28 TYPING REPERFORATOR AND TAPE PRINTER

ADJUSTMENTS

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Prepared for American Telephone and Telegraph Company by Teletype Corporation

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1. GENERAL

1.01 This section contains the specific requirements and adjustments for the 28 typing reperforators and tape printers.

1.02 This section has been revised to include recent engineering changes and additions, and to rearrange the text, so as to bring the section generally up-to-date. Since this is an extensive revision, marginal arrows ordinarily used to indicate changes have been omitted.

Note: Remove power from set or unit before making adjustment.

1.03 Maintenance procedures which apply only to mechanisms of a particular design, or to certain models of 28 typing reperforators and tape printers are so indicated in the titles of the paragraphs which contain these particular adjustment requirements.

1.04 The adjustments are arranged in a sequence that should be followed if a complete readjustment of the unit were undertaken. The tools and spring scales required to perform these adjustments are listed in the applicable section. After an adjustment is completed, be sure to tighten any nuts or screws that are loosened. The adjusting illustrations indicate tolerances, positions of moving parts, spring tensions and the angles at which scales should be applied when measuring spring tensions. If a part mounted on shims is removed, the number of shims used at each of its mounting screws should be noted so that the same number is replaced when the part is remounted.

1.05 Reference made to left or right, up or down, front or rear, etc apply to the unit in its normal operating position as viewed from the front.

1.06 When a requirement calls for a clutch to be disengaged, the clutch shoe lever must be fully latched between its trip lever and latch lever so that the clutch shoes release their tension on the clutch drum. When engaged, the clutch shoe lever is unlatched and the clutch shoes are wedged firmly against the clutch drum.

Note: When the main shaft is rotated by hand, the clutch does not fully disengage upon reaching its stop position. In order to relieve drag and permit the main shaft to rotate freely, apply pressure on the lug of the clutch disc with a screwdriver to cause it to engage its latch lever and fully disengage the clutch.

1.07 To manually operate the typing reperforator or tape printer proceed as follows:

(1) Attach the TP312709 armature clip to the selector magnet armature by carefully placing the spring loop over the magnet terminal insulator and pressing down to engage the hook of the clip on the underside of the armature and releasing. The spring tension of the armature clip will hold the selector armature in the marking (attracted) position.

(2) While holding the selector magnet armature operated by means of the armature clip, use the handwheel, included with the special tools for servicing 28 teletypewriter apparatus, to manually rotate the main shaft in a counterclockwise direction until all the clutches are brought to their disengaged position.

(3) Fully disengage all clutches in accordance with 1.06, Note.

(4) Release the selector magnet armature momentarily to permit the selector clutch to engage.

(5) Rotate the main shaft slowly until all the pushlevers have fallen to the left of their selecting levers.

(6) Strip the pushlevers from their selector levers, which are spacing in the code combination of the character function that is being selected, and allow the pushlevers to move to the right.

(7) The pushlevers and the selector levers move in succession starting with the inner lever No. 1 to the outer lever No. 5.

(8) Continue to rotate the main shaft until all operations initiated by the selector action clear through the unit.

1.08 All electrical contact points should meet squarely. Contacts with the same diameter should not be out of alignment more than 25 per cent of the contact diameter. Check contacts for pitting and corrosion and clean or burnish them before making specified adjustments or tolerance measurement. Avoid sharp kinks or bends in the contact springs.

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

1.09 Where a typing reperforator is used as a component of the 28 reperforator-transmitter unit or the 28 perforator-transmitter base or the multiple reperforator base, refer to the applicable sections for the additional adjustments.

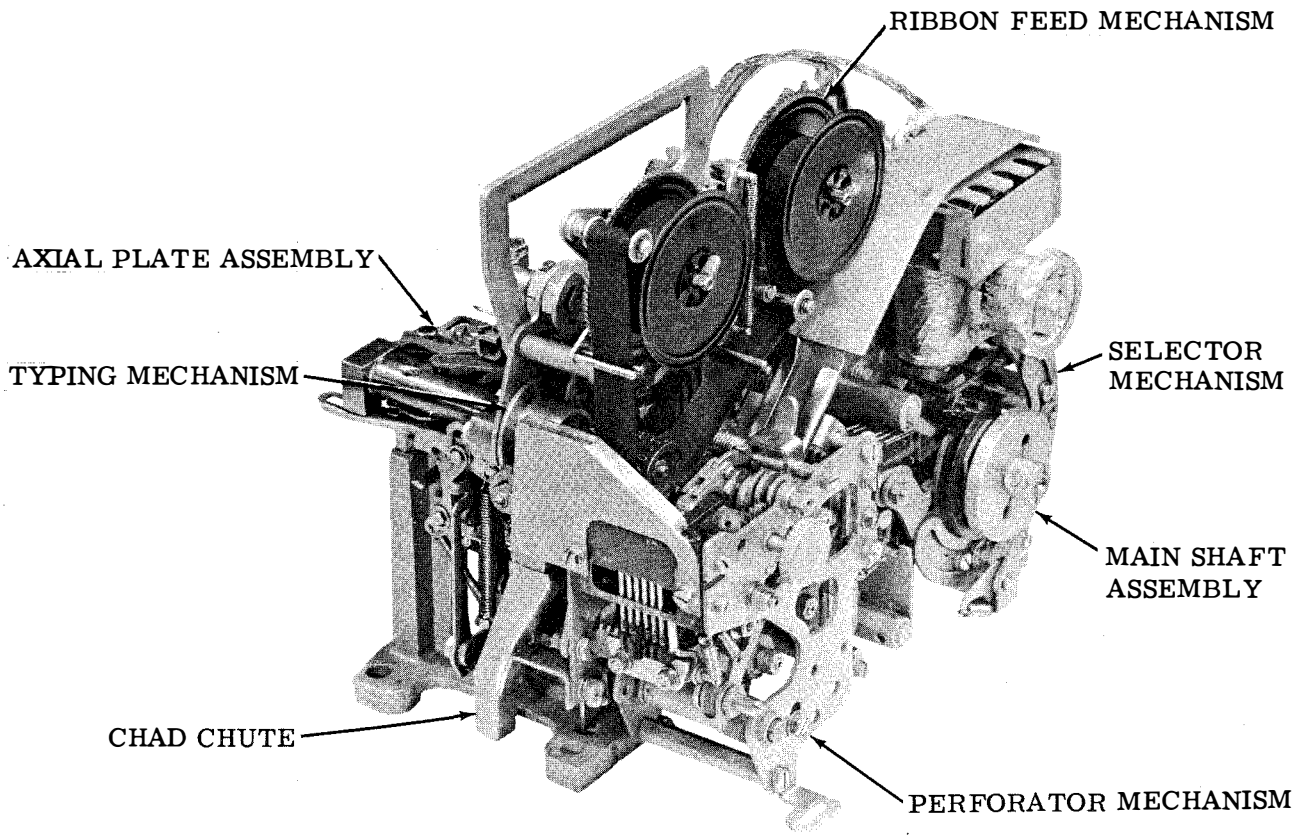


Figure 1 - 28 Typing Reperforator Unit
(Fully Perforated Tape)

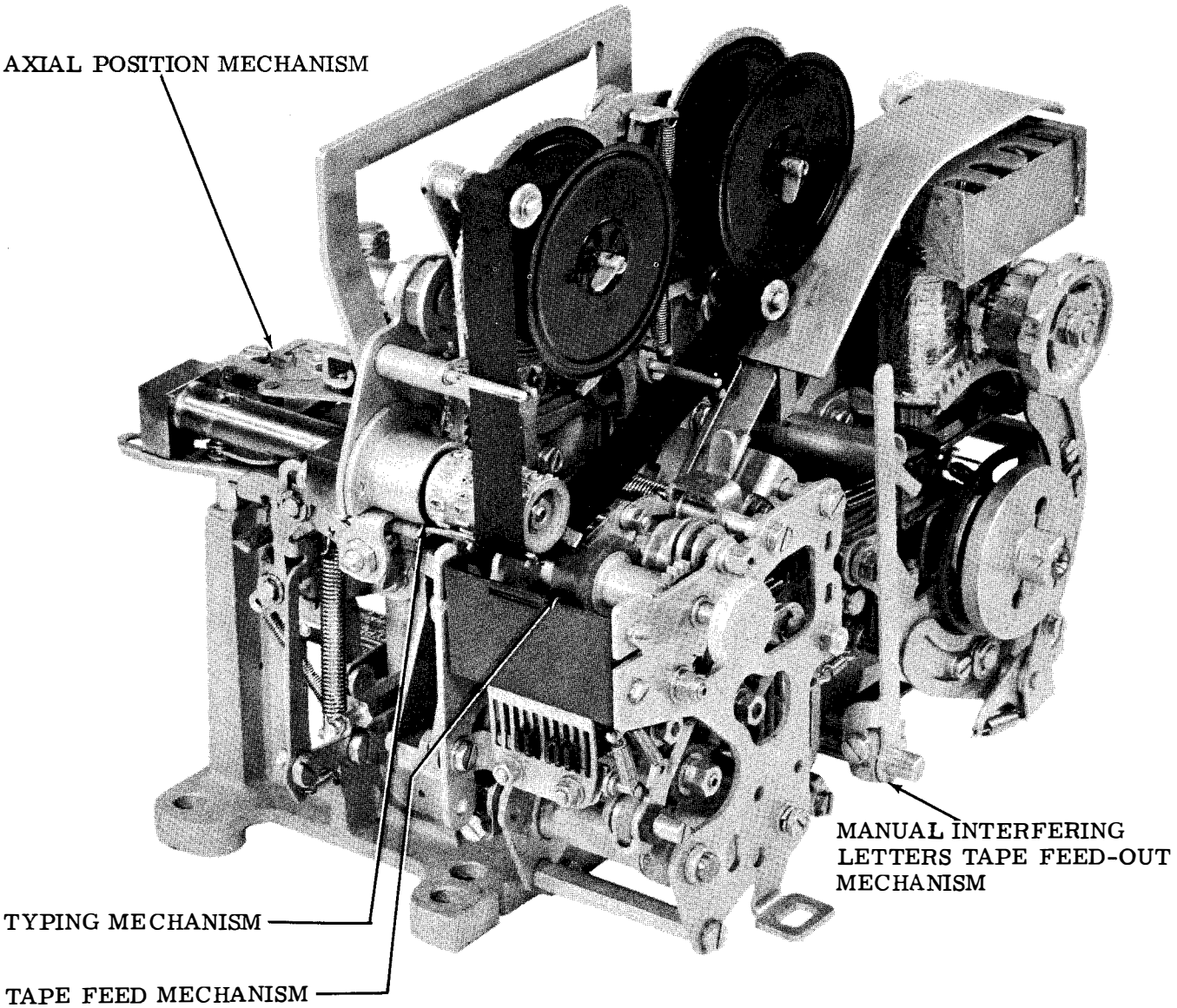


Figure 2 - 28 Tape Printer Unit With Manual Interfering LTRS Tape Feed-Out Mechanism

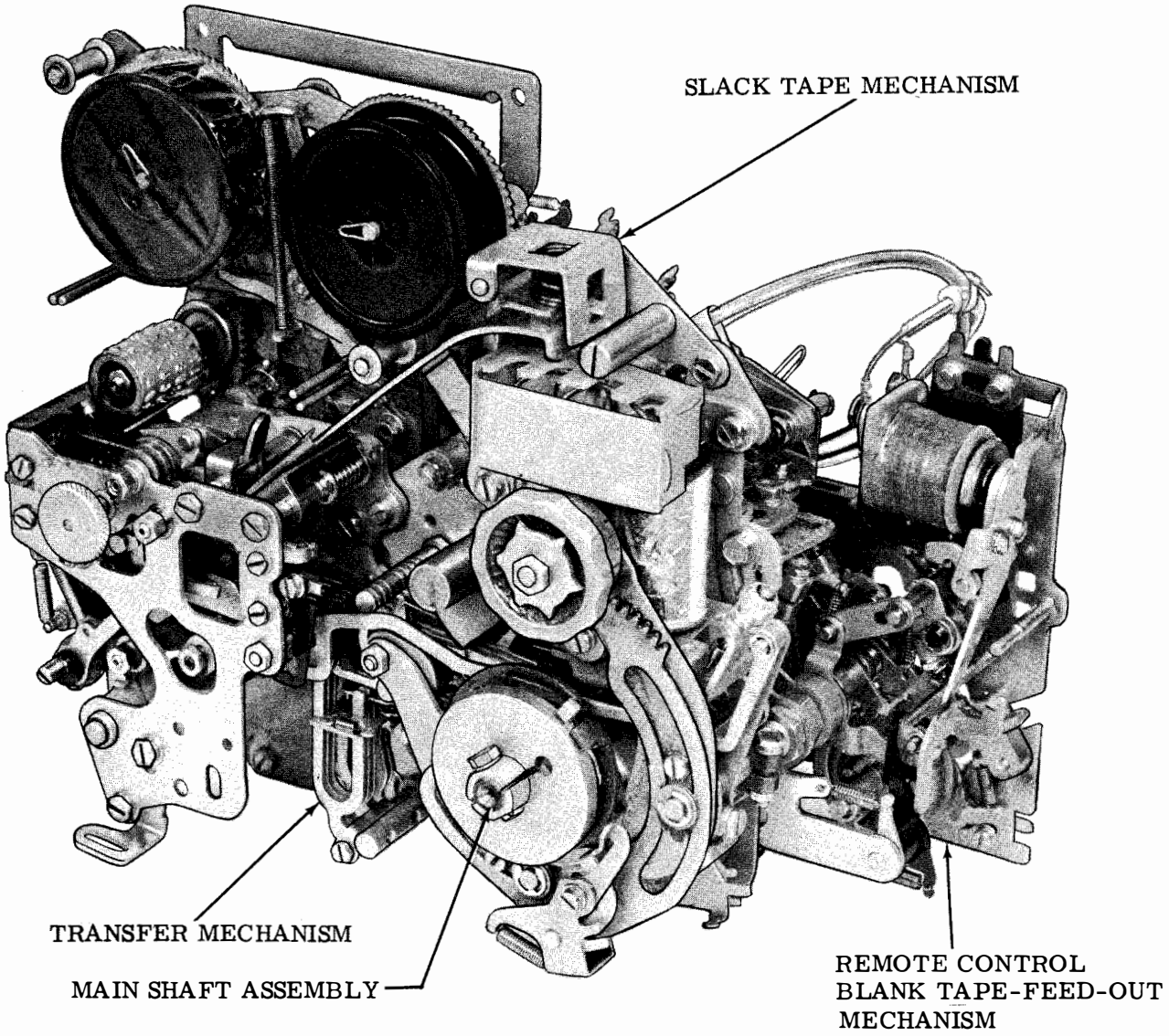


Figure 3 - 28 Typing Reperforator Unit With Remote Control BLANK Tape Feed-Out Mechanism (Fully Perforated Tape)

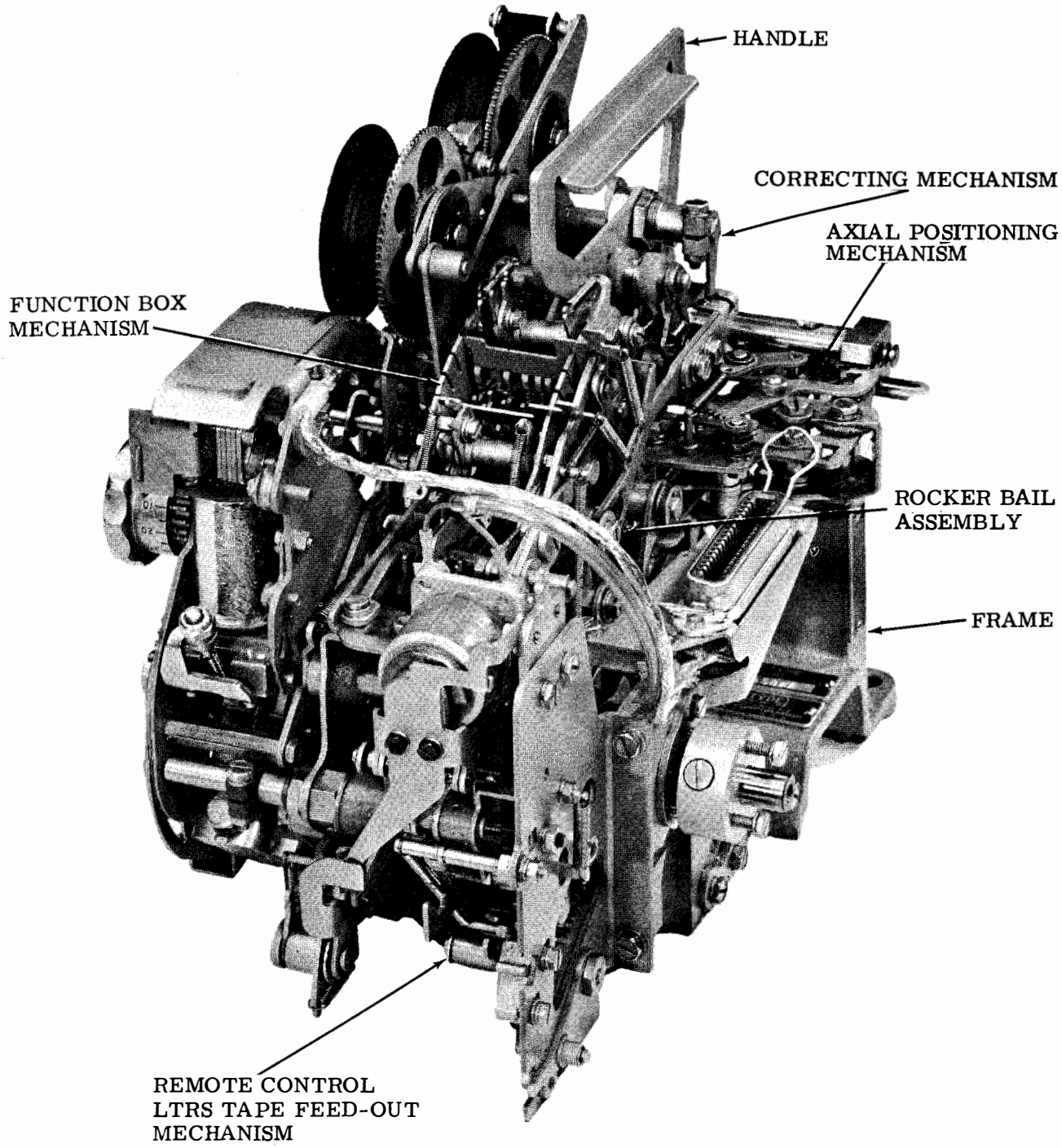


Figure 4 - 28 Typing Reperforator Unit With Remote Control LTRS Tape Feed-Out Mechanism (Rear View)

2. BASIC UNITS

2.01 Selector and Function Clutch Mechanisms

Note: To facilitate adjustments, remove typing reperforator from base as follows:
(1) For typing reperforator equipped with one-shaft mechanism, refer to section containing the disassembly and reassembly routines for the 28 typing reperforator.
(2) For typing reperforator equipped with two-shaft mechanism, refer to section containing the disassembly and reassembly routines for the 28 perforator-transmitter base.

(A) CLUTCH SHOE LEVER

NOTE: THIS ADJUSTMENT SHALL BE MADE FOR BOTH SELECTOR AND FUNCTION CLUTCHES.

TO CHECK

(1) DISENGAGE CLUTCH. MEASURE CLEARANCE.
(2) ALIGN HEAD OF CLUTCH DRUM MOUNTING SCREW WITH STOP LUG. ENGAGE CLUTCH. MANUALLY PRESS SHOE LEVER AND STOP LUG TOGETHER AND ALLOW TO SNAP APART. MEASURE CLEARANCE.

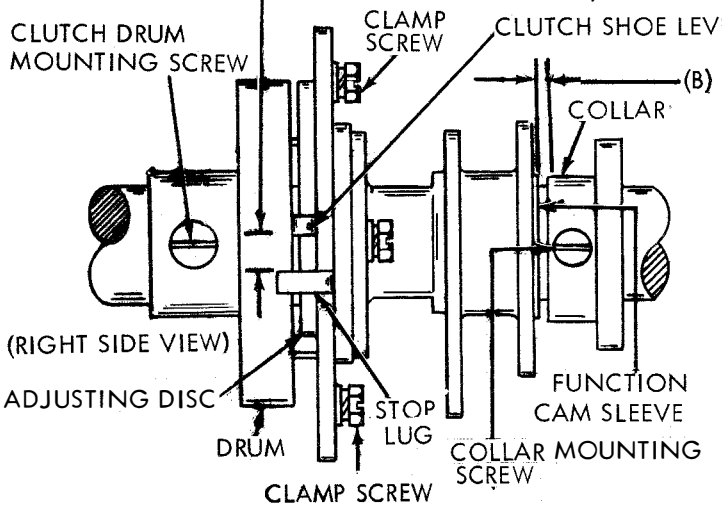
REQUIREMENT

CLEARANCE BETWEEN SHOE LEVER AND STOP LUG
MIN. 0.055 INCH---MAX. 0.085 INCH
GREATER WHEN CLUTCH ENGAGED (2) THAN WHEN DISENGAGED (1).

TO ADJUST

ENGAGE WRENCH OR SCREWDRIVER WITH LUG ON ADJUSTING DISC. ROTATE DISC WITH CLAMP SCREWS LOOSENED.

NOTE: AFTER MAKING ADJUSTMENT, DISENGAGE CLUTCH. REMOVE DRUM MOUNTING SCREW. ROTATE DRUM IN NORMAL DIRECTION AND CHECK TO SEE IF IT DRAGS ON SHOE. IF IT DOES, REFINE ADJUSTMENT.



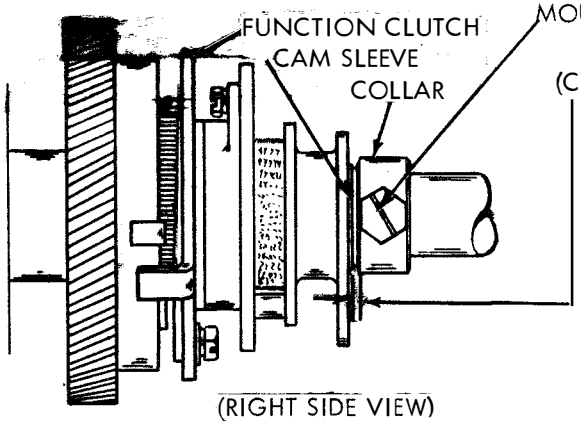
(B) FUNCTION CLUTCH DRUM END PLAY (FOR ONE-SHAFT UNIT)

REQUIREMENT

WITH CLUTCH SHOE LEVER HELD IN DISENGAGED POSITION:
MIN. SOME --- MAX. 0.015 INCH
WHEN PLAY IS TAKEN UP TO MAKE CLEARANCE MAX.

TO ADJUST

WITH ITS MOUNTING SCREW LOOSENED, MOVE DRUM TO EXTREME FRONT POSITION. TIGHTEN DRUM MOUNTING SCREW. POSITION COLLAR WITH MOUNTING SCREW LOOSENED.



(C) FUNCTION CLUTCH DRUM END PLAY (FOR TWO-SHAFT UNIT)

REQUIREMENT

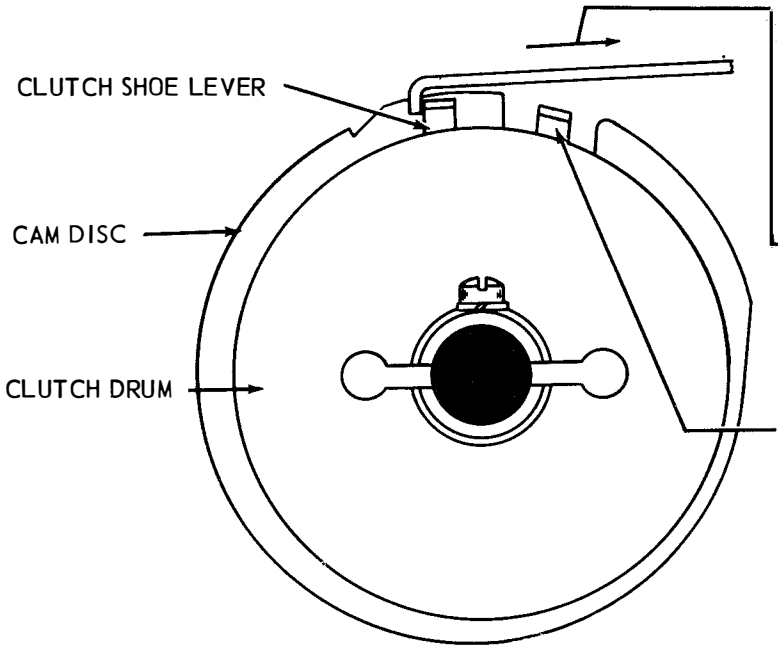
WITH FUNCTION CLUTCH DISENGAGED:
MIN. SOME --- MAX. 0.015 INCH
BETWEEN CAM SLEEVE AND COLLAR WHEN PLAY IS TAKEN UP TO MAKE CLEARANCE MAXIMUM.

TO ADJUST

POSITION COLLAR WITH MOUNTING SCREW LOOSENED.

2.02 Selector and Function Clutch Mechanisms continued

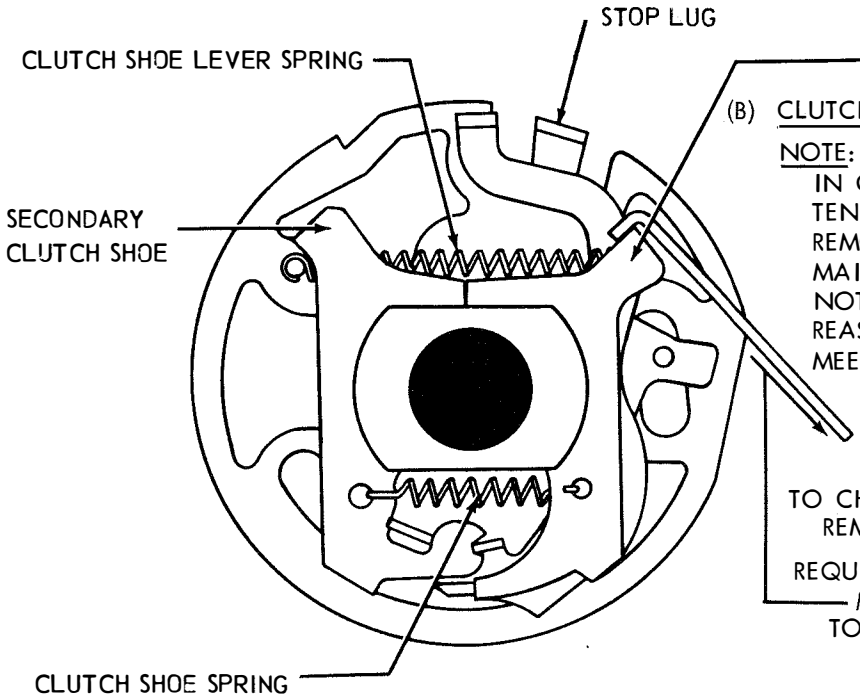
NOTE:
THESE SPRING TENSIONS APPLY TO BOTH CLUTCHES.



(A)
CLUTCH SHOE LEVER SPRING

TO CHECK
ENGAGE CLUTCH. HOLD CAM DISC TO PREVENT ITS TURNING.

REQUIREMENT
MIN. 15 OZS.----MAX. 20 OZS.
TO PULL SHOE LEVER IN CONTACT WITH STOP LUG.



(B) CLUTCH SHOE SPRING

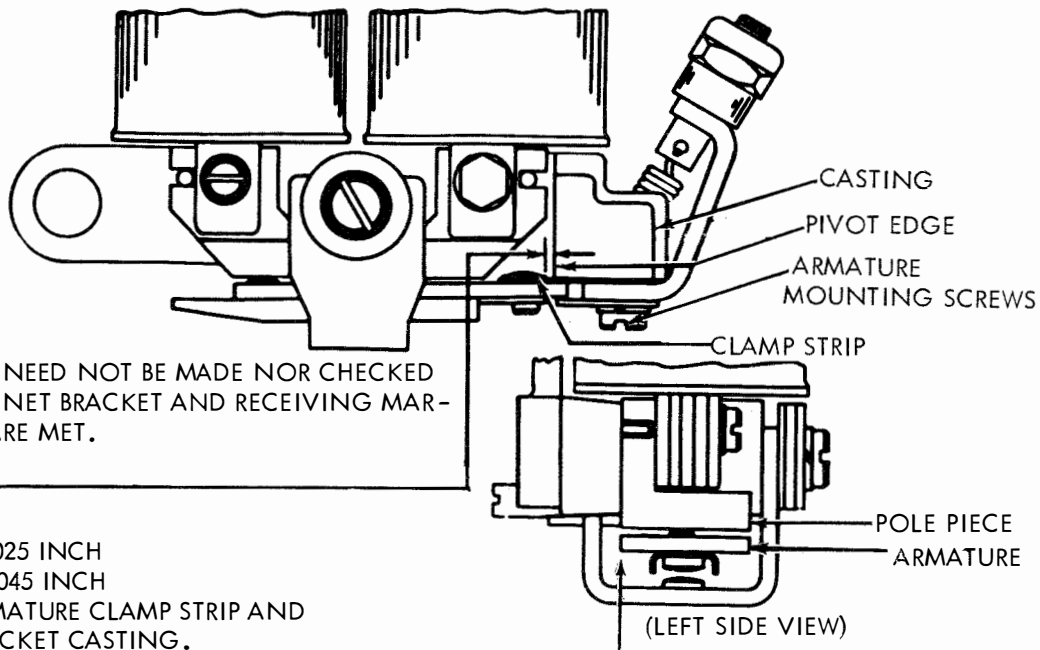
NOTE:
IN ORDER TO CHECK THIS SPRING TENSION, IT IS NECESSARY TO REMOVE THE CLUTCH FROM THE MAIN SHAFT. THEREFORE, IT SHOULD NOT BE CHECKED UNLESS THERE IS REASON TO BELIEVE IT WILL NOT MEET ITS REQUIREMENT.

TO CHECK
REMOVE CLUTCH FROM DRUM.

REQUIREMENT
MIN. 3 OZS.------MAX. 5 OZS.
TO START PRIMARY SHOE MOVING.

2.03 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 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 OR PAPER REMAIN BETWEEN THE POLE PIECES AND ARMATURE.



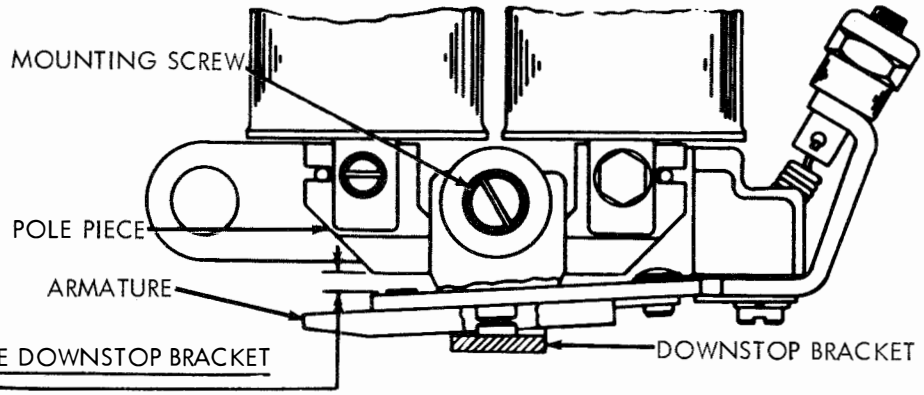
SELECTOR ARMATURE

NOTE:
THESE REQUIREMENTS NEED NOT BE MADE NOR CHECKED IF THE SELECTOR MAGNET BRACKET AND RECEIVING MARGIN REQUIREMENTS ARE MET.

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

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

(3) REQUIREMENT
START LEVER SHALL DROP FREELY INTO ARMATURE EXTENSION SLOT.
TO ADJUST
POSITION ARMATURE SPRING ADJUSTING NUT TO HOLD ARMATURE FIRMLY AGAINST PIVOT EDGE OF CASTING. POSITION ARMATURE WITH MOUNTING SCREWS LOOSENED.



SELECTOR ARMATURE DOWNSTOP BRACKET
REQUIREMENT
REMOVE OIL SHIELD. WITH MAGNET DE-ENERGIZED, LOCK LEVER ON HIGH PART OF THEIR CAM, AND ARMATURE RESTING AGAINST ITS DOWNSTOP, CLEARANCE BETWEEN END OF ARMATURE AND LEFT EDGE OF LEFT POLE PIECE.
MIN. 0.025 INCH
MAX. 0.030 INCH
TO ADJUST
POSITION DOWNSTOP BRACKET WITH MOUNTING SCREW LOOSENED.

2.04 Selector Mechanism continued

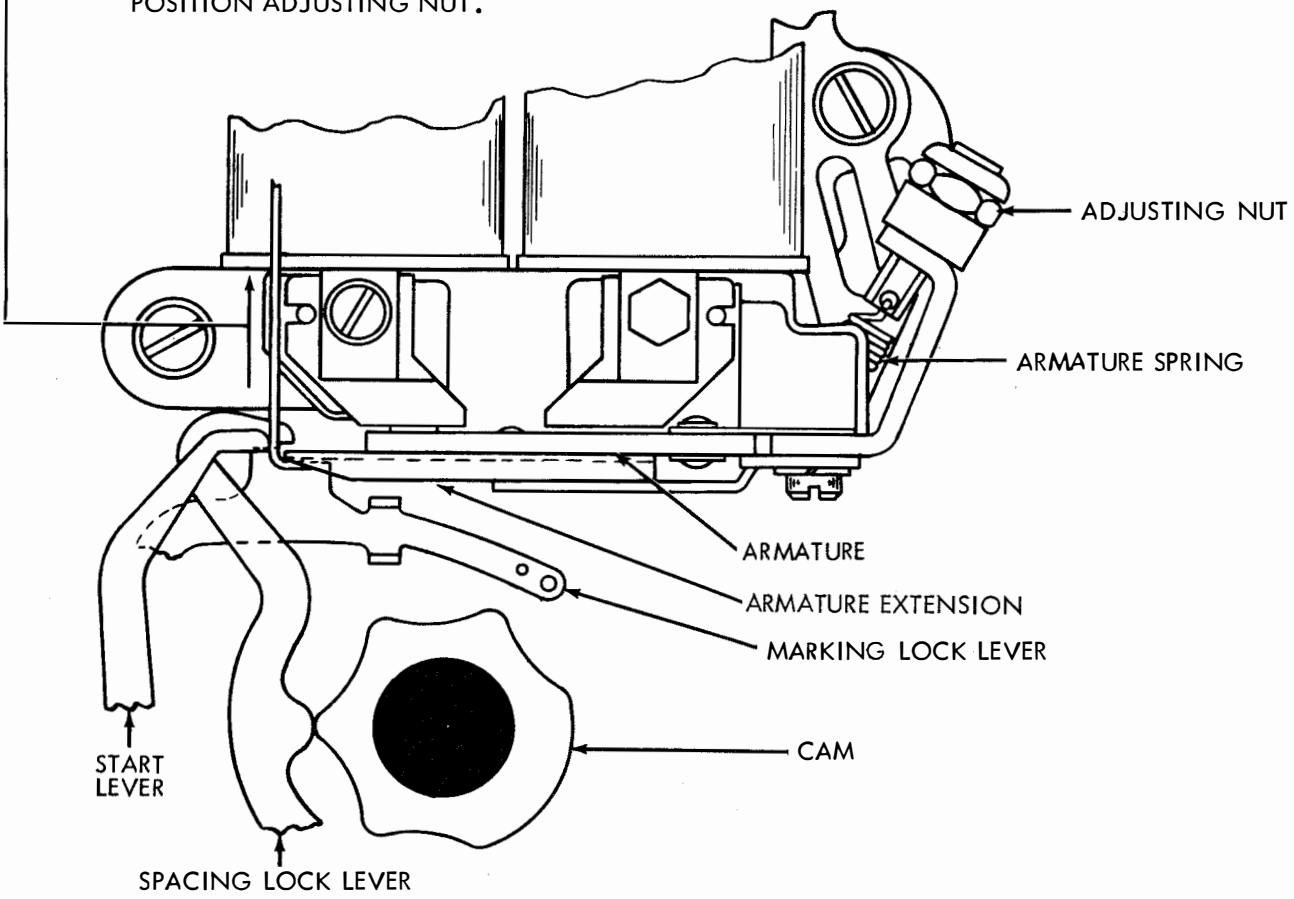
SELECTOR ARMATURE SPRING (PRELIMINARY)
(FOR UNITS EMPLOYING SELECTOR ARMATURE WITH SINGLE ANTI-FREEZE BUTTON ONLY).
REQUIREMENT

WITH LOCKING LEVERS AND START LEVER ON HIGH PART OF THEIR CAMS, SCALE APPLIED AS NEARLY VERTICAL AS POSSIBLE UNDER END OF ARMATURE EXTENSION. IT SHALL REQUIRE THE FOLLOWING TENSIONS TO MOVE ARMATURE TO MARKING POSITION:

0.060 AMPERES	0.020 AMPERES AND 0.035 AMPERES
MIN. 2-1/2 OZS. --- MAX. 3 OZS.	MIN. 1-1/2 OZS. --- MAX. 2 OZS.

NOTE:
THIS SPRING CAN BE ADJUSTED FOR MAXIMUM SELECTOR PERFORMANCE ONLY WHEN PRINTER IS CONNECTED TO THE SPECIFIC CIRCUIT OVER WHICH IT IS TO OPERATE UNDER SERVICE CONDITIONS. SINCE THERE ARE SEVERAL OPERATING SPEEDS AND SINCE CIRCUITS VARY WIDELY, IT IS IMPOSSIBLE TO ADJUST SPRING FOR MAXIMUM PERFORMANCE AT THE FACTORY. THE FOREGOING SPRING TENSION REQUIREMENT IS GIVEN TO PERMIT OPERATION PRIOR TO MEASUREMENT OF RECEIVING MARGINS. READJUSTMENT MADE TO OBTAIN SATISFACTORY RECEIVING MARGIN SHOULD NOT BE DISTURBED. IN ORDER TO MEET REQUIREMENTS OF THIS ADJUSTMENT.

TO ADJUST
POSITION ADJUSTING NUT.



SELECTOR ARMATURE SPRING (FINAL)
REQUIREMENT
(SEE SELECTOR RECEIVING MARGIN ADJUSTMENT)

2.05 Selector Mechanism continued

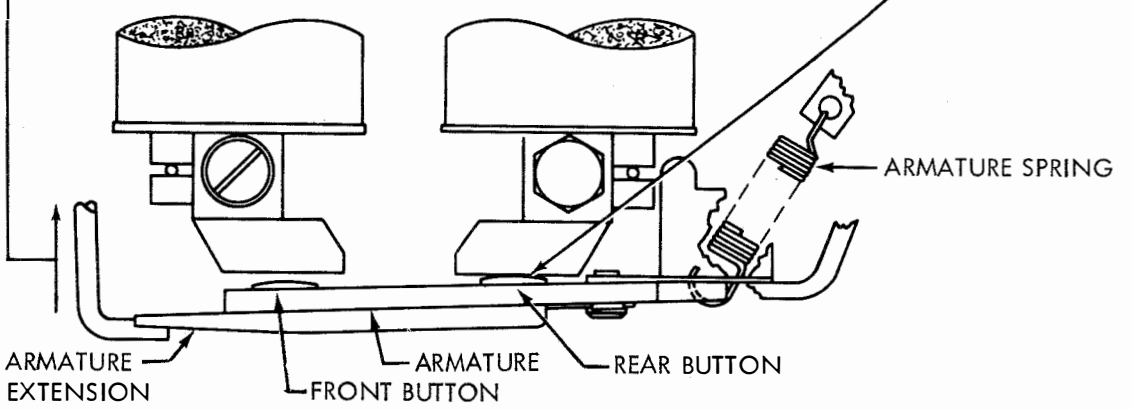
SELECTOR ARMATURE SPRING (PRELIMINARY)

(FOR UNITS EMPLOYING SELECTOR ARMATURE WITH TWO ANTI-FREEZE BUTTONS ONLY).
REQUIREMENT

WITH LOCKING LEVERS AND START LEVER ON HIGH PART OF THEIR CAMS, SCALE APPLIED AS NEARLY VERTICAL AS POSSIBLE UNDER END OF ARMATURE EXTENSION. IT SHALL REQUIRE APPROXIMATELY THE FOLLOWING TENSIONS TO MOVE THE REAR ANTI-FREEZE BUTTON AGAINST THE MAGNET CORE:

0.020 AMPERE	0.030 AMPERE	0.060 AMPERE
14 GRAMS	18 GRAMS	21 GRAMS

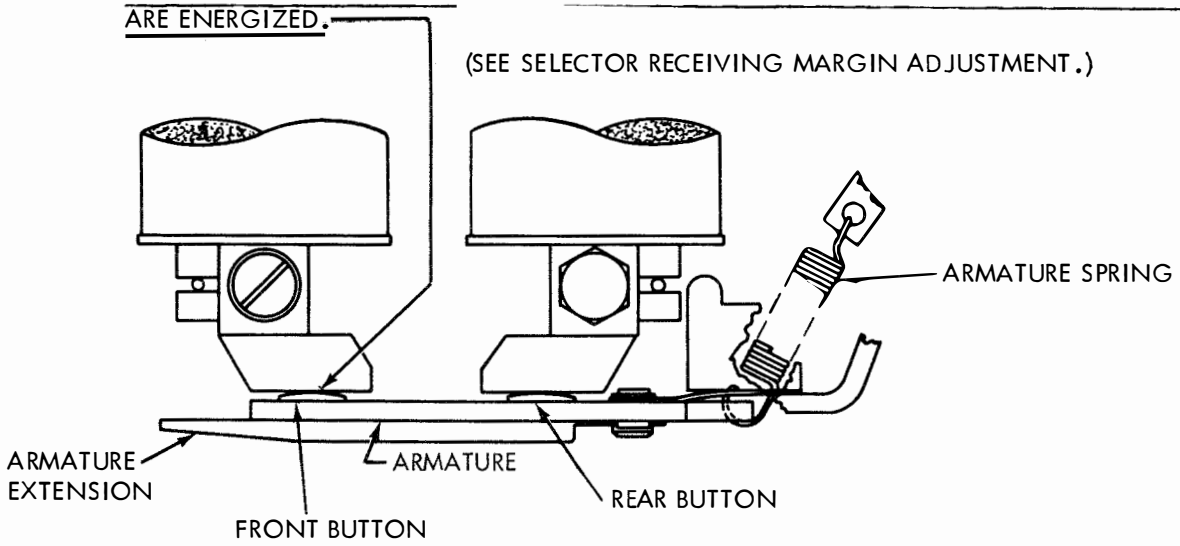
TO ADJUST
POSITION ADJUSTING NUT.



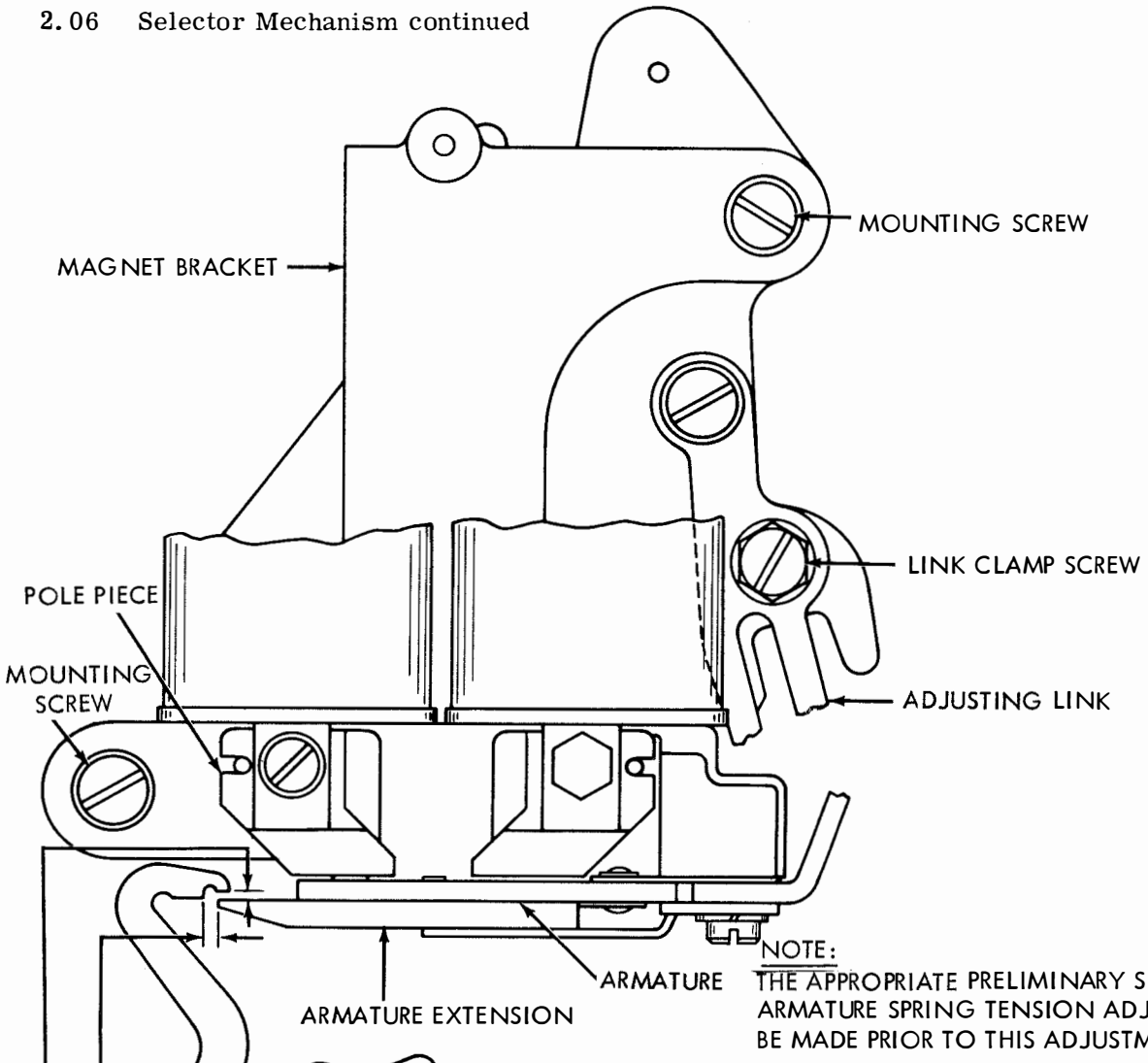
SELECTOR ARMATURE SPRING (FINAL)
REQUIREMENT

WHEN A DISTORTION TEST SET IS AVAILABLE, THE SELECTOR ARMATURE SPRING TENSION SHOULD BE REFINED, IF NECESSARY, TO OBTAIN SATISFACTORY RECEIVING MARGINS. THE FRONT ANTI-FREEZE BUTTON MUST CONTACT THE MAGNET CORE WHEN THE MAGNET COILS ARE ENERGIZED.

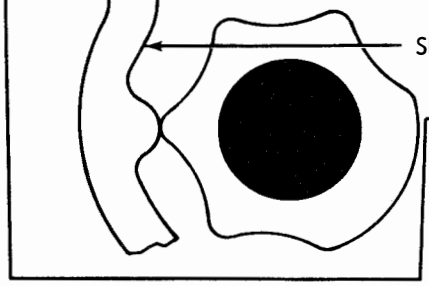
(SEE SELECTOR RECEIVING MARGIN ADJUSTMENT.)



2.06 Selector Mechanism continued



NOTE:
THE APPROPRIATE PRELIMINARY SELECTOR ARMATURE SPRING TENSION ADJUSTMENT MUST BE MADE PRIOR TO THIS ADJUSTMENT.



SELECTOR MAGNET BRACKET

(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

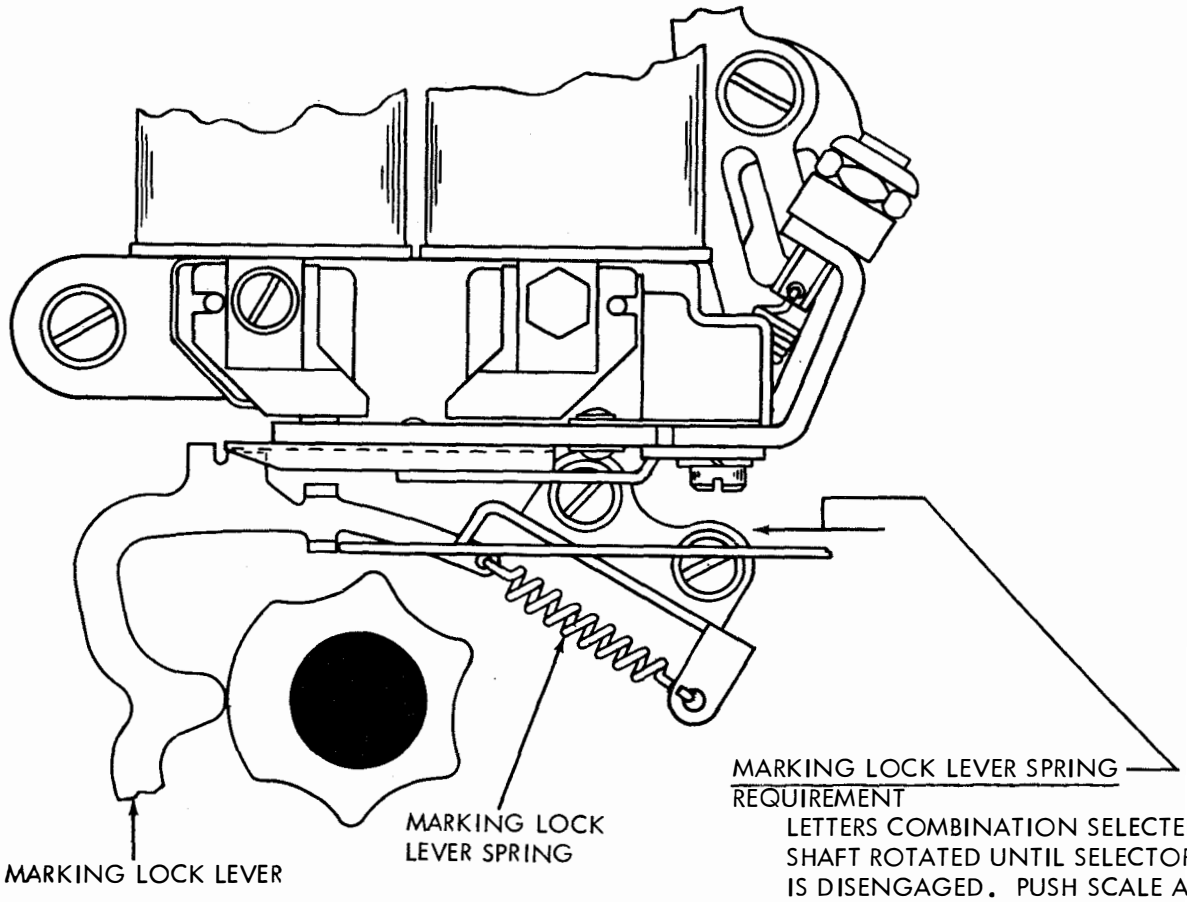
SPACING LOCK LEVER ON HIGH PART OF CAM. ARMATURE IN CONTACT WITH POLE PIECE. SOME CLEARANCE BETWEEN UPPER SURFACE OF ARMATURE EXTENSION AND LOWER SURFACE OF SPACING LOCK LEVER WHEN LOCK LEVER IS HELD DOWNWARD.

MAX. 0.003 INCH

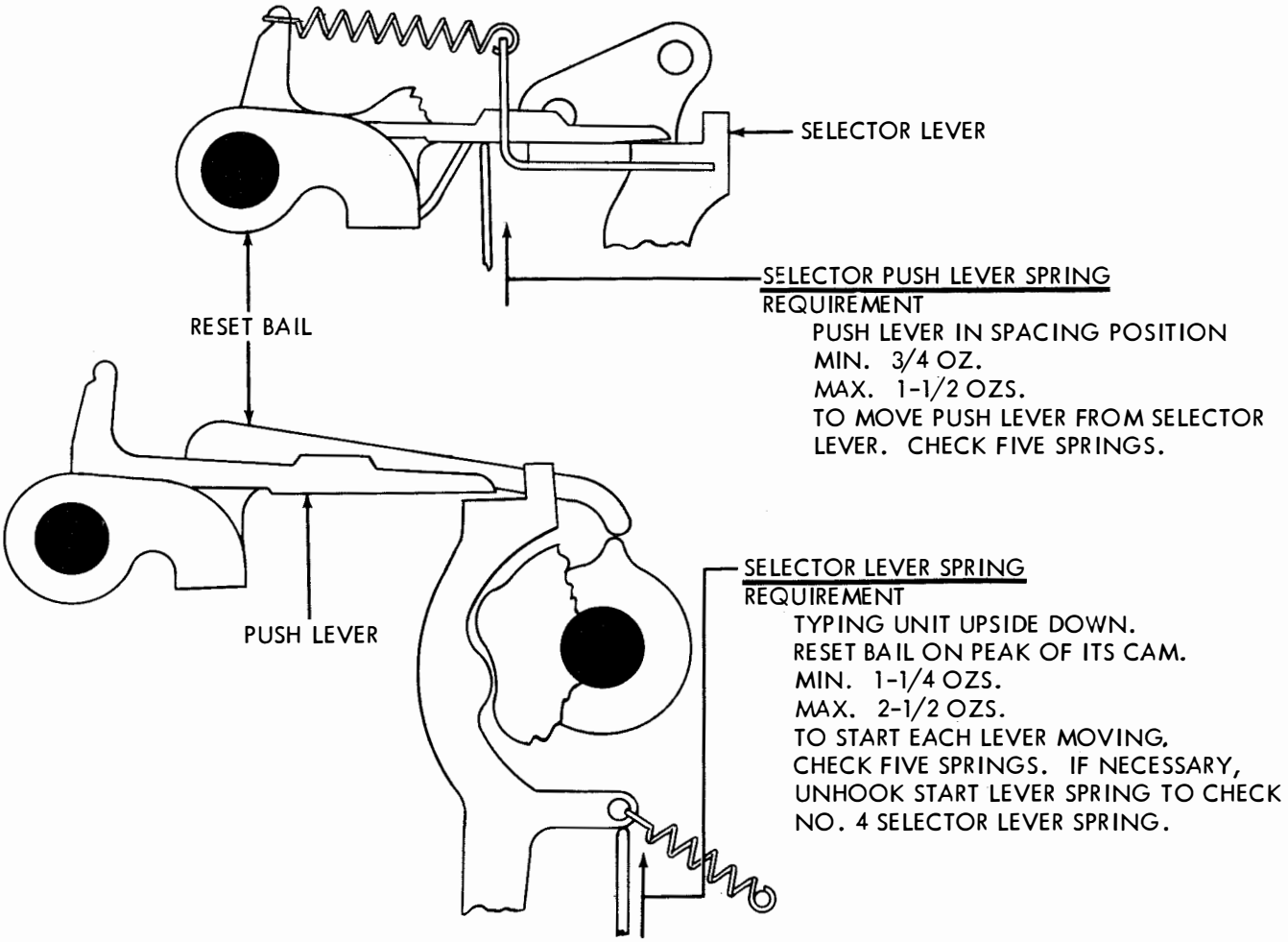
TO ADJUST

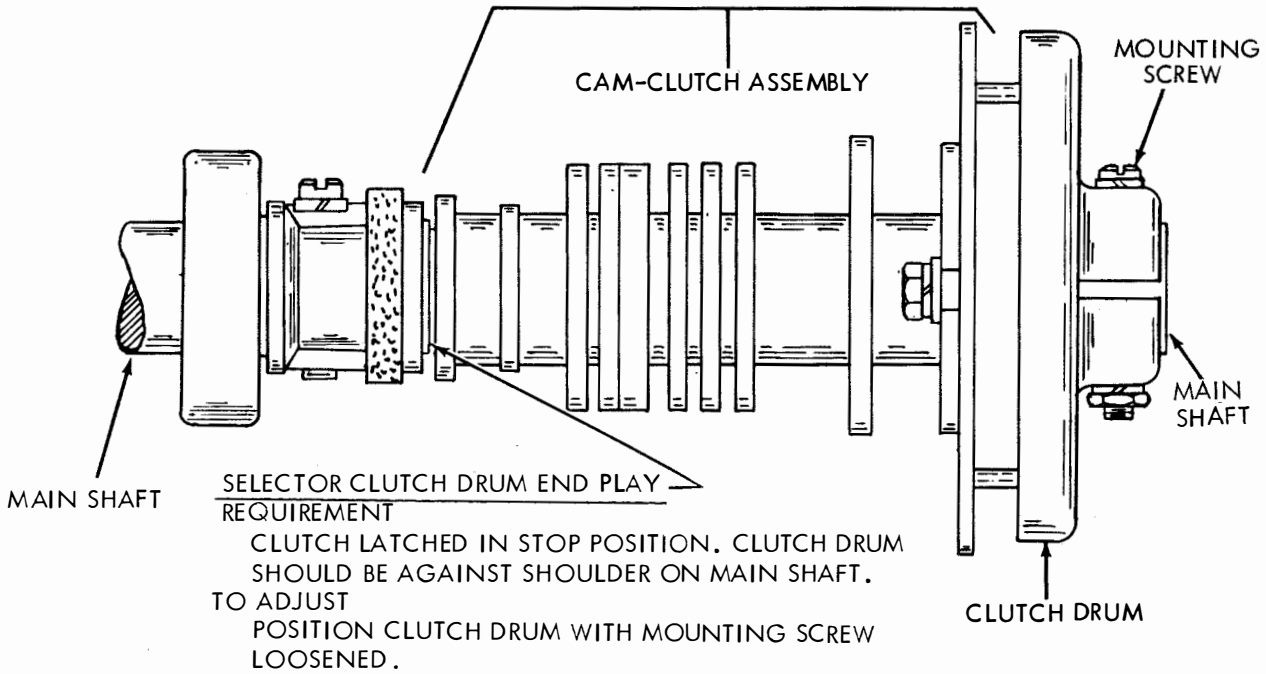
POSITION UPPER END OF MAGNET BRACKET. TIGHTEN TWO MAGNET BRACKET MOUNTING SCREWS. RECHECK REQUIREMENT (1).

2.07 Selector Mechanism continued

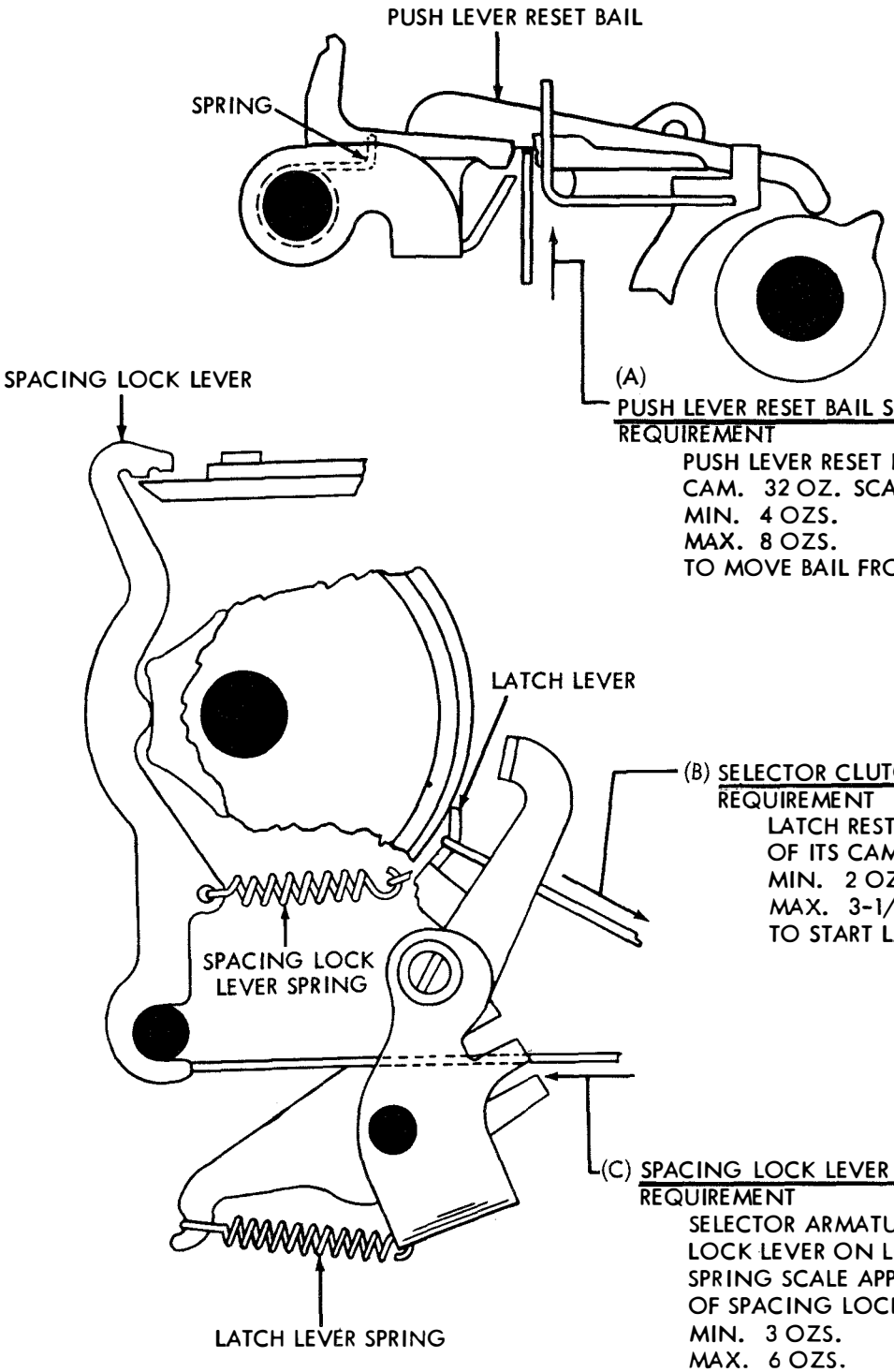


2.08 Selector Mechanism continued





2.09 Selector Mechanism continued



(A) PUSH LEVER RESET BAIL SPRING REQUIREMENT

PUSH LEVER RESET BAIL ON LOW PART OF CAM. 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 DISC.
MIN. 2 OZS.
MAX. 3-1/2 OZS.
TO START LATCH MOVING.

(C) SPACING LOCK LEVER SPRING REQUIREMENT

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

2.10 Selector Mechanism continued

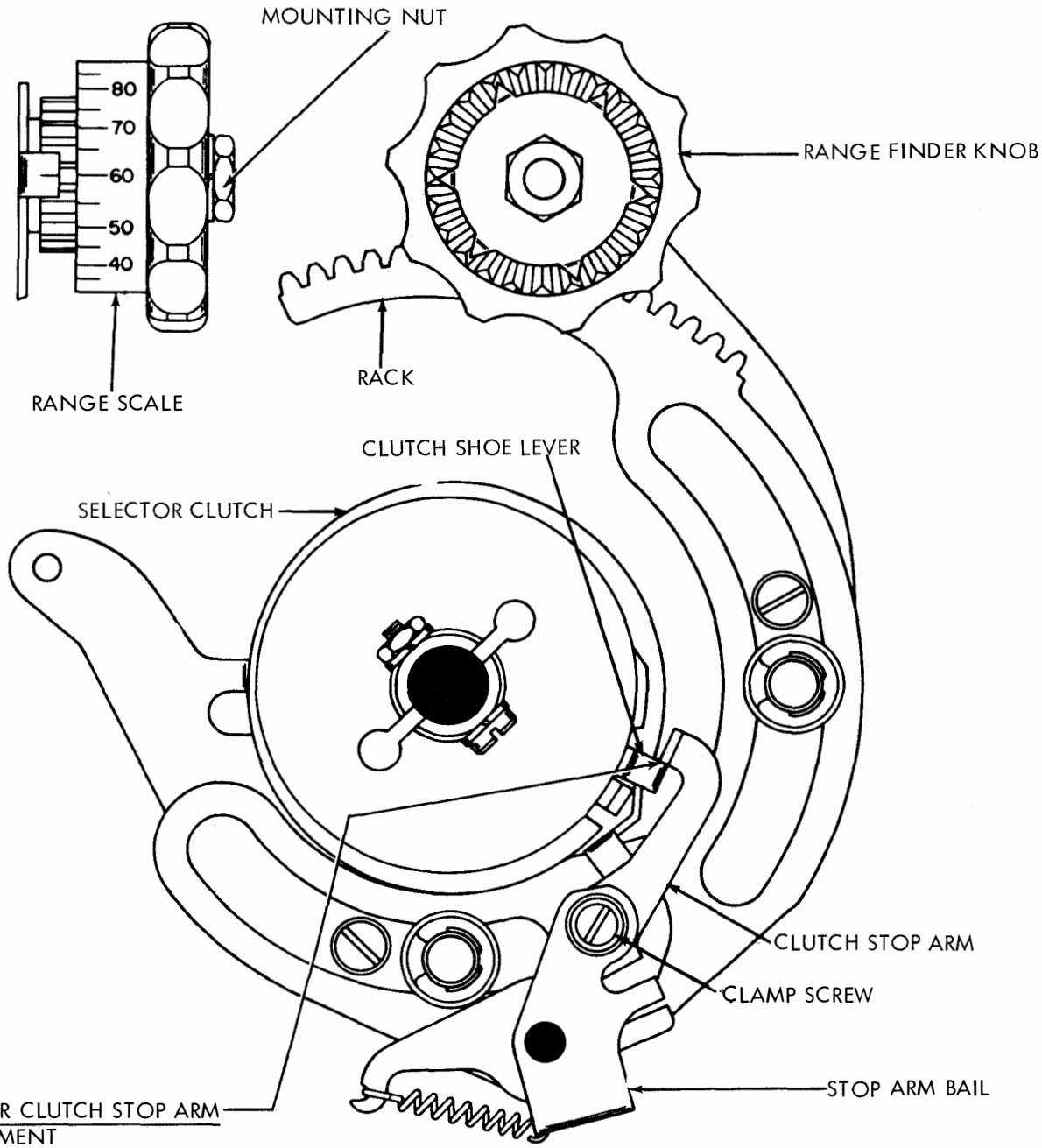
(A) RANGE SCALE KNOB

REQUIREMENT

WITH RANGE SCALE KNOB TURNED TO EITHER END OF RACK, ZERO MARK ON SCALE SHOULD BE WITHIN 3 POINTS OF SCRIBED LINE ON RANGE SCALE PLATE AND THE INNER TEETH OF THE KNOB AND SECTOR ASSEMBLY ARE ENGAGED.

TO ADJUST

LOOSEN RANGE SCALE MOUNTING NUT, DISENGAGE RANGE SCALE GEAR FROM RACK TEETH REPOSITION RANGE SCALE AND TIGHTEN MOUNTING NUT.



(B) SELECTOR CLUTCH STOP ARM

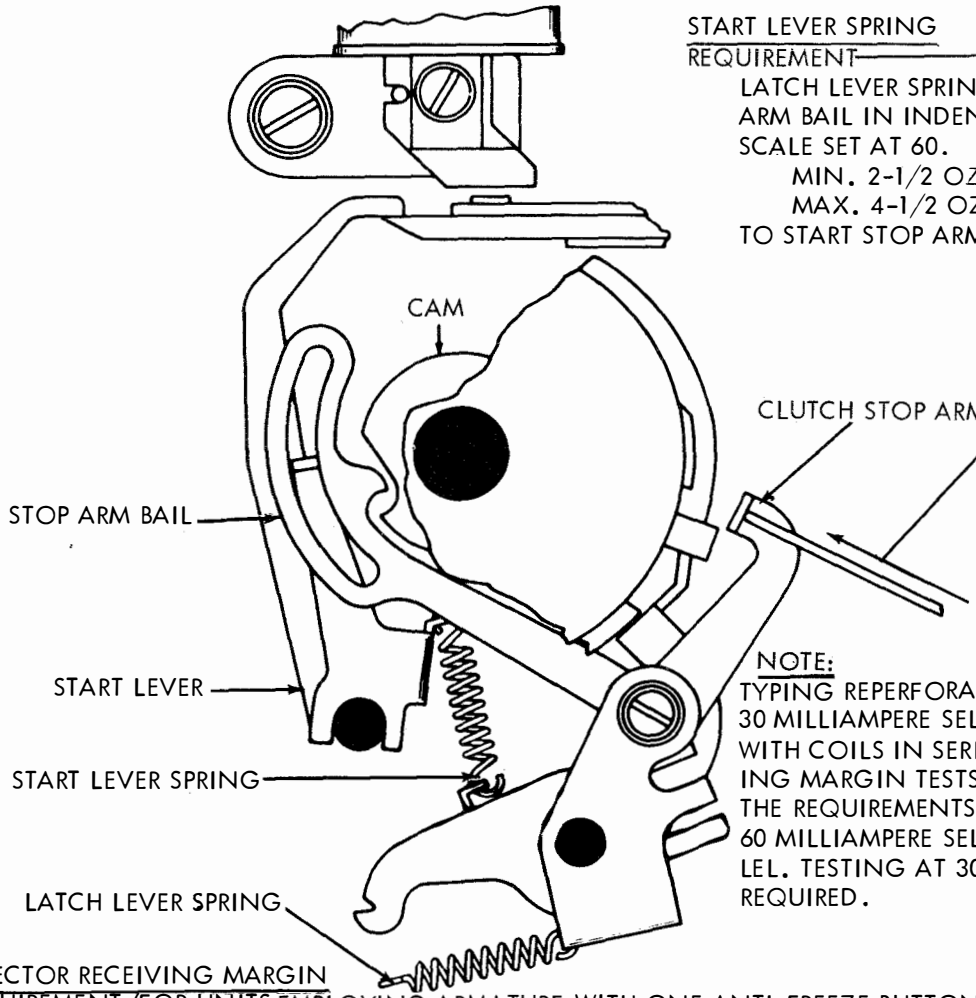
REQUIREMENT

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

TO ADJUST

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

2.11 Selector Mechanism continued



START LEVER SPRING REQUIREMENT

LATCH LEVER SPRING UNHOOKED. STOP ARM BAIL IN INDENT OF ITS CAM. RANGE SCALE SET AT 60.
MIN. 2-1/2 OZS.
MAX. 4-1/2 OZS.
TO START STOP ARM MOVING.

CLUTCH STOP ARM

NOTE:
TYPING REPERFORATORS OPERATING WITH 30 MILLIAMPERE SELECTOR COIL CURRENT WITH COILS IN SERIES SHALL HAVE RECEIVING MARGIN TESTS RUN AT, AND MEET THE REQUIREMENTS FOR 100 WPM SPEED, 60 MILLIAMPERE SELECTOR COILS IN PARALLEL. TESTING AT 30 MILLIAMPERE IS NOT REQUIRED.

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)

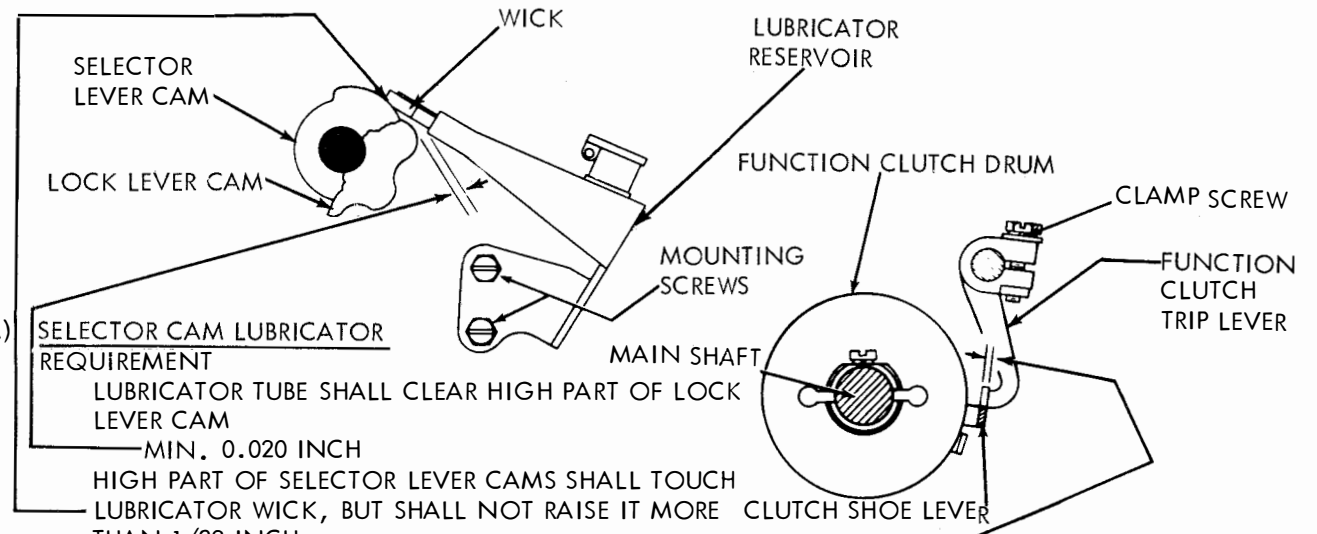
WHEN A DISTORTION TEST SET IS AVAILABLE, THE SELECTOR ARMATURE SPRING TENSION SHOULD BE REFINED, IF NECESSARY, TO OBTAIN SATISFACTORY RECEIVING MARGINS. THE FRONT ANTI-FREEZE BUTTON MUST CONTACT THE MAGNET CORE WHEN THE MAGNET COILS ARE ENERGIZED.

TO ADJUST: REFINE THE SELECTOR ARMATURE SPRING.

SELECTOR RECEIVING MARGIN MINIMUM REQUIREMENTS

CURRENT	SPEED IN W.P.M.	POINTS RANGE WITH ZERO DISTORTION	PERCENTAGE OF MARKING AND SPACING BIAS TOLERATED	END DISTORTION TOLERATED WITH SCALE AT BIAS OPTIMUM SETTING
0.060 AMP. (WINDINGS PARALLEL)	60 75 100	72	40	35
0.020 AMP. (WINDINGS SERIES)	60 75	72	40	35
0.035 AMP. (WINDINGS SERIES)	65 (45.5 BAUD) 106 (75.0 BAUD)	72	40	35

2.12 Selector and Function Mechanisms



(A) SELECTOR CAM LUBRICATOR

REQUIREMENT

LUBRICATOR TUBE SHALL CLEAR HIGH PART OF LOCK LEVER CAM

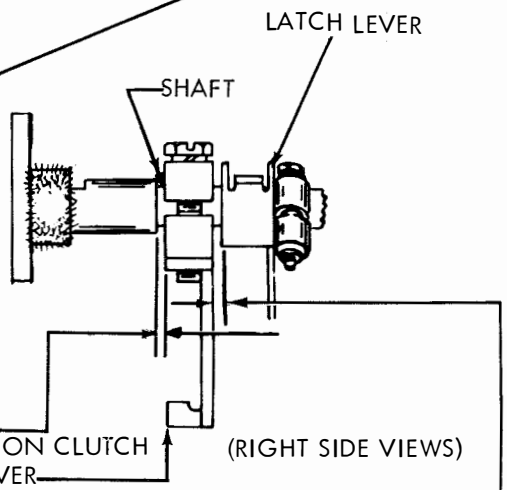
—MIN. 0.020 INCH

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

THERE SHALL BE SOME CLEARANCE BETWEEN MARKING LOCK LEVER SPRING AND RESERVOIR.

TO ADJUST

POSITION LUBRICATOR WITH MOUNTING SCREWS LOOSENED.



(B) FUNCTION CLUTCH TRIP LEVER

REQUIREMENT

(1) WITH RELEASE LEVER RESTING ON MAIN TRIP LEVER (SEE BELOW), FUNCTION CLUTCH TRIP LEVER SHALL ENGAGE FULL THICKNESS OF SHOE LEVER.

(2) MIN. SOME---MAX. 0.010 INCH END PLAY IN TRIP LEVER.

TO ADJUST

POSITION TRIP LEVER ON ITS SHAFT WITH CLAMP SCREW LOOSENED.

(C) RESET ARM

TO CHECK

TRIP FUNCTION CLUTCH AND POSITION MAIN SHAFT SO THAT RESET ARM IS HELD IN ITS HIGHEST POSITION BY CAM PIN.

REQUIREMENT

(1) CLEARANCE BETWEEN RELEASE LEVER AND MAIN TRIP LEVER

MIN 0.005 INCH---MAX. 0.030 INCH

(2) LATCH LEVER END PLAY

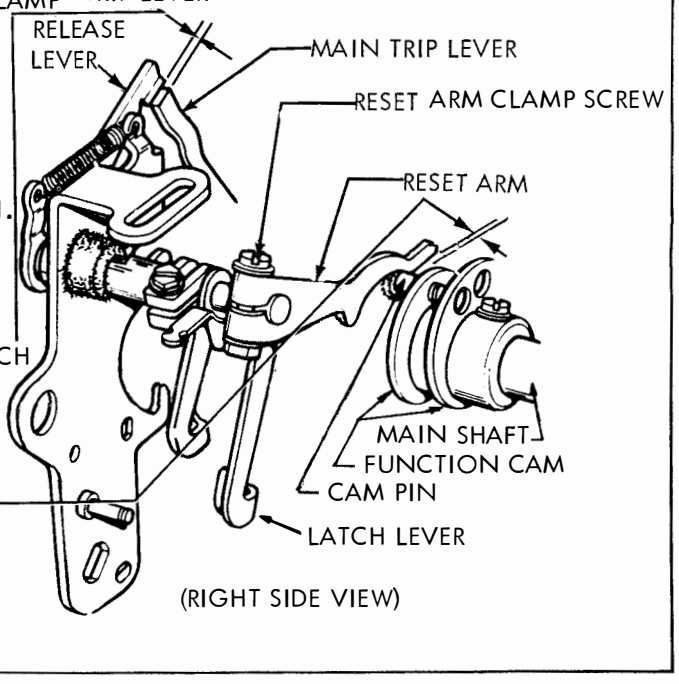
MIN. SOME

(3) CLEARANCE BETWEEN RESET ARM AND FUNCTION CAM

MIN. SOME

TO ADJUST

POSITION RESET ARM WITH CLAMP SCREW LOOSENED.



2.13 Function Mechanisms

(A) FOLLOWER LEVER

REQUIREMENT

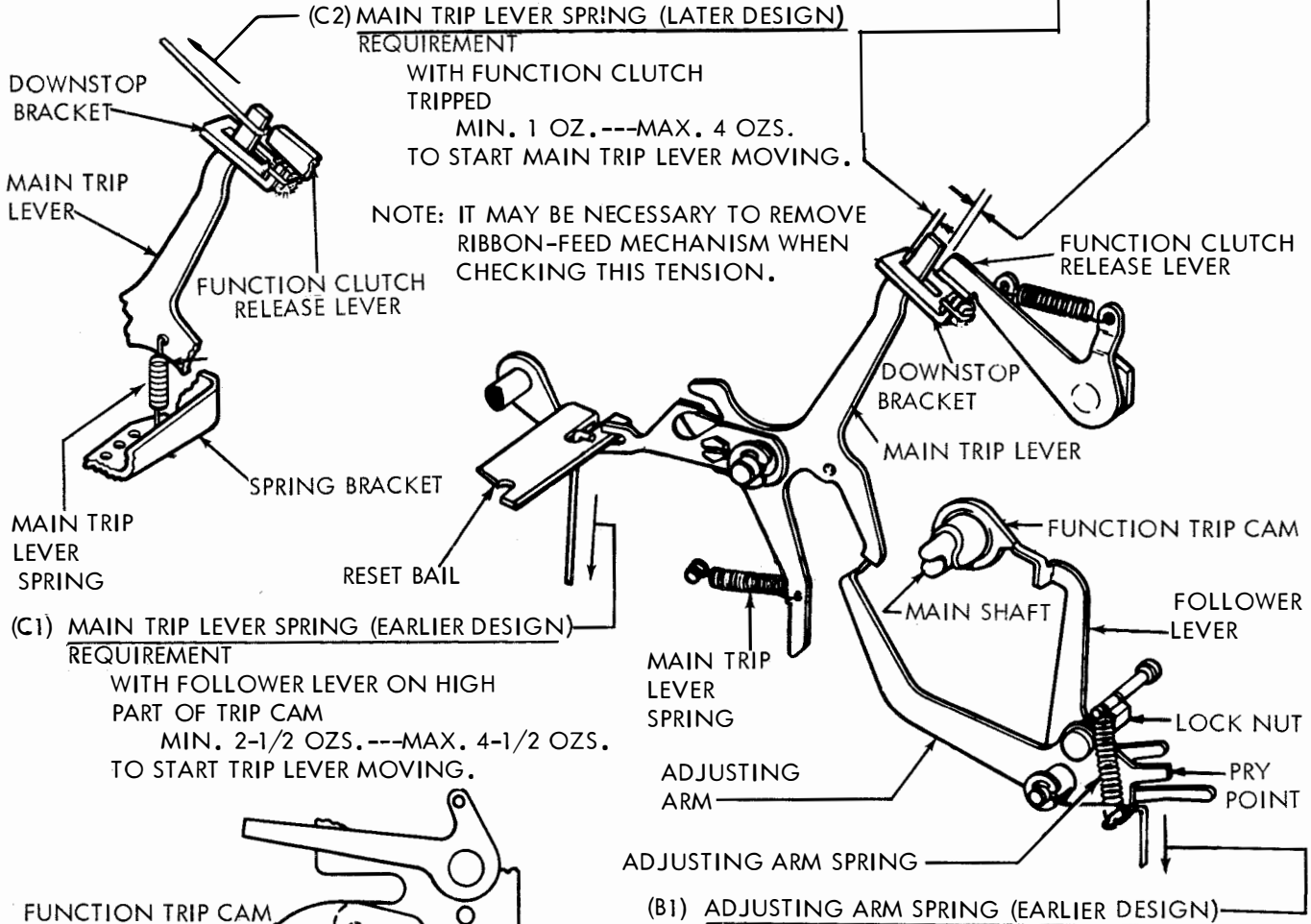
WITH FOLLOWER LEVER ON HIGH PART OF CAM

(1) CLEARANCE BETWEEN RELEASE LEVER AND MAIN TRIP LEVER
MIN. 0.010 INCH---MAX. 0.030 INCH

(2) SOME CLEARANCE BETWEEN MAIN TRIP LEVER AND DOWNSTOP BRACKET.

TO ADJUST

BY MEANS OF PRY POINT, POSITION ADJUSTING ARM OF FOLLOWER LEVER WITH LOCK NUT LOOSENED.



2.14 Function Mechanisms continued

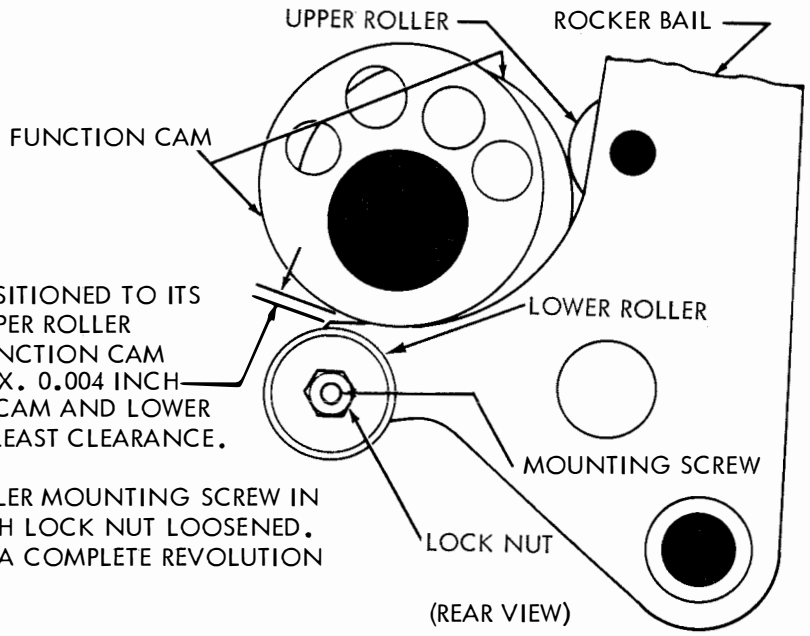
(A) ROCKER BAIL

REQUIREMENT

WITH ROCKER BAIL POSITIONED TO ITS EXTREME LEFT AND UPPER ROLLER IN CONTACT WITH FUNCTION CAM MIN. SOME---MAX. 0.004 INCH CLEARANCE BETWEEN CAM AND LOWER ROLLER AT POINT OF LEAST CLEARANCE.

TO ADJUST

POSITION LOWER ROLLER MOUNTING SCREW IN ELONGATED SLOT WITH LOCK NUT LOOSENED. CHECK THROUGHOUT A COMPLETE REVOLUTION FOR BINDS.



(REAR VIEW)

(B) ROCKER BAIL GUIDE BRACKET

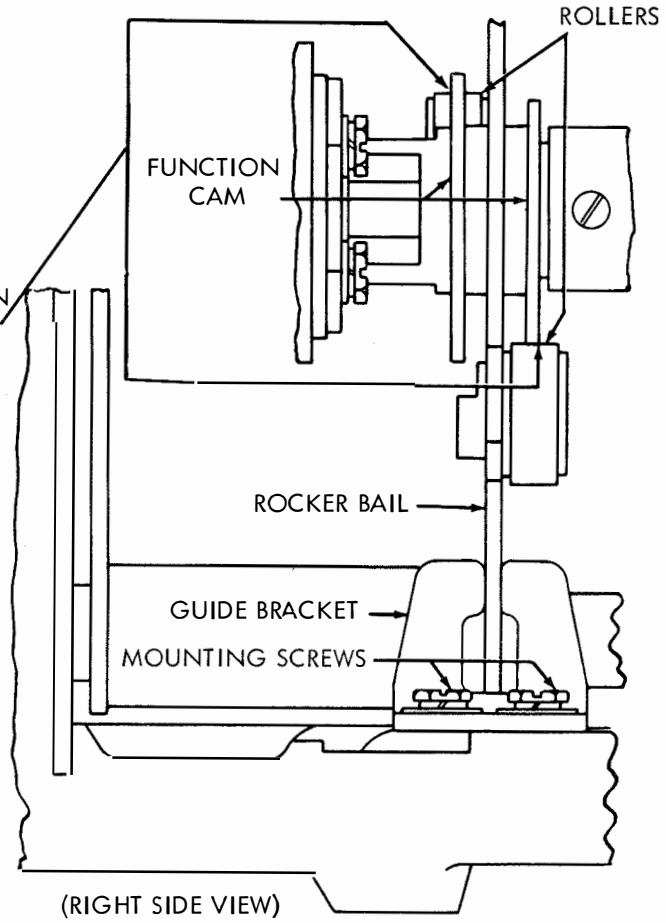
REQUIREMENT

(1) ROCKER BAIL ROLLERS SHOULD ENGAGE FULL THICKNESS OF FUNCTION CAM.

(2) LIFTER ROLLER IN FULL ENGAGEMENT WITH ROCKER BAIL CAMMING SURFACE.

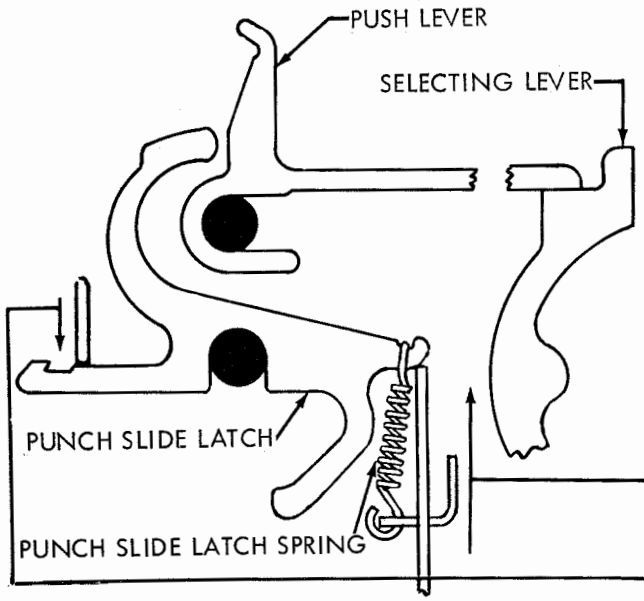
TO ADJUST

POSITION ROCKER BAIL AND GUIDE BRACKET WITH GUIDE BRACKET MOUNTING SCREWS LOOSENED.



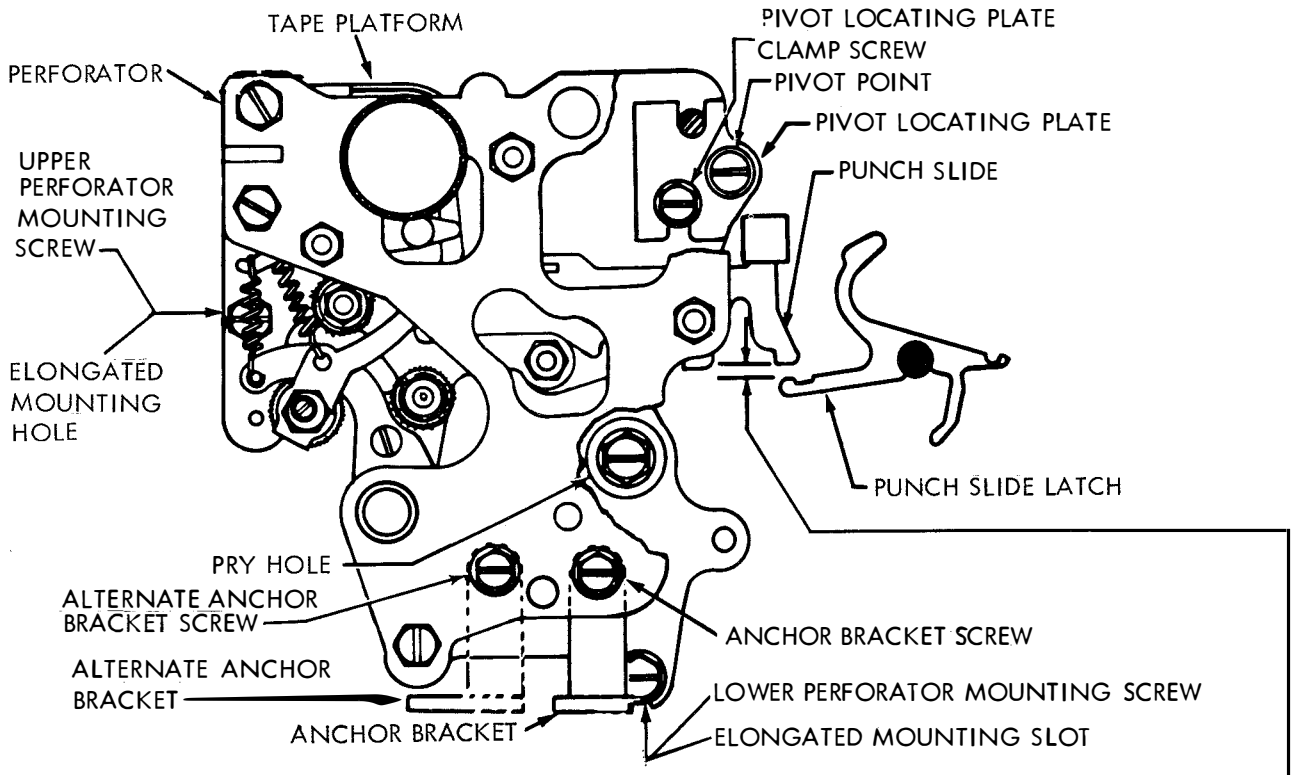
(RIGHT SIDE VIEW)

2.15 Selector Mechanisms



PUNCH SLIDE LATCH SPRINGS
TO CHECK
SELECT LETTERS CODE COMBINATION (12345). POSITION ROCKER BAIL TO EXTREME LEFT. STRIP PUSH LEVERS FROM SELECTING LEVERS.
REQUIREMENT
FOR ONE-SHAFT UNIT
MIN. 1 OZS. --- MAX. 3 OZS. TO START LATCH MOVING.
FOR TWO-SHAFT UNIT
MIN. 3/4 OZS. --- MAX. 2 OZS. TO START LATCH MOVING.

2.16 Punch Mechanisms



PERFORATOR POSITION

REQUIREMENT

WITH LETTERS COMBINATION SELECTED AND FUNCTION CLUTCH JUST TRIPPED.
MIN. 0.015 INCH --- MAX. 0.045 INCH
CLEARANCE BETWEEN THE CLOSEST LATCH LEVER AND ASSOCIATED PUNCH SLIDE.

TO ADJUST

LOOSEN (FRICTION TIGHT) REAR FRAME MOUNTING SCREWS (AND PIVOT LOCATING PLATE CLAMP SCREW IF THE TYPING UNIT IS USED ON THE PUNCH), THE ANCHOR BRACKET MOUNTING SCREWS, PLACE TIP OF SCREWDRIVER BETWEEN HEX HEAD SCREW AND ITS CLEARANCE HOLE RIM AND PRY UP OR DOWN. TIGHTEN SCREWS. TIGHTEN PIVOT LOCATING PLATE CLAMP SCREW ONLY, AS THE NEXT ADJUSTMENT WILL BE TO OBTAIN CLEARANCE BETWEEN TYPEWHEEL AND PUNCH.

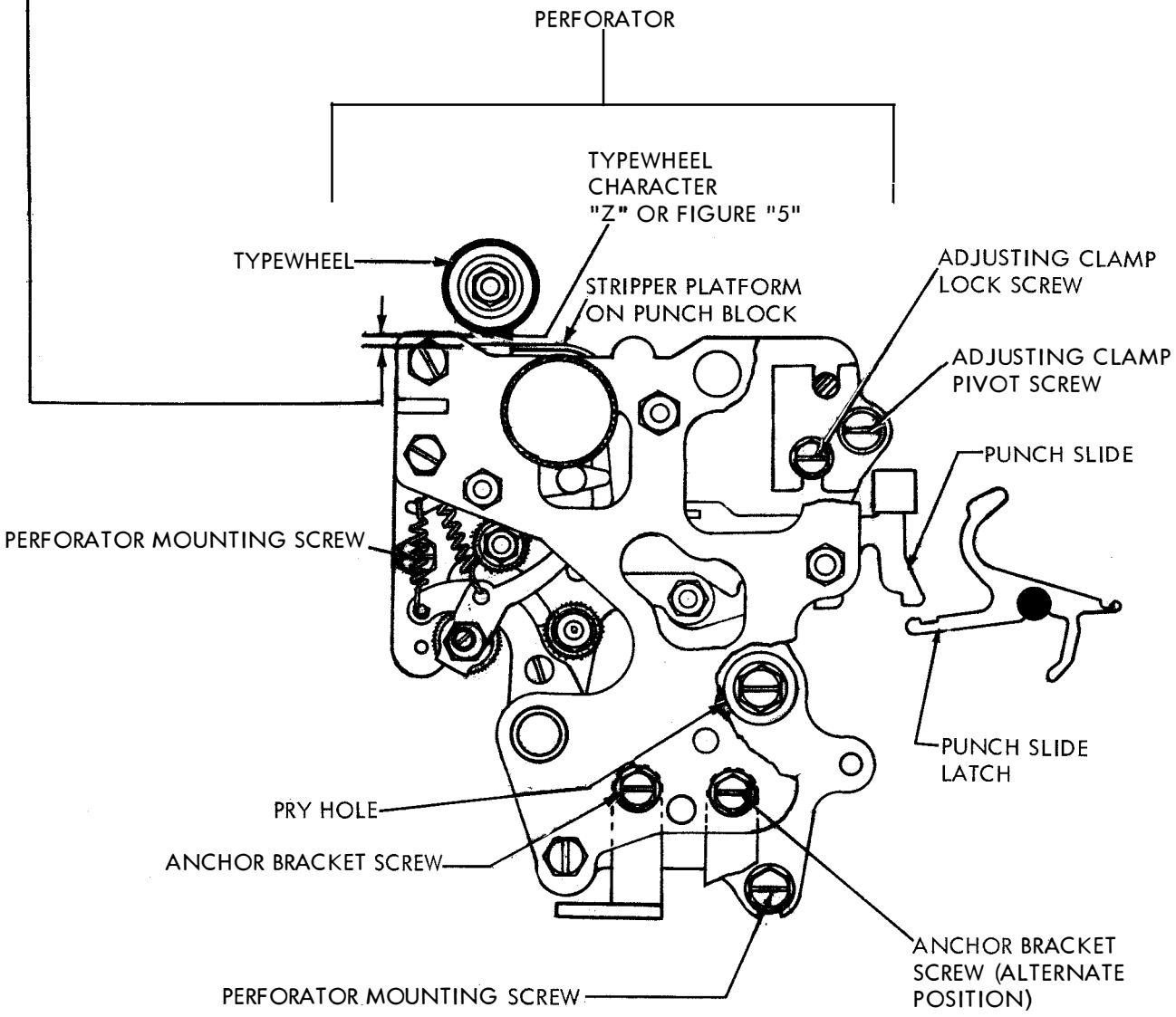
2.17 Punch Mechanisms continued

PERFORATOR POSITION

(1) REQUIREMENT-(FOR TYPING REPERFORATOR WITH SPRING RETRACTED PUNCH UNIT) WITH UNIT IN STOP POSITION AND TYPEWHEEL IN THE LETTERS FIELD. CLEARANCE BETWEEN THE LETTER "Z" ON THE TYPEWHEEL AND THE TOP OF THE STRIPPER PLATFORM.
MIN. 0.090 INCH --- MAX. 0.110 INCH

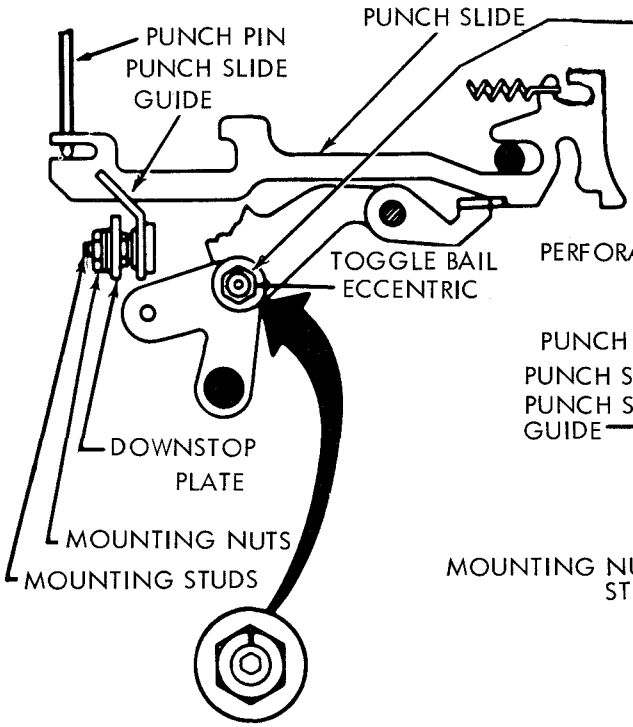
(2) REQUIREMENT - (FOR TYPING REPERFORATOR WITH POWER RETRACTED PUNCH UNIT) WITH UNIT IN STOP POSITION AND TYPEWHEEL IN THE FIGURES FIELD. CLEARANCE BETWEEN THE FIGURE "5" ON THE TYPEWHEEL AND THE TOP OF THE STRIPPER PLATFORM.
MIN. 0.075 INCH---MAX. 0.095 INCH

TO ADJUST
REMOVE RIBBON FROM CARRIER. POSITION PERFORATOR WITH TWO MOUNTING SCREWS, ADJUSTING CLAMP PIVOT SCREW AND ANCHOR BRACKET SCREW LOOSENED. CHECK RESET BAIL TRIP LEVER REQUIREMENT FOR SOME CLEARANCE AND ADJUST IF NECESSARY.

