HIGH SPEED TAPE WINDER

DESCRIPTION, INSTALLATION, MAINTENANCE,

AND PRINCIPLES OF OPERATION

CONTENTS PAGE

1. DESCRIPTION

1.01 The High Speed Tape Winder is a unit designed to wind perforated tape on a reel at a rate of 100 linear feet per minute (2000 wpm). It is a self-contained unit consisting of a tape reel assembly, a tape chad depressor, a tape tension device and power and driving mechanisms.

1.02 Requiring only a minimum number of changes, the unit can be made to accept 5 or 8 level tape and winding speeds in excess of 100 linear feet per minute can be achieved.

1.03 An induction wound motor is used to drive the tape winder. The power supply requirements for the motor are:

(a) Input voltage: 115 volts $\pm$10% AC

(b) Phase: Single

(c) Frequency: 60 cycles

(d) Horse Power: 35 M.H.P.

1.04 The High Speed Tape Winder is 17-1/4 inches high, 5-1/2 inches wide, 23-1/2 inches long and weighs 18 pounds. The reel capacity is 3,000 feet of fully perforated tape or 2,000 feet of chadless tape. The unit will accommodate tape widths of 11/16 inch, 7/8 inch and 1 inch.

Prepared for American Telephone and Telegraph Company by Teletype Corporation

2. INSTALLATION PROCEDURES

UNPACKING HIGH SPEED TAPE WINDER

2.01 The tape winder is packed in a cardboard carton. Unpack the unit by cutting the carton at the sealed edges, being careful not to mar the finish. Observe all caution labels and instructions.

SERVICING INSTRUCTIONS

A. Tape Reel Assembly

2.02 The tape reel assembly is designed to provide take-up of 5 or 8 level tape, depending on the position of the locating pins on the left core relative to the right core. When the locating pins on the left core mate with the holes on the right core and subsequently locked into position, the reel assembly will accommodate 5 level tape. When the locating pins on the left core mate with the slot in the right core and then locked in position, the reel assembly will accommodate 8 level tape. See Figure 1.

B. Tape Guide Collar

2.03 The knurled tape guide collar can be in either of two positions for either 5 or 8 level tape. The garter spring on the collar provides the necessary detent action on the grooved guide post for the two positions. See Figure 2.

TAPE THREADING

2.04 To facilitate tape threading, the following procedure is recommended:

(1) Place the tape reel assembly in the free wheeling position, i.e. in the forward most slots in the reel assembly bearing plate.

(2) Place the tape in the slot of the tape reel cores and rotate the reel assembly at least two complete revolutions.

(3) Route the tape under the guide post.

(4) Lift the tape arm until the chad depressor leaves the post.

(5) The tape may now be placed between the posts and the tape arm extension as shown in Figure 3.

(6) Allow the tape arm to drop to its normal operating position. Place the reel assembly in its drive position (rearmost position).

2.05 The left side of the tape reel assembly consists of a core, bearing, two spacers, gear, reel with hub and shaft. The gear spacer and core are secured together with two drive screws. The reel with hub is contained between the spacer and core. The right side of the tape reel assembly consists of a core, reel with hub, knob and locking plate. The design of the reel assembly allows the two side reels to rotate independent on the shaft and gear.

2.06 To remove the tape from the reel assembly, move the locking plate out of engagement with the groove in the shaft, thus allowing separation of the reel assembly.

3. ADJUSTMENTS

GENERAL

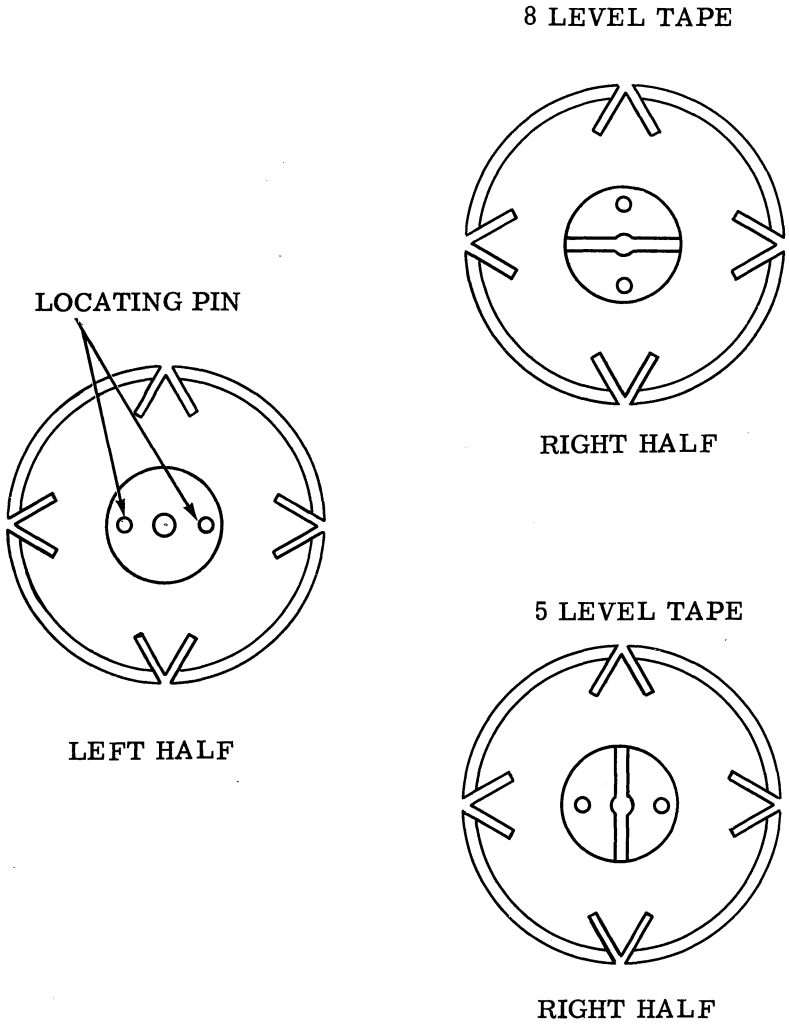
3.01 The mechanisms illustrated in this section are being viewed from a position in front of the equipment, unless labeled otherwise. References in the text to left or right designate the viewer's left or right as he faces the front of the unit.

3.02 In the adjustments and spring tensions covered in this section, location of clearances, position of parts and point and angle of scale applications are illustrated by drawings. Requirements and procedures are set forth in the texts that accompany the drawings. The sequence of adjustments is that which should be followed when a complete readjustment of the unit is undertaken. If a sequence is to be followed on an individual page, numbers in parenthesis will precede the text. A procedure should be read all the way through before making the adjustment or checking the spring tension.

3.03 Tools required to make the adjustments and test the spring tensions are not supplied with the unit. If parts are removed, all adjustments which the removal of these parts might facilitate should be made before the parts are replaced. Unless specifically stated to the contrary, after an adjustment has been made, all nuts and screws that were loosened should be tightened.

3.04 The spring tensions given in this section are indications, not exact values, and should be checked with Teletype scales in the positions shown in the drawings. Springs which do not meet the requirements and for which there are no adjusting procedures, should be discarded and replaced with a new spring.

3.05 All contact points should meet squarely. Points should not be out of alignment more than 25 percent of the point diameter. Avoid sharp kinks or bends in the contact springs.



POSITION OF RIGHT HALF REEL ASSEMBLY
RELATIVE TO LEFT HALF REEL ASSEMBLY

Figure 1.

