HIGH SPEED TAPE READER

(CX TYPE)

REQUIREMENTS AND ADJUSTMENTS

CONTENTS PAGE

1. GENERAL

1.01 This section is reissued to add and revise certain adjustments for the 1A, 2A, and 2A special tape readers, and to change the title.

1.02 This section contains the adjustments for type 1A, 2A, and 2A special tape readers and their associated motors and gears. Unless otherwise specified herein, the general routines for maintaining this apparatus, the tools to be used, and their methods of application are the same as those shown in the sections giving general maintenance information for teletypewriter apparatus.

1.03 Unless specifically stated otherwise, reference made to left or right, front or rear, and up or down applies to the reader as viewed with the flywheel in the front.

1.04 If metal dust is near any moving part, it may indicate insufficient clearance, and the proper adjustment should be made immediately.

1.05 Before proceeding with the adjustments, put the start-stop lever into the RUN (left) position. Manually actuate the operating magnet and slowly rotate the main shaft coun-

Prepared for American Telephone and Telegraph Company by Teletype Corporation

Printed in U. S. A.

terclockwise, as viewed from the flywheel. This will put the various mechanical assemblies into operation. Check for freedom of movement (no binding) between parts.

CAUTION: IMPROPERLY ADJUSTED EQUIPMENT MAY BE DAMAGED IN A MATTER OF SECONDS IF OPERATED UNDER POWER.

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

SUBJECT	SECTION
Numerical Index - Division 592 Data Sets 200 Series	592-000-000

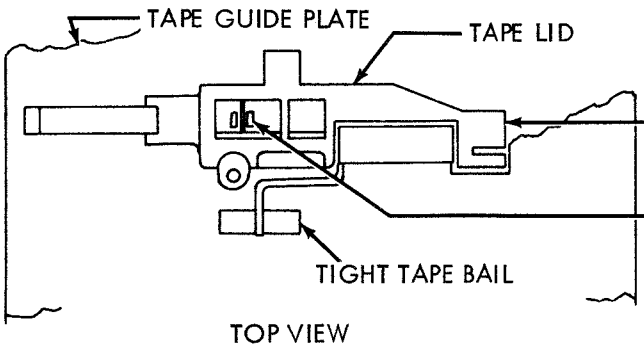
2. ADJUSTMENTS

2.01 Illustrations in this section show the location of clearances, position of parts, and point of scale application. When measuring spring tension, apply steady pressure to the scales. Text on the same page with the illustration outlines the requirements and explains the procedures that should be followed. The adjustments are arranged in the sequence that should be followed when complete adjustment of the set is undertaken. The sequence that should be followed on individual pages is indicated by letters of the alphabet. The sequence for an adjustment with several requirements is indicated by numerals. A procedure should be read all the way through before making adjustments or measuring spring tensions.

TAPE LID

NOTE

REMOVE TAPE GUIDE PLATE AND COVER (OR REAR) PLATE. LUBRICATE TAPE LID AND COVER PER PAR. 2.02 AND 2.03, SECTION 592-801-701.



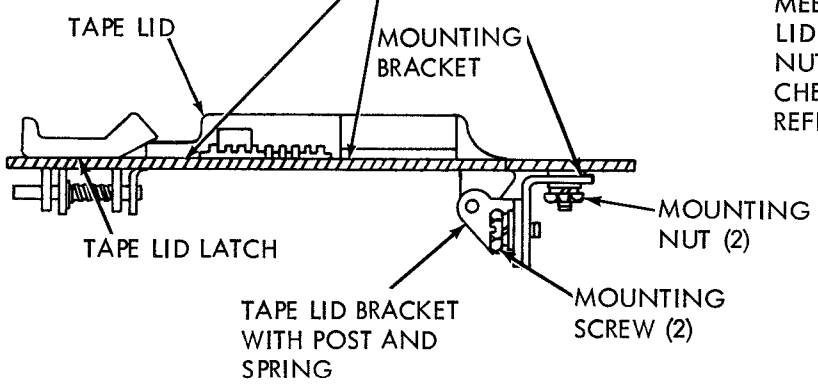
TOP VIEW

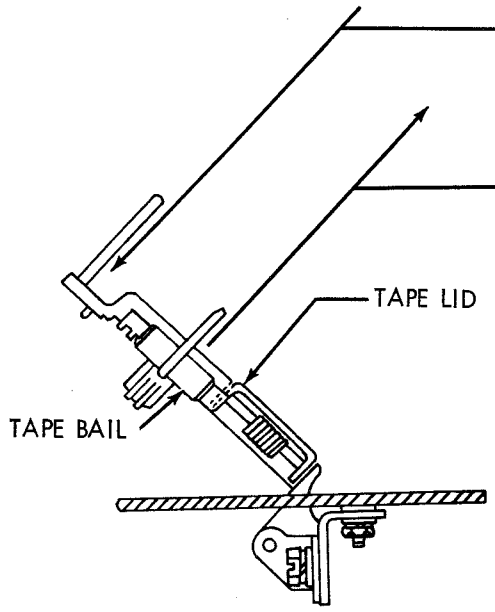
(1) REQUIREMENT
RADIUS OF TAPE GUIDE PLATE SHOULD MATCH CONTOUR OF TAPE LID.

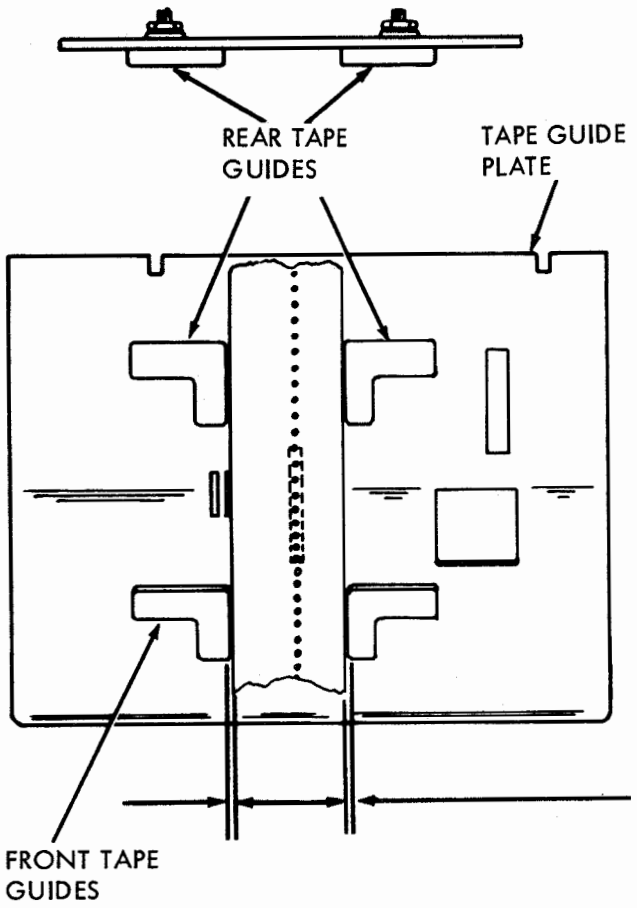
(2) REQUIREMENT
FEED WHEEL GROOVE IN TAPE LID SHOULD LINE UP WITH SLOT IN TAPE GUIDE PLATE. TAPE LID VANES SHOULD BE CENTRALLY LOCATED BETWEEN SLOTS IN TAPE GUIDE PLATE.

(3) REQUIREMENT
TWO FLAT BEARING SURFACES OF TAPE LID SHOULD REST AGAINST TAPE GUIDE PLATE.

TO ADJUST
LOOSEN TWO MOUNTING NUTS AND SCREWS. WITH LOCATING PIN ENGAGED IN TAPE GUIDE PLATE SLOT, POSITION LID TO MEET REQUIREMENTS (1) AND (2). PRESS TAPE LID AGAINST TAPE GUIDE PLATE AND TIGHTEN NUTS AND SCREWS TO MEET REQUIREMENT (3). CHECK REQUIREMENTS AND, IF NECESSARY, REFINE ADJUSTMENTS.







TAPE GUIDE

(1) REQUIREMENT

MIN. 0.005 INCH --- MAX. 0.010 INCH CLEARANCE BETWEEN TAPE EDGE AND GUIDES. 5 LEVEL UNITS USE 5 LEVEL TAPE, 6 LEVEL UNITS USE 6 LEVEL TAPE, ETC.

TO ADJUST

LOOSEN TAPE GUIDE MOUNTING NUTS TO FRICTION TIGHT. UNLATCH TAPE LID. PLACE A LENGTH OF TAPE BETWEEN GUIDES WITH TAPE FEED HOLES OVER FEED WHEEL SLOT OF TAPE GUIDE PLATE. POSITION TAPE GUIDES TO MEET REQUIREMENT.

(2) REQUIREMENT

TAPE SHALL NOT RIDE UP SIDES OF GUIDES.

(3) REQUIREMENT

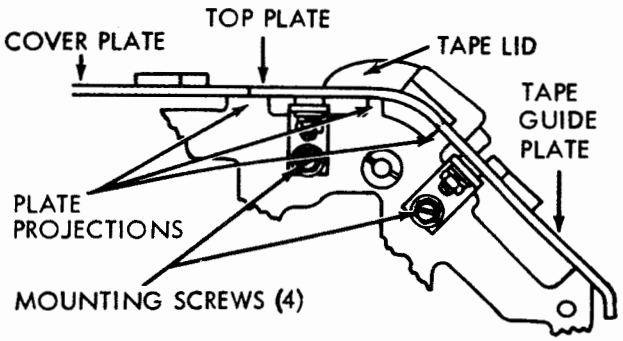
GUIDES IN LINE WITH TAPE PATH AS GAUGED BY EYE.

TO CHECK

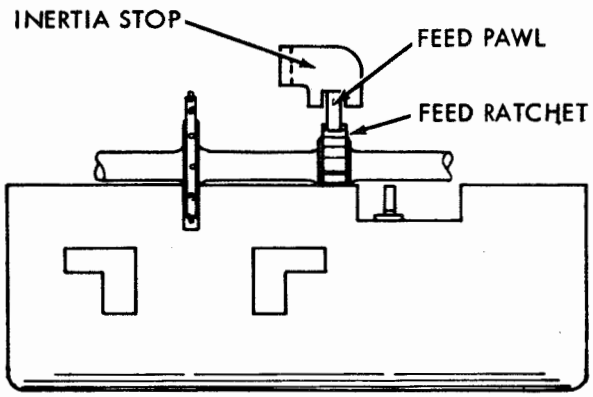
PLACE TAPE IN UNIT AND CLOSE TAPE LID. DRAW TAPE THROUGH TO LEFT. TAPE SHOULD RUN PARALLEL TO EDGE OF TAPE GUIDE PLATE WITHOUT BINDING.

TO ADJUST

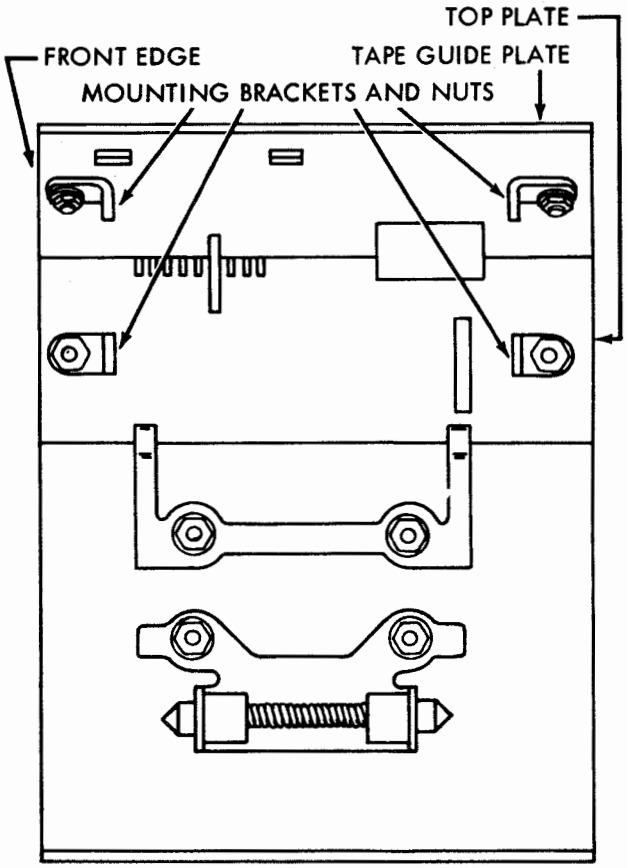
REFINE ABOVE ADJUSTMENT.



