

43 FRICTION AND SPROCKET FEED PRINTER

ADJUSTMENTS AND SPRING TENSIONS

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LEFT AND RIGHT PAPER GUIDES (Angular Positioning) (Friction Feed and Late Design Sprocket Feed) .....	4	1.01 This section provides friction and sprocket (Pin) feed printer adjustments and spring tensions. Variable tractor feed adjustments and spring tension are covered in Section 574-501-701.	
LINE FEED BELT TENSION (Sprocket Feed Only) .....	4	1.02 This section is reissued to change the title and update the adjustments.	
LINE FEED MOTOR BELT TENSION (Floating Motor Only) .....	5	1.03 Belt tensions are checked with a spring scale held at the angle shown in the adjustment illustration.	
PRINT HEAD TO PLATEN .....	6	1.04 When ordering replaceable components, unless otherwise specified, prefix each part number with "TP" (ie, TP430028).	
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## SECTION 574-501-700

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 570-005-800 for a complete listing of various types of hand tools available for maintenance of Teletype Corporation equipment.

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.

Tools	
Bit, 1/4 Inch Socket	135677
Bit, 5/16 Inch Socket	135678
Gauge Set	117781
Gauge, Tape	95960
Handle	135676
Hook, Pull Spring	75765
Hook, Pull Spring	142554
Hook, Push Spring	142555
Scale, Spring (64 Ounce)	82711
Scale, Spring (8 Ounce)	110443
Scale, Spring (32 Ounce)	110444
Scale, 15 Pound Spring	135059
Screwdriver, 3-1/2 Inch Blade	94647
Screwdriver	95368
Screwdriver With Clip	100982
Tweezers	151392
Wrench, Hex Key	124682
Wrench, 3/16 Inch Socket	125752
Wrench, 3/16 Inch and 1/4 Inch Open End	129534
Wrench, 5/16 Inch and 3/8 Inch Open End	152835

## 3. PRINTER ADJUSTMENTS

### LEFT PAPER SPROCKET (Sprocket Feed Only)

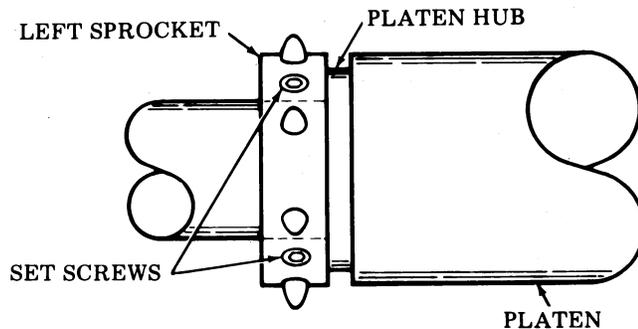
(Early Design)

#### Requirement

The left sprocket should be biased against the collar of the platen hub.

#### To Adjust

Loosen set screws and position left sprocket to meet requirement.



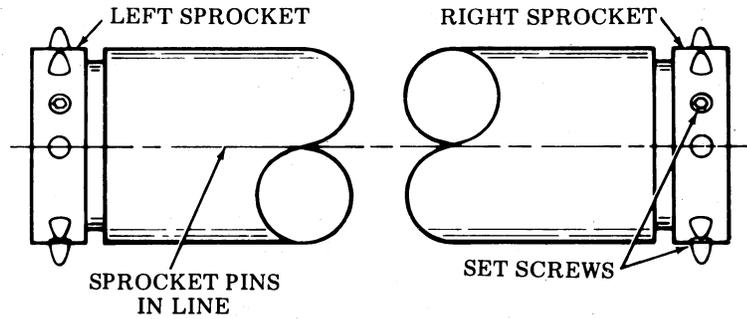
**RIGHT PAPER SPROCKET (Sprocket Feed Only)**  
(Early Design)

**Requirement**

The right sprocket should be biased against the collar of the platen hub and the pins should be in line with the pins of the left sprocket.

**To Adjust**

Loosen set screws and position right sprocket to meet requirement.



*Note:* This adjustment to be refined when making the PRINTED LINE POSITION adjustment.

**LEFT AND RIGHT PAPER GUIDES (Early Design)**  
(Horizontal Positioning) (Sprocket Feed Only)

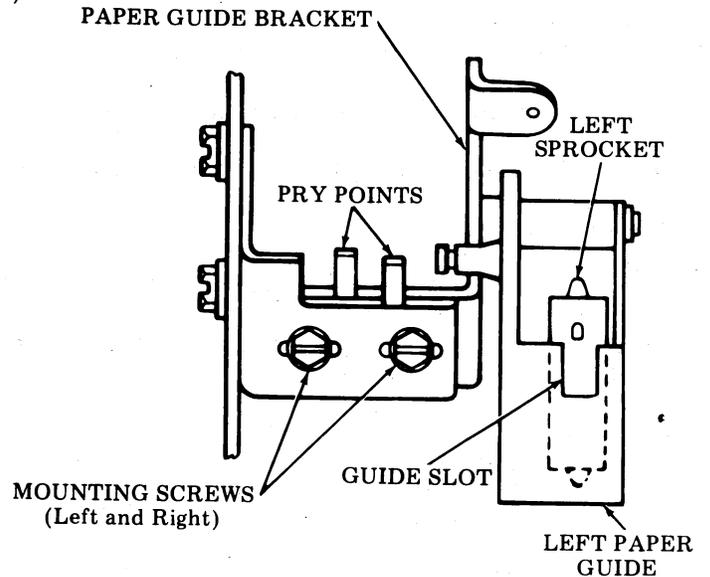
*Note:* Late design brackets do not require this paper guide adjustment.

