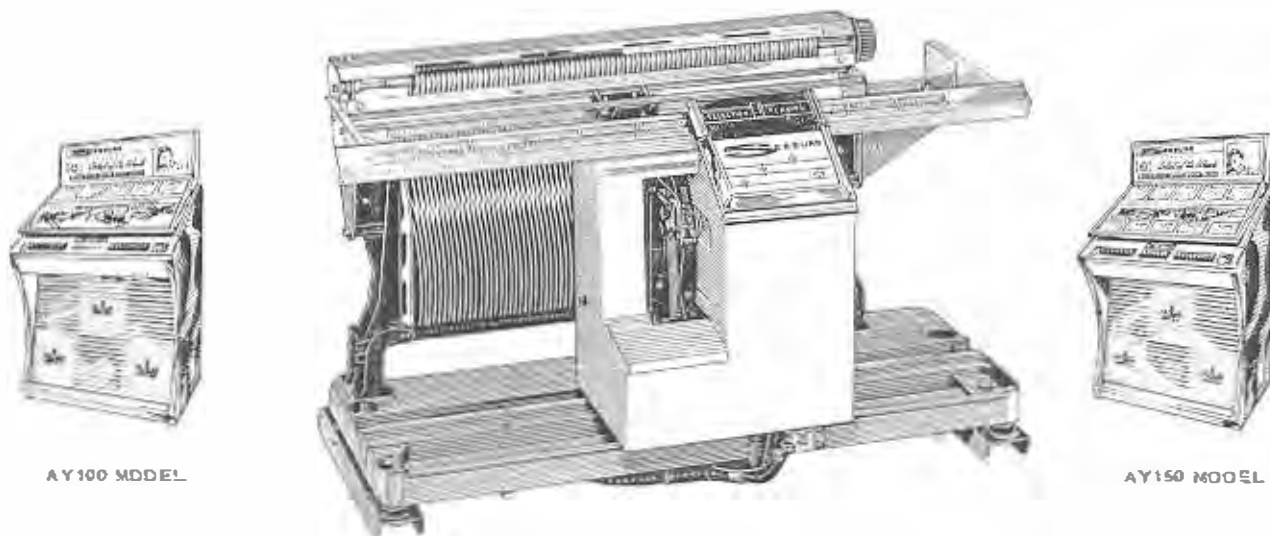


## SELECT-O-MATIC MECHANISMS

Type 145ST7 for AY100 and Y100 Models and Type 160ST5 for AY160 and Y160 Models



AY100 MODEL

AY160 MODEL

The Select-O-Matic Mechanism, Type 145ST7 is used in the AY100 and Y100 Models Select-O-Matic phonographs. The 160ST5 Mechanism is used in the AY160 and Y160 Models Select-O-Matic phonographs. The adjustments and service information for both mechanisms, shown in the following pages, 2429 through 2470, apply to these mechanisms as indexed below:

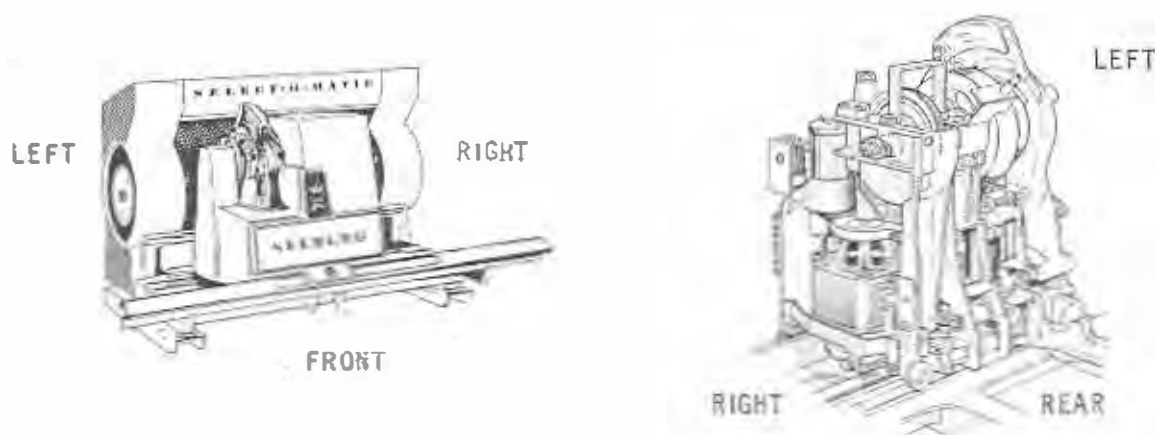
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## PREFACE

The adjustments for the 45 r.p.m. Select-O-Matic Mechanisms are given on the following pages. Each adjustment is associated with a step-by-step procedure which, if followed, will result in correct adjustment and normal operation. These individual adjustments may be made in any sequence but they are, in some instances, dependent on or affected by others. Because of this, they are arranged in a sequence which may be followed from page to page if a completely misadjusted mechanism is to be placed in operating condition. If an individual adjustment is to be checked or made, careful attention should be given to notes indicating dependent adjustments.

Reference is made in these adjustment outlines to the FRONT, REAR, LEFT and RIGHT of the mechanism in order to locate adjusting screws and various mechanical parts. Unless otherwise specified, these are defined as viewed from the front of the cabinet. Reference is also made to right side and left side playing of a record. Right side of a record is defined as viewed from the front of the complete instrument and is played with counter-clockwise rotation of the mechanism flywheel. Left side of a record is defined as viewed from the front of the instrument and is played with clockwise rotation of the flywheel. Counter-clockwise and clockwise rotation of the flywheel are defined as viewed from the left side of the mechanism. These references are used whether the mechanism is in or out of the cabinet.



The operation cycle of the mechanism follows a definite sequence in playing a record. This sequence includes the following:

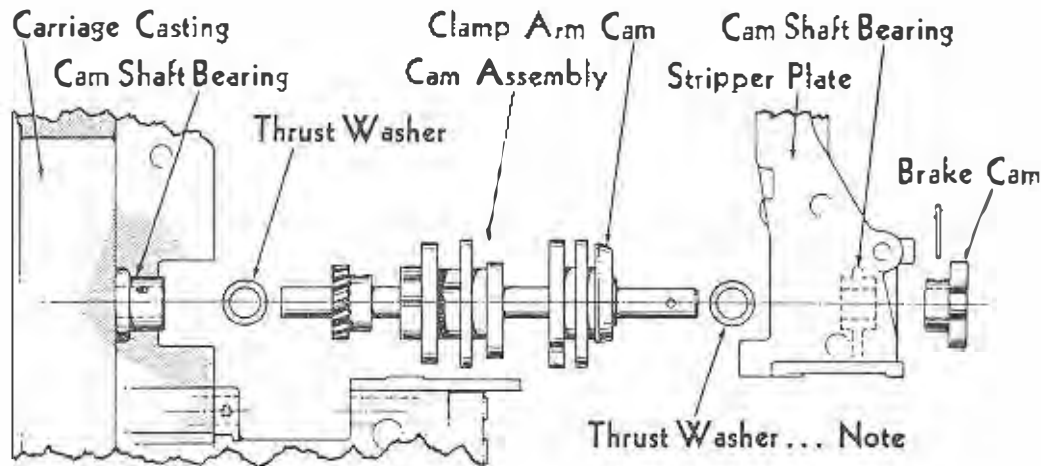
**SCAN** — in which the carriage assembly travels from side to side on the mechanism base.

**TRANSFER** — in which the record is transferred from the magazine to the playing position or from the playing position to the magazine.