(FRONT VIEW)



(TOP VIEW)



(A) TAPE GUIDE PLATE

(1) REQUIREMENT

TAPE GUIDE PLATE SHOULD REST FIRMLY ON TWO LEFT AND AT LEAST ONE RIGHT PLATE PROJECTION.

(2) REQUIREMENT

FEED WHEEL TURNS FREELY WITH CONTROL LEVER IN FREE WHEEL POSITION.

(3) REQUIREMENT

WITH LETTERS TAPE IN UNIT, TAPE-OUT PIN SHOULD BE CENTERED BETWEEN CODE HOLES, OR CODE HOLES AND EDGE OF TAPE.

TO ADJUST

LOOSEN TAPE GUIDE PLATE MOUNTING BRACKET NUTS TO FRICTION TIGHT. PLACE SENSING PINS IN THEIR MOST RETRACTED POSITION. POSITION TAPE GUIDE PLATE WITH TAPE LID UNLATCHED AND CONTROL LEVER IN STOP POSITION. RECHECK ALL REQUIREMENTS.

(B) TOP PLATE (IF PRESENT ON UNIT)

(1) REQUIREMENT

TOP PLATE SHOULD REST FIRMLY ON TWO RIGHT AND AT LEAST ONE LEFT PLATE PROJECTION. UPPER SURFACE OF THE TOP PLATE SHOULD BE FLUSH WITH, OR BELOW (MAX. 0.003 INCH) SURFACE OF TAPE GUIDE PLATE IN AREA OF SENSING FINGERS.

(2) REQUIREMENT

FEEDWHEEL SLOT IN TOP PLATE SHOULD BE IN LINE WITH SLOT IN TAPE GUIDE PLATE. WITH UNIT IN FREE POSITION, FEEDWHEEL SHOULD ROTATE FREELY.

TO ADJUST

POSITION TOP PLATE WITH ITS MOUNTING BRACKET NUTS AND SCREWS FRICTION TIGHT. DO NOT TIGHTEN.

(3) REQUIREMENT

WITH "LETTERS" TAPE IN UNIT, TAPE-OUT PIN SHOULD BE CENTERED BETWEEN CODE HOLES, OR CODE HOLES AND EDGE OF TAPE.

TO ADJUST

POSITION TAPE GUIDE PLATE AND TOP PLATE.

(4) REQUIREMENT

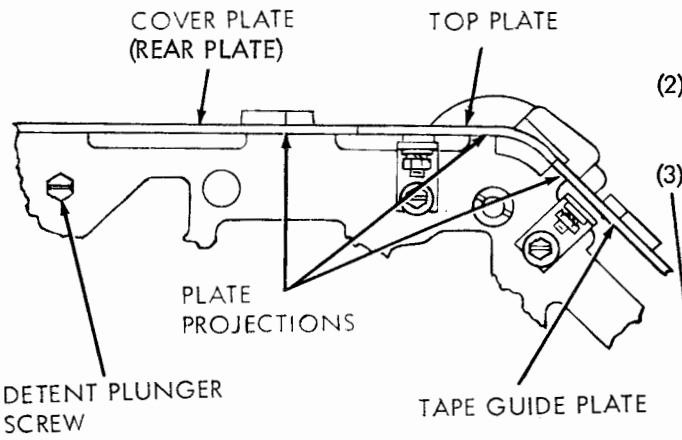
WITH TAPE LID LATCHED:

MIN. 0.008 INCH --- MAX. 0.025 INCH CLEARANCE UNDER TAPE LID EXTENSIONS COVERING FEED WHEEL SLOTS AND TAPE OUT PIN.

MIN. 0.008 INCH --- MAX. 0.015 INCH CLEARANCE BETWEEN TAPE LID AND TOP PLATE MEASURED IN AREA OF SENSING FINGER SLOTS WHEN PLAY IN LID IS TAKEN TOWARD TAPE GUIDE PLATE.

TO ADJUST

LOOSEN SCREWS HOLDING TAPE LID MOUNTING BRACKETS TOGETHER; POSITION TAPE LID TO MEET REQUIREMENTS. RECHECK REQUIREMENTS (1) AND (2).



COVER PLATE

(1) REQUIREMENT

COVER PLATE AND TOP PLATE SHOULD BE HELD FLUSH ALONG THEIR COMMON EDGE BY DETENT ACTION.

(2) REQUIREMENT

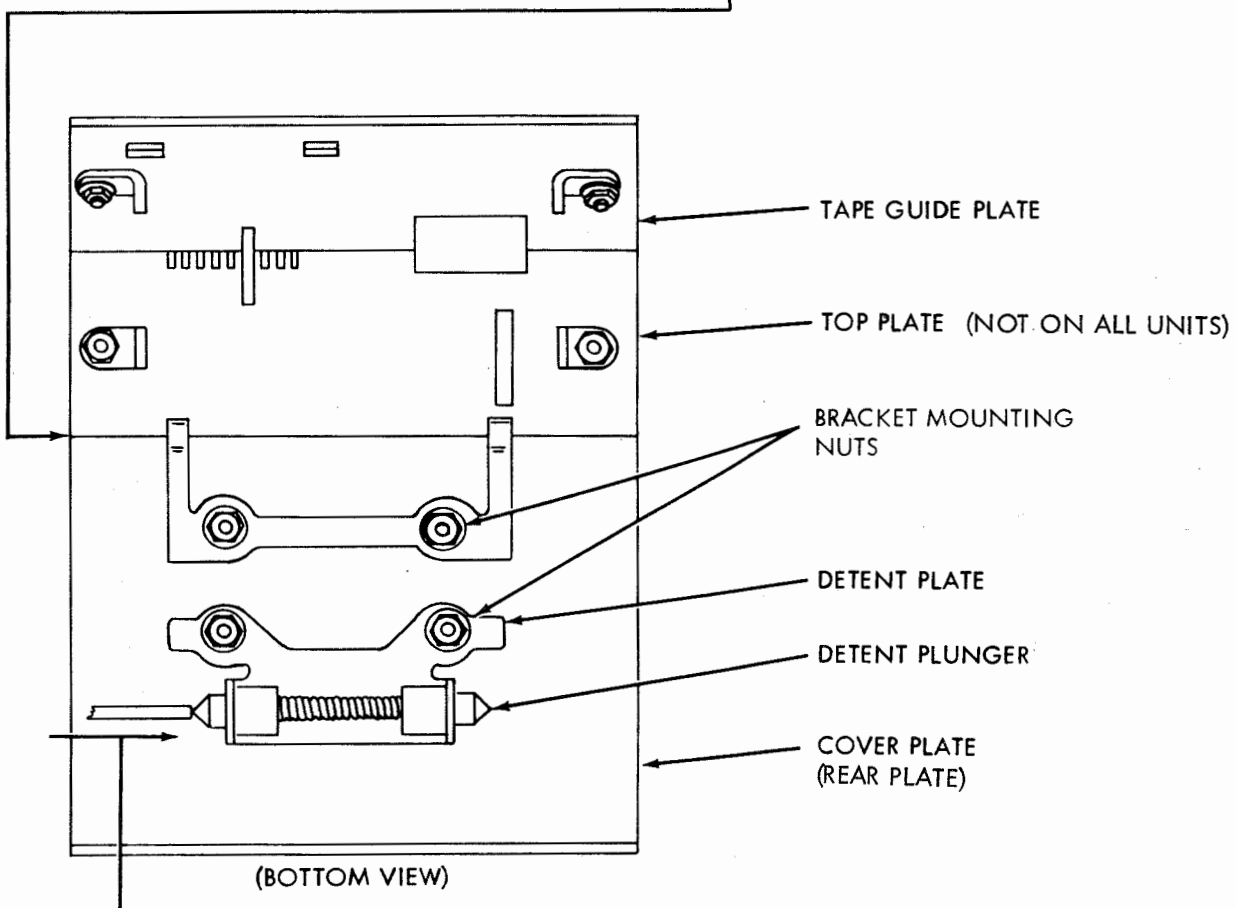
COVER PLATE SHOULD REST FIRMLY ON AT LEAST THREE FRONT AND REAR PLATE PROJECTIONS

(3) REQUIREMENT

FRONT EDGE OF COVER PLATE AND TOP PLATE SHOULD BE IN LINE

TO ADJUST

MOVE SCREWS WHICH FIX POSITION OF DETENT PLUNGER TO EXTREME LOWER RIGHT POSITION. TIGHTEN SCREWS. LOOSEN FOUR BRACKET MOUNTING NUTS ON COVER PLATE, AND POSITION PLATE. IF NECESSARY, REFINE LOCATION OF DETENT PLUNGER SCREWS TO MEET REQUIREMENT (1).

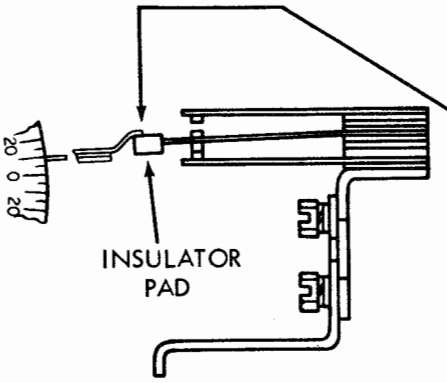


(BOTTOM VIEW)

COVER PLATE PLUNGER SPRING

REQUIREMENT

MIN. 8 OZS. --- MAX. 20 OZS.
TO START ONE OF THE PLUNGERS MOVING.



(A)

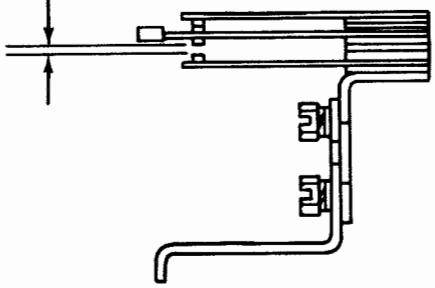
TAPE-OUT CONTACT ASSEMBLY

TO CHECK
REMOVE CONTACT ASSEMBLY FROM ITS MOUNTING BRACKET.

(1) REQUIREMENT
MIN. 8 GRAMS --- MAX. 15 GRAMS
TO OPEN NORMALLY CLOSED CONTACTS
TO ADJUST
BEND CONTACT SWINGER

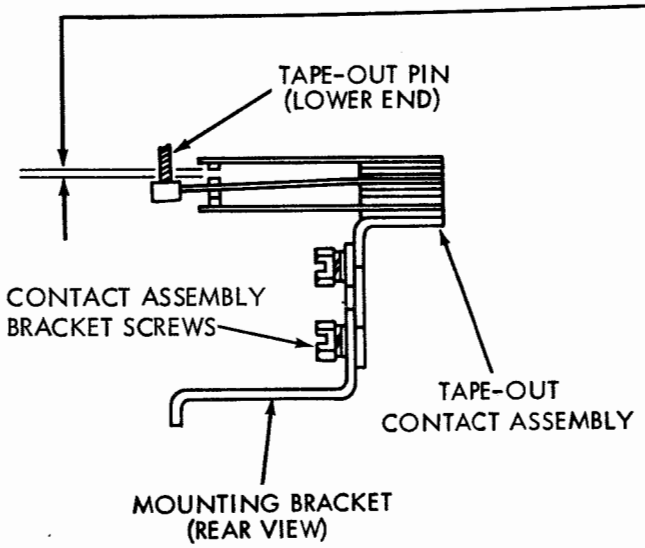
(2) REQUIREMENT
MIN. 0.008 INCH --- MAX. 0.015 INCH
CLEARANCE BETWEEN NORMALLY OPEN CONTACTS
TO ADJUST
BEND UPPER CONTACT LEAF

NOTE
REPLACE CONTACT ASSEMBLY. MAKE SURE CONTACT SWINGER IS UNDER TAPE-OUT PIN EXTENSION.



