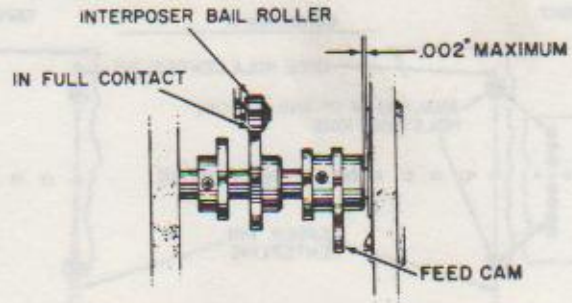
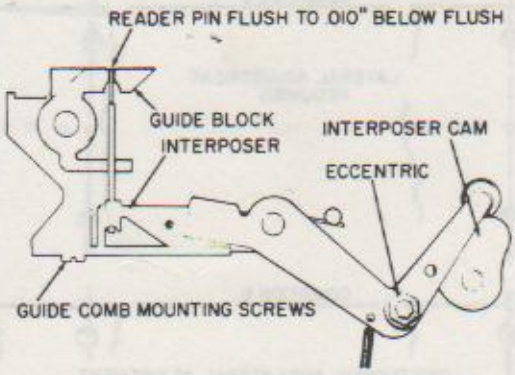
READER

ADJ. 1 FEED CAM & INTERPOSER CAM



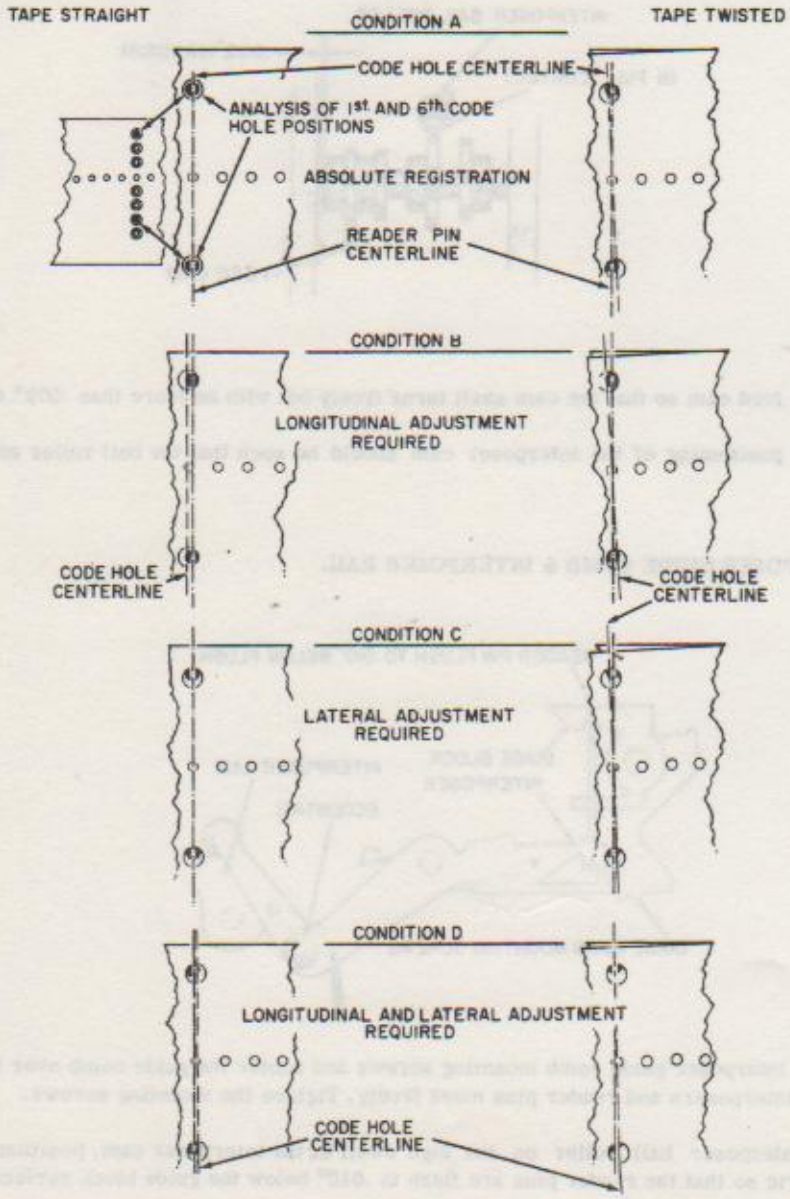
1. Position the feed cam so that the cam shaft turns freely but with no more than .002" end play.
2. The lateral positioning of the interposer cam should be such that the bail roller engages the cam 100%.

