

32 KEYBOARD
ADJUSTMENTS

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1. GENERAL

1.01 This section provides adjustment information for mechanically reset Model 32 keyboards (Figures 1 and 2). It is reissued to include engineering changes, make corrections, and to add alphanumeric codes to the adjustment titles. Since it is a general revision, marginal arrows to indicate changes and additions are omitted. The alphanumeric codes provide a universal method for adjustment identification.

Note: Adjustment information for solenoid-reset keyboards is found in Section 574-121-703TC.

1.02 In the adjustments covered in this section, location of clearances, position of parts, and point and angle of scale applications are illustrated by line drawings. Requirements and procedures accompany the line drawings. Tools necessary to make adjustments are shown in Section 570-005-800TC.

1.03 The adjustments appear in a sequence that should be followed when a complete readjustment of the keyboard is made. No adjustment should be made without completely understanding the procedure. Therefore, read the entire procedure before making an adjustment.

Note: Disconnect power from keyboard before making any adjustment.

1.04 References to left, right, and front (Figure 3) are made viewing the keyboard from its normal operating position.

1.05 When a procedure calls for using pry points to make an adjustment, place a screwdriver between the points and pry as directed.

1.06 When the keyboard is removed from the subbase to facilitate the making of an adjustment and subsequently replaced, recheck any adjustments that may have been affected. Also, if parts are removed from the keyboard to facilitate the making of an adjustment, be sure that they are subsequently replaced. Recheck any adjustment that may have been affected by the removal of parts.

1.07 Related adjustments are listed with some of the adjustment texts and are primarily intended to aid in troubleshooting the equipment. Note that some adjustments affect other adjustments. For example, see the DIS-TRIBUTOR TRIP LINKAGE (KBA-7) adjustment. Note that this adjustment affects the TRIP LEVER ENGAGEMENT (KBA-8) adjustment in Section 574-172-700TC. If the former adjustment is changed, check the latter adjustment.

1.08 The spring tensions specified are indications, not exact values. Therefore, to obtain reliable readings, measure spring tensions with spring scales placed in the positions shown on line drawings. Springs that do not meet their requirements should be replaced by new ones. Only those springs that directly affect the operation of the keyboard are measured; however, others may be measured indirectly. Any springs that are indirectly measured should be replaced

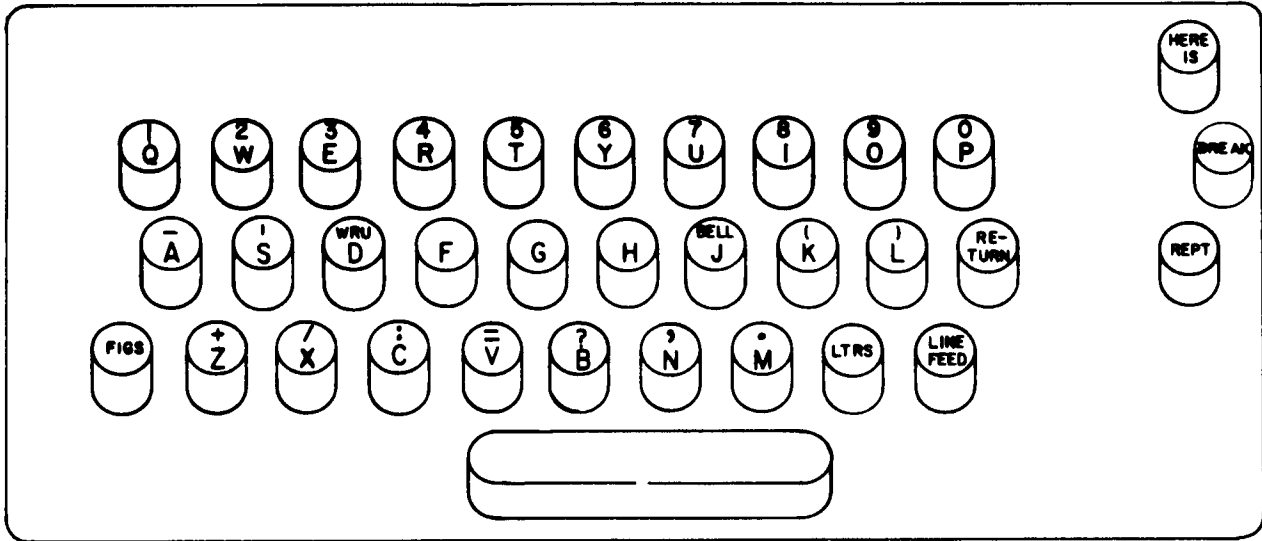


Figure 1 - Model 32 (3 Row 5 Level) Keyboard

one at a time, with the requirement checked each time a spring is replaced.

Note 1: The alphanumeric coding system is not used for spring adjustments.

Note 2: The spring tensions may be checked in any sequence.

1.09 With the keyboard and typing unit assembled on the subbase, adjustment procedures may specify that the typing unit be placed into the stop position. It is in the stop position when the selector armature is attracted (forward) and all clutches are disengaged. Furthermore, the keyboard will be latched (universal lever down and blocked from moving upward).

Note: The keyboard is tripped when the universal lever is up (unlatched).

1.10 To place the typing unit in the stop position hold the selector armature attracted (forward). Manually rotate the main shaft clockwise (as viewed from the left) until all clutches are in a stop position. Fully disengage all

clutches by positioning a screwdriver to the associated stop-lug. Push the clutch disc in the normal direction of main shaft rotation until the corresponding latchlever seats in its clutch disc notch. This permits the clutch shoes to release their tensions on the clutch drum. With all clutches disengaged, the main shaft will turn freely without any dragging of the clutch shoes.

Note 1: A stop position is where a shoe release lever contacts a trip lever.

Note 2: The distributor clutch will not disengage unless the keyboard is latched and the answer-back drum is in its home position. The answer-back home position is where the control lever is fully detented into the answer-back drum.

1.11 A clutch becomes engaged when a trip lever moves away from its shoe release lever. When moved up, a trip lever no longer holds a shoe release lever in its stop position. When the shoe release lever and stop-lug on the clutch disc move apart, the clutch shoes wedge against the drum to permit the shaft and the clutch assembly to turn together.

