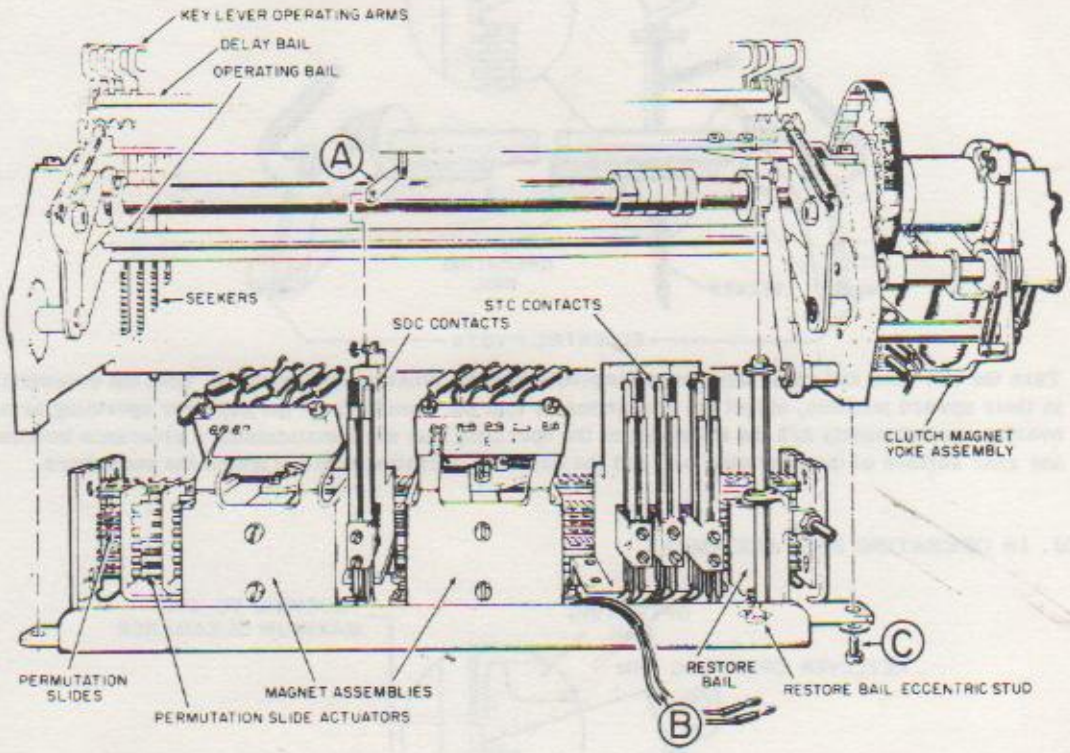
TRADUTTORE

Friden 2200/2300 SERIES MACHINES

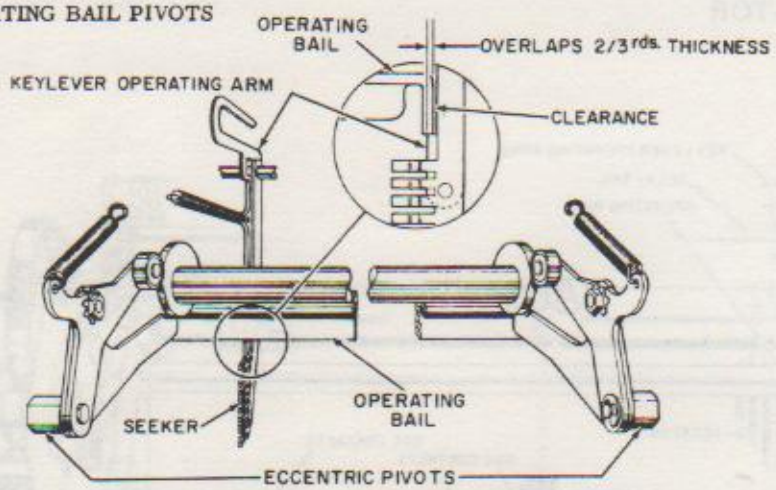
TRANSLATOR



To accomplish adjustments 1A thru 3B, the translator must be separated into two major subassemblies. To separate, detach the delay bail arm (A) from the operator arm on the SDC contact assembly by removing the retaining ring. Disconnect the two cable leads (B) at the clutch magnet yoke assembly and remove the five screws (C) which mount the bottom plate to the translator casting.