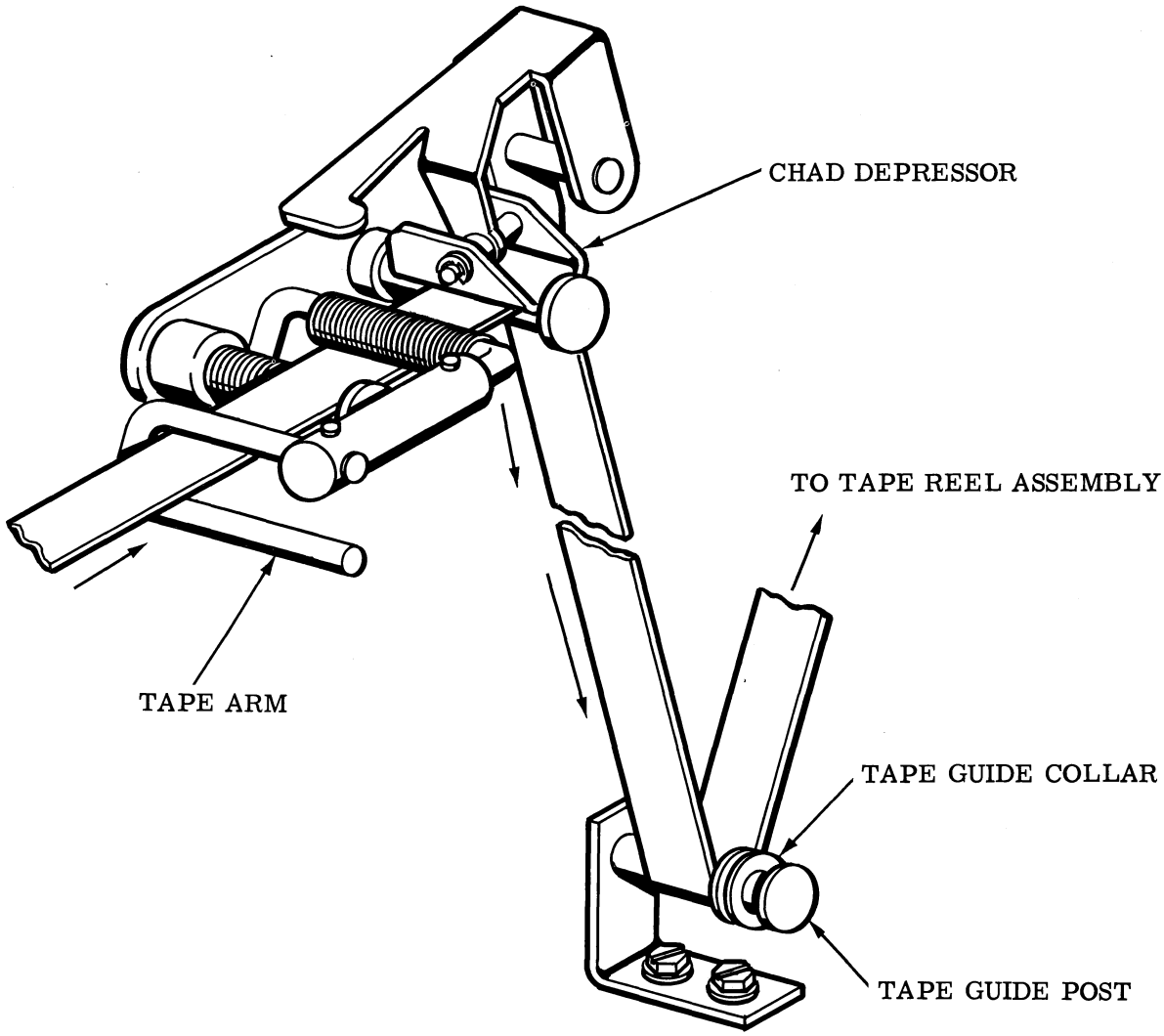
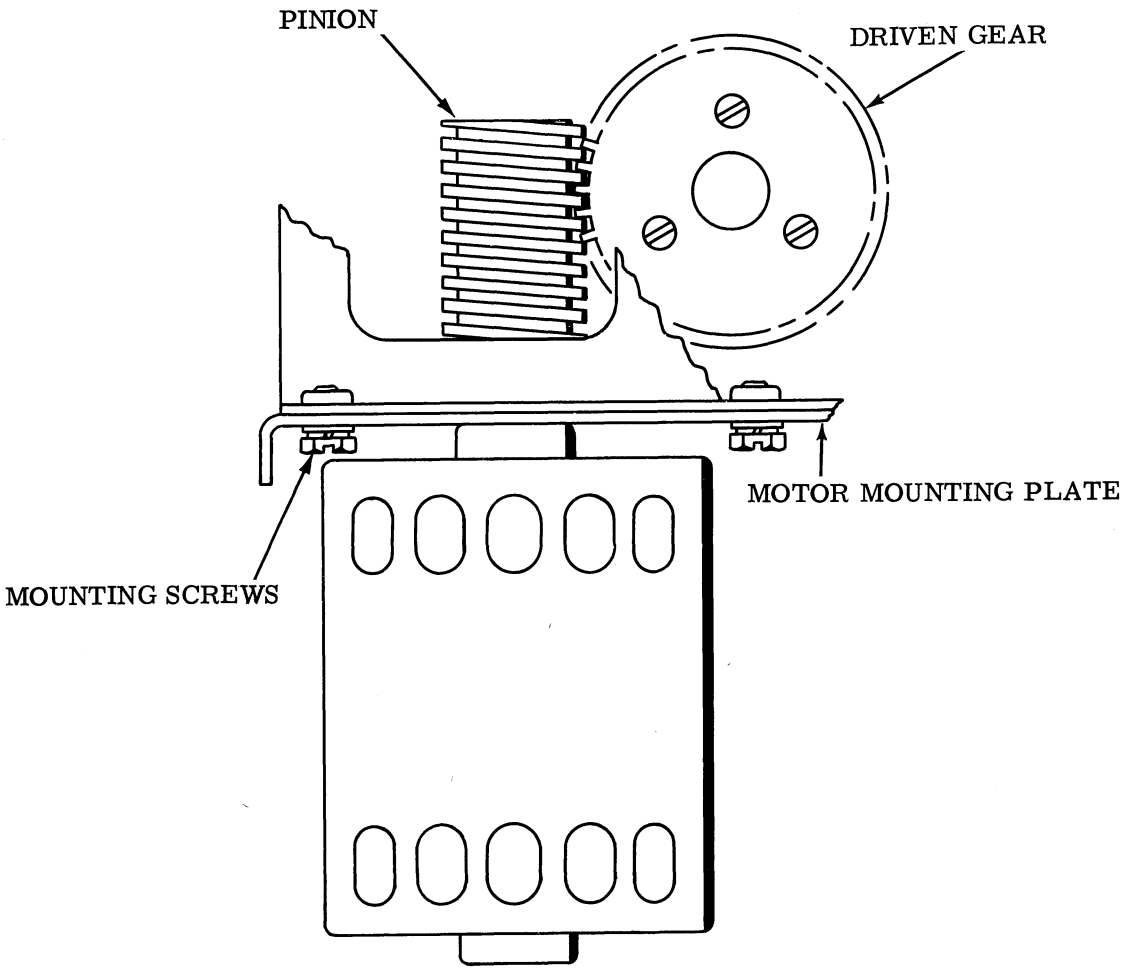

CHAD DEPRESSOR
TO TAPE REEL ASSEMBLY
TAPE ARM
TAPE GUIDE COLLAR
TAPE GUIDE POST

Figure 2.

