J. BURNS

BELL SYSTEM PRACTICES
Teletypewriter and Data Stations

SECTION P34.652
Issue 4, July, 1962
AT&TCo Standard

28 TYPING REPERFORATOR BASE (RECEIVING-ONLY BASE AND KEYBOARD SENDING-RECEIVING BASE) REQUIREMENTS AND ADJUSTMENTS

CONTENTS

CONTENTS (Cont'd) **PARAGRAPH**

CONTENTS (Cont'd) **PARAGRAPH**

1. GENERAL

1.01 This section contains the specific requirements and adjustments for the following 28 typing reperforator bases:

(a) Typing reperforator receiving-only (RO) base, usually referred to as **Base.**

(b) Typing reperforator keyboard sending-receiving (KSR) base, commonly known as **Keyboard.**

The material herein, together with the section containing the general requirements on teletypewriter apparatus, provides the complete adjusting information for maintenance.

1.02 This section is reissued to revise various adjustment requirements in accordance with changes authorized for this apparatus by P98 series Bell System Practices listed at the end of this section and to include other authorized revisions and additions to bring the section generally up to date. Since this is a general revision, the marginal arrows ordinarily used to indicate changes have been omitted.

1.03 In this section, left or right, front or rear, and top or bottom, apply to apparatus in its normal operating position as viewed from the front.

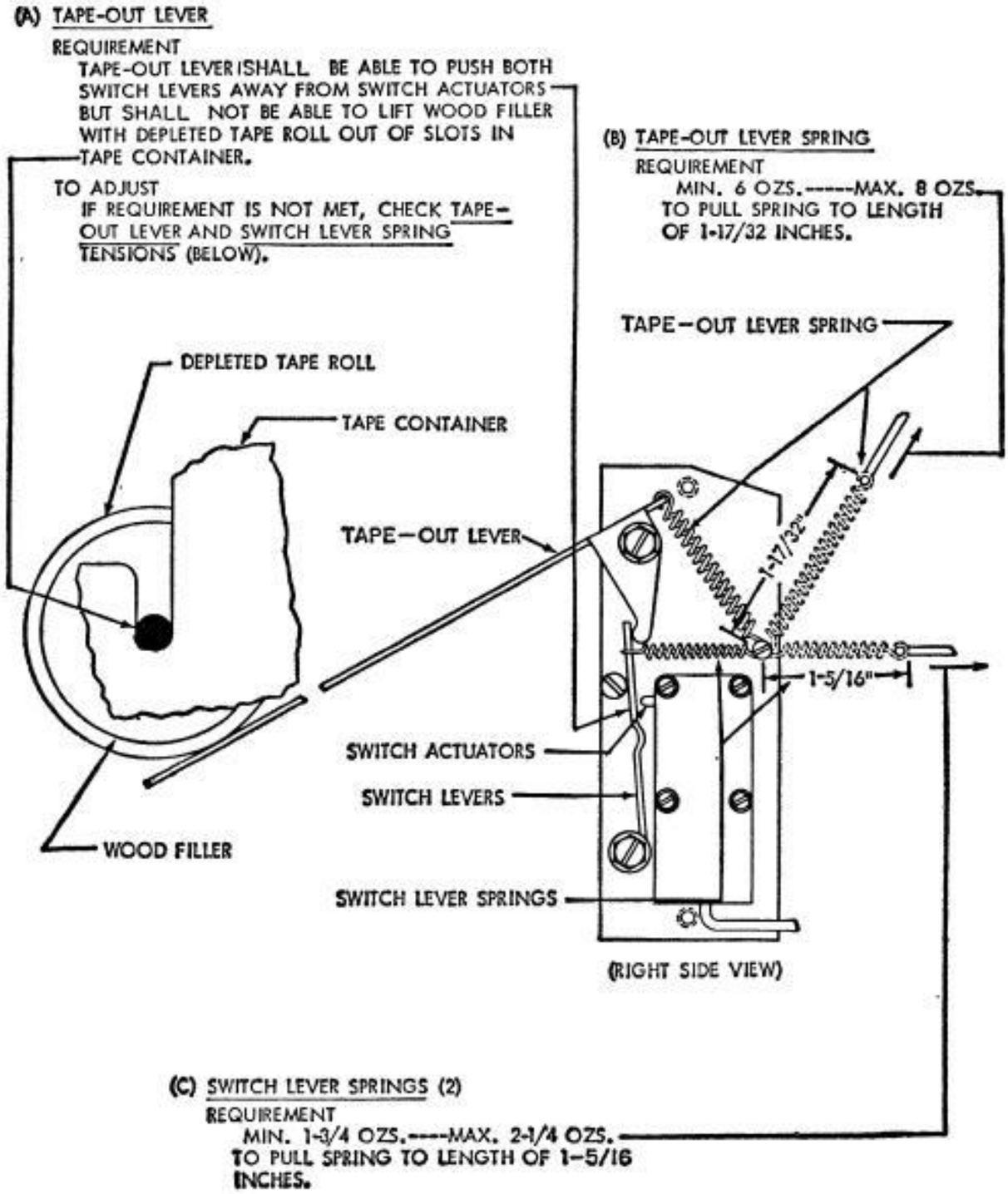
1.04 When a requirement calls for a clutch to be **disengaged,** the clutch-shoe lever must be fully latched between its triplever and latchlever so that the clutch shoes release their tension on the clutch drum. When **engaged,** the clutch-shoe lever is unlatched and the clutch shoes are wedged firmly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

1.05 The figures in this section show the adjusting tolerances, the positions of parts, and spring tensions. The illustrations are arranged so the adjustments are in the sequence that would be followed if a complete readjustment of apparatus were being made. In some cases where an illustration shows interrelated parts, the sequence that should be followed in checking the requirements and making the adjustments is indicated by the letters (A), (B), (C), etc.

2. REQUIREMENTS AND ADJUSTMENTS FOR 28 TYPING REPERFORATOR RECEIVING-ONLY (RO) BASE

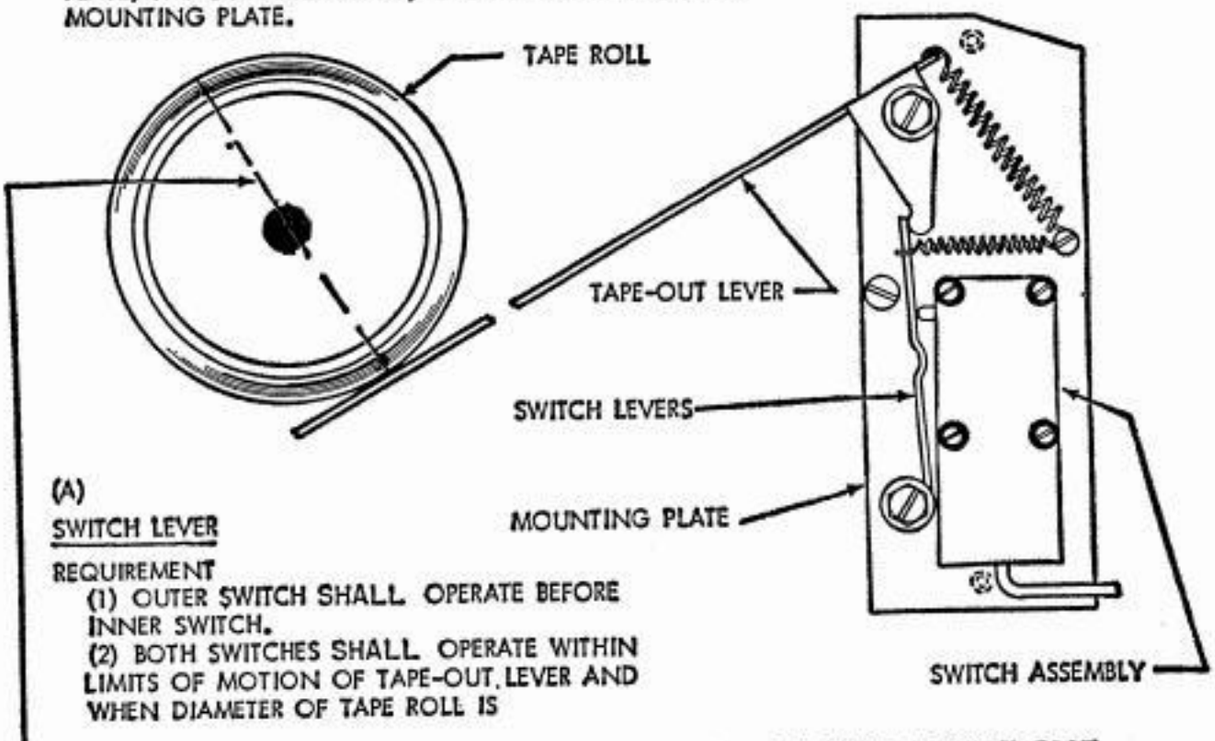
A. RO Base

2.01 Tape-out Mechanism



2.02 Tape-out Mechanism

NOTE:
THE INNER ELEMENTS ARE THOSE NEARER THE MOUNTING PLATE; THE OUTER ELEMENTS, THOSE FARTHER FROM THE MOUNTING PLATE.



(A)

SWITCH LEVER

REQUIREMENT
(1) OUTER SWITCH SHALL OPERATE BEFORE INNER SWITCH.
(2) BOTH SWITCHES SHALL OPERATE WITHIN LIMITS OF MOTION OF TAPE-OUT LEVER AND WHEN DIAMETER OF TAPE ROLL IS

MIN. 2-3/16 INCHES ---- MAX. 2-5/16 INCHES (WHEN USING A 2 INCH DIAMETER CORE)

TO ADJUST
BEND OUTER SWITCH LEVER TOWARD SWITCH ASSEMBLY.

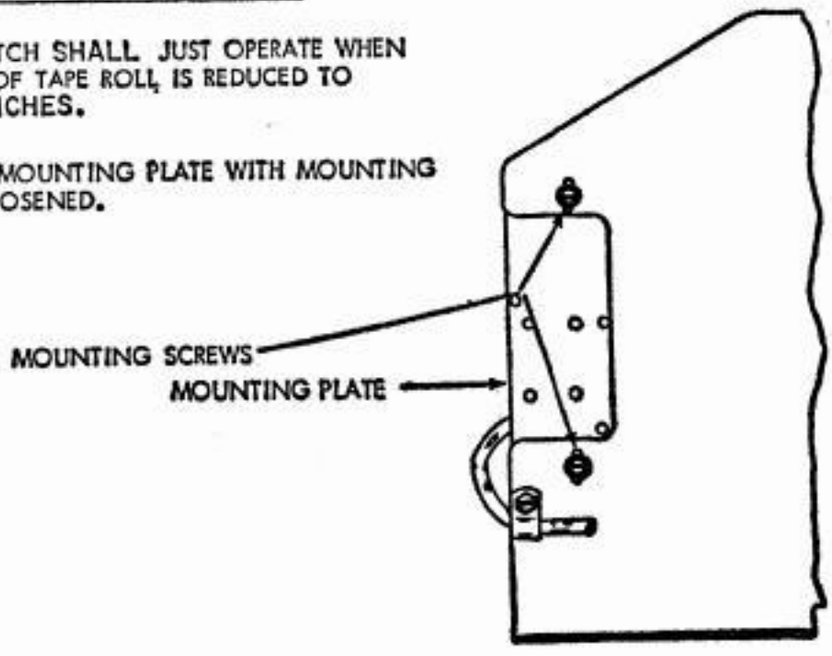
NOTE:
ADJUSTMENT CAN BE FACILITATED BY REMOVING SWITCH MECHANISM FROM TAPE CONTAINER.

(B)

SWITCH MECHANISM MOUNTING PLATE

REQUIREMENT
OUTER SWITCH SHALL JUST OPERATE WHEN DIAMETER OF TAPE ROLL IS REDUCED TO 2-5/16 INCHES.

TO ADJUST
POSITION MOUNTING PLATE WITH MOUNTING SCREWS LOOSENED.



(LEFT SIDE VIEW)

2.03 Intermediate Drive Mechanism

(A) TIMING BELT

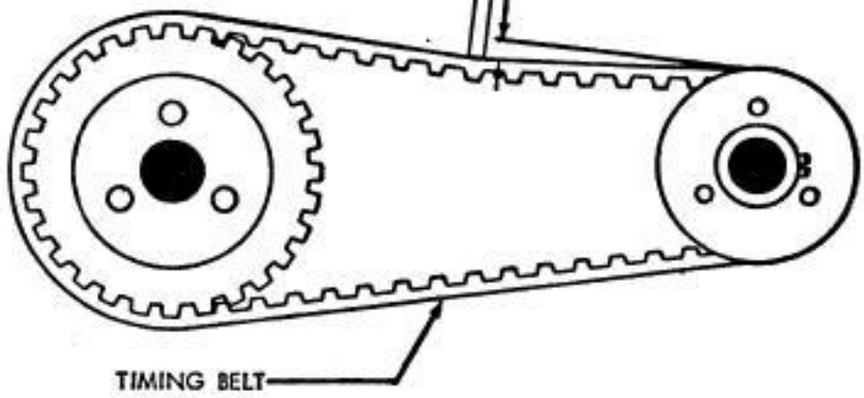
REQUIREMENT

A SLIGHT PRESSURE OF (8 ± 1 OZS.) AT CENTER OF SPAN SHALL DEFLECT BELT 1/32 INCH.

CAUTION: BELT SHALL NOT BE TIGHT.

TO ADJUST

POSITION INTERMEDIATE DRIVE ASSEMBLY WITH MOUNTING SCREWS LOOSENED.



(B) GEAR MESH

REQUIREMENT

MOTOR DRIVE GEAR AND INTERMEDIATE SHAFT DRIVEN GEAR SHALL MESH AT RIGHT ANGLES.

TO ADJUST

POSITION DRIVE ASSEMBLY WITH MOUNTING SCREWS LOOSENED. RE-CHECK TIMING BELT ADJUSTMENT (ABOVE).