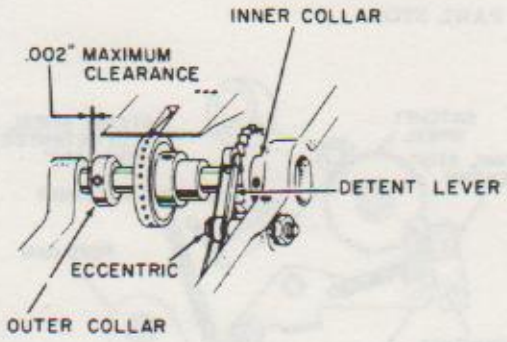
ADJ. 2 INTERPOSER GUIDE COMB & INTERPOSER BAIL



1. Loosen the interposer guide comb mounting screws and center the guide comb over the interposers so that the interposers and reader pins move freely. Tighten the mounting screws.
2. With the interposer bail roller on the high dwell of the interposer cam, position the interposer bail eccentric so that the reader pins are flush to .010" below the guide block surface.

ADJ. 3A LATERAL & LONGITUDINAL REGISTRATION





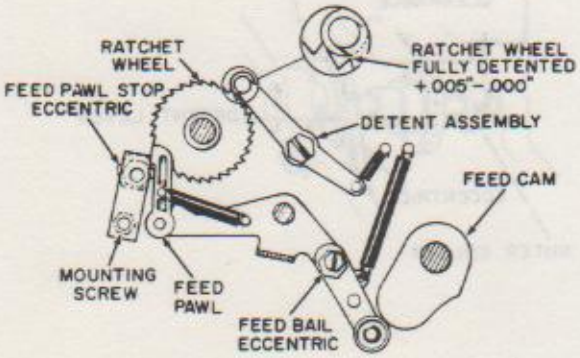
Exercise caution when interpreting an existing tape registration condition. As shown on the chart, Condition A can be seen as an absolute tape registration with the centerlines aligned, but can be misinterpreted as requiring adjustment when the tape is twisted. With the tape straight, the centerlines under Condition B are parallel and a longitudinal adjustment is required only, but appears to require lateral adjustment also when the tape is twisted. When the centerlines under Condition C are aligned, the condition can easily be recognized as requiring a lateral adjustment only. With the tape twisted, the centerlines cross each other and the condition appears to require longitudinal and lateral adjustment. When the center lines are aligned under Condition D they show that a lateral and longitudinal adjustment are required but with the tape twisted it appears to require lateral adjustment only.

1. Using a length of standard punched tape, loosen the setscrews on the front pinwheel collar and laterally center the code holes over the reader pins. Tighten the setscrews.

2. Limit the front pinwheel shaft end play by positioning the shaft collar to allow a .002" maximum clearance with the shaft rotating freely.

3. Loosen the detent lever eccentric and position the eccentric so that the code holes are longitudinally centered over the reader pins. Tighten the eccentric.

ADJ. 3B FEED BAIL & FEED PAWL STOP

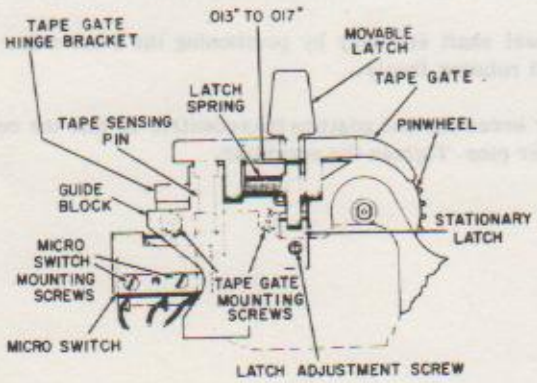


1. Adjust the feed bail eccentric so that the feed pawl rotates the ratchet wheel one full tooth +.005" - .000" when the feed bail roller is on the high dwell of the feed cam.

2. With the feed bail roller on the high dwell of the feed cam, loosen the feed pawl stop mounting screw and eccentric and position the stop to prevent any tendency of the feed pawl and ratchet wheel to over travel without choking off the feed pawl.