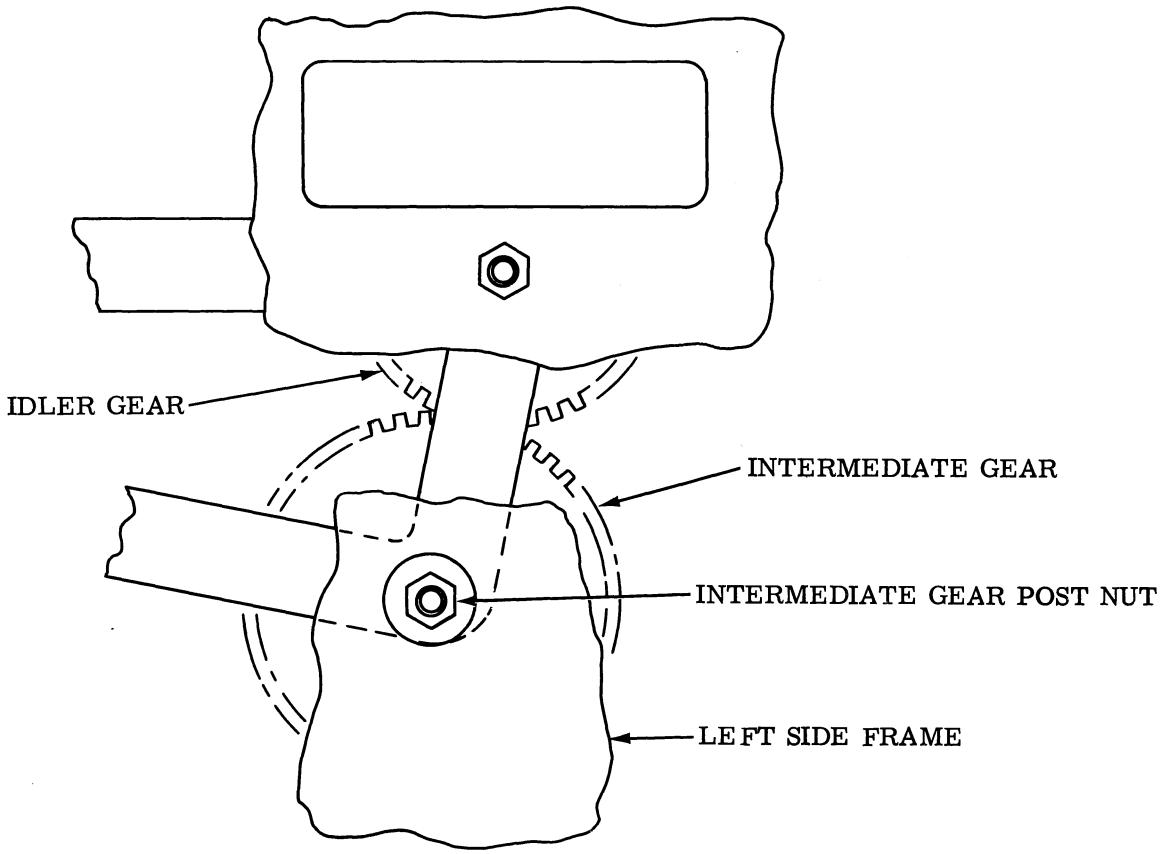


LEFT SIDE VIEW

MOTOR PINION GEAR

Requirement
A barely perceptible amount of backlash between motor pinion and driven gear at point of least clearance.

To Adjust
With mounting screws loosened, position motor mounting plate to meet requirement.

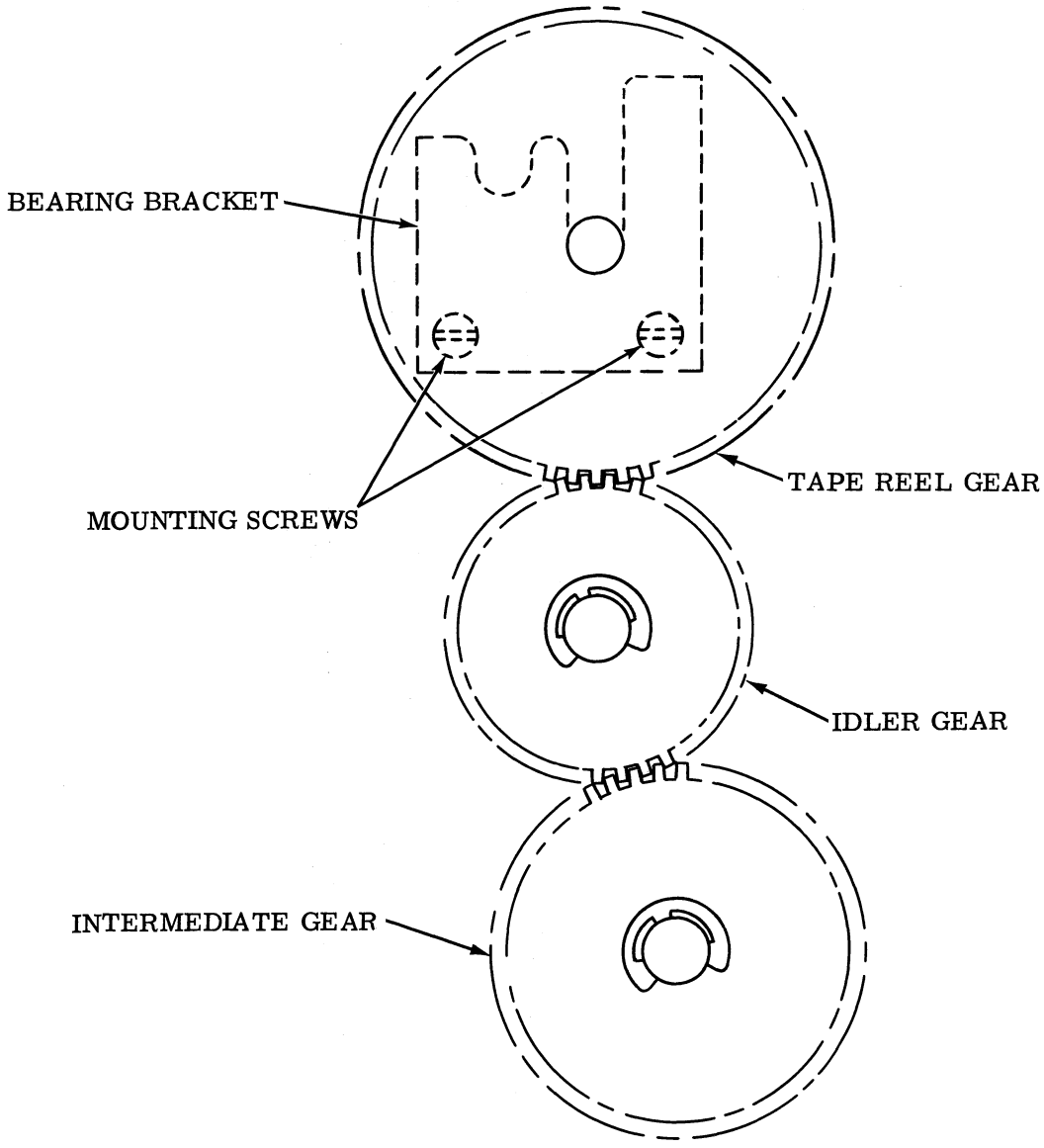


LEFT SIDE VIEW

INTERMEDIATE GEAR

Requirement
A barely perceptible amount of backlash between intermediate gear and idler gear at point of least clearance.

To Adjust
With intermediate gear post nut loosened, position post to meet requirement.