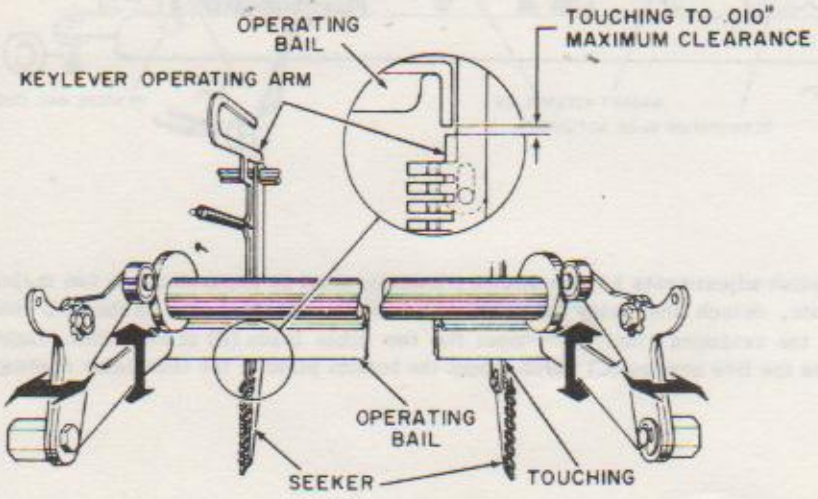
Friden 2200/2300 SERIES MACHINES

ADJ. 1A OPERATING BAIL PIVOTS



1. Turn the left hand and right hand eccentric pivots to their most upward position. With the eccentrics in their upward position, adjust the eccentrics so that the shoulders on the keylever operating arms overlap approximately 2/3 the thickness of the operating bail while maintaining a clearance between the rear surface of the operating bail and the keylever operating arms. Tighten the eccentrics.

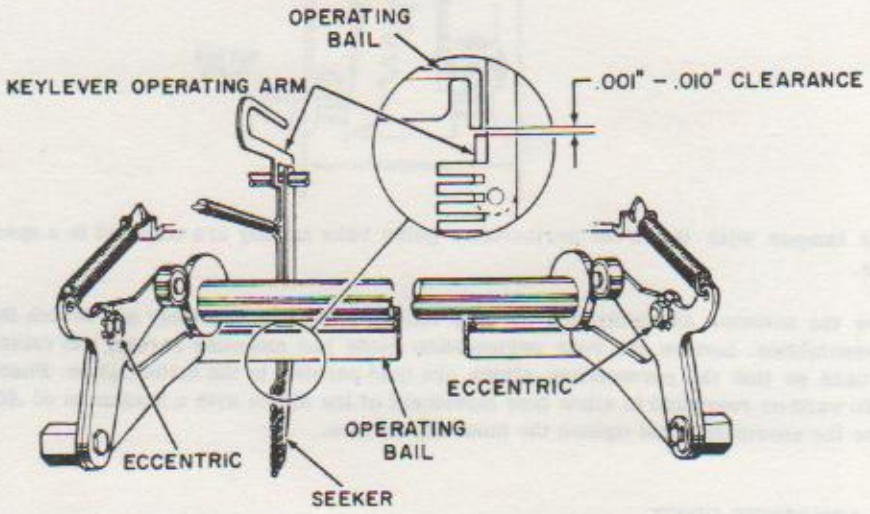
ADJ. 1B OPERATING BAIL ALIGNMENT



1. With the operating bail tension springs detached and the cam shaft rotated so that the seekers are in their forward position, the operating bail should touch the shoulders of the keylever operating arms evenly within .010". Remove and twist the operating bail accordingly to correct a poor condition.

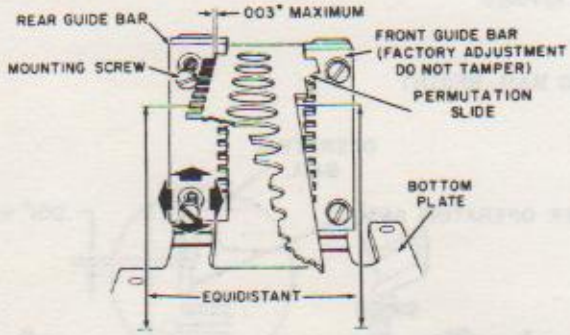
2. Form the ends of the operating bail inward or outward so that the operating bail moves freely. Attach the tension springs.

ADJ. 1C OPERATING BAIL HEIGHT



Adjust the left hand and right hand operating arm eccentrics to allow a vertical clearance of .001" to .010" between the lower edge of the operating bail and the shoulders on the keylever operating arms when the cam shaft is rotated and the seekers have just reached their full forward position.

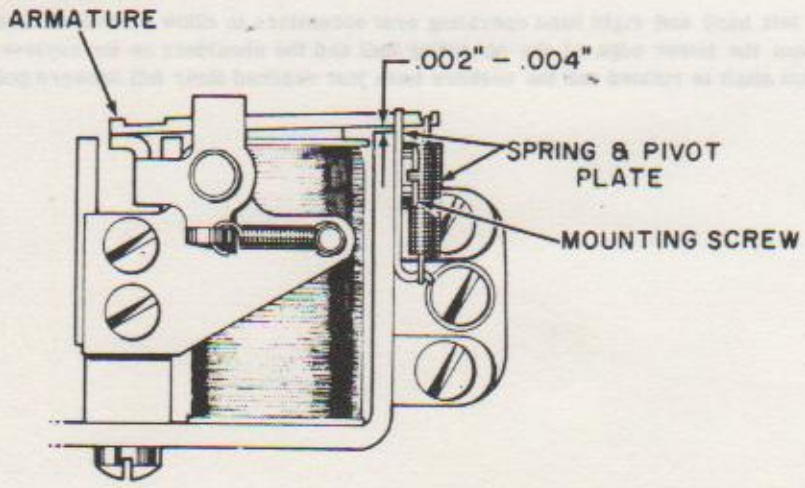
ADJ. 2 FRONT AND REAR PERMUTATION GUIDE BARS



