38 TAPE READER

ADJUSTMENTS

CONTENTS PAGE

1. GENERAL

1.01 This section provides adjustment information for model 38 tape reader which incorporates a single step feature. When adjustments are made, related adjustments should be checked.

1.02 Before proceeding with any adjustment, read the serviceable portion of the adjusting text carefully. After adjustment is completed, make sure to tighten any screws or nuts that may have been loosened during adjustment procedure.

1.03 Spring tension values are scale readings which should be obtained when proper scales are used. Springs not meeting specified requirements should be replaced (except when an adjustment is indicated).

1.04 Tools required to perform adjustments are contained in 185830 tool kit and are listed in Maintenance Tool Section 570-005-800TC. Special tools, 180993 bending tool, 110445 spring bender, and 183103 tool are required specifically for the model 38 set.

1.05 To provide a universal method of adjustment identification, alpha-numeric adjustment codes (example RRA-1 — Reader Area, sequence number 1) are used to supplement adjustment titles. All adjustment clearances are in inches, and all spring tensions are in ounces unless otherwise specified.

NOTE: Requirements that specify the armature in the attracted position can be accomplished with motor power turned off and the trip magnet armature manually engaged.

CAUTION 1: DISCONNECT POWER CABLE BEFORE PROCEEDING WITH ADJUSTMENTS.

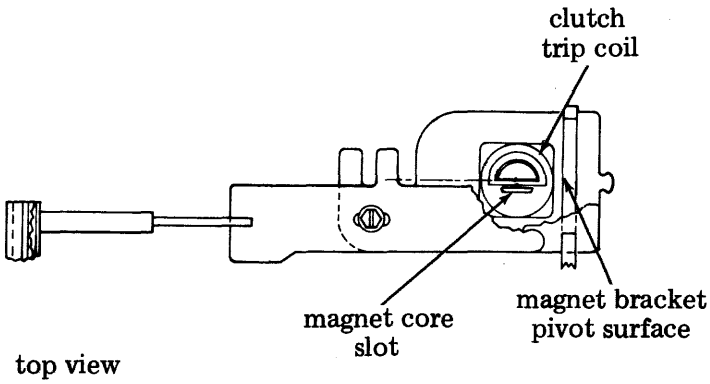
CAUTION 2: HIGH VOLTAGE FOR FEED MAGNET AND TRIP MAGNET WILL CONTINUE FROM POWER PACK FOR APPROXIMATELY 10 SECONDS AFTER POWER CABLE IS DISCONNECTED.

2. BASIC UNIT

MAGNET CORE

Requirement — Magnet core slot to be perpendicular to magnet bracket pivot surface (gauge by eye).

Adjust — Loosen trip coil mounting screw.
Position clutch trip coil.
Tighten screw.



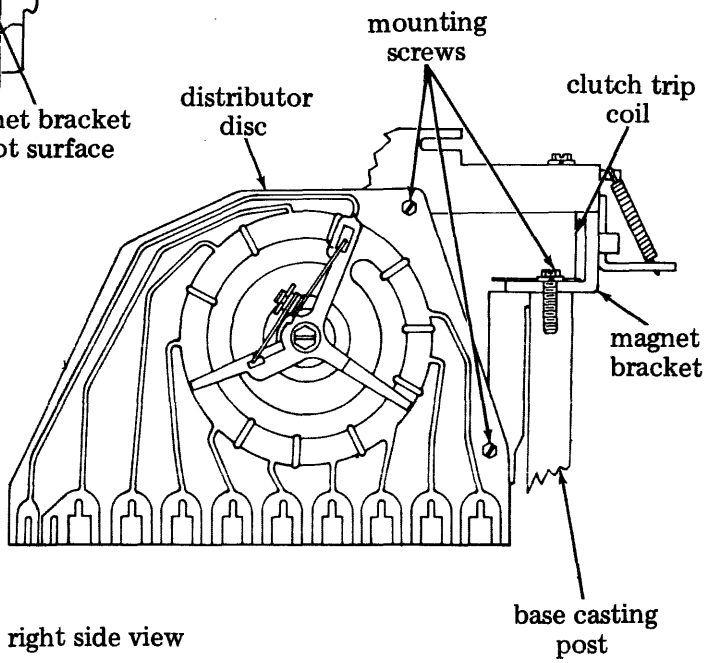
top view

TRIP MAGNET

Requirement — Magnet bracket to be positioned on base casting post as far forward and to the left as possible.

Adjust — Position magnet bracket with three mounting screws loosened.
Tighten screws.

"Adjust" affects:
TRIP LEVER OVERTRAVEL (RRA-1)
CONTACT GAP (RRA-4)
ARMATURE EXTENSION (RRA-2)



right side view

TRIP LEVER OVERTRAVEL (RRA-1)

- Armature in unattracted position.
- Cam roller on high part of trip lever cam.
- Take up and release play in armature extension pivot to rear of reader.

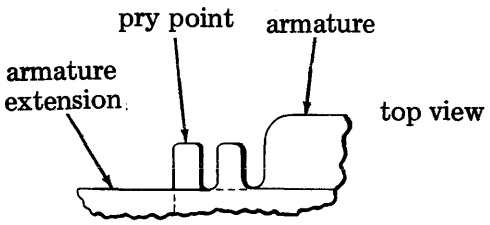
Requirement — 0.010 to 0.030 between end of armature extension and latching surface of trip lever.

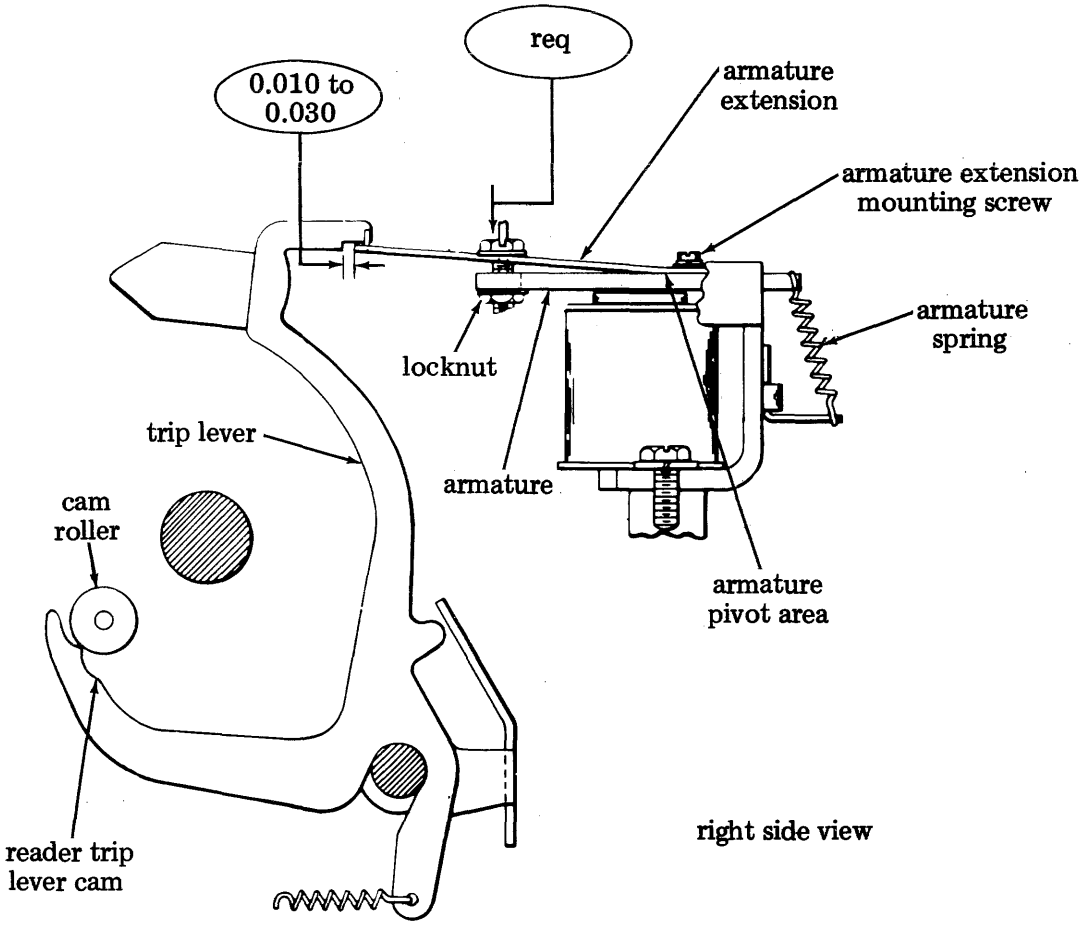
Adjust — Loosen armature extension mounting screw (friction tight). Use pry points to position armature extension and meet requirement. Tighten mounting screw.