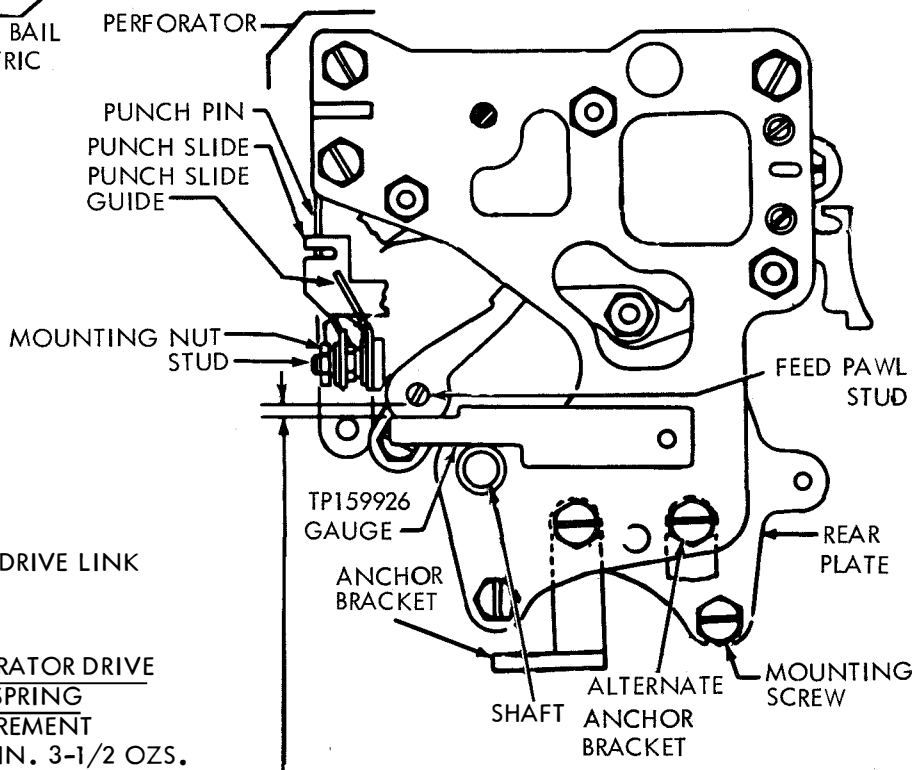


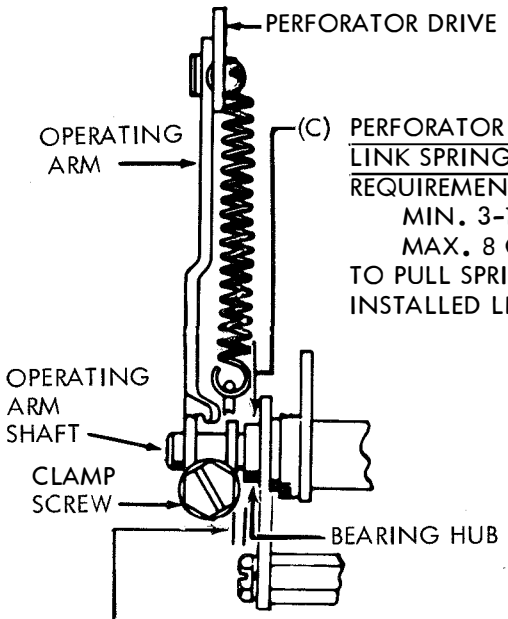
2.18 Punch Mechanisms continued

NOTE: BEFORE PROCEEDING WITH THE PUNCH MECHANSIM ADJUSTMENTS, CHECK THE ROCKER BAIL CAM FOLLOWER ROLLER ADJUSTMENT AND LOOSEN THE PUNCH SLIDE DOWNSTOP MOUNTING NUT AND GUIDE MOUNTING STUD.



(A) TOGGLE BAIL ECCENTRIC (PRELIMINARY)
REQUIREMENT
THE INDENT (HIGH SIDE OF ECCENTRIC) SHALL BE IN ITS UPPERMOST POSITION.
TO ADJUST
WITH THE TOGGLE ECCENTRIC SHAFT LOCK NUT FRICTION TIGHT POSITION ECCENTRIC.



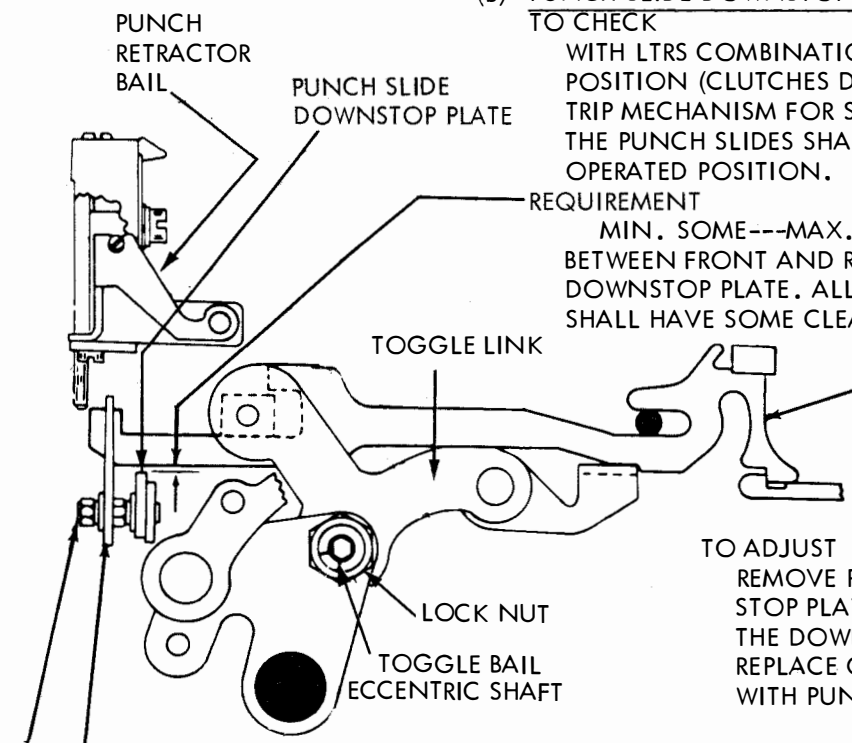


(C) PERFORATOR DRIVE LINK SPRING REQUIREMENT
MIN. 3-1/2 OZS.
MAX. 8 OZS.
TO PULL SPRINGS TO INSTALLED LENGTH.

(B) TOGGLE OPERATING ARM
*(1) REQUIREMENT
TRIP FUNCTION CLUTCH AND ROTATE MAIN SHAFT UNTIL THE UPPER ROCKER BAIL ROLLER IS ON HIGH PART OF ITS CAM.
MIN. SOME---MAX. 0.009 INCH
CLEARANCE BETWEEN FEED PAWL STUD AND THE TP159926 GAUGE.
(2) CLEARANCE BETWEEN ARM AND OSCILLATING SHAFT BEARING HUB.
MIN. 0.002 INCH---MAX. 0.015 INCH
WITH PLAY TAKEN UP IN DIRECTION TO MAKE CLEARANCE MAXIMUM.
TO ADJUST
WITH LOCKSCREW FRICTION TIGHT, POSITION TOGGLE BAIL AND OPERATING ARM.

*AFTER FEED PAWL ADJUSTMENT HAS BEEN MADE, IF PUNCH PIN PENETRATION AND FEED PAWL REQUIREMENTS ARE MET, THIS REQUIREMENT SHOULD BE CONSIDERED FULFILLED.

2.19 Punch Mechanisms for Chadless Tape



(B) PUNCH SLIDE DOWNSTOP PLATE POSITION

TO CHECK

WITH LTRS COMBINATION SELECTED AND UNIT IN STOP POSITION (CLUTCHES DISENGAGED), TRIP FUNCTION RESET TRIP MECHANISM FOR SOME CLEARANCE. THE PUNCH SLIDES SHALL MOVE FREELY TO THEIR OPERATED POSITION.

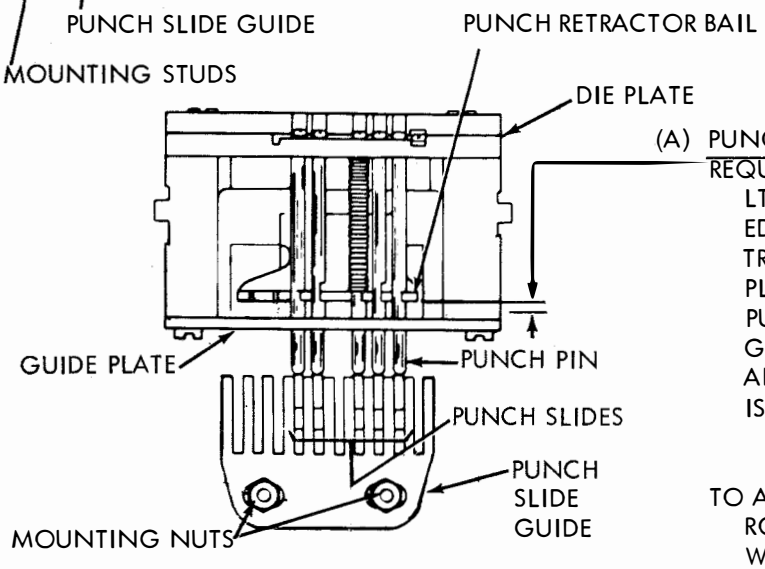
REQUIREMENT

MIN. SOME---MAX. 0.008 INCH BETWEEN FRONT AND REAR PUNCH SLIDES AND DOWNSTOP PLATE. ALL OTHER PUNCH SLIDES SHALL HAVE SOME CLEARANCE.

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.

TO ADJUST

REMOVE PUNCH SLIDE GUIDE, LOOSEN DOWNSTOP PLATE MOUNTING STUDS, AND POSITION THE DOWNSTOP PLATE. TIGHTEN STUDS AND REPLACE GUIDE SO THAT PUNCH SLIDES ALIGN WITH PUNCH PINS (AS GAUGED BY EYE).



(A) PUNCH PIN PENETRATION

REQUIREMENT

LTRS SELECTED. FUNCTION CLUTCH ENGAGED AND ROTATED UNTIL PUNCH PINS HAVE TRAVELED MAXIMUM DISTANCE INTO THE DIE PLATE, CLEARANCE BETWEEN LOWER EDGE OF PUNCH RETRACTOR BAIL AND UPPER SIDE OF GUIDE PLATE (MEASURED ADJACENT TO NO. 1 AND NO. 5 PUNCH PINS WHERE CLEARANCE IS LEAST).

MIN. 0.060 INCH
MAX. 0.075 INCH

TO ADJUST

ROTATE THE TOGGLE BAIL ECCENTRIC SHAFT WITH ITS LOCK NUT LOOSENED. KEEP THE INDENTATION IN THE ECCENTRIC SHAFT TO THE LEFT OF A VERTICAL CENTERLINE THROUGH THE SHAFT.

NOTE:
THE CODE PUNCHES SHALL PUNCH A FULL TAPE LID WITH SLIGHT AMOUNT OF TEAR. THE TEAR SHALL BE RESTRICTED TO A MINIMUM. REFINE PUNCH PIN PENETRATION ADJUSTMENT, IF NECESSARY.

(C) PUNCH SLIDE GUIDE (LEFT SIDE VIEW)

REQUIREMENT

LTRS SELECTED. FUNCTION CLUTCH ENGAGED AND ROTATED UNTIL THE PUNCH SLIDES JUST TOUCH THE PUNCH PINS. THE PUNCH SLIDES SHALL ALIGN CENTRALLY WITH THEIR RESPECTIVE PUNCH PINS (GAUGED BY EYE).

TO ADJUST

POSITION THE PUNCH SLIDE GUIDE WITH ITS MOUNTING NUTS LOOSENED.

2.20 Punch Mechanisms for Fully Perforated Tape

(A) PUNCH PIN PENETRATION

REQUIREMENT

(1) WITH THE LETTERS COMBINATION SELECTED, FUNCTION CLUTCH ENGAGED. ROTATE MAIN SHAFT UNTIL ALL PUNCH PINS ARE INTO OR ABOVE THE TAPE APERTURE IN PUNCH BLOCK. WITH THE TP159926 GAUGE IN POSITION

MIN. 0.050 INCH

CLEARANCE BETWEEN FEED PAWL STUD AND THE GAUGE.

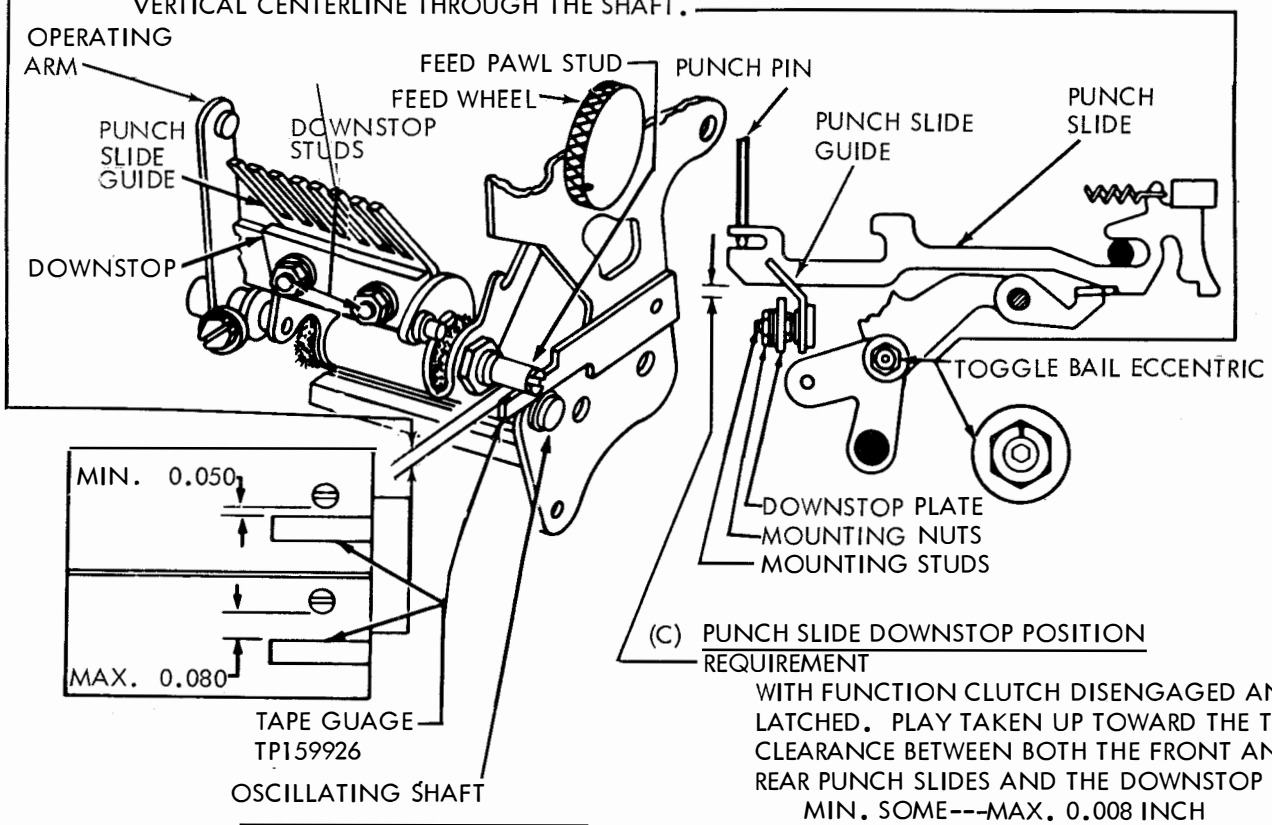
(2) WITH LETTERS COMBINATION SELECTED, FUNCTION CLUTCH ENGAGED. ROTATE MAIN SHAFT UNTIL ALL PUNCH PINS HAVE CLEARED THE PUNCH BLOCK. WITH THE TP159926 GAUGE IN POSITION

MAX. 0.080 INCH

CLEARANCE BETWEEN FEED PAWL STUD AND GAUGE.

TO ADJUST

REFINE THE TOGGLE BAIL ECCENTRIC ADJUSTMENT KEEPING THE INDENT TO THE RIGHT OF A VERTICAL CENTERLINE THROUGH THE SHAFT.



NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.

(B) PUNCH SLIDE GUIDE

REQUIREMENT

THE PUNCH SLIDES SHOULD ALIGN WITH THEIR CORRESPONDING PUNCH PINS AND BE FREE OF BINDS AFTER TIGHTENING THE GUIDE MOUNTING STUDS. EACH PUNCH SLIDE SHOULD RETURN FREELY AFTER BEING PUSHED IN NOT MORE THAN 1/16 INCH.

TO ADJUST

POSITION THE GUIDE WITH ITS MOUNTING STUDS FRICTION TIGHT.

(C) PUNCH SLIDE DOWNSTOP POSITION

REQUIREMENT

WITH FUNCTION CLUTCH DISENGAGED AND LATCHED. PLAY TAKEN UP TOWARD THE TOP CLEARANCE BETWEEN BOTH THE FRONT AND REAR PUNCH SLIDES AND THE DOWNSTOP PLATE

MIN. SOME---MAX. 0.008 INCH

ALL OTHER PUNCH SLIDES SHALL HAVE SOME CLEARANCE.

NOTE: TO CHECK FOR SOME CLEARANCE, PLACE UNIT IN STOP POSITION, TRIP FUNCTION TRIP MECHANISM AND LATCHES, THE PUNCH SLIDES SHALL MOVE FULLY TO THEIR OPERATED POSITION.

TO ADJUST

WITH UNIT IN STOP POSITION, LOOSEN THE TWO DOWNSTOP PLATE MOUNTING LOCK NUTS AND LOCATE THE DOWNSTOP PLATE TO MEET THE REQUIREMENT.

2.21 Function Mechanism continued

RESET BAIL TRIP LEVER

REQUIREMENT

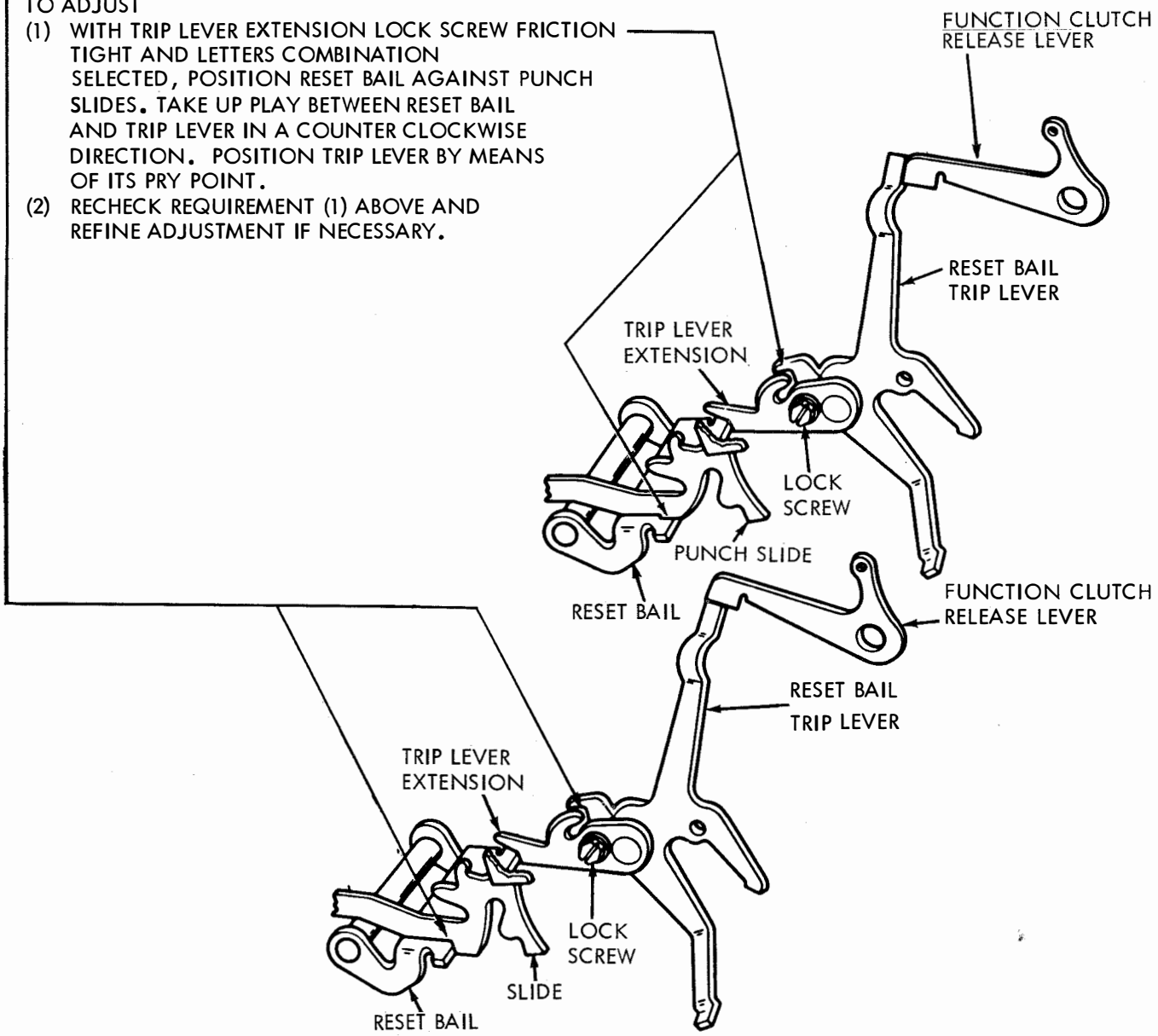
(1) MANUALLY SELECT BLANK COMBINATION. MANUALLY ROTATE RESET BAIL TRIP LEVER. THE PUNCH SLIDE RESET BAIL SHALL TRIP BEFORE THE FUNCTION CLUTCH IS TRIPPED.

(2) WITH FUNCTION AND SELECTOR CLUTCHES DISENGAGED AND LATCHED, THE PUNCH SLIDE RESET BAIL SHALL FULLY ENGAGE THE PUNCH SLIDE LATCHING SURFACE WHEN PLAY IN PARTS IS TAKEN UP IN DIRECTION TO MAKE THE ENGAGEMENT THE LEAST.

TO ADJUST

(1) WITH TRIP LEVER EXTENSION LOCK SCREW FRICTION TIGHT AND LETTERS COMBINATION SELECTED, POSITION RESET BAIL AGAINST PUNCH SLIDES. TAKE UP PLAY BETWEEN RESET BAIL AND TRIP LEVER IN A COUNTER CLOCKWISE DIRECTION. POSITION TRIP LEVER BY MEANS OF ITS PRY POINT.

(2) RECHECK REQUIREMENT (1) ABOVE AND REFINE ADJUSTMENT IF NECESSARY.



2.22 Punch Mechanism continued

(A) LATCH LEVER CLEARANCE

TO CHECK

PUNCH SLIDES SHALL BE IN SPACING POSITION.

REQUIREMENT

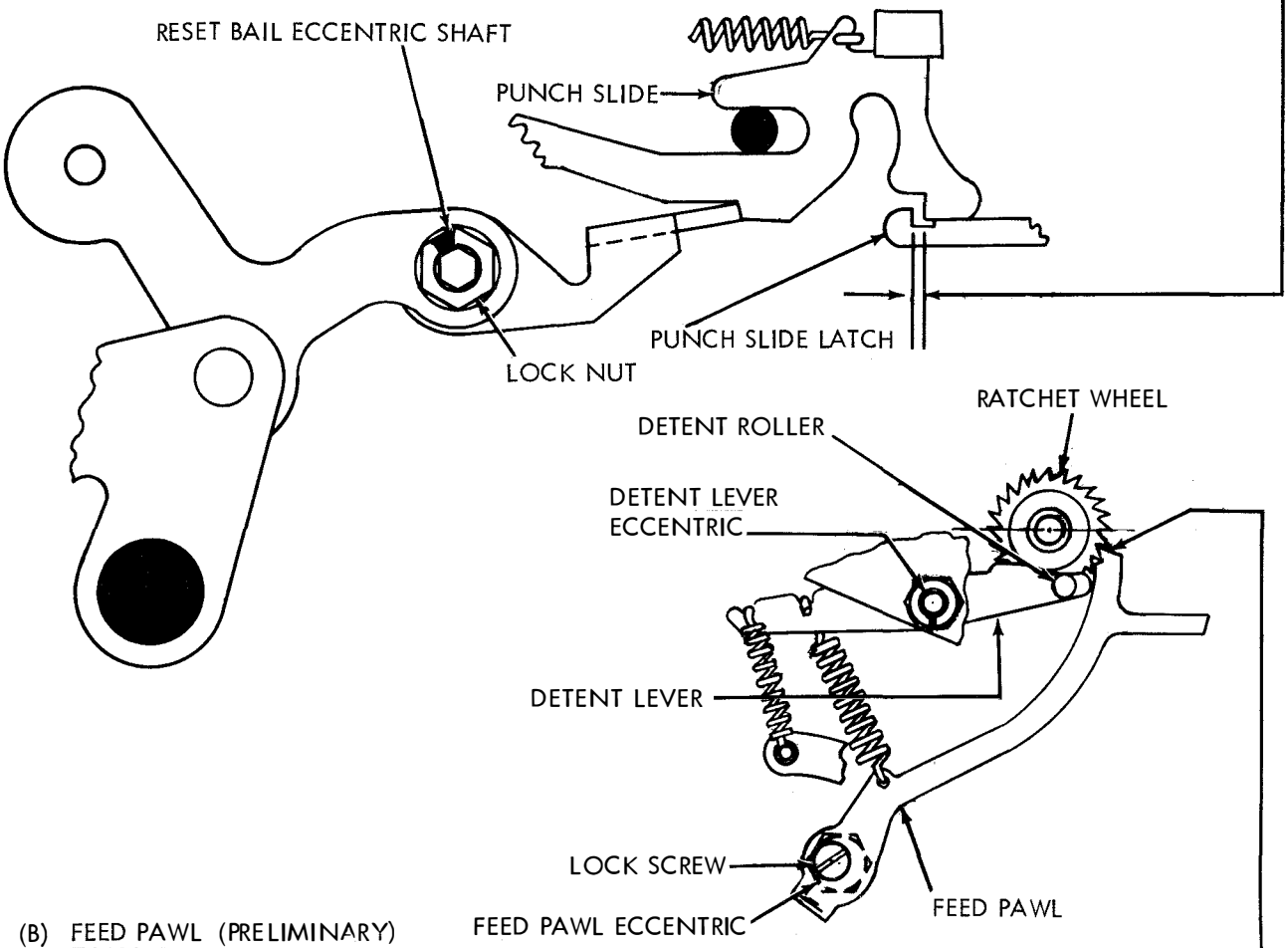
WITH FUNCTION CLUTCH DISENGAGED AND LATCHED. CLEARANCE BETWEEN PUNCH SLIDE AND PUNCH SLIDE LATCH

MIN. 0.008 INCH --- MAX. 0.020 INCH

FOR SLIDE HAVING THE LEAST CLEARANCE.

TO ADJUST

ROTATE THE RESET BAIL ECCENTRIC SHAFT WITH ITS LOCK NUT LOOSENED. KEEP INDENTATION IN ECCENTRIC ABOVE HORIZONTAL CENTER OF SHAFT.



(B) FEED PAWL (PRELIMINARY)

TO CHECK

FEED WHEEL OIL HOLE SHALL BE IN UP POSITION.

REQUIREMENT

FUNCTION CLUTCH DISENGAGED, INDENTATION IN DETENT LEVER ECCENTRIC AT RIGHT ANGLE TO LEVER, DETENT ROLLER IN CONTACT WITH RATCHET WHEEL, HIGH PART OF FEED PAWL ECCENTRIC TO THE RIGHT OF ITS LOCK SCREW. THE FEED PAWL SHALL ENGAGE THE FIRST TOOTH BELOW A HORIZONTAL CENTERLINE THROUGH THE RATCHET WHEEL WITH NO PERCEPTIBLE CLEARANCE.

TO ADJUST

ROTATE THE FEED PAWL ECCENTRIC WITH LOCK SCREW LOOSENED.

NOTE:

THIS ADJUSTMENT IS RELATED TO FEED HOLE SPACING AND TWO ADJUSTMENTS SHALL BE MADE AT THE SAME TIME.

2.23 Punch Mechanism for Chadless Tape continued

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.

FEED HOLE SPACING (PRELIMINARY)

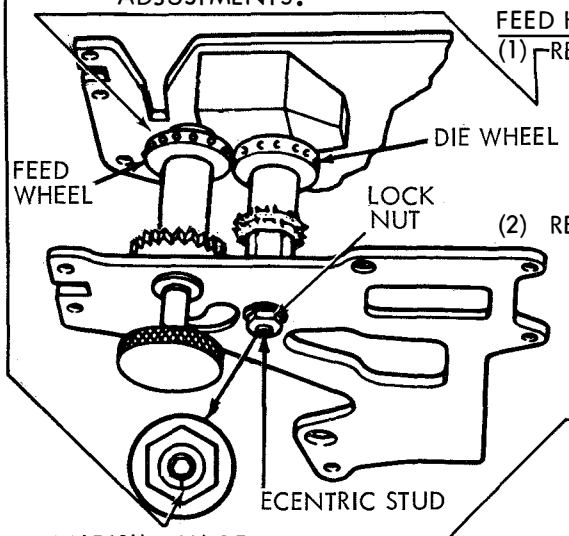
REQUIREMENT

INDENT OF DIE WHEEL ECCENTRIC STUD POINTING DOWNWARD.

TO ADJUST

POSITION DIE WHEEL ECCENTRIC STUD WITH LOCK NUT LOOSENED.

NOTE: BEFORE PROCEEDING WITH THE FOLLOWING ADJUSTMENTS, CHECK BOTH TAPE GUIDE SPRING ADJUSTMENTS.



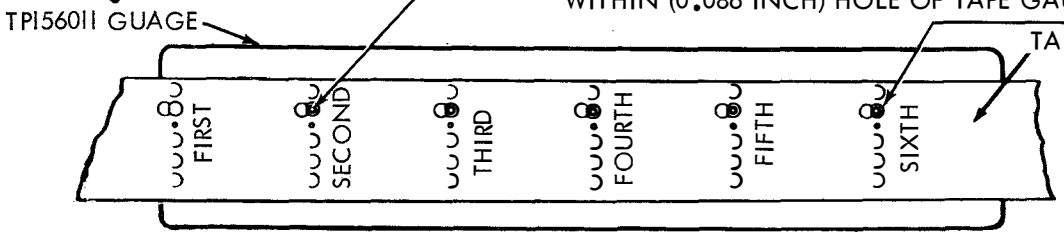
FEED HOLE SPACING (FINAL)

(1) REQUIREMENT

WITH TAPE SHOE BLOCKED AWAY FROM THE FEED WHEEL, FEED PAWL AND DETENT DISENGAGED, AND TAPE REMOVED FROM THE PUNCH MECHANISM, THE FEED WHEEL SHALL ROTATE FREELY. (CHECK THROUGH 3 OR 4 ROTATIONS).

(2) REQUIREMENT

PERFORATE SIX SERIES OF NINE BLANK CODE COMBINATIONS FOLLOWED BY A LTRS COMBINATION. OPEN CHADS SO THAT CODE HOLES ARE VISIBLE. PLACE TAPE OVER SMOOTH SIDE OF TP156011 TAPE GAUGE SO THAT CIRCULAR PORTION OF FIRST NO. 2 CODE HOLE IS CONCENTRIC WITH FIRST (0.072 INCH) HOLE OF TAPE GAUGE. (SEE NOTE BELOW.) SECOND THROUGH FIFTH HOLES IN TAPE GAUGE SHALL BE VISIBLE THROUGH NO. 2 CODE HOLES IN TAPE. CIRCULAR PORTION OF SIXTH NO. 2 CODE HOLE IN TAPE SHALL BE ENTIRELY WITHIN (0.086 INCH) HOLE OF TAPE GAUGE.



TO ADJUST

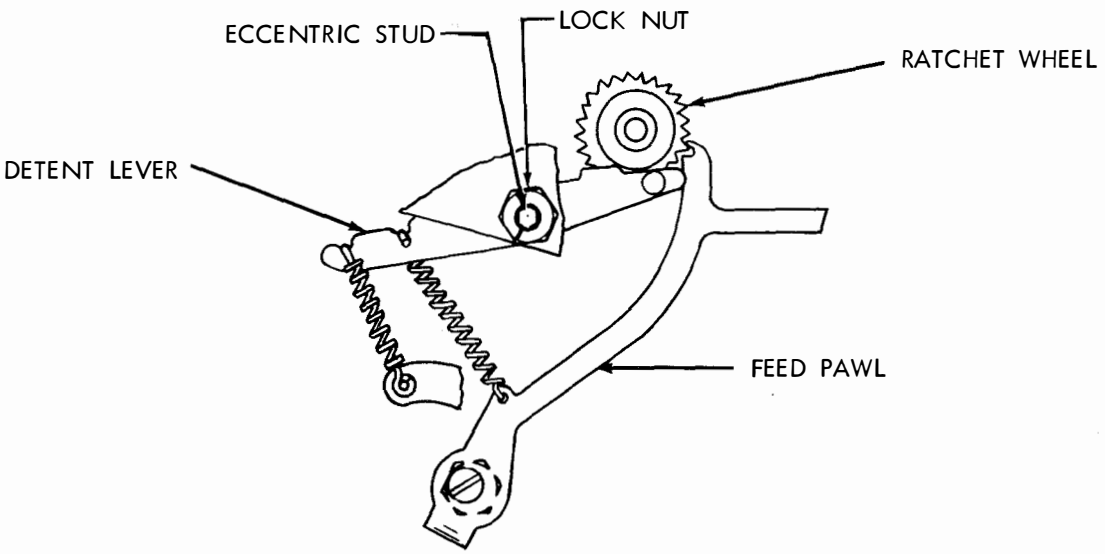
(1) WITH TAPE REMOVED FROM PUNCH MECHANISM, LOOSEN DIE WHEEL ECCENTRIC STUD LOCKNUT. ADJUST DIE WHEEL SO THAT IT JUST BINDS ON FEED WHEEL. BACK OFF ECCENTRIC SO DIE WHEEL IS JUST FREE (CHECK FREENESS THROUGH 3 OR 4 REVOLUTIONS). KEEP INDENT OF ECCENTRIC STUD BELOW HORIZONTAL CENTERLINE OF STUD.

(2) REFINE ABOVE ADJUSTMENT TO MEET REQUIREMENT (2). IF NECESSARY, MOVE INDENT OF DIE WHEEL ECCENTRIC STUD TOWARD FEED WHEEL TO DECREASE CHARACTER SPACING AND AWAY FROM FEED WHEEL TO INCREASE CHARACTER SPACING.
CAUTION: WITH TAPE REMOVED FROM PUNCH MECHANISM, MAKE SURE DIE WHEEL DOES NOT BIND.

(3) RECHECK REQUIREMENT (1). IF IT IS NOT MET, DIE WHEEL ECCENTRIC HAS BEEN OVER ADJUSTED.
REFINE.

NOTE:
FIRST THROUGH FIFTH HOLES IN GAUGE ARE SAME SIZE AS CODE IN TAPE (0.072 INCH DIAMETER). BUT SIXTH HOLE IN GAUGE IS LARGER (0.086 INCH). THIS ARRANGEMENT ALLOWS $\pm$ 0.007 INCH VARIATION IN 5 INCHES.

2.24 Punch Mechanism for Chadless Tape continued



DETENT LEVER

REQUIREMENT

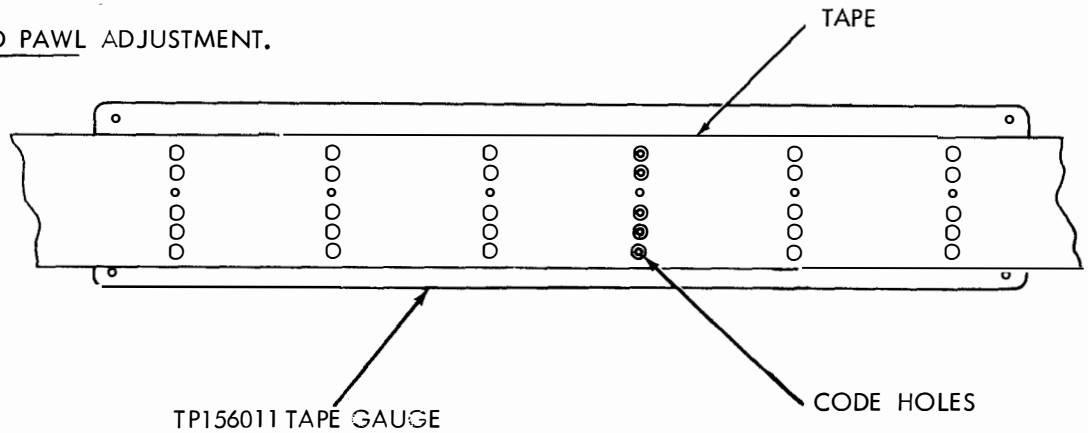
A PIECE OF TAPE CONTAINING NINE FEED HOLES FOLLOWED BY A LETTERS COMBINATION PERFORATED ON THE PERFORATOR MUST CONFORM TO THE TP156011 TAPE GAUGE.
THE LATERAL CENTERLINE THROUGH THE CODE HOLES IN THE TAPE SHOULD COINCIDE WITH A LATERAL CENTERLINE THROUGH THE HOLES IN THE GAUGE.

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.

TO ADJUST

ROTATE THE DETENT ECCENTRIC CLOCKWISE TO MOVE THE FEED HOLES TOWARD THE HINGED EDGE OF THE CODE HOLES AND COUNTERCLOCKWISE TO MOVE THE FEED HOLES TOWARD THE TRAILING EDGE OF THE CODE HOLES. TIGHTEN THE ECCENTRIC LOCK NUT AND REFINE THE FEED PAWL ADJUSTMENT.

RECHECK FEED PAWL ADJUSTMENT.



2.25 Punch Mechanism for Chadless Tape continued

NOTE: IF UNIT IS EQUIPPED WITH TAPE GUIDE (EARLIER DESIGN), LOCKNUT MUST BE LOOSENED BEFORE FEED HOLE LATERAL ALIGNMENT ADJUSTMENT IS MADE.

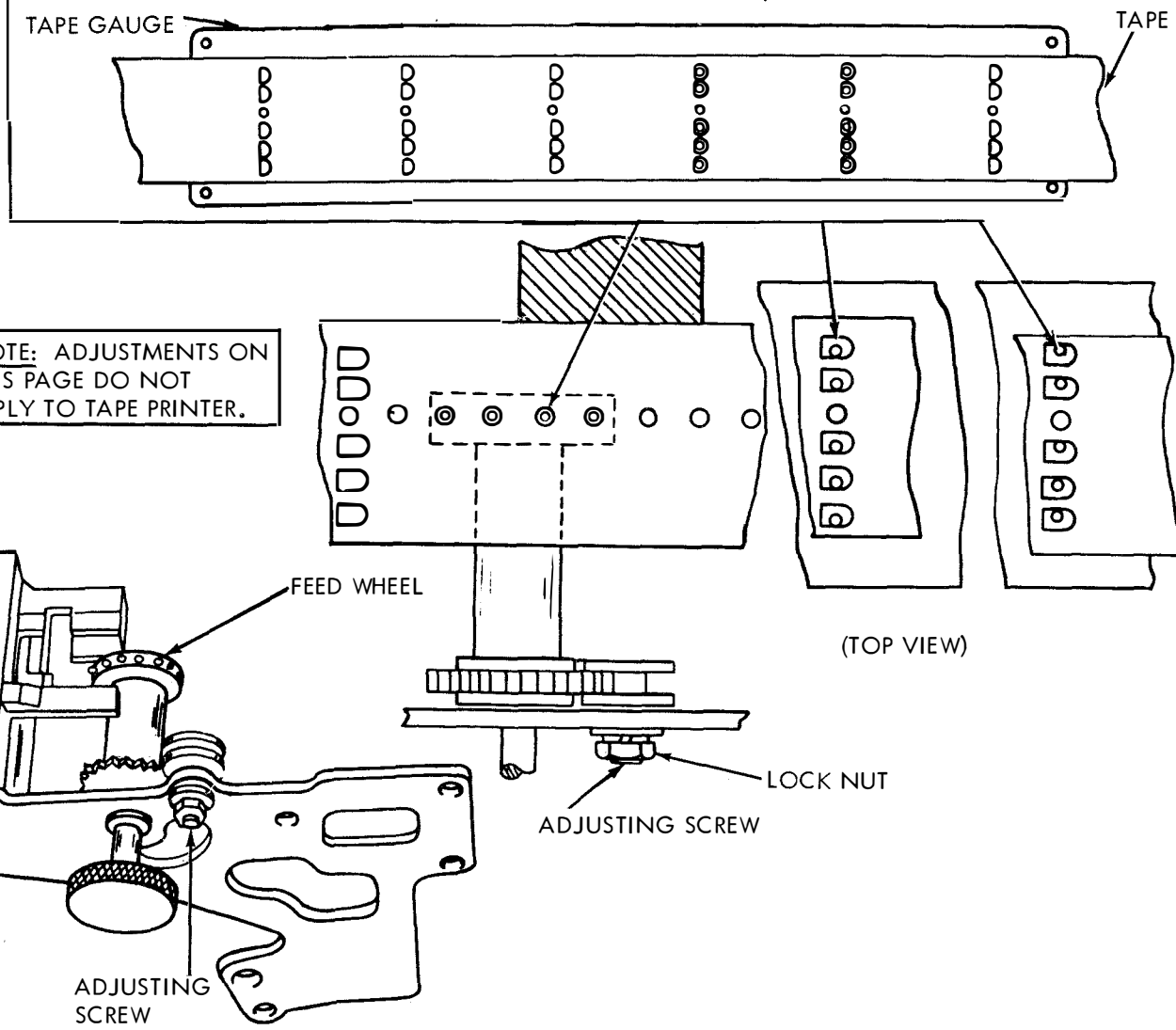
FEED HOLE LATERAL ALIGNMENT

REQUIREMENT

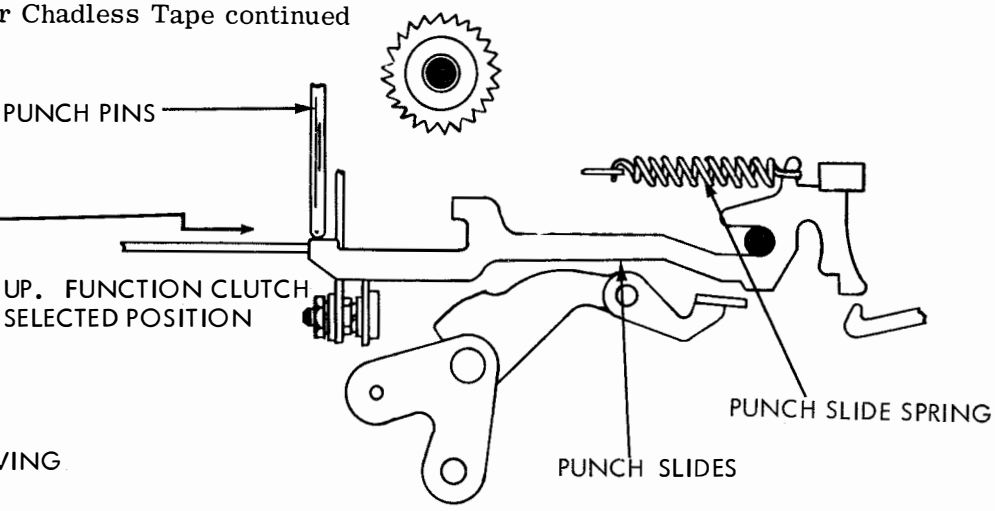
WITH REPERFORATOR OPERATING UNDER POWER, OBTAIN A PIECE OF TAPE CONTAINING A SERIES OF NINE BLANK CODE COMBINATIONS FOLLOWED BY A LTRS COMBINATION. OPEN CHADS SO CODE HOLES ARE VISIBLE AND PLACE TAPE OVER TP156011 TAPE GAUGE WITH LTRS COMBINATION FEED HOLES ENGAGING FEED PINS. LARGE HOLES IN GAUGE ARE SAME DIAMETER AS CIRCULAR PORTION OF CODE HOLES IN TAPE. SMALL HOLES IN GAUGE SERVE AS GUIDE FOR GAUGING. CIRCULAR PORTION OF CODE HOLES IN TAPE SHALL BE CONCENTRIC WITH HOLES IN TAPE GAUGE.

TO ADJUST

LOOSEN ADJUSTING SCREW LOCKNUT AND POSITION ADJUSTING SCREW. TO MOVE HOLES OF GAUGE AWAY FROM REFERENCE EDGE OF TAPE, MOVE FEED WHEEL TOWARD FRONT PLATE OF PUNCH MECHANISM BY ROTATING ADJUSTING SCREW COUNTERCLOCKWISE. TO MOVE HOLES OF GAUGE TOWARD REFERENCE EDGE OF TAPE, MOVE FEED WHEEL TOWARDS BACKPLATE OF PUNCH MECHANISM BY ROTATING ADJUSTING SCREW CLOCKWISE. TIGHTEN LOCKNUT. REFINE DETENT LEVER ADJUSTMENT TO ALIGN LATERAL CENTERLINES OF CODE HOLES AND FEED HOLES, IF REQUIRED.



2.26 Punch Mechanism for Chadless Tape continued

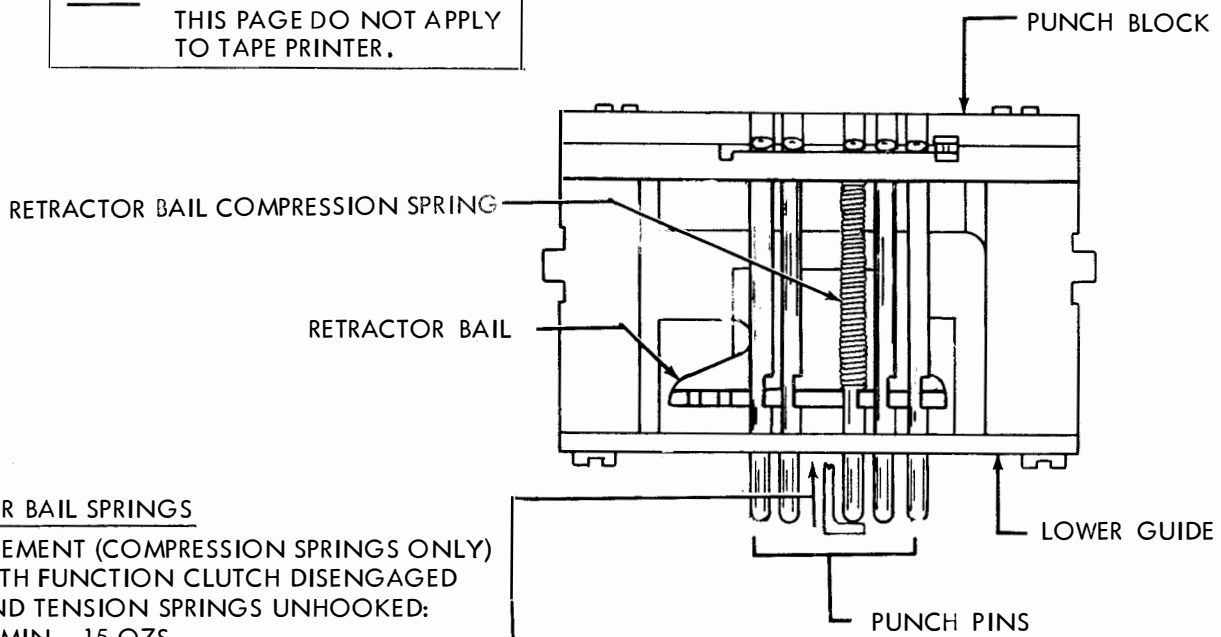


(A)
PUNCH SLIDE SPRING

REQUIREMENT
LETTERS COMBINATION SET UP. FUNCTION CLUTCH TRIPPED. PUNCH SLIDES IN SELECTED POSITION UNDER PUNCH PINS.

MIN. 2 1/4 OZS.
MAX. 3 1/4 OZS.
TO START EACH SLIDE MOVING

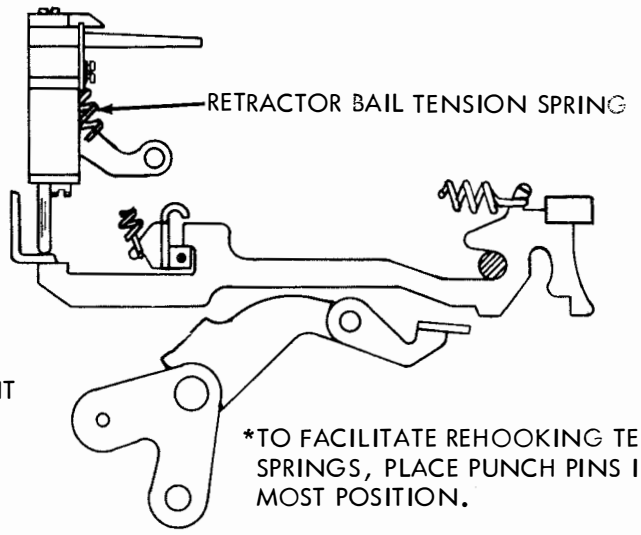
NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.



(LEFT SIDE VIEW)

(B)
RETRACTOR BAIL SPRINGS

(1) REQUIREMENT (COMPRESSION SPRINGS ONLY) WITH FUNCTION CLUTCH DISENGAGED AND TENSION SPRINGS UNHOOKED:
MIN. 15 OZS.
MAX. 32 OZS.
TO LIFT RETRACTOR BAIL AWAY FROM LOWER GUIDE OR PUNCH BLOCK.



(2) REQUIREMENT (COMBINED COMPRESSION AND TENSION SPRINGS)
UNDER THE SAME CONDITIONS AS REQUIREMENT (1) ABOVE, EXCEPT WITH TENSION SPRINGS HOOKED*

MIN. 4 LBS. --- MAX. 5 LBS.

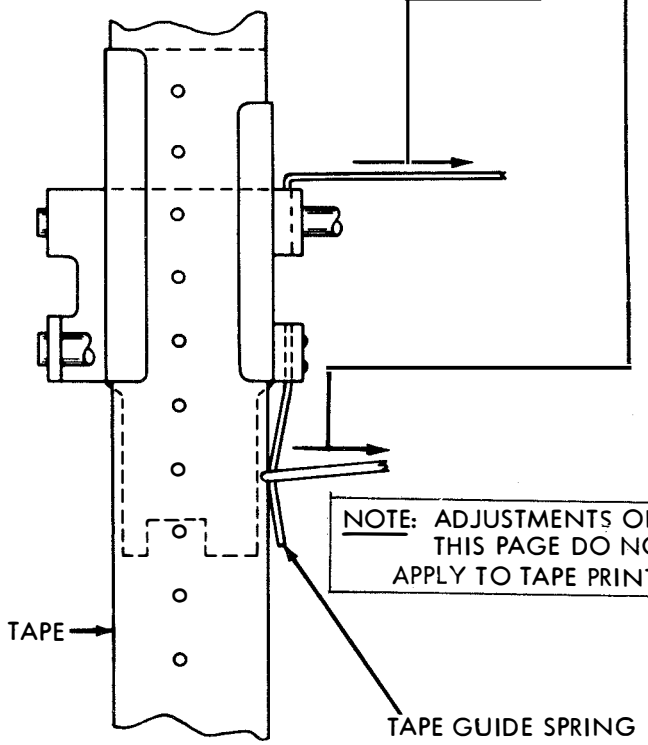
*TO FACILITATE REHOOKING TENSION SPRINGS, PLACE PUNCH PINS IN UPPERMOST POSITION.

2.27 Punch Mechanism for Chadless Tape continued

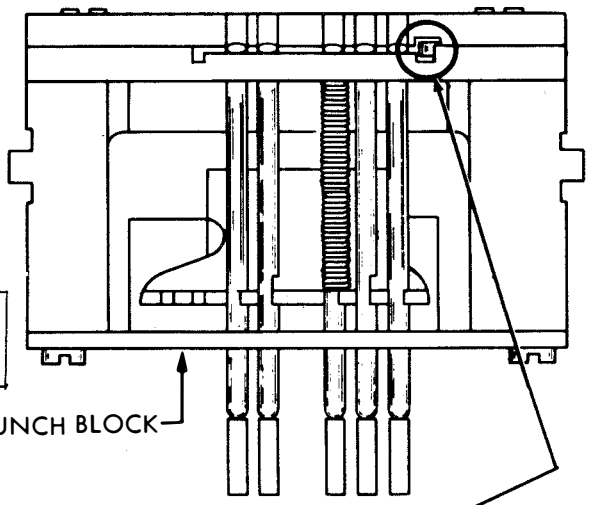
(B) TAPE GUIDE ASSEMBLY SPRING
REQUIREMENT
THE TAPE GUIDE ASSEMBLY SHOULD BE FREE TO RETURN TO REST AGAINST THE TAPE GUIDE BLOCK AFTER A
MIN. 16 OZS.
IS USED TO PULL THE TAPE GUIDE ASSEMBLY AWAY FROM THE BLOCK.
TO ADJUST
REPLACE SPRING IF REQUIREMENT IS NOT MET.
IF THE TAPE GUIDE ASSEMBLY IS NOT FREE TO RETURN, REPOSITION THE TAPE GUIDE ASSEMBLY MOUNTING POST TO FREE THE TAPE GUIDE ASSEMBLY.

(A)
TAPE GUIDE SPRING (TAPE GUIDE)
REQUIREMENT
CLUTCH DISENGAGED AND TAPE THREADED THROUGH THE PUNCH ASSEMBLY,
IT SHOULD REQUIRE
MIN. 1-1/4 OZS.
MAX. 2-1/4 OZS.
TO JUST MOVE THE SPRING AWAY FROM THE TAPE.
TO ADJUST
BEND THE SPRING.

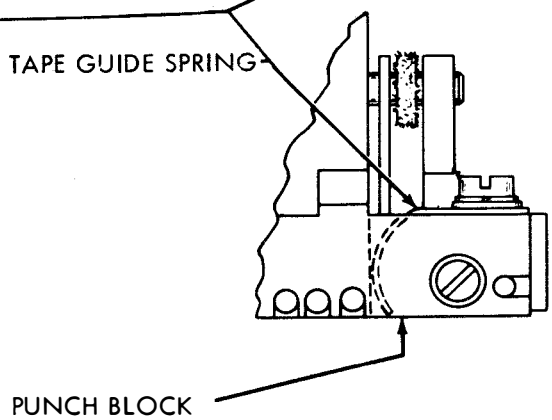
NOTE: IN ORDER TO CHECK THIS SPRING TENSION ON UNITS EQUIPPED WITH BACKSPACE MECHANISM, IT IS NECESSARY TO REMOVE SEVERAL PARTS. IT SHOULD NOT BE CHECKED UNLESS THERE IS REASON TO BELIEVE THAT REQUIREMENTS CANNOT BE MET.



NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.



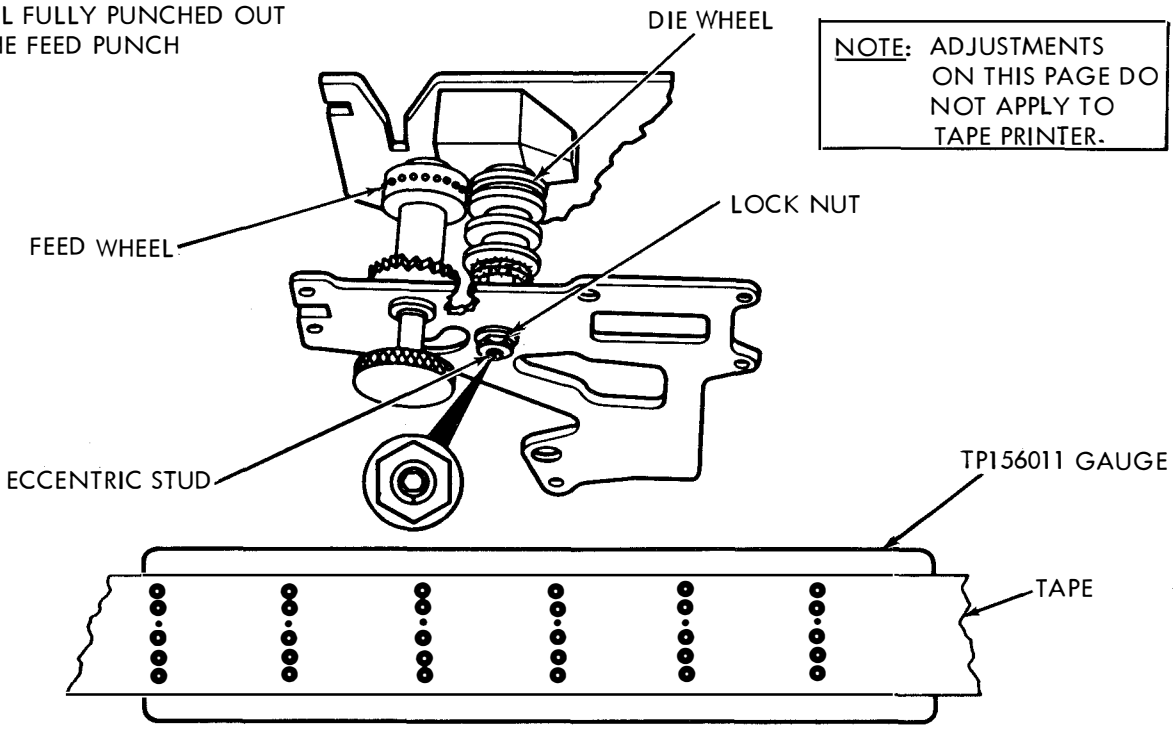
(C) TAPE GUIDE SPRING (PUNCH BLOCK)
(1) REQUIREMENT
WITH THE TAPE REMOVED FROM THE PUNCH BLOCK THE TAPE GUIDE SPRING SHOULD REST AGAINST THE CLEARANCE SLOT IN THE BLOCK IN A SYMMETRICAL MANNER.
(2) REQUIREMENT
WITH TAPE IN THE PUNCH BLOCK AND THE PERFORATOR OPERATING UNDER POWER, THE SPRING SHOULD NOT DISTORT THE EDGE OF THE TAPE.
TO ADJUST
BEND THE SPRING AND POSITION IT WITH ITS MOUNTING SCREW LOOSENED.



2.28 Punch Mechanism for Fully Perforated Tape continued

NOTE: INDENTATIONS OF THE FEED WHEEL FULLY PUNCHED OUT BY THE FEED PUNCH

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.



NOTE: BEFORE PROCEEDING WITH THE FOLLOWING ADJUSTMENTS, CHECK BOTH TAPE GUIDE SPRING ADJUSTMENTS.

FEED HOLE SPACING

(1) REQUIREMENT

WITH TAPE SHOE BLOCKED AWAY FROM FEED WHEEL, FEED PAWL AND DETENT DISENGAGED, AND TAPE REMOVED FROM THE PUNCH MECHANISM, FEED WHEEL SHALL ROTATE FREELY. (SHALL BE CHECKED THROUGH 3 OR 4 REVOLUTIONS.)

(2) REQUIREMENT

PERFORATE SIX SERIES OF NINE BLANK CODE COMBINATIONS FOLLOWED BY A LTRS COMBINATION. PLACE TAPE OVER SMOOTH SIDE OF TP156011 TAPE GAUGE SO THAT CIRCULAR PORTION OF FIRST NO. 2 CODE HOLE IS CONCENTRIC WITH FIRST (0.072 INCH) HOLE OF TAPE GAUGE. (SEE NOTE BELOW.) SECOND THROUGH FIFTH HOLES IN TAPE GAUGE SHALL BE VISIBLE THROUGH NO. 2 CODE HOLES IN TAPE. CIRCULAR PORTION OF SIXTH NO. 2 CODE HOLE IN TAPE SHALL BE ENTIRELY WITHIN (0.086 INCH) HOLE OF TAPE GAUGE.

TO ADJUST

(1) WITH TAPE REMOVED FROM PUNCH MECHANISM, LOOSEN DIE WHEEL ECCENTRIC STUD LOCKNUT. ADJUST DIE WHEEL SO THAT IT JUST BINDS ON FEED WHEEL. BACK OFF ECCENTRIC SO DIE WHEEL IS JUST FREE (CHECK FREENESS THROUGH 3 OR 4 REVOLUTIONS). KEEP INDENT OF ECCENTRIC STUD BELOW HORIZONTAL CENTERLINE OF STUD.

(2) REFINE ABOVE ADJUSTMENT TO MEET REQUIREMENT (2). IF NECESSARY, MOVE INDENT OF DIE WHEEL ECCENTRIC STUD TOWARD FEED WHEEL TO DECREASE CHARACTER SPACING AND AWAY FROM FEED WHEEL TO INCREASE CHARACTER SPACING.
CAUTION: WITH TAPE REMOVED FROM PUNCH MECHANISM, MAKE SURE DIE WHEEL DOES NOT BIND.

(3) RECHECK REQUIREMENT (1). IF IT IS NOT MET, DIE WHEEL ECCENTRIC HAS BEEN OVERADJUSTED. REFINE.

NOTE: FIRST THROUGH FIFTH HOLES IN GAUGE ARE SAME SIZE AS CODE IN TAPE (0.072 INCH DIAMETER). BUT SIXTH HOLE IN GAUGE IS LARGER (0.086 INCH). THIS ARRANGEMENT ALLOWS ± 0.007 INCH VARIATION IN 5 INCHES.

2.29 Punch Mechanism for Fully Perforated Tape continued

NOTE:
(INDENTATION OF THE FEED WHEEL FULLY PUNCHED OUT BY THE FEED PUNCH)

NOTE: IF UNIT IS EQUIPPED WITH TAPE GUIDE (EARLIER DESIGN), LOCKNUT MUST BE LOOSENED BEFORE FEED HOLE LATERAL ALIGNMENT ADJUSTMENT IS MADE.

FEED WHEEL INDENTATION ALIGNMENT

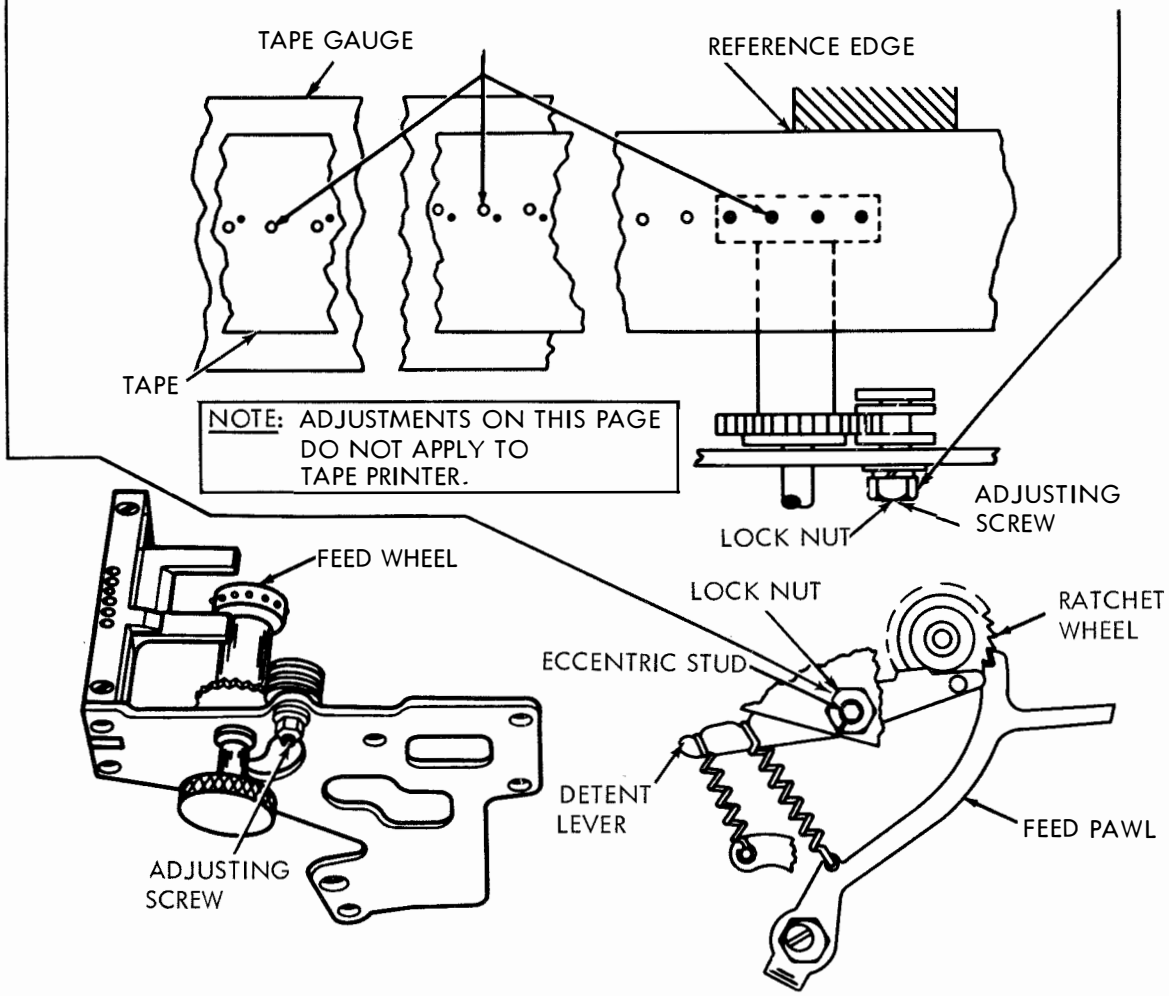
(1) REQUIREMENT

WHEN A PIECE OF TAPE IS PERFORATED WITH A SERIES OF BLANK CODE COMBINATIONS, THE INDENTATIONS OF THE FEED WHEEL SHALL BE FULLY PUNCHED OUT.

TO ADJUST

RIGHT OR LEFT, ROTATE THE DETENT LEVER ECCENTRIC STUD CLOCKWISE TO MOVE THE FEED WHEEL PERFORATIONS TOWARD THE LEADING EDGE OF THE CODE HOLES, AND COUNTERCLOCKWISE TO MOVE THE FEED WHEEL PERFORATIONS TOWARD THE TRAILING EDGE OF THE CODE HOLES. REFINE THE FEED PAWL ADJUSTMENT.

FRONT TO REAR, LOOSEN THE LOCK NUT ON THE ADJUSTING SCREW AND TURN THE SCREW CLOCKWISE TO MOVE TAPE TOWARD REFERENCE EDGE (REAR), AND COUNTERCLOCKWISE TO MOVE THE TAPE AWAY FROM REFERENCE EDGE (FRONT).



2.30 Punch Mechanism for Fully Perforated Tape continued (Indentations of the Feed Wheel Between Feed Holes.)

NOTE: BEFORE PROCEEDING WITH THE FOLLOWING ADJUSTMENTS, CHECK BOTH TAPE GUIDE SPRING TENSIONS.

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.

FEED HOLE SPACING (FINAL) *(SEE NOTE BELOW)

REQUIREMENT

(1) WITH TAPE SHOE BLOCKED AWAY FROM THE FEED WHEEL, THE FEED PAWL AND DETENT DISENGAGED, AND TAPE REMOVED FROM THE PUNCH MECHANISM, THE FEED WHEEL SHALL ROTATE FREELY. (CHECK THROUGH 3 OR 4 ROTATIONS).

(2) PERFORATE SIX SERIES OF (9) "BLANK" COMBINATIONS FOLLOWED BY (1) "LETTERS" COMBINATION. PLACE TAPE OVER SMOOTH SIDE OF THE TP156011 TAPE GAUGE SO CIRCULAR PORTION OF THE FIRST NUMBER TWO CODE HOLE IN TAPE IS CONCENTRIC WITH THE FIRST (0.072) HOLE OF TAPE GAUGE. (SEE NOTE). THE NEXT FOUR 0.072 HOLES IN TAPE GAUGE SHALL BE VISIBLE THROUGH THE NUMBER TWO CODE HOLES IN TAPE AND CIRCULAR PORTION OF THE LAST (SIXTH) NUMBER TWO CODE HOLE IN TAPE SHALL BE ENTIRELY WITHIN THE 0.086 DIA. HOLE OF TAPE GAUGE.

NOTE: THE FIRST FIVE HOLES IN GAUGE ARE THE SAME SIZE AS CODE HOLES IN TAPE (0.072 INCH DIAMETER) BUT THE SIXTH HOLE IN GAUGE IS LARGER THAN THE FIRST FIVE (0.086 INCH DIAMETER). THIS ARRANGEMENT ALLOWS $\pm$ 0.007 INCH VARIATION IN FIVE (5) INCHES.

TO ADJUST

(1) WITH TAPE REMOVED FROM PUNCH MECHANISM, LOOSEN DIE WHEEL ECCENTRIC STUD LOCK NUT AND ADJUST DIE WHEEL SO THAT IT JUST BINDS ON FEED WHEEL, BACK OFF ECCENTRIC SO DIE WHEEL IS JUST FREE (CHECK FREENESS THROUGH 3 OR 4 ROTATIONS). KEEP INDENT OFF ECCENTRIC STUD BELOW THE HORIZONTAL CENTER LINE OF STUD.

(2) CHECK TEN CHARACTERS PER INCH REQUIREMENT AND REFINE FEED WHEEL DIE WHEEL CLEARANCE ADJUSTMENT TO MEET THE REQUIREMENT BY MOVING INDENT OF DIE WHEEL ECCENTRIC STUD TOWARD FEED WHEEL TO DECREASE CHARACTER SPACING AND AWAY FROM FEED WHEEL TO INCREASE THE CHARACTER SPACING.

CAUTION: WITH THE TAPE REMOVED FROM THE PUNCH MECHANISM, BE SURE THE DIE WHEEL DOES NOT BIND.

(3) WITH THE TAPE SHOE AWAY FROM THE FEED WHEEL, THE FEED PAWL AND DETENT DISENGAGED, AND THE TAPE REMOVED FROM THE PUNCH MECHANISM, THE FEED WHEEL SHALL ROTATE FREELY. FAILURE TO MEET THIS REQUIREMENT INDICATES THE DIE WHEEL ECCENTRIC HAS BEEN OVER-ADJUSTED. TO MEET THIS REQUIREMENT, REFINE THE ADJUSTMENT.

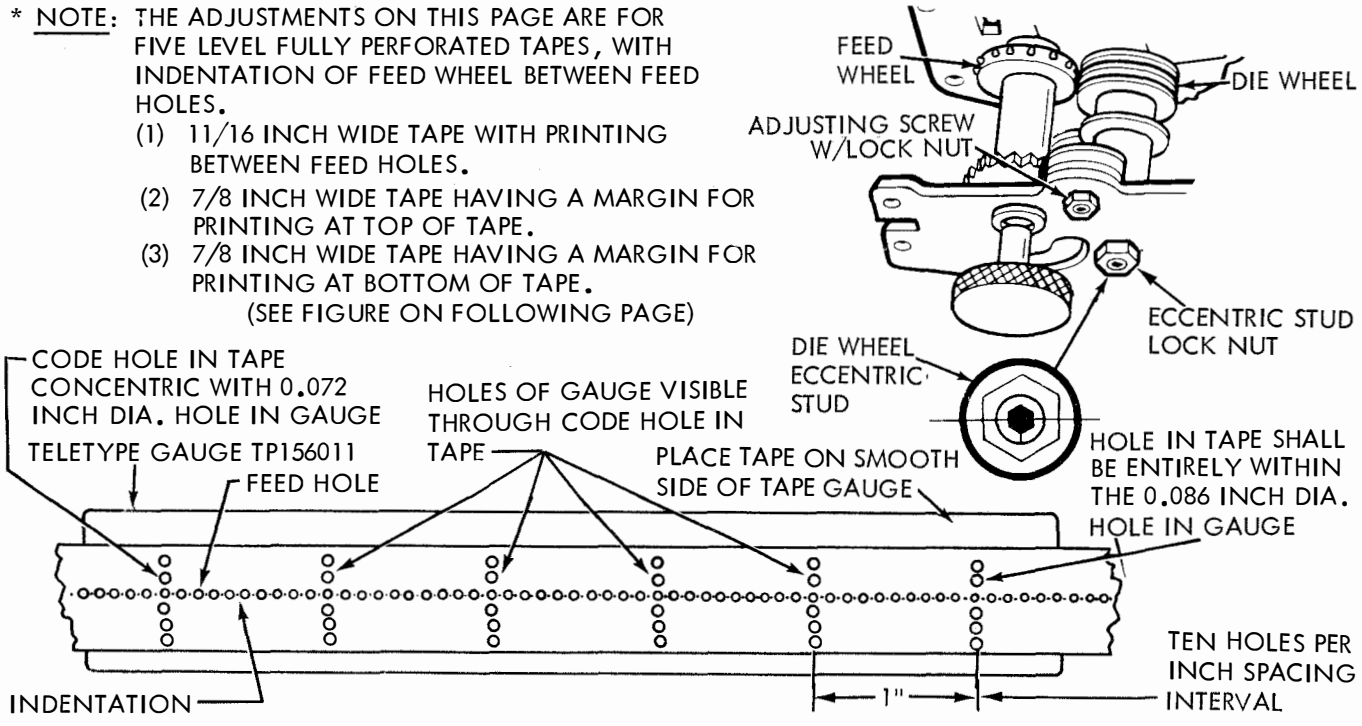
* NOTE: THE ADJUSTMENTS ON THIS PAGE ARE FOR FIVE LEVEL FULLY PERFORATED TAPES, WITH INDENTATION OF FEED WHEEL BETWEEN FEED HOLES.

(1) 11/16 INCH WIDE TAPE WITH PRINTING BETWEEN FEED HOLES.

(2) 7/8 INCH WIDE TAPE HAVING A MARGIN FOR PRINTING AT TOP OF TAPE.

(3) 7/8 INCH WIDE TAPE HAVING A MARGIN FOR PRINTING AT BOTTOM OF TAPE.

(SEE FIGURE ON FOLLOWING PAGE)



2.31 Punch Mechanism For Fully Perforated Tape continued
(Indentation of Feed Wheel Between The Feed Holes)

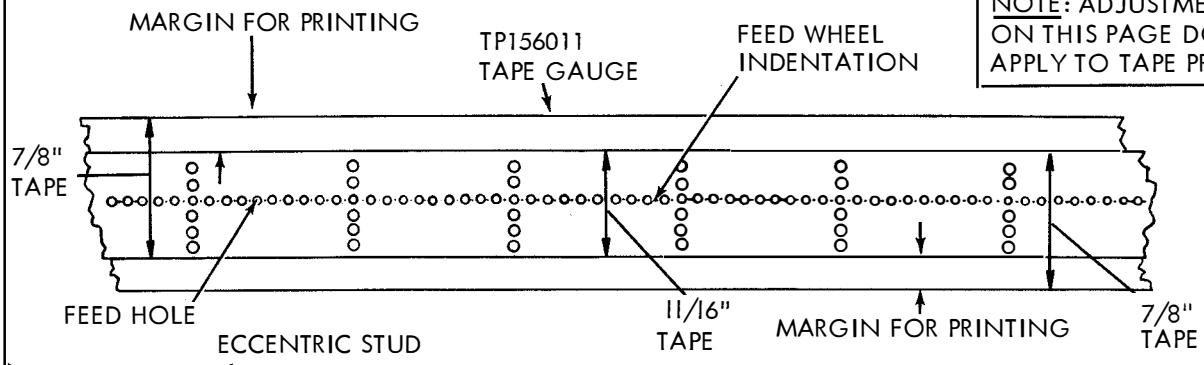
DETENT
REQUIREMENT *(SEE NOTE BELOW)

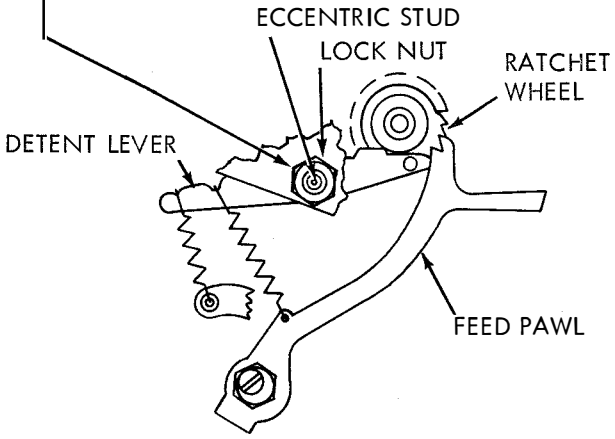
WITH THE UNIT OPERATING UNDER POWER, THE INDENTATIONS OF THE FEED WHEEL SHALL BE CENTRALLY LOCATED BETWEEN TWO FULLY PERFORATED FEED HOLES, AS GAUGED BY EYE.

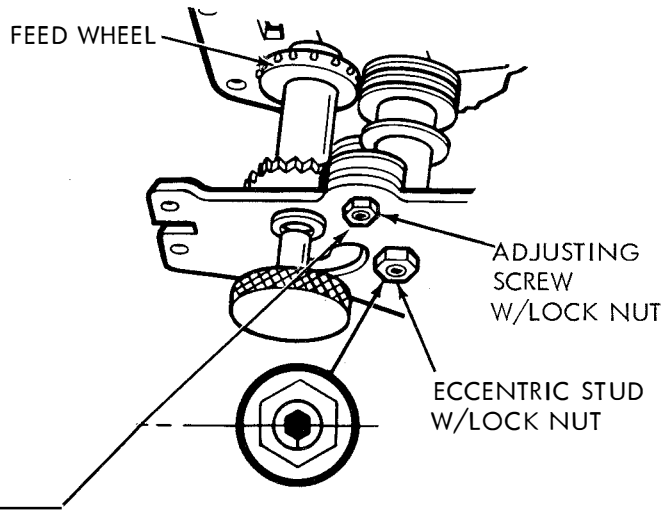
TO ADJUST

LOOSEN THE DETENT LEVER ECCENTRIC STUD LOCK NUT AND TURN THE ECCENTRIC STUD CLOCKWISE TO MOVE THE INDENTATION TOWARD THE LEADING EDGE OF THE FEED HOLE AND COUNTERCLOCKWISE TO MOVE THE INDENTATION TOWARD THE TRAILING EDGE. TIGHTEN THE LOCK NUT AND RE-CHECK THE FEED PAWL ADJUSTMENT.

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.







FEED HOLE LATERAL ALIGNMENT
REQUIREMENT

WITH THE UNIT OPERATING UNDER POWER, THE INDENTATIONS OF THE FEED WHEEL SHOULD BE ON A CENTERLINE BETWEEN THE FULLY PERFORATED FEED HOLES, AS GAUGED BY EYE.

TO ADJUST

WITH THE ADJUSTING SCREW LOCK NUT LOOSE, TURN THE ADJUSTING SCREW CLOCKWISE TO MOVE THE INDENTATION TOWARD THE REAR AND COUNTERCLOCKWISE TO MOVE THE INDENTATIONS TOWARD THE FRONT.

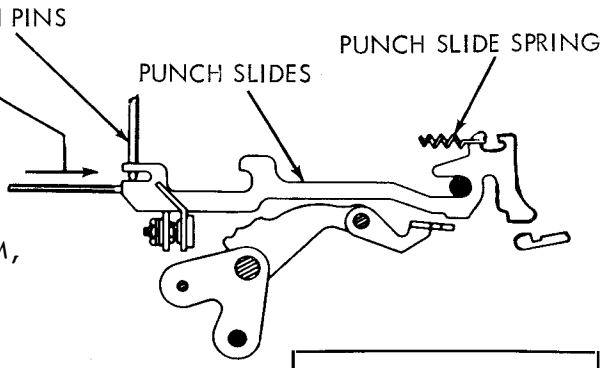
* NOTE:
THE ADJUSTMENTS ON THIS PAGE ARE FOR FIVE-LEVEL FULLY PERFORATED TAPES, WITH INDENTATION OF FEED WHEEL BETWEEN FEED HOLES.
(1) 11/16 INCH WIDE TAPE WITH PRINTING BETWEEN FEED HOLES.
(2) 7/8 INCH WIDE TAPE HAVING A MARGIN FOR PRINTING AT TOP OF TAPE.
(3) 7/8 INCH WIDE TAPE HAVING A MARGIN FOR PRINTING AT BOTTOM OF TAPE.

2.32 Punch Mechanism For Fully Perforated Tape continued

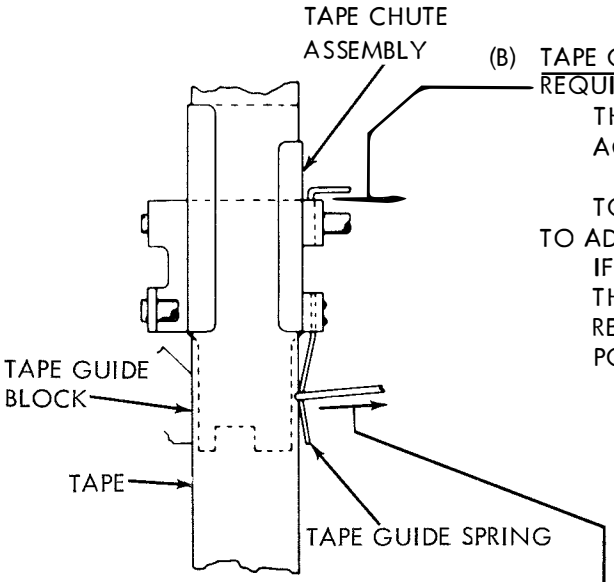
(A) PUNCH SLIDE SPRING REQUIREMENT

LETTERS COMBINATION SET UP AND PUNCH SLIDES IN SELECTED POSITION.
MIN. 2-1/4 OZS.
MAX. 3-1/4 OZS.
TO START EACH SLIDE MOVING.

NOTE: ON UNITS EQUIPPED WITH BACKSPACE MECHANISM, IT IS NECESSARY TO REMOVE SEVERAL PARTS IN ORDER TO CHECK THIS SPRING TENSION. IT SHOULD NOT BE CHECKED UNLESS THERE IS GOOD REASON TO BELIEVE THAT IT DOES NOT MEET ITS REQUIREMENTS.



NOTE: ADJUSTMENTS (B), (C) AND (D) ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.



(B) TAPE GUIDE ASSEMBLY SPRING REQUIREMENT

THE TAPE GUIDE ASSEMBLY SHALL BE FREE TO RETURN TO REST AGAINST THE TAPE GUIDE BLOCK.
MIN. 16 OZS.
TO PULL THE TAPE GUIDE ASSEMBLY AWAY FROM THE BLOCK.

TO ADJUST

IF THE SPRING DOES NOT MEET THE REQUIREMENT, REPLACE THE SPRING. IF THE TAPE GUIDE ASSEMBLY IS NOT FREE TO RETURN, REPOSITION THE TAPE GUIDE ASSEMBLY MOUNTING POST TO FREE THE TAPE GUIDE ASSEMBLY.

(C) TAPE GUIDE SPRING (TAPE GUIDE) REQUIREMENT

CLUTCH DISENGAGED AND TAPE THREADED THROUGH THE PUNCH ASSEMBLY, IT SHOULD REQUIRE
MIN. 1-1/4 OZS.---MAX. 2-1/4 OZS.
TO JUST MOVE THE SPRING AWAY FROM THE TAPE.

TO ADJUST

BEND THE SPRING.

(D) TAPE GUIDE SPRING (PUNCH BLOCK)

(1) REQUIREMENT

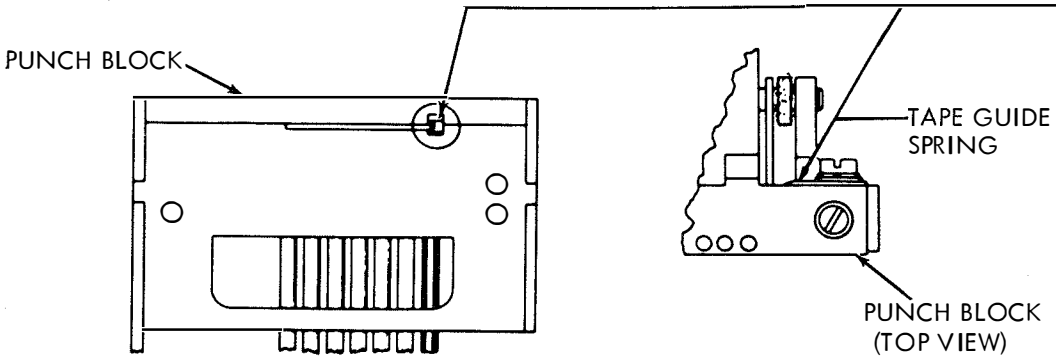
WITH TAPE REMOVED FROM THE PUNCH BLOCK THE TAPE GUIDE SPRING SHOULD REST AGAINST THE CLEARANCE SLOT IN THE BLOCK IN A SYMMETRICAL MANNER.

(2) REQUIREMENT

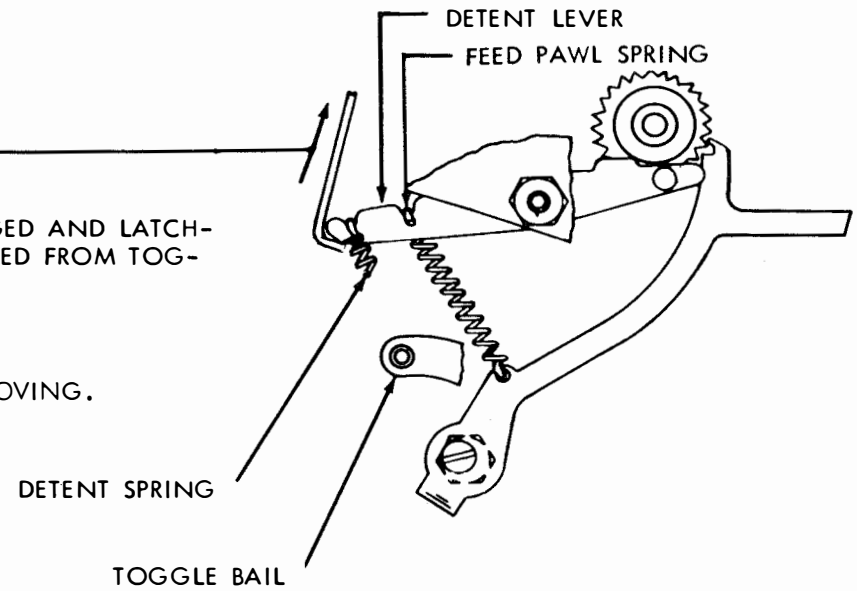
WITH TAPE IN THE PUNCH BLOCK AND THE REPERFORATOR OPERATING UNDER POWER, THE SPRING SHOULD NOT DISTORT THE EDGE OF THE TAPE.

TO ADJUST

BEND THE SPRING AND POSITION IT WITH ITS MOUNTING SCREW LOOSENED.



2.33 Punch Mechanism continued

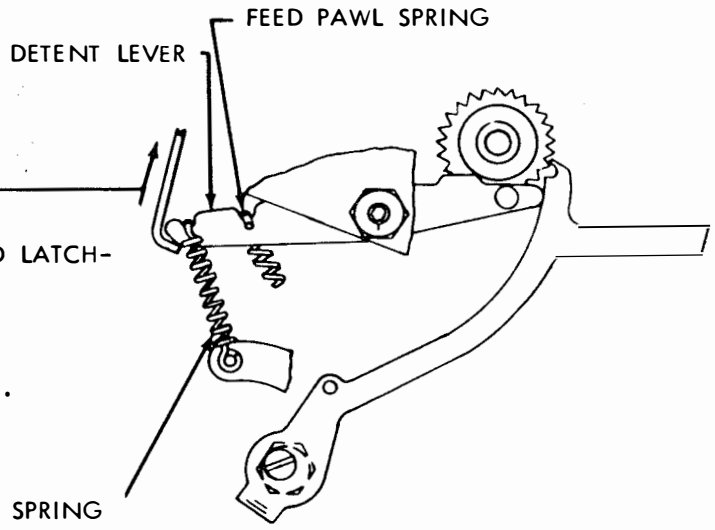


(A) FEED PAWL SPRING

REQUIREMENT
FUNCTION CLUTCH DISENGAGED AND LATCHED. DETENT SPRING UNHOOKED FROM TOGGLE BAIL

MIN. 3 OZS.
MAX. 4-1/2 OZS.

TO START THE DETENT LEVER MOVING.



(B) DETENT LEVER SPRING

REQUIREMENT
FUNCTION CLUTCH DISENGAGED AND LATCHED. FEED PAWL SPRING UNHOOKED.

MIN. 7 OZS.
MAX. 10 OZS.

TO START THE DETENT LEVER MOVING.

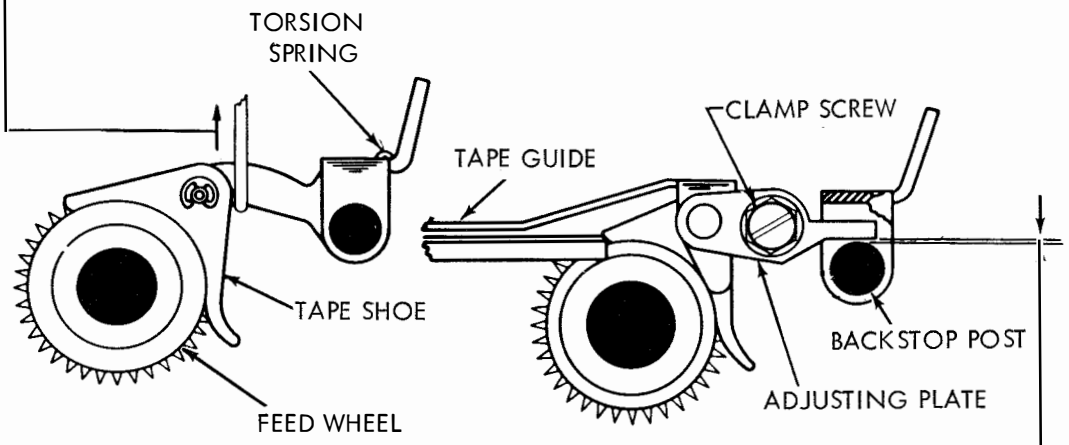
2.34 Punch Mechanism continued

(A) TAPE SHOE TORSION SPRING

REQUIREMENT

MIN. 13 OZS.---MAX. 18 OZS.
TO MOVE TAPE FROM FEED WHEEL.

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.



(B) TAPE GUIDE

TO CHECK

ROTATE FEED WHEEL UNTIL OIL HOLE IS UPWARD. CENTER TAPE SHOE AND TAPE GUIDE. HOLD TAPE GUIDE DOWNWARD.

REQUIREMENT

CLEARANCE BETWEEN ADJUSTING PLATE AND BACKSTOP POST

MIN. 0.002 INCH
MAX. 0.008 INCH

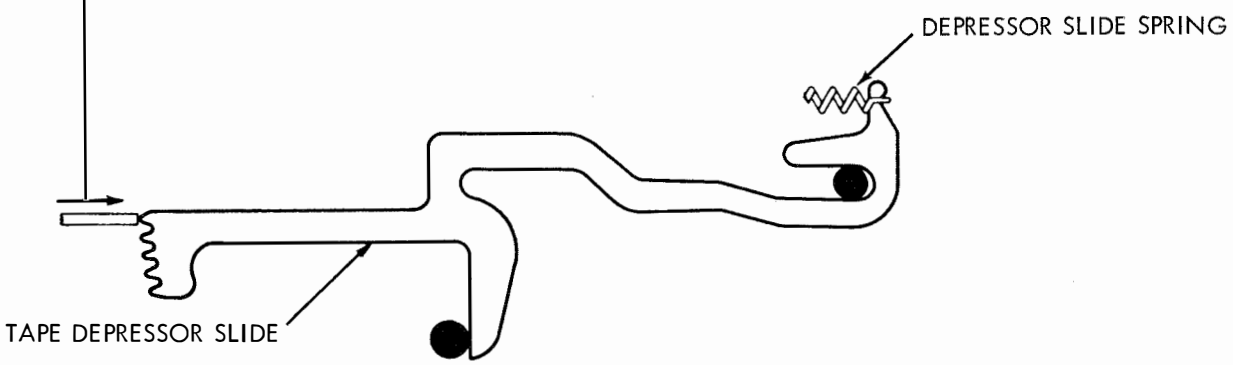
TO ADJUST

POSITION ADJUSTING PLATE WITH ITS CLAMP SCREW LOOSENED.

(C) TAPE DEPRESSOR SLIDE SPRING

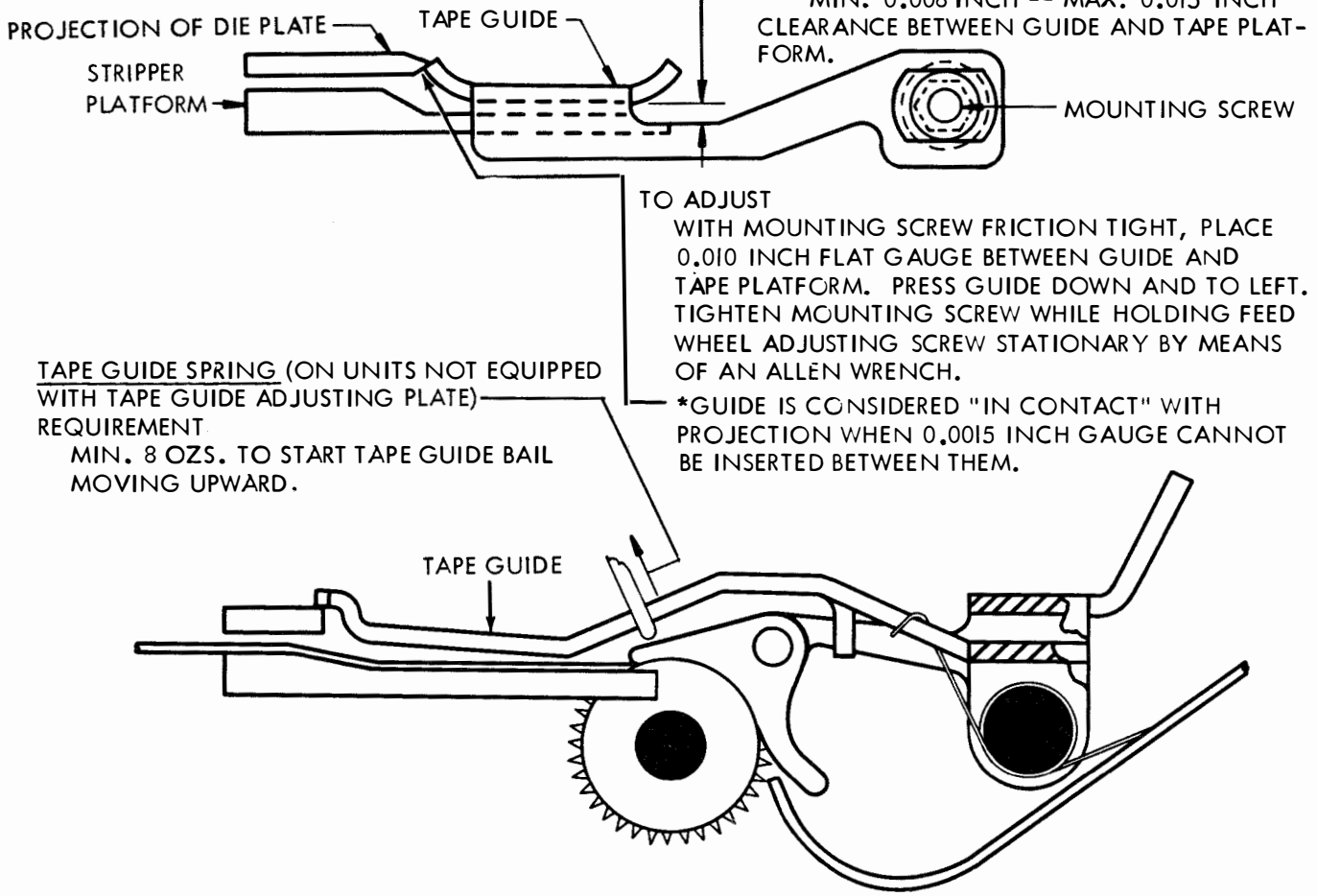
REQUIREMENT

ROCKER BAIL IN ITS EXTREME LEFT POSITION
MIN. 1-1/2 OZS. --- MAX. 2-1/2 OZS.
TO START DEPRESSOR SLIDE MOVING.