TAPE READER

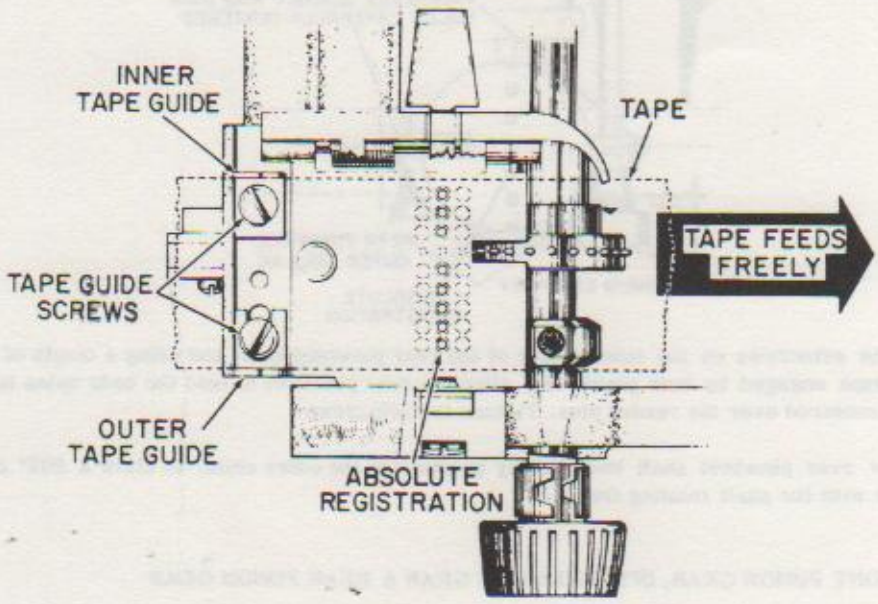
ADJ. 4 TAPE GATE & SRT MICRO SWITCH



1. Loosen the tape gate adjustment screws and the stationary latch adjustment screw and position the gate and the latch to allow an even clearance of .013" to .017" between the surface of the guide block and the tape gate. Tighten the adjustment screws. The gate must operate freely and unlatch with ease.

2. Loosen the micro switch mounting screws and position the micro switch so that with tape in the reader, the micro switch is operated by the tape sensing pin. With the removal of the tape, the micro switch should be non-operative. Tighten the mounting screws.

ADJ. 5 INNER & OUTER TAPE GUIDES

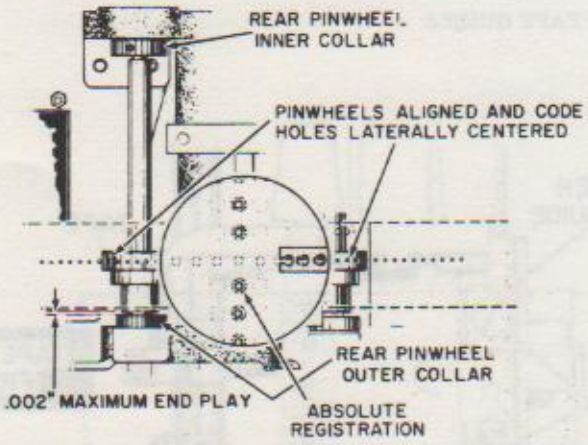


1. Loosen the inner tape guide screw and with tape in the reader, center the code holes over the reader pins and position the guide just to the edge of the tape. Tighten the screw.

2. Loosen the outer tape guide screw and limit the side movement of the tape by positioning the guide to the tape but allowing the tape to feed freely. Tighten the screw.

EDGE CARD READER

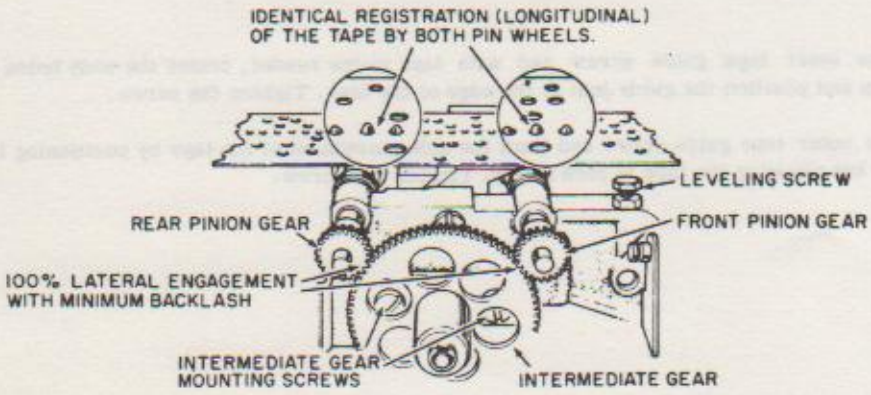
ADJ. 6A REAR PINWHEEL LATERAL REGISTRATION & END PLAY



1. Loosen the setscrews on the inner collar of the rear pinwheel shaft and using a length of standard punched tape engaged by both pinwheels, align the rear pinwheel to hold the code holes in the tape laterally centered over the reader pins. Tighten the setscrews.

2. Limit the rear pinwheel shaft end play by positioning the outer collar to allow a .002" maximum clearance with the shaft rotating freely.