1. Do not tamper with the front permutation guide bars as they are adjusted in a special jig at the factory.

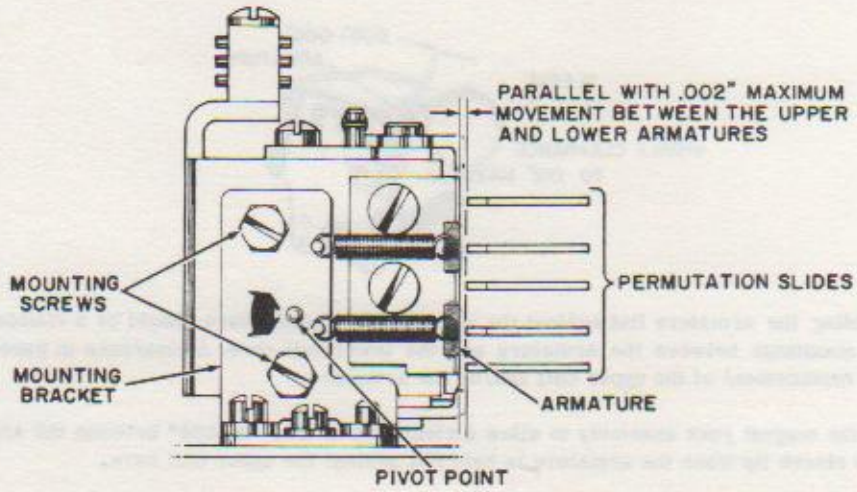
2. Remove the actuator assembly and the SDC contact and block assembly and detach the two magnet yoke assemblies. Loosen the rear permutation guide bar mounting screws and raise or lower the guide bars so that the permutation slides are held parallel to the bottom plate. Position the guide bars forward or rearward to allow free movement of the slides with a maximum of .003" side play. Replace the assemblies and tighten the mounting screws.

ADJ. 3A ARMATURE PIVOT



With the magnet yoke assemblies detached from the translator, loosen the armature pivot mounting screws and with the armatures in their attracted position, adjust the armature pivots to provide a clearance of .002" to .004" using feeler gauges T-18451 and T-18453. Position the armature pivots so that the armatures are aligned with the centers of the magnet cores. Tighten the mounting screws.

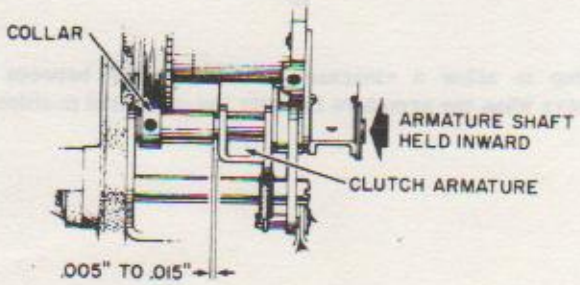
ADJ. 3B MAGNET YOKE ASSEMBLY MOUNTING BRACKETS



Loosen the magnet yoke assembly mounting bracket mounting screws and position the magnet yoke assemblies at their pivot points so they are parallel to the permutation slides. The movement of the upper and lower armatures should not vary more than .002". Tighten the mounting screws.

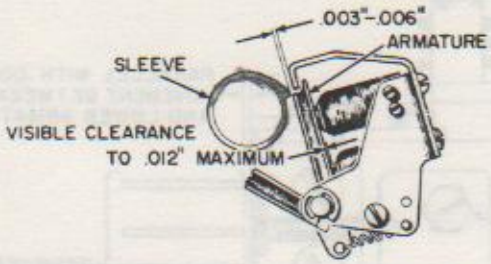
NOTE: To accomplish the remainder of the adjustments, re-assemble the translator.

ADJ. 4 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 setscrews.

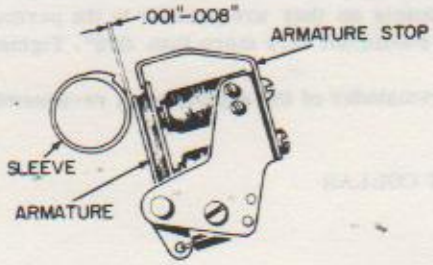
ADJ. 5A LOWER COIL CLEARANCE AND MAGNET YOKE ASSEMBLY



1. While holding the armature flat against the upper magnet core, there should be a 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.