TRIP MAGNET ARMATURE SPRING

- Armature in unattracted position.
- Cam roller on high part of trip lever cam.

Requirement — 2 to 4 to start armature moving.





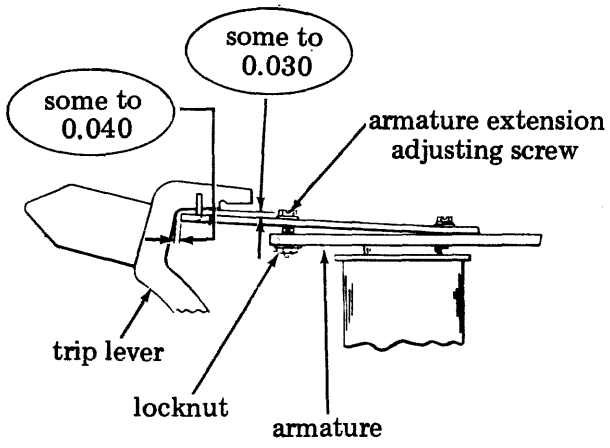
ARMATURE EXTENSION (RRA-2)

- Place distributor clutch in stop position.
- Hold armature in attracted position.
- Rotate distributor clutch for requirement.

Requirement 1 — Some to 0.040 between end of armature extension and trip lever.

Requirement 2 — Some to 0.030 vertical clearance between armature extension and trip lever at closest point.

Adjust — Loosen extension adjusting screw locknut.
Position armature extension with adjusting screw to meet requirement.
Tighten locknut.



right side view

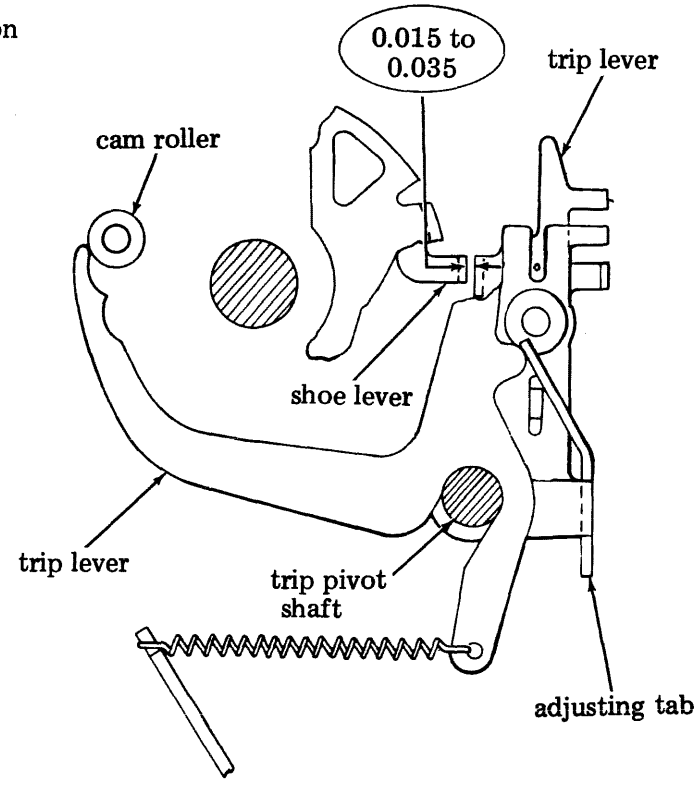
CLUTCH TRIP LEVER (RRA-3)

- Trip distributor clutch by momentarily holding armature in its attracted position.
- Rotate main shaft until upper edge of shoe lever is in line with upper edge of trip lever.

Requirement — 0.015 to 0.035 between clutch shoe release lever and clutch trip lever.

Adjust — Bend (with bending tool 180993) clutch trip bail adjusting tab keeping plane of tab parallel to axis of trip shaft (gauge by eye).

"Adjust" affects:
TRIP LEVER ENGAGEMENT (DBA-6)
(Section 574-422-700TC)



right side view

CONTACT GAP (RRA-4)

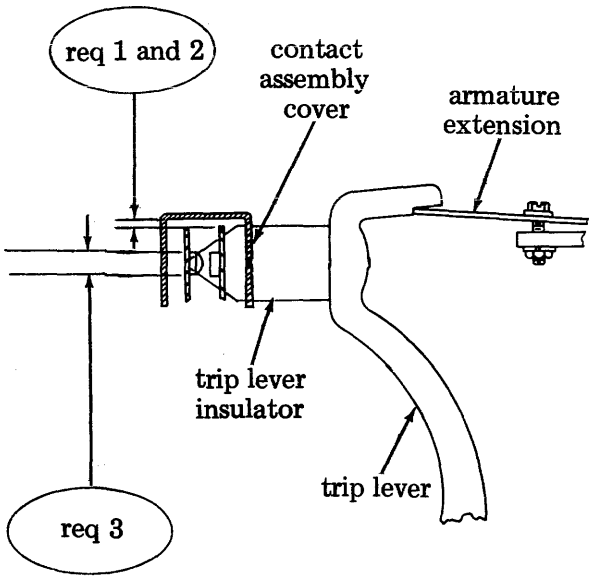
- Armature in unattracted position.
- Distributor clutch in stop position.
- Place trip lever in the center of armature extension.

Requirement 1 — Some clearance between contact springs and contact assembly cover.

Requirement 2 — Some clearance between trip lever insulator and cover.

Requirement 3 — Contacts must be in line (gauge by eye).

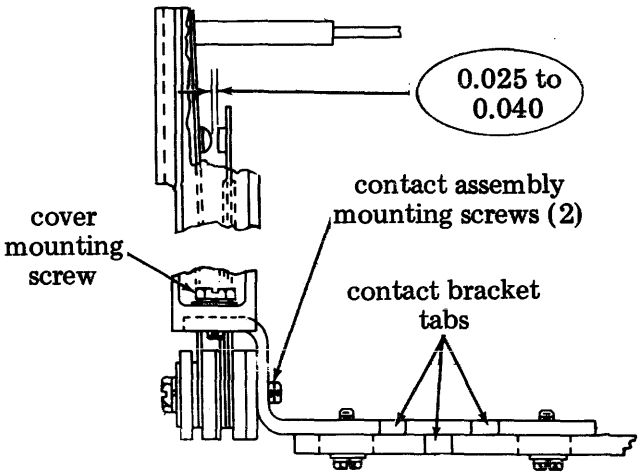
Adjust — Loosen cover mounting screw and two contact assembly mounting screws. Postion contact springs and cover to meet requirement.
Tighten screws.



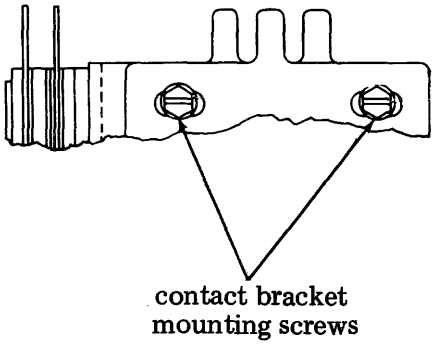
right side view

Requirement 4 — 0.025 to 0.040 gap between contacts.

