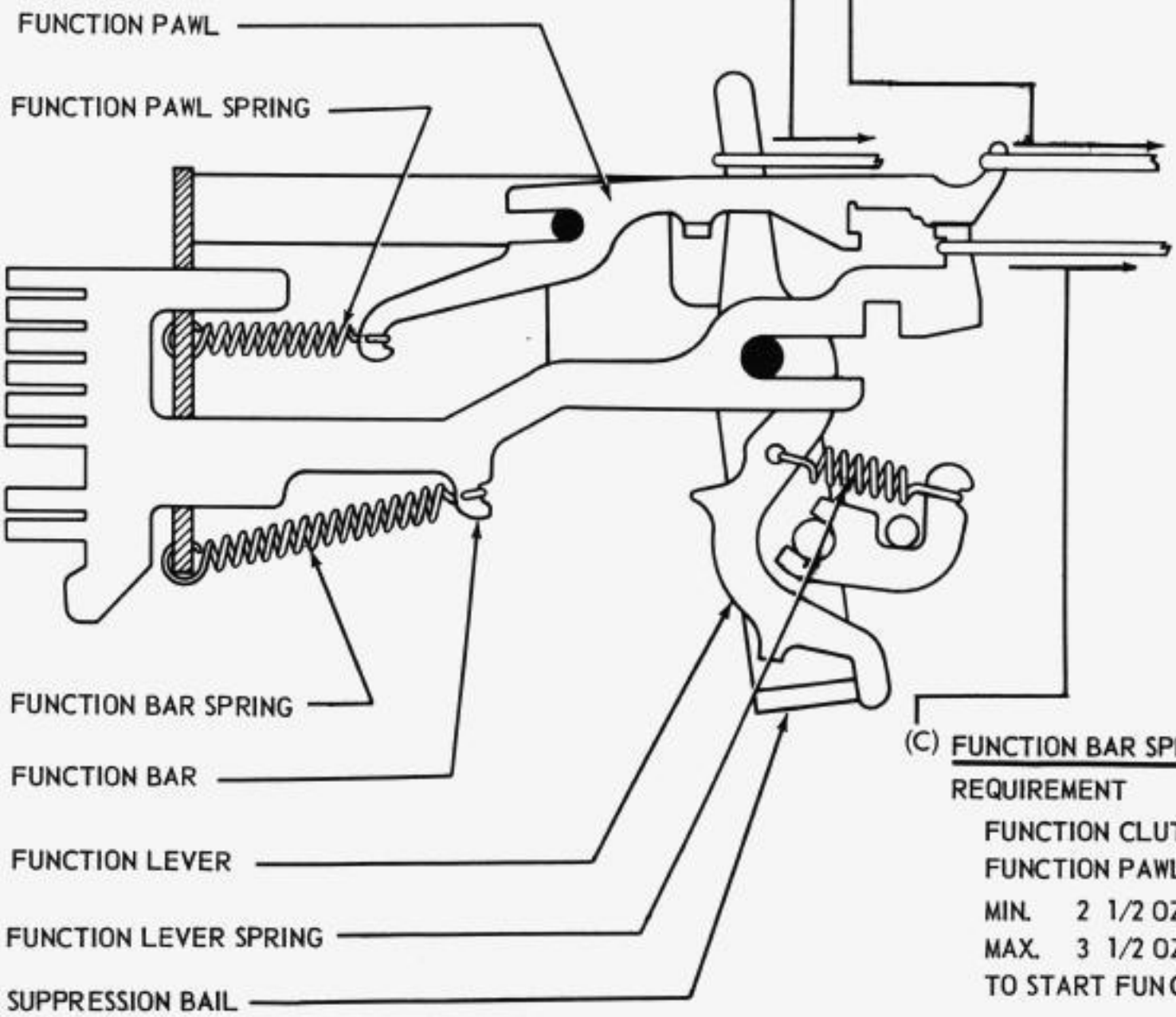
REQUIREMENT

FUNCTION LEVER IN UNOPERATED POSITION.
SUPPRESSION BAIL HELD FORWARD.
MIN. 1 1/2 OZS.
MAX. 2 3/4 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.



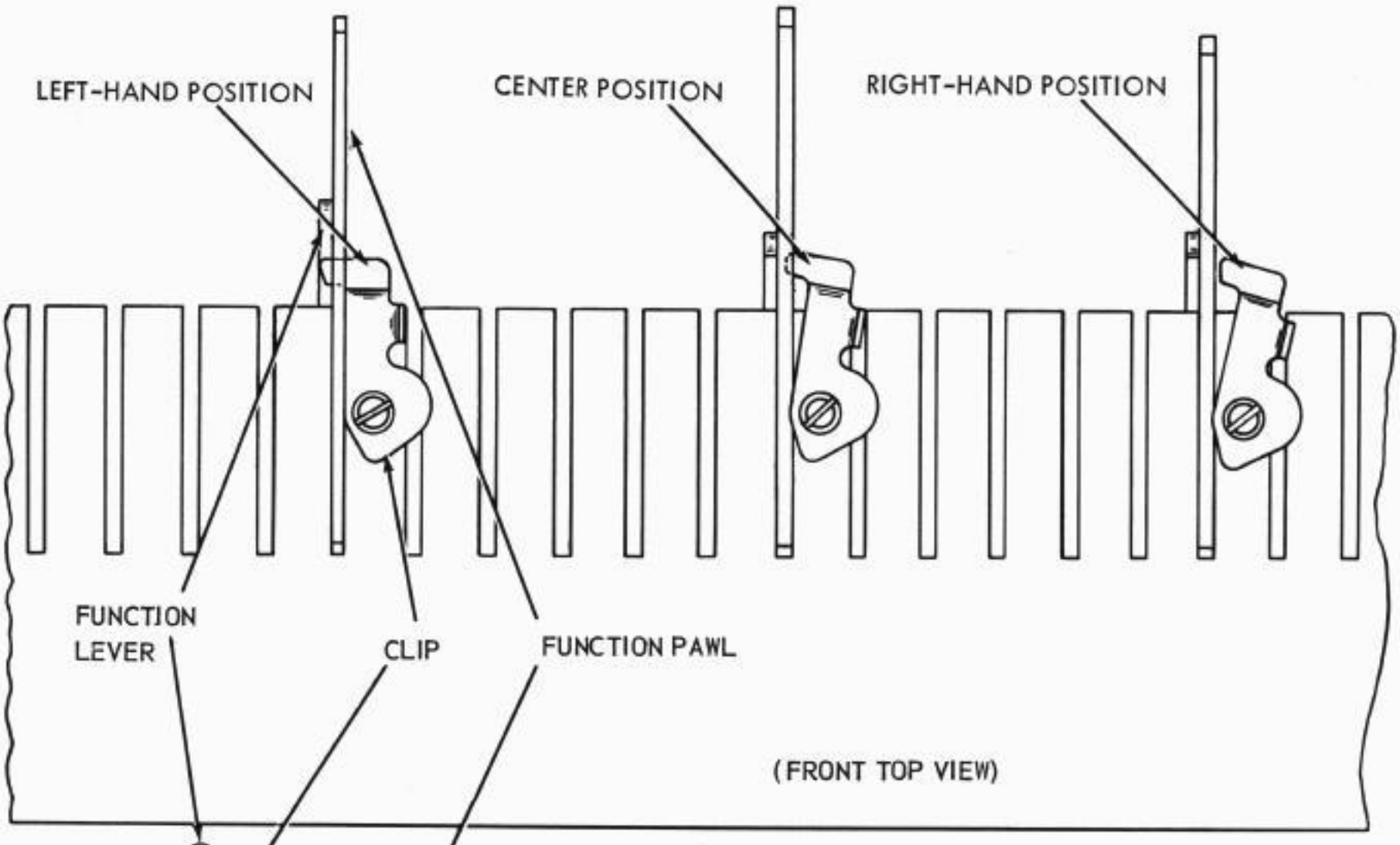
(C) FUNCTION BAR SPRING

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.

2.54 Function Mechanism (Cont.)

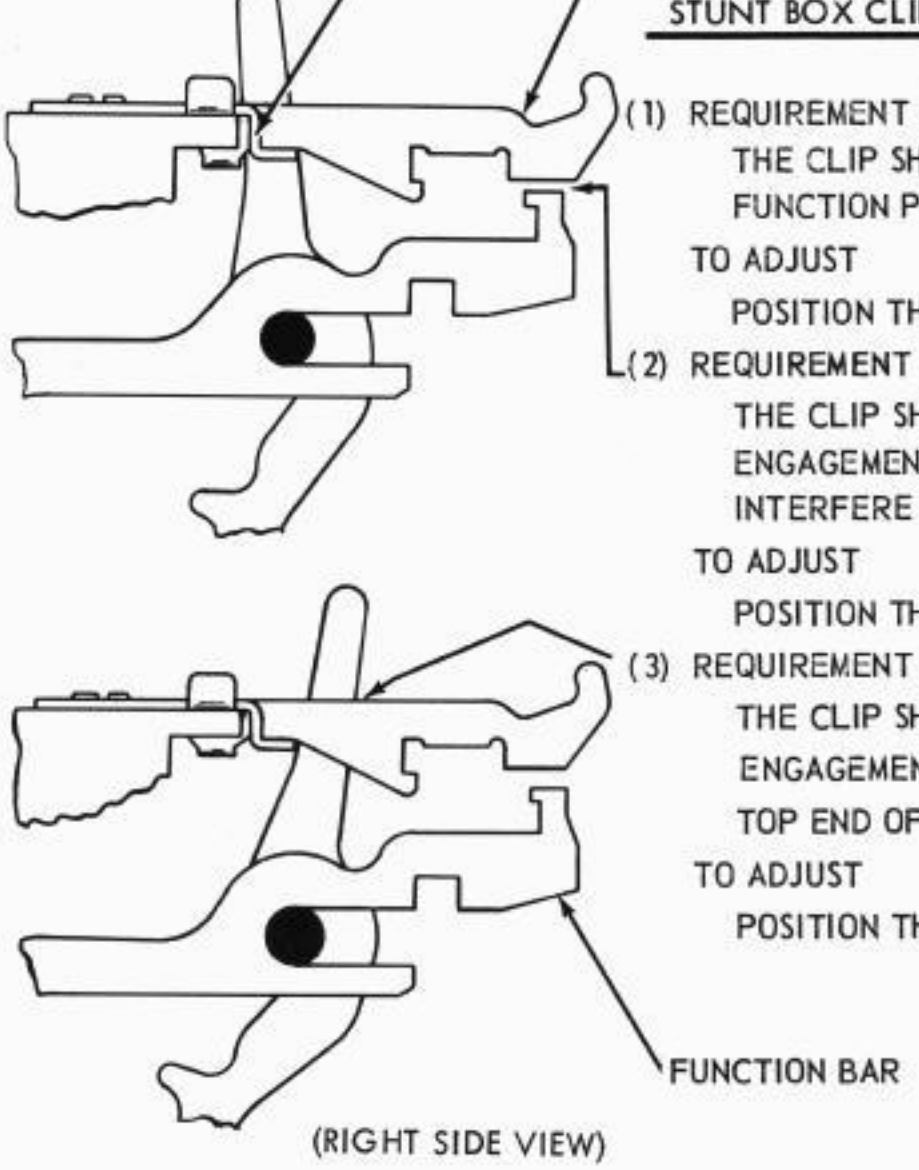


STUNT BOX CLIP (FOR UNITS EQUIPPED WITH CLIPS ONLY)

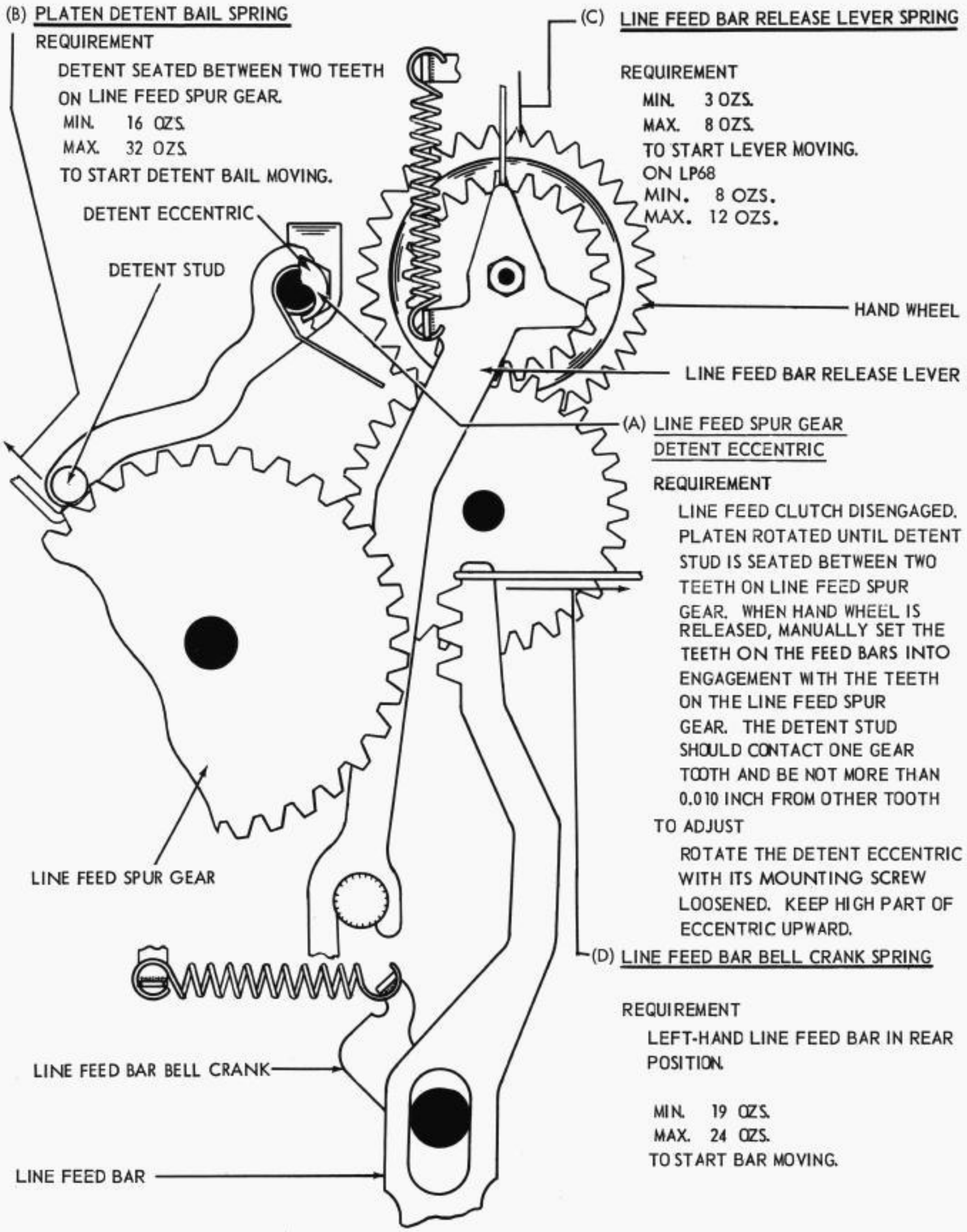
(1) REQUIREMENT (RIGHT-HAND POSITION)
THE CLIP SHOULD NOT PREVENT THE ASSOCIATED FUNCTION PAWL FROM ENGAGING ITS FUNCTION BAR.
TO ADJUST
POSITION THE CLIP TO ITS EXTREME RIGHT-HAND POSITION

(2) REQUIREMENT (CENTER POSITION)
THE CLIP SHOULD HOLD THE FUNCTION PAWL OUT OF ENGAGEMENT WITH ITS FUNCTION BAR BUT SHOULD NOT INTERFERE WITH THE FUNCTION LEVER.
TO ADJUST
POSITION THE CLIP WITH ITS MOUNTING SCREW LOOSENED.

(3) REQUIREMENT (LEFT-HAND POSITION)
THE CLIP SHOULD HOLD THE FUNCTION PAWL UPWARD OUT OF ENGAGEMENT WITH ITS FUNCTION BAR. IT SHOULD ALSO HOLD THE TOP END OF THE FUNCTION LEVER IN ITS REAR POSITION.
TO ADJUST
POSITION THE CLIP TO ITS EXTREME LEFT-HAND POSITION.



2.55 Line Feed and Platen Mechanism (Cont.)



2.56 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

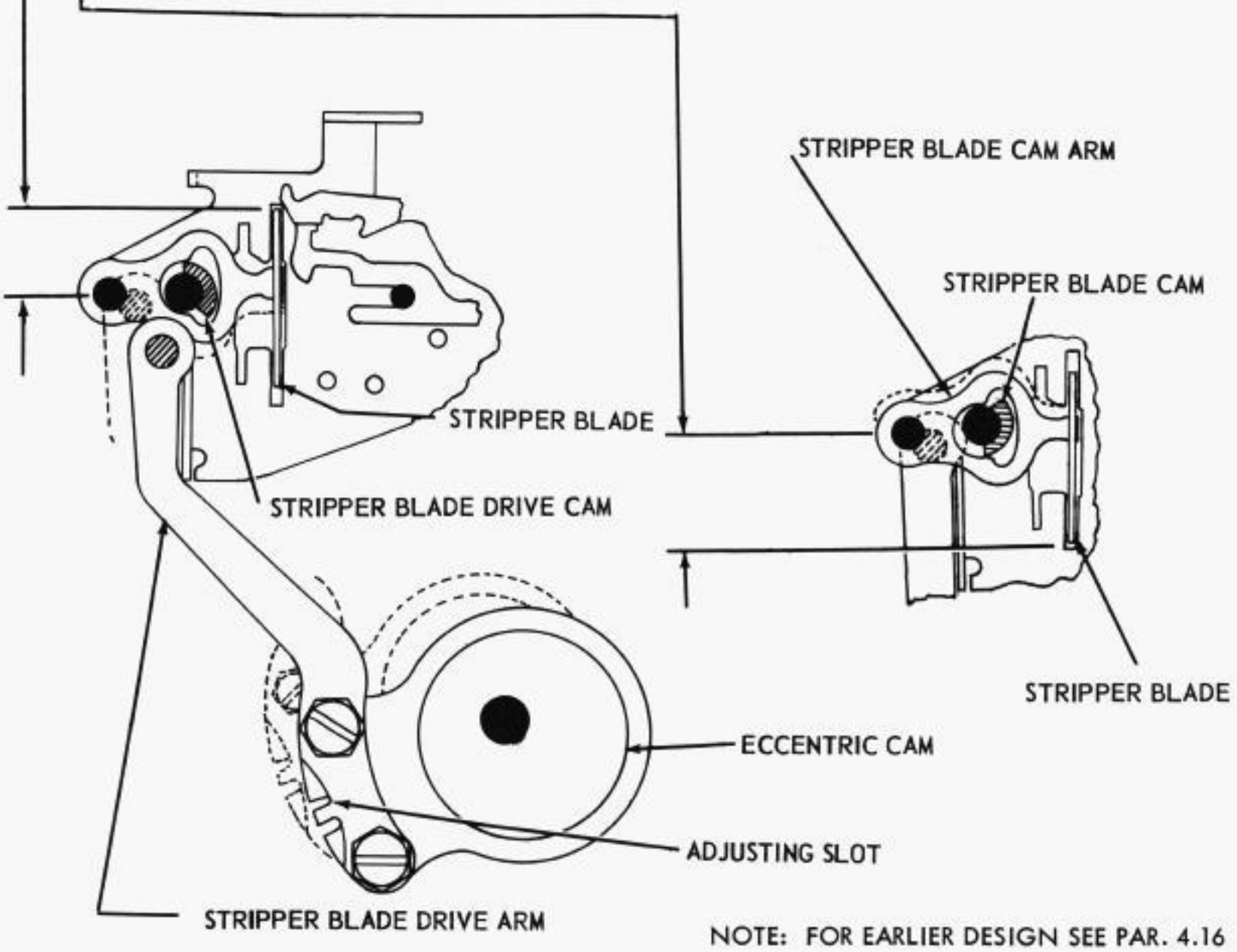
B. DOWNWARD DIRECTION

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.

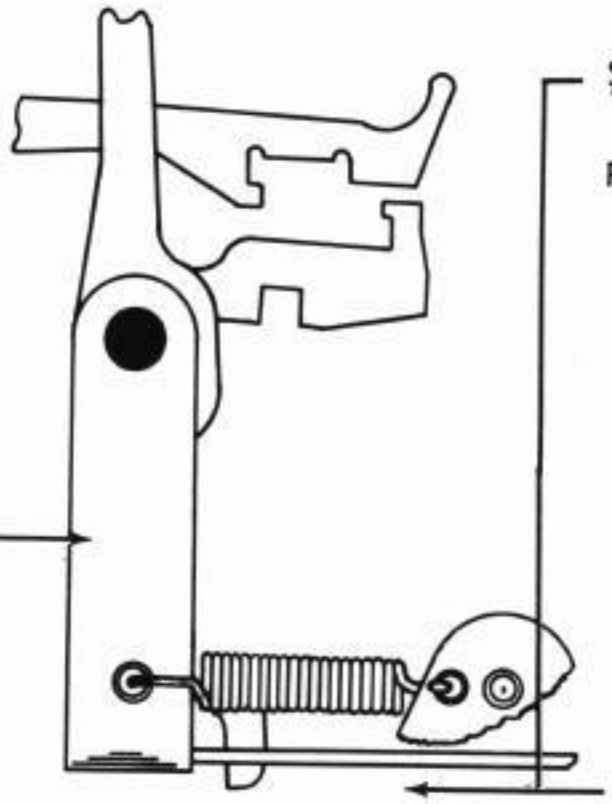
TO ADJUST

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



NOTE: FOR EARLIER DESIGN SEE PAR. 4.16

2.57 Spacing Mechanism (Cont.)



SUPPRESSION BAIL

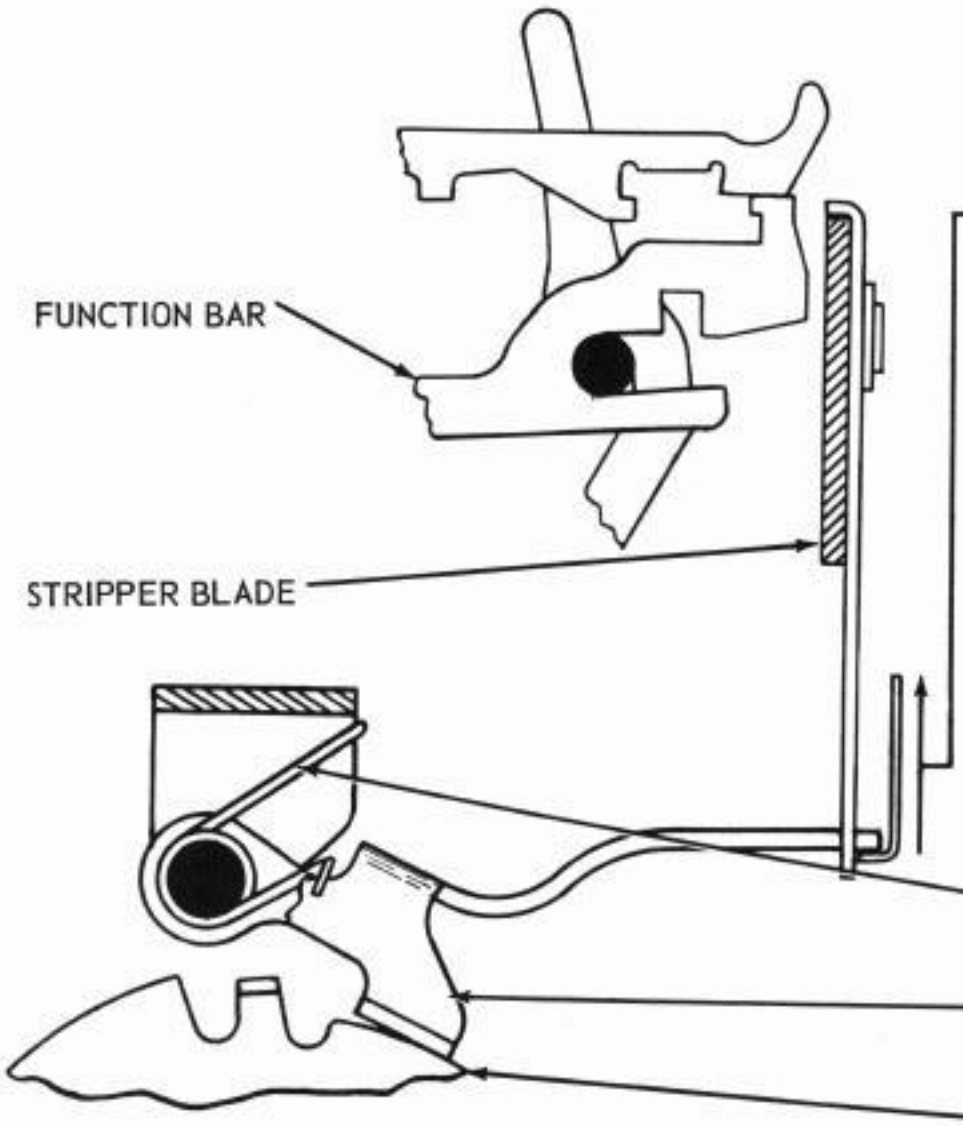
SPACING SUPPRESSION BAIL SPRING

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.

2.58 Line Feed and Platen Mechanism (Cont.)



FUNCTION BAR

STRIPPER BLADE

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.

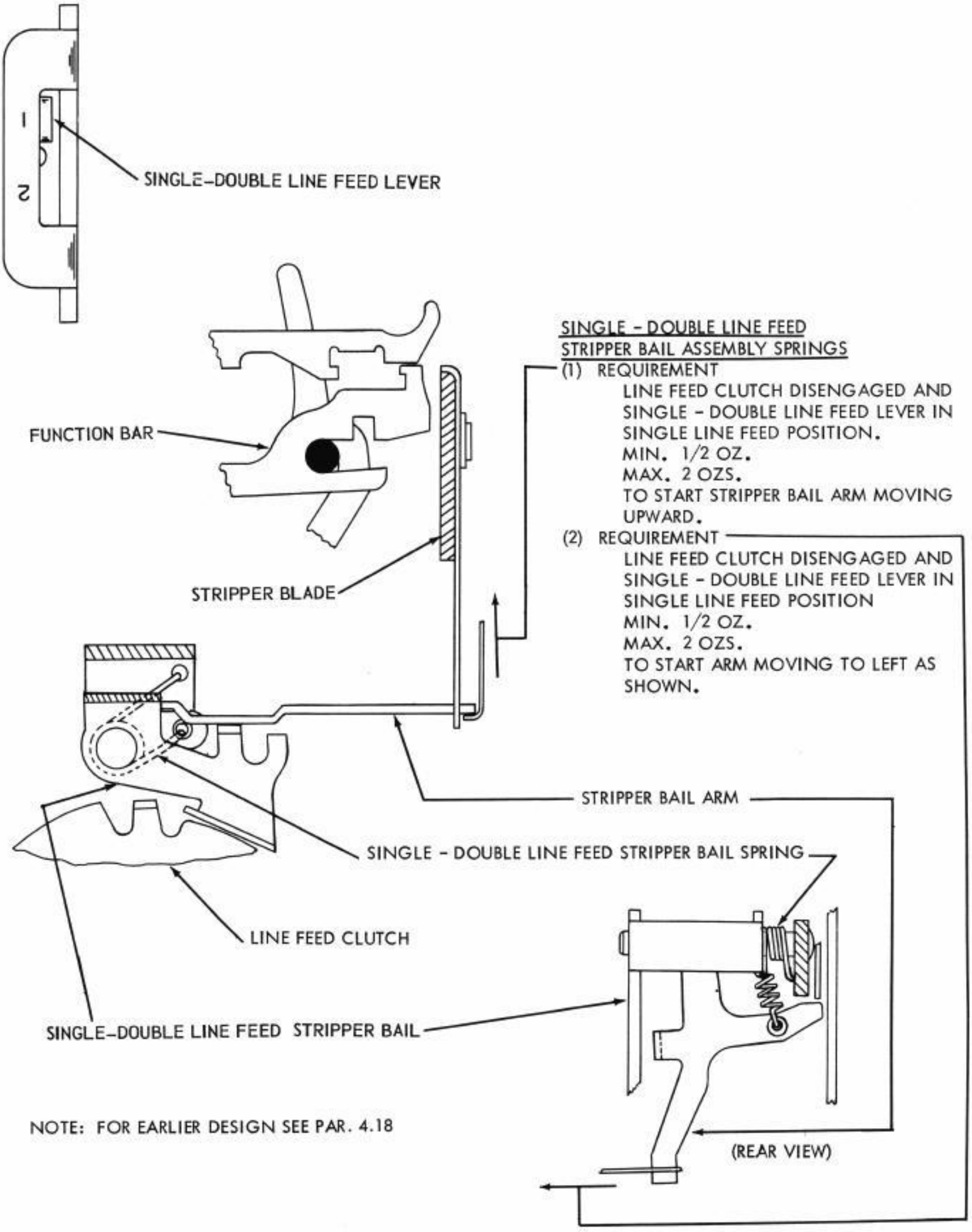
EARLY DESIGN
REFER TO PAR. 2.59 FOR LATER DESIGN

LINE FEED STRIPPER BAIL SPRING

STRIPPER BAIL

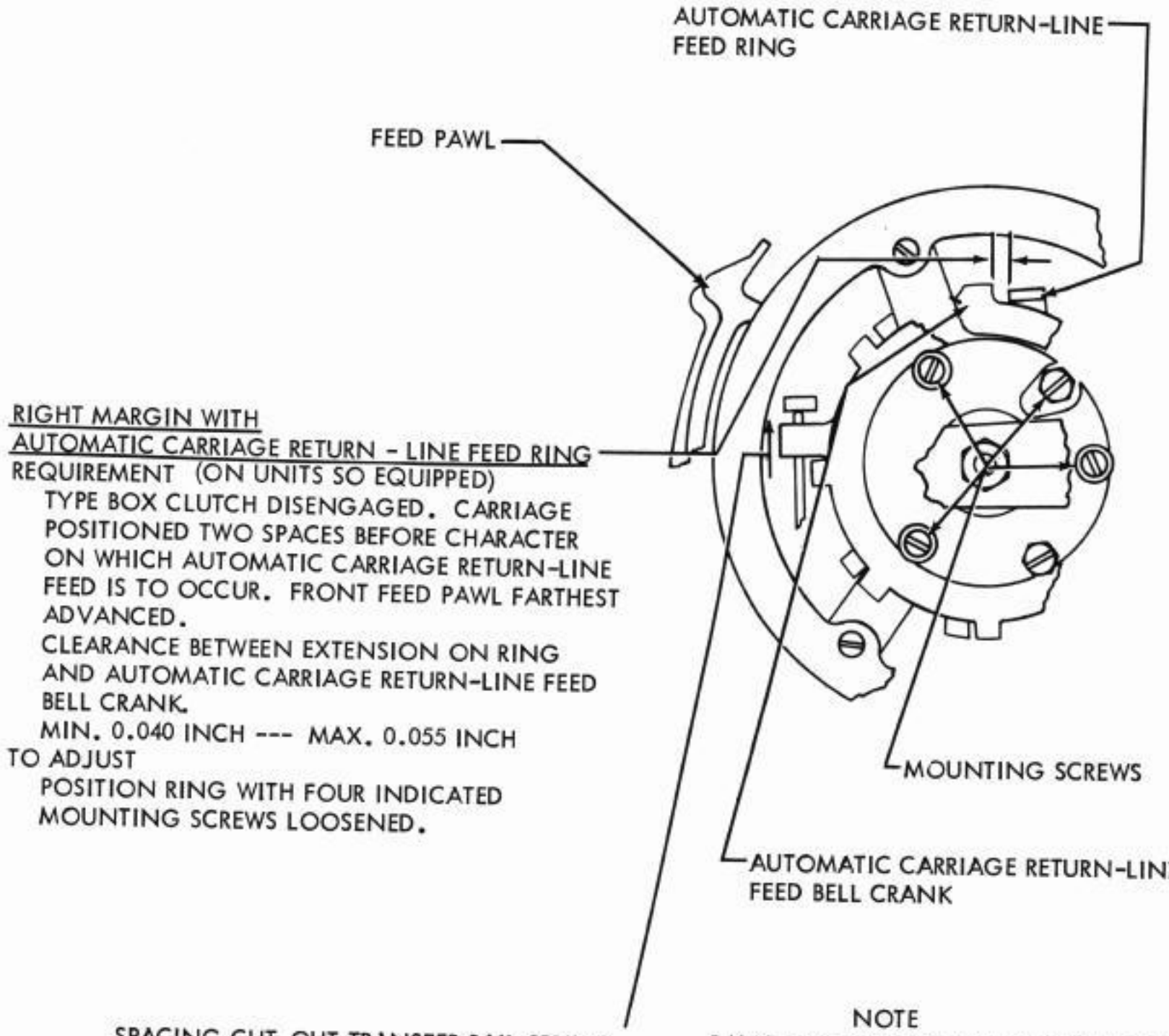
LINE FEED CLUTCH

2.59 Line Feed and Platen Mechanism (Cont.)



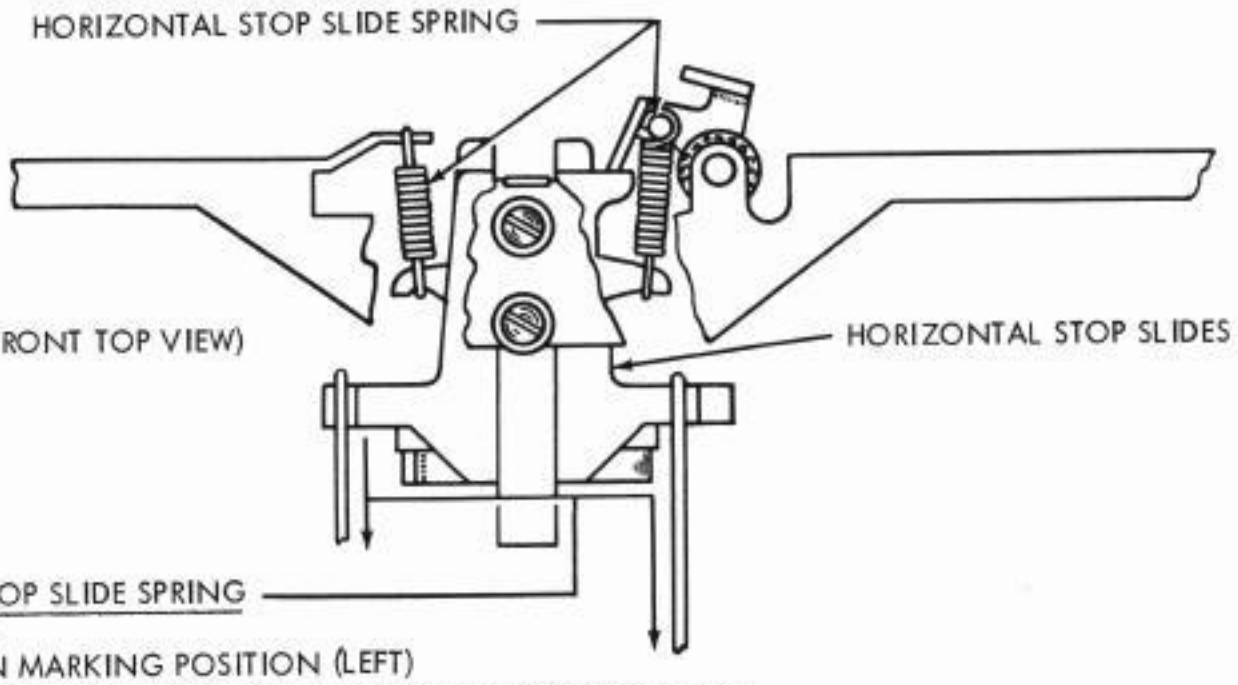
NOTE: FOR EARLIER DESIGN SEE PAR. 4.18

2.60 Spacing Mechanism (Cont.)



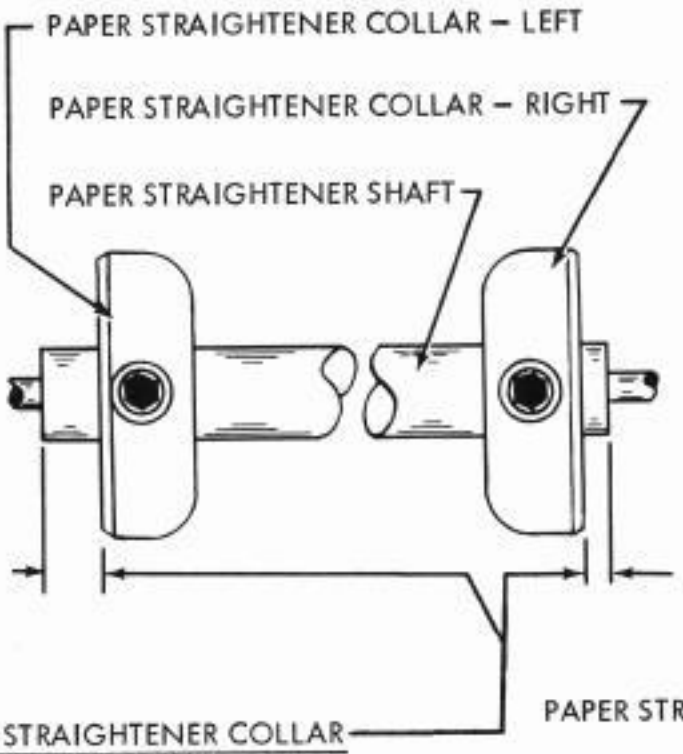
NOTE: FOR ADJUSTMENT ON EARLIER MODELS SEE PAR. 4.17

2.61 Positioning Mechanism (Cont.)

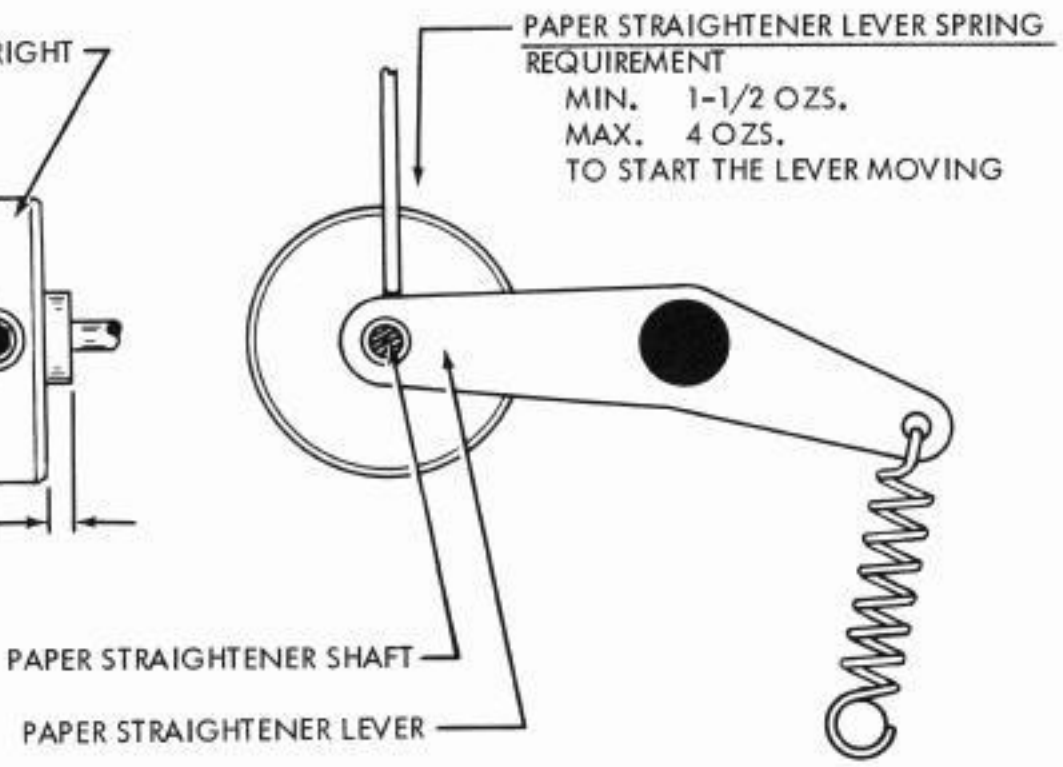


REQUIREMENT
CODE BARS IN MARKING POSITION (LEFT)
TYPE BOX CLUTCH ROTATED 1/4 TURN FROM ITS STOP POSITION
HORIZONTAL MOTION DECELERATING SLIDES (PAR. 2.33) HELD
AWAY FROM HORIZONTAL STOP SLIDES
MIN. 1/2 OZ. MAX. 1-1/2 OZS. FOR UPPER AND LOWER SLIDES
MIN. 1-3/4 OZS. MAX. 3 OZS. FOR MIDDLE SLIDE
TO START SLIDE MOVING.
NOTE: WHEN CHECKING UPPER AND LOWER SLIDES, HOLD MIDDLE SLIDE 1/32 INCH FORWARD.

2.62 Line Feed and Platen Mechanism (Cont.)



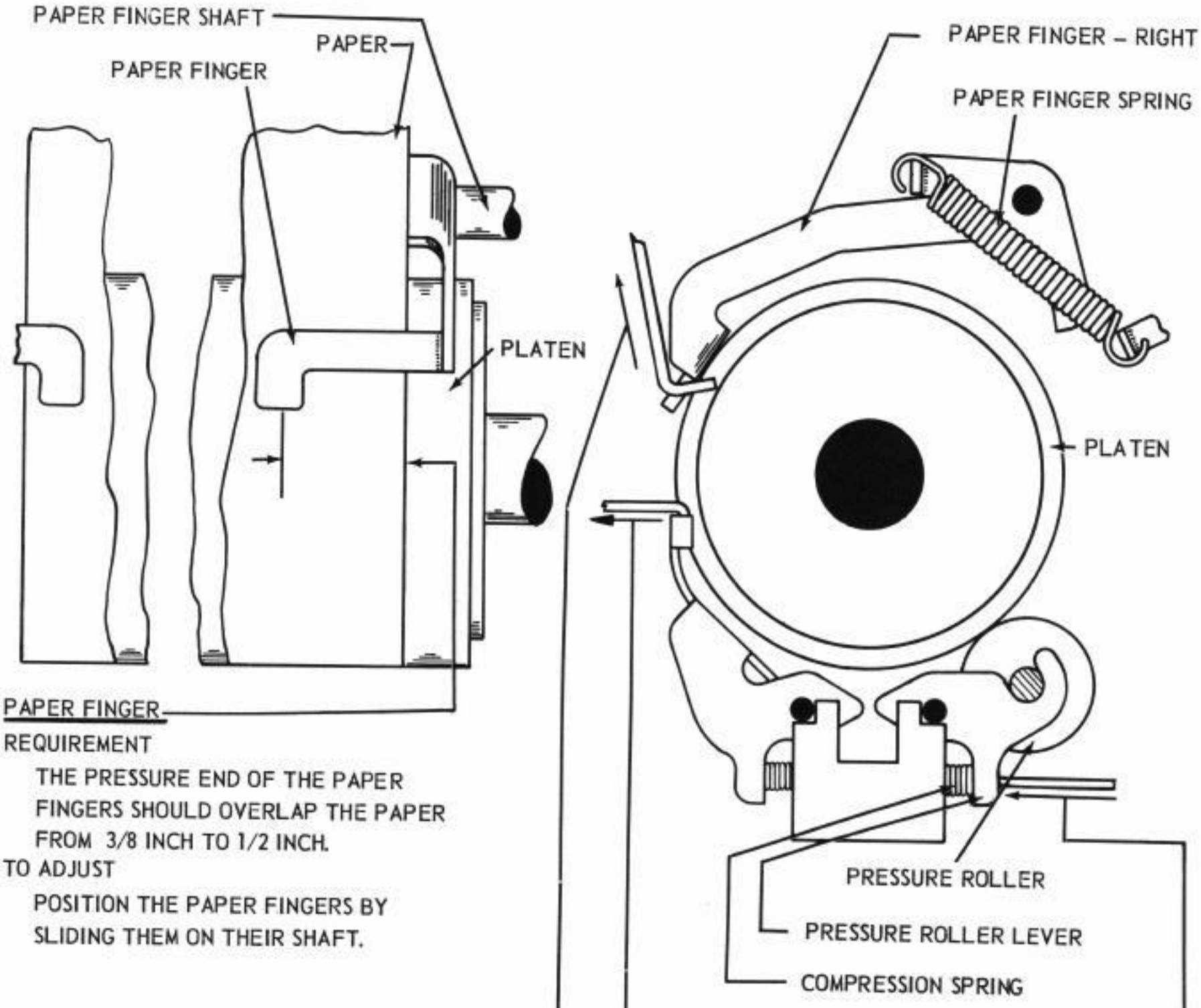
REQUIREMENT
LEFT COLLAR SPACE
MIN. 9/32 INCH
MAX. 21/64 INCH
FROM THE LEFT SHOULDER ON THE PAPER STRAIGHTENER SHAFT.
RIGHT COLLAR SPACED.
MIN. 1/16 INCH
MAX. 5/64 INCH
FROM THE RIGHT SHOULDER.
TO ADJUST
POSITION COLLARS ON SHAFT WITH SET SCREWS LOOSENED.



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

NOTE: FOR SPROCKET FEED MECHANISM SEE PAR. 2.73

2.63 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.

NOTE: FOR SPROCKET FEED MECHANISM SEE PAR. 2.71

PRESSURE ROLLER LEVER SPRING

REQUIREMENT

MIN. 28 OZS.

MAX. 36 OZS.

TO START EACH CENTER LEVER MOVING. ALTERNATELY

PAPER PRESSURE BAIL SPRING

REQUIREMENT

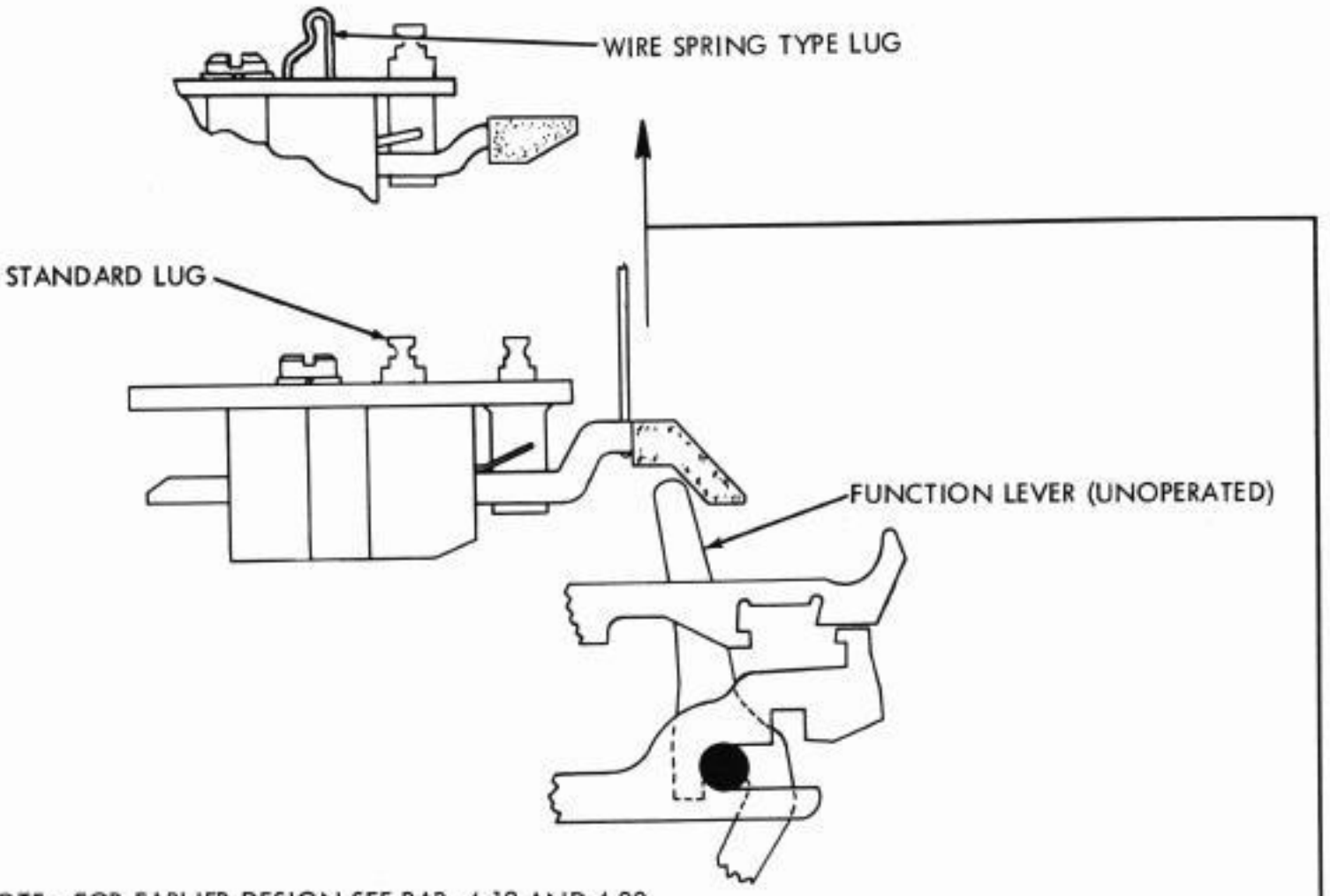
SCALE HOOKED OVER PRESSURE BAIL AT EACH END OF PLATEN.

MIN. 7 OZS.

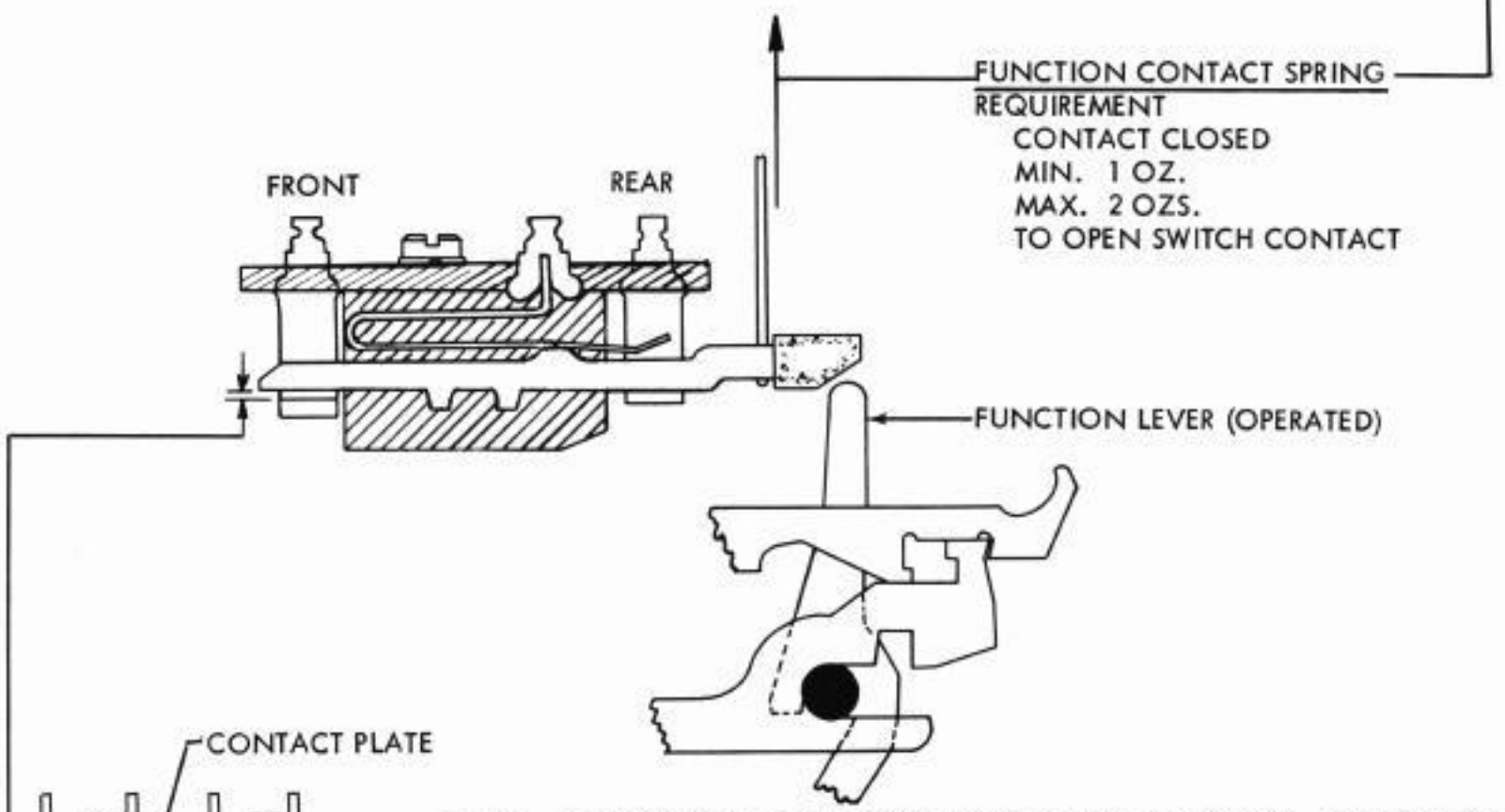
MAX. 20 OZS.

TO MOVE PRESSURE BAIL FROM PLATEN.

