35 TAPE PRINTER

ADJUSTMENTS

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Prepared for American Telephone and Telegraph Company by Teletype Corporation

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1. GENERAL

1.01 This section provides the adjustments for the 35 tape printer (Figures 1 and 2). It is reissued to incorporate revised engineering and TCN-1092 information. Marginal arrows are used to indicate changes.

CAUTION: APPARATUS SHOULD NOT BE SEPARATED FROM ITS PROTECTIVE HOUSING UNLESS POWER IS DISCONNECTED. WHERE OPERATION OF THE EQUIPMENT IS REQUIRED AFTER IT HAS BEEN SEPARATED FROM ITS PROTECTIVE HOUSING, APPROPRIATE PRECAUTIONARY MEASURES SHOULD BE TAKEN TO PREVENT ACCIDENTS.

1.02 The adjustments in this section are arranged in a sequence that should be followed if a complete readjustment of the unit is undertaken. If necessary, refer to the appropriate disassembly and reassembly section for removal of cover, and any internal mechanisms associated with the tape printer. For any further information regarding location of parts, refer to exploded views in the appropriate parts section. A complete adjusting procedure should be read before attempting to make the adjustment. After an adjustment is completed be sure to tighten any nuts or screws that may have been loosened, unless otherwise instructed.

1.03 The adjusting illustrations indicate tolerances, positions of moving parts, spring tensions, and the angle at which scales should be applied. The tools required to make adjustments and check spring tensions are not supplied with the equipment, but are listed in the appropriate tool section (570-005-800).

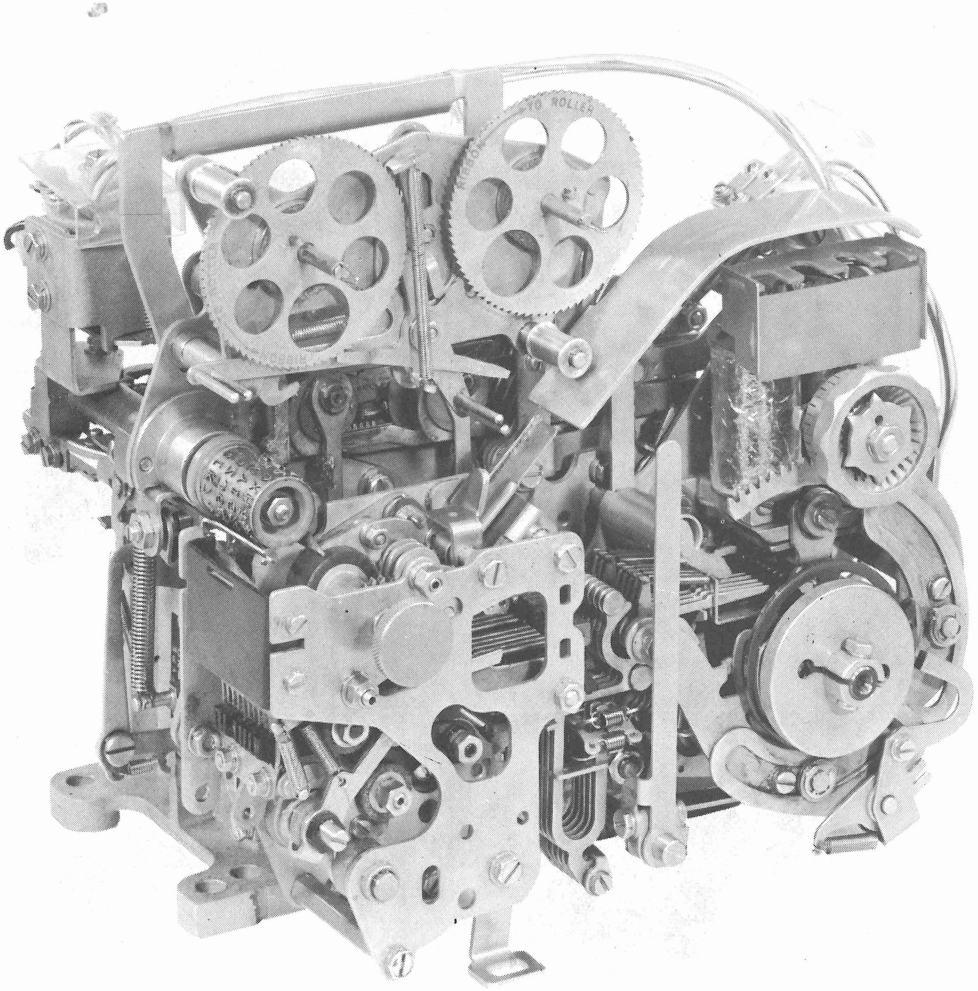


Figure 1 - Tape Printer (Left Front View)

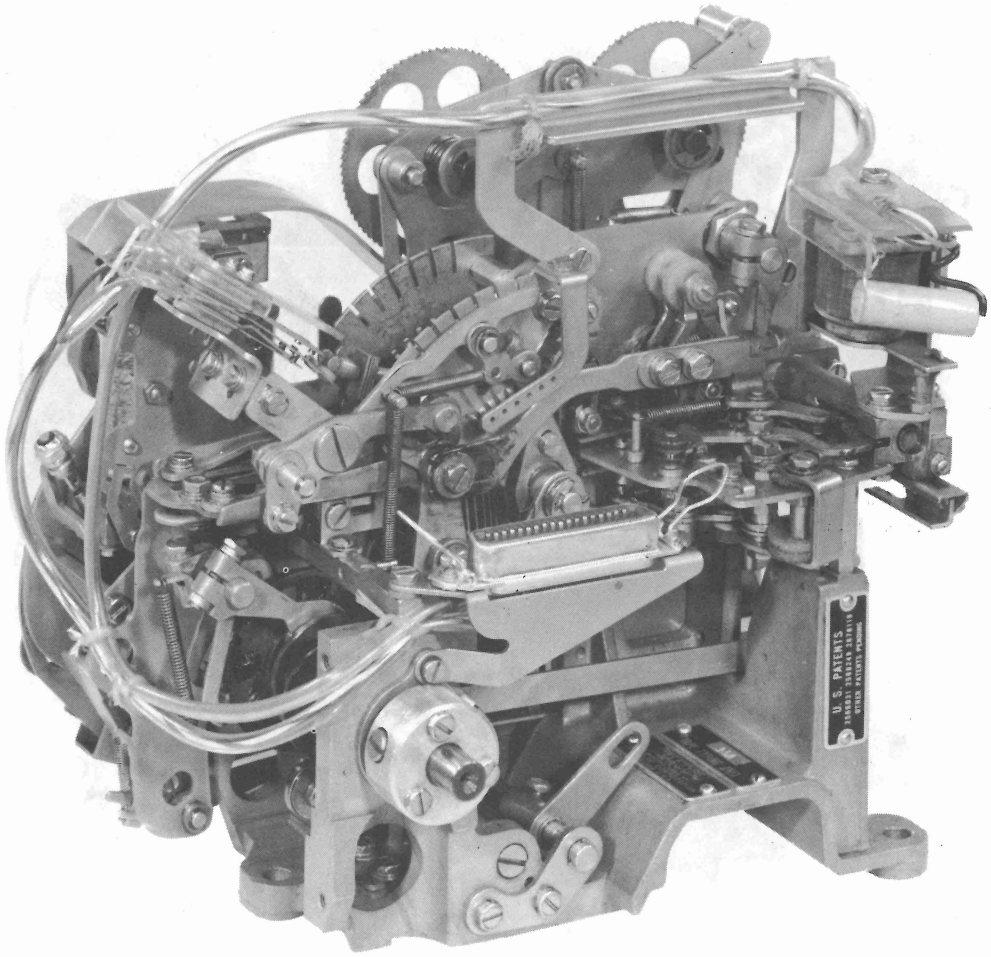


Figure 2 - Tape Printer (Left Rear View)

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

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

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

1.06 The unit is in its unoperated, or stop, condition when it is not under power. It is in its idling condition when it is under power and clutches are disengaged (steady marking condition of signal line). The unit is in the letters condition when the type wheel rack is in its upper position (the numerals appear on the top half of the type wheel). The unit is in the figures condition when the type wheel rack is in its lower position (the letters appear on the top half of the type wheel).

1.07 To manually operate the 35 tape printer proceed as follows

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

(b) While holding the selector magnet attracted by means of the armature clip, manually rotate the main shaft in a counterclockwise direction until all the clutches are brought to their disengaged position.

(c) Fully disengage the clutches in accordance with 1.05, note.

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

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

(f) Strip the pushlevers from their selector levers if they are spacing in the code combination of the character or function that is being selected. Allow the pushlevers to move to the right. The pushlevers and selector levers move in succession, starting with the inner lever no. 1 to the outer lever no. 8.

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

1.08 Parts dismantled to facilitate checking or readjustment should be reassembled after the operation is completed. If a part mounted on shims is to be dismantled, the number of shims used at each mounting screw should be noted so that the same shim pile-ups can be replaced when the part is remounted. When parts removed are replaced, related adjustments which may have been affected should be checked.

1.09 Parts that are worn to the extent that they can no longer be made to meet the specified requirements by authorized adjustments or which are worn to the extent that it seems probable that any further wear might cause a loss of adjustment should be replaced by new parts. Springs which do not meet the requirements and for which there are no adjusting procedures should be discarded and replaced by new springs.

1.10 All contact points should meet squarely. Smaller points should fall wholly within the circumference of larger mating points. Points that are the same size should not be out of alignment more than 25 percent of the point diameter. Avoid sharp kinks or bends in the contact springs.

Note: Keep all electrical contacts free of oil and grease.

1.11 Where a 35 tape printer is used as a component of a receive-only or a send-receive set, it is mounted on a base or keyboard base. Refer to the applicable sections for additional adjustment requirements.

2. BASIC UNIT

Note: For gear mesh adjustment, refer to applicable sections covering base or keyboard mounting facility.

2.01 Selector Mechanism

2.02 Function Mechanism

(A) CLUTCH SHOE LEVER

Note 1: This adjustment should be made for both selecting and function clutches.

To Check

(1) Disengage clutch. Measure clearance.
(2) Align head of clutch drum mounting screw with stop-lug. Engage clutch. Manually press shoe lever and stop-lug together and allow to snap apart. Measure clearance.

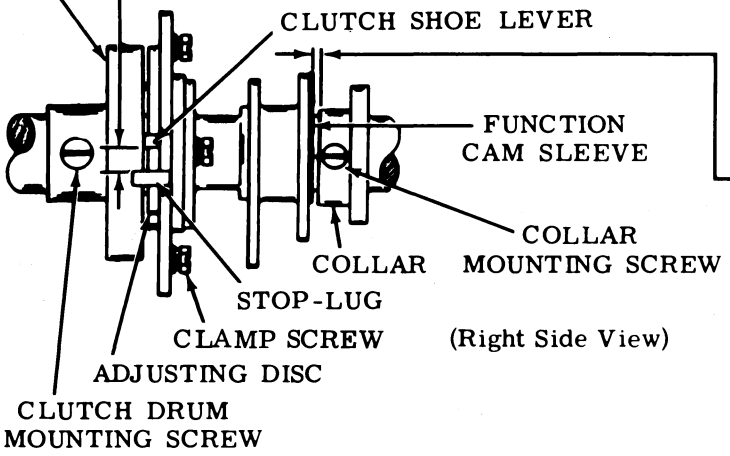
Requirement

Clearance between shoe lever and stop-lug
Min 0.055 inch---Max 0.085 inch
greater when clutch engaged (2) than when disengaged (1).

To Adjust

Engage wrench or screwdriver with lug on adjusting disc. Rotate disc with clamp screws loosened. Tighten screws.

Note 2: After making adjustment, disengage clutch. Remove drum mounting screw. Rotate drum in normal direction and check to see if it drags on shoe. It it does, refine adjustment.



(B) FUNCTION CLUTCH DRUM END-PLAY

Requirement

With function clutch disengaged
Min some---Max 0.015 inch
when play is taken up to make clearance max.

To Adjust

With its mounting screw loosened, move drum to extreme front position. Tighten drum mounting screw. Position collar with mounting screw loosened.

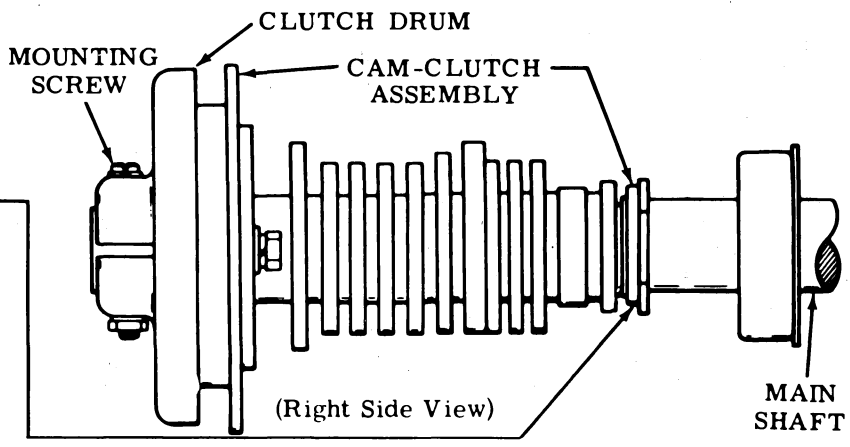
(C) SELECTOR CLUTCH DRUM ENDPLAY

Requirement

Clutch latched in stop position. Cam assembly should have some endplay, not more than 0.010 inch.

To Adjust

Position clutch drum on main shaft with mounting screw loosened. Tighten screw and nut.

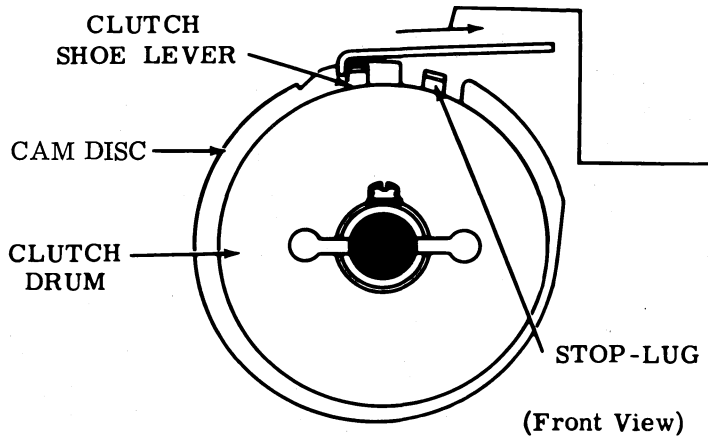


2.03 Selector Mechanism (continued)

2.04 Function Mechanism (continued)

Note: These spring tensions apply to both clutches.

(A) CLUTCH SHOE LEVER SPRING

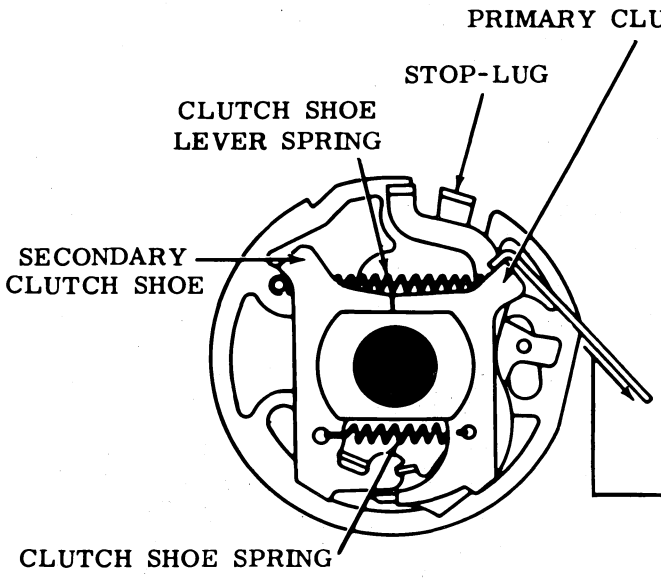


(Front View)

To Check
Engage clutch. Hold cam disc to prevent its turning.

Requirement
Min 15 oz---Max 20 oz to pull shoe lever in contact with stop-lug.

(B) CLUTCH SHOE SPRING



(Front View)

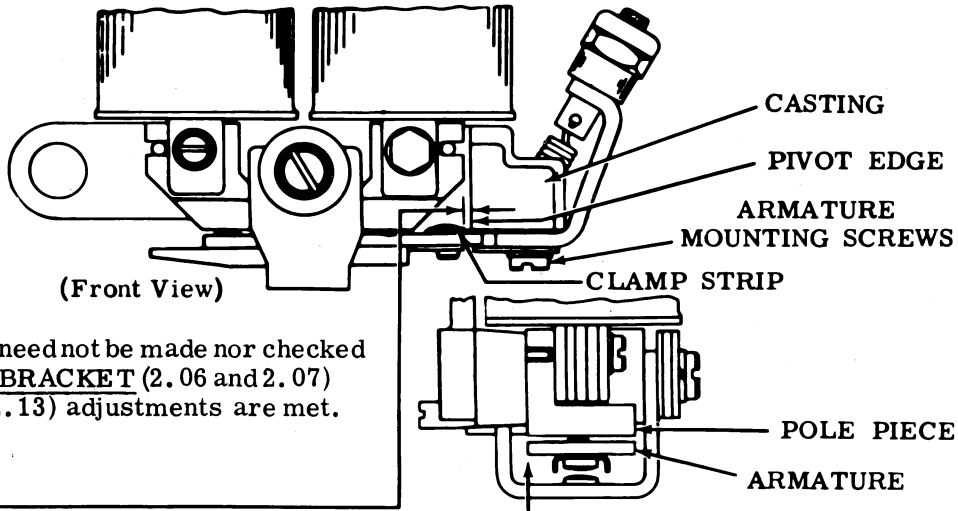
Note: In order to check this spring tension, it is necessary to remove the clutch from the main shaft. Therefore, it should not be checked unless there is reason to believe it will not meet its requirement.

To Check
Remove clutch from drum.

Requirement
Min 3 oz---Max 5 oz to start primary shoe moving.

2.05 Selector Mechanism (continued)

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

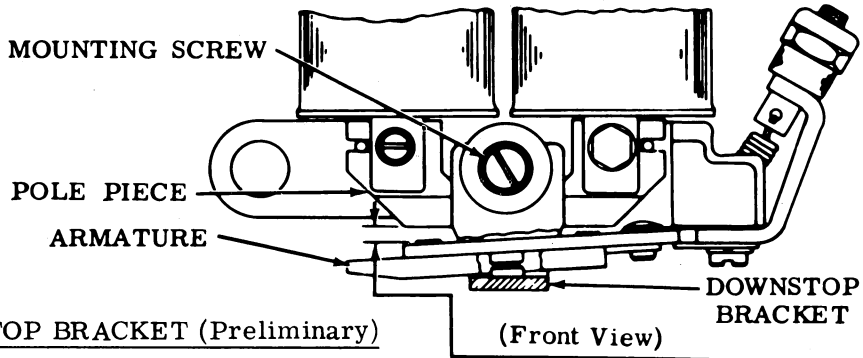
Note: These requirements need not be made nor checked if the SELECTOR MAGNET BRACKET (2.06 and 2.07) and RECEIVING MARGIN (2.13) adjustments are met.

(1) Requirement
Clearance
Min 0.010 inch
between armature clamp strip and pivot edge of magnet bracket casting edge at their closest point.

(2) Requirement
Outer edge of armature should be flush within 0.015 inch
with outer edge of both pole pieces.

(3) Requirement
Start lever should 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. Tighten screws.



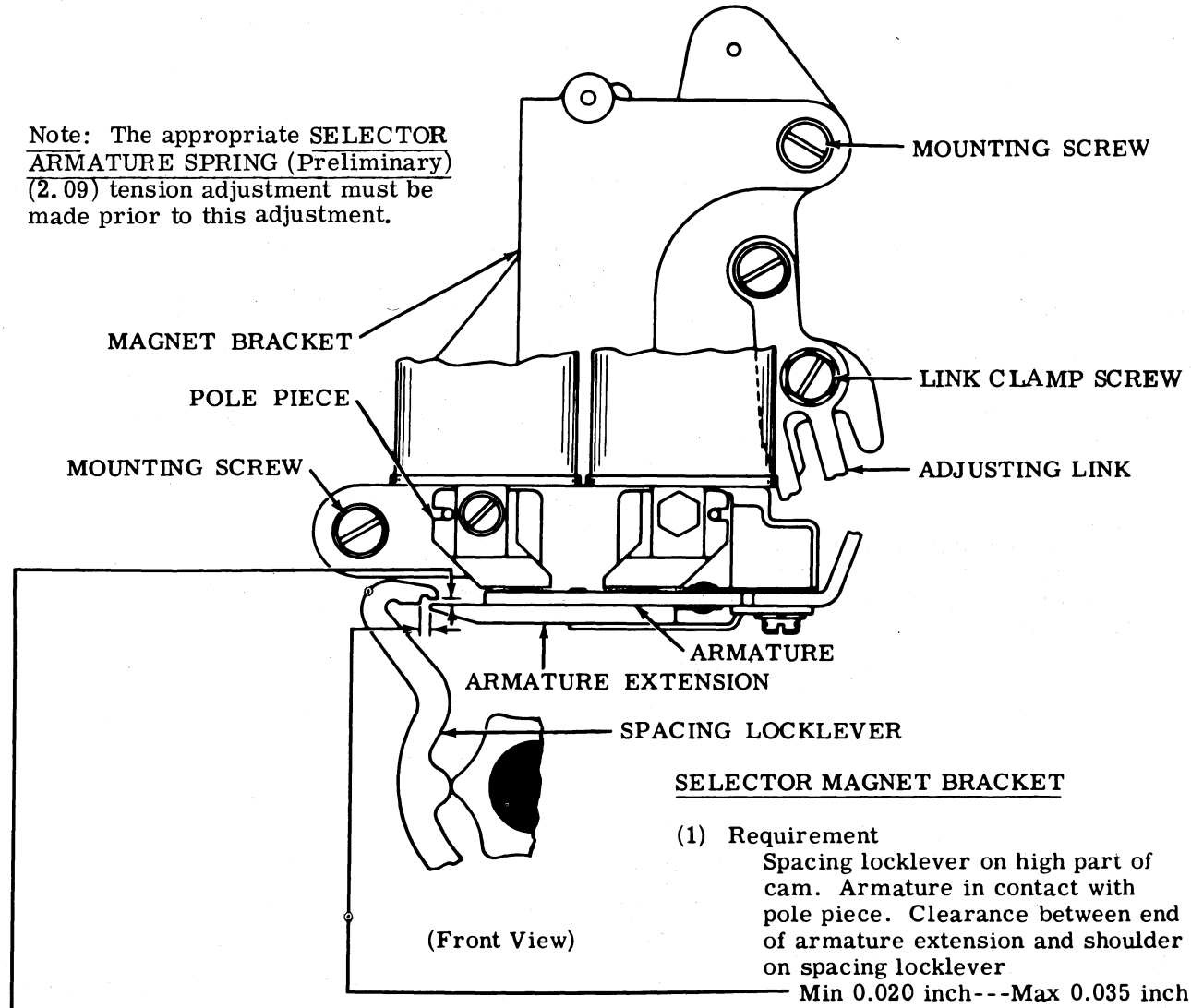
SELECTOR ARMATURE DOWNSTOP BRACKET (Preliminary)

Requirement
Remove oil shield if present. With magnet de-energized, locklevers 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 0.030 inch---Max 0.035 inch

To Adjust
Position downstop bracket with mounting screw loosened. Replace oil shield and check OIL SHIELD (2.16) adjustment. Tighten mounting screw.

2.06 Selector Mechanism (continued)

Note: The appropriate SELECTOR ARMATURE SPRING (Preliminary) (2.09) tension adjustment must be made prior to this adjustment.



(Front View)

SELECTOR MAGNET BRACKET

(1) Requirement
Spacing locklever on high part of cam. Armature in contact with pole piece. Clearance between end of armature extension and shoulder on spacing locklever
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.

Note: See following page for requirement (3).

(2) Requirement
Spacing locklever on high part of cam. Armature in contact with pole piece. Some clearance between upper surface of armature extension and lower surface of spacing locklever when locklever is held downward
Max 0.003 inch

To Adjust
Position upper end of magnet bracket. Tighten two magnet bracket mounting screws. Recheck requirement (1).

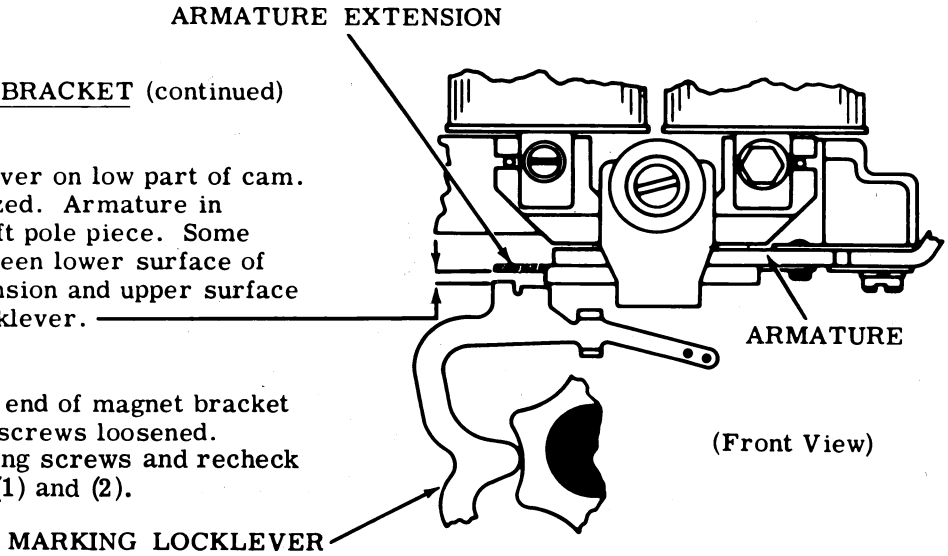
2.07 Selector Mechanism (continued)

Note: See preceding page for SELECTOR MAGNET BRACKET requirements (1) and (2).

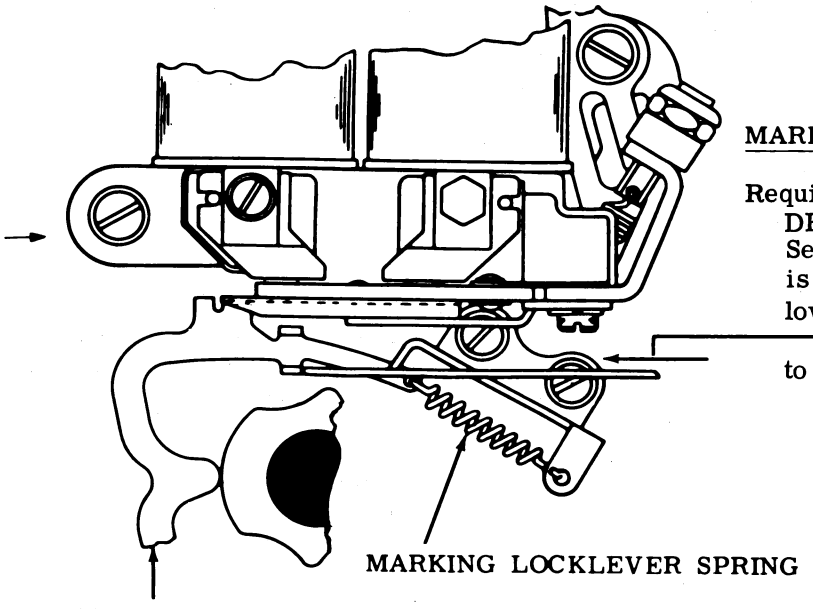
SELECTOR MAGNET BRACKET (continued)

(3) Requirement
Marking locklever on low part of cam. Magnet energized. Armature in contact with left pole piece. Some clearance between lower surface of armature extension and upper surface of marking locklever.

To Adjust
Position upper end of magnet bracket with mounting screws loosened. Tighten mounting screws and recheck requirements (1) and (2).



(Front View)



(Front View)

MARKING LOCKLEVER SPRING

Requirement
DELETE code (12345678 marking) selected. Selector shaft rotated until selector clutch is disengaged. Push scale applied to lower extension of locklever
Min 2 oz---Max 4 oz
to start lever moving.

2.08 Selector Mechanism (continued)

SELECTOR ARMATURE DOWNSTOP BRACKET (Final)

Requirement

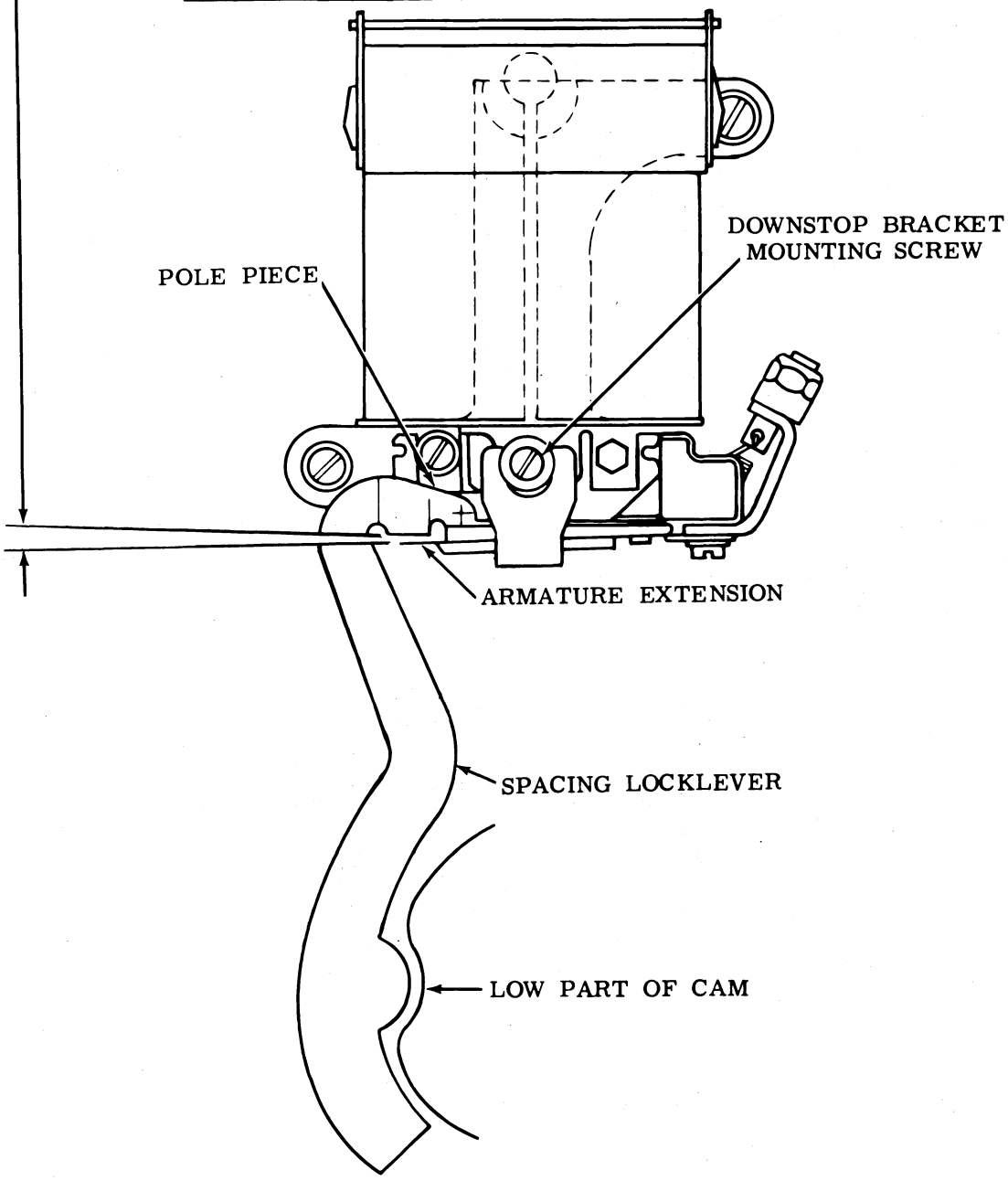
With the selector magnet de-energized and the spacing locklever on the low part of its cam, there should be

Min 0.005 inch---Max 0.015 inch

clearance between the top of the armature extension and the bottom of the lower step of the spacing locklever.

To Adjust

Refine the SELECTOR ARMATURE DOWNSTOP BRACKET (Preliminary) (2.05) adjustment.



2.09 Selector Mechanism (continued)

SELECTOR ARMATURE SPRING (Preliminary)

(For units employing selector armature with two antifreeze buttons only).