ADJ. 6B FRONT PINION GEAR, INTERMEDIATE GEAR & REAR PINION GEAR

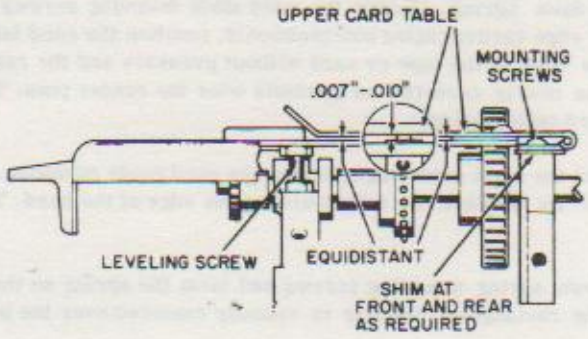


1. Loosen the setscrews on the front pinion gear and position the gear to engage the intermediate gear 100%.

2. Loosen the intermediate gear mounting screws and position the intermediate gear so that with the detent lever held away from the ratchet wheel, all three gears rotate freely without drag or binding areas. When the ratchet wheel is engaged, there should be a minimum of backlash in the intermediate gear. Tighten the mounting screws.

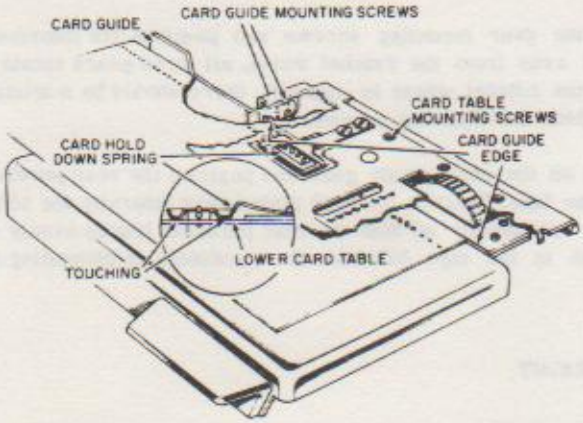
3. Loosen the setscrews on the rear pinion gear and position the rear pinwheel for full engagement of the feed holes in the tape. Position the rear pinion gear laterally for 100% engagement with the intermediate gear and rotationally so that the rear pinwheel tracks evenly with the front pinwheel without creating slack in the tape between the pinwheels or elongating the feed holes. Tighten the setscrews.

ADJ. 7A CARD TABLE HEIGHT



Loosen the card table mounting screws. Shim the right side of the table equally and adjust the leveling screw to allow a clearance of .007" to .010" between the body of the pinwheel and the upper card table with equal spacing across the surface of the guide block. Tighten the screws.

ADJ. 7B CARD TABLE REGISTRATION, CARD GUIDE & CARD HOLD DOWN SPRING

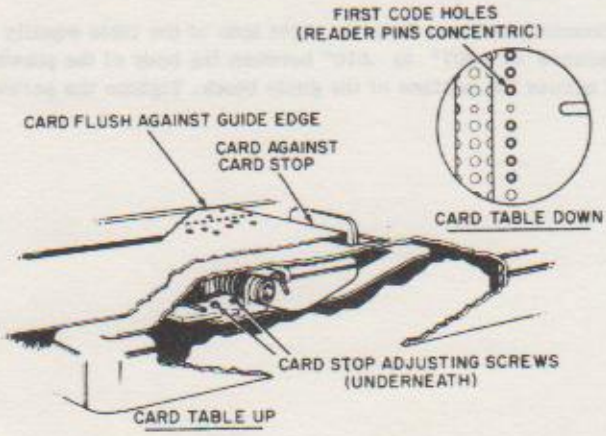


1. Remove the card hold down spring. Loosen the card table mounting screws and with a length of standard punched tape or edge card engaging both pinwheels, position the card table so that the guide edge is just touching the edge of the tape or card without pressure and the reader pin holes in the upper card table are as nearly centered as possible over the reader pins. Tighten the mounting screws and install the card table spring.

2. With an edge card against the right guide edge, loosen the card guide mounting screws and position the card guide so that its surface is fully touching the edge of the card. Tighten the mounting screws.