2.35 Punch Mechanism continued

NOTE: ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.

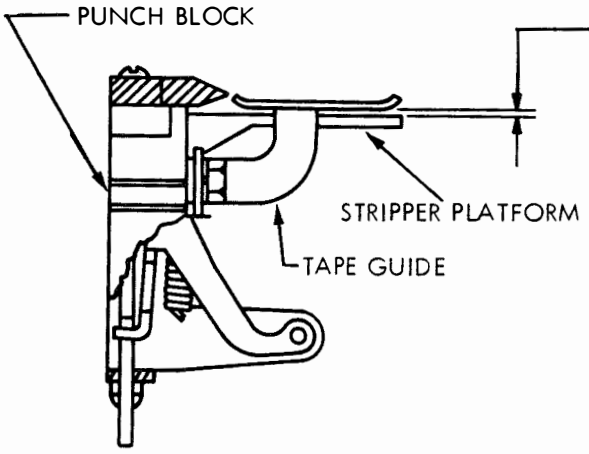


TAPE GUIDE (EARLY DESIGN)
REQUIREMENT
WITH TAPE GUIDE UNDER AND IN CONTACT WITH V SHAPED PROJECTION OF DIE PLATE*
MIN. 0.008 INCH -- MAX. 0.015 INCH CLEARANCE BETWEEN GUIDE AND TAPE PLATFORM.

TO ADJUST
WITH MOUNTING SCREW FRICTION TIGHT, PLACE 0.010 INCH FLAT GAUGE BETWEEN GUIDE AND TAPE PLATFORM. PRESS GUIDE DOWN AND TO LEFT. TIGHTEN MOUNTING SCREW WHILE HOLDING FEED WHEEL ADJUSTING SCREW STATIONARY BY MEANS OF AN ALLEN WRENCH.

*GUIDE IS CONSIDERED "IN CONTACT" WITH PROJECTION WHEN 0.0015 INCH GAUGE CANNOT BE INSERTED BETWEEN THEM.

TAPE GUIDE SPRING (ON UNITS NOT EQUIPPED WITH TAPE GUIDE ADJUSTING PLATE)
REQUIREMENT
MIN. 8 OZS. TO START TAPE GUIDE BAIL MOVING UPWARD.



TAPE GUIDE (LATEST DESIGN)
REQUIREMENT
CLEARANCE UNDER THE TAPE GUIDE.
MIN. 0.008 INCH
MAX. 0.015 INCH

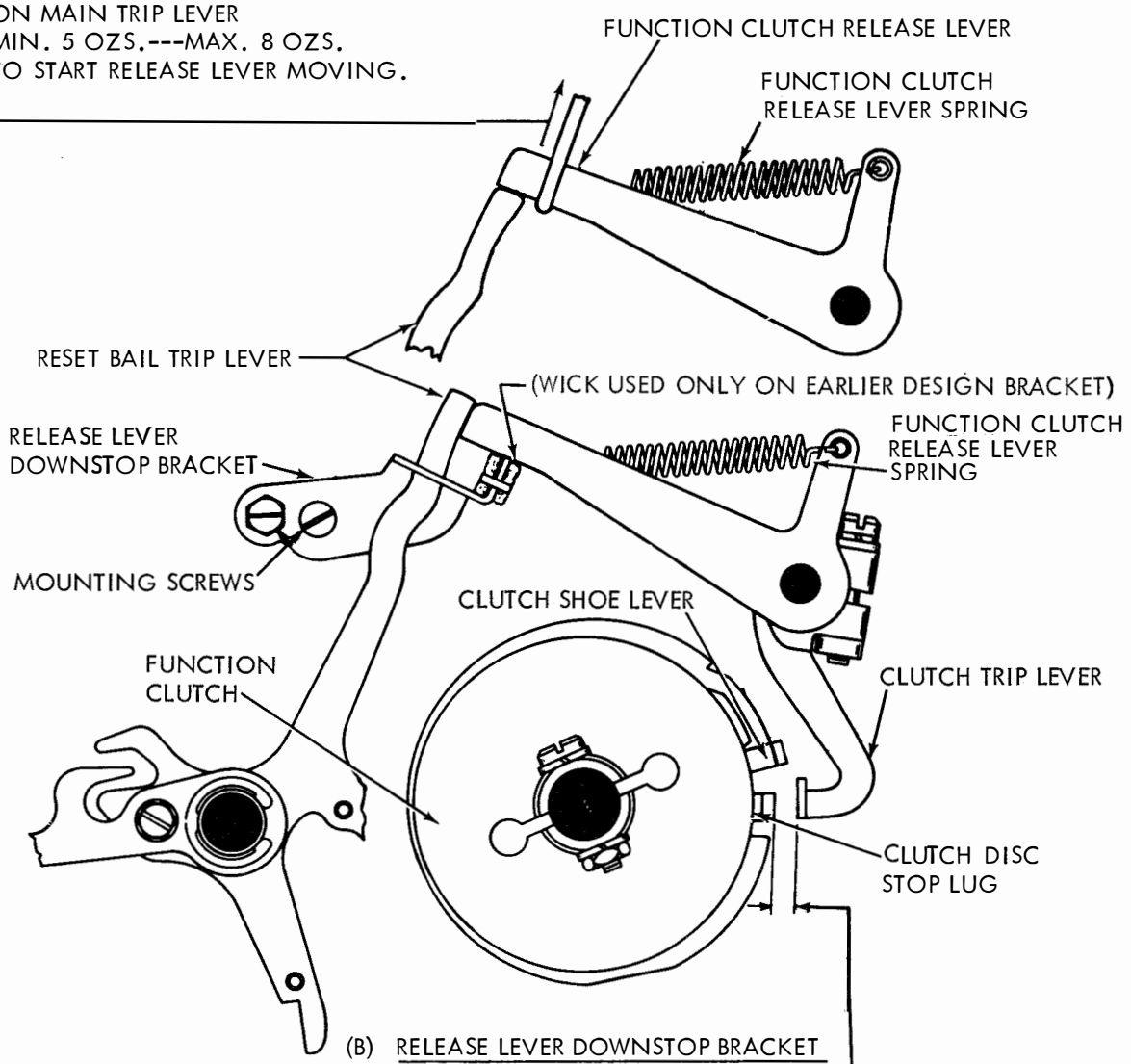
TO ADJUST
WITH MOUNTING SCREW FRICTION TIGHT, POSITION THE TAPE GUIDE. KEEP THE GUIDE AGAINST THE FRONT PLATE OF THE PUNCH.

2.36 Function Mechanism

(A) FUNCTION CLUTCH RELEASE LEVER SPRING

REQUIREMENT

TRIP FUNCTION CLUTCH. ROTATE MAIN SHAFT UNTIL RELEASE LEVER IS RESET ON MAIN TRIP LEVER
MIN. 5 OZS.---MAX. 8 OZS.
TO START RELEASE LEVER MOVING.



(B) RELEASE LEVER DOWNSTOP BRACKET

REQUIREMENT

WITH FUNCTION CLUTCH TRIPPED, ROTATE SHAFT UNTIL CLEARANCE BETWEEN FUNCTION CLUTCH DISC STOP LUG AND CLUTCH TRIP LEVER IS AT A MINIMUM. RELEASE LEVER RESTING AGAINST DOWN-STOP BRACKET. CLEARANCE BETWEEN FUNCTION CLUTCH DISC STOP LUG AND TRIP LEVER
MIN. 0.002 INCH---MAX. 0.045 INCH

TO ADJUST

REMOVE TAPE GUARD. WITH DOWNSTOP BRACKET MOUNTING SCREWS FRICTION TIGHT, POSITION BRACKET. RECHECK FOR SOME CLEARANCE BETWEEN TRIP LEVER EXTENSION AND LEFT END OF SLOT IN RELEASE LEVER DOWNSTOP BRACKET.

2.37 Typing Mechanism

(A) PUSH BAR OPERATING BLADE (PRELIMINARY)

TO CHECK

MANUALLY SELECT LTRS CODE COMBINATION (12345) ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS. HOLE NO. 2 AND 3 BELL CRANKS AGAINST STOP POST.

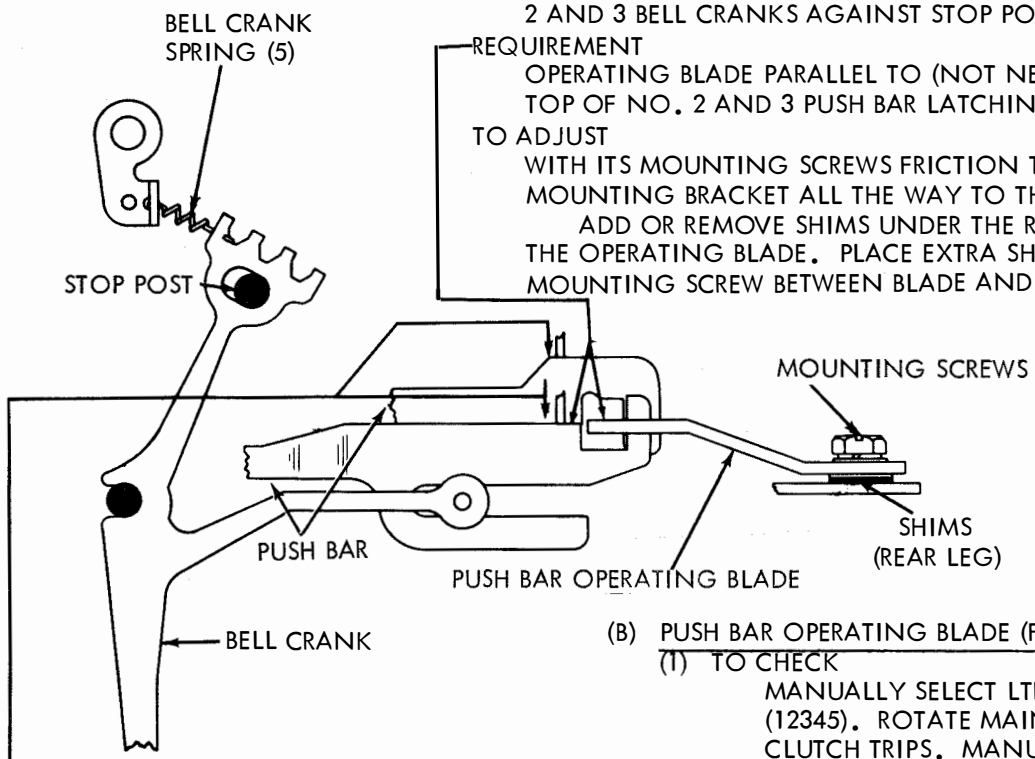
REQUIREMENT

OPERATING BLADE PARALLEL TO (NOT NECESSARILY FLUSH) TO TOP OF NO. 2 AND 3 PUSH BAR LATCHING SURFACES.

TO ADJUST

WITH ITS MOUNTING SCREWS FRICTION TIGHT PRY TRANSFER MOUNTING BRACKET ALL THE WAY TO THE RIGHT.

ADD OR REMOVE SHIMS UNDER THE REAR LEG OF THE OPERATING BLADE. PLACE EXTRA SHIMS ON REAR MOUNTING SCREW BETWEEN BLADE AND FLAT WASHER.



(B) PUSH BAR OPERATING BLADE (FINAL)

(1) TO CHECK

MANUALLY SELECT LTRS CODE COMBINATION (12345). ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS. MANUALLY SEAT PUSH BARS IN DETENTED POSITION. IN BAR WHICH IS NEAREST LEFT EDGE OF BLADE, TAKE UP PLAY TO LEFT AND REAR, AND THEN RELEASE.

REQUIREMENT

CLEARANCE BETWEEN BAR AND LEFT EDGE OF BLADE.

MIN. 0.015 INCH---MAX. 0.030 INCH

(2) REQUIREMENT

SOME CLEARANCE BETWEEN RIGHT EDGE OF BLADE AND PUSH BARS WHEN PLAY IN BARS HAS BEEN TAKEN UP TO RIGHT AND RELEASED.

(3) REQUIREMENT

WITH UNIT IN STOP POSITION, SOME CLEARANCE BETWEEN RIGHT EDGE OF BLADE AND BARS WHEN PLAY IN BARS HAS BEEN TAKEN UP TO RIGHT AND RELEASED.

TO ADJUST

WITH MOUNTING SCREWS LOOSENED, POSITION OPERATING BLADE IN ELONGATED HOLES.

(C) BELL CRANK SPRINGS (5)

TO CHECK

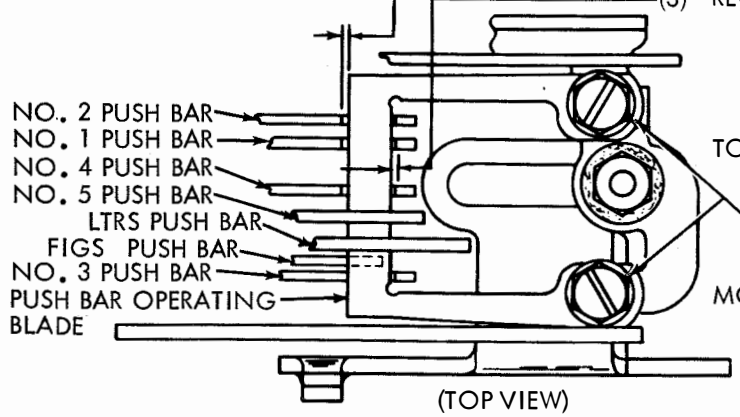
SELECT LTRS CODE COMBINATION (12345). ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS.

REQUIREMENT

MIN. 1 OZ.---MAX. 3 OZS. TO START PUSH BAR MOVING.

NOTE:

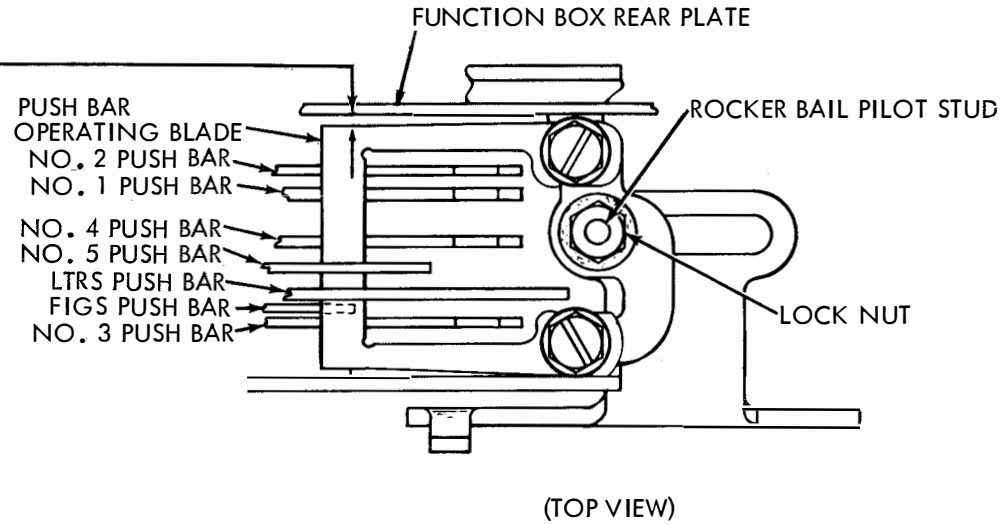
CHECK ALL FIVE SPRINGS.



NOTE:

IT MAY BE NECESSARY TO REFINE THIS ADJUSTMENT AFTER ROCKER BAIL PILOT STUD ADJUSTMENT.

2.38 Typing Mechanism continued



(TOP VIEW)

(A) ROCKER BAIL PILOT STUD

TO CHECK

SELECT BLANK COMBINATION. POSITION ROCKER BAIL THROUGH A COMPLETE CYCLE TO INSURE THE CLEARANCE IS A MINIMUM.

REQUIREMENT

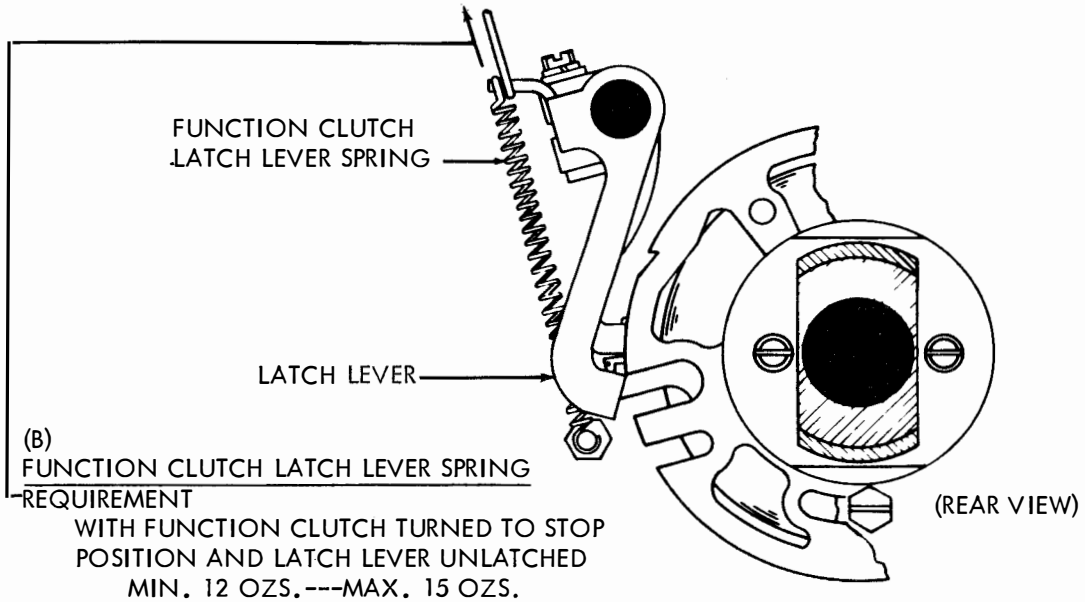
CLEARANCE BETWEEN FUNCTION BOX REAR PLATE AND PUSH BAR OPERATING BLADE

MIN. 0.005 INCH---MAX. 0.020 INCH

AT A POINT IN THE CYCLE AND WHEN PLAY IS TAKEN UP TO MAKE CLEARANCE MINIMUM.

TO ADJUST

POSITION ROCKER BAIL PILOT STUD IN ELONGATED HOLE WITH LOCK NUT LOOSENED.



(REAR VIEW)

(B)

FUNCTION CLUTCH LATCH LEVER SPRING

REQUIREMENT

WITH FUNCTION CLUTCH TURNED TO STOP POSITION AND LATCH LEVER UNLATCHED

MIN. 12 OZS.---MAX. 15 OZS.

TO START LATCH LEVER MOVING.

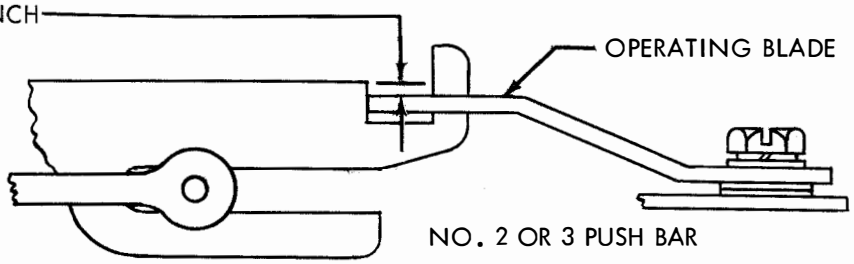
2.39 Typing Mechanism continued

FUNCTION BOX

REQUIREMENT

MANUALLY SELECT LETTERS CODE COMBINATION (12345). ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS, AND PUNCH SLIDES ARE DISENGAGED FROM LATCHES. THE TOP OF THE OPERATING BLADE SHALL BE

FLUSH --- MAX. 0.020 INCH



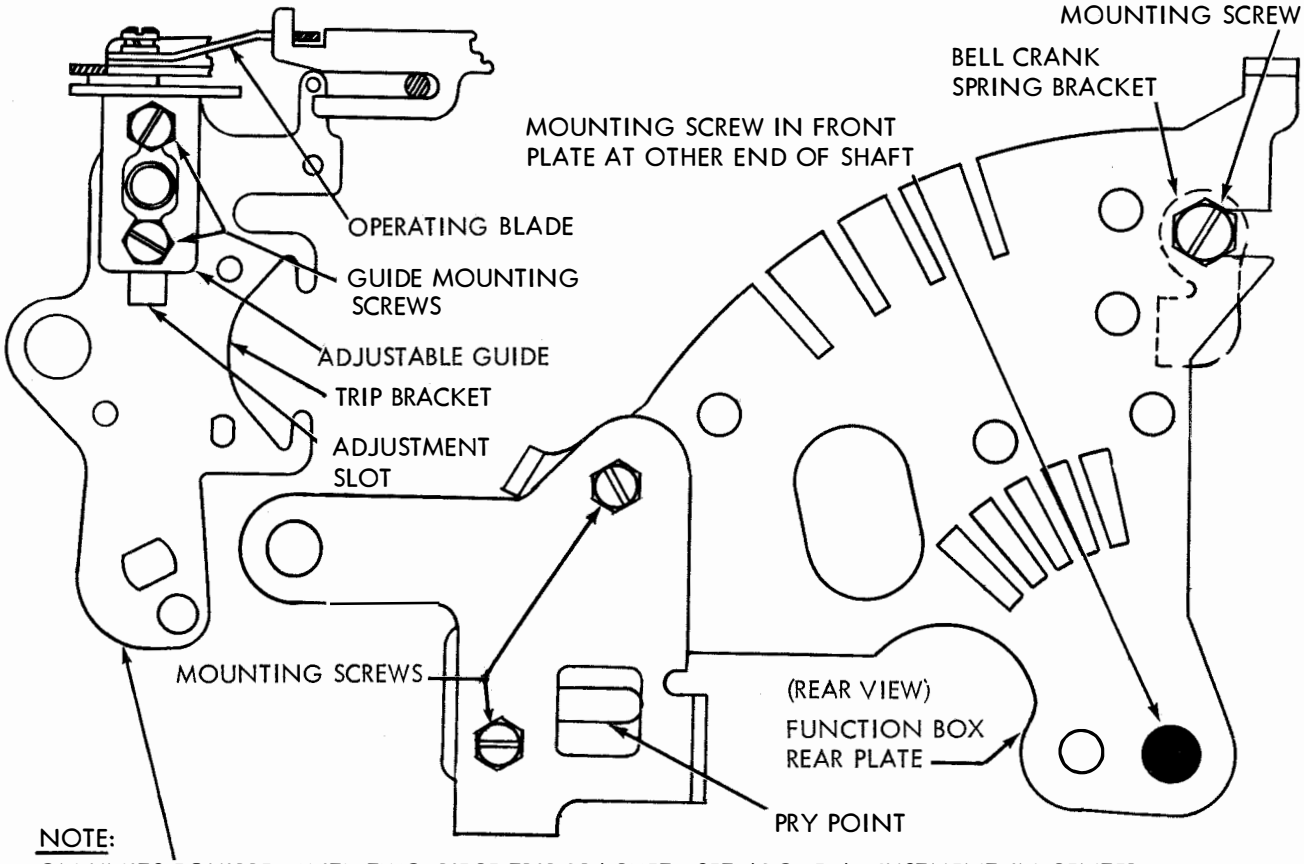
BELOW THE TOPS OF THE NO. 2 AND 3 PUSHBARS. TAKE UP PLAY IN PUSHBARS IN A DOWNWARD DIRECTION THEN RELEASE.

NOTE:

WHEN UNIT IS MOUNTED AS PART OF THE KEYBOARD PERFORATOR TRANSMITTER, IT MAY BE NECESSARY TO REFINE THE ADJUSTMENT WITHIN ITS LIMITS TO INCREASE OPERATING MARGINS OF THE UNIT.

TO ADJUST

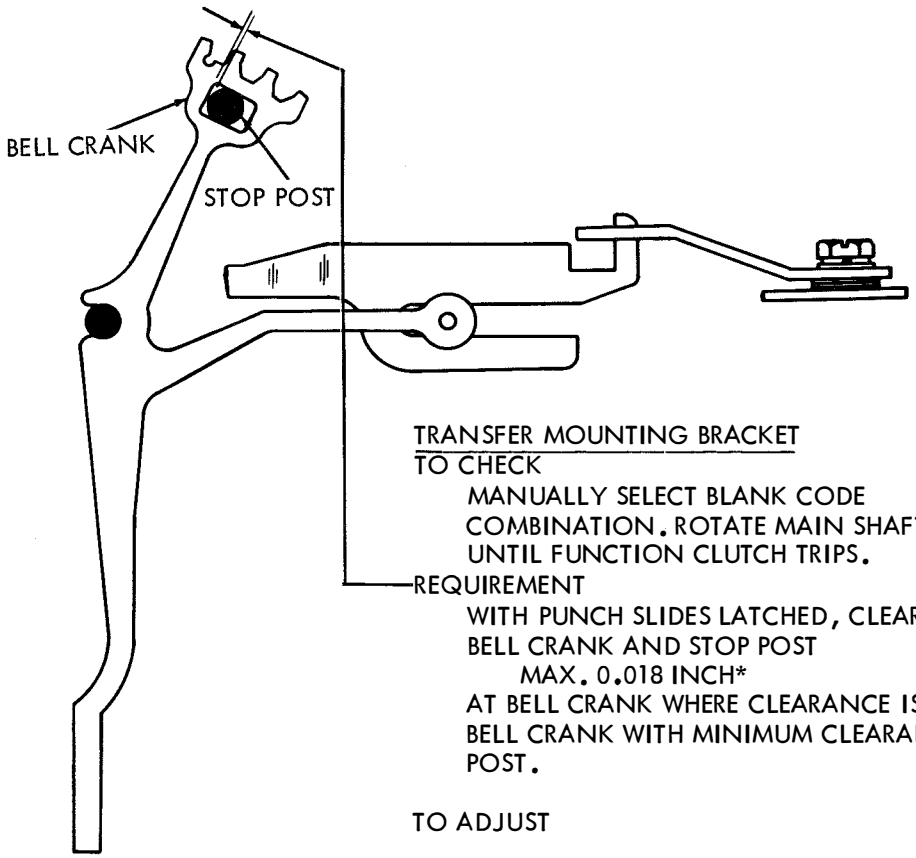
WITH THREE MOUNTING SCREWS IN REAR PLATE AND ONE MOUNTING SCREW IN FRONT PLATE LOOSENED, POSITION FUNCTION BOX BY MEANS OF PRY POINT. CHECK POSITION OF BELL CRANK.



NOTE:

ON UNITS EQUIPPED WITH TWO-PIECE TRIP BRACKET, SET ABOVE ADJUSTMENT IN CENTER OF ITS RANGE AND TIGHTEN SCREWS. LOOSEN TWO SCREWS WHICH MOUNT GUIDE TO BRACKET AND POSITION GUIDE TO MEET ABOVE REQUIREMENT.

2.40 Typing Mechanism continued



TRANSFER MOUNTING BRACKET

TO CHECK

MANUALLY SELECT BLANK CODE COMBINATION. ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS.

REQUIREMENT

WITH PUNCH SLIDES LATCHED, CLEARANCE BETWEEN BELL CRANK AND STOP POST

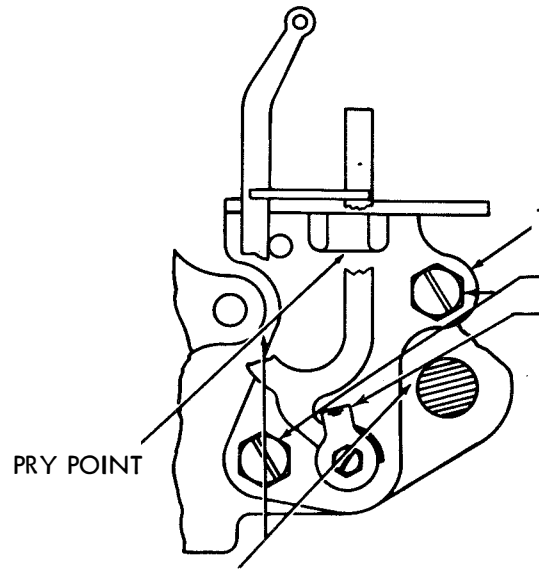
MAX. 0.018 INCH*

AT BELL CRANK WHERE CLEARANCE IS MAXIMUM WHEN BELL CRANK WITH MINIMUM CLEARANCE IS TOUCHING POST.

TO ADJUST

WITH MOUNTING SCREWS FRICTION TIGHT, PRY TRANSFER MOUNTING BRACKET TO LEFT UNTIL CLOSEST BELL CRANK TOUCHES POST. TIGHTEN MOUNTING SCREWS AND CHECK REQUIREMENT.

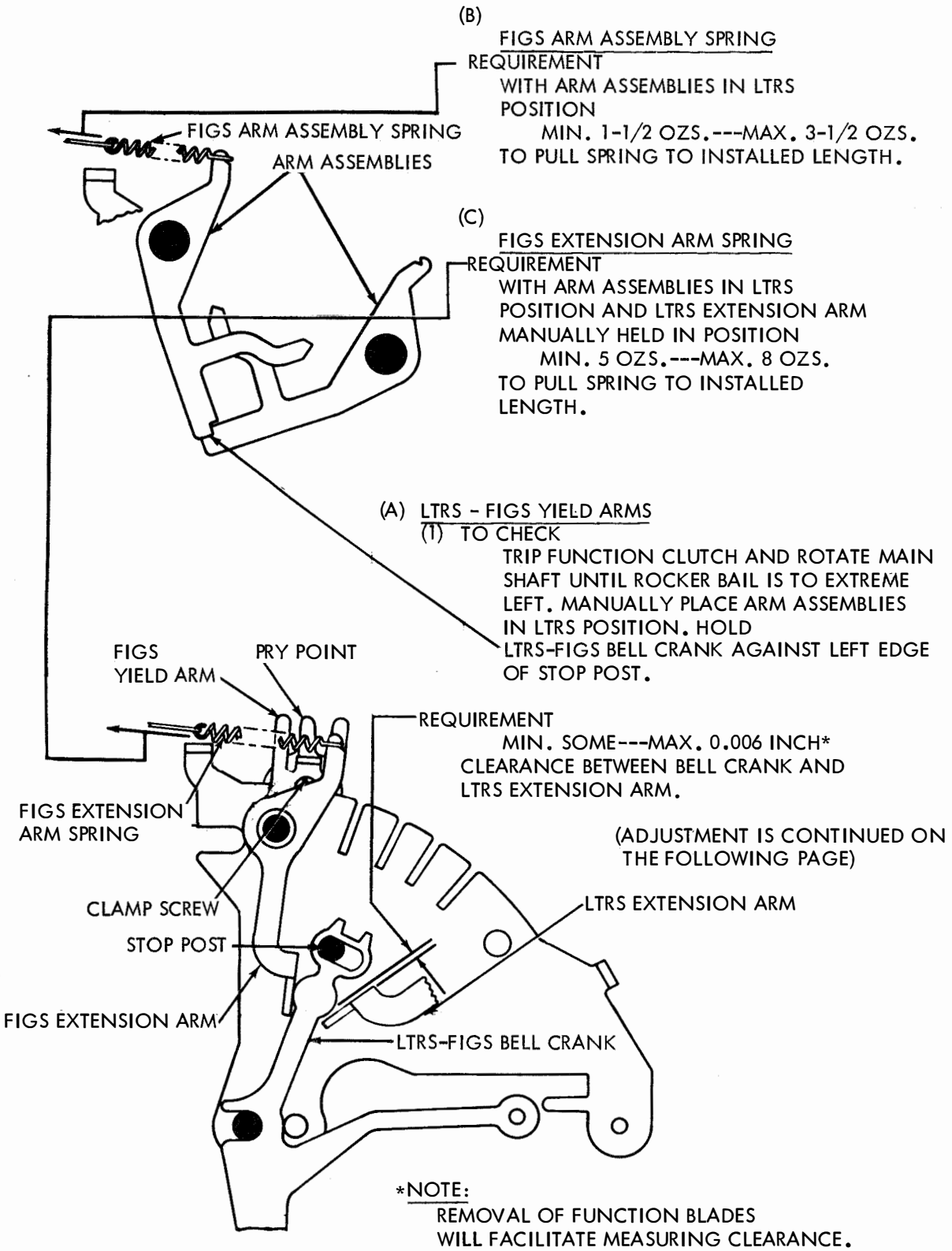
CAUTION: BELL CRANK THAT YIELDS MOST SHALL NOT YIELD MORE THAN 0.007 INCH MEASURED AT POST.



*NOTE:

REMOVAL OF FUNCTION BLADES WILL FACILITATE MEASURING CLEARANCE.

2.41 Typing Mechanism continued



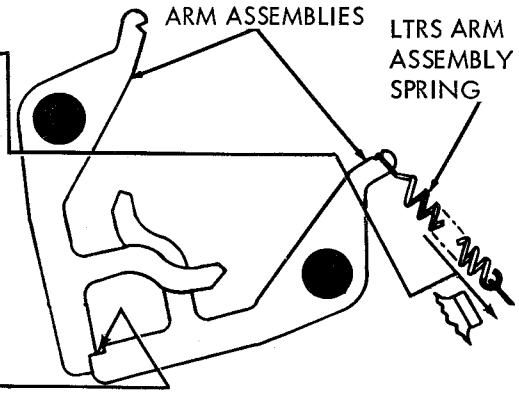
2.42 Typing Mechanism continued

(B)

LTRS ARM ASSEMBLY SPRING REQUIREMENT

WITH ARM ASSEMBLIES IN FIGS POSITION

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



(A)

LTRS - FIGS YIELD ARMS (CONTINUED FROM PREVIOUS PAGE)

(2) TO CHECK

MANUALLY PLACE ARM ASSEMBLIES IN FIGS POSITION.

HOLD LTRS - FIGS BELL CRANK AGAINST RIGHT EDGE OF STOP POST.

REQUIREMENT

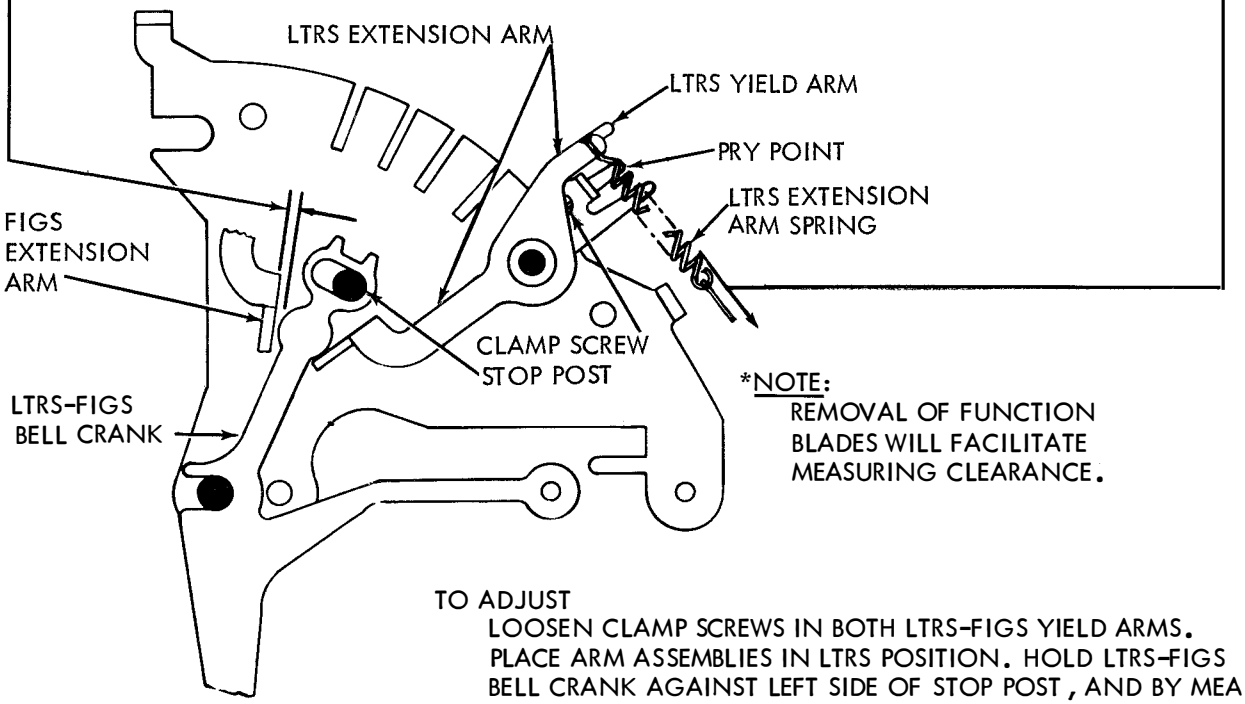
MIN. SOME---MAX. 0.006 INCH* CLEARANCE BETWEEN BELL CRANK AND FIGS EXTENSION ARM.

(C)

LTRS EXTENSION ARM SPRING REQUIREMENT

WITH ARM ASSEMBLIES IN FIGS POSITION AND LTRS EXTENSION ARM MANUALLY HELD IN POSITION

MIN. 5 OZS.---MAX. 8 OZS. TO PULL SPRING TO INSTALLED LENGTH.



*NOTE: REMOVAL OF FUNCTION BLADES WILL FACILITATE MEASURING CLEARANCE.

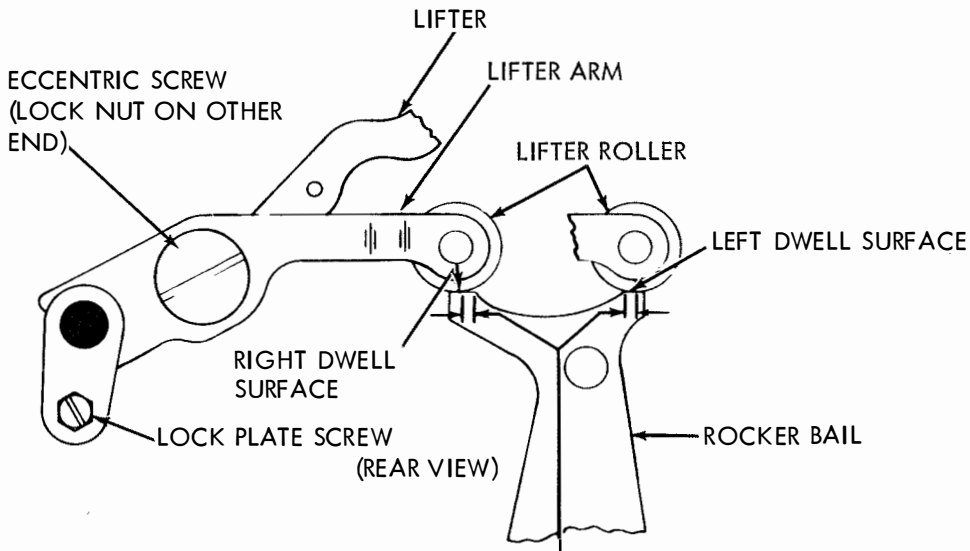
TO ADJUST

LOOSEN CLAMP SCREWS IN BOTH LTRS-FIGS YIELD ARMS. PLACE ARM ASSEMBLIES IN LTRS POSITION. HOLD LTRS-FIGS BELL CRANK AGAINST LEFT SIDE OF STOP POST, AND BY MEANS OF PRY POINT, POSITION LTRS YIELD ARM TO MEET CLEARANCE REQUIREMENT UNDER (A) (1) FIG. ON PREVIOUS PAGE. TIGHTEN LTRS YIELD ARM CLAMP SCREW.

PLACE ARM ASSEMBLIES IN FIGS POSITION AND BY MEANS OF PRY POINT, POSITION FIGS YIELD ARM TO MEET REQUIREMENT UNDER (2) ABOVE. TIGHTEN FIGS YIELD ARM CLAMP SCREW.

CAUTION: ARM ASSEMBLIES MAY CHANGE POSITION DURING ADJUSTMENT. AS TIGHTENING OF SCREWS MAY AFFECT ADJUSTMENT, RECHECK REQUIREMENTS.

2.43 Typing Mechanism continued



(A) LIFTER ARM

TO CHECK

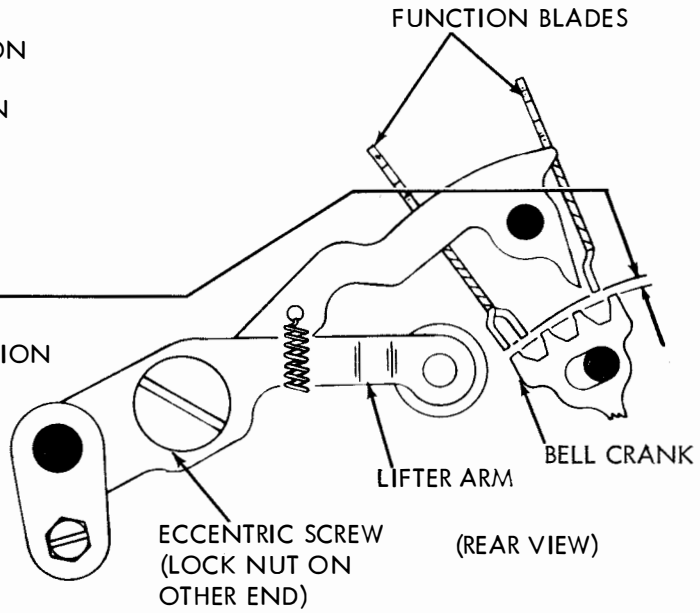
TRIP FUNCTION CLUTCH. MOVE ROCKER BAIL TO EXTREME LEFT POSITION AND OBSERVE TRAVEL OF LIFTER ROLLER ON RIGHT DWELL SURFACE. MOVE ROCKER BAIL TO EXTREME RIGHT POSITION AND OBSERVE TRAVEL OF ROLLER ON LEFT DWELL SURFACE.

REQUIREMENT

APPROXIMATELY EQUAL TRAVEL ON EACH DWELL SURFACE.

TO ADJUST*

LOOSEN LOCK PLATE SCREW UNTIL FRICTION TIGHT. WITH ECCENTRIC SCREW LOCK NUT FRICTION TIGHT, POSITION LIFTER ARM ON LIFTER. TIGHTEN LOCK PLATE SCREW. DO NOT TIGHTEN LOCK NUT.



(B) LIFTER ARM ECCENTRIC SCREW

REQUIREMENT

WITH FUNCTION CLUTCH DISENGAGED

(1) CLEARANCE BETWEEN CLOSEST PROJECTION OF BELL CRANKS AND ASSOCIATED LTRS-FIGS FUNCTION BLADE PROJECTION MIN. 0.008 INCH---MAX. 0.020 INCH

(2) MIN. 0.005 INCH CLEARANCE FOR FUNCTION BLADES OTHER THAN LTRS-FIGS IF UNIT IS SO EQUIPPED

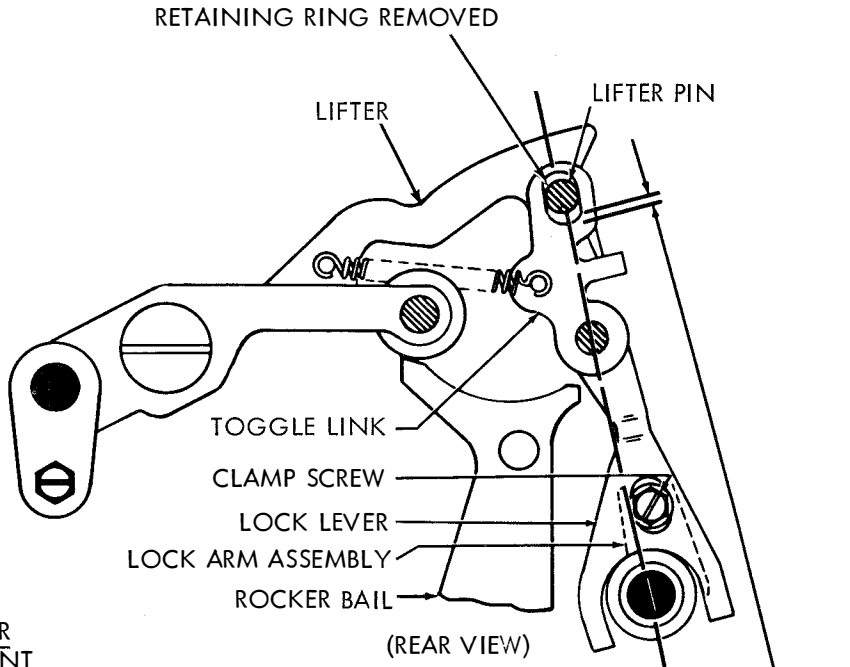
TO ADJUST

POSITION LIFTER ARM ECCENTRIC SCREW WITH LOCK NUT LOOSENED.

*NOTE:

REMOVE TIMING CONTACTS IF UNIT IS SO EQUIPPED.

2.44 Typing Mechanism continued



LOCK LEVER
REQUIREMENT

(1) WITH LETTERS CODE COMBINATION (12345) SELECTED AND ROCKER BAIL TO EXTREME LEFT, TOGGLE LINKAGE SHOULD MOVE THROUGH POINT WHERE TOGGLE LINK AND LOCK LEVER ARE IN STRAIGHT LINE WITHOUT RAISING LIFTER.

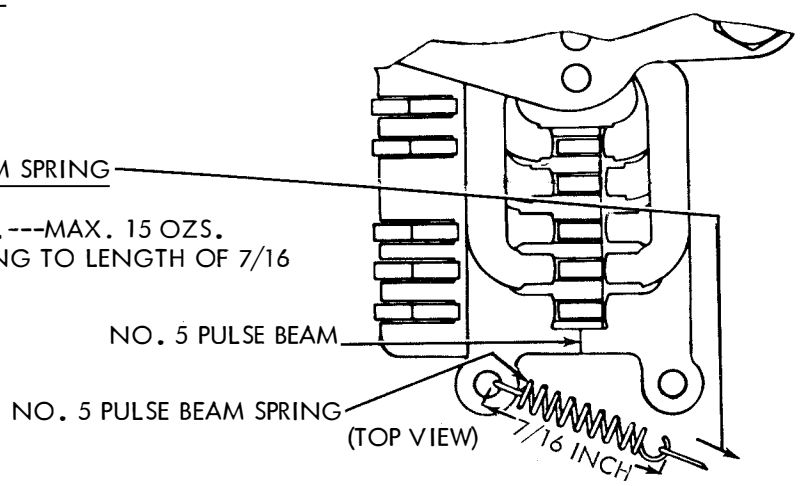
(2) WITH TOGGLE LINK AND LOCK LEVER IN STRAIGHT LINE, CLEARANCE BETWEEN TOGGLE LINK AND LIFTER PIN (WITH RETAINING RING REMOVED)
MIN. SOME---MAX. 0.015 INCH.

TO ADJUST

POSITION LOCK LEVER ON LOCK ARM ASSEMBLY WITH CLAMP SCREW FRICTION TIGHT.

NOTE:

TO AVOID INTERFERENCE WITH LOCK LEVER, IT MAY BE NECESSARY TO MOVE HIGH PART OF CORRECTING DRIVE LINK ECCENTRIC BUSHING ABOVE HORIZONTAL CENTERLINE.



2.45 Typing Mechanism continued

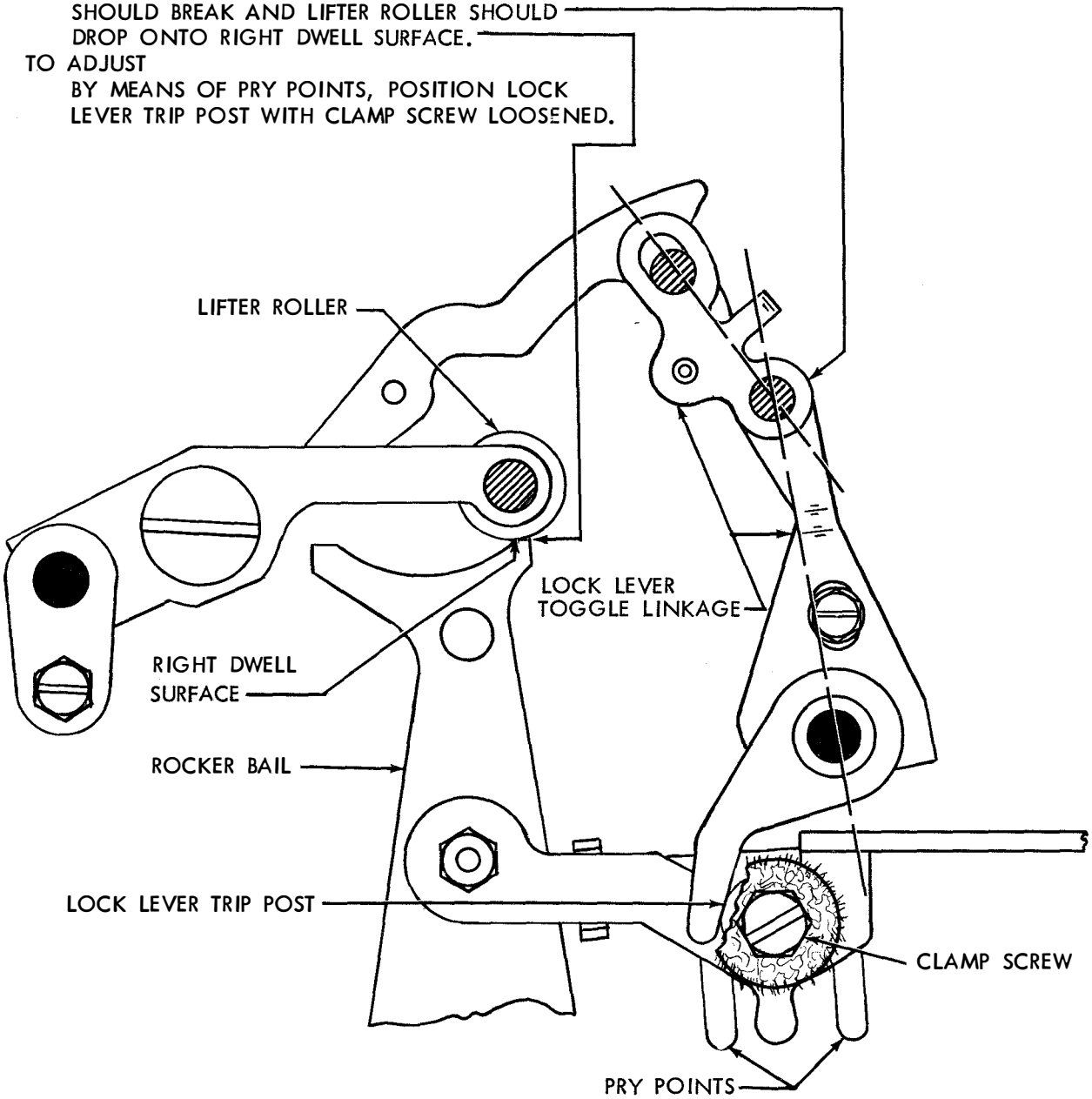
LOCK LEVER TRIP POST

REQUIREMENT

AS ROCKER BAIL APPROACHES EXTREME RIGHT POSITION, LOCK LEVER TOGGLE LINKAGE SHOULD BREAK AND LIFTER ROLLER SHOULD DROP ONTO RIGHT DWELL SURFACE.

TO ADJUST

BY MEANS OF PRY POINTS, POSITION LOCK LEVER TRIP POST WITH CLAMP SCREW LOOSENED.

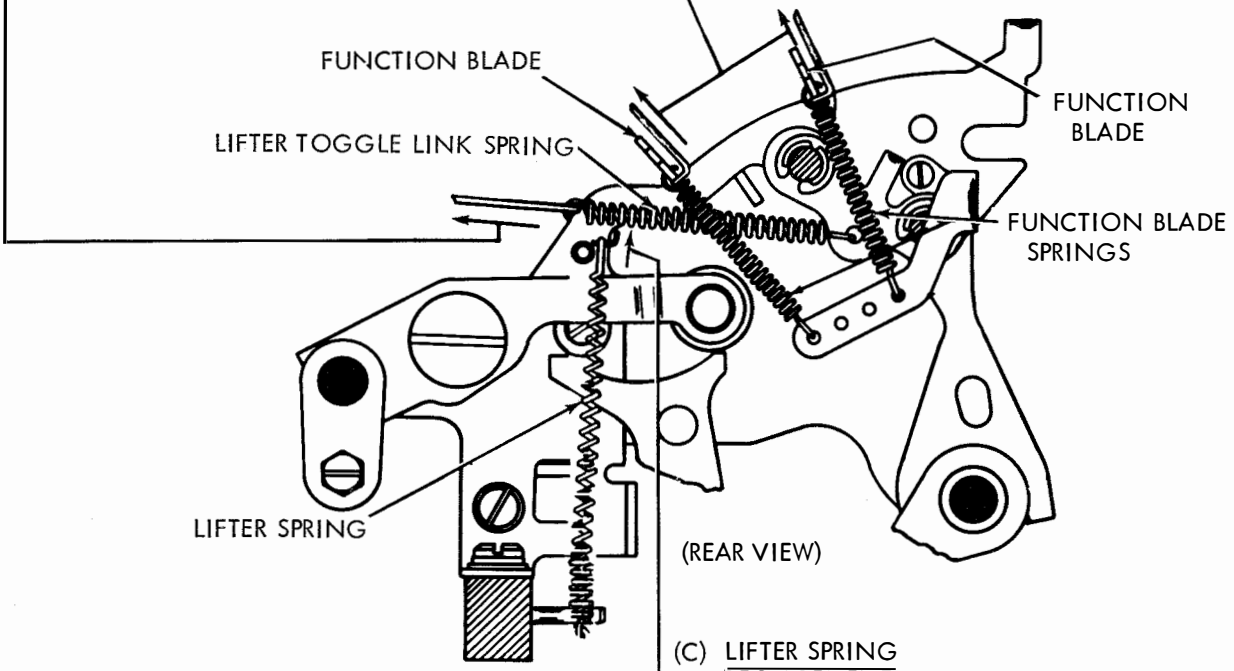


(REAR VIEW)

2.46 Typing Mechanism continued

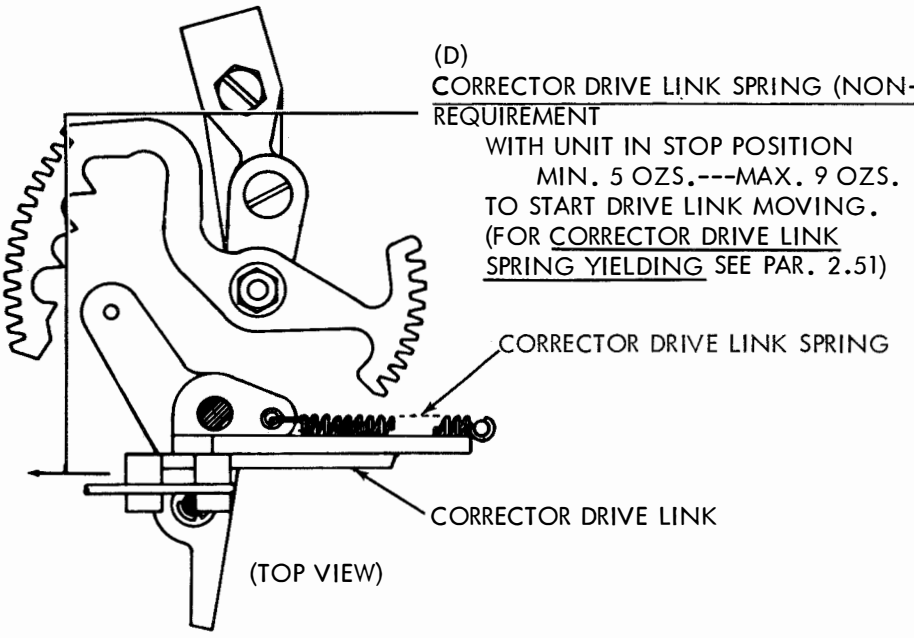
(A)
LIFTER TOGGLE LINK SPRING
REQUIREMENT
WITH UNIT IN STOP POSITION
MIN. 1-1/2 OZS.---MAX. 2-1/4 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(B) FUNCTION BLADE SPRINGS
REQUIREMENT
WITH UNIT IN STOP POSITION.
LETTERS AND FIGURES FUNCTION BLADES.
MIN. 10 OZS.---MAX. 13 OZS.
OTHER FUNCTION BLADES
MIN. 7 OZS.---MAX. 10 OZS.
TO START FUNCTION BLADE MOVING.



(C) LIFTER SPRING
REQUIREMENT
WITH UNIT IN STOP POSITION
MIN. 7 OZS.---MAX. 9 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(D)
CORRECTOR DRIVE LINK SPRING (NON-YIELDING)
REQUIREMENT
WITH UNIT IN STOP POSITION
MIN. 5 OZS.---MAX. 9 OZS.
TO START DRIVE LINK MOVING.
(FOR CORRECTOR DRIVE LINK SPRING YIELDING SEE PAR. 2.51)



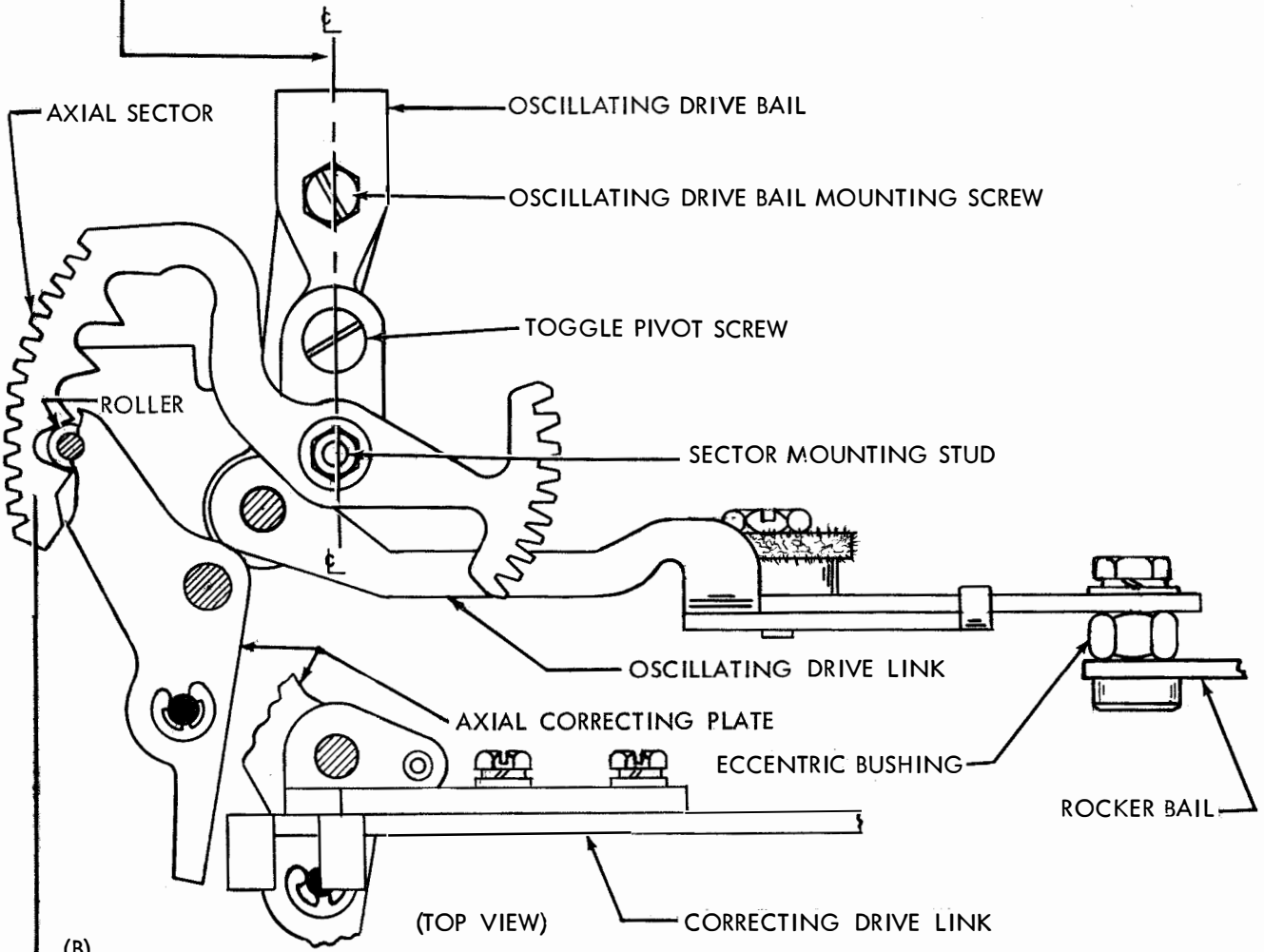
2.47 Typing Mechanism continued

(A) OSCILLATING DRIVE LINK

TO CHECK
POSITION ROCKER BAIL TO ITS EXTREME LEFT.

REQUIREMENT
SECTOR MOUNTING STUD, TOGGLE PIVOT SCREW AND OSCILLATING DRIVE BAIL MOUNTING SCREW SHOULD APPROXIMATELY LINE UP.

TO ADJUST
POSITION OSCILLATING DRIVE LINK BY MEANS OF ITS ECCENTRIC BUSHING.

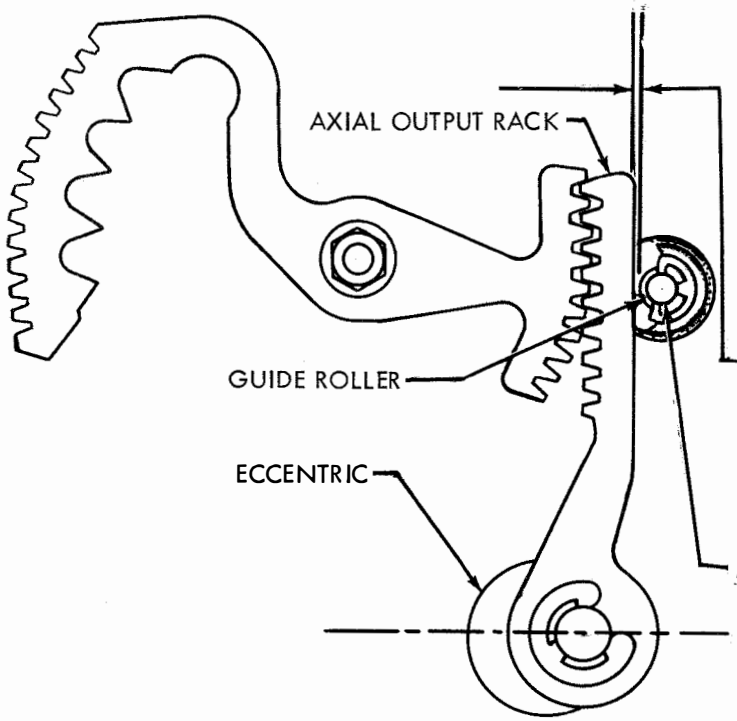


(B)
OSCILLATING DRIVE BAIL

REQUIREMENT
WITH "BLANK" COMBINATION SELECTED, ROTATE MAIN SHAFT, TAKING UP AXIAL PLAY IN TYPE WHEEL SHAFT TOWARD FRONT OF UNIT, THE AXIAL CORRECTOR ROLLER SHALL ENTER THE FIRST NOTCH OF THE SECTOR CENTRALLY.

TO ADJUST
LOOSEN OSCILLATING BAIL ADJUSTING SCREW. SELECT "BLANK" COMBINATION. POSITION OSCILLATING BAIL BY MEANS OF ITS ELONGATED MOUNTING HOLE SO CORRECTOR ROLLER ENTERS FIRST NOTCH OF SECTOR WHEN ROCKER BAIL MOVES TO ITS EXTREME LEFT POSITION. HOLD CORRECTOR ROLLER FIRMLY IN FIRST NOTCH AND TAKE UP PLAY IN OSCILLATING BAIL LINKAGE BY APPLYING A FORCE TO OSCILLATING BAIL TOWARD REAR OF UNIT. TIGHTEN THE OSCILLATING BAIL ADJUSTING SCREW.

2. 49 Typing Mechanism continued



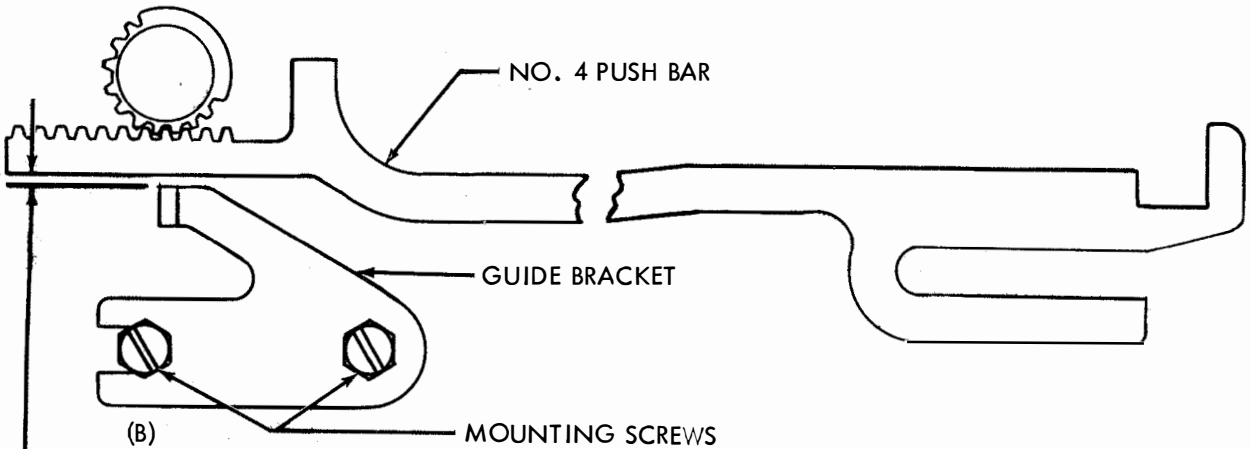
(TOP VIEW)

(A)
AXIAL OUTPUT RACK GUIDE ROLLER

TO CHECK
SELECT LINE FEED CODE COMBINATION (-2---). ROTATE MAIN SHAFT UNTIL ECCENTRIC HAS ROTATED 90 DEGREES. TAKE UP PLAY TO MAKE CLEARANCE BETWEEN OUTPUT RACK AND GUIDE ROLLER MAXIMUM.

REQUIREMENT
MIN. SOME --- MAX. 0.008 INCH

TO ADJUST
POSITION GUIDE ROLLER MOUNTING STUD IN ELONGATED HOLE WITH LOCK NUT LOOSENED.



(B)
PUSH BAR GUIDE BRACKET

TO CHECK
MANUALLY SELECT CARRIAGE RETURN CODE COMBINATION (---4-). ROTATE MAIN SHAFT SO THAT NO. 4 PUSH BAR MOVES THROUGH COMPLETE RANGE OF TRAVEL.

REQUIREMENT
WHEN PLAY IS TAKEN UP TO MAKE CLEARANCE MAXIMUM:
MIN. SOME ----MAX. 0.008 INCH
BETWEEN NO. 4 PUSH BAR AND GUIDE BRACKET THROUGHOUT COMPLETE TRAVEL OF BAR.

TO ADJUST
POSITION GUIDE BRACKET WITH MOUNTING SCREWS LOOSENED.

2.50 Typing Mechanism continued

AXIAL CORRECTOR (NON-YIELDING)

(1) TO CHECK

SELECT BLANK CODE COMBINATION. TRIP FUNCTION CLUTCH AND MOVE ROCKER BAIL TO EXTREME LEFT.

REQUIREMENT

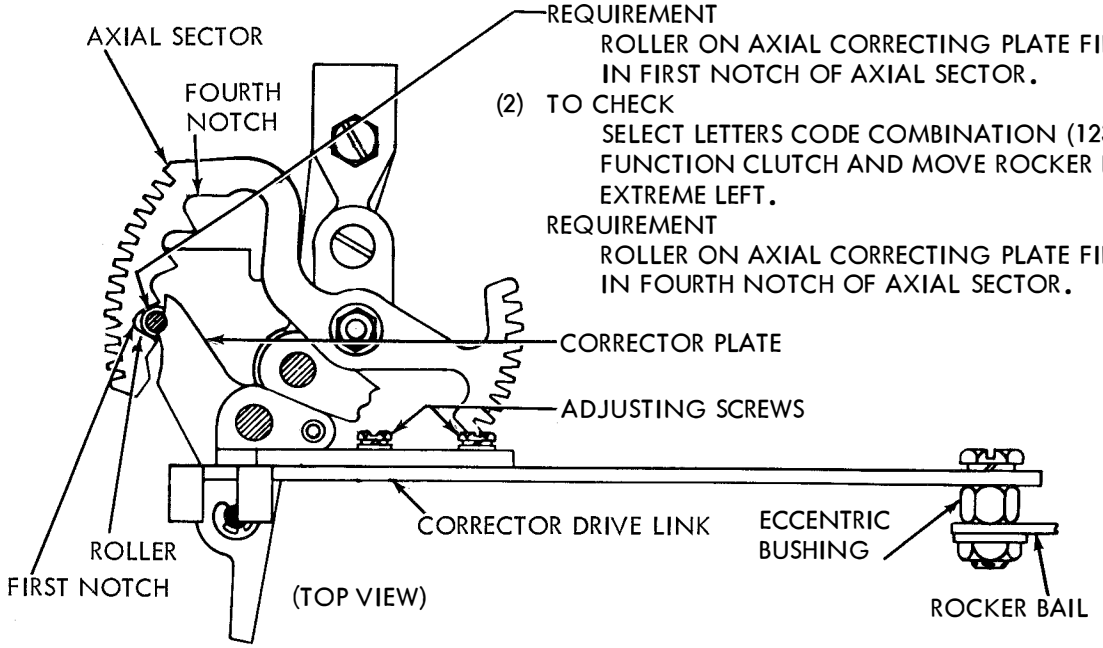
ROLLER ON AXIAL CORRECTING PLATE FIRMLY SEATED IN FIRST NOTCH OF AXIAL SECTOR.

(2) TO CHECK

SELECT LETTERS CODE COMBINATION (12345). TRIP FUNCTION CLUTCH AND MOVE ROCKER BAIL TO EXTREME LEFT.

REQUIREMENT

ROLLER ON AXIAL CORRECTING PLATE FIRMLY SEATED IN FOURTH NOTCH OF AXIAL SECTOR.

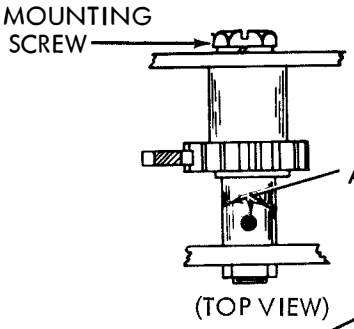


TO ADJUST

(1) LOOSEN THE TWO DRIVE LINK ADJUSTING SCREWS. FIRMLY SEAT THE AXIAL CORRECTOR ROLLER INTO THE FIRST NOTCH OF THE SECTOR BY MANUALLY APPLYING AND HOLDING THIS POSITION FOR THE NEXT PART OF THE ADJUSTMENT.

(2) APPLY A MANUAL PRESSURE ON THE DRIVE LINK SUCH THAT THE SLOT IN THE LINK WILL BOTTOM AGAINST THE BUSHING OF THE ROCKER BAIL.

(3) MAINTANING PRESSURE AT THESE TWO PLACES, TIGHTEN ADJUSTING SCREWS.



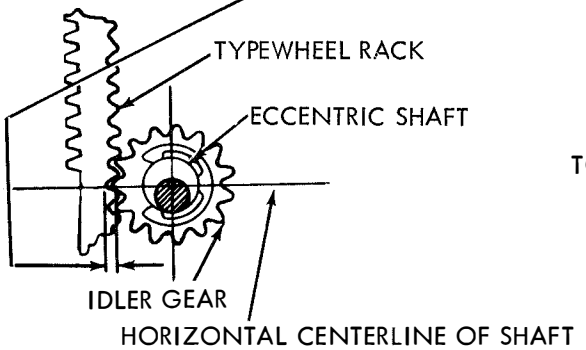
TYPEWHEEL RACK CLEARANCE

REQUIREMENT

WITH UNIT IN LETTERS FIELD, FUNCTION CLUTCH DISENGAGED.

MAX. 0.015 INCH

CLEARANCE BETWEEN IDLER GEAR AND RACK AT THE CLOSEST POINT WITH ALL THE PLAY TAKEN UP IN A DIRECTION TO MAKE THE CLEARANCE MAXIMUM. THERE SHALL BE SOME CLEARANCE THROUGHOUT THE TRAVEL OF THE RACK.



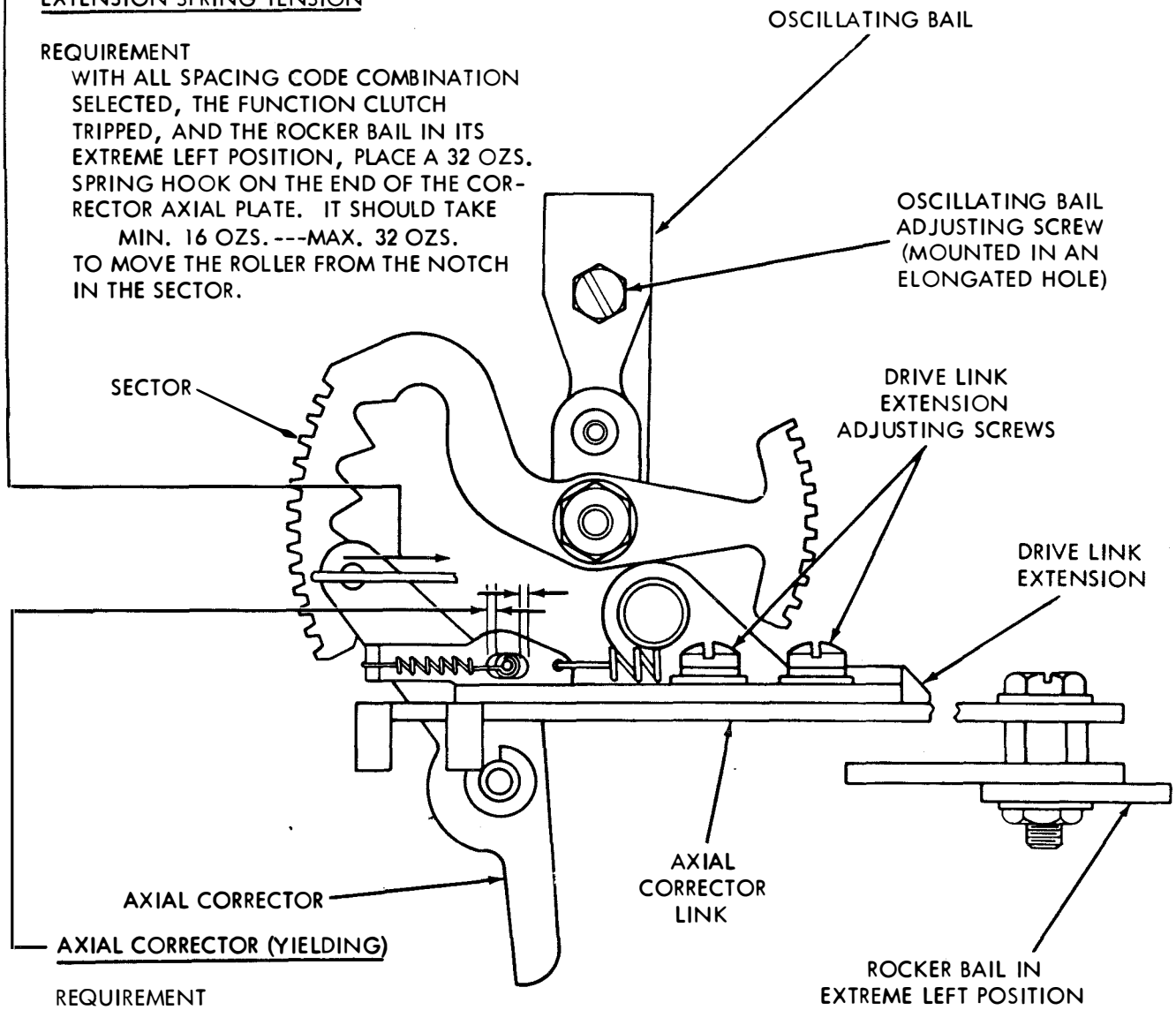
TO ADJUST

WITH MOUNTING SCREW LOOSENED, POSITION IDLER GEAR ECCENTRIC SHAFT BY MEANS OF THREE ADJUSTING HOLES. CHECK RACK THROUGHOUT ITS TRAVEL FOR BINDS.

2.51 Typing Mechanism continued

CORRECTOR DRIVE LINK (YIELDING)
EXTENSION SPRING TENSION

REQUIREMENT
WITH ALL SPACING CODE COMBINATION SELECTED, THE FUNCTION CLUTCH TRIPPED, AND THE ROCKER BAIL IN ITS EXTREME LEFT POSITION, PLACE A 32 OZS. SPRING HOOK ON THE END OF THE CORRECTOR AXIAL PLATE. IT SHOULD TAKE
MIN. 16 OZS. ---MAX. 32 OZS.
TO MOVE THE ROLLER FROM THE NOTCH IN THE SECTOR.



AXIAL CORRECTOR (YIELDING)

REQUIREMENT
WITH BLANK CODE COMBINATION SELECTED, FUNCTION CLUTCH TRIPPED AND ROCKER BAIL IN ITS EXTREME LEFT POSITION, THE AXIAL CORRECTOR ROLLER SHOULD SEAT IN THE FIRST SECTOR NOTCH AND THERE SHOULD BE
MIN. 0.005 INCH
BETWEEN THE ENDS OF THE SLOT AND THE SPRING POST. CHECK BOTH SIDES AND CHECK SEATING IN FOURTH NOTCH (LETTERS SELECTION). TURN THE RETAINING RING FASTENING THE DRIVE LINK EXTENSION TO THE CORRECTOR PLATE TO CHECK THE MINIMUM REQUIREMENT.

TO ADJUST
LOOSEN TWO DRIVE LINK ADJUSTING SCREWS. POSITION DRIVE LINK TO MEET THE REQUIREMENT AND RETIGHTEN THE SCREWS.

2.52 Typing Mechanism continued

ROTARY CORRECTOR MESH

(1) TO CHECK

WITH CLAMP ARM LOOSENED, "FIGURE 9" COMBINATION SELECTED (NO. 4 AND NO. 5 PULSE MARKING IN THE FIGURES POSITION) AND THE ROCKER BAIL IN ITS EXTREME LEFT POSITION.

REQUIREMENT

THE SECOND TOOTH FROM THE TOP OF THE ROTARY OUTPUT RACK (WITH THE PUSH BARS MANUALLY DETENTED) SHOULD SEAT FIRMLY BETWEEN THE LOBES OF THE ROTARY CORRECTOR ARM.

TO ADJUST

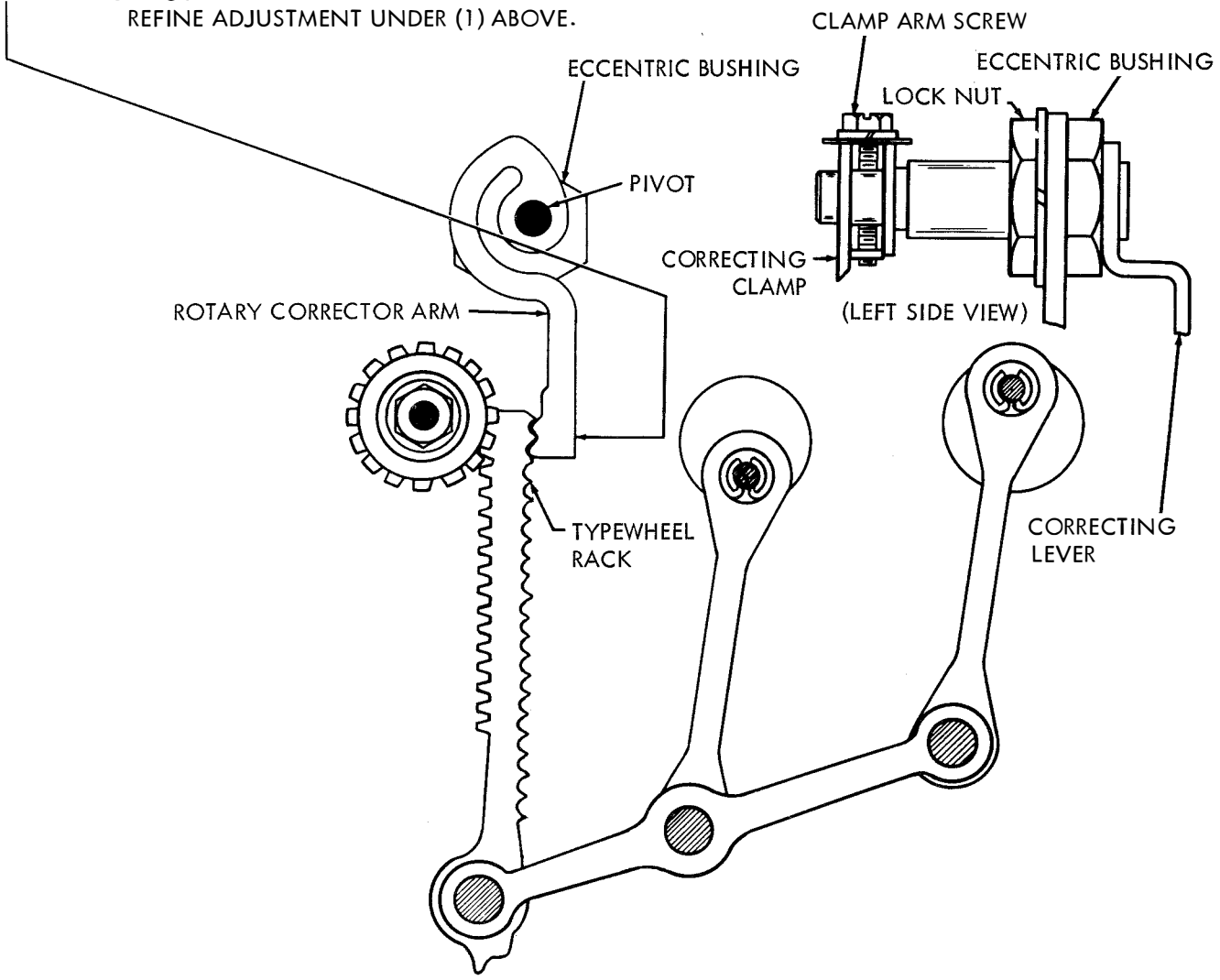
LOOSEN CLAMP ARM SCREW AND ECCENTRIC BUSHING LOCK NUT. WITH THE PIVOT OF THE CORRECTOR ARM TO THE RIGHT OF THE CENTER OF THE BUSHING, POSITION THE ROTARY CORRECTOR. TIGHTEN BUSHING LOCK NUT. DO NOT TIGHTEN CLAMP ARM SCREW AT THIS POINT.

(2) TO CHECK

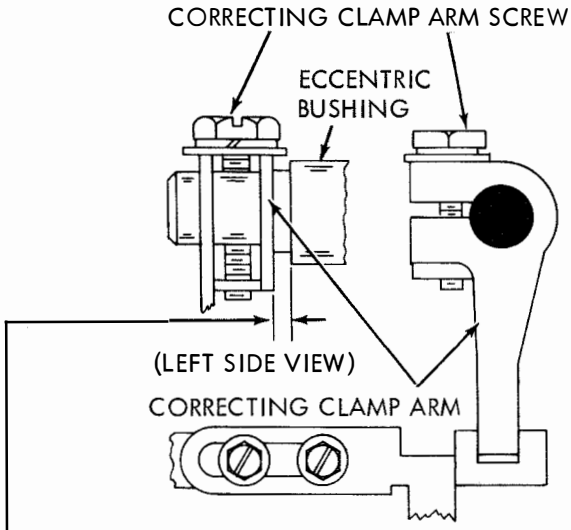
CHECK ENGAGEMENT IN A SIMILAR MANNER AS IN (1) ABOVE WITH THE FIFTH TOOTH (NO. 3 AND NO. 4 MARKING IN FIGURES POSITION), NINTH TOOTH (NO. 4 PULSE MARKING IN THE LETTERS POSITION), SIXTEENTH TOOTH (NO. 3 AND NO. 5 PULSE MARKING IN THE LETTERS FIELD).

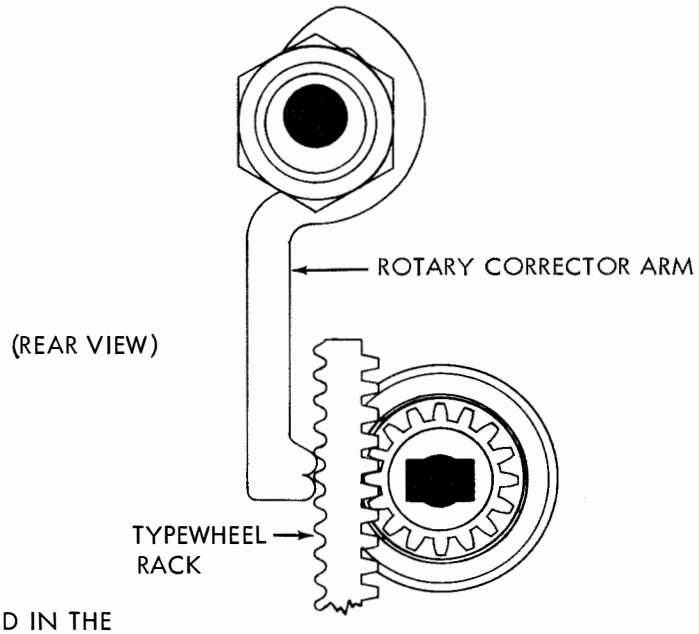
TO ADJUST

REFINE ADJUSTMENT UNDER (1) ABOVE.



2.53 Typing Mechanism continued



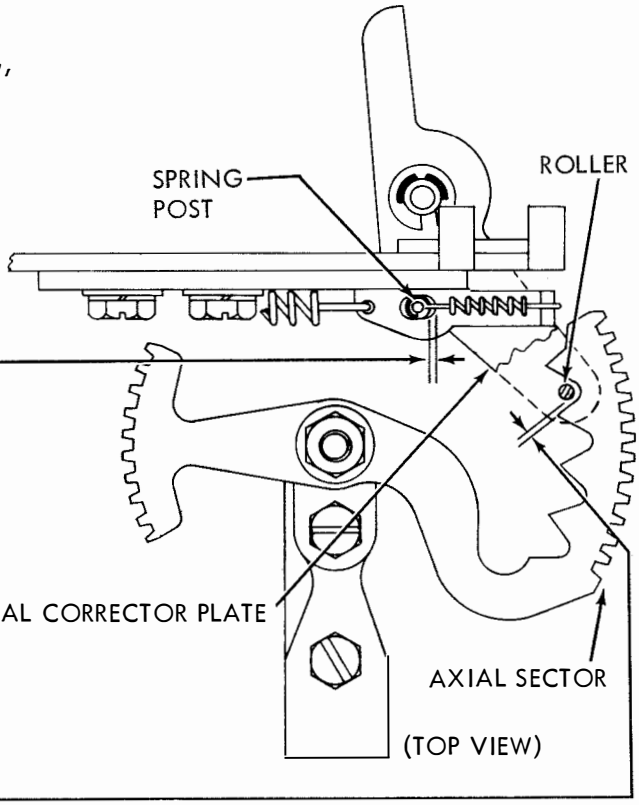


ROTARY CORRECTOR ARM

TO CHECK
WITH THE LETTERS COMBINATION SELECTED IN THE LETTERS FIELD AND THE ROCKER BAIL IN ITS EXTREME LEFT POSITION.

REQUIREMENT
THE ROTARY CORRECTOR ARM SHALL SEAT FIRMLY IN THE TYPEWHEEL RACK.

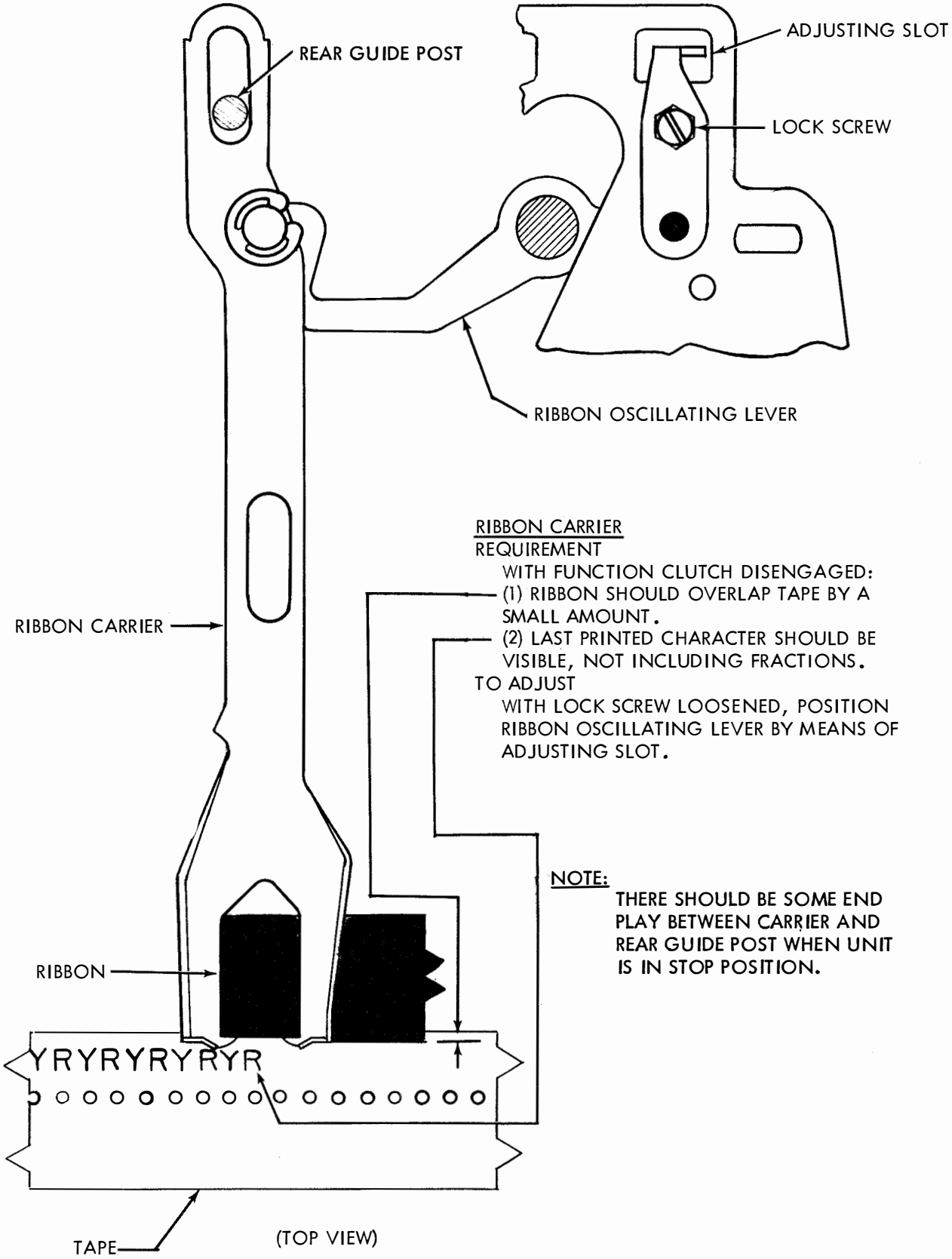
MIN. SOME----MAX. 0.006 INCH
END PLAY BETWEEN CLAMP ARM AND BUSHING, WITH UNIT IN THE STOP POSITION.



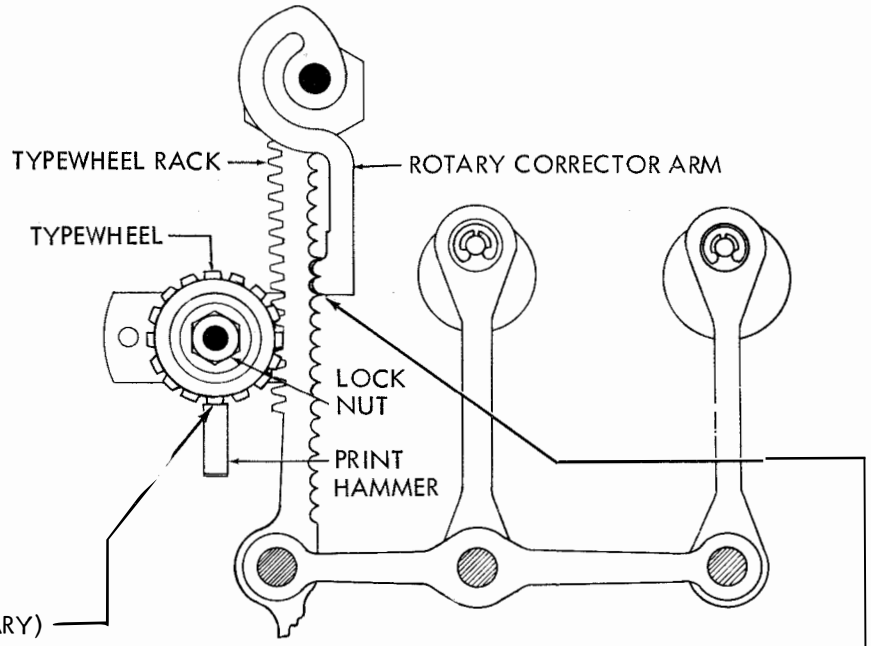
TO ADJUST
(UNITS EQUIPPED WITH NON-YIELDING AXIAL CORRECTOR)
AS THE ROCKER BAIL APPROACHES THE EXTREME LEFT, MEASURE CLEARANCE BETWEEN THE AXIAL CORRECTOR ROLLER AND THE SECTOR NOTCH. WHEN CLEARANCE IS
MIN. SOME----MAX. 0.005 INCH
POSITION ROTARY CORRECTOR ARM FINGER TIGHT AGAINST TYPEWHEEL RACK, AND TIGHTEN CORRECTING CLAMP ARM SCREW.

(UNITS EQUIPPED WITH A YIELDING AXIAL CORRECTOR)
AS THE ROCKER BAIL APPROACHES THE EXTREME LEFT AND THE SPRING POST OF THE AXIAL CORRECTOR STARTS TO LEAVE THE END OF ITS SLOT, POSITION THE ROTARY CORRECTOR ARM FINGER TIGHT AGAINST TYPEWHEEL RACK AND TIGHTEN CORRECTING CLAMP ARM SCREW.

2.54 Typing Mechanism for Chadless Tape continued



2.55 Typing Mechanism for Chadless Tape continued



(A) TYPEWHEEL (PRELIMINARY)

TO CHECK

SELECT "H" CODE COMBINATION (--345). PLACE ROCKER BAIL TO EXTREME LEFT. THE ROTARY CORRECTOR ARM FIRMLY ENGAGED.

REQUIREMENT

TYPEWHEEL ALIGNED SO THAT FULL CHARACTER IS PRINTED UNIFORMLY AND 6 ± 1/4 CODE HOLE SPACES BEHIND ITS PERFORATED CODE HOLES.

TO ADJUST

POSITION TYPEWHEEL WITH LOCK NUT LOOSENED. CHECK PRINTING BY MANUALLY LIFTING ACCELERATOR TO LATCHED POSITION AND RELEASING IT.

NOTE:

FOR BEST RESULTS IT MAY BE NECESSARY TO PROCEED TO THE NEXT ADJUSTMENT THEN COME BACK AND REFINE THE ABOVE.

(B) TYPEWHEEL (FINAL)

REQUIREMENT

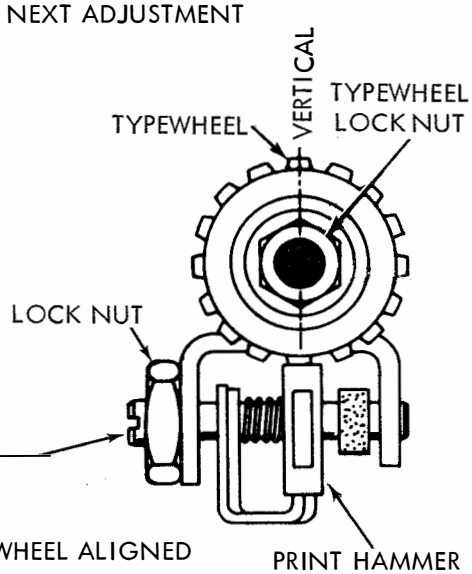
ALL CHARACTERS SHALL BE LEGIBLE AND 6 ± 1/4 CODE HOLE SPACES BEHIND THE PERFORATED CODE HOLES WITH UNIT OPERATING UNDER POWER.

TO ADJUST

REFINE THE TYPEWHEEL POSITION WITH ITS LOCK NUT LOOSENED.

NOTE:

FOR BEST RESULTS IT MAY BE NECESSARY TO MAKE THE PRINT HAMMER ADJUSTMENT AND THEN REFINE THIS ADJUSTMENT.



(C) PRINT HAMMER

REQUIREMENT

WHEN OPERATING UNDER POWER, PRINT HAMMER AND TYPEWHEEL ALIGNED SO AS TO OBTAIN BEST QUALITY OF PRINTING.

