

28 TYPING UNIT

ADJUSTMENTS

CONTENTS	PAGE	CONTENTS	PAGE
1. GENERAL	5	Line Feed and Platen Mechanism	
UNMOUNTED POSITIONS OF TYPING UNIT	6	Left margin (sprocket feed)	73
OPERATING CONDITIONS OF CLUTCHES	6	Line feed bar bell crank spring	61, 76
MANUAL SELECTION OF CHARACTERS OR FUNCTIONS	6	Line feed bar release lever spring	61
VARIABLE FEATURES	7	Line feed clutch phasing	31
EARLIER DESIGN MECHANISMS	7	Line feed spur gear detent eccentric	61
COMPLETE ADJUSTMENT OF TYPING UNIT	7	Line feed stripper bail spring	63
2. BASIC UNITS	8	Paper finger (friction feed)	67
Code Bar Mechanism		Paper finger locking arm spring (sprocket feed)	77
Code bar detent	70	Paper finger or guide bracket (sprocket feed)	75
Code bar detent spring	70	Paper finger or guide bracket latch spring (sprocket feed)	77
Code bar shift lever link bracket	22	Paper finger or guide bracket shaft spring (sprocket feed)	77
Code bar shift lever drive arm	21	Paper finger spring (friction feed)	67
Code bar yield spring	70	Paper guide (sprocket feed)	76
Common transfer lever spring	19	Paper pressure bail spring (friction feed)	67
Intermediate arm backstop bracket	20	Paper straightener collar (friction feed)	66
Transfer lever eccentric	19	Paper straightener lever spring (friction feed)	66
Transfer lever spring	19	Platen detent bail spring	61
Function Mechanism		Platen end play (sprocket feed)	74
Figs - ltrs shift code bar operating mechanism	38	Pressure roller lever spring (friction feed)	67
Function bar spring	59	Printing hammer stop bracket (sprocket feed)	73
Function contact spring	68	Printed line (sprocket feed)	74
Function lever spring	59	Right margin (sprocket feed)	73
Function pawl spring	59	Single-double line feed stripper bail assembly springs	64
Function reset bail blade	37	Sprocket pin separation (sprocket feed)	74
Function reset bail spring	37	Sprocket pin spring (sprocket feed)	76
Keyboard lock lever spring	46	Main Shaft and Trip Shaft Mechanisms	
Stripper blade drive cam position	62	Clutch drum position (except selector)	29
Stunt box clip	60	Clutch latch lever spring (except selector)	23
Unshift-on-space function pawl	69	Clutch shoe lever	28

CONTENTS	PAGE
Clutch shoe lever spring	29
Clutch shoe spring	29
Clutch trip lever spring	26
Clutch trip shaft set collars	25
Code bar clutch cam follower spring	24
Code bar clutch trip lever	23
Function clutch trip lever	24
Line feed clutch trip lever adjusting screw	27
Line feed clutch trip lever eccentric post	27
Spacing clutch trip lever	26
Trip shaft lever spring	23
Type box clutch trip lever	28
Type box clutch trip lever eccentric post	27

Positioning Mechanism

Breaker slide bail spring	32
Decelerating slide spring	49
Horizontal positioning drive linkage	40
Horizontal positioning drive linkage spring	40
Horizontal positioning lock lever spring	32
Horizontal stop slide spring	66
Left vertical positioning lever eccentric stud	34
Reversing slide adjusting stud	39
Reversing slide brackets	39
Reversing slide detent spring	39
Right vertical positioning lever eccentric stud	33
Rocker shaft bracket eccentric stud	32
Rocker shaft left bracket	31
Shift linkage	52
Shift linkage spring	52
Type box position (sprocket feed)	72
Vertical positioning lever spring	33
Vertical positioning lock lever	41
Vertical positioning lock lever spring	34

Printing Mechanism

Printing arm	54
Printing carriage lower roller	50
Printing carriage position	51
Printing hammer bearing stud	51
Printing hammer operating bail latch spring	53
Printing hammer operating bail spring	53
Printing hammer plunger spring	53
Printing hammer stop bracket	54

CONTENTS	PAGE
Printing hammer yield spring	53
Printing track	53
Ribbon feed lever bracket	57
Ribbon feed lever spring	57
Ribbon lever spring	58
Ribbon ratchet wheel friction spring	57
Ribbon reverse detent	56
Ribbon reverse detent lever spring	56
Ribbon reverse spur gear	56
Ribbon tension spring	58
Type box alignment	55
Type box carriage roller arm spring	50
Type pallet spring	54

Selector Mechanism

Marking lock lever spring	14
Push lever reset bail spring	16
Range finder knob phasing	17
Receiving margin for dual speed operation (60 and 100 wpm)	18
Selector armature	8, 13
Selector armature downstop bracket	13
Selector armature spring (500 ma selector coils)	11
Selector armature spring (double button)	11, 12
Selector armature spring (single button)	11, 12
Selector cam lubricator	20
Selector clutch drum	15
Selector clutch latch lever spring	16
Selector clutch stop arm	17
Selector lever spring	15
Selector magnet bracket (magnets energized)	9
Selector magnet bracket - vertical adjustment	10
Selector push lever spring	15
Selector receiving margin	18
Spacing lock lever spring	16
Start lever spring	14

Spacing Mechanism

Automatic CR-LF bell crank spring	47
Carriage draw wire rope	42
Carriage return latch bail	44
Carriage return latch bail spring	44
Carriage return lever	45
Carriage return spring	43
Dashpot vent screw	46
Left margin	47
Lower draw wire rope pulley bail spring	42

CONTENTS	PAGE	CONTENTS	PAGE
Margin indicator lamp	71	Intermediate bail spring	80
Oscillating rail slide position	35	Latch bail adjusting plate	80
Right margin	48	Operating lever adjusting plate	79
Right margin with automatic carriage return-line feed ring	65	Operating lever cam arm spring	81
Spacing cutout transfer bail spring	48	Operating lever slide arm	79
Spacing feed pawl release link spring	43	Operating lever slide arm spring	79
Spacing feed pawl spring	35	Right margin	82
Spacing gear clearance	30	Space suppression by-pass spring	82
Spacing gear phasing	30	Spacing clutch trip lever	78
Spacing suppression bail spring	63	Spacing cut-out transfer bail set collar	81
Spacing trip lever bail cam plate	36	Tabulator pawl (preliminary)	83
Spacing trip lever bail spring	36	Tabulator pawl-horizontal (final)	85
Spacing trip lever spring	36	Tabulator pawl-vertical (final)	84
Transfer slide spring	46	Tabulator pawl spring	84
3. VARIABLE FEATURES	78	Tabulator stop settings	86
Answer-Back Mechanism		Transmitter control contact gap	87
"Figures" stunt box contact	98	Transmitter control contact spring	87
Continuous Spacing Mechanism		Trip lever arm latch bail	80
Carriage return lever	101	Trip lever arm latch bail spring	80
Function clutch trip lever	100	Letters-Figures Code Bar Shift Magnet Mechanism	
Reset bail operating spring	101	Shift magnet armature	118
Solenoid plunger spring	100	Shift magnet armature return spring	118
Suppression bail adjusting bracket	101	Shift magnet yoke	118
Dc Magnet Operated Print Suppression Mechanism		Shift code bar return spring	118
Armature extension clearance	116	Local Back Space Mechanism	
Armature extension overtravel	116	Camming bail spring	93
Blocking bail	91	Camming bail stop arm	93
Blocking bail extension clearance	116	Page Feed-Out Mechanism	
Type box clutch suppression arm	91	Blocking arm	89
Type box clutch trip lever	116	Blocking arm spring	89
Form Alignment Switch Mechanism		Indexing disk	88
Form alignment switch	115	Mounting bracket	88
Form alignment switch spring	115	Page feed-out gear play	88
Form feed-out adjustment	115	Pointer	89
Form Feed-Out Mechanism		Switch operating arm (transmitter control)	88
Form feed-out torsion spring	119	Paper-Out Alarm Mechanism	
Horizontal Tabulator Mechanism		Switch bracket spring	102
Blocking lever spring	84	Switch operating lever	102
Cam arm stripper bail	81	Switch position	102
Clutch trip lever spring	78	Print Suppression Mechanism	
Horizontal tabulator slide arm spring	81	Suppression code bar mechanism	99
		Zero code bar shift mechanism	99

CONTENTS	PAGE
Print Suppression and Off-Line Stunt Shift Control Mechanism	
Blocking bail	91
Print suppression magnet armature return spring	117
Suppression code bar position	117
Type box clutch suppression arm . . .	91
Type box clutch trip lever	117
Reverse Line Feed Mechanism	
Line feed bar bell crank spring	98
Line feed bar release lever spring . .	96
Line feed bar springs	97
Line feed clutch spur gear	95
Line feed spur gear detent eccentric .	96
Platen detent bail spring	96
Reverse line feed slide link spring . .	94
Reverse line feed slide link stop bracket	94
Selective Calling Mechanism	
Automatic carriage return-line feed blocking slide spring	92
Blocking bail	91
Code bar shift mechanism	90
Condition code (zero) code bar shift mechanism	90
Condition code shift fork spring	92
Off line shift solenoid bracket assembly	90
Off line stunt shift solenoid spring . .	91
Print suppressor code bar spring . . .	90
Type box clutch suppression arm . . .	91
Type box clutch trip lever	90
Two Color Ribbon Mechanism	
Armature spring (left and right)	120
Operational requirement - ribbon magnet bracket (final)	121
Ribbon guide lever spring (left and right)	121
Ribbon magnet bracket (left and right) (preliminary)	120
Ribbon magnet hinge bracket (left and right) (final)	120
Ribbon magnet hinge bracket (left and right) (preliminary)	120
Ribbon reversing lever spring (left and right)	121
Ribbon roller bail spring (left and right)	121

CONTENTS	PAGE
Universal Contact (Selector) Mechanism	
Contact arm spring	109
Contact block	109
Contact drive arm position	109
Contact mounting bracket	109
Universal Contact (Stunt Box) Mechanism	
Contact	110
Contact bracket and drive cam	112
Contact bracket and drive cam position	113
Contact bracket and drive cam position (100 wpm)	113
Contact spring (two springs)	110
General application timing - final (using DXD or similar equipment) . . .	113
General requirements after timing adjustments	114
Latch lever spring	111
Normally closed contacts (100 wpm for 83B2 switching system)	113
Normally closed contacts (100 wpm used in Delta and United Airlines System)	114
Normally open contact gap	110
Normally open contact gap (100 wpm) .	113
Special adjustments (for 100 wpm) . .	113
Swinger spring	110
Trip cam	111, 113
Vertical Tabulation and Transmitter- Distributor Control Mechanism	
Blocking lever	104
Blocking lever spring	106
Form-out pawl spring	108
Indexing disk	103
Line feed clutch trip lever spring . . .	108
Mounting bracket	103
Page feed-out gear play	103
Page feed-out index plate position . .	107
Pointer	104
Stunt box switch spring	108
Switch contact pressure	104
Switch contacts for transfer type con- trol switch (transmitter control only) .	107
Tabulation index plate position	106
Tabulation bail spring	108
Transmitter control switch for single-contact type control (transmitter control only)	106

CONTENTS	PAGE	CONTENTS	PAGE
Transmitter control switch - transfer type contacts (transmitter control only)	105	Spacing Mechanism	
Vertical tabulator slide retainer	103	Automatic CR-LF bell crank spring	133
4. EARLIER DESIGN MECHANISMS	122	Automatic carriage return and line feed arm	138
BASIC UNITS	122	Decelerating slide bell crank spring	134
Code Bar Mechanism		Left margin	133
Code bar shift lever drive arm	124	Margin indicator lamp	142
Code bar shift lever link guide bracket	125	Oscillating rail slide position	128
Function Mechanism		Printing carriage position	133
Bell or motor stop function contact	140	Right margin	134
Figs-ltrs shift code bar operating mechanism	129	Spacing cutout transfer bail spring	134
Function contact spring	141	Spacing feed pawl spring	128
Function reset bail blade	130	VARIABLE FEATURES	143
Function stripper blade arms	138	Horizontal Tabulator Mechanism	
Line Feed Mechanism and Platen Mechanism		Cam plate stripper bail	145
Single-double line feed lever	139	Columnar tabulator stops	148
Main Shaft and Trip Shaft Mechanisms		Horizontal tabulator slide arm spring	145
Anti-deflection plate	126	Operating lever adjusting plate	143
Clutch trip lever spring	127	Operating lever cam plate spring	145
Clutch trip shaft set collars	126	Operating lever extension link spring	143
Spacing clutch trip lever	127	Operating lever slide arm	143
Positioning Mechanism		Pawl mounting arm operating range (final)	148
Horizontal positioning drive linkage	131, 132	Pawl mounting arm operating range (preliminary)	147
Horizontal positioning drive linkage spring	131, 132	Right margin	146
Shift linkage spring	135	Spacing cut-out transfer bail set collar	145
Printing Mechanism		Space suppression by-pass spring	146
Printing arm	136	Tabulator pawl spring	146
Printing hammer stop bracket	136	Tabulator shaft mounting brackets	146
Ribbon reverse detent	137	Tabulator shaft spring	143
Ribbon reverse detent lever spring	137	Tabulator stop setting (not illustrated)	148
Ribbon reverse spur gear	137	Trip arm latch bail	144
Type box carriage roller	135	Trip arm latch bail adjusting plate	144
Type pallet spring	136	Trip arm latch bail spring	144
Selector Mechanism		Paper-Out Alarm Mechanism	
Bail lever guide	122	Bell crank follower	149
Selector armature	123	Bell crank follower spring	149
Start lever spring	122		
		1. GENERAL	
		1.01 This section is reissued: to incorporate adjusting information for the Selector Armature Downstop, and the Selector Armature Vertical Adjustment; to rearrange the text matter and assembly grouping to conform to the new	

standard format. Since this is a general revision, marginal arrows are omitted.

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

Note: Remove power from unit before making adjustments.

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

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

1.05 Tools and spring scales required to perform the adjustments are not supplied as part of the equipment but are listed separately in Teletype Bulletin 1124B.

1.06 References made to left or right, up or down, and front or rear apply to the typing unit in its normal operating position as viewed by the operator facing the unit.

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

UNMOUNTED POSITIONS OF TYPING UNIT

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

- (1) In an upright position, and resting on all four feet.
- (2) Tilted backward, and resting on the two rear feet and rear points of side frames.
- (3) Bottom upwards, and resting on two upper points on each side frame.

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

OPERATING CONDITIONS OF CLUTCHES

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

Note: When rotating the main shaft of the typing unit by hand, the clutches do not fully disengage upon reaching their stop positions. In order to relieve the drag on the clutches and permit the main shaft to rotate freely, apply pressure to the stop lug on each clutch disc with a screwdriver until each latch lever falls into its notch on its clutch disc. Thus each internal expansion clutch becomes fully disengaged. This procedure should be followed before placing the typing unit on the base and switching on the power.

MANUAL SELECTION OF CHARACTERS OR FUNCTIONS

1.10 To manually operate the typing unit while removed from the keyboard or base, hold the selector magnet armature (Par. 2.01) against the pole pieces with an armature clip. Rotate the main shaft in a counterclockwise direction (handwheel listed in Bulletin 1124B) to bring all clutches to their disengaged position.

Note: The armature clip is attached to the armature by carefully inserting the flat formed end of the clip over the top of the armature and between the pole pieces, and hooking the extruded projection under the edge of the armature. The top end of the clip

should then be hooked over the top of the selector coil terminal (bakelite) guard. The spring tension of the clip will hold the armature in the marking (attracted) position.

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

VARIABLE FEATURES

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

EARLIER DESIGN MECHANISMS

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

COMPLETE ADJUSTMENT OF TYPING UNIT

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

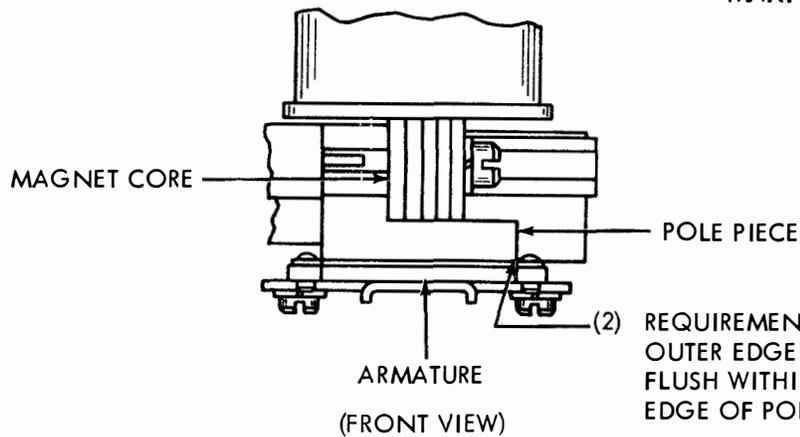
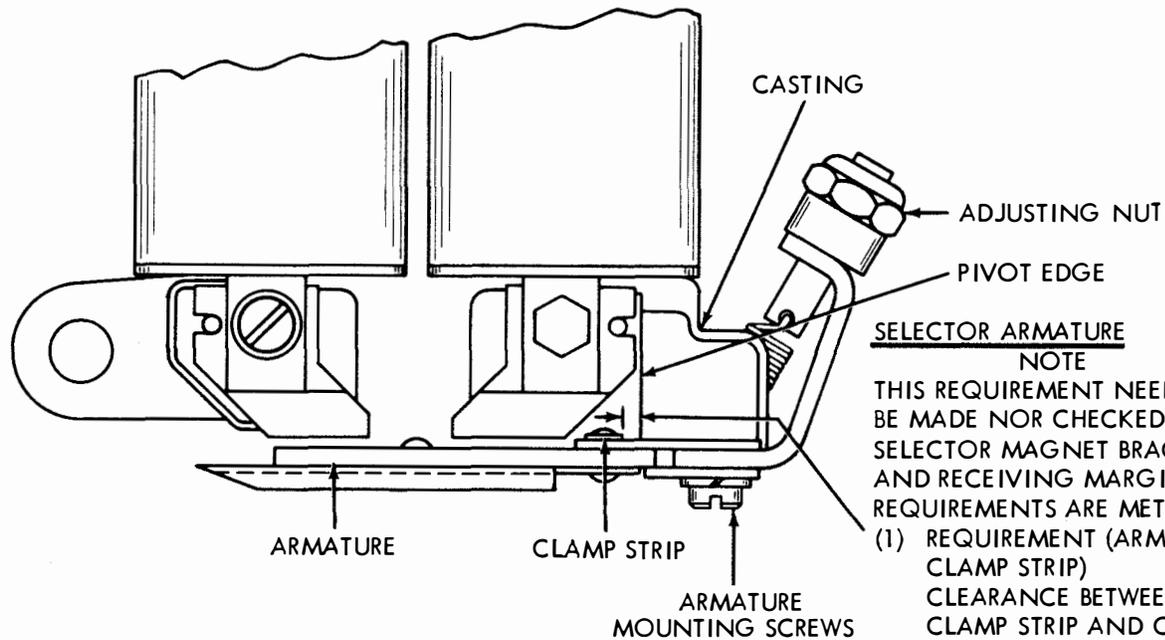
- (a) Loosen the clamp screw on the code bar shift lever drive arm (Par. 2.15).
- (b) Move the right and left vertical positioning lever eccentric studs (Par. 2.28 and 2.29) in the rocker shaft brackets to their lowest position.
- (c) Loosen the two bearing stud mounting screws and two connecting strip clamp screws in the horizontal positioning drive linkage (Par. 2.35).
- (d) Loosen the clamp screws and move the reversing slide brackets to their uppermost position (Par. 2.34).
- (e) Loosen the function reset bail blade mounting screws (Par. 2.32).
- (f) For units equipped with two-stop function clutches: Loosen the shoulder bushings on each function stripper blade arm and move stripper blade and arms to their lowest positions (Par. 4.18).
- (g) Loosen the carriage return lever clamp screw (Par. 2.40).
- (h) Loosen the clamp screws in the oscillating rail slide (Par. 2.30).
- (i) Loosen the reversing slide adjusting stud (Par. 2.34).
- (j) Loosen the clamp nuts on the shift code bar guide plates (Par. 2.33).

2. BASIC UNITS

2.01 Selector Mechanism

NOTE

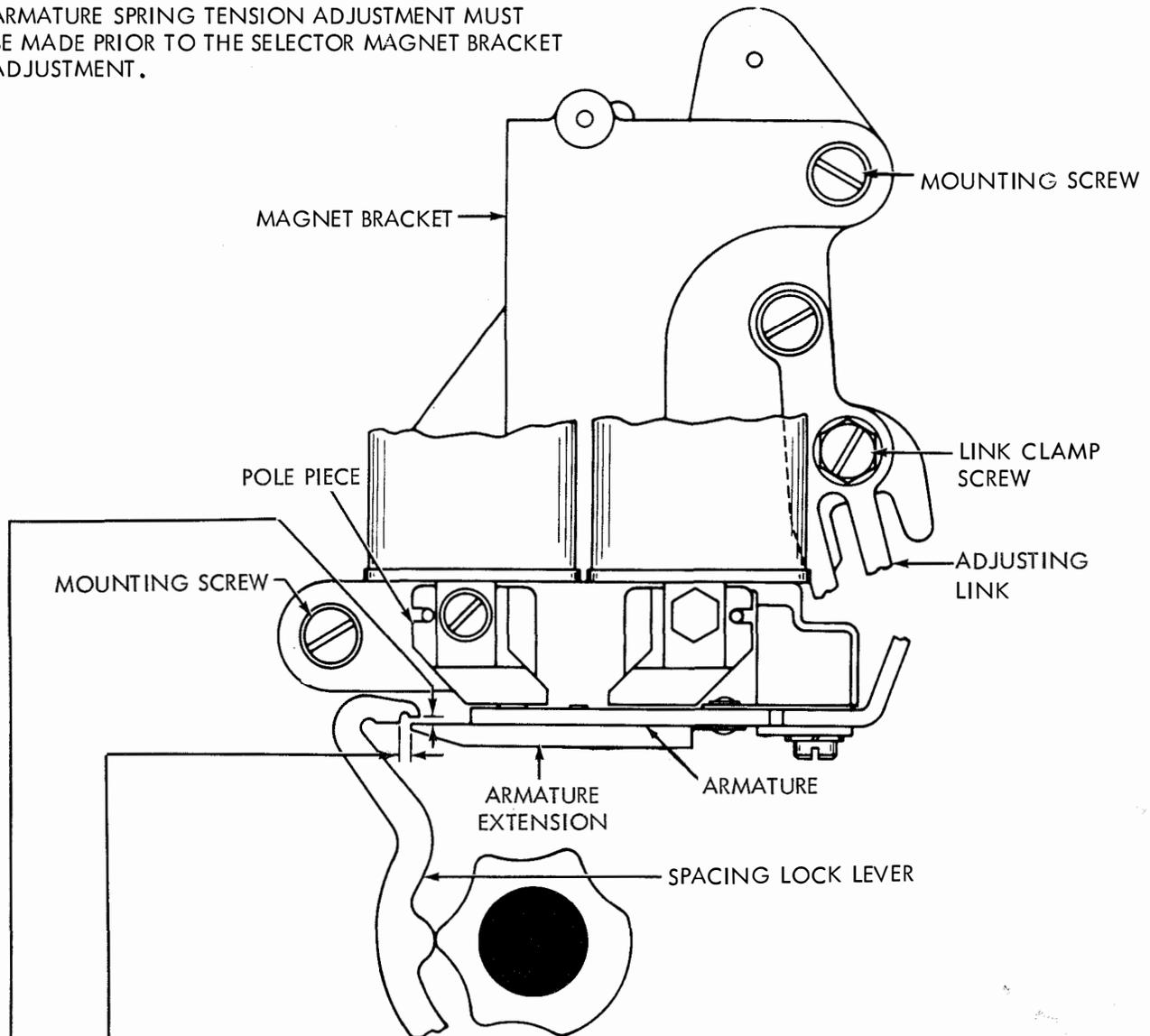
TO FACILITATE MAKING THE FOLLOWING ADJUSTMENTS, REMOVE THE RANGE FINDER AND SELECTOR MAGNET ASSEMBLIES. TO INSURE BETTER OPERATION, PULL A PIECE OF KS BOND PAPER BETWEEN THE ARMATURE AND THE POLE PIECES TO REMOVE ANY OIL OR FOREIGN MATTER THAT MAY BE PRESENT. MAKE CERTAIN THAT NO LINT OR PIECES OF PAPER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



2.02 Selector Mechanism (Cont.)

NOTE

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

SELECTOR MAGNET BRACKET (MAGNETS ENERGIZED)

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

MAX. 0.003 INCH

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

2.03 Selector Mechanism (Cont.)

CAUTION

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

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

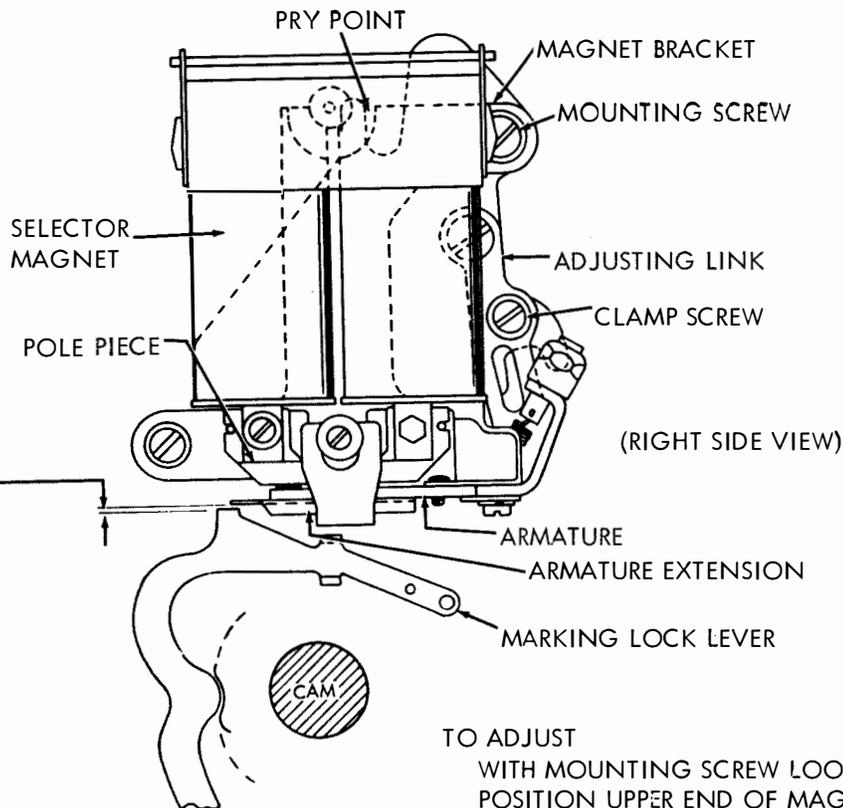
REASSEMBLE AND RECHECK THE FOLLOWING ADJUSTMENTS:

- SELECTOR ARMATURE
- SELECTOR ARMATURE DOWNSTOP BRACKET
- SELECTOR MAGNET BRACKET

SELECTOR MAGNET BRACKET - VERTICAL ADJUSTMENT

(3) REQUIREMENT

MARKING LOCK LEVER ON LOW PART OF CAM. ARM - ATURE IN CONTACT WITH FRONT POLE PIECE (MAGNET ENERGIZED). THERE SHOULD BE SOME CLEARANCE BETWEEN LOWER SURFACE OF ARM - ATURE EXTENSION AND UPPER SURFACE OF MARKING LOCK LEVER. GAUGE BY EYE.



TO ADJUST
WITH MOUNTING SCREW LOOSENED
POSITION UPPER END OF MAGNET
BRACKET BY MEANS OF PRY POINT.
RECHECK REQUIREMENTS (1) AND (2).

2.04 Selector Mechanism (Cont.)

SELECTOR ARMATURE SPRING (500 MA SELECTOR COILS
REFER TO PAR. 2.05 USING THE FOLLOWING:

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

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

SECTION 573-115-700

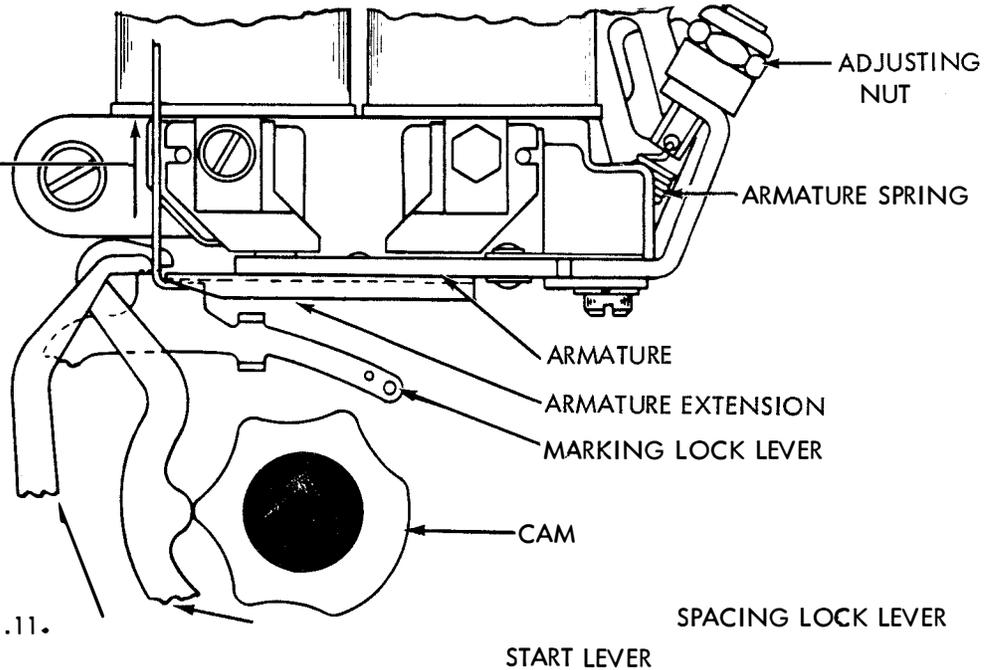
2.05 Selector Mechanism (Cont.)

SELECTOR ARMATURE SPRING (FOR UNITS WITH SINGLE ANTI-FREEZE BUTTON ON SELECTOR ARMATURE)
 REQUIREMENT --- (PRELIMINARY) WITH START LEVER, MARKING AND SPACING LOCK LEVERS ON HIGH PART OF THEIR CAMS, HOOK SCALE UNDER END OF ARMATURE EXTENSION (HOLD AS NEARLY VERTICAL AS POSSIBLE). IT SHOULD REQUIRE

- (a) MIN. 1-1/2 OZS. ----- MAX. 2 OZS. FOR 20 MA OPERATION.
- (b) MIN. 2-1/2 OZS. ----- MAX. 3 OZS. FOR 60 MA OPERATION.

TO PULL ARMATURE TO MARKING POSITION.
 TO ADJUST --- POSITION ADJUSTING NUT.

REQUIREMENT --- (FINAL) REFER TO SELECTOR RECEIVING MARGIN PAR. 2.11



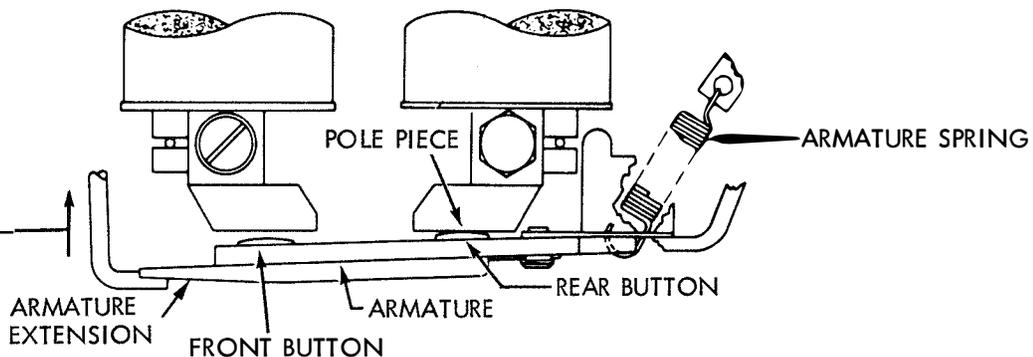
NOTE
 SPRING TENSIONS SHOWN ON THIS PAGE PERMIT OPERATION OF PRINTER PRIOR TO MEASUREMENT OF RECEIVING MARGINS. REFINE SPRING TENSION FOR MAXIMUM SELECTOR PERFORMANCE WITH UNIT CONNECTED TO SPECIFIC CIRCUIT IN WHICH IT IS TO FUNCTION (OPERATING AT DESIRED SPEED AND LINE CURRENT). SEE PAR. 2.11.

SELECTOR ARMATURE SPRING (FOR UNITS WITH TWO ANTI-FREEZE BUTTONS ON SELECTOR ARMATURE)
 REQUIREMENT --- (PRELIMINARY) WITH START LEVER, MARKING AND SPACING LOCK LEVERS ON HIGH PART OF THEIR CAMS, HOOK SCALE UNDER END OF ARMATURE EXTENSION (HOLD AS NEARLY VERTICAL AS POSSIBLE). IT SHOULD REQUIRE

<u>0.020 AMPERES</u>	<u>0.030 AMPERES</u>	<u>0.060 AMPERES</u>
14 GRAMS	18 GRAMS	21 GRAMS

TO PULL REAR BUTTON AGAINST ITS POLE PIECE
 TO ADJUST --- POSITION ADJUSTING NUT.

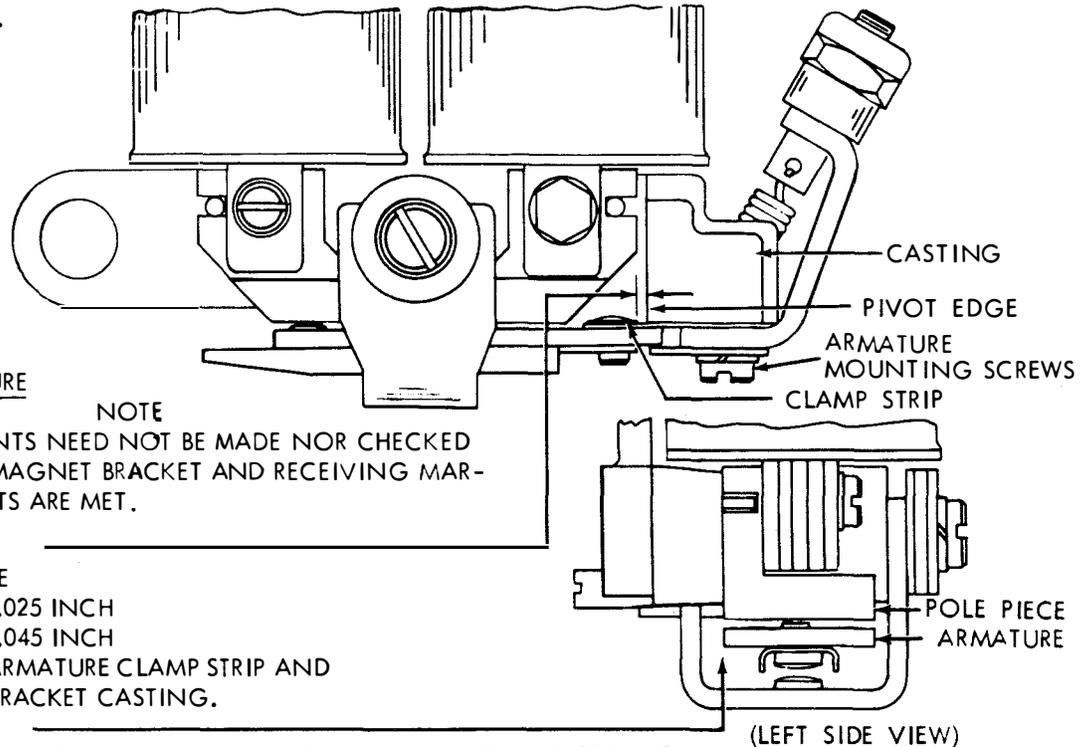
REQUIREMENT --- (FINAL) WHEN A DISTORTION TEST SET IS AVAILABLE, REFINE SELECTOR ARMATURE SPRING ADJUSTMENT TO MEET SELECTOR RECEIVING MARGIN PAR. 2.11. NOTE --- WITH SELECTOR MAGNETS ENERGIZED, FRONT ANTI-FREEZE BUTTON MUST BE IN CONTACT WITH ITS MAGNET CORE.



2.06 Selector Mechanism (Cont.)

NOTE

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

SELECTOR ARMATURE

NOTE

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

(1) REQUIREMENT

CLEARANCE

MIN. 0.025 INCH

MAX. 0.045 INCH

BETWEEN ARMATURE CLAMP STRIP AND
MAGNET BRACKET CASTING.

(2) REQUIREMENT

OUTER EDGE OF ARMATURE SHOULD BE FLUSH WITHIN 0.015 INCH
WITH OUTER EDGE OF POLE PIECES.

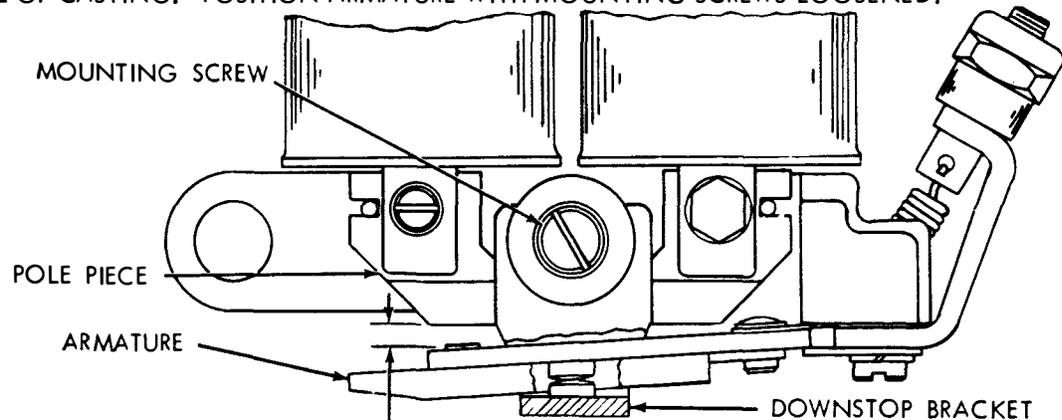
(LEFT SIDE VIEW)

(3) REQUIREMENT

START LEVER SHALL DROP FREELY INTO ARMATURE EXTENSION SLOT.

TO ADJUST

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

SELECTOR ARMATURE DOWNSTOP BRACKET

REQUIREMENT

REMOVE OIL SHIELD. WITH MAGNET DE-ENERGIZED, LOCK LEVERS ON HIGH PART OF
THEIR CAM, AND ARMATURE RESTING AGAINST ITS DOWNSTOP, CLEARANCE BETWEEN
END OF ARMATURE AND LEFT EDGE OF LEFT POLE PIECE

MIN. 0.025 INCH MAX. 0.030 INCH.

TO ADJUST

POSITION DOWNSTOP BRACKET WITH MOUNTING SCREW LOOSENED. REPLACE
OIL SHIELD AND CHECK OIL SHIELD ADJUSTMENT.

SECTION 573-115-700

2.07 Selector Mechanism (Cont.)

MARKING LOCK LEVER SPRING

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

NOTE FOR BELL SERVICE ONLY

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

MARKING LOCK LEVER

MARKING LOCK-LEVER SPRING

START LEVER SPRING

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

NOTE FOR EARLIER DESIGN SEE PAR. 4.01.

STOP ARM BAIL

CAM

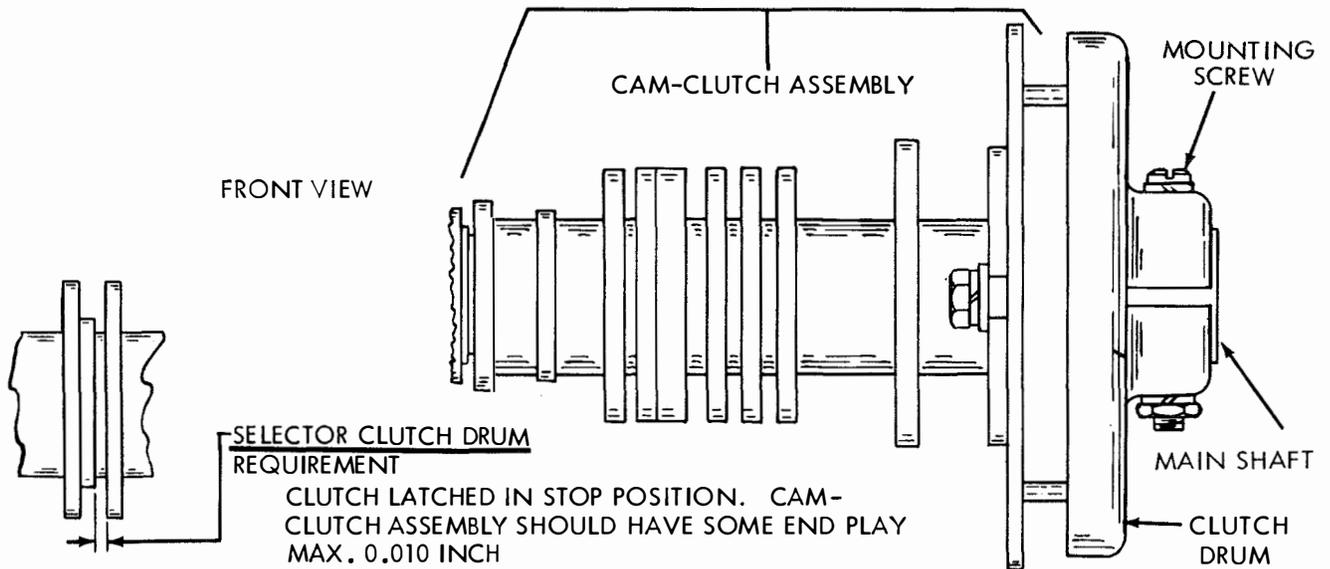
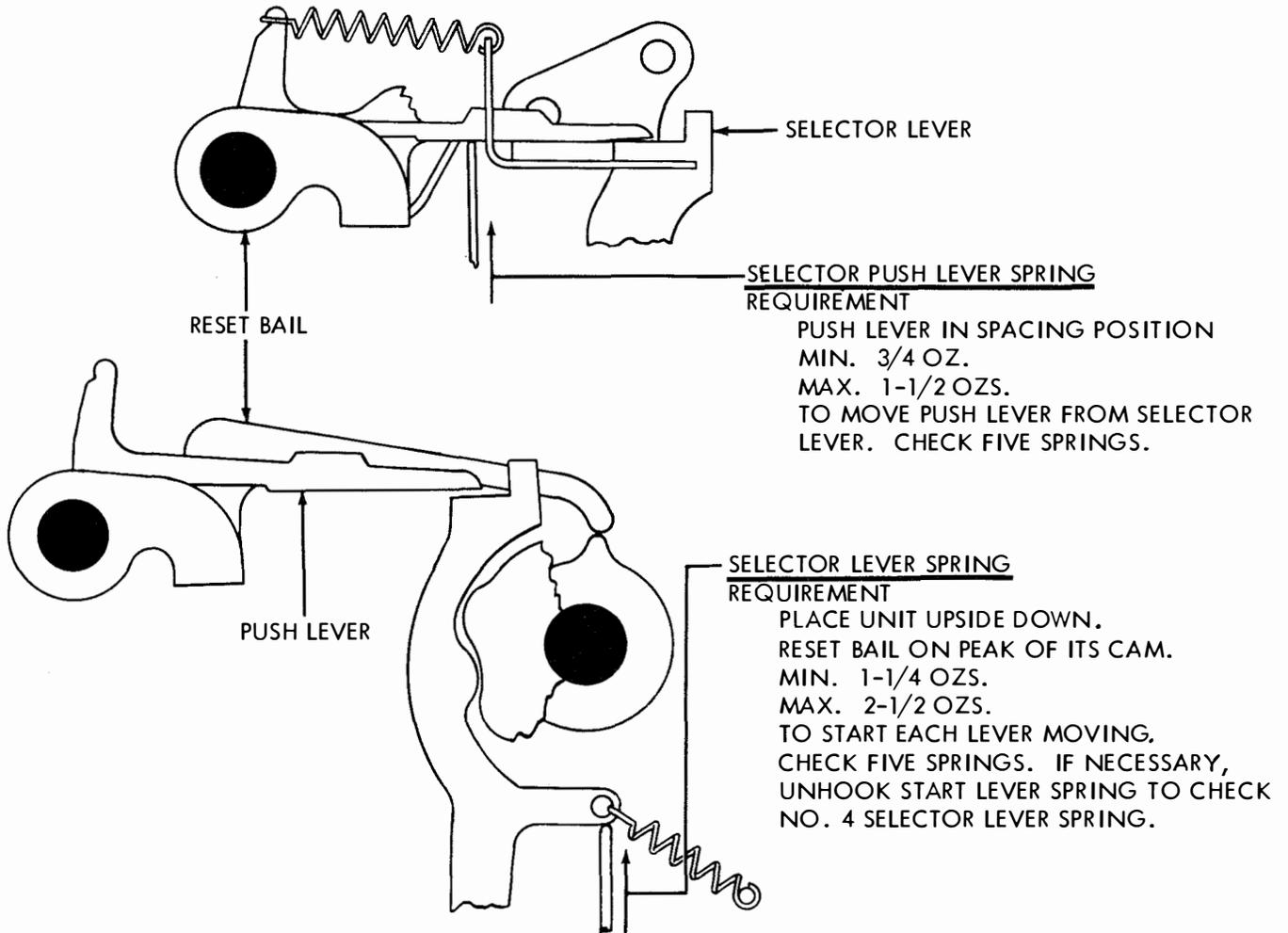
START LEVER

CLUTCH STOP ARM

START LEVER SPRING

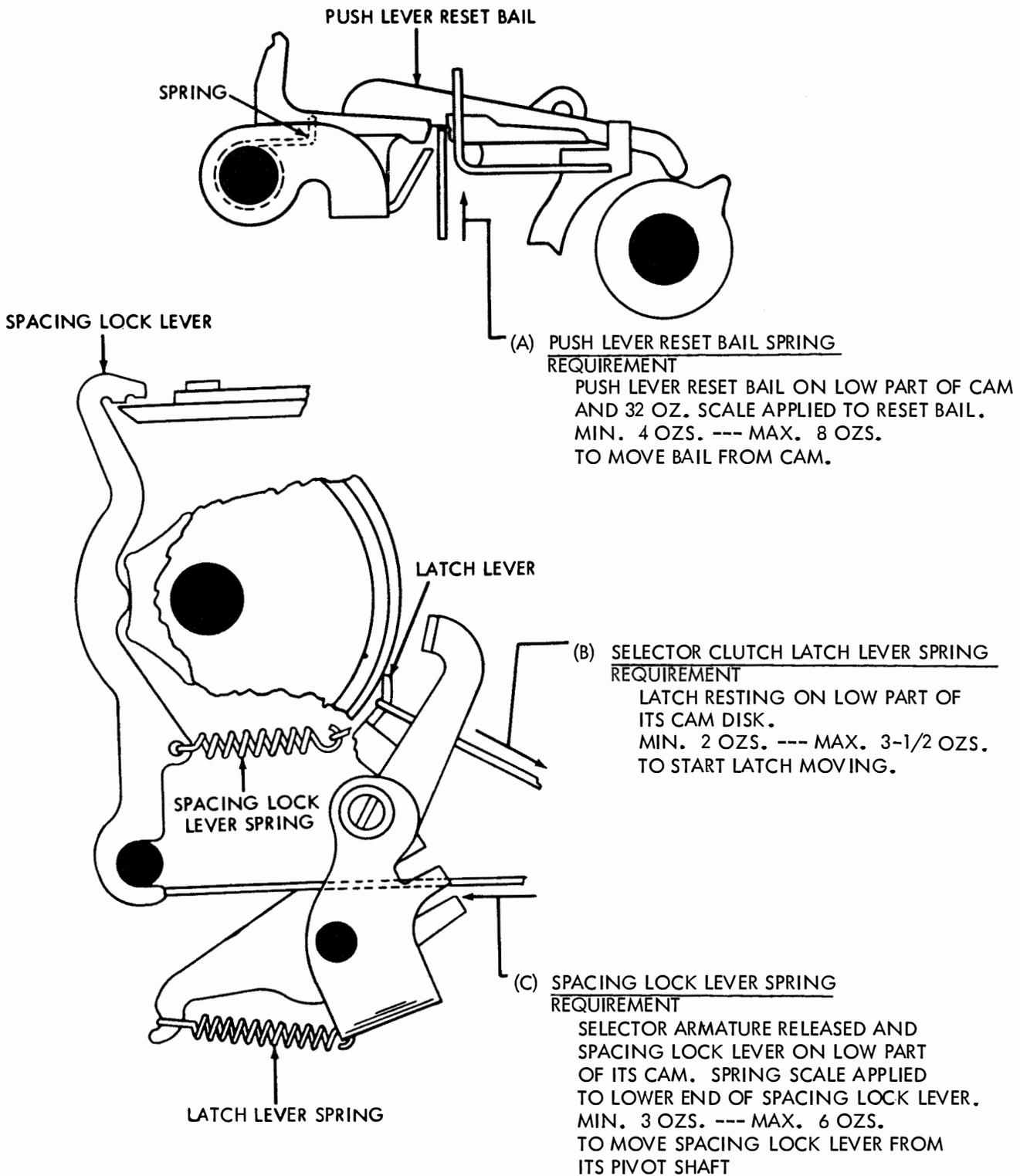
LATCH LEVER SPRING

2.08 Selector Mechanism (Cont.)



TO ADJUST POSITION CLUTCH DRUM WITH MOUNTING SCREW LOOSENED.

2.09 Selector Mechanism (Cont.)



2.10 Selector Mechanism (Cont.)

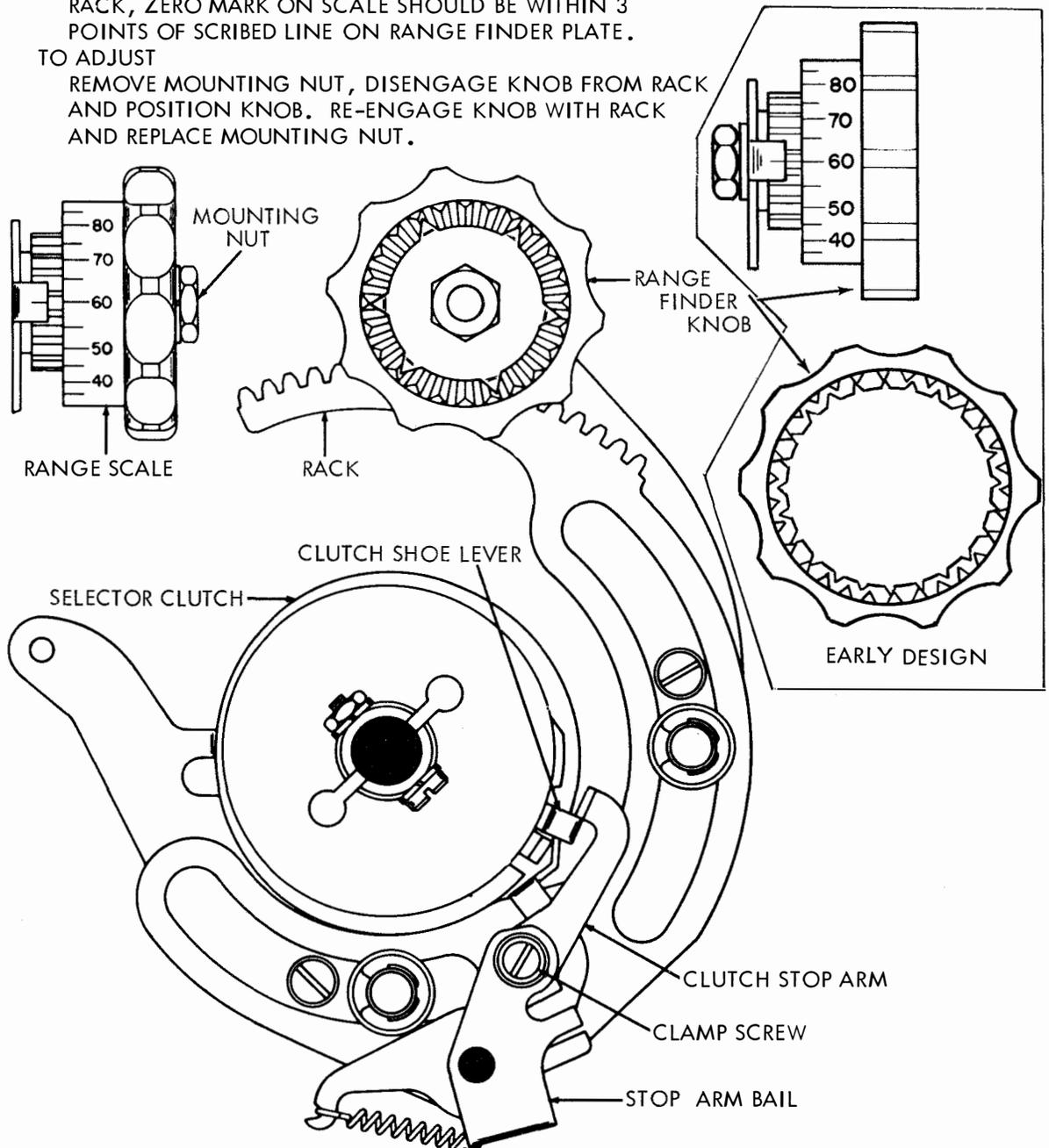
NOTE: REPLACE RANGE FINDER AND SELECTOR MAGNET ASSEMBLY

(A) RANGE FINDER KNOB PHASING
REQUIREMENT

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

TO ADJUST

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

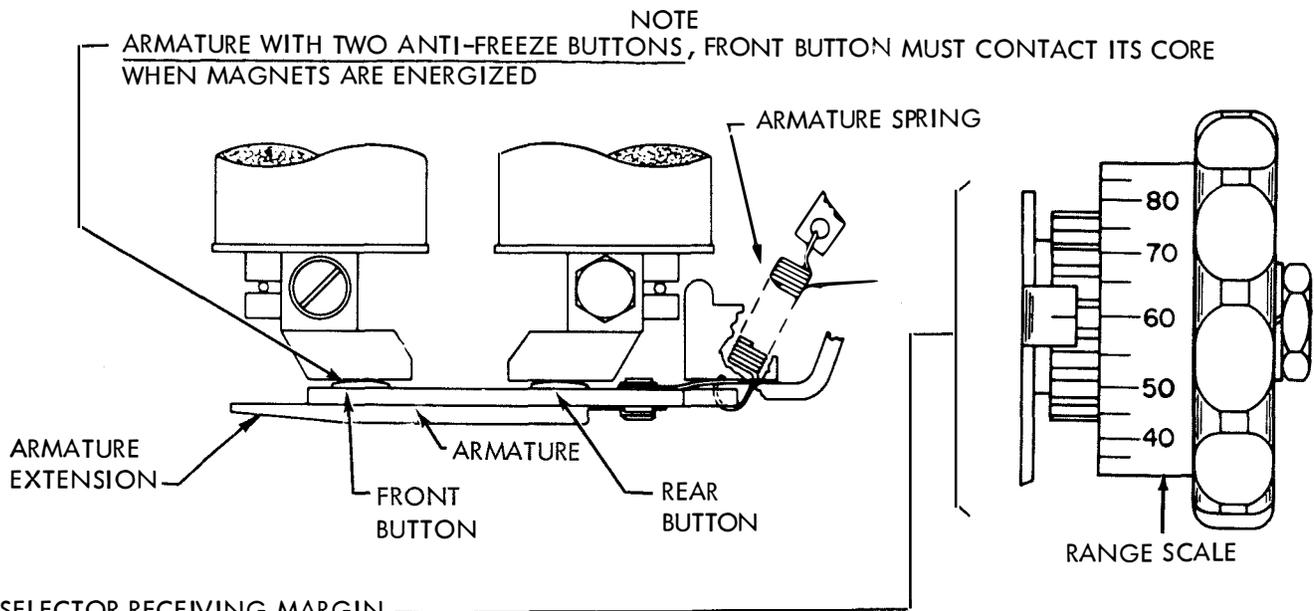
(B) SELECTOR CLUTCH STOP ARM
REQUIREMENT

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

TO ADJUST

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

2.11 Selector Mechanism (Cont.)



SELECTOR RECEIVING MARGIN

REQUIREMENT (FOR UNITS EMPLOYING ARMATURE WITH ONE ANTI-FREEZE BUTTON) WHEN A SIGNAL DISTORTION TEST SET IS USED FOR DETERMINING THE RECEIVING MARGINS OF THE SELECTOR, AND WHERE THE CONDITION OF THE COMPONENTS IS EQUIVALENT TO THAT OF NEW EQUIPMENT, THE RANGE AND DISTORTION TOLERANCES BELOW SHOULD BE MET.

REQUIREMENT (FOR UNITS EMPLOYING ARMATURE WITH TWO ANTI-FREEZE BUTTONS) WHEN A DISTORTION TEST SET IS AVAILABLE, THE SELECTOR ARMATURE SPRING TENSION SHOULD BE REFINED, IF NECESSARY, TO MEET THE SELECTOR RECEIVING MARGINS. THE FRONT ANTI-FREEZE BUTTON MUST CONTACT THE MAGNET CORE WHEN THE MAGNET COILS ARE ENERGIZED.

SELECTOR RECEIVING MARGIN MINIMUM REQUIREMENTS

CURRENT	SPEED WPM	POINTS RANGE (ZERO DISTORTION)	PERCENT MARKING AND SPACING BIAS TOLERATED	END DISTORTION TOLERATED (SCALE SET AT BIAS OPTIMUM)
0.060 AMP. (WINDINGS PARALLEL)	60	72	40	35
	75			
	100			
0.020 AMP. (WINDINGS SERIES)	60	72	40	35
	75			

TO ADJUST: REFINE THE SELECTOR ARMATURE SPRING (SEE PAR. 2.04 and 2.05).

RECEIVING MARGIN FOR DUAL SPEED OPERATION (60 AND 100 WPM)
REQUIREMENT

WITH RANGE SCALE SET AT COMMON OPTIMUM SETTING FOR DUAL SPEED OPERATION, THE PAGE PRINTER SHOULD ACCEPT SIGNALS WITH 35% BIAS AND END DISTORTION WHEN OPERATED AT 60 OR 100 WPM.

TO ADJUST

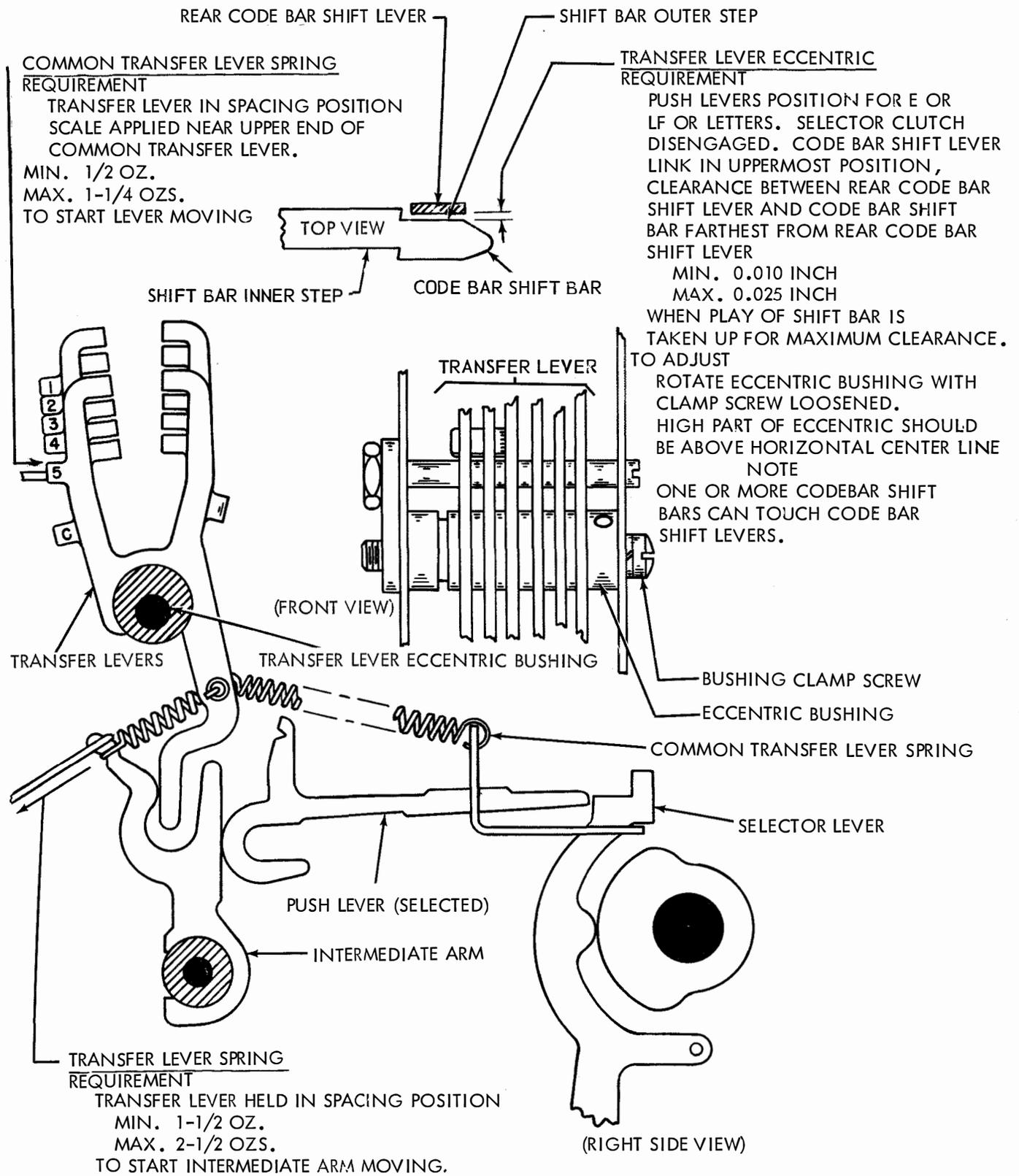
- BIAS SELECTOR BETWEEN LIMITS OF 0% TO -7% INTERNAL BIAS AT 100 WPM. (DO NOT READJUST FOR 60 WPM).
- OBTAIN RECEIVING MARGINS AT 60 AND 100 WPM.
- CALCULATE COMMON OPTIMUM BIAS SETTING AS FOLLOWS: $O_c = \frac{UMB_{100} + LSB_{60}}{2}$ WHERE

O_c = COMMON OPTIMUM BIAS SETTING

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

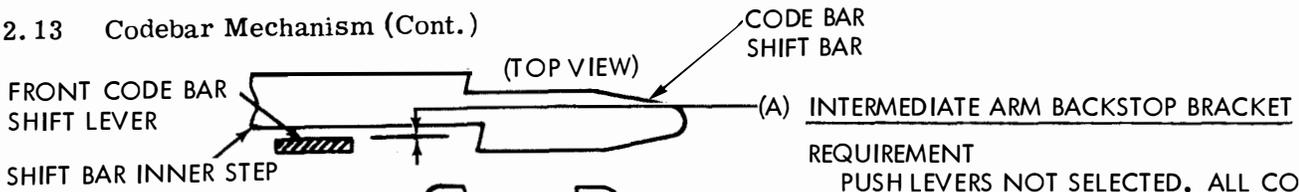
LSB_{60} = LOWER ORIENT LIMIT SPACING BIAS AT 60 WPM

2.12 Codebar Mechanism



SECTION 573-115-700

2.13 Codebar Mechanism (Cont.)

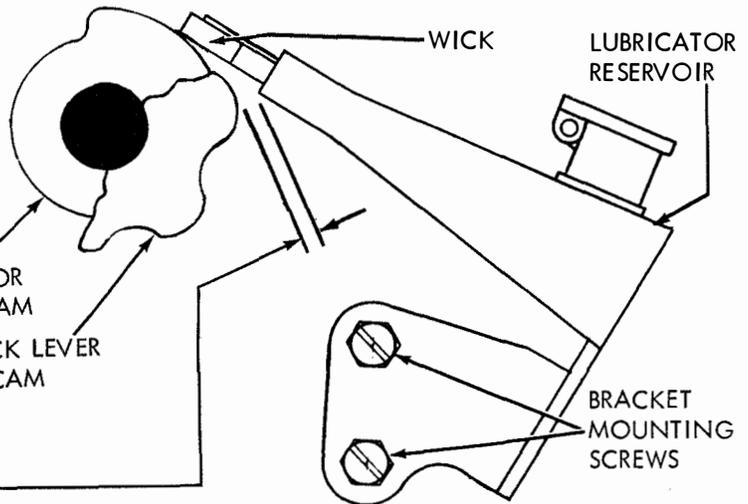
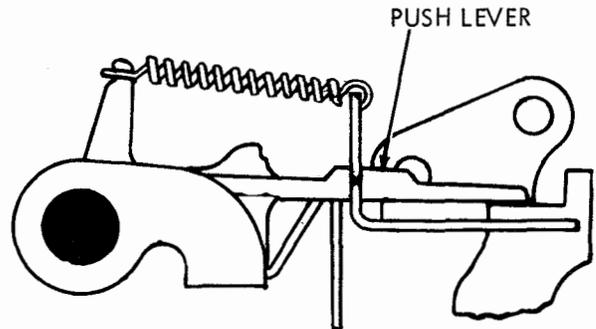
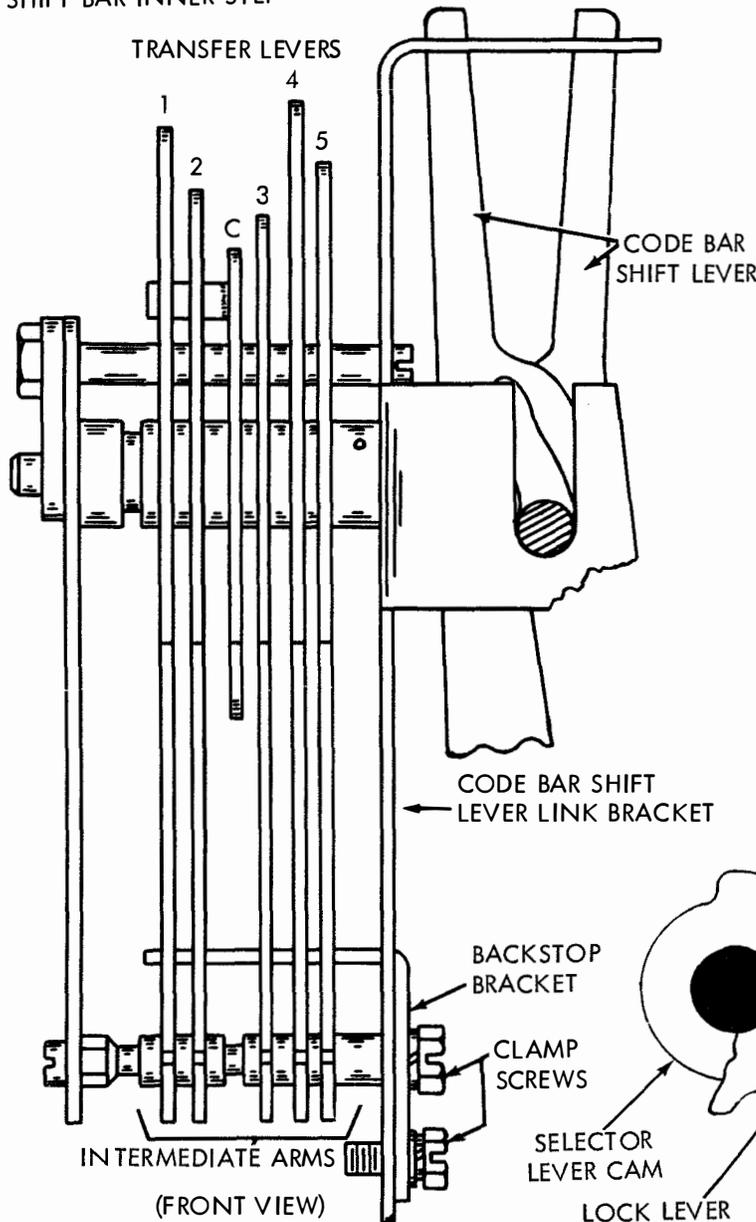


REQUIREMENT

PUSH LEVERS NOT SELECTED. ALL CODE BAR SHIFT BARS TO THE RIGHT. SELECTOR CLUTCH DISENGAGED. CODE BAR SHIFT LEVER LINK IN LOWERMOST POSITION. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND INNER STEP OF CODE BAR SHIFT BAR FARTHEST FROM FRONT CODE BAR SHIFT LEVER
 MIN. 0.010 INCH
 MAX. 0.025 INCH
 WHEN PLAY IN PARTS IS TAKEN UP FOR MAXIMUM CLEARANCE.

TO ADJUST

POSITION BACKSTOP BRACKET WITH ITS TWO CLAMP SCREWS LOOSENED.



2.14 Selector Mechanism (Cont.)

(B) SELECTOR CAM LUBRICATOR REQUIREMENT

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

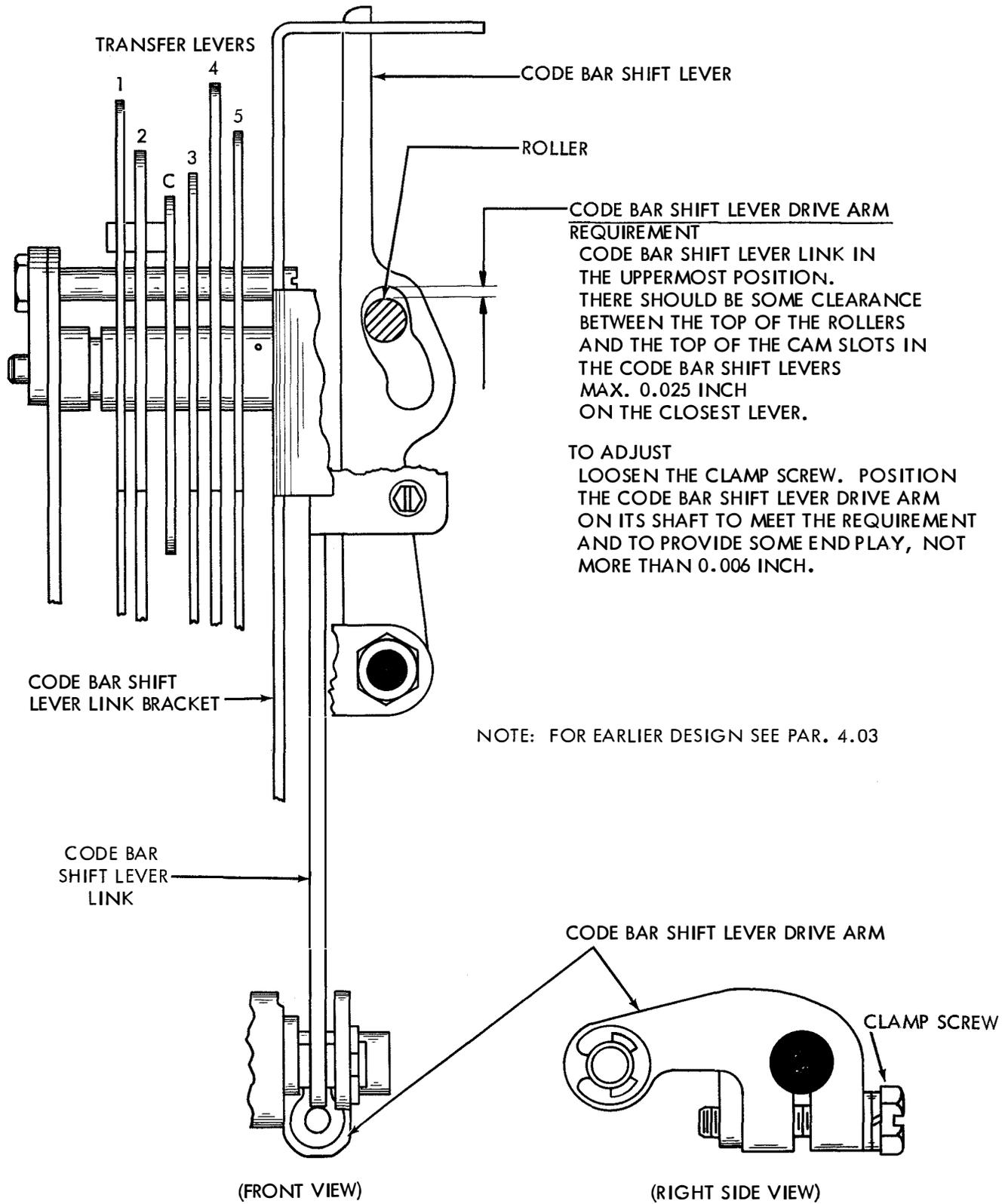
THE HIGH PART OF THE SELECTOR LEVER CAMS SHOULD TOUCH THE LUBRICATOR WICK, BUT SHOULD NOT RAISE IT MORE THAN 1/32 INCH.