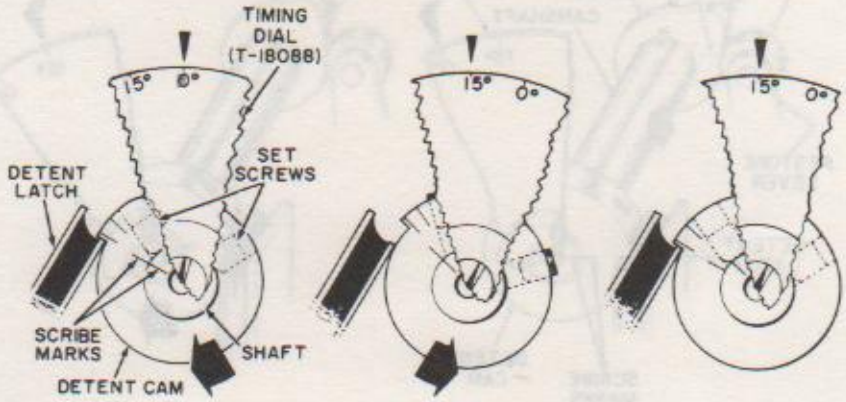
ADJ. 5B ARMATURE STOP



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.

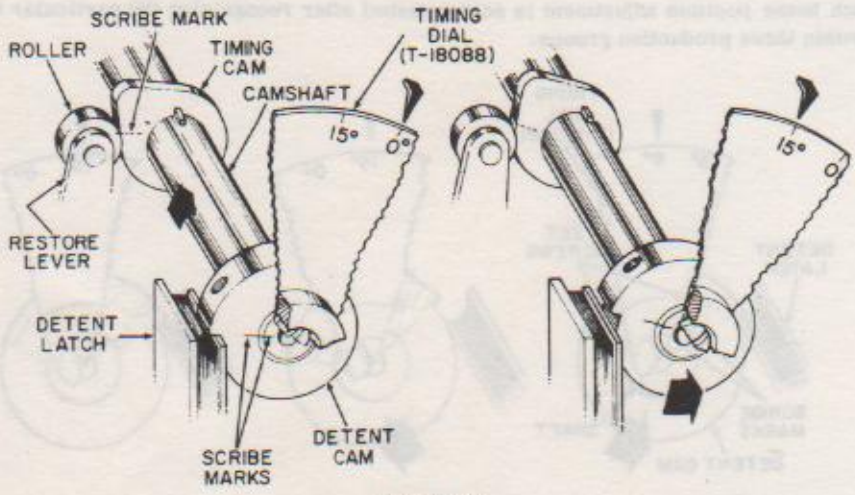
ADJ. 5C CLUTCH HOME POSITION AND PULLEY END PLAY

The clutch home position adjustment is accomplished after recognizing the particular translator concerned within three production groups.



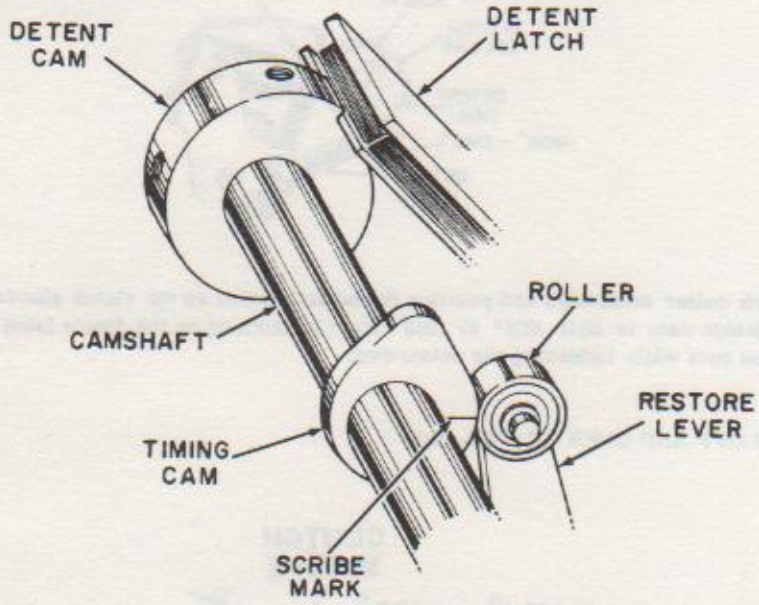
GROUP 1

Group 1. Scribe mark on the end of the cam shaft and detent cam only and no restore bail eccentric stud. Loosen the detent cam setscrews and align the scribe mark on the inner circumference of the detent cam with the scribe mark on the end of the cam shaft. Tighten the setscrews. Attach timing dial T-18088 to the end of the cam shaft and using a fixed point in the vicinity of the timing dial, set the dial for zero degrees. With the detent latch against the detent dam, rotate the cam shaft 15° into its cycle and reset the detent cam to just engage the detent latch. Check the lateral position of the detent cam so that the pulley has an end play of .003" to .008". Tighten the setscrews.



GROUP 2

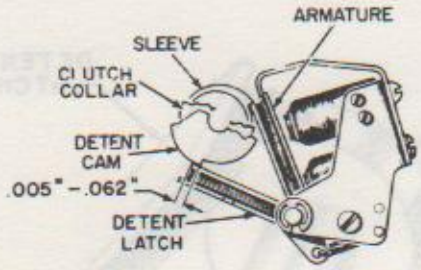
Group 2. Scribe mark on the timing cam, detent cam and on the end of the cam shaft and no restore bail eccentric stud. Rotate the cam shaft so that the roller on the restore lever is centered over the scribe mark on the timing cam. Attach timing dial T-18088 to the end of the cam shaft and using a fixed point in the vicinity of the timing dial, set the dial for zero degrees. With the detent latch against the detent cam, rotate the cam shaft 15° into its cycle and reset the detent cam to just engage the detent latch. Check the lateral position of the detent cam so that the pulley has an end play of .003" to .008". Tighten the setscrews.