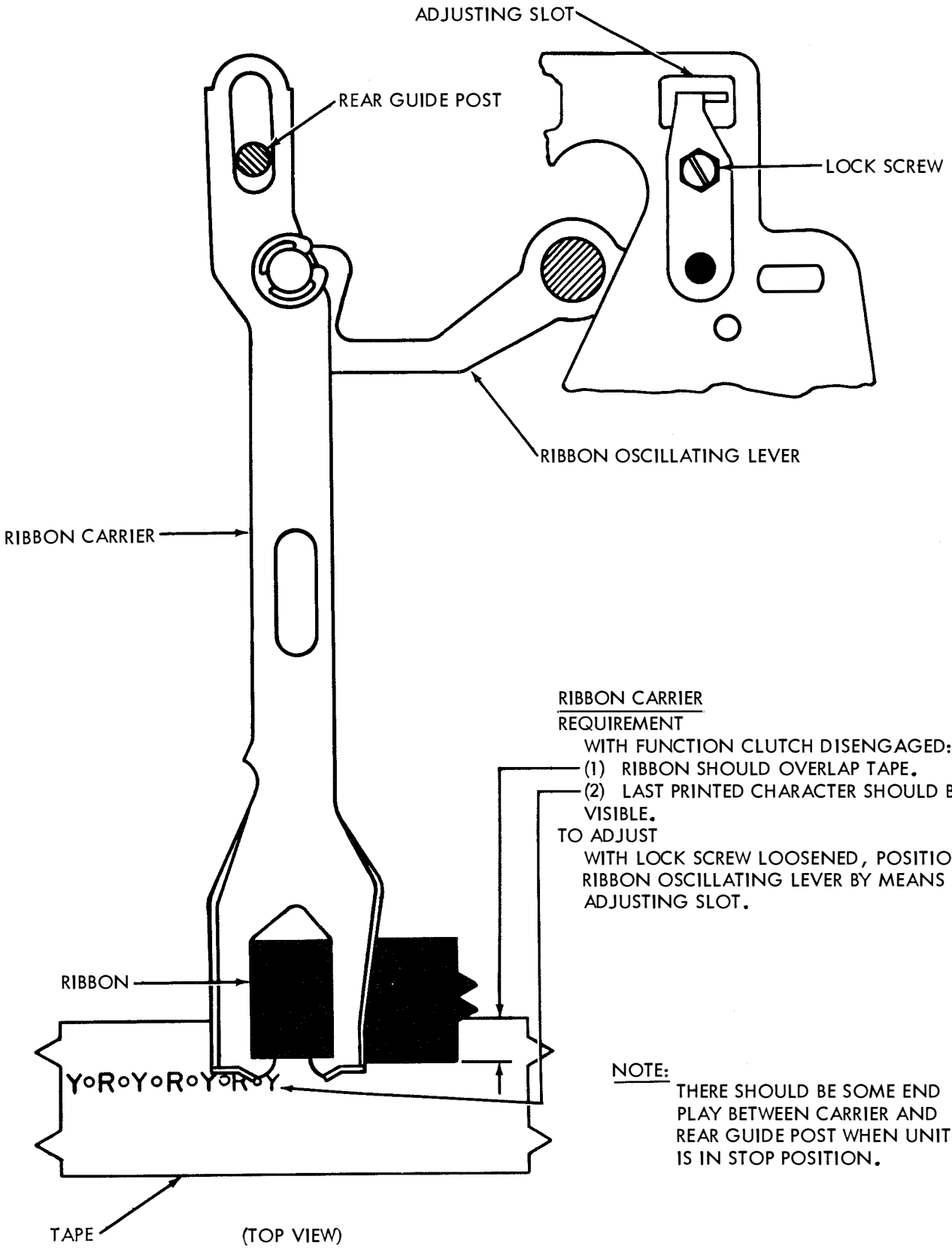
TO ADJUST

POSITION PRINT HAMMER SHAFT WITH LOCK NUT LOOSENED.

NOTE:

IT MAY BE NECESSARY TO REMAKE TYPEWHEEL ADJUSTMENT (ABOVE) AND THEN REFINE THIS ADJUSTMENT.

2.56 Typing Mechanism for Fully Perforated Tape continued



RIBBON CARRIER

REQUIREMENT

WITH FUNCTION CLUTCH DISENGAGED:

(1) RIBBON SHOULD OVERLAP TAPE.

(2) LAST PRINTED CHARACTER SHOULD BE VISIBLE.

TO ADJUST

WITH LOCK SCREW LOOSENED, POSITION RIBBON OSCILLATING LEVER BY MEANS OF ADJUSTING SLOT.

NOTE:

THERE SHOULD BE SOME END PLAY BETWEEN CARRIER AND REAR GUIDE POST WHEN UNIT IS IN STOP POSITION.

2.57 Typing Mechanism continued

(A) PRINTING LATCH (FOR UNITS WITH ADJUSTABLE PRINTING LATCH MOUNTING BRACKETS)

NOTE: FOR UNITS WITH NON-ADJUSTABLE PRINTING LATCH MOUNTING BRACKET REFER TO REQUIREMENT (1) AND TO ADJUST (3) BELOW ONLY.

REQUIREMENTS

(1) ROCKER BAIL IN EXTREME LEFT POSITION. MANUALLY LIFT PRINT HAMMER ACCELERATOR SO THAT LATCHING SURFACES OF PRINTING LATCH AND ACCELERATOR ARE AT THE CLOSEST POINT.
MIN. SOME---MAX. 0.015 INCH
CLEARANCE BETWEEN ACCELERATOR AND LATCH.

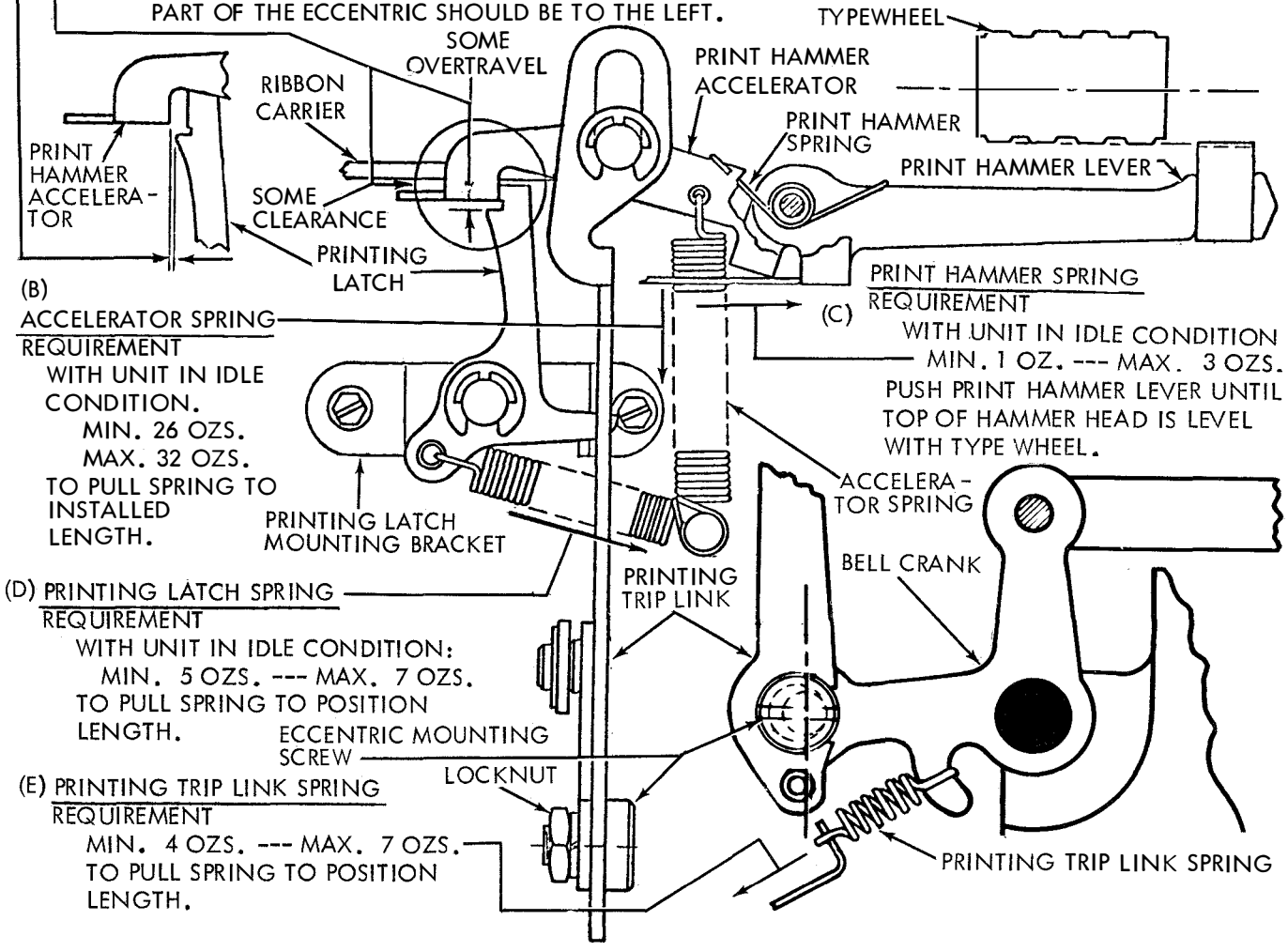
(2) ROCKER BAIL IN ITS EXTREME RIGHT POSITION. THERE SHOULD BE SOME OVERTRAVEL OF THE PRINT HAMMER ACCELERATOR WITH RESPECT TO THE LATCHING SURFACE OF THE PRINTING LATCH AND SOME CLEARANCE BETWEEN THE PRINT HAMMER ACCELERATOR AND THE RIBBON CARRIER.

TO ADJUST

(1) POSITION THE ROCKER BAIL TO THE EXTREME RIGHT. ADJUST THE ECCENTRIC SO THAT THERE IS APPROXIMATELY 0.065 INCH CLEARANCE BETWEEN THE PRINT HAMMER ACCELERATOR AND THE RIBBON CARRIER, KEEPING THE HIGH PART OF THE ECCENTRIC TO THE LEFT. LOOSEN THE TWO SCREWS WHICH FASTEN THE PRINTING LATCH MOUNTING BRACKET UNTIL THEY ARE JUST FRICTION TIGHT, AND MOVE THE BRACKET TO ITS EXTREME REAR POSITION.

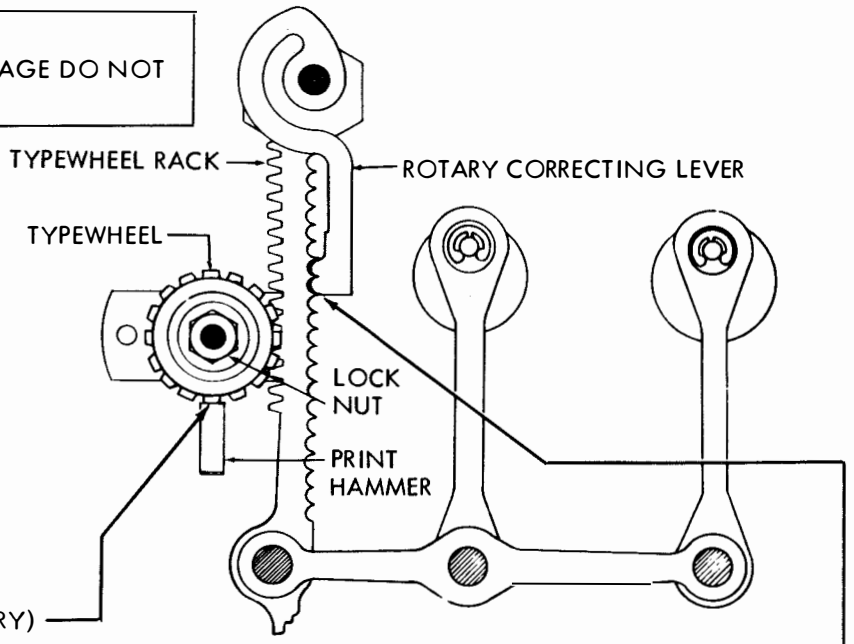
(2) POSITION THE ROCKER BAIL TO THE EXTREME LEFT. MOVE THE PRINTING LATCH MOUNTING BRACKET TOWARD THE FRONT UNTIL THE PRINT HAMMER ACCELERATOR JUST TRIPS. TIGHTEN THE TWO SCREWS WHICH FASTEN THE PRINTING LATCH MOUNTING BRACKET.

(3) WITH THE ROCKER BAIL TO THE EXTREME LEFT, POSITION THE PRINTING TRIP LINK BY ADJUSTING THE ECCENTRIC UNTIL THERE IS:
MIN. SOME---MAX. 0.015 INCH
CLEARANCE BETWEEN THE PRINTING LATCH AND THE PRINT HAMMER ACCELERATOR. THE HIGH PART OF THE ECCENTRIC SHOULD BE TO THE LEFT.



2.58 Typing Mechanism for Fully Perforated Tape continued

NOTE:
ADJUSTMENTS ON THIS PAGE DO NOT APPLY TO TAPE PRINTER.



(A) TYPEWHEEL (PRELIMINARY)

TO CHECK

SELECT "H" CODE COMBINATION (--345). PLACE ROCKER BAIL TO EXTREME LEFT THE ROTARY CORRECTOR FIRMLY ENGAGED.

REQUIREMENT

TYPEWHEEL ALIGNED SO THAT FULL CHARACTER IS PRINTED UNIFORMLY AND 6-1/2 CODE HOLE SPACES BEHIND ITS PERFORATED CODE HOLES.

TO ADJUST

POSITION TYPEWHEEL WITH LOCK NUT LOOSENED. CHECK PRINTING BY MANUALLY LIFTING ACCELERATOR TO LATCHED POSITION AND RELEASING IT.

NOTE:
FOR BEST RESULTS IT MAY BE NECESSARY TO PROCEED TO THE NEXT ADJUSTMENT THEN COME BACK AND REFINE THE ABOVE.

(B) TYPEWHEEL (FINAL)

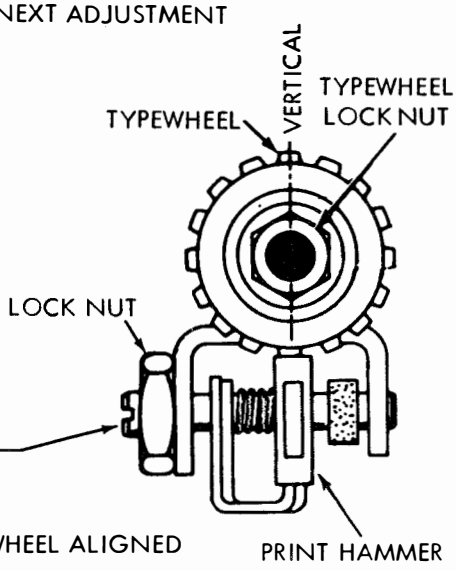
REQUIREMENT

ALL CHARACTERS SHALL BE LEGIBLE AND 6-1/2 CODE HOLE SPACES BEHIND THE PERFORATED CODE HOLES WITH UNIT OPERATING UNDER POWER.

TO ADJUST

REFINE THE TYPEWHEEL POSITION WITH ITS LOCK NUT LOOSENED.

NOTE:
FOR BEST RESULTS IT MAY BE NECESSARY TO MAKE THE PRINT HAMMER ADJUSTMENT AND THEN REFINE THIS ADJUSTMENT.



(C) PRINT HAMMER

REQUIREMENT

WHEN OPERATING UNDER POWER, PRINT HAMMER AND TYPEWHEEL ALIGNED SO AS TO OBTAIN BEST QUALITY OF PRINTING.

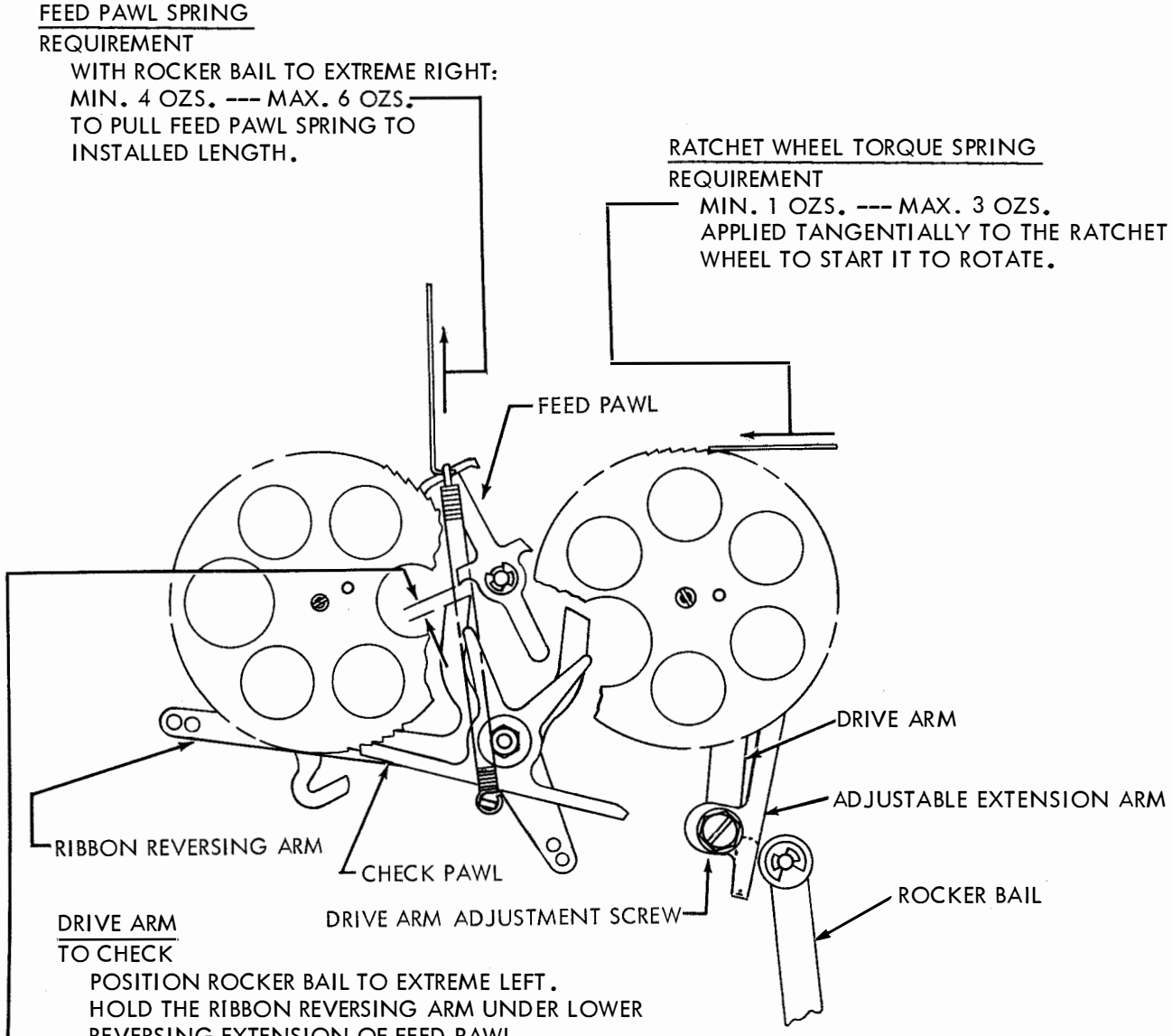
TO ADJUST

POSITION PRINT HAMMER SHAFT WITH LOCK NUT LOOSENED.

NOTE:
IT MAY BE NECESSARY TO REMAKE TYPEWHEEL ADJUSTMENT (ABOVE) AND THEN REFINE THIS ADJUSTMENT.

2.59 Ribbon Mechanism (Later Design)

(For Earlier Design see Par. 4.01 through 4.03)



DRIVE ARM

TO CHECK

POSITION ROCKER BAIL TO EXTREME LEFT.
HOLD THE RIBBON REVERSING ARM UNDER LOWER REVERSING EXTENSION OF FEED PAWL.

REQUIREMENT

(1) CLEARANCE BETWEEN BLOCKING EDGE OF RIBBON REVERSE ARM AND REVERSING EXTENSION OF FEED PAWL:
MIN. SOME

(2) CLEARANCE SHALL NOT BE SO GREAT AS TO ALLOW FEED PAWL TO FEED MORE THAN TWO TEETH AT A TIME.

(3) FEED PAWL DETENTED IN BOTH ITS RIGHT AND LEFT POSITION.

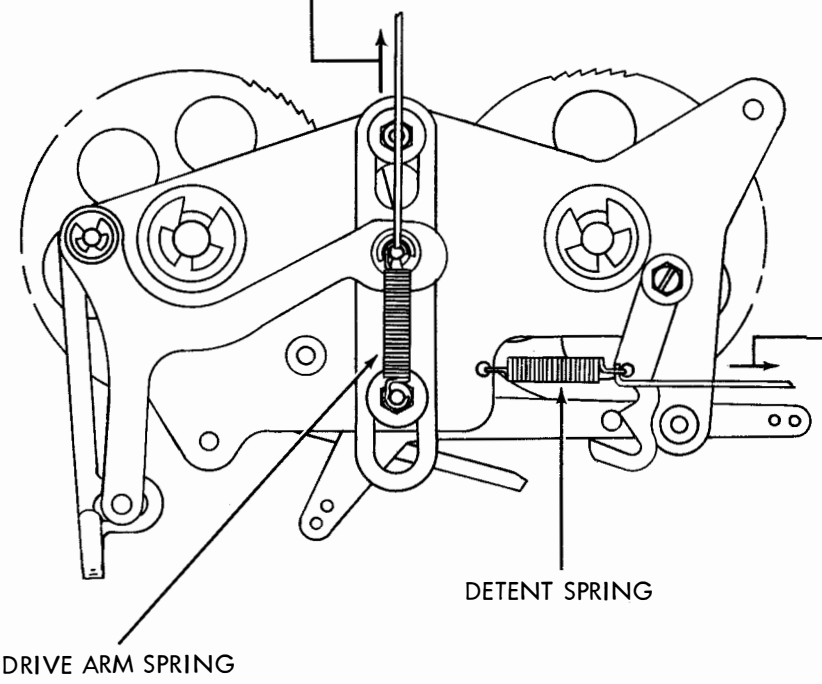
TO ADJUST

POSITION DRIVE ARM ADJUSTABLE EXTENSION LEVER WITH ITS MOUNTING SCREW LOOSENED.

2.60 Ribbon Mechanism (Later Design) continued

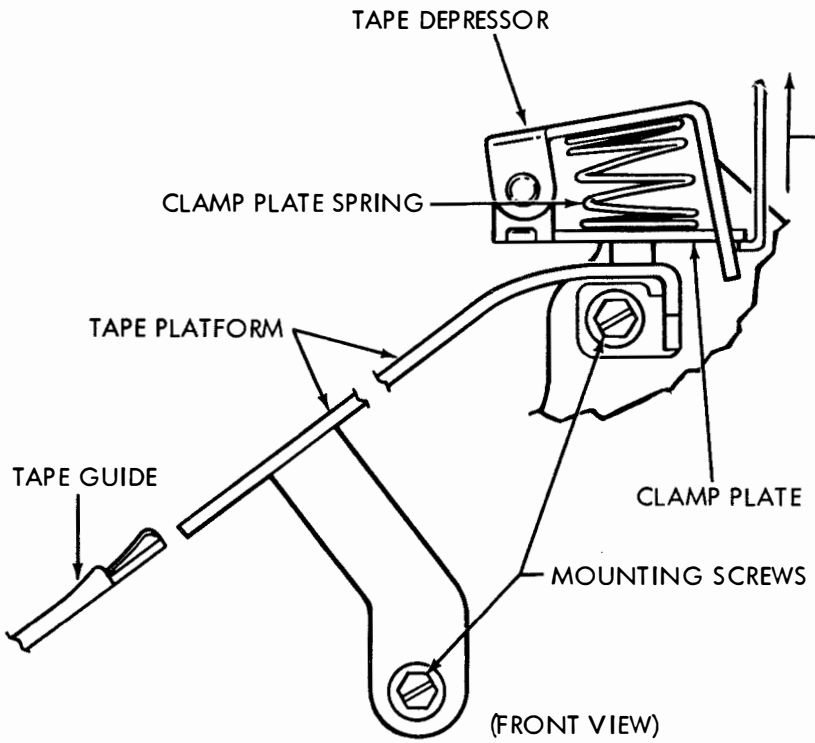
(For Earlier Design see Par. 4.01 through 4.03)

DRIVE ARM SPRING
REQUIREMENT
WITH ROCKER BAIL TO EXTREME RIGHT:
MIN. 9 OZS. --- MAX. 14 OZS.
TO PULL DRIVE ARM SPRING TO
INSTALLED LENGTH.



DETENT SPRING
REQUIREMENT
WITH REVERSING ARM IN ITS EXTREME
RIGHT OR LEFT POSITION:
MIN. 2 OZS. --- MAX. 4 OZS.
TO PULL DETENT SPRING TO ITS
INSTALLED LENGTH.

2.61 Slack Tape Mechanism



TAPE PLATFORM
REQUIREMENT
TOP SURFACE OF TAPE PLATFORM SHOULD BE FLUSH WITH TOP SURFACE OF TAPE GUIDE.

TO ADJUST
WITH TAPE PLATFORM MOUNTING SCREWS LOOSENED, POSITION TAPE PLATFORM.

CLAMP PLATE SPRING
REQUIREMENT
FUNCTION CLUTCH DISENGAGED AND LATCHED. CLAMP PLATE SPRING BOWED TO THE RIGHT.
MIN. 18 OZS. --- MAX. 24 OZS.
TO MOVE CLAMP PLATE FROM BOTTOM OF SLOT IN TAPE DEPRESSOR.

2.62 Model 28 Tape Printer Unit

NOTE:
THESE ADJUSTMENTS, PLUS APPLICABLE MODEL 28 TYPING REPERFORATOR ADJUSTMENTS, ARE REQUIRED TO ADJUST THE MODEL 28 TAPE PRINTER.

FEED WHEEL

REQUIREMENT (PRELIMINARY)

(1) CLEARANCE BETWEEN FEED WHEEL RATCHET AND FRONT PLATE:
MIN. 0.085 --- MAX. 0.095 INCH

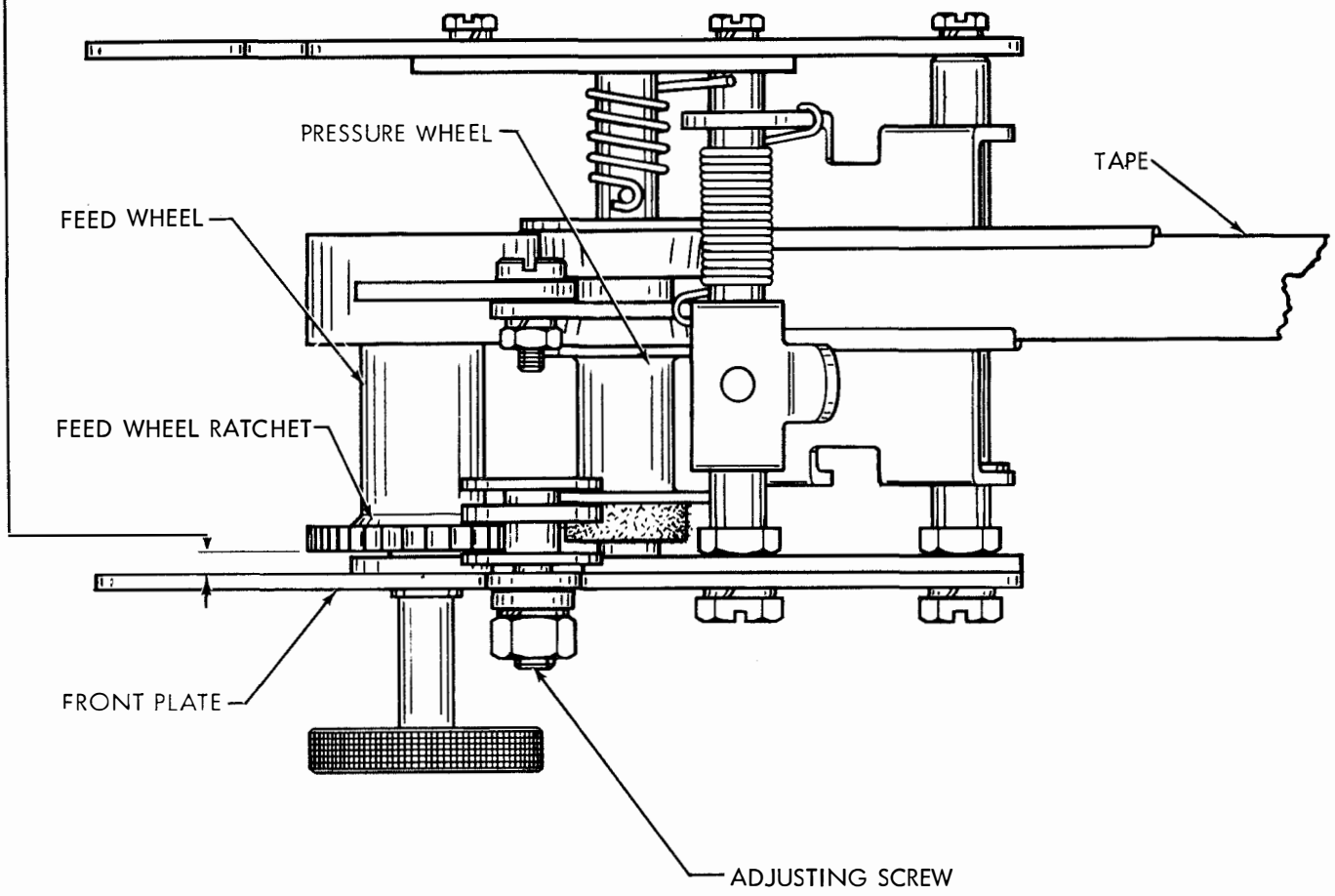
(2) (FINAL)
PRINTING CENTRALLY LOCATED ON TAPE

TO ADJUST
TURN ADJUSTING SCREW WITH LOCK NUT LOOSENED.

TAPE GUIDE

REQUIREMENT
THE TAPE SHALL "RUN" IN THE CENTER OF TAPE GUIDE (GAGE BY EYE).

TO ADJUST
WITH MOUNTING NUTS FRICTION TIGHT, POSITION TAPE GUIDE WITH ROLLER UP OR DOWN TO MEET REQUIREMENT.



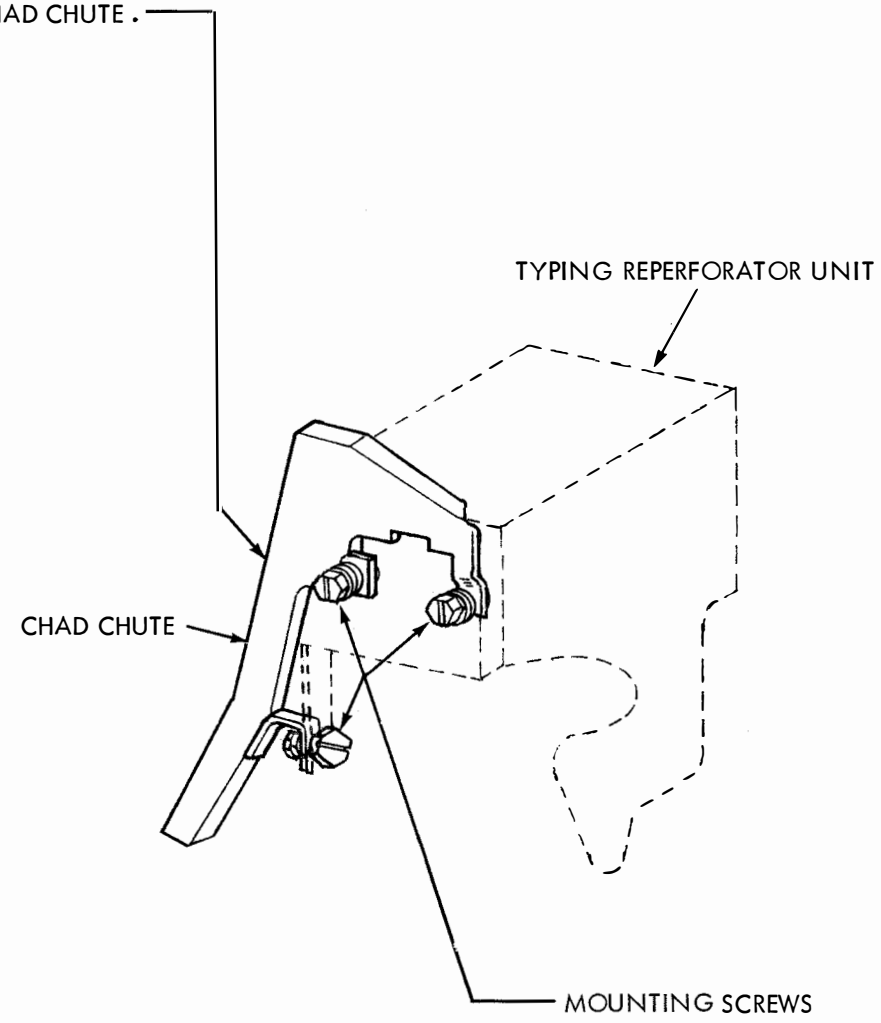
SPECIAL REQUIREMENT

IF THE MODEL 28 TAPE PRINTER IS USED ON A MODEL 28 TYPING REPERFORATOR SINGLE OR DOUBLE PLATE BASE, A TAPE REEL WILL HAVE TO BE USED TO ACCOMMODATE THE 3/8 INCH TAPE. THIS TAPE REEL CONSISTS OF A DISC W/HUB AND A DISC W/NUT.

2.63 Chad Chute Assembly for Self-contained Typing Reperforator Set for Fully Perforated Tape

CHAD CHUTE (SELF CONTAINED TYPING REPERFORATOR SET)
REQUIREMENT
CHAD CHUTE SHOULD BE FLUSH WITH TOP OF PUNCH BLOCK.

TO ADJUST
WITH MOUNTING SCREWS FRICTION TIGHT
POSITION CHAD CHUTE.



2.64 Chad Chute Assembly for Multiple Typing Reperforator Set for Fully Perforated Tape

CHAD CHUTE ASSEMBLY (MULTIPLE REPERFORATOR SET)

REQUIREMENT

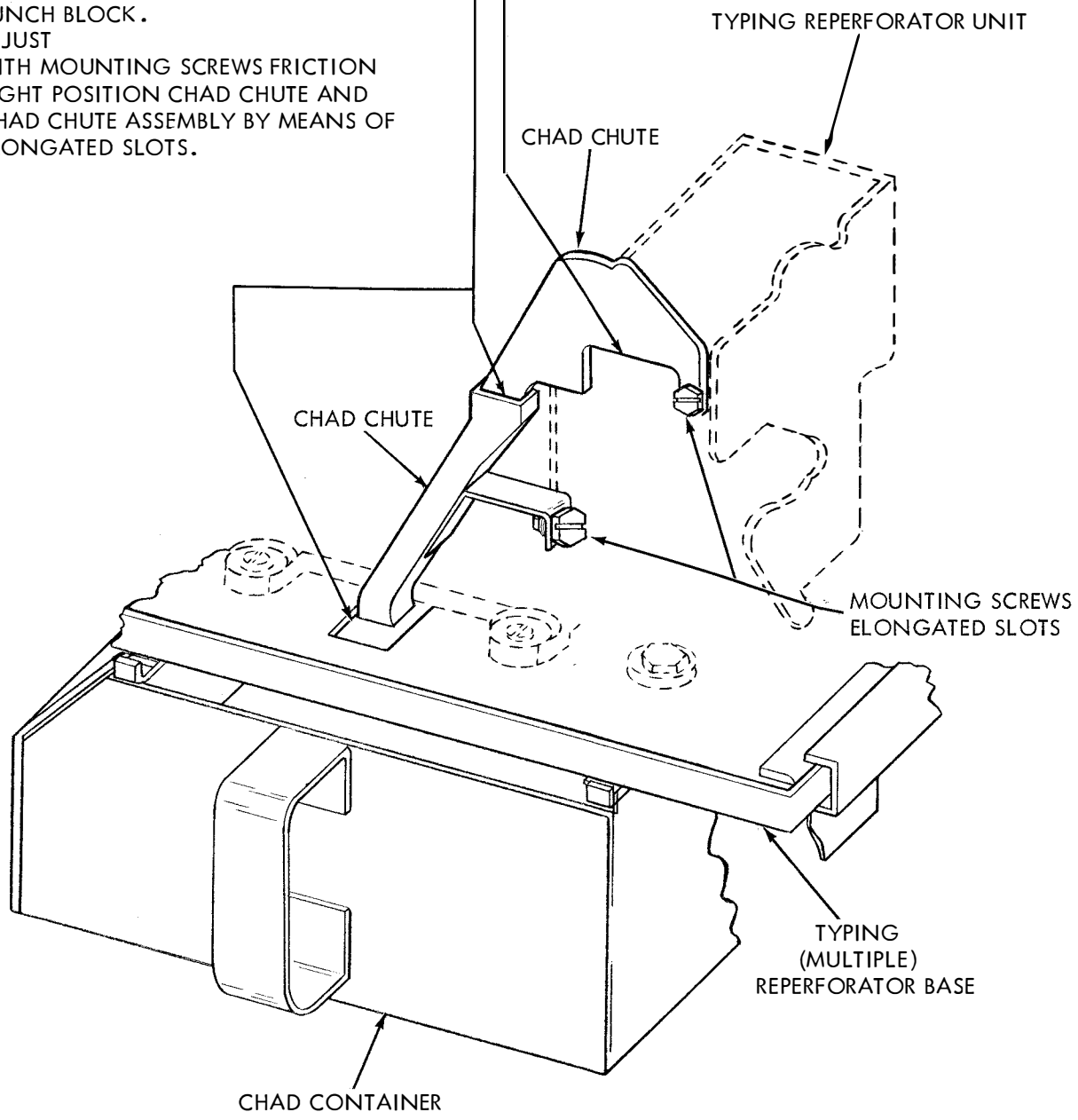
(1) CHAD CHUTE SHOULD BE FLUSH WITH TOP OF PUNCH BLOCK.

(2) CHAD CHUTE ASSEMBLY SHOULD BE ADJUSTED SO CLEARANCE IS MAXIMUM IN ALL DIRECTIONS BETWEEN EACH CHAD CHUTE AND REPERFORATOR CASTING.

(3) POSITION TAPE GUIDE IN ITS MOUNTING SLOTS SO THAT TOP OF ROLLER IS PARALLEL TO AND ABOVE THE TAPE EXIT OF THE PUNCH BLOCK.

TO ADJUST

WITH MOUNTING SCREWS FRICTION TIGHT POSITION CHAD CHUTE AND CHAD CHUTE ASSEMBLY BY MEANS OF ELONGATED SLOTS.



2.65 Chad Chute Assembly for Keyboard Typing Reperforator on Automatic Send-Receive for Fully Perforated Tape

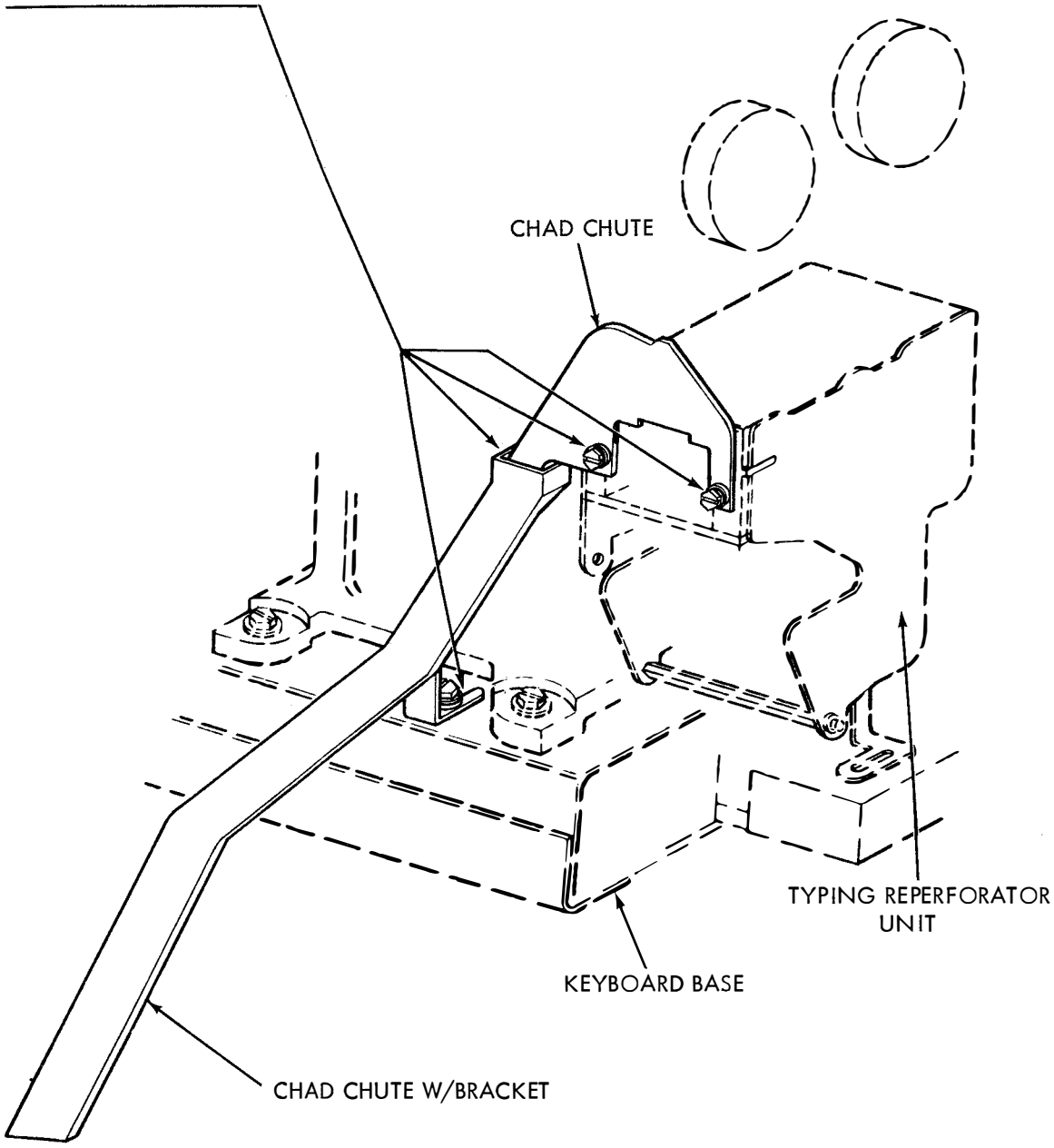
CHAD CHUTE ASSEMBLY (KEYBOARD REPERFORATOR – AUTOMATIC SEND-RECEIVE SET)

REQUIREMENT

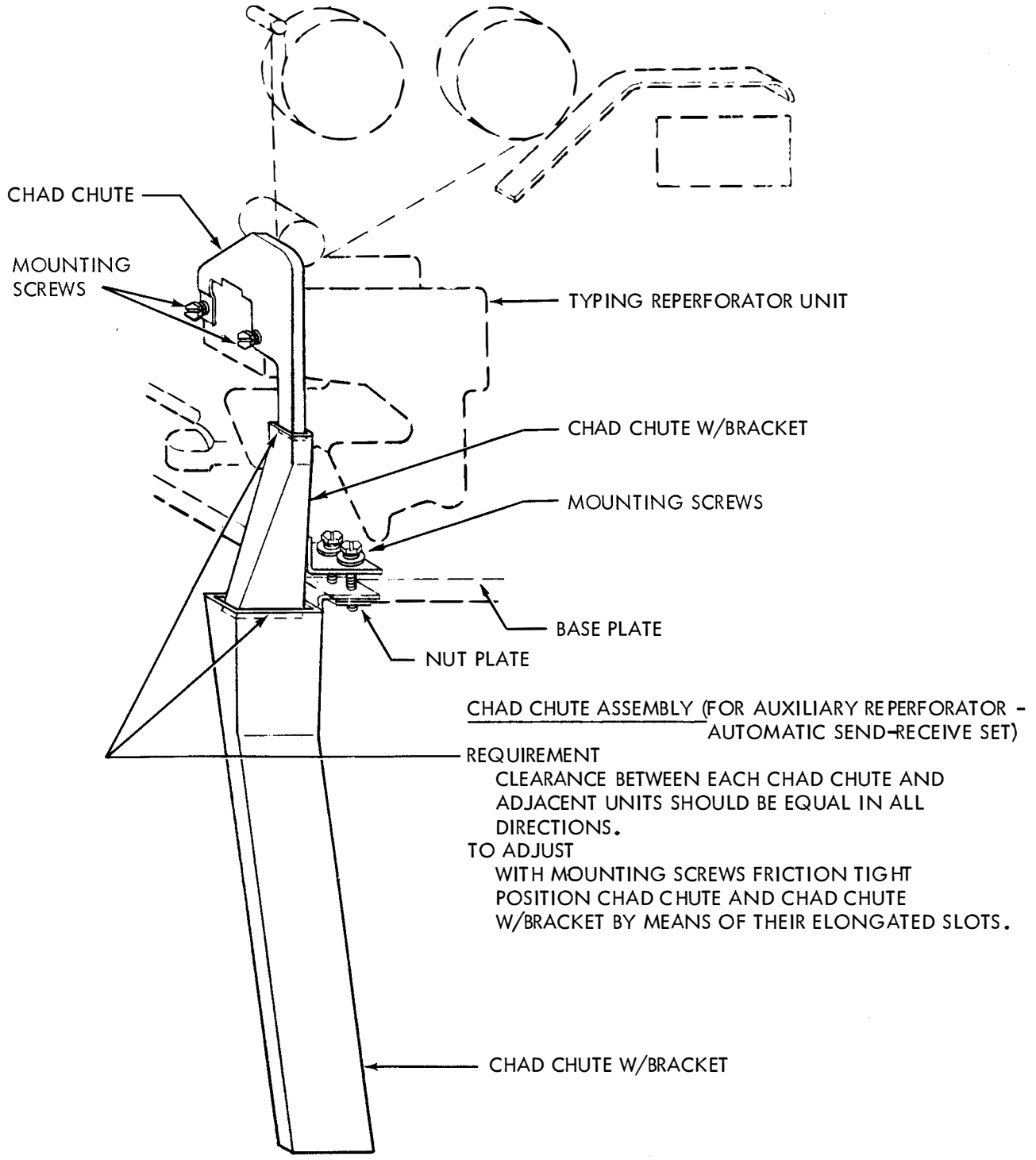
CLEARANCE BETWEEN EACH CHAD CHUTE AND ADJACENT UNITS SHOULD BE EQUAL IN ALL DIRECTIONS.

TO ADJUST

WITH MOUNTING SCREWS FRICTION TIGHT POSITION EACH CHUTE BY MEANS OF THEIR ELONGATED SLOTS.



2.66 Chad Chute Assembly for Auxiliary Typing Reperforator on Automatic Send-Receive for Fully Perforated Tape



2.67 Tape Guide Chute Mechanism for Auxiliary Typing Reperforator on Automatic Send-Receive

TAPE GUIDE CHUTE (AUXILIARY TYPING REPERFORATOR) (AUTOMATIC SEND-RECEIVE SET)

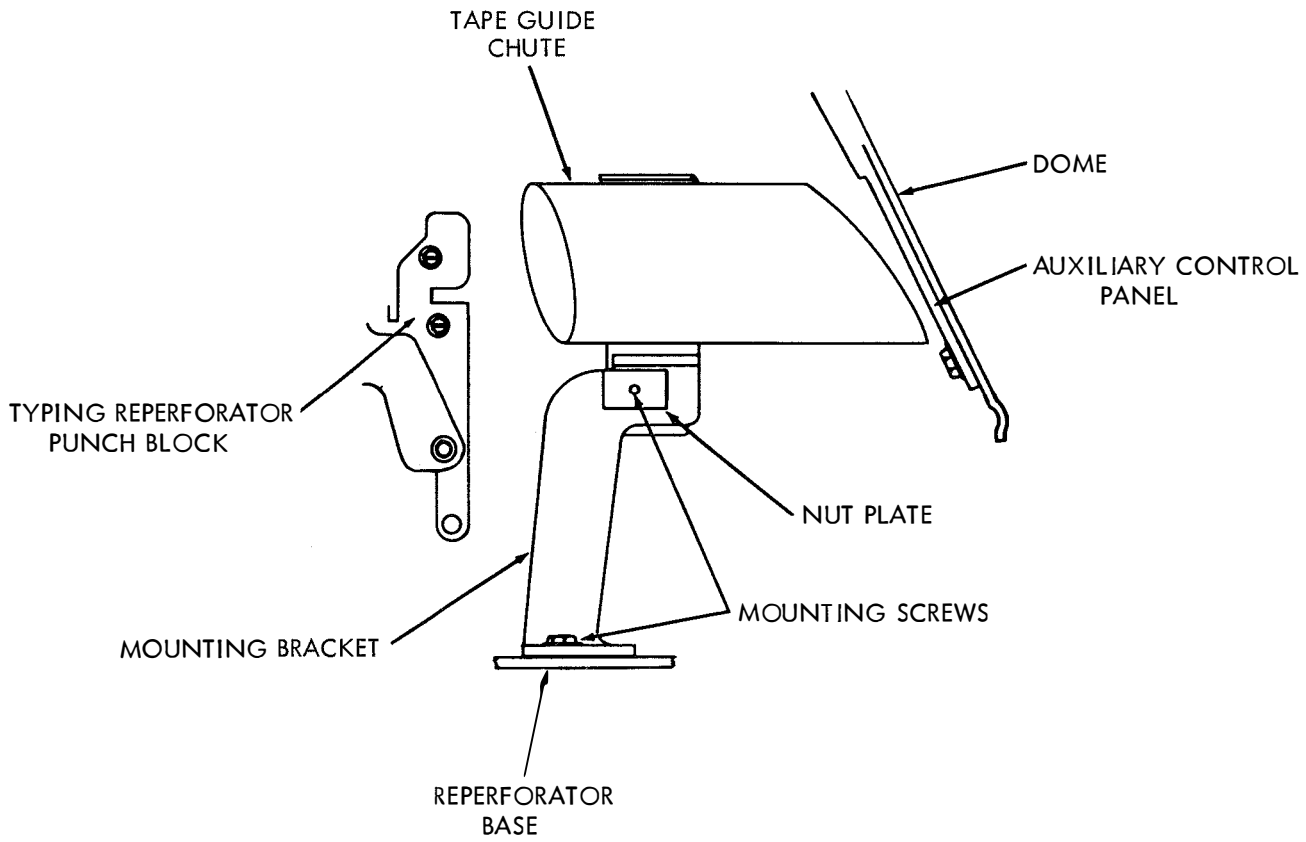
REQUIREMENT

WITH LEFT TOP AND MIDDLE DOME DOORS OPEN, FRONT AND REAR ENDS OF CHUTE ALIGN WITH PUNCH BLOCK TAPE APERTURE AND WITH HOLE IN AUXILIARY CONTROL PANEL.

TO ADJUST

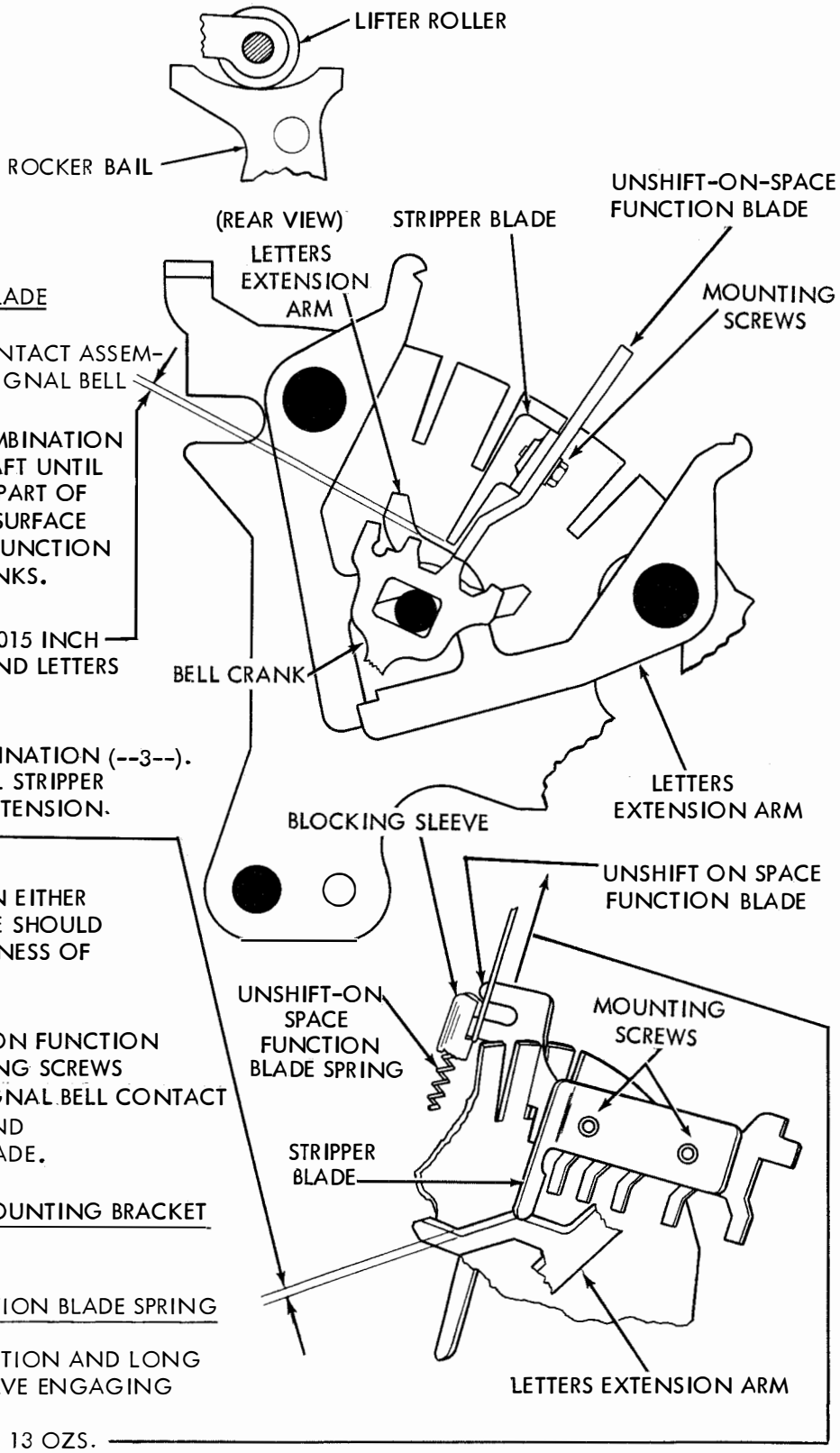
POSITION MOUNTING BRACKET WITH MOUNTING SCREWS FRICTION TIGHT UNTIL CHUTE IS POSITIONED HORIZONTALLY. WITH UPPER ADJUSTING SCREW FRICTION TIGHT IN ITS NUT PLATE, POSITION CHUTE VERTICALLY.

NOTE: TAPE GUIDE CHUTE SHOULD NOT TOUCH TYPING REPERFORATOR OR CABINET. TAPE SHOULD FEED WITHOUT BINDING OR TWISTING.



3. VARIABLE FEATURES

3.01 Unshift-on-Space Mechanism



(A) UNSHIFT-ON-SPACE FUNCTION BLADE

(1) TO CHECK

REMOVE SIGNAL BELL CONTACT ASSEMBLY WITH BRACKET AND SIGNAL BELL FUNCTION BLADE.

SELECT FIGURES CODE COMBINATION (12-45). ROTATE MAIN SHAFT UNTIL LIFTER ROLLER IS ON LOW PART OF ROCKER BAIL'S CAMMING SURFACE AND UNSHIFT-ON-SPACE FUNCTION BLADE RESTS ON BELL CRANKS.

REQUIREMENT

MIN. SOME---MAX. 0.015 INCH BETWEEN STRIPPER BLADE AND LETTERS EXTENSION ARM.

(2) TO CHECK

SELECT SPACE CODE COMBINATION (--3--). ROTATE MAIN SHAFT UNTIL STRIPPER BLADE TOUCHES LETTERS EXTENSION ARM.

REQUIREMENT

WHEN PLAY IS TAKEN UP IN EITHER DIRECTION, STRIPPER BLADE SHOULD ENGAGE AN EQUAL THICKNESS OF LETTERS EXTENSION ARM.

TO ADJUST

POSITION STRIPPER BLADE ON FUNCTION BLADE WITH TWO MOUNTING SCREWS LOOSENED, REINSTALL SIGNAL BELL CONTACT ASSEMBLY WITH BRACKET AND SIGNAL BELL FUNCTION BLADE.

NOTE:

MAKE SIGNAL BELL CONTACT MOUNTING BRACKET ADJUSTMENT.

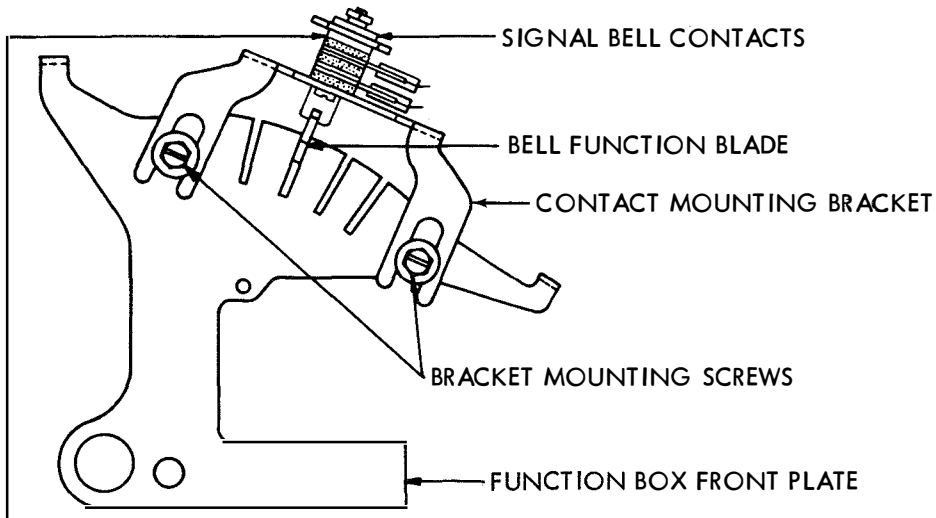
(B) UNSHIFT-ON-SPACE FUNCTION BLADE SPRING

REQUIREMENT

WITH UNIT IN STOP POSITION AND LONG SLOT IN BLOCKING SLEEVE ENGAGING FUNCTION BLADE

MIN. 10 OZS.---MAX. 13 OZS. TO START BLADE MOVING.

3.02 Signal-bell Contact Mechanism (Later Design)
(For Earlier Design see Par. 4.04)



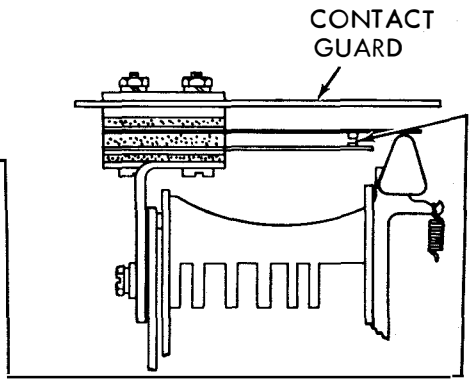
(B) CONTACT BRACKET ASSEMBLY

(1) REQUIREMENT
THE CONTACT ASSEMBLY SHALL BE CENTRALLY LOCATED OVER THE BELL FUNCTION BLADE INSULATOR.

(2) REQUIREMENT
WITH LETTERS CODE COMBINATION (12345) SELECTED ROTATE MAIN SHAFT UNTIL BELL FUNCTION BLADE IS IN ITS LOWEST POSITION (RESTING ON BELL CRANKS). GAP BETWEEN CONTACTS.
MIN. 0.015 INCH
MAX. 0.025 INCH

(3) REQUIREMENT
WITH BELL FUNCTION BLADE IN ITS SELECTED POSITION, THE CONTACTS SHALL BE CLOSED.
TO ADJUST
WITH MOUNTING SCREWS LOOSENED, POSITION CONTACT BRACKET ASSEMBLY.

NOTE: SEE FUNCTION BLADE SPRING FOR TENSION.

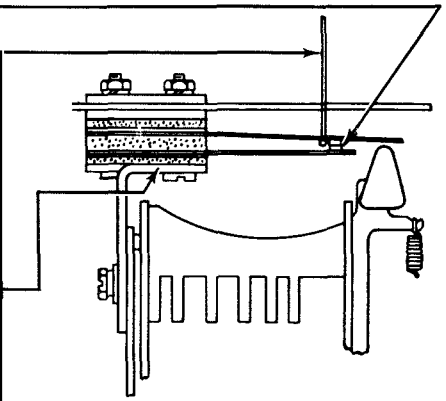


(A) SIGNAL BELL CONTACT

NOTE:
COMPLETE THE FOLLOWING ADJUSTMENTS WITH THE SIGNAL BELL CONTACT ASSEMBLY REMOVED FROM THE FUNCTION BOX FRONT PLATE.

(1) REQUIREMENT
CONTACT SPRINGS SHALL BE APPROXIMATELY PARALLEL TO TOP OF BRACKET.
TO ADJUST
BEND CONTACT SPRING.

(2) REQUIREMENT
MIN. 1-1/2 OZS.
MAX. 2-1/2 OZS.
WITH PULL APPLIED AT CONTACT POINT TO OPEN CONTACTS.
TO ADJUST
BEND UPPER CONTACT SPRING.

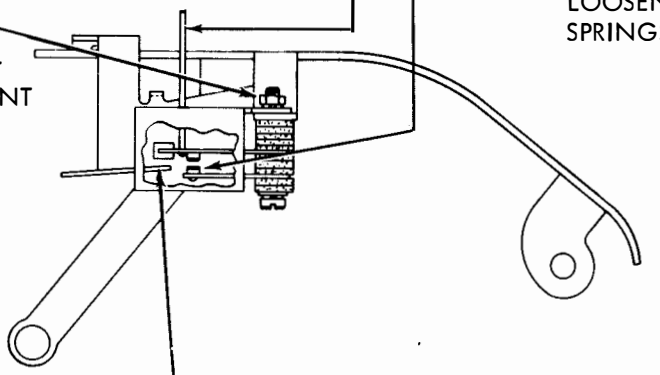


3.03 Tape Absence Contact Assembly

(A) TAPE ABSENCE LONG CONTACT SPRING
REQUIREMENT
TAPE SENSING FINGER IN ITS EXTREME COUNTERCLOCKWISE POSITION.
MIN. 35 GRAMS
MAX. 45 GRAMS
TO ADJUST
REMOVE GUARD. BEND LONG CONTACT SPRING.

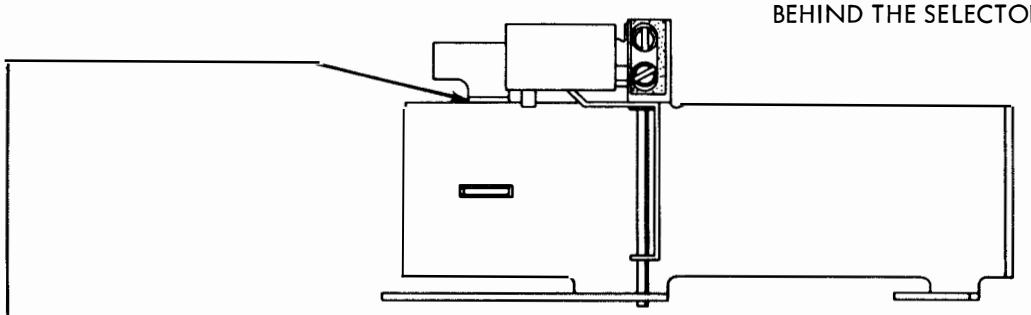
(B) TAPE ABSENCE CONTACT ASSEMBLY POSITION
REQUIREMENT
CONTACT POINTS ALIGNED, INSULATOR ON LONG CONTACT SPRING CENTRALLY LOCATED WITH SENSING FINGER EXTENSION.
TO ADJUST
WITH CONTACT ASSEMBLY GUARD REMOVED, MOUNTING SCREWS LOOSENED, POSITION CONTACT SPRINGS.

(D) TAPE ABSENCE CONTACT ASSEMBLY GUARD POSITION
REQUIREMENT
THE GUARD SHOULD NOT INTERFERE WITH MOVEMENT OF SENSING FINGER.
TO ADJUST
WITH MOUNTING NUT LOOSENED, POSITION THE GUARD.



(C) TAPE ABSENCE SHORT CONTACT SPRING POSITION
REQUIREMENT
TAPE SENSING FINGER IN ITS EXTREME COUNTER-CLOCKWISE POSITION.
MIN. 0.010 INCH
MAX. 0.020 INCH
CLEARANCE BETWEEN SENSING FINGER EXTENSION AND CLOSEST POINT ON BAKELITE INSULATOR OF LONG CONTACT SPRING.
TO ADJUST
WITH GUARD REMOVED, BEND THE SHORT CONTACT SPRING.

(F) TAPE ABSENCE CONTACTS CABLE ASSEMBLY POSITION
REQUIREMENT
THE CABLE ASSEMBLY FOR THE TAPE ABSENCE CONTACTS SHOULD BE ROUTED TOGETHER WITH THE SELECTOR MAGNET CABLE ASSEMBLY AND, IF PRESENT, THE CODE READING CONTACTS CABLE ASSEMBLY. FORM THE CABLES SO THAT THEY DO NOT INTERFERE WITH THE MOVEMENT OF THE TAPE SENSING FINGER.
TO ADJUST:
SECURE THE POSITION OF THE CABLE ASSEMBLIES BY MEANS OF AN APPROPRIATE CABLE CLAMP LOCATED BEHIND THE SELECTOR MAGNETS.



(E) TAPE ABSENCE CONTACTS SENSING FINGER END PLAY
REQUIREMENT
THE END PLAY BETWEEN TAPE SENSING FINGER AND TAPE GUARD SHOULD BE:
MIN. 0.006 INCH
MAX. 0.035 INCH
TO ADJUST
BEND THE TAPE SENSING FINGER.

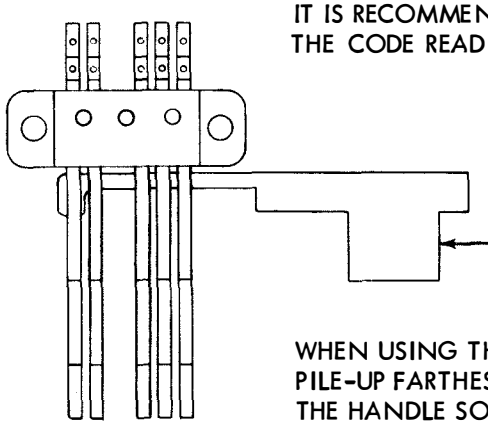
3.04 Code-reading Contact Mechanisms (Make-only and Transfer Types)

NOTE 1:

UNLESS SPECIFICALLY STATED OTHERWISE, THE FOLLOWING CODE READING CONTACT ADJUSTMENTS APPLY TO BOTH THE TRANSFER (BREAK BEFORE MAKE) TYPE AND MAKE TYPE CONTACTS. WHEN AN ADJUSTMENT IS APPLICABLE TO BOTH TYPES, THE TRANSFER TYPE CONTACTS ARE USED IN THE ILLUSTRATIONS. WHEN TESTING THESE CONTACTS ON ASR SETS THE CONTROL KNOB SHOULD BE IN THE K-T POSITION.

NOTE 2:

IT IS RECOMMENDED THAT THE FOLLOWING ADJUSTMENTS BE MADE WITH THE CODE READING CONTACT ASSEMBLY REMOVED FROM THE UNIT.



(LEFT SIDE VIEW)

WHEN USING THE CONTACT SPRING BENDER, START WITH THE CONTACT PILE-UP FARTHEST FROM THE HANDLE OF THE TOOL AND WORK TOWARD THE HANDLE SO AS NOT TO DISTURB ADJUSTMENTS ALREADY MADE.

(A)

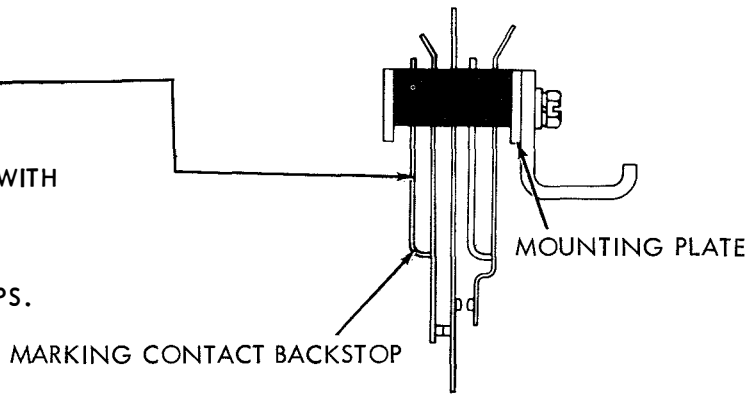
MARKING CONTACT BACKSTOPS

REQUIREMENT

AS GAUGED BY EYE, FIVE MARKING CONTACT SPRINGS SHOULD ALIGN WITH EACH OTHER AND BE PARALLEL WITH MOUNTING PLATE.

TO ADJUST

BEND MARKING CONTACT BACKSTOPS.



(B)

MARKING CONTACT SPRINGS-PRELIMINARY

REQUIREMENT

WITH SWINGER CONTACT SPRING HELD AWAY:

MIN. 2 OZS.

MAX. 6 OZS.

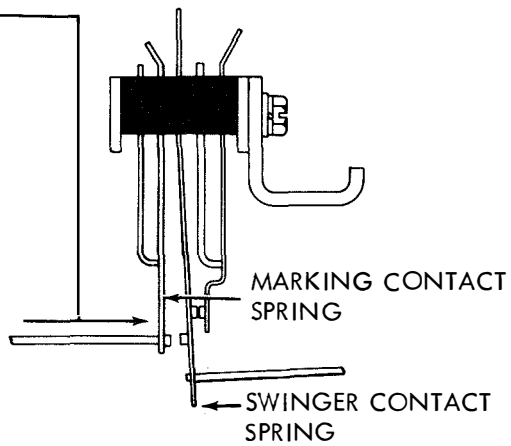
TO MOVE EACH SPRING AWAY FROM BACKSTOP.

TO ADJUST

BEND MARKING CONTACT SPRINGS.

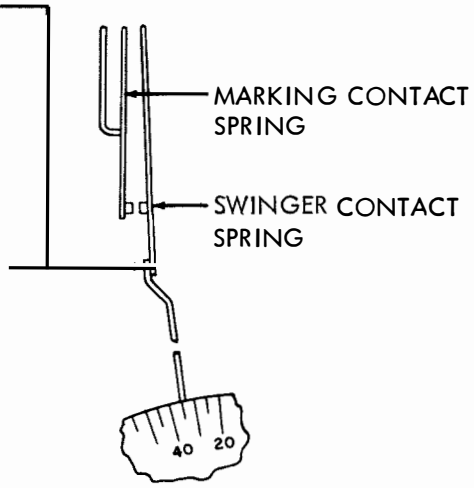
NOTE:

TO INCREASE TENSION OF MARKING CONTACT SPRING, IT MAY BE NECESSARY TO BEND BACKSTOP AWAY FROM SPRING, BEND SPRING AND THEN RE-BEND BACKSTOP TO MEET REQUIREMENT OF MARKING CONTACT BACKSTOPS ADJUSTMENT (ABOVE).



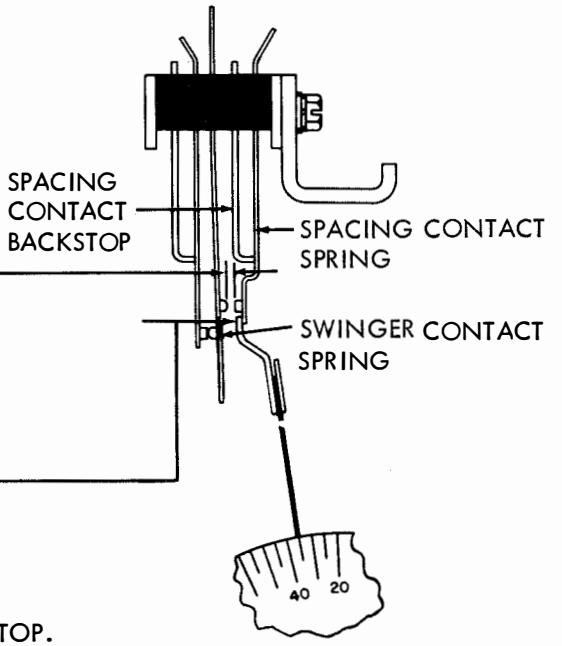
3.05 Code-reading Contact Mechanisms (Make-only and Transfer Types) continued

(A) SWINGER CONTACT SPRINGS-PRELIMINARY
REQUIREMENT
MIN. 30 GRAMS
MAX. 40 GRAMS
TO OPEN MARKING CONTACTS.
TO ADJUST
BEND SWINGER CONTACT SPRINGS.



NOTE:
SPACING CONTACTS (ON TRANSFER TYPE CONTACT ASSEMBLIES ONLY) ARE NORMALLY OPEN WHEN CONTACT ASSEMBLY IS REMOVED FROM UNIT.

(B) SPACING CONTACT BACKSTOPS - PRELIMINARY
(APPLIES TO TRANSFER TYPE CONTACTS ONLY)
REQUIREMENT
GAP BETWEEN SPACING CONTACTS
MIN. 0.018 INCH
MAX. 0.025 INCH
TO ADJUST
BEND SPACING CONTACT BACKSTOPS.

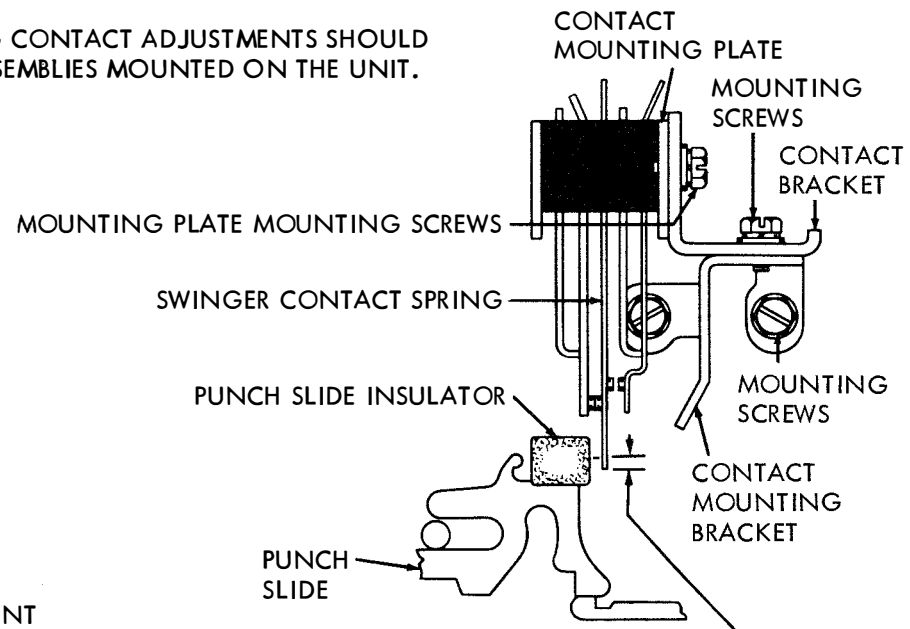


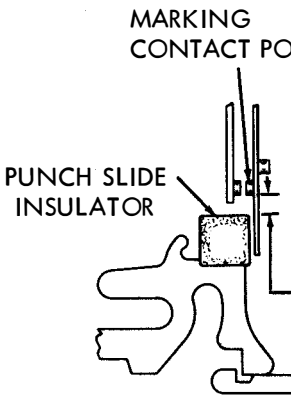
(C) SPACING CONTACT SPRINGS-PRELIMINARY
(APPLIES TO TRANSFER TYPE CONTACTS ONLY)
REQUIREMENT
MIN. 35 GRAMS
MAX. 50 GRAMS
TO MOVE EACH CONTACT SPRING AWAY FROM BACKSTOP.
TO ADJUST
BEND SPACING CONTACT SPRINGS.

NOTE:
TO INCREASE TENSION OF SPRING, IT MAY BE NECESSARY TO BEND BACKSTOP AWAY FROM SPRING, BEND SPRING, AND THEN RE-BEND BACKSTOP TO MEET REQUIREMENT OF SPACING CONTACT BACKSTOPS ADJUSTMENT ABOVE.

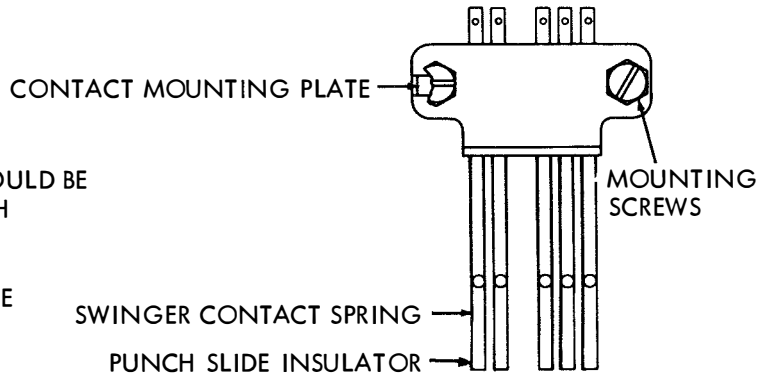
3.06 Code-reading Contact Mechanisms (Make-only and Transfer Types) continued

NOTE:
THE FOLLOWING CODE READING CONTACT ADJUSTMENTS SHOULD BE MADE WITH THE CONTACT ASSEMBLIES MOUNTED ON THE UNIT.





(A) CONTACT MOUNTING BRACKET
REQUIREMENT
(1) WITH FUNCTION CLUTCH DISENGAGED AND LATCHED, THERE SHALL BE MIN. 0.015 INCH CLEARANCE BETWEEN THE CLOSEST NORMALLY CLOSED CONTACT SPRING (MARKING CONTACT) AND PUNCH SLIDE INSULATOR.
(2) WITH LETTERS COMBINATION SELECTED AND PUNCH PINS IN THEIR UPPERMOST POSITION, THE SWINGER SHALL BE PARALLEL TO RIGHT END OF PUNCH SLIDE AND EXTEND BELOW ITS CENTER, AS GAUGED BY EYE.
TO ADJUST
POSITION CONTACT MOUNTING BRACKET WITH MOUNTING SCREWS LOOSENED.



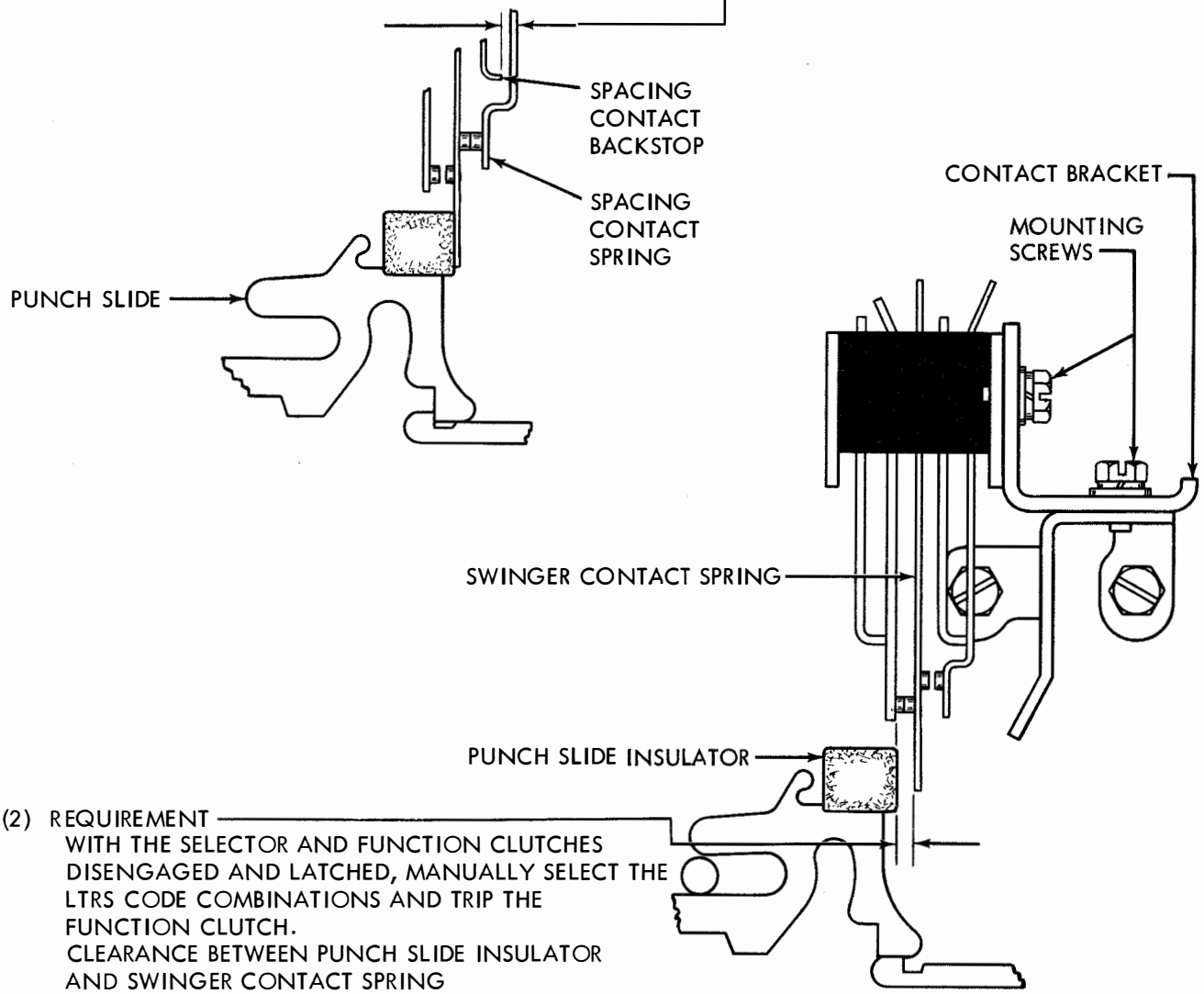
(B) CONTACT MOUNTING PLATE
REQUIREMENT
EACH SWINGER CONTACT SPRING SHOULD BE ALIGNED WITH ITS ASSOCIATED PUNCH SLIDE INSULATOR AS GAUGED BY EYE.
TO ADJUST
POSITION CONTACT MOUNTING PLATE WITH MOUNTING SCREWS LOOSENED.

3.07 Code-reading Contact Mechanism (Transfer Type)

CONTACT BRACKET-PRELIMINARY (APPLIES TO TRANSFER - TYPE CONTACTS ONLY)

(1) REQUIREMENT

MANUALLY SELECT BLANK CODE COMBINATION. ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS. SOME CLEARANCE BETWEEN SPACING CONTACT SPRING AND ITS BACKSTOP.
MAX. 0.008 INCH



(2) REQUIREMENT

WITH THE SELECTOR AND FUNCTION CLUTCHES DISENGAGED AND LATCHED, MANUALLY SELECT THE LTRS CODE COMBINATIONS AND TRIP THE FUNCTION CLUTCH.
CLEARANCE BETWEEN PUNCH SLIDE INSULATOR AND SWINGER CONTACT SPRING
MIN. 0.028 INCH

TO ADJUST

POSITION CONTACT BRACKET WITH ITS MOUNTING SCREWS LOOSENED TO MEET REQUIREMENT (1). TO PRY BRACKET TO LEFT, INSERT SCREWDRIVER BETWEEN BRACKET AND LEFT EDGE OF MOUNTING SCREWS; TO PRY BRACKET TO RIGHT, INSERT SCREWDRIVER BETWEEN BRACKET AND RIGHT EDGE OF MOUNTING SCREWS. CHECK REQUIREMENT (2). IF NOT MET, REFINE ADJUSTMENT.

3.08 Code-reading Contact Mechanism (Make-only Type)

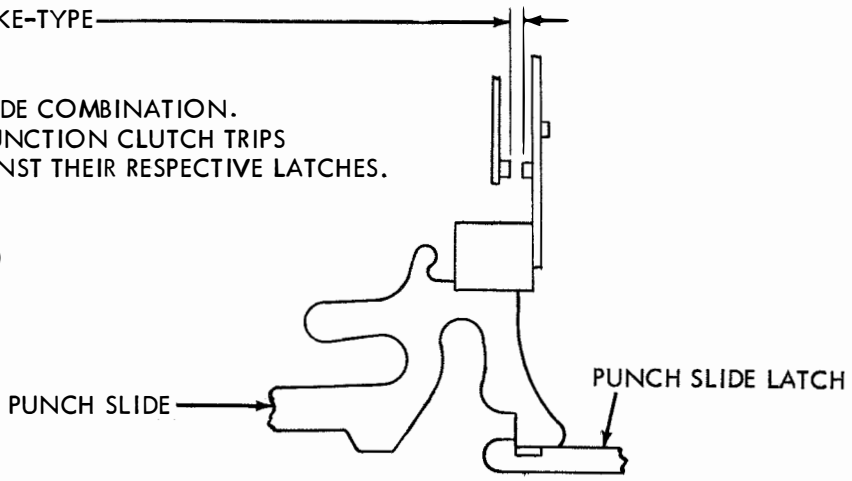
CONTACT BRACKET (APPLIES TO MAKE-TYPE CONTACTS ONLY)---PRELIMINARY

(1) REQUIREMENT

MANUALLY SELECT BLANK CODE COMBINATION. ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS AND PUNCH SLIDES ARE AGAINST THEIR RESPECTIVE LATCHES. GAP BETWEEN CONTACTS.

MIN. 0.010 INCH

MAX. 0.015 INCH (SEE NOTE)

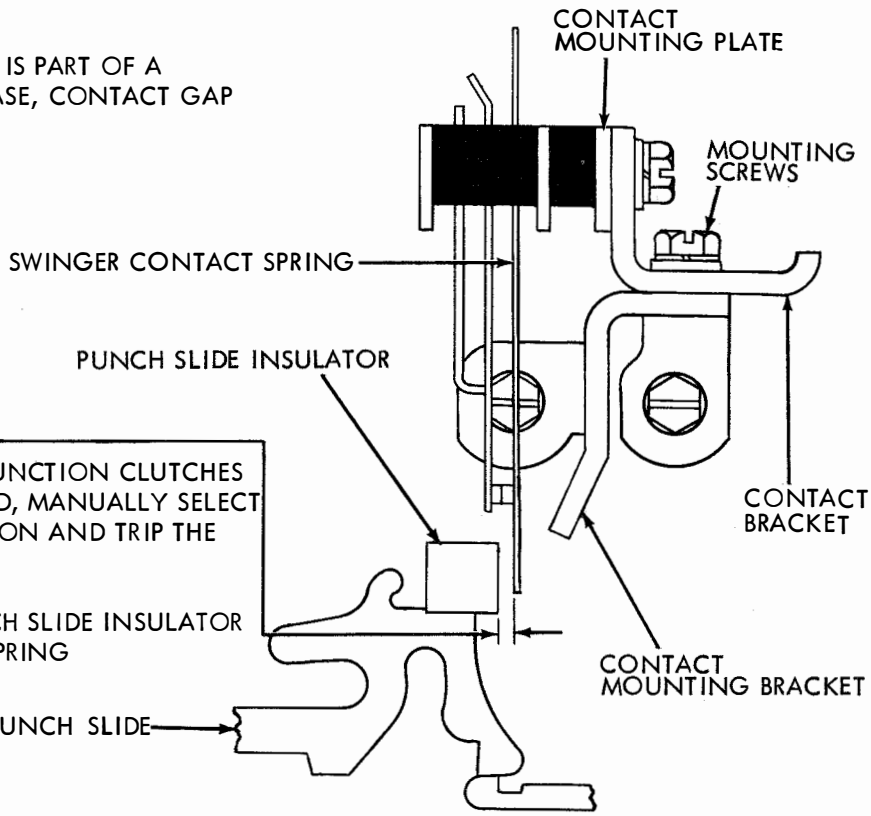


NOTE:

WHERE A TYPING REPERFORATOR IS PART OF A 28 PERFORATOR-TRANSMITTER-BASE, CONTACT GAP SHALL BE

MIN. 0.020 INCH

MAX. 0.025 INCH



(2) TO CHECK

WITH THE SELECTOR AND FUNCTION CLUTCHES DISENGAGED AND LATCHED, MANUALLY SELECT THE LTRS CODE COMBINATION AND TRIP THE FUNCTION CLUTCH.

REQUIREMENT

CLEARANCE BETWEEN PUNCH SLIDE INSULATOR AND SWINGER CONTACT SPRING

MIN. 0.028 INCH

TO ADJUST

POSITION CONTACT BRACKET WITH MOUNTING SCREWS FRICTION TIGHT. TO PRY BRACKET TO LEFT, INSERT SCREWDRIVER BETWEEN BRACKET AND LEFT EDGE OF MOUNTING SCREW; TO PRY BRACKET TO RIGHT, INSERT SCREWDRIVER BETWEEN BRACKET AND RIGHT EDGE OF MOUNTING SCREW.

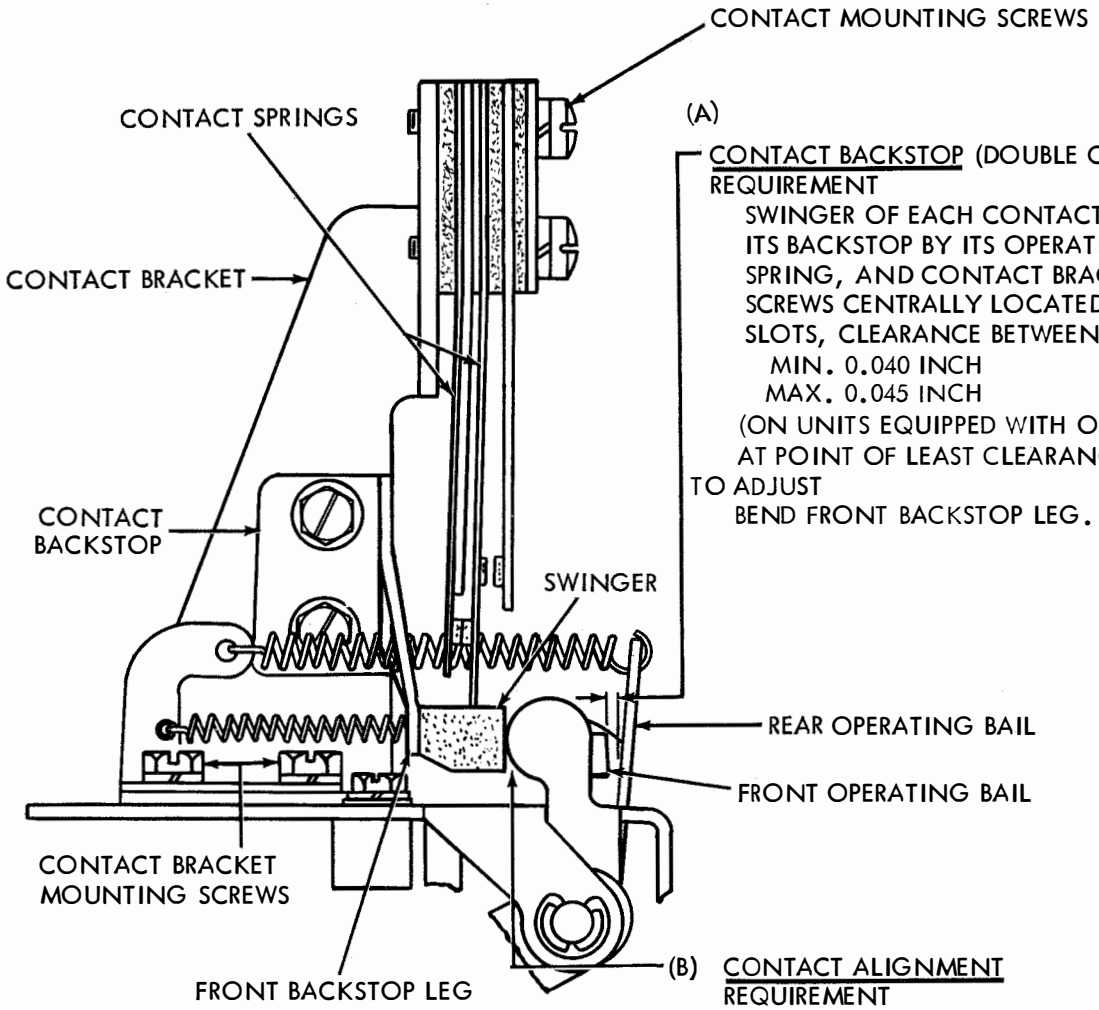
3.09 Auxiliary Timing Contact Mechanisms (Single-contact and Double-contact Types)

NOTE 1:

THERE ARE TWO TYPES OF TIMING CONTACT ASSEMBLIES, SINGLE AND DOUBLE. SINGLE CONTACT ASSEMBLIES HAVE A FRONT CONTACT ONLY, NO REAR CONTACT. IF UNIT IS EQUIPPED WITH A DOUBLE CONTACT ASSEMBLY, THE FOLLOWING ADJUSTMENTS APPLY TO BOTH FRONT AND REAR CONTACTS.

NOTE 2:

IN CASE OF SINGLE-CONTACT ASSEMBLY, MAKE CERTAIN CONTACT BRACKET MOUNTING SCREWS ARE CENTRALLY LOCATED IN ELONGATED SLOTS, AND PROCEED TO NEXT ADJUSTMENT.



(A)

CONTACT BACKSTOP (DOUBLE CONTACT ASSEMBLY)

REQUIREMENT

SWINGER OF EACH CONTACT HELD AGAINST ITS BACKSTOP BY ITS OPERATING BAIL AND SPRING, AND CONTACT BRACKET MOUNTING SCREWS CENTRALLY LOCATED IN ELONGATED SLOTS, CLEARANCE BETWEEN OPERATING BAILS

MIN. 0.040 INCH
MAX. 0.045 INCH

(ON UNITS EQUIPPED WITH ONE-CYCLE CAMS) AT POINT OF LEAST CLEARANCE.

TO ADJUST

BEND FRONT BACKSTOP LEG.

(B) CONTACT ALIGNMENT

REQUIREMENT

WHEN PARTS ARE IN ENGAGEMENT:

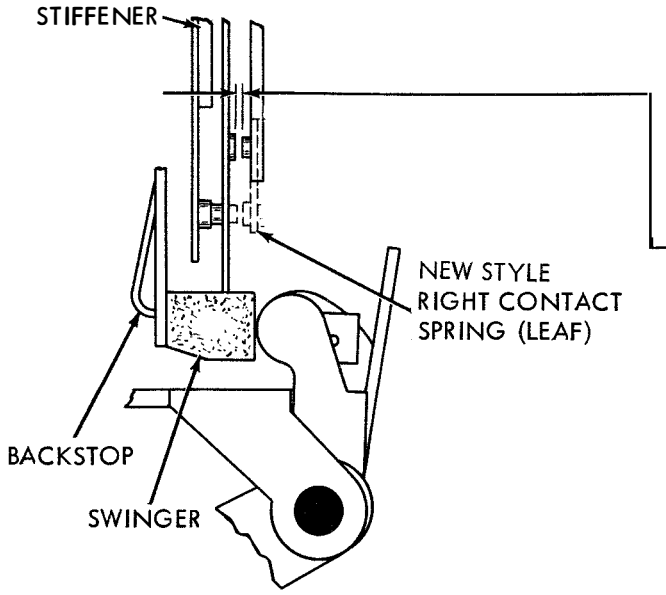
(1) OPERATING BAIL CENTRALLY LOCATED WITH RESPECT TO SWINGER.

(2) MATING CONTACT POINTS ALIGNED.

TO ADJUST

POSITION CONTACT SPRINGS WITH CONTACT MOUNTING SCREWS LOOSENED.

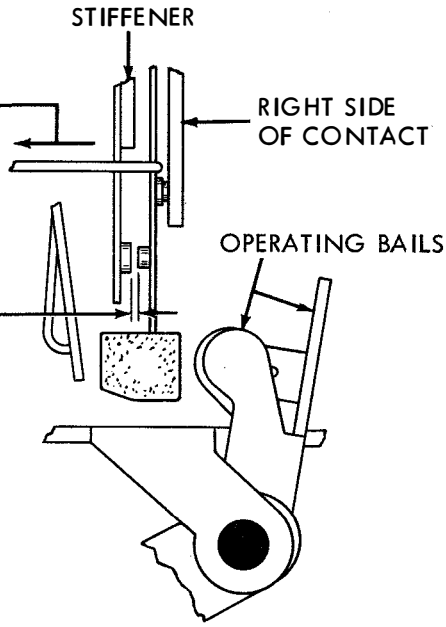
3.10 Auxiliary Timing Contact Mechanisms (Single-contact and Double-contact Types) continued

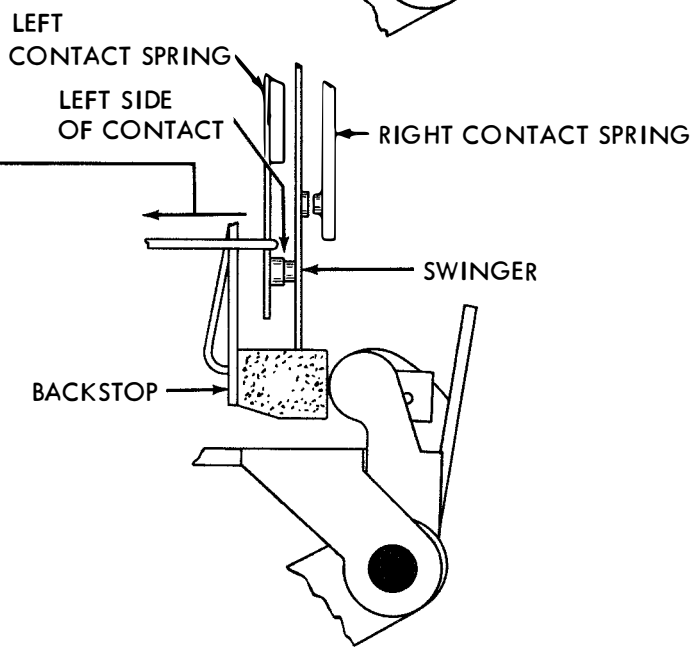


(A) RIGHT CONTACT GAP (NORMALLY CLOSED WHEN CONTACT ASSEMBLY IS REMOVED FROM UNIT).
REQUIREMENT
SWINGER HELD AGAINST ITS BACKSTOP.
GAP BETWEEN CONTACTS:
MIN. 0.020 INCH
MAX. 0.025 INCH
TO ADJUST
BEND RIGHT CONTACT SPRING.