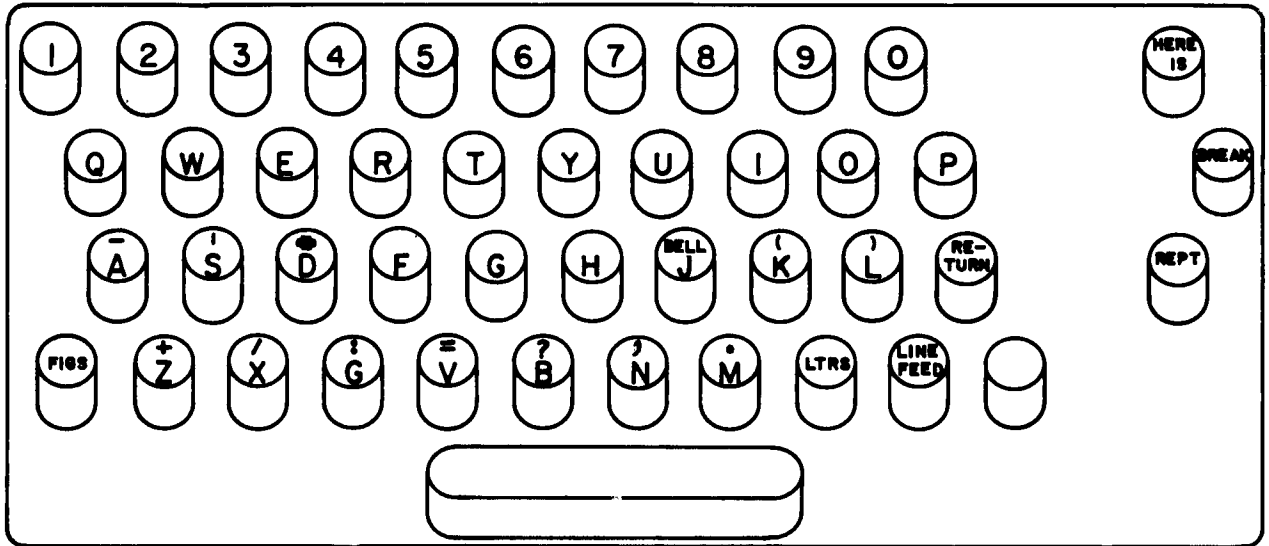


Figure 2 - Model 32 (4 Row 5 Level) Keyboard

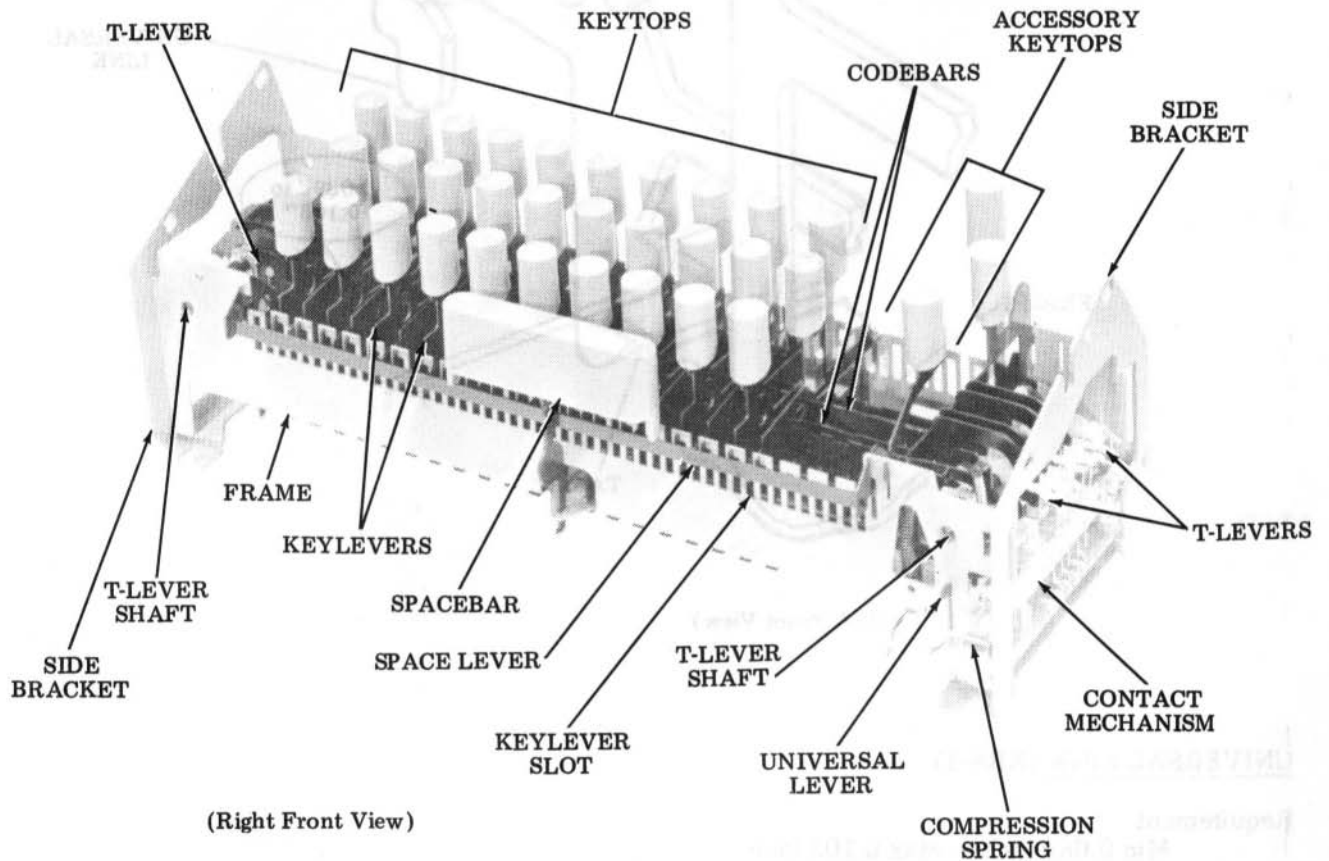


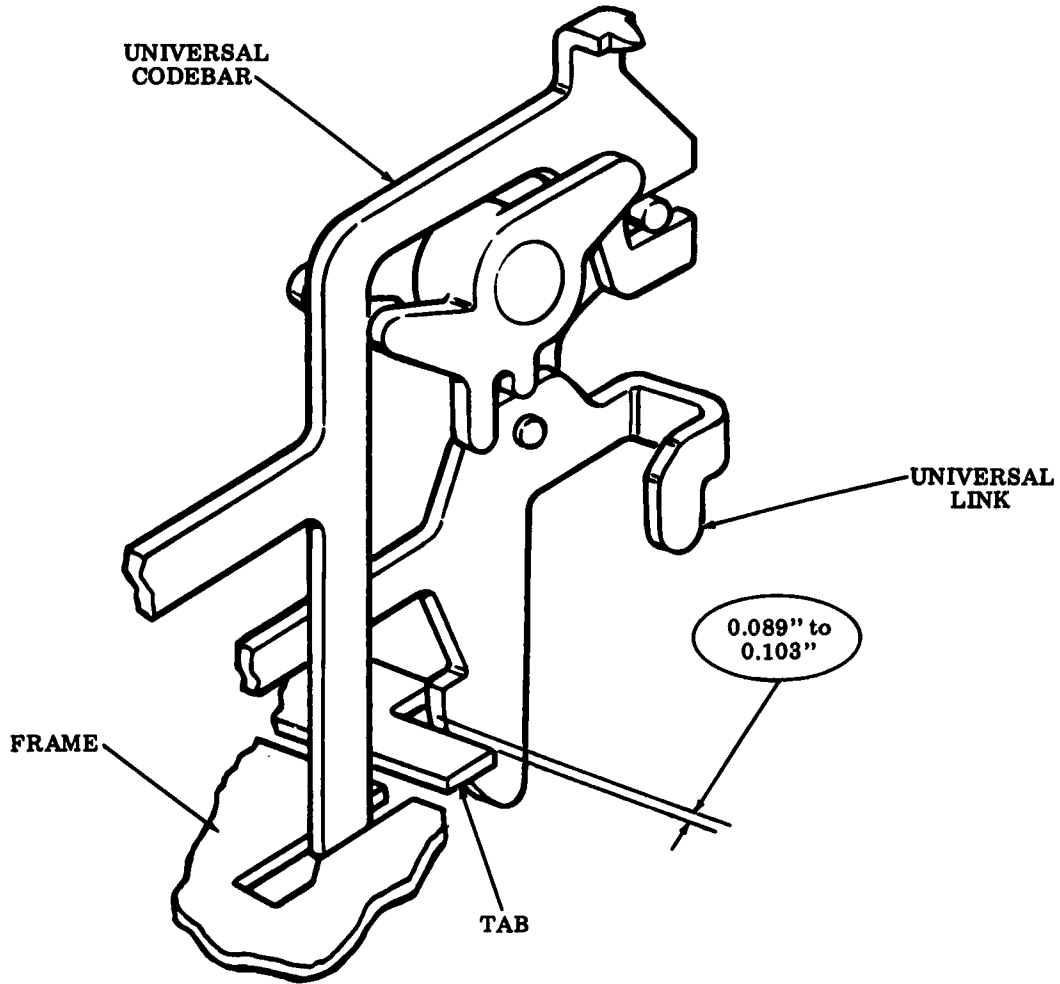
Figure 3 - Keyboard (Cover Removed)

SECTION 574-171-700TC

2. BASIC UNIT

2.01 Universal Link

Note: Remove keyboard and call control unit from subbase. For removal instructions, refer to Section 574-160-702TC.



(Left Front View)

UNIVERSAL LINK (KBA-1)

Requirement

Min 0.089 inch -- Max 0.103 inch
between universal link and frame when universal lever is latched.

To Adjust

Place screwdriver through opening in front of frame and bend tab.

2.02 Contact Wires

CONTACT WIRES — MARKING (KBA-2)

To Check

Push universal lever down until latched by latchlever. Place T-levers down in marking position. Take up play of contact block in downward direction and release. Take up play of each contact wire in upward direction and release.

