43 TELEPRINTER 5-LEVEL PAPER TAPE READER ASSEMBLY

ADJUSTMENTS AND SPRING TENSIONS

CONTENTS PAGE

1. GENERAL

1.01 This section provides adjustments and spring tensions for the 43 Teleprinter 5-Level Paper Tape Reader Assembly.

1.02 Whenever this section is reissued the reason for reissue will be listed in this paragraph.

1.03 Tensions are checked with a spring scale held at the angle shown in the adjustment illustration.

1.04 When ordering replaceable parts, unless otherwise specified prefix each part number with the letter "TP" (ie, TP430047).

1.05 After an adjustment is complete, tighten any screws or nuts loosened to make the adjustment.

1.06 Reference in the procedure to left or right, up or down, and top or bottom, etc, refer to the reader in its normal operating position.

1.07 Adjustments should be checked and performed when a trouble indicates a specific adjustment may be out of tolerance or when an adjustment is disturbed to enable a part to be removed or replaced.

1.08 Spring tension checks should be performed when a trouble indicates a possible defective spring or to verify proper part numbers.

1.09 Springs that do not meet the tension requirements should be replaced.

2. TOOLS REQUIRED

2.01 Refer to Maintenance Tools Section 570-005-800TC for a complete listing of various types of hand tools available for maintenance of Teletype Corporation equipment.

Prepared for American Telephone and Telegraph Company by Teletype Corporation

2.02 The following tools may be required when performing adjustments or spring tension checks. Most of these items should normally be present in standard maintenance tool kits.

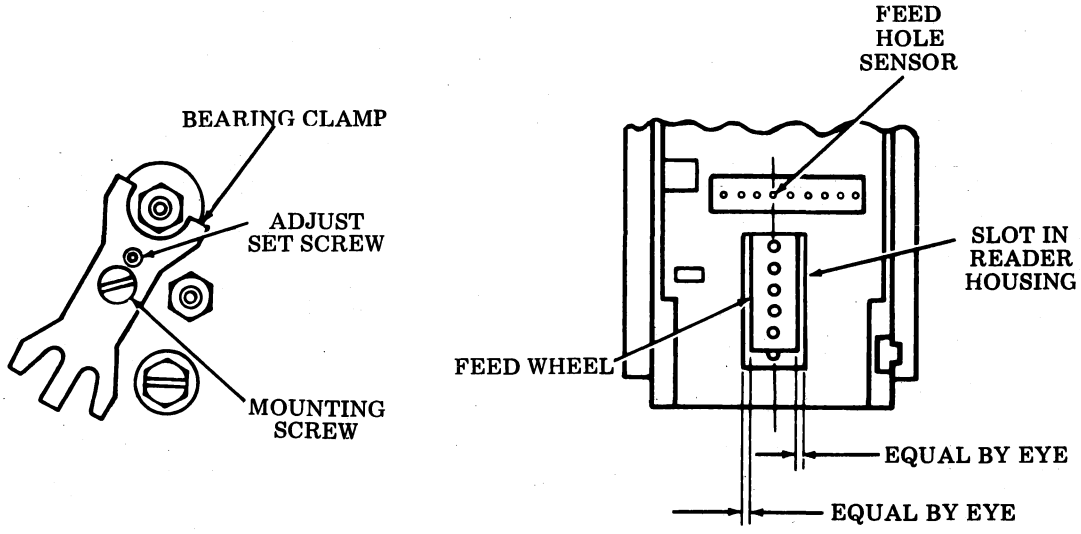
Part No.	Description
117781	Gauge Set
142554	Hook, Pull Spring
82711	Scale, Spring (64 Ounce)
110443	Scale, Spring (8 Ounce)
110444	Scale, Spring (32 Ounce)
94647	Screwdriver, 3-1/2 Inch Blade
100982	Screwdriver W/Clip
124682	Wrench, Hex Key 1/16
129534	Wrench, 3/16 Inch and 1/4 Inch Open End
124682	Hex Key Wrench (1/16)
104457	Hex Key Wrench (.050)
159841	Hex Key Wrench (.093)
302990	Tape Gauge
73404	Tommy Wrench
98631	Scale, Spring (50 Grams)
108285	Long Nose Pliers

3. READER ADJUSTMENTS

READER FEED WHEEL LOCATION

Requirement

The sprocket wheel pins shall be in line with the centerline of the feed hole sensor. This requirement should be met when sprocket wheel is centered by eye in the reader housing.