(B) SWINGER CONTACT SPRING-PRELIMINARY
REQUIREMENT
OPERATING BAIL HELD AWAY FROM SWINGER:
MIN. 4-1/2 OZS.
MAX. 5-1/2 OZS.
TO OPEN RIGHT SIDE OF CONTACT
TO ADJUST
BEND SWINGER CONTACT SPRING. RECHECK RIGHT CONTACT GAP AND READJUST IF NECESSARY.

(C) LEFT CONTACT GAP (NORMALLY OPEN WHEN CONTACT ASSEMBLY IS REMOVED FROM UNIT)
REQUIREMENT
OPERATING BAIL HELD AWAY FROM SWINGER, GAP BETWEEN CONTACTS.
MIN. 0.020 INCH
MAX. 0.025 INCH
TO ADJUST
BEND STIFFENER.



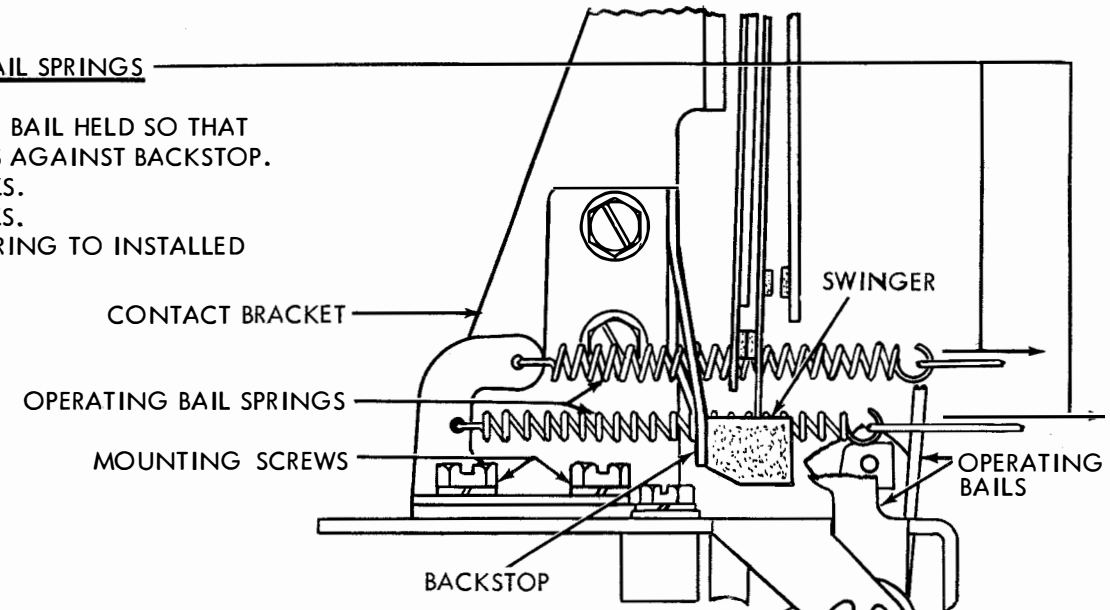


(D) LEFT CONTACT SPRING-PRELIMINARY
REQUIREMENT
SWINGER HELD AGAINST BACKSTOP BY ITS OPERATING BAIL AND SPRING.
MIN. 4-1/2 OZS.
MAX. 5-1/2 OZS.
TO OPEN LEFT SIDE OF CONTACT.
TO ADJUST
BEND LEFT CONTACT SPRING. RECHECK RIGHT CONTACT GAP AND LEFT CONTACT GAP, AND READJUST IF NECESSARY.

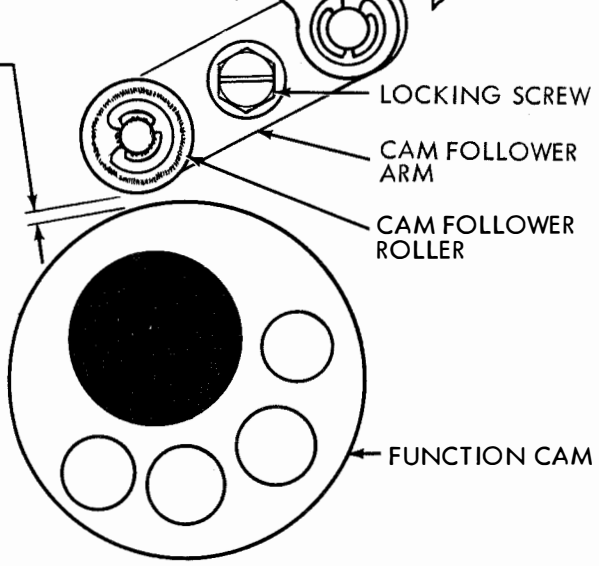
3.11 Auxiliary Timing Contact Mechanisms (Single-contact and Double-contact Types) continued

NOTE:
THE FOLLOWING TIMING CONTACT ADJUSTMENTS SHOULD BE MADE WITH CONTACT ASSEMBLY MOUNTED ON UNIT.

(A) OPERATING BAIL SPRINGS
REQUIREMENT
OPERATING BAIL HELD SO THAT SWINGER IS AGAINST BACKSTOP.
MIN. 7 OZS.
MAX. 12 OZS.
TO PULL SPRING TO INSTALLED LENGTH.



(B)
CONTACT BRACKET-PRELIMINARY (FOR UNITS EQUIPPED WITH ONE-CYCLE CAMS)
LOOSEN LOCKING SCREW. POSITION CAM FOLLOWER ARM, BY MEANS OF ITS ELONGATED MOUNTING HOLE, TO ITS MINIMUM LENGTH ON OPERATING BAIL. TIGHTEN LOCKING SCREW.
REQUIREMENT
SELECTOR AND FUNCTION CLUTCHES DISENGAGED AND LATCHED. CLEARANCE BETWEEN CAM FOLLOWER ROLLER AND FUNCTION CAM.
MIN. 0.050 INCH
MAX. 0.055 INCH
TO ADJUST
POSITION CONTACT BRACKET WITH MOUNTING SCREWS LOOSENED.



NOTE:
ON UNITS EQUIPPED WITH DOUBLE CONTACT ASSEMBLIES, RECHECK CONTACT BACKSTOP ADJUSTMENT. IF REQUIREMENT IS NOT MET, REFINE CONTACT BRACKET ADJUSTMENT.

3.12 LTRS-FIGS Contact Mechanism (Later Design)

(For Earlier Design see Par. 4.05)

NOTE:
TO FACILITATE CONTACT SPRING ADJUSTMENT, REMOVE CONTACT ASSEMBLY FROM UNIT.

(A) MIDDLE CONTACT SPRING

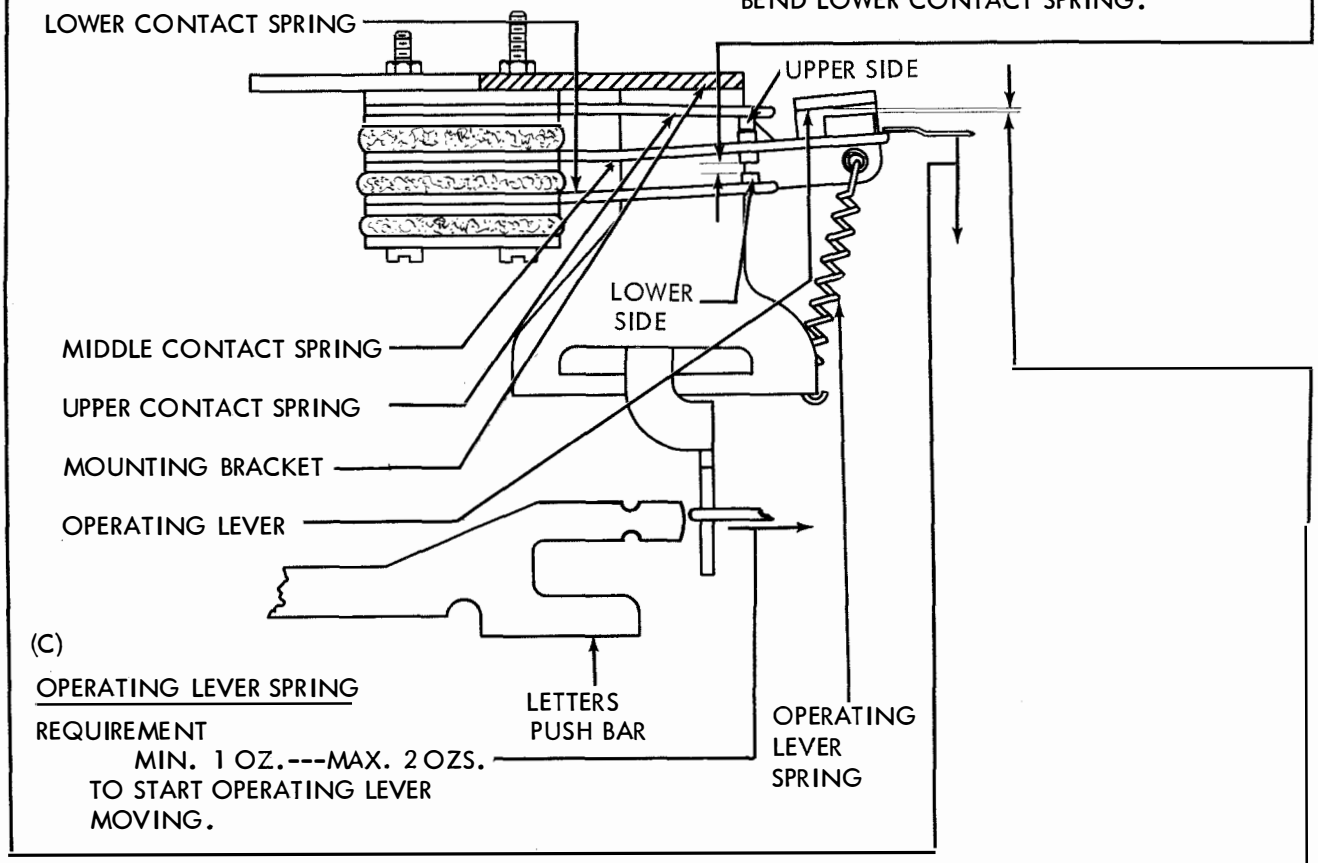
REQUIREMENT
MIN. 25 GRAMS---MAX. 40 GRAMS TO OPEN UPPER SIDE OF CONTACT.

TO ADJUST
BEND MIDDLE CONTACT SPRING.

(B) LOWER CONTACT SPRING

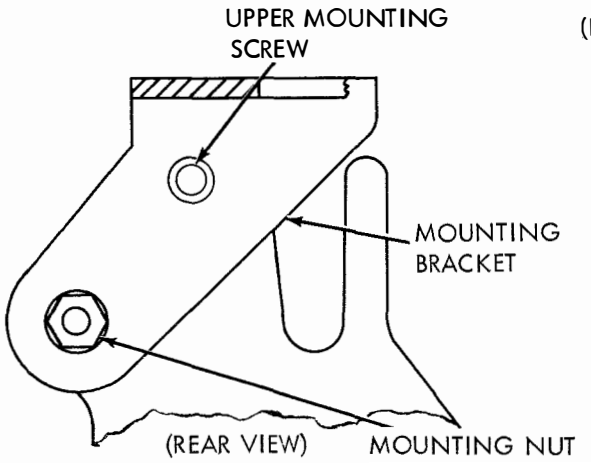
REQUIREMENT
WITH UPPER SIDE OF CONTACT CLOSED:
MIN. 0.012 INCH---MAX. 0.020 INCH GAP AT LOWER SIDE OF CONTACT.

TO ADJUST
BEND LOWER CONTACT SPRING.



(C) OPERATING LEVER SPRING

REQUIREMENT
MIN. 1 OZ.---MAX. 2 OZS. TO START OPERATING LEVER MOVING.



(D) MOUNTING BRACKET

NOTE: CONTACT ASSEMBLY SHOULD BE MOUNTED ON UNIT BEFORE THIS ADJUSTMENT IS MADE.

REQUIREMENT
WITH UNIT IN LETTERS CONDITION AND FUNCTION CLUTCH DISENGAGED:
MIN. 0.005 INCH---MAX. 0.015 INCH BETWEEN OPERATING LEVER AND INSULATOR ON MIDDLE CONTACT SPRING.

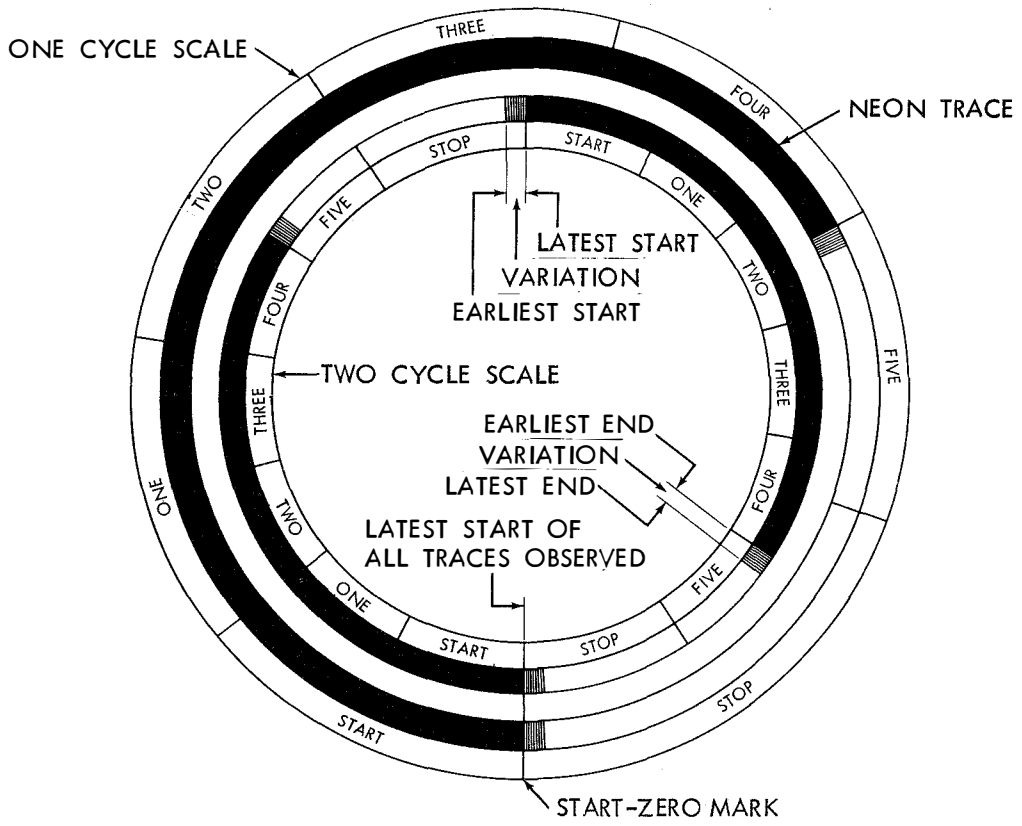
TO ADJUST
WITH MOUNTING NUT AND UPPER MOUNTING SCREW LOOSENED, POSITION MOUNTING BRACKET.

3.13 Contact Timing Measurements (To Zero Test Set)

THE FOLLOWING TESTS REQUIRE THE USE OF A TELETYPE SIGNAL DISTORTION TEST SET. THEY SHOULD BE MADE AFTER THE CONTACT ASSEMBLIES HAVE BEEN ADJUSTED AS INSTRUCTED ON THE PRECEDING PAGES. WHERE REQUIREMENTS ARE NOT MET, DESIGNATED ADJUSTMENTS MUST BE REFINED, AND/OR RELATED LENGTHS MAY HAVE TO BE CHANGED TO MEET TIMING REQUIREMENTS.

TESTS ON 600 OPERATION PER MINUTE UNITS OR LOWER SHOULD BE MADE WITH THE PERFORATOR OR REPERFORATOR AND THE TEST SET OPERATING AT 600 O.P.M.
TESTS ON 900 O.P.M. UNITS USED ON THE AUTOMATIC SEND-RECEIVE (ASR) SET SHOULD BE MADE WITH THE TEST SET OPERATING AT 600 O.P.M. AND USING KEYBOARD TRANSMISSION.
TESTS ON 1200 O.P.M. UNITS SHOULD BE MADE WITH THE REPERFORATOR OPERATING AT 1200 O.P.M. AND THE TEST SET EQUIPPED WITH A TWO CYCLE SCALE AND OPERATING AT 600 O.P.M.

OBSERVATIONS ARE TO BE MADE OF A NEON TRACE ON THE GRADUATED DISC OF A TEST SET. TRACE WILL HAVE TENDENCY TO "JUMP"; THAT IS, IT WILL NOT BE STEADY ENOUGH TO BE ACCURATELY MEASURED. VARIATION MAY BE AS HIGH AS TEN DIVISIONS ON SCALE. MINIMUM SIGNAL LENGTH IS MEASURED BETWEEN LATEST START AND EARLIEST END OF ALL TRACES. MAXIMUM SIGNAL LENGTH IS MEASURED BETWEEN EARLIEST START AND LATEST END OF ALL TRACES.



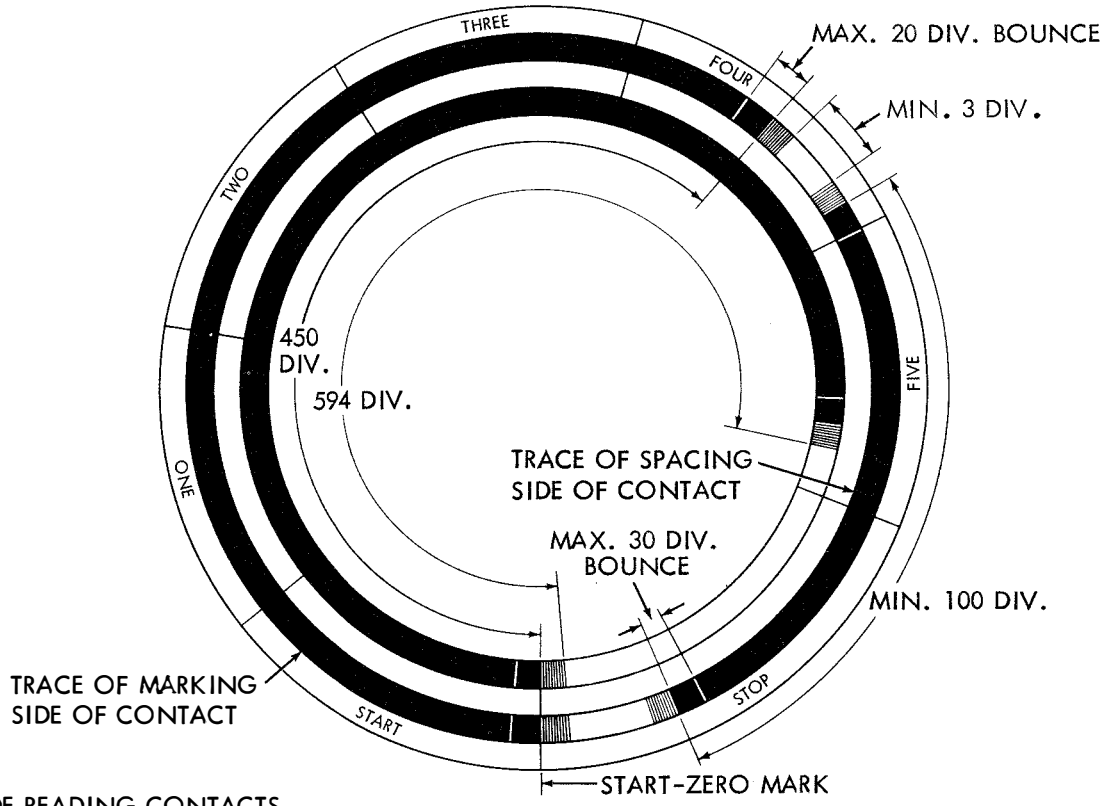
TO ZERO TEST SET

CONNECT NEON TRACE TO NO. 1 CODE READING CONTACT (REARMOST). WITH UNIT RECEIVING LETTERS CODE COMBINATIONS, OBSERVE AND NOTE POINT AT WHICH TRACE ENDS. TRACES WILL JUMP AS DESCRIBED ABOVE; NOTE EARLIEST END OF TRACES. REPEAT FOR REMAINING CONTACTS. OF ALL TRACES OBSERVED, CHOOSE ONE THAT STARTS THE LATEST. SET "START-ZERO" MARK OF SCALE AT LATEST START OF CHOSEN TRACE. RECORD EARLIEST END OF CHOSEN TRACE FOR FUTURE ADJUSTMENT REFERENCES.

3.14 Contact-timing Measurements for Code-reading Contacts

NOTE:

TEST PROCEDURES ON THIS PAGE APPLY TO 600 O.P.M. UNITS OR LOWER ONLY.



CODE READING CONTACTS

(1) ZERO TEST SET AS PREVIOUSLY INSTRUCTED.

(2) CONNECT NEON TRACE TO MARKING SIDE OF A CODE READING CONTACT (NORMALLY OPEN WHEN UNIT IS IN IDLE CONDITION). WITH UNIT RECEIVING CONTINUOUS LETTERS CODE COMBINATIONS, OBSERVE TRACE. REPEAT FOR ALL FIVE CONTACTS.

REQUIREMENTS

A. SIGNAL LENGTH FOR EACH CONTACT TRACE AND COMBINED CONTACT TRACES.
MIN. 450 DIVISIONS
MAX. 594 DIVISIONS

B. BOUNCE SHOULD END WITHIN MAX. OF 20 DIVISIONS OF EARLIEST START AND LATEST END OF ALL TRACES.

(3) (APPLIES TO TRANSFER TYPE CONTACTS ONLY) CONNECT NEON TRACE TO BOTH SIDES OF CONTACT. WITH UNIT RECEIVING LETTERS CODE COMBINATIONS, OBSERVE TRACE.

REQUIREMENTS

A. BREAK IN TRACE INDICATING BREAK BEFORE MAKE.
MIN. 3 DIVISIONS

B. SIGNAL LENGTH OF SPACING SIDE OF CONTACT
MIN. 100 DIVISIONS

C. BOUNCE SHOULD END WITHIN 30 DIVISIONS OF EARLIEST START AND LATEST END OF TRACE.

(4) TO ADJUST

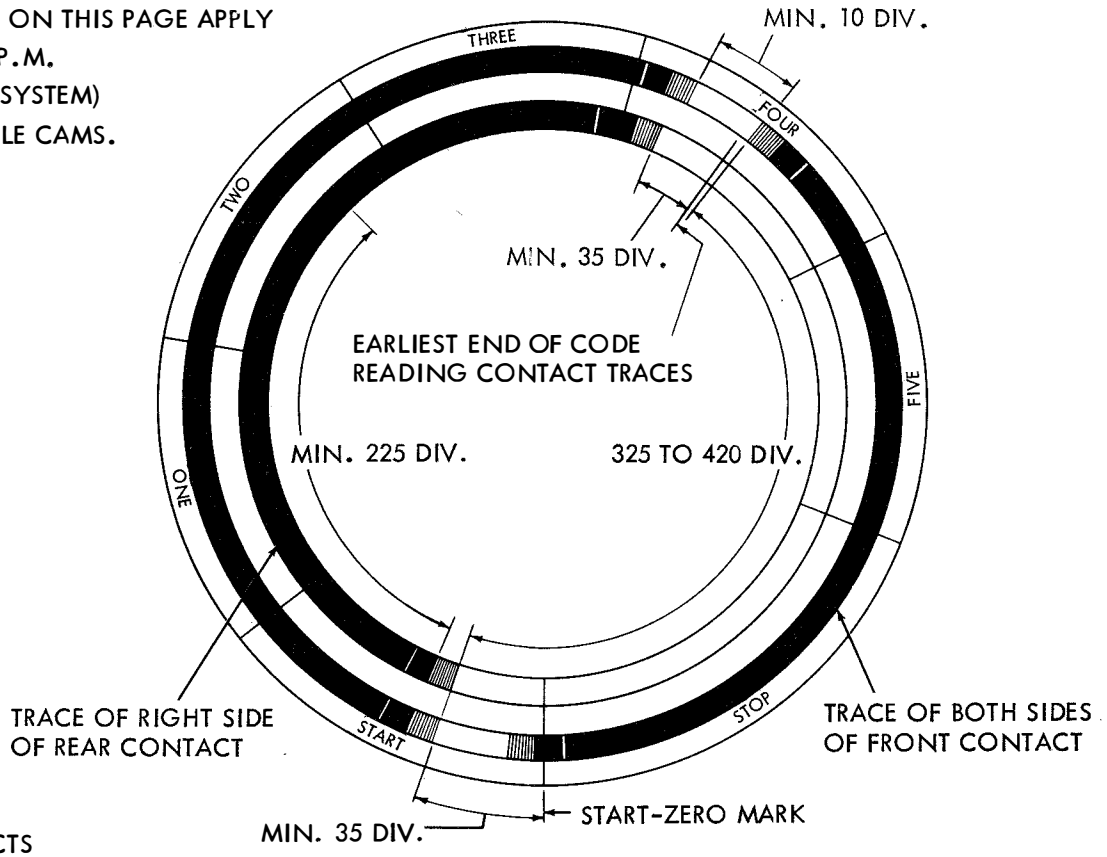
A. IF REQUIREMENTS UNDER (2) A., (3) A., OR (3) B. ARE NOT MET, REFINE CONTACT BRACKET ADJUSTMENT. WHEN REFINING (2) A., ATTEMPT TO ADJUST TOWARD MAXIMUM SIGNAL LENGTH.

B. IF BOUNCE REQUIREMENTS UNDER (2) B. AND (3) C. ARE NOT MET, REFINE MARKING AND SWINGER CONTACT SPRING AND SPACING CONTACT SPRING TENSIONS.

C. IF ANY REFINEMENTS ARE NECESSARY, REPEAT COMPLETE TEST PROCEDURE.

3.15 Contact-timing Measurements for Auxiliary Timing Contacts

TEST PROCEDURES ON THIS PAGE APPLY ONLY TO 600 O.P.M. UNITS (BELL 82B1 SYSTEM) USING ONE-CYCLE CAMS.



TIMING CONTACTS

(1) ZERO TEST SET AS PREVIOUSLY DESCRIBED.

(2) REAR CONTACT

A. CONNECT NEON TRACE TO RIGHT SIDE OF REAR CONTACT (NORMALLY OPEN WHEN UNIT IS IN IDLE CONDITION). WITH UNIT RECEIVING LETTERS CODE COMBINATIONS, OBSERVE TRACE.
REQUIREMENTS
1. EARLIEST START MIN. OF 35 DIVISIONS AFTER START ZERO MARK.
2. LATEST END MIN. OF 35 DIVISIONS BEFORE EARLIEST END OF CODE READING CONTACT TRACES RECORDED WHEN ZEROING TEST SET.
3. MIN. TRACE LENGTH 225 DIVISIONS.
4. BOUNCE SHOULD END WITHIN MAX. 5 DIVISIONS OF START AND END OF ANY TRACE.

(3) FRONT CONTACT

A. CONNECT NEON TRACE TO BOTH SIDES OF FRONT CONTACT. WITH UNIT RECEIVING LETTERS CODE COMBINATIONS, OBSERVE TRACE.
REQUIREMENTS
1. BREAK IN TRACE TO INDICATE BREAK BEFORE MAKE.
MIN. 10 DIVISIONS
2. BETWEEN EARLIEST STARTS OF TRACES OF RIGHT AND LEFT)NORMALLY OPEN AND NORMALLY CLOSED) SIDES OF CONTACT.
MIN. 325 DIVISIONS---MAX. 420 DIVISIONS
3. BOUNCE SHOULD END WITHIN MAX. 5 DIVISIONS OF EARLIEST START AND LATEST END OF ANY TRACE.

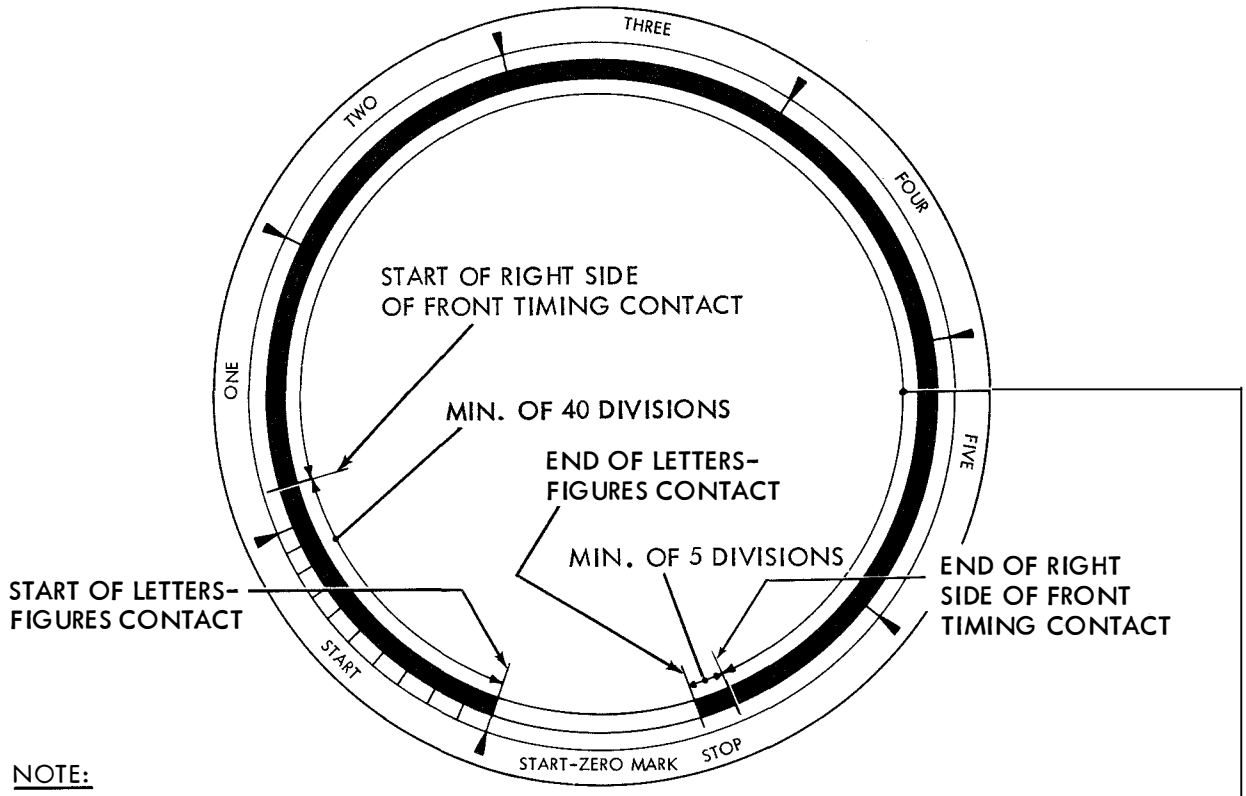
(4) TO ADJUST

A. IF TIMING REQUIREMENTS UNDER (2) A. 1., 2., 3., AND (3) A. 1. AND 2. ARE NOT MET, REFINE CONTACT BRACKET ADJUSTMENT AND/OR RIGHT CONTACT GAP, LEFT CONTACT GAP, SWINGER CONTACT SPRING, AND LEFT CONTACT SPRING ADJUSTMENTS.

B. IF BOUNCE REQUIREMENTS UNDER (2) A. 4. AND (3) A. 3. ARE NOT MET, REFINE SWINGER CONTACT SPRING AND LEFT CONTACT SPRING TENSIONS.

C. IF ANY REFINEMENTS ARE NECESSARY, REPEAT COMPLETE TEST PROCEDURE.

3.16 Contact-timing Measurements for LTRS-FIGS Contacts (Later Design)
(For Earlier Design see Par. 4.05)



NOTE:

IF UNIT IS EQUIPPED WITH CODE READING AND/OR TIMING CONTACTS, TEST IS TO BE MADE AFTER INSTALLATION AND ADJUSTMENT OF THESE CONTACTS.

LETTERS-FIGURES COTACT TEST

TO CHECK

CONNECT CABLE LEADS OF LETTERS-FIGURES CONTACT TO NEON TRACE LAMP OF SIGNAL DISTORTION TEST SET. SET CONTROL SWITCHES OF TEST SET TO FOLLOWING POSITIONS: (1) VIEW-TRANSMIT SWITCH TO VIEW; (2) LINE-DIST. SWITCH TO LINE; AND MOTOR SWITCH TO ON. ALTERNATELY SELECT LETTERS (12345) AND FIGURES (12-45). SET START-ZERO MARK OF TEST-SET SCALE AT START OF CONTACT TRACE. CONNECT RIGHT SIDE OF FRONT TIMING CONTACT (PROBE) TO NEON TRACE LAMP; RECORD START AND END OF TRACE. RECONNECT LETTERS-FIGURES CONTACT TO TRACE LAMP AND ALTERNATELY SELECT LETTERS AND FIGURES.

REQUIREMENT

(1) NO CHATTER OR BOUNCE OF LETTERS-FIGURES CONTACT DURING TIME WHEN TIMING CONTACT IS CLOSED.

(2) TRACE OF LETTERS-FIGURES CONTACT START MIN. OF 40 DIVISIONS BEFORE START OF TRACE OF TIMING CONTACT AND END MIN. OF 5 DIVISIONS AFTER END OF TIMING CONTACT.

TO ADJUST

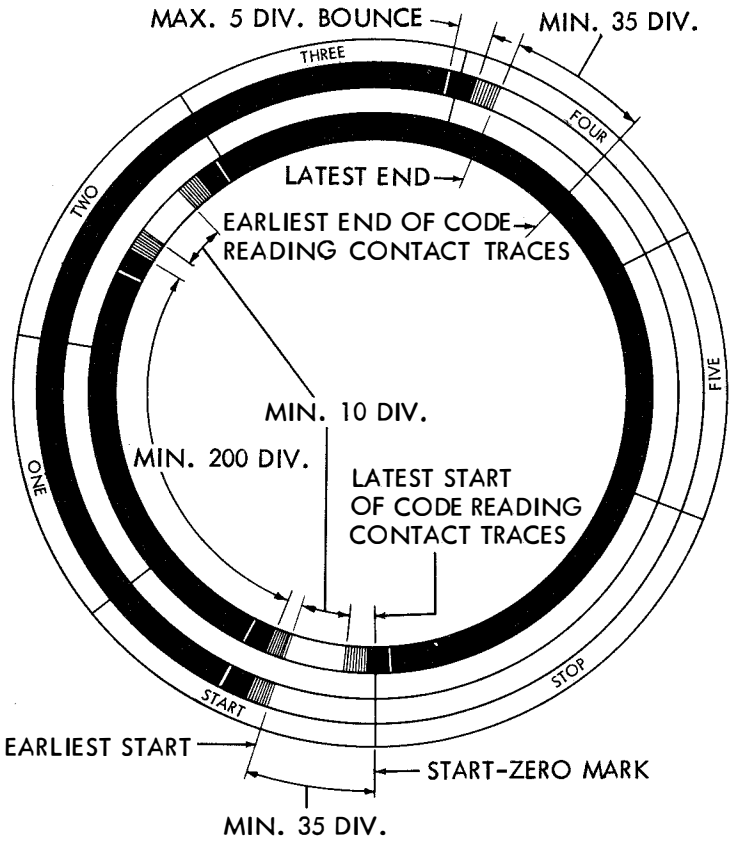
(1) IF (1) OF REQUIREMENT IS NOT MET, REFINE MIDDLE AND LOWER CONTACT SPRING ADJUSTMENTS.

(2) IF (2) OF REQUIREMENT IS NOT MET, REFINE MOUNTING BRACKET ADJUSTMENT.

(3) IF TEST REQUIREMENTS ARE NOT MET, REFINE LTRS-FIGS CONTACT MECHANISM ADJUSTMENTS.

3.17 Contact Timing Measurements (To Zero Test Set)

NOTE:
TEST PROCEDURES ON THIS PAGE DO NOT APPLY TO "BELL SYSTEMS".



TIMING CONTACTS

(1) ZERO TEST SET AS PREVIOUSLY DESCRIBED.

(2) FRONT CONTACT

A. CONNECT NEON TRACE TO RIGHT SIDE OF FRONT CONTACT (NORMALLY OPEN WHEN UNIT IS IN IDLE CONDITION). WITH UNIT RECEIVING CONTINUOUS LETTERS CODE COMBINATIONS, OBSERVE TRACE.
REQUIREMENTS
1. LATEST END MIN. OF 35 DIVISIONS BEFORE EARLIEST END OF CODE READING CONTACT TRACES.
2. EARLIEST START MIN. OF 35 DIVISIONS AFTER LATEST START OF CODE READING CONTACT TRACES.
3. MIN. TRACE LENGTH 200 DIVISIONS.
4. BOUNCE SHOULD END WITHIN MAX. 5 DIVISIONS OF EARLIEST START AND LATEST END OF ANY TRACE.

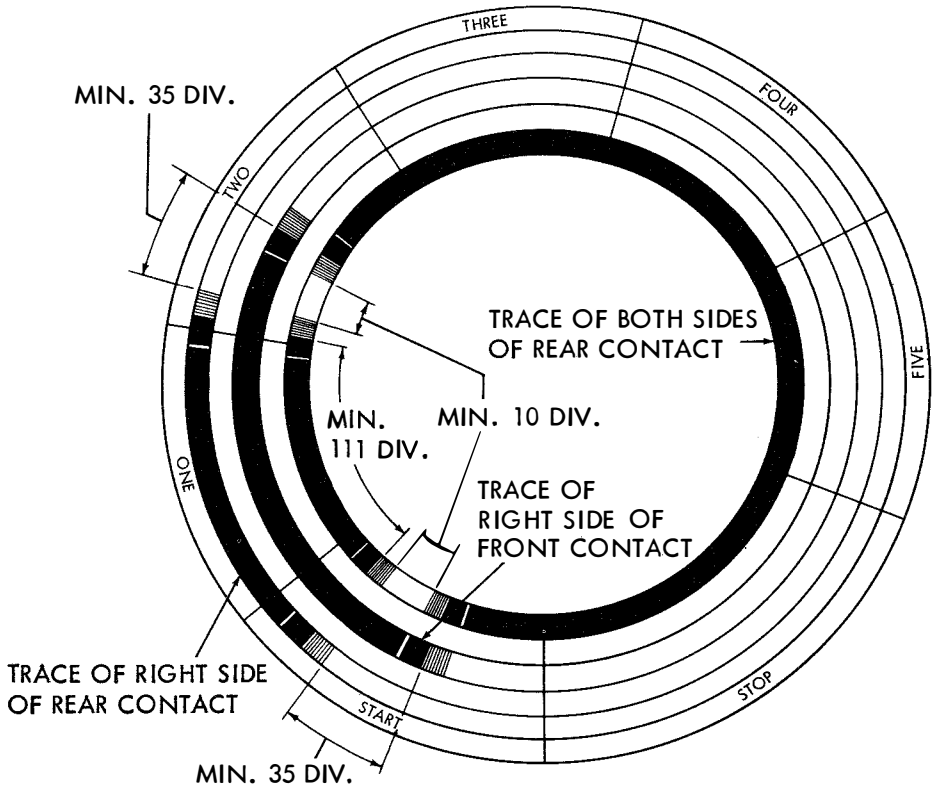
B. RECORD LATEST START AND EARLIEST END OF TRACE.

C. (APPLIES ONLY IF COMPLETE TRANSFER CONTACT IS USED). CONNECT NEON TRACE TO BOTH SIDES OF FRONT CONTACT. OBSERVE TRACE.
REQUIREMENT
1. BREAK IN TRACE AT TWO PLACES TO INDICATE BREAK BEFORE MAKE. MIN. 10 DIVISIONS

(TEST CONTINUED ON NEXT PAGE)

3.18 Contact Timing Measurements (To Zero Test Set) continued

NOTE:
TEST PROCEDURES ON THIS PAGE DO NOT APPLY TO "BELL SYSTEMS".



(3) REAR CONTACT

A. CONNECT NEON TRACE TO RIGHT SIDE OF REAR CONTACT (NORMALLY OPEN WHEN UNIT IS IN IDLE CONDITION). WITH UNIT RECEIVING LETTERS CODE COMBINATIONS, OBSERVE TRACE.
REQUIREMENTS
1. LATEST END OF TRACE MIN. OF 35 DIVISIONS BEFORE EARLIEST END OF TRACE OF RIGHT SIDE OF FRONT CONTACT RECORDED IN (2) B.
2. MIN. TRACE LENGTH 111 DIVISIONS.
3. EARLIEST START OF TRACE MIN. OF 35 DIVISIONS AFTER LATEST START OF TRACE OF RIGHT SIDE OF FRONT CONTACT RECORDED IN (2) B.
4. BOUNCE SHOULD END WITHIN MAX. 5 DIVISIONS OF EARLIEST START AND LATEST END OF ANY TRACE.

B. (APPLIES ONLY IF COMPLETE TRANSFER CONTACT IS USED). CONNECT NEON TRACE TO BOTH SIDES OF REAR CONTACT. OBSERVE TRACE.
REQUIREMENTS
1. BREAK IN TRACE AT TWO PLACES TO INDICATE BREAK BEFORE MAKE. MIN. 10 DIVISIONS

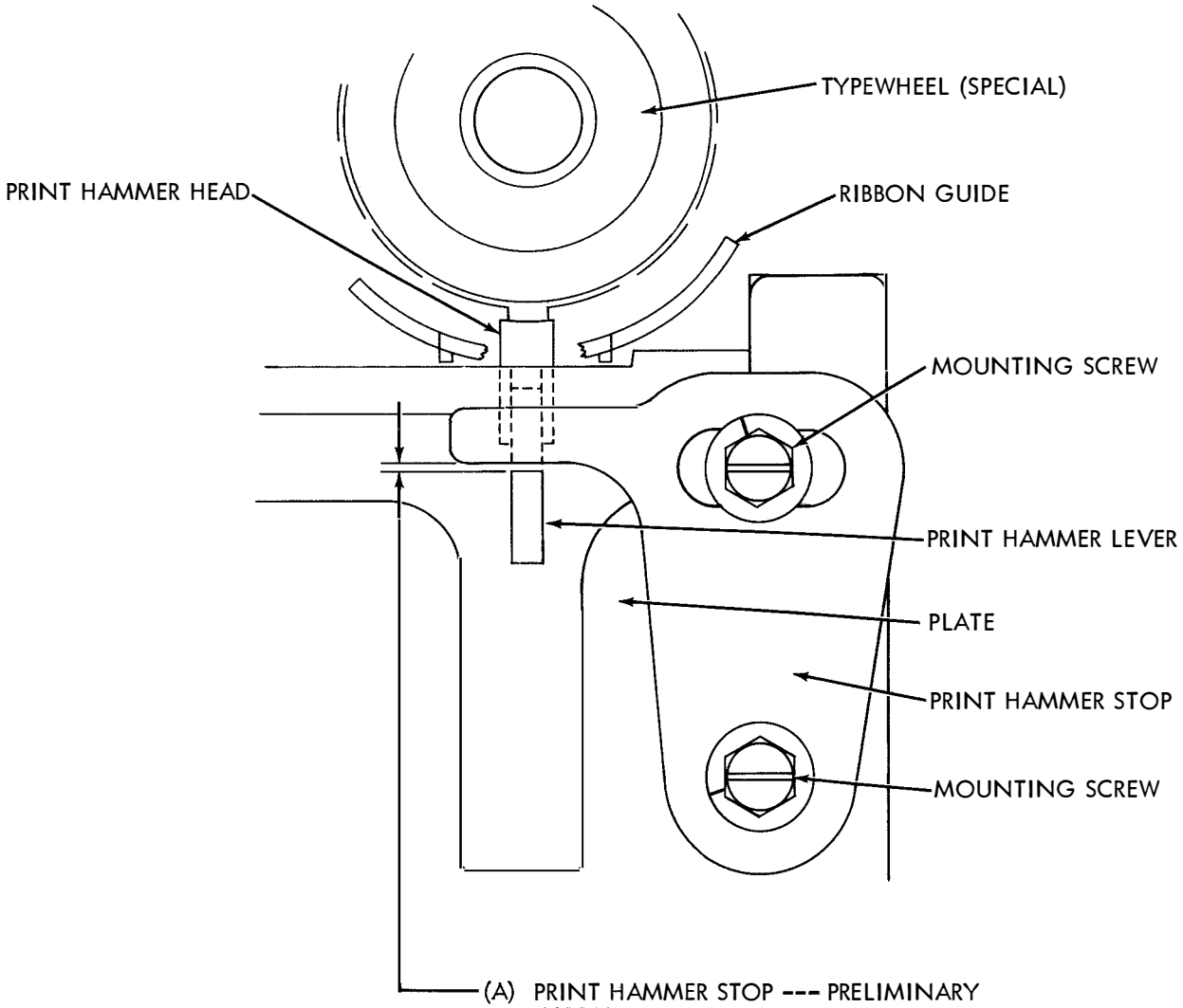
(4) TO ADJUST

A. IF TRACE LENGTHS UNDER (2) A. 3. AND (3) A. 2. ARE BOTH SHORT, REFINE CONTACT BRACKET ADJUSTMENT. IF ONLY ONE TRACE IS SHORT, REFINE CONTACT BACKSTOP ADJUSTMENT AND CHECK RIGHT CONTACT GAP, LEFT CONTACT GAP, SWINGER CONTACT SPRING, AND LEFT CONTACT SPRING ADJUSTMENTS.

B. IF BREAK BEFORE MAKE REQUIREMENTS UNDER (2) C. 1. AND (3) B. 1. ARE NOT MET, REFINE RIGHT CONTACT GAP, LEFT CONTACT GAP, SWINGER CONTACT SPRING, AND LEFT CONTACT SPRING ADJUSTMENTS.

C. IF ANY REFINEMENTS ARE NECESSARY, REPEAT COMPLETE TEST PROCEDURE.

3.19 Print Suppression on Function Mechanism



(A) PRINT HAMMER STOP --- PRELIMINARY

REQUIREMENT

WITH HEAD OF PRINT HAMMER AGAINST CHARACTER ON TYPEWHEEL MIN. SOME --- MAX. 0.010 INCH CLEARANCE BETWEEN PRINT HAMMER LEVER AND PRINT HAMMER STOP.

TO ADJUST

WITH MOUNTING SCREWS LOOSENED POSITION PRINT HAMMER STOP BY MEANS OF ITS ELONGATED UPPER HOLE.

(B) PRINT HAMMER STOP --- FINAL

REQUIREMENT

WITH UNIT OPERATING UNDER POWER, THE AMOUNT OF SMUDGE SHALL BE HELD TO A MINIMUM WHERE PRINT SUPPRESSION IS REQUIRED.

TO ADJUST

REFINE PRINT HAMMER STOP (PRELIMINARY) ADJUSTMENT.

NOTE: UNLESS OTHERWISE SPECIFIED, THE FOLLOWING BACKSPACE ADJUSTMENTS APPLY TO BOTH THE CHADLESS AND FULLY PERFORATED TAPE MECHANISMS.

3.20 Manual and Power Drive Backspace Mechanism (For Chadless Tape)

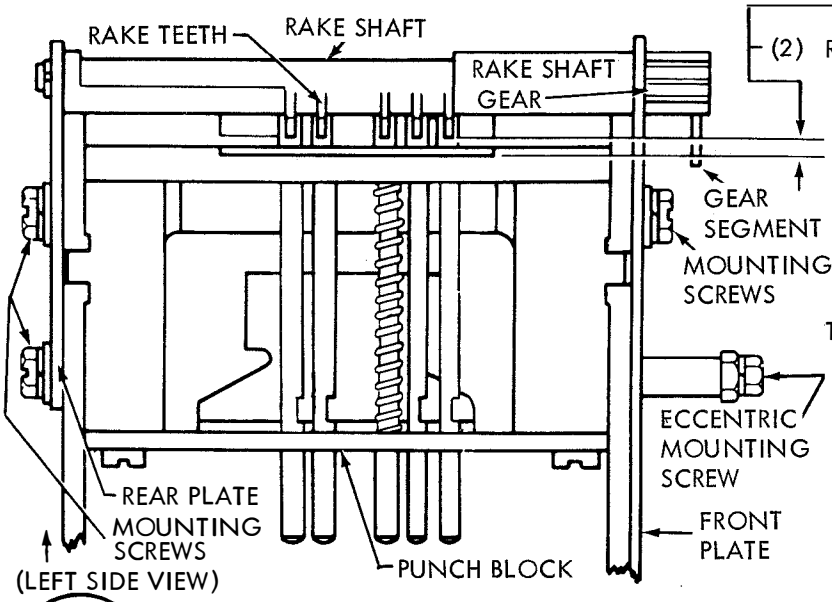
RAKE (A)

(1) REQUIREMENT

WITH ROTATIONAL PLAY IN RAKE TAKEN UP TO LEFT, BOTTOM SURFACE OF RAKE TEETH SHOULD BE WITHIN 0.040 INCH OF THE SAME VERTICAL PLANE AS LEFT SIDE OF PUNCH BLOCK OR SLIGHTLY TO THE RIGHT.

TO ADJUST

REMOVE TWO MOUNTING SCREWS FROM REAR PLATE. POSITION RAKE SHAFT GEAR IN RELATION TO GEAR SEGMENT. REPLACE MOUNTING SCREWS.



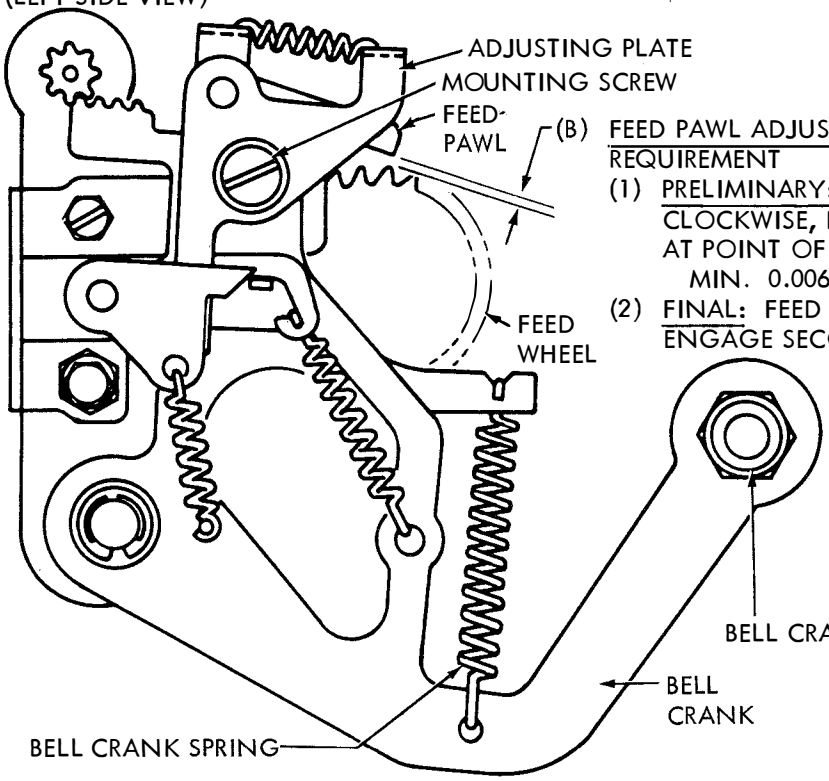
(2) REQUIREMENT

WITH BELLCRANK SPRING UNHOOKED AND RAKE IN OPERATED POSITION, CLEARANCE BETWEEN BOTTOM OF RAKE TEETH AND LOWER SURFACE OF TAPE SLOT:

MIN. 0.007 INCH
MAX. 0.011 INCH
(CHECK AT NO. 1 & 5 PINS.)

TO ADJUST

LOOSEN THREE MOUNTING SCREWS AND ECCENTRIC MOUNT SCREW UNTIL FRICTION TIGHT. POSITION FRONT AND REAR PLATES, WITH BELL CRANK HANDLE FULLY DEPRESSED, UNTIL LEFT EDGES OF BOTH PLATES ARE APPROXIMATELY IN LINE WITH VERTICAL PLANE OF PUNCH BLOCK AND CLEARANCE MEETS THE REQUIREMENT. TIGHTEN MOUNTING SCREWS AND REPLACE BELL CRANK SPRING.



(B) FEED PAWL ADJUSTING PLATE

REQUIREMENT

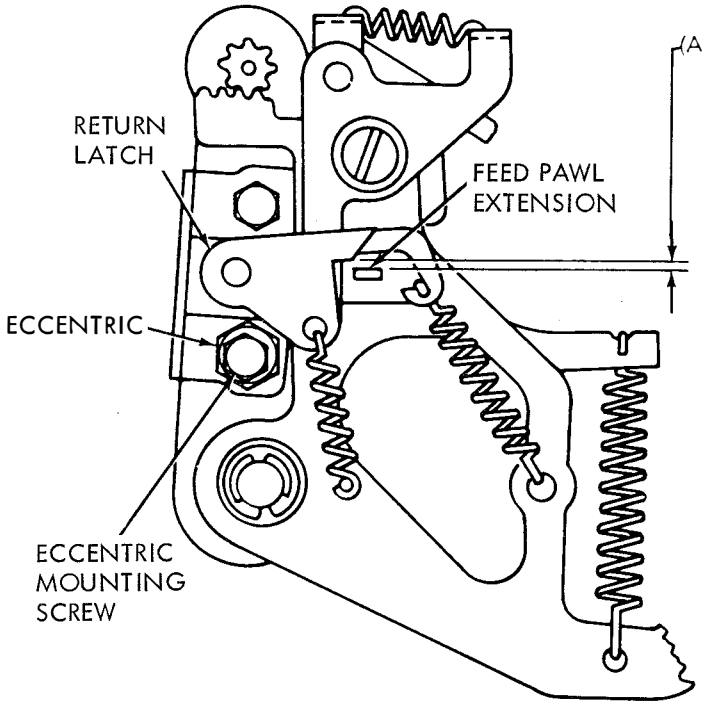
(1) PRELIMINARY: WITH BELL CRANK ROTATED CLOCKWISE, FEED PAWL SHALL MISS FIRST TOOTH AT POINT OF LEAST CLEARANCE BY
MIN. 0.006 INCH --- MAX. 0.040 INCH

(2) FINAL: FEED PAWL SHALL MISS FIRST TOOTH AND ENGAGE SECOND TOOTH BY AT LEAST 1/2 OF RIGHT ENGAGING SURFACE OF FEED PAWL (AS GAUGED BY EYE WHEN FEED PAWL FIRST CONTACTS RATCHET TOOTH)

TO ADJUST

POSITION ADJUSTING PLATE WITH MOUNTING SCREW FRICTION TIGHT.

3.21 Manual and Power Drive Backspace Mechanism (For Chadless Tape) continued



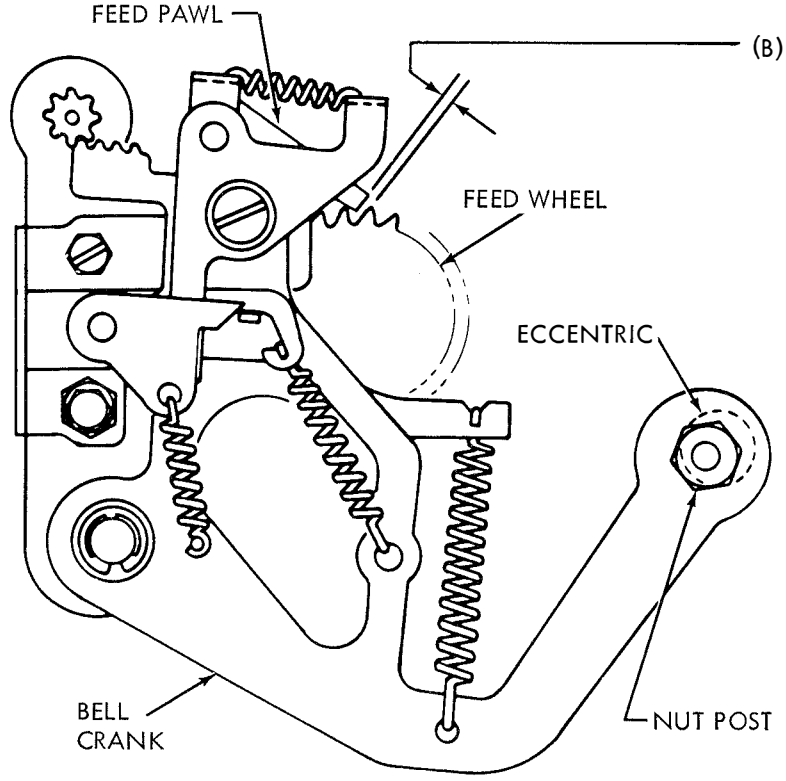
(A) RETURN LATCH REQUIREMENT

BACKSPACE MECHANISM IN UNOPERATED POSITION. CLEARANCE BETWEEN RETURN LATCH AND FEED PAWL EXTENSION

MIN. 0.004 INCH
MAX. 0.020 INCH

TO ADJUST

ADJUST ECCENTRIC WITH MOUNTING SCREW FRICTION TIGHT.



(B) FEED PAWL ECCENTRIC

MANUAL BACKSPACE (PRELIMINARY) REQUIREMENT

WITH THE BACKSPACE BELL CRANK IN ITS OPERATED POSITION AND THE FEED WHEEL DETENTED BACK ONE SPACE.

MIN. SOME---MAX. 0.003 INCH CLEARANCE BETWEEN THE FEED WHEEL RATCHET TOOTH AND THE BACKSPACE FEED PAWL.

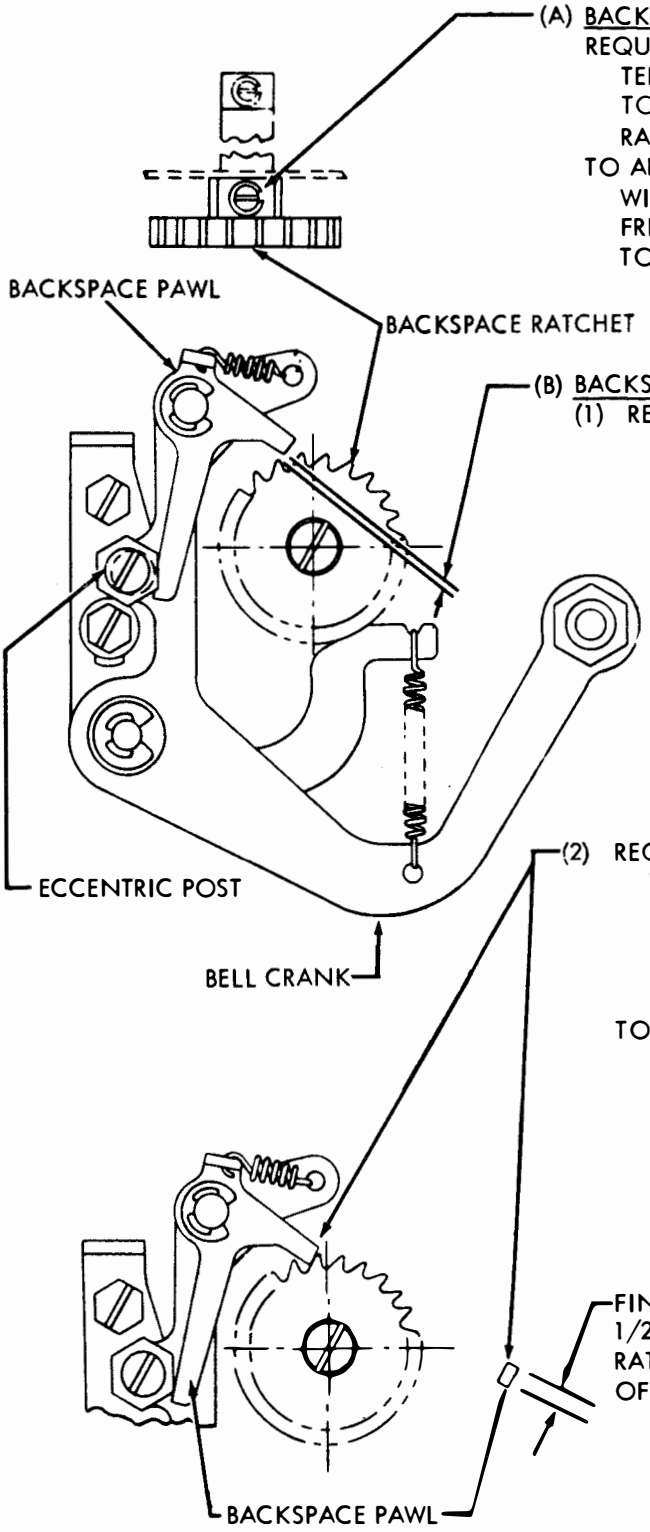
POWER DRIVE BACKSPACE

WITH THE BACKSPACE BELL CRANK IN ITS OPERATED POSITION, THE HIGH SIDE OF THE ECCENTRIC SHOULD BE IN ITS UPPERMOST POSITION.

TO ADJUST

LOOSEN THE NUT POST (FRICTION TIGHT) AND ROTATE ECCENTRIC WITH AN ALLEN WRENCH. TIGHTEN THE NUT POST.

3.22 Manual and Power Drive Backspace Mechanism (For Fully Perforated Tape)



(A) BACKSPACE RATCHET

REQUIREMENT

TEETH OF BACKSPACE AND FEED WHEEL RATCHETS TO LINE UP (VISUAL ALIGNMENT). FEED WHEEL RATCHET TO BE IN DETENTED POSITION.

TO ADJUST

WITH ADJUSTING CLAMP MOUNTING SCREW FRICTION TIGHT, ROTATE BACKSPACE RATCHET TO MEET THE REQUIREMENT.

(B) BACKSPACE PAWL CLEARANCE

(1) REQUIREMENT --- PRELIMINARY

WITH BACKSPACE BELL CRANK ROTATED CLOCKWISE, THE BACKSPACE PAWL SHALL MISS THE FIRST TOOTH BY A CLEARANCE OF:

MIN. 0.003 INCH

MAX. 0.010 INCH

AT POINT OF LEAST CLEARANCE.

(2) REQUIREMENT (FINAL)

THE BACKSPACE PAWL SHALL MISS THE FIRST TOOTH AND ENGAGE THE SECOND TOOTH BY AT LEAST 1/2 OF THE RIGHT ENGAGING SURFACE OF THE BACKSPACE PAWL (AS GAUGED BY EYE) WHEN BACKSPACE PAWL FIRST CONTACTS THE RATCHET TOOTH.

TO ADJUST

TAKE UP ALL ROTATIONAL PLAY OF BACKSPACE RATCHET IN RELATION TO FEED RATCHET BY ROTATING IT CLOCKWISE. AT SAME TIME ROTATE. BELL CRANK CLOCKWISE. WITH MOUNTING SCREW FRICTION TIGHT, ROTATE ECCENTRIC POST TO MEET THE REQUIREMENTS.

FINAL MINIMUM ENGAGEMENT: 1/2 OF SURFACE WITH SECOND RATCHET TOOTH AT FIRST POINT OF CONTACT.

3.23 Manual and Power Drive Backspace Mechanism (For Fully Perforated Tape) continued

FEED PAWL ECCENTRIC

MANUAL BACKSPACE (PRELIMINARY)

REQUIREMENT

WITH THE BACKSPACE BELL CRANK ASSEMBLY IN ITS OPERATED POSITION AND THE FEED WHEEL DETENTED BACK ONE SPACE.

MIN. SOME --- MAX. 0.003 INCH

CLEARANCE BETWEEN THE BACKSPACE RATCHET TOOTH AND THE BACKSPACE FEED PAWL WITH ALL THE ROTATIONAL PLAY OF THE BACKSPACE RATCHET TAKEN UP IN A DIRECTION TO MAKE THE CLEARANCE MAXIMUM.

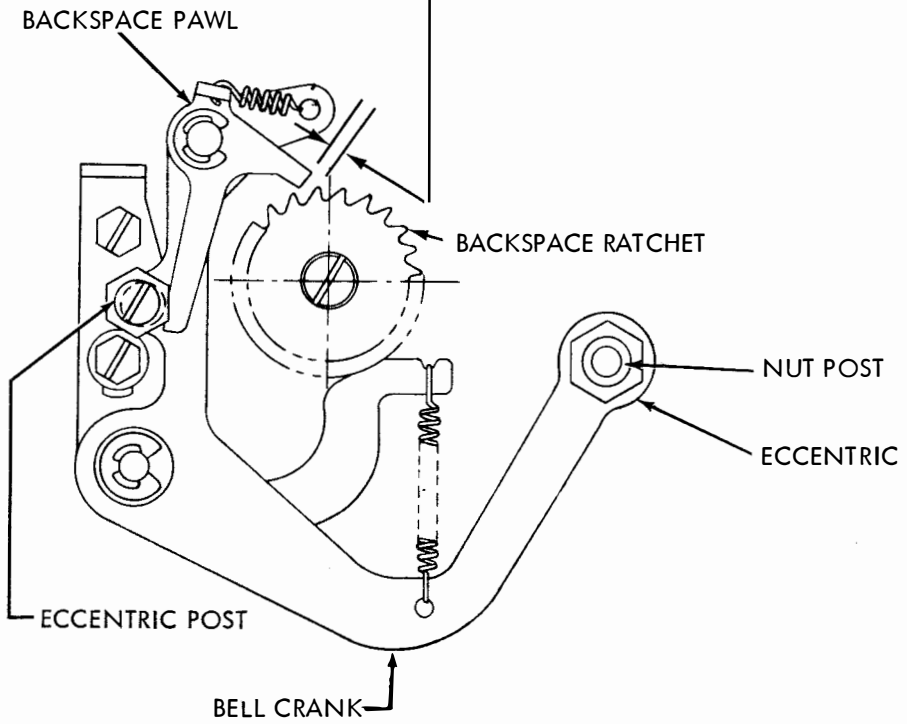
POWER DRIVE BACKSPACE

REQUIREMENT

WITH THE BACKSPACE BELL CRANK ASSEMBLY IN ITS OPERATED POSITION, THE HIGH SIDE OF THE ECCENTRIC SHOULD BE IN ITS UPPERMOST POSITION.

TO ADJUST

LOOSEN THE NUT POST (FRICTION TIGHT) AND ROTATE THE ECCENTRIC WITH AN ALLEN WRENCH. TIGHTEN THE NUT POST.



3.24 Power Drive Backspace Mechanism (Early Design)

NOTE 1:

THE FOLLOWING ADJUSTMENTS ARE FOR USE WITH THE EARLY DESIGN BACKSPACE MAGNET ASSEMBLY. LATER DESIGN USE A NON-ADJUSTABLE BACKSPACE MAGNET ASSEMBLY.

(A) ARMATURE HINGE

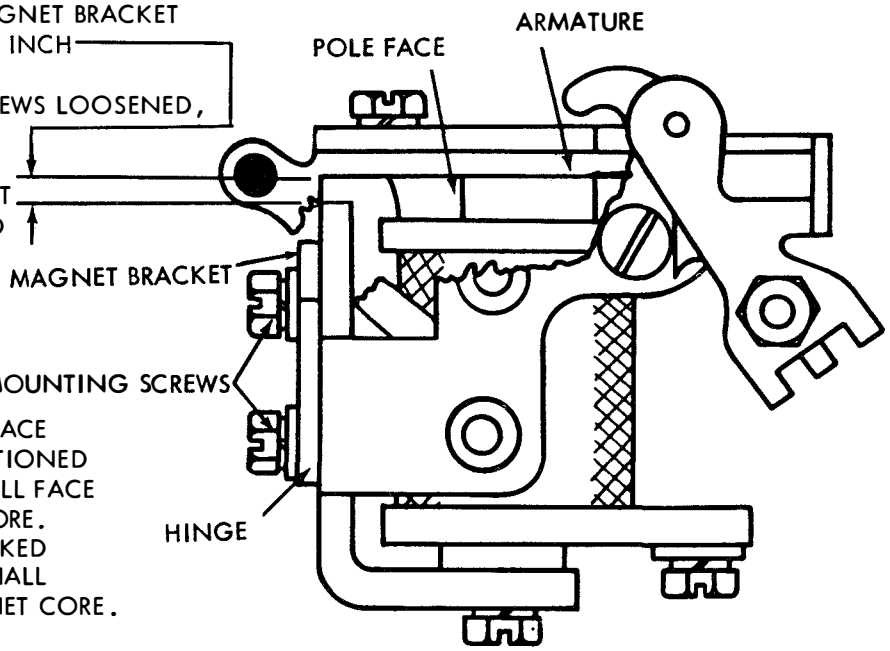
REQUIREMENT

ARMATURE BAIL SPRING REMOVED. WITH ARMATURE HELD AGAINST POLE FACE AND PLAY TAKEN UP AT HINGE IN DOWNWARD DIRECTION, CLEARANCE BETWEEN ARMATURE AND MAGNET BRACKET

MIN. SOME --- MAX. 0.004 INCH

TO ADJUST

WITH HINGE MOUNTING SCREWS LOOSENED, POSITION ARMATURE. THE ARMATURE SHOULD TOUCH FRONT AND REAR OF MAGNET CORE. TIGHTEN SCREWS AND RECHECK ADJUSTMENT.

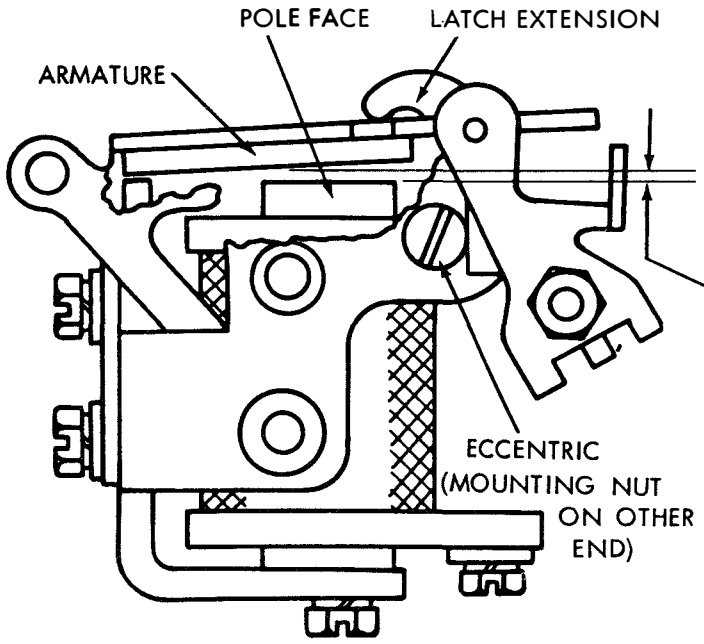


NOTE 2:

FOR "DC" OPERATION, THE BACKSPACE MAGNET ARMATURE SHALL BE POSITIONED SO THAT THE SIDE MARKED "C" SHALL FACE THE POLE FACE OF THE MAGNET CORE. FOR "AC" OPERATION, THE UNMARKED SIDE OF THE MAGNET ARMATURE SHALL FACE THE POLE FACE OF THE MAGNET CORE.

NOTE 3:

THIS ADJUSTMENT IS MADE AT FACTORY AND SHOULD NOT BE DISTURBED UNLESS A REASSEMBLY OF THE UNIT IS UNDERTAKEN. IF NECESSARY TO MAKE THIS ADJUSTMENT, THE PUNCH UNIT SHOULD BE REMOVED. SEE DISASSEMBLY AND REASSEMBLY. REMAKE PUNCH UNIT POSITION ADJUSTMENT.



(B) ARMATURE UP-STOP

REQUIREMENT

ARMATURE IN UNOPERATED POSITION. GAP BETWEEN ARMATURE AND POLE FACE

MIN. 0.025 INCH.

MAX. 0.030 INCH.

AT CLOSEST POINT.

TO ADJUST

ROTATE ECCENTRIC WITH MOUNTING NUT LOOSENED. KEEP HIGH PART OF ECCENTRIC TO LEFT.

3.25 Power Drive Backspace Mechanism (For Fully Perforated Tape) (Early Design) continued

DRIVE ARM

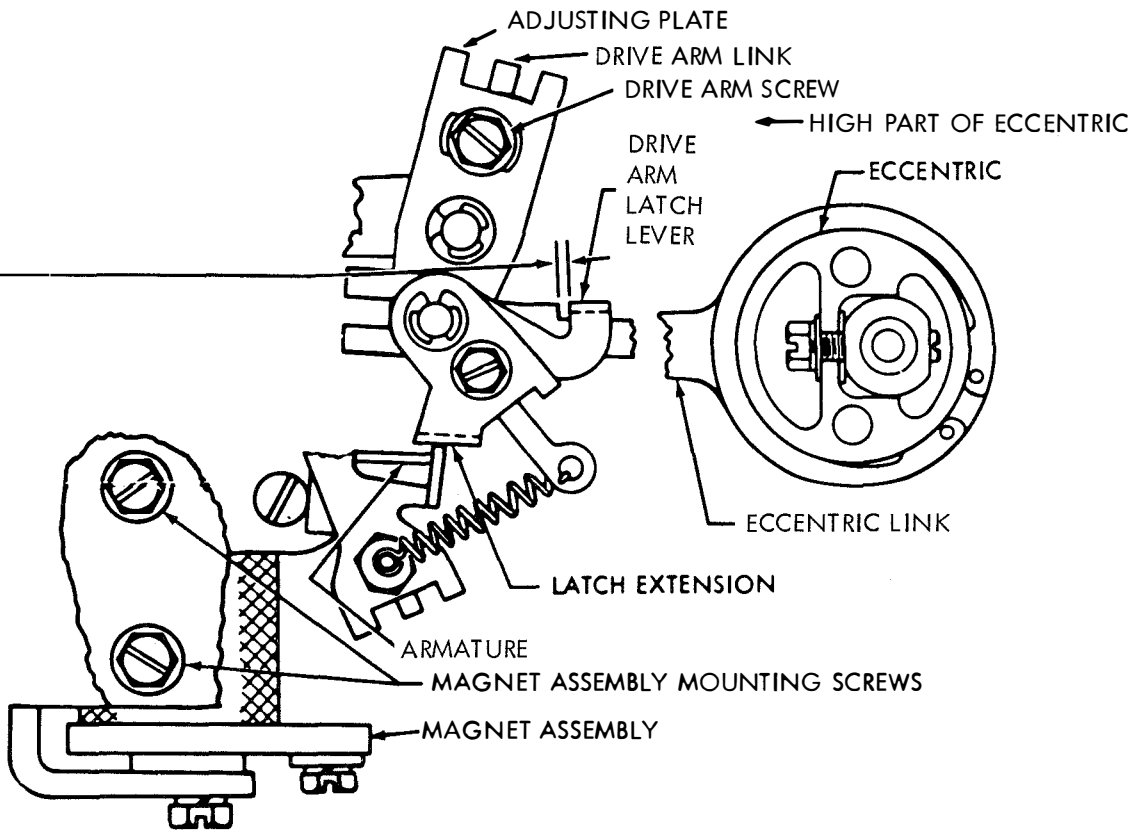
REQUIREMENT (PRELIMINARY)

WITH HIGH PART OF ECCENTRIC LINK IN LEFT HAND POSITION, ARMATURE AGAINST POLE FACE TO ALLOW DRIVE ARM LATCH LEVER TO REST AGAINST ECCENTRIC LINK. CLEARANCE BETWEEN STEP ON ECCENTRIC LINK AND LATCH LEVER WITH PLAY TAKEN UP TO MAKE GAP MINIMUM.

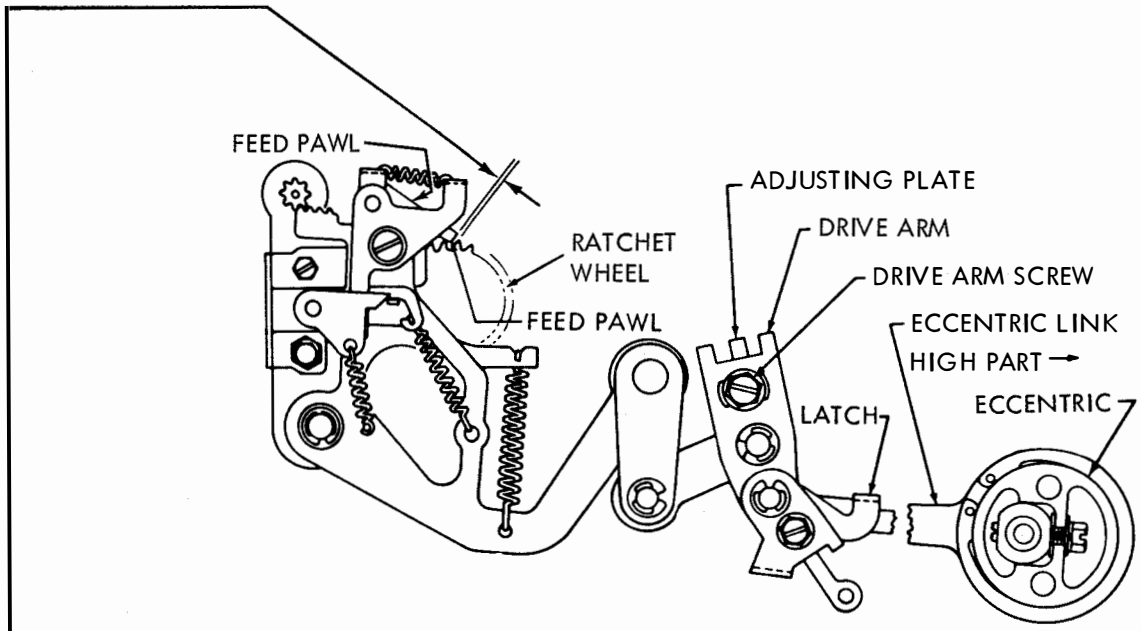
MIN. 0.040 INCH
MAX. 0.045 INCH

TO ADJUST

WITH DRIVE ARM SCREW FRICTION TIGHT POSITION ADJUSTING PLATE.



3.26 Manual and Power Drive Backspace Mechanism (For Chadless Tape) (Early Design) continued



DRIVE ARM

REQUIREMENT (PRELIMINARY)

WITH DRIVE-ARM LATCH LEVER ENGAGED WITH ECCENTRIC LINK, MAIN SHAFT ROTATED TO PLACE ECCENTRIC IN ITS EXTREME RIGHT HAND POSITION AND FEED WHEEL DETENTED BACK ONE SPACE.

MIN. SOME --- MAX. 0.003 INCH

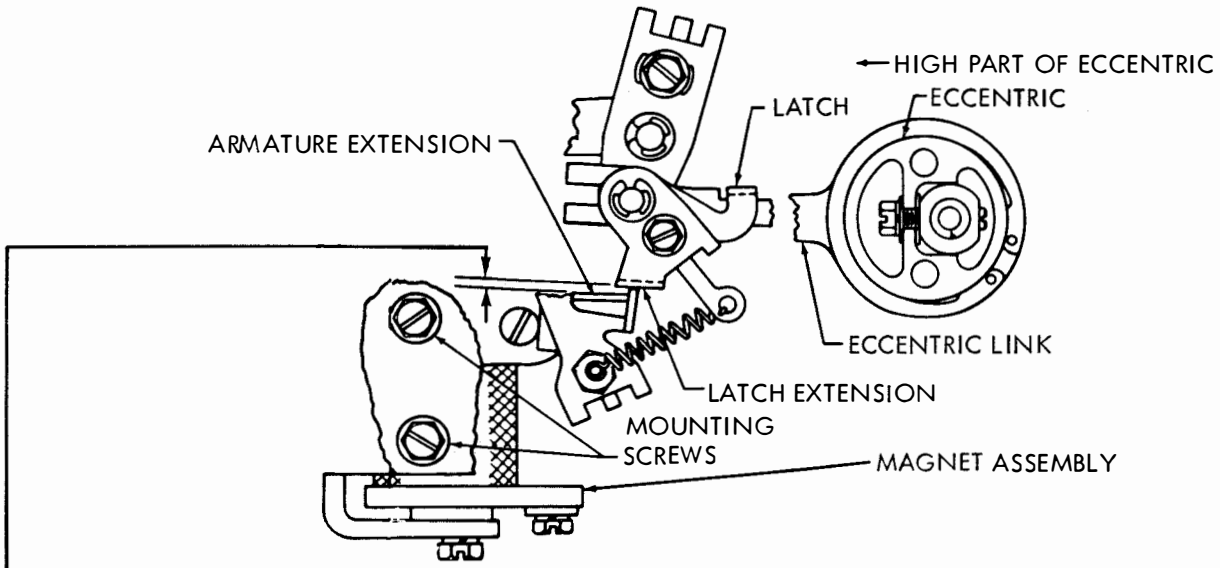
CLEARANCE BETWEEN THE BACKSPACE FEED PAWL AND THE RATCHET TOOTH. CHECK WITH FEED WHEEL SHAFT OIL HOLE IN THE UPPERMOST POSITION AND RECHECK EACH 90 DEGREES ABOUT THE PERIPHERY OF THE FEED WHEEL.

TO ADJUST

LOOSEN DRIVE ARM SCREW (FRICTION TIGHT) AND MOVE ADJUSTING PLATE.

3.27 Power Drive Backspace Mechanism (Early Design) continued

NOTE:
THIS ADJUSTMENT IS MADE AT FACTORY AND SHOULD NOT BE DISTURBED UNLESS A REASSEMBLY OF THE UNIT IS UNDERTAKEN. IF NECESSARY TO MAKE THIS ADJUSTMENT, PUNCH SHOULD BE REMOVED. SEE DISASSEMBLY AND REASSEMBLY. REMAKE PUNCH POSITION ADJUSTMENT.



LATCH EXTENSION

REQUIREMENT

BACKSPACE MECHANISM IN UNOPERATED POSITION. HIGH PART OF ECCENTRIC TO LEFT. ARMATURE AGAINST POLE FACE. LATCH RESTING ON ECCENTRIC LINK NOTCH. CLEARANCE BETWEEN TOP OF ARMATURE EXTENSION AND LATCH EXTENSION

MIN. 0.005 INCH
MAX. 0.020 INCH

TO ADJUST

SWING MAGNET CLOCKWISE OR COUNTERCLOCKWISE, AS NECESSARY, WITH MOUNTING SCREWS FRICTION TIGHT.

3.28 Power Drive Backspace Mechanism (Early Design) continued

(A) LATCH

REQUIREMENT

BACKSPACE MECHANISM IN UNOPERATED POSITION. ARMATURE OFF POLE FACE (DE-ENERGIZED). LATCH EXTENSION AGAINST END OF ARMATURE. ECCENTRIC LINK AT ITS CLOSEST POINT TO UNDERSIDE OF LATCH. CLEARANCE BETWEEN LATCH AND ECCENTRIC LINK.

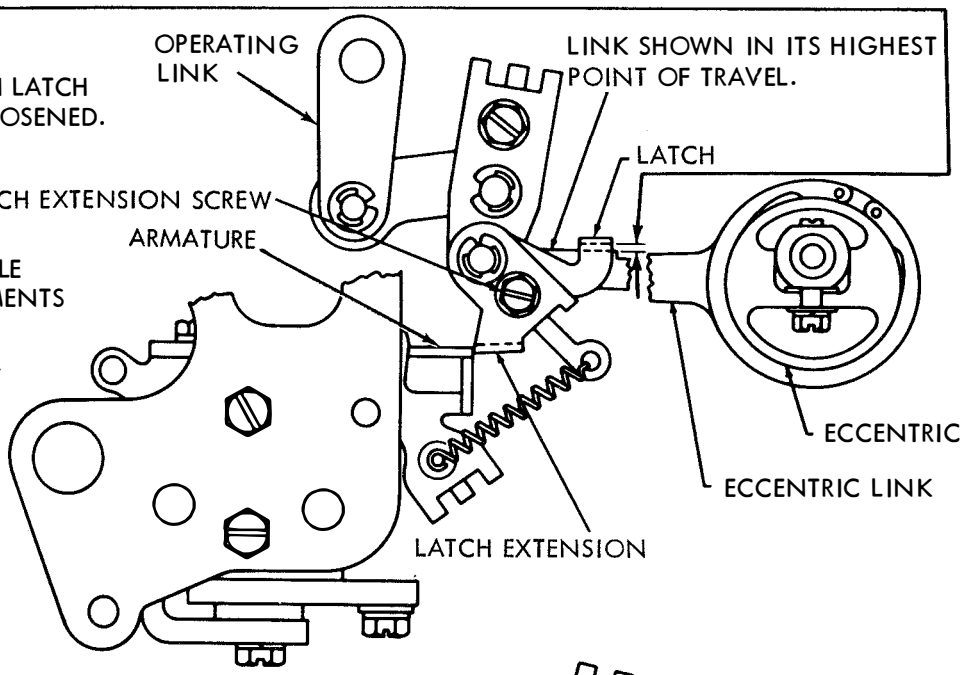
MIN. 0.005 INCH
MAX. 0.025 INCH

TO ADJUST

POSITION LATCH WITH LATCH EXTENSION SCREW LOOSENED.

NOTE 1:

ON UNITS EQUIPPED WITH ONE PIECE NON-ADJUSTABLE LATCH LEVER THE REQUIREMENTS IN THE "FINAL POWER OR MANUAL" MUST BE MET.



(B) NON-REPEAT LATCH

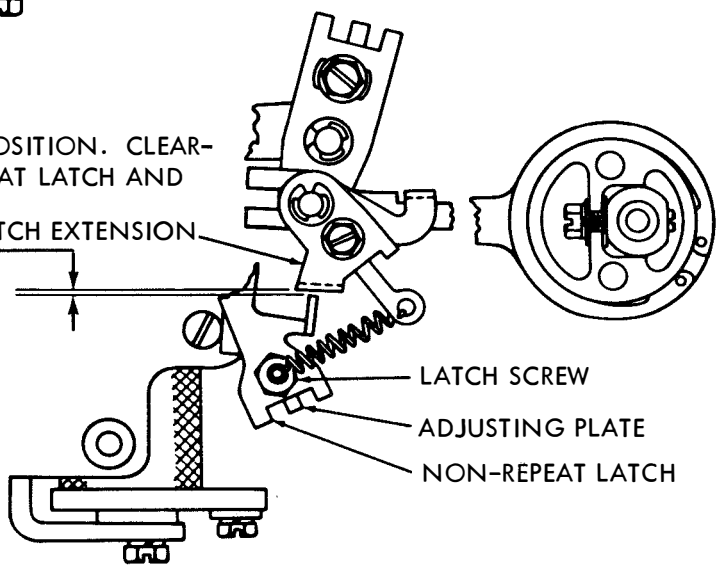
REQUIREMENT

BACKSPACE MECHANISM IN UNOPERATED POSITION. CLEARANCE BETWEEN TOP SURFACE OF NON-REPEAT LATCH AND LOWEST POINT OF LATCH EXTENSION

MIN. 0.002 INCH
MAX. 0.010 INCH

TO ADJUST

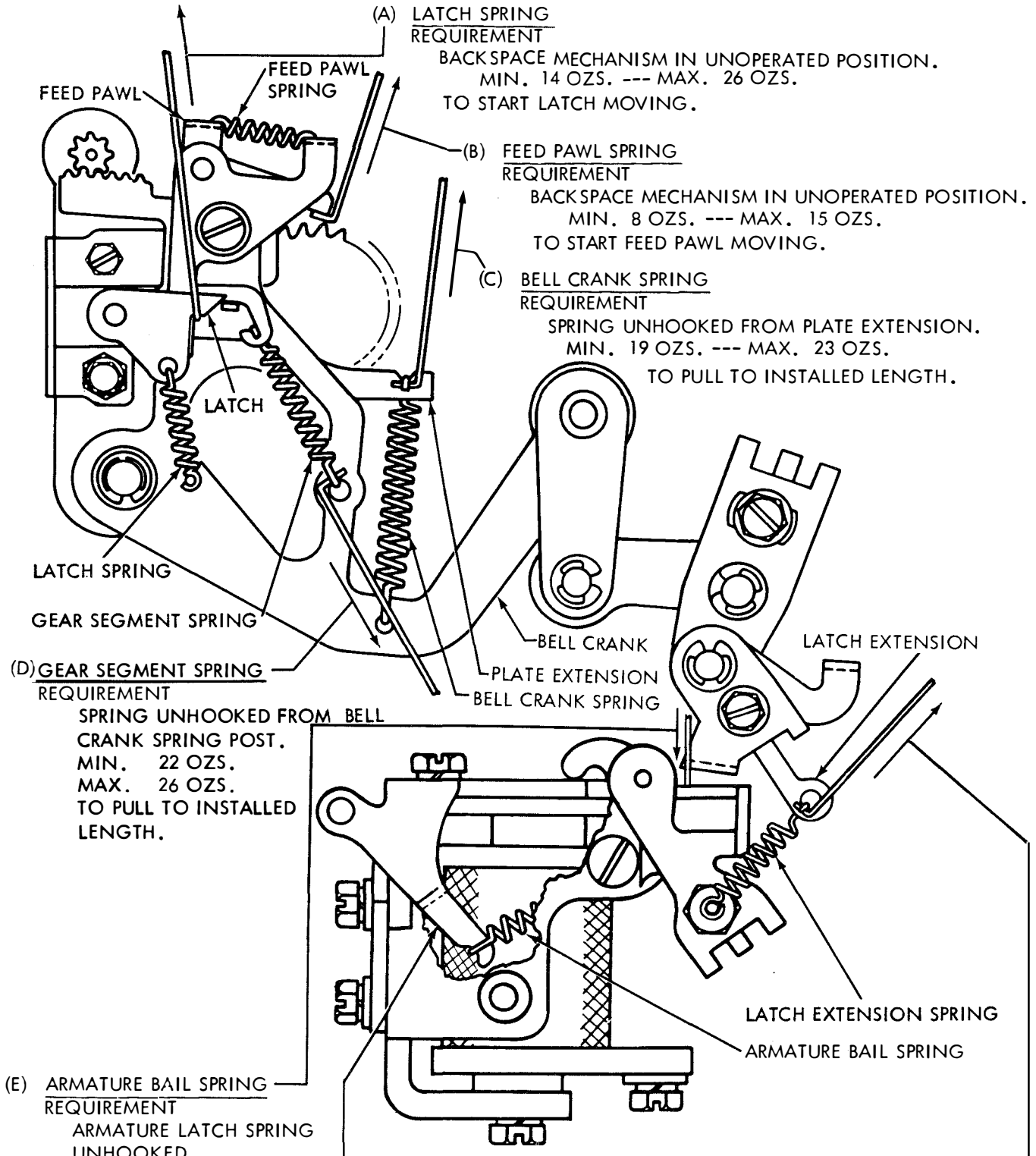
POSITION ADJUSTING PLATE WITH LATCH SCREW LOOSENED FRICTION TIGHT.



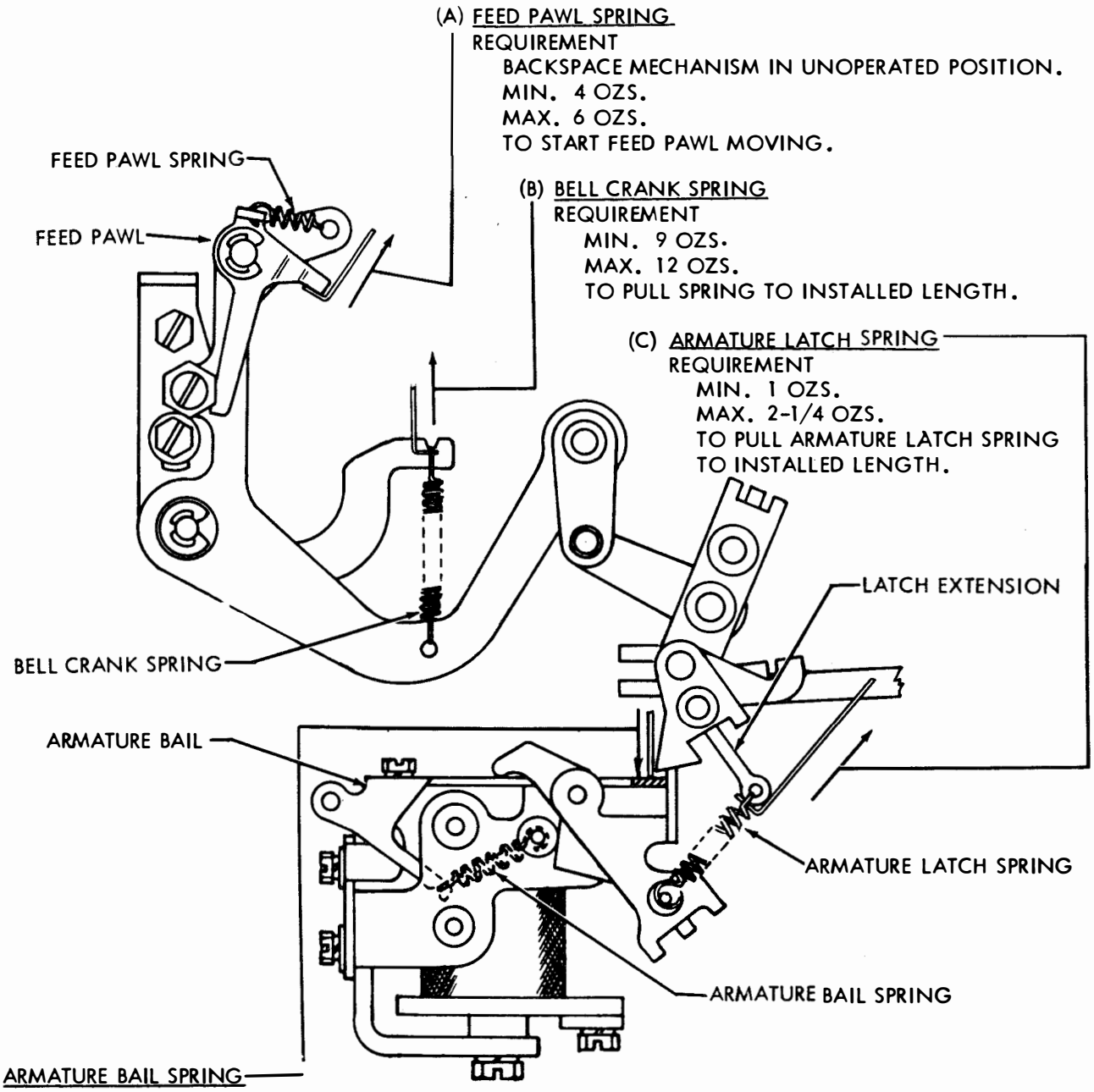
NOTE 2:

MUST NOT BE OPERATED WITH LATCH AGAINST ARMATURE EXTENSION.

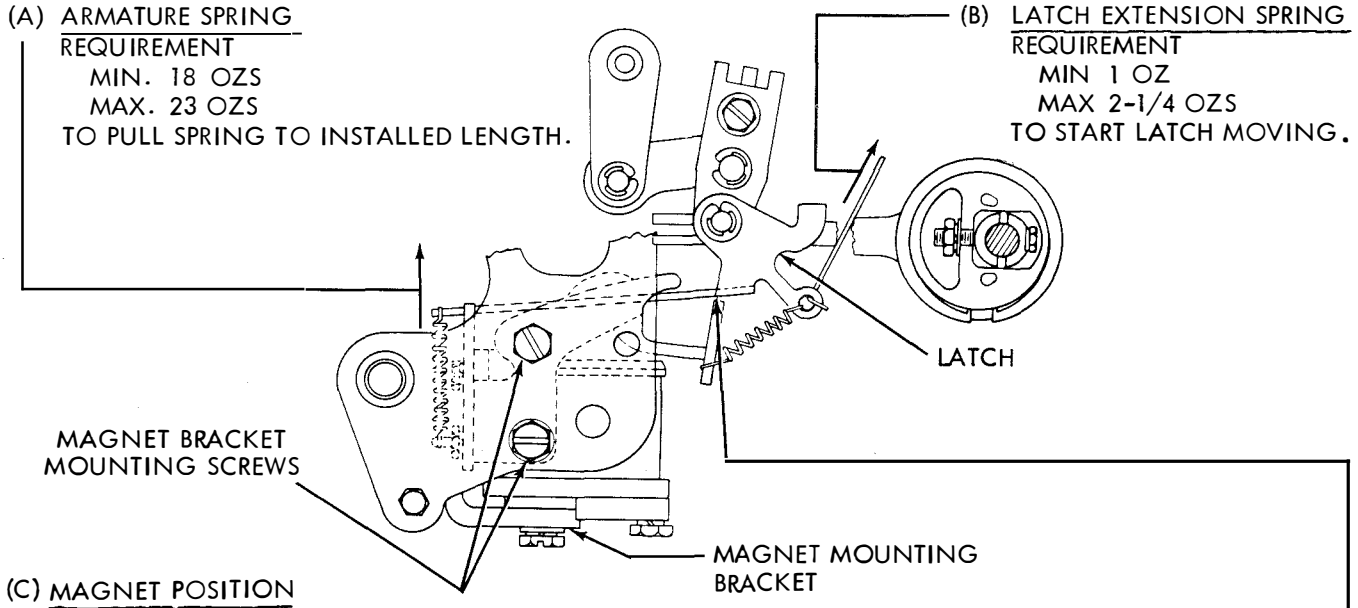
3.29 Manual and Power Drive Backspace Mechanism (For Chadless Tape (Early Design) continued



3.30 Power Drive Backspace Mechanism (For Fully Perforated Tape) (Early Design) continued



3.31 Power Drive Backspace Mechanism (Latest Design)
(Non-Adjustable Backspace Magnet Assembly)



3.32 Manual and Power Drive Backspace Mechanism (Chadless and Fully Perforated Tape)

NOTE: THE FINAL ADJUSTMENT REQUIREMENT FOR ALL BACKSPACE MECHANISMS, MANUAL OR POWER DRIVE, REGARDLESS OF THE TYPE OF UNIT WILL READ AS FOLLOWS:

FINAL POWER OR MANUAL
REQUIREMENT

(1) WITH TAPE IN THE UNIT, PLACE THE FEED WHEEL SHAFT OIL HOLE IN ITS UPPERMOST POSITION, OPERATE THE BACKSPACE MECHANISM ONCE. THE RATCHET WHEEL SHALL BE BACKED ONE SPACE INTO A FULLY DETENTED POSITION.