**PLAYING** — in which the record is clamped to the turntable and is played.

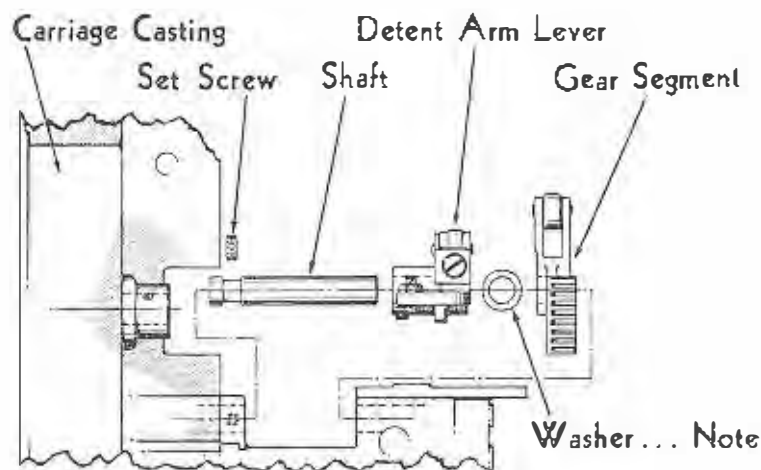
These terms **SCAN - TRANSFER - PLAYING** are also used to describe the position of the clutch, cams and levers of the carriage assembly whether or not the motor is in operation.

INSTALLATION of CAM ASSEMBLY, DETENT ARM & GEAR SEGMENT

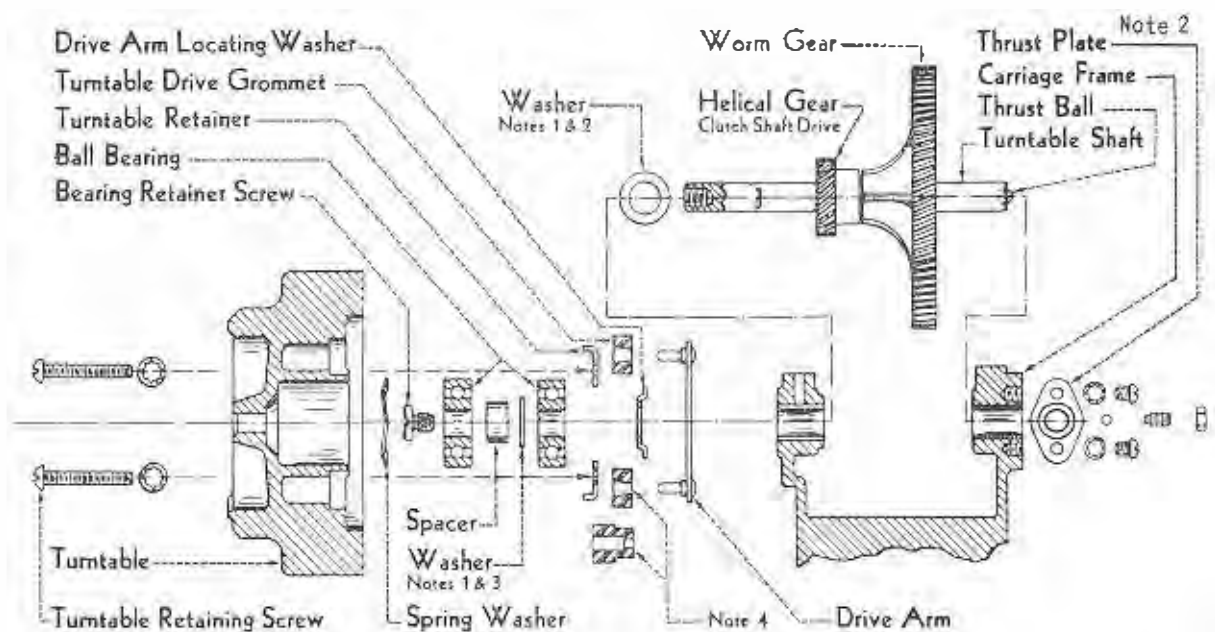


**Note:** Washers, Part No. 922603 (.020"), 922600 (.005"), 922601 (.010"), 922602 (.015") should be selected and installed between the Clamp Arm Cam and the Thrust Washer so the end play of the Cam Assembly is .003" to .010".

After the proper washers have been installed, the cam assembly should be checked by manual rotation, a full turn in either direction without evidence of binds.



**Note:** Washers, Part No. 922170 (.015"), 922165 (.010"), 922160 (.005") should be selected and installed between the Detent Arm Lever and the Gear Segment so the end play is .003" to .010".



Note 1: ..... Washer Part No. 922270 = .005" thick  
 10 21 19 922271 = .010" 19  
 21 21 19 922272 = .015" 21

**Note 2:.....** Select Washers and install between Clutch Shaft Drive Gear and left Turntable Shaft Bearing so end play of Turntable Shaft is .003" to .007". When thrust plate has screw for adjusting end play of shaft, use one No.922272 washer and adjust for .003" to .007" end play with screw.

Note 3: ..... Select Washers and install between Spacer and Ball Bearing so end play of Turntable on the Shaft is a maximum of .015". To check this, hold Turntable Shaft firmly against the Thrust Plate, by pressing against the Worm Gear, and move the Turntable to the right in a direction parallel to the Turntable Shaft. The Spring Washer must always take out the end play by returning the Turntable to the left when released.

Note 4: .....Tuzntable Drive Grommet with tapered center hole is to be installed with small end of tapered hole toward the Drive Arm. When assembled correctly, the part number, which is molded on the end with the large end of the center hole, will not be visible.

Drive Grommets with "step" should be installed with the small diameter end toward the Drive Arm.

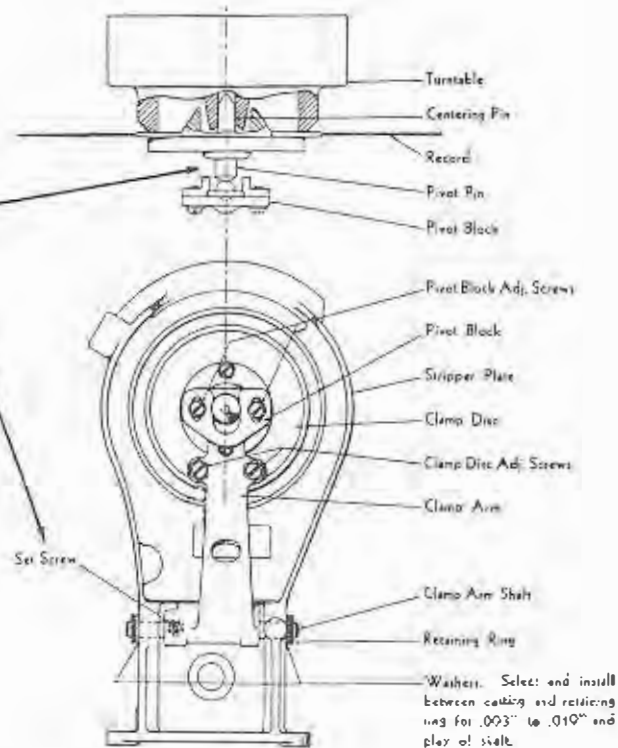
**Lubrication:** The Gears should have a light coating of Stanodrip #29 (Standard Oil Co) oil. Do not use more oil than will adhere to the Geors. The felt wick in the Thrust Screw for the Turntable Worm (which meshes with the Worm Gear) must be placed in the hole in the screw so it is in contact with the Thrust Ball. The wick should be saturated with Stanodrip #29 oil.

## SELECT-O-MATIC MECHANISM ADJUSTMENTS

### INSTALLATION OF CLAMP & TRANSFER ARMS

With the Set Screw loose and a Record clamped on the Turntable, adjust the horizontal position of the Clamp Arm so the Center Line through the Pivot Pin forms a right angle with the Clamp Disc and Record.

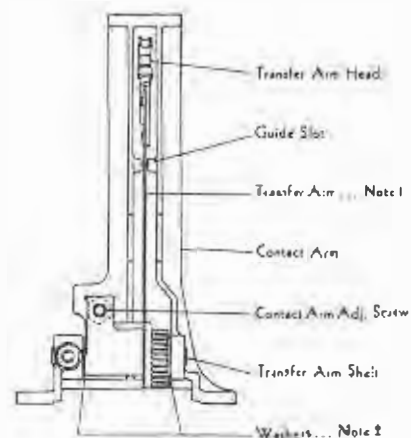
When installation is complete, readjust Clamp Arm. Refer to Clamp Arm Adjustments.



**Note 1:** Transfer Arm should be straight and should form a right angle with the Transfer Arm Shaft.

**Note 2:** Washers, Part No. 921551 (.015"), 921550 (.010"), 921552 (.020"), 921553 (.031") should be selected and placed at both ends of the Transfer Arm hub so the Arm falls in the center of the Guide Slot in the Contact Arm and so the end play of the Arm is .003" to .007". There must be at least one washer at each end of the hub.

