TELETYPE model 28 THE LEADERSHIP LINE

BULLETIN 217B

ADJUSTMENTS AND LUBRICATION

MODEL 28

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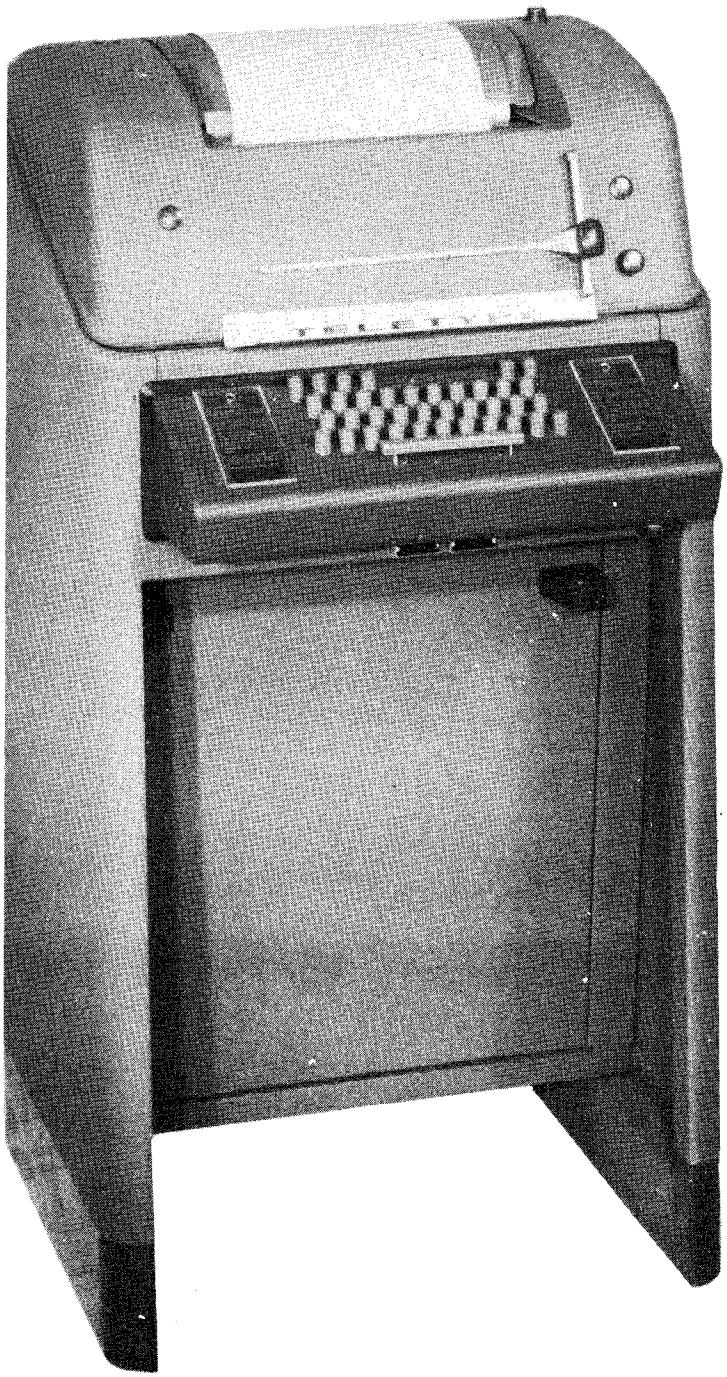

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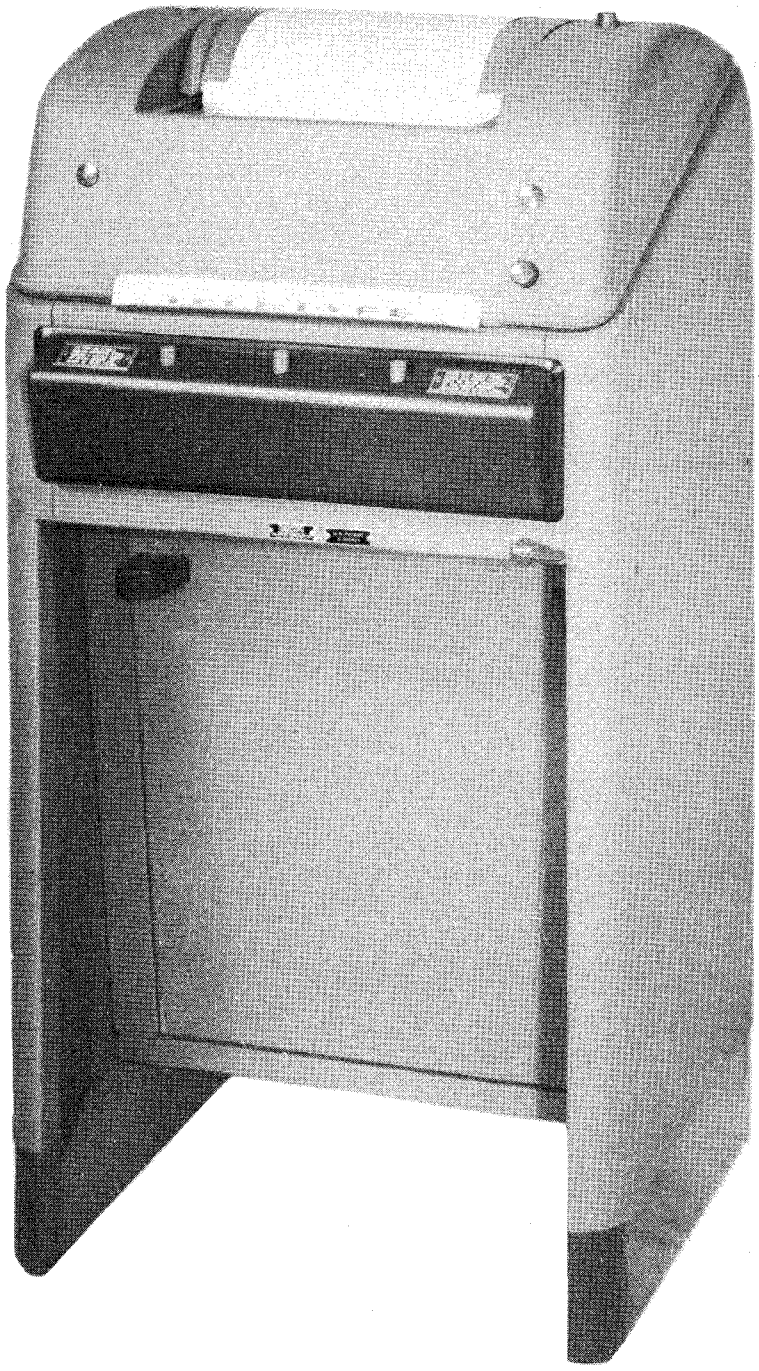

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SECTION 1 - STANDARD UNIT ADJUSTMENTS

1. GENERAL

a. The adjustments of each unit are arranged in a sequence that would be followed if a complete readjustment of the unit were undertaken. Tools and spring scales required to perform the adjustments are listed in Teletype bulletin 1124B but are not supplied as part of the equipment. After an adjustment has been completed, be sure to tighten any nuts or screws that may have been loosened. The adjusting illustrations, in addition to indicating the adjusting tolerances, positions of moving parts, and spring tension, also show the angle at which the scale should be applied when measuring spring tensions. If a part that is mounted on shims is to be removed, the number of shims used at each of its mounting screws should be noted so that the same shim pile-up can be replaced when the part is remounted.

b. The spring tensions given in this specification are indicated values and should be checked with proper spring scales in the position indicated.

NOTE

When rotating the main shaft of the Typing Unit by hand, the clutches do not fully DISENGAGE upon reaching their stop positions. In order to relieve the drag on the clutches and permit the main shaft to ROTATE freely, apply pressure on the lug of each clutch disk (Figure 1-35) with a screwdriver to cause it to ENGAGE its latch lever and thus fully DISENGAGE the internal expansion clutch. This procedure should always be followed prior to placing the Typing Unit on the base and switching on the power.

c. References 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 operator's position in front of the unit.

d. When the 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 (Figure 1-35) 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.

e. The Typing Unit may be safely placed in any one of three positions for servicing: (1) in upright position on its four feet. (2) tilted backward so that it rests on its rear feet and rear points of side frames, (3) bottom upwards so that it rests on two upper points of each side frame.

f. When cleaning plastic parts, use soap or detergent and water. Do not use solvents containing alcohol or chlorinated compounds.

g. Reference made to KEYBOARD means Keyboard base or sending and receiving base. Reference to BASE means receiving only base.

h. Where instructions call for the removal of parts or subassemblies, refer to Disassembly and Reassembly Paragraph 10. Page 1-89.

i. MANUAL SELECTION OF CHARACTERS OR FUNCTIONS

(1) To manually operate the Typing Unit while removed from Keyboard or Base hold the selector magnet armature (Figure 1-17) operated by means of an armature clip and rotate the main shaft in a counterclockwise direction (by means of the handwheel listed in bulletin 1124B) to bring all clutches to their disengaged position.

NOTE

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

(2) Fully disengage all clutches as described in the preceding note. Release armature momentarily to permit the selector clutch to engage. Turn the main shaft slowly until the No. 5 selector lever has just moved to the peak of its cam. Strip from the selector levers the push levers which are spacing in the code combination of the character or function that is being selected. It should be noted that selector levers (Figure 1-24) move in succession starting with the inner (Number One). Continue to rotate main shaft until all operations initiated by selector action clear through unit.

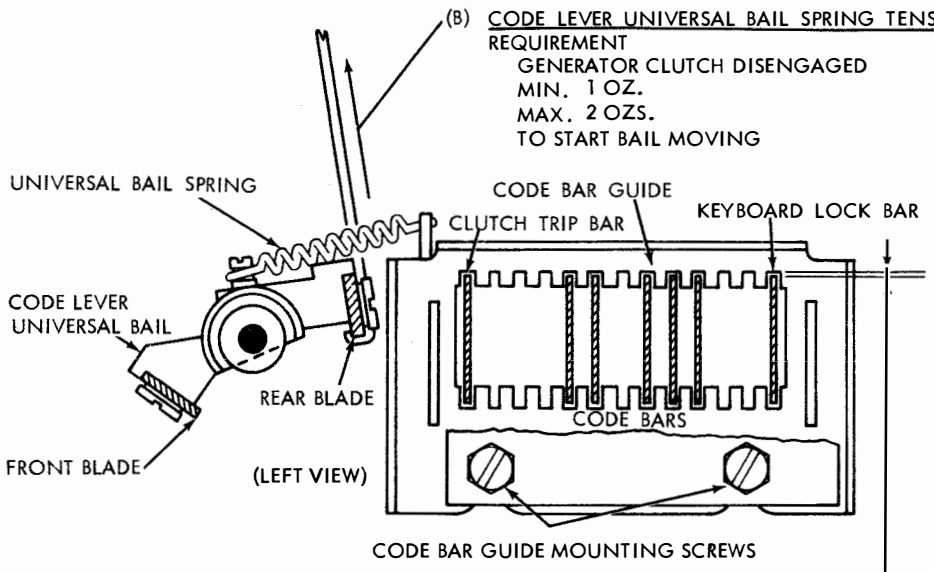
j. VARIABLE FEATURES

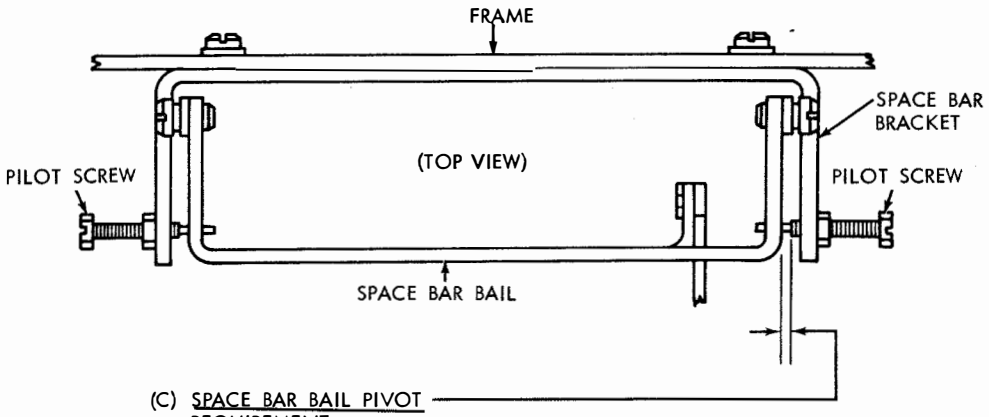
In addition to standard unit adjustments, which are covered in section 1 of this bulletin, adjustments for a number of Variable Features appear in Section 2. Where adjustments of these Variable Features affect the adjusting sequence, cross reference information has been included in Section 1. Variable Feature adjustments which do not affect the adjusting sequence may be done at any time during the adjusting procedure.

k. EARLIER DESIGNED MECHANISMS

Section 1 contains illustrations and adjusting procedure for mechanism currently being manufactured. Illustrations and adjusting procedure for mechanisms of earlier design are located in section 4. Where a new mechanism has replaced one of earlier design, reference has been made in section 1 to the corresponding mechanism in section 4.

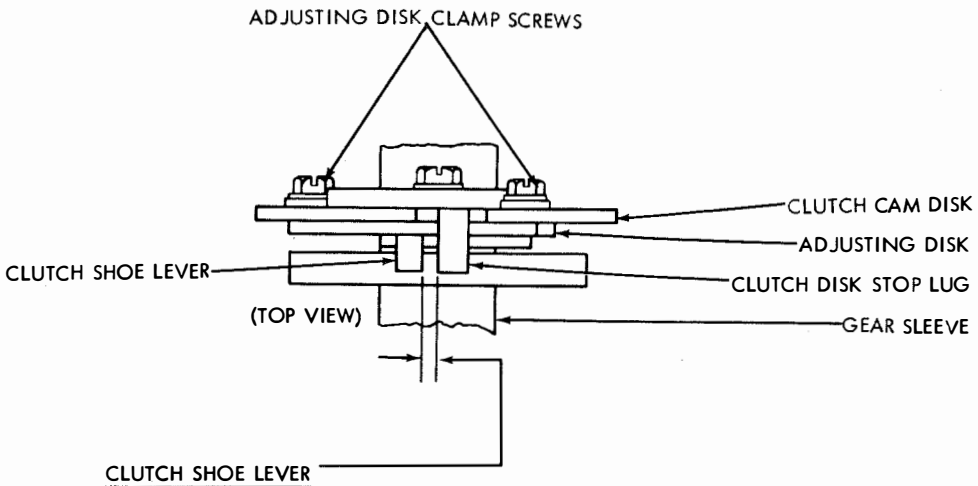
2. KEYBOARD (NEW DESIGN)*





* See page 1-2 Paragraph k.

FIGURE 1-1 KEYBOARD, CODE BAR AND SPACE BAR MECHANISMS



CLUTCH SHOE LEVER

REQUIREMENT

CLEARANCE WHEN CLUTCH IS DISENGAGED SHOULD BE 0.055 INCH TO 0.085 INCH LESS THAN WHEN CLUTCH IS ENGAGED.

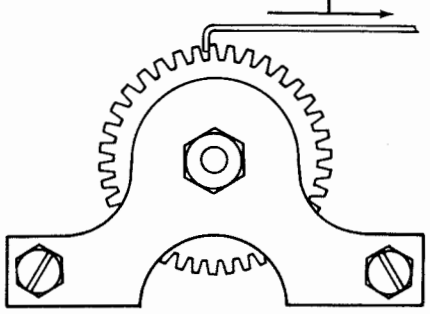
TO CHECK

LATCH CLUTCH IN DISENGAGED POSITION AND MEASURE CLEARANCE. ROTATE GEAR UNTIL OIL HOLE IS UPWARD. ENGAGE CLUTCH AND MEASURE CLEARANCE.

TO ADJUST

LOOSEN THE TWO ADJUSTING DISK CLAMP SCREWS TO POSITION DISK.

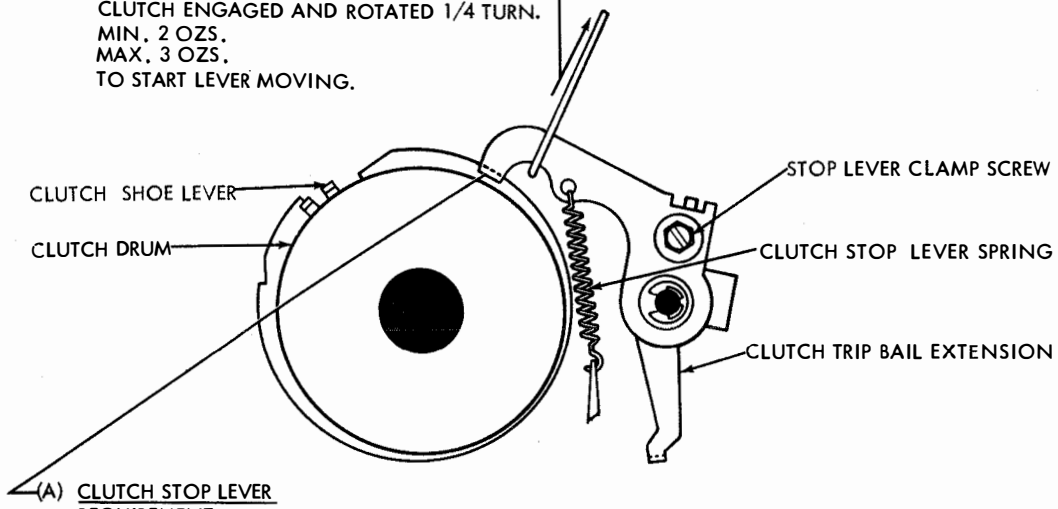
NOTE:
AFTER ABOVE ADJUSTMENT IS MADE, CHECK FOR DRAG ON DRUM AS FOLLOWS: DISENGAGE CLUTCH. HOOK SPRING SCALE ON TOP TOOTH OF GEAR AND PULL AT RIGHT ANGLE TO RADIUS OF GEAR. IF PULL OF 8 OZS. OR MORE IS REQUIRED TO MOVE THE DRUM, REFINE ABOVE ADJUSTMENT.



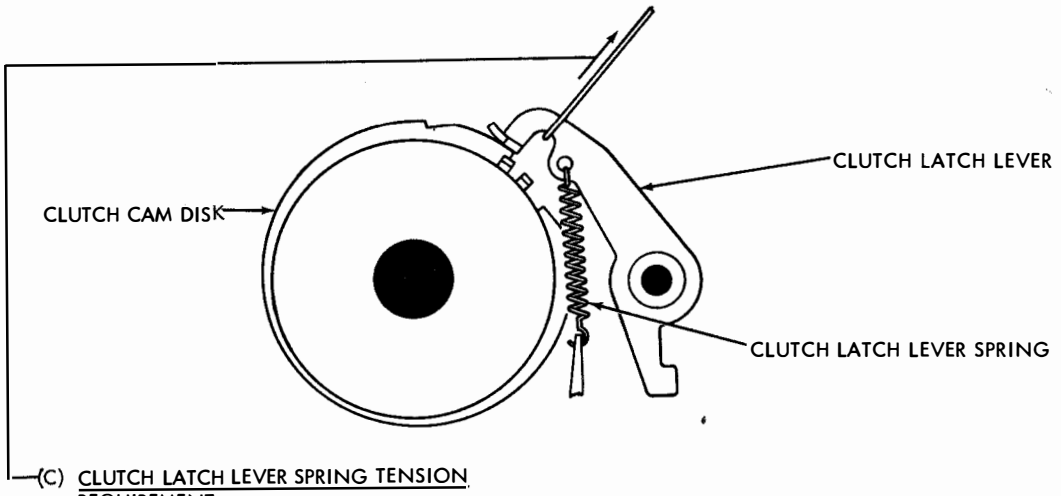
(REAR VIEW)

FIGURE 1-2 KEYBOARD, SIGNAL GENERATOR CLUTCH AND GEAR MECHANISM

(B) CLUTCH STOP LEVER SPRING TENSION
REQUIREMENT
CLUTCH ENGAGED AND ROTATED 1/4 TURN.
MIN. 2 OZS.
MAX. 3 OZS.
TO START LEVER MOVING.



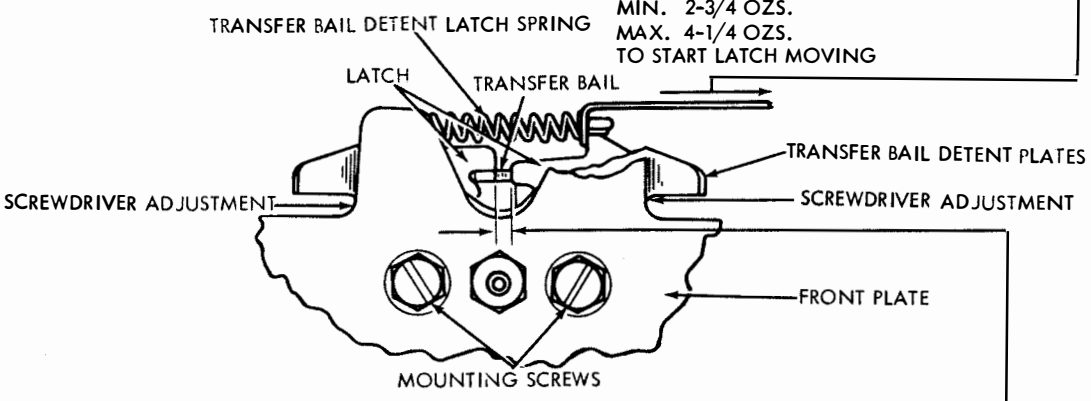
(A) CLUTCH STOP LEVER
REQUIREMENT
SHOULD FULLY ENGAGE. CLUTCH SHOE LEVER
DURING ROTATION, THE LEVER SHOULD NOT TOUCH THE CLUTCH DRUM AT ANY POINT.
TO ADJUST
POSITION STOP LEVER WITH ITS CLAMP SCREW LOOSENED.



(C) CLUTCH LATCH LEVER SPRING TENSION
REQUIREMENT
CLUTCH LATCH LEVER RESTING ON THE HIGHEST POINT OF CLUTCH DISK.
MIN. 2 OZS.
MAX. 3 OZS.
TO START LATCH LEVER MOVING.

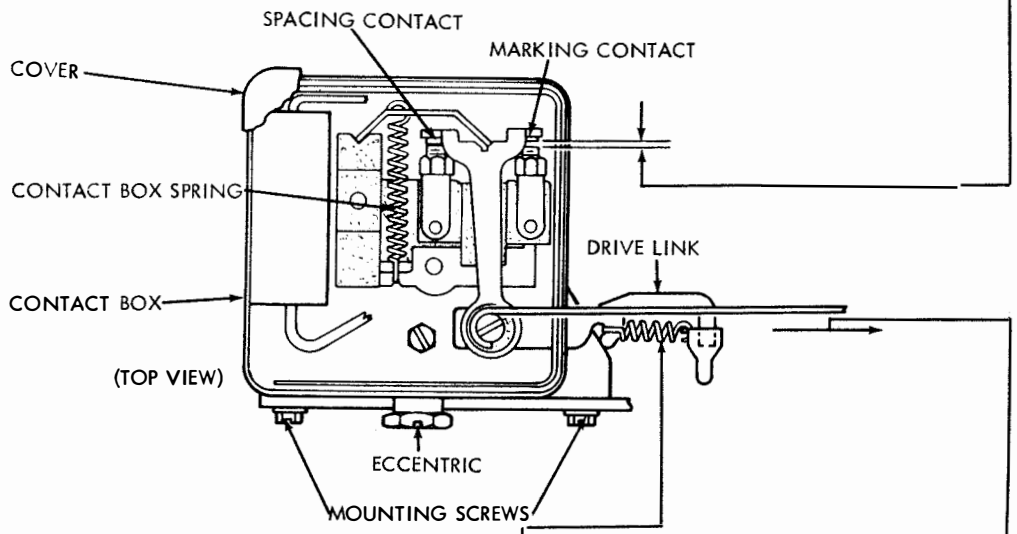
FIGURE 1-3 KEYBOARD, SIGNAL GENERATOR CLUTCH AND LEVER MECHANISM

(A) TRANSFER BAIL DETENT LATCH SPRING TENSION
REQUIREMENT
MIN. 2-3/4 OZS.
MAX. 4-1/4 OZS.
TO START LATCH MOVING



(C) TRANSFER BAIL DETENT PLATE
REQUIREMENT
EQUAL L. H. AND R. H. CLEARANCE WITHIN .002
TO ADJUST
ROTATE DETENT PLATE RIGHT OR LEFT BY MEANS OF SCREWDRIVER WITH MOUNTING SCREWS LOOSENED.

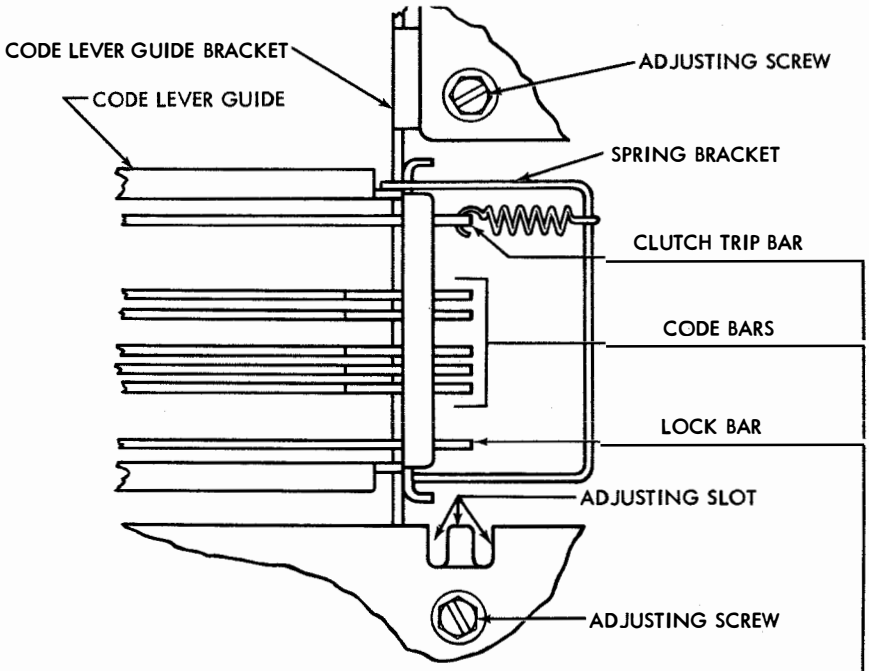
(B) CONTACT BOX CONTACT CLEARANCE
REQUIREMENT
MARKING AND SPACING GAPS SHOULD BE EQUAL WITHIN 0.001 INCH.
TO CHECK
DEPRESS V KEYLEVER AND ROTATE SIGNAL GENERATOR CAM SLEEVE UNTIL EACH CONTACT HAS FULLY OPENED.
TO ADJUST
LOOSEN MOUNTING SCREWS AND MOVE CONTACT BOX BY MEANS OF ECCENTRIC.
NOTE
CHECK BY MEANS OF SIGNAL CHECKING DEVICE WHERE POSSIBLE, AND CAREFULLY REFINE THE ADJUSTMENT TO ELIMINATE ALL BIAS FROM THE SIGNALS BY EQUALIZING THE CURRENT-ON AND CURRENT-OFF INTERVALS.



(D) CONTACT BOX DRIVE LINK SPRING TENSION
REQUIREMENT
SPRING REMOVED FROM LINK
MIN. 11 OZS.
MAX. 13 OZS.
AT .438 INCH

(E) CONTACT BOX SPRING TENSION
REQUIREMENT
TRANSFER BAIL HELD CLEAR OF DRIVE LINK.
MIN. 2 OZS.
MAX. 3 OZS.
TO START LINK MOVING.

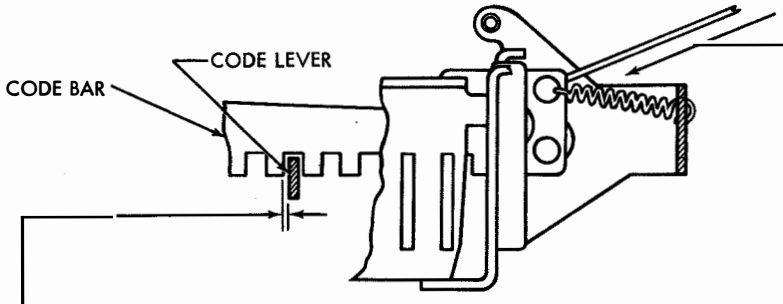
FIGURE 1-4 KEYBOARD, TRANSFER BAIL AND CONTACT BOX MECHANISM



(A) CLUTCH TRIP BAR SPRING TENSION
REQUIREMENT
CLUTCH DISENGAGED, POWER OFF.
MIN. 9 OZS.
MAX. 12 OZS.
TO MOVE BAR.

(B) CODE BAR SPRING TENSION
REQUIREMENT
LETTERS KEYLEVER DEPRESSED.
MIN. 3 OZS.
MAX. 5 OZS.
TO START CODE BAR MOVING.

(C) LOCK BAR SPRING TENSION
REQUIREMENT
CLUTCH DISENGAGED. KEYBOARD LOCK KEYLEVER DEPRESSED.
MIN. 4 OZS.
MAX. 7 OZS.
TO START LOCK BAR MOVING.



(D) CODE BAR AND CODE LEVER CLEARANCE
REQUIREMENT
CARRIAGE RETURN KEY DEPRESSED BUT NOT ENOUGH TO TRIP OFF UNIVERSAL BAIL LATCH OR CLUTCH BAR.
MIN. 0.006 INCH.
MAX. 0.015 INCH.
MEASURED AT CODE BAR #5.
TO ADJUST
POSITION GUIDE BY ADJUSTING SLOT WITH (4) MOUNTING SCREWS LOOSENED.

FIGURE 1-5 KEYBOARD, CODE BAR AND CODE LEVER MECHANISM

(A) FUNCTION BAIL AND CODE LEVER CLEARANCE

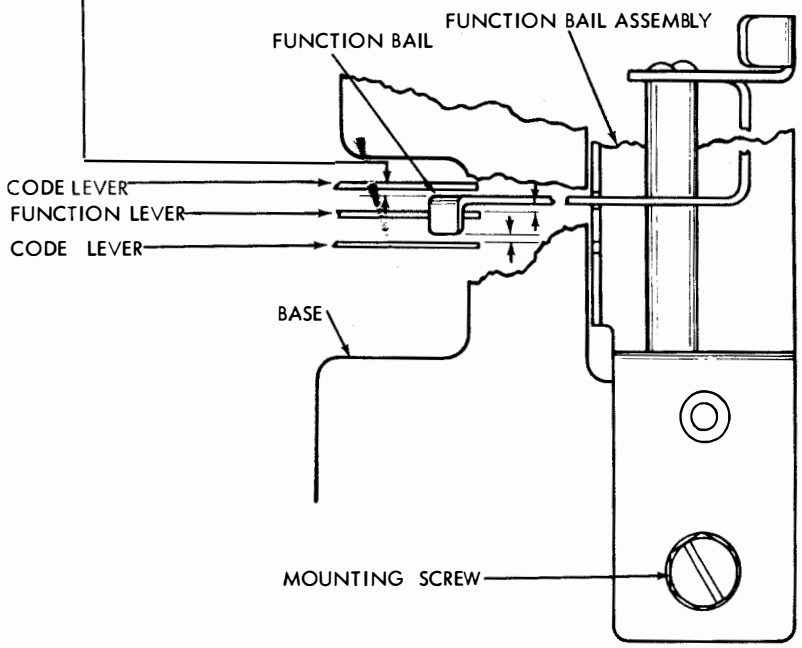
REQUIREMENT

MIN. 0.015 INCH

BETWEEN ANY FUNCTION BAIL AND ITS ADJACENT CODE LEVER

TO ADJUST

POSITION FUNCTION BAIL ASSEMBLY WITH MOUNTING SCREWS LOOSENED.



NOTE: THIS ADJUSTMENT SHOULD NOT BE MADE UNLESS THE LOCK BALL CHANNEL HAS BEEN DISASSEMBLED.

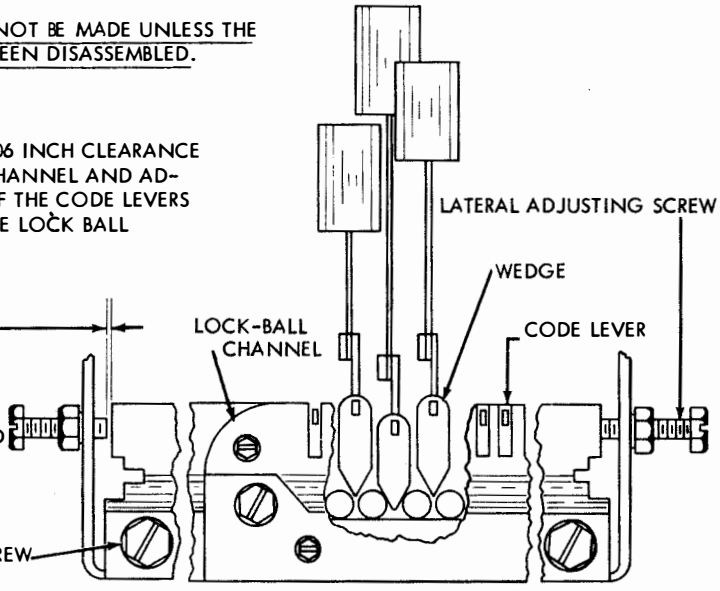
(B) LOCK BALL CHANNEL

REQUIREMENT

THERE SHOULD BE SOME TO 0.006 INCH CLEARANCE BETWEEN END OF LOCK BALL CHANNEL AND ADJUSTING SCREW WHEN MOST OF THE CODE LEVERS ARE CENTRALLY LOCATED IN THE LOCK BALL CHANNEL SLOTS.

TO CHECK

REMOVE THE LOCK BALL RETAINER. REMOVE A WEDGE FROM EACH END AND ONE FROM THE CENTER IN ORDER TO VIEW THE POSITION OF THE CODE LEVER.

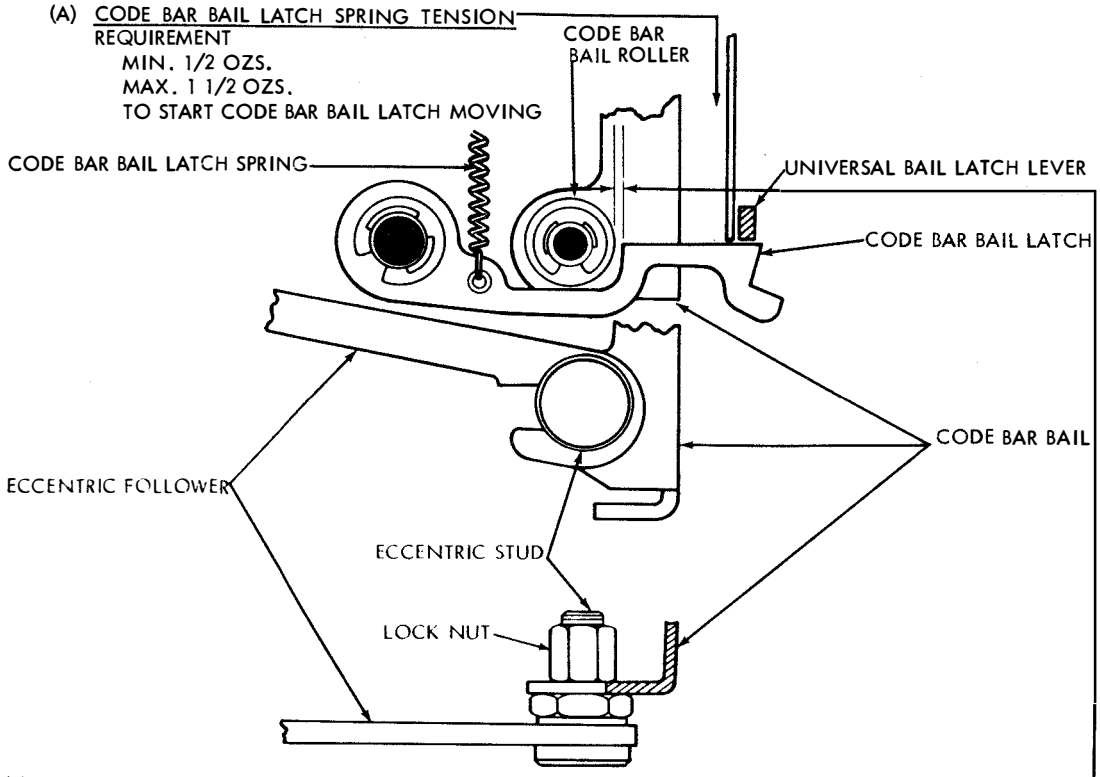


TO ADJUST

LOOSEN THE LOCK BALL CHANNEL MOUNTING SCREWS. BACK OFF LATERAL ADJUSTING SCREWS AND POSITION CHANNEL. TURN ONE ADJUSTING SCREW IN AGAINST THE END OF THE CHANNEL AND LOCK IT. TURN THE OTHER ADJUSTING SCREW IN TO THE END OF THE CHANNEL AND BACK IT OFF 1/4 TURN. LOCK THE SCREW. REPLACE THE WEDGES AND CHECK THEIR POSITION WITH RESPECT TO THE BALLS. PULL CHANNEL ASSEMBLY DOWNWARD UNTIL ALL CODE LEVERS STRIKE THEIR UPSTOP WITHOUT WEDGES JUMPING OUT OF POSITION. REPLACE LOCK-BALL RETAINER. BACK OFF BALL END PLAY ADJUSTING SCREW.

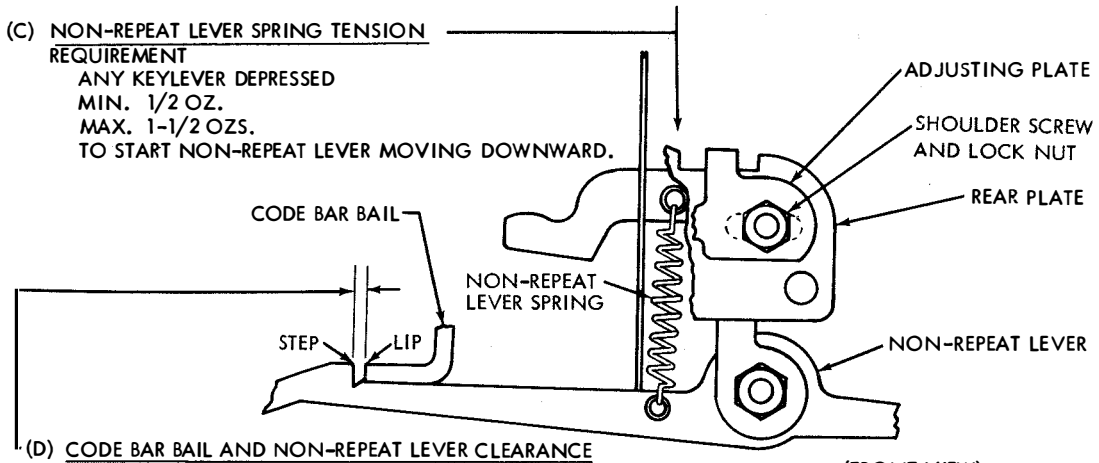
FIGURE 1-6 KEYBOARD, FUNCTION BAIL AND LOCK BALL TRACK MECHANISMS

(A) CODE BAR BAIL LATCH SPRING TENSION
REQUIREMENT
MIN. 1/2 OZS.
MAX. 1 1/2 OZS.
TO START CODE BAR BAIL LATCH MOVING



(B) CODE BAR BAIL
REQUIREMENT
CAM ECCENTRIC AND ARM WHICH HOLD THE BAIL IN EXTREME RESET POSITION TO THE LEFT.
MIN. 0.004 INCH
MAX. 0.012 INCH
BETWEEN CODE BAR BAIL ROLLER AND CODE BAR BAIL LATCH
TO ADJUST
ADJUST ECCENTRIC STUD WITH LOCK NUT LOOSENED.

(C) NON-REPEAT LEVER SPRING TENSION
REQUIREMENT
ANY KEYLEVER DEPRESSED
MIN. 1/2 OZ.
MAX. 1-1/2 OZS.
TO START NON-REPEAT LEVER MOVING DOWNWARD.



(D) CODE BAR BAIL AND NON-REPEAT LEVER CLEARANCE
REQUIREMENT
MECHANISM IN INITIAL TRIP-OFF POSITION, ANY KEY DEPRESSED, NO POWER.
MIN. 0.010 INCH
MAX. 0.030 INCH
BETWEEN LIP OF CODE BAR BAIL AND NON-REPEAT LEVER PICK-UP STEP
TO ADJUST
LOOSEN LOCK NUT AND SHOULDER SCREW AND MOVE MECHANISM LEFT OR RIGHT

(FRONT VIEW)

FIGURE 1-7 KEYBOARD, FUNCTION BAIL, CODE BAR BAIL AND NON-REPEAT LEVER MECHANISMS

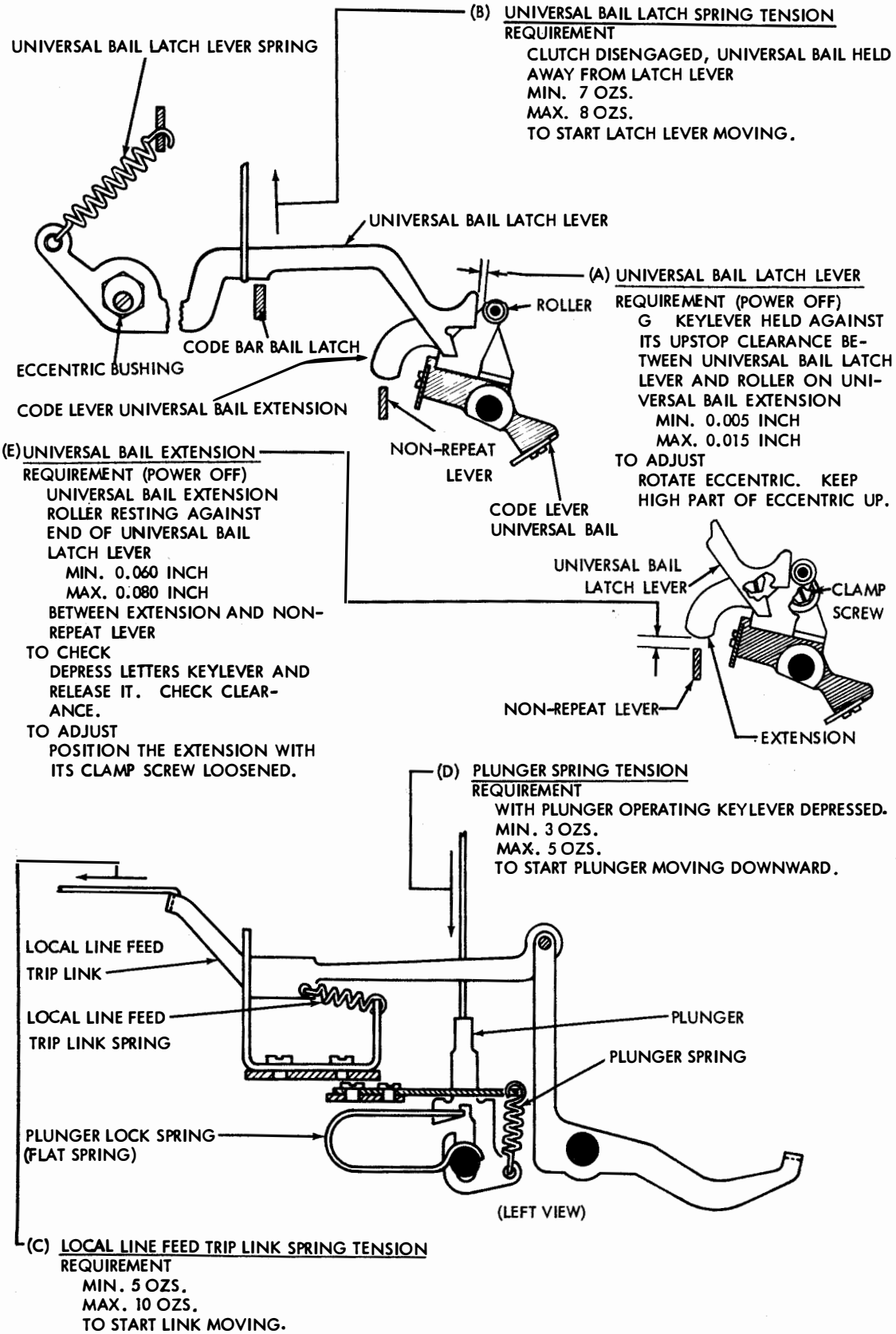


FIGURE 1-8 KEYBOARD, UNIVERSAL BAIL LATCH LEVER AND LOCAL LINE FEED TRIP LINK MECHANISMS

(B) LOCK BALL END PLAY

REQUIREMENT (UNDER POWER)

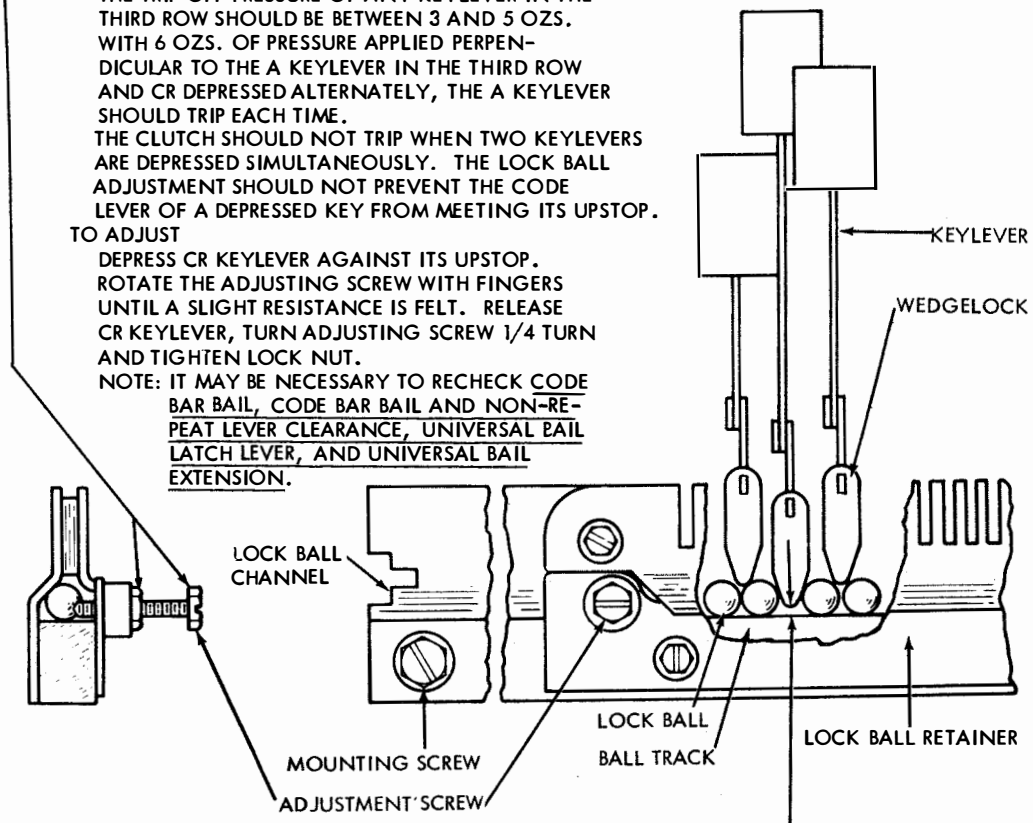
THE TRIP OFF PRESSURE OF ANY KEYLEVER IN THE THIRD ROW SHOULD BE BETWEEN 3 AND 5 OZS. WITH 6 OZS. OF PRESSURE APPLIED PERPENDICULAR TO THE A KEYLEVER IN THE THIRD ROW AND CR DEPRESSED ALTERNATELY, THE A KEYLEVER SHOULD TRIP EACH TIME.

THE CLUTCH SHOULD NOT TRIP WHEN TWO KEYLEVERS ARE DEPRESSED SIMULTANEOUSLY. THE LOCK BALL ADJUSTMENT SHOULD NOT PREVENT THE CODE LEVER OF A DEPRESSED KEY FROM MEETING ITS UPSTOP.

TO ADJUST

DEPRESS CR KEYLEVER AGAINST ITS UPSTOP. ROTATE THE ADJUSTING SCREW WITH FINGERS UNTIL A SLIGHT RESISTANCE IS FELT. RELEASE CR KEYLEVER, TURN ADJUSTING SCREW 1/4 TURN AND TIGHTEN LOCK NUT.

NOTE: IT MAY BE NECESSARY TO RECHECK CODE BAR BAIL, CODE BAR BAIL AND NON-REPEAT LEVER CLEARANCE, UNIVERSAL BAIL LATCH LEVER, AND UNIVERSAL BAIL EXTENSION.



(A) BALL WEDGELOCK AND BALL TRACK CLEARANCE

REQUIREMENT

ADJUSTMENT SCREW BACKED OUT TO PERMIT MAXIMUM BALL MOVEMENT WITHOUT THE BALLS ROLLING OUT OF THE TRACK.

A OR P KEYLEVER FULLY DEPRESSED

MIN. 0.015 INCH.

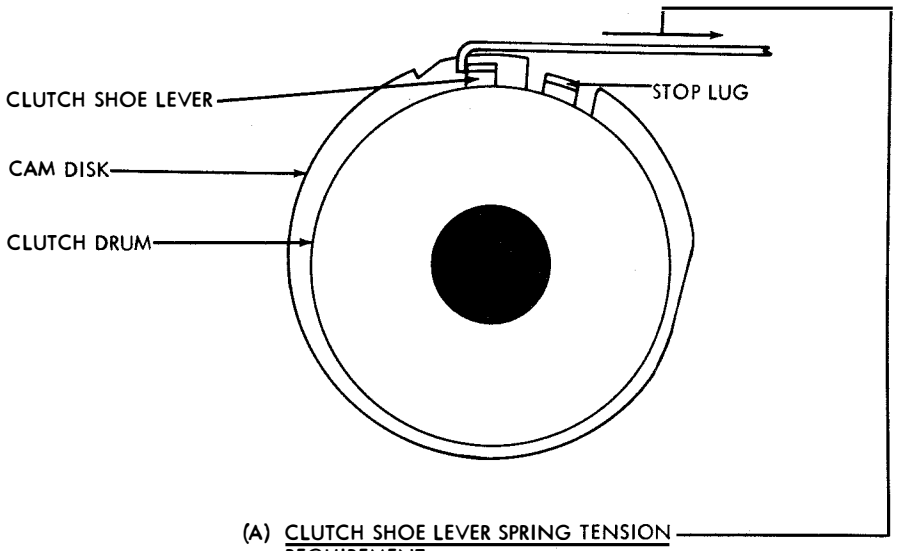
MAX. 0.020 INCH.

BETWEEN THE TIP OF THE WEDGELOCK AND THE BALL TRACK

TO ADJUST

LOOSEN MOUNTING SCREWS AT EACH END OF THE BALL TRACK AND ADJUST TRACK UP OR DOWN

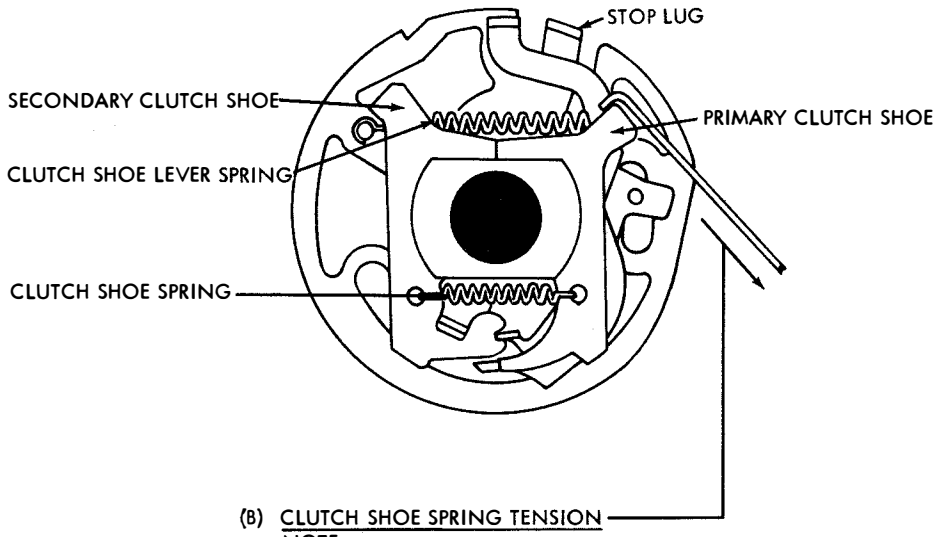
FIGURE 1-9 KEYBOARD, WEDGELOCK AND BALL TRACK MECHANISM



(A) CLUTCH SHOE LEVER SPRING TENSION

REQUIREMENT

CLUTCH ENGAGED.
CAM DISK HELD TO PREVENT TURNING.
MIN. 15 OZS.
MAX. 20 OZS.
TO MOVE SHOE LEVER IN CONTACT WITH STOP LUG.



(B) CLUTCH SHOE SPRING TENSION

NOTE

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

REQUIREMENT

CLUTCH DRUM REMOVED.
MIN. 3 OZS.
MAX. 5 OZS.
TO START PRIMARY SHOE MOVING AWAY FROM SECONDARY SHOE AT POINT OF CONTACT.

FIGURE 1-10 KEYBOARD, SIGNAL GENERATOR CLUTCH MECHANISM

(2) REQUIREMENT
THERE SHOULD BE A BARELY PRECEPTIBLE AMOUNT OF BACKLASH BETWEEN THE INTERMEDIATE DRIVING GEAR AND THE INTERMEDIATE DRIVEN GEAR AT THE POINT WHERE THE BACKLASH IS THE LEAST.
TO ADJUST
RAISE OR LOWER THE FRONT END OF THE INTERMEDIATE GEAR BRACKET BY MEANS OF THE FILISTER HEAD ADJUSTING AND CLAMPING SCREWS LOCATED AT THE FRONT END OF THE BRACKET. REFINE REQUIREMENTS IF NECESSARY.

INTERMEDIATE GEAR BRACKET
(1) REQUIREMENT
THERE SHOULD BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE TYPING UNIT DRIVEN GEAR AND THE TYPING UNIT DRIVING GEAR AT THE POINT WHERE BACKLASH IS THE LEAST.
TO ADJUST
POSITION THE COMPLETE INTERMEDIATE GEAR MECHANISM BRACKET BY UTILIZING THE ADJUSTING SLOTS WITH THE THREE HEXAGON HEAD SCREWS LOOSENED. ALIGN THE GEARS AT THIS TIME.

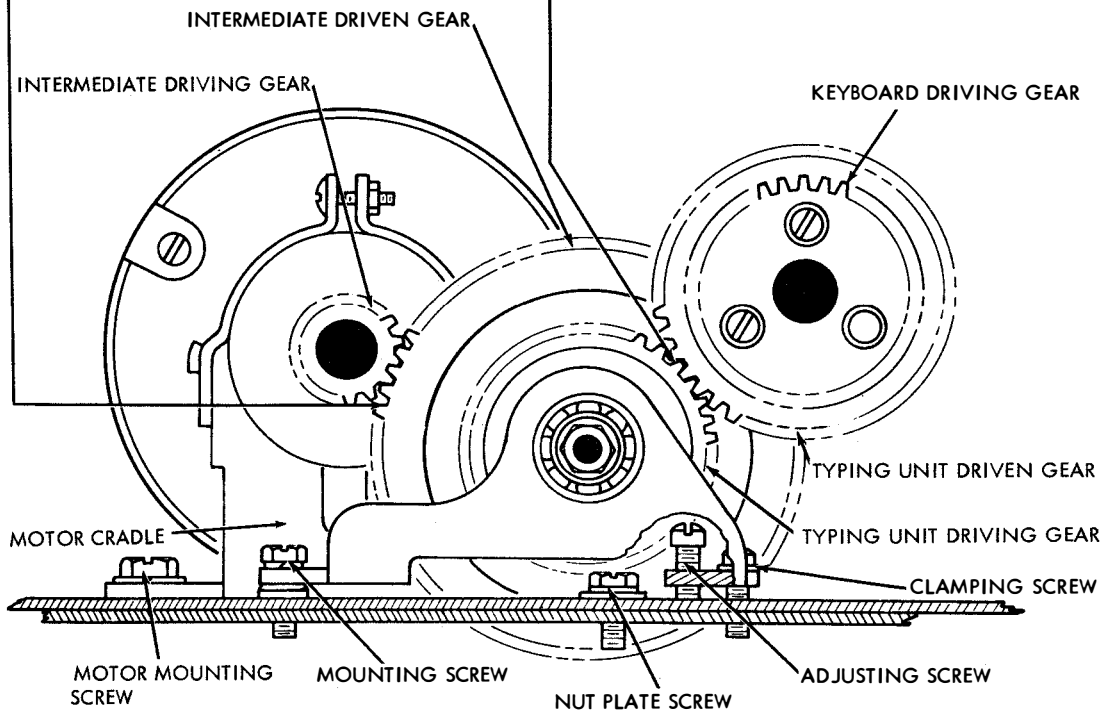
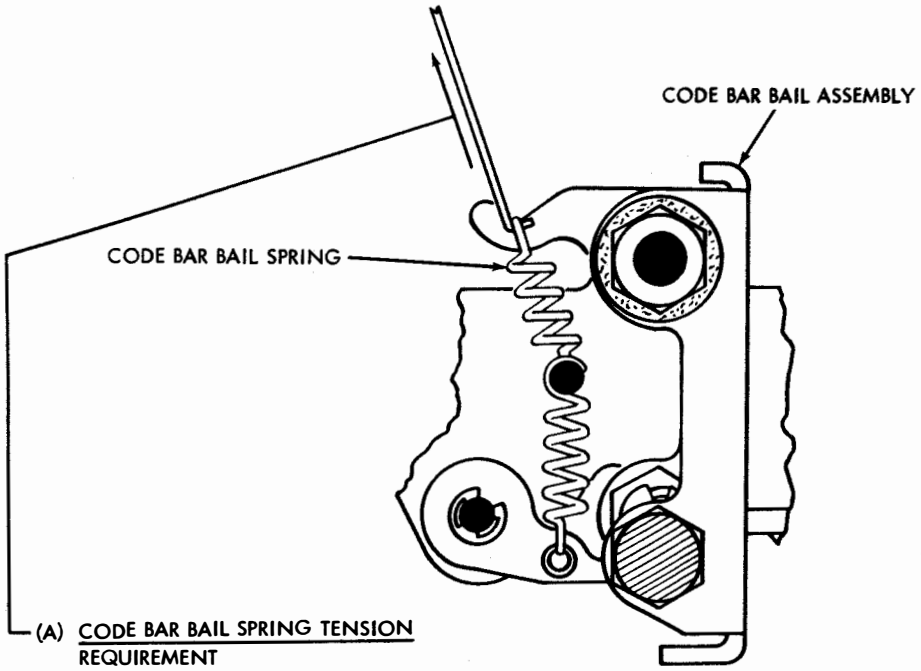


FIGURE 1-11 KEYBOARD OR BASE, MOTOR AND TYPING UNIT GEARING, LEFT SIDE VIEW



(A) CODE BAR BAIL SPRING TENSION
REQUIREMENT
CLUTCH DISENGAGED. SPRING UNHOOKED FROM ARM.
MIN. 9 OZS.
MAX. 11 OZS.
TO PULL TO INSTALLED LENGTH.

(B) LINE BREAK LEVER SPRING TENSION
REQUIREMENT
(COMBINED CODE LEVER AND BREAK LEVER SPRING)
MIN. 3 OZS.
MAX. 4 OZS.
TO MOVE SWITCH BREAK LEVER IN CONTACT WITH SWITCH PLUNGER.
MIN. 6 OZS.
MAX. 8 OZS.
TO ACTUATE SENSITIVE SWITCH

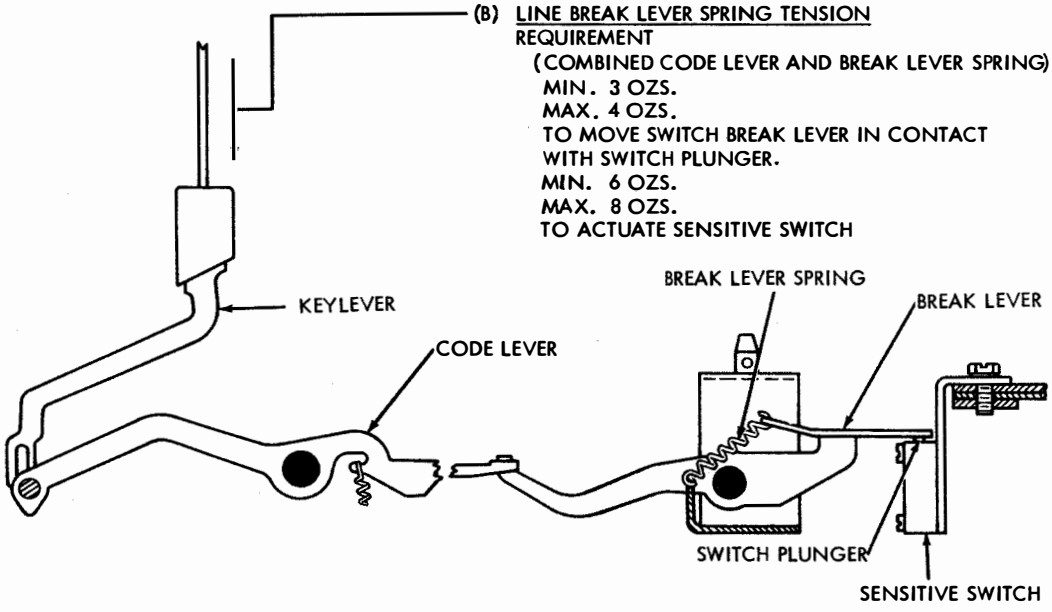


FIGURE 1-12 KEYBOARD, CODE BAR BAIL AND LINE BREAK LEVER

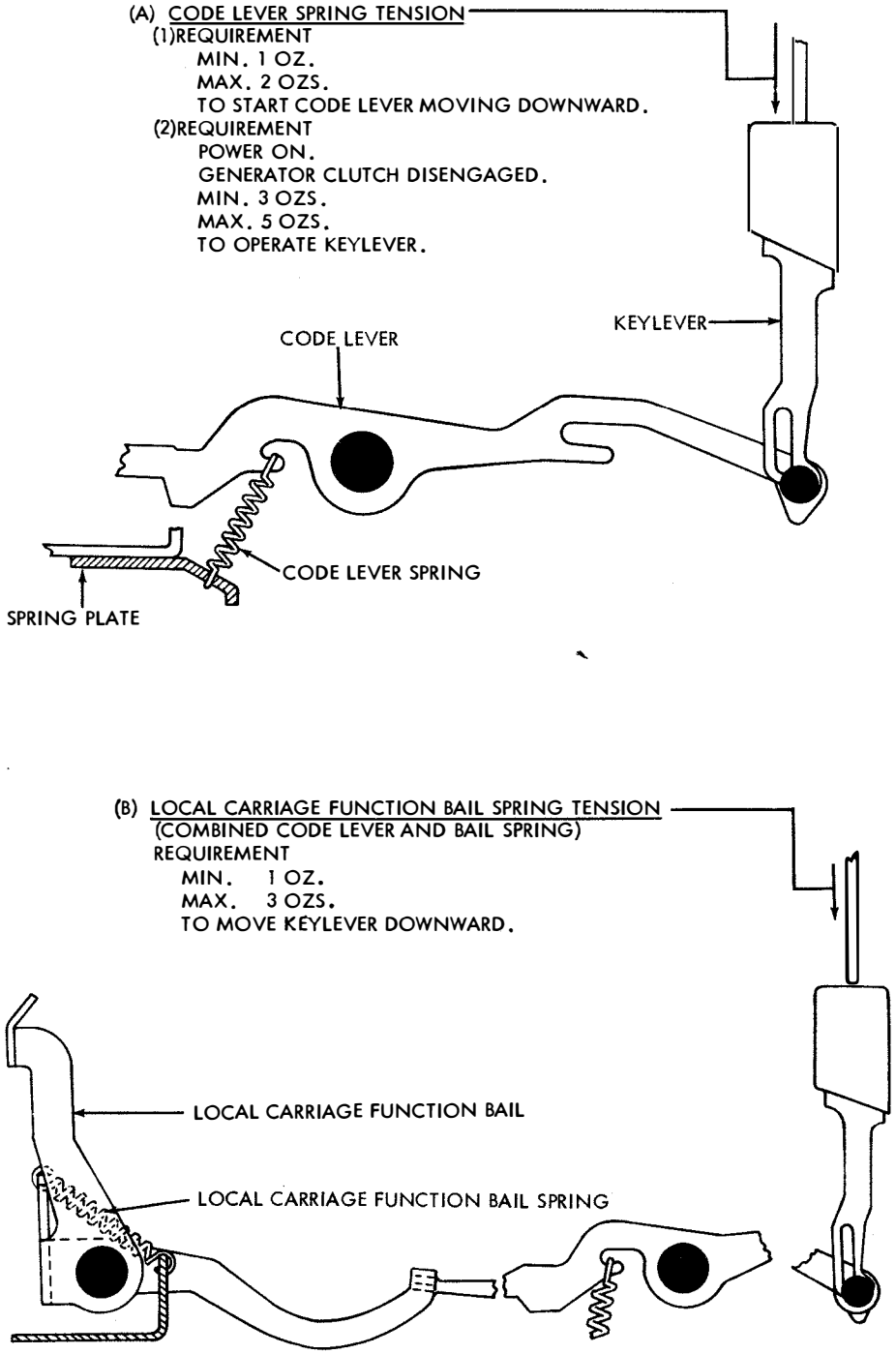


FIGURE 1-13 KEYBOARD, CODE LEVER AND LOCAL CARRIAGE FUNCTION BAIL MECHANISMS

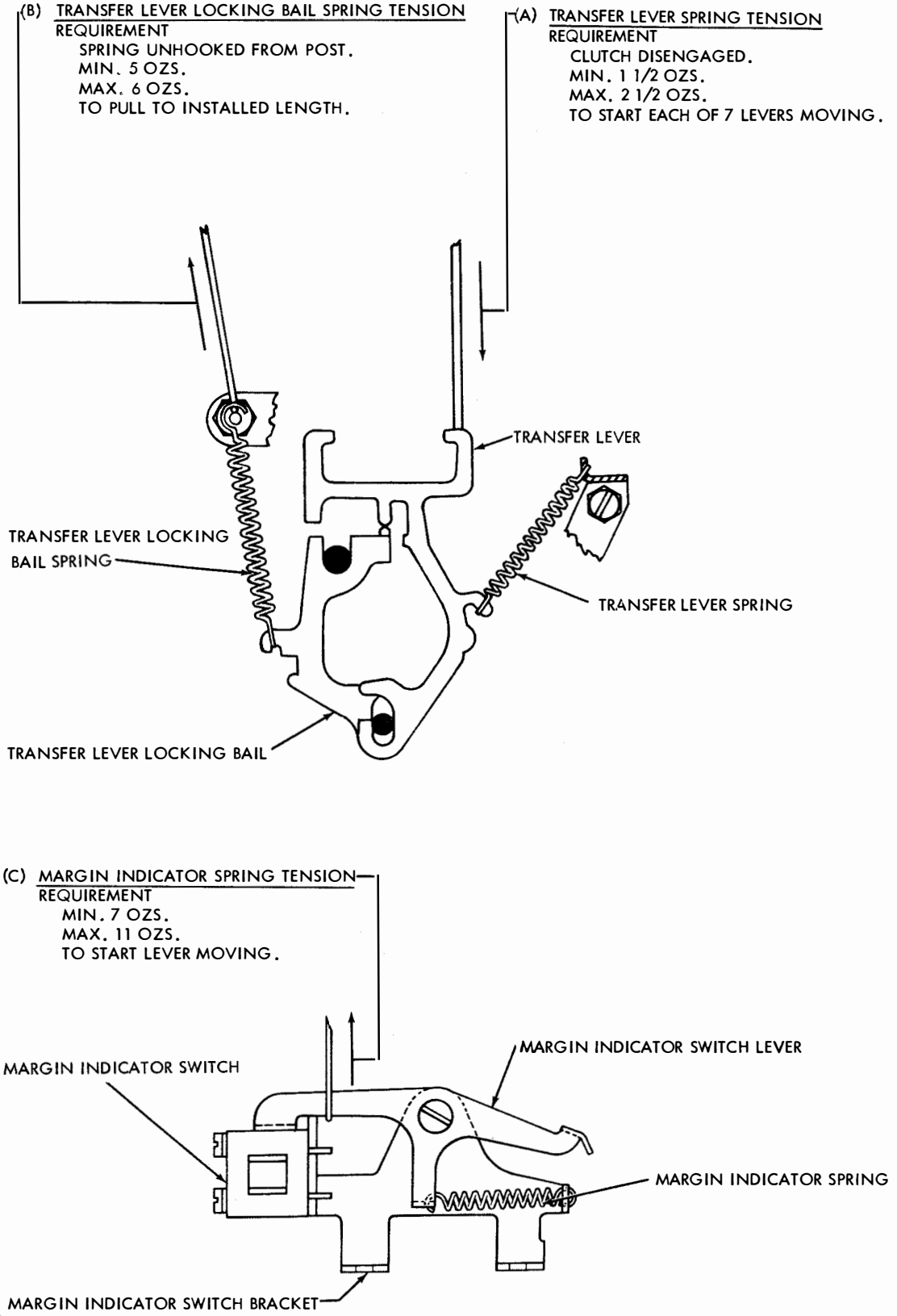
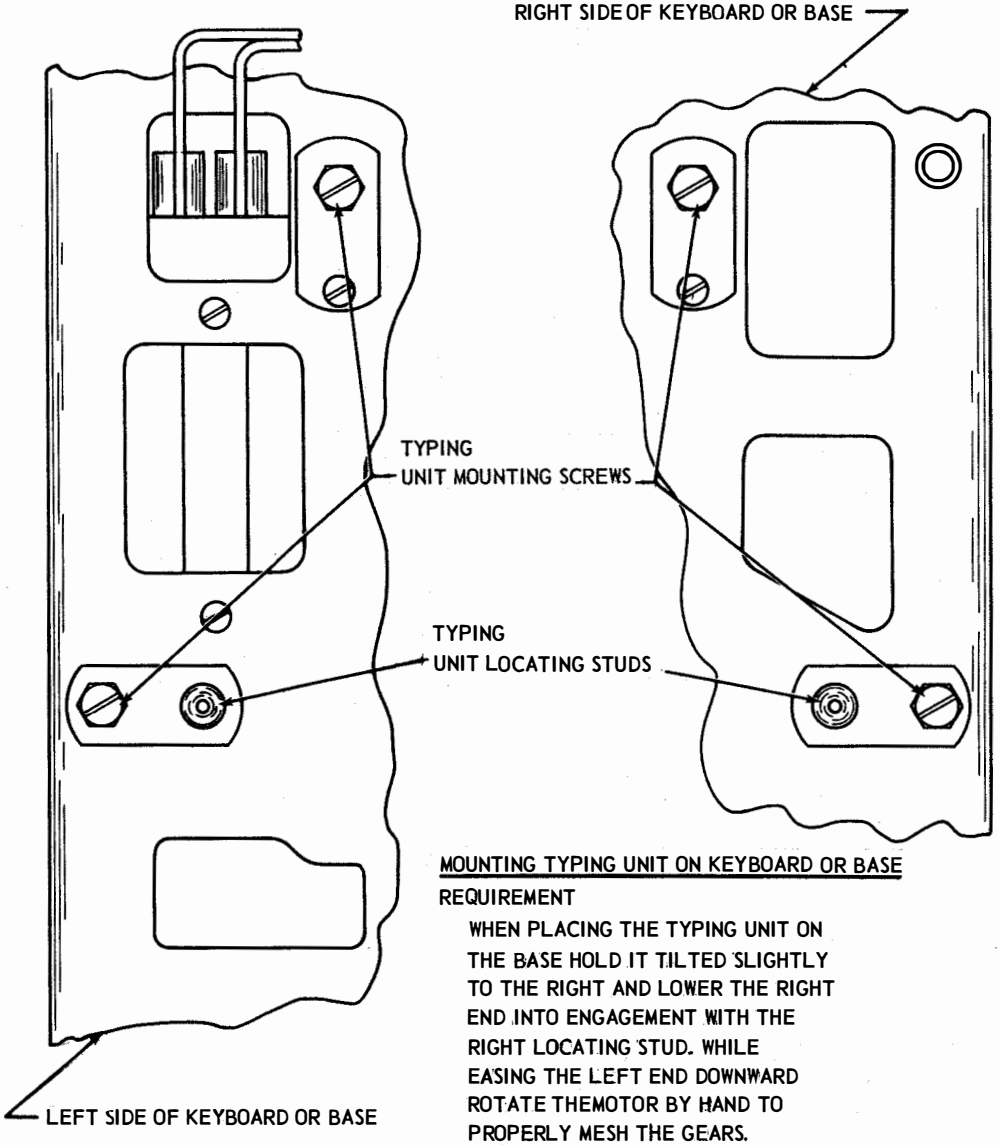


FIGURE 1-14 KEYBOARD, TRANSFER LEVER AND MARGIN INDICATOR MECHANISMS



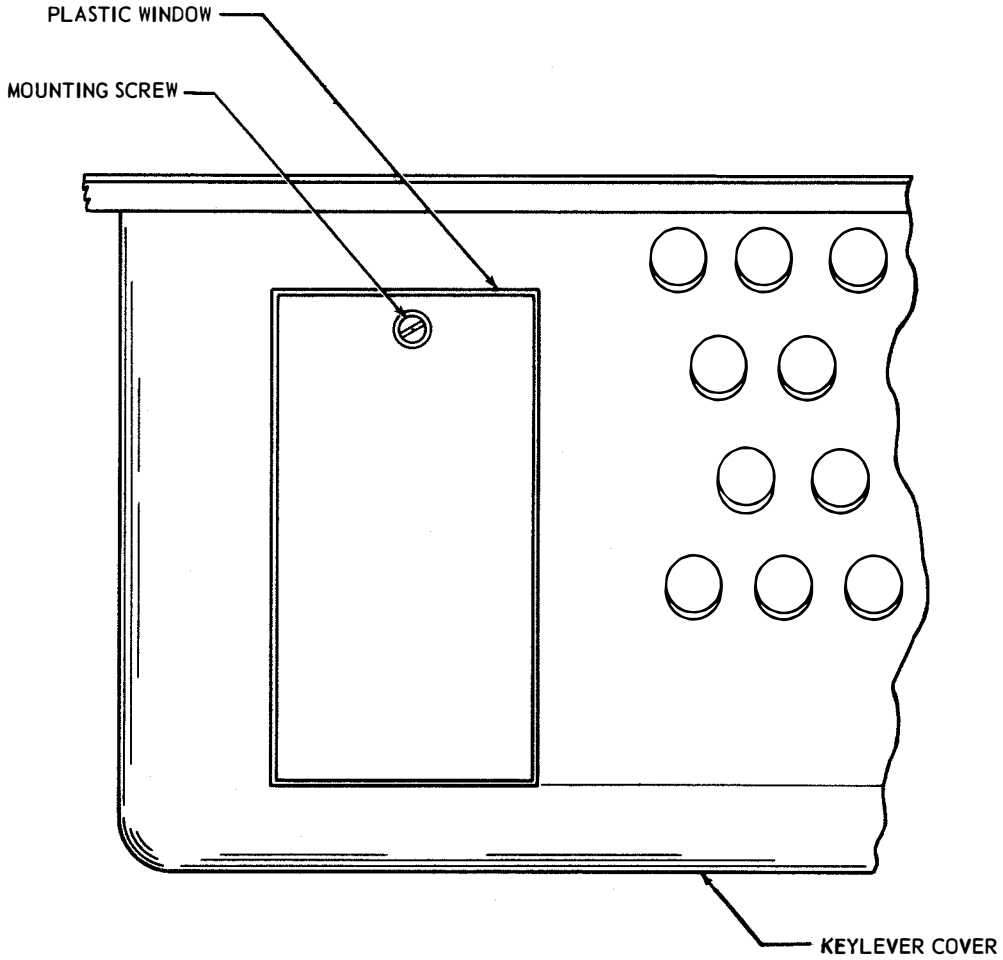
MOUNTING TYPING UNIT ON KEYBOARD OR BASE

REQUIREMENT

WHEN PLACING THE TYPING UNIT ON THE BASE HOLD IT TILTED SLIGHTLY TO THE RIGHT AND LOWER THE RIGHT END INTO ENGAGEMENT WITH THE RIGHT LOCATING STUD. WHILE EASING THE LEFT END DOWNWARD ROTATE THE MOTOR BY HAND TO PROPERLY MESH THE GEARS. SECURE BY FOUR MOUNTING SCREWS.

ROTATE THE MOTOR BY HAND TO INSURE PROPER MESHING OF GEARS

FIGURE 1-15 MOUNTING TYPING UNIT ON KEYBOARD OR BASE, TOP VIEW



PLASTIC WINDOW

REQUIREMENT

PLASTIC WINDOW SHOULD BE FULLY SEATED IN POSITION BEFORE TIGHTENING MOUNTING SCREW.

TO ADJUST

POSITION WINDOW WITH MOUNTING SCREW LOOSENED.

FIGURE 1-16 KEYBOARD, PLASTIC WINDOW

3. BASE

THE FOLLOWING KEYBOARD ADJUSTMENTS CONSTITUTE THE ADJUSTMENT FOR THE BASE:

a. ADJUSTMENTS
   (1) STANDARD
      (a) INTERMEDIATE GEAR BRACKET - FIGURE 1-11
      (b) MOUNTING TYPING UNIT ON BASE - FIGURE 1-15
   (2) VARIABLE FEATURES
      (a) BREAK LEVER EXTENSION - FIGURE 2-6
      (b) TIME DELAY DISABLING DEVICE - FIGURE 2-5
      (c) TIME DELAY MECHANISM POSITION - FIGURE 2-4
      (d) TIME DELAY SWITCH POSITION - FIGURE 2-2
b. SPRING TENSIONS
   (1) STANDARD
      (a) LOCAL CARRIAGE RETURN BAIL - FIGURE 4-22
      (b) LOCAL LINE FEED TRIP LINK - FIGURE 4-22
      (c) MARGIN INDICATOR - FIGURE 1-14
   (2) VARIABLE FEATURES
      (a) BREAK KEYLEVER - FIGURE 2-6
      (b) CONTACT LATCH PAWL - FIGURE 2-3
      (c) CONTACT PAWL - FIGURE 2-3
      (d) ECCENTRIC FOLLOWER PAWL - FIGURE 2-5
      (e) TIME DELAY RATCHET WHEEL - FIGURE 2-2

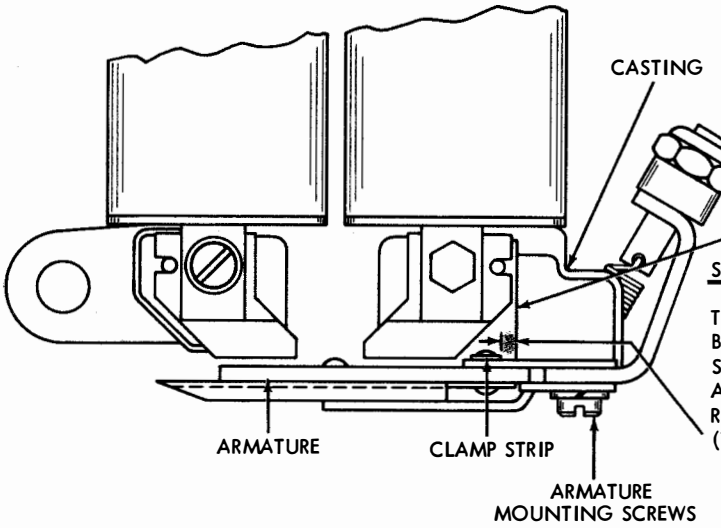
4. TYPING UNIT

WHEN MAKING A COMPLETE ADJUSTMENT OF TYPING UNIT, THE FOLLOWING CONDITIONING OPERATIONS SHOULD BE PERFORMED TO PREVENT DAMAGE:

a. LOOSEN THE SHIFT LEVER DRIVE ARM CLAMP SCREW, (FIGURE 1-26)
b. MOVE THE RIGHT AND LEFT VERTICAL POSITIONING LEVER ECCENTRIC STUDS (FIGURES 1-39 AND 1-40) IN ROCKER SHAFT BRACKETS TO THEIR LOWEST POSITION.
c. LOOSEN THE TWO BEARING STUD MOUNTING SCREWS AND THE TWO CONNECTING STRIP CLAMP SCREWS IN THE HORIZONTAL POSITIONING DRIVE LINKAGE (FIGURE 1-46).
d. LOOSEN THE CLAMP SCREWS AND MOVE THE REVERSING SLIDE BRACKETS TO THEIR UPPERMOST POSITION (FIGURE 1-45).
e. LOOSEN THE FUNCTION RESET BAIL BLADE MOUNTING SCREWS (FIGURE 1-44).
f. UNITS EQUIPPED WITH TWO-STOP FUNCTION CLUTCHES: LOOSEN THE SHOULDER BUSHINGS ON EACH FUNCTION STRIPPER BLADE ARM AND MOVE STRIPPER BLADE AND ARMS TO THEIR LOWEST POSITIONS. (FIGURE 4-37).
g. LOOSEN THE CARRIAGE RETURN LEVER CLAMP SCREW. (FIGURE 1-51).
h. LOOSEN THE CLAMP SCREWS IN THE OSCILLATING RAIL SLIDE. (FIGURE 1-41).
i. LOOSEN THE REVERSING SLIDE ADJUSTING STUD. (FIGURE 1-45).
j. LOOSEN THE SHIFT CODE BAR GUIDE PLATE MOUNTING NUTS. (FIGURE 1-45).
k. CHECK THE FOLLOWING ADJUSTMENTS DURING EACH LUBRICATING PERIOD:
   (1) PRINTING CARRIAGE POSITION (FIGURE 1-57).
   (2) PRINTING HAMMER BEARING STUD. (FIGURE 1-57).
   (3) PRINTING HAMMER STOP BRACKET. ALSO SEE NOTE. (FIGURE 1-60).
   (4) CARRIAGE WIRE ROPE. (FIGURE 1-48).

NOTE

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

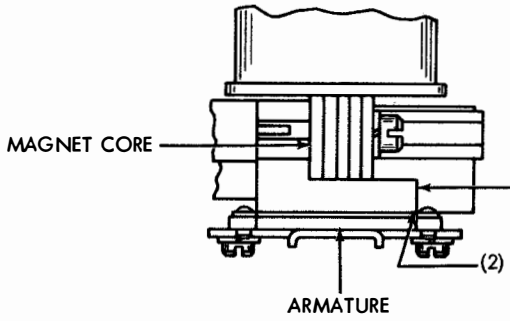


SELECTOR ARMATURE

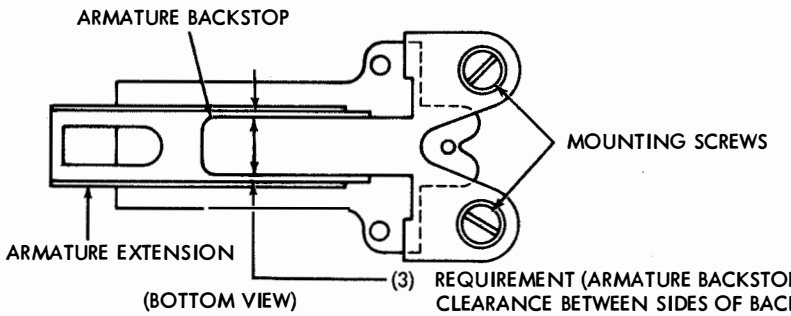
NOTE

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

(1) REQUIREMENT (ARMATURE CLAMP STRIP)
CLEARANCE BETWEEN ARMATURE CLAMP STRIP AND CASTING.
MIN. 0.010 INCH.
MAX. 0.030 INCH



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

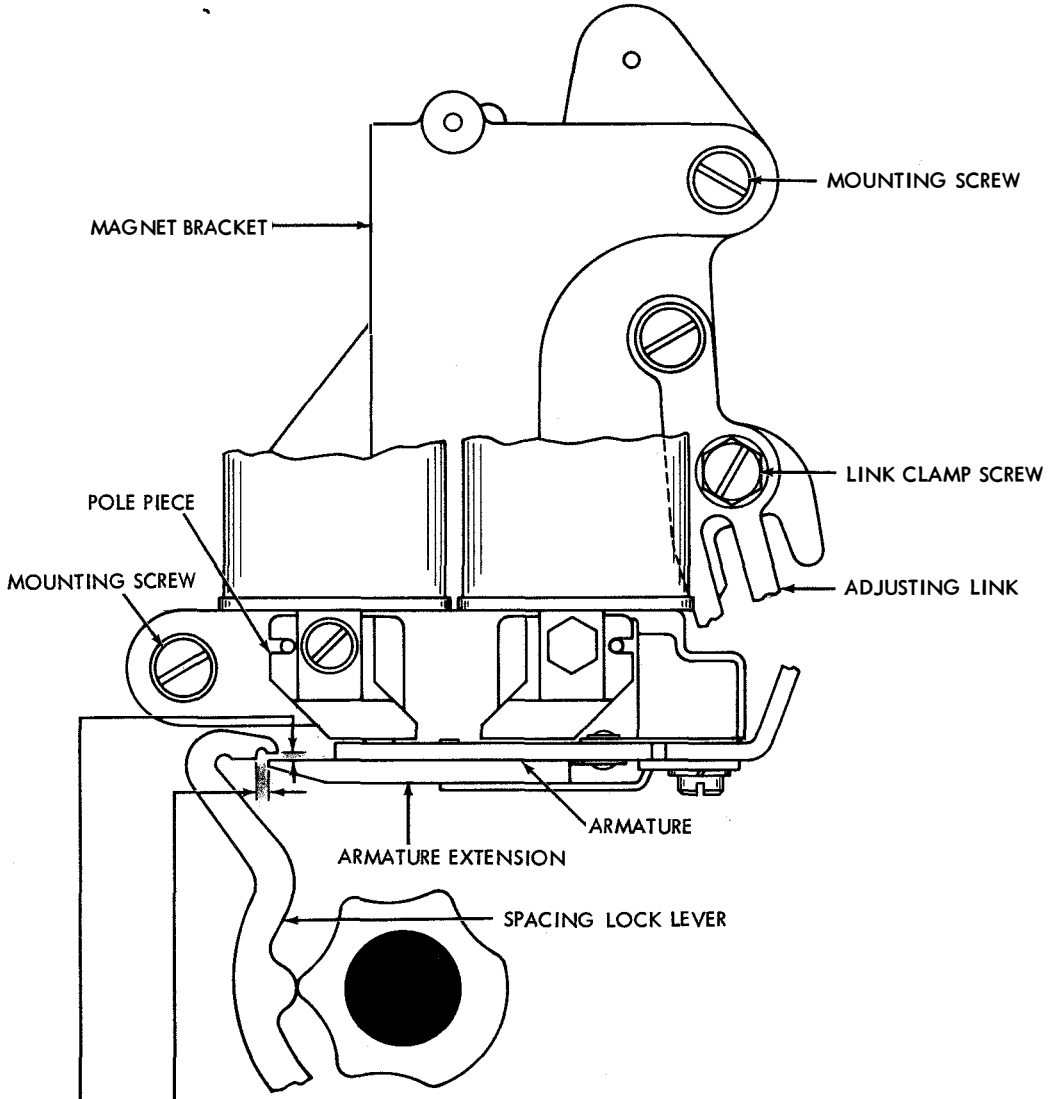


(3) REQUIREMENT (ARMATURE BACKSTOP ALIGNMENT)
CLEARANCE BETWEEN SIDES OF BACKSTOP AND SIDES OF ARMATURE EXTENSION.
MIN. 0.010 INCH

TO ADJUST

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

FIGURE 1-17 TYPING UNIT, SELECTOR MAGNET



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).

FIGURE 1-18 TYPING UNIT, RIGHT SIDE VIEW

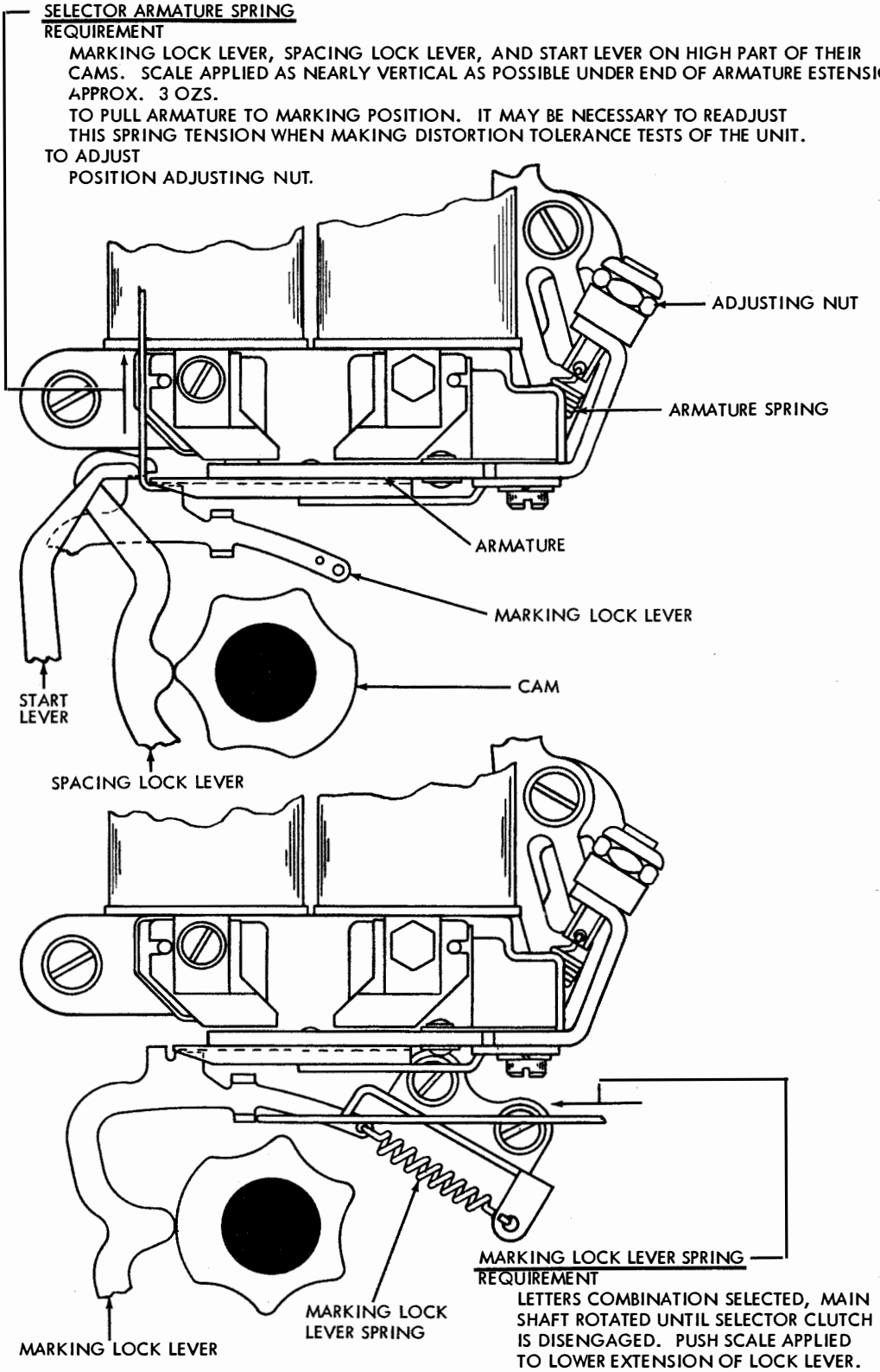


FIGURE 1-19 TYPING UNIT, SELECTOR MECHANISM, RIGHT SIDE VIEW

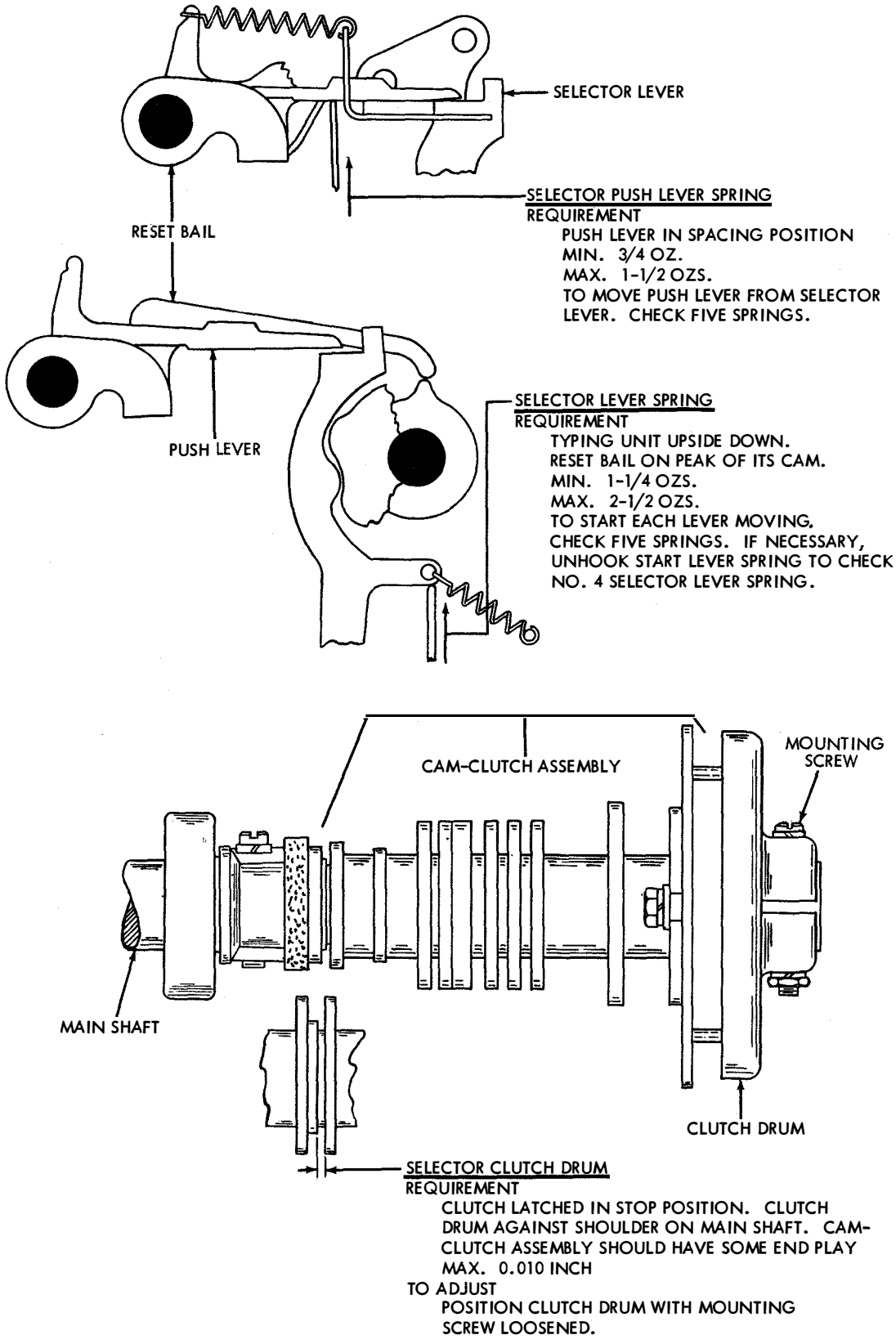


FIGURE 1-20 TYPING UNIT, SELECTOR CAM CLUTCH

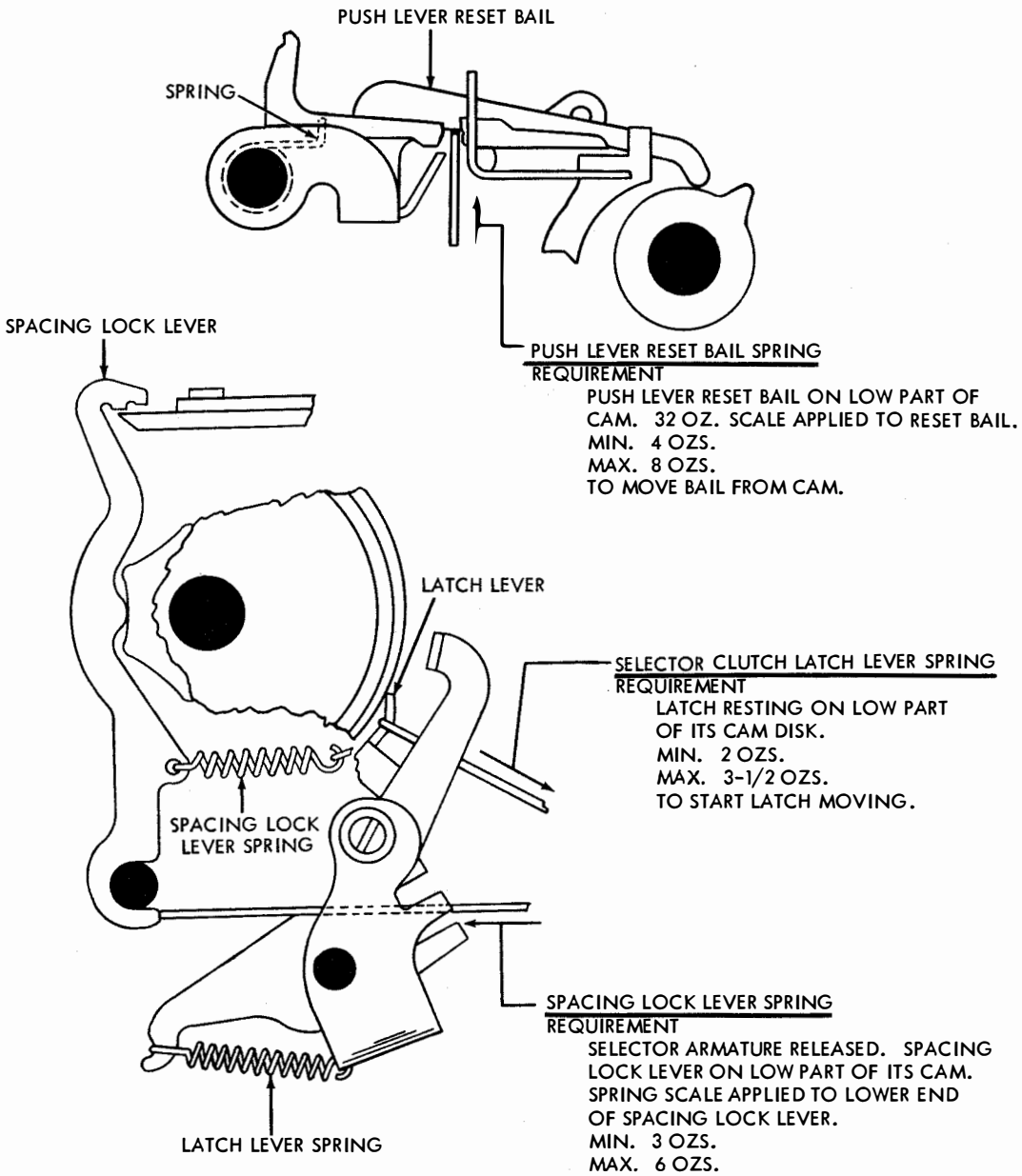


FIGURE 1-21 TYPING UNIT, SELECTOR CLUTCH MECHANISM, RIGHT SIDE VIEW

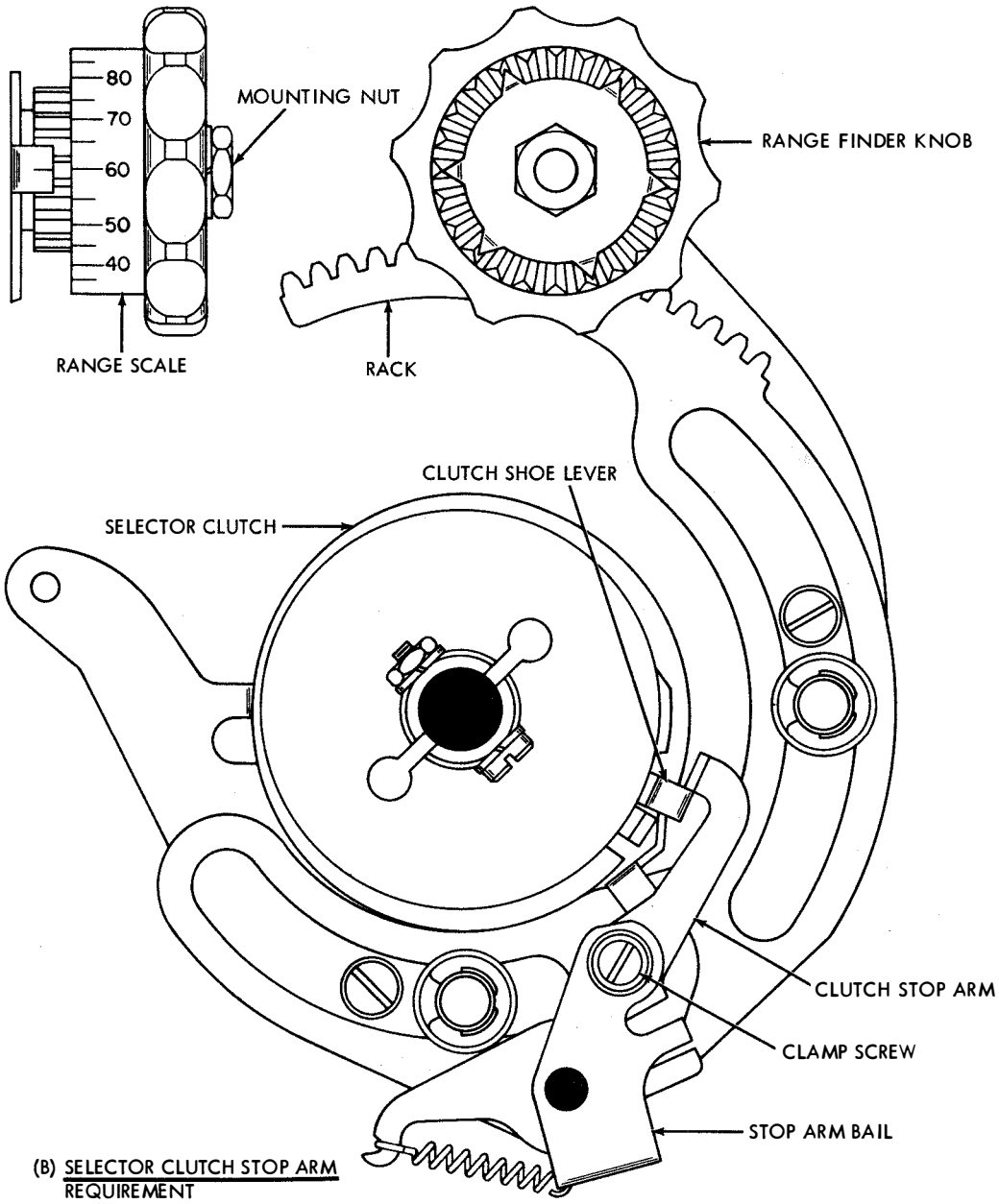
(A) RANGE FINDER KNOB PHASING

REQUIREMENT

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

TO ADJUST

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



(B) SELECTOR CLUTCH STOP ARM

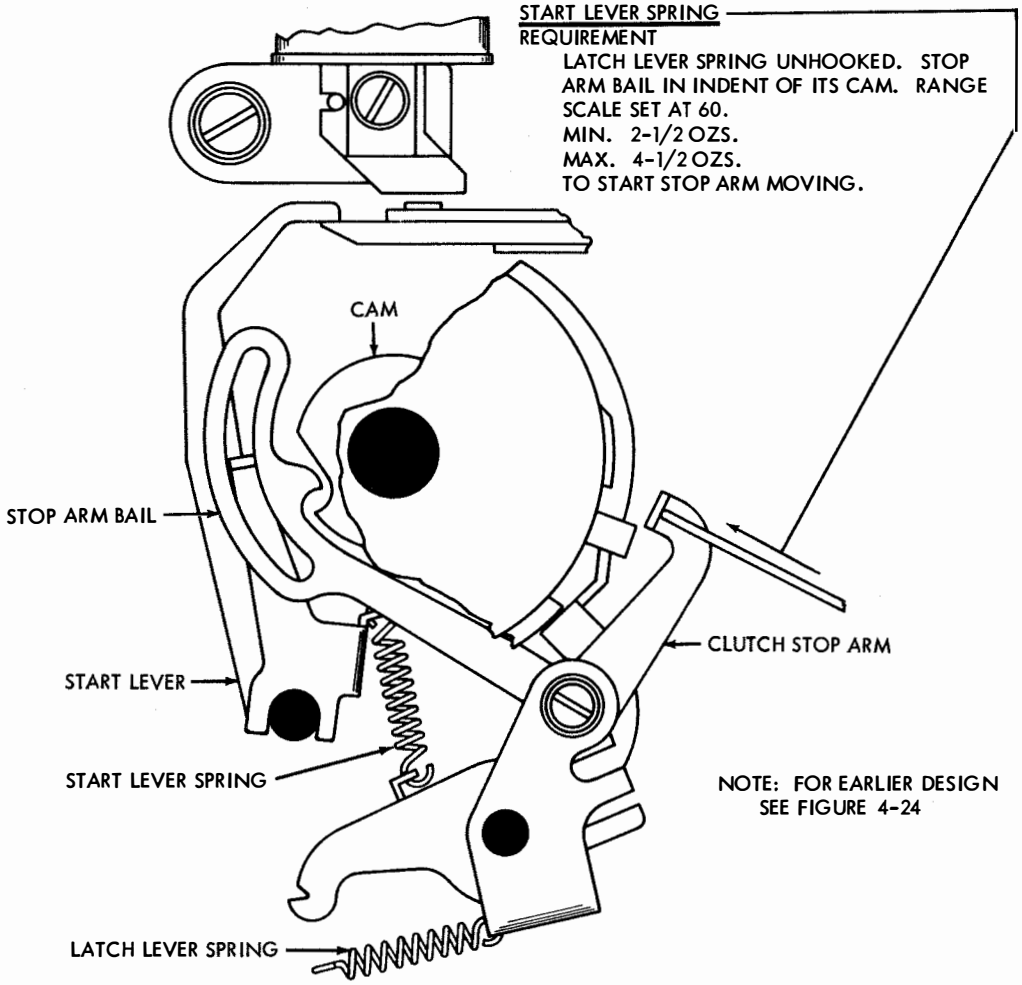
REQUIREMENT

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

TO ADJUST

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

FIGURE 1-22 TYPING UNIT, RANGE FINDER MECHANISM, RIGHT SIDE VIEW



SELECTOR RECEIVING MARGIN

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.

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

TO ADJUST: REFINE THE SELECTOR ARMATURE SPRING (FIGURE 1-19)

FIGURE 1-23 TYPING UNIT, SELECTOR CLUTCH MECHANISM, RIGHT SIDE VIEW

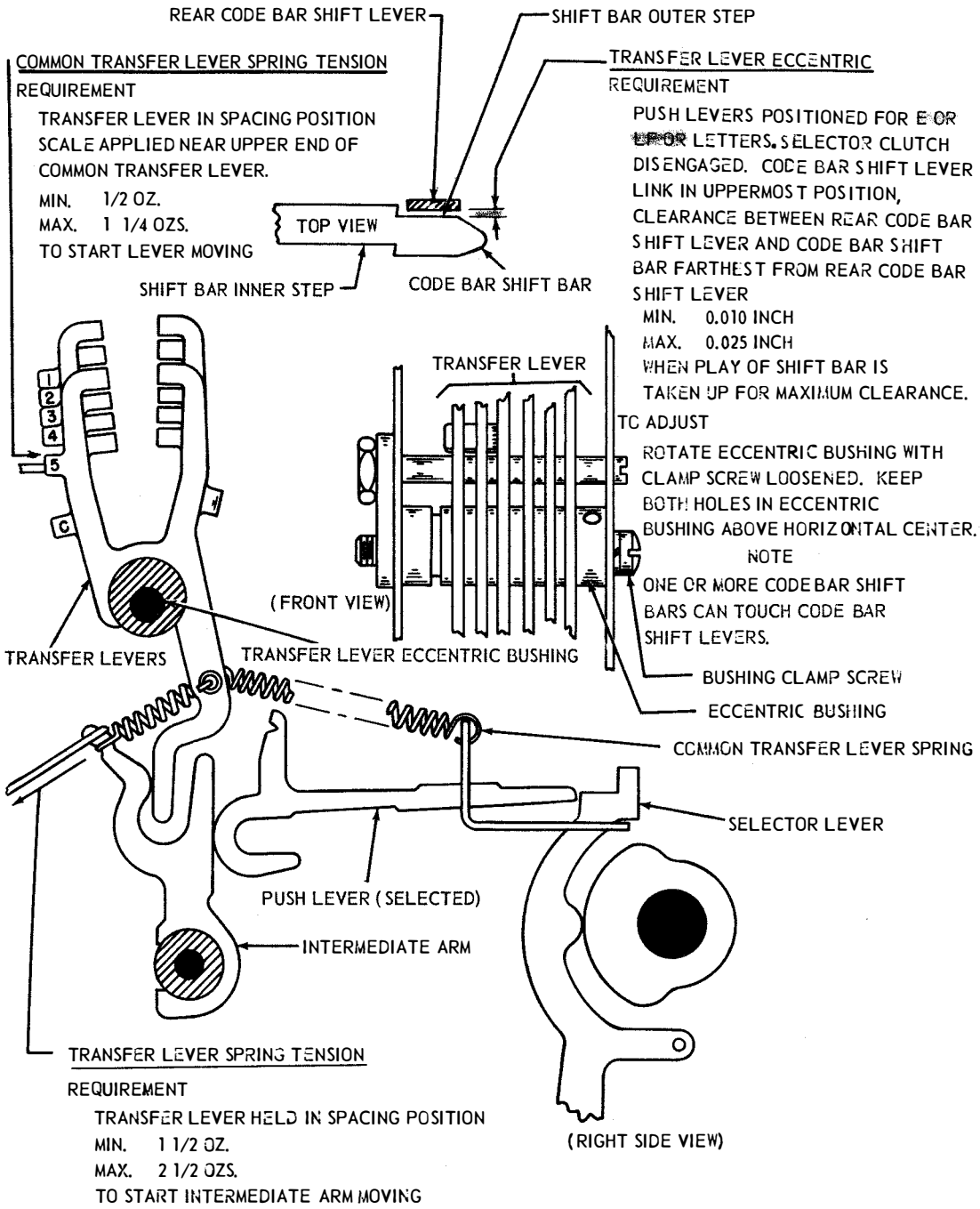
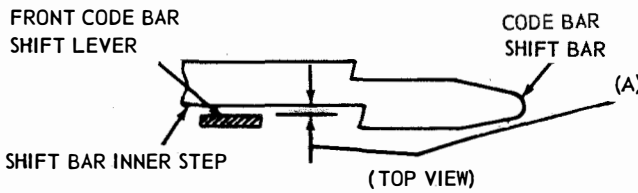


FIGURE 1-24 TYPING UNIT, CODE BAR SHIFT MECHANISM



(A) INTERMEDIATE ARM BACKSTOP BRACKET

REQUIREMENT

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

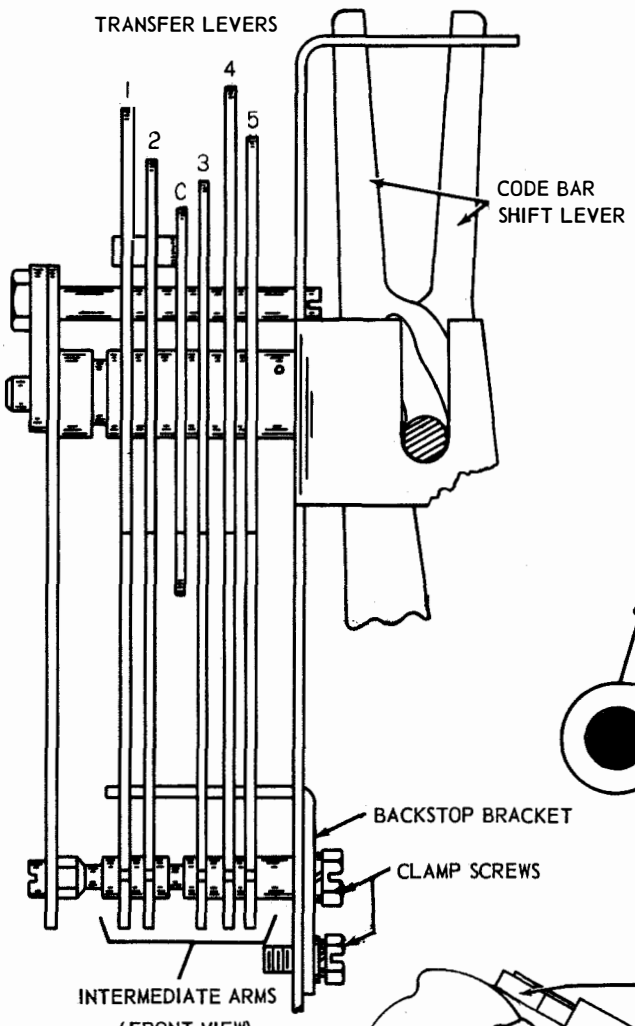
MIN. 0.010 INCH

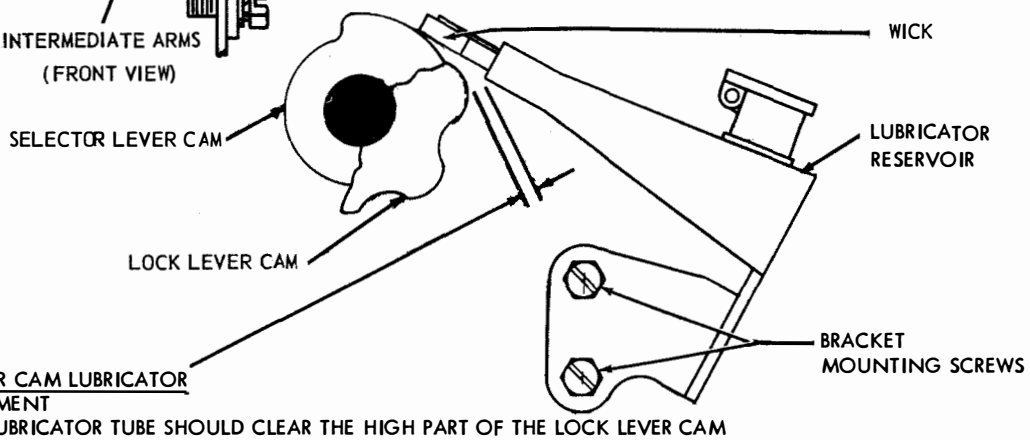
MAX. 0.025 INCH

WHEN PLAY IN PARTS IS TAKEN UP FOR MAXIMUM CLEARANCE.

TO ADJUST

POSITION BACKSTOP BRACKET WITH ITS TWO CLAMP SCREWS LOOSENED.





(B)

SELECTOR CAM LUBRICATOR

REQUIREMENT

THE LUBRICATOR TUBE SHOULD CLEAR THE HIGH PART OF THE LOCK LEVER CAM MIN. 0.020 INCH

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

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

TO ADJUST

POSITION THE LUBRICATOR BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

FIGURE 1-25 TYPING UNIT, CODE BAR SHIFT MECHANISM

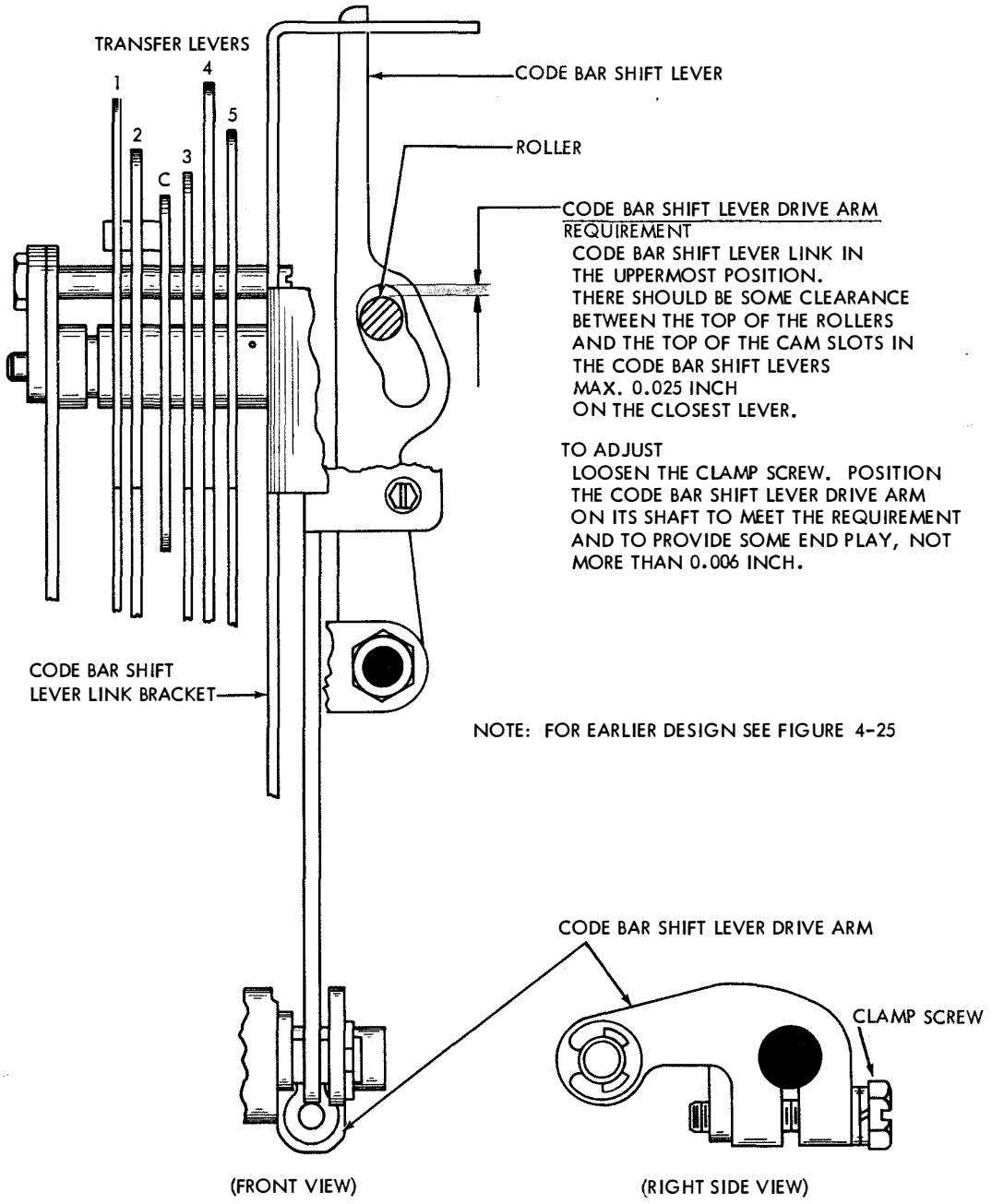


FIGURE 1-26 TYPING UNIT, CODE BAR SHIFT MECHANISM

CODE BAR SHIFT LEVER LINK BRACKET

REQUIREMENT

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

TO CHECK (FRONT)

SELECT BLANK COMBINATION AND ROTATE MAINSHAFT UNTIL CODE BAR SHIFT LEVER LINK REACHES HIGHEST TRAVEL. TAKE UP PLAY FOR MAXIMUM CLEARANCE. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND SHOULDER ON NEAREST CODE BAR SHIFT BAR
MIN. 0.002 INCH
MAX. 0.025 INCH

TO CHECK (REAR)

SELECT LETTERS COMBINATION. CHECK CLEARANCE BETWEEN REAR CODE BAR SHIFT LEVER AND SHOULDER OF CODE BAR SHIFT BAR IN SAME WAY.
MIN. 0.002 INCH
MAX. 0.025 INCH

TO ADJUST

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

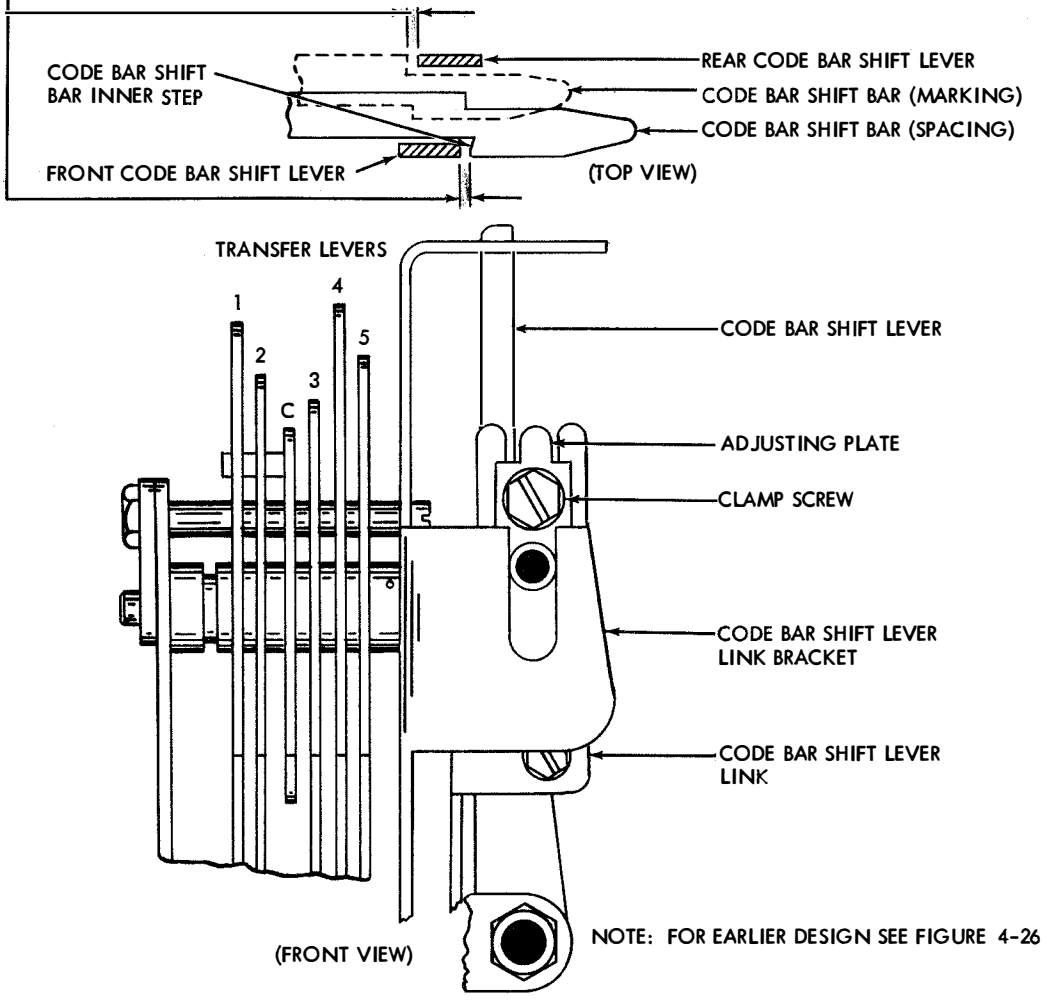


FIGURE 1-27 TYPING UNIT, CODE BAR SHIFT MECHANISM

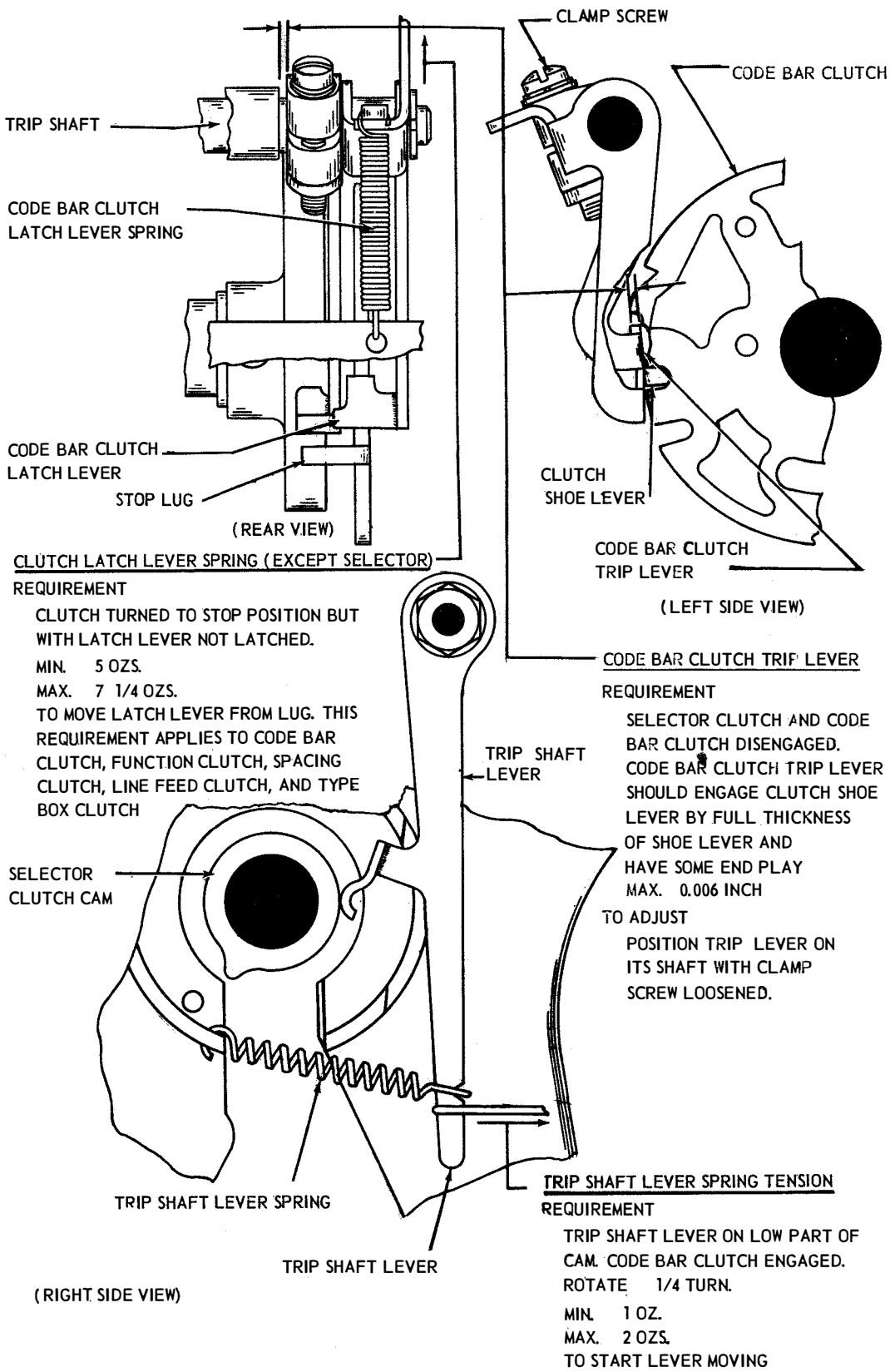
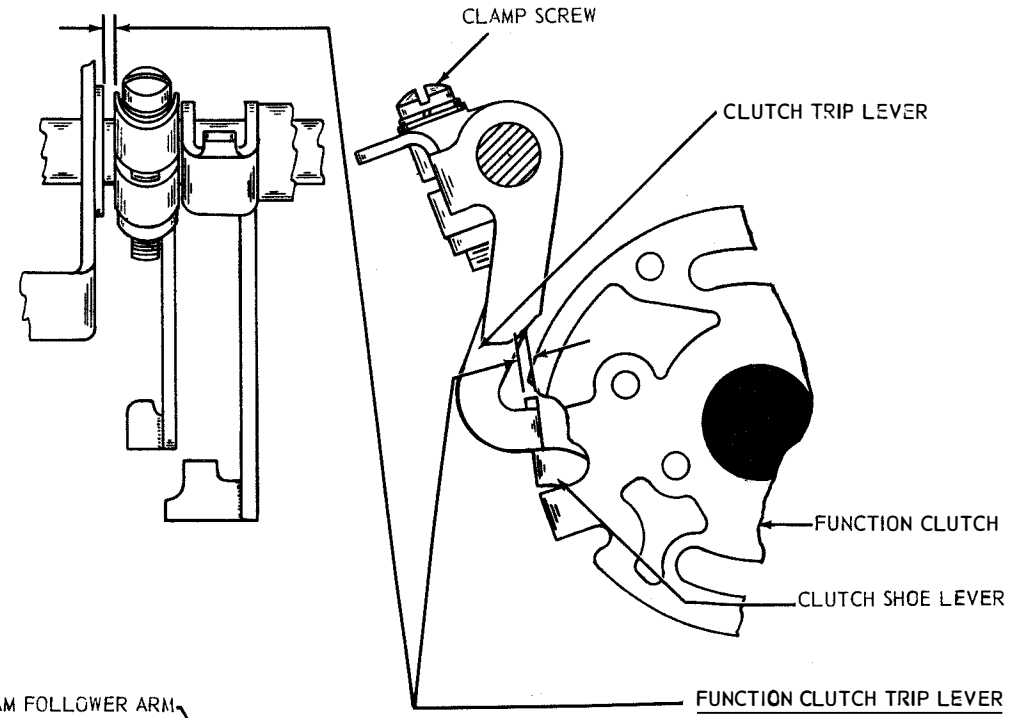


FIGURE 1-28 TYPING UNIT, CODE BAR CLUTCH TRIP SHAFT MECHANISM



FUNCTION CLUTCH TRIP LEVER

REQUIREMENT

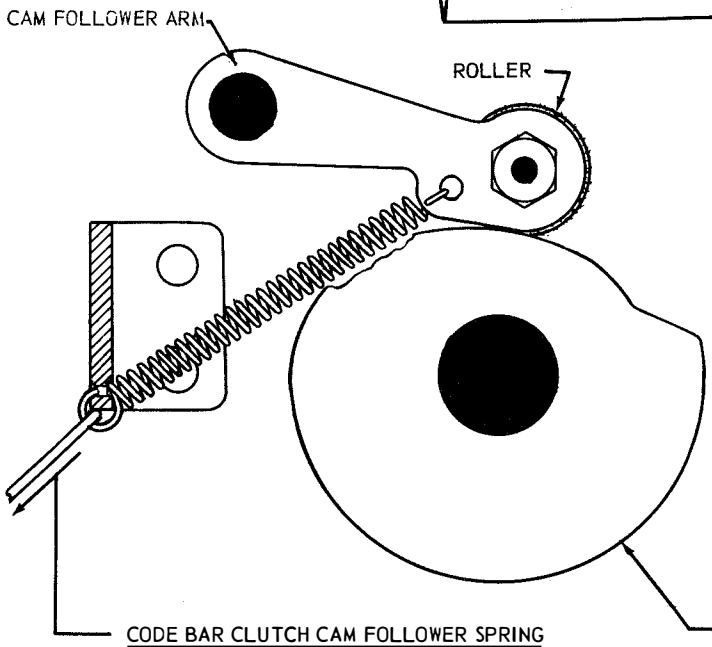
CODE BAR CLUTCH AND FUNCTION CLUTCH DISENGAGED. FUNCTION CLUTCH TRIP LEVER SHOULD ENGAGE CLUTCH SHOE LEVER BY FULL THICKNESS OF SHOE LEVER. (CHECK AT LUG WITH LEAST BITE ON TWO STOP CLUTCHES)

TO ADJUST

POSITION TRIP LEVER ON ITS SHAFT WITH CLAMP SCREW LOOSENED, LETTING SHAFT HAVE END PLAY

MIN. SOME

MAX. 0.006 INCH



CODE BAR CLUTCH CAM FOLLOWER SPRING TENSION

REQUIREMENT

CAM FOLLOWER ROLLER ON THE LOW PART OF CAM.
THE SPRING UNHOOKED FROM SPRING BRACKET.