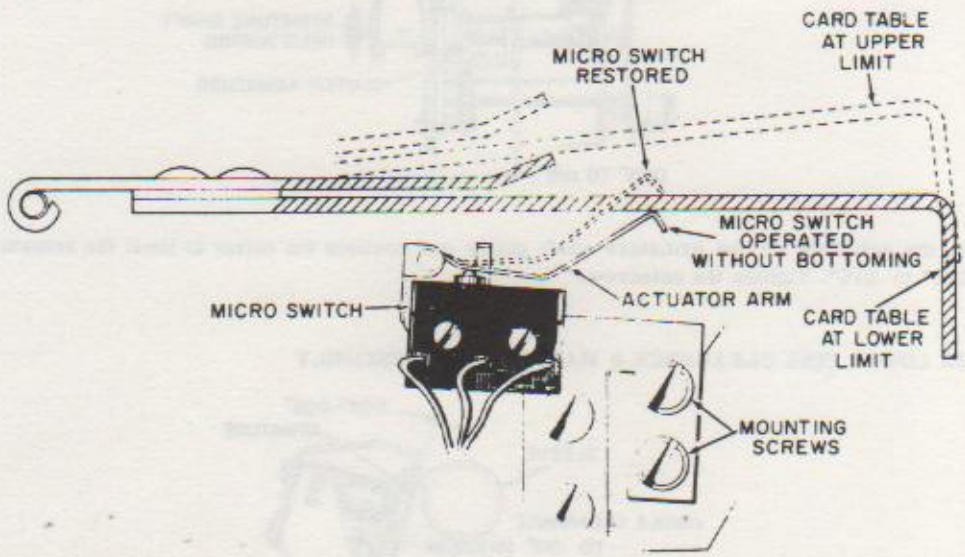
3. Loosen the card hold down spring mounting screws and form the spring so that it just touches the lower card table and the rectangular opening is visually centered over the pinwheel. Tighten the mounting screws.

ADJ. 7C CARD STOP



With the card table in its raised position, insert an edge card in the reader so that it is fully against the right guide edge. Loosen the card stop mounting screws and position the stop with the leading edge of the card flush against the full length of the card stop so that the first code holes in the card are concentric with the reader pins when the card table is lowered. Tighten the mounting screws.

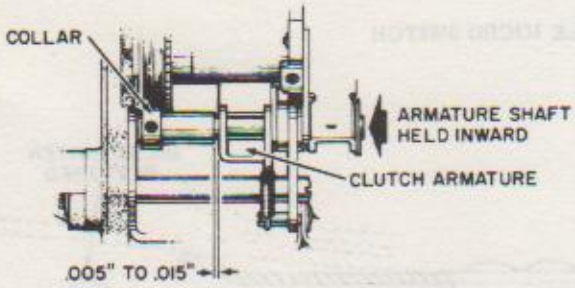
ADJ. 7D CARD TABLE MICRO SWITCH



The reader cuts off when the card table is in its raised position and reads when in its lowered position. Loosen the micro switch bracket mounting screws and position the bracket or form the actuator arm so that the micro switch operates or restores before the card table reaches its limit in either direction. Tighten the mounting screws.

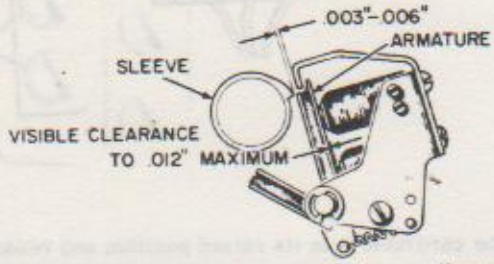
ALL READERS

ADJ. 8 ARMATURE SHAFT COLLAR



Loosen the setscrew on the armature shaft collar and position the collar to limit the armature side play .005" to .015". Tighten the setscrew.

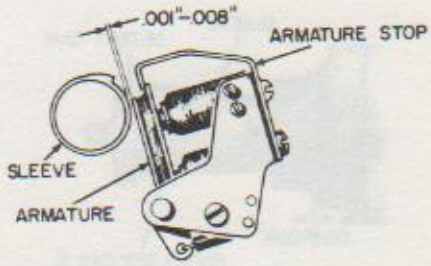
ADJ. 9A LOWER COIL CLEARANCE & MAGNET YOKE ASSEMBLY



1. While holding the armature flat against the upper magnet core, there should be visible clearance to .012" maximum between the armature and the lower coil core. A clearance in excess of .012" indicates replacement of the upper coil and/or the armature.

2. Position the magnet yoke assembly to allow a clearance of .003" to .006" between the armature and the clutch sleeve lip when the armature is held flat against the upper coil core.

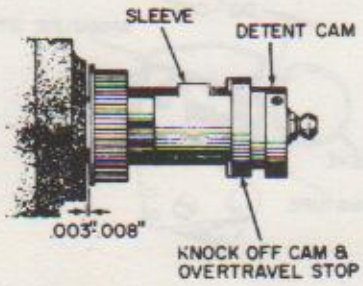
ADJ. 9B ARMATURE STOP

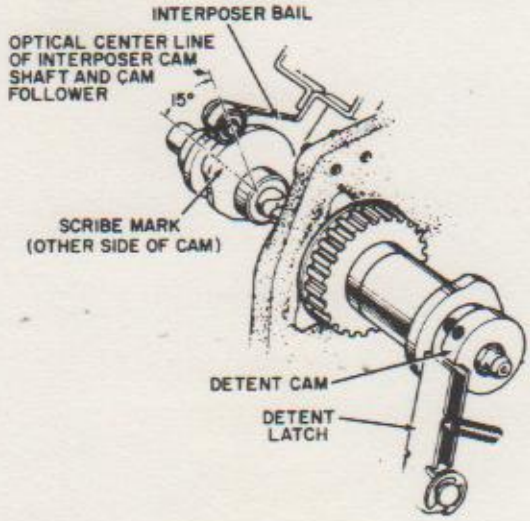


Form the armature stop to allow a clearance of .001" to .008" between the armature and the low surface of the clutch sleeve when the armature is in its non-attracted position.