**Requirement**

There should be some clearance between the base of the sprocket pins and either side of the paper guide slot.

**To Adjust**

Loosen screws friction tight and position paper guide bracket by using a screwdriver on the pry points.



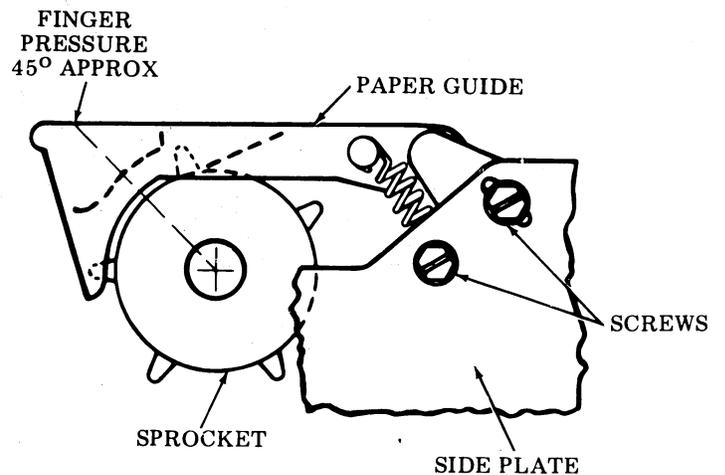
**LEFT AND RIGHT PAPER GUIDES**  
(Angular Positioning) (Sprocket Feed Only)  
(Early Design)

**Requirement**

The paper guides should seat fully on the paper sprockets (left and right sides).

**To Adjust**

Loosen screws. To seat the paper guides, apply finger pressure to top of paper guides at 45 degrees and toward center of platen. With finger pressure applied at approximately 45 degrees; tighten screws.



**LEFT AND RIGHT PAPER GUIDES**

(Angular Positioning) (Friction Feed and Late Design Sprocket Feed)

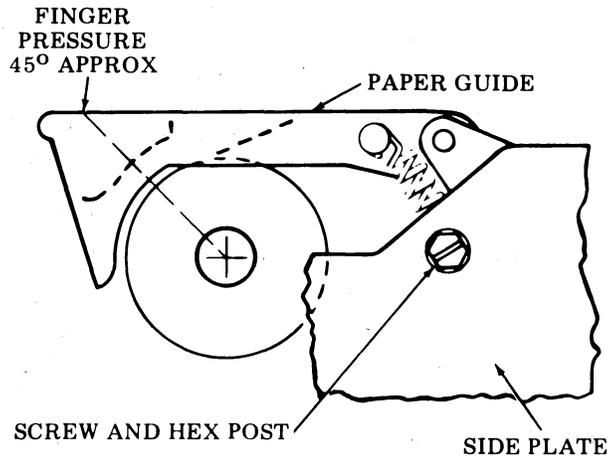
**Requirement**

The left paper guide should seat fully on the hub. The right paper guide should also be fully seated on the hub and the center paper guide should just touch the platen in the middle.

**To Adjust**

On left side, loosen the two mounting screws friction tight and move the left paper guide mounting bracket to meet the adjustment. With finger pressure applied, tighten screws.

On right side, loosen one mounting screw and with an open end wrench applied to the hex post, rotate bracket until adjustment is met. While holding the post, retighten the screw.



**LINE FEED BELT TENSION (Sprocket Feed Only)**

*Note:* This adjustment applies to Sprocket Feed (Early Design) only, without follower pulley.

**Requirement**

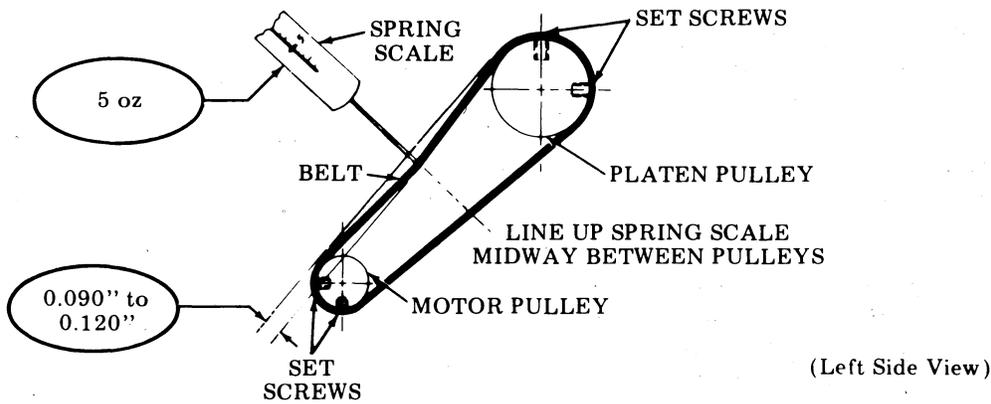
When the belt and sprocket system is at the point of least slack; a force of 5 ounces applied with a spring scale midway between the sprockets the belt should deflect between

Min 0.090 inch--Max 0.120 inch

The point of least slack is the point where the set screws on the platen pulley and those on the motor pulley are set as shown below.