MIN. 20 OZS.

MAX. 24 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

FIGURE 1-29 TYPING UNIT, FUNCTION CLUTCH MECHANISM

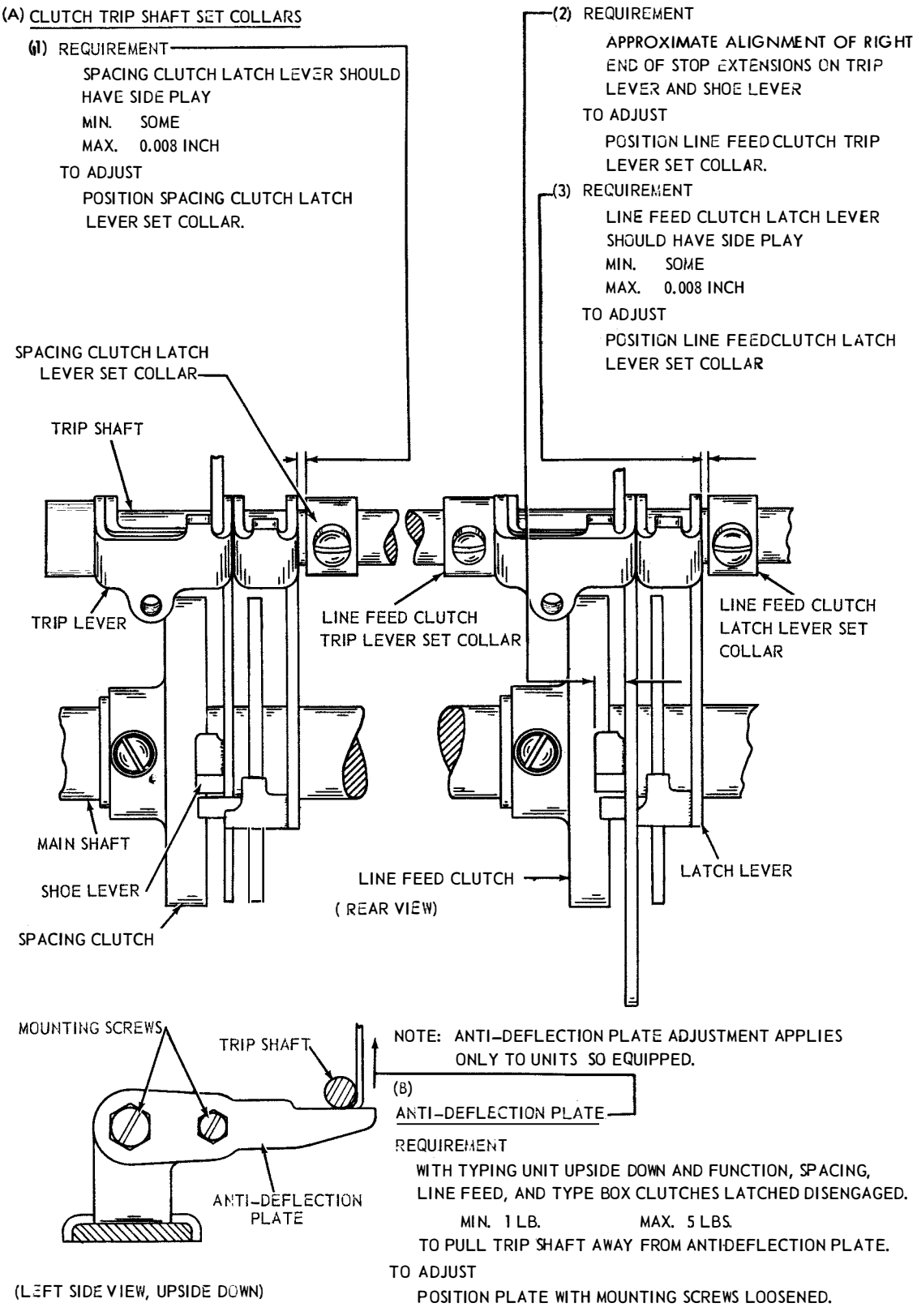
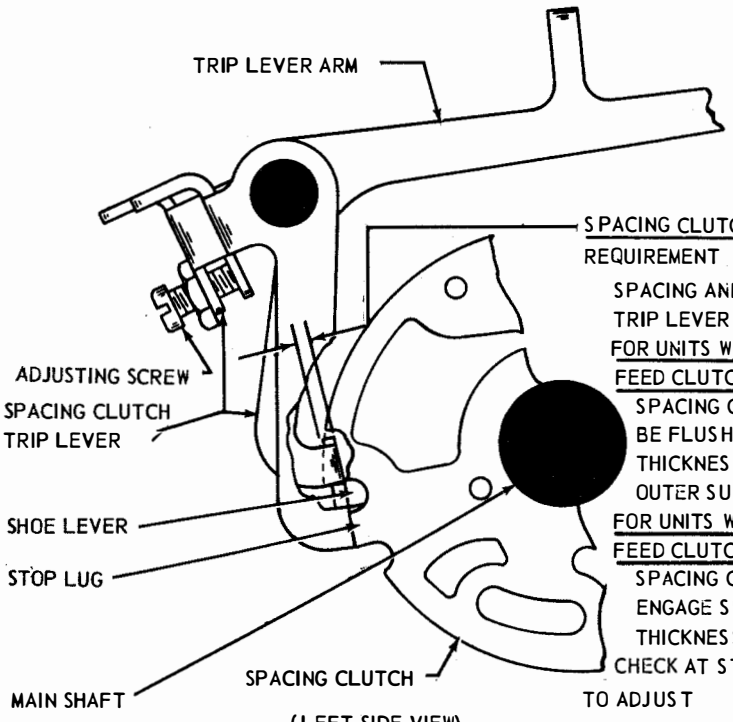


FIGURE 1-30 TYPING UNIT, TRIP LATCH MECHANISM



SPACING CLUTCH TRIP LEVER

REQUIREMENT

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

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

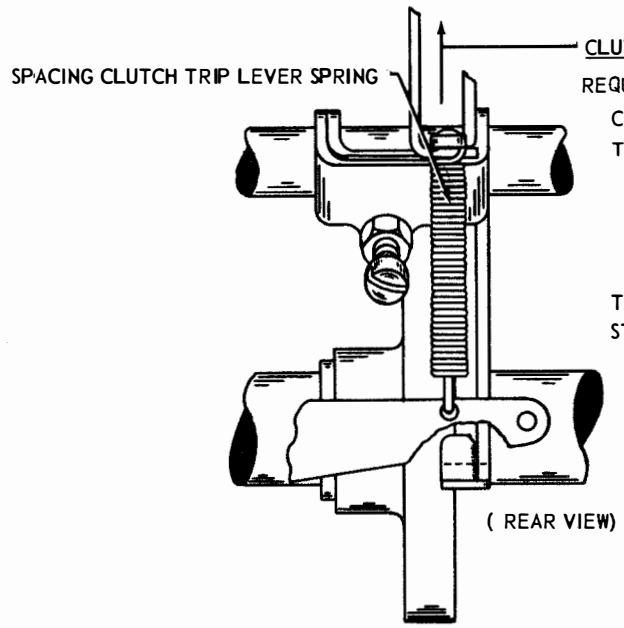
SPACING CLUTCH TRIP LEVER SHOULD BE FLUSH OR UNDERFLUSH BY 1/2 THICKNESS OF SHOE LEVER WITH OUTER SURFACE OF SHOE LEVER.

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

SPACING CLUTCH TRIP LEVER SHOULD ENGAGE SHOE LEVER BY FULL THICKNESS OF SHOE LEVER CHECK AT STOP LUG WITH LEAST BITE.

TO ADJUST

USE ADJUSTING SCREW TO POSITION SPACING CLUTCH TRIP ARM.



CLUTCH TRIP LEVER SPRING TENSION

REQUIREMENT

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

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

TO MOVE LEVER AWAY FROM STOP LUG.

FIGURE 1-31 TYPING UNIT, SPACING CLUTCH MECHANISM

A.
TYPE BOX CLUTCH TRIP LEVER ECCENTRIC POST

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

TO ADJUST
POSITION THE TRIP LEVER ECCENTRIC POST.

B.
LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST

REQUIREMENT
TRIP LEVER ADJUSTING SCREW BACKED OFF.
LINE FEED CLUTCH IN ITS STOP POSITION.
TRIP LEVER SHOULD ENGAGE THE CLUTCH SHOE LEVER BY THE FULL THICKNESS OF THE SHOE LEVER. CHECK AT STOP LUG WITH LEAST BITE.

TO ADJUST
POSITION THE TRIP LEVER ECCENTRIC POST

C.
LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW

REQUIREMENT
LINE FEED FUNCTION SLIDE ARM IN REAR POSITION.
CLUTCH TRIP LEVER AGAINST ITS ECCENTRIC POST.
TRIP ARM HELD AGAINST ITS FUNCTION SLIDE ARM.
SOME CLEARANCE BETWEEN THE END OF THE TRIP LEVER ADJUSTING SCREW AND THE TRIP ARM.
MAX. 0.006 INCH

TO ADJUST
POSITION THE ADJUSTING SCREW.

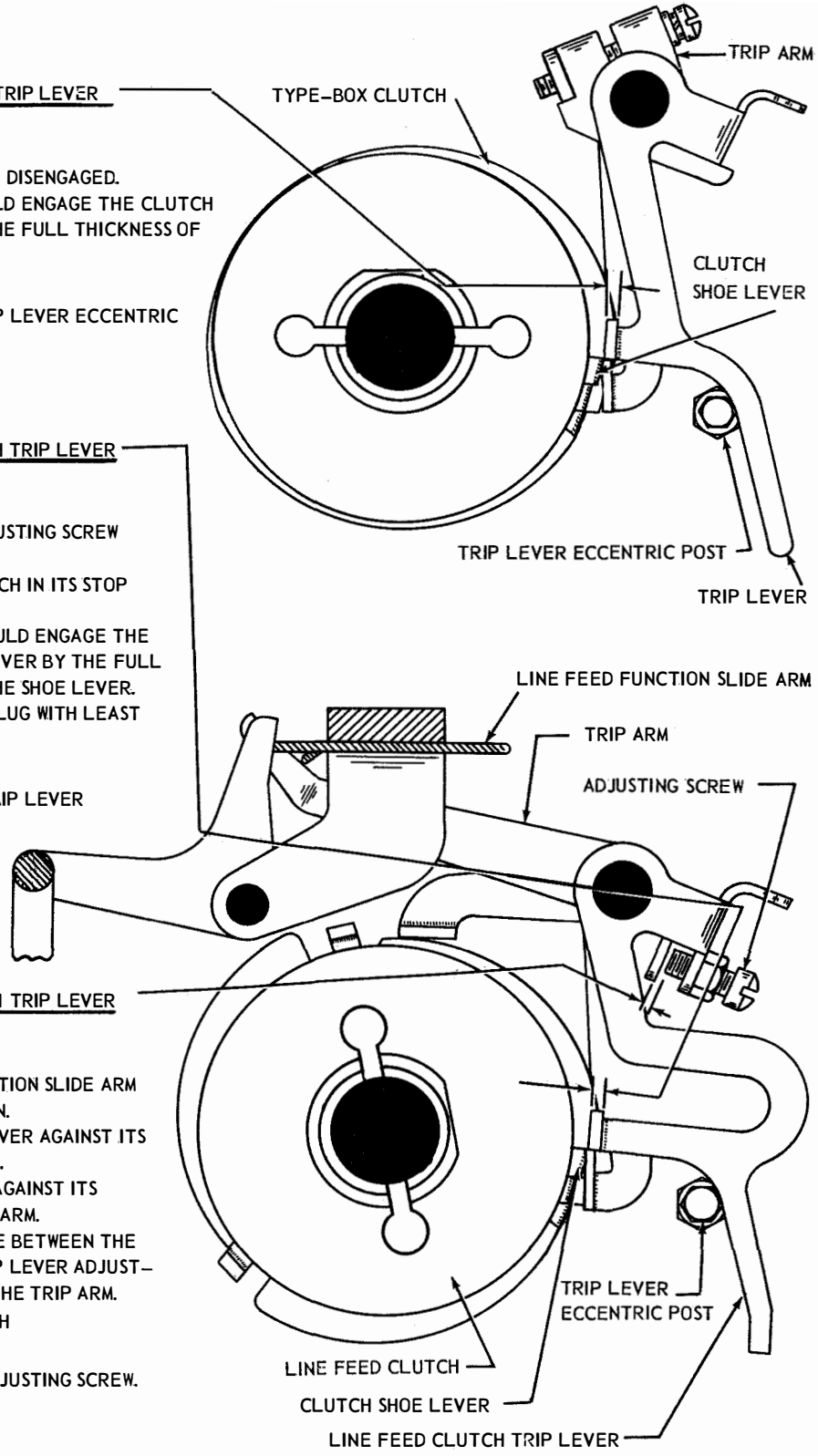
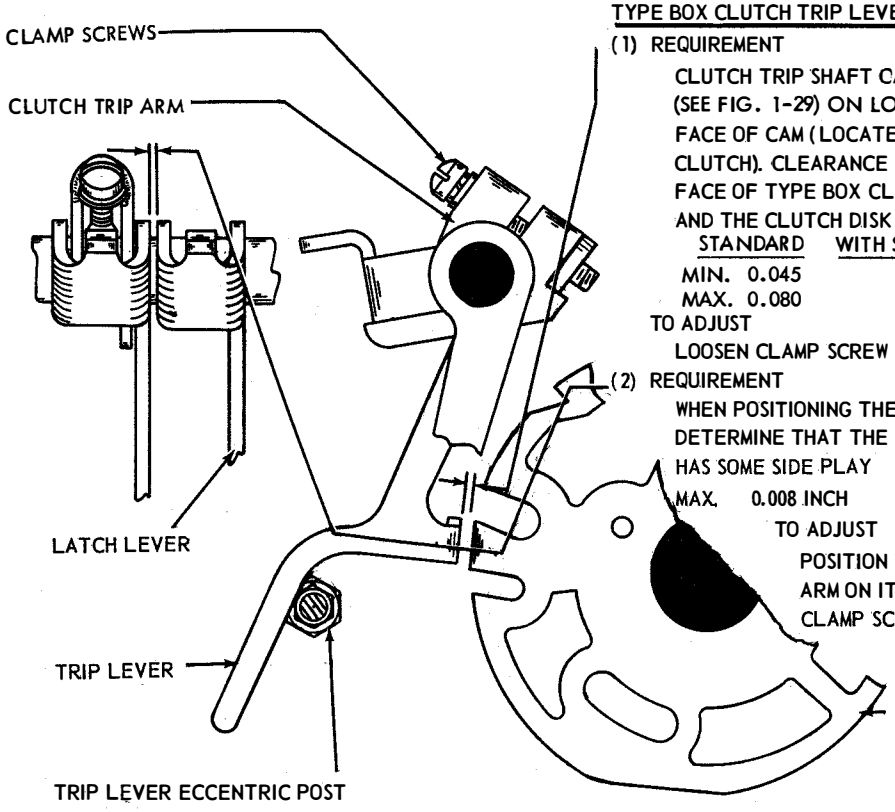


FIGURE 1-32 TYPING UNIT, TYPE BOX CLUTCH AND LINE FEED CLUTCH MECHANISM



TYPE BOX CLUTCH TRIP LEVER

(1) REQUIREMENT

CLUTCH TRIP SHAFT CAM FOLLOWER ROLLER (SEE FIG. 1-29) ON LOWEST SURFACE OF CAM (LOCATED ON CODE BAR CLUTCH). CLEARANCE BETWEEN INNER FACE OF TYPE BOX CLUTCH TRIP LEVER AND THE CLUTCH DISK STOP LUG.

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

TO ADJUST

LOOSEN CLAMP SCREW AND POSITION STOP.

(2) REQUIREMENT

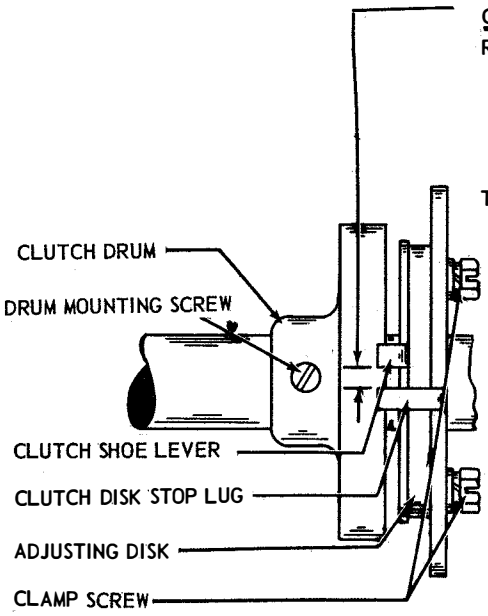
WHEN POSITIONING THE TRIP ARM DETERMINE THAT THE LATCH LEVER HAS SOME SIDE PLAY

MAX. 0.008 INCH

TO ADJUST

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

FIGURE 1-33 TYPING UNIT, TYPE BOX CLUTCH MECHANISM



CLUTCH SHOE LEVER

REQUIREMENT

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

TO CHECK

DISENGAGE THE CLUTCH AND MEASURE THE GAP. TRIP THE CLUTCH AND ROTATE IT UNTIL THE CLUTCH SHOE LEVER IS TOWARD THE BOTTOM OF THE UNIT. ALIGN THE HEAD OF THE CLUTCH DRUM MOUNTING SCREW WITH THE STOP LUG, MANUALLY COMPRESS THE SHOE LEVER AGAINST THE STOP LUG AND ALLOW THEM TO SNAP APART. AGAIN MEASURE THE GAP WITH THE CLUTCH THUS ENGAGED.

NOTE

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

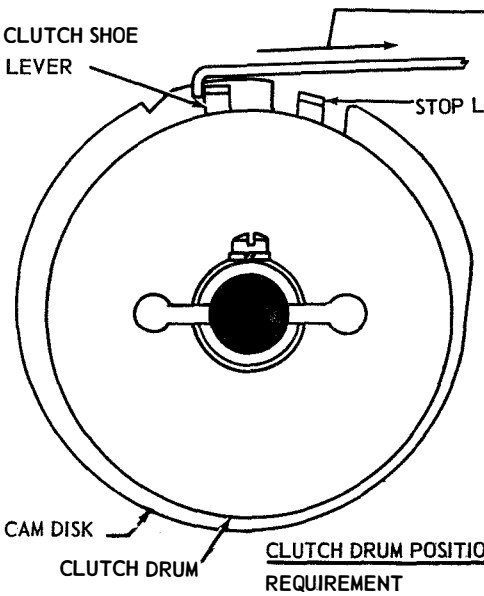
TO ADJUST

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

NOTE

AFTER THE ABOVE ADJUSTMENT IS MADE, DISENGAGE THE CLUTCH, REMOVE THE DRUM MOUNTING SCREW AND ROTATE THE DRUM IN ITS NORMAL DIRECTION OF ROTATION TO MAKE CERTAIN THAT IT DOES NOT DRAG ON THE SHOE. IF THE DRUM DRAGS, REFINE THE ABOVE ADJUSTMENT

FIGURE 1-34 TYPING UNIT, CLUTCH SHOE MECHANISM (ALL CLUTCHES)



CLUTCH SHOE LEVER SPRING TENSIONS

REQUIREMENT

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

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

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

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

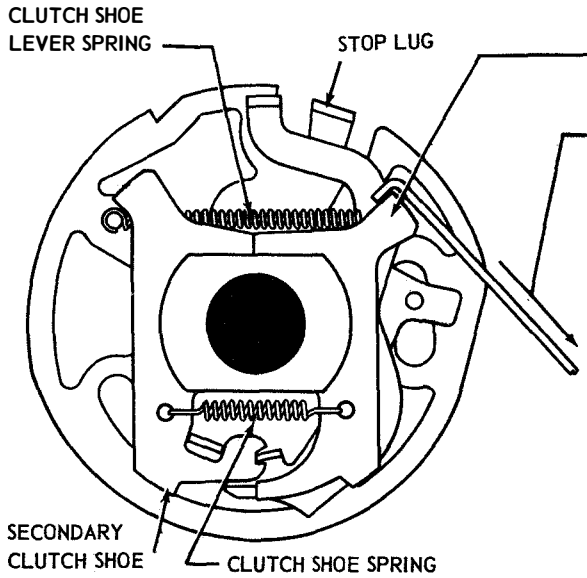
CLUTCH DRUM POSITION (EXCEPT SELECTOR)

REQUIREMENT

CLUTCH SHOE LEVER HELD DISENGAGED. CLUTCH SHOULD HAVE SOME END PLAY
MAX. 0.020 INCH

TO ADJUST

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



CLUTCH SHOE SPRING TENSION

NOTE

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

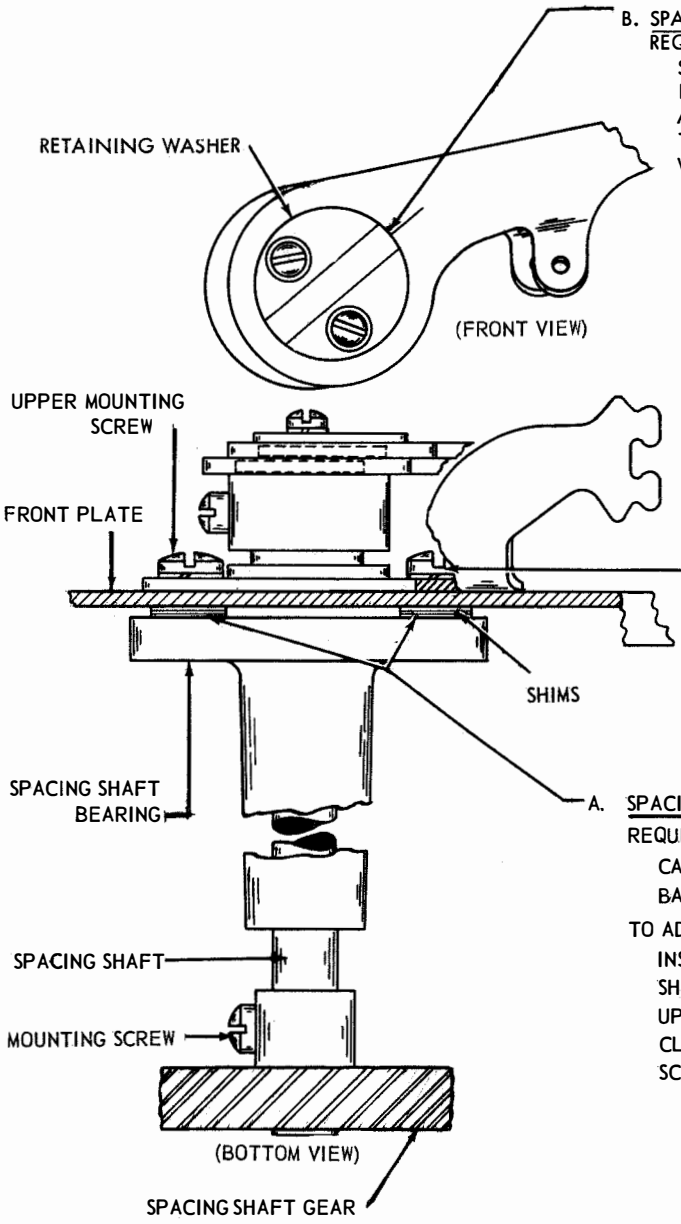
REQUIREMENT

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

MIN. 3 OZS.
MAX. 5 OZS.

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

FIGURE 1-35 TYPING UNIT, CLUTCH MECHANISM LEFT SIDE VIEW



B. SPACING GEAR PHASING

REQUIREMENT

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

TO ADJUST

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

A. SPACING GEAR CLEARANCE

REQUIREMENT

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

TO ADJUST

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

FIGURE 1-36 TYPING UNIT, SPACING MECHANISM

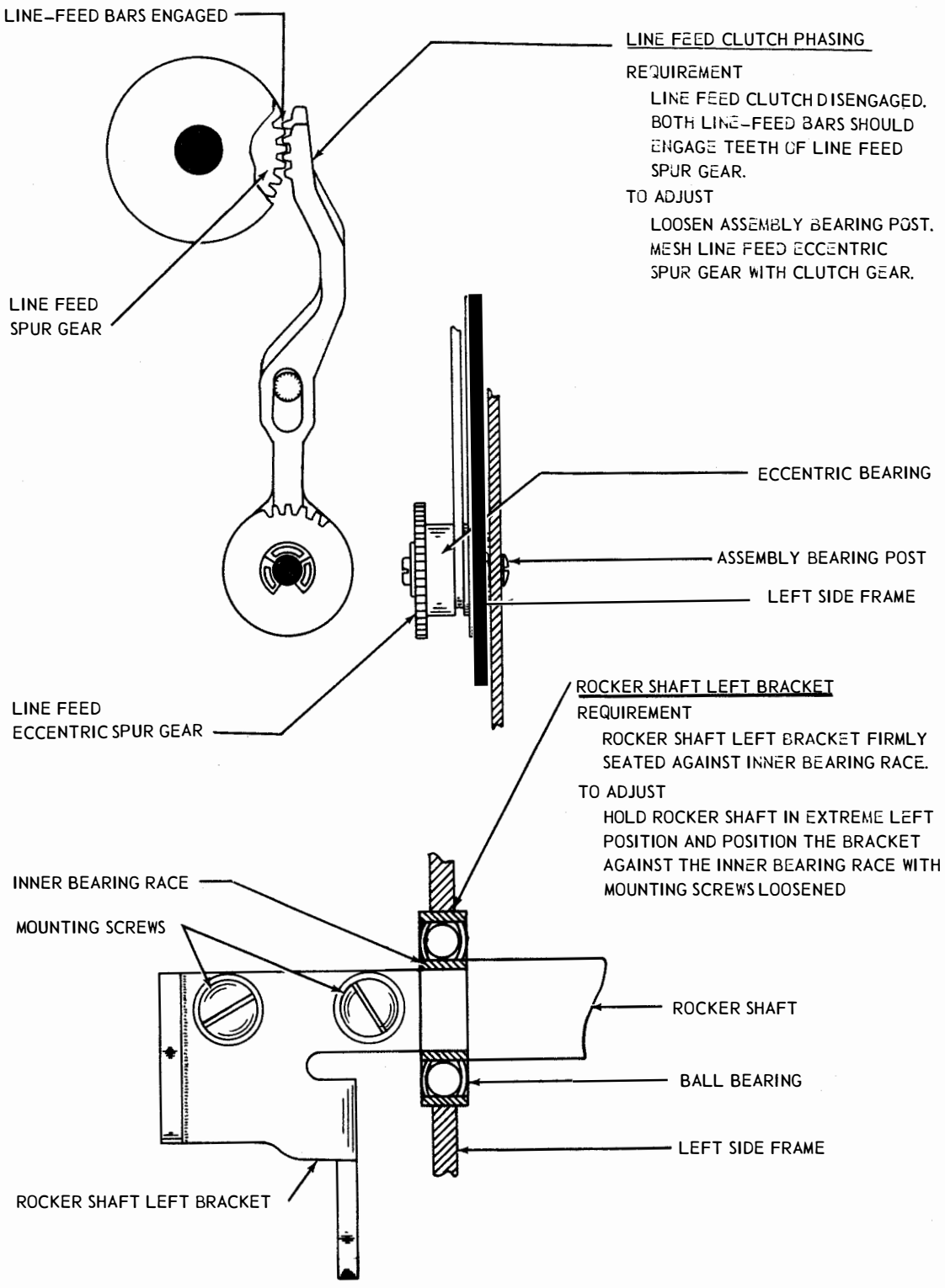


FIGURE 1-37 TYPING UNIT, LINE FEED AND ROCKER SHAFT MECHANISMS

ROCKER SHAFT BRACKET ECCENTRIC STUD

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. PLAY IN LOCKING ARM TAKEN TOWARDS FRONT. GAP BETWEEN LOWER SIDE OF LOCK LEVER ROLLER AND TOP EDGE OF SHOULDER ON HORIZONTAL POSITIONING LOCK LEVER

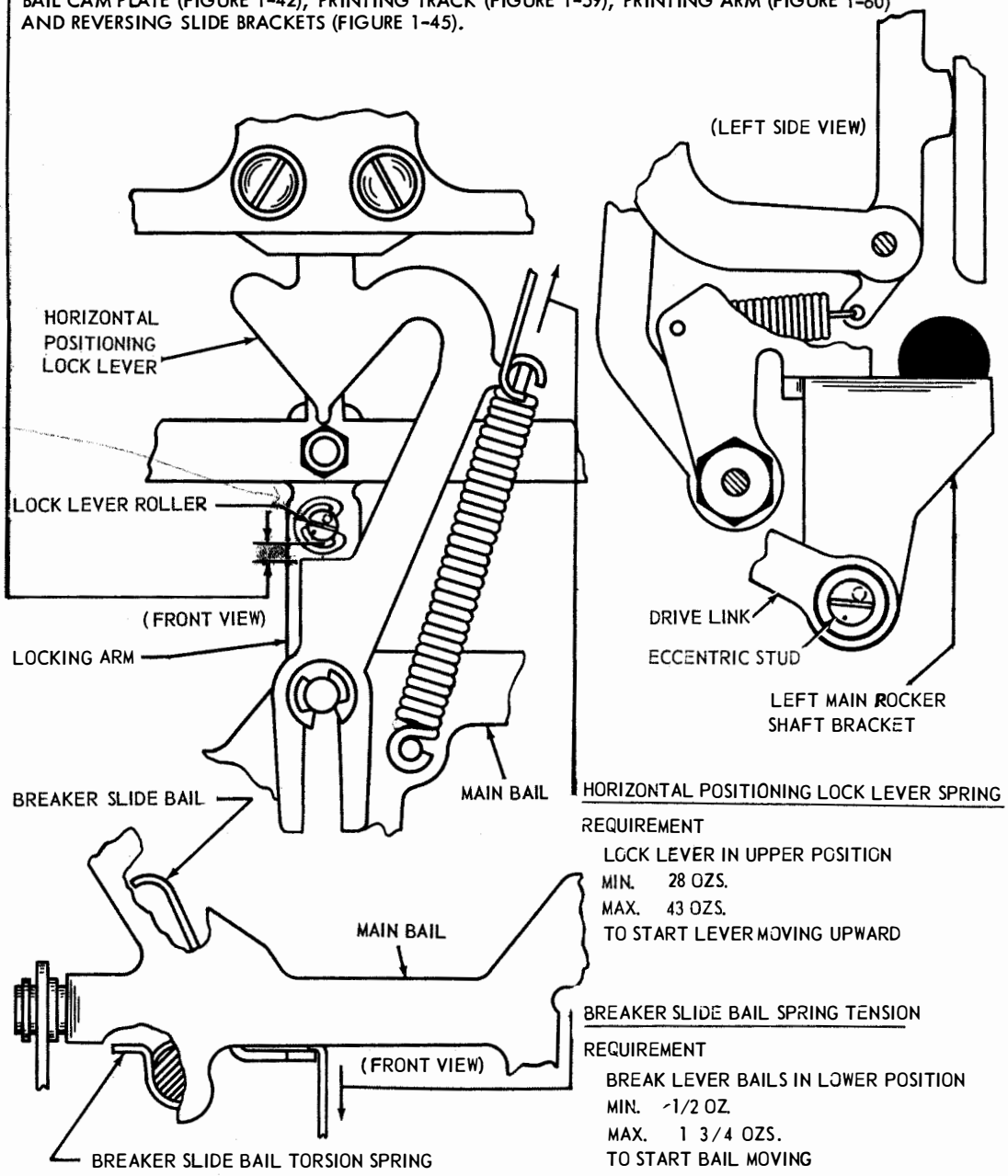
MIN. 0.065 INCH
MAX. 0.080 INCH

TO ADJUST

POSITION ECCENTRIC STUD IN LOWER END OF ROCKER SHAFT LEFT BRACKET. KEEP HIGH PART OF ECCENTRIC (MARKED WITH DOT) BELOW CENTER LINE OF DRIVE LINK.

NOTE:

ANY CHANGE IN THIS ADJUSTMENT WILL REQUIRE A RECHECKING OF THE FOLLOWING ADJUSTMENTS: HORIZONTAL POSITIONING DRIVE LINKAGE (FIGURE 1-46), RIGHT VERTICAL POSITIONING LEVER ECCENTRIC STUD (FIGURE 1-39), LEFT VERTICAL POSITIONING LEVER ECCENTRIC STUD (FIGURE 1-40), VERTICAL POSITIONING LOCK LEVER (FIGURE 1-47), RIBBON FEED LEVER STOP BRACKET (FIGURE 1-63), FUNCTION STRIPPER BLADE ARMS (FIGURE 4-37), SPACING TRIP LEVER BAIL CAM PLATE (FIGURE 1-42), PRINTING TRACK (FIGURE 1-59), PRINTING ARM (FIGURE 1-60) AND REVERSING SLIDE BRACKETS (FIGURE 1-45).



HORIZONTAL POSITIONING LOCK LEVER SPRING

REQUIREMENT

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

BREAKER SLIDE BAIL SPRING TENSION

REQUIREMENT

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

FIGURE 1-38 TYPING UNIT, SHIFT AND POSITIONING MECHANISMS.

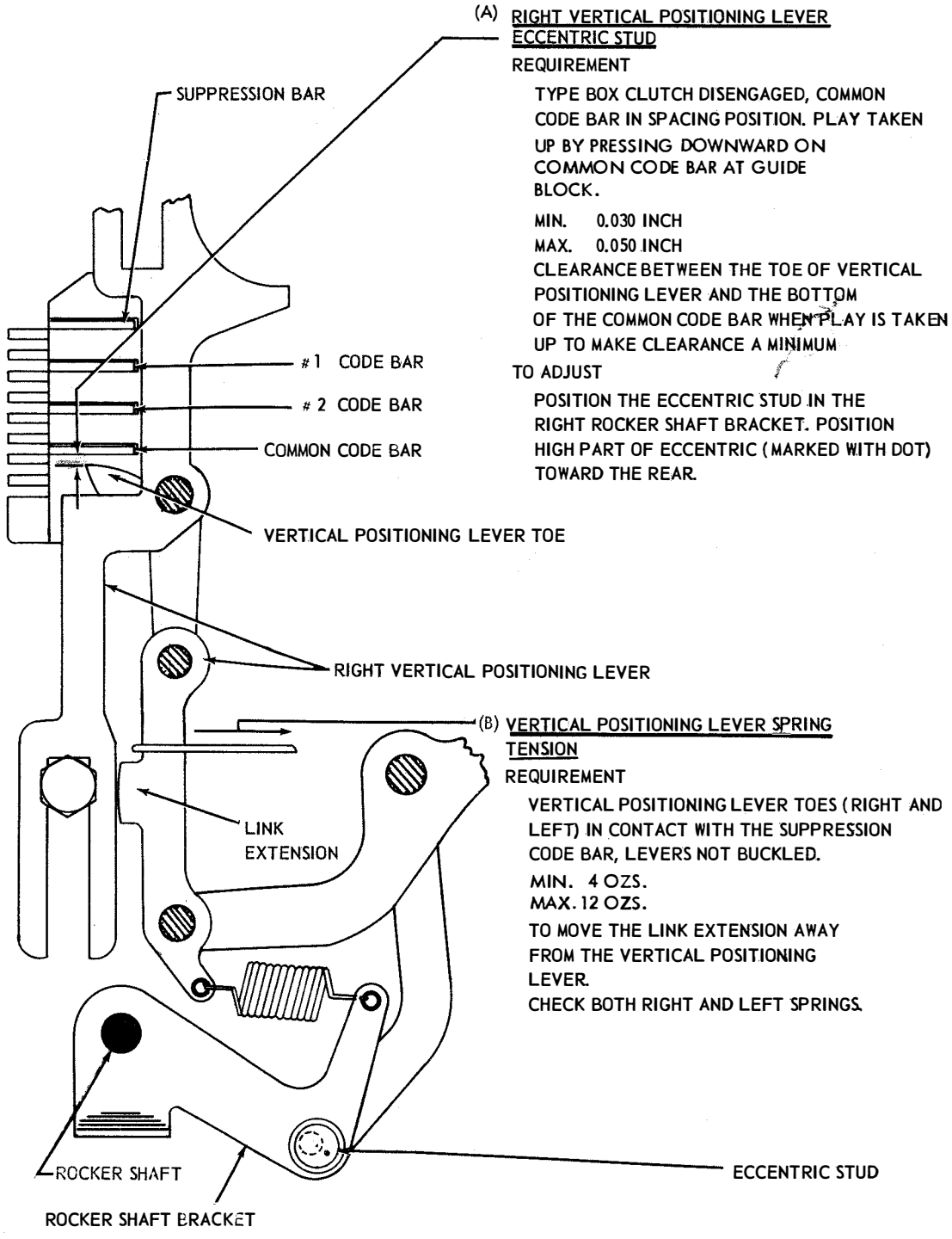


FIGURE 1-39 TYPING UNIT, VERTICAL POSITIONING MECHANISM, RIGHT SIDE

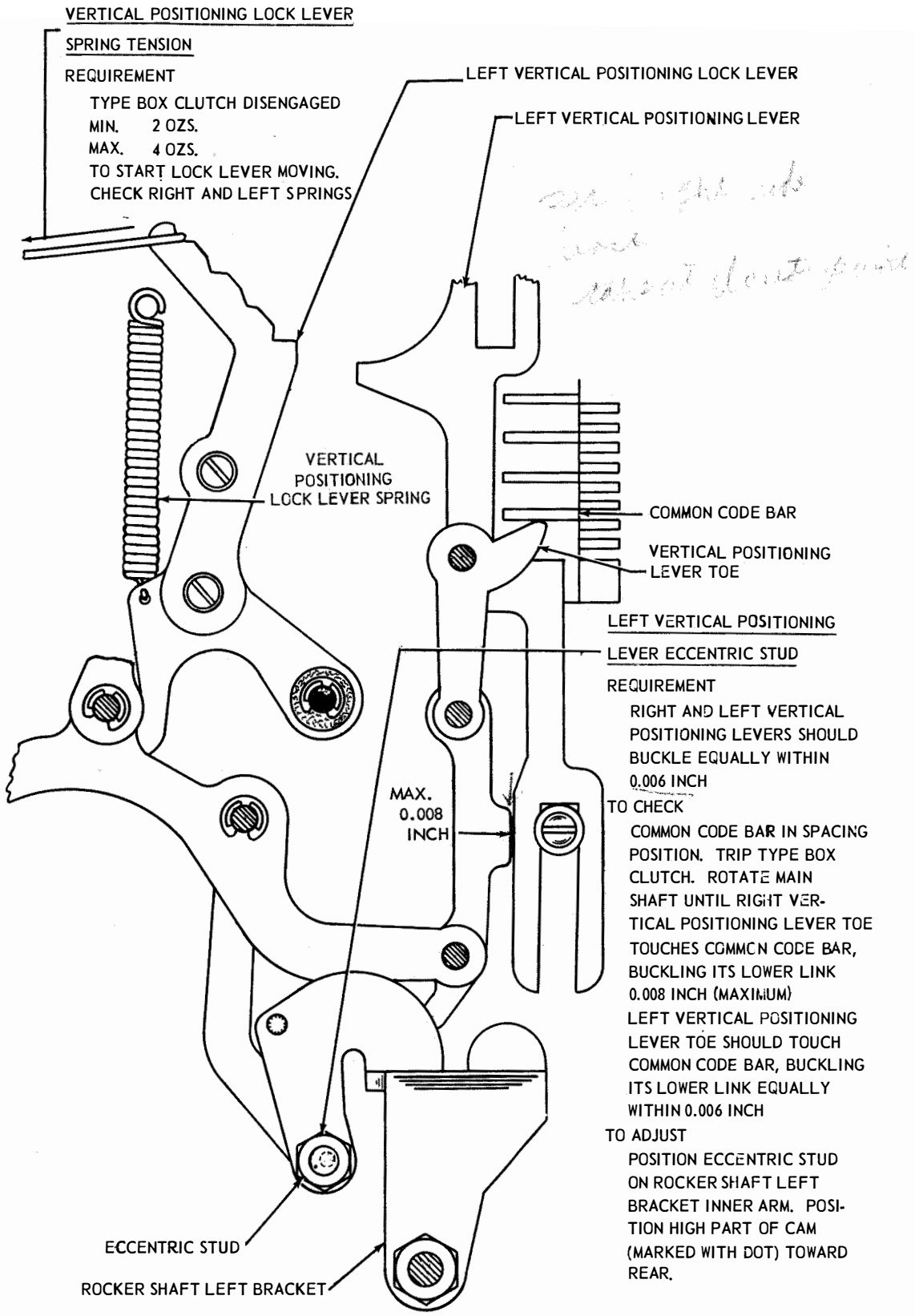
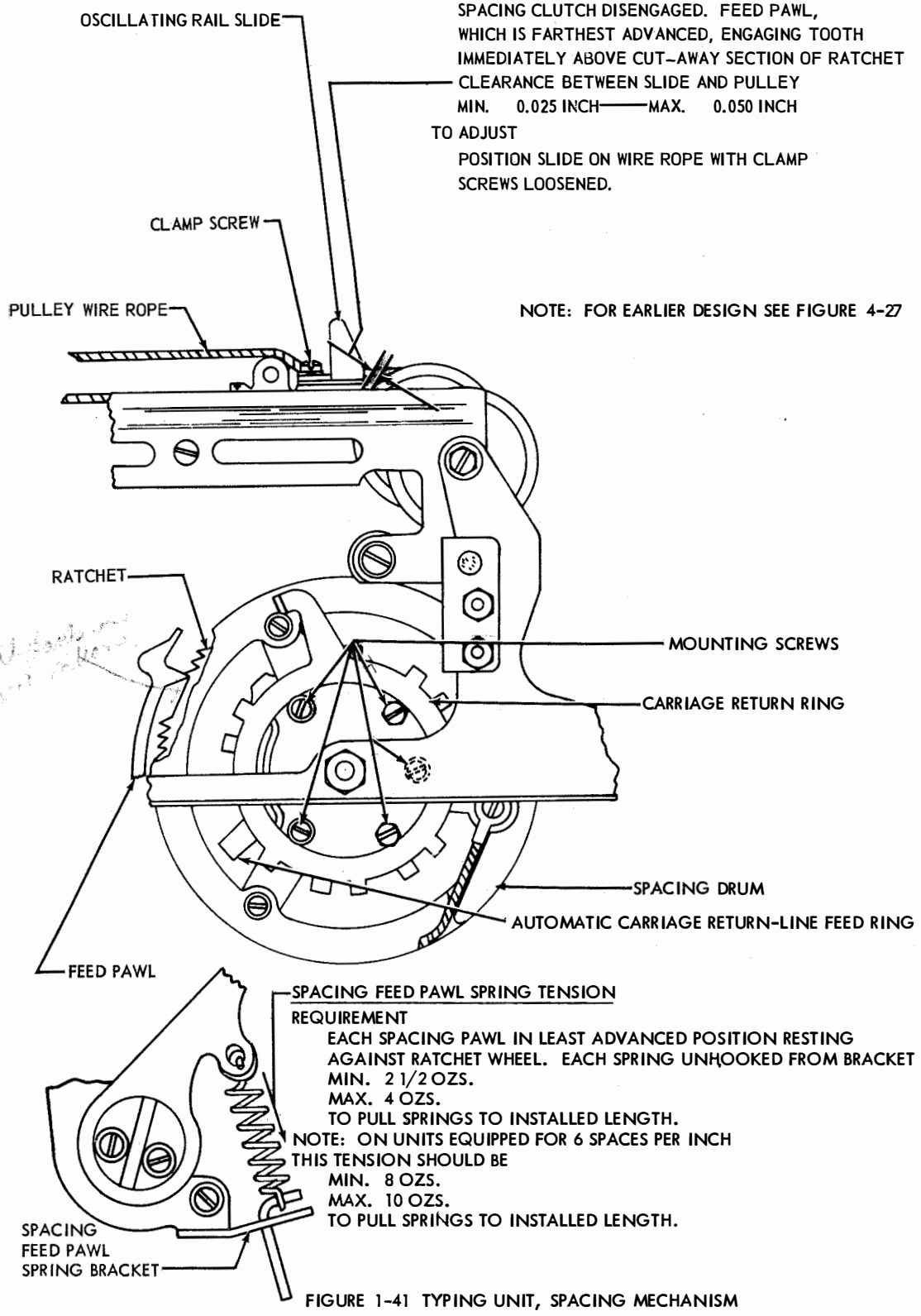


FIGURE 1-40 TYPING UNIT, VERTICAL POSITIONING MECHANISM LEFT SIDE



OSCILLATING RAIL SLIDE POSITION

REQUIREMENT

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

CLEARANCE BETWEEN SLIDE AND PULLEY

MIN. 0.025 INCH——MAX. 0.050 INCH

TO ADJUST

POSITION SLIDE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED.

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-27

SPACING FEED PAWL SPRING TENSION

REQUIREMENT

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

MIN. 2 1/2 OZS.

MAX. 4 OZS.

TO PULL SPRINGS TO INSTALLED LENGTH.

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

MIN. 8 OZS.

MAX. 10 OZS.

TO PULL SPRINGS TO INSTALLED LENGTH.

FIGURE 1-41 TYPING UNIT, SPACING MECHANISM

(A) SPACING TRIP LEVER BAIL CAM PLATE

REQUIREMENT

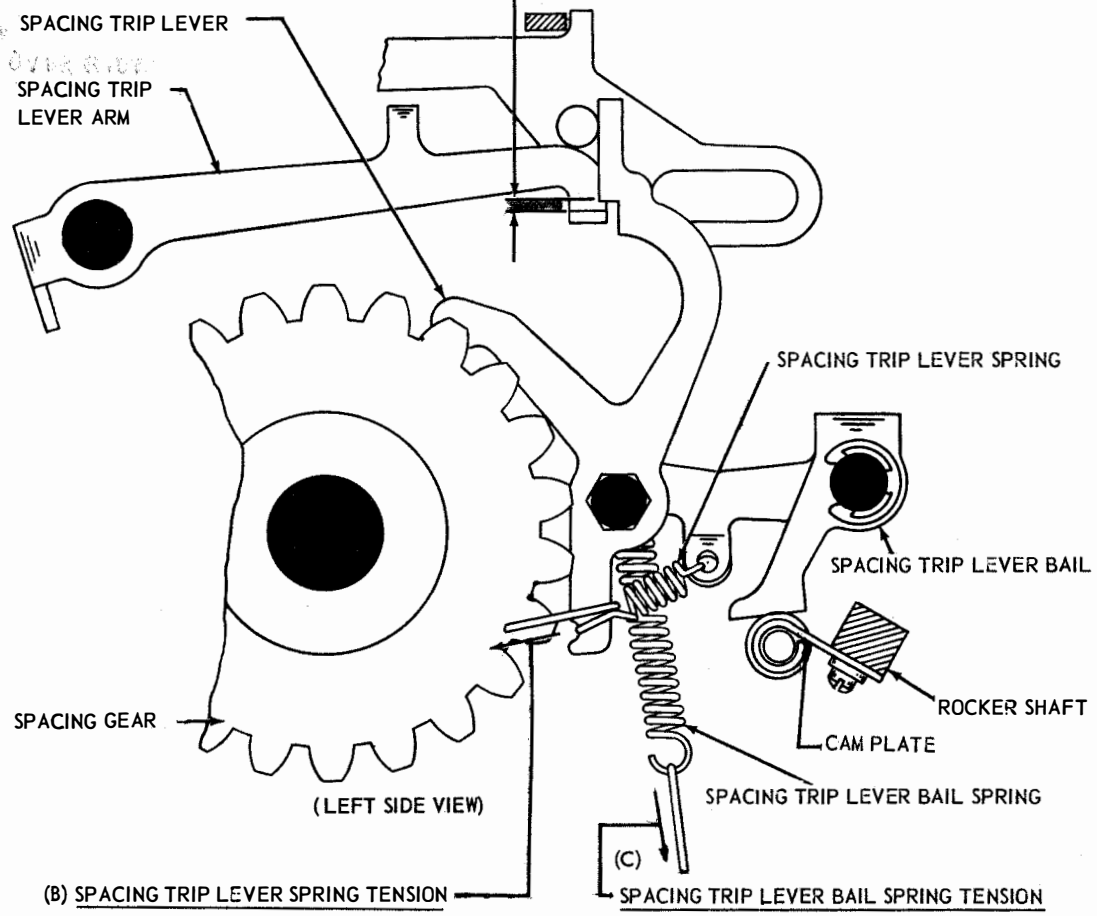
SPACING TRIP LEVER ARM IN UPWARD POSITION. TYPE BOX CLUTCH ROTATED THROUGH APPROXIMATELY ONE-HALF OF ITS CYCLE. ALL FUNCTION PAWLS DISENGAGED FROM FUNCTION BAR. CLEARANCE BETWEEN TOP SURFACE OF TRIP LEVER ARM EXTENSION AND SPACING TRIP LEVER SHOULDER.

MIN. 0.010 INCH

MAX. 0.040 INCH

TO ADJUST

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



(B) SPACING TRIP LEVER SPRING TENSION

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.

MIN. 2 1/2 OZS.

MAX. 5 OZS.

TO START LEVER MOVING.

SPACING TRIP LEVER BAIL SPRING TENSION

REQUIREMENT

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

MIN. 8 OZS.

MAX. 12 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

FIGURE 1-42 TYPING UNIT, SPACING MECHANISM

FIGS-LTRS SHIFT CODE BAR OPERATING MECHANISM

(1) REQUIREMENT

WITH FUNCTION CLUTCH ROTATED UNTIL CLUTCH DISK STOP LUG IS TOWARD BOTTOM OF UNIT, HOOK FIGURES FUNCTION PAWL OVER THE END OF THE FUNCTION BAR. CLEARANCE BETWEEN UPPER GUIDE PLATE EXTENSION AND SHIFT SLIDE.

MAX. 0.020 WHEN PLAY IS TAKEN UP FOR MAXIMUM.

(2) REQUIREMENT

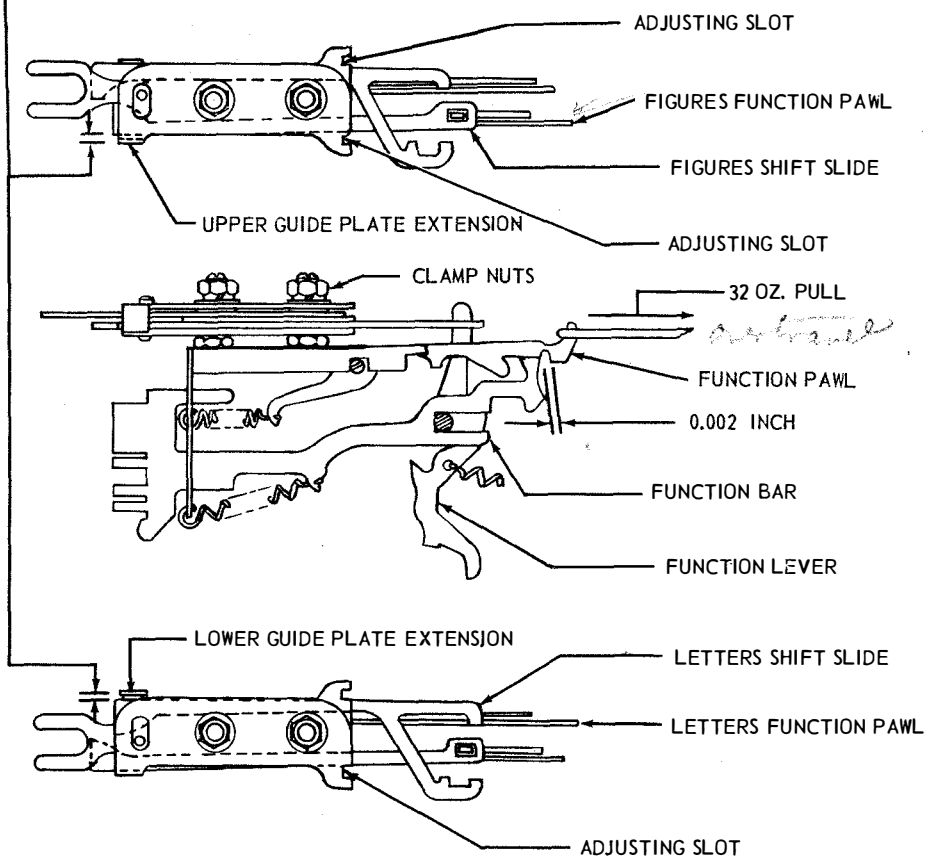
WITH 32 OZ. PULL APPLIED TO FUNCTION PAWL THERE SHOULD BE MIN. 0.002 INCH BETWEEN SHOULDER OF FIGURES FUNCTION PAWL AND FACE OF FUNCTION BAR.

(3) REQUIREMENT

REPEAT THE PROCEDURE FOR THE LETTERS FUNCTION PAWL.CHECK CLEARANCE BETWEEN LOWER GUIDE PLATE EXTENSION AND SHIFT SLIDE.

TO ADJUST

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



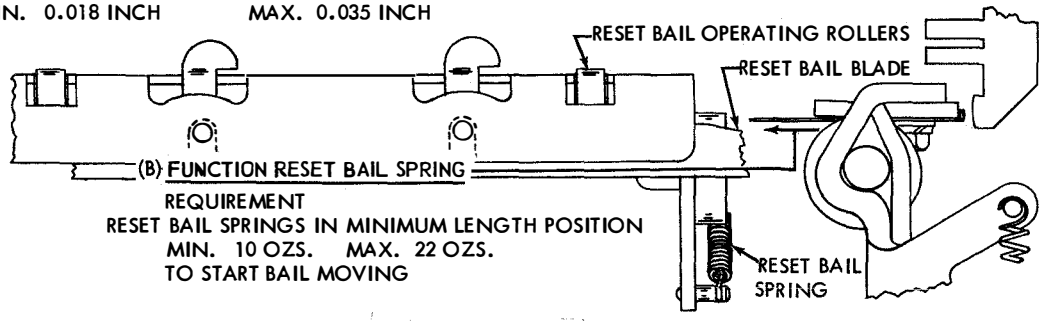
NOTE: FOR EARLIER DESIGN SEE FIGURE 4-28

FIGURE 1-43 TYPING UNIT, SHIFT CODE BAR OPERATING MECHANISM

(A) FUNCTION RESET BAIL BLADE

(1) REQUIREMENT

FUNCTION AND TYPE BOX CLUTCHES DISENGAGED. FUNCTION PAWLS UNLATCHED. FUNCTION BAR HELD IN MAXIMUM REARWARD POSITION. CLEARANCE BETWEEN FUNCTION BAR AND RESET BAIL BLADE: MIN. 0.018 INCH MAX. 0.035 INCH



(B) FUNCTION RESET BAIL SPRING

REQUIREMENT

RESET BAIL SPRINGS IN MINIMUM LENGTH POSITION
MIN. 10 OZS. MAX. 22 OZS.
TO START BAIL MOVING

TO CHECK

MEASURE CLEARANCE AT BARS LOCATED IN STUNT BOX SLOTS 1, 4, 11, 18, 23, 33, 38 AND 41. IF THERE IS NO BAR IN A DESIGNATED SLOT, USE NEAREST BAR. IF THERE IS A BAR ON EACH SIDE OF A DESIGNATED VACANT SLOT, USE BAR IN HIGHEST NUMBERED SLOT. (NOTE: FACING REAR OF UNIT, SLOTS ARE NUMBERED FROM LEFT TO RIGHT).

TO ADJUST

POSITION BLADE ON RESET BAIL WITH ITS MOUNTING SCREWS FRICTION TIGHT.

(2) REQUIREMENT

FUNCTION PAWL SHOULD OVER TRAVEL FUNCTION BAR BY A MIN. OF 0.002 INCH.

TO CHECK

IF CARRIAGE RETURN LEVER ADJUSTMENT HAS NOT BEEN MADE, ITS CLAMP SCREW SHOULD BE LOOSENED. POSITION FUNCTION CLUTCH SO THAT LUG ON CLUTCH DISK IS TOWARD BOTTOM OF UNIT. STRIP OFF ANY SELECTED FUNCTION PAWLS. HOLD FUNCTION LEVER IN MAXIMUM REARWARD POSITION (DO NOT PUT OVER 2 LBS. OF TENSION ON LEVER) AND HOLD FUNCTION PAWL TO REAR WITH A TENSION OF 32 OZS. (AS LOAD ON RESET BAIL AFFECTS OVER TRAVEL, DO NOT LATCH MORE THAN ONE PAWL AT A TIME). MEASURE CLEARANCE. REPEAT FOR EACH FUNCTION PAWL ON STUNT BOX.

TO ADJUST

IF NECESSARY, REFINE THE ABOVE ADJUSTMENT WITHIN THE FOLLOWING LIMITS:
MIN. 0.018 MAX. 0.035 INCH

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-29

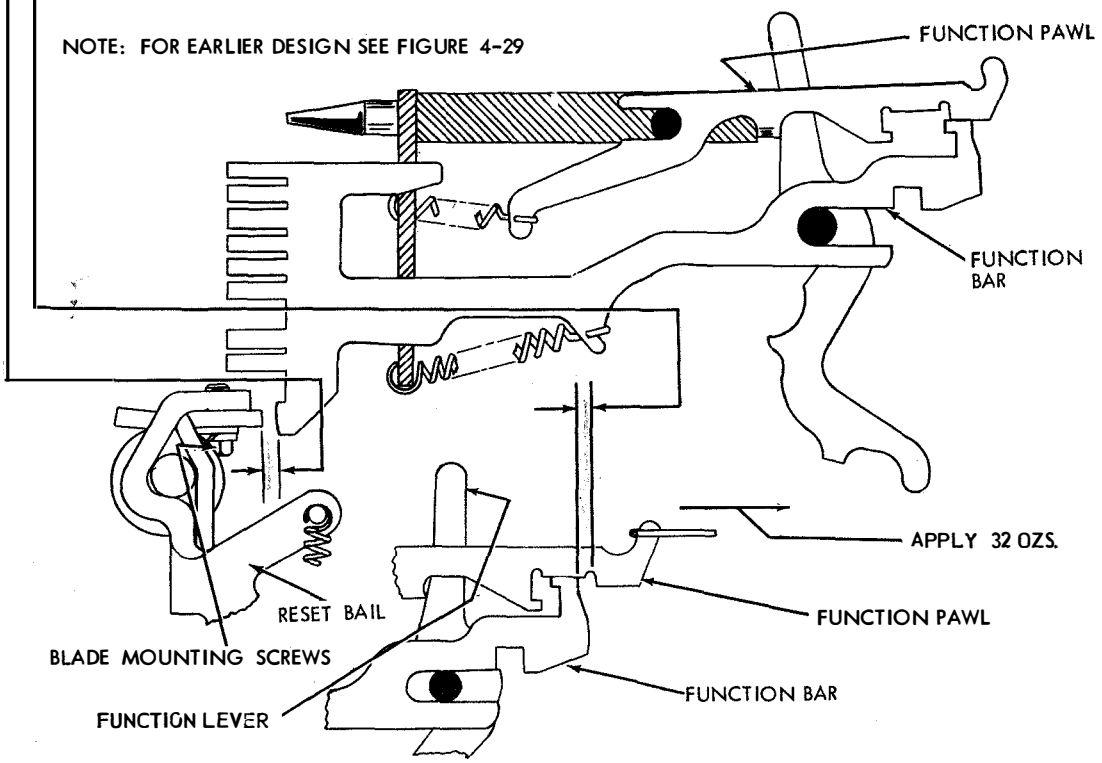
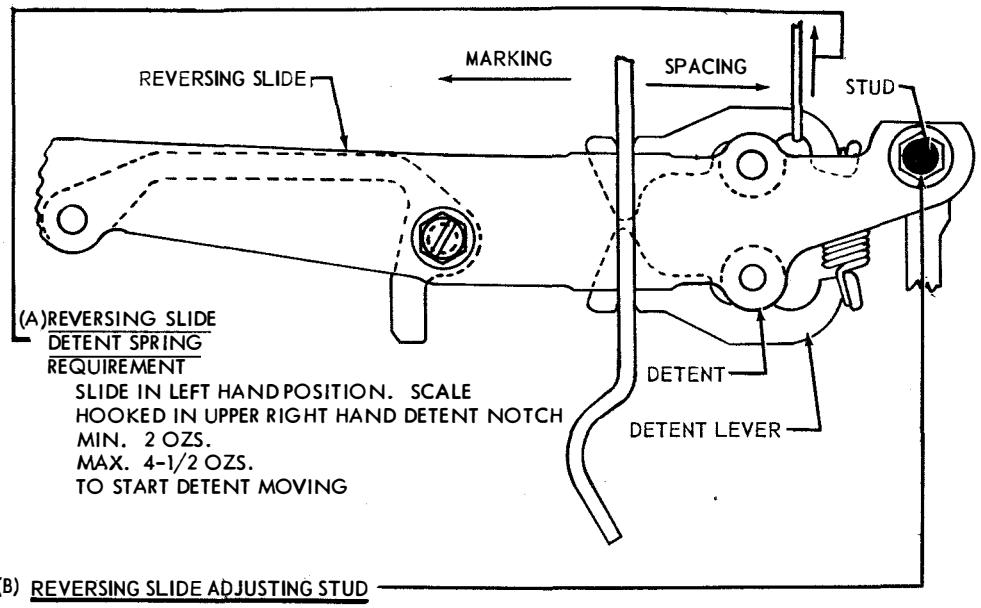


FIGURE 1-44 TYPING UNIT, RESET BAIL MECHANISM



(A) REVERSING SLIDE DETENT SPRING REQUIREMENT

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

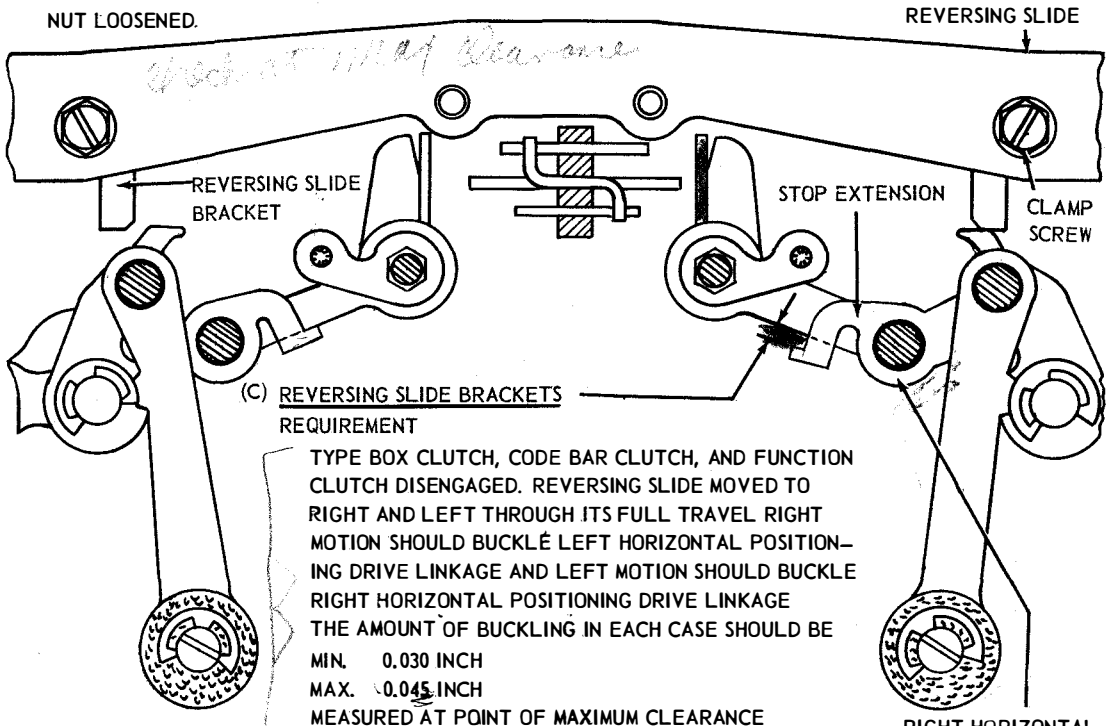
(B) REVERSING SLIDE ADJUSTING STUD

REQUIREMENT

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

TO ADJUST

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



(C) REVERSING SLIDE BRACKETS

REQUIREMENT

TYPE BOX CLUTCH, CODE BAR CLUTCH, AND FUNCTION CLUTCH DISENGAGED. REVERSING SLIDE MOVED TO RIGHT AND LEFT THROUGH ITS FULL TRAVEL RIGHT MOTION SHOULD BUCKLE LEFT HORIZONTAL POSITIONING DRIVE LINKAGE AND LEFT MOTION SHOULD BUCKLE RIGHT HORIZONTAL POSITIONING DRIVE LINKAGE
THE AMOUNT OF BUCKLING IN EACH CASE SHOULD BE
MIN. 0.030 INCH
MAX. 0.045 INCH
MEASURED AT POINT OF MAXIMUM CLEARANCE

TO ADJUST

POSITION EACH REVERSING SLIDE BRACKET WITH THEIR CLAMP SCREWS LOOSENED.

FIGURE 1-45 TYPING UNIT, HORIZONTAL MOTION REVERSING MECHANISM FRONT VIEW

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

HORIZONTAL POSITIONING DRIVE LINKAGE

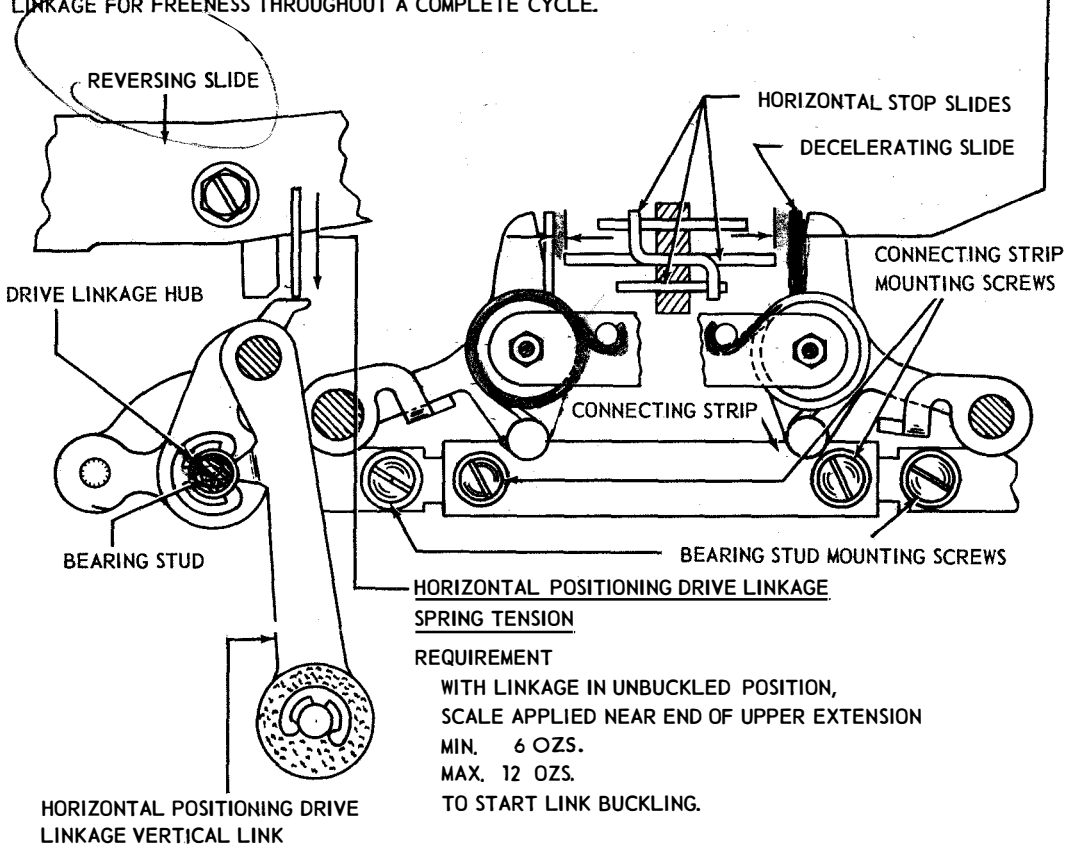
REQUIREMENT

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

MIN. 0.015 INCH
MAX. 0.040 INCH

TO ADJUST

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



HORIZONTAL POSITIONING DRIVE LINKAGE SPRING TENSION

REQUIREMENT

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

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-30

FIGURE 1-46 TYPING UNIT, HORIZONTAL POSITIONING DRIVE MECHANISM, FRONT VIEW

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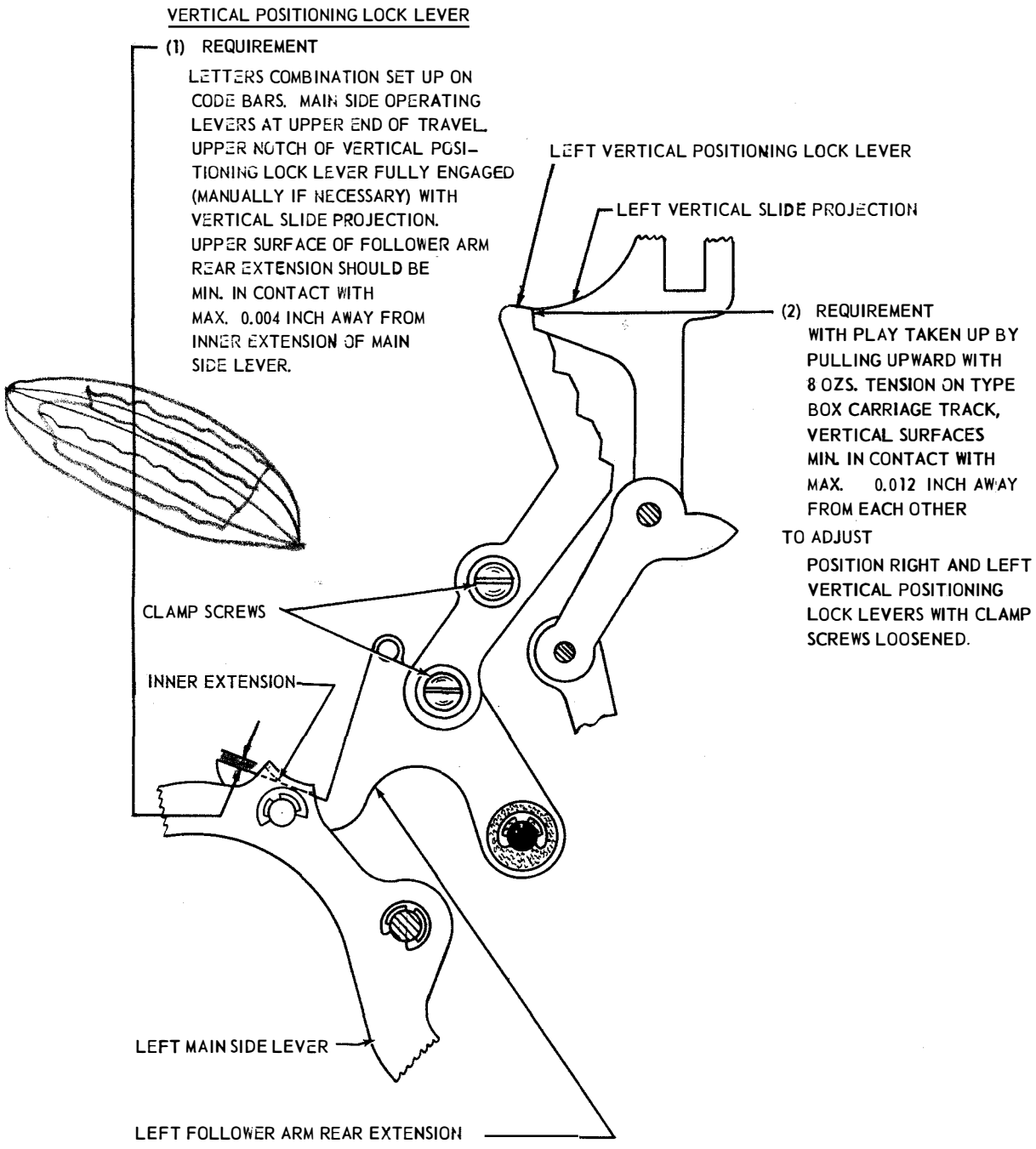


FIGURE 1-47 TYPING UNIT, VERTICAL POSITIONING MECHANISM, LEFT SIDE VIEW

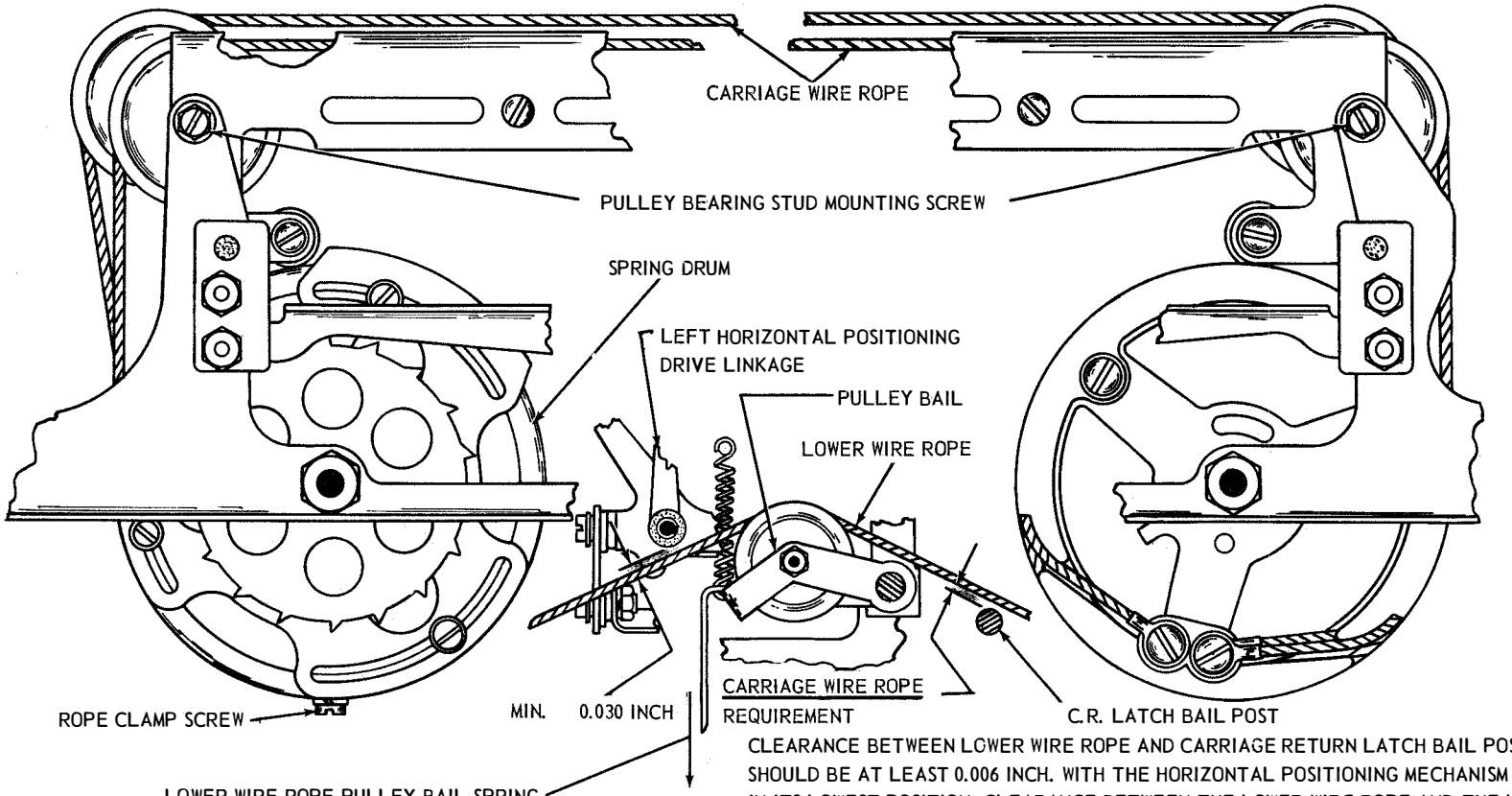


FIGURE 1-48 TYPING UNIT, SPACING MECHANISM FRONT VIEW

LOWER WIRE ROPE PULLEY BAIL SPRING

REQUIREMENT

SPRING UNHOOKED FROM PULLEY BAIL, BAIL EXTENSION RESTING ON OPENING IN FRONT PLATE.

MIN. 18 OZS.

MAX. 22 OZS.

TO PULL SPRING TO POSITION LENGTH.

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

MIN. 0.030 INCH

TO ADJUST

RETURN THE PRINTING CARRIAGE TO ITS LEFT HAND POSITION. LOOSEN THE ROPE CLAMP SCREW ONE TURN ONLY. POSITION THE PULLEY BEARING STUDS WITH THEIR MOUNTING SCREWS LOOSENED TO MEET THE REQUIREMENT. MAKE CERTAIN THAT THE ROPE MOVES AROUND ITS CLAMP SCREW TO AN EQUALIZED POSITION.TIGHTEN THE CLAMP SCREW AND MOUNTING SCREWS.

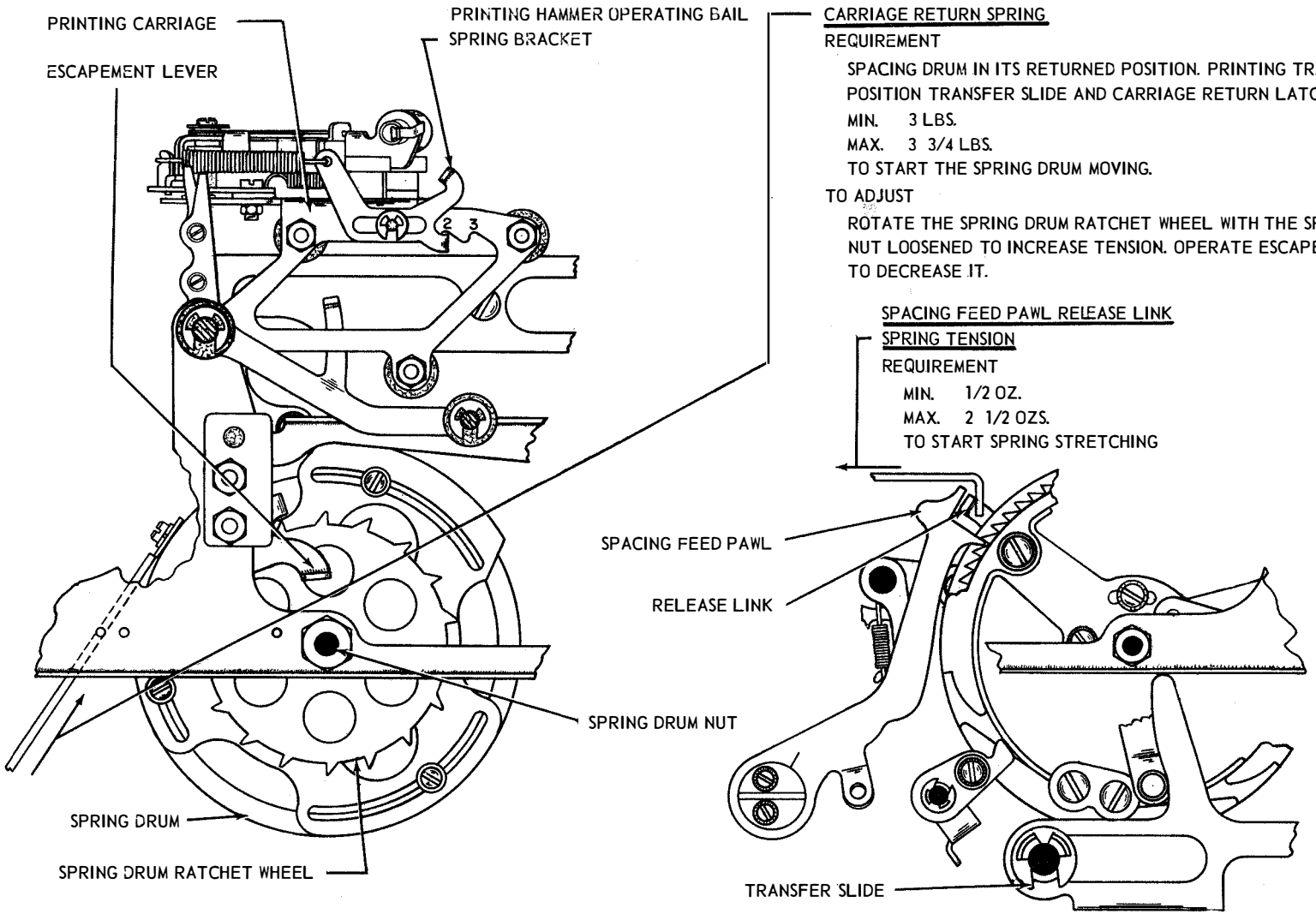
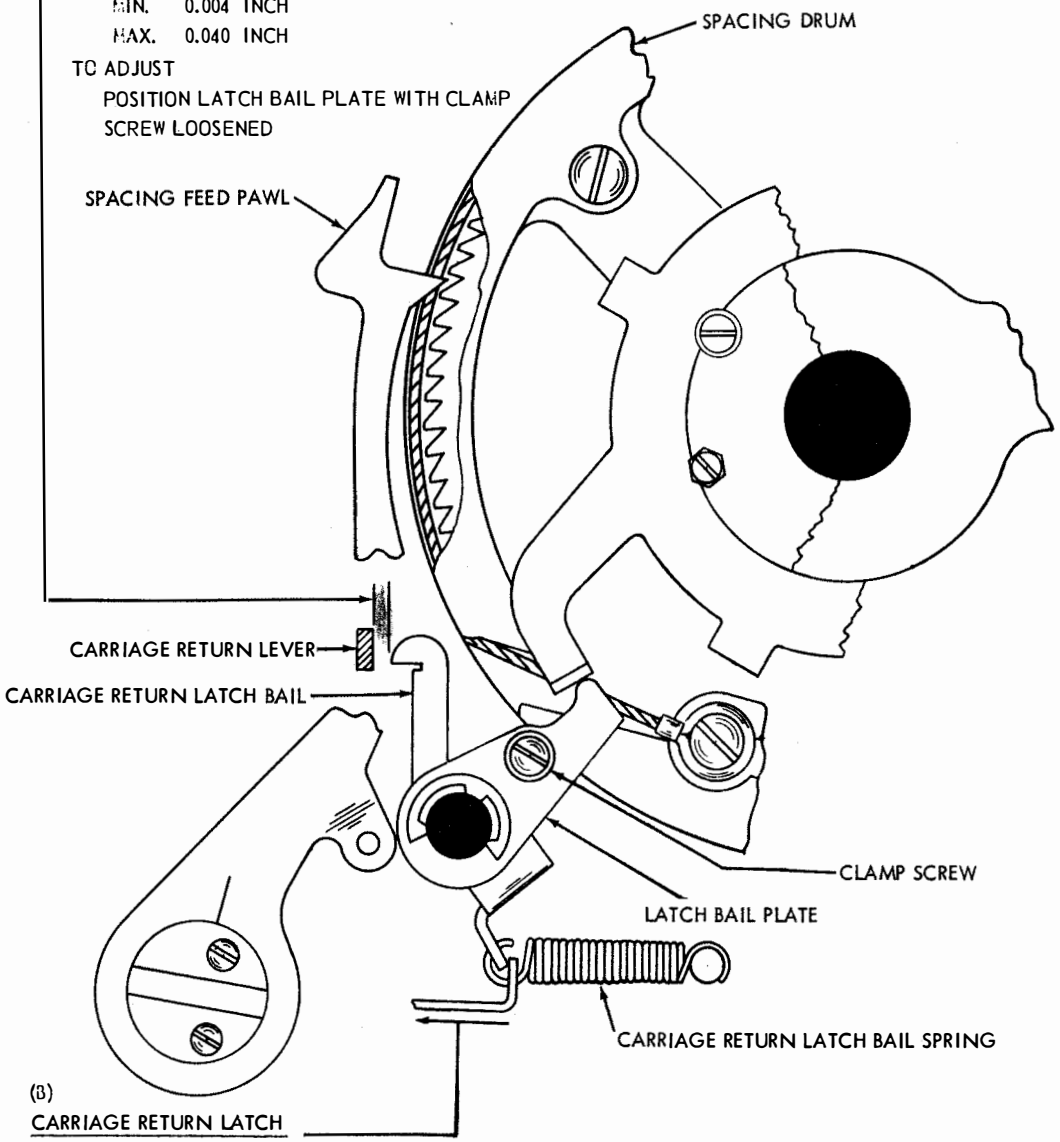


FIGURE 1-49 TYPING UNIT, CARRIAGE RETURN MECHANISM, FRONT VIEW

(A)
CARRIAGE RETURN LATCH BAIL
REQUIREMENT
CARRIAGE FULLY RETURNED (SEE FIGURE 1-53)
PLAY IN CARRIAGE RETURN BAIL TAKEN UP TO RIGHT BY HOLDING RIGHT SIDE OF BAIL AGAINST ITS RETAINER. CLEARANCE BETWEEN CARRIAGE RETURN LATCH BAIL AND CARRIAGE RETURN LEVER.
MIN. 0.004 INCH
MAX. 0.040 INCH
TO ADJUST
POSITION LATCH BAIL PLATE WITH CLAMP SCREW LOOSENED



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

FIGURE 1-50 TYPING UNIT, CARRIAGE RETURN MECHANISM, FRONT VIEW

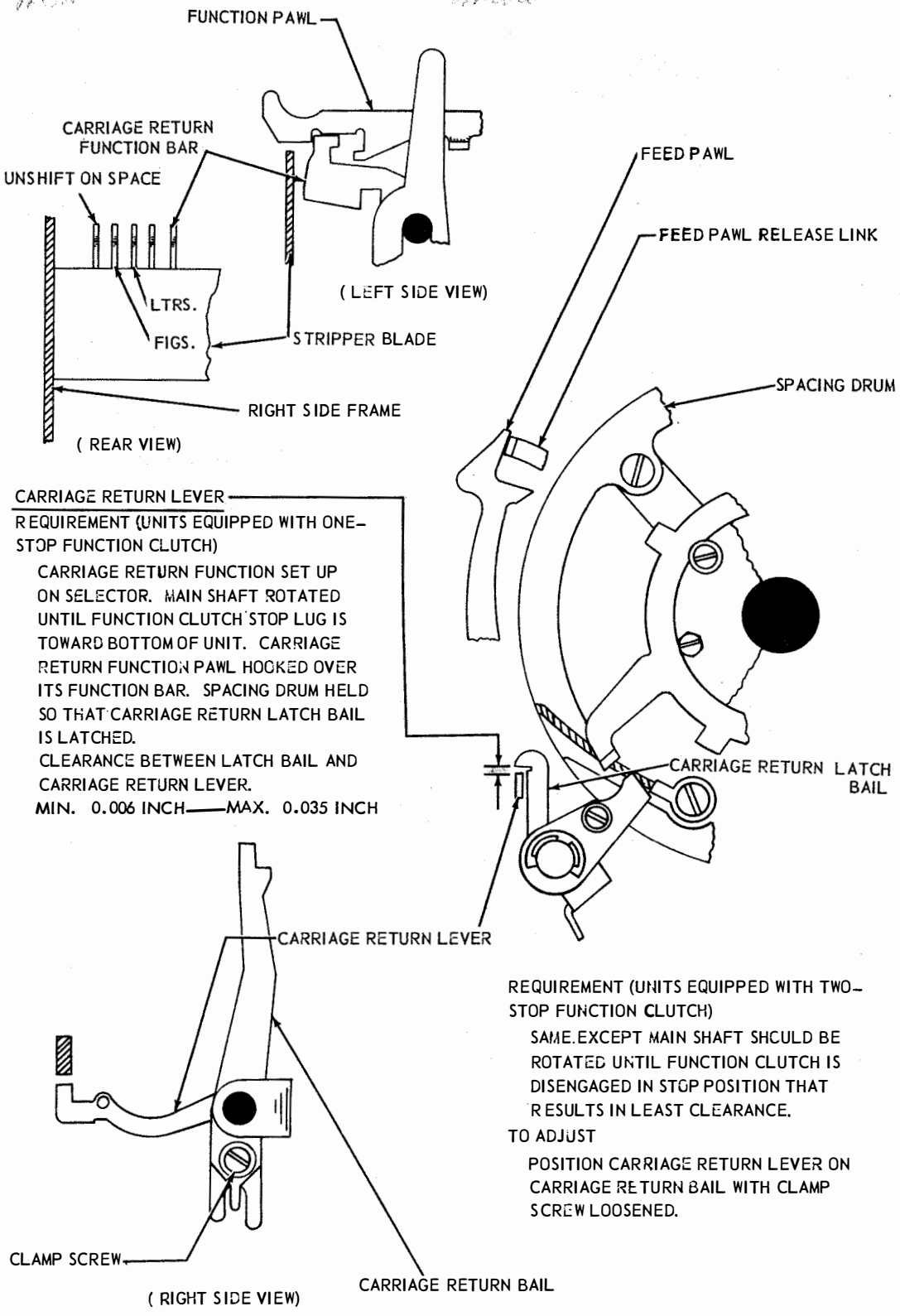


FIGURE 1-51 TYPING UNIT, CARRIAGE RETURN MECHANISM

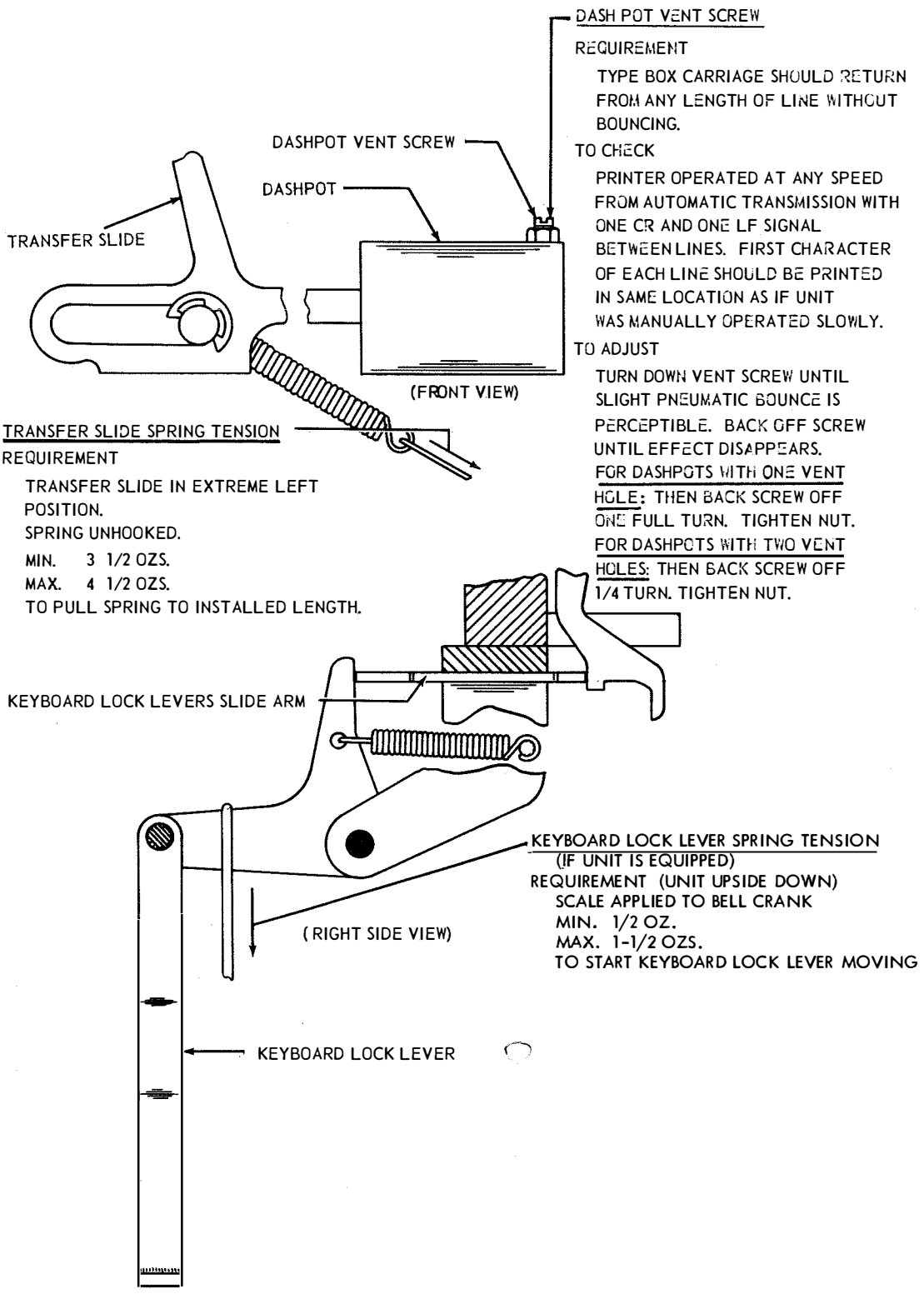
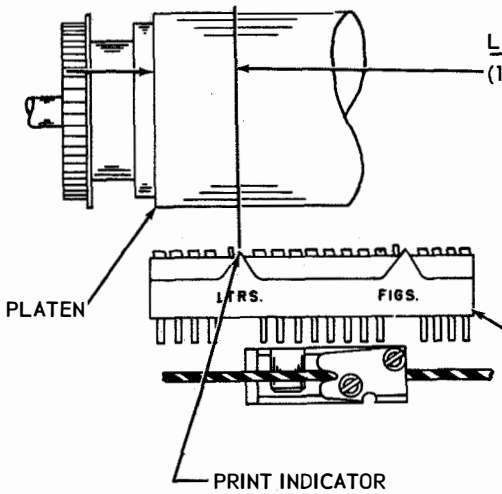


FIGURE 1-52 TYPING UNIT, DASHPOT AND KEYBOARD LOCK MECHANISMS

PRINTING CARRIAGE POSITION
USE STANDARD ADJUSTMENT
(FIGURE 1-57)

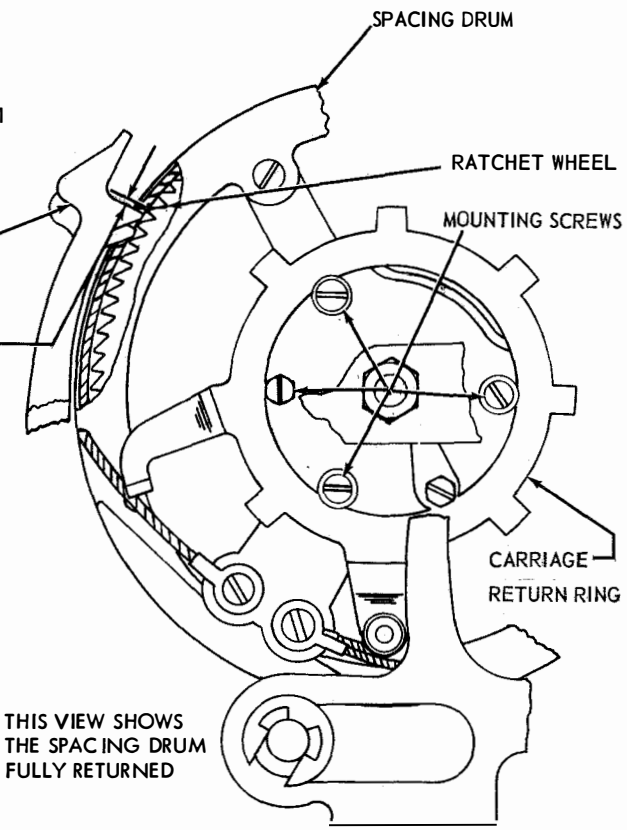


LEFT MARGIN

(1) REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. SPACING DRUM IN RETURNED POSITION. TYPE BOX SHIFTED TO LETTERS POSITION.
CLEARANCE BETWEEN LEFT EDGE OF PLATEN AND LETTERS PRINT INDICATOR.
MIN. 15/16 INCH MAX. 1-1/16 INCH

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-31



(2) REQUIREMENT

SPACING CLUTCH DISENGAGED. FRONT SPACING FEED PAWL FARTHEST ADVANCED. SPACING DRUM FULLY RETURNED. PLAY IN SPACING SHAFT GEAR (FIG. 1-36) TAKEN UP CLOCKWISE.
CLEARANCE BETWEEN PAWL AND SHOULDER OF RATCHET WHEEL TOOTH IMMEDIATELY AHEAD
MIN. 0.002 INCH
MAX. 0.015 INCH

(3) REQUIREMENT

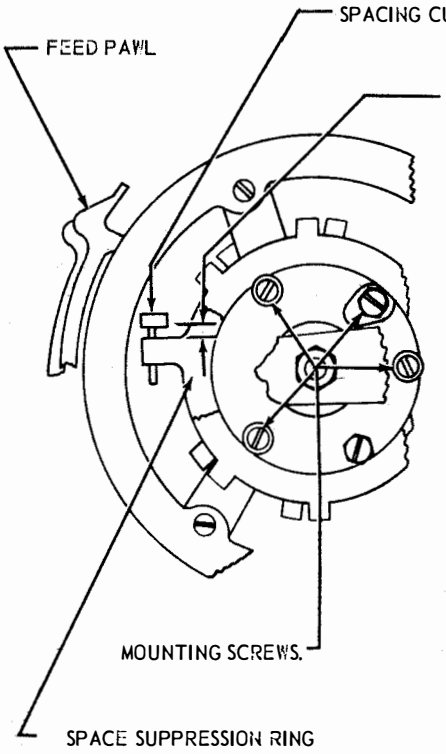
REAR PAWL, WHEN FARTHEST ADVANCED, SHOULD REST AT BOTTOM OF INDENTATION BETWEEN RATCHET WHEEL TEETH.

TO ADJUST

SHIFT TYPE BOX TO LETTERS POSITION. RETURN PRINT CARRIAGE TO ITS LEFT POSITION. LOOSEN FOUR INDICATED CARRIAGE RETURN RING MOUNTING SCREWS. HOLD CARRIAGE RETURN RING IN ITS COUNTER-CLOCKWISE POSITION. LOCATE TYPE BOX SO ITS LTRS INDICATOR IS IN THE REQUIRED POSITION. TIGHTEN THE FOUR MOUNTING SCREWS.

NOTE: THE MARGIN MAY BE VARIED AS REQUIRED. RANGE OF ADJUSTMENT IS 0 TO 85 CHARACTERS.

FIGURE 1-53 TYPING UNIT, CARRIAGE RETURN MECHANISM



RIGHT MARGIN

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. CARRIAGE IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUTOUT IS TO OCCUR. FRONT FEED PAWL FARTHEST ADVANCED. SPACING CUTOUT TRANSFER BAIL HELD IN ITS UPPERMOST POSITION.

CLEARANCE BETWEEN EXTENSION ON SPACE SUPPRESSION RING AND TRANSFER BAIL

MIN. 0.006 INCH——MAX. 0.025 INCH

TO ADJUST

POSITION SPACE SUPPRESSION RING WITH FOUR INDICATED MOUNTING SCREWS LOOSENED.

NOTE

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

(2) ON UNITS EQUIPPED WITH AUTOMATIC CARRIAGE RETURN – LINE FEED RING, THIS ADJUSTMENT IS NOT APPLICABLE. (SEE FIGURE 1-71)

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-32

FIGURE 1-54 TYPING UNIT, SPACE SUPPRESSION

DECELERATING SLIDE SPRING TENSION

REQUIREMENT

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

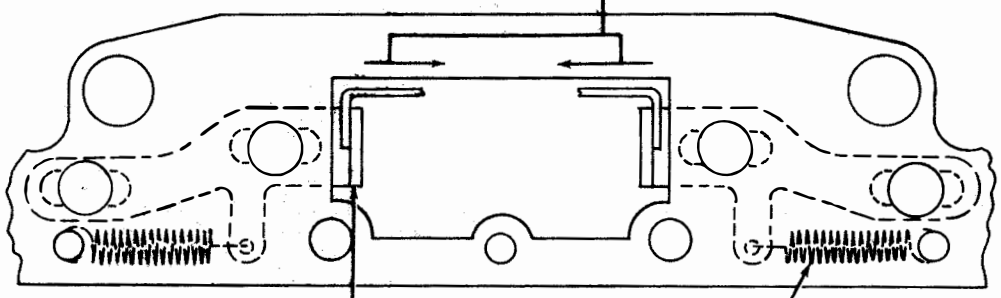
MIN. 1/2 OZ.

MAX. 1 1/2 OZS.

TO START THE SLIDE MOVING.

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

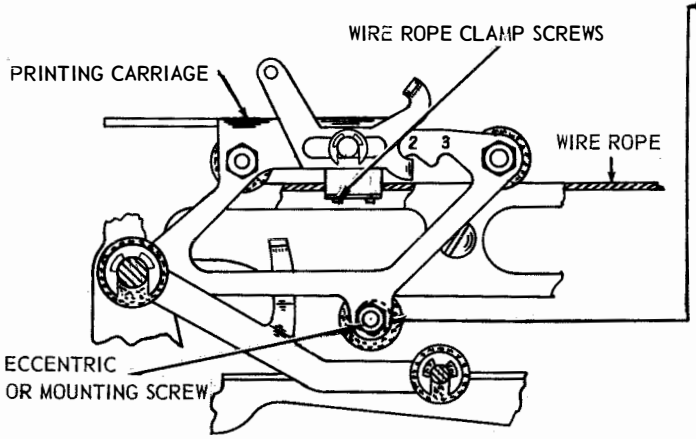
CHECK THE LEFT HAND DECELERATING SLIDE SPRING



DECELERATING SLIDE

DECELERATING SLIDE SPRING

FIGURE 1-55 TYPING UNIT, DECELERATING SLIDE (FRONT VIEW)



PRINTING CARRIAGE LOWER ROLLER

REQUIREMENT

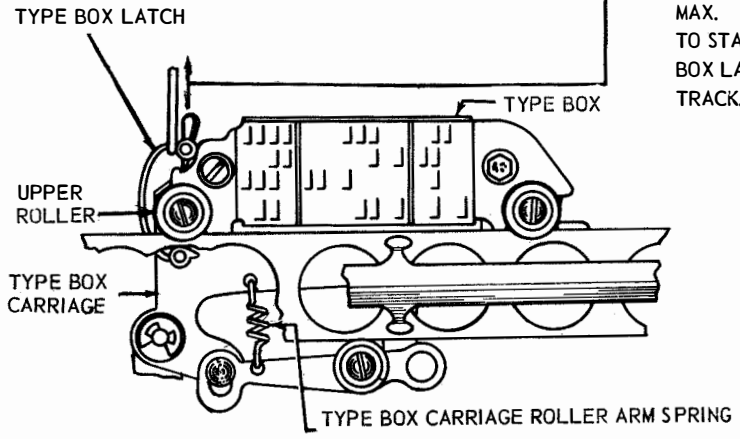
CARRIAGE WIRE ROPE CLAMP SCREWS LOOSENED. PLAY OF CARRIAGE ON TRACK-MIN. WITHOUT BIND, THROUGHOUT TRACK'S FULL LENGTH

TO ADJUST (ECCENTRIC BUSHING)

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

TO ADJUST (SLIDING SCREW)

POSITION LOWER ROLLER WITH MOUNTING SCREW LOOSENED.



TYPE BOX CARRIAGE ROLLER ARM SPRING

REQUIREMENT

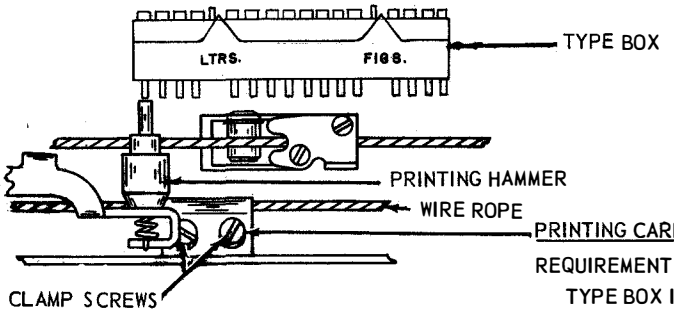
MIN. 28 OZS.

MAX. 36 OZS.

TO START UPPER ROLLER, NEAREST TYPE BOX LATCH, MOVING AWAY FROM CARRIAGE TRACK.

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-33

FIGURE 1-56 TYPING UNIT, PRINTING AND TYPE BOX CARRIAGE



(TOP VIEW)

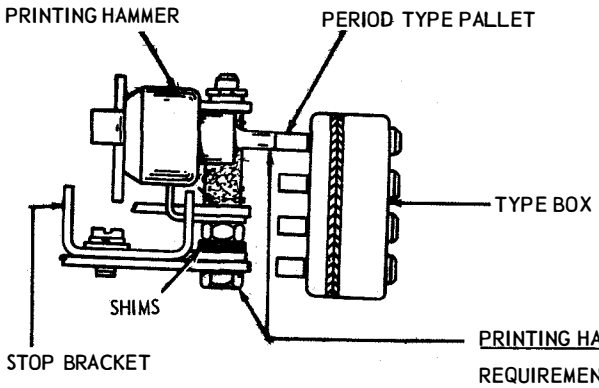
PRINTING CARRIAGE POSITION

REQUIREMENT

TYPE BOX IN LETTERS POSTION.M TYPE PALLET SELECTED. TYPE BOX IN PRINTING POSITION. M TYPE PALLET SHOULD BE APPROXIMATELY IN CENTER OF PRINTING HAMMER WHEN HAMMER IS JUST TOUCHING M TYPE PALLET.

TO ADJUST

POSITION PRINTING CARRIAGE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED.



(RIGHT SIDE VIEW)

PRINTING HAMMER BEARING STUD

REQUIREMENT

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

TO ADJUST

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

FIGURE 1-57 TYPING UNIT, PRINTING CARRIAGE

(A) SHIFT LINKAGE

REQUIREMENT

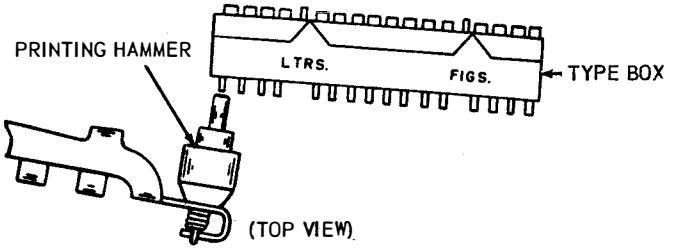
CARRIAGE NEAR MIDPOINT OF PLATEN. TYPE BOX IN POSITION TO PRINT M. MANUALLY BUCKLE RIGHT SHIFT LINKAGE. SHIFT TYPE BOX TO LEFT. PERIOD TYPE PALLET SHOULD BE APPROXIMATELY IN CENTER OF PRINT HAMMER WHEN HAMMER IS JUST TOUCHING PERIOD TYPE PALLET

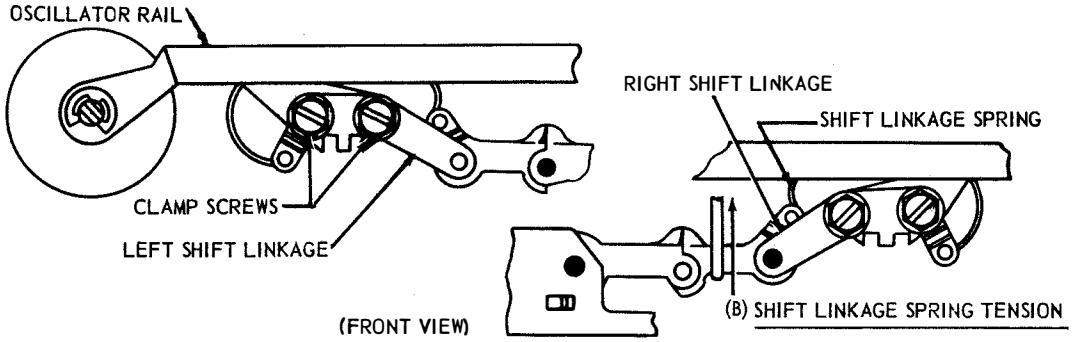
TO ADJUST

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

TO RECHECK

SHIFT ALTERNATELY FROM M TO PERIOD. TAKE UP PLAY IN EACH DIRECTION. REFINE ADJUSTMENT IF NECESSARY.





(B) SHIFT LINKAGE SPRING TENSION

REQUIREMENT

LINK IN STRAIGHT POSITION

MIN. 7 OZS.

MAX. 14 OZS.

TO START EACH LINK MOVING.

NOTE: FOR SHIFT MECHANISMS WITH TORSION SPRINGS SEE FIGURE 4-34

FIGURE 1-58 TYPING UNIT, SHIFT MECHANISM

(A) PRINTING TRACK

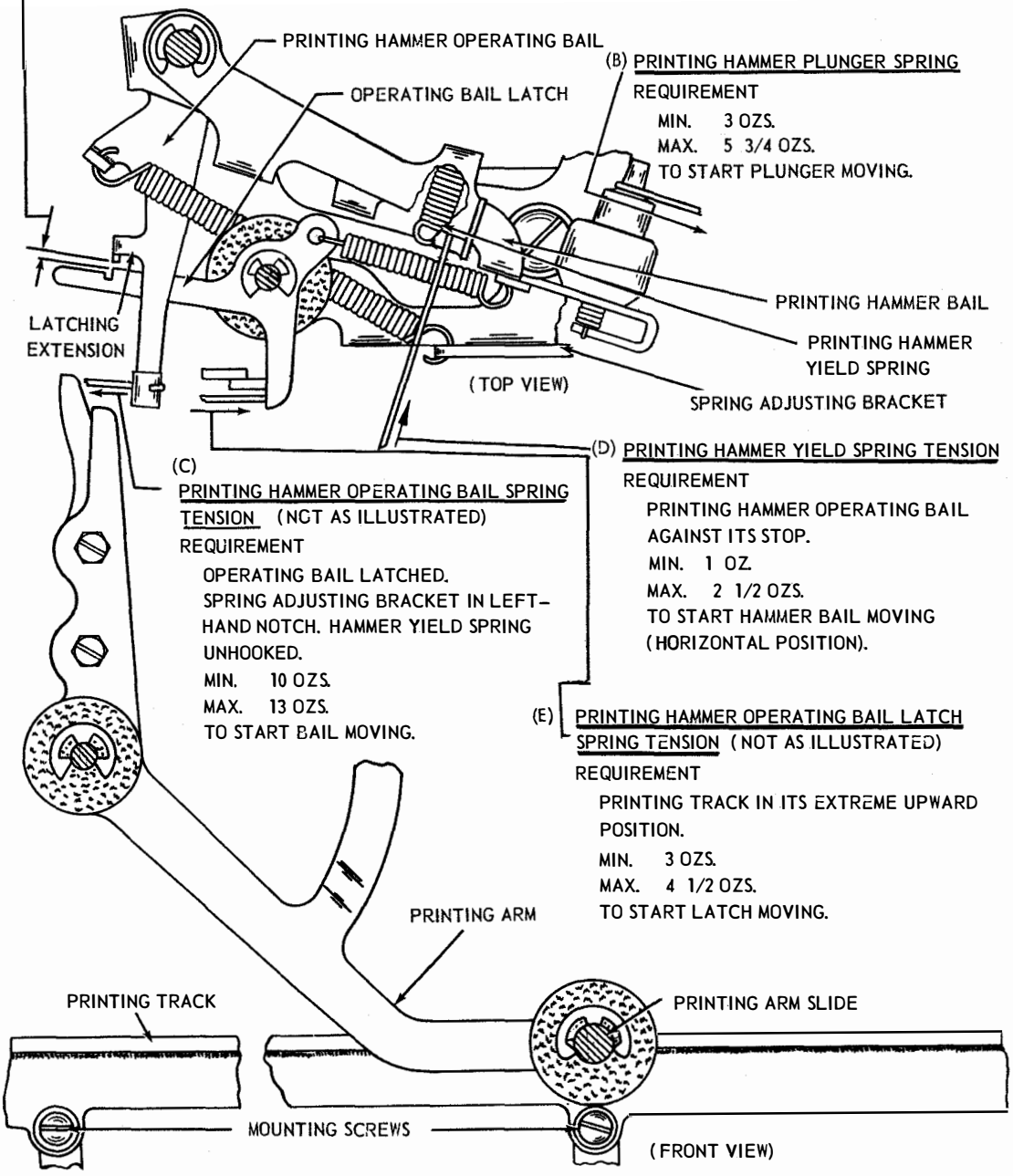
REQUIREMENT

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

MIN. 0.015 INCH
MAX. 0.040 INCH

TO ADJUST

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



(B) PRINTING HAMMER PLUNGER SPRING

REQUIREMENT

MIN. 3 OZS.
MAX. 5 3/4 OZS.
TO START PLUNGER MOVING.

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

REQUIREMENT

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

MIN. 10 OZS.
MAX. 13 OZS.
TO START BAIL MOVING.

(D) PRINTING HAMMER YIELD SPRING TENSION

REQUIREMENT

PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP.

MIN. 1 OZ.
MAX. 2 1/2 OZS.
TO START HAMMER BAIL MOVING (HORIZONTAL POSITION).

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

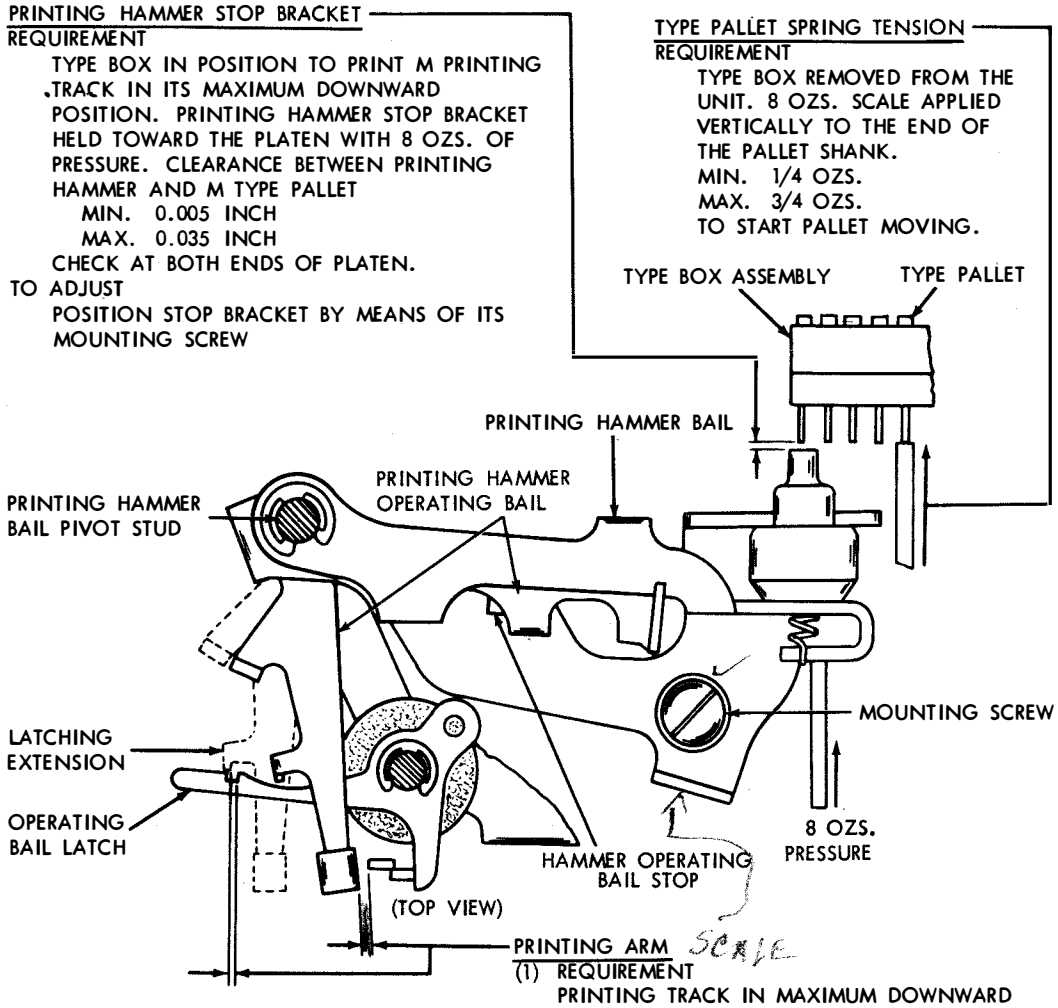
REQUIREMENT

PRINTING TRACK IN ITS EXTREME UPWARD POSITION.

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

FIGURE 1-59 TYPING UNIT, PRINTING MECHANISM

May not print if misadjusted
May print light



NOTE

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

NOTE:
FOR EARLIER DESIGN SEE FIGURE 4-35

FIGURE 1-60 TYPING UNIT, PRINTING MECHANISM

This can cause upper portion or Bottom ... light or heavy

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

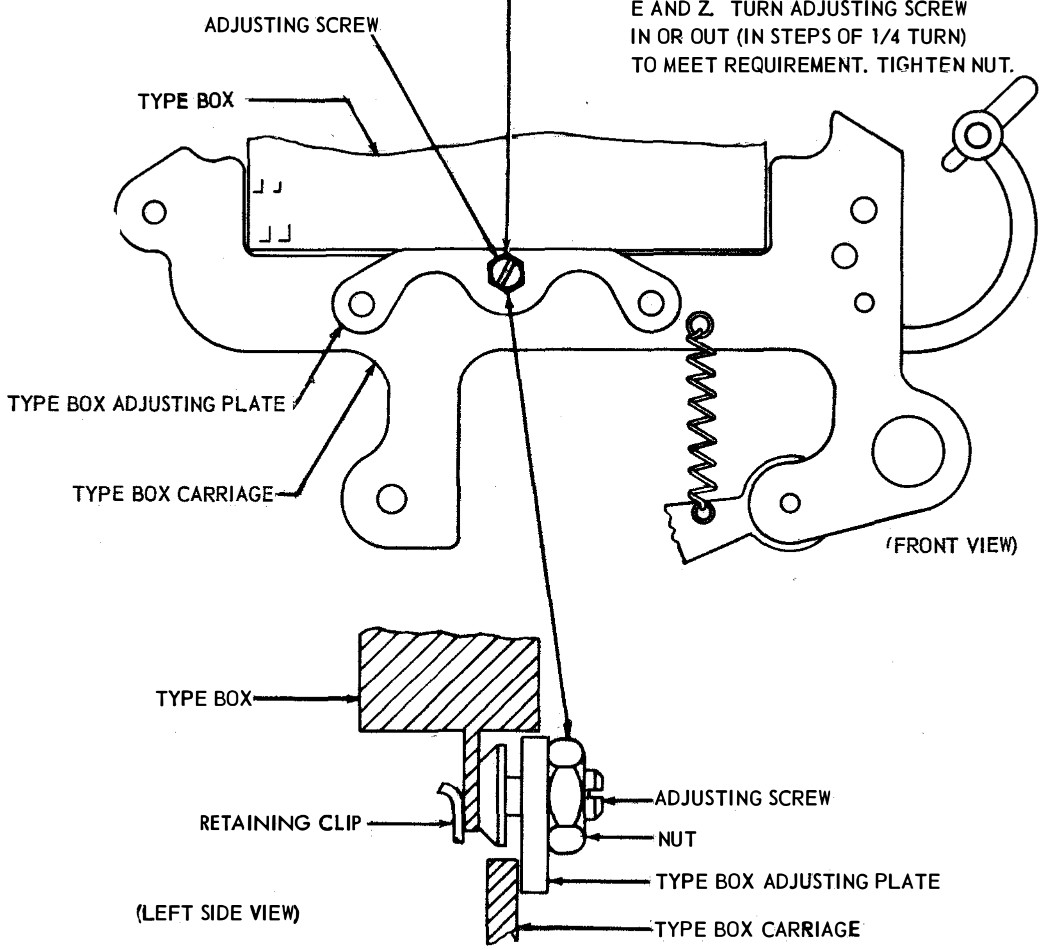
TYPE BOX ALIGNMENT

REQUIREMENT

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

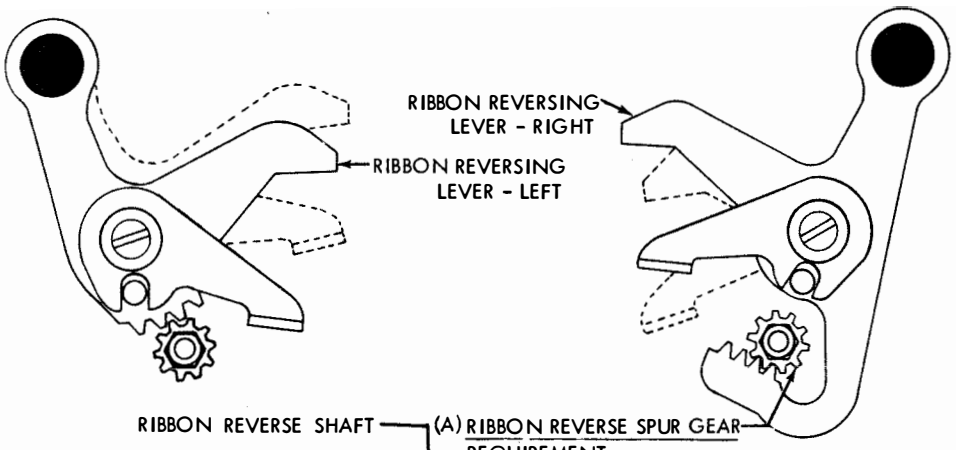
TO ADJUST

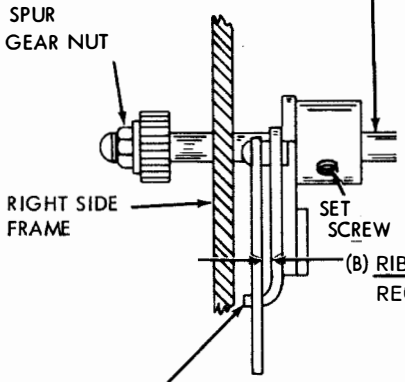
LOOSEN NUT. OPERATE PRINTER UNDER POWER. REPEAT CHARACTERS E AND Z. TURN ADJUSTING SCREW IN OR OUT (IN STEPS OF 1/4 TURN) TO MEET REQUIREMENT. TIGHTEN NUT.