RIGHT SIDE VIEW

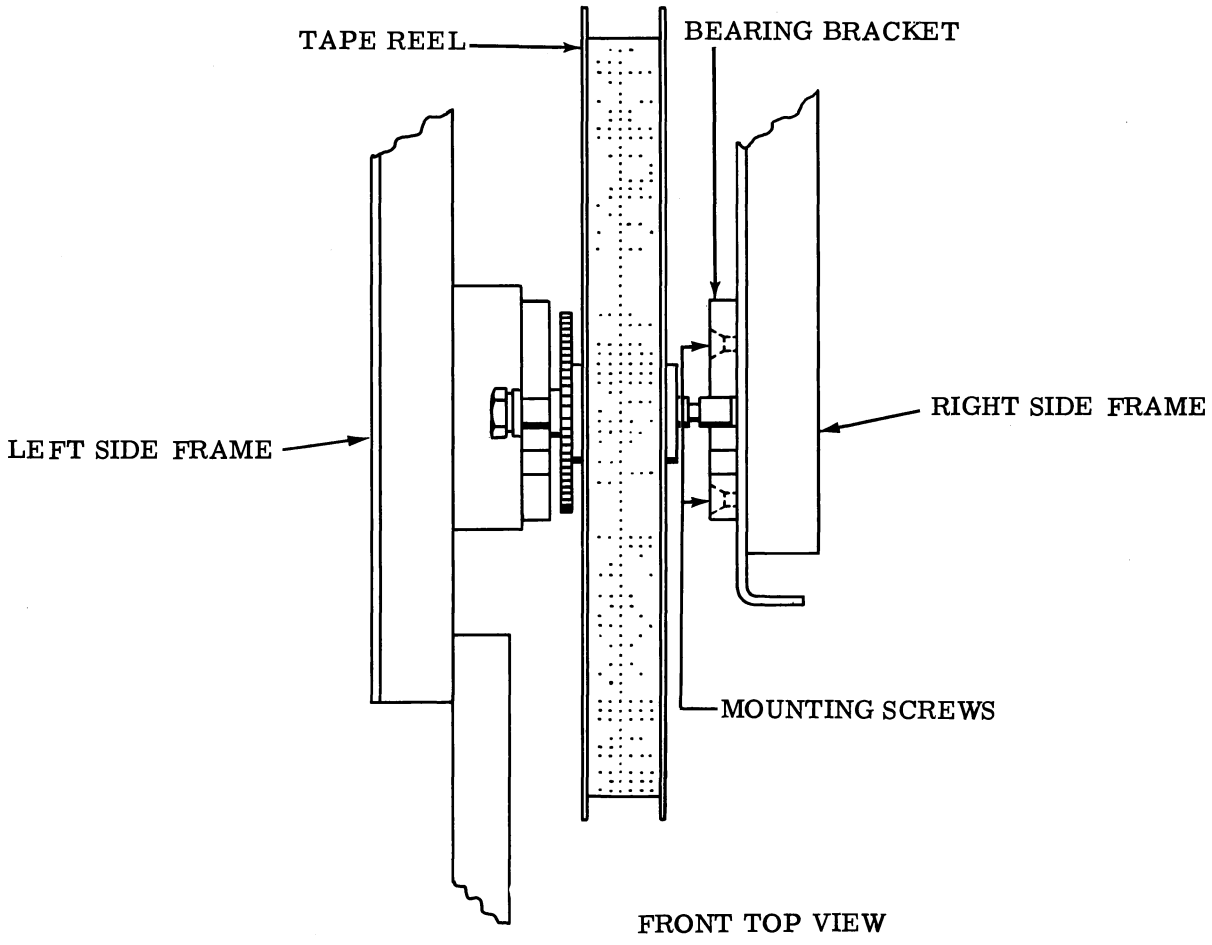
TAPE REEL ASSEMBLY GEAR

Requirement

A barely perceptible amount of backlash between tape reel assembly gear and idler gear at point of least clearance.

To Adjust

With bearing bracket screws friction tight, position bracket to meet requirement.



TAPE REEL ASSEMBLY GEAR AND BEARING

Requirement

Tape reel assembly in its operating position, tape reels shall be parallel to the side frames as gaged by eye.

To Adjust

With right bearing bracket screws friction tight, position bearing bracket to meet requirement.

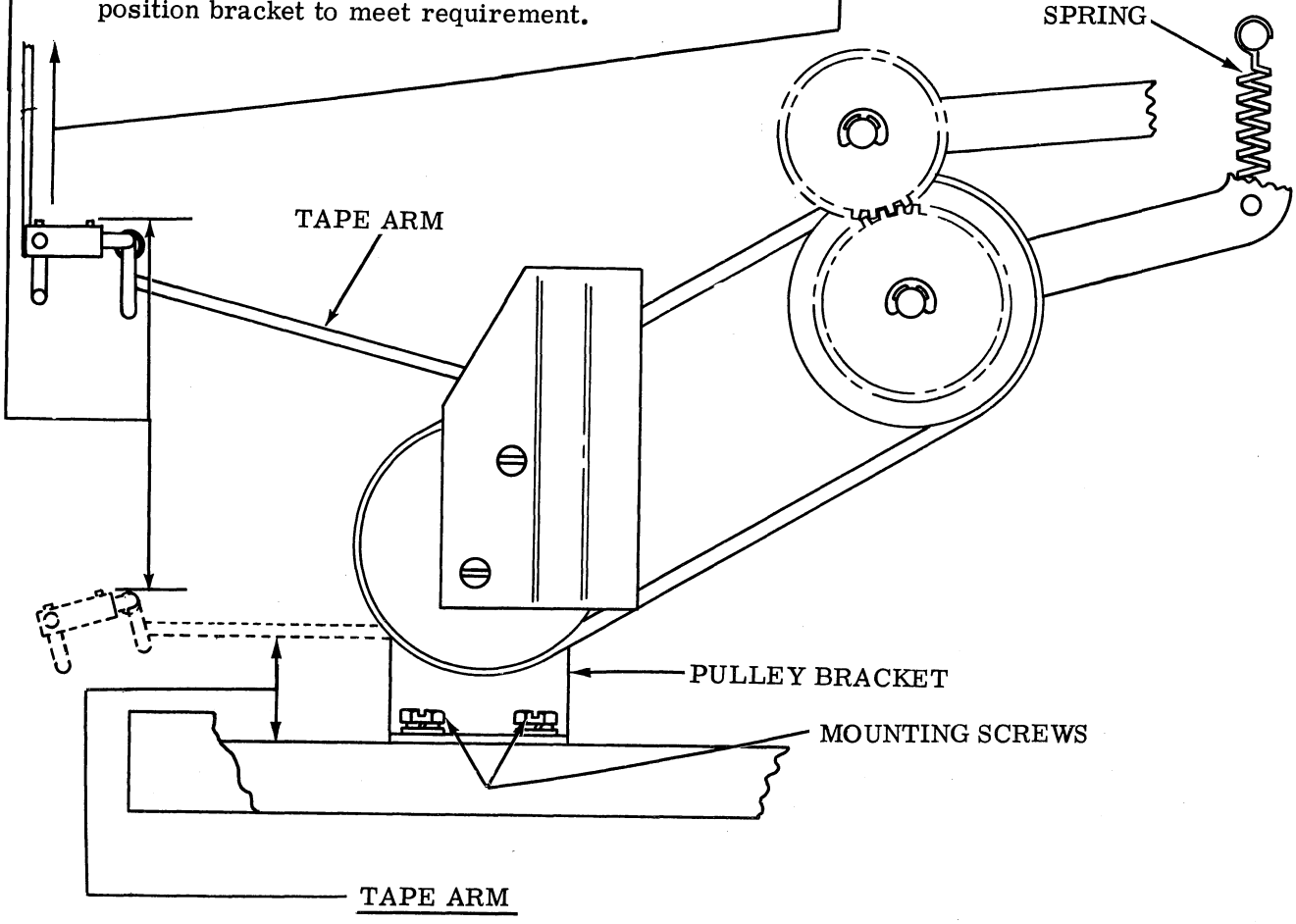
BRAKE PULLEY BRACKET

Requirement
Tape arm shall travel from normal operation position
Min. 4 inches
Max. 5-1/2 inches
before yield spring begins to yield.

To Adjust
With pulley bracket screws friction tight
position bracket to meet requirement.

TAPE ARM YIELD SPRING

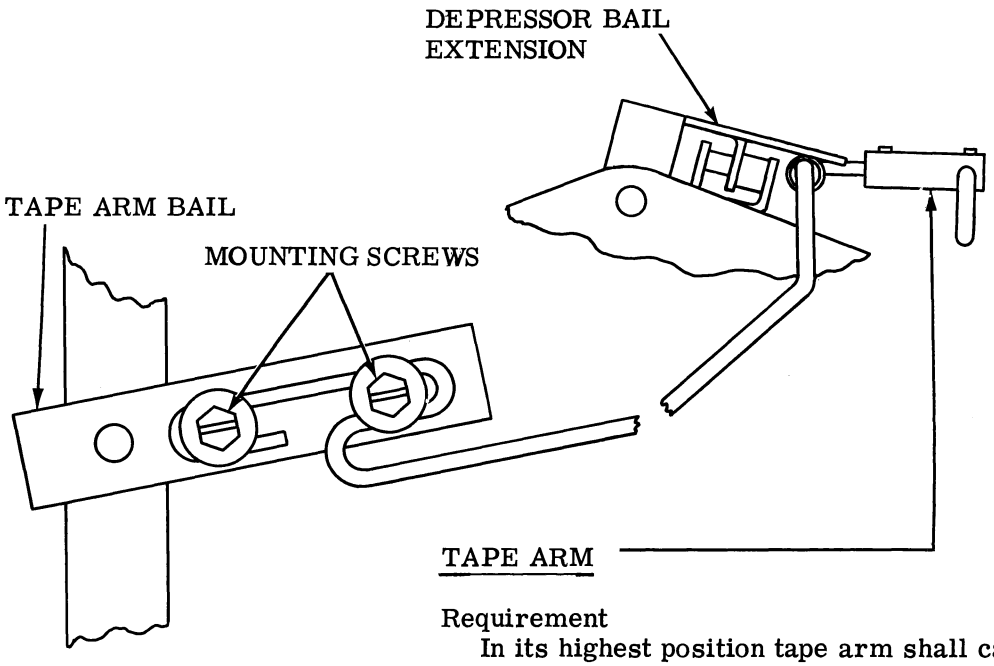
Requirement
Min. 7 ozs.
Max. 12 ozs.
before spring begins to yield.