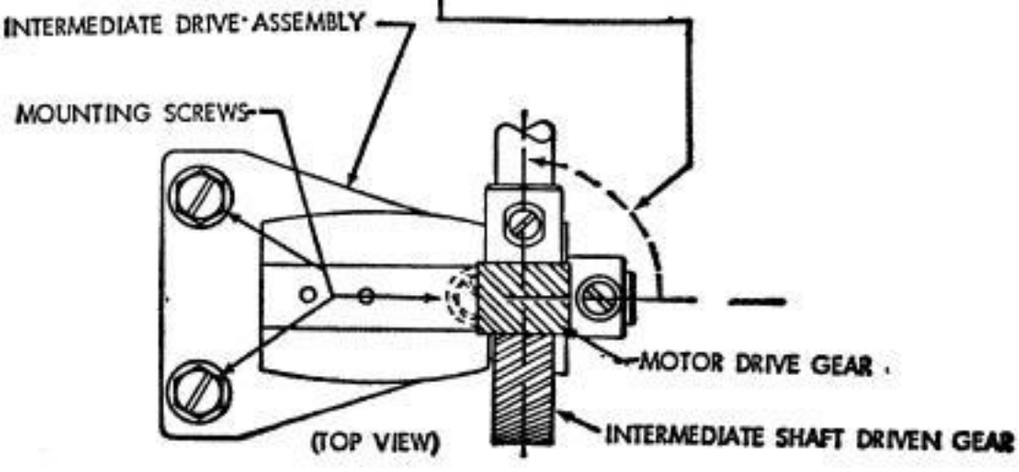
(C) WIRE TAPE GUIDE

REQUIREMENT

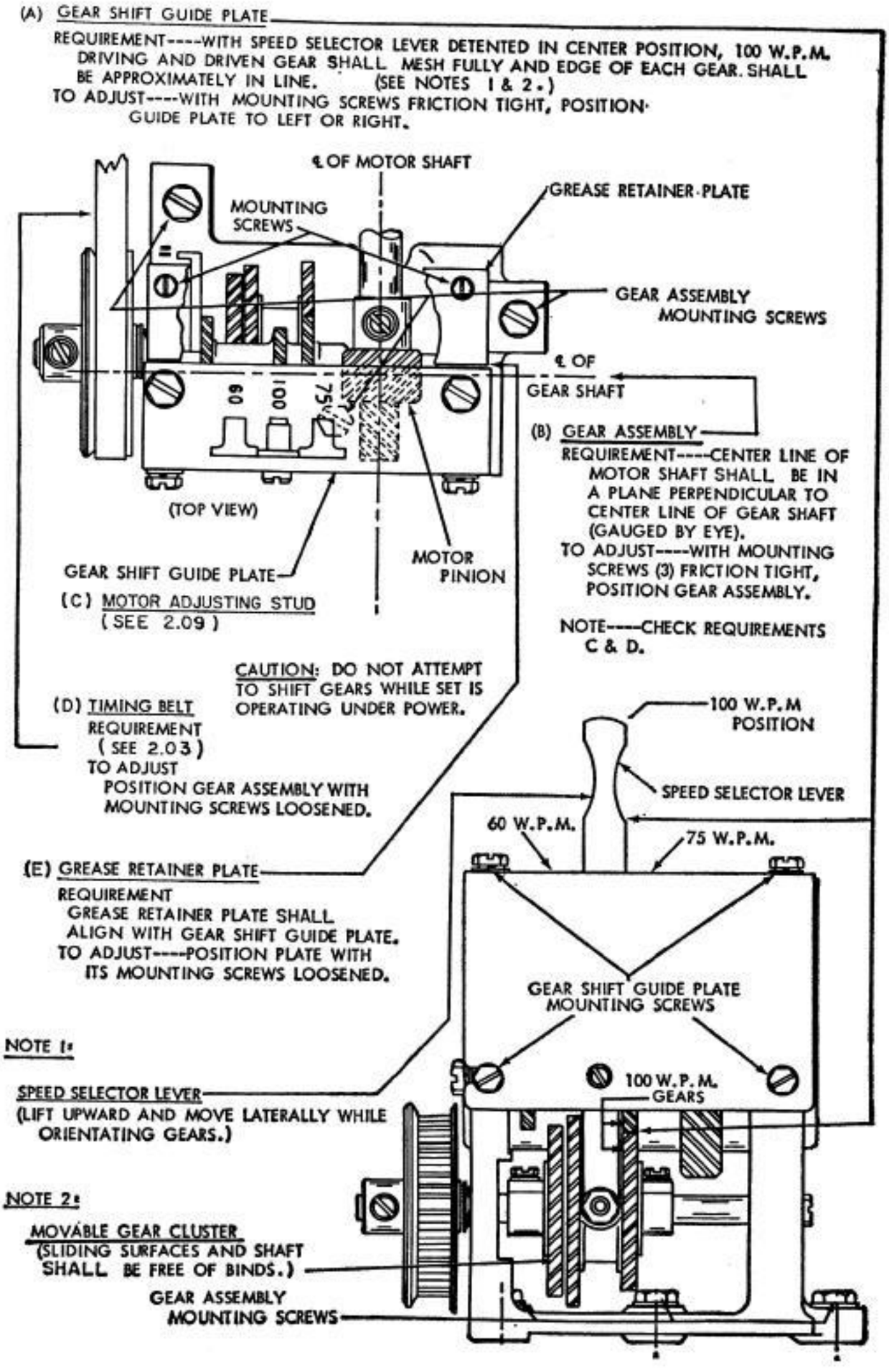
TAPE SHALL PASS FREELY THROUGH WIRE GUIDE AND BE ALIGNED WITH PUNCH GUIDE ASSEMBLY.

TO ADJUST

BEND OR POSITION WIRE GUIDE.