(B)

TAPE-OUT CONTACT ASSEMBLY BRACKET

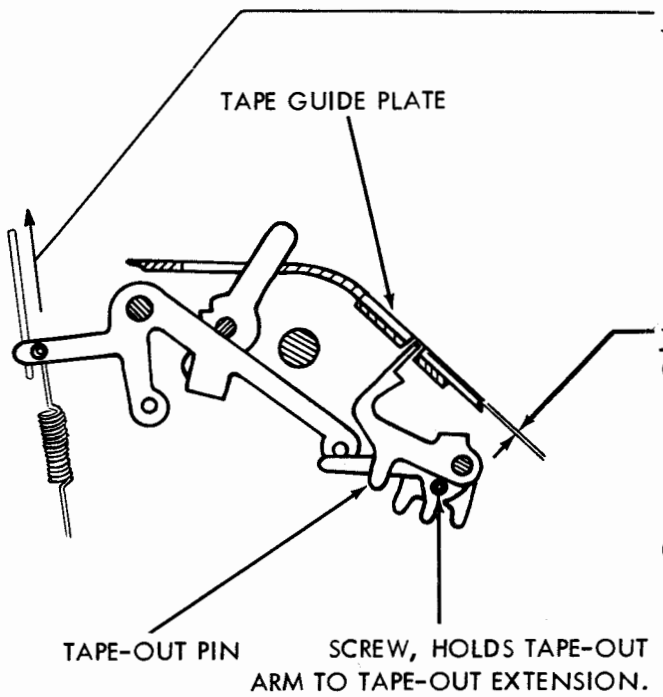


REQUIREMENT

WITH TAPE IN UNIT, TAPE LID LATCHED:
MIN. 0.008 INCH --- MAX. 0.015 INCH
GAP BETWEEN TOP CONTACTS. SOME MOVEMENT OF BOTTOM CONTACTS WHEN TOP CONTACTS ARE OPENED.

TO ADJUST

LOOSEN SCREWS WHICH HOLD CONTACT ASSEMBLY BRACKET AND MOUNTING BRACKET TOGETHER. POSITION BRACKET BY MEANS OF PRY POINTS. IF NECESSARY, REFINE (A) (2) ABOVE.



(FRONT VIEW)

CONTROL LEVER SPRING

TO CHECK

PLACE CONTROL LEVER IN RUN POSITION, AND HOLD TIGHT TAPE ARM AWAY FROM CONTROL LEVER.

REQUIREMENT

MIN. 1 OZ. --- MAX. 5 OZS.

TO START LEVER MOVING

TAPE-OUT PIN

(1) REQUIREMENT

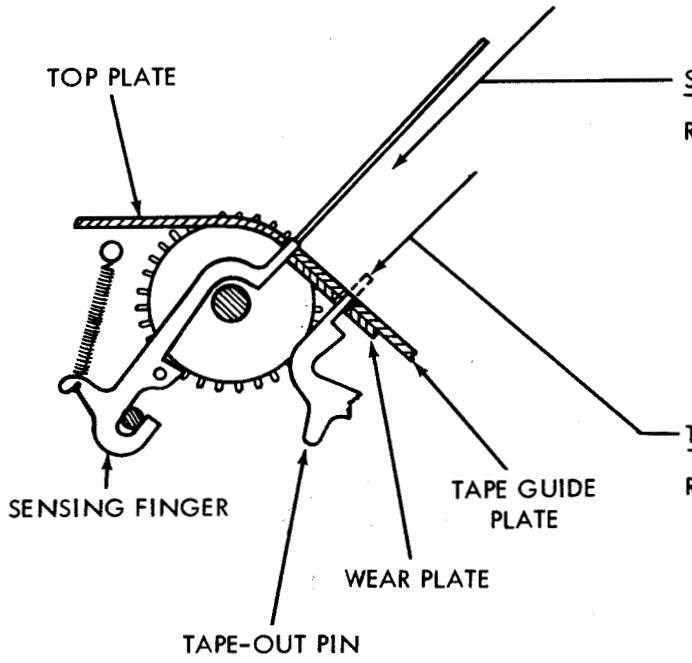
WITH UNIT IN FREE POSITION:
MIN. SOME --- MAX. 0.010 INCH
CLEARANCE BETWEEN TAPE OUT PIN AND TAPE GUIDE PLATE.

(2) REQUIREMENT

WITH UNIT IN RUN POSITION, TAPE IN UNIT; TAPE-OUT PIN SHOULD CLOSE BOTTOM TAPE-OUT CONTACTS.

TO ADJUST

PLACE CONTROL LEVER IN STOP POSITION. LOOSEN SCREW WHICH SECURES TAPE-OUT ARM TO TAPE OUT EXTENSION. POSITION TAPE OUT PIN BY MEANS OF PRY POINTS



(FRONT VIEW)

SENSING FINGER SPRINGS

REQUIREMENT (EACH SPRING)

WITH SENSING FINGERS IN UPPERMOST POSITION, CODE READING CONTACT SPRINGS HELD AWAY:
MIN. 2-1/2 OZS.---MAX. 5 OZS.
TO MOVE SENSING FINGER FLUSH WITH TAPE GUIDE PLATE.

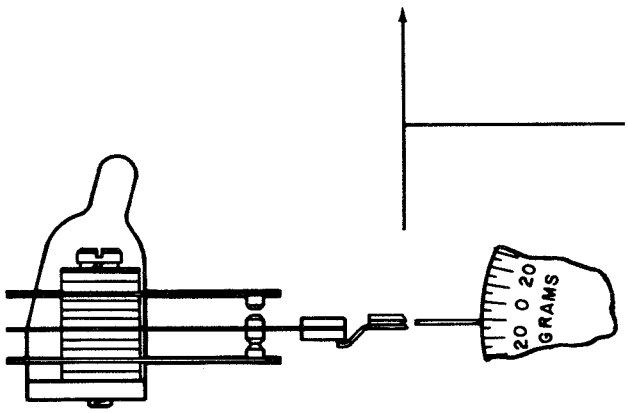
TAPE-OUT PIN SPRING

REQUIREMENT

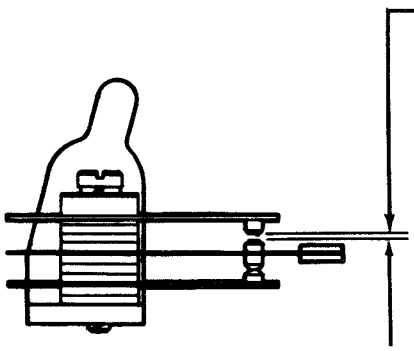
WITH TAPE-OUT CONTACT SWINGER HELD AWAY:
MIN. 5 GRAMS --- MAX. 15 GRAMS
TO MOVE TAPE-OUT PIN FLUSH WITH TAPE GUIDE PLATE.

START-STOP CONTACT ASSEMBLY

TO CHECK
REMOVE CONTACT ASSEMBLY AND ITS MOUNTING BRACKET FROM UNIT.

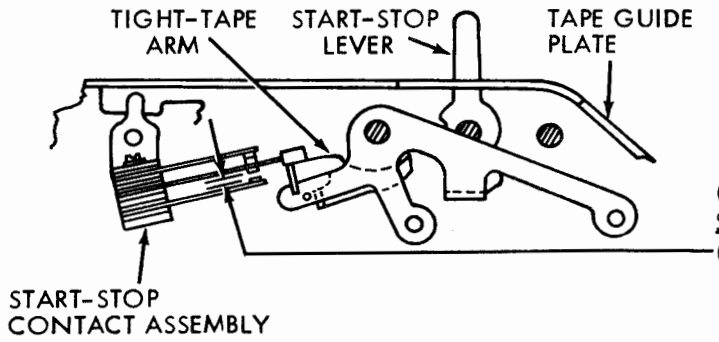


(1) REQUIREMENT
MIN. 8 GRAMS --- MAX. 15 GRAMS
TO OPEN NORMALLY CLOSED CONTACTS
TO ADJUST
BEND CONTACT SWINGER



(2) REQUIREMENT
MIN. 0.008 INCH --- MAX. 0.015 INCH
CLEARANCE BETWEEN NORMALLY OPEN
CONTACTS
TO ADJUST
BEND UPPER CONTACT LEAF

NOTE
REPLACE CONTACT ASSEMBLY. MAKE SURE CONTACT SWINGER IS OVER TIGHT-TAPE ARM EXTENSION.



(REAR - VIEWED FROM FRONT)

(A)

START-STOP CONTACT ASSEMBLY BRACKET

(1) REQUIREMENT

WITH UNIT IN STOP POSITION:
MIN. 0.010 INCH --- MAX. 0.015 INCH
GAP BETWEEN NORMALLY CLOSED CONTACTS.

TO ADJUST

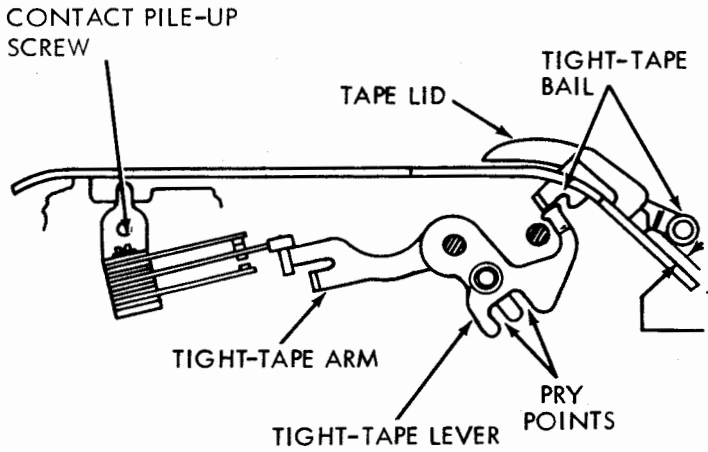
POSITION CONTACT ASSEMBLY BRACKET WITH ITS MOUNTING SCREWS LOOSENED.

(2) REQUIREMENT

TIGHT-TAPE ARM EXTENSION SHOULD FULLY ENGAGE INSULATOR PAD ON SWINGER TIP. SWINGER SHOULD BE APPROXIMATELY PARALLEL TO REAR PLATE.

TO ADJUST

LOOSEN SCREWS SECURING CONTACT PILE-UP TO ASSEMBLY BRACKET. POSITION ASSEMBLY.



(B)

TIGHT-TAPE ARM

REQUIREMENT

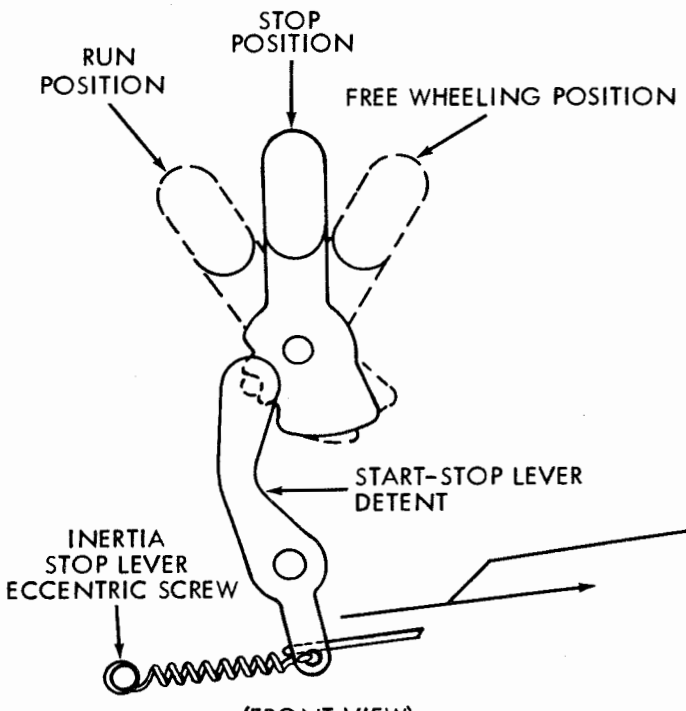
BOTTOM SET OF CONTACTS SHOULD OPEN WHEN TIGHT-TAPE BAIL IS RAISED:
MIN. 0.045 INCH --- MAX. 0.075 INCH
FROM TAPE GUIDE PLATE.