TAPE ARM

Requirement
When tape arm is in its normal operating
position it shall be
Min. 1 inch
Max. 1-3/4 inches
away from base at its closest point

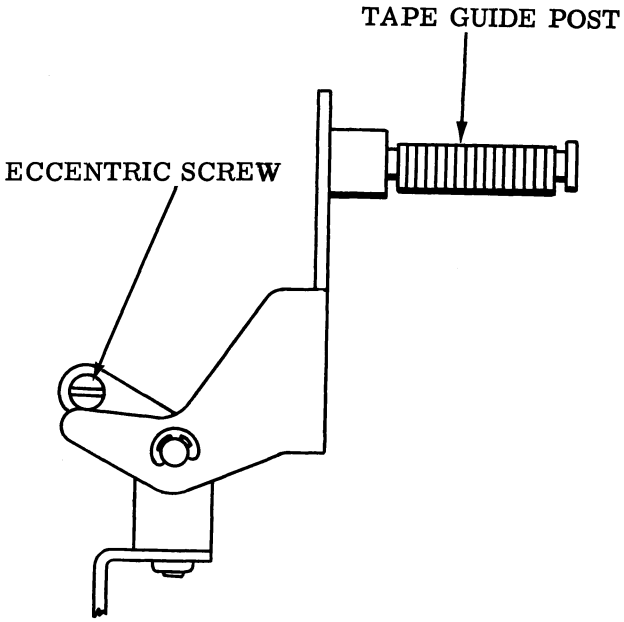
To Adjust
Bend tape arm to meet requirement



TAPE ARM

Requirement
In its highest position tape arm shall cam the depressor bail extension, causing the depressor to leave the post.

To Adjust
With tape arm bail screw loosened position tape arm to meet requirement.

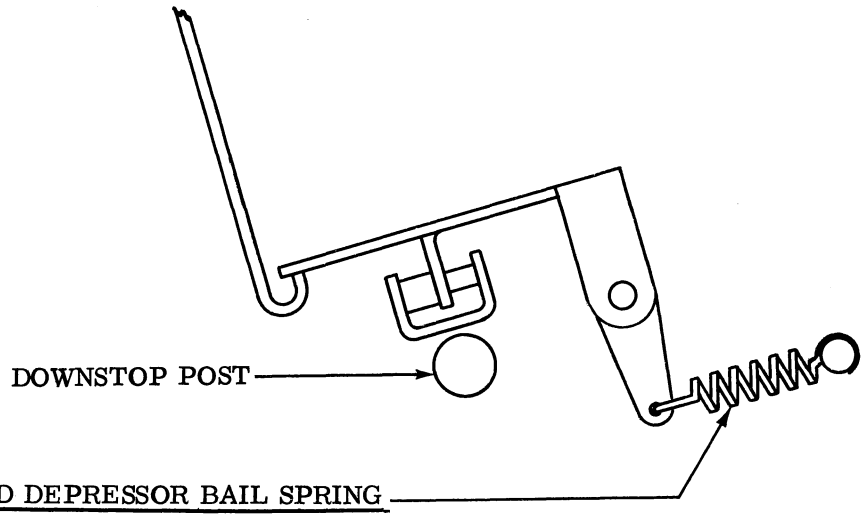


CHAD DEPRESSOR DOWNSTOP

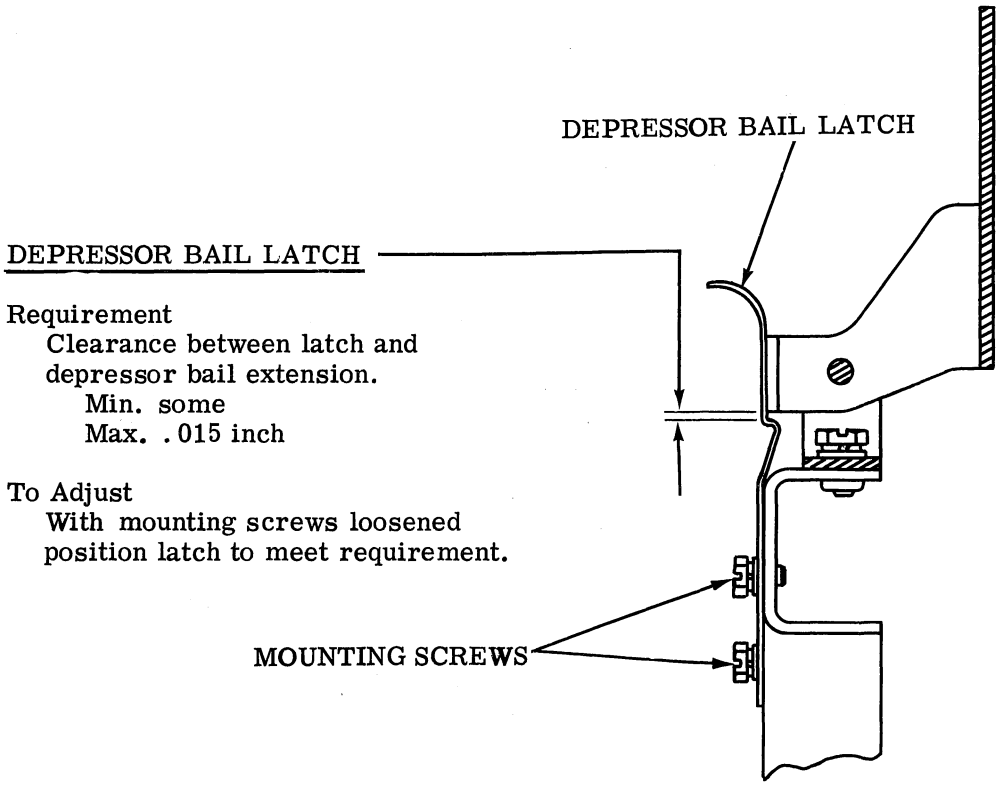
To Check
Place depressor bail latch in its lowermost position.

Requirement
When chad depressor bail is in its normal operation position, the posts shall be horizontal as gaged by eye.

To Adjust
Loosen eccentric screw. Adjust to meet requirement.



Requirement
Min. 7 ozs.
Max. 11 ozs.
to pull depressor away from downstop post.



Requirement
Clearance between latch and depressor bail extension.
Min. some
Max. .015 inch

To Adjust
With mounting screws loosened position latch to meet requirement.

CONTACT SWINGER AND STIFFENER

Requirement
(1) Contact points shall meet squarely as gaged by eye.
(2) In normally closed position, there shall be some clearance between stiffener and contact spring.