NOTE: A FULLY DETENTED POSITION IS DEFINED AS: WITH THE DETENT ROLLER IN CONTACT WITH THE RATCHET WHEEL THE PUNCH UNIT FEED PAWL SHALL ENGAGE THE FIRST TOOTH BELOW THE HORIZONTAL CENTERLINE OF THE FEED WHEEL RATCHET WITH NO PERCEPTIBLE CLEARANCE.

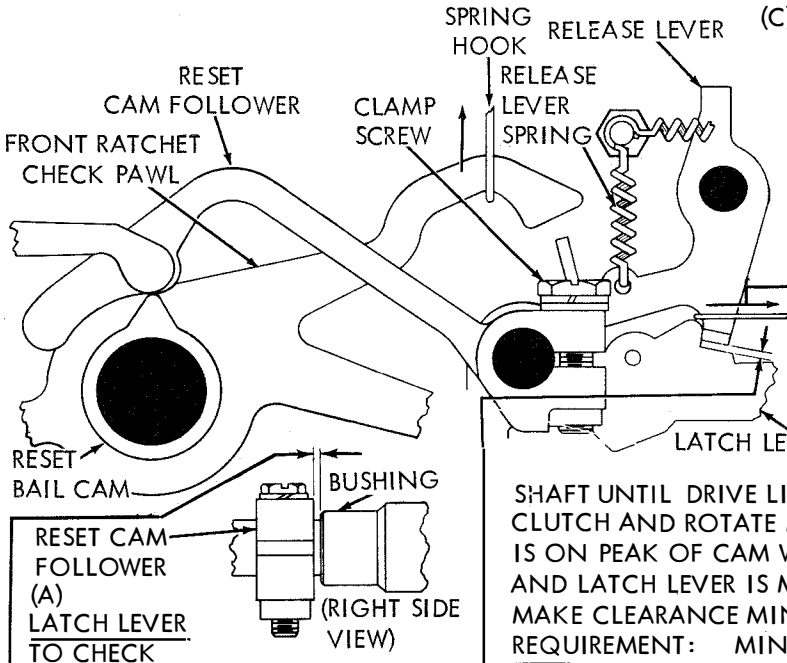
REQUIREMENT

(2) WITH THE UNIT OPERATING UNDER POWER, PERFORATE APPROXIMATELY TWO (2) INCHES OF TAPE WITH THE "LETTERS" COMBINATION SELECTED. BACKSPACE TWELVE (12) CHARACTERS IN SUCCESSION WITH THE UNIT STILL UNDER POWER. AGAIN PERFORATE APPROXIMATELY TWO (2) INCHES OF TAPE WITH THE "LETTERS" COMBINATION SELECTED. CLIPPING OF THE CODE HOLES SHALL BE HELD TO A MINIMUM AND SHALL NOT EXCEED MORE THAN 0.005 INCH AS GAUGED BY EYE.

TO ADJUST

ON MANUAL OPERATED BACKSPACE MECHANISMS REFINE THE FEED PAWL PRELIMINARY ADJUSTMENT. ON BACKSPACE MECHANISMS EQUIPPED WITH POWER DRIVE, LOOSEN THE ARM ADJUSTING SCREW AND POSITION THE ADJUSTING PLATE. TIGHTEN THE ARM ADJUSTING SCREW.

3.33 Automatic Noninterfering LTRS and Blank Tape Feed-out Mechanisms



(A) LATCH LEVER

TO CHECK
TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL RESET CAM FOLLOWER IS ON PEAK OF RESET BAIL CAM, WHERE THE CLEARANCE FOR THE FOLLOWING ADJUSTMENT IS AT A MINIMUM.

REQUIREMENT
(1) MIN. 0.018 INCH---MAX. 0.028 INCH BETWEEN RELEASE LEVER AND LATCH LEVER.
(2) MIN. SOME---MAX. 0.008 INCH END PLAY BETWEEN CAM FOLLOWER AND BUSHING.

TO ADJUST
POSITION LATCH LEVER WITH CLAMP SCREW ON RESET CAM FOLLOWER LOOSENED.

(B) SAFETY LATCH

(1) TO CHECK: TRIP FUNCTION CLUTCH BY ROTATING MAIN TRIP LEVER COUNTERCLOCKWISE. ROTATE MAIN SHAFT UNTIL DRIVE LINK IS TO EXTREME LEFT. TRIP SELECTOR CLUTCH AND ROTATE MAIN SHAFT UNTIL RESET CAM FOLLOWER IS ON PEAK OF CAM WHERE CLEARANCE BETWEEN SAFETY LATCH AND LATCH LEVER IS MIN. TAKE UP PLAY IN SAFETY LATCH TO MAKE CLEARANCE MIN. MEASURE CLEARANCE WHERE IT IS MIN.
REQUIREMENT: MIN. SOME---MAX. 0.005 INCH

TO ADJUST: WITH SMALL NUT LOOSENED, POSITION SAFETY LATCH PIVOT BY MEANS OF PRY POINT.

(2) TO CHECK
TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL RIGHT EDGE OF SAFETY LATCH AND CONTACTING EDGE OF LATCH LEVER ARE IN LINE.

REQUIREMENT
MAX. OF 0.030 INCH OF SAFETY LATCH NOT ENGAGED BY LATCH LEVER.

TO ADJUST
REFINE (1) ABOVE AND LATCH LEVER ADJUSTMENT.

(C) RELEASE LEVER SPRING

TO CHECK
TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL RESET CAM FOLLOWER IS ON PEAK OF RESET BAIL CAM. WITH SPRING HOOK, HOLD FRONT RATCHET CHECK PAWL AWAY FROM RELEASE LEVER.

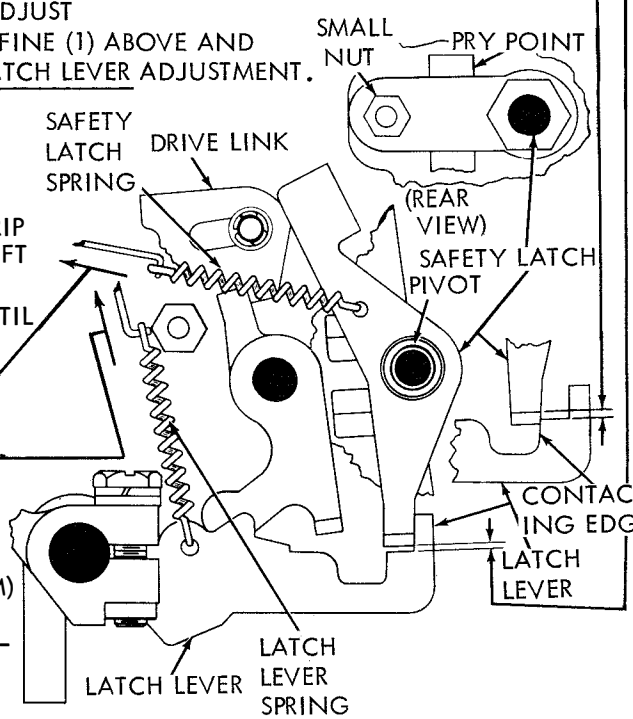
REQUIREMENT
MIN. 5 OZS.--- MAX. 7 OZS. TO START RELEASE LEVER MOVING.

(D) LATCH LEVER SPRING

TO CHECK: TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL RESET CAM FOLLOWER IS ON PEAK OF RESET BAIL CAM. REQUIREMENT (FOR AUTOMATIC NONINTERFERING LTRS TAPE FEED-OUT MECHANISM) MIN. 2 OZS.---MAX. 4 OZS.
(FOR AUTOMATIC NONINTERFERING BLANK TAPE FEED-OUT MECHANISM) MIN. 7 OZS.---MAX. 10 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(E) SAFETY LATCH SPRING

TO CHECK
TRIP FUNCTION CLUTCH BY PIVOTING MAIN TRIP LEVER COUNTERCLOCKWISE. ROTATE MAIN SHAFT UNTIL DRIVE LINK IS TO EXTREME LEFT. TRIP SELECTOR CLUTCH AND ROTATE MAIN SHAFT UNTIL RESET CAM FOLLOWER IS ON PEAK OF CAM.
REQUIREMENT: MIN. 1-1/2 OZS.---MAX. 3 OZS. TO PULL SPRING TO INSTALLED LENGTH.



3.34 Automatic Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued

(A) RELEASE ARM

TO CHECK

PLACE UNIT IN FEED OUT CYCLE BY POSITIONING RELEASE LEVER ON LOWER STEP OF LATCH LEVER. ADVANCE RATCHETS BEYOND TIME DELAY (HIGH PART OF TIME DELAY CAM BEYOND TIME DELAY LEVER). POSITION FEED OUT CAM AS SHOWN.

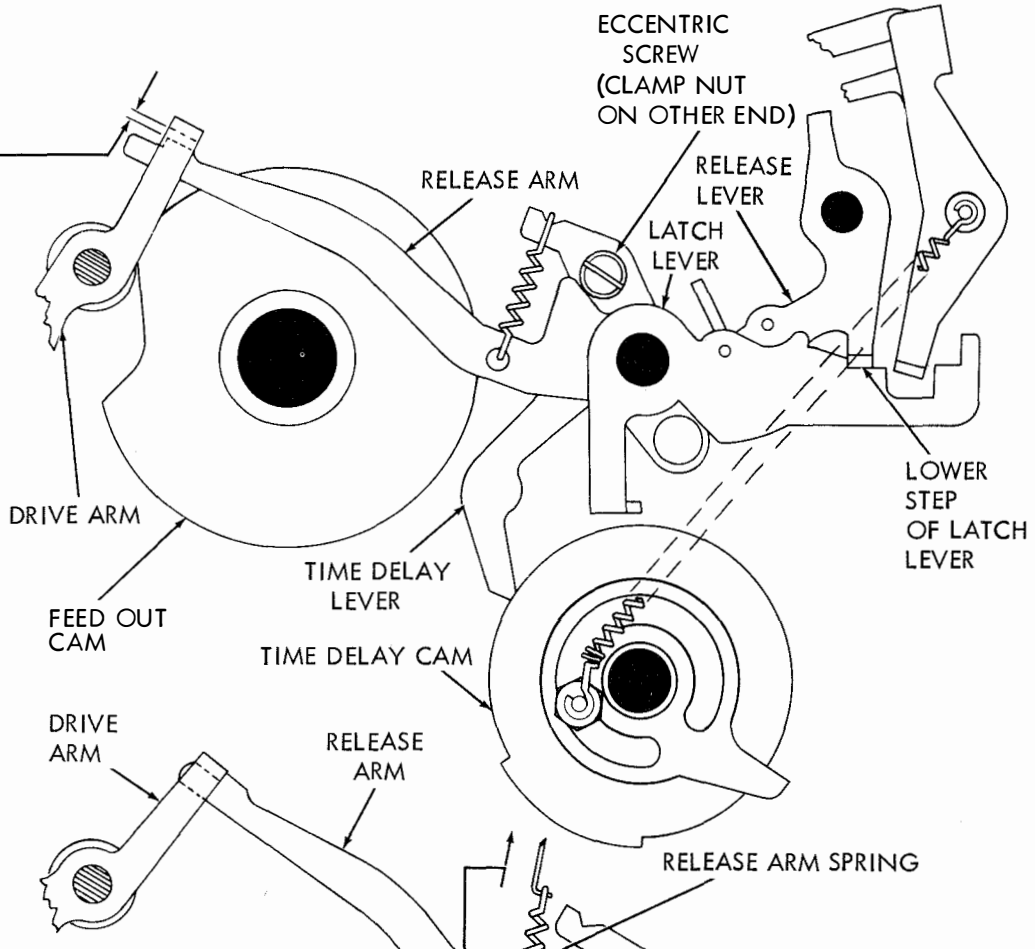
REQUIREMENT

(1) MIN. 0.010 INCH---MAX. 0.030 INCH BETWEEN DRIVE ARM AND RELEASE ARM.

(2) WITH UNIT IN THE STOP POSITION
MAX. 0.015 INCH
OF THE DRIVE BAIL UNENGAGED BY THE RELEASE ARM.

TO ADJUST

WITH CLAMP NUT LOOSENED, POSITION RELEASE ARM BY MEANS OF ECCENTRIC SCREW ON TIME DELAY LEVER.

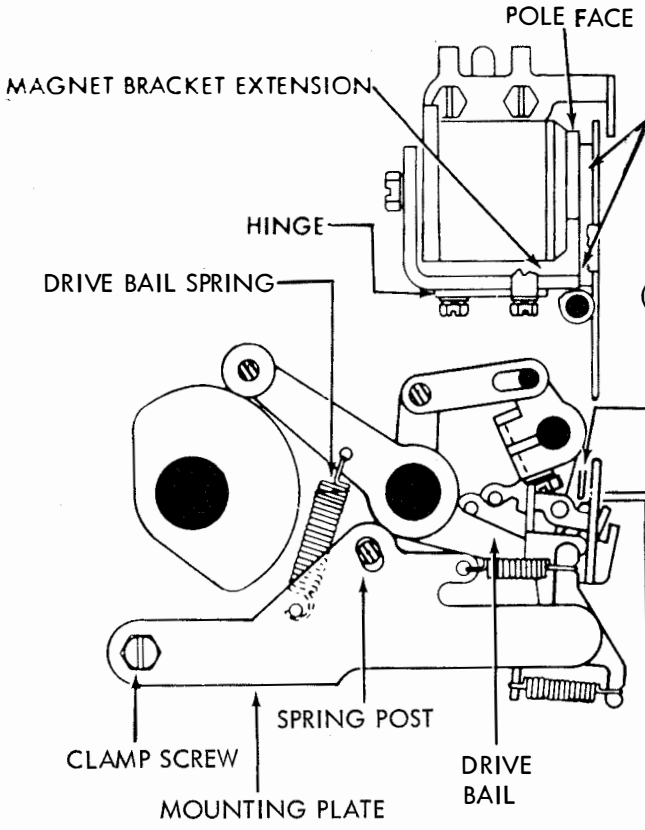


(B) RELEASE ARM SPRING

REQUIREMENT

WITH CLUTCHES DISENGAGED AND DRIVE ARM LATCHED BY RELEASE ARM:
MIN. 2 OZS.---MAX. 5 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

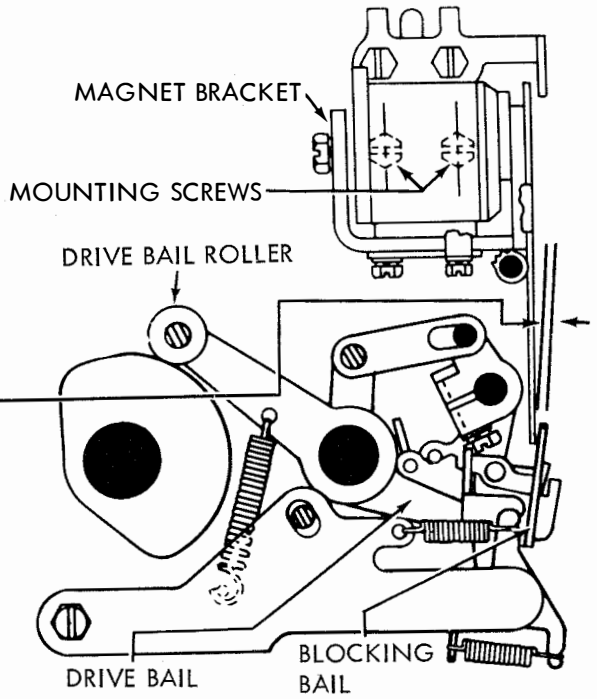
3.35 Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms (For Earlier Design Noninterfering BLANK Tape Feed-Out Mechanism see Par. 4.06)



(A) ARMATURE HINGE
REQUIREMENT
WITH ARMATURE MANUALLY OPERATED. IT SHALL BE FLUSH AGAINST POLE FACE AND MAGNET BRACKET EXTENSION.
TO ADJUST
LOOSEN ARMATURE HINGE BRACKET MOUNTING SCREWS, POSITION ARMATURE AND TIGHTEN SCREWS.

(B) DRIVE BAIL SPRING
REQUIREMENT
ROTATE MAIN SHAFT UNTIL DRIVE BAIL IS ON HIGH PART OF ITS CAM.
MIN. 20 OZS.---MAX. 28 OZS.
TO START THE DRIVE BAIL MOVING.

(C) MOUNTING PLATE
REQUIREMENT
WITH ARMATURE IN UNOPERATED POSITION. ROTATE MAIN SHAFT UNTIL DRIVE BAIL IS ON HIGH PART OF ITS CAM. CLEARANCE BETWEEN THE BLOCKING BAIL AND DRIVE BAIL SURFACE.
MIN. 0.006 INCH
MAX. 0.015 INCH
TO ADJUST
POSITION BLOCKING BAIL WITH MOUNTING PLATE CLAMP SCREW AND SPRING POST FRICTION TIGHT.

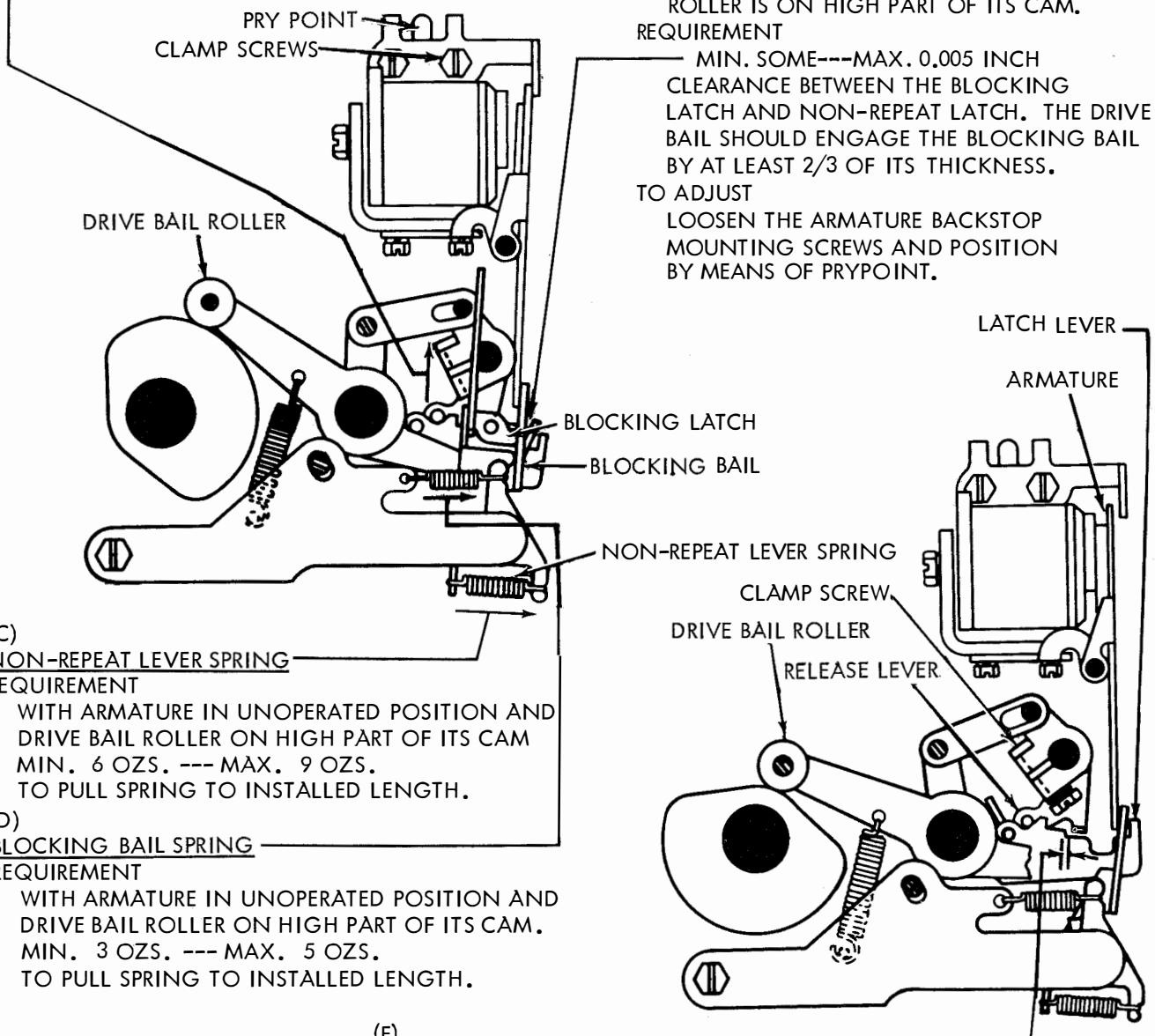


(D) MAGNET ASSEMBLY
REQUIREMENT
WITH ARMATURE HELD IN OPERATED POSITION, ROTATE MAIN SHAFT UNTIL DRIVE BAIL ROLLER IS ON HIGH PART OF ITS CAM. CLEARANCE BETWEEN BLOCKING BAIL AND RIGHT EDGE OF DRIVE BAIL.
MIN. 0.005 INCH
MAX. 0.015 INCH
TO ADJUST
POSITION MAGNET ASSEMBLY, ARMATURE HELD AGAINST MAGNET POLE PIECE WITH MAGNET BRACKET MOUNTING SCREWS FRICTION TIGHT.

3.36 Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued

(A)
BLOCKING LATCH TORSION SPRING
REQUIREMENT
WITH ARMATURE IN UNOPERATED POSITION AND DRIVE BAIL ROLLER ON HIGH PART OF ITS CAM.
MIN. 15 GRAMS --- MAX. 40 GRAMS
TO START BLOCKING LATCH MOVING.

(B)
ARMATURE BACKSTOP
TO CHECK
WITH ARMATURE IN UNOPERATED POSITION, ROTATE MAIN SHAFT UNTIL DRIVE BAIL ROLLER IS ON HIGH PART OF ITS CAM.
REQUIREMENT
MIN. SOME---MAX. 0.005 INCH CLEARANCE BETWEEN THE BLOCKING LATCH AND NON-REPEAT LATCH. THE DRIVE BAIL SHOULD ENGAGE THE BLOCKING BAIL BY AT LEAST 2/3 OF ITS THICKNESS.
TO ADJUST
LOOSEN THE ARMATURE BACKSTOP MOUNTING SCREWS AND POSITION BY MEANS OF PRYPOINT.

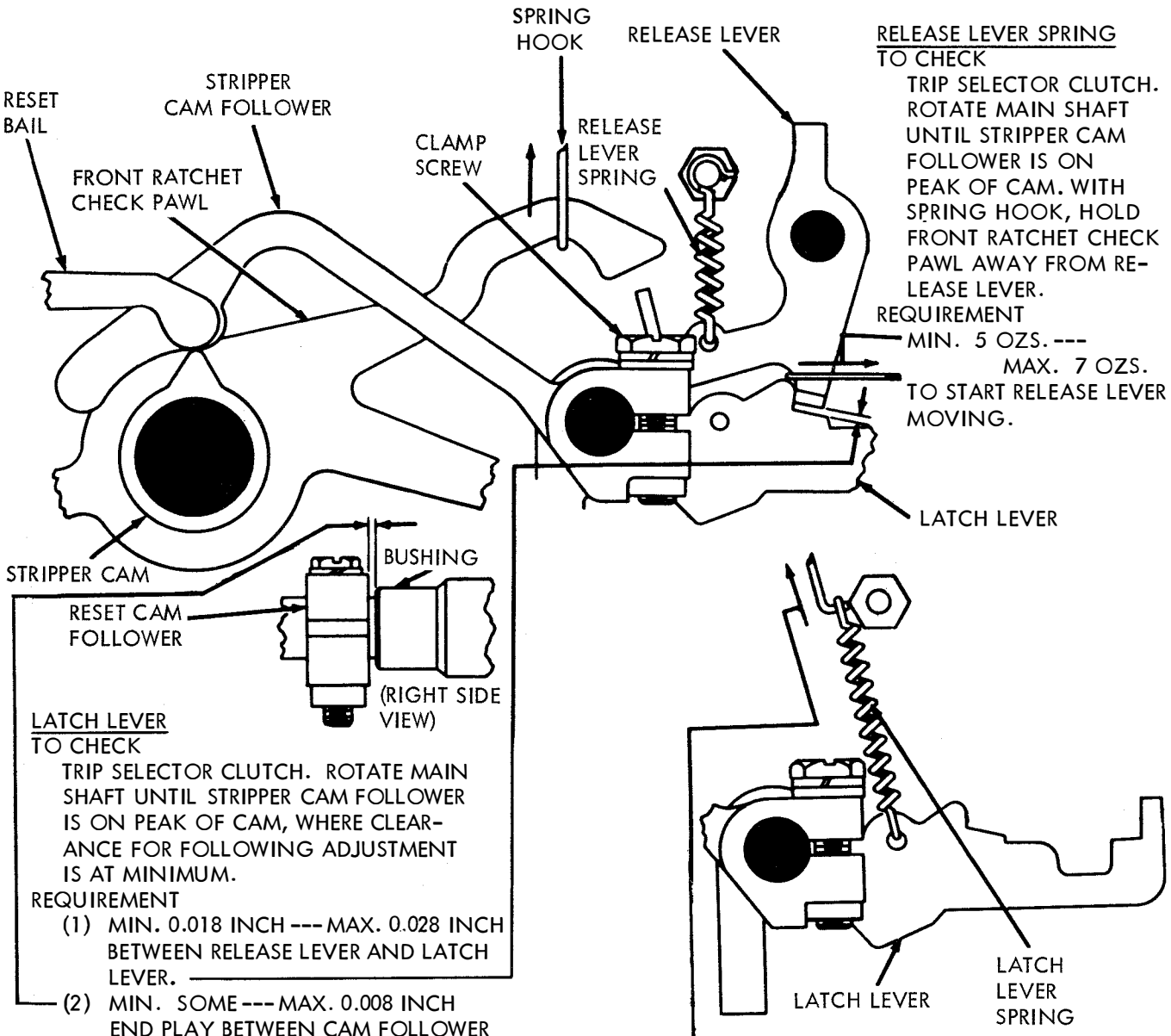


(C)
NON-REPEAT LEVER SPRING
REQUIREMENT
WITH ARMATURE IN UNOPERATED POSITION AND DRIVE BAIL ROLLER ON HIGH PART OF ITS CAM
MIN. 6 OZS. --- MAX. 9 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(D)
BLOCKING BAIL SPRING
REQUIREMENT
WITH ARMATURE IN UNOPERATED POSITION AND DRIVE BAIL ROLLER ON HIGH PART OF ITS CAM.
MIN. 3 OZS. --- MAX. 5 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(E)
RELEASE LEVER
REQUIREMENT
WITH ARMATURE IN OPERATED POSITION. ROTATE MAIN SHAFT UNTIL DRIVE BAIL ROLLER IS IN INDENT OF ITS CAM. CLEARANCE BETWEEN RELEASE LEVER AND LATCH LEVER.
MIN. 0.010 INCH
MAX. 0.025 INCH
TO ADJUST
WITH CLAMP SCREW FRICTION TIGHT POSITION RELEASE LEVER.

3.37 Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued

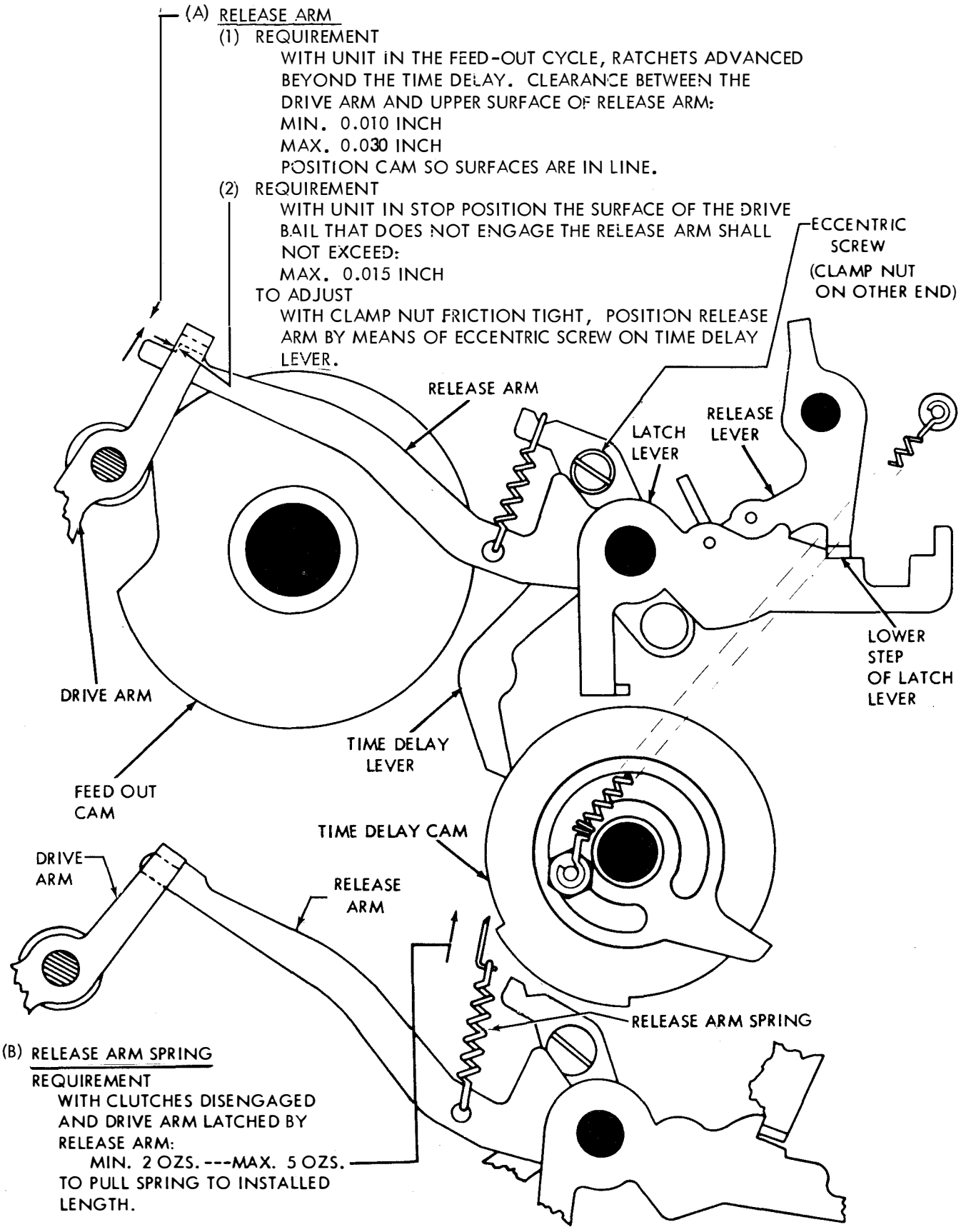


RELEASE LEVER SPRING
TO CHECK
TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL STRIPPER CAM FOLLOWER IS ON PEAK OF CAM. WITH SPRING HOOK, HOLD FRONT RATCHET CHECK PAWL AWAY FROM RELEASE LEVER.
REQUIREMENT
MIN. 5 OZS. --- MAX. 7 OZS. TO START RELEASE LEVER MOVING.

LATCH LEVER
TO CHECK
TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL STRIPPER CAM FOLLOWER IS ON PEAK OF CAM, WHERE CLEARANCE FOR FOLLOWING ADJUSTMENT IS AT MINIMUM.
REQUIREMENT
(1) MIN. 0.018 INCH --- MAX. 0.028 INCH BETWEEN RELEASE LEVER AND LATCH LEVER.
(2) MIN. SOME --- MAX. 0.008 INCH END PLAY BETWEEN CAM FOLLOWER AND BUSHING.
TO ADJUST
POSITION LATCH LEVER WITH CLAMP SCREW ON STRIPPER CAM FOLLOWER LOOSENED.

LATCH LEVER SPRING
TO CHECK
TRIP SELECTOR CLUTCH. ROTATE MAIN SHAFT UNTIL STRIPPER CAM FOLLOWER IS ON PEAK OF CAM.
REQUIREMENT
(FOR REMOTE CONTROL NONTERFERING LTRS TAPE FEED-OUT MECHANISM)
MIN. 2 OZS. --- MAX. 4 OZS.
(FOR REMOTE CONTROL NONINTERFERING BLANK TAPE FEED-OUT MECHANISM)
MIN. 9 OZS. --- MAX. 12 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

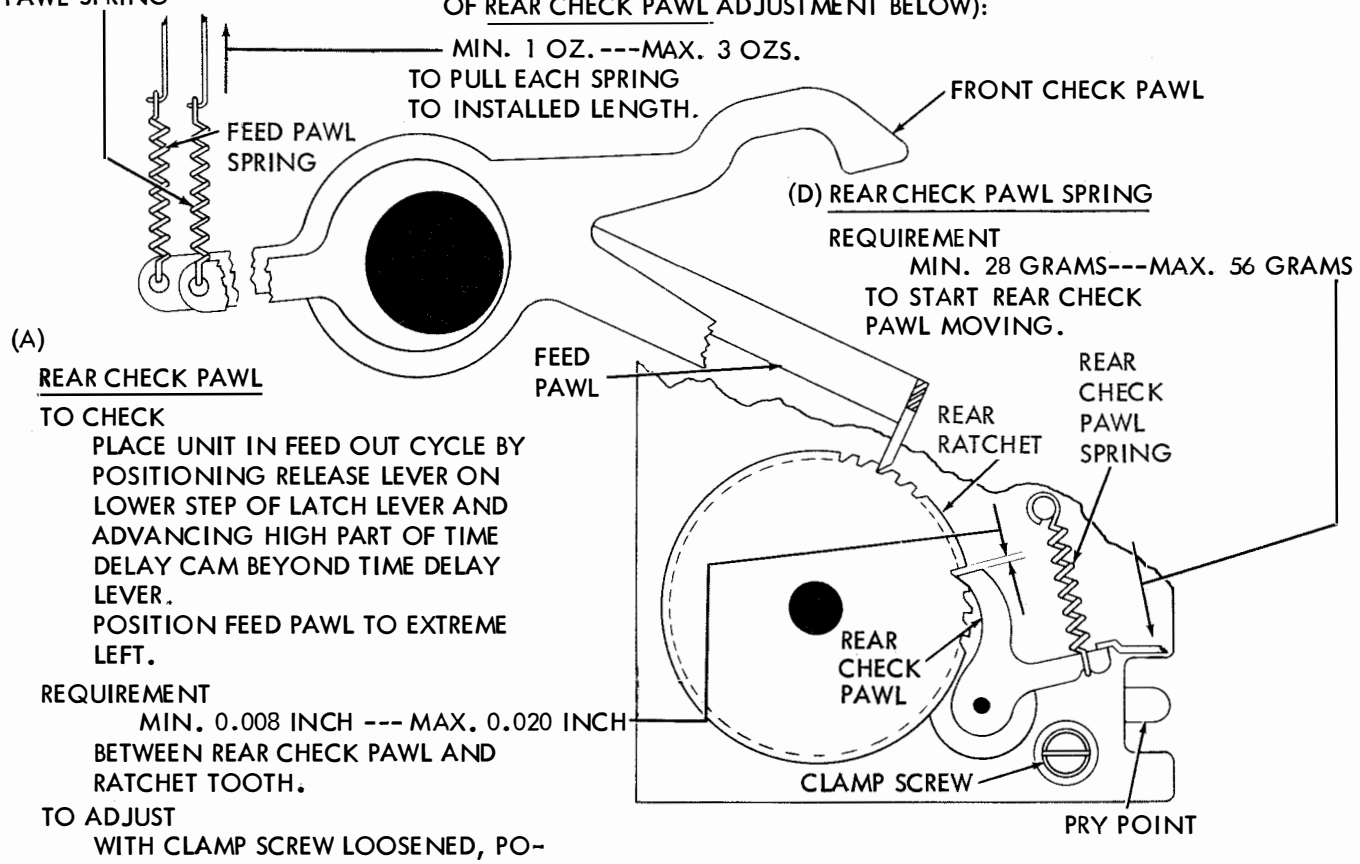
3.38 Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued



3.39 Automatic and Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms

(C) FEED PAWL AND FRONT CHECK PAWL SPRINGS

REQUIREMENT
WITH UNIT IN FEED OUT CYCLE (SEE "TO CHECK" OF REAR CHECK PAWL ADJUSTMENT BELOW):
MIN. 1 OZ.---MAX. 3 OZS.
TO PULL EACH SPRING
TO INSTALLED LENGTH.

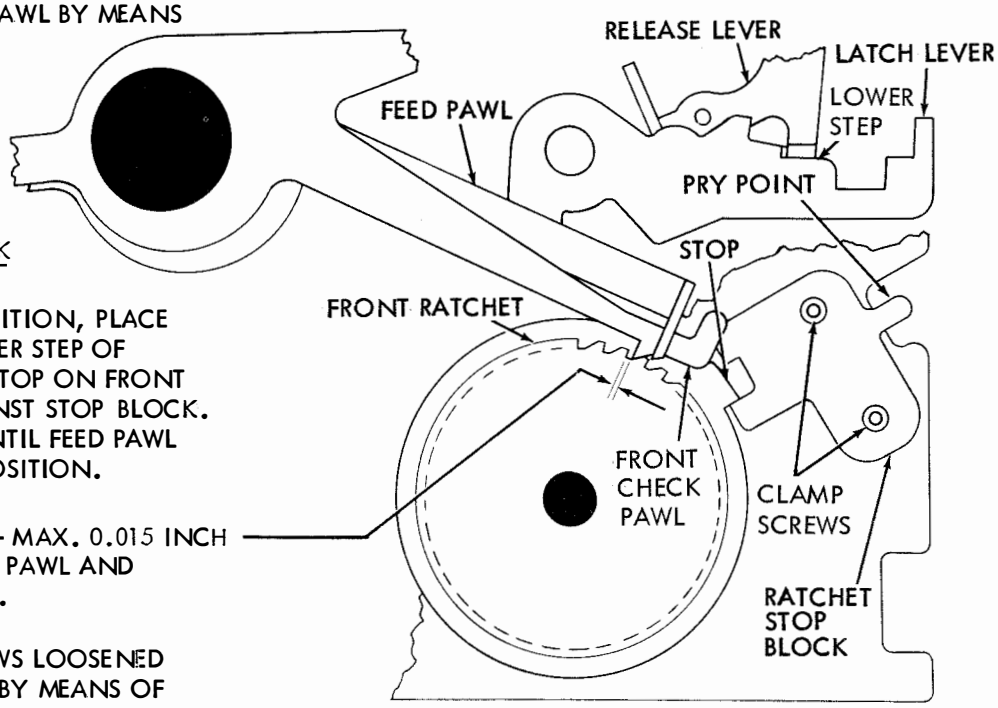


(A)
REAR CHECK PAWL

TO CHECK
PLACE UNIT IN FEED OUT CYCLE BY POSITIONING RELEASE LEVER ON LOWER STEP OF LATCH LEVER AND ADVANCING HIGH PART OF TIME DELAY CAM BEYOND TIME DELAY LEVER.
POSITION FEED PAWL TO EXTREME LEFT.

REQUIREMENT
MIN. 0.008 INCH --- MAX. 0.020 INCH BETWEEN REAR CHECK PAWL AND RATCHET TOOTH.

TO ADJUST
WITH CLAMP SCREW LOOSENED, POSITION REAR CHECK PAWL BY MEANS OF PRY POINT.



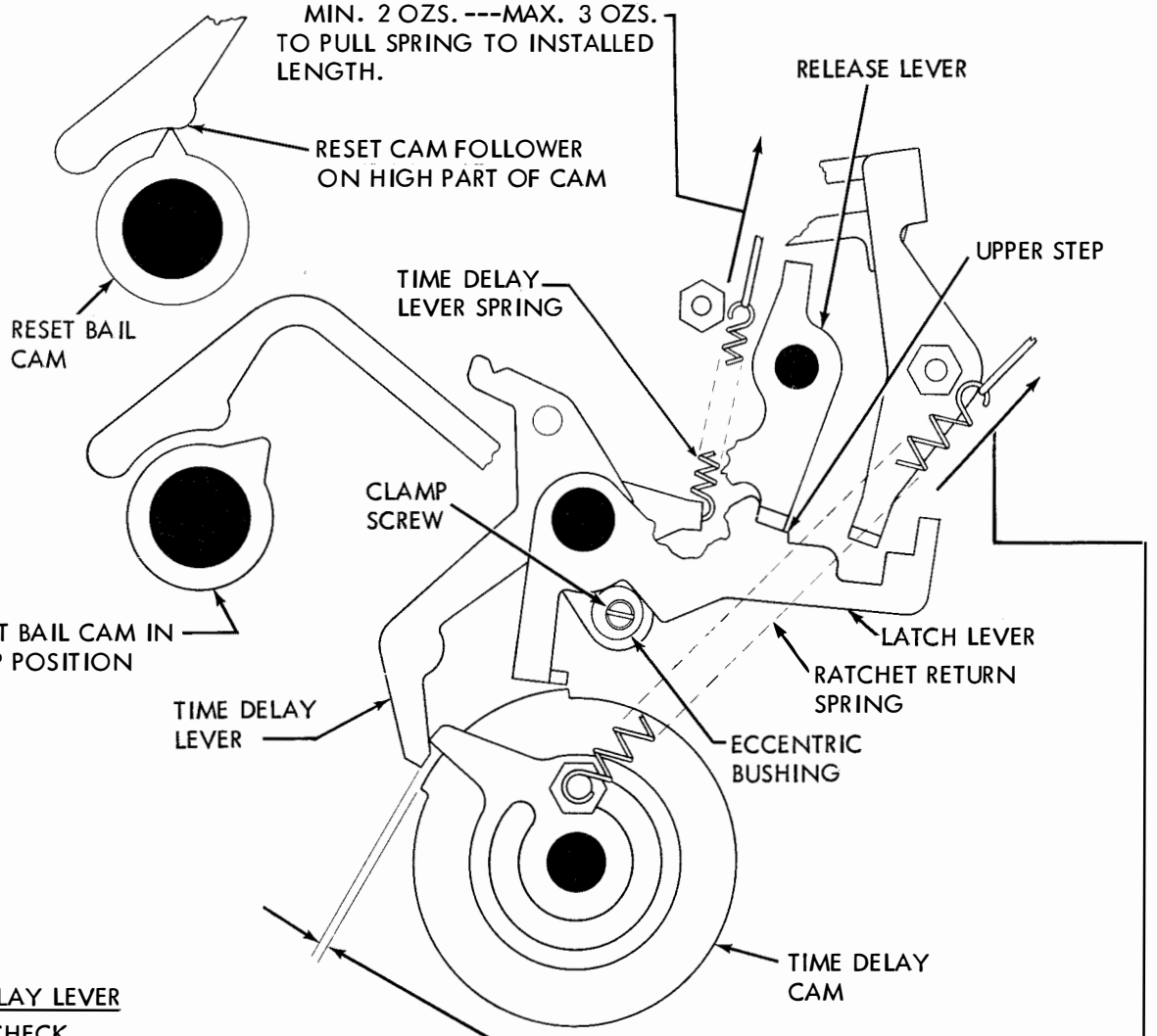
(B)
FRONT RATCHET STOP BLOCK

TO CHECK
WITH UNIT IN STOP POSITION, PLACE RELEASE LEVER ON LOWER STEP OF LATCH LEVER. PERMIT STOP ON FRONT RATCHET TO REST AGAINST STOP BLOCK. ROTATE MAIN SHAFT UNTIL FEED PAWL IS IN EXTREME RIGHT POSITION.

REQUIREMENT
MIN. 0.002 INCH --- MAX. 0.015 INCH BETWEEN FRONT CHECK PAWL AND FRONT RATCHET TOOTH.

TO ADJUST
WITH TWO CLAMP SCREWS LOOSENED POSITION STOP BLOCK BY MEANS OF PRY POINT.

3.40 Automatic and Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued



(A)
TIME DELAY LEVER

(1) TO CHECK
TRIP SELECTOR CLUTCH AND ROTATE MAIN SHAFT UNTIL STRIPPER CAM FOLLOWER IS ON HIGH PART OF ITS CAM.
REQUIREMENT
MIN. 0.040 INCH---MAX. 0.060 INCH
CLEARANCE BETWEEN TIME DELAY LEVER AND HIGH PART OF TIME DELAY CAM.

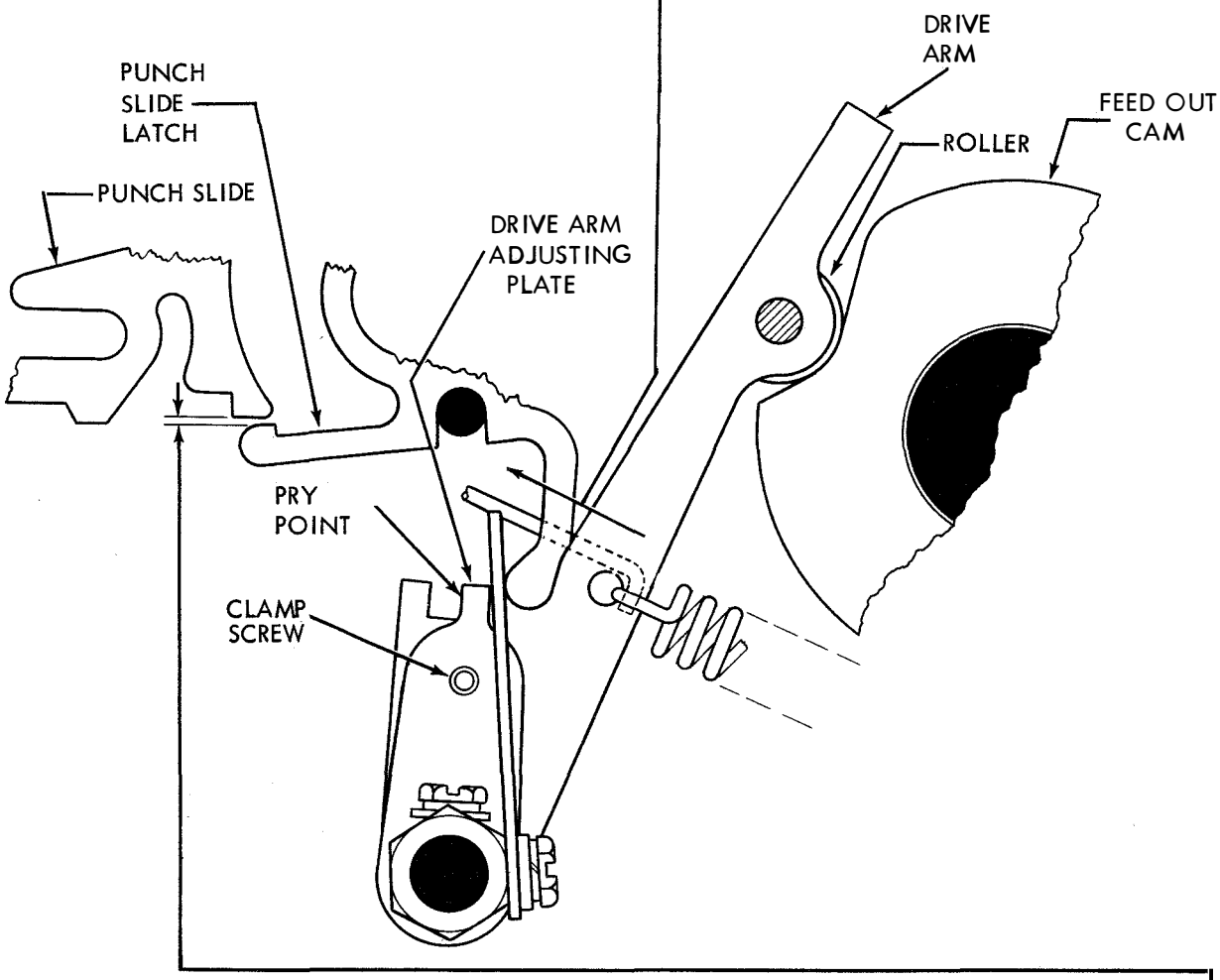
(2) REQUIREMENT
WITH UNIT IN STOP POSITION:
MIN. SOME
CLEARANCE BETWEEN TIME DELAY LEVER AND HIGH PART OF TIME DELAY CAM.

TO ADJUST
WITH CLAMP SCREW LOOSENED, POSITION ECCENTRIC BUSHING.

(C) RATCHET RETURN SPRING
REQUIREMENT
WITH UNIT IN STOP POSITION:
MIN. 5 OZS. ---MAX. 7 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

3.41 Automatic and Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued

DRIVE ARM SPRING
REQUIREMENT
WITH UNIT IN FEED-OUT CYCLE AND DRIVE ARM ROLLER HELD FIRMLY AGAINST ITS CAM INDENT, IT SHALL REQUIRE
MIN. 42 OZS. --- MAX. 50 OZS.
TO PULL SPRING TO INSTALLED LENGTH.



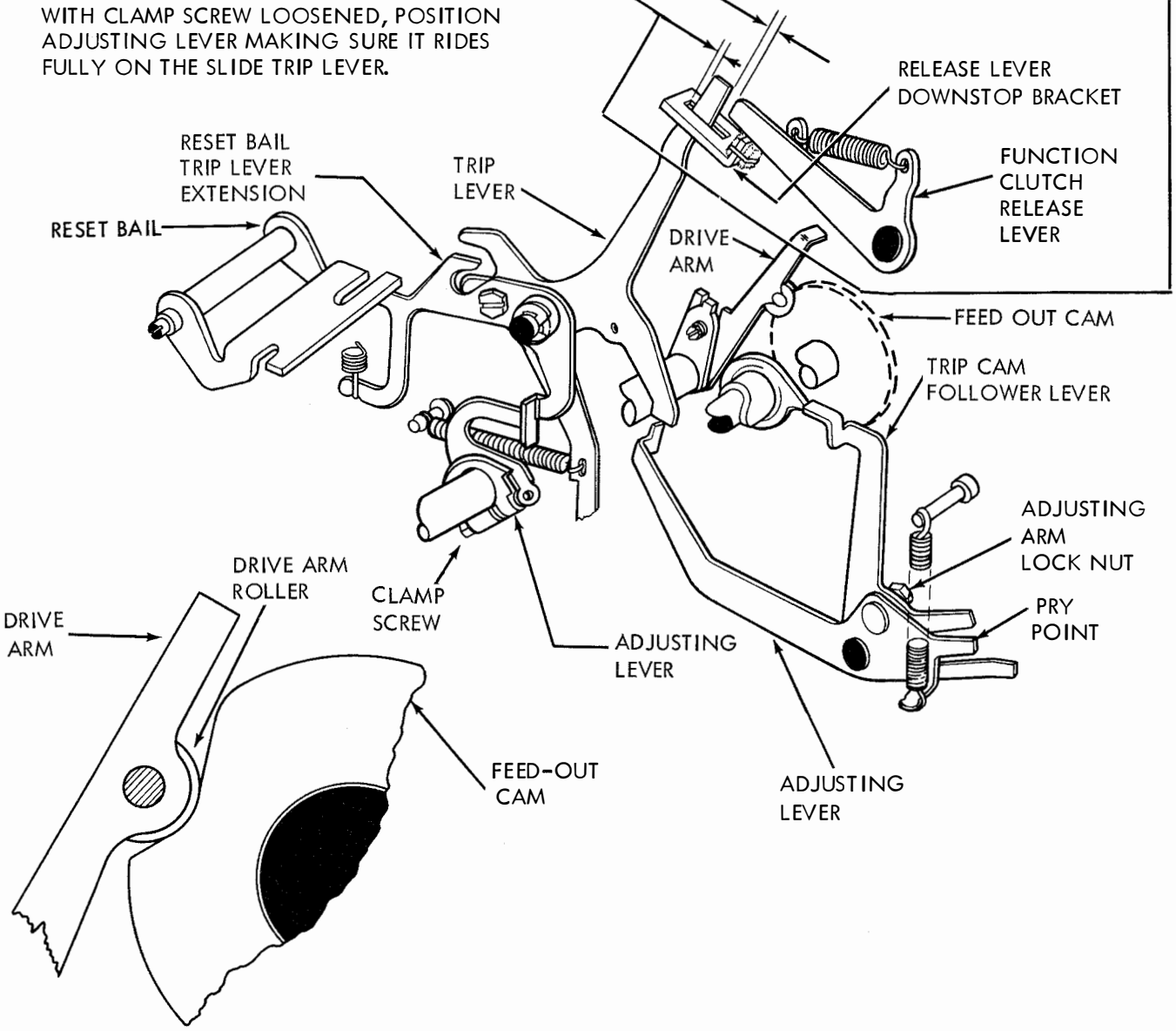
3.42 Automatic and Remote Control Noninterfering LTRS Tape Feed-out Mechanisms continued

PUNCH SLIDE LATCH
TO CHECK
SET UP BLANK CODE COMBINATION (-----) IN SELECTOR. PLACE UNIT IN FEED-OUT CYCLE, THE RATCHETS ADVANCED BEYOND THE TIME DELAY AND THE DRIVE ARM ON THE LOW PART OF ITS CAM.
REQUIREMENT
MIN. 0.010 INCH---MAX. 0.030 INCH
BETWEEN PUNCH SLIDE AND PUNCH SLIDE LATCH AT SLIDE WHERE CLEARANCE IS LEAST.
NOTE: SEE THAT RESET BAIL IS TRIPPED.
TO ADJUST
WITH CLAMP SCREW LOOSENED, POSITION DRIVE ARM ADJUSTING PLATE BY MEANS OF PRY POINT.

3.43 Automatic and Remote-control Noninterfering LTRS and Blank Tape Feed-out Mechanisms continued

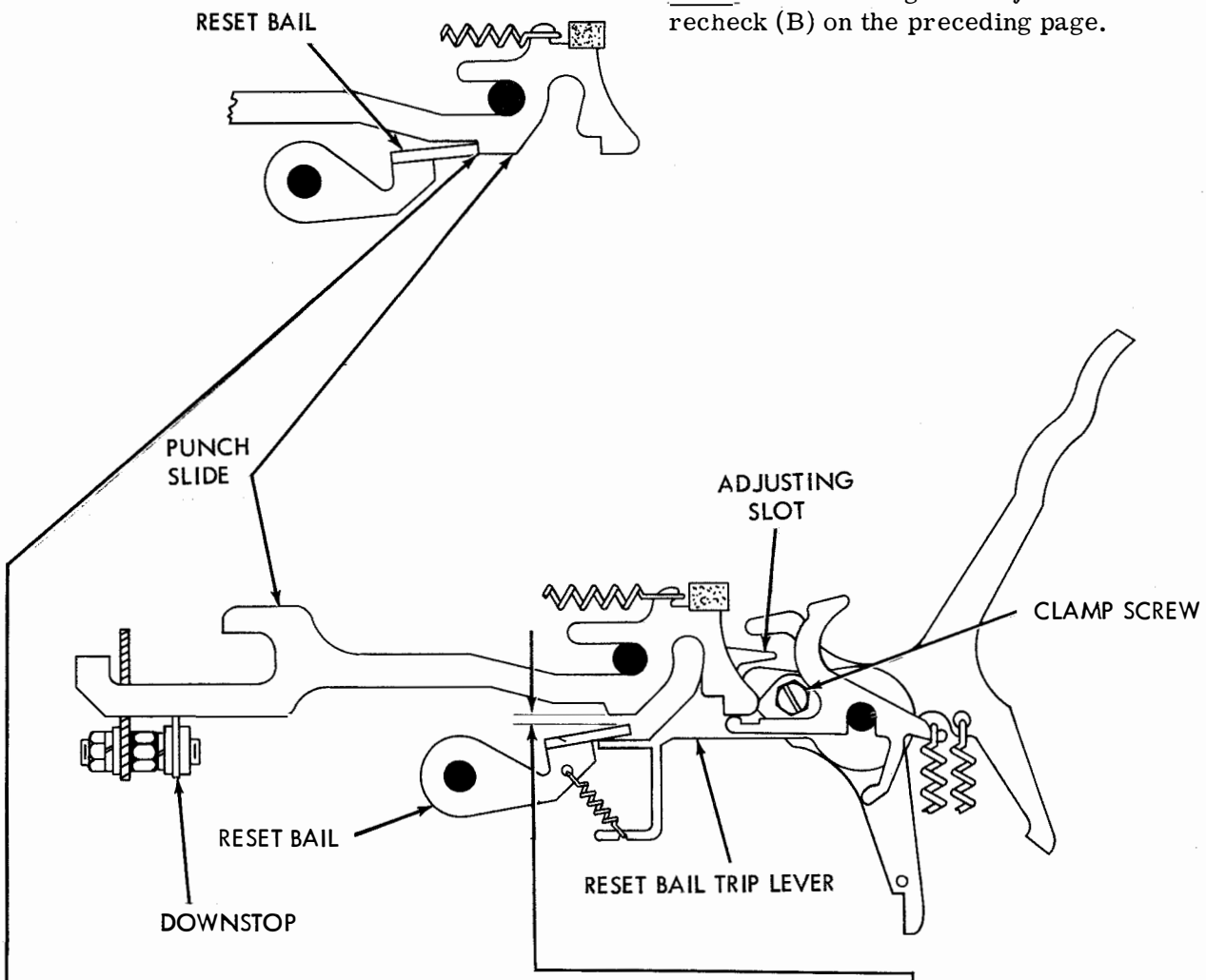
(B)
ADJUSTING LEVER
TO CHECK
PLACE UNIT IN FEED-OUT CYCLE, THE RATCHETS ADVANCED BEYOND THE TIME DELAY AND THE DRIVE ARM ON THE LOW PART OF FEED-OUT CAM.
REQUIREMENT
(1) MIN. 0.010 INCH---MAX. 0.030 INCH CLEARANCE BETWEEN THE TRIP LEVER AND CLUTCH RELEASE LEVER.
(2) MIN. SOME CLEARANCE BETWEEN TRIP LEVER AND LEFT END OF SLOT IN RELEASE LEVER DOWNSTOP BRACKET.
TO ADJUST
WITH CLAMP SCREW LOOSENED, POSITION ADJUSTING LEVER MAKING SURE IT RIDES FULLY ON THE SLIDE TRIP LEVER.

(A) FOLLOWER LEVER
REQUIREMENT
WITH FOLLOWER LEVER ON HIGH PART OF TRIP CAM:
(1) MIN. 0.010 INCH---MAX. 0.030 INCH BETWEEN RELEASE AND MAIN TRIP LEVER.
(2) SOME CLEARANCE BETWEEN MAIN TRIP LEVER AND DOWNSTOP BRACKET.
TO ADJUST
WITH LOCK NUT LOOSENED, POSITION ADJUSTING ARM BY MEANS OF PRY POINT.



3.44 Automatic and Remote Control Noninterfering LTRS and BLANK Tape Feed-Out Mechanisms continued

Note: After making this adjustment recheck (B) on the preceding page.



RESET BAIL TRIP LEVER

TO CHECK

LETTERS COMBINATION SELECTED, FUNCTION CLUTCH TRIPPED, TRIP CAM FOLLOWER RESTING ON THE HIGH PART OF CAM, PUNCH SLIDES AGAINST THEIR DOWNSTOP.

(1) REQUIREMENT

MIN. 0.008 INCH---MAX. 0.020 INCH CLEARANCE BETWEEN LOWER EDGE OF SLIDE AND UPPER EDGE OF RESET BAIL.

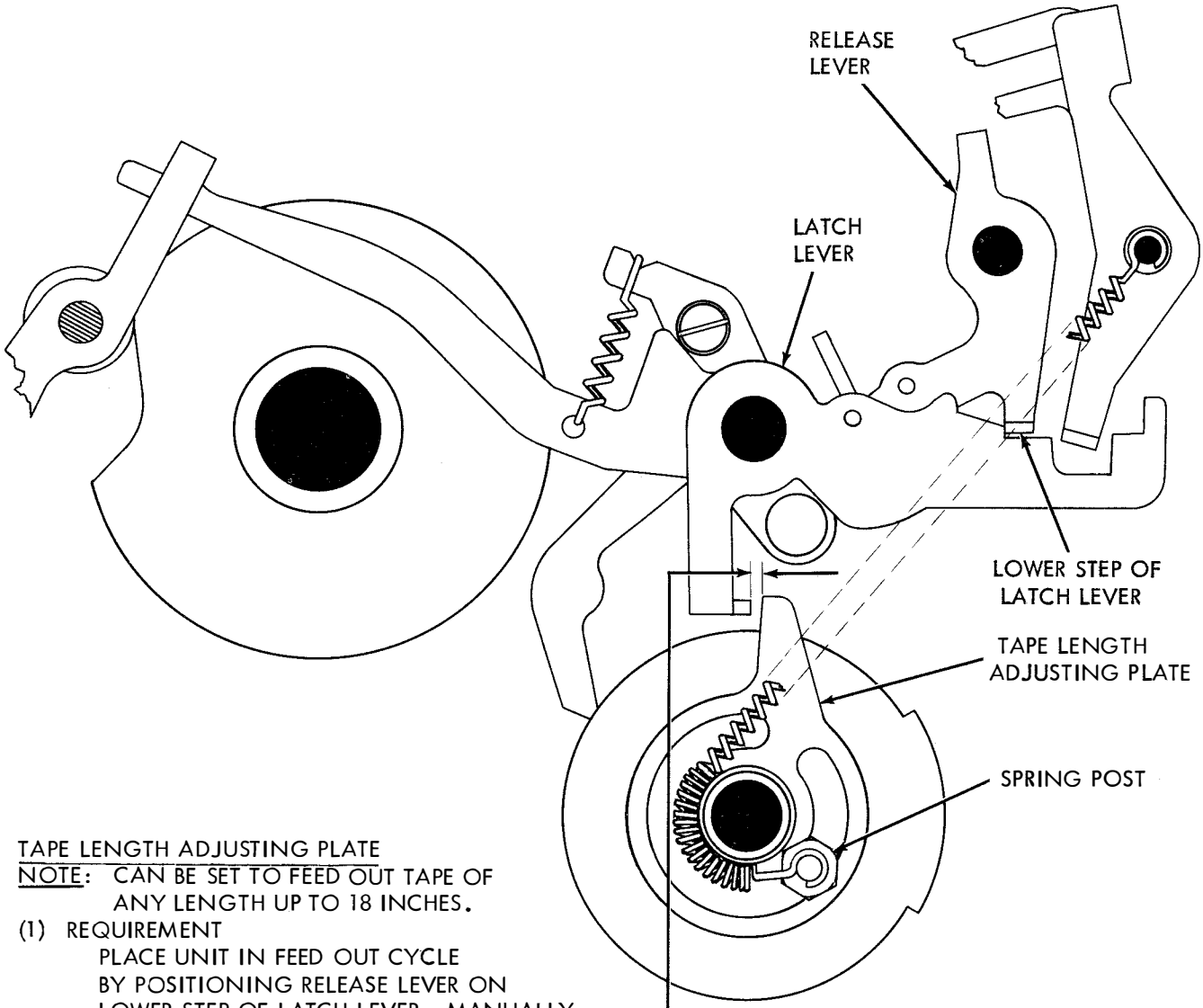
(2) REQUIREMENT

WITH CLUTCHES FULLY DISENGAGED, RESET BAIL SHOULD FULLY ENGAGE NOTCHES IN PUNCH SLIDES.

TO ADJUST

WITH CLAMP SCREW LOOSENED, POSITION RESET BAIL TRIP LEVER BY MEANS OF ADJUSTING SLOT.

3.45 Automatic and Remote Control Noninterfering LTRS and BLANK Tape Feed-Out Mechanisms continued



TAPE LENGTH ADJUSTING PLATE

NOTE: CAN BE SET TO FEED OUT TAPE OF ANY LENGTH UP TO 18 INCHES.

(1) REQUIREMENT

PLACE UNIT IN FEED OUT CYCLE BY POSITIONING RELEASE LEVER ON LOWER STEP OF LATCH LEVER. MANUALLY ADVANCE RATCHETS SO THAT FRONT RATCHET IS IN TOOTH PRECEDING TRIP OFF. ROTATE MAIN SHAFT UNTIL FEED PAWL IS IN EXTREME LEFT POSITION. CLEARANCE BETWEEN ADJUSTING PLATE AND LATCH LEVER PROJECTION

MIN. 0.002 INCH---MAX. 0.020 INCH

(2) REQUIREMENT

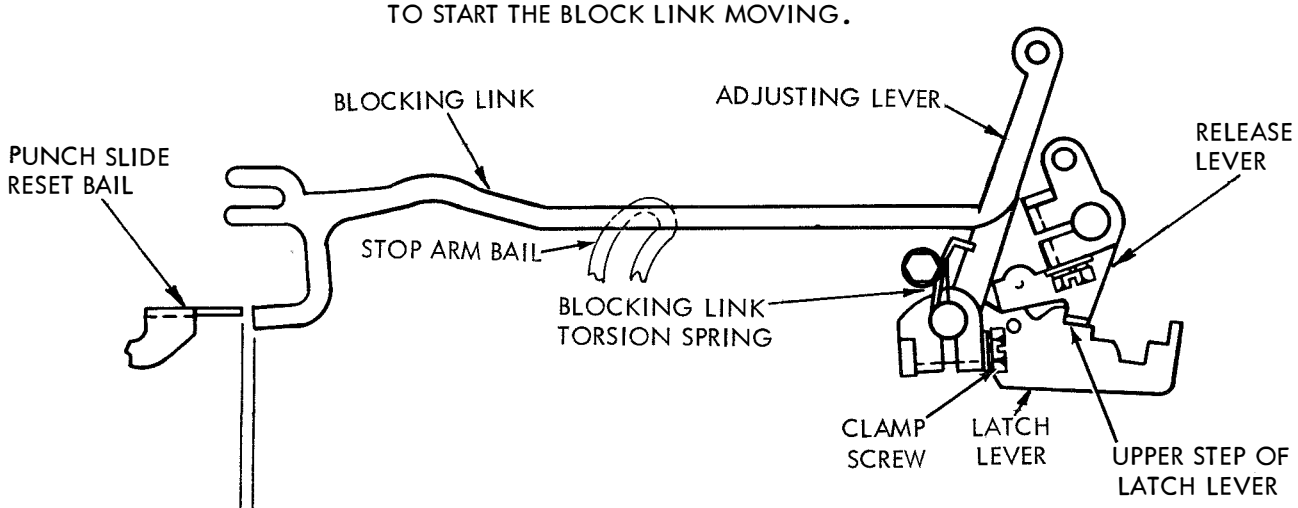
WHEN OPERATING UNDER POWER, UNIT SHOULD FEED OUT CORRECT LENGTH OF TAPE.

TO ADJUST

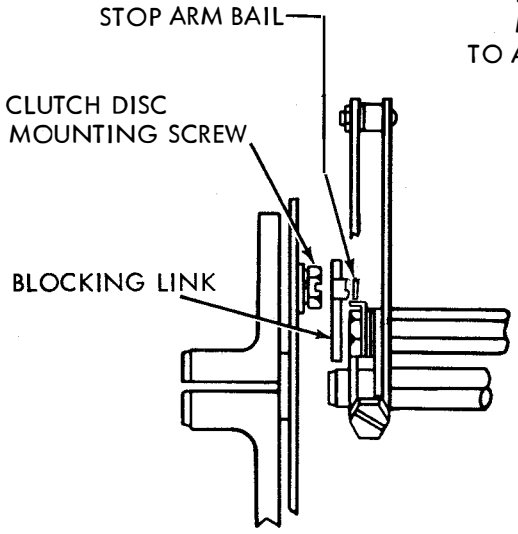
WITH SPRING POST LOOSENED, POSITION ADJUSTING PLATE.

3.46 Automatic and Remote Control Noninterfering BLANK Tape Feed-Out Mechanisms continued

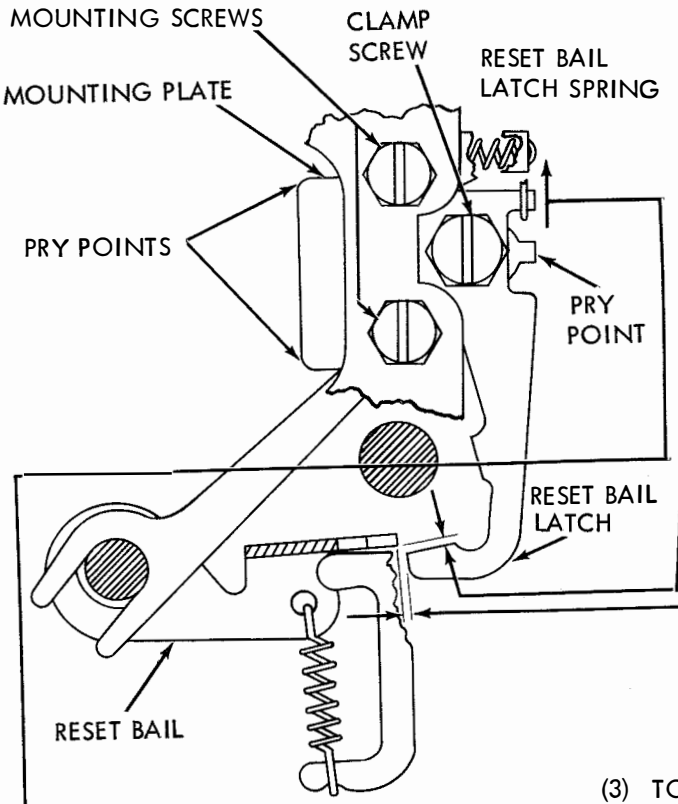
BLOCKING LINK TORSION SPRING
REQUIREMENT
WITH UNIT IN STOP POSITION AND RELEASE LEVER ON LOWER STEP OF LATCH LEVER
MIN. 25 GRAMS---MAX. 45 GRAMS
TO START THE BLOCK LINK MOVING.



BLOCKING LINK
TO CHECK (HORIZONTAL CLEARANCE)
WITH UNIT IN STOP POSITION AND RELEASE LEVER IN UPPER STEP OF LATCH LEVER, MANUALLY TRIP FUNCTION CLUTCH.
REQUIREMENT
(1) MIN. 0.005 INCH---MAX. 0.018 INCH BETWEEN THE RIGHT EDGE OF PUNCH SLIDE RESET BAIL AND BLOCKING LINK.
(2) WITH SELECTOR RANGE SCALE SET AT 120 THE BLOCKING LINK SHOULD BE CENTERED BETWEEN THE CLUTCH DISC MOUNTING SCREWS AND THE SELECTOR STOP ARM BAIL.
TO ADJUST
LOOSEN CLAMP SCREW ON ADJUSTING LEVER AND POSITION BLOCKING LINK TO MEET REQUIREMENT.



3.47 Automatic and Remote Control Noninterfering LTRS and BLANK Tape Feed-Out Mechanisms continued



(A) RESET BAIL LATCH

(1) TO CHECK (VERTICAL CLEARANCE)
SELECT LETTERS CODE COMBINATION (12345). ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS AND PUNCH SLIDES ARE TO EXTREME LEFT. SET UP BLANK CODE COMBINATION (-----) IN SELECTOR BY STRIPPING ALL PUSH LEVERS FROM SELECTING LEVERS. ROTATE MAIN SHAFT UNTIL PUNCH SLIDES ARE JUST LATCHED.

REQUIREMENT
MIN. 0.008 INCH---MAX. 0.020 INCH BETWEEN RESET BAIL AND RESET BAIL LATCH.

TO ADJUST
WITH MOUNTING SCREWS LOOSENED, POSITION MOUNTING PLATE BY MEANS OF PRY POINTS.

(2) REQUIREMENT (HORIZONTAL CLEARANCE)
WITH CLUTCHES DISENGAGED,
MIN. 0.005 INCH---MAX. 0.020 INCH BETWEEN RESET BAIL AND RESET BAIL LATCH.

TO ADJUST
POSITION RESET BAIL SO THAT APPROX. HALF ITS THICKNESS IS BELOW TOP SURFACE OF ITS LATCH. WITH CLAMP SCREW LOOSENED, POSITION RESET BAIL LATCH BY MEANS OF PRY POINT.

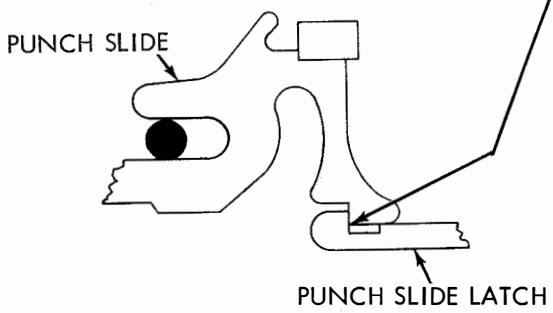
(B) RESET BAIL LATCH SPRING

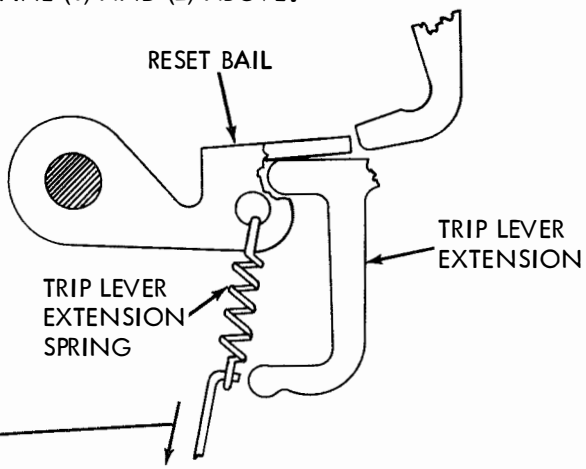
REQUIREMENT
WITH UNIT IN STOP CONDITION
MIN. 1 OZ.---MAX. 3 OZS.
TO START RESET BAIL LATCH MOVING.

(3) TO CHECK
SELECT LETTERS CODE COMBINATION (12345). ROTATE MAIN SHAFT UNTIL FUNCTION CLUTCH TRIPS. SET UP BLANK CODE COMBINATION (-----) IN SELECTOR BY STRIPPING ALL PUSH LEVERS FROM SELECTING LEVERS. ROTATE MAIN SHAFT TO STOP POSITION.

REQUIREMENT
PUNCH SLIDES LATCHED BY PUNCH SLIDE LATCHES.

TO ADJUST
REFINE (1) AND (2) ABOVE.





(C) TRIP LEVER EXTENSION SPRING

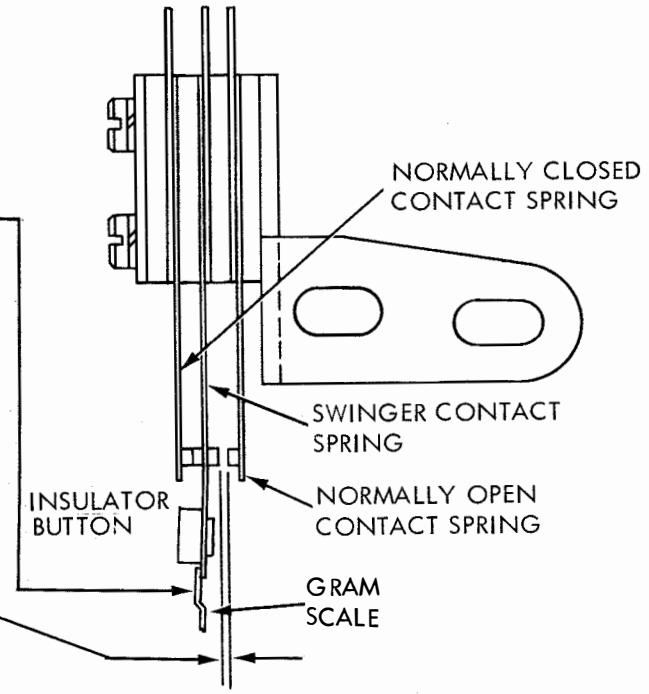
TO CHECK
DISENGAGE BOTH CLUTCHES. TRIP FUNCTION CLUTCH BY PIVOTING MAIN TRIP LEVER COUNTERCLOCKWISE. HOLD TRIP LEVER EXTENSION UP AGAINST RESET BAIL.

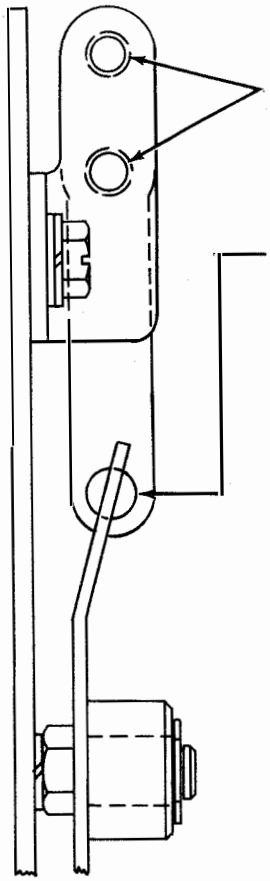
REQUIREMENT
MIN. 18 OZS.---MAX. 24 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

3.48 End of Feed-Out Timing Contacts for Noninterfering LTRS and BLANK Tape Feed-Out Mechanisms

(A) CONTACT SWINGER --- PRELIMINARY
REQUIREMENT
MIN. 1-1/2 OZS.---MAX. 2-1/2 OZS.
TO OPEN NORMALLY CLOSED CONTACT.
TO ADJUST
BEND SWINGER.

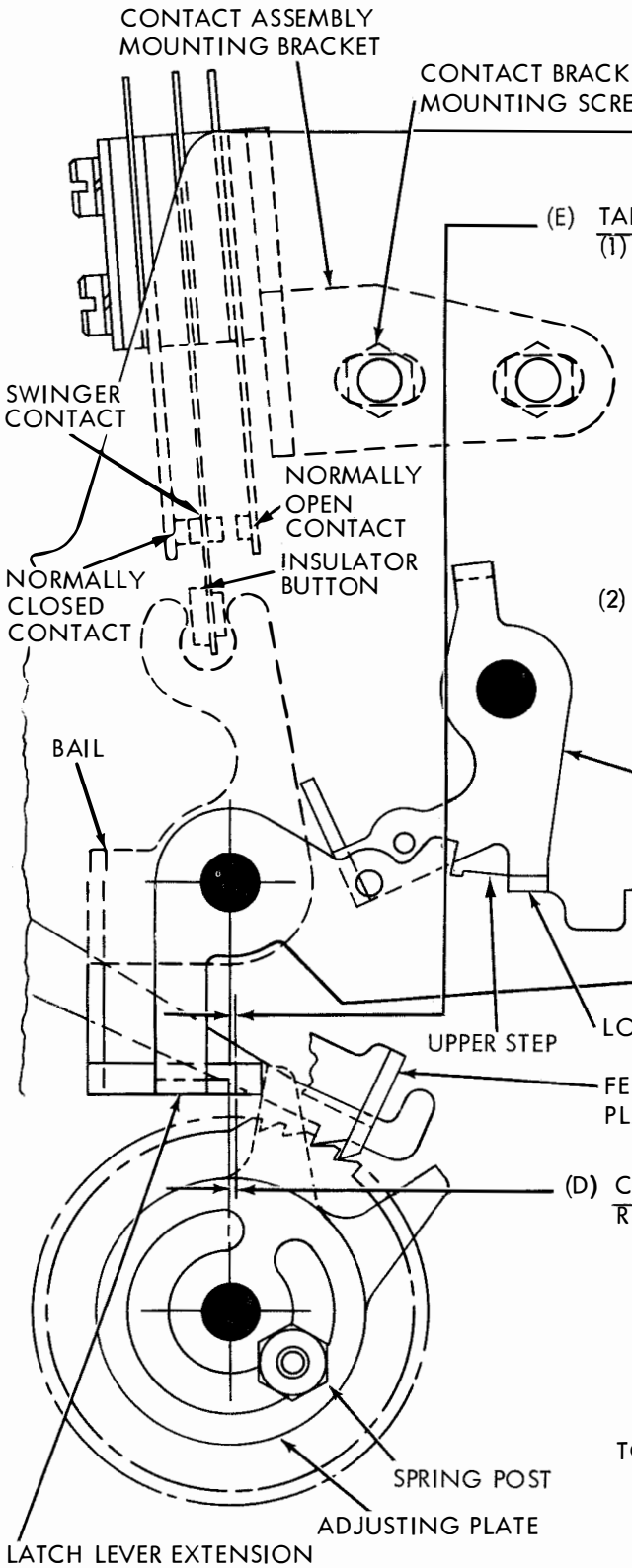
(B) CONTACT SPRING GAP --- PRELIMINARY
REQUIREMENT
NORMALLY OPEN CONTACT GAP
MIN. 0.012 INCH---MAX. 0.020 INCH
TO ADJUST
BEND CONTACT SPRING.





(C) CONTACT ASSEMBLY
REQUIREMENT
INSULATOR BUTTON ON SWINGER SHOULD BE CENTRALLY LOCATED IN BAIL EXTENSION YOKE.
TO ADJUST
WITH MOUNTING SCREWS LOOSENED
POSITION CONTACT ASSEMBLY.

3.49 End of Feed-Out Timing Contacts for Noninterfering LTRS and BLANK Tape Feed-Out Mechanisms continued



(E) TAPE LENGTH ADJUSTING PLATE

(1) REQUIREMENT

WITH UNIT IN STOP POSITION, BLANK COMBINATION SELECTED AND THE RELEASE LEVER POSITIONED ON LOWER STEP OF LATCH LEVER MANUALLY ADVANCE RATCHETS SO THAT THE FEED PAWL IS IN THE FRONT RATCHET TOOTH PRECEEDING TRIP OFF. TURN MAIN SHAFT UNTIL FEED PAWL IS IN EXTREME LEFT POSITION. HOLD BAIL AGAINST ADJUSTING PLATE LIGHTLY.

MIN. 0.030 INCH---MAX. 0.040 INCH CLEARANCE BETWEEN BAIL AND LATCH LEVER EXTENSION.

(2) REQUIREMENT

WHEN OPERATING UNDER POWER, UNIT SHOULD FEEDOUT CORRECT LENGTH OF TAPE.

TO ADJUST

WITH SPRING POST LOOSENED, POSITION ADJUSTING PLATE.

FEED PAWL IN EXTREME LEFT POSITION AND ADJUSTING PLATE IN DOTTED POSITION FOR ADJ. (E) ONLY.

(D) CONTACT ASSEMBLY MOUNTING BRACKET

REQUIREMENT

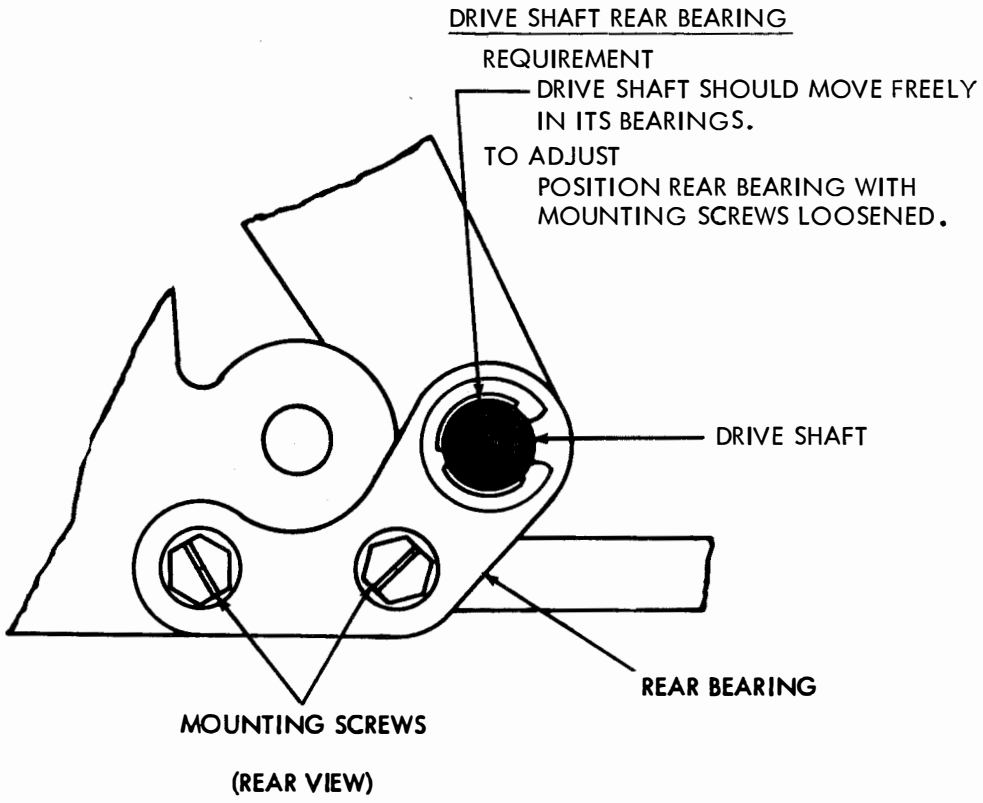
WITH UNIT IN STOP POSITION AND RELEASE LEVER POSITIONED ON LOWER STEP OF LATCH LEVER

MIN. 0.030---MAX. 0.040 INCH CLEARANCE BETWEEN LATCH LEVER EXTENSION AND BAIL WHEN BAIL IS POSITIONED SO CLEARANCE IS A MINIMUM.

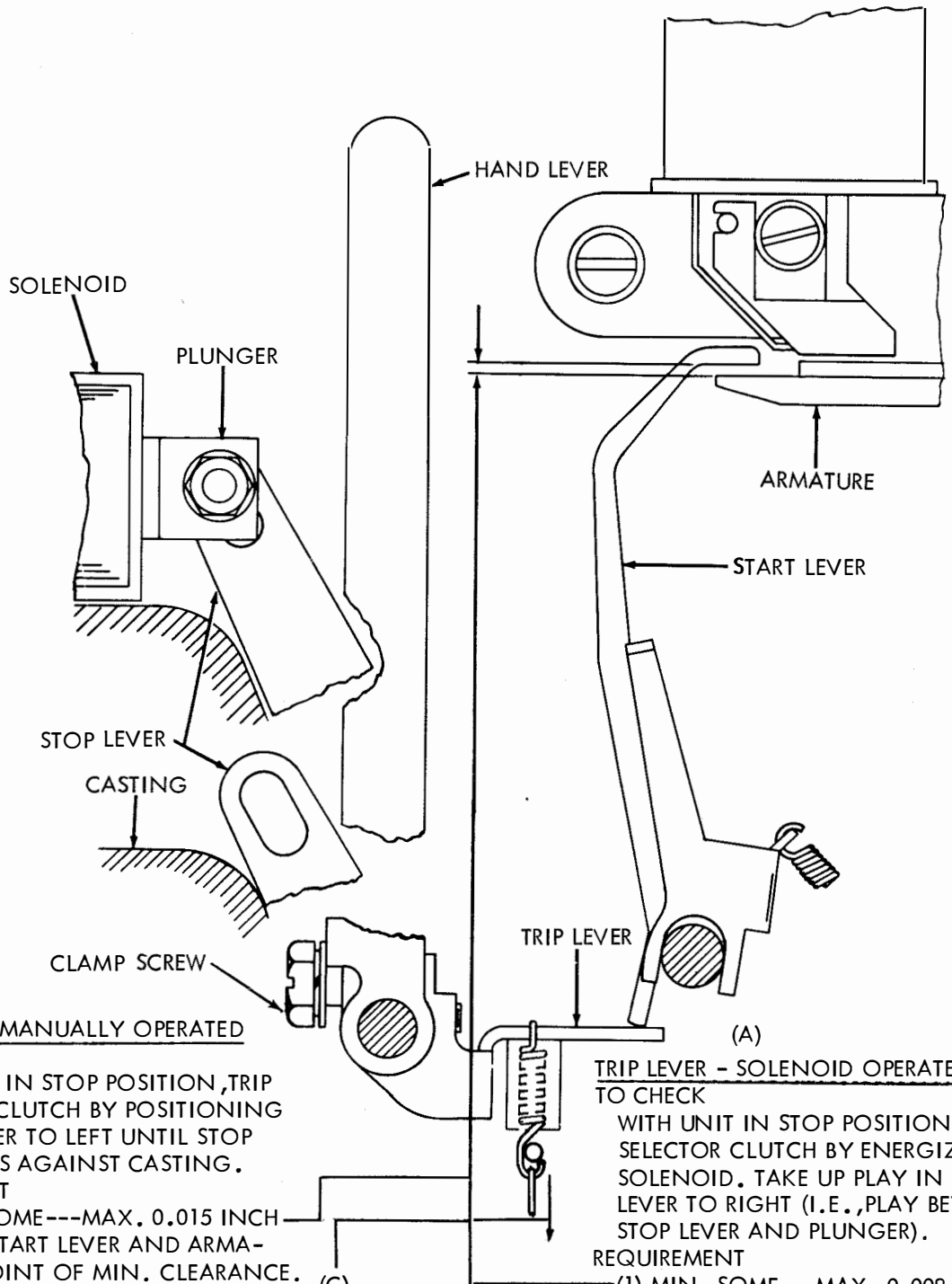
TO ADJUST

WITH MOUNTING SCREWS LOOSENED POSITION CONTACT BRACKET.

3.50 Manual- and Solenoid-Operated Interfering LTRS Tape Feed-Out Mechanisms



3.51 Manual- and Solenoid-Operated Interfering LTRS Tape Feed-Out Mechanisms continued

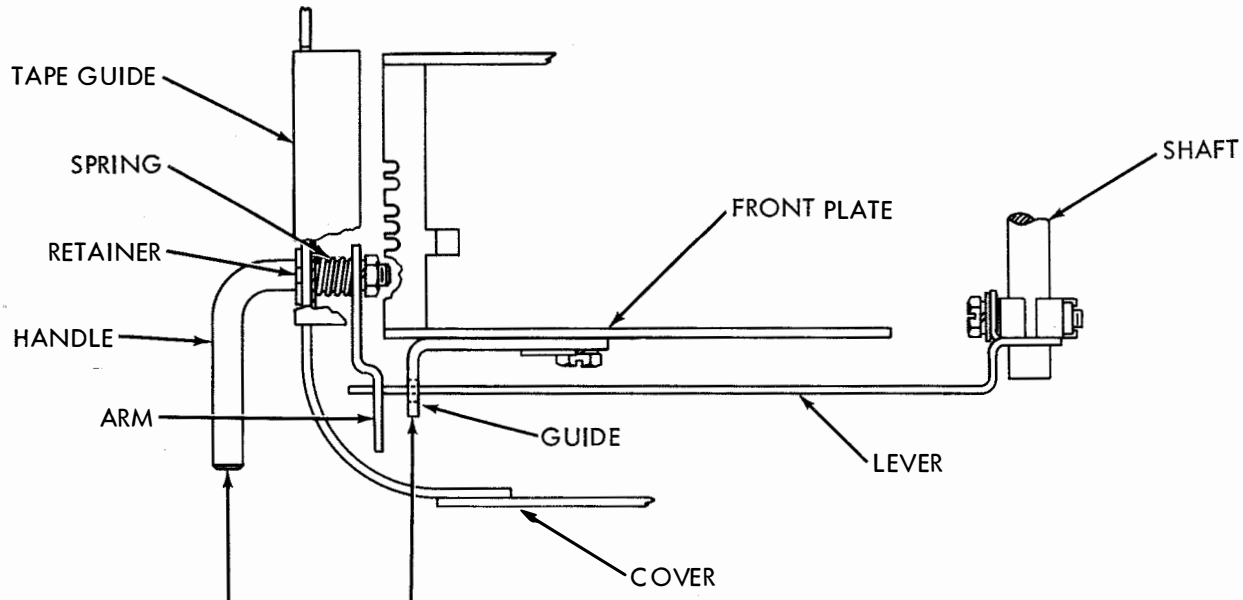


(B)
TRIP LEVER - MANUALLY OPERATED
TO CHECK
WITH UNIT IN STOP POSITION, TRIP SELECTOR CLUTCH BY POSITIONING HAND LEVER TO LEFT UNTIL STOP LEVER RESTS AGAINST CASTING.
REQUIREMENT
(1) MIN. SOME---MAX. 0.015 INCH BETWEEN START LEVER AND ARMATURE AT POINT OF MIN. CLEARANCE.
(2) START LEVER ENGAGING APPROX. CENTER OF TRIP LEVER'S OPERATING SURFACE.
TO ADJUST
WITH CLAMP SCREW LOOSENED, POSITION TRIP LEVER ON SHAFT.

(C)
TRIP LEVER SPRING
REQUIREMENT
MIN. 3/4 OZS.
MAX. 2 OZ.
TO PULL SPRING TO ITS INSTALLED LENGTH.

(A)
TRIP LEVER - SOLENOID OPERATED
TO CHECK
WITH UNIT IN STOP POSITION, TRIP SELECTOR CLUTCH BY ENERGIZING SOLENOID. TAKE UP PLAY IN STOP LEVER TO RIGHT (I.E., PLAY BETWEEN STOP LEVER AND PLUNGER).
REQUIREMENT
(1) MIN. SOME---MAX. 0.008 INCH BETWEEN START LEVER AND ARMATURE AT POINT OF MIN. CLEARANCE.
(2) START LEVER ENGAGING APPROX. CENTER OF TRIP LEVER'S OPERATING SURFACE.
TO ADJUST
WITH CLAMP SCREW LOOSENED, POSITION TRIP LEVER ON SHAFT.

3.52 External Manual Interfering LTRS Tape Feed-Out Mechanism



(A) LEVER

REQUIREMENT

LEVER SHOULD NOT TOUCH SIDES OF GUIDE.

TO ADJUST

BEND LEVER.

NOTE 1:

RECHECK MANUALLY OPERATED TRIPLEVER AND TRIPLEVER SPRING ADJUSTMENTS.

(B) ARM

REQUIREMENT

WITH COVER PROPERLY POSITIONED AS SPECIFIED IN SECTION CONTAINING REQUIREMENTS AND ADJUSTMENTS FOR TYPING REPERFORATOR COVER, AND ARM JUST TOUCHING LEVER, THE HANDLE SHOULD BE APPROXIMATELY HORIZONTAL.

TO ADJUST

WITH ARM ADJUSTING NUT FRICTION TIGHT, POSITION ARM.

NOTE 2:

REMOVE COVER TO SIMPLIFY TIGHTENING AND LOOSENING THE ADJUSTING NUT.

3.53 Timing Contact Mechanism (Operated by Selector)

SEE NOTE BELOW

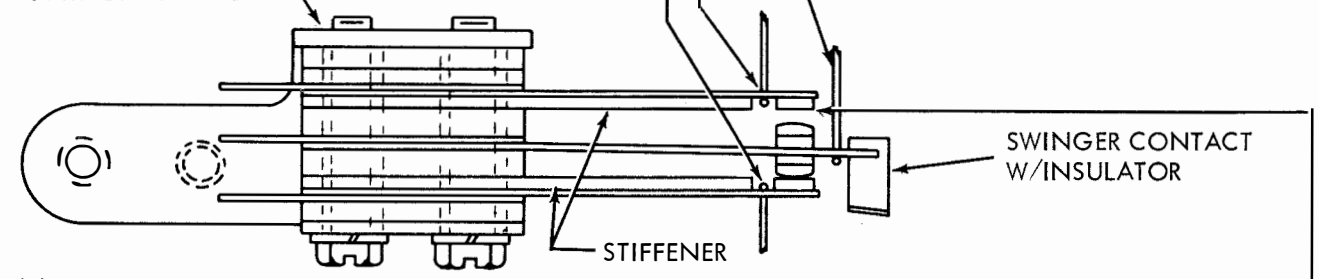
(A) "M" CONTACT SPRINGS
REQUIREMENT
MIN. 4 OZS.
TO MOVE CONTACT SPRING AWAY FROM ITS STIFFENER.
TO ADJUST
BEND CONTACT SPRING.

NOTE

PARTS SHOULD BE WELL ALIGNED AND FREE OF SHARP BENDS. CONTACT POINTS MISALIGNAMENT SHALL NOT EXCEED 1/4 THE DIAMETER OF POINTS.

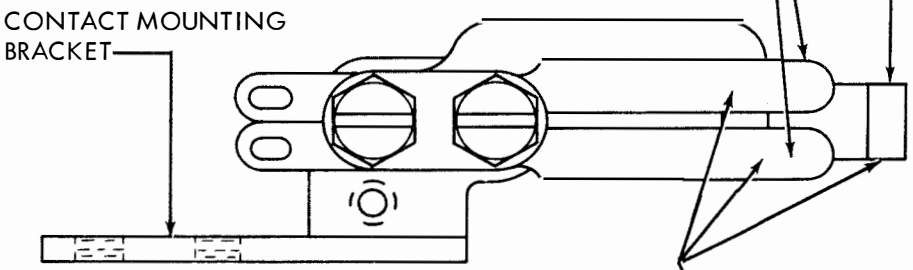
(B) "B" CONTACT SPRINGS
REQUIREMENT
MIN. 4 OZS.
TO MOVE CONTACT SPRING AWAY FROM ITS STIFFENER.
TO ADJUST
BEND CONTACT SPRING.