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

TO ADJUST

POSITION THE LUBRICATOR BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

2.15 Codebar Mechanism (Cont.)



NOTE: FOR EARLIER DESIGN SEE PAR. 4.03

2.16 Codebar Mechanism (Cont.)

CODE BAR SHIFT LEVER LINK BRACKET

REQUIREMENT

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

TO CHECK (FRONT)

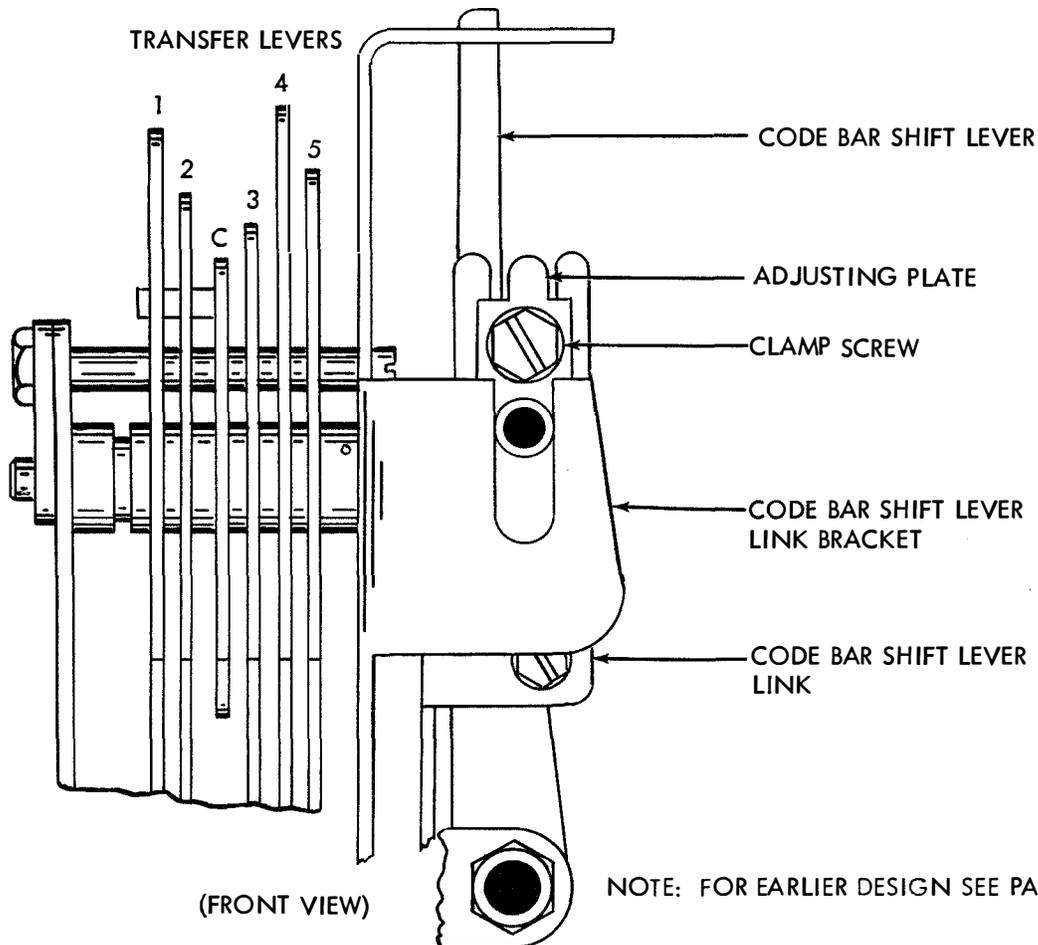
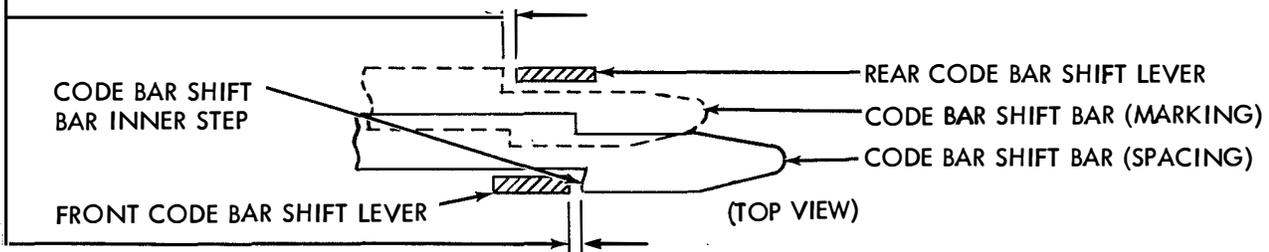
SELECT BLANK COMBINATION AND ROTATE MAINSHAFT UNTIL CODE BAR SHIFT LEVER LINK REACHES HIGHEST TRAVEL. TAKE UP PLAY FOR MAXIMUM CLEARANCE. CLEARANCE BETWEEN FRONT CODE BAR SHIFT LEVER AND SHOULDER ON NEAREST CODE BAR SHIFT BAR
 MIN. 0.002 INCH
 MAX. 0.025 INCH

TO CHECK (REAR)

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

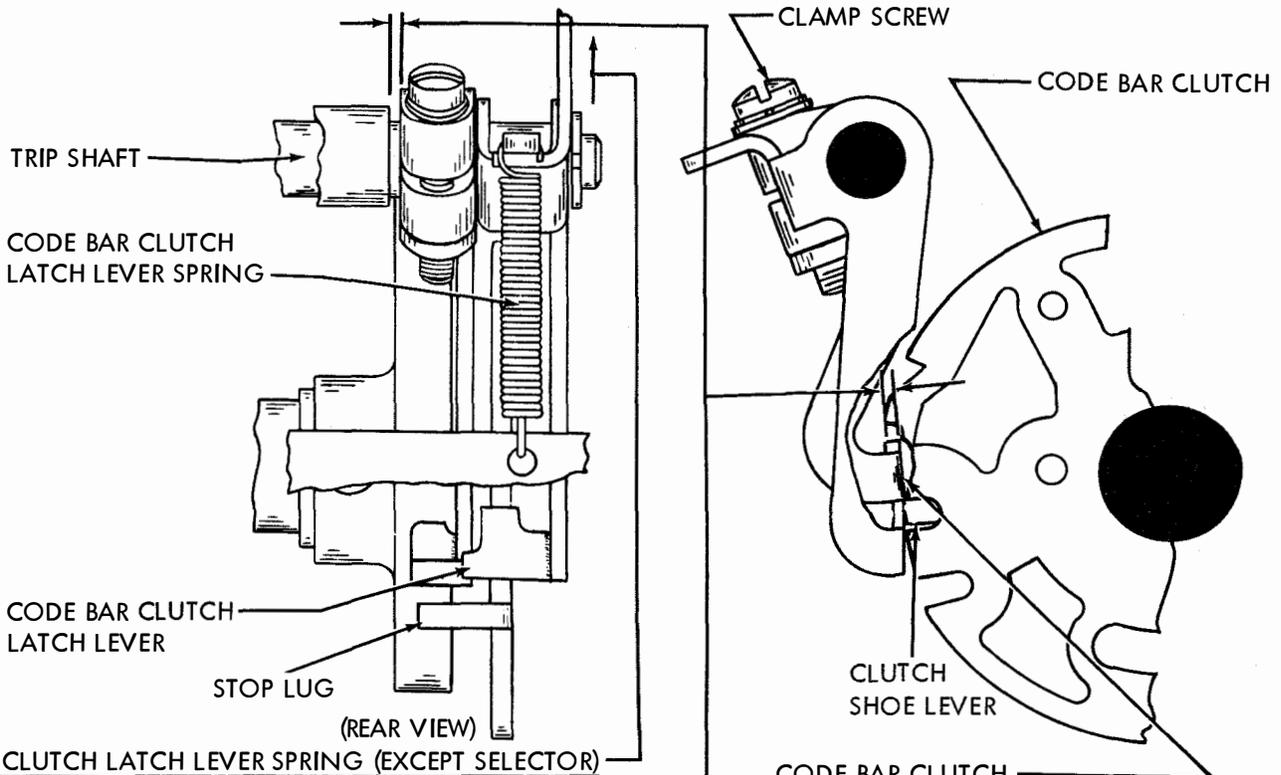
TO ADJUST

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



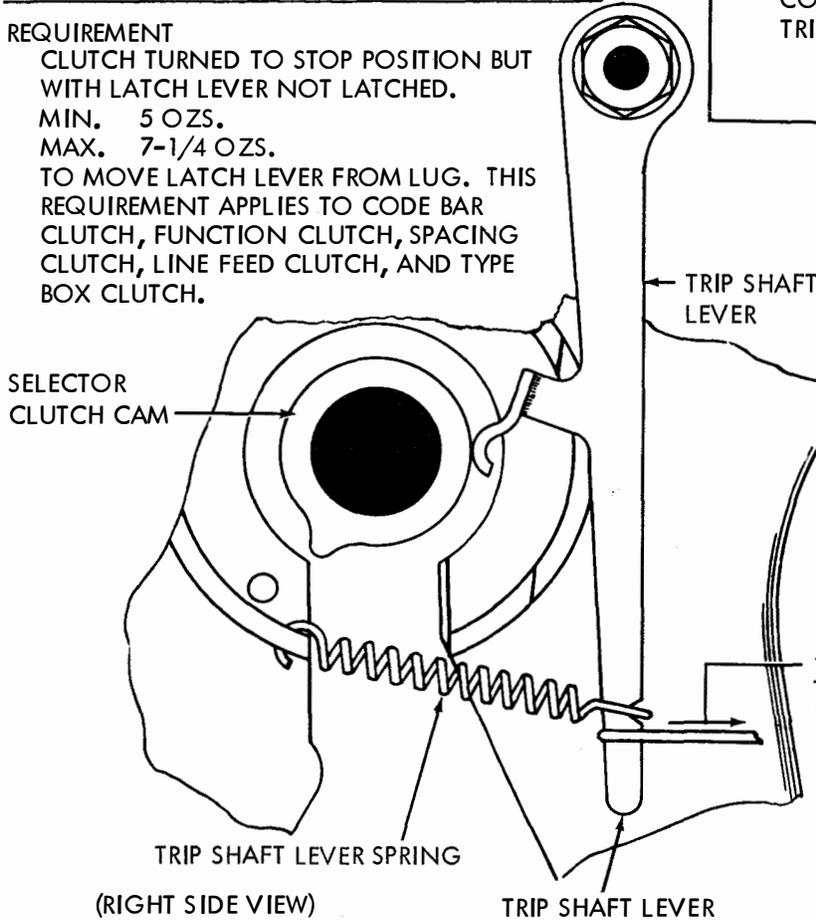
NOTE: FOR EARLIER DESIGN SEE PAR. 4.04

2.17 Main Shaft and Trip Shaft Mechanisms



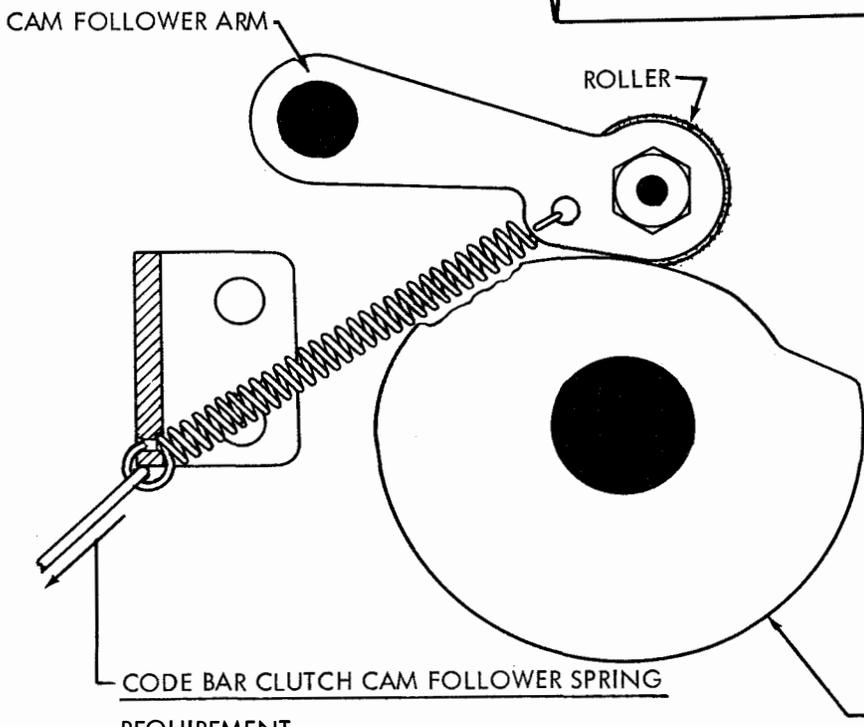
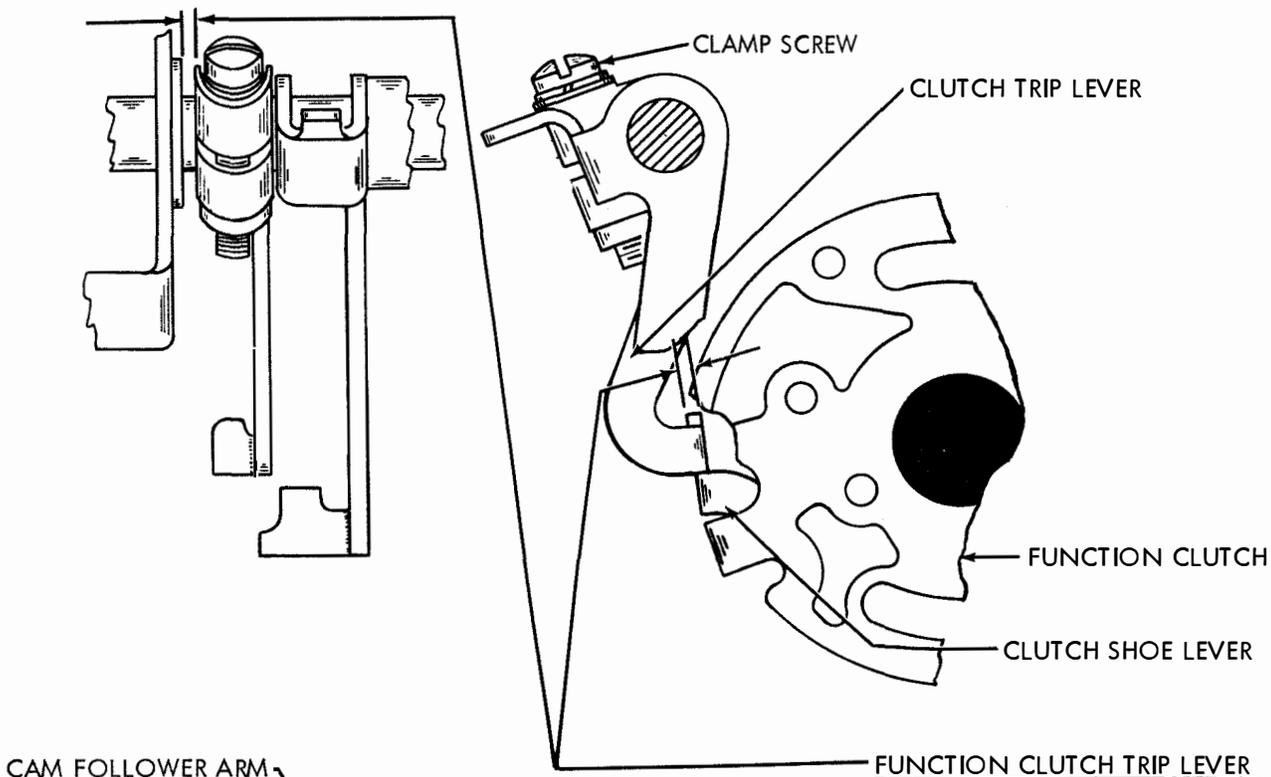
REQUIREMENT
 CLUTCH TURNED TO STOP POSITION BUT WITH LATCH LEVER NOT LATCHED.
 MIN. 5 OZS.
 MAX. 7-1/4 OZS.
 TO MOVE LATCH LEVER FROM LUG. THIS REQUIREMENT APPLIES TO CODE BAR CLUTCH, FUNCTION CLUTCH, SPACING CLUTCH, LINE FEED CLUTCH, AND TYPE BOX CLUTCH.

REQUIREMENT
 SELECTOR CLUTCH AND CODE BAR CLUTCH DISENGAGED. CODE BAR CLUTCH TRIP LEVER SHOULD ENGAGE CLUTCH SHOE LEVER BY FULL THICKNESS OF SHOE LEVER AND HAVE SOME END PLAY
 MAX. 0.006 INCH
 TO ADJUST POSITION TRIP LEVER ON ITS SHAFT WITH CLAMP SCREW LOOSENED.



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

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



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

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

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

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

(A) CLUTCH TRIP SHAFT SET COLLARS

(1) REQUIREMENT

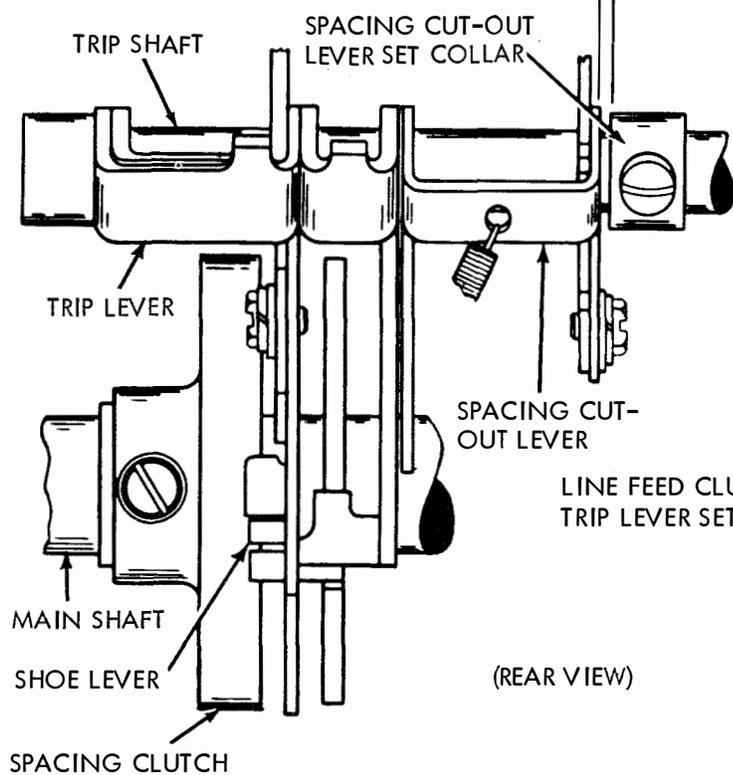
SPACING CUT-OUT LEVER SHOULD HAVE SIDE PLAY

MIN. SOME
MAX. 0.008 INCH

TO ADJUST

POSITION SPACING CUT-OUT LEVER SET COLLAR

NOTE: FOR EARLIER DESIGN SEE PAR. 4.05.



(2) REQUIREMENT

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

TO ADJUST

POSITION LINE FEED CLUTCH TRIP LEVER SET COLLAR.

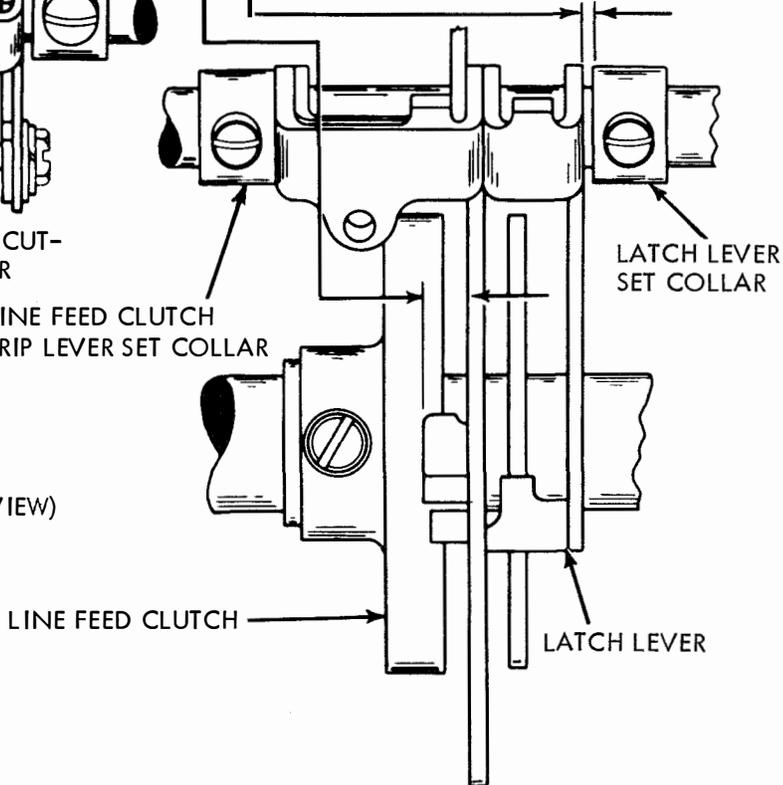
(3) REQUIREMENT

LINE FEED CLUTCH LATCH LEVER SHOULD HAVE SIDE PLAY.

MIN. SOME
MAX. 0.008 INCH

TO ADJUST

POSITION LINE FEED CLUTCH LATCH LEVER SET COLLAR.



2.20 Main Shaft and Trip Shaft Mechanisms (Cont.)

SPACING CLUTCH TRIP LEVER

REQUIREMENT

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

TO CHECK

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

TO ADJUST

POSITION THE TRIP LEVER BY MEANS OF ITS CLAMP SCREW.

NOTE: FOR EARLIER DESIGN
SEE PAR. 4.06.

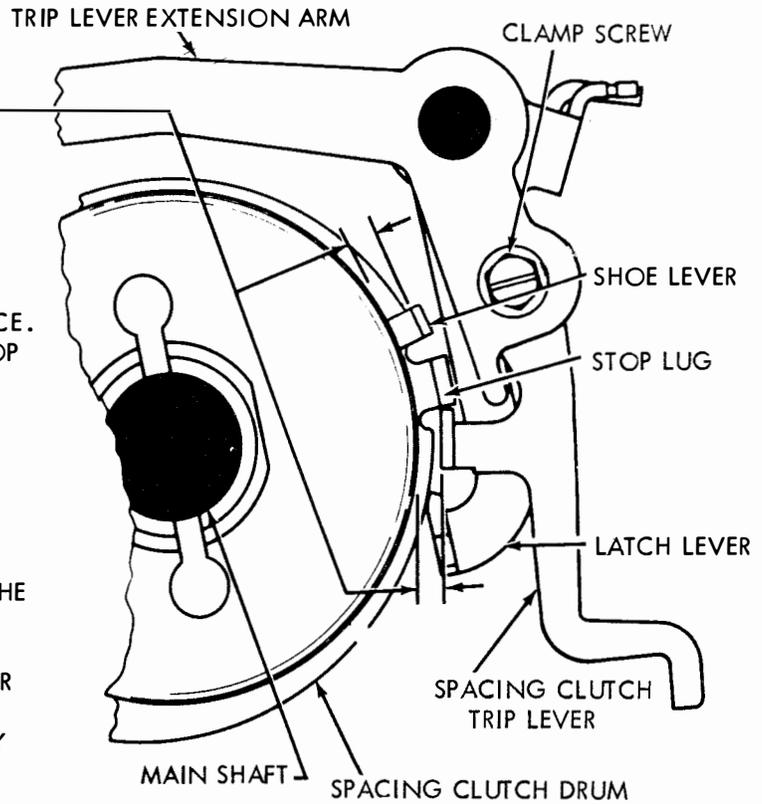
CLUTCH TRIP LEVER SPRING

REQUIREMENT

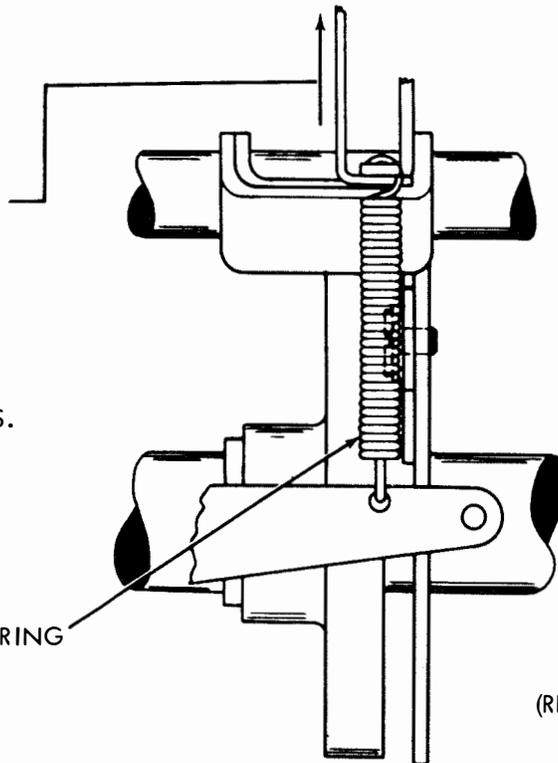
CLUTCH ENGAGED AND ROTATED UNTIL TRIP LEVER RESTS ON STOP LUG

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

TO MOVE LEVER AWAY FROM STOP LUG.



(RIGHT SIDE VIEW)



SPACING CLUTCH TRIP LEVER SPRING

(REAR VIEW)

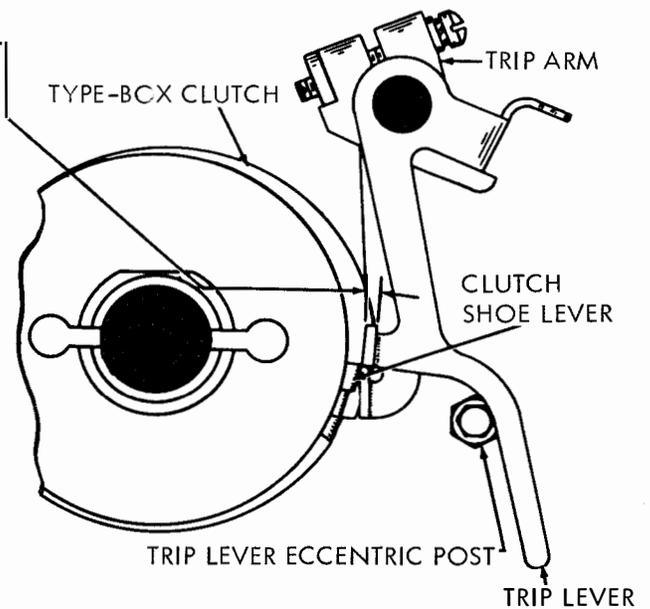
2.21 Main Shaft and Trip Shaft Mechanisms (Cont.)

(A) TYPE BOX CLUTCH TRIP LEVER ECCENTRIC POST
REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. TRIP LEVER SHOULD ENGAGE THE CLUTCH SHOE LEVER BY THE FULL THICKNESS OF THE SHOE LEVER. TO ADJUST POSITION THE TRIP LEVER ECCENTRIC POST.

(C) LINE FEED CLUTCH TRIP LEVER ADJUSTING SCREW
REQUIREMENT

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



(B) LINE FEED CLUTCH TRIP LEVER ECCENTRIC POST
REQUIREMENT

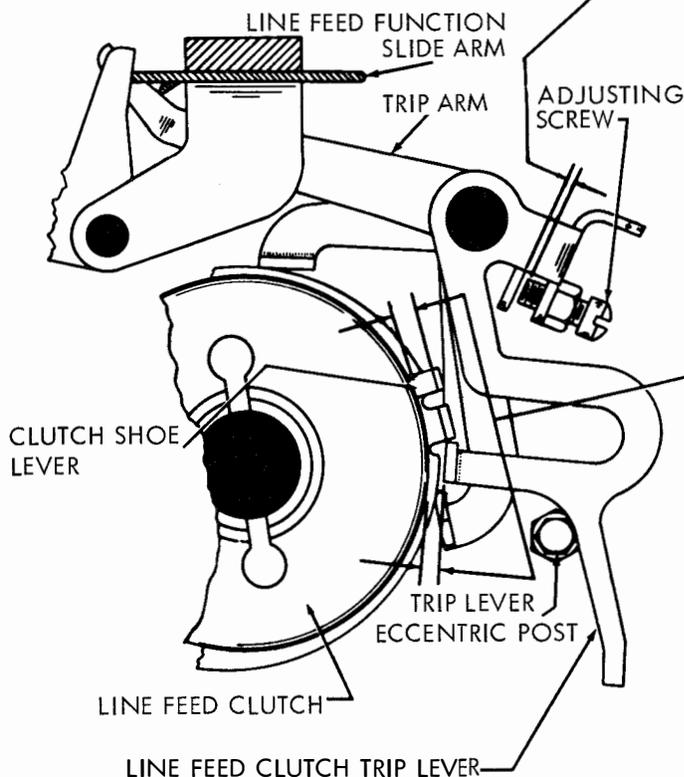
CLEARANCE BETWEEN TRIP LEVER AND CLUTCH DRUM SHOULD BE 0.018 TO 0.035 INCH LESS THAN CLEARANCE BETWEEN SHOE LEVER AND DRUM AT STOP WHICH SHOWS GREATEST CLEARANCE. THERE SHOULD BE SOME OVERBITE ON ALL THREE STOP LUGS AS GAUGED BY EYE.

TO CHECK

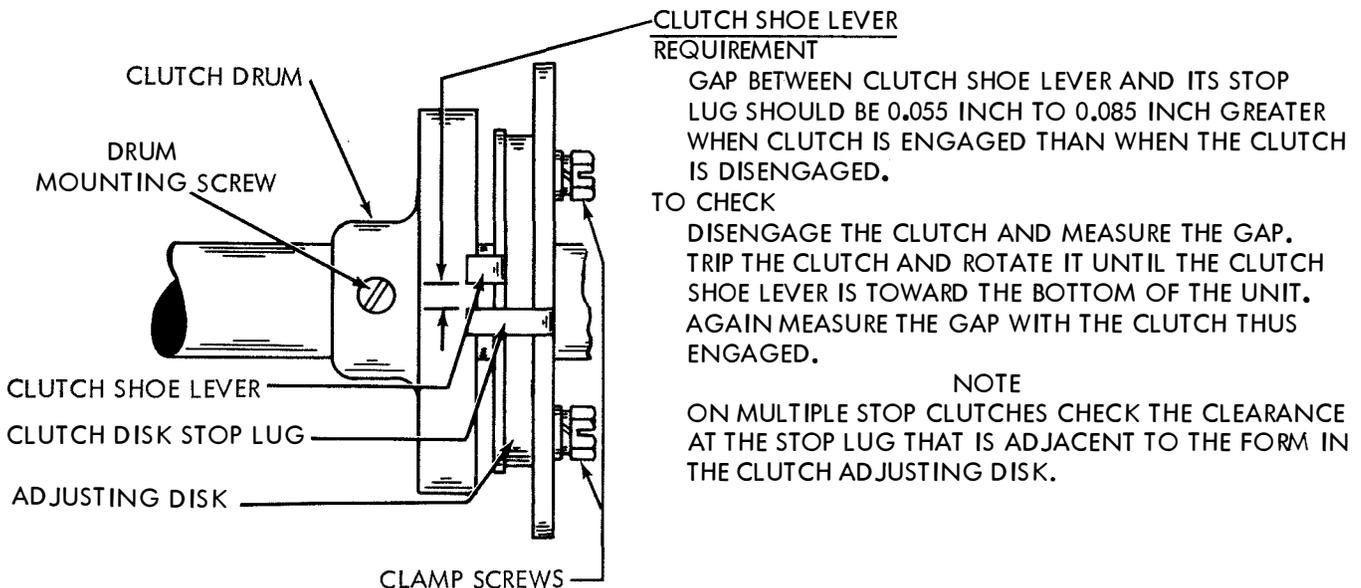
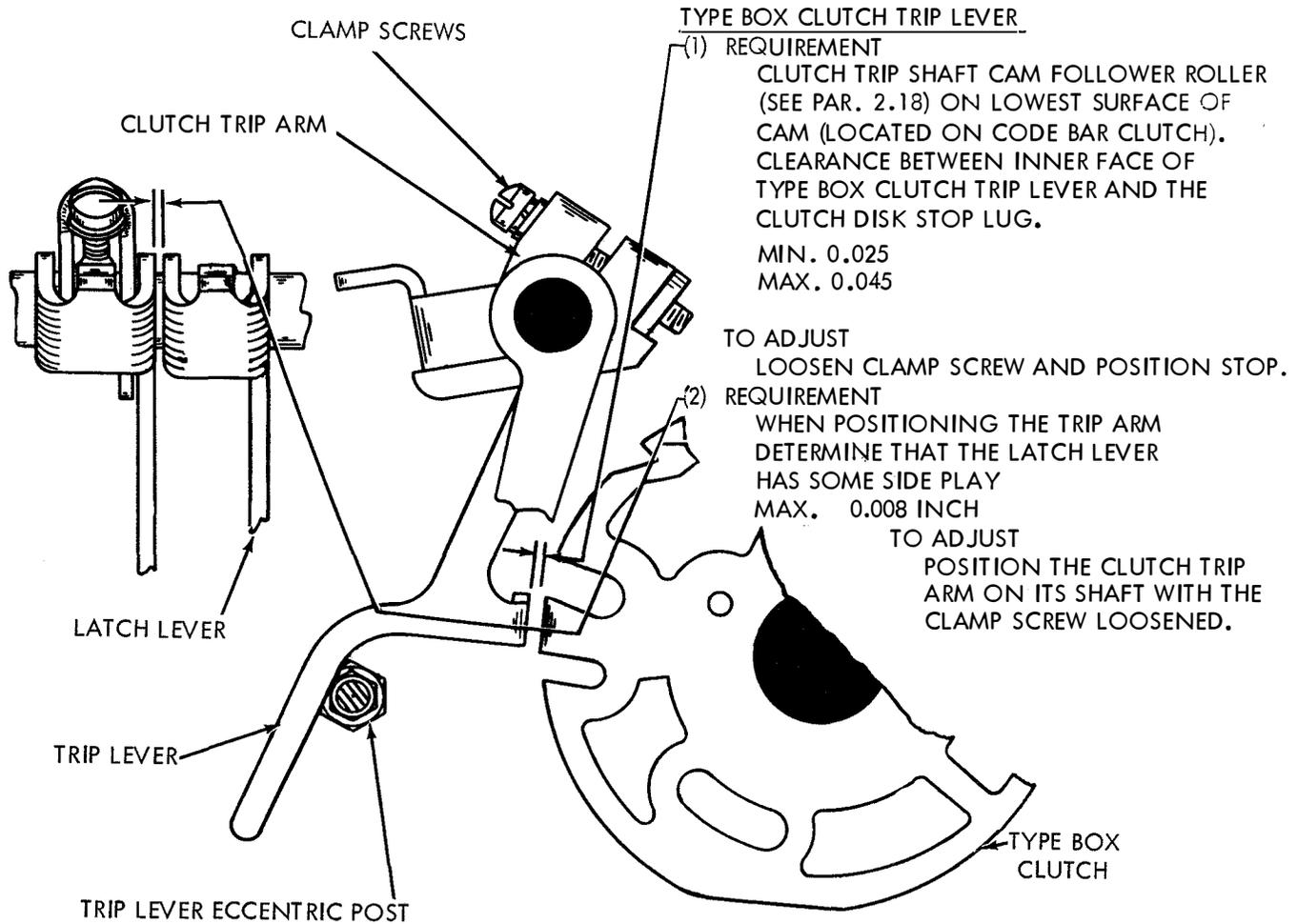
DISENGAGE THE CLUTCH. TRIP CLUTCH TRIP LEVER AND ROTATE MAIN SHAFT UNTIL TRIP LEVER IS OVER THE SHOE LEVER. TAKE UP PLAY OF SHOE LEVER INWARD BY SNAPPING THE TRIP LEVER OVER THE SHOE LEVER. CHECK CLEARANCE BETWEEN SHOE LEVER AND DRUM AT EACH STOP POSITION. WITH TRIP LEVER AT THE STOP POSITION WHICH YIELDS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

TO ADJUST

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

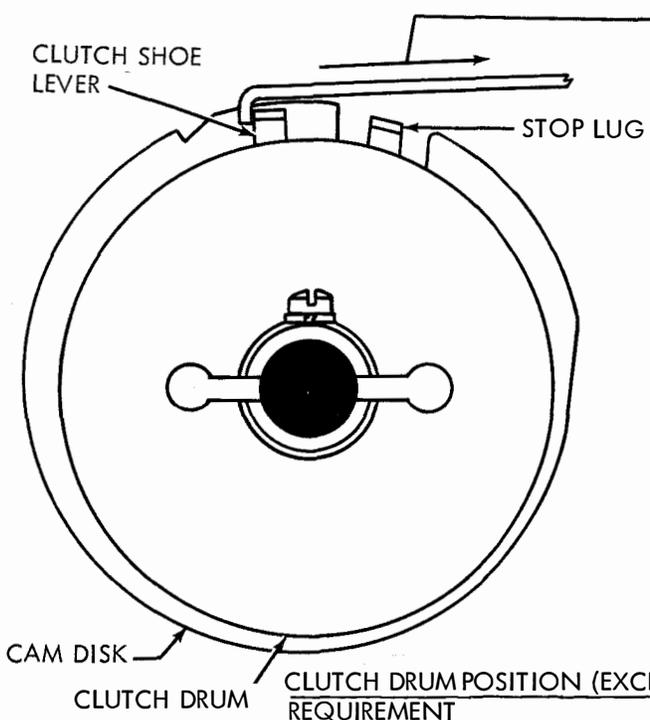


2.22 Main Shaft and Trip Shaft Mechanisms (Cont.)



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

2.23 Main Shaft and Trip Shaft Mechanisms (Cont.)



CLUTCH SHOE LEVER SPRING REQUIREMENT

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

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

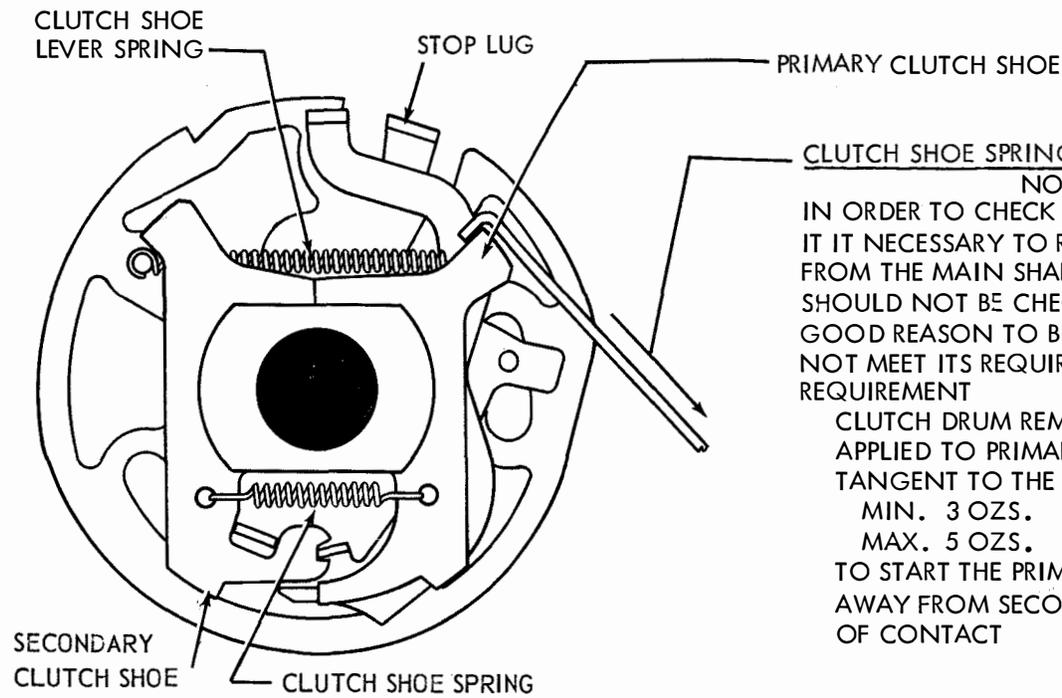
MIN. 16 OZS. MULTIPLE-STOP CLUTCHES
MAX. 22 OZS.

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

CLUTCH DRUM POSITION (EXCEPT SELECTOR) REQUIREMENT

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

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



CLUTCH SHOE SPRING NOTE

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

REQUIREMENT

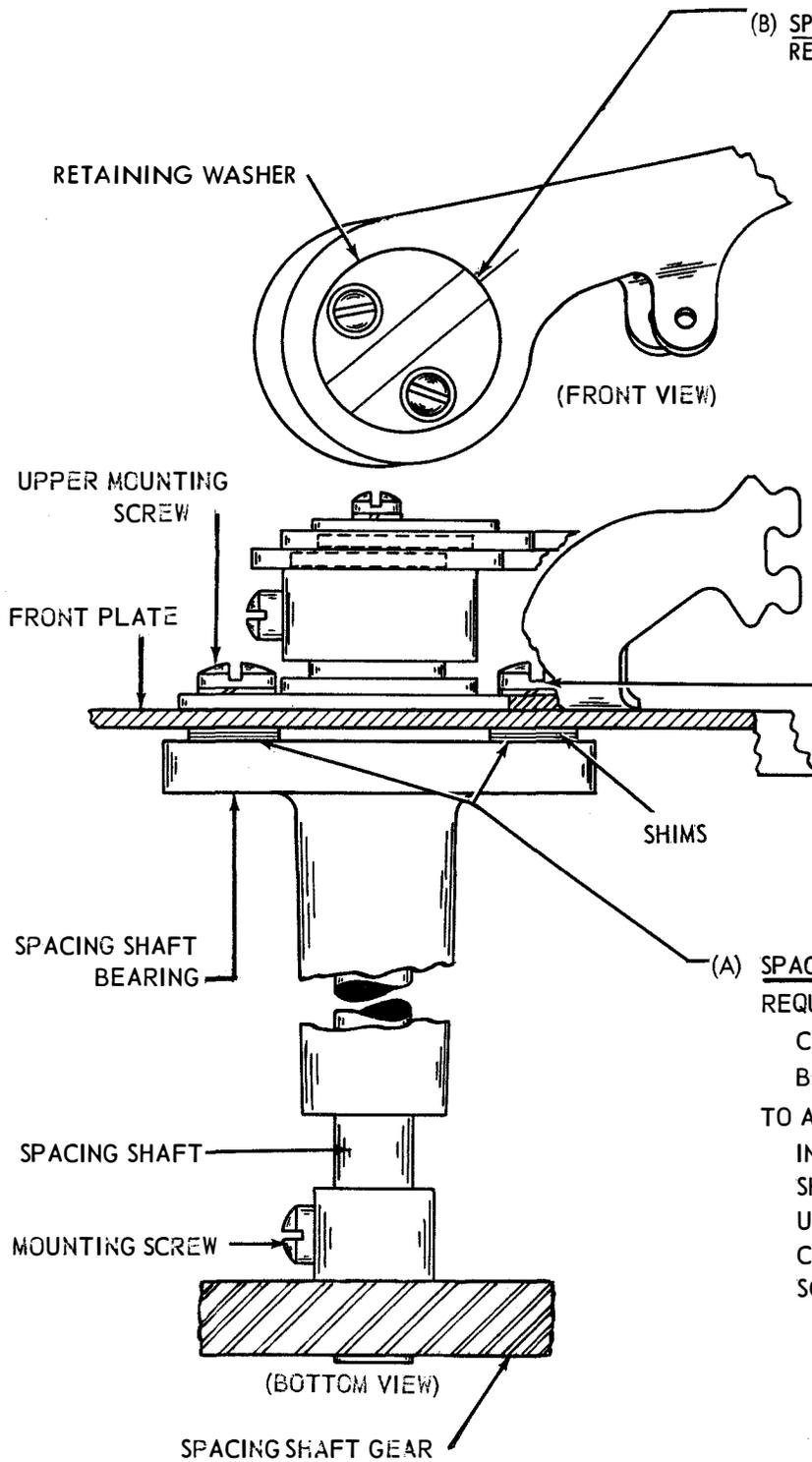
CLUTCH DRUM REMOVED. SPRING SCALE APPLIED TO PRIMARY SHOE AT A TANGENT TO THE FRICTION SURFACE.

MIN. 3 OZS.

MAX. 5 OZS.

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

2.24 Spacing Mechanism



(B) SPACING GEAR PHASING REQUIREMENT

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

TO ADJUST

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

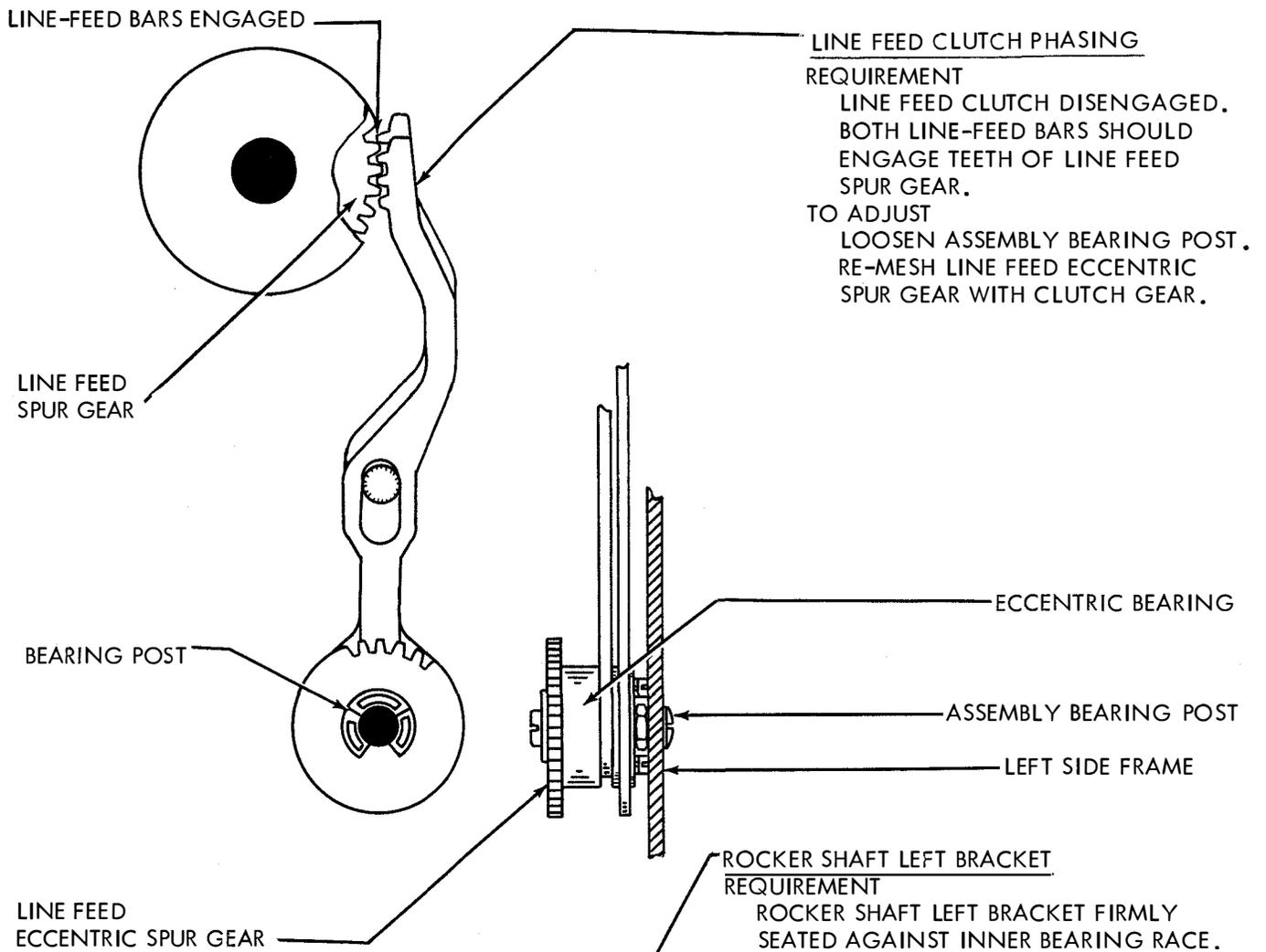
(A) SPACING GEAR CLEARANCE REQUIREMENT

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

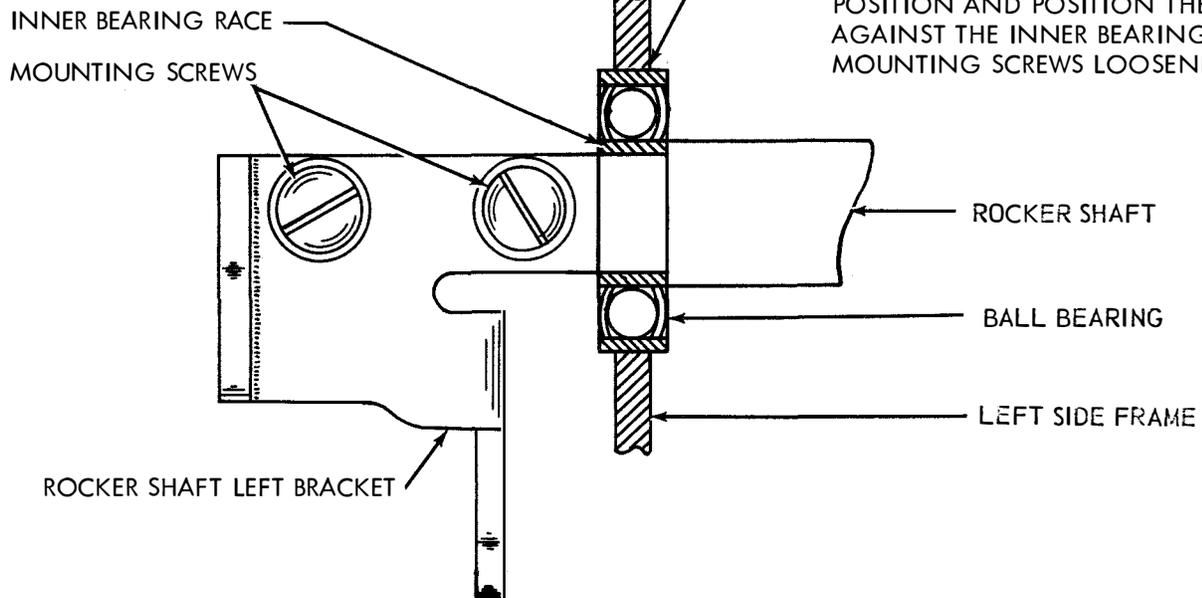
TO ADJUST

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

2.25 Line Feed and Platen Mechanism



2.26 Positioning Mechanism



SECTION 573-115-700

2.27 Positioning Mechanism (Cont.)

ROCKER SHAFT BRACKET ECCENTRIC STUD

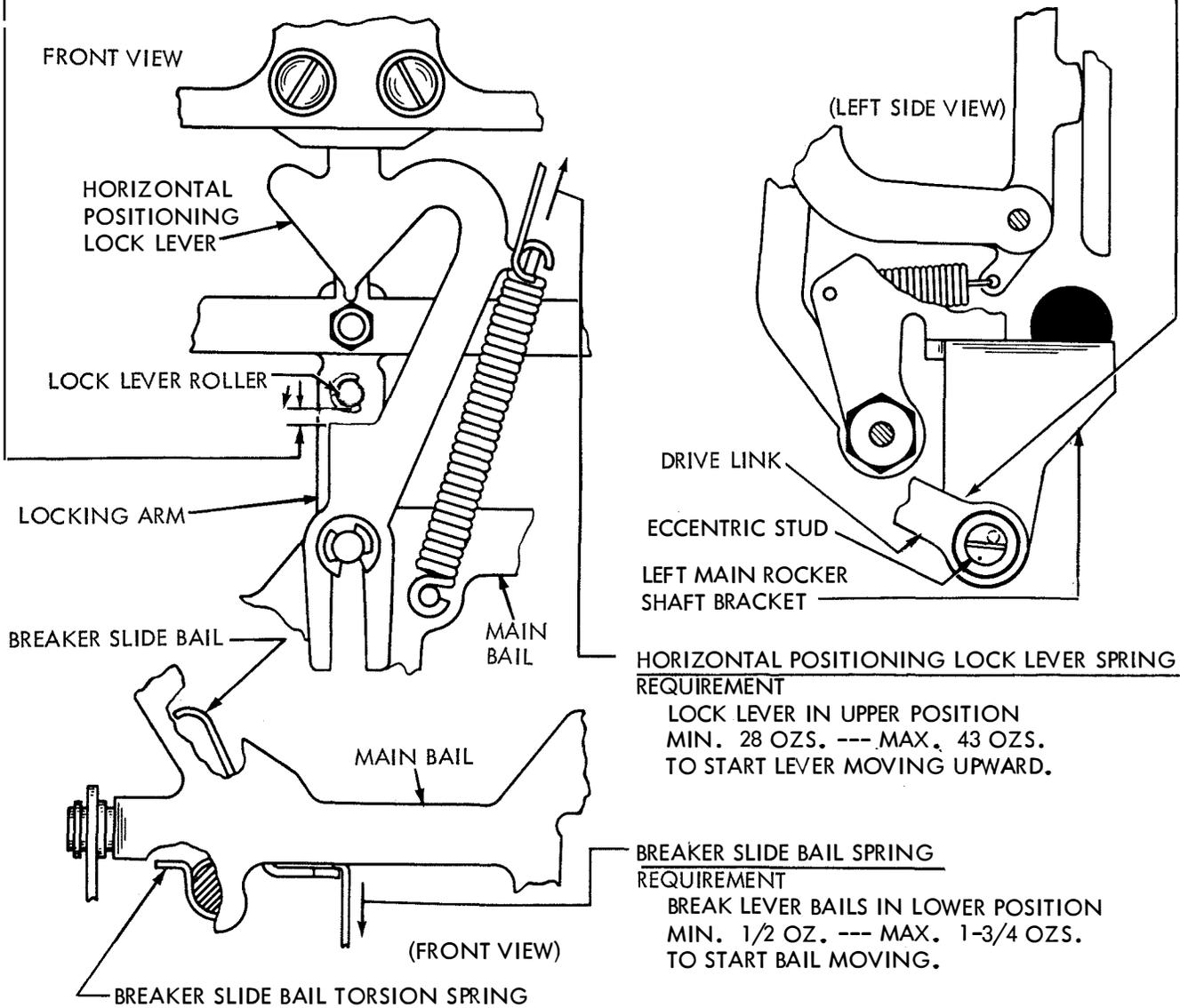
(1) REQUIREMENT --- WITH TYPE BOX CLUTCH DISENGAGED AND PLAY IN LOCKING ARM TAKEN UP TOWARD FRONT, GAP BETWEEN LOWER SIDE OF LOCK LEVER ROLLER AND TOP EDGE OF SHOULDER ON HORIZONTAL POSITIONING LOCK LEVER SHOULD BE:

MIN. 0.055 INCH ----- MAX. 0.090 INCH

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

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

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



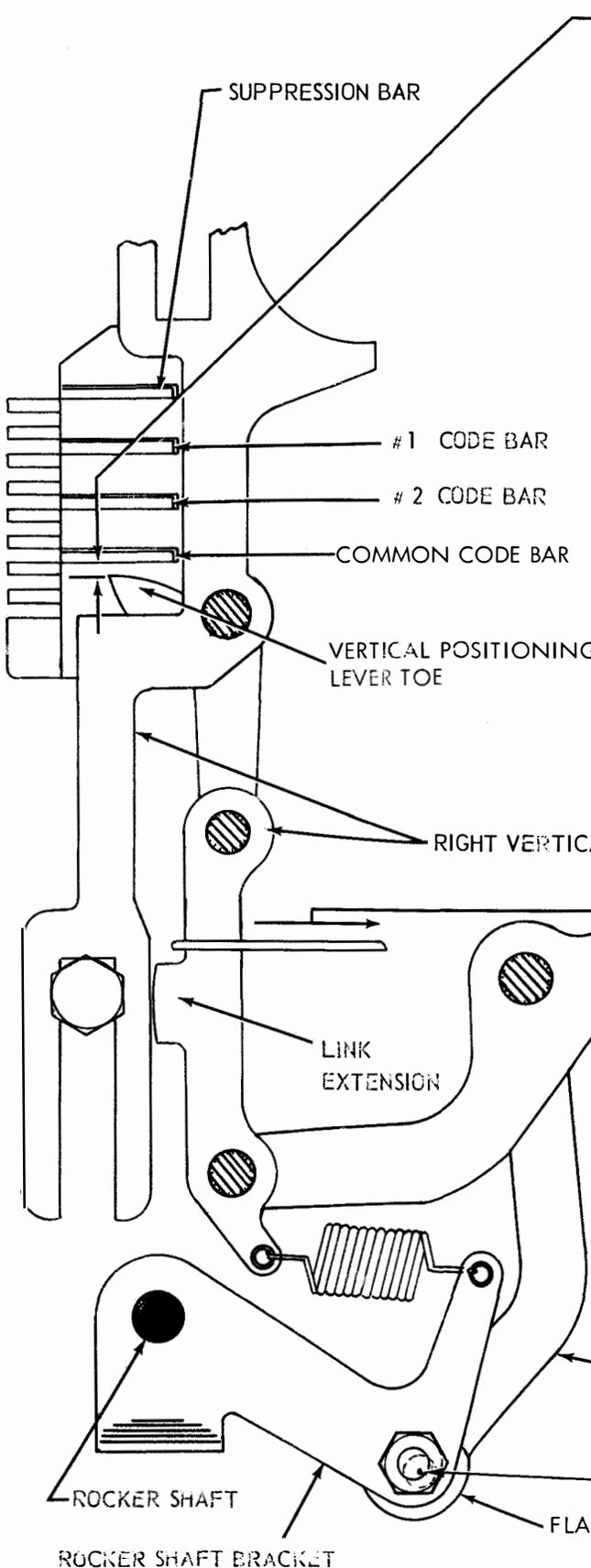
HORIZONTAL POSITIONING LOCK LEVER SPRING REQUIREMENT

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

BREAKER SLIDE BAIL SPRING REQUIREMENT

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

2.28 Positioning Mechanism (Cont.)



(A) RIGHT VERTICAL POSITIONING LEVER
ECCENTRIC STUD

REQUIREMENT

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

MIN. 0.030 INCH

MAX. 0.050 INCH

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

TO ADJUST

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

(B) VERTICAL POSITIONING LEVER SPRING

REQUIREMENT

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

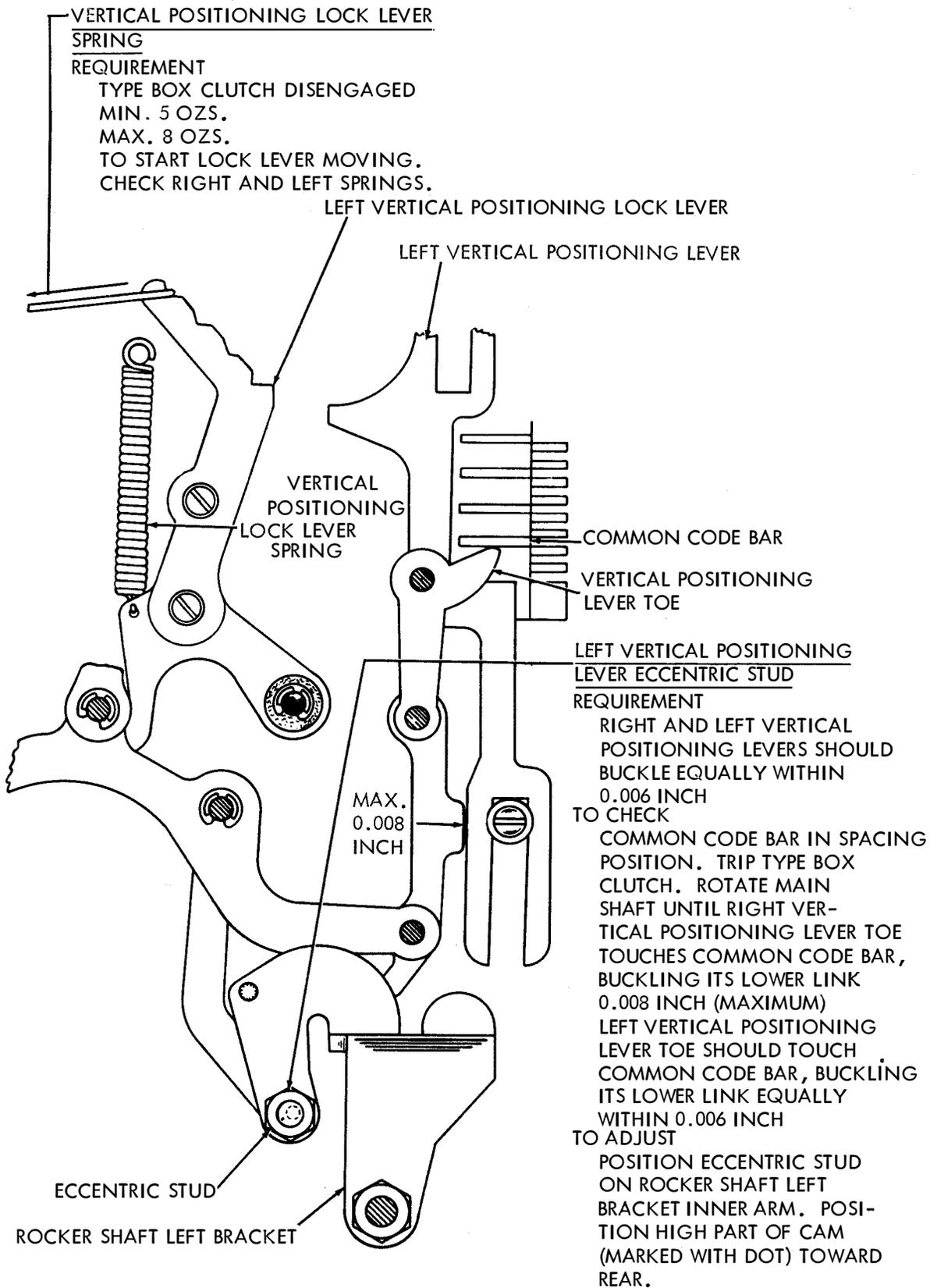
MIN. 4 OZS.

MAX. 12 OZS.

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

CHECK BOTH RIGHT AND LEFT SPRINGS.

2. 29 Positioning Mechanism (Cont.)



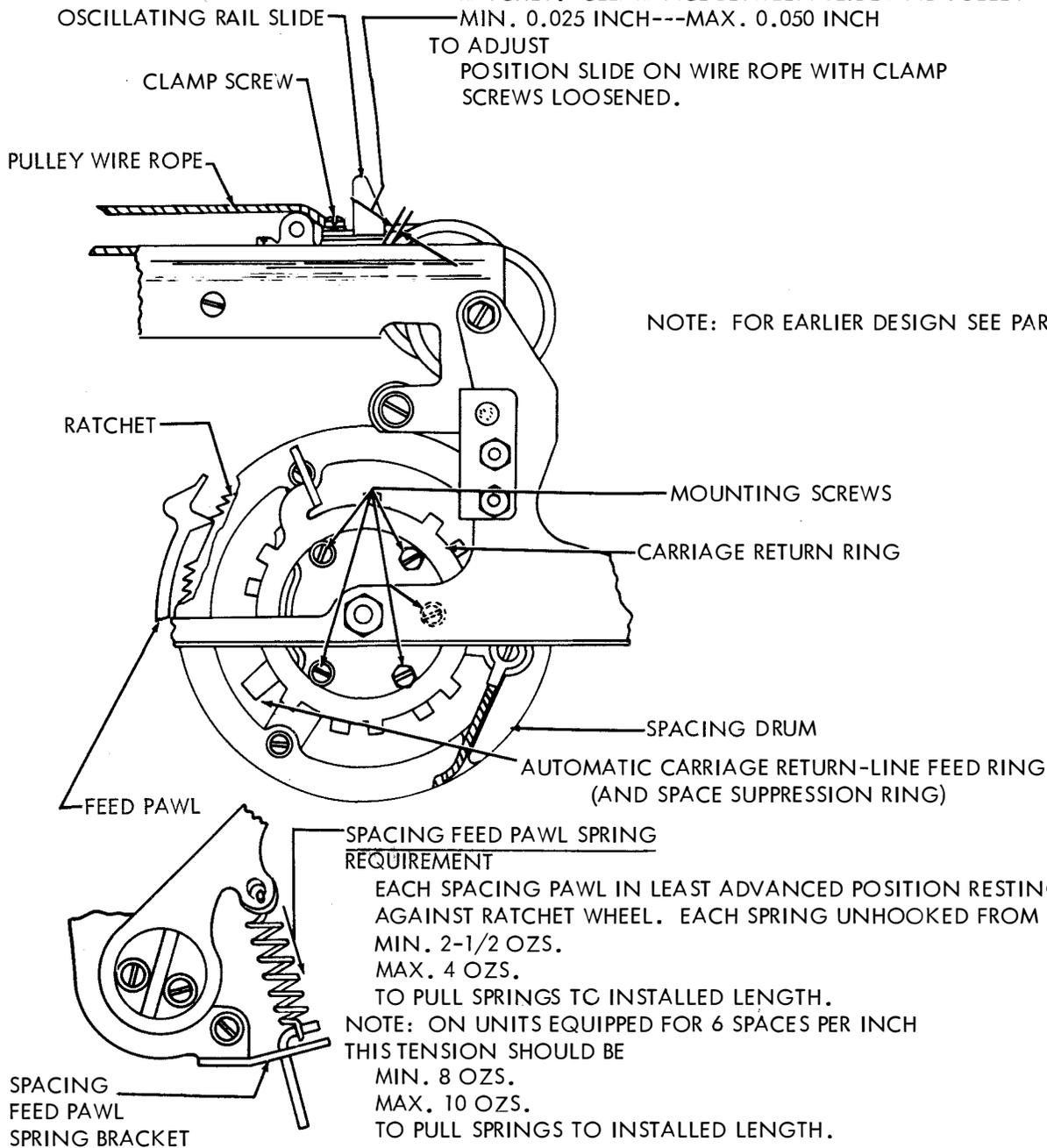
2.30 Spacing Mechanism (Cont.)

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

OSCILLATING RAIL SLIDE POSITION REQUIREMENT

CARRIAGE RETURN RING AND AUTOMATIC CARRIAGE RETURN-LINE FEED RING FREE 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 PAR. 4.07.

SPACING FEED PAWL SPRING REQUIREMENT

EACH SPACING PAWL IN LEAST ADVANCED POSITION RESTING AGAINST RATCHET WHEEL. EACH SPRING UNHOOKED FROM BRACKET
MIN. 2-1/2 OZS.
MAX. 4 OZS.
TO PULL SPRINGS TO INSTALLED LENGTH.
NOTE: ON UNITS EQUIPPED FOR 6 SPACES PER INCH THIS TENSION SHOULD BE
MIN. 8 OZS.
MAX. 10 OZS.
TO PULL SPRINGS TO INSTALLED LENGTH.

SECTION 573-115-700

2. 31 Spacing Mechanism (Cont.)

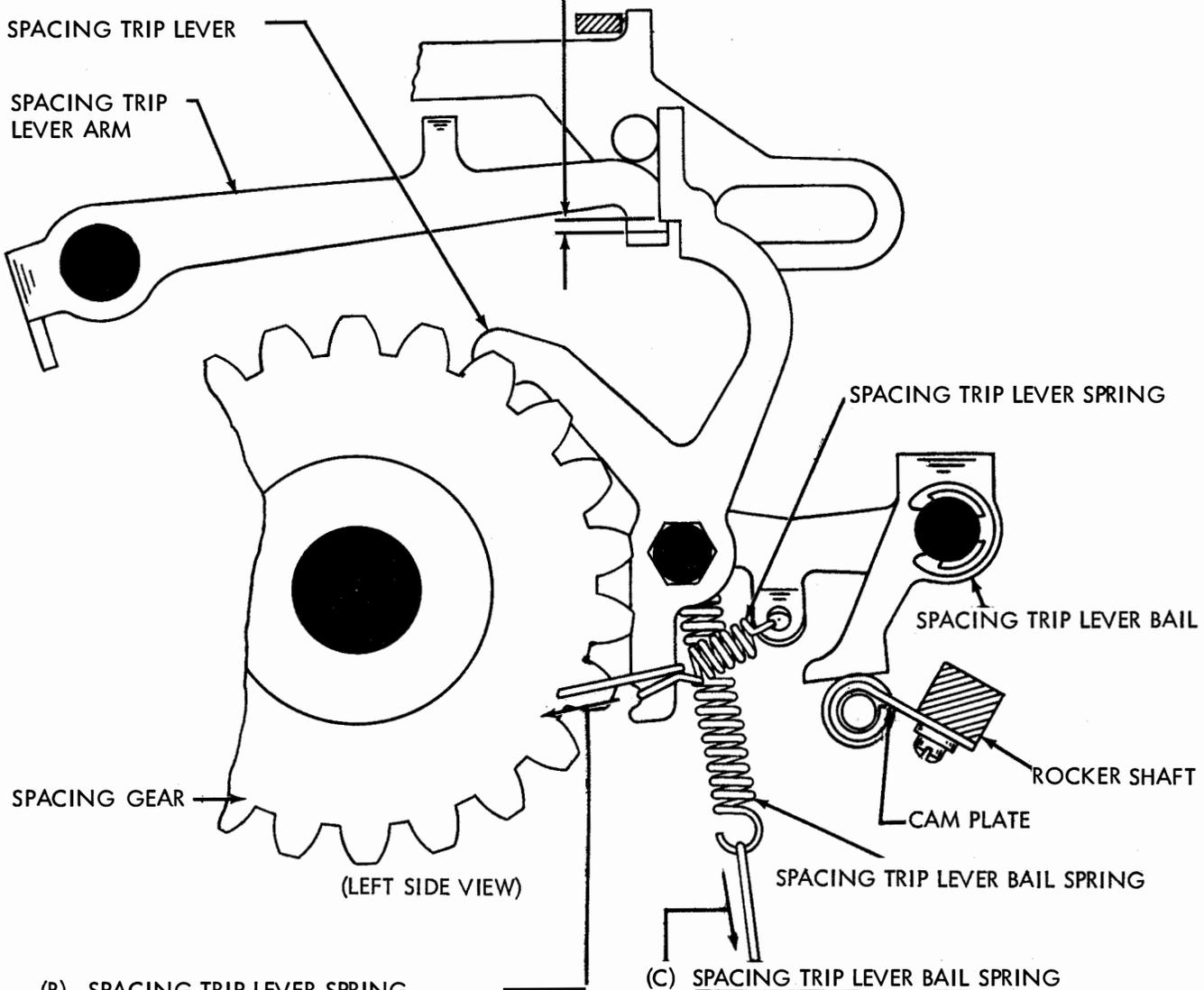
(A) SPACING TRIP LEVER BAIL CAM PLATE
REQUIREMENT

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

MIN. 0.010 INCH
MAX. 0.040 INCH

TO ADJUST

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



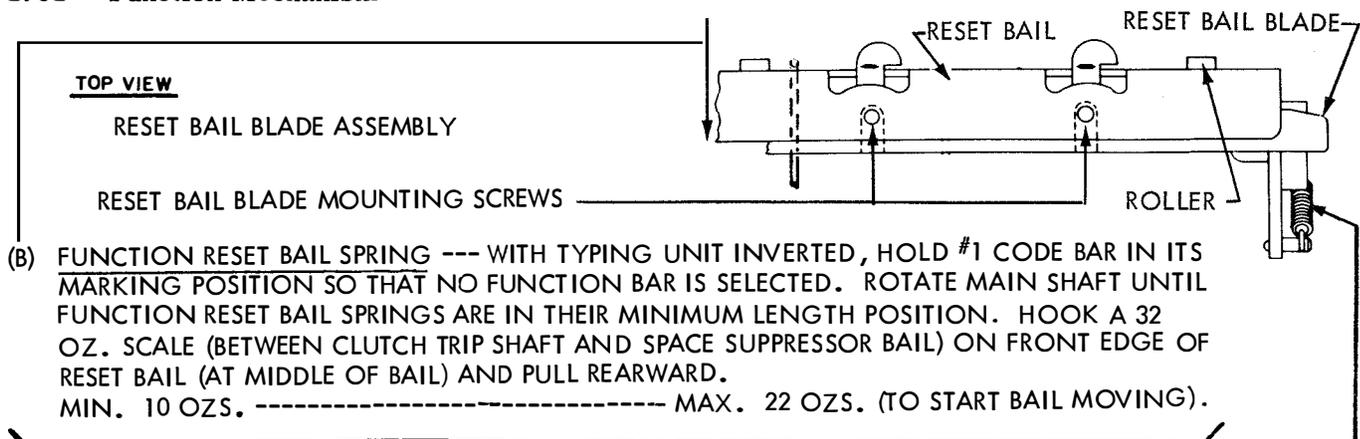
(B) SPACING TRIP LEVER SPRING
REQUIREMENT

TYPE BOX CLUTCH DISENGAGED.
MIN. 2-1/2 OZS.
MAX. 5 OZS.
TO START LEVER MOVING.

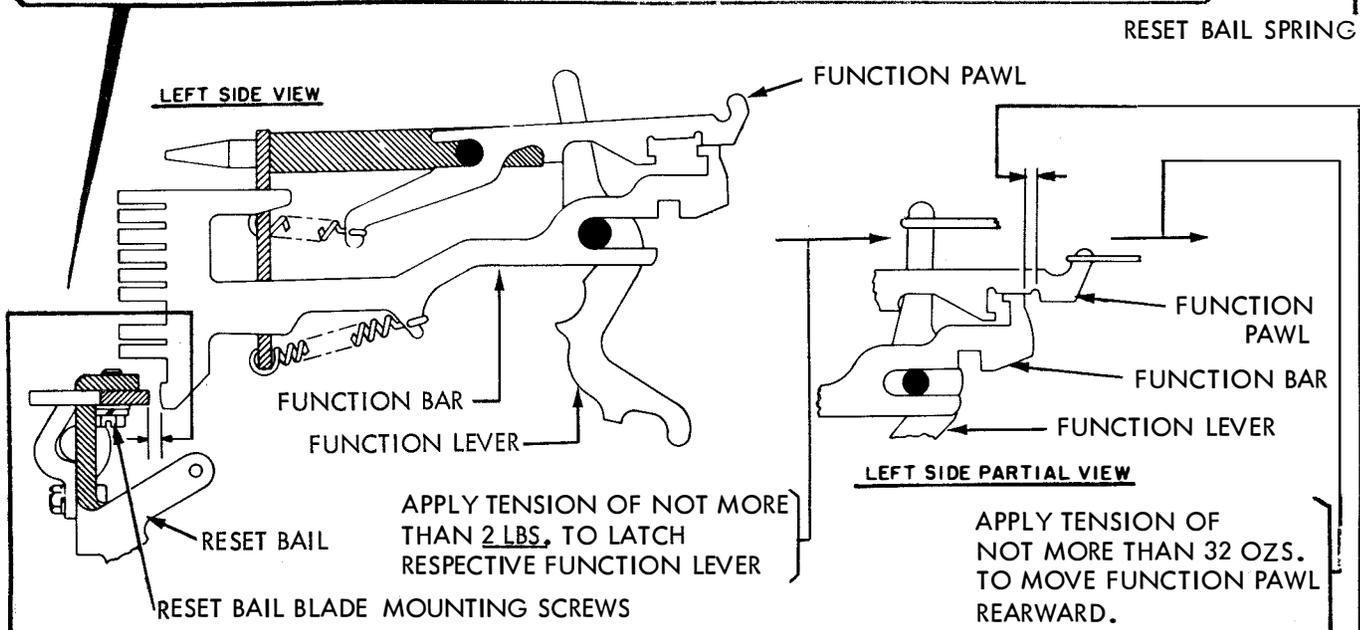
(C) SPACING TRIP LEVER BAIL SPRING
REQUIREMENT

SPACING TRIP LEVER BAIL AGAINST STOP.
SPACING TRIP LEVER BAIL SPRING UNHOOKED.
MIN. 8 OZS.
MAX. 12 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

2.32 Function Mechanism



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



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

- (1) REQUIREMENT --- WITH ALL CLUTCHES DISENGAGED, TRIP CODE BAR CLUTCH AND TURN MAIN SHAFT UNTIL CODE-BAR CLUTCH SHOE-RELEASE LEVER JUST TOUCHES ITS STOP LEVER. UNLATCH ALL FUNCTION PAWLS FROM THEIR FUNCTION BARS. HOLD RESPECTIVE FUNCTION BAR IN ITS EXTREME REARWARD POSITION WITH SPRING HOOK; CLEARANCE BETWEEN FUNCTION BAR AND RESET BAIL BLADE SHOULD BE
 MIN. 0.018 INCH ----- MAX. 0.035 INCH
 TO CHECK --- MEASURE CLEARANCE AT BARS IN STUNT BOX SLOTS, NO'S 1, 4, 11, 18, 23, 33, 38 AND 41. IF A DESIGNATED SLOT IS VACANT, USE NEAREST BAR OR SELECT BAR WITH HIGHEST NUMBERED SLOT WHEN A BAR IS LOCATED ON BOTH SIDES OF VACANT SLOT. (VIEW SLOTS FROM REAR, NUMBERING FROM LEFT TO RIGHT).
 TO ADJUST --- POSITION BLADE ON RESET BAIL WITH ITS MOUNTING SCREWS FRICTION TIGHT.
- (2) REQUIREMENT --- EACH FUNCTION PAWL SHOULD OVER TRAVEL ITS FUNCTION BAR BY AT LEAST 0.002 INCH WITH INDICATED TENSIONS APPLIED. CHECK PAWLS ONE AT-A-TIME AT SLOT NO'S. USED ABOVE.
 TO CHECK --- IF CARRIAGE RETURN LEVER ADJUSTMENT HAS NOT BEEN MADE, LOOSEN ITS CLAMP SCREW. LATCH FUNCTION PAWLS BY LOWERING STRIPPER BLADE; TRIP CODE BAR CLUTCH AND POSITION ITS RELEASE LEVER AS IN (1) ABOVE. STRIP OFF ANY FUNCTIONS WHICH MAY HAVE BEEN SELECTED.
 TO ADJUST --- REFINE REQUIREMENT (1) ABOVE, HOLDING THE READJUSTMENT WITHIN LIMITS
 MIN. 0.018 INCH ----- MAX. 0.035 INCH

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

SECTION 573-115-700

2.33 Function Mechanism (Cont.)

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

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

FIGS - LTRS SHIFT CODE BAR OPERATING MECHANISM

(1) REQUIREMENT

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

(2) REQUIREMENT

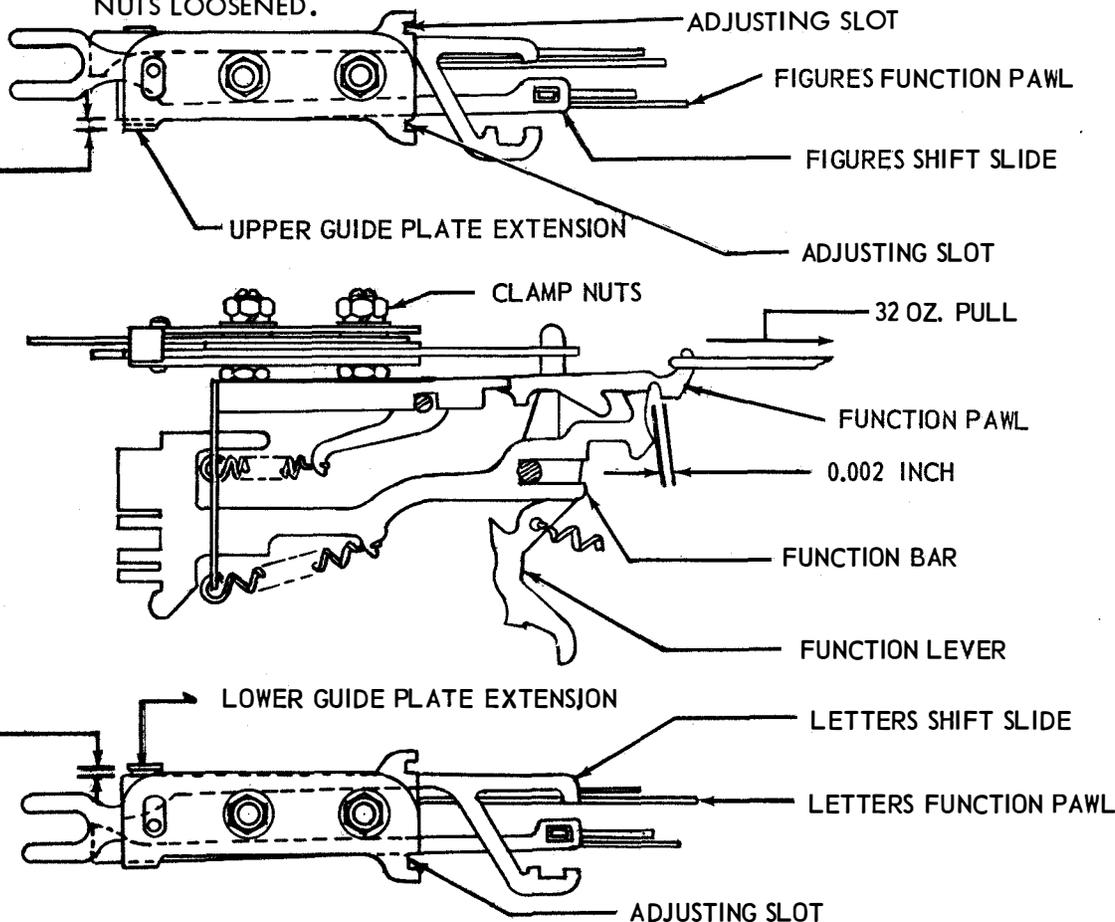
WITH 32 OZ. PULL APPLIED TO FUNCTION PAWL THERE SHOULD BE MIN. 0.002 INCH BETWEEN SHOULDER OF FIGURES FUNCTION PAWL AND FACE OF FUNCTION BAR.

(3) REQUIREMENT

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

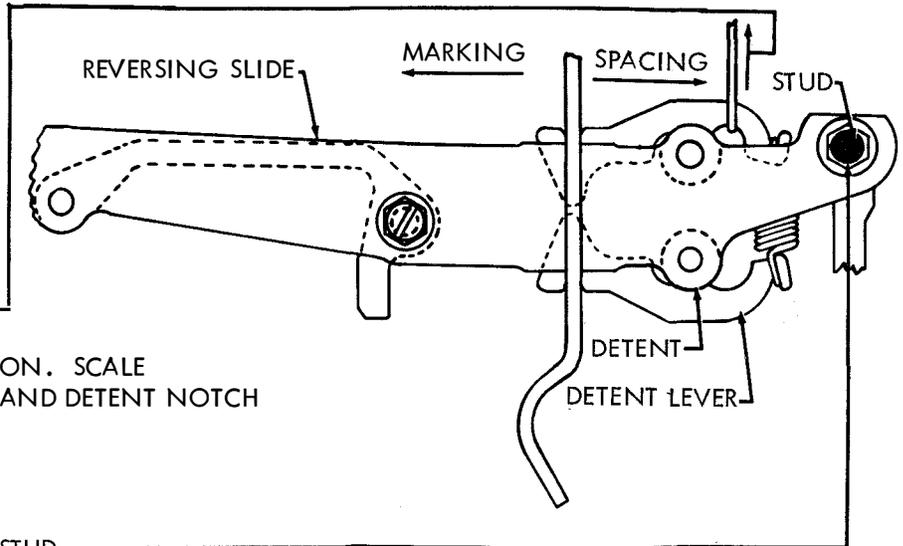
NOTE: THERE SHOULD BE SOME CLEARANCE BETWEEN THE UNOPERATED SHIFT SLIDE AND ITS GUIDE PLATE, WHEN THE SHIFT SLIDE HAS REACHED ITS POSITION OF MAXIMUM TRAVEL.

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



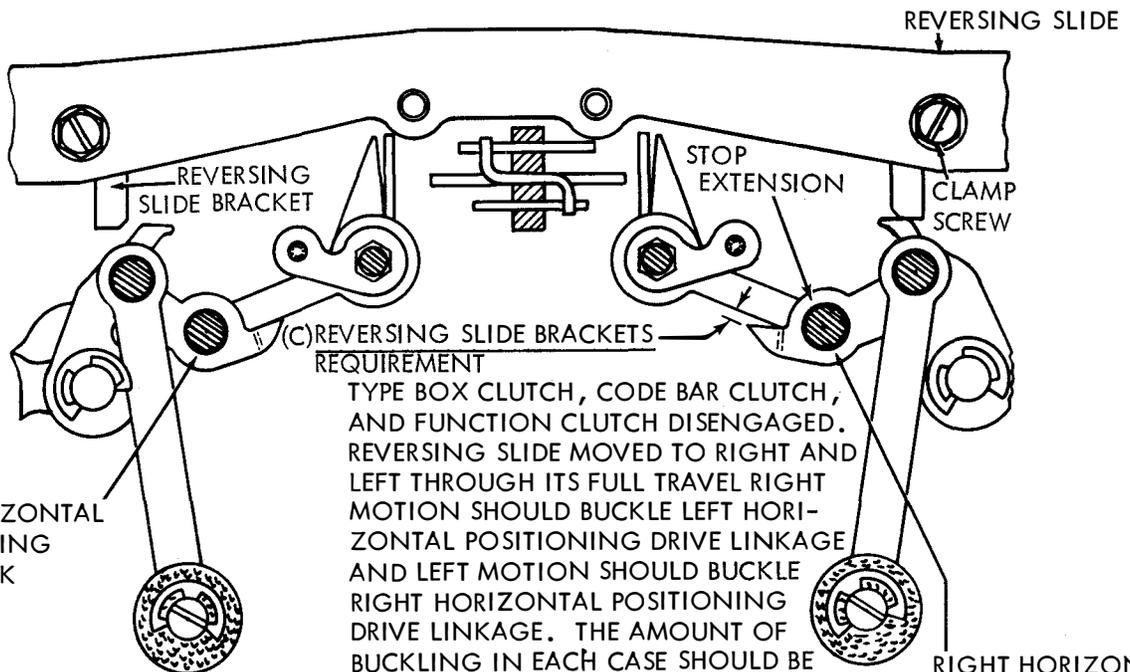
NOTE: FOR EARLIER DESIGN SEE PAR. 4.08

2.34 Positioning Mechanism (Cont.)



- (A) REVERSING SLIDE DETENT SPRING REQUIREMENT
 SLIDE IN LEFT HAND POSITION. SCALE HOOKED IN UPPER RIGHT HAND DETENT NOTCH
 MIN. 2 OZS.
 MAX. 4-1/2 OZS.
 TO START DETENT MOVING

- (B) REVERSING SLIDE ADJUSTING STUD REQUIREMENT
 TYPE BOX CLUTCH DISENGAGED.
 WITH NO. 3 CODE BAR IN SPACING POSITION (RIGHT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE RIGHT-HAND NOTCHES OF THE DETENT LEVER.
 WITH NO. 3 CODE BAR IN MARKING POSITION (LEFT), THE REVERSING SLIDE DETENT ROLLERS SHOULD BE FULLY SEATED IN THE LEFT-HAND NOTCHES OF THE DETENT LEVER.
 TO ADJUST POSITION THE REVERSING SLIDE STUD IN ITS ELONGATED HOLE WITH ITS MOUNTING NUT LOOSENED.