Adjust — Loosen two contact bracket mounting screws friction tight.
Insert blade of screwdriver between pry points.
Position contact bracket to meet requirement.
Tighten screws.



top view

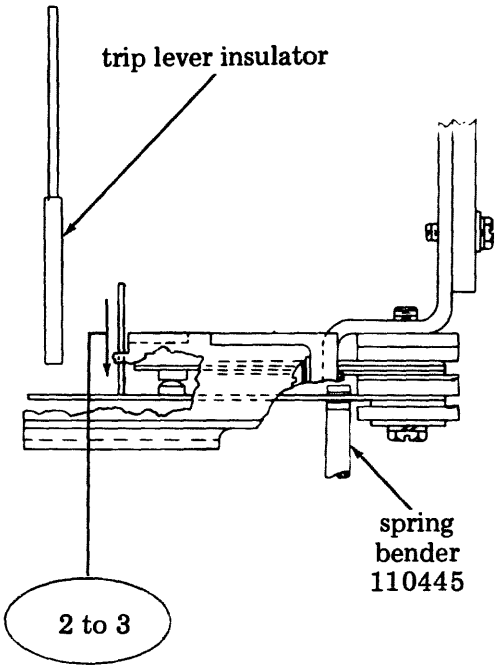


FEED MAGNET CONTACT SPRING

- Trip lever insulator not contacting swinger contact spring.

  Requirement — 2 to 3 to open contacts.

  Adjust — Bend swinger spring near insulators with spring bender 110445.

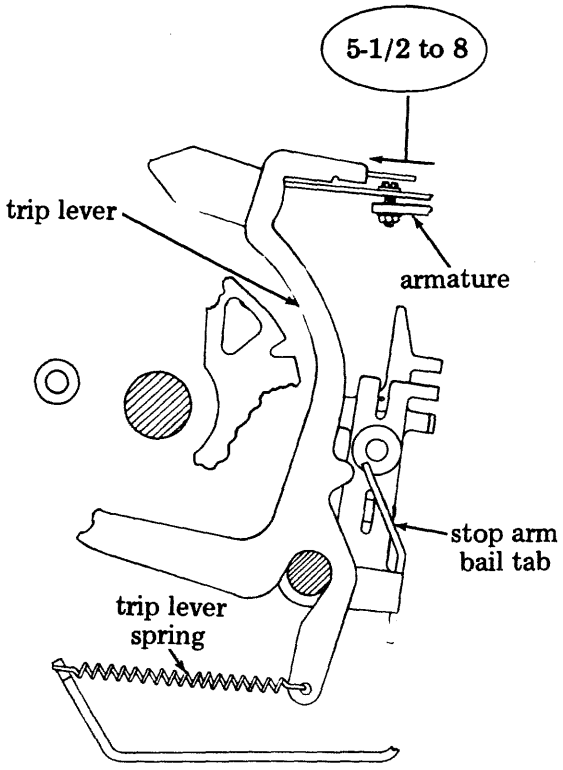


top view

TRIP LEVER SPRING

- Place distributor clutch in stop position.
- Armature in attracted position.
- Stop arm bail tab not contacting trip lever.

  Requirement — 5-1/2 to 8 to start trip lever moving.



right side view

DETENT LEVER (RRA-5)

- Move control lever to its FREE position.
- Rotate feed wheel in direction of tape travel to where feed wheel pins are at their maximum advance position with respect to the sensing pins.

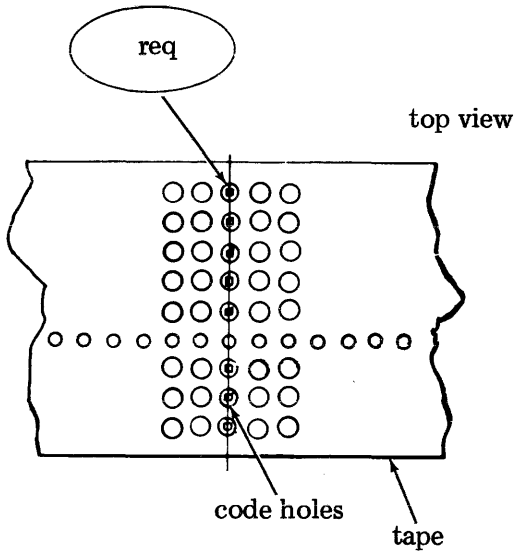
Requirement — Sensing pin tips must be centrally located in code holes of all-marking code punched tape.

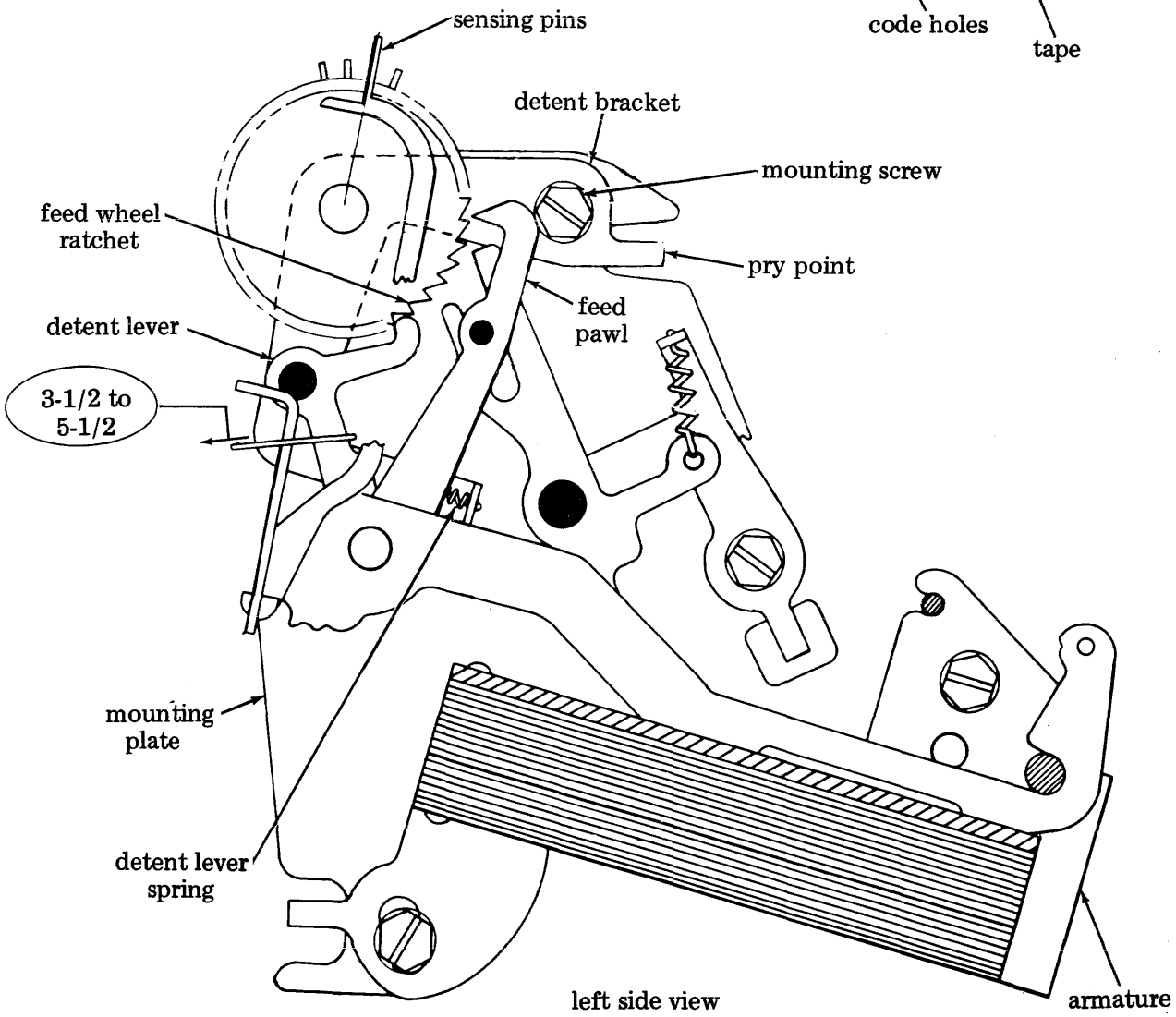
Adjust — Loosen detent bracket mounting screw friction tight.
With screwdriver between pry points, position detent bracket to meet requirement.

"Adjust" affects:
FEED PAWL (RRA-6)
BLOCKING PAWL (RRA-7)

DETENT SPRING

Requirement — 3-1/2 to 5-1/2 to start detent moving.





FEED PAWL (RRA-6)

- Place armature in unattracted position.
- Check for some clearance between the blocking pawl and ratchet tooth. If some clearance is not present provide some clearance with the BLOCKING PAWL (RRA-7) adjustment.
- Rotate ratchet to a position that provides the least clearance between feed pawl and ratchet tooth.