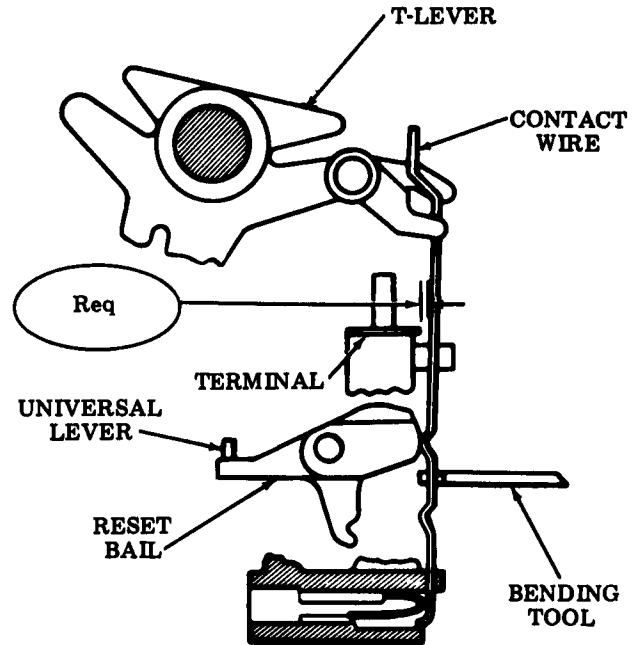
Requirement

Min 0.012 inch — Max 0.027 inch between the no. 1 contact wire (first reset-bail actuated contact wire from front of keyboard) and its associated terminal.

Min 0.018 inch — Max 0.032 inch between remaining marking contact wires and their associated terminals.

To Adjust

Bend contact wire with TP185829 bending tool at position shown.



(Front View)

CONTACT WIRES — SPACING (KBA-3)

To Check

Push universal lever down until latched by latchlever. Place T-levers up in spacing position. Trip keyboard by depressing universal codebar. Take up play of T-levers against universal lever and release. Take up play of contact block in downward direction and release. Take up play of each contact wire in upward direction and release.

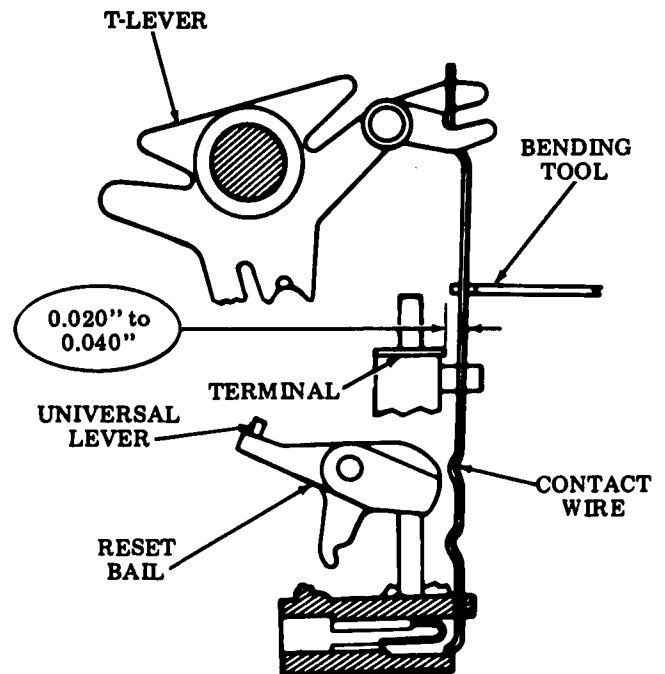
Requirement

Min 0.020 inch — Max 0.040 inch between terminal and each contact wire previously adjusted in KBA-2.