- (C) REVERSING SLIDE BRACKETS REQUIREMENT
 TYPE BOX CLUTCH, CODE BAR CLUTCH, AND FUNCTION CLUTCH DISENGAGED. REVERSING SLIDE MOVED TO RIGHT AND LEFT THROUGH ITS FULL TRAVEL RIGHT MOTION SHOULD BUCKLE LEFT HORIZONTAL POSITIONING DRIVE LINKAGE AND LEFT MOTION SHOULD BUCKLE RIGHT HORIZONTAL POSITIONING DRIVE LINKAGE. THE AMOUNT OF BUCKLING IN EACH CASE SHOULD BE
 MIN. 0.030 INCH
 MAX. 0.050 INCH
 MEASURED AT POINT OF MAXIMUM CLEARANCE
- TO ADJUST POSITION EACH REVERSING SLIDE BRACKET WITH THEIR CLAMP SCREWS LOOSENED.

SECTION 573-115-700

2.35 Positioning Mechanism (Cont.)

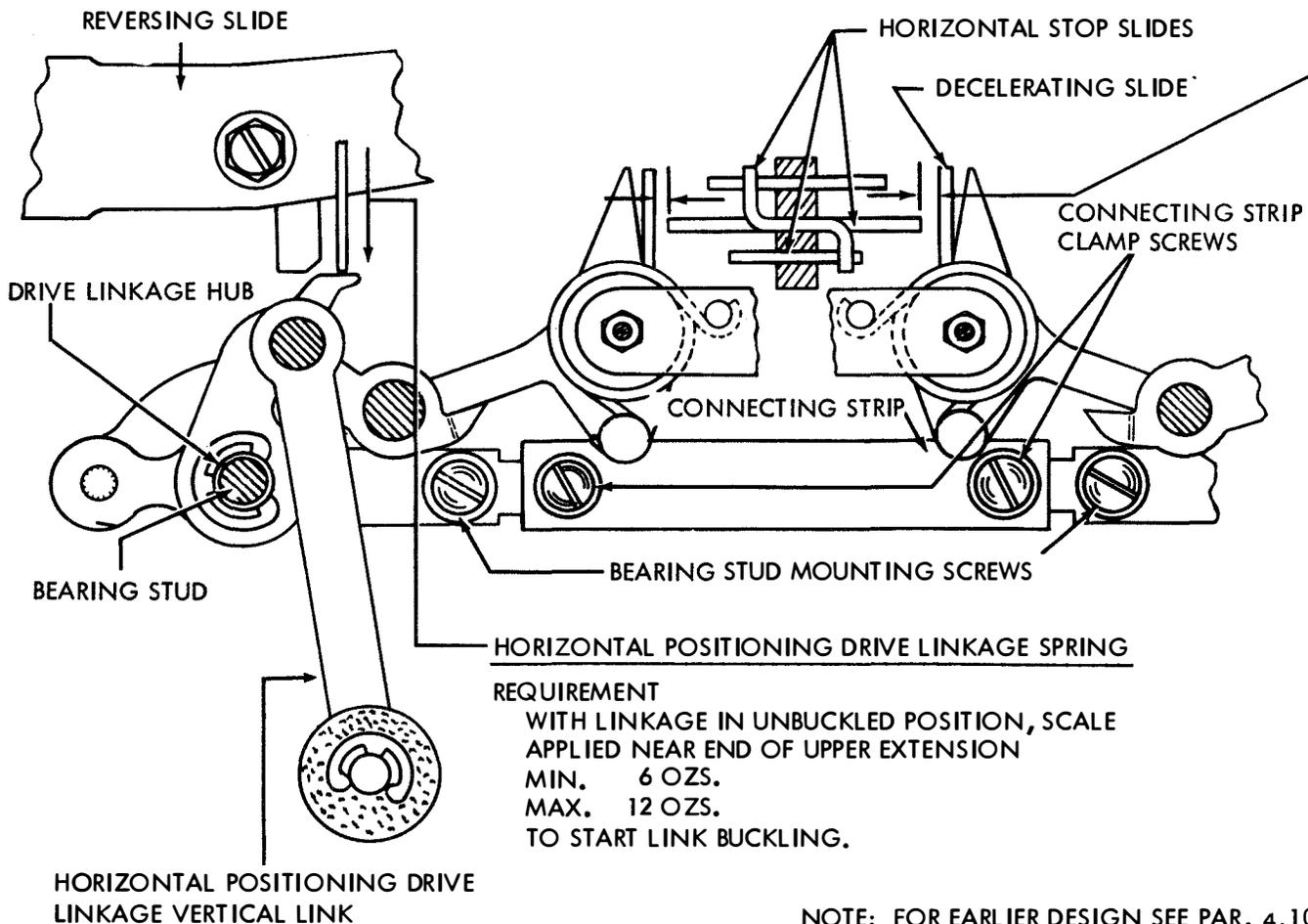
NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS EQUIPPED WITH TORSION SPRINGS.

HORIZONTAL POSITIONING DRIVE LINKAGE REQUIREMENT

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

TO ADJUST

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



NOTE: FOR EARLIER DESIGN SEE PAR. 4.10

2. 36 Positioning Mechanism (Cont.)

VERTICAL POSITIONING LOCK LEVER

(1) REQUIREMENT

LETTERS COMBINATION SET UP ON CODE BARS. MAIN SIDE OPERATING LEVERS AT UPPER END OF TRAVEL. UPPER NOTCH OF VERTICAL POSITIONING LOCK LEVER FULLY ENGAGED (MANUALLY IF NECESSARY) WITH VERTICAL SLIDE PROJECTION. UPPER SURFACE OF FOLLOWER ARM REAR EXTENSION SHOULD BE MIN. IN CONTACT WITH MAX. 0.004 INCH AWAY FROM INNER EXTENSION OF MAIN SIDE LEVER.

LEFT VERTICAL POSITIONING LOCK LEVER

LEFT VERTICAL SLIDE PROJECTION

(2) REQUIREMENT

WITH PLAY TAKEN UP BY PULLING UPWARD WITH 8 OZS. TENSION ON TYPE BOX CARRIAGE TRACK, VERTICAL SURFACES MIN. IN CONTACT WITH MAX. 0.012 INCH AWAY FROM EACH OTHER

TO ADJUST

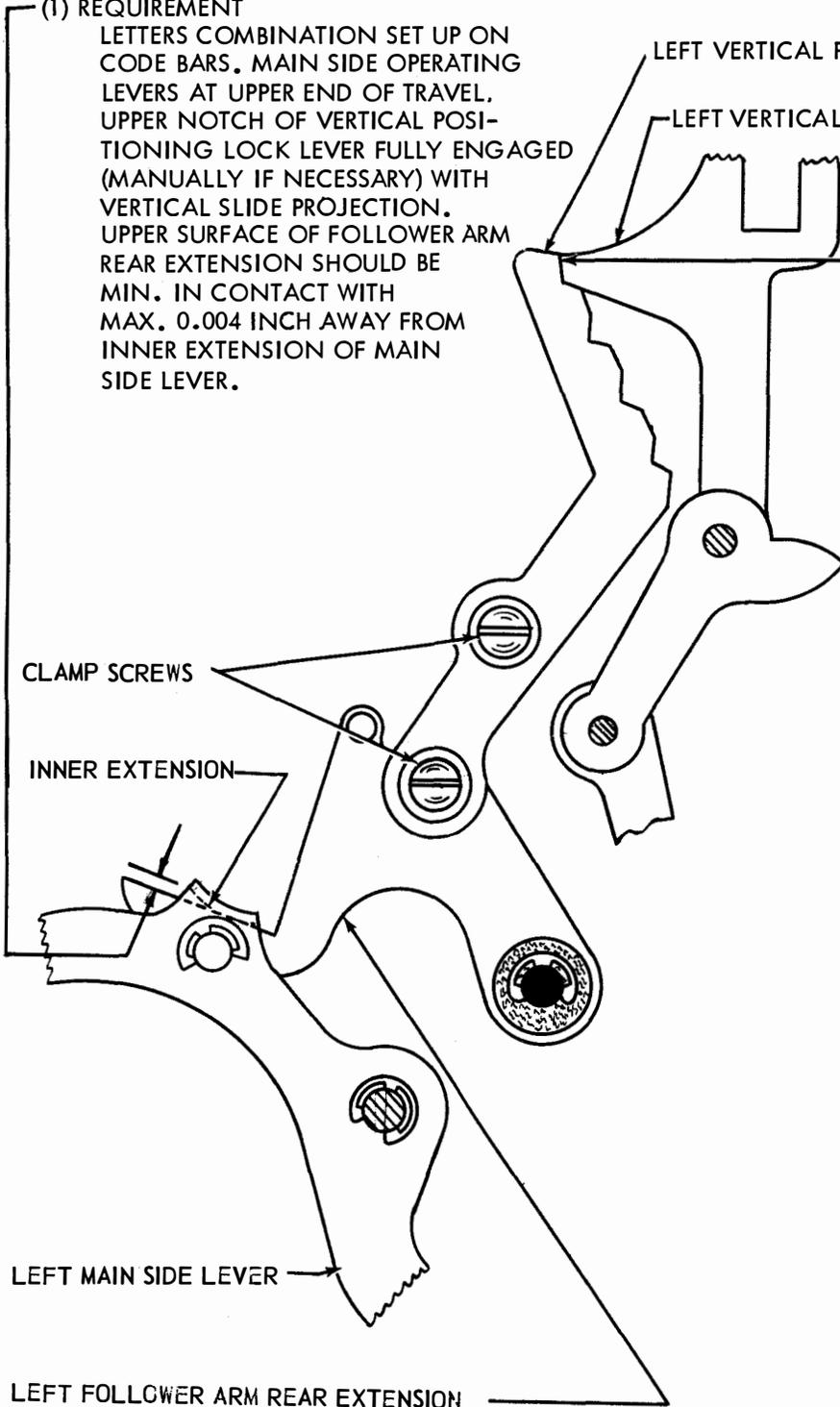
POSITION RIGHT AND LEFT VERTICAL POSITIONING LOCK LEVERS WITH CLAMP SCREWS LOOSENED.

CLAMP SCREWS

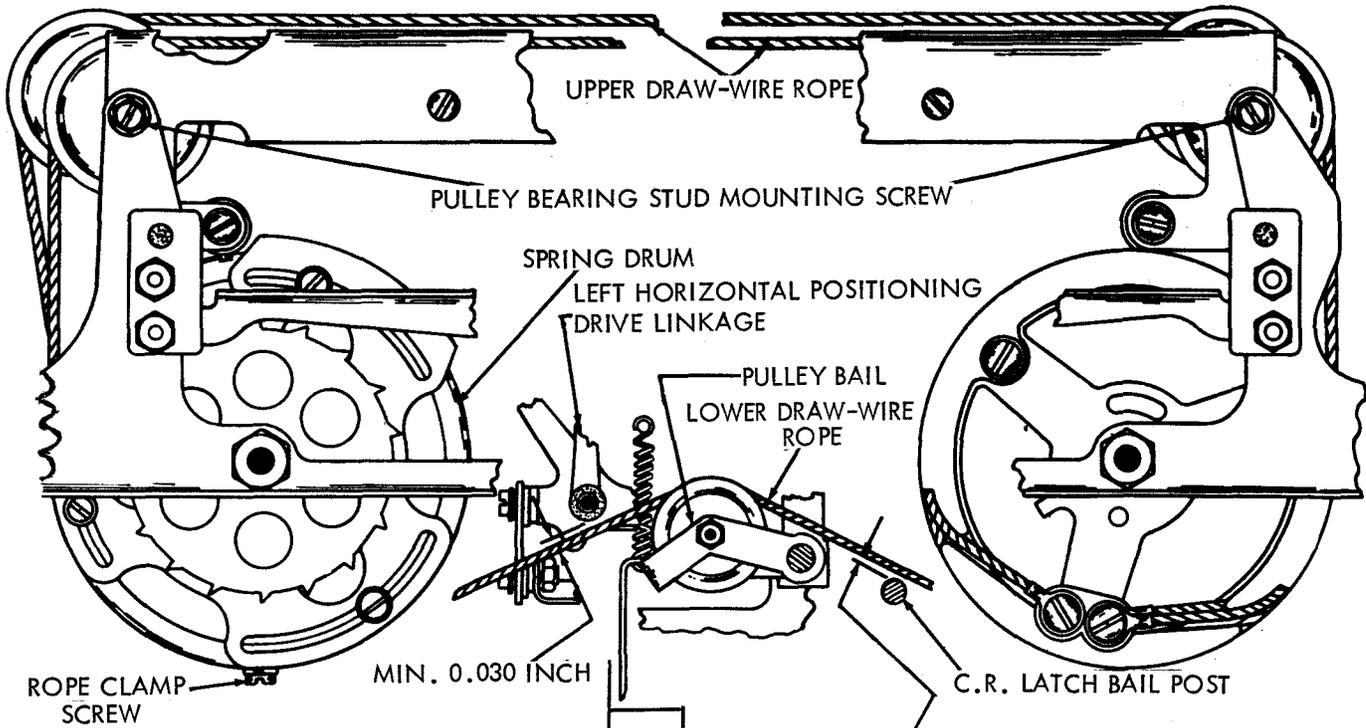
INNER EXTENSION

LEFT MAIN SIDE LEVER

LEFT FOLLOWER ARM REAR EXTENSION



2.37 Spacing Mechanism (cont.)



LOWER DRAW-WIRE ROPE PULLEY BAIL SPRING REQUIREMENT

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

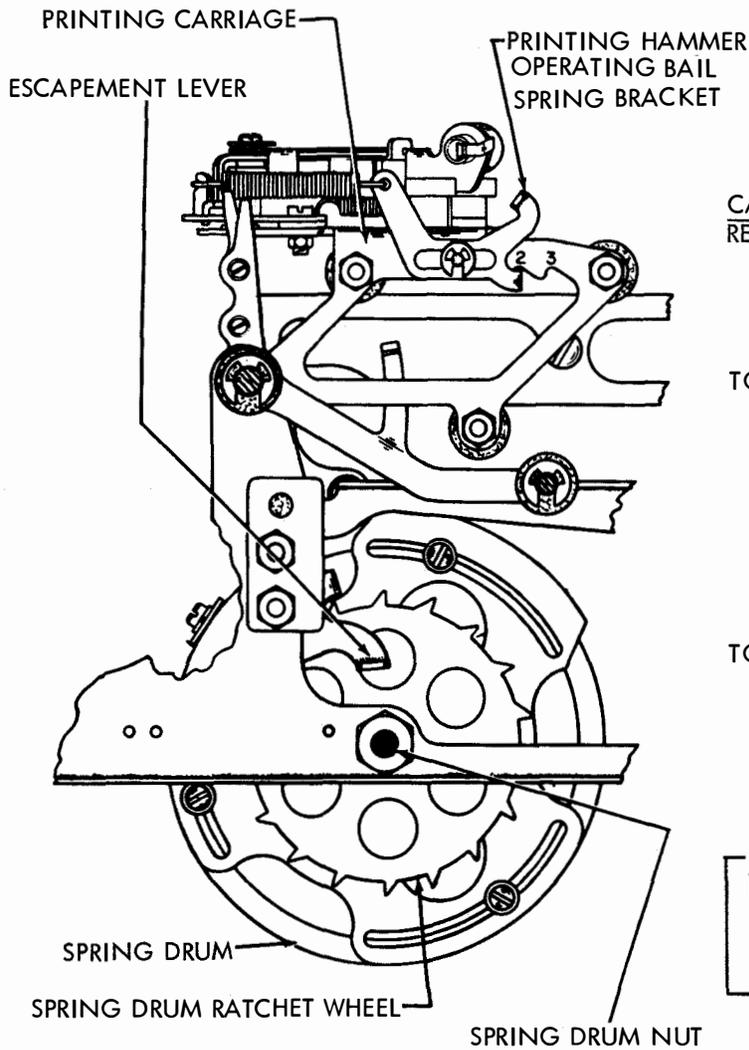
CARRIAGE DRAW-WIRE ROPE REQUIREMENT

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

TO ADJUST

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

2.38 Spacing Mechanism (Cont.)



CARRIAGE RETURN SPRING REQUIREMENT

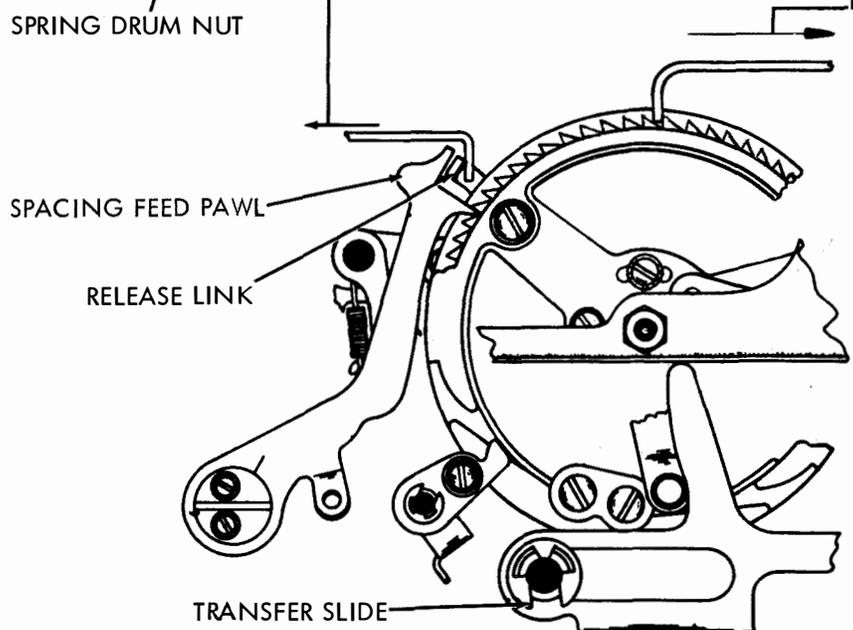
PULL REQUIRED TO START SPRING DRUM MOVING
 MIN. 3-1/2 LBS.
 MAX. 4 LBS.

TO CHECK
 SPACING DRUM IN ITS RETURNED POSITION. PRINTING TRACK IN LOWER POSITION. REMOVE LOWER CABLE ROLLER SPRING. HOLD SPACING PAWL, BUFFER SLIDE AND CARRIAGE RETURN LATCH TO PREVENT INTERFERENCE WITH SPACING DRUM.

TO ADJUST
 SPRING DRUM NUT LOOSENED. ROTATE SPRING DRUM RATCHET WHEEL TO INCREASE TENSION. OPERATE ESCAPEMENT LEVER TO DECREASE TENSION.

SPACING FEED PAWL RELEASE LINK SPRING REQUIREMENT

MIN. 1/2 OZ.
 MAX. 2-1/2 OZS.
 TO START SPRING STRETCHING.



2.39 Spacing Mechanism (Cont.)

(A)

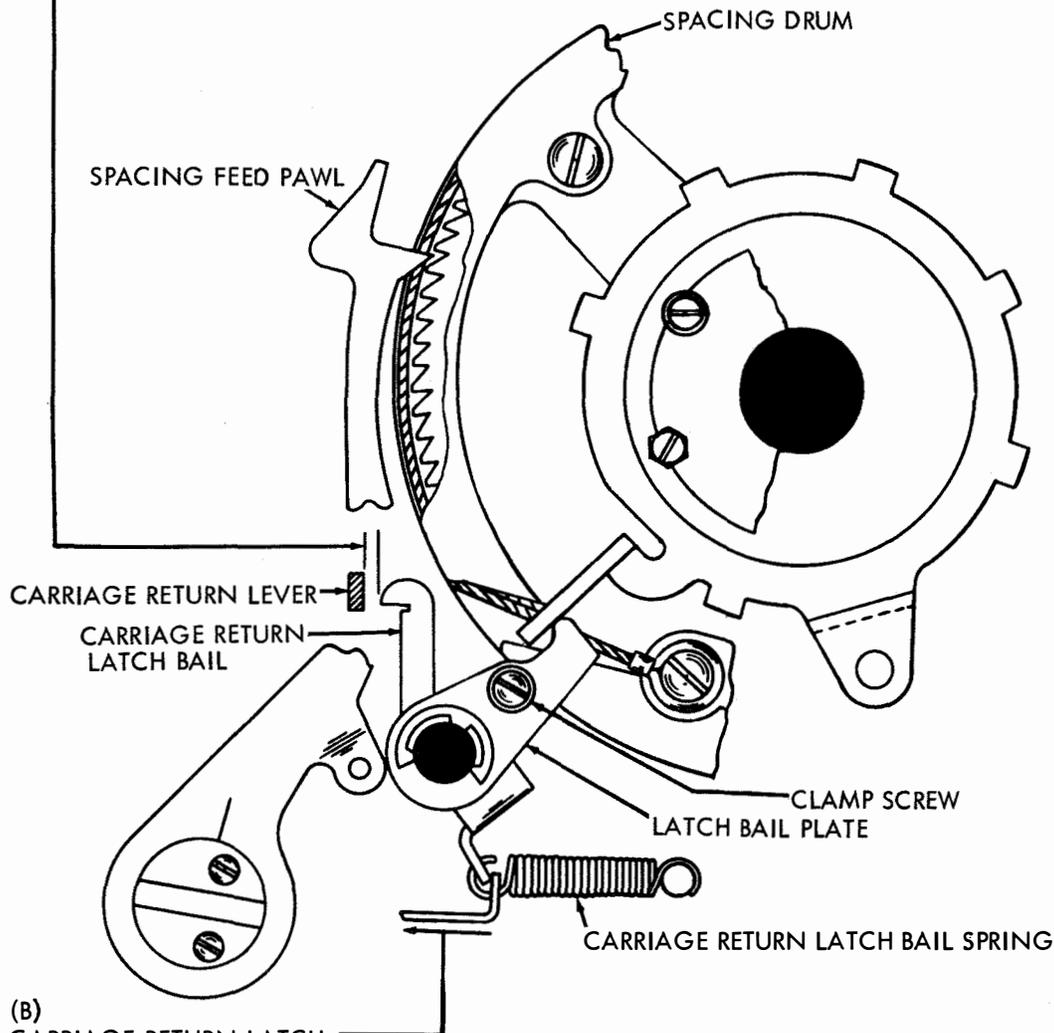
CARRIAGE RETURN LATCH BAIL REQUIREMENT

CARRIAGE FULLY RETURNED (SEE PAR. 2.43)
PLAY IN CARRIAGE RETURN BAIL TAKEN UP
TO RIGHT BY HOLDING RIGHT SIDE OF BAIL
AGAINST ITS RETAINER. CLEARANCE BETWEEN
CARRIAGE RETURN LATCH BAIL AND CARRIAGE
RETURN LEVER.

MIN. 0.004 INCH
MAX. 0.040 INCH

TO ADJUST

POSITION LATCH BAIL PLATE WITH CLAMP
SCREW LOOSENED.

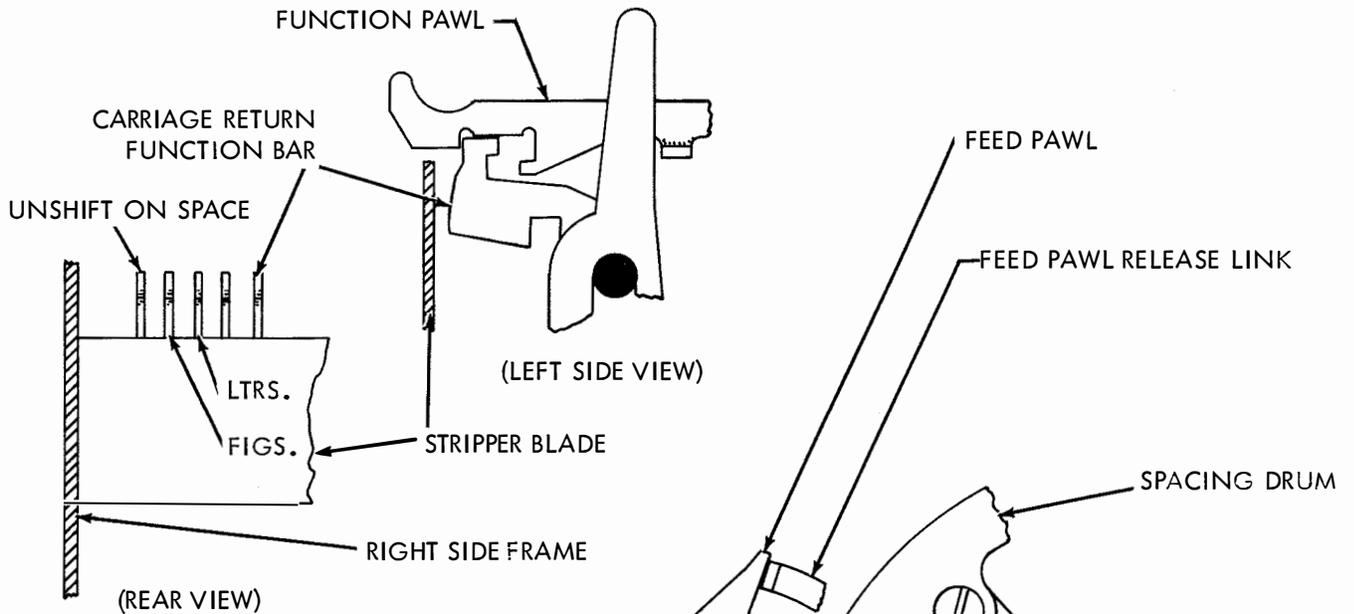


(B)

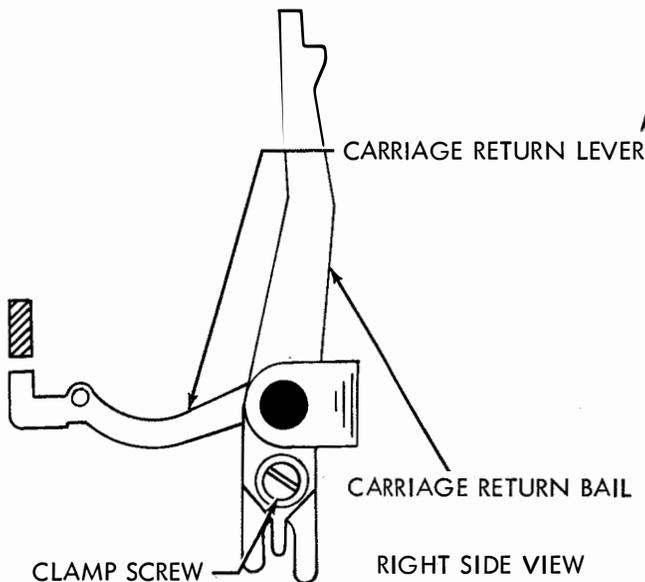
CARRIAGE RETURN LATCH BAIL SPRING REQUIREMENT

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

2.40 Spacing Mechanism (Cont.)

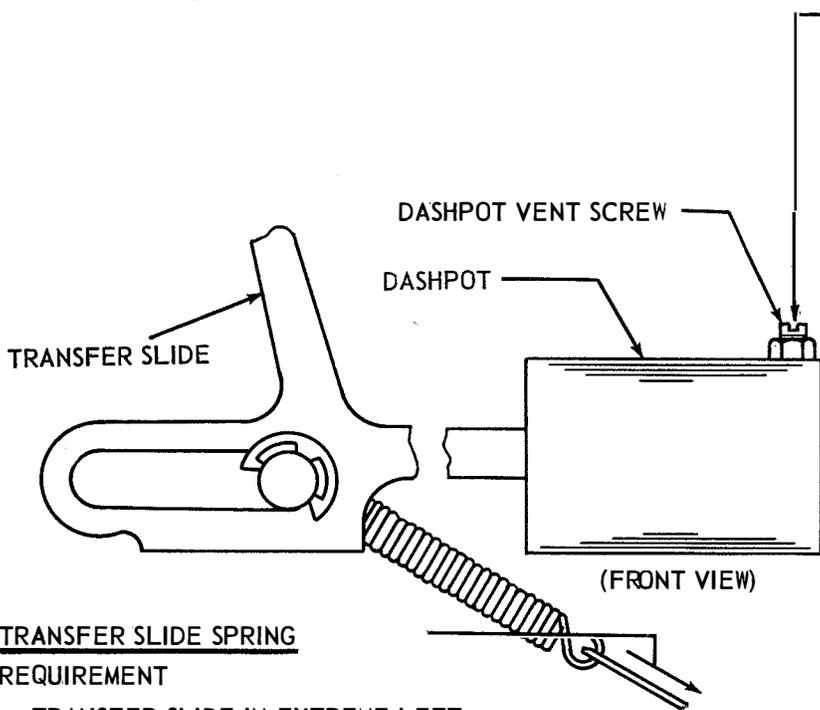


CARRIAGE RETURN LEVER REQUIREMENT (UNITS EQUIPPED WITH ONE-STOP FUNCTION CLUTCH)
 CARRIAGE RETURN FUNCTION SET UP ON SELECTOR. MAIN SHAFT ROTATED UNTIL FUNCTION CLUTCH STOP LUG IS TOWARD BOTTOM OF UNIT. CARRIAGE RETURN FUNCTION PAWL HOOKED OVER ITS FUNCTION BAR. SPACING DRUM HELD SO THAT CARRIAGE RETURN LATCH BAIL IS LATCHED. CLEARANCE BETWEEN LATCH BAIL AND CARRIAGE RETURN LEVER. MIN. 0.006 INCH — MAX. 0.035 INCH



REQUIREMENT (UNITS EQUIPPED WITH TWO-STOP FUNCTION CLUTCH)
 SAME EXCEPT MAIN SHAFT SHOULD BE ROTATED UNTIL FUNCTION CLUTCH IS DISENGAGED IN STOP POSITION THAT RESULTS IN LEAST CLEARANCE. TO ADJUST POSITION CARRIAGE RETURN LEVER ON CARRIAGE RETURN BAIL WITH CLAMP SCREW LOOSENED.

2. 41 Spacing Mechanism (Cont.)



DASH POT VENT SCREW REQUIREMENT

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

TO CHECK

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

TO ADJUST

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

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

TRANSFER SLIDE SPRING REQUIREMENT

TRANSFER SLIDE IN EXTREME LEFT POSITION.
 SPRING UNHOOKED.

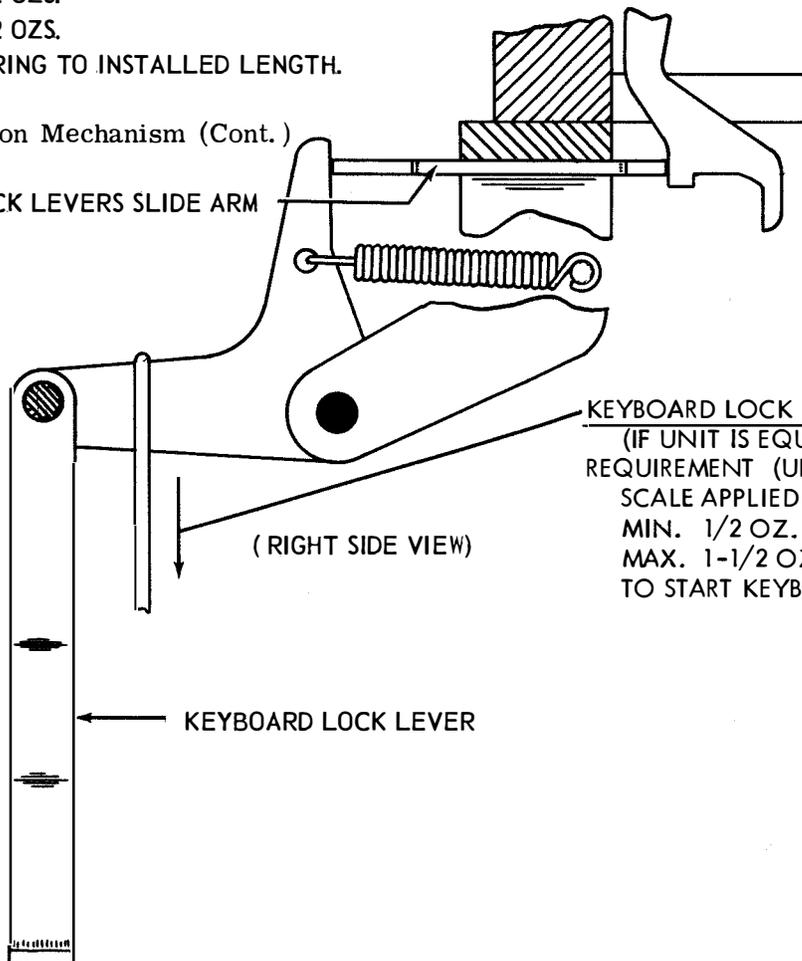
MIN. 3-1/2 OZS.

MAX. 4-1/2 OZS.

TO PULL SPRING TO INSTALLED LENGTH.

2. 42 Function Mechanism (Cont.)

KEYBOARD LOCK LEVERS SLIDE ARM



KEYBOARD LOCK LEVER SPRING (IF UNIT IS EQUIPPED)

REQUIREMENT (UNIT UPSIDE DOWN)

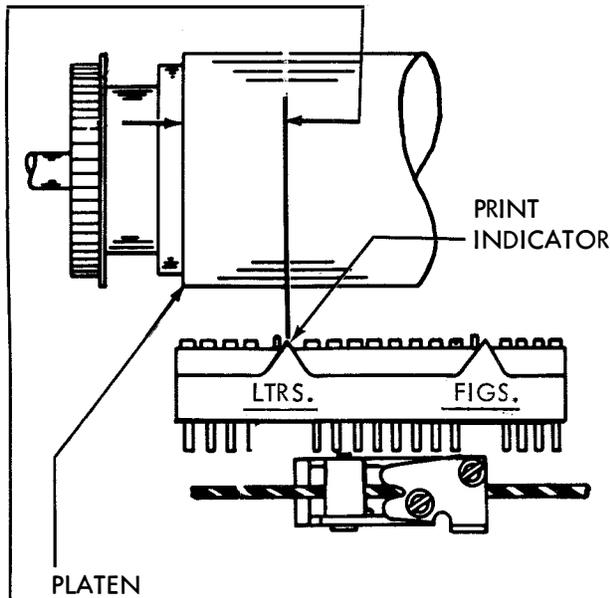
SCALE APPLIED TO BELL CRANK

MIN. 1/2 OZ.

MAX. 1-1/2 OZS.

TO START KEYBOARD LOCK LEVER MOVING

2.43 Spacing Mechanism (Cont.)



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

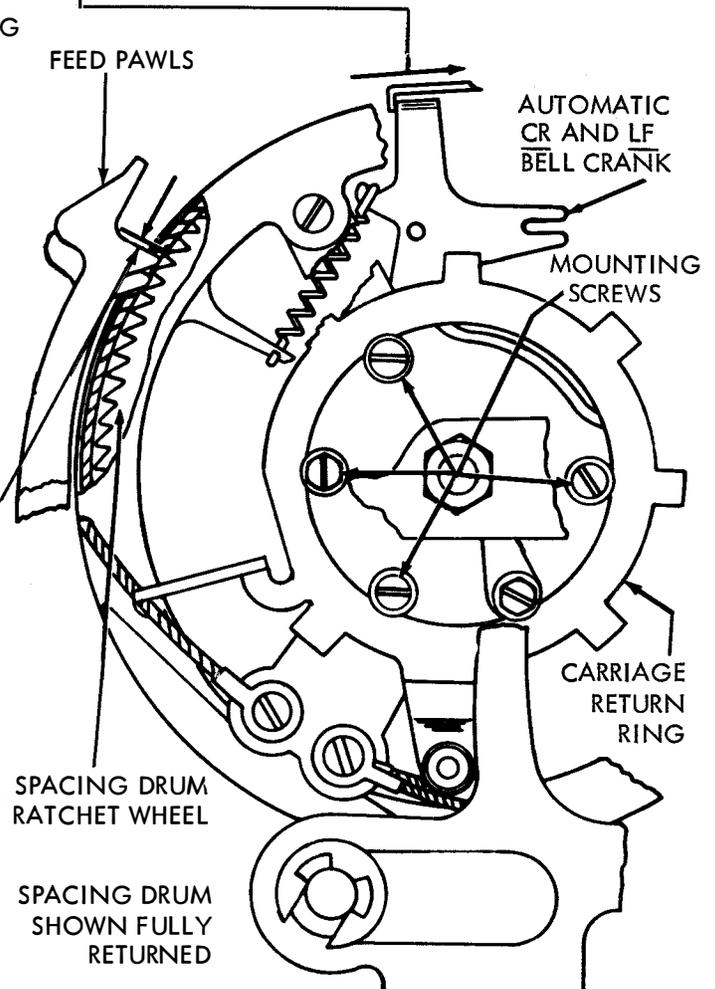
- (1) WITH TYPE BOX CLUTCH DISENGAGED, SPACING DRUM IN ITS RETURN POSITION AND TYPE BOX SHIFTED TO LETTERS POSITION; CLEARANCE BETWEEN LEFT EDGE OF PLATEN AND LETTERS PRINT INDICATOR. (SEE NOTE 3). MIN. 15/16 INCH --- MAX. 1-1/16 INCH. TO ADJUST --- POSITION STOP ARM OF SPACING DRUM* WITH ITS CLAMP SCREWS LOOSENED.
- (2) WITH SPACING CLUTCH DISENGAGED, FRONT SPACING FEW PAWL FARTHEST ADVANCED, SPACING DRUM FULLY RETURNED (DASH POT PLUNGER DEPRESSED FULLY) PLAY IN SPACING SHAFT GEAR (PAR. 2.24) TAKEN UP IN CLOCKWISE DIRECTION; CLEARANCE BETWEEN PAWL AND SHOULDER OF RATCHET WHEEL TOOTH IMMEDIATELY AHEAD. MIN. SOME --- MAX. 0.008 INCH.
- (3) THE REAR PAWL, WHEN FARTHEST ADVANCED, SHOULD DROP INTO INDENTATION BETWEEN RATCHET WHEEL TEETH AND SHOULD BOTTOM FIRMLY IN NOTCH. TO ADJUST --- REFINE REQUIREMENT (1) ABOVE*.

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

NOTES

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

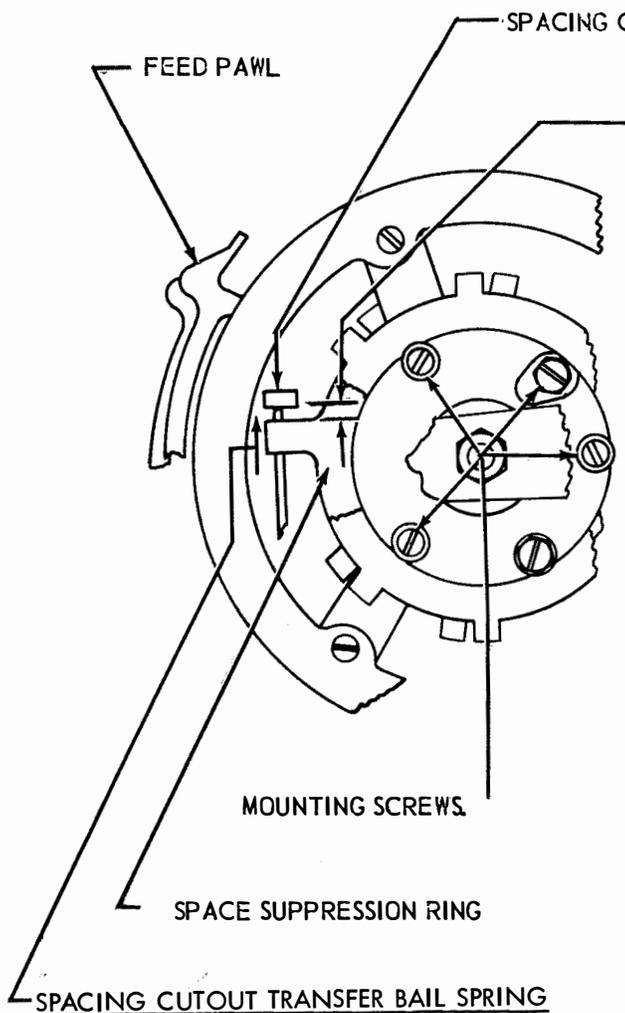
AUTOMATIC CR/LF BELL CRANK SPRING REQUIREMENT --- (FOR UNITS SO EQUIPPED). WITH FUNCTION CLUTCH DISENGAGED. MIN. 2-1/2 OZS. --- MAX. 7 OZS. TO MOVE THE BELL CRANK.



SECTION 573-115-700

2.44 Spacing Mechanism (Cont.)

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



RIGHT MARGIN
REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. CARRIAGE IN POSITION TO PRINT CHARACTER ON WHICH SPACING CUTOUT IS TO OCCUR. FRONT FEED PAWL FARTHEST ADVANCED. SPACING CUTOUT TRANSFER BAIL HELD IN ITS UPPERMOST POSITION. ON UNITS HAVING TWO PIECE SPACING CUTOUT BAIL PUSH THE CUTOUT BAIL TOWARDS REAR OF UNIT THROUGH HOLE IN FRONT PLATE. CLEARANCE BETWEEN EXTENSION ON SPACE SUPPRESSION RING AND TRANSFER BAIL
MIN. 0.006 INCH — MAX. 0.025 INCH

TO ADJUST

POSITION SPACE SUPPRESSION RING WITH FOUR INDICATED MOUNTING SCREWS LOOSENED.

NOTE

- (1) RANGE OF ADJUSTMENT IS FROM 0 TO 85 CHARACTERS.
- (2) ON UNITS EQUIPPED WITH AUTOMATIC CARRIAGE RETURN - LINE FEED RING, THIS ADJUSTMENT IS NOT APPLICABLE. (SEE PAR. 2.62)

SPACING CUTOUT TRANSFER BAIL SPRING

REQUIREMENT

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

NOTE: FOR EARLIER DESIGN SEE PAR. 4.13

2.45 Positioning Mechanism (Cont.)

DECELERATING SLIDE SPRING

REQUIREMENT

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

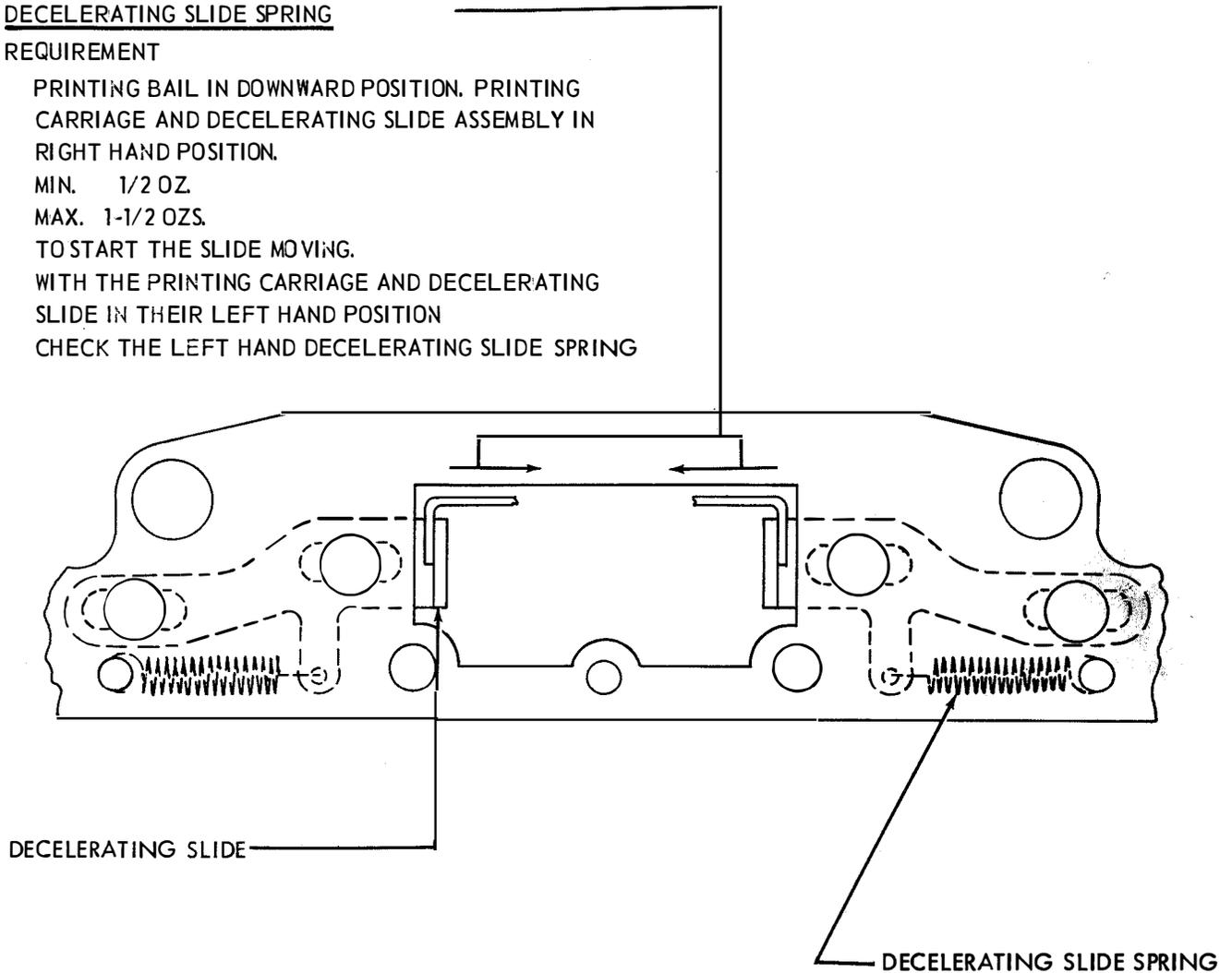
MIN. 1/2 OZ.

MAX. 1-1/2 OZS.

TO START THE SLIDE MOVING.

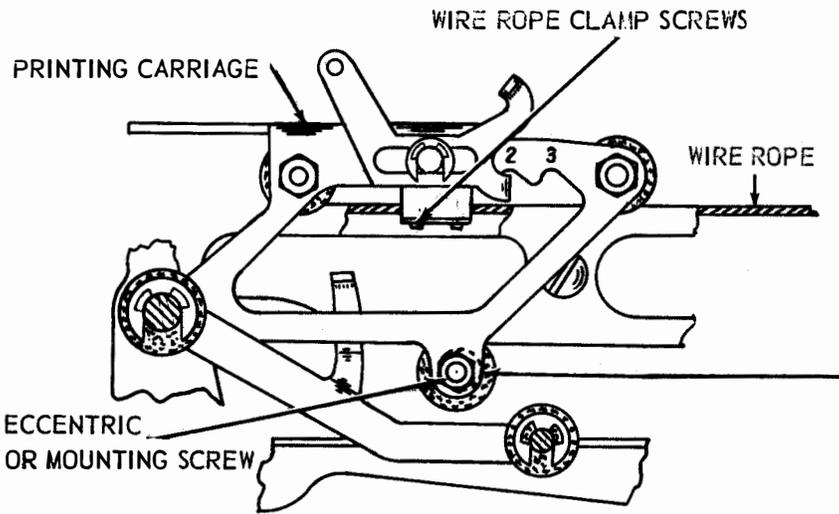
WITH THE PRINTING CARRIAGE AND DECELERATING
SLIDE IN THEIR LEFT HAND POSITION

CHECK THE LEFT HAND DECELERATING SLIDE SPRING



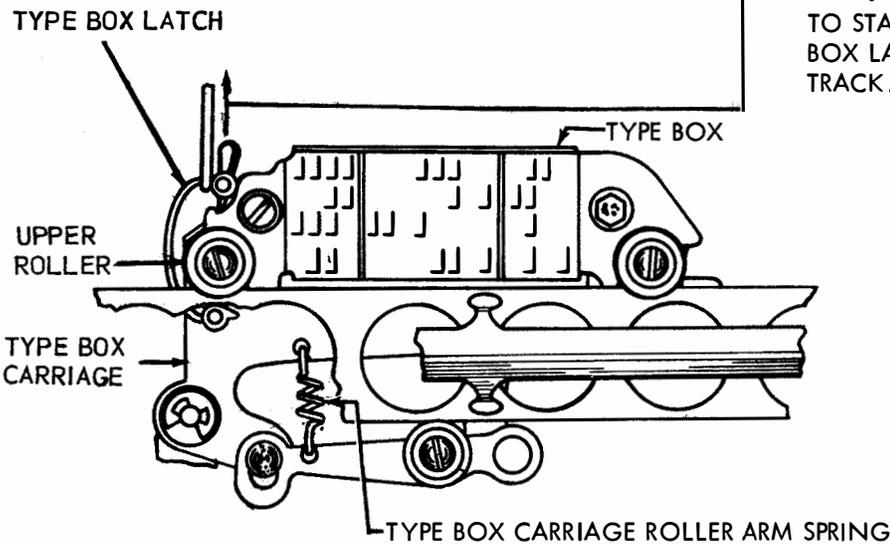
NOTE: FOR EARLIER DESIGN SEE PAR. 4.13

2.46 Printing Mechanism



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.



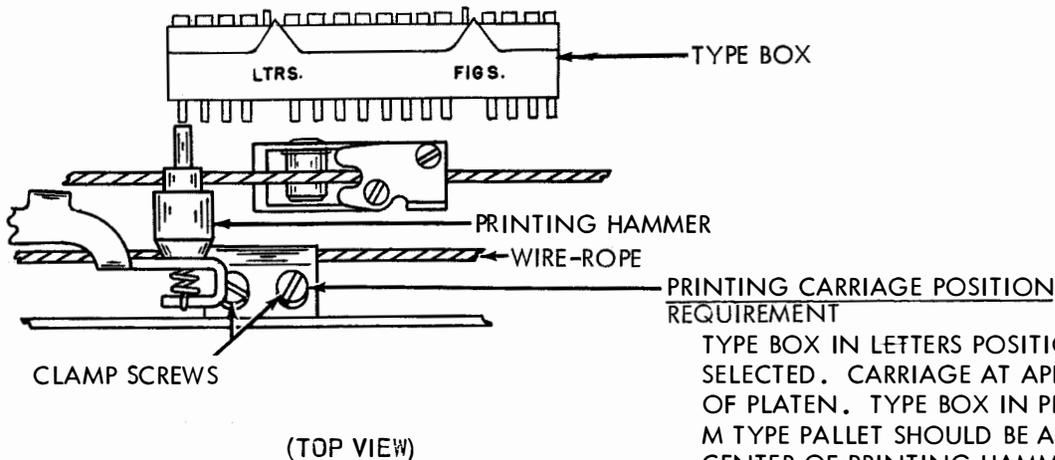
TYPE BOX CARRIAGE ROLLER ARM SPRING REQUIREMENT

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

NOTE: FOR EARLIER DESIGN SEE PAR. 4.14

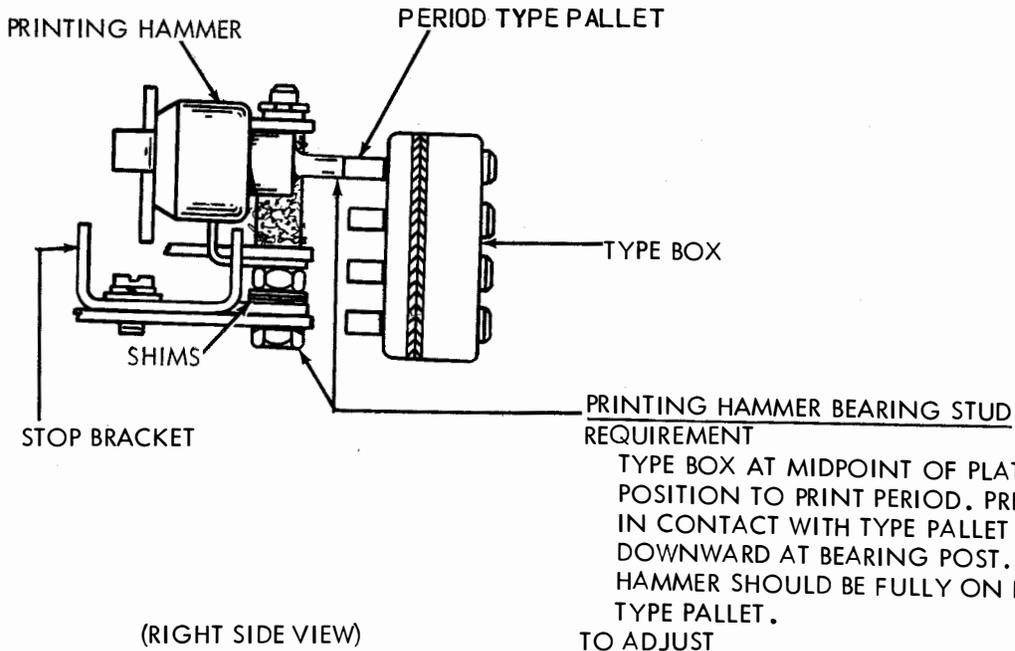
2.47 Printing Mechanism (Cont.)

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



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

TO ADJUST
POSITION PRINTING CARRIAGE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED.



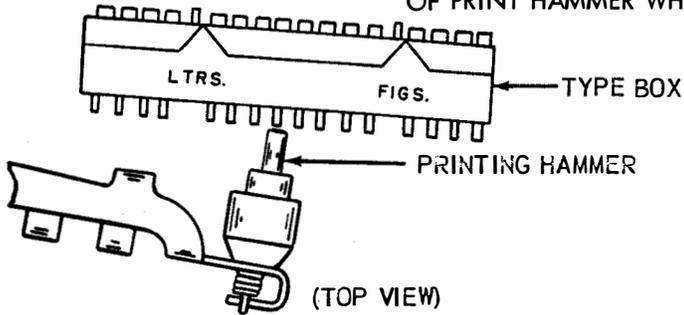
TYPE BOX AT MIDPOINT OF PLATEN AND IN POSITION TO PRINT PERIOD. PRINTING HAMMER IN CONTACT WITH TYPE PALLET AND PRESSED DOWNWARD AT BEARING POST. FACE OF HAMMER SHOULD BE FULLY ON END OF TYPE PALLET.

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

2.48 Positioning Mechanism (Cont.)

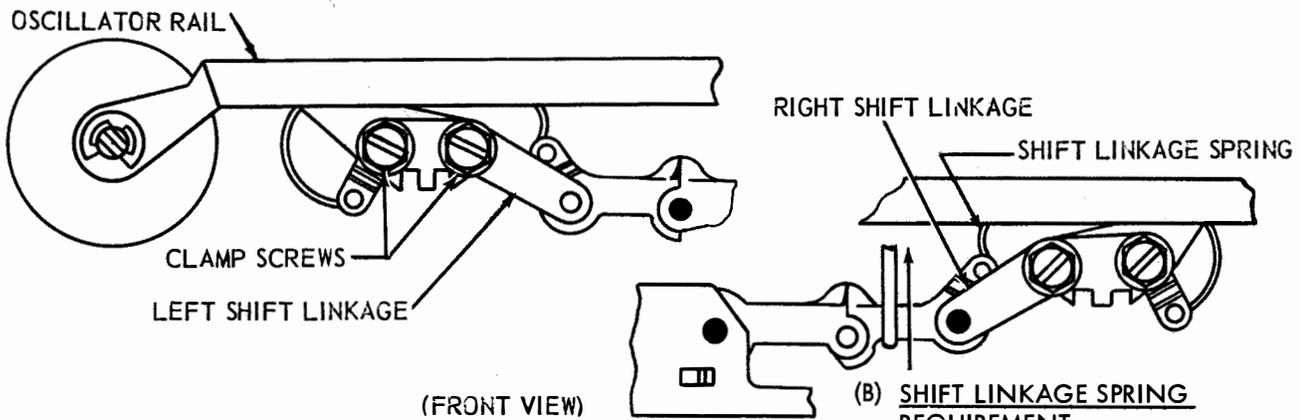
(A) SHIFT LINKAGE REQUIREMENT

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



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

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



(B) SHIFT LINKAGE SPRING REQUIREMENT

LINK IN STRAIGHT POSITION
MIN. 6 OZS.
MAX. 14 OZS.
TO START EACH LINK MOVING.

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

2.49 Printing Mechanism (Cont.)

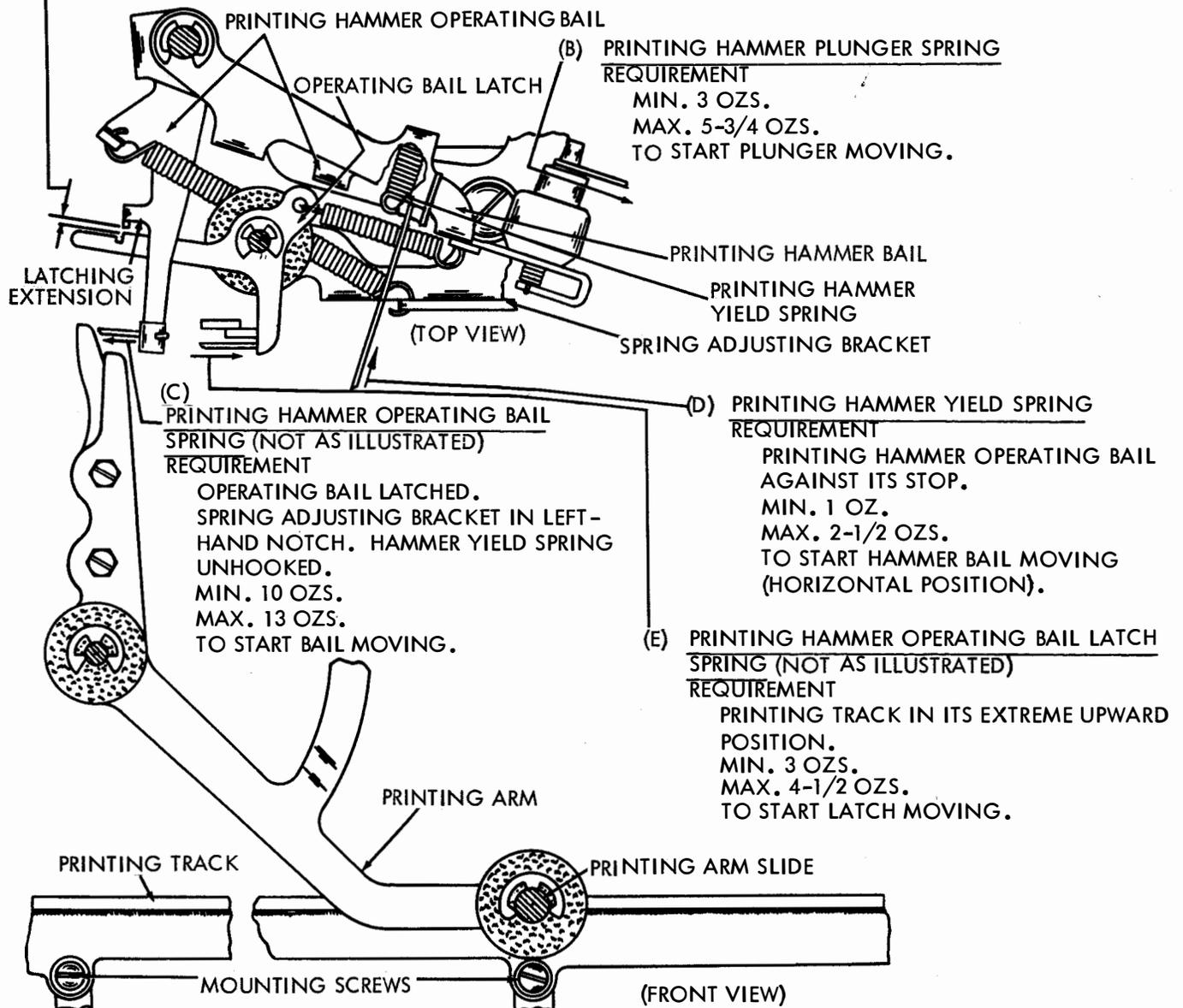
(A) PRINTING TRACK
REQUIREMENT

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

MIN. 0.015 INCH
MAX. 0.040 INCH

TO ADJUST

POSITION THE PRINTING TRACK UP OR DOWN WITH ITS MOUNTING SCREWS LOOSENED. HOLD CLEARANCE TO MAXIMUM.



2.50 Printing Mechanism (Cont.)

PRINTING HAMMER STOP BRACKET

REQUIREMENT --- WITH TYPE BOX IN POSITION TO PRINT CHARACTER "M", PRINTING TRACK IN ITS MAXIMUM DOWNWARD POSITION, AND PRINTING HAMMER STOP BRACKET HELD TOWARD THE PLATEN WITH PRESSURE OF 8 OZS; CLEARANCE BETWEEN PRINTING HAMMER AND "M" TYPE PALLET.

MIN. 0.005 INCH

MAX. 0.035 INCH

AT ANY POINT ALONG THE ENTIRE LENGTH OF THE PLATEN.

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

TYPE PALLET SPRING

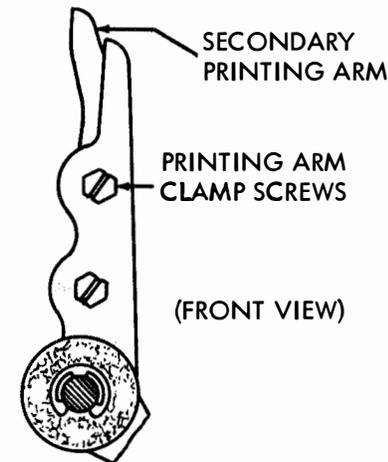
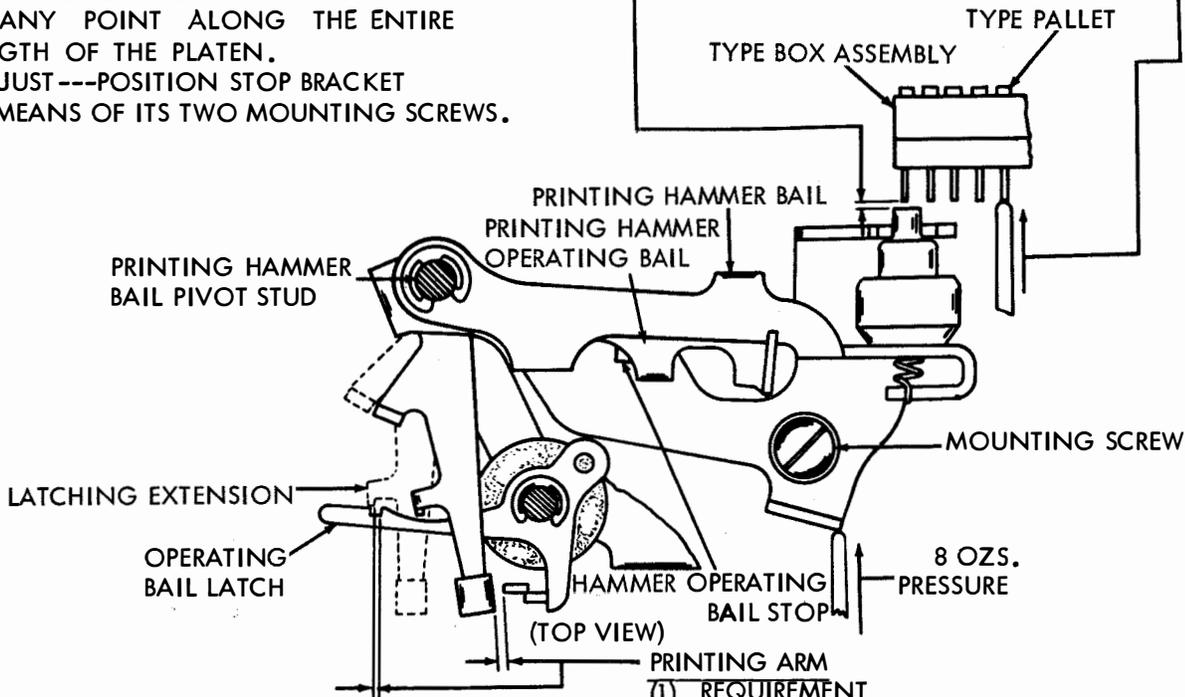
REQUIREMENT

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

MIN. 1/4 OZS.

MAX. 3/4 OZS.

TO START PALLET MOVING.



NOTE 1

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

(1) REQUIREMENT

PRINTING TRACK IN MAXIMUM DOWNWARD POSITION.

PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP.

SOME CLEARANCE BETWEEN SECONDARY PRINTING ARM AND FORWARD EXTENSION OF HAMMER OPERATING BAIL.

MAX. 0.015 INCH

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

(2) REQUIREMENT

PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAIL SHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY MIN. 0.006 INCH

CHECK RIGHT AND LEFT POSITIONS

TO ADJUST

POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.

NOTE 2

FOR EARLIER DESIGN SEE PAR. 4.16

2.51 Printing Mechanism (Cont.)

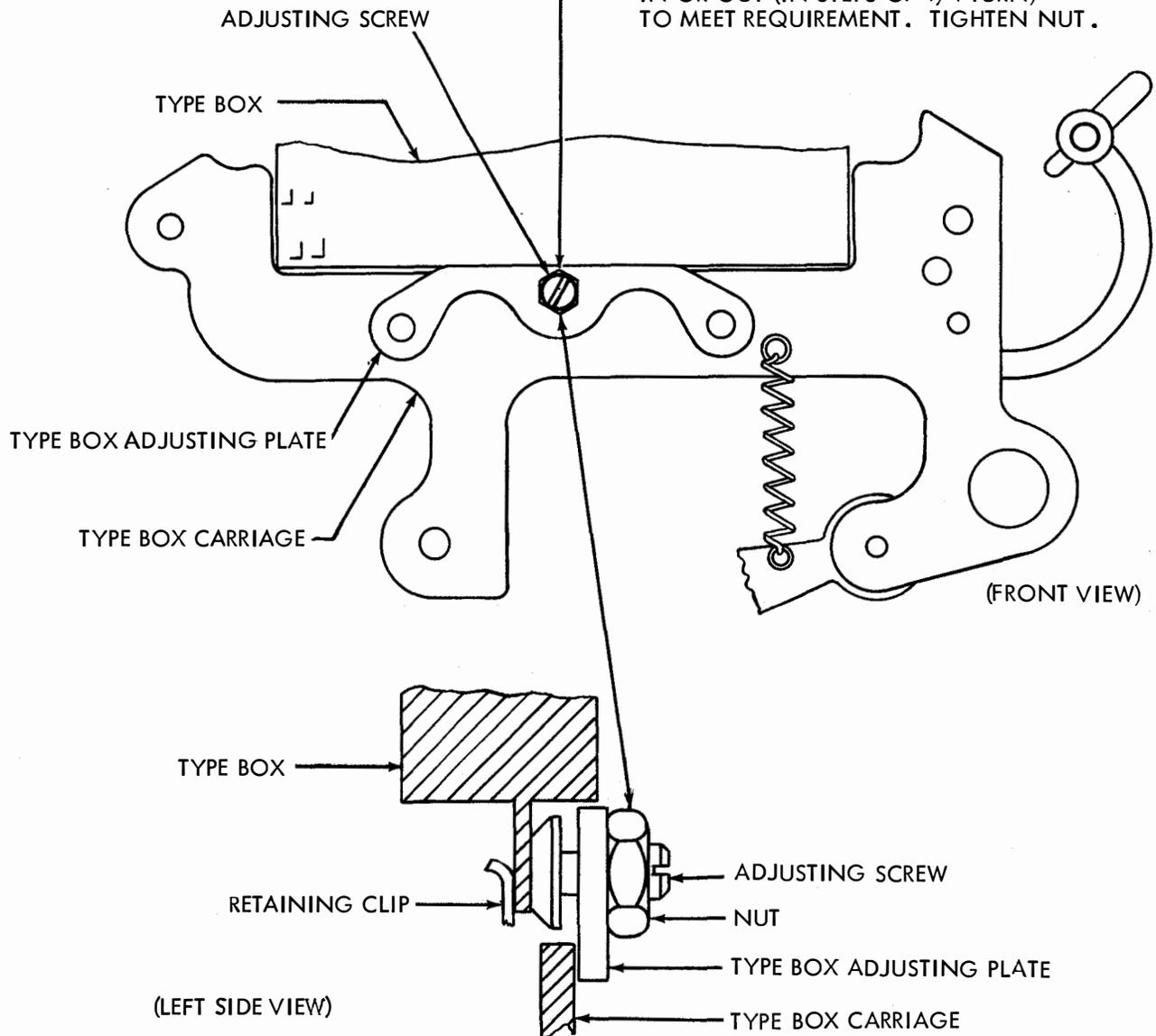
NOTE: THIS ADJUSTMENT APPLIES ONLY TO UNITS SO EQUIPPED AND SHOULD BE MADE WITH THE TYPEBOX IN ITS UPPER POSITION.

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

TYPE BOX ALIGNMENT REQUIREMENT

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

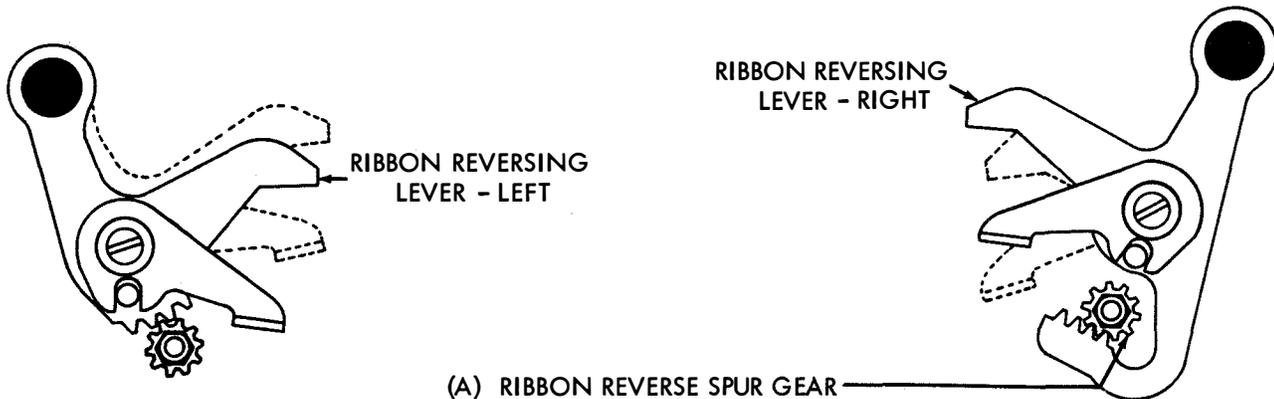
TO ADJUST
 LOOSEN NUT. OPERATE PRINTER UNDER POWER. REPEAT CHARACTERS E AND Z. TURN ADJUSTING SCREW IN OR OUT (IN STEPS OF 1/4 TURN) TO MEET REQUIREMENT. TIGHTEN NUT.



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

2.52 Printing Mechanism (Cont.)

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



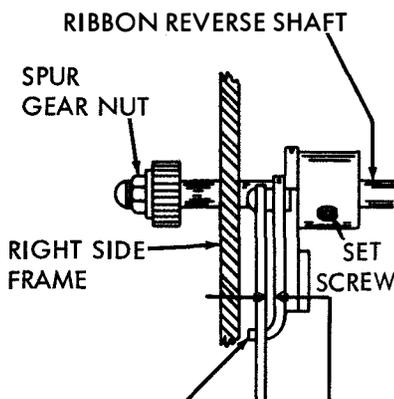
(A) RIBBON REVERSE SPUR GEAR REQUIREMENT

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

TO ADJUST

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

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



(B) RIBBON REVERSE DETENT REQUIREMENT

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

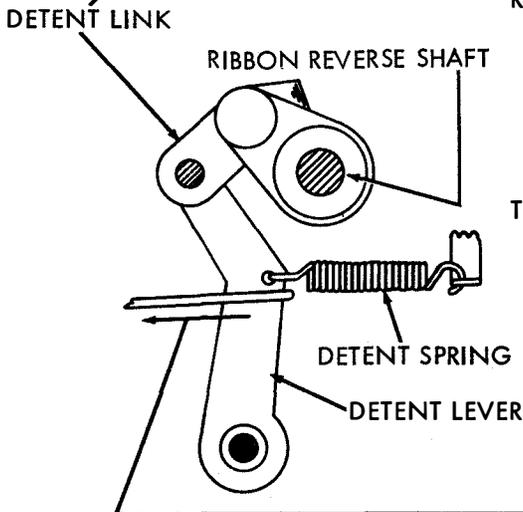
MIN. SOME---MAX. 0.055 INCH

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

TO ADJUST

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

NOTE: FOR EARLIER DESIGN SEE PAR. 4.17



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

REQUIREMENT

DETENT LINK BUCKLED IN UPWARD POSITION

MIN. 10 OZS.

MAX. 18 OZS.

TO START DETENT LEVER MOVING TOWARD REAR.

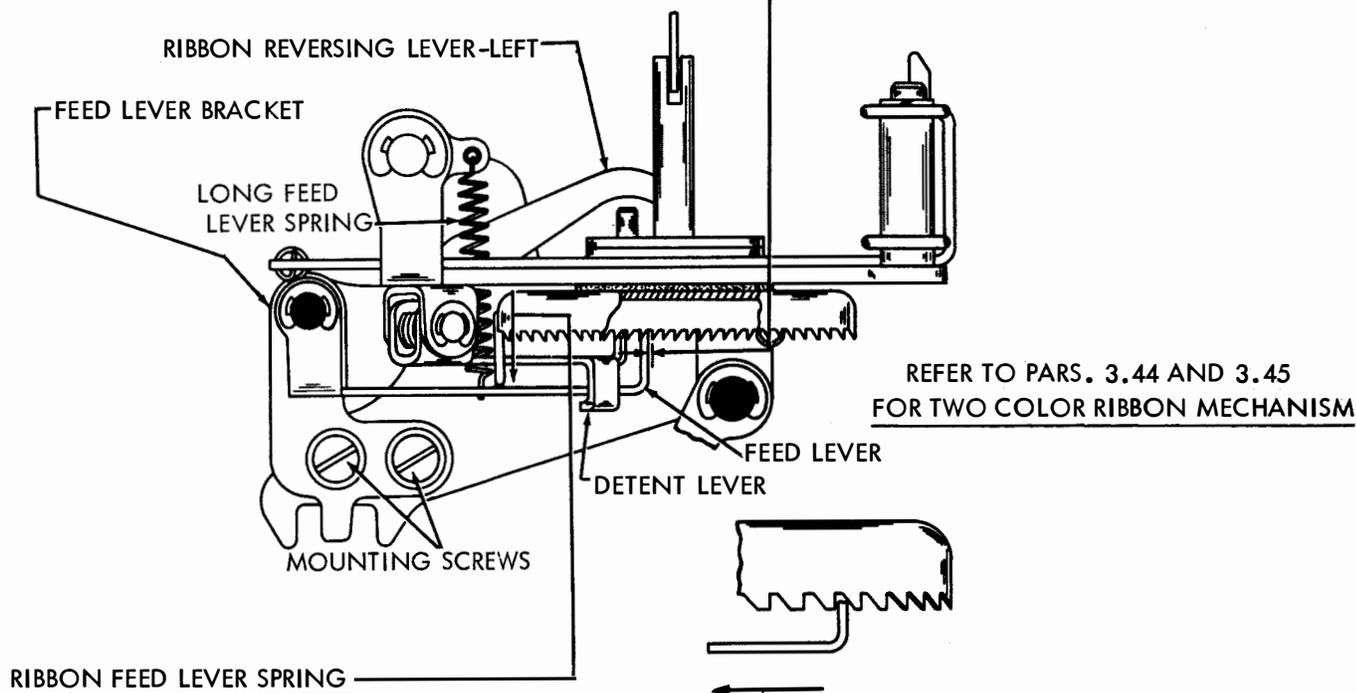
2. 53 Printing Mechanism (Cont.)

RIBBON FEED LEVER BRACKET

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

(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

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

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

RIBBON RATCHET WHEEL FRICTION
 SPRING

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

*TWO COLOR RIBBON REQUIREMENT

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

SECTION 573-115-700

2.54 Printing Mechanism (Cont.)

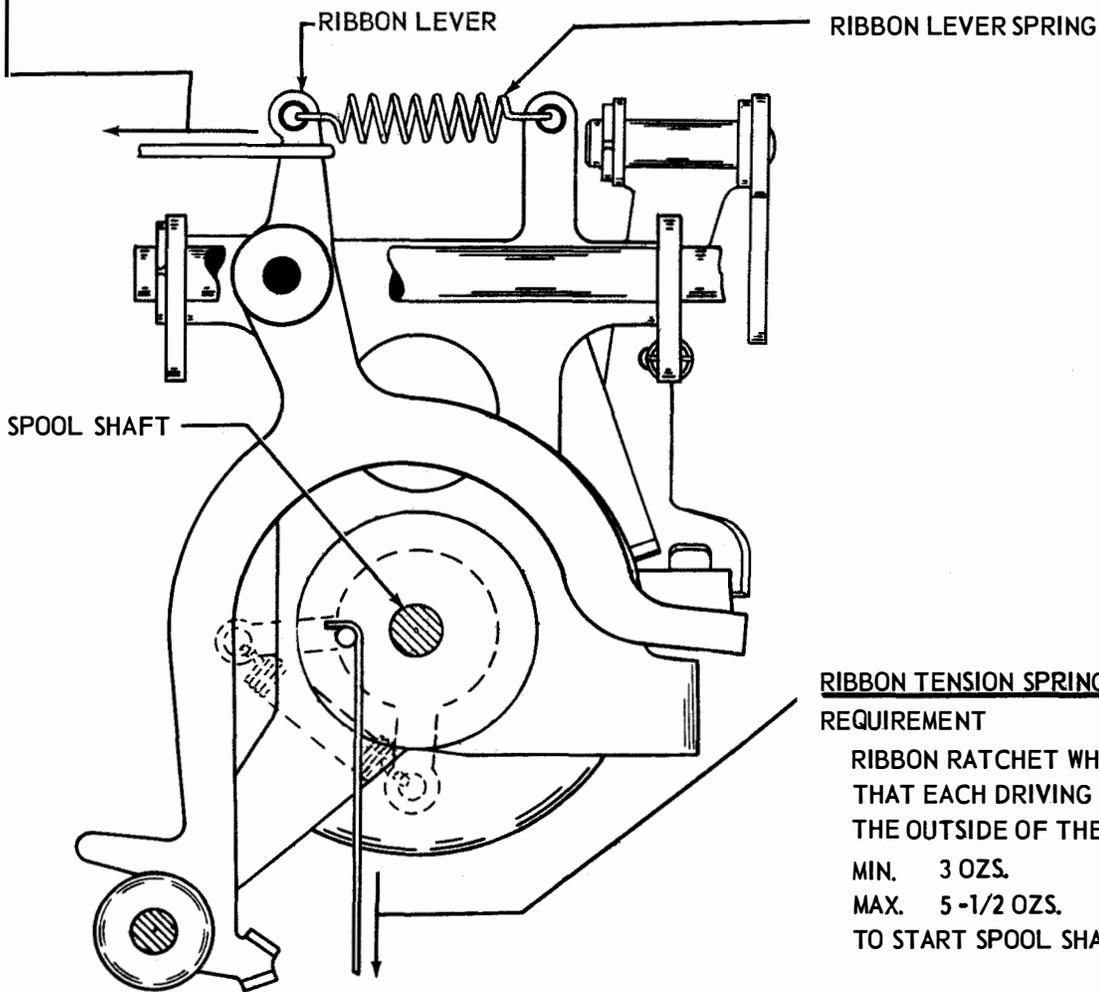
RIBBON LEVER SPRING

REQUIREMENT

MIN. 1-1/2 OZS.

MAX. 3 OZS.

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



RIBBON TENSION SPRING

REQUIREMENT

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

MIN. 3 OZS.

MAX. 5-1/2 OZS.

TO START SPOOL SHAFT MOVING.

2.55 Function Mechanism (Cont.)

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

(A)

FUNCTION LEVER SPRING

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

REQUIREMENT

FUNCTION LEVER IN UNOPERATED POSITION.

SUPPRESSION BAIL HELD FORWARD.

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

LEVER WITH STUD THAT OPERATES TWO CONTACTS

2 OZS.
3-1/2 OZS.

TO START FUNCTION LEVER MOVING. CHECK EACH SPRING.

(B) FUNCTION PAWL SPRING

REQUIREMENT

REAR END OF FUNCTION PAWL RESTING ON FUNCTION BAR
ONE STOP FUNCTION CLUTCH UNITS:

MIN. 3 OZS.