TO ADJUST

PLACE START-STOP LEVER IN RUN POSITION. LOOSEN SCREW WHICH SECURES ARM WITH HUB TO TIGHT-TAPE LEVER. BY MEANS OF PRY POINTS, POSITION TIGHT-TAPE ARM TO SATISFY THE FOLLOWING:

WITH A 0.040 INCH GAUGE BETWEEN TIGHT-TAPE BAIL AND TAPE GUIDE PLATE, CONTACTS SHOULD REMAIN CLOSED.

WITH A 0.060 INCH GAUGE BETWEEN TIGHT-TAPE BAIL AND TAPE GUIDE PLATE, CONTACTS SHOULD OPEN.



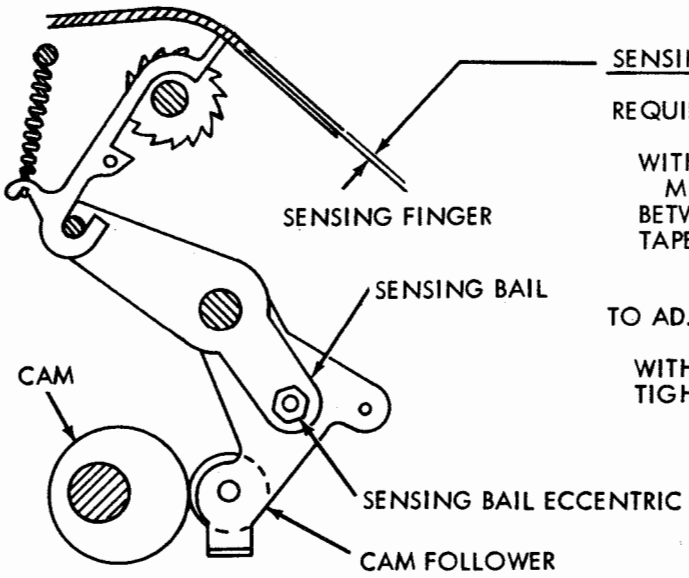
(FRONT VIEW)

(C)

START-STOP LEVER DETENT SPRING

REQUIREMENT

MIN. 10 OZS. --- MAX. 16 OZS.
TO START DETENT MOVING.



(VIEWED FROM FRONT)

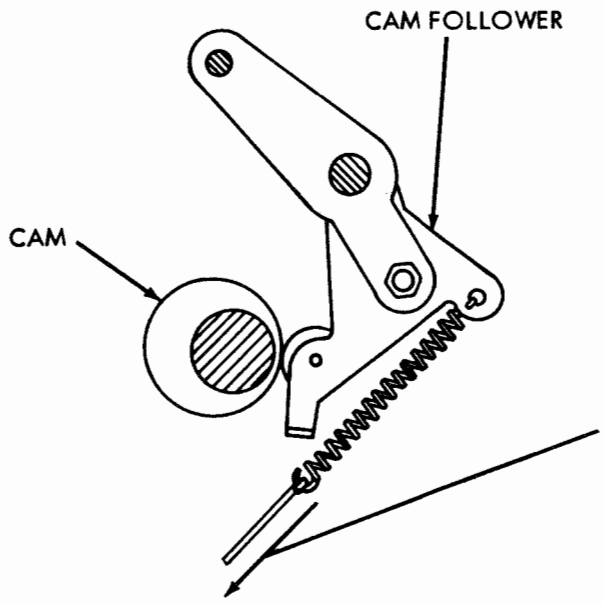
SENSING BAIL

REQUIREMENT

WITH SENSING FINGERS IN LOWERMOST POSITION:
MIN. 0.005 INCH --- MAX. 0.010 INCH
BETWEEN HIGHEST SENSING PIN AND SURFACE OF TAPE GUIDE PLATE.

TO ADJUST

WITH NUT ON SENSING BAIL ECCENTRIC FRICTION TIGHT, ADJUST ECCENTRIC.

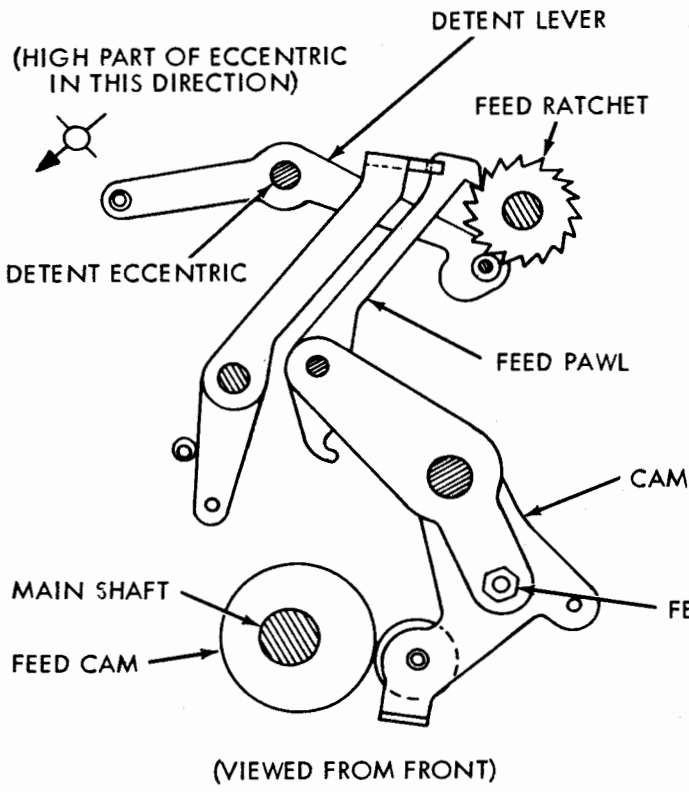


(VIEWED FROM FRONT)

FEED AND SENSING CAM FOLLOWER SPRINGS

REQUIREMENT (EACH SPRING)

WITH CAM FOLLOWERS ON LOW POINT OF CAMS:
MIN. 10 OZS. --- MAX. 12 OZS.
TO PULL SPRING TO INSTALLED LENGTH.



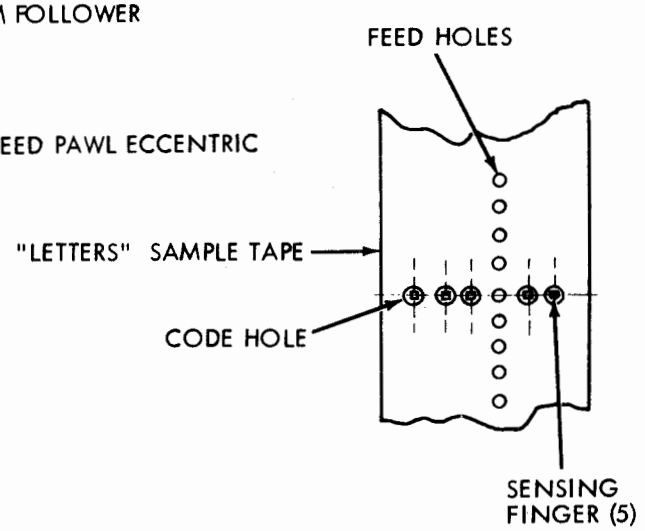
FEEDWHEEL DETENT

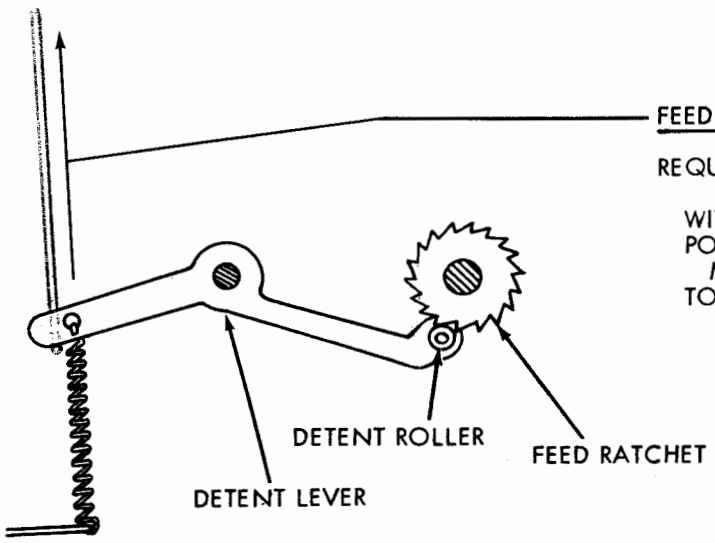
REQUIREMENT

WITH PLAY IN TAPE TAKEN LIGHTLY TOWARD RIGHT, FEEDWHEEL SHOULD CENTER SENSING FINGERS IN CODE HOLES OF NEW, CONFORMING, PERFORATED TAPE.

TO ADJUST

WITH TAPE LID UNLATCHED, FEED PAWL HELD AWAY FROM RATCHET, SENSING FINGERS IN LOWERMOST POSITION, ECCENTRIC SCREW FRICTION TIGHT, ADJUST ECCENTRIC.

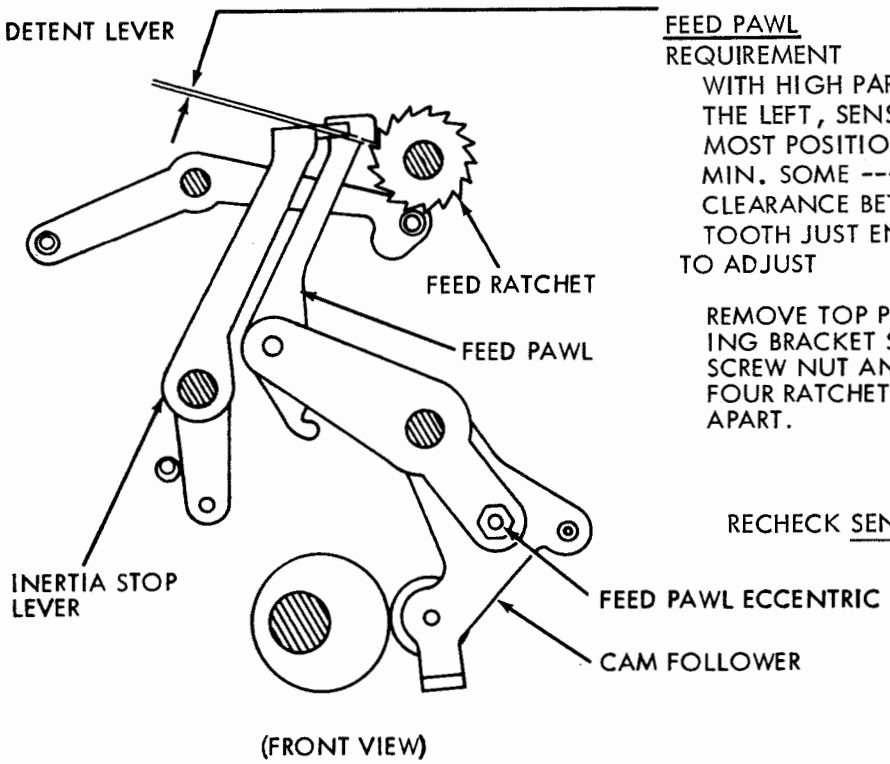




FEEDWHEEL DETENT SPRING

REQUIREMENT

WITH TOP PLATE REMOVED, UNIT IN STOP POSITION:
MIN. 21 OZS. --- MAX. 25 OZS.
TO MOVE ROLLER AWAY FROM RATCHET.



(FRONT VIEW)

FEED PAWL

REQUIREMENT

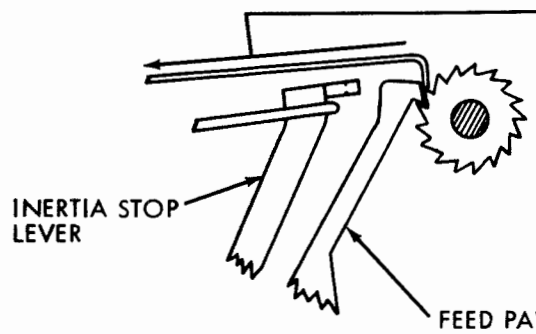
WITH HIGH PART OF FEED PAWL ECCENTRIC TO THE LEFT, SENSING FINGERS IN LOWER-MOST POSITION.
MIN. SOME --- MAX. 0.003 INCH CLEARANCE BETWEEN FEED PAWL AND RATCHET TOOTH JUST ENGAGED.