GROUP 3

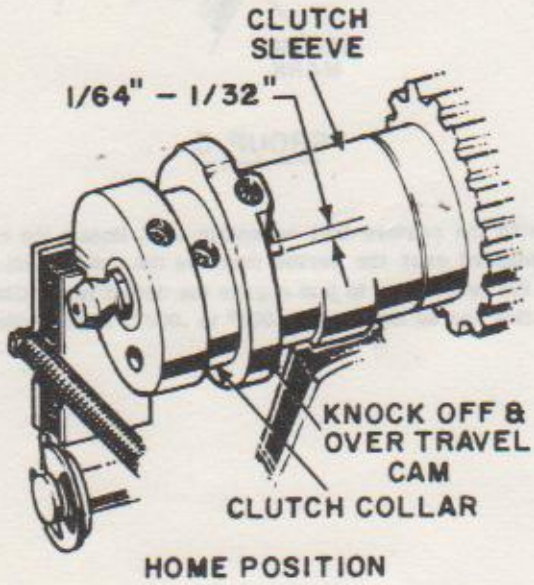
Group 3. Translators with the restore bail eccentric stud. Rotate the cam shaft so that the roller on the restore lever is centered over the scribe mark on the timing cam. Loosen the setscrews on the detent cam and position the detent cam to just engage the detent latch. Check the lateral position of the detent cam so the the pulley has an end play of .003" to .008". Tighten the setscrews.

ADJ. 5D CLUTCH COLLAR



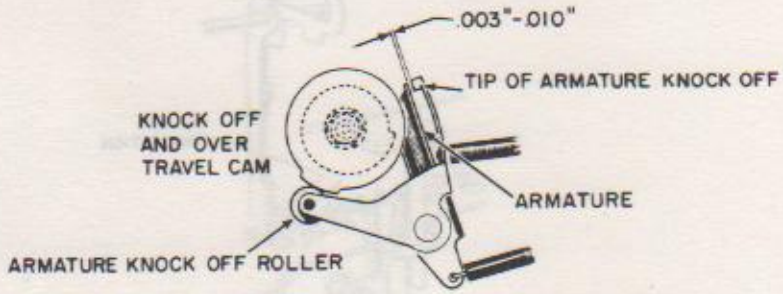
Loosen the clutch collar setscrews and position the collar so that as the clutch sleeve lip touches the armature, the detent cam is still .005" to .062" short of latching on the detent latch. Pull the collar towards the detent cam while tightening the setscrews.

ADJ. 5E KNOCK OFF AND OVER TRAVEL CAM



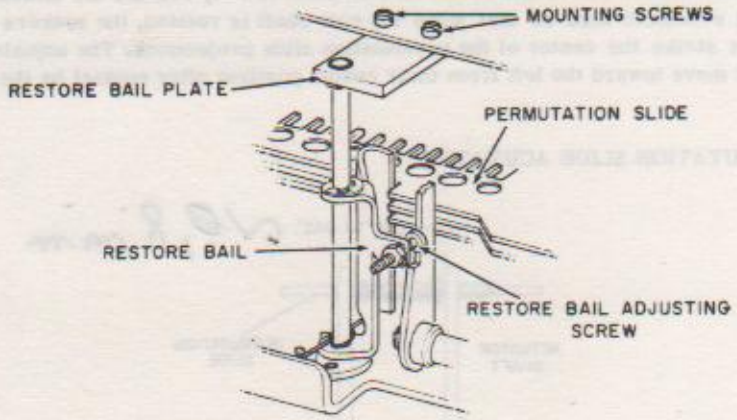
With the clutch in home position, loosen the setscrews on the knock off and over travel cam. Rotate the cam towards the lower end of the cut out in the clutch sleeve and allow a gap of 1/64" to 1/32". This should allow sufficient over travel distance between the detent cam and the detent latch. Pull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

ADJ. 5F ARMATURE KNOCK OFF



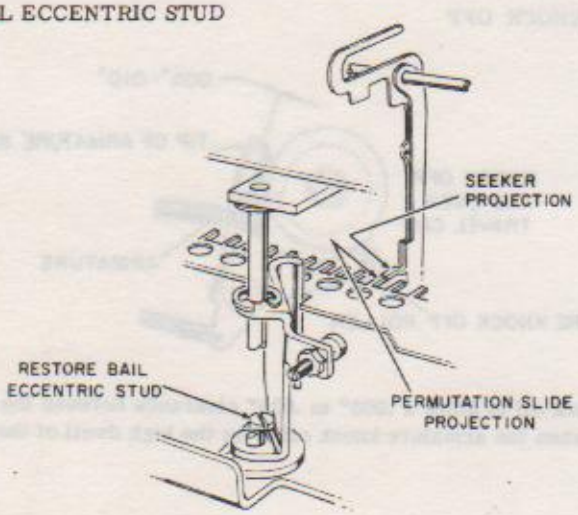
Form the armature knock off to allow a .003" to .010" clearance between the tip of the armature knock off and the armature when the armature knock off is on the high dwell of the knock off and over travel cam.