(C) "S" - "B" CONTACT SPRINGS
REQUIREMENT
MIN. 3-1/2 OZS.
MAX. 4-1/4 OZS.
TO MOVE SWINGER CONTACT AWAY FROM NORMALLY BREAK CONTACT.
TO ADJUST
BEND SWINGER CONTACT SPRING.



(D) TWIN "B" CONTACT SPRINGS
(1) REQUIREMENT
BOTH CONTACTS SHOULD OPEN AT THE SAME TIME.
(2) REQUIREMENT
THE INSERTION OF AN 0.008 INCH GAUGE BETWEEN ONE PAIR OF POINTS SHOULD NOT CAUSE THE OTHER PAIR TO SEPARATE.
TO ADJUST
BEND SPRINGS OR SLIGHTLY TWIST STIFFENER.
RECHECK CONTACT PRESSURE.

(E) "S" - "M" CONTACT GAP
REQUIREMENT
MIN. 0.012 INCH
MAX. 0.020 INCH
TO ADJUST
BEND STIFFENER.



(F) TWIN SPRINGS ("M" CONTACTS)
REQUIREMENT
BOTH BREAK AND SWINGER CONTACTS SHOULD MAKE APPROXIMATELY THE SAME TIME.
TO ADJUST
BEND BREAK CONTACT SPRINGS OR SLIGHTLY TWIST STIFFENER.

NOTE 1:
IN THIS TEXT, THE LETTERS S, B AND M ARE USED TO DENOTE RESPECTIVELY THE "SWINGER", "BREAK" (NORMALLY CLOSED WITH LEVER RIDING CAM DEPRESSION) AND "MAKE" (NORMALLY OPEN; CLOSED ONLY WITH LEVER RIDING CAM PEAK) CONTACT SPRINGS.

NOTE 2:
WHEN MAKING ADJUSTMENTS (F) THROUGH (H) MAKE CERTAIN THE "S" SPRING INSULATOR IS CLEAR OF THE OPERATING LEVER.

3.54 Timing Contact Mechanism (Operated by Selector) continued

(H) CONTACT ASSEMBLY POSITION

(1) REQUIREMENT

SET RANGE SCALE AT 50 (IMPORTANT). ROTATE SHAFT SO OPERATING LEVER IS ON LOWEST PART OF CAM.

TO ADJUST

WITH MOUNTING SCREWS LOOSENED POSITION CONTACT ASSEMBLY BY MEANS OF ITS OVERSIZE MOUNTING HOLES SO LEVER CAN BE MOVED

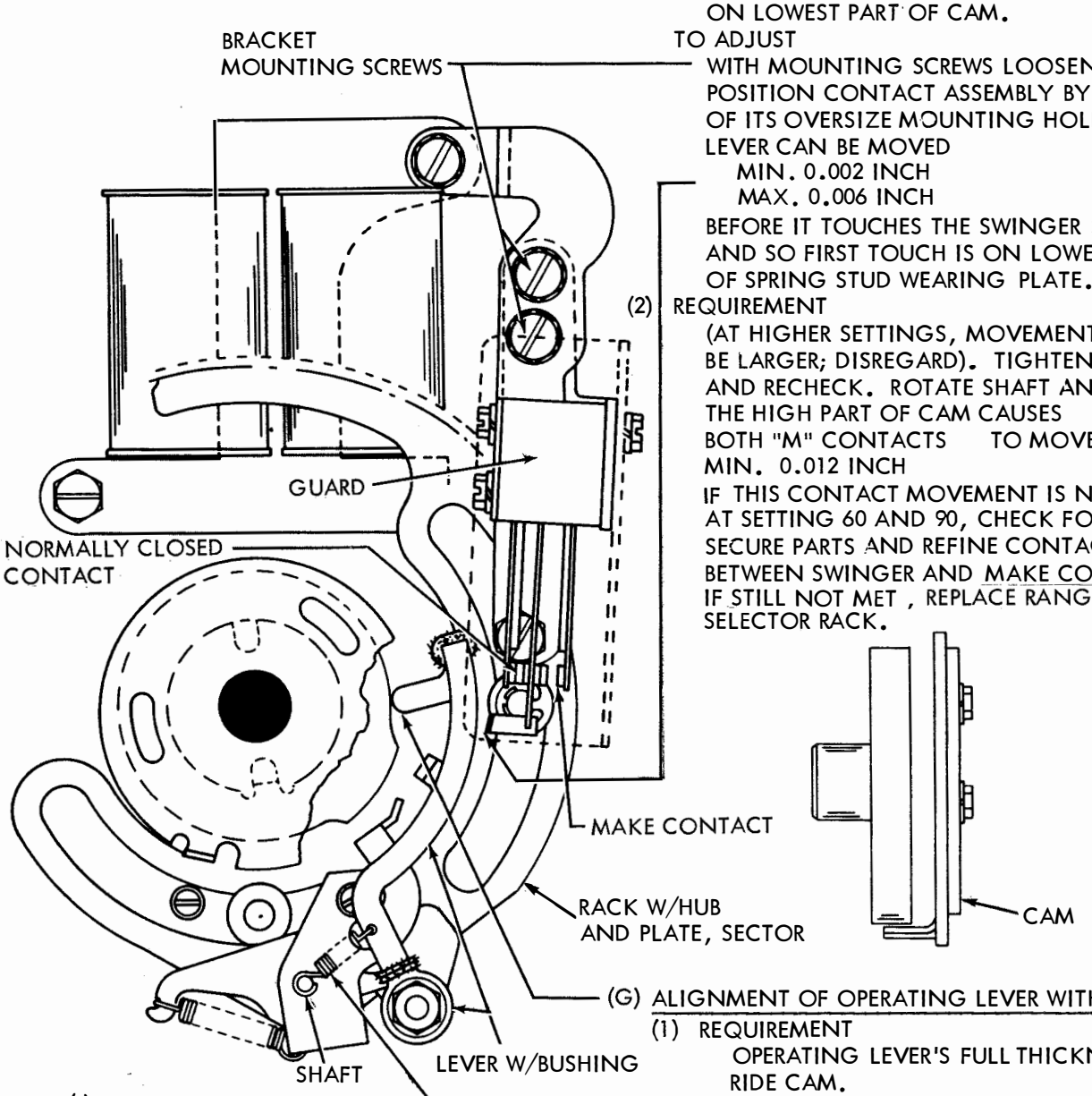
MIN. 0.002 INCH
MAX. 0.006 INCH

BEFORE IT TOUCHES THE SWINGER SPRING, AND SO FIRST TOUCH IS ON LOWER HALF OF SPRING STUD WEARING PLATE.

(2) REQUIREMENT

(AT HIGHER SETTINGS, MOVEMENT WILL BE LARGER; DISREGARD). TIGHTEN SCREWS AND RECHECK. ROTATE SHAFT AND NOTE THE HIGH PART OF CAM CAUSES BOTH "M" CONTACTS TO MOVE AT LEAST, MIN. 0.012 INCH

IF THIS CONTACT MOVEMENT IS NOT MET AT SETTING 60 AND 90, CHECK FOR INSECURE PARTS AND REFINE CONTACT GAP BETWEEN SWINGER AND MAKE CONTACT. IF STILL NOT MET, REPLACE RANGE SCALE SELECTOR RACK.



(G) ALIGNMENT OF OPERATING LEVER WITH CAM

(1) REQUIREMENT

OPERATING LEVER'S FULL THICKNESS SHOULD RIDE CAM.

TO CHECK

TAKE UP ALL CAM END PLAY TOWARD SELECTOR CLUTCH DRUM, ALL OPERATING LEVER END PLAY (AT ITS BEARING) IN OPPOSITE DIRECTION. OBSERVE LEVER AND CAM FOR FULL ENGAGEMENT.

(2) REQUIREMENT

LEVER SHOULD NOT EXERT PRESSURE AGAINST FACE OF CLUTCH DISC.

TO ADJUST

REFINE CLUTCH DRUM END PLAY.

(I) OPERATING LEVER SPRING

REQUIREMENT

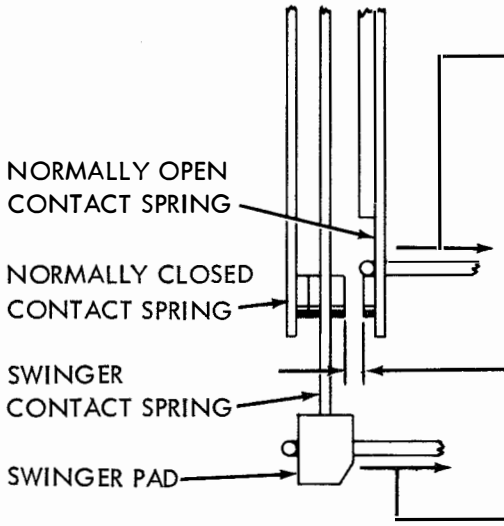
THE SPRING SHOULD HOLD OPERATING LEVER AGAINST CAM WITH LIGHT PRESSURE. WITH SPRING REMOVED.

MIN. 2 OZS.
MAX. 3 OZS.

TO STRETCH SPRING 5/8 INCH LENGTH.

3.55 Auxiliary Contact Assembly

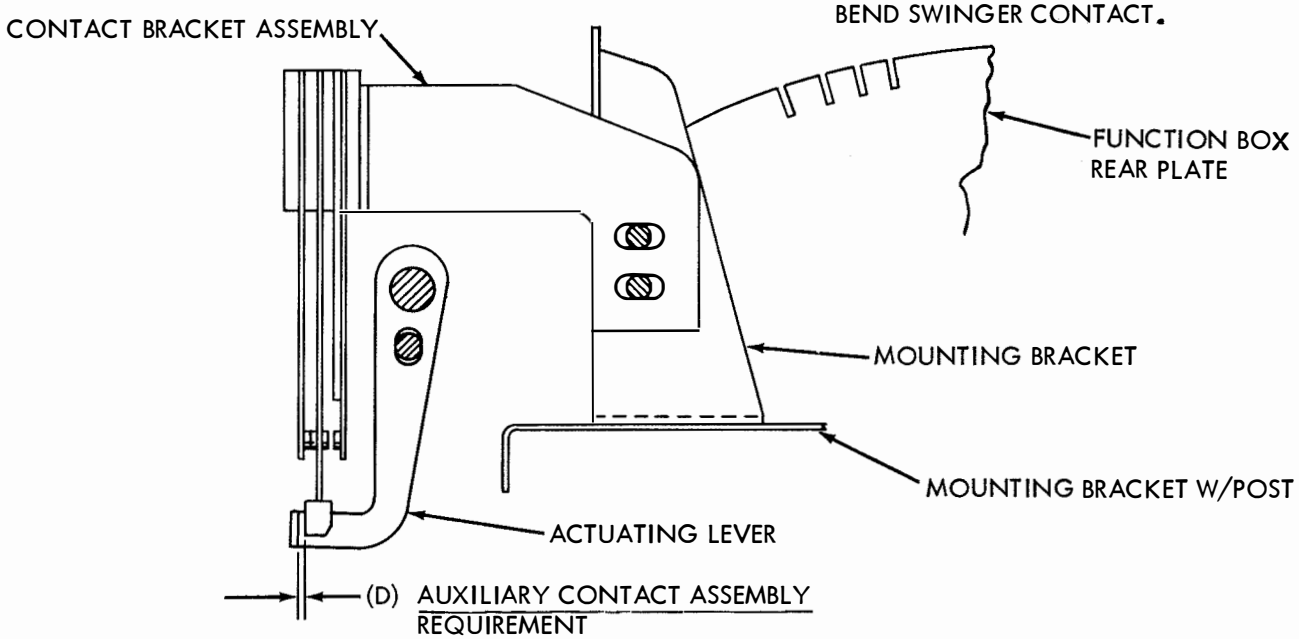
NOTE:
THE FOLLOWING ADJUSTMENTS SHOULD BE MADE PRIOR TO INSTALLATION OF CONTACT BRACKET ASSEMBLY ON THE UNIT.



(A) NORMALLY OPEN CONTACT SPRING
REQUIREMENT
MIN. 4-1/2 OZS.
MAX. 5-1/2 OZS.
TO MOVE CONTACT SPRING AWAY FROM ITS STIFFENER.
TO ADJUST
BEND CONTACT SPRING. RECHECK CONTACT GAP.

(B) NORMALLY OPEN CONTACT GAP
REQUIREMENT
MIN. 0.020 INCH
MAX. 0.025 INCH
TO ADJUST
BEND STIFFENER.

(C) NORMALLY CLOSED CONTACT
REQUIREMENT
MIN. 3 OZS.
MAX. 4 OZS.
TO MOVE SWINGER CONTACT AWAY FROM NORMALLY CLOSED CONTACT.
TO ADJUST
BEND SWINGER CONTACT.



(REAR VIEW)

(D) AUXILIARY CONTACT ASSEMBLY
REQUIREMENT
TRIP FUNCTION CLUTCH AND ROTATE UNTIL CLEARANCE BETWEEN PAD AND ACTUATOR IS MAXIMUM.
MIN. SOME
MAX. 0.008 INCH
CLEARANCE BETWEEN SWINGER PAD AND ACTUATING LEVER WHEN PLAY IS TAKEN UP TO MAKE CLEARANCE A MINIMUM.
TO ADJUST
LOOSEN MOUNTING SCREWS AND POSITION CONTACT BRACKET ASSEMBLY ON MOUNTING BRACKET. IT MAY BE NECESSARY TO REPOSITION MOUNTING BRACKET TO MEET REQUIREMENT.

3.56 Multiple Mounted Function Blade Contact Mechanism

Note: For early design see par 4.21.

NOTE 1:

THE FOLLOWING ADJUSTMENTS SHOULD BE MADE PRIOR TO INSTALLING THE CONTACT BRACKET ASSEMBLY ON UNIT.

(A) NORMALLY OPEN CONTACT GAP

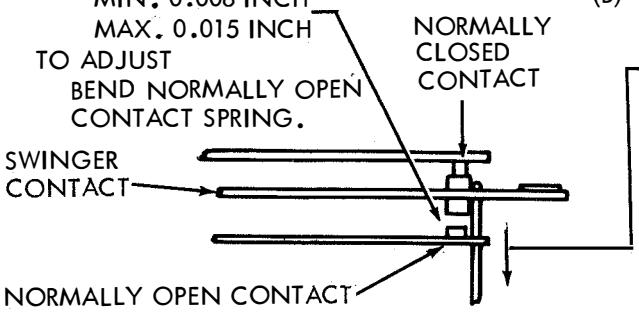
REQUIREMENT

MIN. 0.008 INCH

MAX. 0.015 INCH

TO ADJUST

BEND NORMALLY OPEN CONTACT SPRING.



(B) NORMALLY CLOSED CONTACT

REQUIREMENT

MIN. 8 GRAMS

MAX. 15 GRAMS

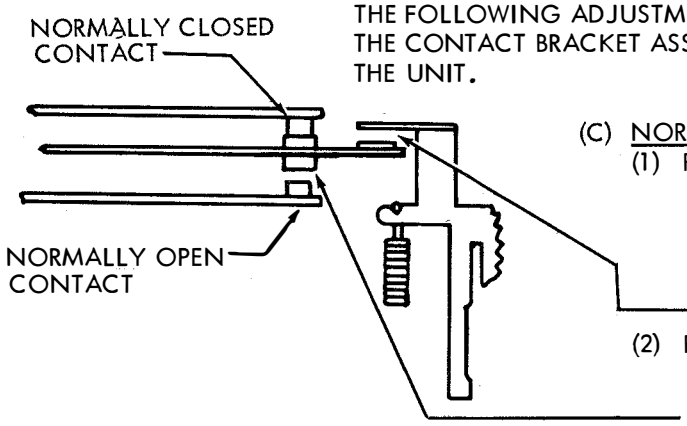
TO MOVE THE SWINGER CONTACT AWAY FROM THE NORMALLY CLOSED CONTACT.

TO ADJUST

BEND NORMALLY CLOSED CONTACT SPRING.

NOTE 2:

THE FOLLOWING ADJUSTMENTS SHOULD BE MADE AFTER THE CONTACT BRACKET ASSEMBLY IS MOUNTED TO THE UNIT.



(C) NORMALLY OPEN CONTACT GAP

(1) REQUIREMENT

WITH THE FUNCTION BLADE IN ITS LOWEST POSITION IN THE NON-SELECTED CONDITION. CLEARANCE BETWEEN THE CONTACT SWINGER INSULATOR BUTTON AND THE FUNCTION BLADE:

MIN. SOME

(2) REQUIREMENT

CONTACT GAP

MIN. 0.008 INCH

MAX. 0.015 INCH

TO ADJUST

BEND NORMALLY CLOSED CONTACT SPRING.

(3) REQUIREMENT

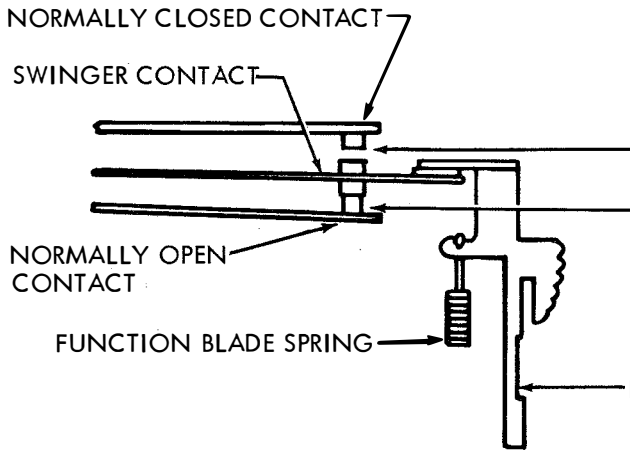
WITH THE FUNCTION BLADE IN ITS LOWEST POSITION IN THE SELECTED CONDITION. GAP BETWEEN THE SWINGER CONTACT AND NORMALLY CLOSED (NOW OPEN) CONTACT

MIN. 0.015 INCH

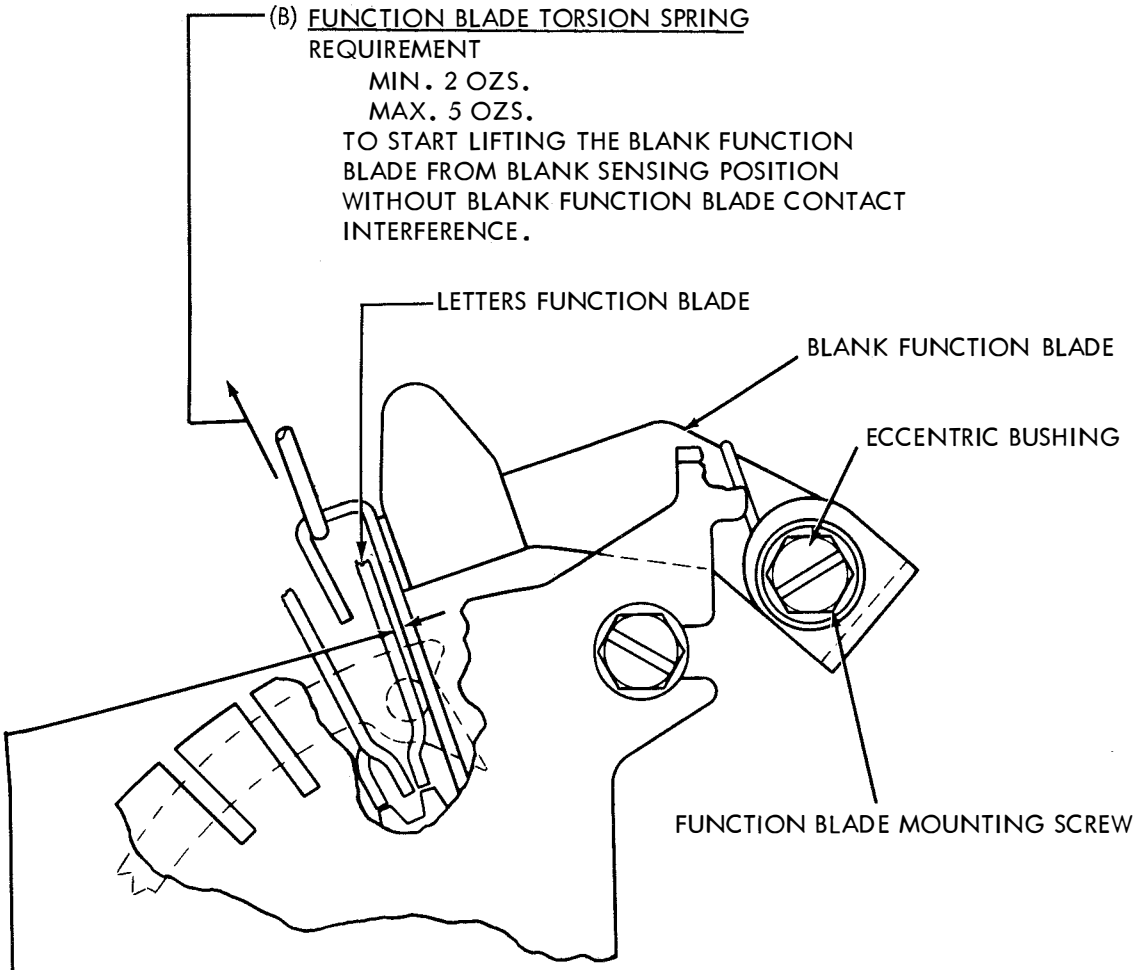
AND SOME OVERTRAVEL OF THE NORMALLY OPEN CONTACT.

TO ADJUST

BEND NORMALLY CLOSED CONTACT SPRING. REFINE PREVIOUS ADJUSTMENTS TO MAINTAIN REQUIREMENTS.



3. 57 Blank Delete Mechanism



3.58 Blank Delete Mechanism continued

FEED PAWL READJUSTMENT

REQUIREMENT

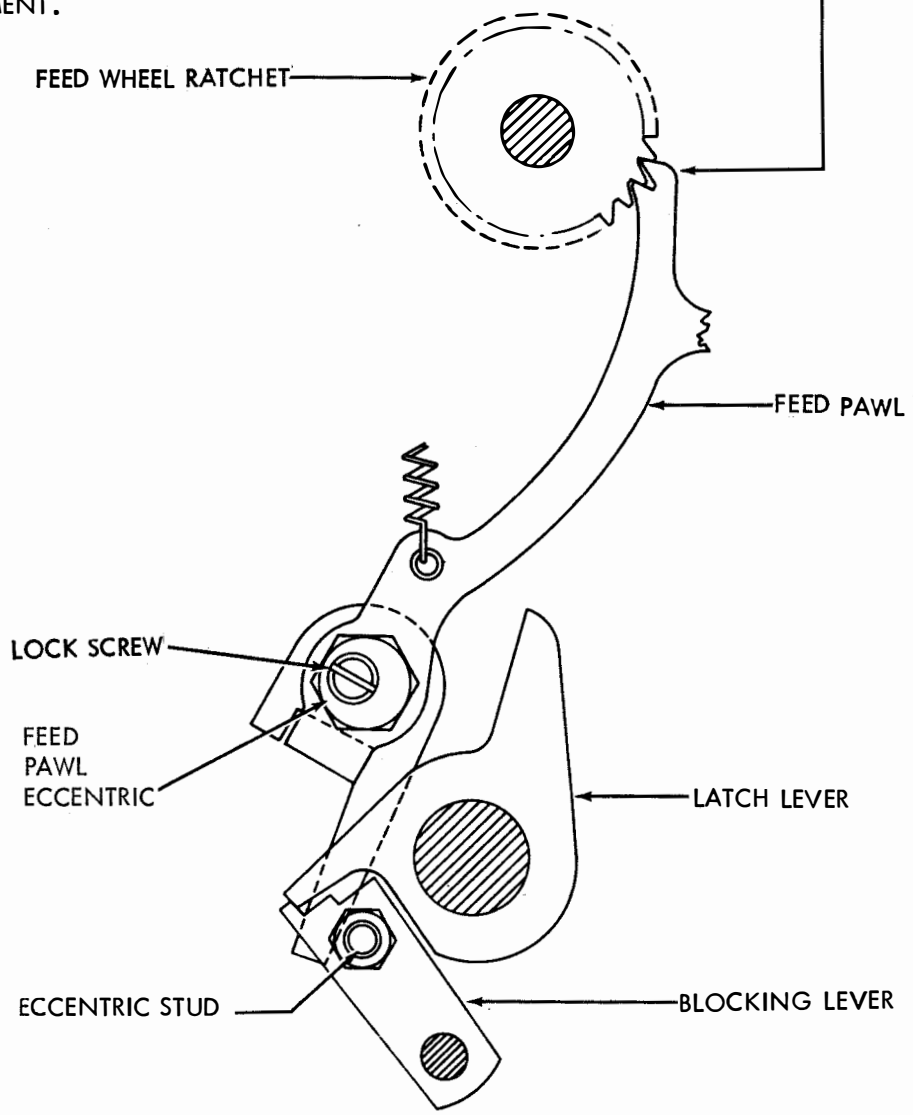
WITH FEED WHEEL RATCHET IN ITS FULLY DETENTED POSITION, THE FEED PAWL IN ITS UPPERMOST POSITION MUST JUST TOUCH THE LOWER PART OF A TOOTH ON THE RATCHET.

TO ADJUST

WITH LOCK SCREW FRICTION TIGHT, ROTATE THE FEED PAWL ECCENTRIC, KEEPING HIGH PART OF ECCENTRIC TO RIGHT OF LOCK SCREW.

NOTE:

THE ECCENTRIC STUD SHOULD BE BACKED OFF TO ELIMINATE ANY INTERFERENCE WITH THIS ADJUSTMENT.



3.59 Blank Delete Mechanism continued

BLOCKING LEVER WITH SHAFT MOUNTING PLATE

REQUIREMENT

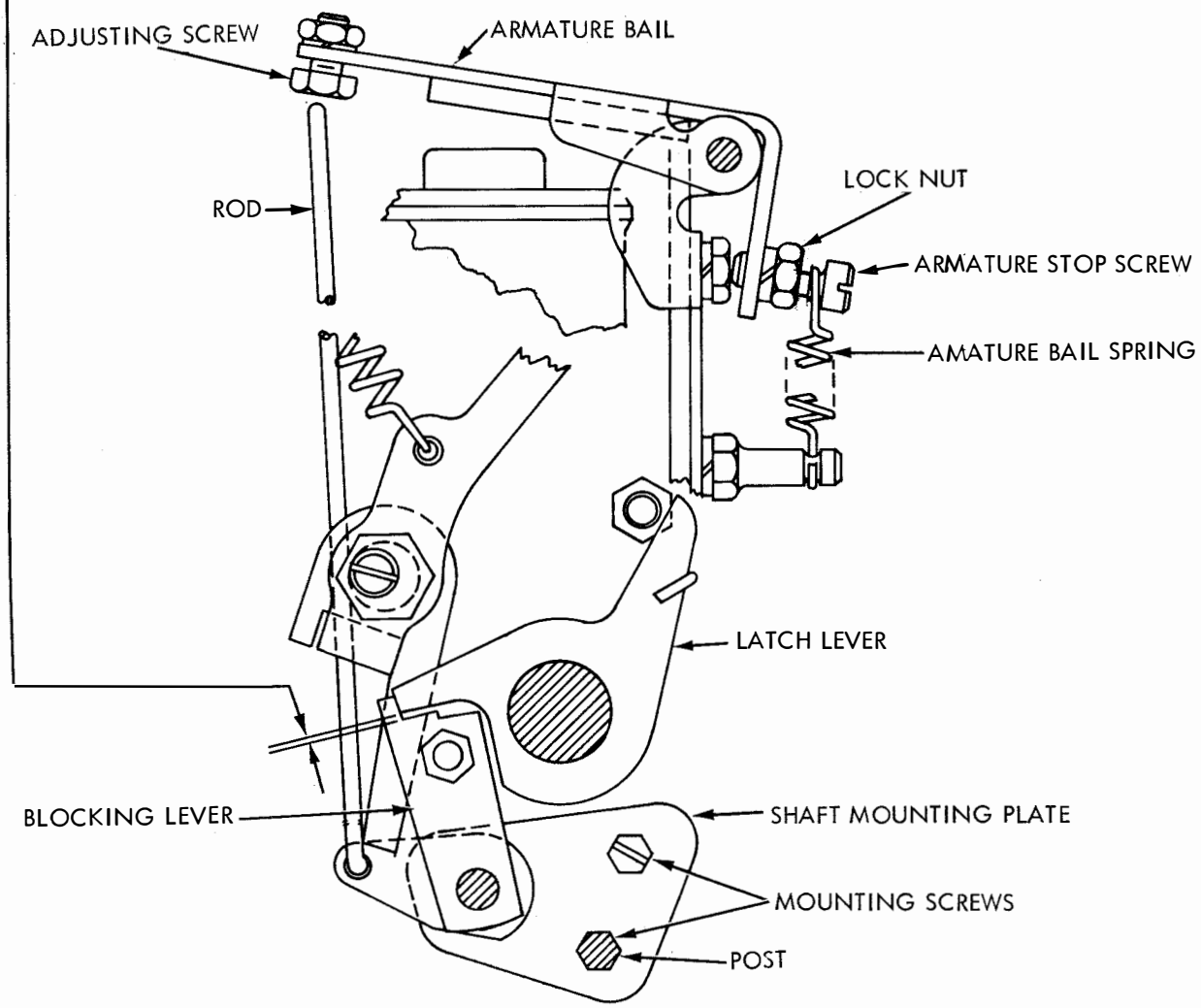
WITH THE UNIT IN THE STOP POSITION, (ALL CLUTCHES LATCHED)

MIN. 0.015 INCH--MAX. 0.030 INCH CLEARANCE BETWEEN THE BLOCKING LEVER AND THE LATCH LEVER.

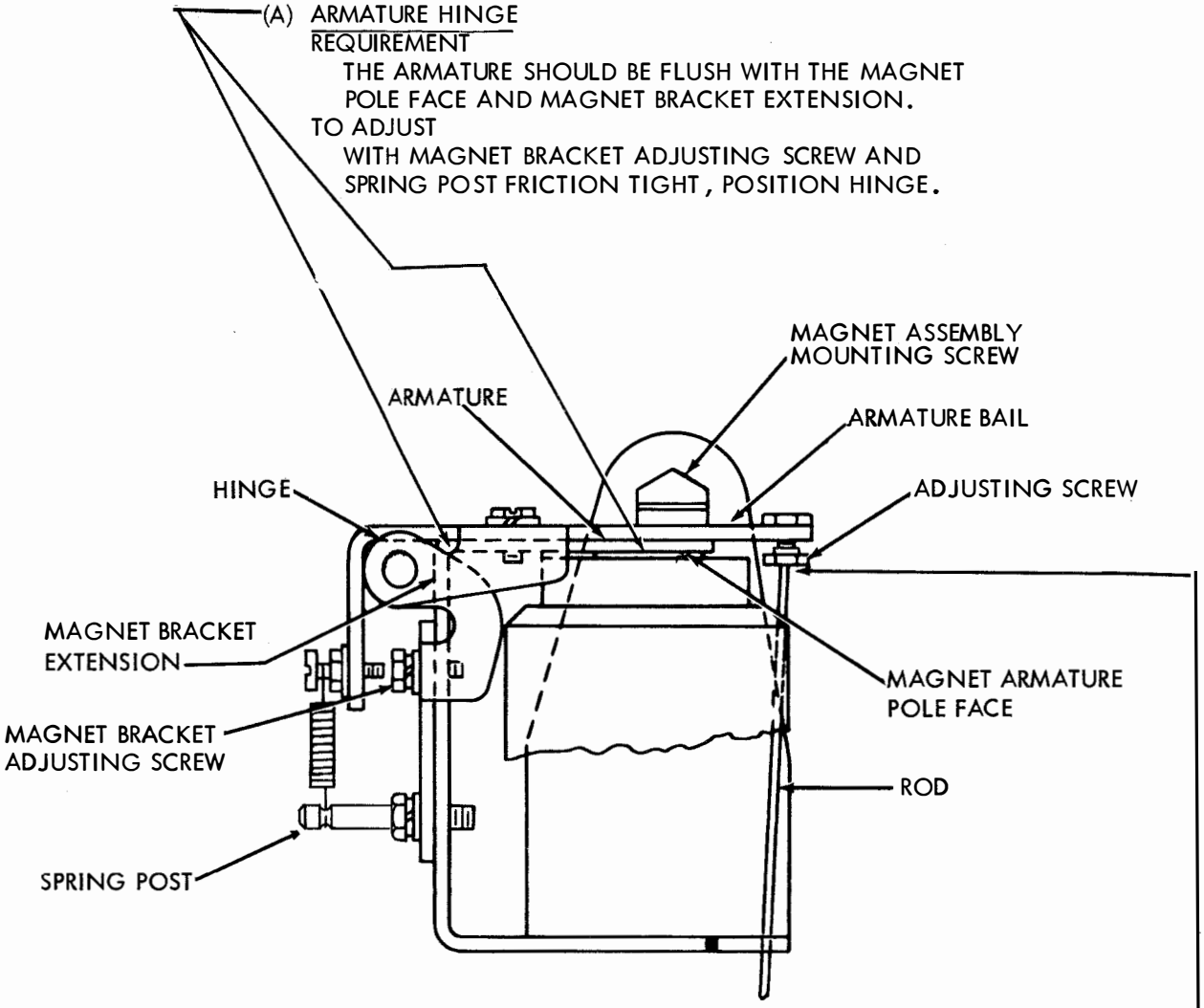
TO ADJUST

LOOSEN MOUNTING SCREWS AND POSITION THE BLOCKING LEVER WITH SHAFT MOUNTING PLATE.

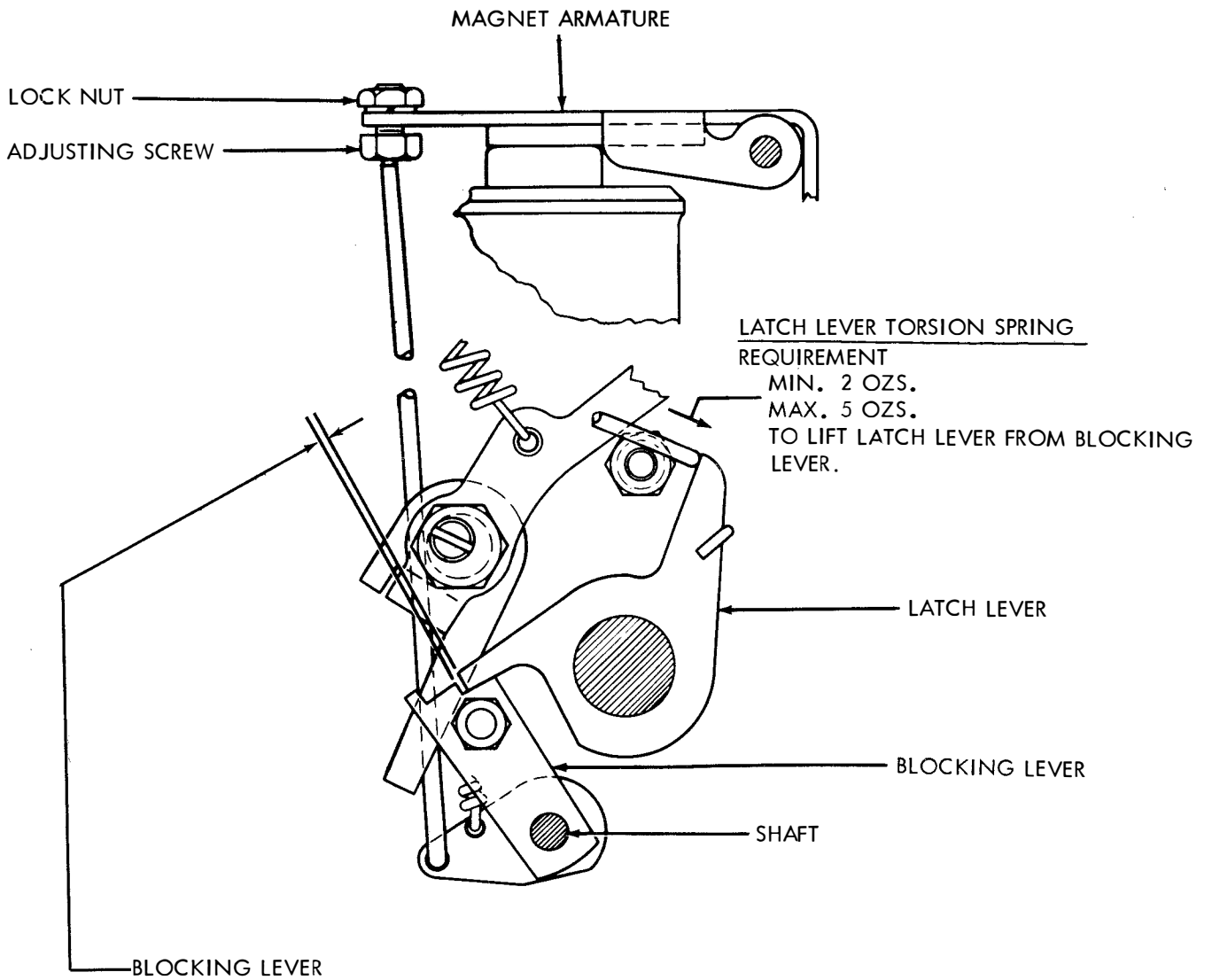
NOTE: CHECK THAT THE HUB ON THE STUD WITH BUSHING DOES NOT RUB AGAINST THE REAR PUNCH PLATE CAUSING THE BLOCKING LEVER SHAFT TO BIND.



3.60 Blank Delete Mechanism continued



3.61 Blank Delete Mechanism continued



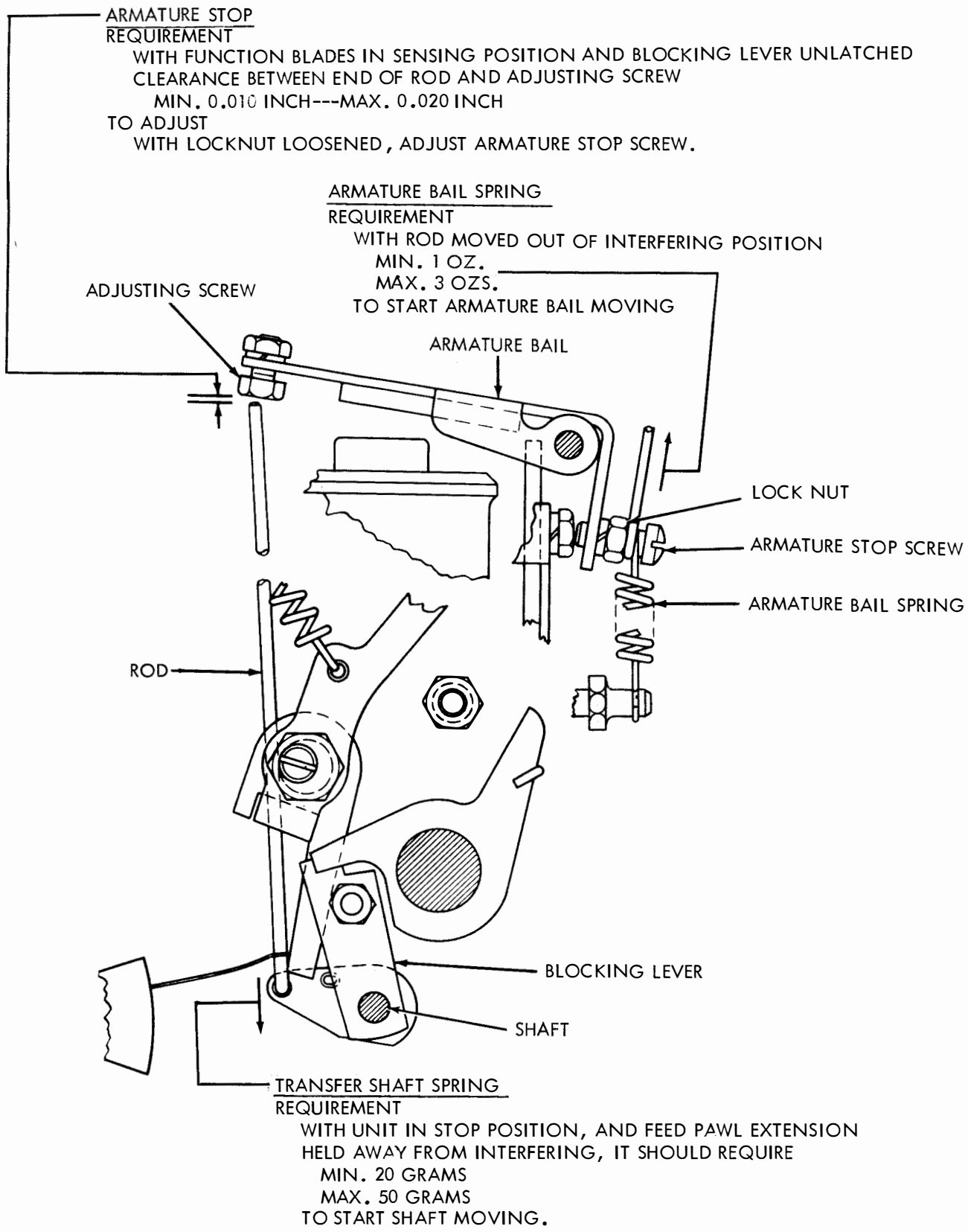
REQUIREMENT
WITH FUNCTION BLADES IN SENSING POSITION AND MAGNET ARMATURE MANUALLY HELD OPERATED,
CLEARANCE BETWEEN BLOCKING LEVER AND LATCH LEVER
MIN. SOME
MAX. 0.005 INCH

TO ADJUST
WITH MAGNET ARMATURE MANUALLY HELD OPERATED AND LOCKNUT ON ADJUSTING SCREW LOOSENED, ROTATE ADJUSTING SCREW TO MEET THE REQUIREMENT.

RECHECK
TIGHTEN LOCK NUT ON ADJUSTING SCREW AND RECHECK ADJUSTMENT.

NOTE: IF UNIT IS EQUIPPED WITH FEED SUPPRESSION, THE LEVER ON TAPE SHOE ARM SHOULD BE PIVOTED OUT OF POSITION WHEN MAKING THIS ADJUSTMENT.

3.62 Blank Delete Mechanism continued



3.63 Blank Delete Mechanism continued

ECCENTRIC STUD

REQUIREMENT

WITH LATCH LEVER AND BLOCKING LEVER IN LATCHED POSITION AND FEED PAWL IN ITS UPWARD TRAVEL, CLEARANCE BETWEEN TIP OF ENGAGING FEED WHEEL RATCHET TOOTH AND FEED PAWL TOOTH AT ITS CLOSEST POINT

MIN. 0.010 INCH
MAX. 0.020 INCH

TO ADJUST

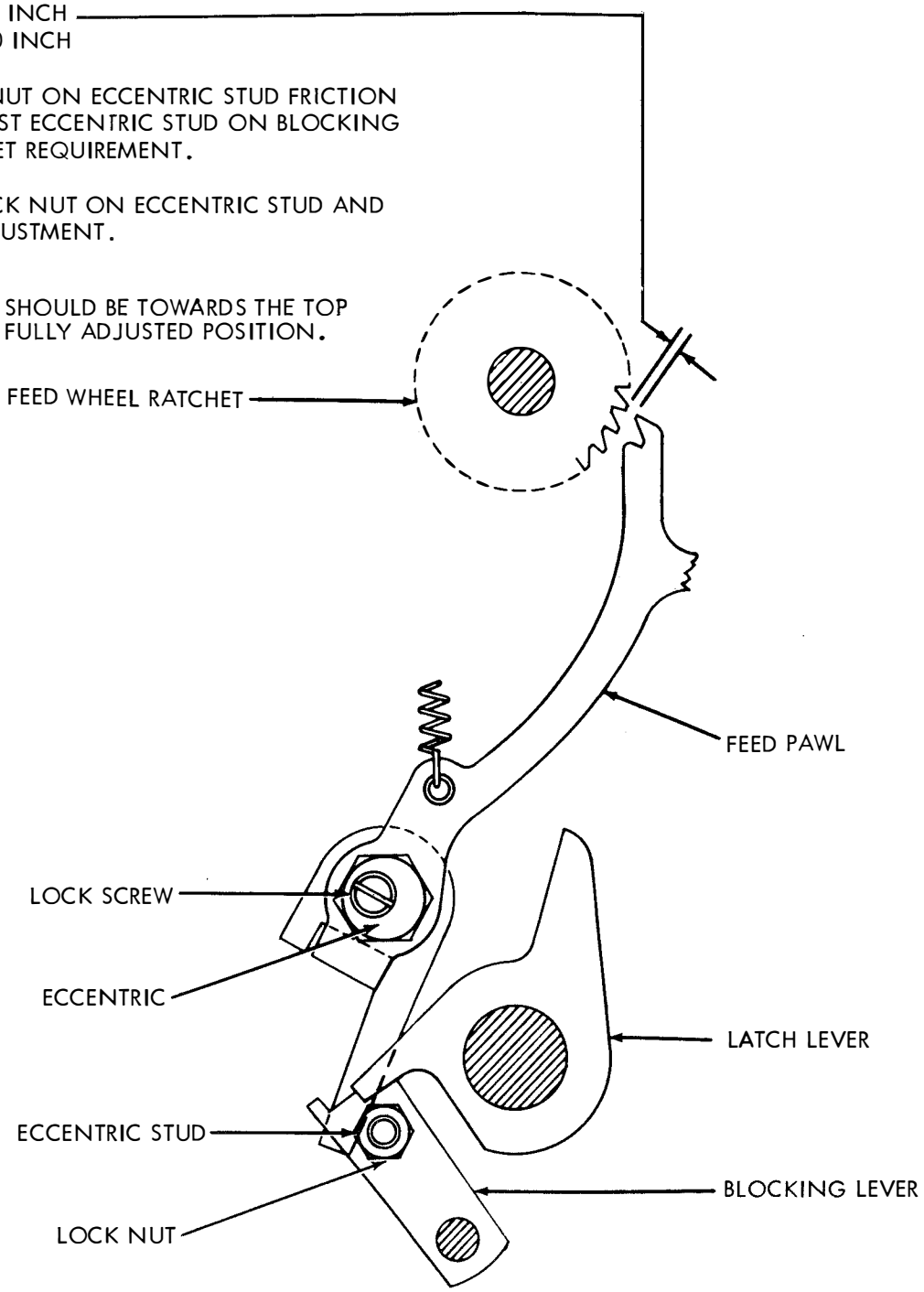
WITH LOCK NUT ON ECCENTRIC STUD FRICTION TIGHT, ADJUST ECCENTRIC STUD ON BLOCKING LEVER TO MEET REQUIREMENT.

RECHECK

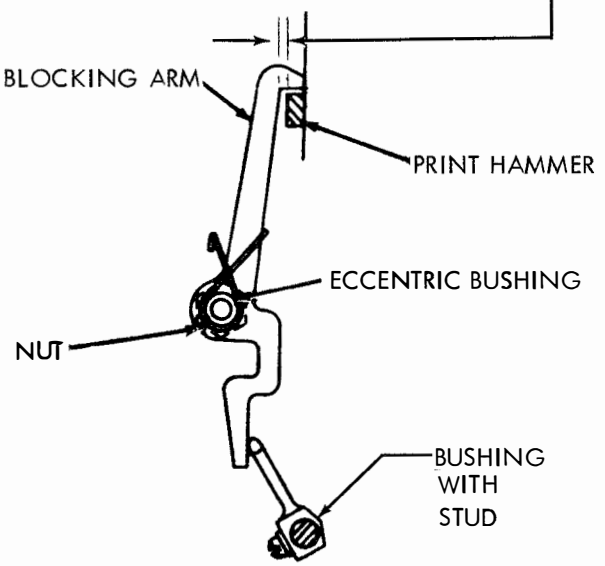
TIGHTEN LOCK NUT ON ECCENTRIC STUD AND RECHECK ADJUSTMENT.

NOTE:

THE ECCENTRIC SHOULD BE TOWARDS THE TOP OF UNIT IN ITS FULLY ADJUSTED POSITION.



3.64 Blank Delete Mechanism continued



(FRONT VIEW)

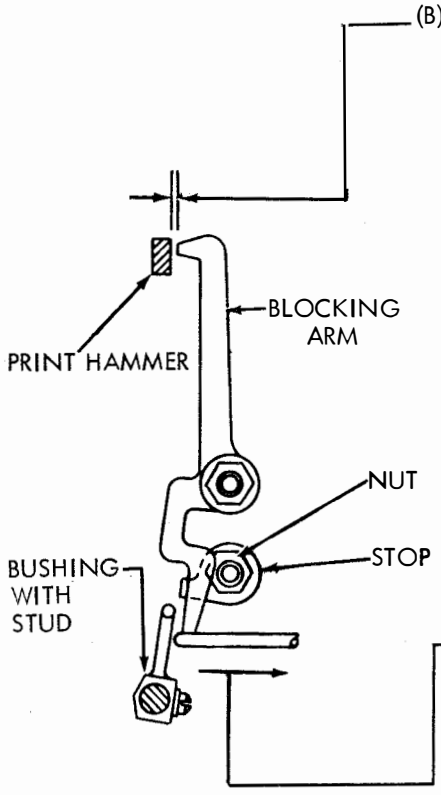
(A) PRINT SUPPRESSOR BLOCKING ARM REQUIREMENT

WITH FUNCTION BLADES IN SENSING POSITION, BLOCKING LEVER LATCHED, AT THE CLOSEST POINT THERE SHALL BE
MIN. 0.003 INCH---MAX. 0.015 INCH
CLEARANCE BETWEEN THE LEFT SIDE OF THE PRINT HAMMER LEVER AND BLOCKING ARM WHEN ALL THE PLAY IN THE PRINT HAMMER LEVER IS TAKEN UP IN A DIRECTION TO MAKE THE CLEARANCE MINIMUM.

TO ADJUST

LOOSEN NUT FRICTION TIGHT AND ADJUST ECCENTRIC SHOULDER SCREW TO MEET REQUIREMENT.

NOTE: IT MAY BE NECESSARY TO FAVOR THE POSITION OF THE ECCENTRIC SHOULDER SCREW IN ITS MOUNTING HOLE TO MEET THE REQUIREMENT.



(REAR VIEW)

(B) PRINT SUPPRESSOR STOP REQUIREMENT

WITH BLOCKING LEVER IN UNLATCHED POSITION
CLEARANCE BETWEEN BLOCKING ARM AND PRINT HAMMER
MIN. SOME
MAX. 0.015 INCH
WHEN PLAY IN PRINT HAMMER IS TAKEN UP IN A DIRECTION TO MAKE THE CLEARANCE A MINIMUM.

TO ADJUST

WITH LOCK NUT FRICTION TIGHT, POSITION STOP TO MEET REQUIREMENT.

RECHECK

PRINT SUPPRESSOR BLOCKING ARM ADJUSTMENT.

(C) BLOCKING ARM SPRING REQUIREMENT

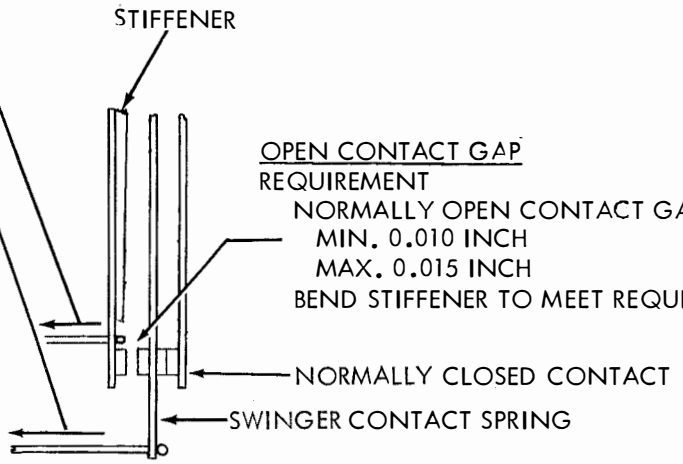
WITH UNIT IN STOP POSITION
MIN. 10 GRAMS
MAX. 50 GRAMS
TO START MOVING THE BLOCKING ARM AWAY FROM STOP.

3.65 Blank Delete Mechanism continued

CONTACT SPRING TENSION
REQUIREMENT
MIN. 4-1/2 OZS.
MAX. 5-1/2 OZS.
TO MOVE THE CONTACT SPRING AWAY FROM ITS STIFFENER.
TO ADJUST
BEND CONTACT SPRING TO MEET REQUIREMENT.
RECHECK
OPEN CONTACT GAP ADJUSTMENT.

SWINGER CONTACT SPRING TENSION
REQUIREMENT
MIN. 2 OZS.---MAX. 3 OZS.
TO JUST MOVE THE SWINGER CONTACT SPRING AWAY FROM THE NORMALLY CLOSED CONTACT.
TO ADJUST
BEND CONTACT SPRING TO MEET REQUIREMENT.

BLANK CONTACT
(THE FOLLOWING ADJUSTMENTS SHOULD BE MADE PRIOR TO INSTALLING THE CONTACT BRACKET ASSEMBLY ON THE UNIT.)



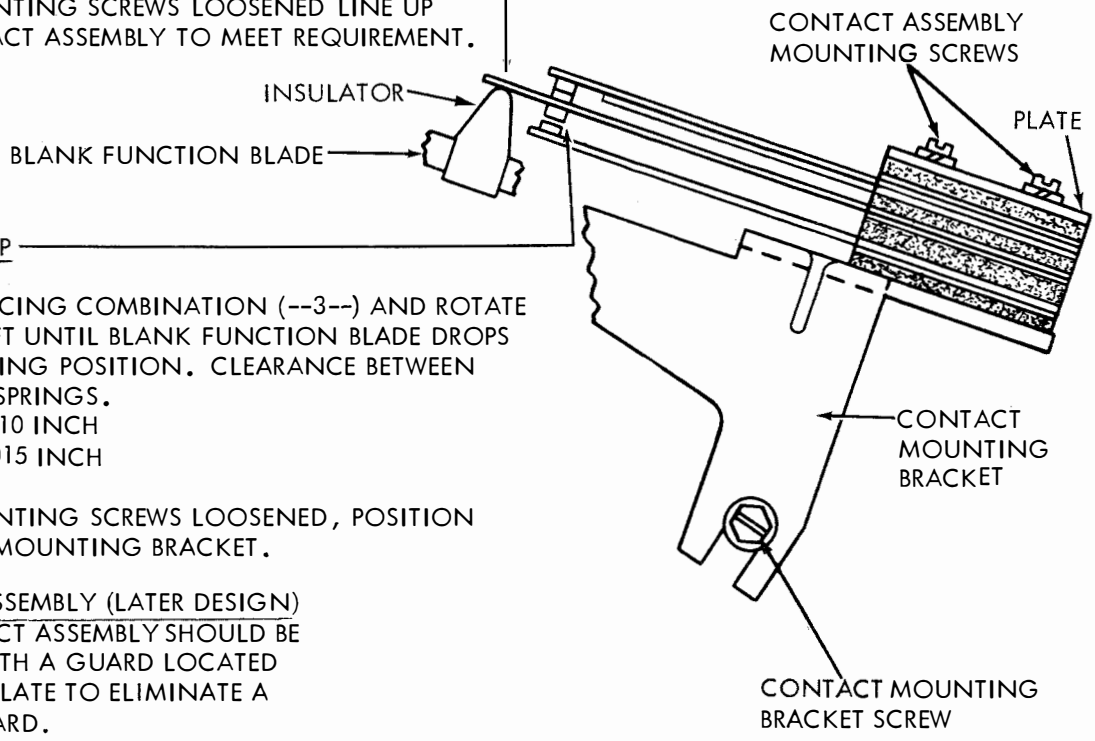
OPEN CONTACT GAP
REQUIREMENT
NORMALLY OPEN CONTACT GAP
MIN. 0.010 INCH
MAX. 0.015 INCH
BEND STIFFENER TO MEET REQUIREMENT.

NOTE:
THE FOLLOWING ADJUSTMENTS SHOULD BE MADE AFTER CONTACT BRACKET ASSEMBLY IS MOUNTED ON UNIT.

CONTACT ASSEMBLY (EARLIER DESIGN)
REQUIREMENT
CONTACT ASSEMBLY SHOULD LINE UP CENTRALLY WITH INSULATOR ON BLANK FUNCTION BLADE.
TO ADJUST
WITH MOUNTING SCREWS LOOSENED LINE UP THE CONTACT ASSEMBLY TO MEET REQUIREMENT.

CONTACT GAP
REQUIREMENT
SELECT SPACING COMBINATION (--3--) AND ROTATE MAIN SHAFT UNTIL BLANK FUNCTION BLADE DROPS INTO SENSING POSITION. CLEARANCE BETWEEN CONTACT SPRINGS.
MIN. 0.010 INCH
MAX. 0.015 INCH
TO ADJUST
WITH MOUNTING SCREWS LOOSENED, POSITION CONTACT MOUNTING BRACKET.

CONTACT ASSEMBLY (LATER DESIGN)
THIS CONTACT ASSEMBLY SHOULD BE EQUIPPED WITH A GUARD LOCATED UNDER THE PLATE TO ELIMINATE A SHOCK HAZARD.



3.66 Manual Print Suppression Mechanism

MANUAL PRINT SUPPRESSION MECHANISM

THE MANUAL PRINT SUPPRESSION MECHANISM CONSISTS OF A BLOCKING ARM WHICH CAN BE LOCKED IN A PRINT OR NON-PRINT CONDITION AT THE TIME OF UNIT INSTALLATION.

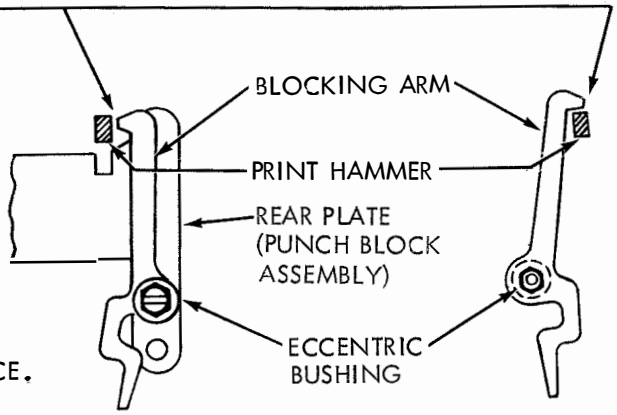
REQUIREMENT

(1) BLOCKING ARM TO BE ADJUSTED IN NON-PRINT CONDITION TO ASSURE THAT PRINT HAMMER ARM IS BLOCKED BY BLOCKING ARM.

(2) THE BLOCKING ARM SHOULD BE READJUSTED TO THE PRINT CONDITION AND LOCKED IN PLACE.

TO ADJUST

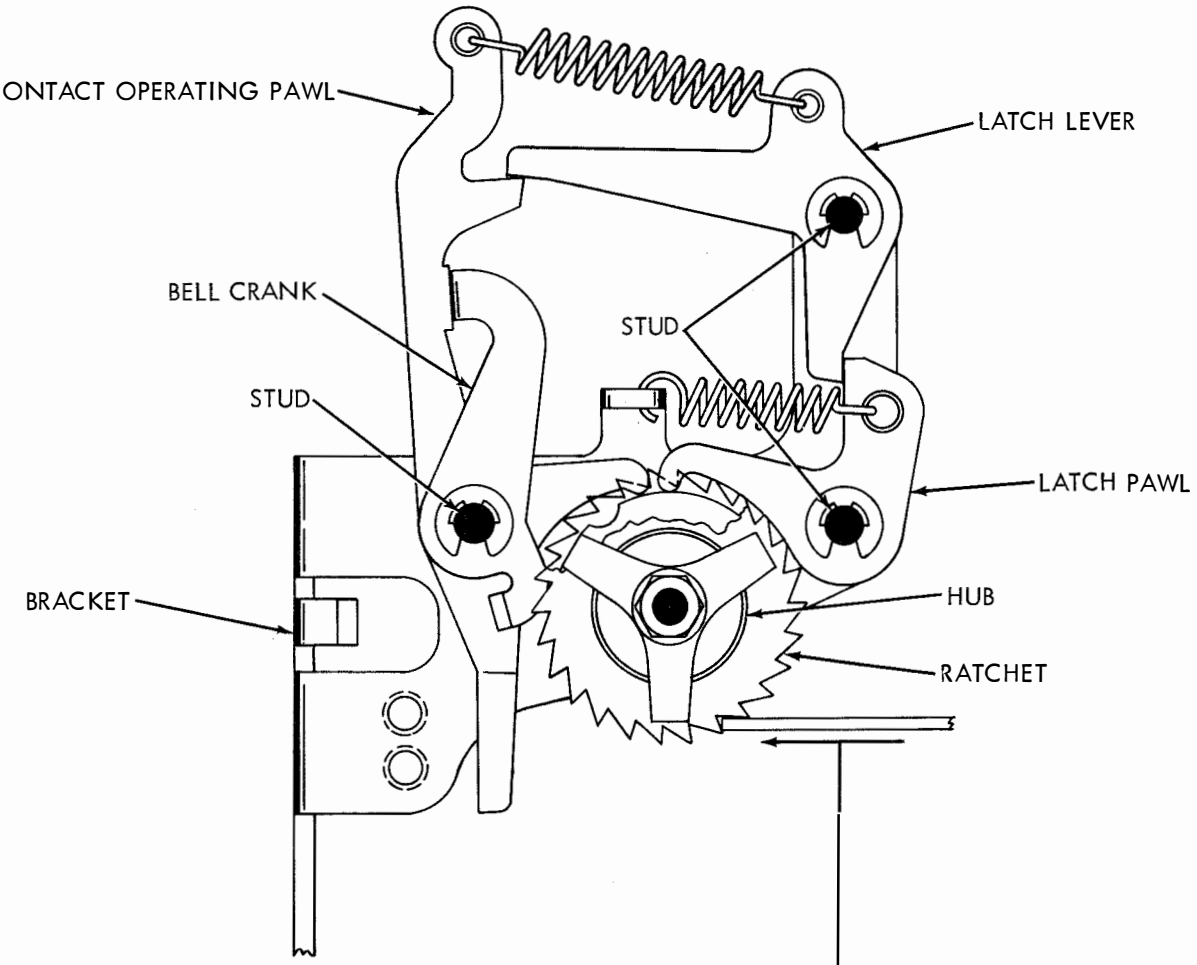
WITH MOUNTING SCREW FRICTION TIGHT, ROTATE ECCENTRIC BUSHING AND MANUALLY POSITION BLOCKING ARM TO NON-PRINT OR PRINT CONDITION.



REAR VIEW
ARM IN PRINT
POSITION

(FRONT VIEW)
ARM IN NON-PRINT
POSITION

3.67 Time Delay Motor Stop Mechanism



(A) TIME DELAY RATCHET WHEEL TENSION

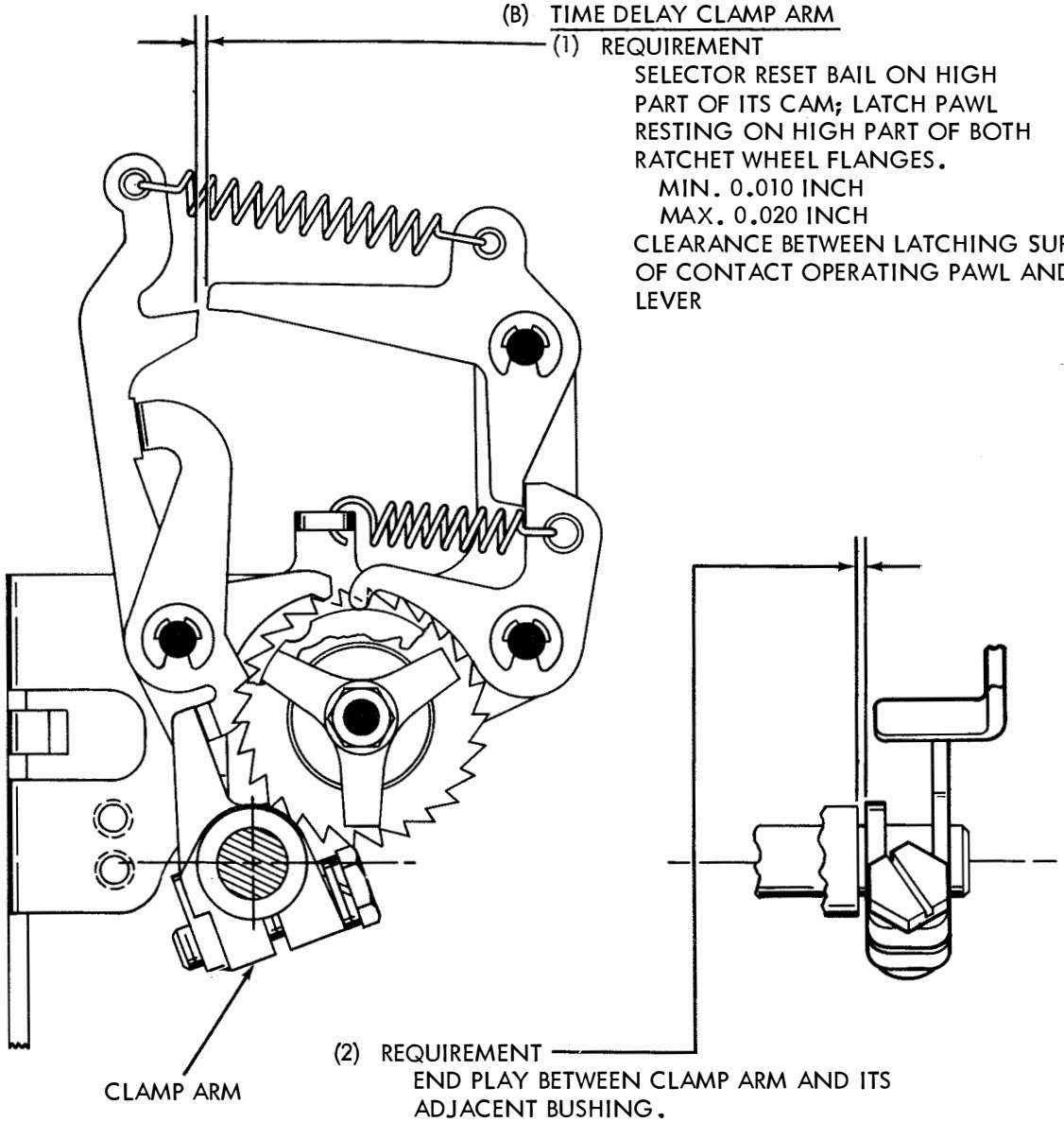
REQUIREMENT

HOLD ALL PAWLS OFF RATCHET WHEELS.
MIN. 2 OZS.
MAX. 8 OZS.
TO MOVE EACH RATCHET WHEEL.

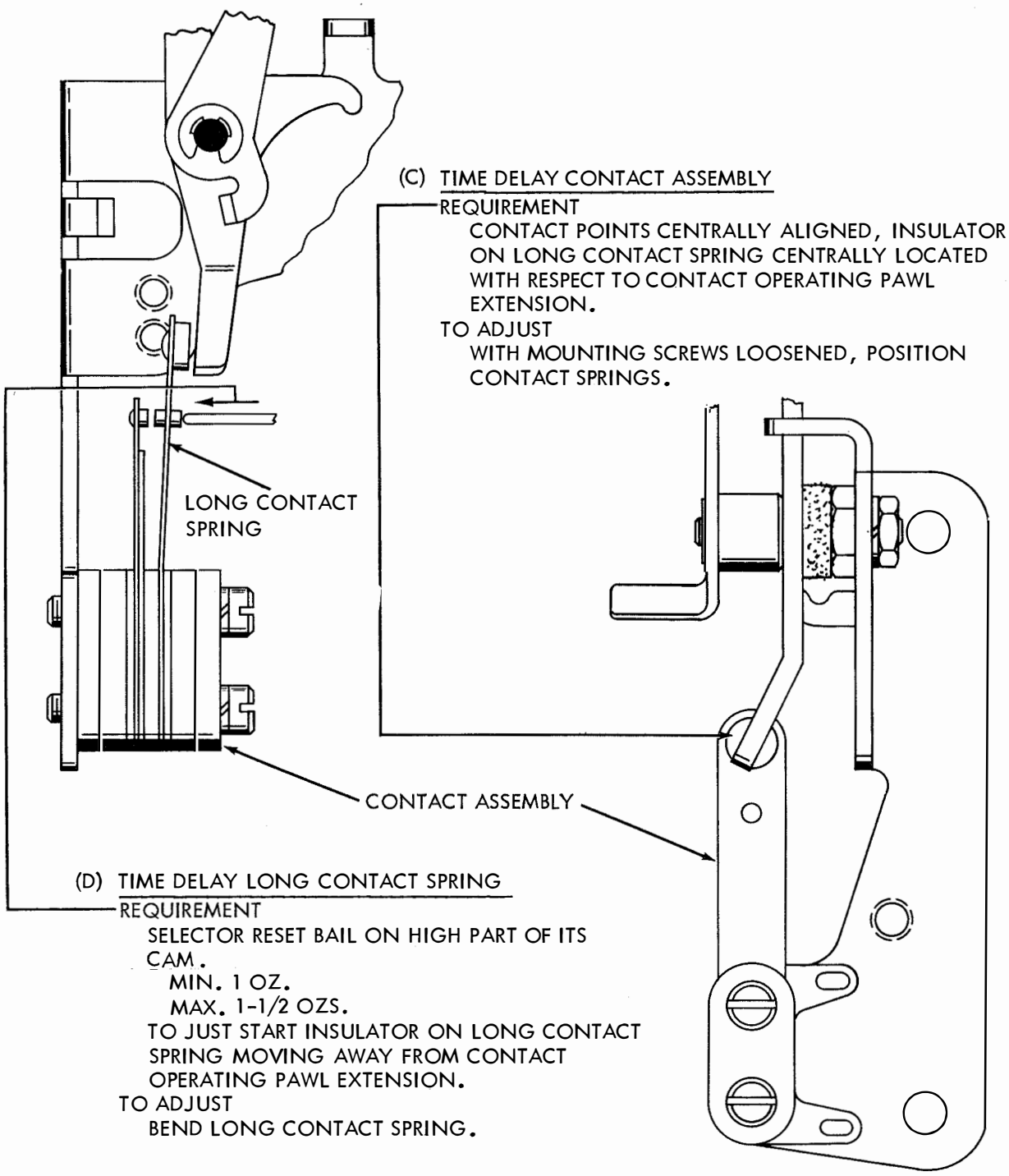
TO ADJUST

REMOVE AND BEND FRICTION SPRINGS OF RATCHET WHEEL.

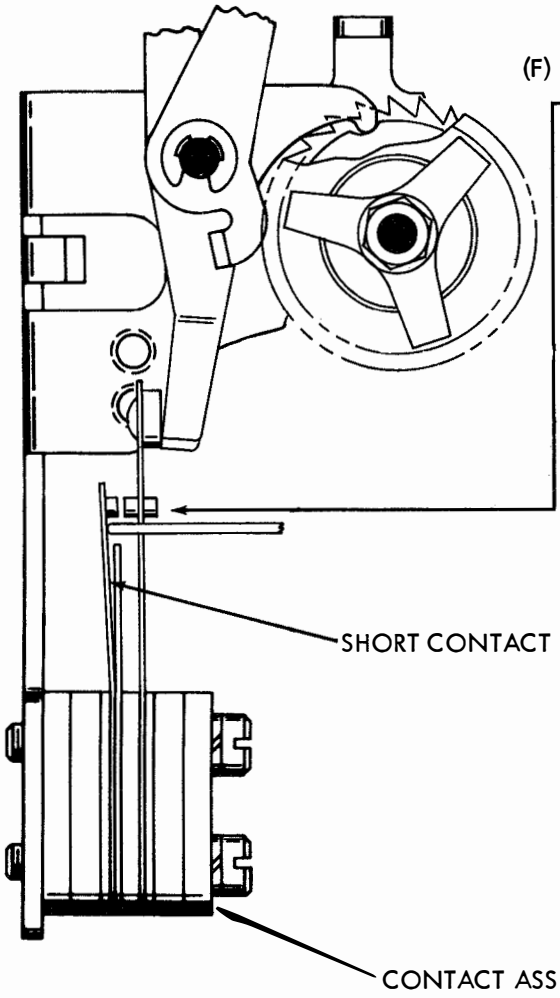
3.68 Time Delay Motor Stop Mechanism continued



3.69 Time Delay Motor Stop Mechanism continued



3.70 Time Delay Motor Stop Mechanism continued



(F) TIME DELAY SHORT CONTACT SPRING

REQUIREMENT

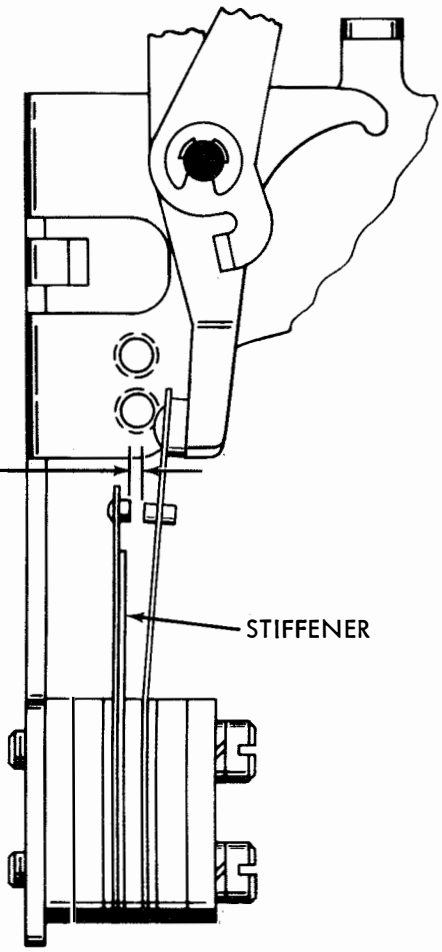
SELECTOR AND FUNCTION CLUTCHES DISENGAGED AND LATCHED; CONTACT OPERATING PAWL IN INDENTATIONS OF BOTH RATCHET WHEEL FLANGES.

MIN. 2 OZS.
MAX. 3 OZS.

TO JUST SEPARATE CONTACT POINTS OF LONG AND SHORT CONTACT SPRINGS.

TO ADJUST

BEND SHORT CONTACT SPRING.



(E) TIME DELAY CONTACT GAP

REQUIREMENT

SELECTOR AND FUNCTION CLUTCHES DISENGAGED AND LATCHED; CONTACT OPERATING PAWL RESTING ON HIGH PART OF BOTH RATCHET WHEEL FLANGES.

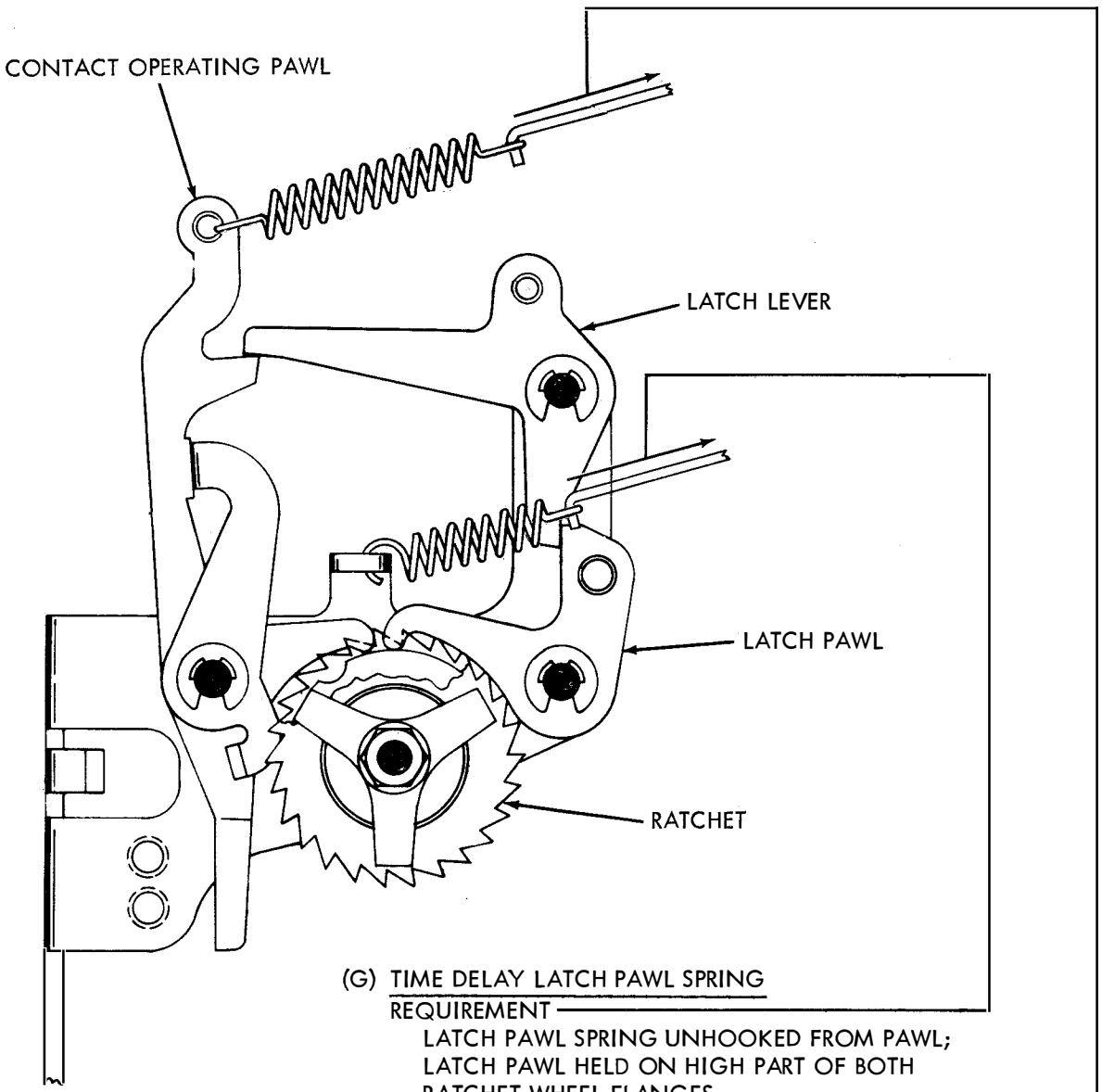
MIN. 0.010 INCH
MAX. 0.015 INCH

CLEARANCE BETWEEN CONTACT POINTS OF LONG AND SHORT CONTACT SPRINGS.

TO ADJUST

BEND SHORT CONTACT SPRING STIFFENER.

3.71 Time Delay Motor Stop Mechanism continued



(G) TIME DELAY LATCH PAWL SPRING

REQUIREMENT

LATCH PAWL SPRING UNHOOKED FROM PAWL; LATCH PAWL HELD ON HIGH PART OF BOTH RATCHET WHEEL FLANGES.

MIN. 12 OZS.
MAX. 15 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

(H) TIME DELAY CONTACT OPERATING PAWL SPRING

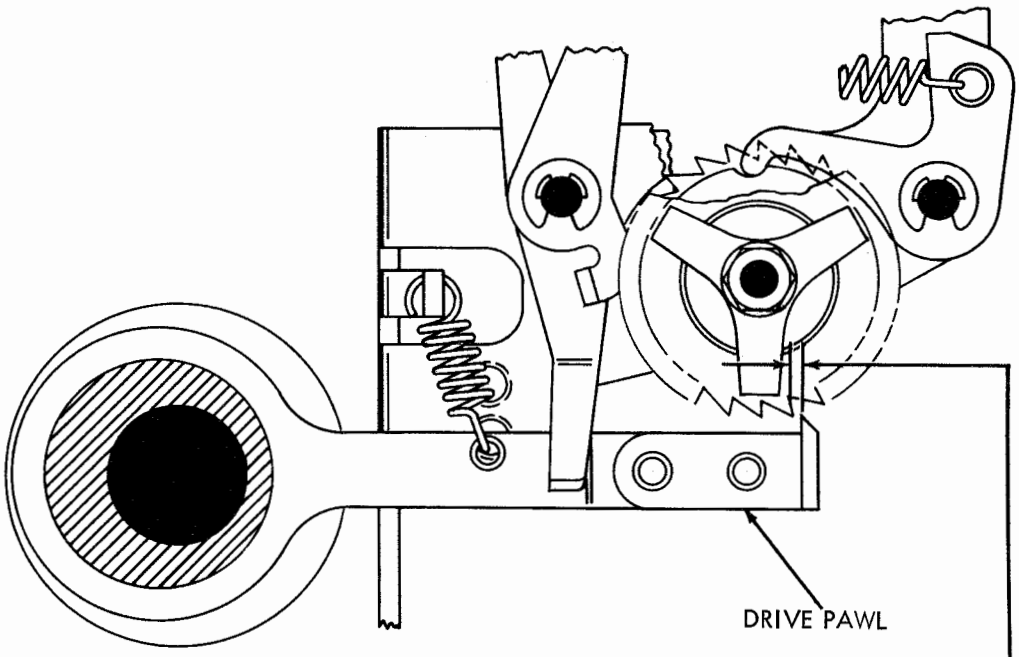
REQUIREMENT

CONTACT OPERATING PAWL SPRING UNHOOKED FROM LATCH LEVER; CONTACT OPERATING PAWL HELD BLOCKED BY LATCH LEVER.

MIN. 2-1/4 OZS.
MAX. 3-1/4 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

3.72 Time Delay Motor Stop Mechanism continued



(I) TIME DELAY DRIVE PAWL

REQUIREMENT

ROTATE BOTH RATCHET WHEELS UNTIL LATCH PAWL DROPS INTO INDENTATIONS OF BOTH RATCHET WHEEL FLANGES. DEPRESS DRIVE PAWL DOWNWARD OUT OF ENGAGEMENT WITH RATCHET TEETH AND TAKE UP PLAY BETWEEN LATCH PAWL AND RATCHET WHEELS BY MOVING RATCHET WHEELS BACKWARD (COUNTER-CLOCKWISE). WITH ECCENTRIC FOLLOWER DRIVE ARM AT END OF ITS EXTREME LEFT TRAVEL, POSITION DRIVE PAWL ON DRIVE ARM SO POINT OF UPPER BEVELED EDGE OF PAWL RESTS ON PEAK OF FIRST RATCHET WHEEL TOOTH TO RIGHT OF VERTICAL CENTERLINE THROUGH RATCHET WHEELS OR OVERTRAVELS PEAK.

MIN. SOME
MAX. 0.010 INCH

TO ADJUST

WITH MOUNTING SCREWS LOOSENED, POSITION DRIVE PAWL ON ITS DRIVE ARM.

3.73 Time Delay Motor Stop Mechanism continued

(J) TIME DELAY ECCENTRIC FOLLOWER DRIVE ARM SPRING

REQUIREMENT

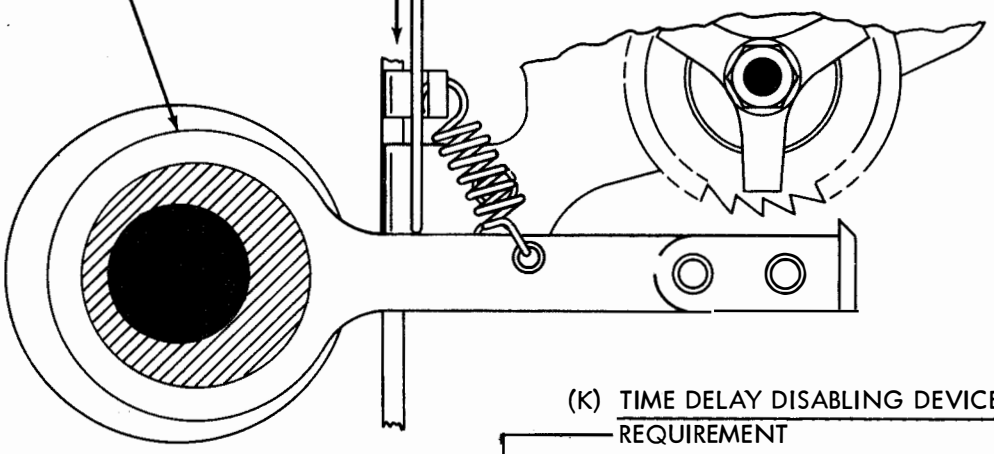
ECCENTRIC FOLLOWER DRIVE ARM AT END OF ITS EXTREME RIGHT TRAVEL.

MIN. 3 OZS.

MAX. 4 OZS.

TO JUST START DRIVE PAWL MOVING DOWNWARD AWAY FROM RATCHET WHEELS.

ECCENTRIC FOLLOWER DRIVE ARM



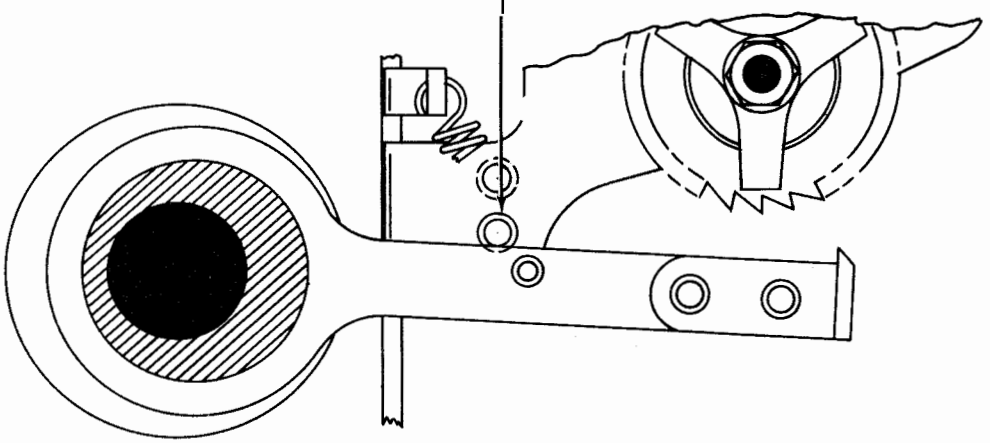
(K) TIME DELAY DISABLING DEVICE

REQUIREMENT

DISABLE THE TIME DELAY MOTOR STOP CONTACT MECHANISM WHEN NOT REQUIRED.

TO ADJUST

REMOVE PILOT SCREW FROM ITS UPPER MOUNTING HOLE IN RATCHET WHEEL BRACKET AND REINSTALL IT IN ITS LOWER MOUNTING HOLE SO THAT IT HOLDS DRIVE PAWL OUT OF ENGAGEMENT WITH RATCHET WHEELS.



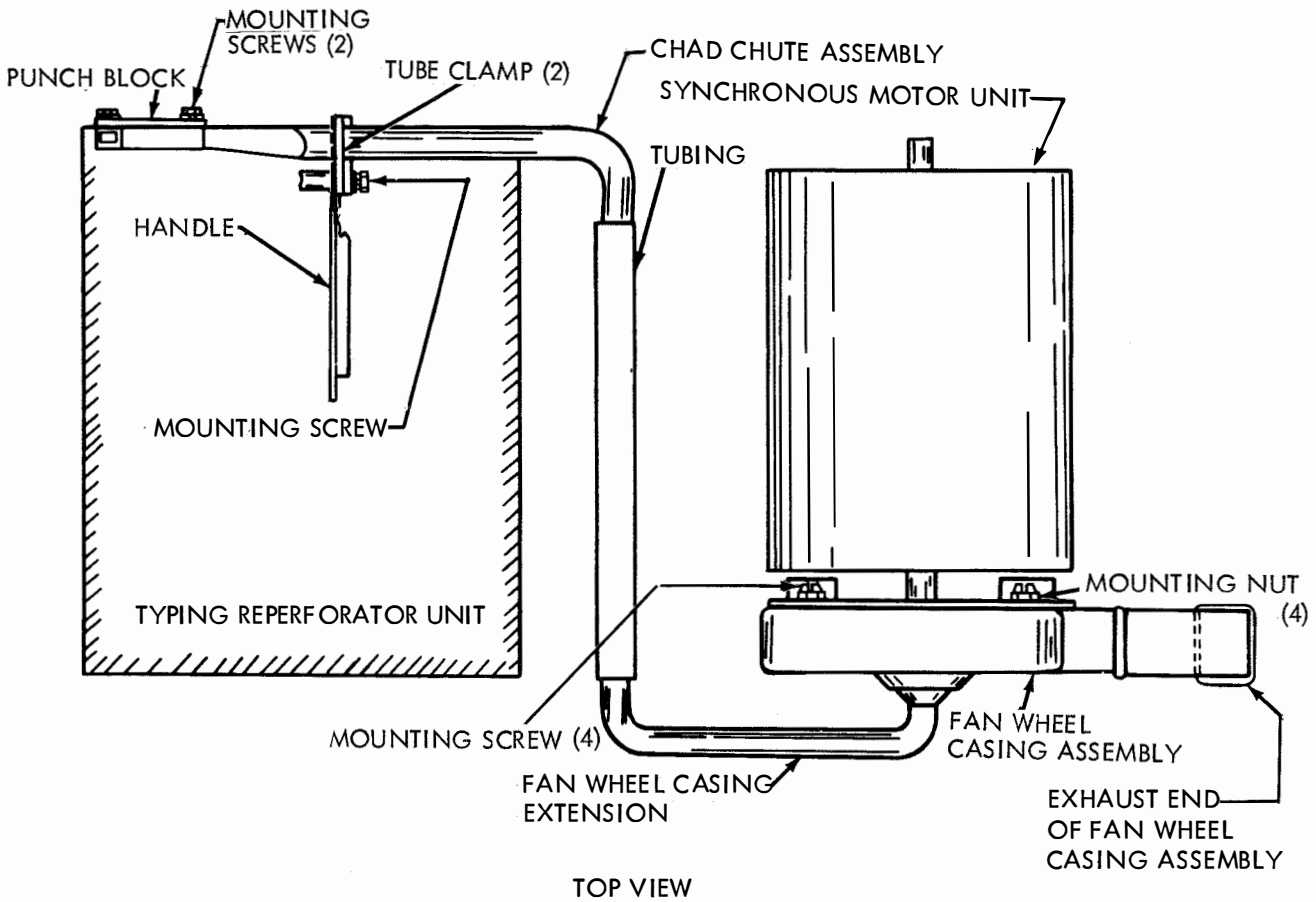
3.74 Vacuum Chad Removal (Send-Receive Typing Reperforator Set)

VACUUM CHAD REMOVAL (SEND-RECEIVE TYPING REPERFORATOR SET)
REQUIREMENTS

(1) DIRECTS THE PUNCHED CHAD TO A CONVENIENT DISPOSAL OUTSIDE THE SET.
(2) SYNCHRONOUS MOTOR WITH OPEN TINES OF THE FAN WHEEL FACING AWAY FROM THE MOTOR PROVIDES POWER FOR CHAD DISPOSAL.
(3) A NYLON BAG OR A NYLON CHUTE ATTACHED TO EXHAUST END OF FAN WHEEL ASSEMBLY FURNISHED AS ALTERNATE MEANS OF CHAD DISPOSAL OUTSIDE OF CABINET.

TO ADJUST

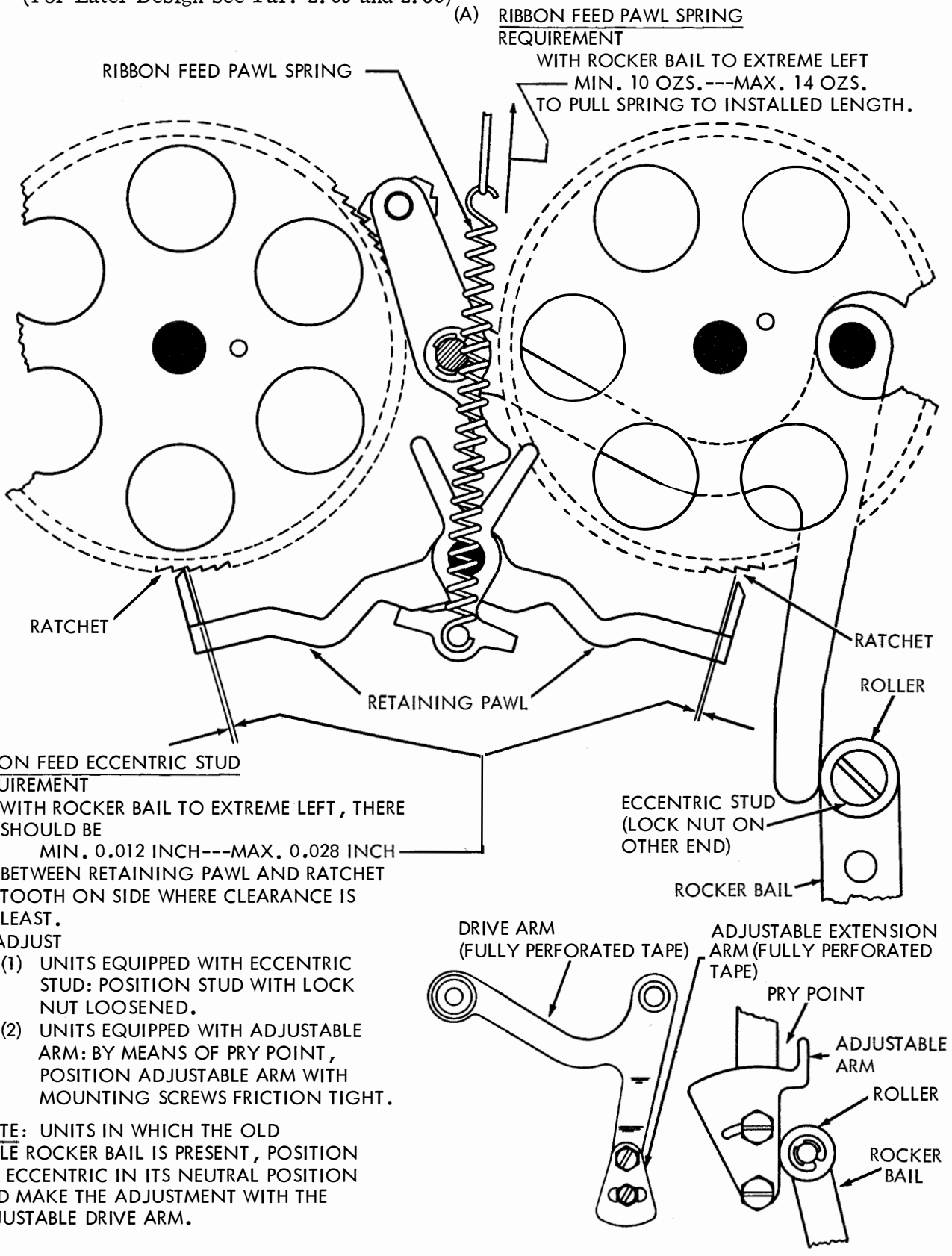
WITH MOUNTING HARDWARE FRICTION TIGHT, POSITION CHAD CHUTE ASSEMBLY, TUBING, AND FAN WHEEL CASING ASSEMBLY SO THERE IS NO INTERFERENCE WITH ADJACENT UNITS.



TOP VIEW

4. EARLIER DESIGN MECHANISMS ADJUSTMENTS

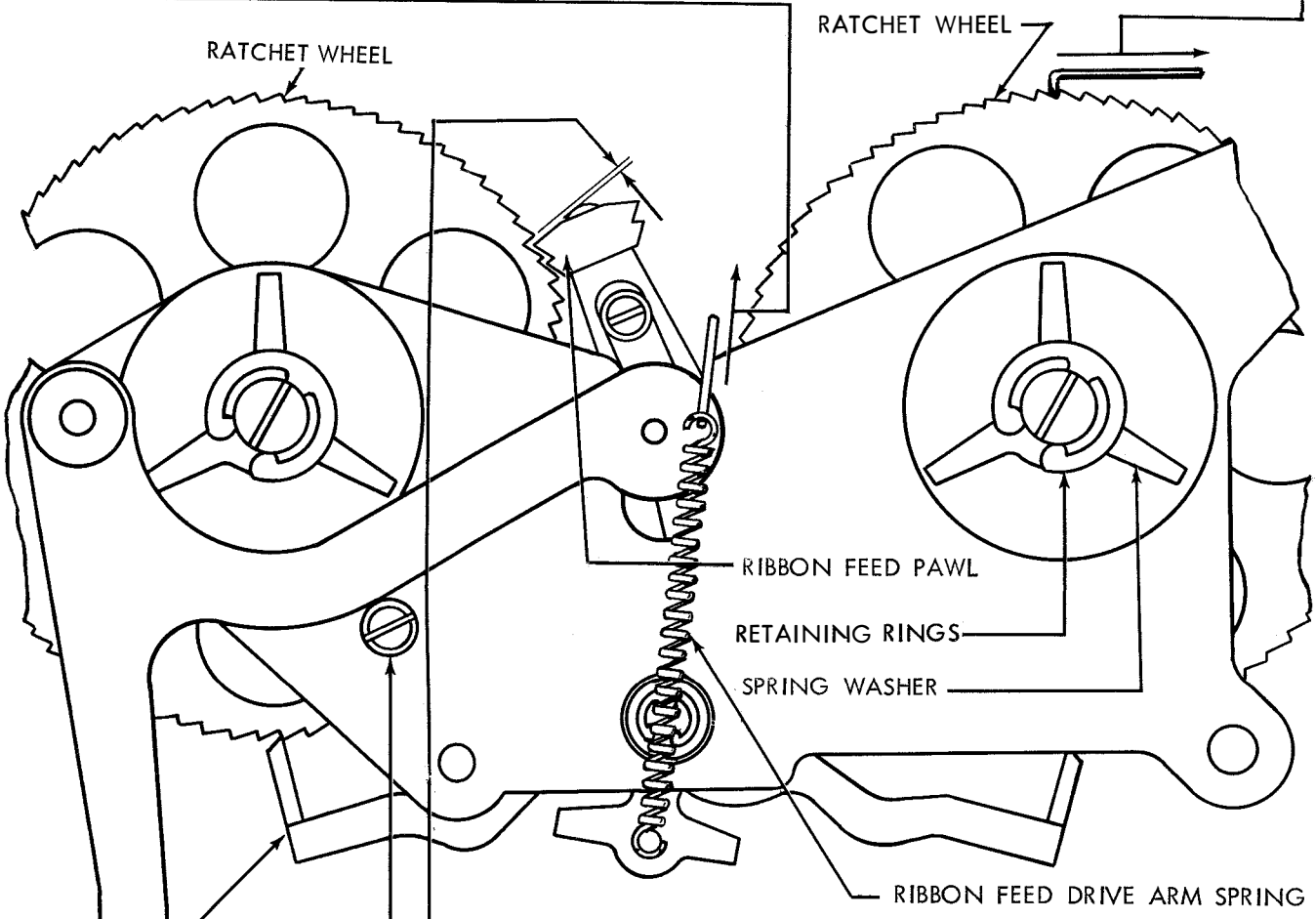
4.01 Ribbon Feed Mechanism for Chadless Tape and Fully Perforated Tape
(For Later Design see Par. 2.59 and 2.60)



4.02 Ribbon Feed Mechanism for Chadless Tape and Fully Perforated Tape continued

(A)
RIBBON FEED DRIVE ARM SPRING
REQUIREMENT
WITH UNIT IN STOP POSITION
MIN. 3 OZS.---MAX. 5 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(C) RIBBON RATCHET WHEEL SPRING WASHERS
REQUIREMENT
WITH FEED PAWL AND RETAINING PAWL SHIFTED TO OPPOSITE RATCHET WHEEL
MIN. 1 OZ.---MAX. 2-1/2 OZS.
TO START WHEEL TURNING.
TO ADJUST
REMOVE RETAINING RING AND BEND SPRING WASHER.
NOTE:
MAKE THIS ADJUSTMENT FOR BOTH RATCHET WHEELS.