**Note 3:** When installing assembly on carriage, mechanism and Transfer Arm should be in SCAN position with reference marks aligned as shown.

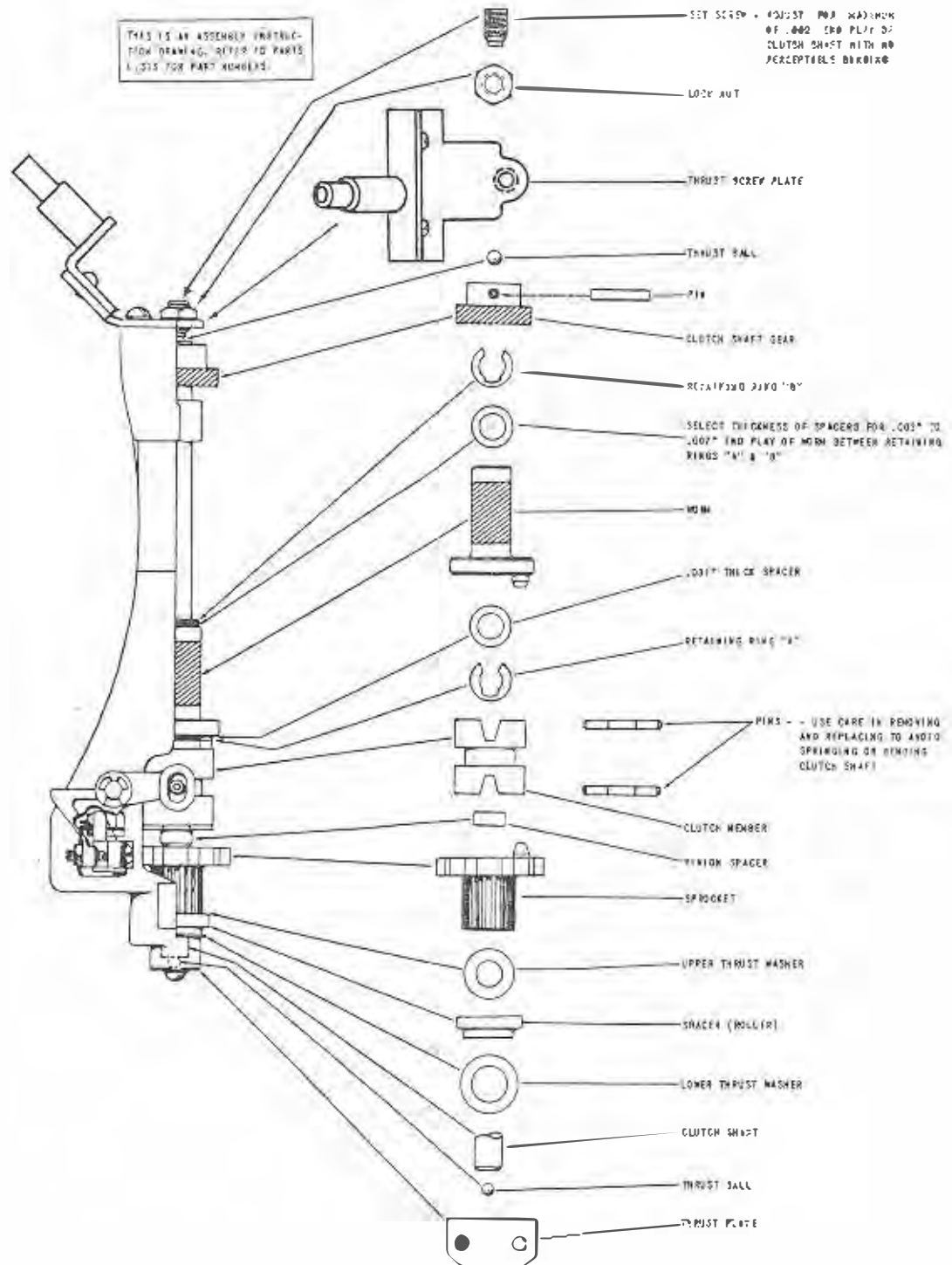


When installation is complete, readjust Transfer Arm. Refer to Transfer Arm Adjustments.



# SELECT-O-MATIC MECHANISM ADJUSTMENTS

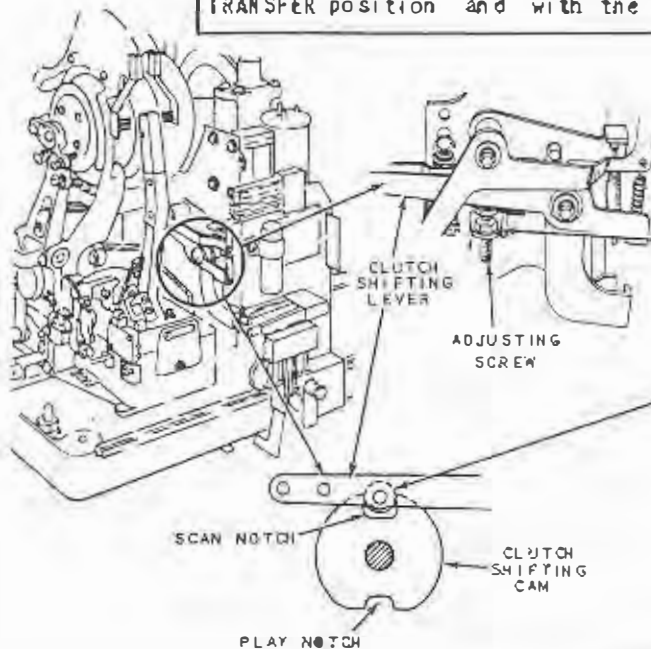
## CLUTCH & HOUSING ASSEMBLY INSTRUCTIONS



BE SURE CLUTCH WORM AND CAM SHAFT DRIVE GEAR ARE CORRECTLY MESHED BEFORE TIGHTENING CLUTCH ASSEMBLY MOUNTING SCREWS.

# "CLUTCH 1" - - CLUTCH LIFTING ADJUSTMENT

This adjustment controls the amount of vertical clutch travel and results in full engagement of the Clutch with the Worm Pin in TRANSFER position and with the Sprocket Pin in SCAN position



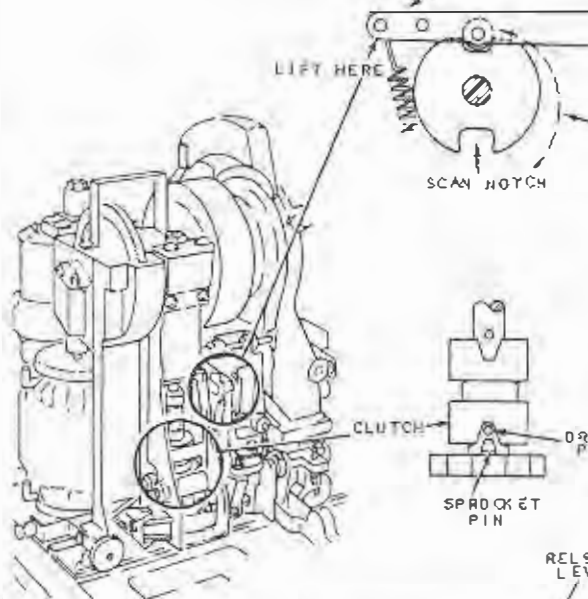
A Scan Carriage to front of \*U0-V0 or K9-K0 record space. Leave it in SCAN position.

B Loosen lock nut and turn Adjusting Screw down to limit.

C Check Clutch Shifting Lever Roller position. The Roller should be in the SCAN Notch.

If the Roller is not in the SCAN Notch, turn the motor shaft until the Roller enters fully into the notch. If the Roller enters the PLAY Notch, it may be necessary to manually lift the Clutch Shifting Lever and - -

turn the motor shaft until the Roller is on the high part of its cam. When the Roller is on the high part of the cam, release the Lever but continue turning the motor shaft until the Roller fully enters the SCAN Notch.



D Check Trip Mechanism position. The Trip Mechanism should be latched with Release Lever down to limit.