ADJ. 6A RESTORE BAIL PLATE



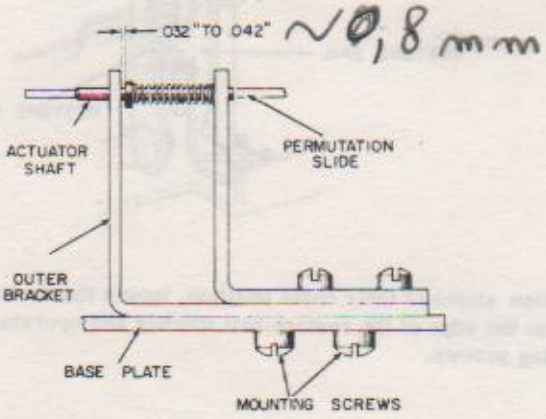
With the permutation slides in their home position, loosen the restore bail plate mounting screws and position the plate so the edge of the restore bail touches and operates the slides as evenly as possible. Tighten the mounting screws.

ADJ. 6B RESTORE BAIL ECCENTRIC STUD



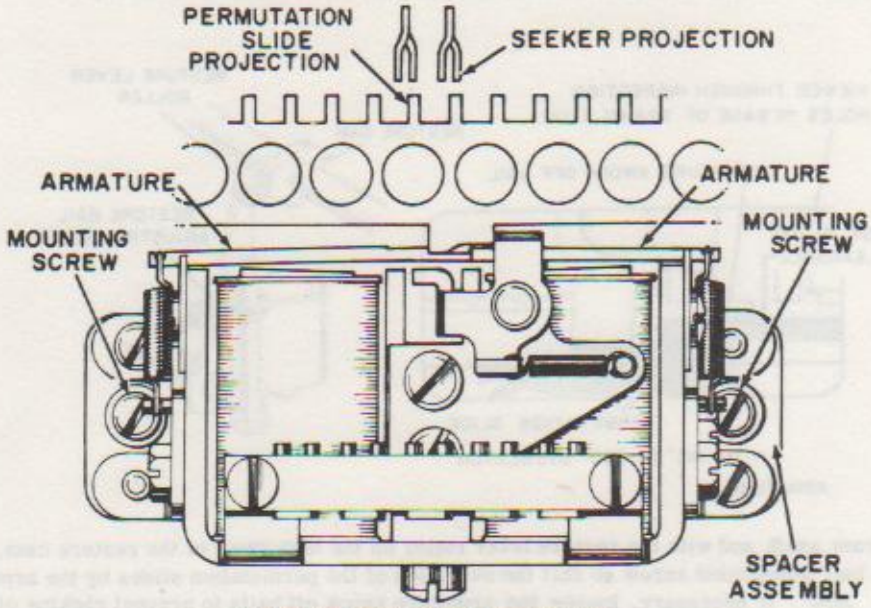
Unlatch all the permutation slides and rotate the cam shaft to fully release the slides to the left. Adjust the restore bail eccentric stud so that when the cam shaft is rotated, the seekers come forward and their projections strike the center of the permutation slide projections. The adjustment is ideal when the slides do not move toward the left from their center position after contact by the seekers.

ADJ. 6C PERMUTATION SLIDE ACUTATOR

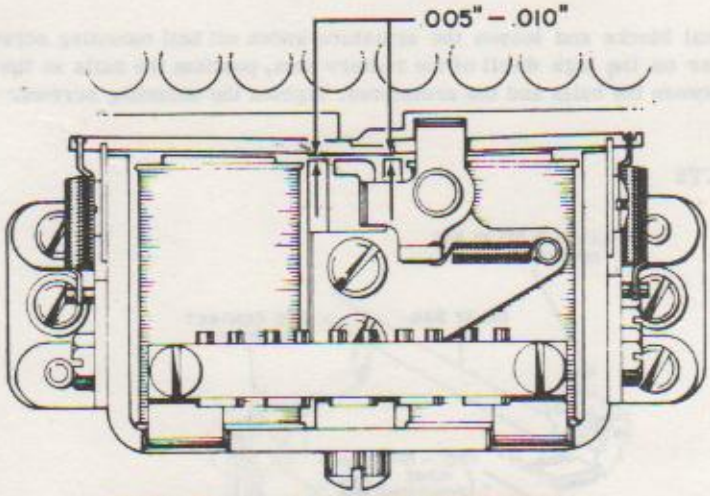


With the permutation slides unlatched and in their extreme left position, loosen the permutation slide actuator mounting screws and position the actuator to allow a .032" to .042" clearance between the outer bracket and the shoulders of the actuator shafts. Tighten the mounting screws.