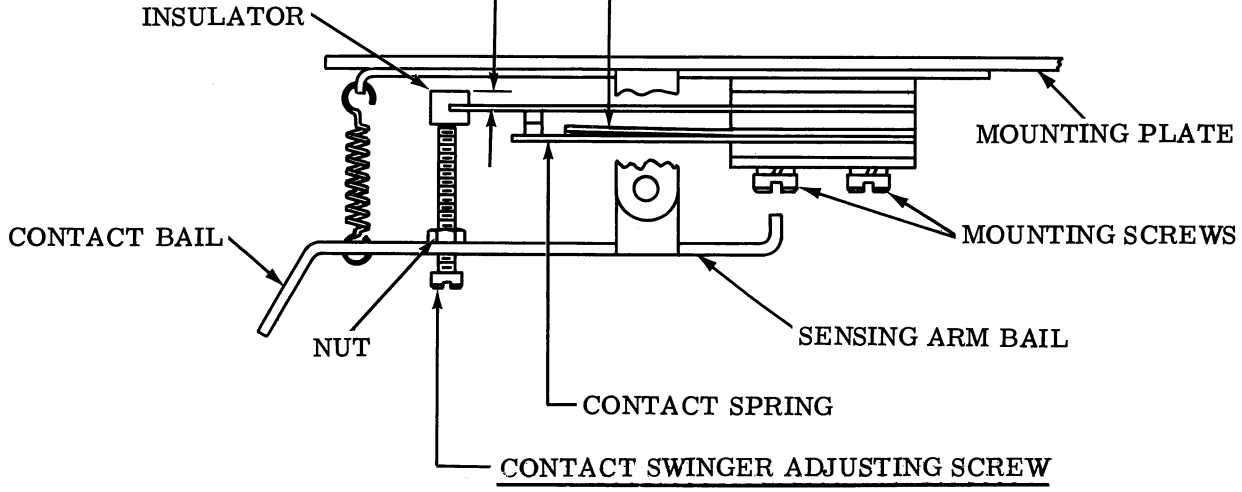
To Adjust
(1) With mounting screws loosened, align contacts to meet requirement.
(2) Bend stiffener and/or contact spring to meet requirement.

NOTE: The above adjustment may be made before assembling sensing arm bail to contact assembly.

CONTACT SWINGER BACKSTOP

Requirement
With contacts closed, there shall be
Min. .045 inch
Max. .085 inch
clearance between swinger insulator and contact bail.

To Adjust
Bend swinger to meet requirement.

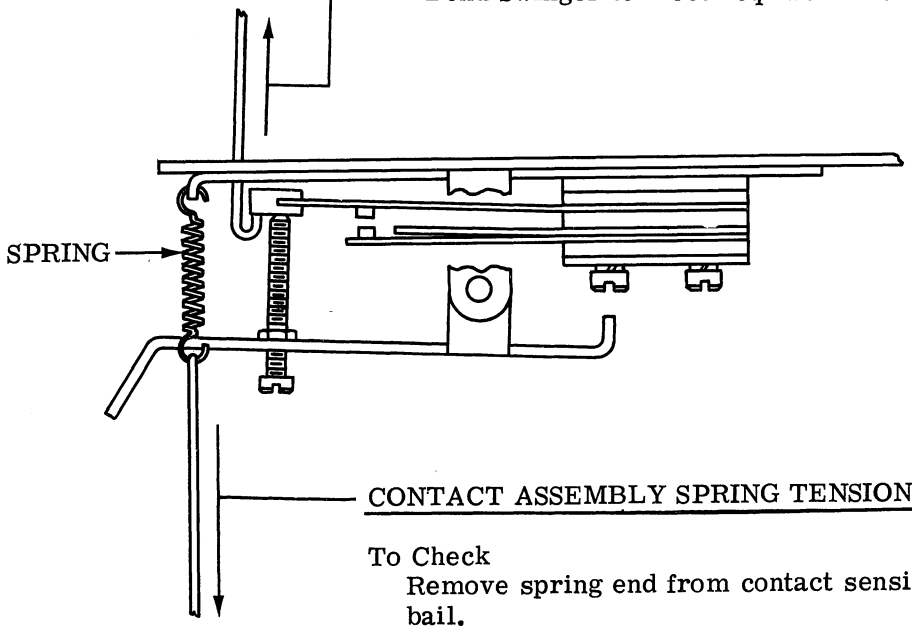


CONTACT SWINGER ADJUSTING SCREW

Requirement
With spring installed, sensing arm bail shall be parallel to mounting plate as gaged by eye.

To Adjust
Loosen nut that secures adjusting screw. Position screw to meet requirement.

NOTE: This adjustment may be made prior to securing assembly to mounting plate.



TAPE REEL FULL CONTACT

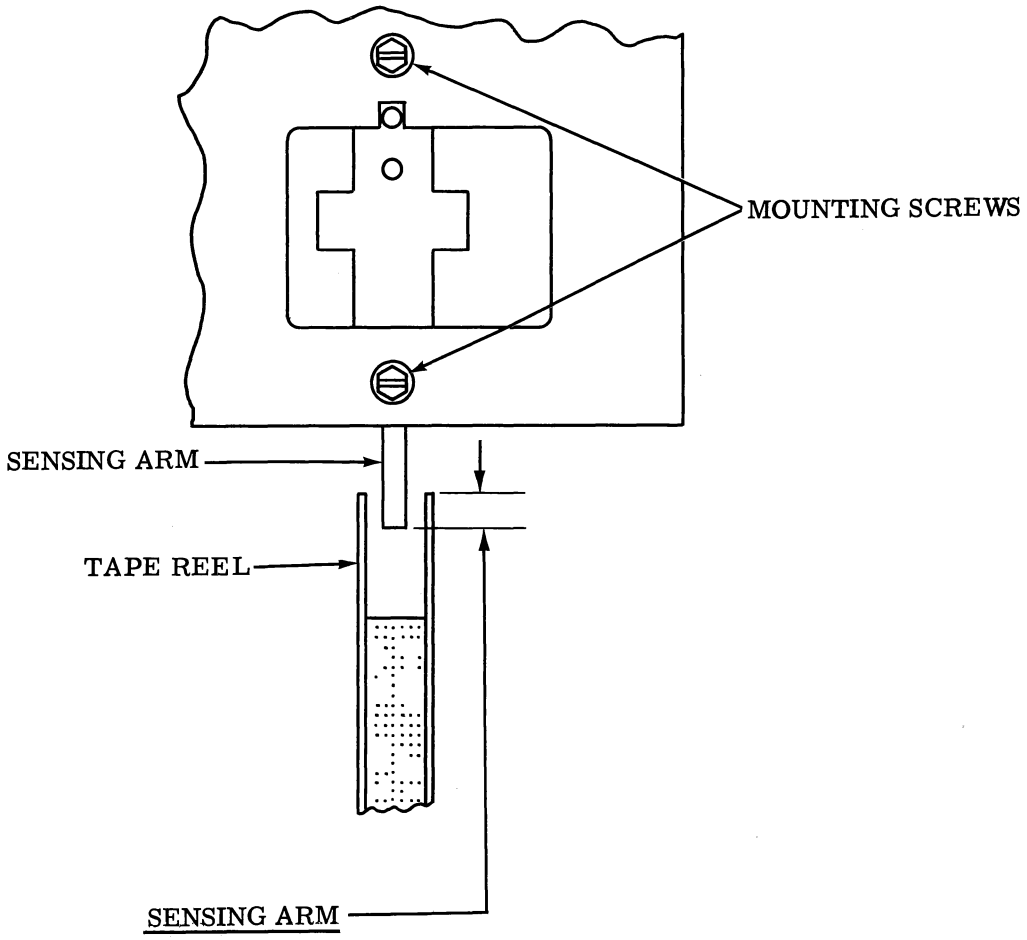
Requirement
To separate contact points
Min. 1/2 oz.
Max. 1 oz.

To Adjust
Bend swinger to meet requirement.

CONTACT ASSEMBLY SPRING TENSION

To Check
Remove spring end from contact sensing bail.

Requirement
To pull spring to its installed length
Min. 1 oz.
Max. 2 ozs.



Requirement
When contact points are opened sensing arm shall be
Min. 1/4 inch
Max. 1/2 inch
inside edge of reel.

To Adjust
With mounting screws loosened position bracket to meet requirement.

4. DISASSEMBLY

4.01 To remove the brake belt and drive belt proceed as follows:

(1) Remove the screws which secure the top plate and motor mounting plates to the side bracket extension.