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

FIGURE 1-61 TYPING UNIT, TYPE BOX





(A) RIBBON REVERSE SPUR GEAR

REQUIREMENT

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

TO ADJUST

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

(B) RIBBON REVERSE DETENT

REQUIREMENT

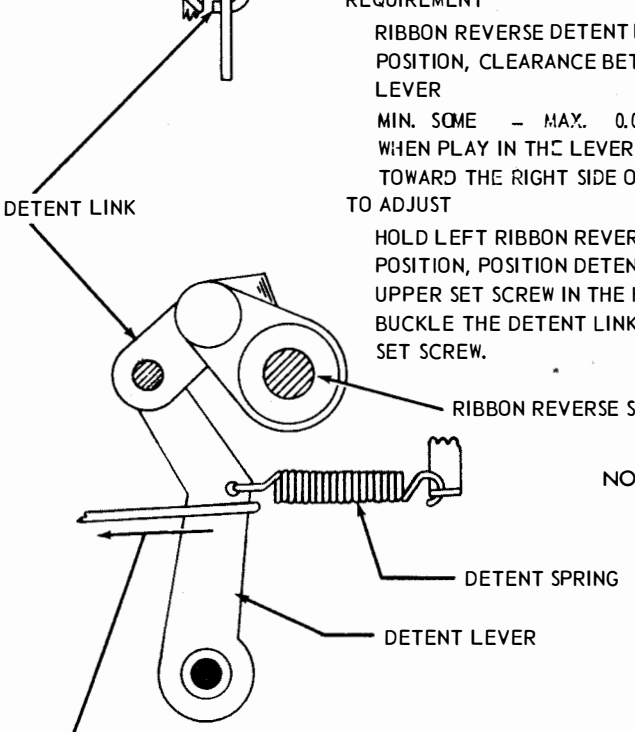
RIBBON REVERSE DETENT LINK BUCKLED IN ITS DOWNWARD POSITION, CLEARANCE BETWEEN DETENT LINK AND DETENT LEVER

MIN. SOME – MAX. 0.040 INCH

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

TO ADJUST

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



NOTE: FOR EARLIER DESIGN SEE FIGURE 4-36

(C) RIBBON REVERSE DETENT LEVER SPRING TENSION

(IF UNIT IS EQUIPPED)

REQUIREMENT

DETENT LINK BUCKLED IN UPWARD POSITION

MIN. 10 OZS.
MAX. 18 OZS.

TO START DETENT LEVER MOVING TOWARD REAR.

FIGURE 1-62 TYPING UNIT, RIBBON REVERSE MECHANISM

RIBBON FEED LEVER BRACKET

(1) REQUIREMENT (LEFT-HAND MECHANISM)

LEFT REVERSING LEVER IN UPWARD POSITION.
RIBBON MECHANISM IN UPPER POSITION.
RATCHET WHEEL HELD AGAINST THE DETENT LEVER.
CLEARANCE BETWEEN THE FRONT FACE OF THE FEED LEVER AND THE SHOULDER OF A TOOTH ON THE RATCHET WHEEL

MIN. 0.020 INCH
MAX. 0.030 INCH

TO ADJUST

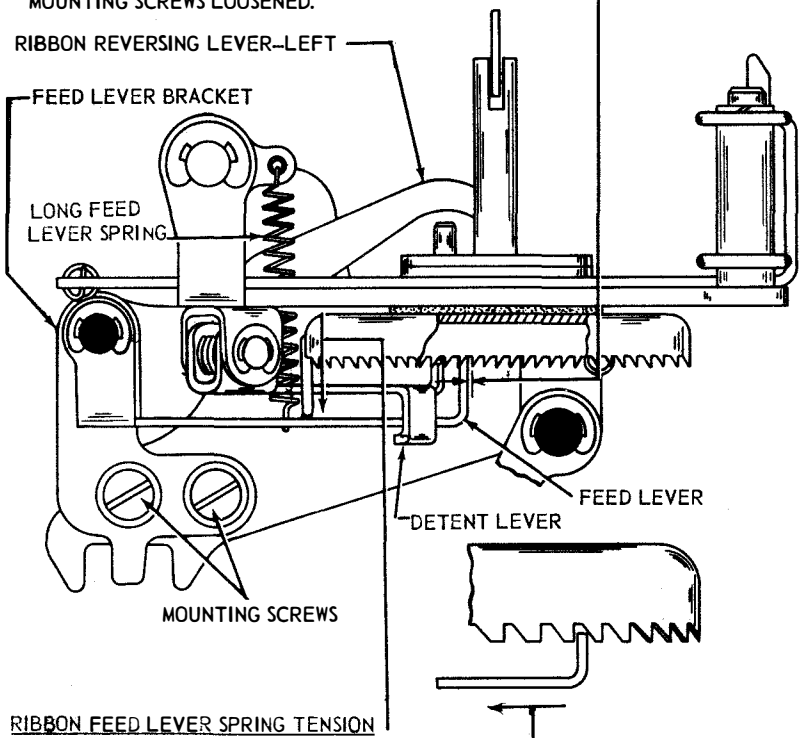
POSITION THE FEED LEVER BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

(2) REQUIREMENT (RIGHT-HAND MECHANISM)

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

NOTE

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



RIBBON FEED LEVER SPRING TENSION

REQUIREMENT

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

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

RIBBON RATCHET WHEEL FRICTION SPRING TENSION

REQUIREMENT

FEED LEVERS DISENGAGED.
MIN. 3 OZS.
MAX. 7 1/2 OZS.
TO START THE RATCHET WHEEL MOVING.

FIGURE 1-63 TYPING UNIT, RIBBON FEED MECHANISM, LEFT SIDE VIEW

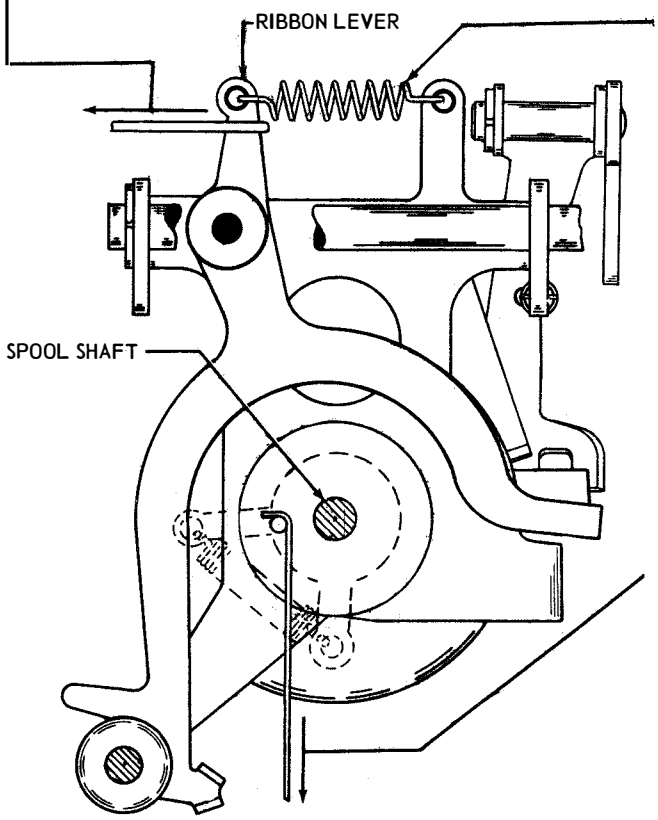
RIBBON LEVER SPRING TENSION

REQUIREMENT

MIN. 1 1/2 OZS.

MAX. 3 OZS.

TO START THE LEVER MOVING. CHECK BOTH RIGHT AND LEFT SPRINGS



RIBBON TENSION SPRING

REQUIREMENT

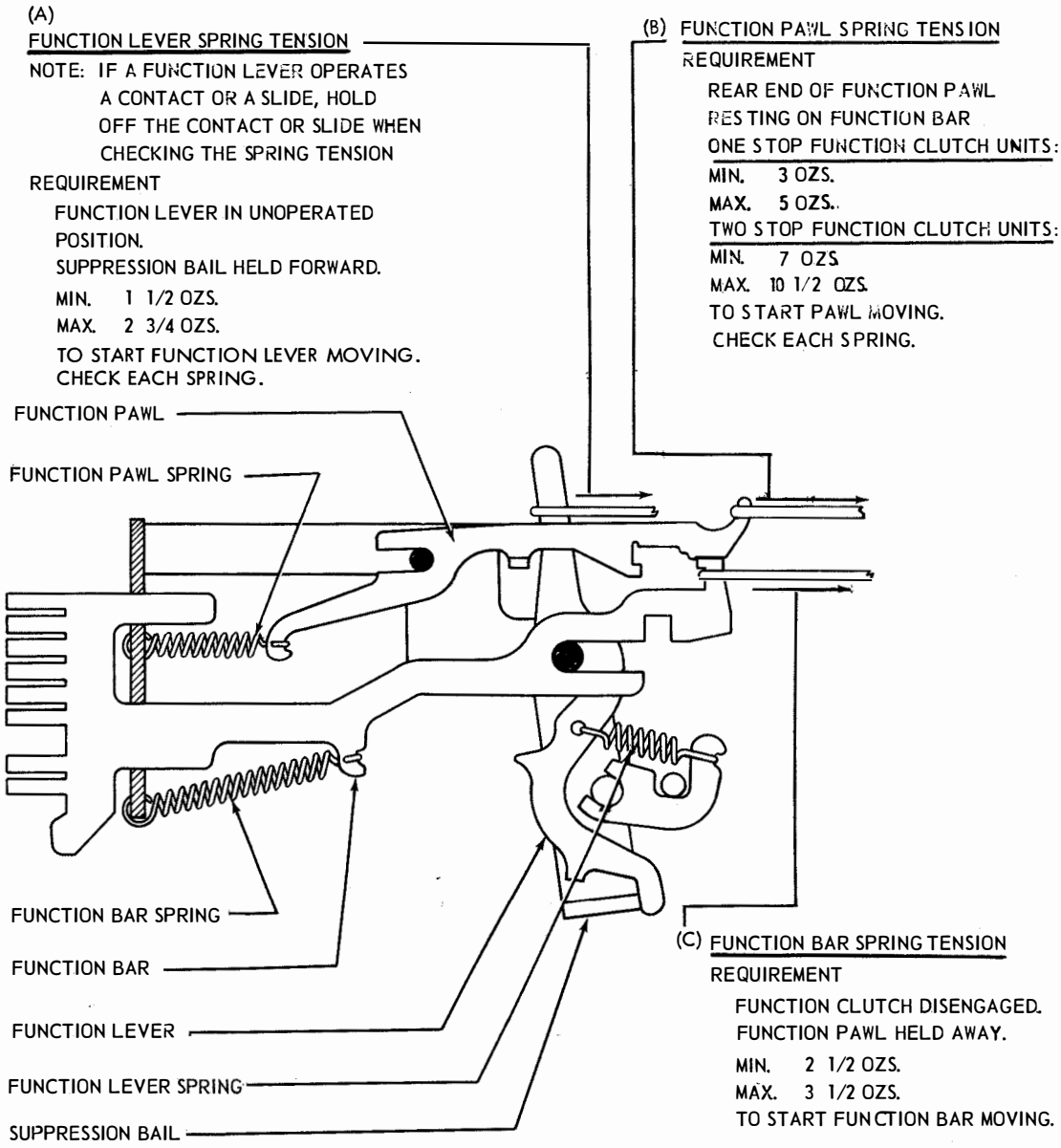
RIBBON RATCHET WHEEL POSITIONED SO THAT EACH DRIVING PIN IS TOWARD THE OUTSIDE OF THE SPOOL SHAFT.

MIN. 3 OZS.

MAX. 5 1/2 OZS.

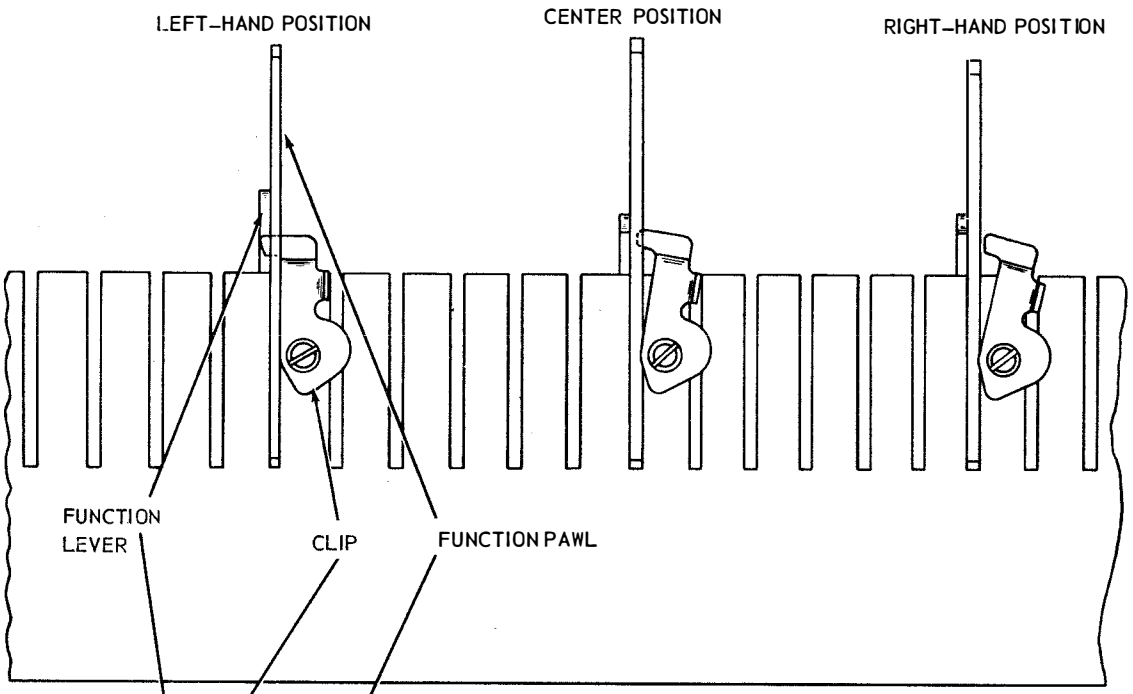
TO START SPOOL SHAFT MOVING.

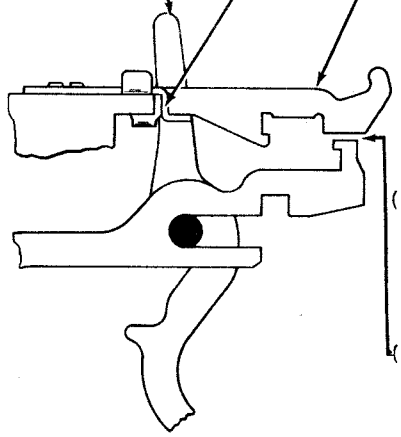
FIGURE 1-64 TYPING UNIT, RIBBON REVERSE MECHANISM, TOP VIEW



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

FIGURE 1-65 TYPING UNIT, STUNT BOX MECHANISM





STUNT BOX CLIP (FOR UNITS EQUIPPED WITH CLIPS ONLY)

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

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

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

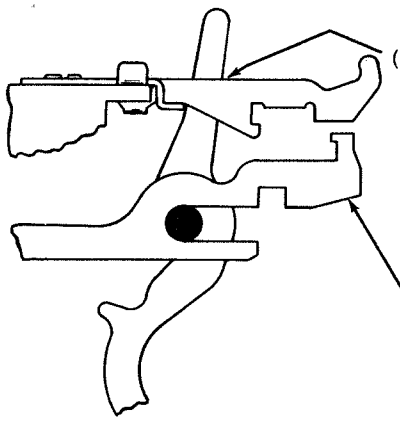


FIGURE 1-66 TYPING UNIT, STUNT BOX MECHANISM

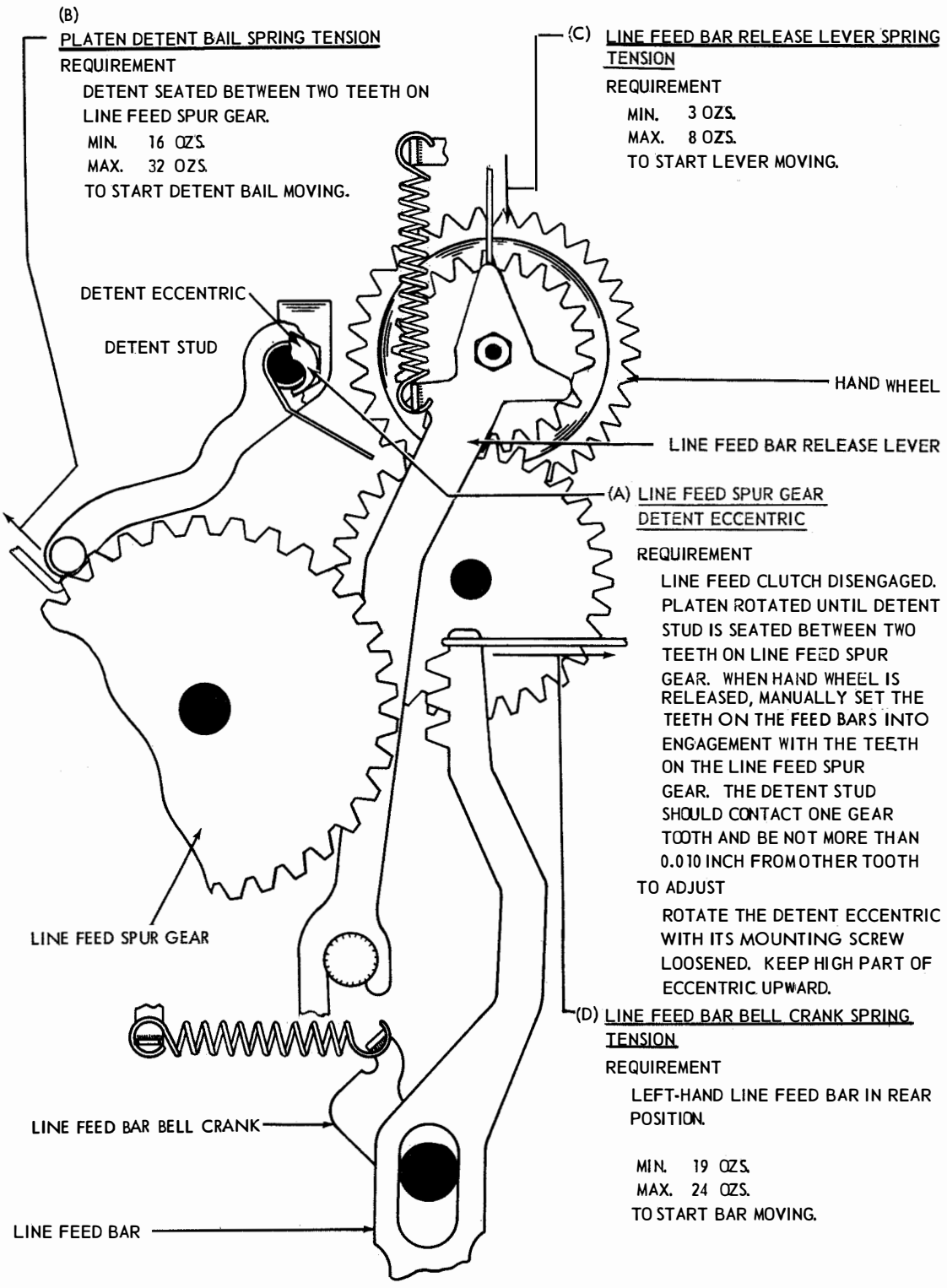


FIGURE 1-67 TYPING UNIT, LINE FEED MECHANISM, RIGHT SIDE

STRIPPER BLADE DRIVE CAM POSITION

REQUIREMENT

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

A. UPWARD DIRECTION

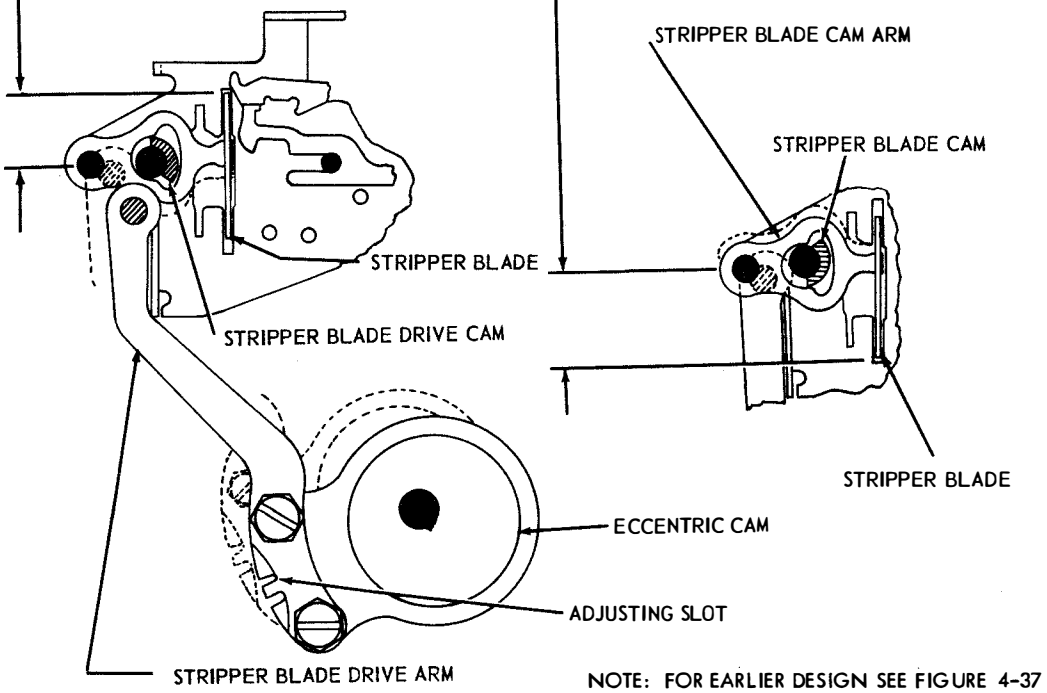
B. DOWNWARD DIRECTION

TO CHECK

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

TO ADJUST

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



NOTE: FOR EARLIER DESIGN SEE FIGURE 4-37

FIGURE 1-68 TYPING UNIT, FUNCTION PAWL STRIPPER

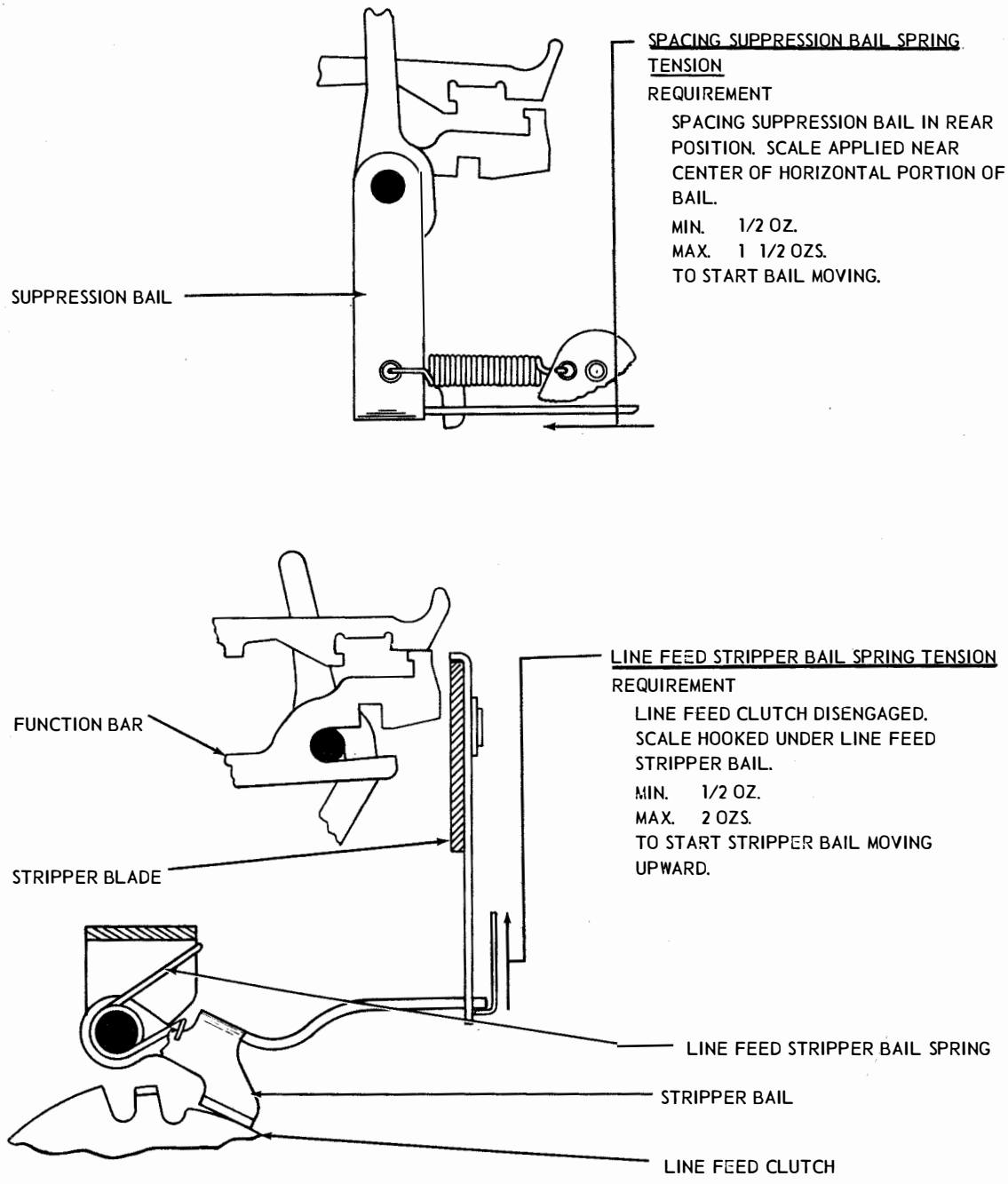


FIGURE 1-69. TYPING UNIT, SPACING SUPPRESSION AND FUNCTION PAWL STRIPPER MECHANISMS

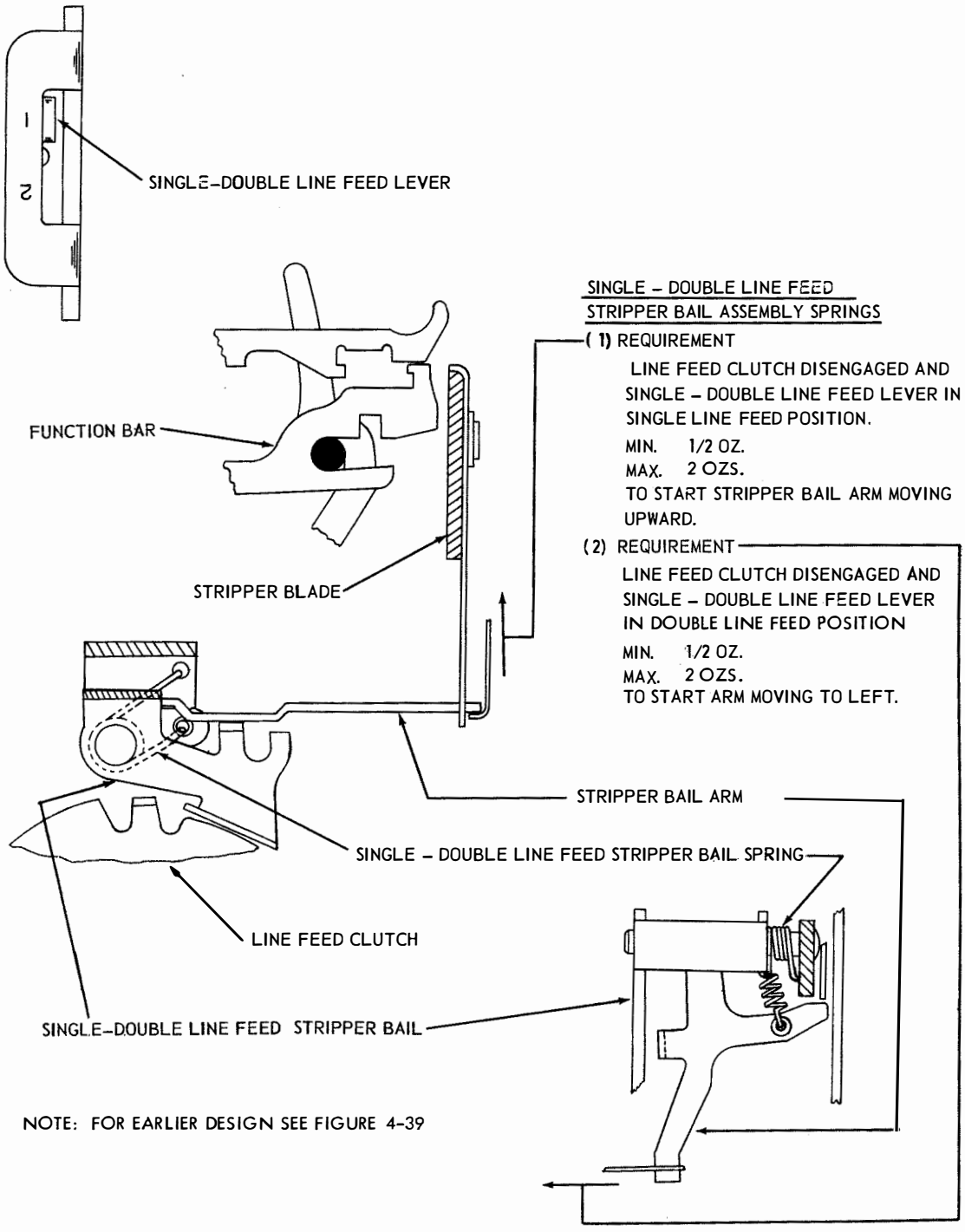
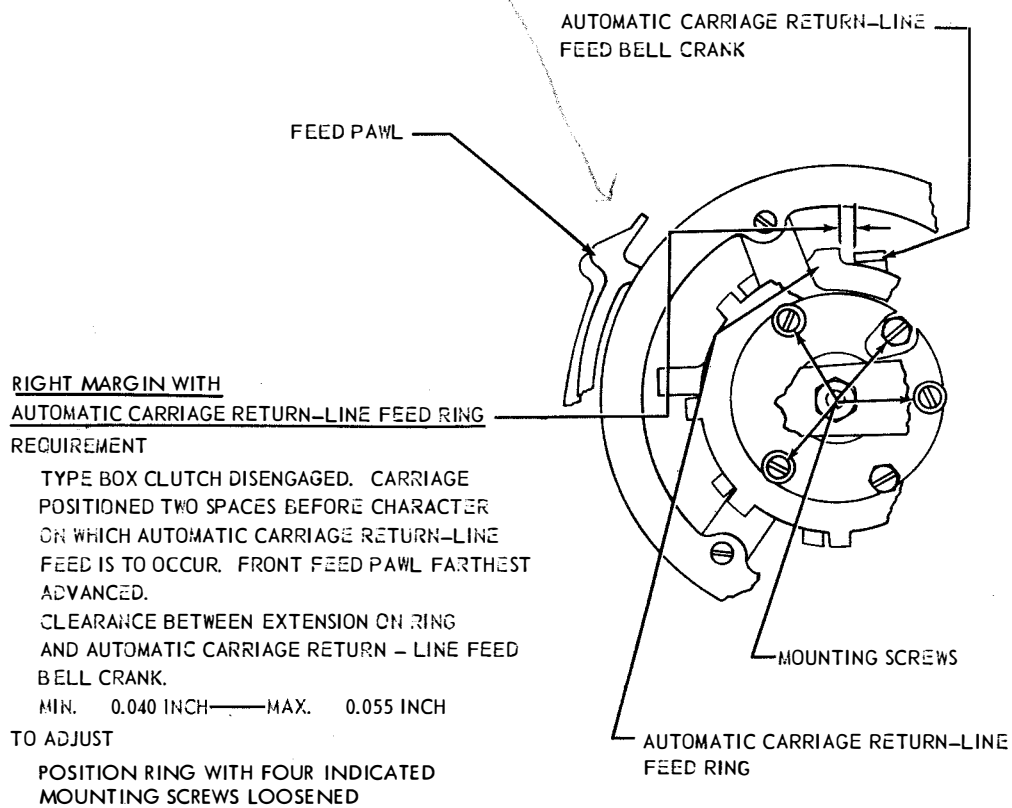
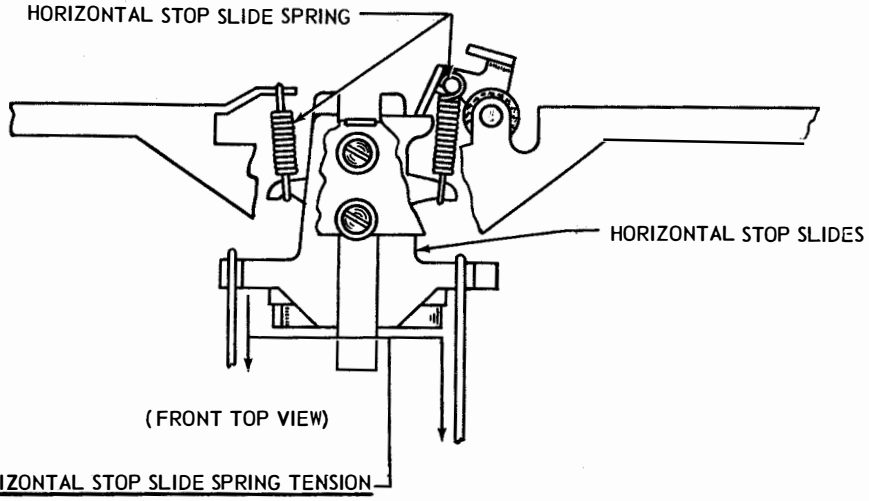


FIGURE 1-70 TYPING UNIT, SINGLE–DOUBLE LINE FEED MECHANISM



NOTE: FOR ADJUSTMENT ON EARLIER MODELS SEE FIGURE 4-38

FIGURE 1-71 TYPING UNIT, AUTOMATIC CARRIAGE RETURN-LINE FEED MECHANISM

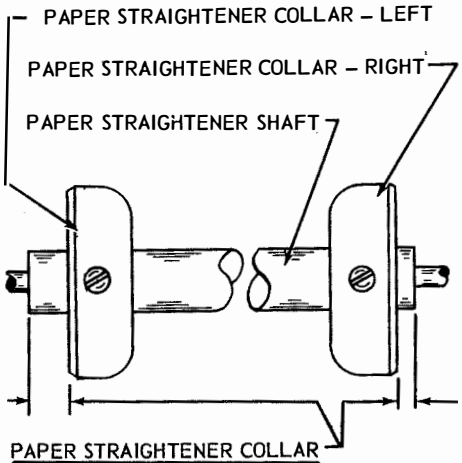


HORIZONTAL STOP SLIDE SPRING TENSION

REQUIREMENT

CODE BARS IN MARKING POSITION (LEFT)
TYPE BOX CLUTCH ROTATED 1/4 TURN FROM ITS STOP POSITION
HORIZONTAL MOTION DECELERATING SLIDES (FIG. 1-46) HELD AWAY FROM HORIZONTAL STOP SLIDES
MIN. 1/2 OZ. MAX. 1 1/2 OZS. FOR UPPER AND LOWER SLIDES
MIN. 1 3/4 OZS. MAX. 3 OZS. FOR MIDDLE SLIDE
TO START SLIDE MOVING.
NOTE: WHEN CHECKING UPPER AND LOWER SLIDES, HOLD MIDDLE SLIDE 1/32 INCH FORWARD.

FIGURE 1-72 TYPING UNIT, HORIZONTAL MOTION STOP



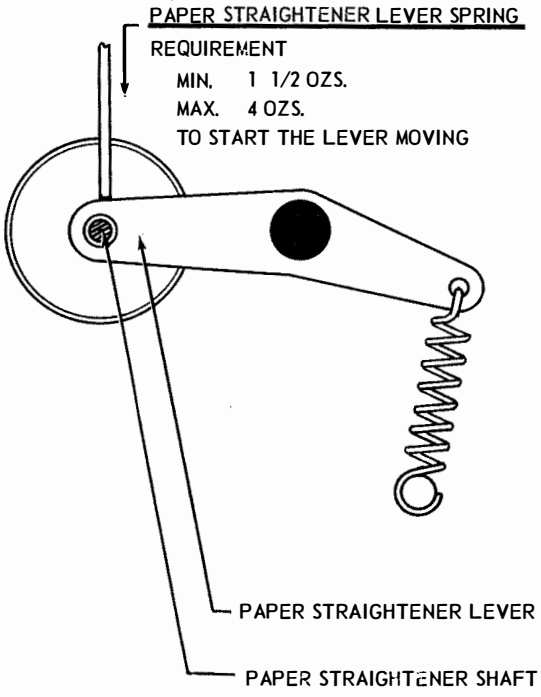
PAPER STRAIGHTENER COLLAR

REQUIREMENT

LEFT COLLAR SPACE
MIN. 9/32 INCH
MAX. 21/64 INCH
FROM THE LEFT SHOULDER ON THE PAPER STRAIGHTENER SHAFT.
RIGHT COLLAR SPACED.
MIN. 1/16 INCH
MAX. 5/64 INCH
FROM THE RIGHT SHOULDER.

TO ADJUST

POSITION COLLARS ON SHAFT WITH SET SCREWS LOOSENED

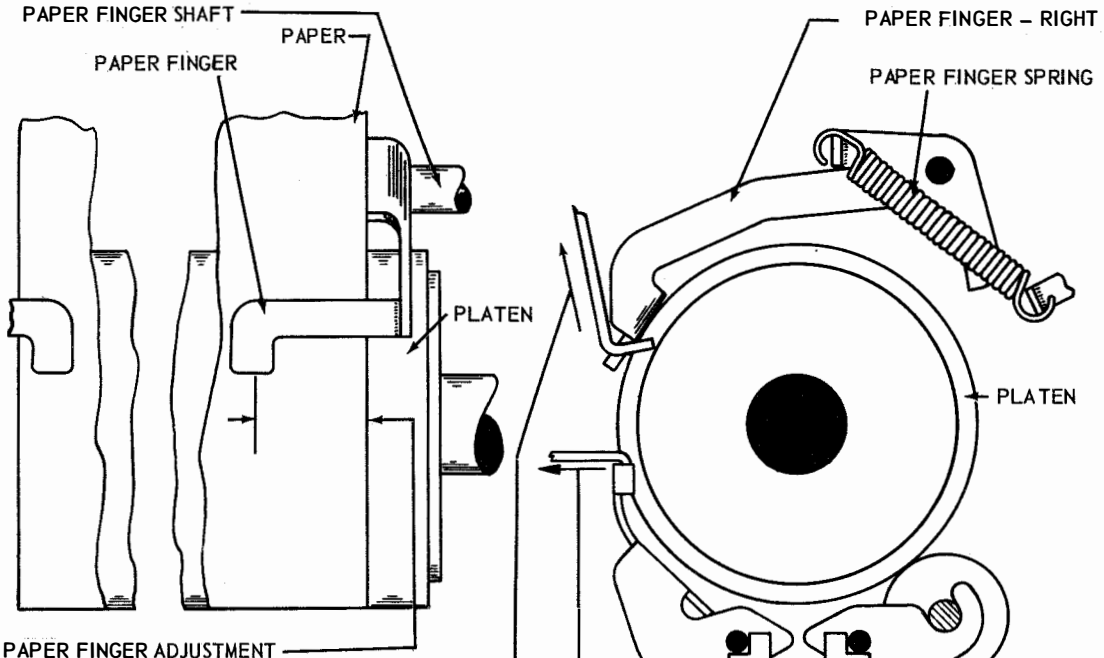


REQUIREMENT

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

NOTE: FOR SPROCKET FEED MECHANISM SEE SECTION 2

FIGURE 1-73 TYPING UNIT, PAPER MECHANISM



PAPER FINGER ADJUSTMENT

REQUIREMENT

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

TO ADJUST

POSITION THE PAPER FINGERS BY SLIDING THEM ON THEIR SHAFT.

PAPER FINGER SPRING TENSION

REQUIREMENT

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

MIN. 3 OZS.

MAX. 6 OZS.

PRESSURE ROLLER LEVER SPRING

REQUIREMENT

MIN. 28 OZS

MAX. 36 OZS.

TO START EACH CENTER LEVER MOVING. ALTERNATELY

PAPER PRESSURE BAIL SPRING TENSION

REQUIREMENT

SCALE HOOKED OVER PRESSURE BAIL AT EACH END OF PLATEN.

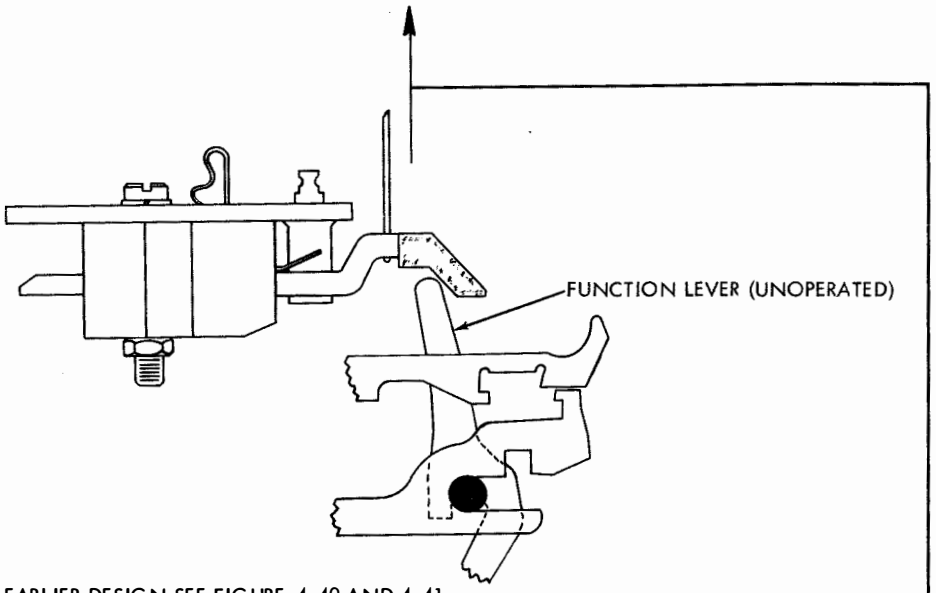
MIN. 10 OZS.

MAX. 20 OZS.

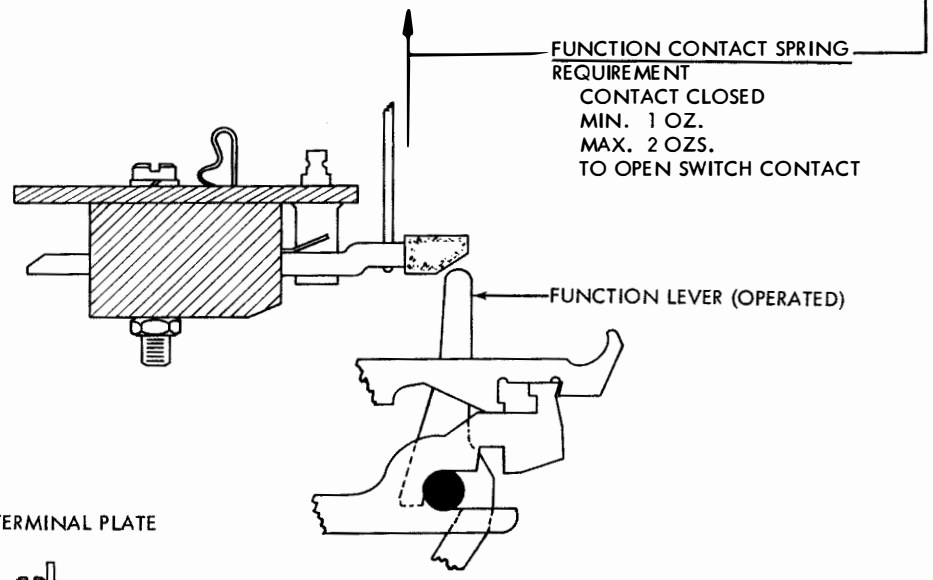
TO MOVE PRESSURE BAIL FROM PLATEN

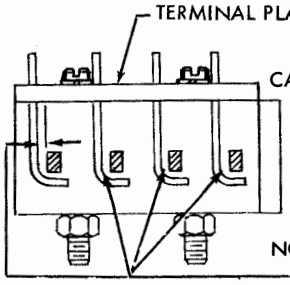
NOTE: FOR SPROCKET FEED MECHANISM SEE SECTION 2

FIGURE 1-74 PAPER MECHANISM



NOTE: FOR EARLIER DESIGN SEE FIGURE 4-40 AND 4-41





CAUTION: CARE SHOULD BE EXERCISED IN SOLDERING TO CONTACT SPRINGS SINCE EXCESSIVE HEAT WILL ANNEAL THE SPRINGS. CONTACT SPRINGS ONCE SOLDERED SHOULD NOT BE USED AGAIN. TO REPLACE A SPRING, REMOVE THE TWO SCREWS WHICH MOUNT THE SWITCH ASSEMBLY TO THE STUNT BOX. CLEAN SOLDER FROM SPRING. COMPRESS LOOP OF SPRING AND REMOVE FROM TERMINAL PLATE. PLACE NEW SPRING IN TERMINAL PLATE AND SNAP INTO PLACE. REPLACE TERMINAL PLATE. RESOLDER CABLE. DO NOT OVERHEAT.

NOTE: BEFORE TIGHTENING TERMINAL PLATE SCREWS PROVIDE A MINIMUM OF 0.006 INCH CLEARANCE HERE. APPLY GREASE TO INSULATOR AND LEVER.

FIGURE 1-75 TYPING UNIT, FUNCTION CONTACTS

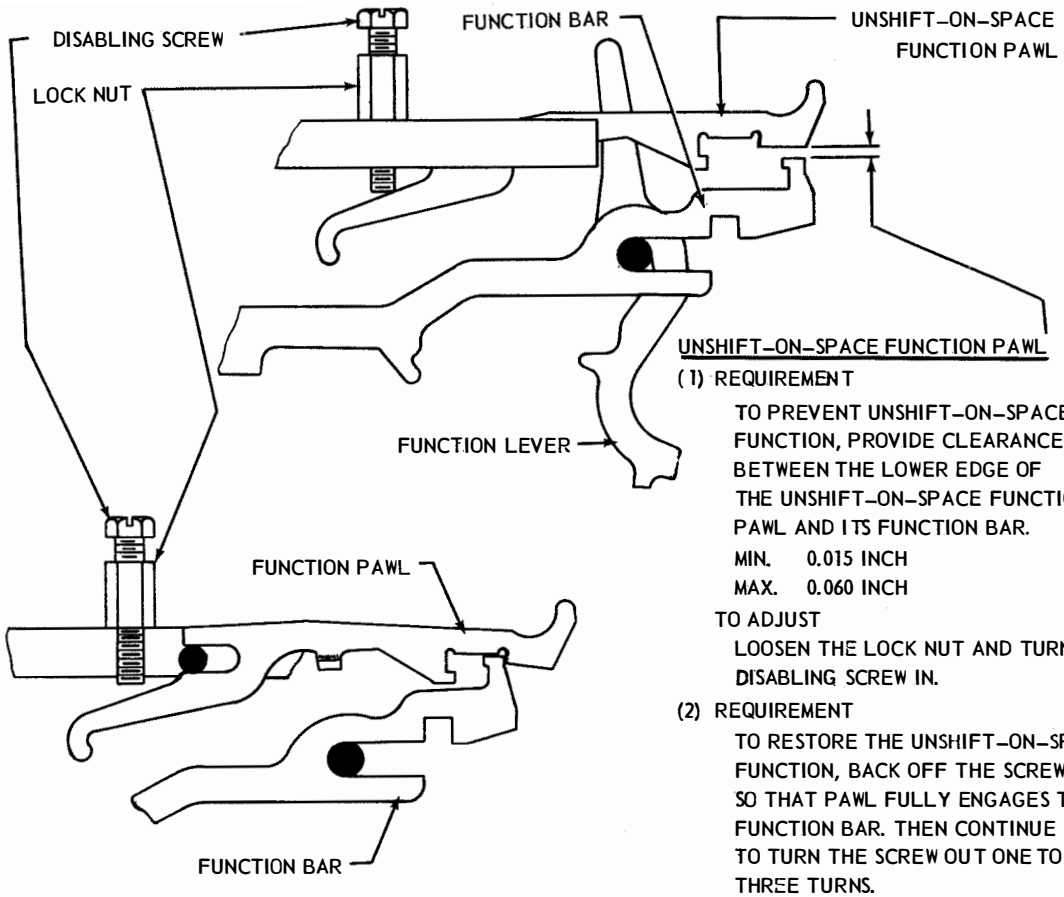


FIGURE 1-76 TYPING UNIT, UNSHIFT-ON-SPACE MECHANISM, LEFT SIDE VIEW

CODE BAR DETENT

REQUIREMENT

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

TO ADJUST

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

CODE BAR DETENT SPRING TENSION

NOTE

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

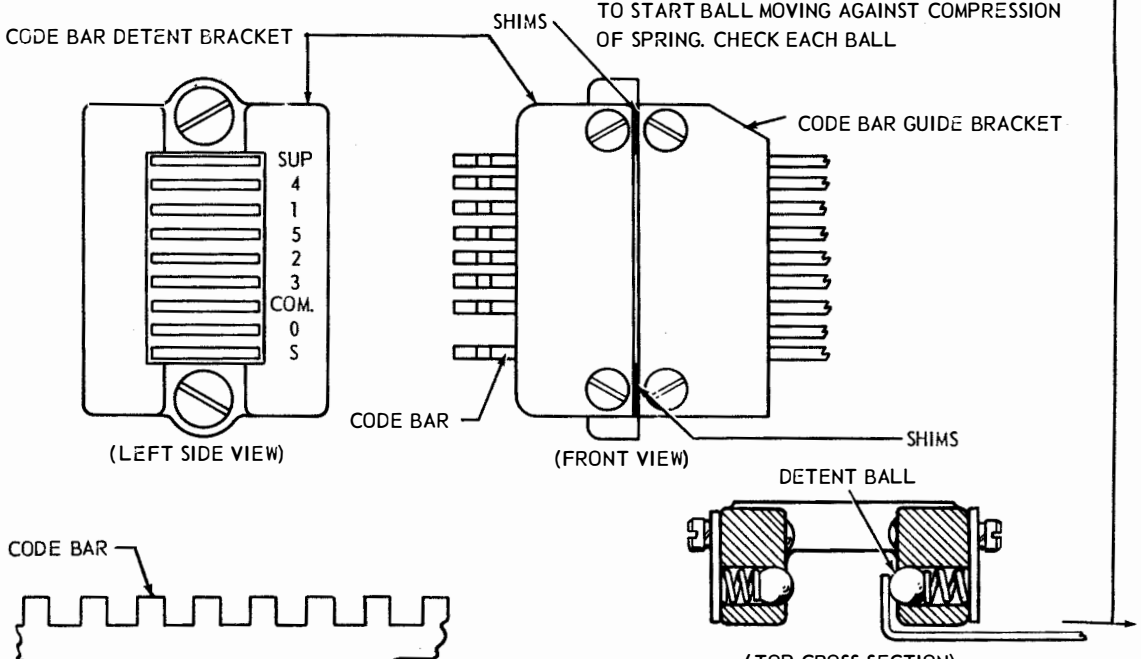
REQUIREMENT

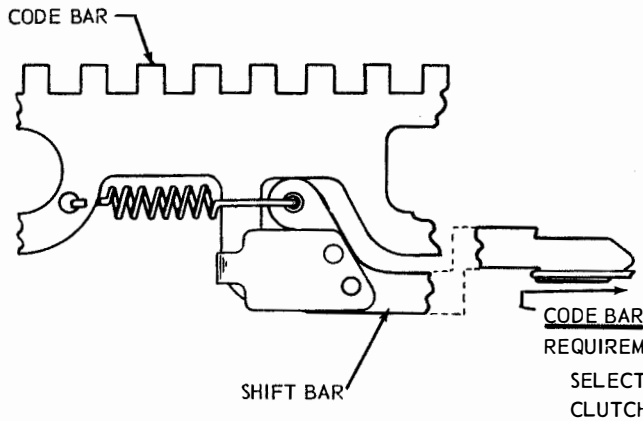
CODE BAR DETENT BRACKET CAREFULLY REMOVED AND CODE BARS REMOVED FROM DETENT BRACKET. SCALE APPLIED TO DETENT BALL AND PULLED IN DIRECTION OF BALL TRAVEL

MIN. 1 1/2 OZS.

MAX. 3 1/2 OZS.

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





CODE BAR YIELD SPRING (IF SO EQUIPPED)

REQUIREMENT

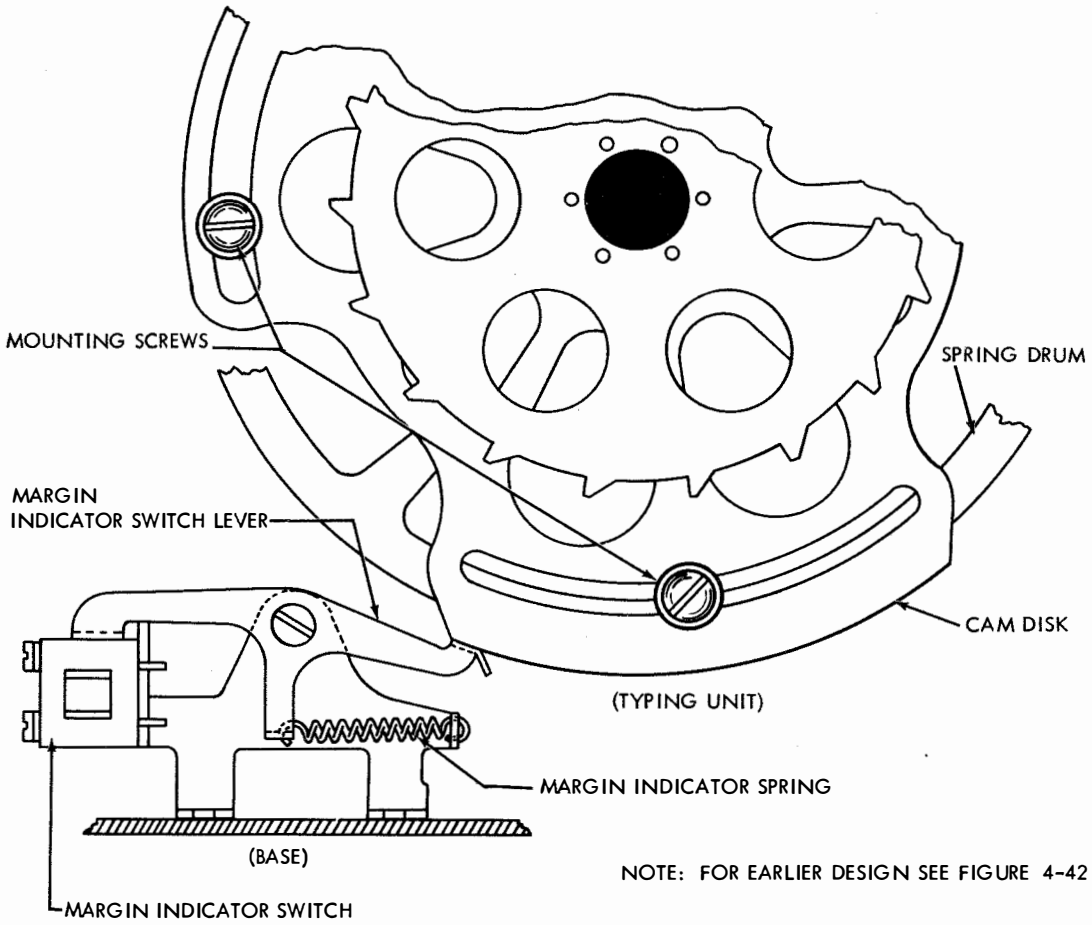
SELECTOR CLUTCH, CODE BAR CLUTCH, AND TYPE BOX CLUTCH DISENGAGED. NO. 1 CODE BAR IN SPACING POSITION

MIN. 17 OZS.

MAX. 23 OZS.

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

FIGURE 1-77 TYPING UNIT, CODE BAR DETENT MECHANISM



NOTE: FOR EARLIER DESIGN SEE FIGURE 4-42

MARGIN INDICATOR LAMP

REQUIREMENT

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

TO ADJUST

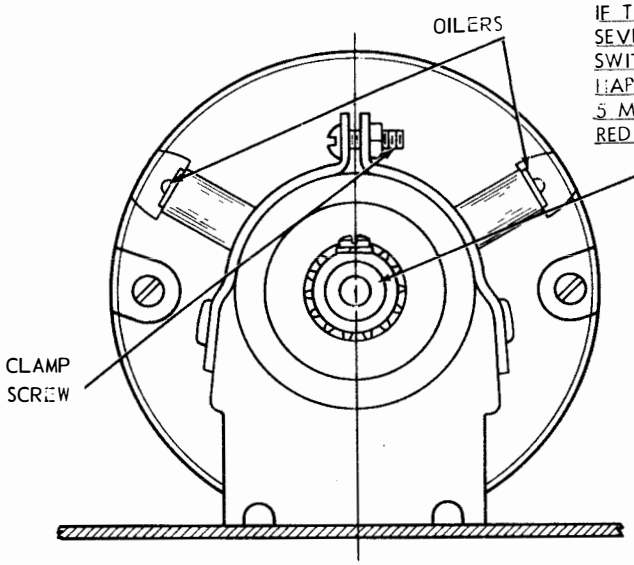
SET THE TYPE BOX CARRIAGE TO PRINT THE DESIRED CHARACTER AND POSITION THE CAM DISK COUNTERCLOCKWISE ON THE SPRING DRUM WITH ITS THREE MOUNTING SCREWS LOOSENED SO THAT THE SWITCH JUST OPENS.

FIGURE 1-78 BASE AND TYPING UNIT, MARGIN INDICATING MECHANISM

5. MOTORS

CAUTION

IF THE MOTOR SHOULD BECOME BLOCKED FOR SEVERAL SECONDS, THE THERMAL CUT-OUT SWITCH WILL BREAK THE CIRCUIT. SHOULD THIS HAPPEN, ALLOW THE MOTOR TO COOL AT LEAST 5 MINUTES BEFORE MANUALLY DEPRESSING THE RED BUTTON. AVOID REPEATED DEPRESSION.



SYNCHRONOUS MOTOR POSITIONING

REQUIREMENT

TWO OILERS SHOULD BE UPWARD AND APPROXIMATELY EQUIDISTANT FROM A VERTICAL LINE THROUGH THE MOTOR SHAFT.

TO ADJUST

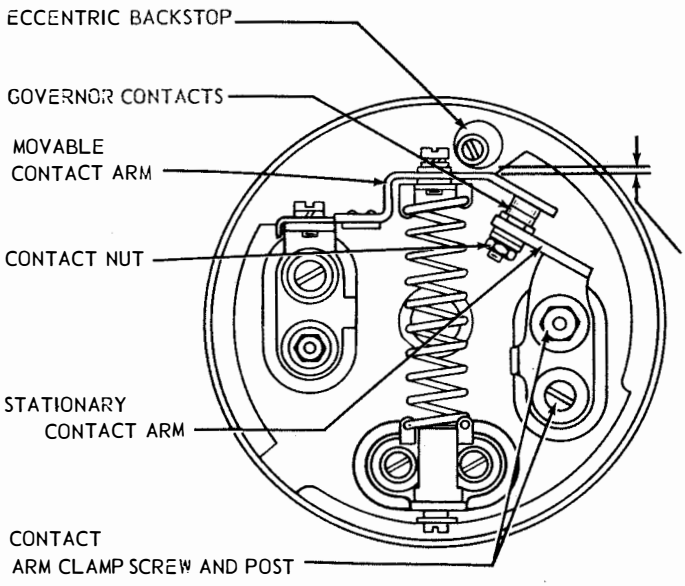
POSITION THE MOTOR WITH THE TWO CLAMP SCREWS LOOSENED.

FIGURE 1-79 SYNCHRONOUS MOTOR

GOVERNED MOTOR POSITIONING

REQUIREMENT

MOTOR SHOULD BE CENTRALLY POSITIONED IN ITS RUBBERMOUNTS SO AS TO PROVIDE AT LEAST 0.020 CLEARANCE BETWEEN THE MOTOR HOUSING AND THE CRADLE AT THE GOVERNOR END. THE CABLE SHOULD ALSO CLEAR THE GROMMET IN THE SCREEN BY AT LEAST 0.030 INCH.



A. GOVERNOR CONTACT

REQUIREMENT

THE CONTACTS SHOULD MEET SQUARELY AND NOT OVERLAP MORE THAN 0.010 INCH.

TO ADJUST

POSITION THE STATIONARY CONTACT AND CONTACT ARM WITH THE CLAMP SCREW AND POST LOOSENED.

B. GOVERNOR CONTACT BACKSTOP

REQUIREMENT

CLEARANCE BETWEEN THE MOVABLE CONTACT ARM AND ITS ECCENTRIC BACKSTOP.

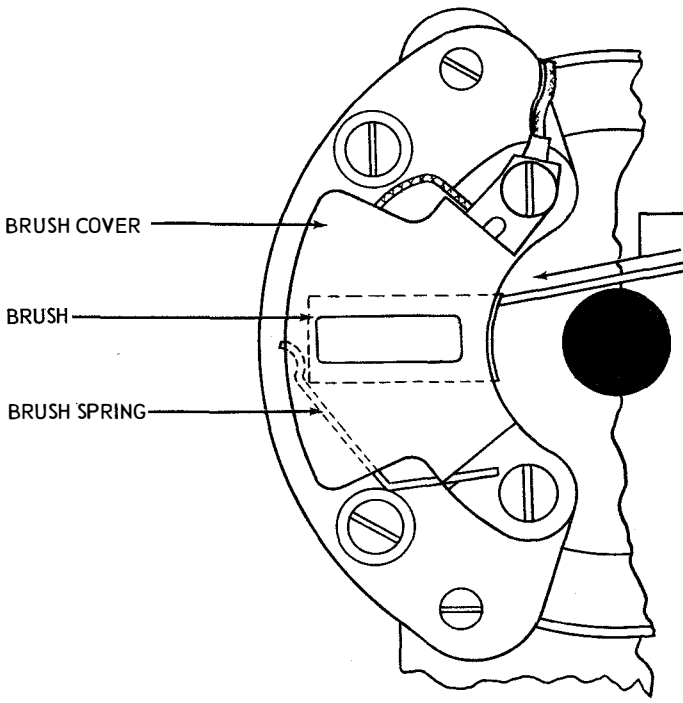
MIN. 0.030 INCH

MAX. 0.050 INCH

TO ADJUST

ROTATE THE ECCENTRIC BACKSTOP WITH CLAMPING SCREW LOOSENED.

FIGURE 1-80 GOVERNED MOTOR



GOVERNED MOTOR SPEED ADJUSTMENT

REQUIREMENT

WITH THE TARGET ILLUMINATED AND VIEWED THROUGH THE VIBRATING SHUTTERS OF A 120 VPS TUNING FORK, THE SPOTS SHOULD APPEAR STATIONARY WHILE ROTATING

TO ADJUST

STOP THE MOTOR AND TURN THE ADJUSTING SCREW AS INDICATED ON THE GOVERNOR COVER.

NOTE

IT IS POSSIBLE TO ADJUST THE MOTOR AT SOME MULTIPLE OF THE CORRECT SPEED. TO CHECK FOR CORRECT SPEED, HAVE THE TYPE BOX CARRIAGE AT THE LEFT MARGIN, SET UP ANY CHARACTER ON THE SELECTOR AND MANUALLY TRIP THE TYPE BOX CLUTCH TRIP LEVER. IF THE UNIT IS EQUIPPED WITH GEAR FOR 60 SPEED OPERATION, IT SHOULD PRINT 70 CHARACTERS IN 10 SECONDS: WITH 75 SPEED GEARS – 44 CHARACTERS IN 5 SECONDS: WITH 100 SPEED GEARS – 57 CHARACTERS IN 5 SECONDS.

FIGURE 1-81 MOTOR GOVERNOR BRUSH AND MOTOR SPEED.

6. CABINET

(A)

ARMATURE SPRING TENSION

REQUIREMENT

MIN. 1/2 OZ.
MAX. 1 OZ.

TO PUSH THE ARMATURE AGAINST THE CORE (VERTICALLY)

(B)

REMOTE SIGNAL BELL

REQUIREMENT

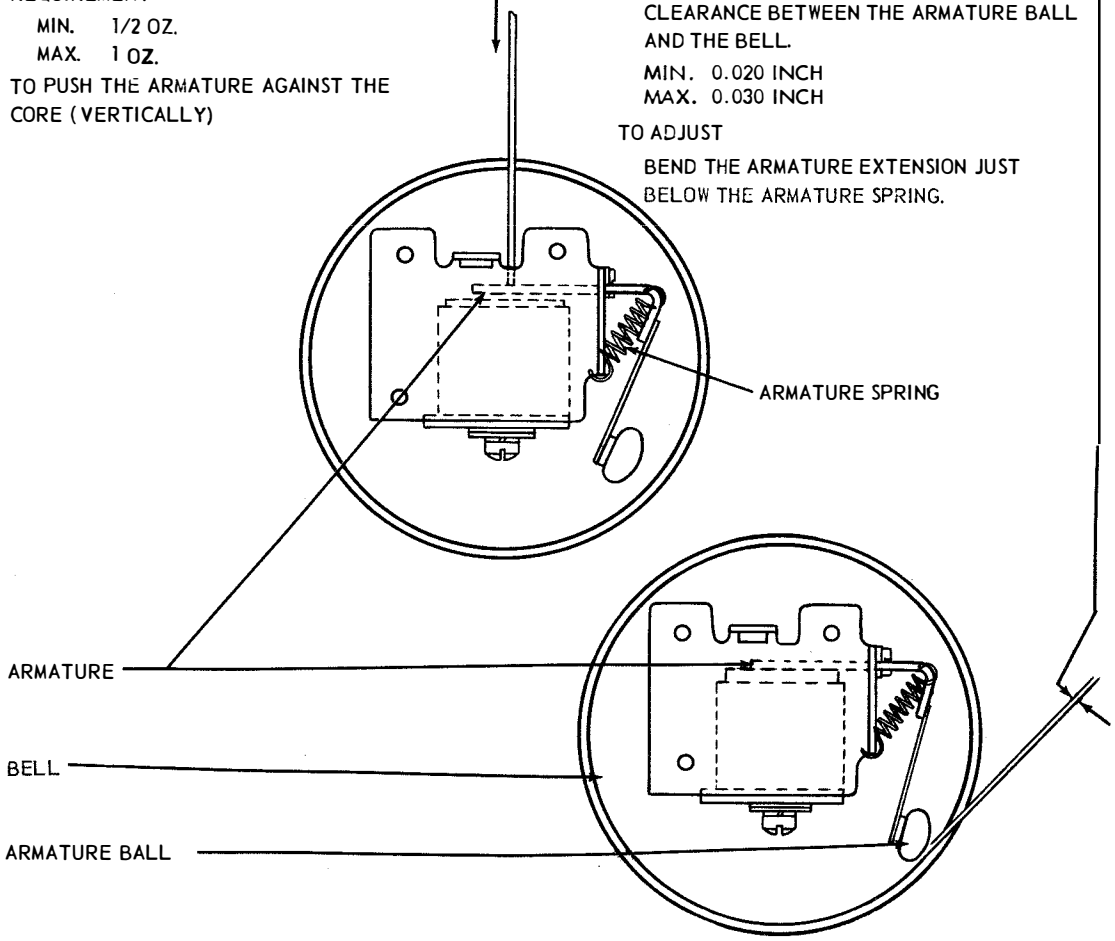
ARMATURE HELD AGAINST THE MAGNET CORE.

CLEARANCE BETWEEN THE ARMATURE BALL AND THE BELL.

MIN. 0.020 INCH
MAX. 0.030 INCH

TO ADJUST

BEND THE ARMATURE EXTENSION JUST BELOW THE ARMATURE SPRING.



(C)

CRADLE

REQUIREMENT

TOP OF HINGE BRACKET PARALLEL TO TOP OF HINGE BAR.

TO ADJUST

TURN STOP SCREW WITH LOCK NUT LOOSENED.

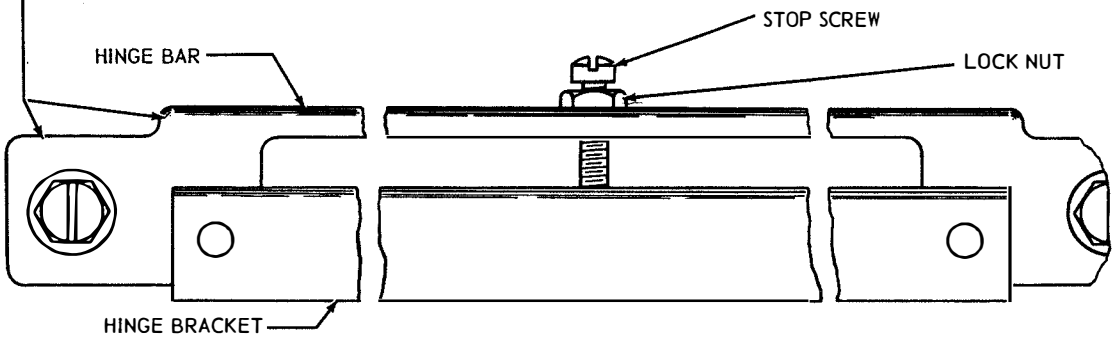
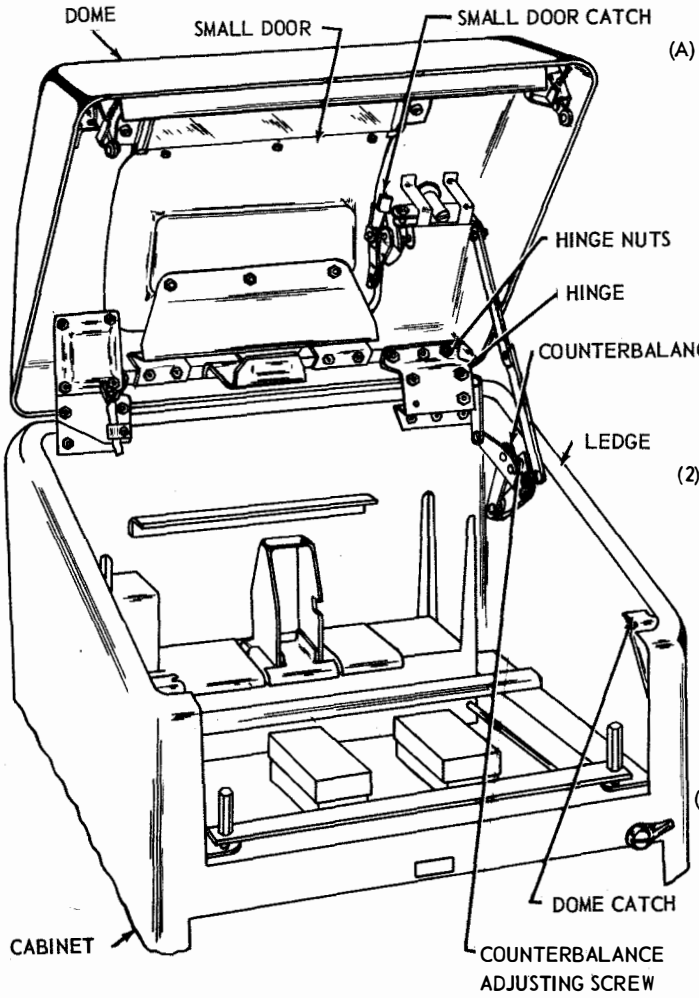


FIGURE 1-82 REMOTE SIGNAL BELL AND CRADLE

NOTE: THE FOLLOWING ADJUSTMENTS ARE MADE AT THE FACTORY AND SHOULD NOT BE DISTURBED UNLESS THERE IS REASON TO BELIEVE THAT THE PARTS ARE OUT OF ADJUSTMENT OR HAVE BEEN DISASSEMBLED.



(A) DOME

(1) REQUIREMENT

THE DOME SHOULD BE CENTERED ON THE CABINET FROM RIGHT TO LEFT AND PLACED

MIN. 3/16 INCH
MAX. 1/4 INCH

FROM THE FRONT EDGE OF THE CABINET

TO ADJUST

POSITION THE DOME WITH THE SIX NUTS WHICH SECURE THE DOME HINGES TO THE DOME LOOSENED. TIGHTEN THE NUTS.

(2) REQUIREMENT

THERE SHOULD BE A LIGHT-PROOF SEAL AT THE REAR OF THE DOME BETWEEN THE RUBBER GASKET AND THE TOP EDGE OF THE CABINET.

TO ADJUST

POSITION THE DOME DOWNWARD WITH THE SIX NUTS, WHICH SECURE THE DOME HINGES TO THE CABINET, LOOSENED. TIGHTEN THE NUTS.

(B) DOME CATCH

(1) REQUIREMENT

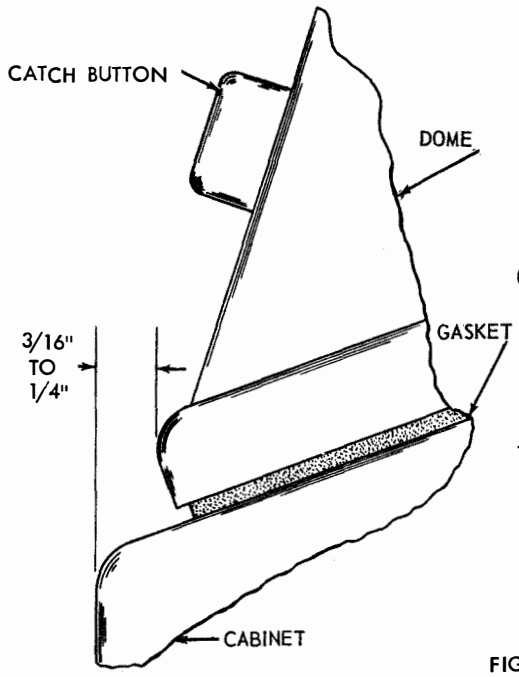
THE DOME SHOULD LATCH SECURELY WITH A LIGHT-PROOF SEAL AT THE FRONT OF THE DOME BETWEEN THE RUBBER GASKET AND THE TOP EDGE OF THE CABINET.

(2) REQUIREMENT

THE DOME CATCH SHOULD UNLATCH WHEN THE CATCH BUTTON IS DEPRESSED NO DEEPER THAN THE OUTER SURFACE OF THE DOME

TO ADJUST

BEND THE TWO DOME CATCHES



(C) SMALL DOOR CATCH

(1) REQUIREMENT

THE SMALL DOOR SHOULD SECURELY LATCH.

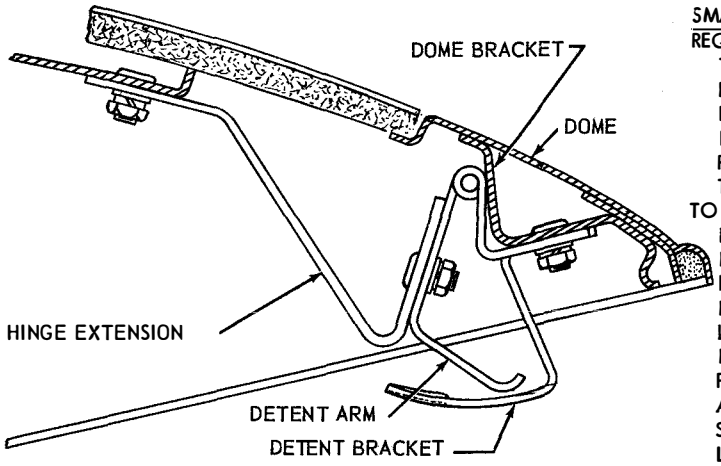
(2) REQUIREMENT

WHEN THE DOOR IS RELEASED FROM ITS CATCH IT SHOULD SPRING OPEN AT LEAST 1/2 INCH.

TO ADJUST

BEND THE SMALL DOOR CATCH. RECHECK REAR OF DOOR TO MAKE CERTAIN IT IS FLUSH WITH OR SLIGHTLY ABOVE THE DOME.

FIGURE 1-83 CABINET



(A)

SMALL DOOR

REQUIREMENT

THE SMALL DOOR SHOULD BE CENTERED FROM RIGHT TO LEFT. IT SHOULD BE POSITIONED SO AS TO PROVIDE A LIGHT TIGHT SEAL BETWEEN THE RUBBER GASKET AND THE LEDGE OF THE DOME AT ALL POINTS.

TO ADJUST

LOOSEN THE TWO NUTS THAT SECURE DETENT BRACKET TO DOME BRACKET. LOOSEN THE TWO NUTS THAT SECURE DETENT ARM TO HINGE EXTENSION. LOOSEN THE FOUR NUTS THAT SECURE DOOR HINGES TO DOME BRACKET. PUSH HINGES AGAINST DOME BRACKET AND TIGHTEN THE FOUR NUTS THAT SECURE HINGES TO DOME BRACKET. LOOSEN THE THREE NUTS THAT SECURE HINGE EXTENSION TO DOOR. SLIDE DOOR TO ITS EXTREME FORWARD POSITION AND POSITION CENTRALLY FROM SIDE TO SIDE. TIGHTEN THE THREE NUTS THAT SECURE HINGE EXTENSION TO DOOR. LOOSEN THE FOUR NUTS THAT FASTEN DOOR HINGES TO HINGE EXTENSION. POSITION DOOR FLUSH WITH OR SLIGHTLY ABOVE DOME. TIGHTEN THE FOUR NUTS THAT FASTEN HINGES TO HINGE EXTENSION. AGAIN LOOSEN THE THREE NUTS THAT SECURE HINGE EXTENSION TO DOOR. CLOSE DOOR AND SLIDE IT TOWARD REAR TO PROVIDE A LIGHT TIGHT SEAL AT FRONT CORNERS OF DOOR. TIGHTEN THE THREE NUTS THAT SECURE HINGE EXTENSION TO DOOR.

(B)

DETENT ARM AND DETENT BRACKET

(1) REQUIREMENT

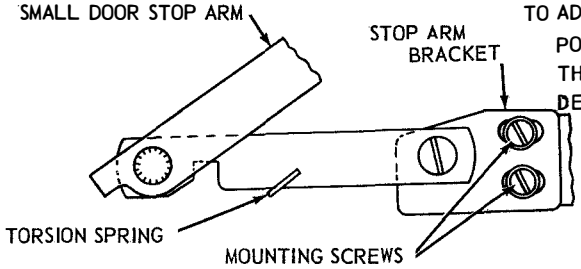
THE DETENT ARM SHOULD BE HORIZONTALLY IN LINE WITH THE UPPER EDGES OF THE TWO HINGES.

TO ADJUST

POSITION THE ARM AND TIGHTEN THE TWO NUTS.

(2) REQUIREMENT

WITH THE DOME IN FULLY RAISED POSITION AND THE SMALL DOOR LATCH BUTTON DEPRESSED, THE SMALL DOOR SHOULD NOT OPEN BEYOND ITS DETENT. WITH THE DOME CLOSED, THE SMALL DOOR SHOULD SPRING OPEN AT LEAST 1/2 INCH WHEN RELEASED FROM ITS CATCH.



TO ADJUST

POSITION THE DETENT BRACKET AND TIGHTEN THE TWO NUTS. IF NECESSARY REPOSITION THE DETENT ARM. RECHECK ALL NUTS FOR TIGHTNESS.

(C)

SMALL DOOR STOP ARM

REQUIREMENT

STOP ARM SHOULD BE FREE OF BINDS WHEN DOOR IS OPENED OR CLOSED.

TO ADJUST

LOOSEN THE STOP ARM BRACKET MOUNTING SCREWS. CLOSE THE DOOR. DISCONNECT THE TORSION SPRING. ALIGN STOP ARM FOR FREENESS AND TIGHTEN MOUNTING SCREWS WITH DOOR CLOSED. REPLACE TORSION SPRING.

(D)

COUNTERBALANCE

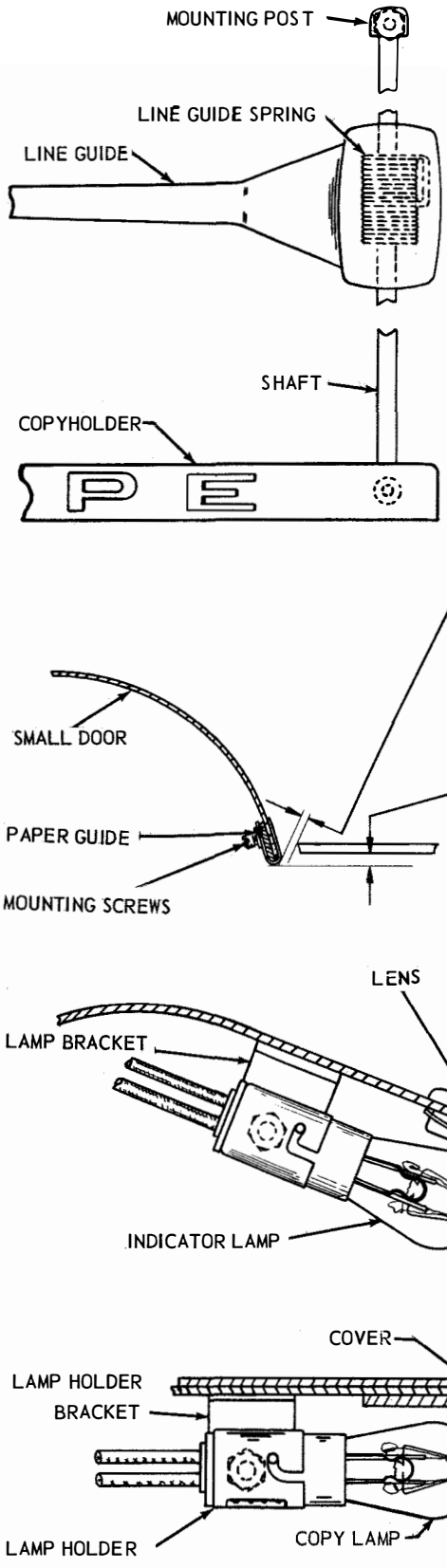
REQUIREMENT

THE DOME SHOULD REMAIN IN ITS MAXIMUM OPEN POSITION AND NOT CLOSE UNLESS MOVED MANUALLY

TO ADJUST

TURN THE SPRING ADJUSTING SCREW. (FIGURE 1-83)

FIGURE 1-84 CABINET



(A) COPYHOLDER

REQUIREMENT

THERE SHOULD BE SUFFICIENT TENSION ON THE LINE GUIDE TO PREVENT IT FROM SLIPPING DOWN ITS SHAFT. IT SHOULD ALSO HOLD THE COPY IN PLACE.

TO ADJUST

REMOVE THE MOUNTING SCREWS OR NUTS FROM THE LINE GUIDE SHAFT AND TURN THE SHAFT. REMOUNT THE SHAFT AND TIGHTEN SCREWS OR NUTS.

(B) WINDOW AND PAPER GUIDE

(FOR SPROCKET FEED UNITS SEE SECTION 2)

(1) REQUIREMENT

THE PAPER GUIDE ON SMALL DOOR SHOULD CLEAR THE WINDOW WHEN THE DOOR IS OPENED OR CLOSED.

MIN. 0.060 INCH MAX. 0.080 INCH

TO ADJUST

POSITION WINDOW WITH ITS RETAINER SCREWS LOOSENED.

(2) REQUIREMENT

WITH SMALL DOOR CLOSED, THE BOTTOM EDGE OF THE PAPER GUIDE SHOULD BE MIN. 7/64 INCH MAX. 9/64 INCH BELOW BOTTOM SURFACE OF WINDOW.

TO ADJUST

POSITION THE PAPER GUIDE WITH ITS MOUNTING SCREWS LOOSENED.

(C) INDICATOR LAMP

REQUIREMENT

CLEARANCE BETWEEN INDICATOR LAMP AND LENS - APPROXIMATELY 1/16 INCH

TO ADJUST

POSITION LAMP HOLDER ON ITS BRACKET WITH MOUNTING SCREWS LOOSENED

(D) COPY LAMP

REQUIREMENT

CLEARANCE BETWEEN COPY LAMP AND COVER APPROXIMATELY 1/16 INCH

TO ADJUST

POSITION LAMP HOLDER ON ITS BRACKET WITH ITS MOUNTING NUT LOOSENED

FIGURE 1-85 CABINET

7. ELECTRICAL SERVICE UNIT

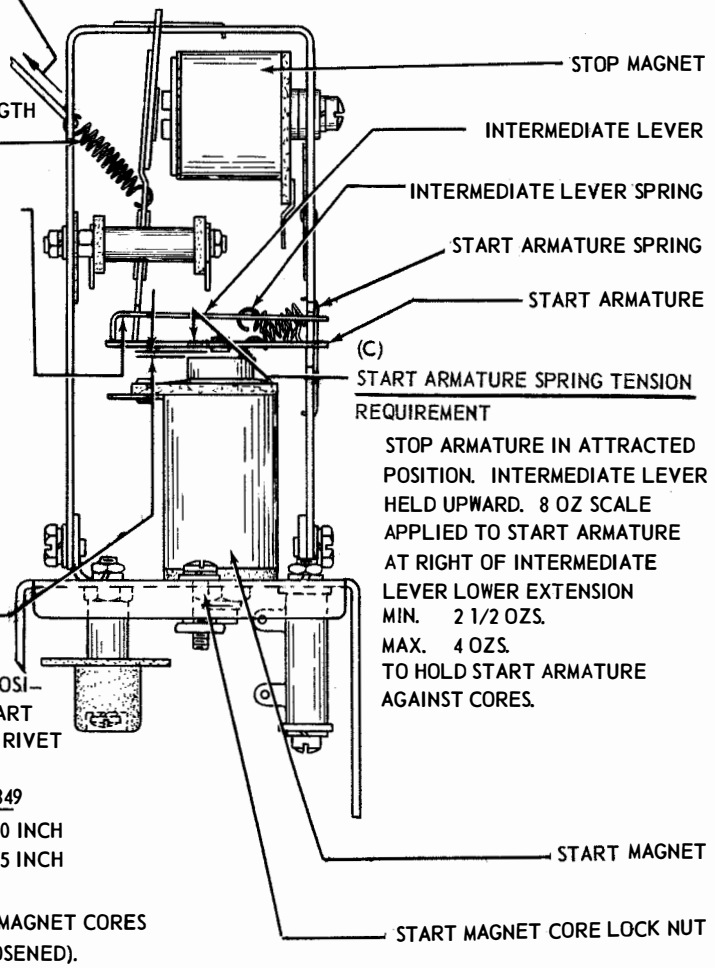
(A)
STOP ARMATURE SPRING TENSION
REQUIREMENT
STOP ARMATURE LATCHED ON START ARMATURE. STOP ARMATURE SPRING UNHOOKED
MIN. 4 1/2 OZS.
MAX. 6 OZS.
TO PULL SPRING TO INSTALLED LENGTH

(B)
INTERMEDIATE LEVER SPRING TENSION
REQUIREMENT
WITH THE STOP AND START ARMATURES HELD AGAINST THEIR CORES, APPLY A GRAM SCALE TO THE UNDER SIDE OF THE INTERMEDIATE LEVER JUST TO THE RIGHT OF ITS DOWNWARD EXTENSION AND PUSH UPWARD
MIN. 10 GRAMS
MAX. 20 GRAMS
TO START THE LEVER MOVING UPWARD.

(D)
START MAGNET CORE
REQUIREMENT
STOP ARMATURE IN UNATTRACTED POSITION. CLEARANCE BETWEEN THE START MAGNET CORE AND ANTI-FREEZE RIVET ON THE START ARMATURE.

ARMATURE	151409	152849
MIN.	0.003 INCH	0.010 INCH
MAX.	0.006 INCH	0.015 INCH

TO ADJUST
ADVANCE OR RETARD THE START MAGNET CORES WITH SCREWDRIVER (LOCK NUT LOOSENED).



(C)
START ARMATURE SPRING TENSION
REQUIREMENT
STOP ARMATURE IN ATTRACTED POSITION. INTERMEDIATE LEVER HELD UPWARD. 8 OZ SCALE APPLIED TO START ARMATURE AT RIGHT OF INTERMEDIATE LEVER LOWER EXTENSION
MIN. 2 1/2 OZS.
MAX. 4 OZS.
TO HOLD START ARMATURE AGAINST CORES.

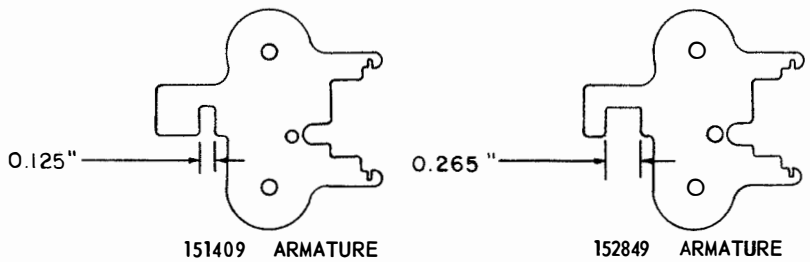


FIGURE 1-86 MOTOR CONTROL ASSEMBLY

8. PAPER AND RIBBON

a. To replenish the supply of friction feed paper, open the dome of the cabinet, move the paper release lever on the Typing Unit toward the rear, slide one of the spindle retainers toward the rear and remove the paper spindle. Insert the spindle in a fresh roll of paper and remount it so that the paper unwinds from underneath. Feed the paper over the paper straightener shaft (Figure 1-85) and fold the end of the paper backward to square it off. With the paper release lever toward the rear, start the paper feeding around the platen and then restore the release lever to its forward position. Depress the line feed wheel and continue to feed the paper upward. Do not disturb the ribbon. Make certain that the paper passes under the paper fingers which may be raised temporarily to facilitate the operation. It may be necessary to operate the release lever momentarily when finally straightening the paper.

*b. The Sprocket feed typing unit is capable of handling as many as 12 copies of stapled continuous form stationery or as many as 6 copies of unstapled form stationery. For stapled stationery, place the form supply box on the floor behind the cabinet or on the shelf provided in the 152349 paper supply box and form-accumulating shelf. For unstapled stationery, place the form supply box on a platform not more than 18 inches below the paper admission slot or on the shelf provided in the 159349 paper supply box and form-accumulating shelf.

c. To replace the ribbon, open the dome of the cabinet, raise the toggles on the ribbon spool shafts (Figure 1-86) to the vertical position and remove both spools. Engage the hook that is on the end of the new ribbon in the hub of the empty spool. Wind a few turns of the ribbon onto the empty spool to make sure that the reversing eyelet has been wound upon the spool. Place the spools on the ribbon spool shafts in such a manner that the ribbon feeds from the rear of each spool without twisting. Turn each spool shaft slightly until the driving pins on the spool shafts engage the holes in the spools. Thread the ribbon forward around both ribbon rollers, through the slots in the ribbon reverse levers, and through the ribbon guide on the type box carriage. Make certain that ribbon remains in guide slots and that both reversing eyelets are between ribbon spools and reverse levers. Eliminate slack in ribbon.

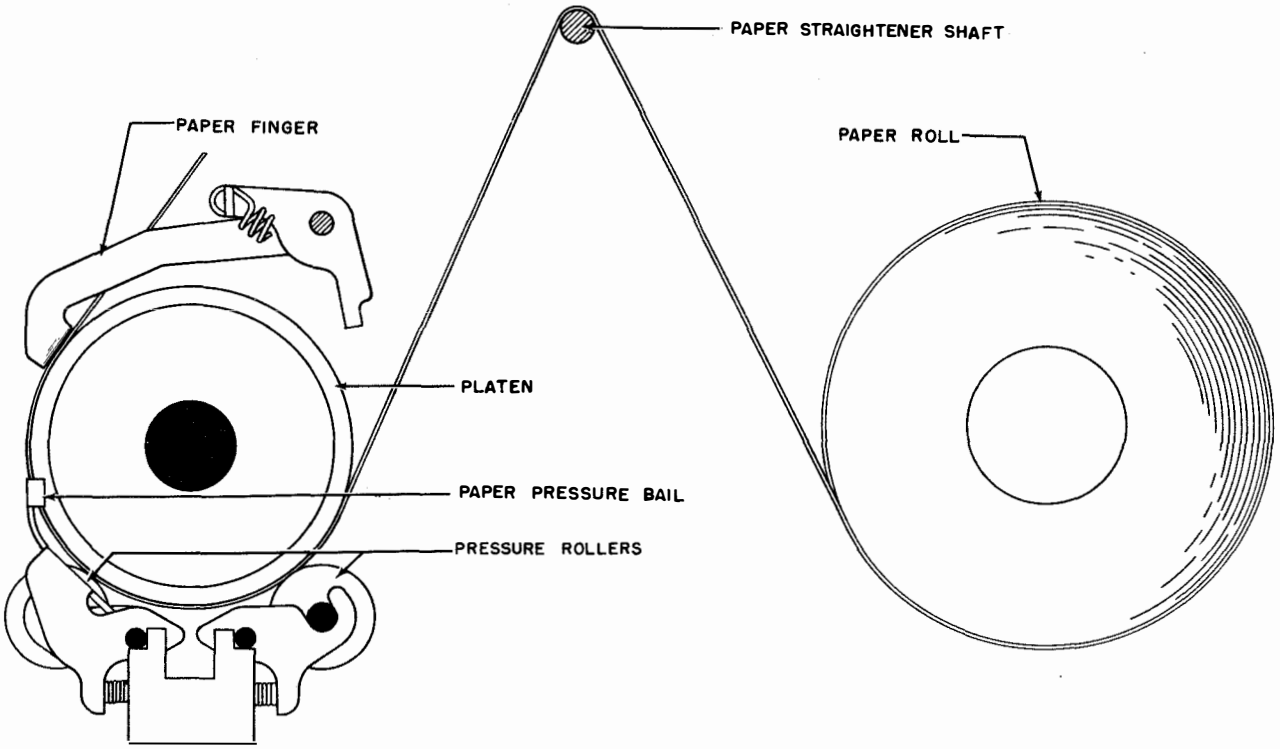


FIGURE 1-87 PATH OF PAPER

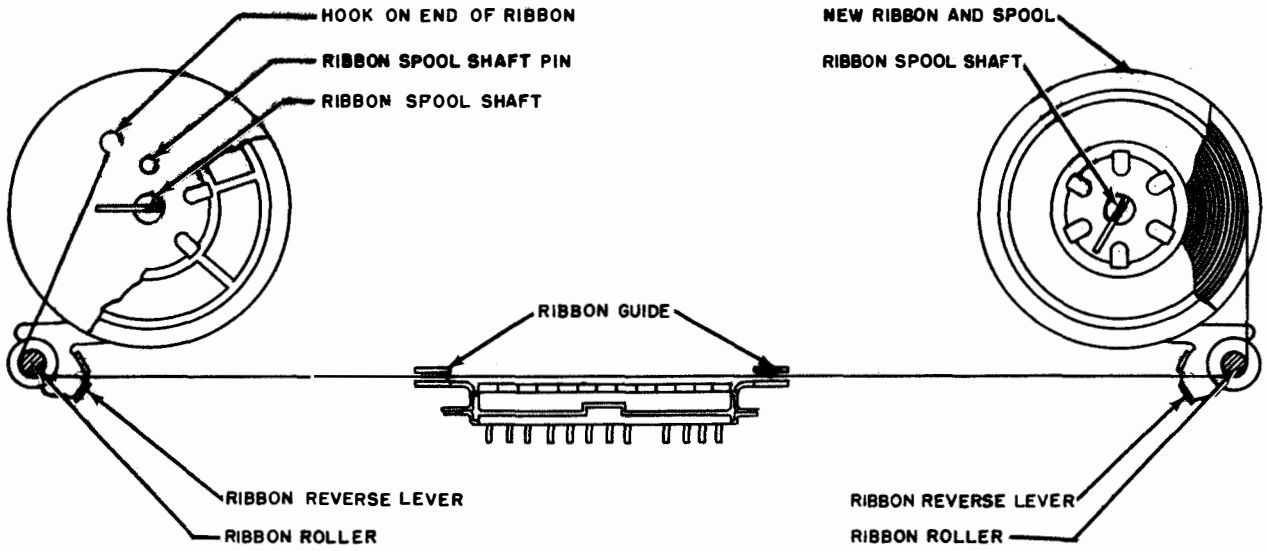


FIGURE 1-88 PATH OF RIBBON

9. TOOLS

For a listing of tools required to maintain the Model 28 Printer Set, refer to Teletype Bulletin 1124B.

10. DISASSEMBLY AND REASSEMBLY. (for illustration of parts referred to herein, see Teletype Model 28 Printer Parts bulletin).

NOTE

If a part that is mounted on shims is to be removed, the number of shims used at each of its mounting screws should be noted so that the same shim pile-up can be replaced when the part is remounted. Retaining rings (Tru-arc) are of spring steel and have a tendency to release suddenly. Loss of these can be minimized as follows: Hold the tru-arc with your left hand to prevent it from rotating. Place the blade of a suitable screwdriver in one of the slots of the tru-arc. Rotate the screwdriver in a direction to increase diameter of tru-arc. Tru-arc will come off easily without flying.

a. TYPING UNIT. To remove the Typing Unit from the Keyboard or Base proceed as follows: Remove the four 151678 screws that secure the Typing Unit to the Keyboard or Base. Remove the 152466 Cable Plug from the right side frame. Lift the typing unit from the Keyboard or Base.

(1) TYPE BOX

(a) To remove the type box, proceed as follows:

1. Trip the 150075 typebox latch toggle to the right.

2. Lift the right end of the type box upward to an angle of approximately 45 degrees and pull the type box toward the right to disengage it from the left hand bearing stud.

*(b) To disassemble type box and replace a type pallet, proceed as follows:

1. Remove both screws and nuts that secure the front plate to the rear plate assembly. Separate the two plates.

2. Remove the spring from the pallet by compressing the spring slightly and pulling the formed end out of the slot in the pallet.

Note: This spring should be discarded once it has been removed from its assembly.

3. Replace pallet (omit this step if replacing spring only).

4. Install new pallet spring making sure that the formed end of the spring extends through the slot in the pallet.

5. Line up the front plate with the rear plate assembly and draw the two plates together until the head of the pallet leaves the rear plate by approximately 1/16". This may be accomplished by using two 6-40 screws (at least 11/32" long) and nuts in place of the screws and nuts removed in step 2 and tightening them only enough to hold the pallets as specified above. (Do not clamp the plates together until all pallets have been moved into their correct position).

6. Manipulate the pallets until they fall into their respective openings in the front plate and press plates together.

7. Replace screws and nuts used in step 5 with screws and nuts removed in step 1.

*(c) To reinstall type box, reverse the procedure used in removing it. CAUTION: THE TYPE BOX SHOULD BE FIRMLY SEATED ON THE BEARING STUDS AND THE POINT OF THE LATCH TOGGLE SHOULD BE PLACED IN THE NOTCH OF THE TYPE BOX PLATE BEFORE MOVING THE TOGGLE TO ITS LATCHED POSITION TO AVOID SPRINGING THE LATCH.

(2) PRINTING CARRIAGE

(a) To remove the printing carriage, proceed as follows:

1. Loosen the two 151152 screws which clamp the 150230 plate to the wire rope and disengage the carriage from the wire rope.

2. Move the carriage to the left of its track and tilt the lower part forward to disengage the rollers from the track.

* Indicates Change

3. The disassembly of the printing carriage is shown in bulletin 1149B.

(b) To reinstall the carriage, reverse the procedure used in removing it.

1. Make certain that the 150068 printing arm is correctly re-engaged with the 150598 printing track.

2. Position the carriage clamp on the wire rope for correct printing position as specified in figure 1-57.

(3) TYPE BOX CARRIAGE

(a) To remove the type box carriage, proceed as follows:

1. Move the type box carriage to its extreme right hand position.

2. Hold the 152548 and 152255 code bar shift bar levers in the marking position and rotate the main shaft so that the type box is in its uppermost position.

3. Remove the 119652 retainer ring from the stud in the right hand end of the 152503 type box carriage link and disengage the link from the carriage.

4. Hold the 153810 ribbon guide forward and the 150311 ribbon reverse lever back and pull the carriage toward the right to disengage it from the carriage track. For disassembly see 1149B.

(b) To reinstall the carriage, reverse the procedure used in removing it. (See Fig. 1-56)

(4) FRONT PLATE

(a) To remove the front plate, proceed as follows:

1. Remove the Typing Unit from the Base.

2. Remove the 119652 retainer ring from the 152503 type box carriage link right hand stud and disengage the link from the carriage. (See instructions for removing the link retainer in paragraph 10.a.(3).

3. Remove the two 151659 or 152893 and 153841 screws, which secure the 150245 main bail drive bracket to the 150365 rocker shaft.

4. Remove the 150202 spacing shaft gear.

5. Remove the four 151606 screws which secure the front plate assembly to the typing unit side frames.

6. Pull the front plate assembly forward to disengage it from its connecting parts in the Typing Unit.

7. The disassembly of the front plate is shown in 1149B.

(b) To reinstall the front plate assembly, reverse the procedure used in removing it.

1. Make certain that the 150770 and 150771 code bar bell cranks, the 152596 letters-figures shift slide, the 152522 reversing slide shift lever, the 150438 automatic C.R. - L.F. bell crank, and the 152545 carriage return lever extension are properly engaged with their mating parts before tightening the front plate mounting screws.

2. Replace the 150202 spacing shaft gear. See figure 1-36 for adjustment on phasing the spacing gears.

(5) STUNT BOX

(a) To remove the stunt box, proceed as follows:

1. Remove the Typing Unit from the Base.

2. Remove the 151627 rear tie bar from the Typing Unit side frames.

3. Remove the 150915 or 155060 line feed function pawl stripper from the 150424 or 155061 stripper blade.

4. Remove the 151657 or 1010 single-double line feed lever screw and disengage the lever from the notch in the stripper blade.

5. Hold the stripper blade toward the right side of the Typing Unit and unhook the 152541 stripper blade left hand arm from the blade. (LP 3, 5, 7, only).

6. Pull the stripper blade toward the left side of the Typing Unit to disengage the stripper blade from the 152542 right hand arm and remove the stripper blade from the Typing Unit. (LP 3, 5, 7, only).

7. Remove the 151692 screws which secure the stunt box assembly in the Typing Unit.

8. Remove the 151637 screw from the 153291 cam shaft drive arm, and slide the drive arm to left out of engagement with the 153300 stripper blade drive arm. (on LP 6 and up.)

9. Lift the stunt box assembly upward to disengage it from its locating brackets and pull toward the rear to disengage all code bar forks from the code bars. Remove the contact assembly and cable clamp, if present, from the stunt box. Remove the stunt box.

10. Disassembly of the stunt box is shown in 1149B.

(b) To reinstall the stunt box assembly:

1. Push it forward in its guide rails to within 1/8 inch of its final position.

2. Manually disengage the function pawls from their function bars and push the stunt box assembly forward and downward until it is latched in place on its locating brackets.

3. Replace the stunt box mounting screws, receptacle and selector magnet wires.

(6) FUNCTION BAR, PAWL, AND LEVER

(a) To remove a function bar, proceed as follows:

1. Remove the stunt box from the Typing Unit - See paragraph 10.a.(5).

2. Unhook the 4703 function bar spring.

3. Hold the function bar toward the rear of the stunt box and disengage its function pawl from the function bar.

4. Pull the function bar toward the front to remove it from the stunt box.

(b) To remove a function pawl after the function bar has been removed:

1. Remove the pawl spring.

2. Hold associated function lever back.

3. Remove the pawl from top of stunt box.

(c) To remove a function lever after the function bar and function pawl have been removed:

1. Remove the 152889 shaft retainer plate.

2. Remove the 150547 shaft nearest the front of the stunt box.

3. Unhook spring from function lever and remove the lever through top of stunt box.

4. Disassembly of the stunt box is shown in 1149B.

(d) To replace the function bar, reverse the procedure used in removing it.

(7) CODE BARS

(a) To remove the code bar assembly, proceed as follows:

1. Remove the Typing Unit from the Base.

2. Remove the stunt box assembly. See paragraph 10.a.(5).

3. Remove the front plate assembly. See paragraph 10.a.(4).

4. Remove the 151657 screws and 2191 lock washers which secure the code bar assembly to the side frame.

5. Remove the 150301 code bar shift bar retainer plate from 152576 right hand code bar casting.

6. Remove the 152548 and 152255 code bar shift bars and 152257 springs from the code bars and pull the code bar assembly forward and to the left.

7. Disassembly of the code bars is shown in 1149B.

(b) To reinstall the code bar assembly, reverse the procedure used in removing it, except do not tighten the mounting screws.

1. Hook the short extension of the 152257 spring in the spring hole of the 152256 code bar shift bar. The short extension of the spring should be hooked from the bottom of the code bar and the long extension should be hooked over the top of the code bar shift bar.

2. Loosen the 151630 code bar assembly tie bar screws and hold the code bar castings back and downward firmly against their locating surfaces on the side frame and tighten the four mounting screws.

3. Tighten the two tie bar screws.

(8) MAIN SHAFT

(a) To remove the main shaft, proceed as follows:

1. Remove the Typing Unit from the Base.

2. Remove the selector cam-clutch assembly. See paragraph 10.a.(13).

3. Set the Typing Unit upside down.

4. Return the carriage to its left-hand position.

5. Remove the 151686 screw which secures the 150673 spacing shaft in the 150668 spacing pawl hub.

6. Remove the spacing shaft with gear.

7. Remove the 151686 screw which secures the 152454 or 153823 collar and the 152455 or 153824 clamp from right end of main shaft. Remove the 152573 main shaft right hand bearing retainer plate.

8. Remove the 150010 retainer plate at the 150046 clutch bearing and remove the 150244 link.

9. Remove the two 151630 screws from the 152537 main shaft left hand bearing clamp.

10. Unhook the 74701 or 135716, 74712 and 70388 spring from the trip levers and latch levers associated with all clutches. Position the code bar clutch so that the low part of the clutch cam clears the spring cam on the cam follower. Unhook the 74712 code bar clutch cam follower spring.

11. Remove the 153300 function clutch arm by removing the two 151630 screws and 119652 Retainer Ring if present.

12. Unhook the 154688 springs from the 153573 function bar reset bail.

13. Move the main shaft assembly toward the left to disengage the code bar clutch and function clutch links from their connecting pins.

14. Lift the left end of the shaft assembly out of the side frame and position the shaft so that the function clutch link passes the suppression assembly bracket and remove the shaft assembly from the typing unit.

15. When assembling the clutches which have cams and disks marked "O" for identification, the marked side of the parts should face away from the clutch side of the assembly. The function and code bar clutches should have their driving links assembled so that the longer end of the hub faces away from the clutch side of the assembly.

16. Disassembly of the main shaft and clutches is shown in 1149B.

(b) To re-install the shaft assembly, reverse the procedure used in removing it.

(c) To phase the spacing gears, see figures 1-36 and 1-37 respectively.

(d) Remake the stripper blade drive cam position adjustment (Figure 1-68).

(9) UPPER DRAW WIRE ROPE

(a) To remove the upper draw wire rope, proceed as follows:

1. Return the carriage to the left hand position.

2. Loosen the 112626 nut on the front end of the 150197 spring drum bearing post. Operate the 150237 ratchet escapement lever to unwind the 74272 carriage return spring.

3. Remove the 150712 wire rope from the 150230 clamp plate on the printing carriage, and the 152521 clamp on the 150728 oscillating rail slide.

4. Loosen the 151618 clamp screw which secures the wire rope to the 150827 spring drum, and remove the wire rope from the drum.

5. Remove the 151618 or 151658 screw in the spacing drum which secures the ends of the wire rope, and remove the rope from the drum.

6. Disassembly of the wire rope, spring drum and spacing drum is shown in 1149B.

(b) To replace the upper draw wire rope, reverse the procedure used in removing it.

(10) LOWER DRAW WIRE ROPE

(a) To remove the lower draw wire rope, proceed as follows:

1. Remove the 151618 or 151658 screw which secures the 150225 lower draw wire rope to the 152587 or 154627 spacing drum, and remove the end of the rope from the drum.

2. Loosen the 151637 screws which secure the 150796 margin indicator cam disk on the spring drum and position the disk to expose the wire rope mounting screw.

3. Remove the 151618 lower draw wire rope screw and move the rope from the spring drum.

4. Loosen the 151632 screws in the 150800 bearing studs which mount 150224 printing carriage pulleys and move the studs toward the center of the Typing Unit.

5. Disassembly of the lower draw wire rope is shown in 1149B.

(b) To replace the wire rope, reverse the procedure used in removing it.

1. Make certain that the lower draw wire rope is in front of the printing carriage wire rope in the track around the drums.

2. Adjust the position of the type box, the printing carriage, and the wire rope tension as specified in the figures 1-49, 1-53, and 1-56.

(11) PLATEN (FRICTION FEED)

(a) To remove the platen, proceed as follows:

1. Remove the 150715 line feed spur gear.

2. Remove the 150719 and 150720 platen bearing retainers.

3. Remove the 152832 paper finger shaft.

4. Hold off the 150900 detent and lift the platen out of the side frame.

5. Disassembly of the platen is shown in 1149B.

(b) To replace the platen, reverse the procedure used in removing it.

1. When replacing each platen bearing retainer, put its upper screw in first. Leave the screw slightly loose. Press the lower end of the retainer downward and hook it into the elongated hole in the side frame. Replace the lower screw. Tighten both screws.

*(12) PLATEN (SPROCKET FEED)

(a) To remove the platen proceed as follows:

1. Remove the paper fingers or guide bracket assembly.

2. Remove the spur gear from left end.

3. Remove the 156719 and 150720 platen bearing retainers.

4. Hold off the 153676 detent and remove the platen.

5. Remove sprocket hub assembly from platen assembly.

6. Insert the 153673 shaft tool into the hub and fasten it with the 151346 screw.

7. Remove the 157286 clamp and 153699 cam from the assembly.

8. To replace a pin, rotate the hub assembly within the retaining tool with a tommy wrench inserted in the shaft tool until the desired pin is opposite the notch in the retaining tool. A pin may then be removed or replaced.

Note: While rotating the hub, the notch must be covered to prevent the pins from being released.

9. Pack with grease.

10. Disassembly of platen shown in 1149B.

* Indicates Change

(b) To replace the platen, reverse the procedure used in removing it. When replacing each platen bearing retainer, put its upper screw in first. Leave the screw slightly loose. Press the lower end of the retainer downward and hook it into the elongated hole in the side frame. Replace the lower screw. Tighten both screws.

(13) SELECTOR CAM-CLUTCH

(a) To remove the selector cam-clutch, proceed as follows:

1. Lift the 152410 push lever reset bail cam follower from its cam and latch it in its raised position on the push lever guide. Lift the selector levers and the marking lock lever by moving the marking lock lever forward until the armature drops behind it.

2. Remove the 151642 screw which mounts the 150001 selector clutch drum and position the cam clutch so that the stop lug on the 150028 disk is in the uppermost position.

3. Place 152410 or 158903 reset bail in raised position. Hold 152432 or 158928 stop arm and 152405 or 158902 marking lock lever to left, grasp cam-clutch by cam-disk (not by drum) and pull forward while rotating cam-clutch slowly. Cam-clutch should come off easily. Do not force it.

4. Disassembly of the selector cam clutch is shown in 1149B.

(b) To replace the cam-clutch assembly, reverse the procedure used in removing it except:

1. As the cam-clutch approaches its fully installed position, move the trip shaft lever and the cam-clutch latch lever so that they ride on their respective cams.

2. Restore the push lever reset bail and the armature to their operating position.

(14) SELECTOR MECHANISM

(a) To remove the selector mechanism, proceed as follows:

1. In order to remove the selector mechanism from the Typing Unit the cam-clutch assembly must be removed. See paragraph 10.a.(13).

2. Remove the 152457 felt wick. Remove the 151658 screw which secures the selector mechanism to the 152546 bracket on the code bar positioning mechanism.

3. Remove from the selector mechanism the 150563 spring which connects with the 152640 common transfer lever on the code bar positioning mechanism.

4. Remove the remaining three 151630 selector mounting screws and lift the selector from the main shaft bearing housing.

5. Disassembly of the selector mechanism is shown in 1149B.

(b) To replace the selector mechanism, reverse the procedure used in removing it.

(c) For readjustment of selector mechanism see the adjusting figures 1-17 to 1-19 and 1-21 to 1-23.

(15) CODE BAR POSITIONING MECHANISM

(a) To remove the code bar positioning mechanism, proceed as follows:

1. Remove from the selector the 150563 spring attached to the common transfer lever and restore any operating push levers to the spacing position by raising the 152410 reset bail.

2. Loosen the 151721 clamp screw on the 150447 shift lever drive arm, and remove the two screws which mount the mechanism - the 151630 to the side frame, and the 151658 to the 152400 selector plate.

3. Manipulate the 152635 to 152640 transfer levers and 152548 or 152255 code bar shift bars while gently twisting the mechanism so as to slide the mechanism off the code bar shift bars.

4. Disassembly of the code bar positioning mechanism is shown in 1149B.

(b) To replace the mechanism on the Typing Unit, reverse the procedure used in removing it.

1. With the main shaft in the stop position, push the code bar shaft bars to the marking position (left front view). Manipulate the code bar shift bars and transfer levers so that the shift bars line up with their respective slots in the 150525 bracket, and slide

the shift bars through the slots, one at a time (leave the bottom slot vacant).

(16) SELECTOR MAGNET ASSEMBLY

(a) To remove the selector magnet assembly, proceed as follows:

1. Remove the two 151657 screws and 3598 nut which mount the range finder to the selector.

2. Remove the 152468 cable from the 1028 coil terminal screws.

3. Remove the two 151658 magnet assembly mounting screws and lift the assembly out.

4. Disassembly of the selector magnet assembly is shown in 1149B.

b. KEYBOARD (EARLIER DESIGN) - Remove the four 151549 screws at each corner of the Keyboard that secure the Keyboard to the cradle. Remove the 152465 plug from its receptacle at the left rear corner of the base. Lift the keyboard from the cradle.

(1) SIGNAL GENERATOR

(a) To remove the signal generator from the Keyboard, proceed as follows:

1. Remove the two 151152 screws located to the right and left of the contact box, and raise the 151358 contact box. (Do not unsolder connections if box is connected to metal tubing). If wire connections to contact box are flexible, unsolder the wires inside the box and do not remove the box.

2. Remove the four 151642 mounting screws which mount the signal generator casting, two at the front end of the casting, and two at the rear. (NOTE: if the unit is equipped with an electrical signal line break mechanism, remove the mechanism by removing its two mounting screws.

3. Lift the signal generator upward from the Keyboard.

4. Disassembly of the signal generator is shown in 1149B.

(b) To replace the signal generator, reverse the procedure used in removing it.

1. The code bar bail latch should be under the code lever bail latch lever, and in the notches of all code bars, trip bar and upstop bar, the break rod in its guide hole, and the clutch trip bail extension in the clutch trip bar notch.

2. Recheck the non-repeat lever adjustment figure 4-13, the contact box adjustment figure 4-10, and the code lever adjustment figure 4-19.

(2) KEYBOARD SELECTOR CAM ASSEMBLY

(a) To remove cam assembly from signal generator, proceed as follows:

1. Remove signal generator from Keyboard Base. See paragraph 10.b.(1) above.

2. Disconnect the 90260 clutch latch lever spring.

3. Disconnect the 31636 clutch stop lever spring.

4. Disconnect the 125268 flutter lever spring.

5. Remove the 112625 front nut of the 151157 stationary shaft.

6. Remove the two 151658 screws that hold the 151064 rear plate to casting.

7. Remove the shaft assembly by lifting it upward and pulling to the rear simultaneously.

8. Disassembly of the cam assembly is shown in 1149B.

(b) To replace the Keyboard selector cam assembly, reverse the procedure used in removing it.

(3) KEYBOARD LABEL

(a) To remove the labels, proceed as follows:

1. Remove the 151354 or 153118 plastic cover mounting screw and remove the plastic cover.

2. Pick up plastic cover at top edge first.

(b) To replace the Keyboard label, reverse the procedure used in removing it.

(4) KEYLEVER COVER

(a) To remove cover from the Keyboard, proceed as follows:

1. Remove the 151353 label covers and labels. See paragraph 10.b.(3).

2. Remove the four 151346 screws located under the labels, two at the extreme right side and two at the extreme left side.

3. Pull keylever cover forward to remove.

4. See 1149B for disassembly.

(b) To replace the keylever cover, reverse the procedure used in removing it.

(c) To remove the 153117 cover from base, proceed as follows:

1. Remove the two 151658 screws located inside the sealing plate, one at the right side and one at the left side.

2. Pull keylever cover forward and downward to unhook it from two studs near bottom.

(d) To replace the keylever cover, reverse the procedure used in removing it.

(5) KEYLEVER

(a) To remove keylever, proceed as follows:

1. Use keylever remover tool No. 151383 in the following manner. Insert the smaller lug of the keylever remover in the slot of the keylever and engage the shoulder of the larger lug on the top of the code lever. Pry upward to unsnap keylever from code lever. The plastic keytop should not be removed from any keylever to change a character.

2. See 1149B for disassembly.

(b) To replace the keylever, reverse the procedure used in removing it.

(6) SPACE BAR

(a) To remove space bar, proceed as follows:

1. Remove the keylever cover. See paragraph 10.b.(4).

2. Remove the two 151223 pivot shoulder screws on left and right sides of the 151045 space bar assembly.

3. See 1149B for disassembly of the space bar.

(b) To replace the space bar, reverse the procedure used in removing it.

(7) KEYLEVER GUIDE PLATE

(a) To remove keylever guide plate, proceed as follows:

1. Remove the keylever cover. See paragraph 10.b.(4).

2. Remove the six 151346 mounting screws on top side of guide plate.

3. See 1149B for disassembly.

(b) To replace the keylever guide plate, reverse the procedure used in removing it.

(8) KEYBOARD LOCKBALL CHANNEL

(a) To remove lockball channel, proceed as follows:

1. Remove the keylever cover. (See paragraph 10.b.(4).

2. Remove the two 151637 channel mounting screws at the left and right ends.

3. Pull channel forward with caution to avoid dropping the wedges that are located on the code levers. Wedges must be replaced separately when reassembling.

4. See 1149B for disassembly.

(b) To replace the keyboard lockball channel, reverse the procedure used in removing it.

(9) SEALING PLATE

(a) To remove sealing plate proceed as follows:

1. Remove the keylever cover. See paragraph 10.b.(4).

2. Remove the keylevers. See paragraph 10.b.(5).

3. Disconnect the 151105 space bar link (keyboard only) at its snap connection.

4. Remove all sealing plate mounting screws.

5. See 1149B for disassembly.

(b) To replace the sealing plate, reverse the procedure used in removing it.

(10) KEYBOARD LOCK-LOCAL LINE FEED MECHANISM

(a) To remove keyboard lock-local line feed mechanism, proceed as follows:

1. Remove the signal generator from the keyboard. See paragraph 10.b.(1). above.

2. Unhook the 7618 code lever bail spring from the 151840 code lever bail.

3. Loosen the two 151090 pilot screws and remove the 151840 code lever bail.

4. Remove the 119651 retaining ring from the 151858 local line feed trip bail.

5. Remove the two 151692 mounting screws and remove the mechanism through the hole in the bottom of the base.

6. See 1149B for disassembly.

(b) To replace the keyboard lock-local line feed mechanism, reverse the procedure used in removing it.

(11) KEYBOARD CODE BAR ASSEMBLY

(a) To remove code bar assembly, proceed as follows:

1. Remove the keylever cover. See paragraph 10.b.(4).

2. Remove the keylevers. See paragraph 10.b.(5).

3. Disconnect the 151105 space bar link at its snap connection.

4. Remove the signal generator. See paragraph 10.b.(1).

5. Remove the two 151658 and two 151346 code bar assembly mounting screws located on top of base.

6. Remove the two 151692 mounting screws and remove the 151856 local C.R. bracket.

7. Remove the keyboard lock-local line feed mechanism. See paragraph 10.b.(10).

8. Remove the 3599 nut and the 151008 code lever bail latch lever with spring. Remove the three 151657 screws which mount the 151367 non-repeat bell crank plate assembly. Remove the plate assembly. Remove code bar assembly through the opening in top side of the base.

9. The disassembly of the keyboard code bar assembly is shown in 1149B.

(b) To replace the keyboard code bar assembly, reverse the procedure used in removing it.

(12) CODE BAR

(a) To remove a code bar from the keyboard assembly, proceed as follows:

1. Remove code bar assembly. See paragraph 10.b.(11).

2. Disconnect the 42661 code bar springs.

3. Remove the 151082 mounting screw and remove the 151102 lock bar pawl from the 151849 code lever guide.

4. Loosen the 151688 mounting screws for the left and right code bar guides until they are friction tight and lift the 151023 guides to their extreme upward position.

5. Remove code bar by sliding it to the left or right to get one end of the code bar out of its guide.

6. Disassembly of the code bar mechanism is shown in 1149B.

(b) To replace a code bar, reverse the procedure used in removing it.

c. KEYBOARD (NEW DESIGN)*

(1) SIGNAL GENERATOR

*See Page 1-2, Paragraph k.

(a) To remove the signal generator assembly, proceed as follows:

1. Remove the typing unit if it is present.

2. Remove the 154131 contact box cover, and disconnect the signal line leads from the 154042, 154043 contact terminals.

3. Remove the two 153841 hold-down screws at the front of the 154200 signal generator frame, and the 74805 screw at the right rear of the frame.

4. Lift the signal generator carefully, while holding the universal bail back so that the non-repeat lever clears and its spring will not be excessively stretched.

5. Disassembly of signal generator is shown in 1149B.

CAUTION

If the non-repeat lever gets pulled down approximately 90 degrees from normal position, its spring might be stressed beyond elastic limits which will result in assembly malfunction.

(b) To replace the signal generator, reverse the procedure used in removing it.

(2) KEYBOARD

(a) To remove the keyboard assembly, proceed as follows:

1. Remove the typing unit and signal generator assembly as specified in paragraph 10.a. and b.(1).

2. Remove the plastic windows and labels, hood, seal, and seal plate as specified in paragraph 10.b.(3).

3. Remove the four 151631 screws which hold the 154210, 154211 front frames to the front of the 154000 base.

4. Remove the two 151632 screws which hold the 154068, 154069 right and left code lever guide brackets on the top of the base, and the two 151632 screws at the extreme right and left of the 154055 front bracket which hold it on the base.

5. When these four screws in front and four on top of the base have been removed, tip up the front of the keyboard assembly and pull it forward, disengaging the function levers.

6. Note that all function levers are under their corresponding function bails - except the keyboard lock function lever - which fits on top of its function bail.

7. When reassembling, depress the keyboard lock keylever so that the lock function lever will go in over its bail instead of under as the other function levers should.

8. Disassembly of the Keyboard is shown In 1149B.

NOTE

It is easier to disassemble and reassemble the keyboard assembly with the base standing up on its rear side.

(b) To replace the keyboard assembly, reverse the procedure used in removing it.

(3) KEYBOARD LABELS

(a) To remove the plastic windows and labels, hood, seal, and seal plates, proceed as follows:

1. Remove the four 154202 screws which secure the 154198 windows and labels.

2. Remove the two 151632 screws underneath the 154110 hood which hold the hood to the 154203 hood mounting bracket; and remove the four 151659 screws on top of the hood which hold it to the 154210, 154211 left and right frame mounting brackets.

3. Pull the hood forward to remove.

4. Stretch the 154020 rubber keyboard seal off its 154057, 154058 plates.

5. Remove the four 151442 screws and two 154203 hood mounting brackets.

6. Remove the 154058 upper seal plate by unscrewing the three 151722 screws at its rear.

7. Remove the 154057 lower seal plate by unscrewing the two 151632 screws at its front.

8. See 1149B for disassembly.

(b) To replace the Keyboard labels reverse the procedure used in removing it.

(4) CONTACT BOX

(a) To remove the contact box assembly, proceed as follows:

1. Remove the 154131 contact box cover and disconnect the signal line leads.

2. Unhook the 86304 drive link spring.

3. Unscrew the two 151632 screws at the front of the 154009 front plate which hold the contact box assembly.

4. Disengage the 156644 drive link from the transfer bail and lift off the assembly. It is most economical to replace the entire contact assembly if contacts need replacement.

5. Disassembly of the contact box is shown in 1149B.

(b) To replace the contact box, reverse the procedure used in removing it.

(5) TRANSFER LEVER LOCKING BAIL

(a) To remove the transfer lever locking bail, proceed as follows:

1. Remove the signal generator assembly from the keyboard as specified in paragraph 10.b.(1).

2. Remove the contact box assembly as specified in paragraph 10.c.(4).

3. Remove the 70388 transfer lever locking bail spring.

4. Extract the 154140 locking bail by unlatching the clutch and rotating the shaft to position the cam in such a way so that the locking bail can be unhooked and dropped down from its guide post. Turn the locking bail clockwise until it forms a right angle with its guide and extract it out the bottom of the frame.

5. Disassembly of the mechanism is shown in 1149B.

(b) To replace the transfer lever locking bail, reverse the procedure used in removing it.

NOTE

It may be necessary to move the shaft back and forth to position the cam for maximum clearance.

(6) SIGNAL GENERATOR SHAFT

(a) To remove the cam, clutch, and shaft assembly, proceed as follows:

1. Remove the transfer lever locking bail as specified in paragraph 10.c.(5).

2. Remove the two 151631 screws which mount the 154101 clutch shaft rear mounting plate to the 154200 signal generator frame, and remove the 112626 nut which locks the shaft to the front of the frame.

3. Hold the 154033 clutch latch lever and the 154034 clutch stop lever away and pull back on the shaft rear mounting plate to disengage the shaft from the front plate.

4. Remove the entire cam, clutch, and shaft assembly by rotating it to clear the various transfer levers. The 154019 code bar bail eccentric follower, the 154138 felt washer, and the 154083 cam spacer will all fall free. These must be repositioned before reassembly.

5. To take the cam (with clutch assembly) off the shaft, disengage the clutch by holding the clutch shoe lever against the stop lug and slide the cam and clutch off.

6. Disassembly of the shaft assembly is shown in 1149B.

(b) To replace the shaft assembly, reverse the procedure used in removing it.

(7) KEYLEVER GUIDE PLATE

(a) To remove the keylever guide plate, proceed as follows:

1. Remove the plastic windows and labels, and hood as specified in paragraph 10.c.(3).

2. Remove the 151045 space bar by unscrewing the two 151223 shoulder screws that fasten it to the 154117 space bar bail.

3. Remove the 151659 screw on the keylever guide plate under the space bar and the two 151659 screws in the upper corners of the plate which hold the plate to the frame.

4. Work the guide plate off the keytops and let them fall free.

5. Disassembly of the mechanism is shown in 1149B.

(b) To replace the guide plate over the keylevers, flop all levers to the rear. Place the front end of the guide plate down on the frame; and push the keylevers into their respective holes, starting with the bottom row and proceeding upward to the top row.

d. MOTOR

Remove the four screws that secure the motor base plate to the base. Remove the screws that secure cover and remove the motor leads from terminals 1 and 2 of the terminal board.