E Check Clutch position. Clutch should be all the way down against Drive Pin and engaged with Sprocket Pin.

F While manually holding Clutch Shifting Lever down - -

turn Adjusting Screw UP until screw head just touches Clutch Shifting Lever.

G Tighten Lock Nut.

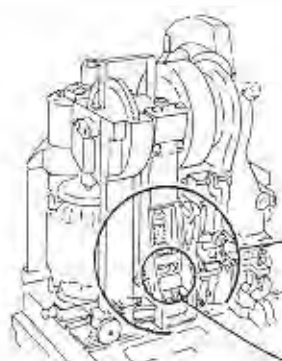
\* U0-V0 for 200 Selection Mechanisms  
U8-V8 for 160 Selection Mechanisms  
K9-K0 for 100 Selection Mechanisms

# "CLUTCH 2" - - SPROCKET CLEARANCE AND DETENTING ADJUSTMENT

This adjustment establishes correct clearance between the Detent Roller and the Sprocket Teeth when the mechanism is Scanning. It results in clearance between roller and Sprocket Teeth which allows 1/16" movement at end of the Detent Arm.

NOTE 1: - "Clutch 1" adjustment should be correct before making this adjustment.

NOTE 2: - If "Clutch 2" adjustment is changed in any way, "Clutch 3 and 4" should be re-adjusted. "Clutch 2, 3 and 4" are related to an extent that a change of "Clutch 2" can cause damaging strains at adjusting screws for "Clutch 3 and 4".



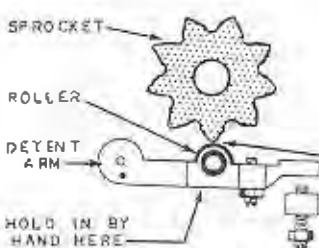
(A) Scan Carriage to right end beyond \*V0 (V8 or K0) position.

(B) Loosen lock nuts and turn these adjusting screws out to the limit;

"Clutch 2"

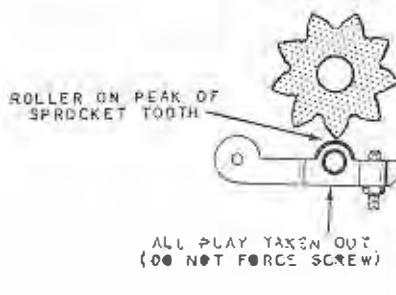
"Clutch 3"

"Clutch 4"



(C) Mechanism should still be in SCAN position, beyond \*V0 (V8 or K0) with Clutch all the way down (against lower Drive Pin) and engaged with Sprocket Pin.

(D) Hold Detent Arm in lightly by hand and turn motor shaft until Detent Arm Roller reaches peak of a Sprocket Tooth.



(E) With Detent Roller lined up with peak of Sprocket Tooth, turn adjusting screw in carefully, a little at a time, until there is no "in and out" play between Detent Arm Roller and peak of Sprocket Tooth. (This is the starting point for correct adjustment.)

(F) Now, back out, the screw 2 turns and tighten the lock nut. This establishes correct clearance.

(G) After this adjustment has been made, adjust "Clutch 3 and 4" as shown on following pages.

\* V0 for 200 Selection Mechanisms  
V8 for 160 Selection Mechanisms  
K0 for 100 Selection Mechanisms



# "CLUTCH 3" - - DETENT LOCKING ADJUSTMENT

This adjustment insures proper locking of the carriage while a record is playing. The adjustment takes out all rotational motion of the sprocket resulting in a minimum of lateral play in the carriage.

NOTE: - "Clutch 2" adjustment should be correct before making this adjustment.

A Loosen Lock Nuts and turn these adjusting screws out to the limit:

"Clutch 3"

"Clutch 4"

B Place Mechanism in \*V0 (V8 or K0) PLAY position. Be sure mechanism is fully in PLAY position.

Clutch Shifting Lever Roller should be down in PLAY Notch, - - - and - - -

Clutch should be somewhere below the Worm Pin and above the Sprocket Pin.

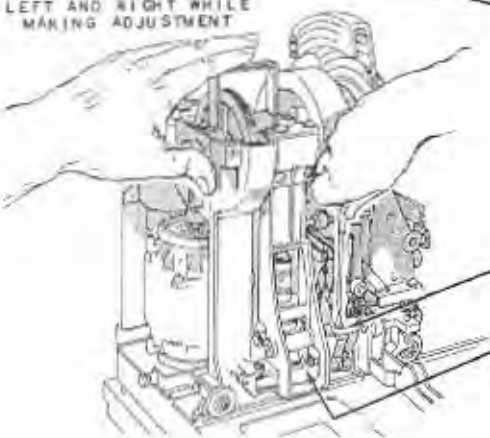
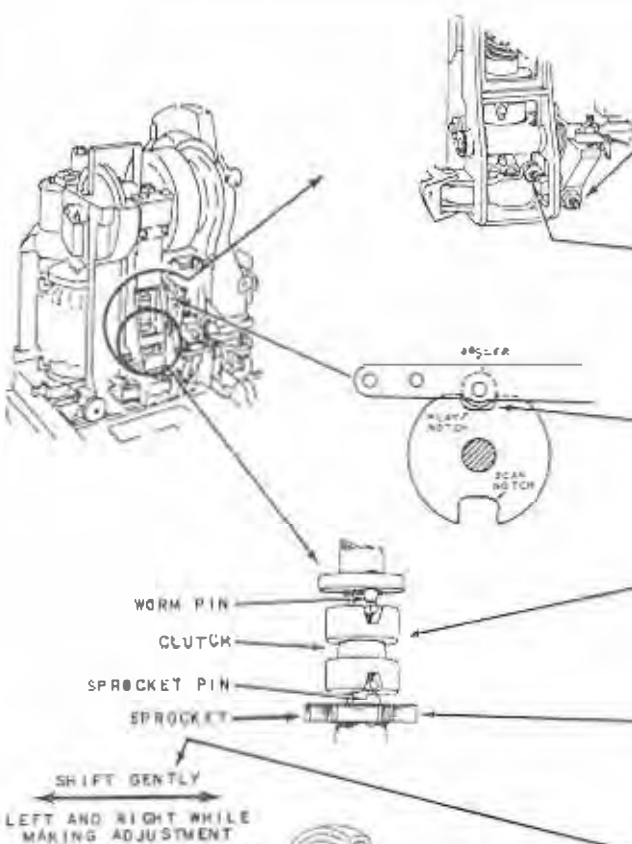
Note side play in Carriage and rotational motion in Sprocket when Carriage is shifted to left and right by hand. This is due to "Clutch 3" screw being out too far.

C While gently shifting Carriage to Left and Right by hand, - - -

turn "Clutch 3" adjusting screw carefully downward - - -

until all rotational motion is just taken out of Sprocket. Tighten "Clutch 3" Lock Nut.

D After this adjustment has been made, adjust "Clutch 4" as shown on the following page.



CAUTION: - Note that when adjustment is completed there is no more rotational motion in Sprocket but Carriage still has a slight amount of side play. This is a normal condition due to required gear clearances.

Do not force adjusting screw.

Turning the screw down too far will setup severe strains in the levers and will cause the Cam Assembly to bind when entering PLAY position. When adjustment is completed, check for freedom of action of Cam Assembly by turning Brake Cam by hand in both directions. Cam should have a slight amount of rotational play.