**To Adjust**

Rotate the platen until the set screws on the platen pulley and the set screws on the motor pulley are aligned as shown below. Loosen motor screws, position motor to meet requirement at the point of least slack. Tighten screws.



LINE FEED MOTOR BELT TENSION (Floating Motor Only)

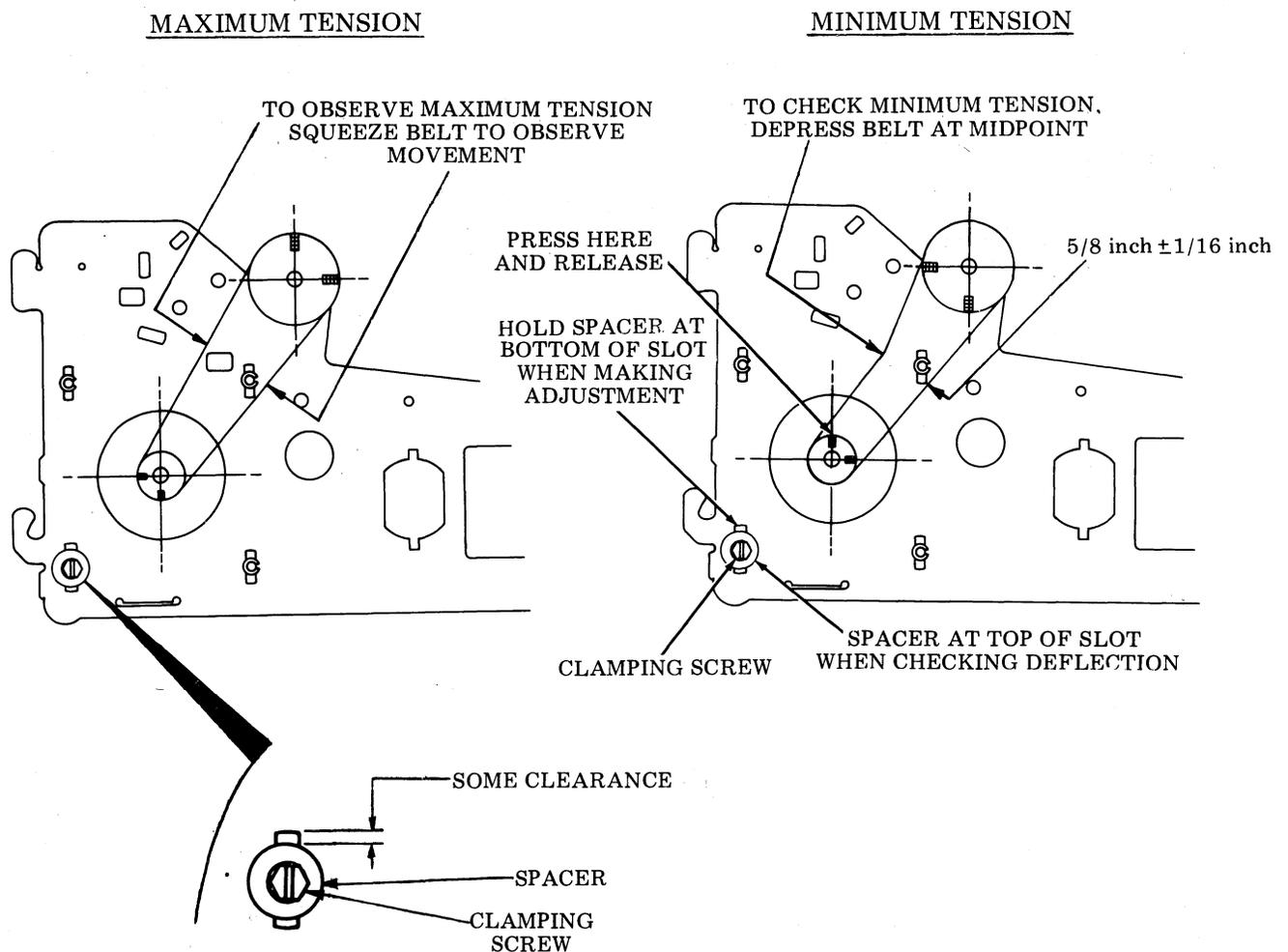
**Requirement:**

When the belt and sprocket system is at the point of maximum tension as shown (pulley screws facing out), there shall be some clearance between the top of the spacer and the top of the slot. Check by squeezing belt while observing upward motor movement.

When the pulleys are at the point of minimum tension (pulley screws facing in), the distance across the belt shall be a minimum of 5/8 inch with the belt deflected until the motor rises to the top of its free travel (spacer at top of slot).

**To Adjust:**

With the system pulleys set up for minimum tension and the clamping screw loose, press down on the motor to reduce any belt slack, then release. Hold spacer down and tighten screw.