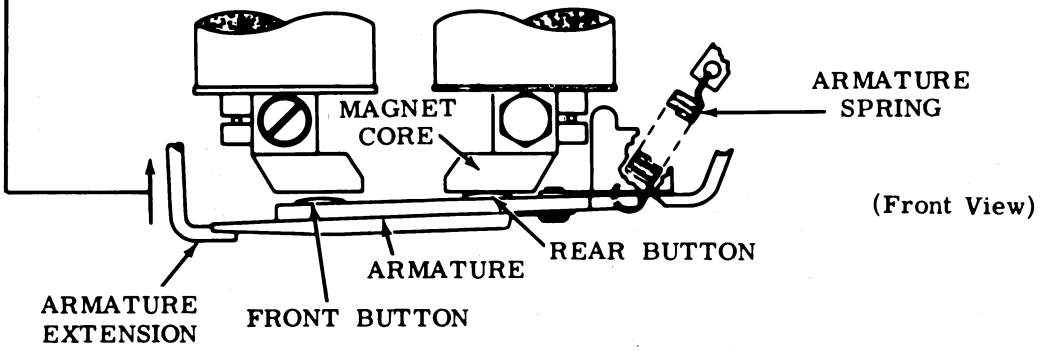
Requirement

With locking levers and start lever on high part of their cams, scale applied as nearly vertical as possible under end of armature extension. It should require approximately the following tensions to move the rear antifreeze button against the magnet core

0.500 ampere --- approximately 28 grams
0.060 ampere --- approximately 21 grams

To Adjust

Position adjusting nut.



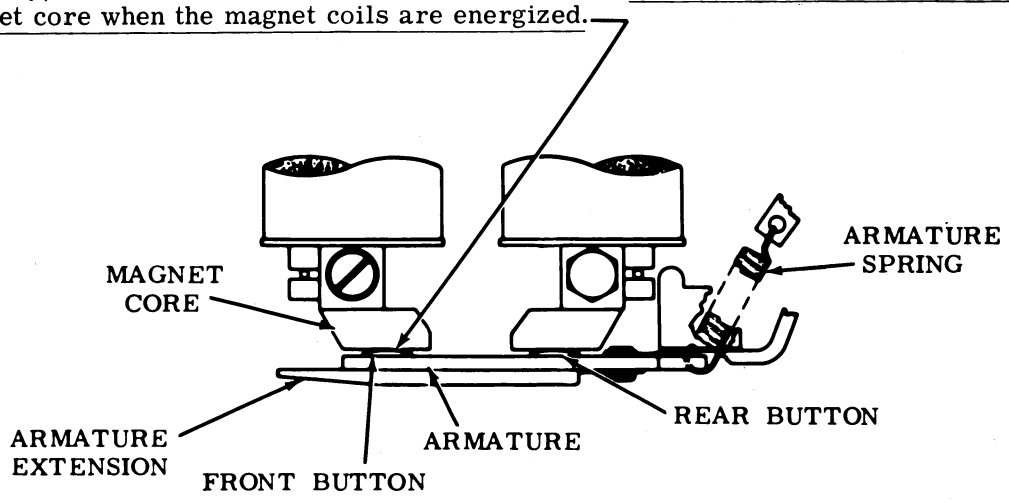
(Front View)

See SELECTOR RECEIVING MARGIN (2.13) adjustment.

SELECTOR ARAMTURE SPRING (Final)

Requirement

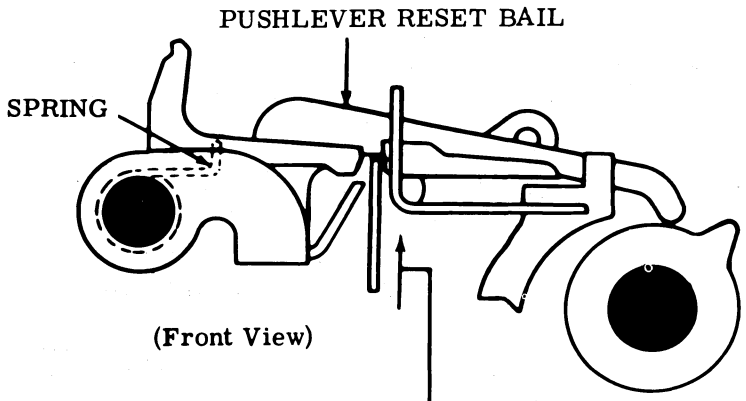
When a distortion test set is available, the selector armature spring tension should be refined, if necessary, to obtain satisfactory receiving margins. The front antifreeze button must contact the magnet core when the magnet coils are energized.



(Front View)

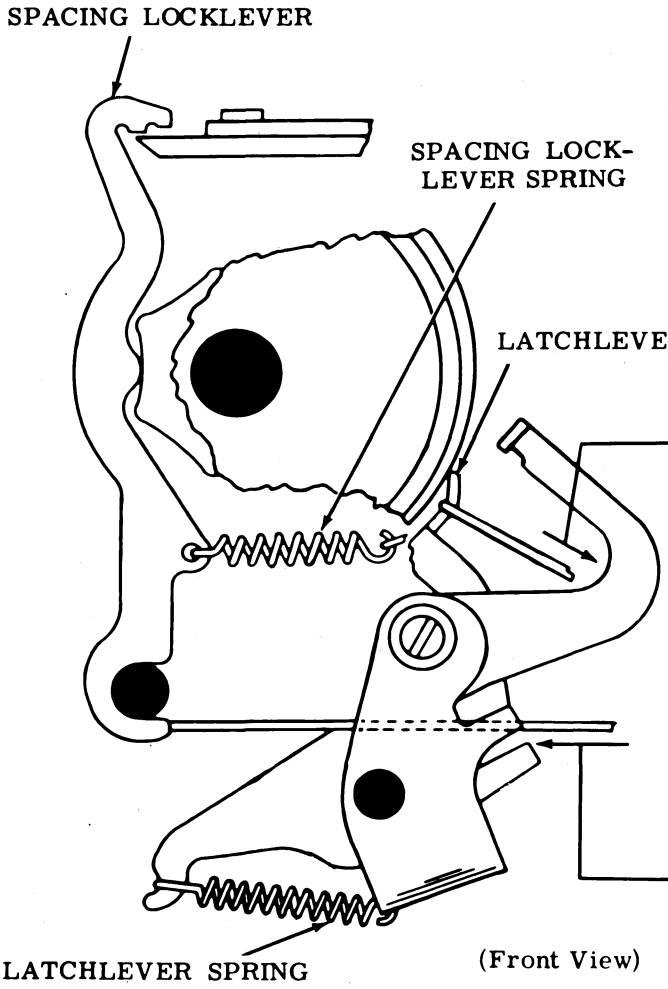
See SELECTOR RECEIVING MARGIN (2.13) adjustment.

2.10 Selector Mechanism (continued)



(A) PUSHLEVER RESET BAIL SPRING

Requirement
Pushlever reset bail on low part of cam. 32 oz scale applied to reset bail
Min 4 oz---Max 8 oz
to move bail from cam.



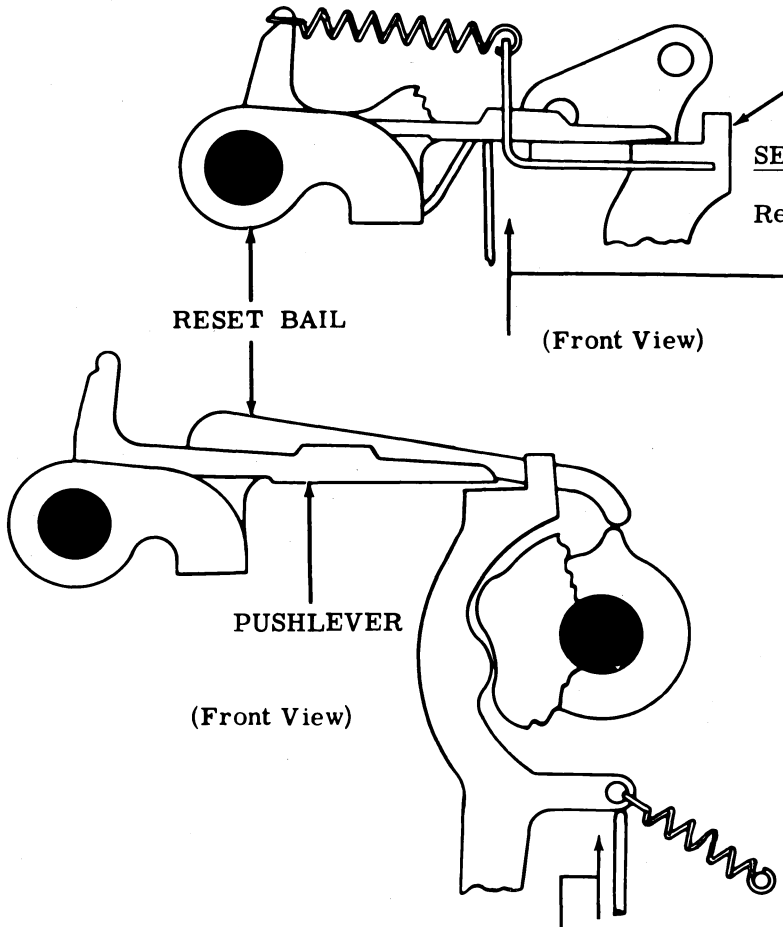
(B) SELECTOR CLUTCH LATCHLEVER SPRING

Requirement
Latch resting on low part of its cam disc
Min 2 oz---Max 3-1/2 oz
to start latch moving.

(C) SPACING LOCKLEVER SPRING

Requirement
Selector armature released. Spacing locklever on low part of its cam. Spring scale applied to lower end of spacing locklever
Min 3 oz---Max 6 oz
to move spacing locklever from its pivot shaft.

2.11 Selector Mechanism (continued)



SELECTOR PUSHLEVER SPRING

Requirement
Pushlever in spacing position
Min 1 oz---Max 2 oz
for all except first in sequence.
Min 2 oz---Max 3 oz
for first in sequence (copper colored)
to move pushlever from selector
lever. Check eight springs.

SELECTOR LEVER SPRING

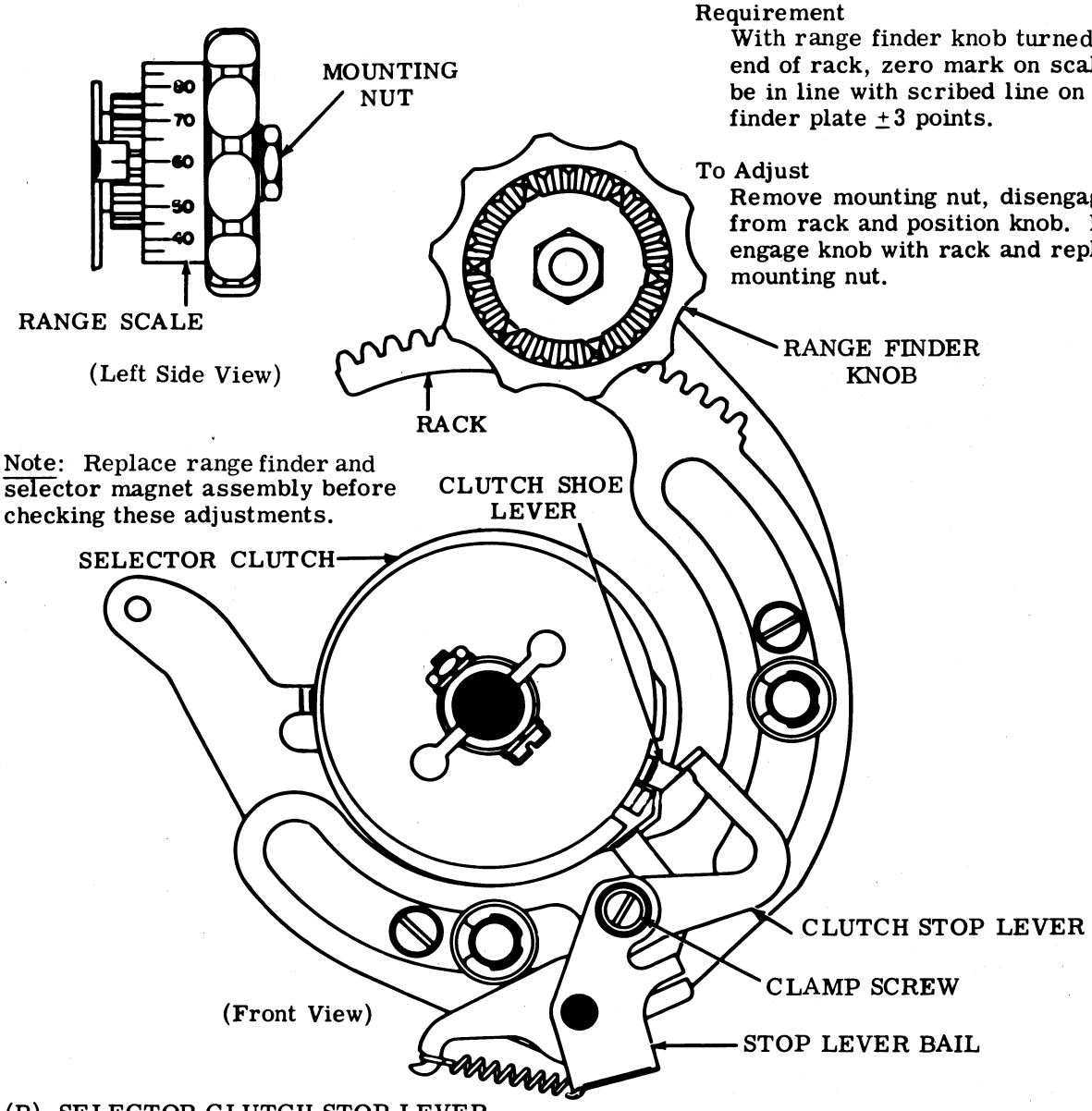
Requirement
Typing unit upside down. Reset bail on peak of its cam.
Min 1-1/2 oz---Max 3 oz
to start each lever moving. Check eight springs. If necessary, unhook start lever spring to check no. 4 selector lever spring.

2.12 Selector Mechanism (continued)

(A) RANGE FINDER KNOB PHASING

Requirement
With range finder knob turned to either end of rack, zero mark on scale should be in line with scribed line on range finder plate ±3 points.

To Adjust
Remove mounting nut, disengage knob from rack and position knob. Re-engage knob with rack and replace mounting nut.



Note: Replace range finder and selector magnet assembly before checking these adjustments.

(B) SELECTOR CLUTCH STOP LEVER

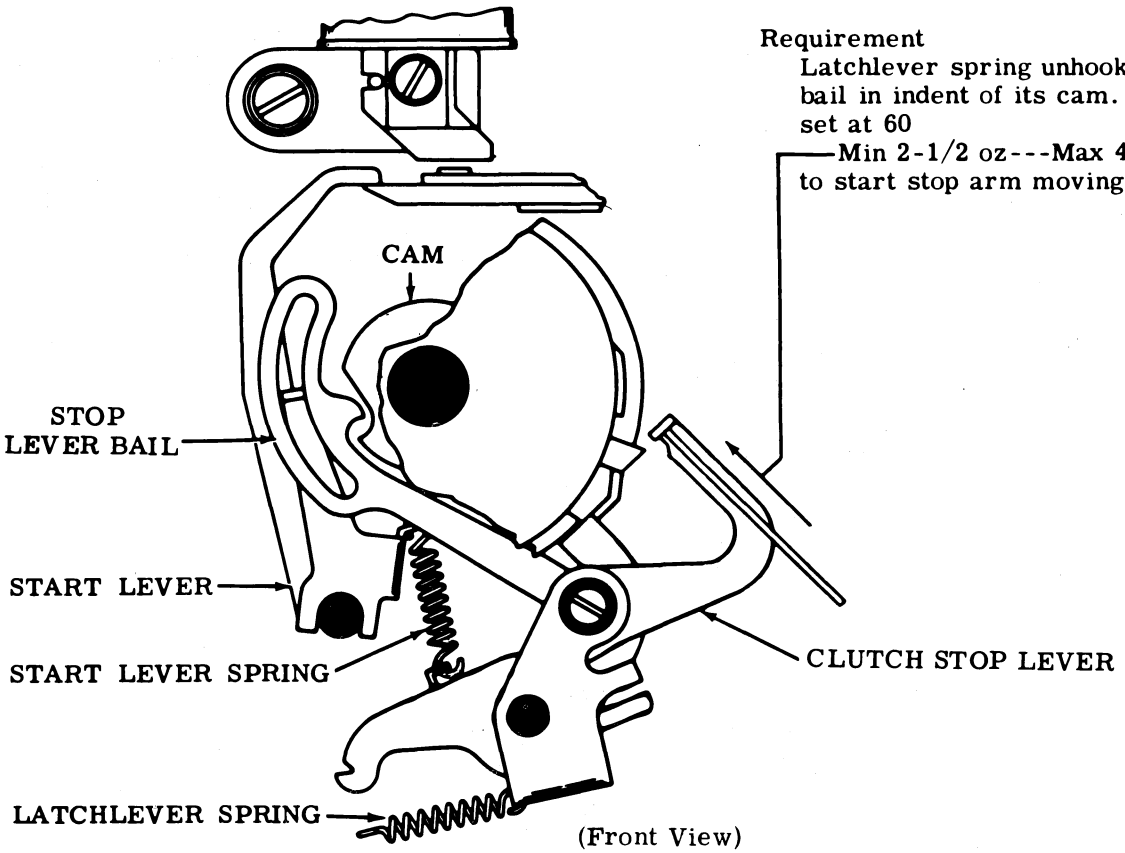
Requirement
Range scale set at 60. Selector clutch disengaged. Armature in marking position. Clutch stop lever should engage clutch shoe lever by approximately full thickness of stop lever.

To Adjust
Position stop lever on stop lever bail with clamp screw loosened.

2.13 Selector Mechanism (continued)

START LEVER SPRING

Requirement
Latchlever spring unhooked. Stop arm bail in indent of its cam. Range scale set at 60
—Min 2-1/2 oz---Max 4-1/2 oz to start stop arm moving.



(Front View)

SELECTOR RECEIVING MARGIN

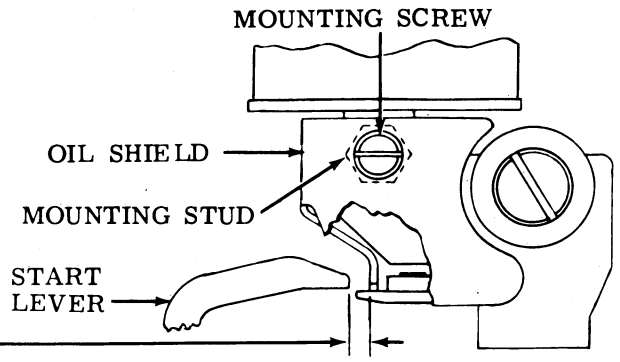
Requirement (for units employing armature with two antifreeze buttons)
When a distortion test set is available, the selector armature spring tension should be refined, if necessary, to obtain satisfactory receiving margins. The front antifreeze button must contact the magnet core when the magnet coils are energized.

To Adjust
Refine the SELECTOR ARMATURE SPRING (2.09) adjustment.

SELECTOR RECEIVING MARGIN MINIMUM REQUIREMENTS

Current	Speed In WPM	Points Range With Zero Distortion	Percentage Of Marking And Spacing Bias	End Distortion Tolerated With Scale At Bias Optimum Setting
0.500 Amp (Windings Parallel)	100	72	38	35
0.060 Amp (Windings Parallel)	100	65	35	30

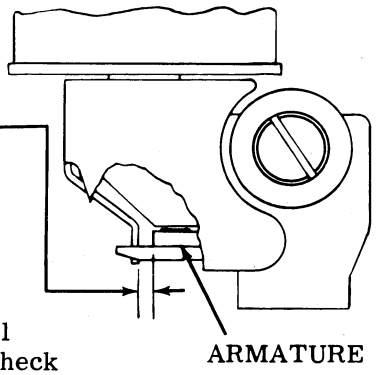
2.14 Selector Mechanism (continued)



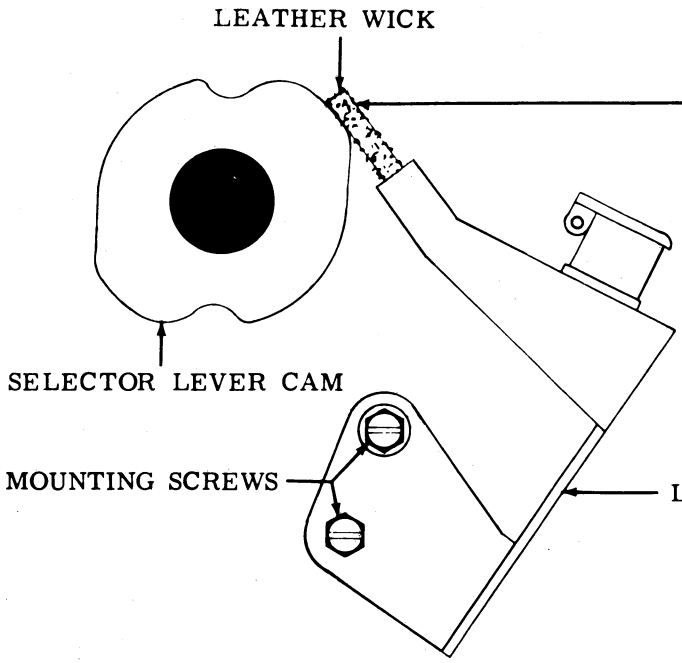
OIL SHIELD (If Applicable)

(1) Requirement
Magnet de-energized. Stop lever bail on low part of its cam. Clearance between start lever and oil shield
Min 0.020 inch

(2) Requirement
Magnet energized. Stop lever bail on high part of its cam. Clearance between end of armature and oil shield
Min 0.010 inch



To Adjust
Position shield with mounting screw loosened. Make sure oil shield mounting stud is secure before making adjustment. Check to be sure there is clearance between the oil shield and armature extension when the armature is energized. Tighten screw.

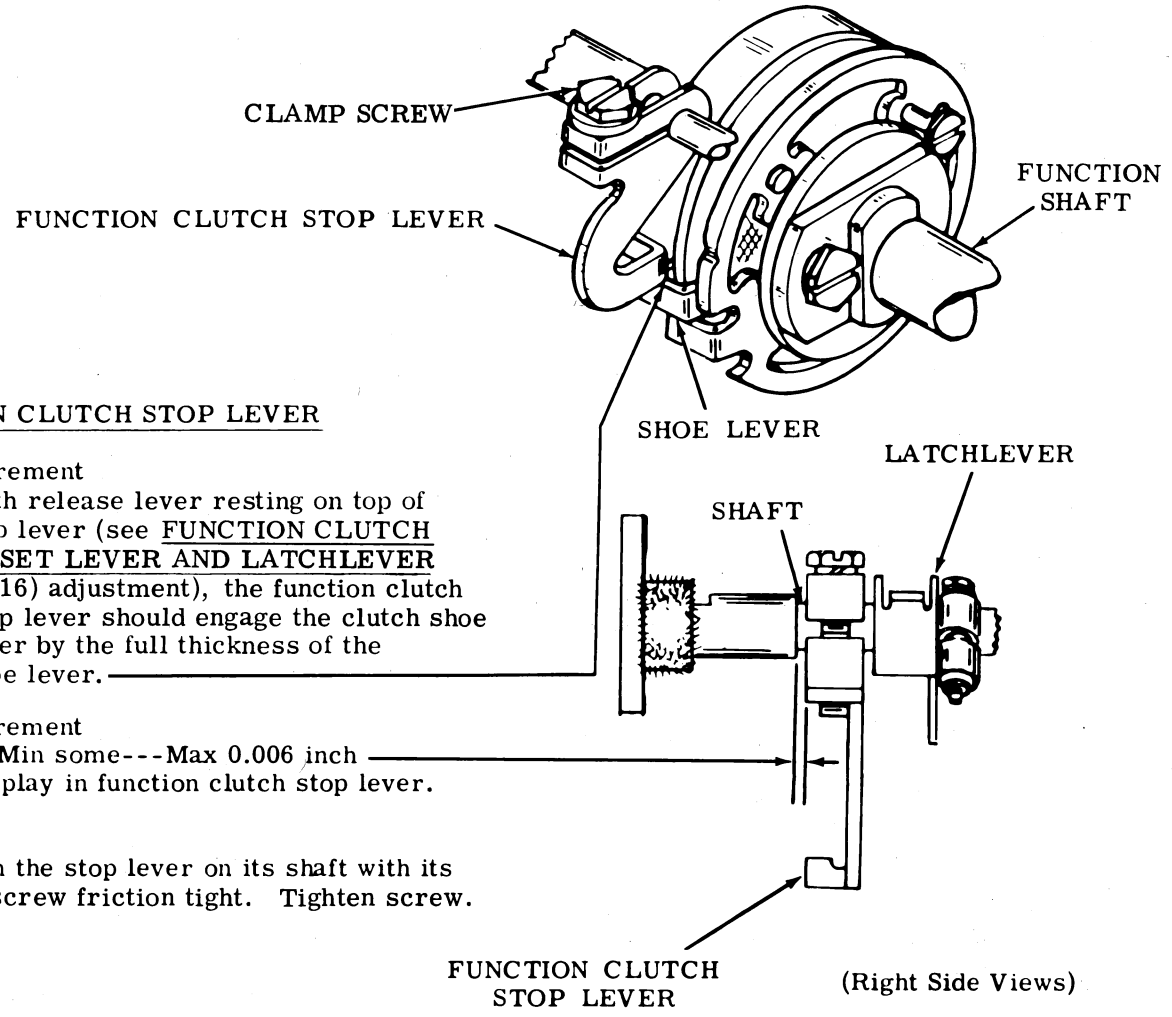


SELECTOR CAM LUBRICATOR

Requirement
High part of selector lever cams should contact leather wick but should not deflect wick more than 1/32 inch gauged visually.

To Adjust
Position lubricator assembly around lower screw with mounting screws loosened. Tighten screws.

2.15 Function Mechanism (continued)



(Right Side Views)

FUNCTION CLUTCH STOP LEVER

(1) Requirement
With release lever resting on top of trip lever (see FUNCTION CLUTCH RESET LEVER AND LATCHLEVER (2.16) adjustment), the function clutch stop lever should engage the clutch shoe lever by the full thickness of the shoe lever.

(2) Requirement
Min some---Max 0.006 inch endplay in function clutch stop lever.

To Adjust
Position the stop lever on its shaft with its clamp screw friction tight. Tighten screw.

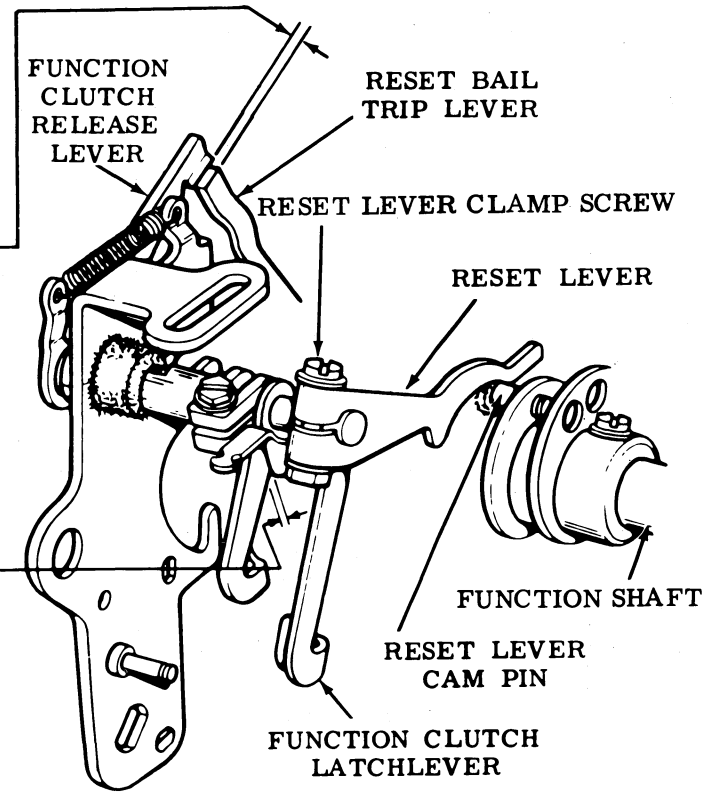
2.16 Function Mechanism (continued)

(A) FUNCTION CLUTCH RESET LEVER AND LATCHLEVER

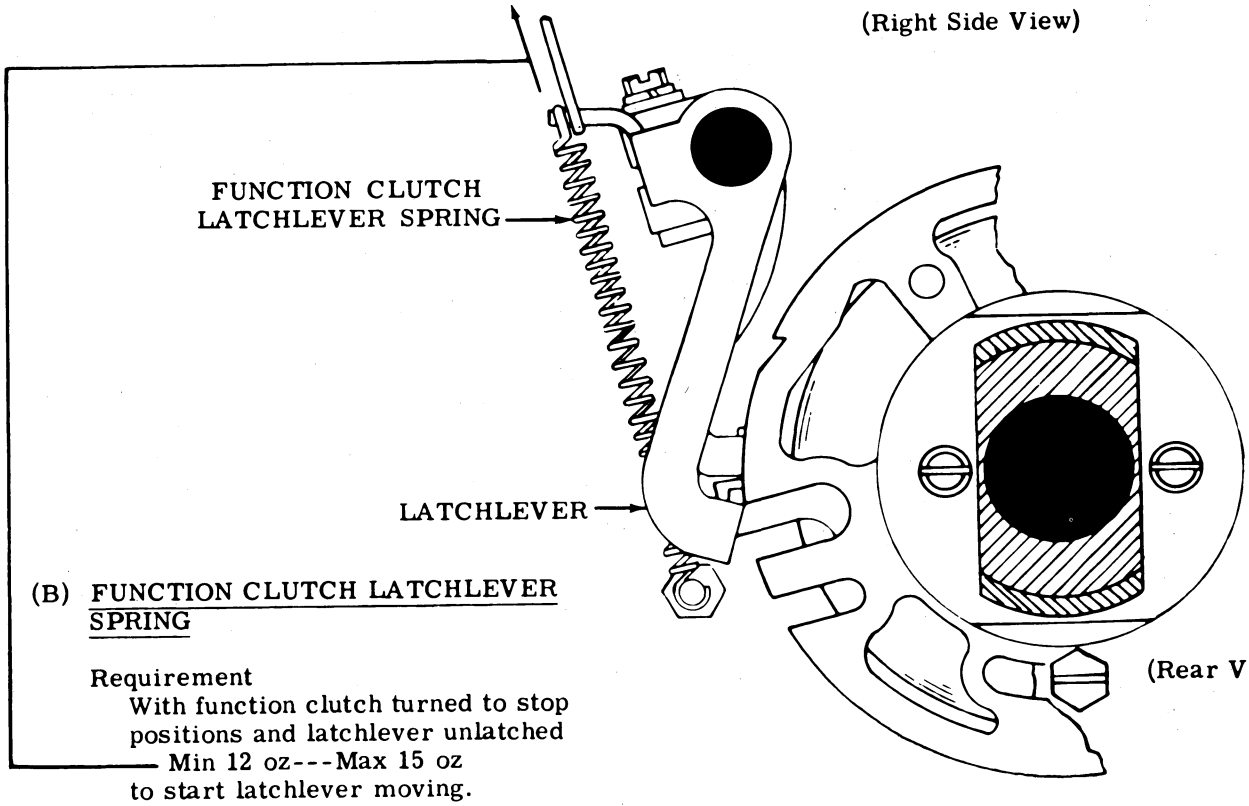
(1) Requirement
Reset lever on the high part of its cam. Clearance between the clutch release lever and the trip lever extension should be
Min 0.010 inch---Max 0.030 inch

(2) Requirement
Reset lever should be axially positioned on shaft so that there is
Min some---Max 0.010 inch
endplay allowed for the function clutch latchlever.

To Adjust
With clamp screw friction tight, position reset lever on its shaft.



(Right Side View)



(Rear View)

(B) FUNCTION CLUTCH LATCHLEVER SPRING

Requirement
With function clutch turned to stop positions and latchlever unlatched
Min 12 oz---Max 15 oz
to start latchlever moving.