To Adjust

Loosen the bearing clamp mounting screw, turn adjust set screw in or out as needed to meet requirement, tighten bearing clamp mounting screw, recheck requirement.

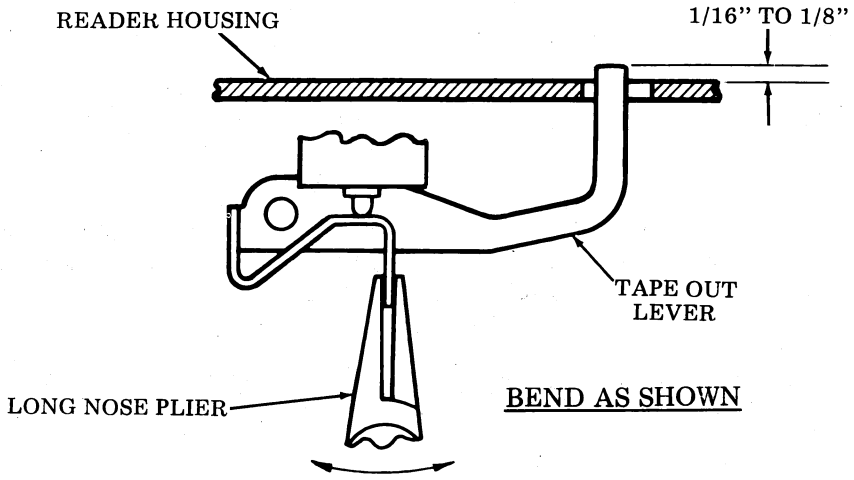
READER TAPE OUT LEVER

Requirement

Depress lever until it "clicks". The top of the lever shall be 1/16 inch to 1/8 inch above the top of the housing surface.

To Adjust

Bend lever to meet requirement. Make certain lever moves freely up and down for full stroke.

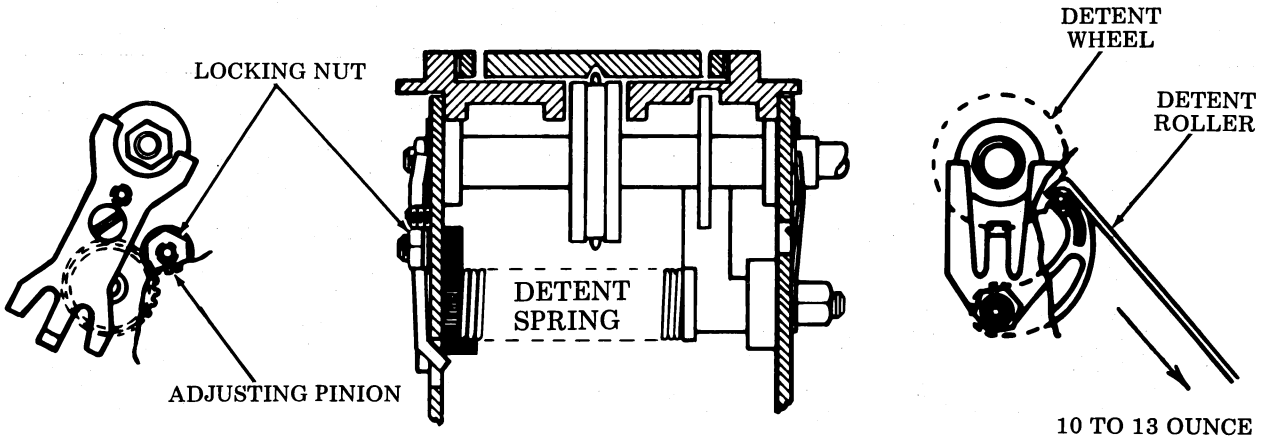


TRANSPORT DETENT SPRING (Reader)

Requirement

With the detent roller fully seated in the detent wheel the force required to start motion of the detent roller away from the detent wheel shall be 10 to 13 ounces. (Use 32 ounce scale.)