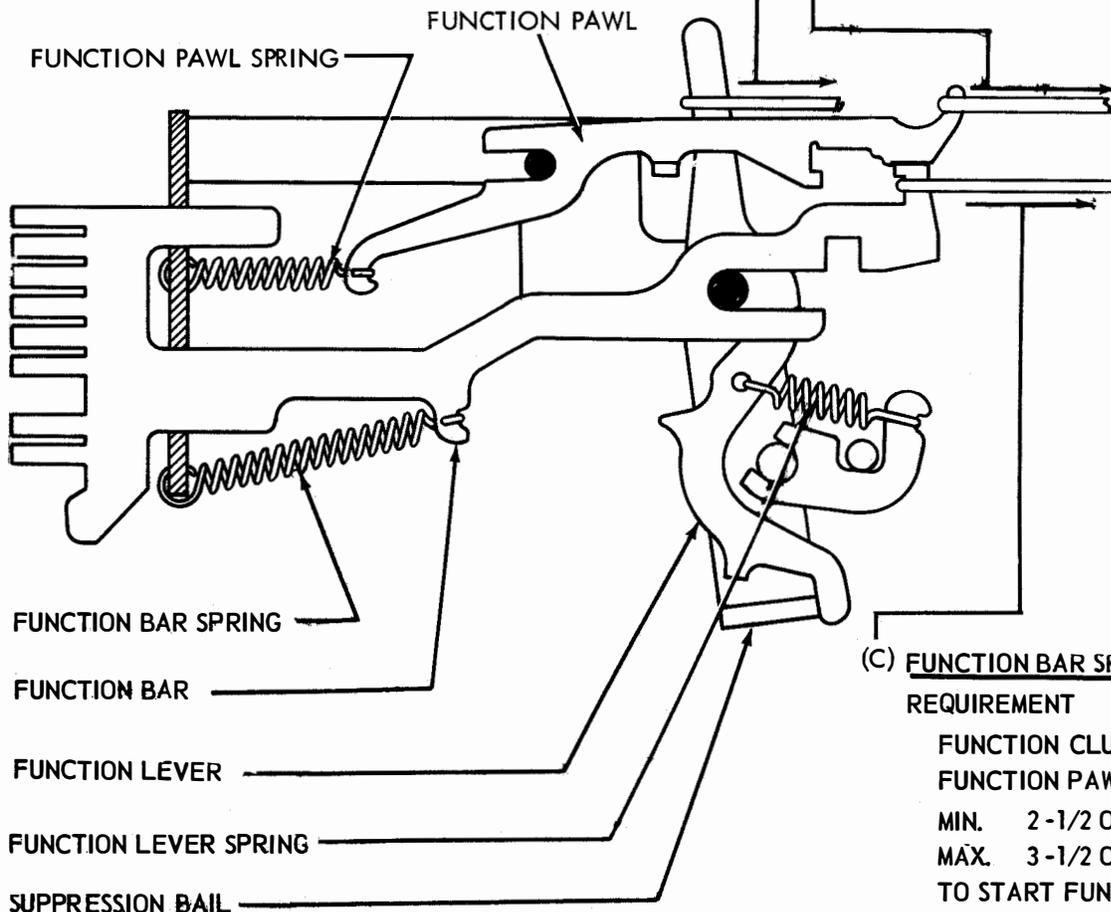
MAX. 5 OZS.

TWO STOP FUNCTION CLUTCH UNITS:

MIN. 7 OZS.

MAX. 10-1/2 OZS.

TO START PAWL MOVING. CHECK EACH SPRING.



(C) FUNCTION BAR SPRING

REQUIREMENT

FUNCTION CLUTCH DISENGAGED.
FUNCTION PAWL HELD AWAY.

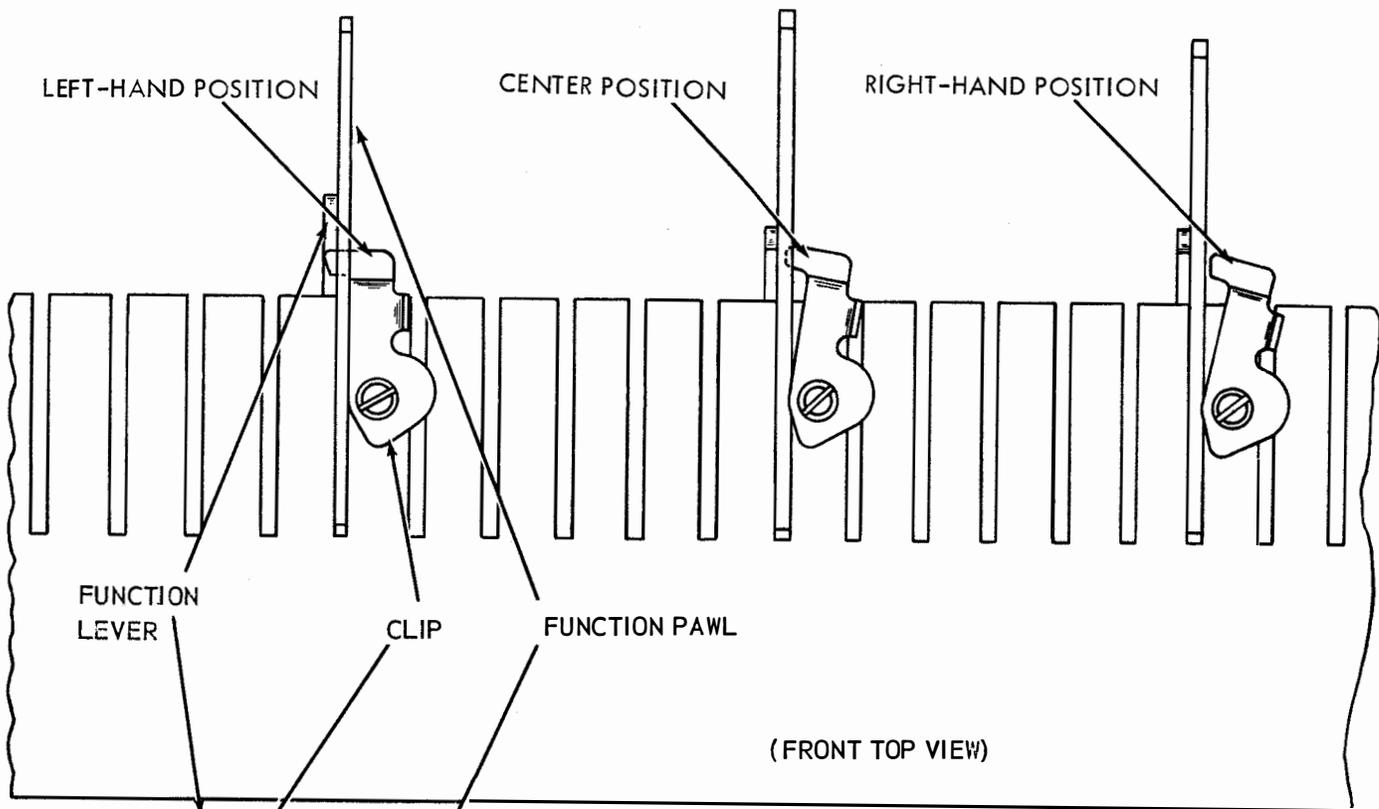
MIN. 2-1/2 OZS.

MAX. 3-1/2 OZS.

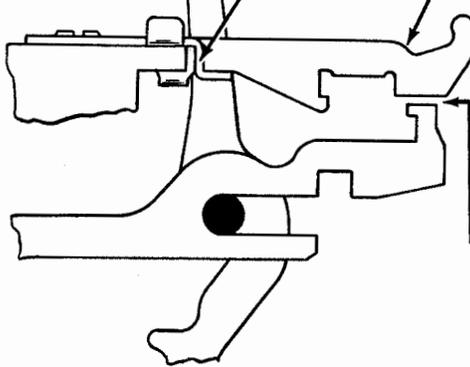
TO START FUNCTION BAR MOVING.

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

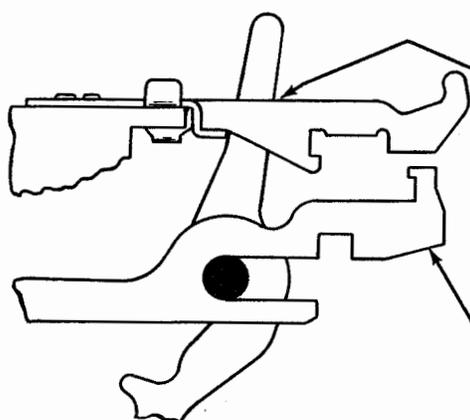
2.56 Function Mechanism (Cont.)



STUNT BOX CLIP (FOR UNITS EQUIPPED WITH CLIPS ONLY)



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



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

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

FUNCTION BAR

(RIGHT SIDE VIEW)

2.57 Line Feed and Platen Mechanism (Cont.)

(B) PLATEN DETENT BAIL SPRING

REQUIREMENT

DETENT SEATED BETWEEN TWO TEETH ON LINE FEED SPUR GEAR.

MIN. 16 OZS.

MAX. 32 OZS.

TO START DETENT BAIL MOVING.

DETENT ECCENTRIC

DETENT STUD

(C) LINE FEED BAR RELEASE LEVER SPRING

REQUIREMENT

MIN. 3 OZS.

MAX. 8 OZS.

TO START LEVER MOVING.

ON LP68

MIN. 8 OZS.

MAX. 12 OZS.

HAND WHEEL

LINE FEED BAR RELEASE LEVER

**(A) LINE FEED SPUR GEAR
DETENT ECCENTRIC**

REQUIREMENT

LINE FEED CLUTCH DISENGAGED. PLATEN ROTATED UNTIL DETENT STUD IS SEATED BETWEEN TWO TEETH ON LINE FEED SPUR GEAR. WHEN HAND WHEEL IS RELEASED, MANUALLY SET THE TEETH ON THE FEED BARS INTO ENGAGEMENT WITH THE TEETH ON THE LINE FEED SPUR GEAR. THE DETENT STUD SHOULD CONTACT ONE GEAR TOOTH AND BE NOT MORE THAN 0.010 INCH FROM OTHER TOOTH TO ADJUST

ROTATE THE DETENT ECCENTRIC WITH ITS MOUNTING SCREW LOOSENED. KEEP HIGH PART OF ECCENTRIC UPWARD.

LINE FEED SPUR GEAR

(D) LINE FEED BAR BELL CRANK SPRING

REQUIREMENT

LEFT-HAND LINE FEED BAR IN REAR POSITION.

FRICITION FEED	SPROCKET FEED
MIN. 19 OZS.	28 OZS.
MAX. 24 OZS.	38 OZS.

MIN. 19 OZS.

28 OZS.

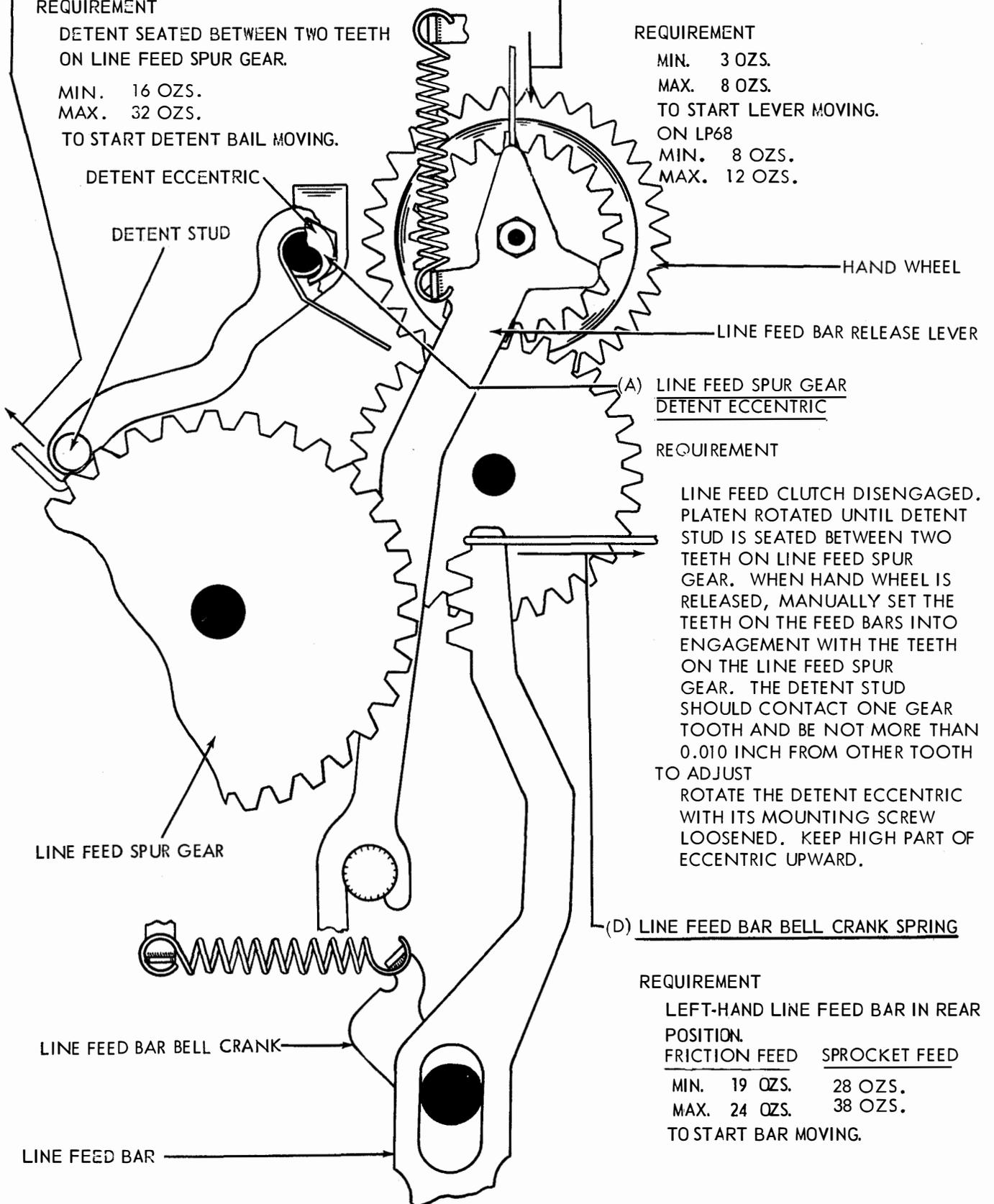
MAX. 24 OZS.

38 OZS.

TO START BAR MOVING.

LINE FEED BAR BELL CRANK

LINE FEED BAR



2. 58 Function Mechanism (Cont.)

STRIPPER BLADE DRIVE CAM POSITION

REQUIREMENT

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

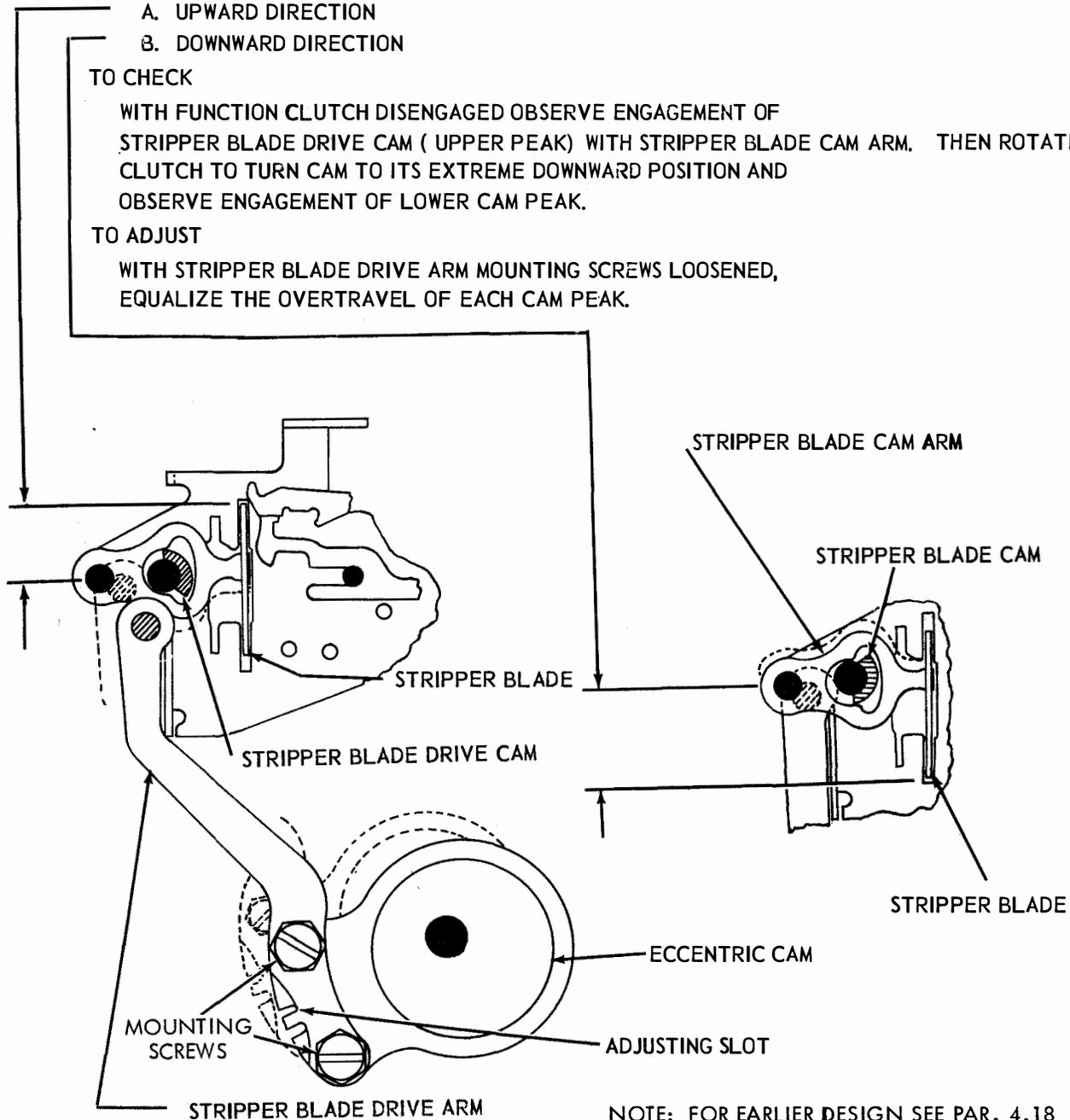
- A. UPWARD DIRECTION
- B. DOWNWARD DIRECTION

TO CHECK

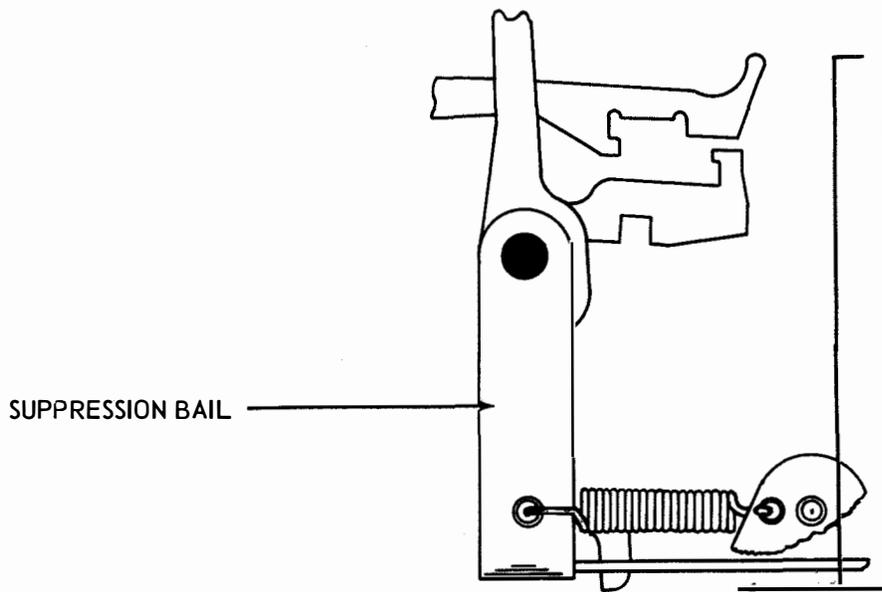
WITH FUNCTION CLUTCH DISENGAGED OBSERVE ENGAGEMENT OF STRIPPER BLADE DRIVE CAM (UPPER PEAK) WITH STRIPPER BLADE CAM ARM. THEN ROTATE CLUTCH TO TURN CAM TO ITS EXTREME DOWNWARD POSITION AND OBSERVE ENGAGEMENT OF LOWER CAM PEAK.

TO ADJUST

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



2.59 Spacing Mechanism (Cont.)



SPACING SUPPRESSION BAIL SPRING

REQUIREMENT

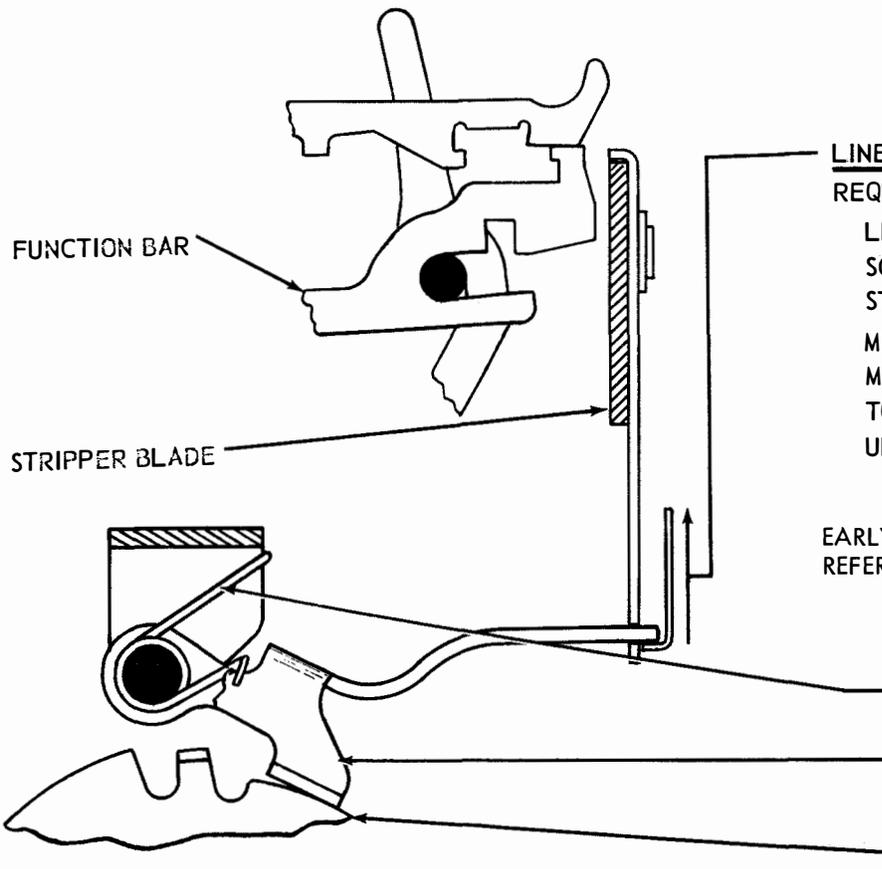
SPACING SUPPRESSION BAIL IN REAR POSITION. SCALE APPLIED NEAR CENTER OF HORIZONTAL PORTION OF BAIL.

MIN. 1/2 OZ.

MAX. 1-1/2 OZS.

TO START BAIL MOVING.

2.60 Line Feed and Platen Mechanism (Cont.)



LINE FEED STRIPPER BAIL SPRING

REQUIREMENT

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

MIN. 1/2 OZ.

MAX. 2 OZS.

TO START STRIPPER BAIL MOVING UPWARD.

EARLY DESIGN

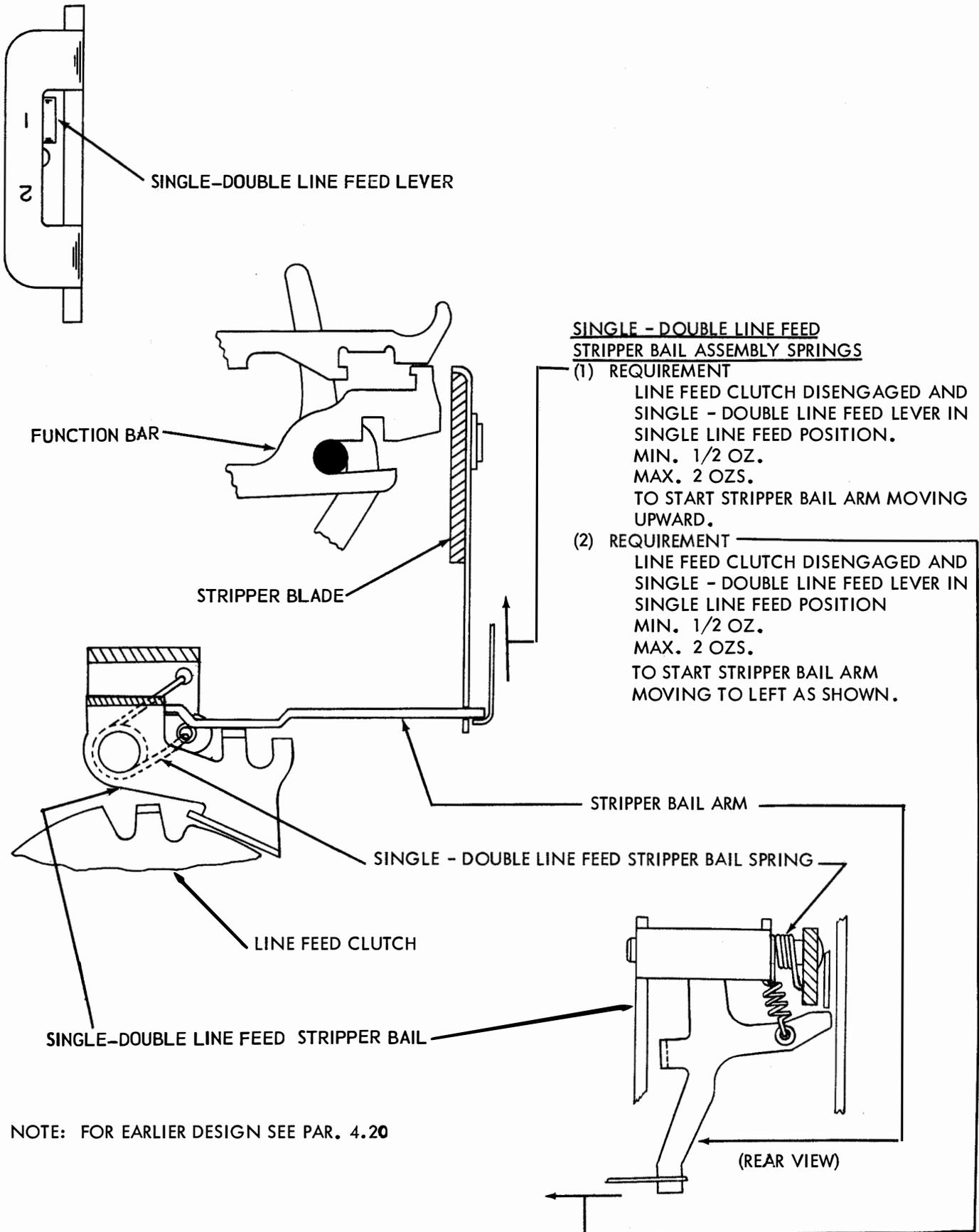
REFER TO PAR. 2.61 FOR LATER DESIGN

LINE FEED STRIPPER BAIL SPRING

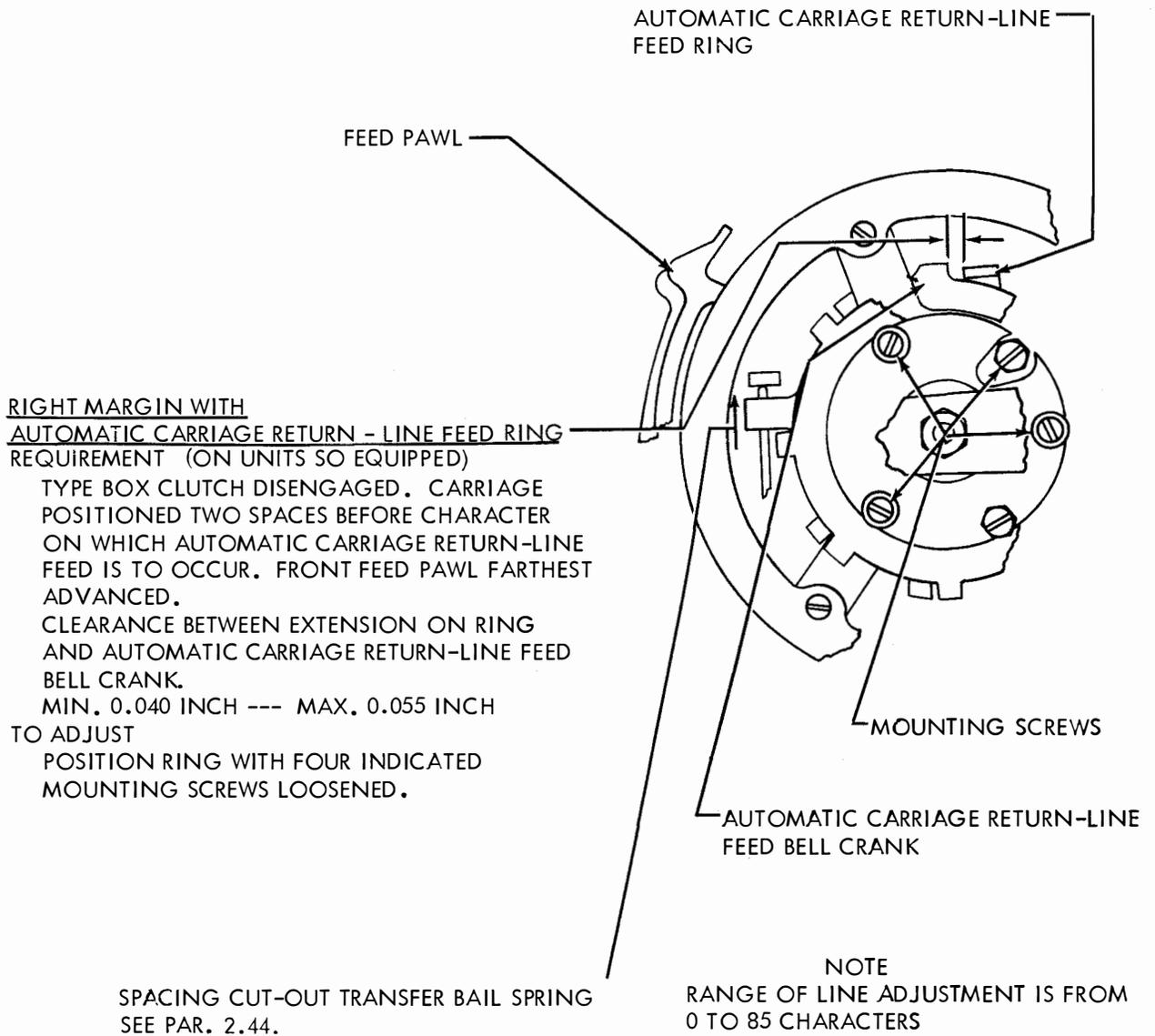
STRIPPER BAIL

LINE FEED CLUTCH

2.61 Line Feed and Platen Mechanism (Cont.)



2.62 Spacing Mechanism (Cont.)



RIGHT MARGIN WITH
AUTOMATIC CARRIAGE RETURN - LINE FEED RING
REQUIREMENT (ON UNITS SO EQUIPPED)

TYPE BOX CLUTCH DISENGAGED. CARRIAGE
POSITIONED TWO SPACES BEFORE CHARACTER
ON WHICH AUTOMATIC CARRIAGE RETURN-LINE
FEED IS TO OCCUR. FRONT FEED PAWL FARTHEST
ADVANCED.

CLEARANCE BETWEEN EXTENSION ON RING
AND AUTOMATIC CARRIAGE RETURN-LINE FEED
BELL CRANK.

MIN. 0.040 INCH --- MAX. 0.055 INCH

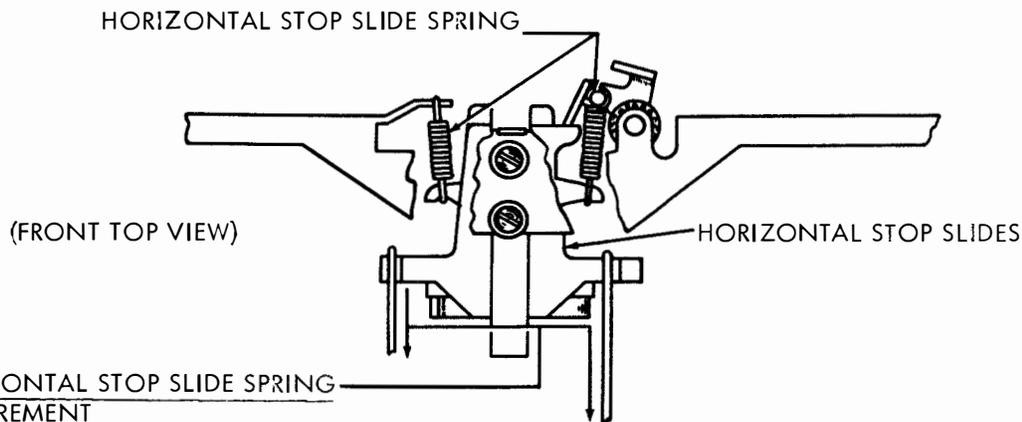
TO ADJUST
POSITION RING WITH FOUR INDICATED
MOUNTING SCREWS LOOSENED.

SPACING CUT-OUT TRANSFER BAIL SPRING
SEE PAR. 2.44.

NOTE
RANGE OF LINE ADJUSTMENT IS FROM
0 TO 85 CHARACTERS

NOTE: FOR ADJUSTMENT ON EARLIER MODELS SEE PAR. 4.19

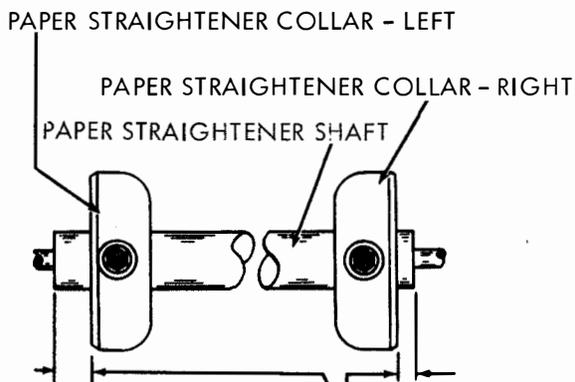
2.63 Positioning Mechanism (Cont.)



REQUIREMENT

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

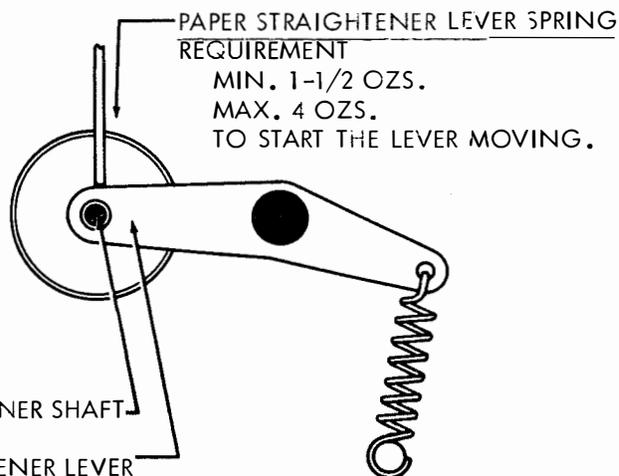
2.64 Line Feed and Platen Mechanism (Cont.)



REQUIREMENT

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

TO ADJUST
 POSITION COLLARS ON SHAFT WITH
 SET SCREWS LOOSENED.

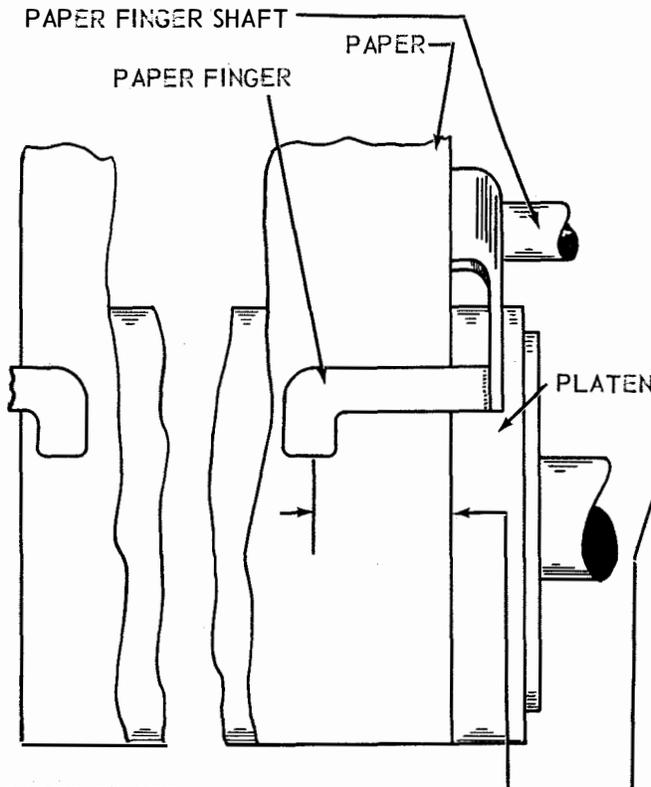


REQUIREMENT

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

NOTE: FOR SPROCKET FEED MECHANISM SEE PAR. 2.75

2.65 Line Feed and Platen Mechanism (Cont.)



PAPER FINGER

REQUIREMENT

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

TO ADJUST

POSITION THE PAPER FINGERS BY SLIDING THEM ON THEIR SHAFT.

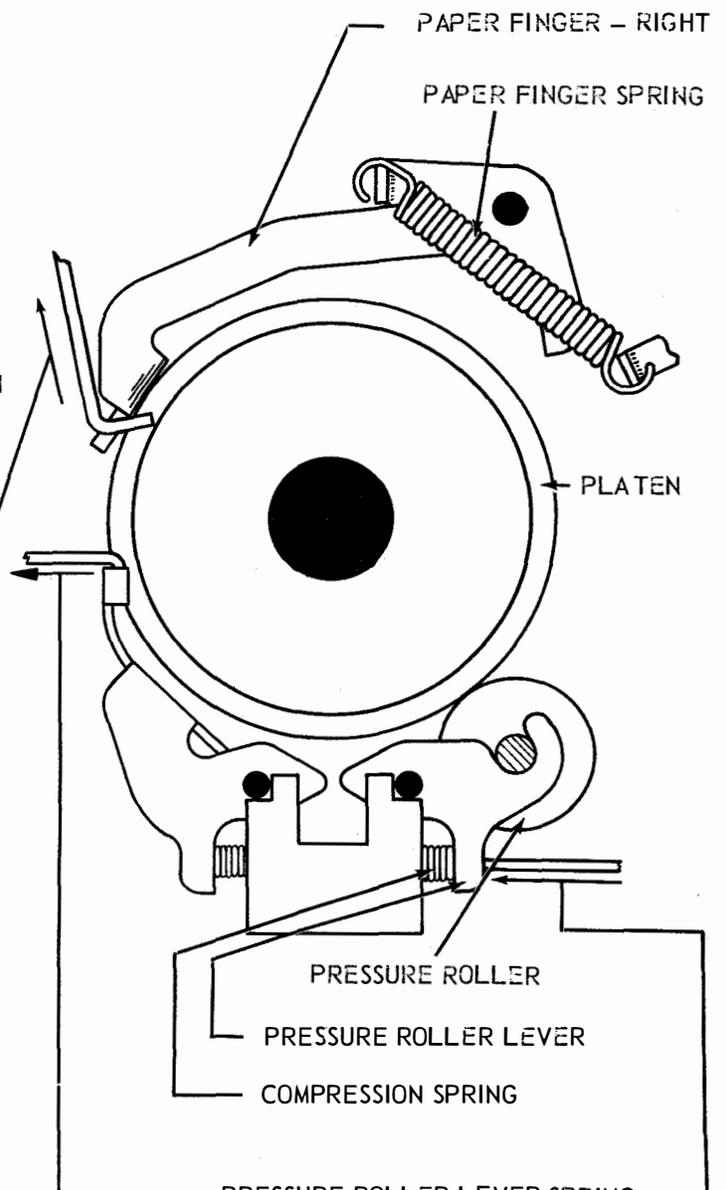
PAPER FINGER SPRING

REQUIREMENT

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

MIN. 3 OZS.

MAX. 6 OZS.



PRESSURE ROLLER LEVER SPRING

REQUIREMENT

MIN. 28 OZS.

MAX. 36 OZS.

TO START EACH CENTER LEVER MOVING. ALTERNATELY

PAPER PRESSURE BAIL SPRING

REQUIREMENT

SCALE HOOKED OVER PRESSURE BAIL AT EACH END OF PLATEN.

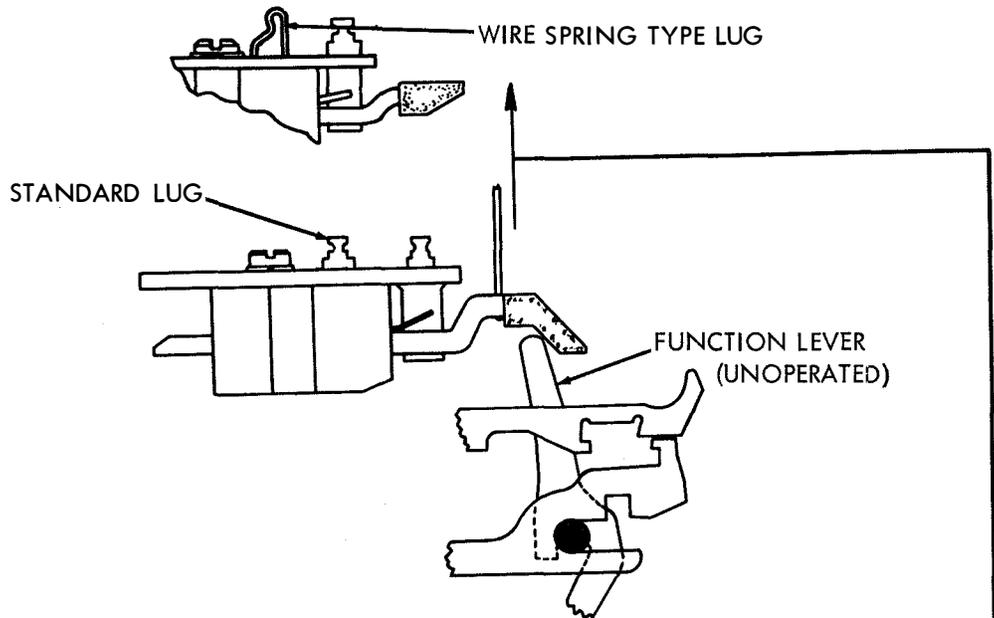
MIN. 7 OZS.

MAX. 20 OZS.

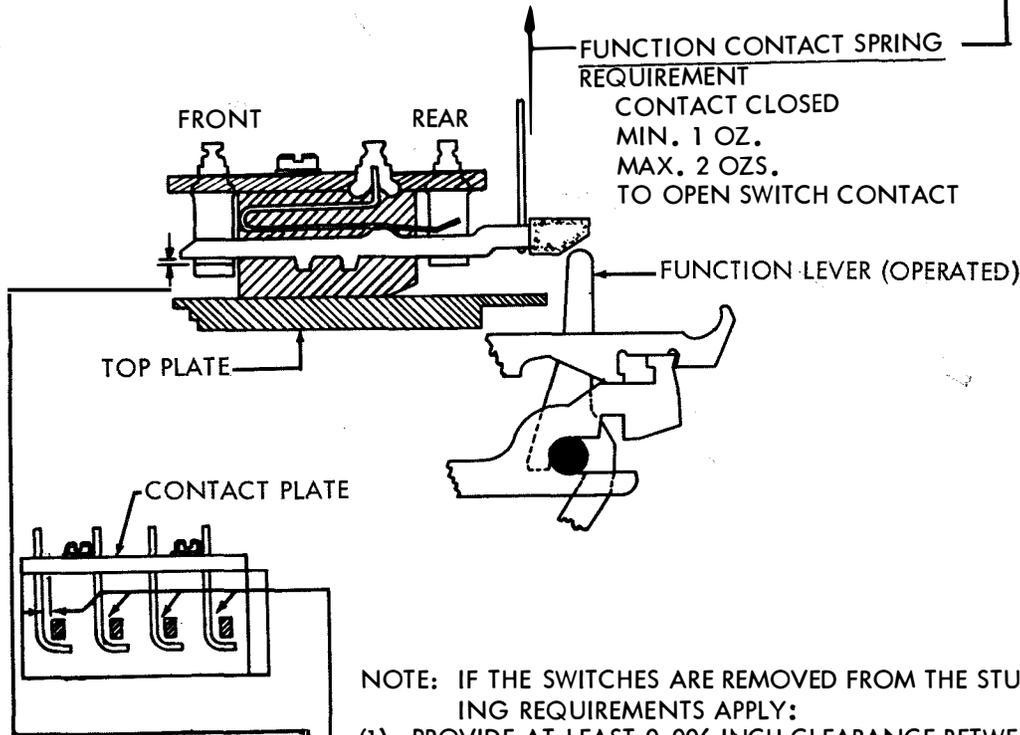
TO MOVE PRESSURE BAIL FROM PLATEN.

NOTE: FOR SPROCKET FEED MECHANISM SEE PAR. 2.73

2.66 Function Mechanism (Cont.)



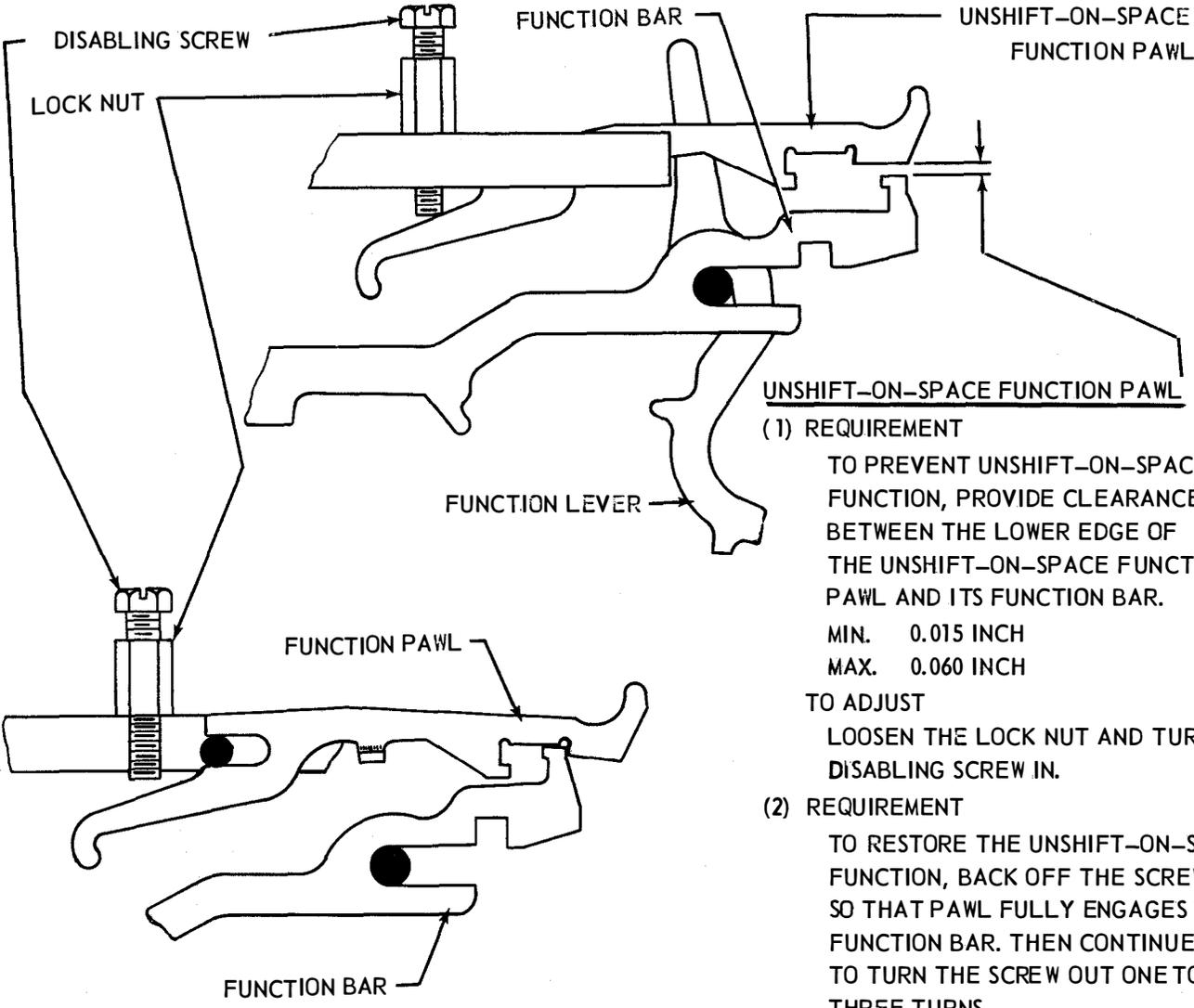
NOTE: FOR EARLIER DESIGN SEE PAR. 4.21 AND 4.22



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

- (1) PROVIDE AT LEAST 0.006 INCH CLEARANCE BETWEEN THE CONTACT ARM AND THE VERTICAL PORTION OF THE CONTACT CLIP. IF THE SWITCH HAS CONTACTS FRONT AND REAR, THIS CLEARANCE APPLIES TO BOTH FRONT AND REAR. TO OBTAIN THIS CLEARANCE, POSITION THE CONTACT PLATE BEFORE TIGHTENING THE CONTACT PLATE SCREWS. THE CONTACT MUST BE MADE BEFORE THE FUNCTION LEVER TOUCHES THE TOP PLATE.
- (2) ON SWITCHES WITH CONTACTS FRONT AND REAR, CHECK TO SEE THAT THERE IS A GAP OF 0.008 TO 0.028 INCH BETWEEN THE FORMED-OVER END OF THE FRONT CONTACT CLIP AND THE BOTTOM OF THE CONTACT ARM WHEN THE REAR CONTACT IS CLOSED.

2.67 Function Mechanism (Cont.)



SECTION 573-115-700

2.68 Codebar Mechanism (Cont.)

CODE BAR DETENT

REQUIREMENT

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

TO ADJUST

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

CODE BAR DETENT SPRING

NOTE

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

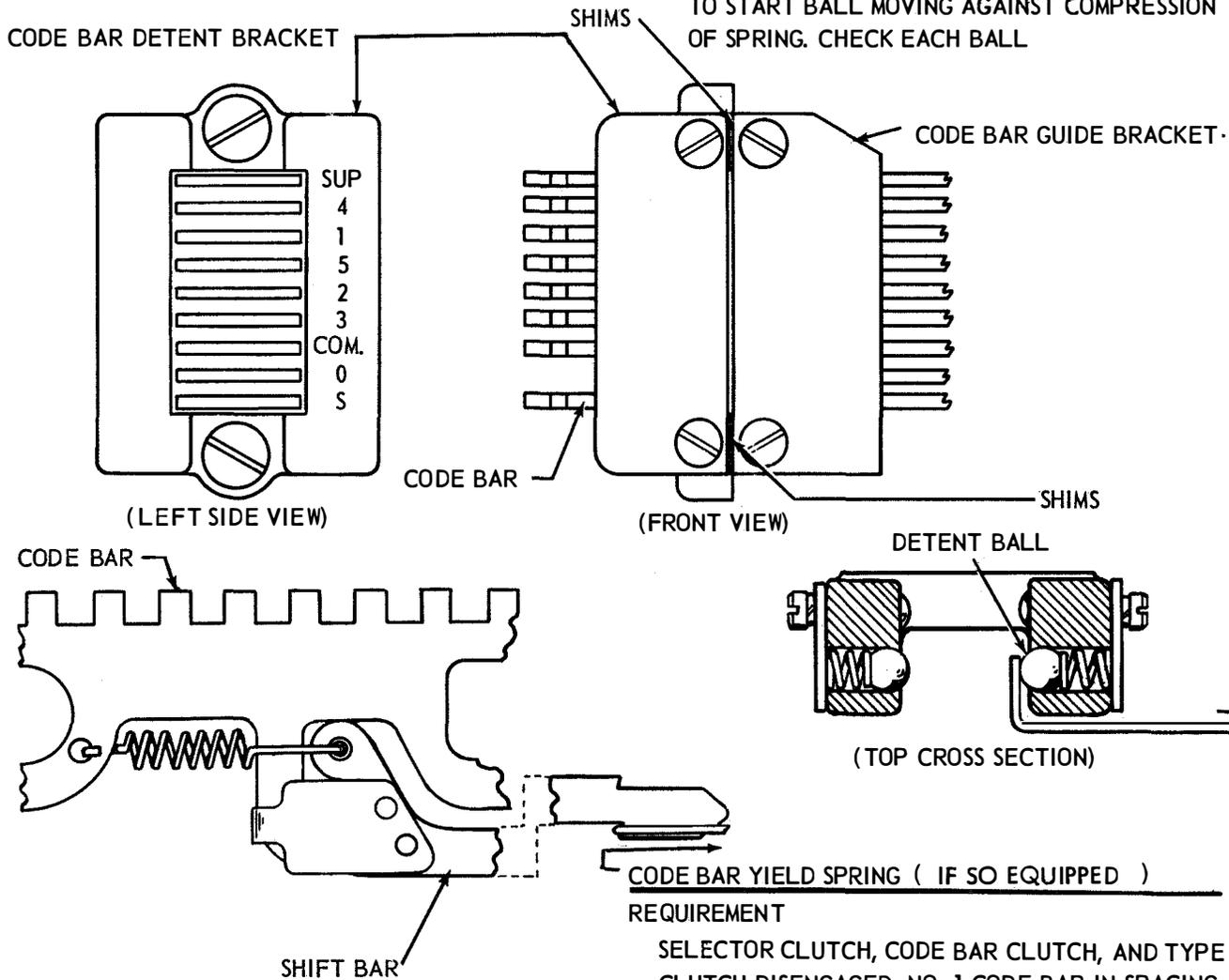
REQUIREMENT

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

MIN. 1-1/2 OZS.

MAX. 3-1/2 OZS.

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



CODE BAR YIELD SPRING (IF SO EQUIPPED)

REQUIREMENT

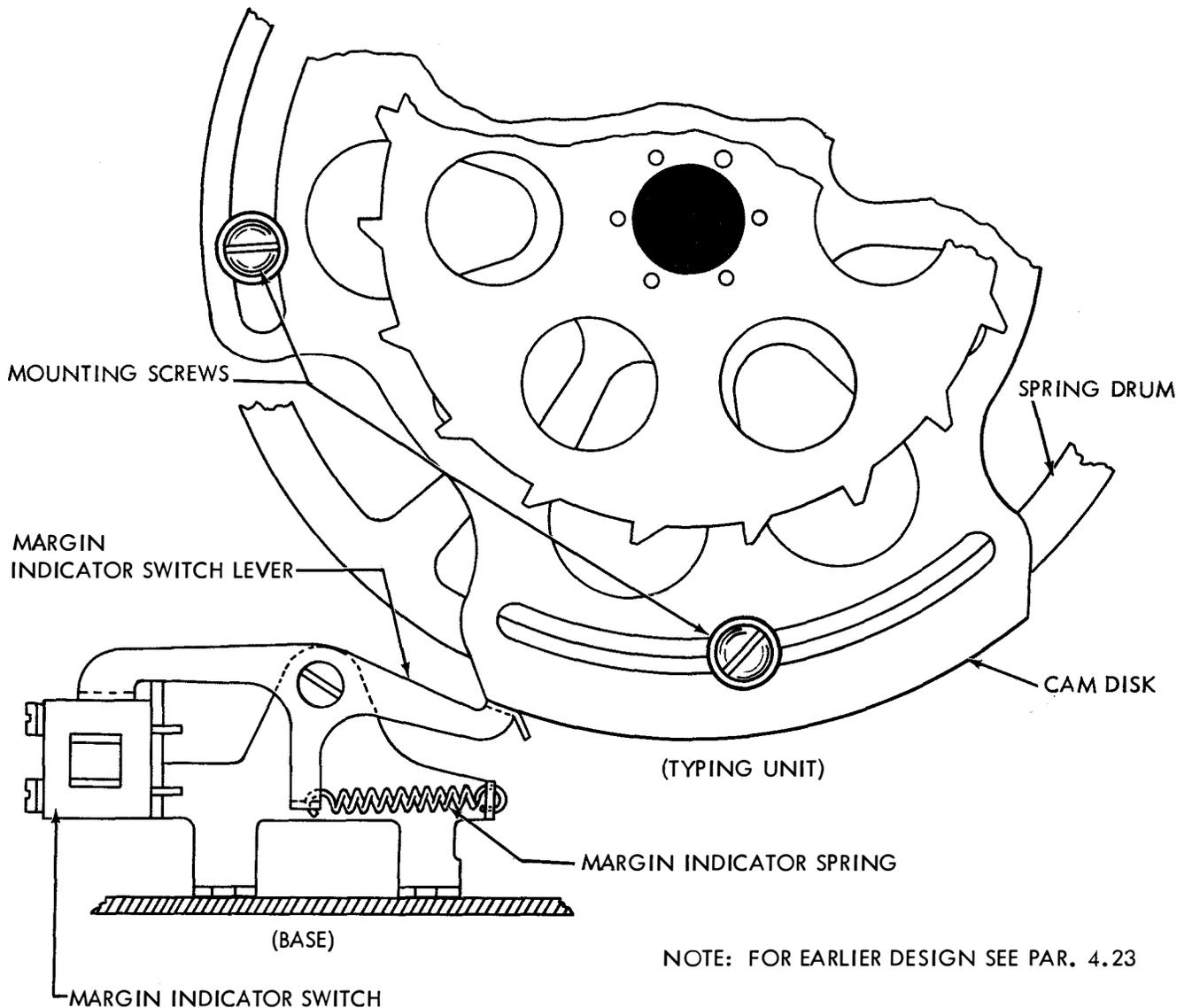
SELECTOR CLUTCH, CODE BAR CLUTCH, AND TYPE BOX
 CLUTCH DISENGAGED. NO. 1 CODE BAR IN SPACING
 POSITION

MIN. 14 OZS.

MAX. 23 OZS.

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

2.69 Spacing Mechanism (Cont.)

MARGIN INDICATOR LAMP

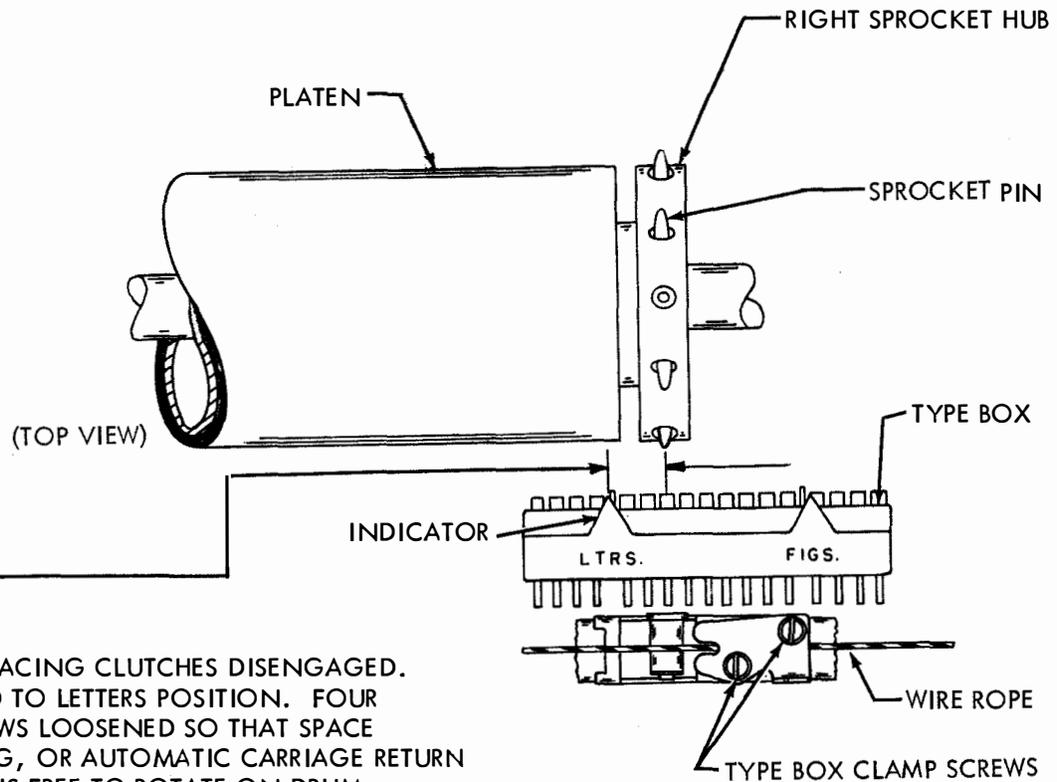
REQUIREMENT

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

TO ADJUST

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

2.70 Positioning Mechanism (Cont.)



TYPE BOX POSITION

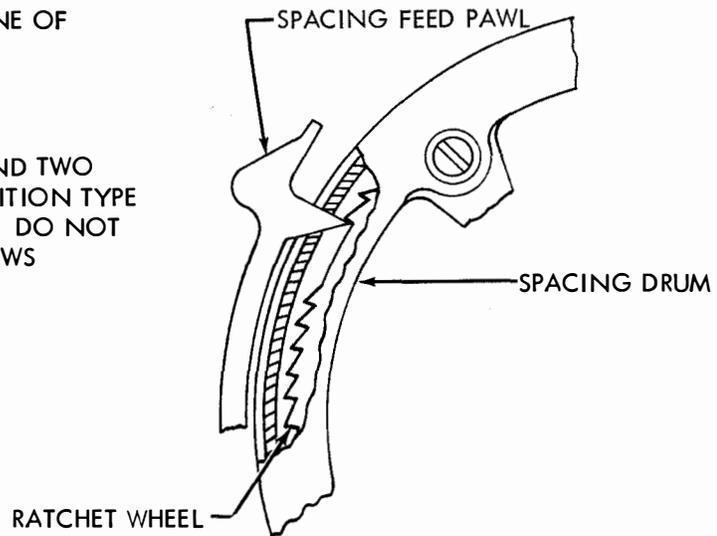
REQUIREMENT

TYPE BOX AND SPACING CLUTCHES DISENGAGED.
 TYPE BOX SHIFTED TO LETTERS POSITION. FOUR MOUNTING SCREWS LOOSENED SO THAT SPACE SUPPRESSION RING, OR AUTOMATIC CARRIAGE RETURN LINE FEED RING, IS FREE TO ROTATE ON DRUM.
 (UNITS EQUIPPED WITH LIMITED ADJUSTMENT SPACING DRUM: SPACING CUT OUT AND AUTOMATIC CARRIAGE RETURN LINE FEED ARMS IN MAXIMUM COUNTER-CLOCKWISE POSITION. SEE PAR. 4.07) CLEARANCE BETWEEN LETTERS PRINT INDICATOR AND CENTER LINE OF SPROCKET PINS IN RIGHT HUB:

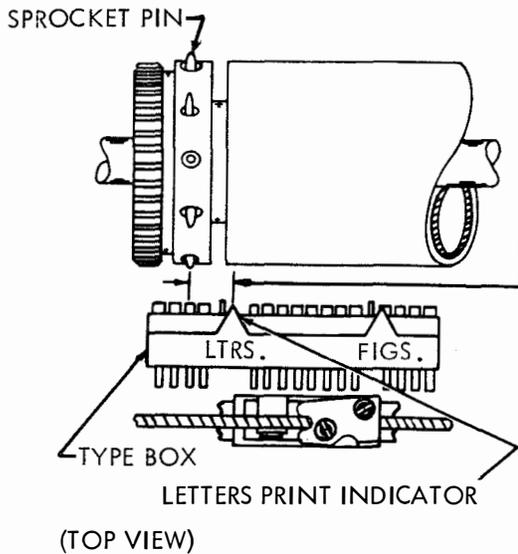
MIN. 5/16 INCH
 MAX. 7/16 INCH

TO ADJUST

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



2.71 Line Feed and Platen Mechanism (Con't)



(A) LEFT MARGIN REQUIREMENT

(1) TYPE BOX CLUTCH DISENGAGED, SPACING DRUM FULLY RETURNED, AND TYPE BOX SHIFTED TO LETTERS POSITION: CLEARANCE BETWEEN CENTER OF LETTERS PRINT INDICATOR ON TYPE BOX AND CENTER LINE OF SPROCKET PINS AT LEFT HUB SHOULD BE:

MIN. 5/16 INCH --- MAX. 7/16 INCH

TO ADJUST --- POSITION CARRIAGE RETURN RING WITH ITS MOUNTING SCREWS LOOSENED.

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

MIN. SOME --- MAX. 0.008 INCH

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

TO ADJUST --- REFINE REQUIREMENT (1) ABOVE

(B) PRINTING HAMMER STOP BRACKET

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

MIN. SOME --- MAX. 0.020 INCH

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

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

(C) RIGHT MARGIN

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

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

SPACING FEED PAWL

SPACING DRUM RATCHET WHEEL

CARRIAGE RETURN RING

MOUNTING SCREWS

(D) PRINTING CARRIAGE POSITION

USE PAR. 2.47

(E) TYPE BOX ALIGNMENT

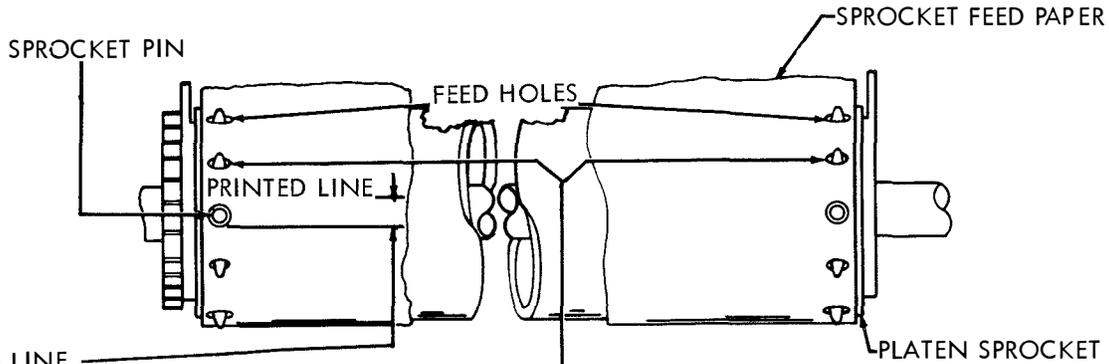
USE PAR. 2.51

(FRONT VIEW)
UNIVERSAL
SPACING
DRUM

FOLLOWING THIS ADJUSTMENT, ALL SCREWS SHOULD BE TIGHTENED.

2.72 Line Feed and Platen Mechanism (Con't)

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



(B) PRINTED LINE REQUIREMENT

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

TO ADJUST

LOOSEN SCREWS AND POSITION LEFT SPROCKET. IF OTHER THAN STANDARD PAPER IS USED, IT MAY BE NECESSARY TO MAKE A VARIATION IN THIS ADJUSTMENT.

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

(D) SPROCKET PIN SEPARATION (1) REQUIREMENT

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

(2) REQUIREMENT

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

TO ADJUST

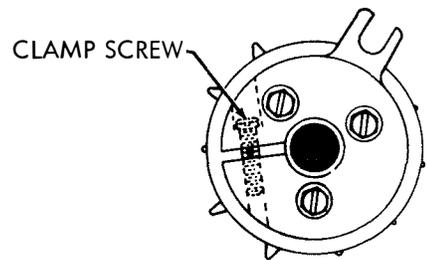
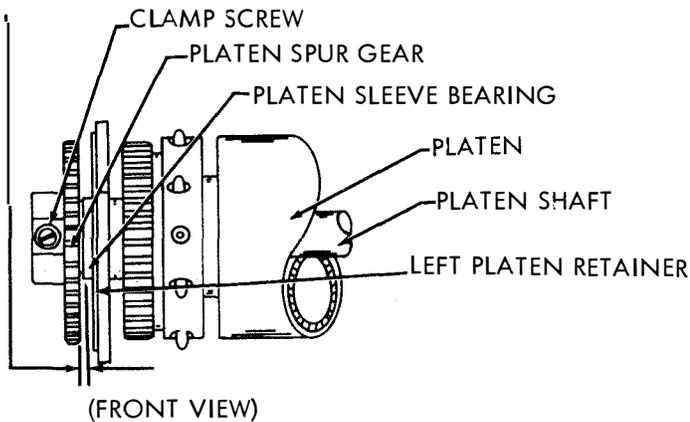
POSITION RIGHT SPROCKET WITH CLAMP SCREW LOOSENED.

(C) PLATEN END PLAY REQUIREMENT

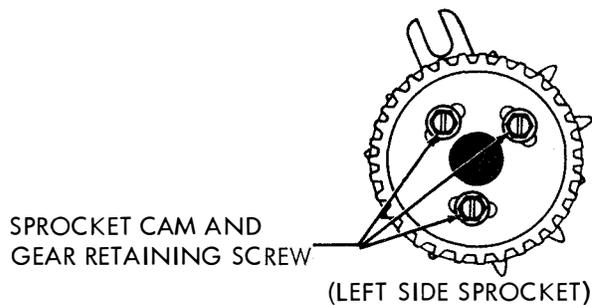
LINE FEED PAWLS DISENGAGED. PLATEN SHAFT SHOULD HAVE SOME END PLAY
MAX. 0.010 INCH

TO ADJUST

POSITION PLATEN SPUR GEAR WITH CLAMP SCREW LOOSENED.

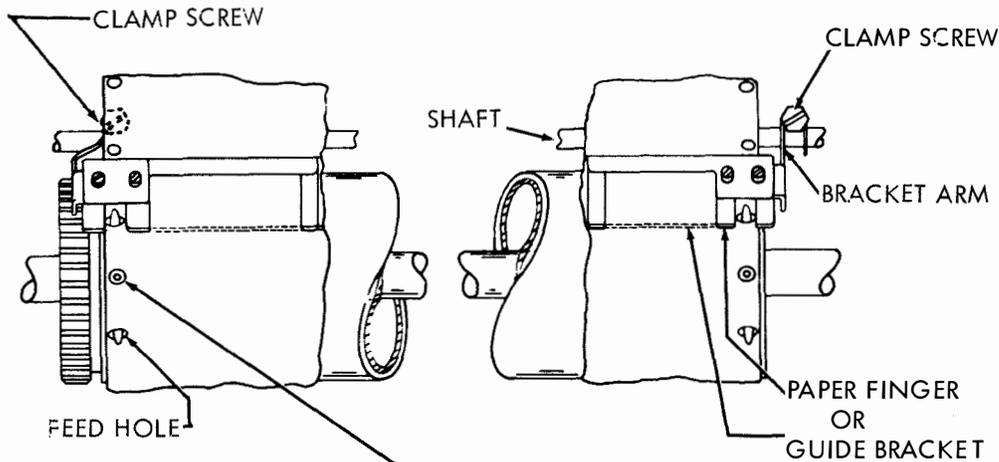


(RIGHT SIDE SPROCKET)



(LEFT SIDE SPROCKET)

2. 73 Line Feed and Platen Mechanism (Con't)



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
 MIN. 0.050 INCH
 MAX. 0.105 INCH

SINGLE COPY OR
UNSTAPLED MULTIPLE COPY
 0.020 INCH
 0.060 INCH

TO ADJUST

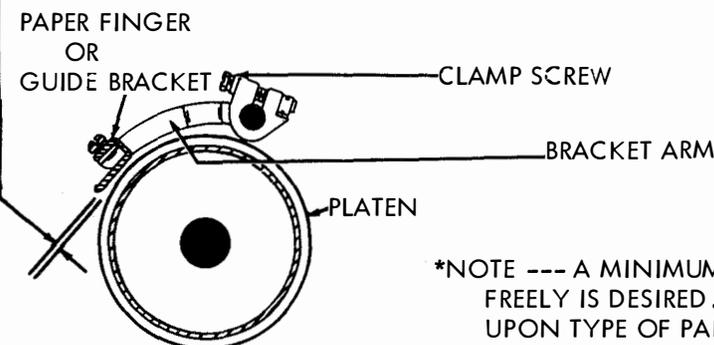
WITH PAPER FINGER OR GUIDE BRACKET ASSEMBLY IN LATCHED POSITION, LOOSEN BOTH CLAMP SCREWS, POSITION ASSEMBLY HORIZONTALLY TO MEET REQUIREMENT (1). ROTATE ASSEMBLY TO MEET REQUIREMENT (2).

(3) REQUIREMENT (NOT ILLUSTRATED)

MIN. 0.035 INCH
 BETWEEN LEADING EDGE OF PAPER FINGER OR GUIDE BRACKET AND RIBBON GUIDE. BOTH RIGHT AND LEFT PAPER FINGERS MUST BE PARALLEL TO THE SAME PRINTED LINE AS GAUGED BY EYE.

TO ADJUST

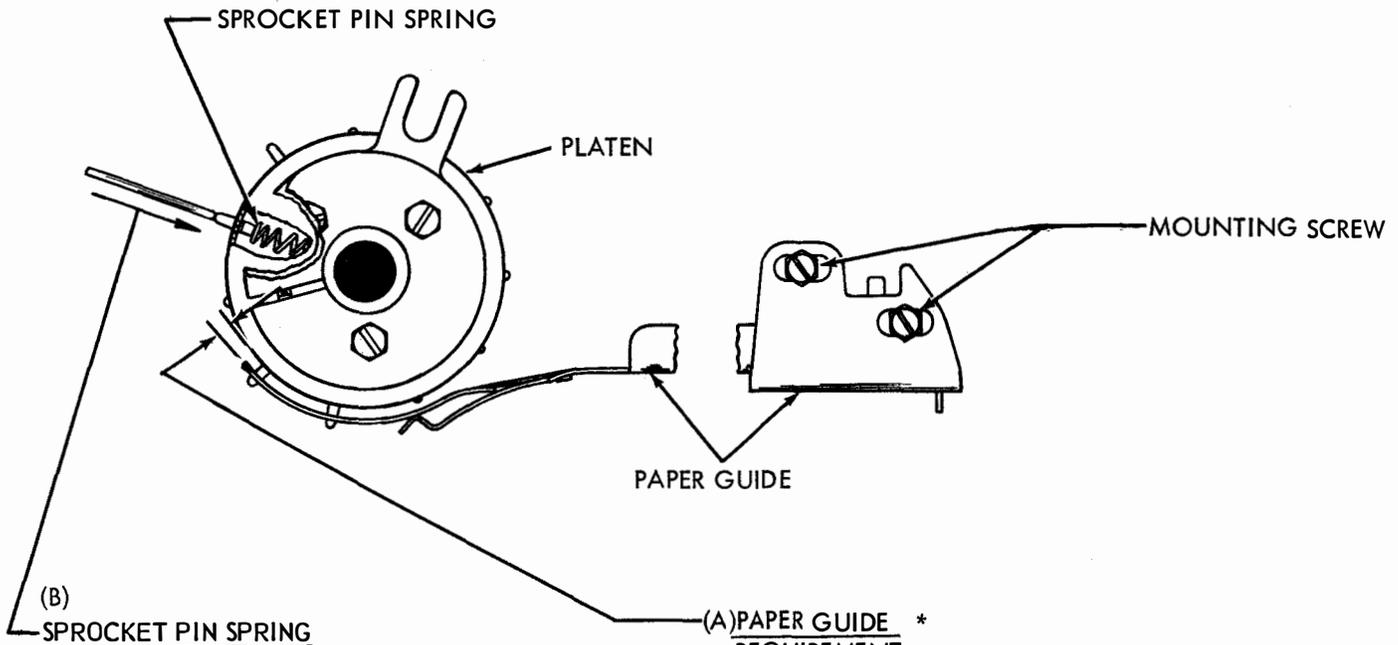
SELECT LETTERS COMBINATION AND ROTATE TYPE BOX CLUTCH 1/2 REVOLUTION. POSITION PAPER FINGERS BY MEANS OF ELONGATED MOUNTING HOLES. AFTER TIGHTENING THE SCREWS RECHECK THESE REQUIREMENTS.



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

SECTION 573-115-700

2.74 Line Feed and Platen Mechanism (Cont.)



REQUIREMENT

MIN. 6 OZS.
MAX. 8 OZS.

TO START DEPRESSING THE PIN.

REQUIREMENT

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

<u>STAPLED</u>		<u>SINGLE COPY OR UNSTAPLED</u>	
<u>MULTIPLE COPY</u>		<u>MULTIPLE COPY</u>	
MIN.	0.050 INCH	0.020 INCH	
MAX.	0.105 INCH	0.060 INCH	

TO ADJUST

POSITION THE GUIDE WITH ITS REAR MOUNTING SCREWS LOOSENED.

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

(C) RIBBON REVERSE SPUR GEAR

USE PAR. 2.52

(D) RIBBON REVERSE DETENT

USE PAR. 2.52

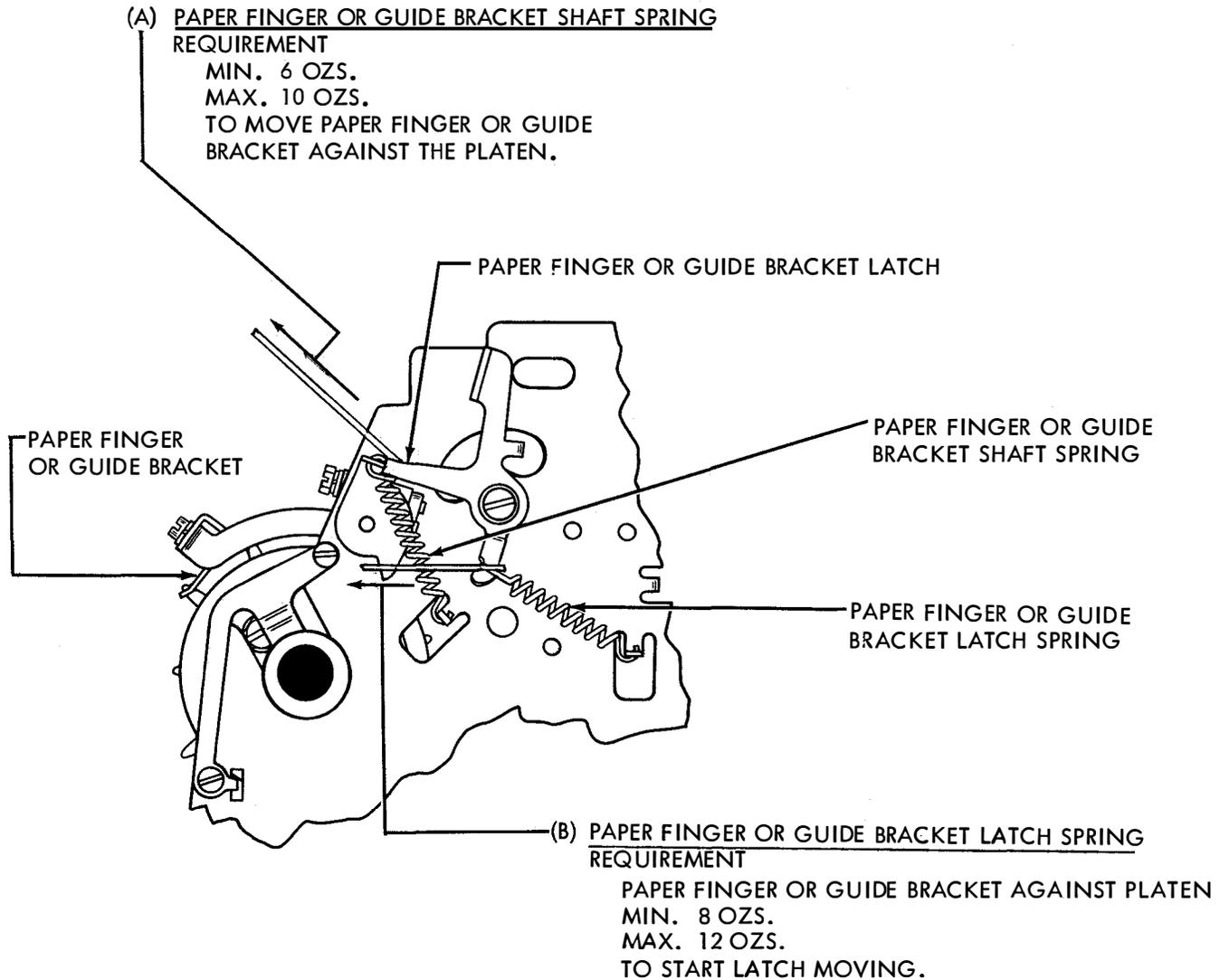
(E) LINE FEED BAR BELL CRANK SPRING

USE PAR. 2.57 EXCEPT
MIN. 28 OZS.