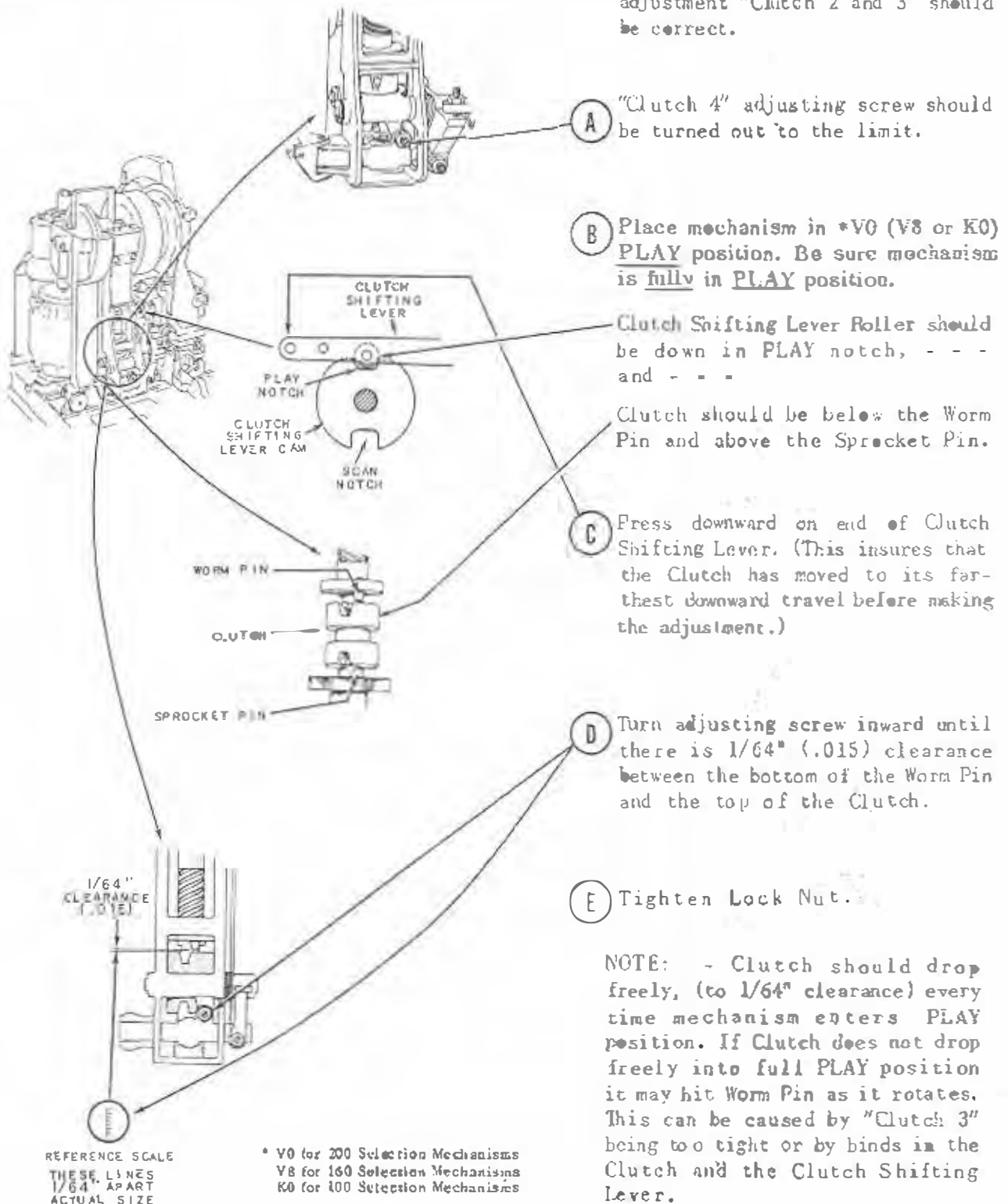
\* V0 for 200 Selection Mechanisms  
V8 for 160 Selection Mechanisms  
K0 for 100 Selection Mechanisms

# SELECT-O-MATIC MECHANISM ADJUSTMENTS

## "CLUTCH 4" - - CLUTCH PLAY POSITION ADJUSTMENT

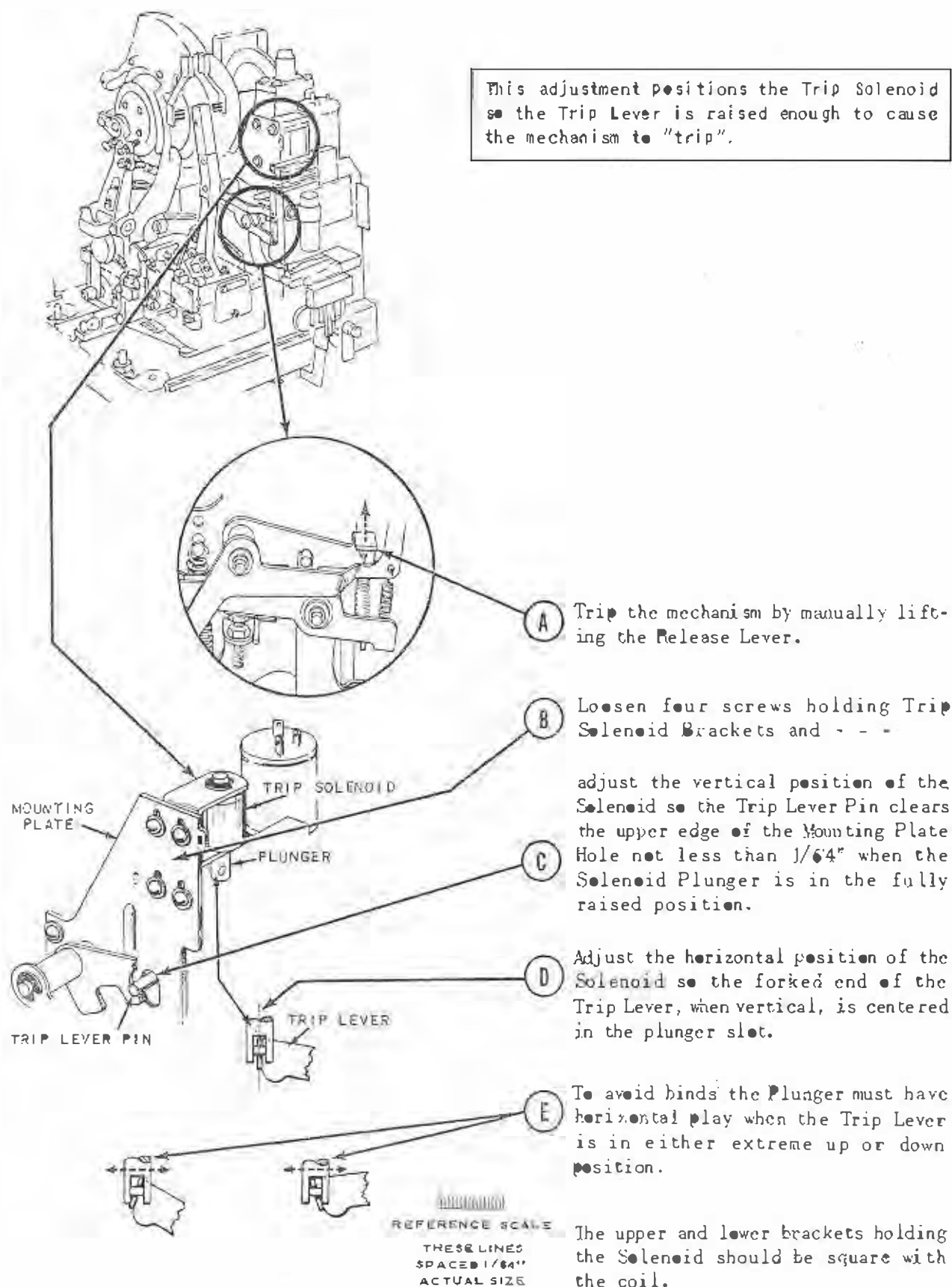
This adjustment establishes the playing position of the Clutch. This results in 1/64" clearance between the Clutch and the Worm Pin in PLAY position.

NOTE: - Before making this adjustment "Clutch 2 and 3" should be correct.