TO ADJUST

REMOVE TOP PLATE BY LOOSENING ITS MOUNTING BRACKET SCREWS. LOOSEN ECCENTRIC SCREW NUT AND ROTATE SCREW. RECHECK AT FOUR RATCHET TEETH APPROXIMATELY 90 DEGREES APART.

NOTE

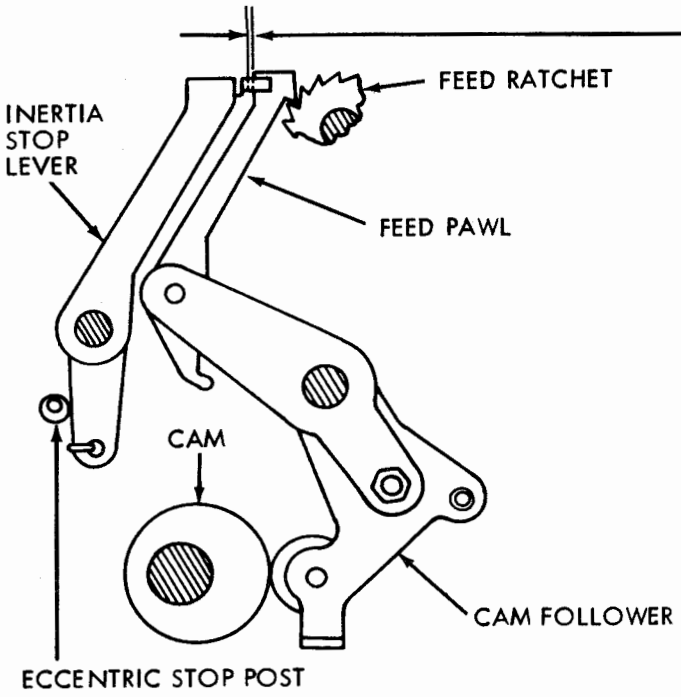
RECHECK SENSING BAIL ADJUSTMENT.



FEED PAWL SPRING

REQUIREMENT

WITH FEED PAWL IN UPPERMOST POSITION AND INERTIA STOP LEVER HELD AWAY:
MIN. 1 OZ. --- MAX. 5 OZS.
TO START FEED PAWL MOVING AWAY FROM FEED RATCHET.



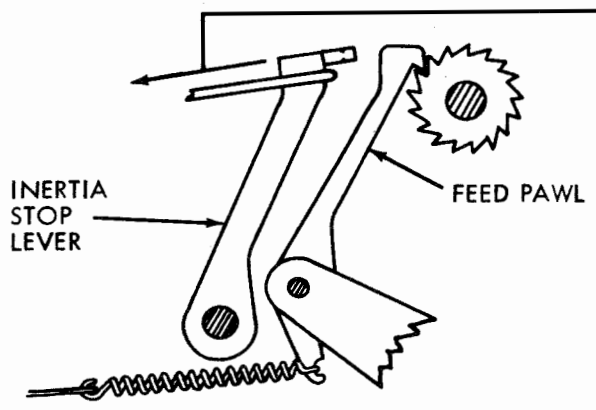
(VIEWED FROM FRONT)

INERTIA STOP LEVER

REQUIREMENT

WITH FEED PAWL IN LOWERMOST POSITION:
MIN. SOME --- MAX. 0.012 INCH CLEARANCE BETWEEN NOTCH IN INERTIA STOP LEVER AND FEED PAWL.

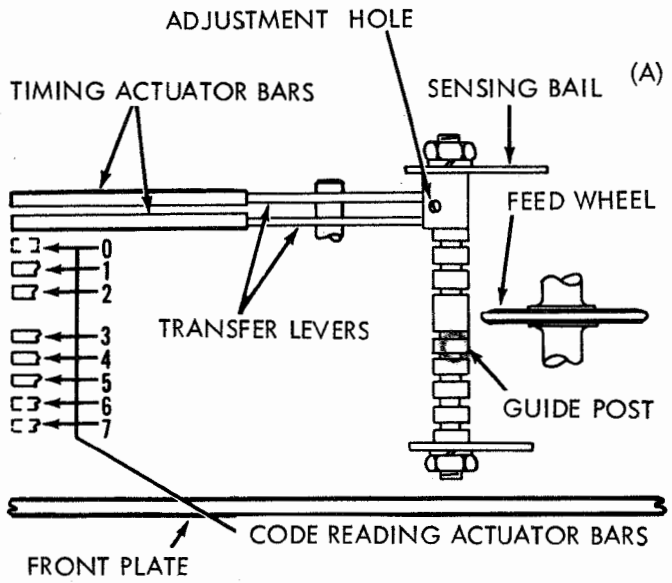
TO ADJUST
REMOVE TOP PLATE BY LOOSENING ITS MOUNTING SCREWS. WITH ECCENTRIC STOP POST NUT FRICTION TIGHT, ROTATE STOP POST TO MEET REQUIREMENT.



INERTIA STOP LEVER SPRING

REQUIREMENT

WITH UNIT IN STOP POSITION:
MIN. 1 OZ. --- MAX. 5 OZS.
TO PULL INERTIA STOP LEVER AWAY FROM FEED PAWL.



(TOP VIEW)

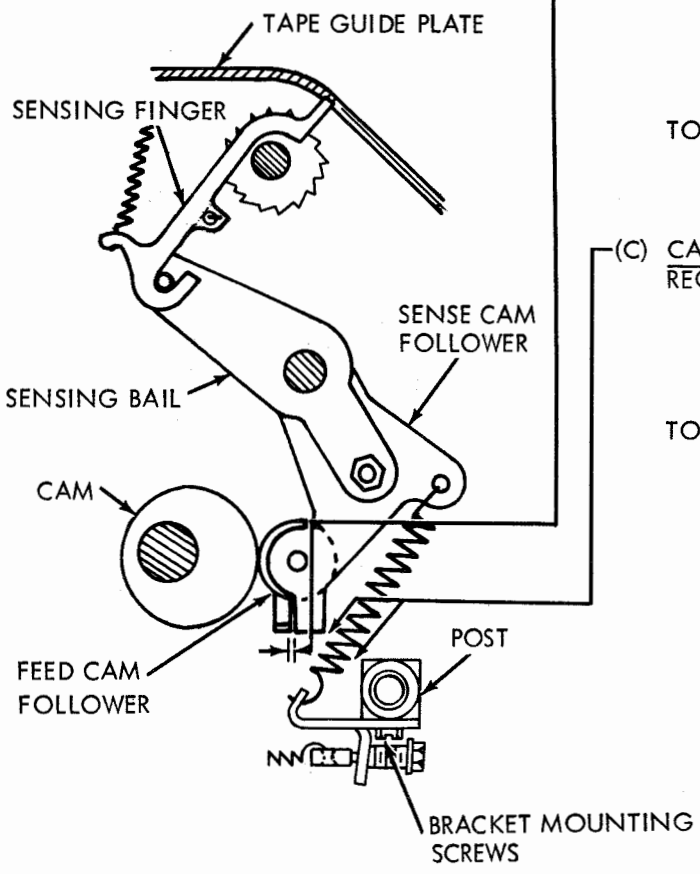
(A) TIMING (UNIVERSAL) CONTACT ACTUATOR

REQUIREMENT

WITH STRAIGHT EDGE ALONG LEFT ENDS OF ACTUATOR BARS, TIMING ACTUATOR BARS SHOULD BE IN LINE WITH CODE READING ACTUATOR BARS. WHEN MAIN SHAFT IS ROTATED, TIMING ACTUATOR BARS SHOULD START TO MOVE WITH CODE READING ACTUATOR BARS.

TO ADJUST

LOOSEN NUTS WHICH SECURE GUIDE POST TO SENSING BAIL. ROTATE POST TO MEET REQUIREMENT.



(B) SENSE CAM FOLLOWER

REQUIREMENT

WITH FEED CAM FOLLOWER ON HIGH PART OF CAM, THERE SHOULD BE SOME CLEARANCE BETWEEN TABS ON FEED CAM FOLLOWER AND SENSE CAM FOLLOWER.

TO ADJUST

BEND TAB ON SENSE CAM FOLLOWER TO MEET REQUIREMENT.

(C) CAM FOLLOWER SPRING CLEARANCE

REQUIREMENT

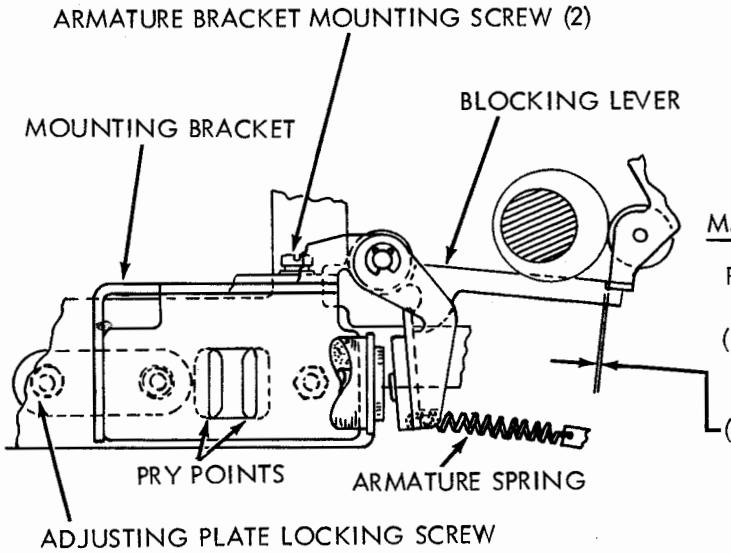
CLEARANCE OF CAM FOLLOWER SPRINGS BETWEEN CAM FOLLOWERS AND POST SHOULD BE APPROXIMATELY EQUAL.

TO ADJUST

WITH FEED CAM FOLLOWER ON HIGH PART OF CAM AND MOUNTING BRACKET SCREWS FRICTION TIGHT, POSITION BRACKET TO MEET REQUIREMENT. TIGHTEN MOUNTING BRACKET SCREWS.

NOTE

ROTATE CAM SHAFT ONE REVOLUTION TO INSURE THAT CAM FOLLOWERS OR POST DO NOT INTERFERE WITH SPRINGS.



(VIEWED FROM FRONT)

MAGNET ASSEMBLY

REQUIREMENT

(1) WITH MAGNET ENERGIZED, ARMATURE SHOULD CONTACT AND BE FLUSH WITH CORE FACES.

(2) WITH MAGNET DE-ENERGIZED, FOLLOWERS ON HIGH POINT OF CAMS:
MIN. 0.005 INCH --- MAX. 0.008 INCH CLEARANCE BETWEEN BLOCKING SURFACE OF BLOCKING LEVER AND FEED CAM FOLLOWER.

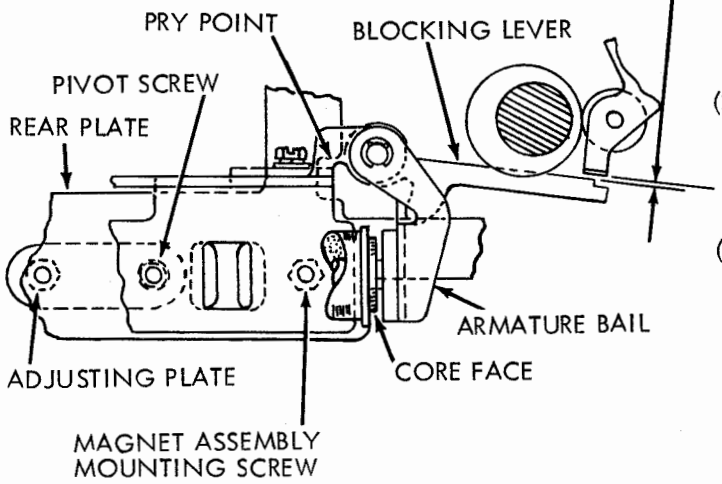
(3) WITH MAGNET ENERGIZED, FOLLOWERS ON LOW POINT OF CAMS:
MIN. 0.005 INCH --- MAX. 0.010 INCH CLEARANCE BETWEEN TOP SURFACE OF BLOCKING LEVER AND FEED CAM FOLLOWER AT CLOSEST POINT.