  Requirement 1 — Some to 0.008 between feed pawl and ratchet tooth and a total of 5 ratchet teeth between detent and feed pawl.

  Adjust — Place armature in unattracted position.
  Loosen three bracket mounting screws.
  Insert screwdriver between pry points and position the magnet bracket to meet requirement.
  Tighten mounting screws.

- Place armature in attracted position.

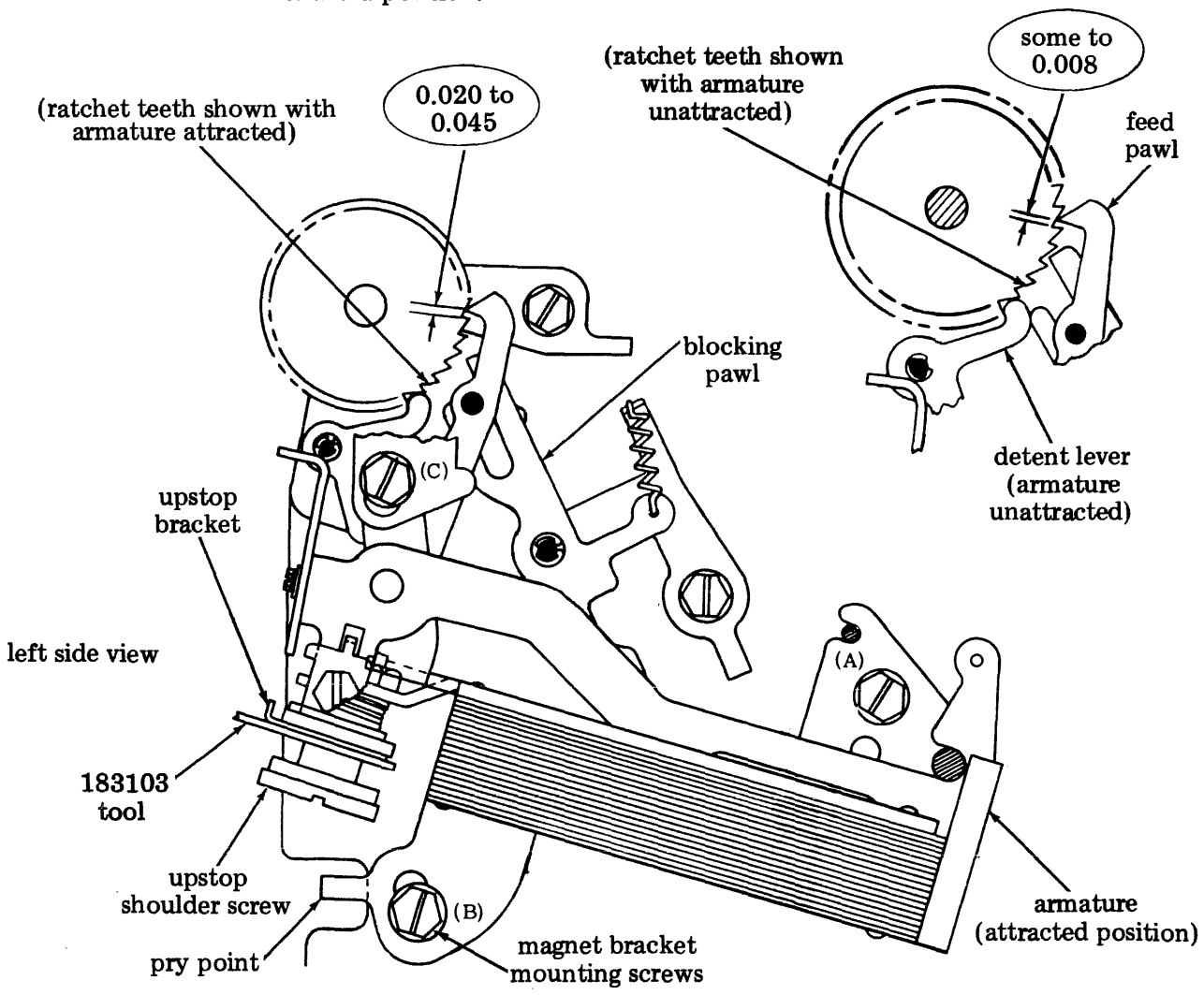
  Requirement 2 — 0.020 to 0.045 between feed pawl and ratchet tooth and a total of 6 ratchet teeth between detent and feed pawl.

  Adjust — Place armature in attracted position.
  Loosen two bracket mounting screws so that upstop bracket is free to move.
  Insert 183103 tool between upstop bracket and shoulder of upstop shoulder screw.
  Tighten mounting screws. Remove tool.

NOTE: Tighten magnet bracket mounting screws A and B first. Rotate vibration damper plate up until lower finger contacts the contact block extension. Continue rotating damper plate until play in block is just removed.

"Adjust" affects:
BLOCKING PAWL (RRA-7)
SENSING PIN (RRA-8)

"Requirement" affected by:
TRIP LEVER OVERTRAVEL (RRA-1)



UPSTOP SPRING

Requirement — 14 to 20 to start upstop bushing moving with armature spring post removed from its slot in magnet bracket.

BLOCKING PAWL (RRA-7)

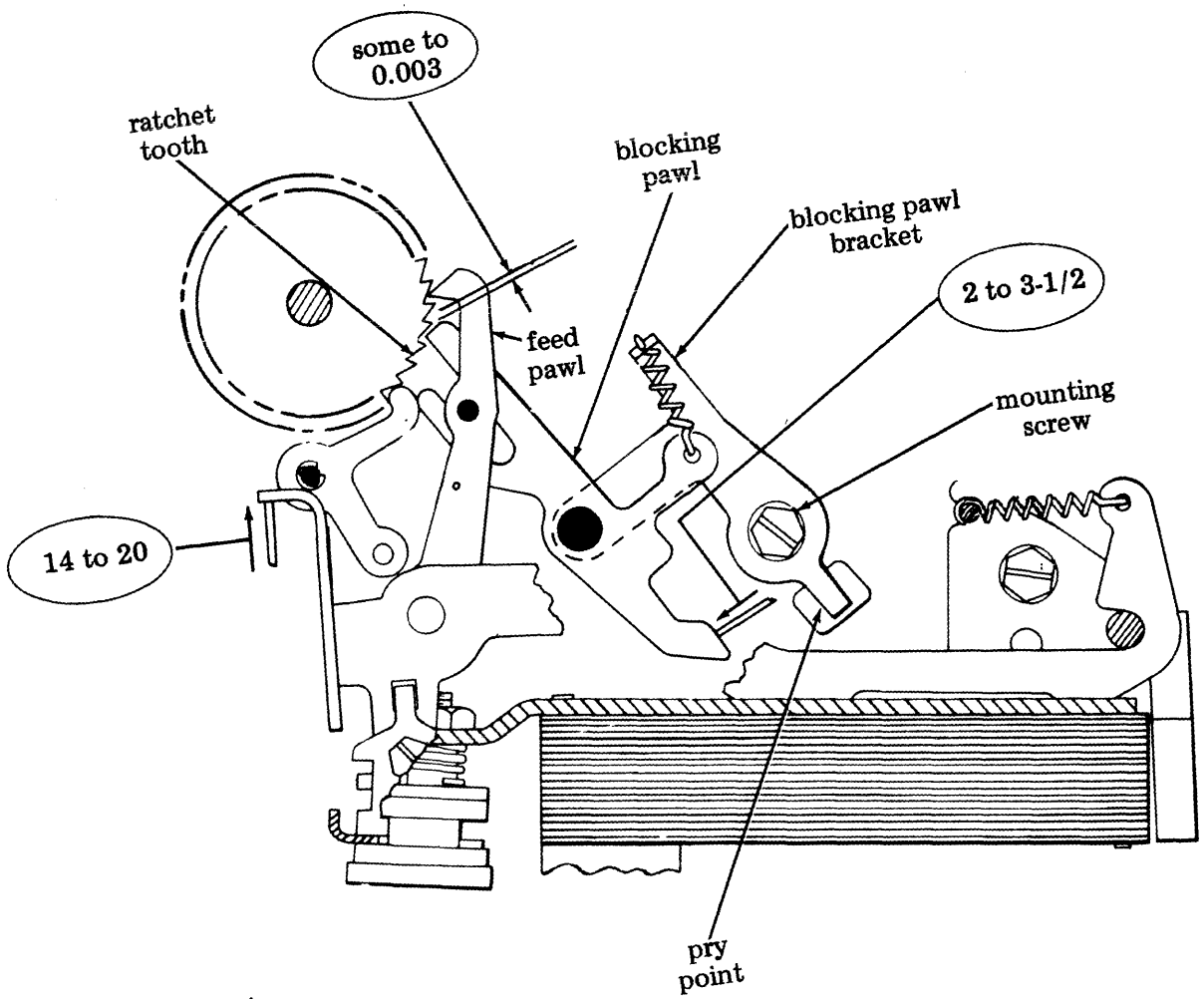
Requirement 1 — 2 to 3-1/2 to start blocking pawl moving. Armature should be in unattracted position and control lever in START position.