(B) RIBBON FEED PAWL DOWNSTOP ECCENTRIC
TO CHECK
DISENGAGE FUNCTION CLUTCH. TAKE UP BACKLASH IN RATCHET WHEEL SO THAT CLEARANCE BETWEEN FEED PAWL AND RATCHET TOOTH IS AT MINIMUM. MEASURE CLEARANCE. REPEAT FOR OTHER RATCHET WHEEL.
REQUIREMENT
(1) CLEARANCE BETWEEN FEED PAWL AND RATCHET TOOTH
MIN. 0.020 INCH---MAX. 0.040 INCH
ON SIDE WHERE CLEARANCE IS LEAST.
(2) PAWL SHOULD FEED ONE TOOTH AT A TIME.
TO ADJUST
POSITION DOWNSTOP ECCENTRIC WITH LOCK NUT LOOSENED.

4.03 Ribbon Feed Mechanism for Chadless Tape and Fully Perforated Tape continued

(A) RIBBON REVERSING PLATE

TO CHECK

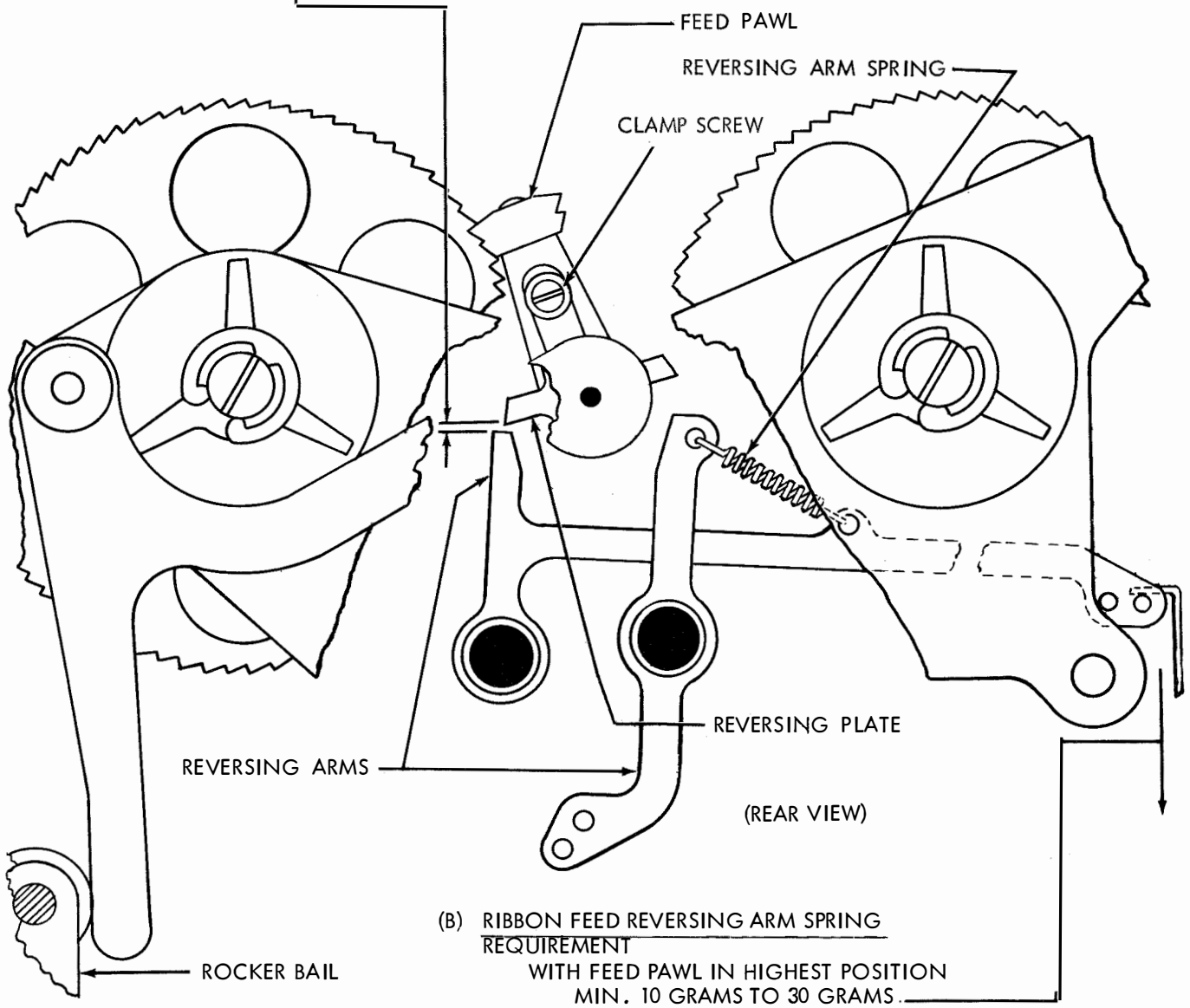
POSITION ROCKER BAIL TO EXTREME LEFT. HOLD REVERSING ARM UNDER REVERSING PLATE AND MEASURE CLEARANCE. WITH FEED PAWL AGAINST OTHER RATCHET, REPEAT PROCEDURE FOR OTHER REVERSING ARM.

REQUIREMENT

CLEARANCE BETWEEN REVERSING ARM AND REVERSING PLATE MIN. 0.010 INCH---MAX. 0.020 INCH AT REVERSING ARM WHERE CLEARANCE IS LEAST.

TO ADJUST

POSITION REVERSING PLATE WITH CLAMP SCREW LOOSENED.

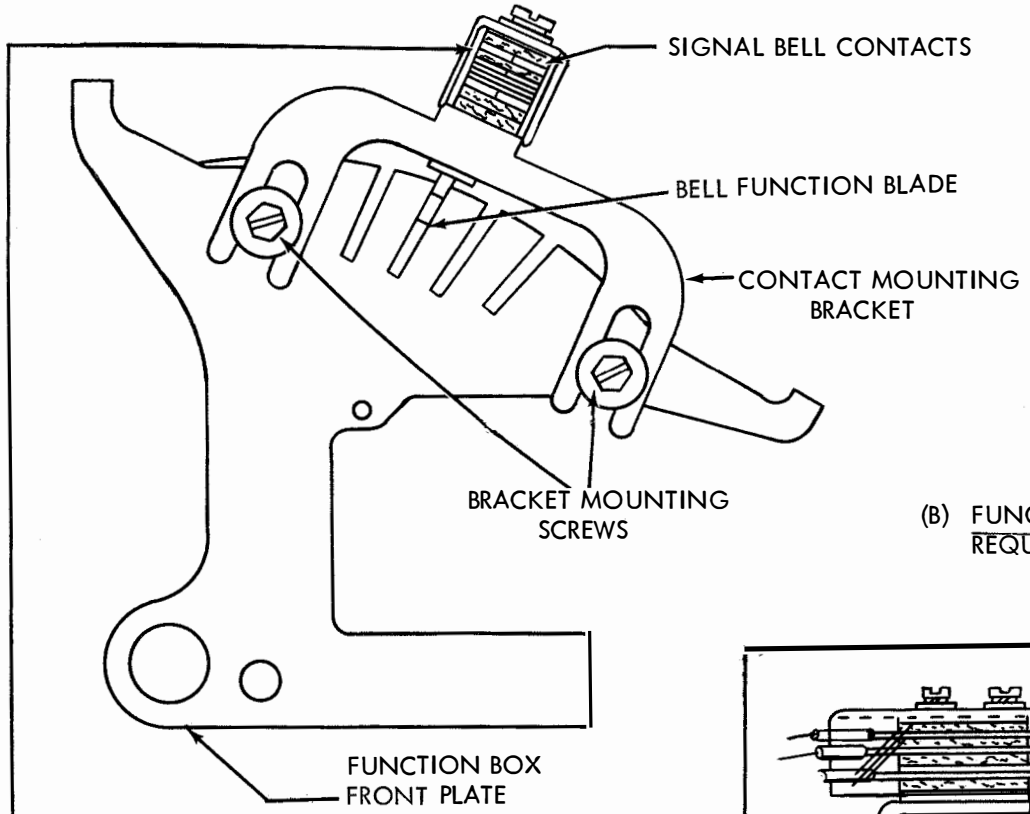


(B) RIBBON FEED REVERSING ARM SPRING

REQUIREMENT

WITH FEED PAWL IN HIGHEST POSITION MIN. 10 GRAMS TO 30 GRAMS TO START REVERSING ARM MOVING.

4.04 Signal Bell Contact Mechanism (For Later Design see Par. 3.02)



(A) CONTACT MOUNTING BRACKET

(1) TO CHECK

DISCONNECT CONTACT. SELECT LETTERS CODE COMBINATION (12345). ROTATE MAIN SHAFT UNTIL BELL FUNCTION BLADE IS IN LOWEST POSITION (RESTING ON BELL CRANKS).

REQUIREMENT

NORMALLY OPEN CONTACT OPEN.

(2) TO CHECK

SELECT BELL CODE COMBINATION AND ROTATE MAIN SHAFT UNTIL BELL FUNCTION BLADE IS IN LOWEST POSITION.

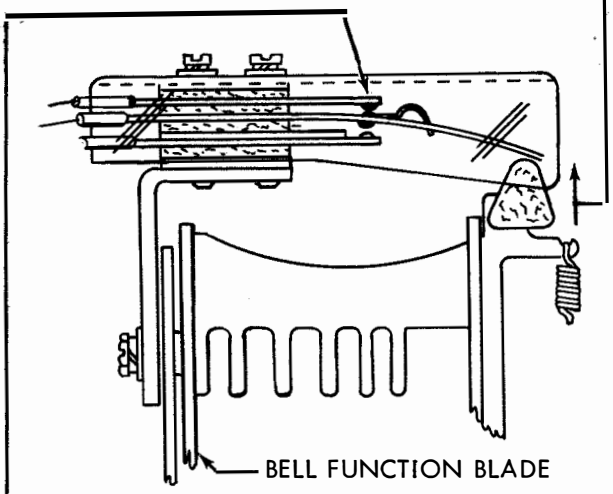
REQUIREMENT

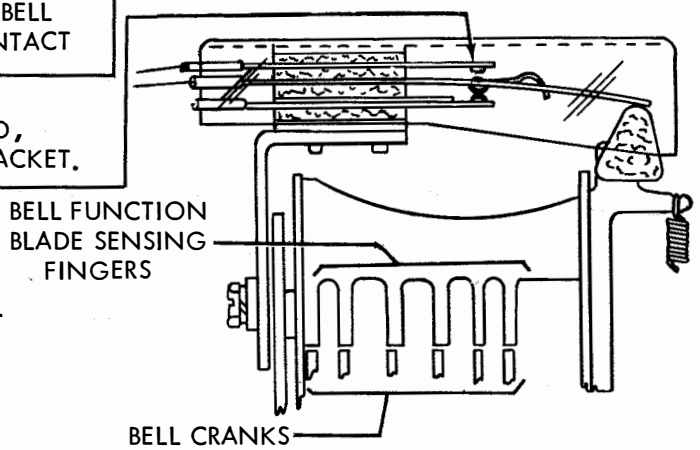
BELL FUNCTION BLADE IN SLOTS OF BELL CRANKS AND NORMALLY OPEN CONTACT CLOSED.

TO ADJUST

WITH MOUNTING SCREWS LOOSENED, POSITION CONTACT MOUNTING BRACKET.

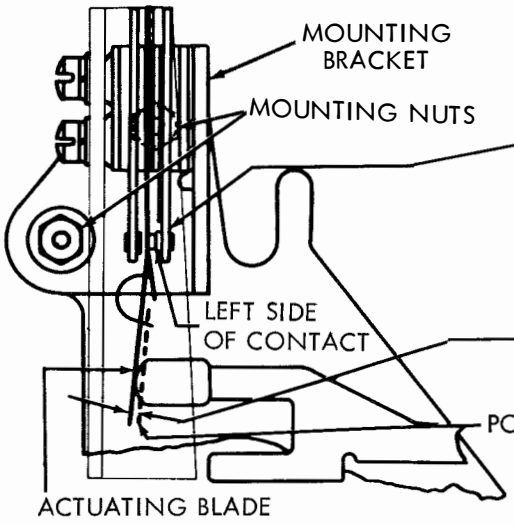
(B) FUNCTION BLADE SPRING REQUIREMENT --- REFER TO





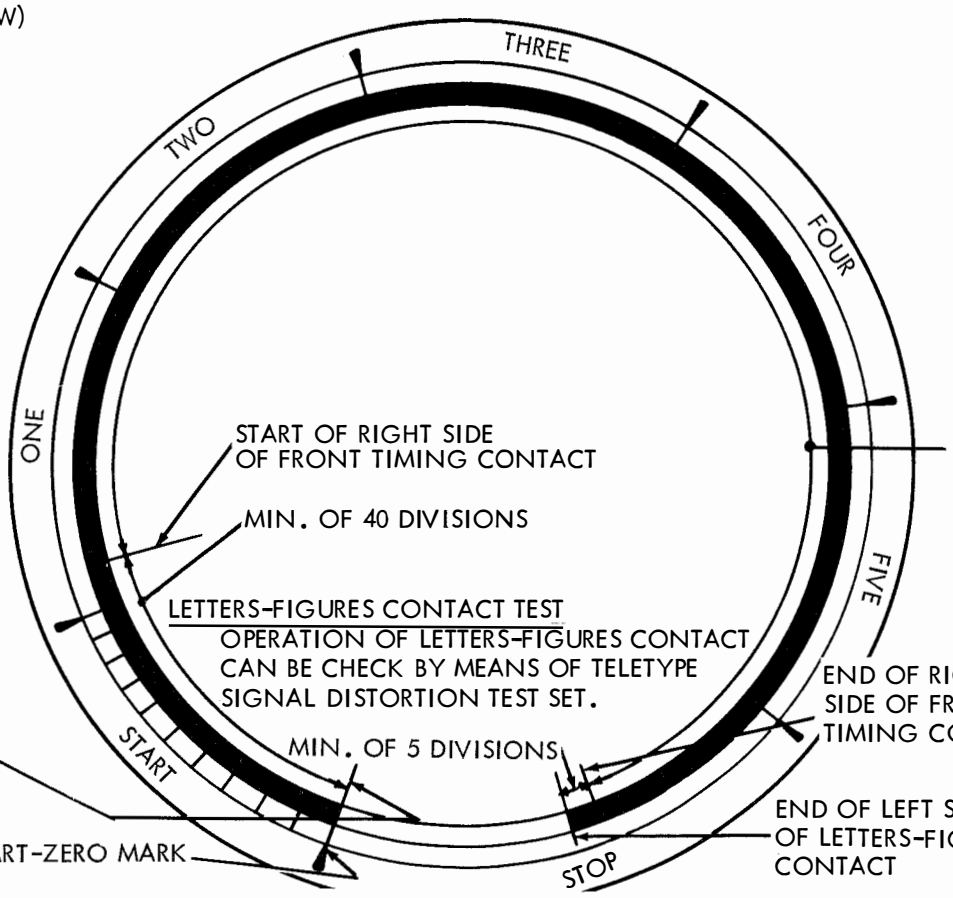
CAUTION: THERE SHOULD BE SOME CLEARANCE BETWEEN RIBBON FEED DRIVE ROLLER AND CONTACT MOUNTING BRACKET WHEN UNIT IS IN STOP POSITION. IF NECESSARY, REFINE ABOVE ADJUSTMENT.

4.05 Letters - Figures Contact Mechanism
(For Later Design see Par. 3.12 and 3.16)



(REAR VIEW)

MOUNTING BRACKET
REQUIREMENT
WITH UNIT IN LETTERS CONDITION AND FUNCTION CLUTCH DISENGAGED, LEFT SIDE OF CONTACT SHOULD BE CLOSED.
TO ADJUST
WITH MOUNTING NUTS LOOSENED, ROTATE MOUNTING BRACKET UNTIL LEFT SIDE OF CONTACT JUST CLOSES AND NOTE POSITION OF ACTUATING BLADE. ROTATE BRACKET FURTHER UNTIL ACTUATING BLADE IS APPROXIMATELY 0.020 INCH BEYOND NOTED POSITION.

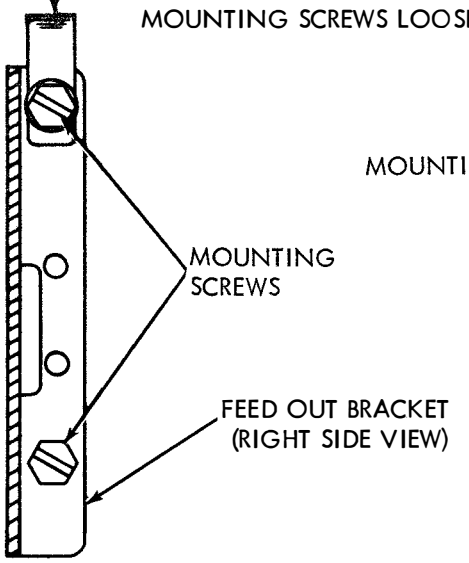


LETTERS-FIGURES CONTACT TEST
OPERATION OF LETTERS-FIGURES CONTACT CAN BE CHECK BY MEANS OF TELETYPE SIGNAL DISTORTION TEST SET.

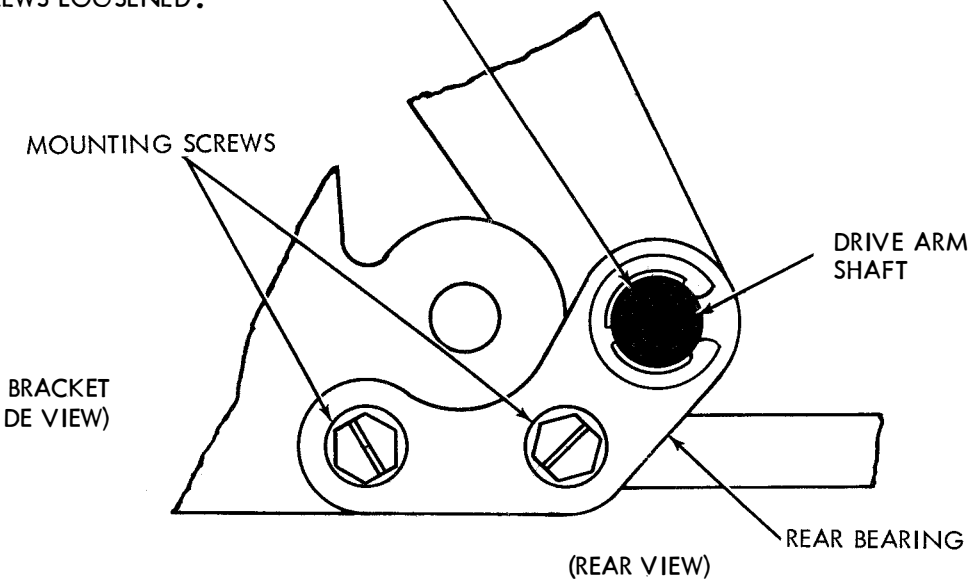
TO CHECK
RECORD START AND END OF TRACE OF RIGHT SIDE OF FRONT TIMING CONTACT. CONNECT NEON TRACE LAMP ACROSS LEFT SIDE OF LETTERS-FIGURES CONTACT. ALTERNATELY SELECT LETTERS (12345) AND FIGURES (12-45) CODE COMBINATIONS AND OBSERVE TRACE. SET START-ZERO MARK OF TEST SET SCALE AT START OF TRACE.
REQUIREMENT
(1) LEFT SIDE OF LETTERS-FIGURES CONTACT SHOULD CLOSE BEFORE RIGHT SIDE OF TIMING CONTACTS CLOSE AND SHOULD OPEN AFTER RIGHT SIDE OF TIMING CONTACTS OPEN.
(2) NO BOUNCE OR CHATTER OF LETTERS-FIGURES CONTACT DURING PART OF FUNCTION CYCLE WHEN RIGHT SIDE OF TIMING CONTACTS ARE CLOSED.

4.06 Noninterfering BLANK Tape Feed-Out Mechanism (Earlier Design)
(For Later Design see Par. 3.36)

(A) FEED OUT BRACKET
REQUIREMENT
OUTER RATCHET CHECK PAWL RIDING FULLY ON RATCHET WHEN PLAY IS TAKEN UP IN EITHER DIRECTION.
TO ADJUST
POSITION FEED OUT BRACKET WITH MOUNTING SCREWS LOOSENED.

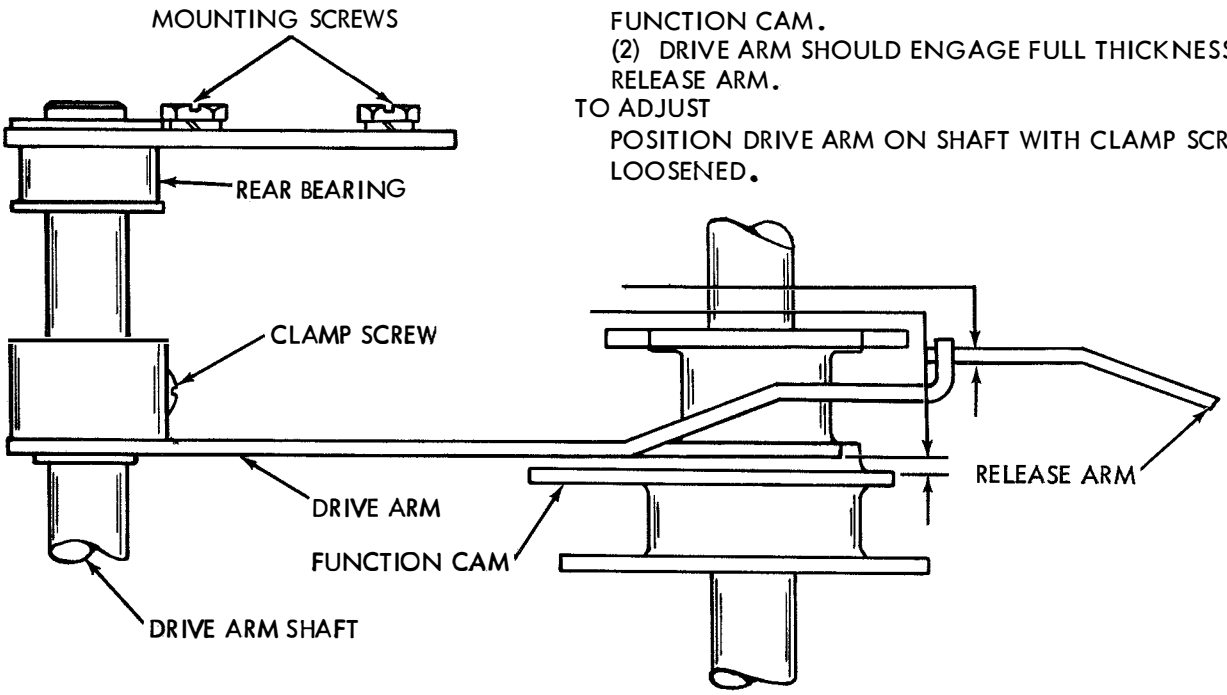


(B) DRIVE ARM SHAFT REAR BEARING
REQUIREMENT
DRIVE ARM SHAFT FINGER FREE IN ITS BEARINGS.
TO ADJUST
POSITION REAR BEARING WITH MOUNTING SCREWS LOOSENED.



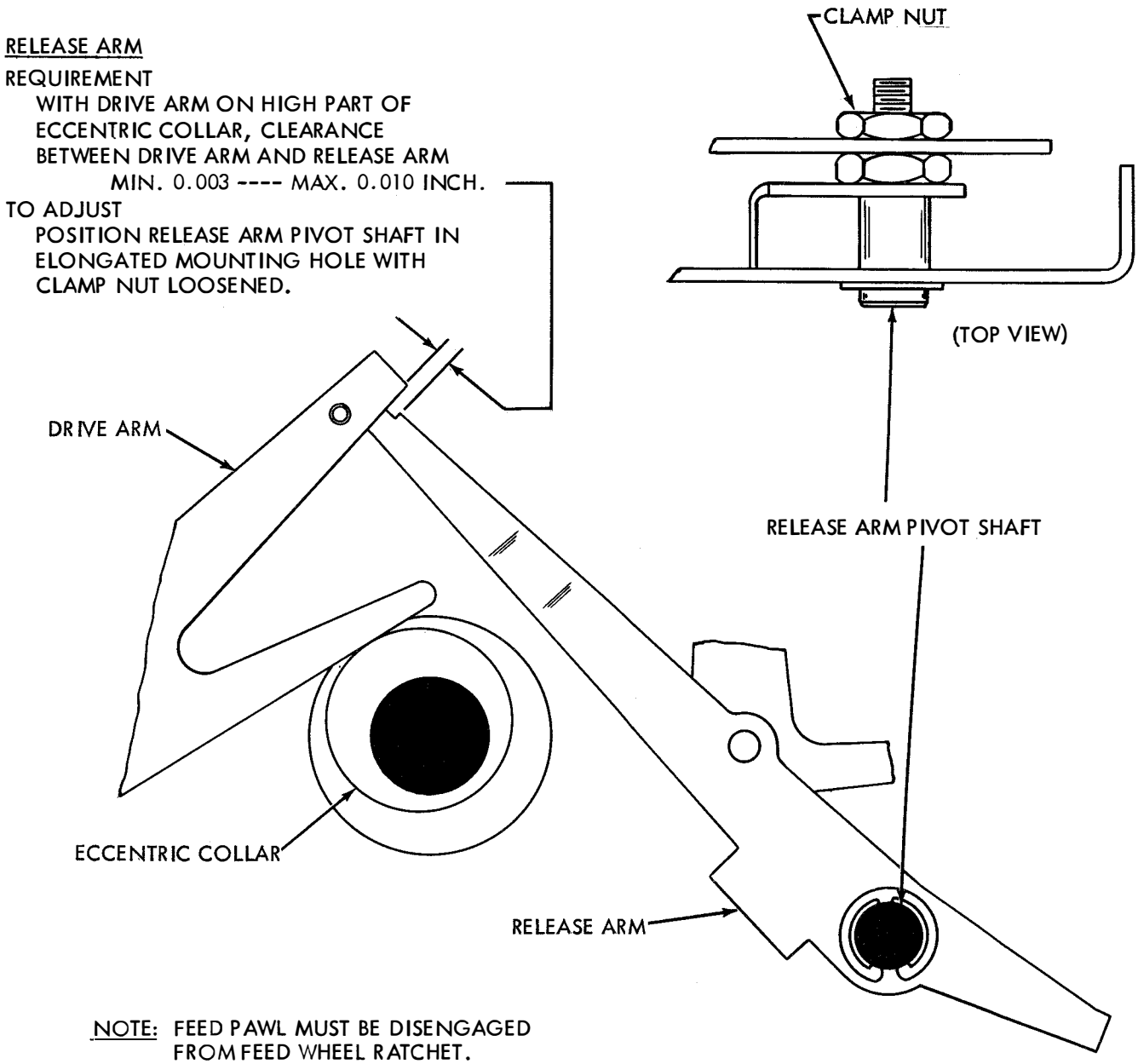
(REAR VIEW)

(C) DRIVE ARM
REQUIREMENT
(1) WHEN PLAY IS TAKEN UP TO MAKE IT MINIMUM, AT LEAST SOME CLEARANCE BETWEEN DRIVE ARM AND FUNCTION CAM.
(2) DRIVE ARM SHOULD ENGAGE FULL THICKNESS OF RELEASE ARM.
TO ADJUST
POSITION DRIVE ARM ON SHAFT WITH CLAMP SCREW LOOSENED.



(TOP VIEW)

4.07 Noninterfering BLANK Tape Feed-Out Mechanism continued



NOTE: FEED PAWL MUST BE DISENGAGED FROM FEED WHEEL RATCHET.

4.08 Noninterfering BLANK Tape Feed-Out Mechanism continued

(A) FEED OUT PAWL

TO CHECK

WITH UNIT OPERATING UNDER POWER, ALLOW FEED OUT OPERATION TO BE INTERRUPTED BY AN INCOMING MESSAGE.

REQUIREMENT

FEED HOLE AND CODE HOLES OF FIRST CHARACTER ON SAME CENTER LINE.

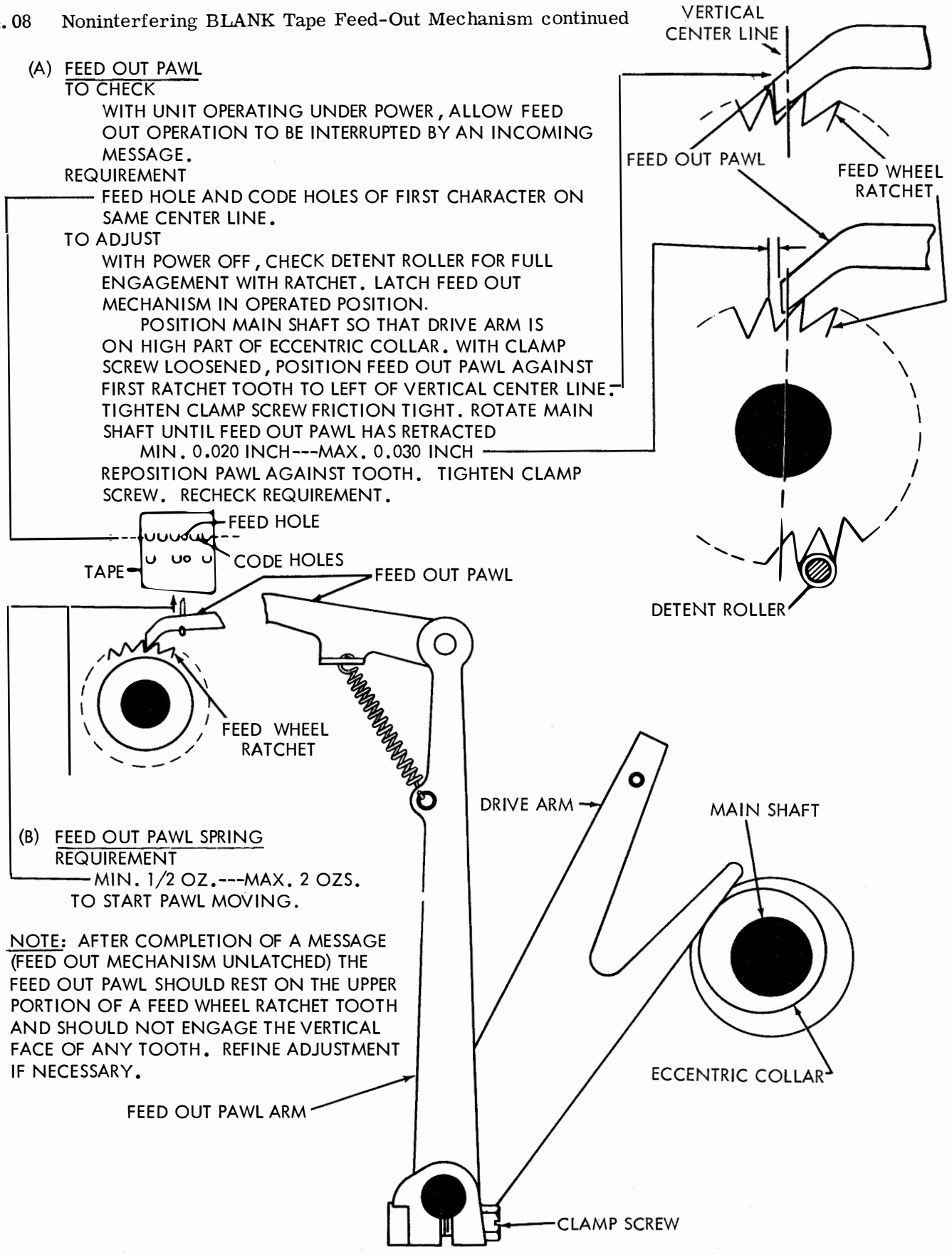
TO ADJUST

WITH POWER OFF, CHECK DETENT ROLLER FOR FULL ENGAGEMENT WITH RATCHET. LATCH FEED OUT MECHANISM IN OPERATED POSITION.

POSITION MAIN SHAFT SO THAT DRIVE ARM IS ON HIGH PART OF ECCENTRIC COLLAR. WITH CLAMP SCREW LOOSENED, POSITION FEED OUT PAWL AGAINST FIRST RATCHET TOOTH TO LEFT OF VERTICAL CENTER LINE. TIGHTEN CLAMP SCREW FRICTION TIGHT. ROTATE MAIN SHAFT UNTIL FEED OUT PAWL HAS RETRACTED

MIN. 0.020 INCH---MAX. 0.030 INCH

REPOSITION PAWL AGAINST TOOTH. TIGHTEN CLAMP SCREW. RECHECK REQUIREMENT.



(B) FEED OUT PAWL SPRING

REQUIREMENT

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

TO START PAWL MOVING.

NOTE: AFTER COMPLETION OF A MESSAGE (FEED OUT MECHANISM UNLATCHED) THE FEED OUT PAWL SHOULD REST ON THE UPPER PORTION OF A FEED WHEEL RATCHET TOOTH AND SHOULD NOT ENGAGE THE VERTICAL FACE OF ANY TOOTH. REFINE ADJUSTMENT IF NECESSARY.

4.09 Noninterfering BLANK Tape Feed-Out Mechanism continued

(A)

ARMATURE HINGE

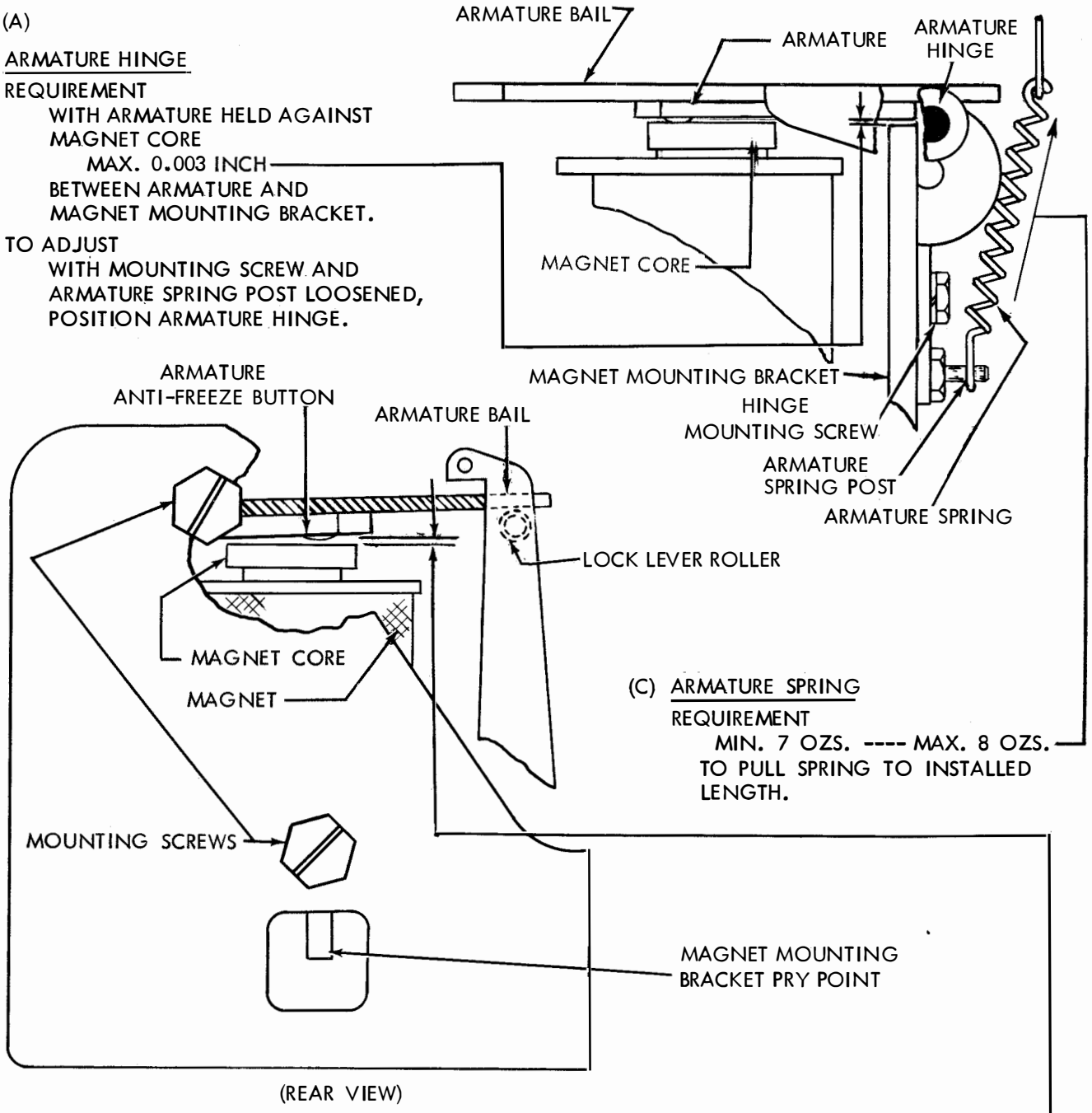
REQUIREMENT

WITH ARMATURE HELD AGAINST MAGNET CORE

MAX. 0.003 INCH BETWEEN ARMATURE AND MAGNET MOUNTING BRACKET.

TO ADJUST

WITH MOUNTING SCREW AND ARMATURE SPRING POST LOOSENED, POSITION ARMATURE HINGE.



(C) ARMATURE SPRING

REQUIREMENT

MIN. 7 OZS. ---- MAX. 8 OZS. TO PULL SPRING TO INSTALLED LENGTH.

(REAR VIEW)

(B) MAGNET MOUNTING BRACKET

TO CHECK

PLACE TAPE-OUT MECHANISM IN UNOPERATED CONDITION (MAGNET DE-ENERGIZED AND DRIVE ARM LATCHED BY RELEASE ARM). TAKE UP ALL CLEARANCE BETWEEN LOCK LEVER ROLLER AND ARMATURE BAIL.

REQUIREMENT

CLEARANCE BETWEEN MAGNET CORE AND ARMATURE ANTI-FREEZE BUTTON

MIN. 0.020 INCH---MAX. 0.025 INCH

TO ADJUST

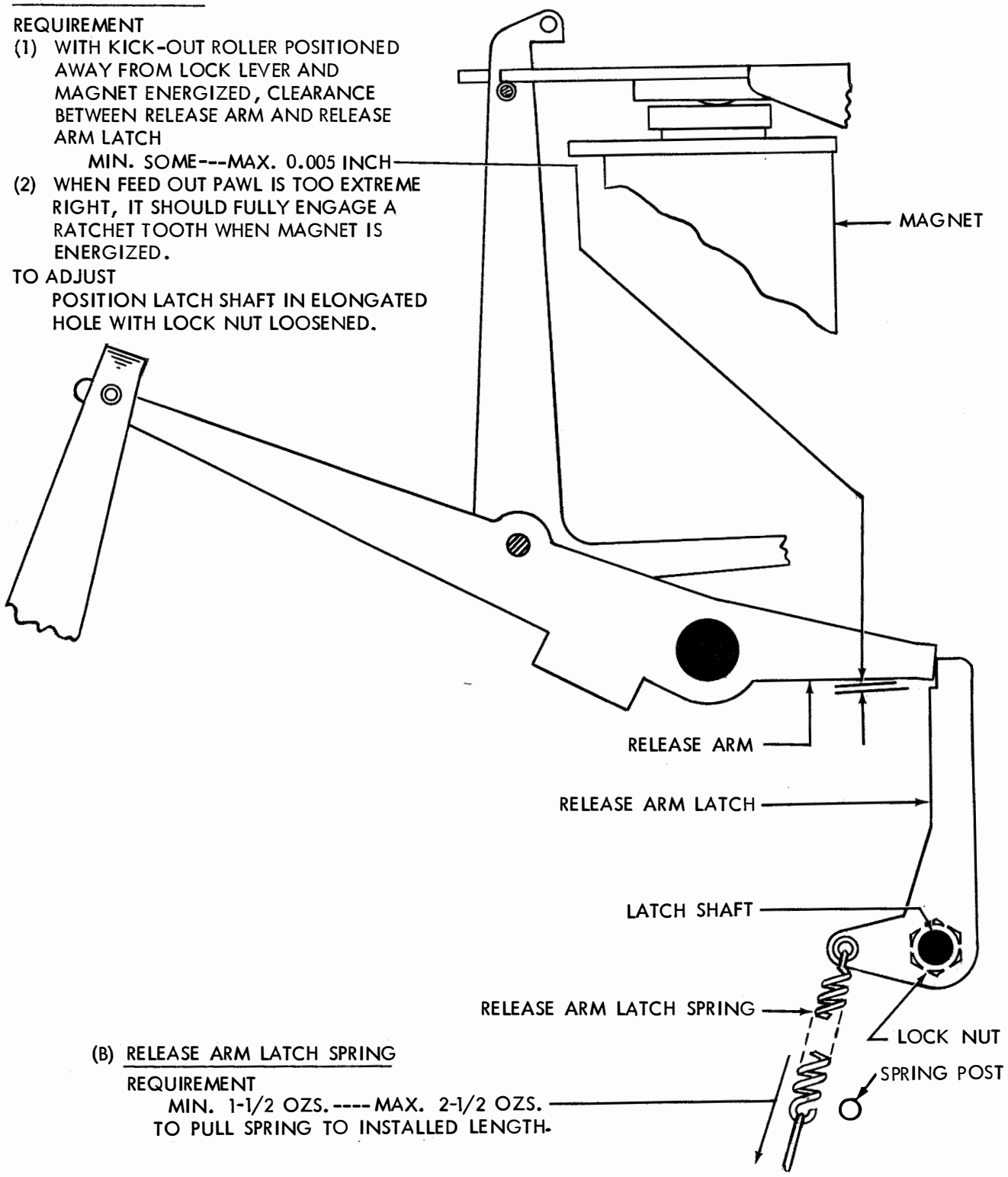
BY MEANS OF PRY POINT, POSITION MAGNET MOUNTING BRACKET WITH MOUNTING SCREWS LOOSENED.

4.10 Noninterfering BLANK Tape Feed-Out Mechanism continued

(A)
RELEASE ARM LATCH

REQUIREMENT
(1) WITH KICK-OUT ROLLER POSITIONED AWAY FROM LOCK LEVER AND MAGNET ENERGIZED, CLEARANCE BETWEEN RELEASE ARM AND RELEASE ARM LATCH
MIN. SOME---MAX. 0.005 INCH
(2) WHEN FEED OUT PAWL IS TOO EXTREME RIGHT, IT SHOULD FULLY ENGAGE A RATCHET TOOTH WHEN MAGNET IS ENERGIZED.

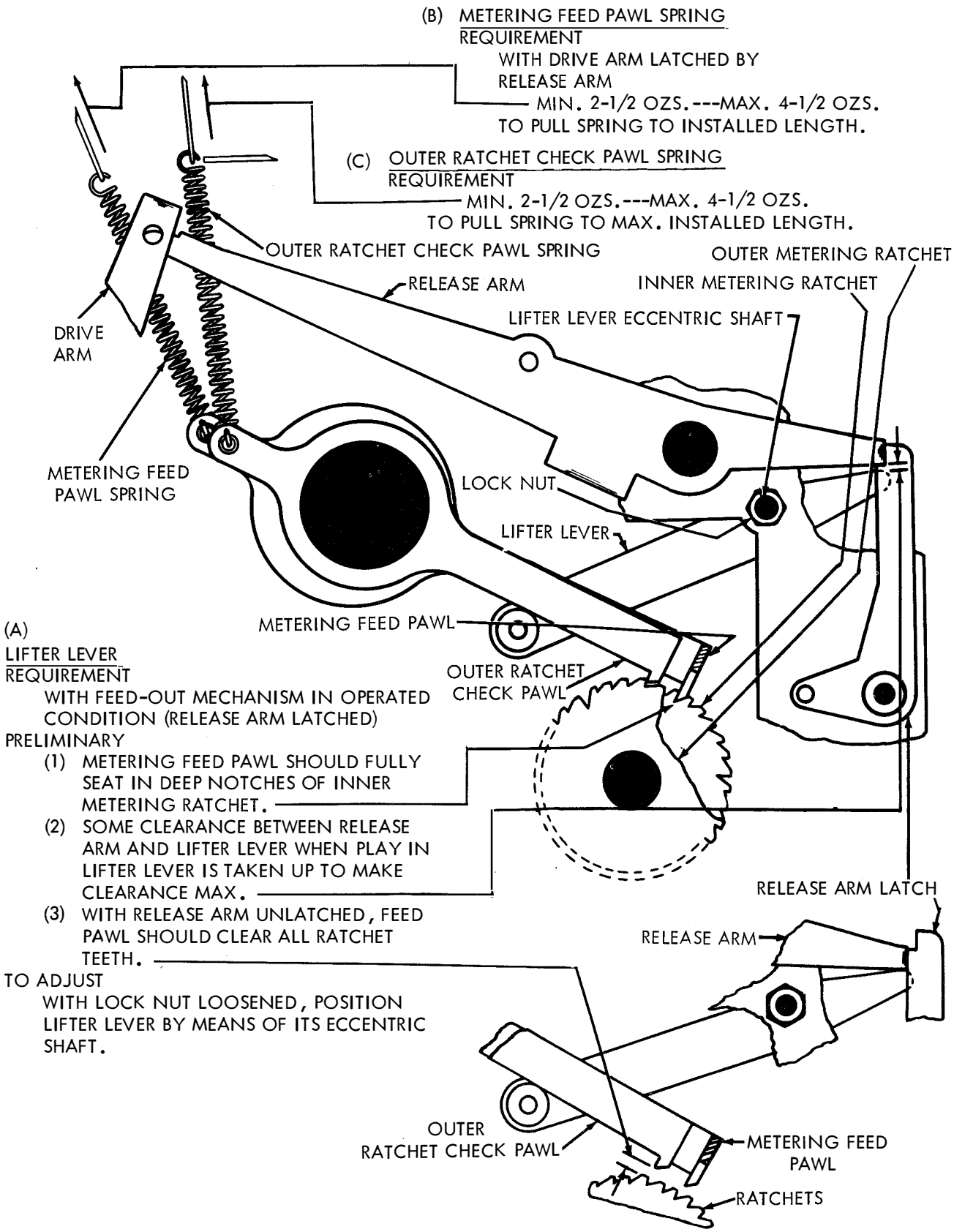
TO ADJUST
POSITION LATCH SHAFT IN ELONGATED HOLE WITH LOCK NUT LOOSENED.



(B) RELEASE ARM LATCH SPRING

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

4.11 Noninterfering BLANK Tape Feed-Out Mechanism continued



4.12 Noninterfering BLANK Tape Feed-Out Mechanism continued

(A) INNER RATCHET CHECK PAWL

TO CHECK

WITH FEED-OUT MECHANISM IN OPERATED CONDITION (DRIVE ARM UNLATCHED), PRESENT A DEEP NOTCH OF BOTH RATCHETS TO METERING FEED PAWL AND POSITION PAWL TO EXTREME LEFT.

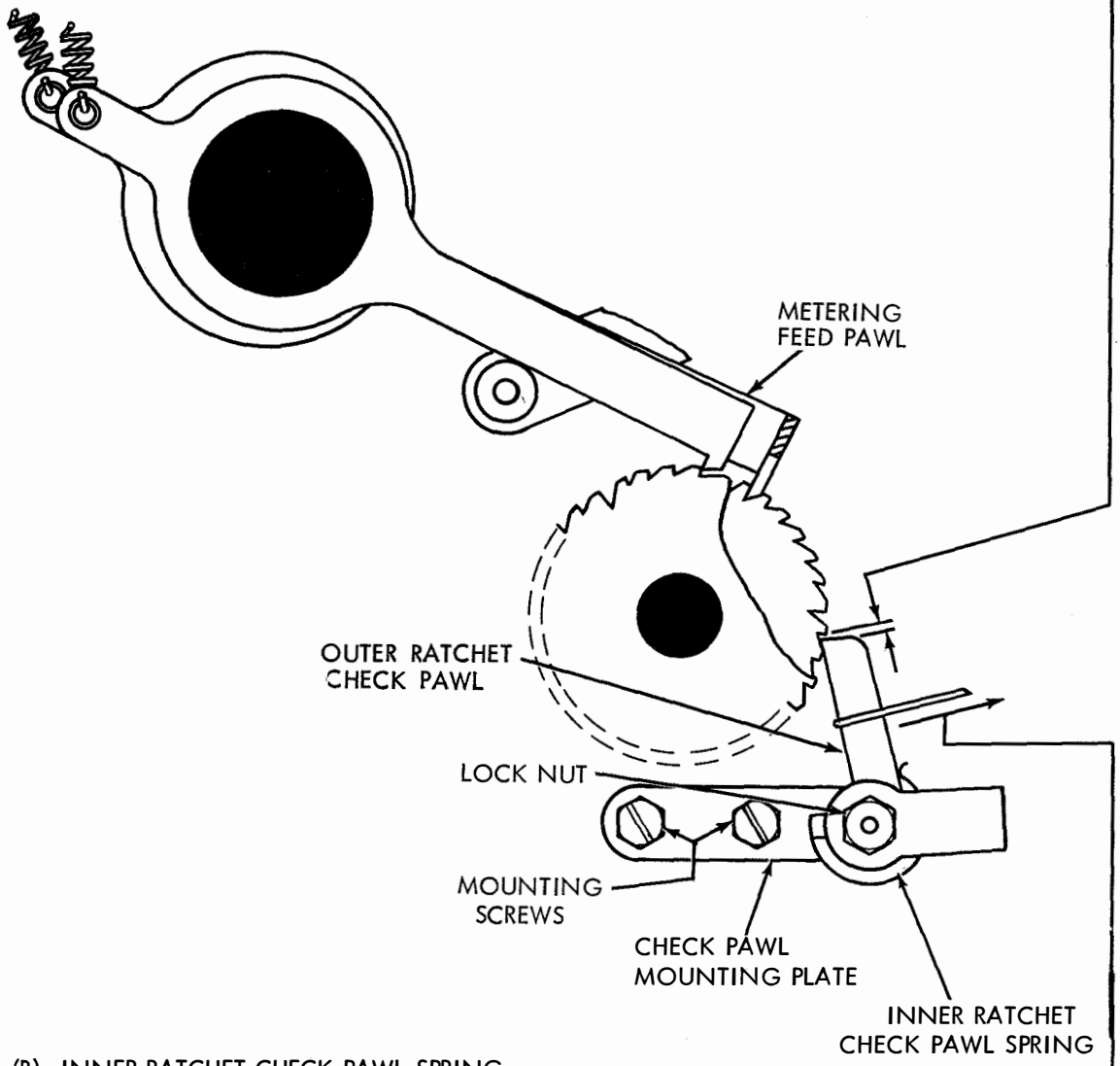
REQUIREMENT

CLEARANCE BETWEEN INNER RATCHET CHECK PAWL AND RATCHET TOOTH

MIN. 0.005 INCH---MAX. 0.015 INCH

TO ADJUST

POSITION CHECK PAWL MOUNTING PLATE WITH MOUNTING SCREWS LOOSENED.



(B) INNER RATCHET CHECK PAWL SPRING

REQUIREMENT

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

TO PULL CHECK PAWL AWAY FROM RATCHET.

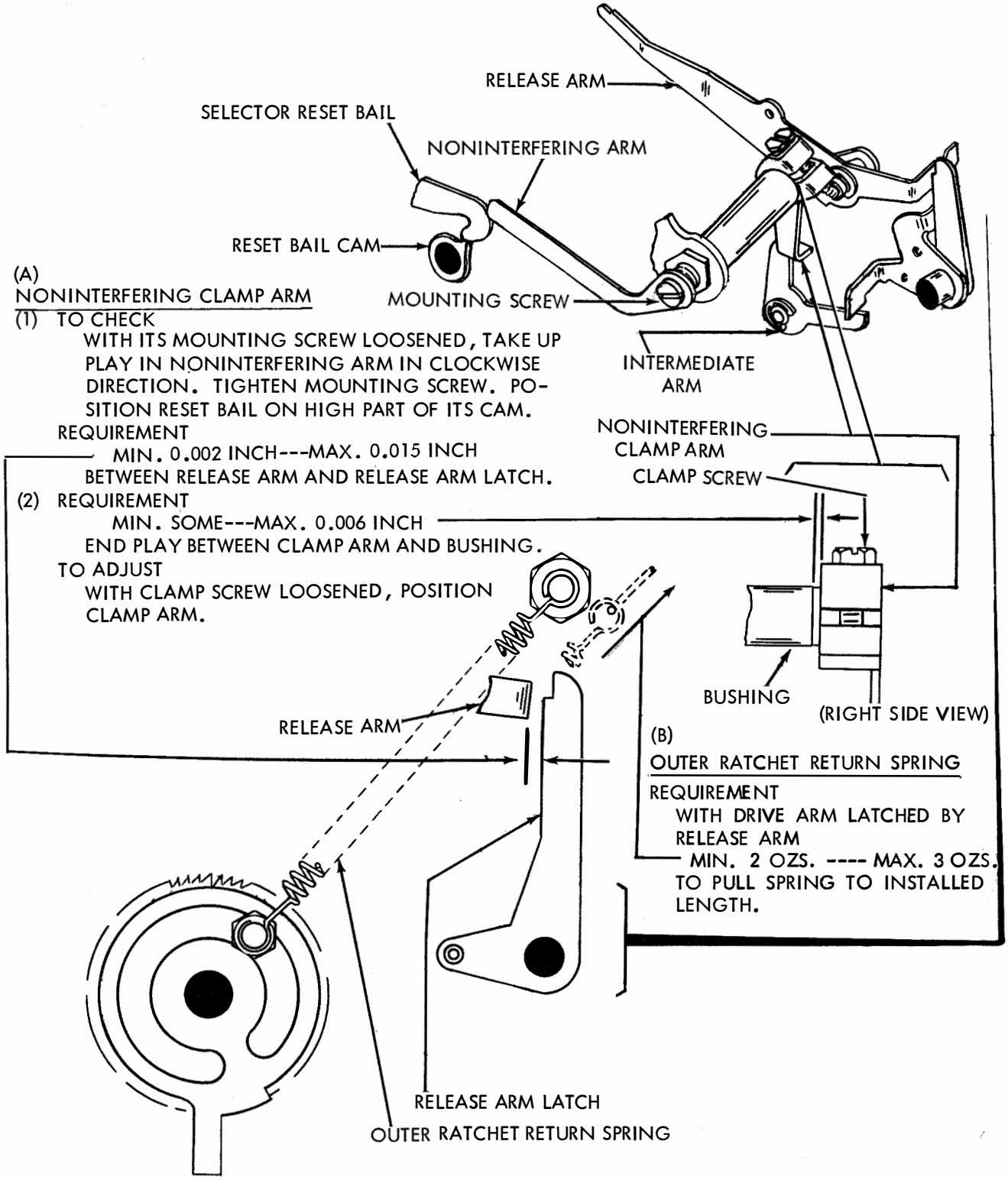
TO ADJUST

POSITION SPRING WITH LOCK NUT LOOSENED. ROTATING SPRING CLOCKWISE INCREASES TENSION; ROTATING SPRING COUNTERCLOCKWISE DECREASES TENSION.

4.13 Noninterfering BLANK Tape Feed-Out Mechanism continued

NOTE

LOOSEN THE STRIPPER BAIL CLAMP SCREW AND TAKE UP THE PLAY BETWEEN THE STRIPPER BAIL AND THE SHAFT IN A CLOCKWISE DIRECTION BEFORE MAKING THE FOLLOWING ADJUSTMENT. TIGHTEN THE STRIPPER BAIL CLAMP SCREW.



(A)

NONINTERFERING CLAMP ARM

(1) TO CHECK

WITH ITS MOUNTING SCREW LOOSENED, TAKE UP PLAY IN NONINTERFERING ARM IN CLOCKWISE DIRECTION. TIGHTEN MOUNTING SCREW. POSITION RESET BAIL ON HIGH PART OF ITS CAM.

REQUIREMENT

MIN. 0.002 INCH---MAX. 0.015 INCH BETWEEN RELEASE ARM AND RELEASE ARM LATCH.

(2) REQUIREMENT

MIN. SOME---MAX. 0.006 INCH END PLAY BETWEEN CLAMP ARM AND BUSHING.

TO ADJUST

WITH CLAMP SCREW LOOSENED, POSITION CLAMP ARM.

(B)

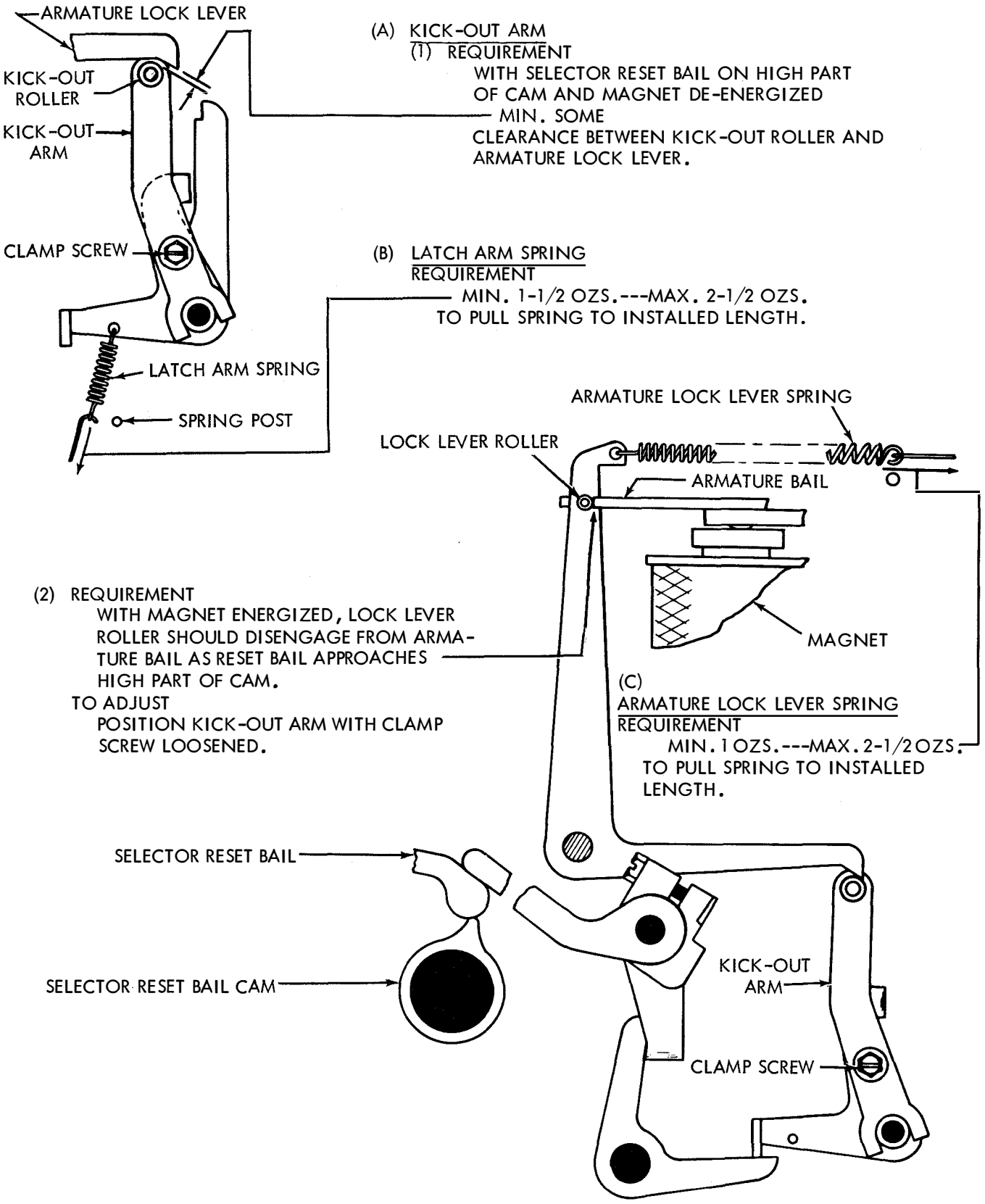
OUTER RATCHET RETURN SPRING

REQUIREMENT

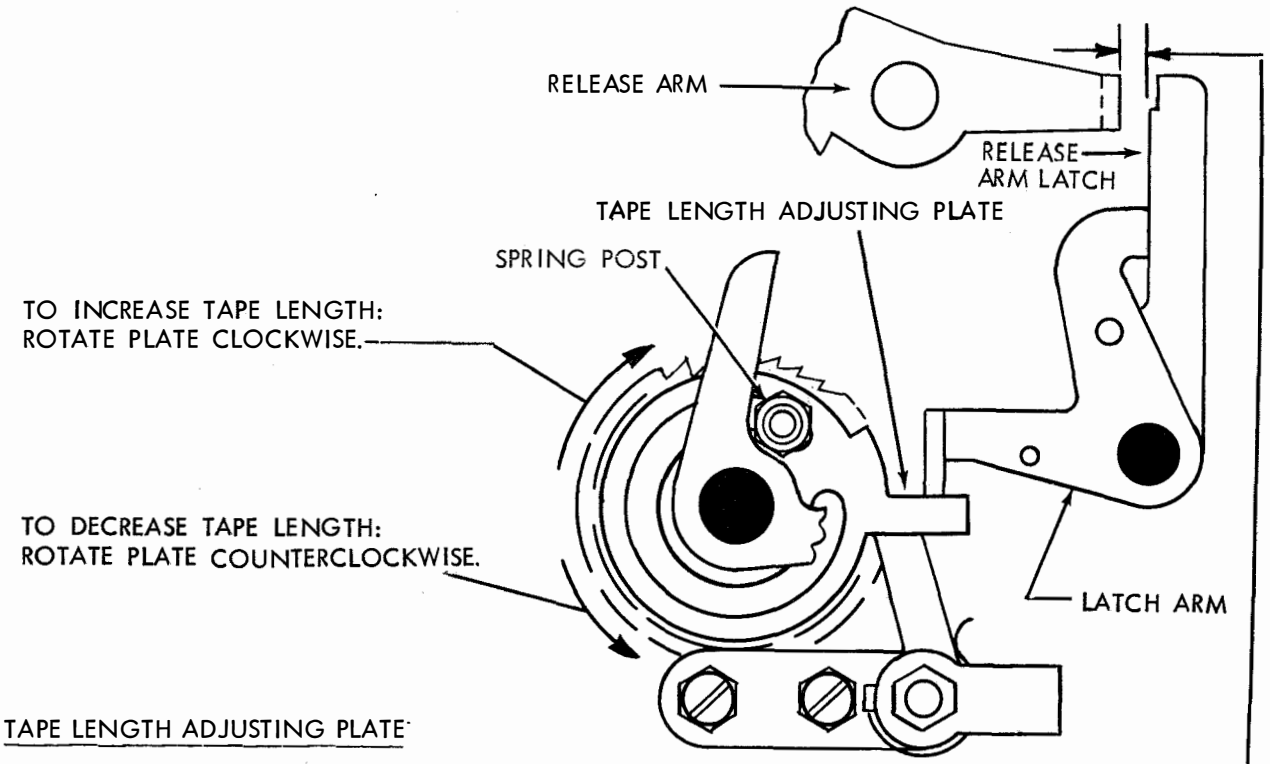
WITH DRIVE ARM LATCHED BY RELEASE ARM

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

4.14 Noninterfering BLANK Tape Feed-Out Mechanism continued



4.15 Noninterfering BLANK Tape Feed-Out Mechanism continued



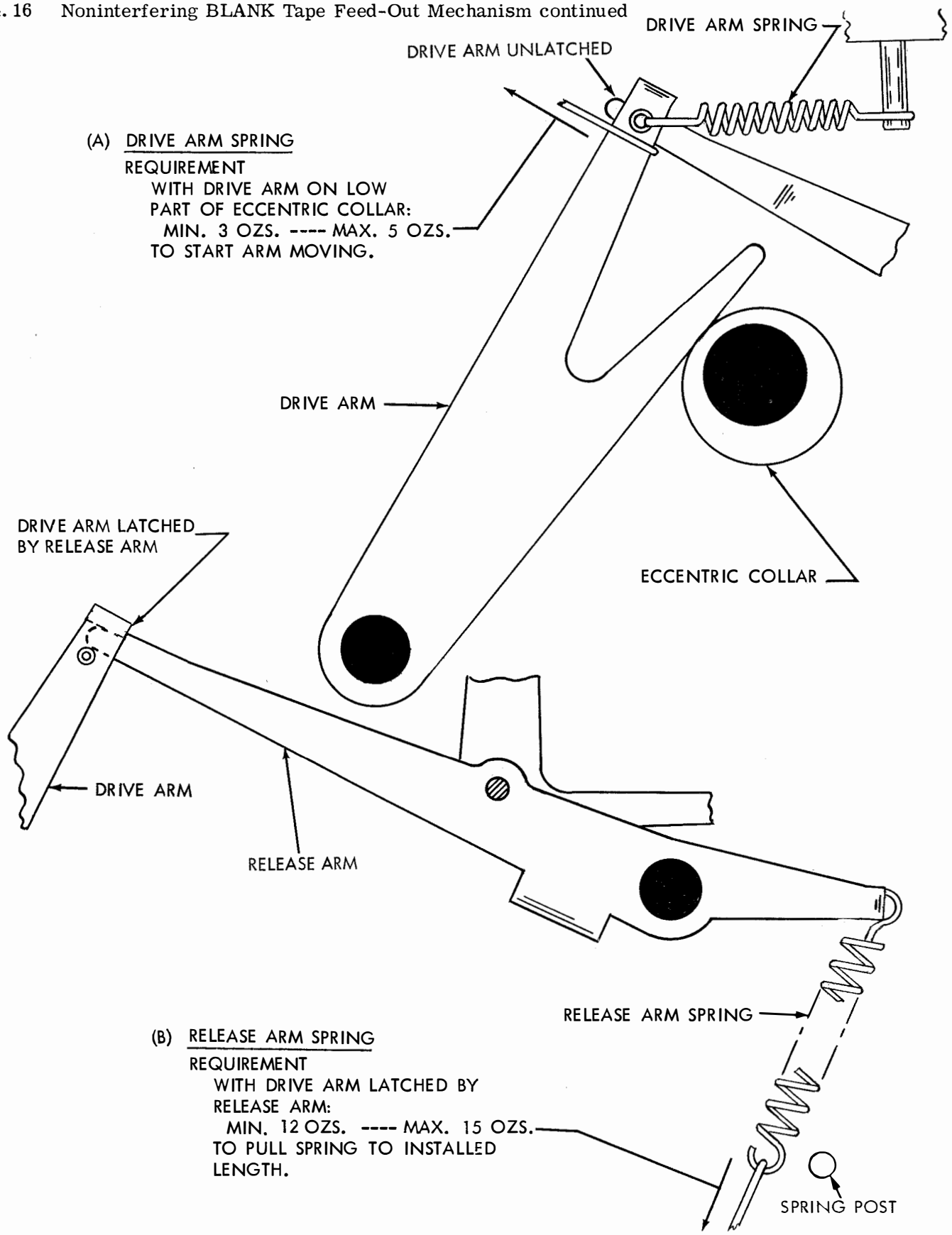
TAPE LENGTH ADJUSTING PLATE

NOTE:
AMOUNT OF TAPE FED OUT CAN BE SET FOR ANY LENGTH UP TO 17 INCHES.

REQUIREMENT
(1) WHEN UNIT IS OPERATING UNDER POWER AND FEED-OUT MAGNET IS ENERGIZED, CORRECT LENGTH OF TAPE SHOULD BE FED OUT.
(2) WHEN UNIT IS NOT OPERATING UNDER POWER AND THE FEED-OUT MECHANISM IN ITS LATCHED POSITION, MANUALLY POSITION RATCHET SO THE NEXT FEED-OUT CYCLE WILL CAUSE FEED-OUT MECHANISM TO STOP. MANUALLY HOLDING FEED PAWL AGAINST THE RATCHET, ROTATE MAIN SHAFT UNTIL RELEASE ARM LATCH RELEASES RELEASE ARM AND FEED PAWL IS IN ITS EXTREME LEFT POSITION. CLEARANCE BETWEEN RELEASE ARM AND THE RELEASE ARM LATCH
MIN. SOME---MAX. 0.080 INCH

TO ADJUST
WITH SPRING POST LOOSENED, POSITION TAPE LENGTH ADJUSTING PLATE.

4.16 Noninterfering BLANK Tape Feed-Out Mechanism continued



4. 17 Noninterfering BLANK Tape-Feed-Out Mechanism continued

NOTE:

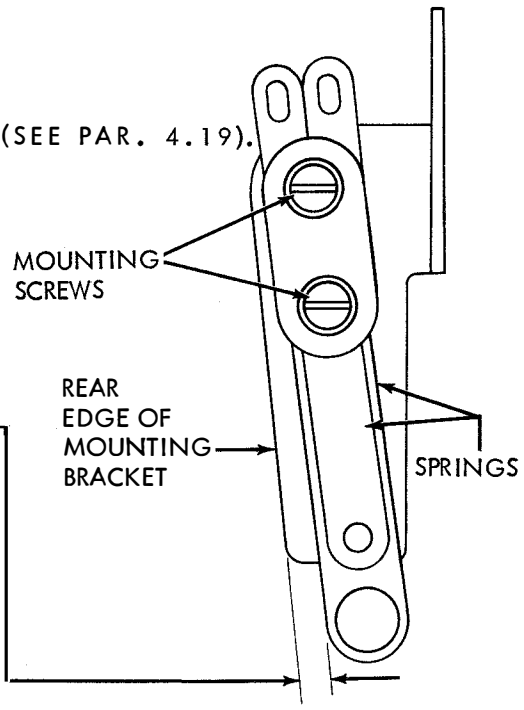
(1) FOR UNITS EQUIPPED WITH SWITCH IN PLACE OF CONTACTS (SEE PAR. 4.19).

(2) IN THIS FIGURE, REFERENCES TO LEFT OR RIGHT INDICATE THE VIEWERS LEFT OR RIGHT AS HE FACES THE REAR OF THE EQUIPMENT.

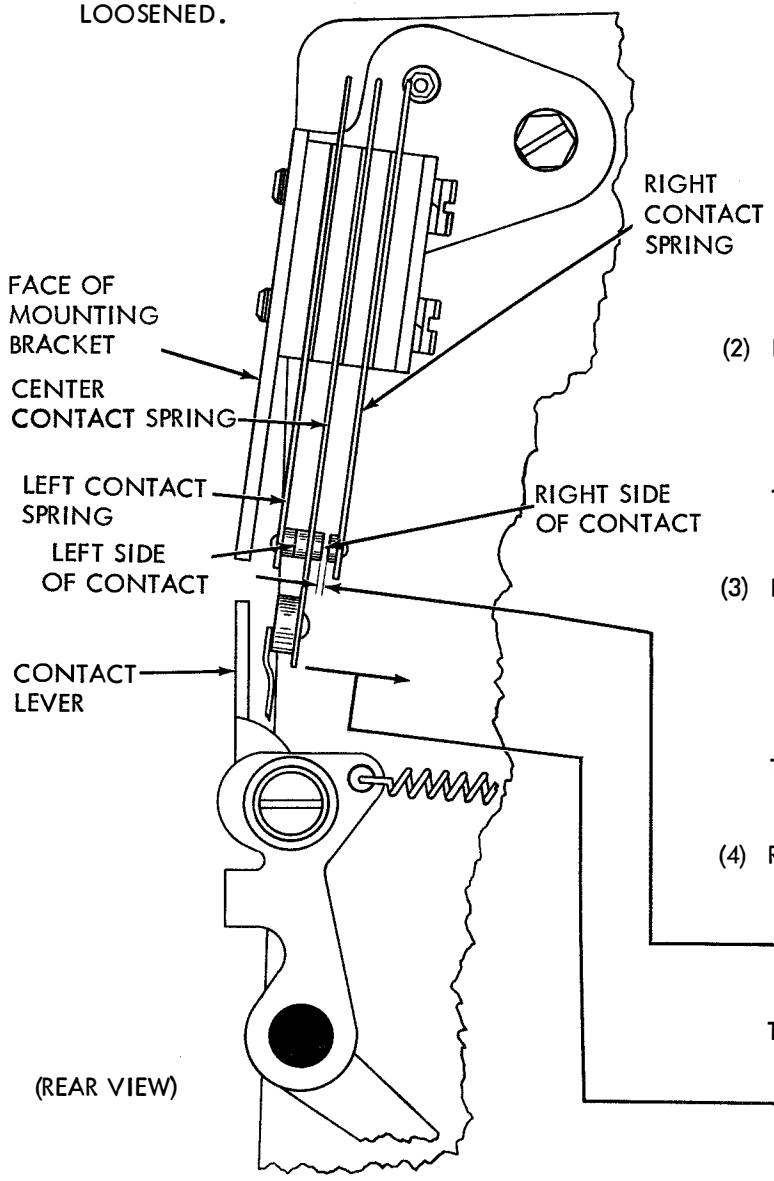
CONTACT SPRINGS

(1) REQUIREMENT
ALL SPRINGS PARALLEL TO REAR EDGE OF MOUNTING BRACKET AND CONTACT ACTUATING LEVER ENGAGE CONTACT BUTTON BY A MINIMUM OF 75% OF THE CONTACT BUTTON.

TO ADJUST
POSITION SPRINGS WITH MOUNTING SCREWS LOOSENED.



(LEFT SIDE VIEW)



(REAR VIEW)

(2) REQUIREMENT
LEFT CONTACT SPRING APPROXIMATELY PARALLEL TO FACE OF MOUNTING BRACKET.

TO ADJUST
BEND LEFT CONTACT SPRING.

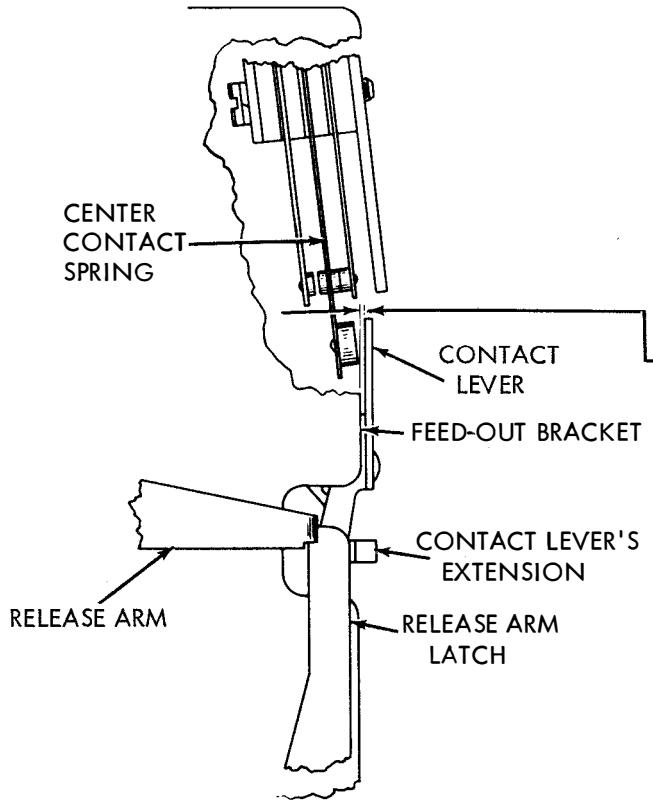
(3) REQUIREMENT
WITH CONTACT LEVER FREE OF CENTER CONTACT SPRING
MIN. 20 GRAMS---MAX. 40 GRAMS
TO JUST OPEN LEFT SIDE OF CONTACT.

TO ADJUST
BEND CENTER CONTACT SPRING.

(4) REQUIREMENT
WITH CONTACT LEVER AWAY FROM CENTER CONTACT SPRING
MIN. 0.010 INCH---MAX. 0.018 INCH
GAP AT RIGHT SIDE OF CONTACT.

TO ADJUST
BEND CONTACT SPRING.

4.18 Noninterfering BLANK Tape-Feed-Out Mechanism continued



(A) CONTACT LEVER

TO CHECK

FULLY LATCH RELEASE ARM ON RELEASE ARM LATCH. HOLD CENTER CONTACT SPRING AWAY FROM CONTACT LEVER. ALLOW CONTACT LEVER'S EXTENSION TO REST AGAINST LATCH. MEASURE CLEARANCE BETWEEN FEED-OUT BRACKET AND CONTACT LEVER AT TOP OF LEVER.

REQUIREMENT

MIN. SOME---MAX. 0.020 INCH

TO ADJUST

POSITION CONTACT LEVER WITH CLAMP SCREW LOOSENED. (FOR POSITION OF CLAMP SCREW SEE ILLUSTRATION BELOW.)

(B) CONTACTING MOUNTING BRACKET

REQUIREMENT

WITH RELEASE ARM UNLATCHED

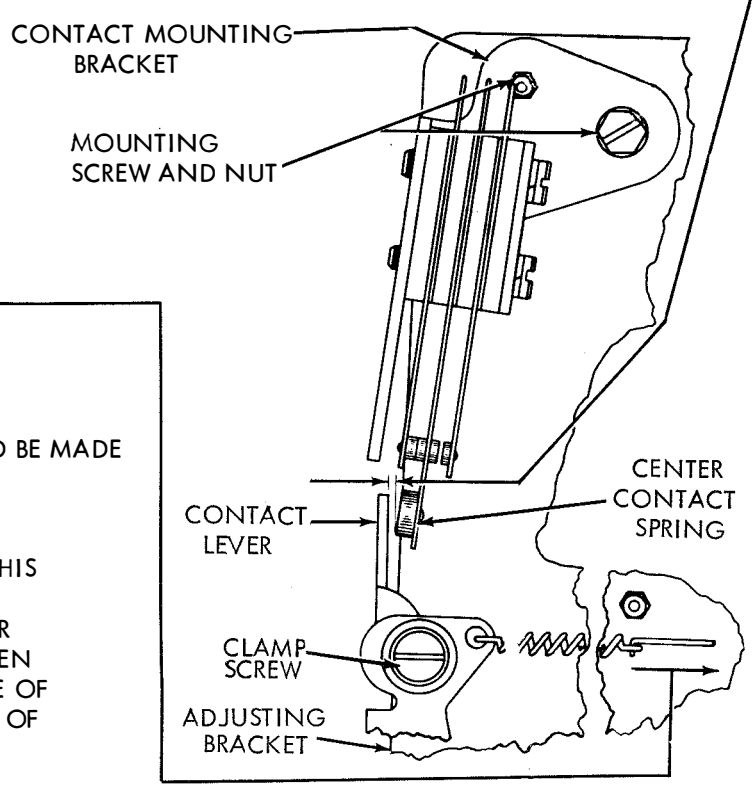
MIN. 0.010 INCH---MAX. 0.040 INCH

BETWEEN CONTACT LEVER AND CENTER CONTACT SPRING.

TO ADJUST

POSITION MOUNTING BRACKET WITH MOUNTING SCREW AND NUT LOOSENED.

NOTE: BY MEANS OF TEST LAMP, CHECK CONTINUITY OF CONTACT WITH CONTACT LEVER IN EACH POSITION.



(C) CONTACT LEVER SPRING

REQUIREMENT

MIN. 3 OZS.---MAX. 6 OZS.

TO PULL TO INSTALLED LENGTH.

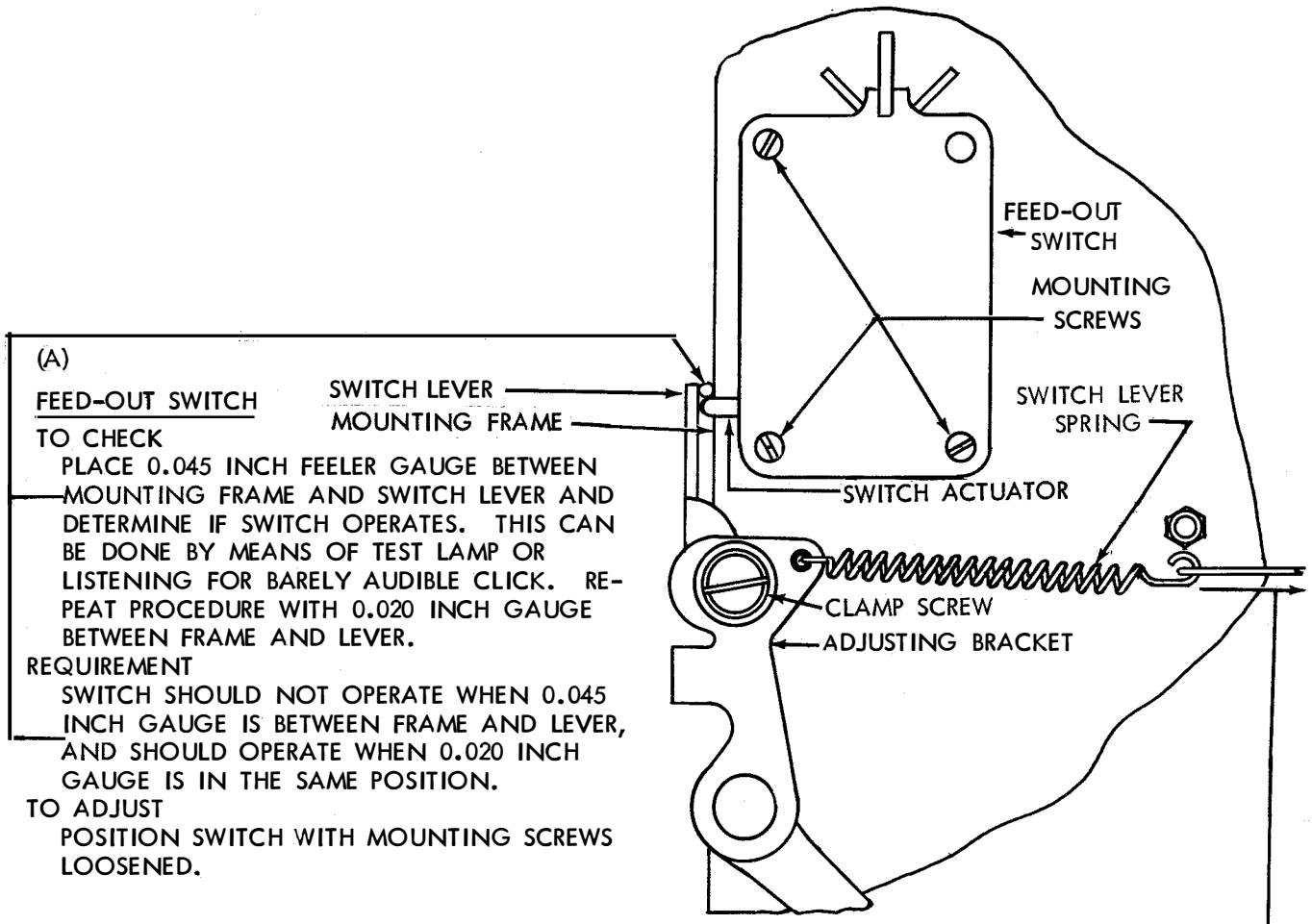
(D) CONTACT PULSE CLOSURE

NOTE: PRECEDING ADJUSTMENTS SHOULD BE MADE PRIOR TO THIS ADJUSTMENT.

EXTERNAL CIRCUITRY MAY REQUIRE A PULSE AT END OF FEED-OUT OPERATION. TO OBTAIN THIS CONDITION, REMOVE CLAMP SCREW AND ADJUSTING BRACKET AND HOOK CONTACT LEVER SPRING IN TAPPED HOLE. CONTACTS WILL THEN BE OPEN OR CLOSED, DEPENDING ON CHOICE OF CONTACT, EXCEPT FOR SHORT PERIOD AT END OF FEED-OUT OPERATION.

4.19 Noninterfering BLANK Tape Feed-Out Mechanism continued

(For Units Equipped with Contacts in Place of Switch see Par. 4.17)



(A)

FEED-OUT SWITCH

TO CHECK

PLACE 0.045 INCH FEELER GAUGE BETWEEN MOUNTING FRAME AND SWITCH LEVER AND DETERMINE IF SWITCH OPERATES. THIS CAN BE DONE BY MEANS OF TEST LAMP OR LISTENING FOR BARELY AUDIBLE CLICK. REPEAT PROCEDURE WITH 0.020 INCH GAUGE BETWEEN FRAME AND LEVER.

REQUIREMENT

SWITCH SHOULD NOT OPERATE WHEN 0.045 INCH GAUGE IS BETWEEN FRAME AND LEVER, AND SHOULD OPERATE WHEN 0.020 INCH GAUGE IS IN THE SAME POSITION.

TO ADJUST

POSITION SWITCH WITH MOUNTING SCREWS LOOSENED.

(B)

SWITCH LEVER SPRING

REQUIREMENT

MIN. 3 OZS.---MAX. 6 OZS. TO PULL SPRING TO INSTALLED LENGTH.

4.20 Noninterfering BLANK Tape Feed-Out Mechanism continued

(A) SWITCH LEVER ADJUSTING BRACKET

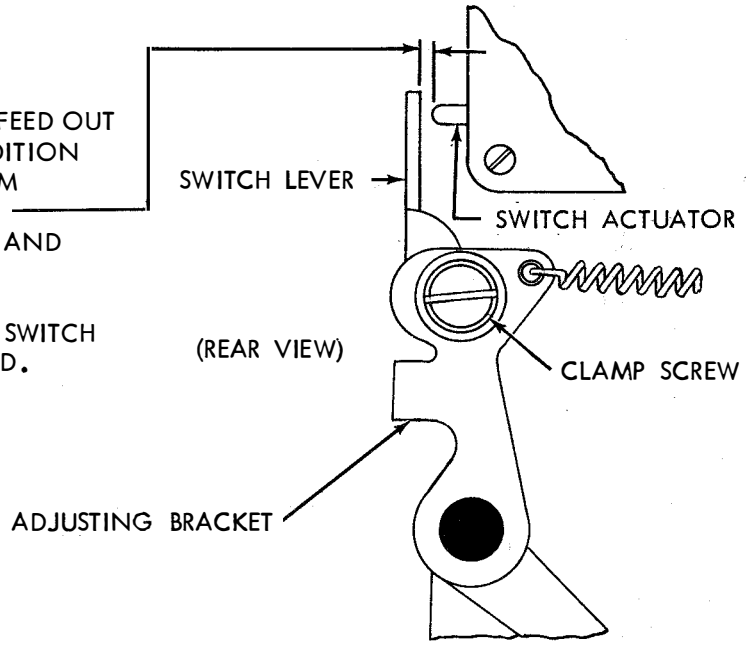
REQUIREMENT

WITH CLUTCHES DISENGAGED AND FEED OUT MECHANISM IN UNOPERATED CONDITION (DRIVE ARM LATCHED BY RELEASE ARM

MIN. SOME---MAX. 0.010 INCH CLEARANCE BETWEEN SWITCH LEVER AND SWITCH ACTUATOR.

TO ADJUST

POSITION ADJUSTING BRACKET ON SWITCH LEVER WITH CLAMP SCREW LOOSENED.



(B) FEED OUT SWITCH (WITH PULSE CLOSURE)

NOTE: EXTERNAL CIRCUITRY MAY REQUIRE A PULSE AT END OF FEED-OUT OPERATION: TO OBTAIN THIS CONDITION, REMOVE ADJUSTING BRACKET AND HOOK SPRING IN TAPPED HOLE IN SWITCH LEVER. SWITCH WILL THEN BE CLOSED EXCEPT FOR SHORT PERIOD AT END OF FEED-OUT OPERATION. FOR REVERSE CONDITION---I.E. SWITCH OPEN EXCEPT FOR SHORT PERIOD AT END OF OPERATION---REMOVE WHITE AND BLUE LEAD AND SOLDER TO SPARE TERMINAL.

TO CHECK

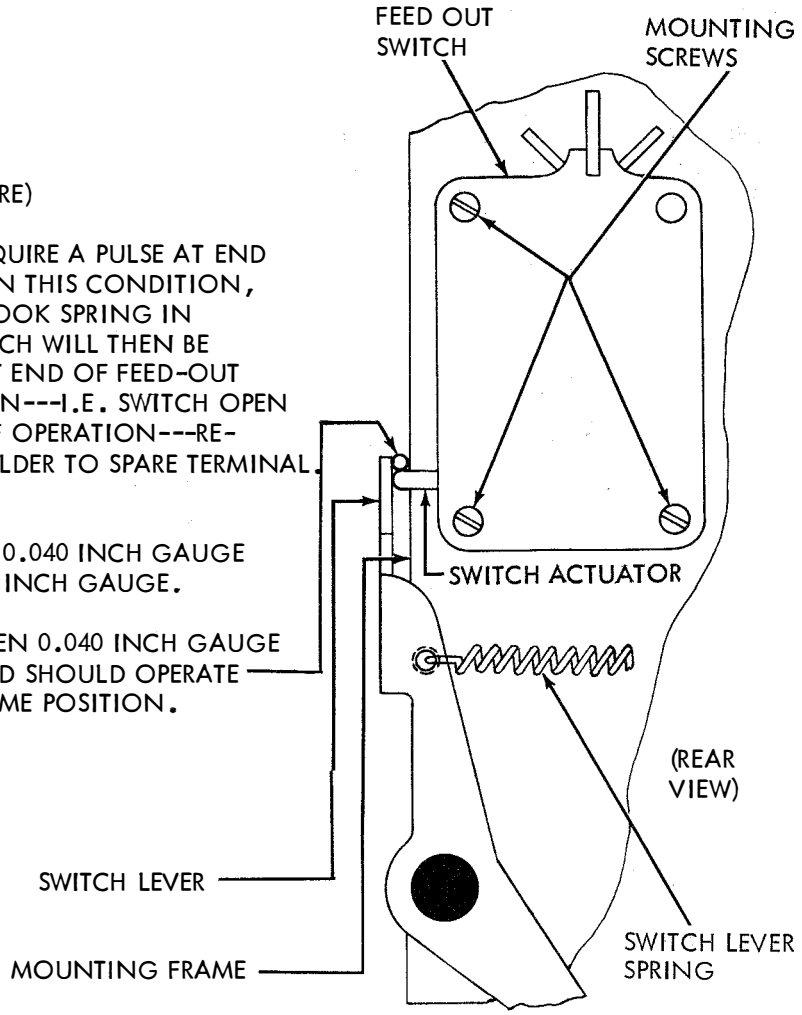
SAME AS FEED OUT SWITCH EXCEPT 0.040 INCH GAUGE SHOULD BE SUBSTITUTED FOR 0.045 INCH GAUGE.

REQUIREMENT

SWITCH SHOULD NOT OPERATE WHEN 0.040 INCH GAUGE IS BETWEEN FRAME AND LEVER, AND SHOULD OPERATE WHEN 0.020 INCH GAUGE IS IN SAME POSITION.

TO ADJUST

SAME AS FEED OUT SWITCH.



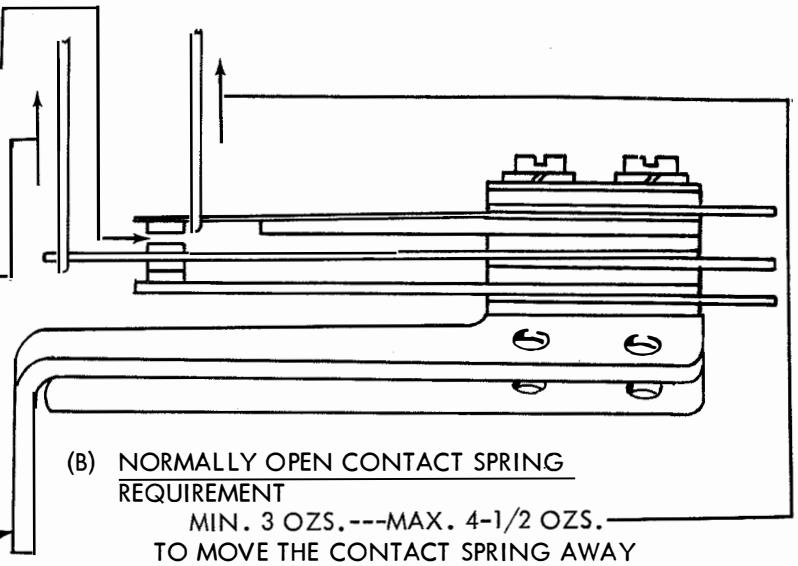
4.21 Multiple Mounted Function Blade Contacts
(For later design see par 3.56)

NOTE 1:
THE FOLLOWING ADJUSTMENTS SHOULD BE MADE PRIOR TO INSTALLING THE CONTACT BRACKET ASSEMBLY ON UNIT.

(A) NORMALLY OPEN CONTACT GAP
REQUIREMENT
MIN. 0.010 INCH
MAX. 0.020 INCH
TO ADJUST
BEND STIFFENER.

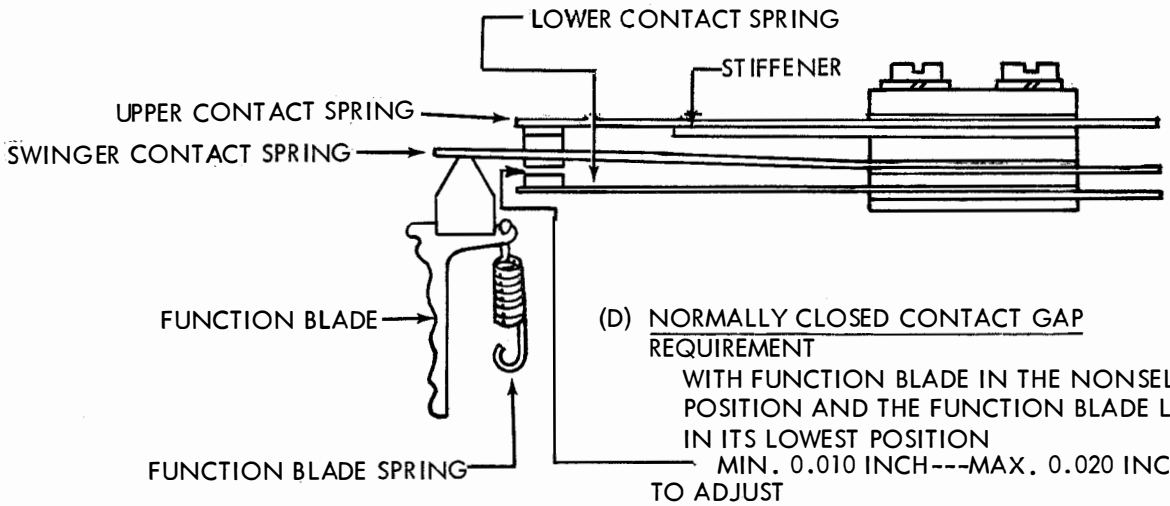
(C) NORMALLY CLOSED CONTACT SPRING
REQUIREMENT
MIN. 2-1/2 OZS.
MAX. 3-1/2 OZS.
TO MOVE THE SWINGER CONTACT AWAY FROM THE NORMALLY CLOSED CONTACT.
TO ADJUST
BEND SWINGER CONTACT SPRING.

CONTACT MOUNTING BRACKET



(B) NORMALLY OPEN CONTACT SPRING
REQUIREMENT
MIN. 3 OZS.---MAX. 4-1/2 OZS.
TO MOVE THE CONTACT SPRING AWAY FROM ITS STIFFENER.
TO ADJUST
BEND CONTACT SPRING. RECHECK CONTACT GAP.

NOTE 2:
THE FOLLOWING ADJUSTMENTS SHOULD BE MADE AFTER THE CONTACT BRACKET ASSEMBLY IS MOUNTED ON THE UNIT.



(D) NORMALLY CLOSED CONTACT GAP
REQUIREMENT
WITH FUNCTION BLADE IN THE NONSELECT POSITION AND THE FUNCTION BLADE LIFTER IN ITS LOWEST POSITION
MIN. 0.010 INCH---MAX. 0.020 INCH
TO ADJUST
BEND LOWER CONTACT SPRING.

NOTE 3:
SELECT EACH FUNCTION BLADE IN TURN AND DETERMINE THAT THERE IS A DEFINITE TRANSFER FROM MAKE TO BREAK CONTACTS. REFINE ABOVE ADJUSTMENT.