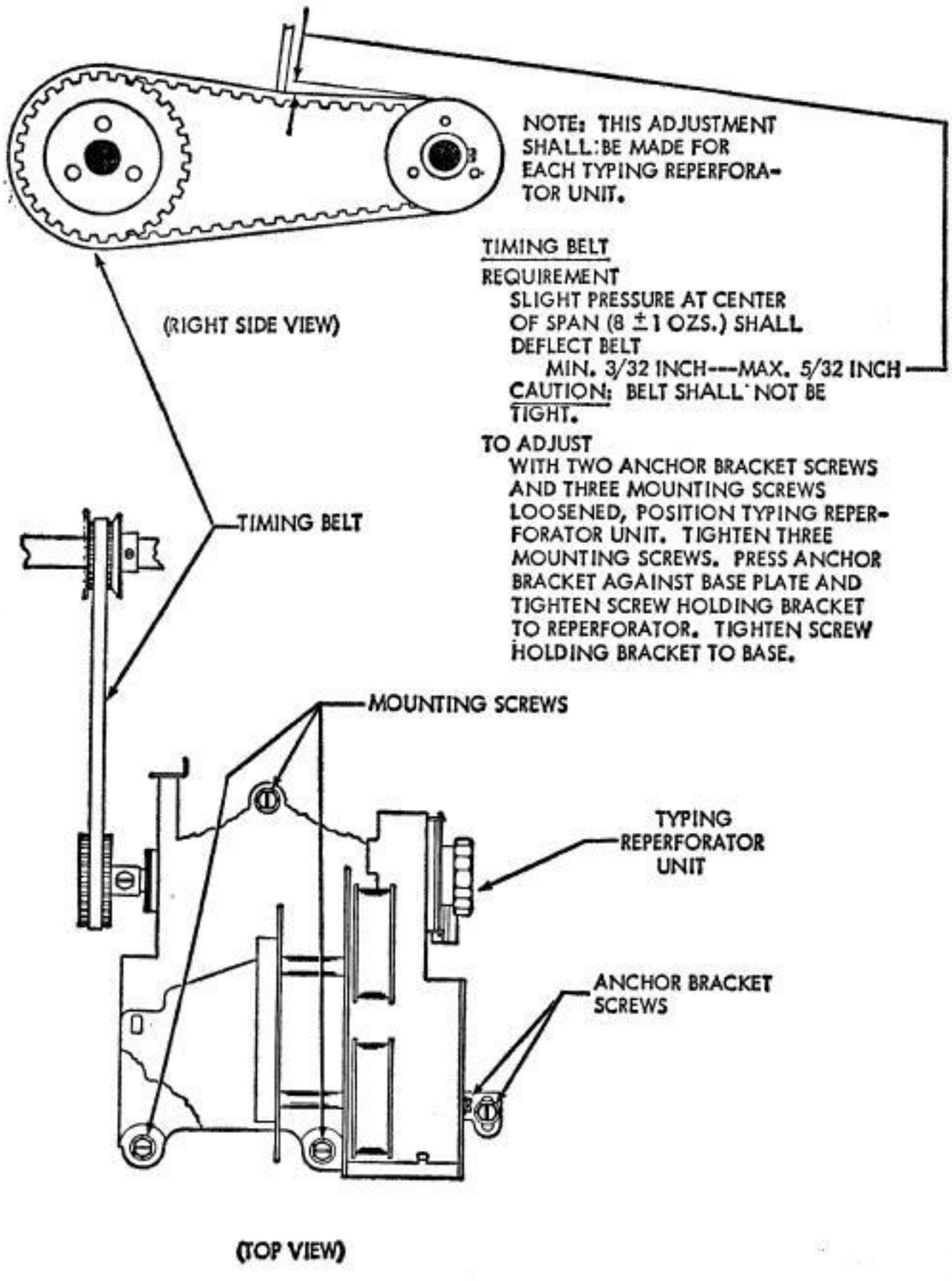


2.04 Variable Speed Drive Mechanism

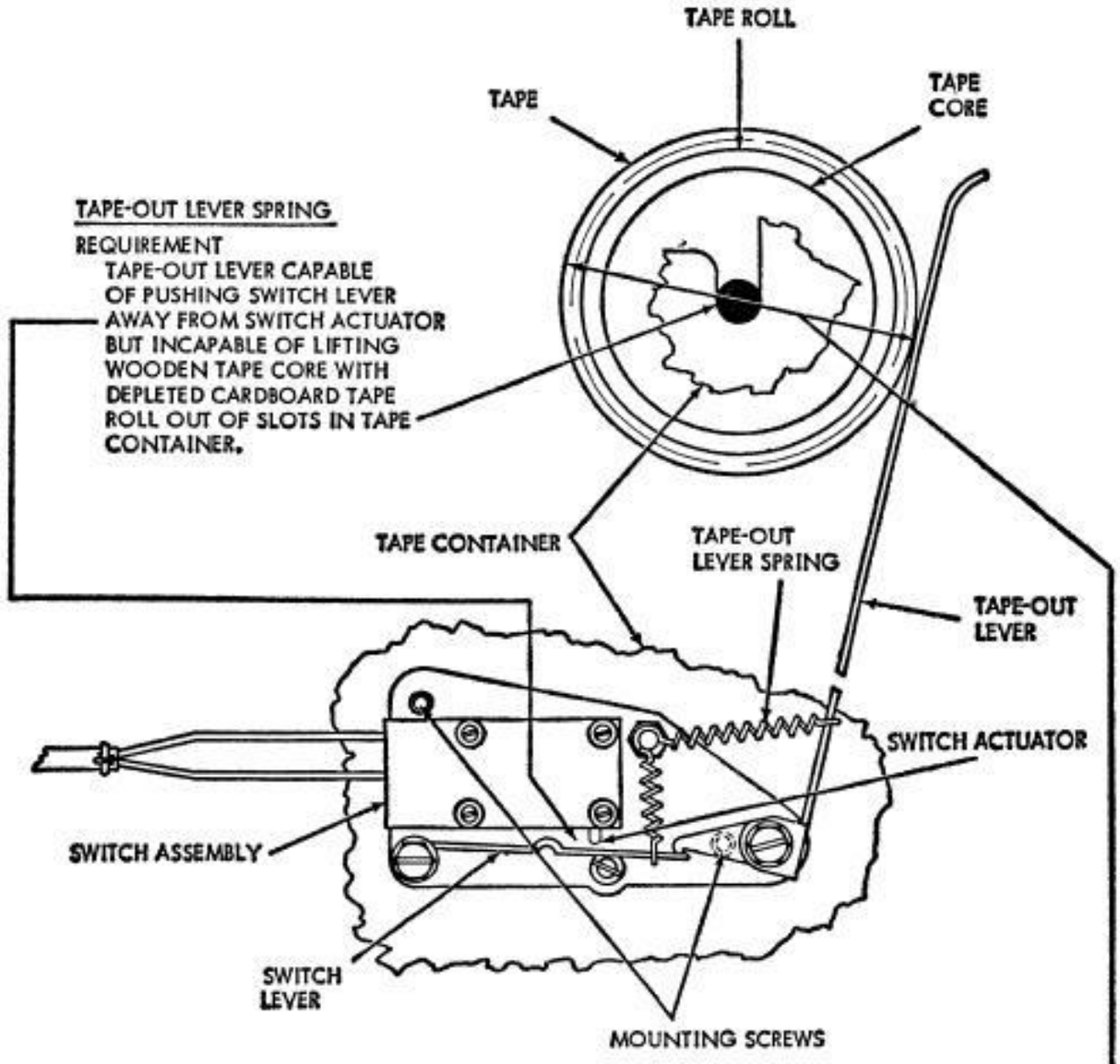


B. Multiple RO Base

2.05 Drive Mechanism

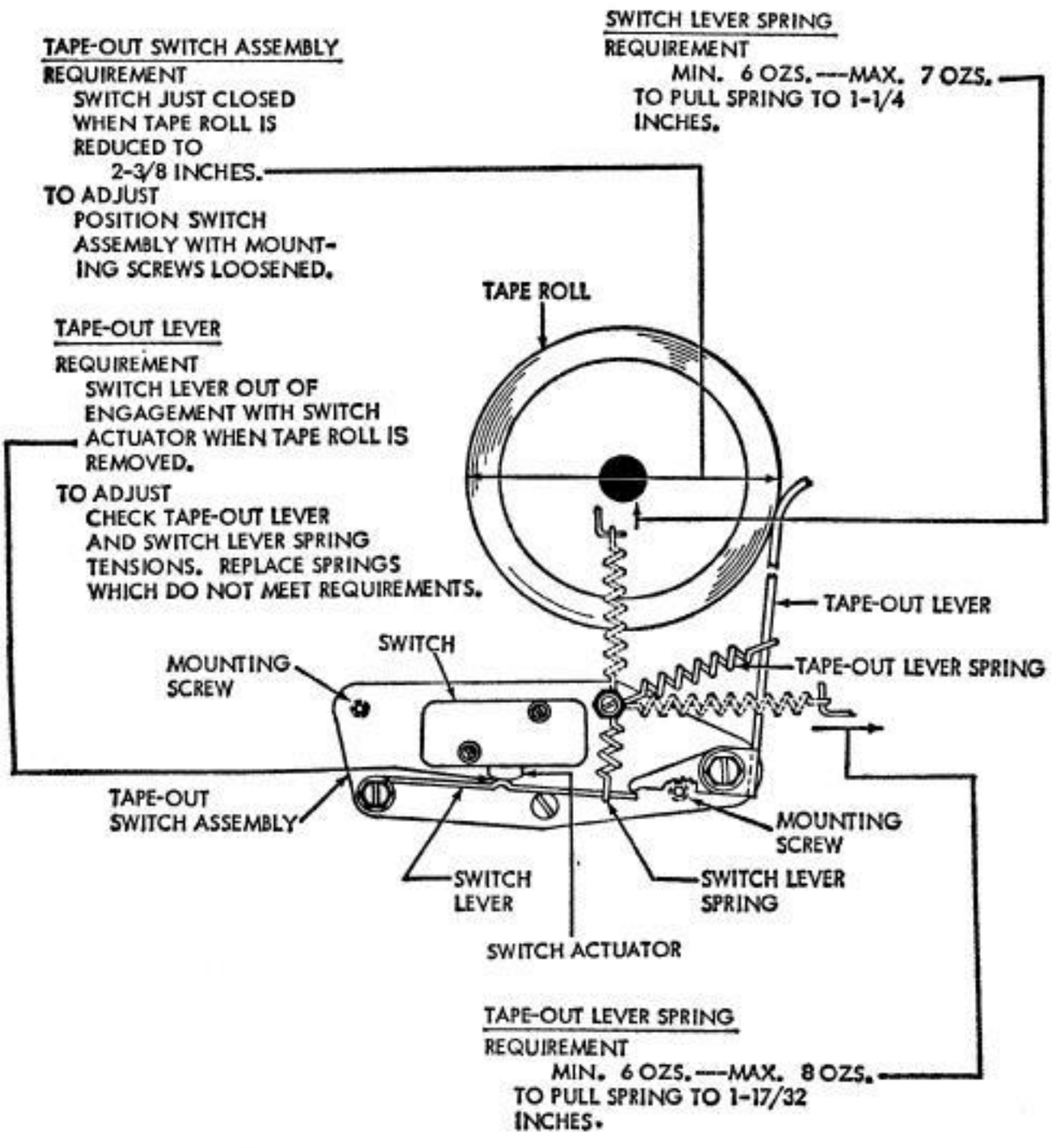


2.06 Tape-out Mechanism

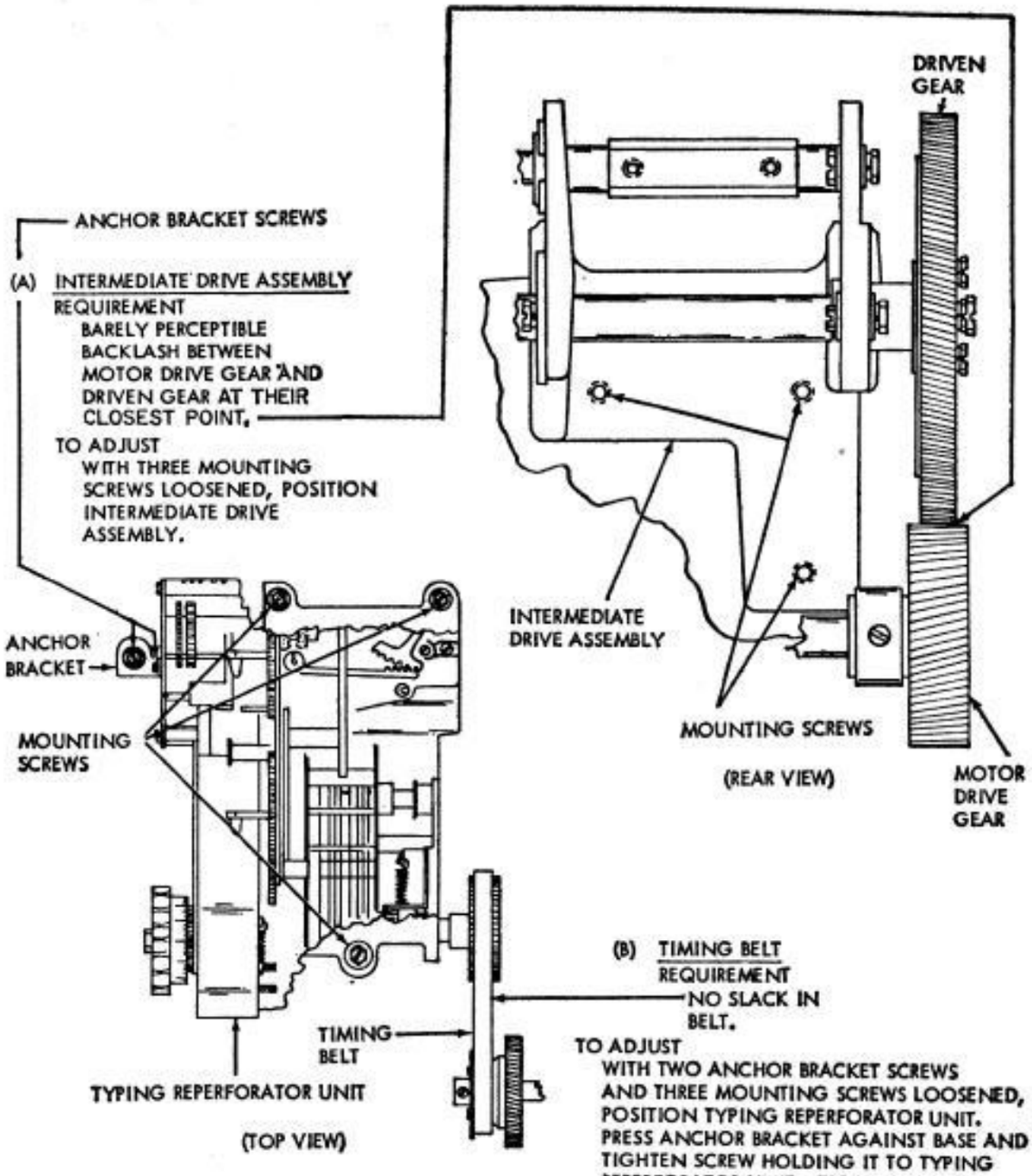


C. Auxiliary RO Base

2.07 Tape-out Mechanism



2.08 Drive Mechanism



2.09 Motor Adjusting Stud

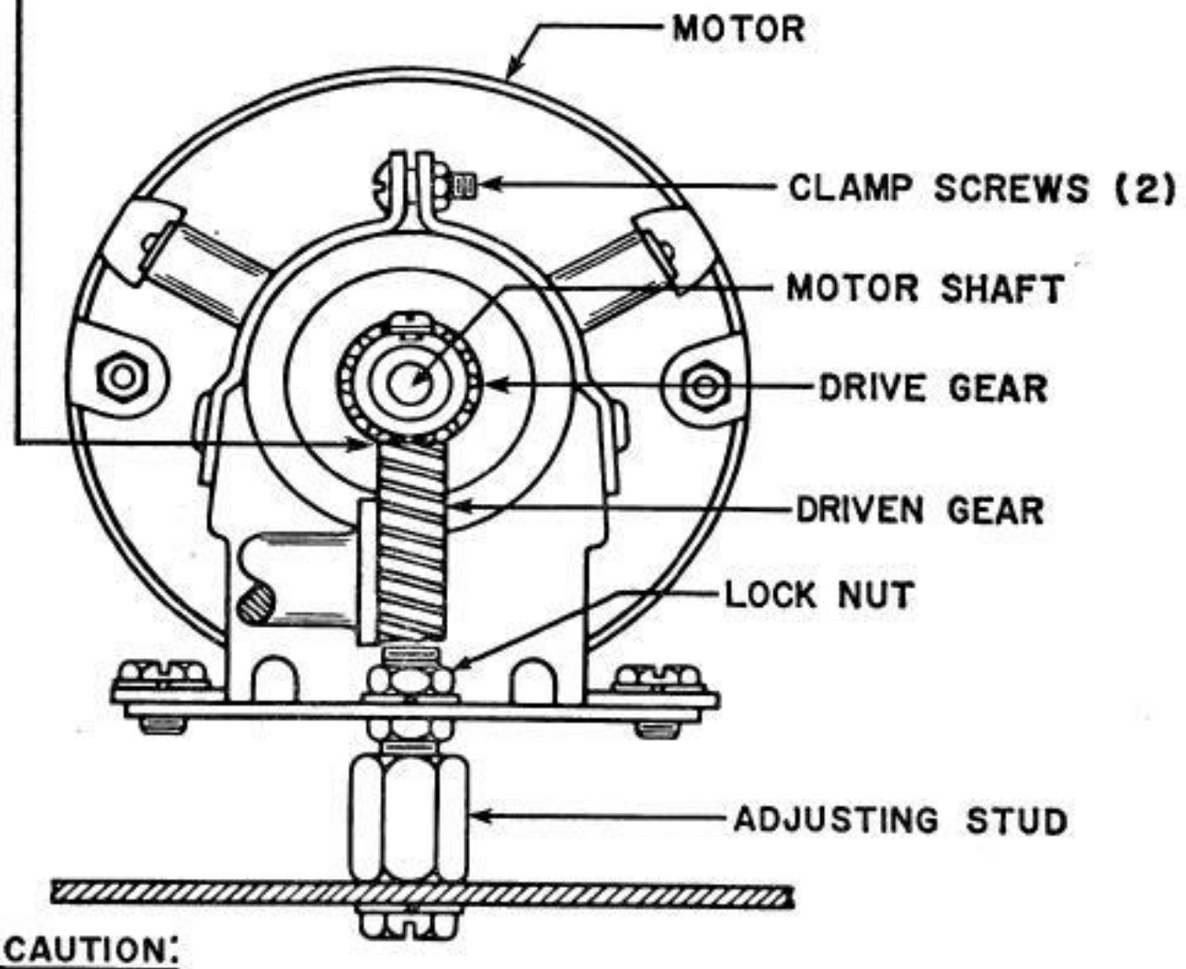
MOTOR ADJUSTING STUD

REQUIREMENT

BARELY PERCEPTIBLE BACKLASH BETWEEN DRIVE GEAR AND DRIVEN GEAR AT THEIR CLOSEST POINT.

TO ADJUST

WITH LOCK NUT LOOSENED, POSITION ADJUSTING STUD. TIGHTEN NUT WHILE HOLDING STUD IN POSITION.



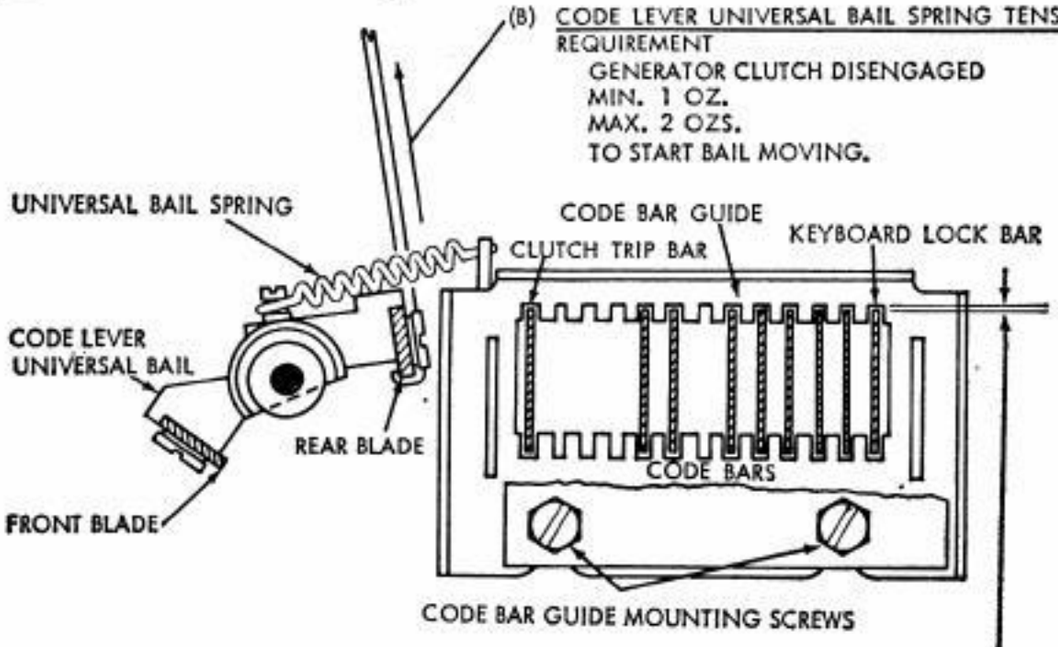
CAUTION:

IF MOTOR BECOMES BLOCKED FOR SEVERAL SECONDS, THERMAL CUT-OUT SWITCH WILL BREAK CIRCUIT. SHOULD THIS HAPPEN, ALLOW MOTOR TO COOL AT LEAST 5 MINUTES BEFORE DEPRESSING RED RESET BUTTON.

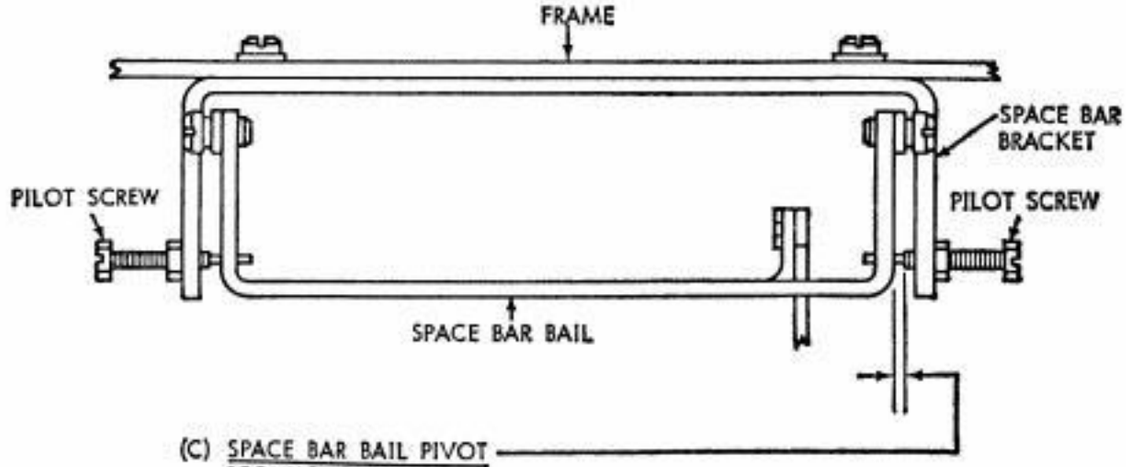
3. REQUIREMENTS AND ADJUSTMENTS FOR 28 TYPING REPERFORATOR KEYBOARD SENDING-RECEIVING (KSR) BASE

A. KSR Base

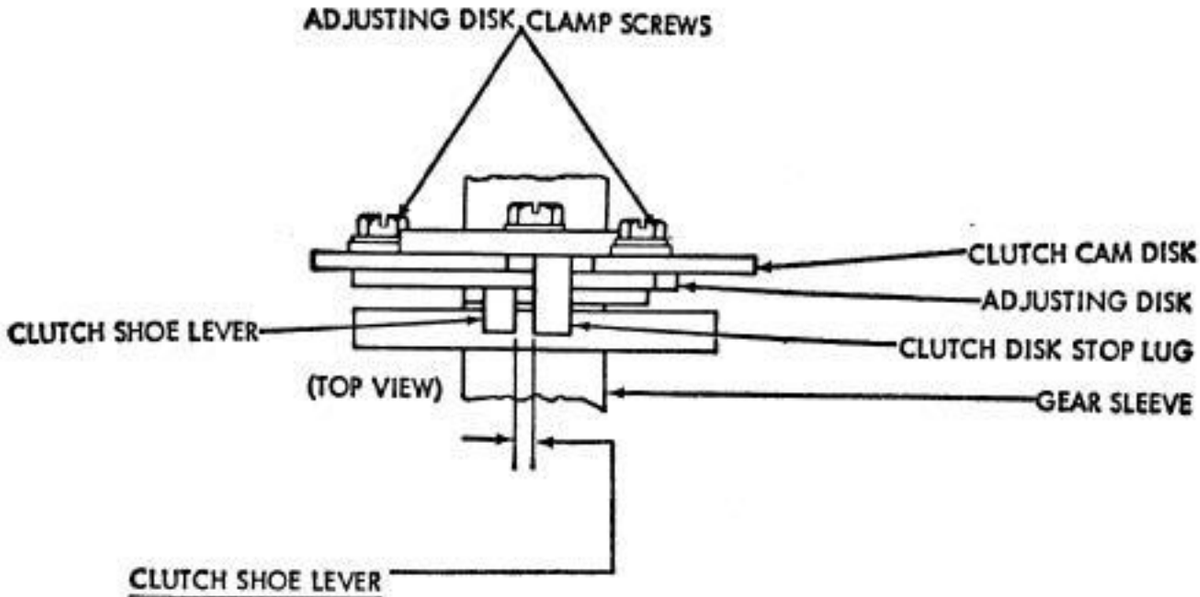
3.01 Codebar and Spacebar Mechanisms



NOTE: KEYLEVER GUIDE PLATE MUST BE REMOVED.
SEE DISASSEMBLY AND REASSEMBLY.



3.02 Signal Generator Clutch Mechanism



REQUIREMENT

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

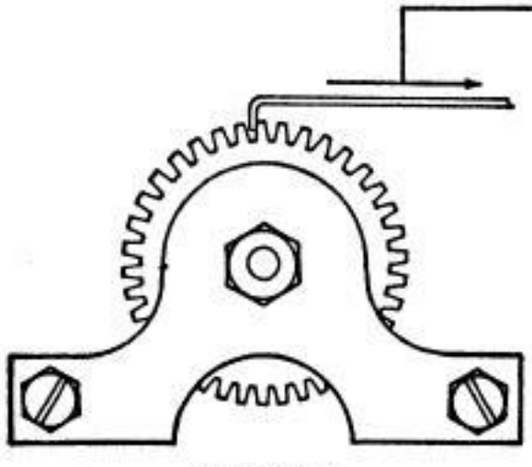
TO CHECK

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

TO ADJUST

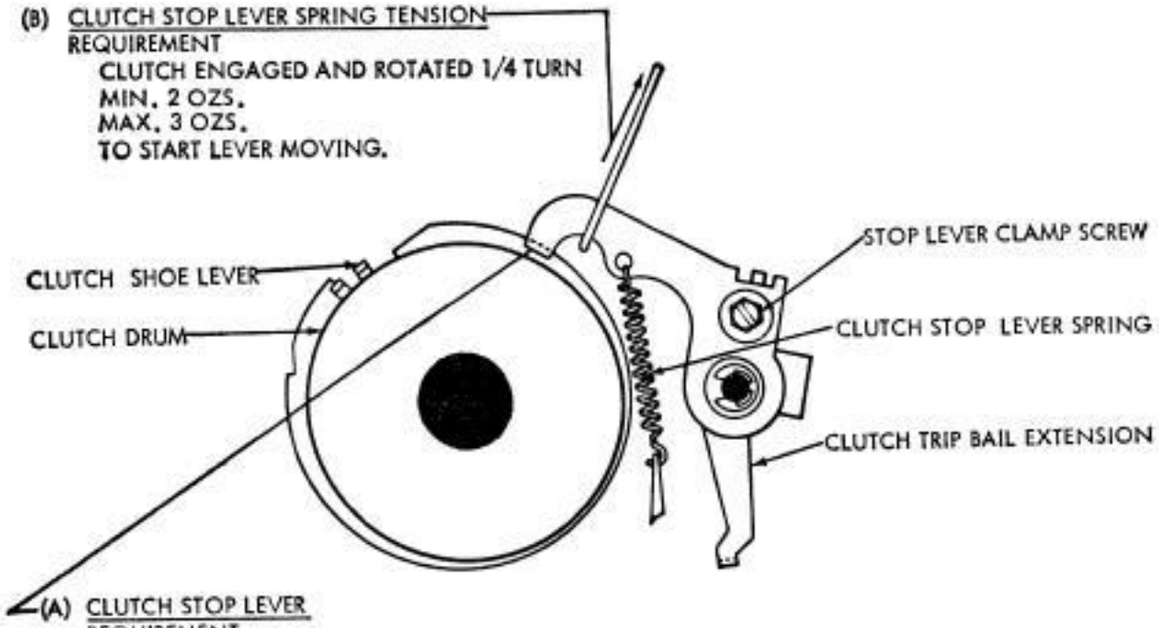
LOOSEN THE TWO ADJUSTING DISK CLAMP SCREWS TO POSITION DISK.