- Armature in unattracted position.
- Some clearance between feed pawl and ratchet tooth.
- Rotate ratchet to a position of least clearance between blocking pawl and ratchet teeth.

Requirement 2 — Some to 0.003 clearance at closest point between end of blocking pawl and ratchet tooth.

Adjust — Loosen blocking pawl mounting screw friction tight.
Using pry point, position blocking pawl bracket to meet requirement.
Tighten mounting screw.

"Adjust" affects:
DETENT LEVER (RRA-5)
FEED PAWL (RRA-6)



left side view

SENSING PIN (RRA-8)

- Armature in unattracted position.

  Requirement — 0.005 to 0.020. All sensing pin tips should be below top surface of top plate.

  Adjust — Loosen sensing pin guide mounting screws (2) friction tight.
  Use pry points to position sensing pin guide to meet requirement.
  Tighten mounting screws.

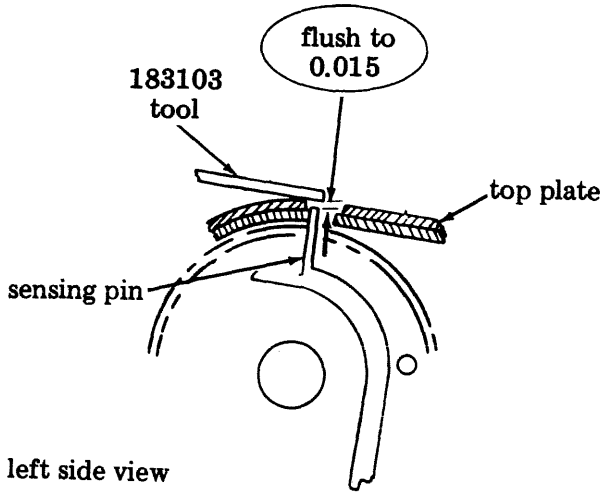
  "Adjust" affects:
  FEED PAWL (RRA-6)

NOTE: Make adjustment using thin-slotted end of gauge. Measure clearance holding the gauge directly above sensing pins.

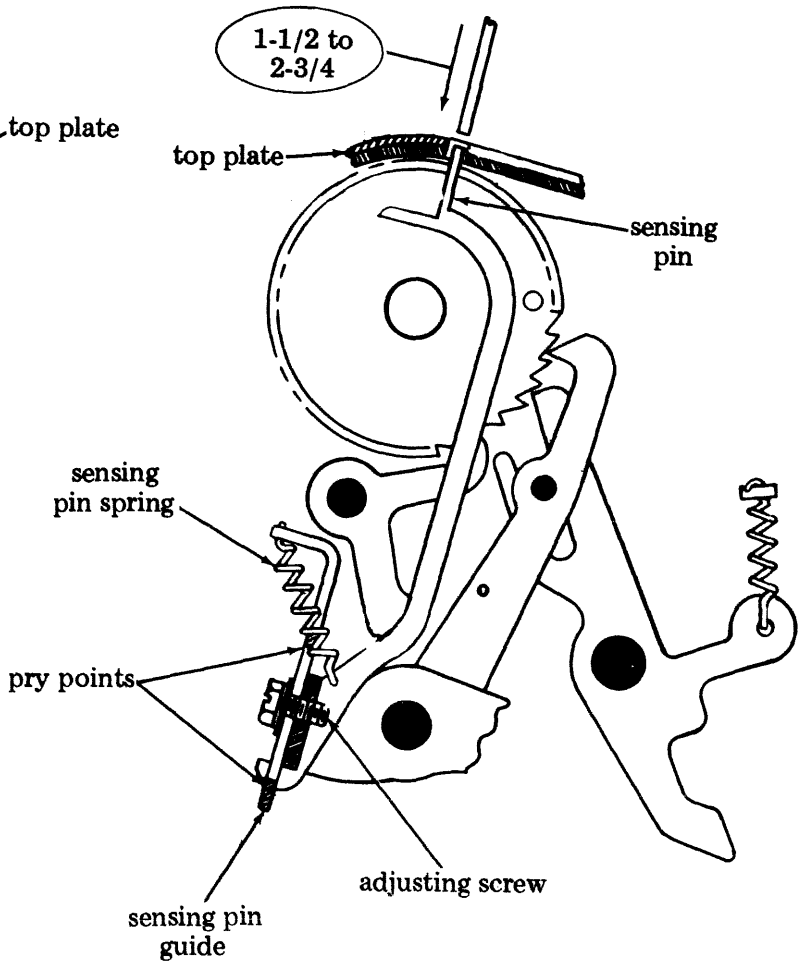
SENSING PIN SPRING

- Armature in attracted position.

  Requirement — 1-1/2 to 2-3/4 to deflect each (8) sensing pin flush with top plate.



left side view



left side view

TAPE LID LATCH (RRA-10)

- Tape lid closed.
- Take up and release lid latch spring play against top plate.

Requirement — 0.005 to 0.030 clearance between top plate and lid latch spring. Some clearance between lid latch and tape lid.

Adjust — Loosen mounting screw friction tight.
Position lid latch up or down to meet requirement.
Tighten mounting screw.

TAPE LID SPRING

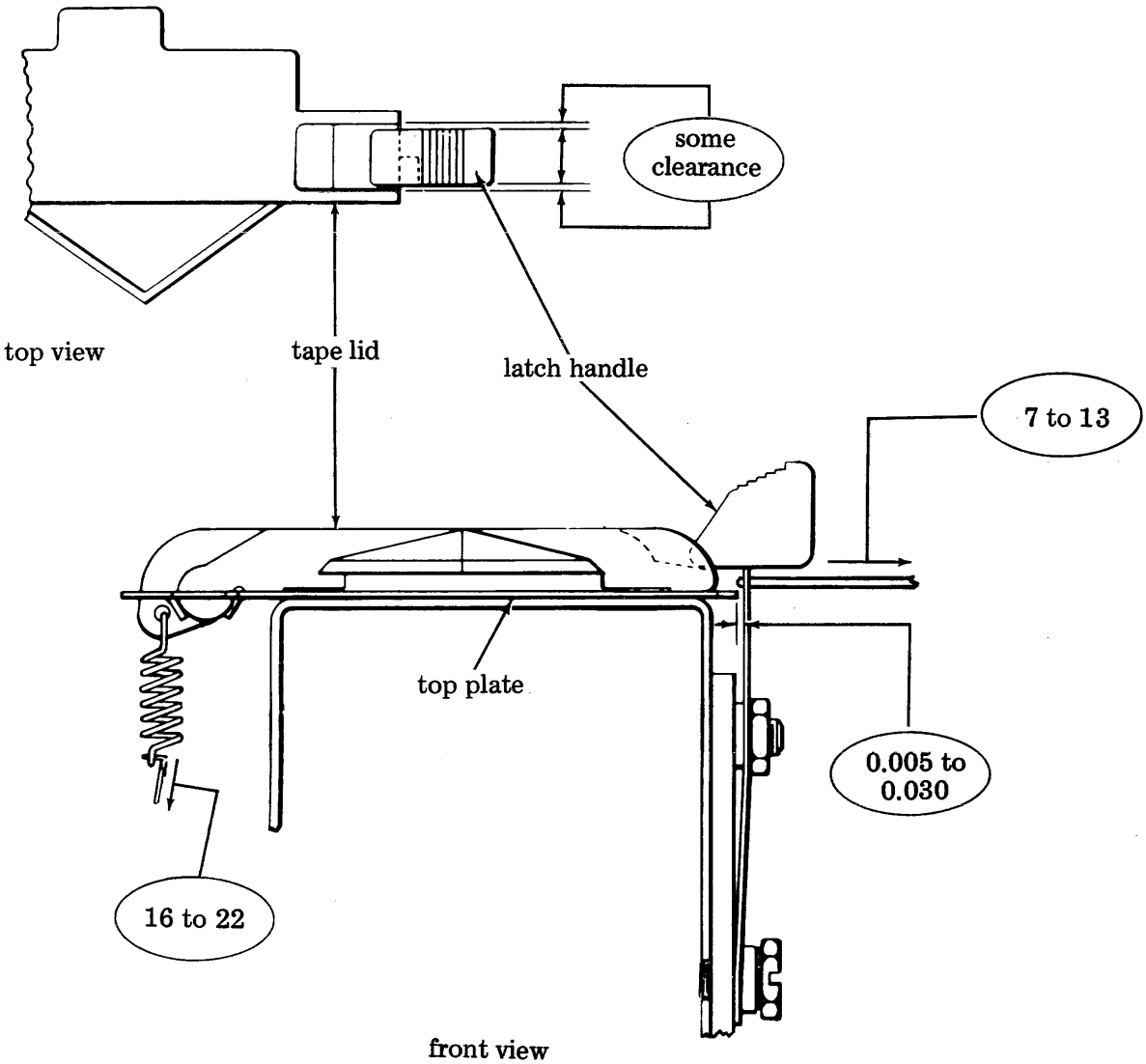
- Tape lid closed.