2.17 Function Mechanism (continued)

(A) TRIP CAM FOLLOWER LEVER

(1) Requirement

With the trip cam follower on the high part of its cam, the clearance between the trip lever extension and the clutch release lever should be

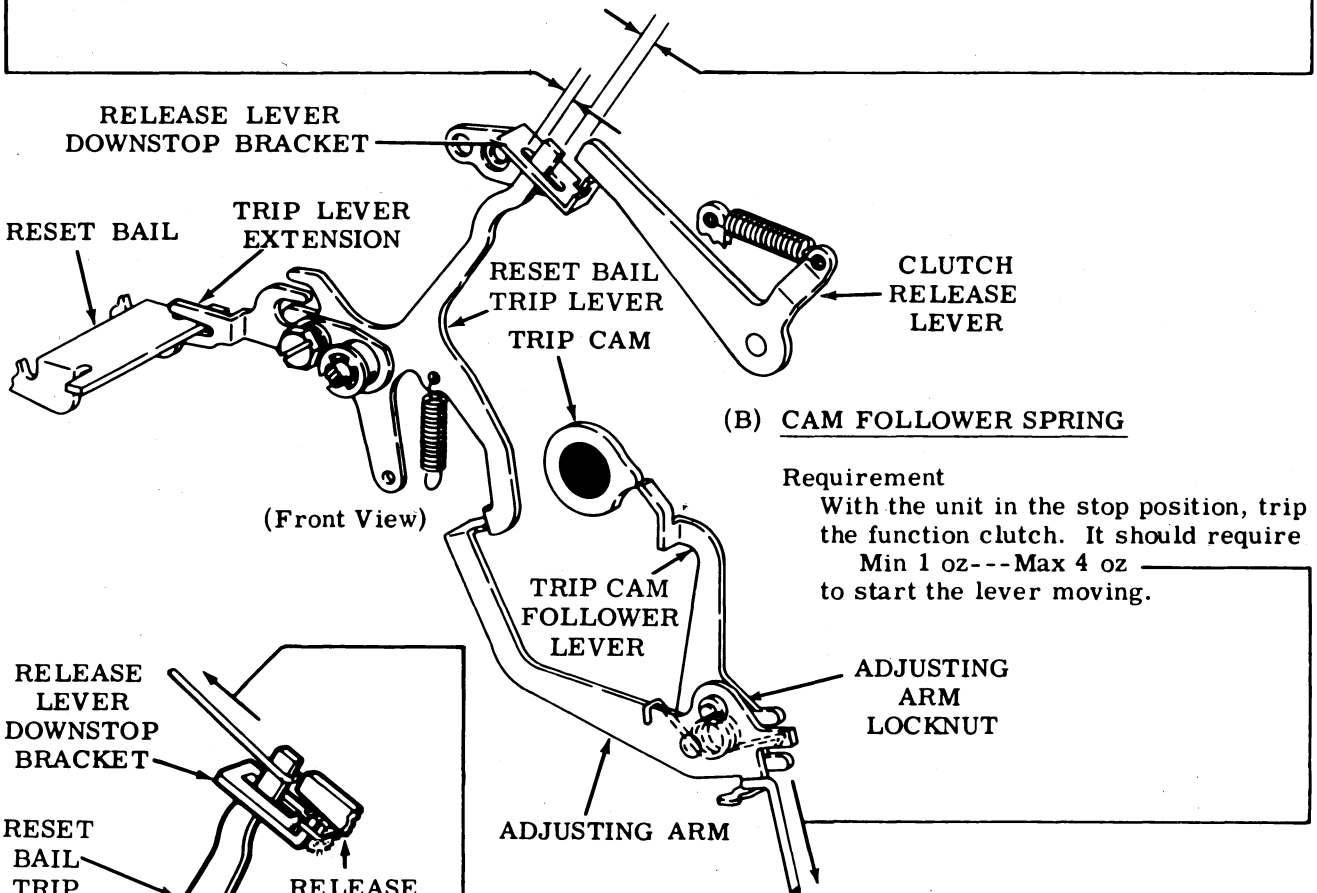
Min 0.010 inch---Max 0.030 inch

(2) Requirement

There should be some clearance between the trip lever extension and left end of slot in release lever downstop bracket.

To Adjust

With adjusting arm locknut friction tight, adjust by means of pry point.



(Front View)

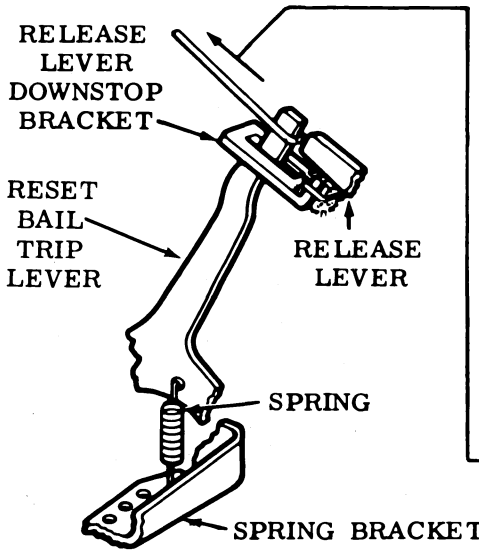
(B) CAM FOLLOWER SPRING

Requirement

With the unit in the stop position, trip the function clutch. It should require

Min 1 oz---Max 4 oz

to start the lever moving.



(Front View)

(C) TRIP LEVER EXTENSION SPRING

Requirement

Trip the reset bail trip lever extension. With scale pulling at the top of the trip lever extension

Min 1 oz---Max 4 oz

to start trip lever extension moving.

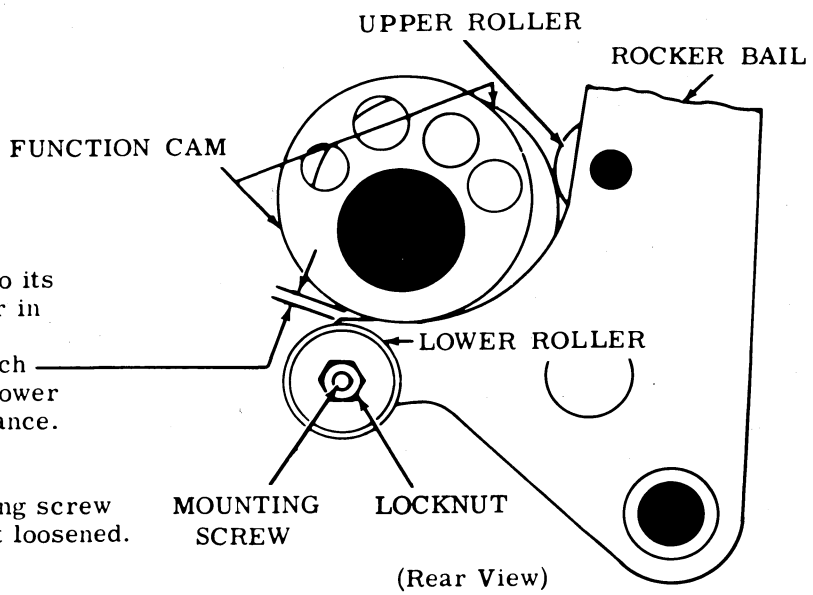
Note: It may be necessary to remove the ribbon feed mechanism when checking this tension.

2.18 Function Mechanism (continued)

(A) CAM FOLLOWER ROLLER

Requirement
With rocker bail positioned to its extreme left and upper roller in contact with function cam
Min some---Max 0.004 inch clearance between cam and lower roller at point of least clearance.

To Adjust
Position lower roller mounting screw in elongated slot with locknut loosened. Tighten locknut.



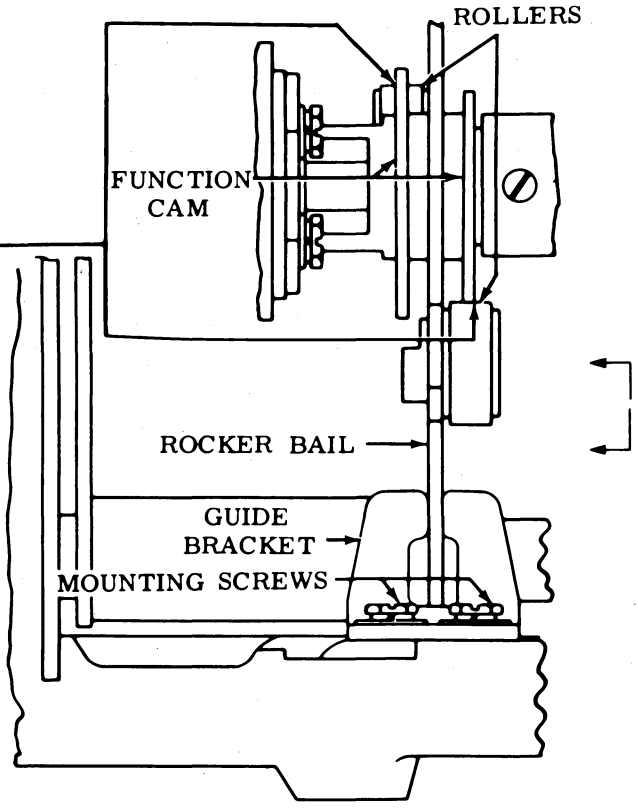
(Rear View)

(B) CAM FOLLOWER ROLLER ALIGNMENT

(1) Requirement
Rocker bail rollers should engage full thickness of function cam.

(2) Requirement
Lifter roller in full engagement with rocker arm camming surface (refer to TOGGLE LINK Par. 2.40 illustration).

To Adjust
Position rocker bail and guide bracket with guide bracket mounting screws loosened. Tighten screws.



(Right Side View)

2.19 Punch Mechanism

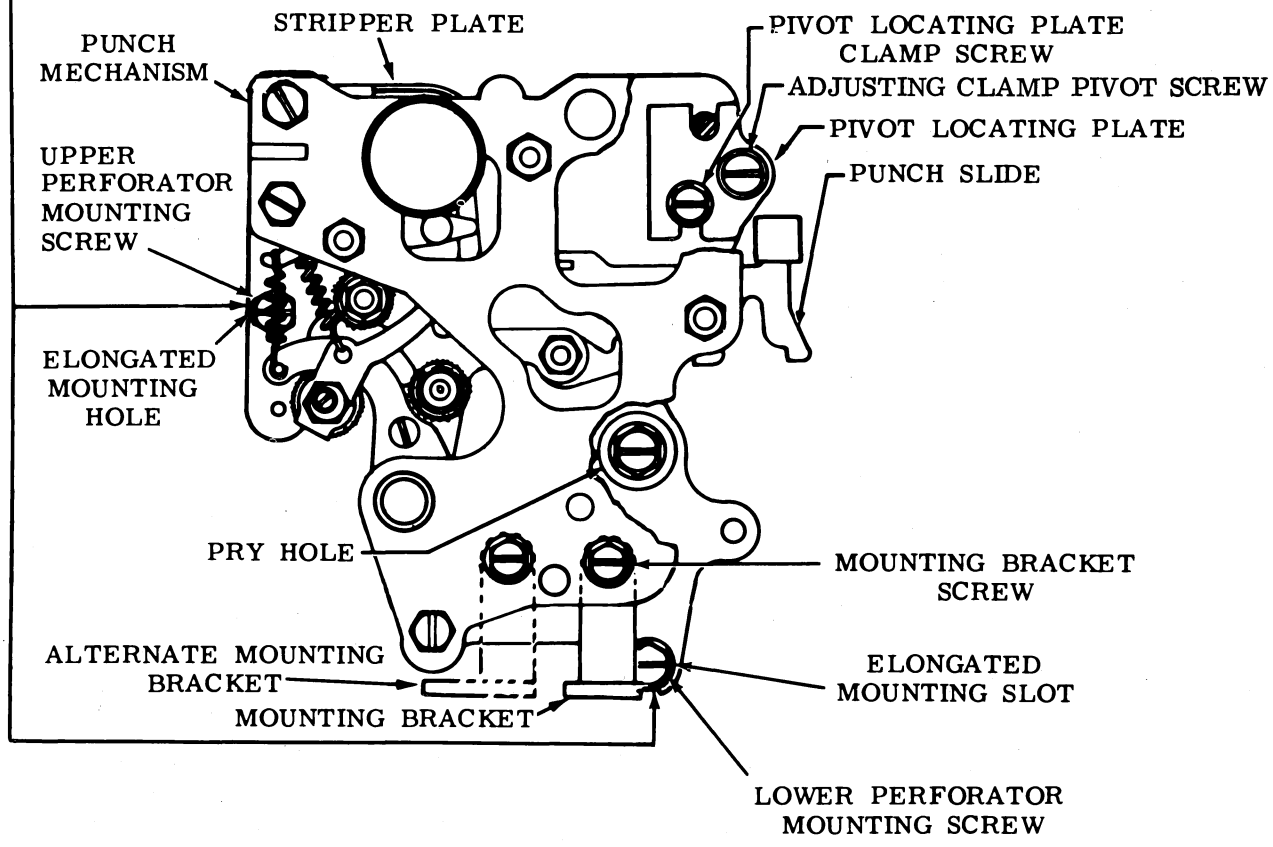
PUNCH MOUNTING PLATE (Preliminary)

Requirement

The punch mechanism mounting screw, beneath punch block, and mounting screw at lower edge of punch mechanism backplate should be located centrally within their respective mounting holes.

To Adjust

Remove mounting screw at the lower edge of punch mechanism backplate. With the two remaining backplate mounting screws and mounting bracket screw friction tight, position punch mechanism so that the tapped hole of the frame is centrally located (as gauged by eye) within large body hole of punch mechanism backplate. Tighten the two backplate mounting screws and recheck to see that requirement is met. Replace and tighten the lower backplate mounting screw. Tighten the bracket mounting screw.



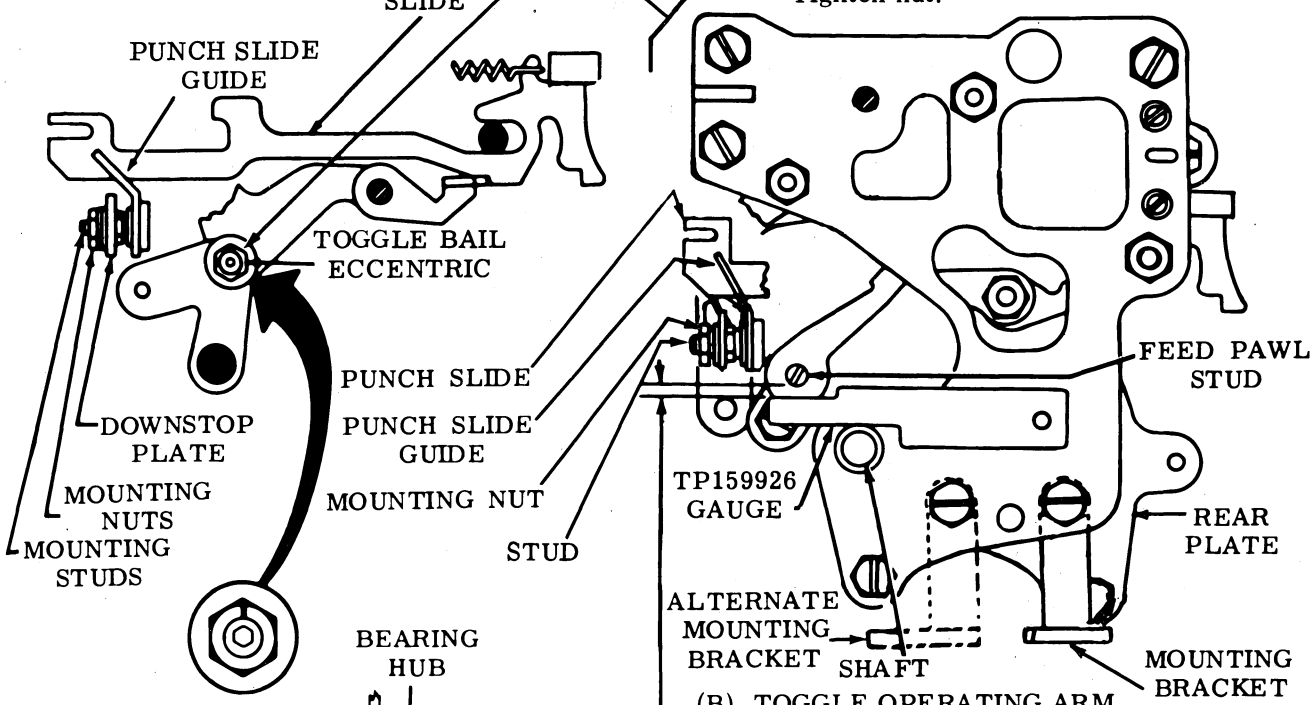
2.20 Punch Mechanism (continued)

Note: Before proceeding with the punch mechanism adjustments, check the CAM FOLLOWER ROLLER (2.18) adjustment and loosen the punch slide downstop mounting nut and guide mounting stud.

(A) TOGGLE BAIL ECCENTRIC (Preliminary)

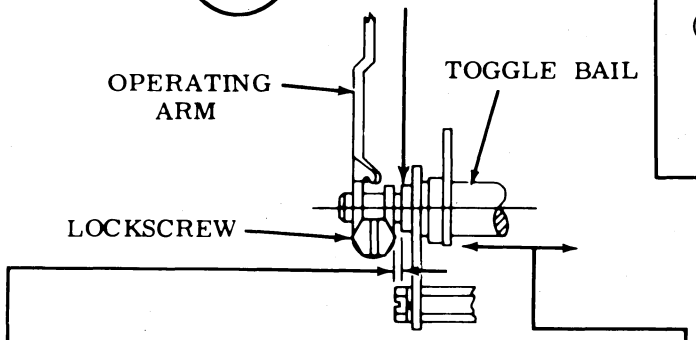
Requirement
The indent (high side of eccentric) should be in its uppermost position.

To Adjust
With the toggle eccentric shaft locknut friction tight position eccentric. Tighten nut.



(B) TOGGLE OPERATING ARM

(1) Requirement
Trip function clutch and rotate main shaft until the upper rocker bail roller is on high part of its cam.
Min 0.002 inch---Max 0.005 inch clearance between feed pawl stud and the TP159926 gauge.



(Left Side View)

(2) Requirement
The oscillating shaft endplay should be
Min 0.002 inch
and the clearance between the operating arm and the oscillating shaft bearing hub should be
Max 0.015 inch

To Adjust
Position the arm in a horizontal direction to obtain the clearances in requirement (2). Tighten the screw.

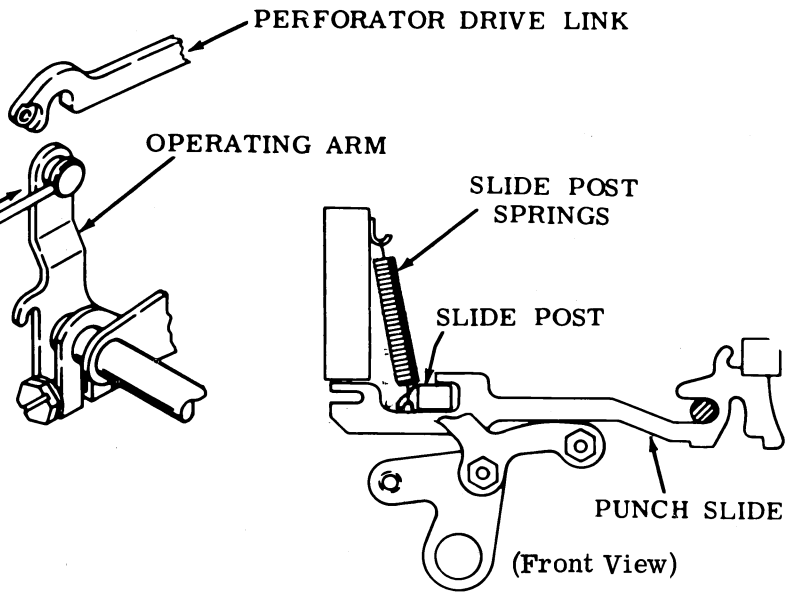
2.21 Punch Mechanism (continued)

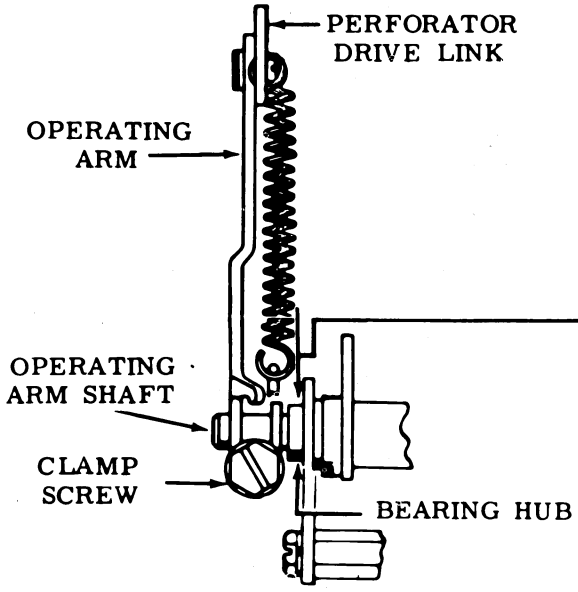
SLIDE POST SPRINGS

Requirement

Select the DELETE code (12345678 marking) and trip the function clutch. Disengage the perforator drive link from the operating arm. With the push end of the scale applied at the connecting pin of the operating arm

Min 24 oz---Max 40 oz to start the end of the punch slides moving downward.





(Left Side View)

PERFORATOR DRIVE LINK SPRING

Requirement

Min 3-1/2 oz---Max 8 oz to pull springs to installed length.

2.22 Punch Mechanism (continued)

PUNCH SLIDE DOWNSTOP POSITION

Requirement

With function clutch disengaged and latched and play taken up toward the top, clearance between both the front and rear punch slides and downstop plate

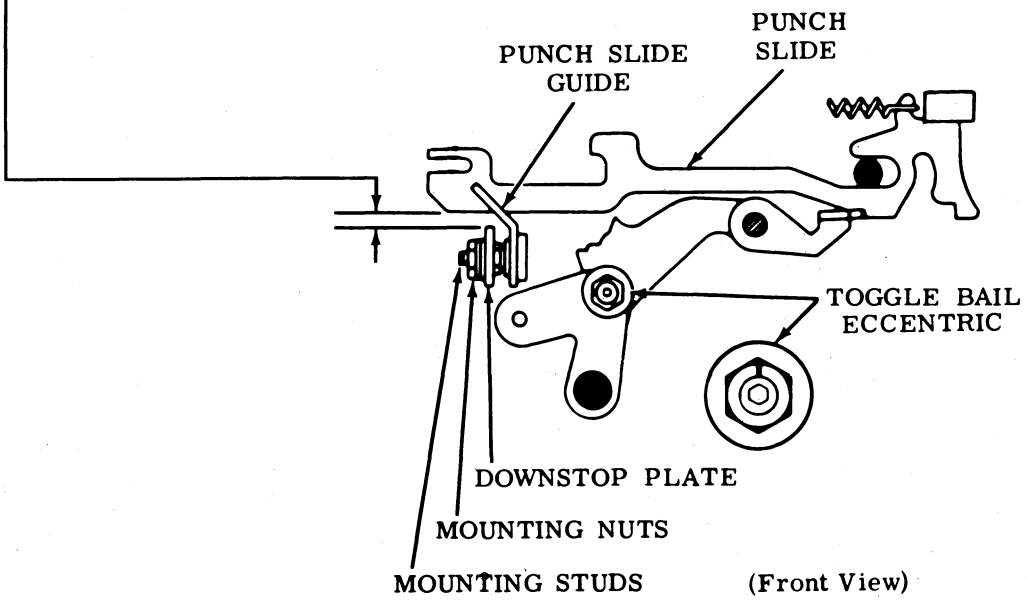
— Min some---Max 0.008 inch

all other punch slides should have some clearance.

Note: To check for some clearance, place unit in stop position, trip function trip mechanism and latches, the punch slides should move fully to their operated position.

To Adjust

With unit in stop position, loosen the two downstop plate mounting locknuts and locate the downstop plate to meet the requirement. Tighten nuts.



2.23 Punch Mechanism (continued)

PUNCH MOUNTING PLATE (Final)

(1) To Check

Select delete code combination (12345678) marking. Rotate until function clutch trips with punch levers in extreme left-hand position.

Requirement

Clearance between punch slide and punch slide latch

Min 0.015 inch---Max 0.045 inch

at slide where clearance is least.

To Adjust

Loosen perforator mounting screws, adjusting clamp lockscrew, adjusting clamp pivot screw, and anchor bracket screw until friction tight. Place tip of screwdriver between screw and rim of pry hole and pry perforator up or down. Tighten only adjusting clamp lockscrew.

(2) To Check

Remove ribbon and tape. With unit in stop position and upper no.7 pushbar to the right, check clearance between rear leg of stripper plate and type wheel. Select the R code combination (-2--5-78) marking, trip the function clutch, and move rocker bail to its extreme left position. Check clearance between front leg of the stripper plate and type wheel.

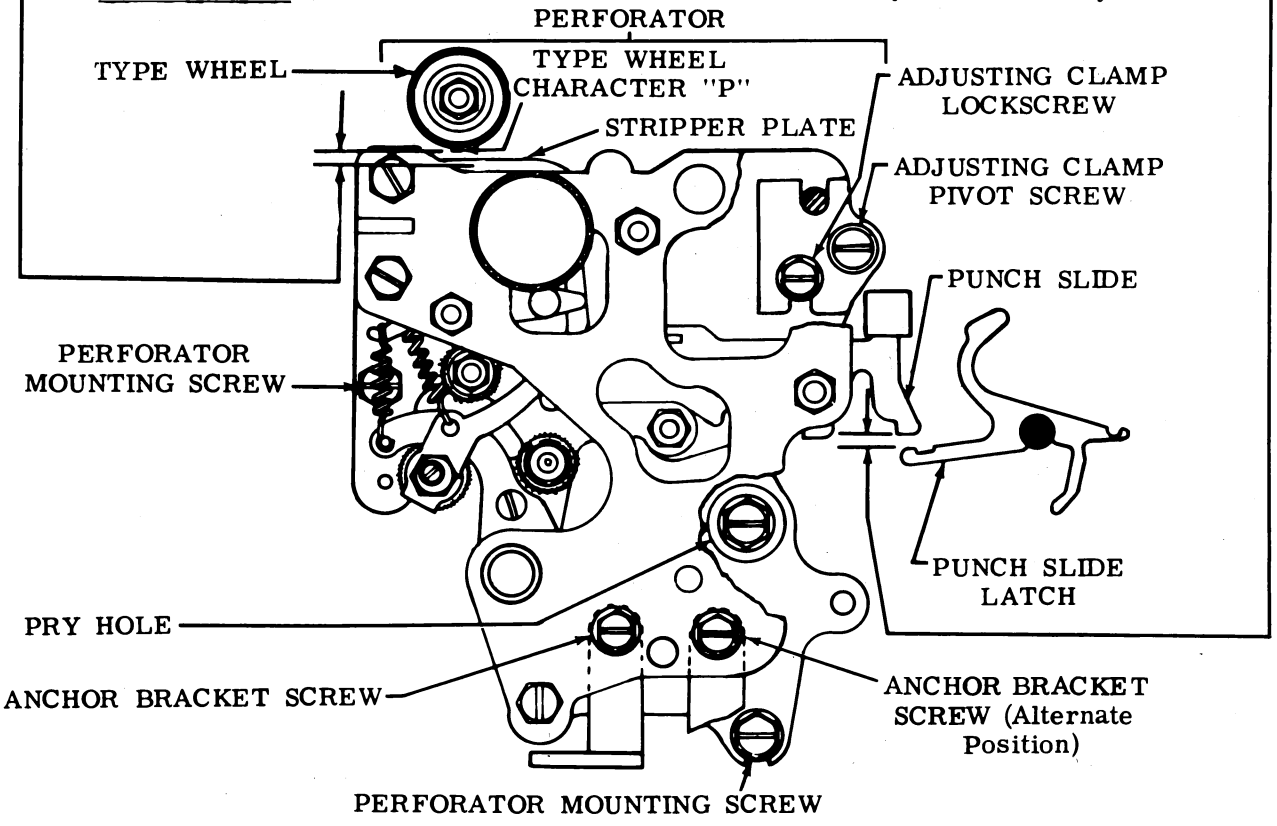
Requirement

Clearance between the character P and the front or rear leg of stripper plate (whichever has the least clearance) should be

Min 0.075 inch---Max 0.085 inch

To Adjust

Position perforator with two mounting screws, adjusting clamp pivot screw, and anchor bracket screw friction tight. Tighten screws. Check RESET BAIL TRIP LEVER (Final) (2.24) adjustment for some clearance and adjust if necessary.



2.24 Punch Mechanism (continued)

RESET BAIL TRIP LEVER (Final)

(1) Requirement

Manually select the null code combination (all spacing). Manually rotate reset bail trip lever. The punch slide reset bail should trip before the function clutch is tripped.

To Adjust

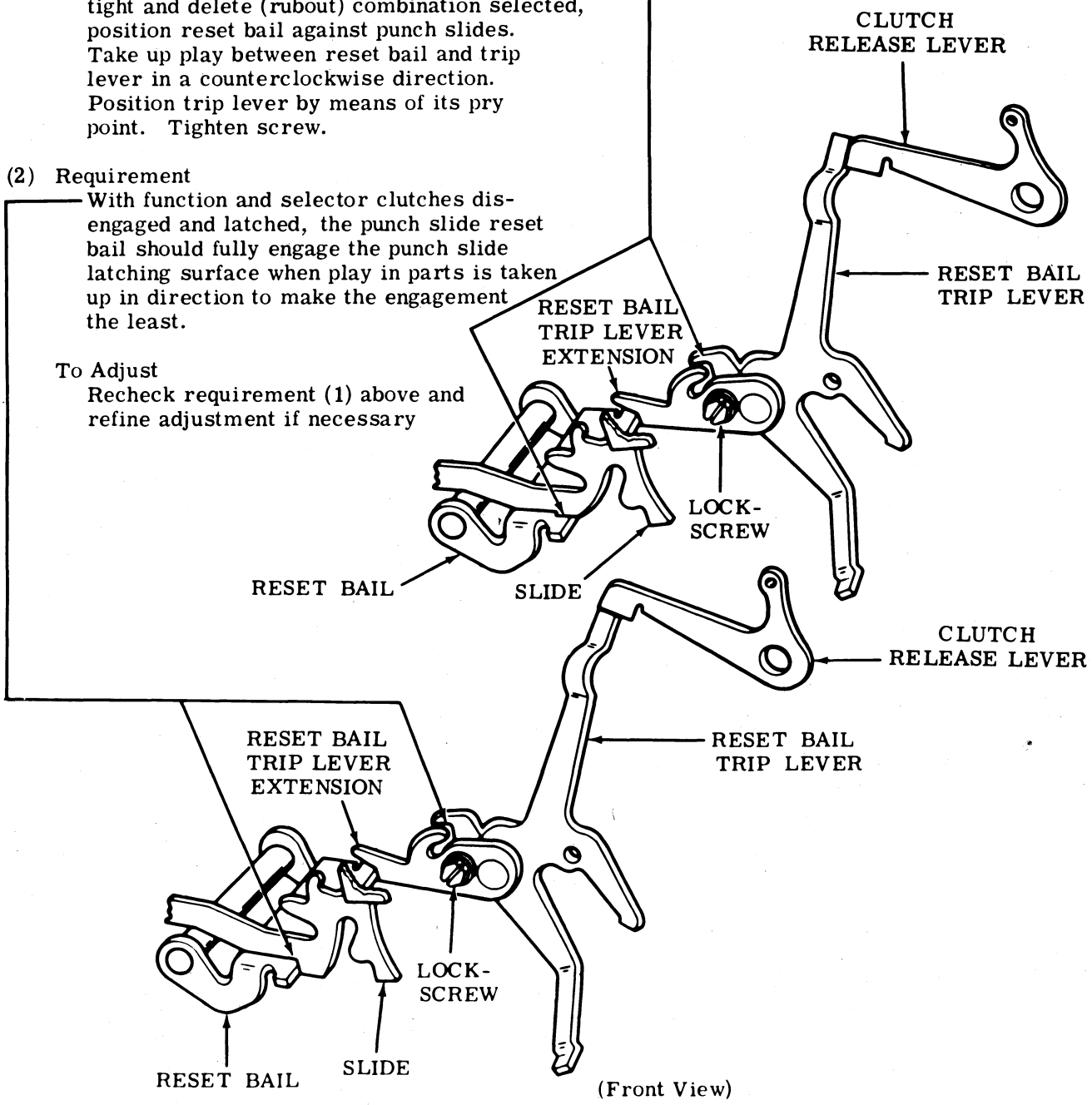
With trip lever extension lockscrew friction tight and delete (rubout) combination selected, position reset bail against punch slides. Take up play between reset bail and trip lever in a counterclockwise direction. Position trip lever by means of its pry point. Tighten screw.

(2) Requirement

With function and selector clutches disengaged and latched, the punch slide reset bail should fully engage the punch slide latching surface when play in parts is taken up in direction to make the engagement the least.