(2) Remove the end screw that retains the inner race of the left ball bearing.

(3) Loosen the three screws which mount the left side bracket to the base.

(4) Remove the retainer rings from the intermediate and idler gear posts. Remove the gears.

(5) Loosen the screws that mount the brake belt bracket to the base.

(6) Remove the brake belt and drive belt.

(7) To reassemble, reverse the procedure outlined above.

5. LUBRICATION

GENERAL

5.01 This section provides lubrication instructions for the High Speed Tape Winder. It is important that thorough lubrication of the Set be performed at the intervals specified and with the lubricants recommended. Lubricate the equipment before its initial service, or prior to storage.

5.02 Specific lubrication points are indicated by line drawings and descriptive text. The symbols in the text indicate the following directions:

O	Apply one drop of oil.
O2	Apply two drops of oil.
O3	Apply three drops of oil, etc.
G	Apply thin coat of grease.
SAT	Saturate with oil.

Use only KS7470 oil and KS7471 grease at the specified lubrication points.

5.03 The unit should be thoroughly lubricated, but over-lubrication, which might allow oil to drip or grease to be thrown on other parts, should be avoided. Keep all electrical contacts free from oil or grease.

5.04 These general instructions supplement the specific lubrication points illustrated in this section.

(1) Apply one drop of oil to all spring hooks.

(2) Apply a light flim of grease to all cam surfaces.

(3) Apply a coat of grease to all gears.

(4) Apply oil to all pivot points.

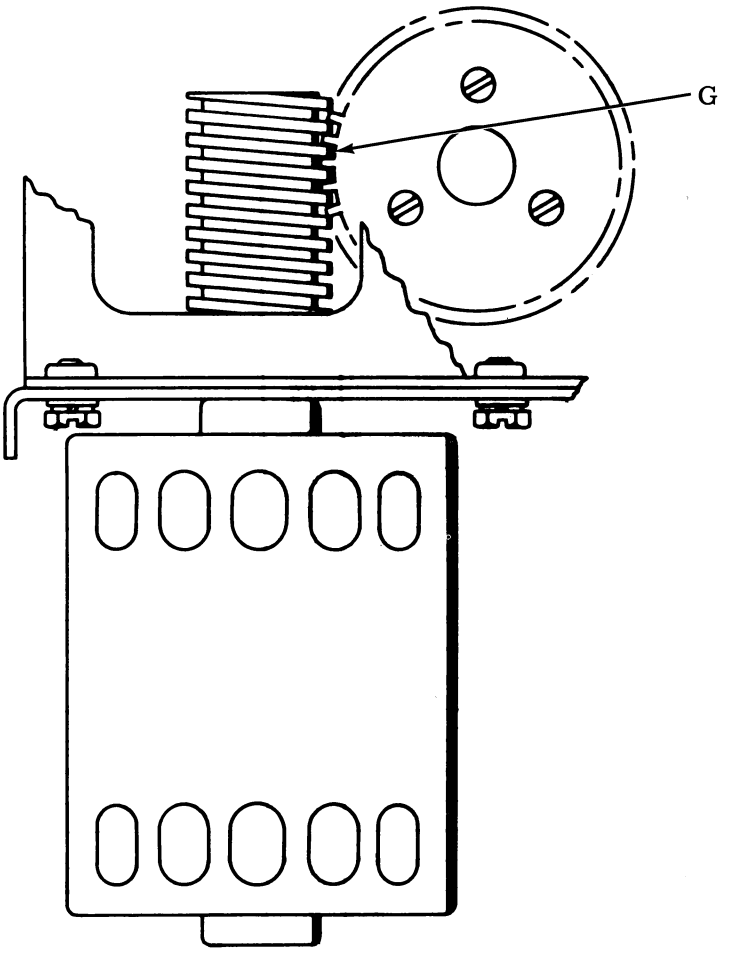
(5) Apply oil to all sliding surfaces.

5.05 After a few weeks of service, relubricate the unit to make certain that all specified points have been lubricated. Thereafter, adhere to the following lubrication schedule.

Operating Speed	Lubrication Interval
100 WPM	2000 hours or 6 months*
500 WPM	400 hours or 3 months*
1000 WPM	200 hours or 2 months*
1500 WPM	150 hours or 1-1/2 months*
2000 WPM	100 hours or 1 month*

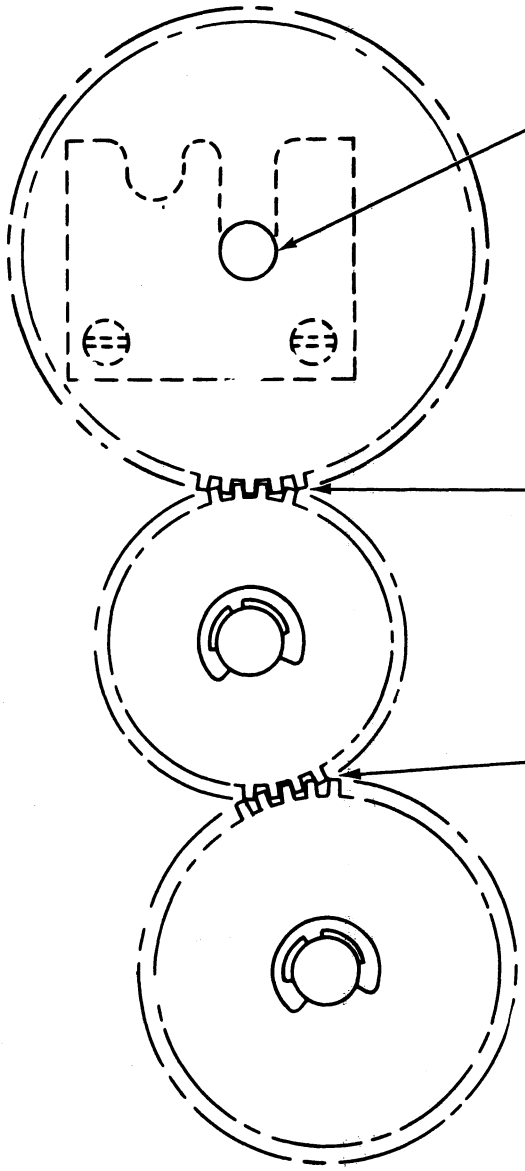
* Whichever occurs first.