2.64 Function Mechanism (Cont.)



NOTE: FOR EARLIER DESIGN SEE PAR. 4.19 AND 4.20

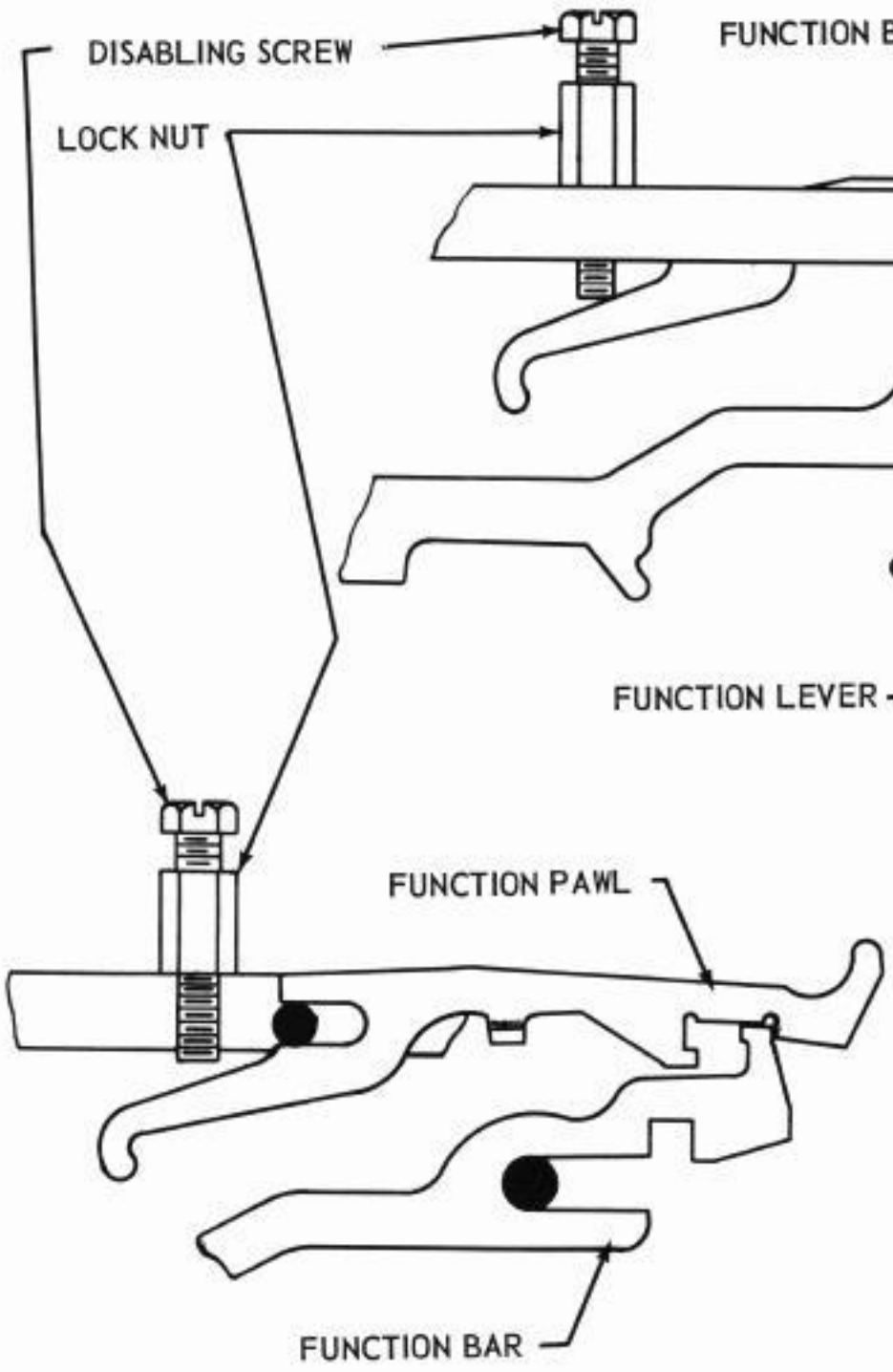


NOTE: IF THE SWITCHES ARE REMOVED FROM THE STUNT BOX, THE FOLLOWING REQUIREMENTS APPLY:

(1) PROVIDE AT LEAST .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.

(2) ON SWITCHES WITH CONTACTS FRONT AND REAR, CHECK TO SEE THAT THERE IS A GAP OF NOT LESS THAN .008 INCH BETWEEN THE FORMED-OVER END OF THE FRONT CONTACT CLIP AND THE BOTTOM OF THE CONTACT ARM WHEN THE REAR CONTACT IS CLOSED.

2.65 Function Mechanism (Cont.)



UNSHIFT-ON-SPACE FUNCTION PAWL

(1) REQUIREMENT

TO PREVENT UNSHIFT-ON-SPACE FUNCTION, PROVIDE CLEARANCE BETWEEN THE LOWER EDGE OF THE UNSHIFT-ON-SPACE FUNCTION PAWL AND ITS FUNCTION BAR.

MIN. 0.015 INCH
MAX. 0.060 INCH

TO ADJUST

LOOSEN THE LOCK NUT AND TURN THE DISABLING SCREW IN.

(2) REQUIREMENT

TO RESTORE THE UNSHIFT-ON-SPACE FUNCTION, BACK OFF THE SCREW SO THAT PAWL FULLY ENGAGES THE FUNCTION BAR. THEN CONTINUE TO TURN THE SCREW OUT ONE TO THREE TURNS.

2.66 Code Bar 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.

CODE BAR DETENT SPRING

NOTE

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

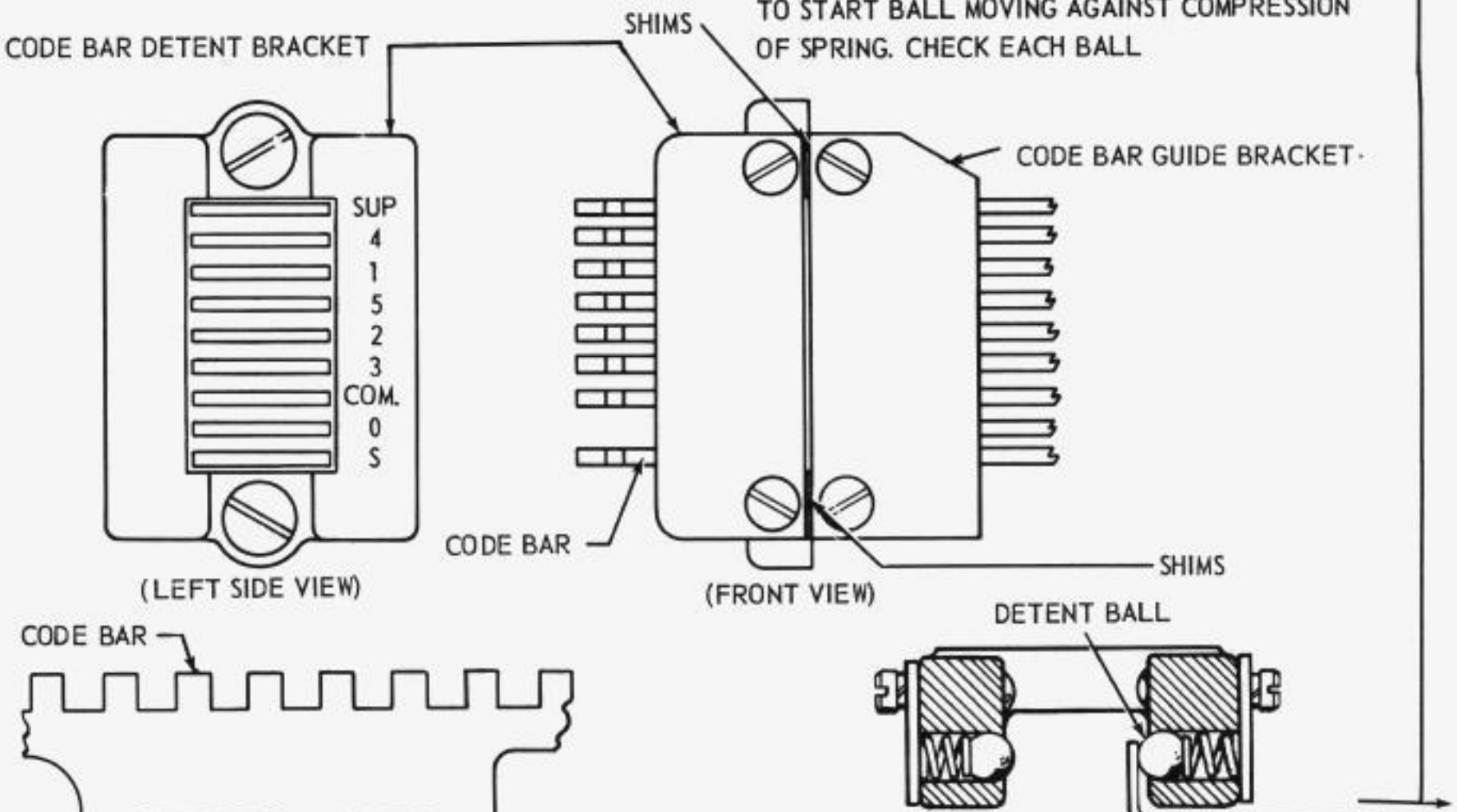
REQUIREMENT

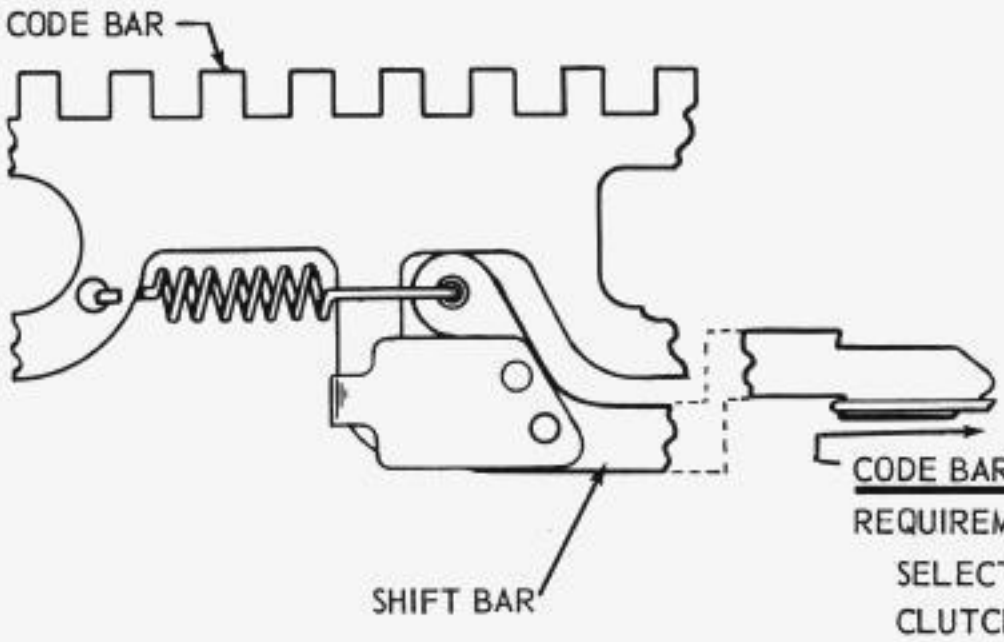
CODE BAR DETENT BRACKET CAREFULLY REMOVED AND CODE BARS REMOVED FROM DETENT BRACKET. SCALE APPLIED TO DETENT BALL AND PULLED IN DIRECTION OF BALL TRAVEL

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

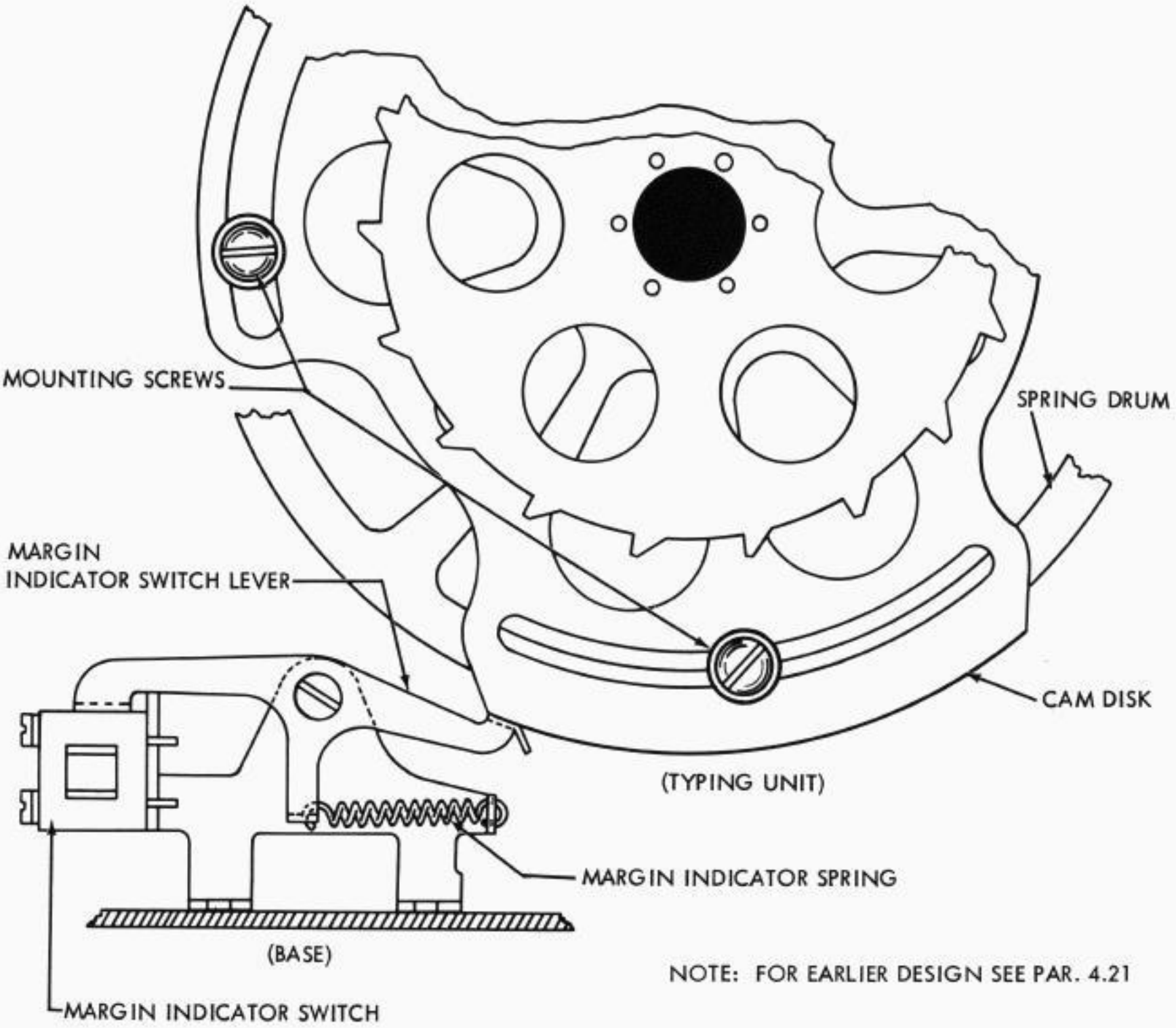
SELECTOR CLUTCH, CODE BAR CLUTCH, AND TYPE BOX CLUTCH DISENGAGED. NO. 1 CODE BAR IN SPACING POSITION

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.

2.67 Spacing Mechanism (Cont.)



NOTE: FOR EARLIER DESIGN SEE PAR. 4.21

MARGIN INDICATOR LAMP

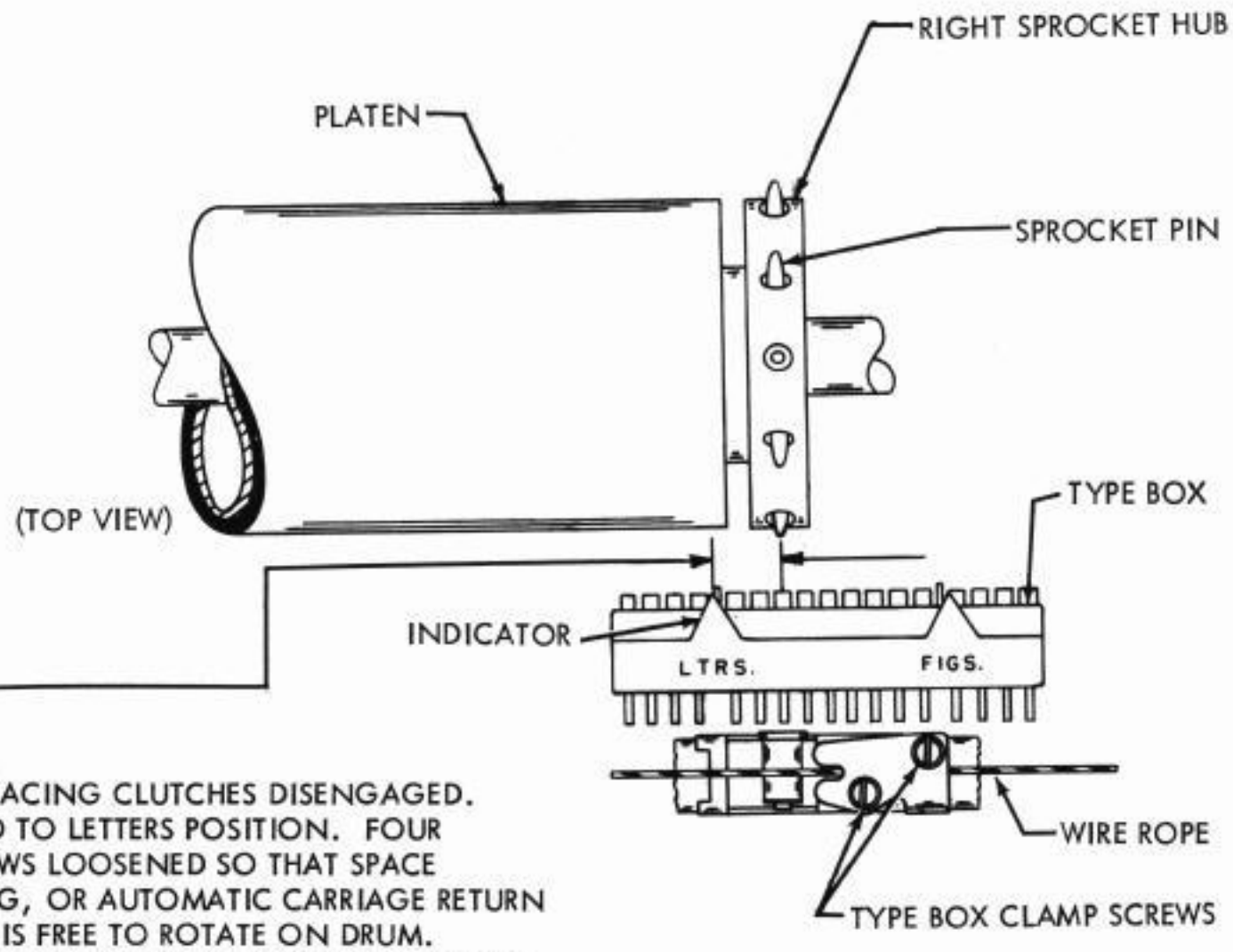
REQUIREMENT

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 DISK 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 DISK SCREWS AND INSERT THEM IN ADJACENT SLOTS IN THE DISK, IF THE RANGE OF ROTATION IN ONE SLOT IS NOT ENOUGH.

2.68 Positioning Mechanism (Cont.)



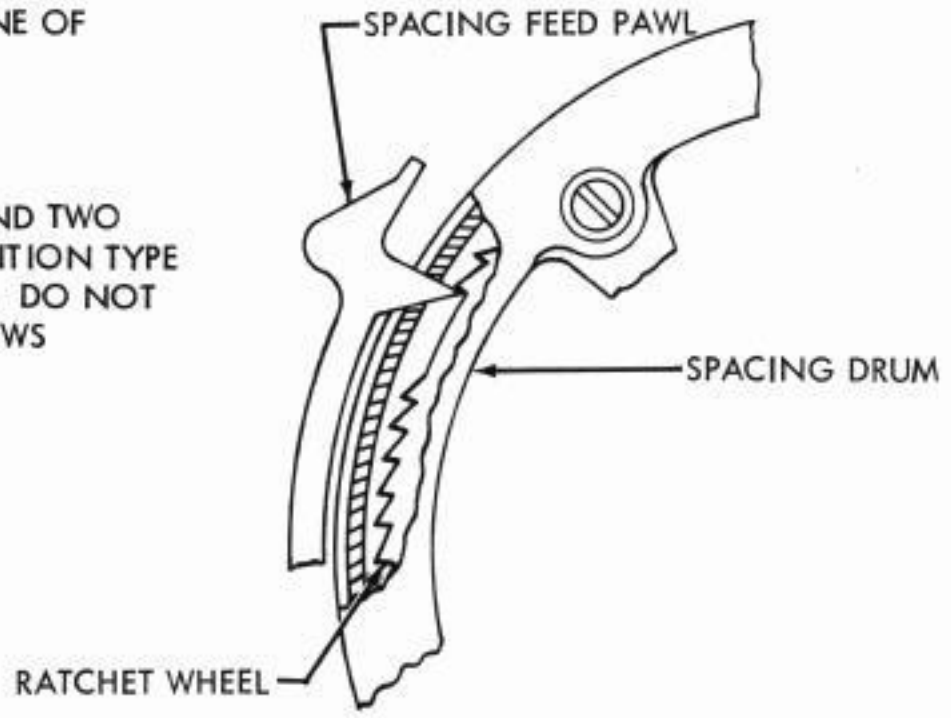
TYPE BOX POSITION

REQUIREMENT

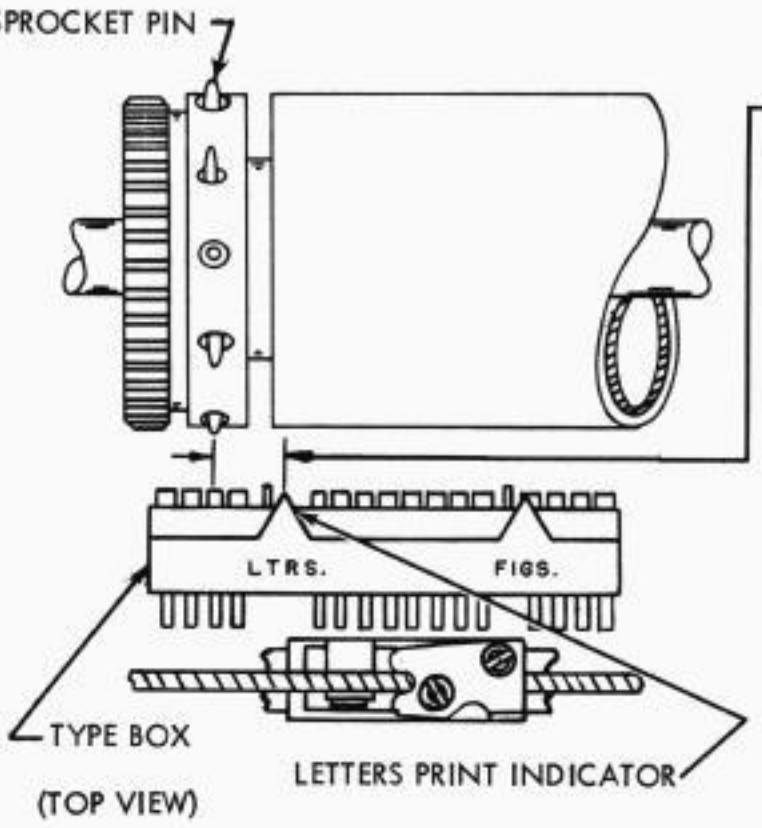
TYPE BOX AND SPACING CLUTCHES DISENGAGED. TYPE BOX SHIFTED TO LETTERS POSITION. FOUR MOUNTING SCREWS LOOSENED SO THAT SPACE SUPPRESSION RING, OR AUTOMATIC CARRIAGE RETURN LINE FEED RING, IS FREE TO ROTATE ON DRUM. (UNITS EQUIPPED WITH LIMITED ADJUSTMENT SPACING DRUM: SPACING CUT OUT AND AUTOMATIC CARRIAGE RETURN LINE FEED ARMS IN MAXIMUM COUNTER-CLOCKWISE POSITION. SEE PAR. 4.06) 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 TYPE BOX CLAMP SCREWS AND TWO PRINTING CARRIAGE CLAMP SCREWS. POSITION TYPE BOX. TIGHTEN TYPE BOX CLAMP SCREWS. DO NOT TIGHTEN PRINTING CARRIAGE CLAMP SCREWS UNTIL PRINTING CARRIAGE POSITION ADJUSTMENT IS MADE.



2.69 Line Feed and Platen Mechanism (Cont.)



(A) LEFT MARGIN REQUIREMENTS

(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. 2.22) 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.

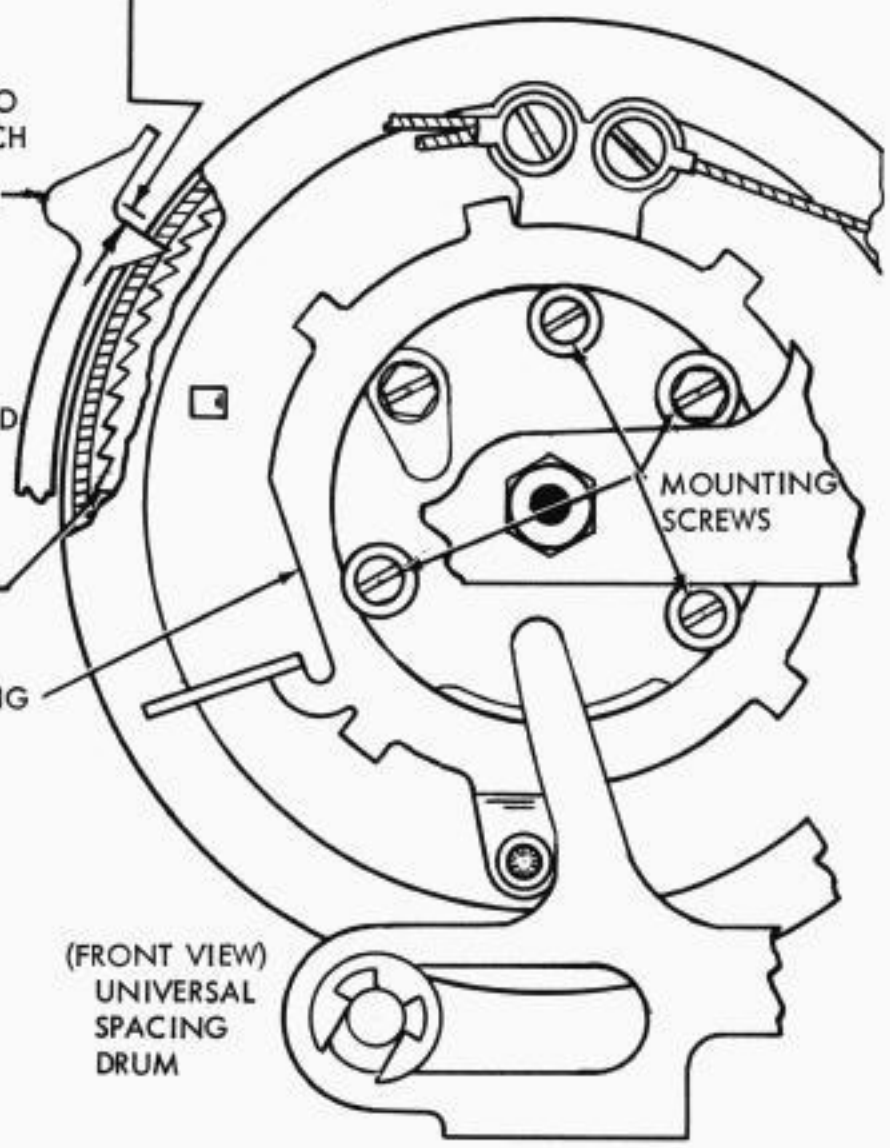
TO ADJUST --- REFINE REQUIREMENT (1) ABOVE

(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



(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

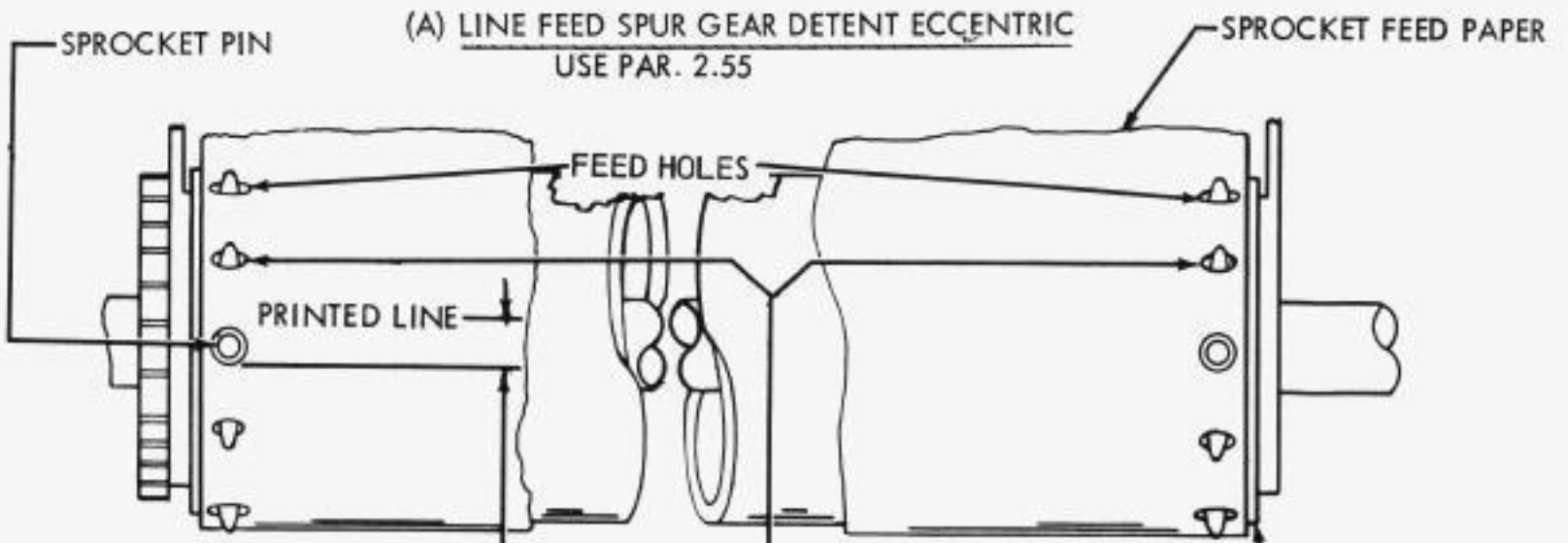
USE PAR. 2.45

(E) TYPE BOX ALIGNMENT

USE PAR. 2.49

FOLLOWING THIS ADJUSTMENT, ALL SCREWS SHOULD BE TIGHTENED.

2.70 Line Feed and Platen Mechanism (Cont.)



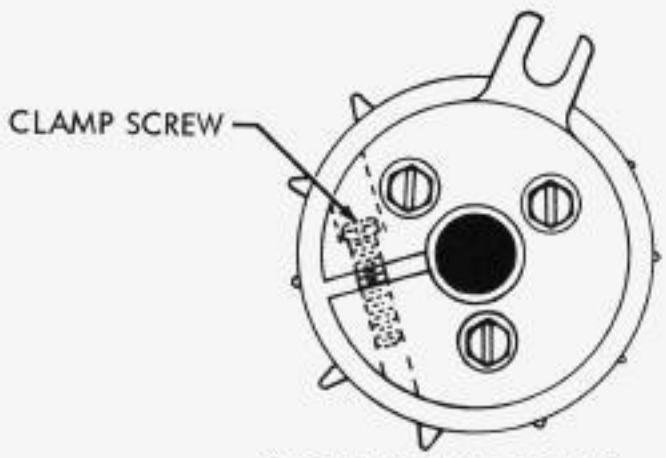
(B) PRINTED LINE
REQUIREMENT
THE BOTTOM OF THE PRINTED LINE SHOULD BE 1/32 INCH ± 1/64 INCH (PLUS A MULTIPLE OF 1/6 INCH IF REQUIRED) ABOVE A HORIZONTAL LINE DRAWN EVEN WITH THE BOTTOM EDGE OF ANY SPROCKET HOLE.
TO ADJUST
LOOSEN SCREWS AND POSITION LEFT SPROCKET

NOTE: SPUR GEAR AND LEFT PLATEN RETAINER MUST BE REMOVED TO MAKE PRINTED LINE ADJUSTMENT.

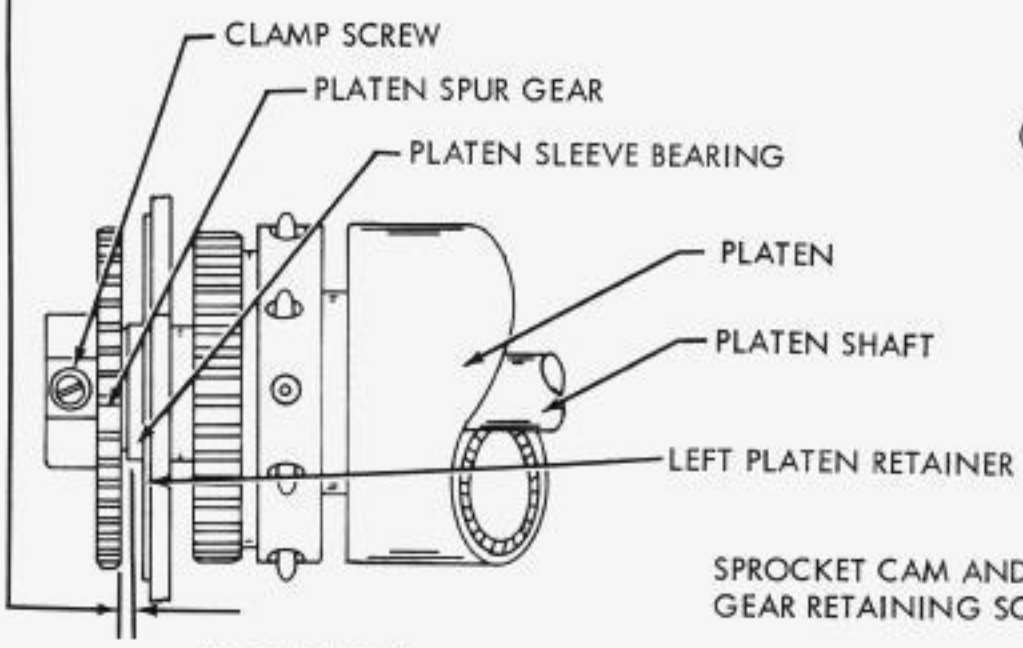
(D)
SPROCKET PIN SEPARATION
(1) REQUIREMENT
WITH SINGLE SHEET OF SPROCKET FEED PAPER PLACED ON THE PLATEN THE SPROCKET PINS SHOULD BE CENTRALLY LOCATED IN THE FEED HOLES OF THE PAPER

(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.

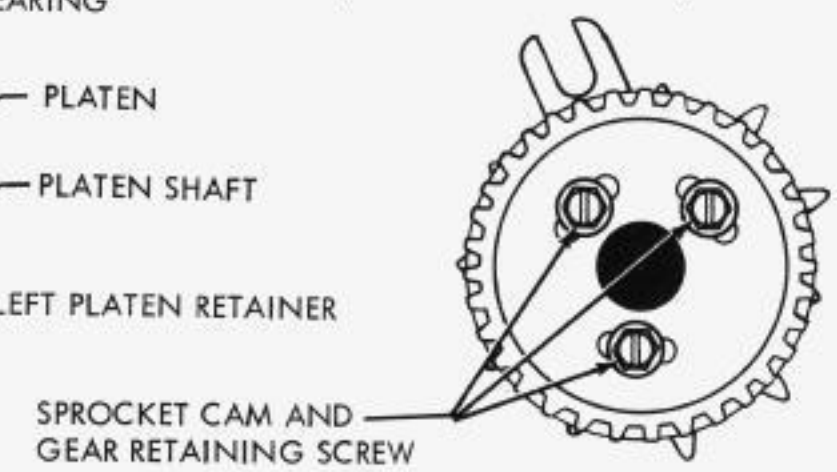
(C) PLATEN END PLAY
REQUIREMENT
LINE FEED PAWLS DISENGAGED.
PLATEN SHAFT SHOULD HAVE SOME END PLAY
MAX. 0.010 INCH
TO ADJUST
POSITION PLATEN SPUR GEAR WITH CLAMP SCREW LOOSENED.



(RIGHT SIDE SPROCKET)

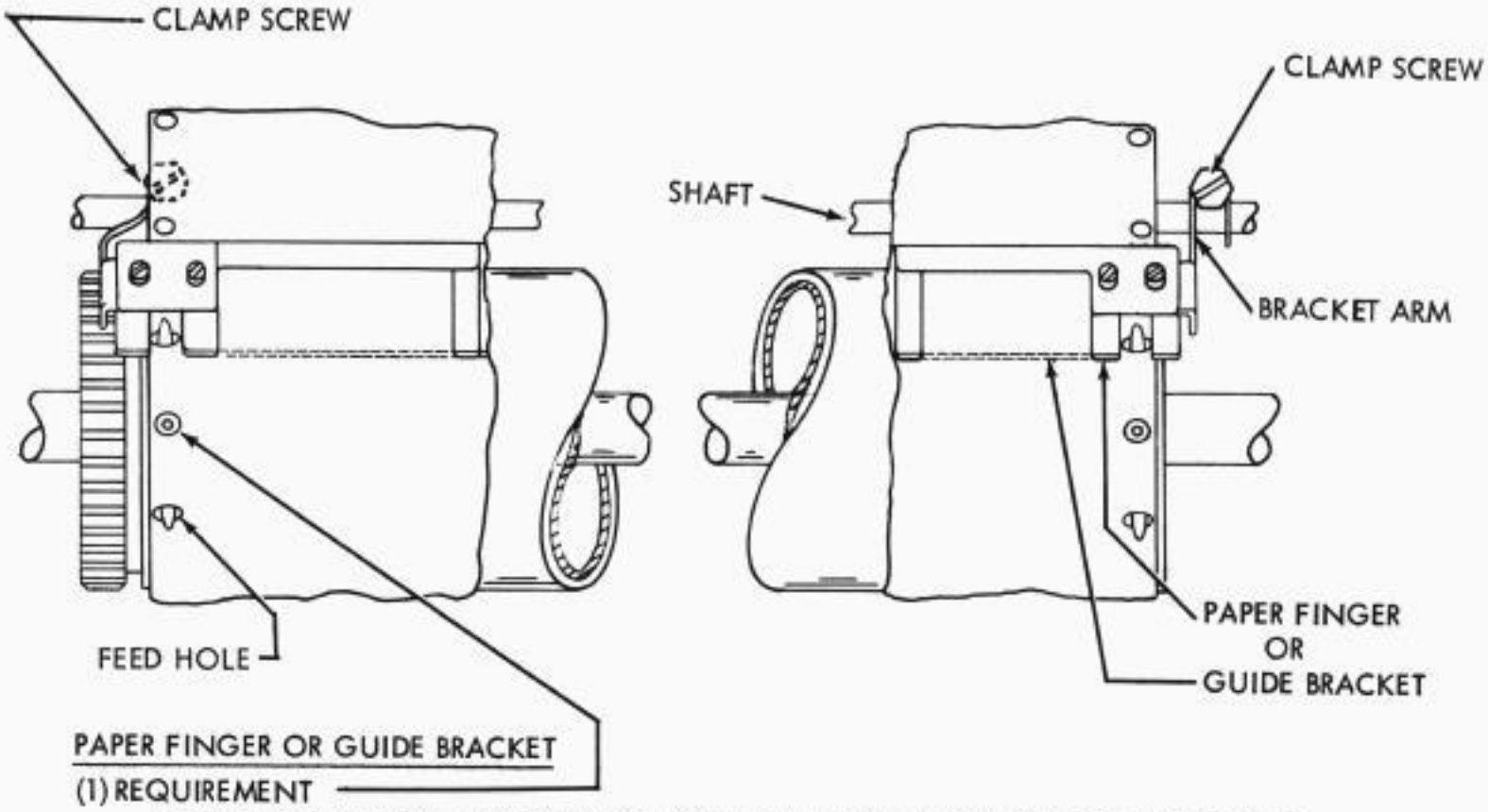


(FRONT VIEW)



(LEFT SIDE SPROCKET)

2.71 Line Feed and Platen Mechanism (Cont.)



PAPER FINGER OR GUIDE BRACKET

(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).

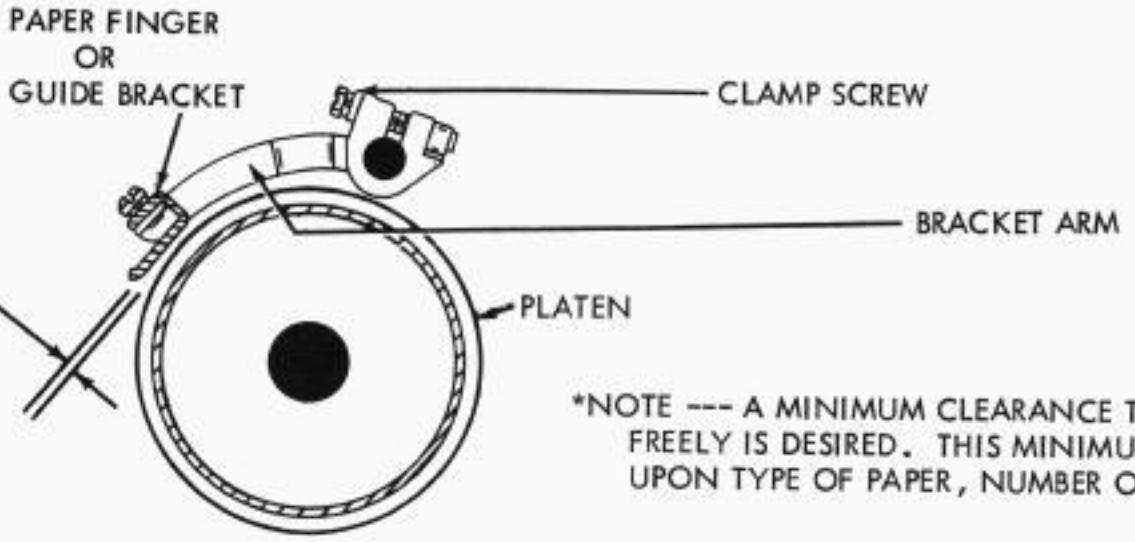
(3) REQUIREMENT (NOT ILLUSTRATED)

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.

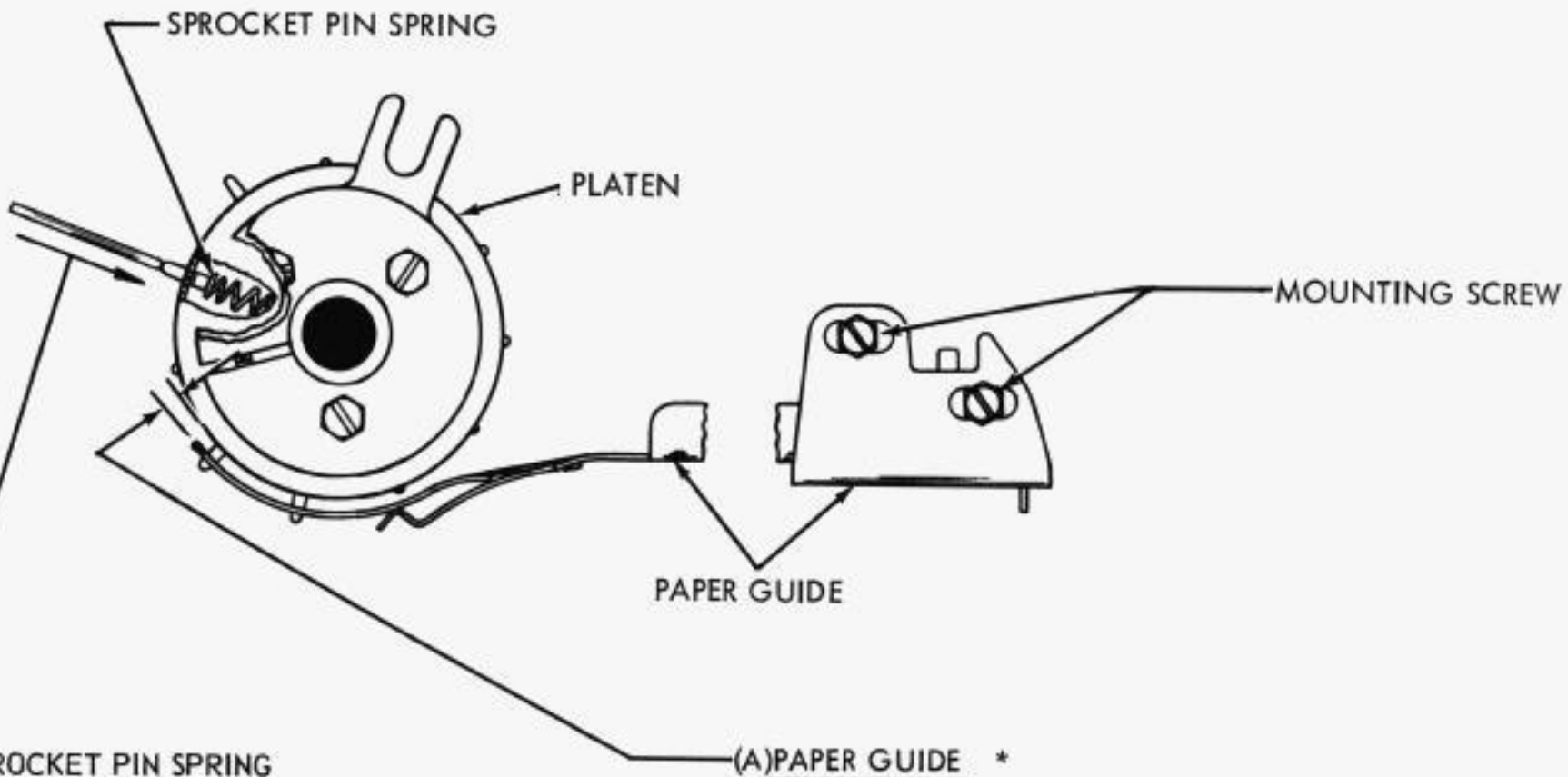
TO ADJUST

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.

2.72 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 SINGLE COPY OR MULTIPLE COPY	UNSTAPLED 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.

*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.

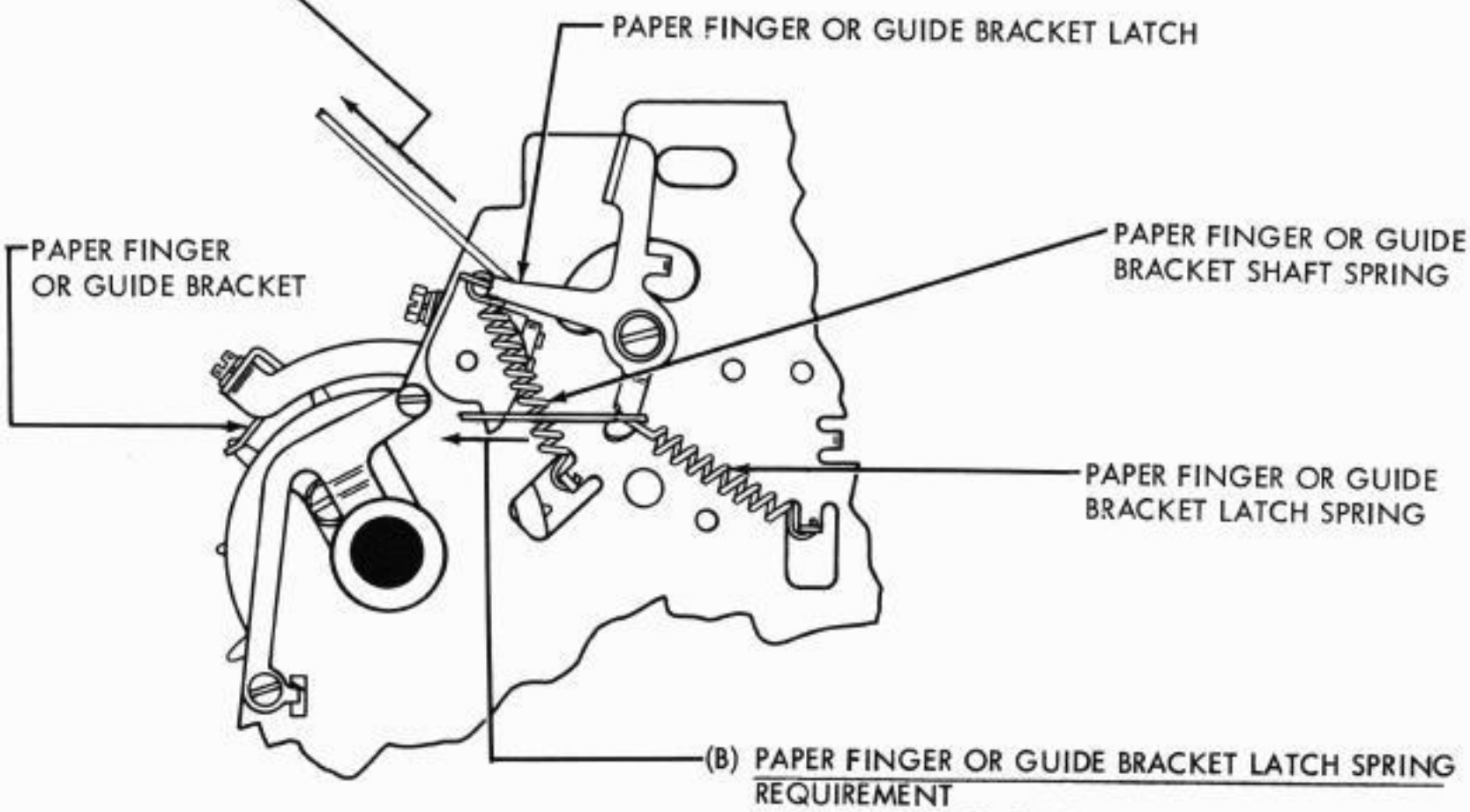
(C)RIBBON REVERSE SPUR GEAR
USE PAR. 2.50

(D)RIBBON REVERSE DETENT
USE PAR. 2.50

(E) LINE FEED BAR BELL CRANK SPRING
USE PAR. 2.55 EXCEPT
MIN. 28 OZS.
MAX. 38 OZS.
TO START BAR MOVING.

2.73 Line Feed and Platen Mechanism (Cont.)

(A) PAPER FINGER OR GUIDE BRACKET SHAFT SPRING
REQUIREMENT
MIN. 6 OZS.
MAX. 10 OZS.
TO MOVE PAPER FINGER OR GUIDE BRACKET AGAINST THE PLATEN.



(B) PAPER FINGER OR GUIDE BRACKET LATCH SPRING
REQUIREMENT
PAPER FINGER OR GUIDE BRACKET AGAINST PLATEN
MIN. 8 OZS.
MAX. 12 OZS.
TO START LATCH MOVING.

NOTE
SPROCKET FEED MECHANISM WITH RETRACTABLE PINS

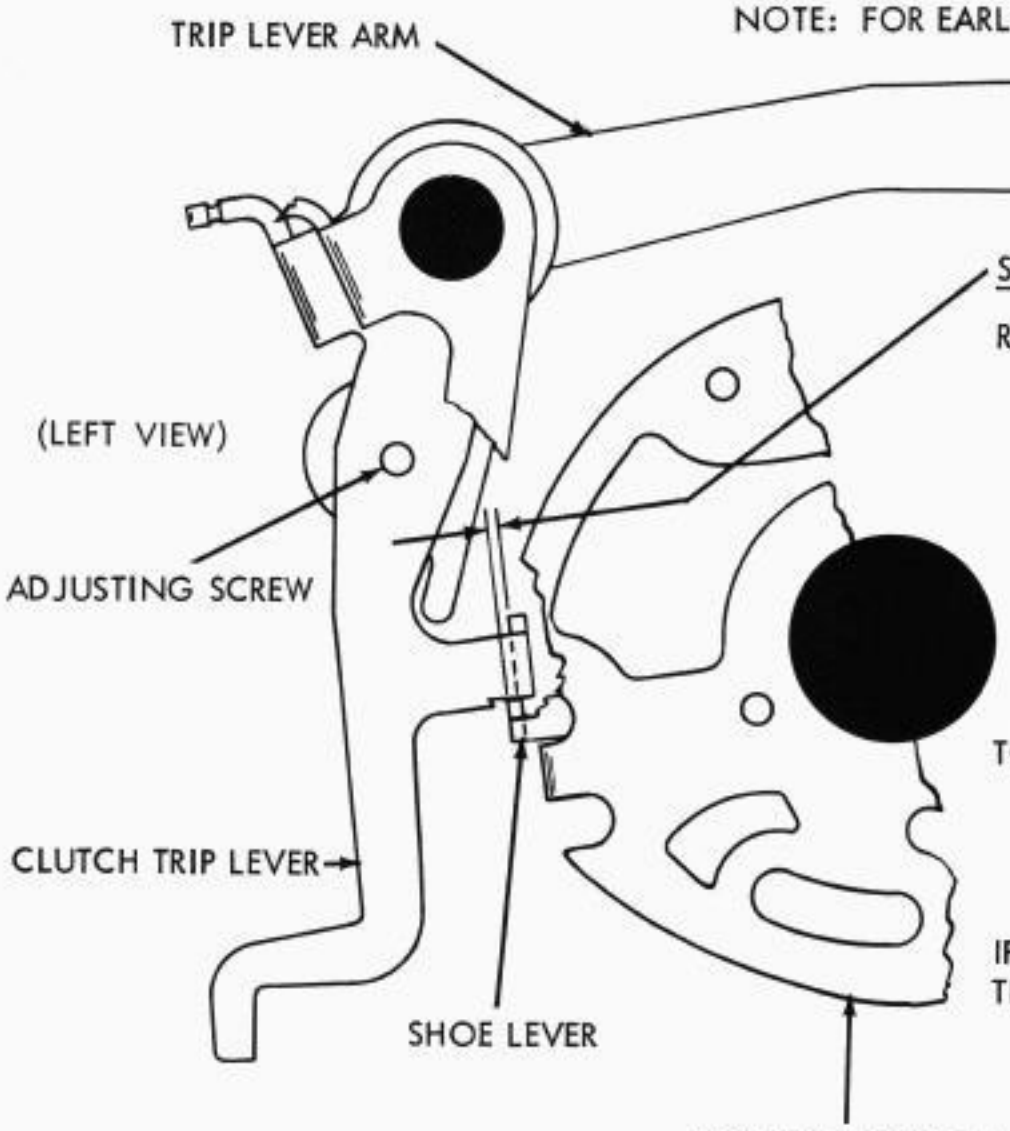
PAPER FINGER LOCKING ARM SPRING
REQUIREMENT --- IT SHALL REQUIRE
MIN 1 OZ --- MAX 1-1/2 OZS
TO MOVE ARM AWAY FROM PLATEN

PLATEN DETENT BAIL SPRING
USE PAR. 2.55

3. VARIABLE FEATURES

3.01 Horizontal Tabulator Mechanism

NOTE: FOR EARLIER DESIGN SEE PARS. 4.22 THROUGH 4.27.



SPACING CLUTCH TRIP LEVER

REQUIREMENT

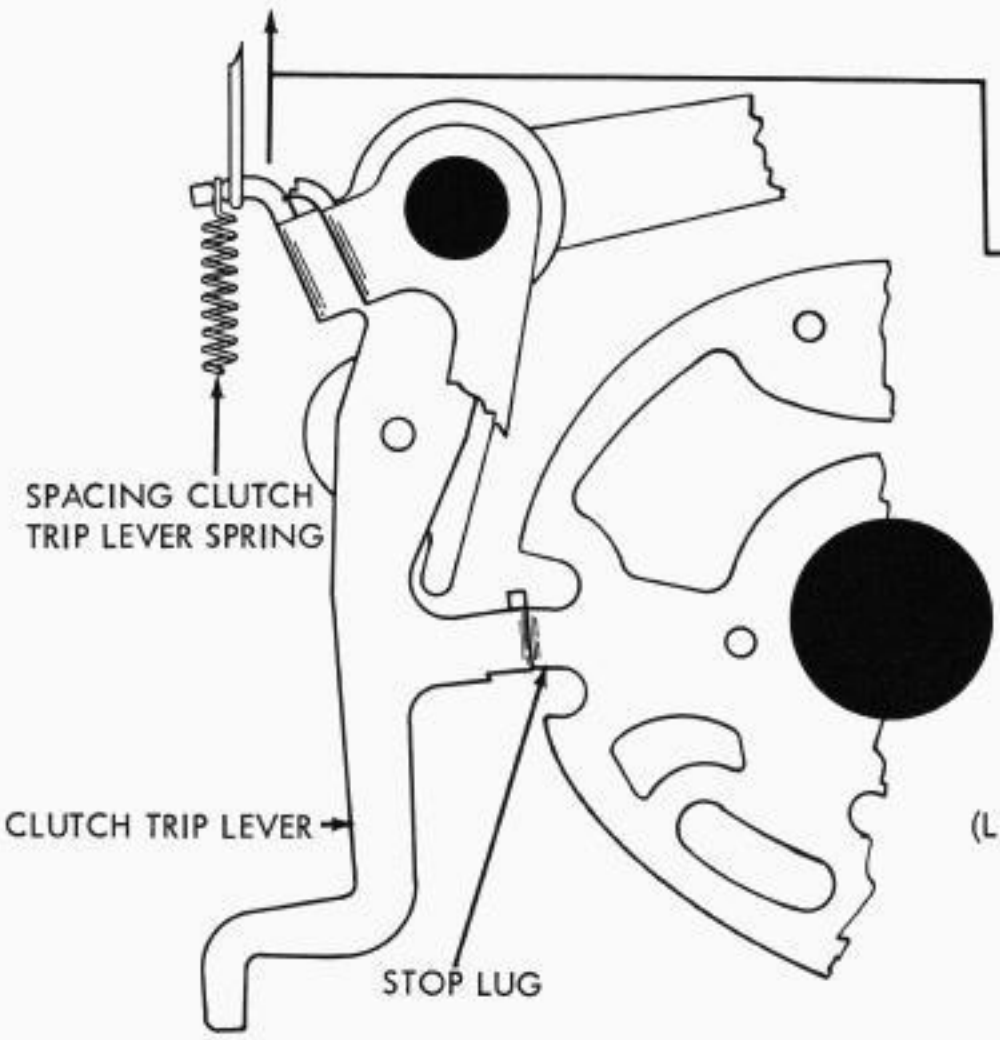
SPACING CLUTCH DISENGAGED. TRIP LEVER ARM AND INTERMEDIATE BAIL IN THEIR UPWARD POSITION. THE OUTER SURFACE OF THE TRIP LEVER SHOULD BE FLUSH WITH THE OUTER SURFACE OF THE SHOE LEVER OR UNDER FLUSH TO .010 INCH. CHECK AT STOP LUG WITH LEAST BITE.