Requirement — 16 to 22 to pull spring to its installed length.

LATCH SPRING

- Tape lid open.

Requirement — 7 to 13 to start latch spring moving.



START CONTACT WIRE (RRA-12)

- Place control lever in ON position.

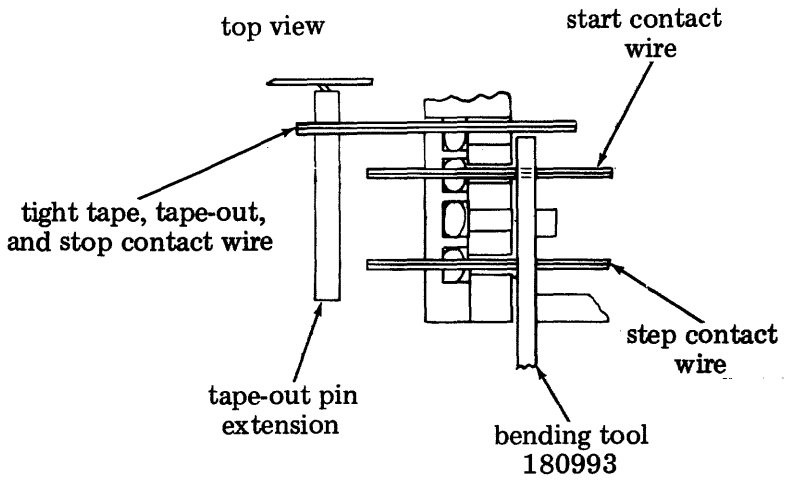
  Requirement — 0.085 to 0.115 clearance between start contact wire and its terminal.

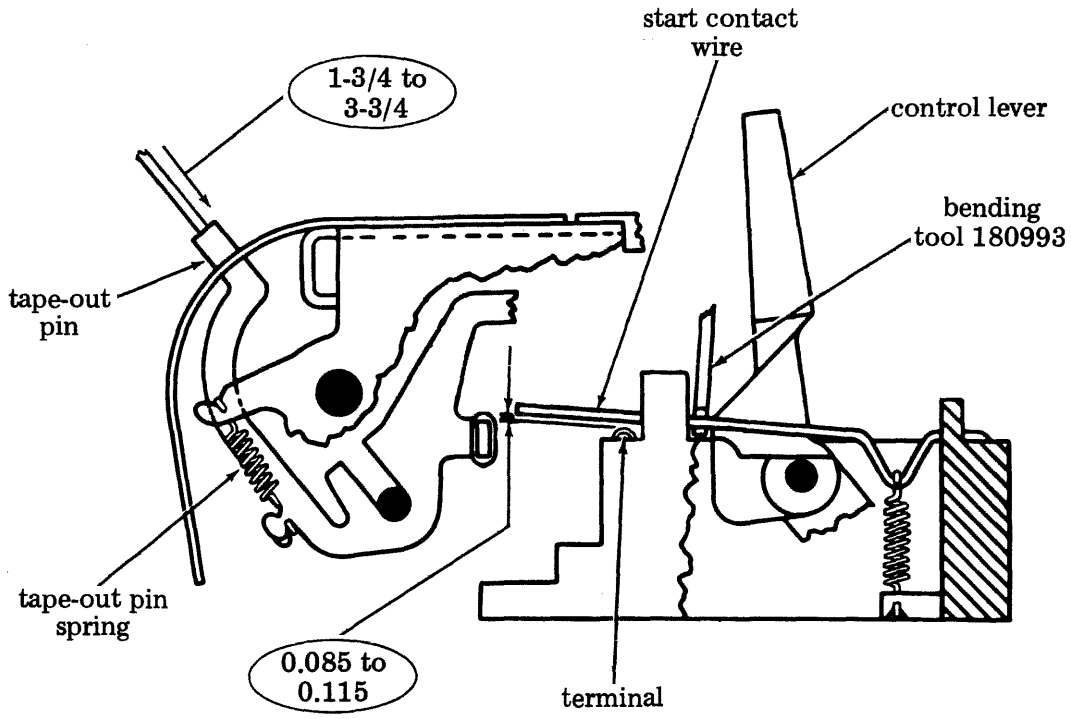
  Adjust — Bend contact wire between contact block and cam surface on control lever with bending tool.

TAPE-OUT PIN SPRING

- Tape lid open.
- Tight-tape contact wire held free of tape-out pin.
- Control lever in ON position.

  Requirement — 1-3/4 to 3-3/4 to start tape-out pin moving.





left side view

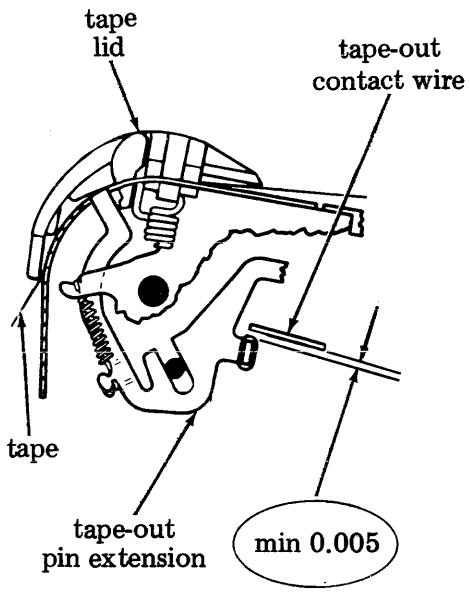
TAPE-OUT CONTACT WIRE (RRA-13)

- Tape-out pin in fully up position.

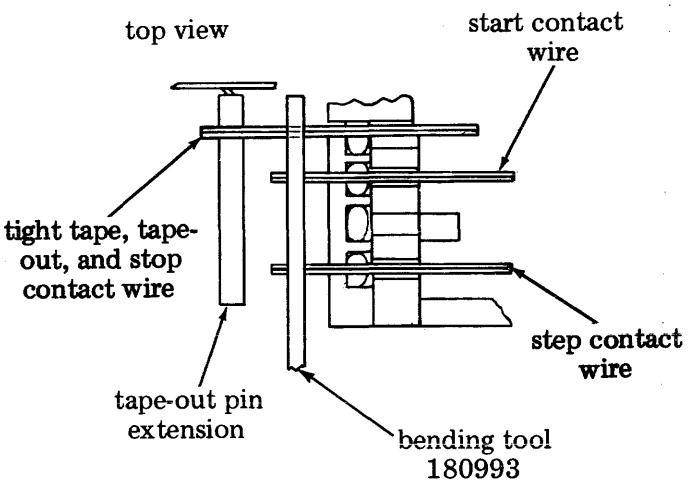
  Requirement 1 — 0.010 to 0.025 clearance between tape-out contact wire and its terminal.