MAX. 38 OZS.

TO START BAR MOVING.

2.75 Line Feed and Platen Mechanism (Con't)



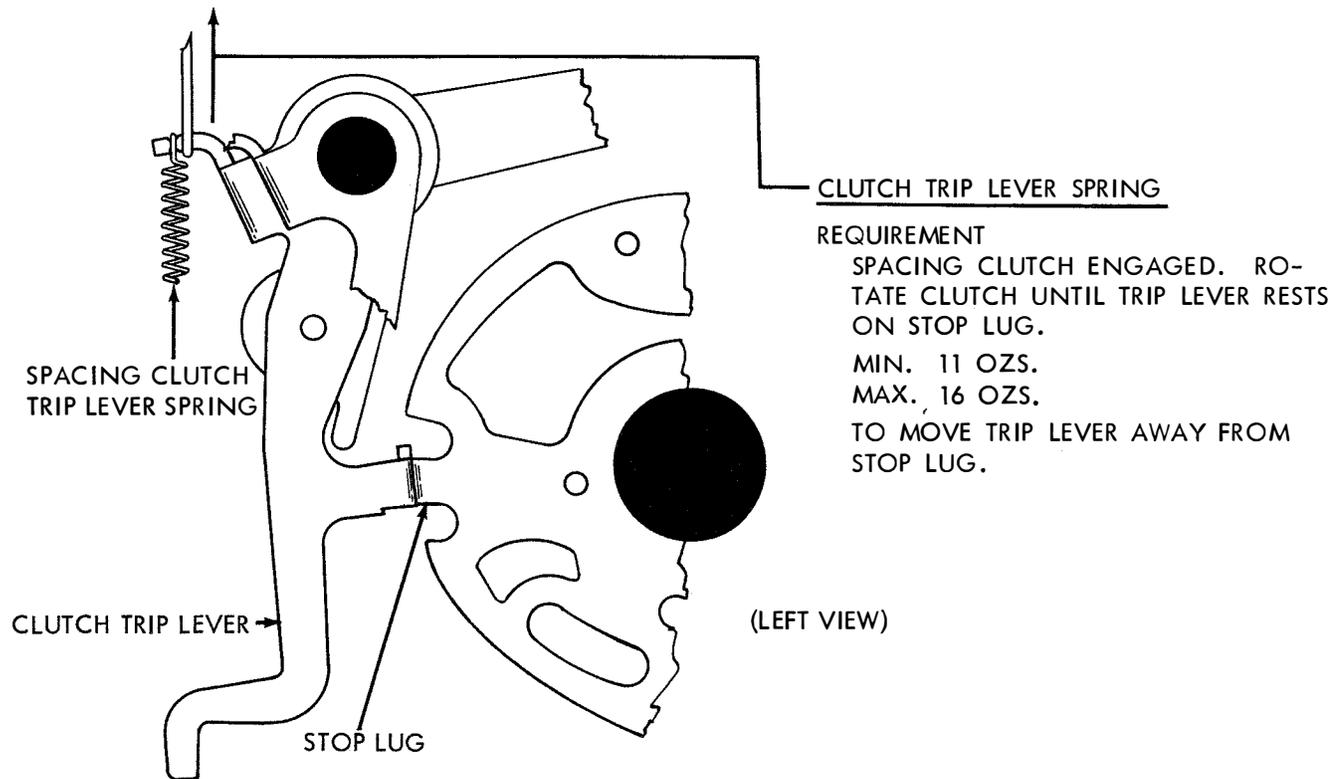
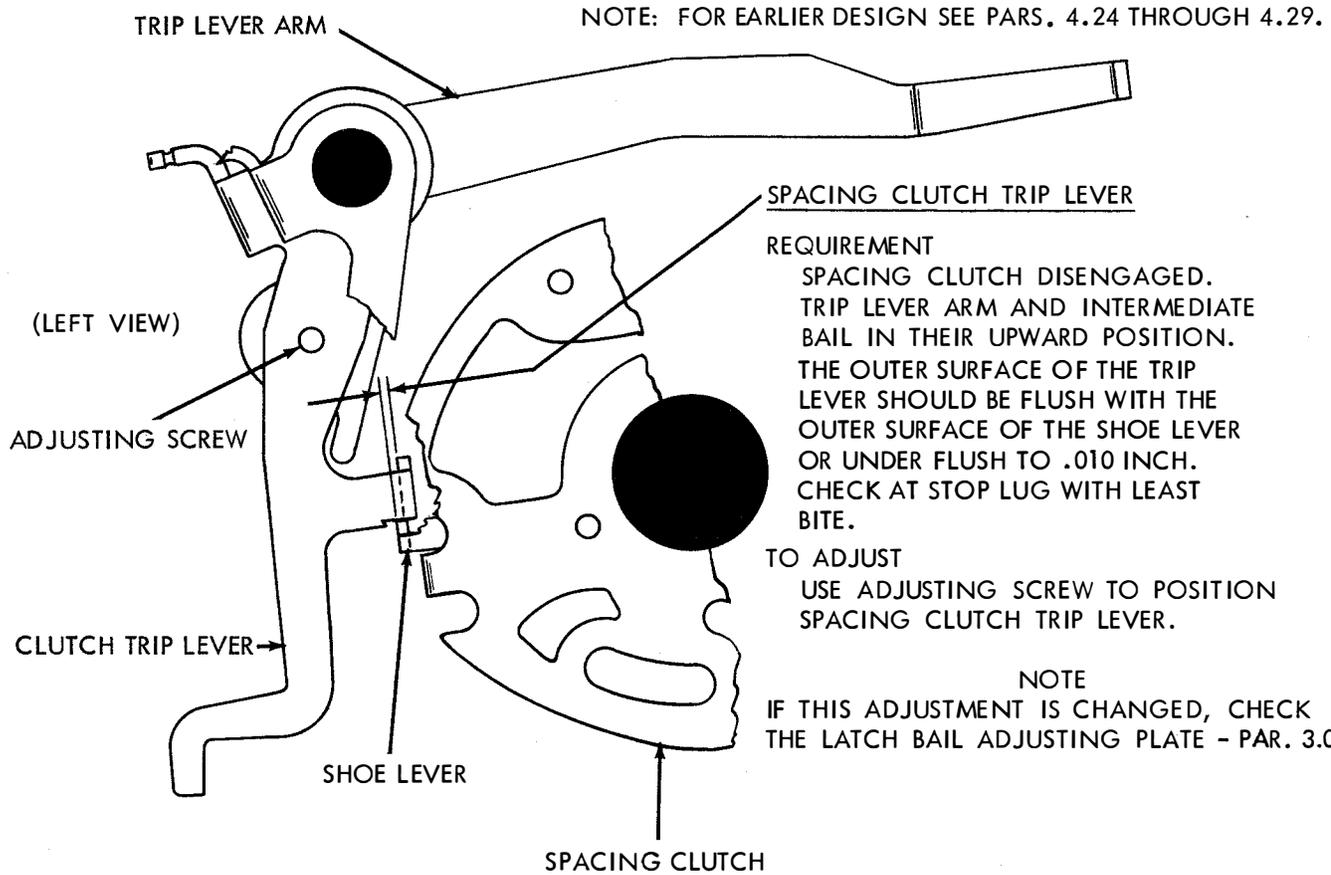
NOTE
 SPROCKET FEED MECHANISM WITH RETRACTABLE PINS

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

PLATEN DETENT BAIL SPRING
 USE PAR. 2.57

3. VARIABLE FEATURES

3.01 Horizontal Tabulator Mechanism



3.02 Horizontal Tabulator Mechanism (Con't)

OPERATING LEVER SLIDE ARM

NOTE

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

REQUIREMENT

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

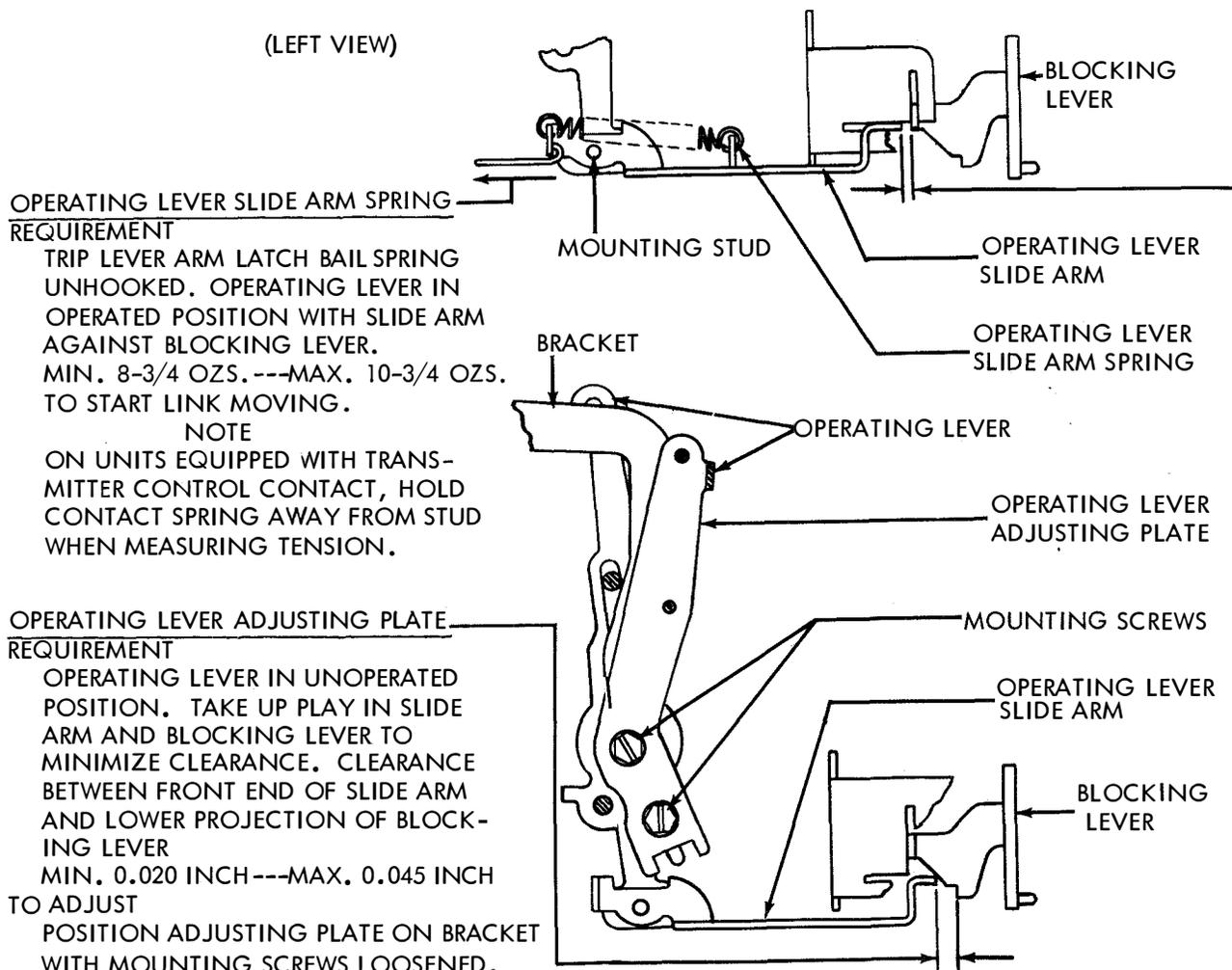
TO ADJUST

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

NOTE

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

(LEFT VIEW)



OPERATING LEVER SLIDE ARM SPRING

REQUIREMENT

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

NOTE

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

OPERATING LEVER ADJUSTING PLATE

REQUIREMENT

OPERATING LEVER IN UNOPERATED POSITION. TAKE UP PLAY IN SLIDE ARM AND BLOCKING LEVER TO MINIMIZE CLEARANCE. CLEARANCE BETWEEN FRONT END OF SLIDE ARM AND LOWER PROJECTION OF BLOCKING LEVER MIN. 0.020 INCH---MAX. 0.045 INCH

TO ADJUST

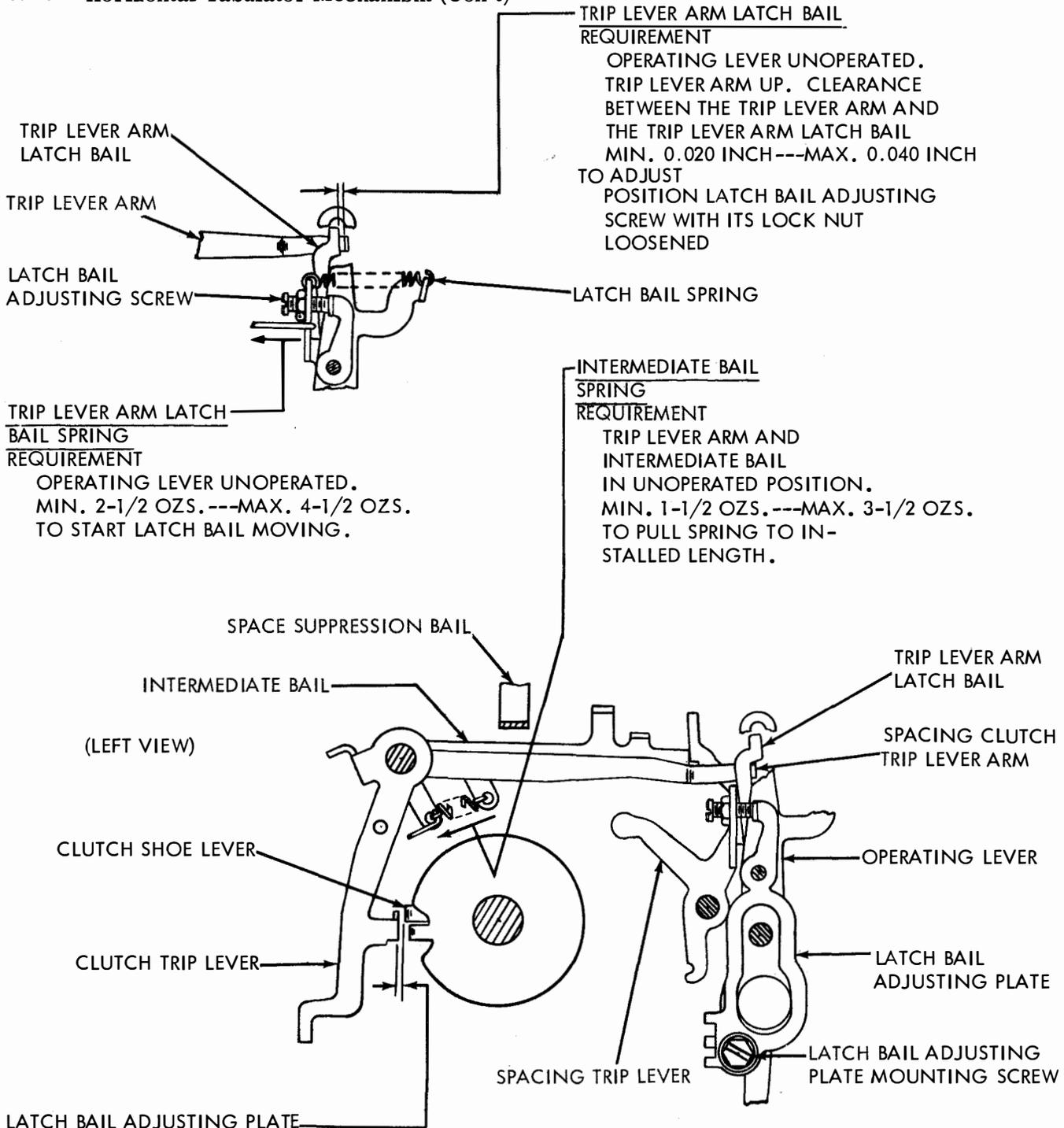
POSITION ADJUSTING PLATE ON BRACKET WITH MOUNTING SCREWS LOOSENED.

NOTE

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

SECTION 573-115-700

3.03 Horizontal Tabulator Mechanism (Con't)



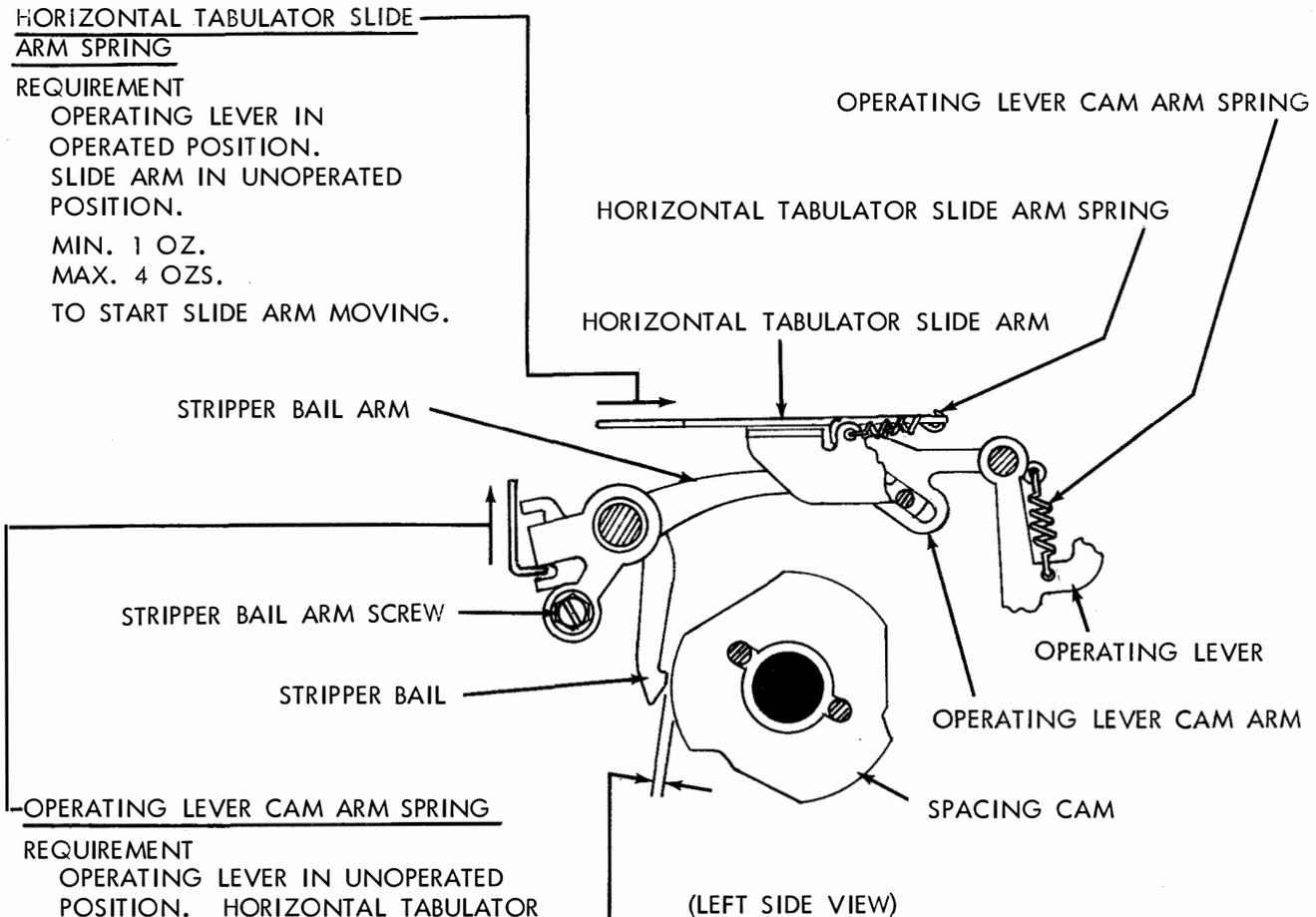
TRIP LEVER ARM LATCH BAIL REQUIREMENT
 OPERATING LEVER UNOPERATED.
 TRIP LEVER ARM UP. CLEARANCE BETWEEN THE TRIP LEVER ARM AND THE TRIP LEVER ARM LATCH BAIL MIN. 0.020 INCH---MAX. 0.040 INCH
 TO ADJUST POSITION LATCH BAIL ADJUSTING SCREW WITH ITS LOCK NUT LOOSENED

TRIP LEVER ARM LATCH BAIL SPRING REQUIREMENT
 OPERATING LEVER UNOPERATED.
 MIN. 2-1/2 OZS.---MAX. 4-1/2 OZS.
 TO START LATCH BAIL MOVING.

INTERMEDIATE BAIL SPRING REQUIREMENT
 TRIP LEVER ARM AND INTERMEDIATE BAIL IN UNOPERATED POSITION.
 MIN. 1-1/2 OZS.---MAX. 3-1/2 OZS.
 TO PULL SPRING TO INSTALLED LENGTH.

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

3.04 Horizontal Tabulator Mechanism (Cont.)



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.

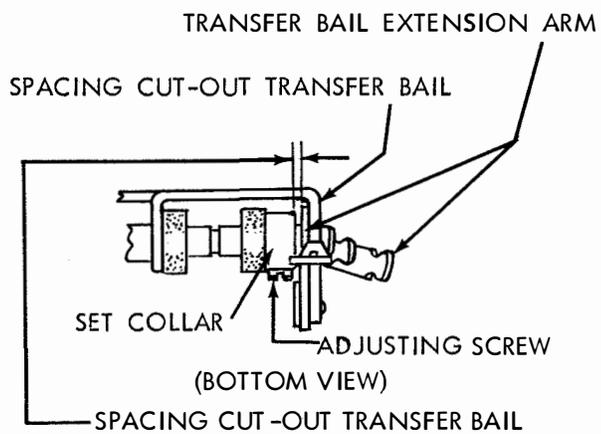
(LEFT SIDE VIEW)

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.



(BOTTOM VIEW)

SPACING CUT-OUT TRANSFER BAIL SET COLLAR
 REQUIREMENT

TRANSFER BAIL SHOULD HAVE SOME END PLAY.
 MAX. 0.008 INCH
 TO ADJUST
 POSITION SET COLLAR WITH ADJUSTING SCREW LOOSENED.

SECTION 573-115-700

3.05 Horizontal Tabulator Mechanism (Cont.)

SPACE SUPPRESSION
BY-PASS SPRING

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

SPACING CUT-OUT TRANSFER BAIL

BAIL EXTENSION ARM

SPACING CUT-OUT LEVER
ON SPACING DRUM

SPACE SUPPRESSION BY-PASS SPRING

RIGHT MARGIN

REQUIREMENT
CLEARANCE BETWEEN SPACING CUT-OUT
LEVER ON SPACING DRUM AND BAIL
EXTENSION ARM
MIN. 0.006 INCH
MAX. 0.025 INCH

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

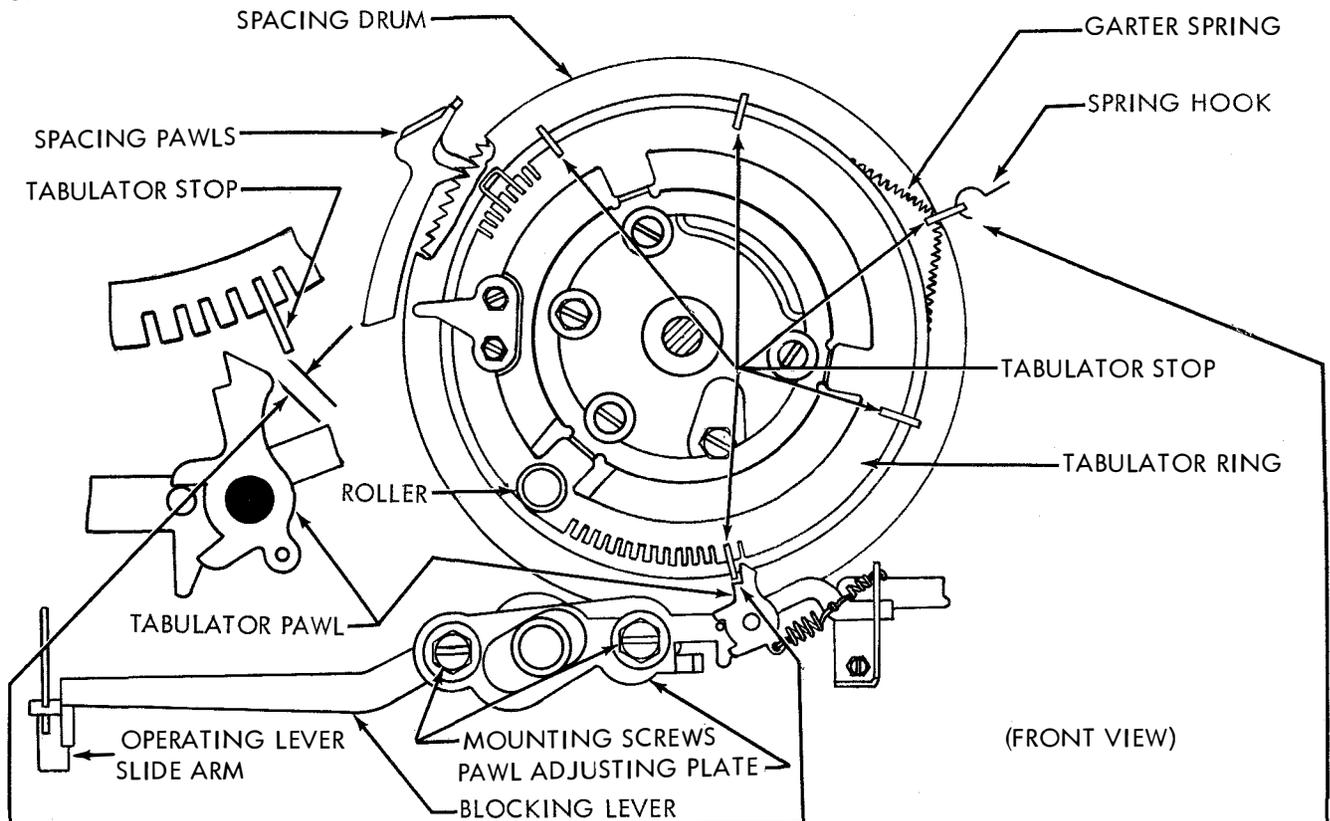
TO ADJUST
POSITION CUT-OUT LEVER WITH CLAMP
SCREW LOOSENED.

NOTE

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

(RIGHT SIDE VIEW)

3.06 Horizontal Tabulator Mechanism (Con't)

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 SIDWAYS. DO NOT USE PLIERS TO MOVE STOPS.
- (3) DISENGAGE ALL CLUTCHES SO FRONT SPACING FEED PAWL IS IN LOWER POSITION. PLACE PAWL ADJUSTING PLATE AT CENTER OF HORIZONTAL AND VERTICAL ADJUSTMENT: TO ADJUST VERTICALLY, LOOSEN BOTH MOUNTING SCREWS; TO ADJUST HORIZONTALLY, LOOSEN ONLY LEFT SCREW. HORIZONTAL ADJUSTMENT SHOULD BE MADE AFTER VERTICAL. DISENGAGE SPACING FEED PAWLS AND ALLOW DRUM TO ROTATE TO EXTREME COUNTERCLOCKWISE POSITION. KEEPING SPACING CLUTCH DISENGAGED, MANUALLY ADVANCE DRUM UNTIL FIRST STOP IS IMMEDIATELY TO LEFT OF PAWL. POSITION ADJUSTING PLATE HORIZONTALLY SO THAT STOP IS ALIGNED WITH LEFT EDGE OF PAWL SHOULDER.
- (4) PLACE BLOCKING LEVER AND OPERATING LEVER SLIDE ARM IN UNBLOCKED POSITION. DISENGAGE FEED PAWLS AND LET DRUM ROTATE TWO SPACES COUNTERCLOCKWISE. BOTH FEED PAWLS SHOULD BE FULLY ENGAGED. BLOCK SLIDE ARM WITH BLOCKING LEVER. GAGE AND NOTE CLEARANCE BETWEEN STOP AND SLOPE ON PAWL.
- (5) ROTATE DRUM CLOCKWISE UNTIL NEXT STOP IS JUST TO LEFT OF PAWL. REPEAT PROCEDURE DESCRIBED IN PARAGRAPH (4) FOR THIS STOP. REPEAT PROCEDURE FOR REMAINING STOPS, NOTING EACH CLEARANCE.
- (6) STOP WITH MAXIMUM CLEARANCE SHOULD BE USED AS REFERENCE IN MAKING FINAL HORIZONTAL AND VERTICAL PAWL ADJUSTMENTS.

3.07 Horizontal Tabulator Mechanism (Cont.)

TABULATOR PAWL - VERTICAL (FINAL)

TO CHECK

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

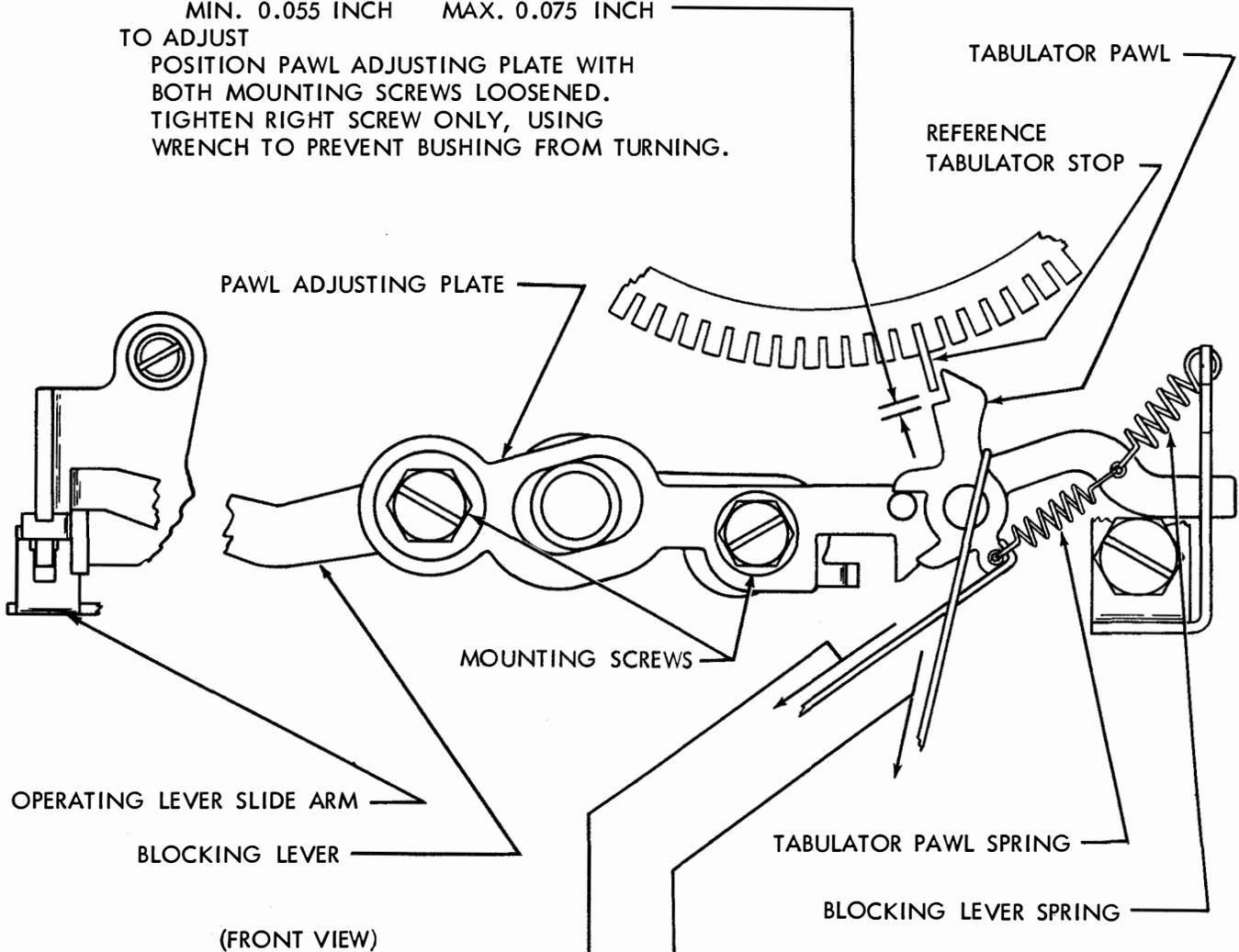
REQUIREMENT

CLEARANCE BETWEEN PAWL AND STOP:

MIN. 0.055 INCH MAX. 0.075 INCH

TO ADJUST

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



TABULATOR PAWL SPRING

REQUIREMENT

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

BLOCKING LEVER SPRING

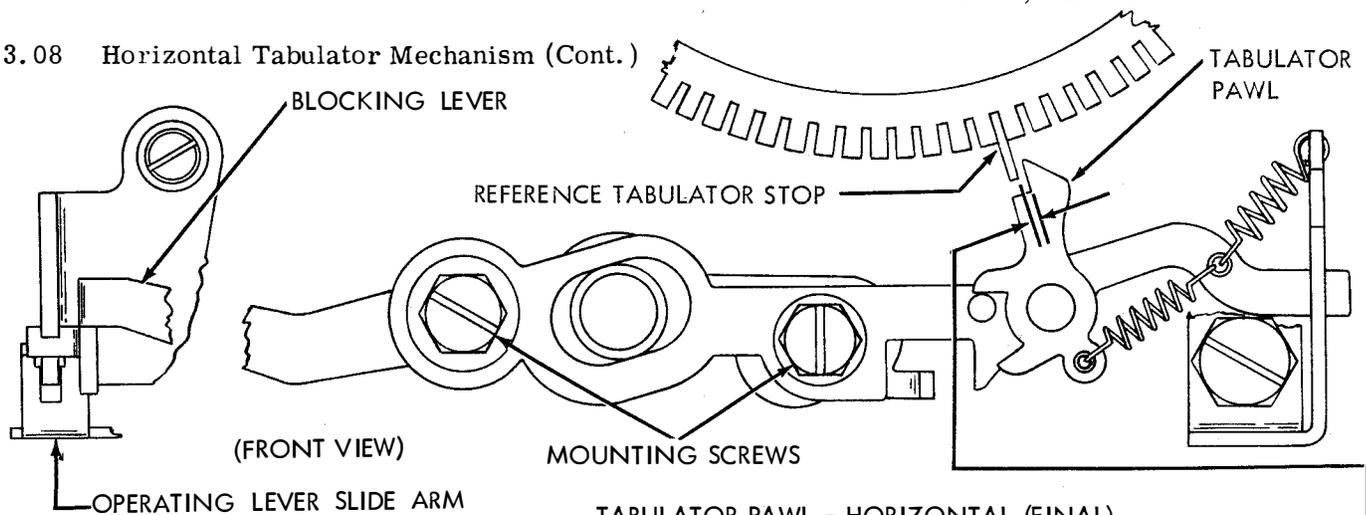
TO CHECK

HOLD OPERATING LEVER SLIDE ARM TO THE REAR.

REQUIREMENT

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

3.08 Horizontal Tabulator Mechanism (Cont.)



TABULATOR PAWL - HORIZONTAL (FINAL)
TO CHECK

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

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

REQUIREMENT

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

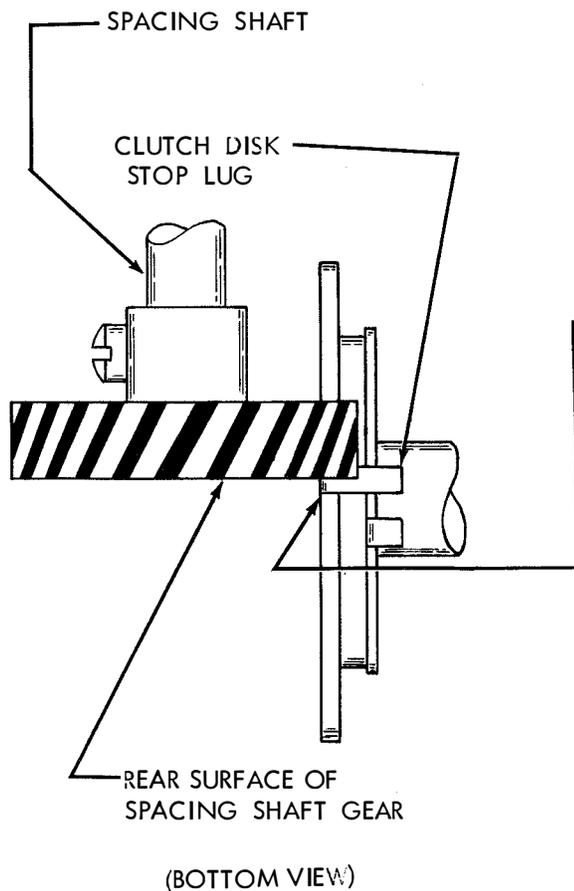
TO ADJUST

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

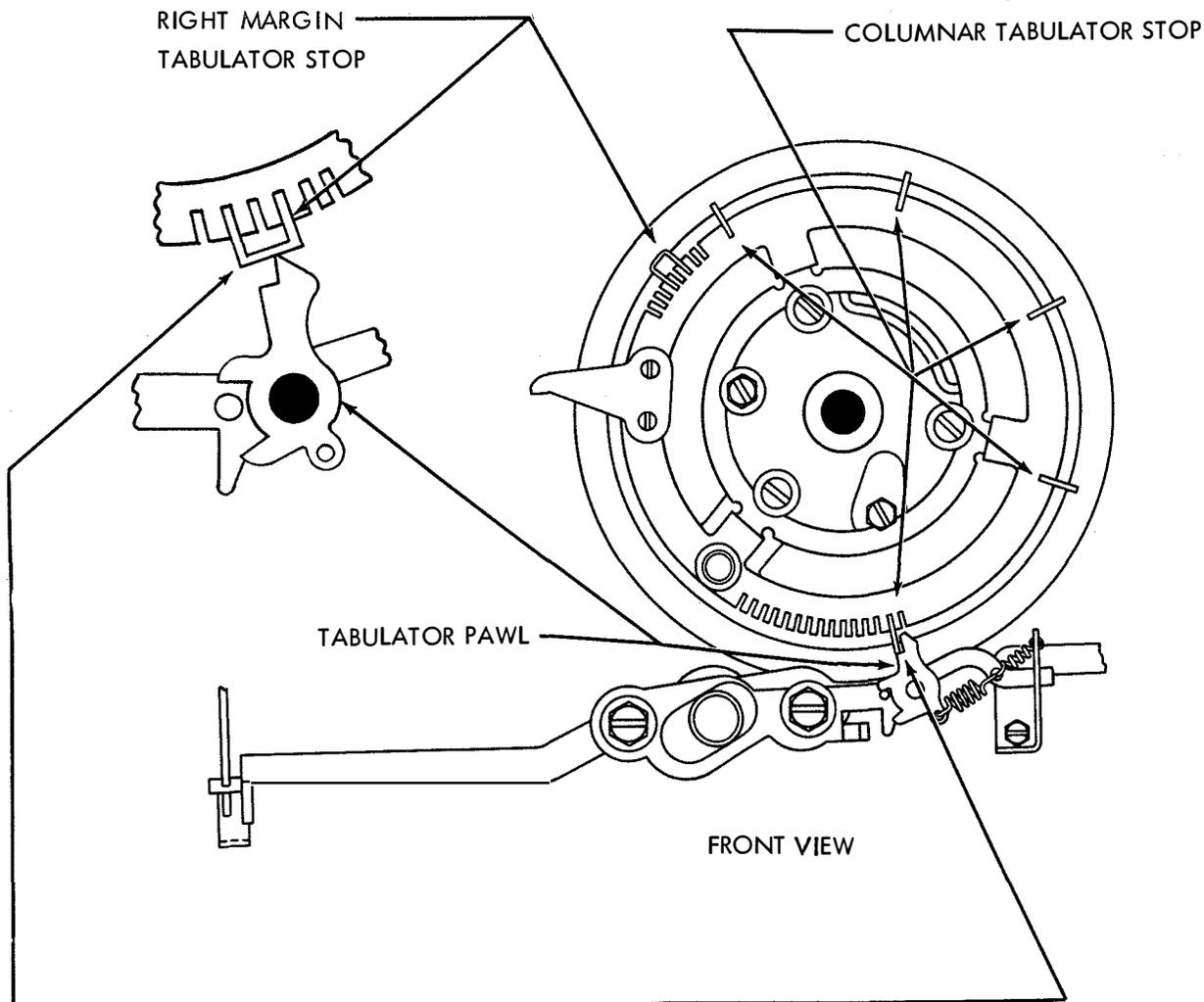
NOTE:

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

MIN. 0.003 --- MAX. 0.008



3.09 Horizontal Tabulator Mechanism (Cont.)



TABULATOR STOP SETTINGS

NOTE:

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

(1) COLUMNAR TABULATOR STOPS

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

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

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

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

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

3.10 Horizontal Tabulator Mechanism (Cont.)

NOTE

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

ADJUSTMENTS SHOWN BELOW.

1. OPERATING LEVER SLIDE ARM (PAR. 3.02)
2. OPERATING LEVER ADJUSTING PLATE (PAR. 3.02)

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

TRANSMITTER CONTROL CONTACT SPRING

REQUIREMENT

OPERATING LEVER IN UNOPERATED POSITION.

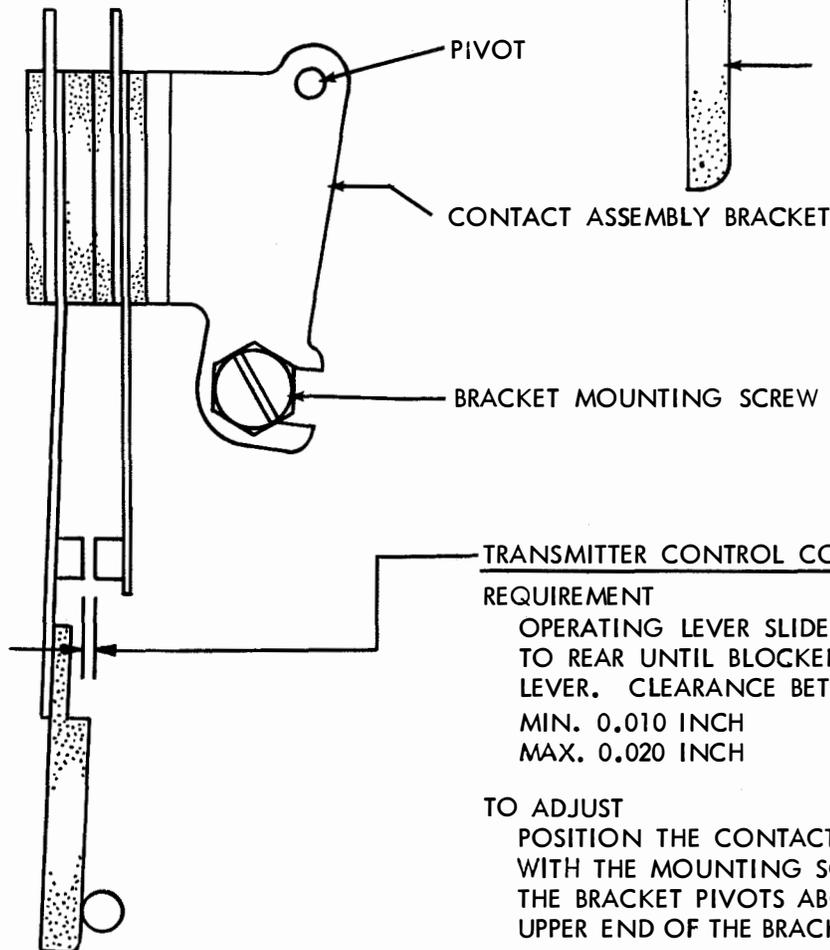
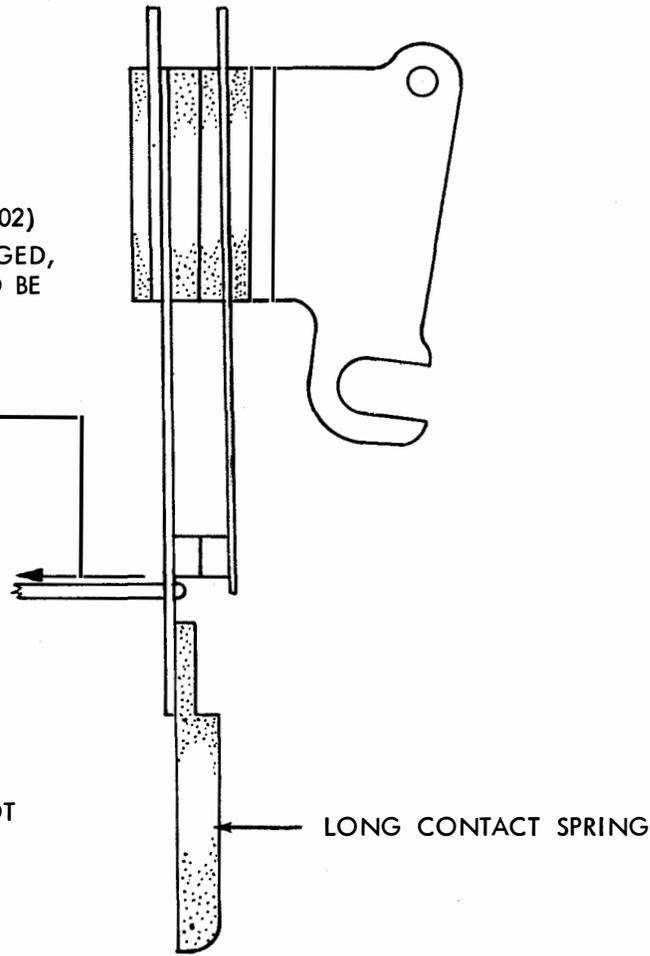
MIN. 3-1/2 OZS.

MAX. 4-1/2 OZS.

TO JUST OPEN CONTACTS.

TO ADJUST

BEND THE LONG CONTACT SPRING



TRANSMITTER CONTROL CONTACT GAP

REQUIREMENT

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

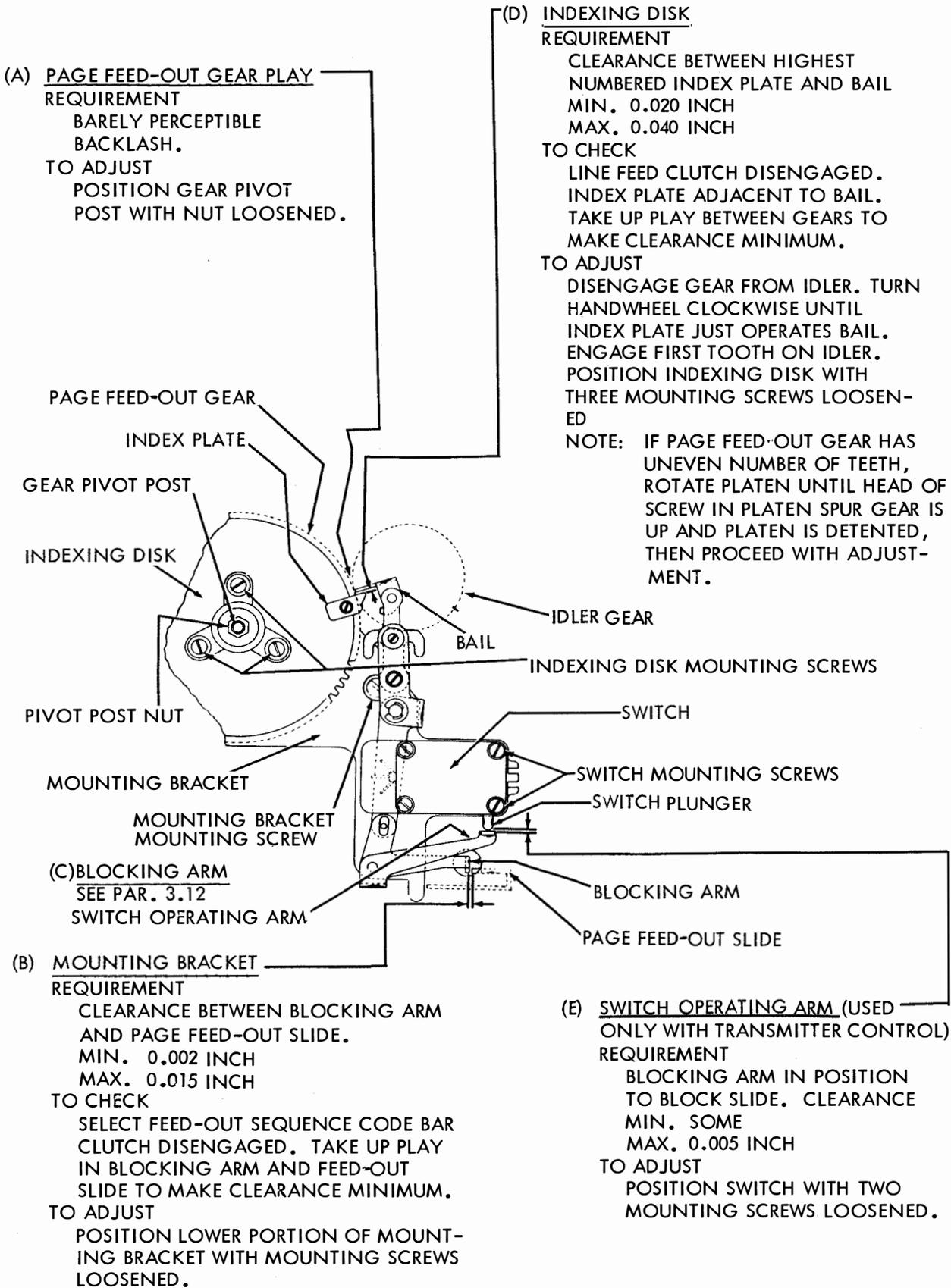
MIN. 0.010 INCH

MAX. 0.020 INCH

TO ADJUST

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

3.11 Page Feed-Out Mechanism

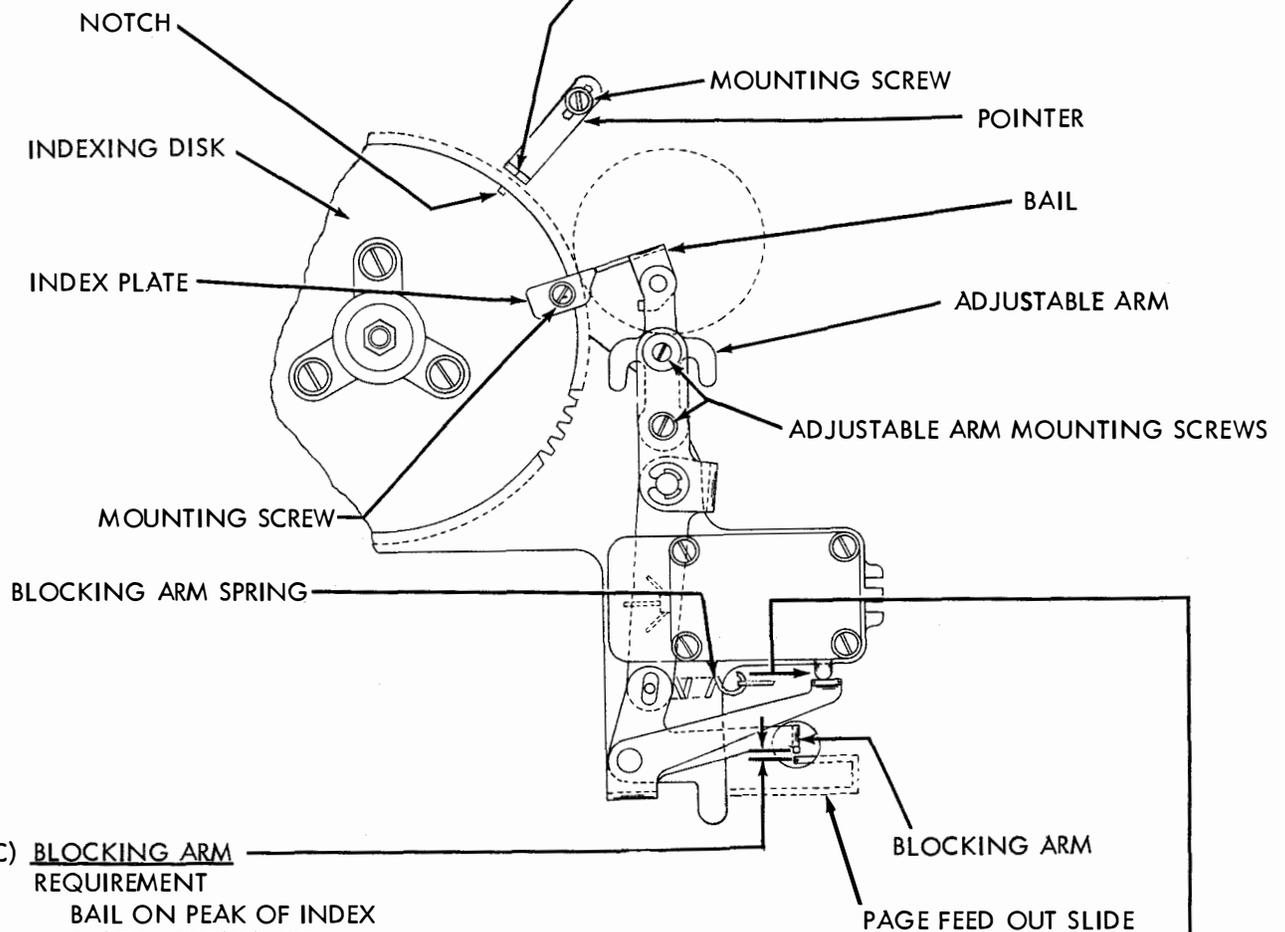


3.12 Page Feed-Out Mechanism (Cont.)

(F) POINTER
REQUIREMENT

LINE FEED CLUTCH DISENGAGED.
INDEX PLATE ADJACENT TO BAIL
AS SHOWN IN PAR. 3.11. POINTER
SHOULD LINE UP WITH NOTCH IN
INDEXING DISK AND CLEAR DISK BY
APPROXIMATELY 1/16 INCH.

TO ADJUST
POSITION POINTER WITH MOUNTING
SCREWS LOOSENED.

(C) BLOCKING ARM
REQUIREMENT

BAIL ON PEAK OF INDEX
PLATE. CLEARANCE
MIN. 0.005 INCH
MAX. 0.045 INCH

TO ADJUST
POSITION ADJUSTABLE ARM
WITH MOUNTING SCREWS
LOOSENED.

NOTE
IF REQUIREMENT CANNOT
BE MET FOR EACH PLATE,
REPOSITION PLATE WITH
MOUNTING SCREW LOOSENED.

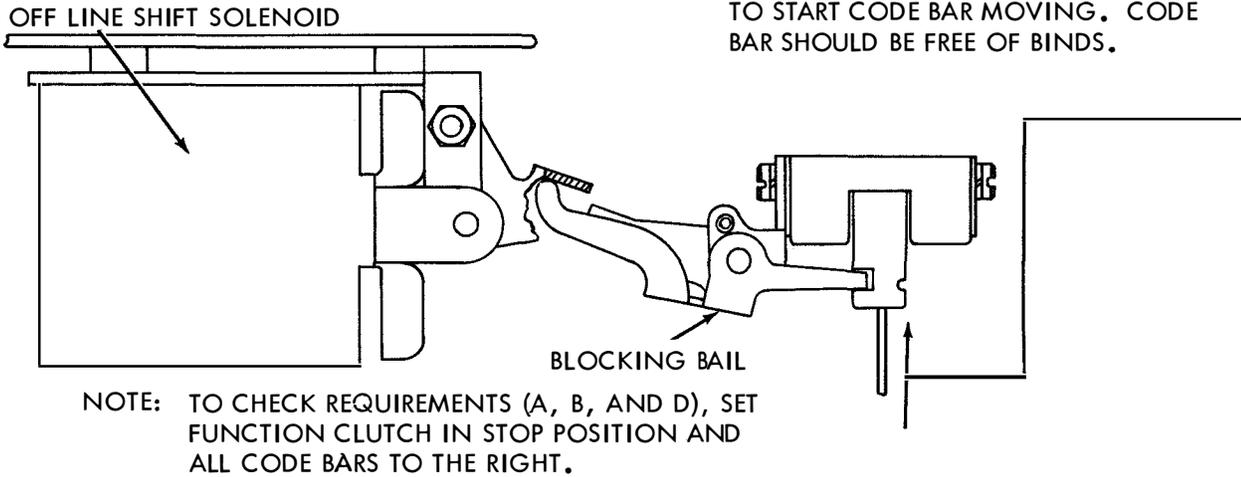
(H) BLOCKING ARM SPRING
REQUIREMENT

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

3.13 Selective Calling Mechanism

TYPE BOX CLUTCH TRIP LEVER
 (SELECTIVE - CALLING UNITS WITH OR WITHOUT
 OFF-LINE SHIFT SOLENOID)
 CLEARANCE BETWEEN TYPE BOX CLUTCH TRIP
 LEVER AND CLUTCH DISK STOP LUG SHOULD BE
 MIN. 0.040 INCH---MAX. 0.055 INCH
 SEE PAR. 2.22.

PRINT 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.



(A) CODE BAR SHIFT MECHANISM
 REQUIREMENTS

1. WITH FUNCTION CLUTCH IN STOP POSITION, LATCH FUNCTION LEVER (SHIFT MECH.) ON ITS LOWER RELEASING LATCH. NOTCH IN SUPP. CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.
 TO ADJUST
 POSITION UPPER OR LOWER GUIDE PLATE (PAR. 2.33) WITH ITS CLAMP NUTS LOOSENED.
2. REPEAT FOR EACH STUNT CASE CODE BAR SHIFT MECHANISM.
 NOTE --- POSITION THE ASSOCIATED GUIDE PLATE SO THAT THE MOVEMENT OF THE FORK IS NOT RESTRICTED WITHIN THE RANGE OF ADJUSTMENT.

(D) OFF LINE SHIFT SOLENOID BRACKET ASSEMBLY (OFF LINE ONLY)
 REQUIREMENT

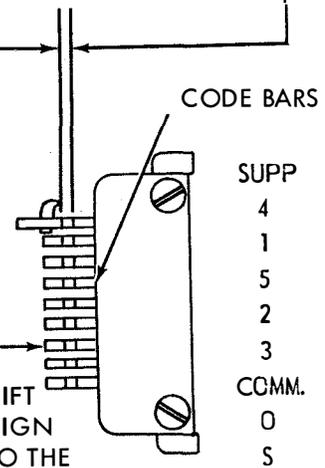
- NOTCH IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.
 TO ADJUST
 POSITION THE SOLENOID BRACKET ASSEMBLY WITH ITS MOUNTING SCREWS LOOSENED.

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

(B) CONDITION CODE (ZERO) CODE BAR SHIFT MECHANISM
 REQUIREMENT

- WITH FUNCTION CLUTCH IN STOP POSITION, LATCH FUNCTION LEVER (SHIFT MECH.). THE NOTCH IN CONDITION CODE (ZERO) CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS WHEN ALL CODE BARS ARE SHIFTED TO THE RIGHT.
 TO ADJUST
 POSITION THE UPPER OR LOWER GUIDE PLATE (PAR. 2.33) WITH ITS CLAMP NUTS LOOSENED.

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



3. 14 Selective Calling Mechanism (Con't)

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

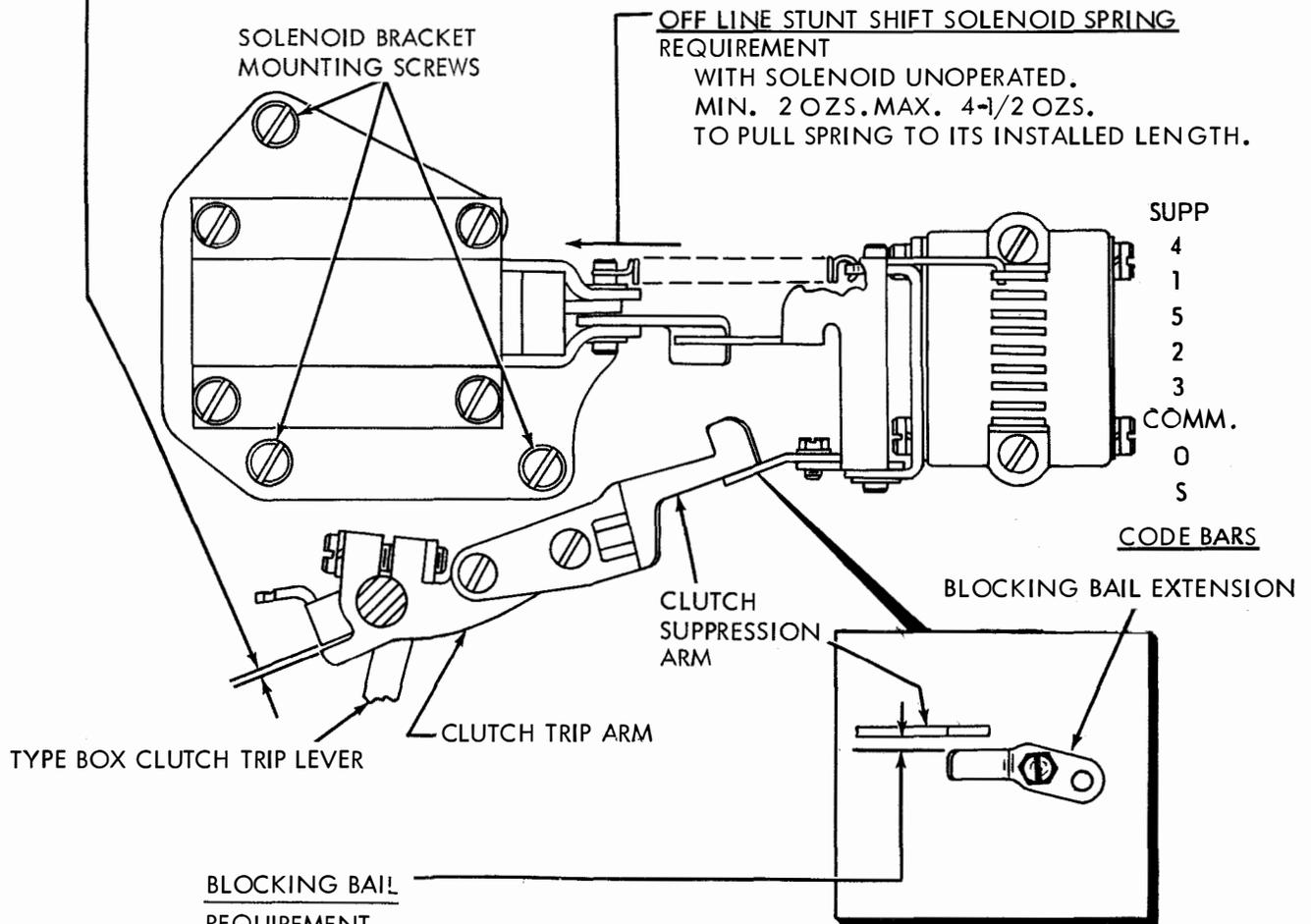
REQUIREMENT

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

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

TO ADJUST

POSITION SUPPRESSION ARM WITH ITS MOUNTING SCREWS LOOSENED.



OFF LINE STUNT SHIFT SOLENOID SPRING

REQUIREMENT

WITH SOLENOID UNOPERATED.
MIN. 2 OZS. MAX. 4-1/2 OZS.
TO PULL SPRING TO ITS INSTALLED LENGTH.

SUPP
4
1
5
2
3
COMM.
0
5

CODE BARS

BLOCKING BAIL

REQUIREMENT

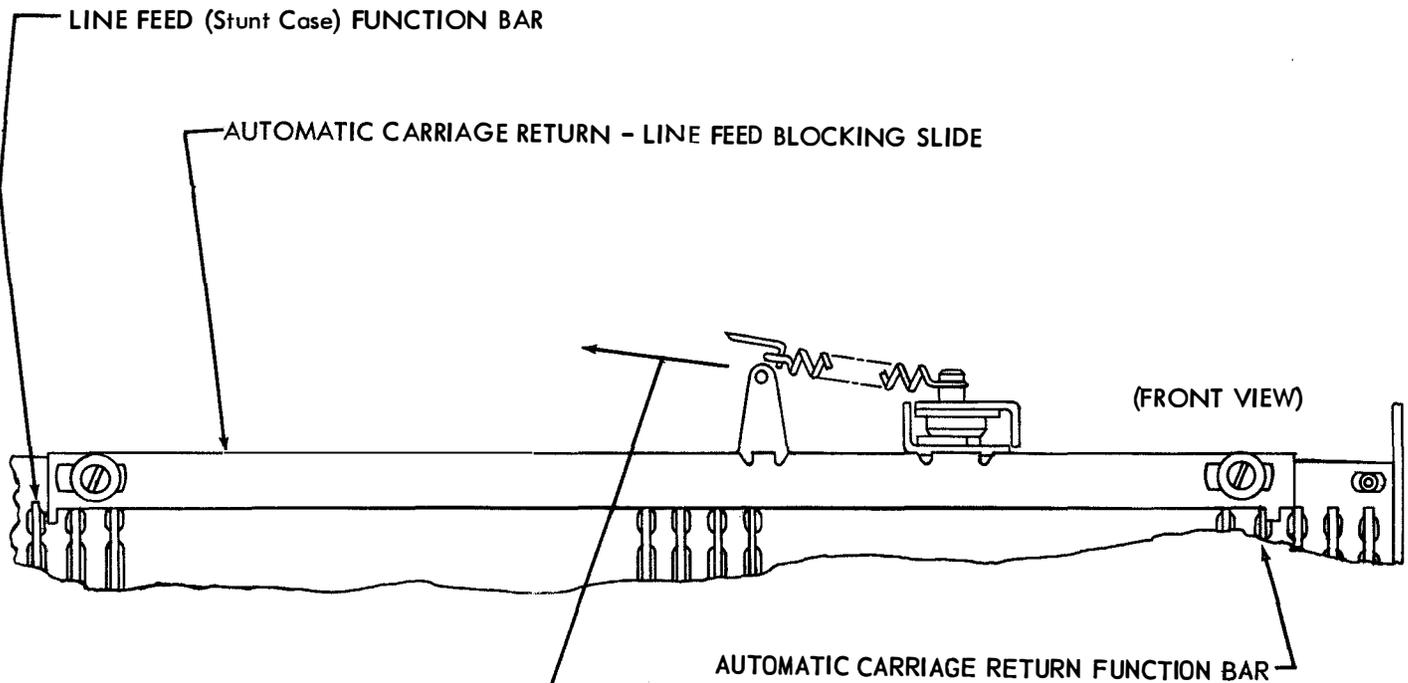
1. LATCH FUNCTION LEVER OF ANY STUNT CASE CODE BAR SHIFT MECHANISM AND ROTATE MAIN SHAFT UNTIL LOWER SURFACE OF THE SUPPRESSION ARM IS ALIGNED (APPROX) WITH BOTTOM SURFACE OF BLOCKING BAIL EXTENSION. CLEARANCE BETWEEN SUPPRESSION ARM AND BLOCKING BAIL EXTENSION, WITH PLAY TAKEN UP TO PRODUCE MINIMUM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

TO ADJUST

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

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

3.15 Selective Calling Mechanism (Cont.)



CONDITION CODE SHIFT FORK SPRING

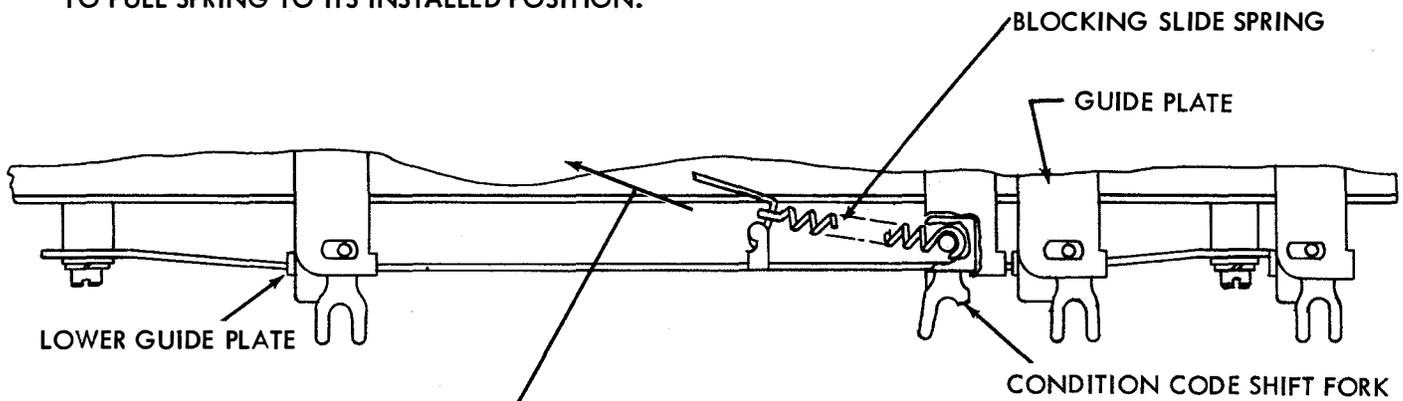
REQUIREMENT

WITH CONDITION CODE SHIFT IN ITS UNOPERATED POSITION.

MIN. 1 OZ.

MAX. 3 OZS.

TO PULL SPRING TO ITS INSTALLED POSITION.



(TOP VIEW)

AUTOMATIC CARRIAGE RETURN - LINE FEED BLOCKING SLIDE SPRING

REQUIREMENT

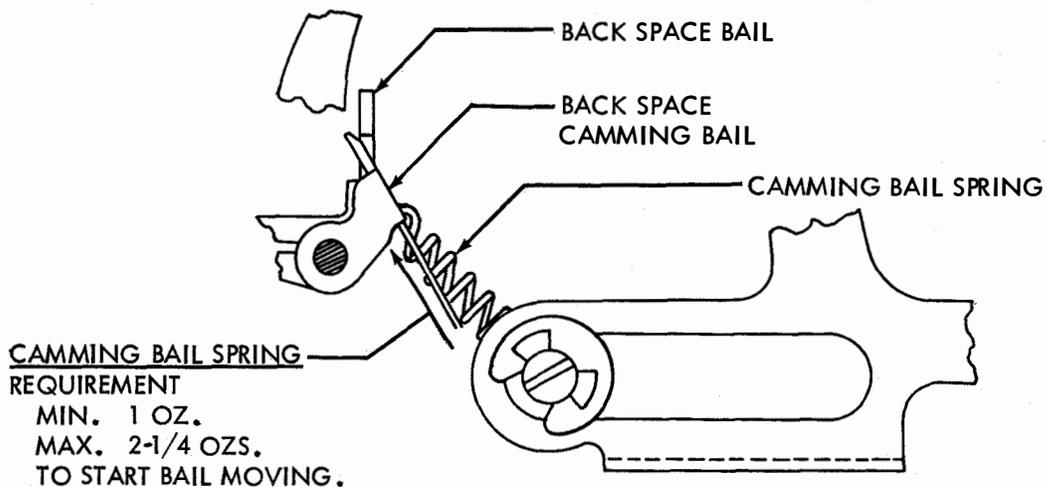
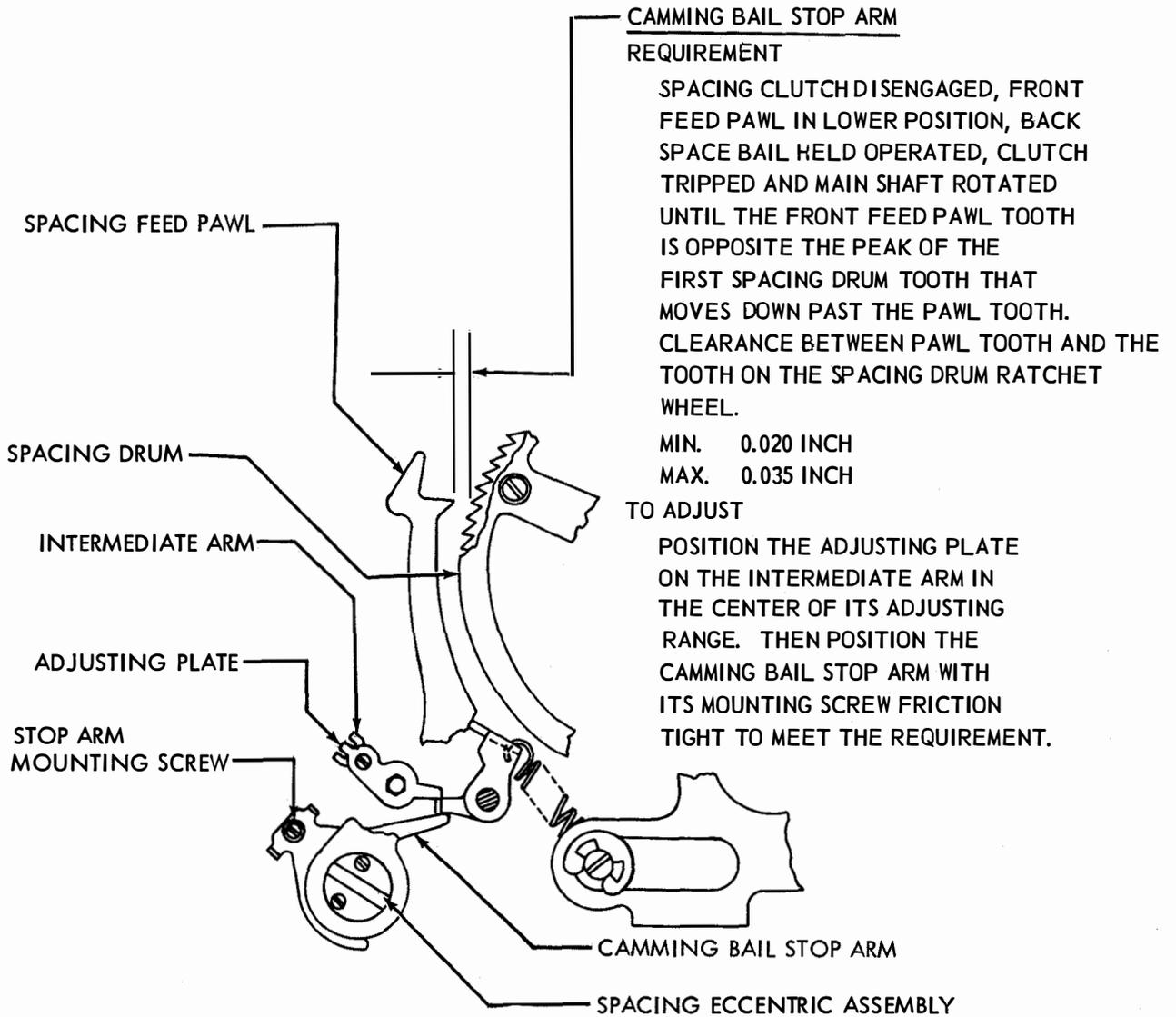
WITH CONDITION CODE SHIFT FORK IN ITS UNOPERATED POSITION.

MIN. 1 OZ.

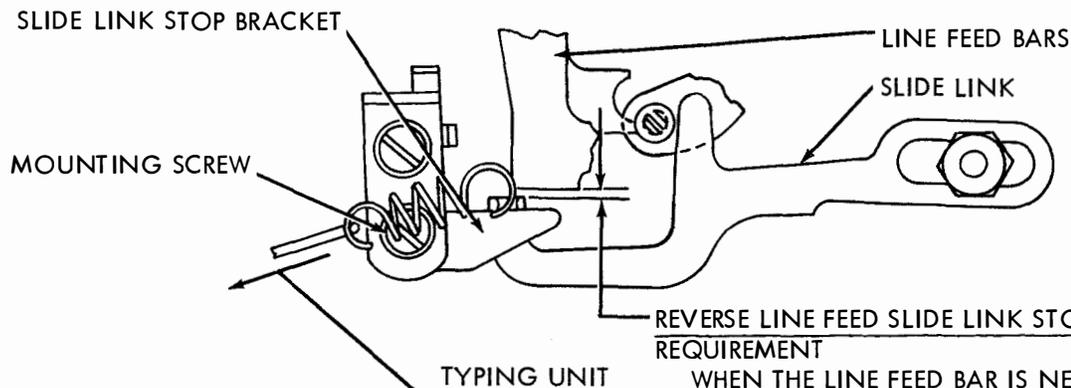
MAX. 3 OZS.