Note: Be careful not to over tighten spring.



Note: First loop of spring threaded onto a plastic projection on the detent arm.

To Adjust

With the locking nut friction tight rotate the pinion with a 1/16 inch allen key to meet requirement. Tighten locking nut and recheck requirement.

FEED PAWL-POLE FACE GAP

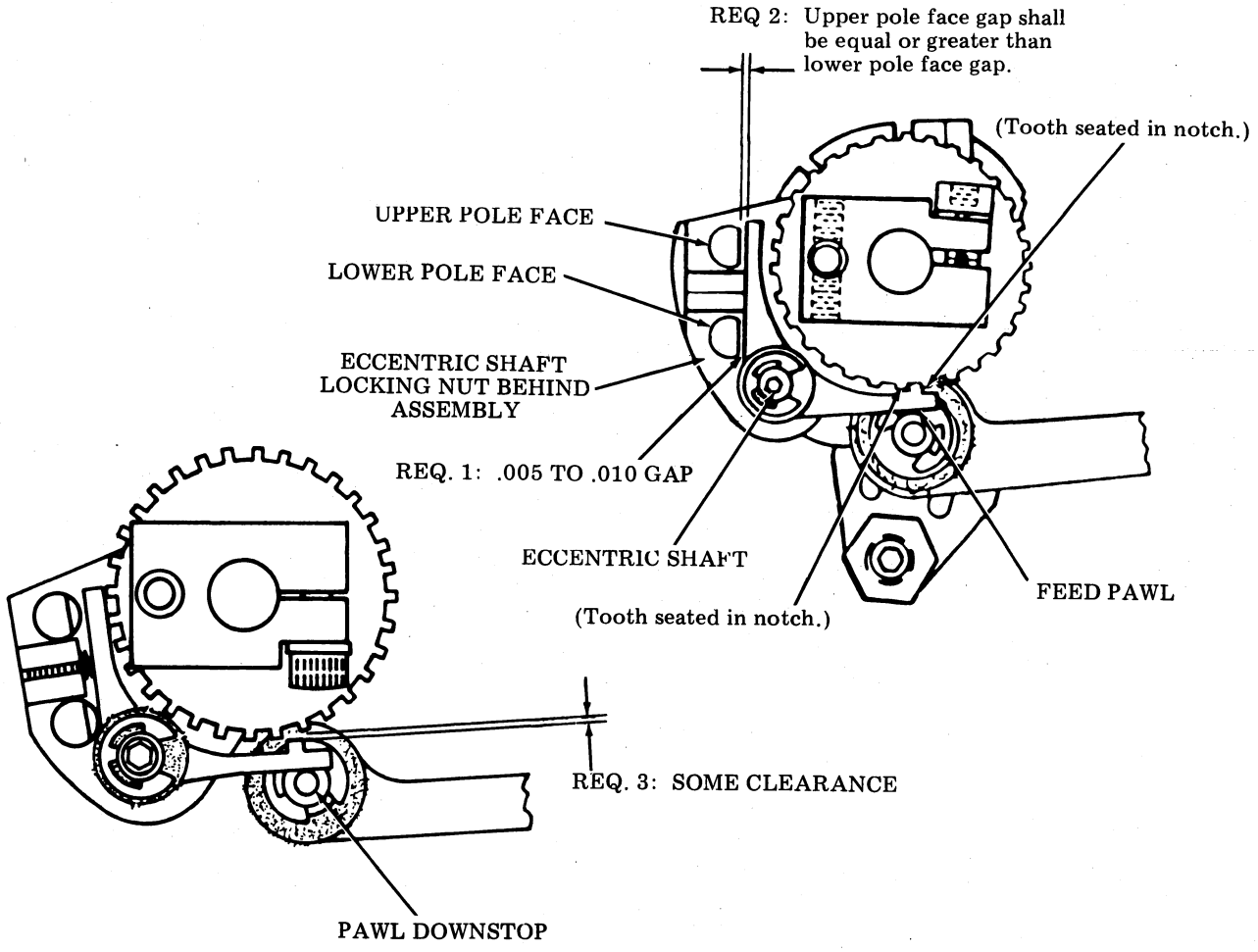
(1) Requirement
With the feed pawl tooth seated in a ratchet wheel notch there shall be a .005 to .010 inch gap between the lower pole face and feed pawl at the point of least clearance. (Check at several places 90 degrees apart on ratchet wheel).