To Adjust

Recheck requirement (1) above and refine adjustment if necessary



(Front View)

2.25 Punch Mechanism (continued)

(A) LATCHLEVER CLEARANCE

Requirement

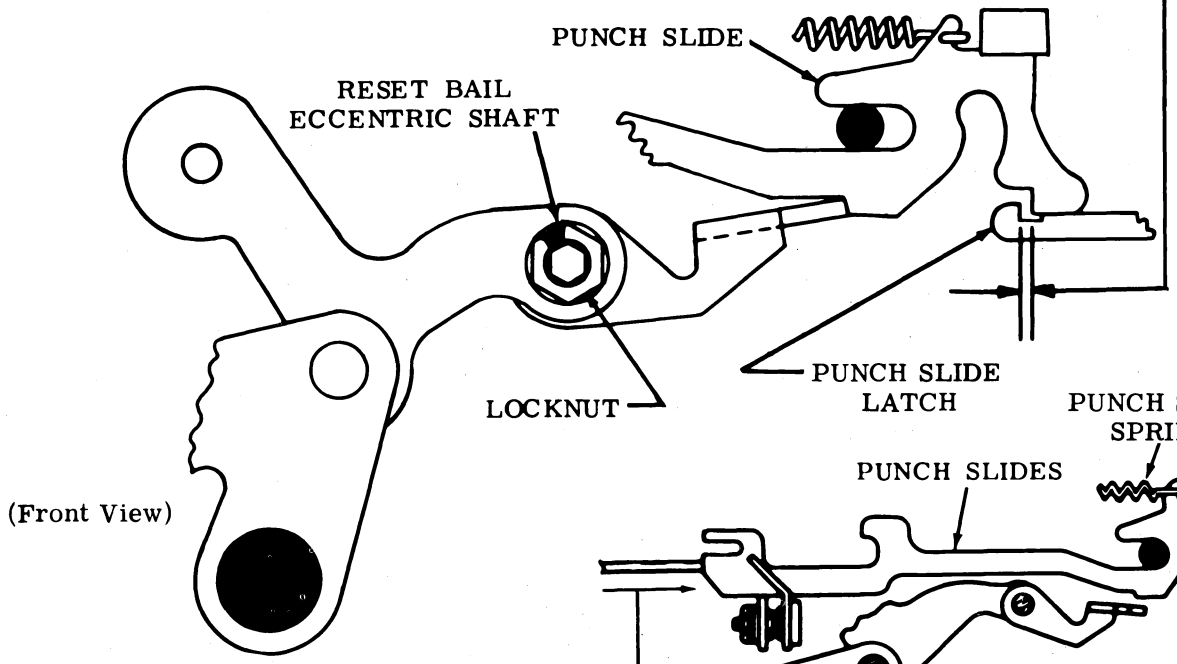
With null combination selected, the function clutch disengaged and latched, clearance between the punch slide and its associated latchlever should be

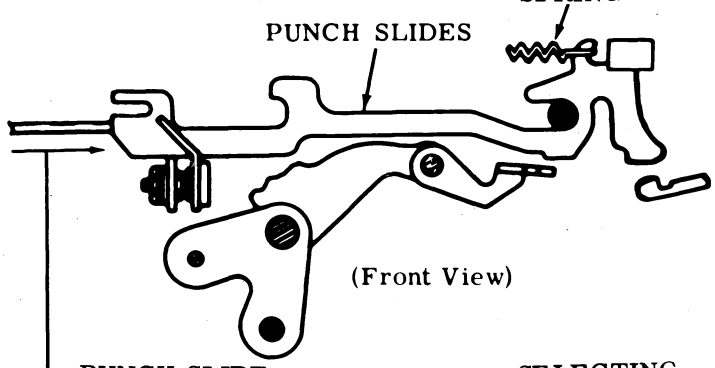
Min 0.008 inch---Max 0.020 inch

for the slide having the least clearance.

To Adjust

Rotate the reset bail eccentric shaft with its locknut loosened. Keep the indentation in the eccentric above center of shaft. Tighten locknut.





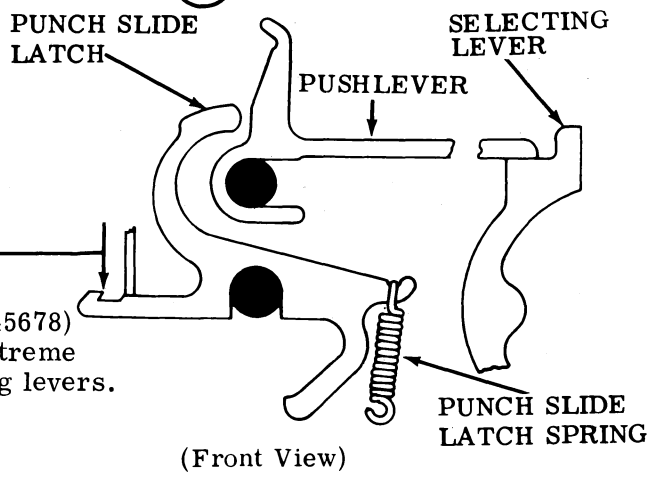
(B) PUNCH SLIDE SPRING

Requirement

Delete combination set up, and punch slides in selected position

Min 2-1/4 oz---Max 3-1/4 oz

to start each slide moving.



(C) PUNCH SLIDE LATCH SPRING

To Check

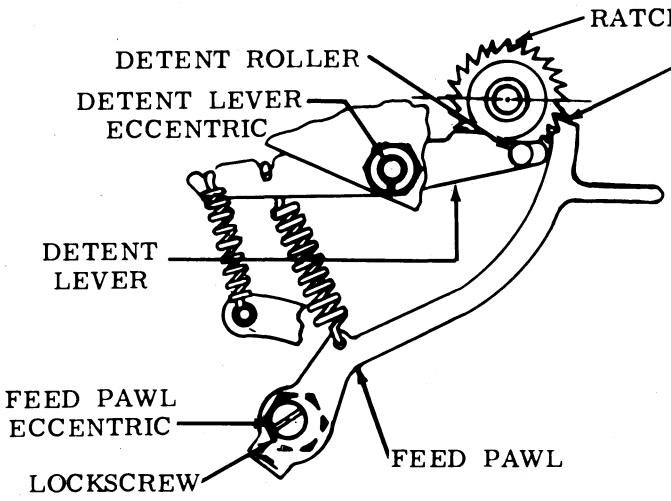
Select delete code combination (12345678) marking. Position rocker bail to extreme left. Strip pushlevers from selecting levers.

Requirement

Min 1 oz---Max 3 oz

to start latch moving.

2.26 Punch Mechanism (continued)



FEED PAWL

Requirement

Function clutch disengaged, indentation in detent lever eccentric at right angle to lever, detent roller in contact with ratchet wheel, high part of feed pawl eccentric to the right of its lockscrew. The feed pawl should engage the first tooth below a horizontal centerline through the ratchet wheel with no perceptible clearance.

To Adjust

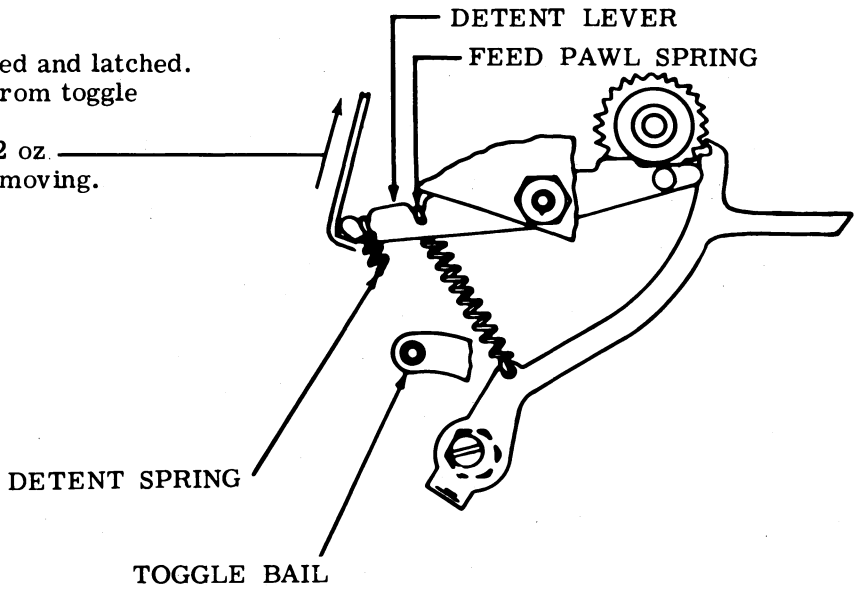
Rotate the feed pawl eccentric with lockscrew loosened. Tighten screw.

FEED PAWL SPRING

Requirement

Function clutch disengaged and latched. Detent spring unhooked from toggle bail

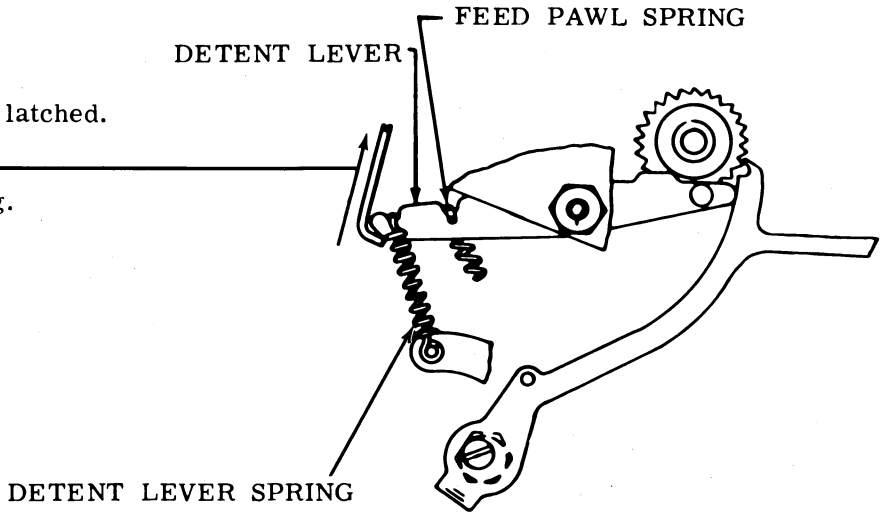
Min 3 oz---Max 4-1/2 oz to start the detent lever moving.



2.27 Punch Mechanism (continued)

DETENT LEVER SPRING

Requirement
Function clutch disengaged and latched.
Feed pawl spring unhooked.
Min 7 oz---Max 10 oz
to start the detent lever moving.



TAPE GUIDE ASSEMBLY SPRING

(1) Requirement
Min 16 oz
to pull tape guide assembly away from tape guide block.

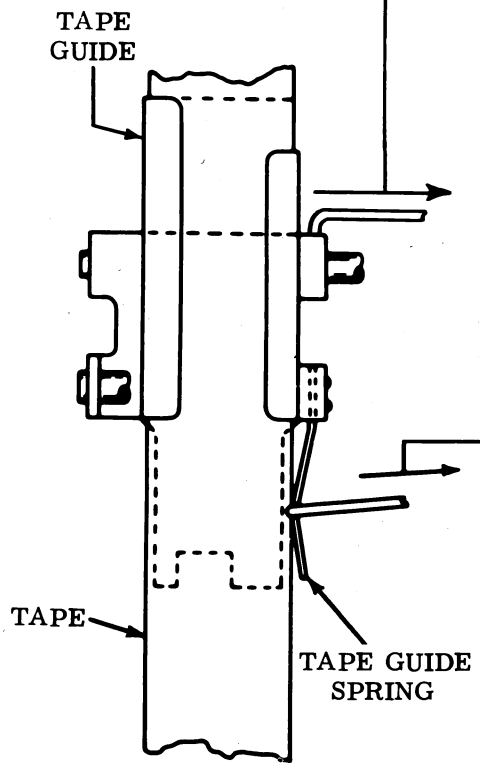
(2) Requirement
Tape guide assembly should move freely on shaft.

To Adjust
Position mounting post.

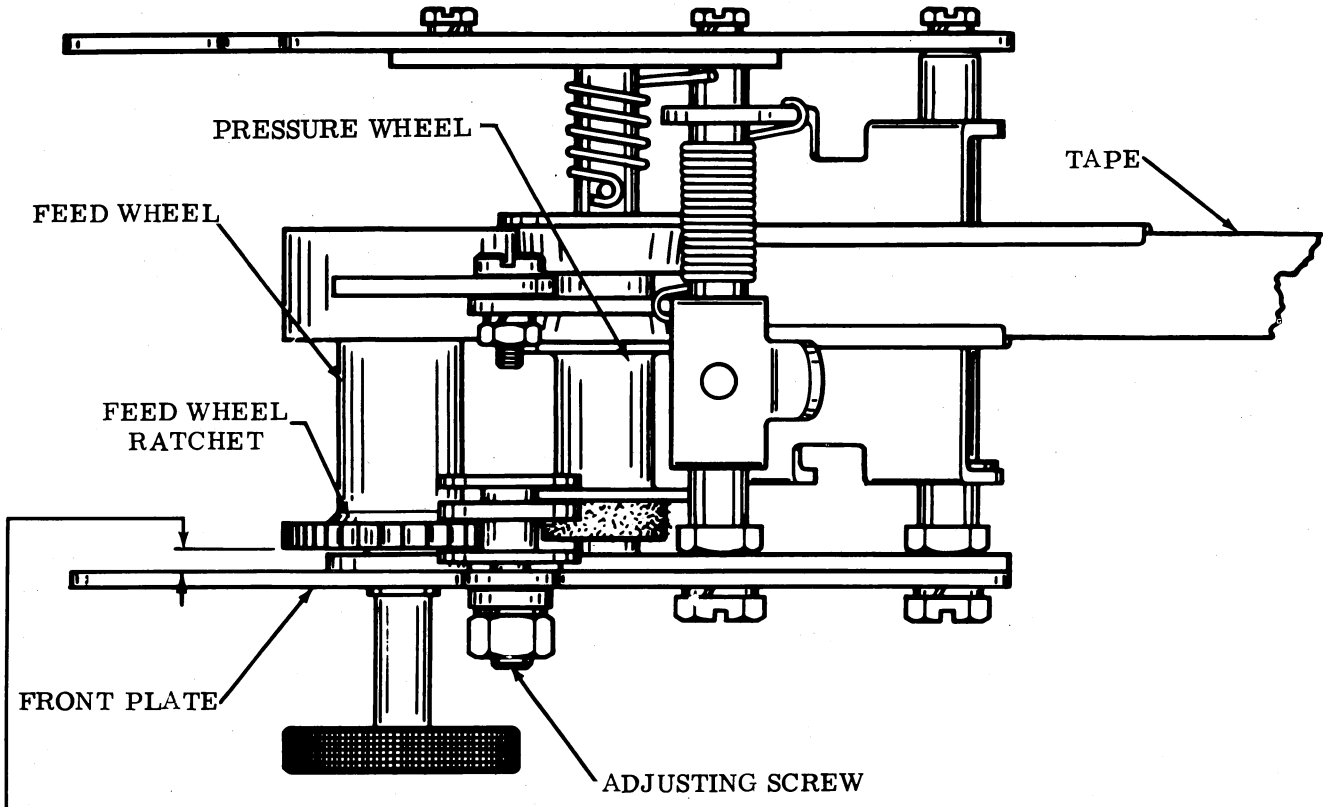
TAPE GUIDE SPRING

Requirement
With selector and function clutches disengaged and latched, tape threaded through punch mechanism, it should require
Min 1-1/4 oz---Max 2-1/4 oz
to just move the spring away from the tape.

To Adjust
Bend the spring.



2.28 Tape Feed Mechanism



FEED WHEEL

(1) Requirement (preliminary)
Clearance between feed wheel ratchet and front plate
Min 0.085---Max 0.095 inch

(2) Requirement (final)
Printing centrally located on tape.

To Adjust
Turn adjusting screw with locknut loosened.

TAPE GUIDE

Requirement
The tape should run in the center of tape guide (gauge by eye).

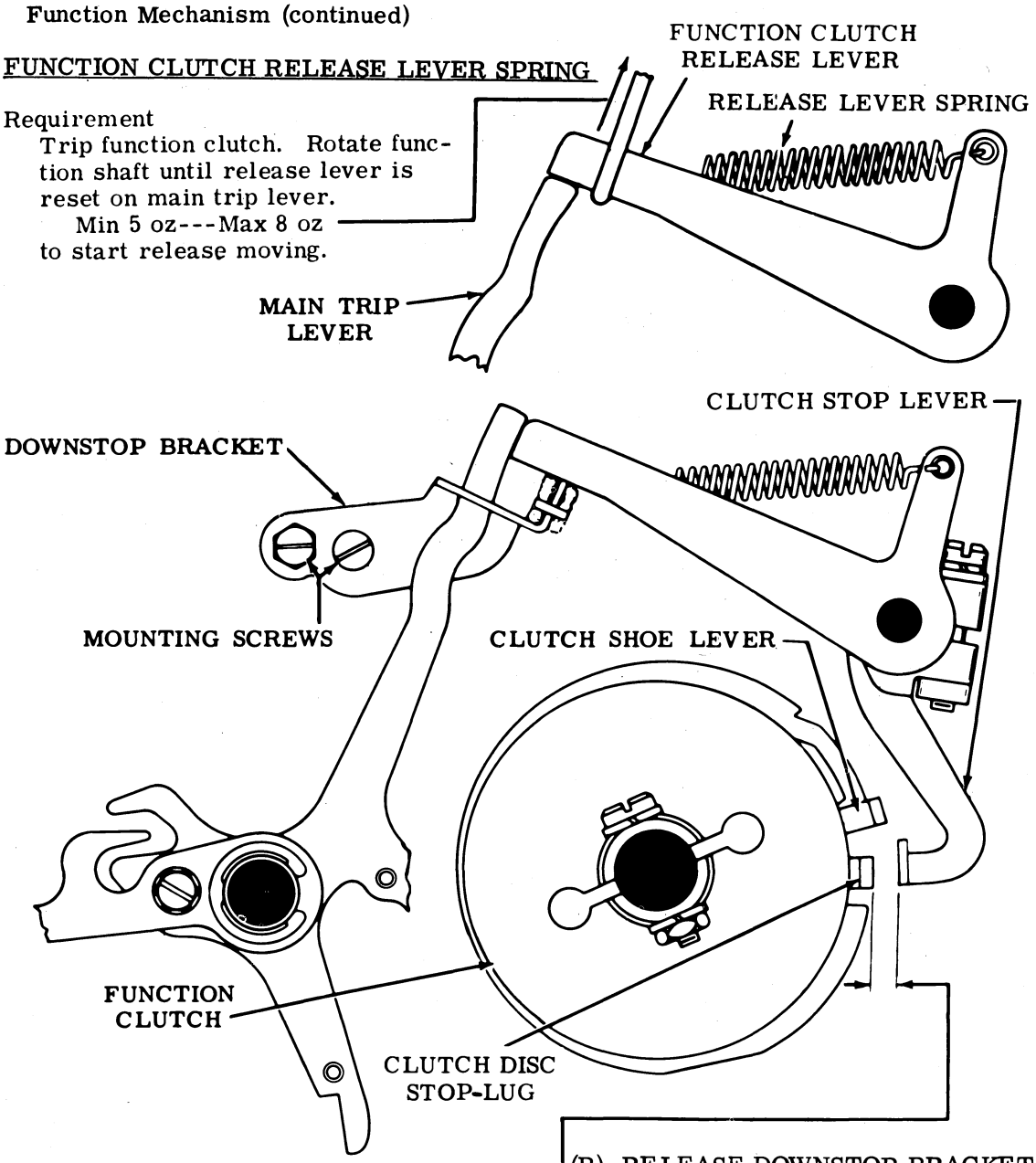
To Adjust
With mounting nuts friction tight, position tape guide with roller up or down to meet requirement.

SPECIAL REQUIREMENT
If the tape printer is used on a typing reperforator single or double plate base, a tape reel will have to be used to accommodate the 3/8 inch tape. This tape reel consists of a disc with hub and a disc with nut.

2.29 Function Mechanism (continued)

(A) FUNCTION CLUTCH RELEASE LEVER SPRING

Requirement
Trip function clutch. Rotate function shaft until release lever is reset on main trip lever.
Min 5 oz---Max 8 oz
to start release moving.



(Front View)

(B) RELEASE DOWNSTOP BRACKET

Requirement
With function clutch tripped, rotate shaft until clearance between function clutch disc stop-lug and clutch stop lever is at a minimum. Release resting against downstop bracket. Clearance between function clutch disc stop-lug and stop lever
Min 0.002 inch---Max 0.045 inch

To Adjust
With downstop bracket mounting screws friction, tighten position bracket. Tighten screws.

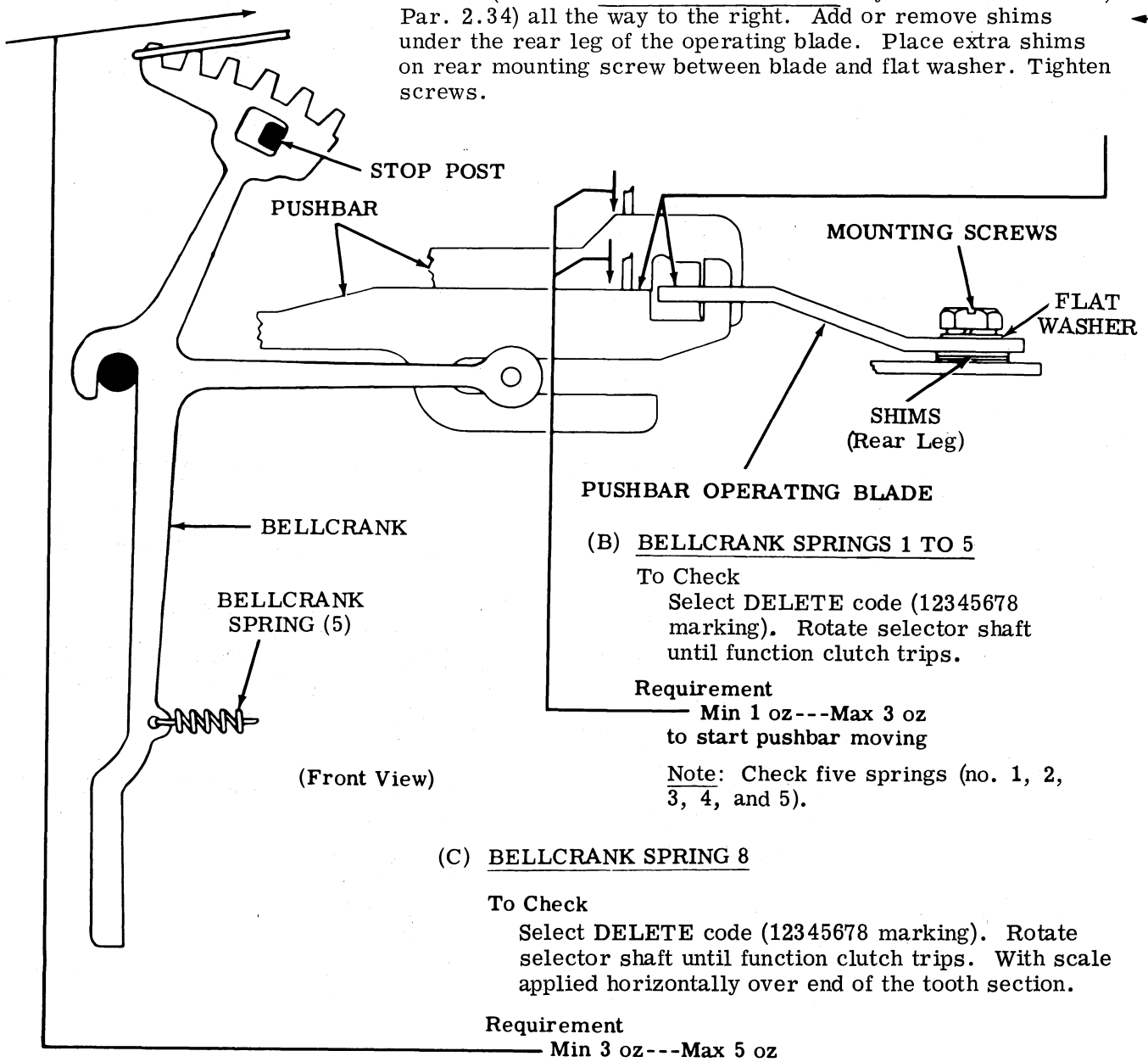
2.30 Typing Mechanism

(A) PUSHBAR OPERATING BLADE ALIGNMENT (Preliminary)

To Check
Manually select DELETE code (12345678 marking). Rotate selector shaft until function clutch trips. Hold no. 2 and 3 bellcranks against stop post as illustrated.

Requirement
Operating blade parallel to (not necessarily flush with) no. 2 and 3 pushbars.

To Adjust
With its mounting screws friction tight, pry transfer mounting bracket (refer to PUSHBAR LOCATION adjustment illustration, Par. 2.34) all the way to the right. Add or remove shims under the rear leg of the operating blade. Place extra shims on rear mounting screw between blade and flat washer. Tighten screws.



(B) BELLCRANK SPRINGS 1 TO 5

To Check
Select DELETE code (12345678 marking). Rotate selector shaft until function clutch trips.

Requirement
Min 1 oz---Max 3 oz to start pushbar moving

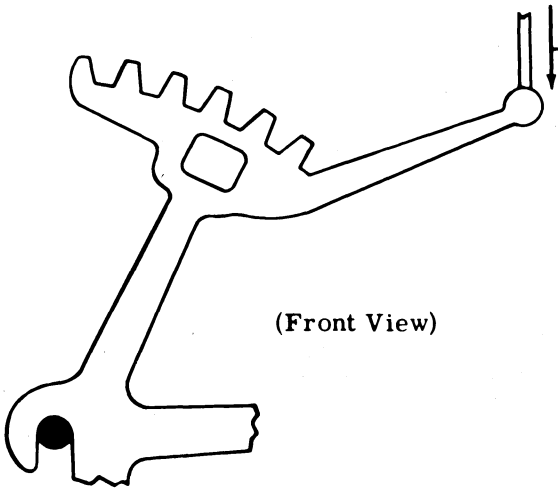
Note: Check five springs (no. 1, 2, 3, 4, and 5).

(C) BELLCRANK SPRING 8

To Check
Select DELETE code (12345678 marking). Rotate selector shaft until function clutch trips. With scale applied horizontally over end of the tooth section.

Requirement
Min 3 oz---Max 5 oz to start bellcrank moving.

2.31 Typing Mechanism (continued)



BELLCRANK SPRINGS 6 AND 7

To Check
Select delete combination (12345678) marking. Rotate selector shaft until function clutch trips.

(1) Requirement (bellcrank spring 6)
With scale applied vertically to ball end of bellcrank contact operating
Min 2 oz---Max 4 oz
to start bellcrank moving.

(2) Requirement (bellcrank spring 7)
With seven-pulse beam spring removed and scale applied vertically to ball end of bellcrank operating arm
Min 3 oz---Max 6 oz
to start bellcrank moving.

SHOULDER CLEARANCE

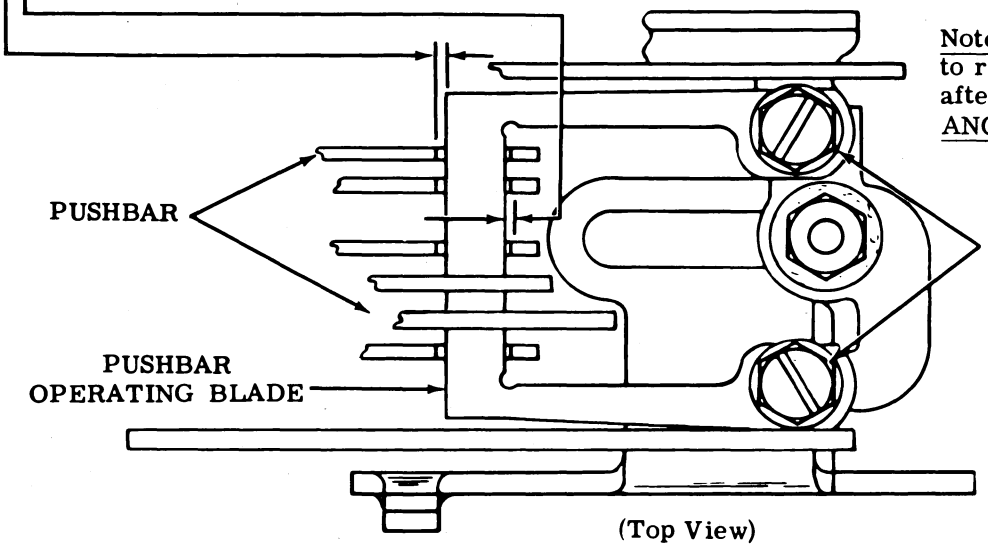
To Check
Manually select delete code combination (12345678) marking. Rotate selector shaft until function clutch trips. Manually seat pushbars in detented position. In bar which is nearest left edge of blade, take up play to left and rear, and then release.

(1) Requirement
Clearance between bar and left edge of blade
Min 0.015 inch---Max 0.030 inch

(2) Requirement
Some clearance between right edge of blade and pushbars when play in bars has been taken up to right and released.

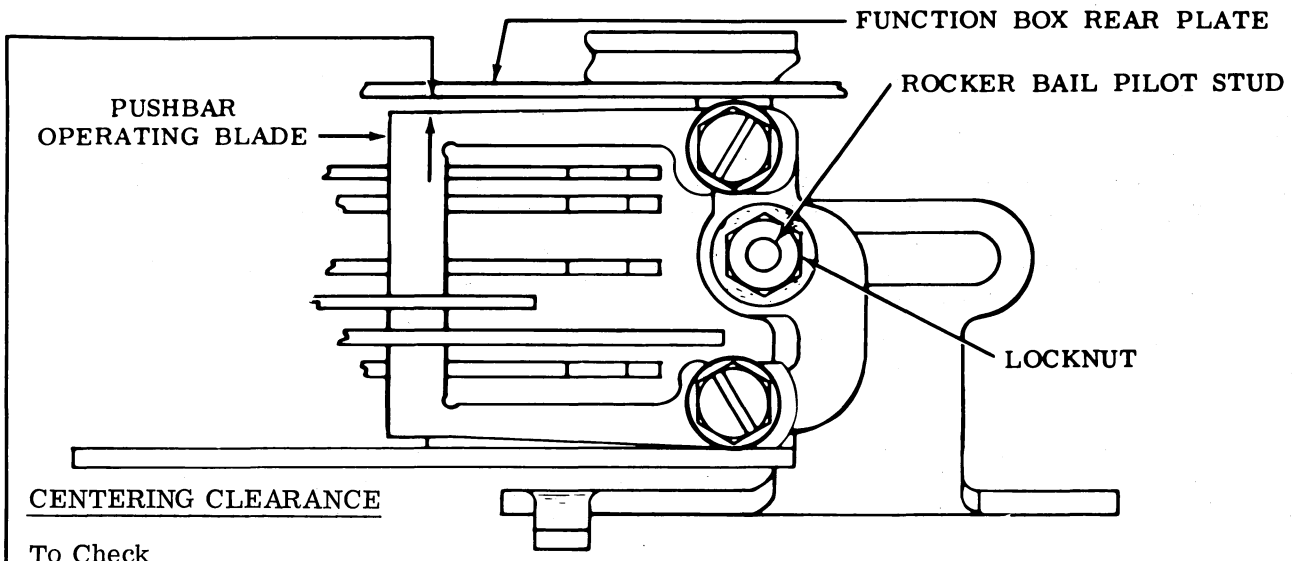
(3) Requirement
With unit in stop position, some clearance between right edge of blade and bars when play in bars has been taken up to right and released.

To Adjust
With mounting screws loosened, position operating blade in elongated holes. Tighten screws.



Note: It may be necessary to refine this adjustment after CENTERING CLEARANCE (2.32) adjustment.

2.32 Typing Mechanism (continued)



(Top View)

CENTERING CLEARANCE

To Check

Manually select the NULL code (all spacing). Move rocker bail through one cycle of operation to find position of minimum clearance between function box rear plate and pushbar operation blade.

Requirement

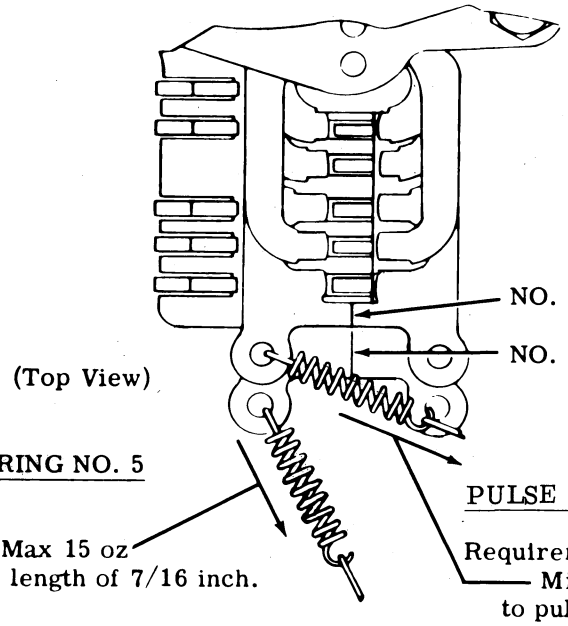
Clearance between function box rear plate and pushbar operating blade

Min 0.005 inch---Max 0.020 inch

at a point in the cycle where play is taken up to make clearance minimum.

To Adjust

Position rocker bail pilot stud in elongated hole with locknut loosened. Tighten nut.



(Top View)

PULSE LEVER SPRING NO. 5

Requirement

Min 10 oz---Max 15 oz to pull spring to length of 7/16 inch.