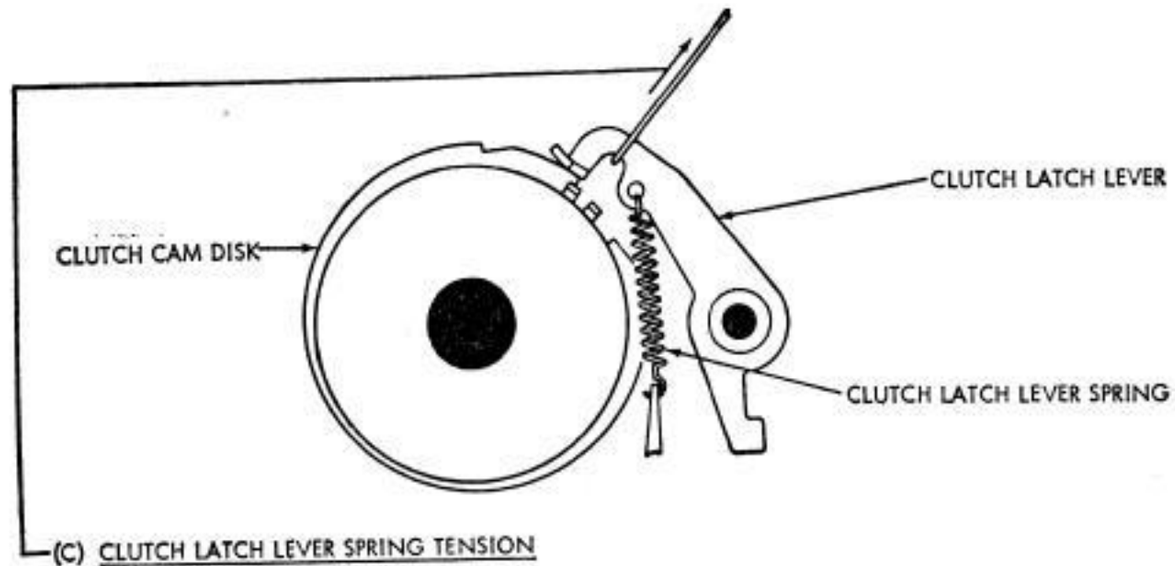
NOTE:
AFTER ABOVE ADJUSTMENT IS MADE, CHECK FOR DRAG ON DRUM AS FOLLOWS: DISENGAGE CLUTCH. HOOK SPRING SCALE ON TOP TOOTH OF GEAR AND PULL AT RIGHT ANGLE TO RADIUS OF GEAR. IF PULL OF 12 OZS. OR MORE IS REQUIRED TO MOVE THE DRUM, REFINE ABOVE ADJUSTMENT.



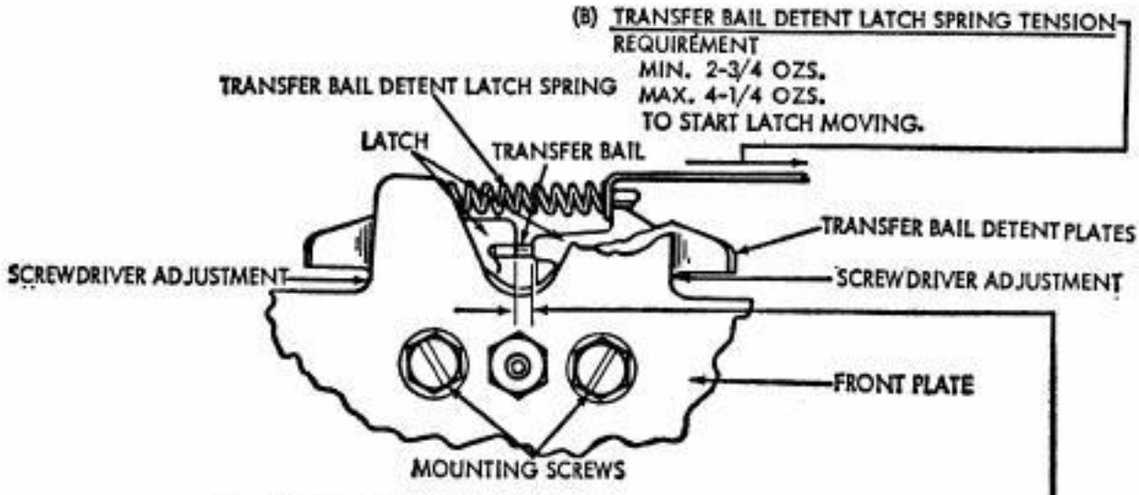
(REAR VIEW)

3.03 Signal Generator Clutch Mechanism





3.04 Signal Generator Contact Box and Transfer Mechanisms



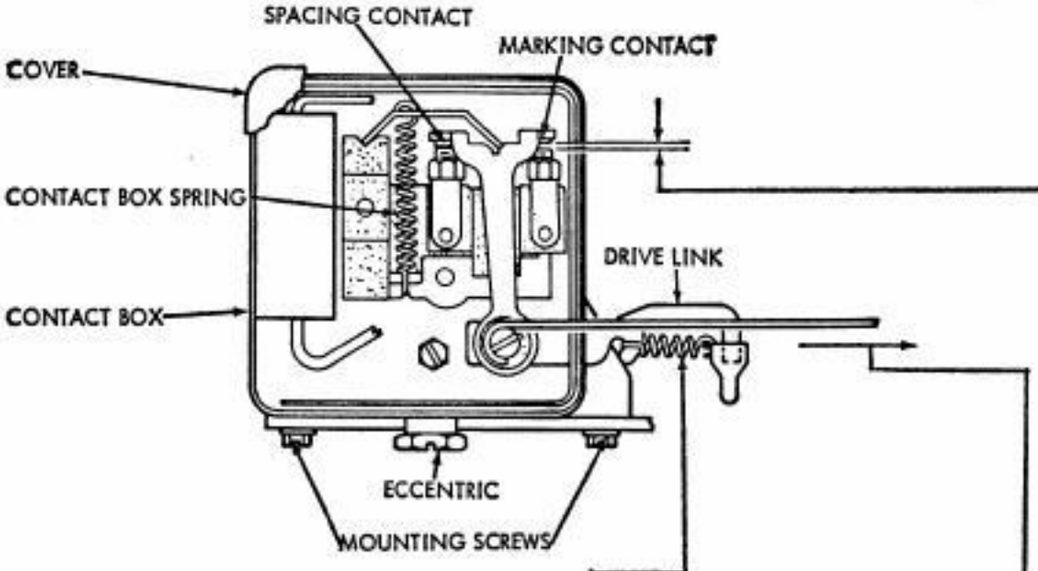
(B) TRANSFER BAIL DETENT LATCH SPRING TENSION
REQUIREMENT
MIN. 2-3/4 OZS.
MAX. 4-1/4 OZS.
TO START LATCH MOVING.

(A) TRANSFER BAIL DETENT PLATE
REQUIREMENT
EQUAL L. H. AND R. H. CLEARANCE WITHIN 0.002 INCH.
TO ADJUST
ROTATE DETENT PLATE RIGHT OR LEFT BY MEANS OF SCREWDRIVER WITH MOUNTING SCREWS LOOSENED.

(C) CONTACT BOX CONTACT CLEARANCE
REQUIREMENT
MARKING AND SPACING GAPS SHALL BE EQUAL WITHIN 0.001 INCH.
TO CHECK
DEPRESS V KEYLEVER AND ROTATE SIGNAL GENERATOR CAM SLEEVE UNTIL EACH CONTACT HAS FULLY OPENED.
TO ADJUST
LOOSEN MOUNTING SCREWS AND MOVE CONTACT BOX BY MEANS OF ECCENTRIC.

NOTE

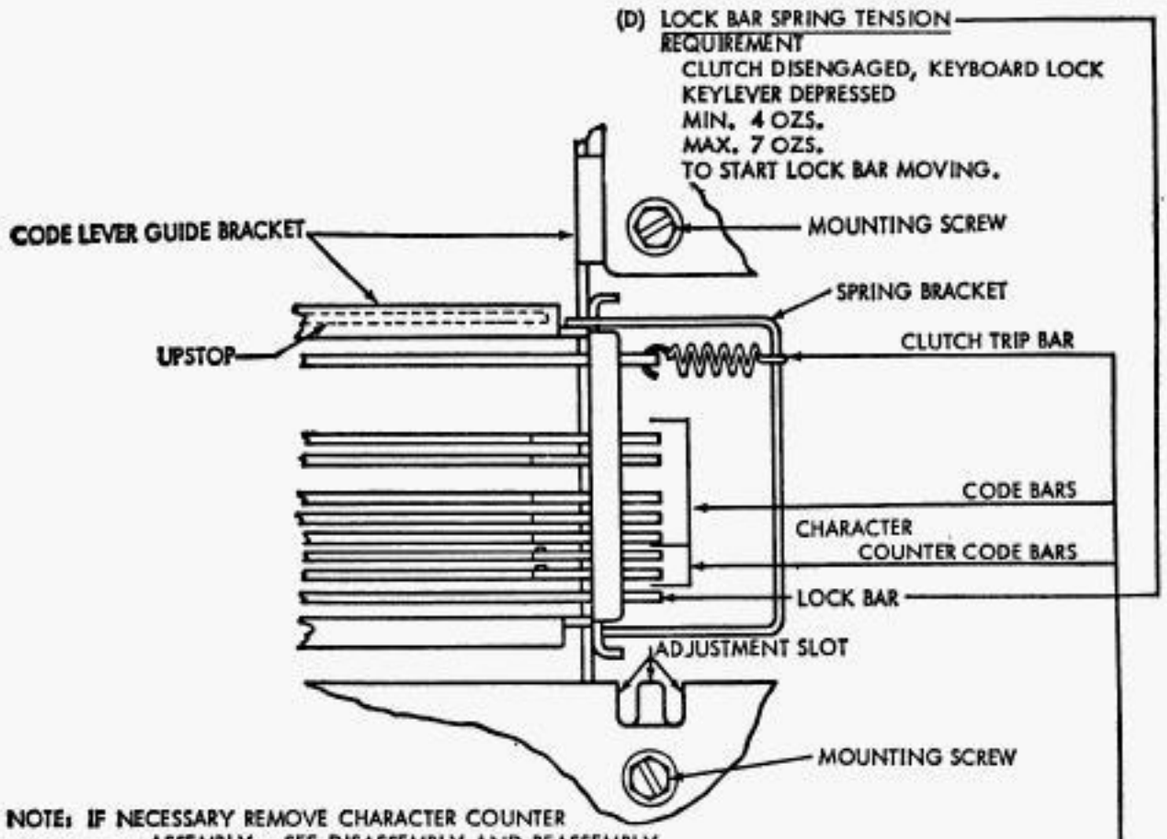
CHECK BY MEANS OF SIGNAL CHECKING DEVICE WHERE POSSIBLE, AND CAREFULLY REFINE THE ADJUSTMENT TO ELIMINATE ALL BIAS FROM THE SIGNALS BY EQUALIZING THE CURRENT-ON AND CURRENT-OFF INTERVALS.



(D) CONTACT BOX DRIVE LINK SPRING TENSION
REQUIREMENT
SPRING REMOVED FROM LINK
MIN. 11 OZS.
MAX. 13 OZS.
AT 7/16 INCH.

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

3.05 Codebar and Codelever Mechanisms



(A) CODE BAR AND CODE LEVER CLEARANCE

REQUIREMENT

CAR.RET.KEY DEPRESSED BUT NOT ENOUGH TO TRIP OFF UNIVERSAL BAIL LATCH OR CLUTCH BAR
MIN. 0.006 INCH
MAX. 0.017 INCH
MEASURED AT CODE BAR NO. 3.

TO ADJUST

POSITION GUIDE BY ADJUSTING SLOT WITH 4 MOUNTING SCREWS LOOSENED.

(B) CLUTCH TRIP BAR SPRING TENSION

REQUIREMENT

BLANK KEYLEVER DEPRESSED TO ALLOW THE CLUTCH TRIP BAR TO FALL TO RIGHT.
SPRING UNHOOKED FROM BRACKET
MIN. 9 OZS.
MAX. 12 OZS.
TO PULL SPRING TO INSTALLED LENGTH.

(C) CODE BAR SPRING TENSION

REQUIREMENT (POWER OFF)

LTRS KEYLEVER DEPRESSED.
HOLD TRANSFER LEVERS TO THE RIGHT SO THEY DO NOT AFFECT THE CODE BARS
MIN. 3 OZS.
MAX. 5 OZS.
TO START CODE BAR MOVING.

3.06 Function Bail and Lock-ball Channel Mechanisms

(A) FUNCTION BAIL AND CODE LEVER CLEARANCE

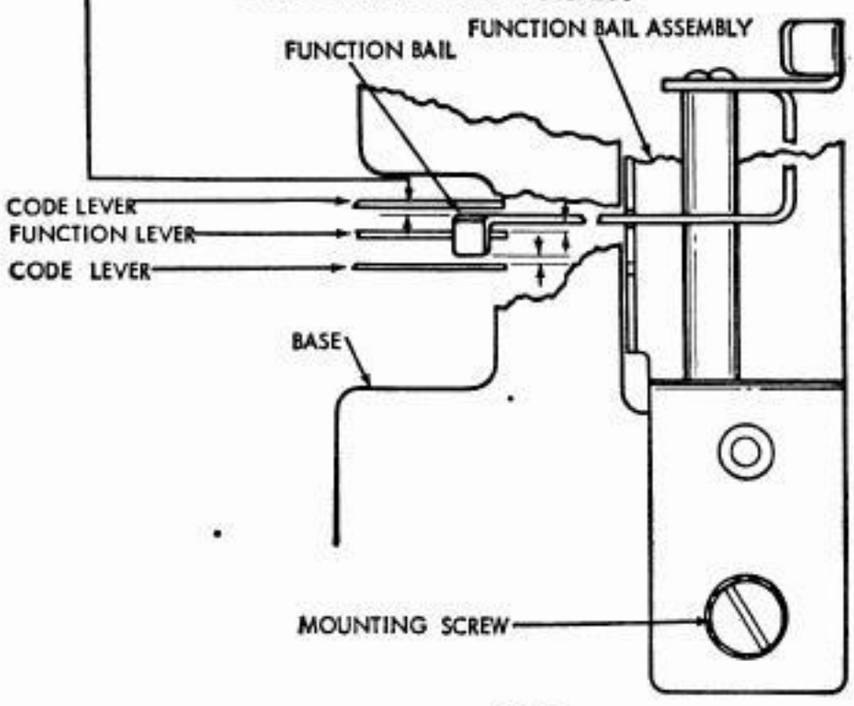
REQUIREMENT

MIN. 0.015 INCH

BETWEEN ANY FUNCTION BAIL AND ITS ADJACENT CODE LEVER.

TO ADJUST

POSITION FUNCTION BAIL ASSEMBLY WITH MOUNTING SCREWS AND CASTING UNIT LOCATING STUDS LOOSENED.



NOTE

THIS ADJUSTMENT SHALL NOT BE MADE UNLESS THE LOCK-BALL CHANNEL HAS BEEN DISASSEMBLED.