ADJ. 7A MAGNET YOKE ASSEMBLY POSITIONING



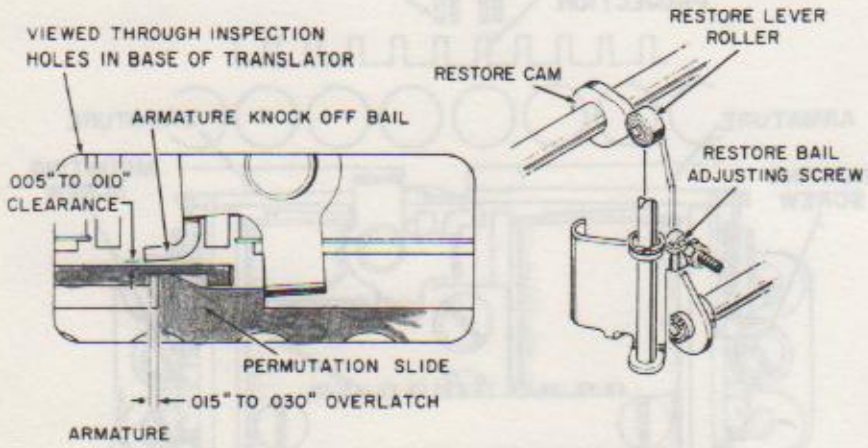
LEFT OR RIGHT POSITIONING



FORWARD OR REARWARD POSITIONING

Detach the SDC and STC contact and block assemblies and rotate the cam shaft so that the permutation slides are latched by the magnet yoke armatures (home position). Loosen the magnet yoke spacer assembly mounting screws and position the magnet yokes left or right to center the permutation slide projections to the seeker projections and forward or rearward to allow a detectable movement of .005" to .010" in the armatures when in their unlatched position. Tighten the mounting screws.

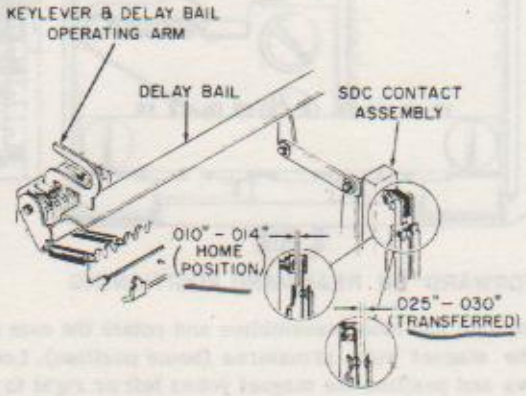
ADJ. 7B RESTORE BAIL ADJUSTMENT SCREW AND ARMATURE KNOCK OFF BAILS



1. Rotate the cam shaft and with the restore lever roller on the high dwell of the restore cam, adjust the restore bail adjustment screw so that the overlatch of the permutation slides by the armatures is .015" to .030". If necessary, loosen the armature knock off bails to prevent choking off while making the adjustment.

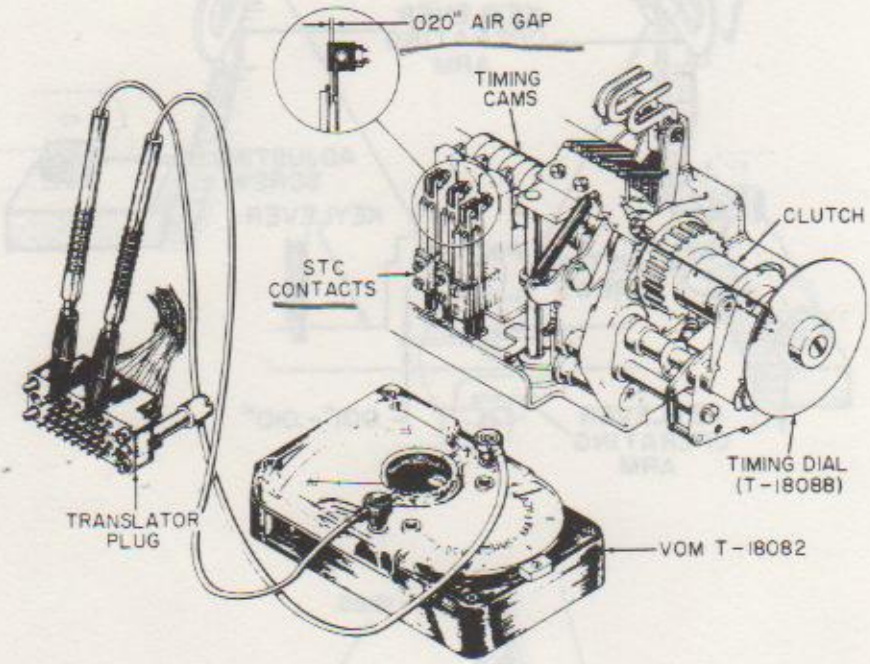
2. Detach the terminal blocks and loosen the armature knock off bail mounting screws and with the restore lever roller on the high dwell of the restore cam, position the bails so there is a .005" to .010" clearance between the bails and the armatures. Tighten the mounting screws.