PRINT HEAD TO PLATEN

Requirement

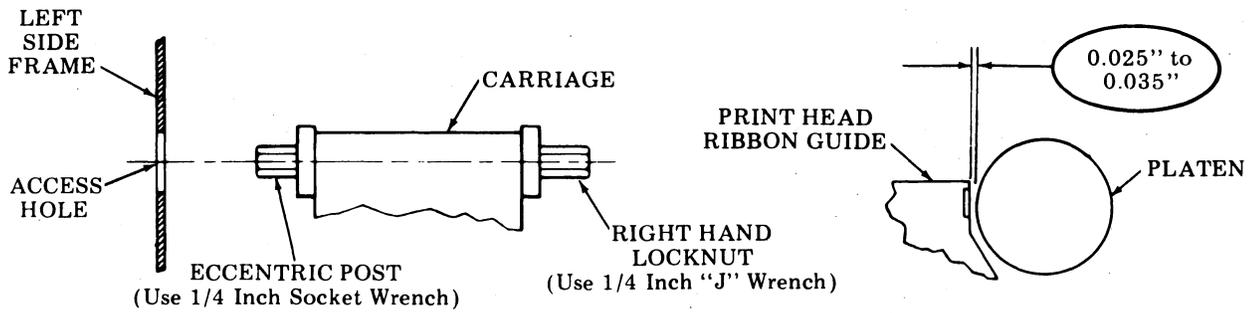
There should be

Min 0.025 inch---Max 0.035 inch

gap between the ribbon guide of the print head and the platen (without paper or ribbon) and at all positions of the carriage and platen, when platen play at the right end is biased down and to the rear and the print head is locked.

To Adjust

Position carriage to the extreme left position. Unlock locking handle, use 1/4 inch "J" wrench to loosen right-hand locknut and with carriage biased rearward, insert 1/4 inch socket wrench through access hole in left side frame and rotate eccentric post to adjust. Tighten locknut. Check adjustment with carriage locked. Check adjustment on extreme right end of platen, while biasing platen down and to the rear. Refine adjustment, if necessary.

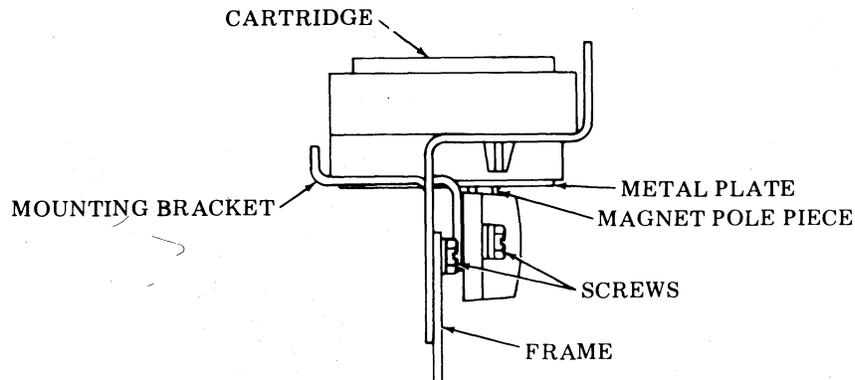


RIBBON CARTRIDGE MAGNETIC LATCH**Requirement**

The magnetic pole pieces of the magnetic latch should be firmly engaged with the cartridge lower metal plate when the cartridge is installed in the right-hand cartridge mounting bracket.

**To Adjust**

Loosen the two magnetic latch mounting screws. Install cartridge onto the mounting bracket. While holding the cartridge down firmly, allow the magnetic latch to fully engage the lower metal plate of the cartridge. Tighten the latch mounting screws.

LINE FEED FOLLOWER PULLEY STOP BRACKET

*Note:* For units with line feed pulleys only.

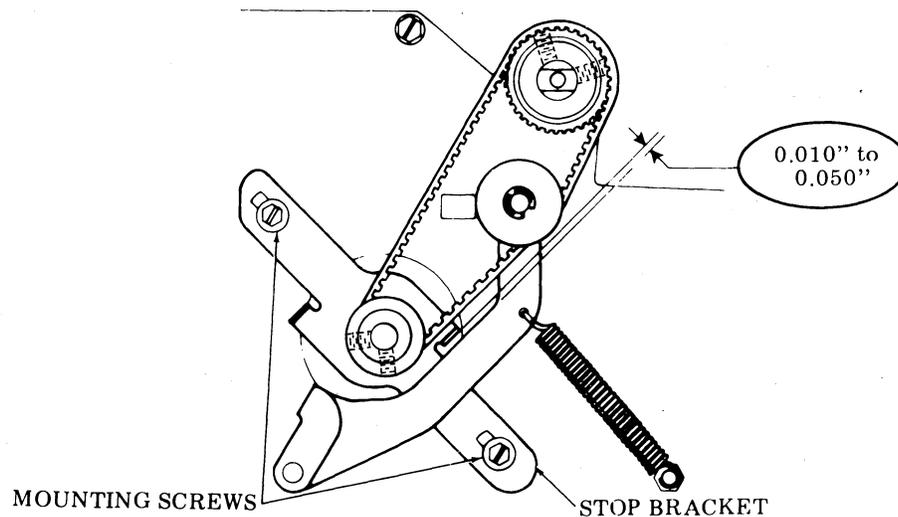
**Requirement**

With the set screws on both pulleys positioned as shown below and with the follower pulley resting on the belt, push the pulley against the belt to take up all friction. Slowly release pressure. Measuring between the follower lever and the adjacent tab of the stop bracket there should be

Min 0.010 inch---Max 0.050 inch  
gap between them.

**To Adjust**

Loosen the two mounting screws on the stop bracket to friction tight and move bracket to meet the adjustment. If the motor mounting holes are slotted, the motor may be repositioned from the center of the slot, if necessary, if the stop bracket adjustment does not meet the requirement.