(1) SYNCHRONOUS

(a) Disassembly of the Synchronous Motor is shown in 1149B.

(2) GOVERNED

(a) Disassembly of the Governed Motor is shown in 1149B.

(b) In order to prolong the life of governor slip ring brushes, the slip rings are machined to close concentricity requirements after assembly. These slip rings should not be replaced unless facilities for machining operation are available.

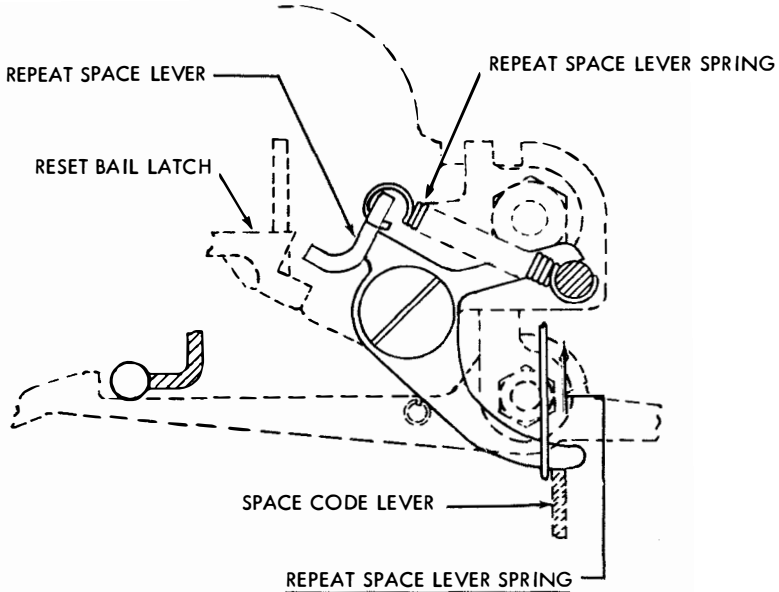
(c) After the Governor parts are assembled, the Governor is carefully balanced to reduce vibration; therefore, when it becomes necessary to replace contacts, only the parts being replaced should be moved.

e. ELECTRICAL SERVICE UNIT

In order to remove the Electrical Service Unit completely from the Cabinet, it will be necessary to remove the wires from the 118759 terminal blocks. However, the panel may be turned bottom side upward for maintenance purposes by removing the two 151437 studs.

SECTION 2 - VARIABLE FEATURE ADJUSTMENTS

1. REPEAT SPACE MECHANISM



(1) REQUIREMENT
MIN. 1 OZ.
MAX. 1-1/2 OZ.
TO PULL REPEAT SPACE LEVER IN ENGAGEMENT WITH RESET BAIL LATCH.

(2) REQUIREMENT
WITH POWER APPLIED AND THE SPACE BAR FULLY DEPRESSED, THE SPACE CHARACTER SHOULD BE REPEATED AS LONG AS THE SPACE BAR IS HELD DEPRESSED.

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-43

FIGURE 2-1 KEYBOARD REPEAT ON SPACE MECHANISM

2. TIME DELAY MECHANISM

TIME DELAY RATCHET WHEEL TENSION

REQUIREMENT

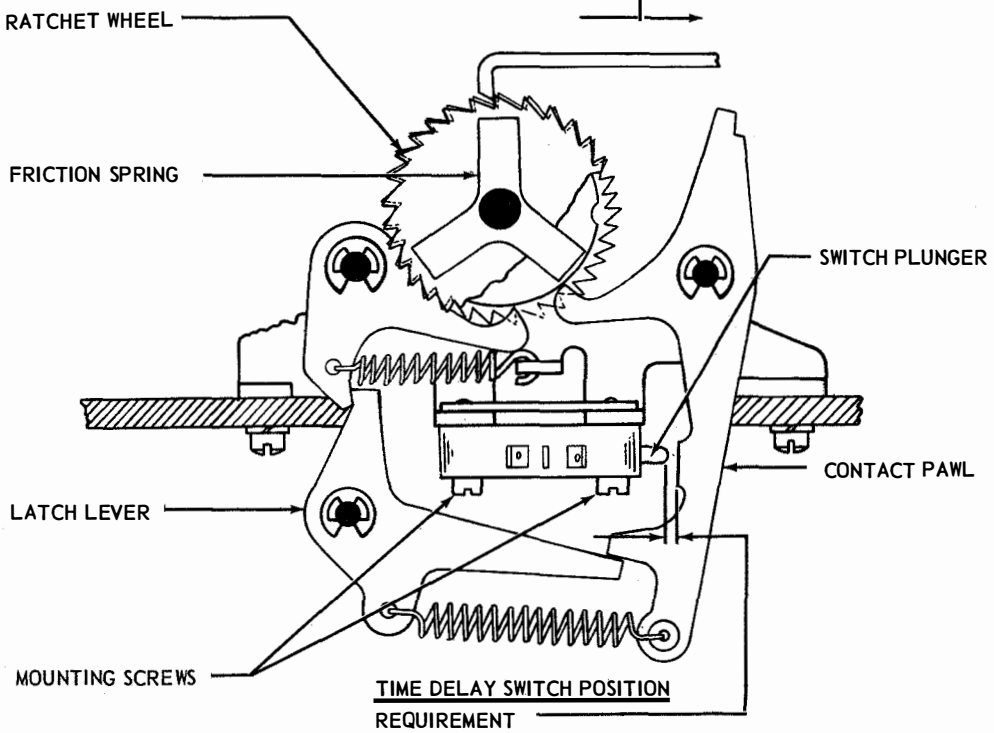
HOLD OFF ALL PAWLS.

MIN. 2 OZS.
MAX. 8 OZS.

TO MOVE RATCHET WHEEL.

TO ADJUST

REMOVE AND BEND THE FRICTION SPRINGS.



TIME DELAY SWITCH POSITION

REQUIREMENT

CONTACT PAWL NOT BLOCKED BY LATCH LEVER AND ON HIGH PART OF THE RATCHET WHEEL. SOME CLEARANCE BETWEEN CONTACT PAWL AND SWITCH PLUNGER WHEN PLAY IN RATCHET WHEELS IS TAKEN UP IN DOWNWARD DIRECTION MAX. 0.010 INCH

TO ADJUST

POSITION THE SWITCH WITH THE TWO SWITCH MOUNTING SCREWS LOOSENED.

FIGURE 2-2 KEYBOARD OR BASE, TIME DELAY MECHANISM

2. TIME DELAY MECHANISM

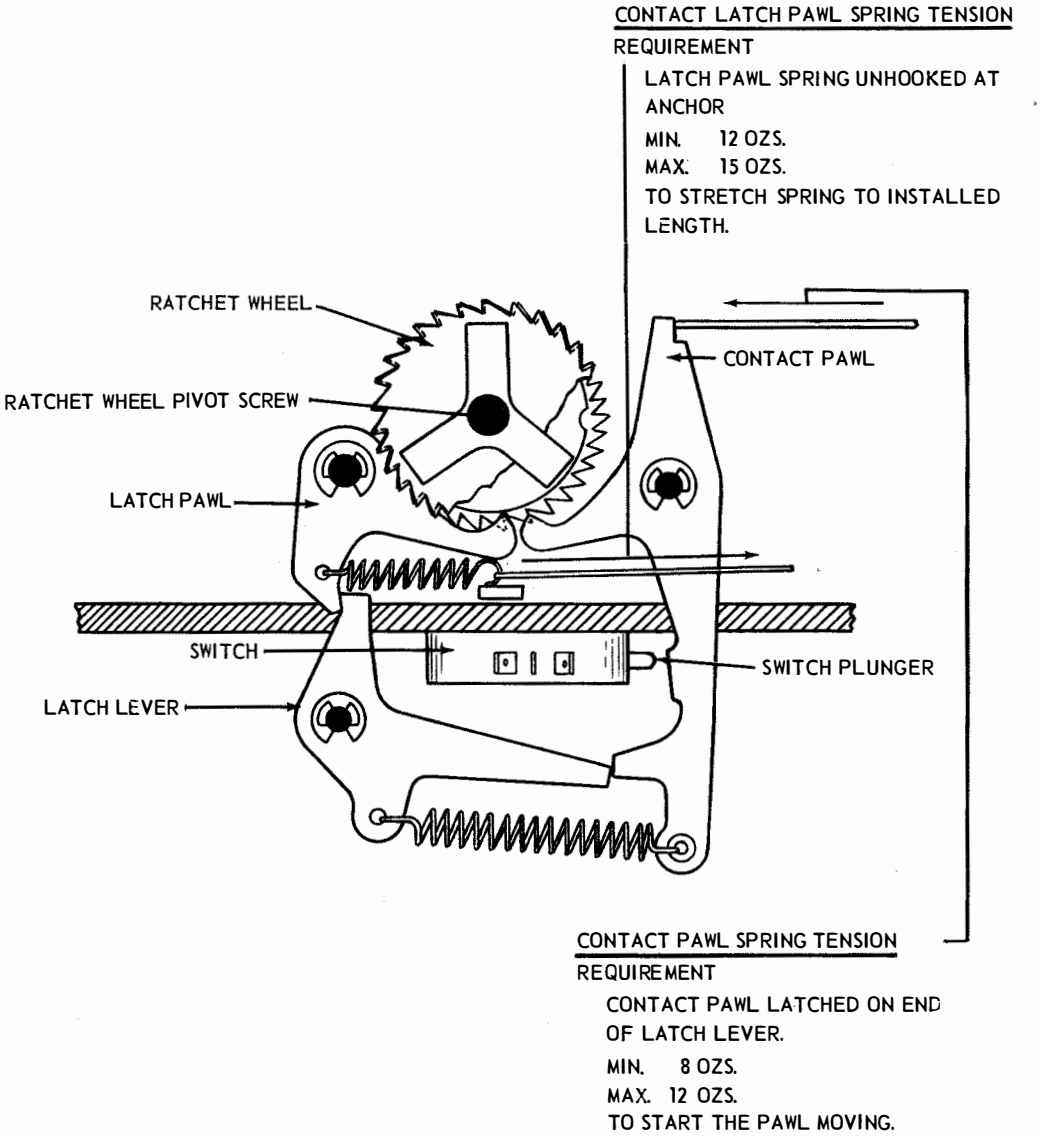
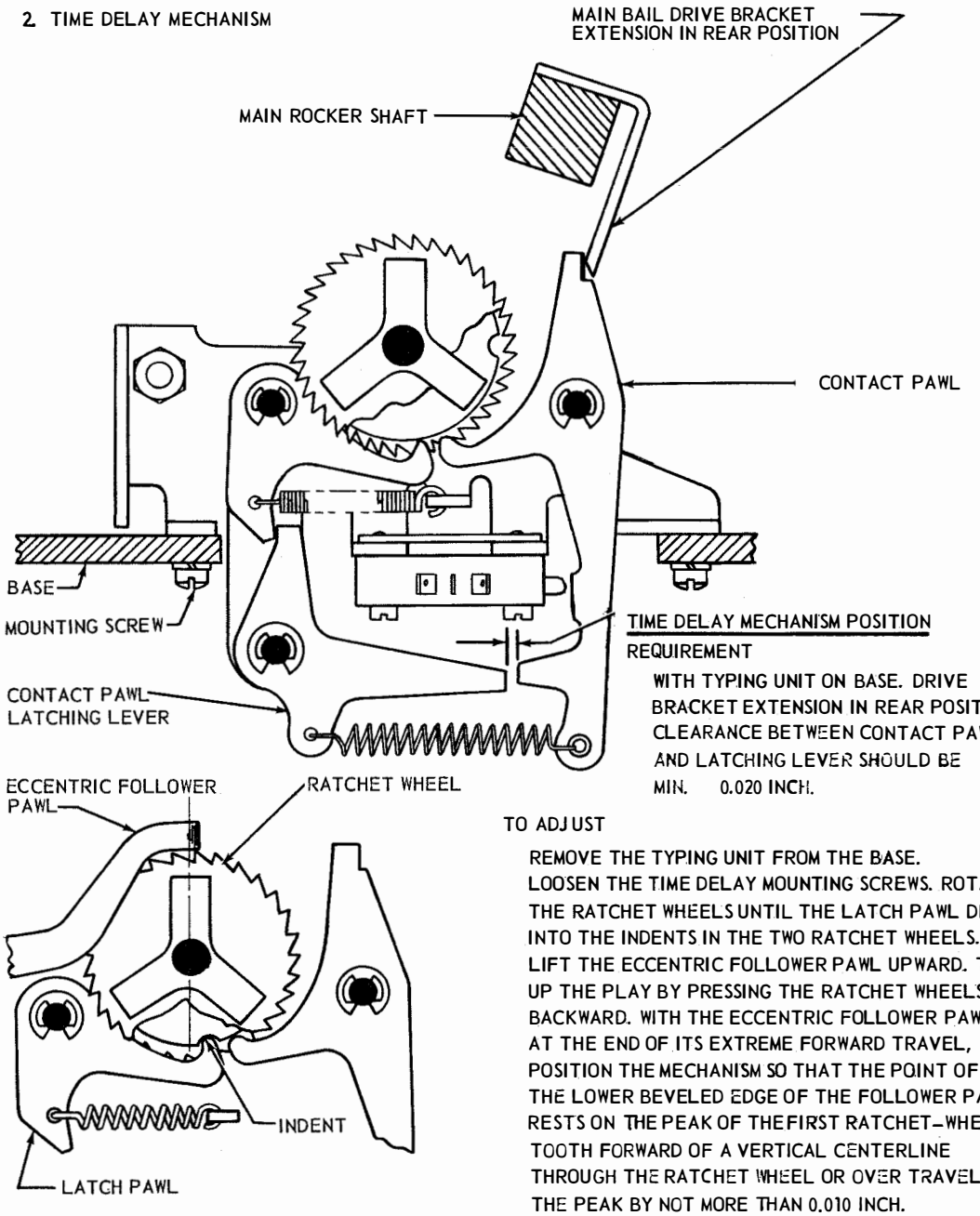


FIGURE 2-3 KEYBOARD OR BASE, TIME DELAY MECHANISM, LEFT SIDE VIEW

2. TIME DELAY MECHANISM



TIME DELAY MECHANISM POSITION

REQUIREMENT

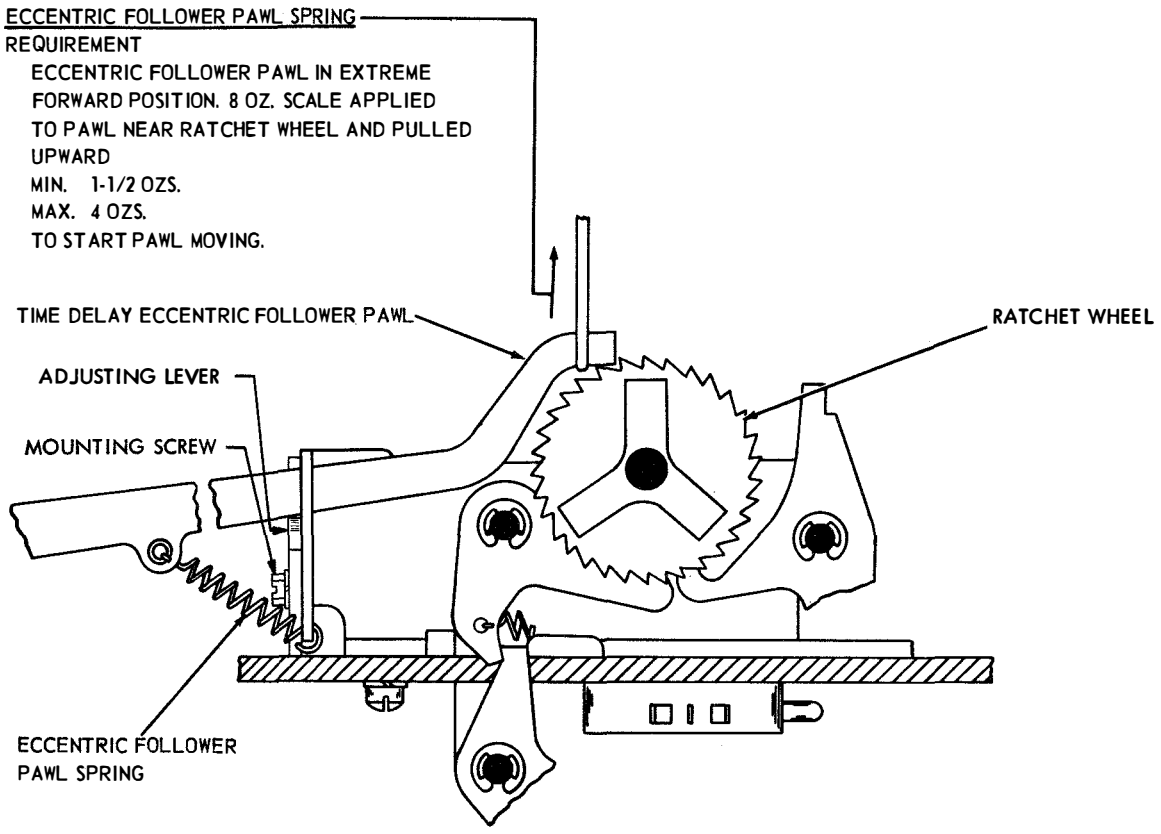
WITH TYPING UNIT ON BASE. DRIVE BRACKET EXTENSION IN REAR POSITION. CLEARANCE BETWEEN CONTACT PAWL AND LATCHING LEVER SHOULD BE MIN. 0.020 INCH.

TO ADJUST

REMOVE THE TYPING UNIT FROM THE BASE. LOOSEN THE TIME DELAY MOUNTING SCREWS. ROTATE THE RATCHET WHEELS UNTIL THE LATCH PAWL DROPS INTO THE INDENTS IN THE TWO RATCHET WHEELS. LIFT THE ECCENTRIC FOLLOWER PAWL UPWARD. TAKE UP THE PLAY BY PRESSING THE RATCHET WHEELS BACKWARD. WITH THE ECCENTRIC FOLLOWER PAWL AT THE END OF ITS EXTREME FORWARD TRAVEL, POSITION THE MECHANISM SO THAT THE POINT OF THE LOWER BEVELED EDGE OF THE FOLLOWER PAWL RESTS ON THE PEAK OF THE FIRST RATCHET-WHEEL TOOTH FORWARD OF A VERTICAL CENTERLINE THROUGH THE RATCHET WHEEL OR OVER TRAVELS THE PEAK BY NOT MORE THAN 0.010 INCH. RECHECK MINIMUM CLEARANCE OF 0.020 INCH WITH TYPER ON KEYBOARD BASE. IF NECESSARY, REFINE ADJUSTMENT

FIGURE 2-4 KEYBOARD OR BASE, TIME DELAY MECHANISM, LEFT SIDE VIEW

2. TIME DELAY MECHANISM



TIME DELAY DISABLING DEVICE
REQUIREMENT
DISABLE THE TIME DELAY MECHANISM WHEN NOT REQUIRED.
TO ADJUST
LOOSEN THE ADJUSTING LEVER MOUNTING SCREW AND PRESS DOWNWARD ON THE LEVER TO RAISE ECCENTRIC FOLLOWER OUT OF ENGAGEMENT WITH ITS RATCHET WHEEL.

NOTE: FOR ADJUSTMENT OF EARLIER DESIGN MECHANISMS SEE FIGURE 4-44

FIGURE 2-5 KEYBOARD OR BASE, TIME DELAY DISABLING DEVICE

3. SIGNAL LINE BREAK MECHANISM (BASE)

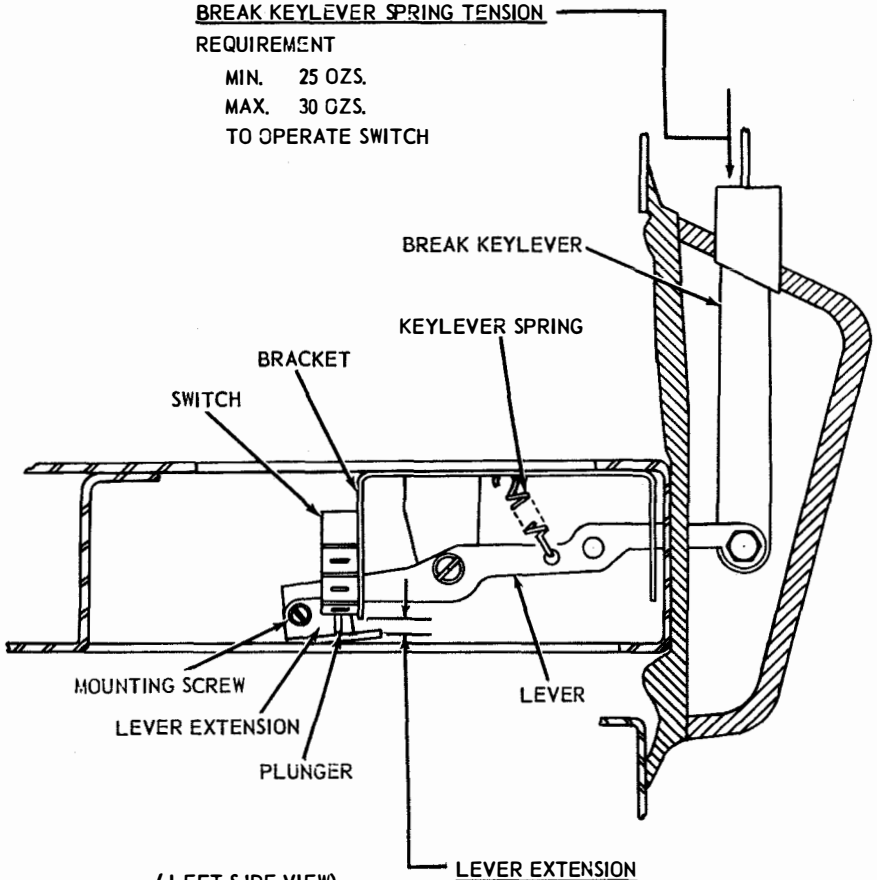


FIGURE 2-6 BASE, BREAK MECHANISM

4. PAPER FEED OUT MECHANISM

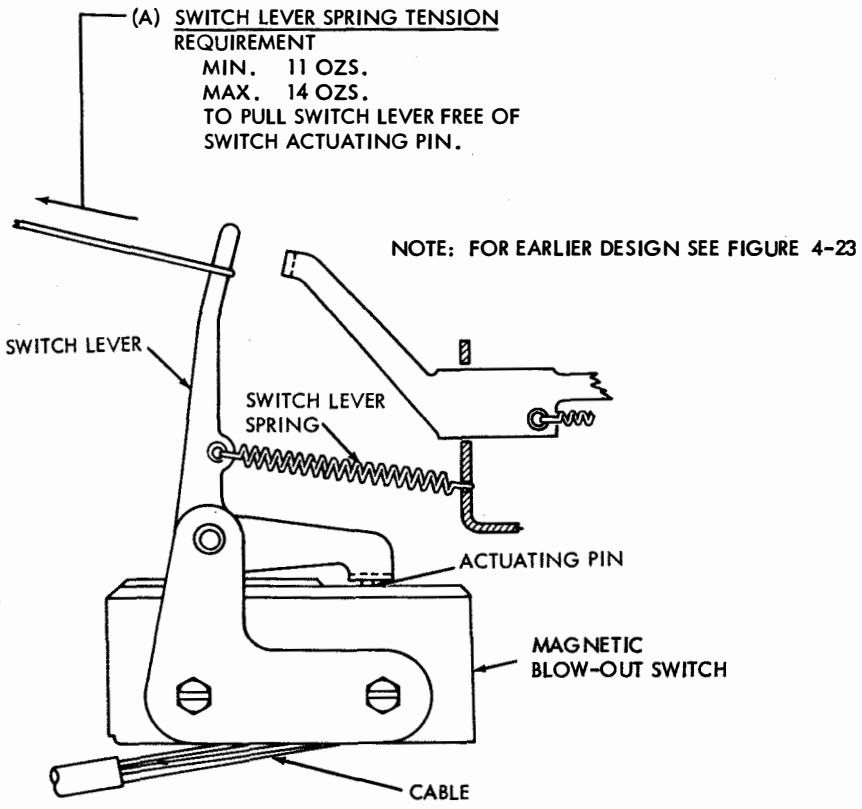
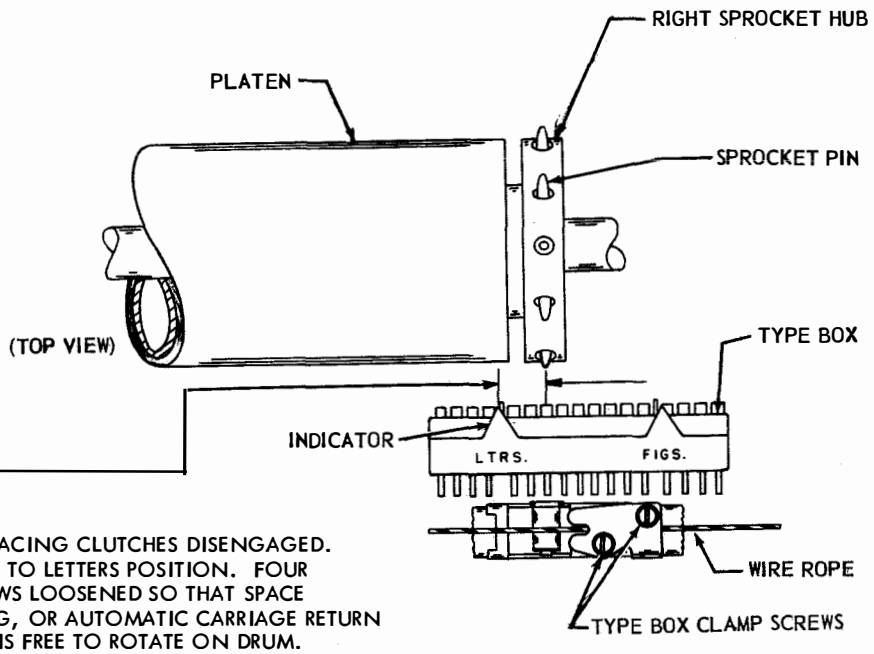


FIGURE 2-7 KEYBOARD OR BASE, LOCAL PAPER FEED-OUT MECHANISM

5. SPROCKET FEED MECHANISM



TYPE BOX POSITION

REQUIREMENT

TYPE BOX AND SPACING CLUTCHES DISENGAGED. TYPE BOX SHIFTED TO LETTERS POSITION. FOUR MOUNTING SCREWS LOOSENED SO THAT SPACE SUPPRESSION RING, OR AUTOMATIC CARRIAGE RETURN LINE FEED RING, IS FREE TO ROTATE ON DRUM. (UNITS EQUIPPED WITH LIMITED ADJUSTMENT SPACING DRUM: SPACING CUT OUT AND AUTOMATIC CARRIAGE RETURN LINE FEED ARMS IN MAXIMUM COUNTER-CLOCKWISE POSITION. SEE FIG. 4-27) CLEARANCE BETWEEN LETTERS PRINT INDICATOR AND CENTER LINE OF SPROCKET PINS IN RIGHT HUB:
MIN. 5/16 INCH
MAX. 7/16 INCH

TO ADJUST

LOOSEN TWO TYPE BOX CLAMP SCREWS AND TWO PRINTING CARRIAGE CLAMP SCREWS. POSITION TYPE BOX. TIGHTEN TYPE BOX CLAMP SCREWS. DO NOT TIGHTEN PRINTING CARRIAGE CLAMP SCREWS UNTIL PRINTING CARRIAGE POSITION ADJUSTMENT IS MADE.

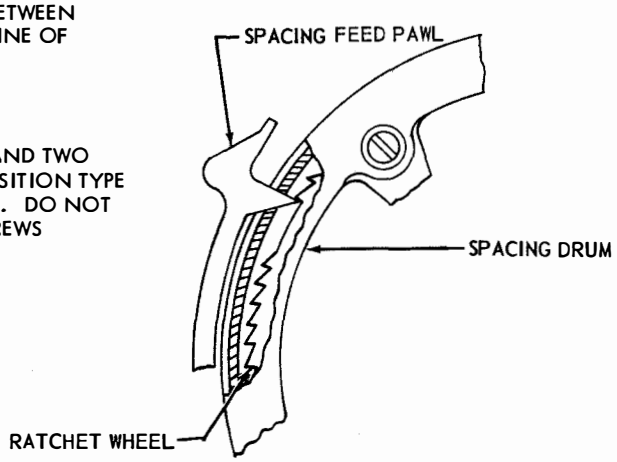
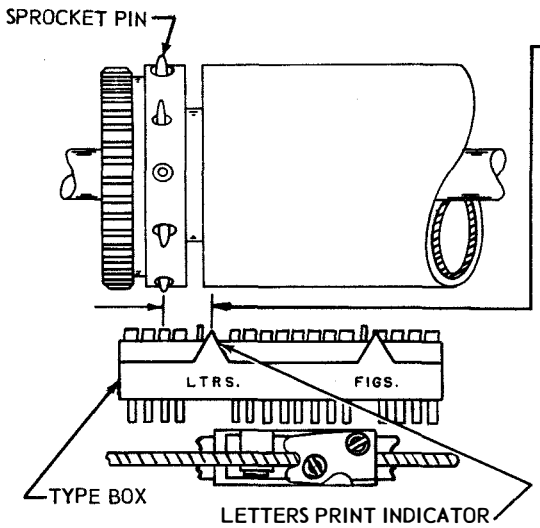


FIGURE 2-8 TYPING UNIT, PLATEN AND PRINTING MECHANISM

5. SPROCKET FEED MECHANISM



(TOP VIEW)

(A) LEFT MARGIN

(1) REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. SPACING DRUM FULLY RETURNED. TYPE BOX SHIFTED TO LETTERS POSITION. CLEARANCE BETWEEN CENTER OF LETTERS PRINT INDICATOR ON TYPE BOX AND CENTERLINE OF SPROCKET PINS IN LEFT HUB

MIN. 5/16 INCH

MAX. 7/16 INCH

(2) REQUIREMENT

SPACING CLUTCH DISENGAGED. FRONT SPACING FEED PAWL FARTHEST ADVANCED. SPACING DRUM FULLY RETURNED. PLAY IN SPACING SHAFT GEAR (FIG. 1-36) TAKEN UP CLOCKWISE. CLEARANCE BETWEEN PAWL AND SHOULDER OF RATCHET WHEEL TOOTH IMMEDIATELY AHEAD

MIN. 0.002 INCH

MAX. 0.015 INCH

(3) REQUIREMENT

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

TO ADJUST

POSITION CARRIAGE RETURN RING WITH MOUNTING SCREWS LOOSENED.

(B) PRINTING HAMMER STOP BRACKET

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

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

(C) RIGHT MARGIN

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

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

(D) PRINTING CARRIAGE POSITION
USE STANDARD ADJUSTMENT

(E) TYPE BOX ALIGNMENT
USE STANDARD ADJUSTMENT

FOLLOWING THIS ADJUSTMENT, ALL SCREWS SHOULD BE TIGHTENED.

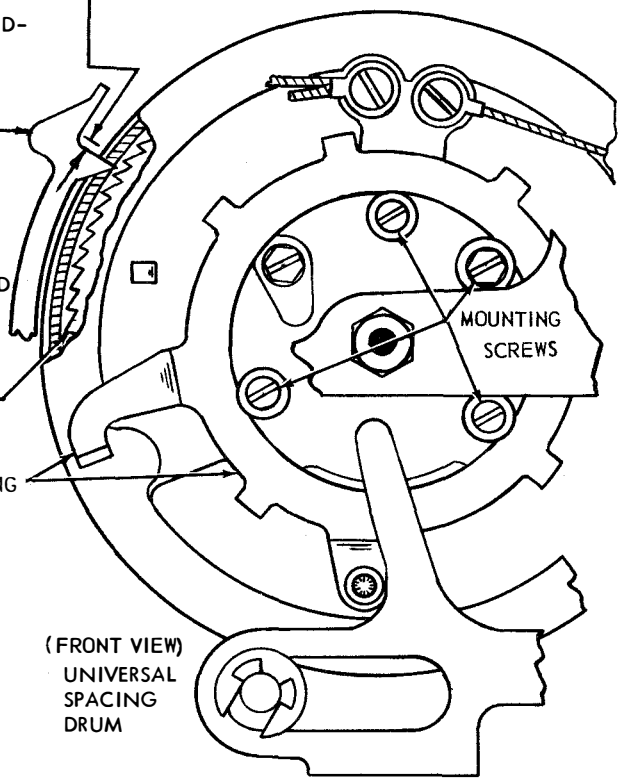
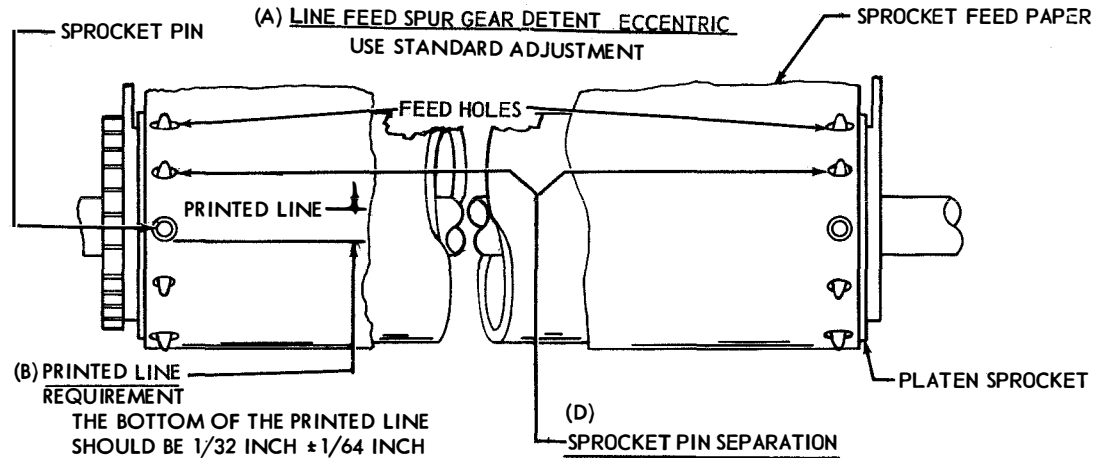


FIGURE 2-9 TYPING UNIT, PLATEN AND SPACING MECHANISM

5. SPROCKET FEED MECHANISM



(B) PRINTED LINE REQUIREMENT

THE BOTTOM OF THE PRINTED LINE SHOULD BE 1/32 INCH ± 1/64 INCH (PLUS A MULTIPLE OF 1/6 INCH IF REQUIRED) ABOVE A HORIZONTAL LINE DRAWN EVEN WITH THE BOTTOM EDGE OF ANY SPROCKET HOLE.

TO ADJUST

LOOSEN SCREWS AND POSITION LEFT SPROCKET

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

(C) PLATEN END PLAY

REQUIREMENT

LINE FEED PAWLS DISENGAGED. PLATEN SHAFT SHOULD HAVE SOME END PLAY.

MAX. 0.010 INCH.

TO ADJUST

POSITION PLATEN SPUR GEAR WITH CLAMP SCREW LOOSENED.

(D) SPROCKET PIN SEPARATION

(1) REQUIREMENT

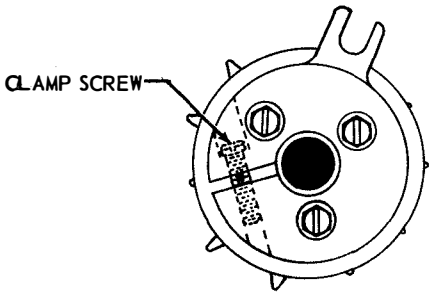
WITH SINGLE SHEET OF SPROCKET FEED PAPER PLACED ON THE PLATEN THE SPROCKET PINS SHOULD BE CENTRALLY LOCATED IN THE FEED HOLES OF THE PAPER

(2) REQUIREMENT

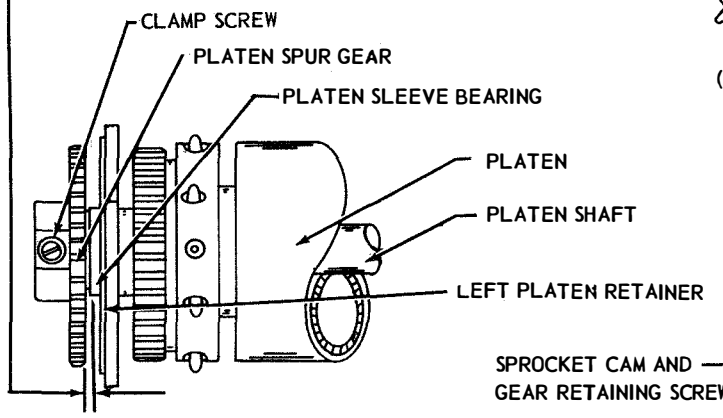
PRINTED LINE SHOULD BE PARALLEL TO A LINE DRAWN PERPENDICULAR TO EDGE OF PAPER WITHIN PLUS OR MINUS 1/32 INCH

TO ADJUST

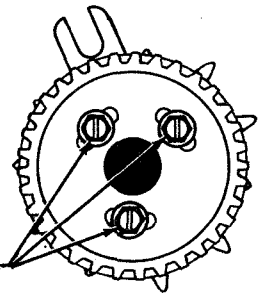
POSITION RIGHT SPROCKET WITH CLAMP SCREW LOOSENED.



(RIGHT SIDE SPROCKET)



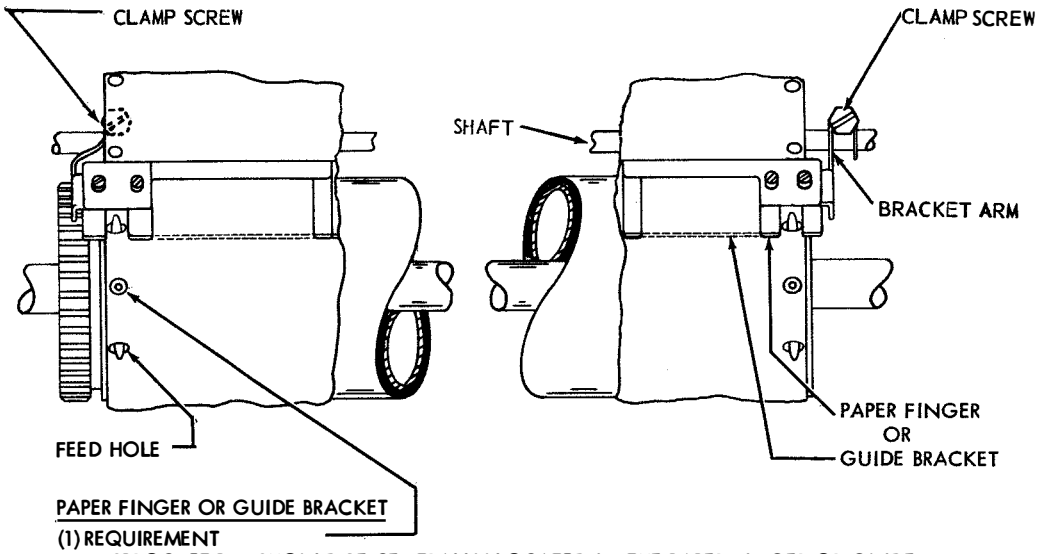
(FRONT VIEW)



(LEFT SIDE SPROCKET)

FIGURE 2-10 TYPING UNIT, SPROCKET FEED PLATEN

5. SPROCKET FEED MECHANISM



PAPER FINGER OR GUIDE BRACKET

(1) REQUIREMENT

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

(2) REQUIREMENT

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

STAPLED MULTIPLE COPY	SINGLE COPY OR UNSTAPLED MULTIPLE COPY
MIN. 0.090 INCH	0.050 INCH
MAX. 0.105 INCH	0.060 INCH

TO ADJUST

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

(3) REQUIREMENT (NOT ILLUSTRATED)

MIN. 0.035 INCH

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

TO ADJUST

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

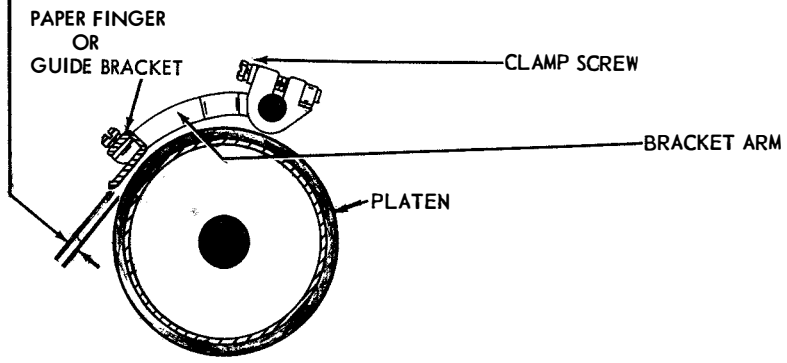
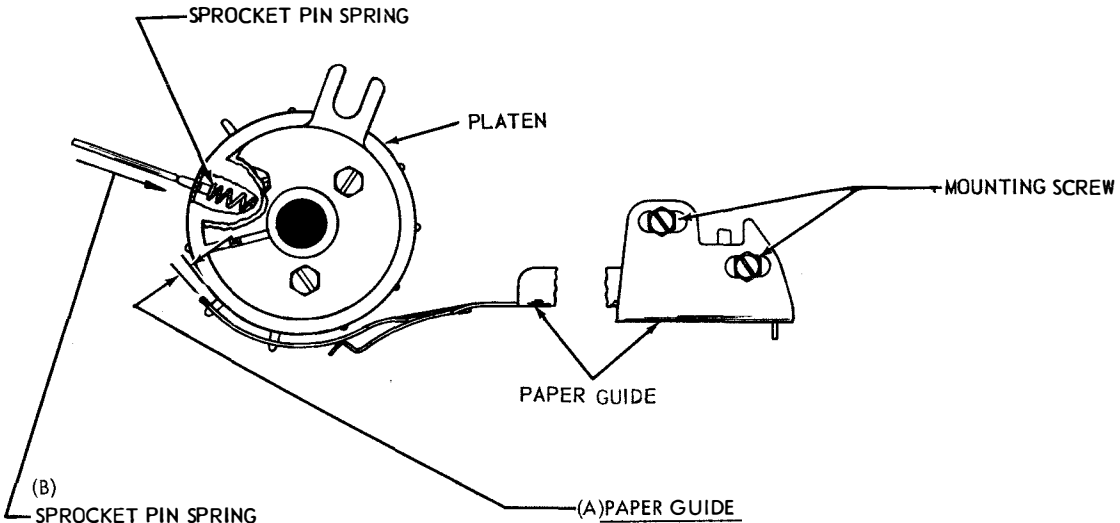


FIGURE 2-11 TYPING UNIT, PLATEN MECHANISM

5. SPROCKET FEED MECHANISM



(B)
SPROCKET PIN SPRING
REQUIREMENT
MIN. 6 OZS.
MAX. 8 OZS.
TO START DEPRESSING THE PIN.

(A)PAPER GUIDE
REQUIREMENT
THE CLEARANCE BETWEEN THE PLATEN AND THE FRONT EDGE OF THE PAPER GUIDE SHOULD BE

	STAPLED MULTIPLE COPY	SINGLE COPY OR UNSTAPLED COPY
MIN.	0.090 INCH	0.050 INCH
MAX.	0.105 INCH	0.060 INCH

TO ADJUST
POSITION THE GUIDE WITH ITS REAR MOUNTING SCREWS LOOSENED.

(C)RIBBON REVERSE SPUR GEAR
USE STANDARD ADJUSTMENT

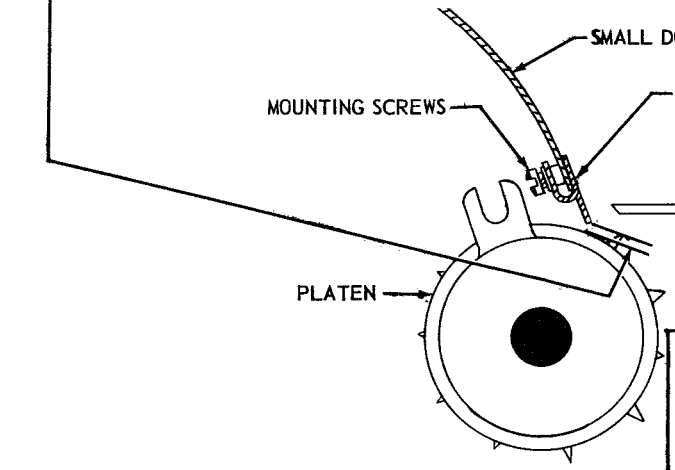
(D)RIBBON REVERSE DETENT
USE STANDARD ADJUSTMENT

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

FIGURE 2-12 TYPING UNIT, PLATEN AND PAPER TRAY

5. SPROCKET FEED MECHANISM

FRONT FORM GUIDE (CABINET)
REQUIREMENT
WITH TYPING UNIT IN CABINET AND LARGE AND SMALL DOORS LATCHED, CLEARANCE BETWEEN THE LOWER EDGE OF THE FRONT FORM GUIDE AND THE PLATEN SHOULD BE
MIN. 3/64 INCH
MAX. 5/64 INCH
TO ADJUST
LOOSEN THE FORM GUIDE MOUNTING SCREWS. PRESS THE PAPER GUIDE AGAINST THE PLATEN, THEN RAISE THE FORM GUIDE PARALLEL TO THE PLATEN.



GUIDE BRACKET (CABINET)
REQUIREMENT
THE GUIDE BRACKET SHOULD BE PLACED AS FAR AS POSSIBLE TO THE LEFT (REAR VIEW).
TO ADJUST
POSITION THE GUIDE BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

REAR FORM GUIDE (CABINET)
REQUIREMENT
WITH A SHEET OF SPROCKET FEED PAPER PLACED IN THE FORM GUIDE AND PUSHED TO THE RIGHT (REAR VIEW) AGAINST THE GUIDE BRACKET, THE CLEARANCE BETWEEN THE LEFT EDGE OF THE PAPER AND THE GUIDE POST SHOULD BE
MIN. 3/64 INCH
MAX. 5/64 INCH
TO ADJUST
POSITION THE GUIDE POST WITH ITS MOUNTING NUT LOOSENED.

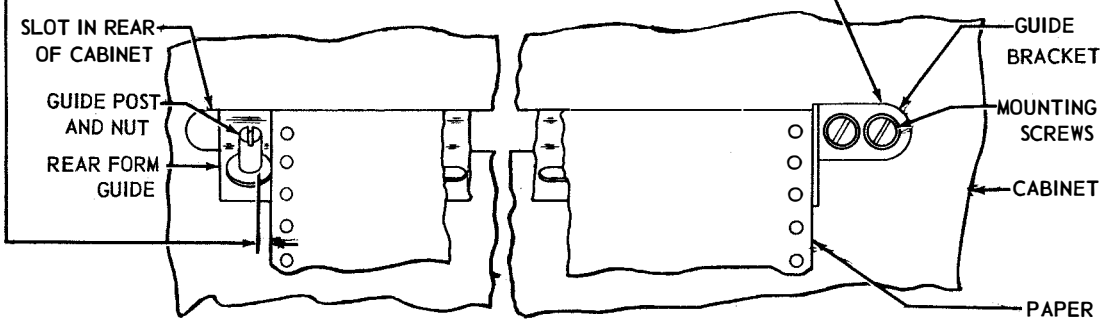
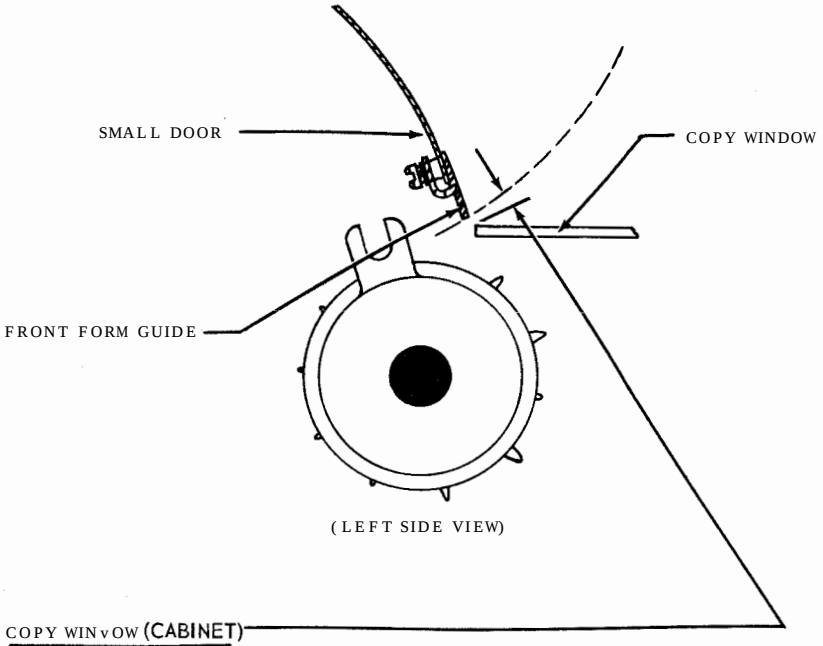


FIGURE 2-13 CABINET, FRONT AND REAR FORM GUIDES

5. SPROCKET FEED MECHANISM



REQUIREMENT

SMALL DOOR OPEN AND POSITIONED SO THAT CLEARANCE BETWEEN FRONT FORM GUIDE AND WINDOW IS AT MINIMUM. CLEARANCE.

MIN. 0.060 INCH

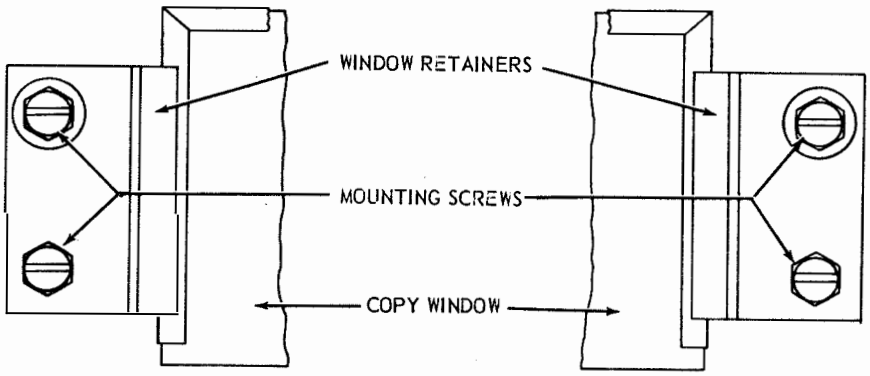
MAX. 0.080 INCH

TO ADJUST

POSITION WINDOW WITH FOUR WINDOW RETAINER MOUNTING SCREWS LOOSENED.

NOTE

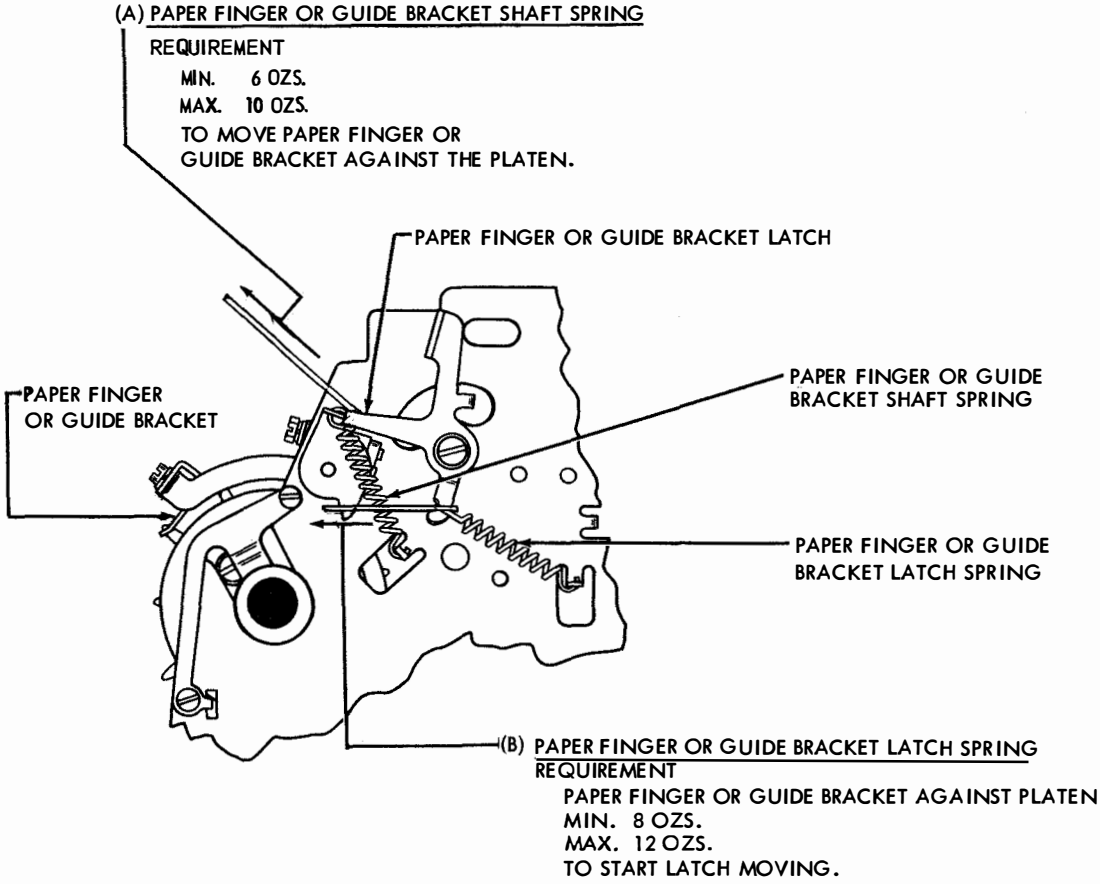
IF STAPLED PAPER IS USED, STAPLES SHOULD PASS FREELY THROUGH SLOT. IF THEY DO NOT, INCREASE CLEARANCE AS REQUIRED.



(BOTTOM VIEW)

FIGURE 2-14 CABINET, FORM GUIDE AND COPY WINDOW

5. SPROCKET FEED MECHANISM



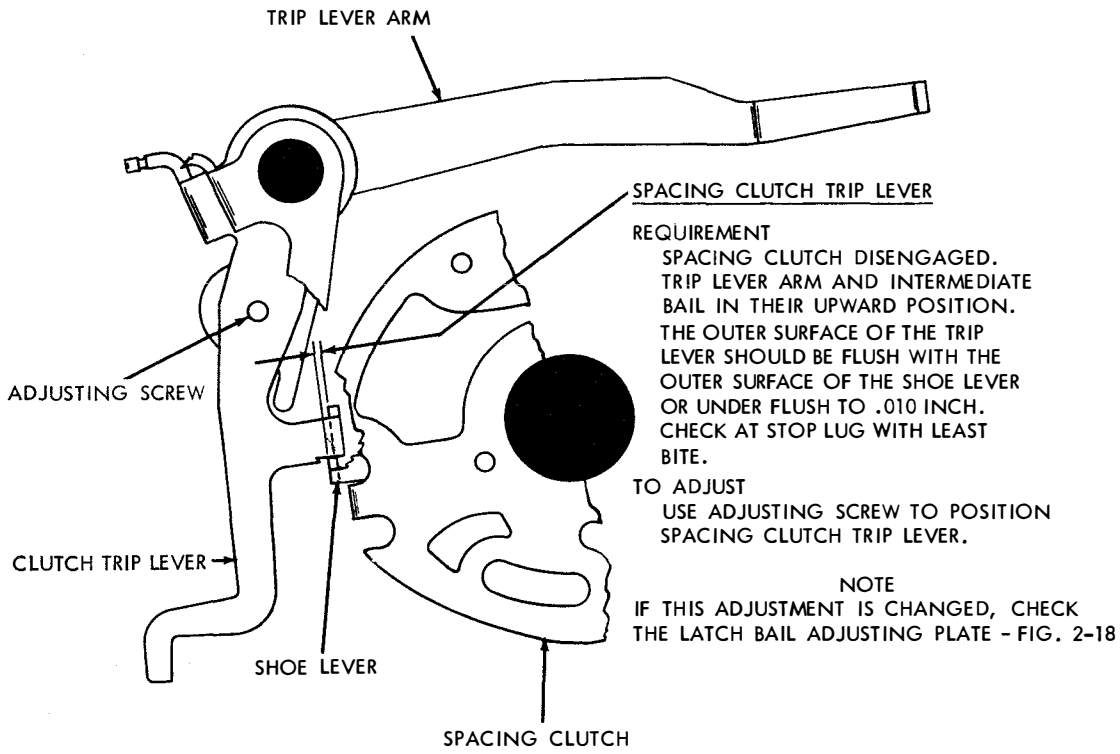
PLATEN DETENT BAIL SPRING TENSION

USE STANDARD ADJUSTMENT (FIGURE 1-67)

FIGURE 2-15 TYPING UNIT, SPROCKET FEED MECHANISM

6. HORIZONTAL TABULATOR MECHANISM (NEW DESIGN)

NOTE: FOR EARLIER DESIGN SEE FIGURES 4-48 THROUGH 4-53.



SPACING CLUTCH TRIP LEVER

REQUIREMENT

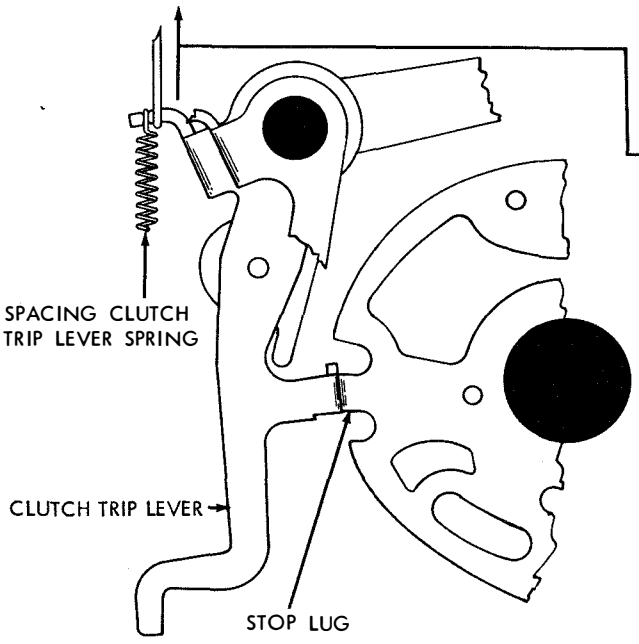
SPACING CLUTCH DISENGAGED. TRIP LEVER ARM AND INTERMEDIATE BAIL IN THEIR UPWARD POSITION. THE OUTER SURFACE OF THE TRIP LEVER SHOULD BE FLUSH WITH THE OUTER SURFACE OF THE SHOE LEVER OR UNDER FLUSH TO .010 INCH. CHECK AT STOP LUG WITH LEAST BITE.

TO ADJUST

USE ADJUSTING SCREW TO POSITION SPACING CLUTCH TRIP LEVER.

NOTE

IF THIS ADJUSTMENT IS CHANGED, CHECK THE LATCH BAIL ADJUSTING PLATE - FIG. 2-18



CLUTCH TRIP LEVER SPRING TENSION

REQUIREMENT

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

MIN. 11 OZS.
MAX. 16 OZS.

TO MOVE TRIP LEVER AWAY FROM STOP LUG.

FIGURE 2-16 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, LEFT VIEW

6. HORIZONTAL TABULATOR MECHANISM

OPERATING LEVER SLIDE ARM

NOTE

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

REQUIREMENT

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

MIN. 0.020 INCH
MAX. 0.030 INCH

TO ADJUST

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

NOTE

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

OPERATING LEVER SLIDE ARM SPRING

REQUIREMENT

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

MIN. 8-3/4 OZS.
MAX. 10-3/4 OZS.

TO START LINK MOVING.

NOTE

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

OPERATING LEVER ADJUSTING PLATE

REQUIREMENT

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

MIN. 0.025 INCH
MAX. 0.040 INCH

TO ADJUST

POSITION ADJUSTING PLATE ON BRACKET WITH MOUNTING SCREWS LOOSENED.

NOTE

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

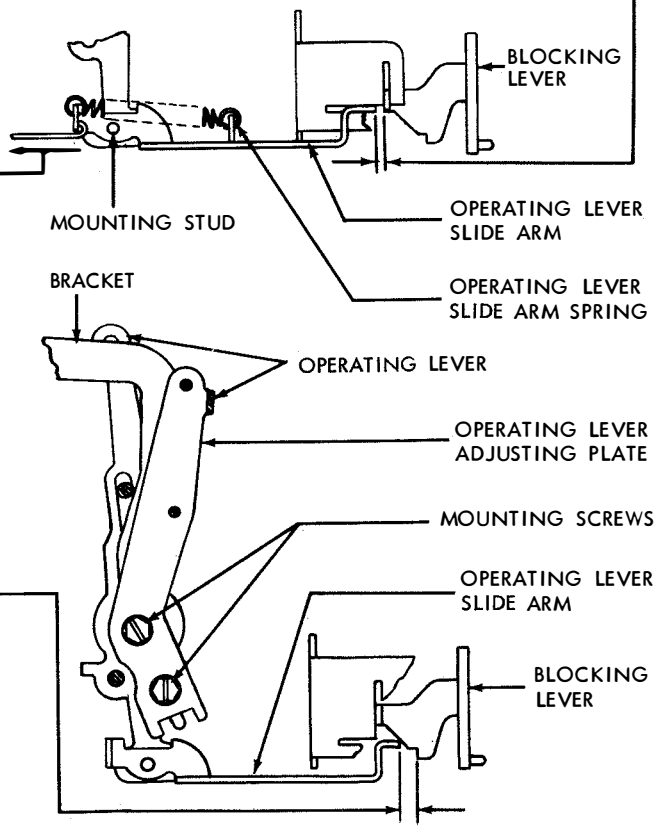


FIGURE 2-17 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, LEFT VIEW

6. HORIZONTAL TABULATOR MECHANISM

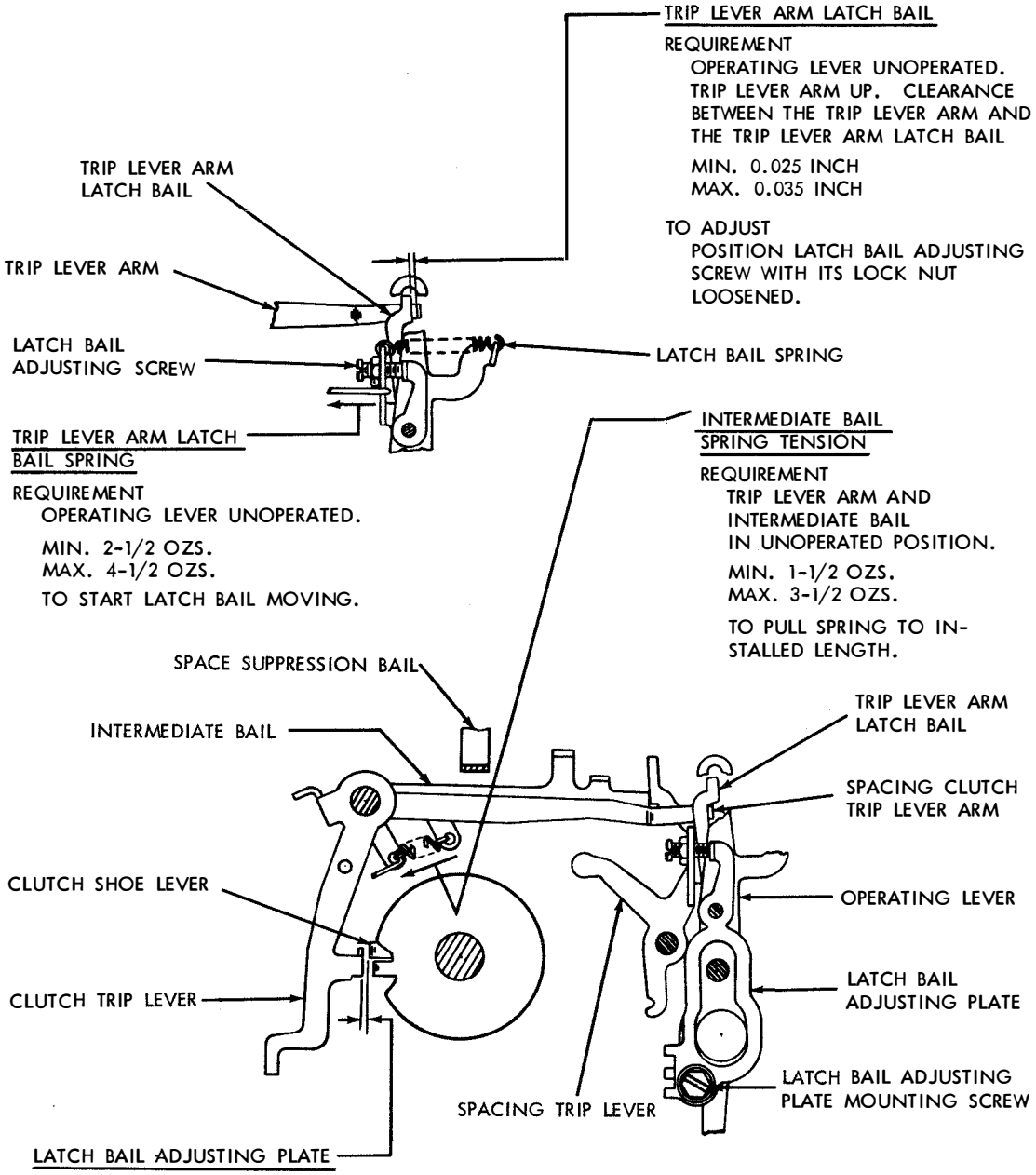
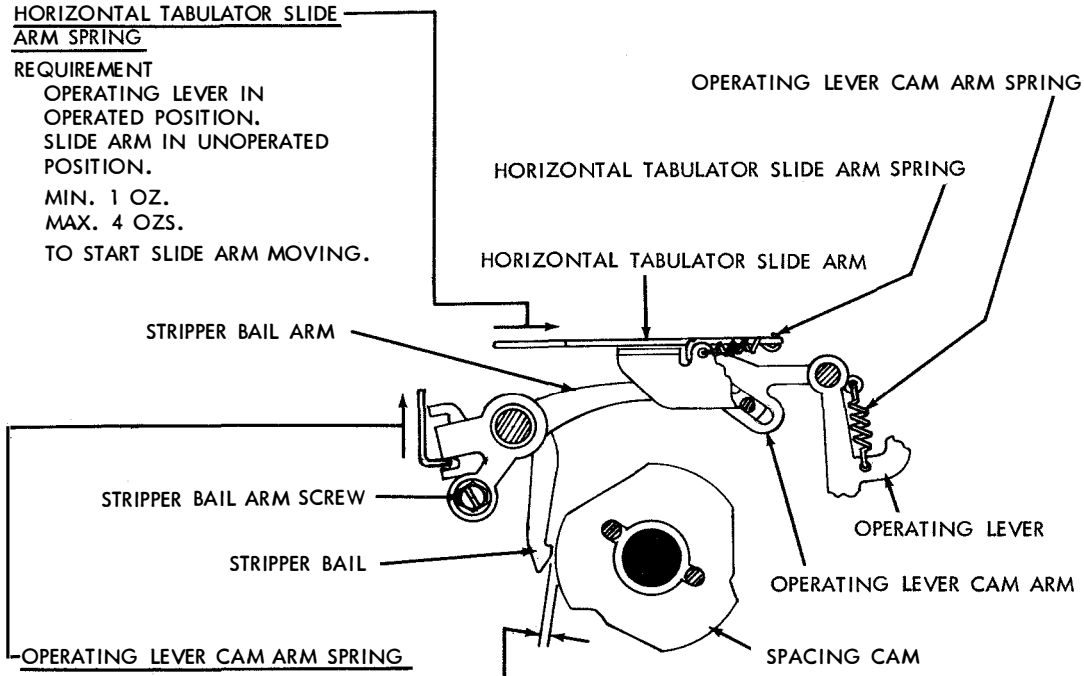


FIGURE 2-18 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM (LEFT VIEW)

6. HORIZONTAL TABULATOR MECHANISM



HORIZONTAL TABULATOR SLIDE ARM SPRING

REQUIREMENT
OPERATING LEVER IN OPERATED POSITION. SLIDE ARM IN UNOPERATED POSITION.
MIN. 1 OZ.
MAX. 4 OZS.
TO START SLIDE ARM MOVING.

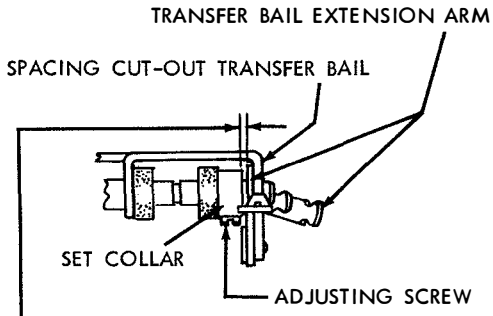
OPERATING LEVER CAM ARM SPRING

REQUIREMENT
OPERATING LEVER IN UNOPERATED POSITION. HORIZONTAL TABULATOR FUNCTION PAWL UNLATCHED.
MIN. 4 OZS.
MAX. 9 OZS.
TO START STRIPPER BAIL MOVING.

CAM ARM STRIPPER BAIL

REQUIREMENT
OPERATING LEVER AND TABULATOR SLIDE ARM IN UNOPERATED POSITIONS. SPACING CLUTCH ROTATED UNTIL HIGH PART OF SPACING CAM IS OPPOSITE STRIPPER BAIL. CLEARANCE BETWEEN SPACING CAM AND STRIPPER BAIL
MIN. 0.010 INCH
MAX. 0.025 INCH

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



SPACING CUT-OUT TRANSFER BAIL SET COLLAR

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

TO ADJUST
POSITION SET COLLAR WITH ADJUSTING SCREW LOOSENED.

FIGURE 2-19 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM

6. HORIZONTAL TABULATOR MECHANISM

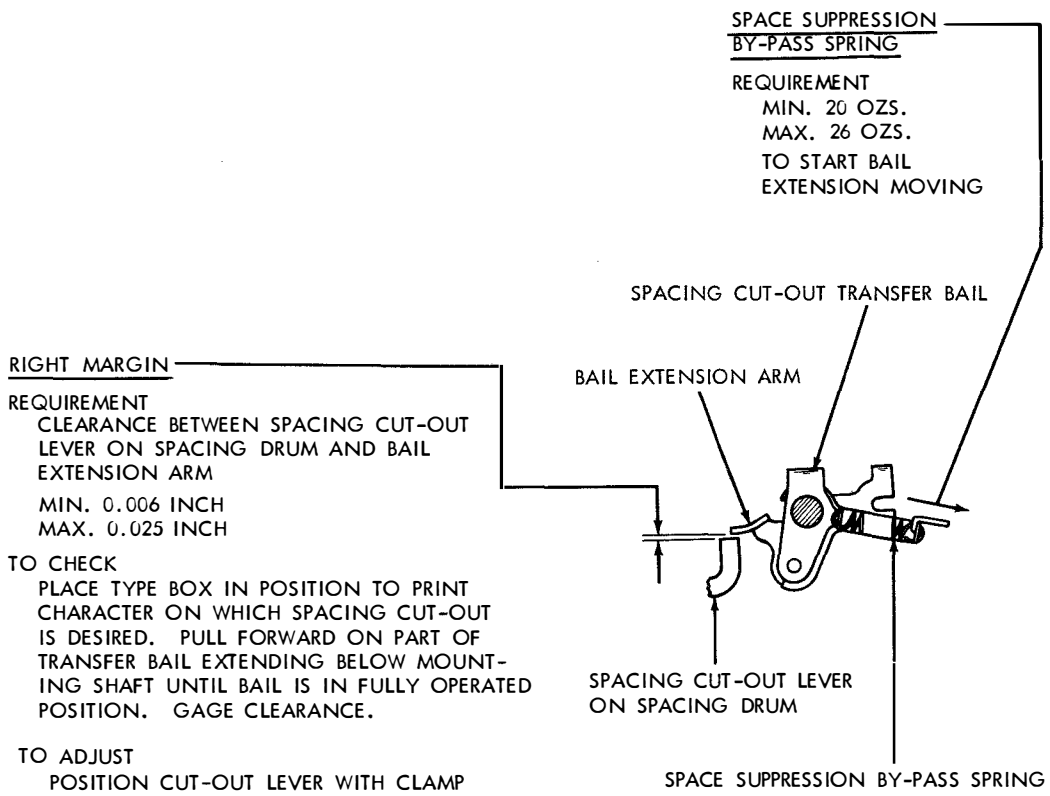
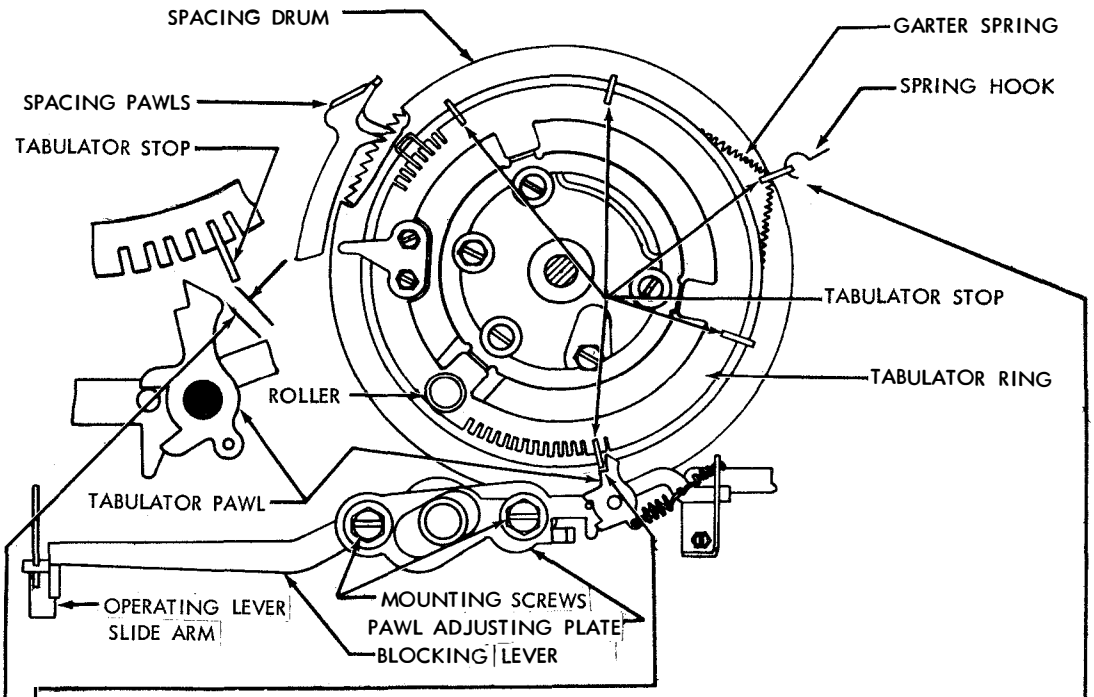


FIGURE 2-20 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM

6. HORIZONTAL TABULATOR MECHANISM



TABULATOR PAWL (PRELIMINARY)

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

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

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

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

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

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

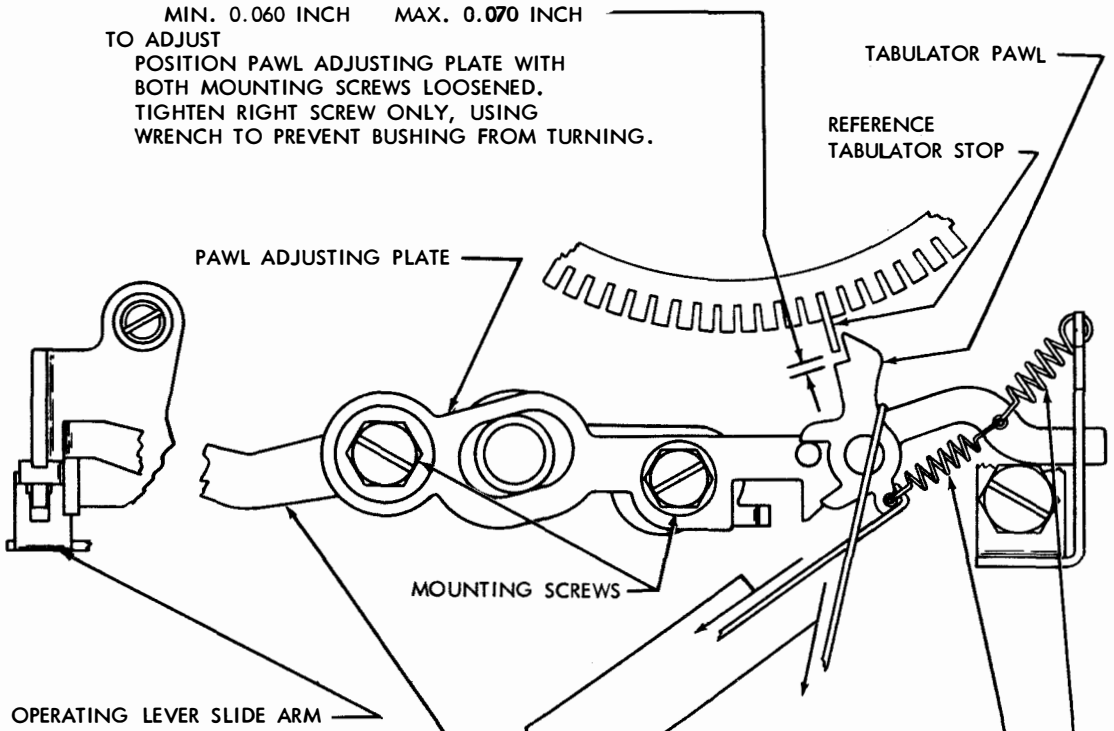
(5) ROTATE DRUM CLOCKWISE UNTIL NEXT STOP IS JUST TO LEFT OF PAWL. REPEAT PROCEDURE DESCRIBED IN PARAGRAPH (4) FOR THIS STOP. REPEAT PROCEDURE FOR REMAINING STOPS, NOTING EACH CLEARANCE.

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

FIGURE 2-21 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, FRONT VIEW

6. HORIZONTAL TABULATOR MECHANISM

TABULATOR PAWL - VERTICAL (FINAL)
TO CHECK
POSITION SPACING DRUM SUCH THAT REFERENCE TABULATOR STOP, AS DETERMINED BY PRELIMINARY TABULATOR PAWL ADJUSTMENT (FIG. 2-21), IS OPPOSITE SHOULDER ON PAWL. BLOCK OPERATING LEVER SLIDE ARM WITH BLOCKING LEVER.
REQUIREMENT
CLEARANCE BETWEEN PAWL AND STOP:
MIN. 0.060 INCH MAX. 0.070 INCH
TO ADJUST
POSITION PAWL ADJUSTING PLATE WITH BOTH MOUNTING SCREWS LOOSENED. TIGHTEN RIGHT SCREW ONLY, USING WRENCH TO PREVENT BUSHING FROM TURNING.

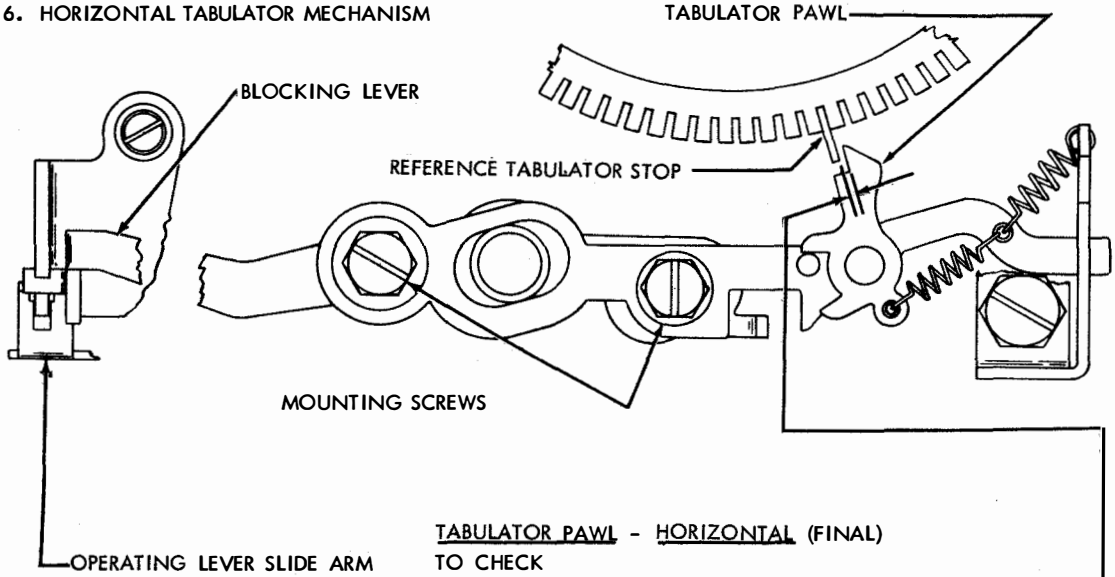


TABULATOR PAWL SPRING
REQUIREMENT
MIN. 3 OZS. MAX. 5 OZS.
TO START PAWL MOVING.

BLOCKING LEVER SPRING
TO CHECK
HOLD OPERATING LEVER SLIDE ARM TO THE REAR.
REQUIREMENT
MIN. 2 1/2 OZS. MAX. 4 1/2 OZS.
TO START BLOCKING LEVER MOVING.

FIGURE 2-22 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, FRONT VIEW

6. HORIZONTAL TABULATOR MECHANISM

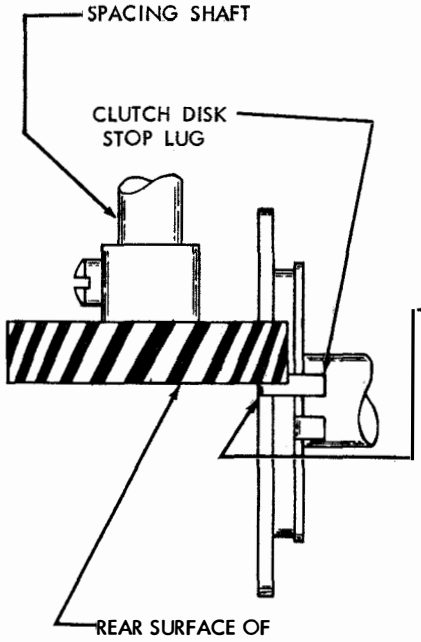


TABULATOR PAWL - HORIZONTAL (FINAL)

TO CHECK

(1) DISENGAGE ALL CLUTCHES SO THAT FRONT SPACING FEED PAWL IS IN LOWER POSITION (AS SHOWN IN FIG. 2-21). POSITION SPACING DRUM SO THAT REFERENCE TABULATOR STOP, AS DETERMINED IN PRELIMINARY TABULATOR PAWL ADJUSTMENT (FIG. 2-21), IS IMMEDIATELY TO LEFT OF PAWL. OPERATING LEVER SLIDE ARM SHOULD BE FORWARD IN UNBLOCKED POSITION. DISENGAGE FEED PAWLS AND ALLOW DRUM TO ROTATE ONE SPACE COUNTER-CLOCKWISE. BOTH FEED PAWLS SHOULD BE FULLY ENGAGED. MOVE SLIDE ARM TO REAR TO BLOCKED POSITION.

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



(BOTTOM VIEW)

REQUIREMENT

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

TO ADJUST

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

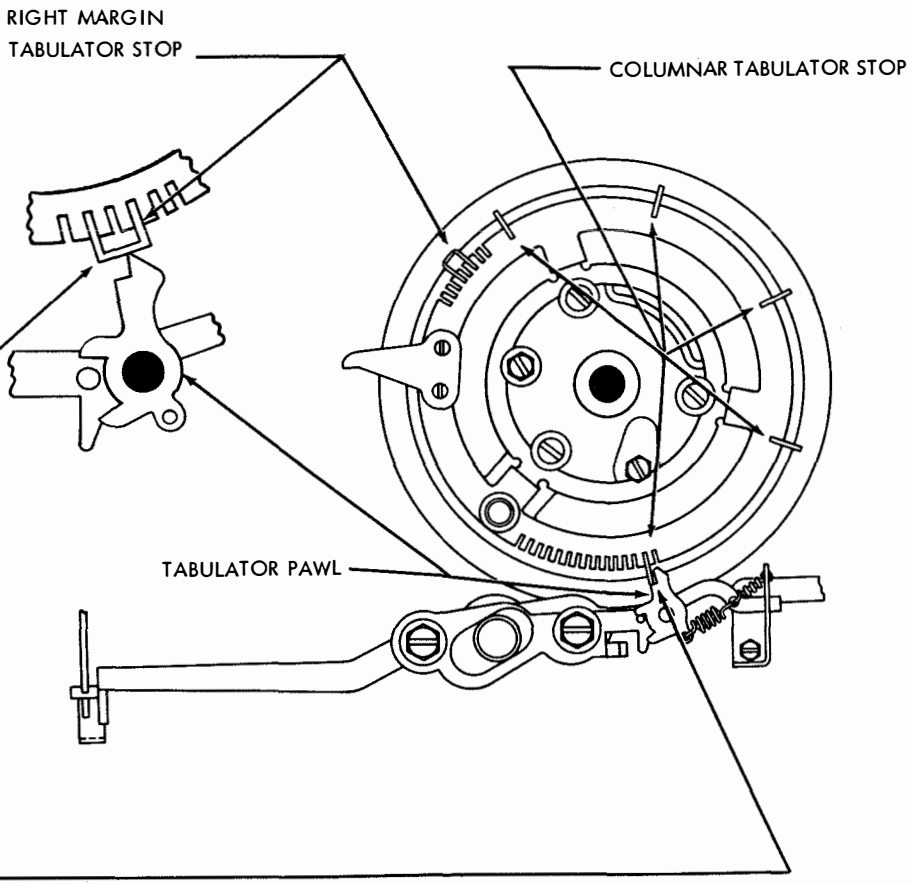
NOTE:

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

MIN. 0.003 MAX. 0.008

FIGURE 2-23 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, FRONT VIEW

6. HORIZONTAL TABULATOR MECHANISM



TABULATOR STOP SETTINGS

NOTE:
FOR INSTRUCTIONS ON HOW TO MOVE TABULATOR STOPS, SEE TABULATOR PAWL PRELIMINARY ADJUSTMENT, FIGURE 2-21, PARAGRAPH 2

(1) COLUMNAR TABULATOR STOPS

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

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

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

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

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

FIGURE 2-24 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, FRONT VIEW

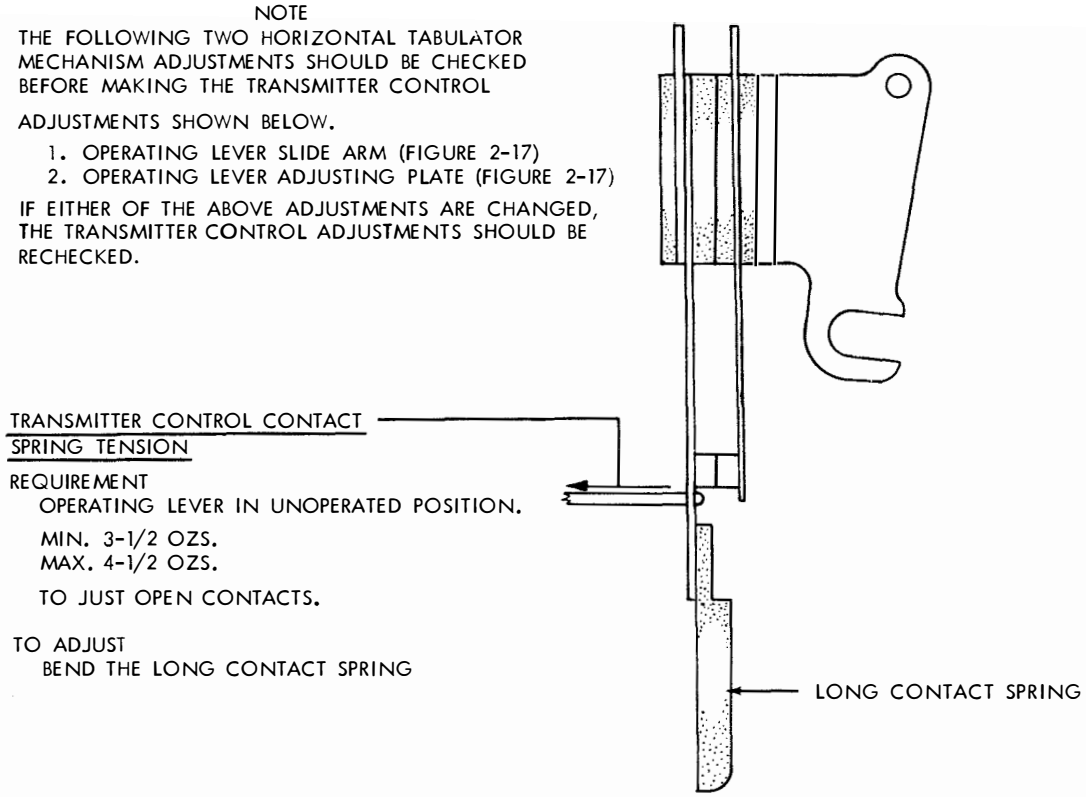
6. HORIZONTAL TABULATOR MECHANISM

NOTE

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

1. OPERATING LEVER SLIDE ARM (FIGURE 2-17)
2. OPERATING LEVER ADJUSTING PLATE (FIGURE 2-17)

IF EITHER OF THE ABOVE ADJUSTMENTS ARE CHANGED, THE TRANSMITTER CONTROL ADJUSTMENTS SHOULD BE RECHECKED.



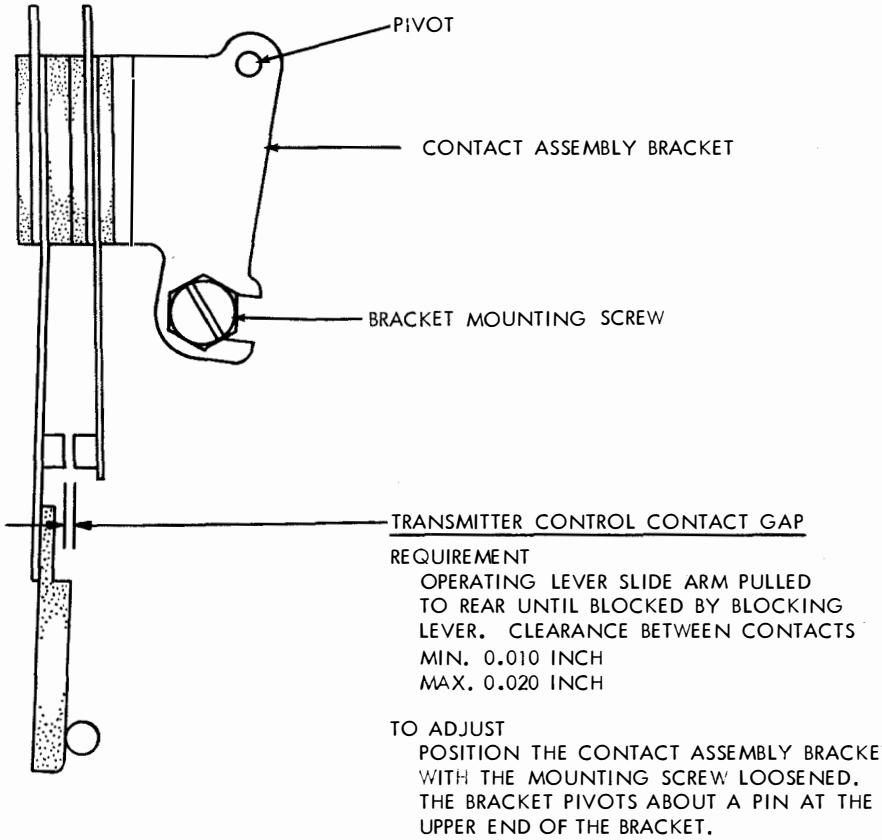


FIGURE 2-25 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM

7. PAGE FEED OUT MECHANISM

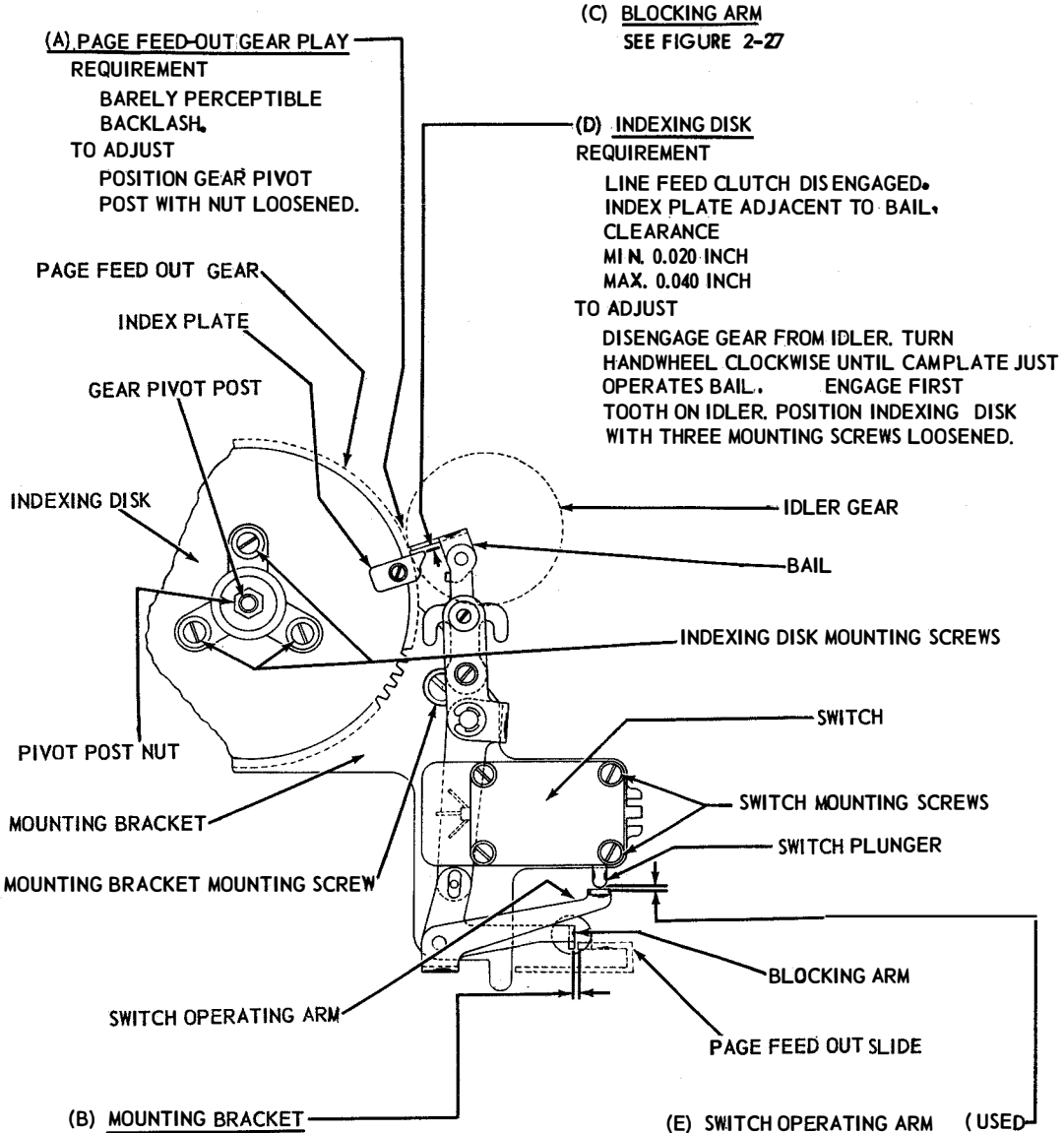
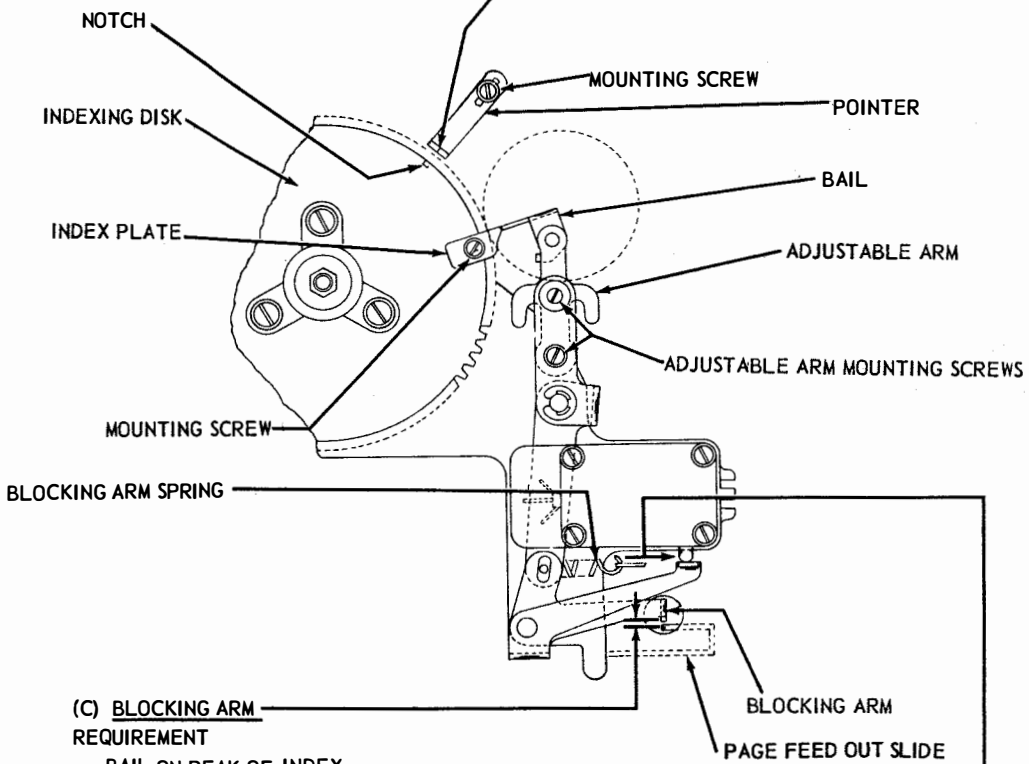


FIGURE 2-26 TYPING UNIT, PAGE FEED-OUT MECHANISM

7. PAGE FEED-OUT MECHANISM

(F) POINTER
REQUIREMENT
LINE FEED CLUTCH DISENGAGED, INDEX PLATE ADJACENT TO BAIL
AS SHOWN IN FIGURE 2-26. POINTER SHOULD LINE UP WITH NOTCH IN INDEXING DISK AND CLEAR DISK BY APPROXIMATELY 1/16 INCH.
TO ADJUST
POSITION POINTER WITH MOUNTING SCREW LOOSENED.



(C) BLOCKING ARM
REQUIREMENT
BAIL ON PEAK OF INDEX PLATE. CLEARANCE
MIN. 0.010 INCH
MAX. 0.025 INCH
TO ADJUST
POSITION ADJUSTABLE ARM WITH MOUNTING SCREWS LOOSENED.
NOTE
IF REQUIREMENT CANNOT BE MET FOR EACH PLATE, REPOSITION PLATE WITH MOUNTING SCREW LOOSENED.

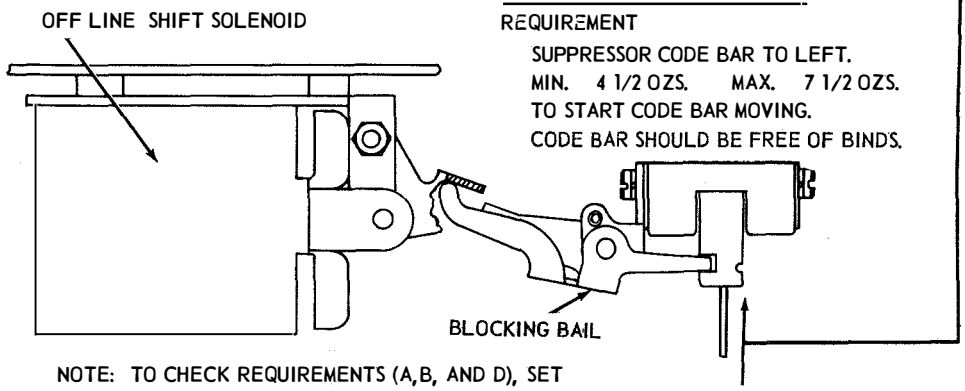
(H) BLOCKING ARM SPRING TENSION
REQUIREMENT
BLOCKING ARM IN UNBLOCKED POSITION.
MIN. 3 OZS.
MAX. 5 OZS
TO PULL SPRING TO OPERATING LENGTH.

FIGURE 2-27 TYPING UNIT, PAGE FEED-OUT MECHANISM

8. SELECTIVE CALLING MECHANISM

TYPE BOX CLUTCH TRIPLEVER
(SELECTIVE-CALLING UNITS WITH OR WITHOUT OFF-LINE SHIFT SOLENOID)
CLEARANCE BETWEEN TYPE BOX CLUTCH TRIP LEVER AND CLUTCH DISK STOP LUG SHOULD BE
MIN. 0.030 INCH MAX. 0.065 INCH
SEE FIG. 1-33

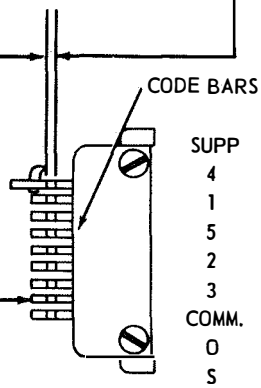
SUPPRESSOR CODE BAR SPRING
REQUIREMENT
SUPPRESSOR CODE BAR TO LEFT.
MIN. 4 1/2 OZS. MAX. 7 1/2 OZS.
TO START CODE BAR MOVING.
CODE BAR SHOULD BE FREE OF BINDS.



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

A. CODE BAR SHIFT MECHANISM
REQUIREMENTS
1. WITH FUNCTION CLUTCH IN STOP POSITION, LATCH FUNCTION LEVER (SHIFT MECH.) ON ITS LOWER RELEASING LATCH. NOTCH IN SUPP. CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.
TO ADJUST
POSITION UPPER OR LOWER GUIDE PLATE (FIG. 1-43) WITH ITS CLAMP NUTS LOOSENED
2. REPEAT FOR EACH STUNT CASE CODE BAR SHIFT MECHANISM.
NOTE - - - POSITION THE ASSOCIATED GUIDE PLATE SO THAT THE MOVEMENT OF THE FORK IS NOT RESTRICTED WITHIN THE RANGE OF ADJUSTMENT

D. OFF LINE SHIFT BRACKET ASSEMBLY (OFF LINE ONLY)
REQUIREMENT
NOTCH IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.
TO ADJUST
POSITION THE SOLENOID BRACKET ASSEMBLY WITH ITS MOUNTING SCREWS LOOSENED.



B. CONDITION CODE (ZERO) CODE BAR SHIFT MECHANISM
REQUIREMENT
WITH FUNCTION CLUTCH IN STOP POSITION, LATCH FUNCTION LEVER (SHIFT MECH). THE NOTCH IN CONDITION CODE (ZERO) CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.
TO ADJUST
POSITION THE UPPER OR LOWER GUIDE PLATE (FIG. 1-43) WITH ITS CLAMP NUTS LOOSENED
NOTE - - - POSITION THE ASSOCIATED GUIDE PLATE SO THAT THE MOVEMENT OF THE FORK IS NOT RESTRICTED WITHIN THE RANGE OF ADJUSTMENT.

FIGURE 2-28 TYPING UNIT, CODE BAR SHIFT MECHANISM

8. SELECTIVE CALLING MECHANISM

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

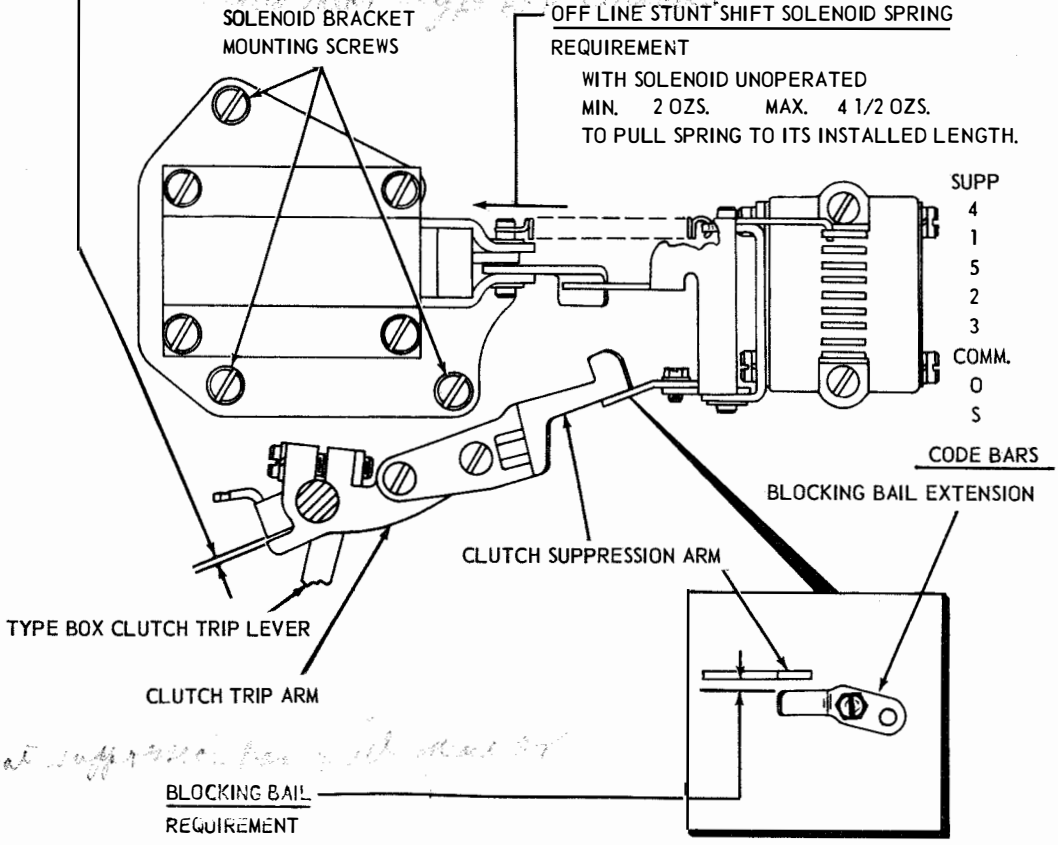
REQUIREMENT

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

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

TO ADJUST

POSITION SUPPRESSION ARM WITH ITS MOUNTING SCREWS LOOSENED.



REQUIREMENT

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

   MIN. 0.008 INCH ——— MAX. 0.035 INCH

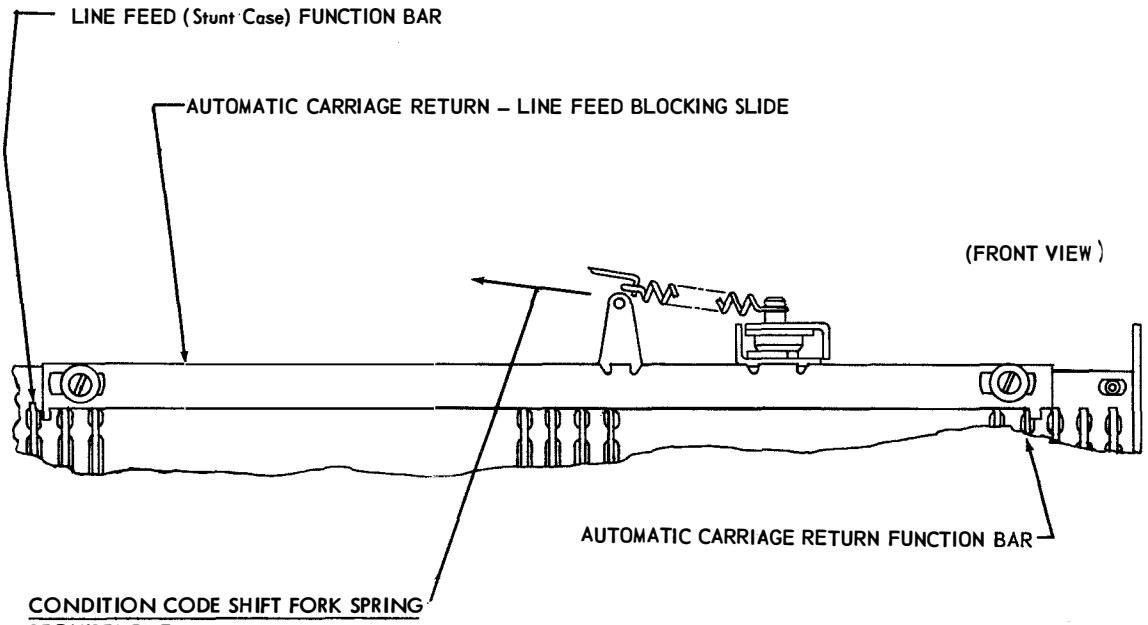
TO ADJUST

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

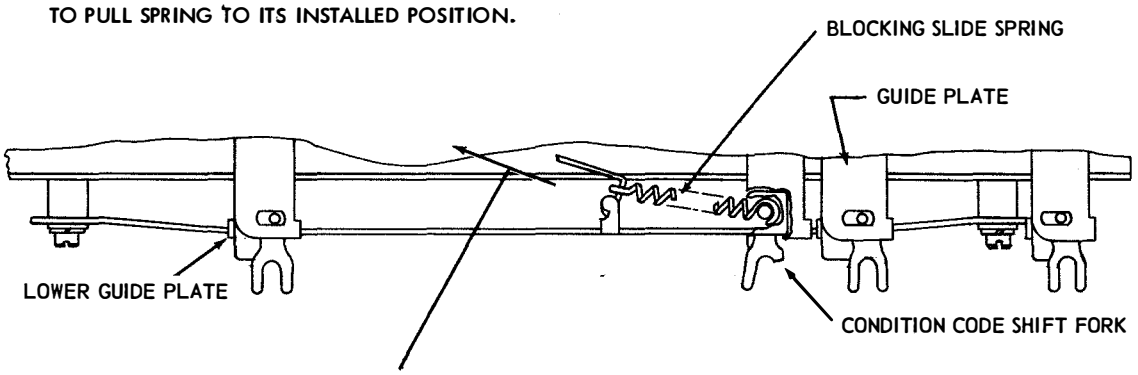
2. REFINE THE STUNT CASE CODE BAR SHIFT MECHANISM ADJUSTMENT OF ANY SHIFT MECHANISM THAT DOES NOT MEET THE ABOVE REQUIREMENT.

FIGURE 2-29 TYPING UNIT, OFF LINE STUNT SHIFT SOLENOID MECHANISM

8. SELECTIVE CALLING MECHANISM



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



(TOP VIEW)

AUTOMATIC CARRIAGE RETURN - LINE FEED BLOCKING SLIDE SPRING
REQUIREMENT
WITH CONDITION CODE SHIFT FORK IN ITS UNOPERATED POSITION.
MIN. 1 OZ.
MAX. 3 OZS.
TO PULL SPRING TO ITS INSTALLED LENGTH.

FIGURE 2-30 TYPING UNIT, STUNT BOX MECHANISM

9. LOCAL BACK SPACE MECHANISM

NOTE: FOR EARLIER DESIGN SEE FIGURE 4-46

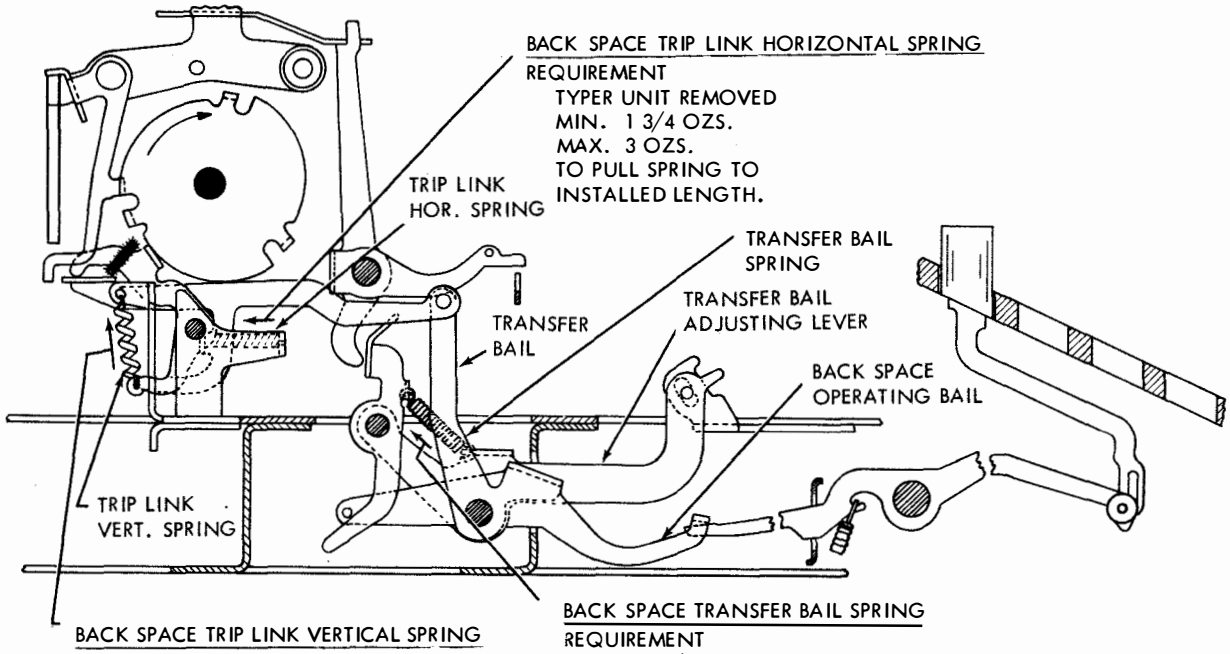
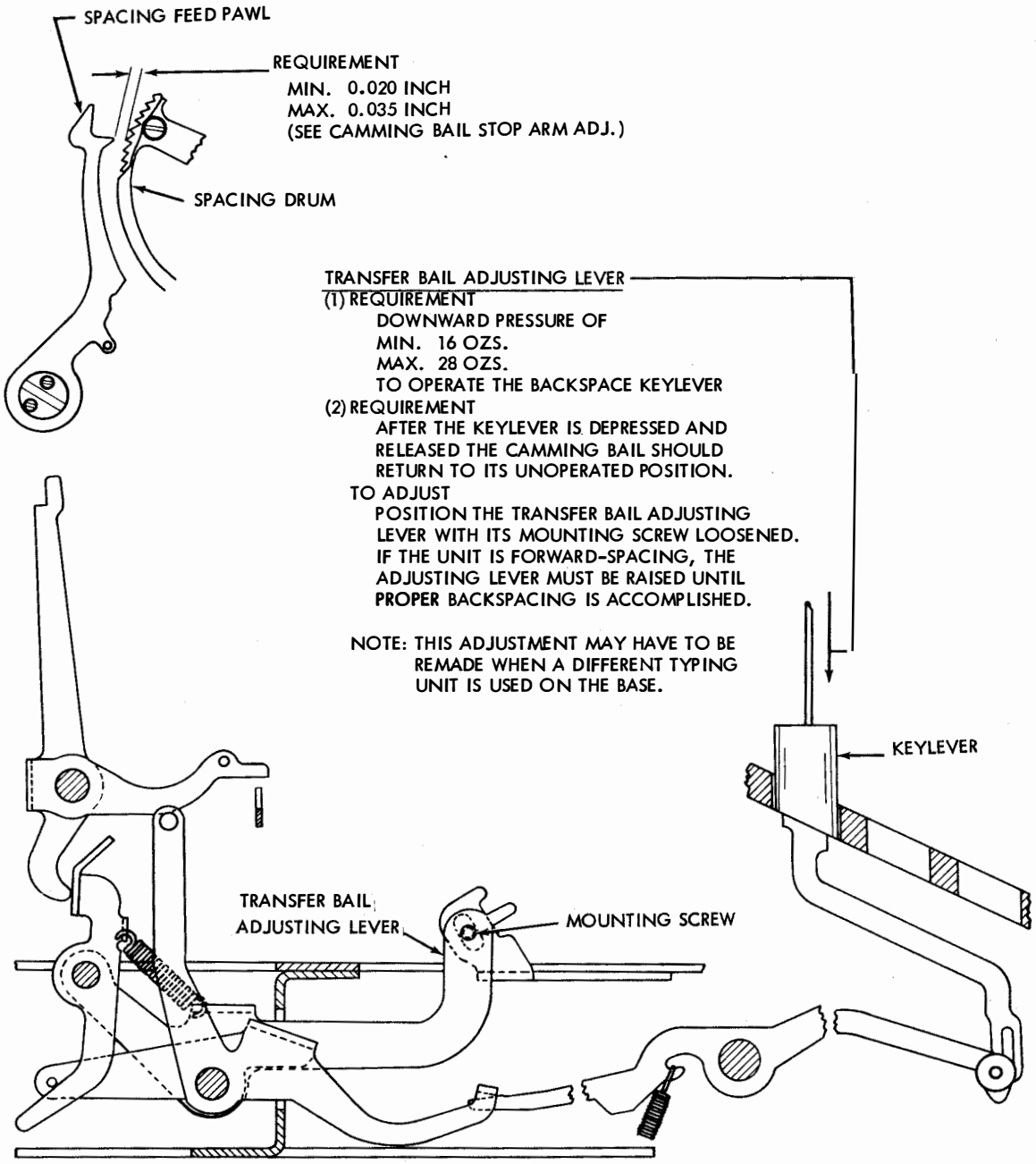


FIGURE 2-31 KEYBOARD, BACK SPACE MECHANISM

9. LOCAL BACK SPACE MECHANISM



NOTE: FOR EARLIER DESIGN SEE FIGURE 4-47

FIGURE 2-32 KEYBOARD, BACK SPACE MECHANISM

9. LOCAL BACK SPACE MECHANISM

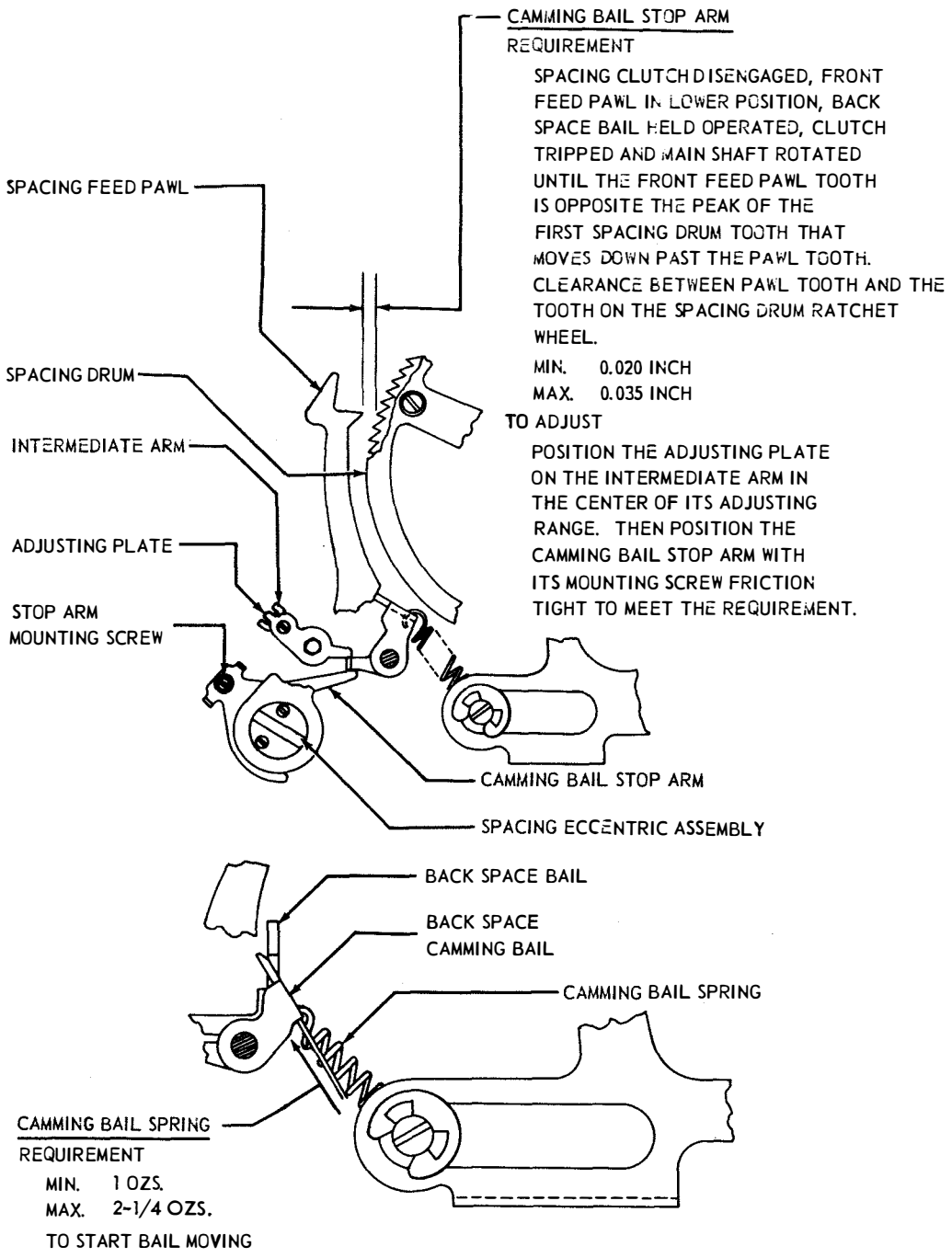
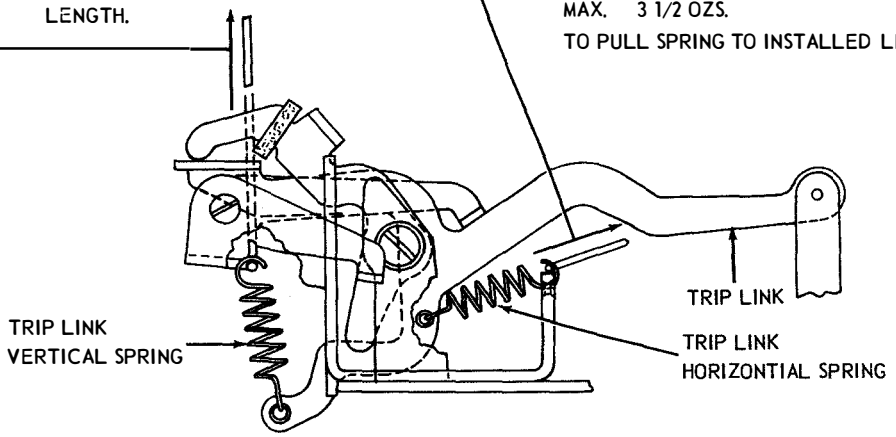


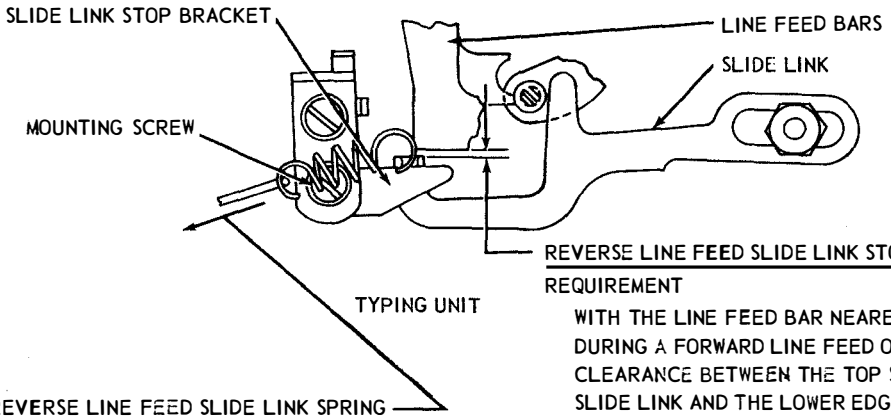
FIGURE 2-33 TYPING UNIT, BACKSPACE MECHANISM

10. REVERSE LINE FEED MECHANISM

REVERSE LINE FEED TRIP LINK VERTICAL SPRING
REQUIREMENT
TYPING UNIT REMOVED.
MIN. 1 1/2 OZS.
MAX. 3 1/2 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

REVERSE LINE FEED TRIP LINK HORIZONTAL SPRING
REQUIREMENT
TYPING UNIT REMOVED
MIN. 1 1/2 OZS
MAX. 3 1/2 OZS.
TO PULL SPRING TO INSTALLED LENGTH.





REVERSE LINE FEED SLIDE LINK STOP BRACKET
REQUIREMENT
WITH THE LINE FEED BAR NEAREST THE SLIDE LINK DURING A FORWARD LINE FEED OPERATION, THE CLEARANCE BETWEEN THE TOP SURFACE OF THE SLIDE LINK AND THE LOWER EDGE OF THE LOWER LINE FEED BAR SHOULD BE:
MIN. .005 INCH
MAX. .030 INCH
CHECK BOTH FEED BARS
TO ADJUST
POSITION THE SLIDE LINK STOP BRACKET WITH MOUNTING SCREWS LOOSENED.