(2) Requirement
With the feed pawl tooth seated in a ratchet wheel notch, the gap between the upper pole face and feed pawl shall be equal to or greater than the lower pole face and feed pawl gap. (Check at several places 90 degrees apart on ratchet wheel.)

(3) Requirement
With the feed pawl resting against its downstop, there shall be some clearance between the face of the feed pawl tooth and the ratchet wheel as gauged by eye throughout one complete revolution of the ratchet wheel.

To Adjust
With locking nut friction tight and feed pawl tooth held seated in ratchet wheel notch by slight pressure opposite pawl tooth, rotate the eccentric shaft clockwise until gaps at both pole faces are maximum. From this point rotate eccentric shaft counterclockwise to meet requirements 1, 2, and 3. Tighten eccentric shaft locking nut and recheck requirements.

Caution: Rotation of the eccentric feed pawl shaft is limited. Attempted 360 degree rotation will cause the pawl to jam against the magnet poles and backstop. This may result in damage to the transport assembly.



FEED PAWL AND RATCHET WHEEL ENGAGEMENT

Requirement

With detent roller seated in the detent wheel and when the transport drive eccentric is at Top Dead Center and at Bottom Dead Center the feed pawl tooth should fall freely into the notch of the ratchet wheel. (Engagement should be checked at four places approximately 90 degrees apart on the ratchet wheel).