TO ADJUST

USE ADJUSTING SCREW TO POSITION SPACING CLUTCH TRIP LEVER.

NOTE

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



CLUTCH TRIP LEVER SPRING

REQUIREMENT

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

MIN. 11 OZS.
MAX. 16 OZS.

TO MOVE TRIP LEVER AWAY FROM STOP LUG.

3.02 **Horizontal Tabulator Mechanism (Cont.)**

OPERATING LEVER SLIDE ARM

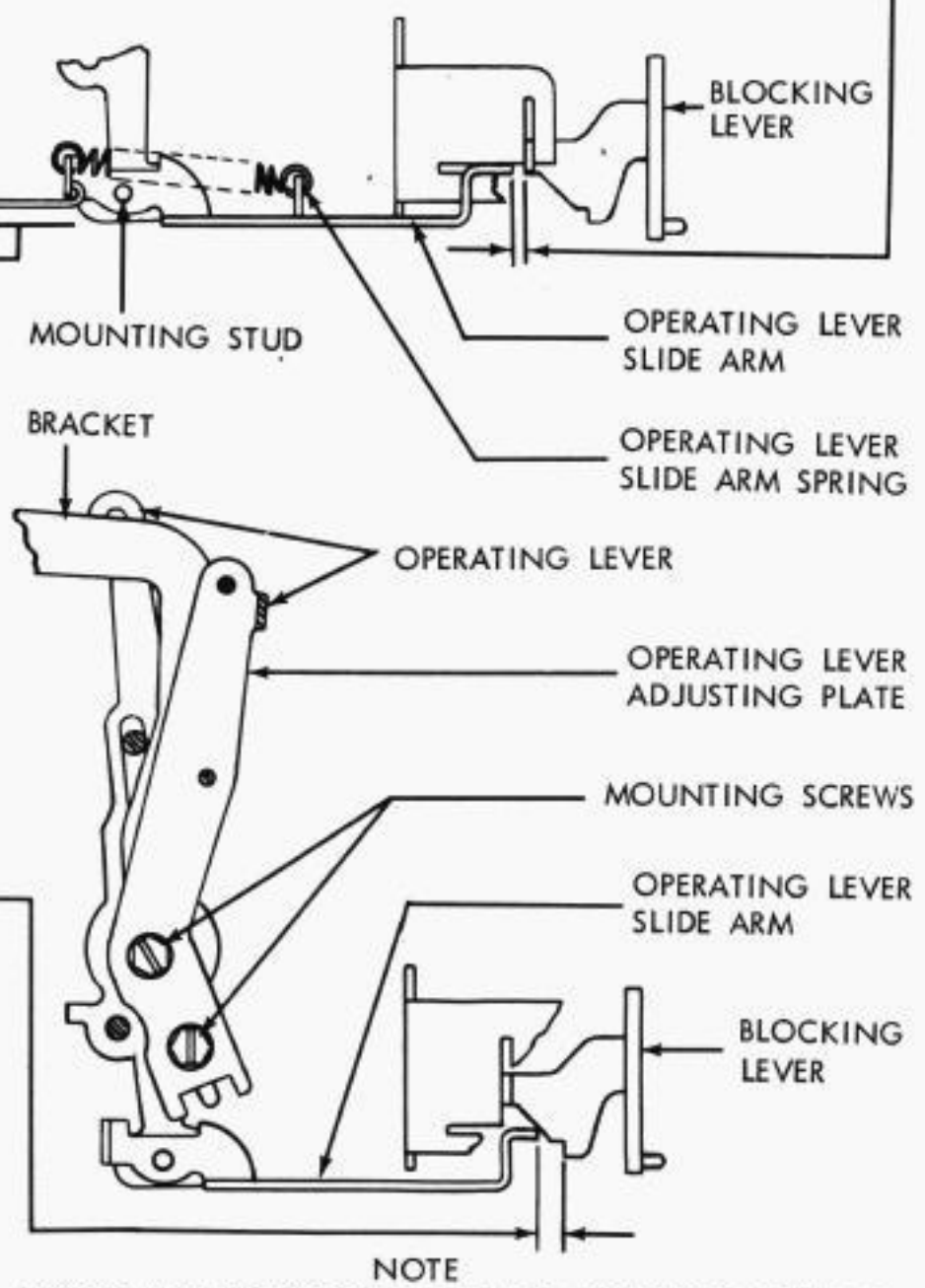
NOTE
PRIOR TO THIS ADJUSTMENT CHECK THE FUNCTION RESET BAIL BLADE ADJUSTMENT.

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 SLIDE ARM AND BLOCKING SURFACE OF BLOCKING LEVER

MIN. 0.015 INCH
MAX. 0.035 INCH

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

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 THE STRIPPER BAIL ARM BY LOOSENING ITS ADJUSTING SCREW.



OPERATING LEVER SLIDE ARM SPRING

REQUIREMENT
TRIP LEVER ARM LATCH BAIL SPRING UNHOOKED. OPERATING LEVER IN OPERATED POSITION WITH SLIDE ARM 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

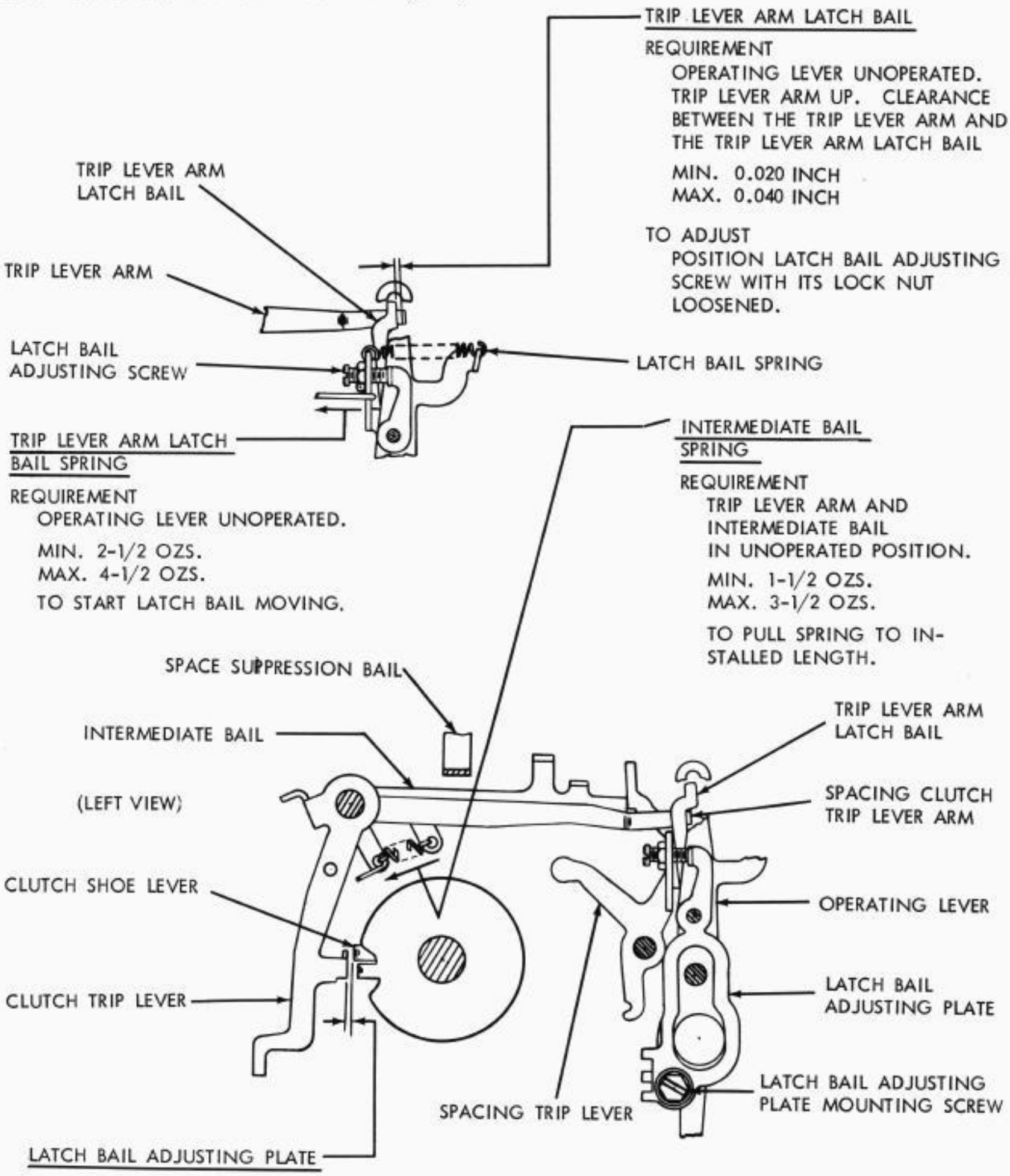
REQUIREMENT
OPERATING LEVER IN UNOPERATED POSITION. TAKE UP PLAY IN SLIDE ARM AND BLOCKING LEVER TO MINIMIZE CLEARANCE. CLEARANCE BETWEEN FRONT END OF SLIDE ARM AND LOWER PROJECTION OF BLOCKING LEVER

MIN. 0.020 INCH
MAX. 0.045 INCH

TO ADJUST
POSITION ADJUSTING PLATE ON BRACKET WITH MOUNTING SCREWS LOOSENED.

NOTE
IF OPERATING LEVER SLIDE ARM OR OPERATING LEVER ADJUSTING PLATE ADJUSTMENT IS CHANGED ON UNITS EQUIPPED WITH TRANSMITTER CONTROL CONTACT, CHECK CONTROL CONTACT GAP AND REMAKE IF NECESSARY.

3.03 Horizontal Tabulator Mechanism (Cont.)



TRIP LEVER ARM LATCH BAIL

REQUIREMENT
OPERATING LEVER UNOPERATED. TRIP LEVER ARM UP. CLEARANCE BETWEEN THE TRIP LEVER ARM AND THE TRIP LEVER ARM LATCH BAIL

MIN. 0.020 INCH
MAX. 0.040 INCH

TO ADJUST
POSITION LATCH BAIL ADJUSTING SCREW WITH ITS LOCK NUT LOOSENED.

TRIP LEVER ARM LATCH BAIL SPRING

REQUIREMENT
OPERATING LEVER UNOPERATED.

MIN. 2-1/2 OZS.
MAX. 4-1/2 OZS.
TO START LATCH BAIL MOVING.

INTERMEDIATE BAIL SPRING

REQUIREMENT
TRIP LEVER ARM AND INTERMEDIATE BAIL IN UNOPERATED POSITION.

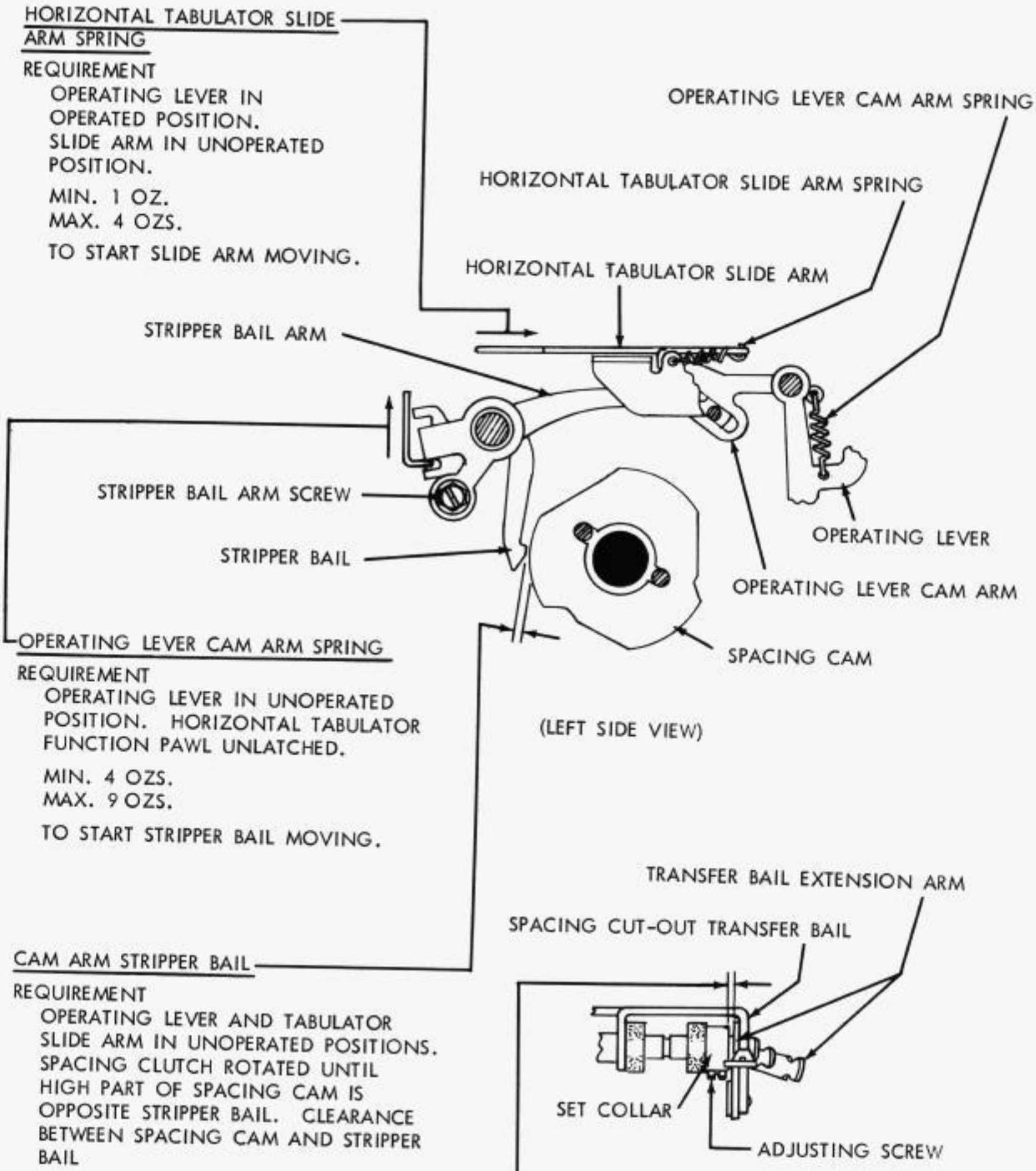
MIN. 1-1/2 OZS.
MAX. 3-1/2 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

LATCH BAIL ADJUSTING PLATE

REQUIREMENT
OPERATING LEVER SLIDE ARM POSITIONED TO REAR AND LATCHED ON BLOCKING LEVER. TRIP LEVER ARM LATCH BAIL IN FULLY LATCHED POSITION. SPACING TRIP LEVER DISENGAGED FROM INTERMEDIATE BAIL BY PUSHING FORWARD ON SPACE SUPPRESSION BAIL. CLEARANCE BETWEEN CLUTCH TRIP LEVER 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.



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.

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 ARM STRIPPER BAIL

REQUIREMENT

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

MIN. 0.010 INCH
MAX. 0.025 INCH

TO ADJUST

POSITION STRIPPER BAIL ARM ON STRIPPER BAIL WITH STRIPPER BAIL ARM SCREW FRICTION TIGHT.

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 ADJUSTING SCREW LOOSENED.

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

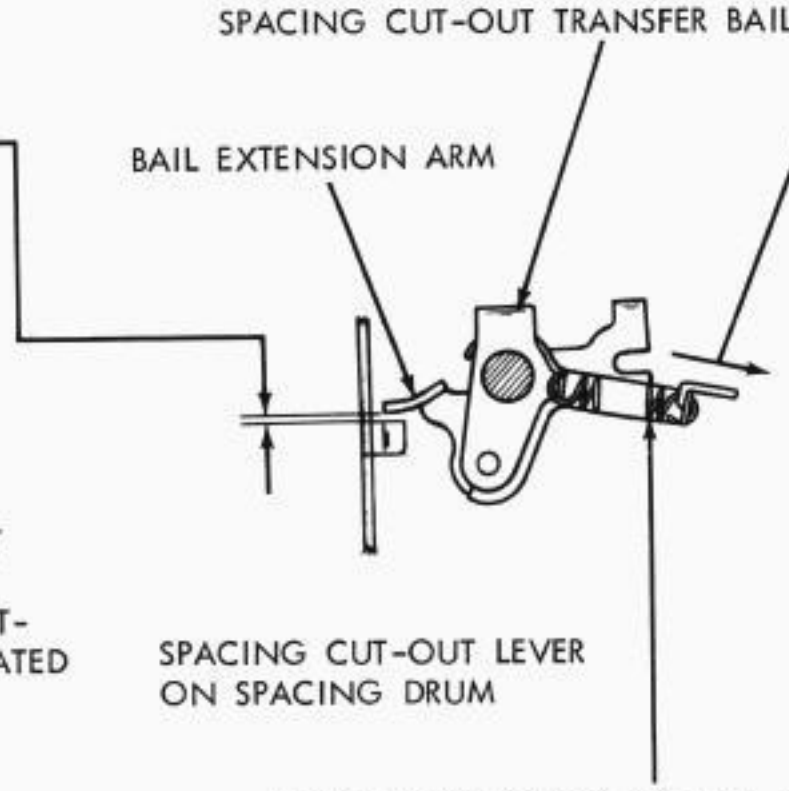
TO CHECK
PLACE TYPE BOX IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUT-OUT IS DESIRED. PULL FORWARD ON PART OF TRANSFER BAIL EXTENDING BELOW MOUNTING SHAFT UNTIL BAIL IS IN FULLY OPERATED POSITION. GAGE CLEARANCE.

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

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

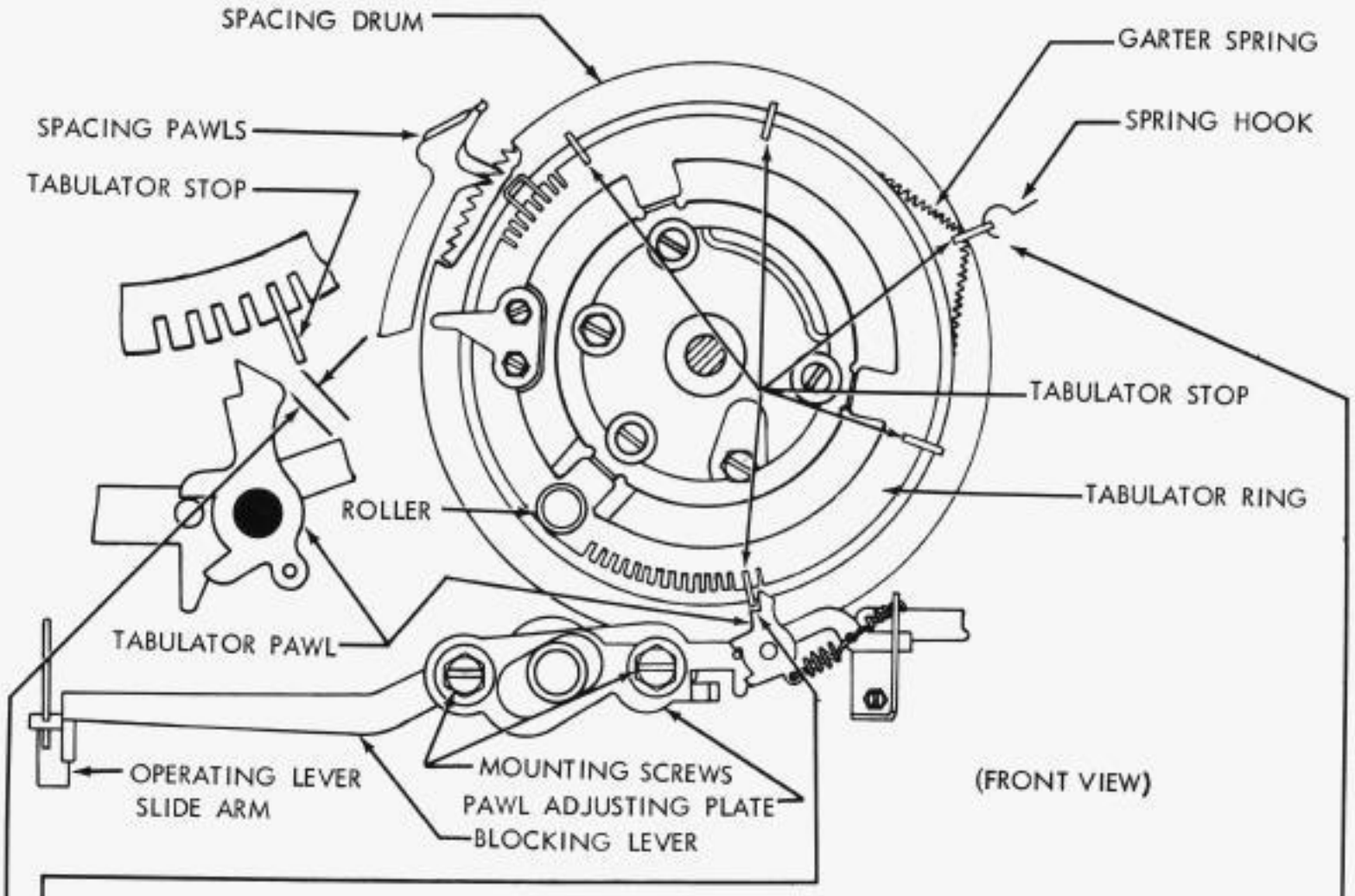
SPACE SUPPRESSION BY-PASS SPRING

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



(RIGHT SIDE VIEW)

3.06 Horizontal Tabulator Mechanism (Cont.)



TABULATOR PAWL (PRELIMINARY)

NOTE:
BEFORE MAKING THIS ADJUSTMENT, CHECK LEFT MARGIN AND SPACING GEAR PHASING 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.

(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 SLIDE ARM WITH BLOCKING LEVER. GAGE 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.

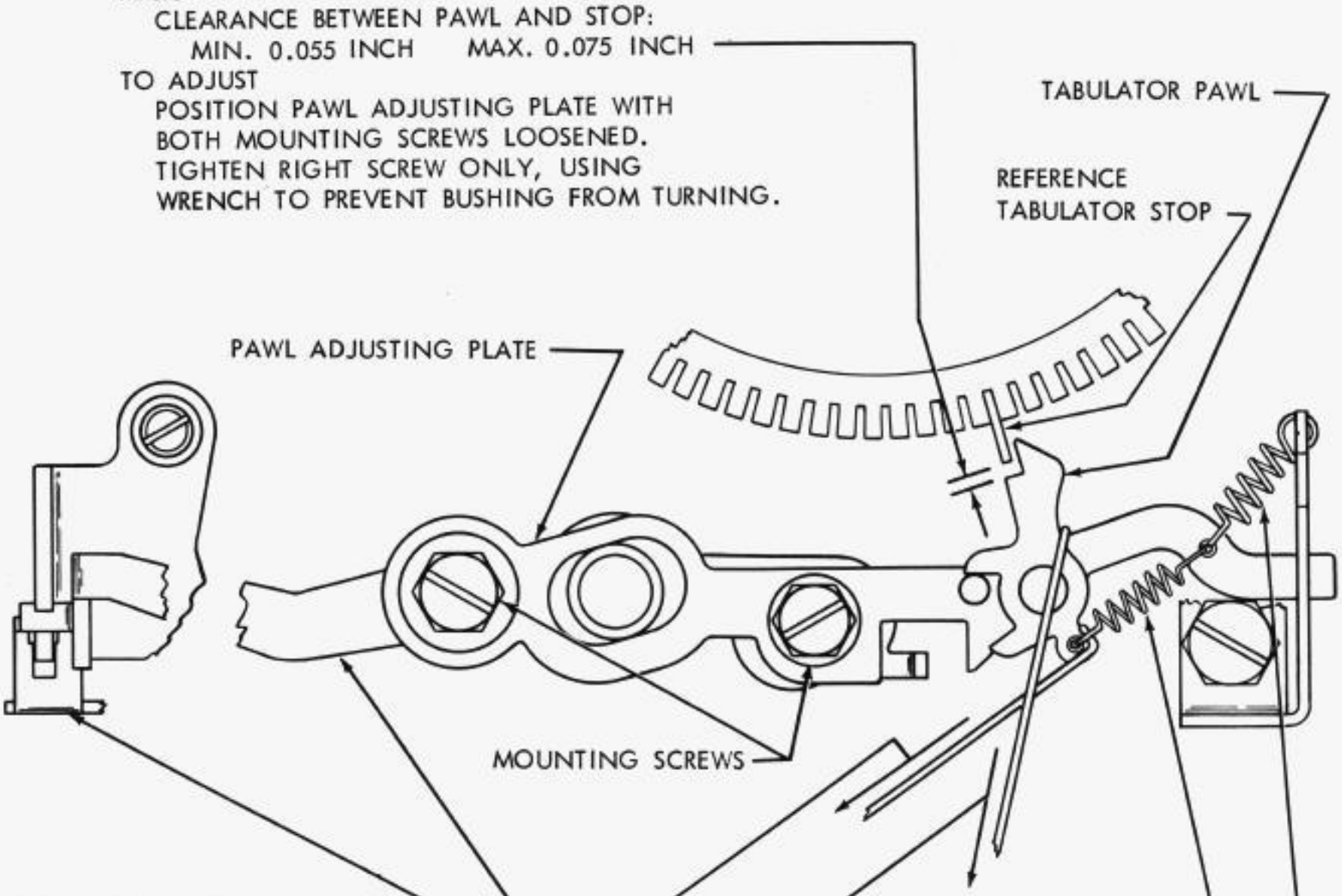
3.07 Horizontal Tabulator Mechanism (Cont.)

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 OPERATING LEVER SLIDE ARM 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.

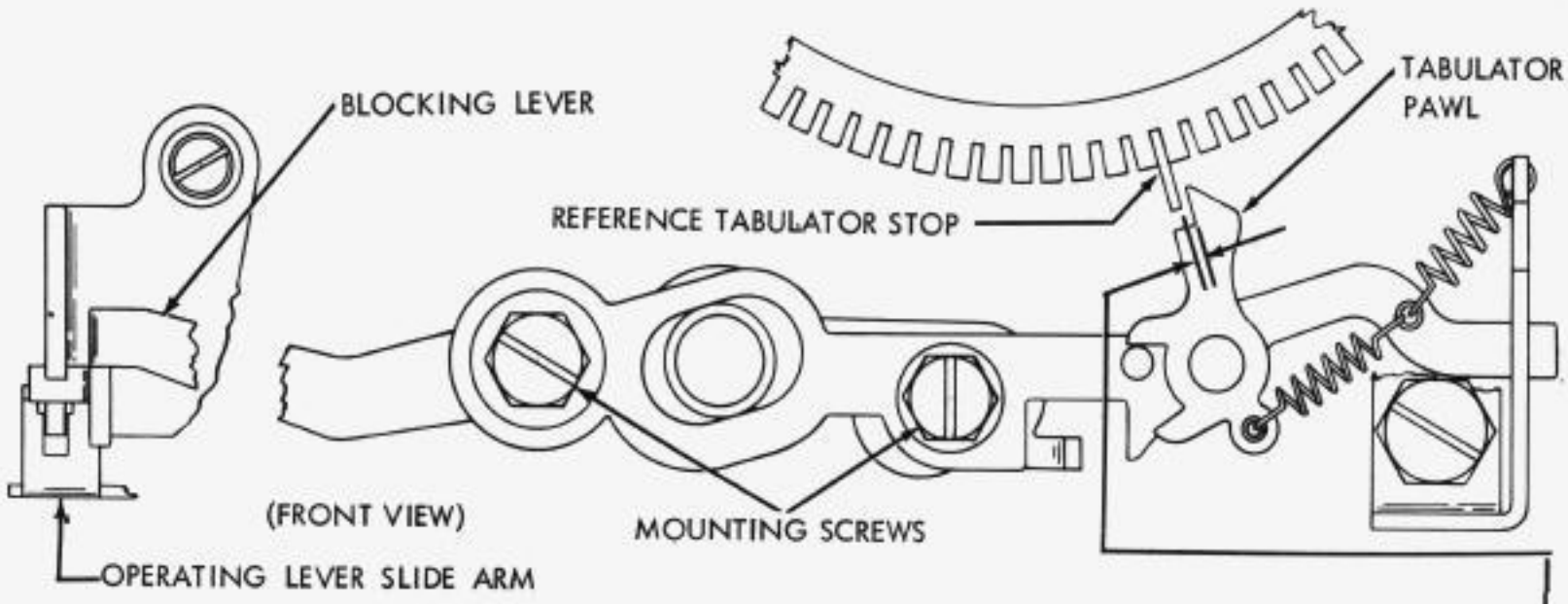


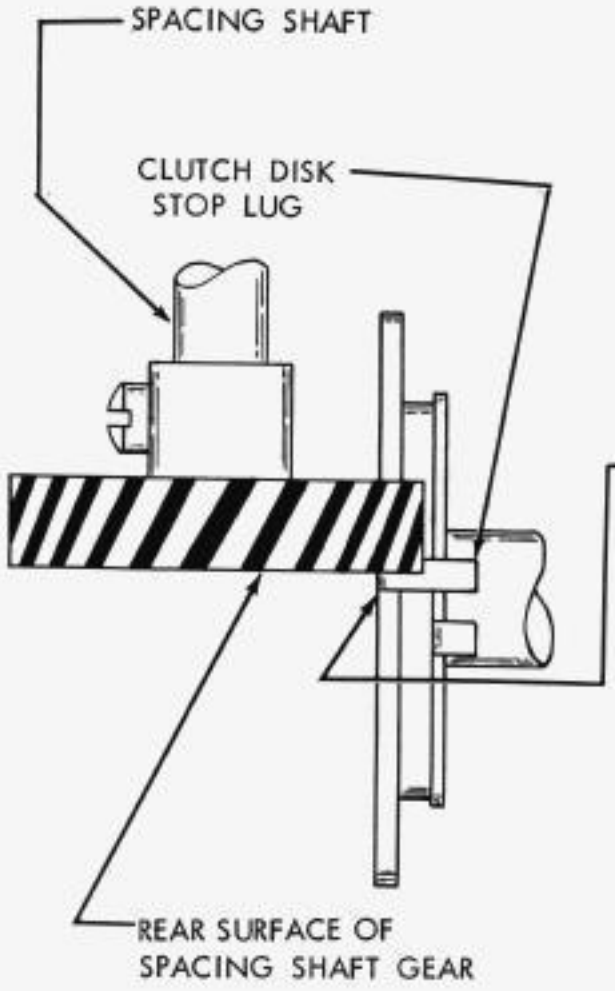
(FRONT VIEW)

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

BLOCKING LEVER SPRING
TO CHECK
HOLD OPERATING LEVER SLIDE ARM 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 SLIDE ARM 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 DISK STOP LUG SHOULD BE ALIGNED WITH REAR SURFACE OF SPACING SHAFT GEAR.

TO ADJUST

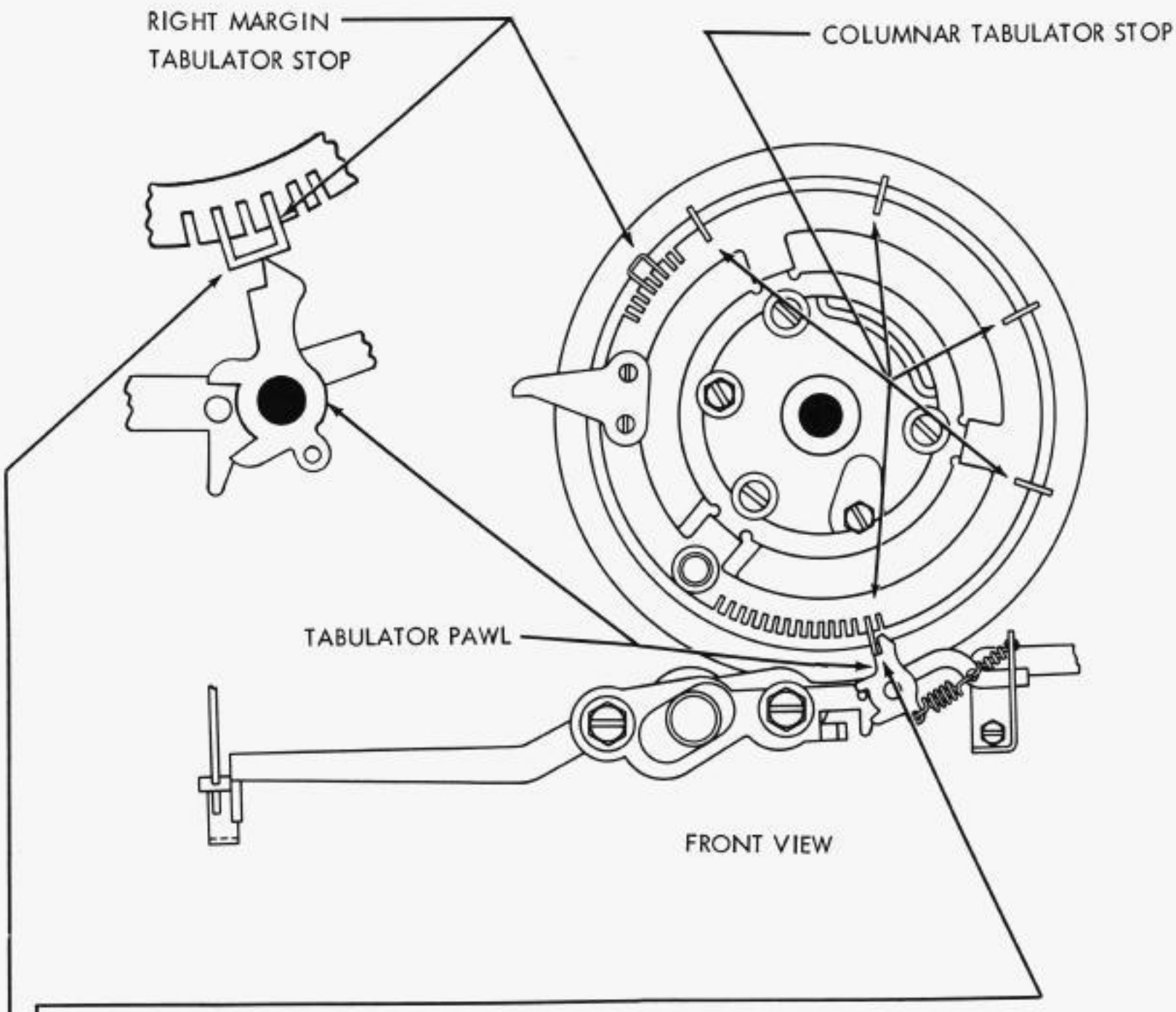
REPEAT PROCEDURE SET FORTH IN PARAGRAPH (1) ABOVE. TRIP SPACING CLUTCH AND ROTATE SHAFT UNTIL MIDDLE OF STOP LUG IS IN LINE WITH REAR SURFACE OF GEAR. IF BLOCKING LEVER TRIPPED TOO SOON, WITH LEFT MOUNTING SCREW LOOSENED, POSITION PAWL ADJUSTING PLATE TO LEFT UNTIL SLIDE ARM CAN BE BLOCKED. SLOWLY MOVE 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 BY ACCIDENT. 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 SLIDE ARM 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 MAX. 0.008

3.09 Horizontal Tabulator Mechanism (Cont.)



TABULATOR STOP SETTINGS

NOTE:
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: 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: 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.

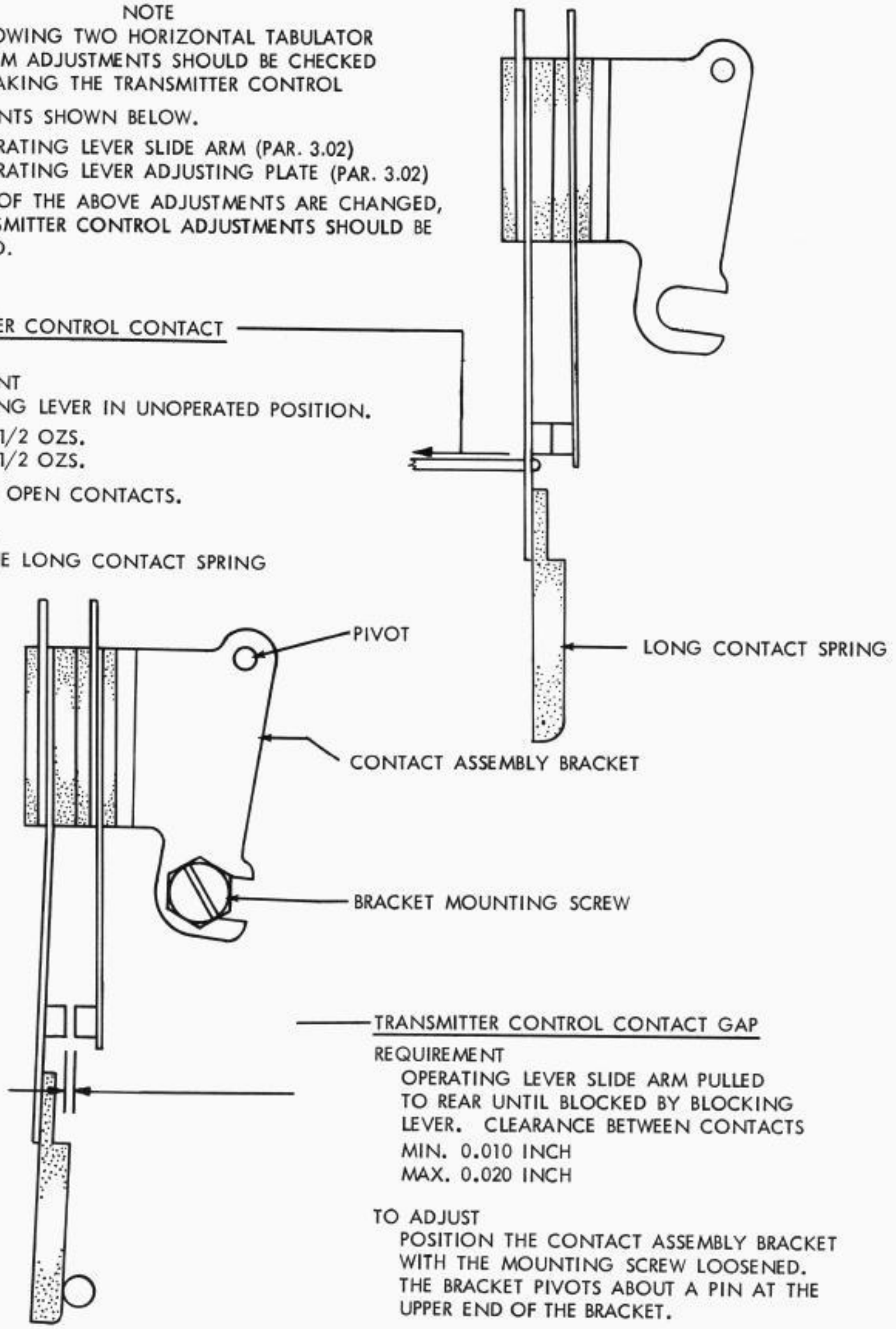
3.10 Horizontal Tabulator Mechanism (Cont.)

NOTE

THE FOLLOWING TWO HORIZONTAL TABULATOR MECHANISM ADJUSTMENTS SHOULD BE CHECKED BEFORE MAKING THE TRANSMITTER CONTROL ADJUSTMENTS SHOWN BELOW.

1. OPERATING LEVER SLIDE ARM (PAR. 3.02)
2. OPERATING LEVER ADJUSTING PLATE (PAR. 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 OZS.
MAX. 4-1/2 OZS.

TO JUST OPEN CONTACTS.

TO ADJUST

BEND THE LONG CONTACT SPRING

TRANSMITTER CONTROL CONTACT GAP

REQUIREMENT

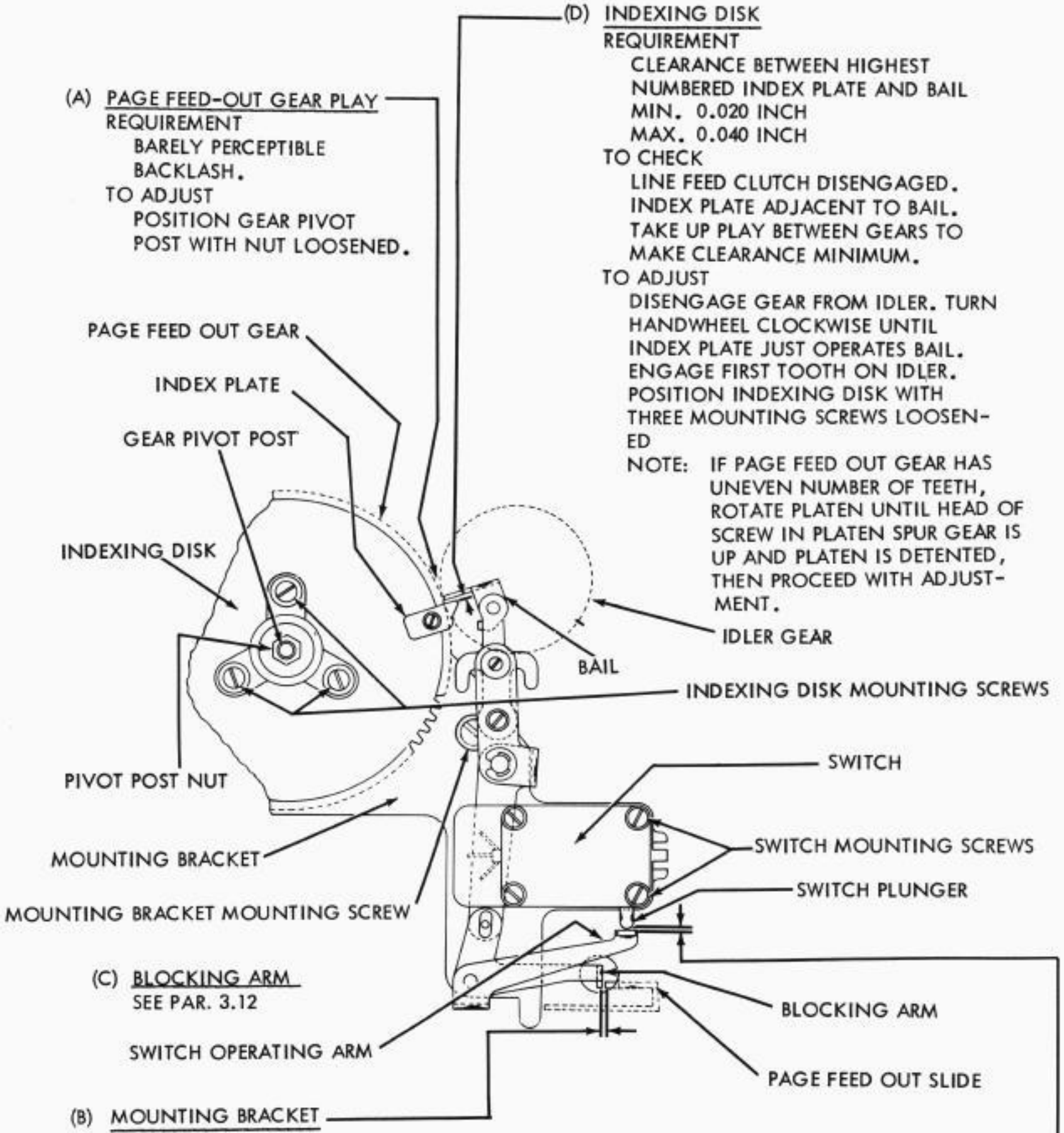
OPERATING LEVER SLIDE ARM PULLED TO REAR UNTIL BLOCKED BY BLOCKING LEVER. CLEARANCE BETWEEN CONTACTS

MIN. 0.010 INCH
MAX. 0.020 INCH

TO ADJUST

POSITION THE CONTACT ASSEMBLY BRACKET WITH THE MOUNTING SCREW LOOSENED. THE BRACKET PIVOTS ABOUT A PIN AT THE UPPER END OF THE BRACKET.

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.

(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.

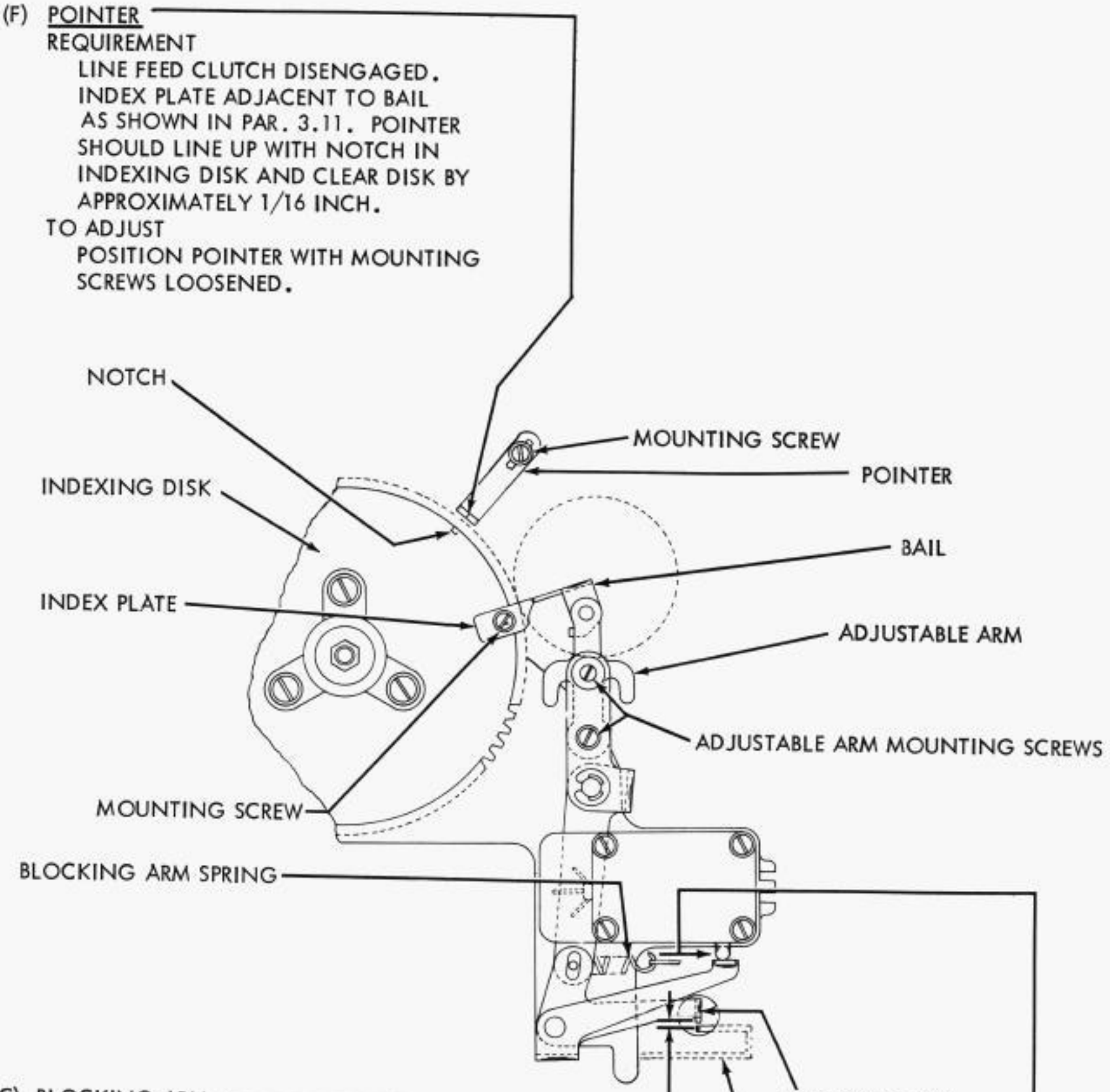
(C) BLOCKING ARM
SEE PAR. 3.12

(D) INDEXING DISK
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 DISK WITH THREE MOUNTING SCREWS LOOSENED
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.

(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.

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 DISK AND CLEAR DISK BY APPROXIMATELY 1/16 INCH.
TO ADJUST
POSITION POINTER WITH MOUNTING SCREWS LOOSENED.

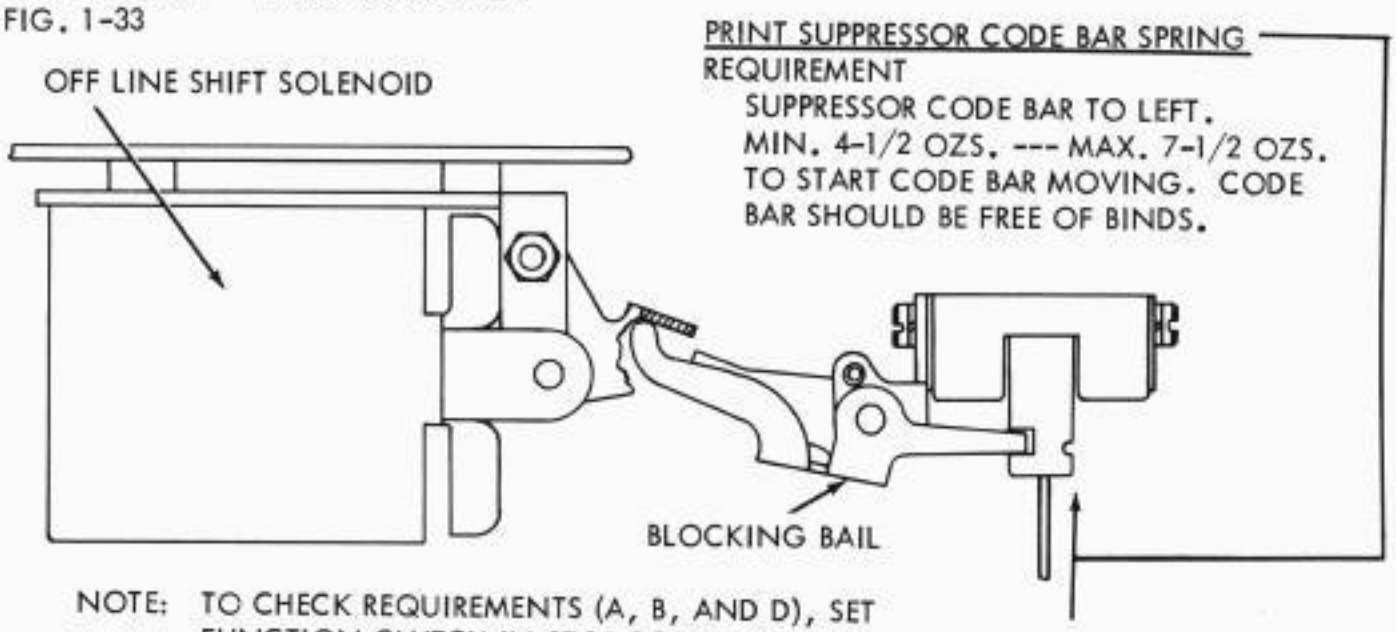


(C) BLOCKING ARM
REQUIREMENT
BAIL ON PEAK OF INDEX PLATE. CLEARANCE
MIN. 0.005 INCH
MAX. 0.045 INCH
TO ADJUST
POSITION ADJUSTABLE ARM WITH MOUNTING SCREWS LOOSENED.
NOTE
IF REQUIREMENT CANNOT BE MET FOR EACH PLATE, REPOSITION PLATE WITH MOUNTING SCREW LOOSENED.

(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

TYPE BOX CLUTCH TRIP LEVER
(SELECTIVE - CALLING UNITS WITH OR WITHOUT OFF-LINE SHIFT SOLENOID)
CLEARANCE BETWEEN TYPE BOX CLUTCH TRIP LEVER AND CLUTCH DISK STOP LUG SHOULD BE MIN. 0.040 INCH --- MAX. 0.055 INCH
SEE FIG. 1-33



NOTE: TO CHECK REQUIREMENTS (A, B, AND D), SET FUNCTION CLUTCH IN STOP POSITION AND ALL CODE BARS TO THE RIGHT.

(A) CODE BAR SHIFT MECHANISM
REQUIREMENTS
1. WITH FUNCTION CLUTCH IN STOP POSITION, LATCH FUNCTION LEVER (SHIFT MECH.) ON ITS LOWER RELEASING LATCH. NOTCH IN SUPP. CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.

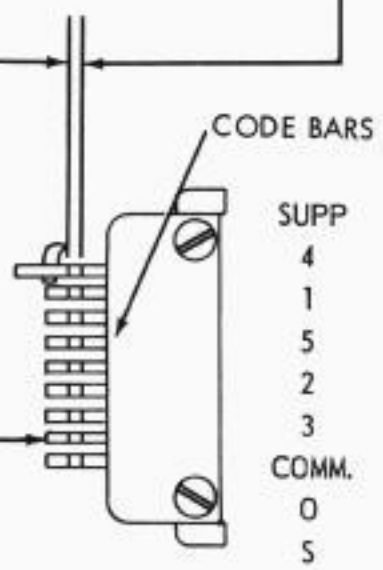
TO ADJUST
POSITION UPPER OR LOWER GUIDE PLATE (PAR. 2.30) WITH ITS CLAMP NUTS LOOSENED.

2. REPEAT FOR EACH STUNT CASE CODE BAR SHIFT MECHANISM.

NOTE --- POSITION THE ASSOCIATED GUIDE PLATE 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 CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.

TO ADJUST
POSITION THE SOLENOID BRACKET ASSEMBLY WITH ITS MOUNTING SCREWS LOOSENED.



(C) TYPE BOX CLUTCH SUPPRESSION ARM
SEE PAR. 3.14

(B) CONDITION CODE (ZERO) CODE BAR SHIFT MECHANISM
REQUIREMENT
WITH FUNCTION CLUTCH IN STOP POSITION, LATCH FUNCTION LEVER (SHIFT MECH.). THE NOTCH IN CONDITION CODE (ZERO) CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.