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

FIGURE 2-34 LOCAL REVERSE LINE FEED MECHANISM, LEFT VIEW

10. REVERSE LINE FEED MECHANISM

LINE FEED CLUTCH SPUR GEAR

REQUIREMENT

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

MIN. 0.005 INCH
MAX. 0.040 INCH

TO ADJUST

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

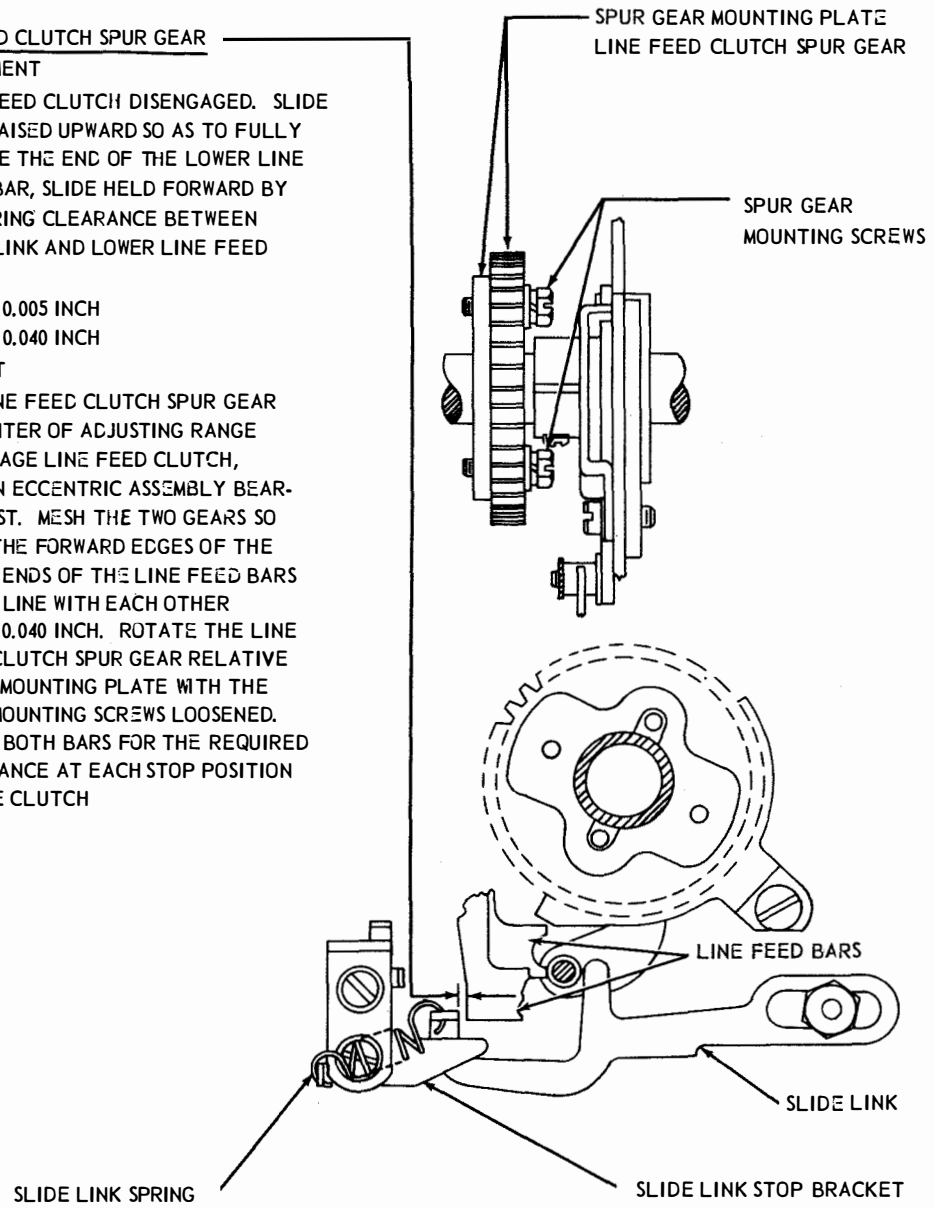


FIGURE 2-35 TYPING UNIT, LINE FEED MECHANISM, LEFT SIDE VIEW

10. REVERSE LINE FEED MECHANISM

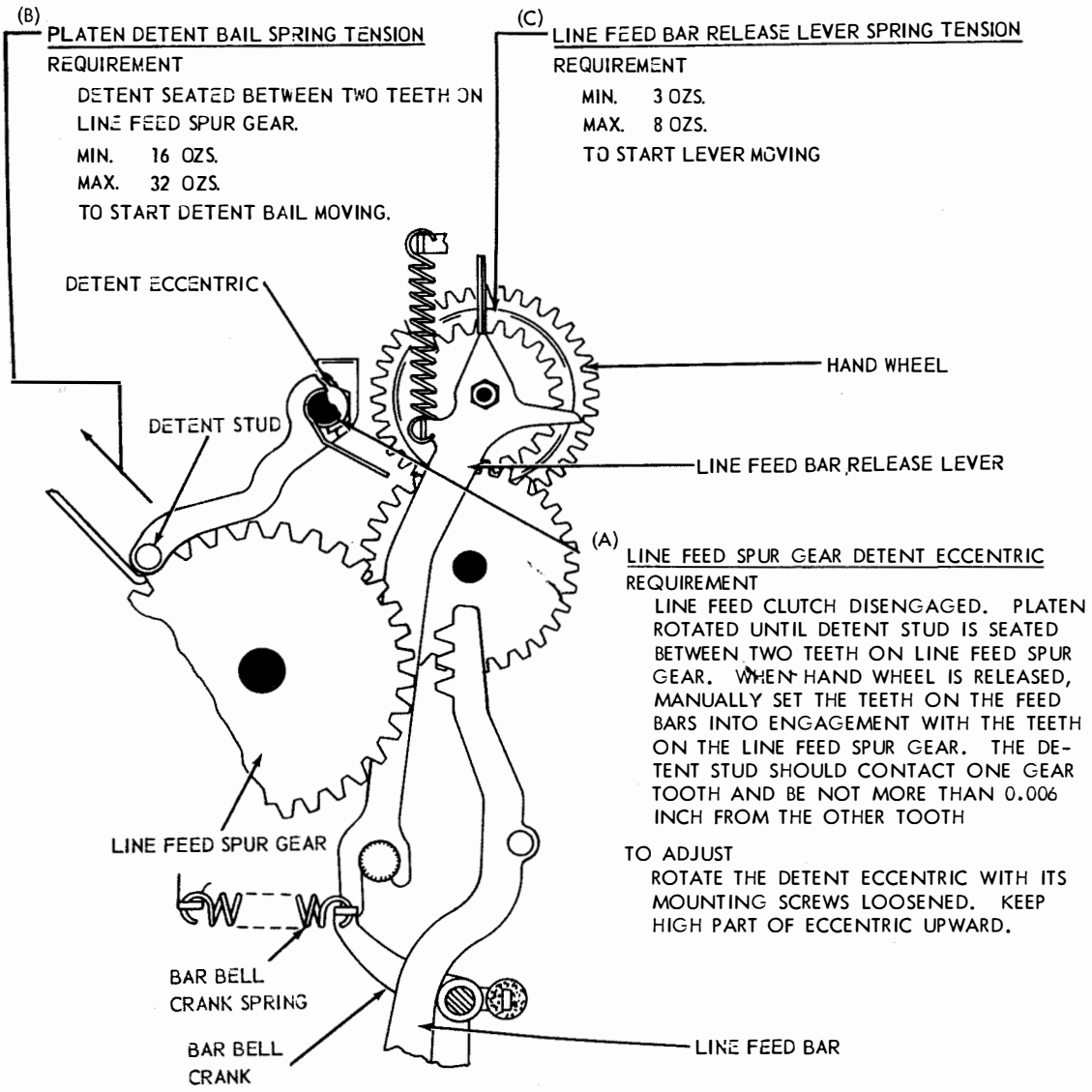


FIGURE 2-36 TYPING UNIT, LINE FEED MECHANISM, RIGHT SIDE VIEW

10. REVERSE LINE FEED MECHANISM

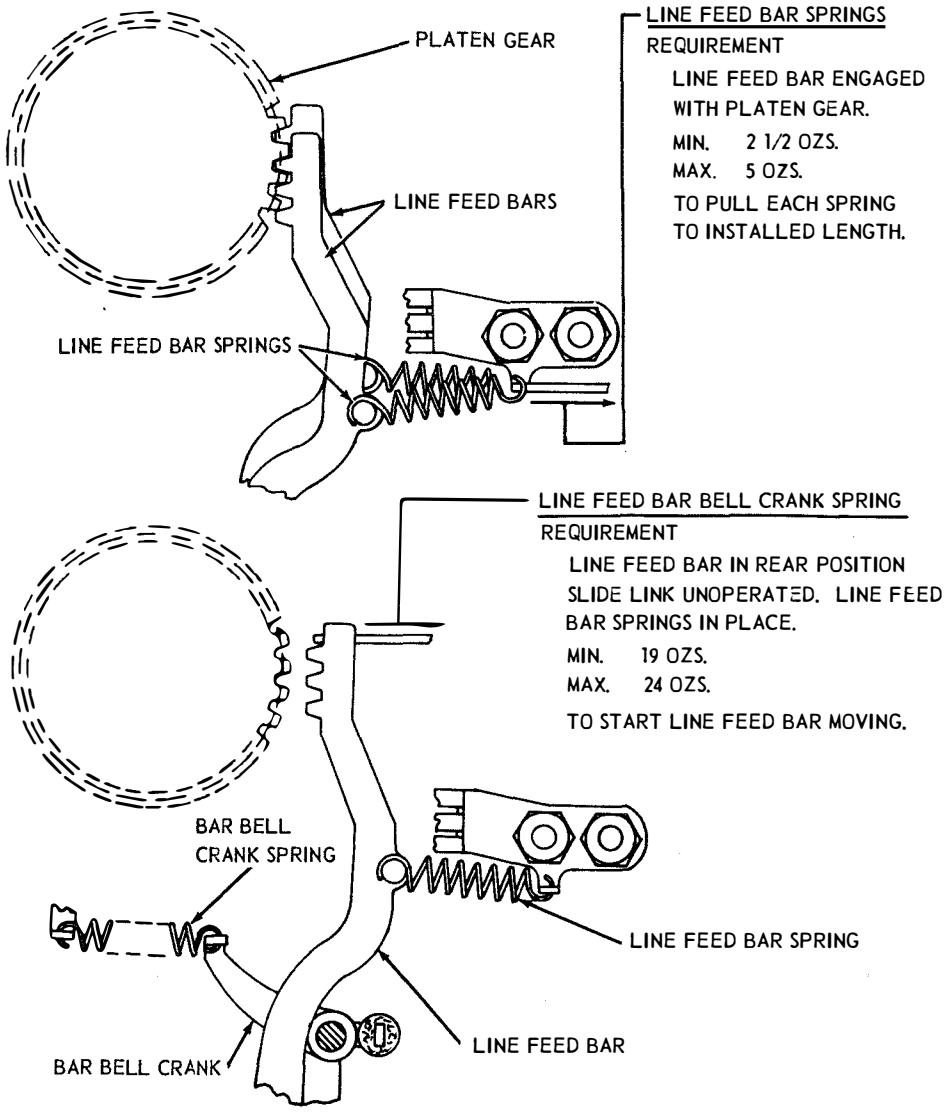
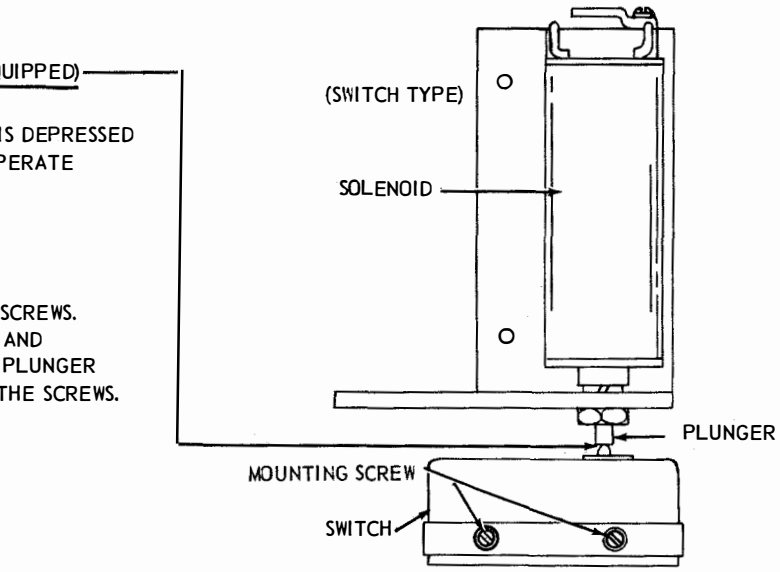
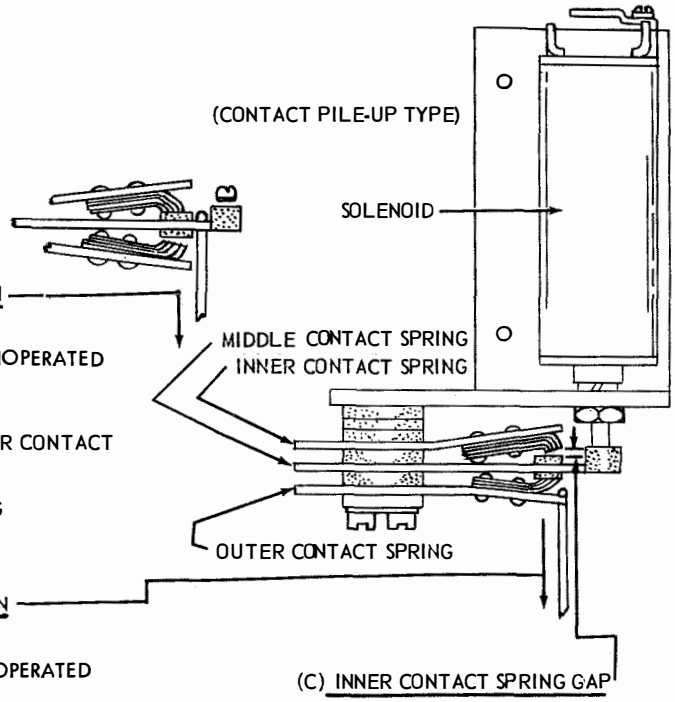


FIGURE 2-37 TYPING UNIT, LINE FEED MECHANISM, RIGHT SIDE VIEW

11. MOTOR CONTROL RELAY MECHANISM

(D)
SWITCH POSITION (IF UNIT IS SO EQUIPPED)
REQUIREMENT
WHEN THE SOLENOID PLUNGER IS DEPRESSED SLOWLY, THE SWITCH SHOULD OPERATE WHEN THE PLUNGER IS WITHIN MAX. 0.005 INCH FROM THE END OF ITS TRAVEL
TO ADJUST
LOOSEN THE SWITCH MOUNTING SCREWS. HOLD THE PLUNGER DOWNWARD AND MOVE THE SWITCH TOWARD THE PLUNGER UNTIL IT OPERATES. TIGHTEN THE SCREWS.





(A)
MIDDLE CONTACT SPRING TENSION
REQUIREMENT
WITH SOLENOID PLUNGER UNOPERATED
MIN. 2 OZS.
MAX. 3 OZS.
TO BREAK CONTACT WITH INNER CONTACT
TO ADJUST
BEND MIDDLE CONTACT SPRING

(B)
OUTER CONTACT SPRING TENSION
REQUIREMENT
HOLD SOLENOID PLUNGER OPERATED
MIN. 12 OZS.
MAX. 16 OZS.
TO BREAK CONTACT WITH THE MIDDLE CONTACT SPRING.
TO ADJUST
BEND OUTER CONTACT SPRING.

(C) INNER CONTACT SPRING GAP
REQUIREMENT
HOLD SOLENOID PLUNGER OPERATED
CLEARANCE BETWEEN INNER AND MIDDLE CONTACT SPRING CONTACT SURFACE
MIN. 0.025 INCH
MAX. 0.030 INCH
TO ADJUST
BEND THE INNER CONTACT SPRING.

FIGURE 2-38 ELECTRICAL SERVICE UNIT, MOTOR CONTROL RELAY

12. END-OF-FORM ALARM MECHANISM (CABINET)

END-OF-FORM LEVER

REQUIREMENT

THE END-OF-FORM LEVER SHOULD MOVE FREELY BETWEEN THE TYPING UNIT AND THE PAPER GUIDE ON THE CABINET. CHECK WITH THE DOME CLOSED AND THE SMALL DOOR OPEN.

TO ADJUST

POSITION THE END-OF-FORM LEVER WITH ITS CLAMP SCREWS LOOSENED.

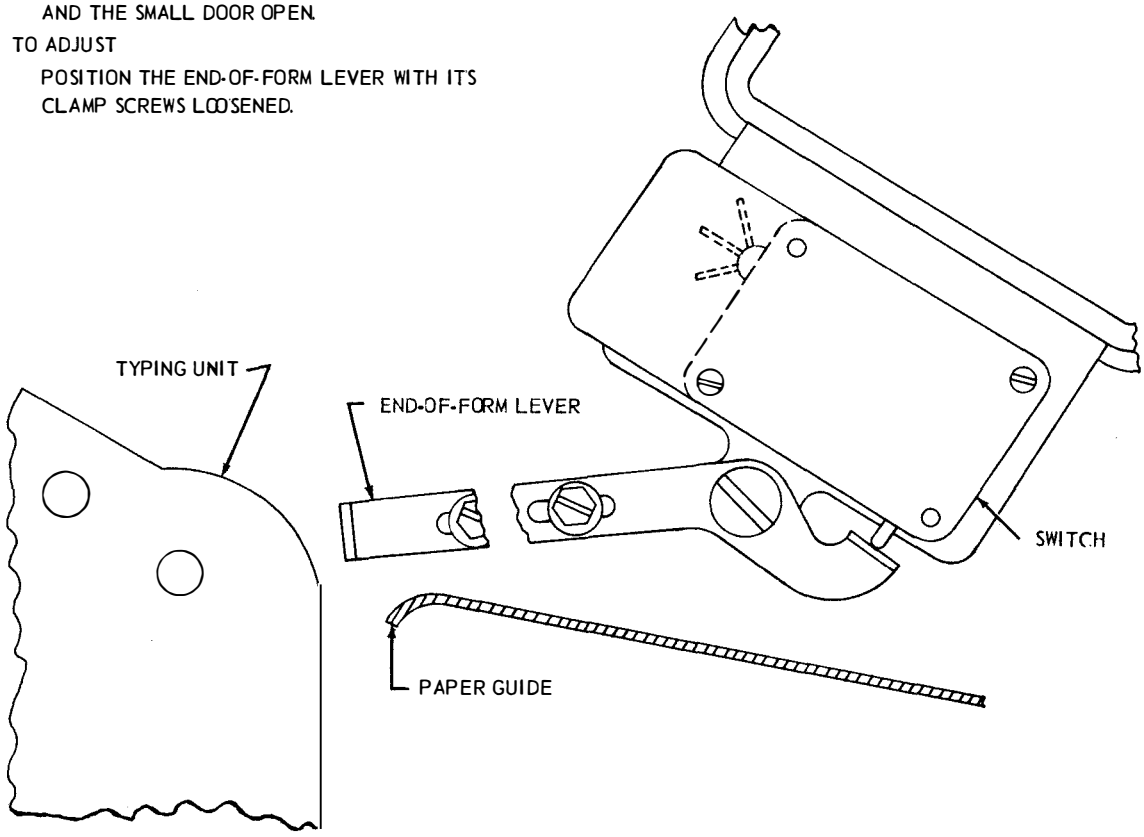
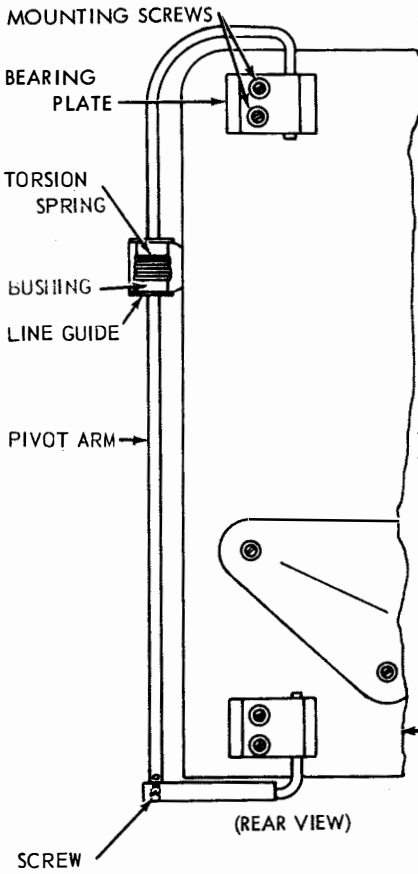


FIGURE 2-39 CABINET, END-OF-FORM ALARM MECHANISM

13. OFF-SET COPYHOLDER

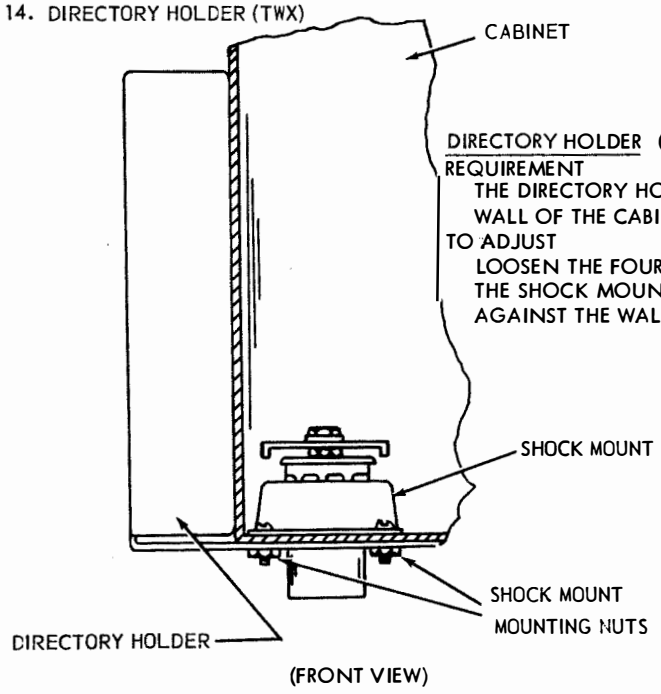


(A)
PIVOT ARM AND LINE GUIDE
(1) REQUIREMENT
THERE SHOULD BE SUFFICIENT TENSION ON THE PIVOT ARM TO HOLD IT IN THE DESIRED POSITION.
TO ADJUST
TIGHTEN THE BEARING PLATE MOUNTING SCREWS.
(2) REQUIREMENT
THERE SHOULD BE SUFFICIENT TENSION ON THE LINE GUIDE TO PREVENT IT FROM SLIPPING DOWN ITS PIVOT ARM.
TO ADJUST
REMOVE THE LOWER BEARING PLATE. REMOVE THE SCREW FROM THE BOTTOM OF THE PIVOT ARM. SLIP THE LINE GUIDE OFF THE PIVOT ARM. ROTATE THE BUSHING IN THE LINE GUIDE TO INCREASE THE TENSION OF THE TORSION SPRING. REASSEMBLE.

(B)
COPY HOLDER BRACKET AND TOP BRACKET ALIGNMENT ON TABLE MOUNTED CABINET (NOT ILLUSTRATED)
REQUIREMENT
WITH LOWER BRACKET IN FORWARD POSITION, THE HOLE IN THE TOP BRACKET SHOULD ALIGN WITH THE TOP HOLE IN COPYHOLDER BRACKET.
TO ADJUST
POSITION LOWER BRACKET ALONG ITS ELONGATED MOUNTING HOLES BY MEANS OF ITS TWO NUTS.

FIGURE 2-40 CABINET, COPYHOLDER

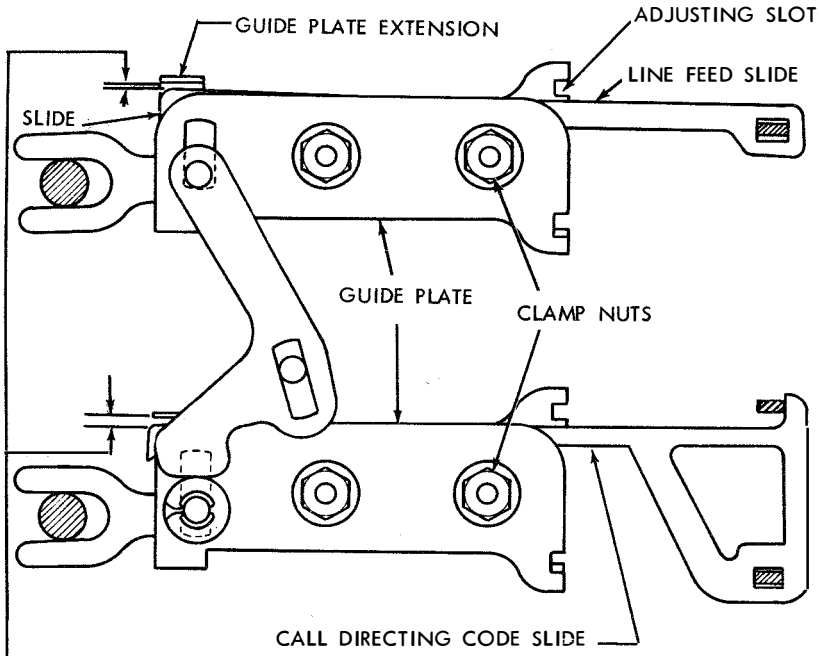
14. DIRECTORY HOLDER (TWX)

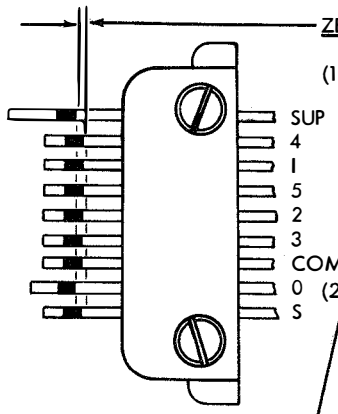


DIRECTORY HOLDER (TABLE CABINET)
REQUIREMENT
THE DIRECTORY HOLDER SHOULD FIT SNUGLY AGAINST THE WALL OF THE CABINET.
TO ADJUST
LOOSEN THE FOUR BOTTOM INNER SET OF NUTS WHICH SECURE THE SHOCK MOUNTS AND THE HOLDER. PUSH THE HOLDER AGAINST THE WALL OF THE CABINET AND TIGHTEN THE NUTS.

FIGURE 2-41 CABINET, DIRECTORY HOLDER

15. PRINT SUPPRESSION DURING SELECTION



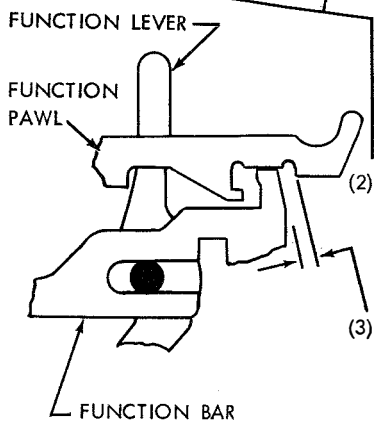


ZERO CODE BAR SHIFT MECHANISM

(1) REQUIREMENT
FUNCTION CLUTCH ROTATED UNTIL FUNCTION BARS ARE IN EXTREME REAR POSITION. LINE FEED FUNCTION PAWL HOOKED OVER ITS FUNCTION BAR AND THEN STRIPPED. THE NOTCH IN THE ZERO CODE BAR SHOULD LINE UP VERTICALLY WITH THE NOTCHES IN THE 4, 1, 5, 2, 3. CODE BARS BUT MAY BE OUT OF ALIGNMENT
MAX. 0.010 INCH
IN THE MARKING DIRECTION.

(2) REQUIREMENT
MAX. 0.002 INCH
CLEARANCE BETWEEN GUIDE PLATE EXTENSION AND SLIDE.
TO ADJUST
POSITION THE GUIDE PLATE BY ITS LOWER ADJUSTING SLOT WITH ITS CLAMP NUTS LOOSENED.

SUPPRESSION CODE BAR MECHANISM



(1) REQUIREMENT
FUNCTION BARS IN REAR POSITION. CALL DIRECTING FUNCTION PAWL HOOKED OVER ITS FUNCTION BAR AND STRIPPED. NOTCH IN SUPPRESSION CODE BAR SHOULD LINE UP VERTICALLY WITH NOTCHES IN 4, 1, 5, 2, 3 CODE BARS BUT MAY BE OUT OF ALIGNMENT
MAX. 0.010 INCH
IN THE MARKING DIRECTION

(2) REQUIREMENT
MAX. 0.002 INCH
CLEARANCE BETWEEN GUIDE PLATE EXTENSION AND SLIDE.
TO ADJUST
POSITION THE GUIDE PLATE BY ITS LOWER ADJUSTING SLOT WITH ITS CLAMP NUTS LOOSENED.

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

REFINE THE TWO ADJUSTMENTS ABOVE IF NECESSARY.

FIGURE 2-42 TYPING UNIT, PRINT SUPPRESSION MECHANISM

16. CONTINUOUS SPACING

SOLENOID PLUNGER SPRING

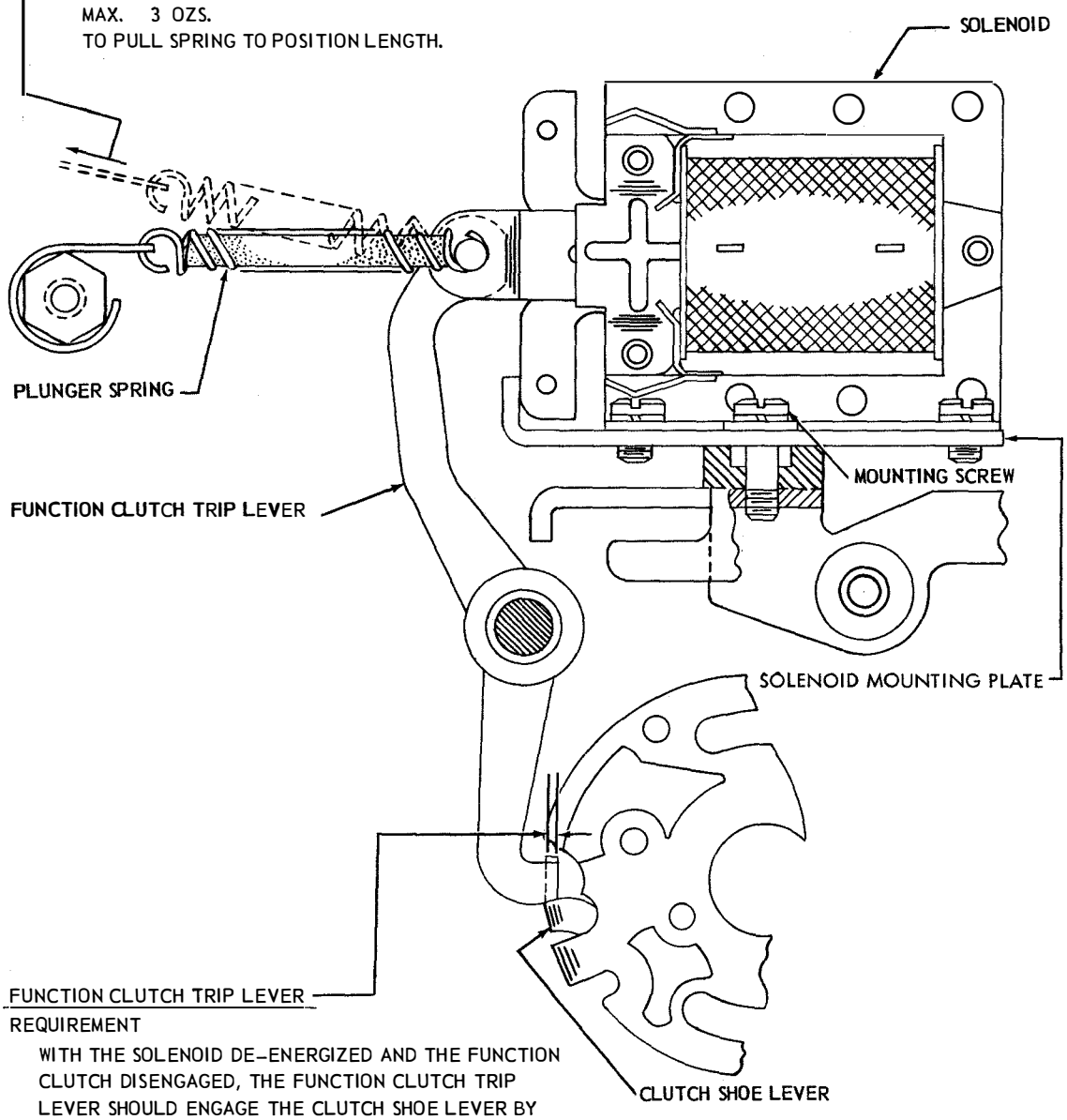
REQUIREMENT

SOLENOID DE-ENERGIZED, SPRING UNHOOKED

MIN. 1 1/2 OZS.

MAX. 3 OZS.

TO PULL SPRING TO POSITION LENGTH.



FUNCTION CLUTCH TRIP LEVER

REQUIREMENT

WITH THE SOLENOID DE-ENERGIZED AND THE FUNCTION CLUTCH DISENGAGED, THE FUNCTION CLUTCH TRIP LEVER SHOULD ENGAGE THE CLUTCH SHOE LEVER BY THE FULL THICKNESS OF THE SHOE LEVER (CHECK AT LUG WITH LEAST BITE ON TWO STOP CLUTCHES).

TO ADJUST

POSITION THE SOLENOID MOUNTING PLATE WITH ITS MOUNTING SCREWS LOOSENED. IN POSITIONING THE PLATE MOVE EACH END EQUALLY TO AVOID BINDS IN THE SOLENOID PLUNGER AND FUNCTION CLUTCH TRIP LEVER.

FIGURE 2-43 TYPING UNIT, CONTINUOUS SPACING AND TRIPLE LINE FEED MECHANISM

16. CONTINUOUS SPACING

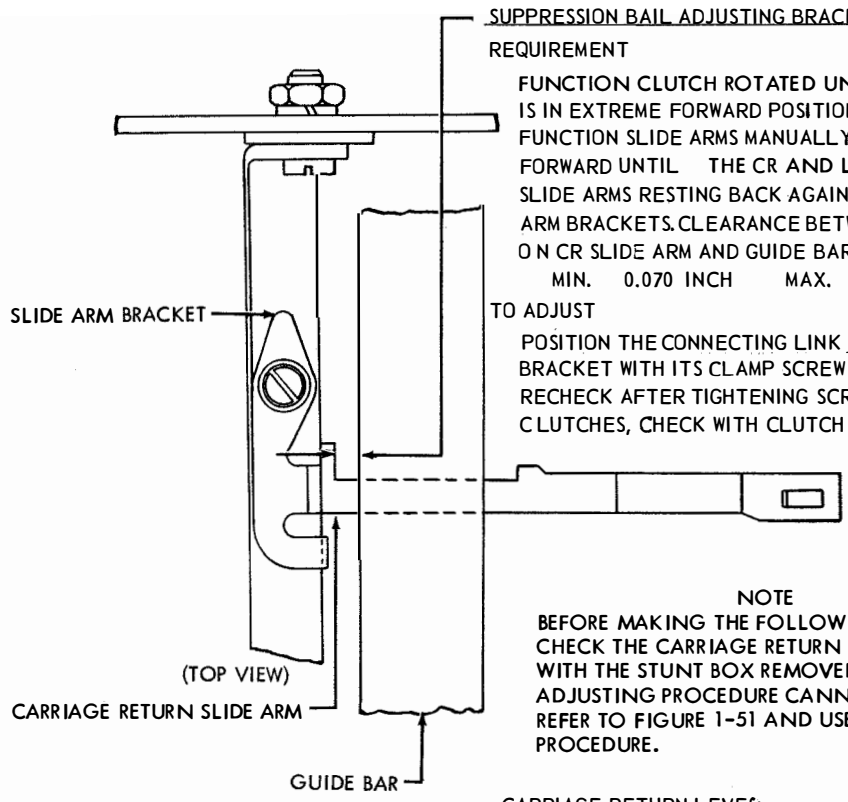
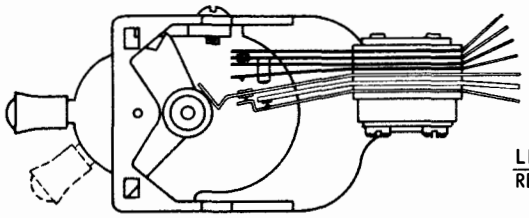
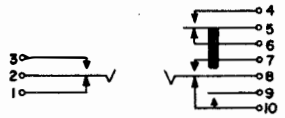


FIGURE 2-44 TYPING UNIT, CONTINUOUS SPACING AND TRIPLE LINE FEED MECHANISM

17. LINE TEST KEY





LINE TEST KEY
REQUIREMENT
WHEN KNOB IS MOVED TO DOWNWARD POSITION. CONTACTS 9 - 10 SHOULD CLOSE BEFORE CONTACTS 8 - 10 AND 5 - 6 OPEN.

FIGURE 2-45. LINE TEST KEY

18. PAPER-OUT ALARM

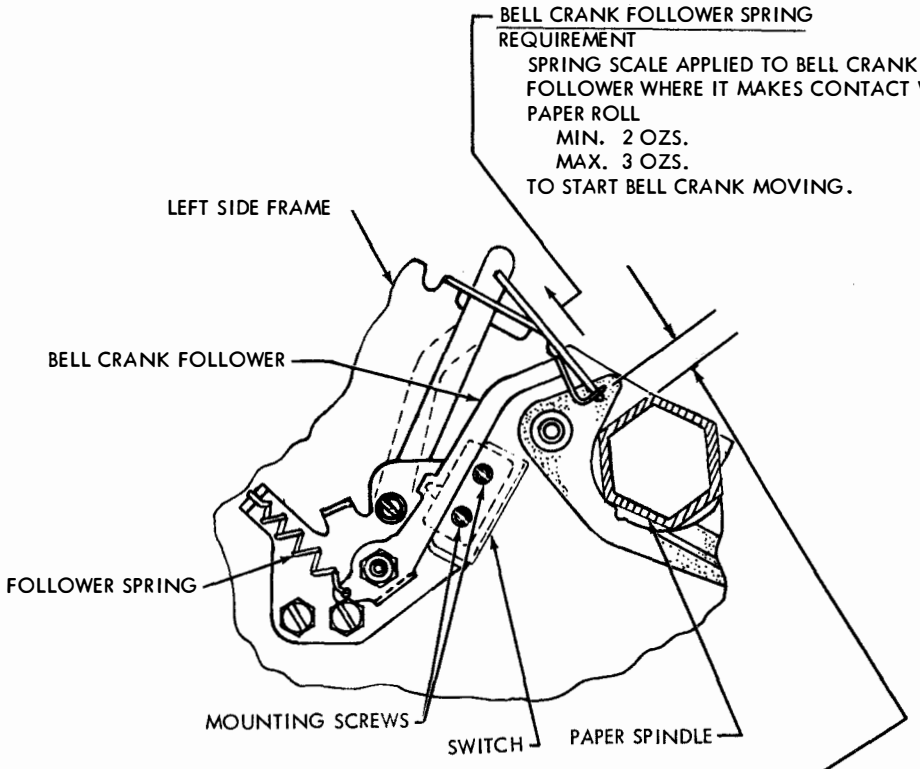


FIGURE 2-46. TYPING UNIT, PAPER-OUT ALARM MECHANISM

19. OFF-LINE CONTACT

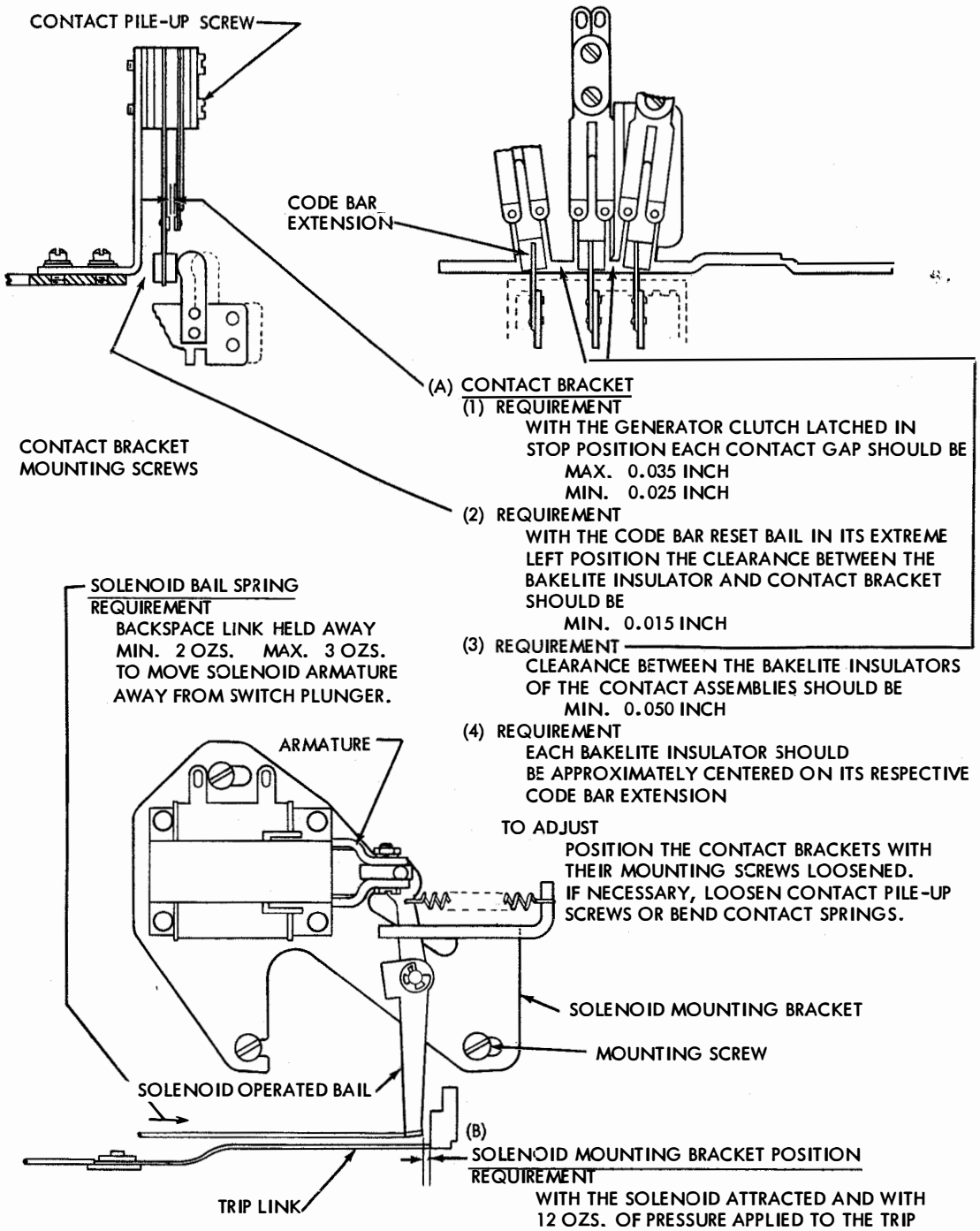
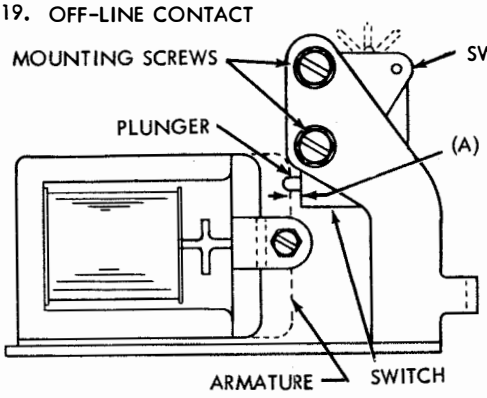


FIGURE 2-47. KEYBOARD, OFF-LINE CONTACTS AND EXTERNAL TAPE BACKSPACE MECHANISM

19. OFF-LINE CONTACT



(A) SOLENOID OPERATED SWITCH PLATE POSITION

REQUIREMENT

WITH THE SOLENOID DE-ENERGIZED, THE CLEARANCE BETWEEN ARMATURE AND THE SWITCH (NOT THE PLUNGER) SHOULD BE

MIN. 0.025 INCH
MAX. 0.035 INCH

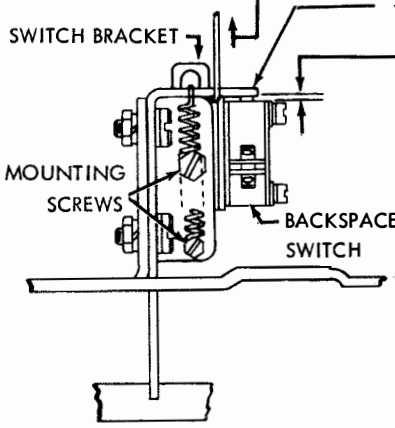
TO ADJUST

POSITION THE SWITCH PLATE WITH ITS MOUNTING SCREWS LOOSENED.

(C) SWITCH OPERATING LEVER SPRING

REQUIREMENT

MIN. 7 1/2 OZS. MAX. 10 1/2 OZS.
TO MOVE LEVER AWAY FROM PLUNGER.



(B) BACKSPACE KEYLEVER OPERATED SWITCH POSITION

REQUIREMENT

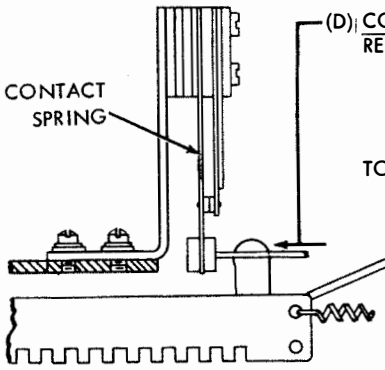
WITH THE BACKSPACE KEYLEVER IN ITS NORMAL UNOPERATED POSITION, THE CLEARANCE BETWEEN THE BACKSPACE KEYLEVER OPERATED SWITCH AND THE SWITCH OPERATING LEVER SHOULD BE

MAX. 0.055 INCH

TO ADJUST

POSITION THE SWITCH BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

OPERATIONAL CHECK: WITH A TYPING UNIT ON THE BASE, AND AC POWER APPLIED (SELECTOR MAGNETS ENERGIZED), DEPRESS LOCAL BACKSPACE KEYLEVER. CUT OFF AC POWER. RELEASE THE LOCAL BACKSPACE KEYLEVER SO THAT THE BACKSPACE LINK CLEARS THE SOLENOID OPERATED BAIL EXTENSION AND LATCHES UP UNDER IT BY AT LEAST 0.010 INCH CLEARANCE. WITH AC POWER APPLIED THE BACKSPACE SOLENOID SHOULD BECOME ENERGIZED. IF NECESSARY, REFINE THE SOLENOID OPERATED SWITCH PLATE POSITION.



(D) CONTACT SPRING TENSION

REQUIREMENT

WITH CR KEYLEVER DEPRESSED CHECK FRONT CONTACT
WITH SPACE BAR DEPRESSED CHECK CENTER AND REAR CONTACTS
MIN. 1 OZ. MAX. 2 OZS.
TO OPEN CONTACTS

TO ADJUST

BEND CONTACT SPRING. IF NECESSARY REMOVE CONTACT ASSEMBLY.

(E) CODE BAR SPRING TENSION

REQUIREMENT

SPACE BAR DEPRESSED
MIN. 3 OZS. MAX. 4 OZS.
TO START EACH CODE BAR MOVING

FIGURE 2-48. KEYBOARD, EXTERNAL TAPE BACKSPACE AND OFF-LINE CONTACT MECHANISM

SECTION 3 - LUBRICATION

1. GENERAL

1.01 The printer set should be lubricated as directed in this section. The figures indicate points to be lubricated and the kind and quantity of lubricant to be used. Lubricate the printer just prior to placing it in service. After a few weeks in service, re-lubricate to make certain that all points receive lubrication. The following lubrication schedule should be followed thereafter.

OPERATING SPEED (Words per Minute)	LUBRICATING INTERVAL (Whichever occurs first)
60	3000 hrs. or 1 yr.
75	2400 hrs. or 9 mo.
100	1500 hrs. or 6 mo.

1.02 Use Teletype KS-7470 oil at all locations where the use of oil is indicated. Use KS-7471 grease on all surfaces where grease is indicated except the motor bearings. Apply two drops of KS-7470 oil to motor bearings every four months (depress oiler with metal object). If the motor is disassembled at any time, repack the bearings with KS-7471 grease.

1.03 All spring wicks and felt oilers should be saturated. The friction surfaces of all moving parts should be thoroughly lubricated. Overlubrication should be avoided. Special care must be taken to prevent any oil or grease from getting between the selector armature and its magnet pole faces or between electrical contacts.

1.04 Apply a thick film of grease to all gears and the spacing clutch reset cam plate.

1.05 Apply oil to all cams, including the camming surfaces of each clutch disk.

1.06 The photographs show the paragraph numbers referring to particular line drawings of mechanisms and where these mechanisms are located on the unit. Parts in the line drawings are shown in an upright position unless otherwise specified.

1.07 The illustration symbols indicate the following lubrication directions:

0	Apply 1 drop of oil.
02	Apply 2 drops of oil.
03	Apply 3 drops of oil.
020	Apply 20 drops of oil, etc.
G	Apply thin film of grease.
SAT	Saturate (Felt oilers, washer, wicks) with oil.

NOTE: During each lubrication period, check the following adjustments:

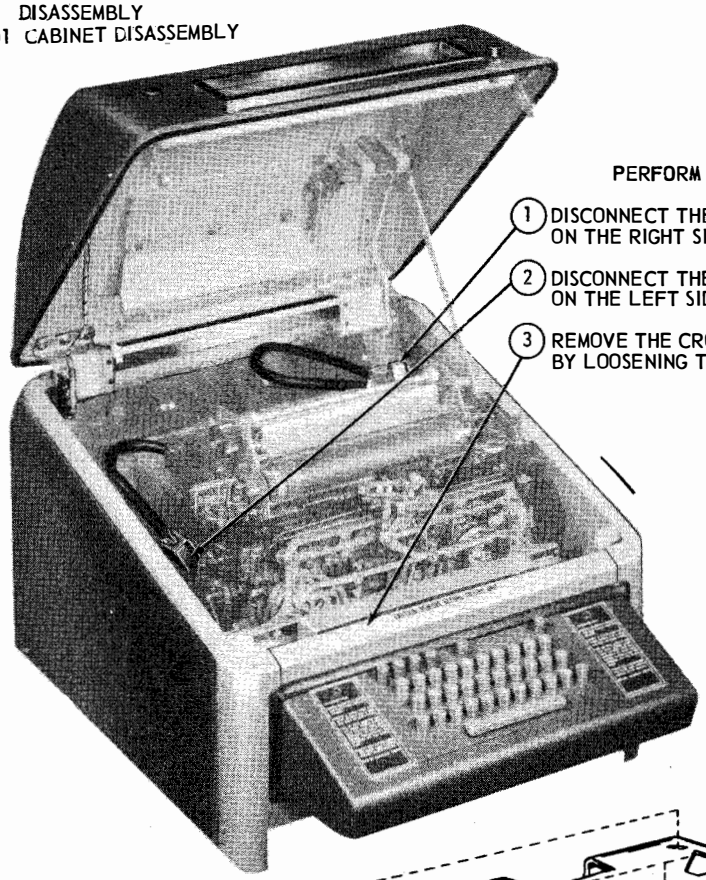
1. PRINTING CARRIAGE POSITION
2. PRINTING HAMMER BEARING STUD
3. PRINTING HAMMER STOP BRACKET

(Also see note after "Printing Arm" adjustment)

4. CARRIAGE WIRE ROPE

2. DISASSEMBLY

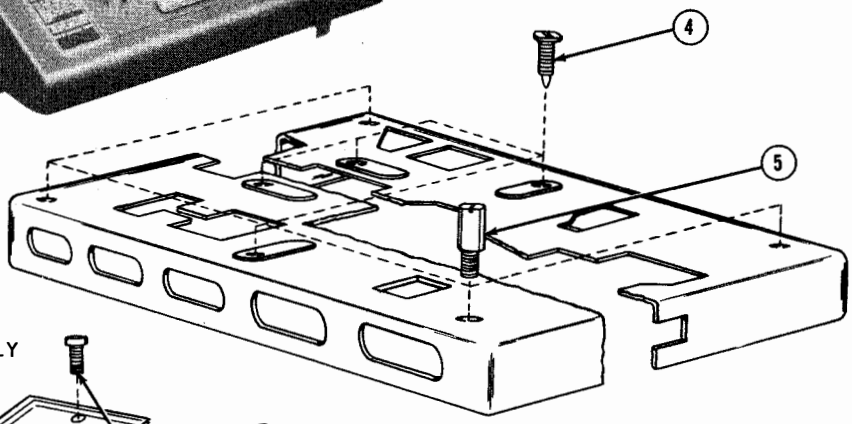
2.01 CABINET DISASSEMBLY



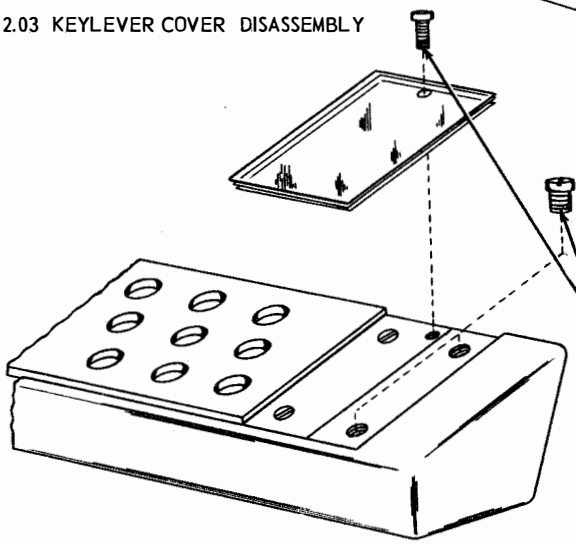
PERFORM OPERATIONS IN NUMERICAL SEQUENCE

1. DISCONNECT THE PLUG ON THE CABLE FROM THE RECEPTACLE ON THE RIGHT SIDE OF THE TYPING UNIT
2. DISCONNECT THE PLUG ON THE CABLE FROM THE RECEPTACLE ON THE LEFT SIDE OF THE KEYBOARD.
3. REMOVE THE CROSS BAR FROM THE FRONT OF THE CABINET BY LOOSENING THE TWO KNURLED THUMB SCREWS.

2.02 BASE DISASSEMBLY

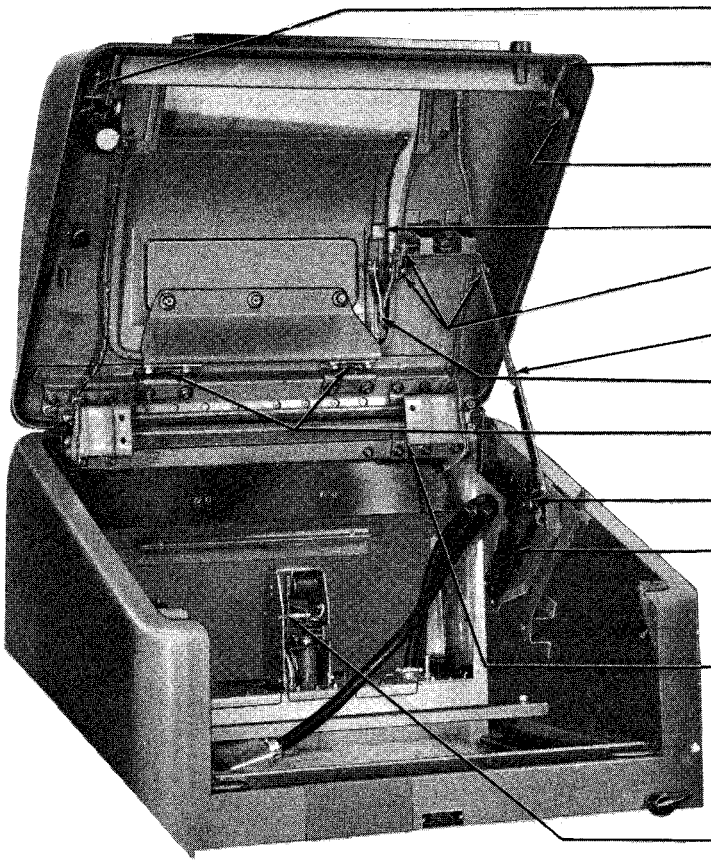


2.03 KEYLEVER COVER DISASSEMBLY



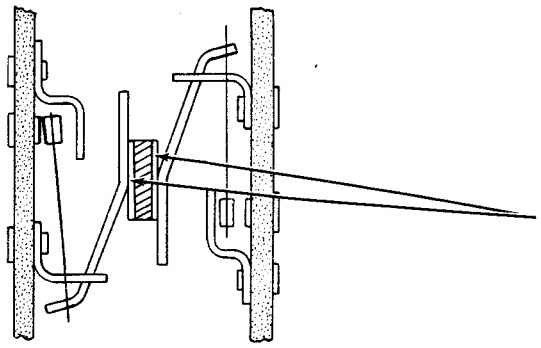
4. REMOVE THE FOUR SCREWS HOLDING THE KEYBOARD TO THE CRADLE ASSEMBLY AND REMOVE THE KEYBOARD WITH TYPING UNIT ATTACHED.
5. REMOVE THE FOUR SCREWS HOLDING THE TYPING UNIT TO THE KEYBOARD AND REMOVE TYPING UNIT.
6. REMOVE THE SCREW HOLDING THE PLASTIC WINDOW (RIGHT AND LEFT) TO THE KEYLEVER GUIDE PLATE. REMOVE THE TWO SCREWS HOLDING THE KEYLEVER COVER (RIGHT AND LEFT) AND REMOVE KEYLEVER COVER.

3. CABINET



O	BEARING SURFACES (2 LEVERS)	DOME LATCH LEVER
G	HOOKS – EACH END (4 SPRINGS)	SPRING
O	BEARING SURFACES (2 ROLLERS)	DOME LATCH ROLLER
G	ENGAGING SURFACE	DOOR LATCH
G	HOOKS-EACH END (3 SPRINGS)	SPRING
O	BEARING SURFACES (3 PLACES)	DOME STOP ARM
O	BEARING SURFACES (3 PLACES)	DOOR STOP ARM
G	SPRING LOOPS (2 SPRINGS)	SPRING
O	BEARING SURFACES (4 PLACES)	DOME COUNTERBALANCE ARMS
G	SLIDING GROOVE	DOME COUNTERBALANCE ARM
O2	BEARING SURFACES (2 HINGES)	DOME HINGES
G	ENGAGING SURFACES	(SEE FIG. 3.01)

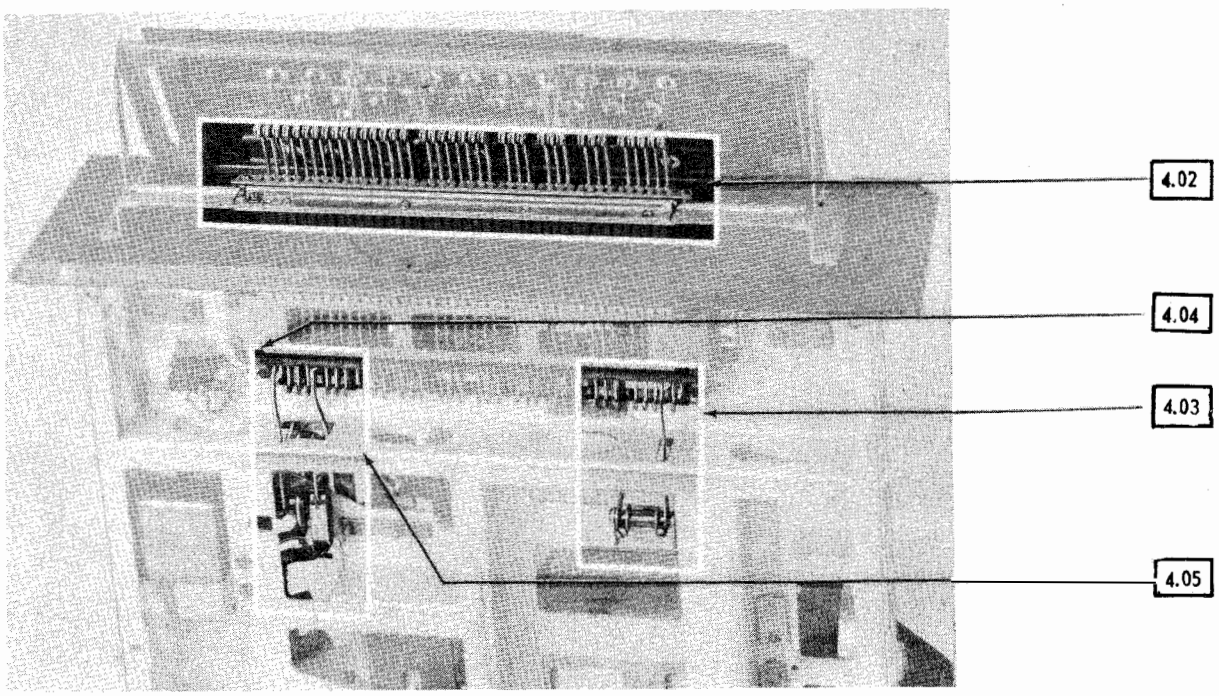
3.01 ELECTRICAL SERVICE UNIT



G	ENGAGING SURFACES	STOP MAGNET ARMATURE

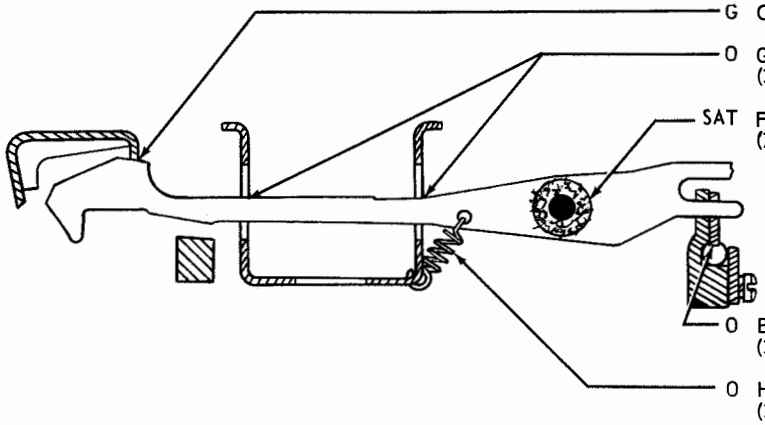
4. KEYBOARD (EARLIER DESIGN)

4.01 REST KEYBOARD BOTTOM SIDE UP.

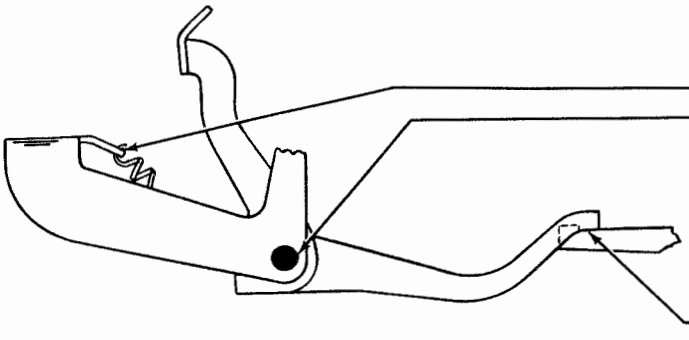


(BOTTOM VIEW)

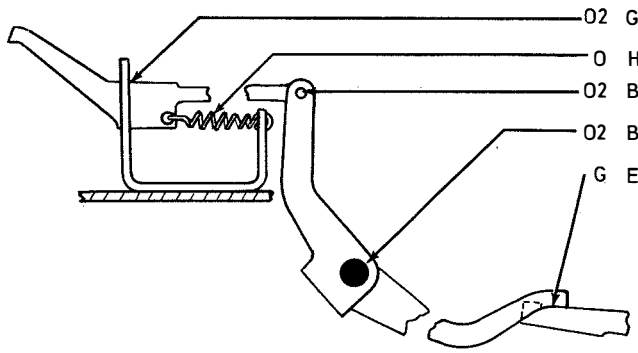
4.02 CODE LEVER MECHANISM



4.03 LOCAL CARRIAGE RETURN MECHANISM

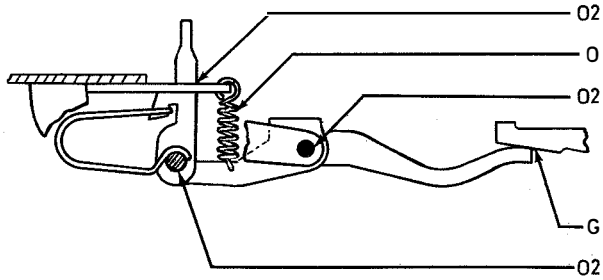


4.04 LOCAL LINE FEED MECHANISM



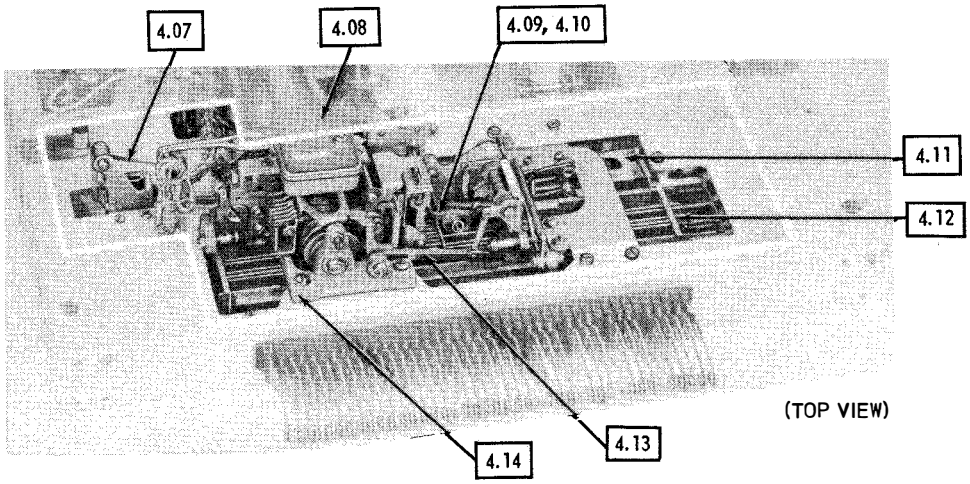
O2	GUIDE SLOT	LOCAL LINE FEED TRIP LINK
O	HOOKS–EACH END	SPRING
O2	BEARING SURFACE	LOCAL LINE FEED TRIP ARM
O2	BEARING SURFACE	LOCAL LINE FEED TRIP SHAFT
G	ENGAGING SURFACE	LOCAL LINE FEED FUNCTION ARM

4.05 KEYBOARD LOCK MECHANISM



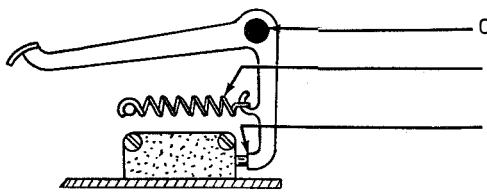
O2	GUIDE SLOT	KEYBOARD LOCK PLUNGER
O	HOOKS–EACH END	SPRING
O2	BEARING SURFACE	KEYBOARD LOCK PLUNGER
G	ENGAGING SURFACE	KEYBOARD LOCK FUNCTION ARM
O2	BEARING SURFACE	KEYBOARD LOCK ARM TRIP SHAFT

4.06 REST KEYBOARD IN UPRIGHT POSITION



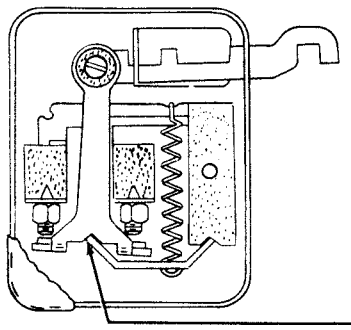
(TOP VIEW)

4.07 MARGIN INDICATING MECHANISM



O2	BEARING SURFACE	MARGIN INDICATOR CONTACT LEVER
O	HOOKS–EACH END	SPRING
O	CONTACTING SURFACE	SWITCH PLUNGER

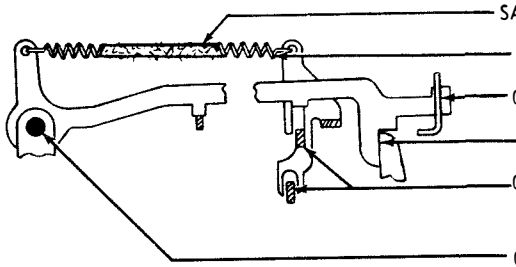
4.08 CONTACT BOX



DISASSEMBLY: REMOVE NUT AND LOCK WASHER SECURING CONTACT BOX COVER AND REMOVE COVER.

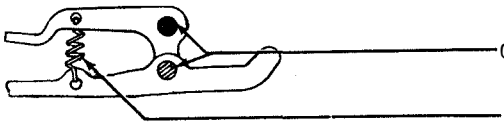
G	ENGAGING SURFACE	CONTACT TOGGLE

4.09 CODE BAR MECHANISM



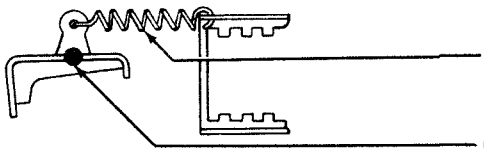
SAT	FELT WICK	SPRING WICK
O	HOOKS–EACH END	SPRING
O2	GUIDING SURFACE	CODE LEVER BAIL LATCH LEVER
G	ENGAGING SURFACE	CODE LEVER BAIL
O2	GUIDING SURFACES (2 PLACES)	NON-REPEAT BELL CRANKS
O2	BEARING	CODE LEVER BAIL LATCH LEVER

4.10



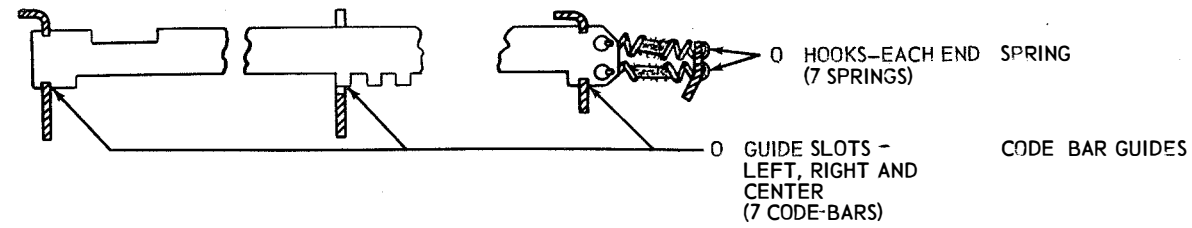
O2	BEARING SURFACES (2 PLACES)	NON-REPEAT BELL CRANKS
O	HOOKS–EACH END	SPRING

4.11

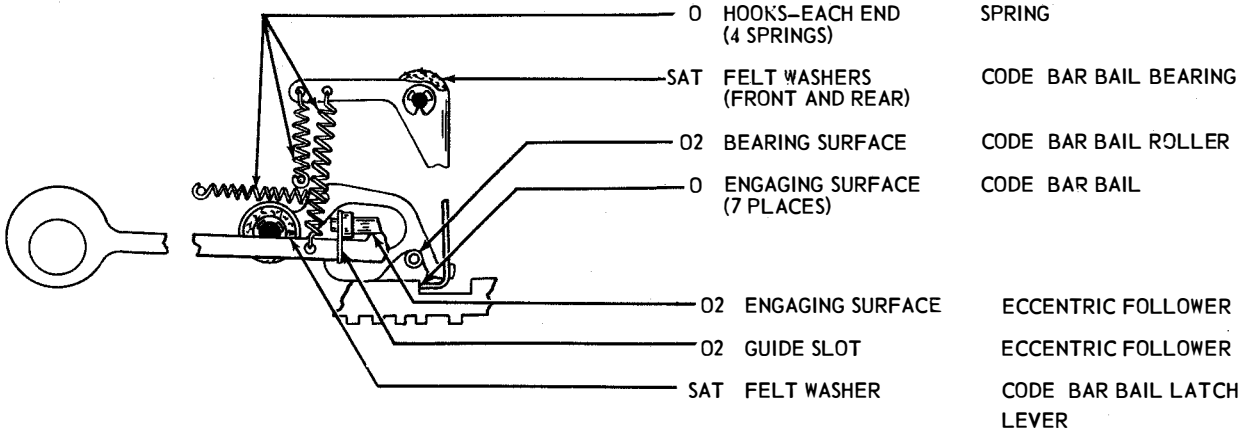


O	HOOKS–EACH END	SPRING
O2	BEARING SURFACES (RIGHT AND LEFT)	CODE LEVER BAIL

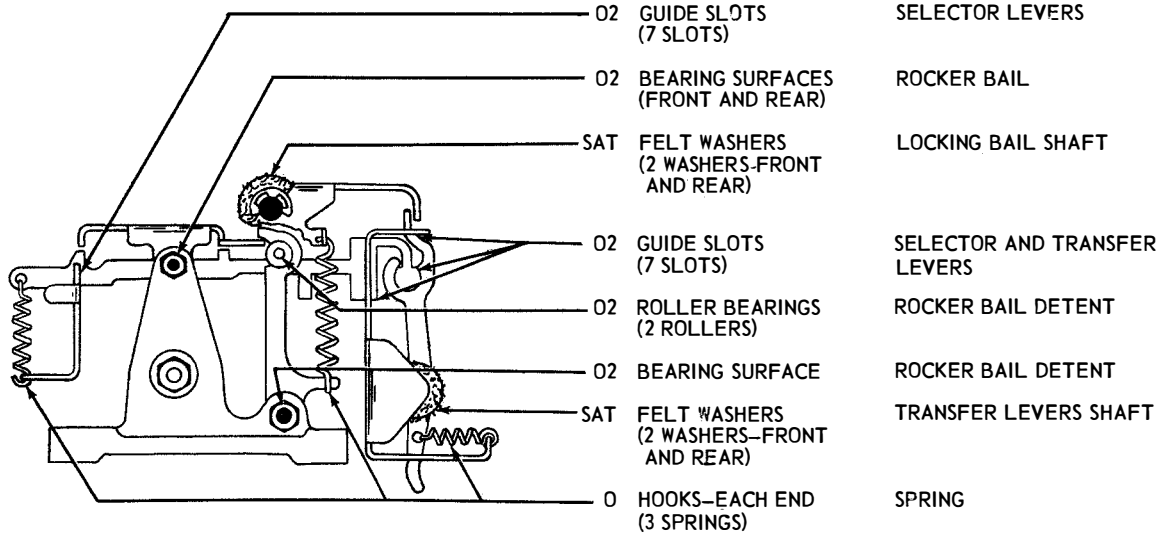
4.12 CODE BAR MECHANISM (Continued)



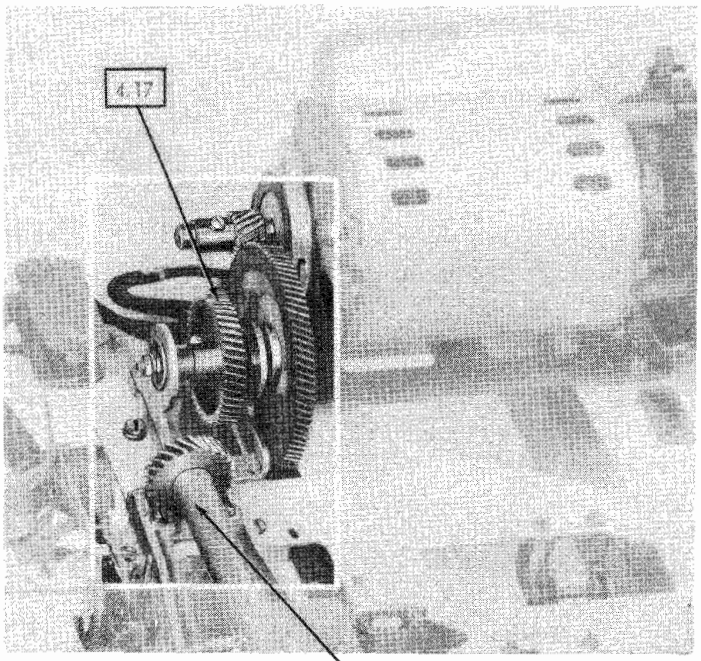
4.13



4.14 KEYBOARD SELECTOR MECHANISM

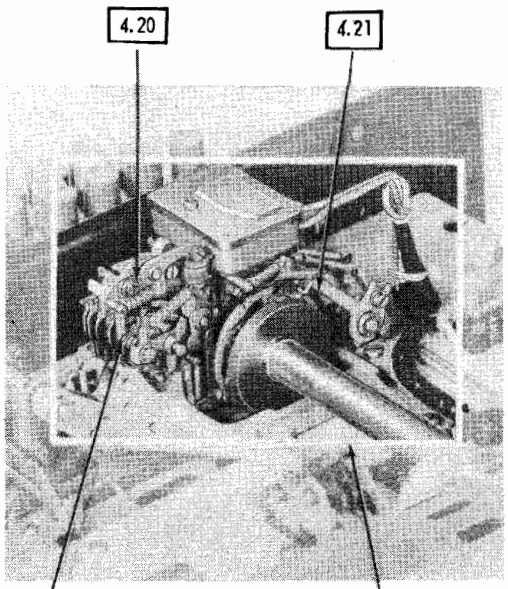


4.15 SIGNAL GENERATOR MECHANISM
REST KEYBOARD IN UPRIGHT POSITION



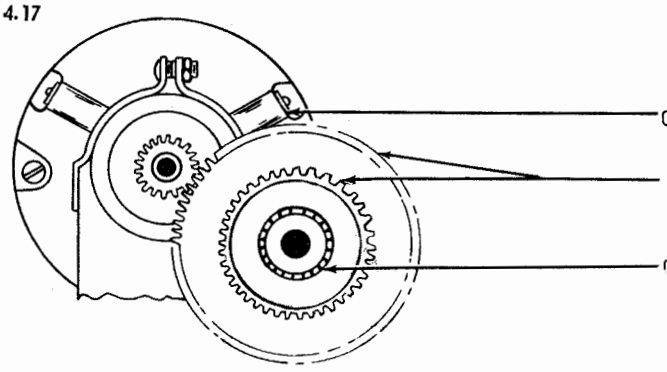
(FRONT VIEW)

4.16



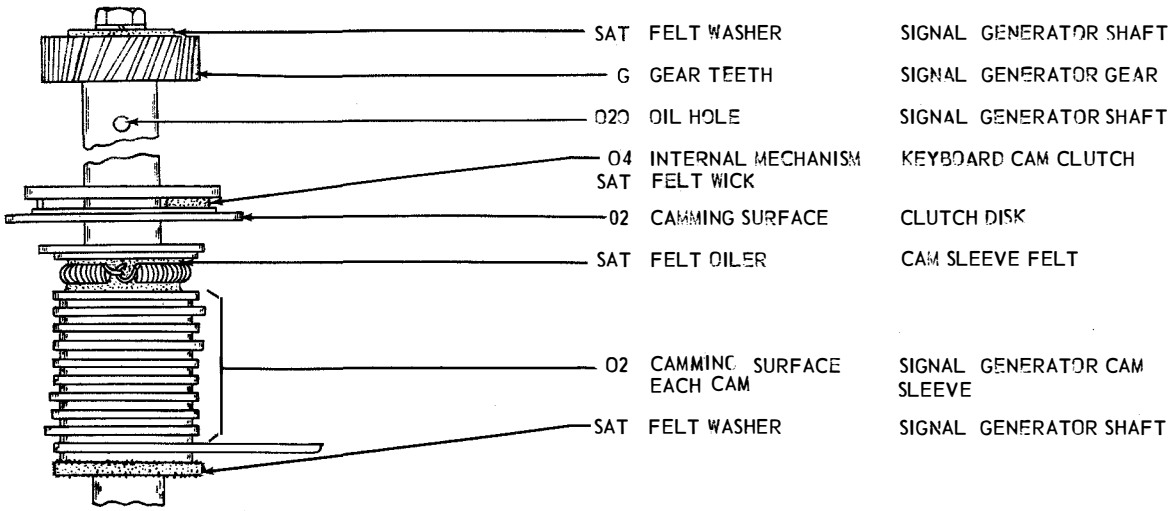
(REAR VIEW)

4.17

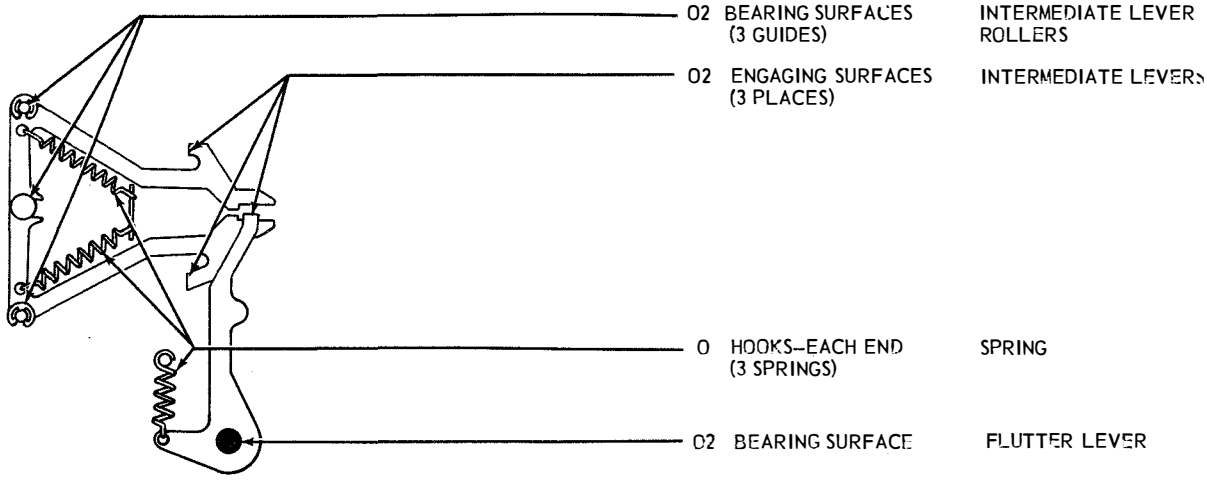


02	OILER–EACH END (RIGHT AND LEFT)	MOTOR SHAFT
G	TEETH (2 GEARS)	INTERMEDIATE GEARS
02	BALL BEARING	INTERMEDIATE GEAR SHAFT

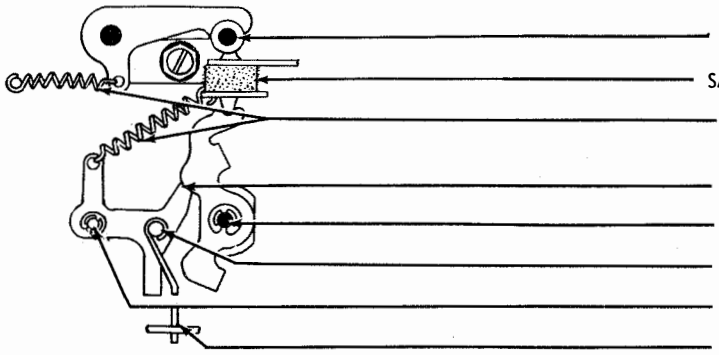
4.18 SIGNAL GENERATOR MECHANISM (Continued)



4.19

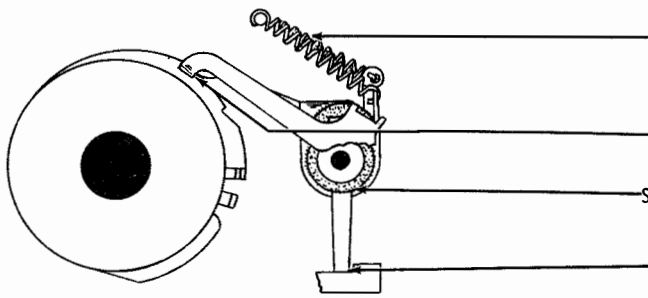


4.20 SIGNAL GENERATOR MECHANISM (Continued)



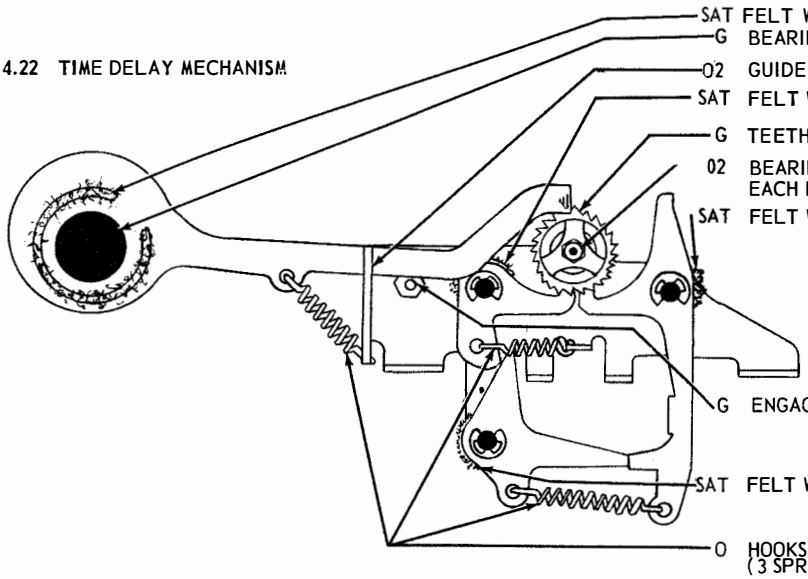
02	BEARING SURFACE	DETENT TOGGLE
SAT	FELT WASHER	DETENT TOGGLE
O	HOOKS–EACH END (2 SPRINGS)	SPRING
02	ENGAGING SURFACE	BREAK BAIL
02	BEARING SURFACE	OSCILLATING LEVER
02	BEARING SURFACE	BREAK ROD
02	BEARING SURFACE	BREAK LEVER
02	GUIDE HOLE	BREAK ROD

4.21



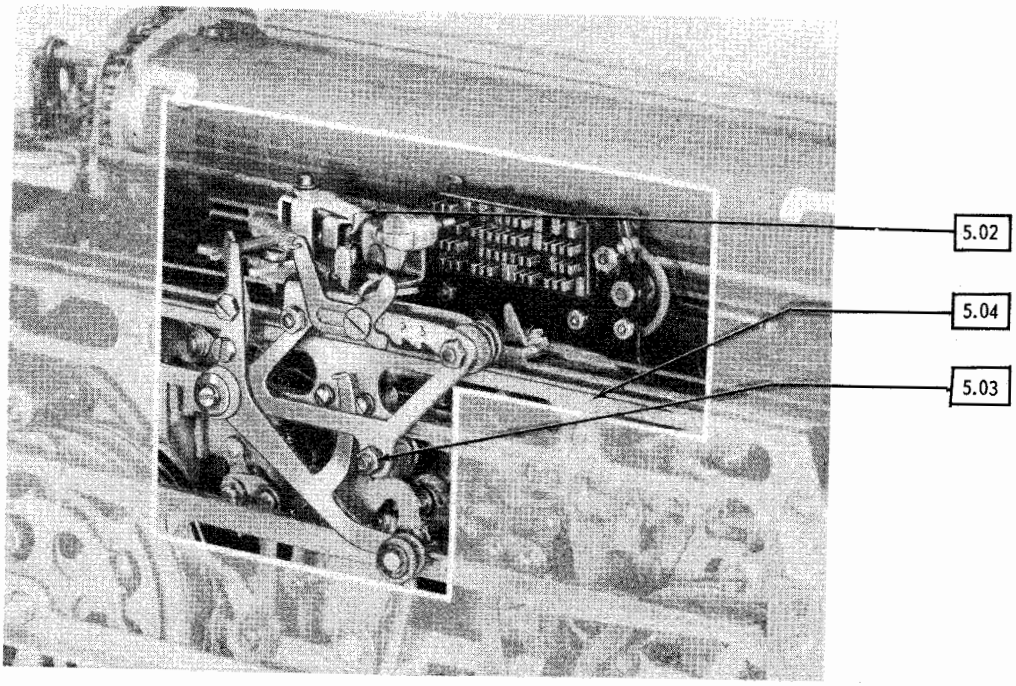
O	HOOKS–EACH END (2 SPRINGS)	SPRING
02	LATCHING SURFACE	CLUTCH STOP LEVER AND THROWOUT BAIL LEVER
SAT	FELT WASHER (2 WASHERS - FRONT & REAR)	THROWOUT BAIL AND TRIP BAIL
02	ENGAGING SURFACE	CLUTCH TRIP BAIL

4.22 TIME DELAY MECHANISM

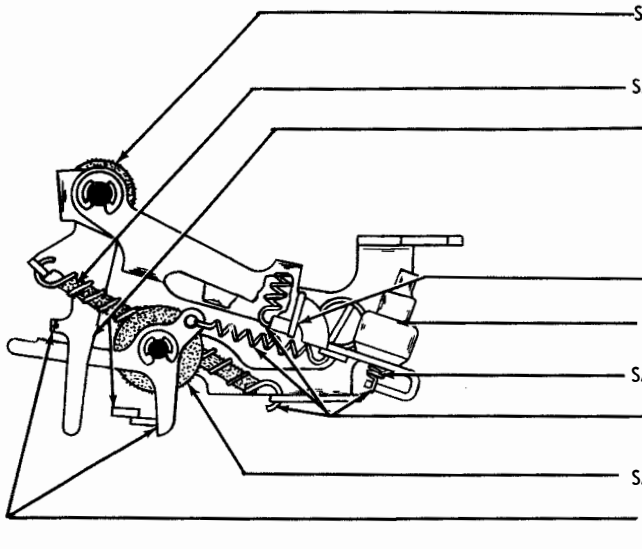


SAT	FELT WASHER	ECCENTRIC FOLLOWER PAWL
G	BEARING SURFACE	ECCENTRIC FOLLOWER PAWL
02	GUIDE SLOT	ECCENTRIC FOLLOWER PAWL
SAT	FELT WASHER	LATCH PAWL
G	TEETH (2 WHEELS)	RATCHET WHEELS
02	BEARING SURFACE - EACH END	RATCHET WHEEL SHAFT
SAT	FELT WASHER	CONTACT PAWL
G	ENGAGING SURFACE	ECCENTRIC FOLLOWER PAWL
SAT	FELT WASHER	LATCH LEVER
O	HOOKS - EACH END (3 SPRINGS)	SPRING

5. TYPING UNIT
5.01 REST TYPING UNIT IN UPRIGHT POSITION

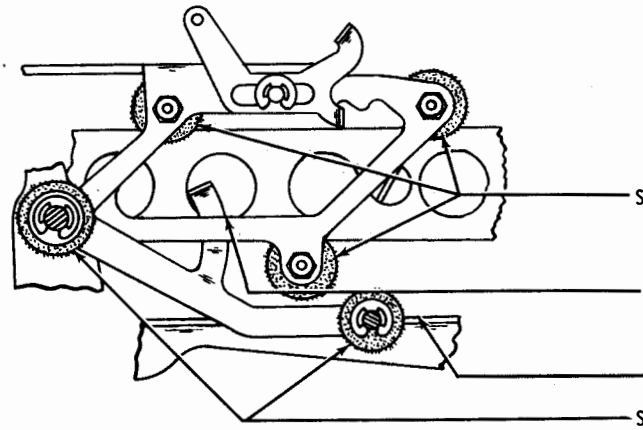


5.02 PRINTING MECHANISM



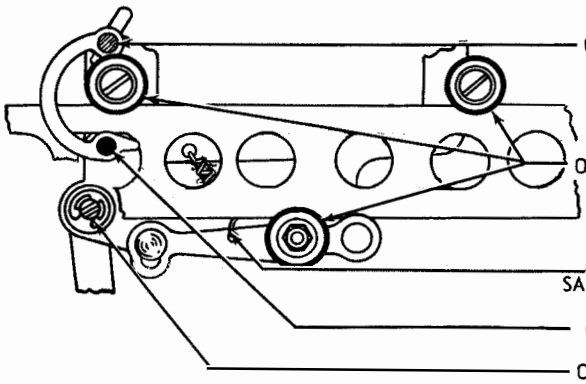
SAT	FELT WASHERS (2 WASHERS)	PRINTING HAMMER OPERATING BAIL
SAT	FELT WICK	SPRING WICK
G	ENGAGING SURFACE	SECONDARY PRINTING ARM
G	ENGAGING SURFACE	PRINTING HAMMER STOP
G	ENGAGING SURFACE	PRINTING HAMMER
SAT	FELT WICK	SPRING WICK
0	HOOKS–EACH END (4 SPRINGS)	SPRING
SAT	FELT WASHER	OPERATING BAIL LATCH
02	ENGAGING SURFACES (2 PLACES)	OPERATING BAIL LATCH

5.03 PRINTING MECHANISM (Continued)



SAT	FELT WASHERS (3 WASHERS)	PRINTING CARRIAGE ROLLERS
G	GUIDING SURFACE	PRINTING ARM EXTENSION
010	TRACK SURFACE	PRINTING TRACK
SAT	FELT WASHERS (2 WASHERS)	PRINTING ARM

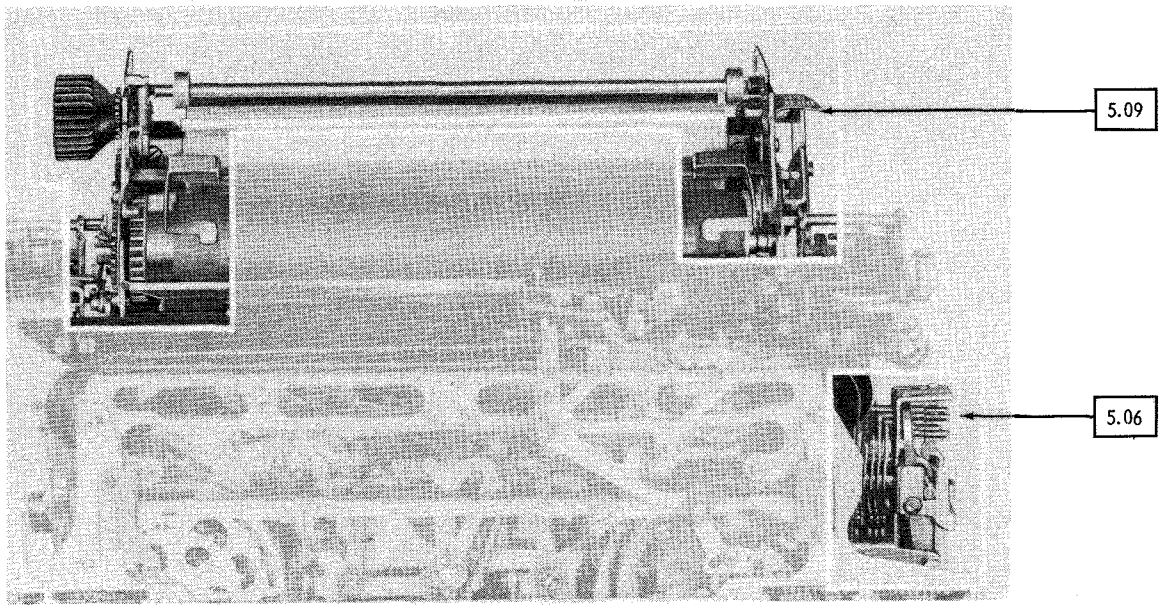
5.04 TYPE BOX CARRIAGE MECHANISM



0	BEARING SURFACE	TYPE BOX CARRIAGE LATCH TOGGLE
02	BEARINGS (3 ROLLERS)	TYPE BOX CARRIAGE ROLLERS
0 SAT	HOOK–EACH END FELT WICK	SPRING
0	BEARING SURFACE	TYPE BOX CARRIAGE LATCH
02	BEARING SURFACE	TYPE BOX CARRIAGE LINK

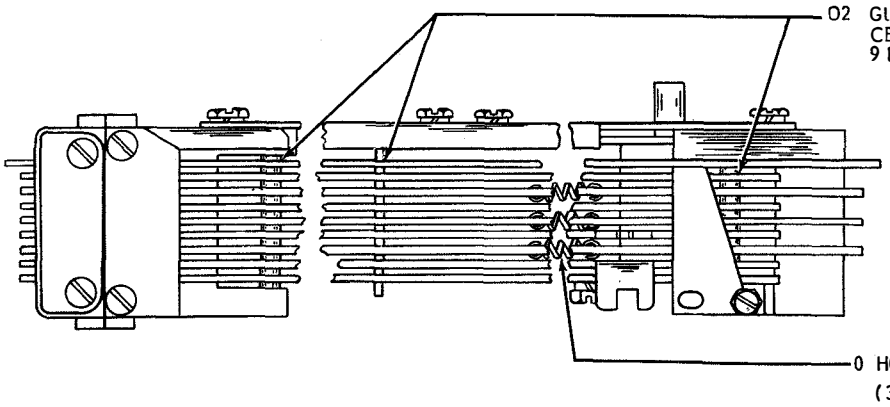
5.05 CODE BAR MECHANISM
ALSO LOCATION OF PAPER FEED MECHANISM (5.09)

REST TYPING UNIT IN UPRIGHT POSITION



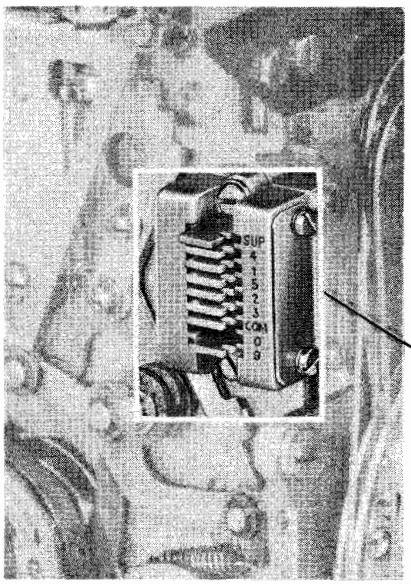
(FRONT VIEW)

5.06



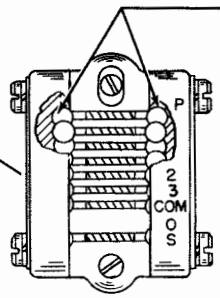
5.07 CODE BAR MECHANISM (Continued)

REST TYPING UNIT IN UPRIGHT POSITION



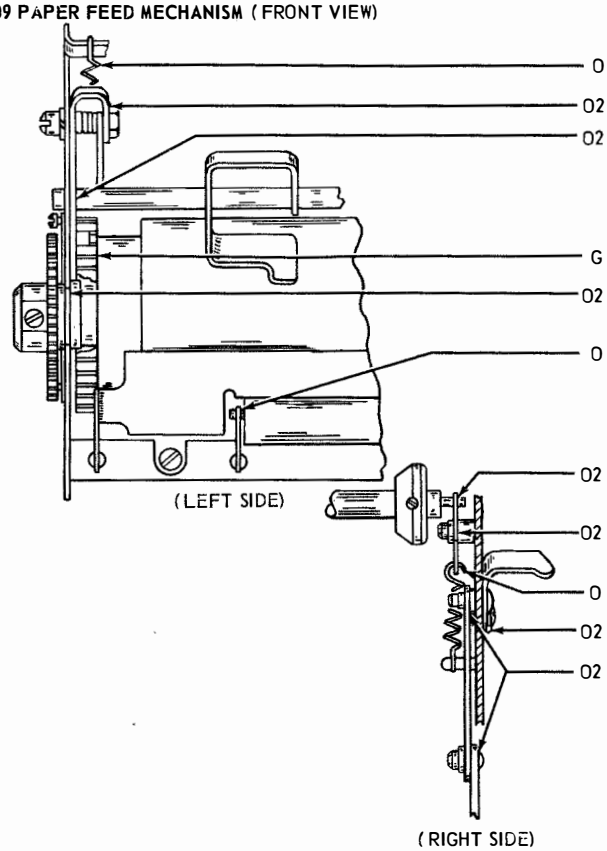
(LEFT SIDE VIEW)

5.08



02	BEARING BALLS (9 BALLS)	CODE BAR DETENT

5.09 PAPER FEED MECHANISM (FRONT VIEW)

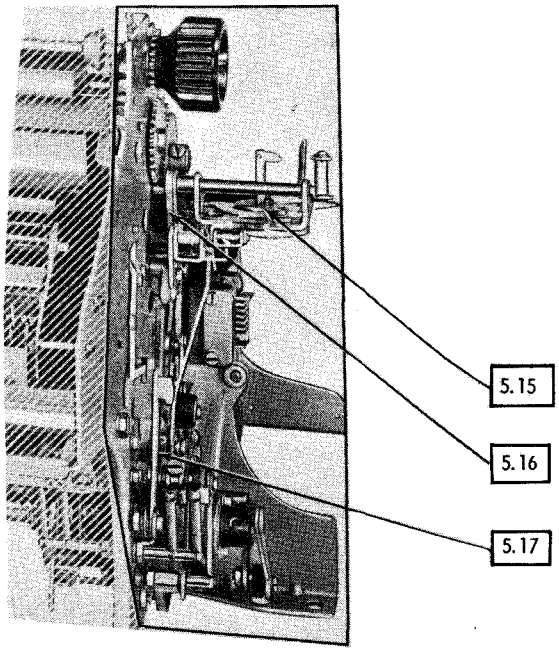


0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	PLATEN DETENT BAIL
02	BEARING SURFACES (EACH END)	PAPER FINGER SHAFT
G	TEETH (2 GEAR)	PLATEN GEARS
02	BEARINGS (EACH END)	PLATEN SHAFT
0	BEARING SURFACES-EACH END (6 ROLLERS)	PAPER PRESSURE ROLLER SHAFTS (WIPE OFF EXCESS OIL)
02	BEARING SURFACES (EACH END)	PAPER STRAIGHTENER SHAFT
02	BEARING SURFACES (RIGHT AND LEFT)	PAPER STRAIGHTENER LEVERS
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	RELEASE LEVER
02	BEARING SURFACES (EACH END)	RELEASE LEVER LINK

(LEFT SIDE)

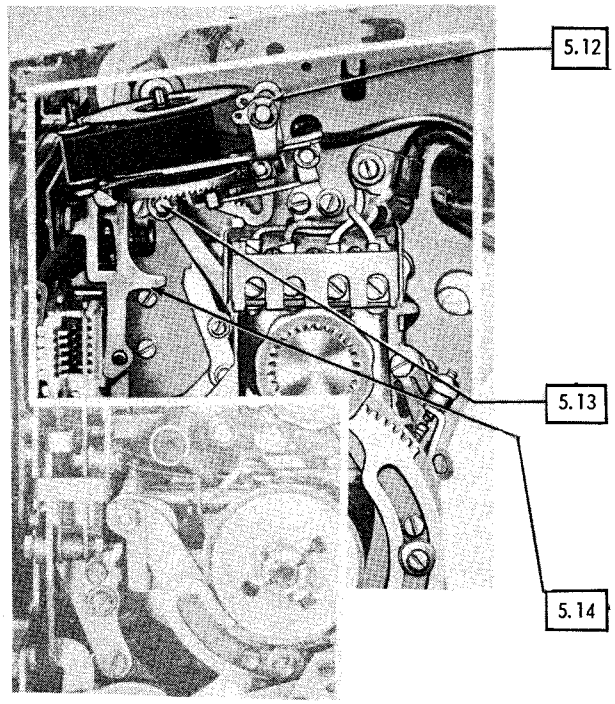
(RIGHT SIDE)

5.10 REST TYPING UNIT IN UPRIGHT POSITION



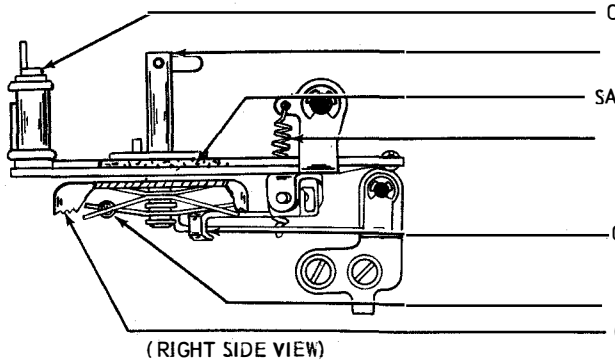
(LEFT SIDE VIEW)

5.11



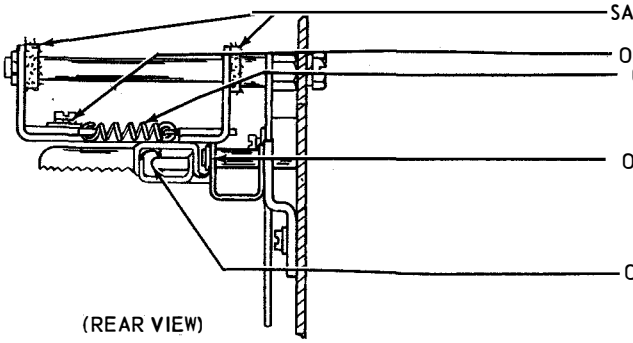
(RIGHT SIDE VIEW)

5.12 RIBBON FEED MECHANISM (RIGHT SIDE)



O2	BEARING SURFACE	RIBBON ROLLER SHAFT
O2	BEARING SURFACE	RIBBON SPOOL TOGGLE
SAT	FELT WASHER	RIBBON SPOOL SHAFT
O	HOOKS–EACH END	RIBBON FEED LEVER SPRING
O2	ENGAGING SURFACE	RIBBON DETENT LEVER
O	HOOKS–EACH END	RIBBON RATCHET WHEEL SPRING
G	TEETH	RIBBON RATCHET WHEEL

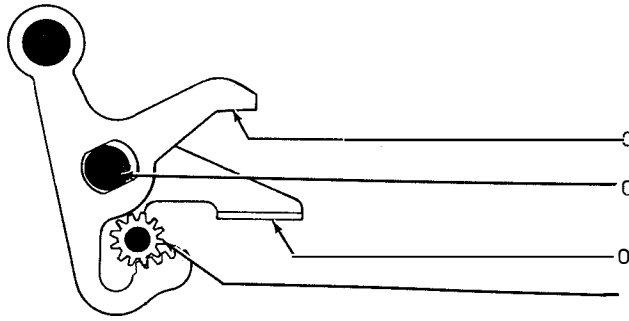
(RIGHT SIDE VIEW)



SAT	FELT WASHERS (2 WASHERS)	RIBBON FEED LEVER BAIL
O2	BEARING SURFACE	RIBBON LEVER SPRING
O	HOOKS–EACH END	
O2	BEARING SURFACES (2 PLACES)	RATCHET FEED LEVER SHAFT
O2	BEARING SURFACE (2 PLACES)	RIBBON DETENT LEVER SHAFT

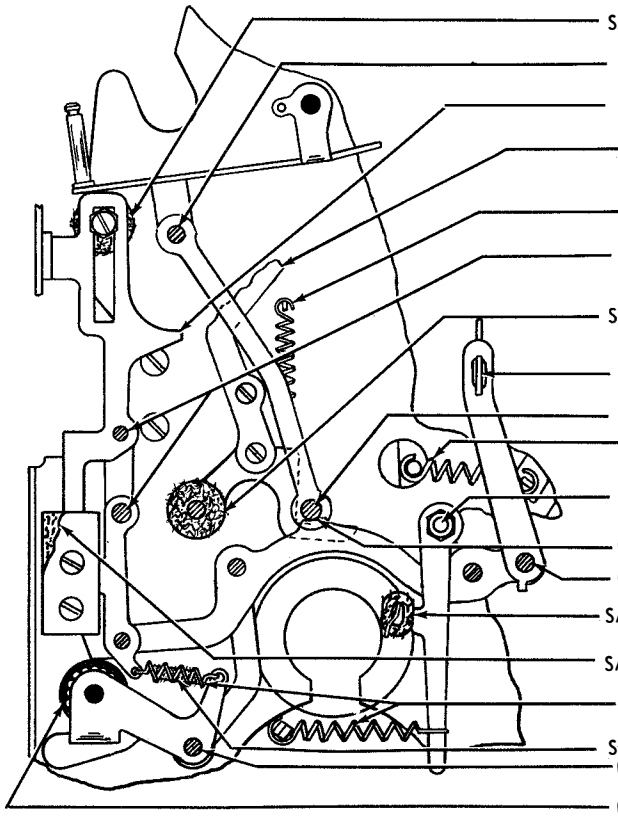
(REAR VIEW)

5.13 RIBBON FEED MECHANISM (Continued)



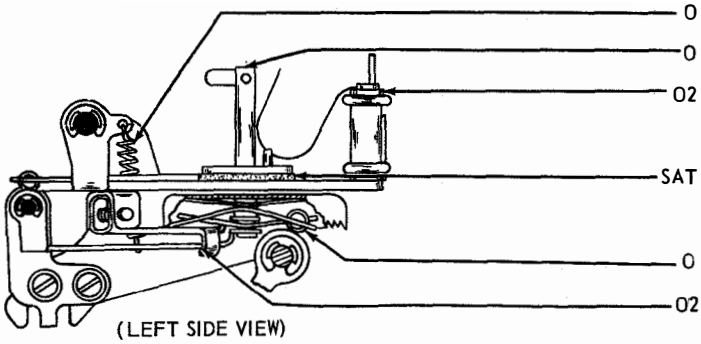
02	ENGAGING SURFACE	RIBBON REVERSEING LEVER
02	BEARING SURFACE	RIBBON REVERSE LEVERS
02	ENGAGING SURFACE	RIBBON REVERSE LEVER
G	TEETH	RIBBON REVERSE SPUR GEAR

5.14 VERTICAL POSITIONING MECHANISM (RIGHT SIDE)



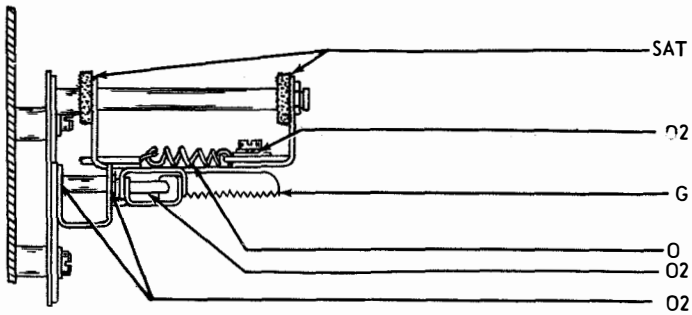
SAT	FELT WASHER	VERTICAL POSITIONING LEVER
02	BEARING SURFACE	RIBBON DRIVE LINK
02	ENGAGING SURFACE	VERTICAL POSITIONING LEVER
0	ENGAGING SURFACES (4 PLACES)	VERTICAL POSITIONING LOCK LEVER
0	HOOKS–EACH END	SPRING
02	BEARING SURFACES (2 PLACES)	VERTICAL POSITIONING LEVER
SAT	FELT WASHERS (2 WASHERS)	MAIN SIDE LEVER FOLLOWER ARM
02	GUIDING SURFACE	STRIPPER BLADE
02	BEARING SURFACE	RIBBON DRIVE LINK
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	CODE-BAR CLUTCH TRIP SHAFT OPERATING LEVER
02	ENGAGING SURFACE	MAIN SIDE LEVER FOLLOWER ARM
02	BEARING SURFACE	STRIPPER BLADE ARM
SAT	FELT WASHER	CODE BAR CLUTCH TRIP SHAFT OPERATING LEVER EXTENSION
SAT	FELT OILER	VERTICAL POSITIONING LEVER
0	HOOKS–EACH END (2 SPRINGS)	SPRING
SAT	FELT WICK	SPRING WICK
02	BEARING SURFACE	ROCKER SHAFT BRACKET
02	BALL BEARING	MAIN ROCKER SHAFT

5.15 RIBBON FEED MECHANISM (LEFT SIDE)



O	HOOKS–EACH END	SPRING
O	BEARING SURFACE	RIBBON SPOOL SHAFT
O2	BEARING SURFACE	RIBBON ROLLER SHAFT
SAT	FELT WASHER	RIBBON SPOOL SHAFT
O	HOOKS - EACH END	SPRING
O2	ENGAGING SURFACE	RIBBON DETENT LEVER

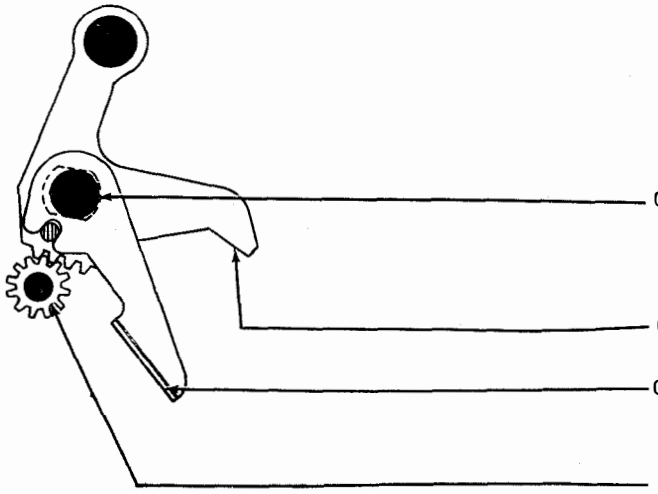
(LEFT SIDE VIEW)



SAT	FELT WASHERS (2 WASHERS)	RIBBON FEED LEVER BAIL
O2	BEARING SURFACE	RIBBON REVERSE LEVER
G	TEETH	RIBBON RATCHET WHEEL
O	HOOKS - EACH END	SPRING
O2	ENGAGING SURFACE	RIBBON DETENT LEVER SHAFT
O2	BEARING SURFACES (2 PLACES)	RATCHET FEED LEVER SHAFT

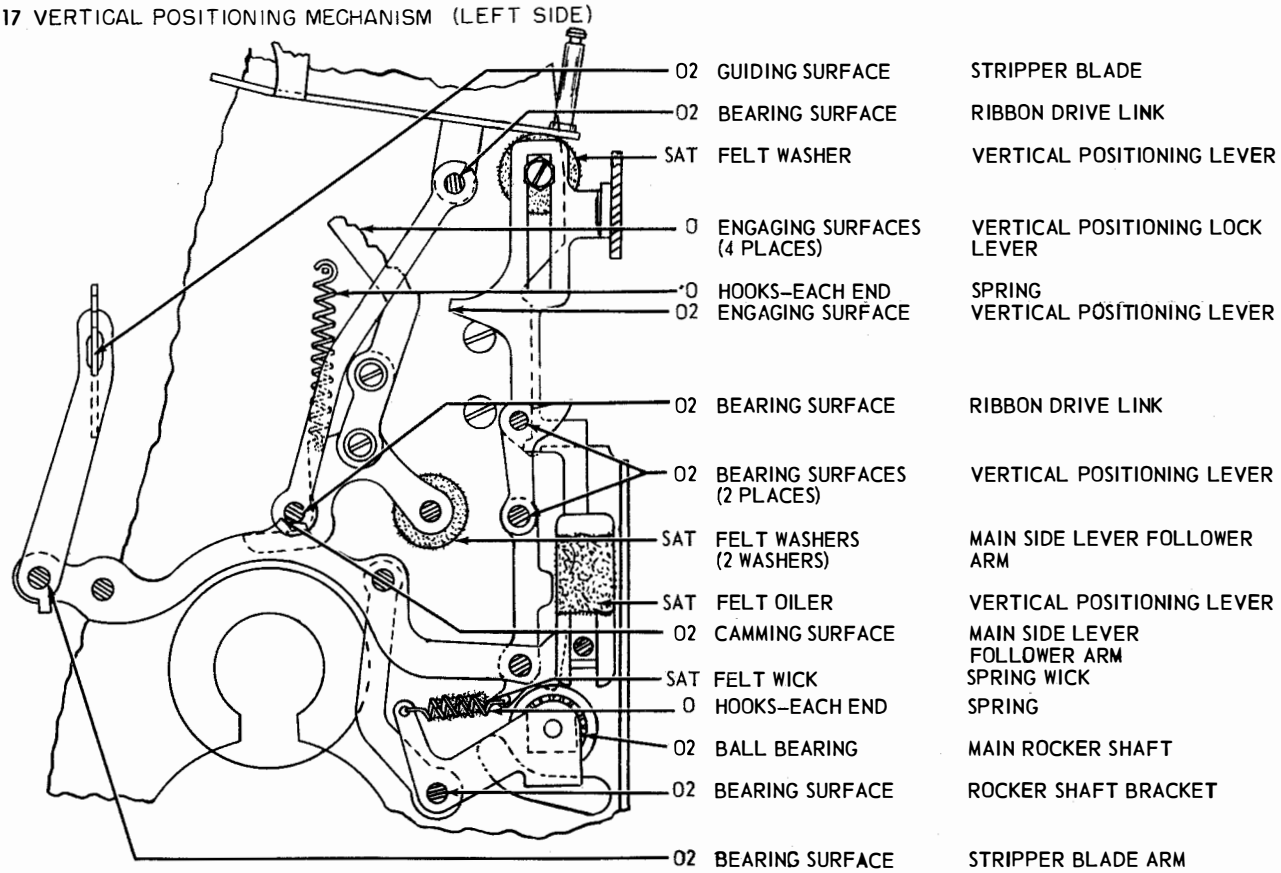
(REAR VIEW)

5.16 RIBBON FEED MECHANISM (Continued)

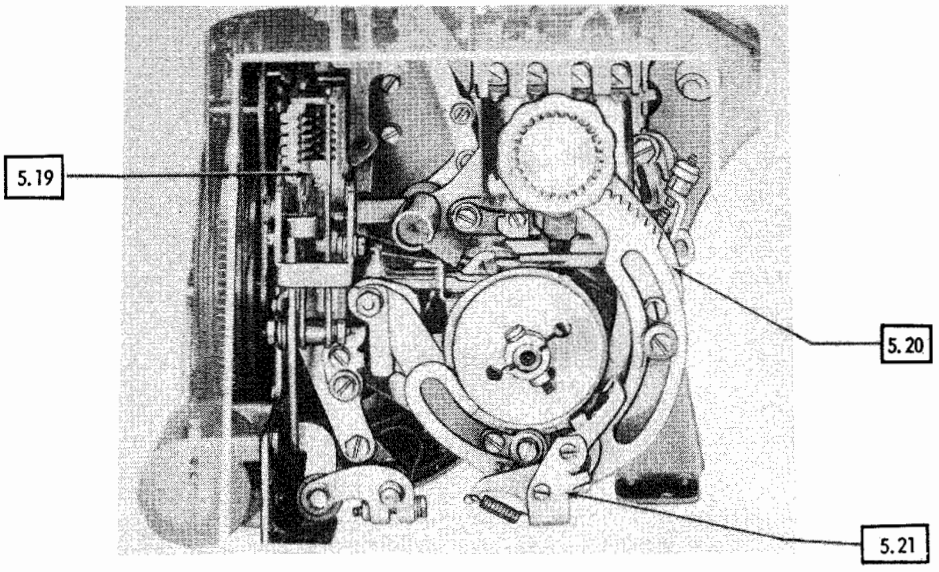


O2	BEARING SURFACE	RIBBON DETENT LEVER
O2	ENGAGING SURFACE	RIBBON REVERSEING LEVER
O2	ENGAGING SURFACE	RIBBON REVERSE LEVER
G	TEETH	RIBBON REVERSE SPUR GEAR

5.17 VERTICAL POSITIONING MECHANISM (LEFT SIDE)

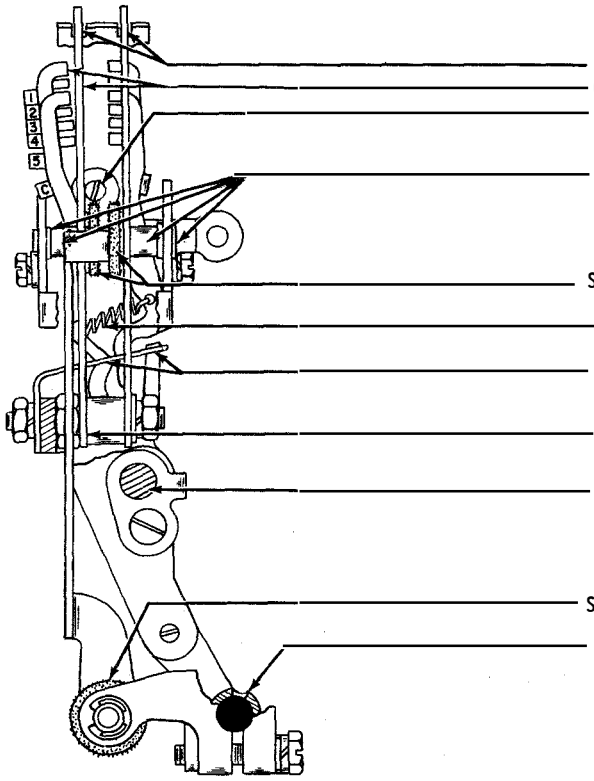


5.18 REST TYPING UNIT IN UPRIGHT POSITION



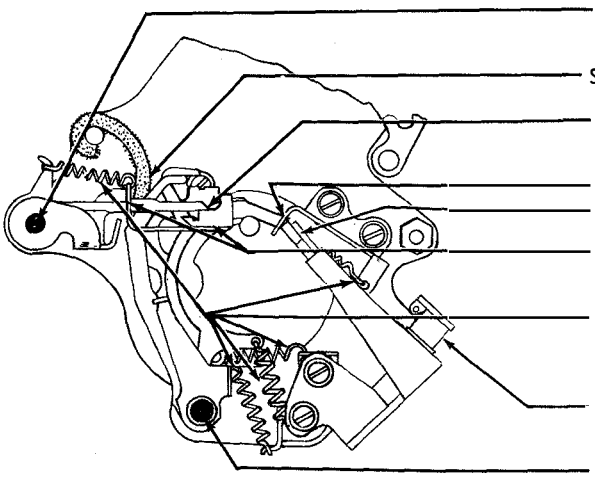
(RIGHT SIDE VIEW)

5.19 CODE BAR MECHANISM



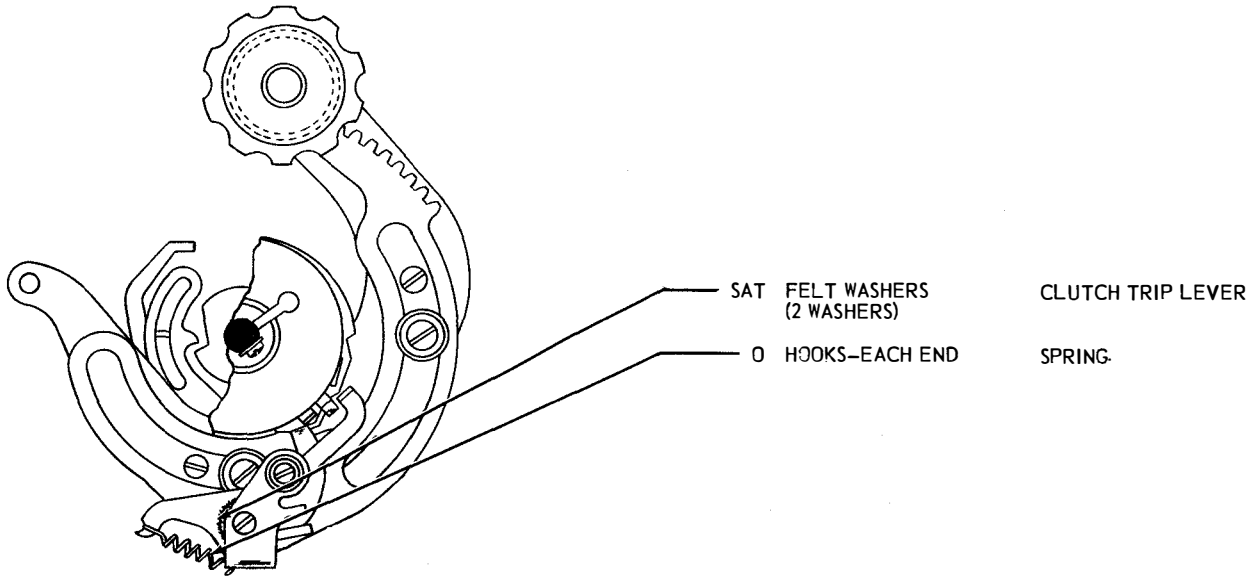
02	GUIDE SLOTS	SHIFT LEVERS
02	ENGAGING SURFACE	SHIFT AND TRANSFER LEVERS
02	BEARING GUIDE SLOTS (6 SLOTS)	TRANSFER LEVER GUIDE BEARING
02	ROLLER BEARINGS (4 ROLLERS)	SHIFT LEVER LINK ROLLERS
SAT	FELT WASHERS (2 WASHERS)	SHIFT LEVER LINK SHAFT
0	HOOKS–EACH END (5 SPRINGS)	SPRING
02	GUIDE SLOTS (5 SLOTS)	INTERMEDIATE ARMS AND TRANSFER LEVERS
02	BEARING SURFACES (2 PLACES)	SHIFT LEVERS
02	BEARING GUIDE SLOTS (5 SLOTS)	INTERMEDIATE ARM GUIDE BEARING
SAT	FELT WASHER	SHIFT LEVER LINK
03	OIL HOLE	SHIFT LEVER DRIVE ARM SHAFT

5.20 SELECTOR MECHANISM

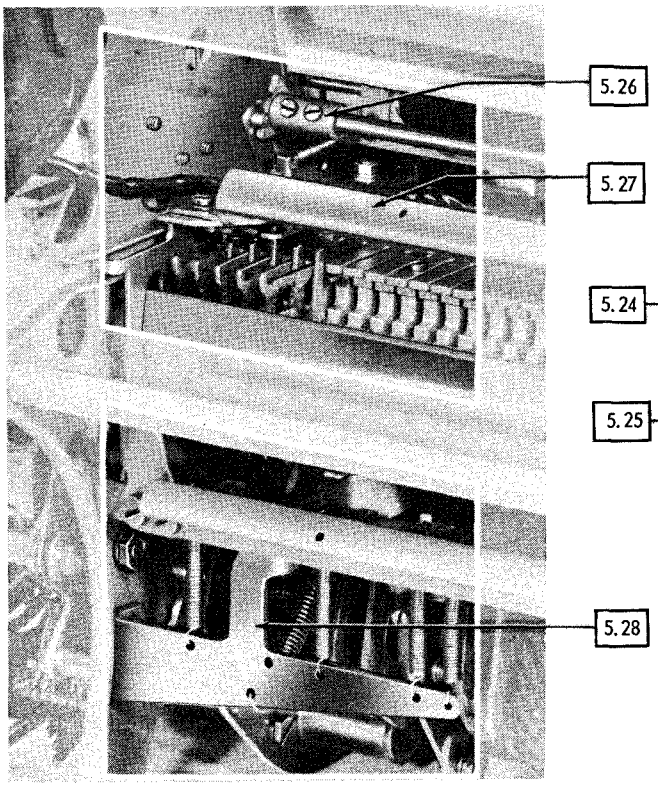


02	BEARING GUIDE SLOTS (5 SLOTS)	PUSH LEVER GUIDE BEARING
SAT	FELT WICK	SELECTOR WICK
02	ENGAGING SURFACES (5 LEVERS)	PUSH LEVERS
02	GUIDE SLOT	MARKING LOCK LEVER
02	WICK	LUBRICATOR WICK
02	GUIDE SLOTS	SELECTOR AND PUSH LEVERS
0	HOOKS–EACH END (12 SPRINGS)	SPRINGS
	FILL CUP (AVOID AIR LOCK)	LUBRICATOR RESERVOIR
02	BEARING GUIDE SLOTS (6 SLOTS)	SELECTOR LEVER GUIDE BEARING