(B) LOCK-BALL CHANNEL

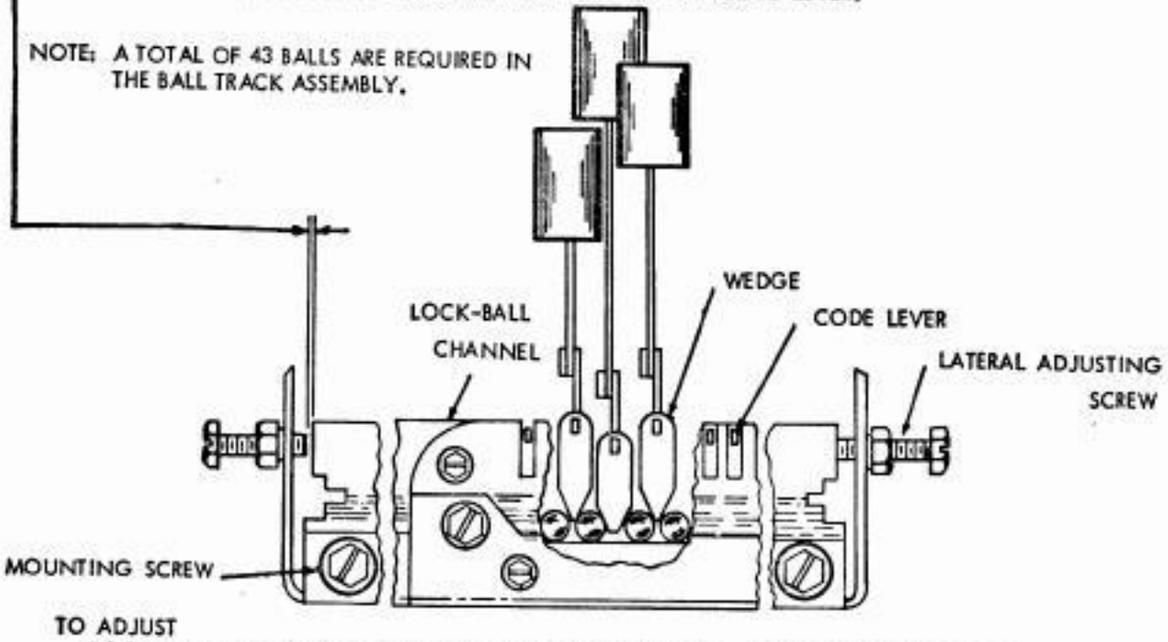
REQUIREMENT

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

TO CHECK

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

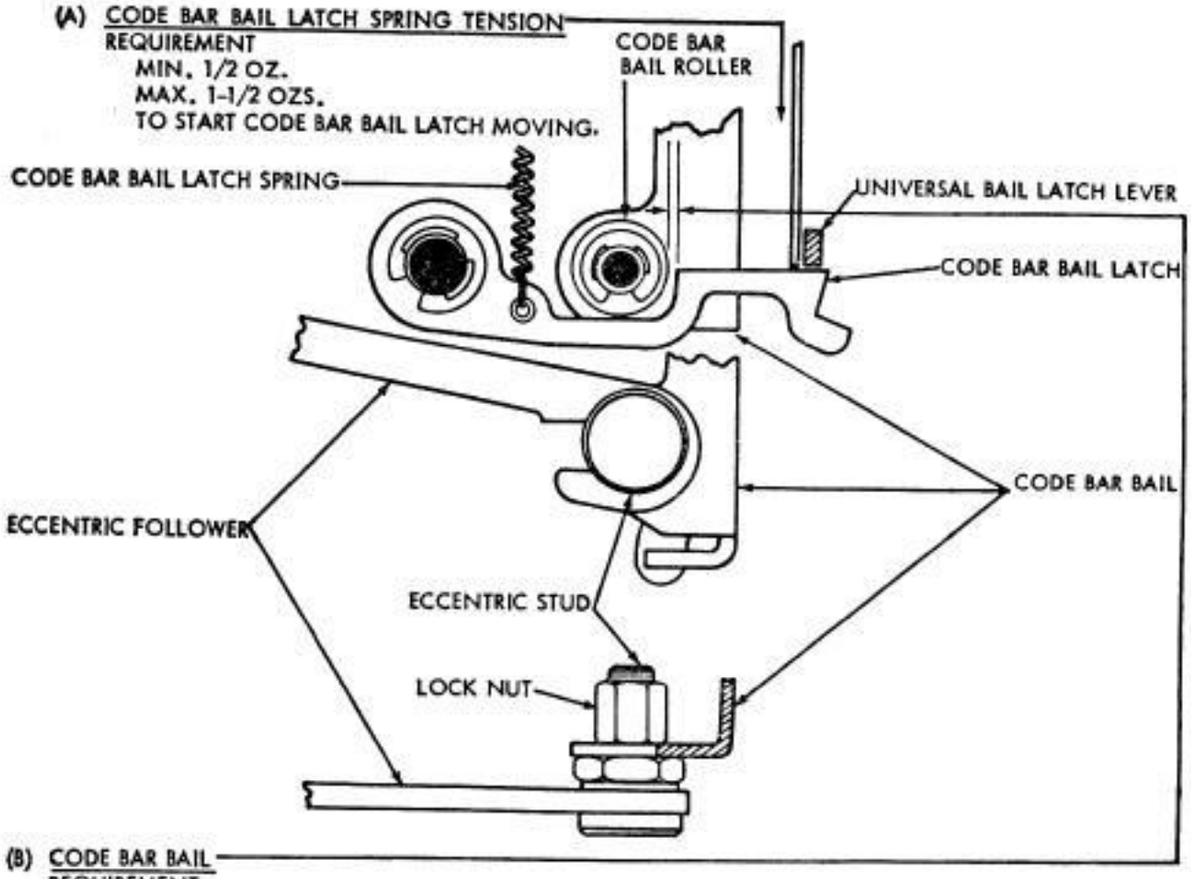
NOTE: A TOTAL OF 43 BALLS ARE REQUIRED IN THE BALL TRACK ASSEMBLY.



TO ADJUST

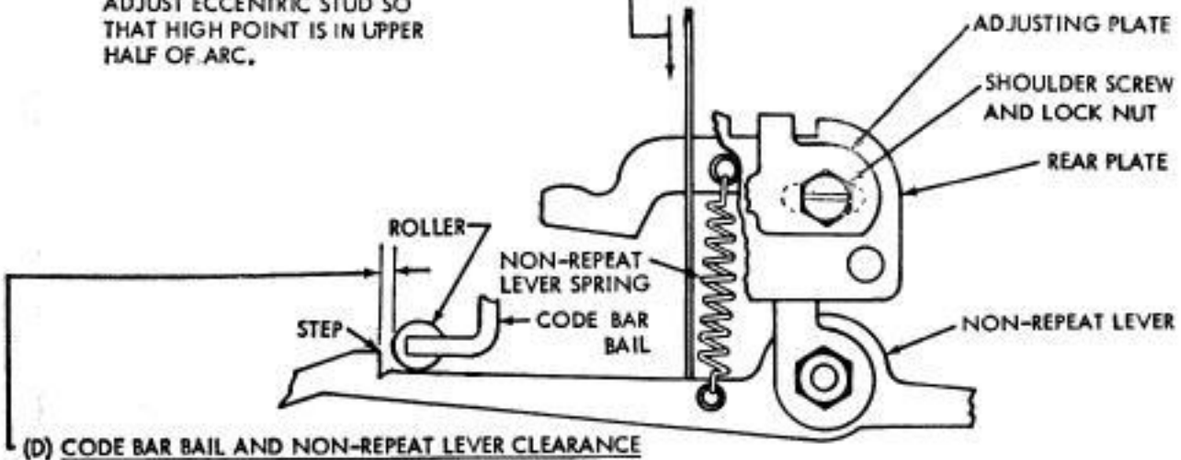
LOOSEN THE LOCK-BALL CHANNEL MOUNTING SCREWS. BACK OFF LATERAL ADJUSTING SCREWS AND POSITION CHANNEL. TURN ONE ADJUSTING SCREW IN AGAINST THE END OF THE CHANNEL AND LOCK IT. TURN THE OTHER ADJUSTING SCREW IN TO THE END OF THE CHANNEL AND BACK IT OFF 1/4 TURN. LOCK THE SCREW. REPLACE THE WEDGES AND CHECK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

3.07 Codebar Bail and Nonrepeat Mechanisms



(B) CODE BAR BAIL
REQUIREMENT
CAM ECCENTRIC AND ARM WHICH HOLD THE BAIL IN EXTREME RESET POSITION TO THE LEFT
MIN. 0.004 INCH
MAX. 0.012 INCH
BETWEEN CODE BAR BAIL ROLLER AND CODE BAR BAIL LATCH.
TO ADJUST
WITH LOCK NUT LOOSENED, ADJUST ECCENTRIC STUD SO THAT HIGH POINT IS IN UPPER HALF OF ARC.

(C) NON-REPEAT LEVER SPRING TENSION
REQUIREMENT
ANY KEYLEVER DEPRESSED
MIN. 2-1/4 OZS.
MAX. 3-1/4 OZS.
TO START NON-REPEAT LEVER MOVING DOWNWARD.



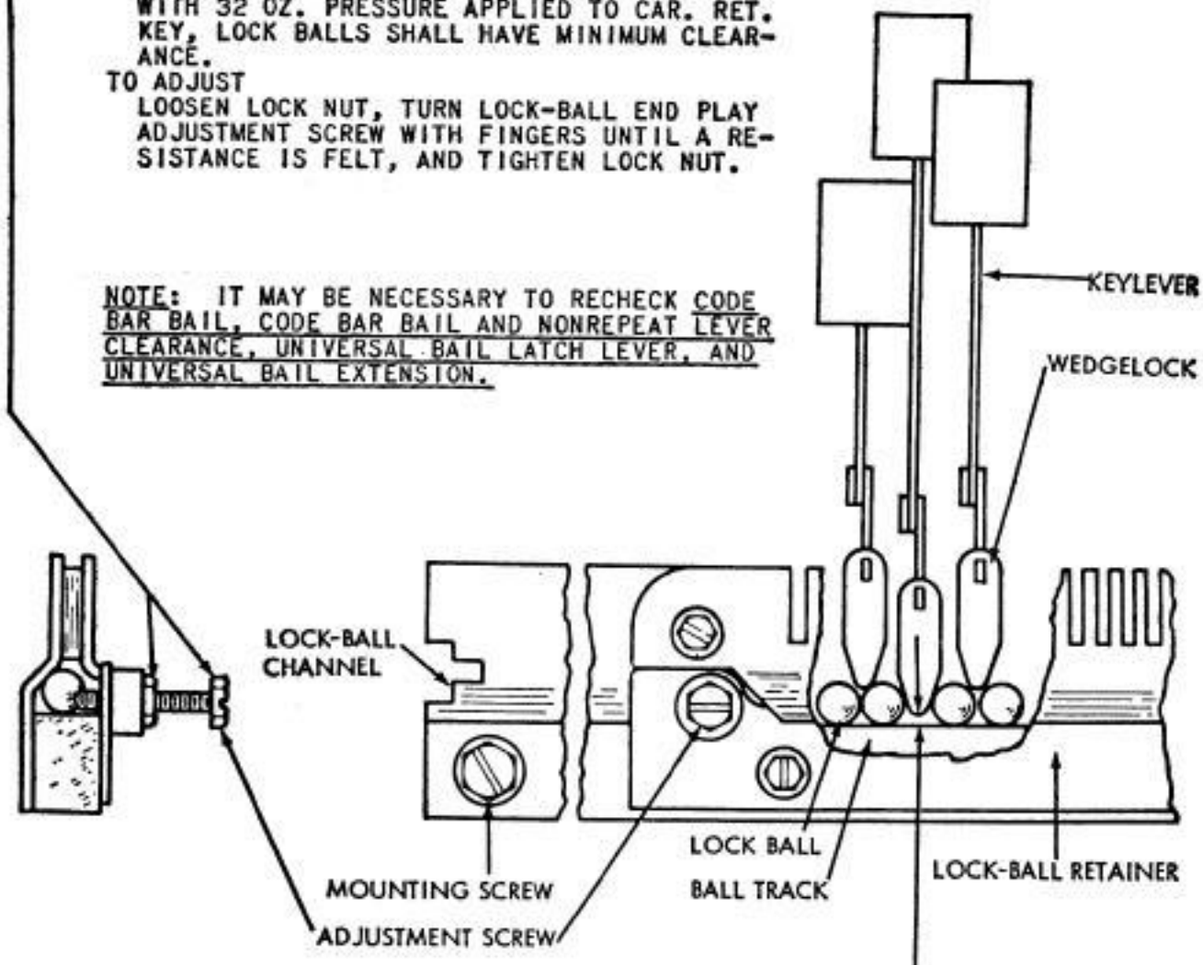
(D) CODE BAR BAIL AND NON-REPEAT LEVER CLEARANCE
REQUIREMENT (POWER OFF)
MECHANISM IN INITIAL TRIP-OFF POSITION, ANY KEY DEPRESSED

MIN. 0.010 INCH
MAX. 0.020 INCH
BETWEEN ROLLER OF CODE BAR BAIL AND NON-REPEAT LEVER PICK-UP STEP.
TO ADJUST
LOOSEN LOCK NUT AND SHOULDER SCREW AND MOVE MECHANISM LEFT OR RIGHT.

3.08 Lock-ball Mechanism (Prel)

(B) LOCK-BALL END PLAY (PRELIMINARY)
REQUIREMENT
WITH 32 OZ. PRESSURE APPLIED TO CAR. RET. KEY, LOCK BALLS SHALL HAVE MINIMUM CLEARANCE.
TO ADJUST
LOOSEN LOCK NUT, TURN LOCK-BALL END PLAY ADJUSTMENT SCREW WITH FINGERS UNTIL A RESISTANCE IS FELT, AND TIGHTEN LOCK NUT.

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

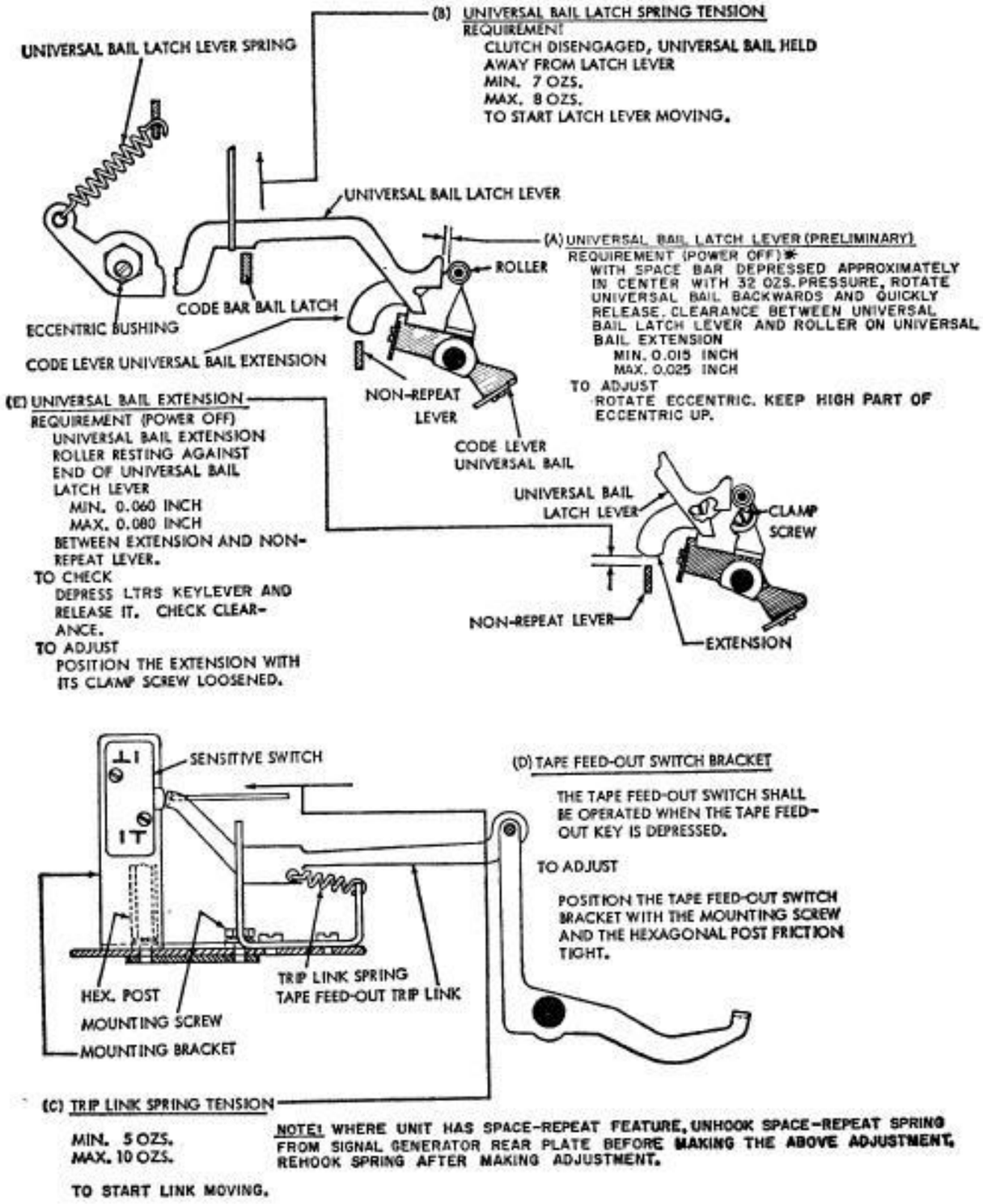


(A) BALL WEDGELOCK AND BALL TRACK CLEARANCE (PRELIMINARY)
REQUIREMENT
ADJUSTMENT SCREW BACKED OUT TO PERMIT MAXIMUM BALL MOVEMENT WITHOUT BALLS ROLLING OUT OF TRACK. APPLY 32 OZ. PRESSURE TO Q AND P KEYLEVERS
MIN. 0.005 INCH
MAX. 0.015 INCH (EQUAL WITHIN 0.005 INCH)
BETWEEN TIP OF WEDGELOCK AND BALL TRACK.
TO ADJUST
LOOSEN MOUNTING SCREWS AT EACH END OF BALL TRACK AND ADJUST TRACK UP OR DOWN.

NOTE: WHEN GAUGING THESE CLEARANCES, MAKE SURE THERE IS NO CLEARANCE BETWEEN LOWER EDGE OF CODE LEVER EXTENSION AND BOTTOM OF SLOTS IN WEDGES.

NOTE: A TOTAL OF 43 BALLS ARE REQUIRED IN BALL TRACK ASSEMBLY.

3.09 Universal Bail and Tape Feed-out Mechanisms



3.10 **Ball Wedgelock and Ball Track Clearance, Lock-ball Endplay, and Universal Bail Latchlever (Final)**

Requirement (Keyboard under power)

(1) It shall require
Min. 2 ozs.
Max. 5 ozs.
To trip off any center row key.

(2) With 5-1/2 oz. pressure applied perpendicularly to "A" key after depressing each key in third row, "A" key shall trip each time one of the keys in the third row is released. Repeat this check with 5-1/2 oz. pressure on CAR. RET. key.

(3) Clutch shall not trip when any two keys are depressed simultaneously.