To Adjust

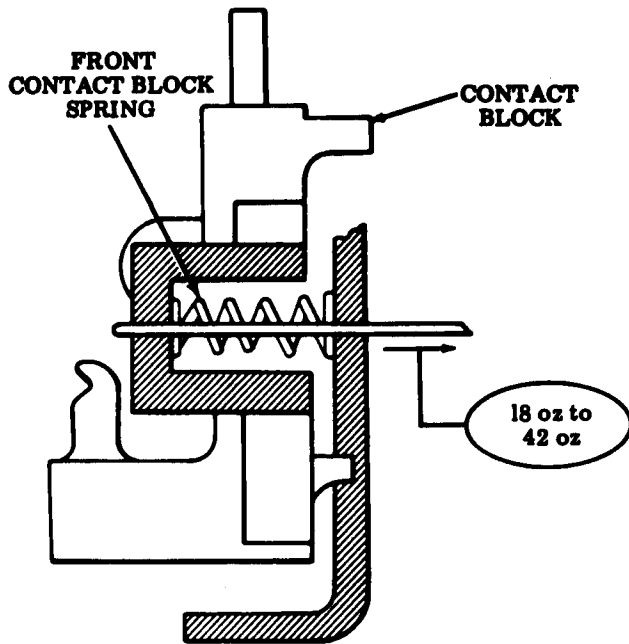
Bend contact wire with TP185829 bending tool at position shown.

Note: Adjustment KBA-2 affects adjustment KBA-3.



(Front View)

2.03 Contact Block Spring and Contact Wire Spring



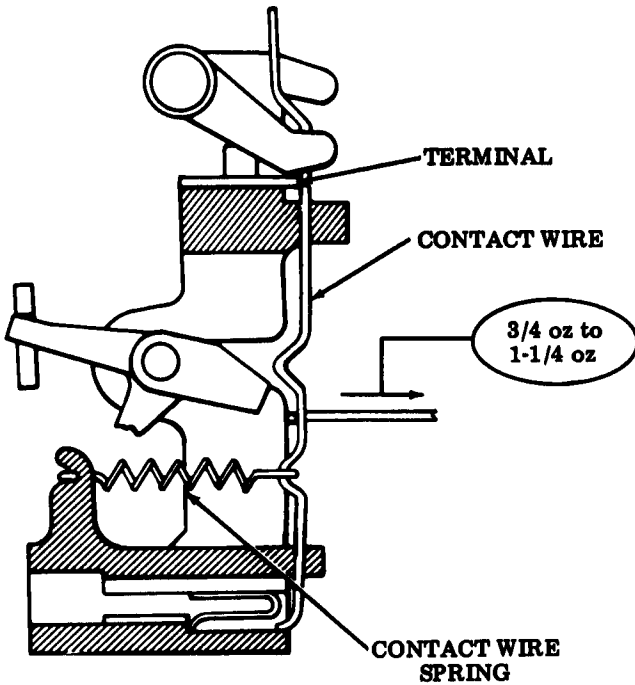
(Front View)

CONTACT BLOCK SPRING

Requirement

Min 18 oz -- Max 42 oz
to start contact block moving.

Note: Check both front and rear contact
block springs.



(Front View)

CONTACT WIRE SPRING

To Check

Latch universal lever. Place T-levers down
to marking position. Depress universal code-
bar.

Requirement

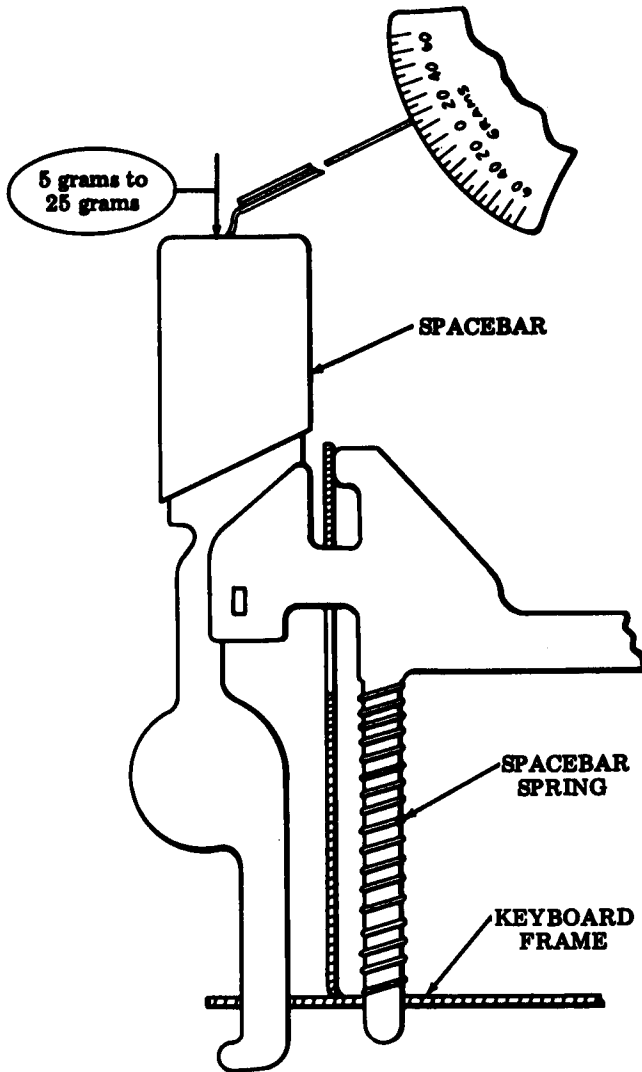
Min 3/4 oz -- Max 1-1/4 oz
to start each contact wire moving away
from terminal.

2.04 Spacebar Spring and Keylever Spring

SPACEBAR SPRING

To Check
Latch universal lever. Depress spacebar and then release.

Requirement
Min 5 grams -- Max 25 grams
to start spacebar moving.



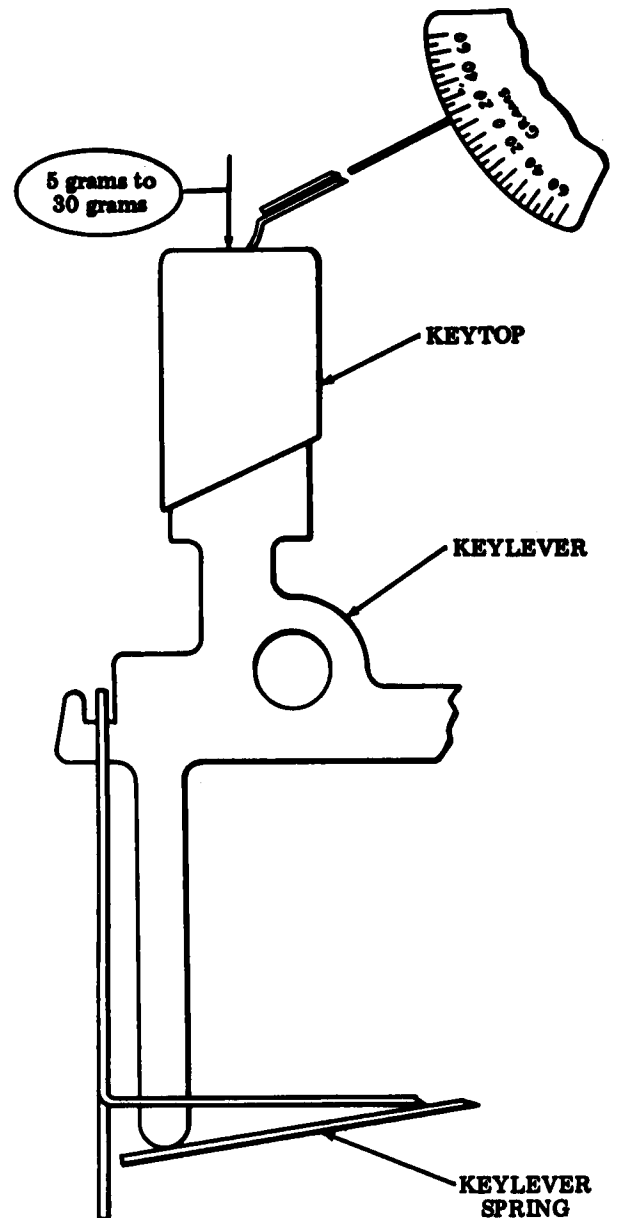
(Right Side View)

KEYLEVER SPRING

To Check
Latch universal lever. Depress any keytop and release.