TO ADJUST
POSITION THE UPPER OR LOWER GUIDE PLATE (PAR. 2.30) WITH ITS CLAMP NUTS LOOSENED.

NOTE --- POSITION THE ASSOCIATED GUIDE PLATE SO THAT THE MOVEMENT OF THE FORK IS NOT RESTRICTED.

3.14 Selective Calling Mechanism (Cont.)

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

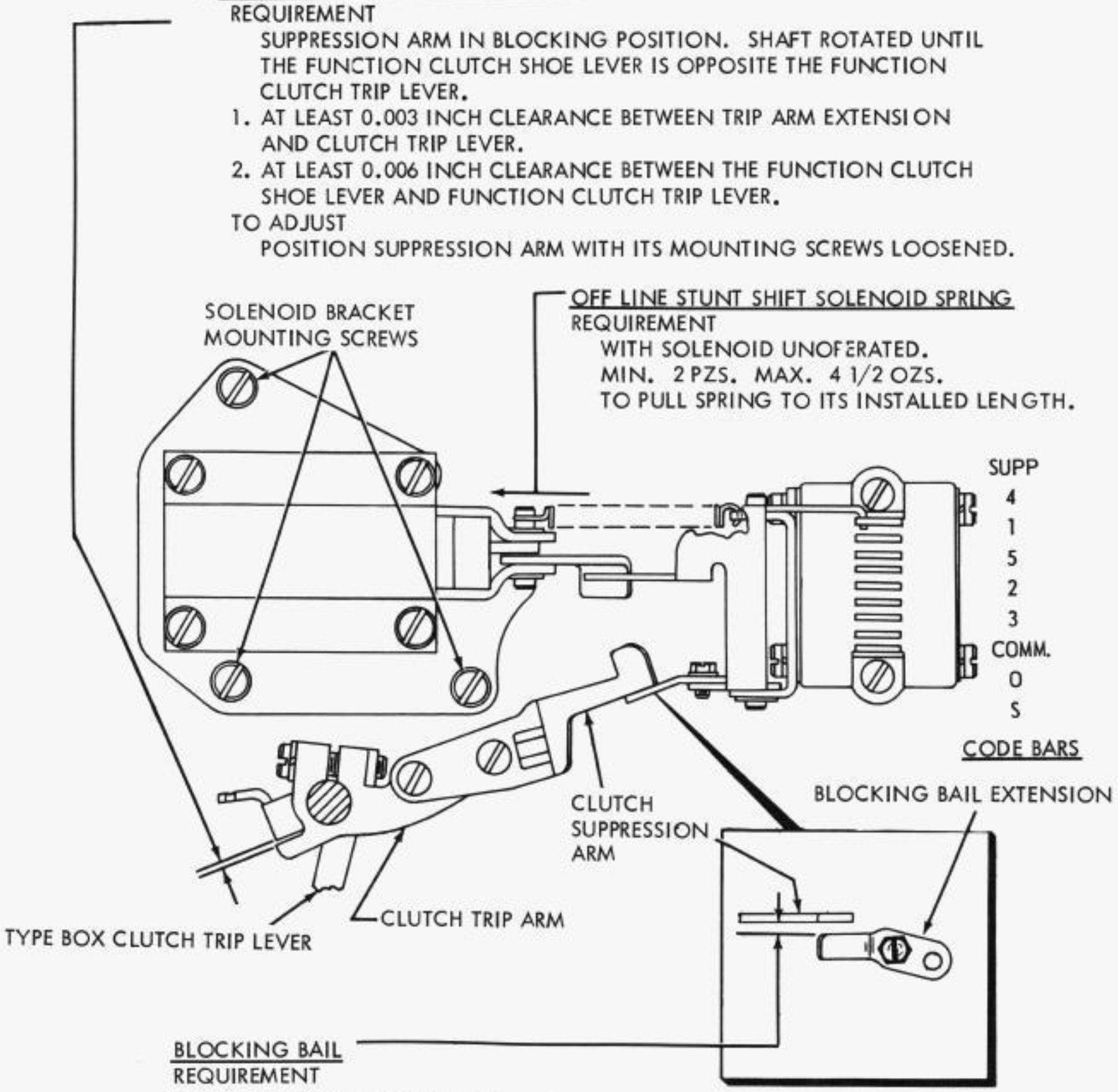
REQUIREMENT

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.



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.

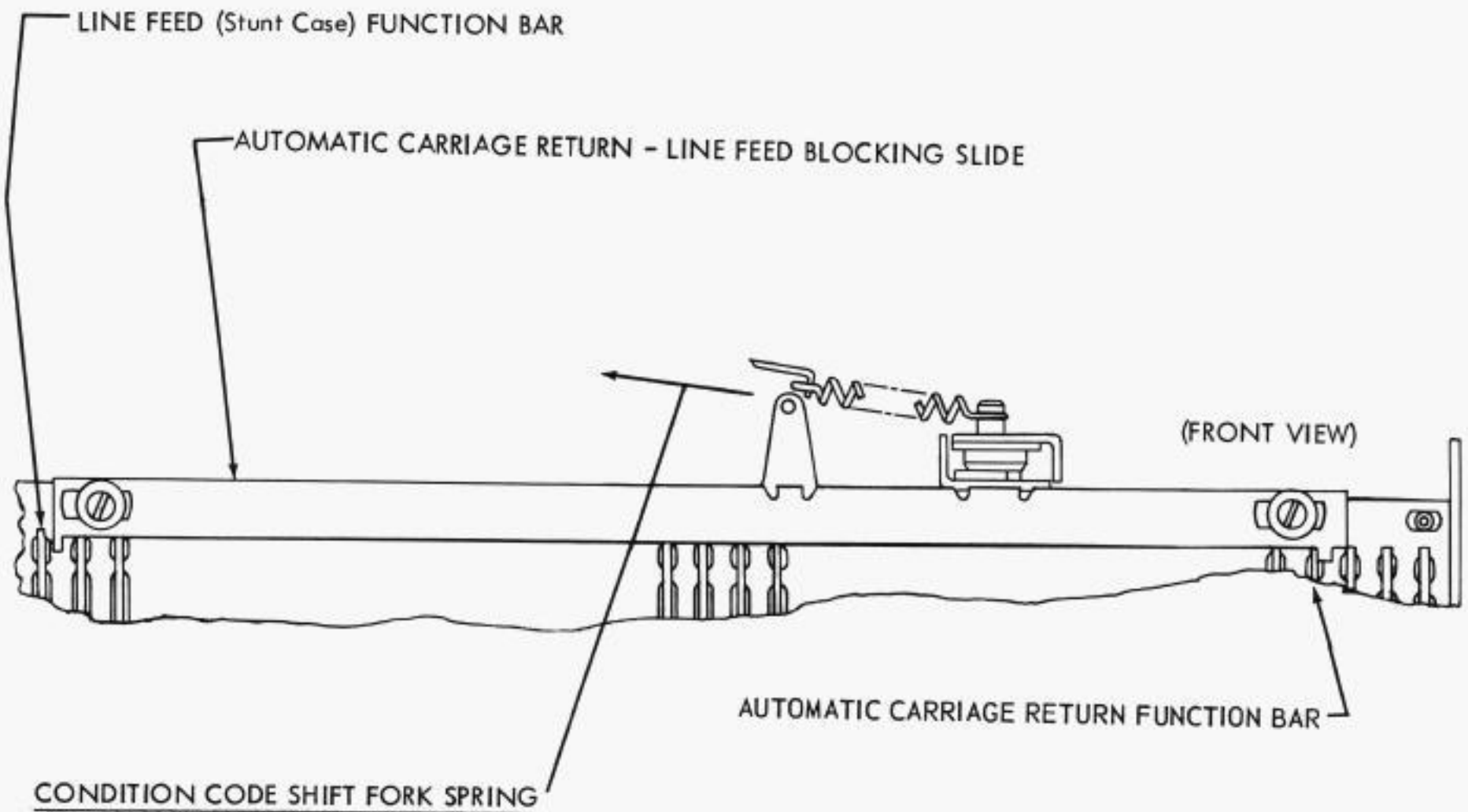
   MIN. 0.008 INCH ——————————— MAX. 0.055 INCH

TO ADJUST

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

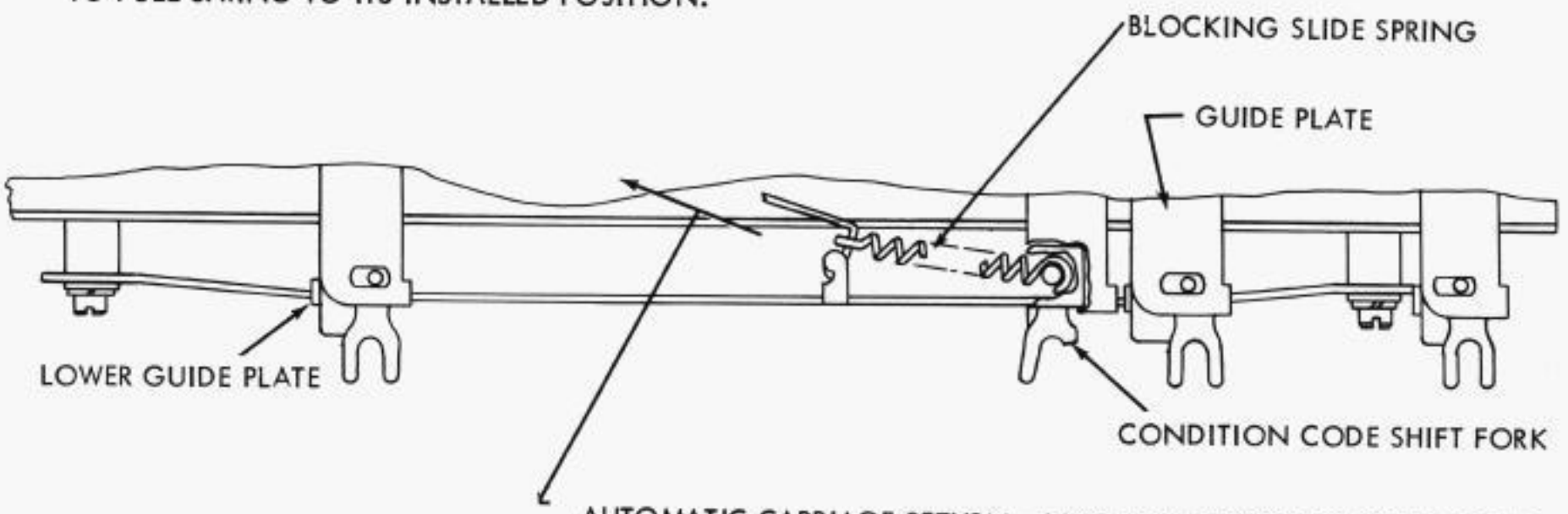
2. REFINE THE STUNT CASE CODE BAR SHIFT MECHANISM ADJUSTMENT OF ANY SHIFT MECHANISM THAT DOES NOT MEET THE ABOVE REQUIREMENT.

3.15 Selective Calling Mechanism (Cont.)



REQUIREMENT

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



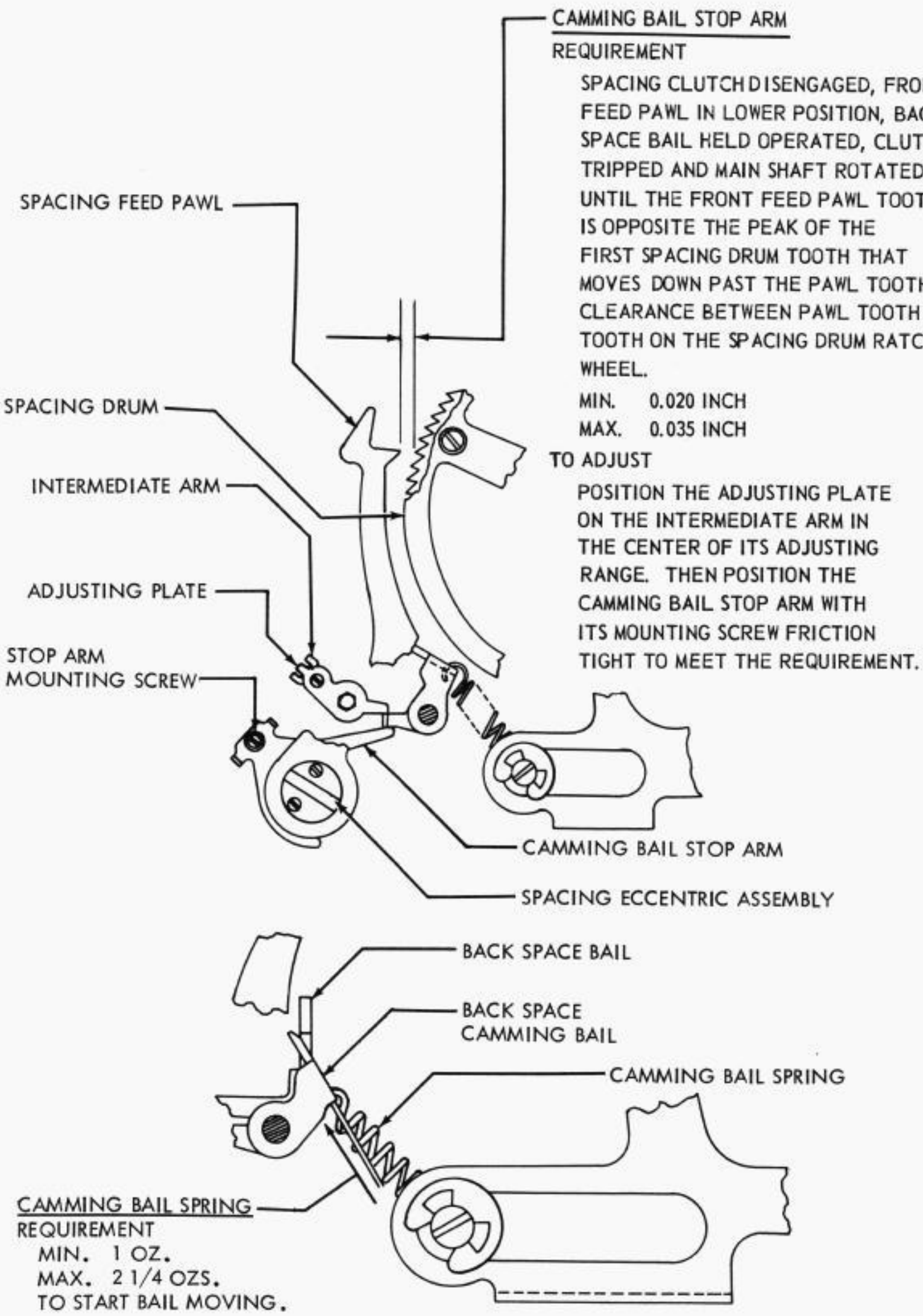
(TOP VIEW)

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 LENGTH.

3.16 Local Back Space Mechanism



CAMMING BAIL STOP ARM

REQUIREMENT

SPACING CLUTCH DISENGAGED, FRONT FEED PAWL IN LOWER POSITION, BACK SPACE BAIL HELD OPERATED, CLUTCH TRIPPED AND MAIN SHAFT ROTATED UNTIL THE FRONT FEED PAWL TOOTH IS OPPOSITE THE PEAK OF THE FIRST SPACING DRUM TOOTH THAT MOVES DOWN PAST THE PAWL TOOTH. CLEARANCE BETWEEN PAWL TOOTH AND THE TOOTH ON THE SPACING DRUM RATCHET WHEEL.

MIN. 0.020 INCH
MAX. 0.035 INCH

TO ADJUST

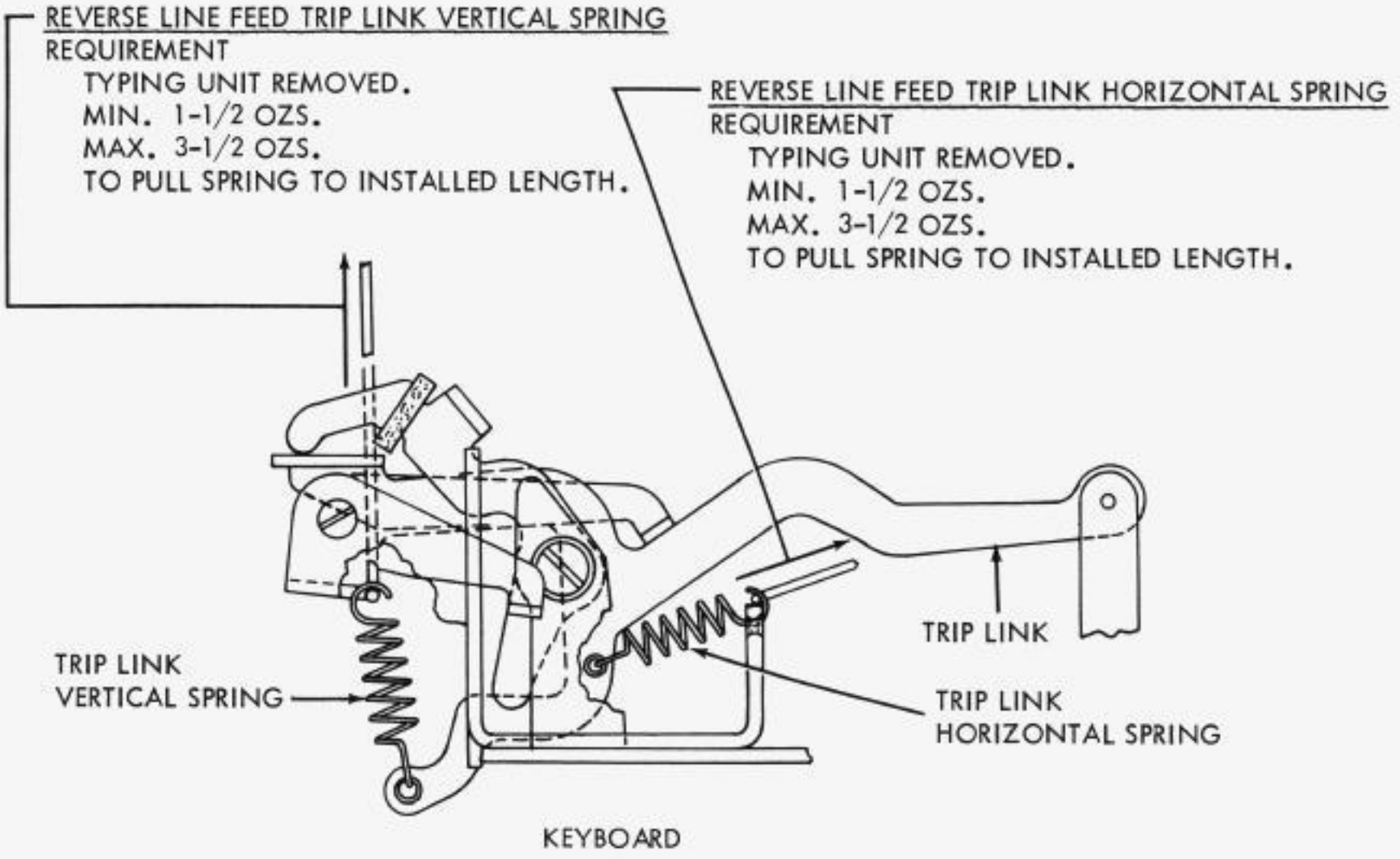
POSITION THE ADJUSTING PLATE ON THE INTERMEDIATE ARM IN THE CENTER OF ITS ADJUSTING RANGE. THEN POSITION THE CAMMING BAIL STOP ARM WITH ITS MOUNTING SCREW FRICTION TIGHT TO MEET THE REQUIREMENT.

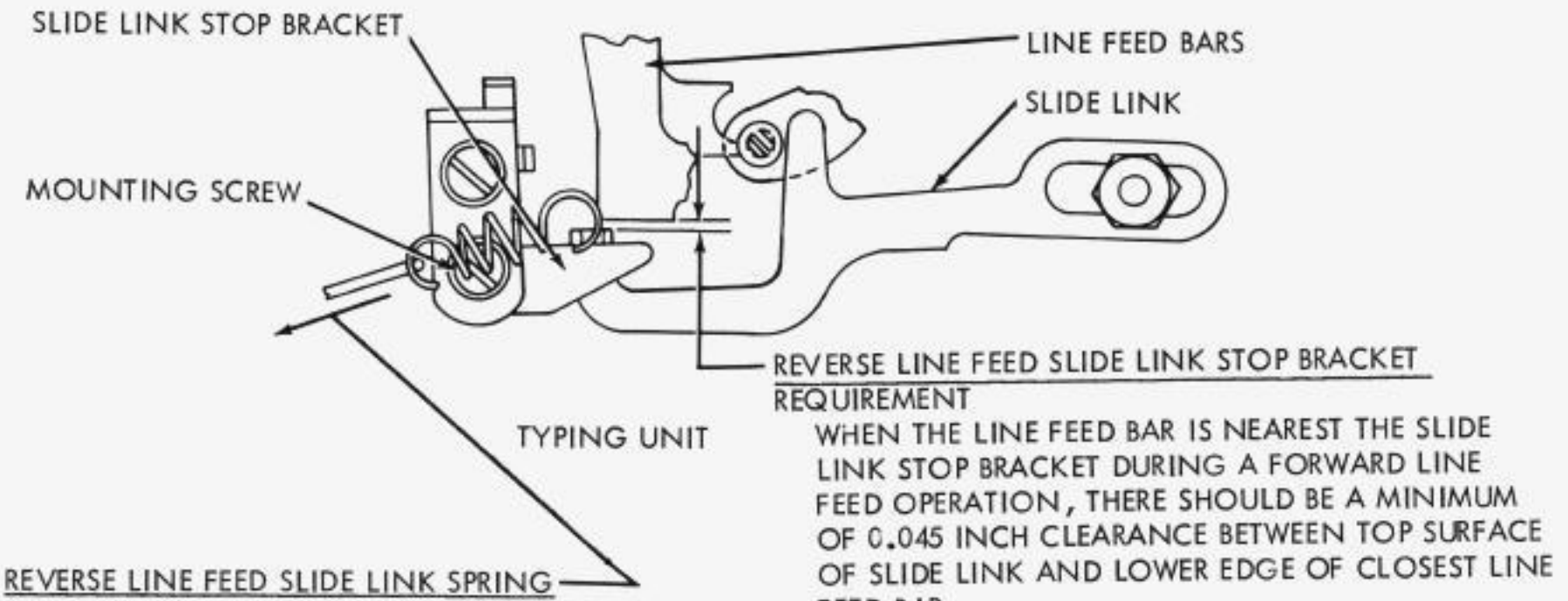
CAMMING BAIL SPRING

REQUIREMENT

MIN. 1 OZ.
MAX. 2 1/4 OZS.
TO START BAIL MOVING.

3.17 Reverse Line Feed Mechanism





3.18 Reverse Line Feed Mechanism (Cont.)

LINE FEED CLUTCH SPUR GEAR

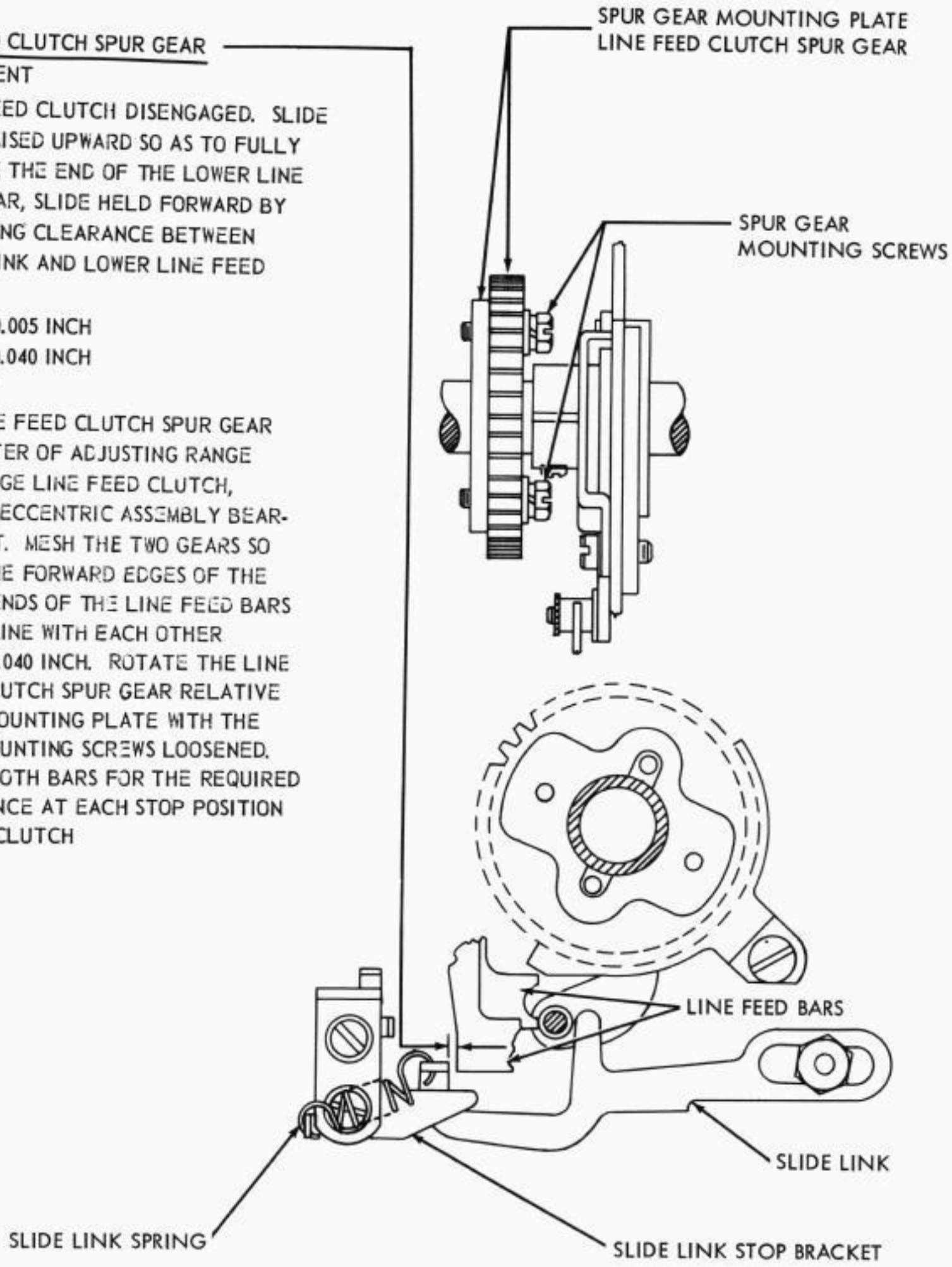
REQUIREMENT

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.

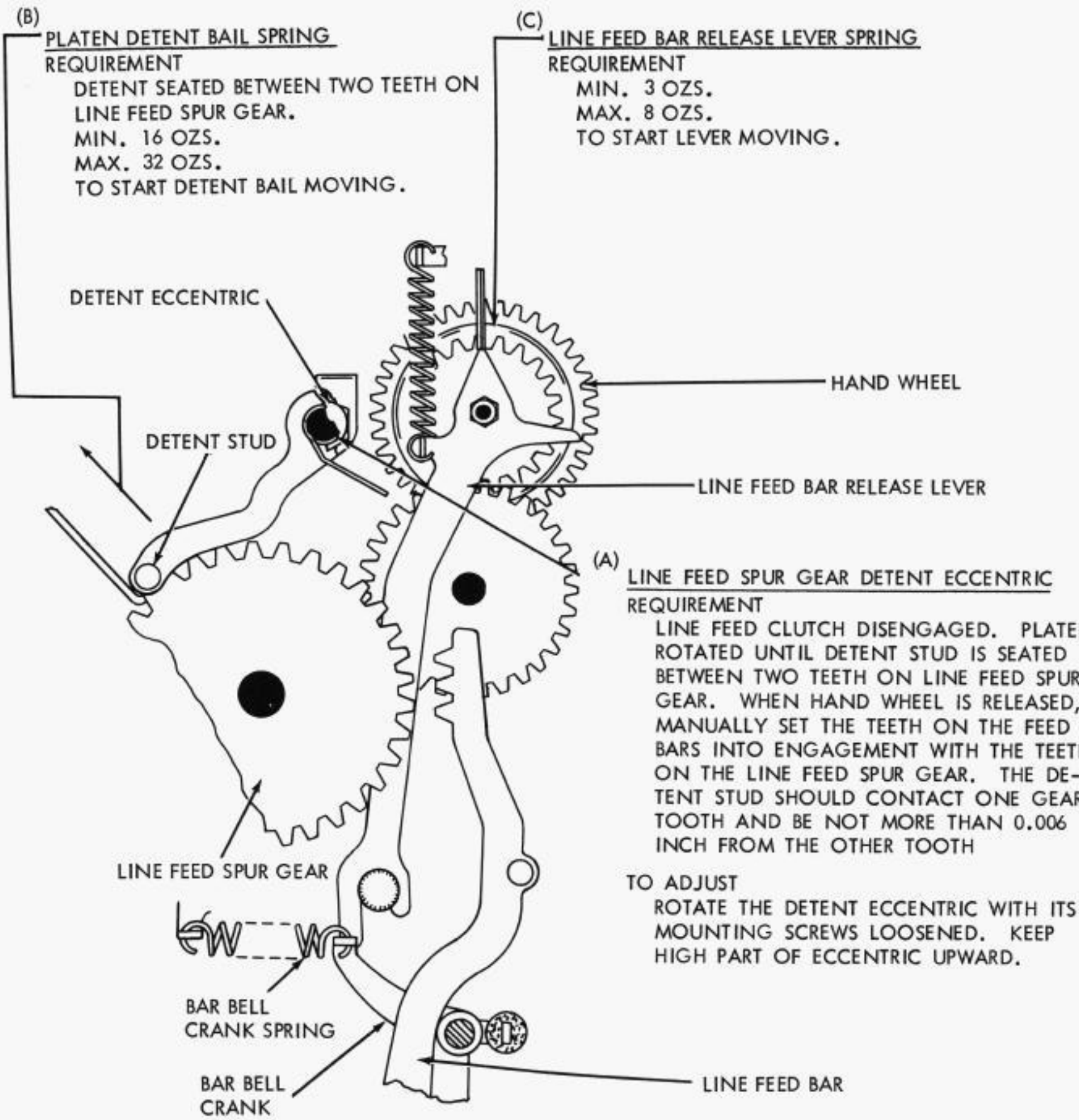
MIN. 0.005 INCH
MAX. 0.040 INCH

TO ADJUST

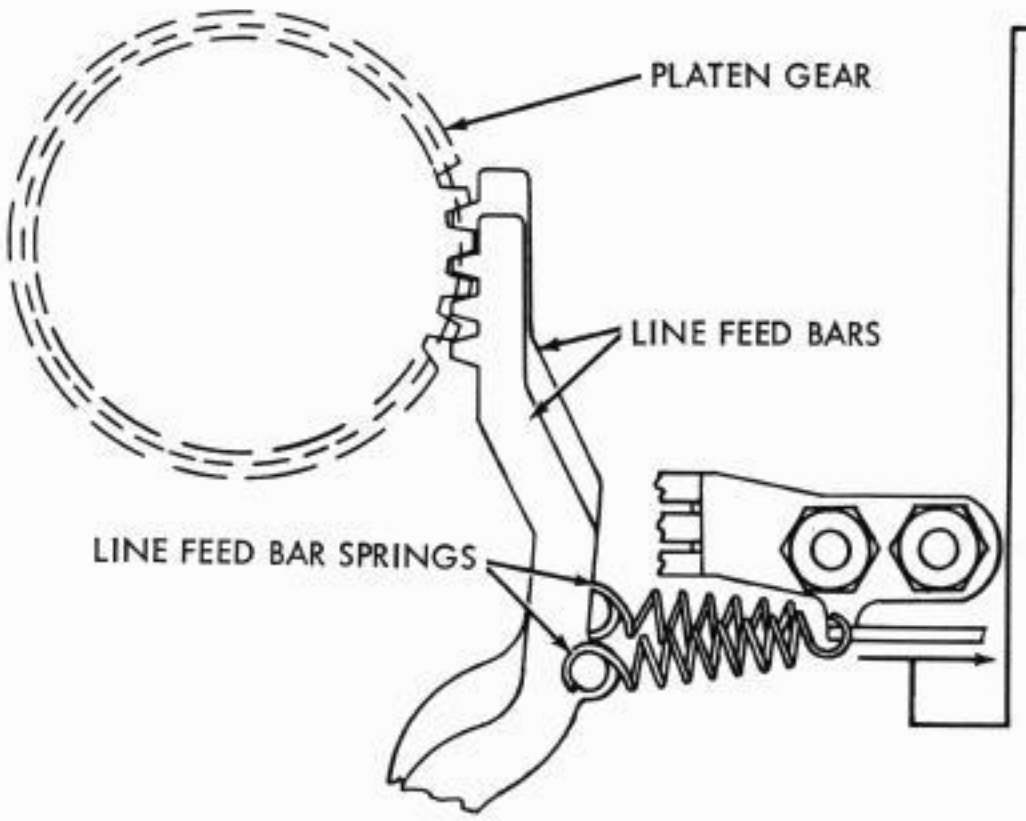
SET LINE FEED CLUTCH SPUR GEAR AT CENTER OF ADJUSTING RANGE DISENGAGE LINE FEED CLUTCH, LOOSEN ECCENTRIC ASSEMBLY BEARING POST. MESH THE TWO GEARS SO THAT THE FORWARD EDGES OF THE LOWER ENDS OF THE LINE FEED BARS ARE IN LINE WITH EACH OTHER WITHIN 0.040 INCH. ROTATE THE LINE FEED CLUTCH SPUR GEAR RELATIVE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



3.19 Reverse Line Feed Mechanism (Cont.)



3.20 Reverse Line Feed Mechanism (Cont.)



LINE FEED BAR SPRINGS

REQUIREMENT

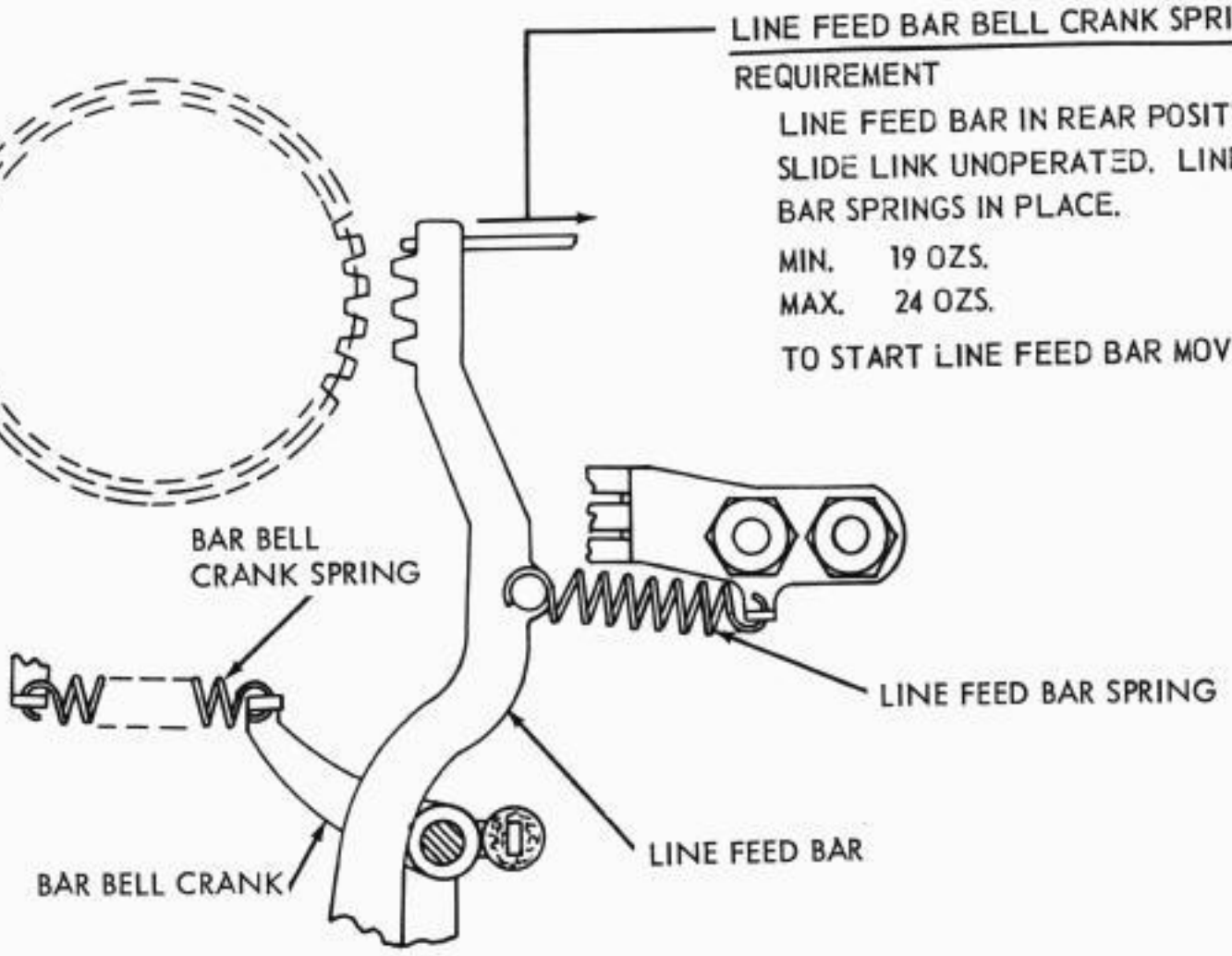
LINE FEED BAR ENGAGED WITH PLATEN GEAR.

MIN. 2 1/2 OZS.

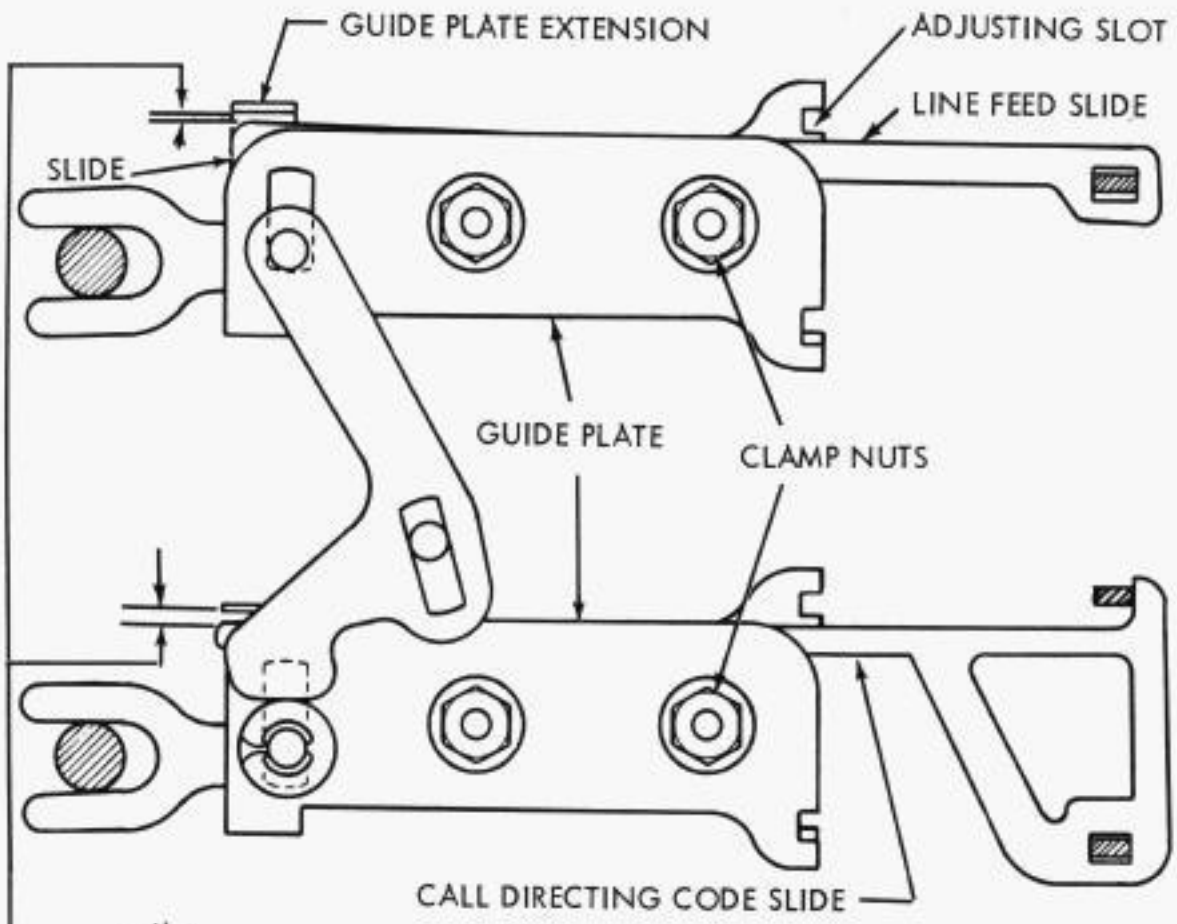
MAX. 5 OZS.

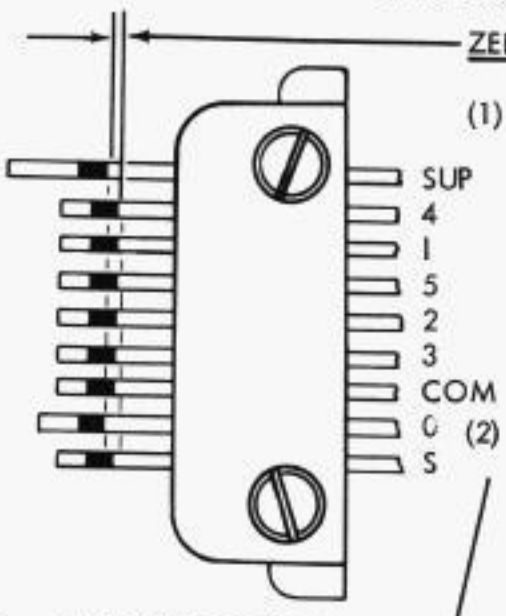
TO PULL EACH SPRING TO INSTALLED LENGTH.

3.21 Reverse Line Feed Mechanism (Cont.)



3.22 Print Suppression Mechanism





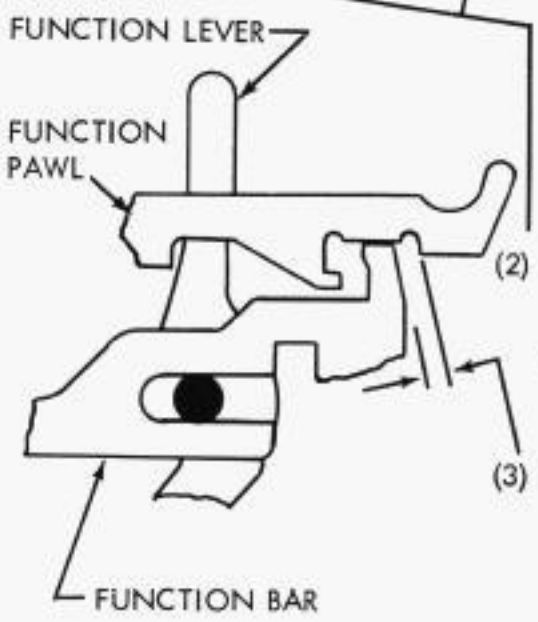
ZERO CODE BAR SHIFT MECHANISM

(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.

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

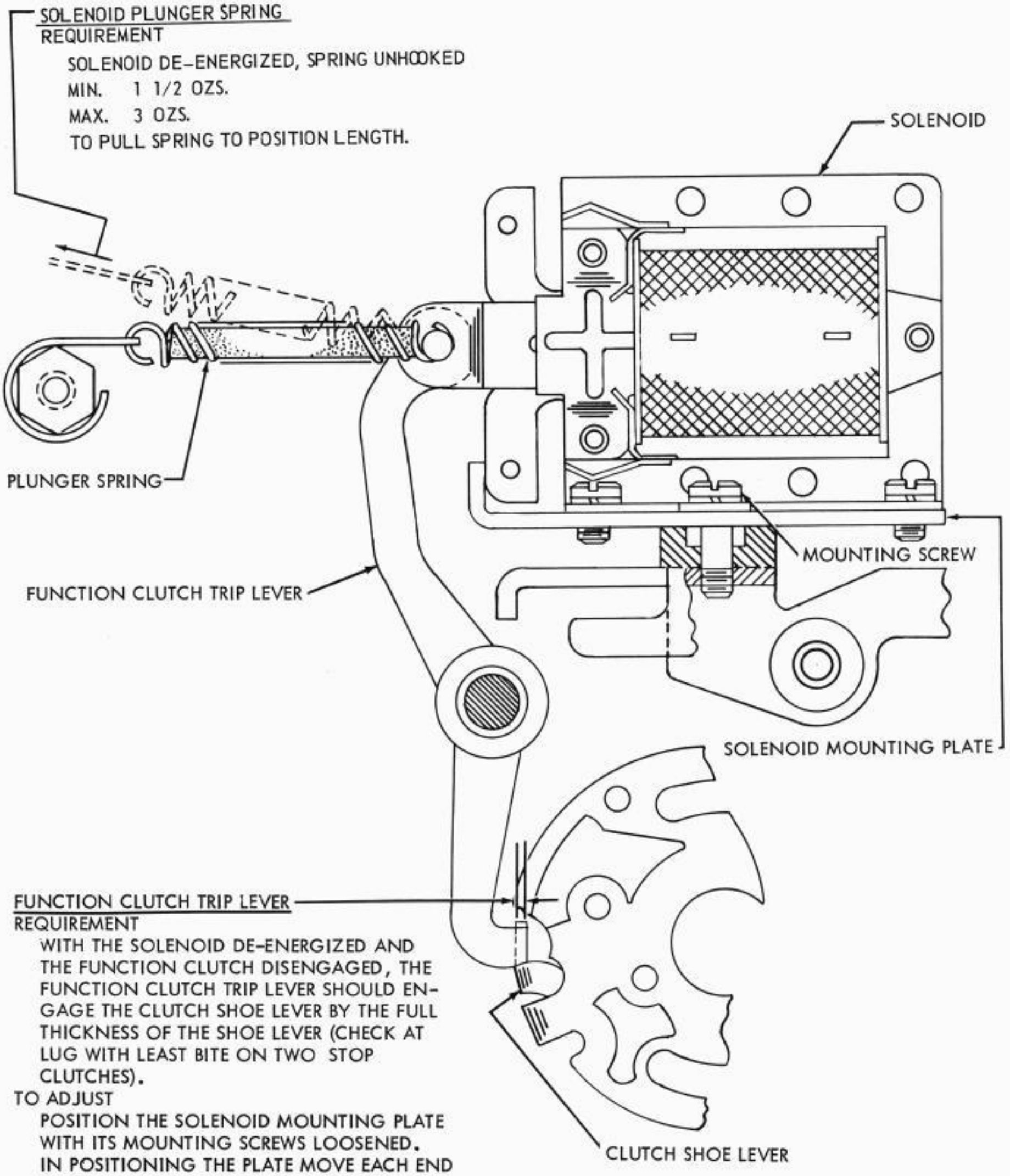
(2) REQUIREMENT
MAX. 0.002 INCH
CLEARANCE BETWEEN GUIDE PLATE EXTENSION AND SLIDE.

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

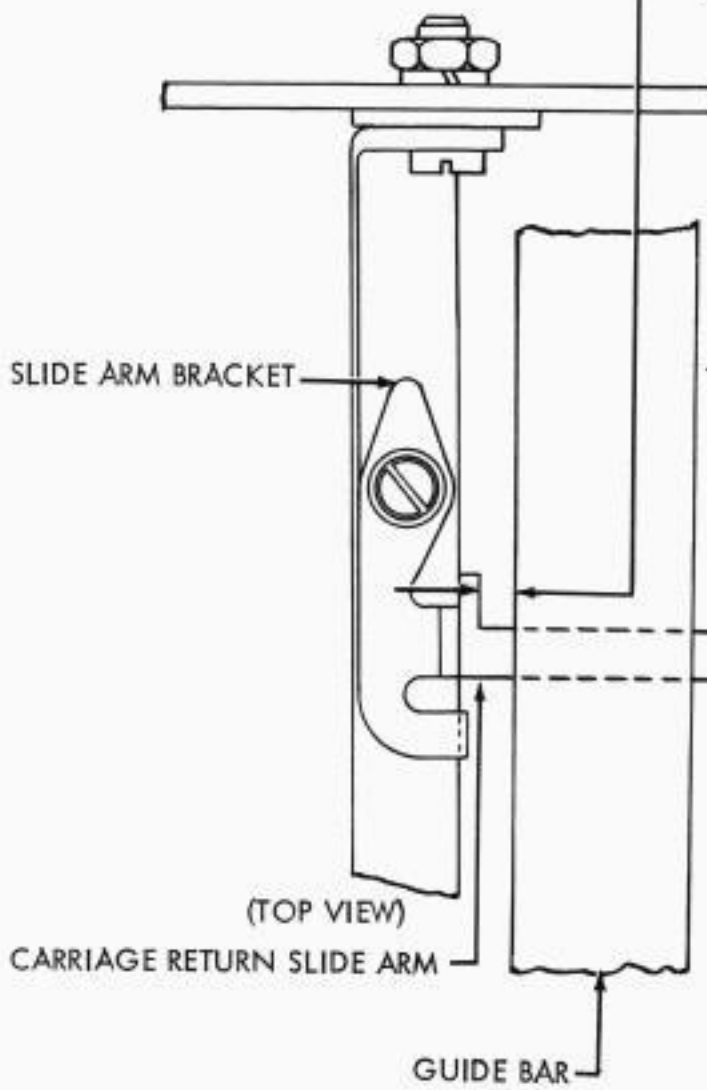
(3) REQUIREMENT
THERE SHOULD BE SOME CLEARANCE BETWEEN THE REAR END OF THE FUNCTION BAR AND THE FACE OF THE NOTCH ON THE FUNCTION PAWL WHEN THE LINE FEED FUNCTION PAWL AND CALL DIRECTING FUNCTION PAWL ARE ALTERNATELY HOOKED OVER THEIR RESPECTIVE FUNCTION BAR.

REFINE THE TWO ADJUSTMENTS ABOVE IF NECESSARY.

3.23 Continuous Spacing Mechanism



3.24 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. 2.38 AND USE THE FOLLOWING PROCEDURE.

CARRIAGE RETURN LEVER

REQUIREMENT

CLEARANCE BETWEEN CARRIAGE RETURN LATCH BAIL AND CARRIAGE RETURN LEVER (PAR. 2.38) 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 RESTS AGAINST CARRIAGE RETURN LEVER EXTENSION.

TO ADJUST

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

RESET BAIL OPERATING SPRING

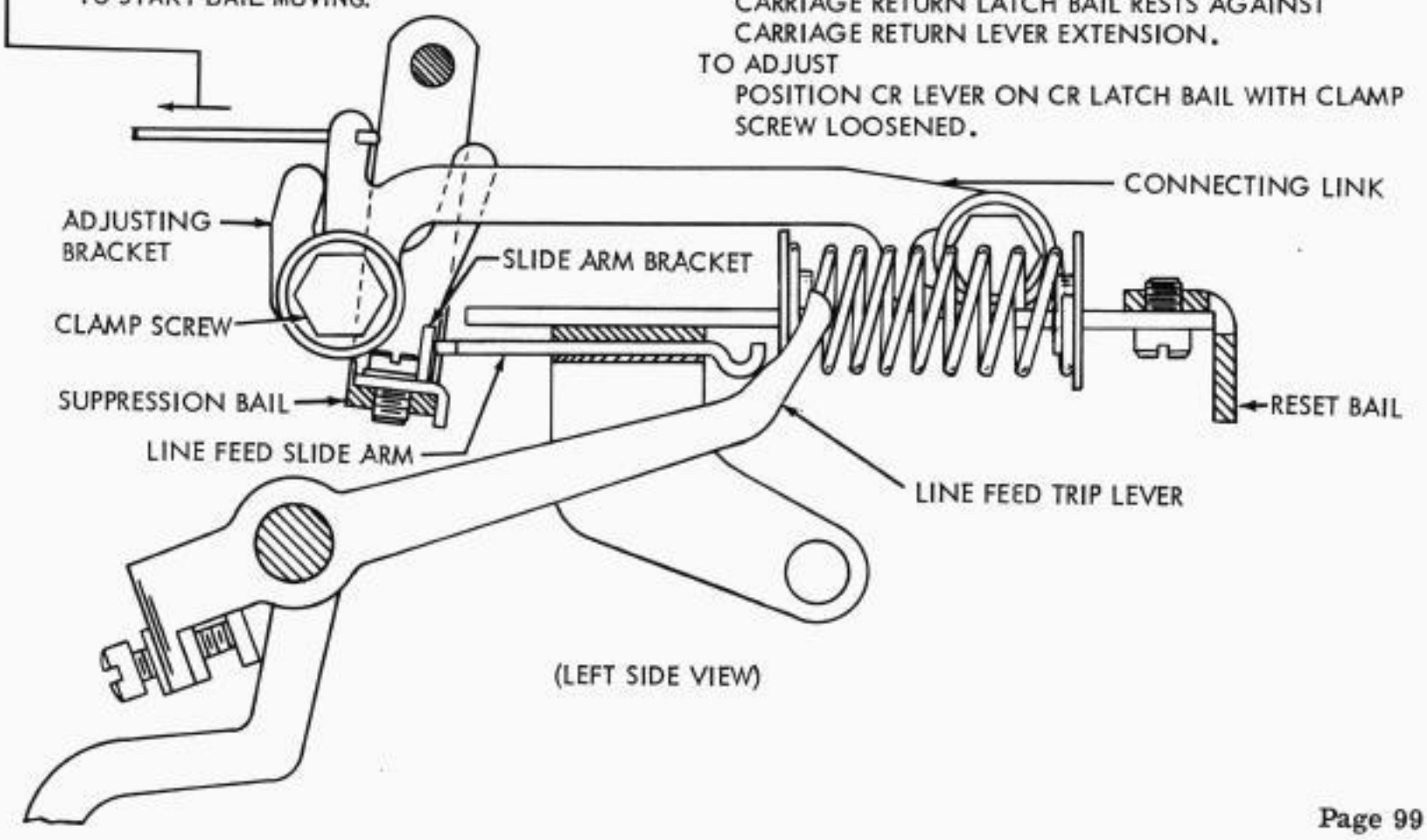
REQUIREMENT

FUNCTION RESET BAIL IN FORWARD POSITION

MIN. 2 1/4 LBS.

MAX. 3 1/2 LBS.