PULSE LEVER SPRING NO. 7

Requirement

Min 20 oz---Max 25 oz to pull spring to length of 7/16 inch.

2.33 Typing Mechanism (continued)

BELLCRANK PUSHBAR ENGAGEMENT

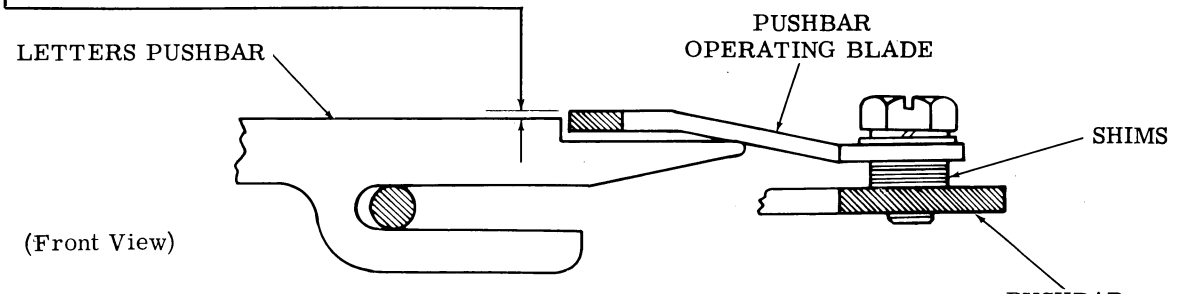
Requirement

With letters pushbar to extreme right and fully detented, DELETE code (12345678 marking) selected, punch slides disengaged and function clutch tripped, eliminate play in downward direction, then release. Keep operating blade parallel with no. 2 and no. 3 pushbars and take up function box play in a clockwise direction. The top of the operating blade should be

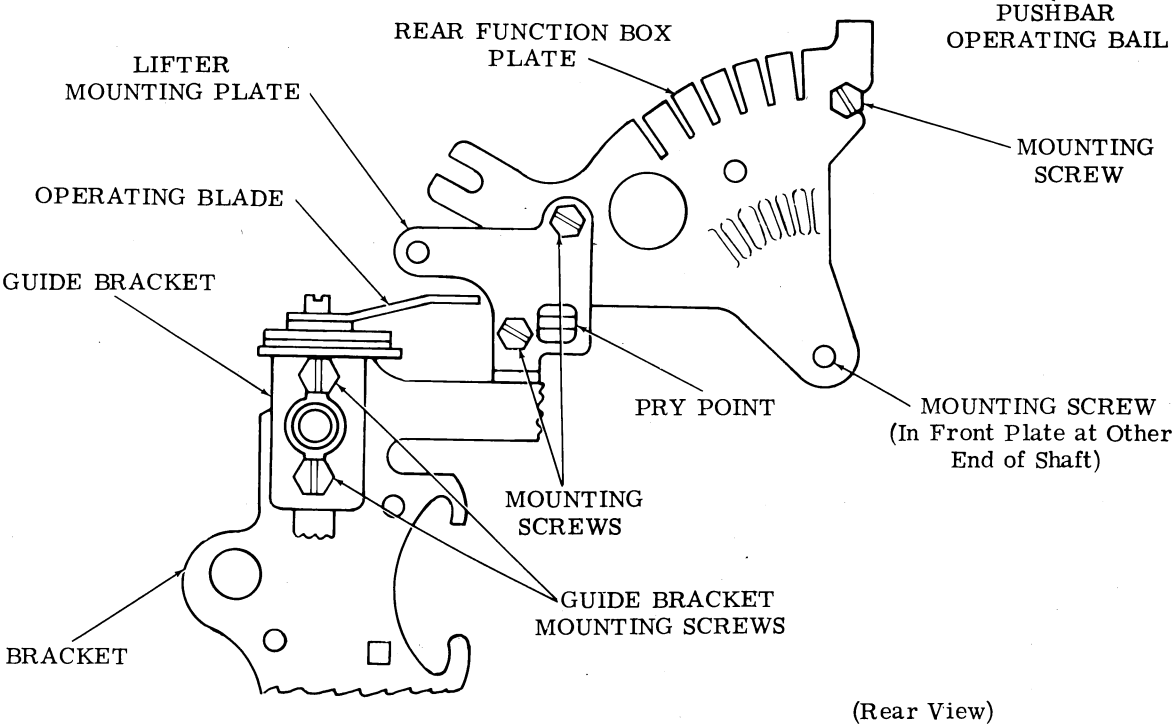
Min flush---Max 0.020 inch above top rubout pushbars.

To Adjust

Loosen two screws mounting function box to spacer posts on front plate. Set pry point in center of cutout. Loosen the two screws which mount the guide to the bracket. Position guide to meet requirement. Tighten screws.

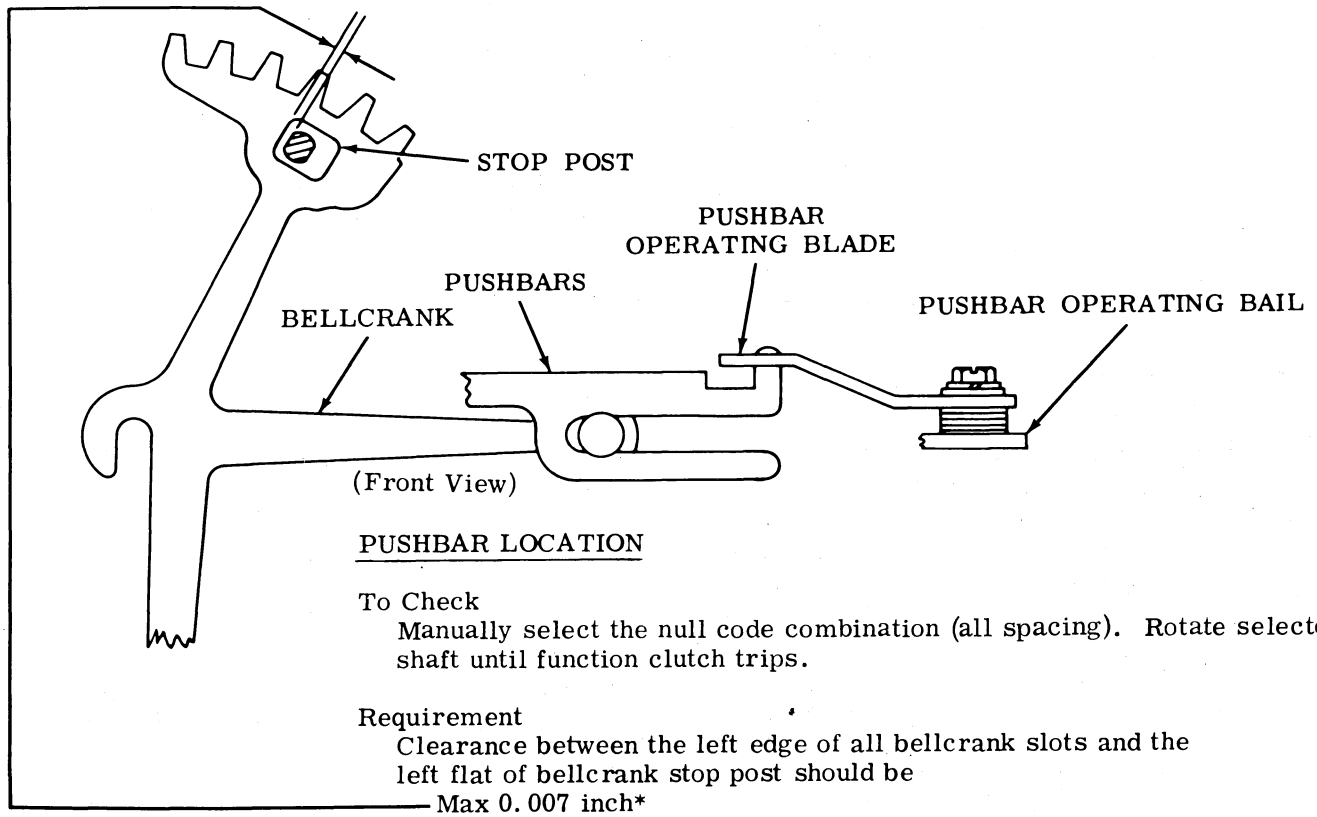


(Front View)



(Rear View)

2.34 Typing Mechanism (continued)



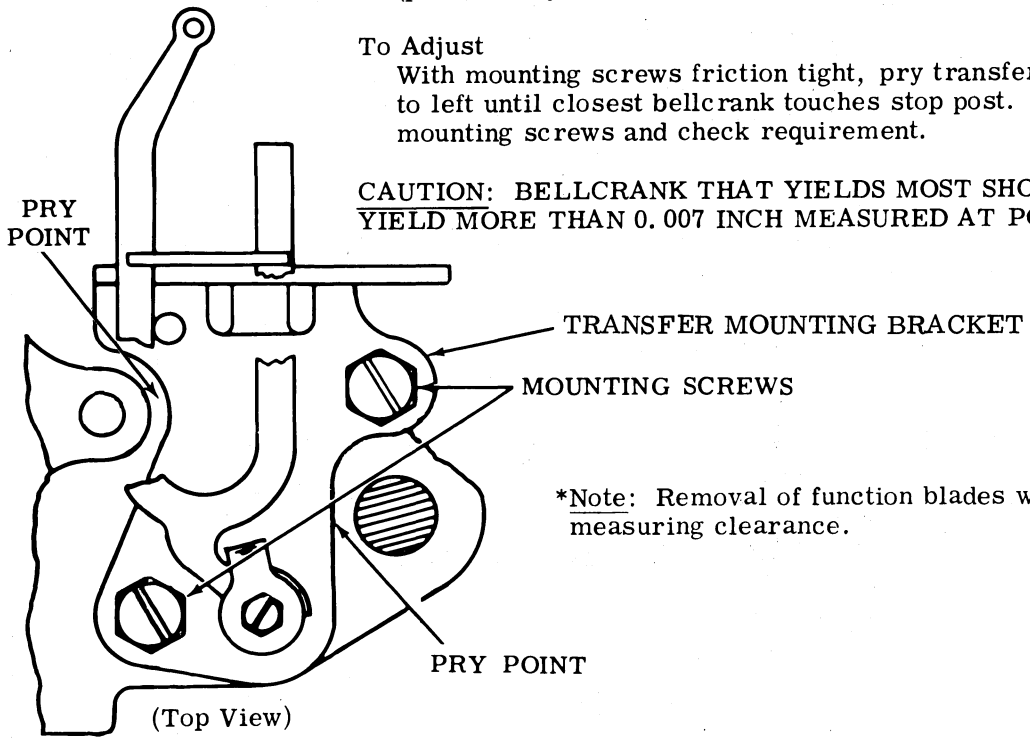
PUSHBAR LOCATION

To Check
Manually select the null code combination (all spacing). Rotate selector shaft until function clutch trips.

Requirement
Clearance between the left edge of all bellcrank slots and the left flat of bellcrank stop post should be
Max 0.007 inch*
(preliminary for no. 6 and no. 7 bellcranks.)

To Adjust
With mounting screws friction tight, pry transfer beam bracket to left until closest bellcrank touches stop post. Tighten mounting screws and check requirement.

CAUTION: BELLCRANK THAT YIELDS MOST SHOULD NOT YIELD MORE THAN 0.007 INCH MEASURED AT POST.

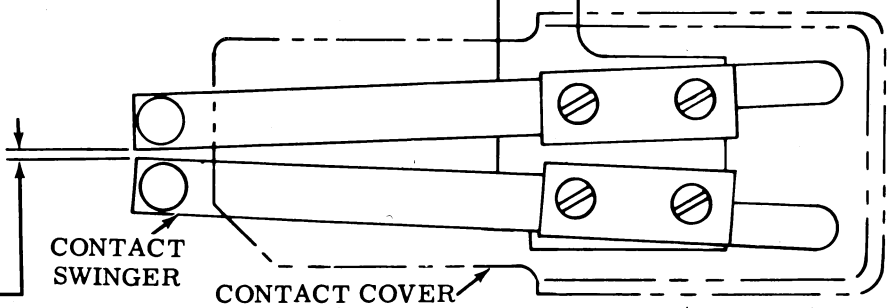


*Note: Removal of function blades will facilitate measuring clearance.

2.35 Ribbon Shift and Print Suppression Mechanism (Early Design)

Note: Refer to variable features (Part 3) for additional adjustments applying to print suppression only.

(For latest design see 2.37)



RIBBON SHIFT AND PRINT SUPPRESSION CONTACTS (Top View)

Note: The contact assembly can be identified by gold-plated contact points with a common transfer contact point on the contact swinger spring.

(1) Requirement

With the two contact swingers positioned toward each other, the clearance between the swingers should be

Min 0.035 inch---Max 0.060 inch

To Adjust

Disconnect all power from unit. Remove the contact assembly from the function box by removing the two mounting bracket screws. With the four contact cover mounting screws friction tight, position the contact swingers. Check the alignment of the associated contacts with each swinger and tighten the four contact cover mounting screws.

(2) Requirement (Preliminary)

With the contact assembly still removed from the function box, there should be

Min 0.015 inch---Max 0.020 inch

clearance between the two swinger contact points and their associated normally open contact points. The top surface of the plastic insulators on both swingers should be parallel to each other and in the same plane (as gauged by eye).

(3) Requirement

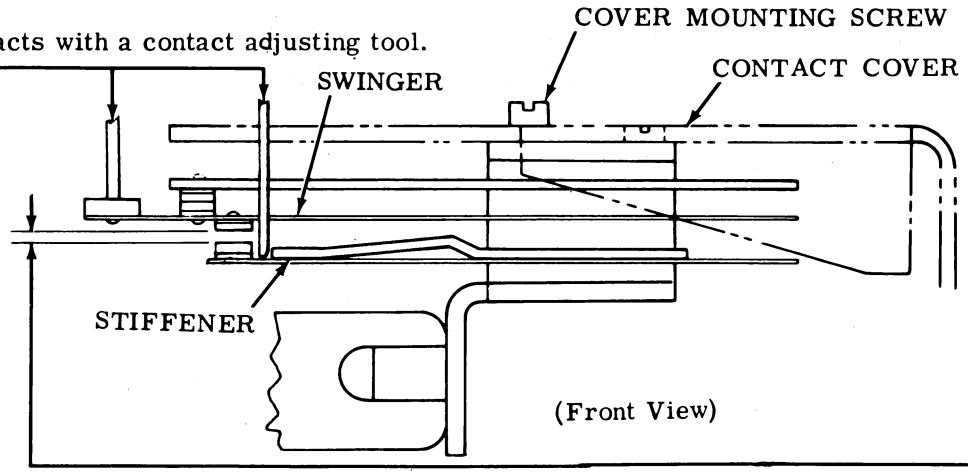
In addition to the clearance requirement, it should take

Min 2 oz---Max 3 oz

to start each swinger moving and to start normally open contacts moving away from their associated stiffeners.

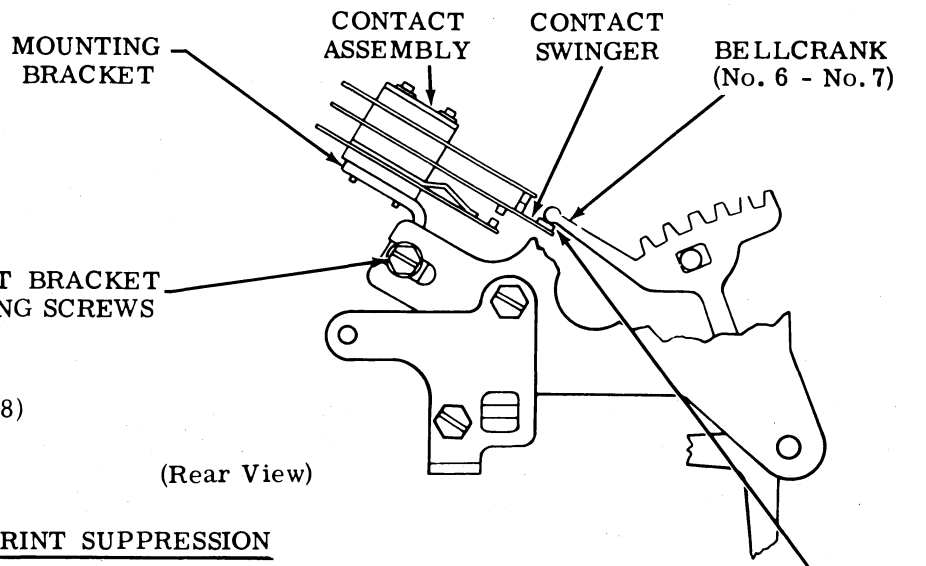
To Adjust

Adjust the contacts with a contact adjusting tool.



(Front View)

2.36 Ribbon Shift and Print Suppression Mechanism (Early Design) (continued)



(For Latest Design see 2.38)

(Rear View)

RIBBON SHIFT AND PRINT SUPPRESSION CONTACT POSITION

Note: The following adjustments are to be made with the contact assembly mounted on the unit.

(1) Requirement

Manually select the null combination. With the function clutch tripped, the follower portion of the no. 6 and no. 7 bellcranks should be centrally positioned with respect to the insulator followers on the contact swingers as viewed from the front of the unit.

To Adjust

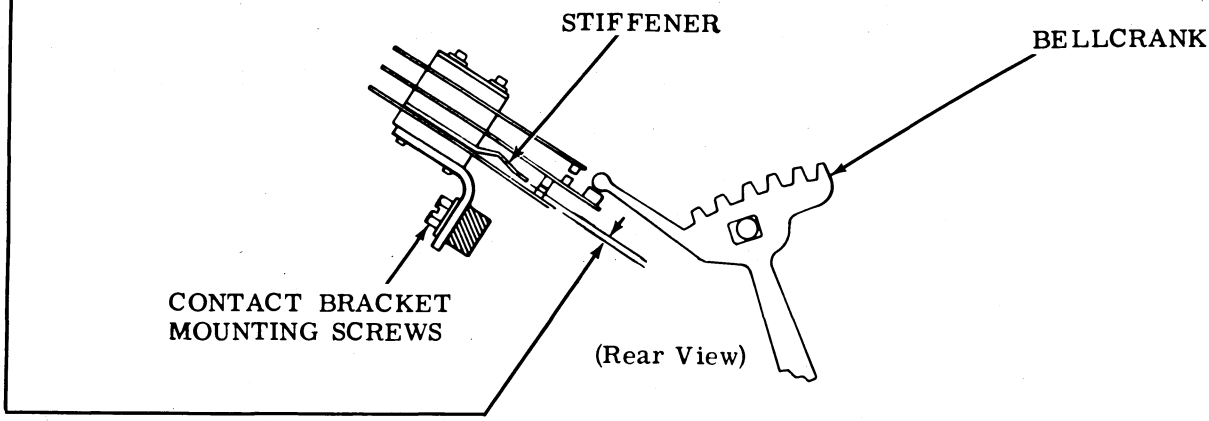
With the contact mounting bracket support mounting screws friction tight, position the contact assembly. Tighten screws.

(2) Requirement

With the null combination still selected and the function clutch tripped Min some---Max 0.004 inch clearance between each of the two spacing contacts and their stiffeners. Take up the play in the function box in a clockwise direction (as viewed from the selector side of the unit).

To Adjust

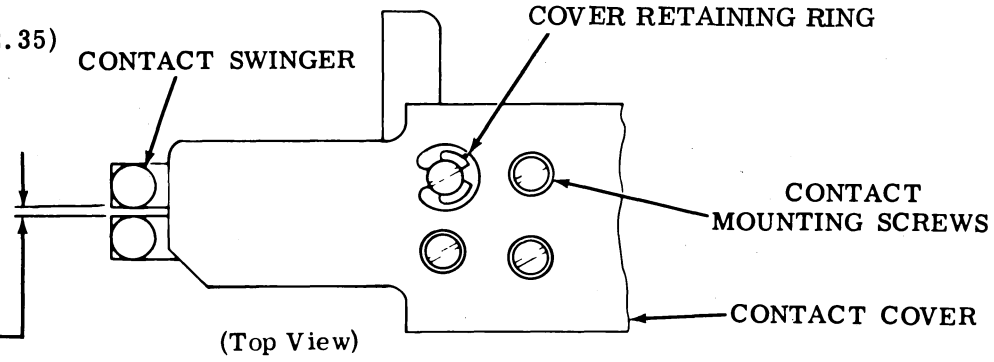
With the contact bracket mounting screws friction tight, position the bracket. Tighten screws.



2.37 Ribbon Shift and Print Suppression Mechanism (Latest Design)

Note: Refer to variable features (Part 3) for additional adjustments applying to print suppression only.

(For Early Design see 2.35)



(Top View)

RIBBON SHIFT AND PRINT SUPPRESSION CONTACTS

Note: The contact assembly can be identified by silver contact points with a common transfer contact point on the contact swinger spring and one retaining ring for fastening the cover. The cover may be removed by taking off the cover retaining ring snapped in place over the special mounting screw.

(1) Requirement

With the two contact swingers positioned toward each other, the clearance between the swingers should be

Min 0.035 inch---Max 0.060 inch

To Adjust

Disconnect all power from unit. Remove the contact assembly from the function box by removing the two mounting bracket screws. With the four contact mounting screws friction tight, position the contact swingers. Check the alignment of the associated contacts with each swinger and tighten the four screws.

(2) Requirement (Preliminary)

With the contact assembly still removed from the function box, there should be

Min 0.015 inch---Max 0.020 inch

clearance between the two swinger contact points and their associated normally open contact points. The top surface of the plastic insulators on both swingers should be parallel to each other and in the same plane (as gauged by eye).

(3) Requirement

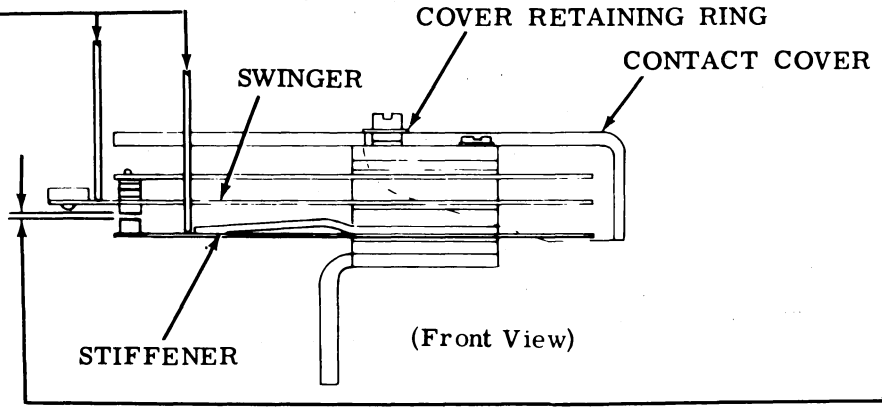
In addition to the clearance requirement, it should take

Min 45 grams---Max 60 grams

to start each swinger moving and to start normally open contacts moving away from their associated stiffeners.

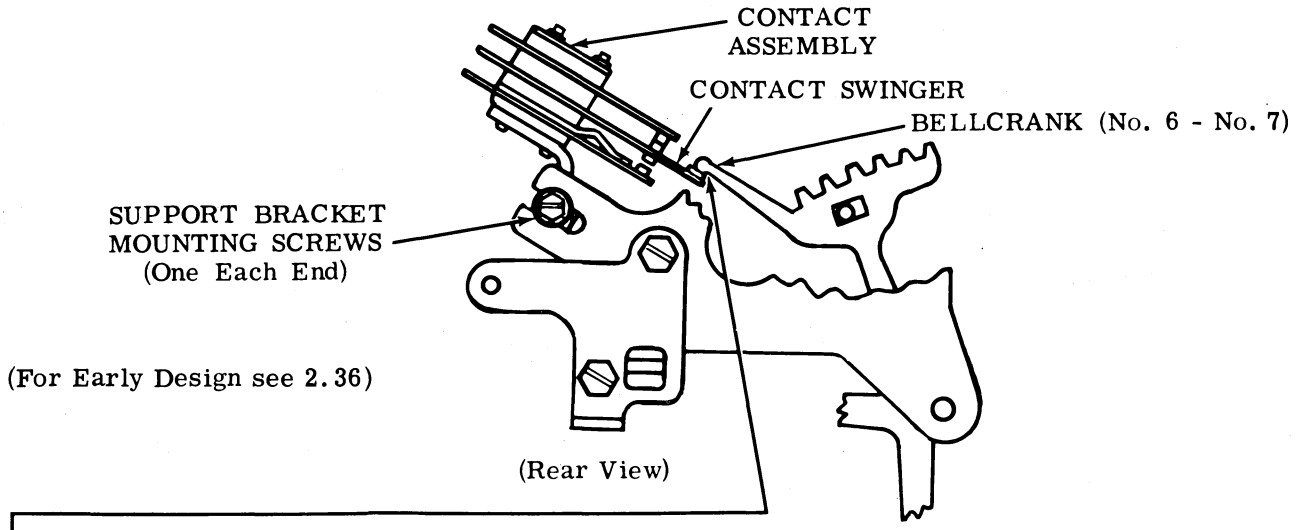
To Adjust

Adjust the contacts with a contact adjusting tool.



(Front View)

2.38 Ribbon Shift and Print Suppression Mechanism (Latest Design) (continued)



RIBBON SHIFT AND PRINT SUPPRESSION CONTACT POSITION

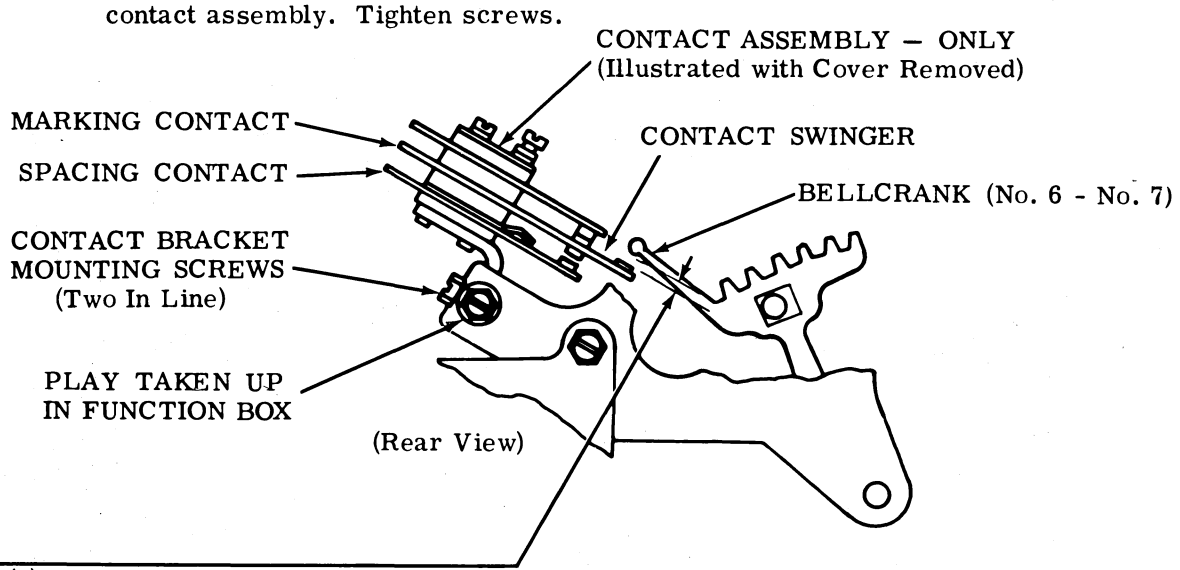
Note: The following adjustments are to be made with the contact assembly mounted on the unit.

(1) Requirement

Manually select the null combination (--------) spacing. With the function clutch tripped, the follower portion of the no. 6 and no. 7 bellcranks should be centrally positioned with respect to the insulator followers on the contact swingers as viewed from the front of the unit.

To Adjust

With the contact mounting bracket support mounting screws friction tight, position the contact assembly. Tighten screws.



(2) Requirement

With the rubout combination (12345678) marking selected and the function clutch tripped, there should be

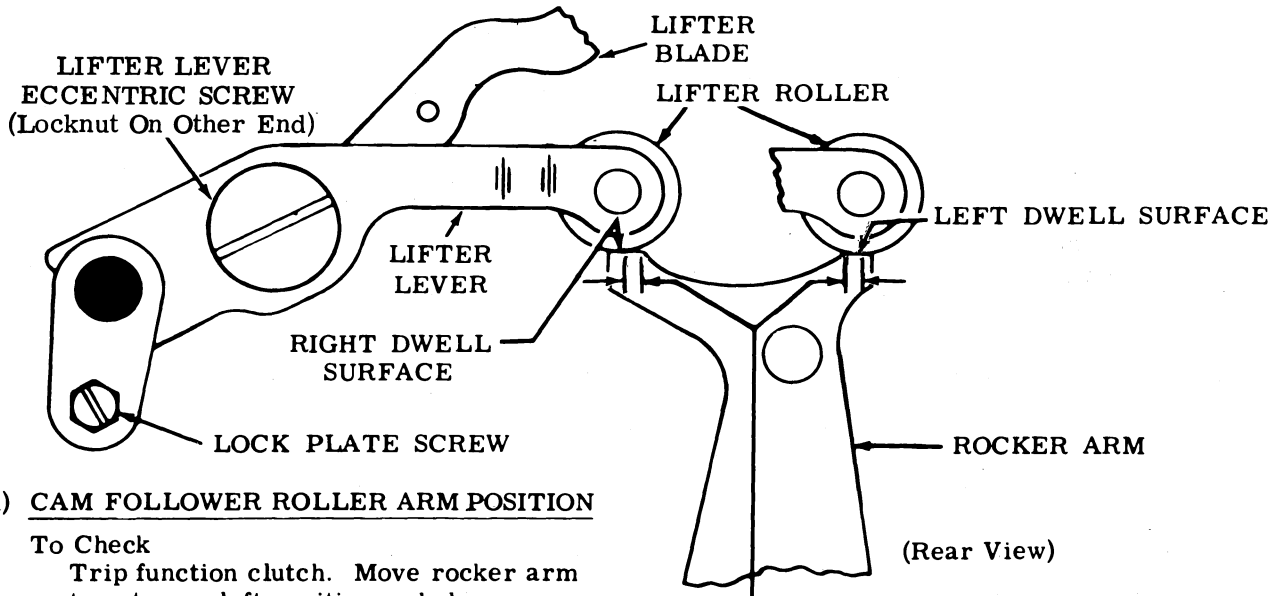
Min 0.025 inch---Max 0.045 inch

clearance between the bellcranks and the insulated portion of their respective swingers. Take up the play in the function box.

To Adjust

With the contact bracket mounting screws friction tight, position the bracket. Tighten screws. Replace the cover and secure it with the cover retaining ring.

2.39 Typing Mechanism (continued)



(A) CAM FOLLOWER ROLLER ARM POSITION

To Check
Trip function clutch. Move rocker arm to extreme left position and observe travel of roller on right dwell surface. Move rocker arm to extreme right position and observe travel of roller on left dwell surface.

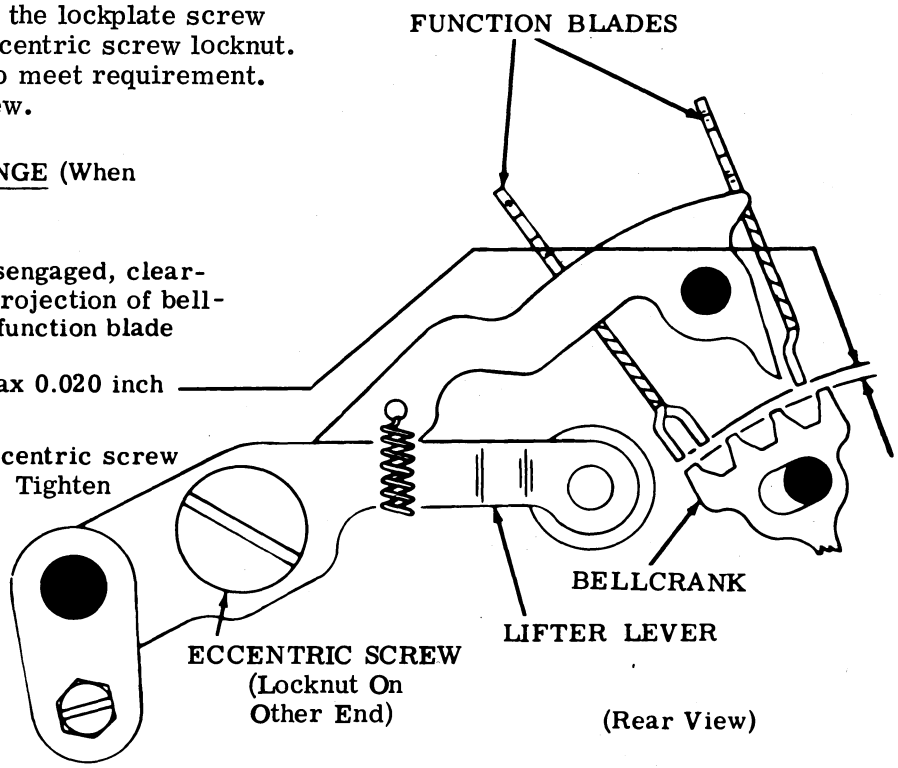
Requirement
Approximately equal travel on each dwell surface.