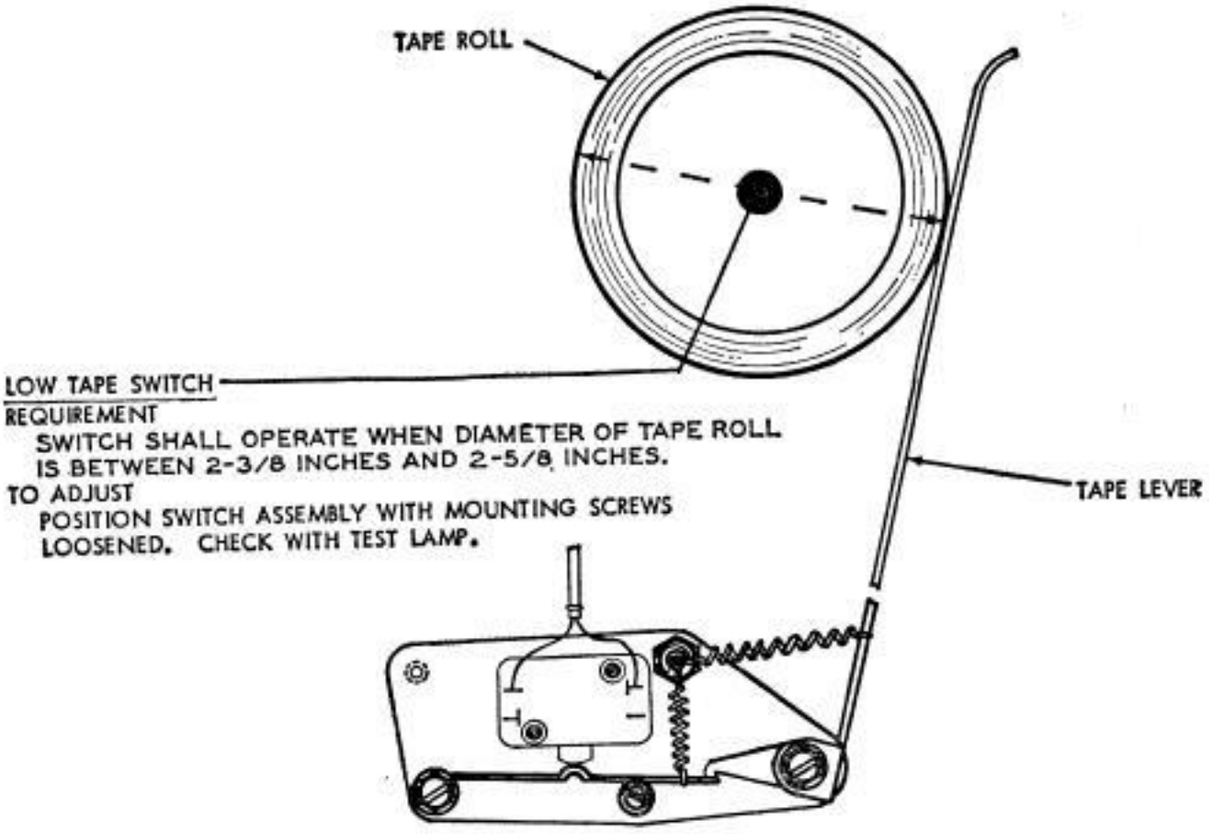
(4) With Min. 4 ozs.—Max. 4-1/2 ozs. applied to space bar after depressing CAR. RET. key, spacebar shall trip each time CAR. RET. key is released by moving finger off key in horizontal direction.

Note: Disregard requirement (4) where unit is equipped with repeat-on-space feature.

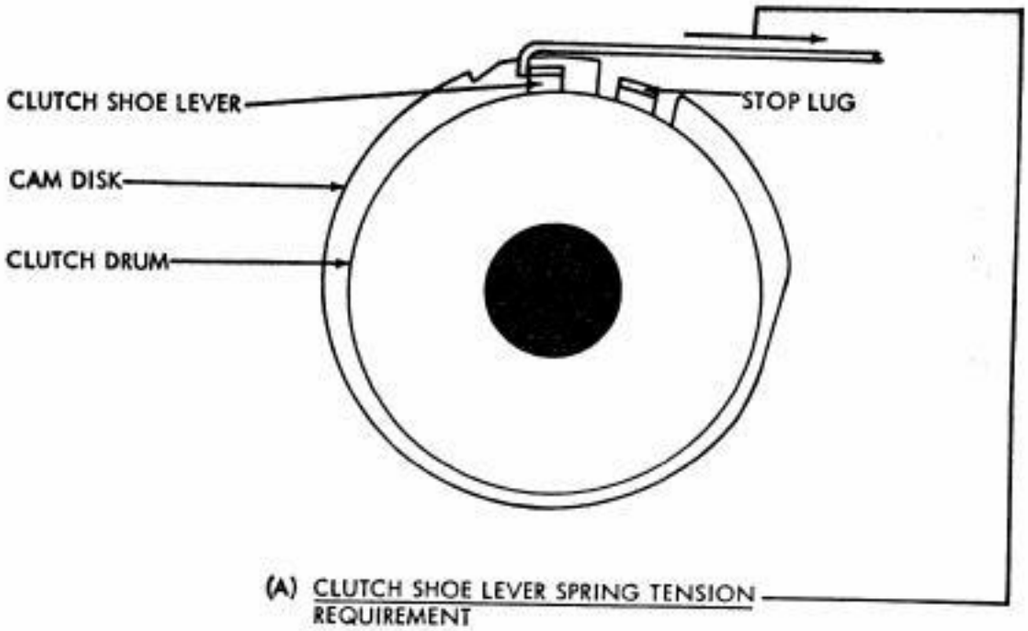
To Adjust

Refine preliminary **Ball Wedgelock and Ball Track Clearance, Lock-ball Endplay,** and **Universal Bail Latchlever** adjustments and recheck **Universal Bail Extension** adjustment.

3.11 Low Tape Mechanism



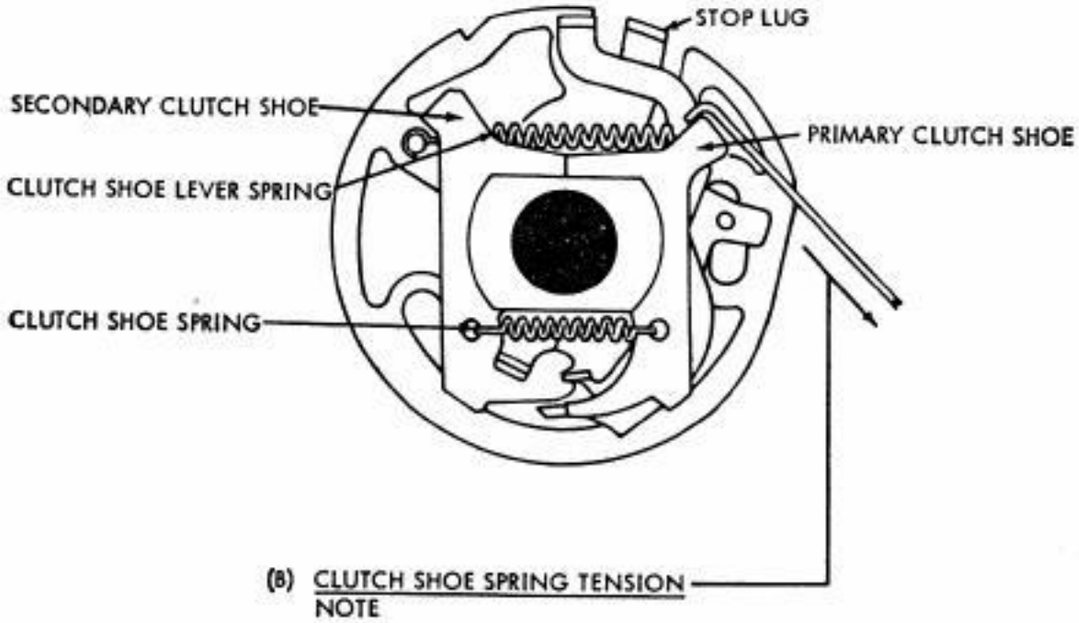
3.12 Signal Generator Clutch Mechanism



(A) CLUTCH SHOE LEVER SPRING TENSION

REQUIREMENT

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



(B) CLUTCH SHOE SPRING TENSION

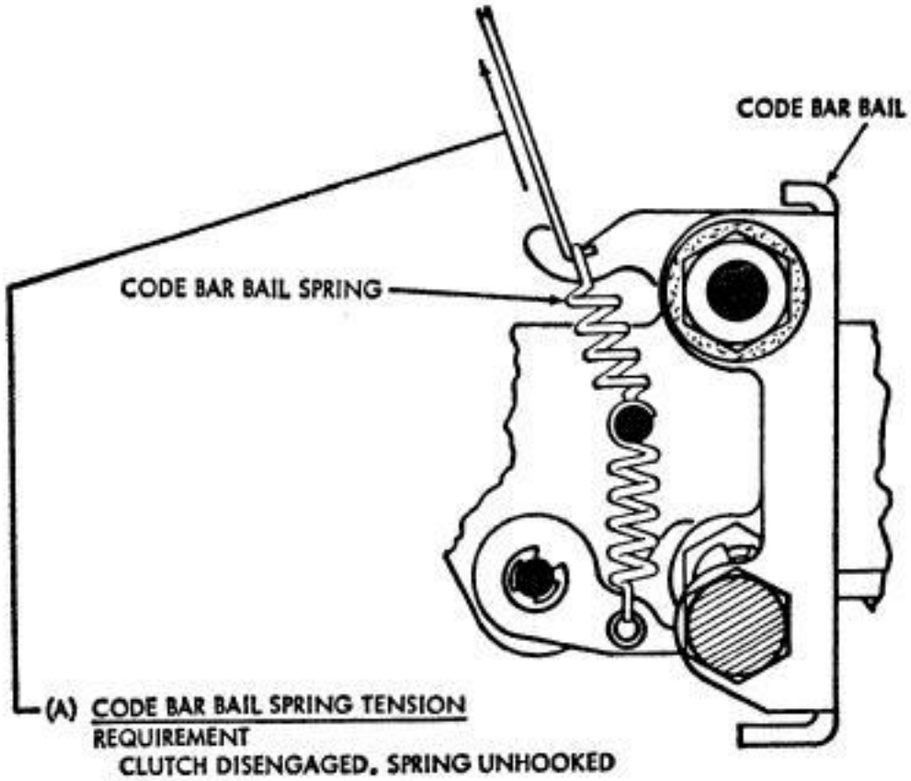
NOTE

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

REQUIREMENT

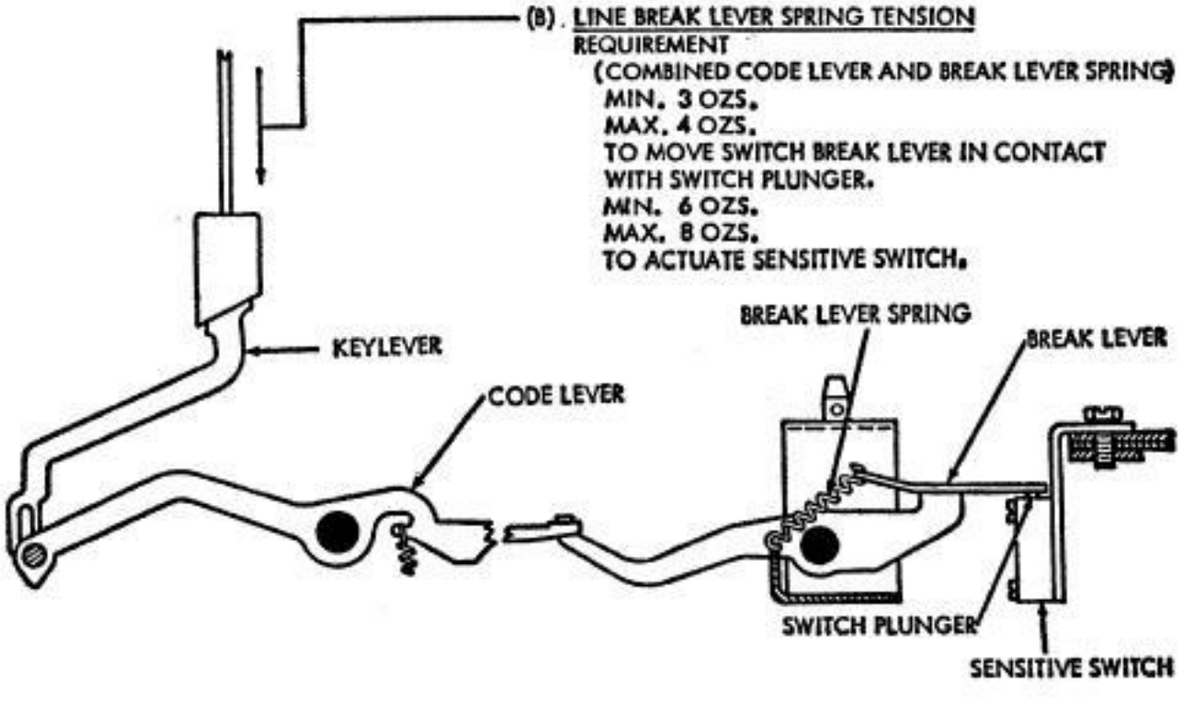
CLUTCH DRUM REMOVED
MIN. 3 OZS.
MAX. 5 OZS.
TO START PRIMARY SHOE MOVING AWAY FROM SECONDARY SHOE AT POINT OF CONTACT.