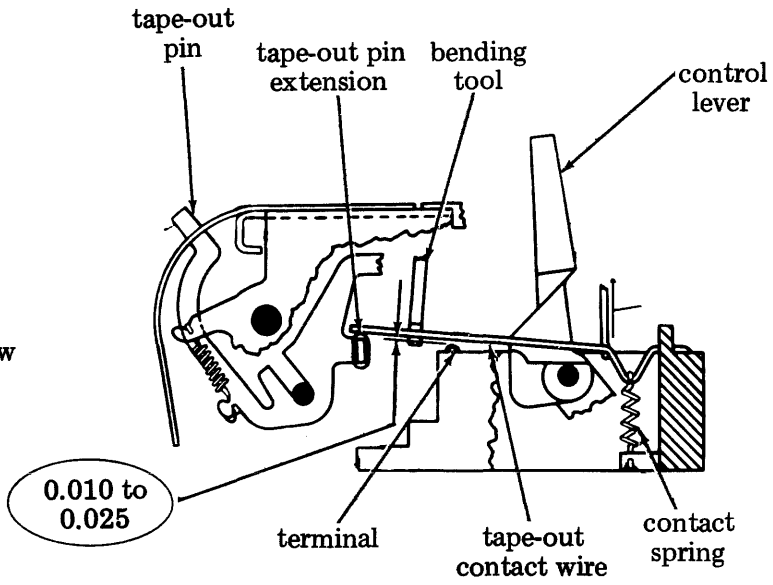
  Requirement 2 — Minimum 0.005 clearance between tape-out contact wire and tape-out pin extension with control lever in ON position, tape in reader, and tape lid closed.

  Adjust — Bend contact wire in between the terminal and tape-out pin extension with bending tool 180993.



left side view





left side view

SENSING CONTACT WIRE

- Armature in attracted position.

  Requirement 1 — 3/4 to 1-3/4 to start contact wire moving.

TIGHT-TAPE LEVER SPRING

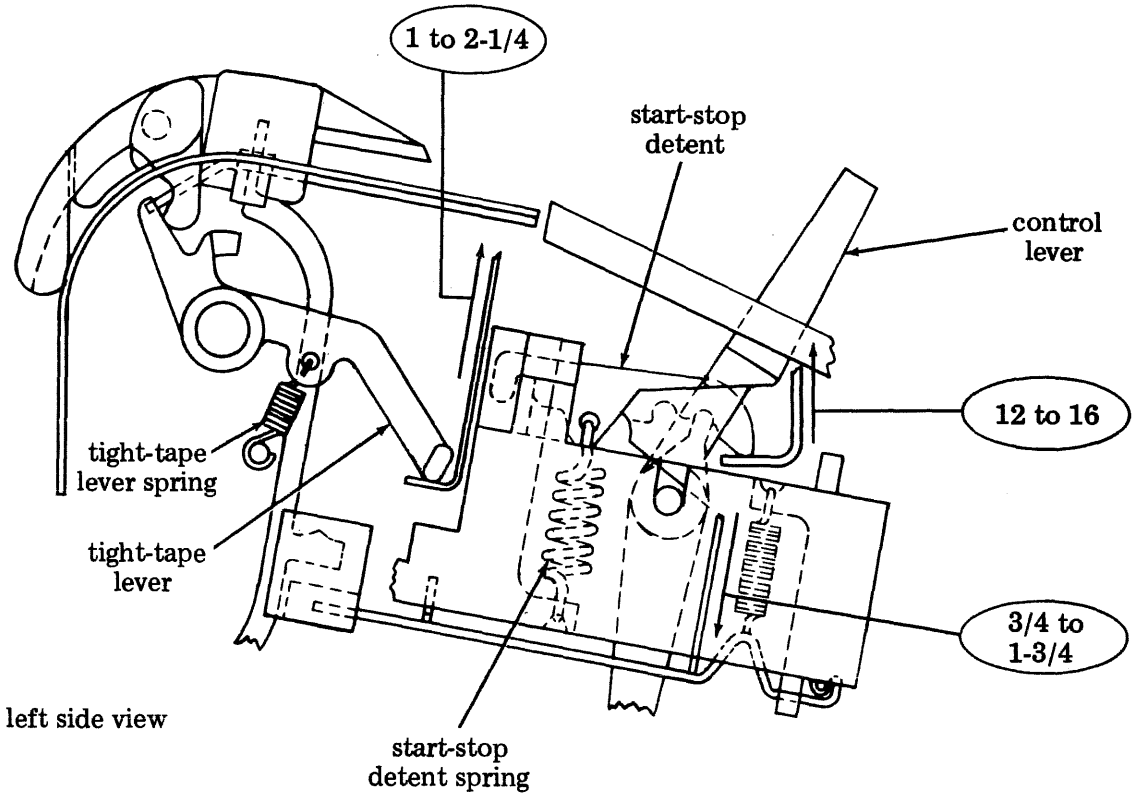
- Tape lid closed.

  Requirement 2 — 1 to 2-1/4 to start tight-tape lever moving.

START-STOP DETENT SPRING

- Control lever in ON position.

  Requirement — 12 to 16 to start detent moving.



START, STOP, TIGHT-TAPE, TAPE-OUT CONTACT WIRE SPRINGS

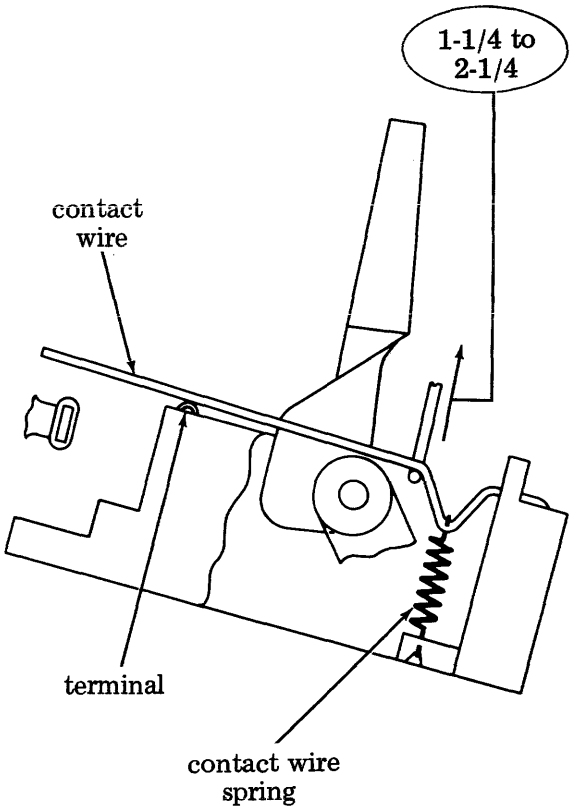
- Control lever in ON position.
- Tape-out pin fully depressed.

Requirement — 1-1/4 to 2-1/4 to start contact wires moving.

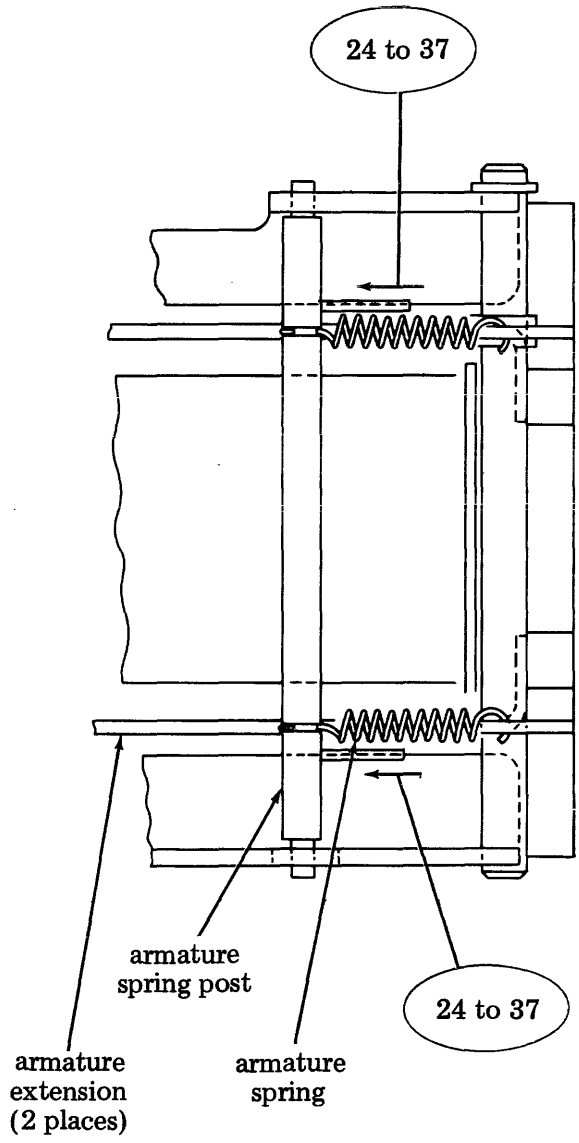
ARMATURE SPRING

- Armature in unattracted position.