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PRESSURE ROLLER BAIL (Friction Feed Only)

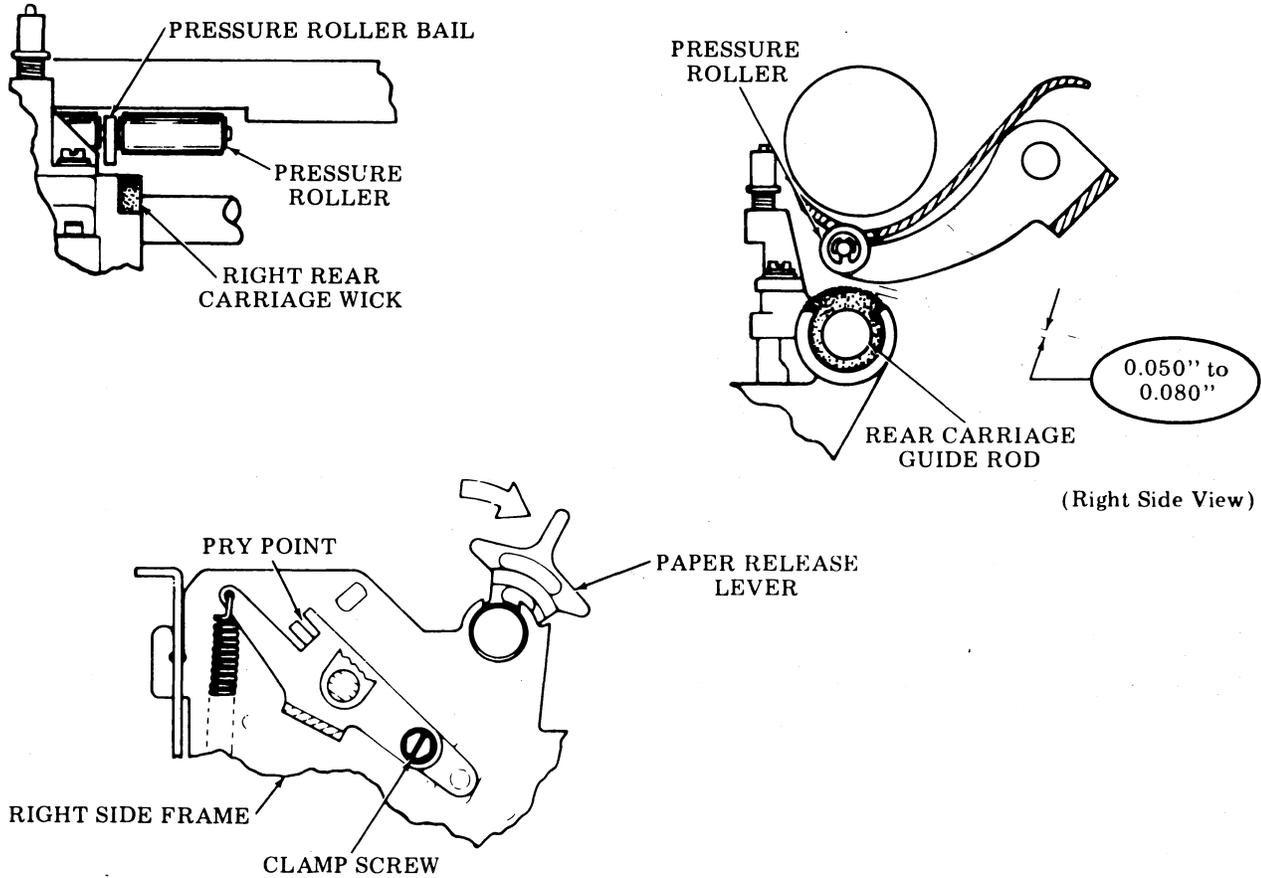
Requirement

With the paper release lever in the forward position and the right end of the carriage next to the right rear carriage wick located immediately under the arm of the pressure roller bail (between the two pressure rollers) there should be from

Min 0.050 inch---Max 0.080 inch  
gap between the carriage and the bail arm when measured at the closest point.

To Adjust

Loosen the clamp screw to friction tight. Move pry point down to increase gap or up to decrease gap.



PAPER GUIDE PLATE CLEARANCE (Sprocket Feed Only)

Note: For sprocket feed (Early Design) with metal paper guide only.

(1) Requirement

With no sprocket forms in the platen mechanism and the platen oriented with the slot, or rib, on the right platen hub in the top uppermost position there should be

Min 0.008 inch---Max 0.025 inch between the platen and the left and right ends of the paper guideplate. Record the two clearances.

To Adjust

Loosen locknut and adjust screw. Tighten locknut.

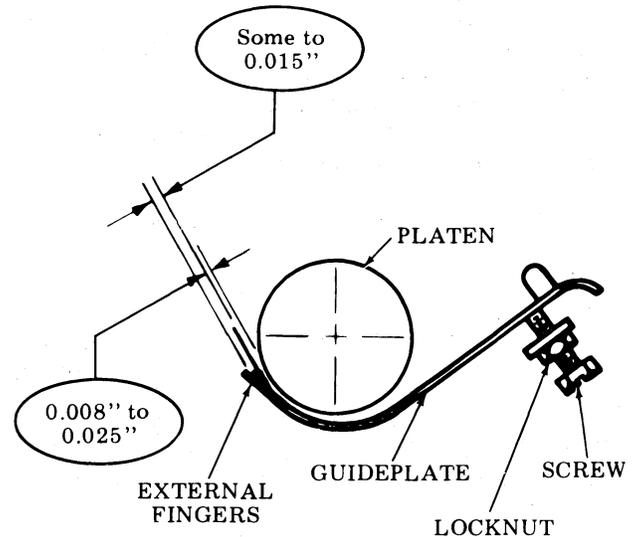
(2) Requirement

The fingers at both the left and right ends of the platen should be

Min Some---Max 0.015 inch beyond the recorded gap between the platen and the left and right ends of the paper guideplate.