To Adjust
Loosen (friction tight) the lockplate screw and the lifter lever eccentric screw locknut. Position lifter lever to meet requirement. Tighten lockplate screw.

(B) LIFTER OPERATING RANGE (When function blades are used)

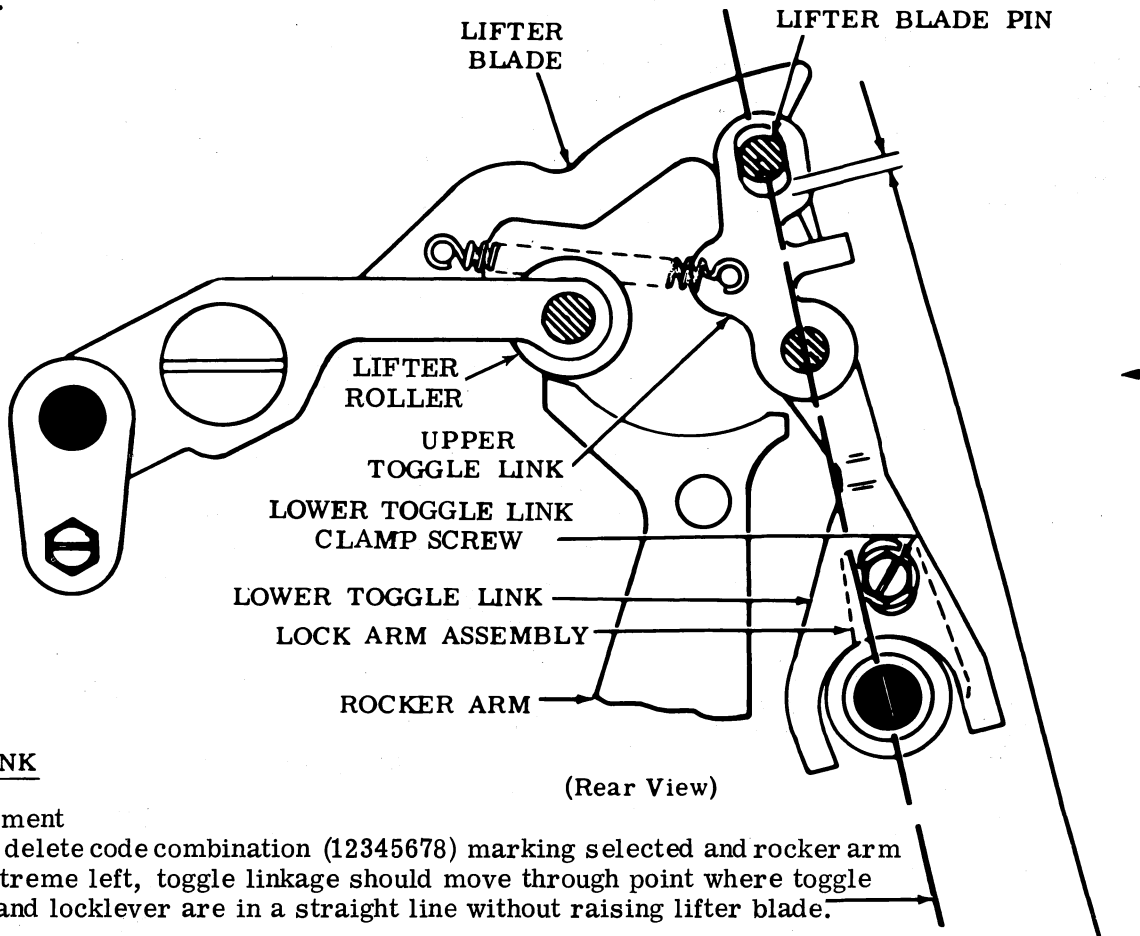
Requirement
With function clutch disengaged, clearance between closest projection of bellcranks and associated function blade projection
Min 0.008 inch---Max 0.020 inch

To Adjust
Position lifter lever eccentric screw with locknut loosened. Tighten locknut.



2.40 Typing Mechanism (continued)

Note: Preliminary when no function blades are used.



(Rear View)

TOGGLE LINK

(1) Requirement

With delete code combination (12345678) marking selected and rocker arm to extreme left, toggle linkage should move through point where toggle link and locklever are in a straight line without raising lifter blade.

(2) Requirement

With upper and lower toggle links in a straight line, clearance between toggle link and lifter blade pin should be

Min some---Max 0.015 inch

To Adjust

Position lower toggle link on lock arm assembly with clamp screw friction tight. Rotate retaining ring for access to clearance. Tighten clamp screw.

Note: To avoid interference with the lower toggle link clamp screw, it may be necessary to move high part of correcting drive link eccentric bearing above horizontal center line.

2.41 Typing Mechanism (continued)

Note: Preliminary when no function blades are used.

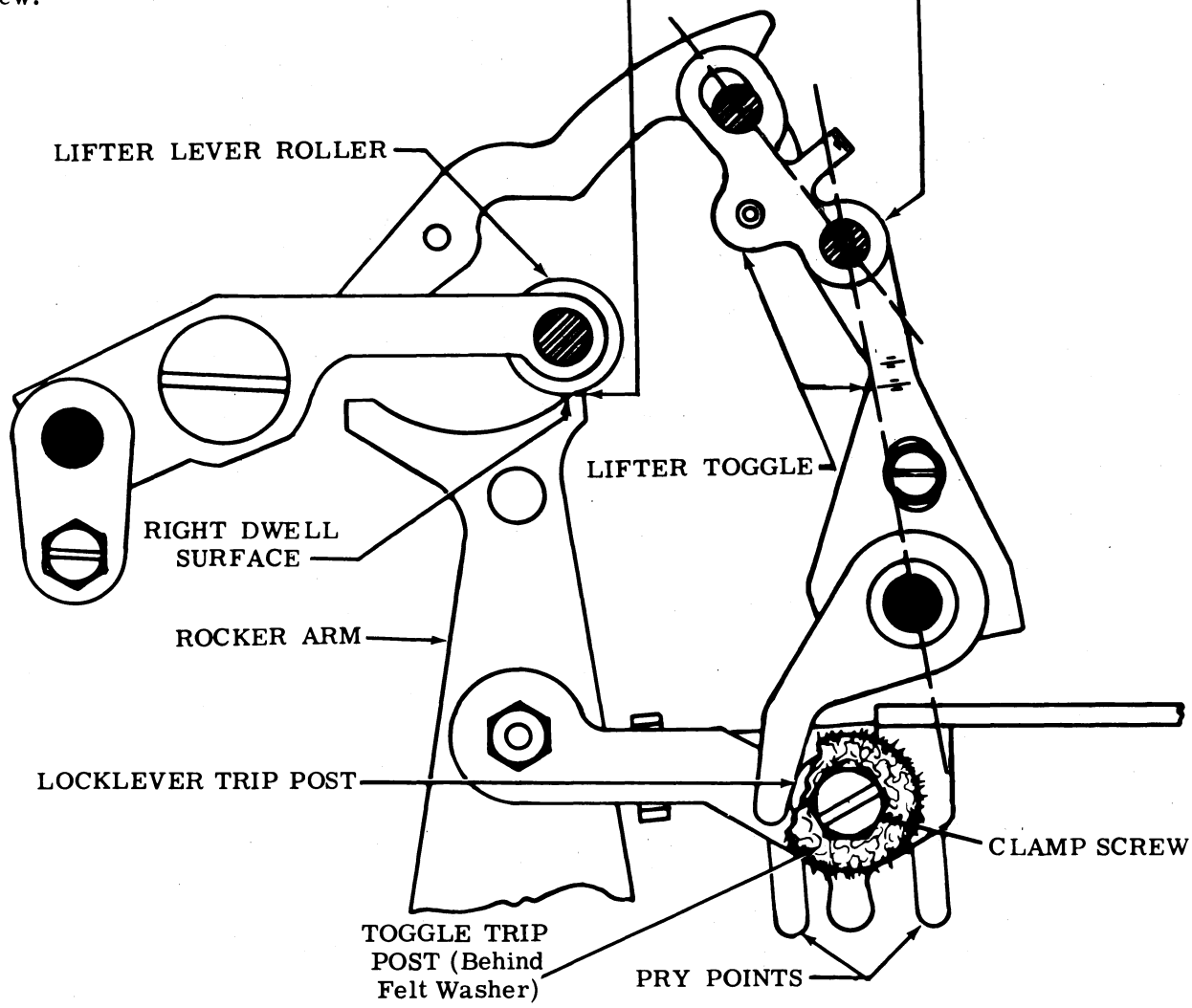
TOGGLE TRIP ARM

Requirement

As rocker arm approaches extreme right position, the lifter toggle should break and lifter arm roller should drop onto right dwell surface.

To Adjust

By means of pry points, position toggle trip post with clamp screw loosened. Tighten screw.



(Rear View)

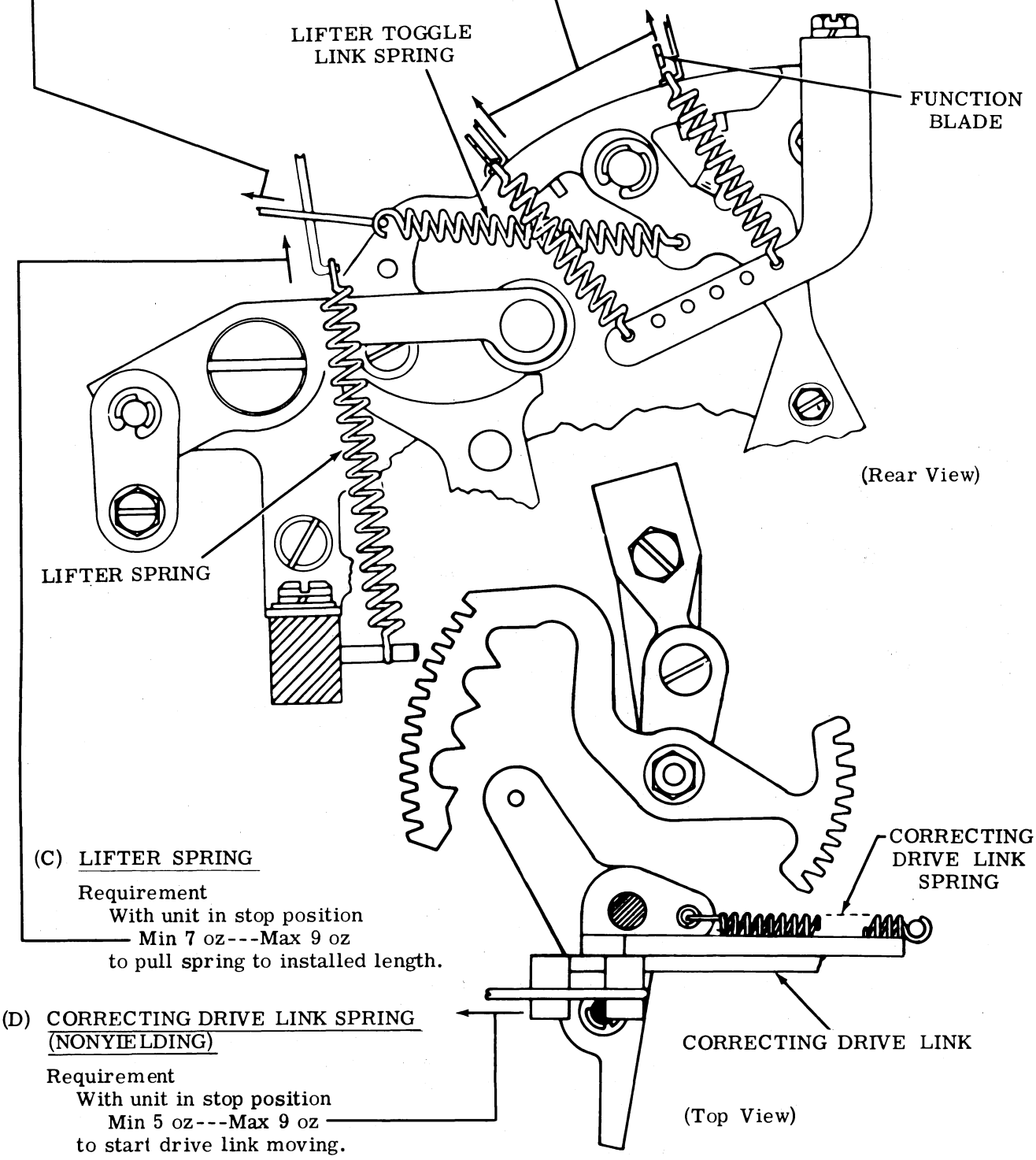
2.42 Typing Mechanism (continued)

(A) LIFTER TOGGLE LINK SPRING

Requirement
With unit in stop position
Min 1-1/2 oz---Max 2-1/4 oz
to pull spring to installed length.

(B) FUNCTION BLADE SPRING (2 Or More)

Requirement (If so equipped)
With unit in stop position
Min 7 oz---Max 10 oz
to start function blade moving.



(C) LIFTER SPRING

Requirement
With unit in stop position
Min 7 oz---Max 9 oz
to pull spring to installed length.

(D) CORRECTING DRIVE LINK SPRING (NONYIELDING)

Requirement
With unit in stop position
Min 5 oz---Max 9 oz
to start drive link moving.

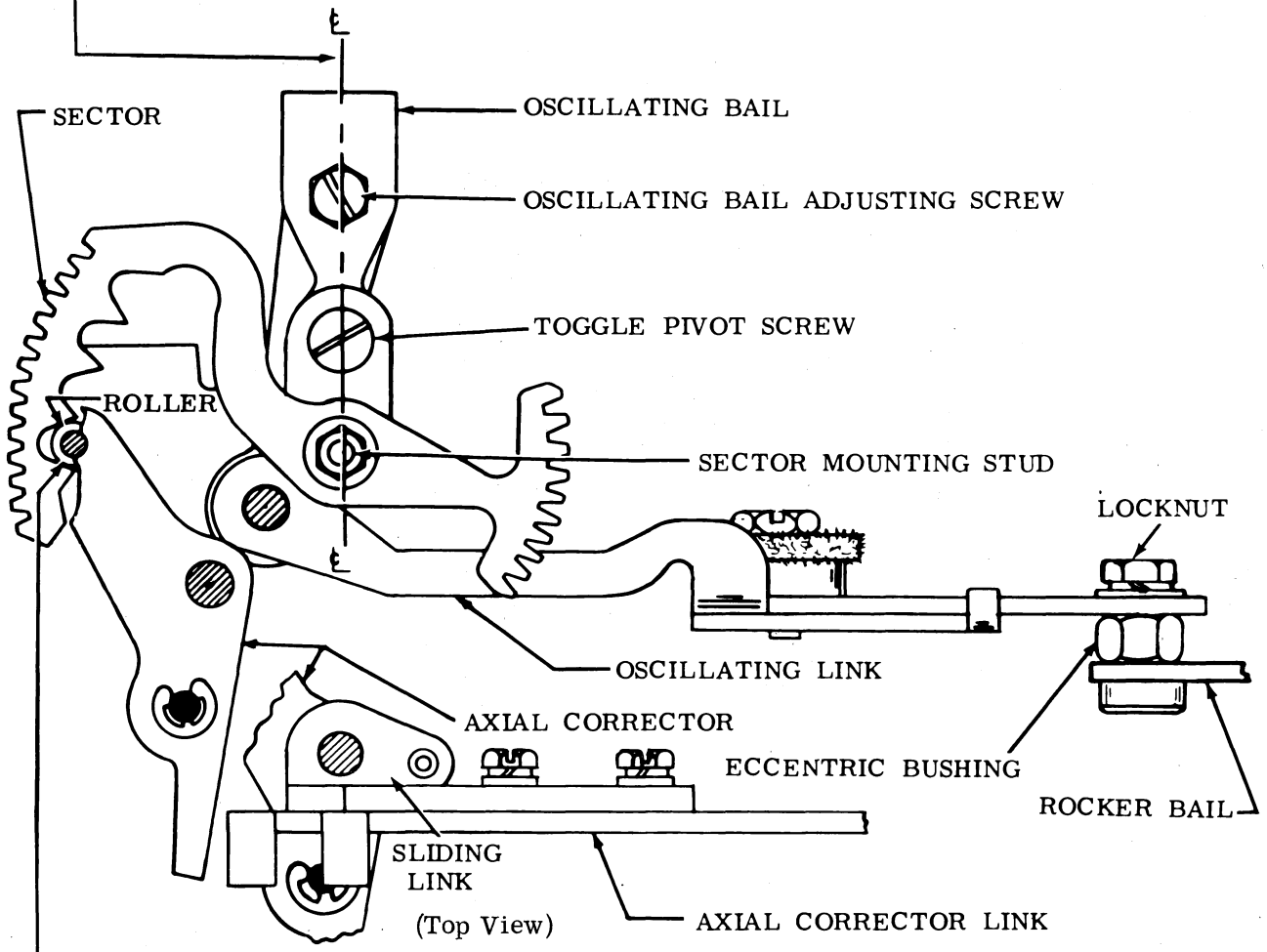
2.43 Typing Mechanism (continued)

(A) OSCILLATING BAIL DRIVE LINK

To Check
Position rocker bail to its extreme left.

Requirement
Sector mounting stud, toggle pivot screw and oscillating bail mounting screw should approximately line up.

To Adjust
With locknut friction tight, position oscillating link by means of its eccentric bushing. Tighten nut.



(B) OSCILLATING BAIL PIVOT

Requirement
With null combination (12345678) marking selected, rotate main shaft taking up the axial play in type wheel shaft toward the front of the unit. The axial corrector roller should enter first notch of the sector centrally.

To Adjust
With oscillating bail adjusting screw friction tight, select null combination. Position oscillating bail by means of its elongated mounting hole so corrector roller enters first notch of the sector when rocker bail moves to its extreme left position. Hold corrector roller firmly in first notch and take up the play in oscillating bail linkage by applying a force to the oscillating bail. Tighten oscillating adjusting screw.

2.44 Typing Mechanism (continued)

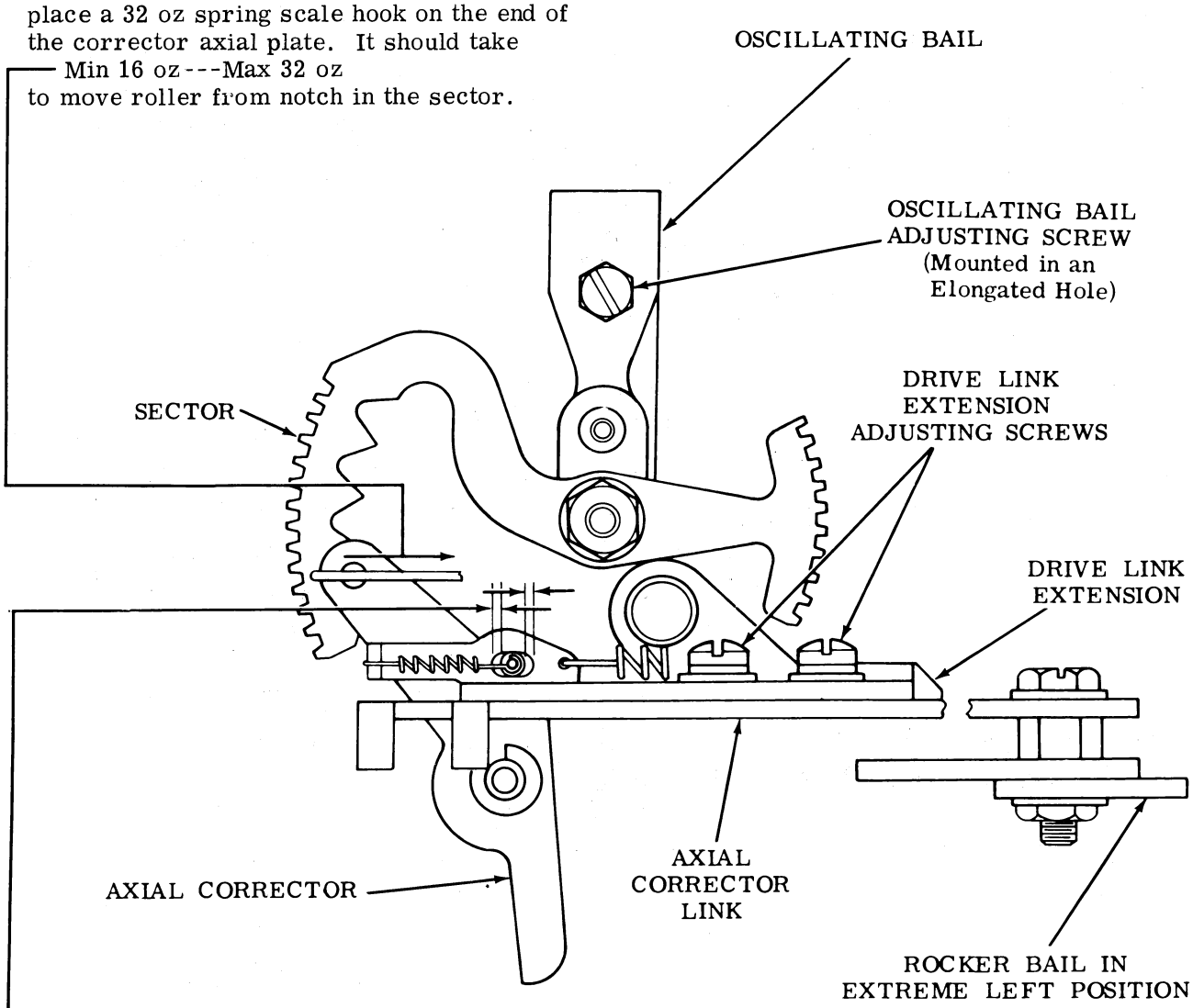
CORRECTOR DRIVE LINK (YIELDING) EXTENSION SPRING

Requirement

With the null code combination (--------) spacing selected, function clutch tripped, and rocker bail in its extreme left position, place a 32 oz spring scale hook on the end of the corrector axial plate. It should take

Min 16 oz---Max 32 oz

to move roller from notch in the sector.



AXIAL CORRECTOR (YIELDING)

Requirement

With all null code combination (--------) spacing selected, function clutch tripped and rocker bail in its extreme left position, the axial corrector roller should seat in the first sector notch and there should be

Min 0.005 inch

between the ends of the slot and the spring post. Check both sides and check seating in fourth notch (letters selection). Turn the retaining ring that fastens drive link extension to corrector plate to check the minimum requirement.

To Adjust

Loosen two drive link adjusting screws. Position drive link to meet the requirement and retighten the screws.

2.45 Typing Mechanism (continued)

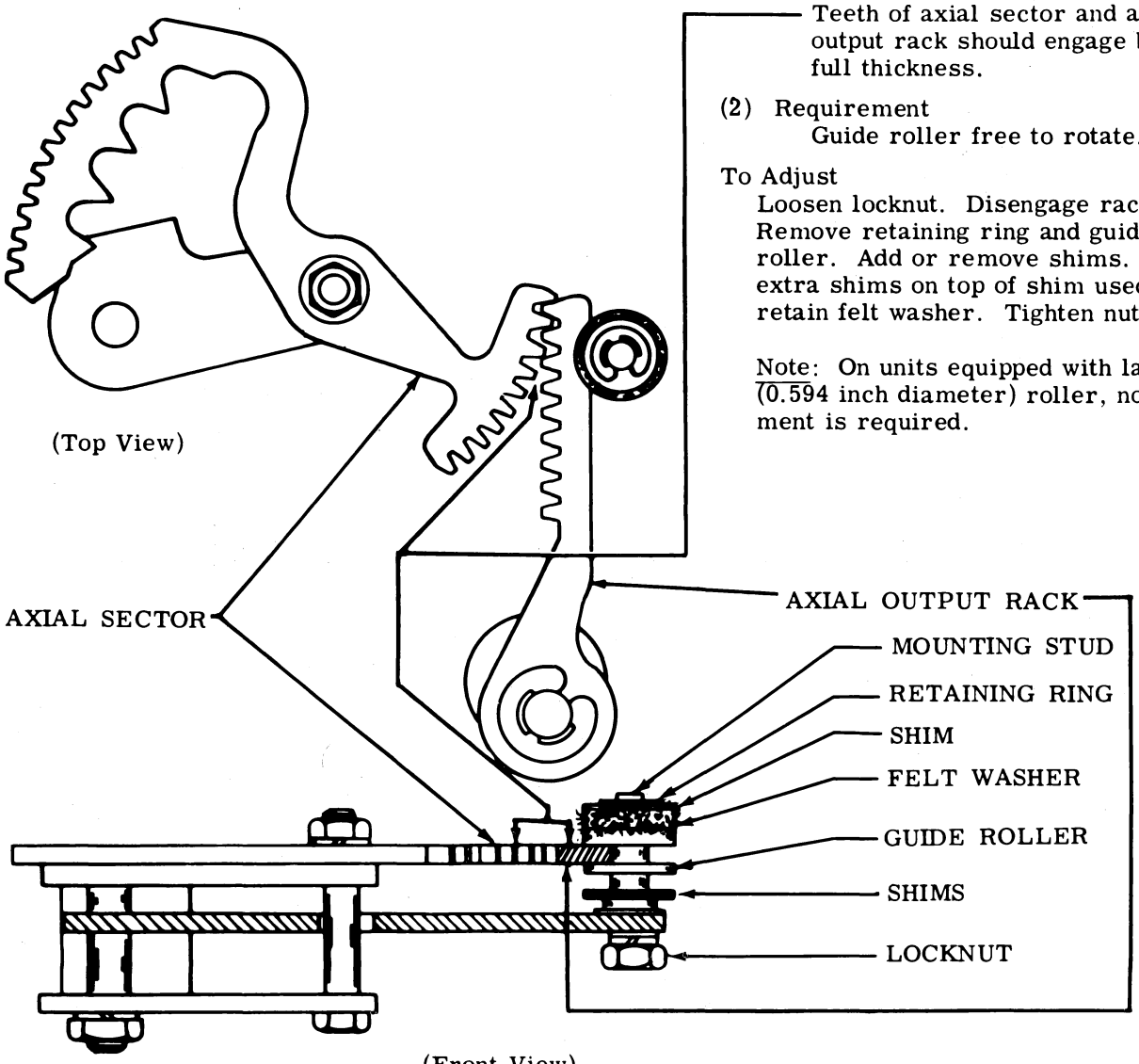
(A) AXIAL SECTOR ALIGNMENT

(1) Requirement
Teeth of axial sector and axial output rack should engage by their full thickness.

(2) Requirement
Guide roller free to rotate.

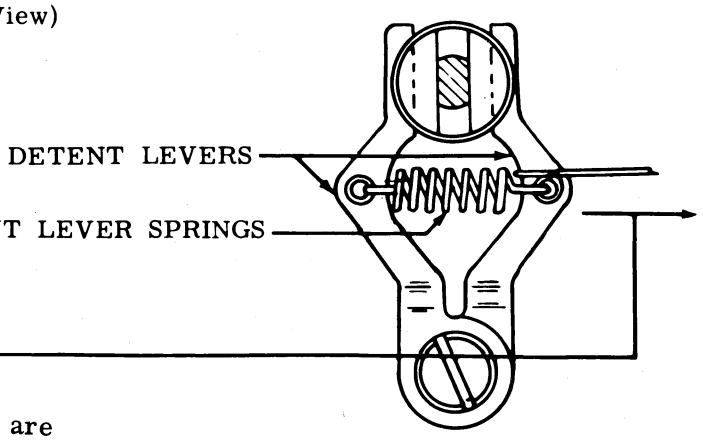
To Adjust
Loosen locknut. Disengage rack. Remove retaining ring and guide roller. Add or remove shims. Place extra shims on top of shim used to retain felt washer. Tighten nut.

Note: On units equipped with larger (0.594 inch diameter) roller, no adjustment is required.



(Top View)

(Front View)



(Top View of Springs on Axial Positioning Mechanism)

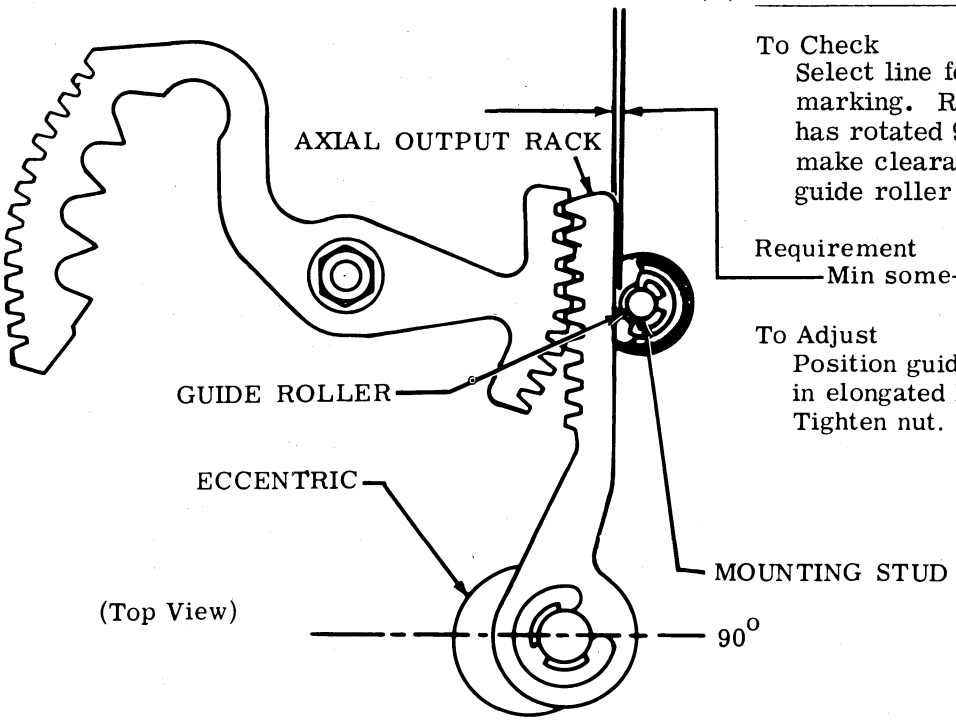
(B) ECCENTRIC SHAFT
DETENT LEVER SPRING (6)

Requirement
Min 7 oz---Max 10 oz
to start detent lever moving.

Note: Check all 6 springs. There are two on the axial positioning mechanism and four on the rotary positioning mechanism.

2.46 Typing Mechanism (continued)

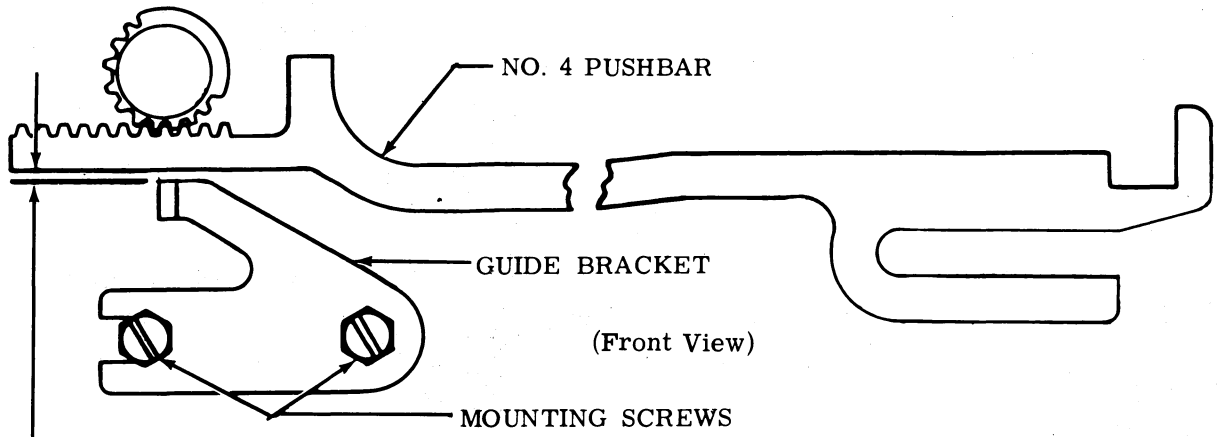
(A) AXIAL OUTPUT RACK GUIDE ROLLER



To Check
Select line feed code combination (-2-4---8) marking. Rotate main shaft until eccentric has rotated 90 degrees. Take up play to make clearance between output rack and guide roller maximum.

Requirement
Min some---Max 0.008 inch

To Adjust
Position guide roller mounting stud in elongated hole with locknut loosened Tighten nut.



(B) PUSHBAR GUIDE BRACKET

To Check
Manually select carriage return code combination (1-34---8) marking. Rotate main shaft so that no. 4 pushbar moves through complete range of travel.

Requirement
When play is taken up to make clearance maximum
Min some---Max 0.008 inch
between no. 4 pushbar and guide bracket throughout complete travel of bar.