# SELECT-O-MATIC MECHANISM ADJUSTMENTS

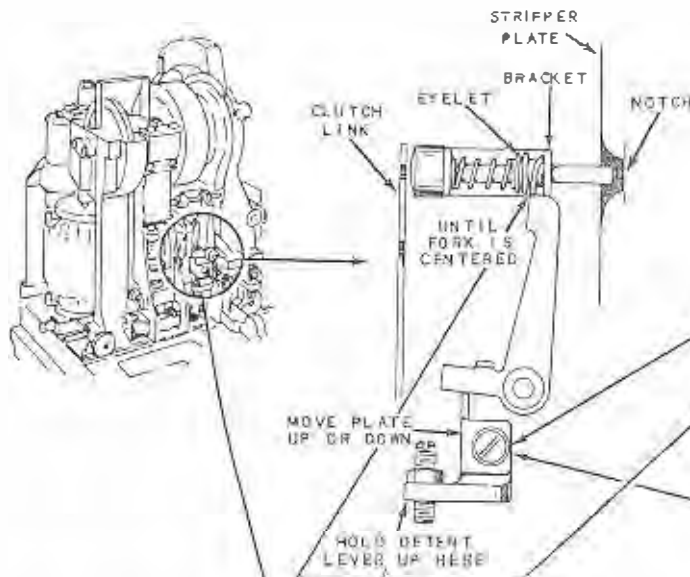
## "TRIP SOLENOID 1" - - TRIP SOLENOID POSITION



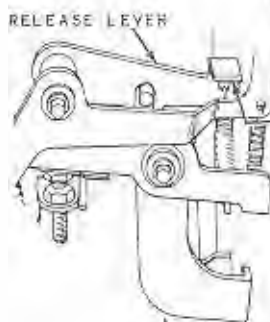
# "SAFETY LEVER 1" - - SAFETY LEVER POSITION

This adjustment establishes the correct position of the Safety Lever and results in proper travel of the Safety Plunger when the mechanism is entering PLAY or SCAN position.

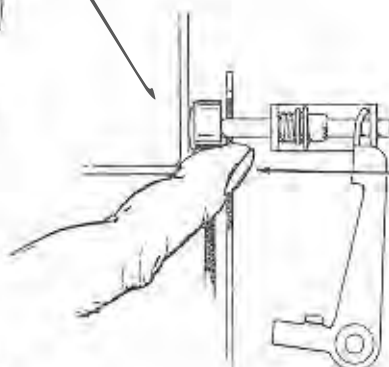
- (A)** Scan Carriage to right end beyond \*V8 (V8 or K8) and turn off power.



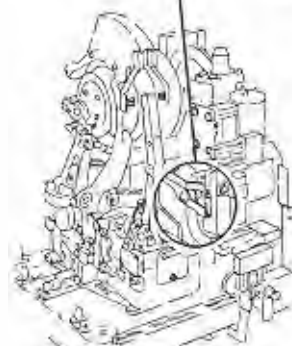
- (B)** To adjust Safety Lever, - - -
1. Mechanism should still be in SCAN position.
  2. Loosen screw.
  3. While holding Detent Arm Lever up by hand, move Adjustment Plate up or down until top forked end of Safety Lever is approximately centered between eyelet and bracket.
  4. Tighten screw.



- (C)** To check Safety Assembly for binds,
1. Trip the mechanism by manually lifting the Release Lever.
  2. Pull Plunger all the way over to the left (as shown) and release slowly to right. Plunger should return freely without binds.



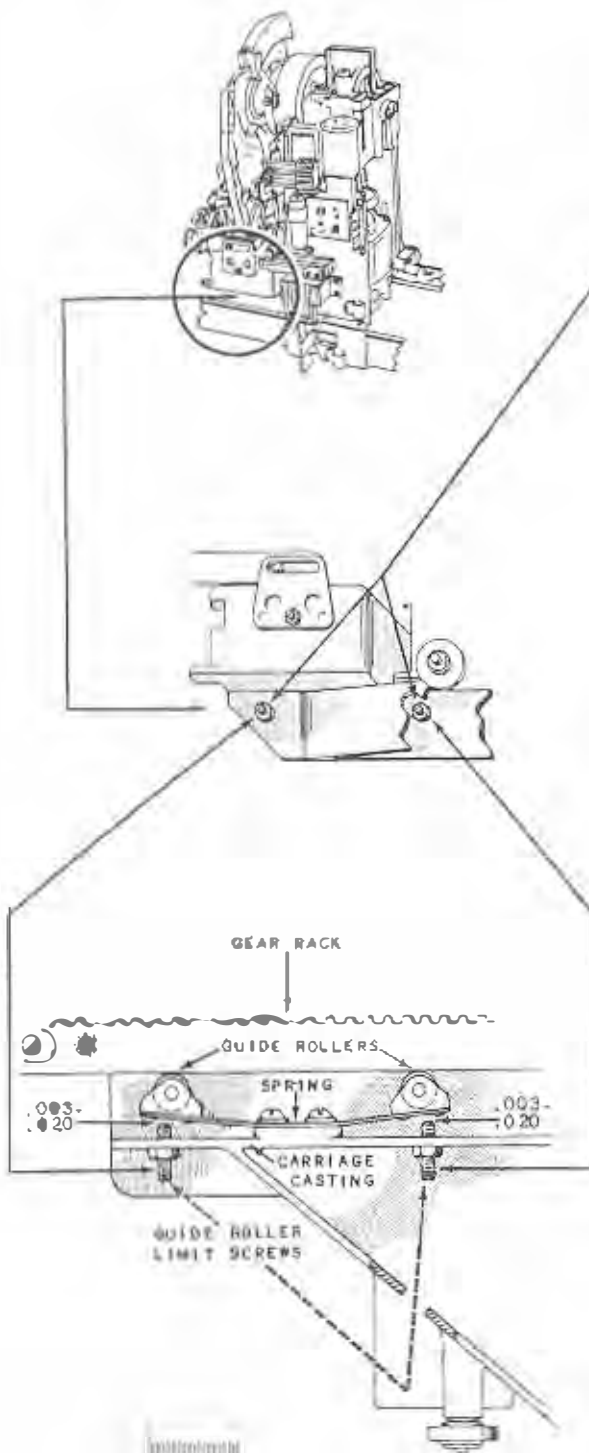
- (D)** To test for correct safety operation, - - hold the edge of a thin record across the Stripper Plate Notch and run mechanism slowly through SCAN. Hook on Clutch link should catch on large end of Plunger and record should be returned to PLAY position.



\* V8 for 200 Selection Mechanisms  
V8 for 160 Selection Mechanisms  
K8 for 140 Selection Mechanisms

# "GUIDE ROLLERS !" - - CARRIAGE GUIDE ROLLER ADJUSTMENTS

This adjustment limits the front to back play of the Carriage.



REFERENCE SCALE

THESE LINES  
SPACED 1/64"  
ACTUAL SIZE

**A** Front and back play of Carriage on rack should be limited to .003 to .020 by position of Guide Roller Limit Screws.

**B** To adjust Guide Roller limit Screws - - -

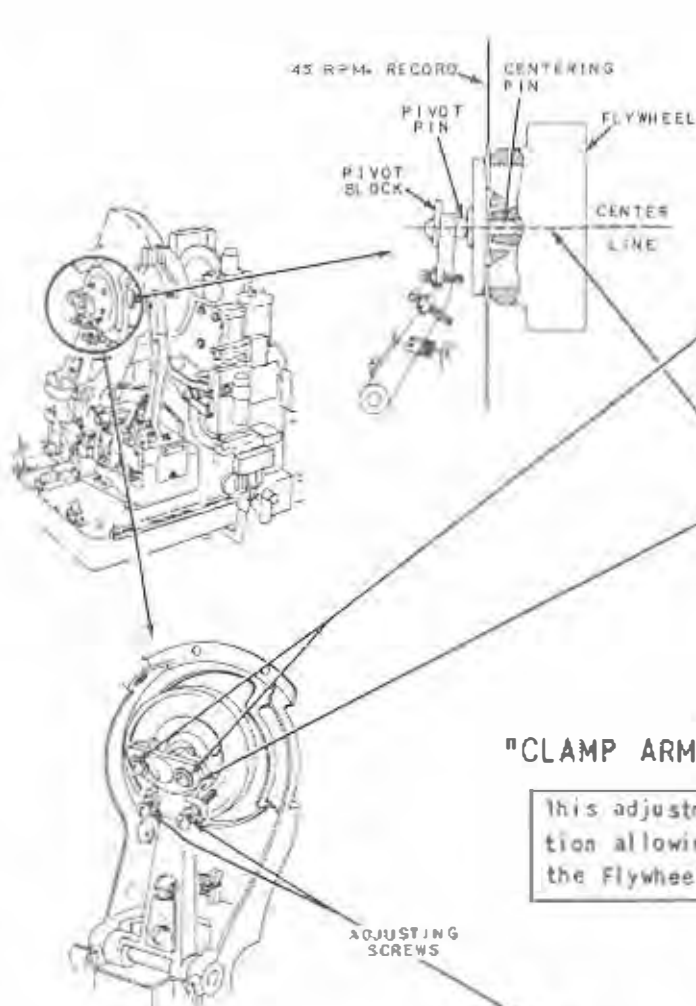
- 1** loosen Lock Nuts.
- 2** Carefully turn screws in, all the way, until all front and back play of Carriage is taken out.  
(DO NOT FORCE SCREWS)
- 3** When all front and back play is taken out, back out each screw 1/2 turn. (This will result in approximately .015 clearance.)
- 4** Tighten Lock Nuts.