Requirement
Min 5 grams -- Max 30 grams
to start selected keytop moving.

Note: Check each keylever spring.



(Right Side View)

2.05 HERE IS, BREAK, and REPT Keylever Springs

“BREAK” KEYLEVER SPRING

Requirement

Min 12 oz -- Max 18 oz
to start keytop moving.

“HERE IS” KEYLEVER SPRING

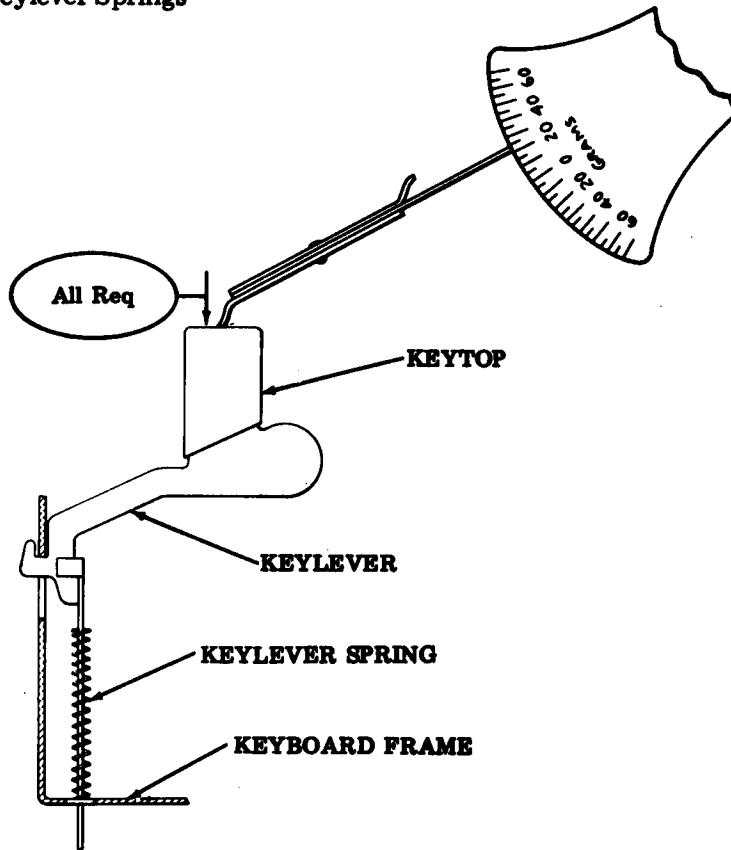
Requirement

Min 18 grams -- Max 35 grams
to start keytop moving.

“REPT” KEYLEVER SPRING

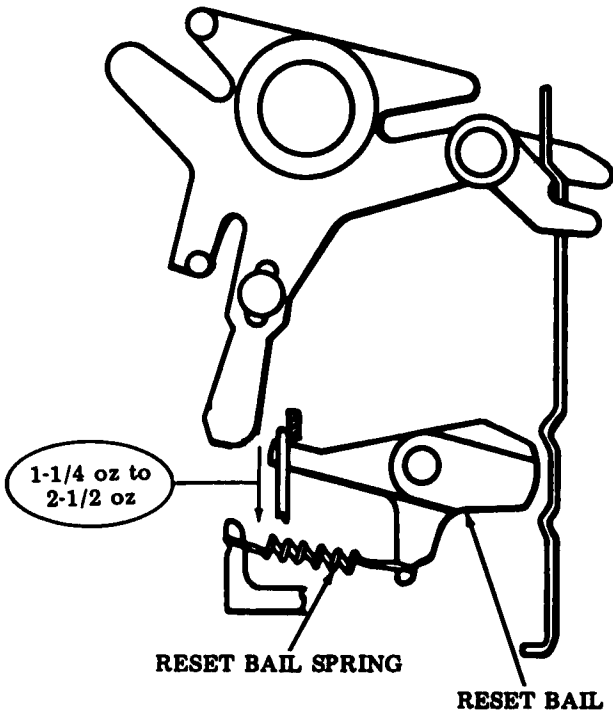
Requirement

Min 15 grams -- Max 30 grams
to start keytop moving.



(Right Side View)

2.06 Reset Bail Spring



(Front View)

RESET BAIL SPRING

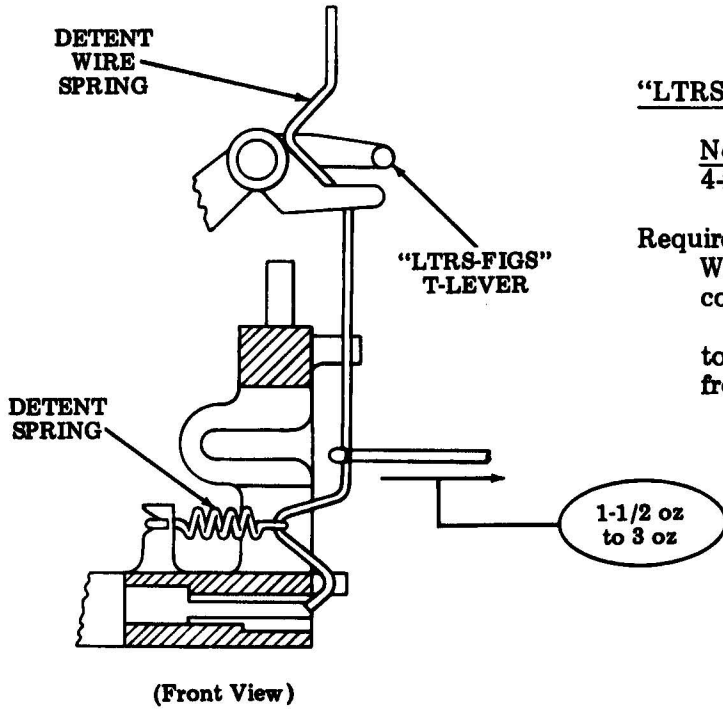
To Check

Latch universal lever. Depress LTRS keytop.

Requirement

Min 1-1/4 oz -- Max 2-1/2 oz
to start reset bail moving.