To Adjust
Position guide bracket with mounting screws loosened. Tighten screws.

2.47 Typing Mechanism (continued)

(A) CORRECTING DRIVE LINK (NONYIELDING)

(1) To Check

Select the null code combination. Trip function clutch and move rocker bail to extreme left.

Requirement

Roller on axial correcting plate firmly seated in first notch of axial sector.

(2) To Check

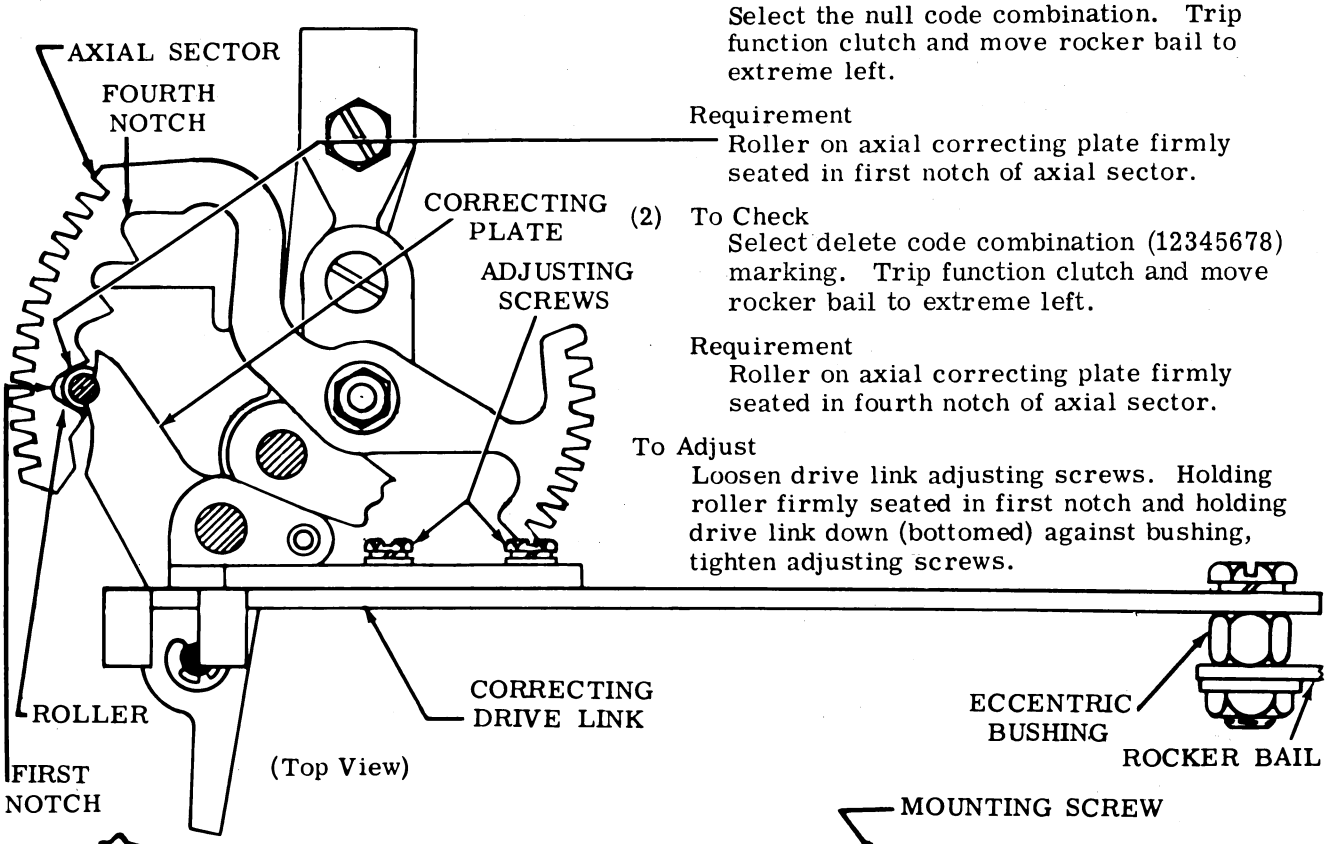
Select delete code combination (12345678) marking. Trip function clutch and move rocker bail to extreme left.

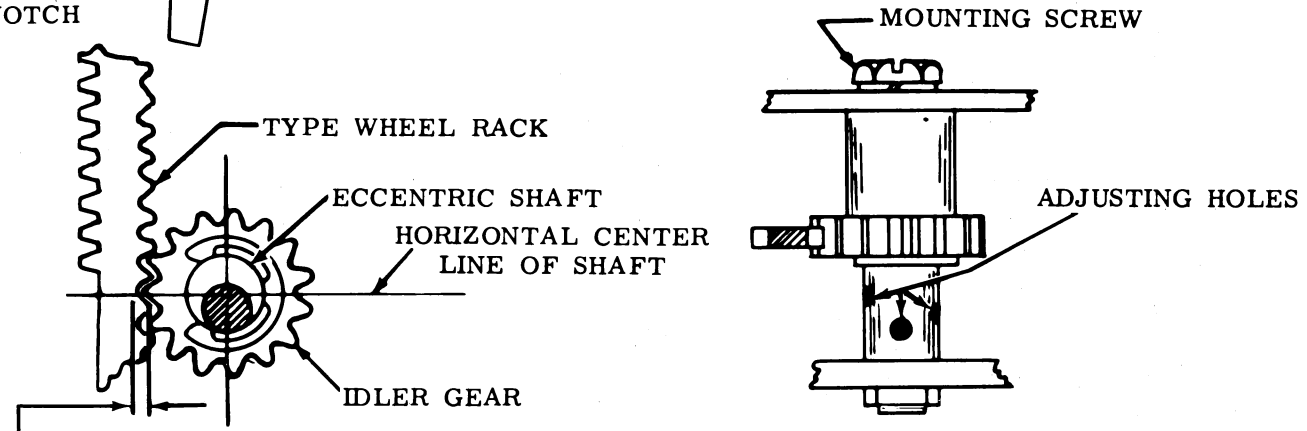
Requirement

Roller on axial correcting plate firmly seated in fourth notch of axial sector.

To Adjust

Loosen drive link adjusting screws. Holding roller firmly seated in first notch and holding drive link down (bottomed) against bushing, tighten adjusting screws.





(B) TYPE WHEEL RACK CLEARANCE

Requirement

With function clutch disengaged and upper no. 7 pushbar to the right

Min some---Max 0.015 inch

clearance between idler gear and rack at the closest point when all play is taken up in a direction to make clearance a maximum. There should be some clearance throughout travel of the rack.

To Adjust

With mounting screw friction tight, position idler gear eccentric shaft by means of three adjusting holes in top of shaft. Tighten screw.

2.48 Typing Mechanism (continued)

ROTARY CORRECTOR MESH

Requirement

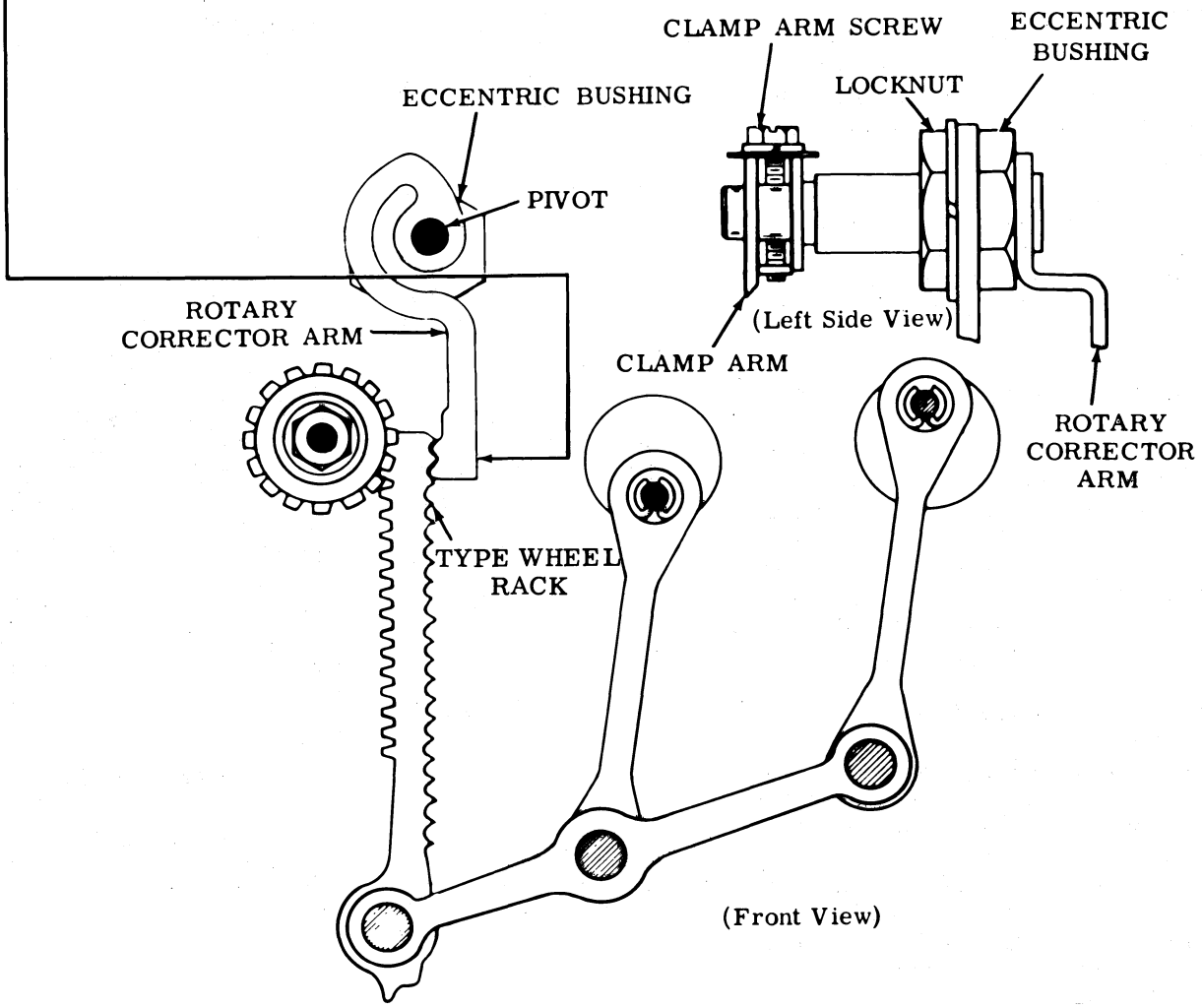
With clamp arm friction tight and X code (---45-78 marking) selected, the second tooth from the top of the rotary output rack (with the pushbars manually detented) should seat between the lobes of the rotary corrector arm.

To Adjust

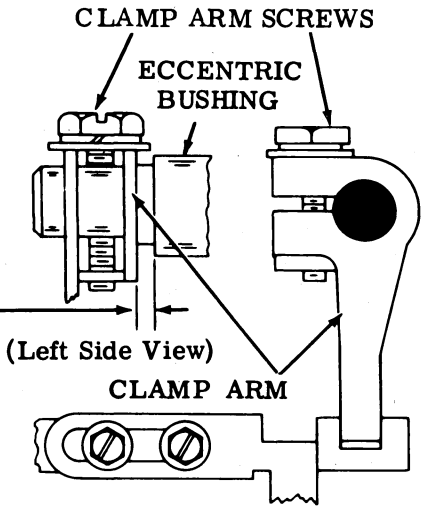
Loosen clamp arm screw and eccentric bushing locknut. With the pivot of the corrector arm to the right of the center of the bushing, position the rotary corrector arm. Tighten the bushing locknut. Do not tighten clamp arm screw at this point.

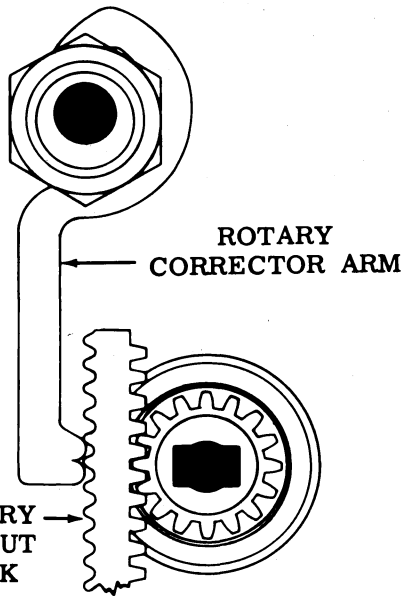
To Check

Check engagement in a similar manner as in requirement above with the fifth tooth (3, 4, and 7 pulse marking), ninth tooth (4 pulse marking), and sixteenth tooth (3 and 5 pulse marking). Refine adjustment if necessary.



2.49 Typing Mechanism (continued)





ROTARY CORRECTOR ARM

To Check

Place a C code (12----78 marking) in selector and complete one cycle of operation. Place a DELETE code (12345678 marking) in selector. Position rocker bail to extreme left. Manually seat corrector arm in rack.

Requirement

The rotary corrector arm should seat firmly in the rotary output rack.

Min some---Max 0.006 inch endplay between clamp arm and bushing, with unit in the stop position.

To Adjust (Units equipped with a yielding axial corrector)

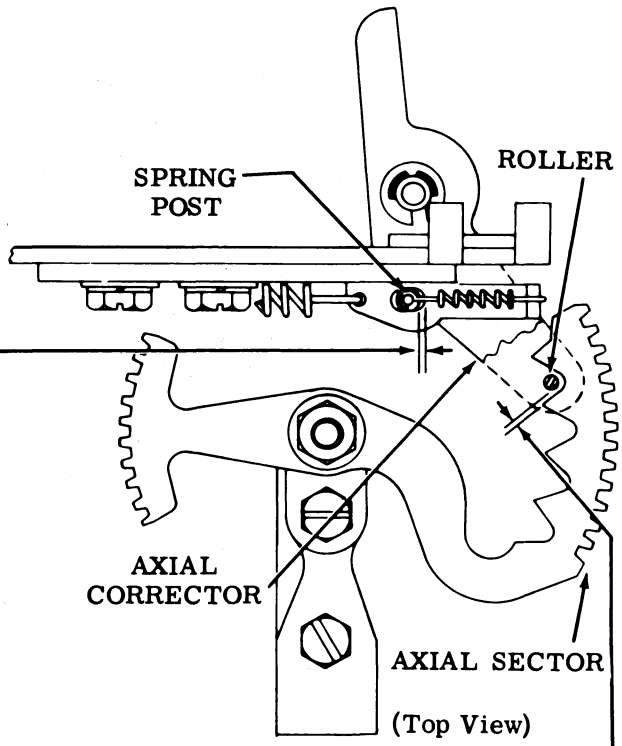
As the rocker bail approaches the extreme left and the spring post of the axial corrector starts to leave the end of its slot, take up play of drive arm in its operating fork towards main bail and position the rotary corrector arm finger tight against rotary output rack and tighten clamp arm screw.

To Adjust (Units equipped with nonyielding axial corrector)

As the rocker bail approaches the extreme left, measure clearance between the axial corrector roller and the sector notch. When clearance is

Min some---Max 0.005 inch

position rotary corrector arm finger tight against rotary output rack, and tighten correcting clamp arm screw.



2.50 Ribbon Shift and Print Suppression Mechanism (Latest Design) (continued)

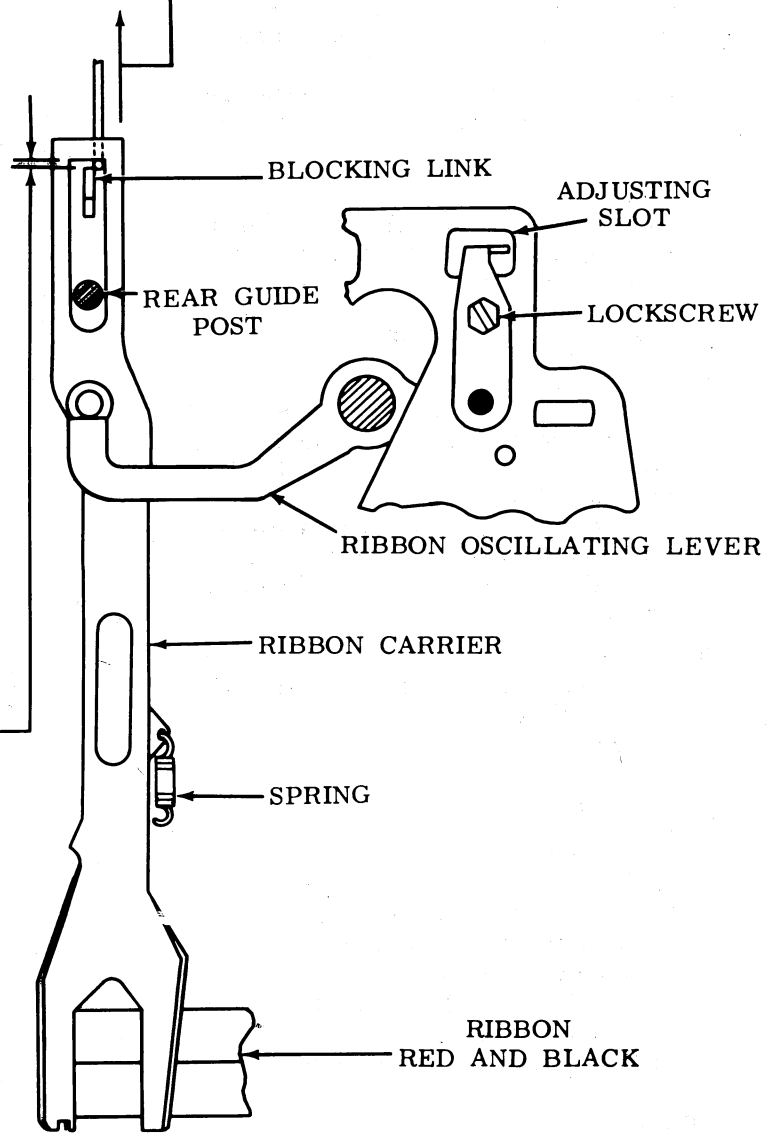
RIBBON CARRIER SPRING

Requirement
With unit in stop position
Min 7 oz---Max 10 oz
to start carrier moving.

RIBBON CARRIER

Requirement
With function clutch disengaged, manually lift blocking lever so that it is opposite ribbon carrier and against the type wheel shaft housing.
Min 0.040 inch---Max 0.060 inch clearance between blocking link and ribbon carrier.

To Adjust
Loosen lockscrew. Position ribbon oscillating lever, using adjusting slot. Tighten screw.



2.51 Ribbon Shift and Print Suppression Mechanism (Early Design) (continued)

Note: The following adjustments apply to units with graphics either suppressed or in red (red of red-black ribbon towards rear of unit) when magnet is de-energized.

(B) ARMATURE AIR GAP

Requirement

With armature on downstop screw

Min 0.015 inch---Max 0.020 inch clearance between magnet core and armature at closest point and

Min some---Max 1/32 inch clearance between rear of armature slot and blocking link as gauged by eye.

To Adjust

Position magnet bracket with mounting screws loosened. Tighten screws. Check for binds.

(A) ARMATURE DOWNSTOP

Requirement

With rocker bail in extreme left position and ribbon carrier biased downward, hold the blocking link against the type wheel shaft housing.

Min some---Max 0.005 inch clearance between top surface of blocking link and lower surface of ribbon carrier.

To Adjust

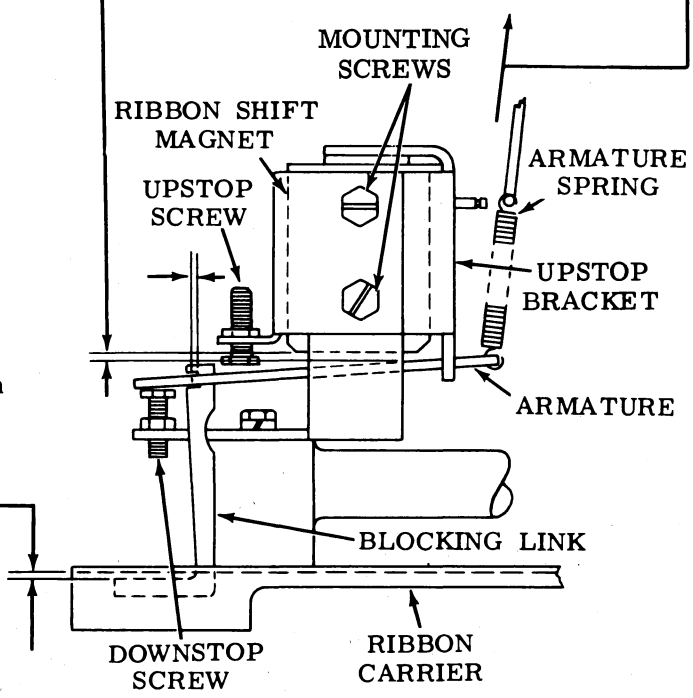
Position armature downstop screw with locknut loosened.

(D) ARMATURE SPRING

Requirement

With spring disconnected

Min 3-1/2 oz---Max 4-1/2 oz when pulled to installed length.



(C) ARMATURE UPSTOP

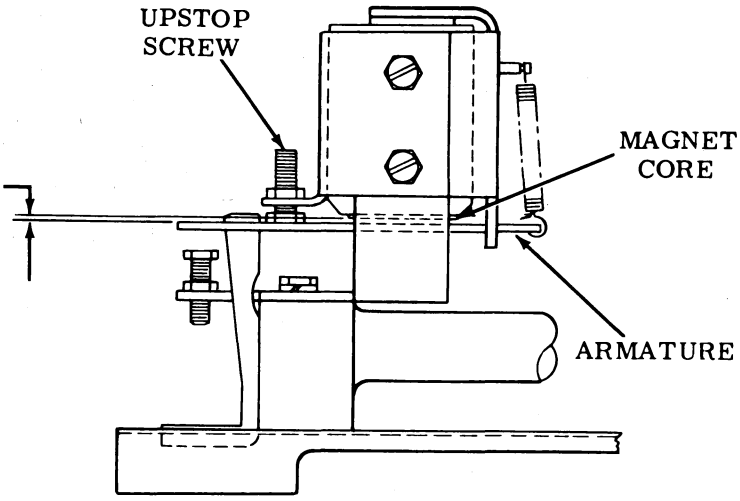
Requirement

With armature held against upstop screw (magnet is not to be energized) and ribbon carrier biased upward

Min 0.005 inch---Max 0.010 inch clearance between magnet core and armature at closest point.

To Adjust

Position upstop screw with locknut loosened. Tighten locknut.



Note: Refer to Part 3 for additional print suppression adjustments.

2.52 Ribbon Shift and Print Suppression Mechanism (Latest Design) (continued)

Note: The following adjustments apply to units with printing of graphics either suppressed or in red (red of red-black ribbon towards front of unit) when magnet is de-energized.

(C) ARMATURE AIR GAP AND DOWNSTOP

Requirement

With armature resting on downstop screw

Min 0.015 inch---Max 0.020 inch clearance between magnet core and armature at closest point.

To Adjust

Position downstop screw with locknut loosened. Tighten nut.

(D) ARMATURE SPRING

Requirement

With spring disconnected

Min 3-1/2 oz---Max 4-1/2 oz when pulled to installed length.

(B) BLOCKING LINK

Requirement

With armature held against upstop screw (magnet is not to be energized) and ribbon carrier biased upward

Min some---Max 0.008 inch clearance between blocking link lower surface and ribbon carrier top surface at closest point and

Min some---Max 0.031 inch clearance between rear of armature slot and blocking link as gauged by eye.

To Adjust

Position magnet bracket with screws loosened. Tighten screws.

(A) ARMATURE UPSTOP

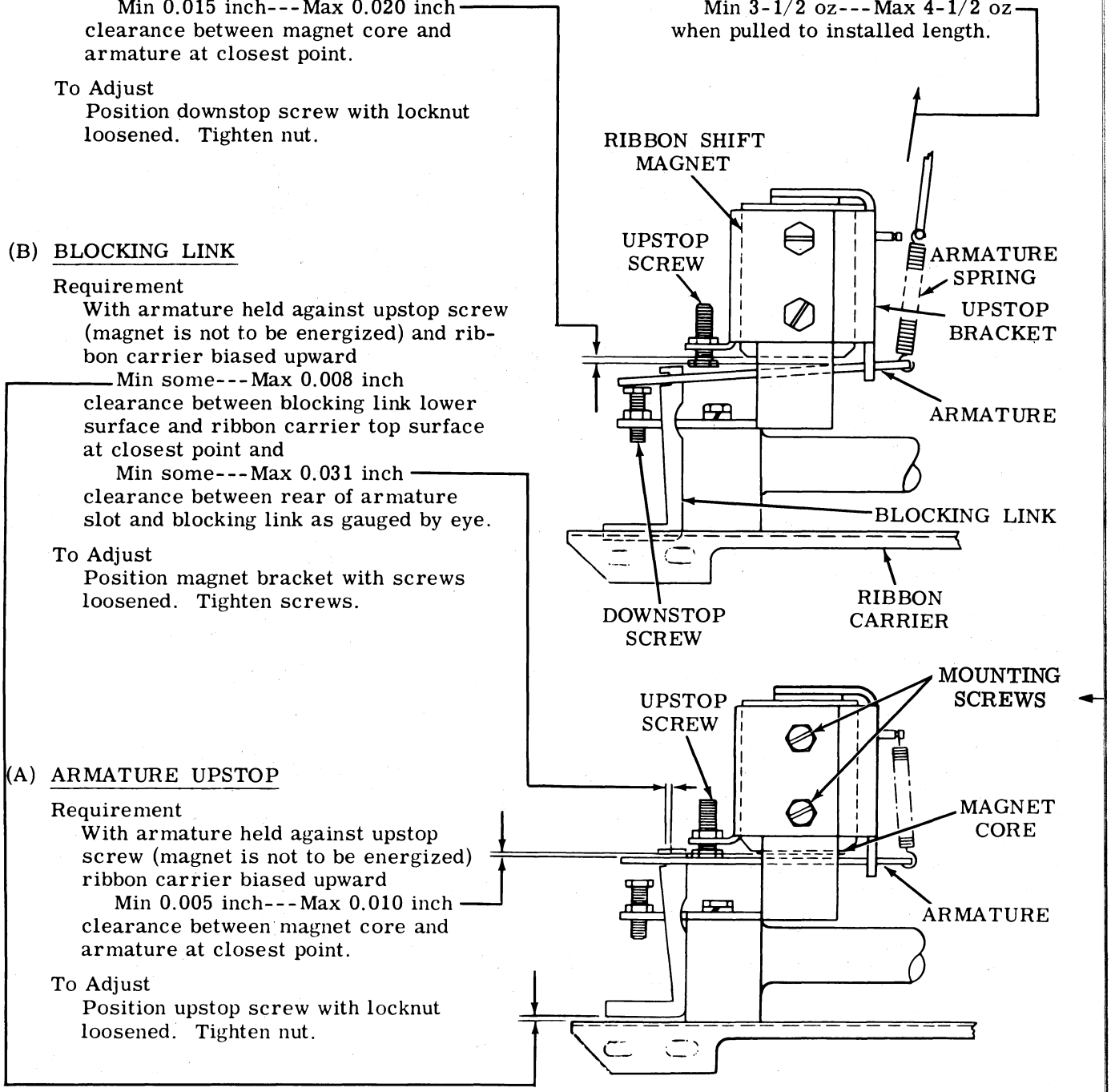
Requirement

With armature held against upstop screw (magnet is not to be energized) ribbon carrier biased upward

Min 0.005 inch---Max 0.010 inch clearance between magnet core and armature at closest point.

To Adjust

Position upstop screw with locknut loosened. Tighten nut.



Note: Refer to Part 3 for additional print suppression adjustments.

2.53 Typing Mechanism (continued)

PRINTING LATCH

Note: For units with adjustable printing latch mounting bracket.

(1) Requirement

With rocker bail in its extreme left position, manually raise the print hammer accelerator. The clearance between the print hammer accelerator and the printing latch should be

Min some---Max 0.015 inch

(2) Requirement

With rocker bail in its extreme right position, there should be some overtravel of the print hammer accelerator with respect to the latching surface of the printing latch and some clearance between the print hammer accelerator and the ribbon carrier (or accelerator blocking link if present).

To Adjust

(1) Position the rocker bail to the extreme right. With the high part of the eccentric to the left, rotate the eccentric so that the clearance between the print hammer accelerator and the ribbon carrier is

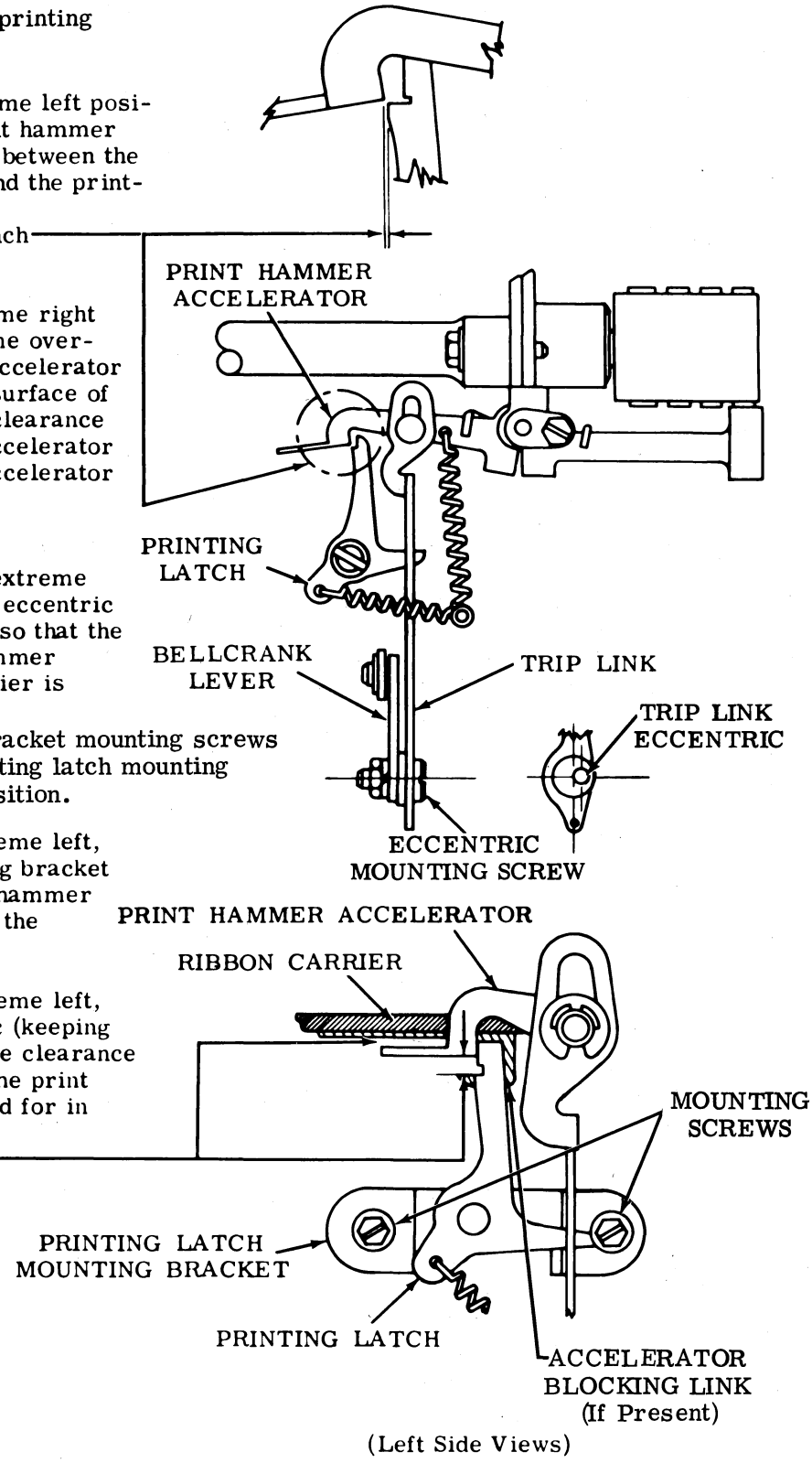
Approximately 0.065 inch

With printing latch mounting bracket mounting screws friction tight, position the printing latch mounting bracket to its extreme rear position.

(2) With the rocker bail to the extreme left, move the printing latch mounting bracket toward the front until the print hammer accelerator just trips. Tighten the mounting screws.