TO ADJUST

(1) REMOVE MAGNET ASSEMBLY FROM UNIT. WITH ARMATURE BRACKET MOUNTING SCREWS LOOSENED, POSITION ARMATURE, TIGHTEN SCREWS, REPLACE ASSEMBLY.

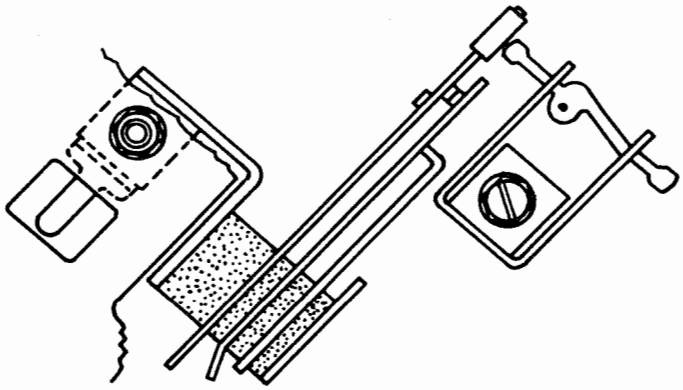
(2) WITH ASSEMBLY MOUNTING SCREWS AND LOCKING SCREW FRICTION TIGHT, POSITION ASSEMBLY BY MEANS OF PRY POINTS TO MEET (2) ABOVE. TIGHTEN LOCKING SCREW.

(3) WITH PIVOT SCREW FRICTION TIGHT, POSITION ASSEMBLY BY MEANS OF PRY POINT TO MEET (3) ABOVE.



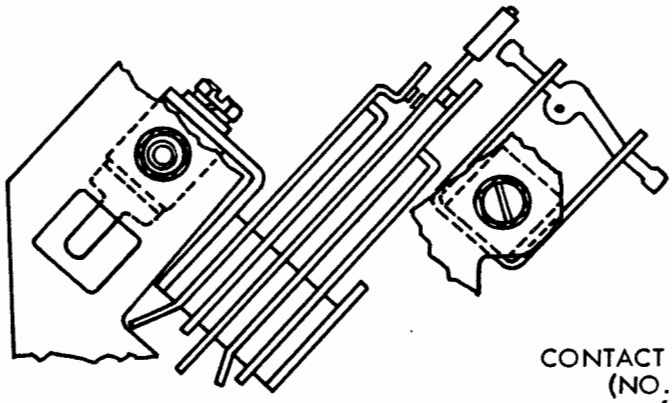
(VIEWED FROM FRONT)

ADJUSTMENTS (D), (E) AND (F-2) APPLY TO TRANSFER TYPE CONTACT ASSEMBLIES ONLY; ALL OTHER ADJUSTMENTS APPLY TO BOTH TRANSFER TYPE AND MAKE ONLY TYPE CONTACT ASSEMBLIES. ADJUSTMENTS (A) THROUGH (E) ARE PRELIMINARY. PRELIMINARY ADJUSTMENTS SHOULD BE MADE WITH THE CONTACT ASSEMBLY REMOVED FROM THE READER. FOR EACH ADJUSTMENT, START WITH THE CONTACT PILE-UP FARTHEST FROM THE BENDING TOOL HANDLE TO AVOID DISTURBING COMPLETED ADJUSTMENTS.



MAKE-ONLY TYPE CONTACT ASSEMBLY

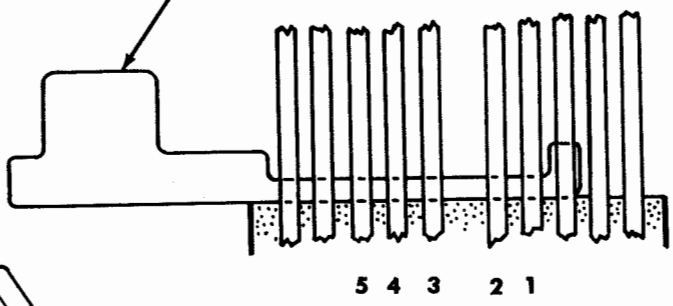
(FRONT VIEW)



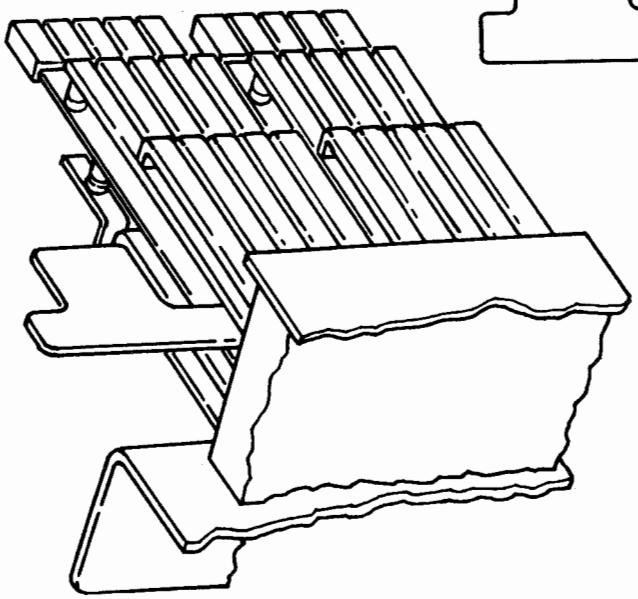
TRANSFER TYPE CONTACT ASSEMBLY

(FRONT VIEW)

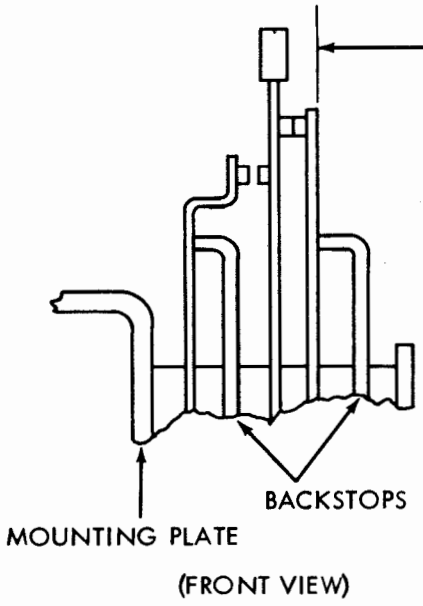
CONTACT SPRING BENDER
(NO. 172060)



(TOP VIEW - FROM LEFT SIDE)



(BOTTOM VIEW - FROM LEFT SIDE)



(FRONT VIEW)

(A)

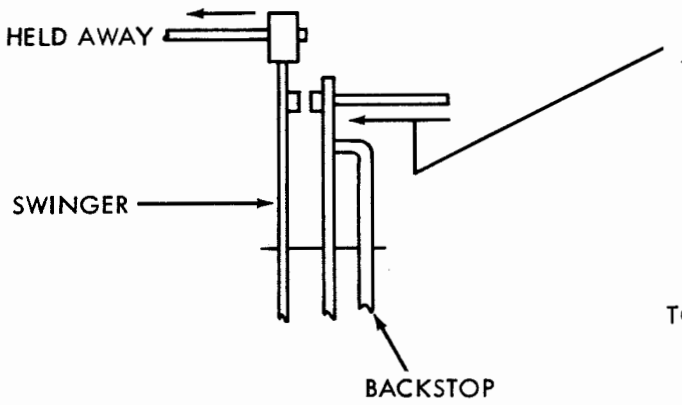
BACKSTOP - NORMALLY CLOSED CONTACT

REQUIREMENT

NORMALLY CLOSED CONTACT LEAVES SHOULD BE PARALLEL TO MOUNTING PLATE AND IN LINE WITH EACH OTHER.

TO ADJUST

BEND BACKSTOP. GAUGE BY EYE.



(B)

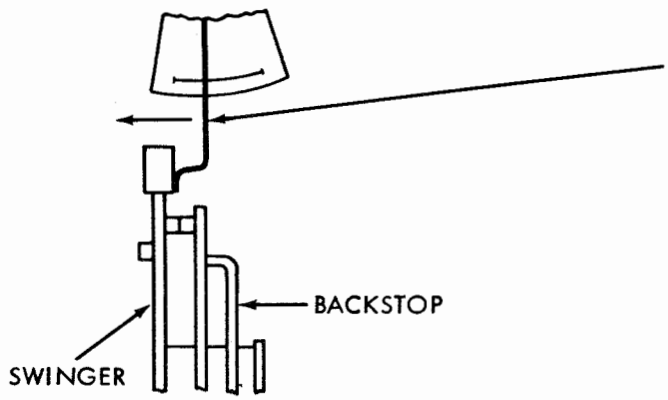
SPRING TENSION - NORMALLY CLOSED CONTACT AGAINST BACKSTOP

REQUIREMENT

MIN. 3 OZS. --- MAX. 6 OZS. TO MOVE STATIONARY LEAF AWAY FROM BACKSTOP.

TO ADJUST

BEND STATIONARY LEAF AND, IF NECESSARY, BEND BACKSTOP AWAY FROM LEAF AND FORM LEAF TO INCREASE TENSION. REPOSITION BACKSTOP TO MEET (A) ABOVE.



(C)

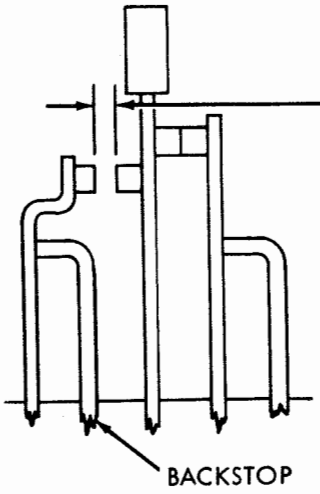
SPRING TENSION - NORMALLY CLOSED CONTACT

REQUIREMENT

MIN. 25 GRAMS --- MAX. 35 GRAMS TO OPEN CONTACT.

TO ADJUST

BEND SWINGER.



(FRONT VIEW)

(D)

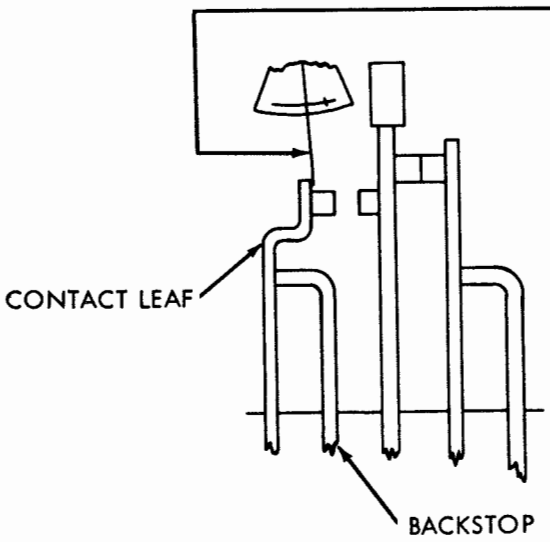
NORMALLY OPEN CONTACT

REQUIREMENT

MIN. 0.010 INCH --- MAX. 0.015 INCH GAP BETWEEN CONTACTS.

TO ADJUST

BEND BACKSTOP.



(FRONT VIEW)

(E)

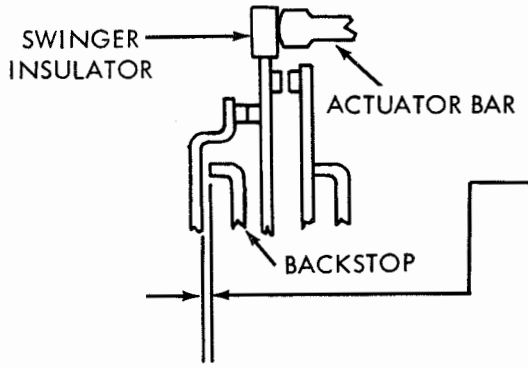
SPRING TENSION - NORMALLY OPEN CONTACT

REQUIREMENT

MIN. 30 GRAMS --- MAX. 40 GRAMS TO MOVE CONTACT FROM BACKSTOP.