TO PULL SPRING TO ITS INSTALLED POSITION

3.16 Local Back Space Mechanism



3. 17 Reverse Line Feed Mechanism



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

REVERSE LINE FEED SLIDE LINK STOP BRACKET REQUIREMENT

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

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

3.18 Reverse Line Feed Mechanism (Cont.)

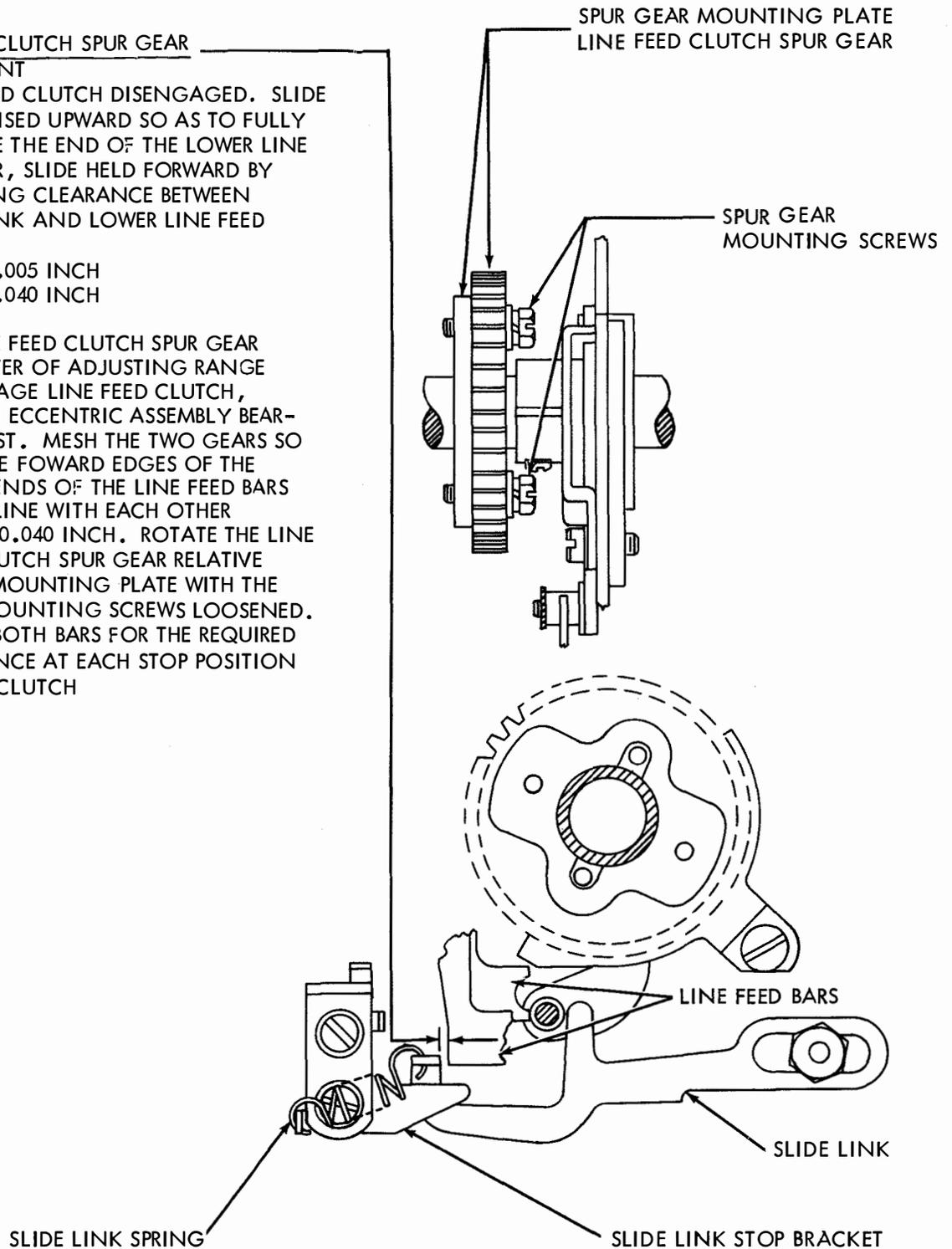
LINE FEED CLUTCH SPUR GEAR REQUIREMENT

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

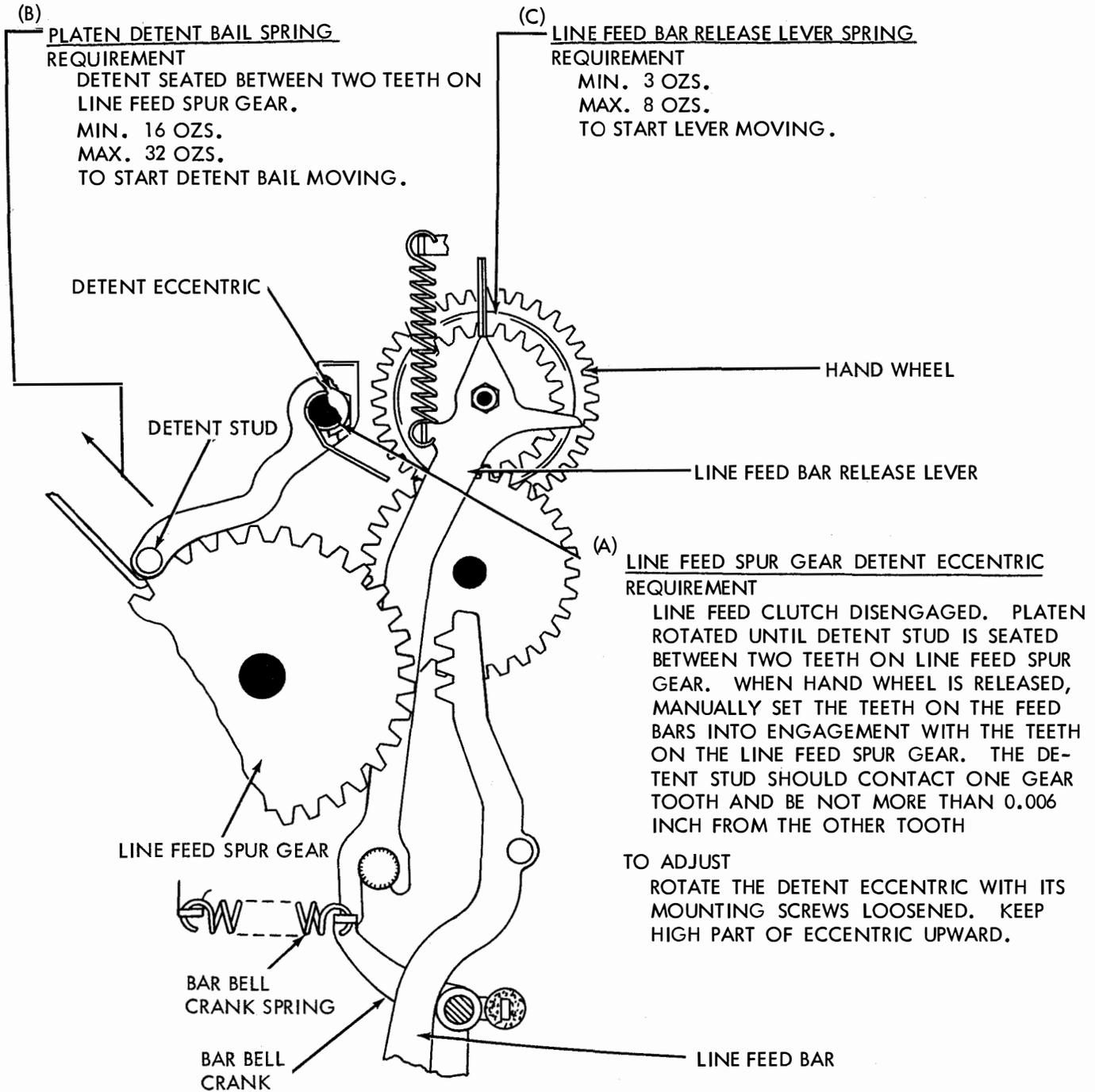
MIN. 0.005 INCH
MAX. 0.040 INCH

TO ADJUST

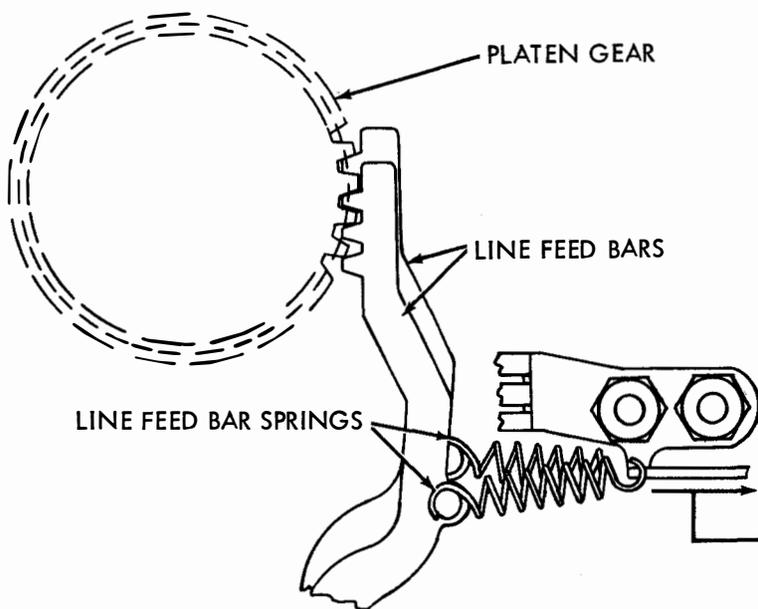
SET LINE FEED CLUTCH SPUR GEAR AT CENTER OF ADJUSTING RANGE DISENGAGE LINE FEED CLUTCH, LOOSEN ECCENTRIC ASSEMBLY BEARING POST. MESH THE TWO GEARS SO THAT THE FORWARD EDGES OF THE LOWER ENDS OF THE LINE FEED BARS ARE IN LINE WITH EACH OTHER WITHIN 0.040 INCH. ROTATE THE LINE FEED CLUTCH SPUR GEAR RELATIVE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



3.19 Reverse Line Feed Mechanism (Cont.)



3.20 Reverse Line Feed Mechanism (Cont.)



LINE FEED BAR SPRINGS

REQUIREMENT

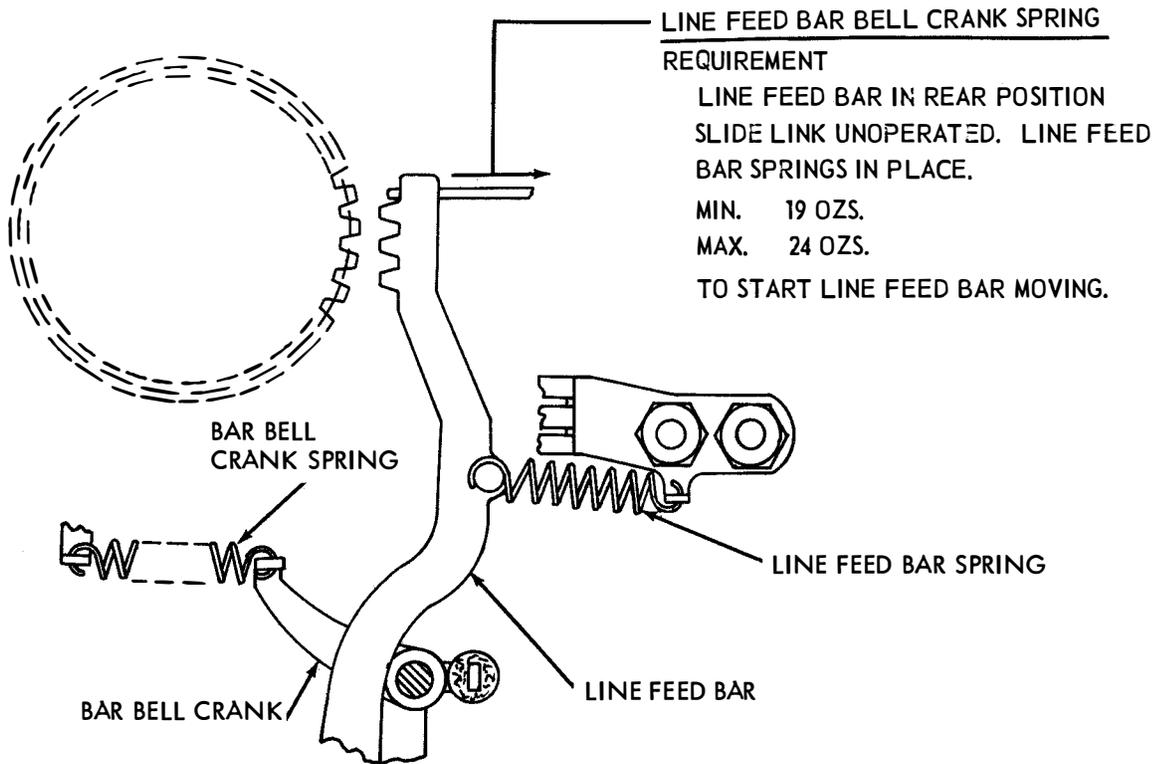
LINE FEED BAR ENGAGED
WITH PLATEN GEAR.

MIN. 2-1/2 OZS.

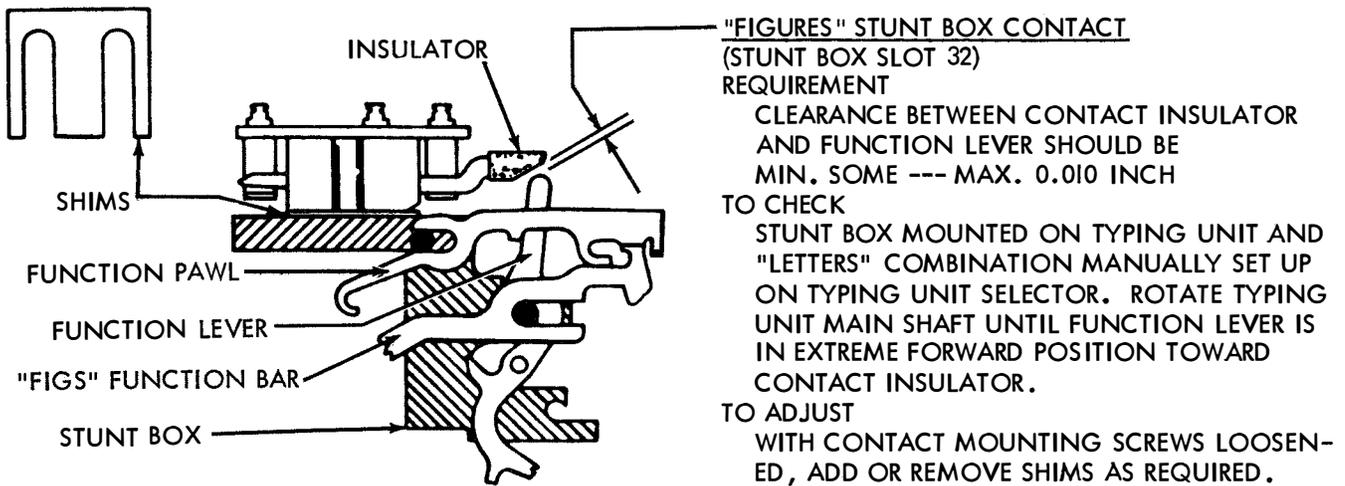
MAX. 5 OZS.

TO PULL EACH SPRING
TO INSTALLED LENGTH.

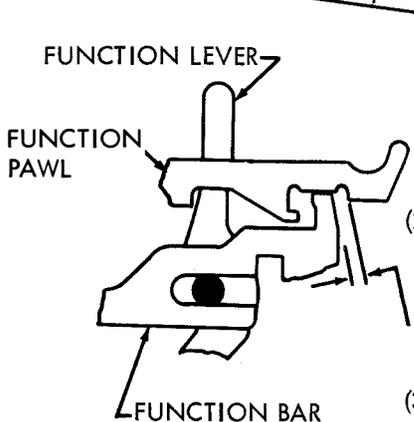
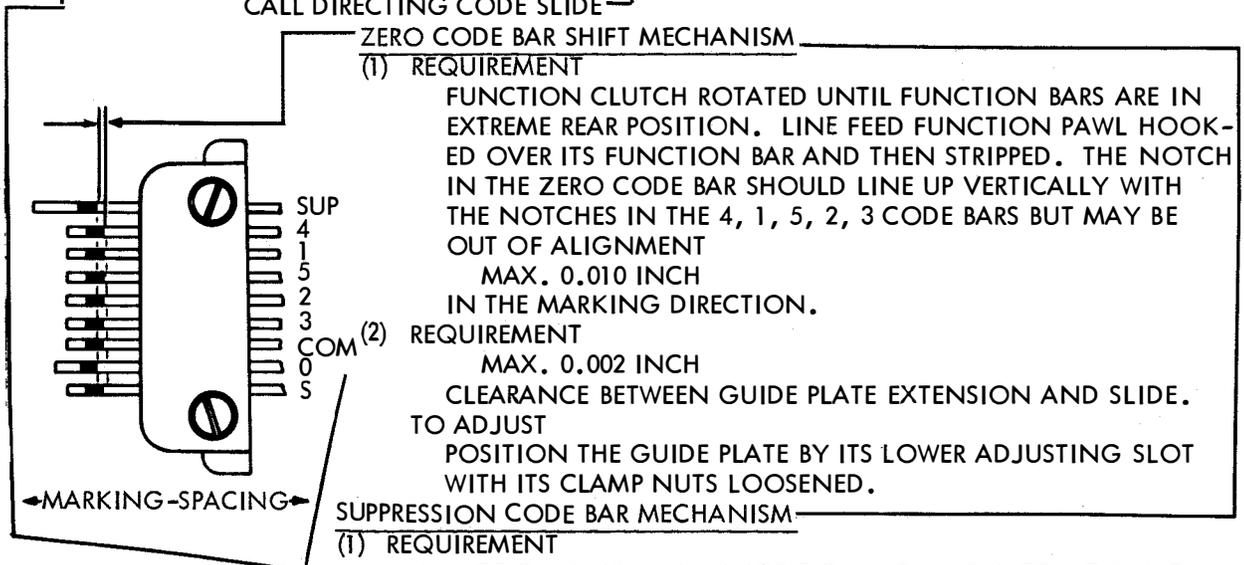
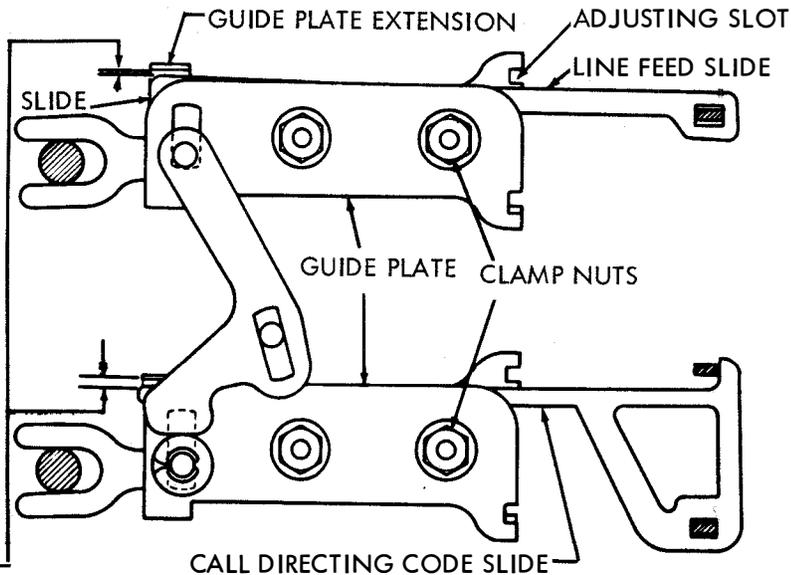
3.21 Reverse Line Feed Mechanism (Cont.)



3.22 Answer-Back Mechanism (Switched Circuit Network)



3.23 Print Suppression Mechanism



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.

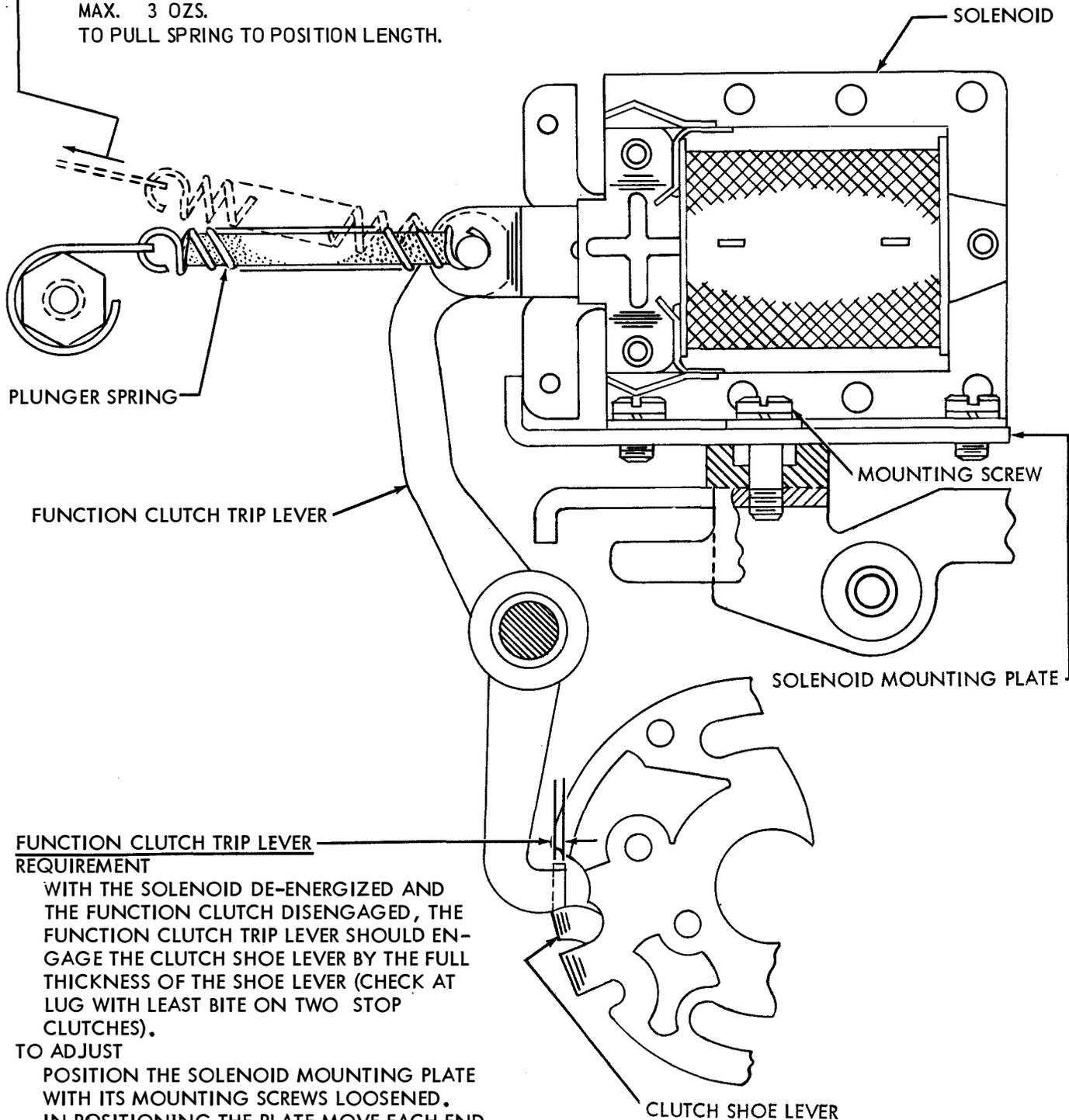
(3) REQUIREMENT
 THERE SHOULD BE SOME CLEARANCE BETWEEN THE REAR END OF THE FUNCTION BAR AND THE FACE OF THE NOTCH ON THE FUNCTION PAWL WHEN THE LINE FEED FUNCTION PAWL AND CALL DIRECTING FUNCTION PAWL ARE ALTERNATELY HOOKED OVER THEIR RESPECTIVE FUNCTION BAR.
 REFINE THE TWO ADJUSTMENTS ABOVE IF NECESSARY.

SECTION 573-115-700

3.24 Continuous Spacing Mechanism

SOLENOID PLUNGER SPRING
REQUIREMENT

SOLENOID DE-ENERGIZED, SPRING UNHOOKED
MIN. 1-1/2 OZS.
MAX. 3 OZS.
TO PULL SPRING TO POSITION LENGTH.



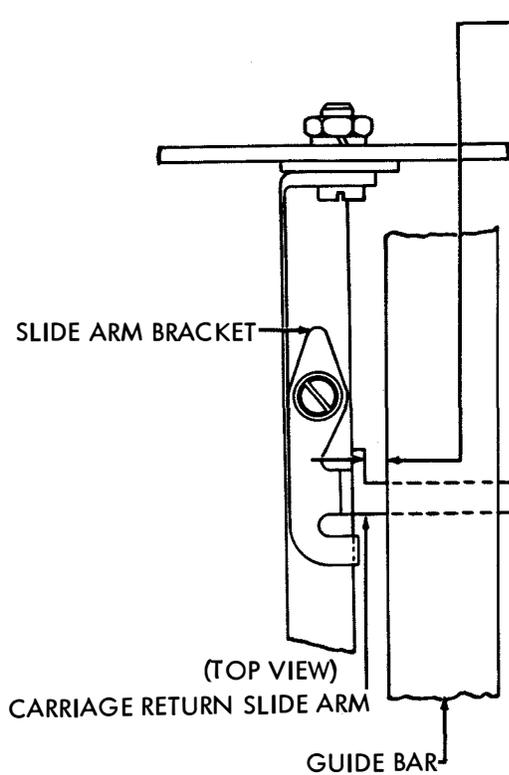
FUNCTION CLUTCH TRIP LEVER
REQUIREMENT

WITH THE SOLENOID DE-ENERGIZED AND
THE FUNCTION CLUTCH DISENGAGED, THE
FUNCTION CLUTCH TRIP LEVER SHOULD EN-
GAGE 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.

3.25 Continuous Spacing Mechanism (Cont.)



SUPPRESSION BAIL ADJUSTING BRACKET REQUIREMENT

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

MIN. 0.070 INCH --- MAX. 0.095 INCH

TO ADJUST

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

NOTE

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

CARRIAGE RETURN LEVER REQUIREMENT

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

MIN. 0.006 INCH --- MAX. 0.040 INCH

TO CHECK

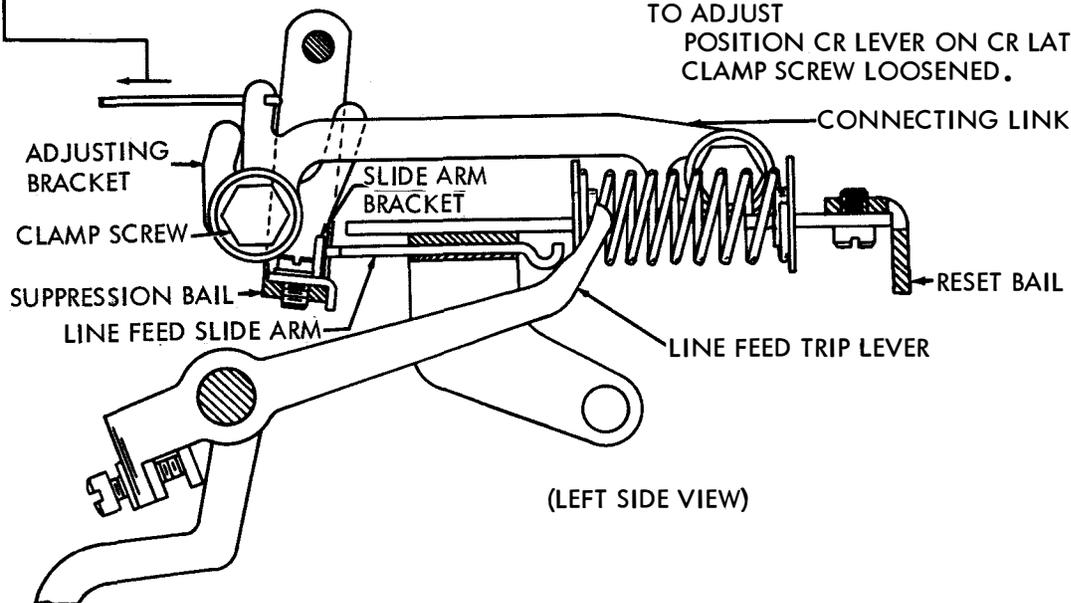
PRINTING CARRIAGE IN RETURNED POSITION. TRIP FUNCTION CLUTCH AND ROTATE MAIN SHAFT UNTIL SUPPRESSION BAIL IS IN EXTREME FORWARD POSITION. LOCATE SPACING DRUM SO THAT CARRIAGE RETURN LATCH BAIL RESETS AGAINST CARRIAGE RETURN LEVER EXTENSION.

TO ADJUST

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

RESET BAIL OPERATING SPRING REQUIREMENT

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



(LEFT SIDE VIEW)

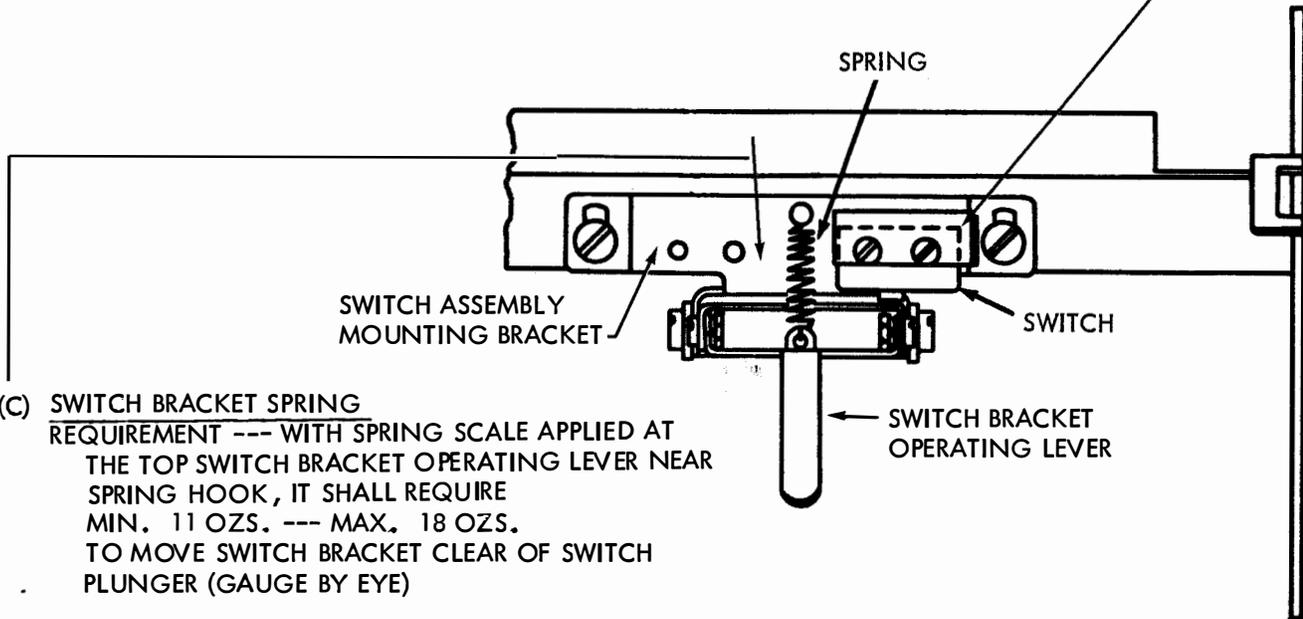
3. 26 Paper-Out Alarm Mechanism

FOR EARLY DESIGN
SEE PARAGRAPH 4.30

(A) SWITCH POSITION

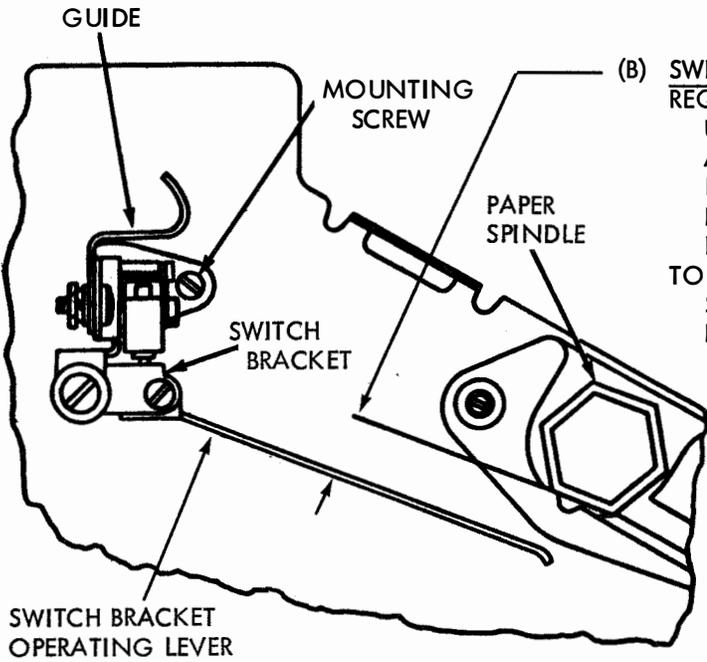
REQUIREMENT --- HORIZONTAL AXIS OF SWITCH SHALL LIE IN A PLANE PARALLEL TO THE SWITCH BRACKET WHEN THE SWITCH IS MOVED TOWARD UPPER LIMIT OF ITS TRAVEL IN THE MOUNTING HOLES.

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



(C) SWITCH BRACKET SPRING

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



(B) SWITCH OPERATING LEVER

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

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

3.27 Vertical Tabulation and Transmitter Distributor Control Mechanism

(C) PAGE FEED-OUT GEAR PLAY

REQUIREMENT

BARELY PERCEPTIBLE BACKLASH BETWEEN IDLER GEAR AND FEED-OUT GEAR

TO ADJUST

POSITION GEAR PIVOT POST WITH NUT LOOSENED.

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

(D) BLOCKING LEVER

SEE PAR. 3.28

(E) INDEXING DISK

REQUIREMENT

CLEARANCE BETWEEN INDEX PLATE AND PAWL SHOULD BE

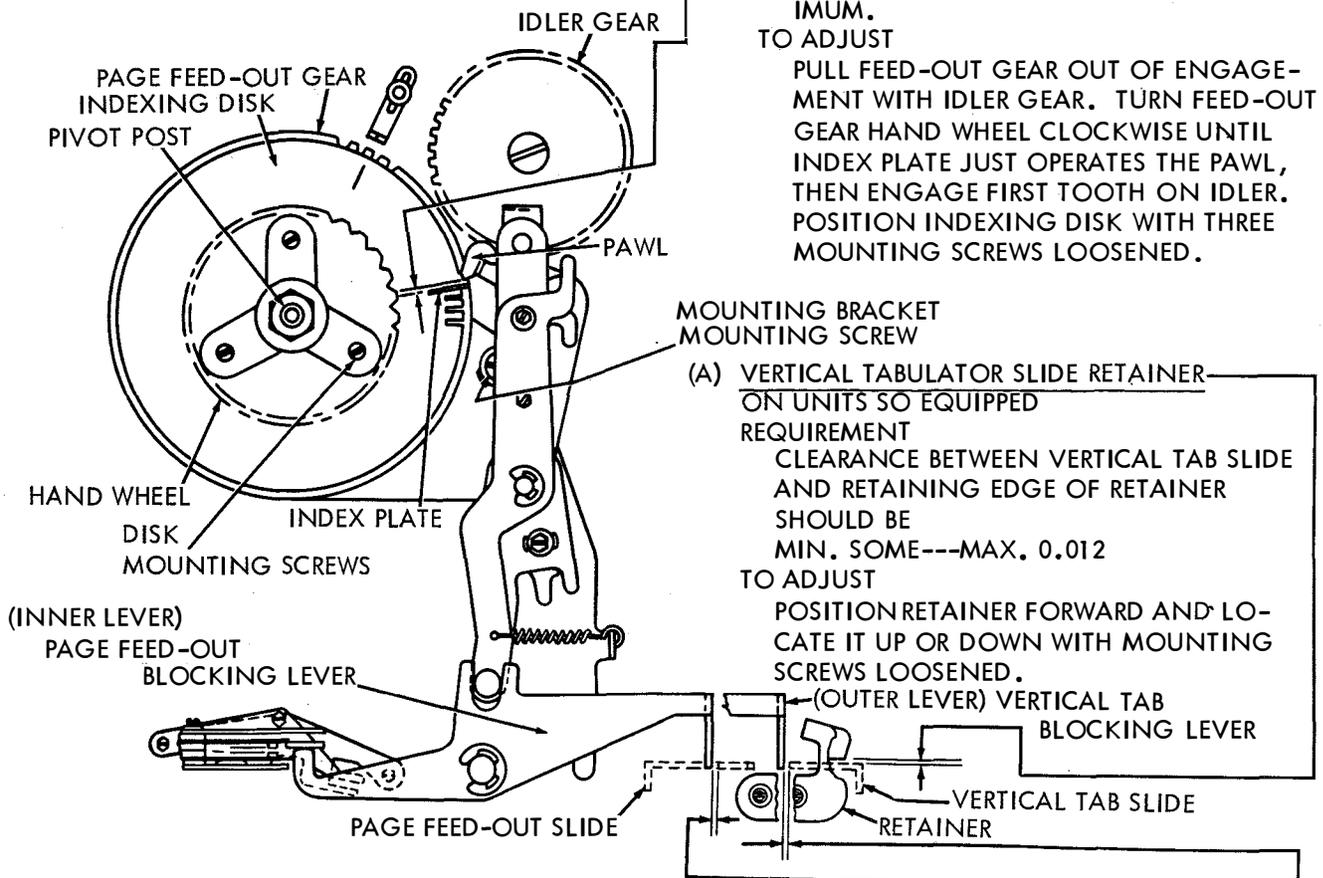
MIN. 0.015 INCH---MAX. 0.040 INCH

TO CHECK

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

TO ADJUST

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



(A) VERTICAL TABULATOR SLIDE RETAINER

ON UNITS SO EQUIPPED

REQUIREMENT

CLEARANCE BETWEEN VERTICAL TAB SLIDE AND RETAINING EDGE OF RETAINER SHOULD BE

MIN. SOME---MAX. 0.012

TO ADJUST

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

(B) MOUNTING BRACKET

REQUIREMENT

1. CLEARANCE BETWEEN FEED-OUT BLOCKING LEVER (INNER LEVER) AND FEED-OUT SLIDE --- MIN. SOME---MAX. 0.020 INCH

TO CHECK

SELECT UPPER CASE "Z" AND ROTATE MAIN SHAFT UNTIL PAGE FEED-OUT SLIDE IS IN ITS MOST FORWARD POSITION. TAKE UP PLAY IN PAGE FEED-OUT BLOCKING LEVER TO MAKE CLEARANCE A MINIMUM.

2. CLEARANCE BETWEEN VERTICAL TAB SLIDE AND VERTICAL TAB BLOCKING LEVER (OUTER LEVER) --- MIN. 0.002 INCH

TO CHECK

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

TO ADJUST

POSITION LOWER PORTION OF MOUNTING BRACKET WITH MOUNTING SCREWS LOOSENED.

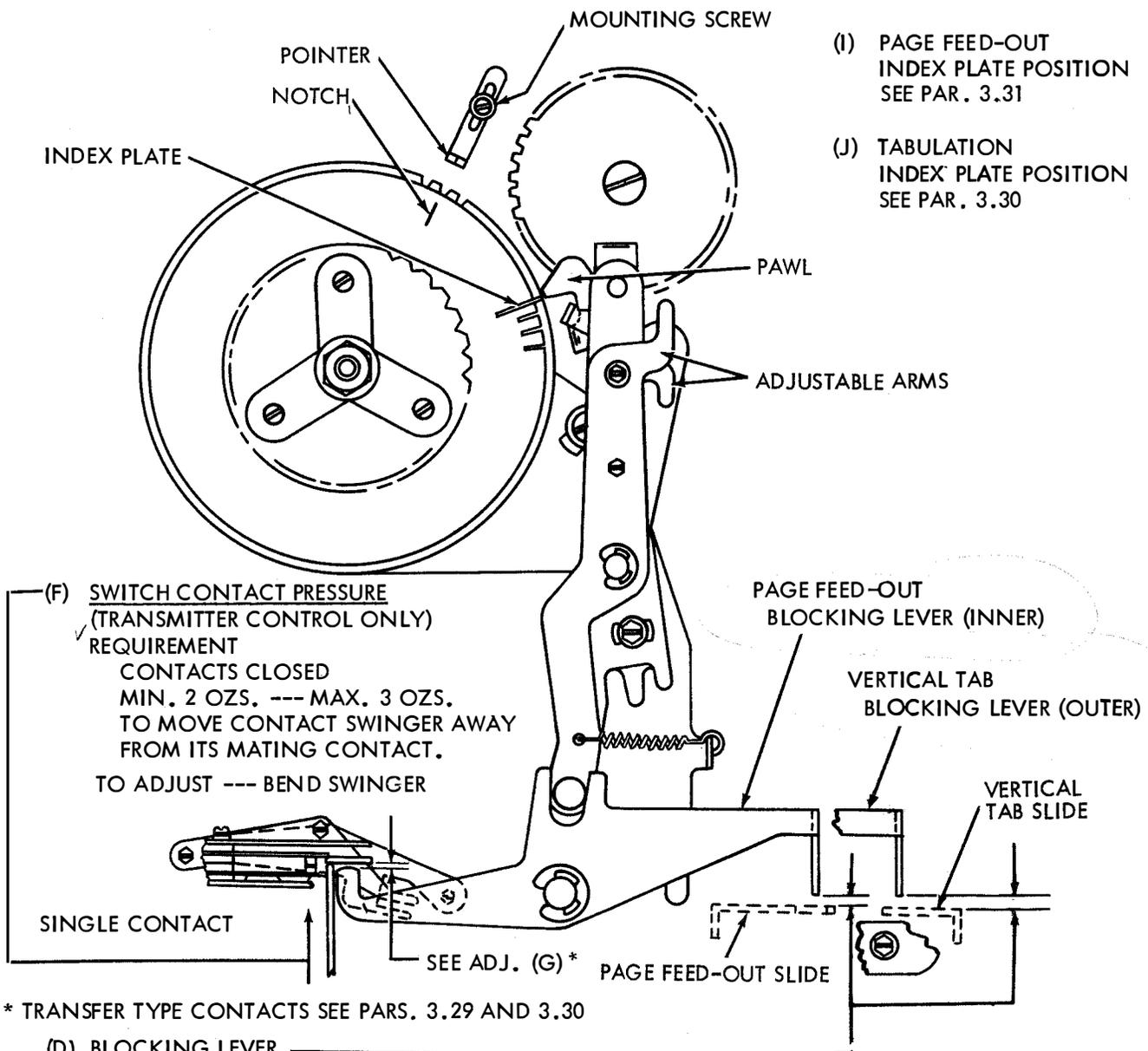
3.28 Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)

(H) POINTER
REQUIREMENT

LINE FEED CLUTCH DISENGAGED. INDEX PLATE ADJACENT TO PAWL. POINTER SHOULD LINE UP WITH NOTCH IN INDEXING DISK AND CLEAR ANY INDEX PLATE BY APPROXIMATELY 1/16 INCH.

TO ADJUST

POSITION POINTER ON SIDE FRAME WITH ITS MOUNTING SCREW LOOSENED.



(I) PAGE FEED-OUT
INDEX PLATE POSITION
SEE PAR. 3.31

(J) TABULATION
INDEX PLATE POSITION
SEE PAR. 3.30

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

* TRANSFER TYPE CONTACTS SEE PARS. 3.29 AND 3.30

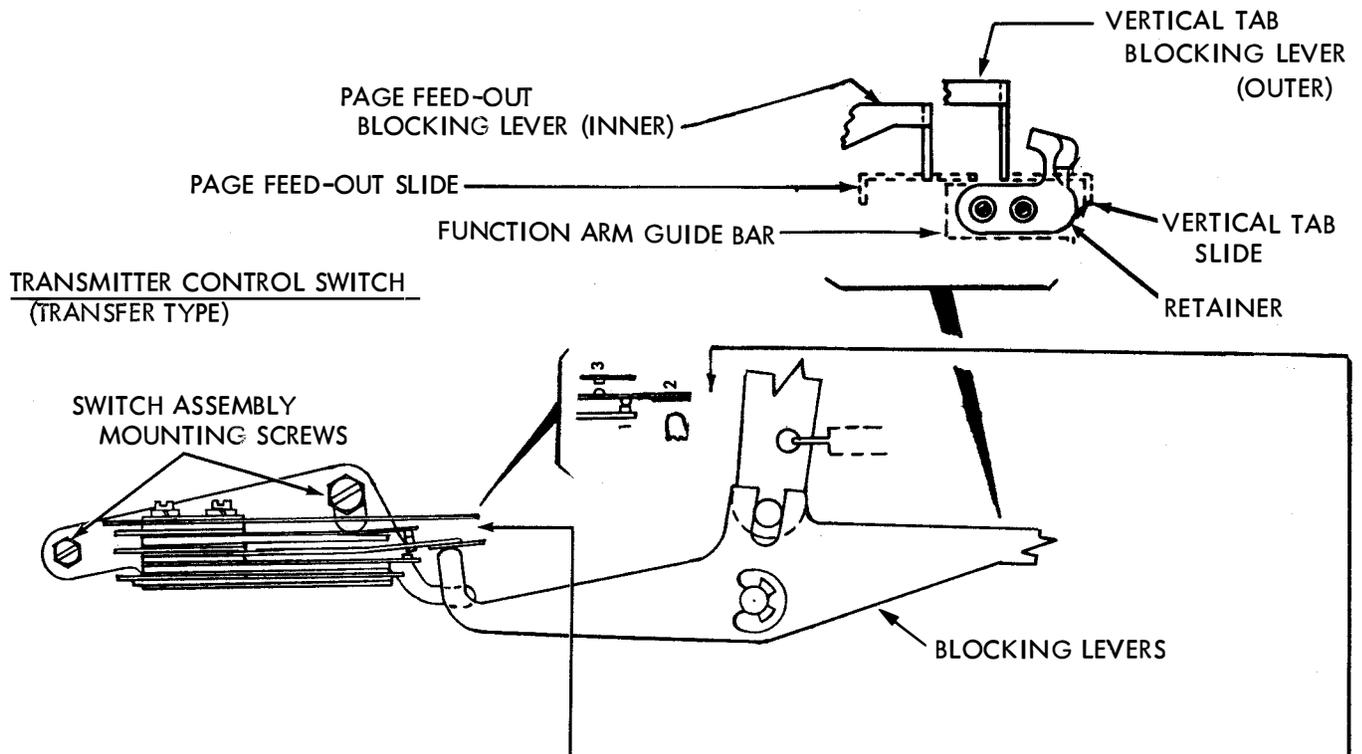
(D) BLOCKING LEVER
REQUIREMENT

CLEARANCE BETWEEN BOTTOM OF BLOCKING LEVER AND TOP OF SLIDE WHEN PAWL IS ON PEAK OF INDEX PLATE SHOULD BE
MIN. 0.005 INCH --- MAX. 0.045 INCH

TO ADJUST

TRIP LINE FEED CLUTCH. ROTATE MAIN SHAFT UNTIL PAWL IS ON PEAK OF INDEX PLATE. POSITION ADJUSTABLE ARM WITH MOUNTING SCREWS LOOSENED. MAKE ADJUSTMENT FOR EACH BLOCKING LEVER.

3. 29 Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)



TRANSMITTER CONTROL SWITCH (TRANSMITTER CONTROL ONLY)
REQUIREMENTS --- FOR TRANSFER TYPE CONTACTS

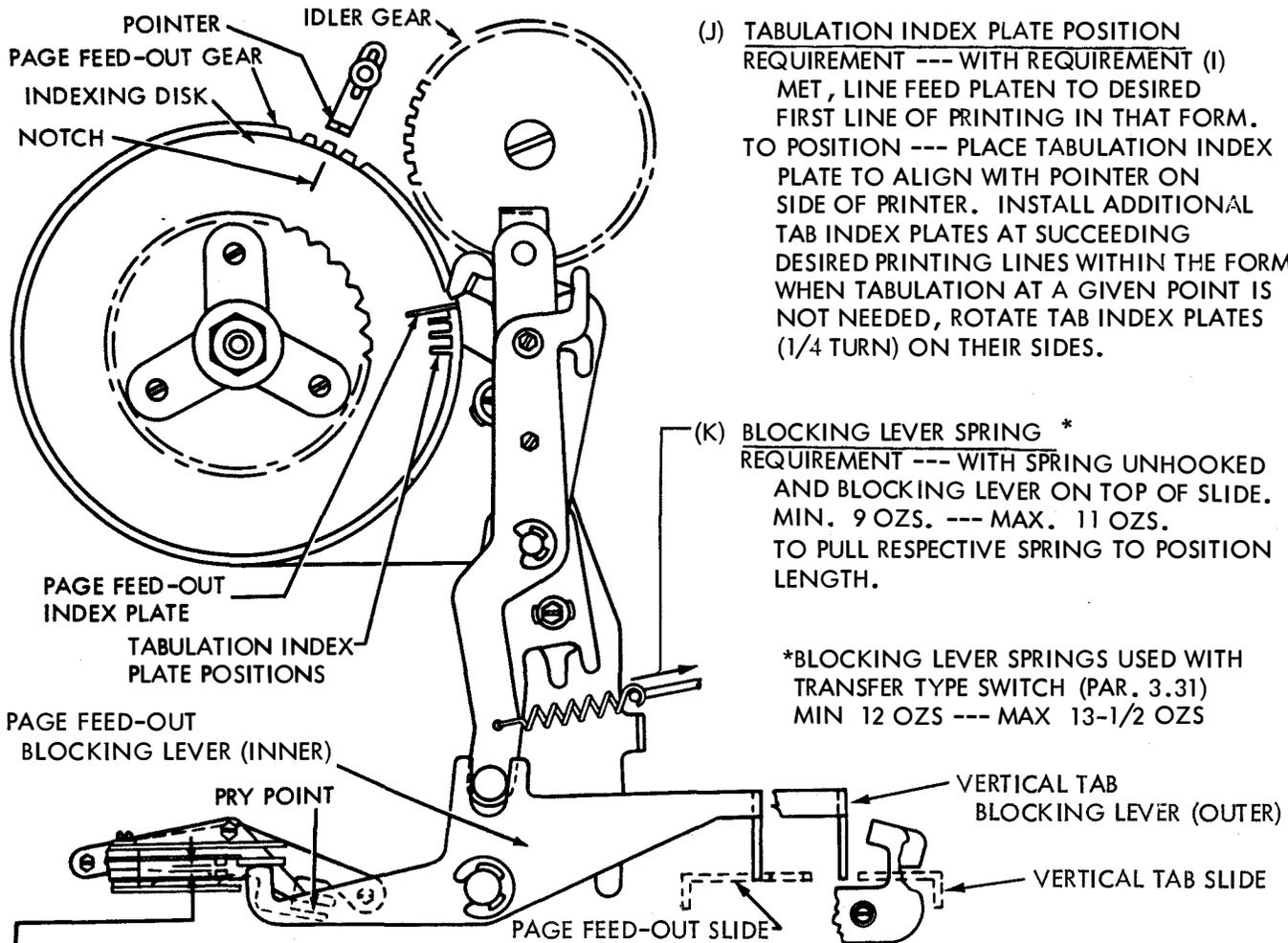
1. WITH NORMALLY CLOSED (LOWER) CONTACTS CLOSED, CLEARANCE BETWEEN INSULATED EXTENSION OF SWINGER AND LOBES OF FEED-OUT AND VERTICAL TABULATOR BLOCKING LEVER SHALL BE MIN. SOME CLEARANCE ----- MAX 0.005 INCH

TO CHECK --- ROTATE MAINSHAFT UNTIL FEED-OUT AND VERTICAL TABULATOR BLOCKING LEVERS ARE UNOPERATED (BLOCKING LEVERS RESTING ON SLIDES).

TO ADJUST - WITH TRANSMITTER CONTROL SWITCH MOUNTING SCREWS LOOSENED, POSITION THE CONTACT ASSEMBLY.

2. WITH THE NORMALLY OPEN (UPPER) CONTACTS CLOSED
- LOBE OF FEED-OUT BLOCKING LEVER (INNER LEVER) SHALL FULLY ENGAGE INSULATED EXTENSION OF CONTACT SWINGER.
 - THE FEED-OUT BLOCKING LEVER SHALL REST FIRMLY ON THE FUNCTION ARM GUIDE BAR (INTERNAL --- CHECK BY LIFTING LEVER LIGHTLY AT CONTACT END) AND ALSO SEPARATE THE NORMALLY OPEN CONTACT SPRING FROM ITS STIFFENER AS THE UPPER CONTACT CLOSURES.
- TO CHECK --- SELECT FEED-OUT CODE COMBINATION, ROTATE MAIN SHAFT UNTIL FEED-OUT SLIDE IS IN ITS EXTREME FORWARD POSITION AND FEED-OUT BLOCKING LEVER DROPS BEHIND ITS SLIDE TO CLOSE NORMALLY OPENED CONTACTS.
- TO ADJUST --- WITH CONTACT PILE-UP MOUNTING SCREWS LOOSENED, POSITION THE ASSEMBLY.
3. WITH THE NORMALLY OPEN (UPPER) CONTACTS CLOSED
- LOBE OF VERTICAL TABULATOR BLOCKING LEVER (OUTER) SHALL FULLY ENGAGE THE INSULATED EXTENSION OF THE SWINGER.
 - THE VERTICAL TABULATOR BLOCKING LEVER SHALL REST FIRMLY ON THE FUNCTION ARM GUIDE BAR (INTERNAL --- CHECK BY LIFTING LEVER LIGHTLY AT CONTACT END.) AND ALSO SEPARATE NORMALLY OPEN CONTACT SPRING FROM ITS STIFFENER AS UPPER CONTACT CLOSURES.
- TO CHECK --- SELECT VERTICAL TABULATOR COMBINATION AND PROCEED AS IN ITEM TO CHECK OF REQUIREMENT 2 ABOVE.

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



(J) TABULATION INDEX PLATE POSITION REQUIREMENT --- WITH REQUIREMENT (I) MET, LINE FEED PLATEN TO DESIRED FIRST LINE OF PRINTING IN THAT FORM. TO POSITION --- PLACE TABULATION INDEX PLATE TO ALIGN WITH POINTER ON SIDE OF PRINTER. INSTALL ADDITIONAL TAB INDEX PLATES AT SUCCEEDING DESIRED PRINTING LINES WITHIN THE FORM. WHEN TABULATION AT A GIVEN POINT IS NOT NEEDED, ROTATE TAB INDEX PLATES (1/4 TURN) ON THEIR SIDES.

(K) BLOCKING LEVER SPRING *
 REQUIREMENT --- WITH SPRING UNHOOKED AND BLOCKING LEVER ON TOP OF SLIDE. MIN. 9 OZS. --- MAX. 11 OZS. TO PULL RESPECTIVE SPRING TO POSITION LENGTH.

*BLOCKING LEVER SPRINGS USED WITH TRANSFER TYPE SWITCH (PAR. 3.31)
 MIN 12 OZS --- MAX 13-1/2 OZS

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

1. WITH TRANSMITTER CONTROL CONTACTS CLOSED, THERE SHOULD BE SOME CLEARANCE BETWEEN INSULATED EXTENSION OF SWINGER AND LOBE OF FEED-OUT AND VERTICAL TABULATOR BLOCKING LEVERS.
 TO CHECK - ROTATE MAIN SHAFT UNTIL FEED-OUT AND VERTICAL TABULATOR BLOCKING LEVERS ARE UNOPERATED (RESTING ON TOP OF SLIDES).
 TO ADJUST - POSITION THE CONTACT ASSEMBLY WITH ITS MOUNTING SCREWS LOOSENED.
2. WITH TRANSMITTER CONTROL CONTACTS OPENED BY FEED-OUT BLOCKING LEVER, CLEARANCE BETWEEN SWITCH CONTACTS SHALL BE
 MIN 0.010 INCH ----- MAX 0.020 INCH
 TO CHECK - SELECT FEED-OUT CODE COMBINATION. ROTATE MAIN SHAFT UNTIL FEED-OUT SLIDE IS IN ITS EXTREME FORWARD POSITION AND FEED-OUT BLOCKING LEVER DROPS BEHIND ITS SLIDE TO OPEN CONTACTS
 TO ADJUST - REFINE REQUIREMENT NO. 1 ABOVE.
3. WITH CONTROL CONTACTS OPENED BY VERTICAL TABULATOR BLOCKING LEVER, CLEARANCE BETWEEN SWITCH CONTACTS SHOULD BE
 MIN 0.010 INCH ----- MAX 0.020 INCH
 TO CHECK - SELECT VERTICAL TABULATOR CODE COMBINATION. ROTATE MAIN SHAFT UNTIL VERTICAL TAB SLIDE IS IN ITS EXTREME FORWARD POSITION AND VERTICAL TABULATOR BLOCKING LEVER DROPS BEHIND ITS SLIDE
 TO ADJUST - REFINE REQUIREMENT NO. 1. ABOVE.

3. 31 Vertical Tabulation and Transmitter Distributor Control Mechanism (Cont.)

(I) PAGE FEED-OUT INDEX PLATE POSITION

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

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

SWITCH CONTACTS (TRANSMITTER CONTROL ONLY)

REQUIREMENTS --- FOR TRANSFER TYPE CONTROL SWITCH

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

TO ADJUST - FORM THE LOWER CONTACT SPRING BY BENDING.

2. WITH LOWER CONTACT CLOSED

MIN 30 GRAMS ----- MAX 45 GRAMS.

TO MOVE SWINGER FROM ITS MATING CONTACTS.

TO ADJUST - FORM THE SWINGER BY BENDING.

3. WITH LOWER CONTACT CLOSED

- (a) GAP BETWEEN UPPER CONTACT AND MATING CONTACT OF SWINGER

MIN 0.008 INCH ----- MAX 0.015 INCH

TO ADJUST - POSITION STIFFENER OF NORMALLY CLOSED CONTACT.

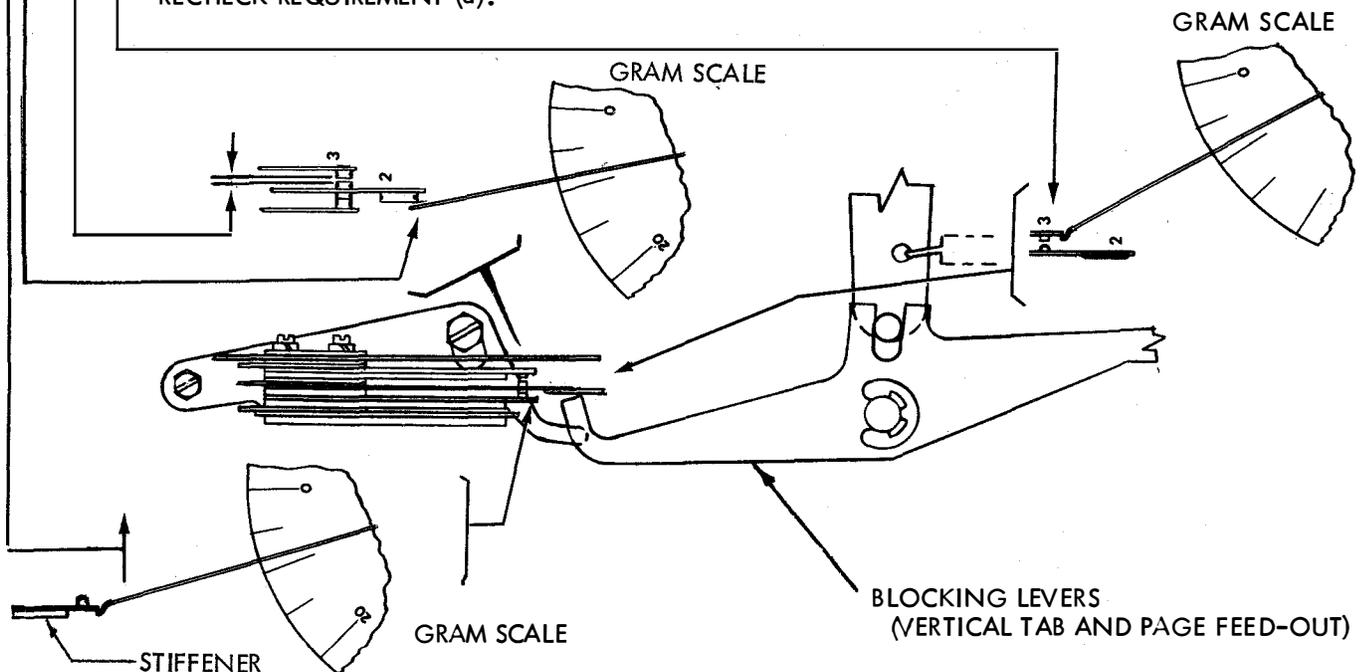
- (b) WITH A GAP OF 0.008 TO 0.015 INCH, IT SHALL REQUIRE

MIN 25 GRAMS ----- MAX 35 GRAMS

TO PULL UPPER CONTACT AWAY FROM ITS STIFFENER

TO ADJUST - FORM THE UPPER CONTACT SPRING BY BENDING.

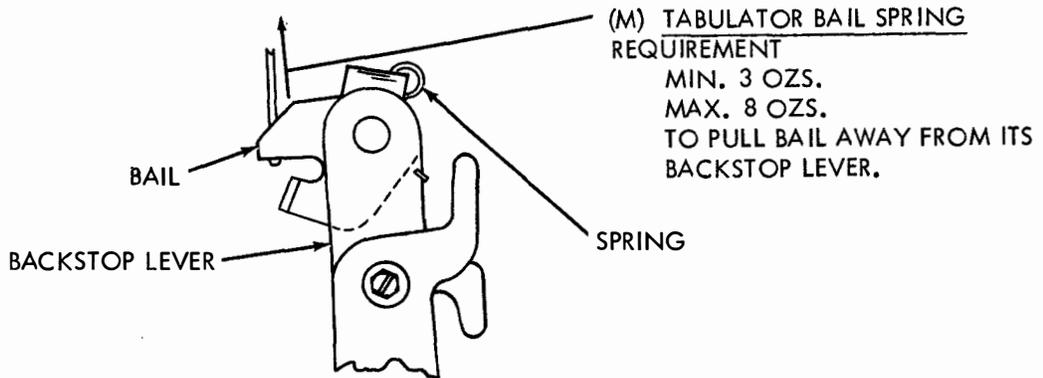
RECHECK REQUIREMENT (a).



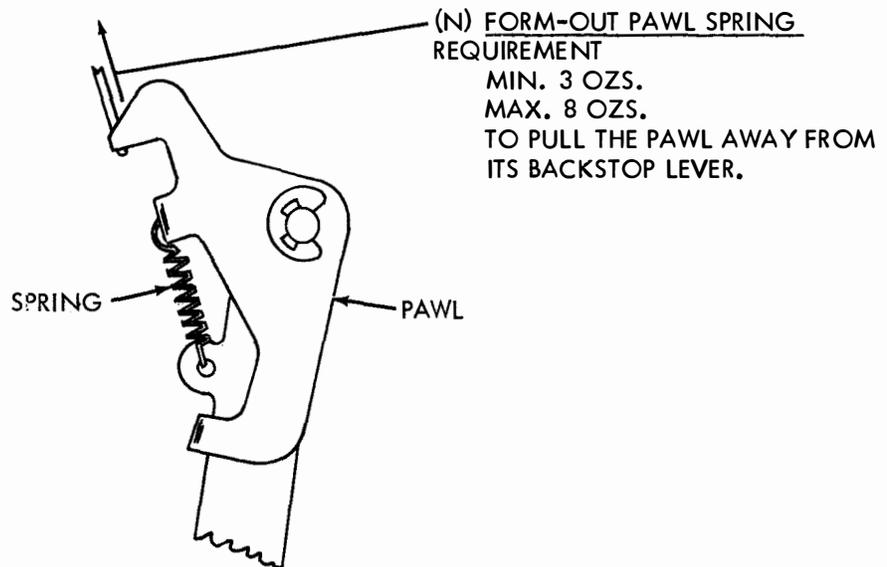
SECTION 573-115-700

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

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



- (O) STUNT BOX SWITCH SPRING
SEE PAR. 2.66



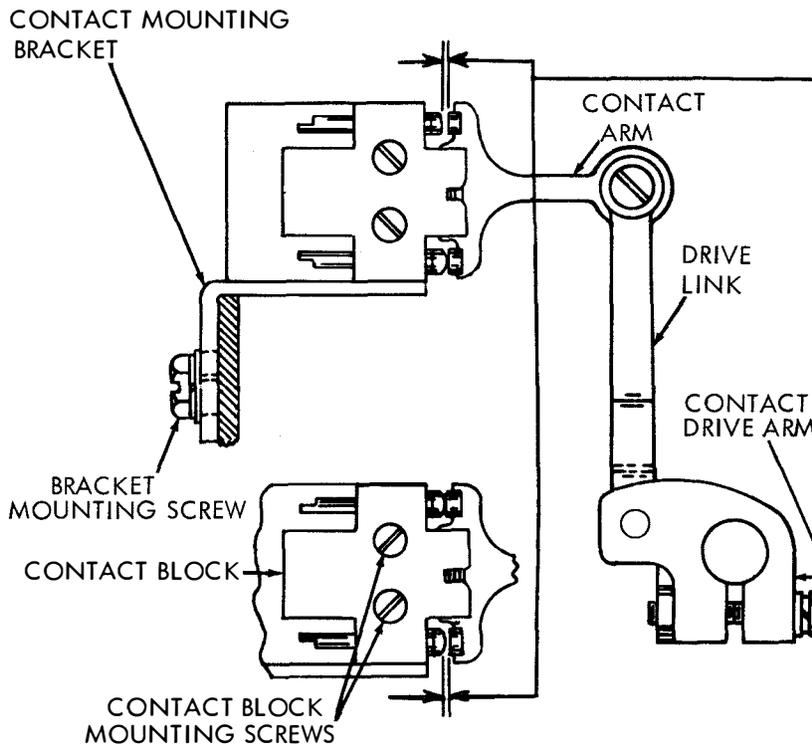
3.33 Universal Contact (Selector) Mechanism

(A) CONTACT MOUNTING BRACKET REQUIREMENT

THE DRIVE ARM LINKAGE SHOULD BE VERTICALLY ALIGNED TO PREVENT BINDS.
TO ADJUST
POSITION THE CONTACT MOUNTING BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

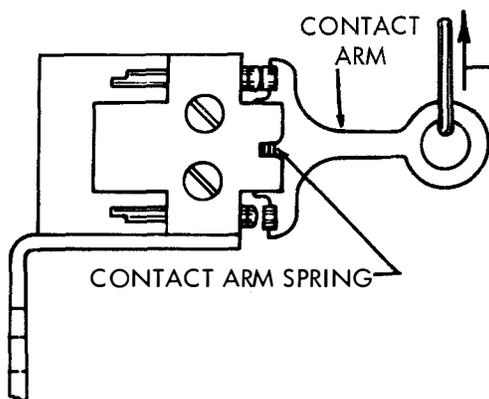
(B) CONTACT BLOCK REQUIREMENT

THE CONTACT FACES SHOULD BE IN A VERTICAL STRAIGHT LINE
TO ADJUST
LOOSEN THE TWO CONTACT MOUNTING SCREWS. PRESS THE CONTACT BLOCK TOWARD THE REAR OF THE TYPING UNIT FIRMLY AGAINST THE SCREWS AND TIGHTEN THE SCREWS.



(C) CONTACT DRIVE ARM POSITION REQUIREMENT

THE CONTACTS SHOULD OPEN EQUALLY WITHIN 0.010 INCH
TO CHECK
ROTATE CODE BAR CLUTCH UNTIL IT IS DISENGAGED AND LATCHED IN STOP POSITION. MEASURE GAP BETWEEN UPPER CONTACTS. TRIP CODE BAR CLUTCH AND ROTATE 180 DEGREES OR UNTIL LOWER CONTACT GAP REACHES ITS MAXIMUM OPENING. MEASURE THE GAP.
TO ADJUST
POSITION CONTACT DRIVE ARM WITH ITS CLAMP SCREW LOOSENED.



(D) CONTACT ARM SPRING REQUIREMENT

WITH SHOULDER SCREW WHICH CONNECTS CONTACT ARM TO DRIVE LINK REMOVED AND SPRING SCALE APPLIED VERTICALLY UPWARD OR DOWNWARD
MIN. 2 OZS. --- MAX. 5 OZS.
TO OPEN EITHER CONTACT.

SECTION 573-115-700

3.34 Universal Contact (Stunt Box) Mechanism

NOTE: 1. THESE ADJUSTMENTS SHOULD BE MADE WITH THE CONTACT BRACKET ASSEMBLY REMOVED
NOTE: 2. IF CONTACT SCREWS ARE DISTURBED TO OBTAIN A REQUIREMENT, THEY MUST BE RETIGHTENED AND ALL PRECEDING REQUIREMENTS RECHECKED.

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

(A) CONTACT

1. REQUIREMENT

CONTACT SPRINGS AND STIFFENERS MOUNTED VERTICALLY AND CONTACT POINTS IN ALIGNMENT (GAUGE BY EYE).

TO ADJUST

POSITION THE CONTACT SPRINGS AND STIFFENERS WITH ASSEMBLY SCREWS LOOSENED.

2. REQUIREMENT

STIFFENERS SHOULD BE PARALLEL WITH THE CONTACT BRACKETS.

TO ADJUST

FORM THE STIFFENER

3. REQUIREMENT

CONTACT SPRINGS SHOULD REST AGAINST THEIR STIFFENERS THROUGHOUT THEIR WIDTH.

TO ADJUST

BEND TOP FORMED SECTION OF STIFFENER. IF NECESSARY, BEND CONTACT SPRINGS.

(B) NORMALLY OPEN CONTACT GAP
REQUIREMENT

WITH THE NORMALLY CLOSED CONTACTS CLOSED, THE NORMALLY OPEN CONTACT SHOULD BE OPEN
MIN 0.020 INCH
MAX 0.025 INCH

TO ADJUST

BEND STIFFENER

(C) CONTACT SPRING
REQUIREMENT

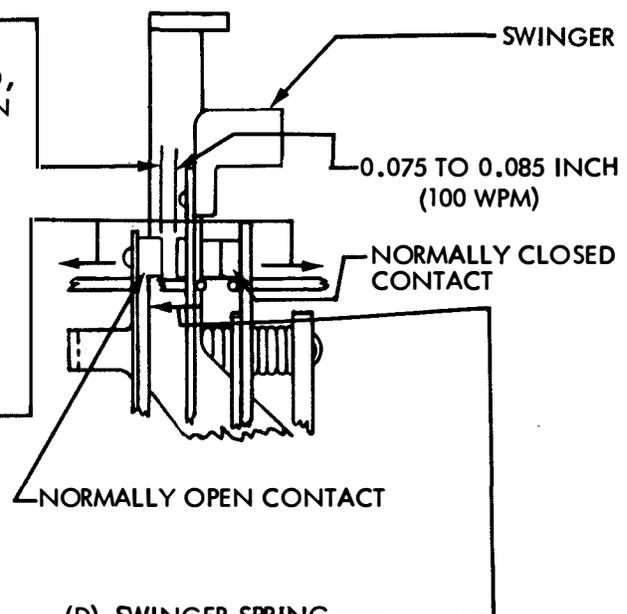
MIN 2 OZ

MAX 3 OZ

TO MOVE EACH CONTACT SPRING AWAY FROM ITS STIFFENER, WITH THE SWINGER HELD AWAY

TO ADJUST

REMOVE AND FORM THE SPRING.



(D) SWINGER SPRING
REQUIREMENT

MIN 4 OZ

MAX 6 OZ

TO MOVE SWINGER FROM NORMALLY CLOSED CONTACT.

TO ADJUST

BEND SWINGER

3.35 Universal Contact (Stunt Box) Mechanism (continued)

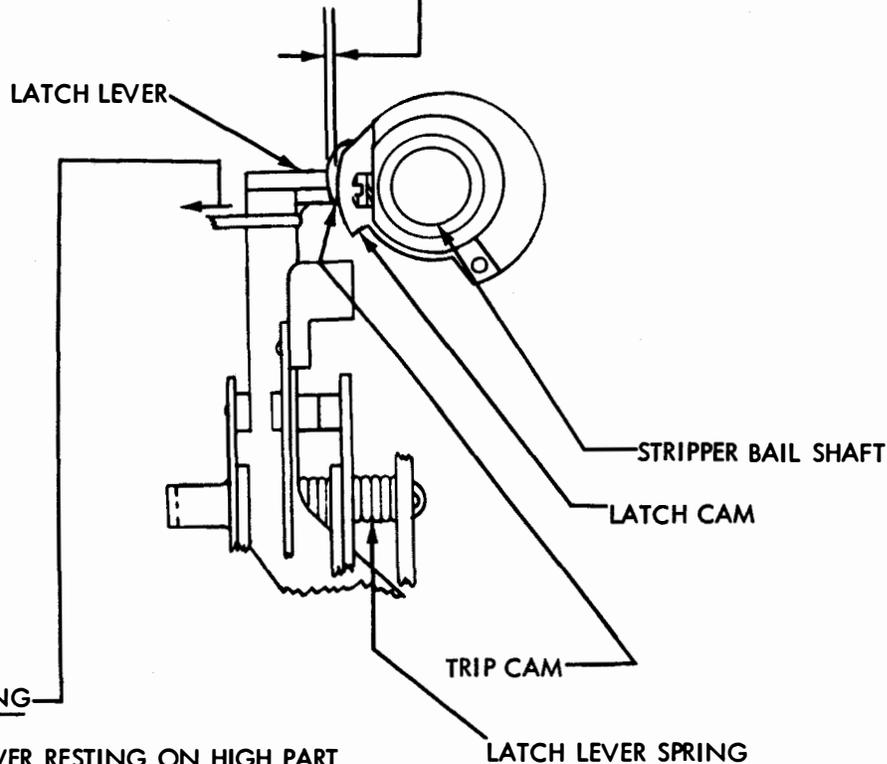
**TRIP CAM
REQUIREMENT**

WITH STRIPPER BAIL SHAFT DRIVE LINK
AT ITS LOWEST POINT, THE CLEARANCE
BETWEEN THE LATCH LEVER AND THE LATCH
CAM SHOULD BE
MIN 0.003 INCH

TO ADJUST

ROTATE THE TRIP CAM WITH ITS MOUNTING
SCREW LOOSENED.

NOTE: AS A CHECK TO SEE THAT THE TRIP CAM IS
NOT INSTALLED 180° OUT OF PLACE, THE MAIN
SHAFT SHOULD BE ROTATED SO THAT THE STRIPPER
SHAFT DRIVE LINK MOVES DOWNWARD.



**LATCH LEVER SPRING
REQUIREMENT**

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

3.36 Universal Contact (Stunt Box) Mechanism (continued)

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

CONTACT BRACKET AND DRIVE CAM

1. REQUIREMENT

WITH DRIVE LINK IN ITS UPPERMOST POSITION, CLEARANCE BETWEEN TOP OF LATCH LEVER AND LATCH CAM

MIN 0.003 INCH
MAX 0.008 INCH

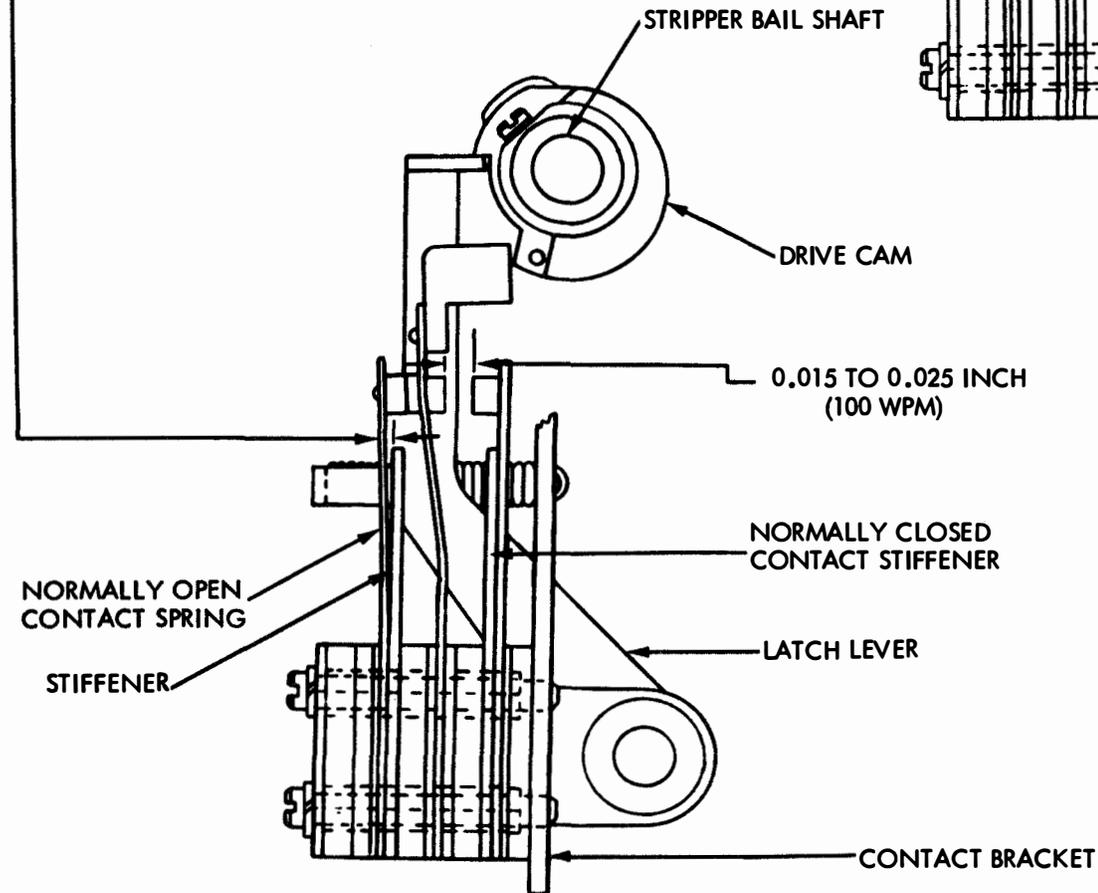
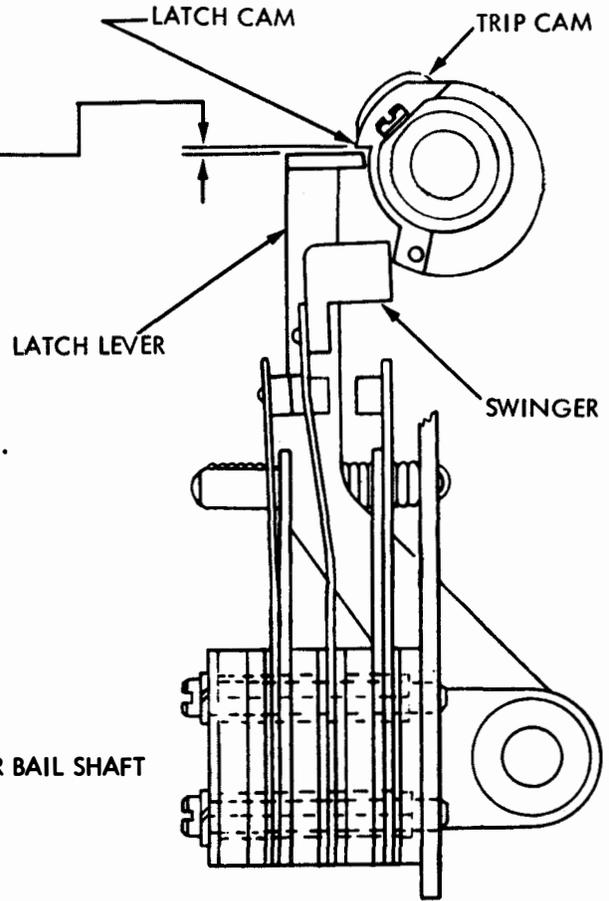
2. REQUIREMENT

WITH THE MAIN SHAFT ROTATED ON UNTIL THE CLEARANCE IN REQUIREMENT 1. IS CLOSED AND THE LATCH CAM RESTS FIRMLY ON THE LATCH LEVER. CLEARANCE BETWEEN THE NORMALLY OPEN CONTACT SPRING AND THE UPPER END OF ITS STIFFENER

MIN 0.005 INCH
MAX 0.010 INCH

TO ADJUST

REPOSITION THE CONTACT BRACKET, AND, IF NECESSARY, THE DRIVE CAM.



3.37 Universal Contact (Stunt Box) Mechanism (continued)

GENERAL APPLICATION TIMING - FINAL (USING DXD OR SIMILAR EQUIPMENT)CONTACT BRACKET AND DRIVE CAM POSITION REQUIREMENT

THE NORMALLY OPEN UNIVERSAL CONTACTS SHOULD CLOSE WITHIN ± 5 MILLISECONDS OF THE CLOSURE OF THE NORMALLY OPEN STUNT BOX CONTACT.

TO ADJUST

REFINE THE DRIVE CAM (AND, IF NECESSARY, THE BRACKET) ADJUSTMENT BY ROTATING THE DRIVE CAM WITHIN THE SPECIFIED LIMITS.

TRIP CAM REQUIREMENT

THE NORMALLY OPEN UNIVERSAL CONTACTS SHOULD OPEN WITHIN -5 $+0$ MILLISECONDS OF THE OPENING OF THE NORMALLY OPEN STUNT BOX CONTACT.

TO ADJUST

REFINE THE TRIP CAM ADJUSTMENT BY ROTATING THE TRIP CAM ON ITS SHAFT WITHIN THE SPECIFIED LIMITS.

SPECIAL ADJUSTMENTS (FOR 100 WPM)

NOTE: TO PREVENT EXCESSIVE FLEXING OF THE SWINGER, THE NORMALLY OPEN CONTACT SPRING STIFFENER MUST BE BENT TO HOLD THE SPRING AWAY FROM THE SWINGER WITH THE DRIVE LINK IN ITS UPPERMOST POSITION.

NORMALLY OPEN CONTACT GAP (100 WPM) REQUIREMENT

WITH THE SWINGER RESTING AGAINST THE NORMALLY CLOSED CONTACT THE GAP SHOULD BE
MIN 0.075 INCH
MAX 0.085 INCH

TO ADJUST

BEND THE CONTACT SPRING STIFFENER.

CONTACT BRACKET AND DRIVE CAM POSITION (100 WPM) REQUIREMENT

WITH THE LATCH CAM IN ITS FULLY LATCHED POSITION
MIN 0.015 INCH
MAX 0.025 INCH

BETWEEN THE NORMALLY OPEN CONTACT SPRING AND ITS STIFFENER.

TO ADJUST

POSITION THE DRIVE CAM AND/OR, IF NECESSARY, THE CONTACT BRACKET.

SPECIAL APPLICATION TIMING (USING DXD OR SIMILAR EQUIPMENT)A. NORMALLY CLOSED CONTACTS (100 WPM FOR 83B2 SWITCHING SYSTEM)

1. THE NORMALLY CLOSED CONTACTS SHOULD CLOSE WITHIN 50 TO 80 DIVISIONS AFTER THE START OF THE STOP PULSE.
2. THE NORMALLY OPEN CONTACT SHOULD CLOSE PRIOR TO THE END OF NO. 3 PULSE.
3. THE NORMALLY OPEN CONTACTS SHOULD REMAIN CLOSED FOR AT LEAST 238 DIVISIONS (100 WPM DXD WITH 742 SCALE DIVISIONS).