ADJ. 9C CLUTCH HOME POSITION & PULLEY END PLAY

725 RPM READERS



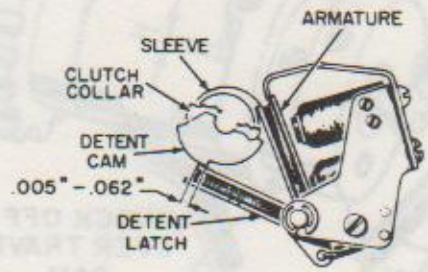


To obtain the clutch home position, attach timing dial T-18088 to the left end of the cam shaft. Rotate the shaft so that the scribe mark on the interposer cam is aligned with the center of the roller on the interposer bail. Set the timing dial for zero degrees at any fixed point on the outer casting and tighten the dial. Retard the cam shaft 15° and set the detent cam to just engage the detent latch. At this time check the lateral position of the detent cam so that the pulley has an end play of .003" to .008".

675 RPM READERS

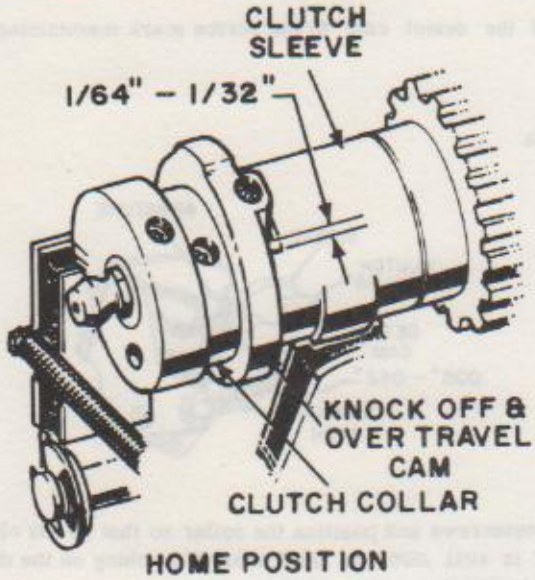
Set the home position of the detent cam to the scribe mark maintaining .003" to .008" end play of the pulley.

ADJ. 9D CLUTCH COLLAR



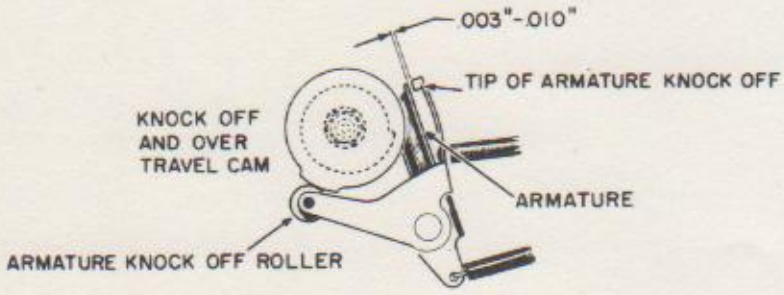
Loosen the clutch collar setscrews and position the collar so that as the clutch sleeve lip touches the armature, the detent cam is still .005" to .062" short of latching on the detent latch. Pull the collar towards the detent cam while tightening the setscrews.

ADJ. 9E KNOCK OFF & OVER TRAVEL CAM



With the clutch in home position, loosen the setscrews on the knock off & over travel cam. Rotate the cam towards the lower end of the cut out in the clutch sleeve and allow a gap of 1/64" to 1/32". This should allow sufficient over travel distance between the detent cam and the detent latch. Pull the cam towards the clutch collar while tightening the setscrews.

ADJ. 9F ARMATURE KNOCK OFF



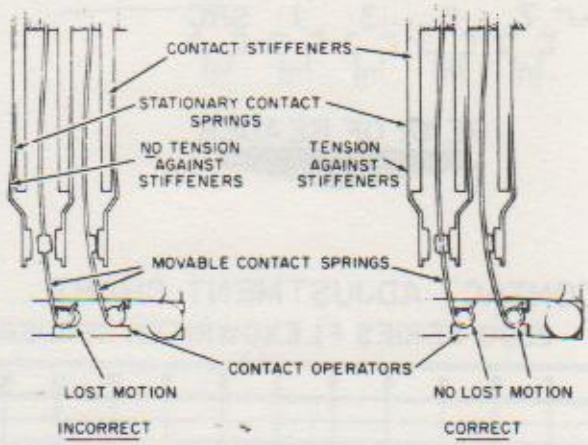
Form the armature knock off to allow a .003" to .010" clearance between the tip of the armature knock off and the armature when the armature knock off roller is on the high dwell of the knock off and over travel cam.