To Adjust

Bend fingers to meet requirement.



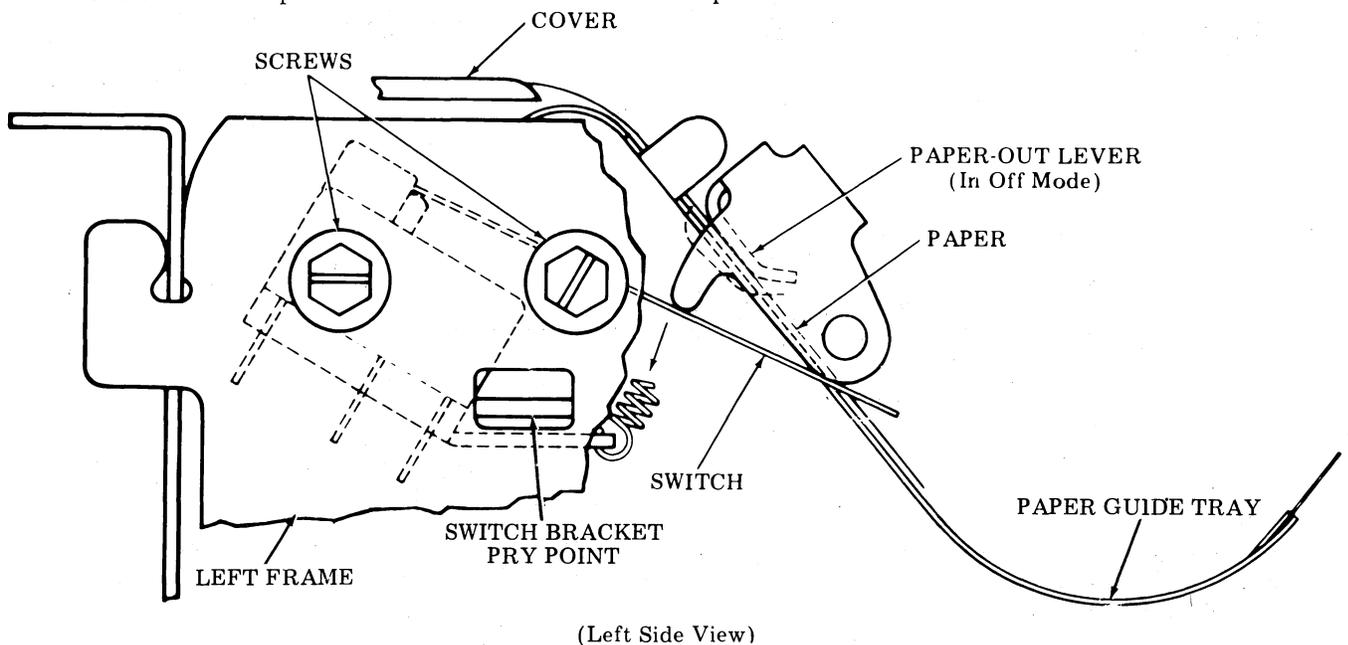
PAPER ALARM CONTACT LEVER (Sprocket Feed Only)

Requirement

With the paper alarm contact lever resting on the paper and the paper held taut over the cutout in the paper guide tray, the switch will be in the off mode (nonalarm). With the paper out, the lever should activate the switch (alarm mode).

To Adjust

Loosen screws and position switch bracket to meet requirement.

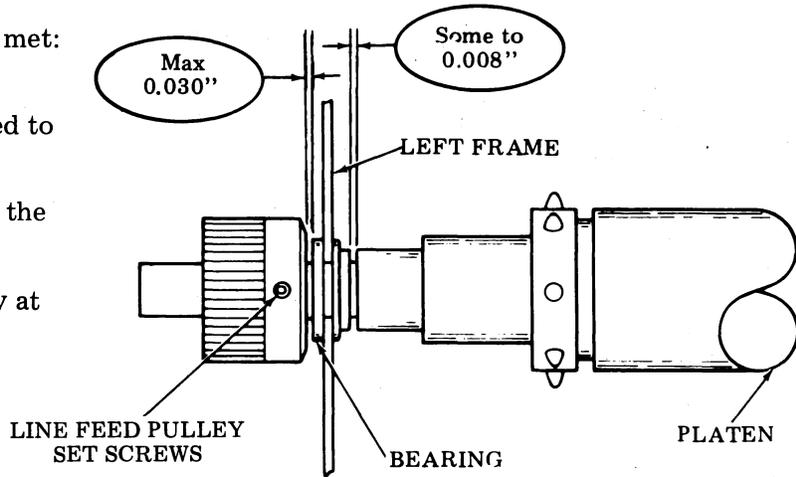


PLATEN ENDPLAY AND PRINTED LINE POSITION

The following two requirements must be met:

- (1) Requirement  
 Platen Endplay -- With the platen biased to the right, there should be  
 Min Some ---Max 0.008 inch  
 clearance between the left bearing and the platen hub, at the closest point, and  
 Max 0.030 inch  
 between the left bearing and the pulley at the closest point.