NOTE: THE RELATION BETWEEN THE NORMALLY CLOSED UNIVERSAL CONTACT MARKING PULSE AND THE STOP IMPULSE OF THE RECEIVED SIGNAL VARIES WITH THE RANGE SCALE SETTING OF THE UNIT.

SECTION 573-115-700

3. 38 Universal Contact (Stunt Box) Mechanism (continued)

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

WHEN THE NORMALLY OPEN CONTACTS ARE NOT USED, THE NORMALLY CLOSED CONTACTS SHOULD REMAIN OPEN FOR 53.88 MILLISECONDS OR 400 ± 15 DXD DIVISIONS.

TO ADJUST

REFINE THE DRIVE CAM, TRIP CAM AND, IF NECESSARY, THE BRACKET POSITIONS TO MEET THE TIMING REQUIREMENTS.

NOTE 1:

THE NORMAL 0.003 TO 0.008 INCH OVERTRAVEL OF THE LATCH CAM OVER THE LATCH LEVER WITH THE DRIVE LINK IN ITS UPPERMOST POSITION MUST BE INCREASED IN ORDER TO DECREASE NORMALLY CLOSED CONTACT GAP IN THE LATCHED POSITION OF THE LATCH CAM. THIS PREVENTS THE CONTACT FROM BOUNCING WHEN THE LATCH LEVER IS RELEASED.

NOTE 2:

WITH THE LATCH CAM IN ITS LATCHED POSITION, THERE SHOULD BE 0.015 INCH MINIMUM CONTACT GAP BETWEEN THE NORMALLY CLOSED CONTACTS.

GENERAL REQUIREMENTS AFTER TIMING ADJUSTMENTS

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

A. WITH THE DRIVE LINK IN ITS UPPERMOST POSITION:

1. THE LATCH CAM SHALL NOT OVERTRAVEL OR HANG UP ON THE SWINGER INSULATOR.
2. THERE SHALL BE AT LEAST 0.003 INCH CLEARANCE BETWEEN THE LATCHING SURFACE OF THE LATCH CAM AND THE LATCHING SURFACE OF THE LATCH LEVER.
3. THE CLEARANCE BETWEEN THE NORMALLY OPEN CONTACT SPRING AND ITS STIFFENER SHALL NOT EXCEED 0.025 INCH.

B. WITH THE DRIVE LINK IN ITS LOWERMOST POSITION:

1. THE TOP OF THE SWINGER INSULATOR MUST CLEAR THE CUT-OUT SECTION OF THE LATCH CAM.
2. THERE SHALL BE AT LEAST 0.003 INCH CLEARANCE BETWEEN THE FRONT EDGE OF THE LATCH LEVER LATCHING SURFACE AND THE HIGH PART OF THE LATCH CAM.

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

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

3. 39 Form Alignment Switch Mechanism

(A) FORM FEED-OUT ADJUSTMENT

SEE PARS. 3.11 AND 3.12

(B) FORM ALIGNMENT SWITCH
(REMOVE POWER FROM SWITCH)

REQUIREMENT

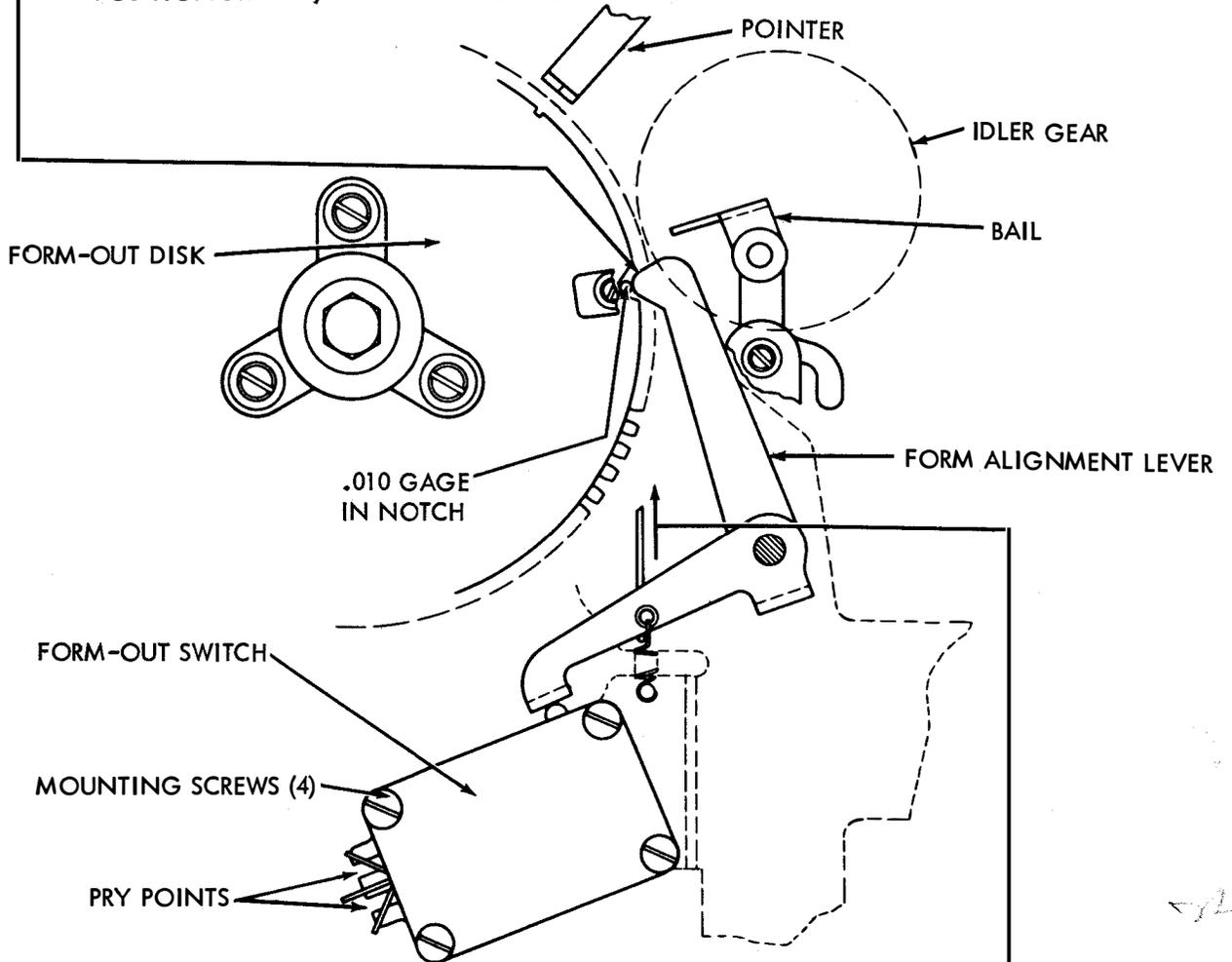
SWITCH SHOULD BE OPERATED WHEN SWITCH LEVER IS WITHIN 0.010 INCH OF BOTTOM OF NOTCH IN FORM-OUT DISK AND SHOULD NOT BE OPERATED WHEN LEVER IS ON OUTER EDGE OF DISK.

TO CHECK

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

TO ADJUST

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



(C) FORM ALIGNMENT SWITCH SPRING

REQUIREMENT

MIN. 6 OZS.

MAX. 8 OZS.

TO MOVE THE LEVER FROM OUTER-EDGE OF DISK.

TO CHECK

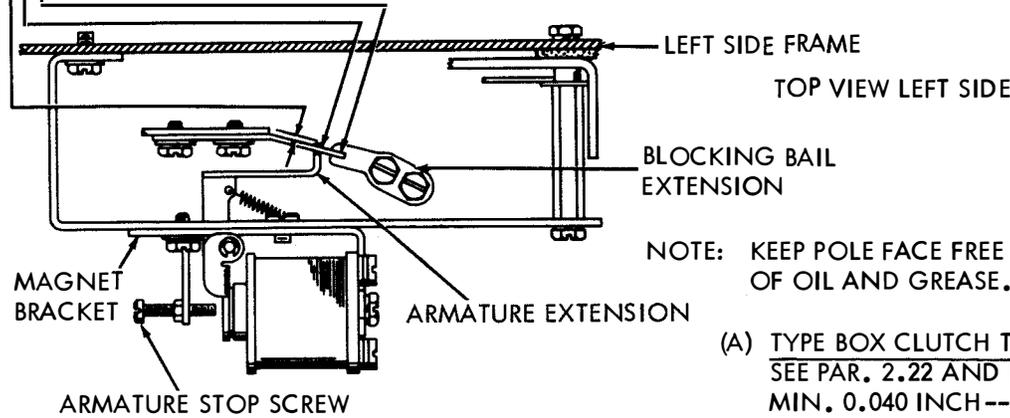
SWITCH OPERATING LEVER ON OUTER EDGE OF DISK
(NOT IN NOTCH AS SHOWN)

LEFT VIEW

3.40 DC Magnet Operated Print Suppression Mechanism

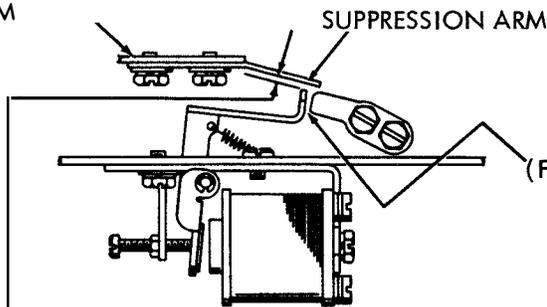
(D) ARMATURE EXTENSION OVERTRAVEL REQUIREMENT

1. OVERTRAVEL OF ARMATURE EXTENSION SHOULD BE MIN. 0.010 INCH --MAX. 0.015 INCH
 2. THERE SHOULD BE NO CLEARANCE BETWEEN BLOCKING SURFACE OF ARMATURE EXTENSION AND BOTTOM SURFACE OF SUPPRESSION ARM. TO CHECK (REQUIREMENTS 1 AND 2.) SUPPRESSION ARM BLOCKED BY BLOCKING BAIL EXTENSION. HOLD ARMATURE AGAINST POLE FACE OF MAGNET.
 3. ROTATE BLOCKING BAIL EXTENSION. IT SHOULD SLIDE UNDER THE SUPPRESSION ARM WITH NO PERCEPTIBLE CLEARANCE. TO CHECK (REQUIREMENT 3.) SUPPRESSION ARM BLOCKED BY ARMATURE EXTENSION
- TO ADJUST
PIVOT MAGNET BRACKET, UP OR DOWN AND TO THE FRONT OR REAR, WITH ITS MOUNTING SCREWS LOOSENED, USING AN ECCENTRIC ADJUSTING TOOL. PRESS ARMATURE EXTENSION FIRMLY AGAINST BOTTOM OF SUPPRESSION ARM. IF NECESSARY, ADD OR REMOVE SHIMS BETWEEN SUPPRESSION ARM AND TYPE BOX CLUTCH TRIP ARM. RECHECK (B) AND (C).



- (A) TYPE BOX CLUTCH TRIP LEVER
SEE PAR. 2.22 AND REFINE REQUIREMENT TO MIN. 0.040 INCH---MAX. 0.055 INCH
- (B) TYPE BOX CLUTCH SUPPRESSION ARM
SEE PAR. 3.14
- (C) BLOCKING BAIL
SEE PAR. 3.14

TYPE BOX CLUTCH TRIP ARM



- (F) BLOCKING BAIL EXTENSION CLEARANCE REQUIREMENT
THERE SHOULD BE NO INTERFERENCE BETWEEN ARMATURE EXTENSION AND BLOCKING BAIL EXTENSION.
TO ADJUST
REFINE ABOVE ADJUSTMENTS AS NECESSARY.

(E) ARMATURE EXTENSION CLEARANCE REQUIREMENT

- CLEARANCE BETWEEN END OF ARMATURE EXTENSION AND SUPPRESSION ARM SHOULD BE MIN. 0.012 INCH---MAX. 0.030 INCH
TO CHECK
ARMATURE RELEASED
TO ADJUST
POSITION ARMATURE WITH ARMATURE STOP SCREW. RECHECK (D).

3.41 Print Suppression and Offline Stunt Shift Control Mechanism

(A) SUPPRESSION CODE BAR POSITION

REQUIREMENT

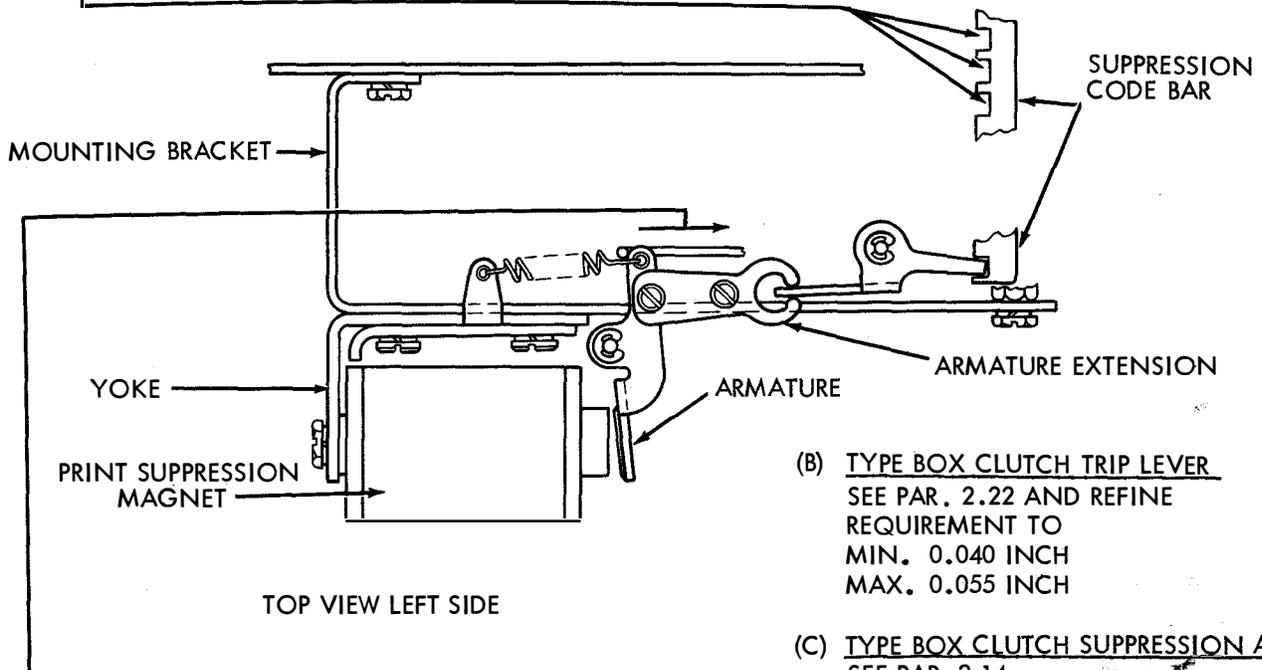
NOTCHES IN SUPPRESSION CODE BAR SHOULD ALIGN WITH NOTCHES IN OTHER CODE BARS. VIEW FROM REAR OF UNIT ABOVE STUNT BOX. GAGE BY EYE.

TO CHECK

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

TO ADJUST

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



(B) TYPE BOX CLUTCH TRIP LEVER
SEE PAR. 2.22 AND REFINE
REQUIREMENT TO
MIN. 0.040 INCH
MAX. 0.055 INCH

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

(E) PRINT SUPPRESSION MAGNET ARMATURE RETURN SPRING

REQUIREMENT

MIN. 7 OZS.

MAX. 10-1/2 OZS.

TO START MAGNET ARMATURE MOVING TOWARD CORE

TO CHECK

PRINT SUPPRESSION MAGNET UNOPERATED

(D) BLOCKING BAIL
SEE PAR. 3.14

NOTE: KEEP POLE FACE FREE
OF OIL AND GREASE.

SECTION 573-115-700

3.42 Letters - Figures Codebar Shift Magnet Mechanism

(A) SHIFT MAGNET YOKE

REQUIREMENT

CLEARANCE BETWEEN ARMATURE AND END OF HEELPIECE SHOULD BE
MIN. SOME --- MAX. 0.003 INCH

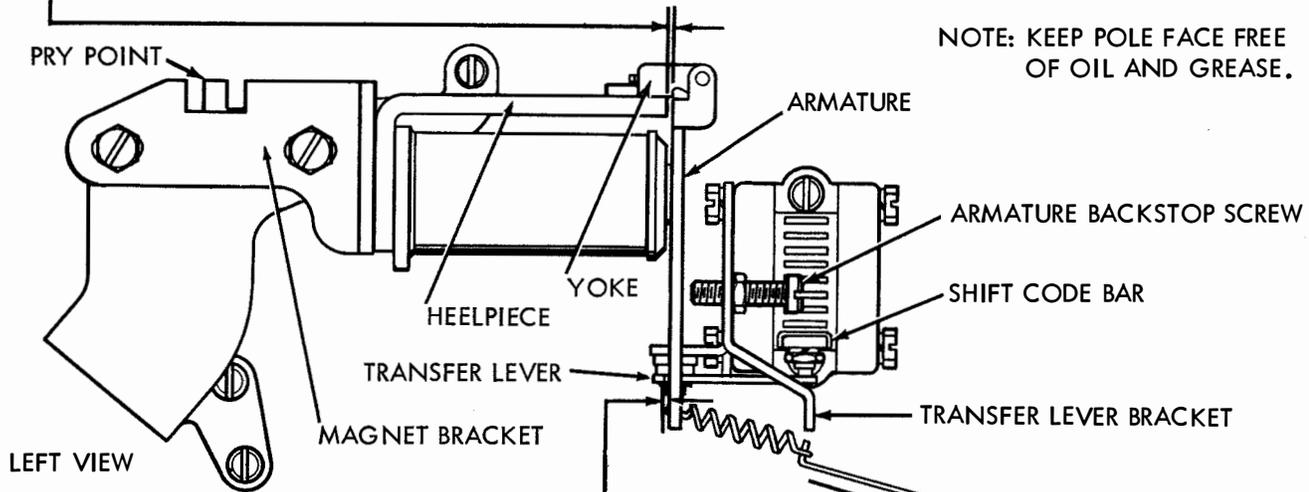
TO CHECK

MAGNET ARMATURE HELD AGAINST CORE. CHECK CLEARANCE ACROSS END OF HEELPIECE

TO ADJUST

POSITION YOKE WITH ITS CLAMP SCREW LOOSENED.

NOTE: KEEP POLE FACE FREE
OF OIL AND GREASE.



(B) SHIFT MAGNET ARMATURE

REQUIREMENT

1. CLEARANCE BETWEEN ARMATURE AND
TRANSFER LEVER SHOULD BE
MIN. SOME --- MAX. 0.005 INCH

TO CHECK

MAGNET ARMATURE ATTRACTED. SHIFT
CODE BAR IN FULL MARKING POSITION.

TO ADJUST

POSITION MAGNET FORWARD OR BACK-
WARD WITH BRACKET MOUNTING SCREWS
LOOSENED.

2. CLEARANCE BETWEEN ARMATURE AND
TRANSFER LEVER SHOULD BE
MIN. SOME --- MAX. 0.010 INCH

TO CHECK

MAGNET ARMATURE UNOPERATED. SHIFT
CODE BAR IN FULL SPACING POSITION.

TO ADJUST

POSITION ARMATURE BACKSTOP SCREW
WITH LOCK NUT LOOSENED.

(C) SHIFT MAGNET ARMATURE RETURN SPRING
REQUIREMENT

MIN. 1 OZ. --- MAX. 3 OZS.

TO PULL SPRING TO INSTALLED LENGTH

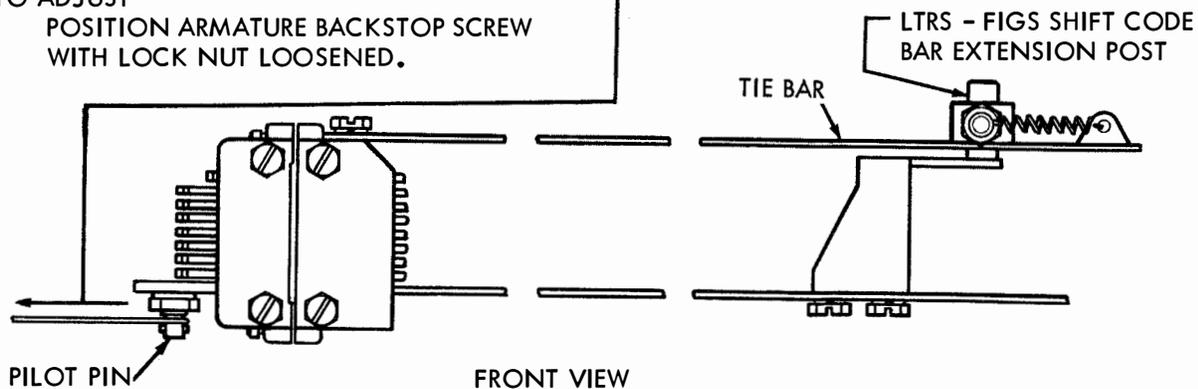
(D) SHIFT CODE BAR RETURN SPRING
REQUIREMENT

MIN. 3 OZS. --- MAX. 7 OZS.

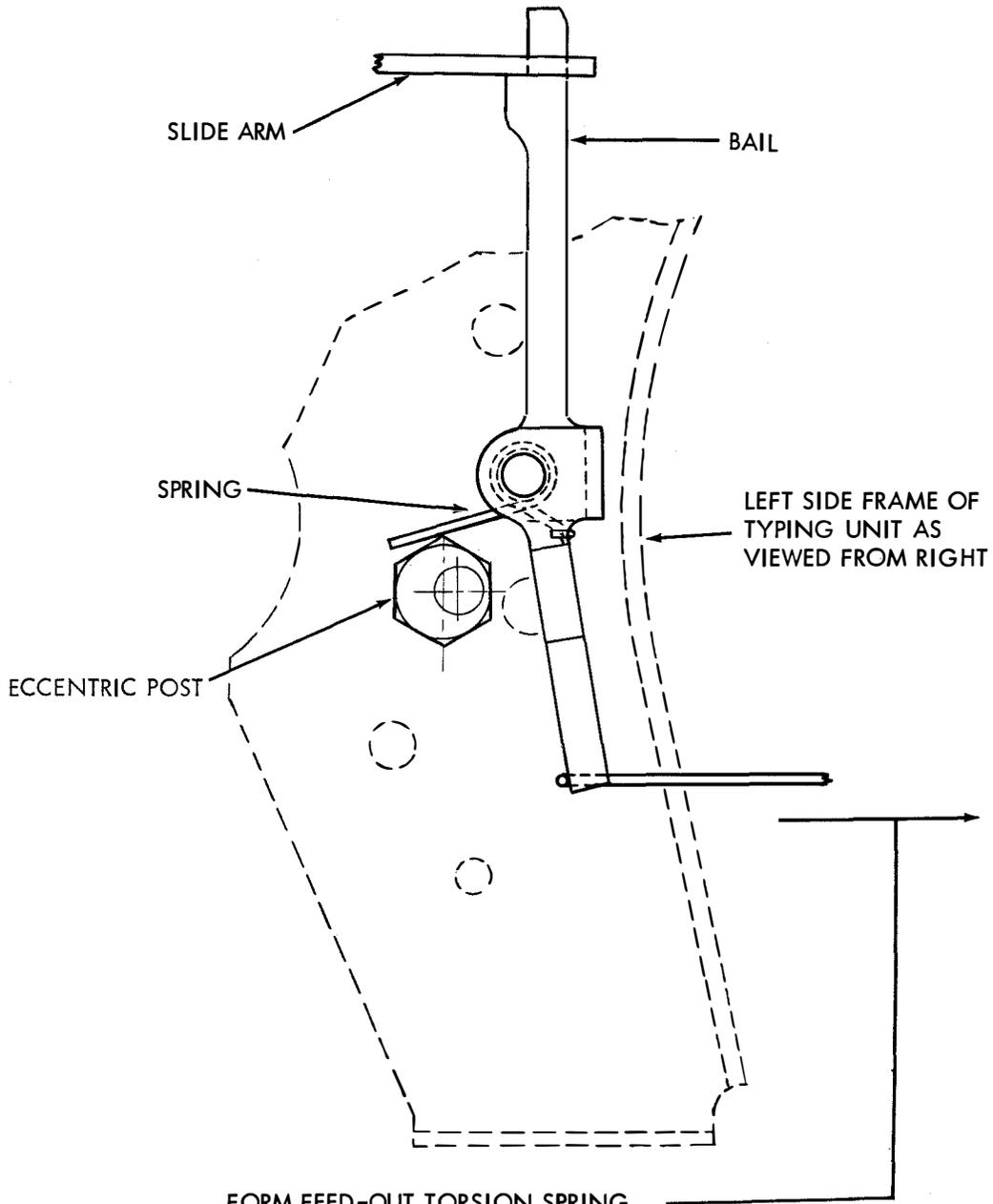
TO START CODE BAR MOVING

TO CHECK

TRIP TYPE BOX CLUTCH, ROTATE MAIN
SHAFT UNTIL PRINTING TRACK IS IN
LOWEST POSITION



3.43 Form Feed-Out Mechanism



**FORM FEED-OUT TORSION SPRING
REQUIREMENT ***

MIN. 1/8 OZ.

MAX. 1-1/4 OZ.

TO START BAIL MOVING TOWARDS REAR OF UNIT.
TO CHECK
DISENGAGE LINE FEED CLUTCH TRIP LEVER.

*RECEIVE ONLY UNITS

MIN 2 OZS

MAX 6 OZS

SECTION 573-115-700

3.44 Two Color Ribbon Mechanism

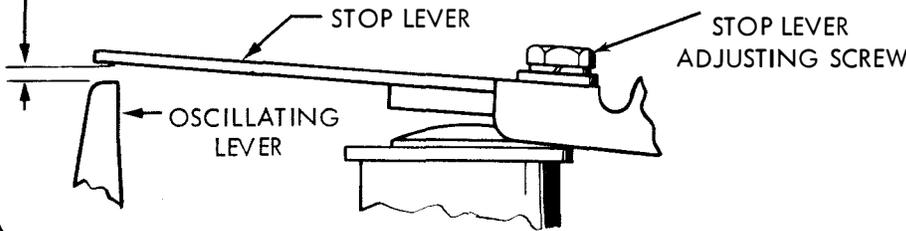
SEE NOTES 1 THROUGH 5 ON FOLLOWING PAGE

(A) RIBBON MAGNET HINGE BRACKET (LEFT AND RIGHT) (PRELIMINARY)
 REQUIREMENT --- MAGNET ENERGIZED OR IN ATTRACTED POSITION, ARMATURE ON POLE PIECE.
 CLEARANCE BETWEEN ARMATURE AND POLE PIECE SHOULD BE NOT MORE THAN .005 INCH.
 TO ADJUST --- POSITION HINGE BRACKET WITH MOUNTING SCREWS LOOSENED.

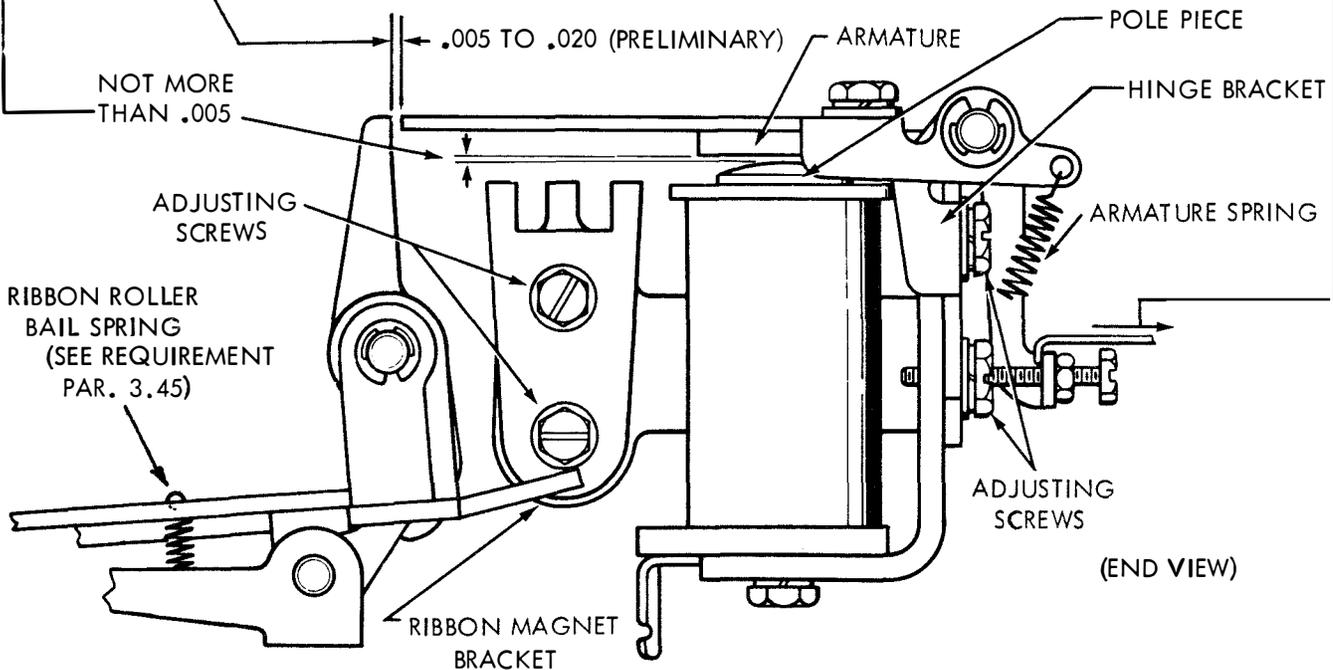
(B) RIBBON MAGNET BRACKET (LEFT AND RIGHT) (PRELIMINARY)
 REQUIREMENT --- ADJUSTING SCREW IN LOWEST POSITION, ALL CLUTCHES DISENGAGED,
 POSITION RIBBON MAGNET BRACKET AS FOLLOWS:
 1. HOLD MAGNET ARMATURE STOP LEVER AGAINST MAGNET CORE, LEVER SHOULD BE PARALLEL
 TO OSCILLATING LEVER TOP SURFACE AND ENGAGE THE OSCILLATING LEVER BY AT LEAST
 1/2 OF THE STOP LEVER THICKNESS. GAUGE BY EYE.
 2. STOP LEVER HELD AGAINST MAGNET CORE. CLEARANCE BETWEEN STOP LEVER AND
 OSCILLATING LEVER SHOULD BE: MIN. 0.005 INCH --- MAX. 0.020 INCH WITH PLAY
 TAKEN UP TOWARD FRONT OF UNIT.

TO ADJUST --- LOOSEN AND POSITION RIBBON MAGNET BRACKET TO MEET ABOVE REQUIREMENTS.

(C) RIBBON MAGNET HINGE BRACKET (LEFT AND RIGHT) (FINAL)
 REQUIREMENT --- MAGNET DE-ENERGIZED OR IN RELEASED POSITION, ROTATE MAIN SHAFT UNTIL
 OSCILLATING LEVER IS FULLY UNDER STOP LEVER. CLEARANCE BETWEEN OSCILLATING LEVER
 AND STOP LEVER SHOULD BE: MIN. 0.020 INCH --- MAX. 0.040 INCH.
 TO ADJUST --- POSITION STOP LEVER ADJUSTING SCREW WITH LOCK NUT LOOSENED.



ARMATURE SPRING (LEFT AND RIGHT)
 REQUIREMENT --- MIN. 2-1/2 OZS. --- MAX. 3-1/2 OZS. ---
 TO SEAT ARMATURE AGAINST POLE PIECE.



3.45 Two Color Ribbon Mechanism

OPERATIONAL REQUIREMENT - RIBBON MAGNET BRACKET (FINAL) (SEE PRECEDING FIGURE)

PRINTER OPERATING AT 60, 75, OR 100 WPM, TEST BEING PRINTED.

REQUIREMENT

PRINTS RED WHEN RIBBON MAGNETS ARE ENERGIZED.

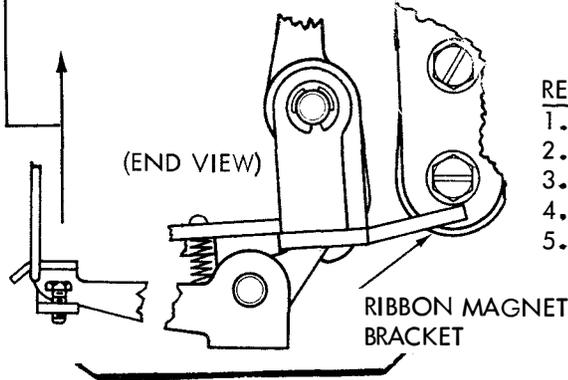
TO ADJUST

TURN LEFT AND RIGHT RIBBON BRACKET ROLLER BAIL ADJUSTING SCREWS
1/2 TURN UP. REFINES RIBBON AND RIBBON HINGE BRACKET ADJUSTMENTS.
REPEAT ABOVE PROCEDURE IF BLACK IS PRINTED.

RIBBON ROLLER BAIL SPRING (LEFT AND RIGHT) (SEE PRECEDING FIGURE)

REQUIREMENT

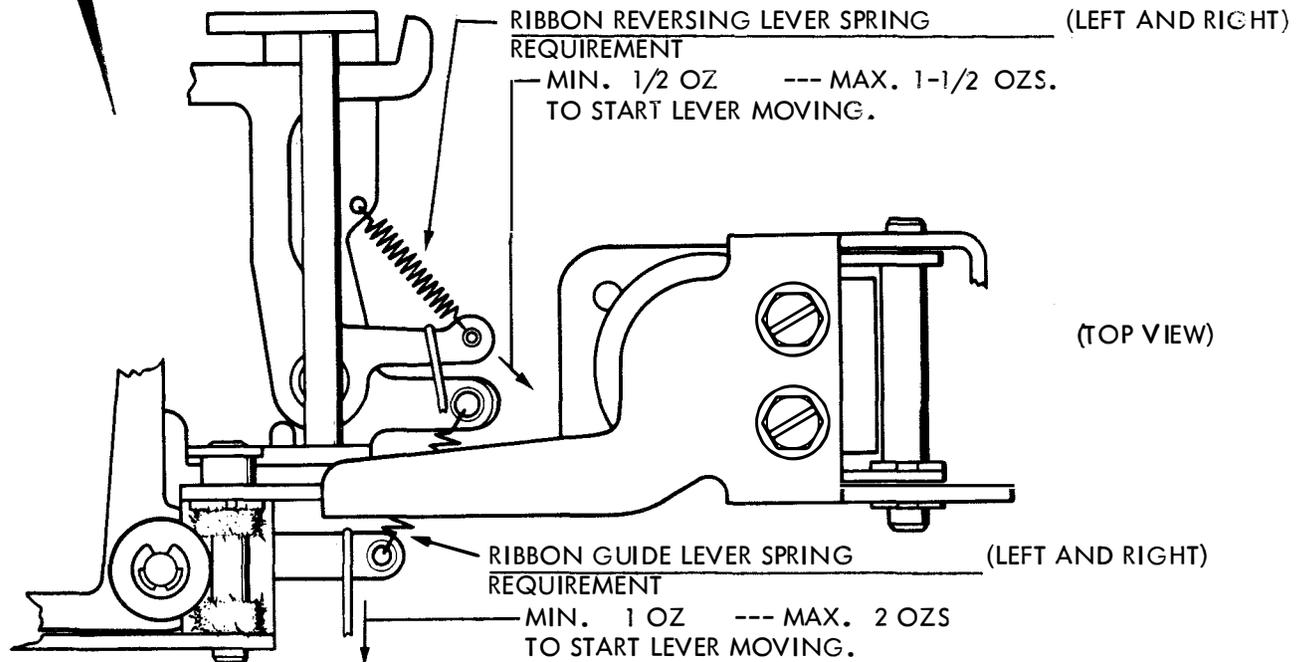
ALL CLUTCHES DISENGAGED, ADJUSTING SCREW IN LOWEST POSITION
MIN. 4 OZS. --- MAX. 6 OZS.
TO START LIFTER BAIL MOVING.



NOTES

REFER TO RELATED REQUIREMENTS

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



RIBBON REVERSING LEVER SPRING (LEFT AND RIGHT)

REQUIREMENT

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

RIBBON GUIDE LEVER SPRING (LEFT AND RIGHT)

REQUIREMENT

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

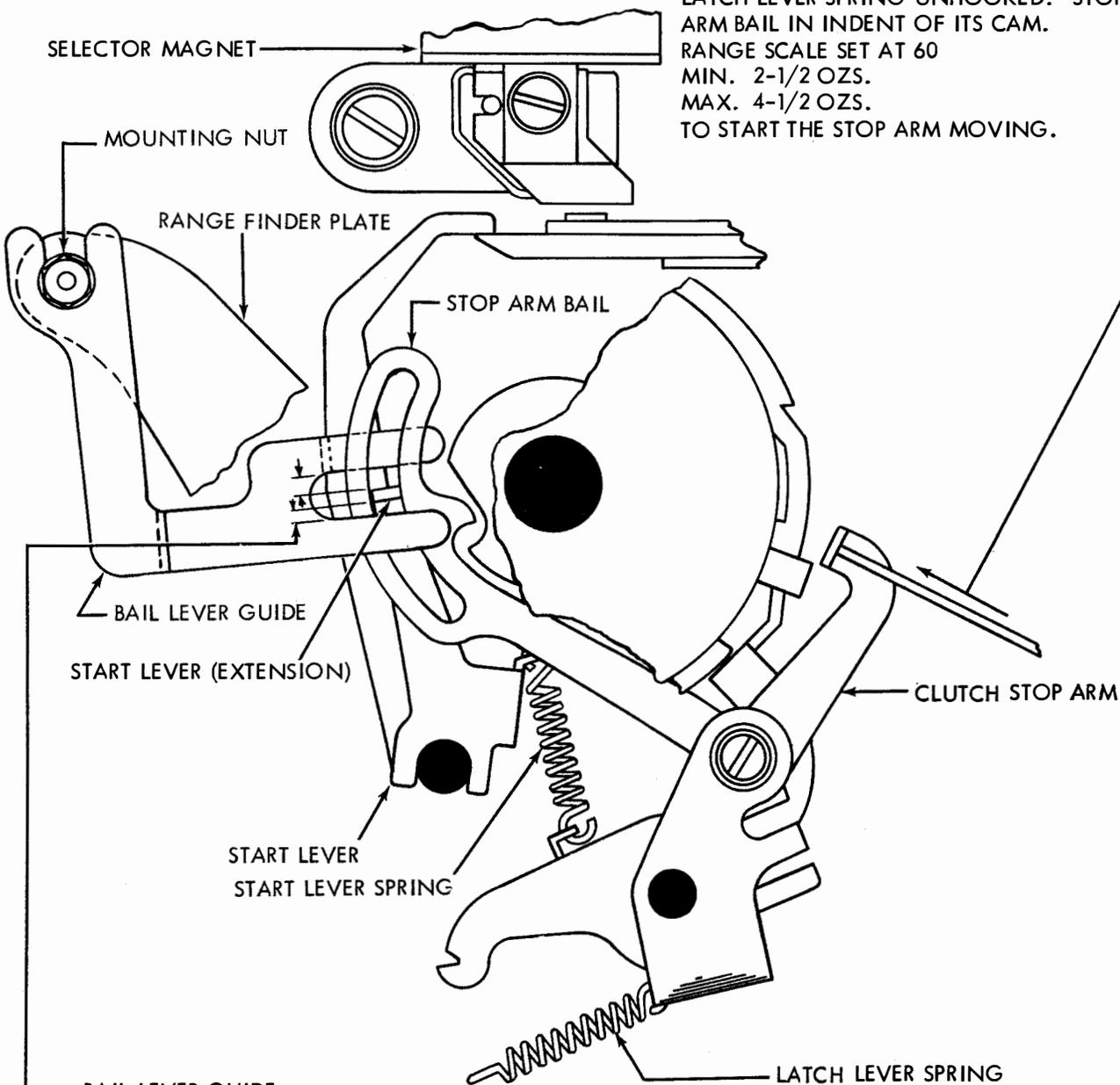
4. EARLIER DESIGN MECHANISMS
BASIC UNITS

4.01 SELECTOR MECHANISM

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

START LEVER SPRING
REQUIREMENT

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



BAIL LEVER GUIDE
REQUIREMENT

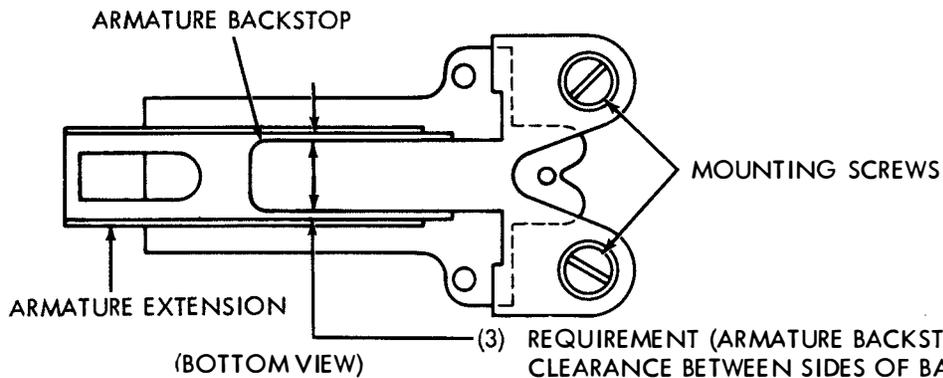
SOME CLEARANCE BETWEEN
EACH SIDE OF GUIDE FORK
AND EXTENSION OF START
LEVER THROUGHOUT ITS
TRAVEL.

TO ADJUST
POSITION BAIL LEVER GUIDE
WITH MOUNTING NUT LOOSENED.

(RIGHT SIDE VIEW)

4.02 Selector Mechanism

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



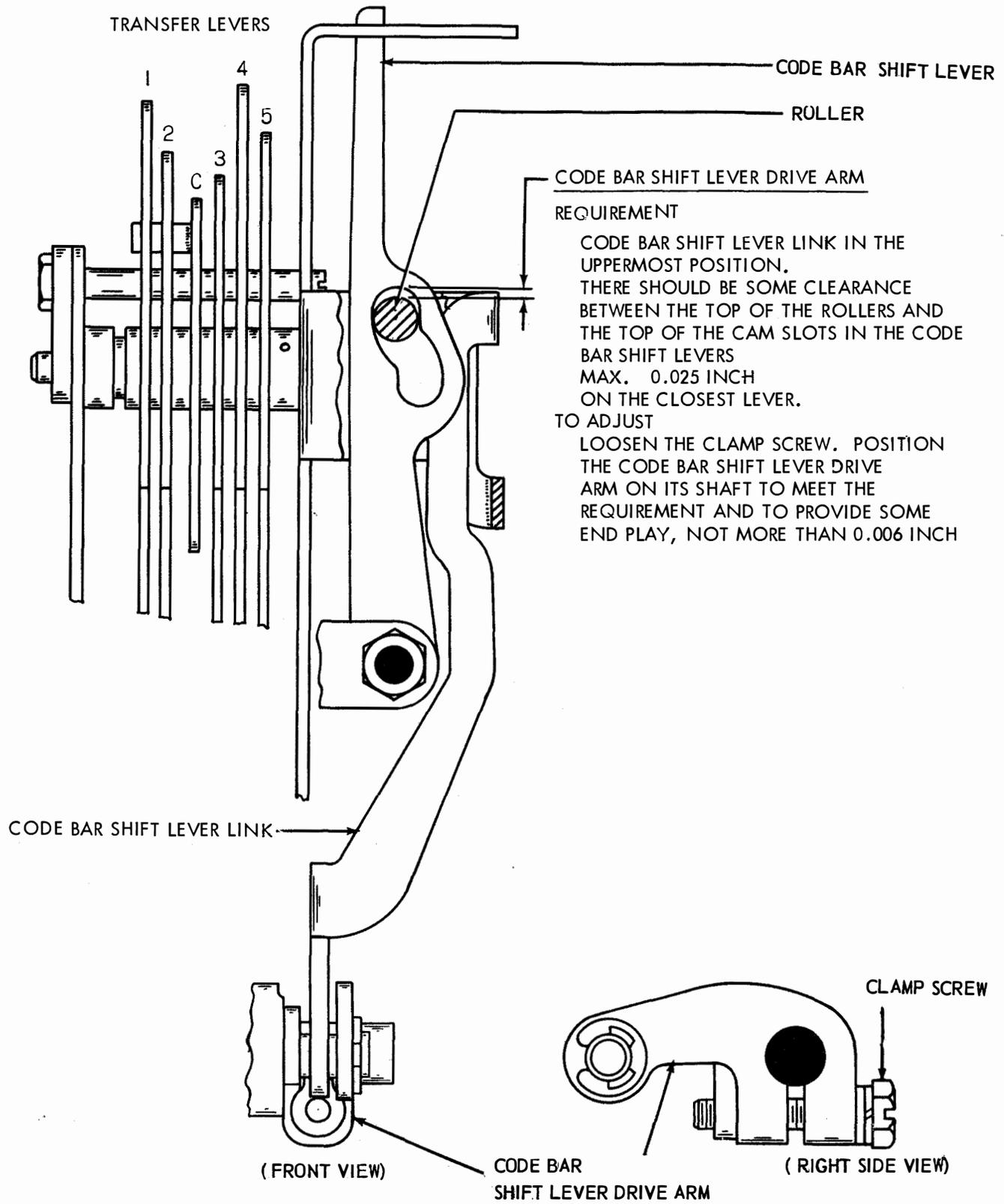
(3) REQUIREMENT (ARMATURE BACKSTOP ALIGNMENT)
 CLEARANCE BETWEEN SIDES OF BACKSTOP
 AND SIDES OF ARMATURE EXTENSION.
 MIN. 0.010 INCH

TO ADJUST

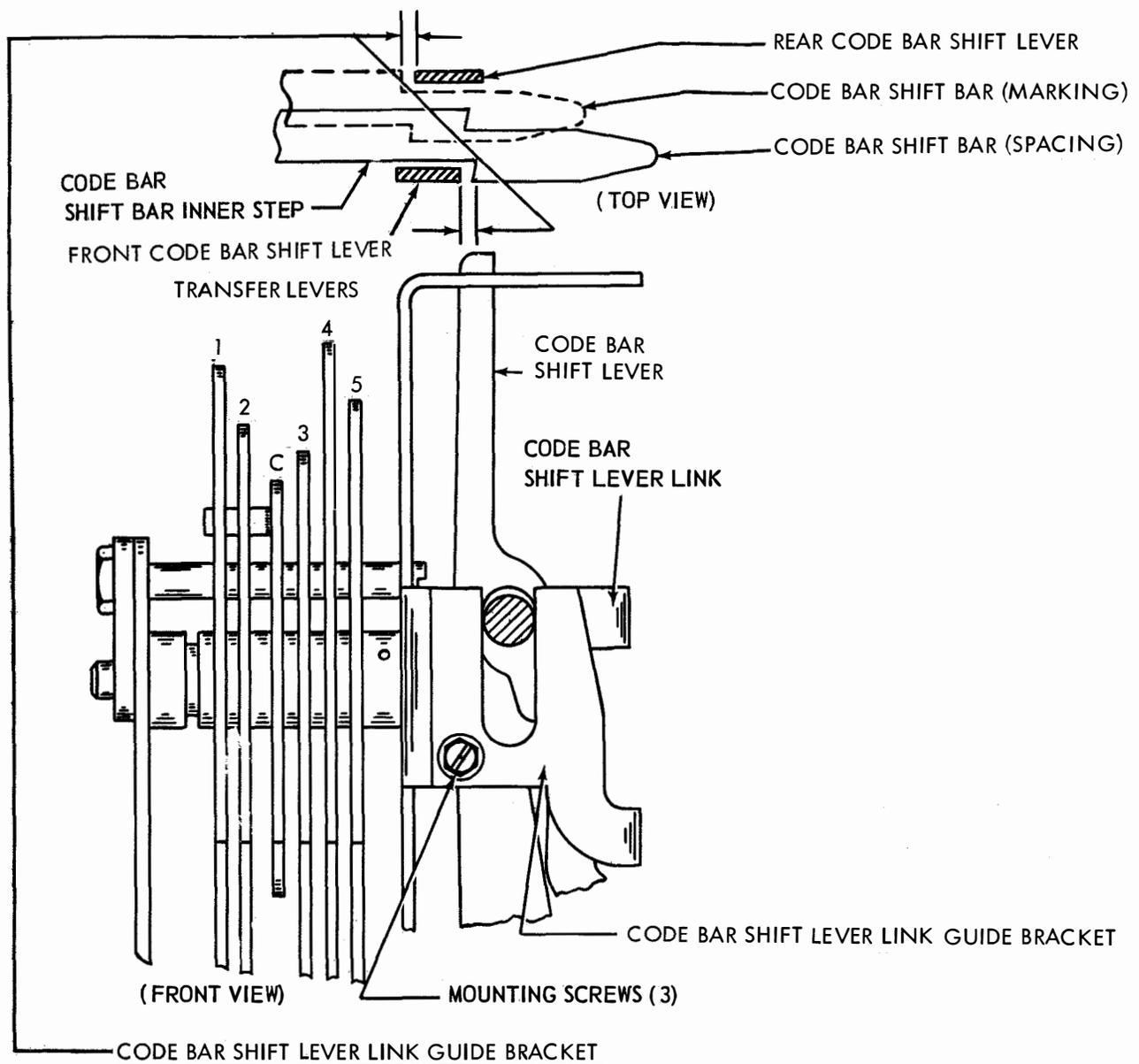
1. POSITION ARMATURE SPRING ADJUSTING NUT TO HOLD ARMATURE FIRMLY AGAINST PIVOT EDGE OF CASTING.
2. POSITION ARMATURE AND BACKSTOP WITH MOUNTING SCREWS LOOSENEED.

SECTION 573-115-700

4.03 Codebar Mechanism



4.04 Codebar Mechanism (Cont.)

**REQUIREMENT**

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

TO CHECK (FRONT)

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

MIN. 0.002 INCH---MAX. 0.025 INCH

TO CHECK (REAR)

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

MIN. 0.002 INCH---MAX. 0.025 INCH

TO ADJUST

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

SECTION 573-115-700

4.05 Main Shaft and Trip Shaft Mechanisms

(A) CLUTCH TRIP SHAFT SET COLLARS

(1) REQUIREMENT

SPACING CLUTCH LATCH LEVER SHOULD HAVE SIDE PLAY
MIN. SOME
MAX. 0.008 INCH
TO ADJUST
POSITION SPACING CLUTCH LATCH
LEVER SET COLLAR.

SPACING CLUTCH LATCH
LEVER SET COLLAR

TRIP SHAFT

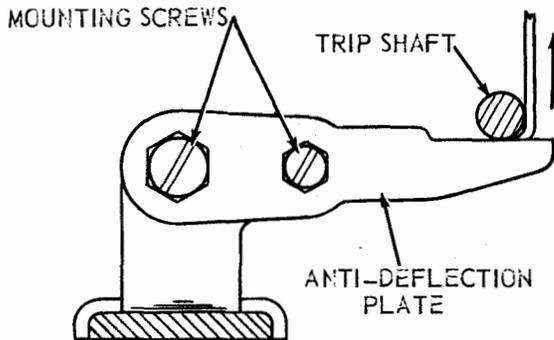
TRIP LEVER

LINE FEED CLUTCH
TRIP LEVER SET COLLAR

MAIN SHAFT

SHOE LEVER

SPACING CLUTCH



LINE FEED CLUTCH
(REAR VIEW)

LATCH LEVER

(2) REQUIREMENT

APPROXIMATE ALIGNMENT OF RIGHT
END OF STOP EXTENSIONS ON TRIP
LEVER AND SHOE LEVER
TO ADJUST
POSITION LINE FEED CLUTCH TRIP
LEVER SET COLLAR.

(3) REQUIREMENT

LINE FEED CLUTCH LATCH LEVER
SHOULD HAVE SIDE PLAY
MIN. SOME
MAX. 0.008 INCH
TO ADJUST
POSITION LINE FEED CLUTCH LATCH
LEVER SET COLLAR

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

(B) ANTI-DEFLECTION PLATE

REQUIREMENT

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

MIN. 1 LB. MAX. 5 LBS.

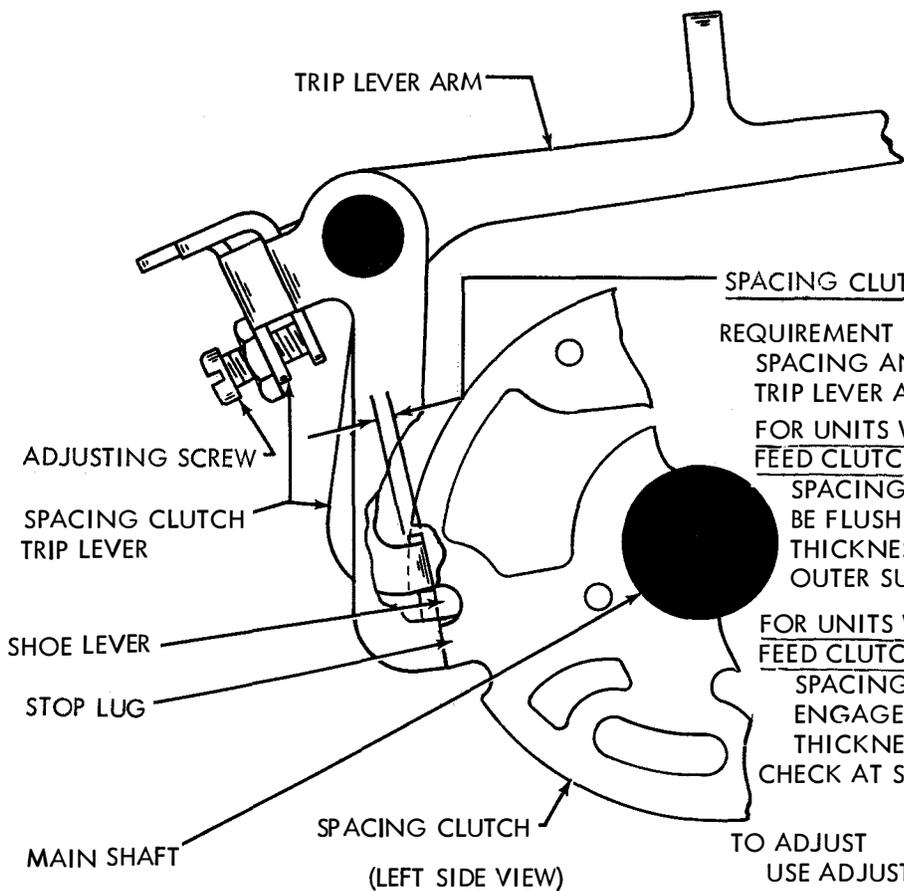
TO PULL TRIP SHAFT AWAY FROM ANTIDEFLECTION PLATE

TO ADJUST

POSITION PLATE WITH MOUNTING SCREWS LOOSENED.

(LEFT SIDE VIEW, UPSIDE DOWN)

4.06 Main Shaft and Trip Shaft Mechanisms (Cont.)



SPACING CLUTCH TRIP LEVER

REQUIREMENT

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

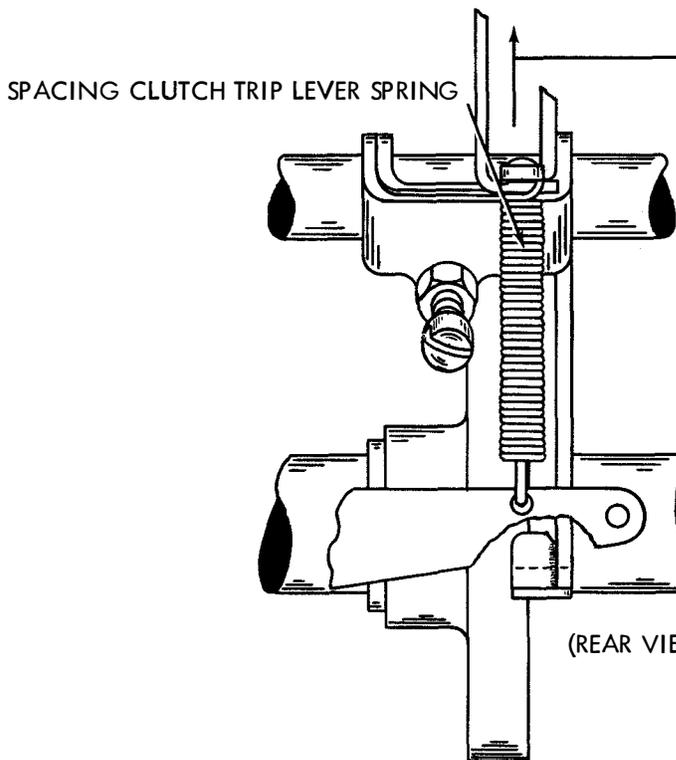
FOR UNITS WITHOUT U-SHAPED LINE
FEED CLUTCH TRIP LEVER:

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

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

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

TO ADJUST
USE ADJUSTING SCREW TO POSITION
SPACING CLUTCH TRIP ARM.



CLUTCH TRIP LEVER SPRING
REQUIREMENT

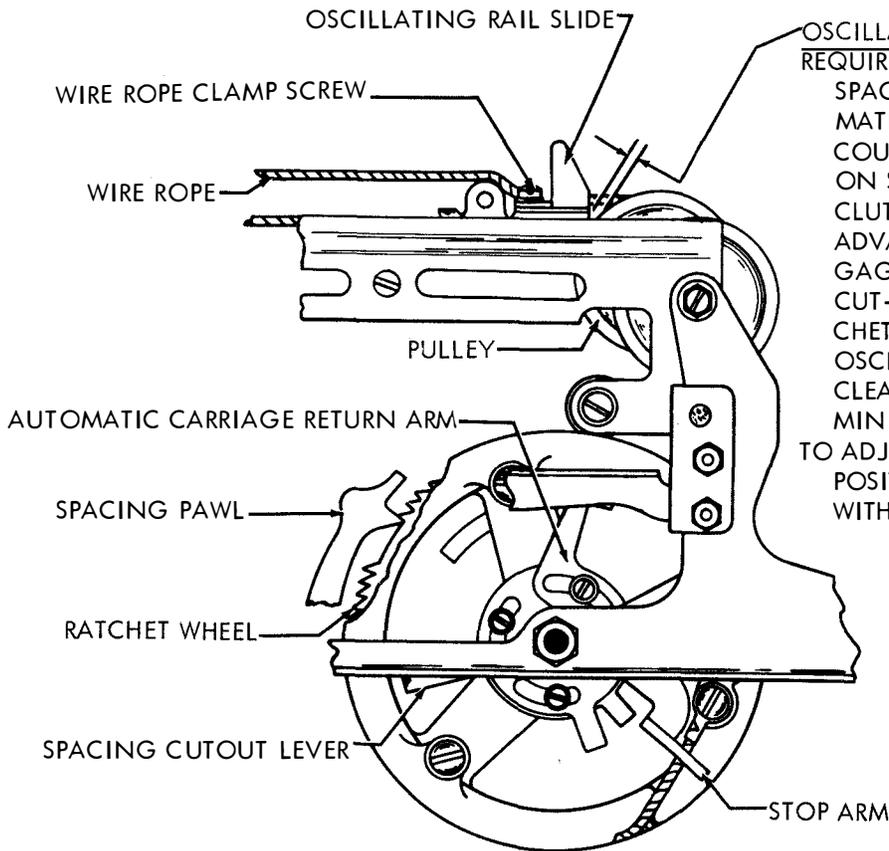
CLUTCH ENGAGED AND ROTATED UNTIL
TRIP LEVER RESTS ON STOP LUG.

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

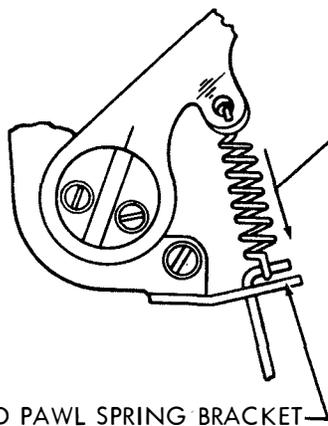
TO MOVE LEVER AWAY FROM
STOP LUG.

4.07 Spacing Mechanism

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



OSCILLATING RAIL SLIDE POSITION REQUIREMENT
 SPACING CUTOUT LEVER AND AUTOMATIC CR-LF ARM IN MAXIMUM COUNTERCLOCKWISE POSITION ON SPACING DRUM. SPACING CLUTCH DISENGAGED. FARTHEST ADVANCED SPACING PAWL ENGAGED WITH TOOTH JUST ABOVE CUT-AWAY SECTION IN RATCHET WHEEL. RIGHT END OF OSCILLATING RAIL SLIDE SHOULD CLEAR PULLEY.
 MIN. 0.025 INCH---MAX. 0.050 INCH
 TO ADJUST POSITION SLIDE ON WIRE ROPE WITH CLAMP SCREWS LOOSENED.



SPACING FEED PAWL SPRING REQUIREMENT
 EACH SPACING PAWL IN LEAST ADVANCED POSITION, RESTING AGAINST RACHET WHEEL. EACH SPRING UNHOOKED FROM BRACKET
 MIN. 2-1/2 OZS. ---MAX. 4 OZS.
 TO PULL SPRINGS TO INSTALLED LENGTH.

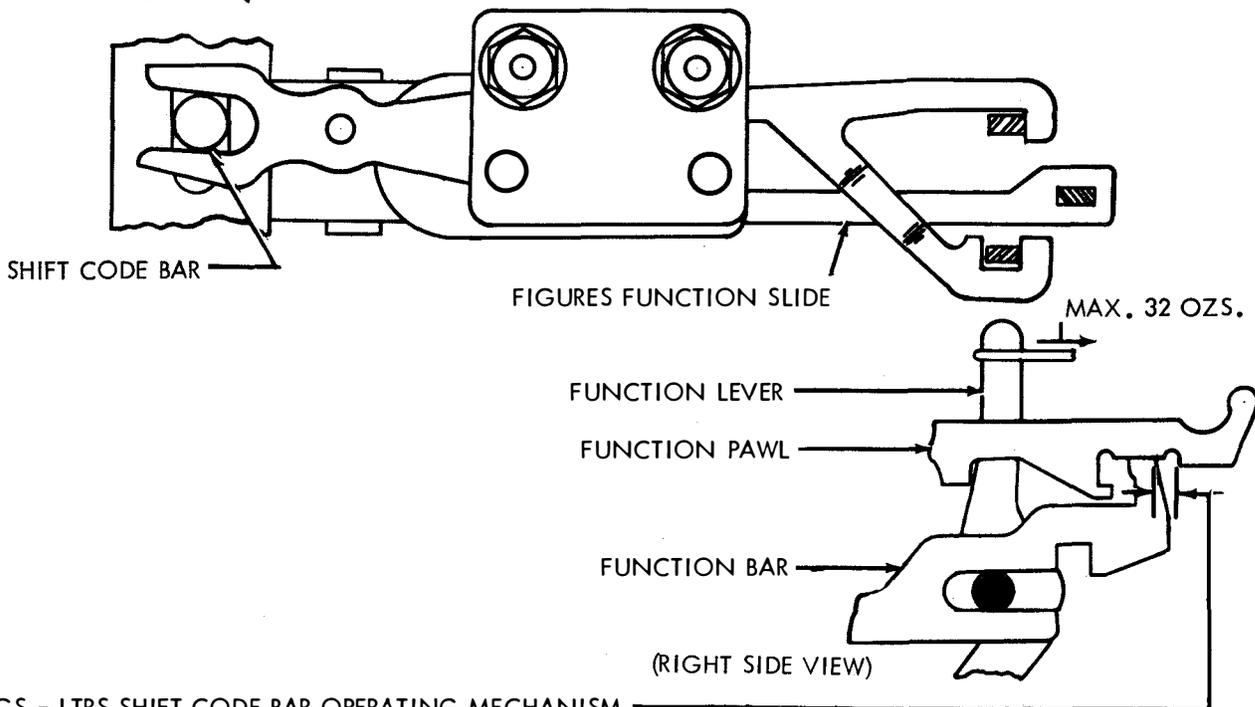
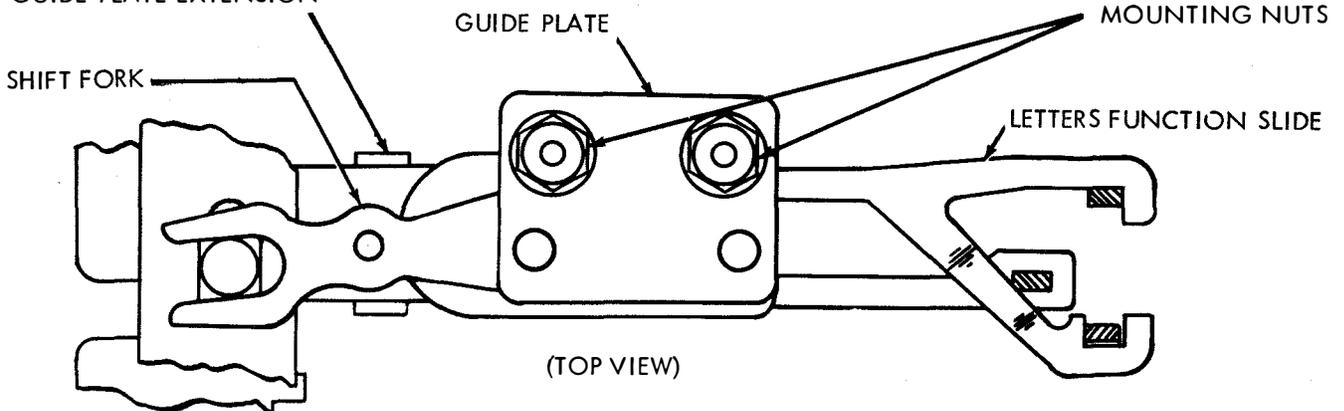
SPACING FEED PAWL SPRING BRACKET

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

4.08 Function Mechanism

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

GUIDE PLATE EXTENSION



FIGS - LTRS SHIFT CODE BAR OPERATING MECHANISM

REQUIREMENT: (FOR TWO STOP FUNCTION CLUTCH)

DISENGAGE FUNCTION CLUTCH AT POSITION GIVING LEAST CLEARANCE. ROTATE TYPE BOX CLUTCH 1/2 REVOLUTION. HOLD FIGURES FUNCTION LEVER IN REARWARD POSITION WITH TENSION OF 32 OZS. CLEARANCE BETWEEN THE FUNCTION PAWL SHOULDER AND FACE OF FUNCTION BAR
 MIN. 0.002 INCH
 MAX. 0.015 INCH

WHEN PLAY IN PAWL IS TAKEN FOR MAXIMUM CLEARANCE.

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

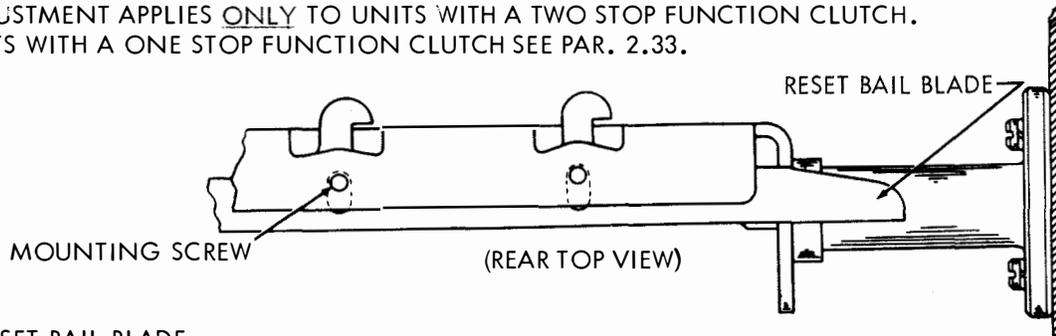
TO ADJUST

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

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

4.09 Function Mechanism (Cont.)

- NOTE: 1. THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH A TWO STOP FUNCTION CLUTCH.
 2. FOR UNITS WITH A ONE STOP FUNCTION CLUTCH SEE PAR. 2.33.



FUNCTION RESET BAIL BLADE

(1) REQUIREMENT

FUNCTION CLUTCH DISENGAGED AT STOP POSITION GIVING LEAST CLEARANCE. TYPE BOX CLUTCH DISENGAGED. ALL FUNCTION PAWLS UNLATCHED FROM THEIR FUNCTION BARS. FUNCTION BAR HELD IN MAXIMUM REARWARD POSITION. CLEARANCE BETWEEN FUNCTION BAR AND RESET BAIL BLADE

MIN. 0.018 INCH--MAX. 0.035 INCH

TO CHECK

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

TO ADJUST

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

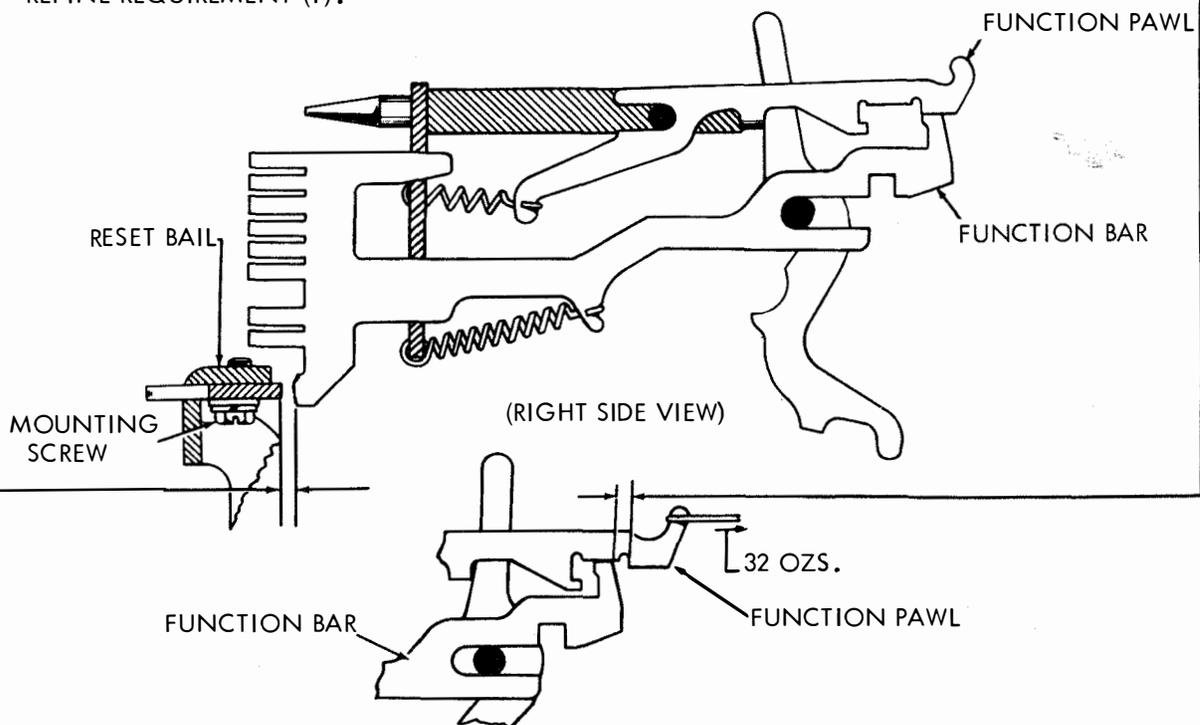
(2) REQUIREMENT

TYPE BOX CLUTCH ROTATED 1/2 REVOLUTION, FUNCTION LEVER HELD IN REARMOST POSITION WITH 2 LBS. MAXIMUM TENSION. LATCH ASSOCIATED PAWL ONLY ONE AT A TIME. WITH 32 OZS. TENSION APPLIED TO FUNCTION PAWL, IT SHOULD OVERTRAVEL ITS BAR

MIN. 0.002 INCH

TO ADJUST

REFINE REQUIREMENT (1).



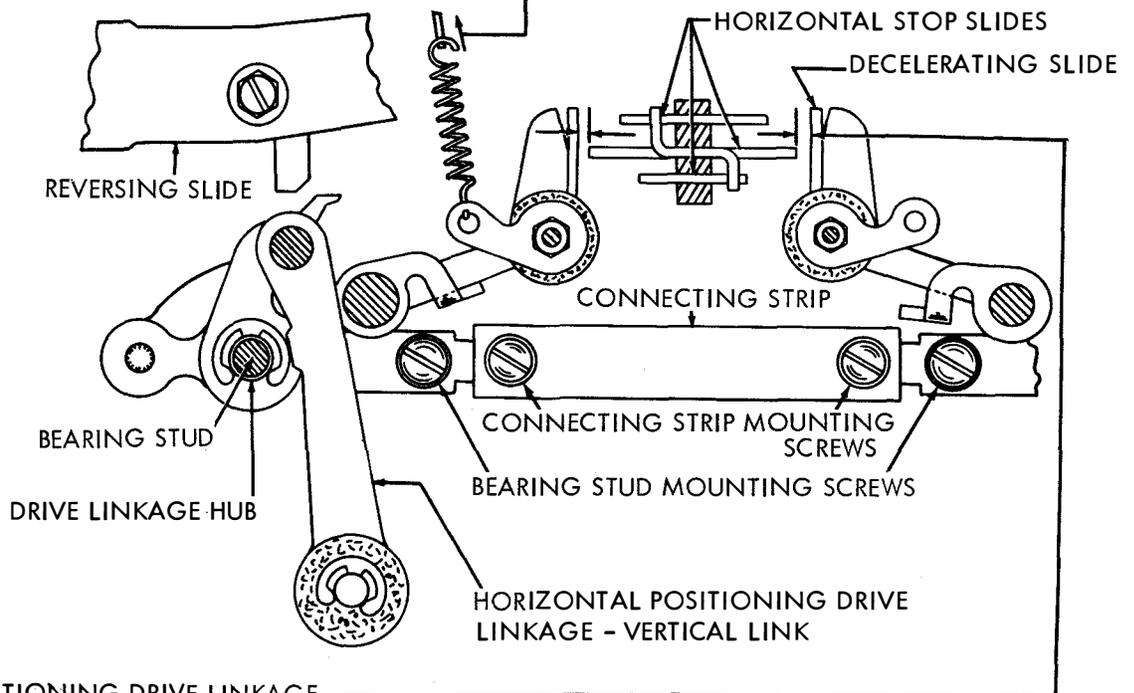
4.10 Positioning Mechanism

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

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

HORIZONTAL POSITIONING DRIVE LINKAGE SPRING REQUIREMENT

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



HORIZONTAL POSITIONING DRIVE LINKAGE REQUIREMENT

TYPE BOX CLUTCH DISENGAGED. CODE BARS 4 AND 5 TO SPACING (RIGHT).
CLEARANCE BETWEEN EACH SIDE OF CENTER HORIZONTAL STOP SLIDE AND DECELERATING SLIDES ON SIDE WHERE KNEE LINK IS STRAIGHT, SHOULD BE EQUAL (WITHIN 0.005 INCH)
MIN. 0.020 INCH ---MAX. 0.040 INCH

TO ADJUST

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

SECTION 573-115-700

4.11 Positioning Mechanism (Cont.)

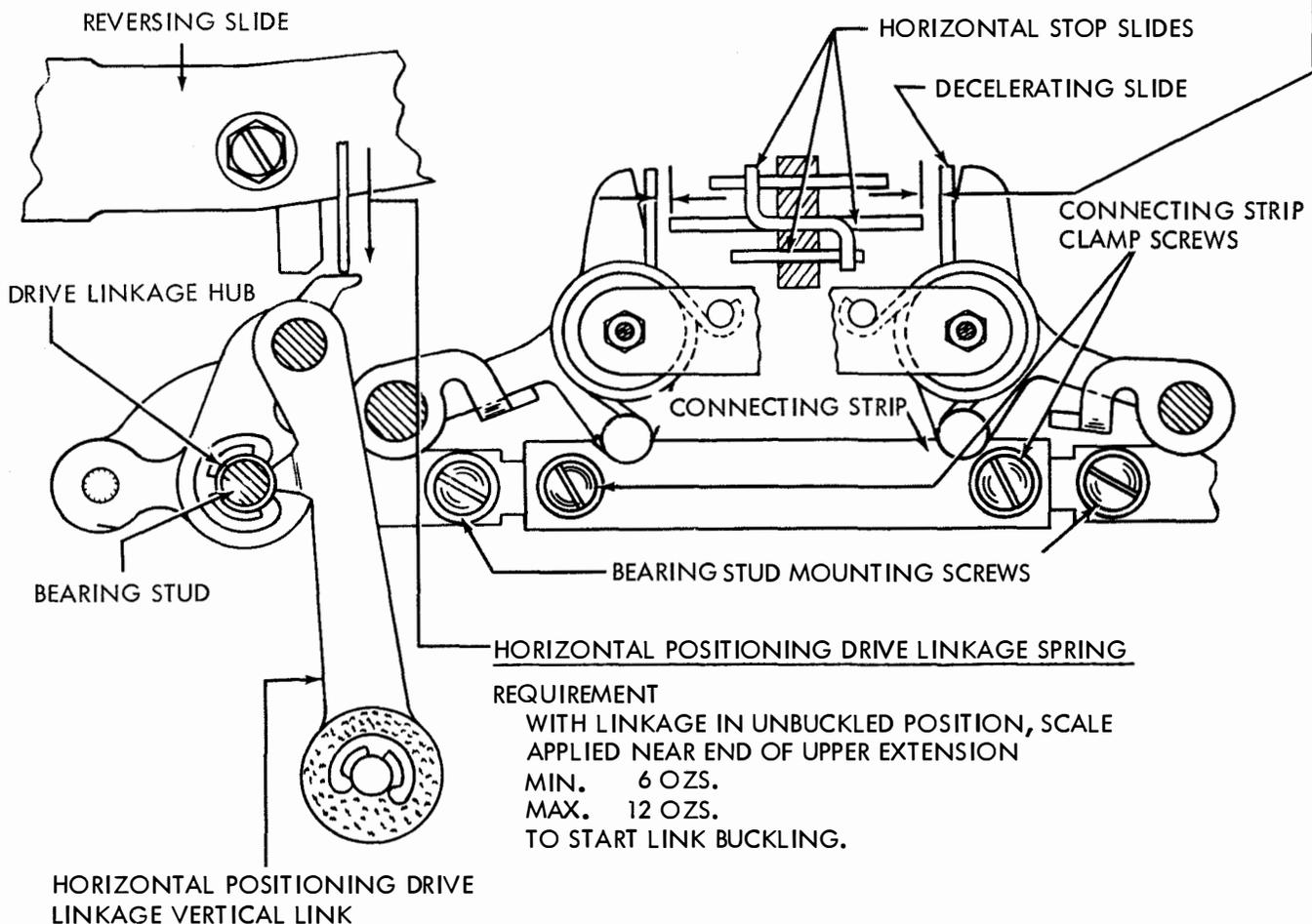
NOTE: THESE ADJUSTMENTS APPLY ONLY TO HORIZONTAL POSITIONING DRIVE MECHANISMS EQUIPPED WITH TORSION SPRINGS.