ADJ. 10A CONTACT STACKUP ALIGNMENT

INCORRECT CORRECT

Check to see that the contact stackups are aligned sideways and that the mating contact points are no more than .015" out of alignment. When necessary, loosen the contact assembly mounting screws to align the stackups.

ADJ. 10B CONTACT SPRING TENSION

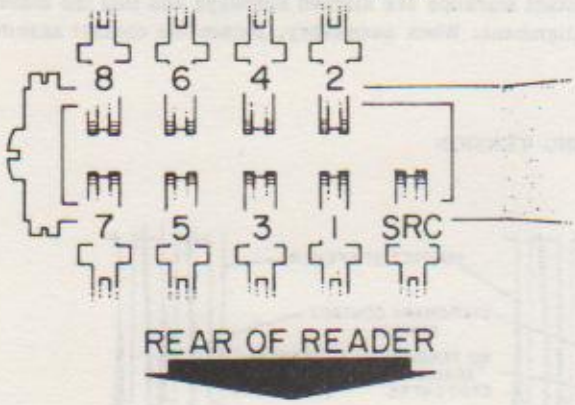


1. The moveable contact springs should have sufficient tension to follow the operators without lost motion. Form or replace the moveable contact springs when necessary.

2. The stationary contact springs should have sufficient tension against the contact stiffeners. When necessary, form or replace the stationary contact springs.

ADJ. 10C READER CONTACT ADJUSTMENTS

TAPE AND EDGE CARD READERS
(BOTTOM VIEW)



CONTACT ADJUSTMENT CHART
2200 – 2300 SERIES FLEXOWRITER READERS

SPRINGS		1	2	3	4	5	6	7	8	9	10	11	12
SR-1	N/O												
	N/C												
SR-2	N/O												
	N/C												
SR-3	N/O												
	N/C												
SR-4	N/O												
	N/C												
SR-5	N/O												
	N/C												
SR-6	N/O												
	N/C												
SR-7	N/O												
	N/C												
SR-8	N/O												
	N/C												

ADJUST ALL CONTACTS
TO A .015" – .020" AIR GAP

1. With a length of blank tape in the reader and the interposer bail roller on the low dwell of its cam, adjust the normally open (N/O) contacts to the air gap indicated on the above chart.

2. With the tape removed from the reader and the interposer bail roller on the low dwell of its cam, adjust the normally closed (N/C) contacts to the air gap indicated on the above chart.

ADJ. 10D READER COMMON CONTACT ADJUSTMENTS

CONTACTS SHOWN UNOPERATED

(INTERPOSER BAIL ON HIGH DWELL OF CAM)

The following adjustments for "A" Form (N/O), "B" Form (N/C) and "C" Form (Transfer) contacts are to be considered standard.

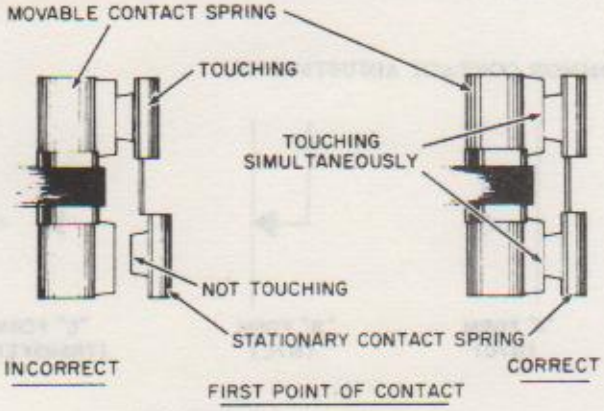
1. "A" Form (N/O) - With the clutch in home position (interposer bail on the high dwell of its cam) adjust the normally open (N/O) contacts to a .015" to .020" air gap.

2. "B" Form (N/C) - With the cam shaft cycled (interposer bail on the low dwell of its cam) adjust the normally closed (N/C) contacts to a .015" to .020" air gap.

3. "C" Form (Transfer) - With the clutch in home position (interposer bail on the high dwell of its cam) adjust the normally open (N/O) contacts to a .015" to .020" air gap. With the cam shaft cycled (interposer bail on the low dwell of its cam) adjust the normally closed (N/C) contacts to a .015" to .020" air gap.