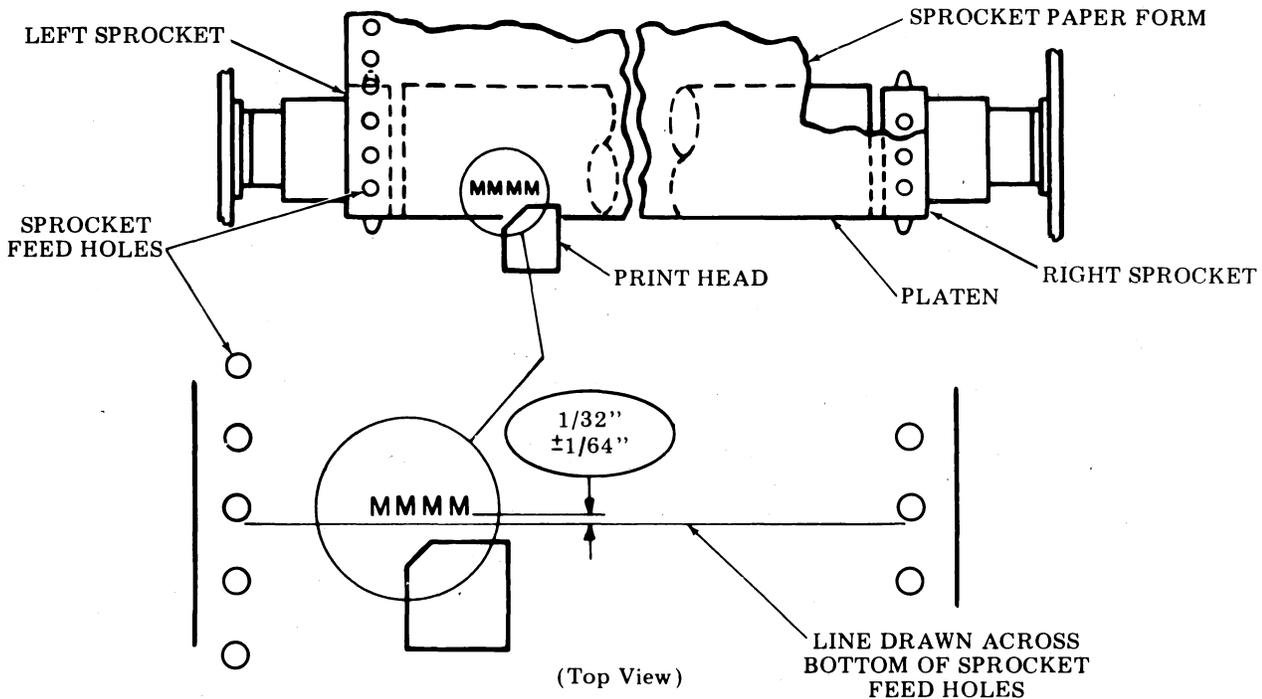
To Adjust  
 Loosen line feed pulley set screws and position.



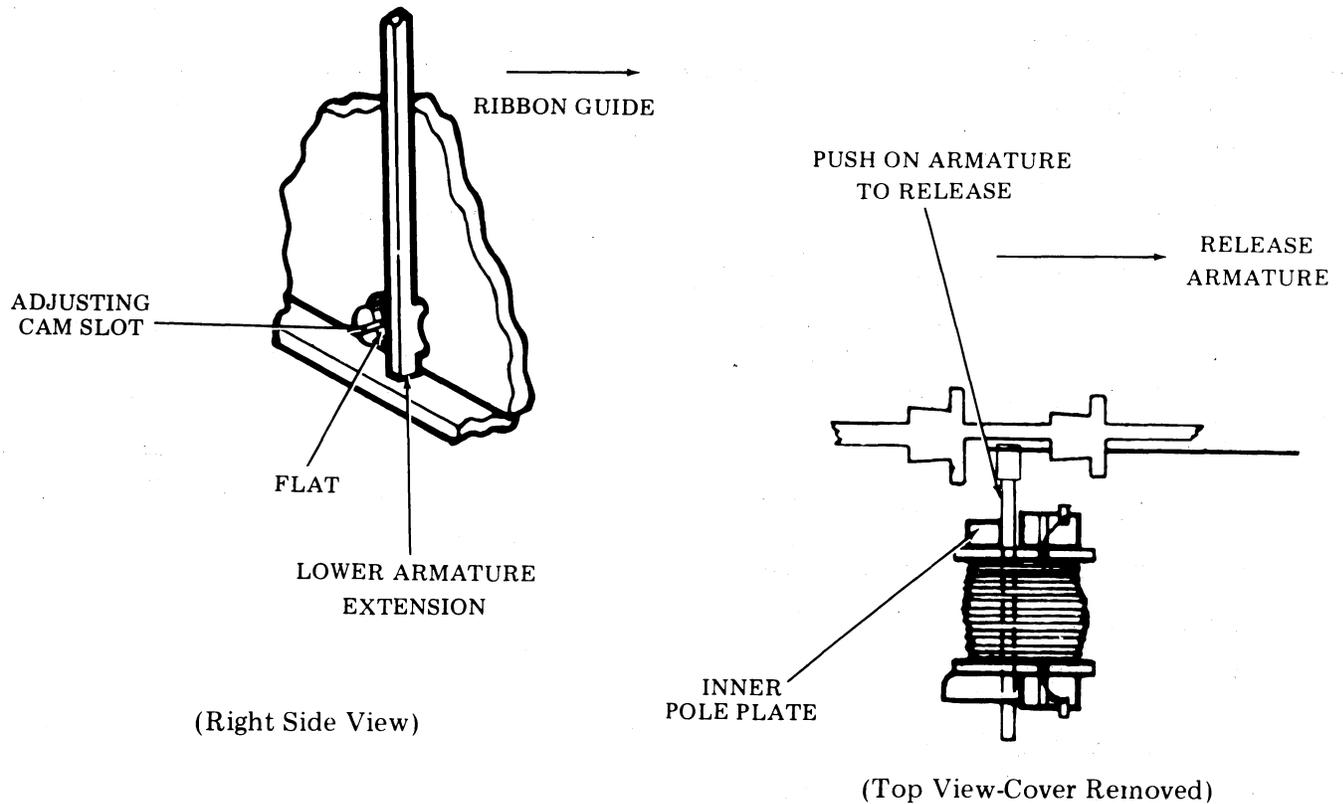
- (2) Requirement (Sprocket Feed Only)  
 Printed Line Position — The lower edge of a typed line of M characters should be  $1/32 \pm 1/64$  inch above a horizontal line located by any of the following methods:

1. A line drawn between the lower edges of two opposite sprocket holes.
2. A preprinted line on the form the same as in 1. above or in 1/6 inch multiples.
3. A fold midway between two sprocket holes on fanfold paper.

(Power must be on line feed motor for this adjustment.)



To Adjust  
 Loosen the line feed pulley set screws and position. Print the character "M" across the line and check (2) Requirement. If necessary, (early design platen only) loosen set screw on right sprocket to meet alignment requirement.

PRINT HEAD ARMATURE**Requirement**

With a good ribbon installed and the print head positioned and locked toward the platen, no wires shall stick through the ribbon (will not retract) and no dots shall be missing or noticeably lighter than other dots on printed copy.

**To Adjust**

*Note:* This adjustment applies to all 9 levels.  
(Power must be off for this adjustment)

Remove the ribbon and print head cover. Release the print head and position away from the platen. With the lower armature extension on the high part of the cam (adjusting cam slot horizontal and the flat facing toward the ribbon guide) and the armature released from the inner pole plate, rotate the adjusting cam slowly clockwise until the armature is magnetically pulled up. Continue rotating cam clockwise for 3 more clicks.

4. **SPRING TENSIONS** (Spring identification and location on Page 13.)

① 430028 Lead Screw Spring

On left side of lead screw, push to start to compress spring — 9 to 11 pounds.

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### ② 430030 or 430366 Carriage Nut Spring

Place carriage on left side of unit. Hold lead screw pulley. Insert spring scale through top hole of left bearing housing. Push carriage with  $46 \pm 8$  ounces to compress carriage nut spring.

### ②a 430366 Bias Spring

The free length of the bias spring (not assembled on the lead screw nuts) should be between 1.55 inch and 1.65 inch.

### ③ 430242 Ribbon Tension Spring

4-1/2 to 6-1/2 ounces to pull spring to installed length with ribbon installed.

### ④ 101386 Paper Finger Springs (Left and Right) (2)

2 to 4 ounces to start to lift paper fingers at front edge of fingers (with center paper guide installed)

### ⑤ 430021 SP Belt Tension Arm Spring

18 to 22 ounces to pull spring to installed length.

### ⑥ 72473 Paper-Out Spring (Sprocket Feed Only)

1/2 to 1 ounce to start paper-out lever moving.

### ⑦ Bell Plunger (Striker) Spring (Old Bell)

1/2 to 1 ounce to seat plunger (430118).

### ⑦a 430411 Bell Plunger Spring (New Bell)

1 to 10 grams for striker (430411) to contact gong.

### ⑧ Link Spring (Part of 430216)

3/4 to 1-1/4 ounces at roll pin to hold spring in lowest position with locking handle in the most forward position.

### ⑨ 4708 Paper Tray Springs (Left and Right) (2)

On sprocket feed units, lift paper out contact bail to latched position. Move the printhead away from the platen. With a spring scale hooked over the center of the top edge of the tray, and pulling at right angles to the main surface of the tray, it should require 8 to 12 ounces to start the tray moving forward.

### ⑨a 82463 Paper Tray Springs (Left and Right) (2)

On friction feed sets with plastic paper trays, move the printhead away from the platen. With a spring scale hooked over the center of the top edge of the tray, and pulling at right angles to the main surface of the tray, it should require 1 to 1-1/2 ounce to start the tray moving forward.

### ⑩ 430021 Line Feed Belt Tension Arm Spring

10 to 14 ounces to pull spring to installed length.

### ⑪ 82727 Pressure Roller Bail Spring (Friction Feed Only)

With the paper release lever in the rear position and pulling the pressure roller bail at the spring mounting hole at a right angle to the bail arm, it should take 46 to 56 ounces to start the roller bail moving.

SPRING IDENTIFICATION