TO ADJUST

BEND CONTACT LEAF. IF NECESSARY, BEND BACKSTOP AWAY FROM LEAF TO INCREASE TENSION; THEN REPOSITION BACKSTOP TO MEET REQUIREMENT (D).



(FRONT VIEW)

NOTE

FOLLOWING ADJUSTMENTS TO BE MADE WITH CONTACT ASSEMBLY MOUNTED ON UNIT.

(F)

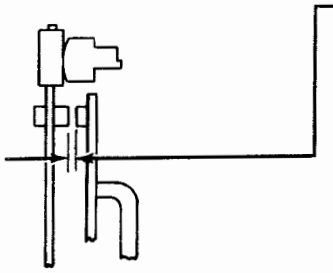
CONTACT INSTALLATION

(3) REQUIREMENT

(a) TRANSFER TYPE CONTACT ASSEMBLY WITH BLANK TAPE IN UNIT, SENSING CAM FOLLOWER ON LOW POINT OF CAM:
MIN. SOME --- MAX. 0.005 INCH
CLEARANCE BETWEEN NORMALLY OPEN CONTACTS AND BACKSTOP.

TO ADJUST

BEND NORMALLY OPEN CONTACT BACKSTOPS. CHECK AFFECTED TENSIONS (SEE PAGES 18 AND 19).



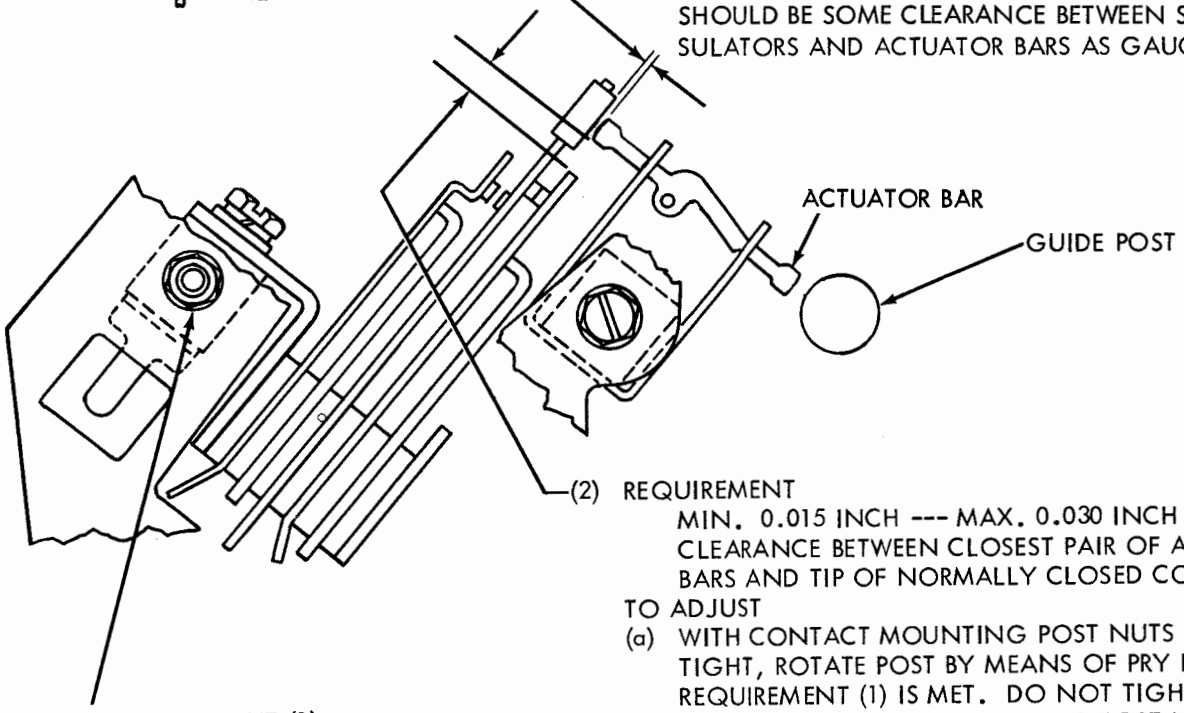
(b) MAKE ONLY TYPE CONTACT ASSEMBLY
MIN. 0.005 INCH
GAP BETWEEN NORMALLY CLOSED CONTACTS.

TO ADJUST

REFINE REQUIREMENT (1).

(1) REQUIREMENT

WITH MAGNET ENERGIZED, NO TAPE IN UNIT, AND SENSING FINGERS IN UPPERMOST POSITION, THERE SHOULD BE SOME CLEARANCE BETWEEN SWINGER INSULATORS AND ACTUATOR BARS AS GAUGED BY EYE.



(2) REQUIREMENT

MIN. 0.015 INCH --- MAX. 0.030 INCH
CLEARANCE BETWEEN CLOSEST PAIR OF ACTUATOR BARS AND TIP OF NORMALLY CLOSED CONTACTS.

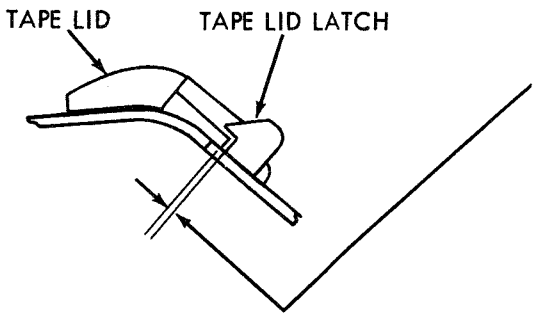
TO ADJUST

(a) WITH CONTACT MOUNTING POST NUTS FRICTION TIGHT, ROTATE POST BY MEANS OF PRY POINT UNTIL REQUIREMENT (1) IS MET. DO NOT TIGHTEN NUTS.

(b) WITH ACTUATOR BAR MOUNTING POST NUTS FRICTION TIGHT, ROTATE POST UNTIL REQUIREMENT (2) IS MET. TIGHTEN THESE NUTS. REFINE REQUIREMENT (1), AND TIGHTEN THE CONTACT MOUNTING POST NUTS.

NOTE

TO MEET REQUIREMENT, IT MAY BE NECESSARY TO BEND NORMALLY CLOSED CONTACT BACKSTOPS. IF THIS IS DONE, CHECK AFFECTED TENSIONS (SEE PAGES 18 AND 19).



(FRONT VIEW)

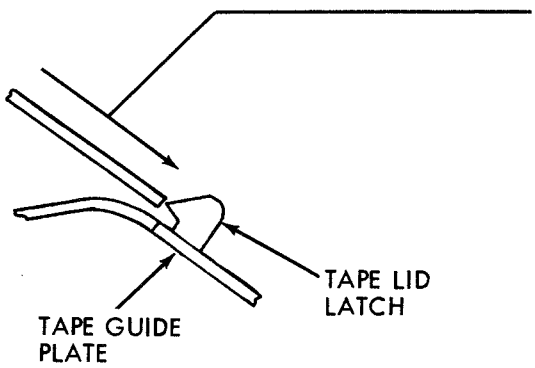
TAPE LID LATCH (EARLY DESIGN)

REQUIREMENT

WITH TAPE LID HELD CLOSED:
MIN. SOME --- MAX. 0.015 INCH
CLEARANCE BETWEEN LEFT EDGE OF LATCH
AND TAPE LID.

TO ADJUST

POSITION LATCH WITH ITS MOUNTING
SCREWS LOOSENED.



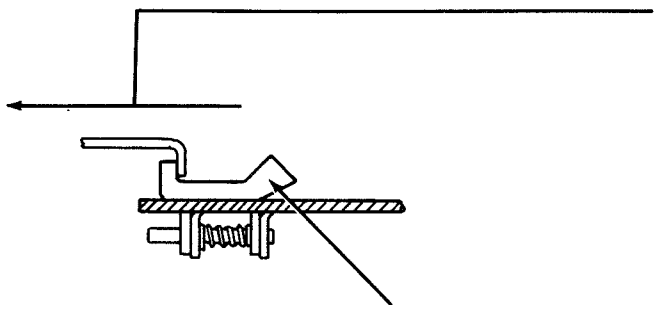
TAPE LID LATCH SPRING (EARLY DESIGN)

TO CHECK

HOLD TAPE LID IN LATCHED POSITION.

REQUIREMENT

MIN. 4-1/2 OZS. --- MAX. 7-1/2 OZS.
TO START LATCH MOVING.



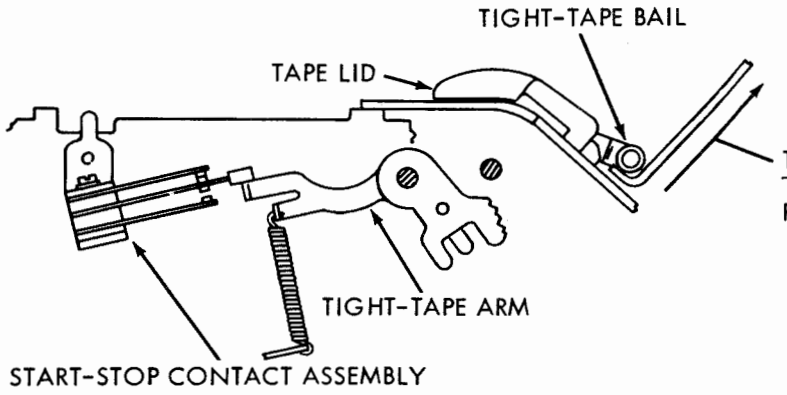
TAPE LID LATCH SPRING (LATE DESIGN)

TO CHECK

OPEN TAPE LID.

REQUIREMENT

MIN. 9 OZ. --- MAX. 15 OZS.
TO START LATCH MOVING.

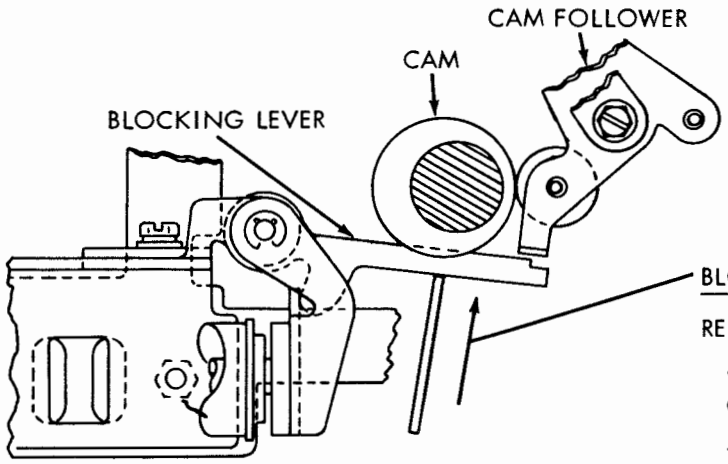


(VIEWED FROM FRONT)

TIGHT-TAPE ARM SPRING

REQUIREMENT

WITH UNIT IN RUN POSITION AND TAPE LID LATCHED:
MIN. 1 OZS. --- MAX. 3-1/2 OZS.
TO OPEN BOTTOM START-STOP CONTACTS.

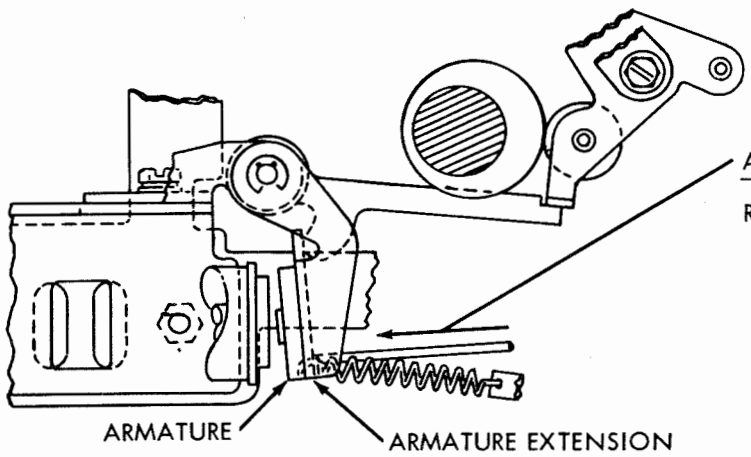


(VIEWED FROM FRONT)

BLOCKING LEVER SPRING

REQUIREMENT

WITH UNIT RESTING ON REAR PLATE, FOLLOWERS ON LOW POINT OF CAMS:
MIN. 1/2 OZ. --- MAX. 1-1/2 OZS.
TO START BLOCKING LEVER MOVING.