5.21 SELECTOR MECHANISM (Continued)

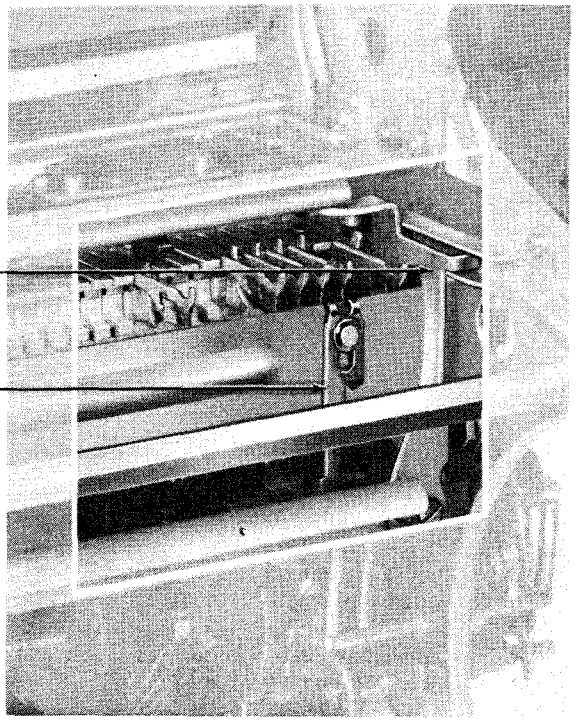


5.22 REST TYPING UNIT IN UPRIGHT POSITION



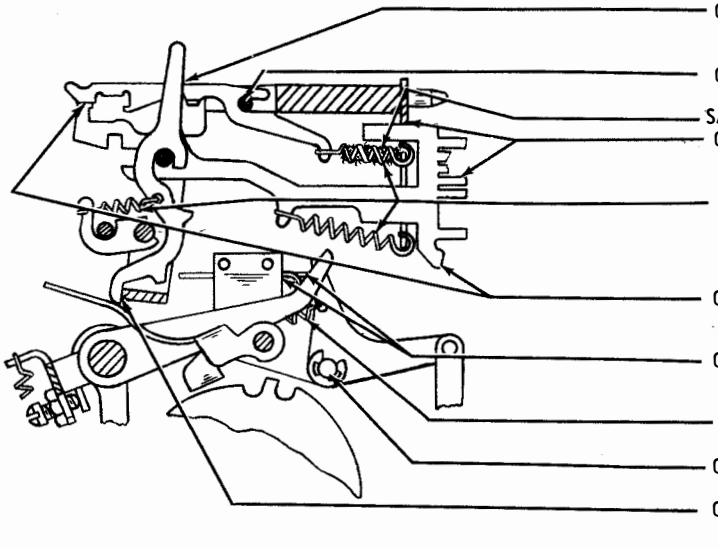
(REAR VIEW)

5.23



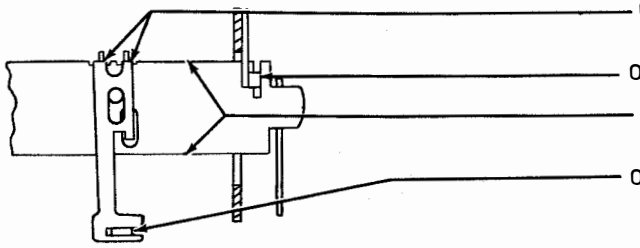
(REAR VIEW)

5.24 STUNT BOX MECHANISM



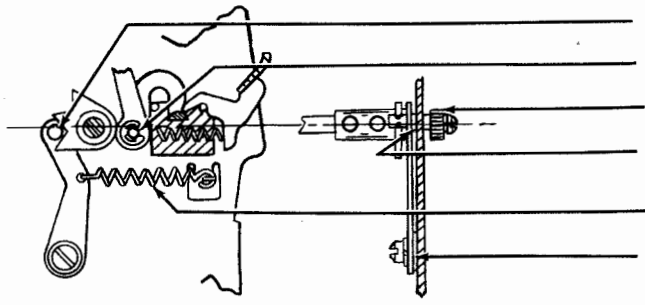
02	GUIDE SLOTS (11 LEVERS)	FUNCTION LEVERS
02	GUIDE SLOTS (11 PAWLS)	FUNCTION PAWLS
SAT	EACH FELT WICK	FUNCTION PAWL SPRINGS
02	GUIDE SLOTS (11 LEVERS)	FUNCTION BARS
0	HOOKS–EACH END (33 SPRINGS)	SPRING
02	ENGAGING SURFACES (FRONT & REAR–11 BARS)	FUNCTION BARS
02	GUIDE AND ENGAGING SURFACES	LINE FEED SLIDE ARM
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	KEYBOARD LOCK LEVER
02	ENGAGING SURFACES (11 LEVERS)	FUNCTION LEVERS

5.25



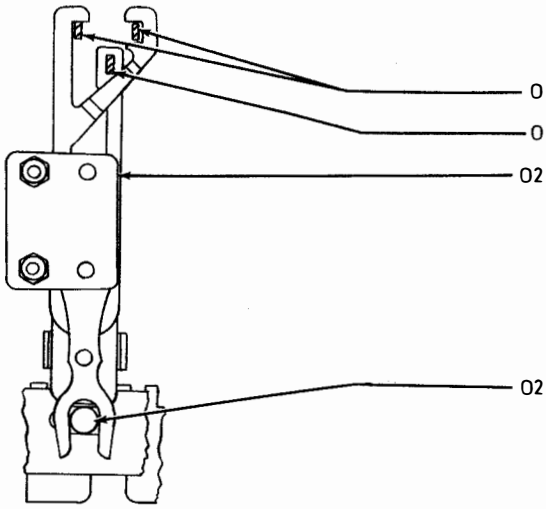
0	ENGAGING SURFACES (2 PLACES)	LINE FEED FUNCTION PAWL STRIPPER
02	GUIDING SURFACE	STRIPPER BLADE
G	UPPER AND LOWER WORKING SURFACES	STRIPPER BLADE
02	GUIDING SURFACE	STRIPPER BAIL

5.26 RIBBON REVERSE MECHANISM



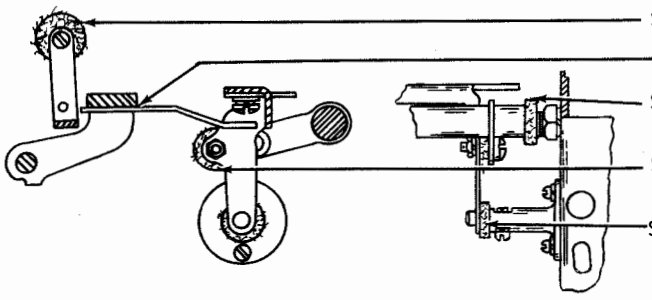
02	ENGAGING SURFACE	RIBBON REVERSE DETENT
02	BEARING SURFACE	PAPER RELEASE LEVER
G	TEETH	RIBBON REVERSE SPUR GEAR
02	BEARING (RIGHT AND LEFT)	RIBBON REVERSE SHAFT
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	RIBBON REVERSE DETENT LEVER

5.27 SHIFT MECHANISM



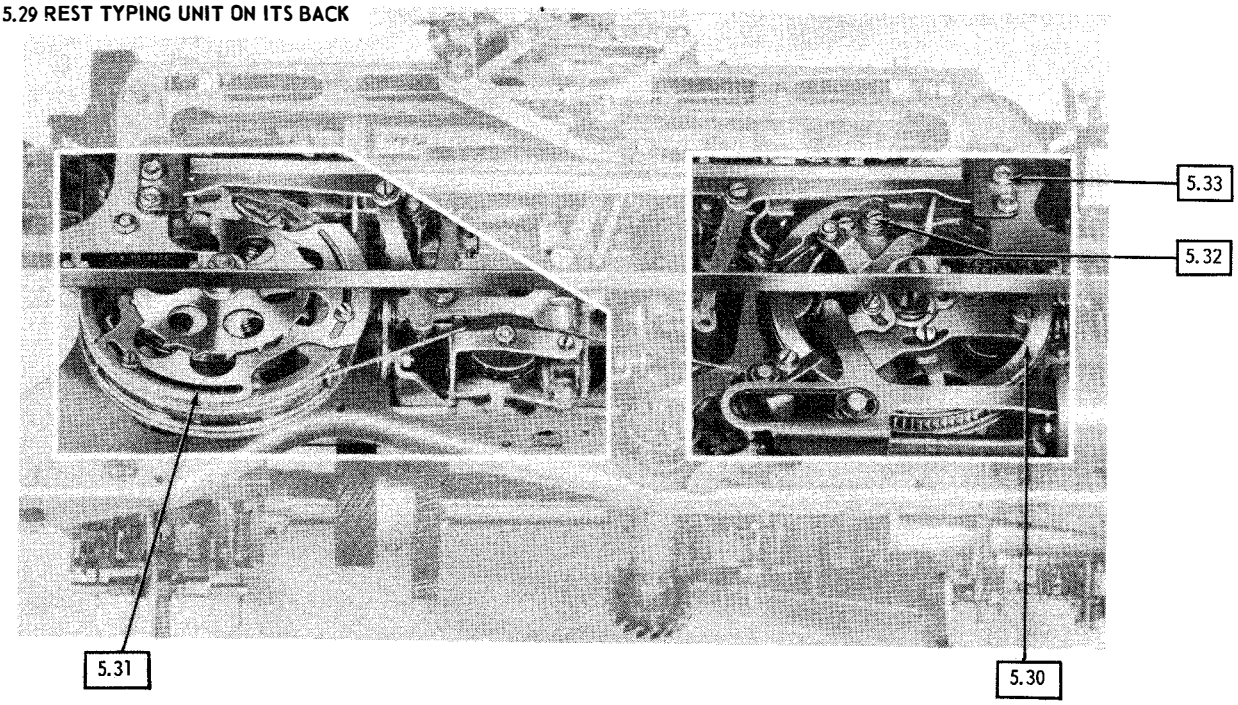
0	ENGAGING SURFACES	LETTERS FUNCTION SLIDE
0	ENGAGING SURFACE	FIGURES FUNCTION SLIDE
02	GUIDING SURFACES (EACH SLIDE)	LETTERS AND FIGURES FUNCTION SLIDES
02	ENGAGING SURFACE	LETTERS-FIGURES CODE BAR FORK

5.28 FUNCTION ROCKER SHAFT MECHANISM

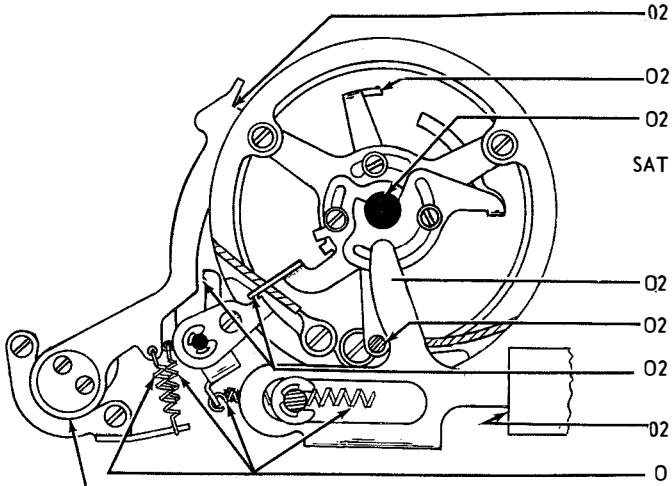


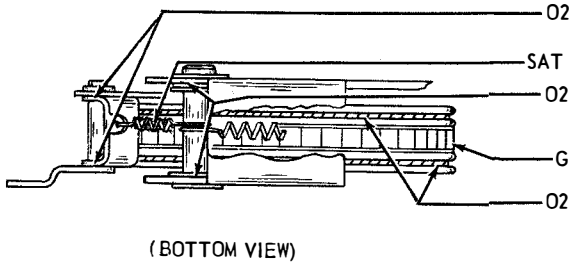
SAT	FELT WASHER	SPACE SUPPRESSION BAIL
02	GUIDE SURFACE	CARRIAGE RETURN SLIDE ARM
SAT	FELT WASHERS (2 WASHERS)	FUNCTION ROCKER SHAFT
SAT	FELT WASHERS (2 WASHERS)	FUNCTION BAIL TOGGLE LINK
SAT	FELT WASHERS (2 WASHERS)	FUNCTION BAIL

5.29 REST TYPING UNIT ON ITS BACK



5.30 SPACING DRUM DRIVE MECHANISM (EARLIER DESIGN)

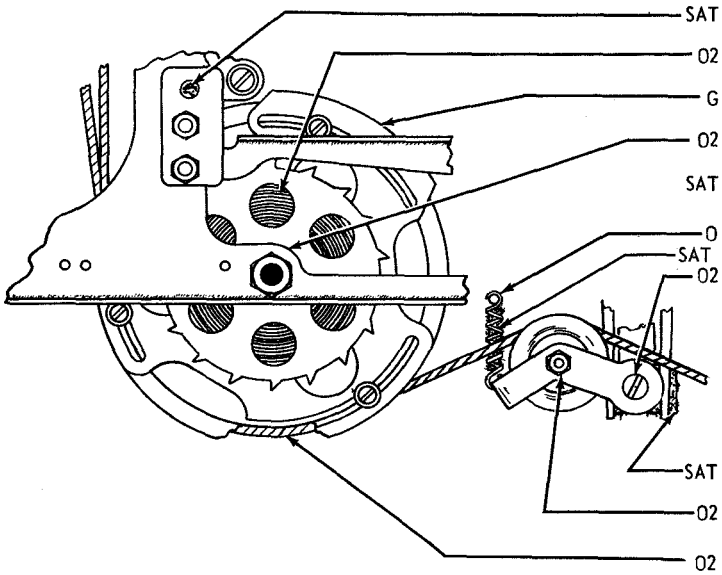




02	ENGAGING SURFACE (2 PAWL)	SPACE PAWLS
02	ENGAGING SURFACE	SPACING CUTOUT LEVER
02	BEARING (OUTER AND INNER END)	SPACING DRUM SHAFT
SAT	FELT WASHER	
02	ENGAGING SURFACE	TRANSFER SLIDE
02	ROLLER BEARING	STOP ARM ROLLER
02	ENGAGING SURFACES (2 PLACES)	CARRIAGE RETURN LATCH BAIL
02	GUIDE SURFACE	DASH POT
0	HOOKS–EACH END (4 SPRINGS)	SPRING
02	BEARING SURFACES (2 ECCENTRICS)	SPACING DRUM FEED PAWLS ECCENTRICS
02	BEARING SURFACES (2 PLACES)	CARRIAGE RETURN LATCH BAIL
SAT	FELT WICK	SPRING WICK
02	ROLLER BEARINGS (2 ROLLERS)	TRANSFER SLIDE ROLLERS
G	TEETH	SPACING DRUM RATCHET WHEEL
02	CABLE GROOVES (2 PLACES)	SPACING DRUM

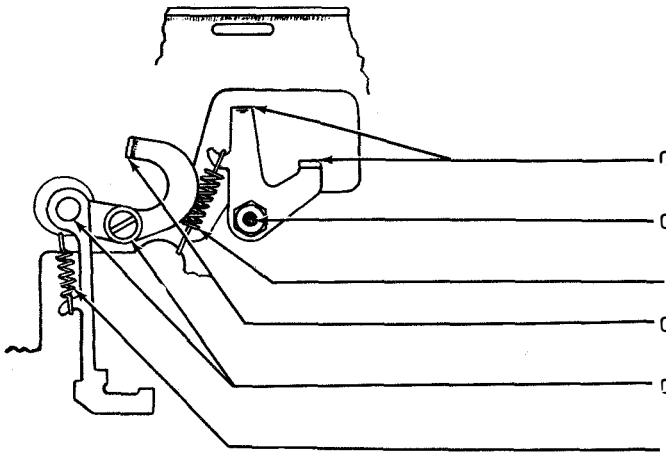
(SEE PARAGRAPH 6-08)

5.31 CARRIAGE RETURN MECHANISM



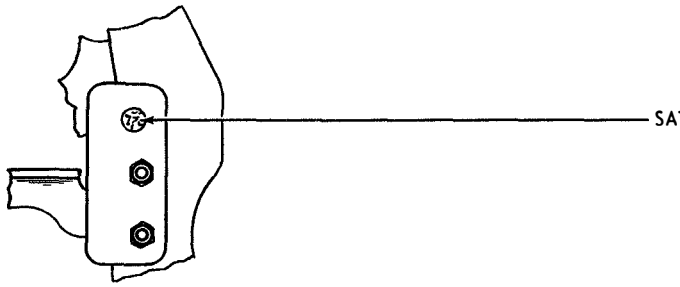
SAT	FELT OILER	PRINTING TRACK GUIDE
02	BETWEEN LAYERS	CARRIAGE RETURN SPRING
G	CAM DISK SURFACE	MARGIN INDICATOR CAM DISK
02	BEARING (OUTER AND INNER END)	CARRIAGE RETURN SPRING DRUM SHAFT
SAT	FELT WASHER	
O	HOOKS–EACH END	SPRING
SAT	FELT WICK	SPRING WICK
02	BEARING SURFACE	TENSION PULLEY BAIL
SAT	FELT OILER	MAIN BAIL
02	BEARING SURFACE	PULLEY
02	CABLE GROOVES	CARRIAGE RETURN SPRING DRUM

5.32



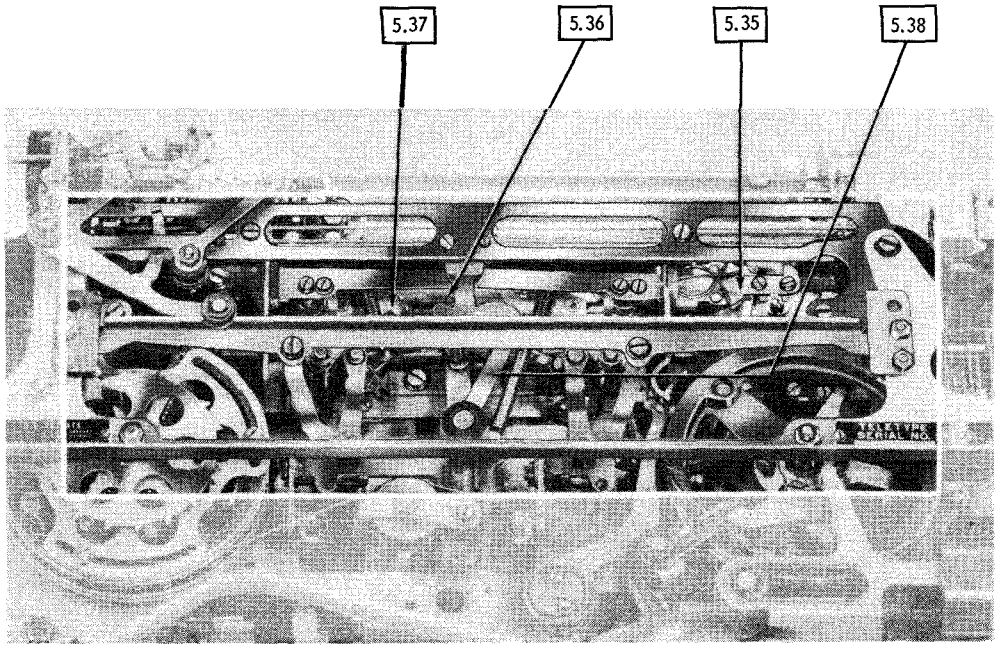
02	ENGAGING SURFACES (2 PLACES)	AUTOMATIC CARRIAGE RETURN BELL CRANK
02	BEARING SURFACE	AUTOMATIC CARRIAGE RETURN BELL CRANK
O	HOOKS–EACH END	SPRING
02	ENGAGING SURFACE	SPACING DRUM FEED PAWL RELEASE LINK
02	BEARING SURFACES (2 PLACES)	SPACING DRUM FEED PAWL RELEASE LINK
O	HOOKS–EACH END	SPRING

5.33



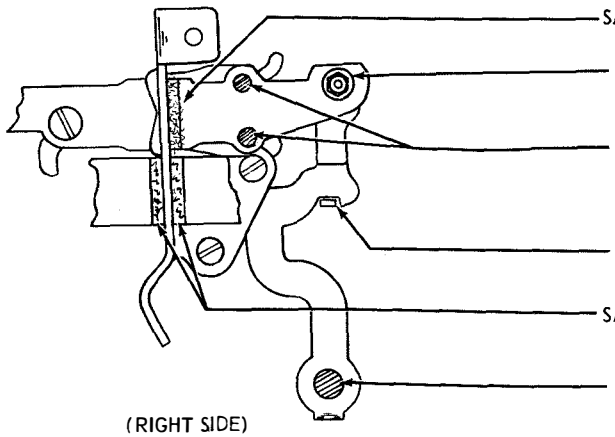
SAT	FELT OILER	PRINTING TRACK GUIDE

5.34 REST TYPING UNIT ON ITS BACK



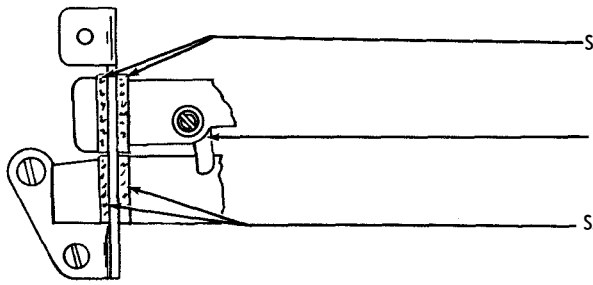
(FRONT VIEW)

5.35 HORIZONTAL POSITIONING MECHANISM (FRONT VIEW)



SAT	FELT WASHER	HORIZONTAL REVERSING SLIDE
02	ENGAGING SURFACE	HORIZONTAL REVERSING SLIDE SHIFT LEVER
02	DETENTS (2 DETENTS)	DETENT BAILS
02	ENGAGING SURFACE	HORIZONTAL REVERSING SLIDE SHIFT LEVER
SAT	FELT WASHERS (2 WASHERS)	OSCILLATING RAIL SHIFT SLIDE
02	BEARING SURFACE	HORIZONTAL REVERSING SLIDE SHIFT LEVER

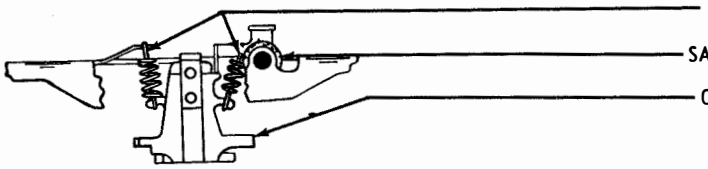
(RIGHT SIDE)



SAT	FELT WASHERS (2 WASHERS)	HORIZONTAL REVERSING SLIDE
02	ENGAGING SURFACES (2 PLACES)	HORIZONTAL REVERSING SLIDE
SAT	FELT WASHERS (2 WASHERS)	OSCILLATING RAIL SHIFT SLIDE

(LEFT SIDE)

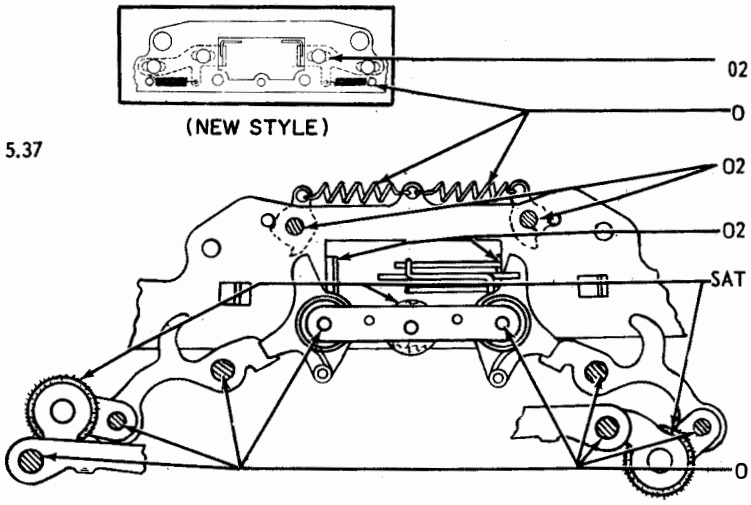
5.36 HORIZONTAL POSITIONING MECHANISM (Continued)



O	HOOKS–EACH END	SPRING
SAT	FELT WASHER	CODE BAR BELL CRANK
O2	ENGAGING SURFACES (3 SLIDES)	HORIZONTAL MOTION STOP SLIDES

(TOP VIEW)

5.37



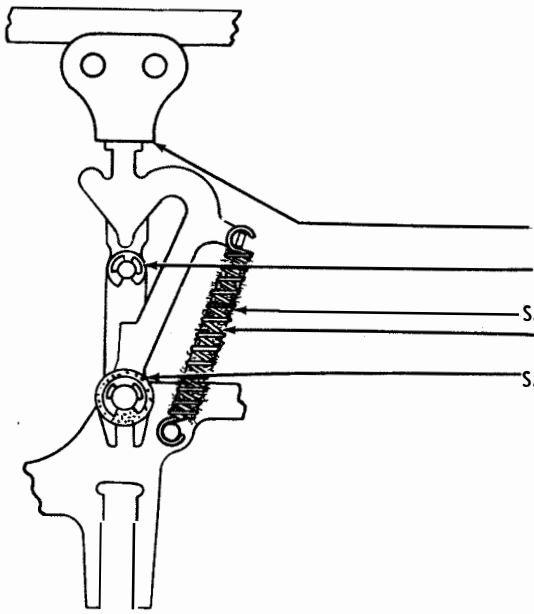
(NEW STYLE)

O2	ENGAGING SURFACES	DECELERATING SLIDE (SEE NOTE 1)
O	HOOKS–EACH END (2 SPRINGS)	SPRING
O2	BEARING SURFACES (2 BELL CRANKS)	DECELERATING SLIDE BELL CRANKS
O2	ENGAGING SURFACES (2 SLIDES)	DECELERATING SLIDES (SEE NOTE 2)
SAT	FELT WASHERS (3 WASHERS)	SHIFT SLIDE DRIVE LINKS
O	BEARING SURFACES (8 PLACES)	SHIFT SLIDE DRIVE LINKS

(FRONT VIEW)

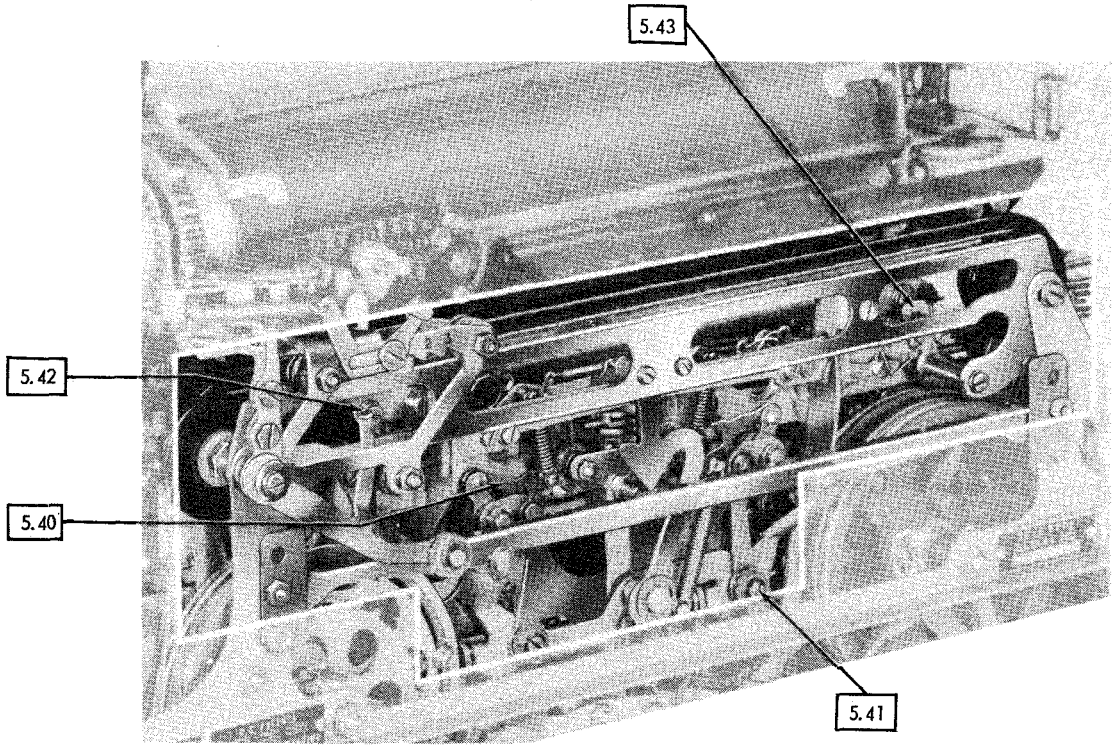
NOTES
1. WITH SPRINGS LOCATED ON REAR SIDE OF SLIDE
2. WITH SPRINGS LOCATED ABOVE THE SLIDE

5.38 HORIZONTAL POSITIONING MECHANISM (Continued)



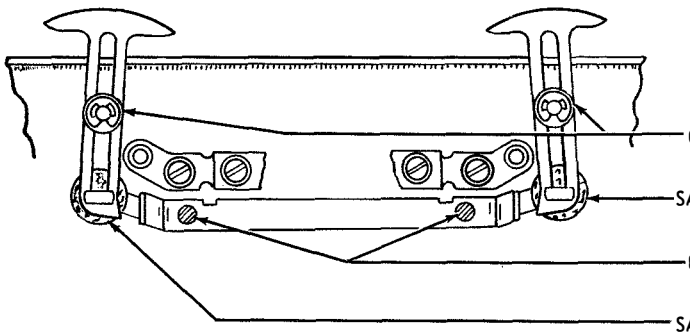
O2	GUIDING SURFACE	HORIZONTAL POSITIONING LOCK LEVER
O2	BEARING SURFACE	HORIZONTAL LOCK LEVER ARM
SAT	FELT WICK	ROLLER
O	HOOKS–EACH END	SPRING WICK
		SPRING
SAT	FELT WASHER	HORIZONTAL POSITIONING LOCK LEVER

5.39 REST TYPING UNIT IN UPRIGHT POSITION



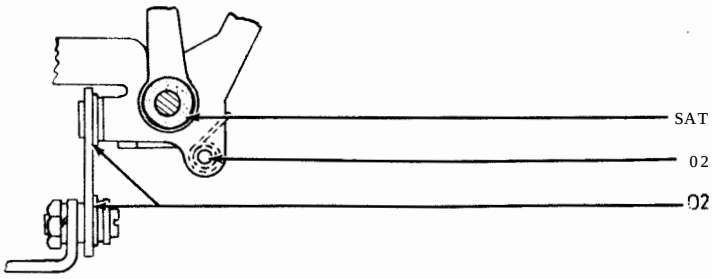
(FRONT VIEW)

5.40 LETTERS–FIGURES SHIFT MECHANISM



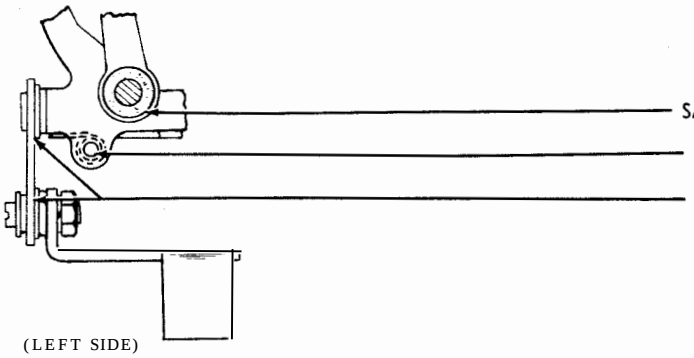
O2	GUIDING SURFACES (2 SLIDES)	SHIFT LINK BREAKER SLIDE
SAT	FELT WASHER	LETTERS–FIGURES SHIFT SLIDE POST
O2	BEARING SURFACE	LETTERS–FIGURES SHIFT SLIDE
SAT	FELT WASHER	LETTERS–FIGURES SHIFT SLIDE POST

5.41 LETTt S FIGURES SHIFT MECHANISM Continued)



SAT	FELT WASHER	SHIFT SLIDE DRIVE LINK
02	BEARING SURFACE	BREAKER SLIDE BAIL
02	BEARING SURFACES (2 PLACES)	MAIN BAIL LINK

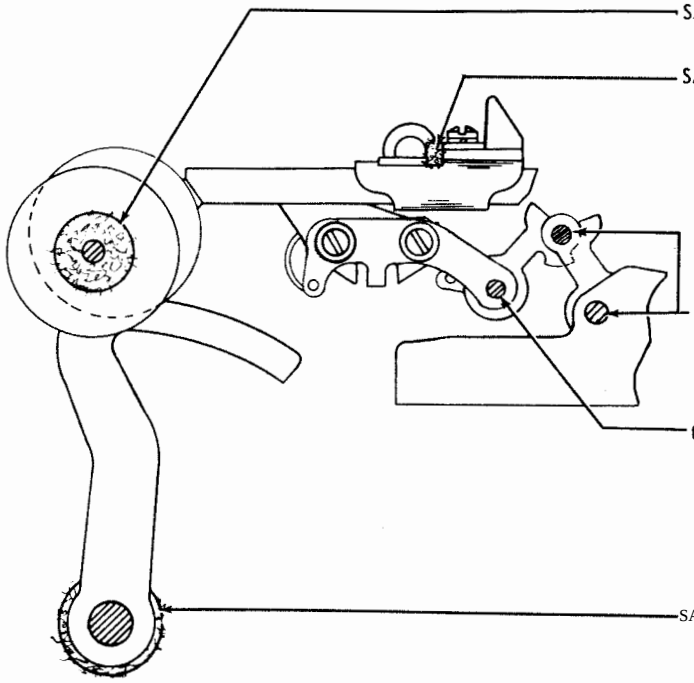
(RIGHT SIDE)



SAT	FELT WASHER	SHIFT SLIDE DRIVE LINK
02	BEARING SURFACE	BREAKER SLIDE BAIL
02	BEARING SURFACES (2 PLACES)	MAIN BAIL LINK

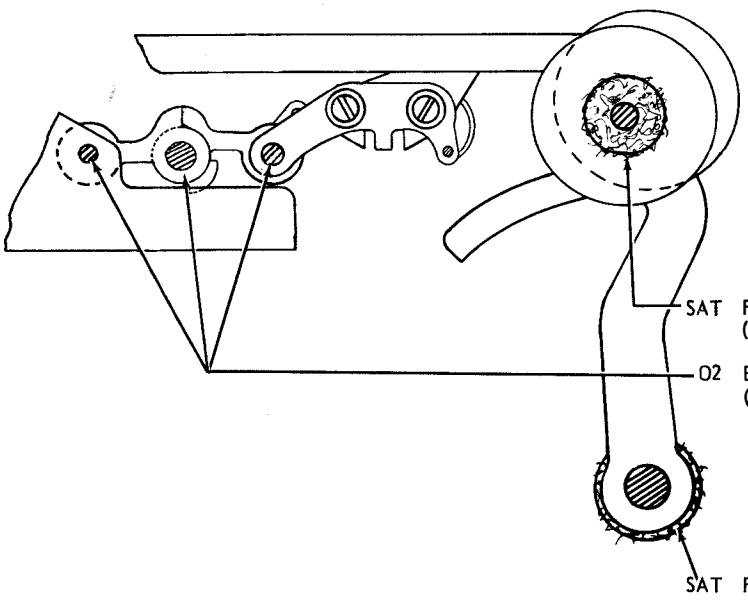
(LEFT SIDE)

5.42 !SCILLATING MECHANISM



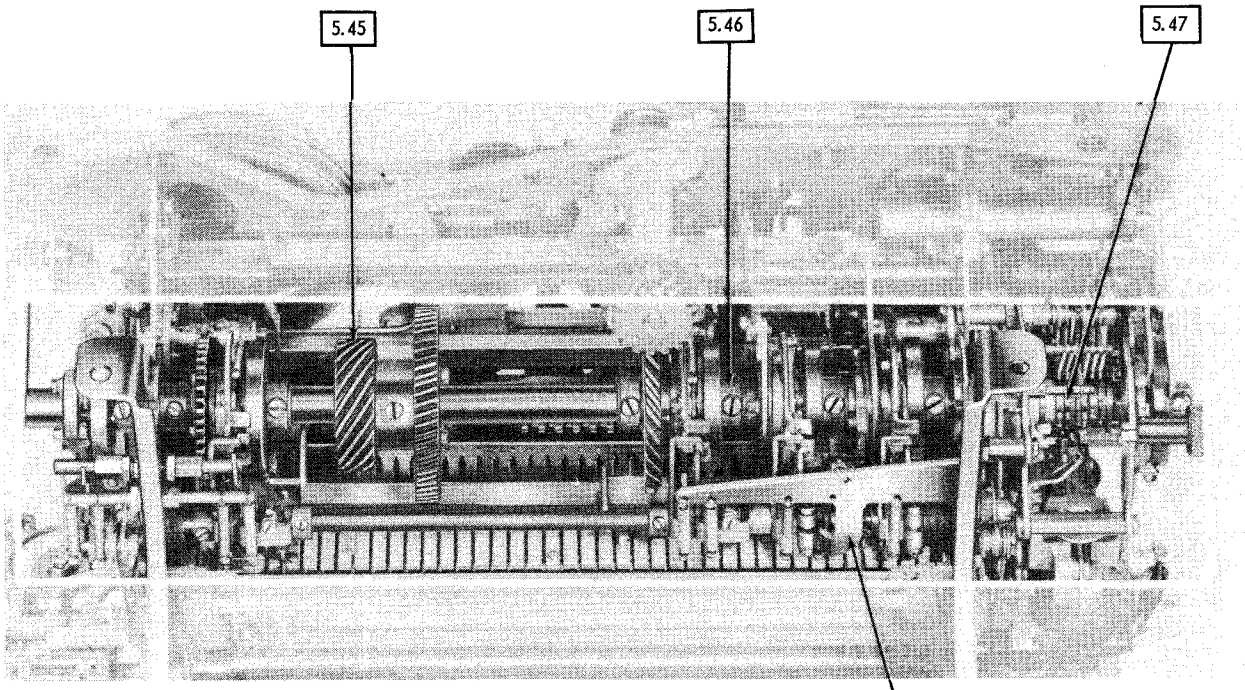
SAT	FELT WASHERS (3 WASHERS)	PULLEYS
SAT	FELT OILER	OSCILLATING RAIL SLIDE
02	BEARING SURFACE	OSCILLATING RAIL SHIFT LINK
02	BEARING SURFACE	OSCILLATING RAIL SHIFT LINK
SAT	FELT WASHER	OSCILLATING RAIL GUIDE ARM

5.43 OSCILLATING MECHANISM (Continued)



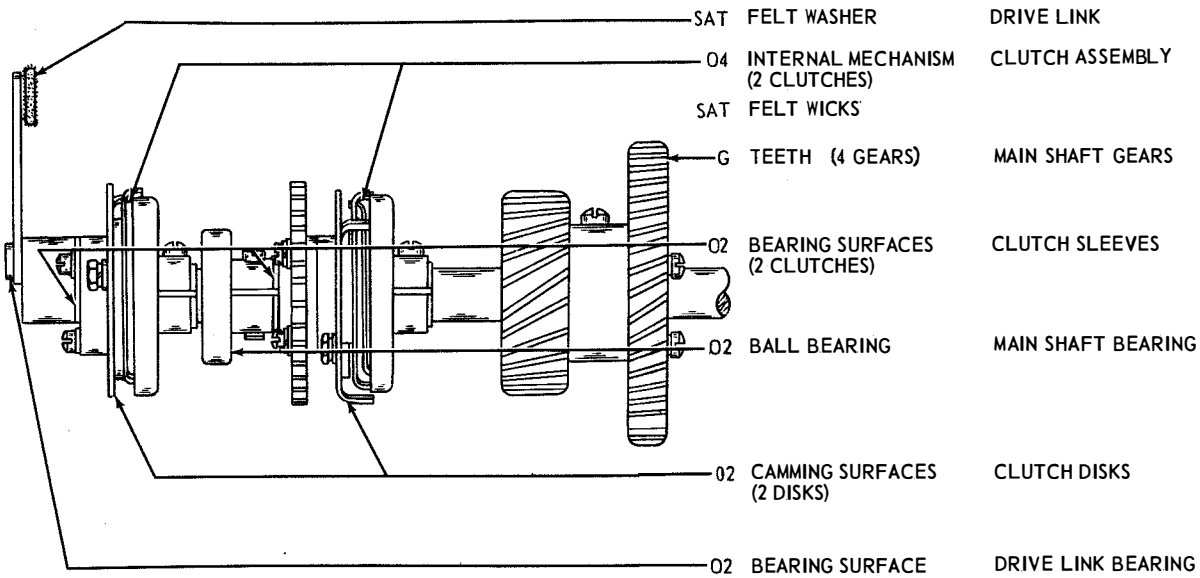
SAT	FELT WASHERS (3 WASHERS)	PULLEYS
O2	BEARING SURFACES (3 PLACES)	OSCILLATING RAIL SHIFT LINK
SAT	FELT WASHER	OSCILLATING RAIL GUIDE ARM

5.44 REST TYPING UNIT IN BOTTOM UPWARD POSITION

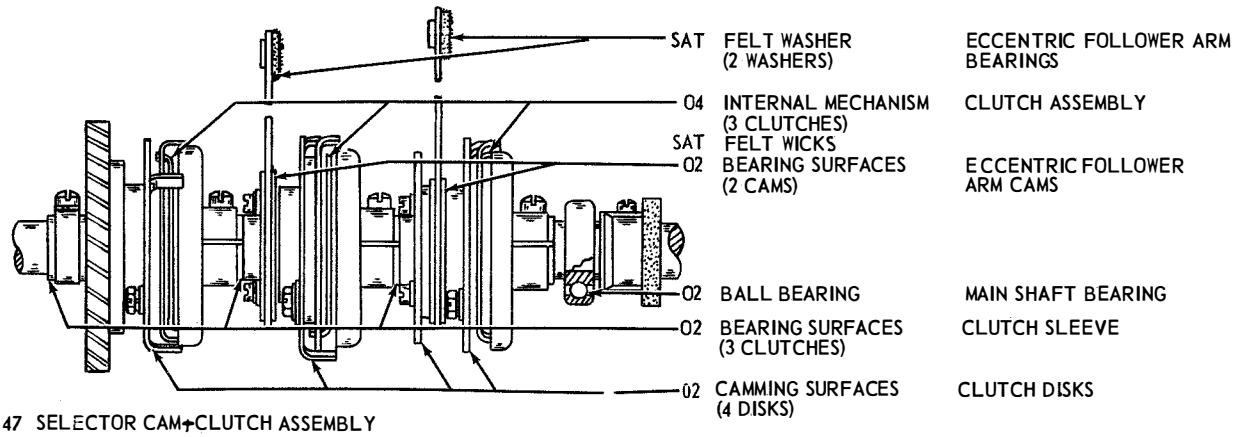


(BOTTOM VIEW)

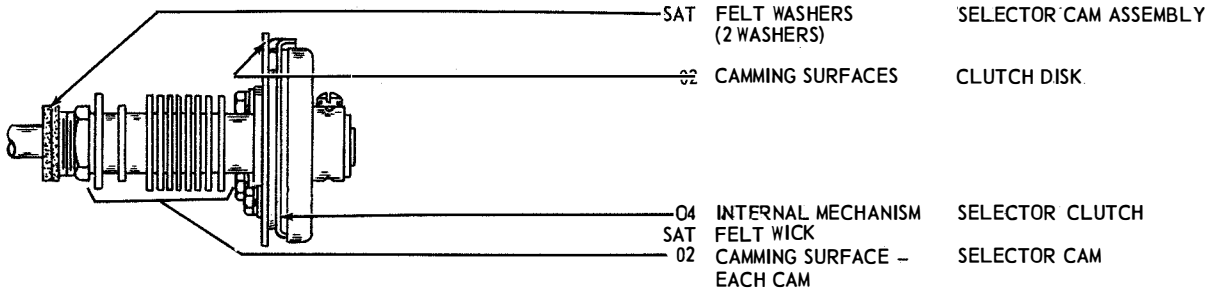
5.45 MAIN SHAFT (CLUTCHES, GEARS, ETC.)



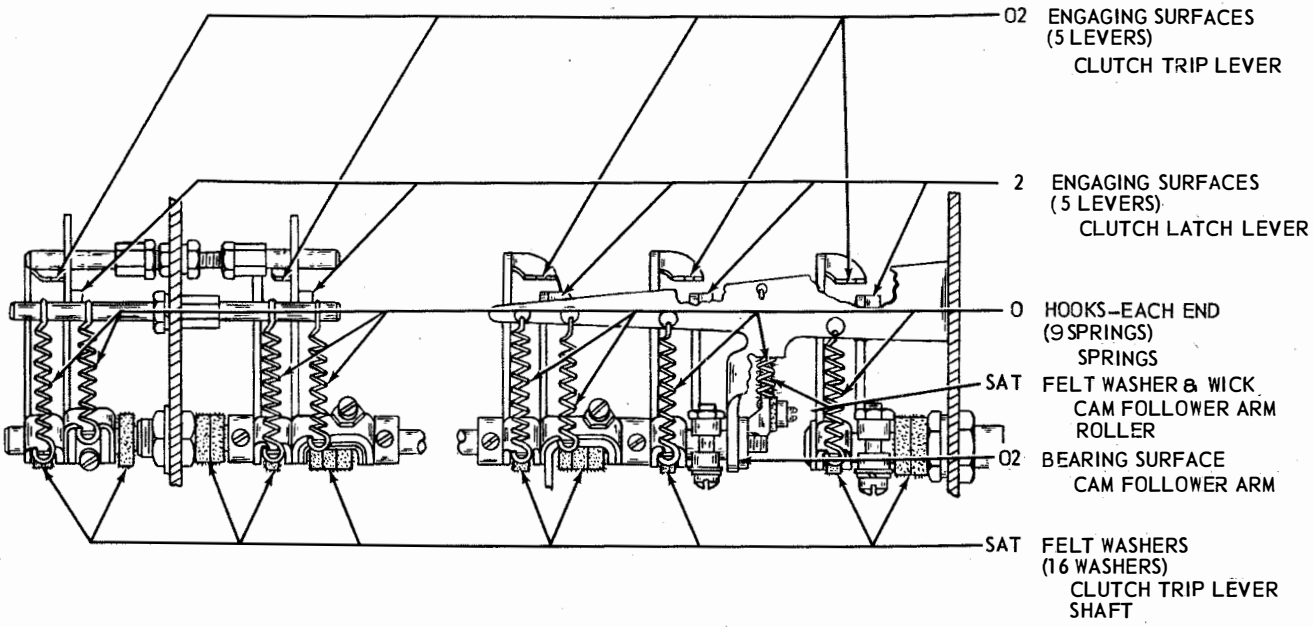
5.46



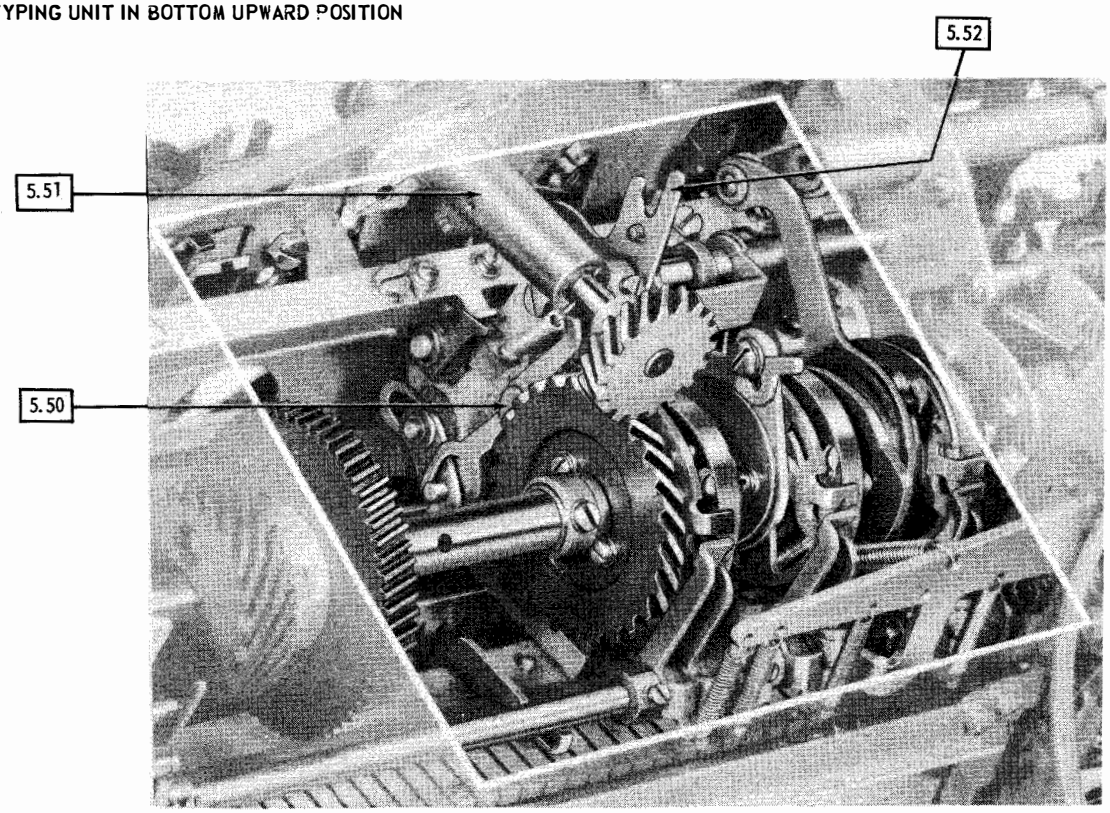
5.47 SELECTOR CAM+CLUTCH ASSEMBLY



5.48 MAIN SHAFT (CLUTCHES, GEARS, ETC.)—Continued

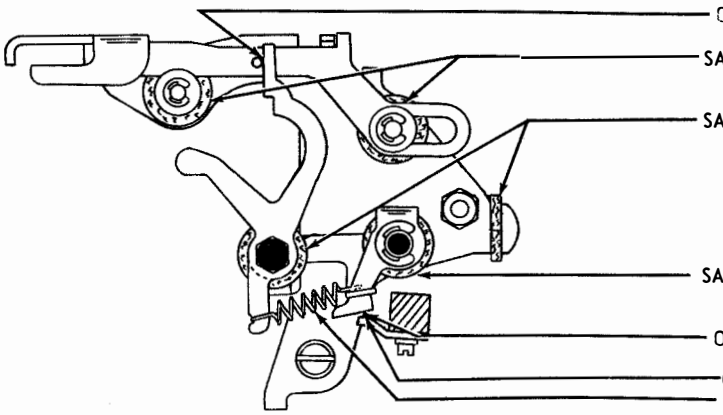


5.49 REST TYPING UNIT IN BOTTOM UPWARD POSITION



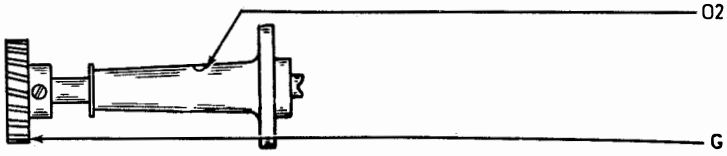
(BOTTOM VIEW)

5.50 SPACING MECHANISM



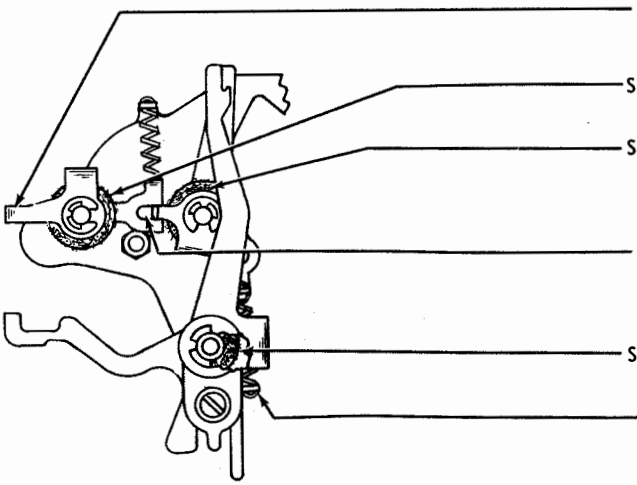
02	ENGAGING SURFACES	SPACING TRIP LEVER
SAT	FELT WASHERS (2 WASHERS)	SPACING SUPPRESSION SLIDE
SAT	FELT WASHER	SPACING TRIP LEVER
SAT	FELT WASHER	SPACING TRIP LEVER BAIL SHAFT
02	ENGAGING SURFACE	SPACING TRIP LEVER BAIL
G	ENGAGING SURFACE	TRIP RESET CAM
O	HOOKS–EACH END (2 SPRINGS)	SPRING PLATE

5.51



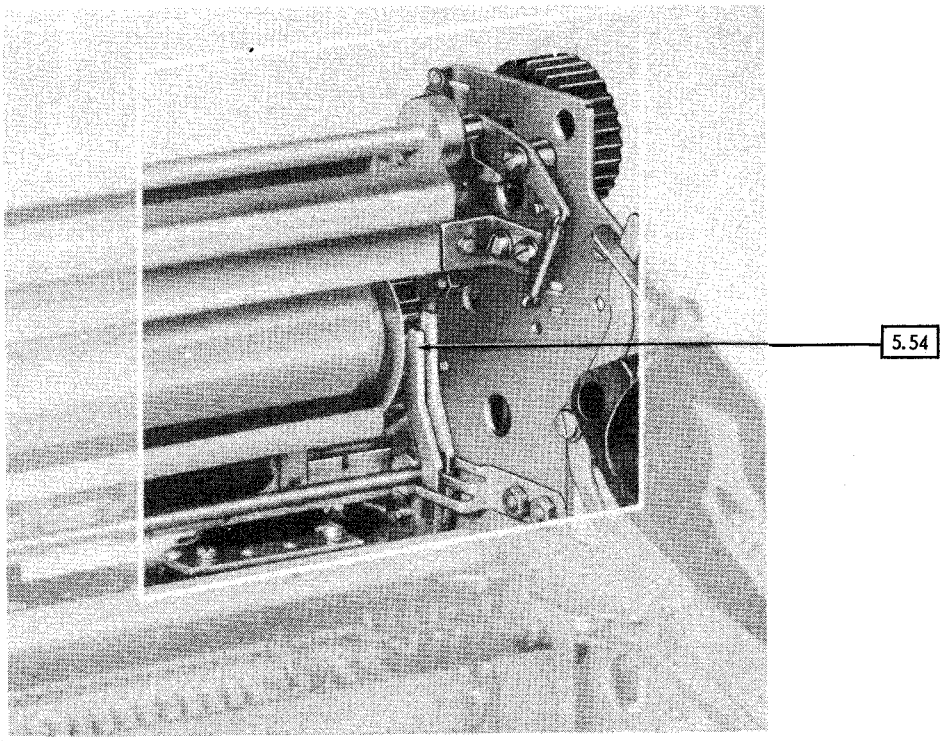
02	OIL HOLE	SPACING SHAFT
G	TEETH	SPACING SHAFT GEAR

5.52 SPACING MECHANISM (Continued)



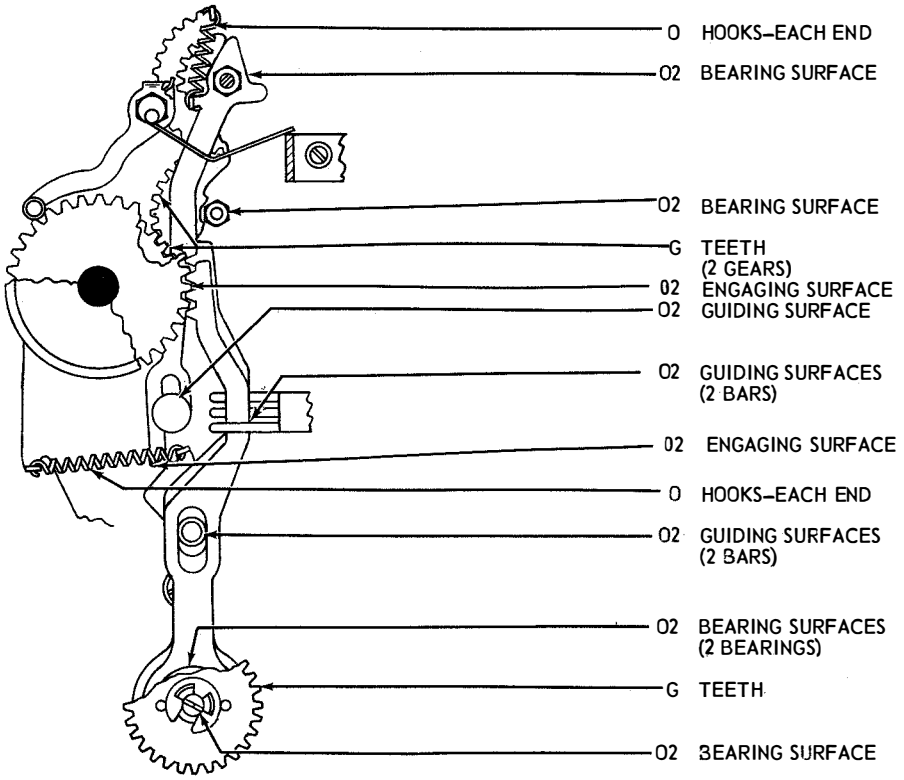
02	ENGAGING SURFACE	SPACING CUT-OUT TRANSFER BAIL
SAT	FELT WASHERS (2 WASHERS)	SPACING CUT-OUT TRANSFER BAIL
SAT	FELT WASHER	SPACING CUT-OUT BAIL
02	ENGAGING SURFACE	SPACING CUT-OUT BAIL
SAT	FELT WASHERS (2 WASHERS)	CARRIAGE RETURN BAIL SHAFT
O	HOOKS–EACH END	SPRING

5.53 REST TYPING UNIT IN BOTTOM UPWARD POSITION



(REAR VIEW)

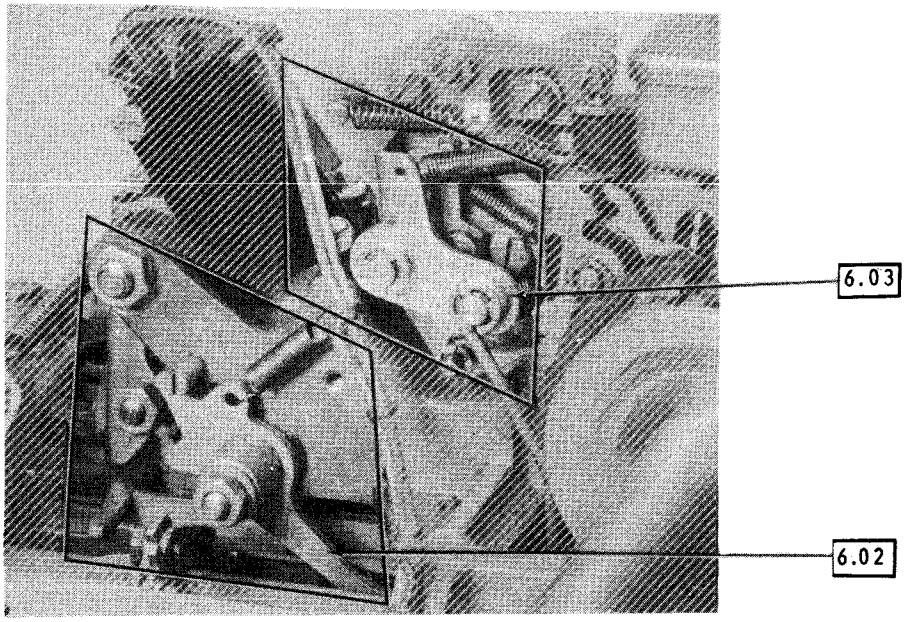
5.54 LINE FEED MECHANISM



O	HOOKS–EACH END	SPRING
O2	BEARING SURFACE	PLATEN HAND WHEEL
O2	BEARING SURFACE	PLATEN IDLER SPUR GEAR
G	TEETH (2 GEARS)	PLATEN SPUR GEARS
02	ENGAGING SURFACE	LINE FEED BARS
O2	GUIDING SURFACE	LINE FEED BAR RELEASE LEVER
O2	GUIDING SURFACES (2 BARS)	LINE FEED BARS
02	ENGAGING SURFACE	LINE FEED BAR RELEASE LEVER
O	HOOKS–EACH END	SPRING
O2	GUIDING SURFACES (2 BARS)	LINE FEED BAR BELL CRANK
O2	BEARING SURFACES (2 BEARINGS)	LINE FEED BAR ECCENTRIC BEARING
G	TEETH	LINE FEED CLUTCH SPUR GEAR
O2	BEARING SURFACE	LINE FEED CLUTCH SPUR GEAR SHAFT

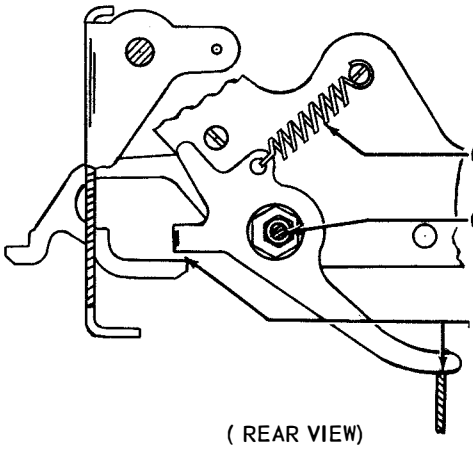
6. VARIABLE FEATURES

6.01 REST KEYBOARD IN UPRIGHT POSITION.



(REAR VIEW)

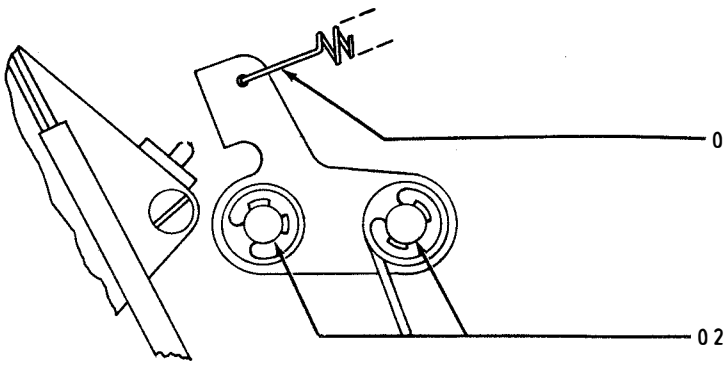
6.02 REPEAT ON SPACE MECHANISM



02	HOOKS – EACH END	SPRING
02	BEARING SURFACES (2 PLACES)	MOUNTING STUD
G	CONTACT SURFACES (2 PLACES)	REPEAT TRIP LEVER

(REAR VIEW)

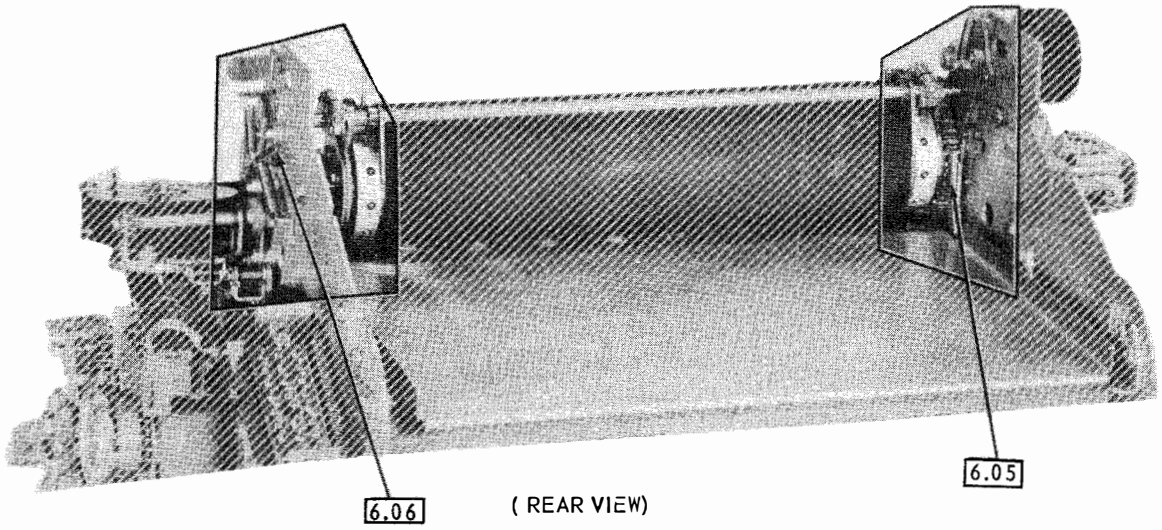
6.03 SIGNAL LINE BREAK MECHANISM (ELECTRICAL)



0	HOOKS – EACH END	SPRING
02	PIVOTS (2 PLACES)	BREAK LEVER

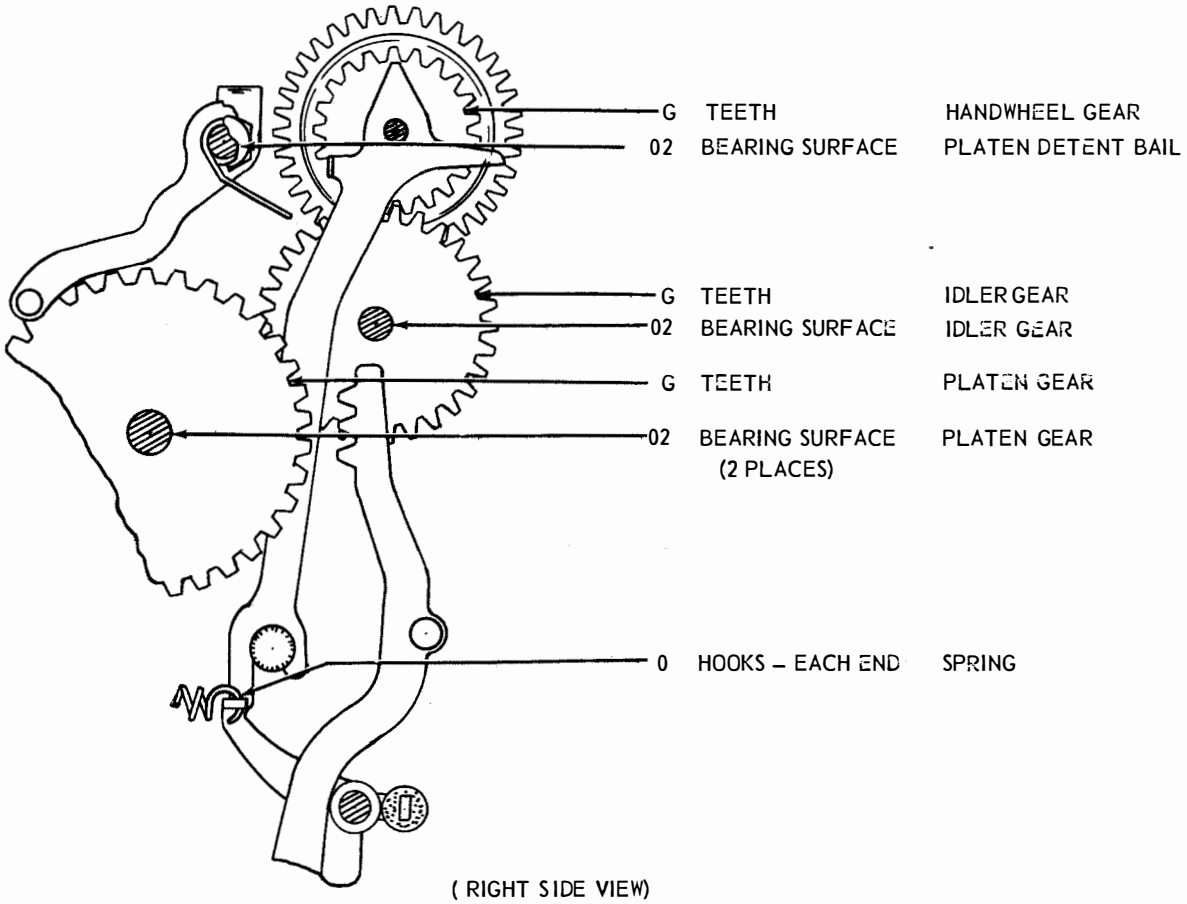
(REAR VIEW)

6.04 REST TYPING UNIT IN UPRIGHT POSITION.



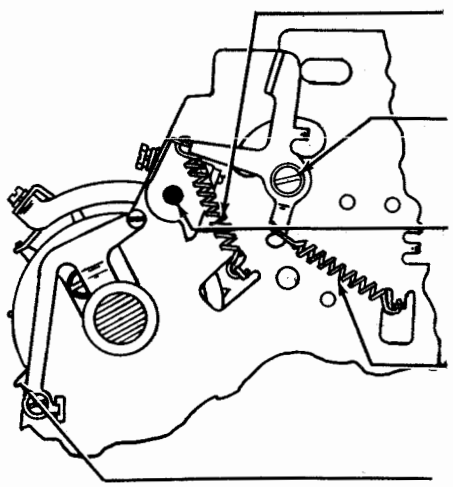
(REAR VIEW)

6.05 SPROCKET FEED-LINE FEED MECHANISM



(RIGHT SIDE VIEW)

6.06 SPROCKET FEED–PAPER GUIDE MECHANISM

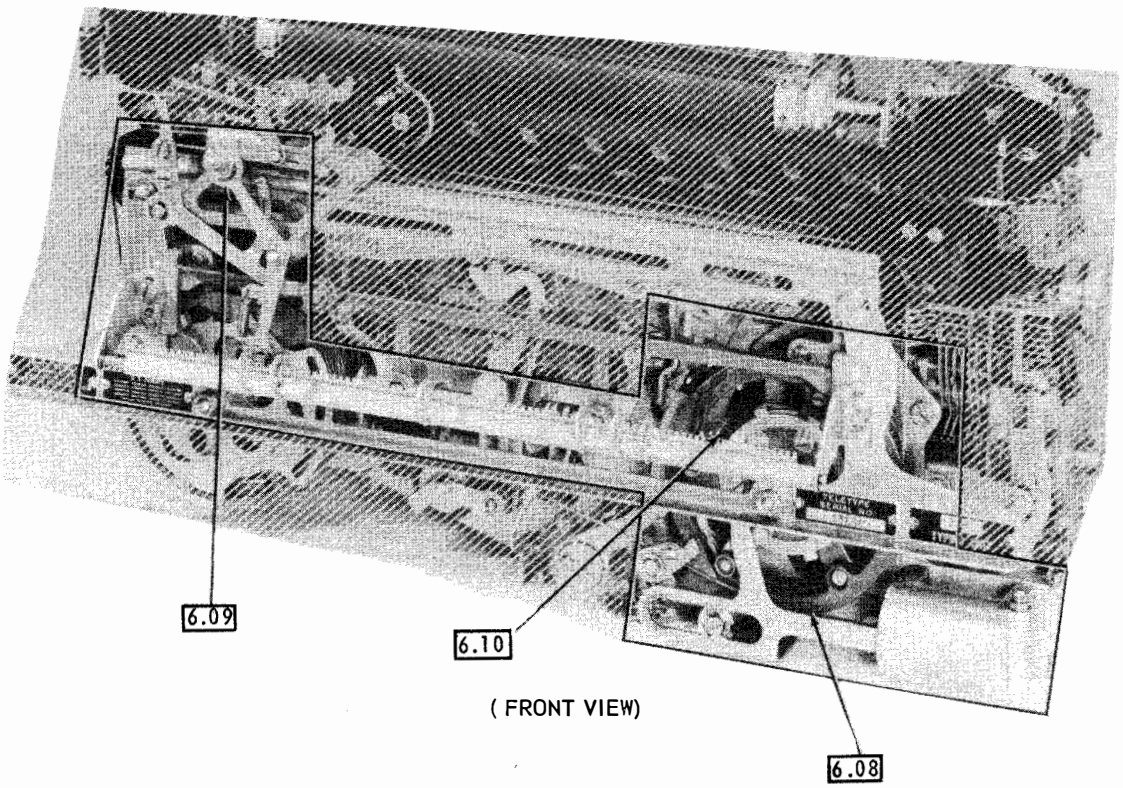


0	HOOKS – EACH END	SPRING
02	PIVOTS (2 PLACES)	GUIDE BRACKET LATCH
02	PIVOTS (2 PLACES)	GUIDE BRACKET SHAFT
0	HOOKS – EACH END	SPRING
G	PACK PIN AND SPRING CAVATIES (22 PLACES)	SPROCKET

NOTE: SEE DISASSEMBLY AND REASSEMBLY

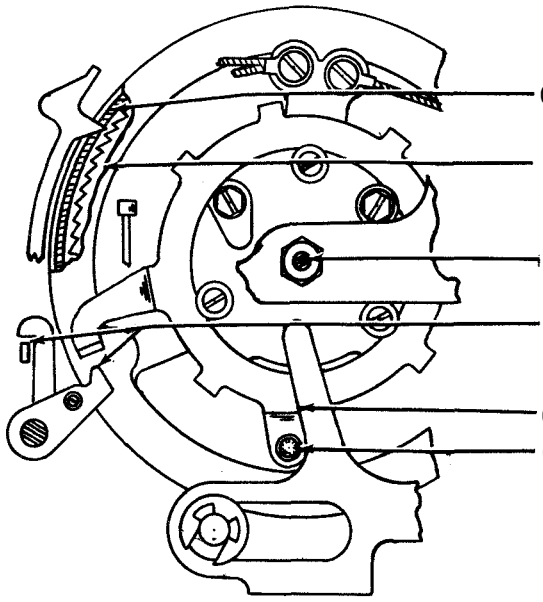
(RIGHT SIDE VIEW)

6.07 REST TYPING UNIT IN UPRIGHT POSITION.



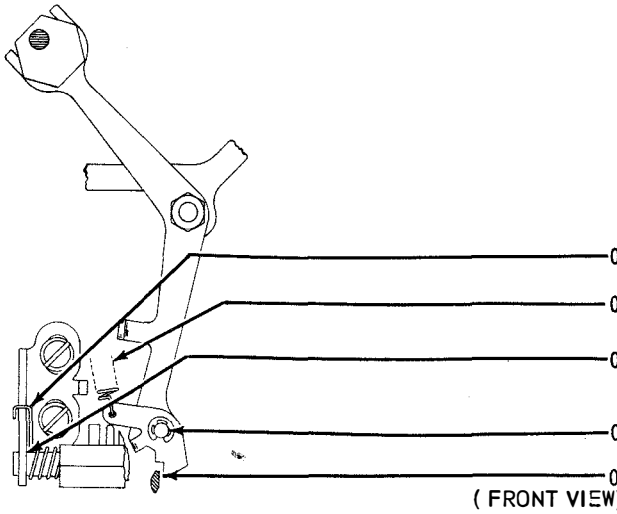
(FRONT VIEW)

6.08 UNIVERSAL DRUM MECHANISM (NEW DESIGN)



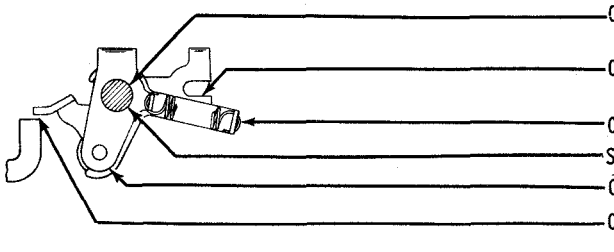
(FRONT VIEW)

6.09 HORIZONTAL TABULATOR – TABULATOR SHAFT MECHANISM (EARLIER DESIGN)



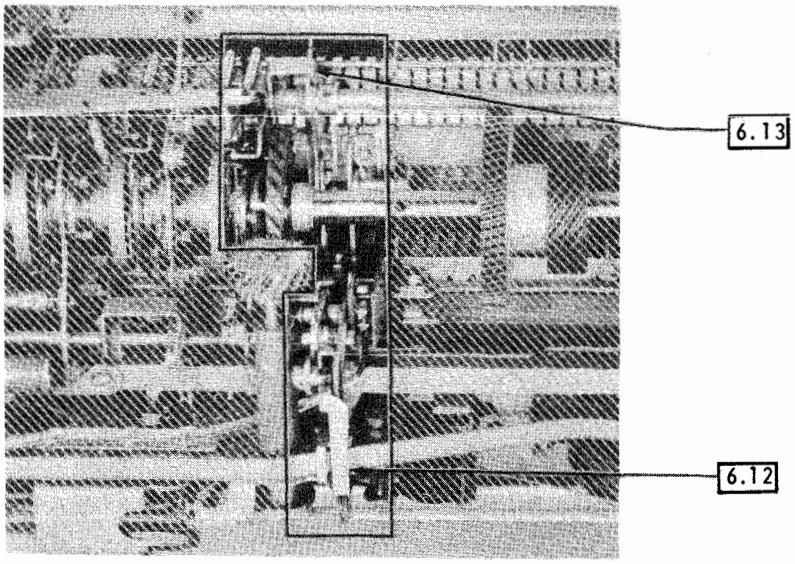
(FRONT VIEW)

6.10 HORIZONTAL TABULATOR – SPACE SUPPRESSION MECHANISM



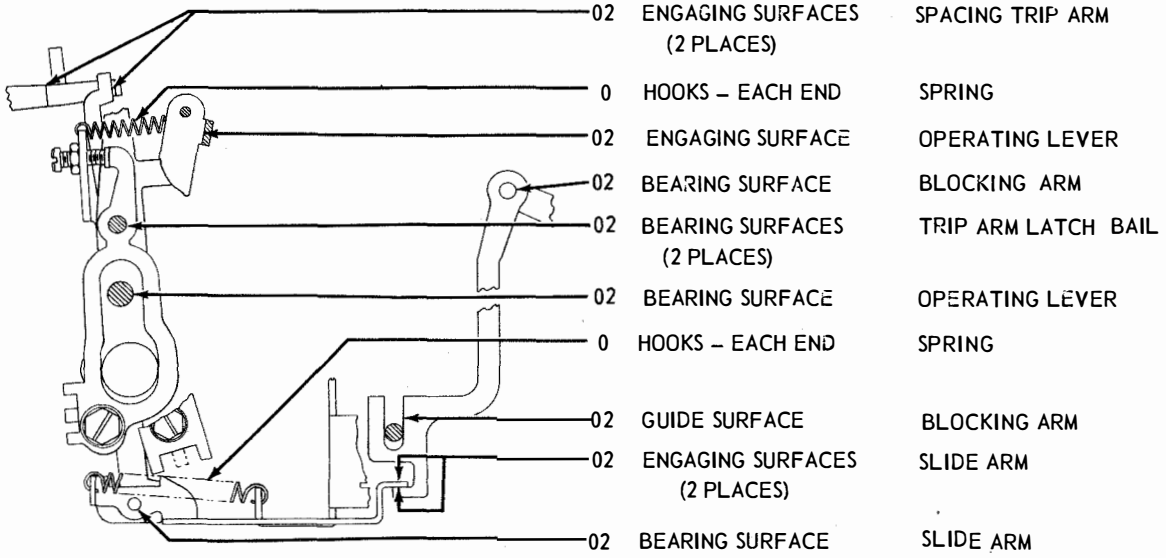
(RIGHT SIDE VIEW)

6.11 REST TYPING UNIT BOTTOM SIDE UP.



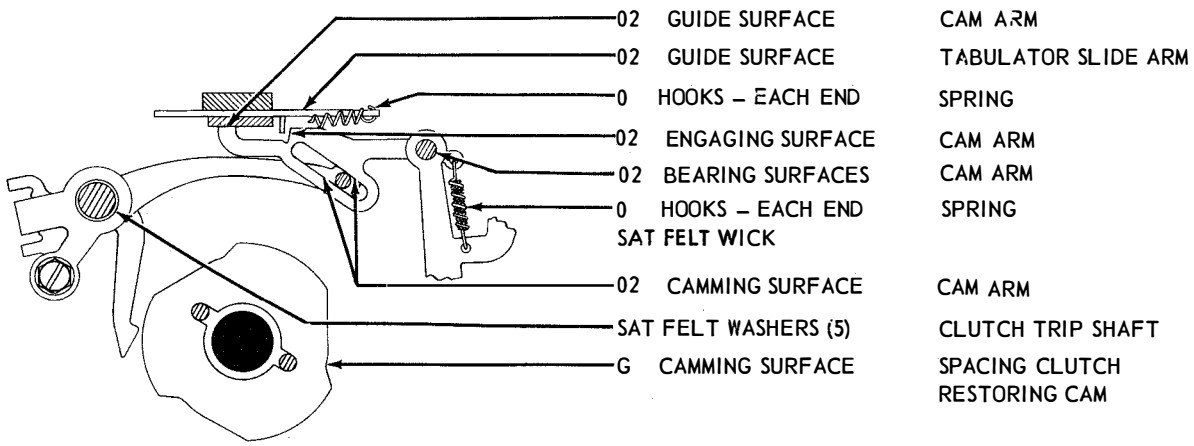
(BOTTOM VIEW)

6.12 HORIZONTAL TABULATOR – OPERATING LEVER MECHANISM (EARLIER DESIGN)

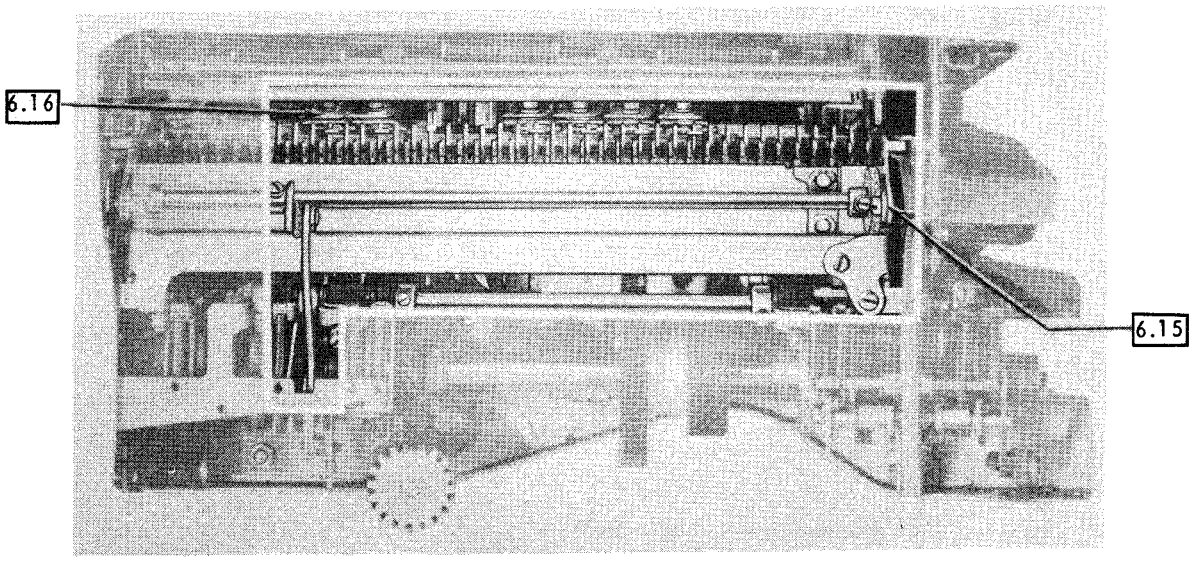


(LEFT SIDE VIEW)

6.13 HORIZONTAL TABULATOR – SPACING CLUTCH MECHANISM (EARLIER DESIGN)

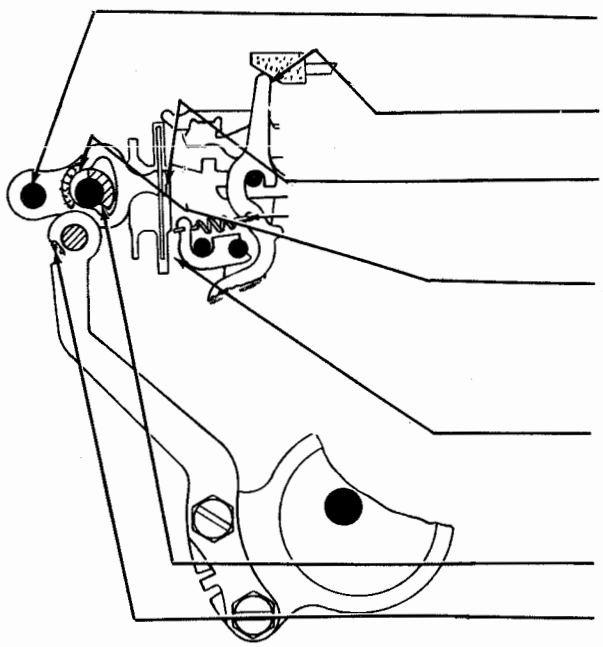


6.14 REST TYPING UNIT IN UPRIGHT POSITION



(REAR VIEW)

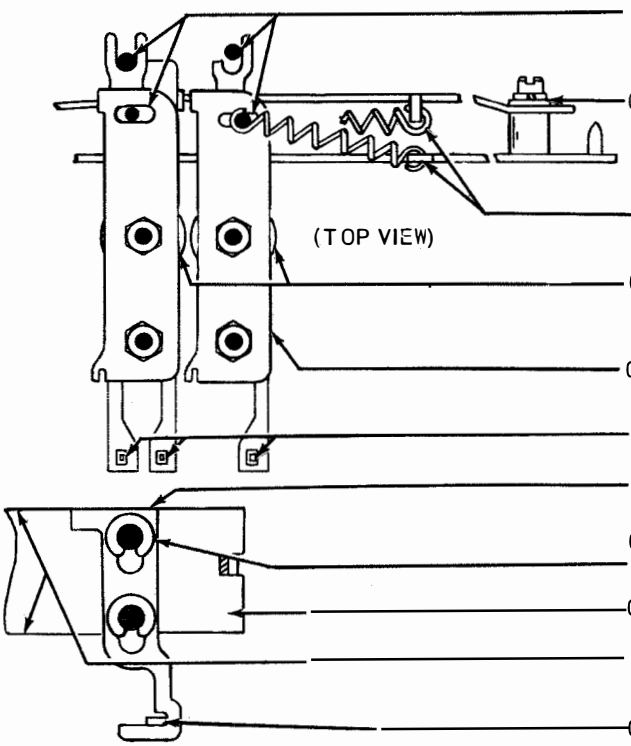
6.15 SELECTIVE CALLING – STRIPPER BAIL MECHANISM



02	BEARING SURFACES (2 BEARINGS)	CAM ARMS
G	ENGAGING SURFACES (EACH ARM)	CONTACT ARM
G	ENGAGING SURFACES (2 ARMS)	CAM ARMS
SAT	FELT WASHERS (4 WASHERS)	DRIVING CAM
02	GUIDE SLOTS (EACH END)	STRIPPER BLADE
G	CAMMING SURFACES (2 CAMS)	DRIVING CAM
SAT	FELT WASHER	STRIPPER BLADE DRIVING ARM

(LEFT SIDE VIEW)

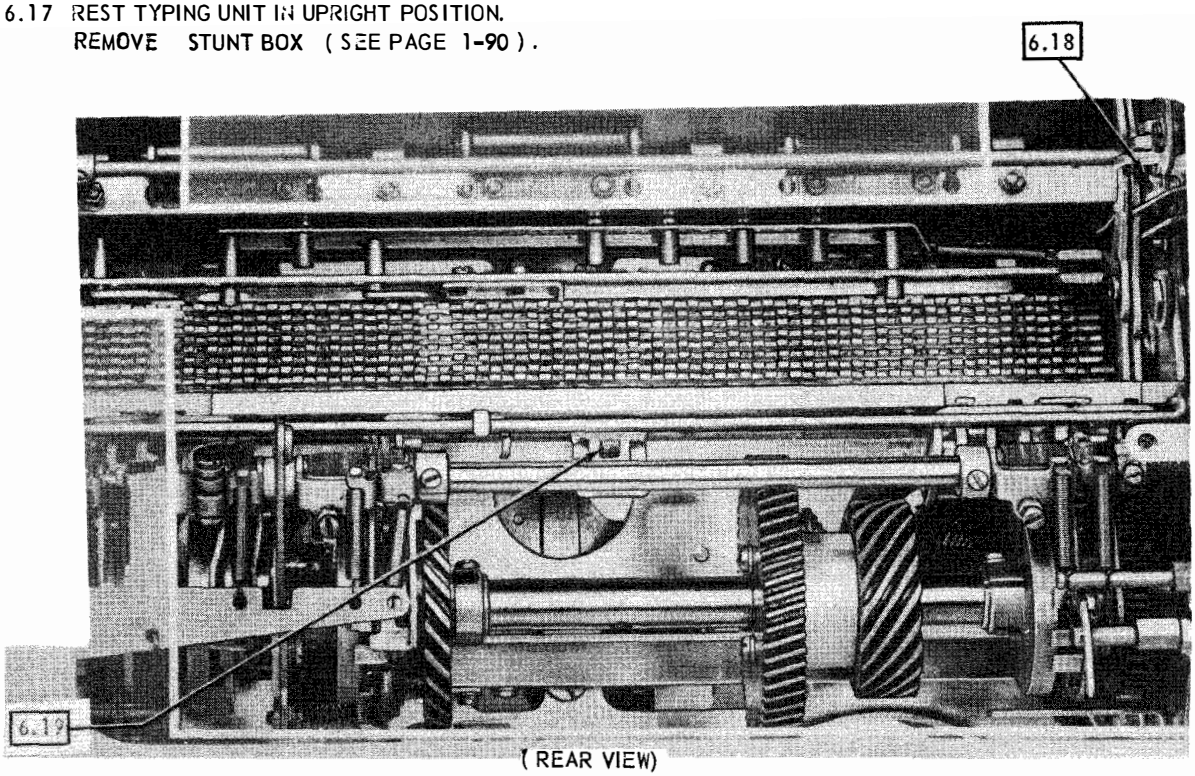
6.16 SELECTIVE CALLING – SHIFT AND STRIPPER BAIL MECHANISMS



02	ENGAGING SURFACES	CODE BAR FORKS
02	SLIDING SURFACES (2 SLIDES)	BLOCKING SLIDE
0	HOOKS–EACH END (2 SPRINGS)	SPRINGS
02	ROLLERS AND PIVOTS	FUNCTION SLIDES
02	SLIDING SURFACES	FUNCTION SLIDES
0	ENGAGING SURFACES	FUNCTION SLIDES
0	ENGAGING SURFACE	LINE FEED STRIPPER SLIDE
02	GUIDE SURFACES (2 PLACES)	STRIPPER SLIDE
02	GUIDE SURFACES (EACH END)	STRIPPER BLADE
G	ENGAGING SURFACES (2 PLACES)	STRIPPER BLADE
02	ENGAGING SURFACE	STRIPPER BAIL

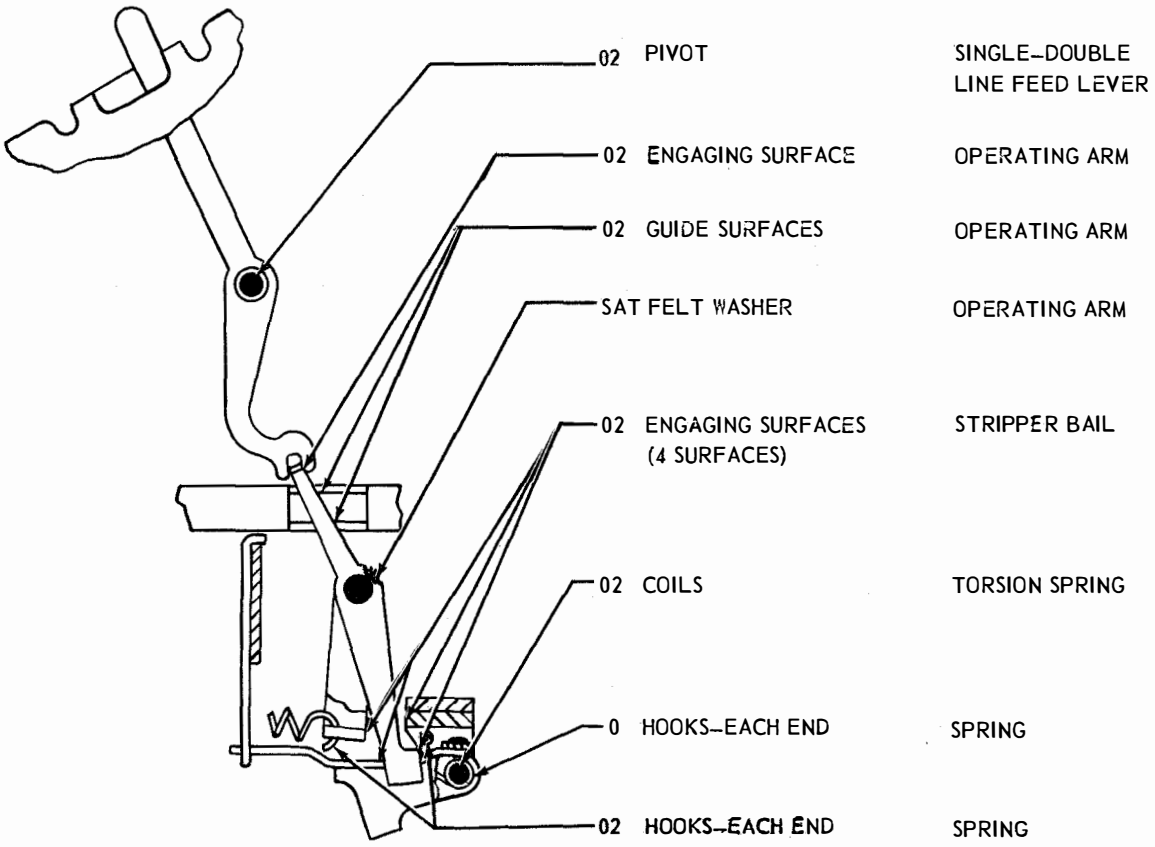
(REAR VIEW)

6.17 REST TYPING UNIT IN UPRIGHT POSITION.
REMOVE STUNT BOX (SEE PAGE 1-90).



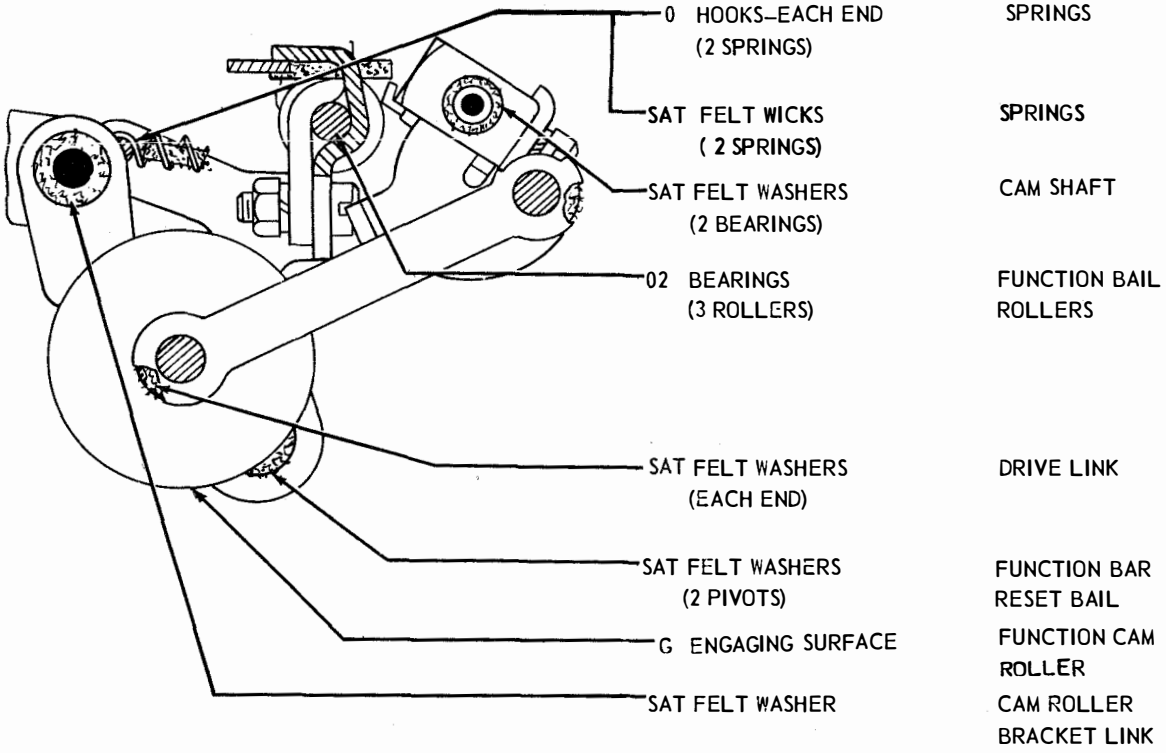
(REAR VIEW)

6.18 SELECTIVE CALLING – SINGLE – DOUBLE LINE FEED MECHANISM



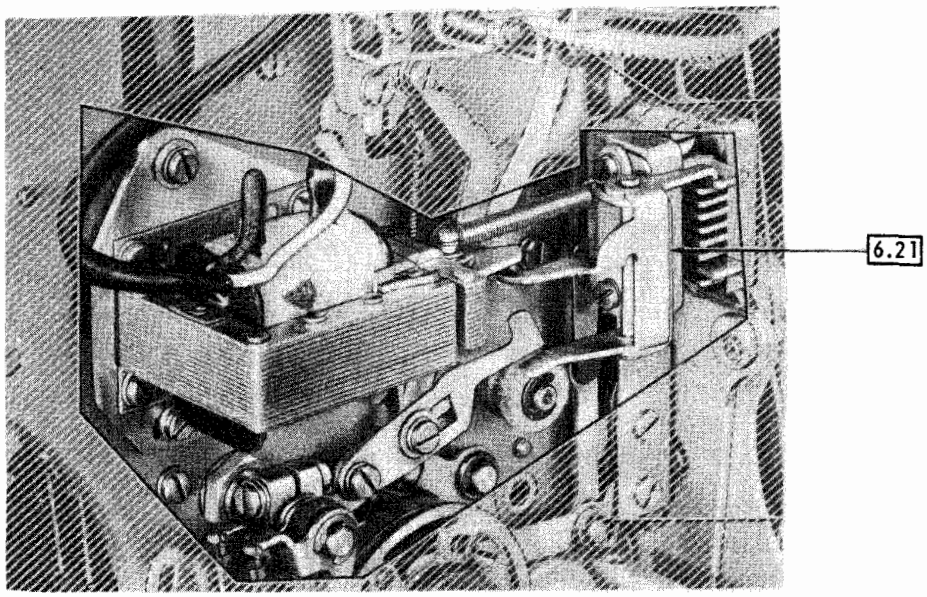
(RIGHT SIDE VIEW)

6.19 SELECTIVE CALLING – FUNCTION RESET BAIL MECHANISM



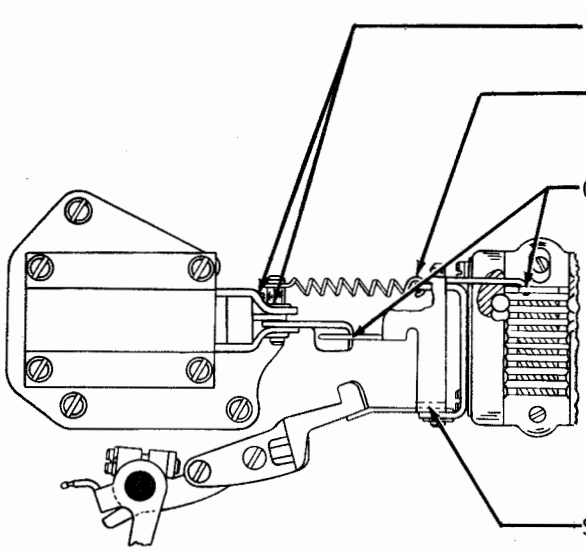
(LEFT SIDE VIEW)

6.20 REST TYPING UNIT IN UPRIGHT POSITION.



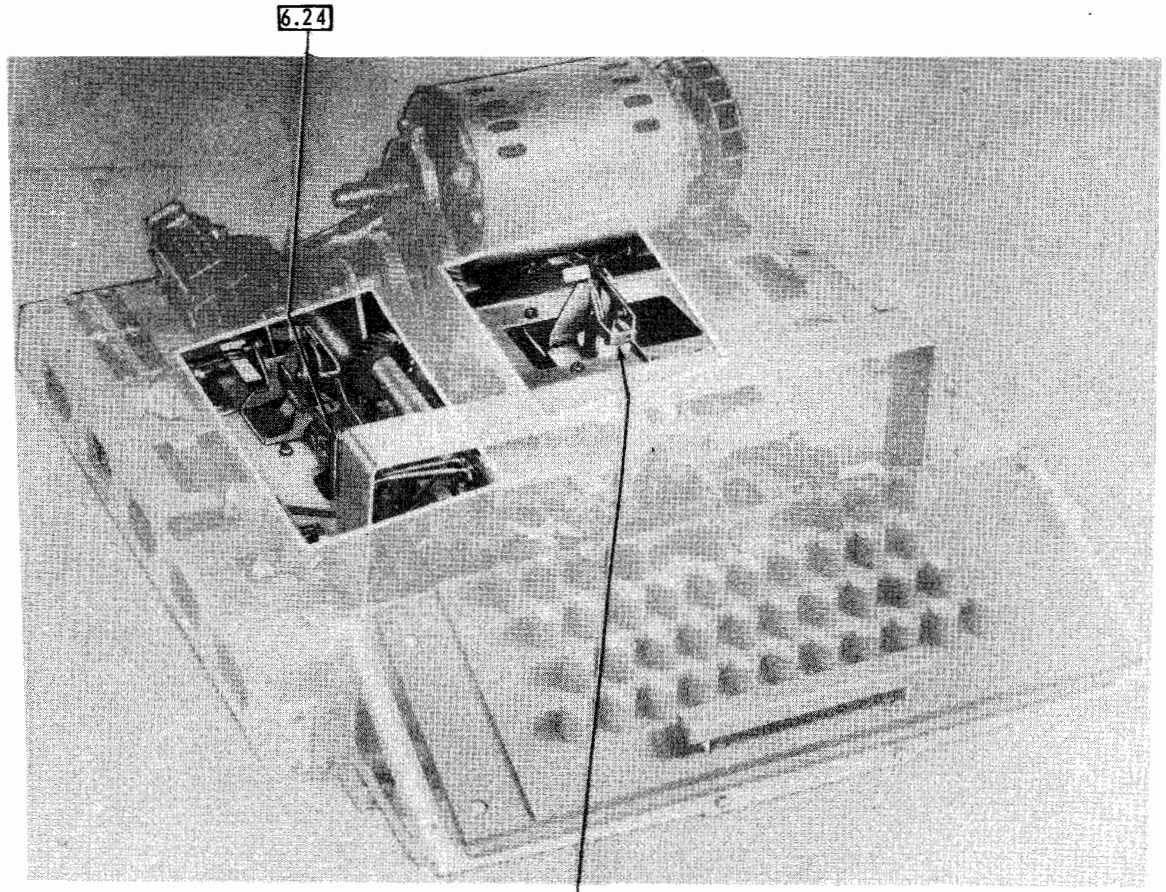
(LEFT SIDE VIEW)

6.21 SELECTIVE CALLING – CLUTCH SUPPRESSION MECHANISM



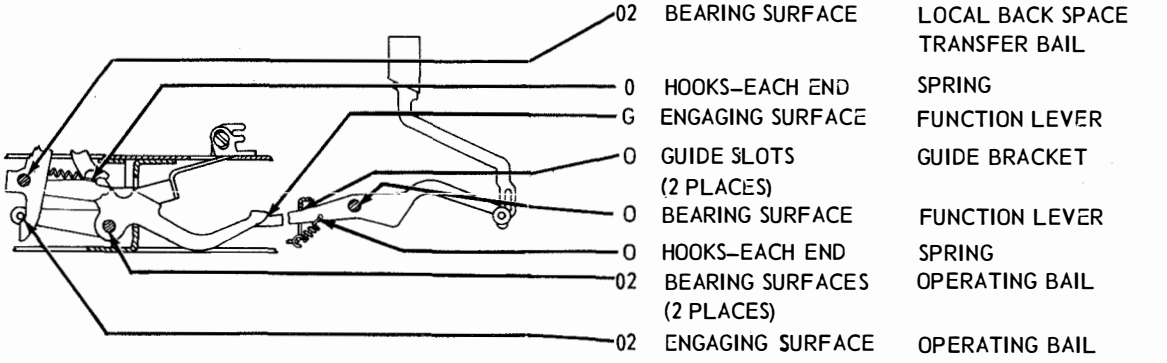
(LEFT SIDE VIEW)

6.22 REST KEYBOARD IN UPRIGHT POSITION



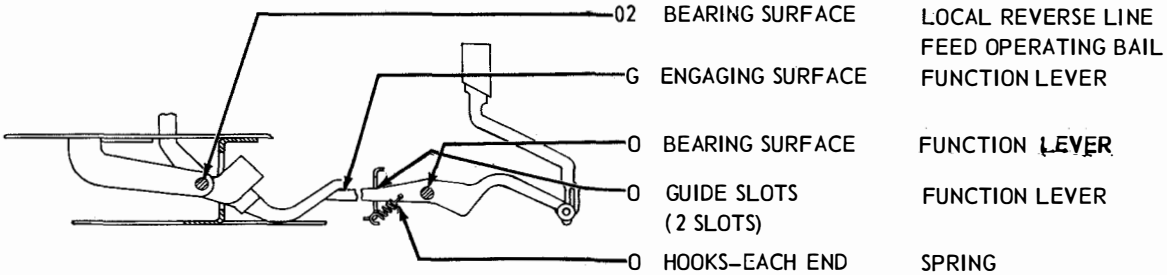
(TOP VIEW)

6.23 LOCAL BACK SPACE MECHANISM



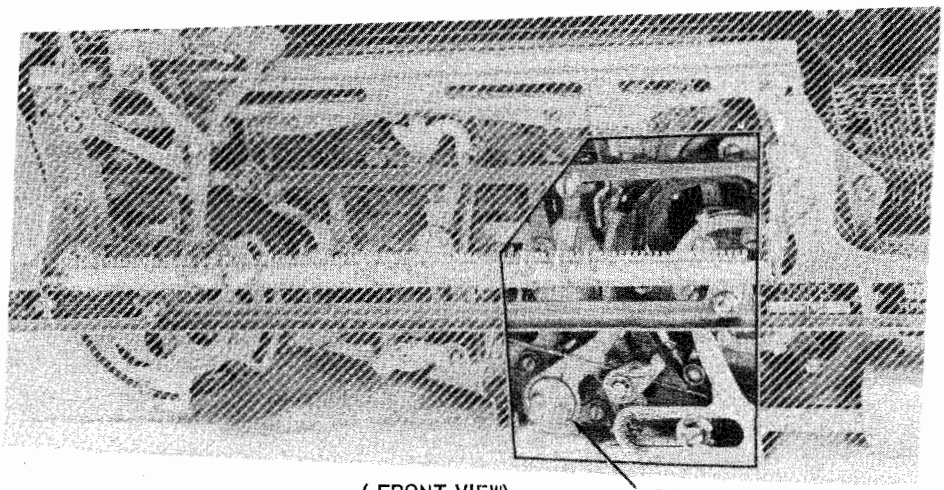
(LEFT SIDE VIEW)

6.24 LOCAL REVERSE LINE FEED MECHANISM



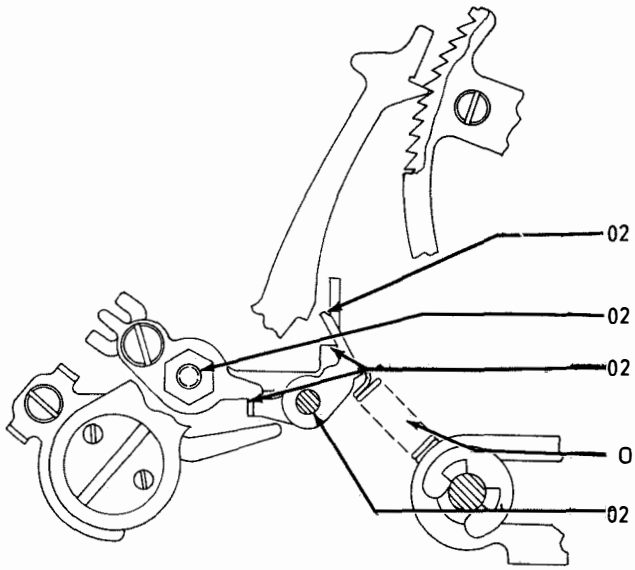
(LEFT SIDE VIEW)

6.25 REST TYPING UNIT IN UPRIGHT POSITION



(FRONT VIEW) 6.26

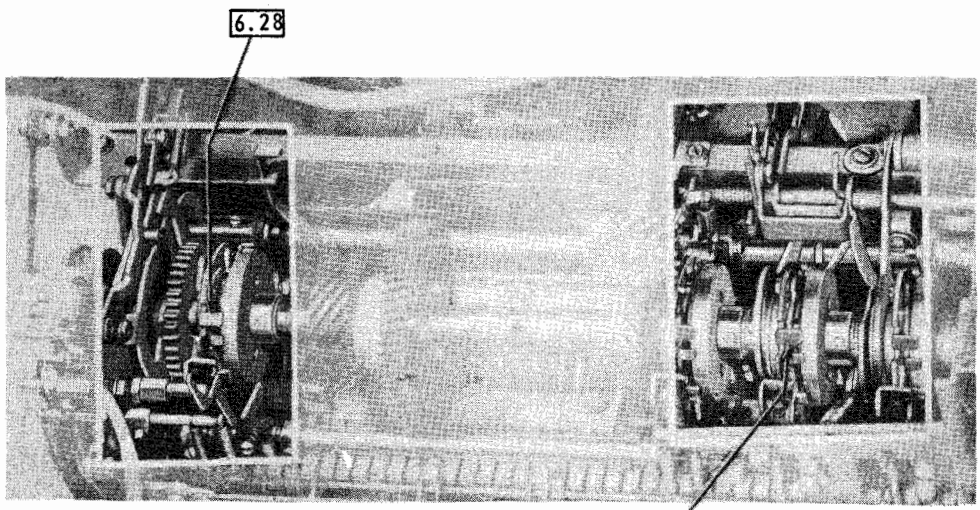
6.26 LOCAL BACK SPACE MECHANISM



02	ENGAGING SURFACE	BACK SPACE CAMMING BAIL
02	BEARING SURFACE	ADJUSTING PLATE
02	ENGAGING SURFACES (2 PLACES)	INTERMEDIATE ARM
0	HOOKS–EACH END	SPRING
02	BEARING SURFACE	BACK SPACE CAMMING BAIL

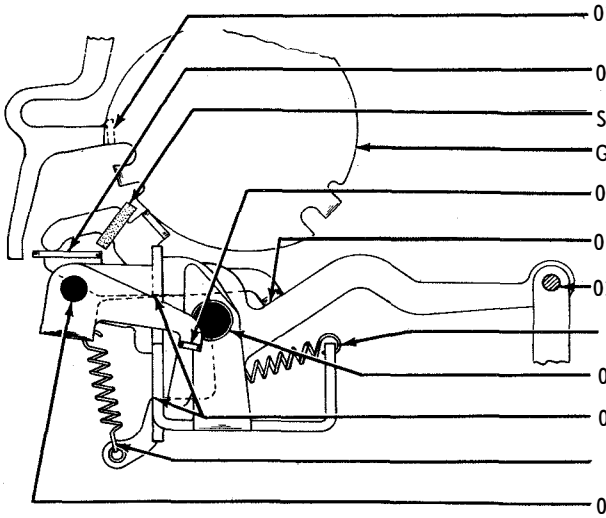
(FRONT VIEW)

6.27 REST TYPING UNIT BOTTOM SIDE UP



(BOTTOM VIEW)

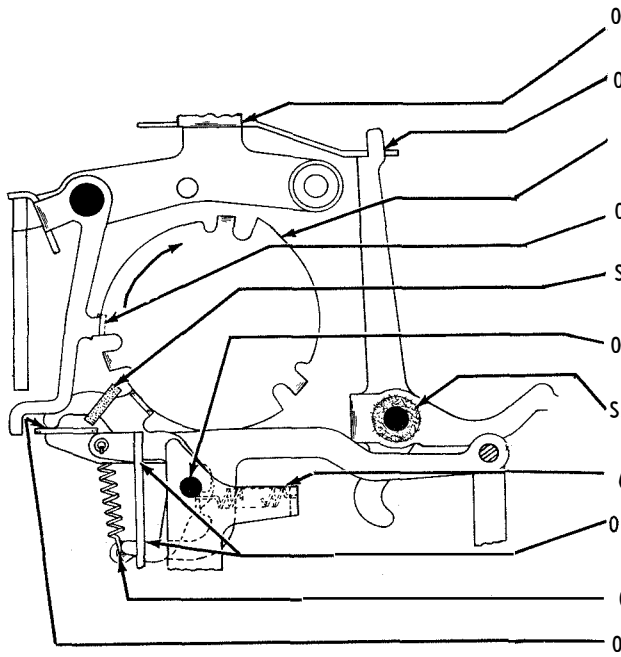
6.28 LOCAL REVERSE LINE FEED MECHANISM



02	ENGAGING SURFACE	LINE FEED CLUTCH TRIP LEVER
02	ENGAGING SURFACE	TRIP LINK
SAT	FELT OILER	STRIPPER LEVER
G	CAMMING SURFACE	CAM DISK
02	ENGAGING SURFACE	TRANSFER BAIL
02	BEARING SURFACE	TRIP LINK
02	BEARING SURFACE	TRIP LINK
O	HOOKS–EACH END	SPRING
02	BEARING SURFACE	STRIPPER LEVER
02	GUIDE SLOTS	TRIP LINK
0	HOOKS – EACH END	SPRING
02	BEARING SURFACE	TRANSFER BAIL

(LEFT SIDE VIEW)

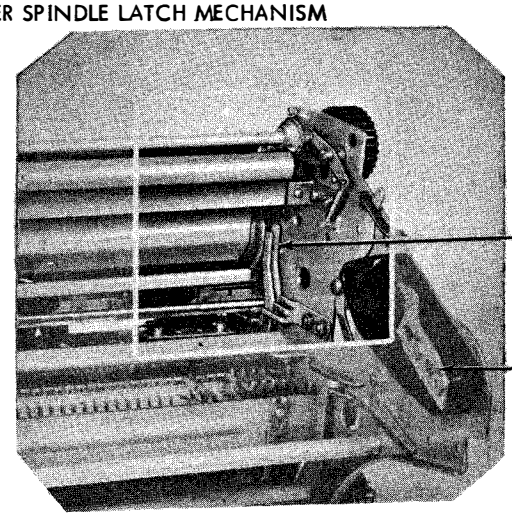
6.29 LOCAL BACK SPACE MECHANISM



02	GUIDE SURFACES	BACK SPACE SLIDE ARM
02	ENGAGING SURFACE	BACK SPACE BAIL
G	CAMMING SURFACE	SPACING CLUTCH CAM DISK
02	ENGAGING SURFACE	SPACING CLUTCH CAM DISK
SAT	FELT OILER	TRIP LINK STRIPPER LEVER
02	BEARING SURFACE	TRIP LINK STRIPPER LEVER
SAT	FELT WASHERS (2 PLACES)	BACK SPACE BAIL
O	HOOKS–EACH END	SPRING
02	GUIDE SLOTS	TRIP LINK STRIPPER LEVER
0	HOOKS–EACH END	SPRING
02	ENGAGING SURFACE	TRIP LINK STRIPPER LEVER

(LEFT SIDE VIEW)

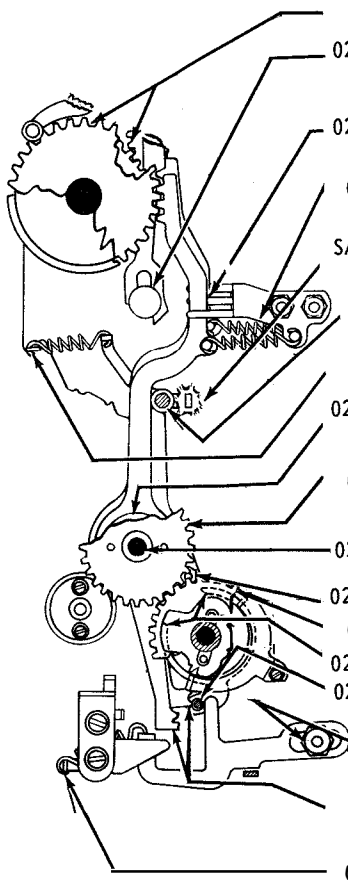
6.30 REST TYPING UNIT IN UPRIGHT POSITION
6.31 PAPER SPINDLE LATCH MECHANISM



0	LATCH (2 PLACES)	PAPER SPINDLE LATCH

(REAR VIEW)

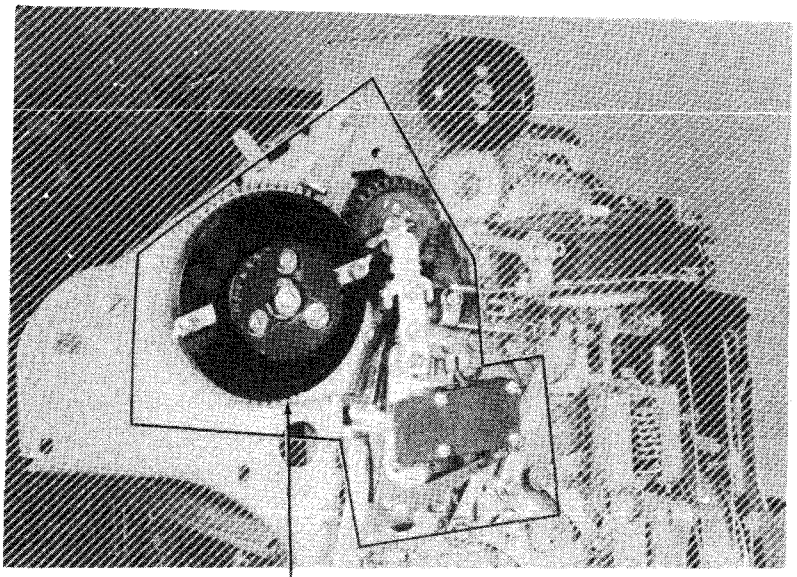
6.32 LOCAL REVERSE LINE FEED MECHANISM



G	TEETH (2 GEARS)	PLATEN SPUR GEARS
02	GUIDE SURFACE	LINE FEED BAR RELEASE LEVER
02	GUIDE SURFACES (2 BARS)	LINE FEED BARS
0	HOOKS–EACH END	SPRINGS (2)
SAT	FELT OILER	LINE FEED BAR BELL CRANK
02	BEARING SURFACE	LINE FEED BAR BELL CRANK
0	HOOKS–EACH END	SPRING
02	BEARING SURFACES (2 BEARINGS)	LINE FEED BAR ECCENTRIC
G	TEETH	LINE FEED CLUTCH SPUR GEAR
02	BEARING SURFACE	SPUR GEAR
02	BEARING SURFACE	LINE FEED BAR BELL CRANK
G	TEETH	PLATEN SPUR GEAR
02	BEARING SURFACES	INTERMEDIATE LEVER
02	BEARING SURFACE	ROLLER
02	BEARING SURFACE	REVERSE LINE FEED SLIDE LINK
0	ENGAGING SURFACES (2 PLACES)	LINE FEED BARS (2)
0	HOOKS–EACH END	SPRING

(RIGHT SIDE VIEW)

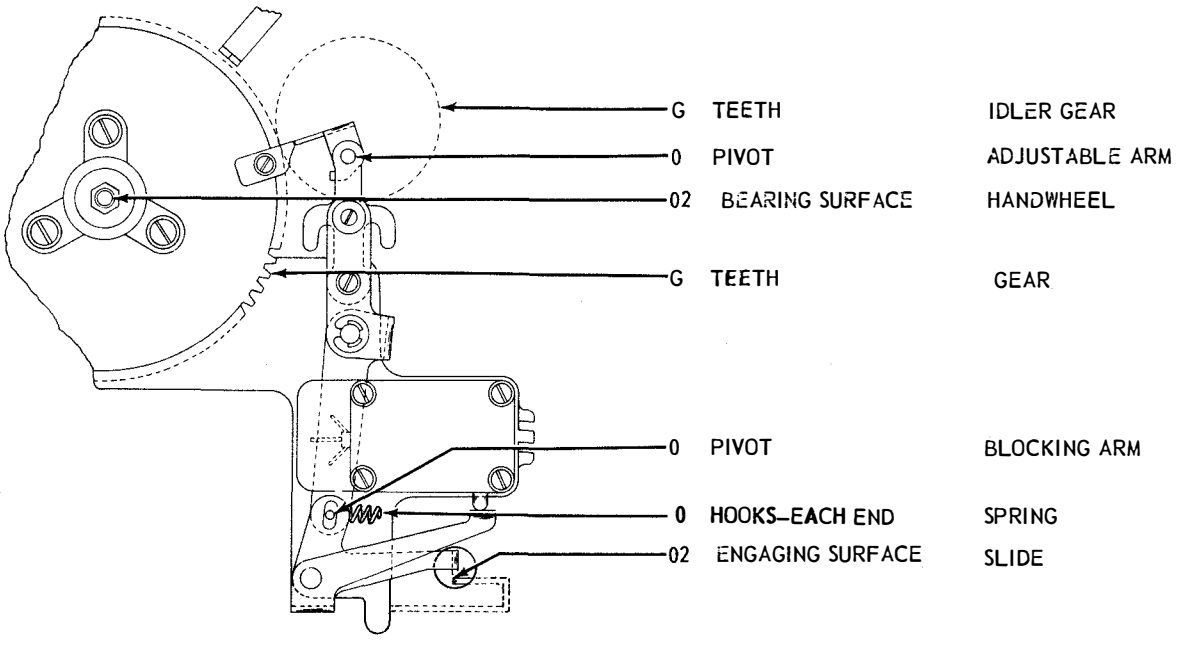
6.33 REST TYPING UNIT IN UPRIGHT POSITION.