3.13 Codebar Bail and Line Break Lever Mechanisms

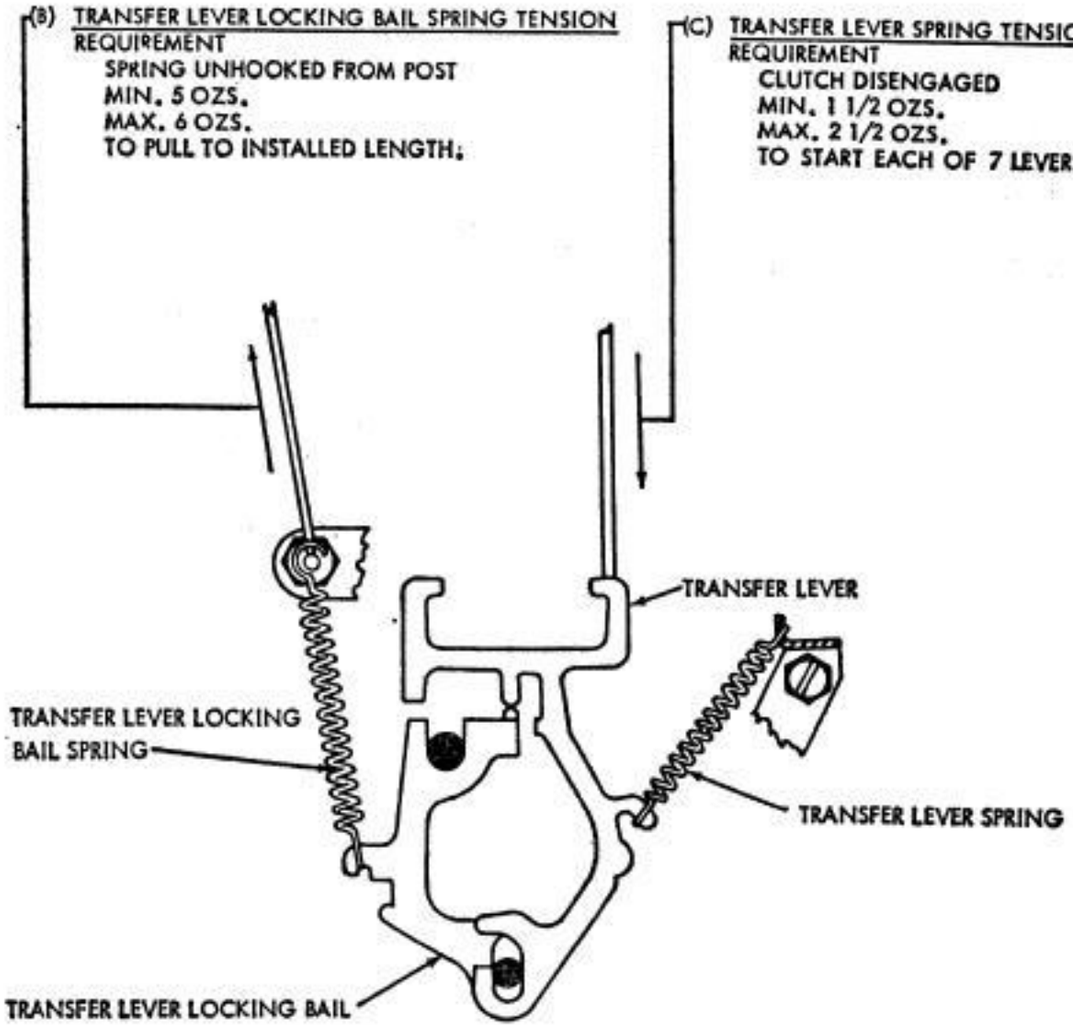


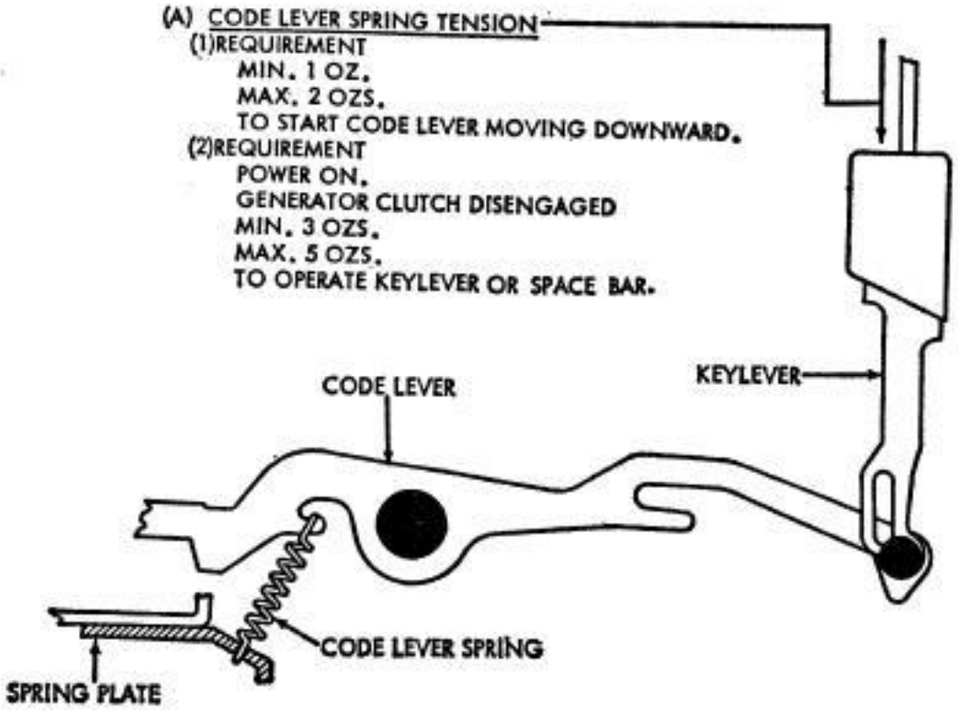
(A) CODE BAR BAIL SPRING TENSION
REQUIREMENT
CLUTCH DISENGAGED, SPRING UNHOOKED FROM ARM
MIN. 9 OZS.
MAX. 11 OZS.
TO PULL TO INSTALLED LENGTH.

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

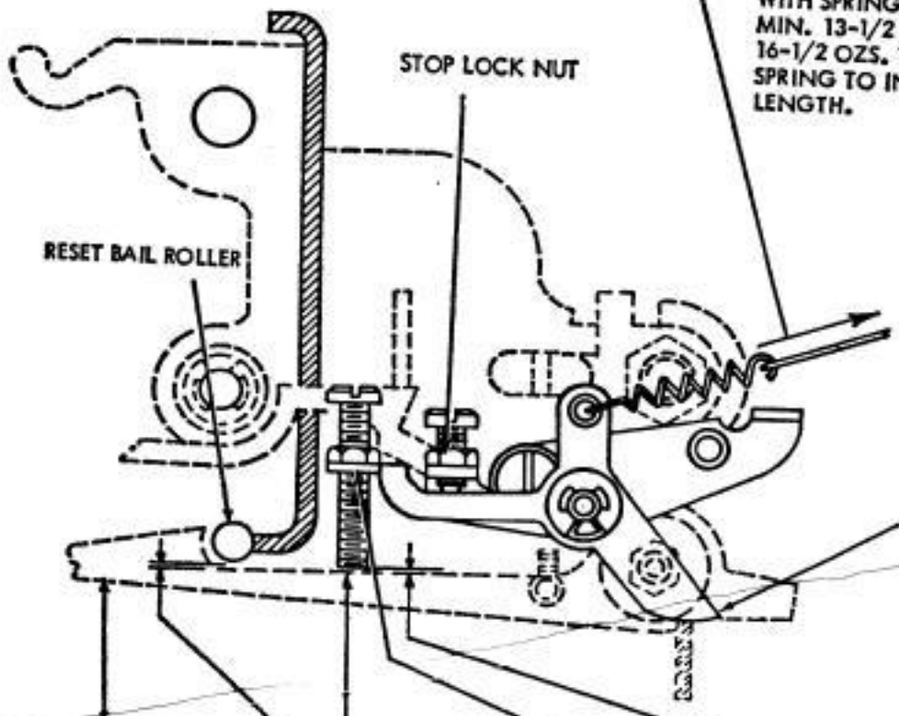


3.14 Signal Generator Transfer and Codelever Mechanisms





3.15 Repeat-on-Space Mechanism



SPACE-REPEAT LEVER SPRING
REQUIREMENT
WITH SPRING UNHOOKED MIN. 13-1/2 OZS.---MAX. 16-1/2 OZS. TO STRETCH SPRING TO INSTALLED LENGTH.

STOP
REQUIREMENT
MIN. 0.002 INCH---MAX. 0.020 INCH BETWEEN SPACE-REPEAT LEVER AND NON-REPEAT LEVER.
TO ADJUST
DEPRESS G KEYLEVER TO TRIP KEYBOARD CLUTCH. POSITION STOP BY LOOSENING STOP LOCK NUT. RECHECK AFTER ADJUSTMENT.

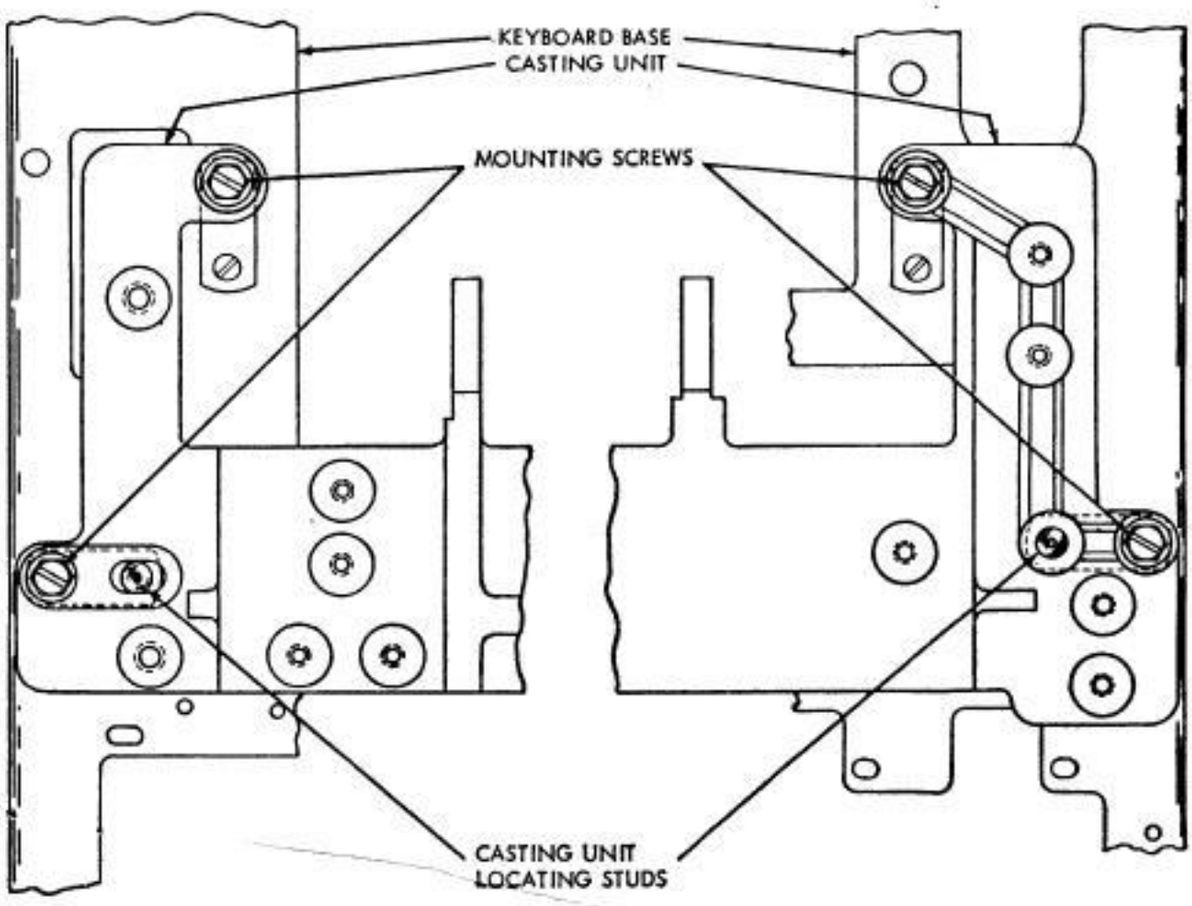
SPACE BAR
(1) REQUIREMENT (SINGLE SPACE)
NORMAL KEY TOP PRESSURE TO TRANSMIT SINGLE SPACE.
(2) REQUIREMENT (REPEAT SPACE)
SPACE BAR FULLY DEPRESSED AND HELD DOWN TO EFFECT CONTINUOUS SPACE TRANSMISSION.

TRAVEL SCREW
REQUIREMENT
WITH SPACE KEY FULLY DEPRESSED MIN. 0.035 INCH---MAX. 0.080 INCH BETWEEN RESET BAIL ROLLER AND NON-REPEAT LEVER.
TO ADJUST
WITH SPACE KEY FULLY DEPRESSED, ADJUST TRAVEL SCREW BY LOOSENING TRAVEL SCREW LOCK NUT. RECHECK AFTER ADJUSTMENT.

NOTE

SPACE BAR TOUCH TO OBTAIN A REPEAT IS AFFECTED BY THIS ADJUSTMENT. TO GET A LIGHTER TOUCH, ADJUST TO UPPER LIMIT. TO OBTAIN A HEAVIER TOUCH ADJUST TO THE LOWER LIMIT.

3.16 Base and Casting Assembly



CASTING ASSEMBLY TO KEYBOARD BASE

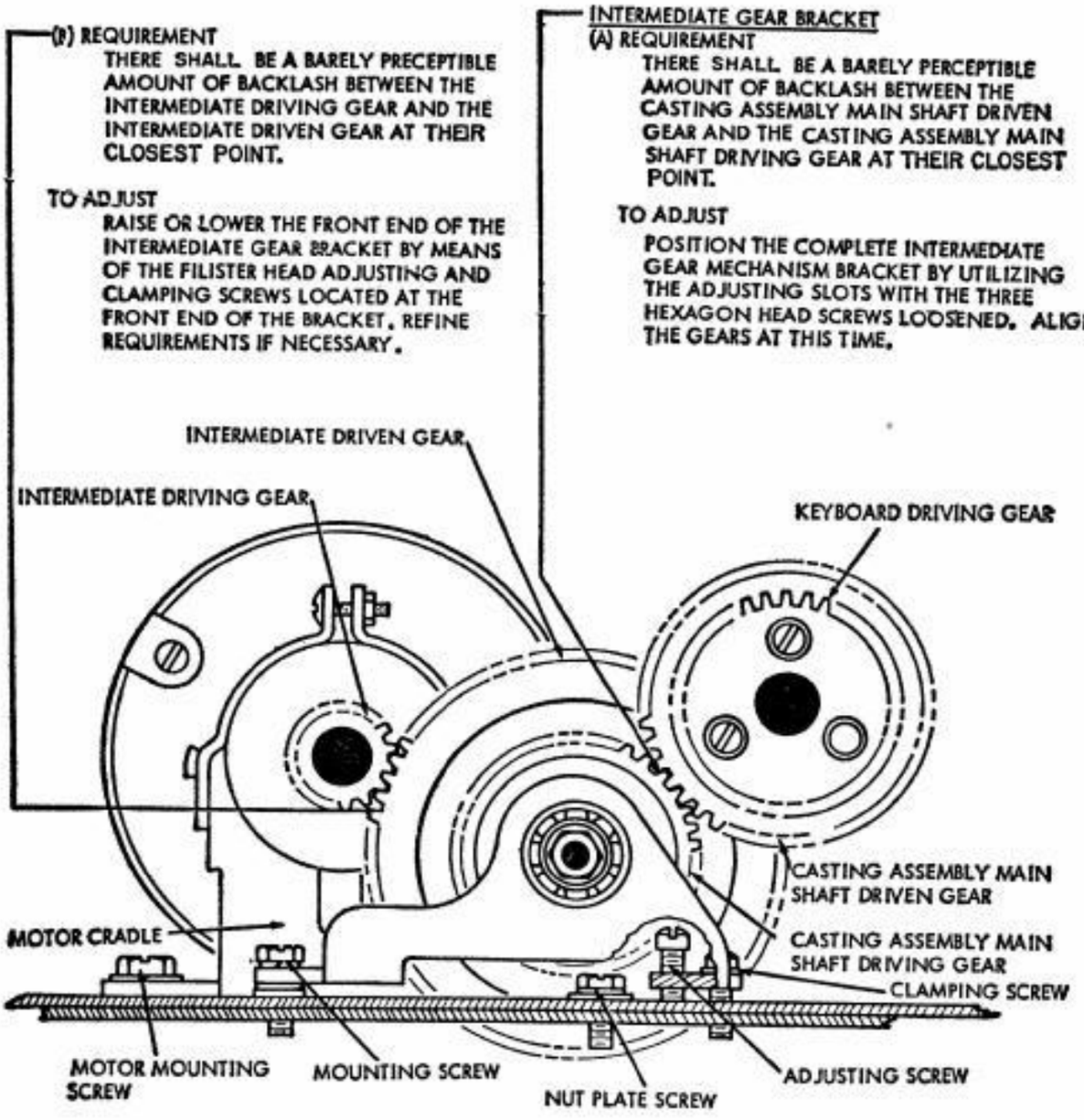
REQUIREMENT

THERE SHALL BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE CASTING ASSEMBLY MAIN SHAFT DRIVEN GEAR AND ITS DRIVING GEAR AT THEIR CLOSEST POINT.

TO ADJUST

WITH THE FRONT FEET OF THE CASTING ASSEMBLY PLACED OVER THE LOCATING STUDS PROVIDED ON THE KEYBOARD BASE AND ITS MOUNTING SCREWS LOOSENED, POSITION THE CASTING ASSEMBLY UTILIZING ITS OVERSIZE MOUNTING HOLES.

3.17 Intermediate Gear Mechanism

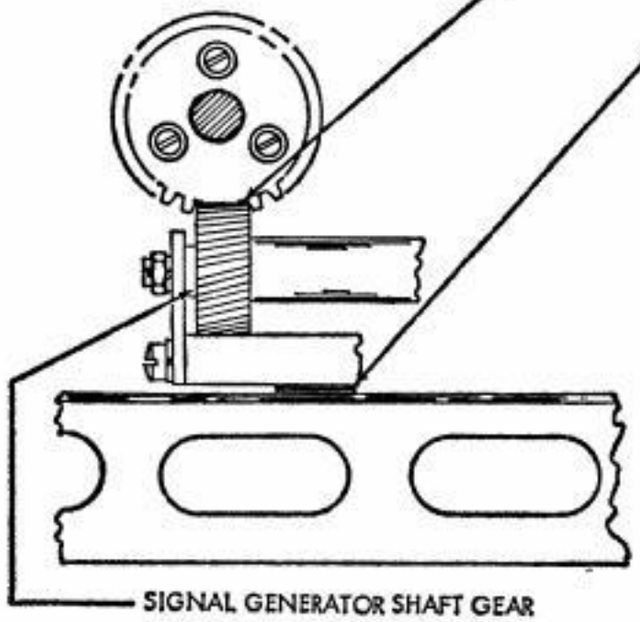


3.18 Signal Generator and Typing Reperforator Gear Mechanisms

(A) SIGNAL GENERATOR SHAFT GEAR MESH

REQUIREMENT
THERE SHALL BE A BARELY PERCEPTIBLE AMOUNT OF BACKLASH BETWEEN THE SIGNAL GENERATOR SHAFT GEAR AND ITS DRIVING GEAR, AT THEIR CLOSEST POINT.

TO ADJUST
REMOVE THE SIGNAL GENERATOR AND ADD OR SUBTRACT SHIMS AT THE REAR GENERATOR MOUNT TO OBTAIN THE PROPER CLEARANCE.