To Adjust

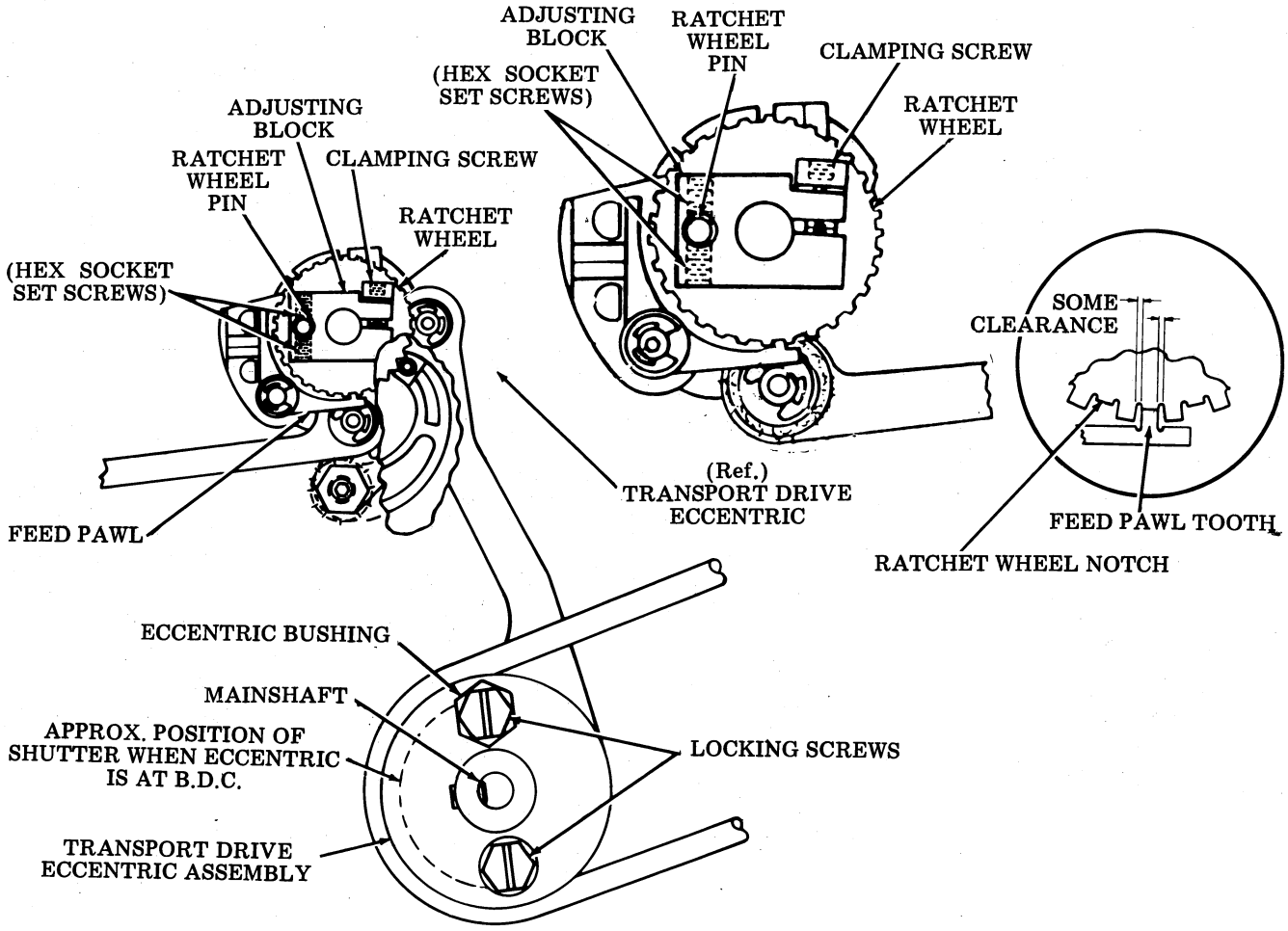
(a) If the feed pawl tooth does not fall freely into the ratchet wheel notch, at both TDC and BDC, the position of the feed wheel relative to the feed pawl may only need refinement. This is accomplished by moving the hex socket screws in the adjusting block against or away from the pin in the ratchet wheel as needed. When one screw is loosened the other must be tightened to insure a rigid assembly.

(b) If the adjustment cannot be refined using the hex socket screws, adjust them to center of the ratchet wheel pin in the ratchet wheel hole. Then, with the adjusting block clamping screw loose rotate the main shaft to TDC. Engage the feed pawl tooth and hold it centered in a notch in the ratchet wheel. Tighten the screw. Refine a. if necessary or repeat.

(c) Rotate the mainshaft to BDC and check requirement. Refine a. if necessary.

Note: This adjustment is affected by the transport drive eccentric adjustment.

READER TRANSPORT



READER TRANSPORT TAPE POSITION (Preliminary)

Note: This adjustment is to be made only if the reader transport tape position adjustment (Final) requirement cannot be met.

Requirement

Detent eccentric to be at midrange.