Requirement — 24 to 37 to start spring post moving (measure at two places).



left side view



top view

TIE LINK OVERTRAVEL

- Armature in attracted position.

Requirement — 0.018 to 0.025 clearance between primary latch and tie link.

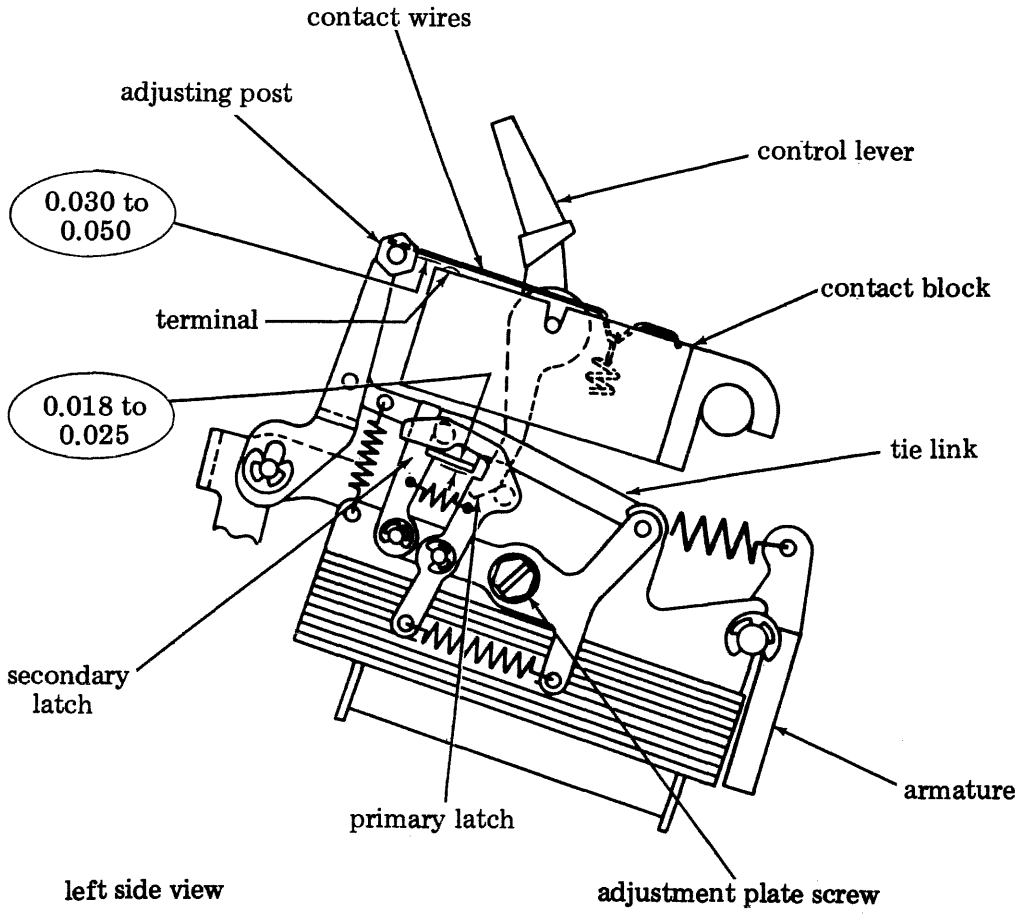
Adjust — Loosen adjustment plate screw. Rotate plate to meet requirement. Tighten screw.

STEP CONTACT WIRE GAP

- Armature in unattracted position.
- Tie link resting on secondary latch.
- Rotate control lever to leave a gap between contact wires and the cam of the control lever.

Requirement — 0.030 to 0.050 between contact wires and terminal.

Adjust — Loosen adjustment post nut. Position post to meet requirement. Tighten nut.



left side view

SINGLE STEP SPRING

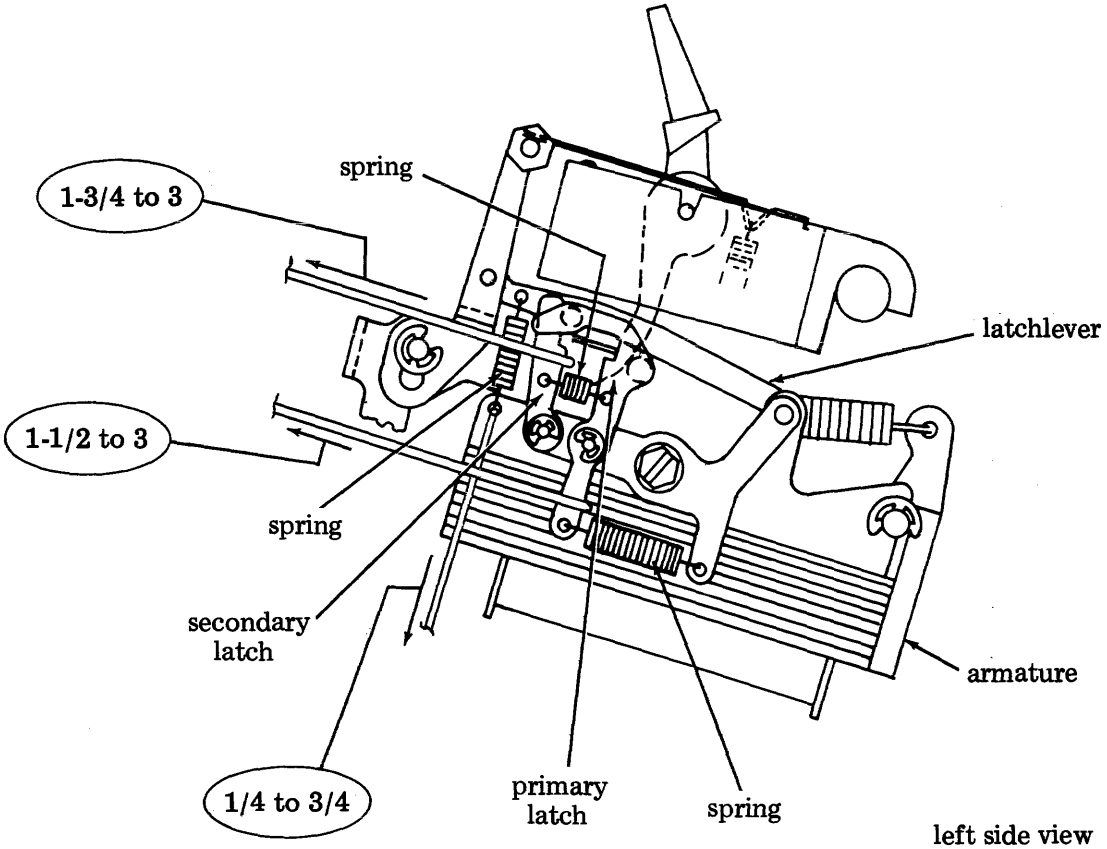
- Armature in attracted position.

  Requirement 1 — 1-3/4 to 3 to move secondary latch.

  Requirement 2 — 1-1/2 to 3 to move primary latch.

  Requirement 3 — 1/4 to 3/4 to pull latch-lever spring to its installed length.

CAUTION: CHECK ALL MOVING PARTS TO MAKE SURE THEY ARE FREE OF BINDS BEFORE OPERATING THE SET UNDER POWER.



left side view