2.07 LTRS-FIGS Detent Spring and Universal Link Spring



"LTRS-FIGS" DETENT SPRING

Note: This adjustment applies only to 4-row 5-level keyboards.

Requirement

With LTRS-FIGS T-lever either up in LTRS condition or down in FIGS condition

Min 1-1/2 oz -- Max 3 oz
to start detent wire spring moving away from LTRS-FIGS T-lever.

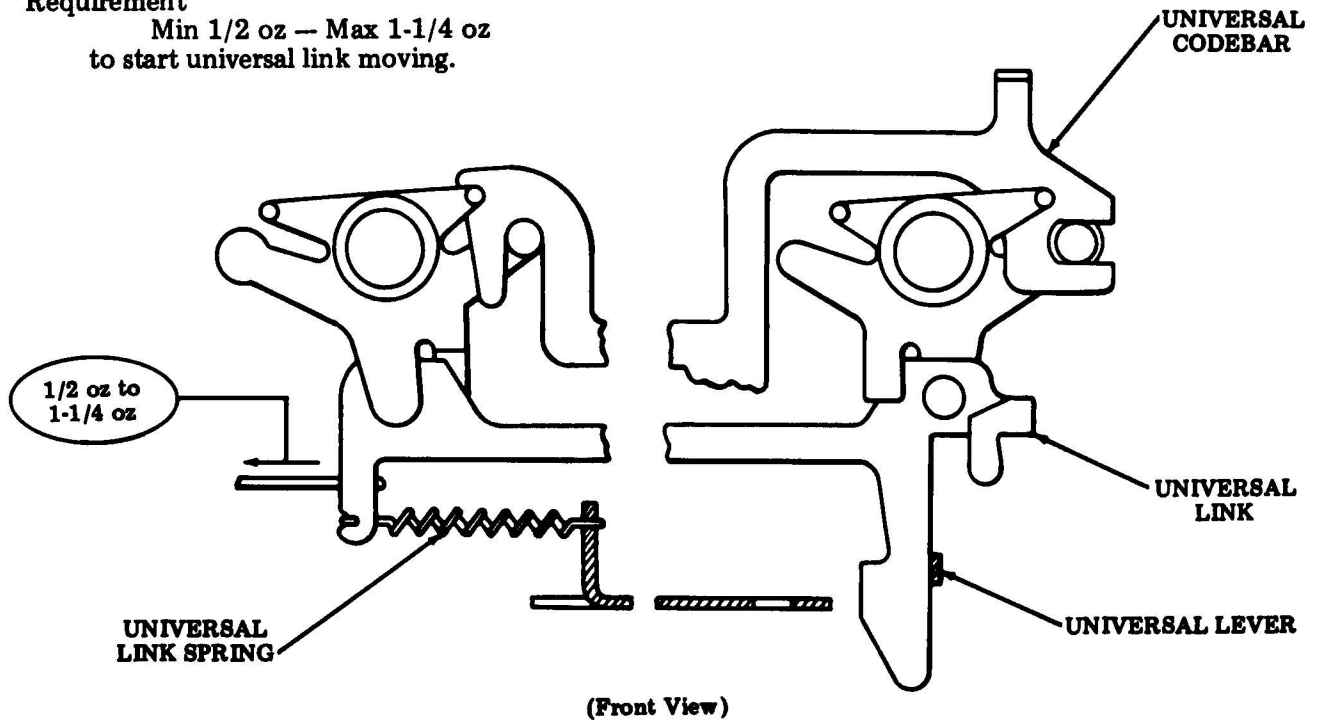
UNIVERSAL LINK SPRING

To Check

Latch universal lever. Trip keyboard by depressing universal codebar.

Requirement

Min 1/2 oz -- Max 1-1/4 oz
to start universal link moving.



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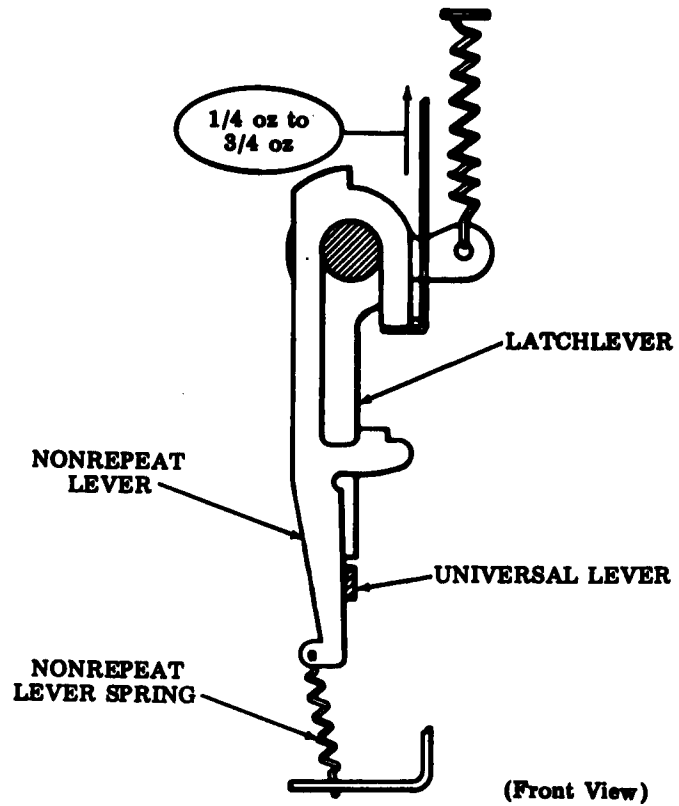
2.08 Nonrepeat Lever Spring

Note: Remove keyboard cover. For disassembly instructions, refer to Section 574-171-702TC.

NONREPEAT LEVER SPRING

Requirement

Min 1/4 oz -- Max 3/4 oz
to start nonrepeat lever moving with universal lever latched.