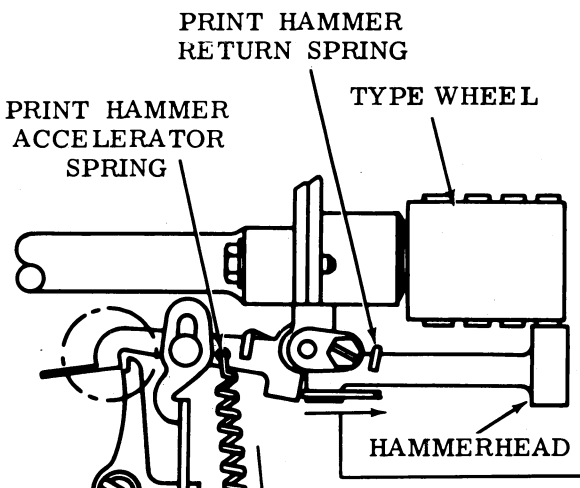
(3) With the rocker bail to the extreme left, position the trip lever eccentric (keeping the high part to the left) until the clearance between the printing latch and the print hammer accelerator is as called for in requirement (1). Tighten nut.

Note 2: For units with non-adjustable printing latch mounting bracket use above "(1) Requirement" and adjust according to "To Adjust (3)."



(Left Side Views)

2.54 Typing Mechanism (continued)



PRINT HAMMER RETURN SPRING

Requirement
With unit in the stop position, it should require
Min 1 oz---Max 3 oz
to pull the print hammer lever so that the top of the hammerhead is level with the type wheel.

PRINT HAMMER ACCELERATOR SPRING

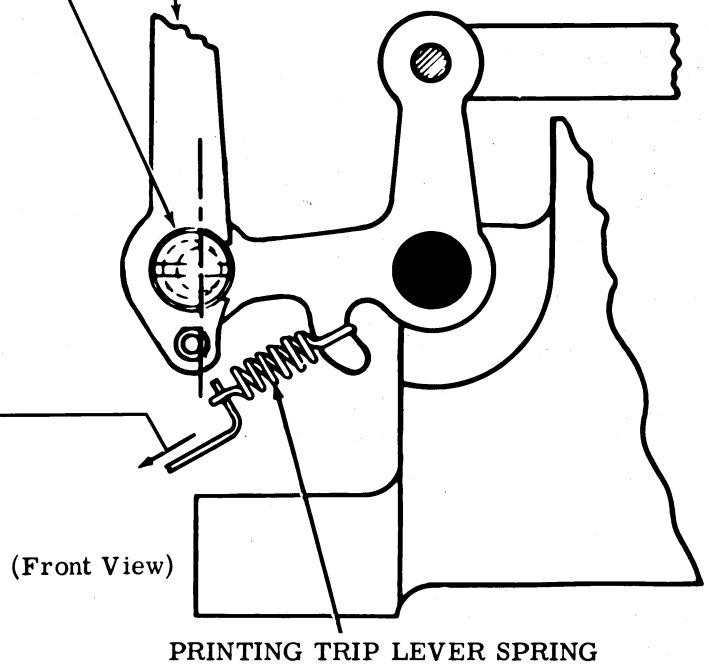
Requirement
Place unit in the stop position.
For 1-1/4 inch length (approximately 41 turns) accelerator spring
Min 32 oz---Max 42 oz
to pull spring to its installed length.
For 1-1/8 inch length (approximately 31 turns) accelerator spring
Min 26 oz---Max 32 oz
to pull spring to its installed length.

ACCELERATOR LATCH SPRING

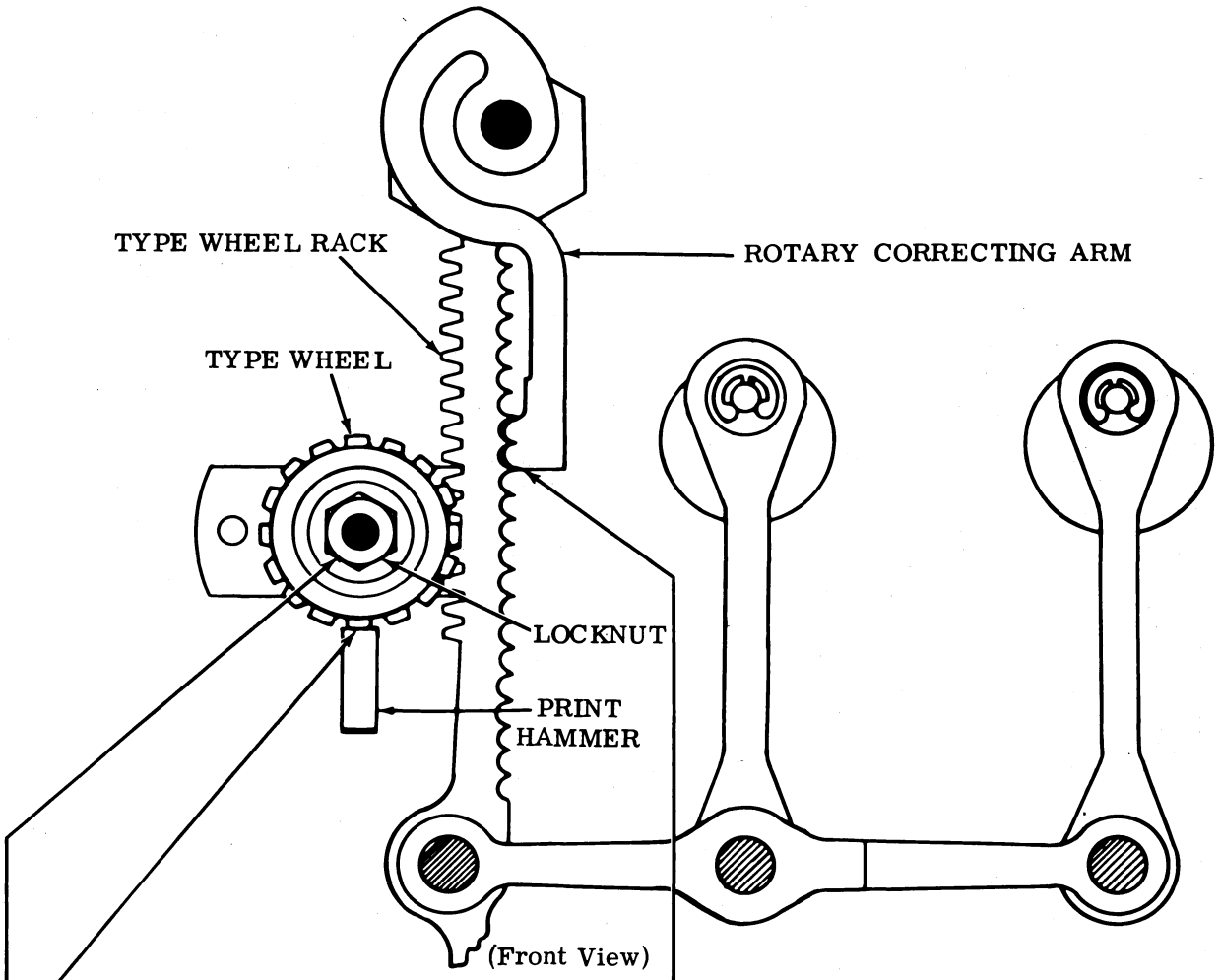
Requirement
With the unit in the stop position
Min 5 oz---Max 7 oz
to pull the spring to its installed length.

PRINT HAMMER TRIP LEVER SPRING

Requirement
Min 4 oz---Max 7 oz
to pull spring to installed length.



2.55 Typing Mechanism (continued)



TYPE WHEEL (Preliminary)

To Check
Select H code combination (---4--78). Place rocker bail to extreme left. Correcting arm should be firmly seated in type wheel rack.

Requirement
Type wheel aligned so that full character is printed uniformly.

To Adjust
Position type wheel with locknut loosened. Check printing by manually lifting accelerator to latched position and releasing it.

Note: For best results, it may be necessary to make PRINT HAMMER (2.56) adjustment and then refine this adjustment.

TYPE WHEEL (Final)

To Check
With unit operating under power.

Requirement
All characters should be legible.

To Adjust
Refine type wheel position with locknut friction tight. Tighten locknut.

Note: For best results, it may be necessary to make the PRINT HAMMER (2.56) adjustment and refine this adjustment.

2.56 Typing Mechanism (continued)

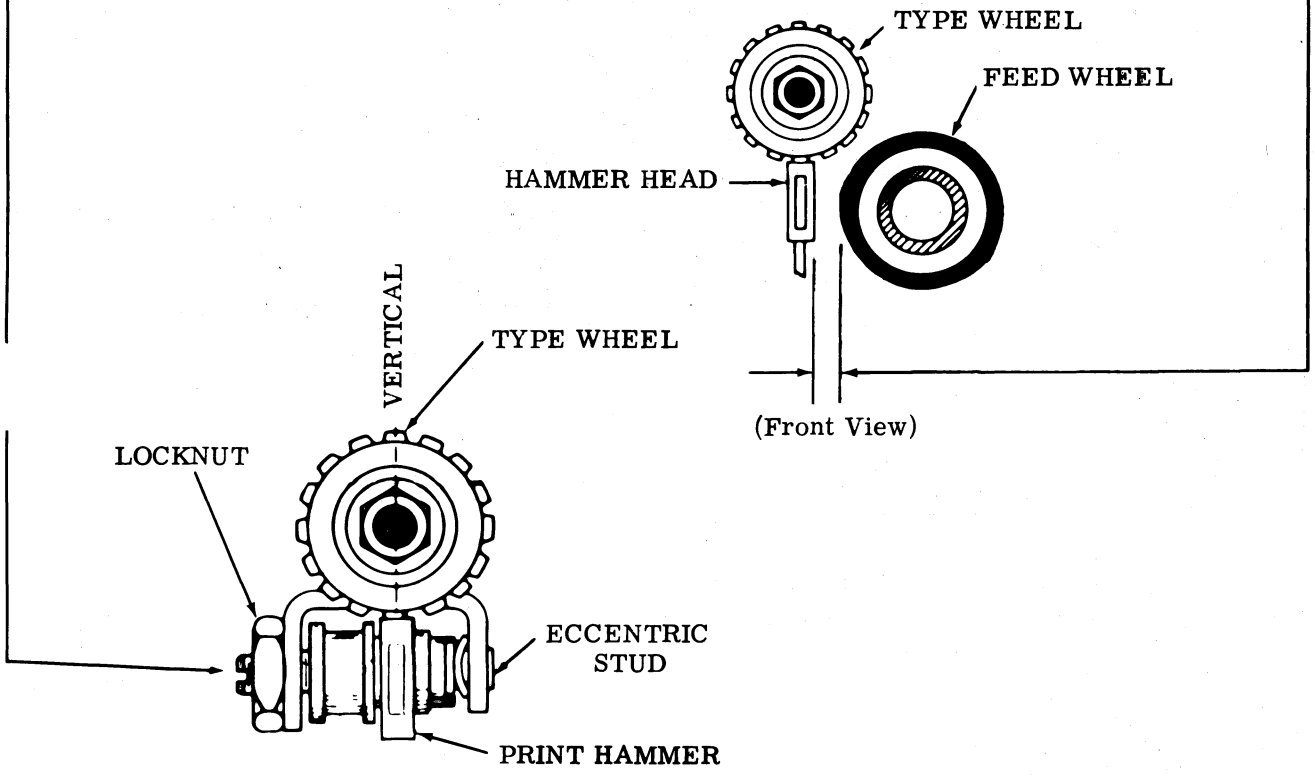
PRINT HAMMER

To Check
With unit operating under power.

Requirement
Print hammer aligned with type wheel so as to obtain quality printing with some clearance between the rim on the feed wheel and the side of the print hammer.

To Adjust
Position print hammer shaft with its locknut friction tight. Tighten locknut.

Note: It may be necessary to make the TYPE WHEEL (Final) (2.55) adjustment and then refine this adjustment.



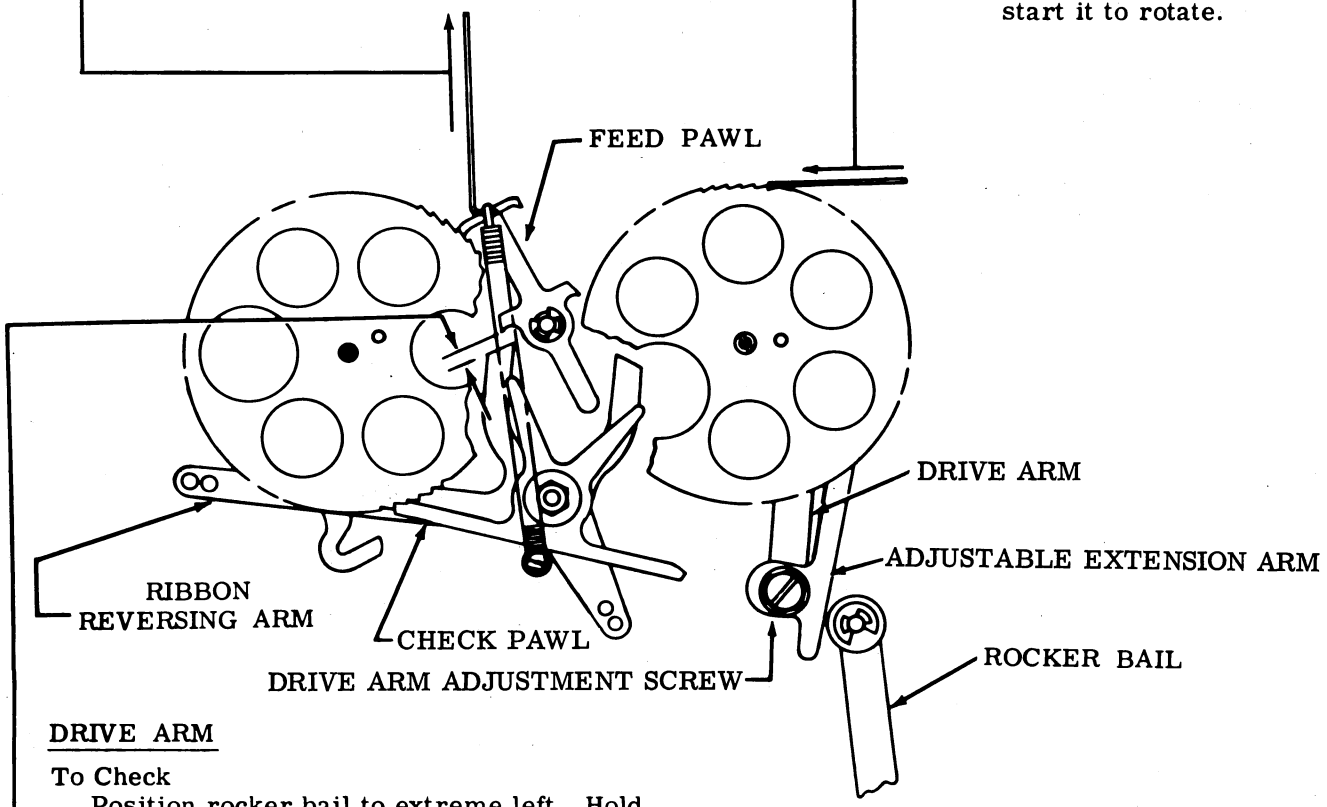
2.57 Typing Mechanism (continued)

FEED PAWL SPRING

Requirement
With rocker bail to extreme right
Min 4 oz---Max 6 oz
to pull feed pawl spring to installed length.

RATCHET WHEEL TORQUE SPRING

Requirement
Min 1 oz---Max 3 oz
applied tangentially to the ratchet wheel to start it to rotate.



DRIVE ARM

To Check
Position rocker bail to extreme left. Hold the ribbon reversing arm under lower reversing extension of feed pawl.

(1) Requirement
Clearance between blocking edge of ribbon reverse arm and reversing extension of feed pawl
Min some

(2) Requirement
Clearance should not be so great as to allow feed pawl to feed more than two teeth at a time.

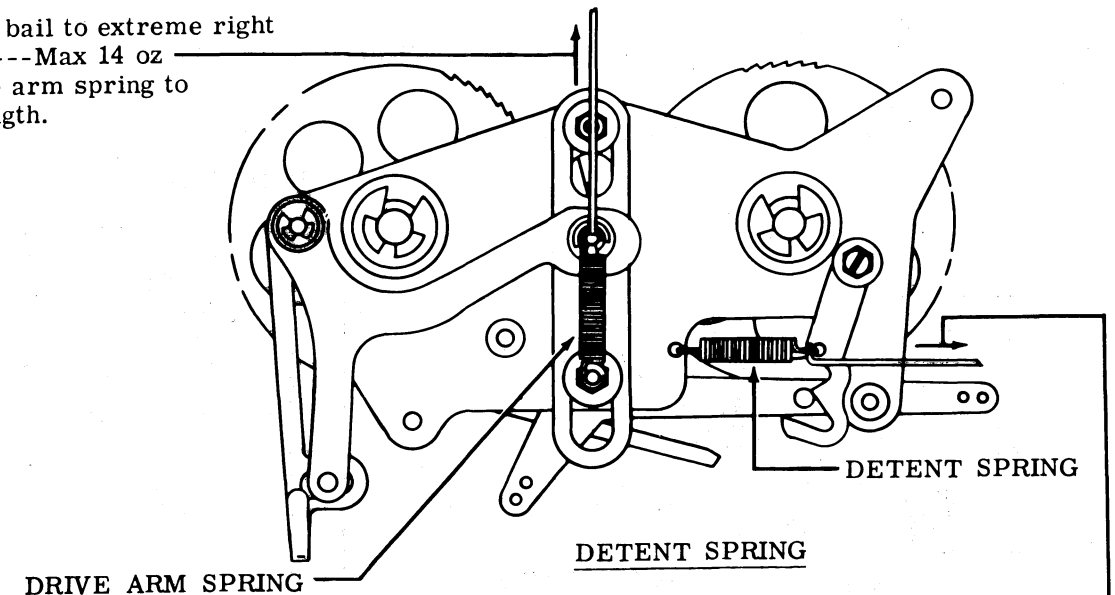
(3) Requirement
Feed pawl detented in both its right and left position.

To Adjust
Position drive arm adjustable extension lever with its mounting screw loosened. Tighten screw.

2.58 Typing Mechanism (continued)

DRIVE ARM SPRING

Requirement
With rocker bail to extreme right
Min 9 oz---Max 14 oz
to pull drive arm spring to installed length.



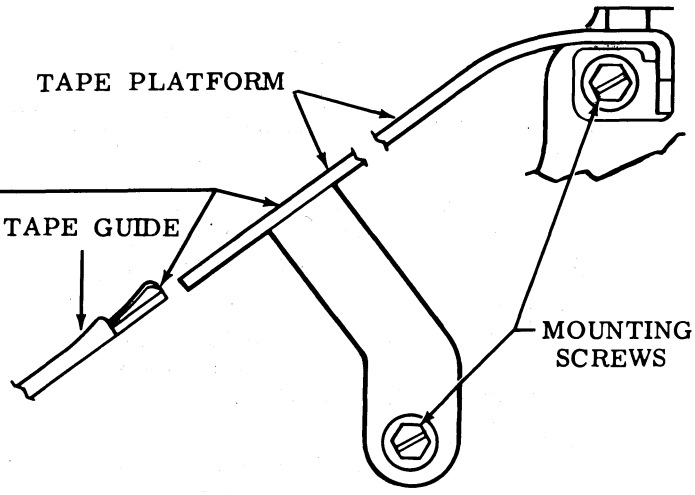
DETENT SPRING

Requirement
With reversing arm in its extreme right or left position
Min 2 oz---Max 4 oz
to pull detent spring to its installed length.

TAPE PLATFORM

Requirement
Top surface of tape platform should be flush with top surface of tape guide.

To Adjust
With tape platform mounting screws loosened, position tape platform. Tighten screws.



(Front View)

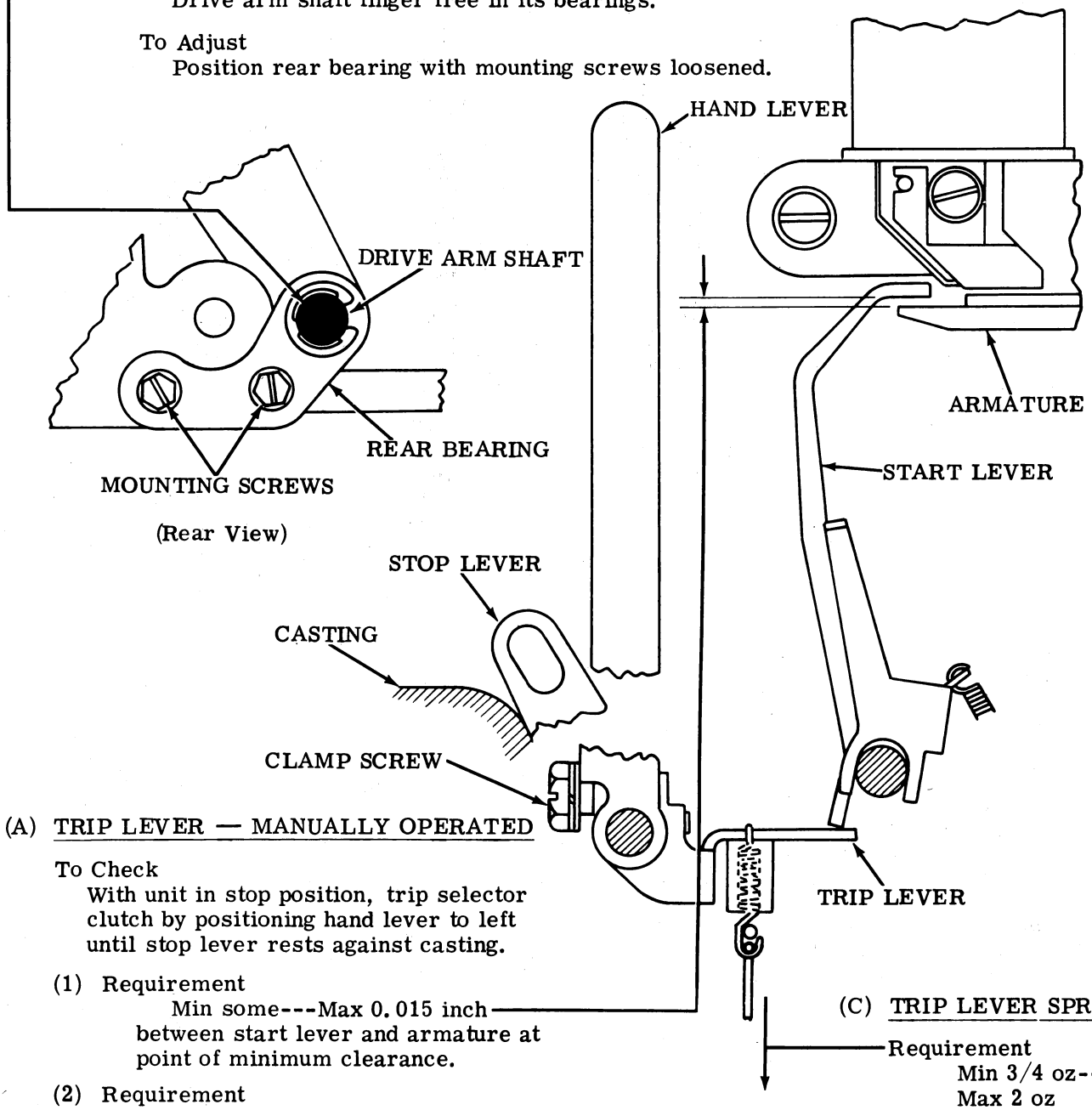
3. VARIABLE FEATURES

3.01 Manual Interfering Rubout Tape Feed-Out Mechanism

(B) DRIVE ARM SHAFT REAR BEARING

Requirement
Drive arm shaft finger free in its bearings.

To Adjust
Position rear bearing with mounting screws loosened.



(A) TRIP LEVER — MANUALLY OPERATED

To Check
With unit in stop position, trip selector clutch by positioning hand lever to left until stop lever rests against casting.

(1) Requirement
Min some---Max 0.015 inch between start lever and armature at point of minimum clearance.

(2) Requirement
Start lever engaging approximate center of trip lever operating surface.

To Adjust
With clamp screw loosened, position trip lever on shaft so that hand lever clears selector pushlever pivot post by a 0.010 inch minimum.

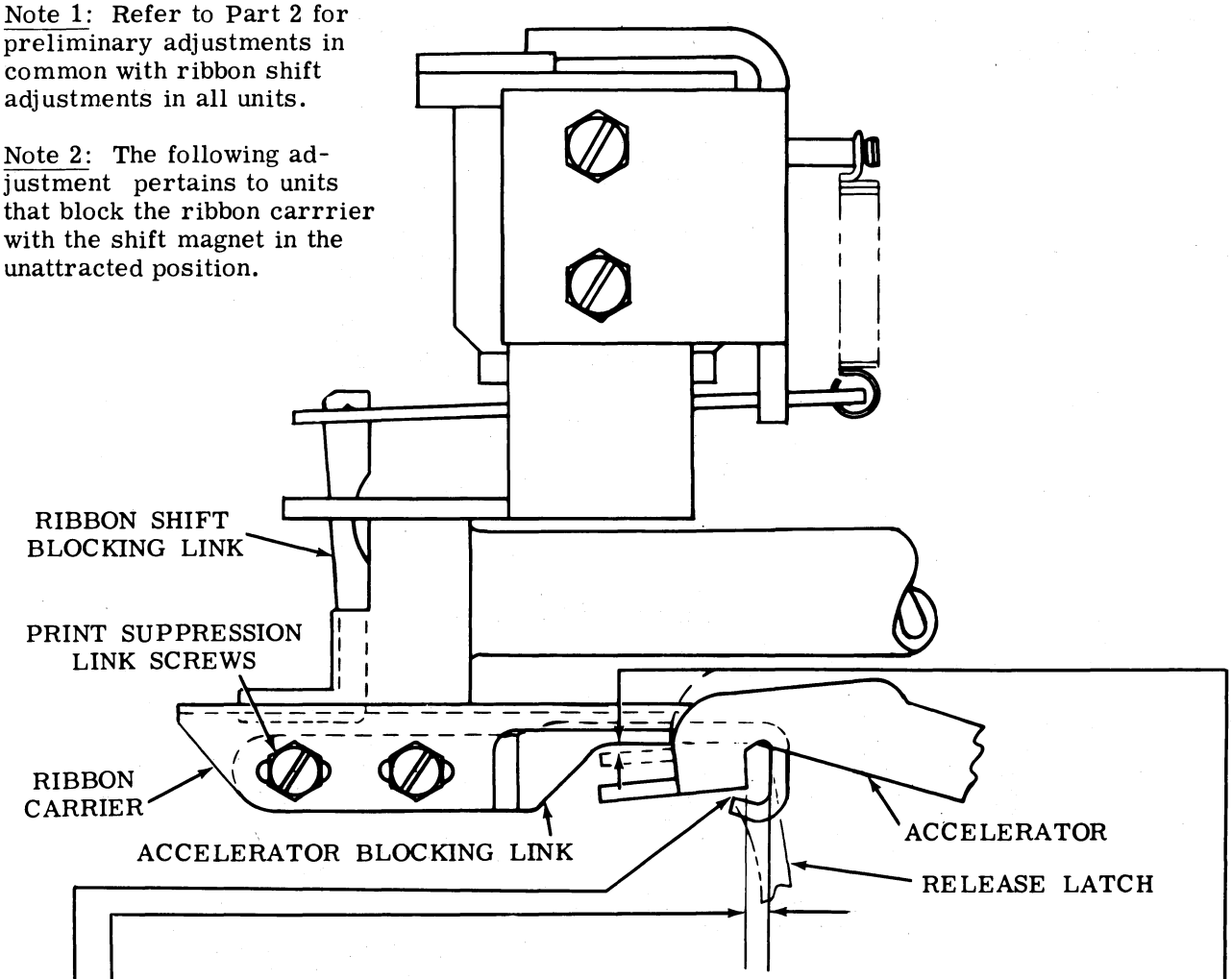
(C) TRIP LEVER SPRING

Requirement
Min 3/4 oz---
Max 2 oz
to pull spring to its installed length.

3.02 Print Suppression Mechanism

Note 1: Refer to Part 2 for preliminary adjustments in common with ribbon shift adjustments in all units.

Note 2: The following adjustment pertains to units that block the ribbon carrrier with the shift magnet in the unattracted position.



ACCELERATOR BLOCKING LINK (Latest Design)

(1) Requirement

With the rocker bail in the extreme left position, there should be Min 0.075 inch---Max 0.095 inch clearance between the accelerator lever and the accelerator blocking link.

(2) Requirement

With the unit in the stop position, there should be Min some clearance between the top surface of the accelerator and the blocking link.

(3) Requirement

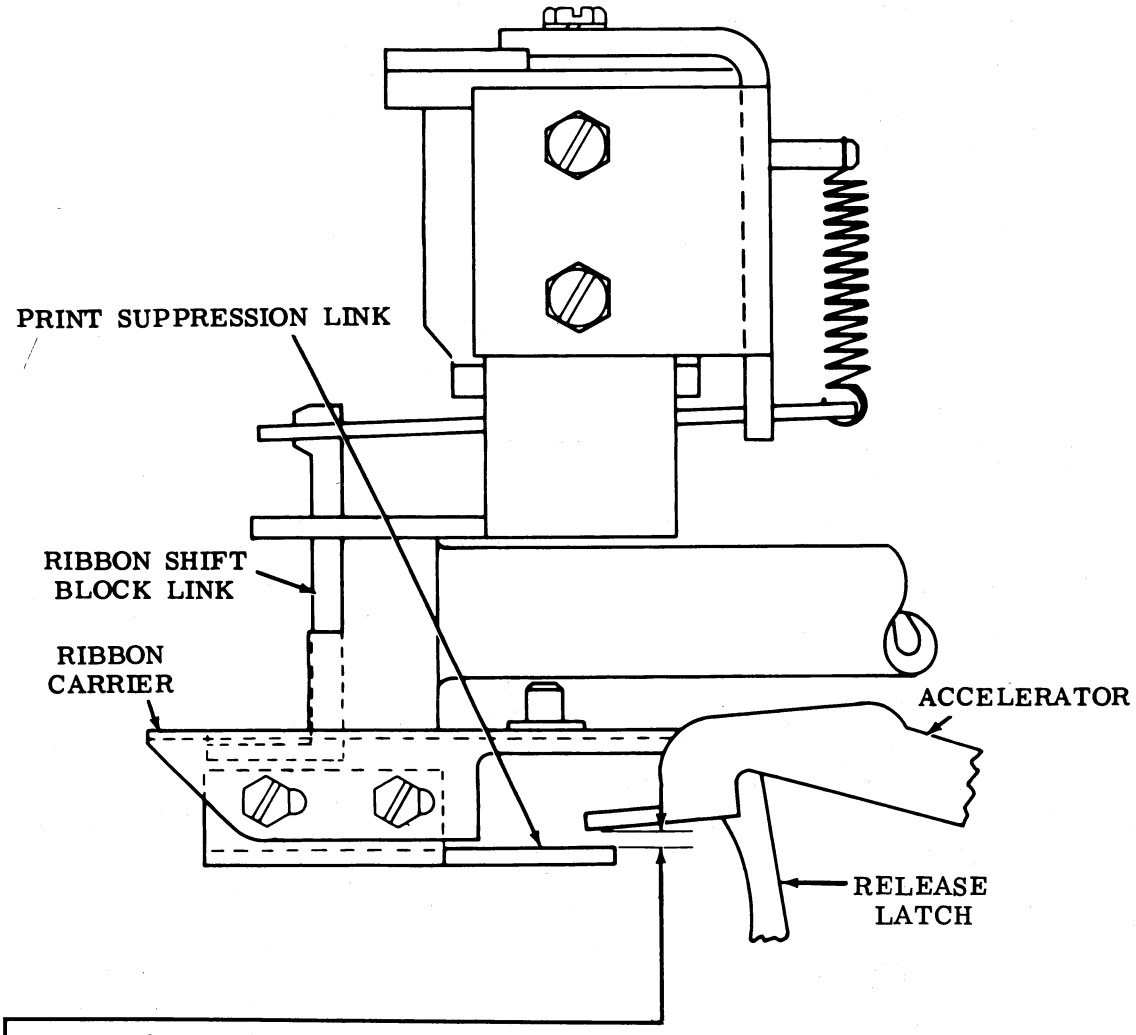
With the ribbon shift magnet armature resting against its upstop screw and when the main shaft is rotated through a complete revolution, there should be Min some clearance between the accelerator and blocking link at its closest point.

To Adjust

Loosen the two screws which mount the accelerator blocking link and position the link both horizontally and vertically to meet the requirements. Tighten screws.

3.03 Print Suppression Mechanism (continued)

Note 1: Refer to Part 2 for preliminary adjustments in common with ribbon shift adjustments in all units.



Note 2: The following adjustment pertains to units that block the ribbon carrier when the shift magnet armature is held attracted.

ACCELERATOR BLOCKING LINK (Early Design)

Requirement

Function clutch tripped and main shaft rotated until print hammer trip lever just touches print release latch. There should be

Min 0.020 inch---Max 0.030 inch

clearance between the upper surface of the print suppression link and the lower surface of the print hammer accelerator.

To Adjust

Position the print suppression link all the way to the rear of the slots on the ribbon carrier. Position link in vertical direction with mounting screws loosened to meet requirement. Tighten screws.