HORIZONTAL POSITIONING DRIVE LINKAGE
REQUIREMENT

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

TO ADJUST

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

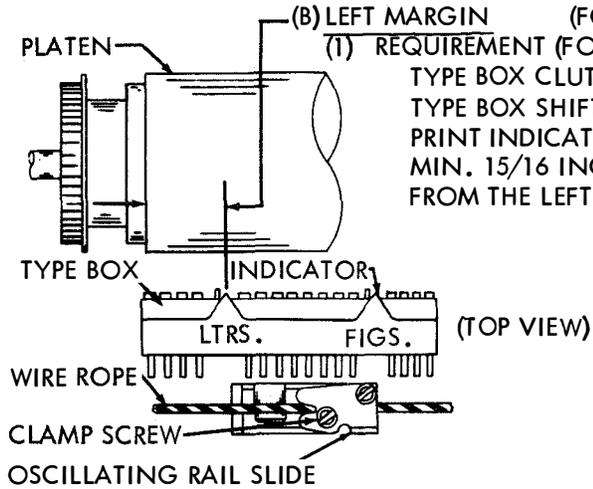


REQUIREMENT

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

4.12 Spacing Mechanism (Cont.)

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



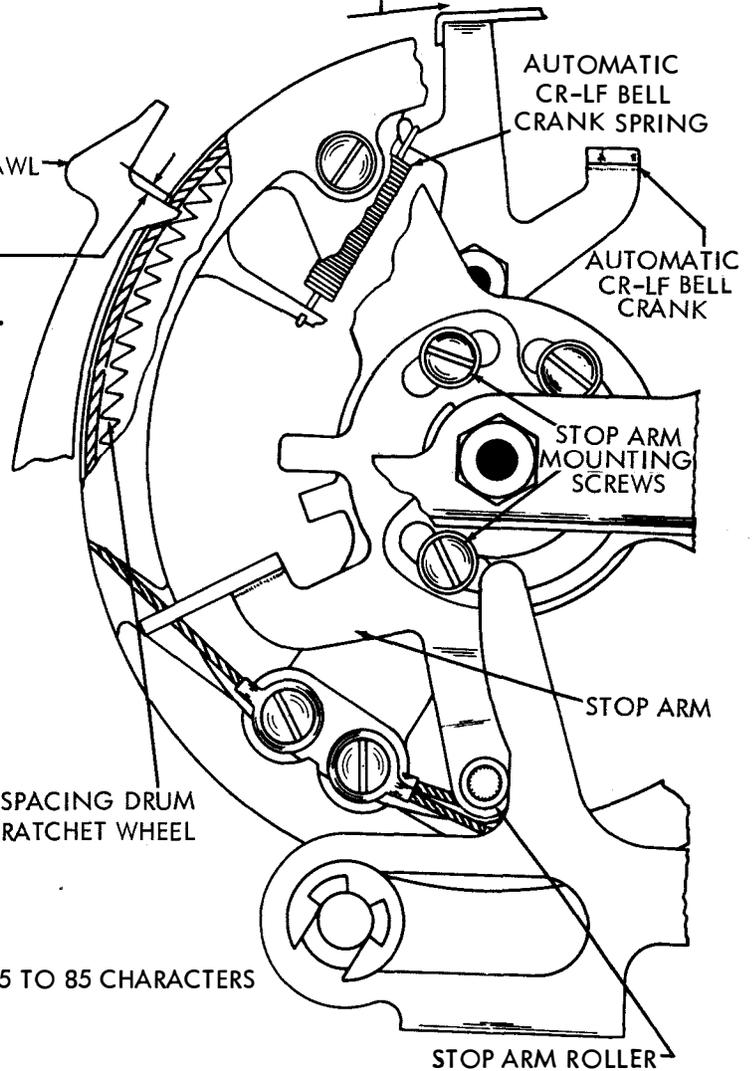
(C) AUTOMATIC CR-LF BELL CRANK SPRING REQUIREMENT
 FUNCTION CLUTCH DISENGAGED.
 MIN. 6-1/2 OZS.---MAX. 11 OZS.
 TO MOVE THE BELL CRANK.

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

(3) REQUIREMENT
 REAR PAWL, WHEN FARTHEST ADVANCED, SHOULD REST AT BOTTOM OF INDENTATION BETWEEN RATCHET WHEEL TEETH.
 TO ADJUST POSITION STOP ARM ON SPACING DRUM WITH MOUNTING SCREWS LOOSENED.

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

SPACING DRUM RATCHET WHEEL



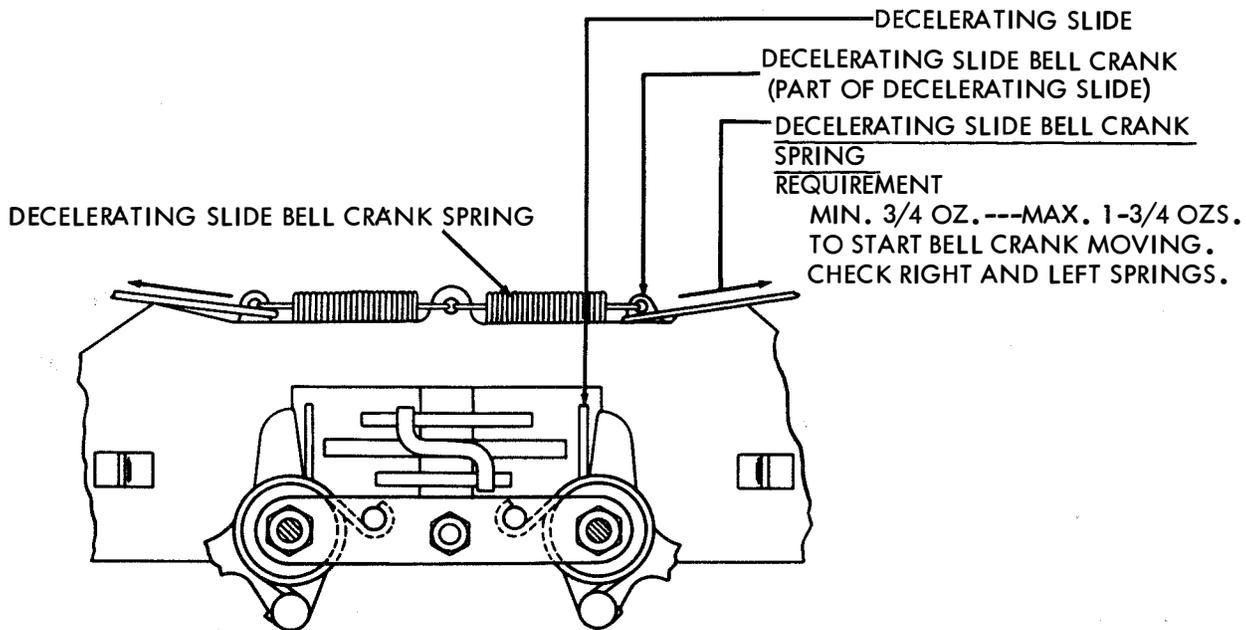
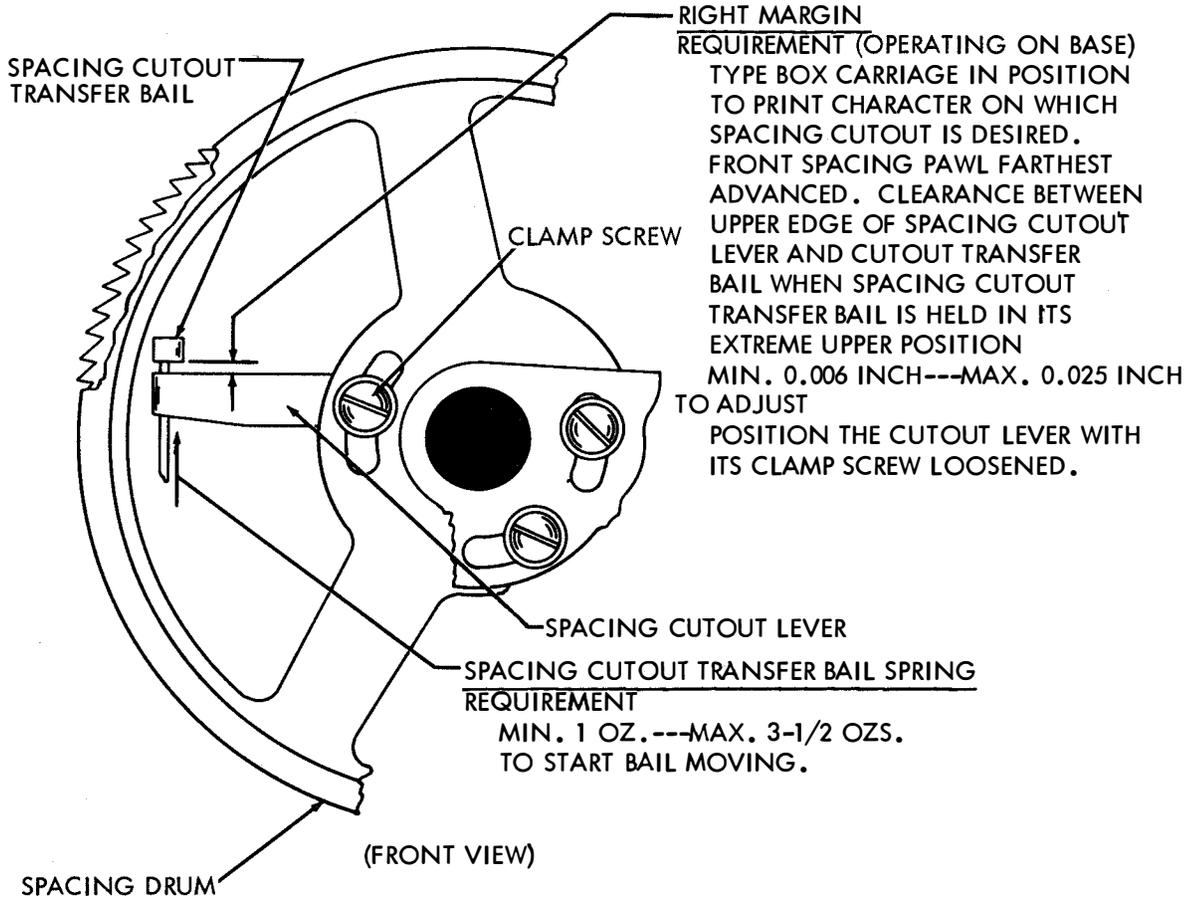
(FRONT VIEW)

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

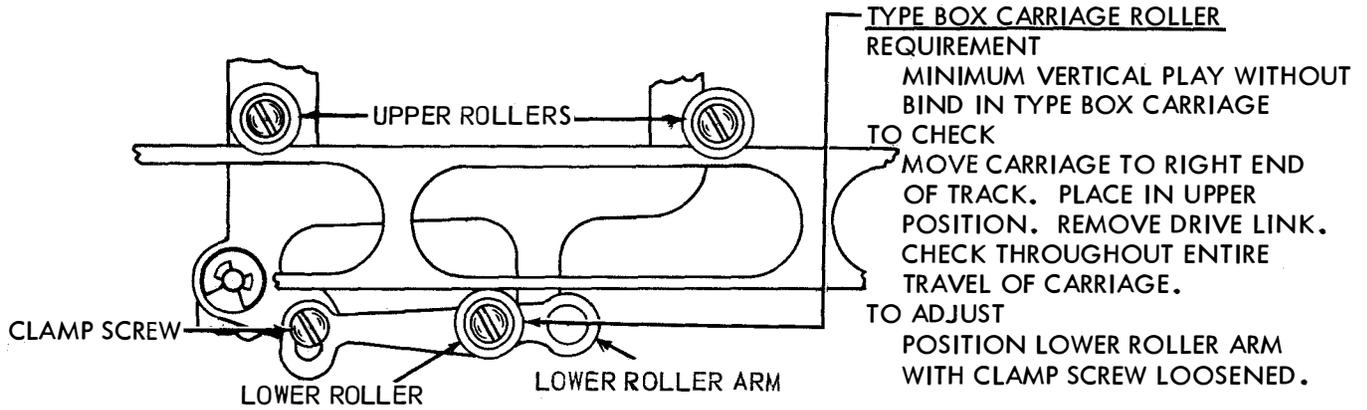
NOTE
 THIS VIEW SHOWS THE SPACING DRUM FULLY RETURNED.

4.13 Spacing Mechanism (Cont.)

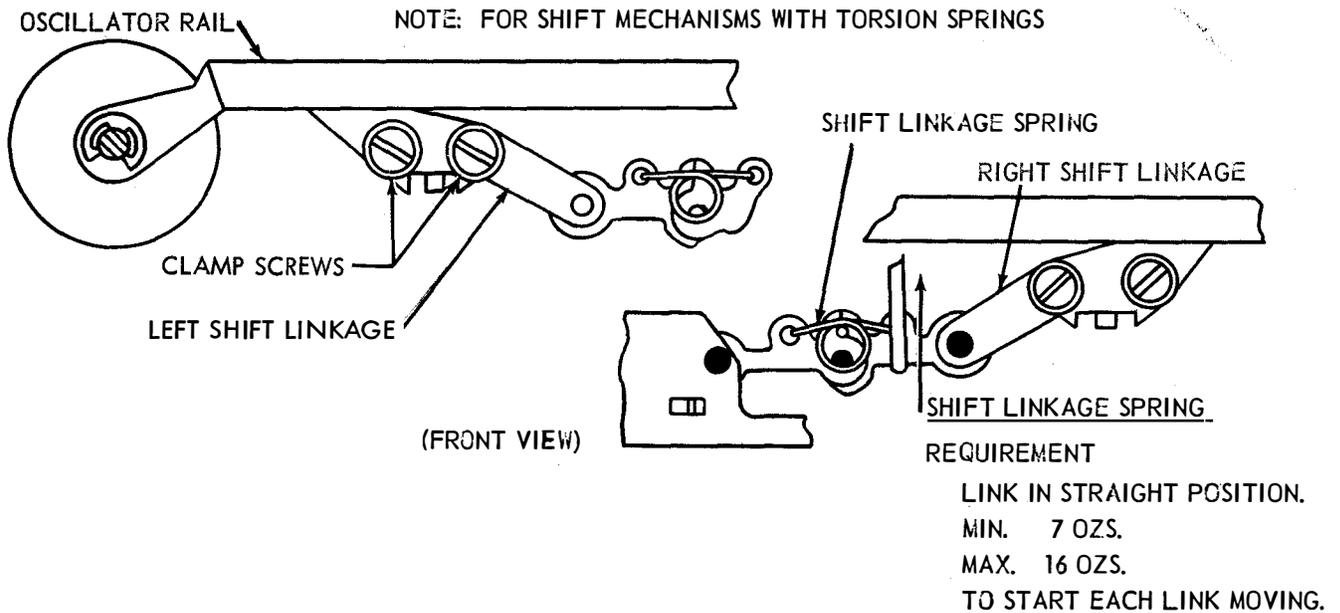
NOTE: CHECK RELATED ADJUSTMENTS, PARS. 4.07, 2.38 AND 2.47, IF THE FOLLOWING ADJUSTMENT ARE REMADE.



4.14 Printing Mechanism



4.15 Positioning Mechanism (Cont.)



SECTION 573-115-700

4.16 Printing Mechanism (Cont.)

(A) PRINTING HAMMER STOP BRACKET

(FOR THICK TYPE BOX WITH DUMMY PALLETS)

REQUIREMENT

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

FRICTION FEED

MIN. 0.008 INCH
MAX. 0.020 INCH

TO ADJUST

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

(FOR SPROCKET FEED UNITS, SEE PAR. 2.71)

(C) TYPE PALLET SPRING

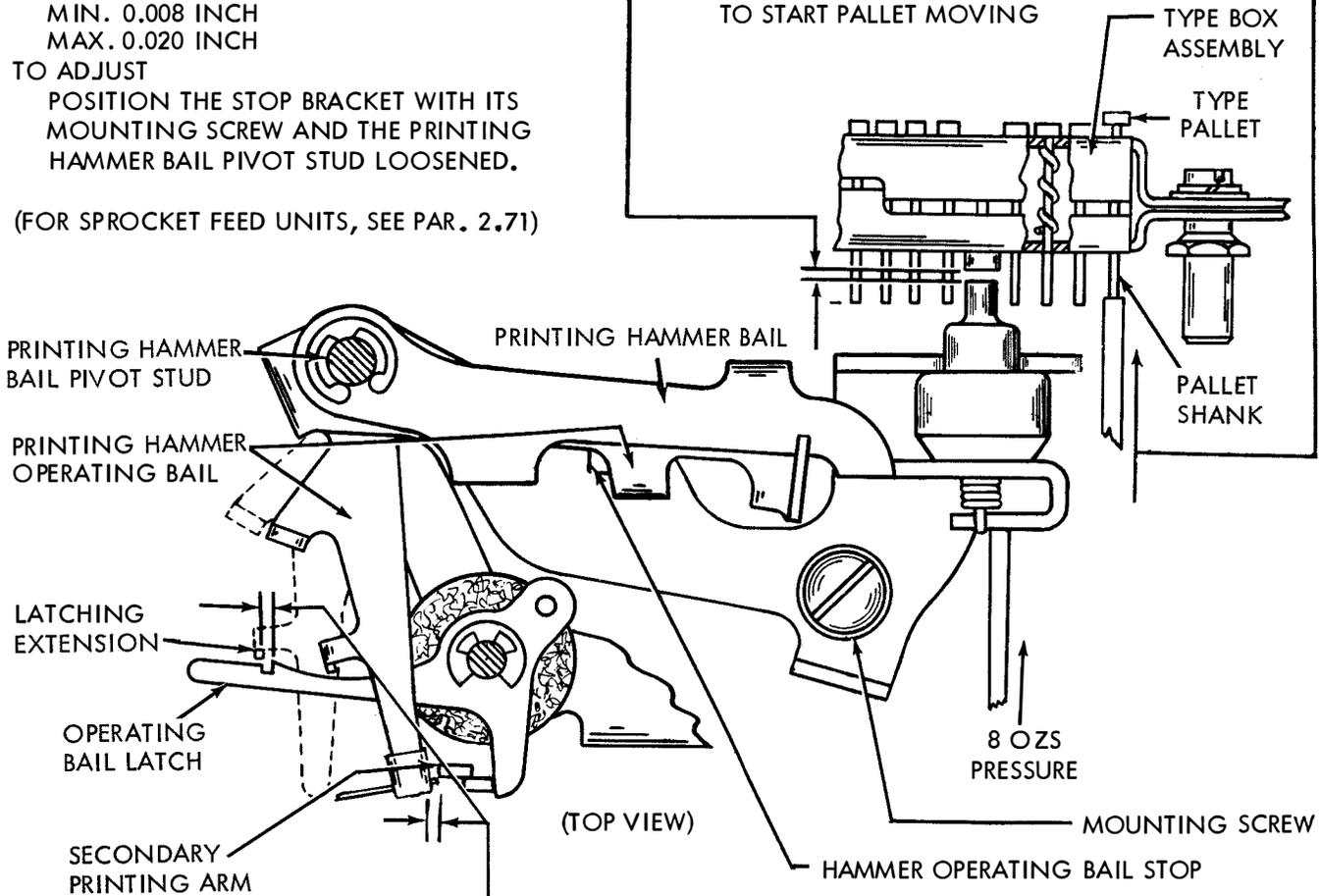
REQUIREMENT

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

MIN. 1/4 OZ.

MAX. 3/4 OZ.

TO START PALLET MOVING



(TOP VIEW)

(B) PRINTING ARM

(1) REQUIREMENT

PRINTING TRACK IN MAXIMUM DOWNWARD POSITION. PRINTING HAMMER OPERATING BAIL AGAINST ITS STOP. SOME CLEARANCE BETWEEN SECONDARY PRINTING ARM AND FORWARD EXTENSION OF HAMMER OPERATING BAIL. MAX. 0.015 INCH

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

(2) REQUIREMENT

PRINTING TRACK IN UPPERMOST POSITION. LATCHING EXTENSION OF PRINTING HAMMER OPERATING BAIL SHOULD OVERTRAVEL LATCHING SURFACE OF OPERATING BAIL LATCH BY MIN. 0.006 INCH

CHECK RIGHT AND LEFT POSITION

TO ADJUST

POSITION SECONDARY PRINTING ARM WITH CLAMP SCREWS LOOSENED.

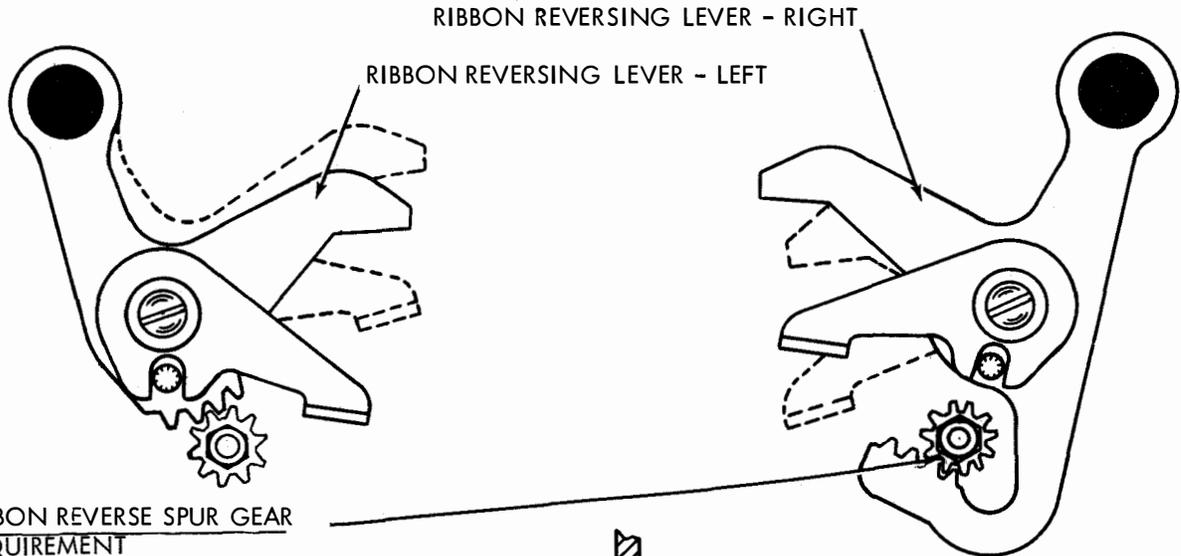
PRINTING ARM CLAMP SCREWS

NOTE

THE PRINTING ARM ADJUSTMENT SHOULD ALWAYS BE MADE WITH THE PRINTING HAMMER OPERATING BAIL SPRING BRACKET (PAR. 2:38) IN THE NO. 1 POSITION POSITIONS NO. 2 AND NO. 3 ARE TO BE USED ONLY FOR MAKING MULTIPLE COPIES.

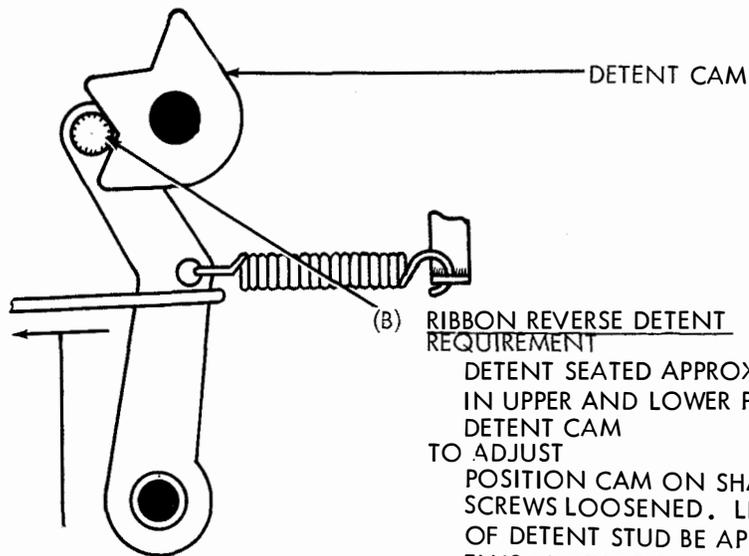
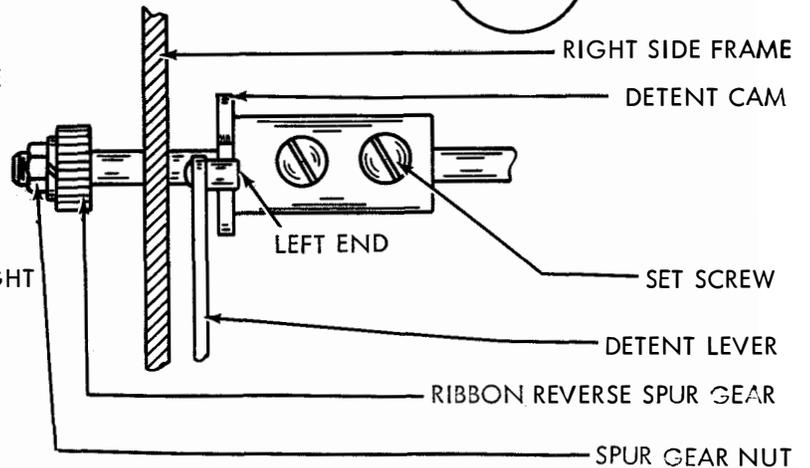
(FRONT VIEW)

4.17 Printing Mechanism (Cont.)



(A) RIBBON REVERSE SPUR GEAR REQUIREMENT

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



(B) RIBBON REVERSE DETENT LEVER SPRING REQUIREMENT

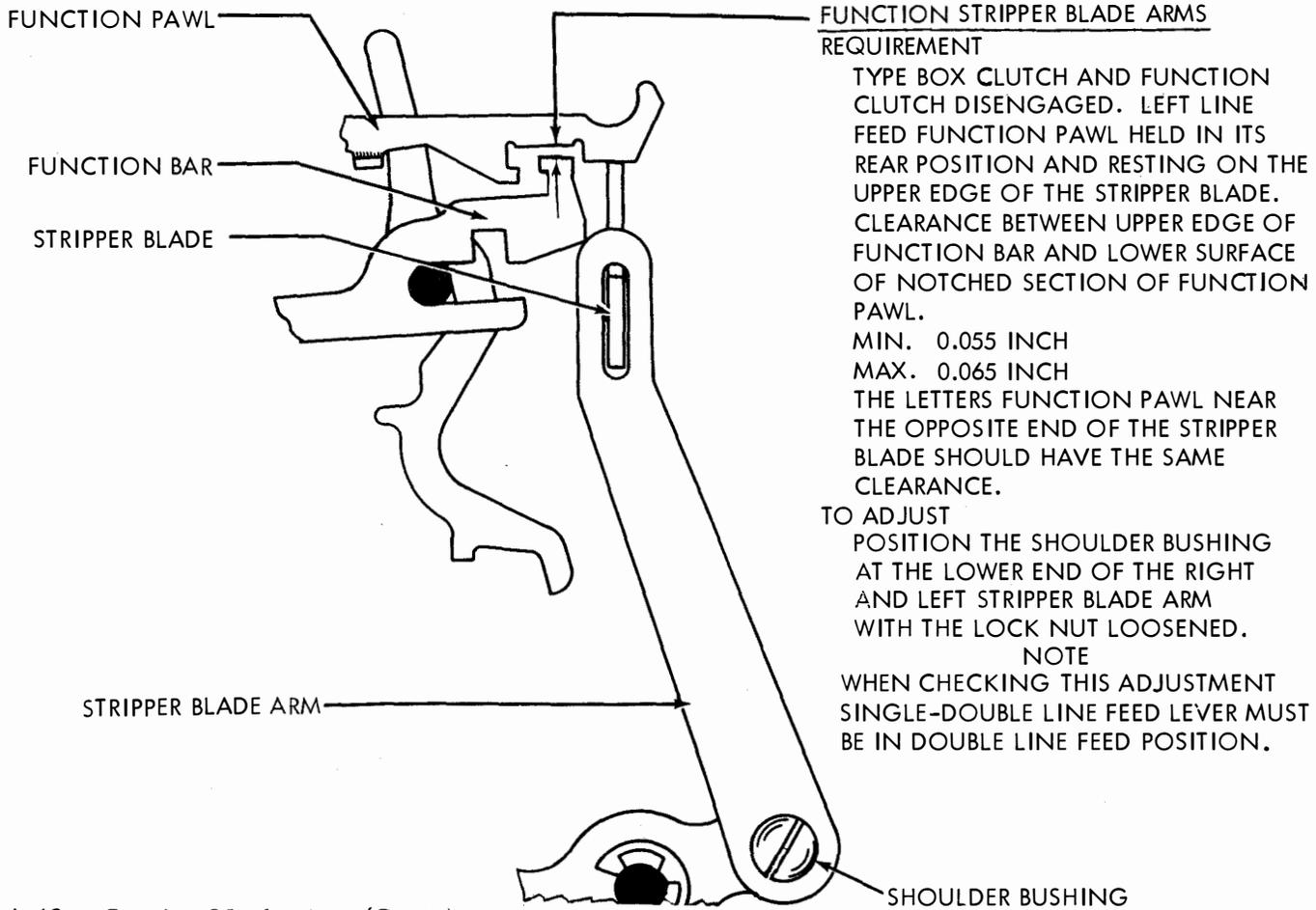
DETENT SEATED APPROXIMATELY EQUAL IN UPPER AND LOWER POSITIONS OF DETENT CAM
 TO ADJUST
 POSITION CAM ON SHAFT WITH SET SCREWS LOOSENED. LET LEFT END OF DETENT STUD BE APPROXIMATELY FLUSH WITH LEFT FACE OF CAM (PLAY IN DETENT TAKEN TO RIGHT OF PRINTER)

(C) RIBBON REVERSE DETENT LEVER SPRING REQUIREMENT

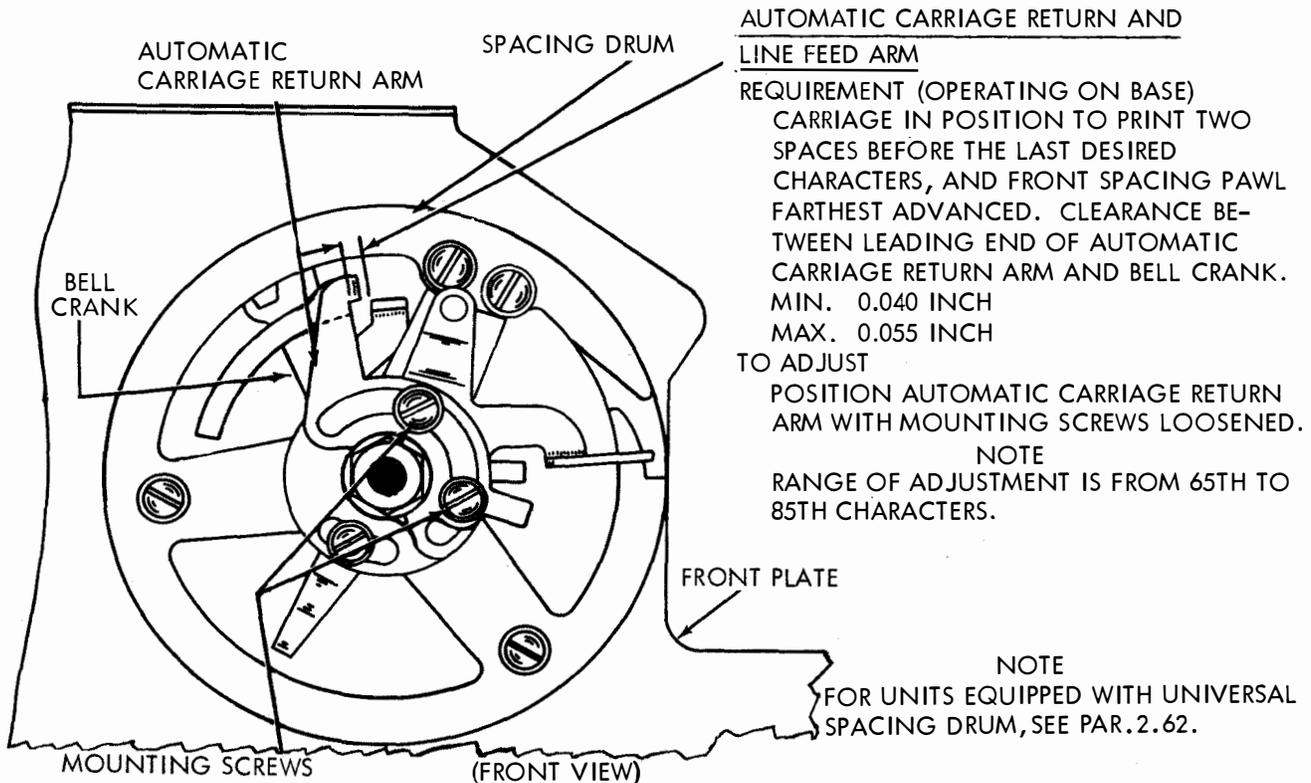
DETENT SEATED IN NOTCH OF CAM. RIGHT RIBBON REVERSING LEVER HELD DOWNWARD.
 MIN. 6-1/2 OZS. --- MAX. 9 OZS.
 TO START THE DETENT LEVER MOVING.

SECTION 573-115-700

4.18 Function Mechanism (Cont.)

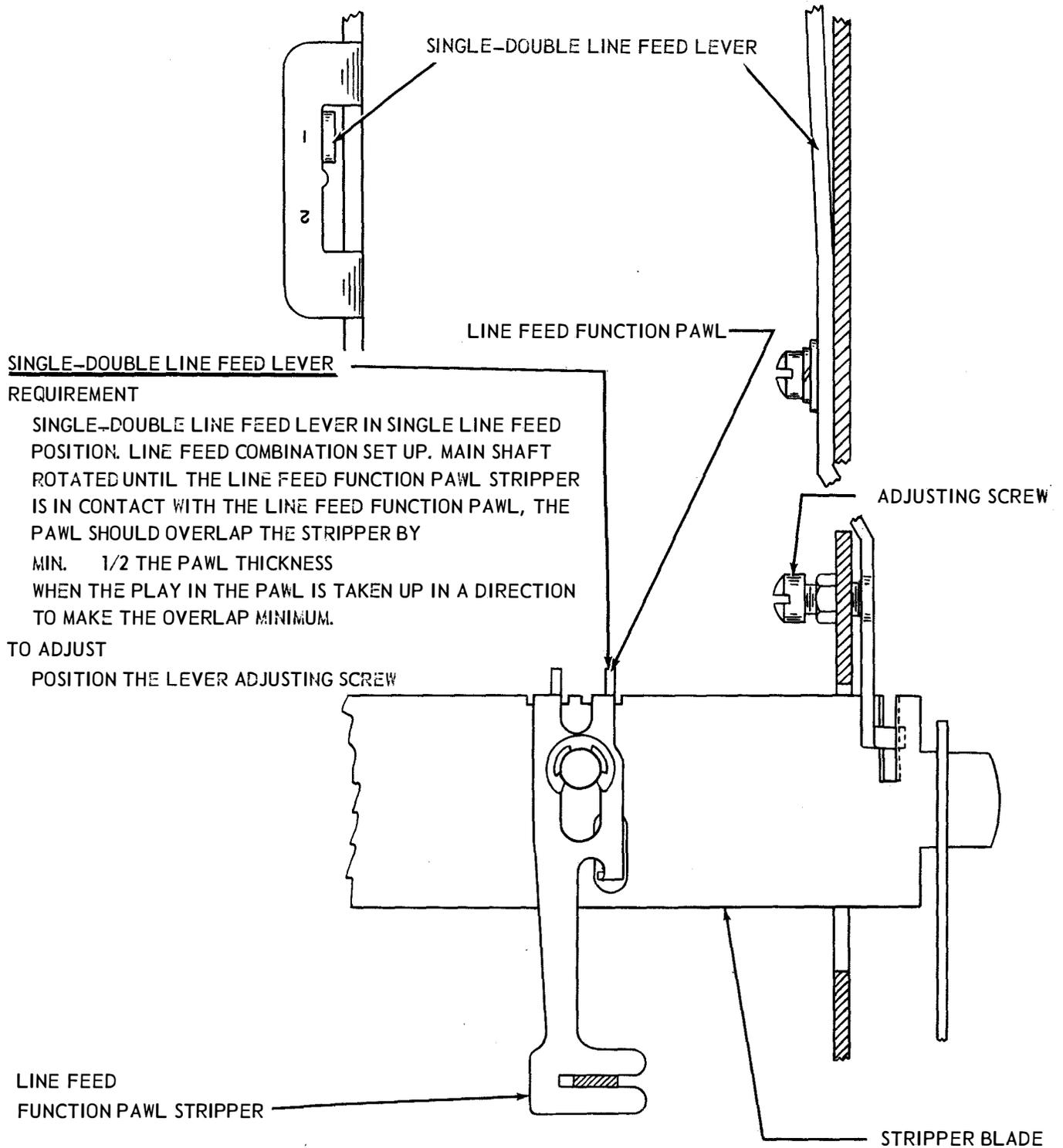


4.19 Spacing Mechanism (Cont.)

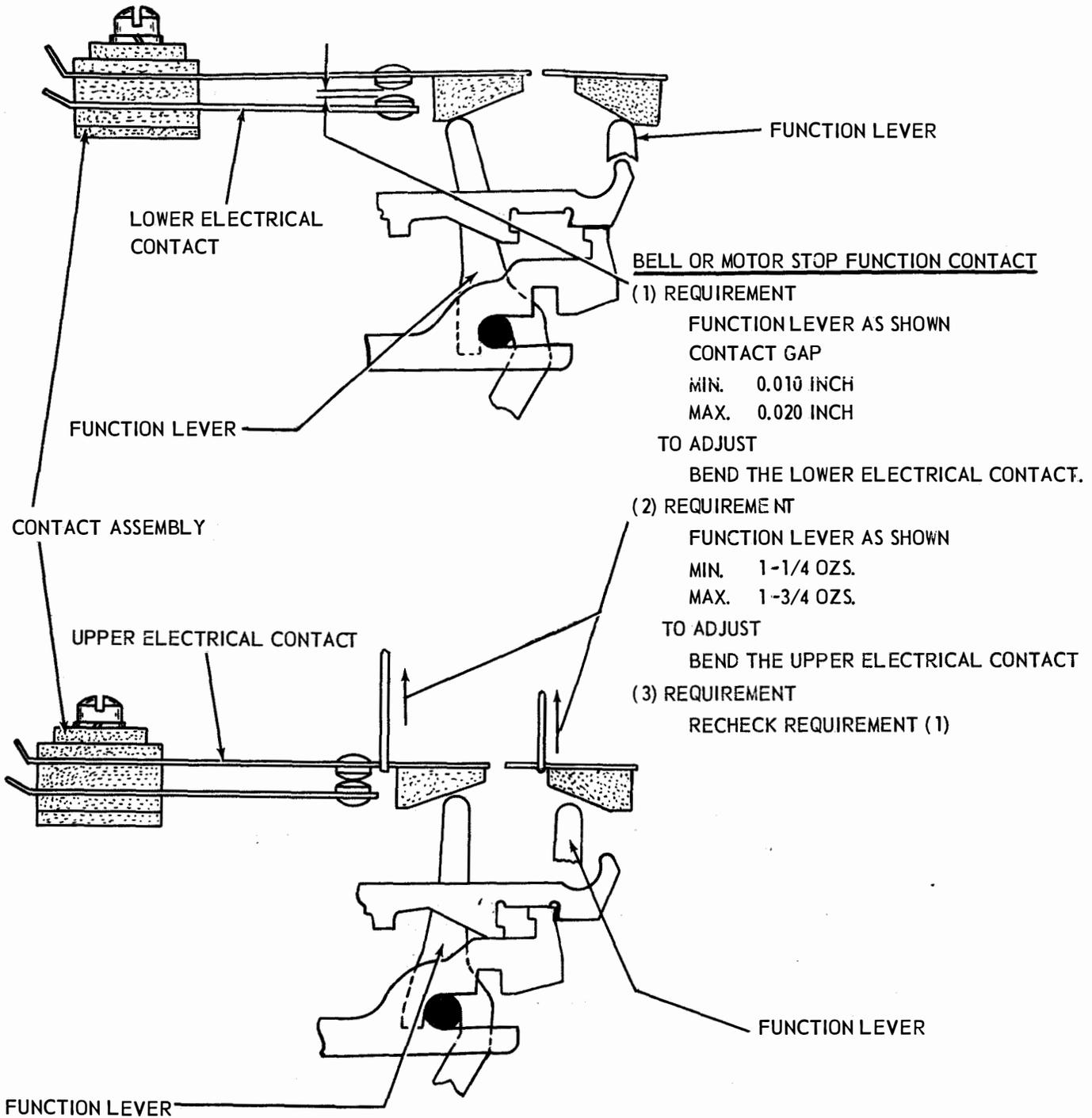


4.20 Line Feed Mechanism and Platen Mechanism

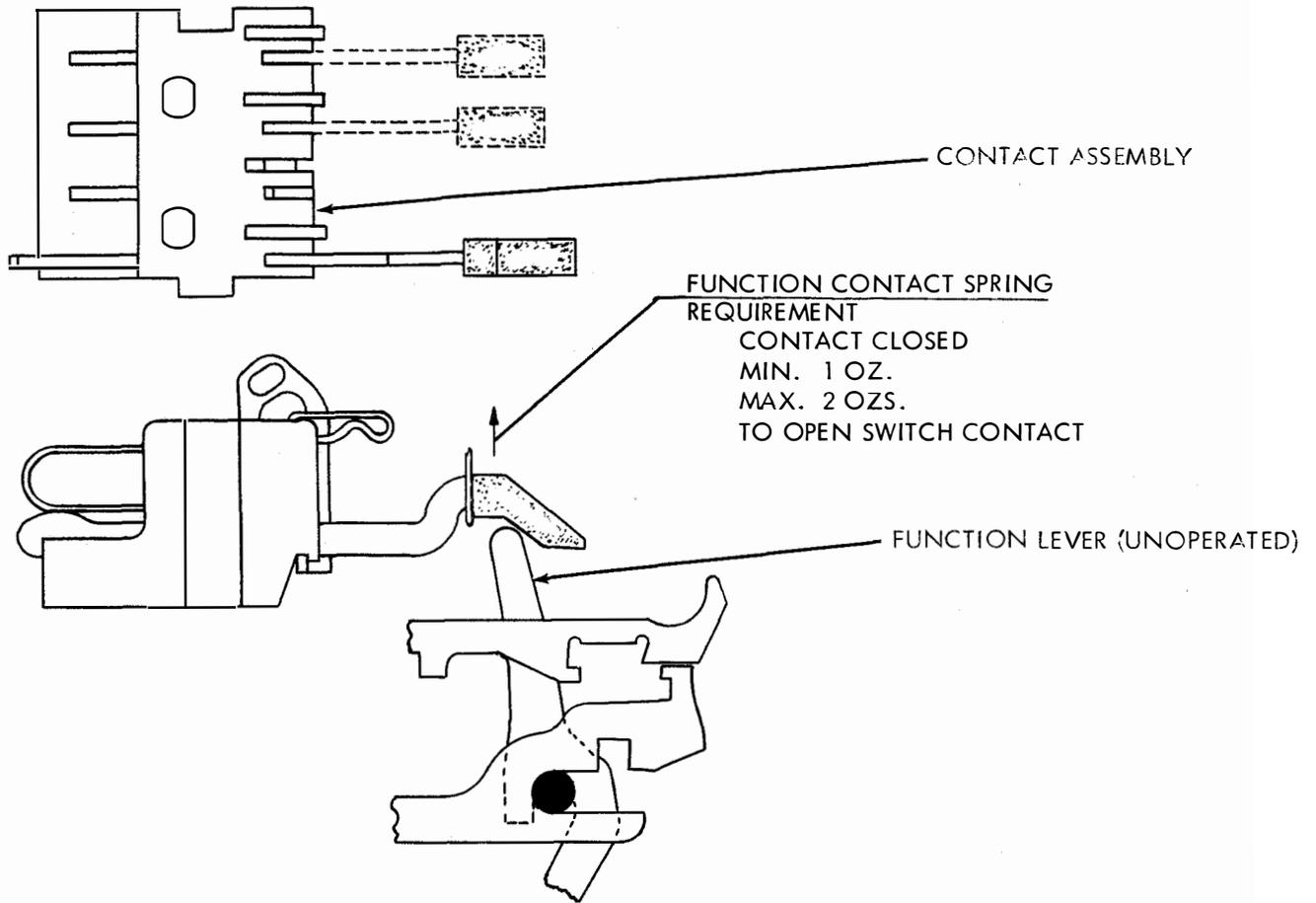
NOTE: THIS ADJUSTMENT APPLIES ONLY TO UNITS WITH A TWO-STOP FUNCTION CLUTCH



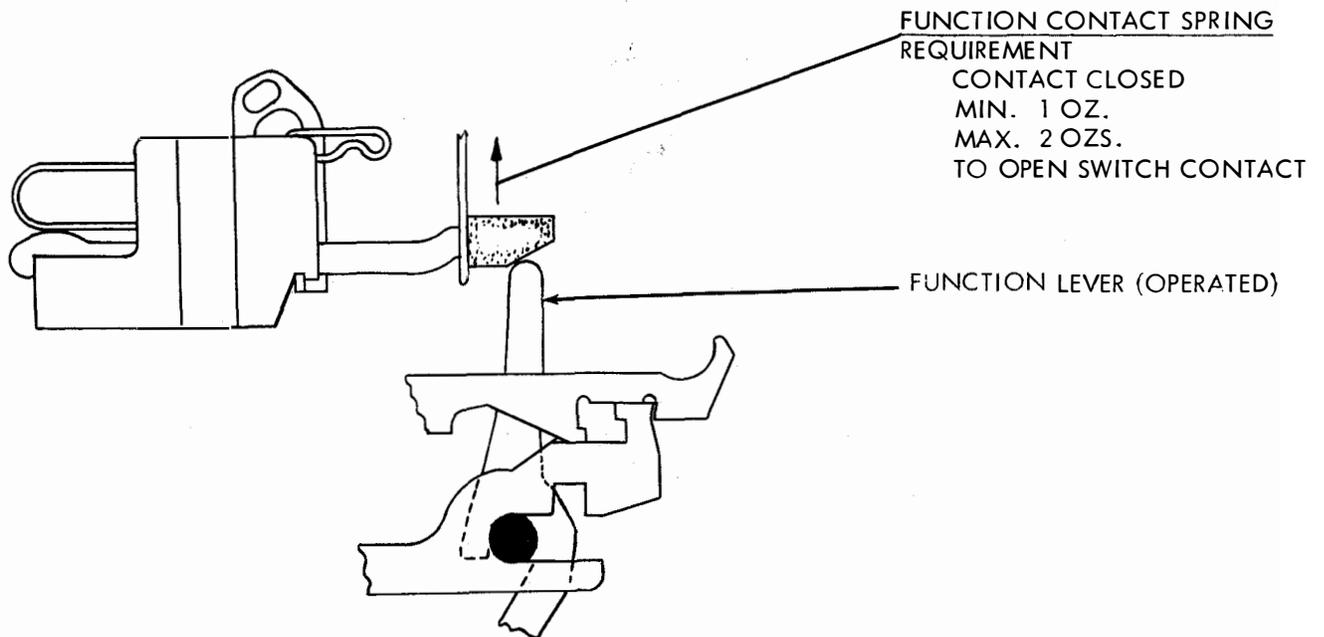
4.21 Function Mechanism (Cont.)



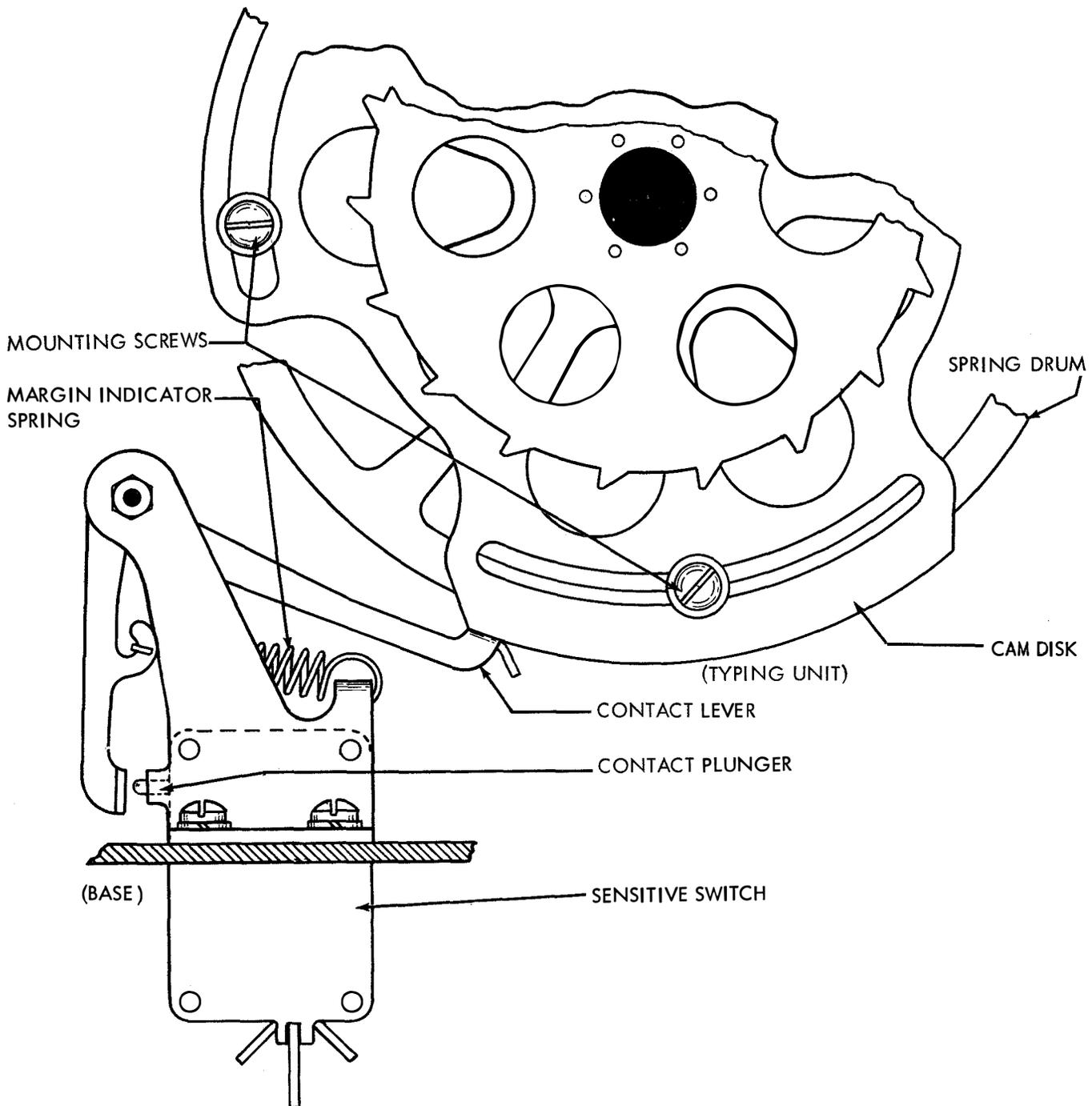
4.22 Function Mechanism (Cont.)



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



4.23 Spacing Mechanism (Cont.)



MARGIN INDICATOR LAMP
REQUIREMENT

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

TO ADJUST

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

VARIABLE FEATURES

4.24 Horizontal Tabulator Mechanism

(A)

OPERATING LEVER SLIDE ARM

NOTE

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

REQUIREMENT

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

MIN. 0.020 INCH
MAX. 0.030 INCH

TO ADJUST

POSITION SLIDE ARM ON OPERATING LEVER WITH
MOUNTING STUD FRICTION TIGHT

(D) TABULATOR SHAFT SPRING
(TORSION)

NOTE

FOR LOCATION OF SPRING
SEE PAR. 4.27

REQUIREMENT

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

(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)

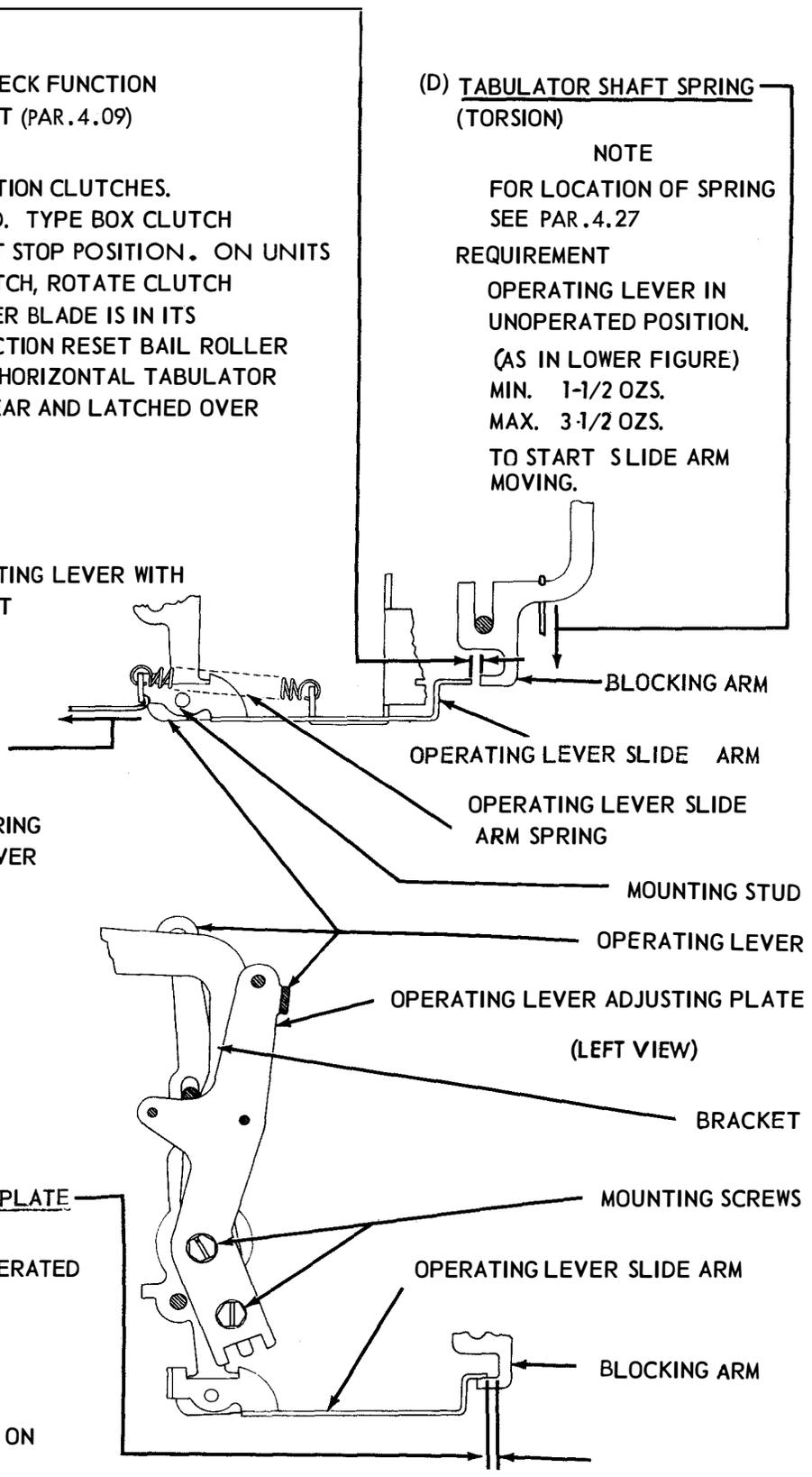
OPERATING LEVER ADJUSTING PLATE

REQUIREMENT

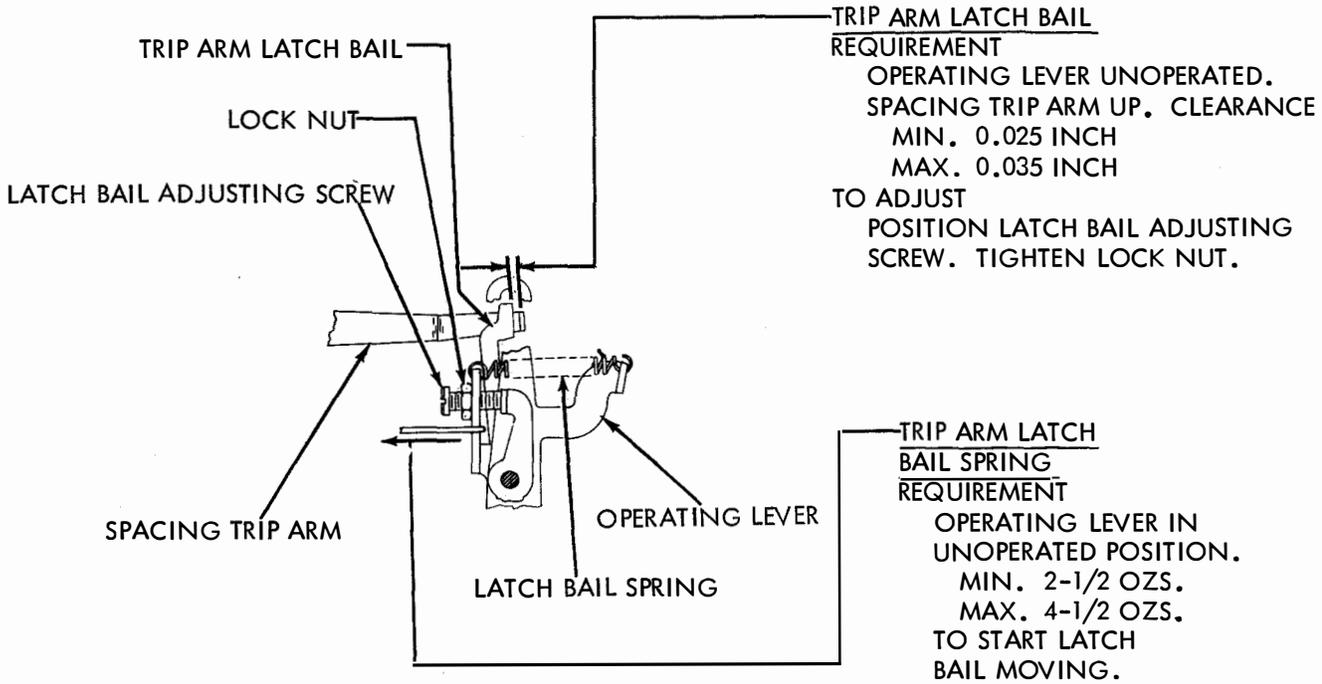
OPERATING LEVER IN UNOPERATED
POSITION. CLEARANCE
MIN. 0.070 INCH
MAX. 0.085 INCH

TO ADJUST

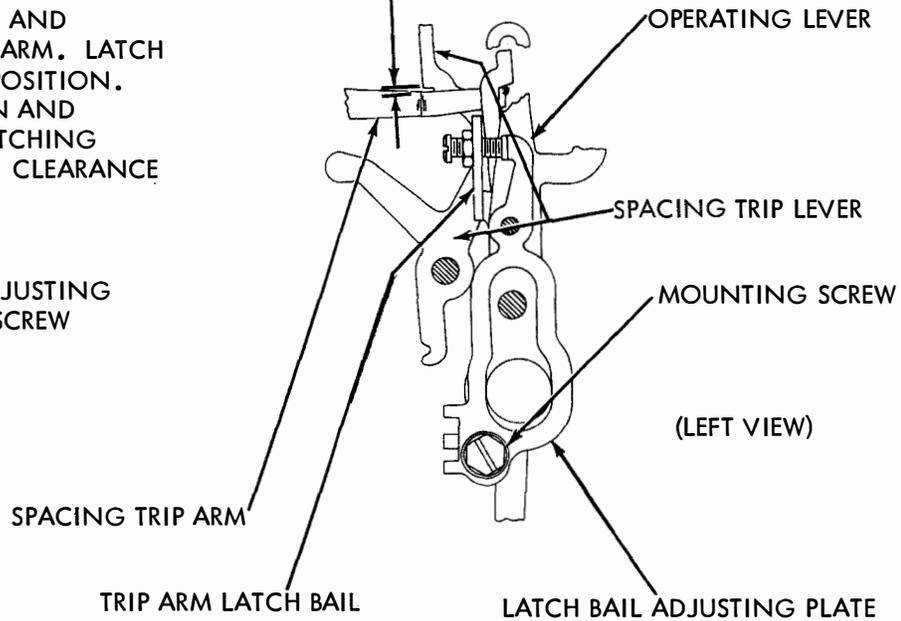
POSITION ADJUSTING PLATE ON
BRACKET WITH MOUNTING
SCREWS LOOSE.



4.25 Horizontal Tabulator Mechanism (Cont.)



TRIP ARM LATCH BAIL ADJUSTING PLATE REQUIREMENT
 SPACING CLUTCH AND TYPE BOX
 CLUTCH DISENGAGED. OPERATING
 LEVER SLIDE ARM TO REAR AND
 LATCHED ON BLOCKING ARM. LATCH
 BAIL IN FULLY LATCHED POSITION.
 SPACING TRIP ARM DOWN AND
 BEARING UP AGAINST LATCHING
 SURFACE OF LATCH BAIL. CLEARANCE
 MIN. SOME
 MAX. 0.008 INCH
 TO ADJUST
 POSITION LATCH BAIL ADJUSTING
 PLATE WITH MOUNTING SCREW
 FRICTION TIGHT.



4.26 Horizontal Tabulator Mechanism (Cont.)

(C)
HORIZONTAL TABULATOR SLIDE
 ARM SPRING
 REQUIREMENT

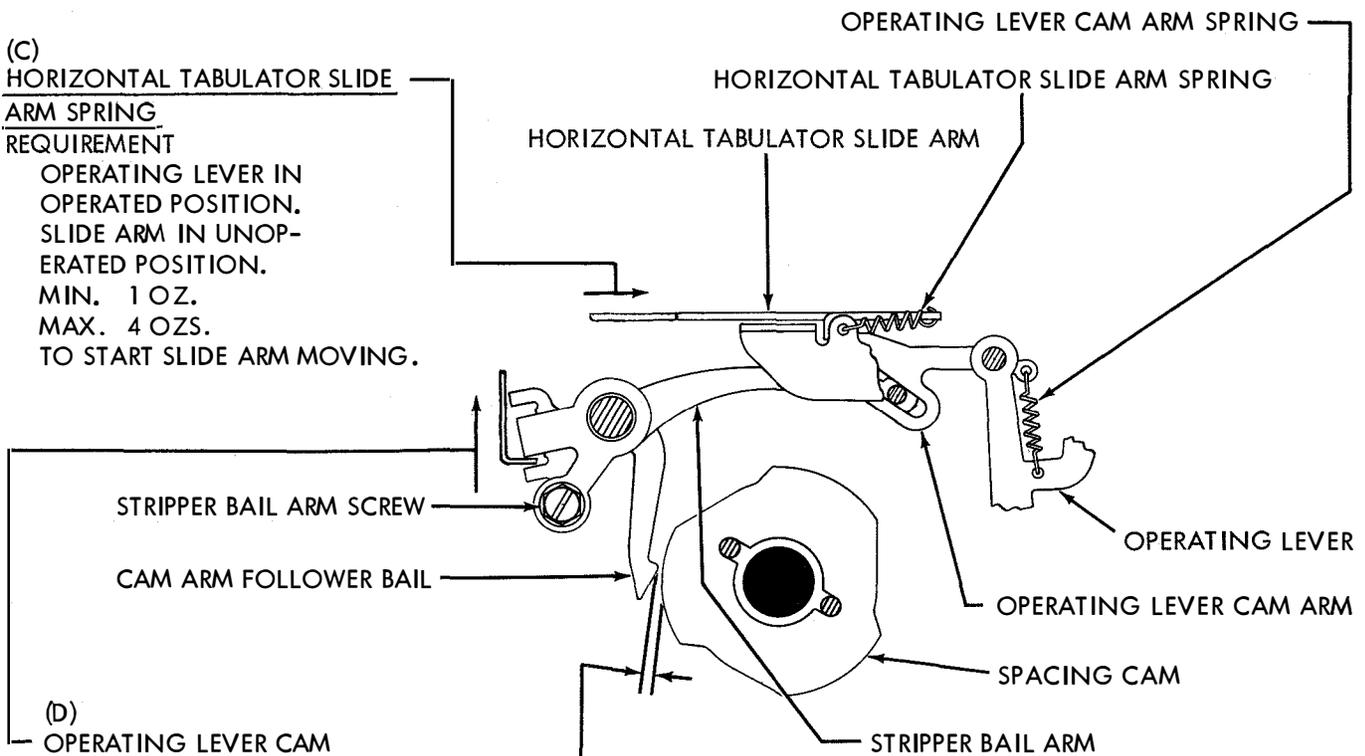
OPERATING LEVER IN
 OPERATED POSITION.
 SLIDE ARM IN UNOP-
 ERATED POSITION.
 MIN. 1 OZ.
 MAX. 4 OZS.
 TO START SLIDE ARM MOVING.

(D)
OPERATING LEVER CAM
 PLATE SPRING
 REQUIREMENT

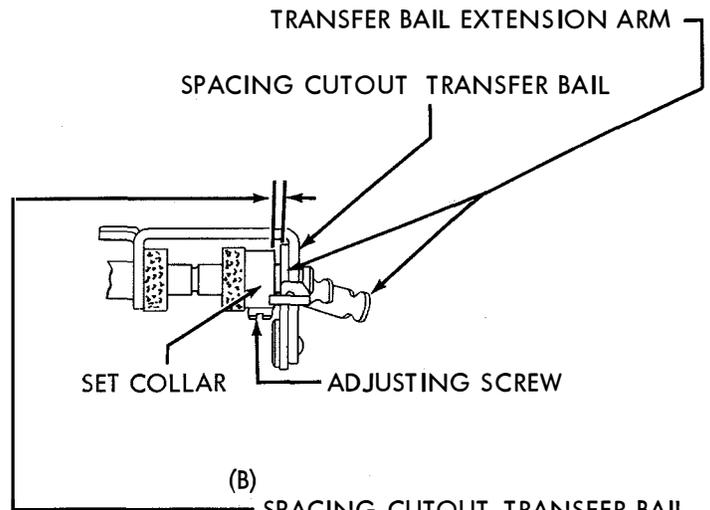
OPERATING LEVER IN UNOPERATED
 POSITION. HORIZONTAL TABULATOR
 FUNCTION PAWL UNLATCHED.
 MIN. 4 OZS.
 MAX. 9 OZS.
 TO START STRIPPER BAIL ARM MOVING.

(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.



(LEFT SIDE VIEW)



(B)
SPACING CUTOUT TRANSFER BAIL
 SET COLLAR
 REQUIREMENT

TRANSFER BAIL SHOULD
 HAVE SOME END PLAY.
 MAX. 0.008 INCH.
 TO ADJUST
 POSITION SET COLLAR
 WITH ADJUSTING SCREW
 LOOSENED.

4.27 Horizontal Tabulator Mechanism (Cont.)

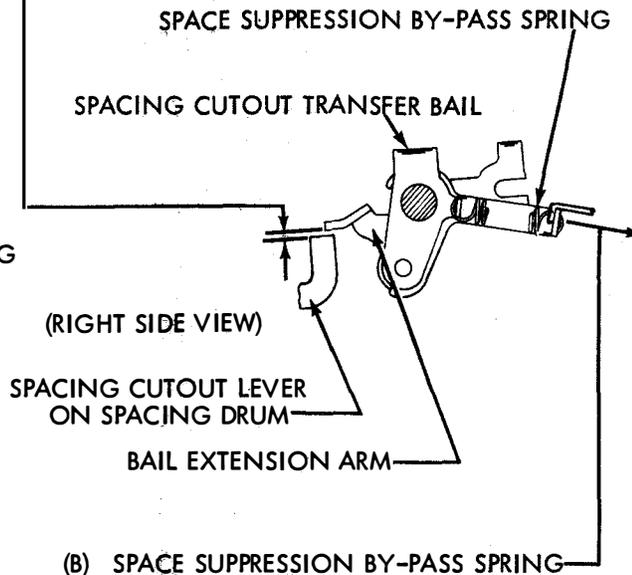
(A) RIGHT MARGIN

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

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

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

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



(B) SPACE SUPPRESSION BY-PASS SPRING

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

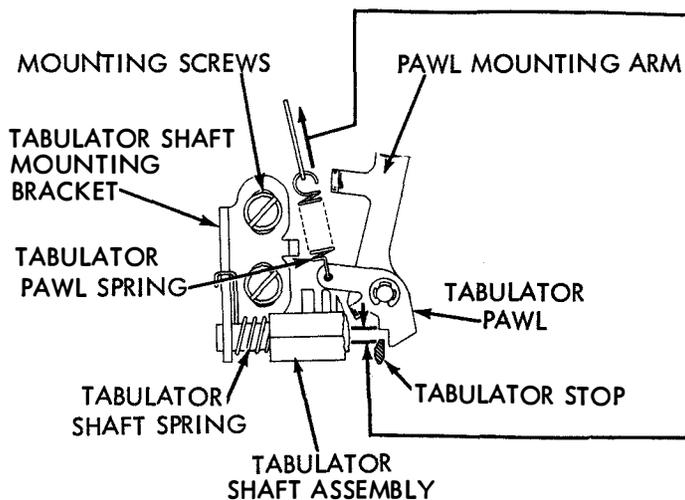
(D) TABULATOR PAWL SPRING

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

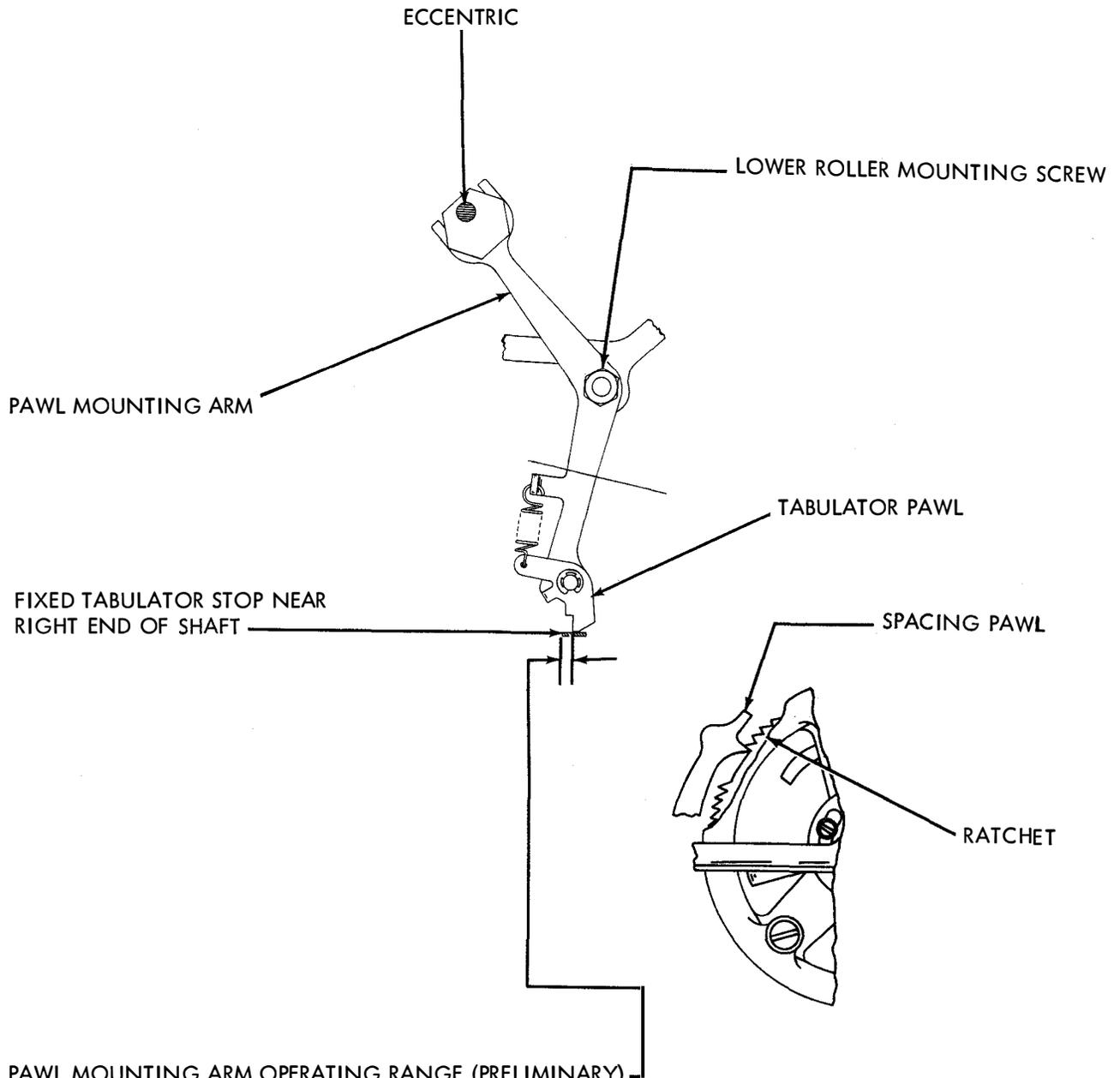
(C) TABULATOR SHAFT MOUNTING BRACKETS

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

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



4.28 Horizontal Tabulator Mechanism (Cont.)



PAWL MOUNTING ARM OPERATING RANGE (PRELIMINARY)

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

REQUIREMENT (UNITS WITH FRICTION FEED PLATENS)

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

MIN. 0.070 INCH MAX. 0.090 INCH

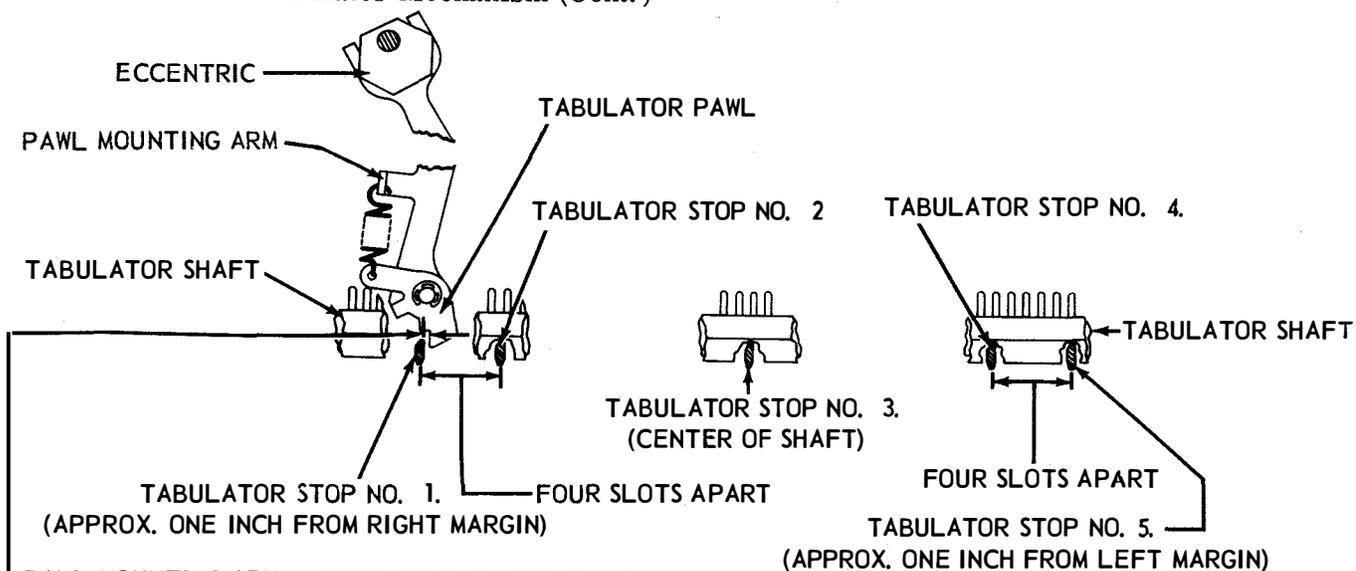
REQUIREMENT (UNITS WITH SPROCKET FEED PLATENS)

HIGH PART OF ECCENTRIC TOWARD LOWER ROLLER MOUNTING SCREW.

TO ADJUST

POSITION ECCENTRIC.

4.29 Horizontal Tabulator Mechanism (Cont.)



PAWL MOUNTING ARM OPERATING RANGE (FINAL)

REQUIREMENT

— CLEARANCE MIDWAY BETWEEN MINIMUM AND MAXIMUM LIMITS OF OPERATING RANGE.

TO CHECK

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

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

TO ADJUST

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

TABULATOR STOP SETTING (NOT ILLUSTRATED)

RIGHT MARGIN TABULATOR STOP (WITH WIDE SHELF)

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

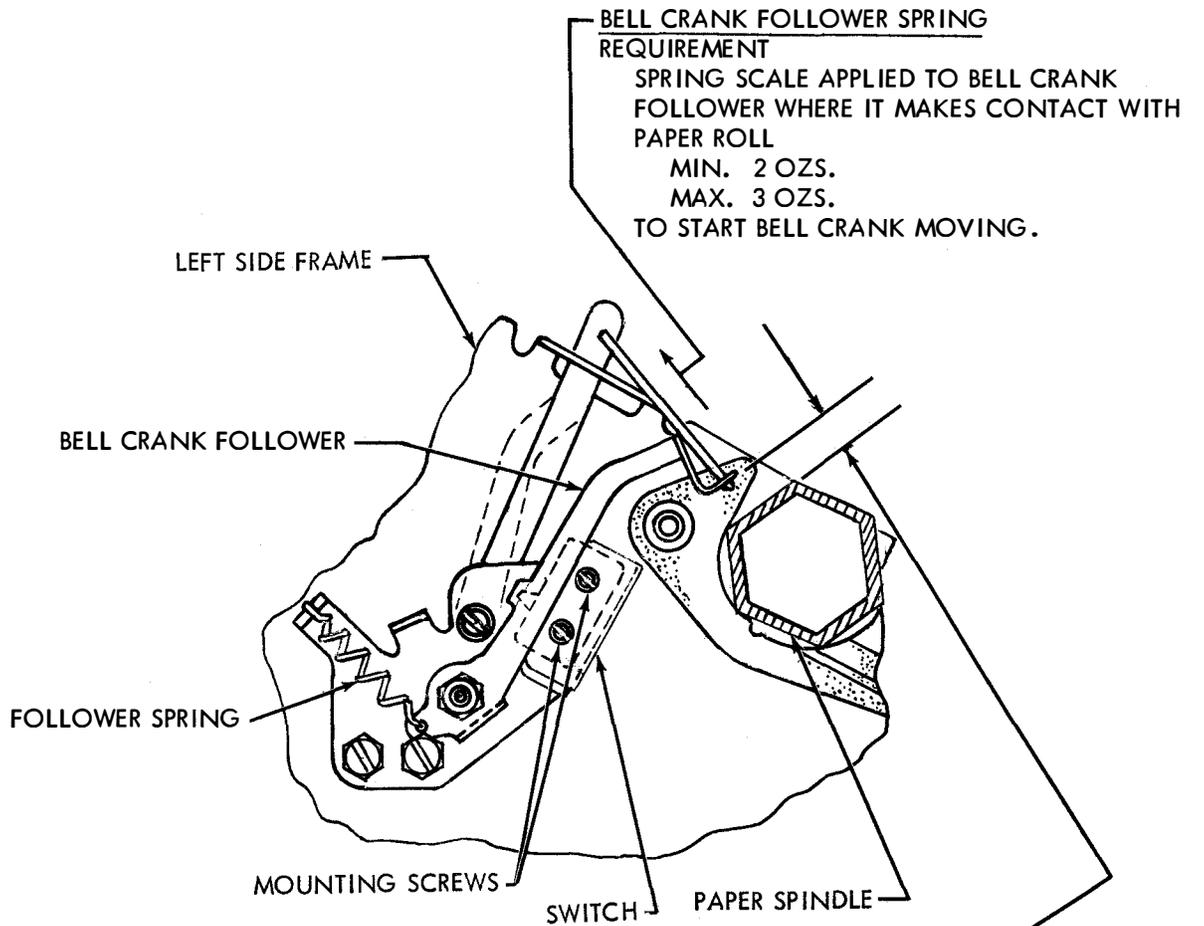
POSITION PRINTING CARRIAGE AT RIGHT MARGIN (SPACING CUTOUT OPERATED). INSERT STOP WITH WIDE SHELF IN SLOT IMMEDIATELY TO LEFT OF TABULATOR PAWL.

COLUMNAR TABULATOR STOPS

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

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

4. 30 Paper-Out Alarm Mechanism



BELL CRANK FOLLOWER SPRING REQUIREMENT
 SPRING SCALE APPLIED TO BELL CRANK FOLLOWER WHERE IT MAKES CONTACT WITH PAPER ROLL
 MIN. 2 OZS.
 MAX. 3 OZS.
 TO START BELL CRANK MOVING.

BELL CRANK FOLLOWER REQUIREMENT
 THE BELL CRANK FOLLOWER SHOULD BE APPROXIMATELY 1/4 INCH FROM A FLAT SIDE OF THE PAPER SPINDLE.
 TO ADJUST POSITION THE SWITCH WITH ITS MOUNTING SCREWS LOOSENED.