2.09 Universal Lever Spring

UNIVERSAL LEVER SPRING

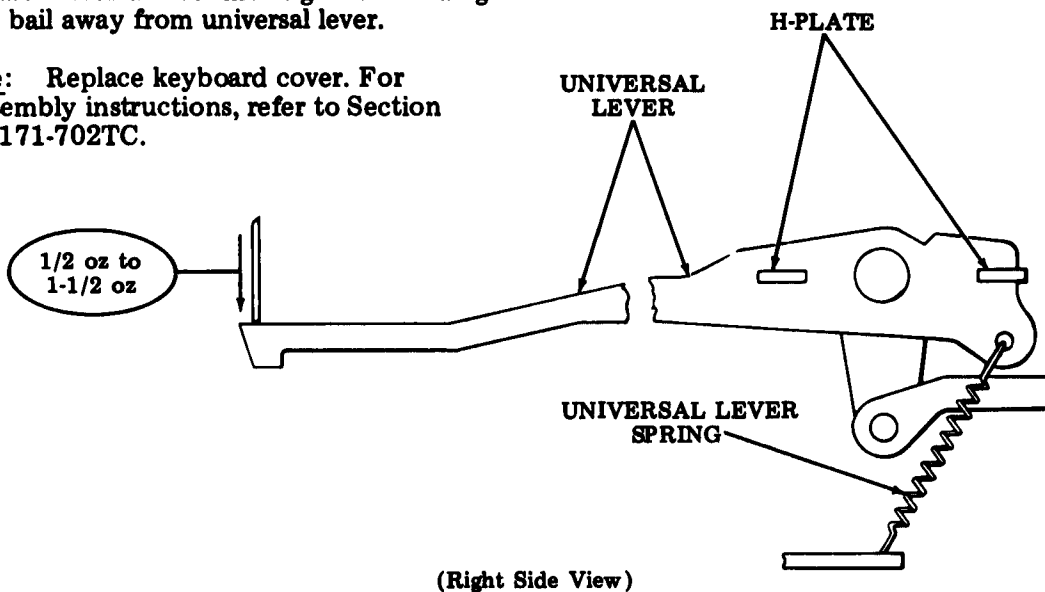
To Check

Remove H-plate. Latch universal lever.

Requirement

Min 1/2 oz -- Max 1-1/2 oz
to start universal lever moving while holding reset bail away from universal lever.

Note: Replace keyboard cover. For reassembly instructions, refer to Section 574-171-702TC.



2.10 Distributor Trip Linkage

DISTRIBUTOR TRIP LINKAGE – Method 1 (KBA-7)

Note 1: Use only Method 1 (2.10), or Method 2 (2.11). Do not intermix. Method 1 is preferred.

Note 2: Replace keyboard, H-plate, and call control unit onto subbase. For replacement instructions, refer to Section 574-160-702TC.

To Check

Place typing unit in stop position. Engage distributor clutch. From front of keyboard, latch universal lever. Attach gauge TP186308 to front of keyboard frame. Rotate distributor shaft until its cam post (late design) or cam roller (early design) is on high part of keyboard trip lever camming surface.

Requirement

Top edge of universal lever (now in lowest position) should be within thickness of lower tab of gauge as seen by eye.

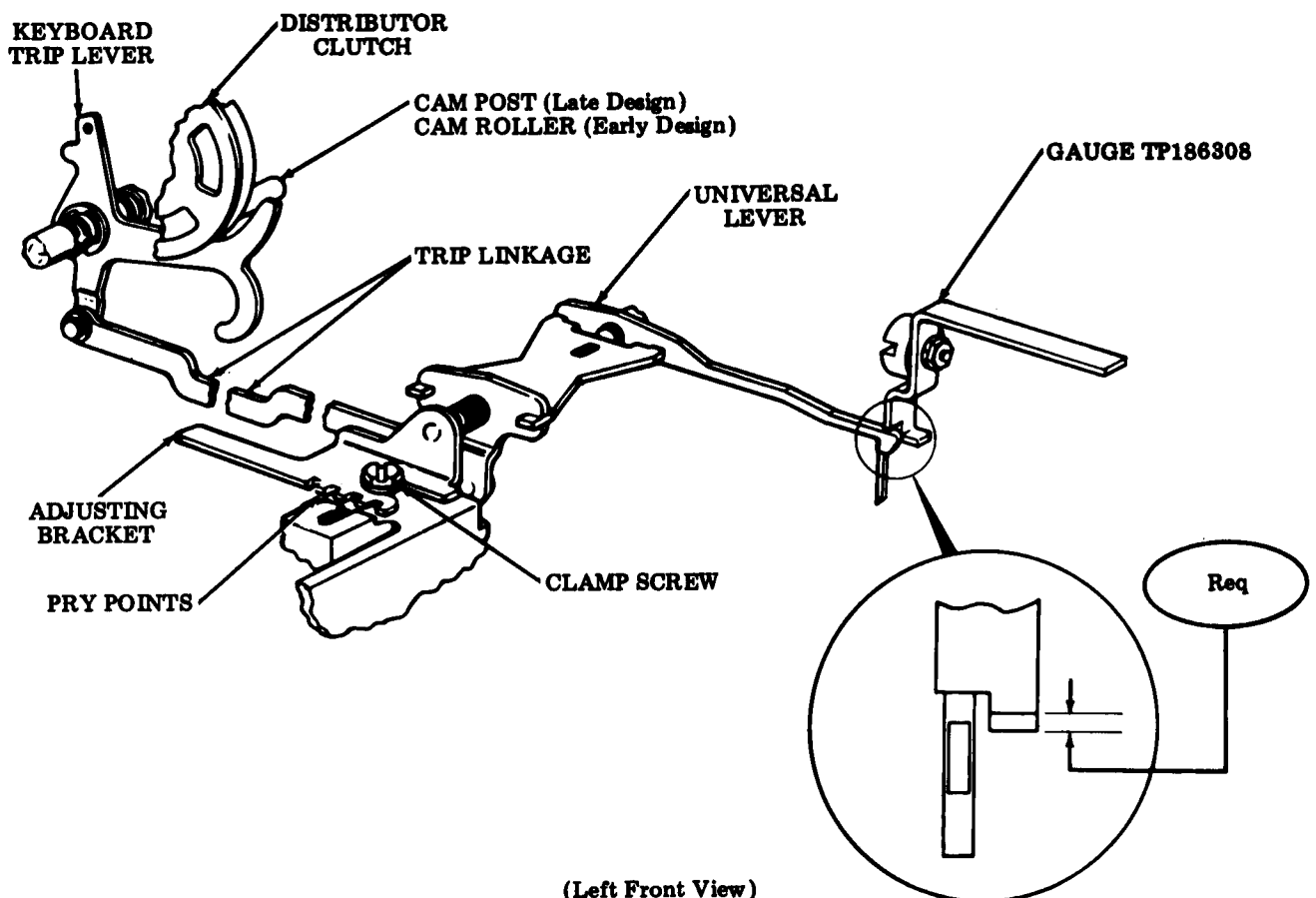
To Adjust

Loosen clamp screw. Using pry points, position adjusting bracket until requirement is met. Tighten clamp screw.

Related Adjustment

Affects

TRIP LEVER ENGAGEMENT (KBA-8) in Section 574-172-700TC.



SECTION 574-171-700TC

2.11 Distributor Trip Linkage (continued)

DISTRIBUTOR TRIP LINKAGE — Method 2 (KBA-7)

Note: The requirement applies to early and late design keyboards having the TP180086, TP182240, or TP185766 universal lever.

To Check

Place typing unit in stop position. Engage distributor clutch. Rotate distributor shaft until keyboard trip lever is on high part of its cam. Push against reset bail spring anchor with just enough force to slightly move the reset bail, then release.

Requirement

Min 0.014 — Max 0.058 inch
between latchlever and universal lever.