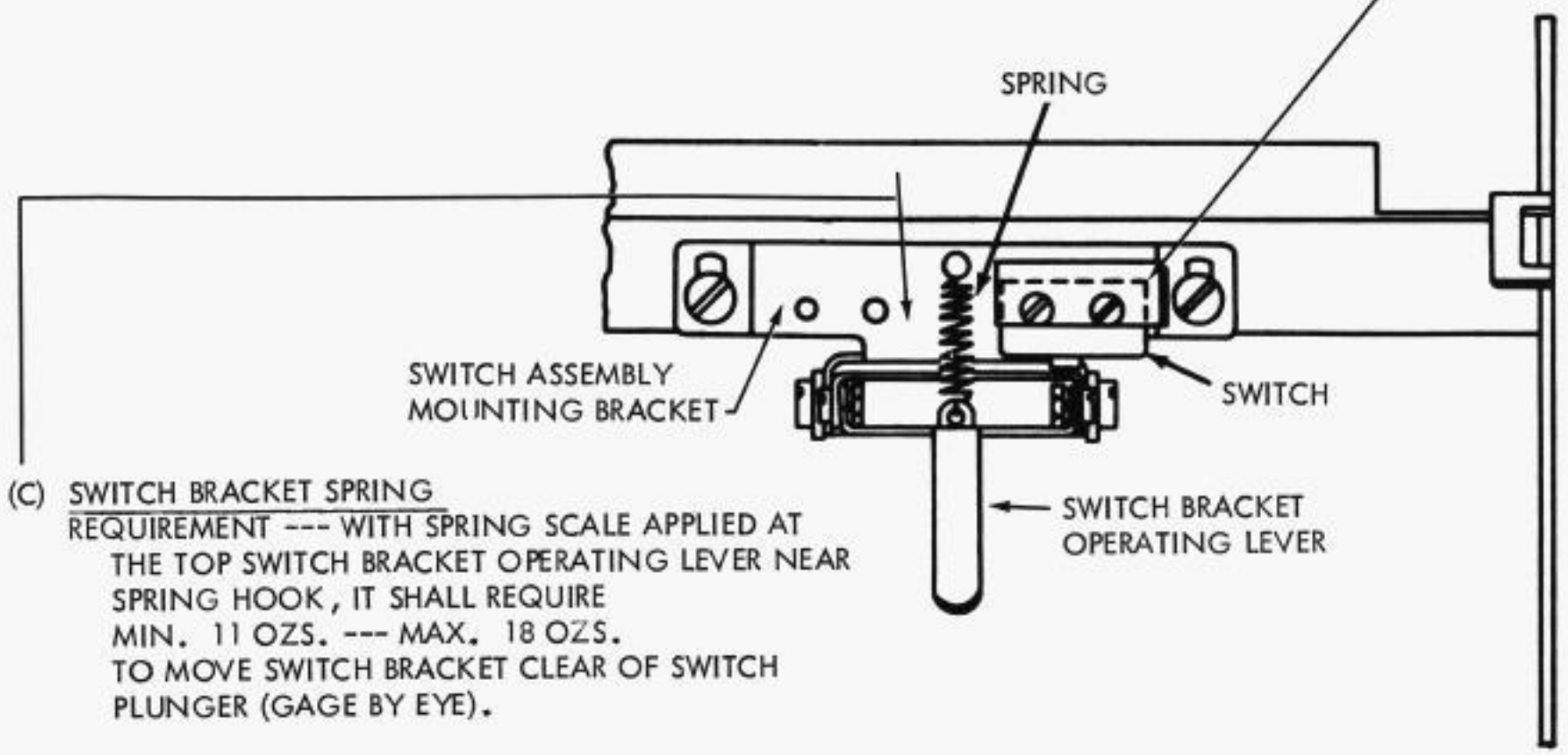
TO START BAIL MOVING.



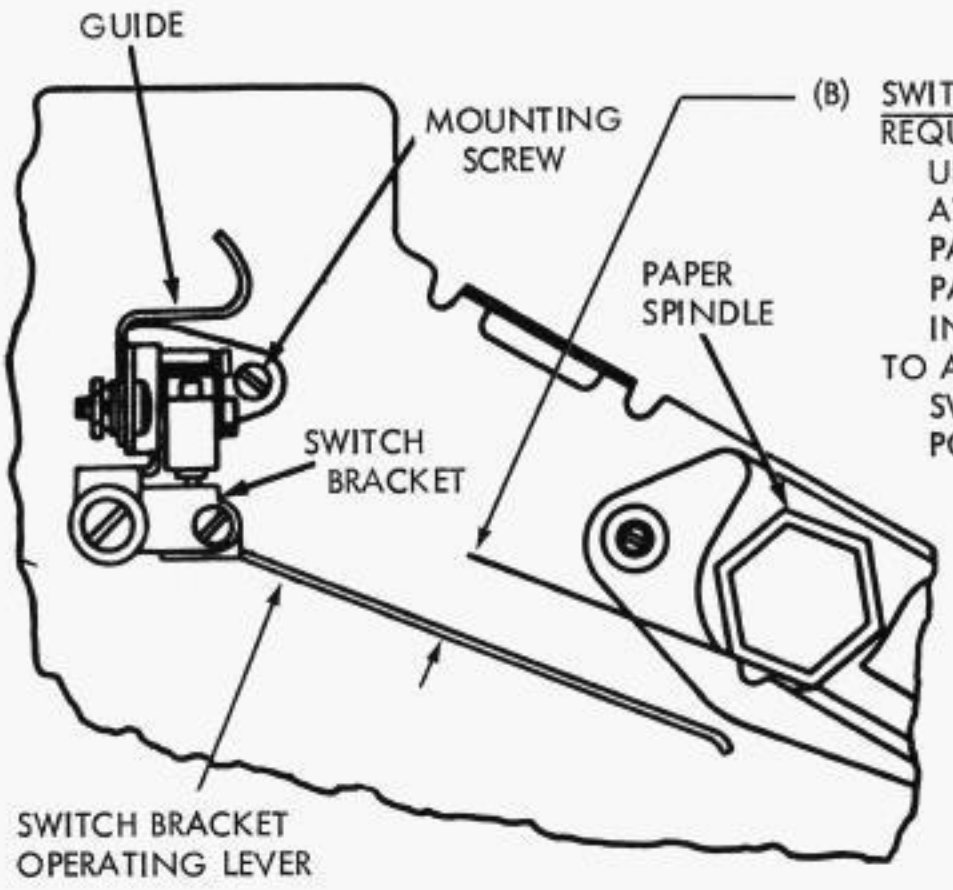
3.25 Paper-Out Alarm Mechanism

FOR EARLY DESIGN
SEE PARAGRAPH 4.27

(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.



(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 (GAGE BY EYE).



(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.

3.26 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.

NOTE: GEARS SHOULD MESH ACCURATELY WHEN CHECKED AT 3 EQUAL DISTANCES AROUND CIRCUMFERENCE OF GEAR.

(D) BLOCKING LEVER

SEE PAR. 3.26

(E) INDEXING DISK

REQUIREMENT

CLEARANCE BETWEEN INDEX PLATE AND PAWL SHOULD BE

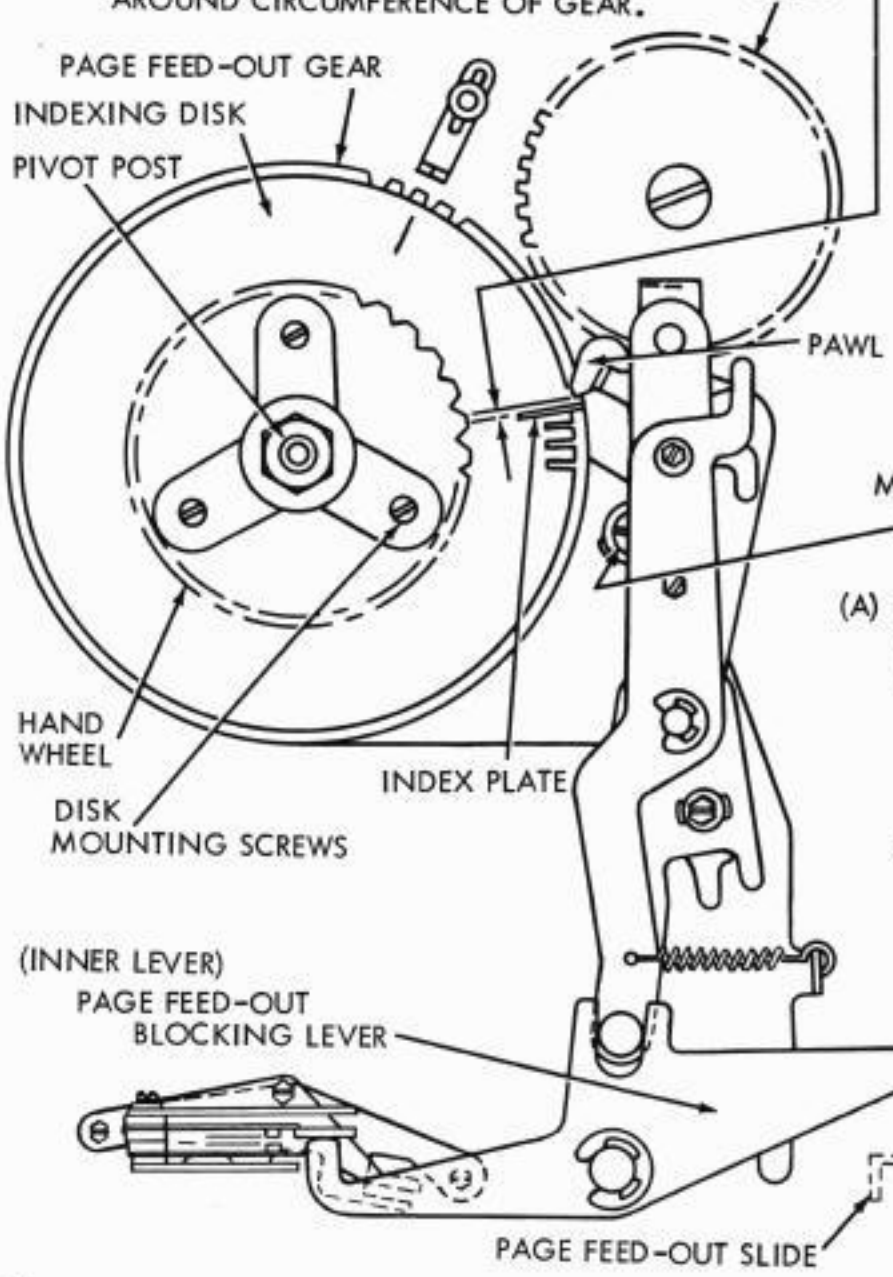
MIN. 0.020 INCH --- MAX. 0.040 INCH

TO CHECK

LINE FEED CLUTCH DISENGAGED. INDEX PLATE ADJACENT TO PAWL. SLACK IN GEARS TAKEN UP TO MAKE GAP A MAXIMUM.

TO ADJUST

PULL FEED-OUT GEAR OUT OF ENGAGEMENT WITH IDLER GEAR. TURN FEED-OUT GEAR HAND WHEEL CLOCKWISE UNTIL INDEX PLATE JUST OPERATES THE PAWL, THEN ENGAGE FIRST TOOTH ON IDLER. POSITION INDEXING DISK WITH THREE MOUNTING SCREWS LOOSENED.



(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

TO ADJUST

POSITION RETAINER FORWARD AND LOCATE IT UP OR DOWN WITH MOUNTING SCREWS LOOSENED.

(B) MOUNTING BRACKET

REQUIREMENT

1. CLEARANCE BETWEEN FEED-OUT BLOCKING LEVER (INNER LEVER) AND FEED-OUT SLIDE
   MIN. 0.002 INCH --- MAX. 0.015 INCH

TO CHECK

SELECT UPPER CASE "Z" 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. CLEARANCE BETWEEN VERTICAL TAB SLIDE AND VERTICAL TAB BLOCKING LEVER (OUTER LEVER)
   MIN. 0.002 INCH

TO CHECK

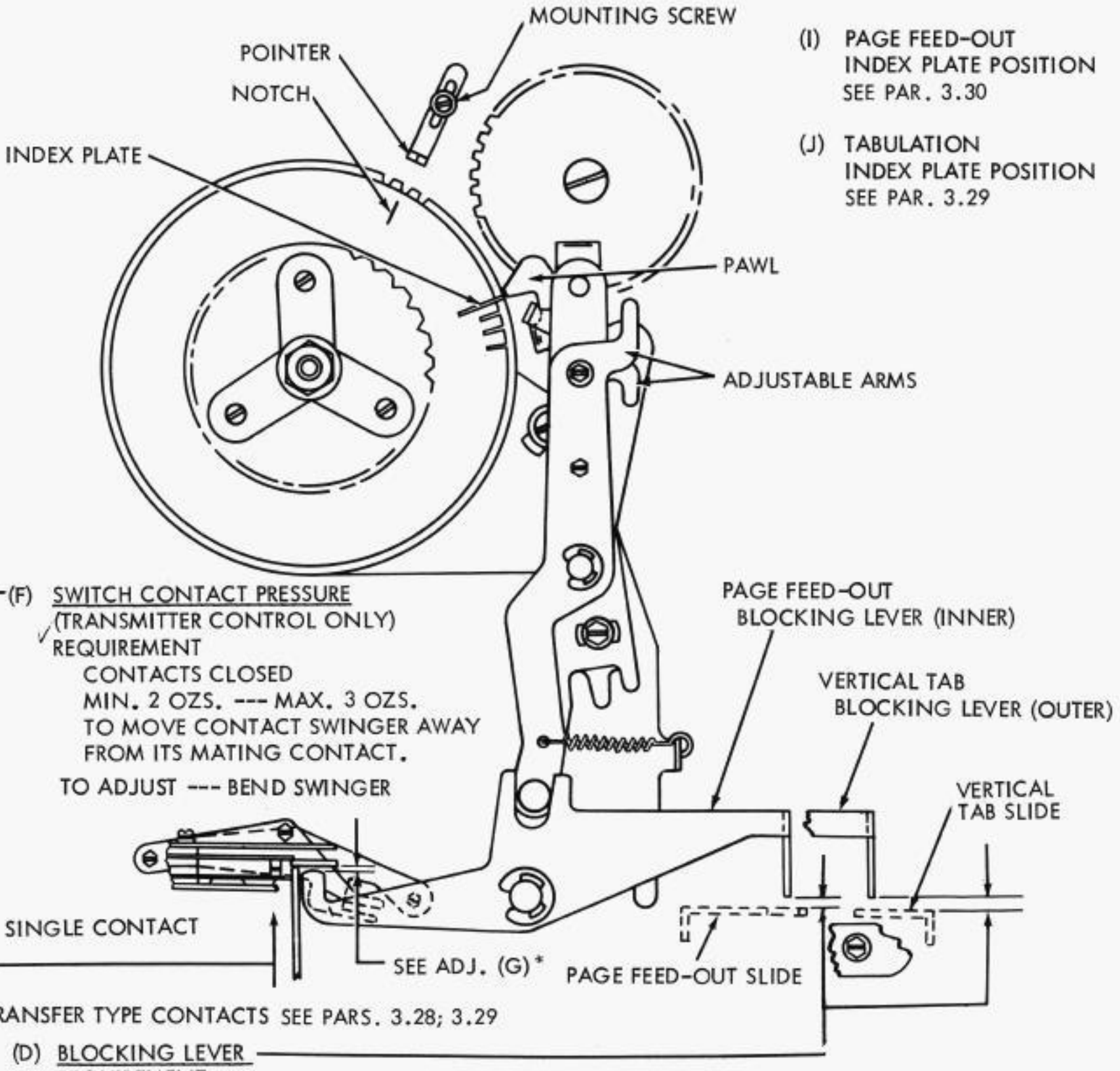
SELECT UPPER CASE "J" AND ROTATE MAIN SHAFT UNTIL VERTICAL TAB SLIDE IS IN ITS MOST FORWARD POSITION. TAKE UP PLAY IN VERTICAL TAB BLOCKING LEVER TO MAKE CLEARANCE A MINIMUM.

TO ADJUST

POSITION LOWER PORTION OF MOUNTING BRACKET WITH MOUNTING SCREWS LOOSENED.

3.27 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 DISK AND CLEAR ANY INDEX PLATE BY APPROXIMATELY 1/16 INCH.
TO ADJUST
POSITION POINTER ON SIDE FRAME WITH ITS MOUNTING SCREW LOOSENED.



(I) PAGE FEED-OUT INDEX PLATE POSITION
SEE PAR. 3.30

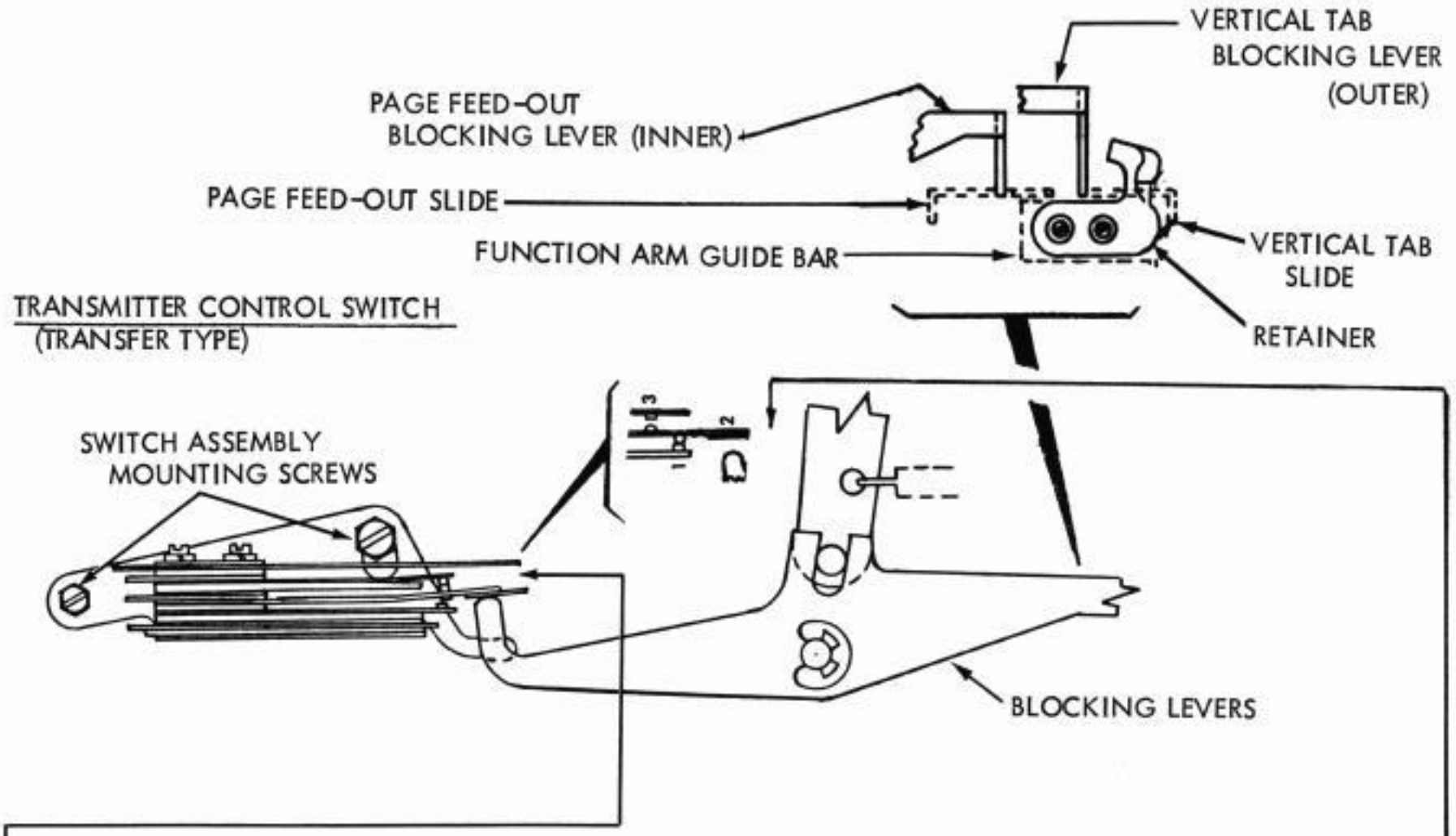
(J) TABULATION INDEX PLATE POSITION
SEE PAR. 3.29

(F) SWITCH CONTACT PRESSURE
(TRANSMITTER CONTROL ONLY)
REQUIREMENT
CONTACTS CLOSED
MIN. 2 OZS. --- MAX. 3 OZS.
TO MOVE CONTACT SWINGER AWAY FROM ITS MATING CONTACT.
TO ADJUST --- BEND SWINGER

*TRANSFER TYPE CONTACTS SEE PARS. 3.28; 3.29

(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. MAKE ADJUSTMENT FOR EACH BLOCKING LEVER.

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



TRANSMITTER CONTROL SWITCH (TRANSMITTER CONTROL ONLY)

REQUIREMENTS --- FOR TRANSFER TYPE CONTACTS

1. 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 MAINSHAFT 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.

2. 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 IT STIFFENER AS THE UPPER CONTACT CLOSES.

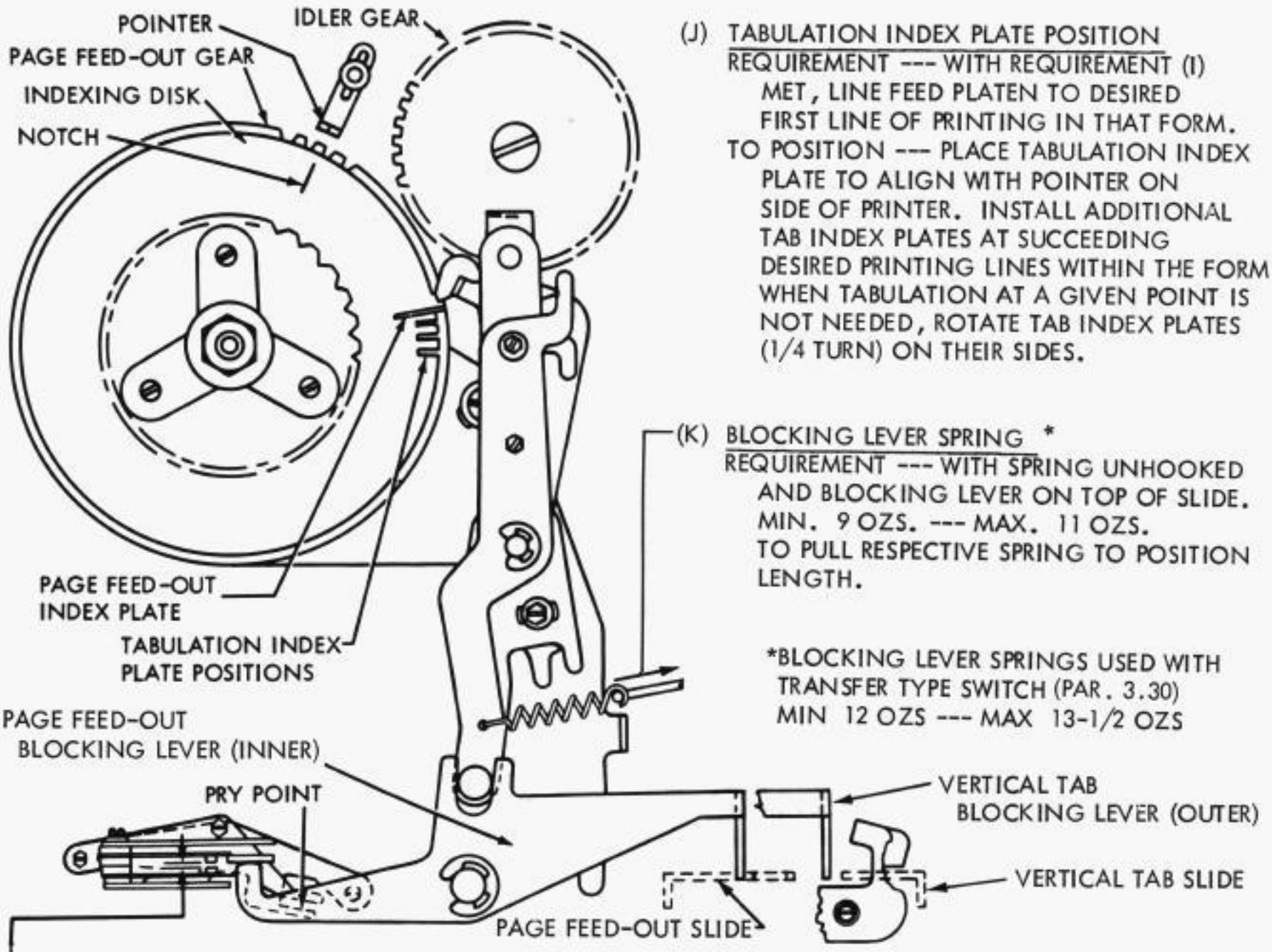
   TO CHECK --- SELECT FEED-OUT CODE COMBINATION, ROTATE MAIN SHAFT UNTIL FEED-OUT SLIDE IS IN ITS EXTREME FORWARD POSITION AND FEED-OUT BLOCKING LEVER DROPS BEHIND ITS SLIDE TO CLOSE NORMALLY OPENED CONTACTS.

   TO ADJUST --- WITH CONTACT PILE-UP MOUNTING SCREWS LOOSENED, POSITION THE ASSEMBLY.

3. 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.

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



(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 OZS. --- MAX. 11 OZS. TO PULL RESPECTIVE SPRING TO POSITION LENGTH.

*BLOCKING LEVER SPRINGS USED WITH TRANSFER TYPE SWITCH (PAR. 3.30) MIN 12 OZS --- MAX 13-1/2 OZS

(G) TRANSMITTER CONTROL SWITCH (TRANSMITTER CONTROL ONLY)
REQUIREMENTS --- FOR SINGLE-CONTACT TYPE CONTROL

1. 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.
2. 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 NO. 1 ABOVE.
3. 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 NO. 1. ABOVE.

3.30 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 DISK 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 DISK 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.

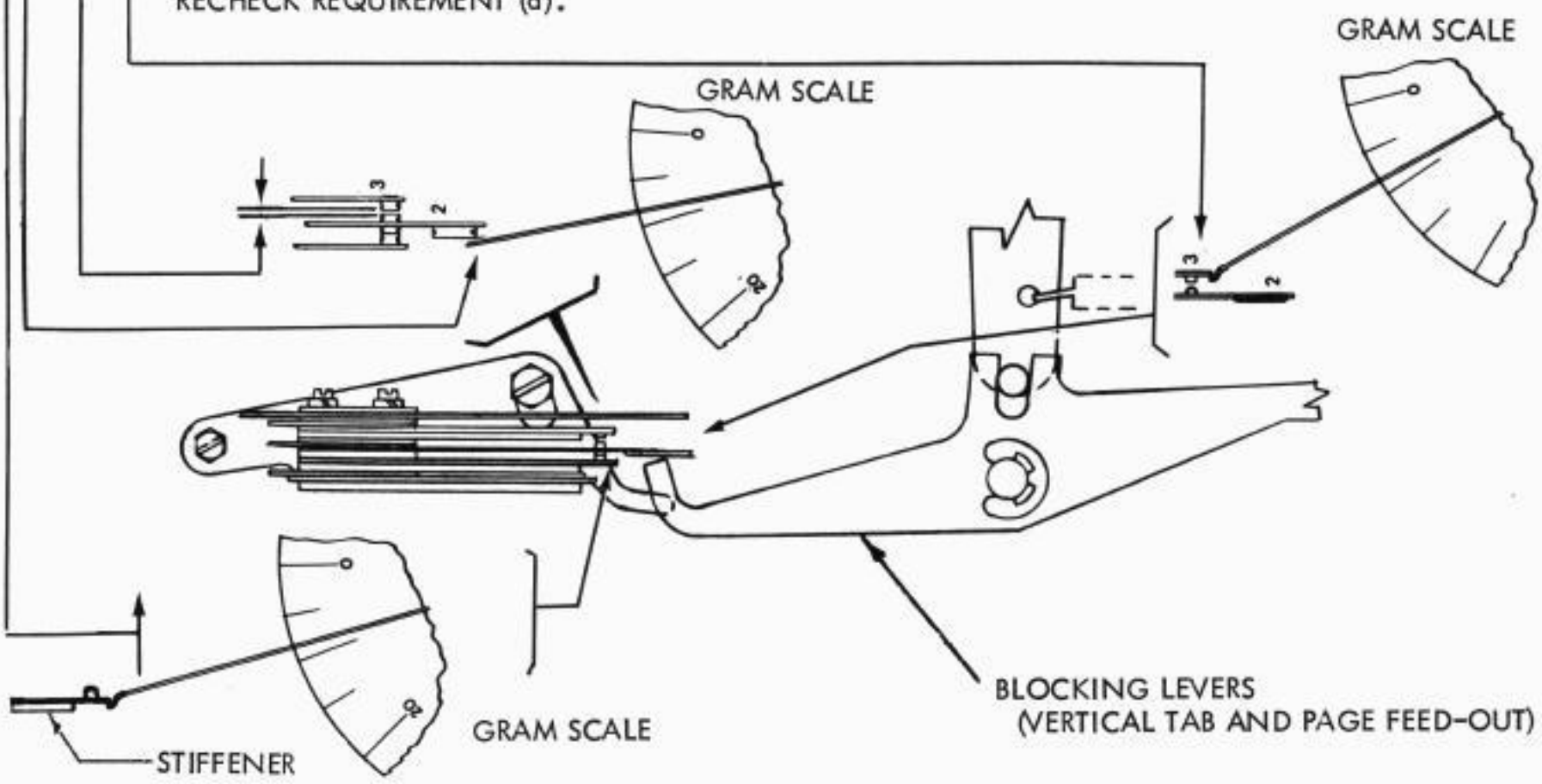
   (b) WITH A GAP OF 0.008 TO 0.015 INCH, IT SHALL REQUIRE

   MIN 25 GRAMS ---------- MAX 35 GRAMS

   TO PULL UPPER CONTACT AWAY FROM ITS STIFFENER

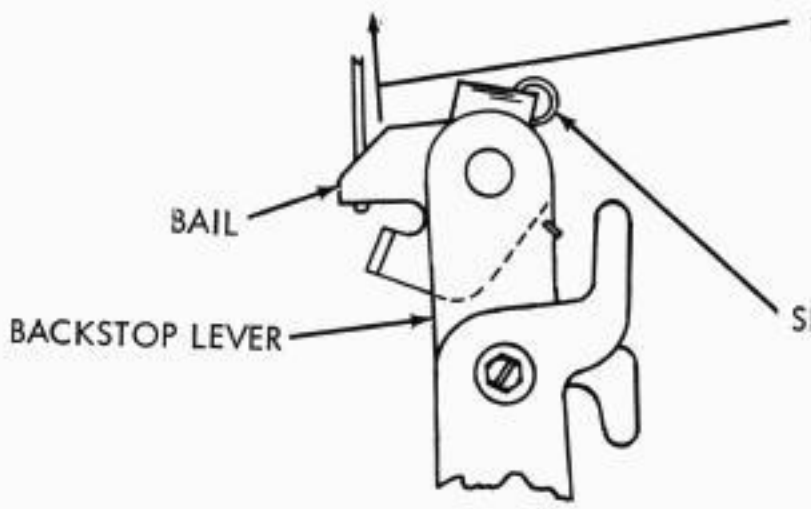
   TO ADJUST - FORM THE UPPER CONTACT SPRING BY BENDING.

   RECHECK REQUIREMENT (a).



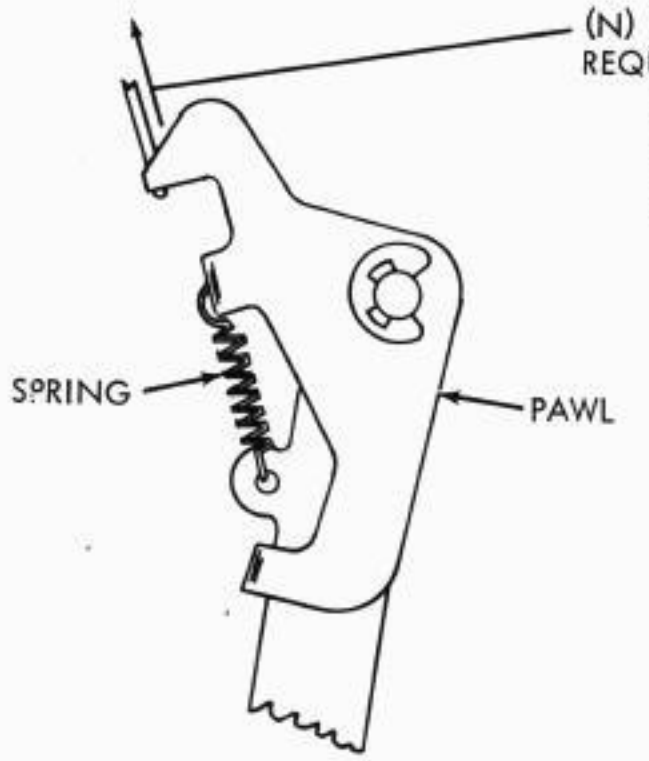
3.31 Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)

(L) LINE FEED CLUTCH TRIP LEVER SPRING
SEE PAR. 2.18



(M) TABULATOR BAIL SPRING
REQUIREMENT
MIN. 3 OZS.
MAX. 8 OZS.
TO PULL BAIL AWAY FROM ITS BACKSTOP LEVER.

(O) STUNT BOX SWITCH SPRING
SEE PAR. 2.64



(N) FORM-OUT PAWL SPRING
REQUIREMENT
MIN. 3 OZS.
MAX. 8 OZS.
TO PULL THE PAWL AWAY FROM ITS BACKSTOP LEVER.

3.32 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.

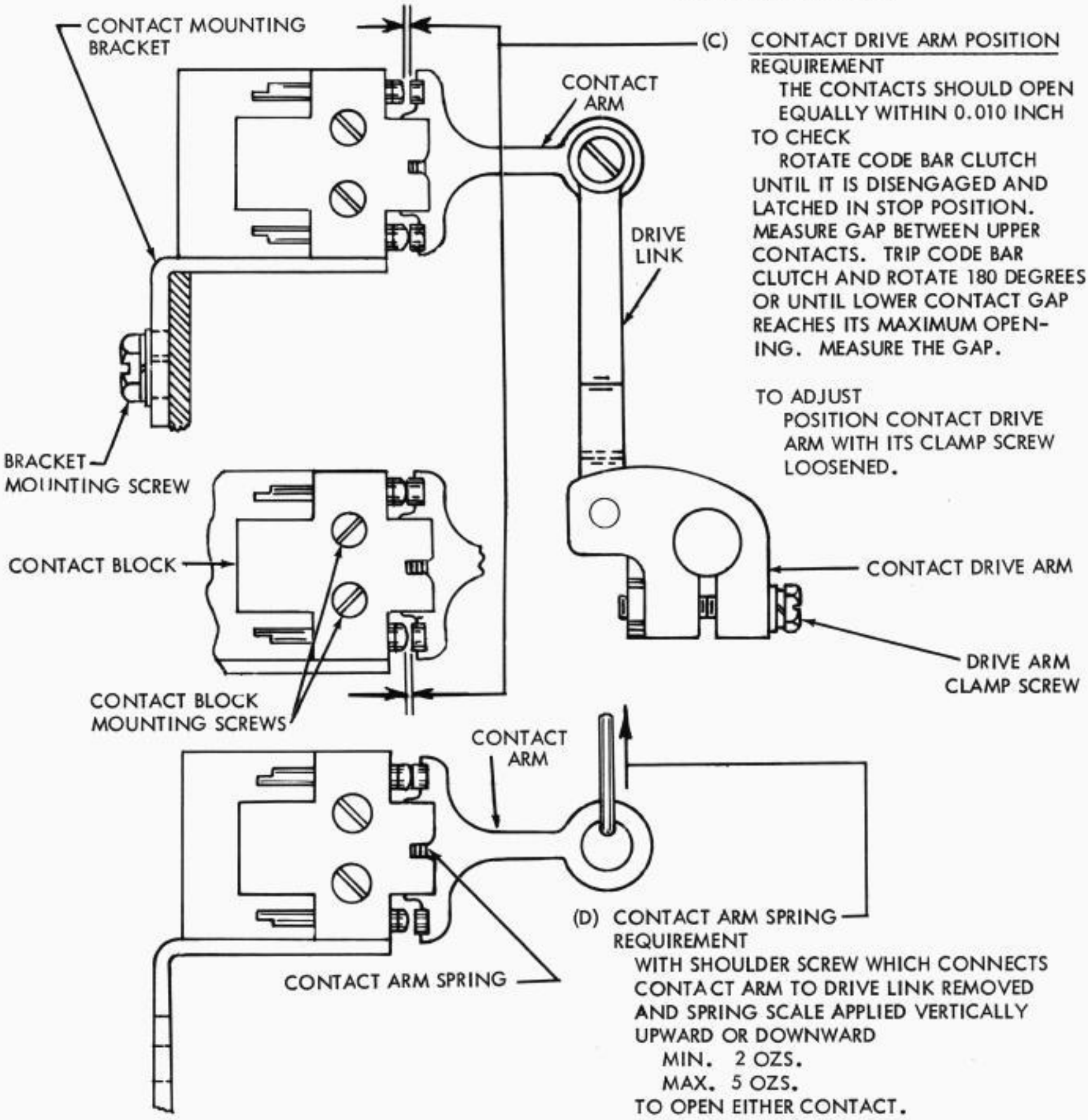
(B) CONTACT BLOCK

REQUIREMENT

THE CONTACT FACES SHOULD BE IN A VERTICAL STRAIGHT LINE

TO ADJUST

LOOSEN THE TWO CONTACT MOUNTING SCREWS. PRESS THE CONTACT BLOCK TOWARD THE REAR OF THE TYPING UNIT FIRMLY AGAINST THE SCREWS AND TIGHTEN THE SCREWS.



(C) CONTACT DRIVE ARM POSITION

REQUIREMENT

THE CONTACTS SHOULD OPEN EQUALLY WITHIN 0.010 INCH

TO CHECK

ROTATE CODE BAR CLUTCH UNTIL IT IS DISENGAGED AND LATCHED IN STOP POSITION. MEASURE GAP BETWEEN UPPER CONTACTS. TRIP CODE BAR 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.

(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 OZS.

MAX. 5 OZS.

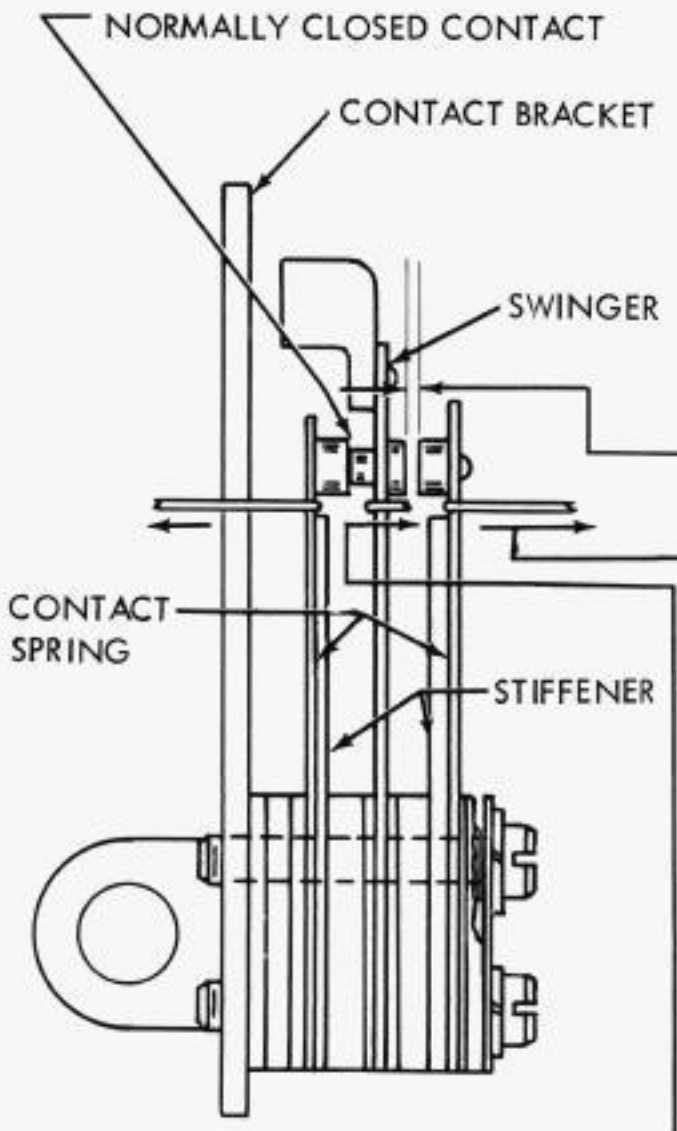
TO OPEN EITHER CONTACT.

3.33 Universal Contact (Stunt Box) Mechanism

NOTE 1. THESE ADJUSTMENTS SHOULD BE MADE WITH THE CONTACT BRACKET ASSEMBLY REMOVED.

2. IF CONTACT MOUNTING SCREWS ARE DISTURBED TO OBTAIN A REQUIREMENT, THEY MUST BE RETIGHTENED AND ALL PRECEEDING REQUIREMENTS RECHECKED.

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



(A) CONTACT

1. REQUIREMENT
   CONTACT SPRINGS AND STIFFENERS MOUNTED VERTICALLY AND CONTACT POINTS OF SPRINGS IN ALIGNMENT (GAGE BY EYE).
   TO ADJUST
   POSITION THE CONTACT SPRINGS AND STIFFENERS WITH ASSEMBLY SCREWS LOOSENED.

2. REQUIREMENT
   STIFFENERS SHOULD BE PARALLEL WITH THE CONTACT BRACKET.
   TO ADJUST
   BEND THE STIFFENER.

3. REQUIREMENT
   CONTACT SPRINGS SHOULD REST AGAINST THE TOP OF THEIR STIFFENERS THROUGHOUT THEIR WIDTH.
   TO ADJUST
   BEND TOP FORMED SECTION OF STIFFENER. IF NECESSARY, BEND CONTACT SPRINGS.

(B) NORMALLY OPEN CONTACT GAP

REQUIREMENT
CLEARANCE BETWEEN NORMALLY OPEN CONTACTS
MIN. 0.020 INCH --- MAX. 0.025 INCH
WITH NORMALLY CLOSED CONTACTS CLOSED.
TO ADJUST --- BEND STIFFENER

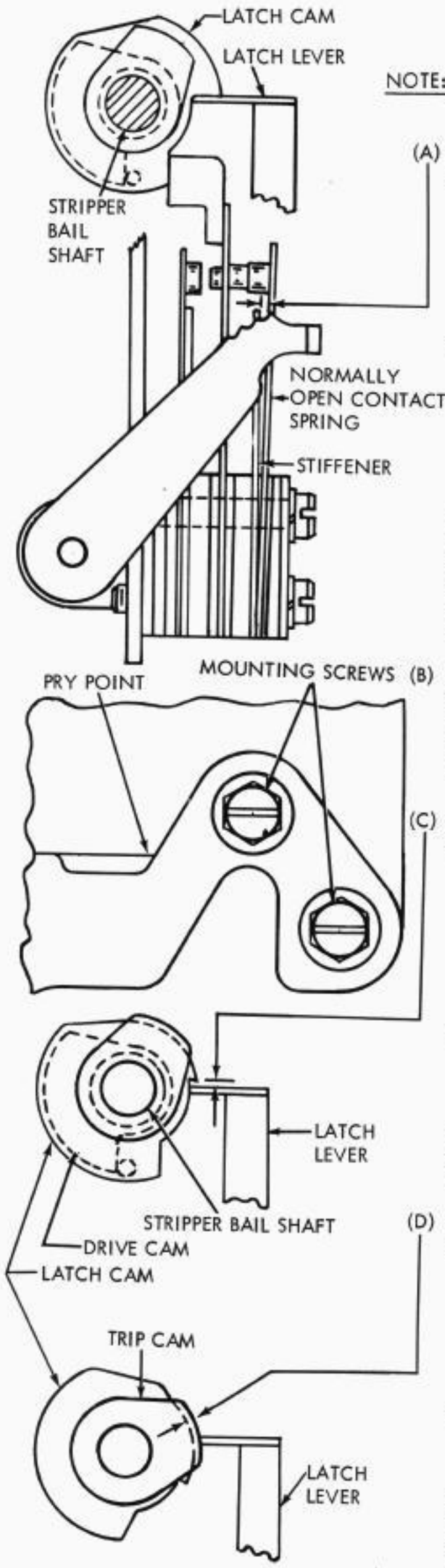
(C) CONTACT SPRING (TWO SPRINGS)

REQUIREMENT
MIN. 2 OZS. --- MAX. 3 OZS.
TO MOVE EACH CONTACT SPRING AWAY FROM ITS STIFFENER, WITH THE SWINGER HELD AWAY.
TO ADJUST --- REMOVE AND FORM SPRING.

(D) SWINGER SPRING

REQUIREMENT
MIN. 4 OZS. --- MAX. 6 OZS.
TO MOVE SWINGER FROM NORMALLY CLOSED CONTACT.
TO ADJUST --- BEND SWINGER

3.34 Universal Contact (Stunt Box) Mechanism (Cont.)



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

(A) LATCH

REQUIREMENT

WITH THE MAIN SHAFT ROTATED UNTIL THE STRIPPER BAIL SHAFT HAS REACHED ITS EXTREME COUNTERCLOCKWISE POSITION AND THE LATCH CAM LATCHED BY THE LATCH LEVER, CLEARANCE BETWEEN NORMALLY OPEN CONTACT AND UPPER END OF ITS STIFFENER

MIN. 0.003 INCH
MAX. 0.008 INCH

TO ADJUST

LOOSEN CONTACT BRACKET MOUNTING SCREWS. MOVE BRACKET TO ITS HIGHEST POSITION. WITH SCREWDRIVER IN PRY POINT MOVE BRACKET DOWNWARD UNTIL REQUIREMENT IS MET. THE LATCH LEVER SHOULD ENGAGE BOTH CAMS BY THEIR FULL THICKNESS.

NOTE

THE UNIVERSAL CONTACT SHOULD BE ADJUSTED SO THAT THE NORMALLY OPEN CONTACT SHALL CLOSE WITHIN $\pm$ 6 MILLISECONDS OF THE STUNT BOX CONTACT CLOSURE AND SHOULD OPEN WITHIN $\pm$ 5 MILLISECONDS OF THE NORMALLY OPEN STUNT BOX CONTACT OPENING. THE "BLANK" CHARACTER STUNT BOX CONTACT IN SLOT 36 SHOULD BE USED AS THE REFERENCE FOR THIS ADJUSTMENT.

(B) TIMING

SINCE THE CONTACTS CAN BE ADJUSTED FOR VARIED TIMING, THE BEST PROCEDURE IS TO UTILIZE A DISTORTION TEST SET OR AN INDICATOR LAMP TO CHECK FOR PROPER ADJUSTMENT. IF THIS TEST EQUIPMENT IS NOT AVAILABLE, ADJUSTMENT CAN BE MADE AS FOLLOWS:

(C) DRIVE CAM (TIMING)

REQUIREMENT

WITH THE MAIN SHAFT ROTATED UNTIL THE STRIPPER BAIL SHAFT HAS REACHED ITS EXTREME COUNTERCLOCKWISE POSITION THERE SHOULD BE

MIN. 0.003 INCH
MAX. 0.008 INCH

BETWEEN THE TOP OF THE LATCH LEVER AND THE NOTCH OF THE LATCH CAM AT THE CLOSEST POINT WHEN PLAY IN STRIPPER BAIL SHAFT IS TAKEN UP FOR MINIMUM.

TO ADJUST

TURN DRIVE CAM ON SHAFT WITH ITS MOUNTING SCREW LOOSENED.

NOTE

THIS PROCEDURE PROVIDES THE LATEST POSSIBLE CLOSURE TIME. IF AN EARLIER CLOSURE TIME IS DESIRABLE, VARY POSITION OF CAM OR USE TEST SET.

(D) TRIP CAM (TIMING)

REQUIREMENT

WITH MAIN SHAFT ROTATED UNTIL THE STRIPPER BAIL SHAFT HAS REACHED ITS EXTREME CLOCKWISE POSITION, THE LATCH LEVER SHOULD BE RESTING ON THE TRIP CAM AND THE CLEARANCE BETWEEN THE LATCH LEVER AND THE LATCH CAM SHOULD BE

MIN. 0.003 INCH
MAX. 0.008 INCH

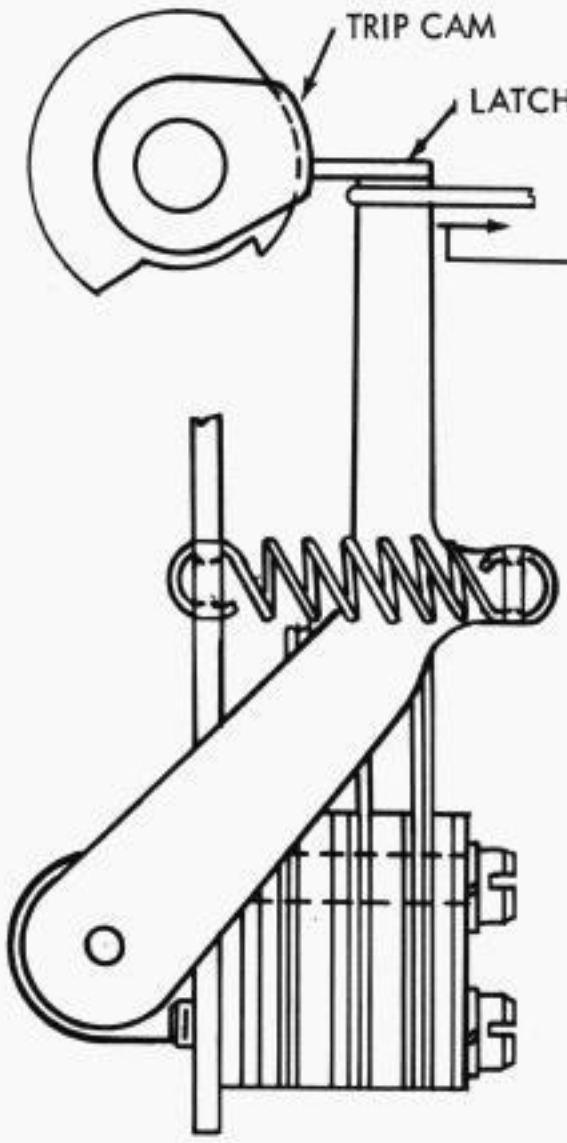
TO ADJUST

ROTATE TRIP CAM ON ITS SHAFT WITH ITS MOUNTING SCREW LOOSENED.

NOTE

THIS PROCEDURE PROVIDES THE LATEST POSSIBLE OPENING TIME FOR THE DRIVE CAM ADJUSTMENT. IF AN EARLIER OPENING TIME IS DESIRABLE, VARY THE POSITION OF CAM, OR USE A TEST SET.

3.35 Universal Contact (Stunt Box) Mechanism (Cont.)



NOTE: THE FOLLOWING ADJUSTMENTS SHOULD BE MADE ONLY WHERE TIMING REQUIREMENTS ARE SPECIFIED FOR THE NORMALLY CLOSED CONTACTS. THEY MAY BE MODIFIED TO MEET OTHER SPECIFIC REQUIREMENTS.
COMPLETE ALL OF THE FOREGOING STANDARD ADJUSTMENTS FOR THE STUNT BOX UNIVERSAL CONTACT BEFORE PROCEEDING.

FIFTY MILLISECOND SPACING PULSE AT 100 WPM OPERATION

(A) NORMALLY OPEN CONTACT GAP (SEE (B) ON PAR. 3.33)
MIN. 0.010 INCH --- MAX. 0.025 INCH
IF THERE ARE NO SPECIFIED TIMING REQUIREMENTS FOR THE NORMALLY OPEN CONTACTS.

(B) NORMALLY CLOSED CONTACT SPRING
REQUIREMENT
NORMALLY CLOSED CONTACT SPRING SHOULD REST AGAINST TOP OF ASSOCIATED STIFFENER FOR FULL WIDTH OF CONTACT SPRING. (HOLD SWINGER AWAY)
ADJUST PER (A) 3 ON PAR. 3.33.

(C) TIMING OF NORMALLY CLOSED CONTACTS (FOR 50 MS PULSE)
PRELIMINARY
WITH MAIN SHAFT ROTATED UNTIL STRIPPER BAIL SHAFT HAS REACHED ITS EXTREME COUNTER-CLOCKWISE POSITION, BEND NORMALLY CLOSED CONTACT STIFFENER TO GIVE
MIN. 0.030 INCH --- MAX. 0.035 INCH
GAP BETWEEN NORMALLY CLOSED CONTACTS.
FINAL
CHECK SPACING PULSE WITH STROBOSCOPIC TEST SET. IF NECESSARY, REFINE DRIVE CAM TIMING (C) ON PAR. 3.41 WITHIN SPECIFIED .003 to .008 LIMITS. RECHECK SWINGER SPRING TENSION (D) ON PAR. 3.40. REPEAT STROBE CHECK.

3.36 Form Alignment Switch Mechanism

(A) FORM FEED-OUT ADJUSTMENT

SEE PARS. 3.11 AND 3.12

(B) FORM ALIGNMENT SWITCH

(REMOVE POWER FROM SWITCH)

REQUIREMENT

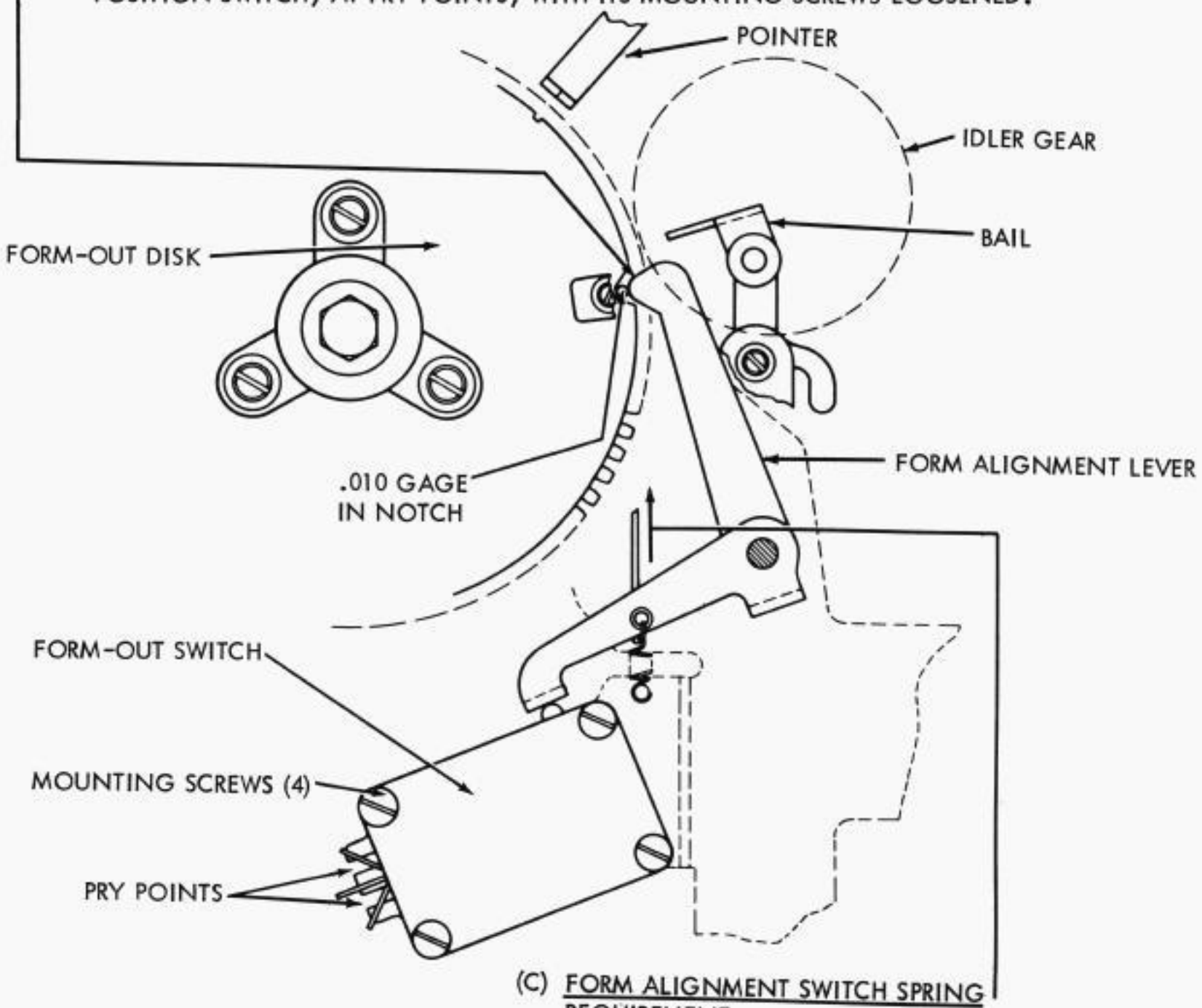
SWITCH SHOULD BE OPERATED WHEN SWITCH LEVER IS WITHIN 0.010 INCH OF BOTTOM OF NOTCH IN FORM-OUT DISK AND SHOULD NOT BE OPERATED WHEN LEVER IS ON OUTER EDGE OF DISK.