6.33

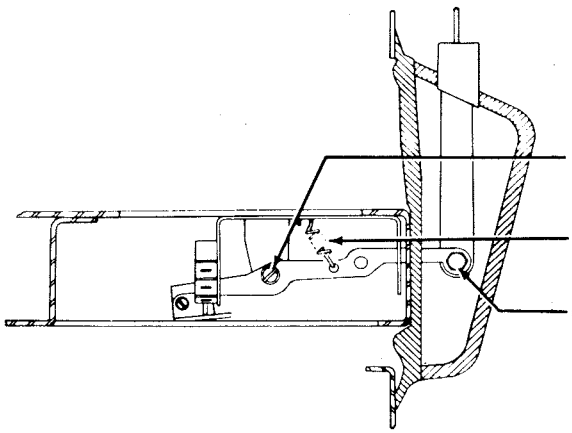
(LEFT SIDE VIEW)

6.34 PAGE FEED-OUT MECHANISM

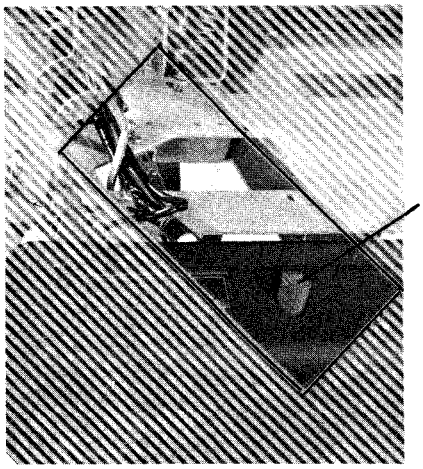


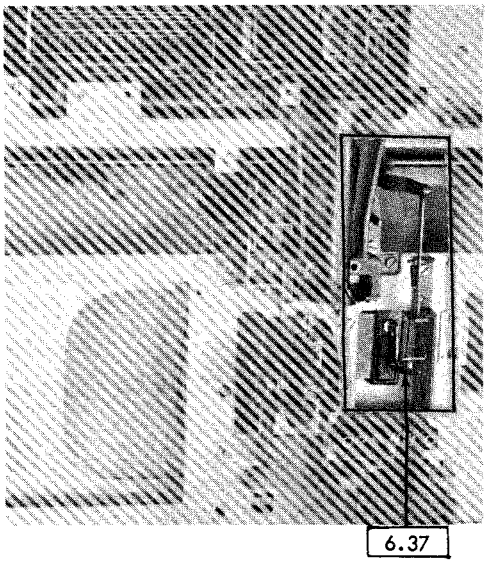
(LEFT SIDE)

6.35 SIGNAL LINE BREAK MECHANISM (BASE)

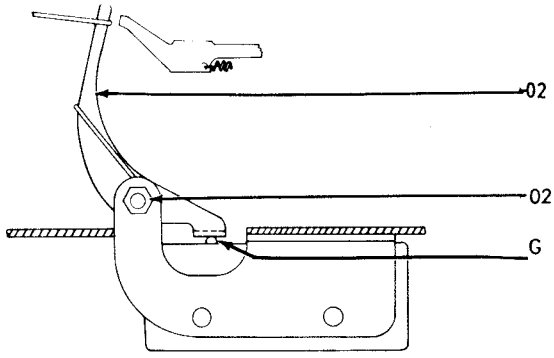


6.36 REST BASE IN UPRIGHT POSITION

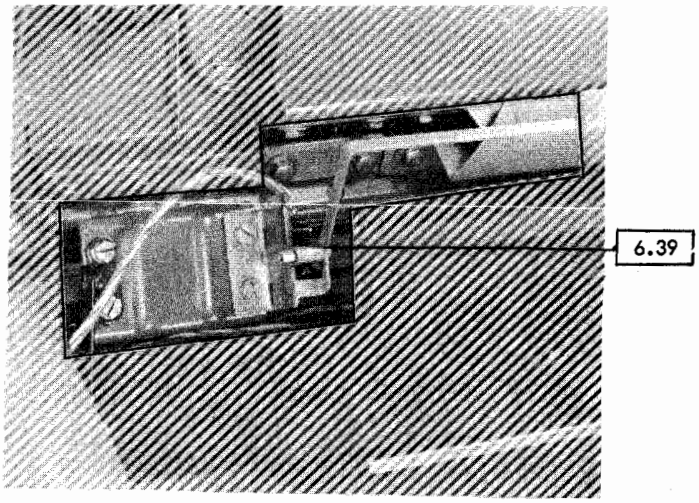




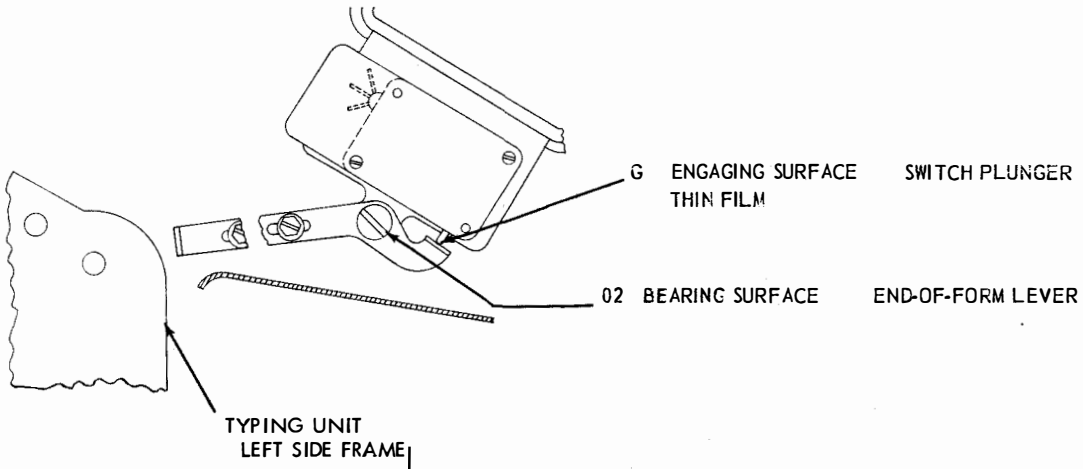
6.37 PAPER FEED OUT MECHANISM (KEYBOARD)



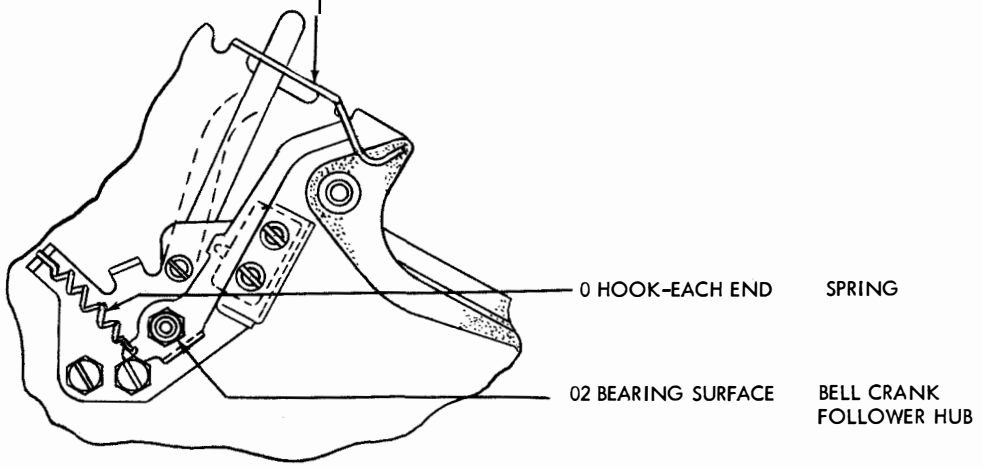
6.38 CABINET DOME OPEN



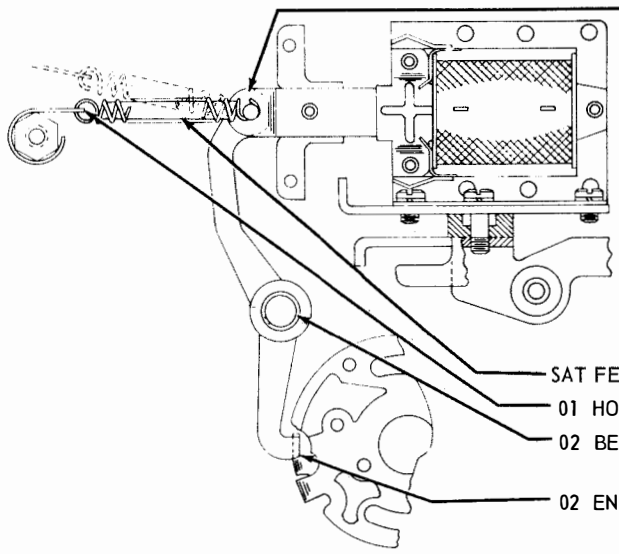
6.39 END-OF-FORM ALARM MECHANISM (CABINET)



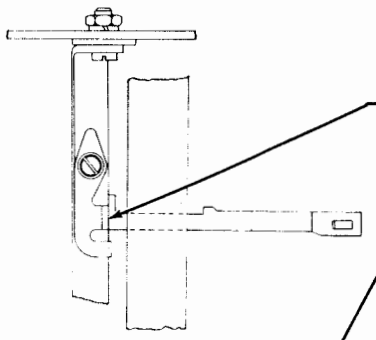
6.40 PAPER-OUT ALARM MECHANISM



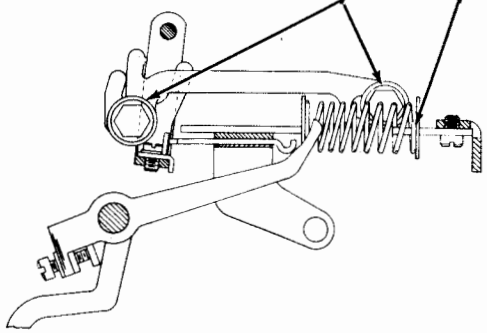
6.41 CONTINUOUS SPACING MECHANISM

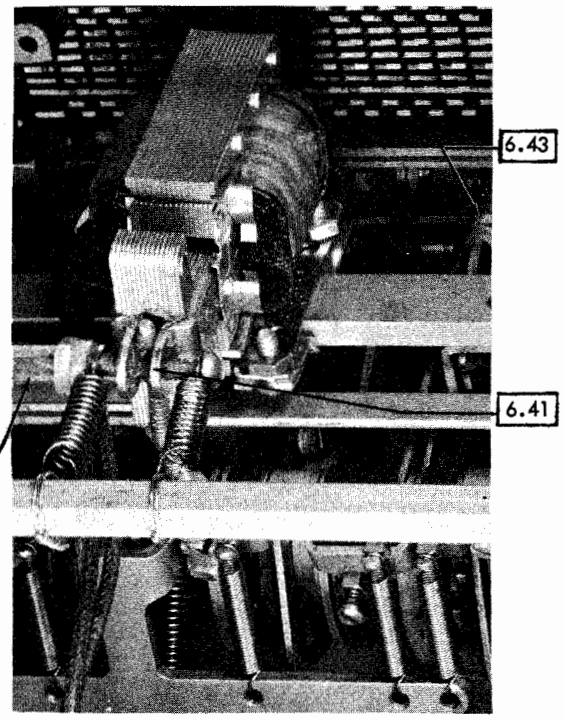


6.42



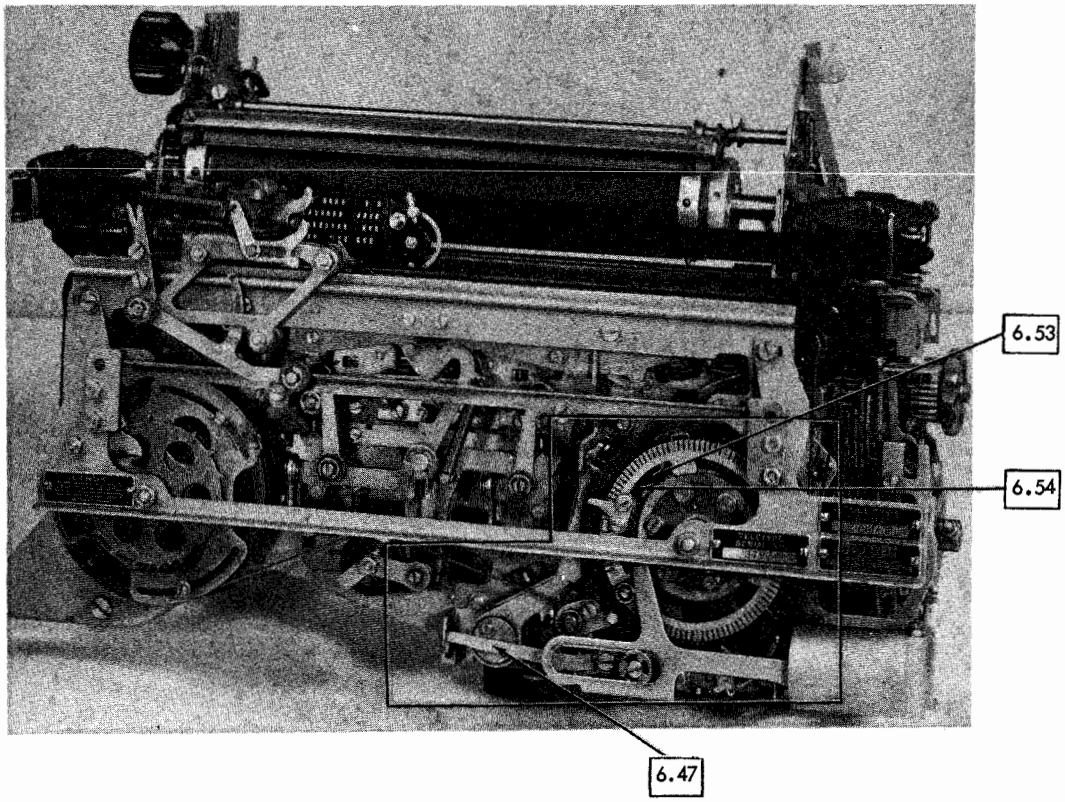
6.43



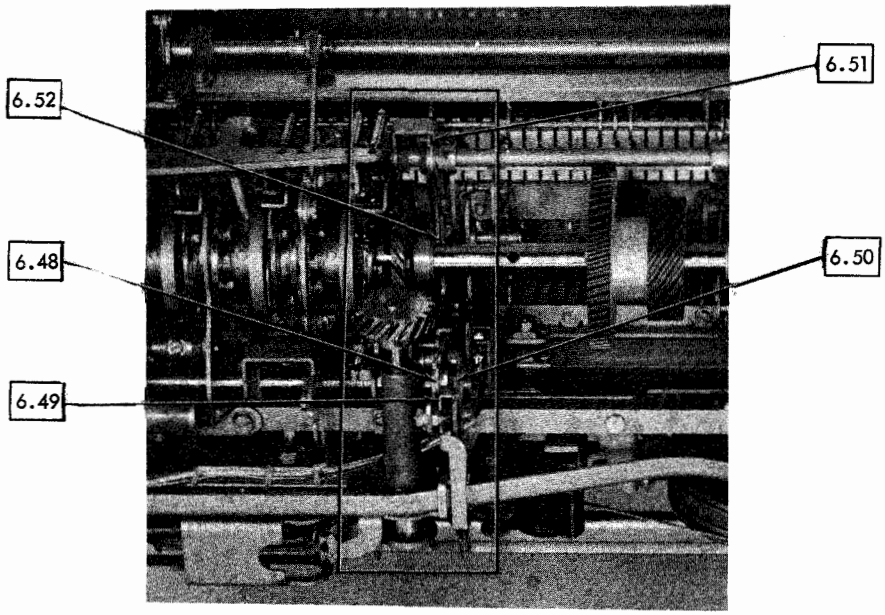


6.44 REST TYPING UNIT IN UPRIGHT POSITION

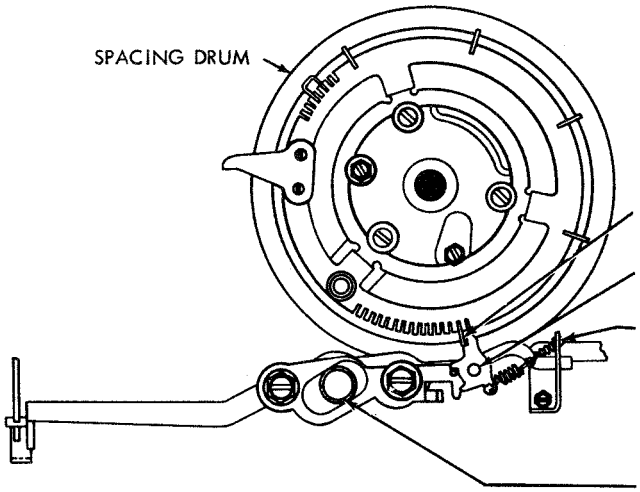
6.45 REST TYPING UNIT IN UPRIGHT POSITION



6.46 REST TYPING UNIT BOTTOM SIDE UP

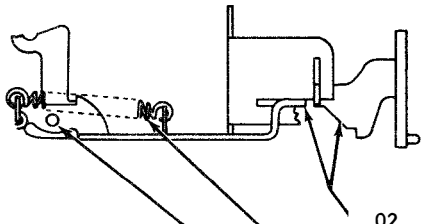


6.47 HORIZONTAL TABULATOR - BLOCKING LEVER



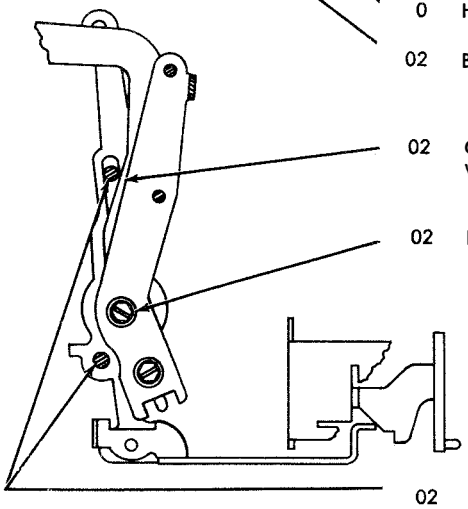
02	ENGAGING SURFACE	TABULATOR STOPS
02	BEARING SURFACE	TABULATOR PAWL
0	HOOKS - EACH END	SPRINGS
02	BEARING AND GUIDE SURFACE	BLOCKING LEVER

6.48 HORIZONTAL TABULATOR - SLIDE ARM



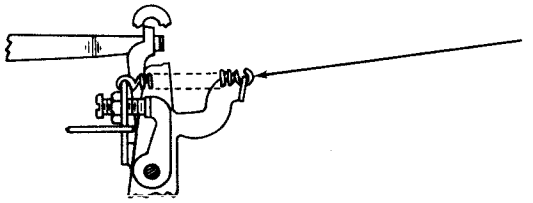
02	ENGAGING SURFACE WITH BLOCKING LEVER AND BRACKET	OPERATING LEVER SLIDE ARM
0	HOOKS - EACH END	SLIDE ARM SPRING
02	BEARING SURFACE	OPERATING LEVER SLIDE ARM

6.49 HORIZONTAL TABULATOR - OPERATING LEVER



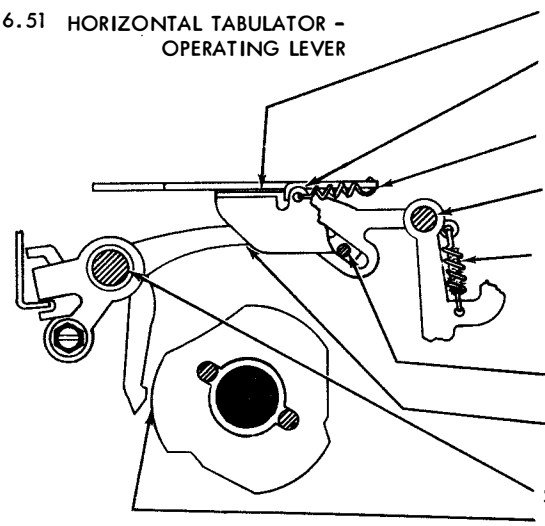
02	CONTACTING SURFACE WITH ADJUSTING PLATE	OPERATING LEVER
02	BEARING SURFACE	TRIP LEVER ARM LATCH BAIL
02	BEARING SURFACE	OPERATING LEVER

6.50 HORIZONTAL TABULATOR - LATCH BAIL



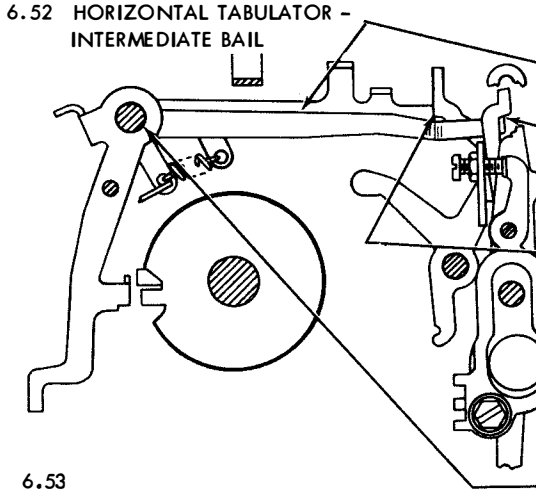
0	HOOKS - EACH END	LATCH BAIL SPRING

6.51 HORIZONTAL TABULATOR - OPERATING LEVER



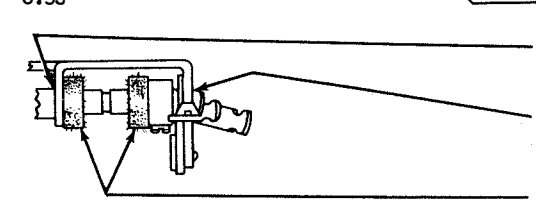
02	GUIDE SURFACES	OPERATING LEVER
02	CONTACT WITH SLIDE ARM	OPERATING LEVER
0	HOOKS - EACH END	SLIDE ARM SPRING
02	BEARING SURFACE	OPERATING LEVER
SAT	FELT WICK	SPRING
02	SLOT CAMMING SURFACE	OPERATING LEVER
02	BRACKET CONTACT SURFACE	OPERATING LEVER
SAT	FELT WASHERS	STRIPPER BAIL SHAFT
G	CAMMING SURFACE	SPACING CLUTCH RESTORING CAM

6.52 HORIZONTAL TABULATOR - INTERMEDIATE BAIL



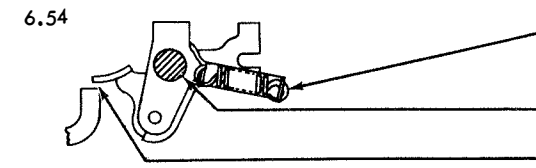
0	CONTACT SURFACE TRIP LEVER ARM	INTERMEDIATE BAIL
02	CONTACTING SURFACE	SPACING TRIP LEVER ARM
0	CONTACT SURFACE SPACING TRIP LEVER	INTERMEDIATE BAIL

6.53



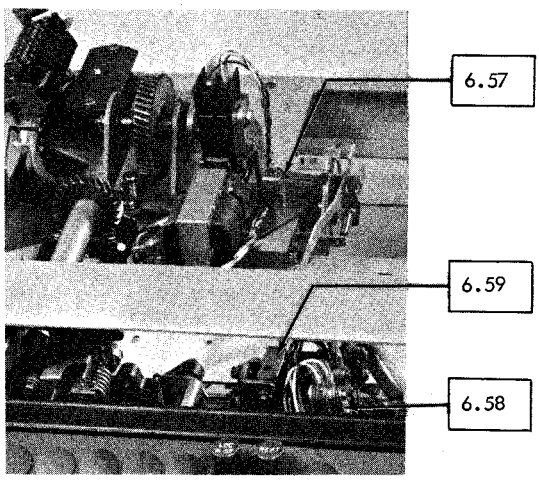
SAT	FELT WASHER	TRIP LEVER ARM SHAFT
02	BEARING SURFACE	SPACING CUTOUT TRANSFER BAIL
02	BAIL CONTACTING SURFACE	SPACING CUTOUT TRANSFER BAIL
SAT	FELT WASHER	TRANSFER BAIL STUD

6.54

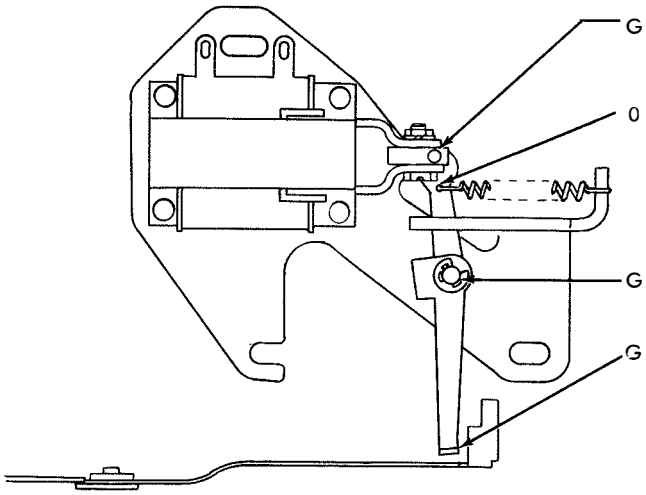


0	HOOKS - EACH END	SPACE SUPPRESSION BY PASS SPRING.
02	BEARING SURFACE	BAIL EXTENSION ARM
02	CONTACT SURFACE WITH SPACING CUT-OUT LEVER	BAIL EXTENSION ARM

6.55 OFF-LINE CONTACTS

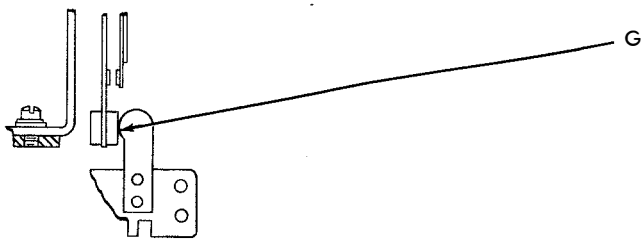


6.56 KEYBOARD - TOP VIEW



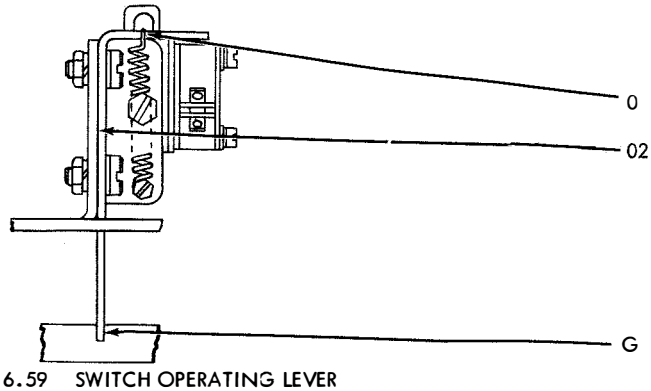
	FORK AND PIN	SOLENOID ARMATURE
	HOOKS - EACH END	SPRING
	BEARING SURFACE AND RETAINING RING	SOLENOID
	ENGAGING SURFACE	BACKSPACE LINK

6.57 SOLENOID BAIL



	ENGAGING SURFACE	CONTACT INSULATOR

6.58 CONTACT INSULATORS

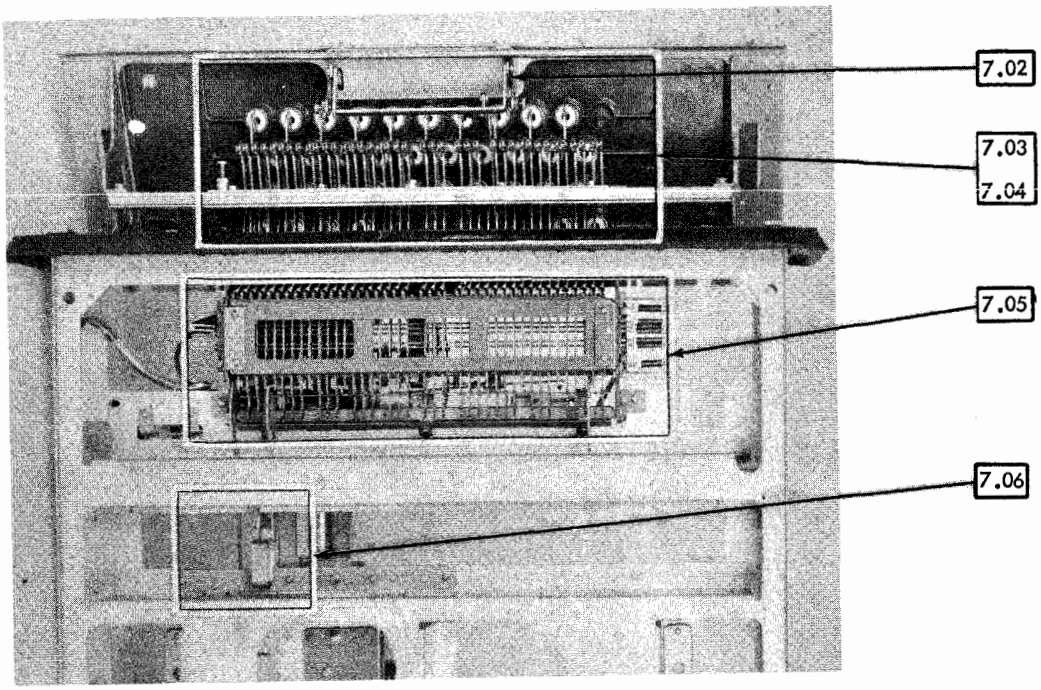


	HOOKS - EACH END	SPRING
	SLIDING SURFACE	OPERATING LEVER
	ENGAGING SURFACE	FUNCTION LEVER

6.59 SWITCH OPERATING LEVER

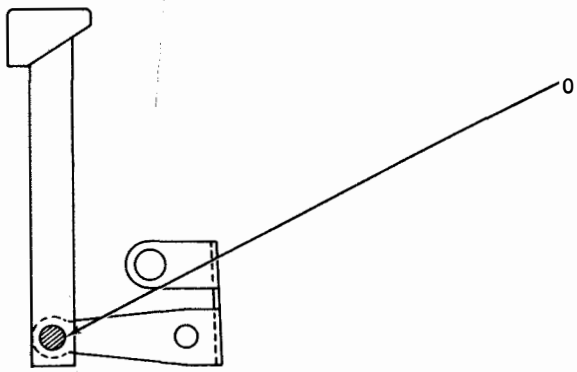
7. NEW DESIGN KEYBOARD

7.01 REST KEYBOARD BOTTOM SIDE UP

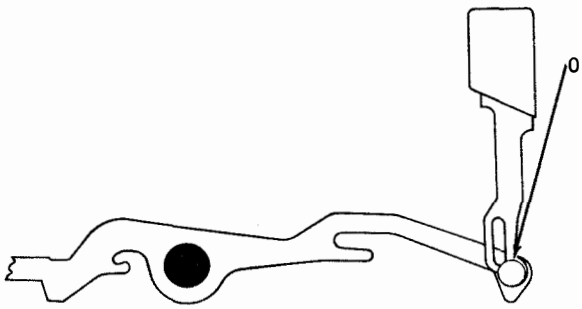


BOTTOM VIEW

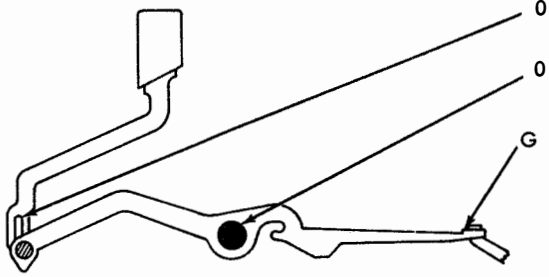
7.02 SPACE BAR MECHANISM



7.03 KEYLEVER MECHANISM

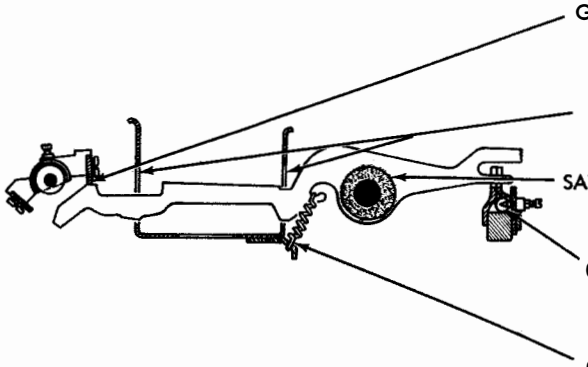


7.04 BREAK LEVER MECHANISM



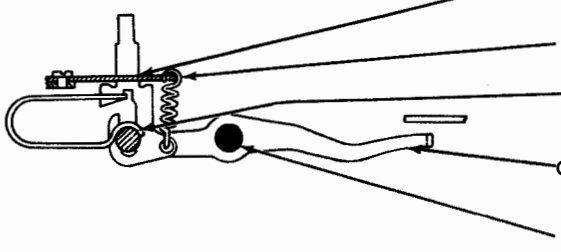
0	ENGAGING SURFACE	BREAK KEYLEVER
0	BEARING SURFACE	FUNCTION LEVER
G	CONTACT SURFACE	BREAK LEVER

7.05 CODE LEVER MECHANISM



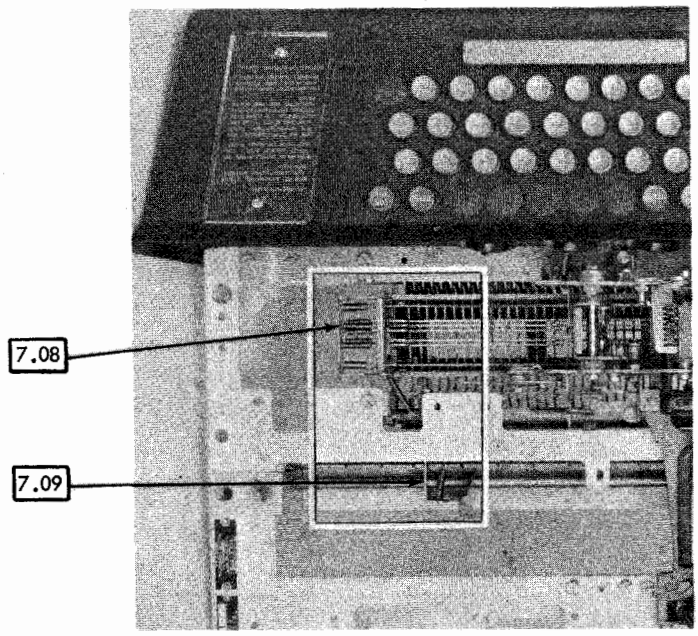
G	CONTACTING SURFACE (32 LEVERS)	CODE LEVER UNIVERSAL BAIL
0	GUIDE SLOTS (32 LEVERS)	CODE LEVERS
SAT	FELT WASHERS (6 WASHERS)	CODE LEVER SHAFT
0	BEARING SURFACE (32 WEDGES)	LOCK BALL TRACK
0	HOOKS-EACH END (40 SPRINGS)	SPRING

7.06 KEYBOARD LOCK MECHANISM



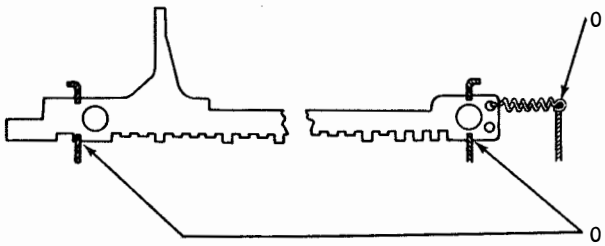
0	GUIDE SLOT	KEYBOARD LOCK PLUNGER
0	HOOKS-EACH END	SPRING
0	BEARING SURFACE	KEYBOARD LOCK LEVER
G	ENGAGING SURFACE	KEYBOARD LOCK FUNCTION LEVER
0	BEARING SURFACE	FUNCTION BAIL

7.07 REST KEYBOARD IN UPRIGHT POSITION



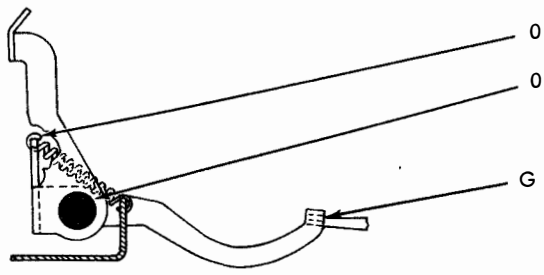
TOP VIEW

7.08 CODE BAR MECHANISM



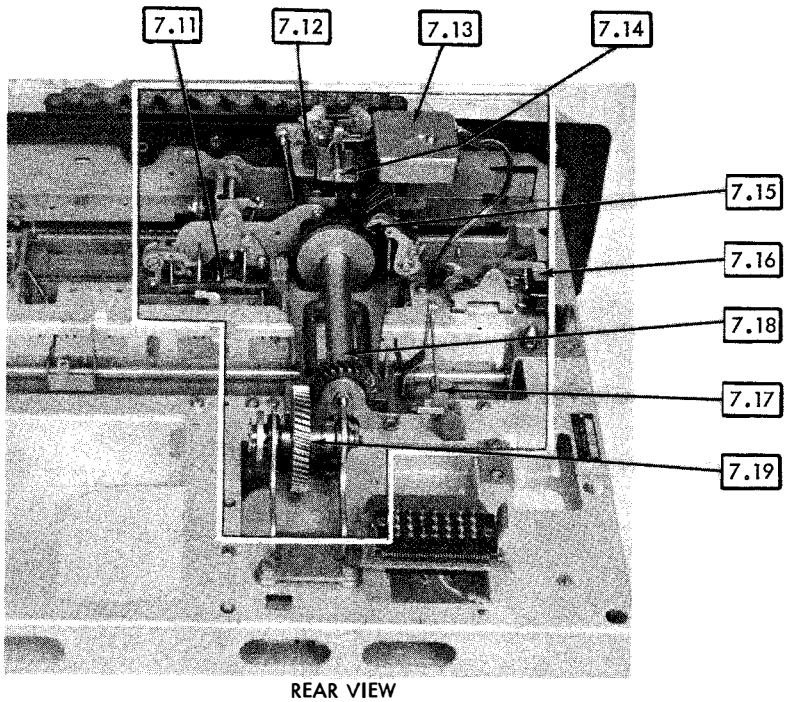
0	HOOKS–EACH END (7 SPRINGS)	SPRING
0	GUIDE SLOTS (LEFT AND RIGHT–TOP AND BOTTOM)	CODE BAR GUIDES

7.09 LOCAL CARRIAGE RETURN MECHANISM



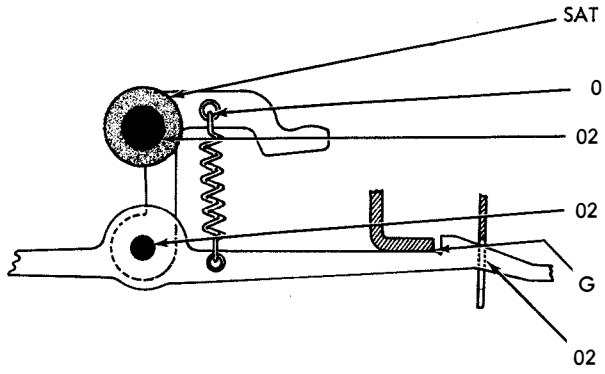
0	HOOKS–EACH END	SPRING
0	BEARING SURFACE (2 PLACES)	LOCAL CARRIAGE RETURN FUNCTION BAIL
G	ENGAGING SURFACE	LOCAL CARRIAGE RETURN FUNCTION LEVER

7.10 SIGNAL GENERATOR MECHANISM REST KEYBOARD IN UPRIGHT POSITION



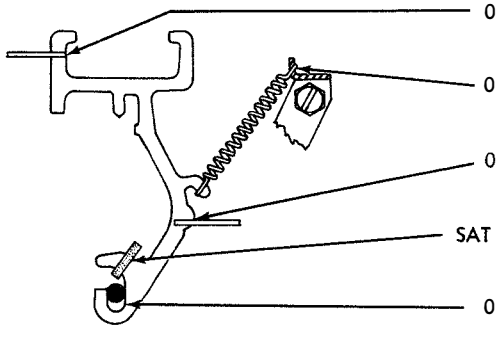
REAR VIEW

7.11 NON-REPEAT LEVER MECHANISM



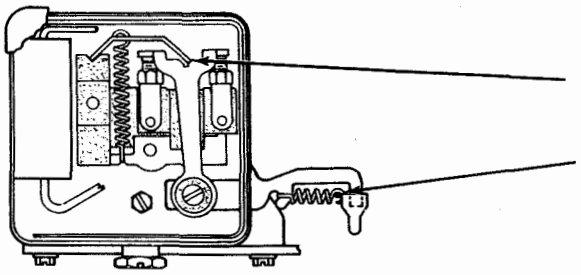
SAT	FELT WASHER	NON-REPEAT LEVER CRANK
0	HOOKS-EACH END	SPRING
02	BEARING SURFACE	NON-REPEAT LEVER CRANK
02	BEARING SURFACE	NON-REPEAT LEVER
G	ENGAGING SURFACE	NON-REPEAT LEVER
02	GUIDE SLOT	NON-REPEAT LEVER

7.12 TRANSFER LEVER MECHANISM



0	GUIDE SLOTS	TRANSFER LEVERS (7 LEVERS)
0	HOOKS-EACH END (7 SPRINGS)	SPRING
0	GUIDE SLOTS	TRANSFER LEVERS (7 LEVERS)
SAT	FELT WASHERS (4 WASHERS)	CAMMING SURFACES
0	GUIDE SLOTS	TRANSFER LEVERS (7 LEVERS)

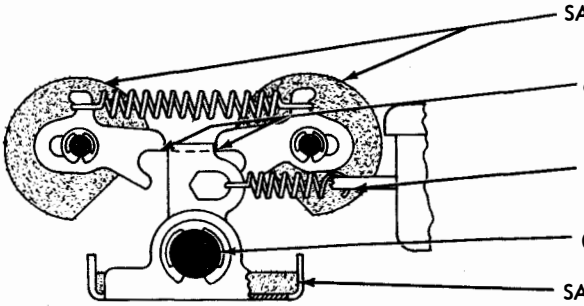
7.13 CONTACT BOX



G	ENGAGING SURFACE	CONTACT TOGGLE
0	HOOKS-EACH END	SPRING

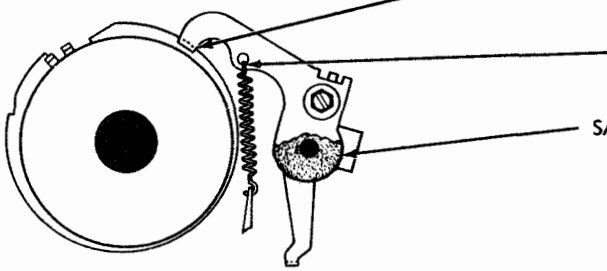
DISASSEMBLY: REMOVE NUT AND LOCK WASHER SECURING CONTACT BOX COVER AND REMOVE COVER.

7.14 TRANSFER BAIL MECHANISM



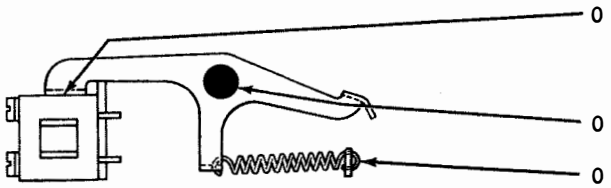
SAT	FELT WASHERS (2 WASHERS)	LATCHES
G	ENGAGING SURFACE	TRANSFER BAIL
0	HOOKS-EACH END (2 SPRINGS)	SPRING
02	BEARING SURFACE	TRANSFER BAIL
SAT	OIL WICK	TRANSFER BAIL

7.15 FUNCTION CLUTCH MECHANISM



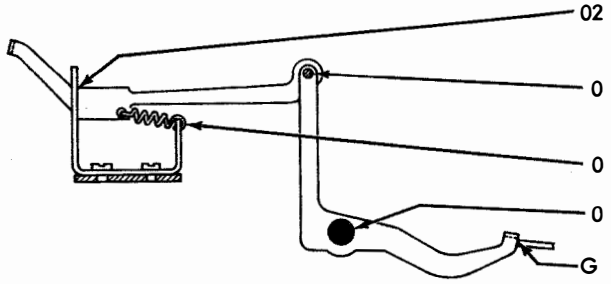
02	LATCHING SURFACE	CLUTCH STOP LEVER AND CLUTCH LATCH LEVER
0	HOOKS-EACH END (2 SPRINGS)	SPRING
SAT	FELT WASHERS (2 FRONT & REAR)	CLUTCH TRIP BAIL

7.16 MARGIN INDICATING MECHANISM



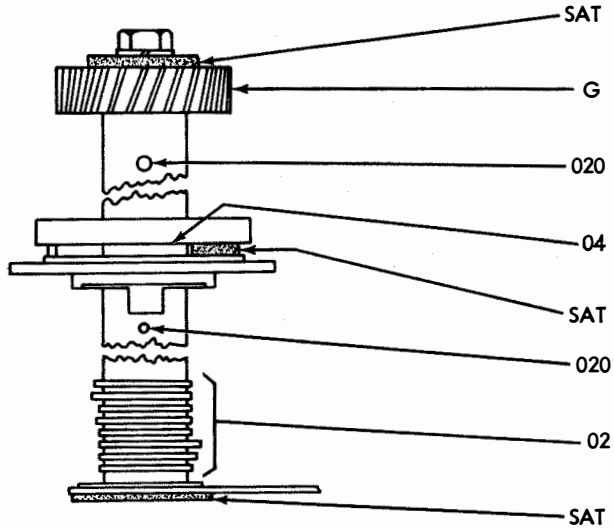
0	ENGAGING SURFACE	MARGIN INDICATOR SWITCH
0	BEARING SURFACE	SWITCH LEVER
0	HOOKS–EACH END	SPRING

7.17 LOCAL LINE FEED MECHANISM



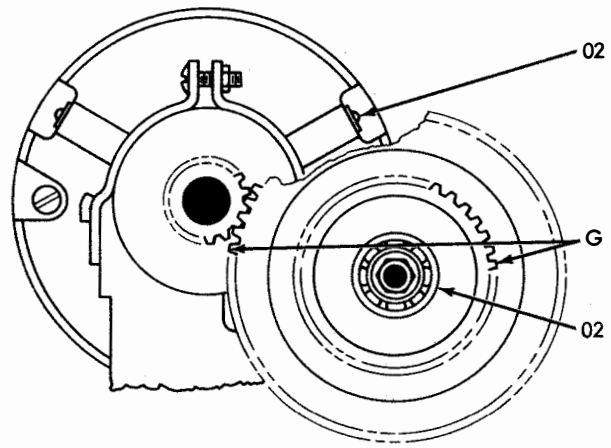
02	GUIDE SLOT	LOCAL LINE FEED TRIP LINK
0	BEARING SURFACE	LOCAL LINE FEED FUNCTION LEVER
0	HOOKS–EACH END	SPRING
0	BEARING SURFACE	FUNCTION BAIL
G	ENGAGING SURFACE	LOCAL LINE FEED FUNCTION LEVER

7.18 SHAFT MECHANISM



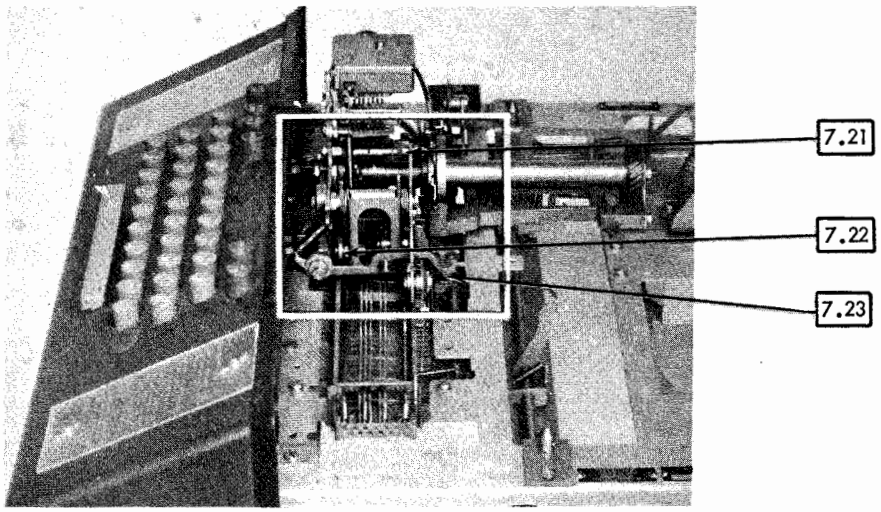
SAT	FELT WASHER	SIGNAL GENERATOR SHAFT
G	GEAR TEETH	SIGNAL GENERATOR SHAFT
020	OIL HOLE	SIGNAL GENERATOR SHAFT
04	INTERNAL MECHANISM	KEYBOARD CLUTCH
SAT	FELT WICK	
020	OIL HOLE	SIGNAL GENERATOR CAM
02	CAMMING SURFACE EACH CAM	SIGNAL GENERATOR CAM
SAT	FELT WASHER	SIGNAL GENERATOR SHAFT

7.19 INTERMEDIATE GEAR MECHANISM



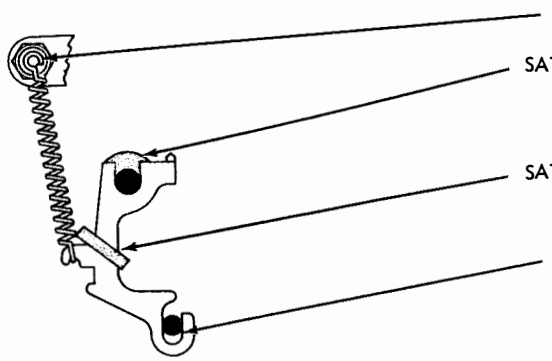
02	OILER–EACH END (RIGHT & LEFT)	MOTOR SHAFT
G	TEETH (2 GEARS)	INTERMEDIATE GEARS
02	BALL BEARING (2 BEARINGS)	INTERMEDIATE GEAR SHAFT

7.20 SIGNAL GENERATOR MECHANISM (continued) REST KEYBOARD IN UPRIGHT POSITION



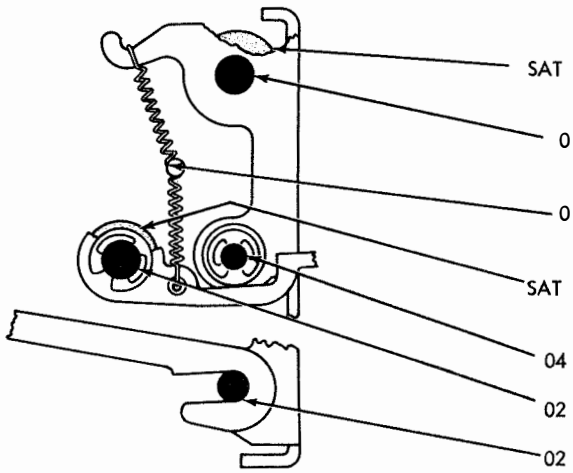
RIGHT SIDE VIEW

7.21 LOCKING BAIL MECHANISM



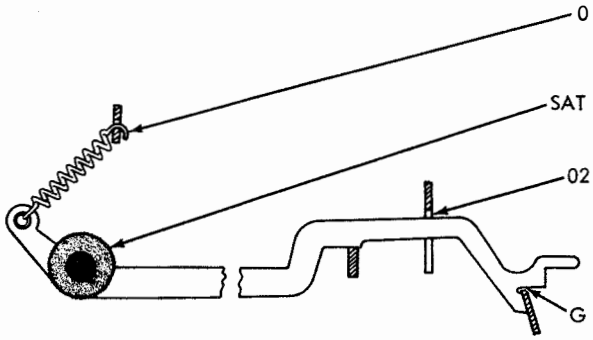
0	HOOKS-EACH END	SPRING
SAT	FELT WASHERS (2 WASHERS - FRONT AND REAR)	LOCKING BAIL POST
SAT	FELT WICK	CAMMING SURFACES
0	GUIDE SLOTS (3 SLOTS)	LOCKING BAIL

7.22 CODE BAR BAIL MECHANISM



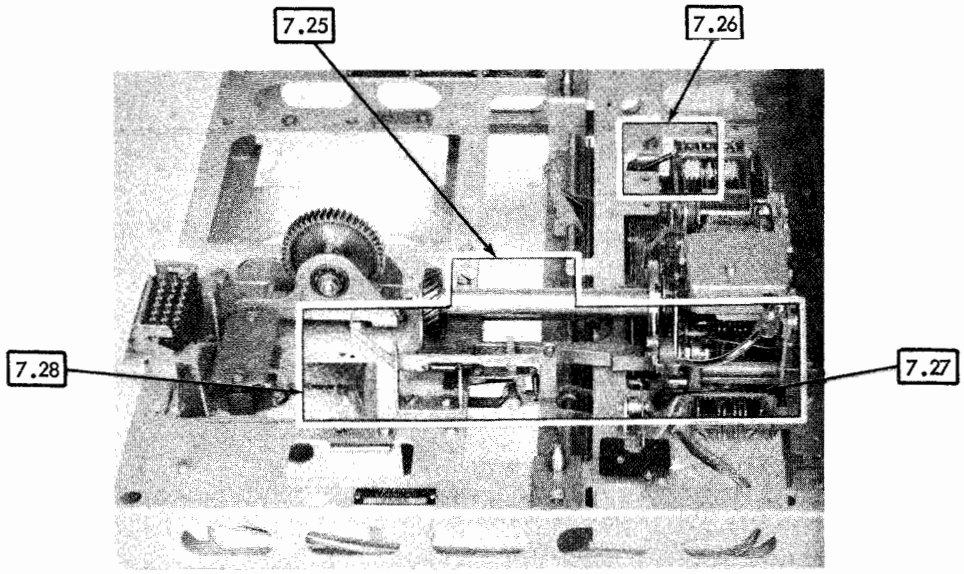
SAT	FELT WASHERS (TWO WASHERS)	CODE BAR BAIL
0	BEARING SURFACE (2 PLACES)	CODE BAR BAIL
0	HOOKS-EACH END (2 SPRINGS)	SPRING
SAT	FELT WASHER	CODE BAR BAIL LATCH
04	BEARING	CODE BAR BAIL
02	BEARING SURFACE	CODE BAR BAIL LATCH
02	ENGAGING SURFACE	ECCENTRIC FOLLOWER

7.23 UNIVERSAL BAIL LATCH LEVER



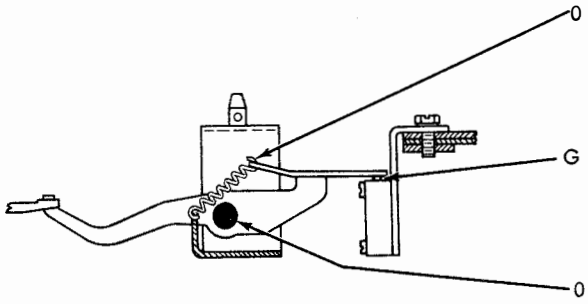
0	HOOKS (EACH END)	SPRING
SAT	FELT WASHER	UNIVERSAL BAIL LATCH LEVER
02	GUIDE SLOT (EACH SIDE OF SLOT)	UNIVERSAL BAIL LATCH LEVER
G	ENGAGING SURFACE	RESET BAIL LATCH

7.24 NEW DESIGN KEYBOARD AND VARIABLE FEATURES
REST KEYBOARD IN UPRIGHT POSITION



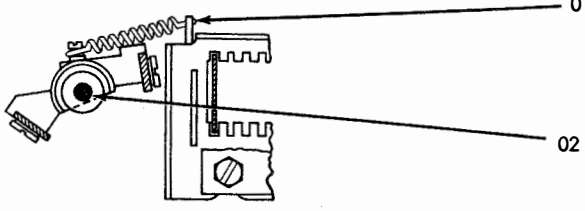
LEFT SIDE VIEW

7.25 ELECTRICAL LINE BREAK MECHANISM



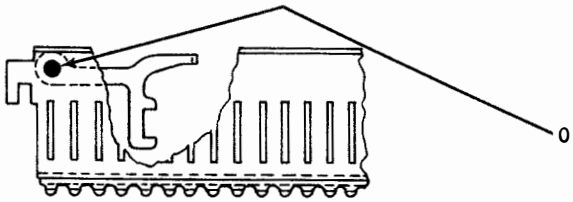
0	HOOKS-EACH END	SPRING
G	CONTACT SURFACE	SENSITIVE SWITCH
0	BEARING SURFACE	BREAK LEVER

7.26 CODE LEVER UNIVERSAL BAIL MECHANISM



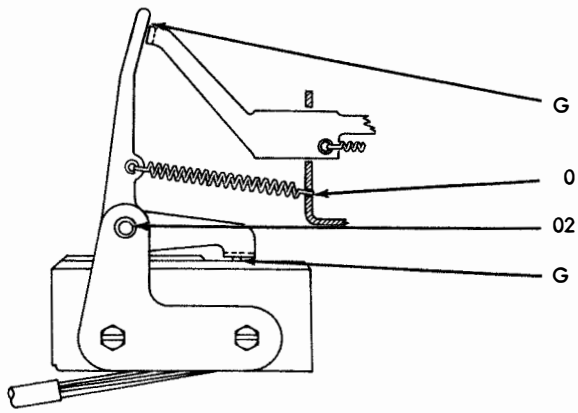
0	HOOKS-EACH END	SPRING
02	BEARING SURFACE	CODE LEVER UNIVERSAL BAIL

7.27 LOCK BAR LATCH MECHANISM



0	BEARING SURFACE	LOCK BAR LATCH

7.28 LOCAL PAPER FEED-OUT MECHANISM



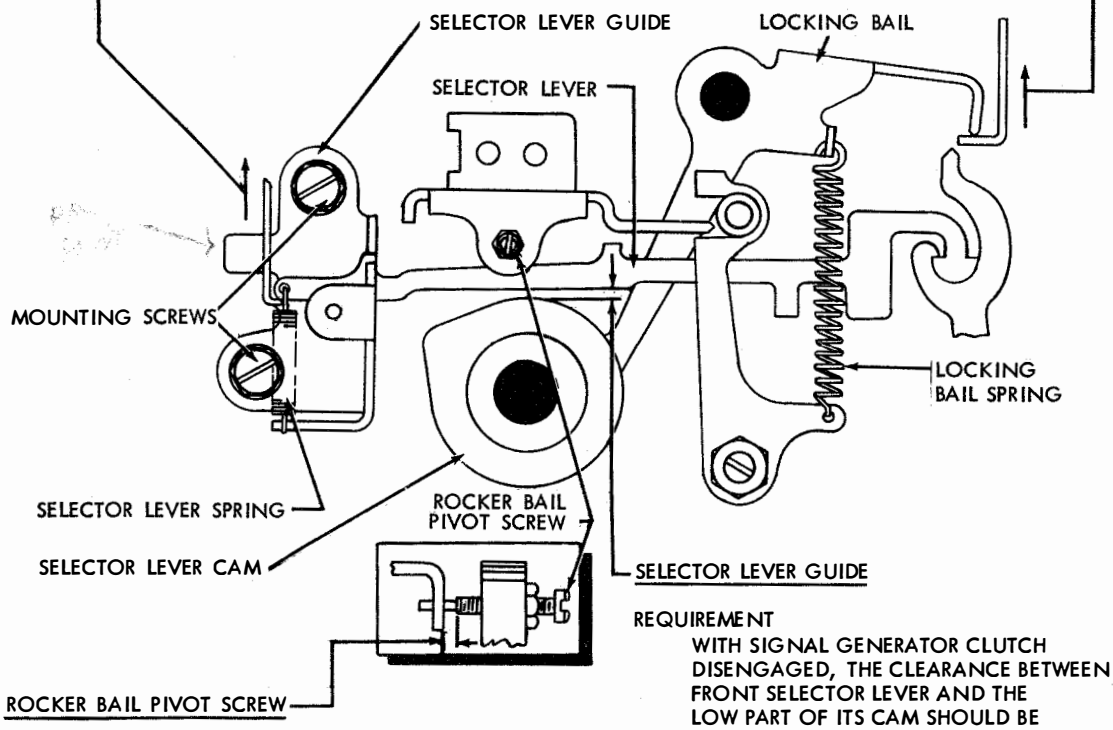
G	ENGAGING SURFACE	LOCAL LINE FEED TRIP LINK
0	HOOKS-EACH END	SPRING
02	BEARING SURFACE	LEVER
G	ENGAGING SURFACE	MAGNETIC BLOWOUT SWITCH

SECTION 4 - EARLIER DESIGN MECHANISM ADJUSTMENTS

1. KEYBOARD

NOTE

IN ORDER TO PERFORM ALL SIGNAL GENERATOR ADJUSTMENTS, IT WILL BE NECESSARY TO REMOVE GENERATOR FROM THE KEYBOARD. SEE DISASSEMBLY AND REASSEMBLY PARAGRAPH 10.b.(1)



SELECTOR LEVER SPRING TENSION

REQUIREMENT
SELECTOR LEVER ON LOW PART OF CAM.

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

TO START LEVER MOVING.
CHECK EACH SELECTOR LEVER SPRING.

LOCKING BAIL SPRING TENSION

REQUIREMENT
GENERATOR CLUTCH DISENGAGED.

MIN. 2 OZS.
MAX. 4 OZS.

TO START LOCKING BAIL MOVING.

ROCKER BAIL PIVOT SCREW

REQUIREMENT
ROCKER BAIL FREE ON PIVOT WITH SOME END PLAY

MAX. 0.010 INCH

TO ADJUST
ROTATE PIVOT SCREW.

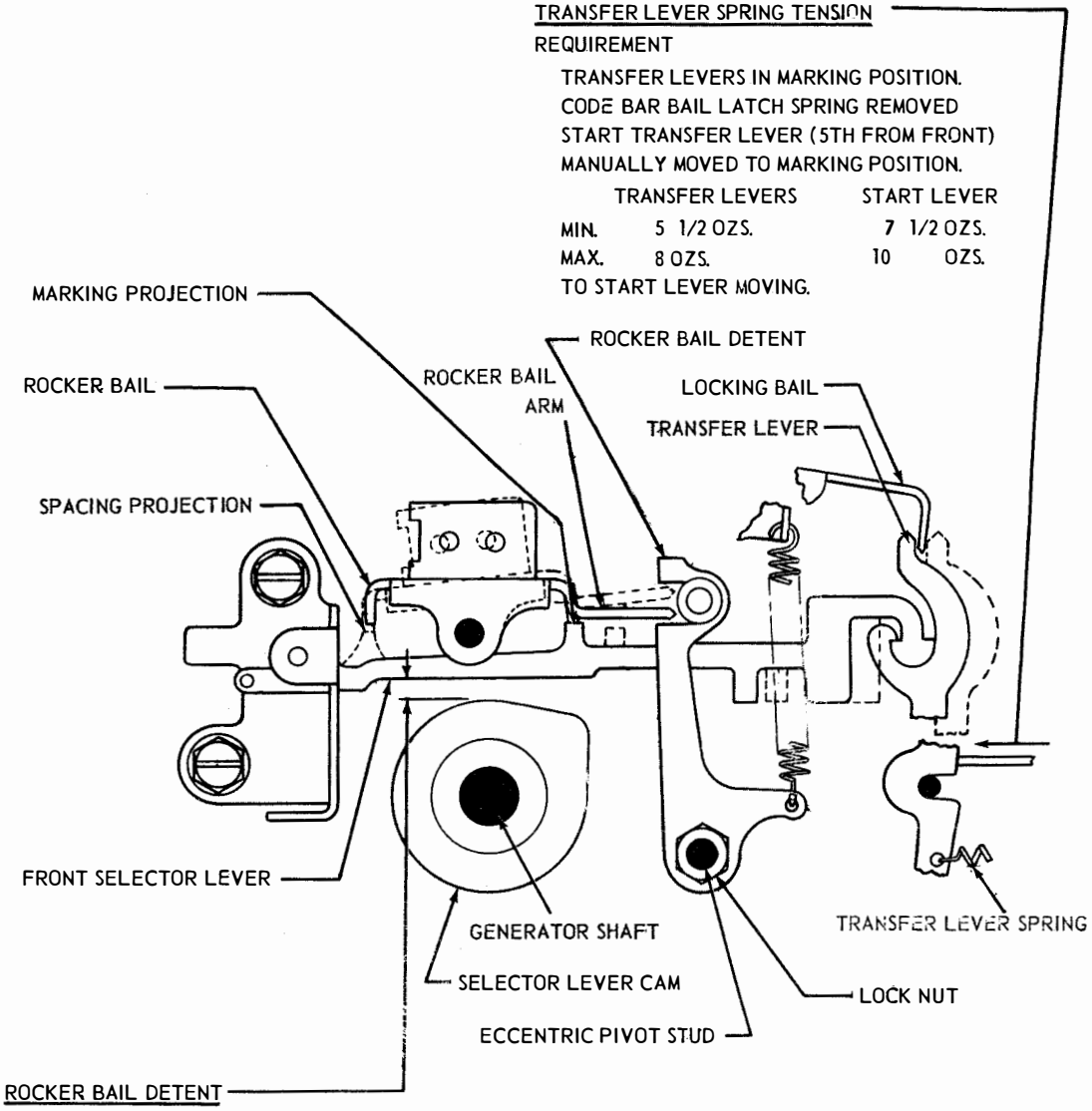
SELECTOR LEVER GUIDE

REQUIREMENT
WITH SIGNAL GENERATOR CLUTCH DISENGAGED, THE CLEARANCE BETWEEN FRONT SELECTOR LEVER AND THE LOW PART OF ITS CAM SHOULD BE

MIN. 0.004 INCH
MAX. 0.010 INCH

TO ADJUST
POSITION THE SELECTOR LEVER GUIDE WITH ITS MOUNTING SCREWS LOOSENED.

FIGURE 4-1 KEYBOARD, SIGNAL GENERATOR, FRONT VIEW



REQUIREMENT

CLEARANCE BETWEEN THE ROCKER BAIL ARM AND BOTH THE MARKING AND THE SPACING PROJECTIONS OF THE SELECTOR LEVERS SHOULD BE EQUAL WITHIN 0.005 INCH

TO CHECK

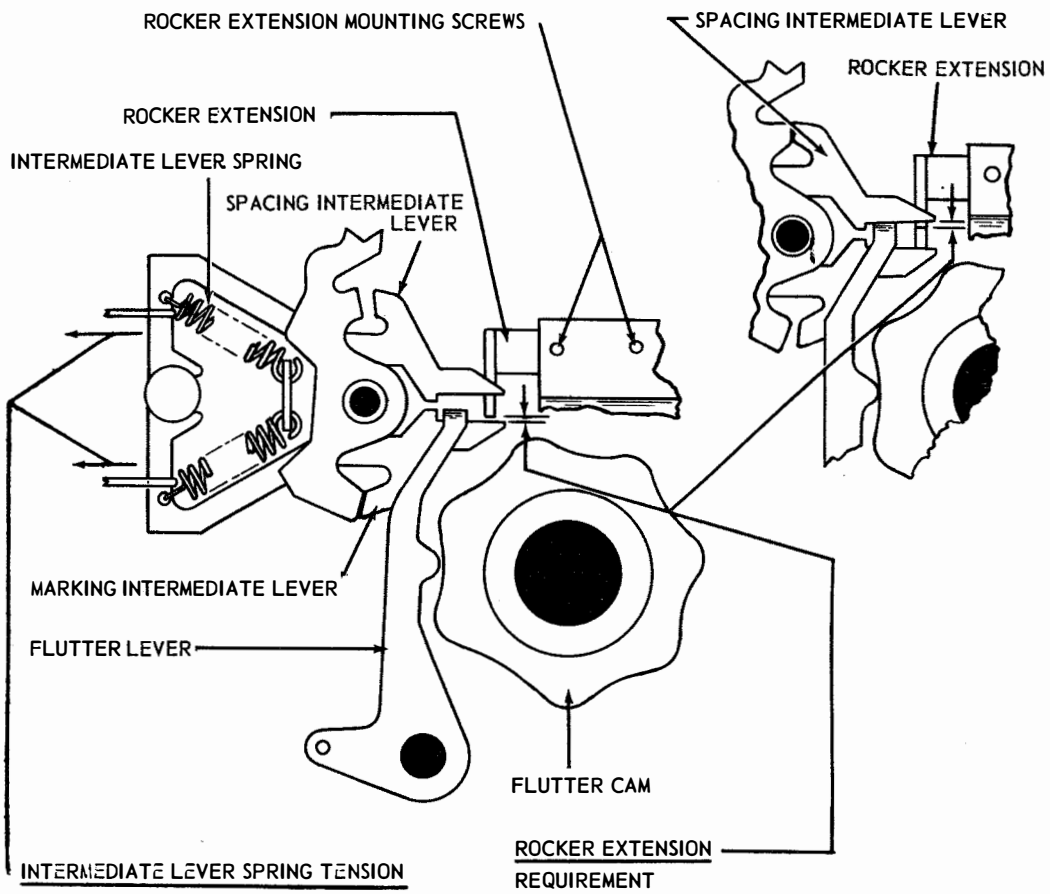
ROTATE THE CAM SLEEVE UNTIL THE FRONT SELECTOR LEVER HAS COME DOWN OFF THE PEAK OF ITS CAM AND IS OPPOSITE THE LOW PART OF ITS CAM. WITH THE FRONT SELECTOR LEVER IN THE MARKING (LEFT) POSITION, AND THE ROCKER BAIL ARM AGAINST THE LOWER STOP OF ITS DETENT, HOLD THE SELECTOR LEVER LIGHTLY UP AGAINST THE ROCKER BAIL AND GAUGE THE CLEARANCE BETWEEN THE SELECTOR LEVER AND THE CAM. SHIFT THE ROCKER BAIL ARM AGAINST THE UPPER STOP OF ITS DETENT AND HOLD FRONT SELECTOR LEVER TO THE RIGHT AND UP SO THAT THE SPACING PROJECTION TOUCHES THE ROCKER BAIL. GAUGE THE CLEARANCE BETWEEN THE SELECTOR LEVER AND THE CAM. THESE TWO CLEARANCES SHOULD BE EQUAL WITHIN 0.005 INCH.

TO ADJUST

EQUALIZE CLEARANCES BY ROTATING THE ECCENTRIC PIVOT STUD OF THE DETENT WITH ITS LOCK NUT LOOSENED. KEEP THE HIGH PART OF THE ECCENTRIC TOWARD THE GENERATOR SHAFT.

FIGURE 4-2 KEYBOARD, SIGNAL GENERATOR, FRONT VIEW

NOTE: REMOVE MECHANICAL BREAK LEVER AND SPRING OR ELECTRICAL BREAK LEVER SPRING AND SWITCH, IF EQUIPPED. SEE FIGURE 4-45



INTERMEDIATE LEVER SPRING TENSION

REQUIREMENT

CLUTCH DISENGAGED. PULL HORIZONTALLY, PARALLEL TO INTERMEDIATE LEVER'S PATH

MIN. 2 OZS.

MAX. 4 OZS.

TO START LEVER MOVING.

CHECK SPACING AND MARKING LEVERS.

ROCKER EXTENSION

REQUIREMENT

EQUAL CLEARANCE (WITHIN 0.005 INCH) BETWEEN THE ROCKER EXTENSION AND BOTH THE MARKING AND THE SPACING INTERMEDIATE LEVERS WHEN SELECTED INDIVIDUALLY.

TO CHECK

ROTATE THE SHAFT UNTIL THE MARKING INTERMEDIATE LEVER IS SELECTED AND THE FLUTTER LEVER IS ON LOW PART OF CAM. GAUGE CLEARANCE IN LEFT FIG. REPEAT PROCEDURE FOR SPACING INTERMEDIATE LEVER. GAUGE CLEARANCE IN RIGHT FIGURE.

TO ADJUST

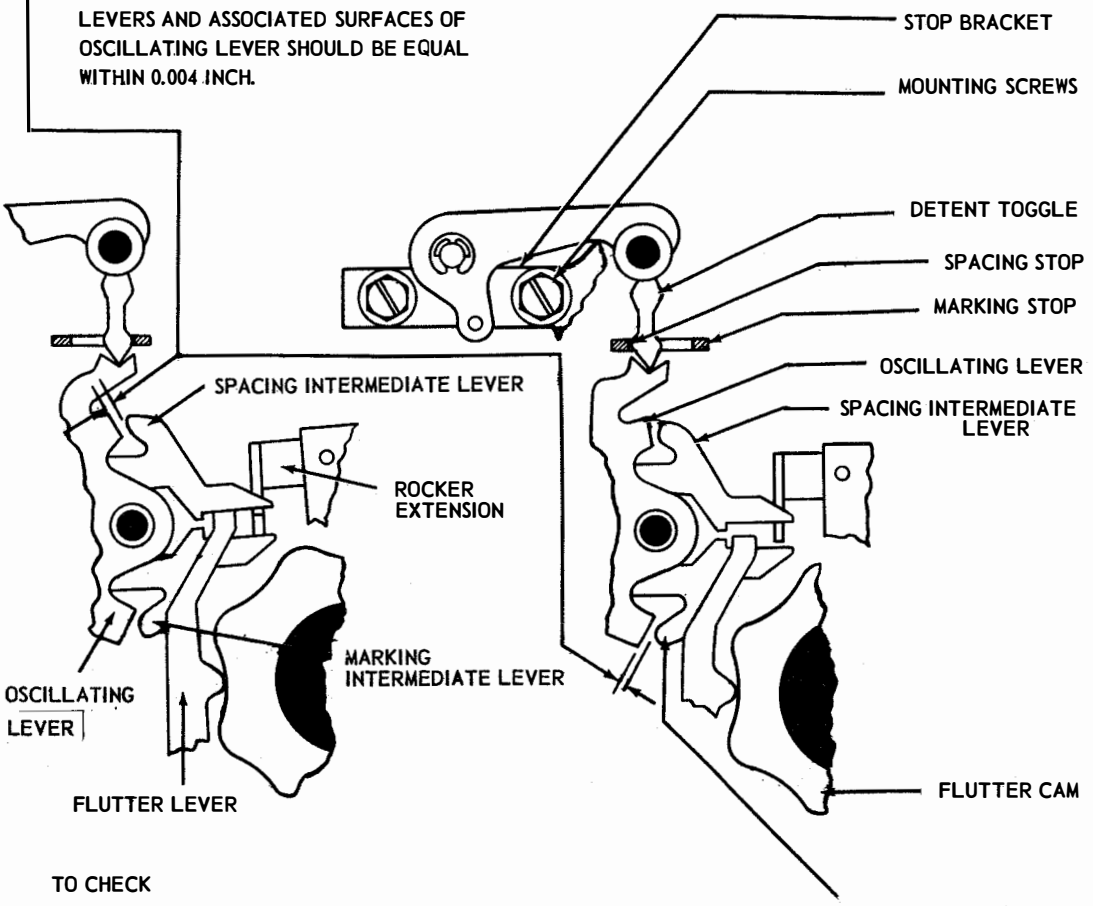
EQUALIZE CLEARANCES BY POSITIONING THE ROCKER EXTENSION WITH ITS MOUNTING SCREWS LOOSENED.

FIGURE 4-3 KEYBOARD, SIGNAL GENERATOR, REAR VIEW

DETENT TOGGLE STOP BRACKET

REQUIREMENT

CLEARANCE BETWEEN ENGAGING SURFACES OF SPACING AND MARKING INTERMEDIATE LEVERS AND ASSOCIATED SURFACES OF OSCILLATING LEVER SHOULD BE EQUAL WITHIN 0.004 INCH.



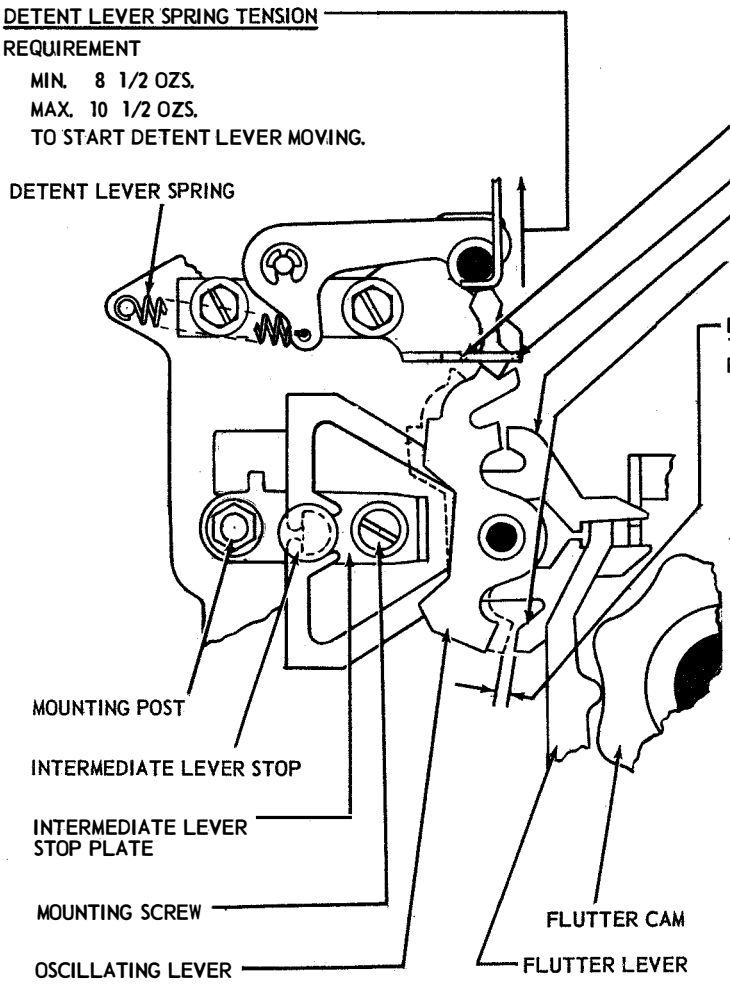
TO CHECK

FRONT SELECTOR LEVER IN MARKING POSITION, GENERATOR SHAFT ROTATED UNTIL FRONT SELECTOR LEVER IS ON PEAK OF ITS CAM. MOVE OSCILLATING LEVER TOWARD MARKING INTERMEDIATE LEVER AND GAUGE THE GAP. THEN WITH FRONT SELECTOR LEVER IN SPACING POSITION AND ON PEAK OF ITS CAM, MOVE OSCILLATING LEVER TOWARD SPACING INTERMEDIATE LEVER AND CHECK GAP.

TO ADJUST

EQUALIZE THE CLEARANCES BY POSITIONING THE STOP BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

FIGURE 4-4 KEYBOARD, SIGNAL GENERATOR, REAR VIEW



NOTE: REPLACE THE BREAK LEVER AND ASSOCIATED PARTS

FIGURE 4-5 KEYBOARD, SIGNAL GENERATOR, REAR VIEW

(A) FLUTTER LEVER SPRING TENSION

REQUIREMENT

WITH SIGNAL GENERATOR CLUTCH DISENGAGED AND SPACING INTERMEDIATE LEVER HELD AWAY FROM FLUTTER LEVER, INSERT SCALE BETWEEN CASTING AND BREAK ROD

MIN. 1 OZ.

MAX. 2 1/4 OZS.

TO START FLUTTER LEVER MOVING.

(B) FLUTTER LEVER

(1) REQUIREMENT

WITH THE FLUTTER LEVER ON EACH LOW PORTION OF ITS CAM AND THE MARKING AND SPACING INTERMEDIATE LEVERS ALTERNATELY SELECTED, THE CLEARANCE BETWEEN THE FLUTTER LEVER AND LATCHING SURFACE OF SELECTED INTERMEDIATE LEVER SHOULD BE

MIN. 0.005 INCH

MAX. 0.018 INCH

WITH THE CLUTCH ENGAGED AND THE SELECTOR LEVERS (FIG. 2) TO MARKING (LEFT), ROTATE THE GENERATOR SHAFT TO CHECK CLEARANCE ON MARKING INTERMEDIATE LEVERS. HOLD SELECTOR LEVERS TO SPACING (RIGHT) AND ROTATE SHAFT TO CHECK SPACING INTERMEDIATE LEVERS.

TO ADJUST

POSITION THE FLUTTER LEVER MOUNTING STUD IN THE ELONGATED MOUNTING HOLE WITH THE LOCK NUT LOOSENED.

(2) REQUIREMENT

AFTER REQUIREMENT (1) HAS BEEN MET, SELECT THE MARKING AND SPACING INTERMEDIATE LEVERS ALTERNATELY AND ROTATE THE GENERATOR SHAFT UNTIL THE FLUTTER LEVER IS ON SUCCESSIVE HIGH PORTIONS OF ITS CAM. UNDER THESE CONDITIONS THERE SHOULD BE SOME CLEARANCE BETWEEN THE OSCILLATOR AND THE SELECTED INTERMEDIATE LEVER.

TO ADJUST

REFINE THE FLUTTER LEVER ADJUSTMENT AND RECHECK REQUIREMENT (1).

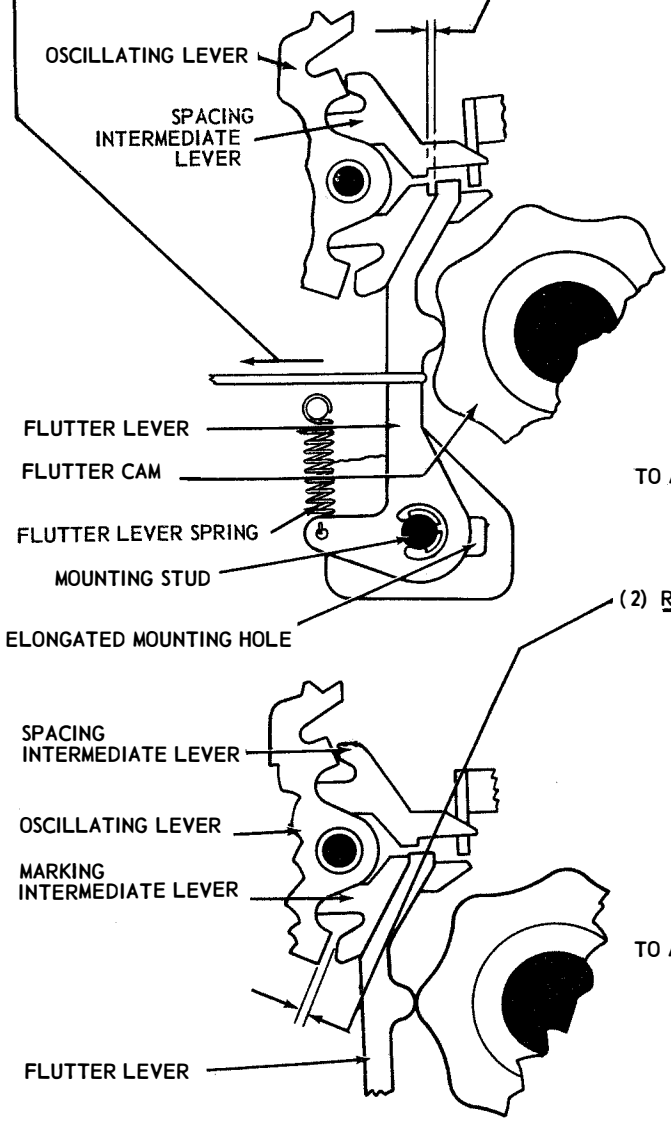
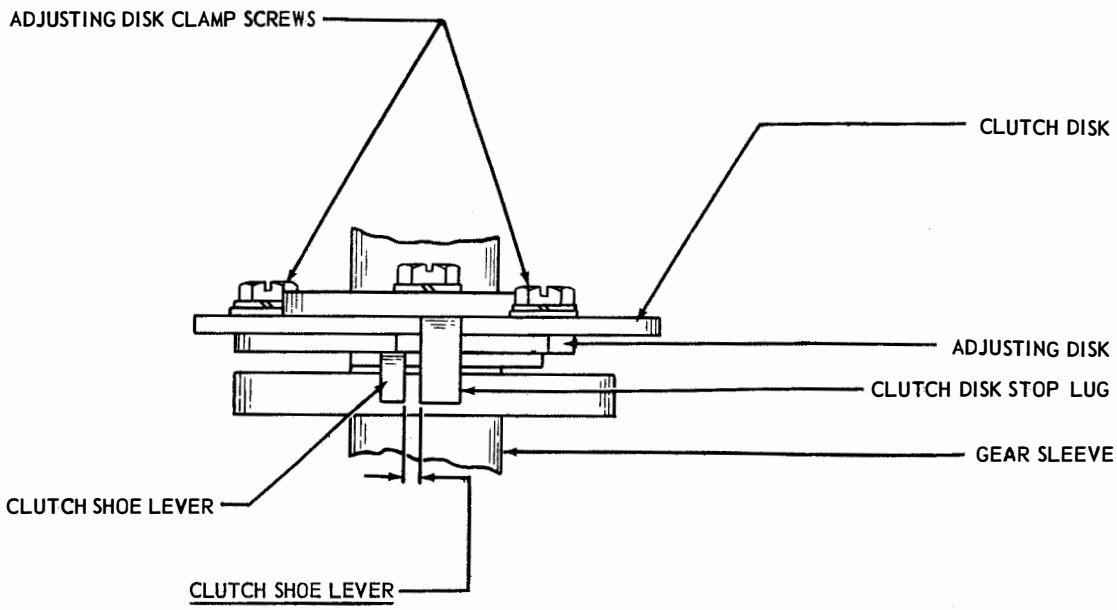


FIGURE 4-6 KEYBOARD, SIGNAL GENERATOR. REAR VIEW

FOR CLUTCH SHOE LEVER SPRING TENSION AND CLUTCH SHOE SPRING TENSION SEE FIGURE 1-35



REQUIREMENT

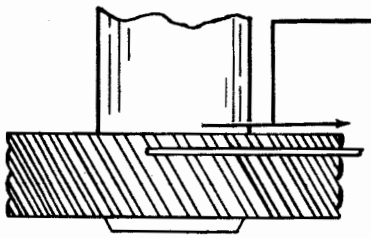
CLEARANCE WHEN CLUTCH IS DISENGAGED SHOULD BE 0.055 INCH TO 0.085 INCH LESS THAN WHEN CLUTCH IS ENGAGED.

TO CHECK

LATCH CLUTCH IN DISENGAGED POSITION AND MEASURE CLEARANCE. ROTATE GEAR UNTIL OIL HOLE IS UPWARD. ENGAGE CLUTCH AND MEASURE CLEARANCE.

TO ADJUST

LOOSEN THE TWO ADJUSTING DISK CLAMP SCREWS TO POSITION DISK.



NOTE

AFTER ABOVE ADJUSTMENT IS MADE, CHECK FOR DRAG ON DRUM AS FOLLOWS: DISENGAGE CLUTCH. HOOK SPRING SCALE ON TOP TOOTH OF GEAR AND PULL AT RIGHT ANGLE TO RADIUS OF GEAR. IF PULL OF 8 OZS. OR MORE IS REQUIRED TO MOVE THE DRUM, REFINE ABOVE ADJUSTMENT.

FIGURE 4-7 KEYBOARD, CLUTCH MECHANISM,TOP VIEW

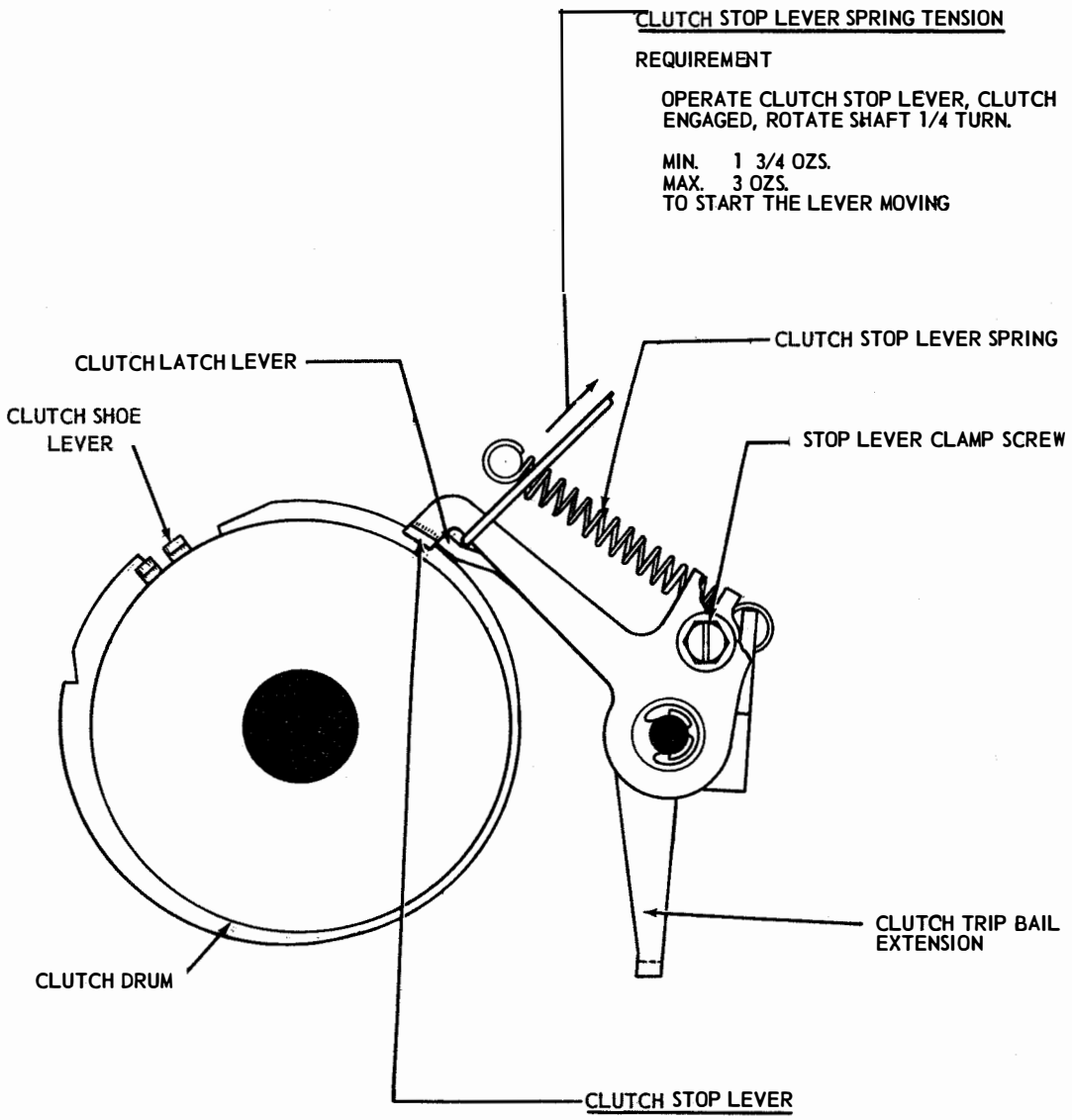
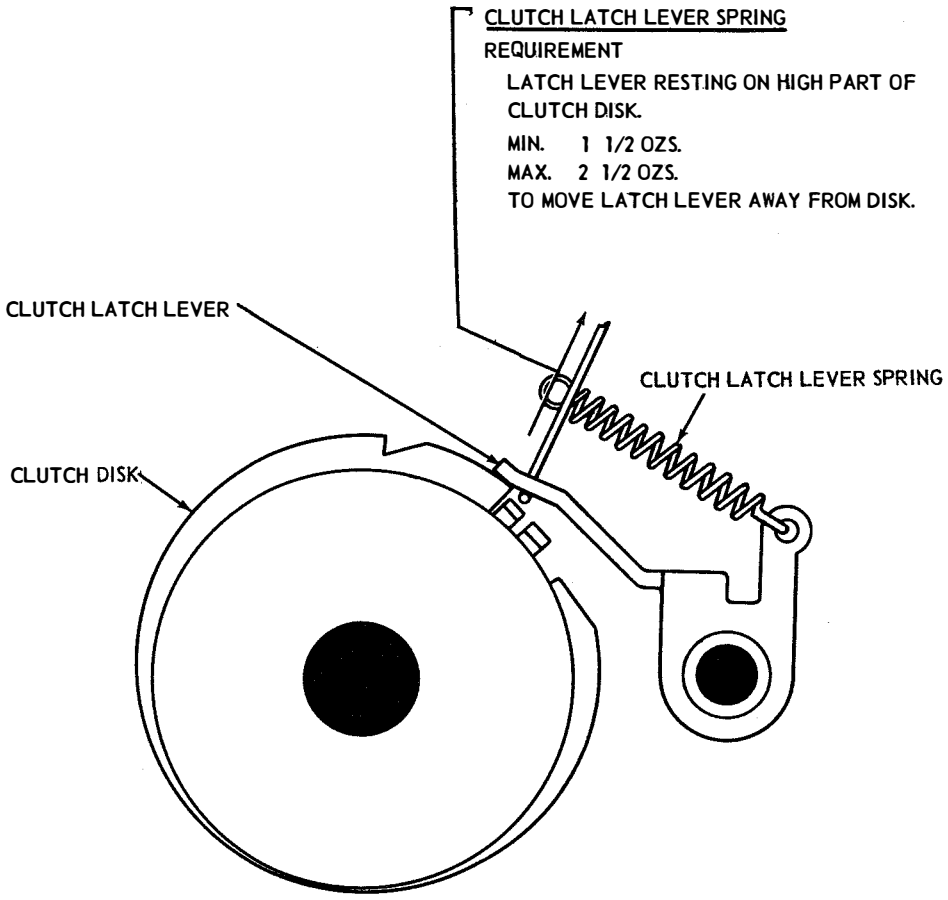


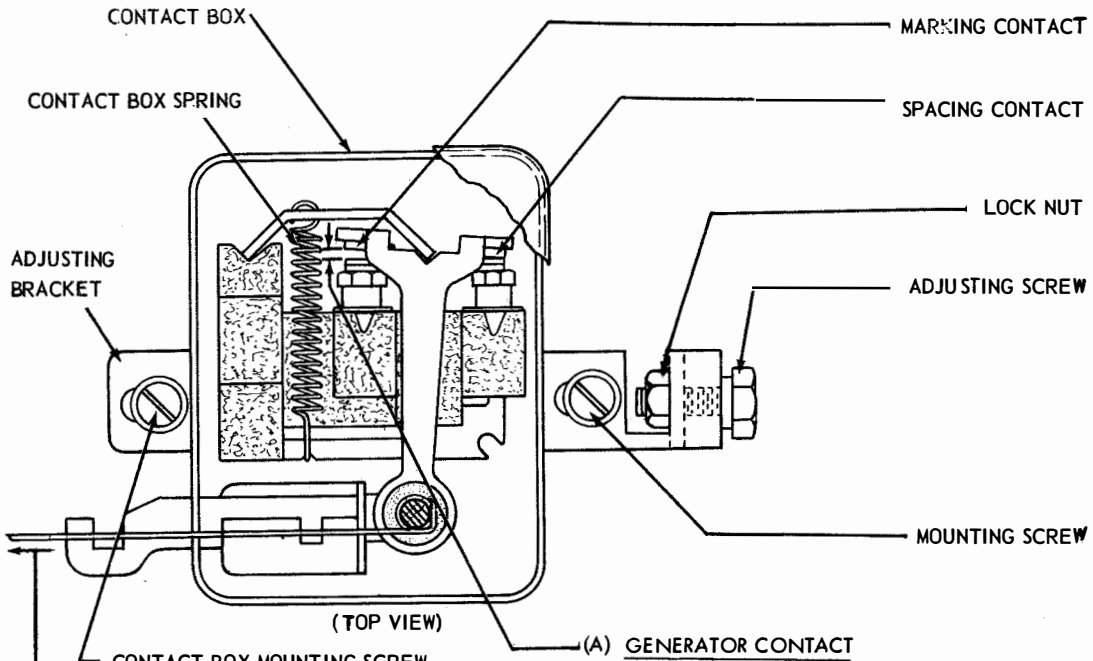
FIGURE 4-8 KEYBOARD, CLUTCH MECHANISM

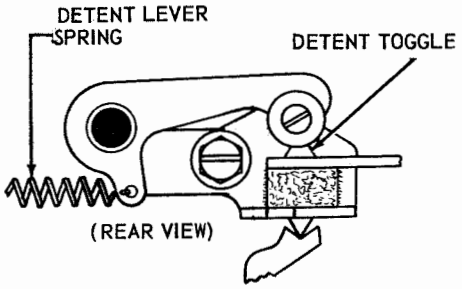


NOTE

REPLACE SIGNAL GENERATOR ON THE KEYBOARD. MAKE CERTAIN THAT THE CODE BAR BAIL LATCH LEVER (FIG. 4-11) IS UNDER CODE LEVER BAIL LATCH LEVER (FIG. 4-13), THAT (IF EQUIPPED) BREAK KEY ROD, ATTACHED TO BREAK LEVER (FIG. 4-45) IS IN ITS GUIDE HOLE IN CODE LEVER GUIDE, AND THAT THE CLUTCH TRIP BAIL EXTENSION (FIG. 4-8) IS IN THE NOTCH PROVIDED IN THE CLUTCH TRIP BAR (REAR) AND THAT THE CODE BAR BAIL (FIGURE 4-11) IS RESTING IN THE NOTCHES OF THE FIVE CODE BARS, THE CLUTCH TRIP BAR AND THE KEYLEVER UPSTOP BAR. SEE DISASSEMBLY AND REASSEMBLY PARAGRAPH 10.b.(1).

FIGURE 4-9 KEYBOARD, CLUTCH MECHANISM





(A) GENERATOR CONTACT

REQUIREMENT

THE MARKING AND SPACING CONTACT GAPS SHOULD BE EQUAL

TO CHECK

REMOVE THE COVER FROM THE CONTACT BOX. FIRST, MOVE THE DETENT TOGGLE AGAINST ITS SPACING STOP AND GAUGE THE MARKING CONTACT GAP. THEN MOVE THE DETENT TOGGLE AGAINST ITS MARKING STOP AND GAUGE SPACING CONTACT GAP.

TO ADJUST

ROTATE THE CONTACT BOX ADJUSTING SCREW WITH ITS LOCK NUT LOOSENED AND WITH THE CONTACT BOX MOUNTING SCREWS FRICTION TIGHT. REPLACE CONTACT BOX COVER.

NOTE

CHECK BY MEANS OF A SIGNAL CHECKING DEVICE WHERE POSSIBLE AND CAREFULLY REFINE THE ADJUSTMENT TO ELIMINATE ALL BIAS FROM THE SIGNALS BY EQUALIZING THE CURRENT-ON AND CURRENT-OFF INTERVALS.

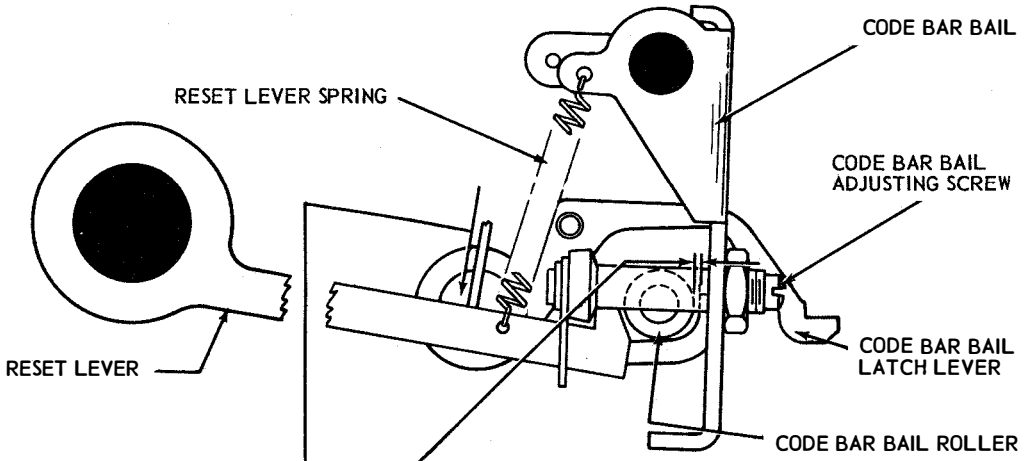
(B) CONTACT BOX SPRING TENSION

REQUIREMENT

CONTACT BOX COVER REMOVED. DETENT LEVER SPRING DISCONNECTED.

MIN. 2 OZS.
MAX. 4 OZS.
TO BREAK CONTACT

FIGURE 4-10 KEYBOARD, CONTACT ASSEMBLY



CODE BAR BAIL ADJUSTING SCREW

REQUIREMENT

CLUTCH ENGAGED. LTRS. COMBINATION SELECTED CLUTCH ROTATED 1/2 TURN UNTIL RESET LEVER IS IN EXTREME LEFT HAND POSITION.

CLEARANCE BETWEEN THE CODE BAR BAIL LATCH LEVER AND CODE BAR BAIL ROLLER.

MIN. 0.004 INCH

MAX. 0.008 INCH

TO ADJUST

POSITION THE CODE BAR BAIL ADJUSTING SCREW WITH ITS LOCK NUT LOOSENED.

RESET LEVER SPRING TENSION

REQUIREMENT

CLUTCH DISENGAGED.

MIN. 2 OZS.

MAX. 4 OZS.

TO START THE RESET LEVER MOVING.

FIGURE 4-11 KEYBOARD, CODE BAR BAIL MECHANISM, FRONT VIEW

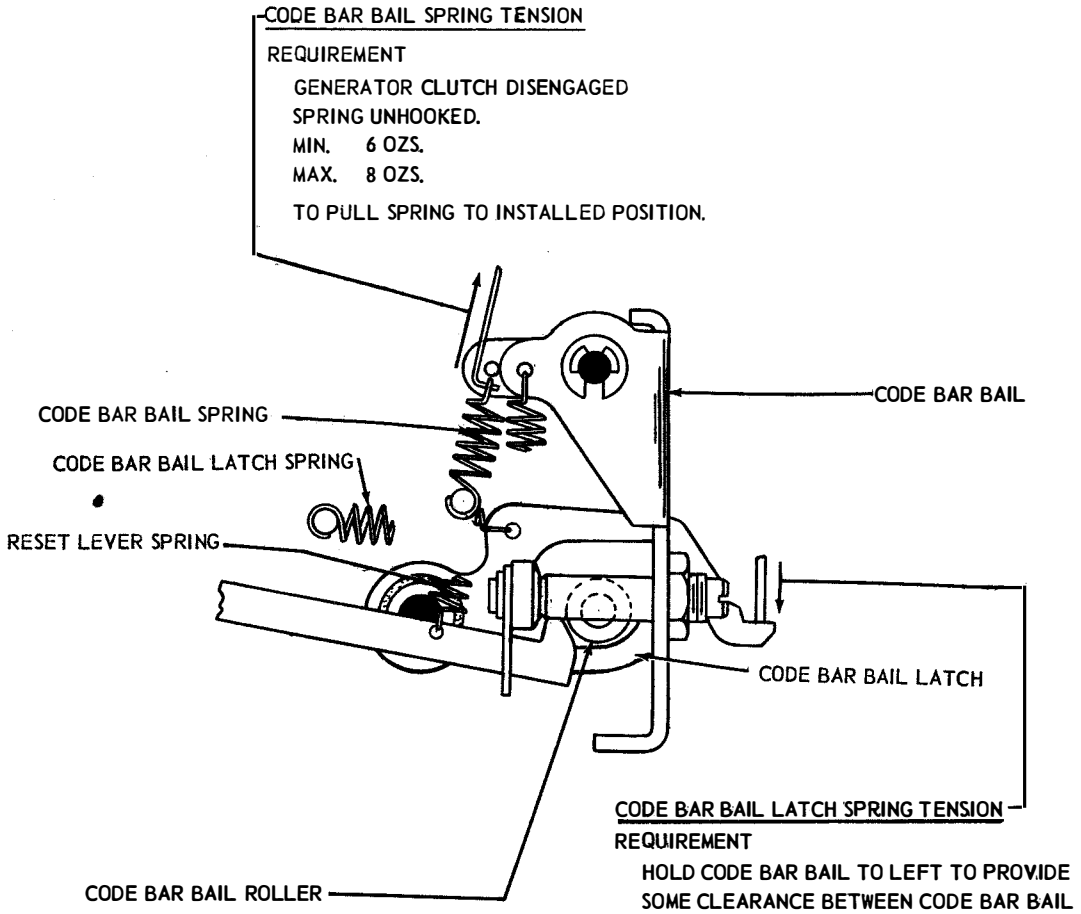
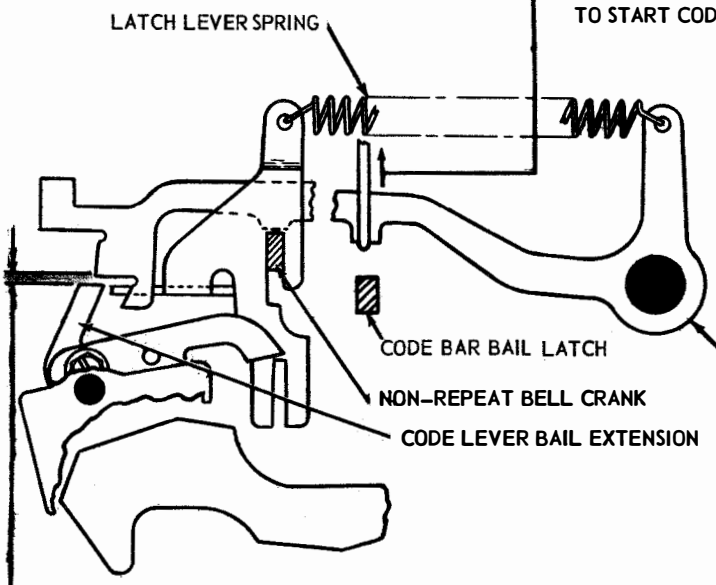


FIGURE 4-12 KEYBOARD, CODE BAR BAIL, FRONT VIEW

CODE LEVER BAIL LATCH LEVER SPRING

REQUIREMENT

SIGNAL GENERATOR CLUTCH DISENGAGED CODE BAR BAIL LATCH TRIPPED. CODE LEVER BAIL EXTENSION HELD AWAY FROM LATCHING SURFACE OF CODE LEVER BAIL LATCH LEVER.
MIN. 3 OZS.
MAX. 5 OZS.
TO START CODE LEVER BAIL LATCH LEVER MOVING.



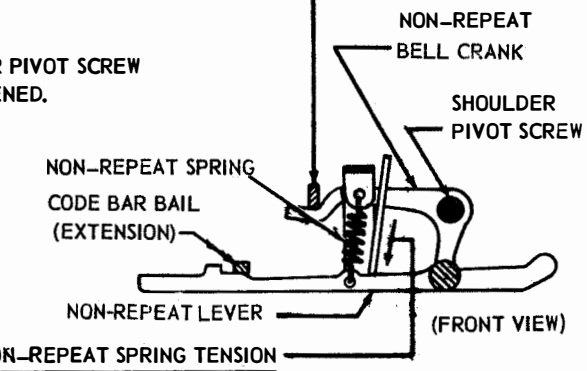
NON-REPEAT LEVER

REQUIREMENT

ANY KEYLEVER DEPRESSED, SIGNAL GENERATOR SHAFT ROTATED UNTIL CLUTCH IS DISENGAGED. CLEARANCE BETWEEN CODE LEVER BAIL EXTENSION AND CODE LEVER BAIL LATCH LEVER
MIN. 0.020 INCH
MAX. 0.030 INCH
LET UP ON KEYLEVER UNTIL SURFACES TO BE MEASURED ARE IN LINE.

TO ADJUST

POSITION NON-REPEAT BELL CRANK SHOULDER PIVOT SCREW IN ITS ELONGATED HOLE WITH LOCK NUT LOOSENED.

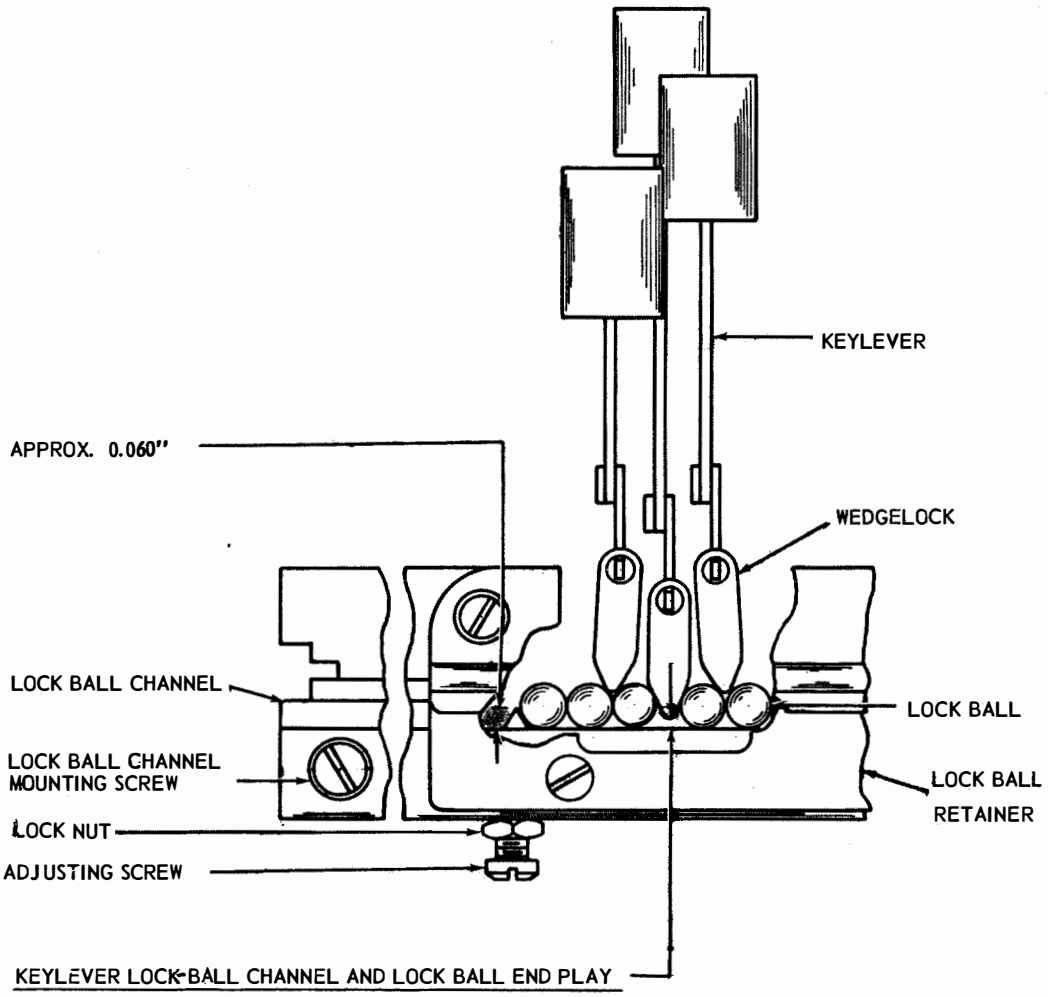


NON-REPEAT SPRING TENSION

REQUIREMENT

GENERATOR CLUTCH DISENGAGED.
ANY KEYLEVER DEPRESSED.
MIN. 1/2 OZ.
MAX. 1 1/2 OZS.
TO START NON-REPEAT LEVER MOVING DOWNWARD.

FIGURE 4-13 KEYBOARD, NON-REPEAT MECHANISM



KEYLEVER LOCK-BALL CHANNEL AND LOCK BALL END PLAY

REQUIREMENT

GENERATOR SHAFT ROTATING, CLUTCH SHOULD TRIP CONSISTENTLY WHEN TWO KEYLEVERS ARE DEPRESSED ALTERNATELY. CLUTCH SHOULD NOT TRIP WHEN TWO KEYLEVERS ARE DEPRESSED SIMULTANEOUSLY. WHEN EITHER Q OR P KEYLEVER IS FULLY DEPRESSED, CLEARANCE SHOULD BE

MIN. SOME CLEARANCE

MAX. 0.015 INCH

BETWEEN TIP OF WEDGELOCK AND BOTTOM OF CHANNEL.

TO ADJUST

POSITION CHANNEL WITH MOUNTING SCREWS LOOSENED. POSITION LOCK BALL ADJUSTING SCREW APPROXIMATELY 0.060 INCH ABOVE BOTTOM OF BALL CHANNEL.

FIGURE 4-14 KEYBOARD, KEYLEVER LOCKING MECHANISM

CODE LEVER BAIL LATCH LEVER ECCENTRIC

(1) REQUIREMENT

KEYLEVER WITH SHORTEST DOWNWARD STROKE FULLY DEPRESSED. CLEARANCE BETWEEN FRONT VERTICAL SURFACE OF THE CODE LEVER BAIL EXTENSION AND THE STOP ON THE REAR END OF THE CODE LEVER BAIL LATCH LEVER.

MIN. 0.025 INCH
MAX. 0.040 INCH

(2) REQUIREMENT

GENERATOR CLUTCH DISENGAGED. CLEARANCE BETWEEN CODE LEVER BAIL LATCH LEVER AND THE CODE BAR BAIL LATCH

MIN. 0.005 INCH
MAX. 0.035 INCH

TO ADJUST

ROTATE THE CODE LEVER BAIL LATCH LEVER ECCENTRIC.

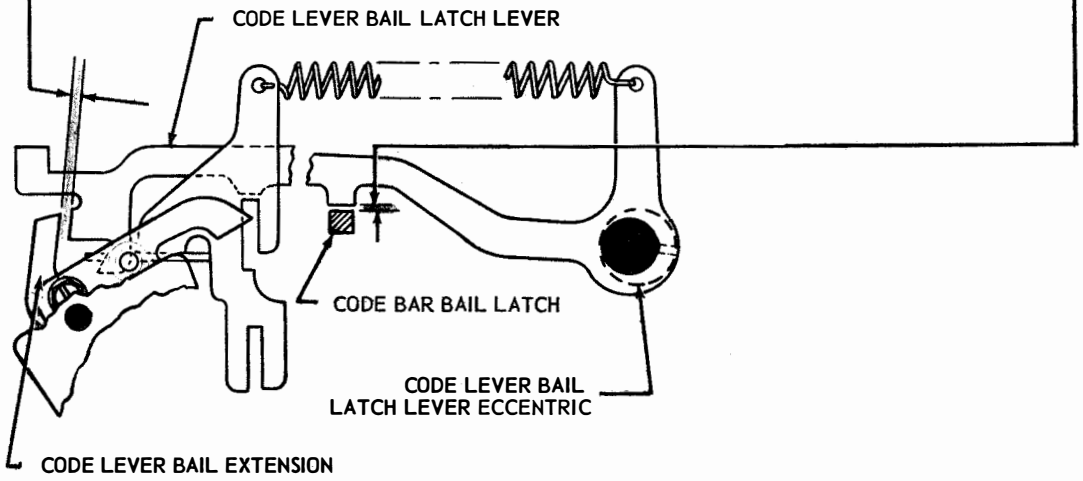


FIGURE 4-15 KEYBOARD CODE LEVER BAIL LATCH MECHANISM, LEFT SIDE VIEW

CODE LEVER BAIL SPRING TENSION

REQUIREMENT

GENERATOR CLUTCH DISENGAGED. NON-REPEAT LEVER HELD AWAY.

MIN. 1-3/4 OZS.
MAX. 3 OZS.
TO START THE BAIL MOVING.

CODE BAR GUIDES

REQUIREMENT

CLEARANCE BETWEEN CODE BARS AND CODE BAR GUIDES

MIN. SOME CLEARANCE
MAX. 0.010 INCH

TO ADJUST

POSITION THE TWO CODE BAR GUIDES WITH THEIR MOUNTING SCREWS LOOSENED.

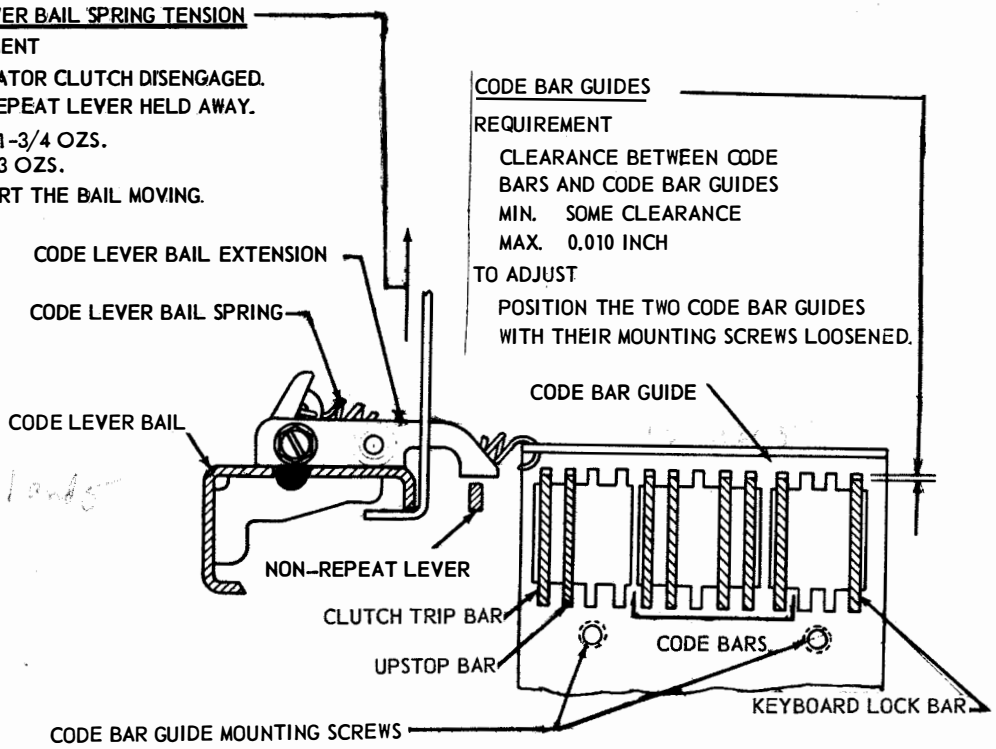


FIGURE 4-16 KEYBOARD, CODE BAR MECHANISM, LEFT SIDE VIEW

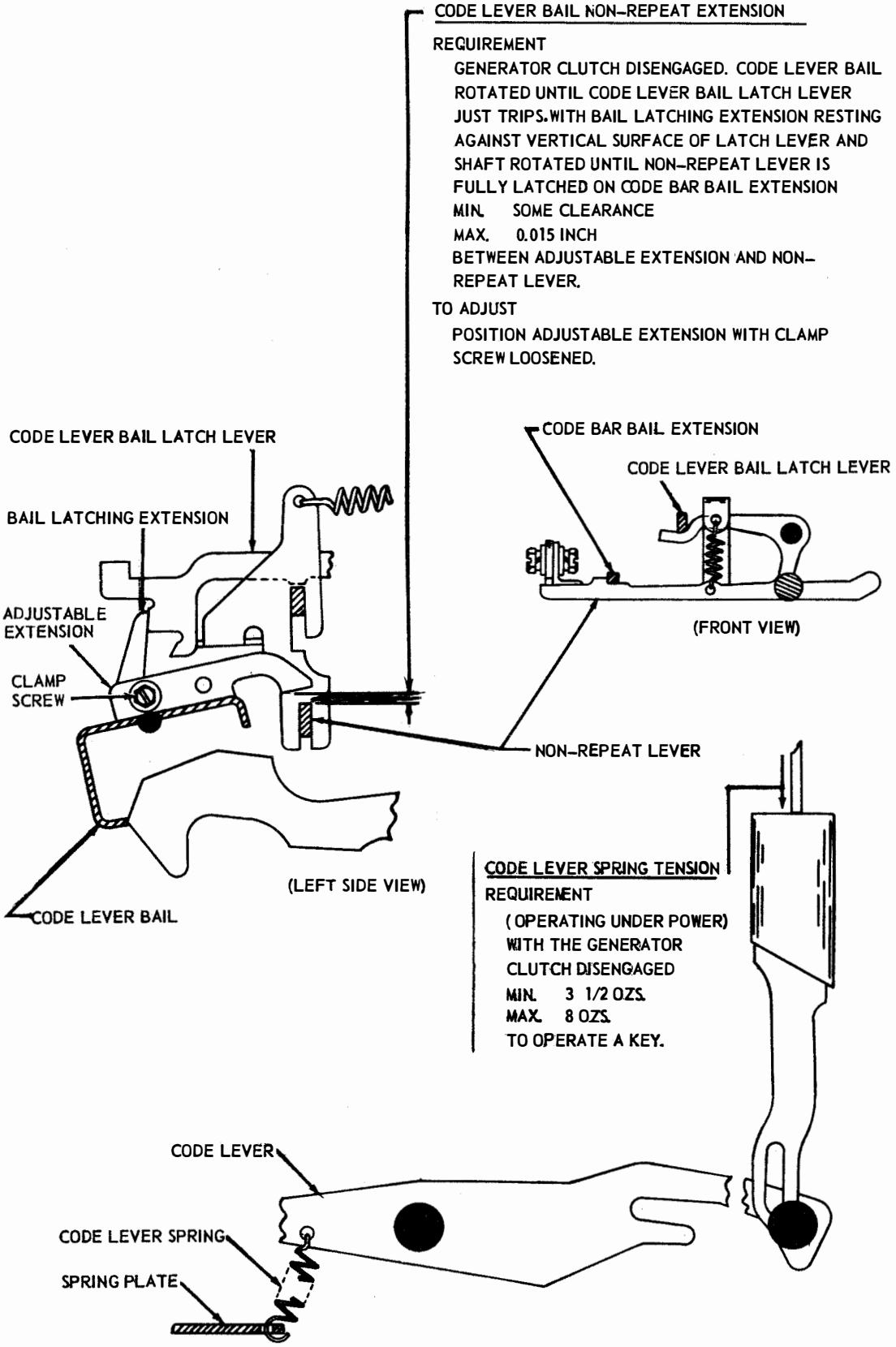


FIGURE 4-17 KEYBOARD, NON-REPEAT MECHANISM

LOCK BAR SPRING TENSION

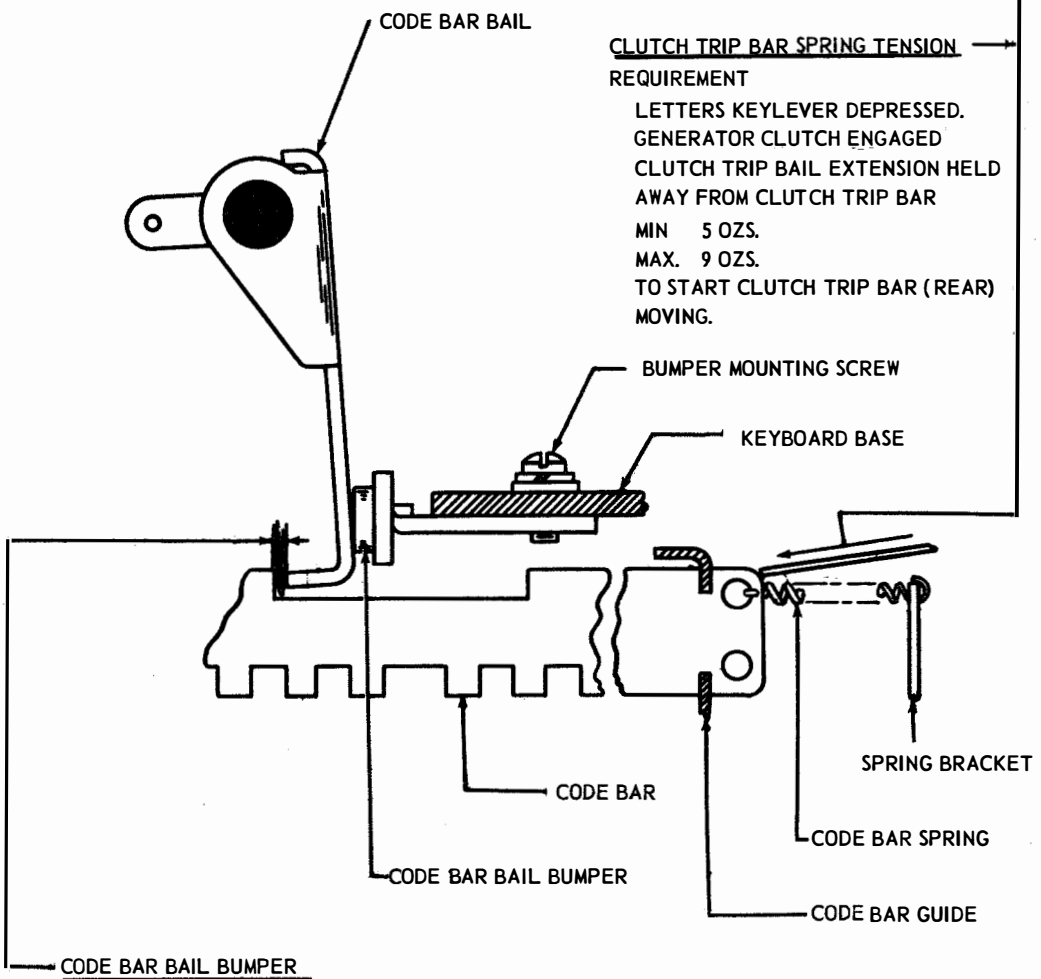
REQUIREMENT

GENERATOR CLUTCH DISENGAGED.
KEYBOARD LOCK KEY HELD DEPRESSED.
MIN. 5 OZS.
MAX. 9 OZS.
TO START LOCK BAR MOVING.

CODE BAR SPRING TENSION

REQUIREMENT

LETTERS KEYLEVER DEPRESSED.
GENERATOR CLUTCH ENGAGED.
MIN. 3 OZS.
MAX. 4 OZS.
TO START A CODE BAR MOVING.



CLUTCH TRIP BAR SPRING TENSION

REQUIREMENT

LETTERS KEYLEVER DEPRESSED.
GENERATOR CLUTCH ENGAGED
CLUTCH TRIP BAIL EXTENSION HELD AWAY FROM CLUTCH TRIP BAR
MIN 5 OZS.
MAX. 9 OZS.
TO START CLUTCH TRIP BAR (REAR) MOVING.

CODE BAR BAIL BUMPER

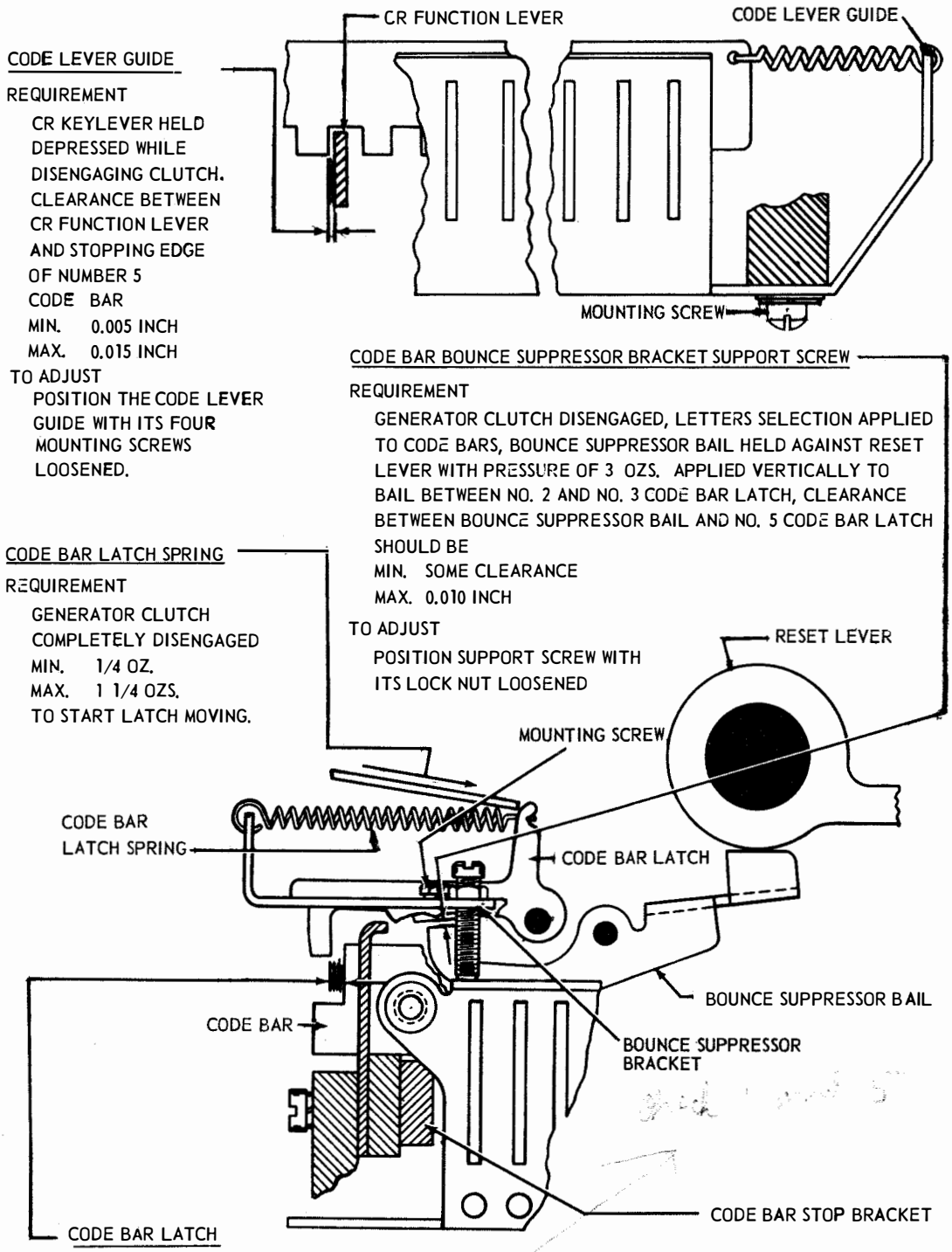
REQUIREMENT

LETTERS SELECTION APPLIED TO CODE BAR.
CLEARANCE BETWEEN SHOULDER ON CLOSEST CODE BAR AND ENGAGING FACE OF CODE BAR BAIL.
MIN. 0.010 INCH
MAX. 0.020 INCH

TO ADJUST

POSITION BUMPER WITH MOUNTING SCREWS.
LOOSENED.

FIGURE 4-18 KEYBOARD, CODE BAR MECHANISM



CODE LEVER GUIDE

REQUIREMENT

CR KEYLEVER HELD DEPRESSED WHILE DISENGAGING CLUTCH. CLEARANCE BETWEEN CR FUNCTION LEVER AND STOPPING EDGE OF NUMBER 5 CODE BAR

MIN. 0.005 INCH

MAX. 0.015 INCH

TO ADJUST

POSITION THE CODE LEVER GUIDE WITH ITS FOUR MOUNTING SCREWS LOOSENED.

CODE BAR BOUNCE SUPPRESSOR BRACKET SUPPORT SCREW

REQUIREMENT

GENERATOR CLUTCH DISENGAGED, LETTERS SELECTION APPLIED TO CODE BARS, BOUNCE SUPPRESSOR BAIL HELD AGAINST RESET LEVER WITH PRESSURE OF 3 OZS. APPLIED VERTICALLY TO BAIL BETWEEN NO. 2 AND NO. 3 CODE BAR LATCH, CLEARANCE BETWEEN BOUNCE SUPPRESSOR BAIL AND NO. 5 CODE BAR LATCH SHOULD BE

MIN. SOME CLEARANCE

MAX. 0.010 INCH

TO ADJUST

POSITION SUPPORT SCREW WITH ITS LOCK NUT LOOSENED

CODE BAR LATCH SPRING

REQUIREMENT

GENERATOR CLUTCH COMPLETELY DISENGAGED

MIN. 1/4 OZ.

MAX. 1 1/4 OZS.

TO START LATCH MOVING.

CODE BAR LATCH

(1) REQUIREMENT

LETTERS SELECTION APPLIED TO THE CODE BARS AND THE CODE BARS AGAINST THEIR STOP. CLEARANCE BETWEEN CODE BAR AND LATCH

MIN. 0.010 INCH

MAX. 0.025 INCH

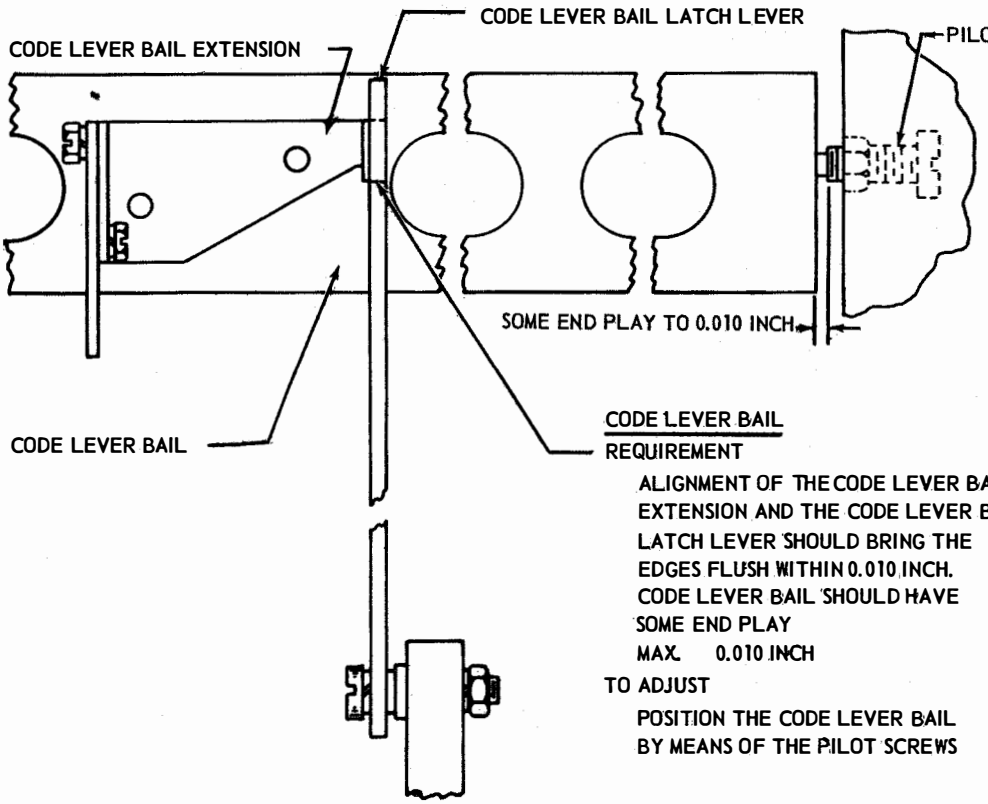
(2) REQUIREMENT

BOUNCE SUPPRESSOR BAIL SHOULD RIDE CENTRALLY ON RESET LEVER.