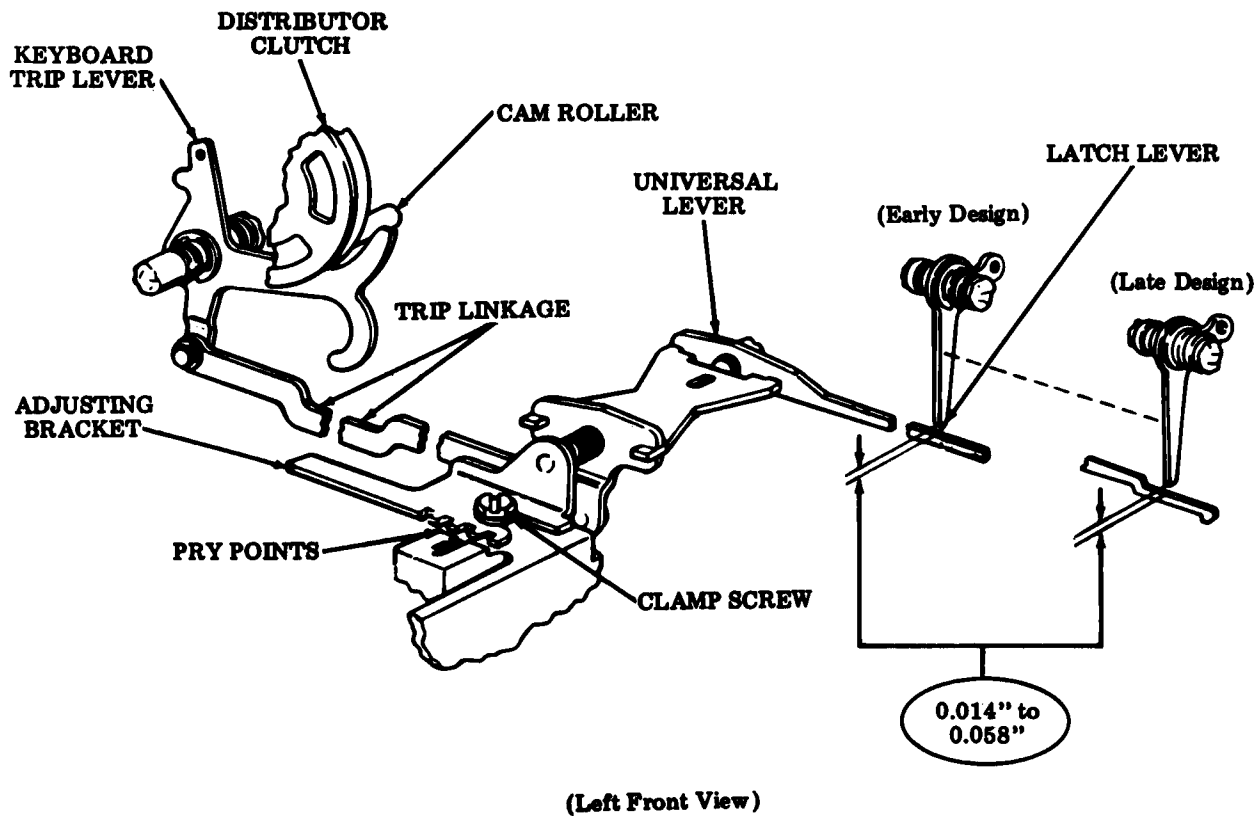
To Adjust

Loosen clamp screw. Using pry points, position adjusting bracket until requirement is met. Tighten clamp screw.

Related Adjustment

Affects

TRIP LEVER ENGAGEMENT (KBA-8) in Section 574-172-700TC.



2.12 Latchlever Spring

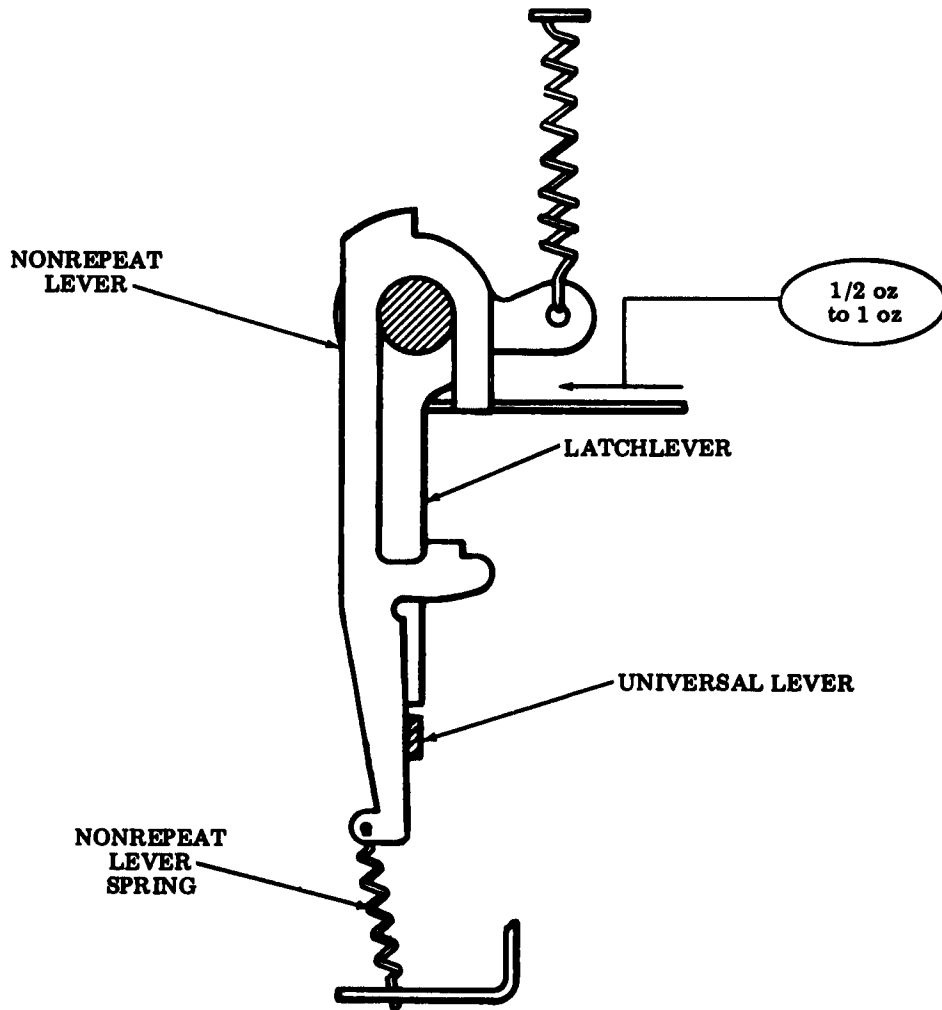
LATCHLEVER SPRING

To Check

Place typing unit in stop position. Engage distributor clutch. Rotate main shaft until keyboard trip lever reaches its lowest point.

Requirement

Min 1/2 oz -- Max 1 oz
to start latchlever moving.



(Front View)