**C** Check for play along the entire Gear Rack. Back out each screw an additional 1/4 turn if necessary to avoid binding.

**D** To check Guide Roller Spring pressure, - push left side of Carriage toward the rear and release slowly. Repeat with right side of Carriage. Spring pressure on each side should be great enough to fully reset the Carriage to its normal forward positions.

# "CLAMP ARM 1" - - PIVOT PIN ALIGNMENT

This adjustment establishes proper alignment of the Pivot Pin with the Centering Pin and the hole in the Flywheel Shaft.



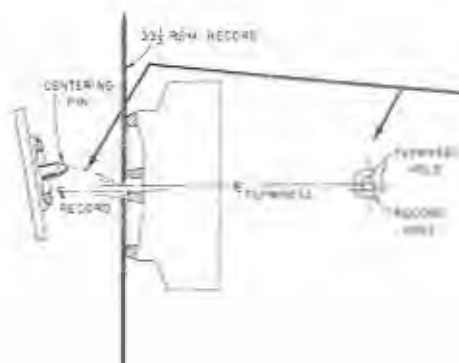
**A** Place mechanism in PLAY position with a record clamped on the Flywheel.

**B** Loosen Pivot Block Screws.

**C** Move Pivot Block, up or down, until center line of Pivot Pin is in line with or  $1/32$ " below the center line of the Flywheel Shaft, and tighten screws.

## "CLAMP ARM 2" - - CENTERING PIN POSITION

This adjustment establishes the Centering Pin position allowing it to enter freely into the hole of the Flywheel Shaft when a record is being clamped.



NOTE: - "Clamp Arm 1" and transfer arm adjustments should be correct before making this adjustment.

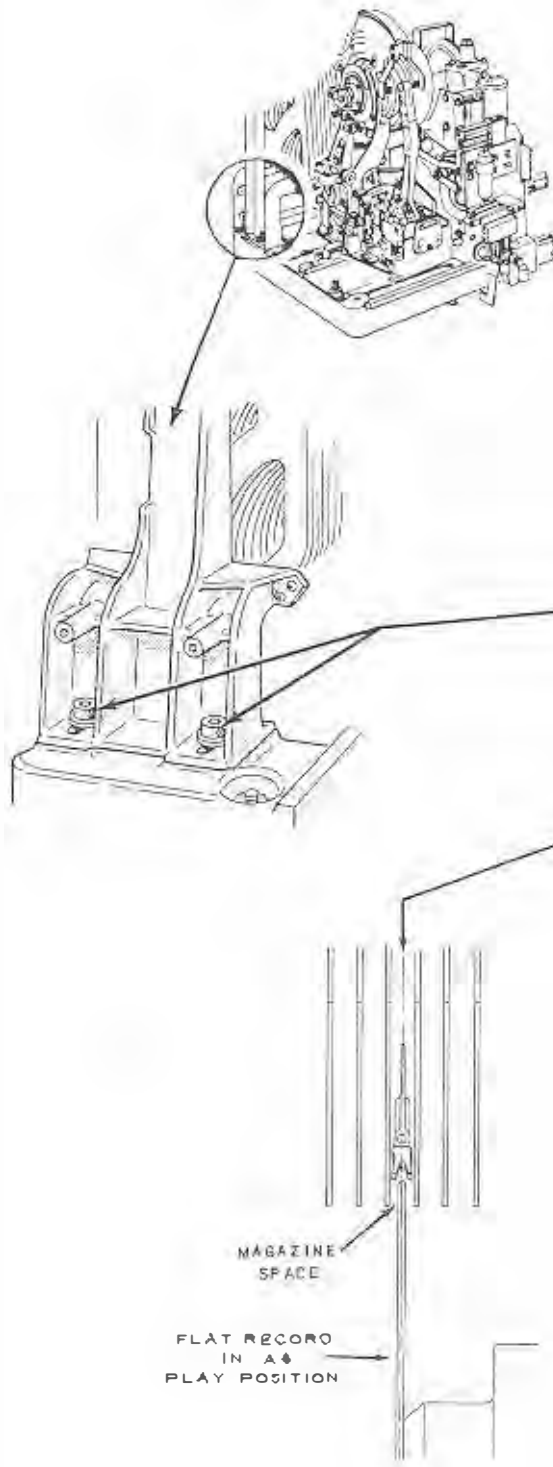
**A** Loosen lock nuts and adjust both screws as required so - - -

**B** Tip of Centering Pin enters record hole as shown.

**C** Tighten Lock Nuts.

# "MAGAZINE - - HORIZONTAL POSITION"

This adjustment establishes the horizontal Magazine position so that when a record is in Play position it is approximately centered with its magazine space.



(A) Place a FLAT record in PLAY position near the center of the magazine. (Be sure the record is FLAT - not warped, not dished.)

(B) Loosen the cap screws holding both ends of the Magazine to the Base.

(C) Shift the entire Magazine to Left or Right until the record is in the center of the Magazine Space.

(D) Tighten cap screws. (Be sure the screws are tight.)

NOTE: - If the Magazine position is changed be sure to check

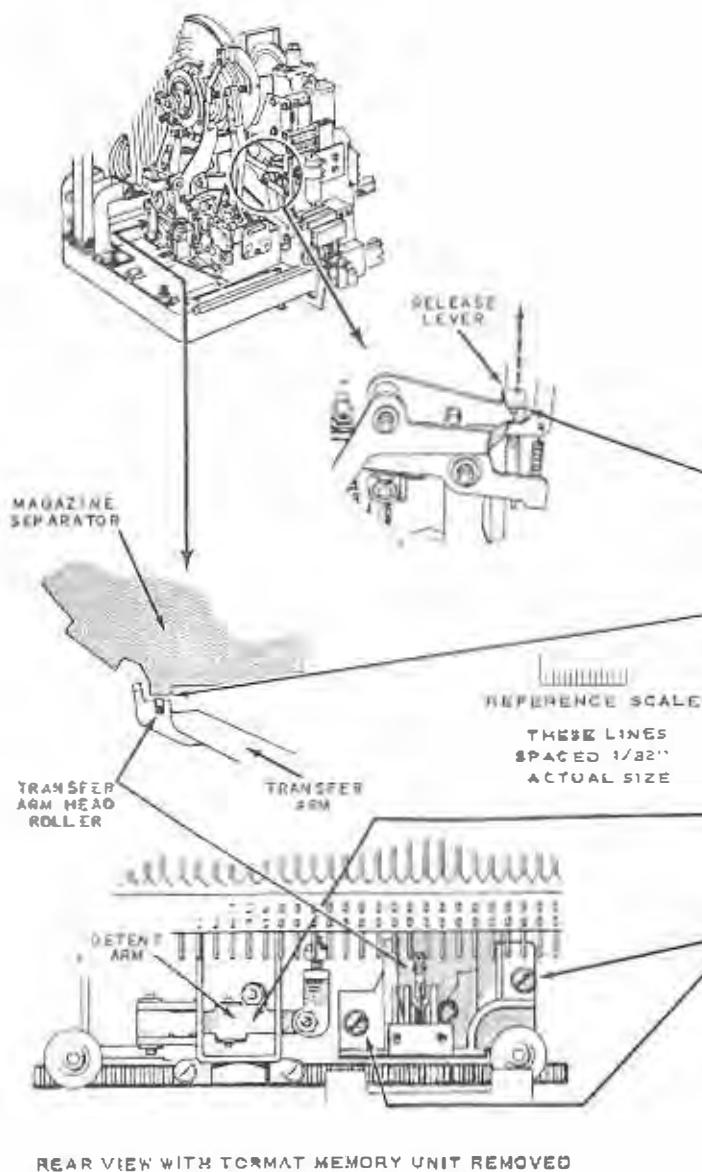
- "Transfer Arm 1"
- "Contact Plunger Block 1 & 2"
- "Format Memory Unit Position"
- "Selection Playing Indicator"

# "TRANSFER ARM 1" - - ALIGNMENT TO MAGAZINE

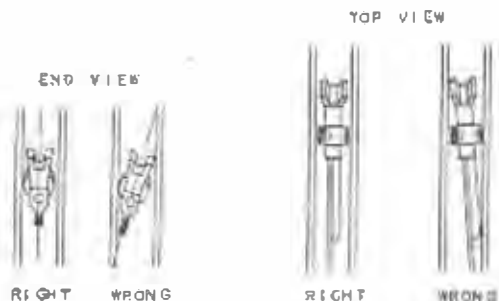
This adjustment establishes the lateral position of the Transfer Arm so the Transfer Arm Head will be centered in the magazine space when a record is transferred.