To Adjust

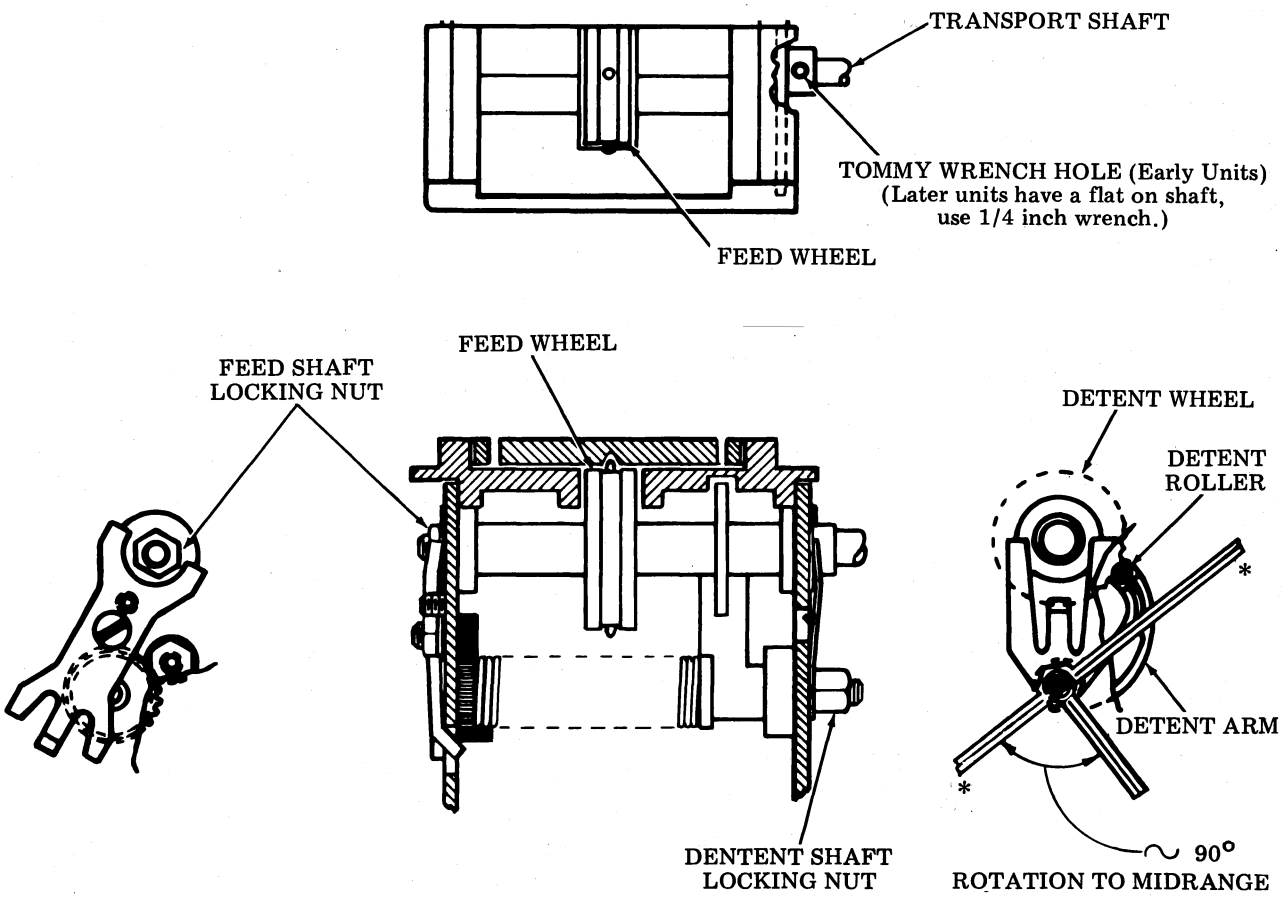
With the detent shaft locking nut and locking screw friction tight use a 1/16 inch allen key to move the detent wheel to one extreme of its adjustment (observe feed wheel to determine extreme). Then rotate the allen key 180 degrees and observe the other extreme. Now set the adjustment to midrange by rotating the allen key approximately 90 degrees between the extremes. Tighten locking nut and screw.

Requirement

With the detent roller seated in the detent wheel a master tape, (TTI correct) when engaged with the feed wheel and lined up with the tape slot in the reader housing, should line up such that the feed and code holes in the tape are centered by eye with the aperture slots in the reader housing.

To Adjust

Loosen feed shaft locking nut. (Use 1/4 inch socket and tommy wrench on early models or 1/4 inch open end wrench on later model feed shaft flat.) While the detent roller remains seated in the detent wheel rotate the feed wheel until requirement is met. Tighten locking nut.



*Example of allen key at extreme positions.