ADJ. 8 SDC CONTACTS



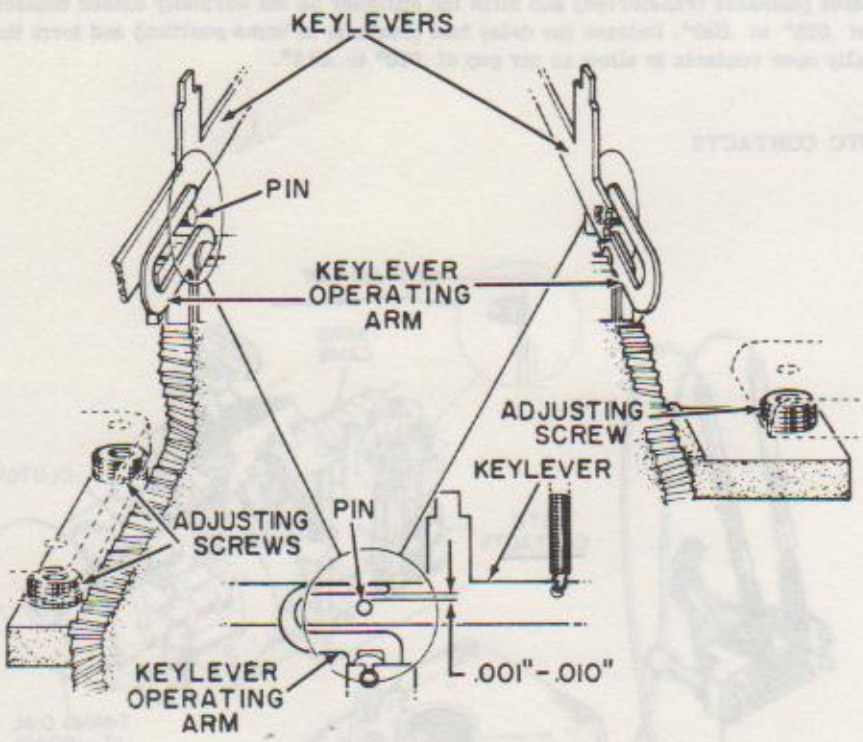
Press and hold the delay bail downward so that the plunger on the SDC contacts bottoms against the contact block (contacts transferred) and form the stiffener on the normally closed contacts to allow an air gap of .025" to .030". Release the delay bail (contacts in home position) and form the stiffener on the normally open contacts to allow an air gap of .010" to .014".

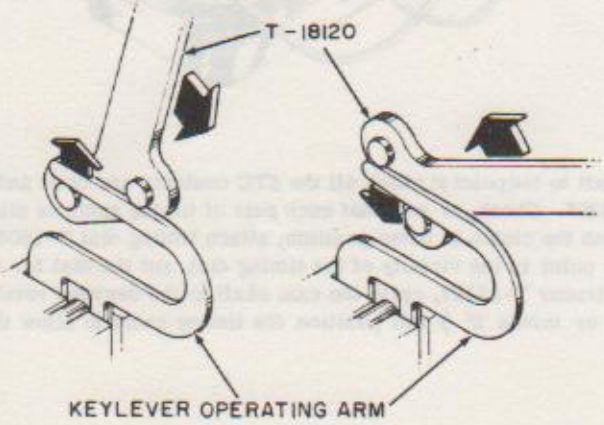
ADJ. 9 STC CONTACTS



Rotate the cam shaft to the point at which all the STC contacts are open and form the stiffeners to allow an air gap of .020". Check to see that each pair of timing cams is aligned and fully engaged by its related roller. With the clutch in home position, attach timing dial T-18088 to the end of the cam shaft and using a fixed point in the vicinity of the timing dial, set the dial for zero degrees. Using VOM T-18082 or circuit tracer T-18187, cycle the cam shaft to the degrees rotation specified on the machine schematics (plus or minus 2°) and position the timing cams to allow the contacts to make or break as required.

ADJ. 10 TRANSLATOR ADJUSTING SCREWS AND KEYLEVER OPERATING ARMS





1. The adjusting screws are factory adjusted and locked in position with a sealant compound (Loctite) and should not be disturbed unnecessarily. When the adjustment is required, remove the first, second and third rows of keybuttons from their keylevers to expose the keylever operating arms and the keylevers. Remove the mounting screws and turn the adjusting screws as required to allow a detectable clearance of .001" to .010" between the majority of keylever operating arms and the pins on the keylevers. (The two adjusting screws on the left end of the translator should be turned equally to raise or lower the keylever operating arms to prevent the possibility of tilting the translator in a forward or rearward position). The clearance should be felt rather than seen by pushing the keylever operating arm toward the pin on the keylever and observing the movement of the keylever. The absence of movement between the keylever operating arm and the pin on the keylever indicates the possibility that the keylever operating arm is holding the keylever down. When the adjustment is completed, reseal the adjusting screws with Loctite (or a similar compound) and tighten the mounting screws.

2. Using seeker forming tool T-18120, form the individual keylever operating arms that are still out of adjustment to conform with the required .001" to .010" clearance between the keylever operating arms and the keylevers. Replace the keybuttons.