TO ADJUST

POSITION BOUNCE SUPPRESSOR BRACKET WITH MOUNTING SCREWS LOOSENED

FIGURE 4-19 KEYBOARD, CODE BAR MECHANISM, FRONT VIEW



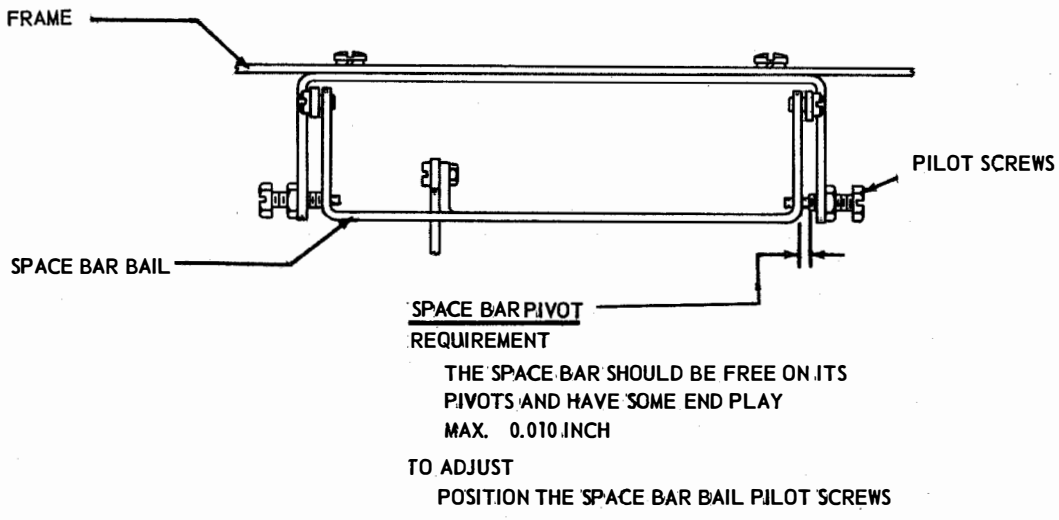


FIGURE 4-20 KEYBOARD, CODE LEVER BAIL , SPACE BAR

(A) INTERMEDIATE GEAR BRACKET

(2) REQUIREMENT

THERE SHOULD BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE INTERMEDIATE DRIVING GEAR AND THE INTERMEDIATE DRIVEN GEAR AT THE POINT WHERE THE BACKLASH IS THE LEAST.

TO ADJUST

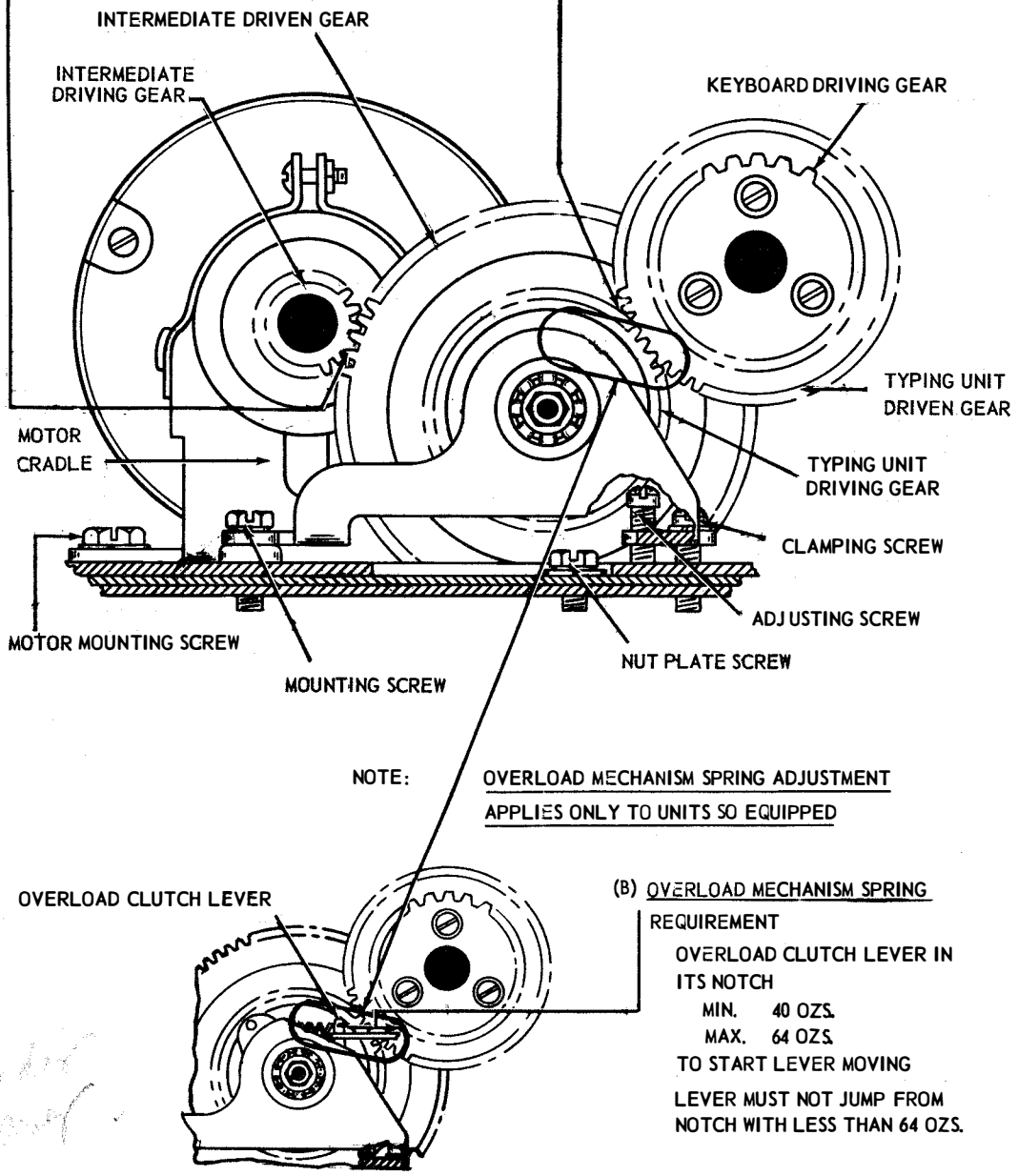
RAISE OR LOWER THE FRONT END OF THE INTERMEDIATE GEAR BRACKET BY MEANS OF THE FILISTER HEAD ADJUSTING AND CLAMPING SCREWS LOCATED AT THE FRONT END OF THE BRACKET. REFINE REQUIREMENTS IF NECESSARY

(1) REQUIREMENT

THERE SHOULD BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE TYPING UNIT DRIVEN GEAR AND THE TYPING UNIT DRIVING GEAR AT THE POINT WHERE BACKLASH IS THE LEAST

TO ADJUST

POSITION THE COMPLETE INTERMEDIATE GEAR MECHANISM BRACKET BY UTILIZING THE ADJUSTING SLOTS WITH THE THREE HEXAGON HEAD SCREWS LOOSENED. ALIGN THE GEARS AT THIS TIME



(B) OVERLOAD MECHANISM SPRING

REQUIREMENT

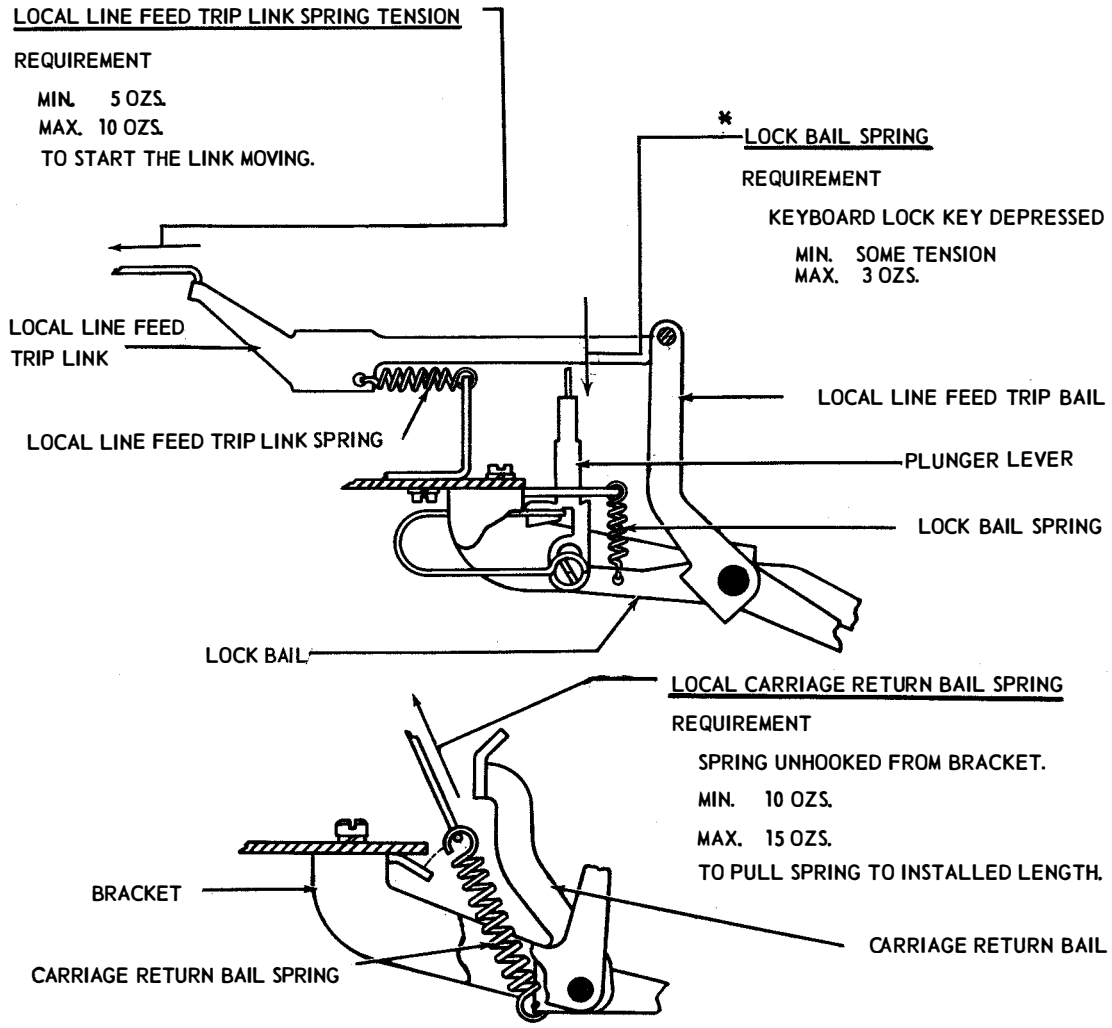
OVERLOAD CLUTCH LEVER IN ITS NOTCH

MIN. 40 OZS.
MAX. 64 OZS.

TO START LEVER MOVING

LEVER MUST NOT JUMP FROM NOTCH WITH LESS THAN 64 OZS.

FIGURE 4-21 KEYBOARD OR BASE, MOTOR, AND TYPING UNIT GEARING, LEFT SIDE VIEW



*APPLIES TO KEYBOARD ONLY

FIGURE 4-22 KEYBOARD LOCK, LOCAL LINE FEED, AND CARRIAGE RETURN MECHANISM, LEFT SIDE VIEW.

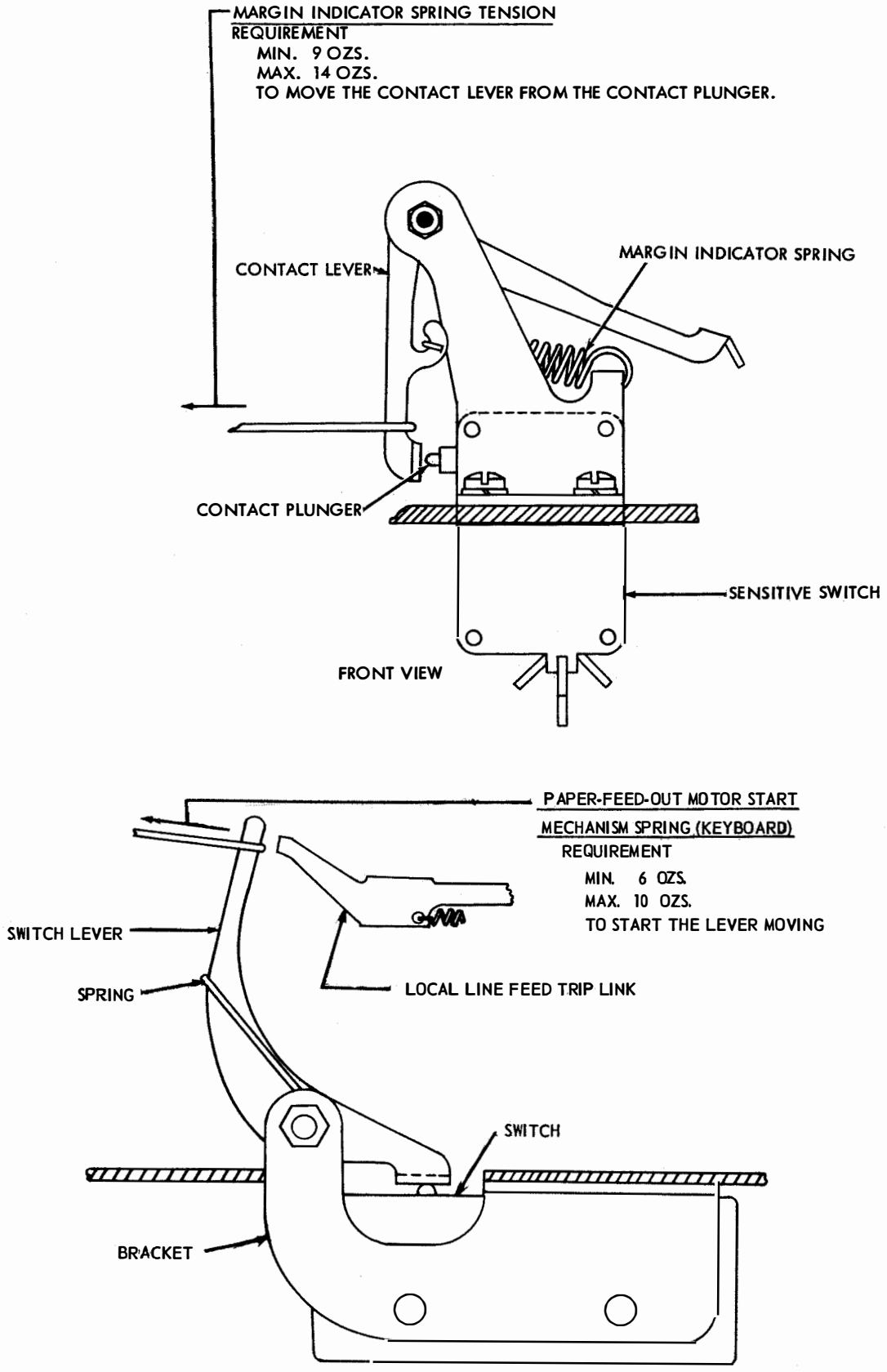


FIGURE 4-23 KEYBOARD, MARGIN INDICATING AND PAPER FEED-OUT MECHANISMS

2. TYPING UNIT

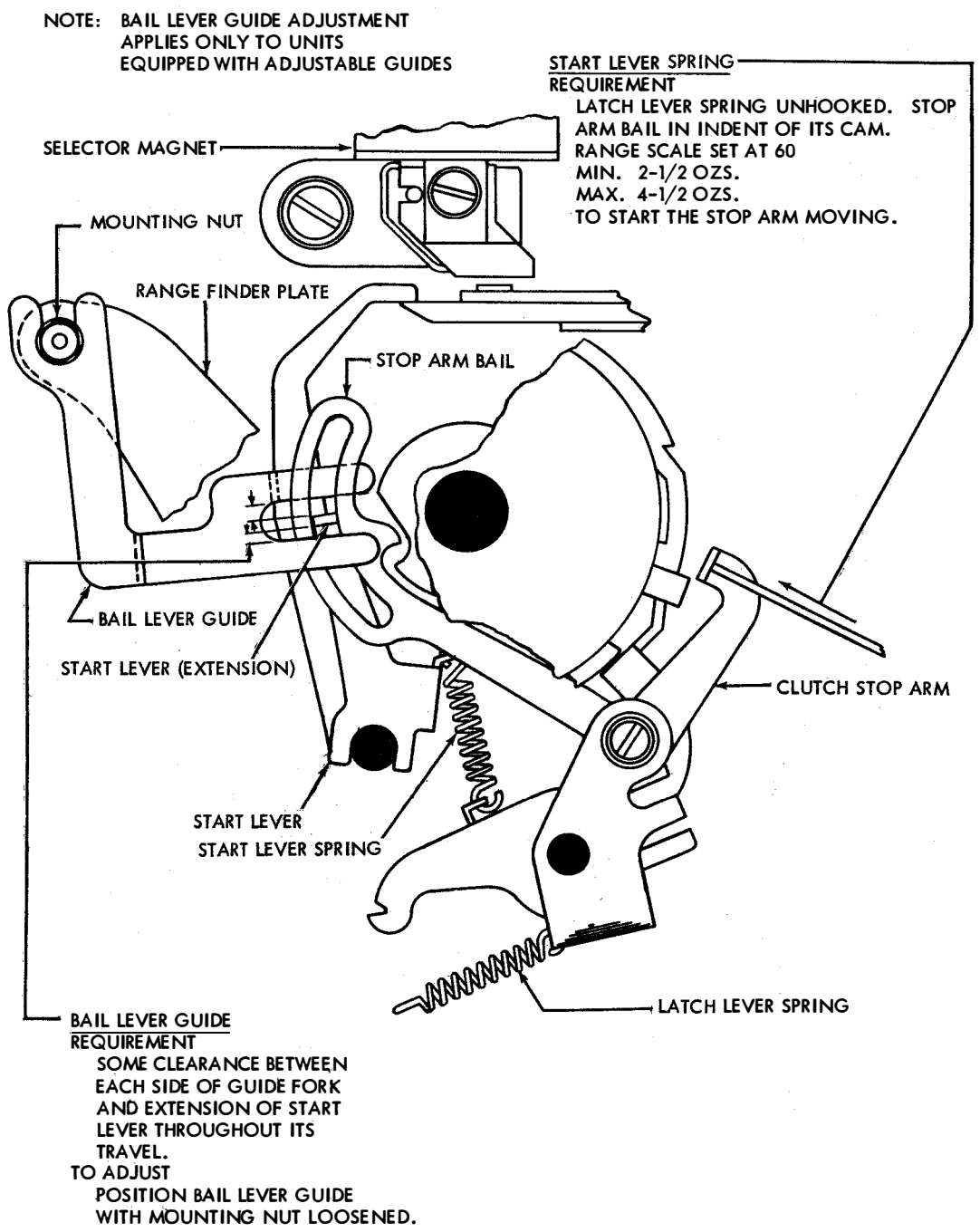


FIGURE 4-24 TYPING UNIT, SELECTOR CLUTCH MECHANISM, RIGHT SIDE VIEW

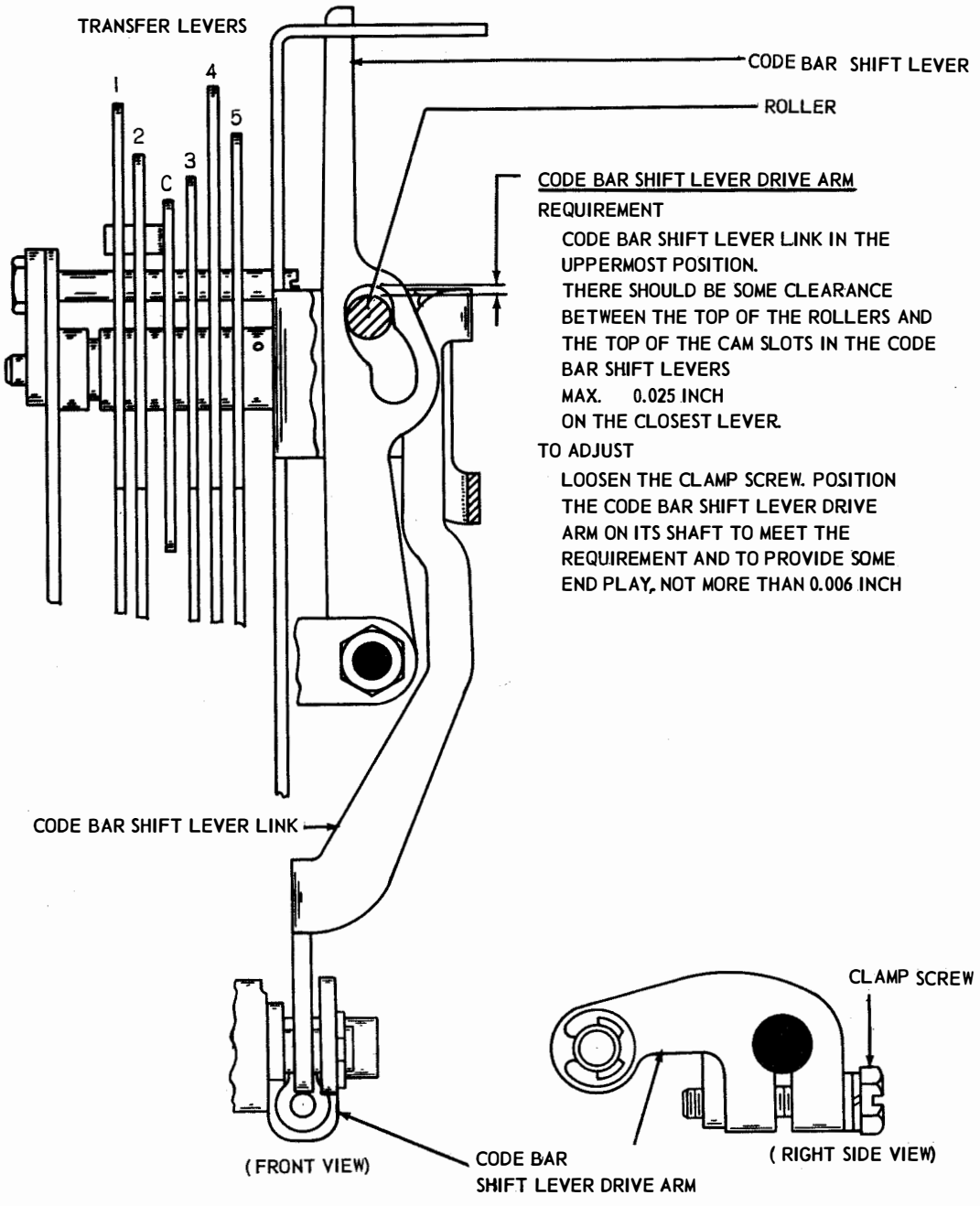
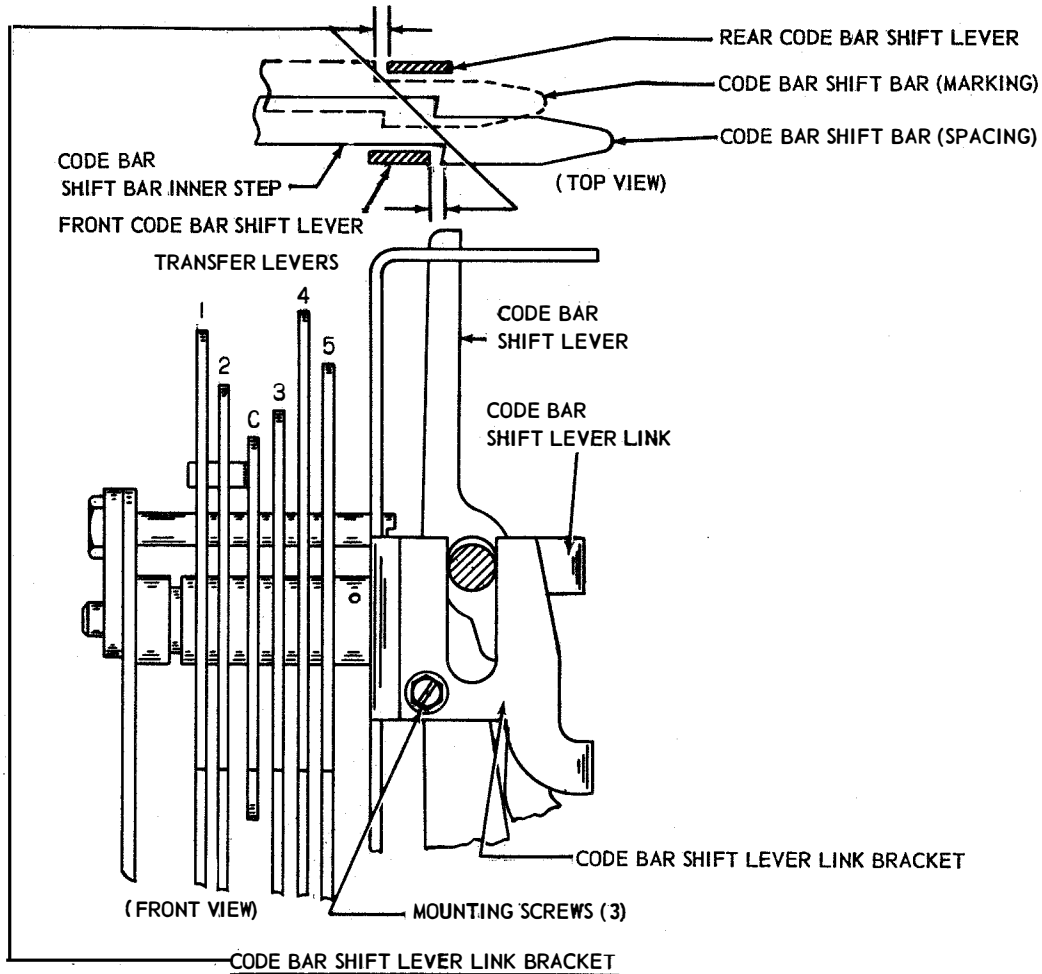


FIGURE 4-25 TYPING UNIT, CODE BAR SHIFT MECHANISM



CODE BAR SHIFT LEVER LINK BRACKET

REQUIREMENT

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

TO CHECK (FRONT)

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

MIN. 0.002 INCH
MAX. 0.025 INCH

TO CHECK (REAR)

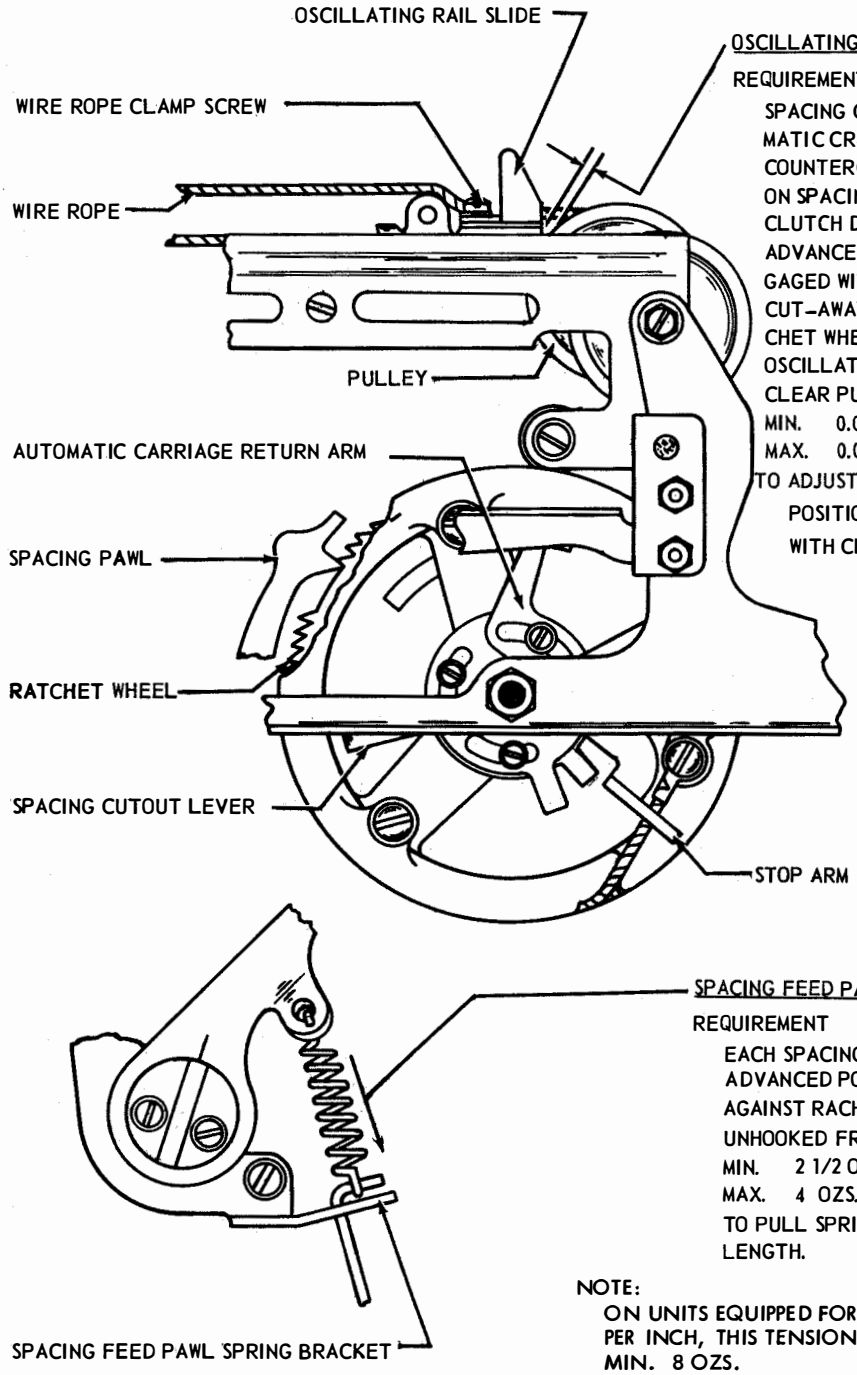
SELECT LETTERS COMBINATION. CHECK CLEARANCE BETWEEN REAR CODE BAR SHIFT LEVER AND SHOULDER OF CODE BAR SHIFT BAR IN SAME WAY.

MIN. 0.002 INCH
MAX. 0.025 INCH

TO ADJUST

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

FIGURE 4-26 TYPING UNIT, CODE BAR SHIFT MECHANISM



OSCILLATING RAIL SLIDE POSITION

REQUIREMENT

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

MIN. 0.025 INCH
MAX. 0.050 INCH

TO ADJUST

POSITION SLIDE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED.

SPACING FEED PAWL SPRING TENSION

REQUIREMENT

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

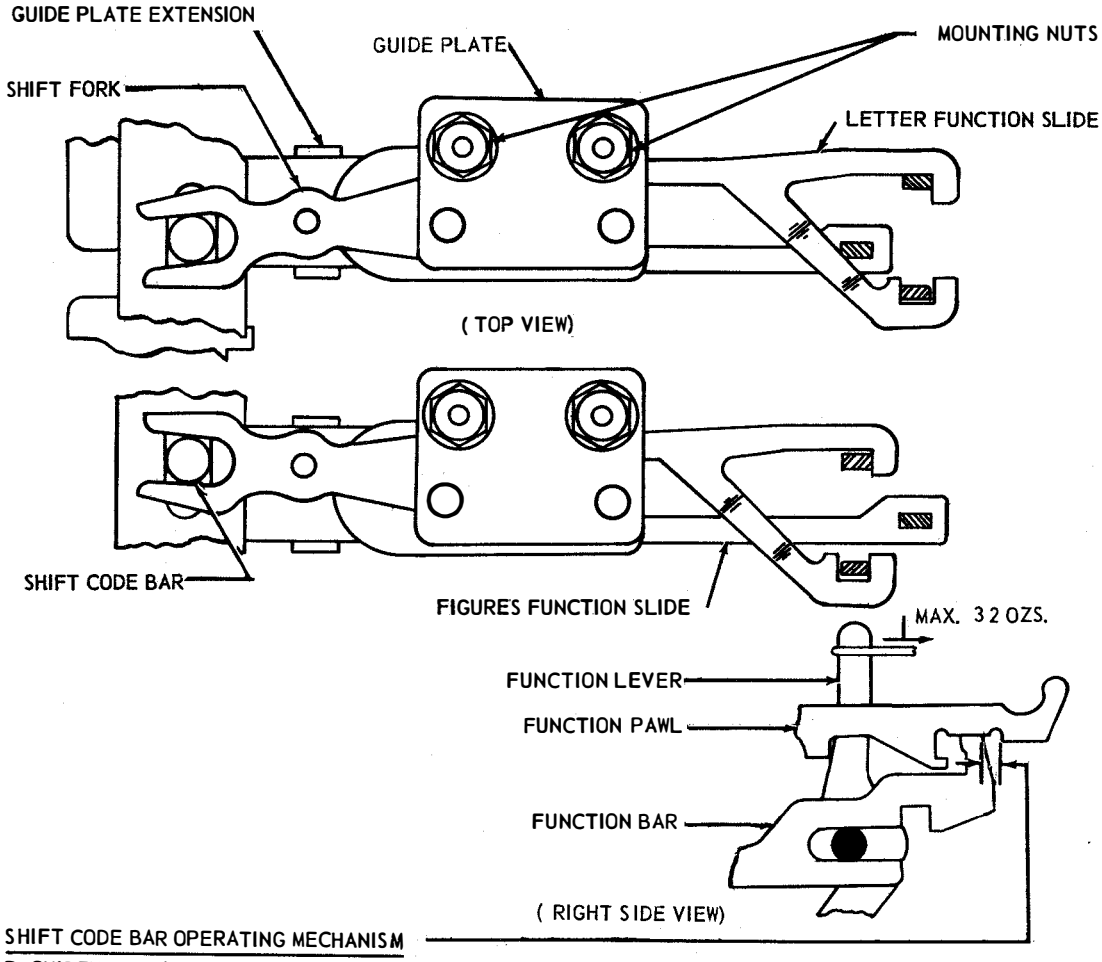
MIN. 2 1/2 OZS.
MAX. 4 OZS.

TO PULL SPRINGS TO INSTALLED LENGTH.

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

FIGURE 4-27 TYPING UNIT, SPACING MECHANISM

NOTE: 1. THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH NON-ADJUSTABLE GUIDE PLATES
2. FOR UNITS WITH ADJUSTABLE GUIDE PLATES AND ONE STOP FUNCTION CLUTCHES SEE FIG. 1-43
3. FOR UNITS WITH ADJUSTABLE GUIDE PLATES AND TWO STOP FUNCTION CLUTCHES SEE FIG. 1-43 CHANGE FIRST SENTENCE IN REQUIREMENT TO: "DISENGAGE FUNCTION CLUTCH AT STOP GIVING LEAST CLEARANCE." THEN PROCEED AS SPECIFIED.



SHIFT CODE BAR OPERATING MECHANISM

REQUIREMENT: (FOR TWO STOP FUNCTION CLUTCH)

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

MIN. 0.002 INCH

MAX. 0.015 INCH

WHEN PLAY IN PAWL IS TAKEN FOR MAXIMUM CLEARANCE.

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

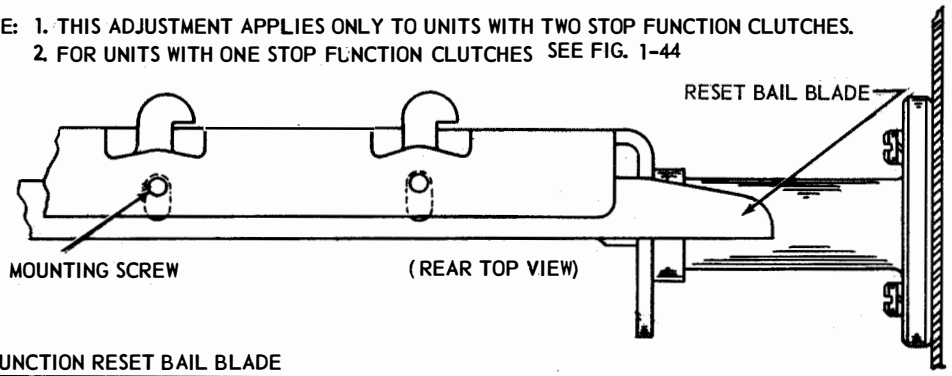
TO ADJUST

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

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

FIGURE 4-28 TYPING UNIT, SHIFT MECHANISM

NOTE: 1. THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH TWO STOP FUNCTION CLUTCHES.
2. FOR UNITS WITH ONE STOP FUNCTION CLUTCHES SEE FIG. 1-44



FUNCTION RESET BAIL BLADE

(1) REQUIREMENT

FUNCTION CLUTCH DISENGAGED AT STOP POSITION GIVING LEAST CLEARANCE. TYPE BOX CLUTCH DISENGAGED. ALL FUNCTION PAWLS UNLATCHED FROM THEIR FUNCTION BARS. FUNCTION BAR HELD IN MAXIMUM REARWARD POSITION. CLEARANCE BETWEEN FUNCTION BAR AND RESET BAIL BLADE
MIN. 0.018 INCH MAX. 0.035 INCH

TO CHECK

MEASURE CLEARANCE AT BARS LOCATED IN STUNT BOX SLOTS. 1, 4, 11, 18, 23, 33, 38, AND 41. IF THERE IS NO BAR IN A DESIGNATED SLOT, USE NEAREST BAR. IF THERE IS A BAR ON EACH SIDE OF A DESIGNATED VACANT SLOT, USE BAR IN HIGHEST NUMBERED SLOT. (NOTE: FACING REAR OF UNIT, SLOTS ARE NUMBERED FROM LEFT TO RIGHT)

TO ADJUST

POSITION BLADE ON RESET BAIL WITH BLADE MOUNTING SCREWS FRICTION TIGHT.

(2) REQUIREMENT

TYPE BOX CLUTCH ROTATED 1/2 REVOLUTION, FUNCTION LEVER HELD IN REARMOST POSITION WITH 2 LBS. MAXIMUM TENSION. LATCH ASSOCIATED PAWL ONLY ONE AT A TIME. WITH 32 OZS. TENSION APPLIED TO FUNCTION PAWL, IT SHOULD OVERTRAVEL ITS BAR
MIN. 0.002 INCH

TO ADJUST
REFINE REQUIREMENT (1).

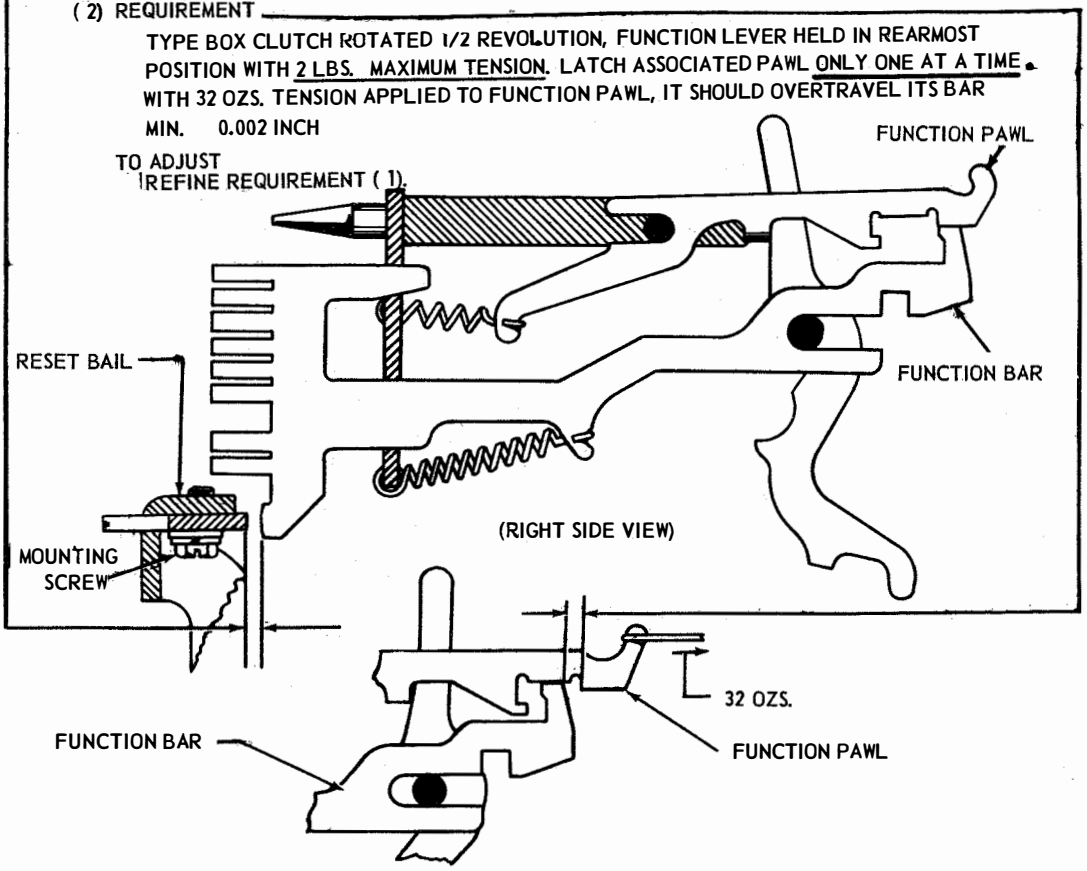


FIGURE 4-29 TYPING UNIT, FUCTION BAR RESET MECHANISM

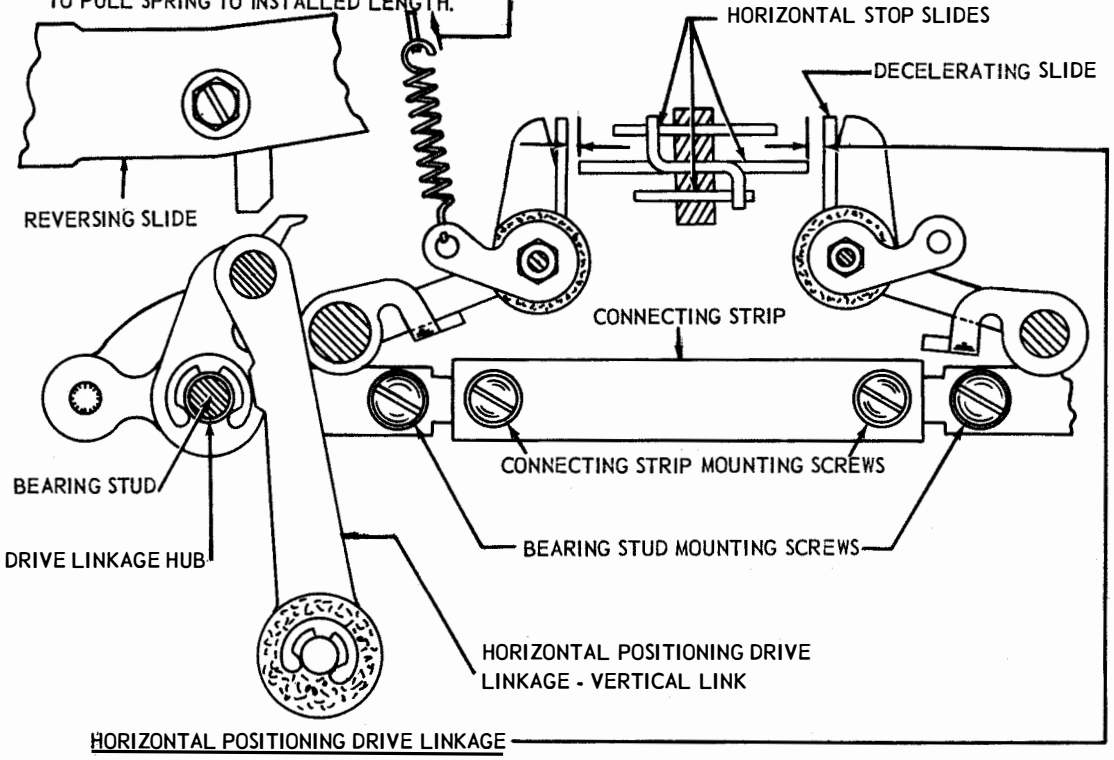
NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS EQUIPPED WITH TENSION SPRINGS

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

HORIZONTAL POSITIONING DRIVE LINKAGE SPRING TENSION

REQUIREMENT

SPRING UNHOOKED FROM ITS POST.
LINKAGE IN ITS UNBUCKLED POSITION.
MIN. 14 OZS.
MAX. 18 OZS.
TO PULL SPRING TO INSTALLED LENGTH.



HORIZONTAL POSITIONING DRIVE LINKAGE

REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. CODE BARS 4 AND 5 TO SPACING (RIGHT).
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES ON SIDE WHERE KNEE LINK IS STRAIGHT, SHOULD BE EQUAL (WITHIN 0.005 INCH)
MIN. 0.020 INCH
MAX. 0.040 INCH

TO ADJUST

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

FIGURE 4-30 TYPING UNIT, HORIZONTAL POSITIONING DRIVE MECHANISM, FRONT VIEW

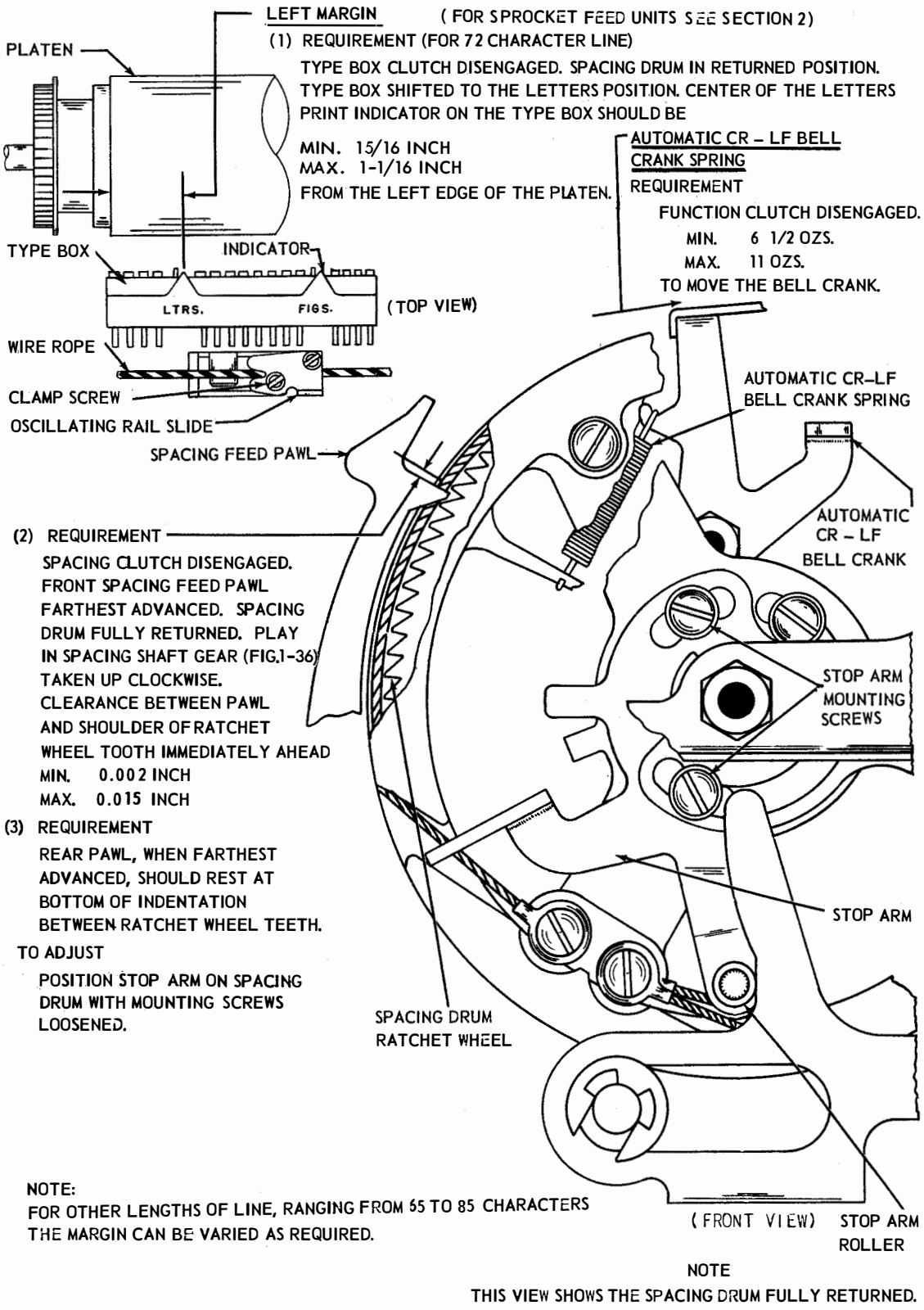


FIGURE 4-31 TYPING UNIT, CARRIAGE RETURN MECHANISM

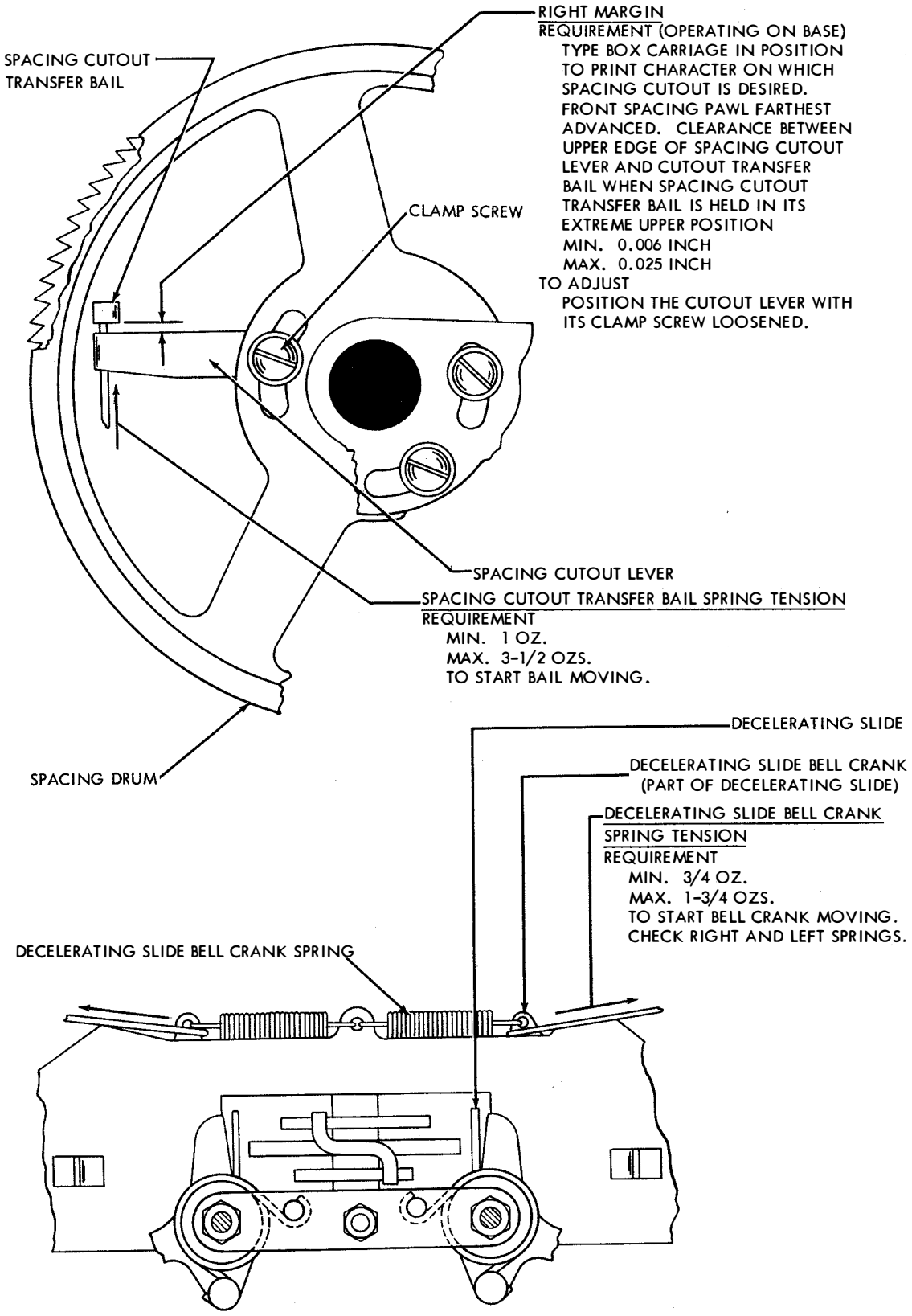


FIGURE 4-32 TYPING UNIT, RIGHT MARGIN AND DECELERATING SLIDE MECHANISM, FRONT VIEW

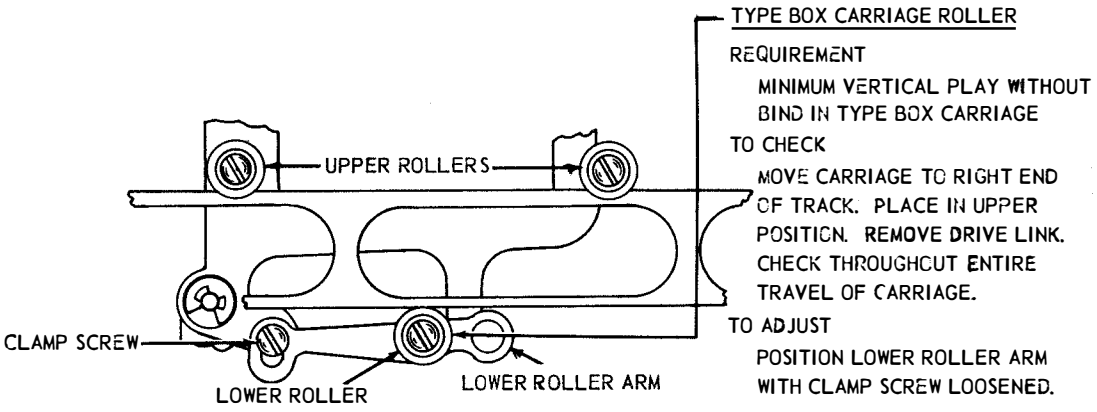


FIGURE 4-33 TYPING UNIT, PRINTING AND TYPE BOX CARRIAGE

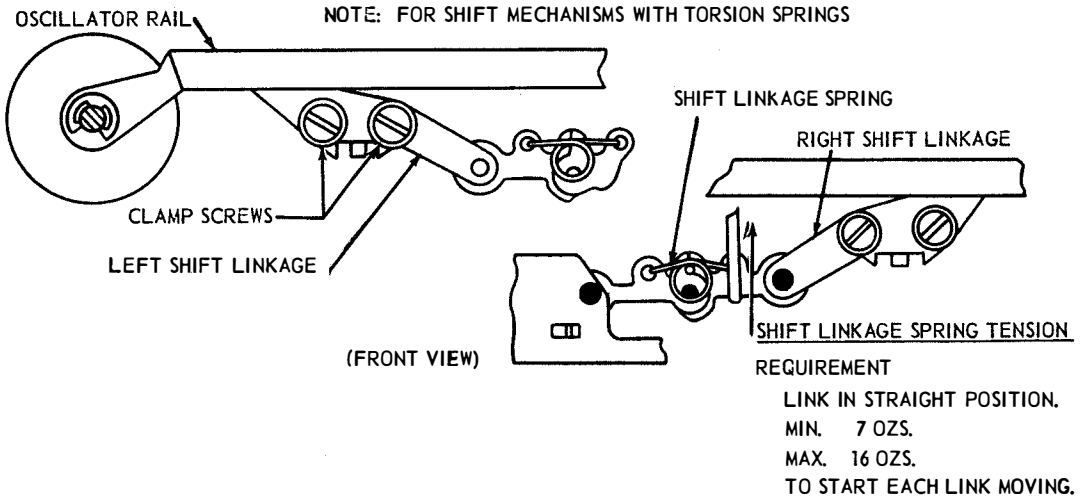


FIGURE 4-34 TYPING UNIT, SHIFT MECHANISM

(A) PRINTING HAMMER STOP BRACKET

(FOR THICK TYPE BOX WITH DUMMY PALLETS)

REQUIREMENT

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

FRICTION FEED	SPROCKET FEED
MIN. 0.008 INCH	SOME
MAX. 0.020 INCH	0.020 INCH

TO ADJUST

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

FOR SPROCKET FEED UNITS, SEE FIGURE 2-9)

(C)

TYPE PALLET SPRING TENSION

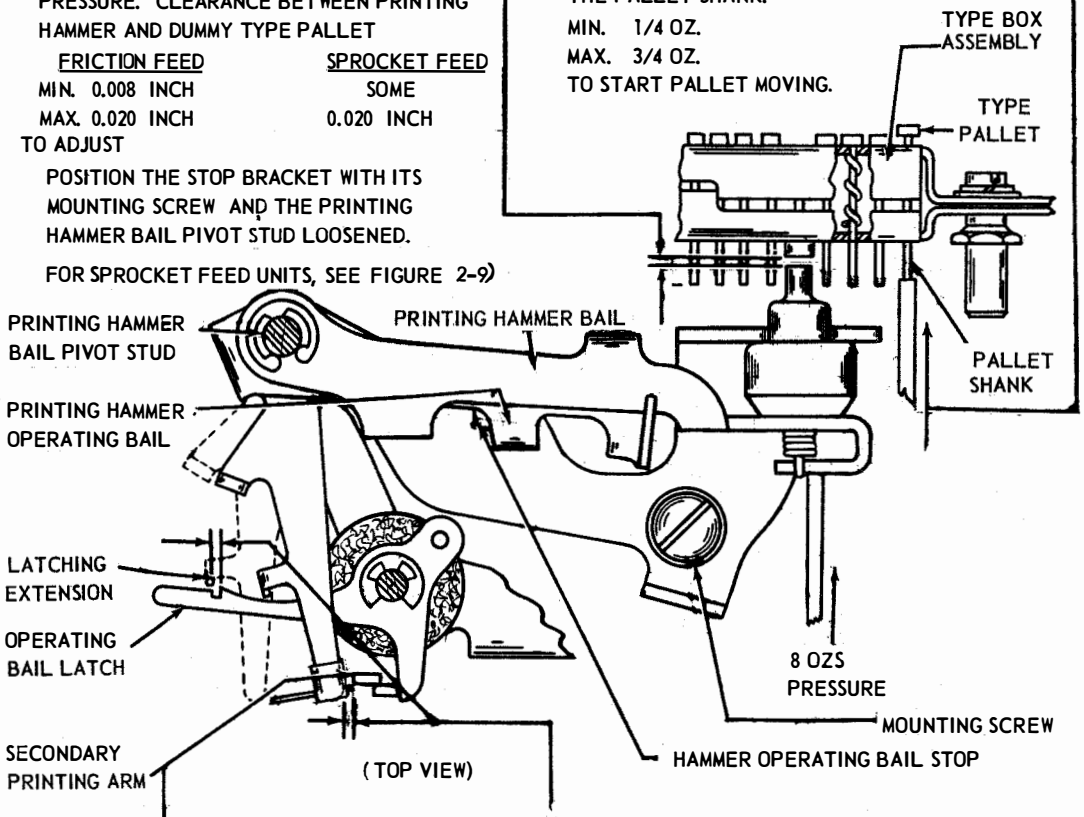
REQUIREMENT

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

MIN. 1/4 OZ.

MAX. 3/4 OZ.

TO START PALLET MOVING.



(B) PRINTING ARM

(1) REQUIREMENT

PRINTING TRACK IN MAXIMUM DOWNWARD POSITION.

PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP.

SOME CLEARANCE BETWEEN SECONDARY PRINTING ARM AND FORWARD EXTENSION OF HAMMER OPERATING BAIL.

MAX. 0.015 INCH

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

(2) REQUIREMENT

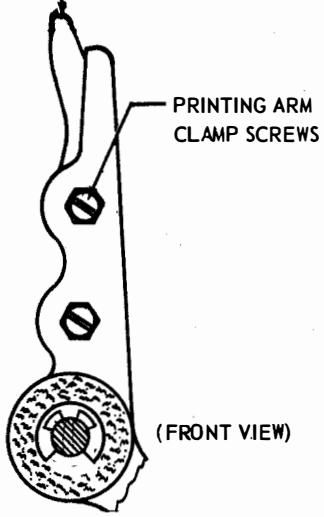
PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAILSHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY

MIN. 0.006 INCH

CHECK RIGHT AND LEFT POSITION

TO ADJUST

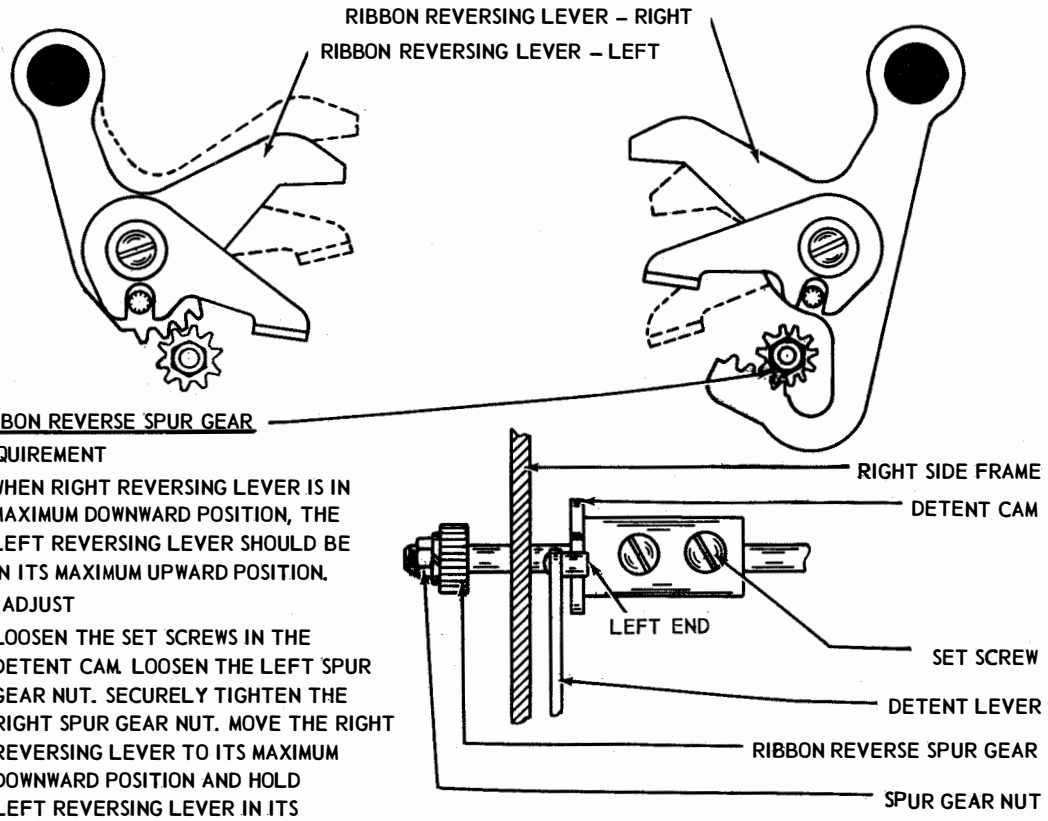
POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.



NOTE

THE PRINTING ARM ADJUSTMENT SHOULD ALWAYS BE MADE WITH THE PRINTING HAMMER OPERATING BAIL SPRING BRACKET (FIGURE 1-49) IN THE NO. 1 POSITION POSITIONS NO. 2 AND NO. 3 ARE TO BE USED ONLY FOR MAKING MULTIPLE COPIES.

FIGURE 4-35 TYPING UNIT, PRINTING MECHANISM



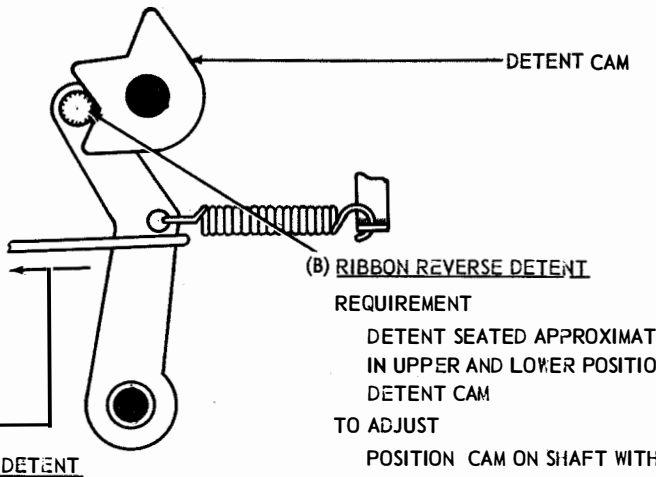
(A) RIBBON REVERSE SPUR GEAR

REQUIREMENT

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

TO ADJUST

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



(B) RIBBON REVERSE DETENT

REQUIREMENT

DETENT SEATED APPROXIMATELY EQUAL IN UPPER AND LOWER POSITIONS OF DETENT CAM

TO ADJUST

POSITION CAM ON SHAFT WITH SET SCREWS LOOSENED. LET LEFT END OF DETENT STUD BE APPROXIMATELY FLUSH WITH LEFT FACE OF CAM (PLAY IN DETENT TAKEN TO RIGHT OF PRINTER)

(C) RIBBON REVERSE DETENT LEVER SPRING TENSION

REQUIREMENT

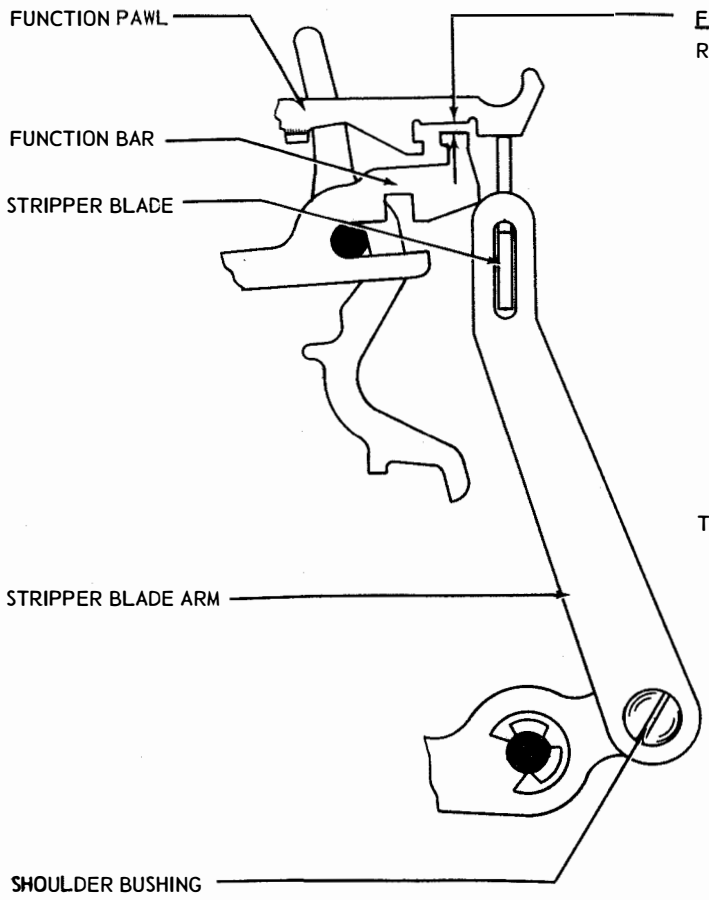
DETENT SEATED IN NOTCH OF CAM. RIGHT RIBBON REVERSING LEVER HELD DOWNWARD.

MIN. 6 1/2 OZS.

MAX. 9 OZS.

TO START THE DETENT LEVER MOVING.

FIGURE 4-36 TYPING UNIT, RIBBON REVERSE MECHANISM



FUNCTION STRIPPER BLADE ARMS

REQUIREMENT

TYPE BOX CLUTCH AND FUNCTION CLUTCH DISENGAGED. LEFT LINE FEED FUNCTION PAWL HELD IN ITS REAR POSITION AND RESTING ON THE UPPER EDGE OF THE STRIPPER BLADE. CLEARANCE BETWEEN UPPER EDGE OF FUNCTION BAR AND LOWER SURFACE OF NOTCHED SECTION OF FUNCTION PAWL.

MIN. 0.055 INCH
MAX. 0.065 INCH

THE LETTERS FUNCTION PAWL NEAR THE OPPOSITE END OF THE STRIPPER BLADE SHOULD HAVE THE SAME CLEARANCE.

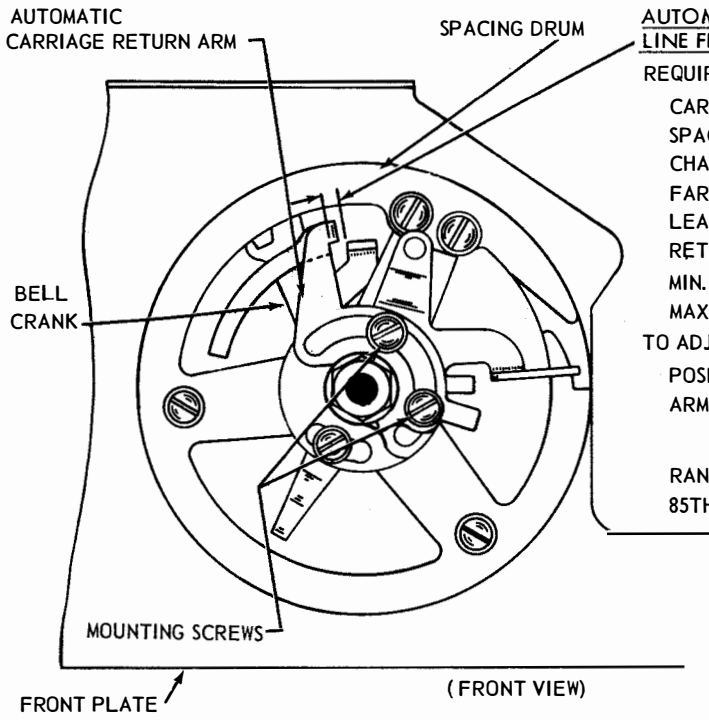
TO ADJUST

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

NOTE

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

FIGURE 4-37 TYPING UNIT, FUNCTION PAWL STRIPPER MECHANISM



AUTOMATIC CARRIAGE RETURN AND LINE FEED ARM

REQUIREMENT (OPERATING ON BASE)

CARRIAGE IN POSITION TO PRINT TWO SPACES BEFORE THE LAST DESIRED CHARACTERS, AND FRONT SPACING PAWL FARTHEST ADVANCED. CLEARANCE BETWEEN LEADING END OF AUTOMATIC CARRIAGE RETURN ARM AND BELL CRANK.

MIN. 0.040 INCH
MAX. 0.055 INCH

TO ADJUST

POSITION AUTOMATIC CARRIAGE RETURN ARM WITH MOUNTING SCREWS LOOSENED.

NOTE

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

NOTE

FOR UNITS EQUIPPED WITH UNIVERSAL SPACING DRUM, SEE FIGURE 142.

FIGURE 4-38 TYPING UNIT, HORIZONTAL MOTION STOP AND AUTOMATIC CARRIAGE RETURN MECHANISM

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

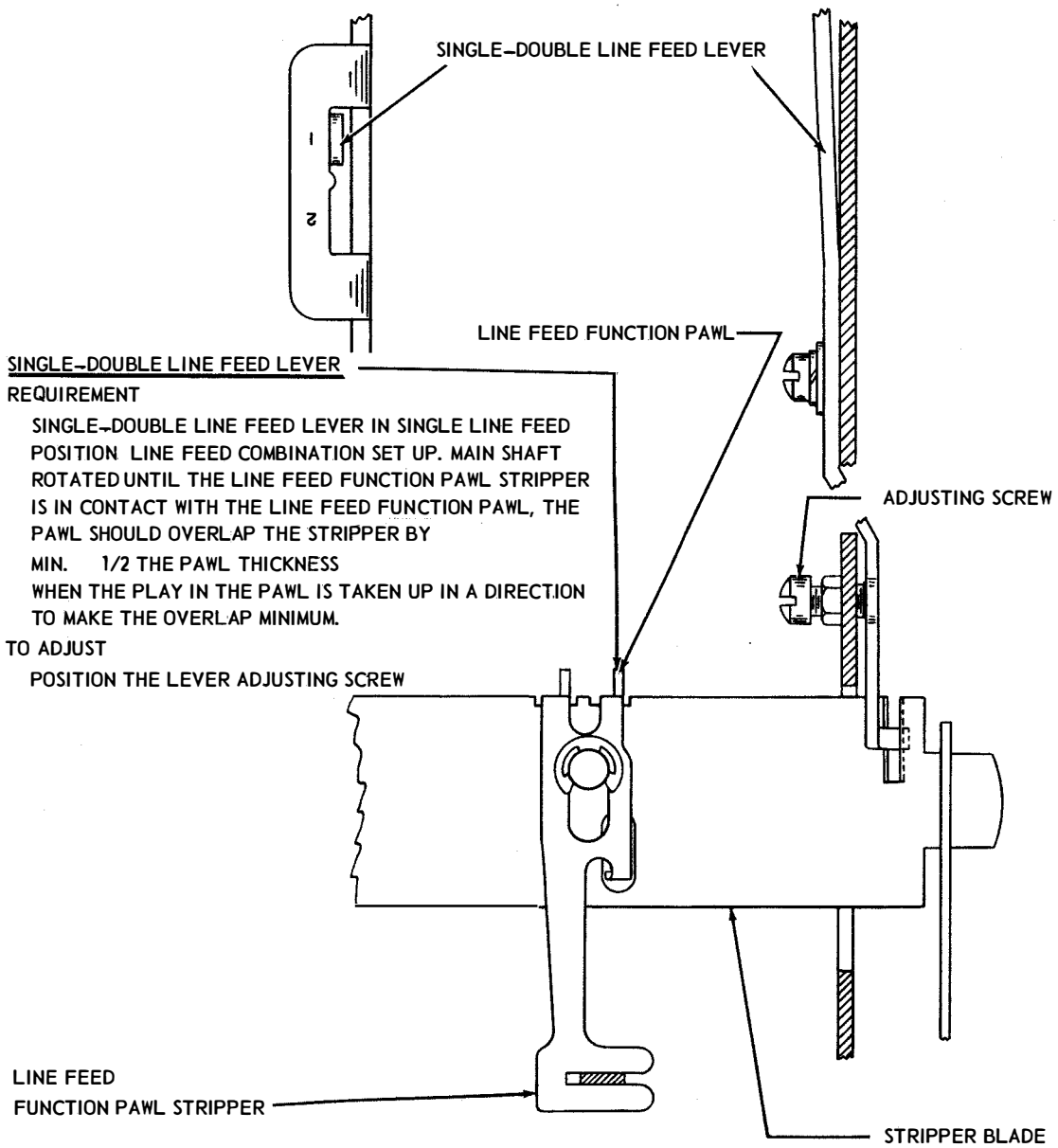


FIGURE 4-39 TYPING UNIT, SINGLE–DOUBLE LINE FEED MECHANISM

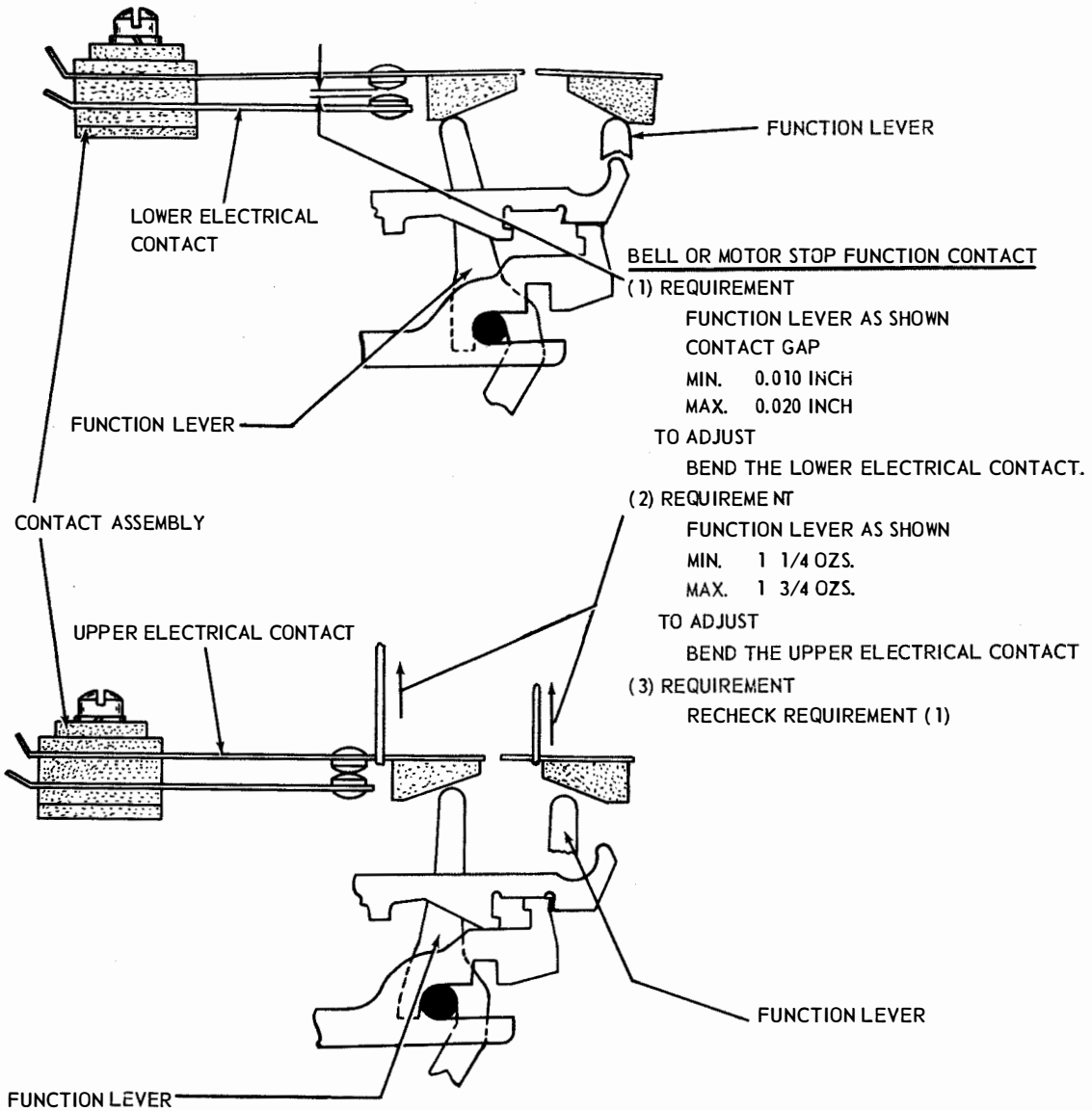
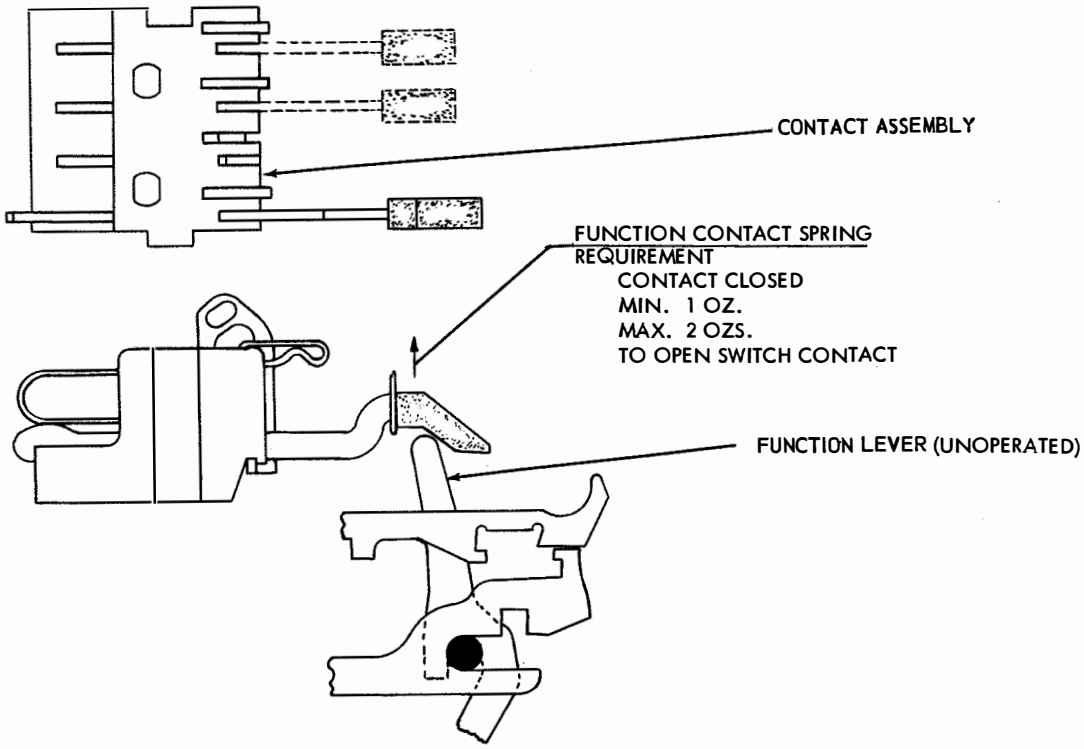


FIGURE 4-40 TYPING UNIT, FUNCTION CONTACT



CAUTION: CARE SHOULD BE EXERCISED IN SOLDERING TO CONTACT SPRINGS SINCE EXCESSIVE HEAT WILL ANNEAL THE SPRINGS. CONTACT SPRINGS ONCE SOLDERED SHOULD NOT BE USED AGAIN.

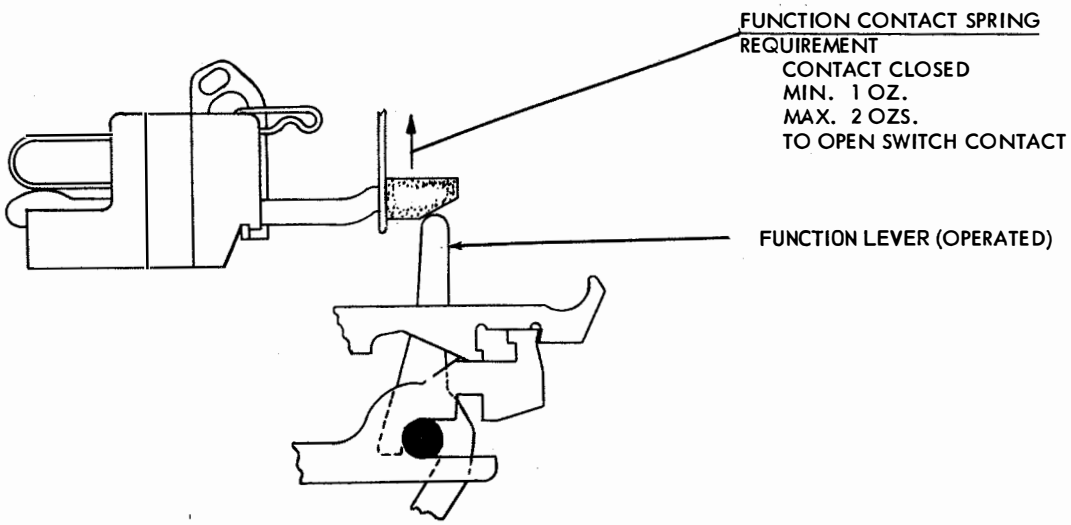
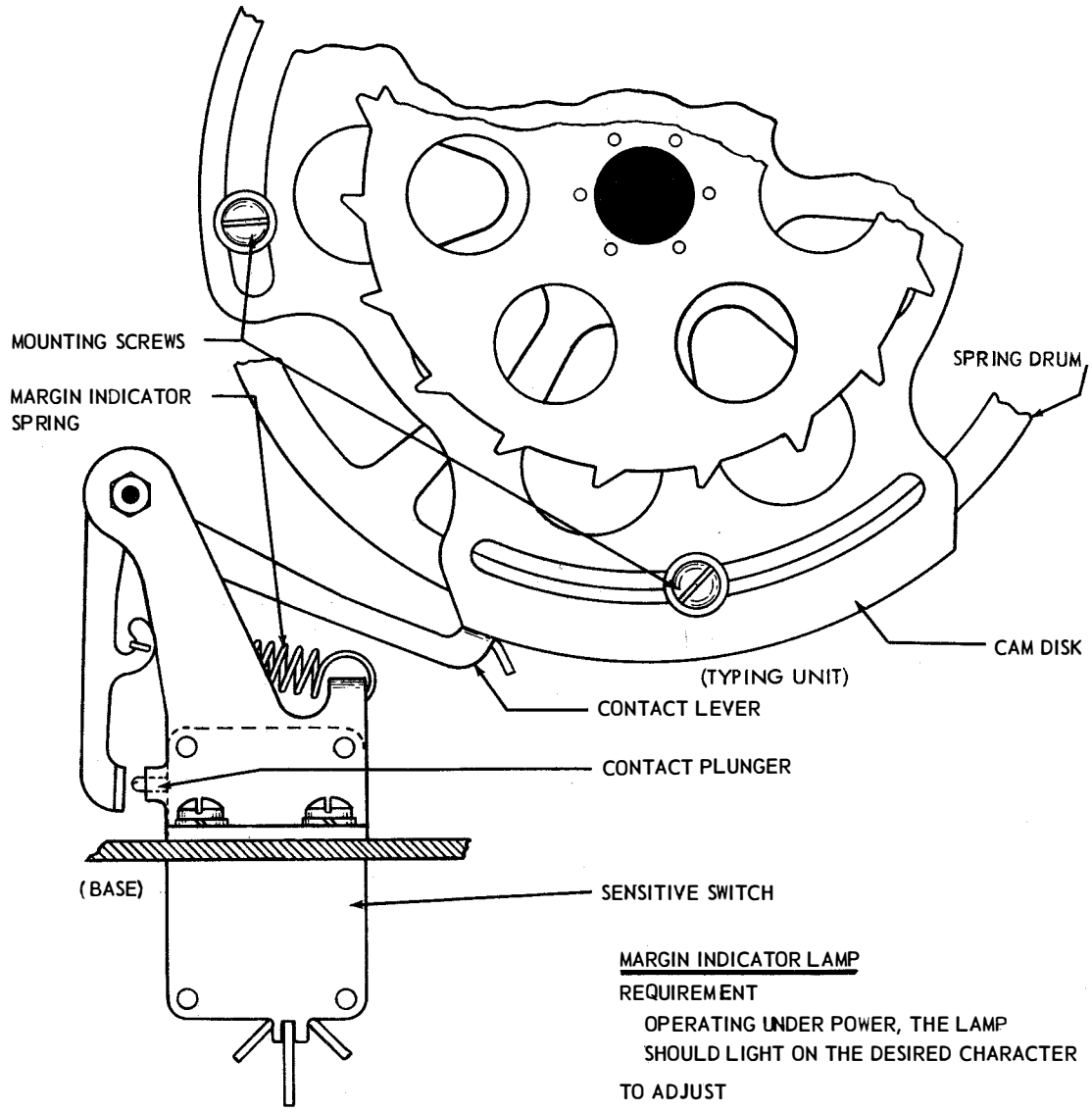


FIGURE 4-41 TYPING UNIT, FUNCTION CONTACTS



MARGIN INDICATOR LAMP

REQUIREMENT

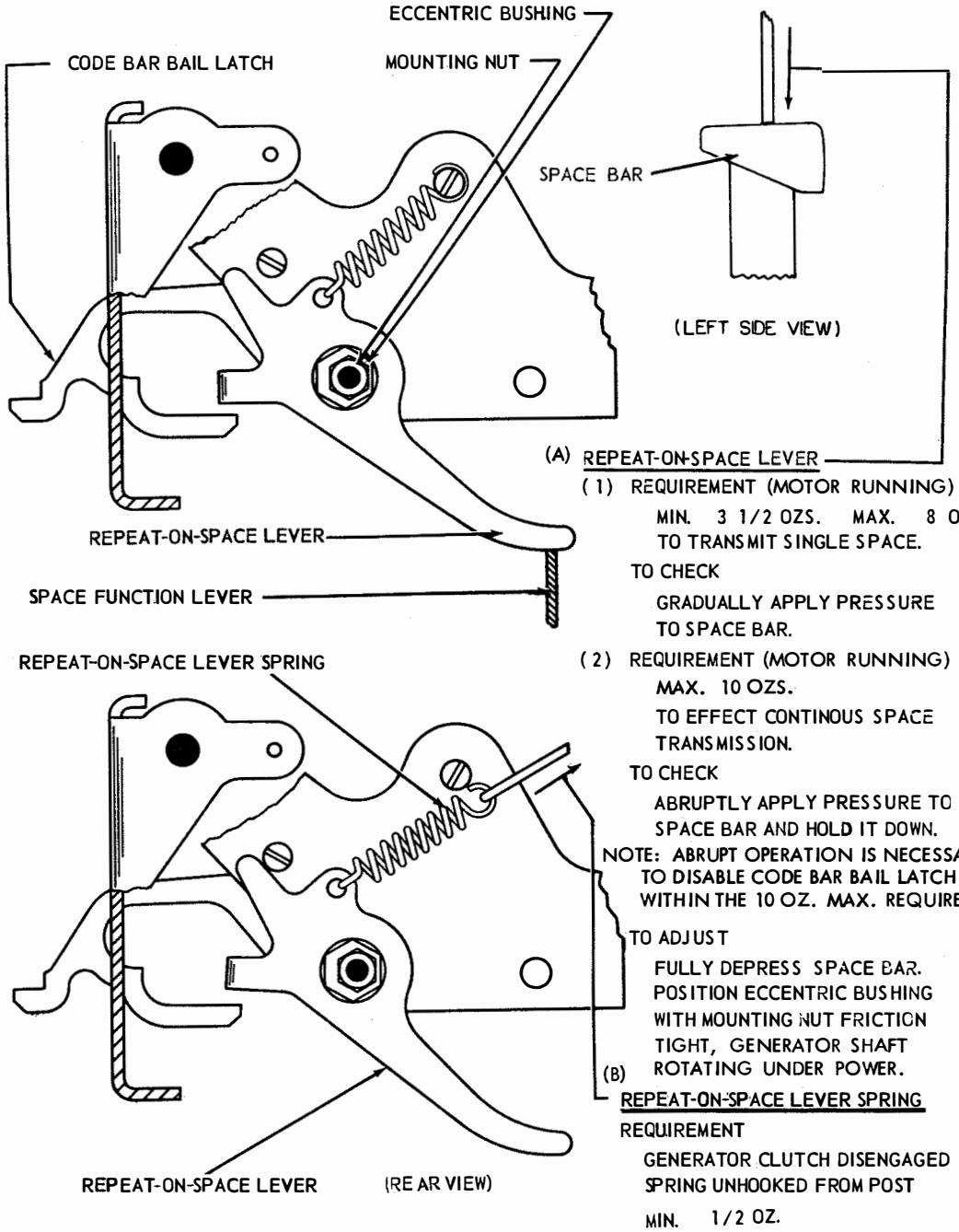
OPERATING UNDER POWER, THE LAMP SHOULD LIGHT ON THE DESIRED CHARACTER

TO ADJUST

SET THE TYPE BOX CARRIAGE TO PRINT THE DESIRED CHARACTER AND POSITION THE CAM DISK COUNTERCLOCKWISE ON THE SPRING DRUM WITH ITS THREE MOUNTING SCREWS LOOSENED SO THAT THE SWITCH JUST OPENS.

FIGURE 4-42 BASE AND TYPING UNIT, MARGIN INDICATING MECHANISM

3. VARIABLE FEATURES



(A) REPEAT-ON-SPACE LEVER

(1) REQUIREMENT (MOTOR RUNNING)

MIN. 3 1/2 OZS. MAX. 8 OZS.
TO TRANSMIT SINGLE SPACE.

TO CHECK

GRADUALLY APPLY PRESSURE TO SPACE BAR.

(2) REQUIREMENT (MOTOR RUNNING)

MAX. 10 OZS.
TO EFFECT CONTINOUS SPACE TRANSMISSION.

TO CHECK

ABRUPTLY APPLY PRESSURE TO SPACE BAR AND HOLD IT DOWN.

NOTE: ABRUPT OPERATION IS NECESSARY TO DISABLE CODE BAR BAIL LATCH WITHIN THE 10 OZ. MAX. REQUIREMENT.

TO ADJUST

FULLY DEPRESS SPACE BAR. POSITION ECCENTRIC BUSHING WITH MOUNTING NUT FRICTION TIGHT, GENERATOR SHAFT ROTATING UNDER POWER.

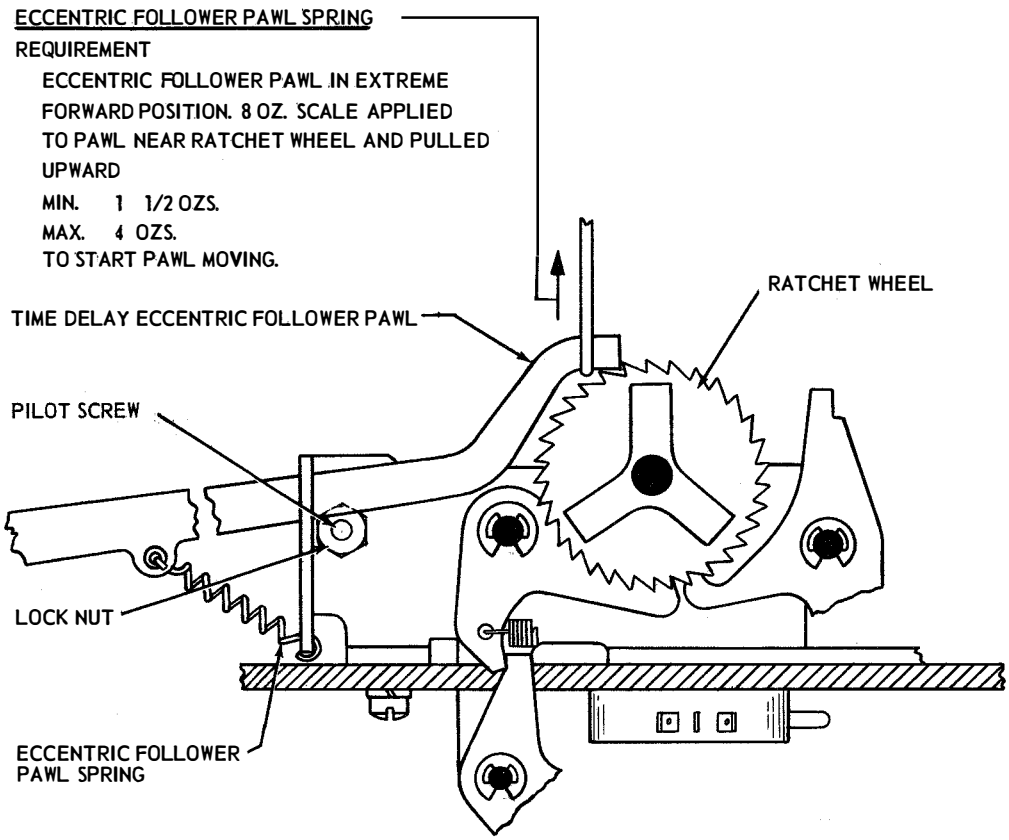
(B) REPEAT-ON-SPACE LEVER SPRING

REQUIREMENT

GENERATOR CLUTCH DISENGAGED
SPRING UNHOOKED FROM POST

MIN. 1/2 OZ.
MAX. 1 1/2 OZS.
TO PULL SPRING TO POSITION LENGTH.

FIGURE 4-43 KEYBOARD, REPEAT-ON-SPACE MECHANISM



TIME DELAY DISABLING DEVICE

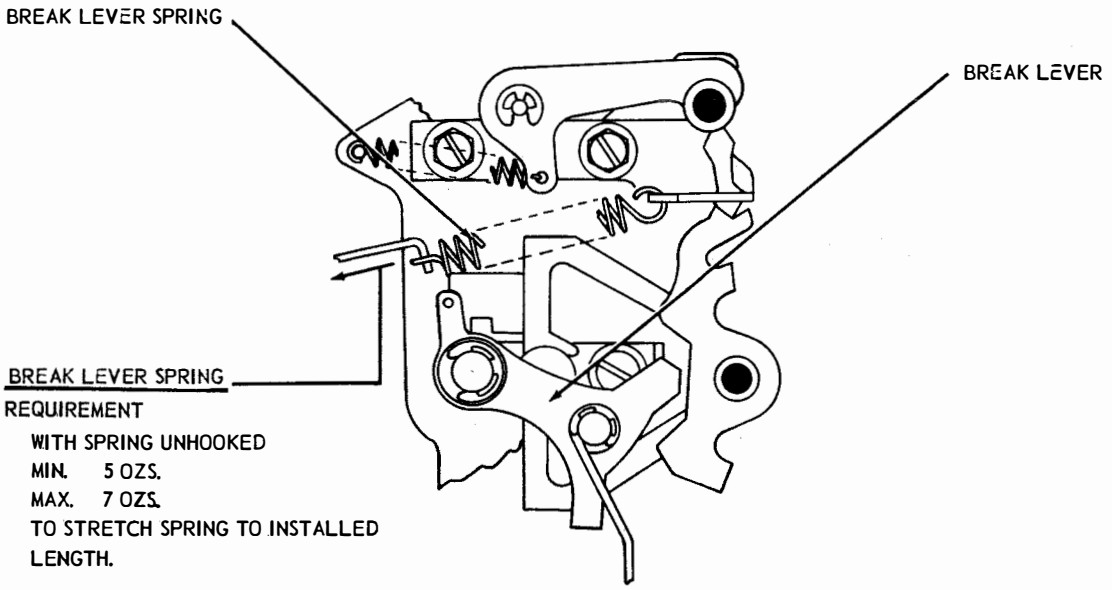
REQUIREMENT

DISABLE THE TIME DELAY MECHANISM WHEN NOT REQUIRED.

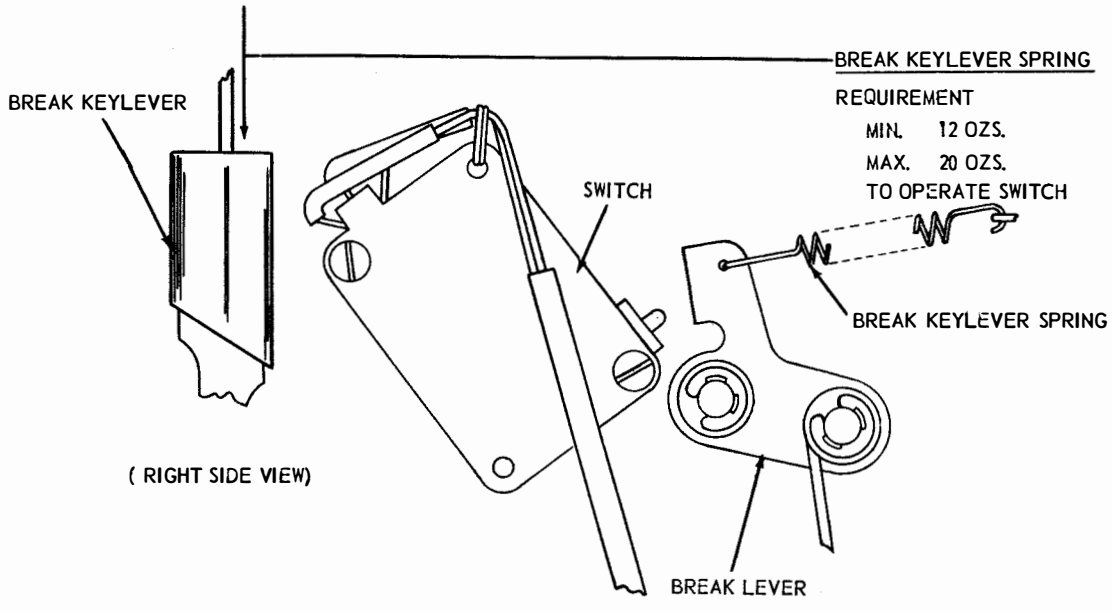
TO ADJUST

RAISE THE PILOT SCREW (LOCK NUT LOOSENED) AND ECCENTRIC FOLLOWER PAWL UNTIL THE PAWL CLEARS THE RATCHET WHEEL.

FIGURE 4-44 KEYBOARD OR BASE, TIME DELAY DISABLING DEVICE



MECHANICAL
(REAR VIEW)



ELECTRICAL
(REAR VIEW)

FIGURE 4-45 KEYBOARD, SIGNAL LINE BREAK MECHANISMS

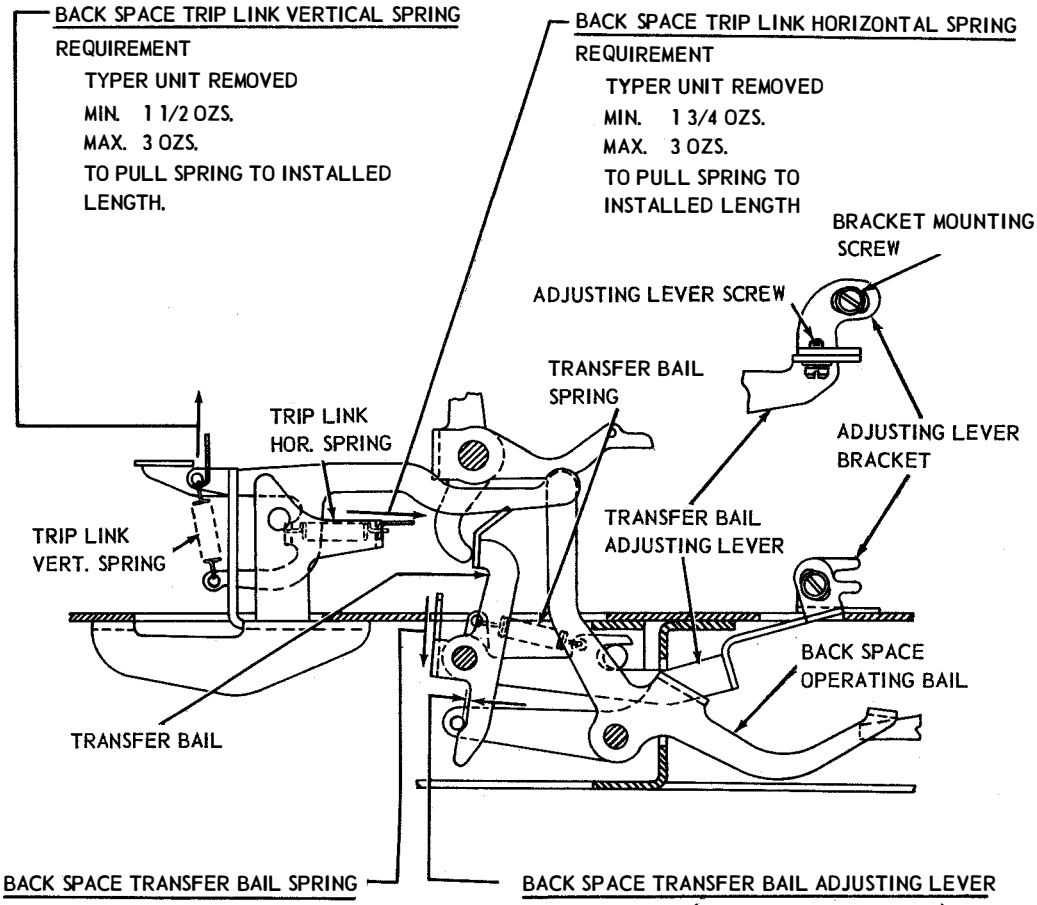
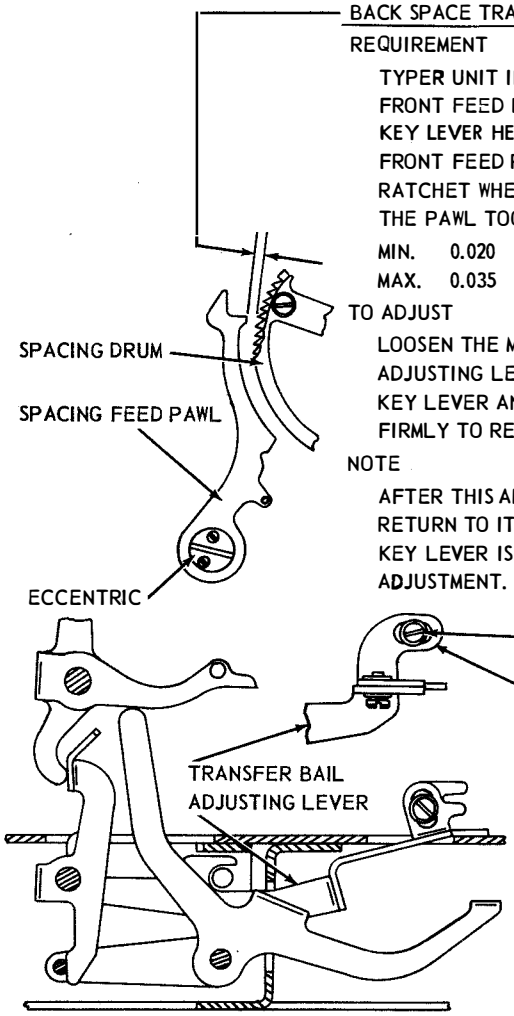


FIGURE 4-46 KEYBOARD, BACK SPACE MECHANISM



BACK SPACE TRANSFER BAIL ADJUSTING LEVER HORIZONTAL ADJUSTMENT

REQUIREMENT

TYPER UNIT INSTALLED, SPACING CLUTCH DISENGAGED, FRONT FEED PAWL IN LOWER POSITION. BACK SPACE KEY LEVER HELD DEPRESSED, MAIN SHAFT ROTATED UNTIL FRONT FEED PAWL IS OPPOSITE THE PEAK OF THE FIRST RATCHET WHEEL TOOTH THAT MOVES DOWNWARD PAST THE PAWL TOOTH. CLEARANCE SHOULD BE:

MIN. 0.020
MAX. 0.035

TO ADJUST

LOOSEN THE MOUNTING SCREW ON THE TRANSFER BAIL ADJUSTING LEVER BRACKET. DEPRESS THE BACK SPACE KEY LEVER AND PUSH THE ADJUSTING LEVER AND BRACKET FIRMLY TO REAR. TIGHTEN THE BRACKET MOUNTING SCREW.

NOTE

AFTER THIS ADJUSTMENT THE CAMMING BAIL SHOULD RETURN TO ITS UNOPERATED POSITION WHEN THE KEY LEVER IS RELEASED. IF IT DOES NOT RETURN REFINE THE ADJUSTMENT. RECHECK THE TRANSFER BAIL VERTICAL ADJUSTMENT

NOTE: IF A NEW TYPING UNIT IS INSTALLED ON THE BASE, THIS ADJUSTMENT SHOULD BE CHECKED.

FIGURE 4-47 KEYBOARD, BACKSPACING MECHANISM

(A)
OPERATING LEVER SLIDE ARM

NOTE

PRIOR TO THIS ADJUSTMENT CHECK FUNCTION RESET BAIL BLADE ADJUSTMENT (FIGURE 54)

REQUIREMENT

ON UNITS WITH TWO-STOP FUNCTION CLUTCHES. FUNCTION CLUTCH DISENGAGED. TYPE BOX CLUTCH ROTATED 1/2 REVOLUTION PAST STOP POSITION ON UNITS WITH ONE-STOP FUNCTION CLUTCH, ROTATE CLUTCH UNTIL FUNCTION PAWL STRIPPER BLADE IS IN ITS LOWER POSITION AND THE FUNCTION RESET BAIL ROLLER IS ON THE HIGH PART OF CAM. HORIZONTAL TABULATOR FUNCTION PAWL PULLED TO REAR AND LATCHED OVER FUNCTION BAR. CLEARANCE
MIN. 0.020 INCH
MAX. 0.030 INCH

TO ADJUST

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

(C)
OPERATING LEVER EXTENSION LINK SPRING

REQUIREMENT

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

(B)
OPERATING LEVER ADJUSTING PLATE

REQUIREMENT

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

TO ADJUST

POSITION ADJUSTING PLATE ON BRACKET WITH MOUNTING SCREWS LOOSE.

(D) TABULATOR SHAFT SPRING (TORSION)

NOTE

FOR LOCATION OF SPRING SEE FIGURE 4-51

REQUIREMENT

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

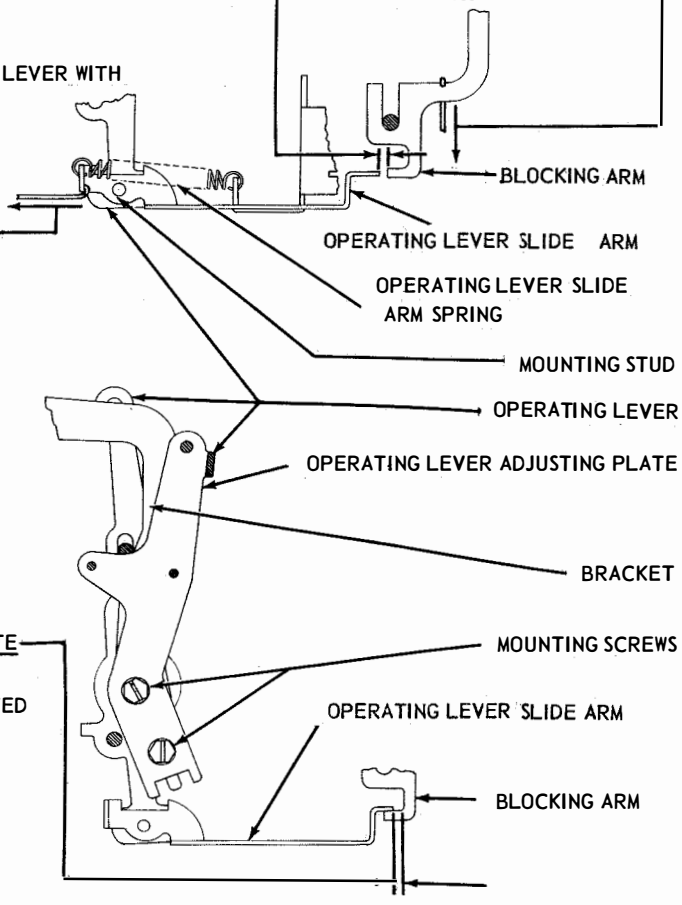


FIGURE 4-48 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM (LEFT VIEW)

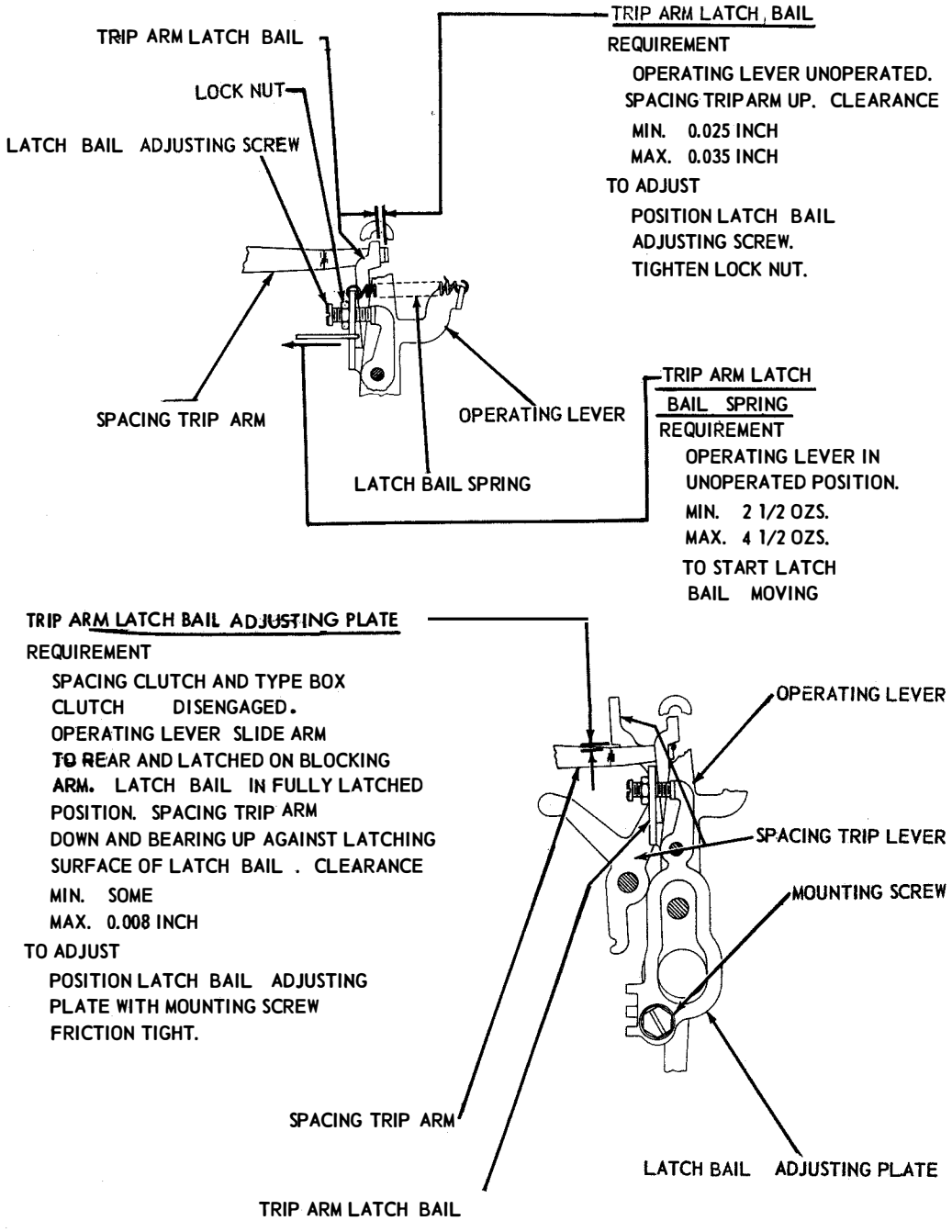
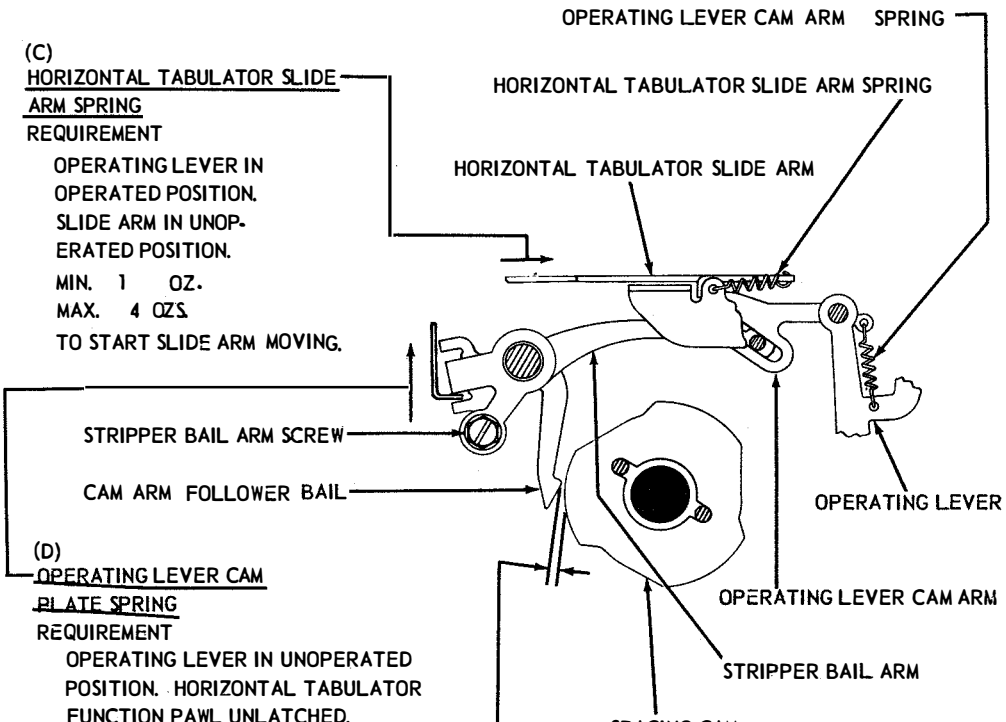


FIGURE 4-49 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM, LEFT VIEW



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

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

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

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

FIGURE 4-50 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM

(A)

RIGHT MARGIN

REQUIREMENT

CLEARANCE

MIN. 0.006 INCH MAX. 0.025 INCH

TO CHECK

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

TO ADJUST

POSITION CUTOUT LEVER WITH CLAMP SCREW LOOSENED (FOR LOCATION OF CLAMP SCREW SEE FIGURE 4-32)

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

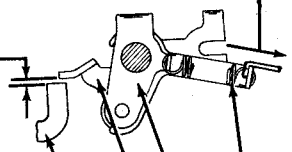
(B) SPACE SUPPRESSION BY-PASS SPRING

REQUIREMENT

MIN. 20 OZS.

MAX. 26 OZS.

TO START ARM MOVING.



SPACING CUTOUT LEVER ON SPACING DRUM

BAIL EXTENSION ARM

SPACING CUTOUT TRANSFER BAIL

SPACE SUPPRESSION BY-PASS SPRING

(D)

TABULATOR PAWL SPRING

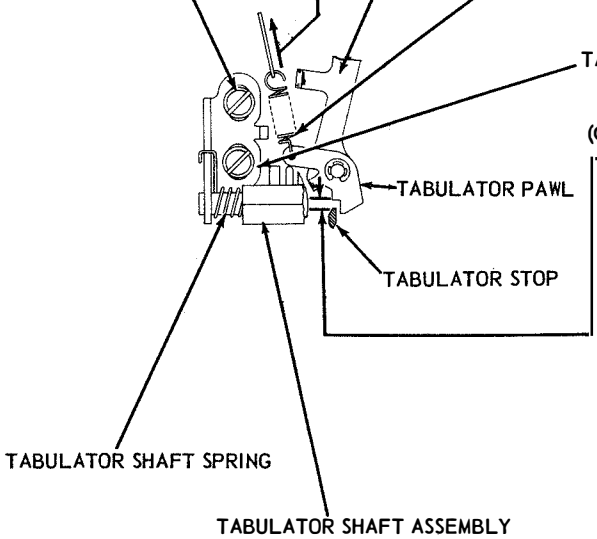
REQUIREMENT

MIN. 1 3/4 OZS.

MAX. 3 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

(RIGHT SIDE VIEW)



(C)

TABULATOR SHAFT MOUNTING BRACKETS

REQUIREMENT

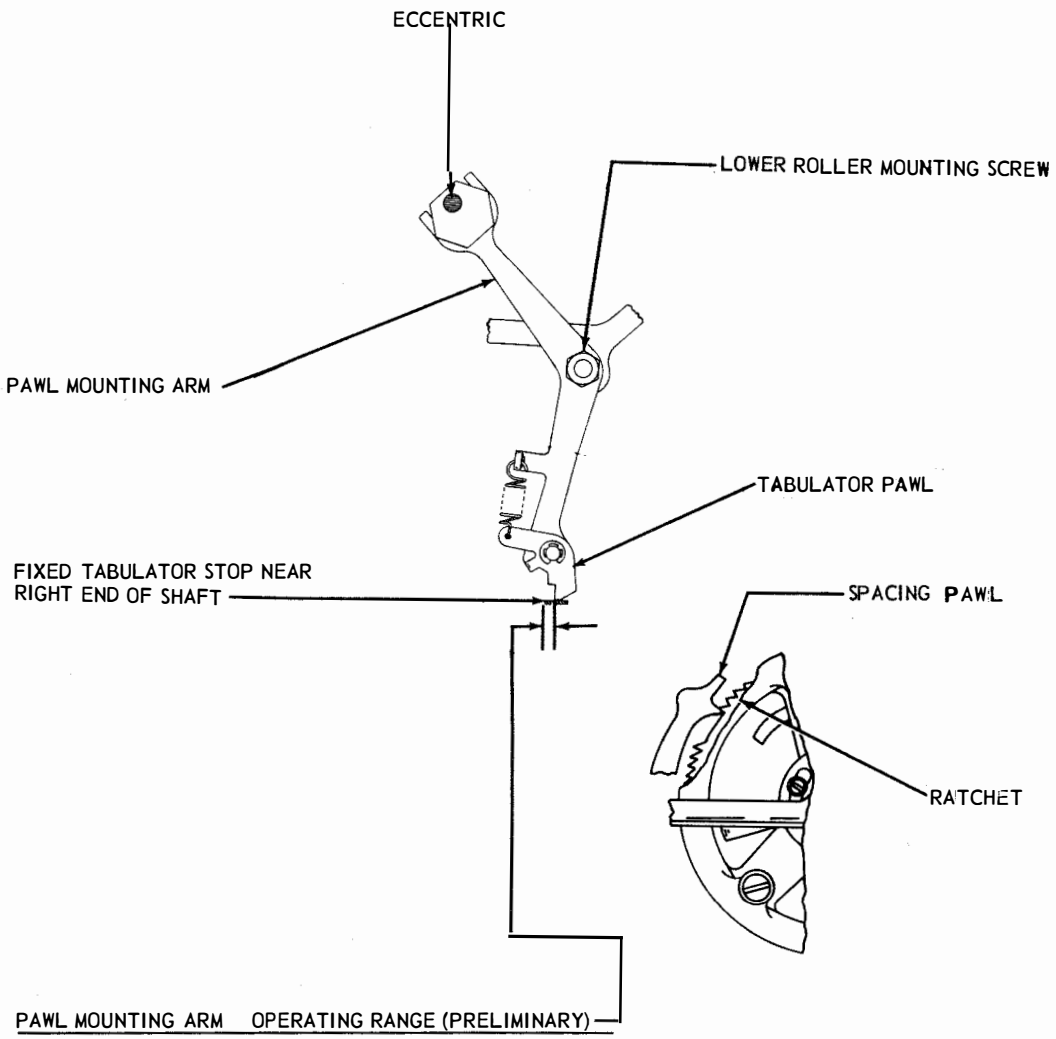
LEVER SLIDE ARM TO REAR SO THAT BLOCKING ARM AND TABULATOR STOP ARE IN EXTREME UPPER POSITION. CLEARANCE MIN. 0.050 INCH MAX. 0.065 INCH CLEARANCE MEASURED NEAR LEFT AND RIGHT END OF SHAFT EQUAL WITHIN 0.007 INCH

TO ADJUST

POSITION MOUNTING BRACKETS WITH MOUNTING SCREWS LOOSENED.

NOTE: MAKE SURE SHAFT IS FREE OF BINDS.

FIGURE 4-51 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM.



PAWL MOUNTING ARM OPERATING RANGE (PRELIMINARY)

NOTE - - - PRIOR TO THIS ADJUSTMENT, CHECK THE FOLLOWING: OSCILLATING RAIL SLIDE (FIGURE 51), PRINTING CARRIAGE POSITION (FIG. 1-57) AND PRINTING CARRIAGE LOWER ROLLER (FIG. 1-56).

REQUIREMENT (UNITS WITH FRICTION FEED PLATENS)

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

MIN. 0.070 INCH MAX. 0.090 INCH

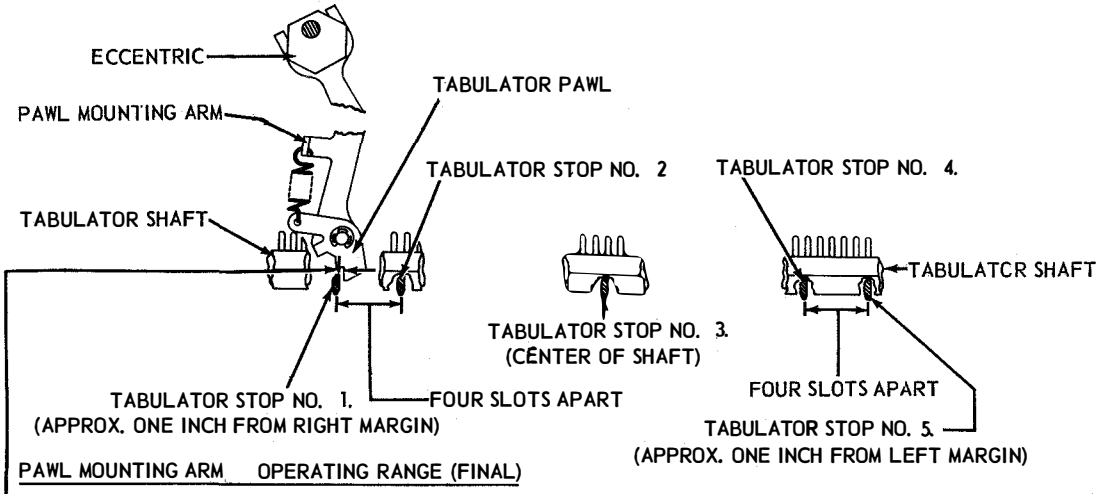
REQUIREMENT (UNITS WITH SPROCKET FEED PLATENS)

HIGH PART OF ECCENTRIC TOWARD LOWER ROLLER MOUNTING SCREW.

TO ADJUST

POSITION ECCENTRIC.

FIGURE 4-52 TYPING UNIT, HORIZONTAL TABULATOR MECHANISM.



PAWL MOUNTING ARM OPERATING RANGE (FINAL)

REQUIREMENT

CLEARANCE MIDWAY BETWEEN MINIMUM AND MAXIMUM LIMITS OF OPERATING RANGE.

TO CHECK

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

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

TO ADJUST

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

TABULATOR STOP SETTING (NOT ILLUSTRATED)

RIGHT MARGIN TABULATOR STOP (WITH WIDE SHELF)

NOTE: PRIOR TO THIS ADJUSTMENT, CHECK THE FOLLOWING: RIGHT MARGIN (FIGURE 4-51 AND PAWL MOUNTING ARM OPERATING RANGE (FIGURE 4-52 AND 4-53).

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

COLUMNAR TABULATOR STOPS

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

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

FIGURE 4-53 TYPING UNIT HORIZONTAL TABULATOR MECHANISM