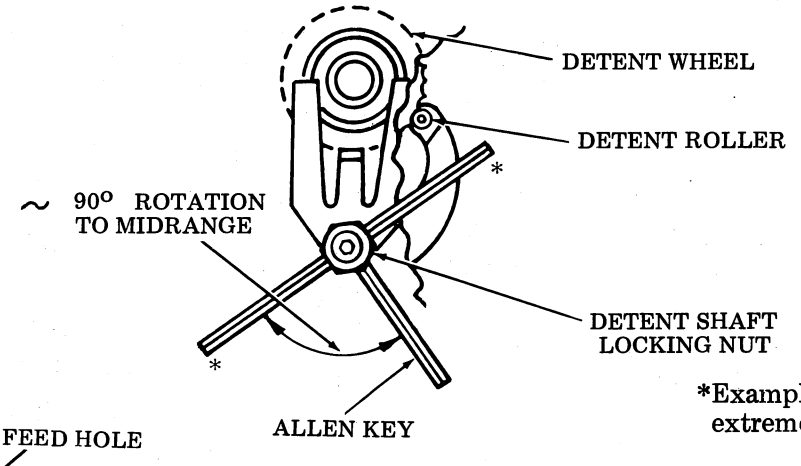
READER TRANSPORT TAPE POSITION (Final)

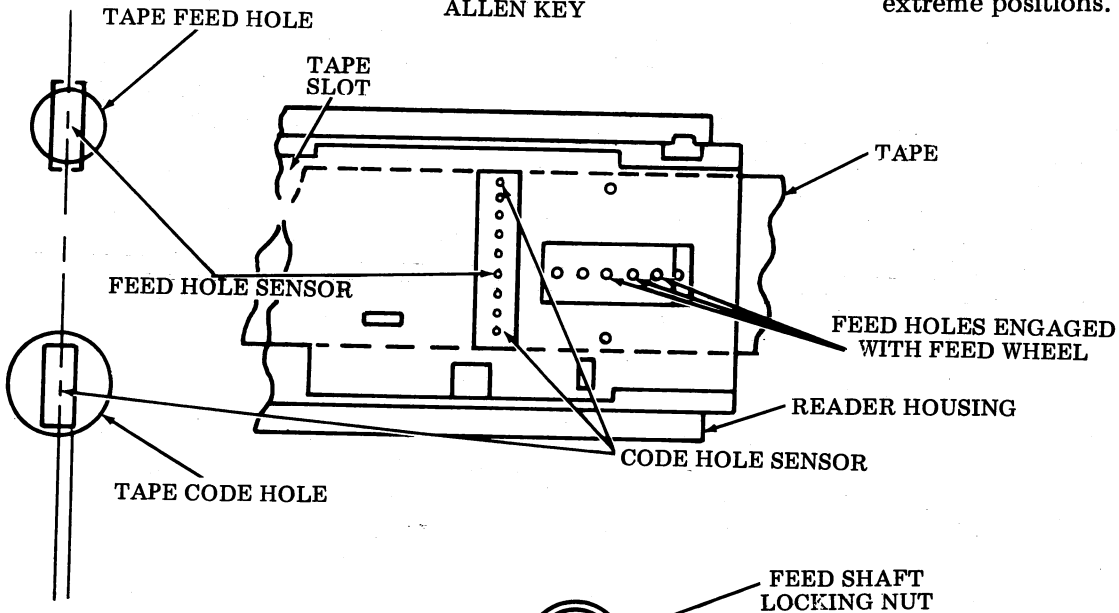
Requirement

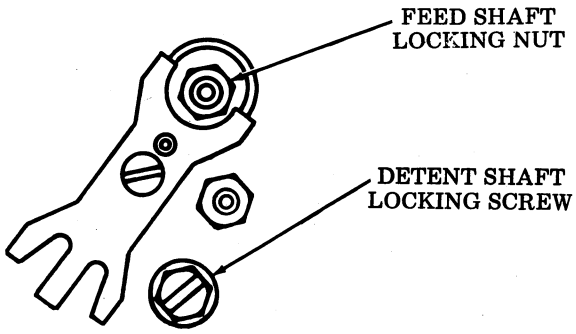
With the detent roller seated in the detent wheel, a test tape perforated on the associated punch, (TTI correct as checked in Section 2C) when engaged with the feed wheel and lined up with the tape slot in the reader housing, should line up such that the feed and code holes in the tape are centered by eye on the aperature slots in the reader housing.