5.06 Motor Pinion



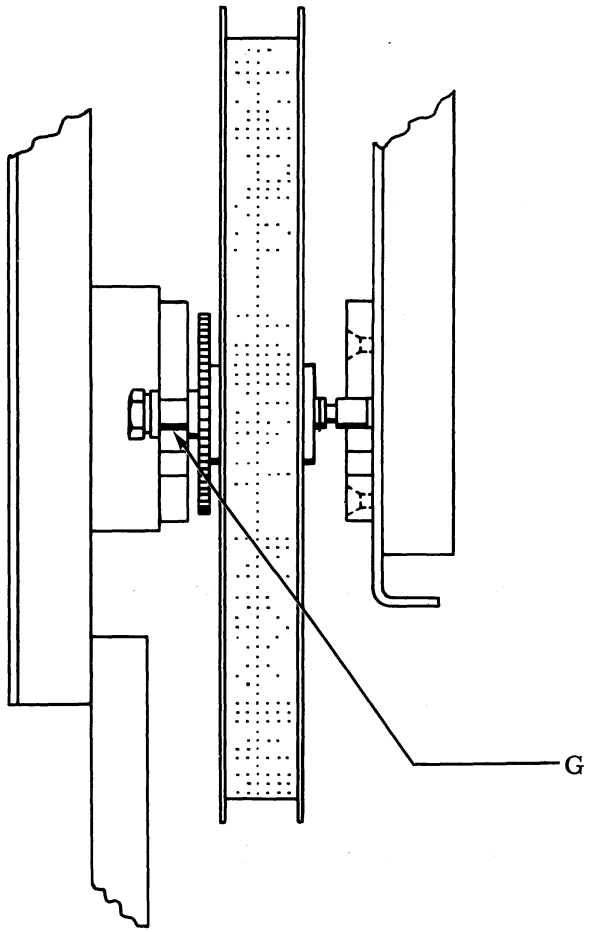
G	Teeth	Pinion and Driven Gear

5.07 Gear Assembly



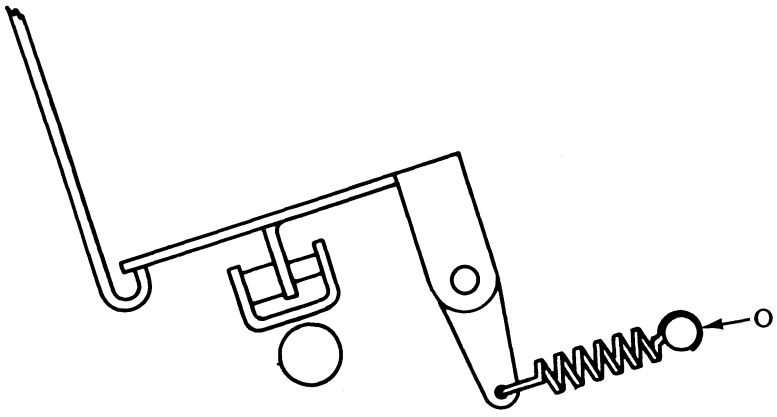
G	Bearing Surface	Bearing Plate
G	Teeth	Idler Gear
G	Teeth	Intermediate Gear

5.08 Tape Reel



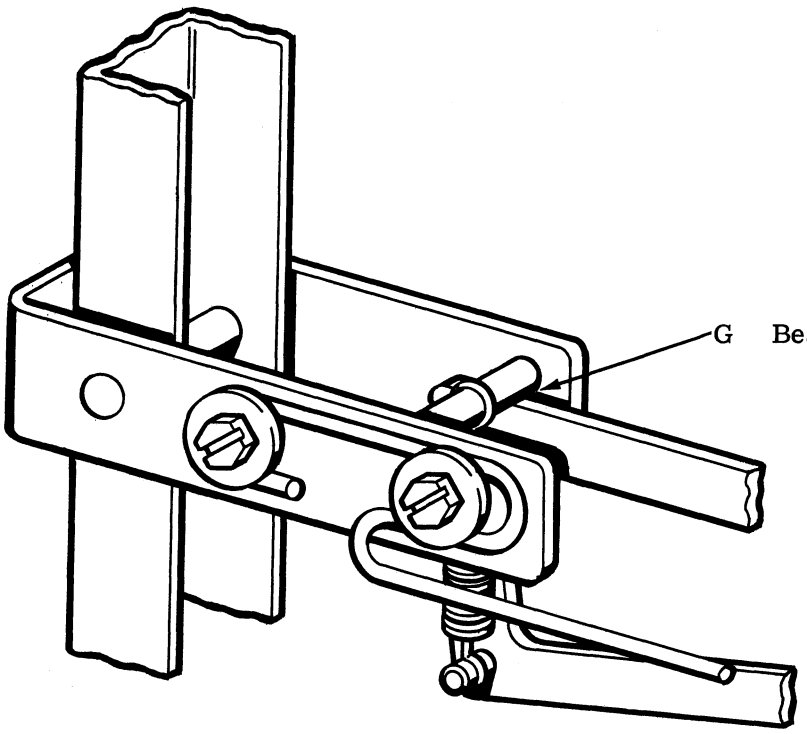
G Bearing Surface Tape Reel Assembly

5.09 Chad Depressor

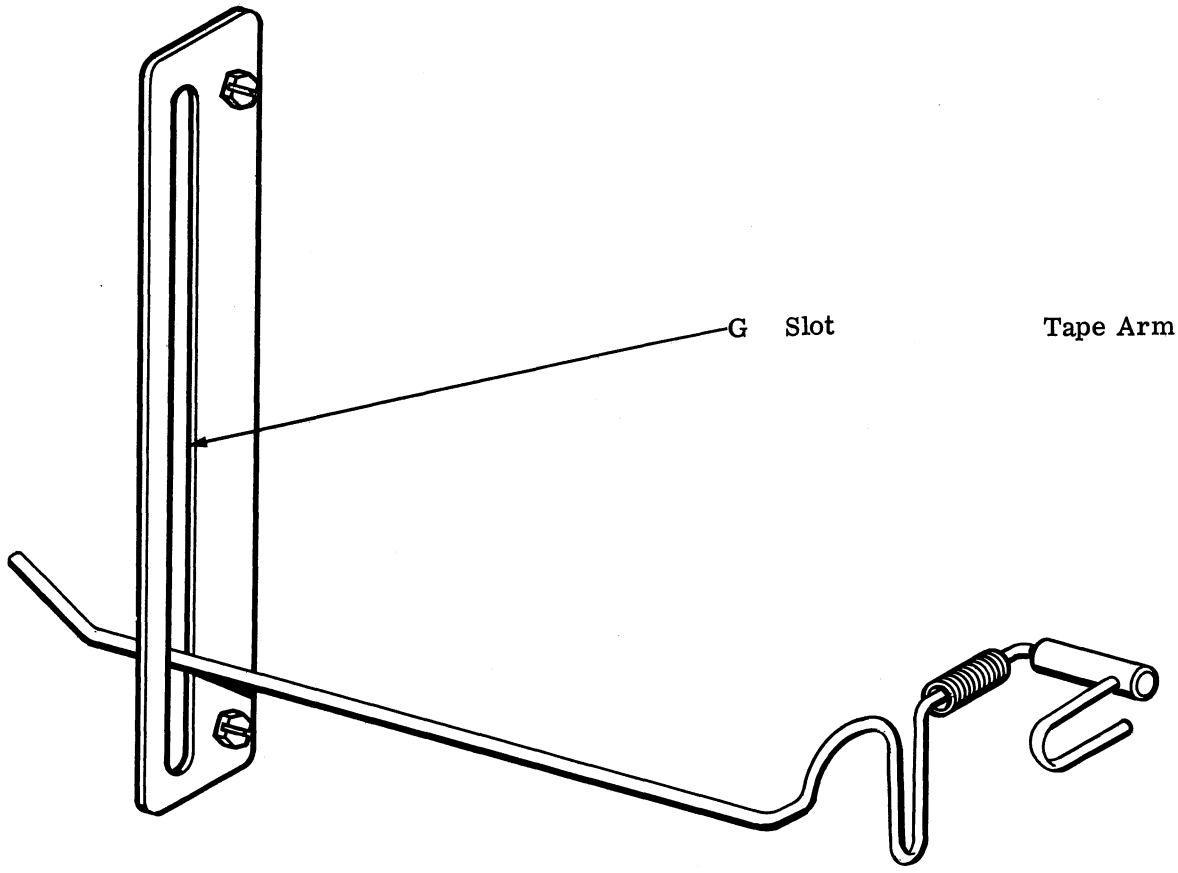


O Spring Ends Chad Depressor Bail Spring

5.10 Tape Arm Bail



5.11 Tape Arm Guide



6. PRINCIPLES OF OPERATION

6.01 The High Speed Tape Winder is a motor driven mechanism used for winding tape from any tape perforating or transmitting unit. The winder operates at a speed of 100 linear feet per minute (2000 WPM).

6.02 The tape arm provides operational control of the unit. When the tape arm senses a tight tape condition, the tape arm pivots upward which causes a slack in the drive belt thereby interrupting power transmission.

6.03 An inertia brake device provides immediate stoppage of the tape reel assembly when a tight-tape condition is sensed by the tape arm. This is accomplished by a belt riding on one of the pulleys on the intermediate gear and pulley assembly and on a stationary pulley. During normal winding the belt is slack. Upon sensing a tight-tape condition, the action of the tape arm assembly pivots the pulley and gear assembly and increases the belt tension. This then provides the braking action on the intermediate drive.

6.04 A combination chad depressor and tape tension device insures chad depression for chadless tape and tight winding of tape. This device may be pivoted out of the way to facilitate removal of the tape reel assembly.