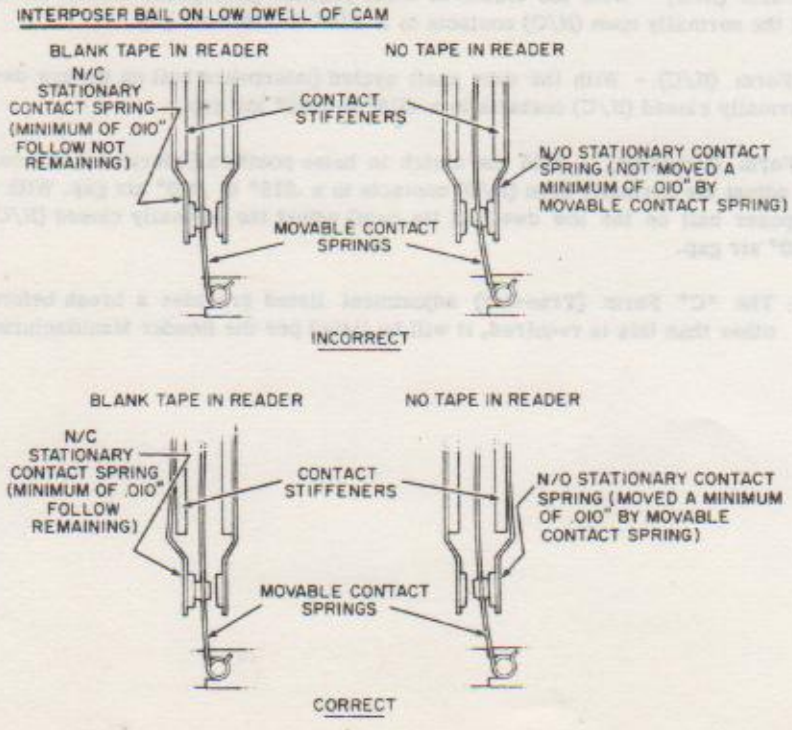
NOTE: The "C" Form (Transfer) adjustment listed provides a break before make operation. If other than this is required, it will be listed per the Reader Manufacturing Specification.

ADJ. 10E CONTACT MATING



Both contacts on all stationary springs (N/O and N/C) should touch the contacts on the moveable contact springs simultaneously.

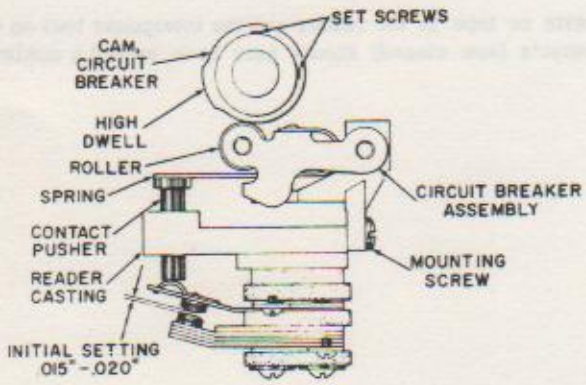
10F CONTACT FOLLOW



1. N/C Contacts - With a blank tape in the reader and the interposer bail on the low dwell of its cam, all normally closed contacts should have a minimum of .010" follow still remaining.

2. N/O Contacts - With no tape in the reader and the interposer bail on the low dwell of its cam, all normally open contacts (now closed) should have been moved a minimum of .010" by the movable contact spring.

ADJ. 11 CIRCUIT BREAKER ASSEMBLY TIMING (SRCC-1, SRCC-2)



CONTACT	MAKE	BREAK	DURATION OF CLOSURE
SRCC-1 (675 RPM READERS)	59°	136°	77°
SRCC-1 (725 RPM READERS)	74°	151°	77°
SRCC-2	310°	20°	70°

1. Duration - Raising or lowering the circuit breaker assembly by loosening the mounting screws determines the contact clearance with the roller on the low dwell of the cam and therefore the duration or length of time the contacts are made on the high dwell of the cam. Begin with the circuit breaker assembly adjusted to give an initial setting of .015" to .020" clearance between the contacts with the roller on the low dwell of the cam. With a timing dial (T-18088) attached to the reader shaft, determine the number of degrees the contacts remain closed when operated by the high dwell of the cam as the drive shaft is cycled. Raise the circuit breaker assembly to increase the duration of contact closure and lower to decrease until the correct duration of contact closure is obtained as outlined in the timing chart.

   NOTE: Distortion or weakening of the spring which operates the contact pusher may make it impossible to obtain the correct contact duration. If necessary, replace the circuit breaker assembly.

2. Timing - Once the correct duration of contact closure has been obtained, set the SRCC timing cams to make and break according to the specifications called for in the timing chart.