TO CHECK

1. ROTATE DISK UNTIL LEVER FALLS INTO NOTCH. PLACE 0.010 INCH FEELER GAGE BENEATH LEVER. LIFT LEVER AND ALLOW IT TO COME TO REST ON GAGE. SWITCH SHOULD BE OPERATED.
2. ROTATE DISK UNTIL LEVER RESTS ON OUTER EDGE. SWITCH SHOULD NOT BE OPERATED.

TO ADJUST

POSITION SWITCH, AT PRY POINTS, WITH ITS MOUNTING SCREWS LOOSENED.



LEFT VIEW

(C) FORM ALIGNMENT SWITCH SPRING

REQUIREMENT

MIN. 6 OZS.
MAX. 8 OZS.
TO MOVE THE LEVER FROM OUTER-EDGE OF DISK.

TO CHECK

SWITCH OPERATING LEVER ON OUTER EDGE OF DISK (NOT IN NOTCH AS SHOWN)

3.37 DC Magnet Operated Print Suppression Mechanism

(D) ARMATURE EXTENSION OVERTRAVEL

REQUIREMENT

1. OVERTRAVEL OF ARMATURE EXTENSION SHOULD BE MIN. 0.010 INCH --- MAX. 0.015 INCH
2. 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.

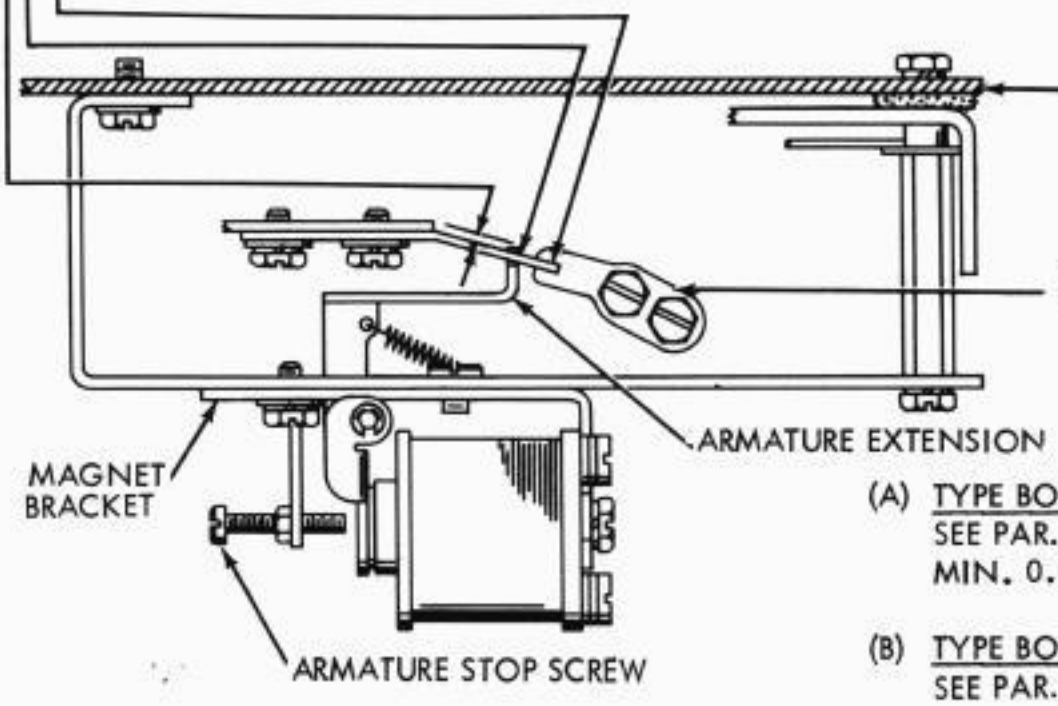
3. ROTATE BLOCKING BAIL EXTENSION. IT SHOULD SLIDE UNDER THE SUPPRESSION ARM WITH NO PERCEPTIBLE CLEARANCE.

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. PRESS ARMATURE EXTENSION FIRMLY AGAINST BOTTOM OF SUPPRESSION ARM. IF NECESSARY, ADD OR REMOVE SHIMS BETWEEN SUPPRESSION ARM AND TYPE BOX CLUTCH TRIP ARM. RECHECK (B) AND (C).



(A) TYPE BOX CLUTCH TRIP LEVER

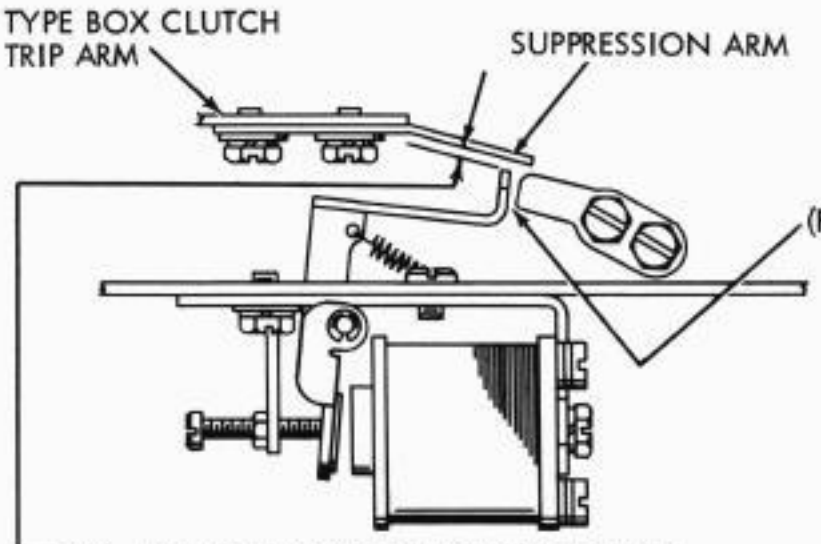
SEE PAR. 2.20 AND REFINE REQUIREMENT TO MIN. 0.040 INCH --- MAX. 0.055 INCH

(B) TYPE BOX CLUTCH SUPPRESSION ARM

SEE PAR. 3.14

(C) BLOCKING BAIL

SEE PAR. 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. RECHECK (D).

3.38 Print Suppression and Off-Line Stunt Shift Control Mechanism

(A) SUPPRESSION CODE BAR POSITION

REQUIREMENT

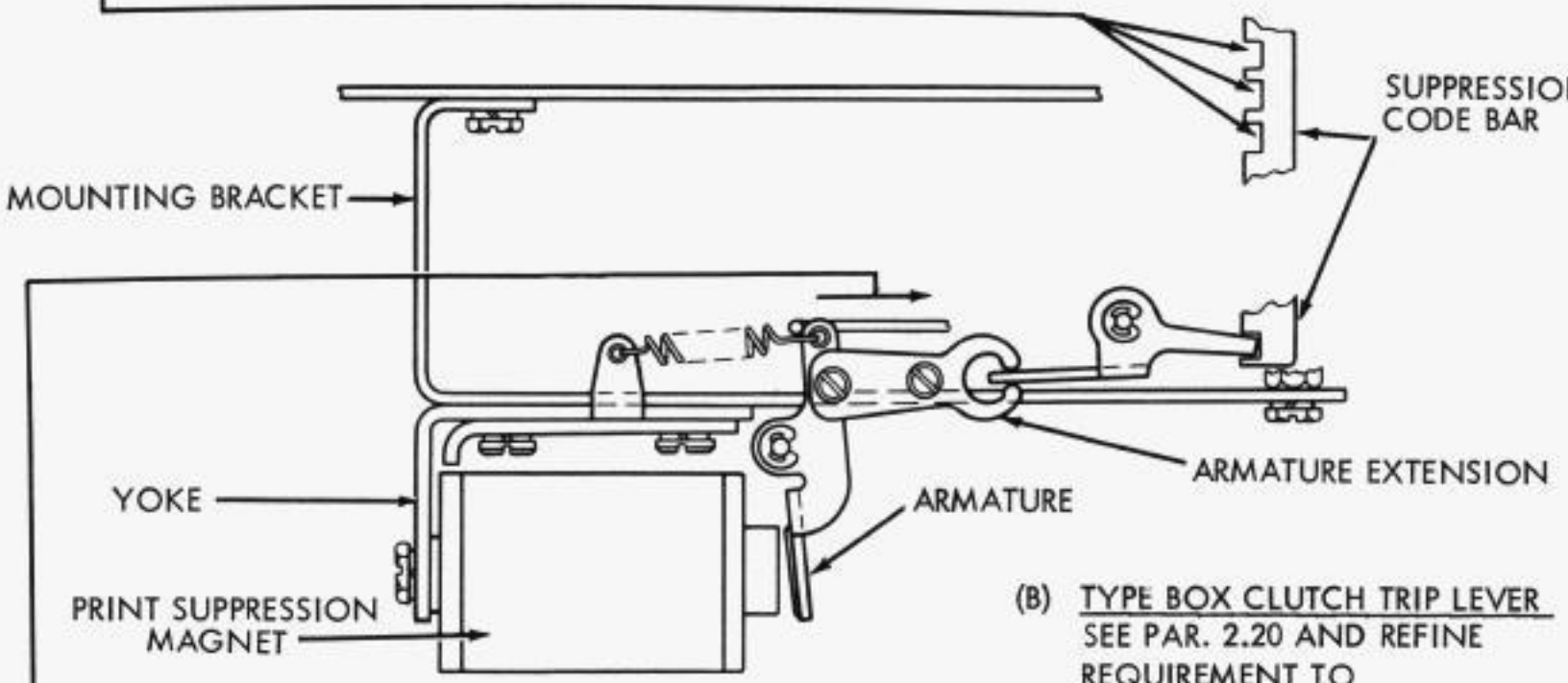
NOTCHES IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS. VIEW FROM REAR OF UNIT ABOVE STUNT BOX. GAGE BY EYE.

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.



TOP VIEW LEFT SIDE

(B) TYPE BOX CLUTCH TRIP LEVER

SEE PAR. 2.20 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

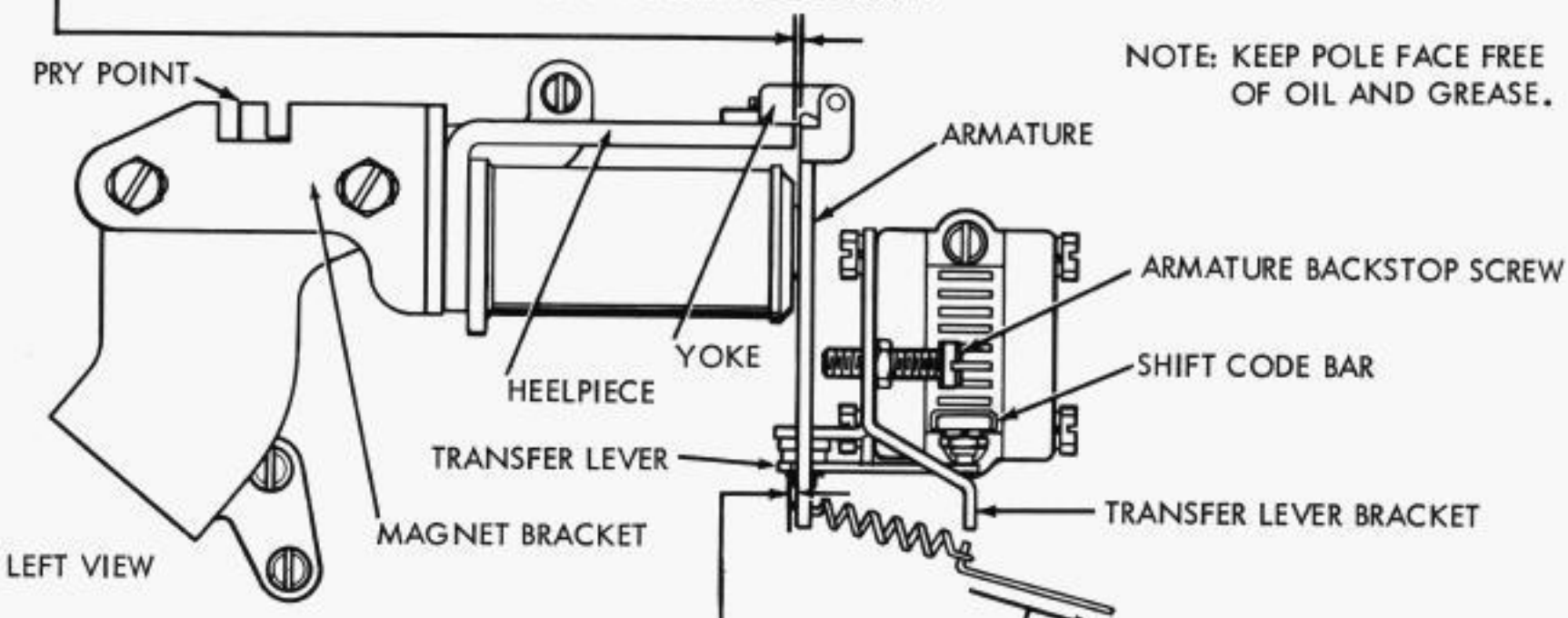
PRINT SUPPRESSION MAGNET UNOPERATED

NOTE: KEEP POLE FACE FREE OF OIL AND GREASE.

3.39 Letters - Figures Code Bar 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.

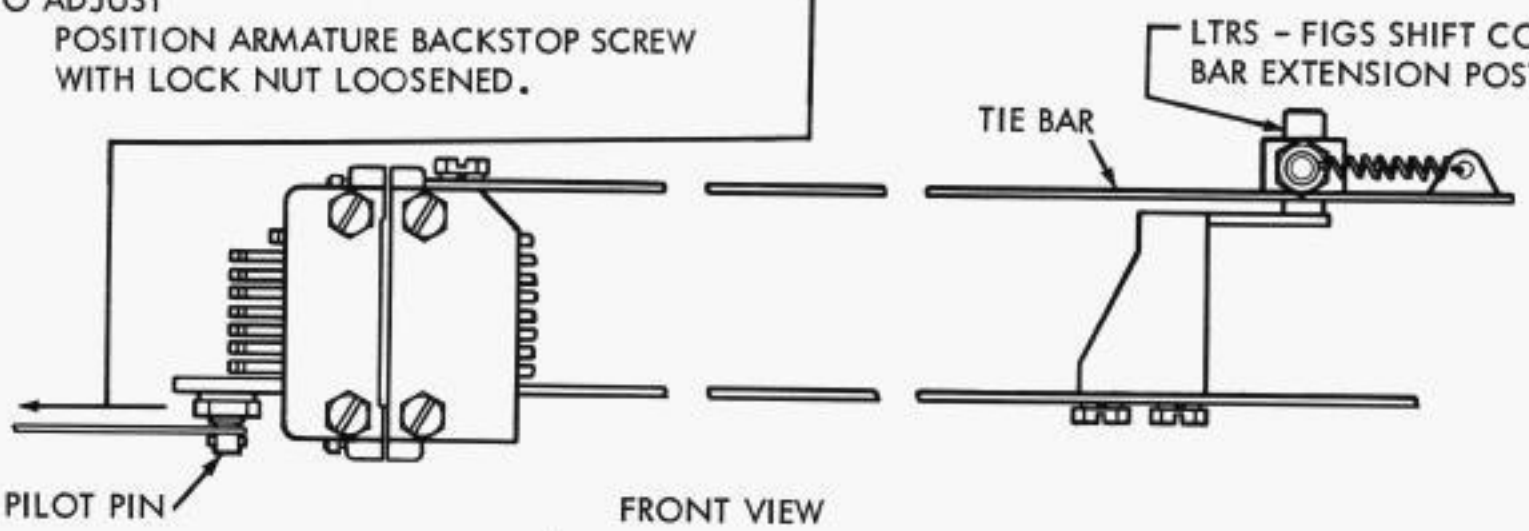
NOTE: KEEP POLE FACE FREE OF OIL AND GREASE.



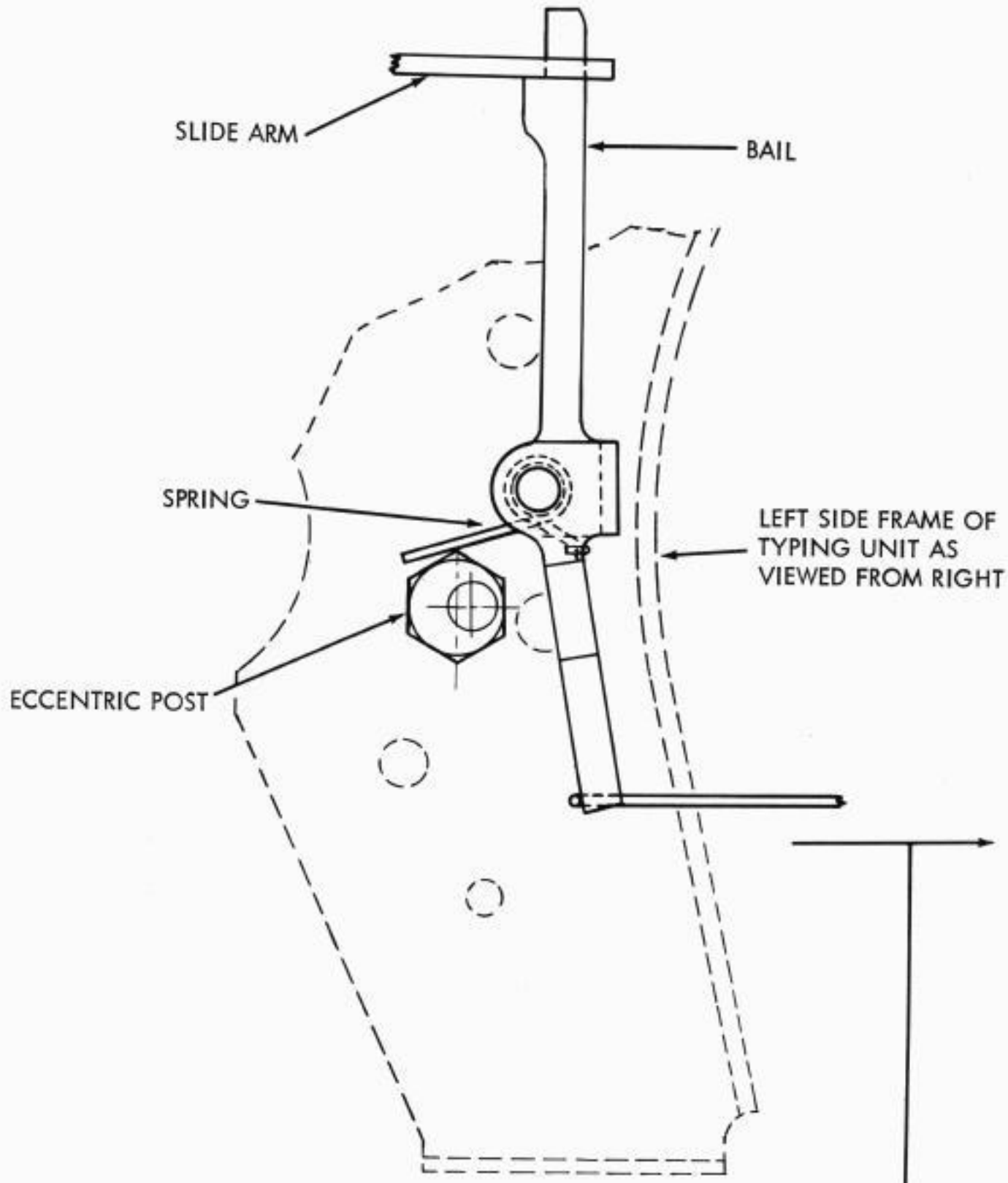
(B) SHIFT MAGNET ARMATURE
REQUIREMENT
1. CLEARANCE BETWEEN ARMATURE AND TRANSFER LEVER SHOULD BE
MIN. SOME --- MAX. 0.005 INCH
TO CHECK
MAGNET ARMATURE ATTRACTED. SHIFT CODE BAR IN FULL MARKING POSITION.
TO ADJUST
POSITION MAGNET FORWARD OR BACKWARD WITH BRACKET MOUNTING SCREWS LOOSENED.
2. CLEARANCE BETWEEN ARMATURE AND TRANSFER LEVER SHOULD BE
MIN. SOME --- MAX. 0.010 INCH
TO CHECK
MAGNET ARMATURE UNOPERATED. SHIFT CODE BAR IN FULL SPACING POSITION.
TO ADJUST
POSITION ARMATURE BACKSTOP SCREW WITH LOCK NUT LOOSENED.

(C) SHIFT MAGNET ARMATURE RETURN
REQUIREMENT
MIN. 1 OZ. --- MAX. 3 OZS.
TO PULL SPRING TO INSTALLED LENGTH

(D) SHIFT CODE BAR RETURN
REQUIREMENT
MIN. 3 OZS. --- MAX. 7 OZS.
TO START CODE BAR MOVING
TO CHECK
TRIP TYPE BOX CLUTCH, ROTATE MAIN SHAFT UNTIL PRINTING TRACK IS IN LOWEST POSITION



3.40 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

3.41 Two Color Ribbon Mechanism

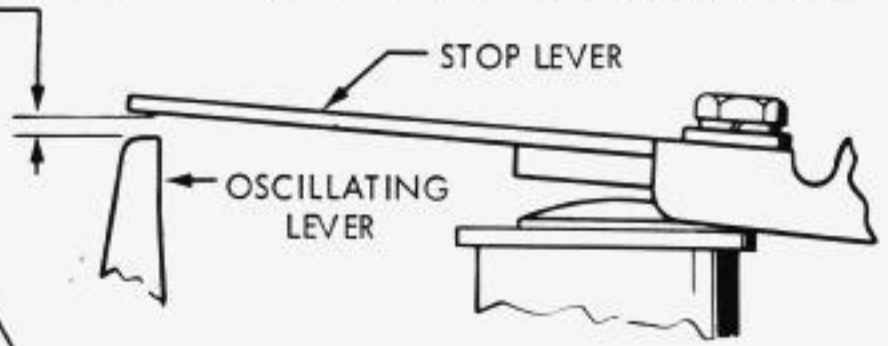
SEE NOTES 1 THROUGH 5 ON OPPOSITE PAGE

(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 .005 INCH.
TO ADJUST --- POSITION HINGE BRACKET WITH MOUNTING SCREWS LOOSENED.

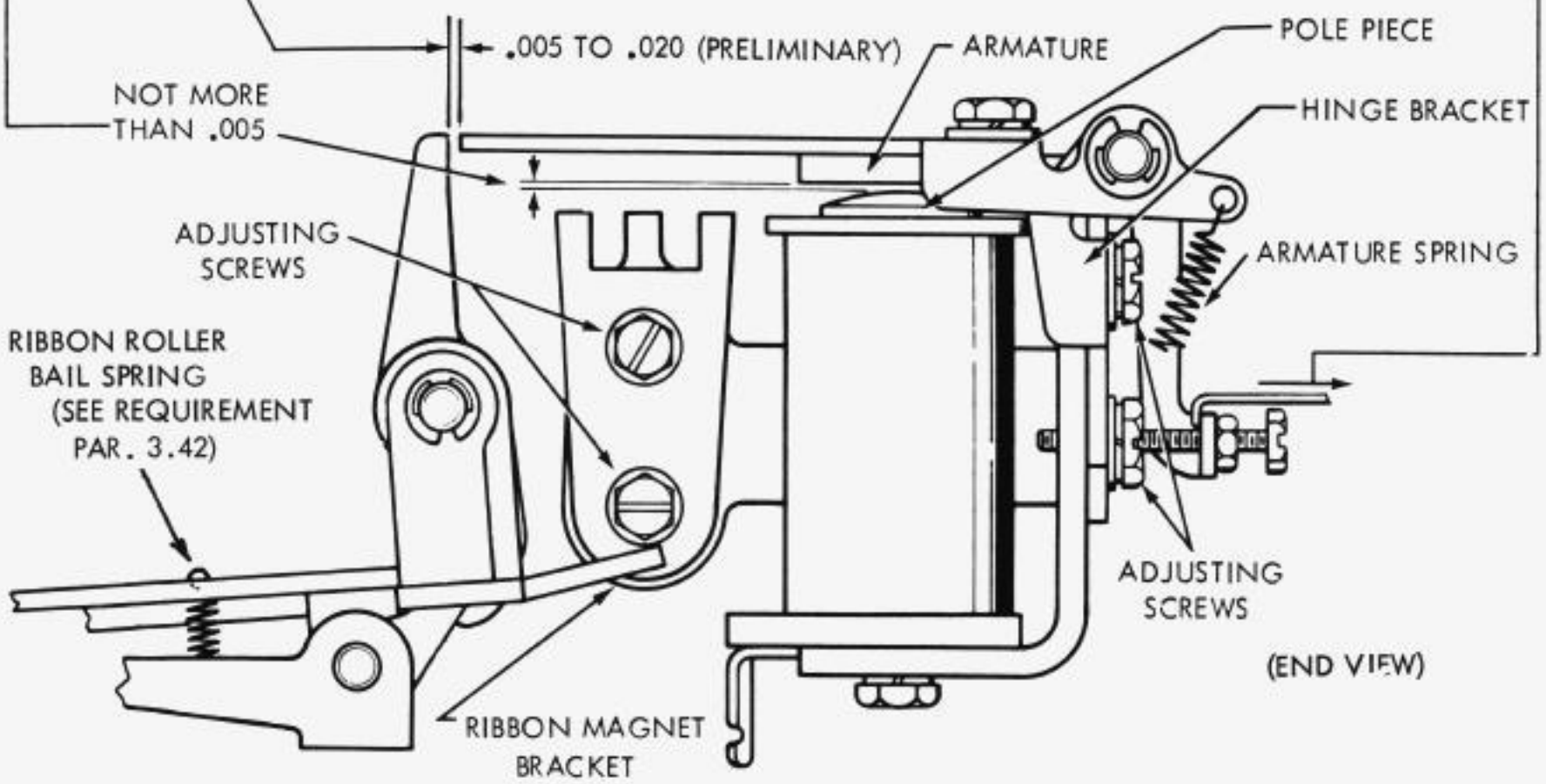
(B) RIBBON MAGNET BRACKET (LEFT AND RIGHT) (PRELIMINARY)
REQUIREMENT --- ADJUSTING SCREW IN LOWEST POSITION, ALL CLUTCHES DISENGAGED, POSITION RIBBON MAGNET BRACKET AS FOLLOWS:
1. HOLD MAGNET ARMATURE STOP LEVER AGAINST MAGNET CORE, LEVER SHOULD BE PARALLEL TO OSCILLATING LEVER TOP SURFACE AND ENGAGE 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.

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 AND STOP LEVER SHOULD BE: MIN. 0.020 INCH --- MAX. 0.040 INCH.
TO ADJUST --- POSITION STOP LEVER ADJUSTING SCREW WITH LOCK NUT LOOSENED.



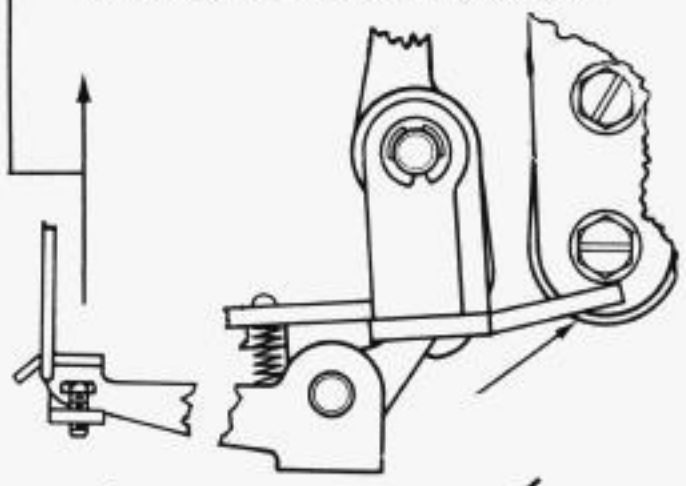
ARMATURE SPRING (LEFT AND RIGHT)
REQUIREMENT --- MIN. 2 OZS -- MAX 4 OZS. TO SEAT ARMATURE AGAINST POLE PIECE.



3.42 Two Color Ribbon Mechanism

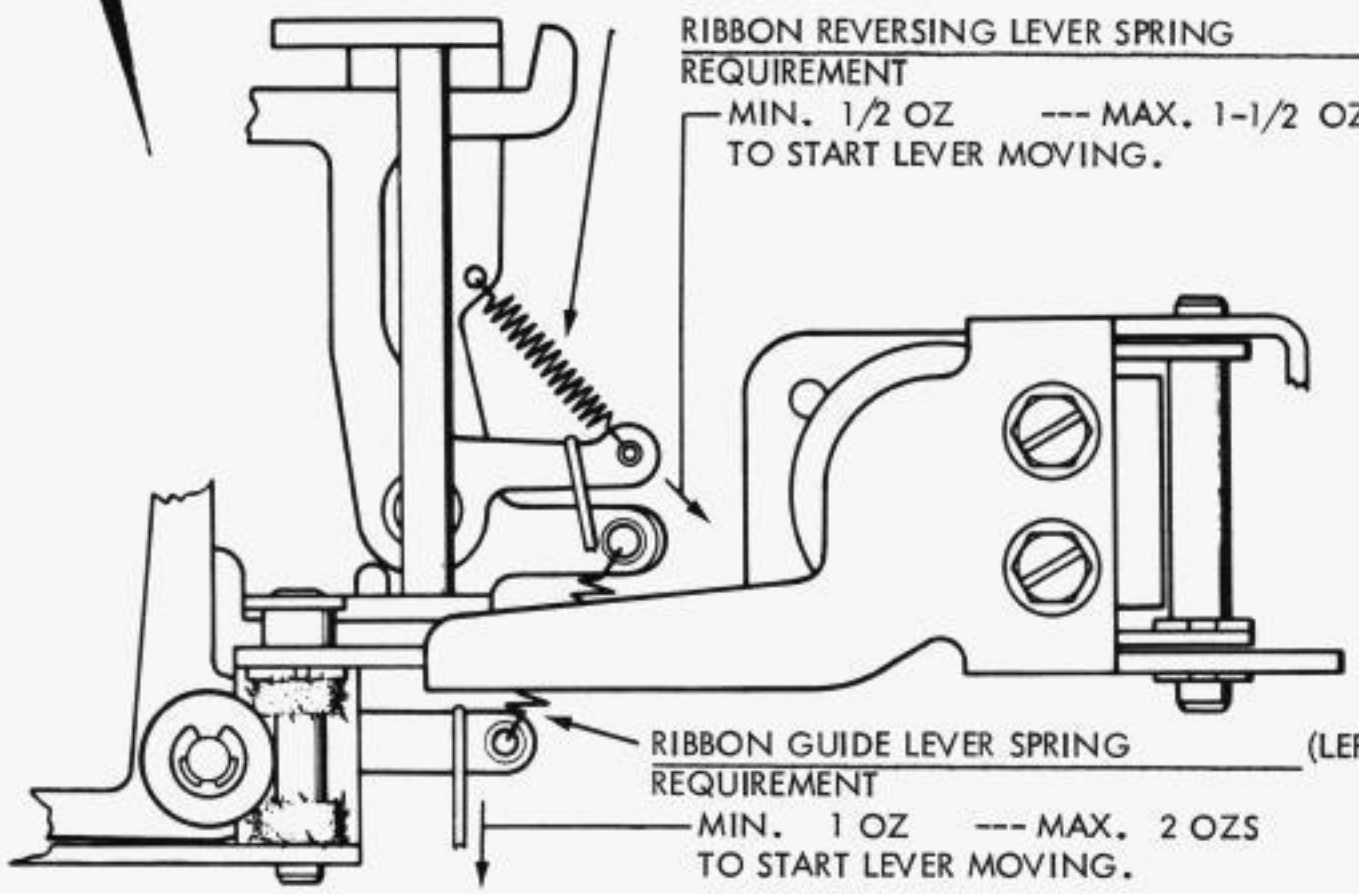
OPERATIONAL REQUIREMENT - RIBBON MANGET BRACKET (FINAL) (SEE PRECEDING FIGURE)
PRINTER OPERATING AT 60, 75, OR 100 WPM, TEST BEING PRINTED.
REQUIREMENT
PRINTS RED WHEN RIBBON MAGNETS ARE ENERGIZED.
TO ADJUST
TURN LEFT AND RIGHT RIBBON BRACKET ROLLER BAIL ADJUSTING SCREWS 1/2 TURN UP. REFINE RIBBON AND 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. 2.34
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).



RIBBON REVERSING LEVER SPRING (LEFT AND RIGHT)
REQUIREMENT
MIN. 1/2 OZ --- MAX. 1-1/2 OZS.
TO START LEVER MOVING.

(TOP VIEW)

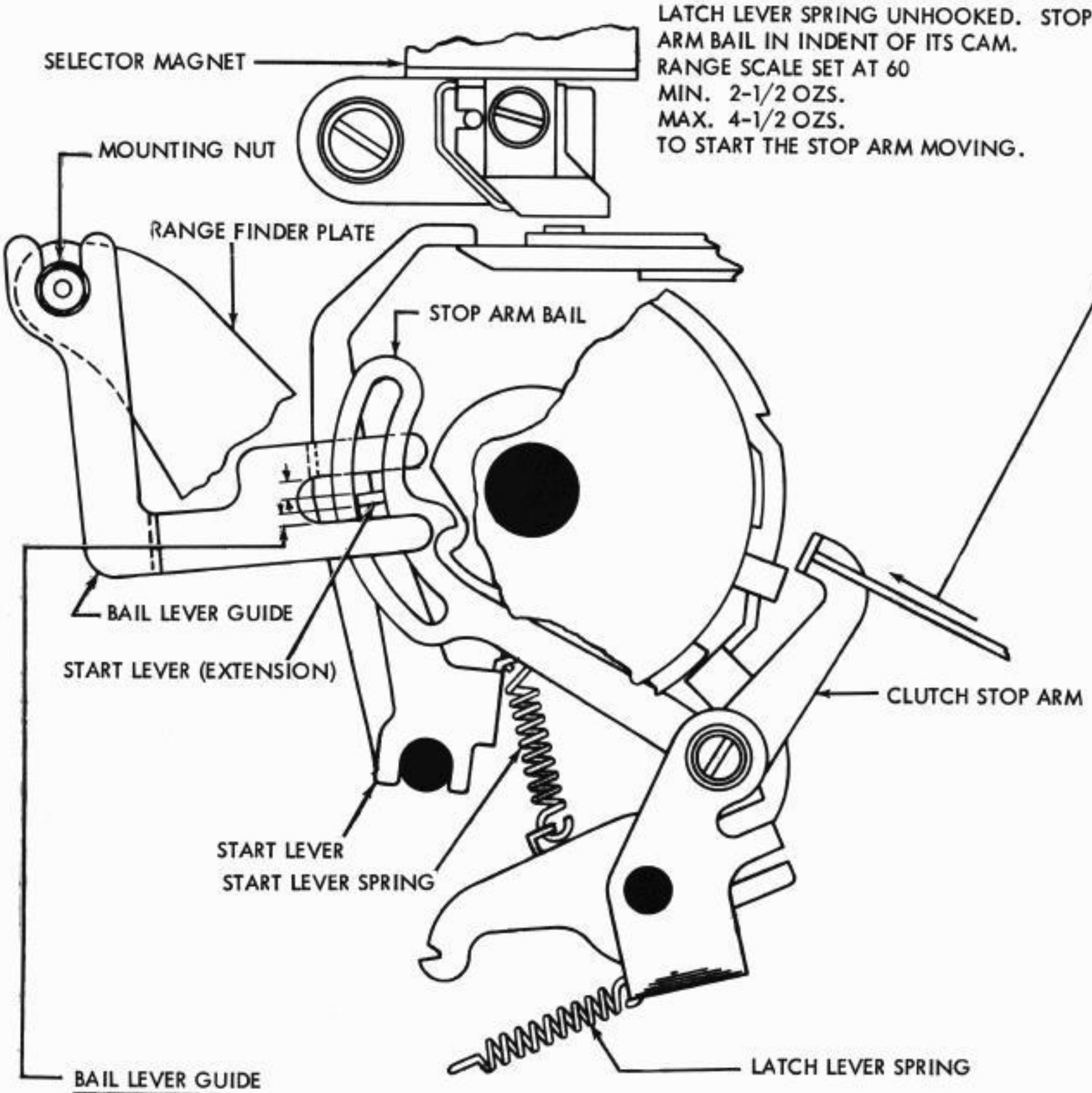
RIBBON GUIDE LEVER SPRING (LEFT AND RIGHT)
REQUIREMENT
MIN. 1 OZ --- MAX. 2 OZS
TO START LEVER MOVING.

4. EARLIER DESIGN MECHANISMS

BASIC UNITS

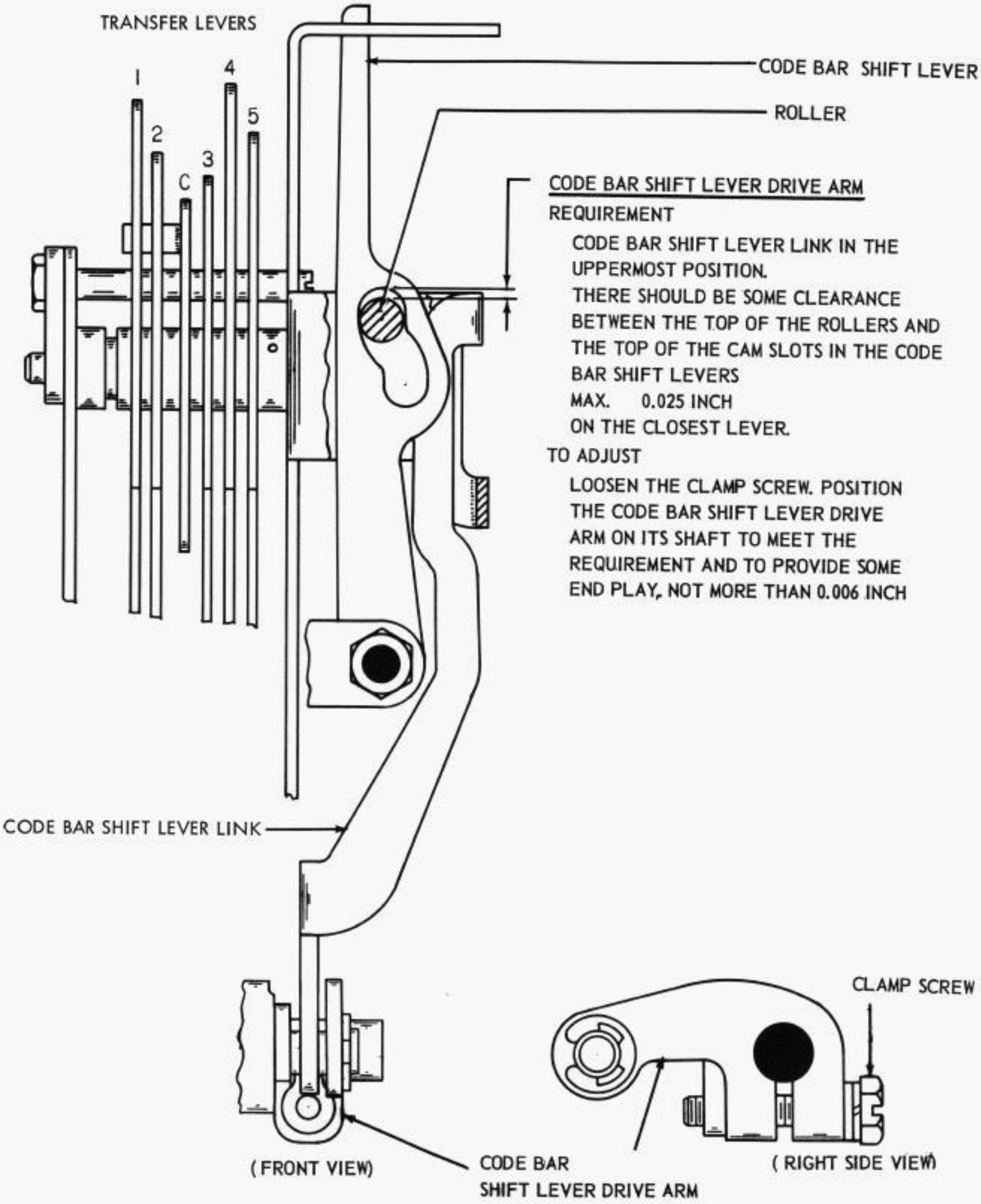
4.01 Selector Mechanism

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

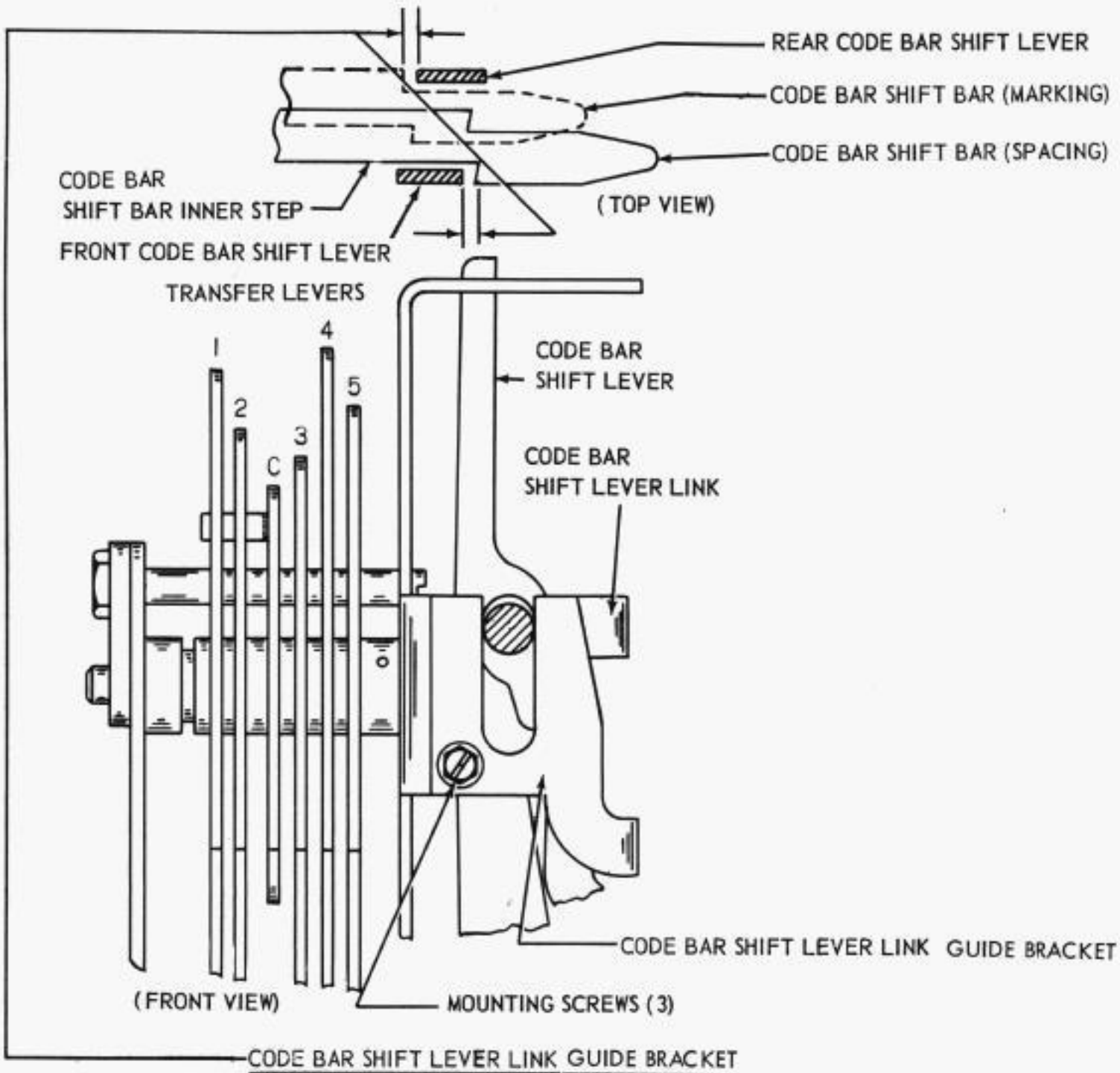


(RIGHT SIDE VIEW)

4.02 Code Bar Mechanism



4.03 Code Bar 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).

4.04 Main Shaft and Trip Shaft Mechanisms

(A) CLUTCH TRIP SHAFT SET COLLARS

(1) REQUIREMENT

SPACING CLUTCH LATCH LEVER SHOULD HAVE SIDE PLAY

MIN. SOME

MAX. 0.008 INCH

TO ADJUST

POSITION SPACING CLUTCH LATCH LEVER SET COLLAR.

(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

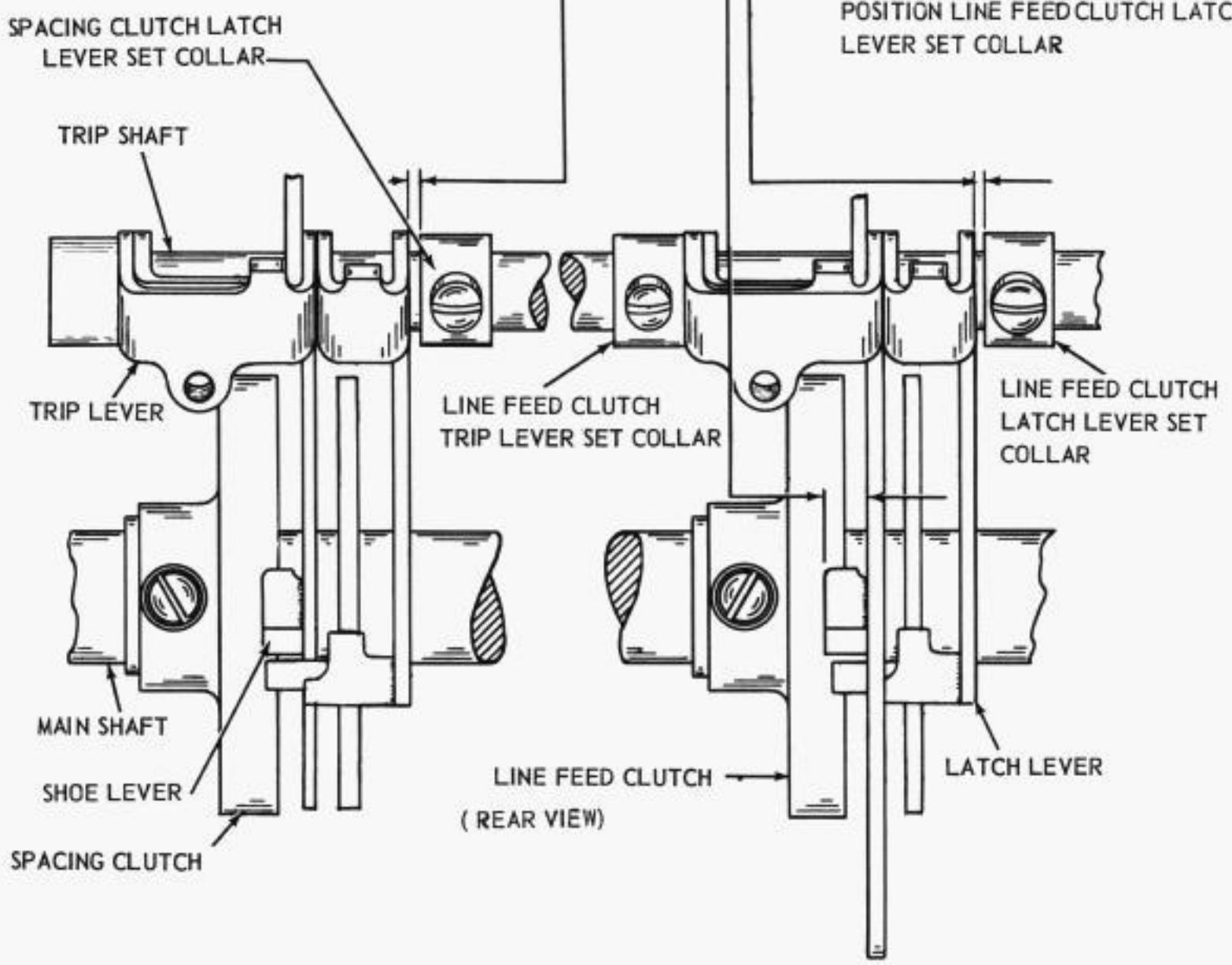
LINE FEED CLUTCH LATCH LEVER SHOULD HAVE SIDE PLAY

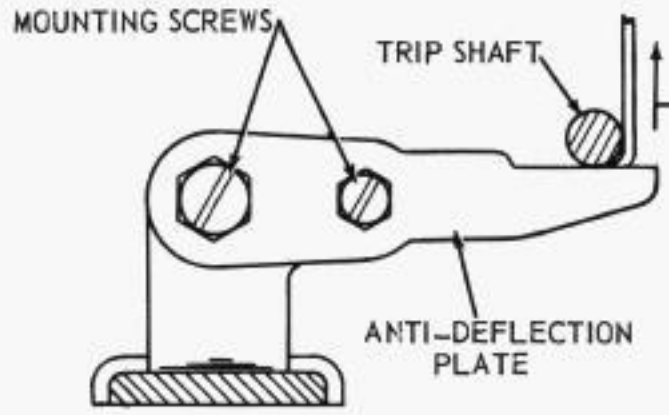
MIN. SOME

MAX. 0.008 INCH

TO ADJUST

POSITION LINE FEED CLUTCH LATCH LEVER SET COLLAR





(LEFT SIDE VIEW, UPSIDE DOWN)

NOTE: ANTI-DEFLECTION PLATE ADJUSTMENT APPLIES ONLY TO UNITS SO EQUIPPED.

(B)

ANTI-DEFLECTION PLATE

REQUIREMENT

WITH TYPING UNIT UPSIDE DOWN AND FUNCTION, SPACING, LINE FEED, AND TYPE BOX CLUTCHES LATCHED DISENGAGED.

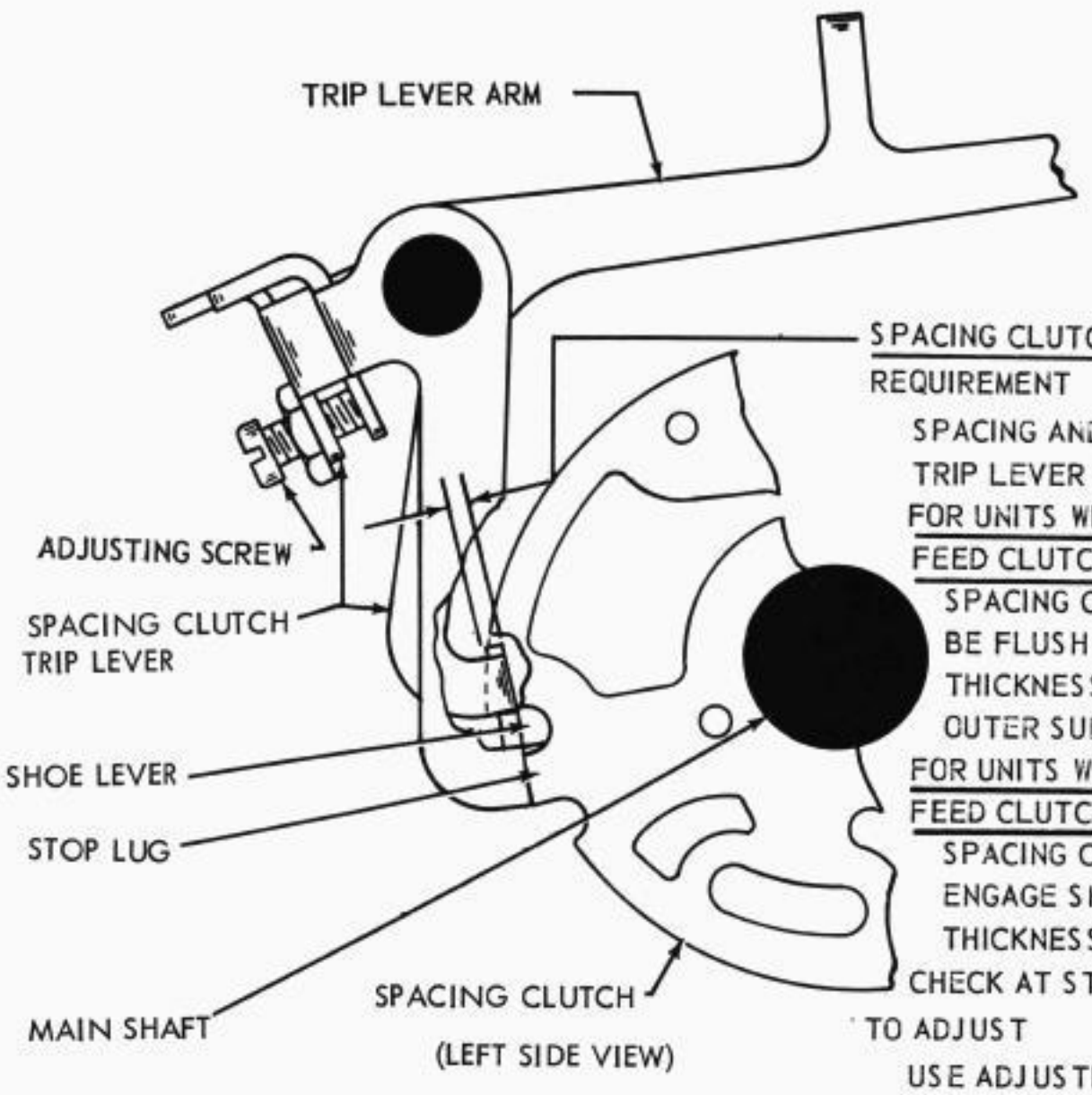
MIN. 1 LB. MAX. 5 LBS.

TO PULL TRIP SHAFT AWAY FROM ANTIDEFLECTION PLATE.

TO ADJUST

POSITION PLATE WITH MOUNTING SCREWS LOOSENED.