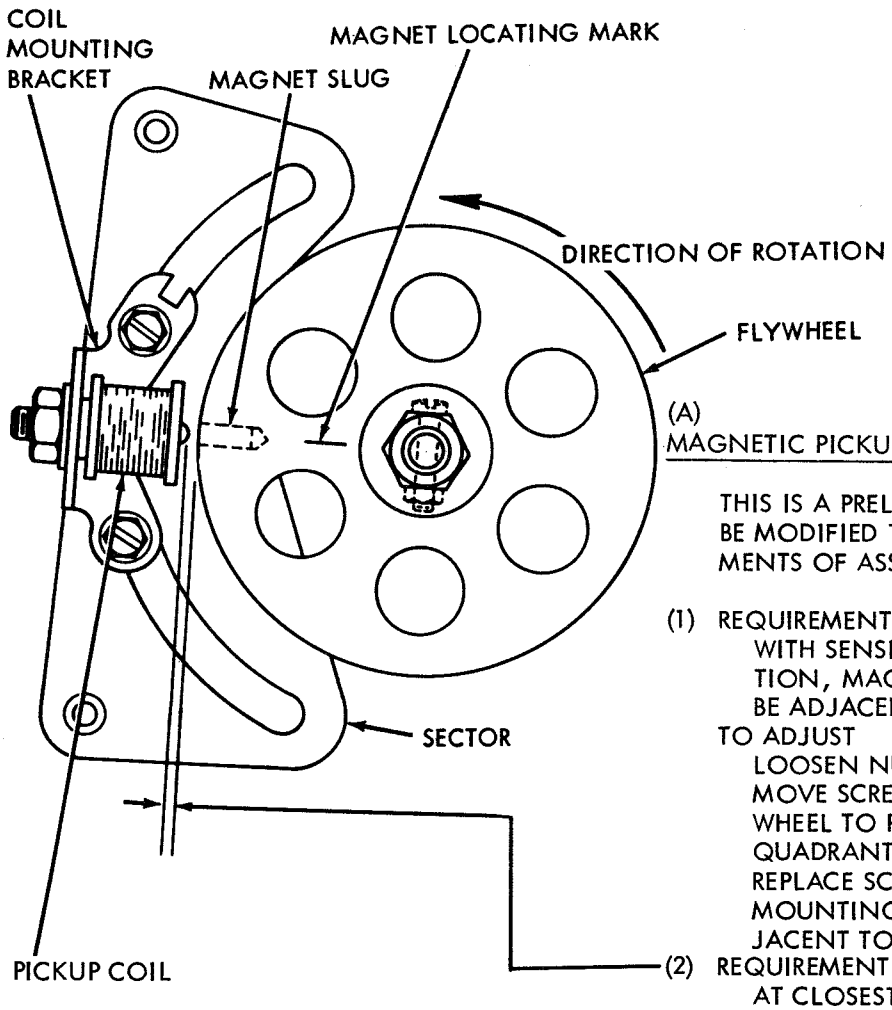


(VIEWED FROM FRONT)

ARMATURE SPRING

REQUIREMENT

MIN. 28 OZS. --- MAX. 32 OZS.
TO HOLD ARMATURE AGAINST CORE FACES.

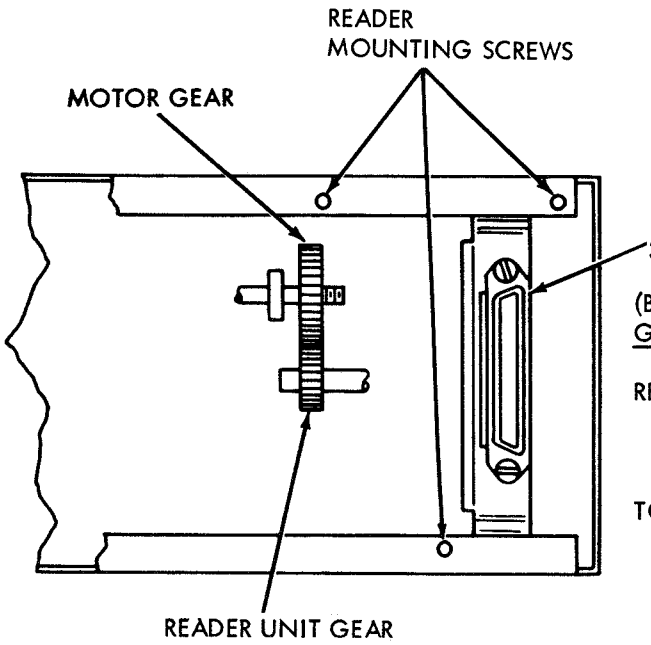


(A)
MAGNETIC PICKUP

NOTE
THIS IS A PRELIMINARY ADJUSTMENT. IT SHOULD BE MODIFIED TO MEET SPECIFIC TIMING REQUIREMENTS OF ASSOCIATED APPARATUS.

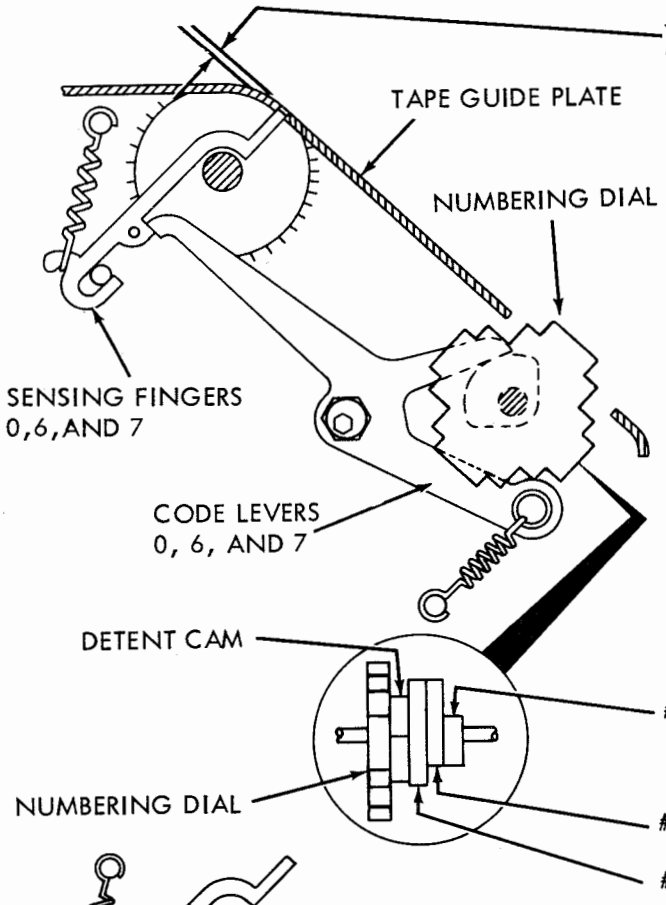
(1) REQUIREMENT
WITH SENSING FINGERS IN UPPERMOST POSITION, MAGNET SLUG IN FLYWHEEL SHOULD BE ADJACENT TO PICKUP COIL CORE.
TO ADJUST
LOOSEN NUT ON END OF MAIN SHAFT. REMOVE SCREW FROM SHAFT. POSITION FLYWHEEL TO PLACE MAGNET SLUG IN SAME QUADRANT AS COIL. TIGHTEN NUT AND REPLACE SCREW. LOOSEN COIL BRACKET MOUNTING SCREWS, POSITION COIL ADJACENT TO MAGNET SLUG.

(2) REQUIREMENT
AT CLOSEST POINT BETWEEN MAGNET SLUG AND PICKUP COIL CORE, CLEARANCE SHOULD BE:
MIN. 0.003 INCH --- MAX. 0.006 INCH
TO ADJUST
LOOSEN SCREWS HOLDING PICKUP BRACKET TO SECTOR AND APPROXIMATELY CENTER PRY POINT. TIGHTEN UPPER SCREW FRICTION TIGHT. POSITION BRACKET TO MAKE A ROUGH ADJUSTMENT. TIGHTEN LOWER SCREW. LOOSEN UPPER SCREW AND REFINE ADJUSTMENT.



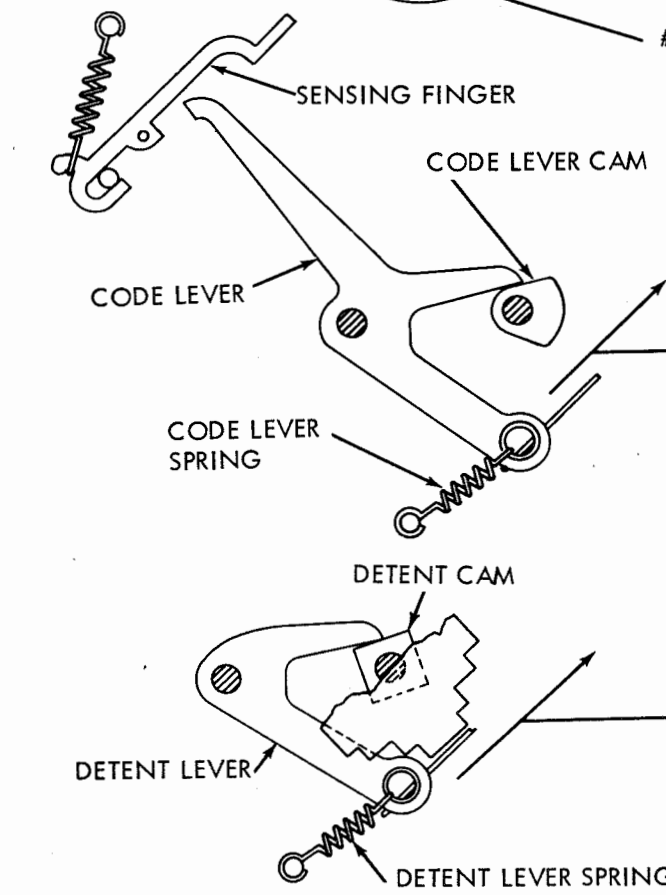
(B)
GEAR MESH

REQUIREMENT
BARELY PERCEPTIBLE BACKLASH BETWEEN READER GEAR AND MOTOR GEAR MEASURED AT FOUR POINTS AROUND MOTOR GEAR.
TO ADJUST
POSITION READER WITH ITS MOUNTING SCREWS LOOSENED. IF REQUIREMENT CANNOT BE MET, LOOSEN MOTOR MOUNTING SCREWS AND POSITION MOTOR ALSO.



TO CHECK
TRIP CLUTCH AND ROTATE CAM UNTIL SENSING FINGERS ARE IN THEIR UPPERMOST POSITION.
REQUIREMENT
WITH NUMBERING DIAL DETENTED IN NUMBER 5 POSITION, SENSING FINGERS 0, 6, AND 7 SHOULD BE BELOW TAPE GUIDE PLATE:
MIN. 0.005 INCH --- MAX. 0.010 INCH
TO ADJUST
LOOSEN ECCENTRIC LEVER POST NUT FRICTION TIGHT. INSERT ALLEN WRENCH INTO POST SOCKET AND ROTATE POST.

NOTE
IDENTIFYING SLOT ON LEVER ECCENTRIC POST SHOULD BE IN THE ONE TO FIVE O'CLOCK QUADRANT.



UNIVERSAL CODE LEVER SPRING

TO CHECK
REMOVE TOP PLATE.
REQUIREMENT (EACH SPRING)
WHEN CODE LEVERS ARE ON LOW PART OF THEIR RESPECTIVE CAMS:
MIN. 1 OZ. --- MAX. 3 OZS.
TO START LEVERS MOVING.

UNIVERSAL DETENT LEVER SPRING

TO CHECK
REMOVE TOP PLATE
REQUIREMENT
MIN. 20 OZS. --- MAX. 30 OZS.
TO SEPARATE DETENT LEVER FROM ITS CAM.