To Adjust

With the detent shaft locking nut and locking screw friction tight and the detent roller seated in the detent wheel put a 1/16 inch allen wrench into the end of the detent shaft and adjust the feed wheel to meet requirement. Tighten nut and screw. Recheck requirement.







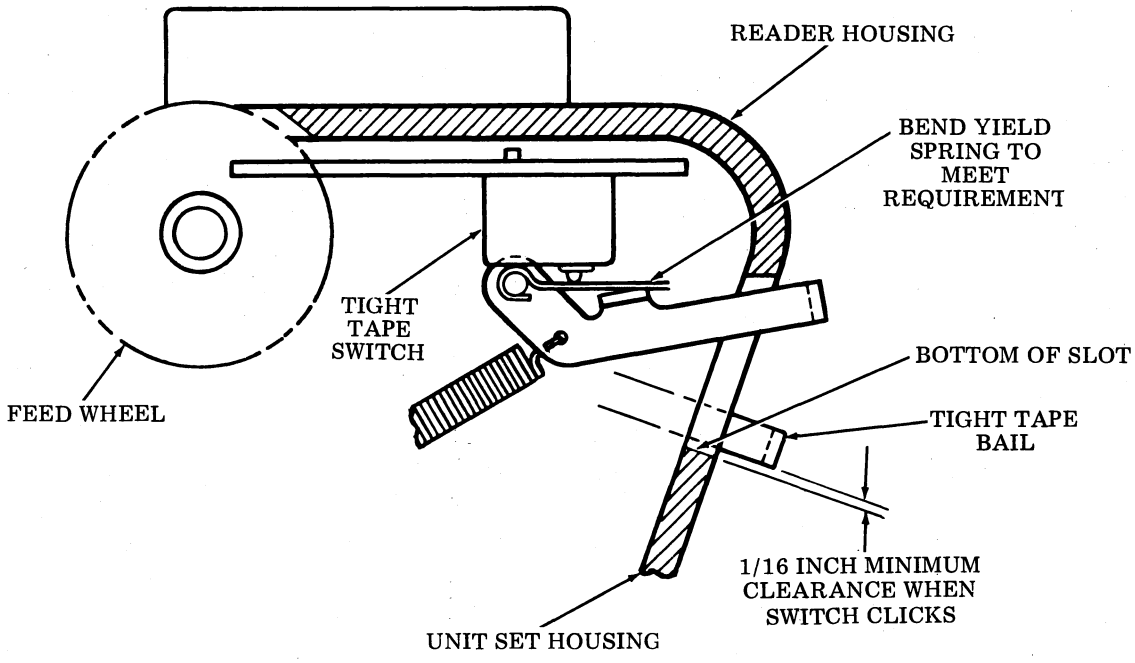
TIGHT TAPE BAIL

Requirement

With unit seated in the set housing and when the tight tape bail is moved up and down, the tight tape switch will click in both directions and, at the lowest click, will have a minimum clearance of 1/16 inch between the bail and the bottom of the slot in the set housing.

To Adjust

Lift unit for access to yeild spring and bend yield spring with pliers to meet requirement.



4. SPRING TENSIONS

(1) Reader Tape Out Lever Spring:
With the lever in upmost position and measured at spring end, it shall take 2 1/2 to 4 ounces to start the lever moving down.

(2) Reader Tight Tape Arm Spring:
With the lever biased upward against upstop, it shall take 3 to 4 ounces to pull spring to installed length.

(3) Reader Transport Shaft:
With spring scale push on shaft from left side of unit until bearing is flush with the left side plate, as seen by eye

Min. 32 oz
Max 48 oz

(4) Transport Pawl Return Spring:
When measured at the tip of the pawl, as shown, it shall take 21 to 25 grams to bias the pawl so the tooth is seated in ratchet wheel.

SPRING IDENTIFICATION