4.05 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:

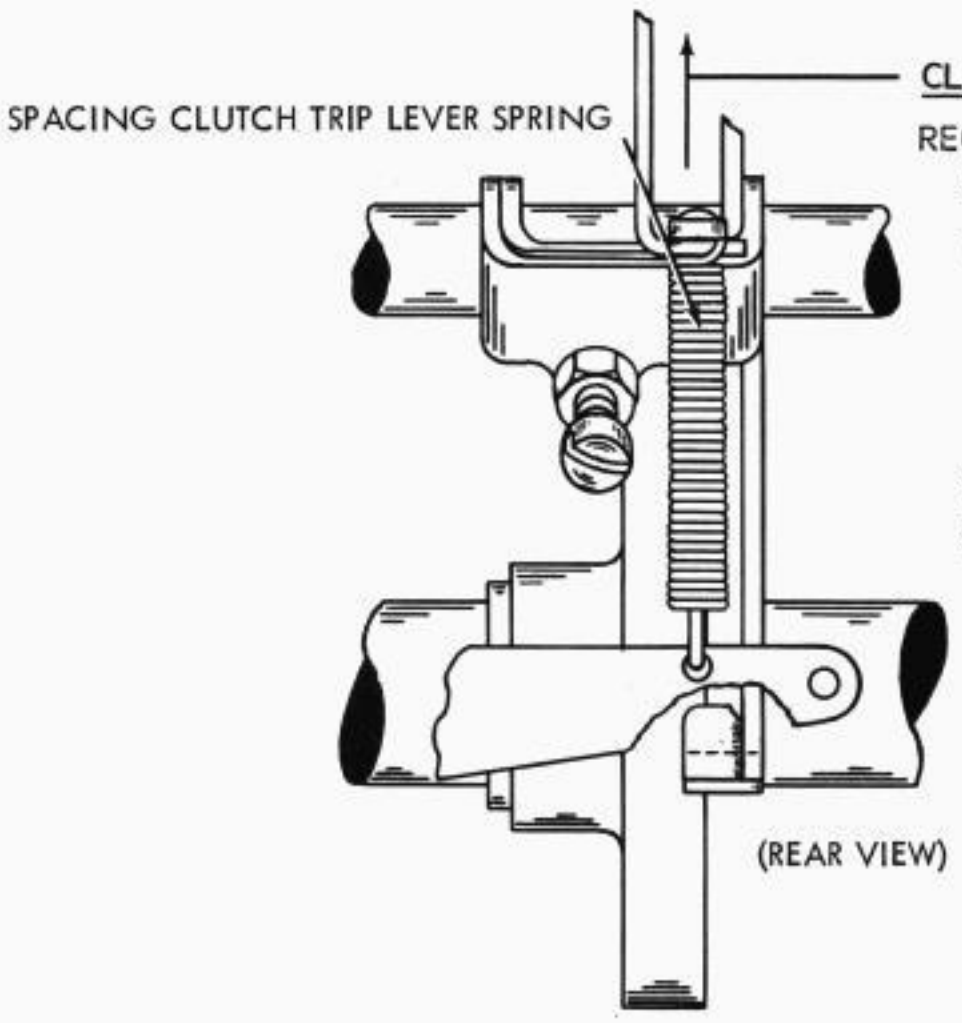
SPACING CLUTCH TRIP LEVER SHOULD BE FLUSH OR UNDERFLUSH BY 1/2 THICKNESS OF SHOE LEVER WITH OUTER SURFACE OF SHOE LEVER.

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.



CLUTCH TRIP LEVER SPRING

REQUIREMENT

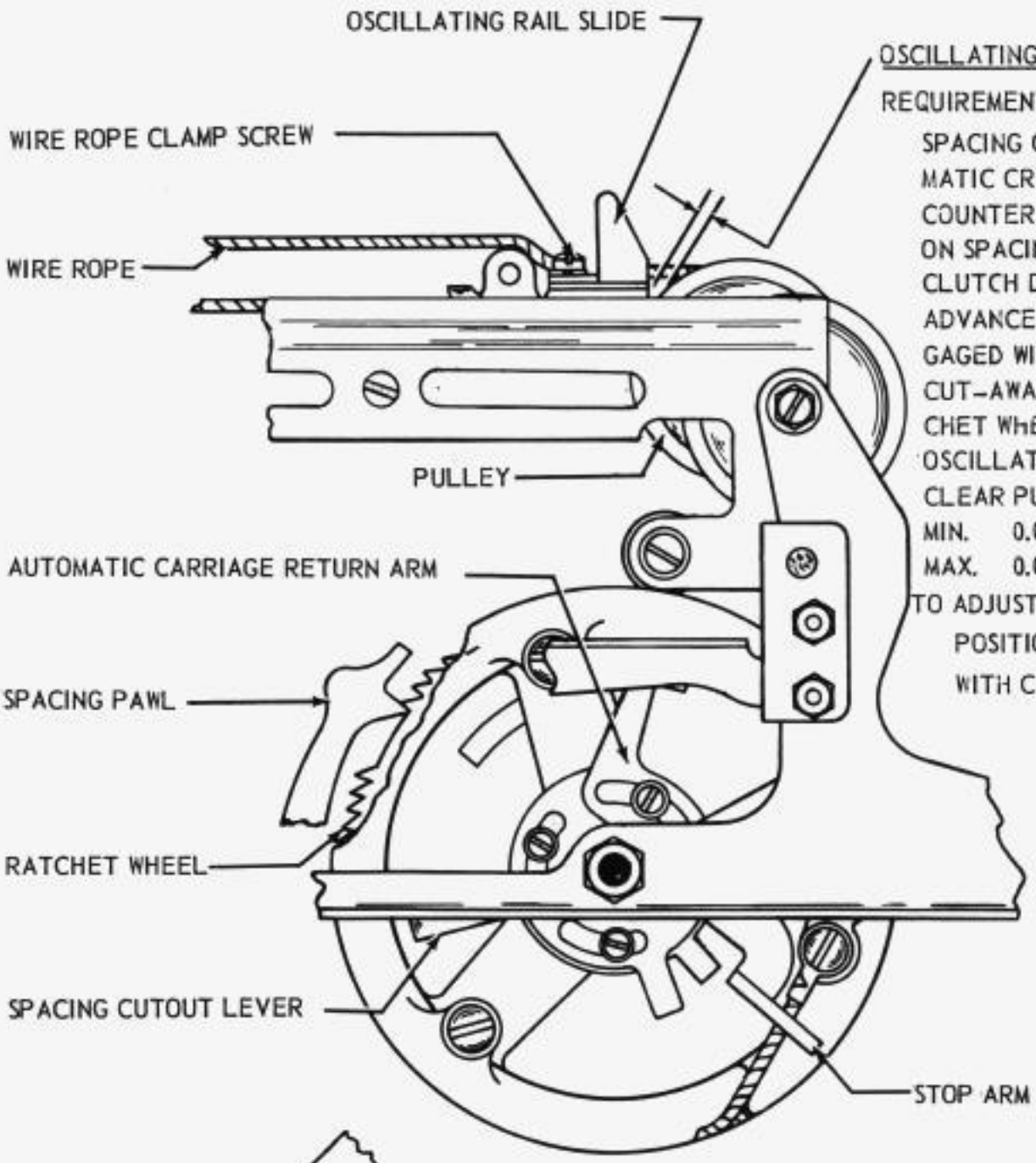
CLUTCH ENGAGED AND ROTATED UNTIL TRIP LEVER RESTS ON STOP LUG.

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.

4.06 Spacing Mechanism

NOTE: CHECK RELATED ADJUSTMENTS, PARS. 4.10, 4.11, 2.45, IF THE FOLLOWING ADJUSTMENTS ARE REMADE.



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.

SPACING FEED PAWL SPRING

REQUIREMENT

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

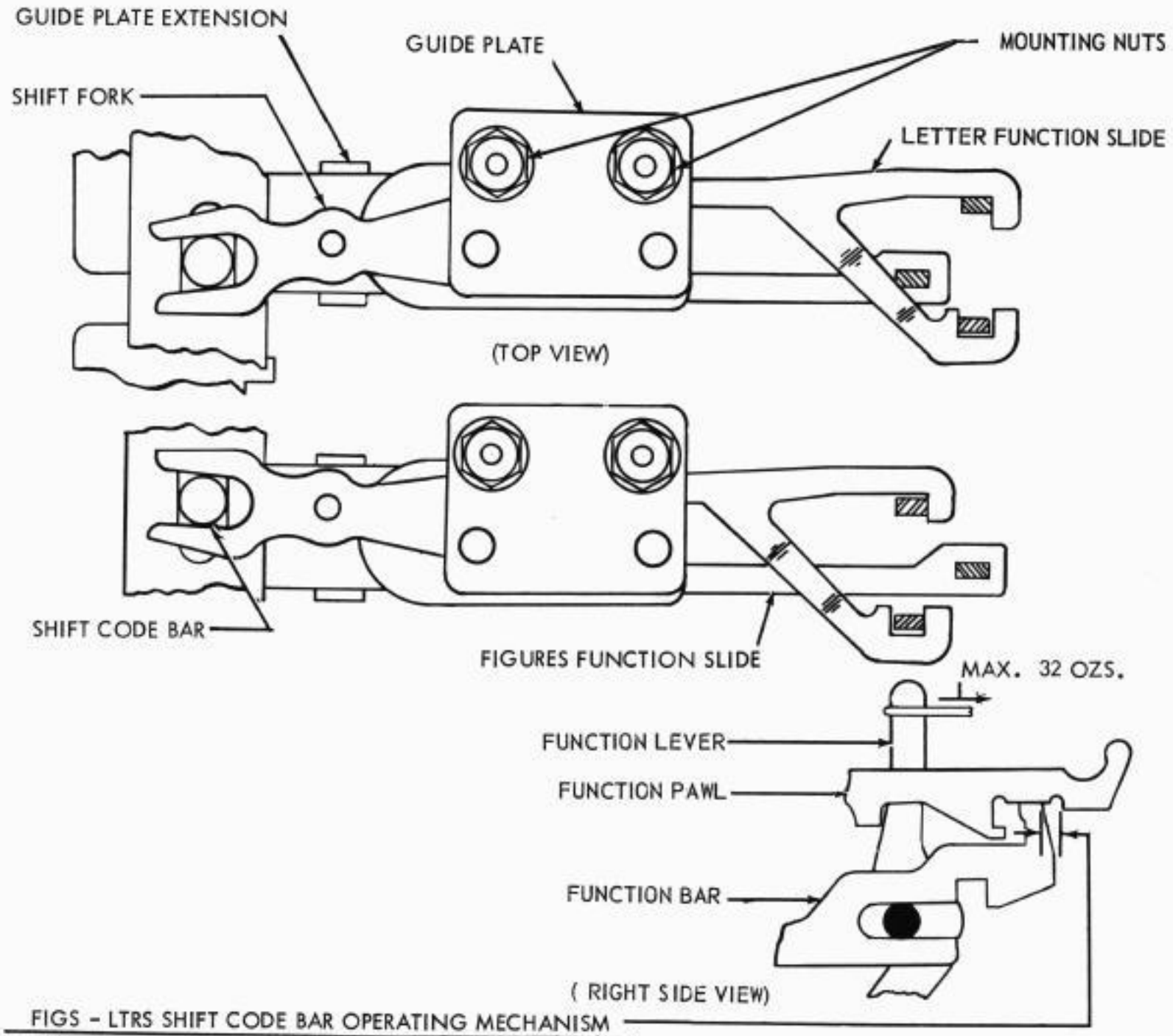
MIN. 2 1/2 OZS.
MAX. 4 OZS.

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.

4.07 Function Mechanism

NOTE: 1. THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH NON-ADJUSTABLE GUIDE PLATES
2. FOR UNITS WITH ADJUSTABLE GUIDE PLATES SEE PAR. 2.30.



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.

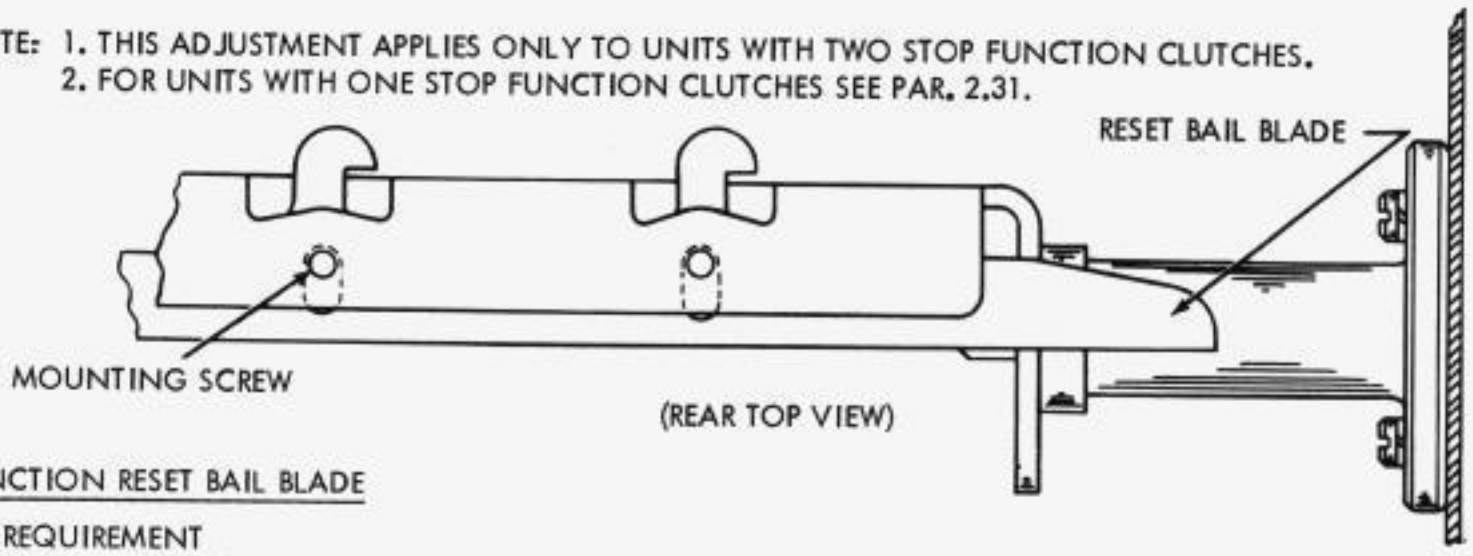
TO ADJUST

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

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

4.08 Function Mechanism (Cont.)

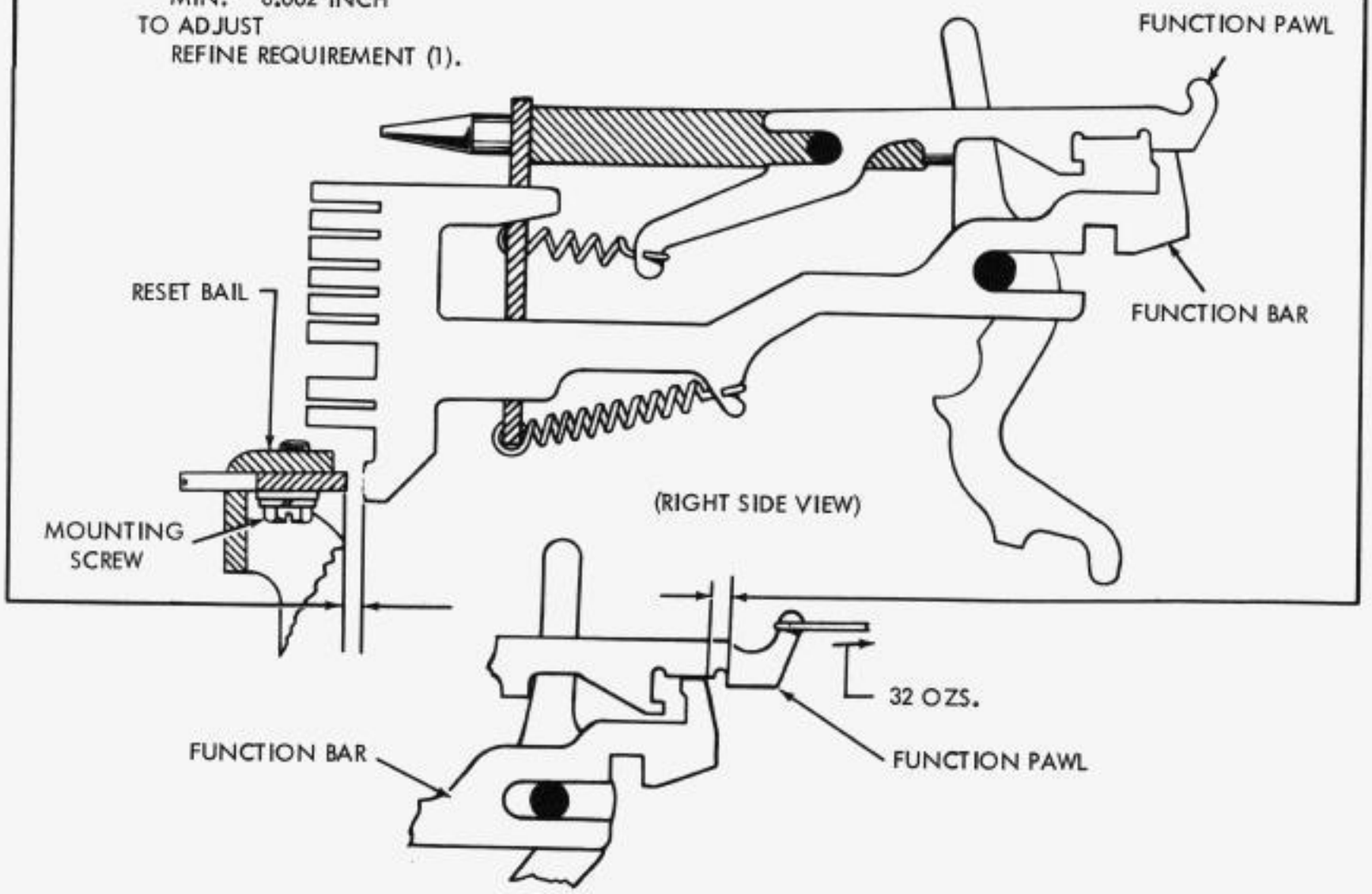
NOTE: 1. THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH TWO STOP FUNCTION CLUTCHES.
2. FOR UNITS WITH ONE STOP FUNCTION CLUTCHES SEE PAR. 2.31.



FUNCTION RESET BAIL BLADE

(1) REQUIREMENT
FUNCTION CLUTCH DISENGAGED AT STOP POSITION GIVING LEAST CLEARANCE. TYPE BOX 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.

(2) REQUIREMENT
TYPE BOX 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 OZS. TENSION APPLIED TO FUNCTION PAWL, IT SHOULD OVERTRAVEL ITS BAR
MIN. 0.002 INCH
TO ADJUST
REFINE REQUIREMENT (1).



4.09 Positioning Mechanism

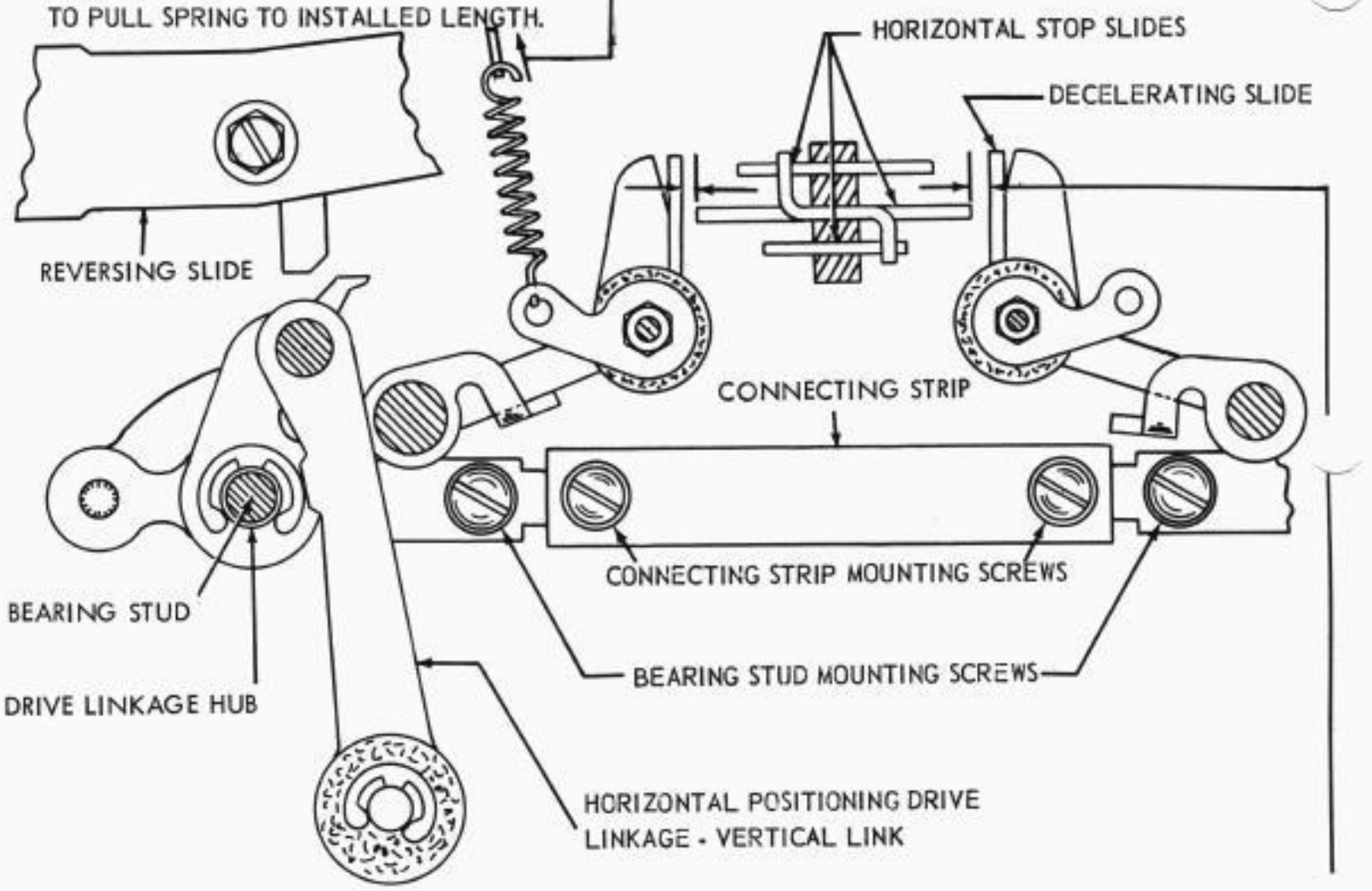
NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS EQUIPPED WITH TENSION SPRINGS

NOTE 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 WHIC[illegible] THE LOOPS ARE LOCATED, IS TOWARD THE REAR OF THE MACHINE. WHEN REMOVING EITHE[illegible] 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. 0.020 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 NORM[illegible] DIRECTION OF ROTATION IN THE STOP POSITION.

4.10 Spacing Mechanism (Cont.)

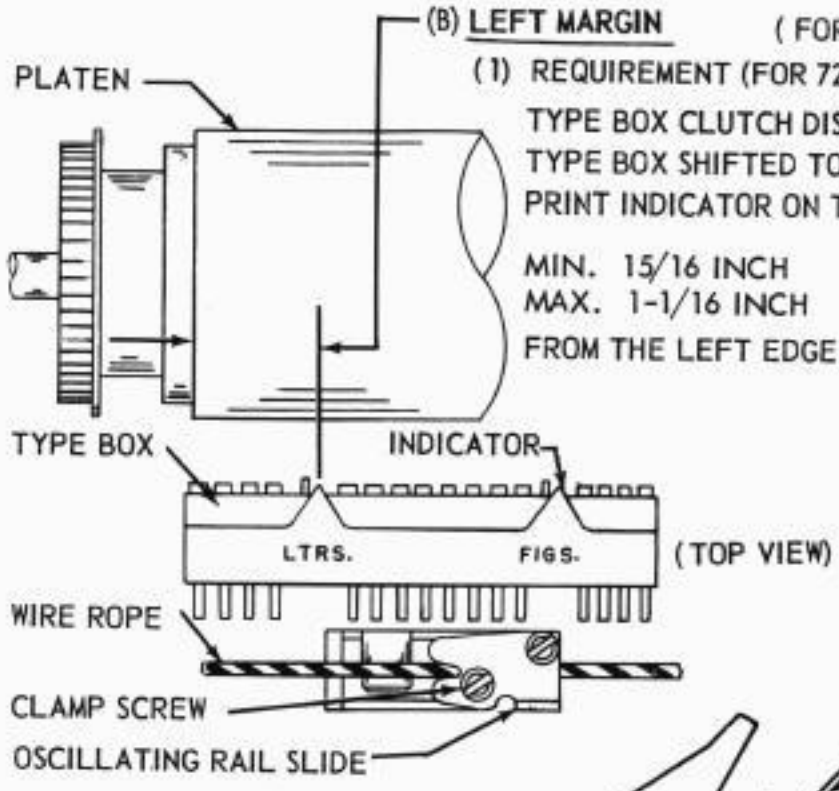
NOTE: CHECK RELATED ADJUSTMENTS, PARS. 4.06, 4.11 AND 2.45 IF THE FOLLOWING ADJUSTMENTS ARE REMADE.

(B) LEFT MARGIN (FOR SPROCKET FEED UNITS SEE PAR. 2)

(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.



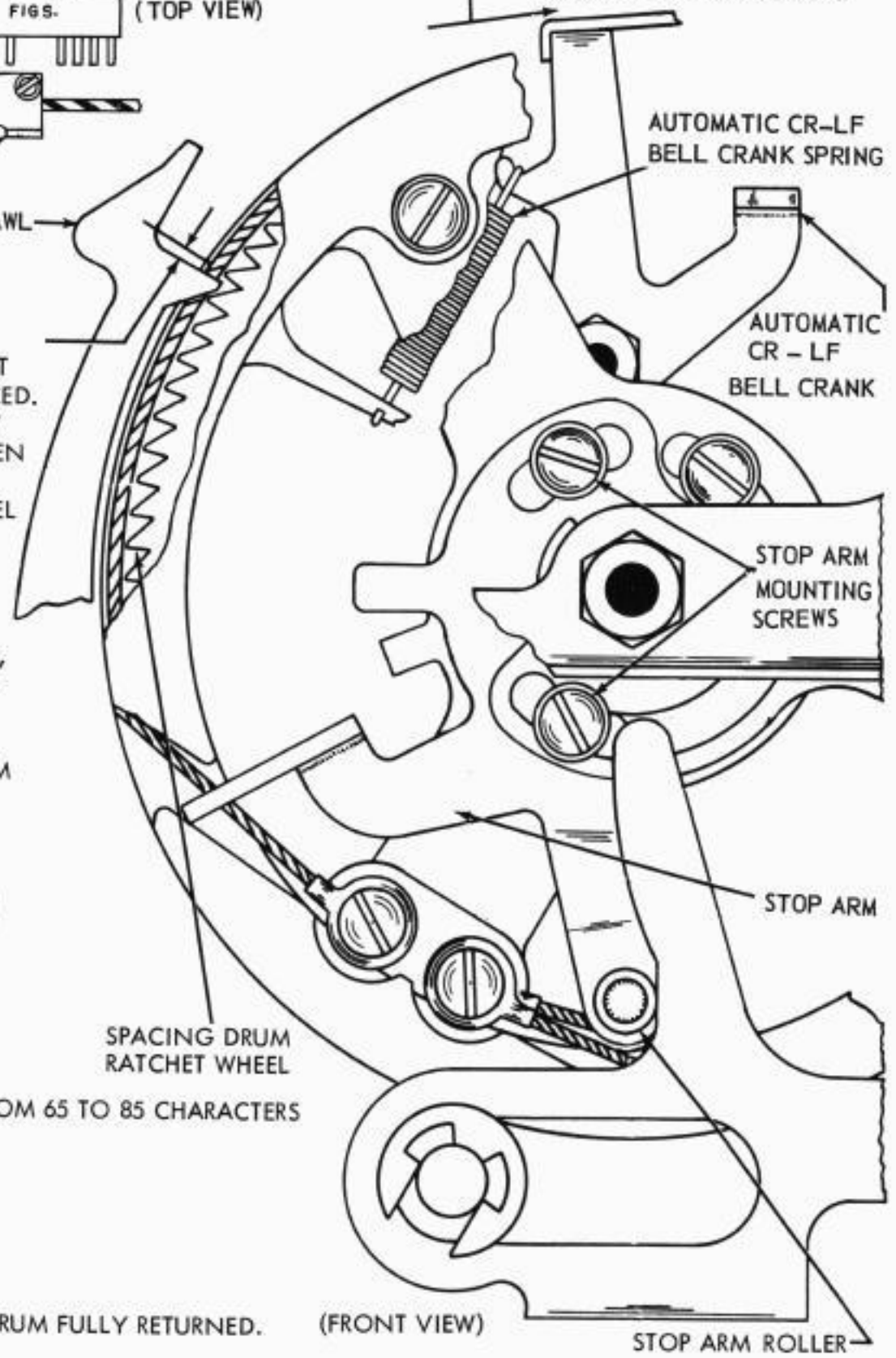
(C) AUTOMATIC CR – LF BELL CRANK SPRING

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. 2.22 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.

(A) PRINTING CARRIAGE POSITION
(USE STANDARD ADJUSTMENT PAR. 2.45)

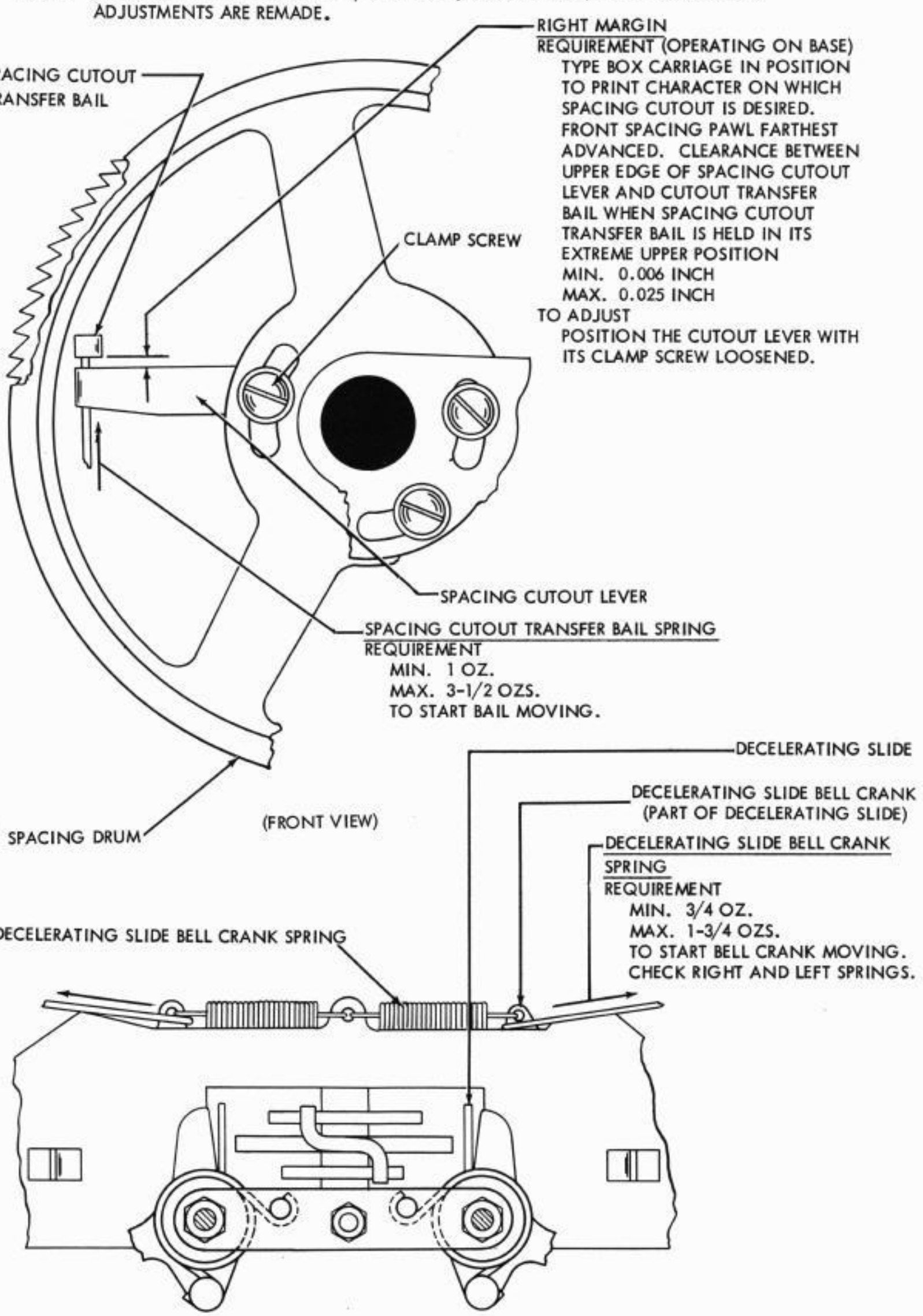
NOTE:
FOR OTHER LENGTHS OF LINE, RANGING FROM 65 TO 85 CHARACTERS THE MARGIN CAN BE VARIED AS REQUIRED.

NOTE

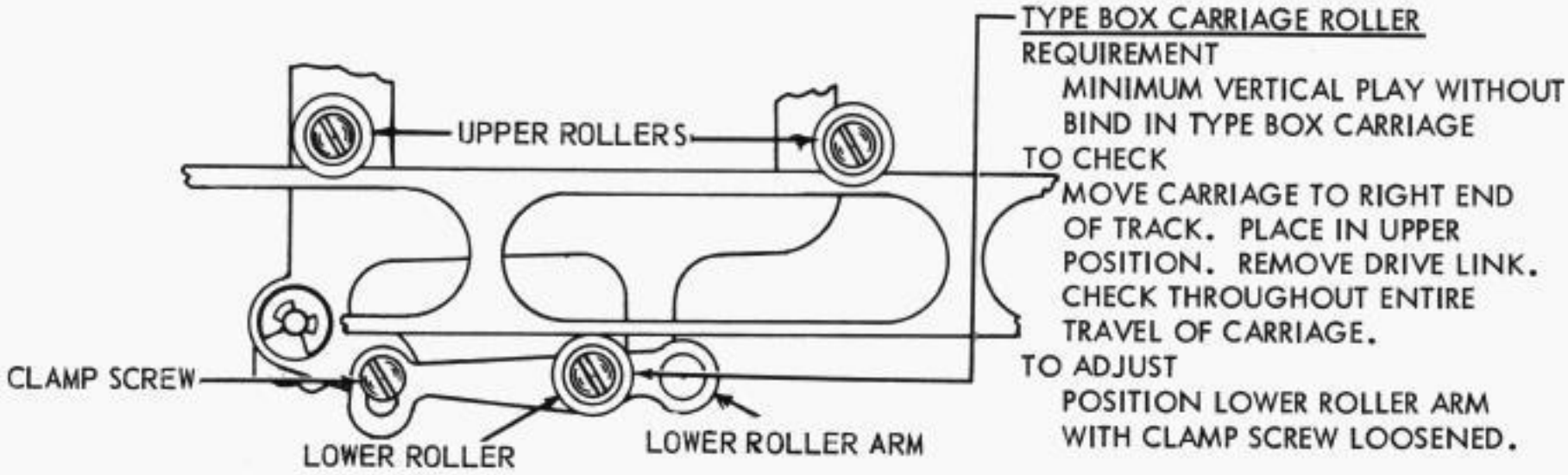
THIS VIEW SHOWS THE SPACING DRUM FULLY RETURNED. (FRONT VIEW)

4.11 Spacing Mechanism (Cont.)

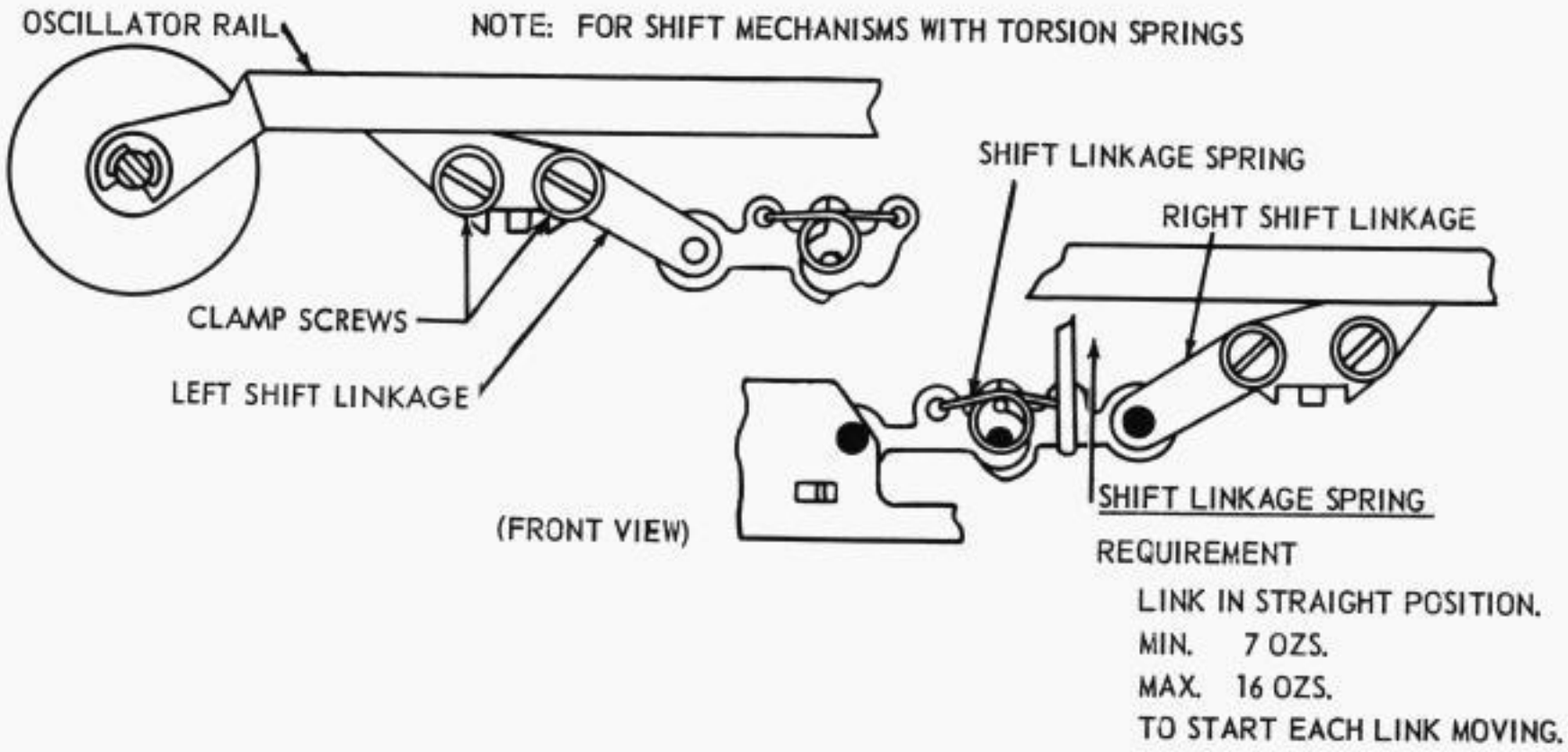
NOTE: CHECK RELATED ADJUSTMENTS, PARS. 4.06, 2.36 AND 2.45, IF THE FOLLOWING ADJUSTMENTS ARE REMADE.



4.12 Printing Mechanism



4.13 Positioning Mechanism (Cont.)



4. 14 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.

(FOR SPROCKET FEED UNITS, SEE PAR. 3.02)

(C)

TYPE PALLET SPRING

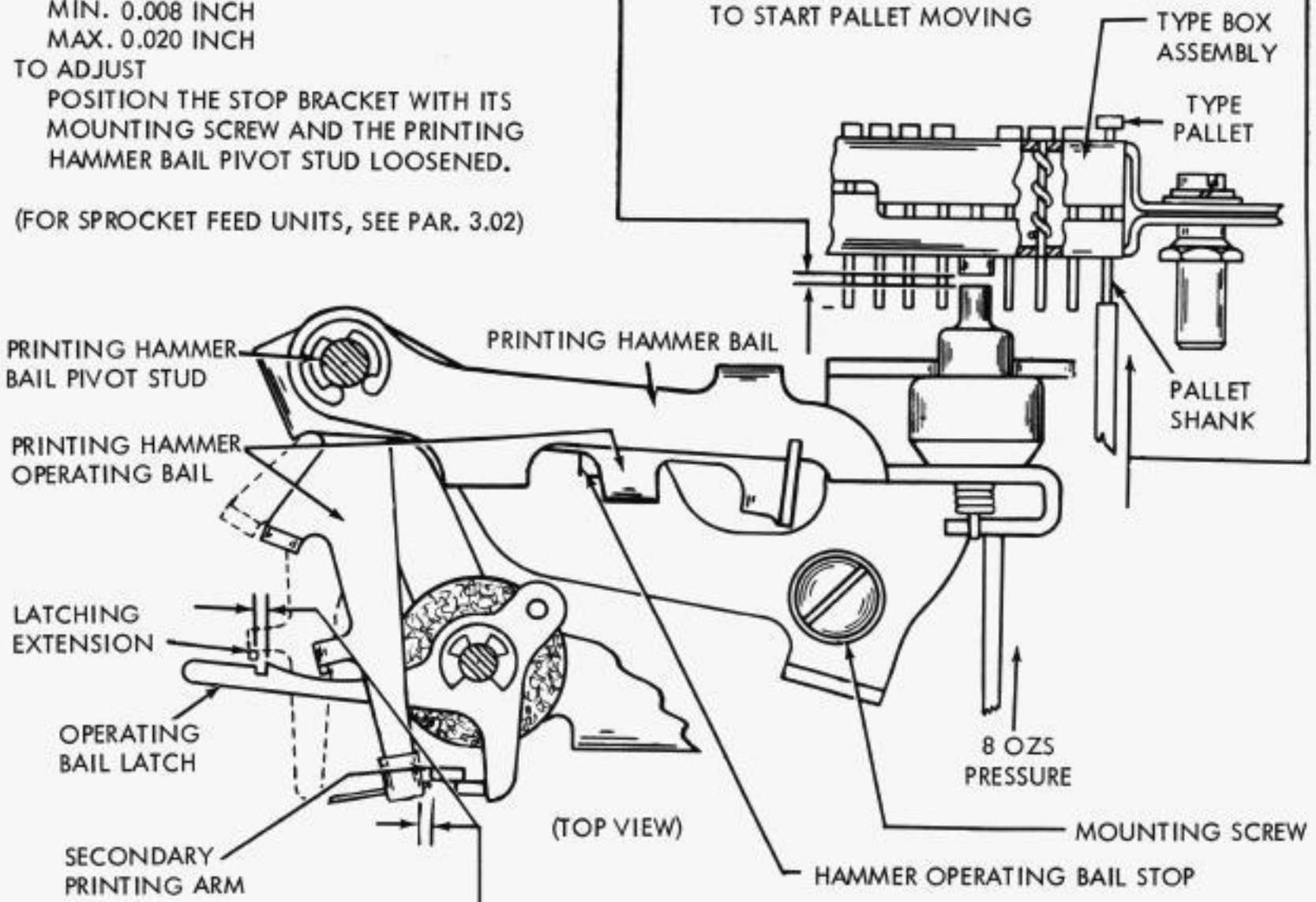
REQUIREMENT

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

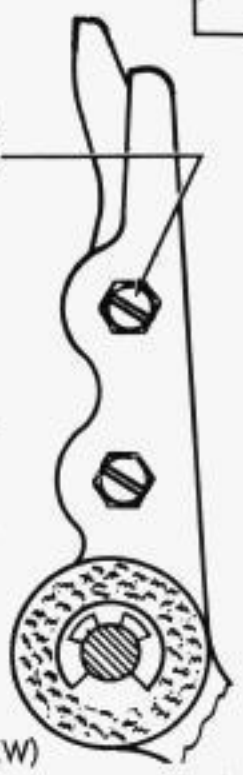
PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAIL SHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY

MIN. 0.006 INCH

CHECK RIGHT AND LEFT POSITION

TO ADJUST

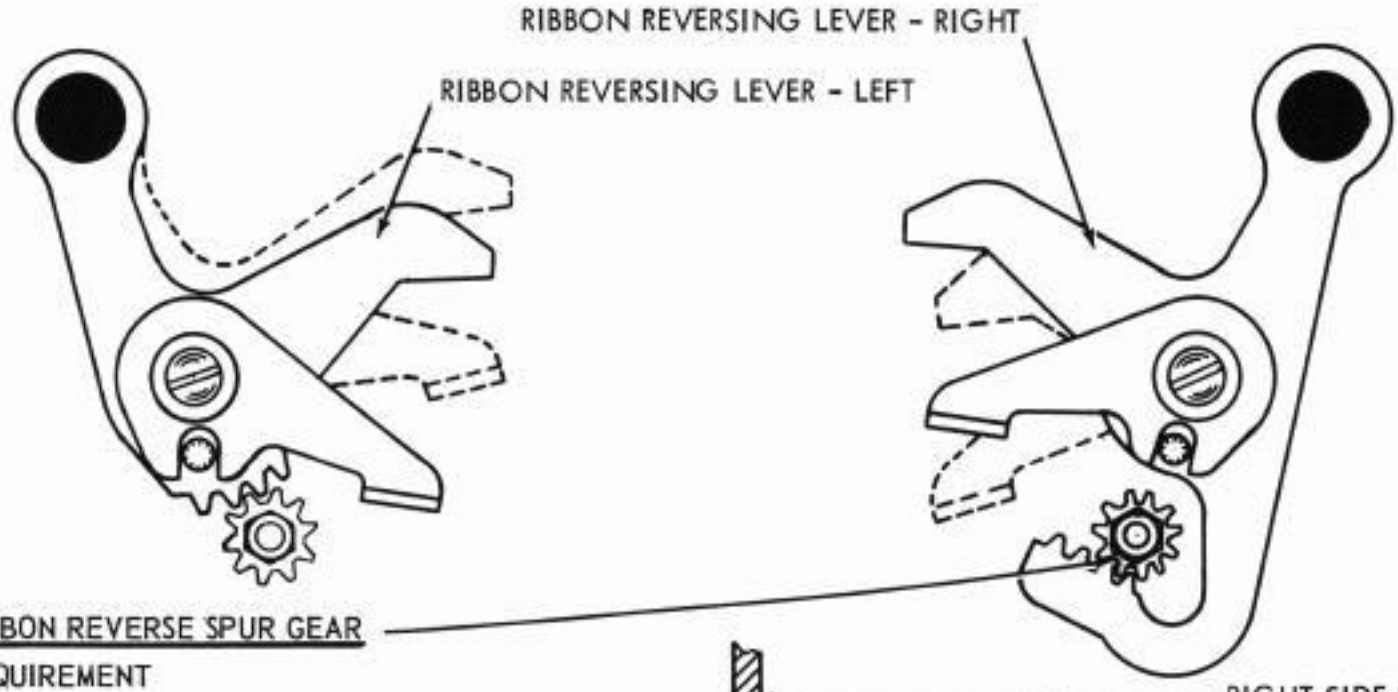
POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.



NOTE

THE PRINTING ARM ADJUSTMENT SHOULD ALWAYS BE MADE WITH THE PRINTING HAMMER OPERATING BAIL SPRING BRACKET (PAR. 2.36) IN THE NO. 1 POSITION POSITIONS NO. 2 AND NO. 3 ARE TO BE USED ONLY FOR MAKING MULTIPLE COPIES.

4.15 Printing Mechanism (Cont.)



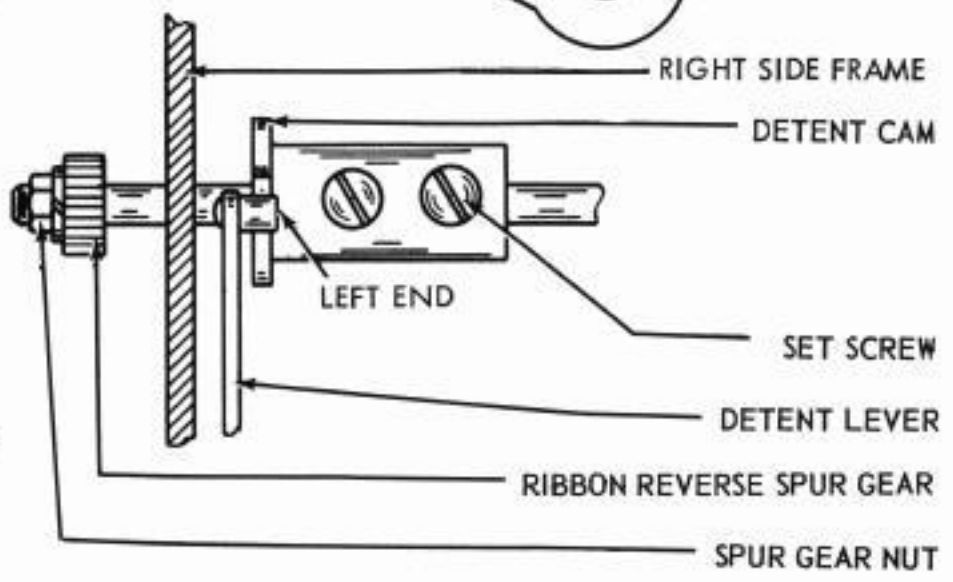
(A) RIBBON REVERSE SPUR GEAR

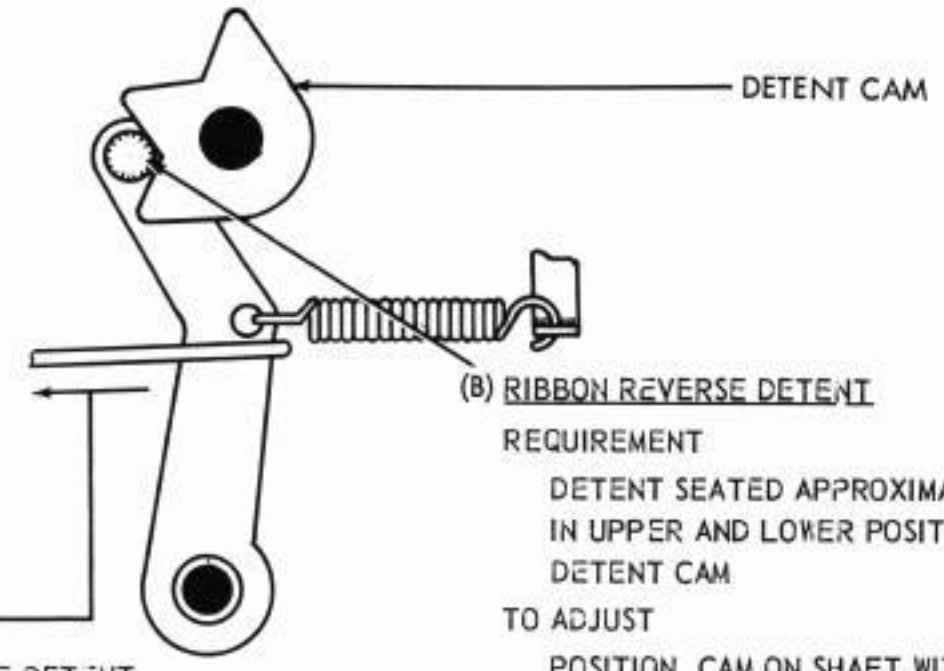
REQUIREMENT

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)

(C) RIBBON REVERSE DETENT LEVER SPRING

REQUIREMENT

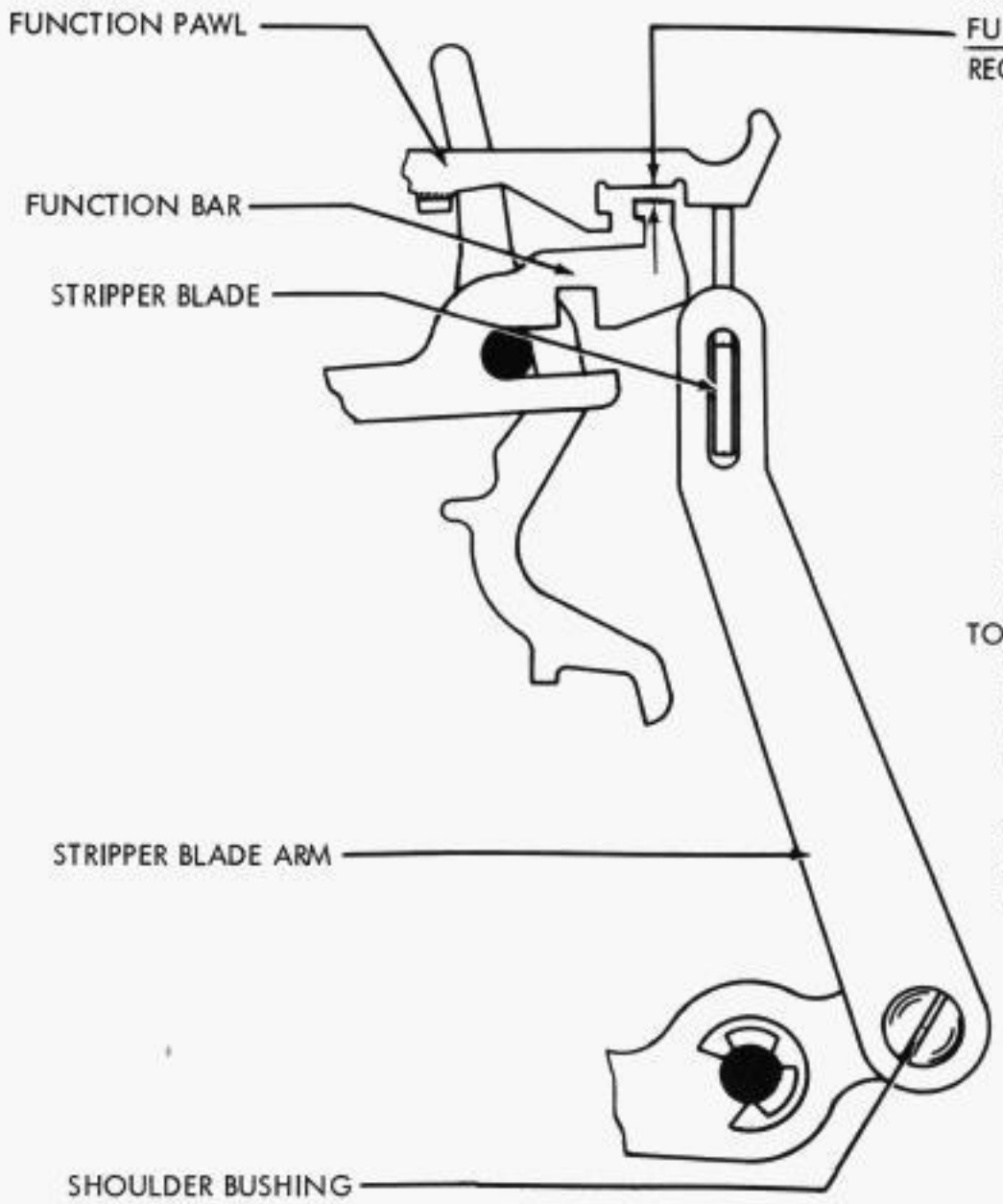
DETENT SEATED IN NOTCH OF CAM. RIGHT RIBBON REVERSING LEVER HELD DOWNWARD.

MIN. 6 1/2 OZS.

MAX. 9 OZS.

TO START THE DETENT LEVER MOVING.