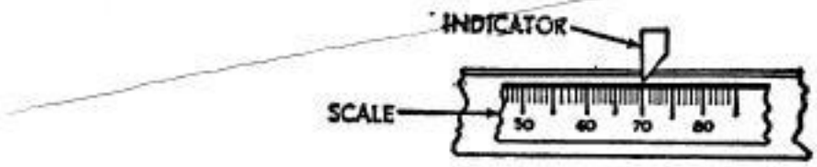


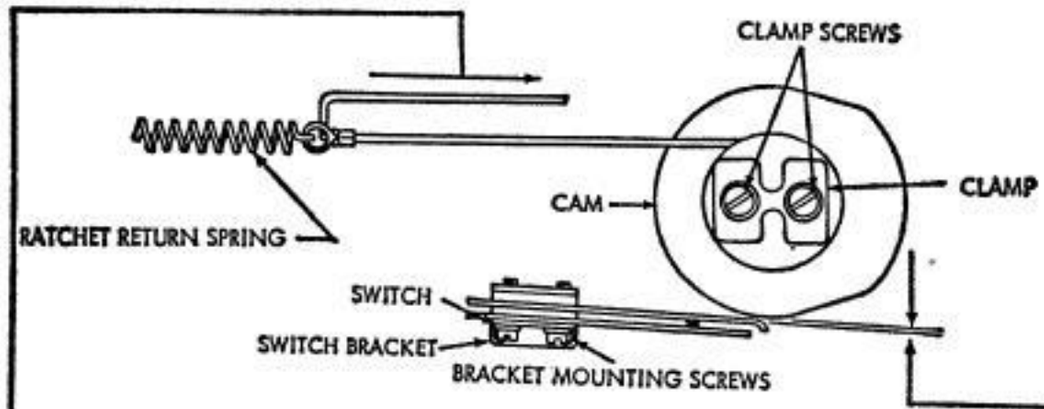
(B) TYPING REPERFORATOR SHAFT GEAR MESH

REQUIREMENT
CENTER THE GEAR ON THE TYPING REPERFORATOR MAIN SHAFT WITH THE GEAR ON THE CASTING ASSEMBLY SHAFT.

TO ADJUST
POSITION THE TYPING REPERFORATOR IN ITS OVERSIZE MOUNTING HOLES WITH ITS MOUNTING SCREWS LOOSENED AND ADJUST HUB ON REPERFORATOR.

3.19 Character Counter Mechanism





(B) RATCHET DRUM ASSEMBLY RETURN SPRING

REQUIREMENT

MIN. 1-1/2 OZS. – MAX. 2-1/2 OZS. WHEN INDICATOR POINTS TO 0 TO START EYELET MOVING.

MIN. 3-1/2 OZS. – MAX. 6-1/2 OZS. WHEN INDICATOR POINTS TO 70 TO START EYELET MOVING.

(A) CHARACTER COUNTER END-OF-LINE SWITCH

(1) REQUIREMENT (REMOVE CHARACTER COUNTER)
THE SWITCH SHALL CLOSE AT A PRESET NUMBER OF CHARACTERS WITH A SMALL AMOUNT OF OVERTRAVEL BY BOTH CONTACT SPRINGS.

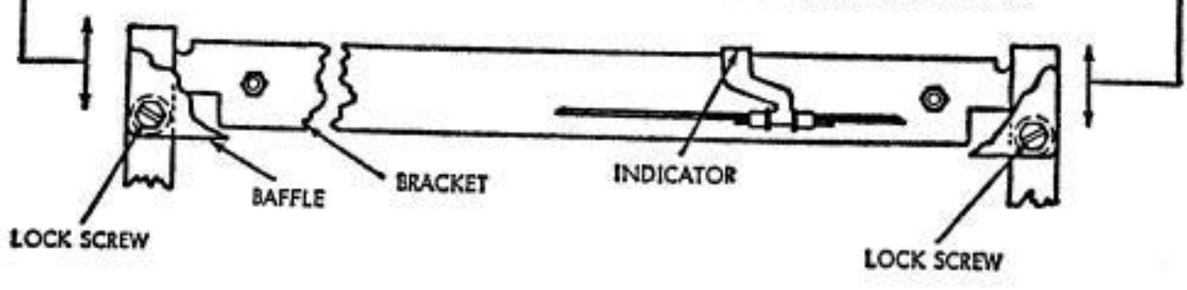
(2) REQUIREMENT
CLEARANCE BETWEEN LONG CONTACT SPRING AND LOW PART OF CAM
MIN. 0.012 INCH – MAX. 0.025 INCH

TO ADJUST
POSITION SWITCH BRACKET WITH ITS MOUNTING SCREWS LOOSENED. THEN SET COUNTER TO THE DESIRED COUNT. LOOSEN CAM CLAMP SCREWS AND POSITION CAM UNTIL CONTACTS CLOSE WITH SOME OVERTRAVEL. REPLACE UNIT.

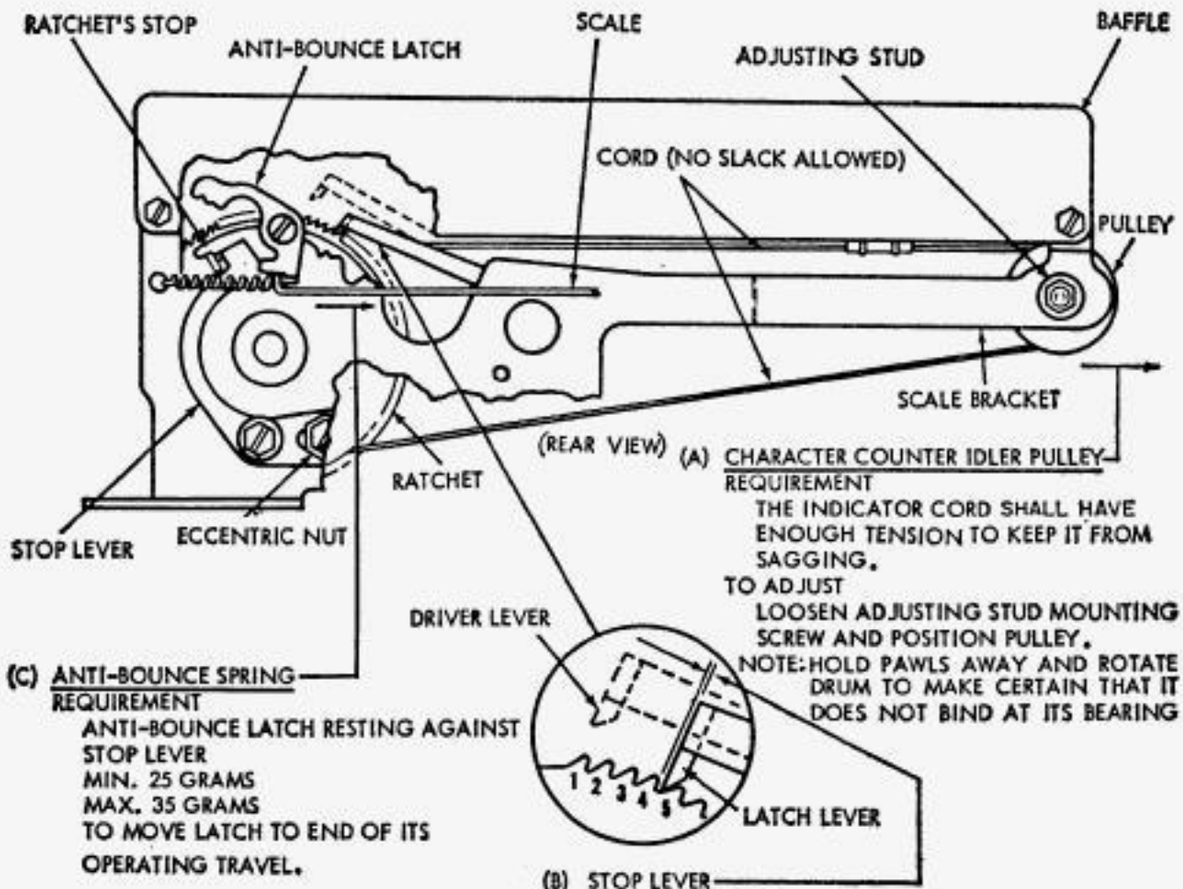
(C) CHARACTER COUNTER SCALE BRACKET

REQUIREMENT
INDICATOR SHALL REST LIGHTLY ON BRACKET FOR ITS FULL TRAVEL FROM 0 TO MAX. TRAVEL.

TO ADJUST
LOOSEN LOCK SCREWS AND POSITION BRACKET. CORD SHALL REMAIN IN STRAIGHT LINE.



3.20 Character Counter Mechanism

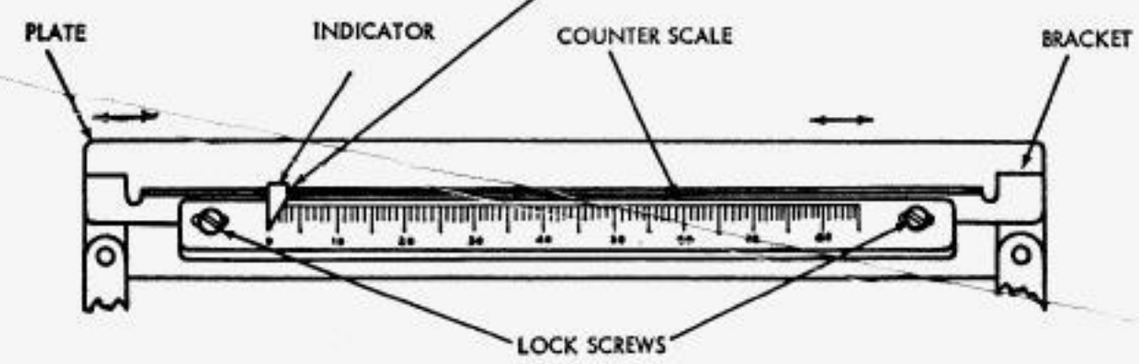


(A) CHARACTER COUNTER IDLER PULLEY
REQUIREMENT
THE INDICATOR CORD SHALL HAVE ENOUGH TENSION TO KEEP IT FROM SAGGING.
TO ADJUST
LOOSEN ADJUSTING STUD MOUNTING SCREW AND POSITION PULLEY.
NOTE: HOLD PAWLS AWAY AND ROTATE DRUM TO MAKE CERTAIN THAT IT DOES NOT BIND AT ITS BEARING

(B) STOP LEVER
(1) REQUIREMENT
WITH THE COUNTER RATCHET FULLY RETURNED AND RESTING AGAINST ITS STOP LEVER, THE CLEARANCE BETWEEN THE LATCH LEVER AND THE FACE OF THE 4TH RATCHET TOOTH SHALL BE
MIN. 0.002 INCH
MAX. 0.010 INCH
(2) REQUIREMENT
THE ANTI-BOUNCE LATCH SHALL NOT INTERFERE WITH THE ROTATION OF THE RATCHET.
TO ADJUST
HOLD THE FEED LEVER OUT OF ENGAGEMENT WITH THE RATCHET AND ROTATE THE STOP LEVER ECCENTRIC.

(C) ANTI-BOUNCE SPRING
REQUIREMENT
ANTI-BOUNCE LATCH RESTING AGAINST STOP LEVER
MIN. 25 GRAMS
MAX. 35 GRAMS
TO MOVE LATCH TO END OF ITS OPERATING TRAVEL.

(D) CHARACTER COUNTER SCALE
REQUIREMENT
WHEN INDICATOR IS AT EXTREME LEFT OF SCALE, IT SHALL POINT TO ZERO.
TO ADJUST
SET INDICATOR TO LEFT.
LOOSEN LOCK SCREWS AND POSITION SCALE.



3.21 Character Counter Mechanism

(A) CHARACTER COUNTER STROKE

REQUIREMENT

WHEN CHARACTER AND REPEAT KEYS ARE DEPRESSED, COUNTER SHALL OPERATE CONSISTENTLY.

WHEN CAR. RET. KEY IS DEPRESSED, THE COUNTER SHALL RESET WITHOUT BINDING.

COUNTER MECHANISM SHALL COUNT FIRST CHARACTER ON RESTART AFTER RESET CONDITION

MIN. 0.012 INCH

MAX. 0.018 INCH

BETWEEN DRIVE LEVER AND RATCHET TOOTH, WHEN COUNTER IS SET NEAR MID-POINT OF ITS RANGE.

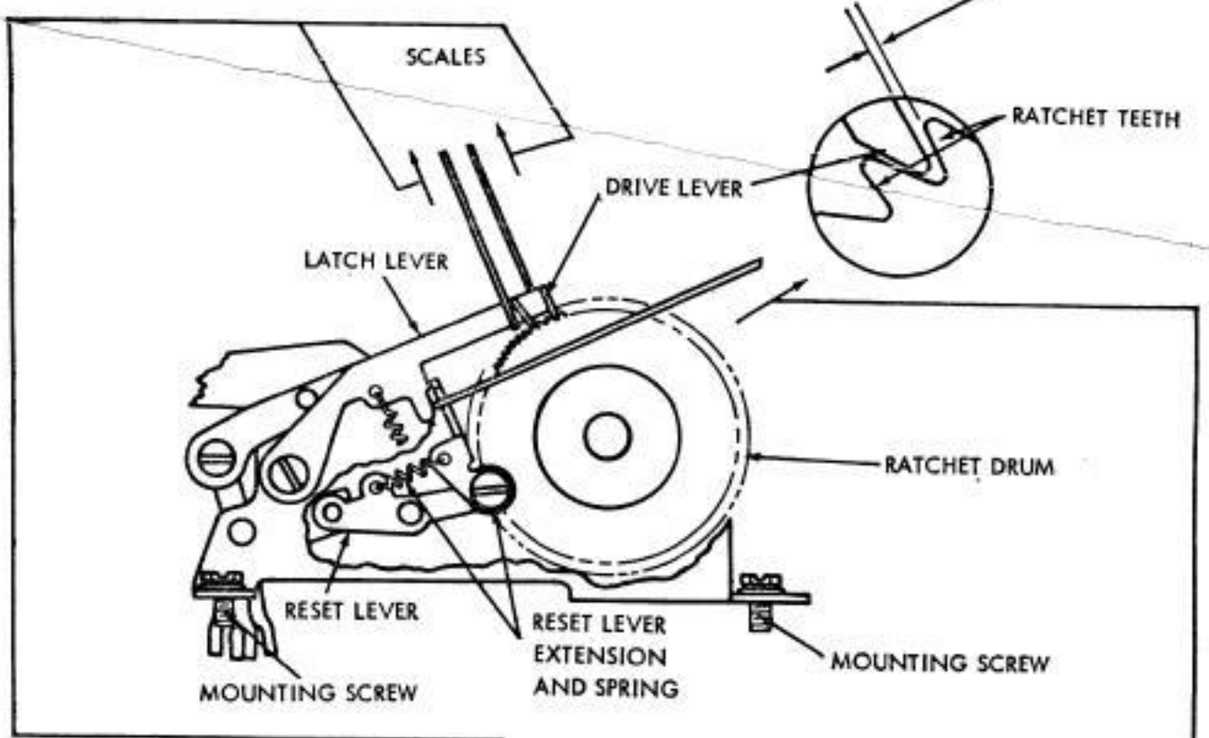
TO ADJUST

LOOSEN MOUNTING SCREWS.

START MOTOR AND STRIKE CAR. RET. KEY, AND THEN E KEY.

TURN OFF MOTOR. DEPRESS E KEY.

POSITION CHARACTER COUNTER FRAME FOR CLEARANCE.



(C) LATCH LEVER AND DRIVE LEVER SPRING

REQUIREMENT

MIN. 1/2 OZ.

MAX. 1 OZ.

TO MOVE EITHER LEVER.

(B) RESET LEVER EXTENSION SPRING

REQUIREMENT

MIN. 3/4 OZ.

MAX. 1-1/4 OZS.

TO START LEVER MOVING.

4. ASSOCIATED BELL SYSTEM PRACTICE

4.01 The following Bell System Practice provides additional information that may be required in connection with this section.

Subject	Section
Alphabetical Index of 28-type Equipment, Bell System Practices, and Associated 28 ASR Station Drawings	P34.001

CHANGES AUTHORIZED BY P98 SERIES BELL SYSTEM PRACTICES

Paragraph	Adjustment Requirements	Includes Changes as Authorized by Section
3.05(A)	Codebar and Codelever Clearance	P98.922
3.08(B)	Ball Wedgelock and Ball Track Clearance (Prel)	P98.867
3.08(A)	Lock-ball Endplay (Prel)	P98.867
3.09(A)	Universal Bail Latchlever (Prel)	P98.867
3.10	Lock-ball Endplay (Final)	P98.867
3.10	Ball Wedgelock and Ball Track Clearance (Final)	P98.867
3.10	Universal Bail Latchlever (Final)	P98.867