4.16 Function Mechanism (Cont.)



FUNCTION STRIPPER BLADE ARMS

REQUIREMENT

TYPE BOX CLUTCH AND FUNCTION CLUTCH DISENGAGED. LEFT LINE FEED FUNCTION PAWL HELD IN ITS REAR POSITION AND RESTING ON THE UPPER EDGE OF THE 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.

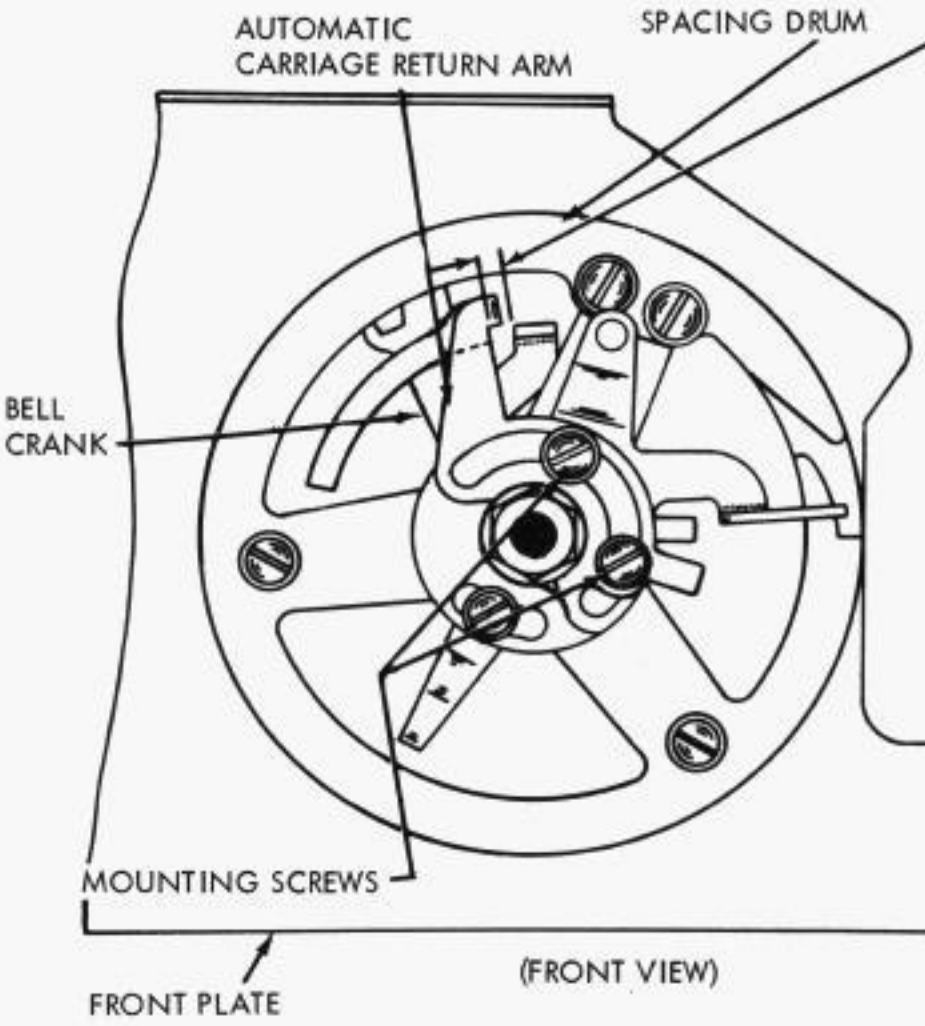
TO ADJUST

POSITION THE SHOULDER BUSHING AT THE LOWER END OF THE RIGHT AND LEFT STRIPPER BLADE ARM WITH THE LOCK NUT LOOSENED.

NOTE

WHEN CHECKING THIS ADJUSTMENT SINGLE-DOUBLE LINEFEED LEVER MUST BE IN DOUBLE LINEFEED POSITION.

4.17 Spacing Mechanism (Cont.)



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 BELL CRANK.

MIN. 0.040 INCH
MAX. 0.055 INCH

TO ADJUST

POSITION AUTOMATIC CARRIAGE RETURN ARM WITH MOUNTING SCREWS LOOSENED.

NOTE

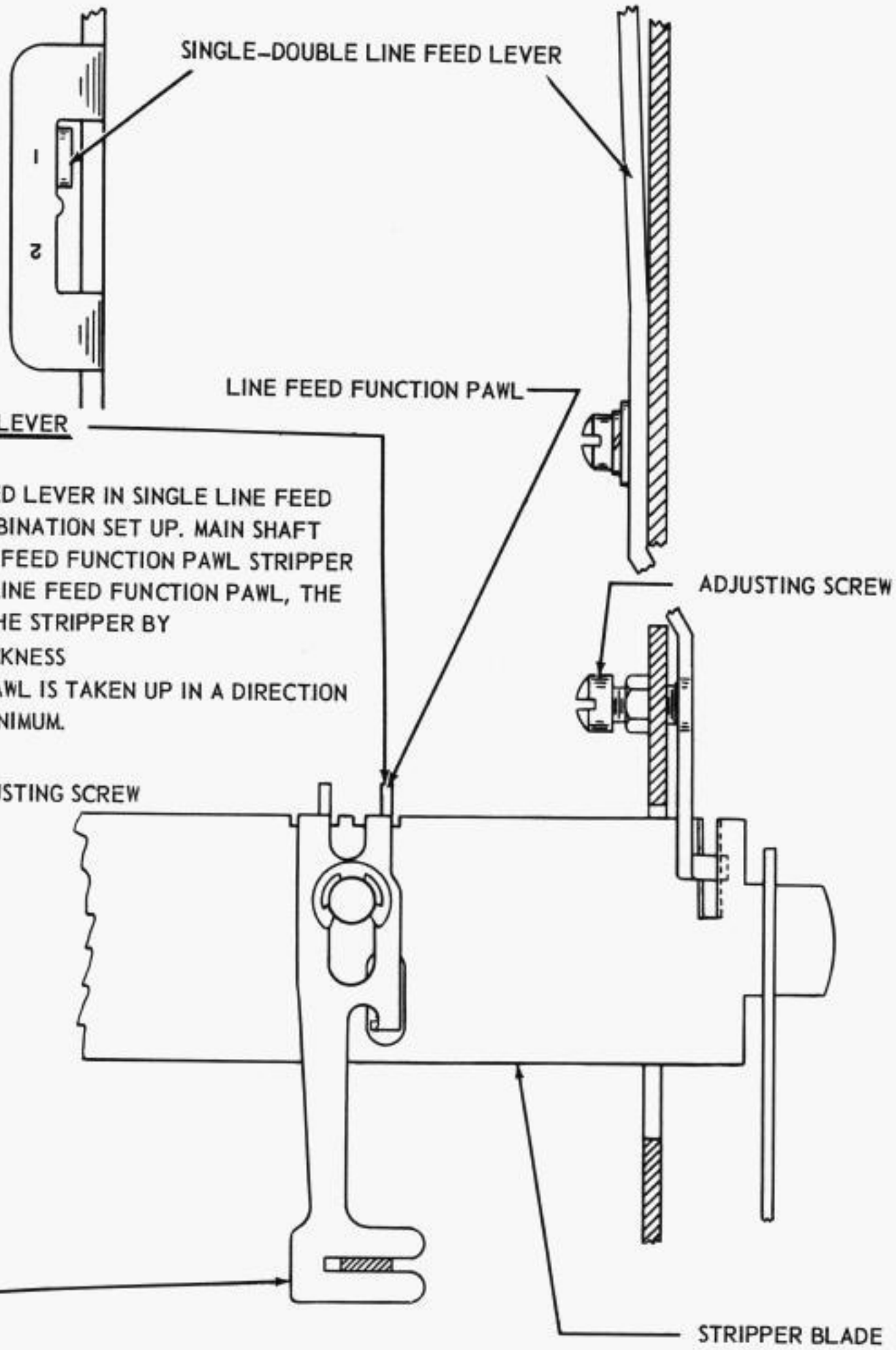
RANGE OF ADJUSTMENT IS FROM 65TH TO 85TH CHARACTERS.

NOTE

FOR UNITS EQUIPPED WITH UNIVERSAL SPACING DRUM, SEE PAR. 2.60.

4.18 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

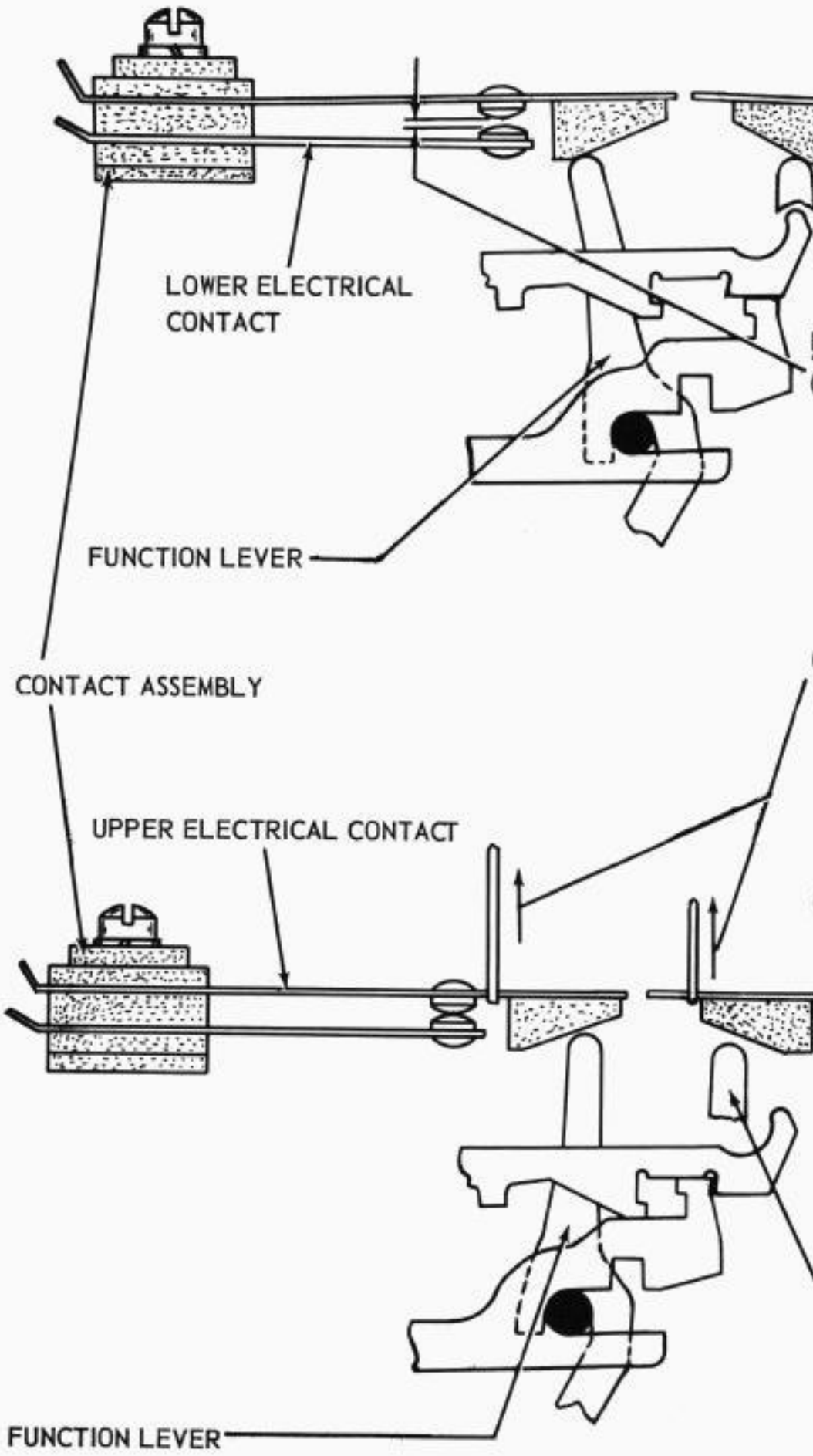
MIN. 1/2 THE PAWL THICKNESS

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

TO ADJUST

POSITION THE LEVER ADJUSTING SCREW

4.19 Function Mechanism (Cont.)



BELL OR MOTOR STOP FUNCTION CONTACT

(1) REQUIREMENT

FUNCTION LEVER AS SHOWN

CONTACT GAP

MIN. 0.010 INCH

MAX. 0.020 INCH

TO ADJUST

BEND THE LOWER ELECTRICAL CONTACT.

(2) REQUIREMENT

FUNCTION LEVER AS SHOWN

MIN. 1 1/4 OZS.

MAX. 1 3/4 OZS.

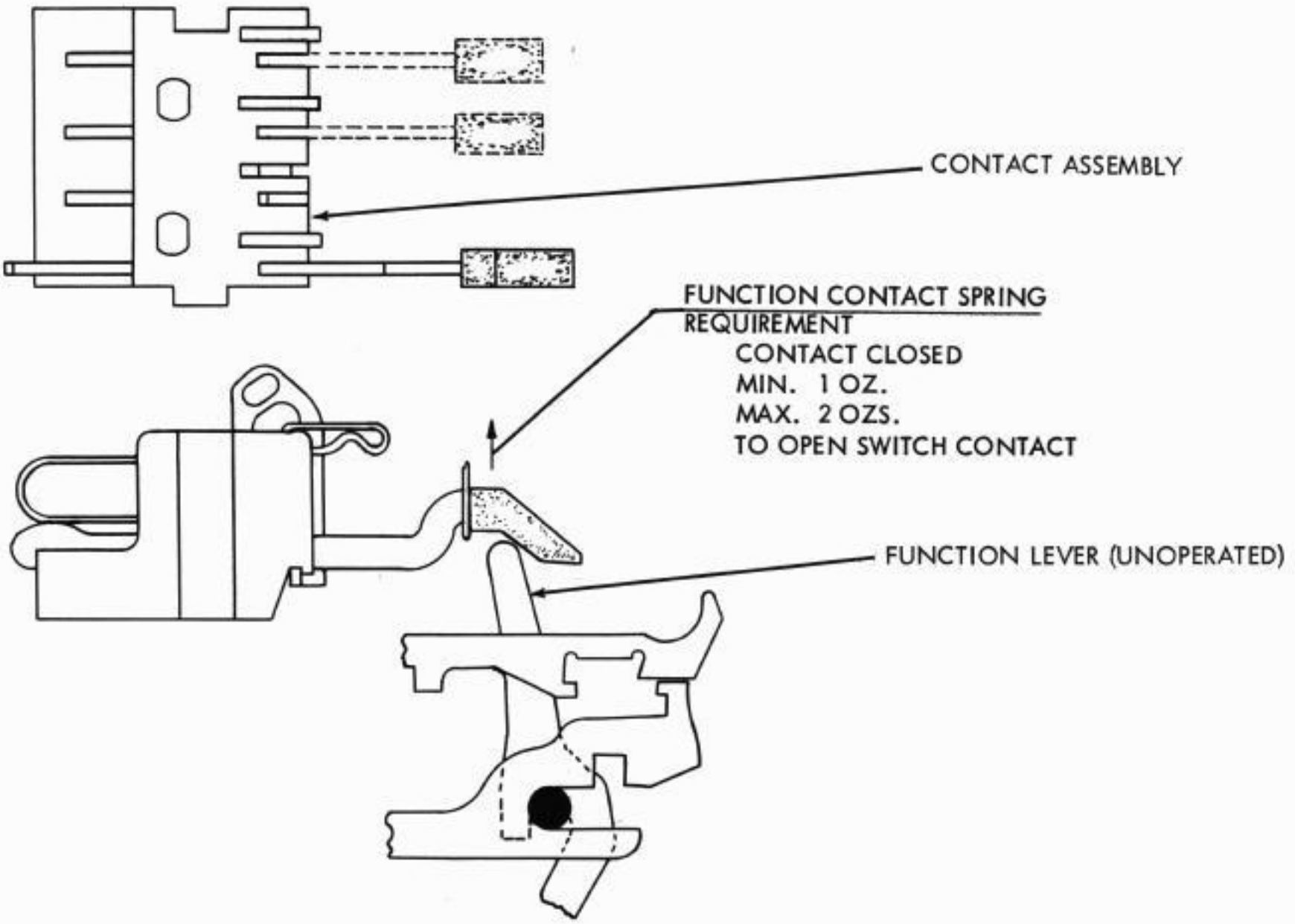
TO ADJUST

BEND THE UPPER ELECTRICAL CONTACT

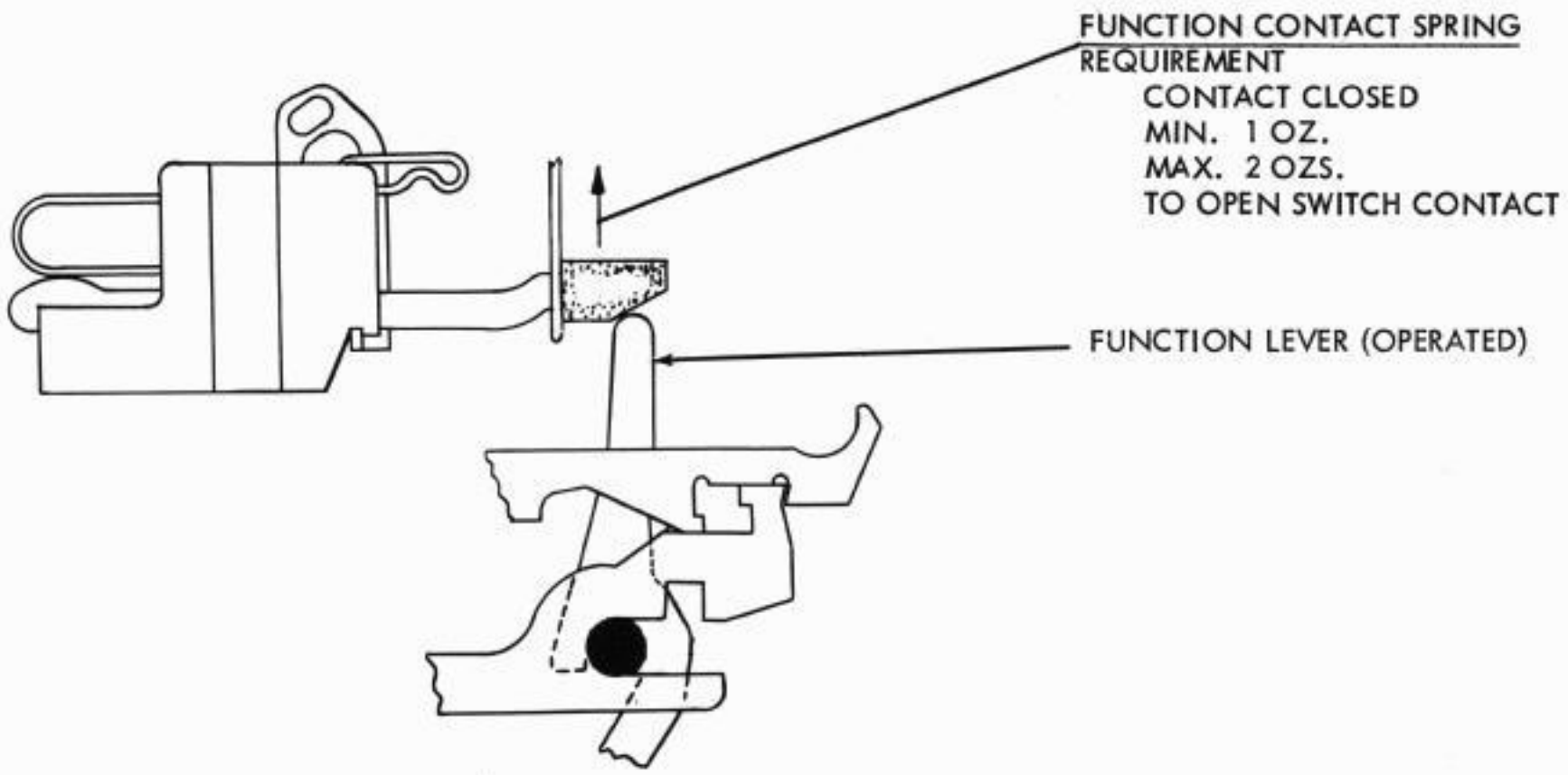
(3) REQUIREMENT

RECHECK REQUIREMENT (1)

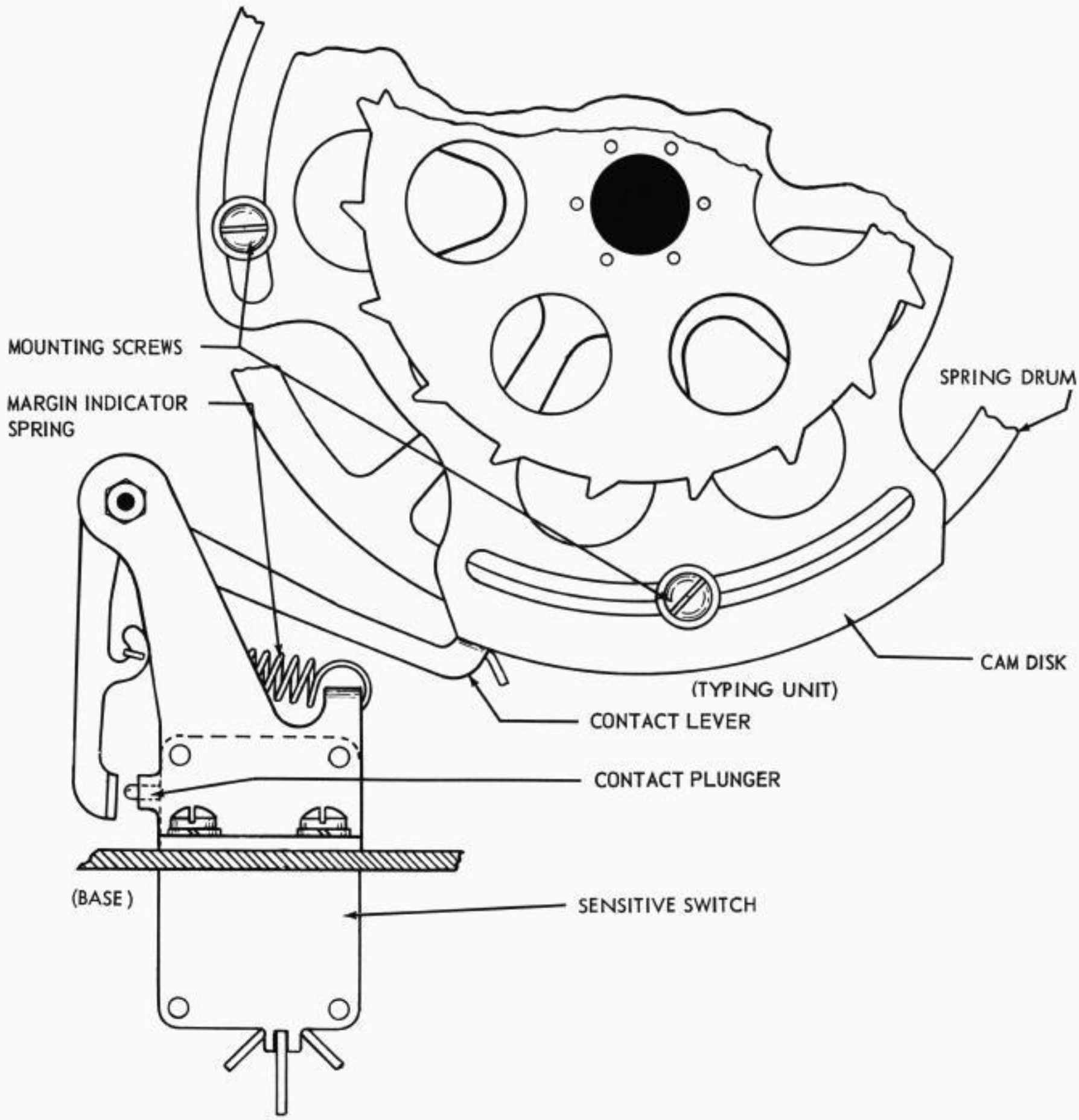
4.20 Function Mechanism (Cont.)



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



4.21 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 DISK 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 DISK SCREWS AND INSERT THEM IN ADJACENT SLOTS OF THE DISK, IF THE RANGE OF ROTATION IN ONE SLOT IS NOT ENOUGH.

VARIABLE FEATURES

4.22 Horizontal Tabulator Mechanism

(A)
OPERATING LEVER SLIDE ARM

NOTE

PRIOR TO THIS ADJUSTMENT CHECK FUNCTION RESET BAIL BLADE ADJUSTMENT (PAR. 4.08)

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. 0.020 INCH
MAX. 0.030 INCH

TO ADJUST

POSITION SLIDE ARM ON OPERATING LEVER WITH MOUNTING STUD FRICTION TIGHT

(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 ONI BRACKET WITH MOUNTING SCREWS LOOSE.

(D) TABULATOR SHAFT SPRING (TORSION)

NOTE

FOR LOCATION OF SPRING SEE PAR. 4.25

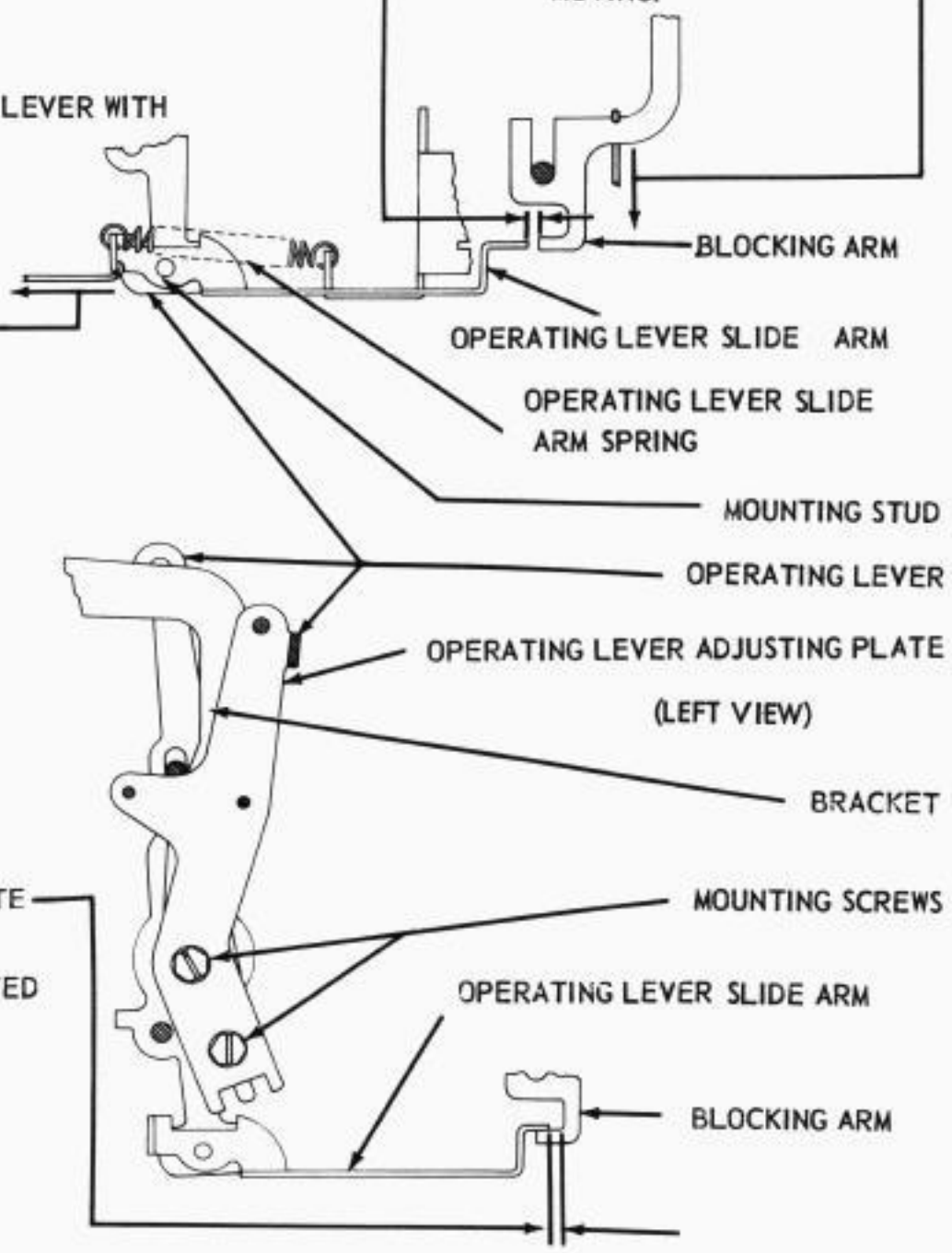
REQUIREMENT

OPERATING LEVER IN UNOPERATED POSITION.

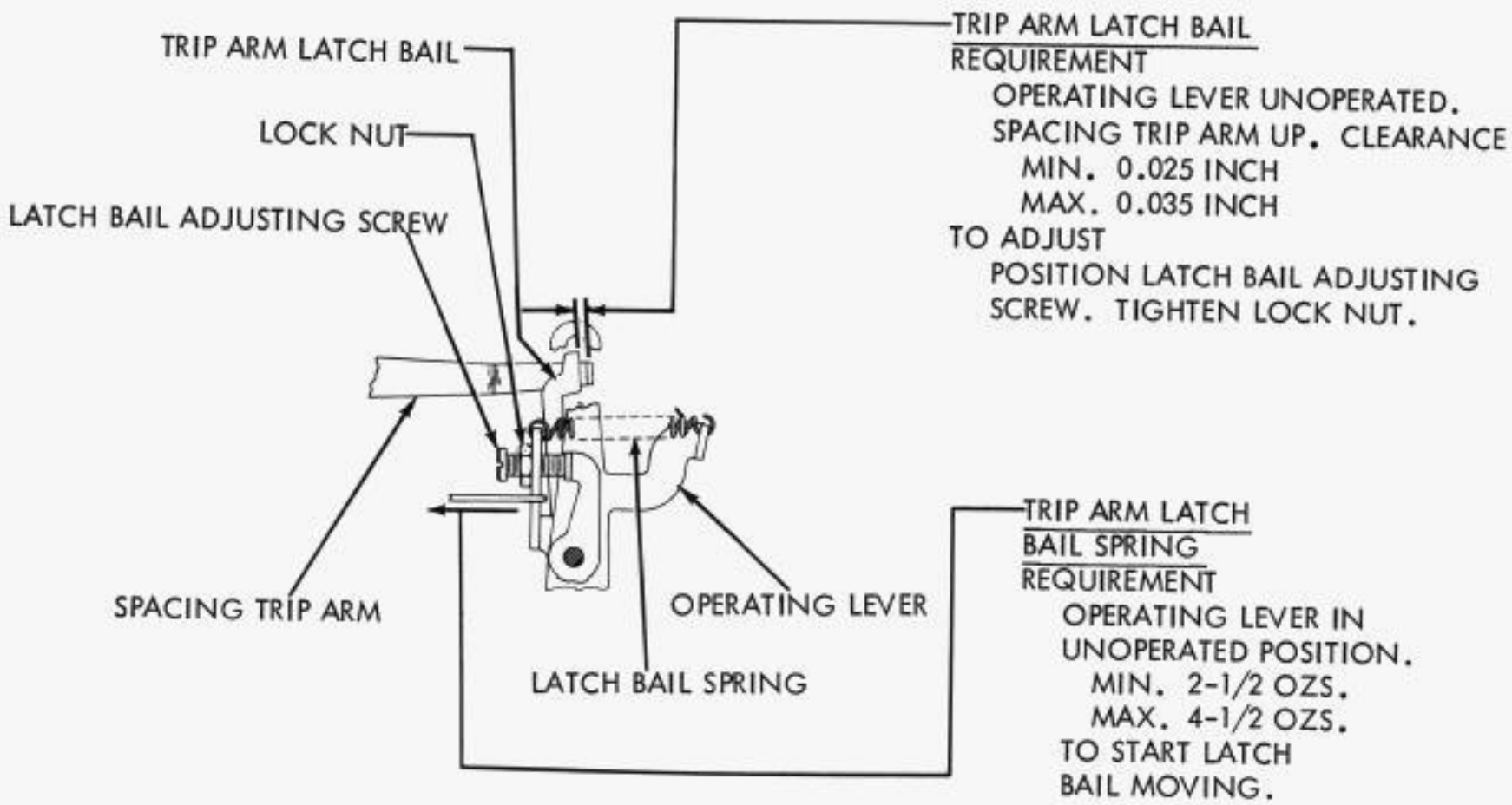
'AS IN LOWER FIGURE)

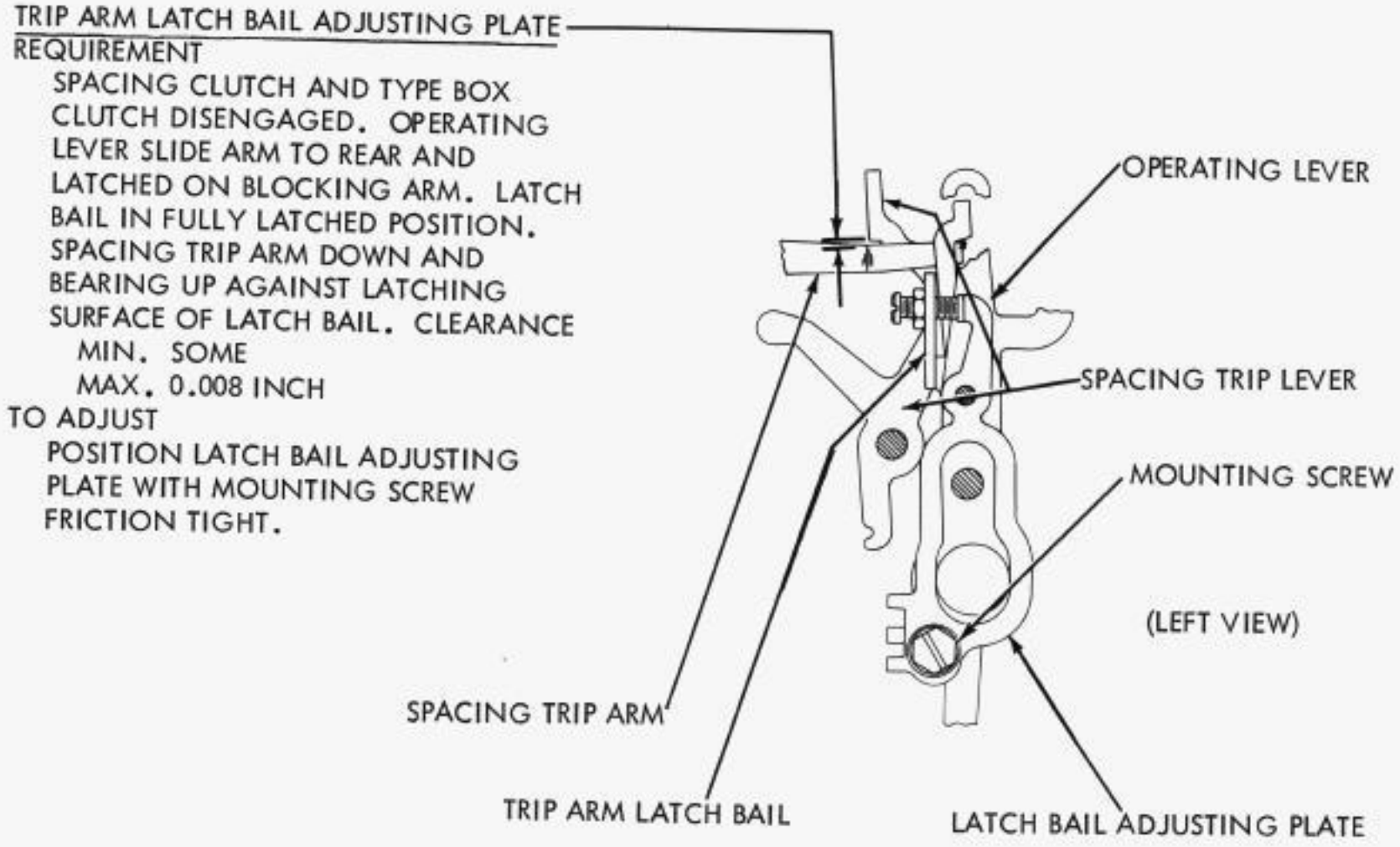
MIN. 1 1/2 OZS.
MAX. 3 1/2 OZS.

TO START SLIDE ARM MOVING.

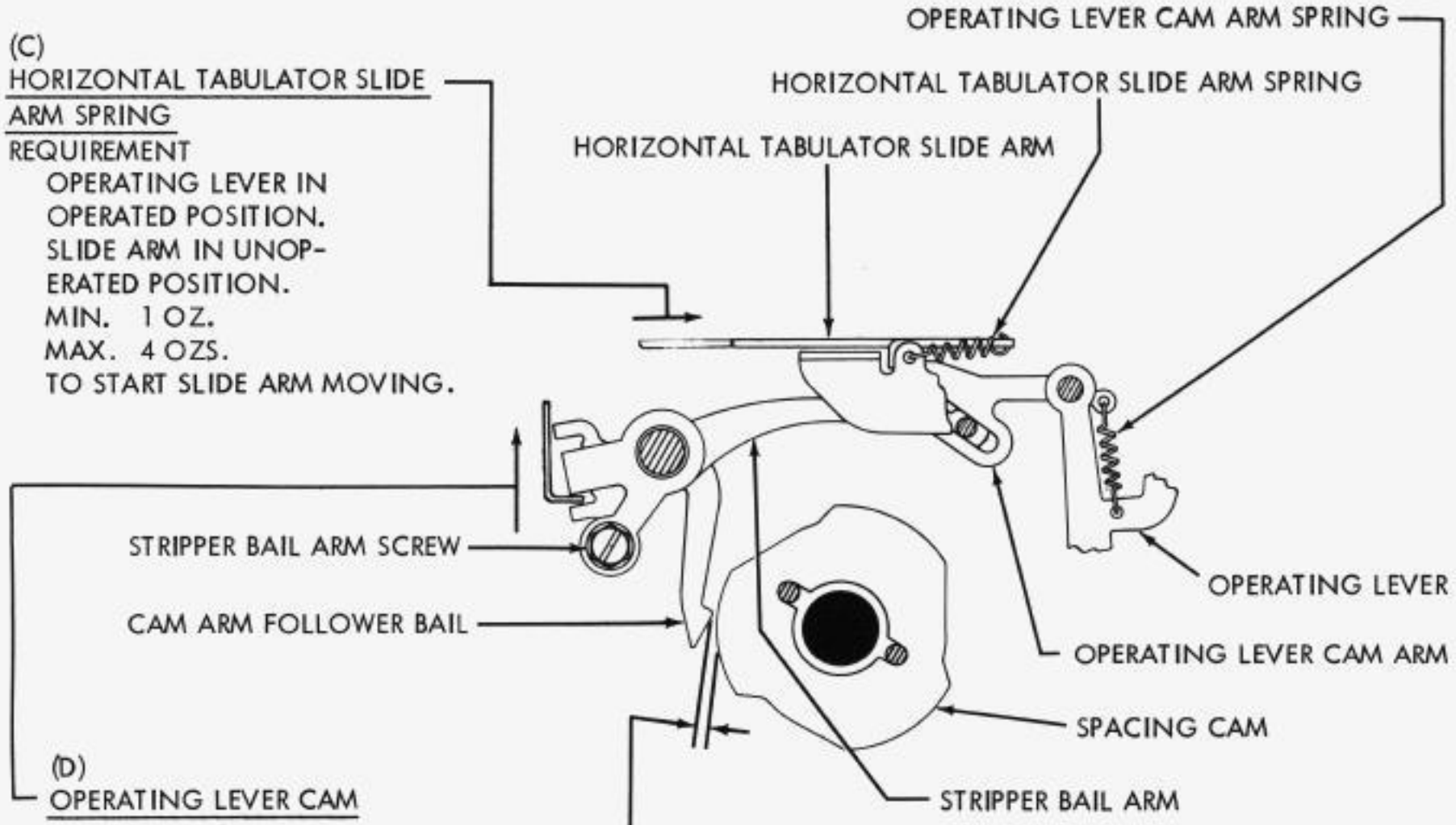


4.23 Horizontal Tabulator Mechanism (Cont.)





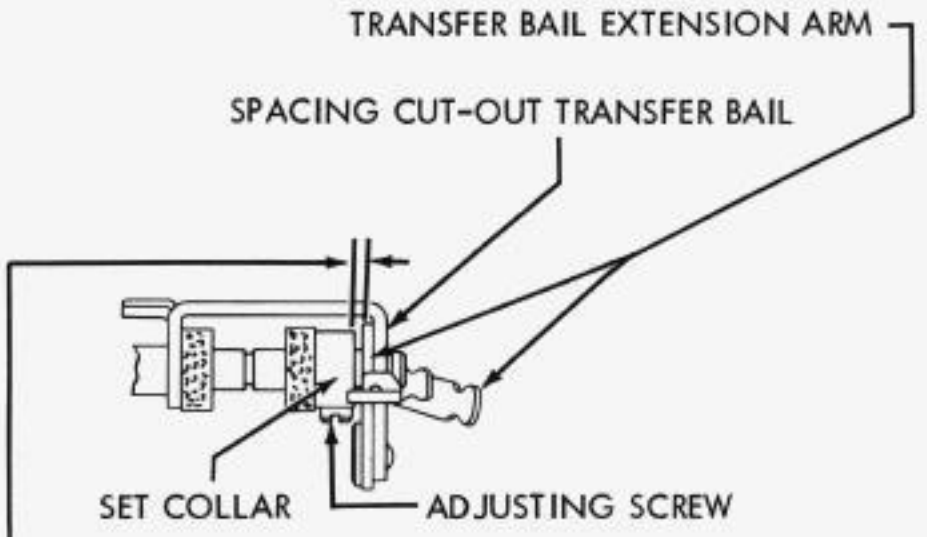
4.24 Horizontal Tabulator Mechanism (Cont.)



(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.

(LEFT SIDE VIEW)



(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.

(B)
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 ADJUSTING SCREW LOOSENED.

4.25 Horizontal Tabulator Mechanism (Cont.)

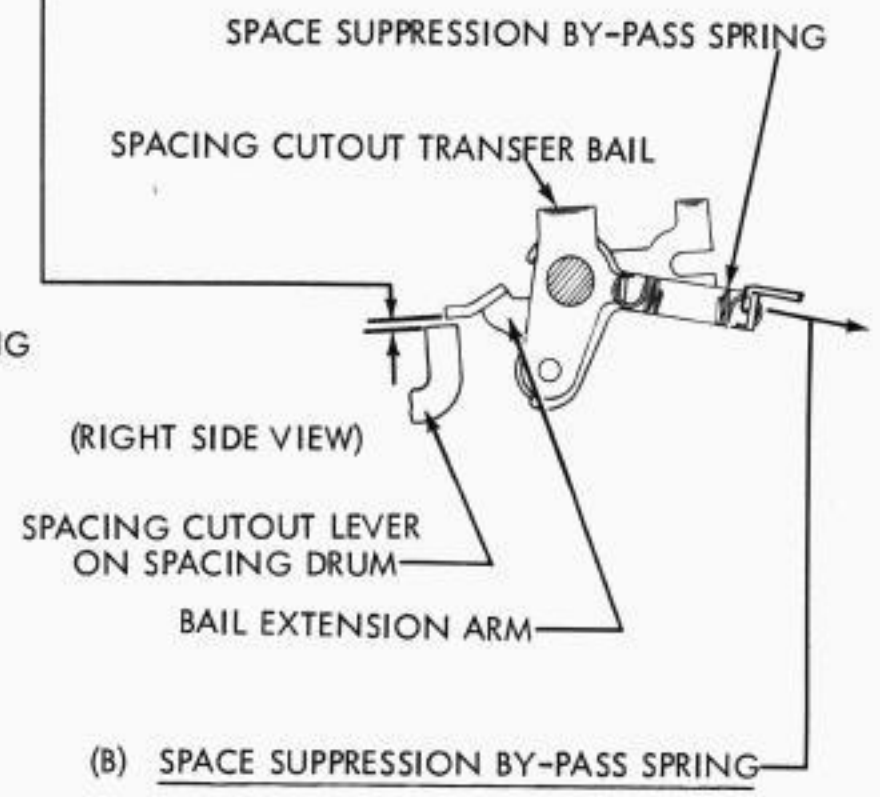
(A) RIGHT MARGIN

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.

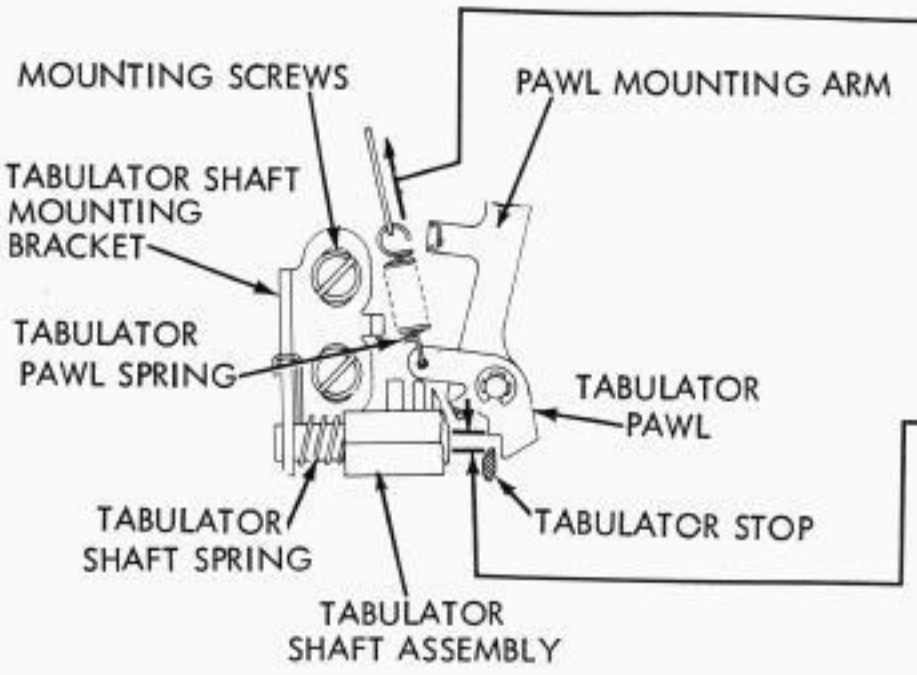
TO ADJUST
POSITION CUTOUT LEVER WITH CLAMP SCREW LOOSENED. (FOR LOCATION OF CLAMP SCREW SEE PAR. 4.11)

NOTE: 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

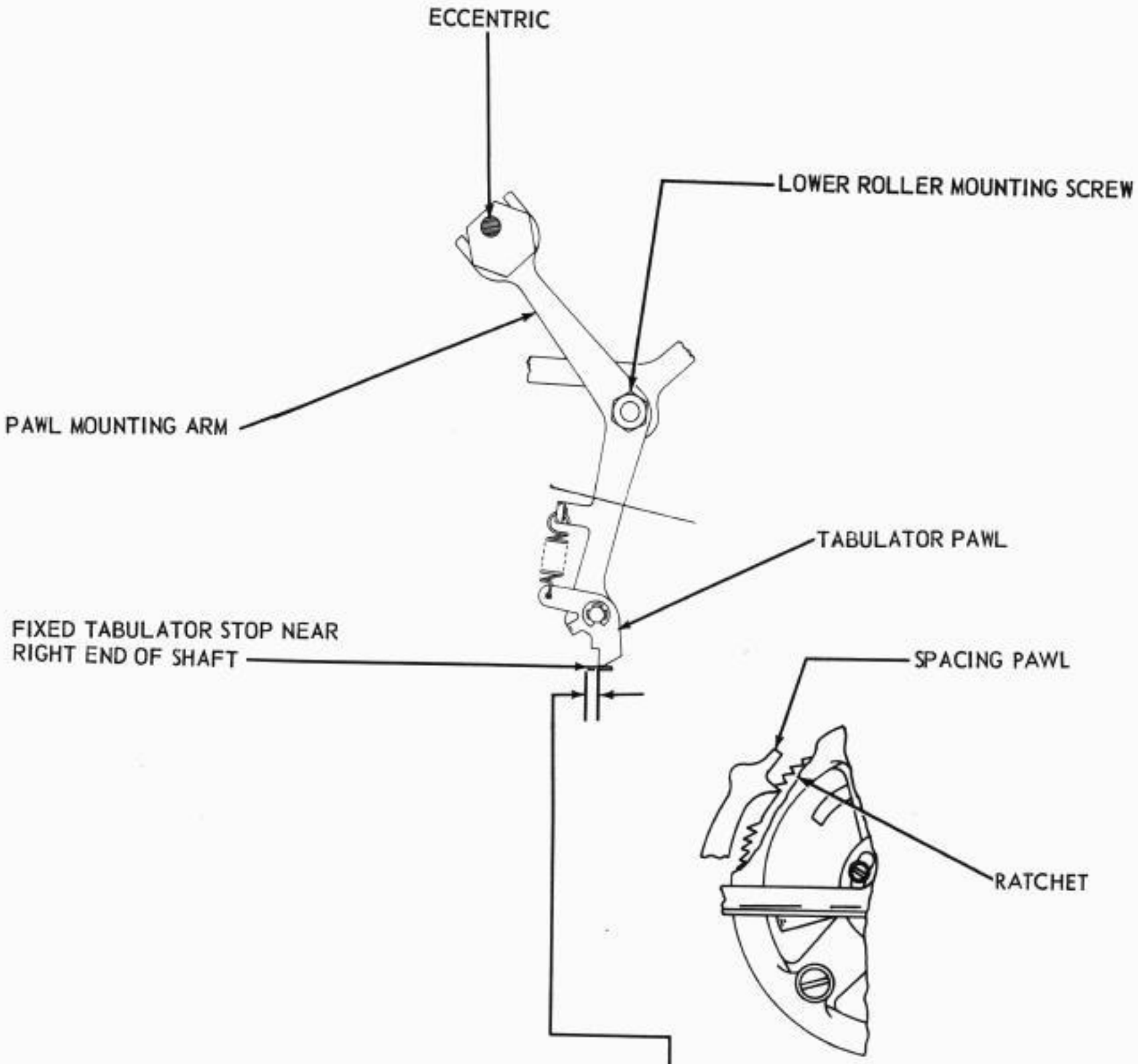
REQUIREMENT
MIN. 1-3/4 OZS.
MAX. 3 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(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: MAKE SURE SHAFT IS FREE OF BINDS.

4.26 Horizontal Tabulator Mechanism (Cont.)



PAWL MOUNTING ARM OPERATING RANGE (PRELIMINARY)

NOTE - - - PRIOR TO THIS ADJUSTMENT, CHECK THE FOLLOWING: OSCILLATING RAIL SLIDE (PAR. 2.28), PRINTING CARRIAGE POSITION (PAR. 2.45) AND PRINTING CARRIAGE LOWER ROLLER (PAR. 2.44).

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

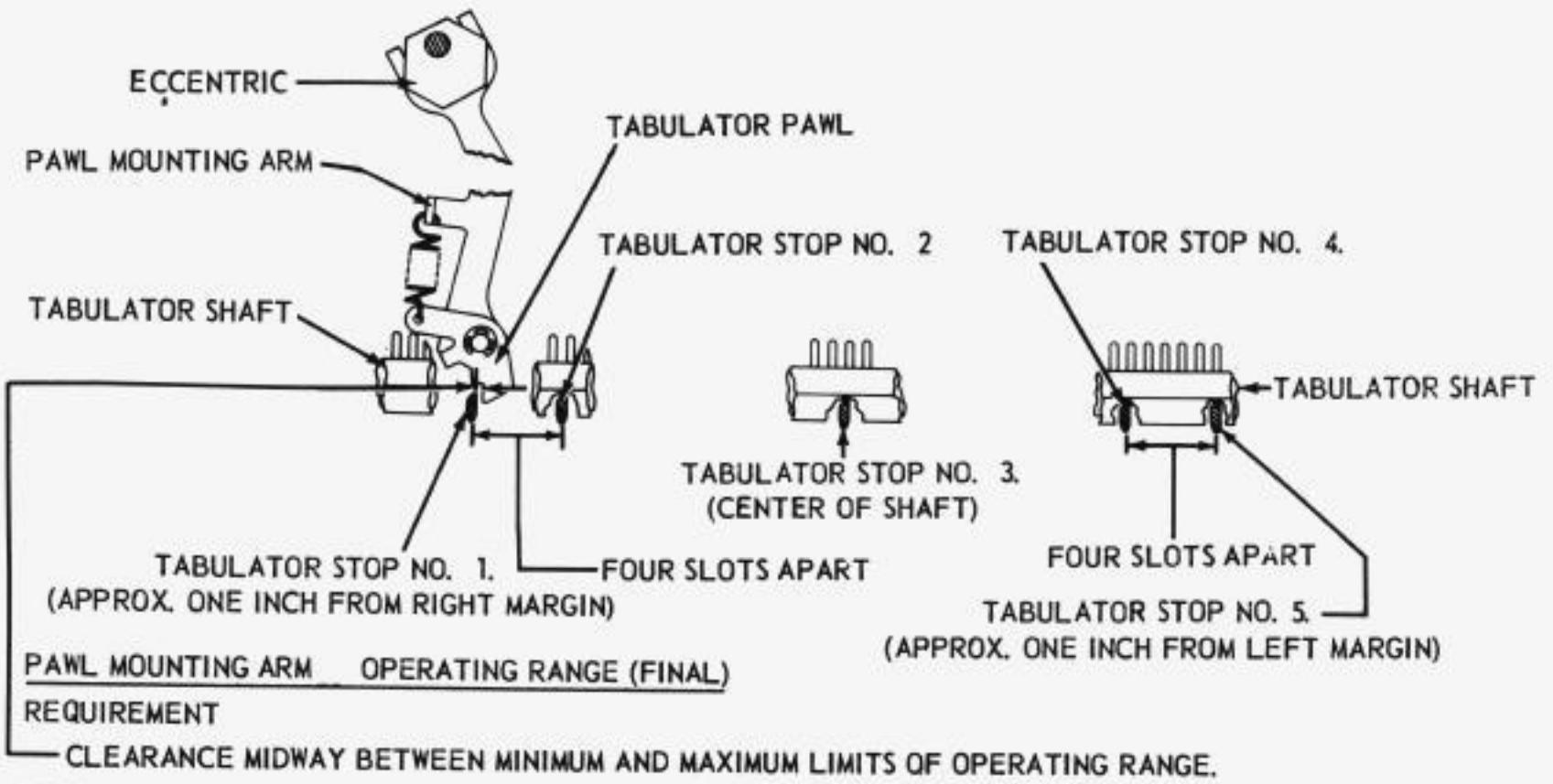
REQUIREMENT (UNITS WITH SPROCKET FEED PLATENS)

HIGH PART OF ECCENTRIC TOWARD LOWER ROLLER MOUNTING SCREW.

TO ADJUST

POSITION ECCENTRIC.

4.27 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) GAGE 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) GAGE 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.

TABULATOR STOP SETTING (NOT ILLUSTRATED)

RIGHT MARGIN TABULATOR STOP (WITH WIDE SHELF)

NOTE: PRIOR TO THIS ADJUSTMENT, CHECK THE FOLLOWING: RIGHT MARGIN (PAR. 4.25) AND PAWL MOUNTING ARM OPERATING RANGE (PAR. 4.26 AND 4.27).

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.

4.28 Paper-Out Alarm Mechanism