NOTE: The Magazine horizontal position adjustment should be correct before making this adjustment.

The Tormat Memory Unit should be removed for convenience in making this adjustment. This can be done by removing its four mounting screws.



- A Scan the mechanism to a position near the center of the magazine and turn off power.
- B Trip the mechanism by manually lifting the Release Lever.
- C Turn motor shaft until Roller in Transfer Arm Head is approximately 1/32" below the projections on the lower edges of the Magazine Separators.
- D Push in on Detent Arm to take out Carriage Side Play.
- E Loosen two screws holding Contact Arm Casting to Carriage Casting and -
- F Shift Contact Arm Casting to left or right until Transfer Arm Head is centered in the space. Tighten screws.



- G When the Transfer Arm enters the space, the Transfer Arm Head should be parallel to the Magazine Separators as shown. Straighten Arm if necessary to correct Transfer Arm Head alignment.

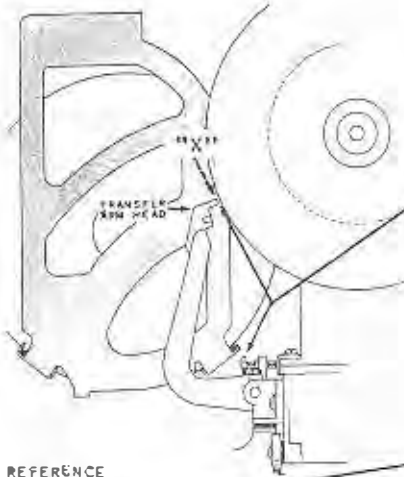
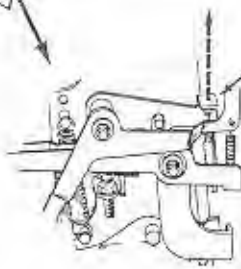
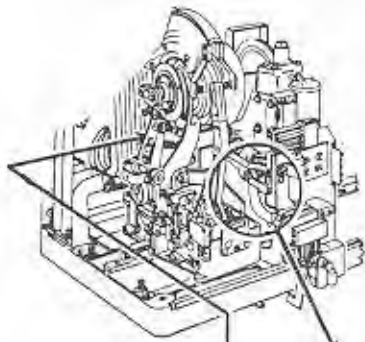
NOTE: -After making this adjustment be sure to check and adjust - "Contact Plunger Block 1 & 2" and "Tormat Memory Unit Position."



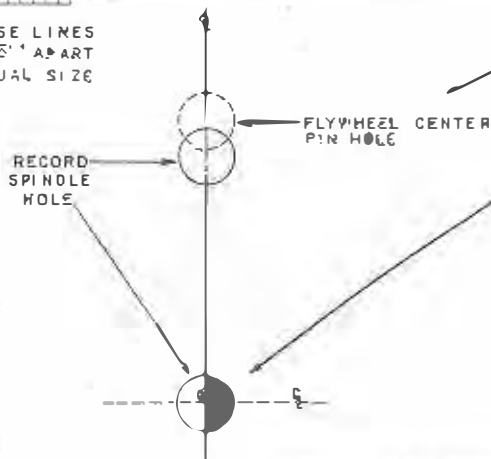
## SELECT-O-MATIC MECHANISM ADJUSTMENTS

### "TRANSFER ARM 2" -- PLAY POSITION CLEARANCE

This adjustment establishes the travel of the Transfer Arm so that records will be properly clamped to the Flywheel by the Clamp Arm.



THESE LINES  
1/16" APART  
ACTUAL SIZE



A

NOTE: CLAMP ARM 1 & 2 ADJUSTMENTS MUST BE CORRECT BEFORE MAKING THIS ADJUSTMENT.

Scan the carriage to the Left, stopping it one position to the LEFT of A1 so the Transfer Arm will come up outside the magazine.

B

Trip the mechanism by manually lifting the Release Lever.

*For mechanisms designed for playing 45 rpm. records only (clamp arm lifts record from transfer arm head).*

C

Place a normal size \*45 rpm. record in position on the Transfer Arm Head. Turn motor shaft until record is brought up and clamped in PLAY position. (Transfer Arm and record should come up just outside of the Magazine one position to the left of A1.)

D

Adjust screw for 1/16" clearance between edge of record and tips of the Transfer Arm Head at "X".

*For mechanisms designed to play intermixed 45 and 33-1/3 rpm. records. (Transfer arm moves away from record after clamp arm clamps it.)*

E

Place a normal size \*33-1/3 rpm. record (with 5/16" spindle hole) in position on the Transfer Arm head and turn motor shaft until record is at its maximum raised position. This will be at a point where the Clamp Arm just starts moving toward the record.

F

Adjust screw so record spindle hole is exactly aligned, vertically, with the centering pin hole in the fly wheel and . . . . .

G

. . . . . the record ramp should be positioned so the tip of the centering pin enters the record spindle hole in line with or 1/32" above the horizontal center line of the record hole.

*After the record has been clamped, the Transfer Arm moves downward so there is about 1/4" clearance at "X" in play position.*

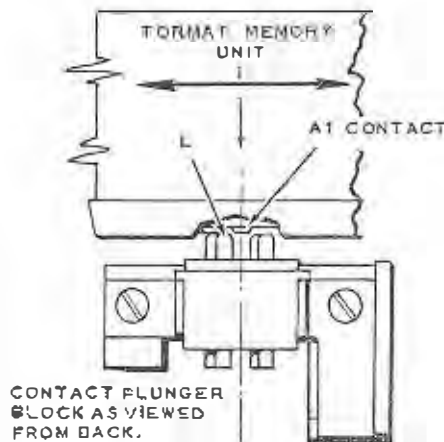
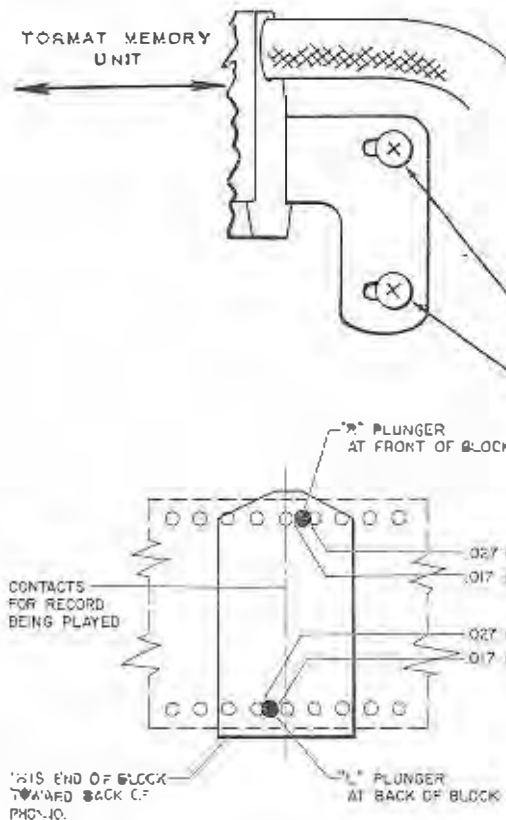
\*DIAMETER OF A NORMAL SIZE 45 RPM. RECORD IS 6-7/8" = 1/32"

## SELECT-O-MATIC MECHANISM ADJUSTMENTS

### "TORMAT MEMORY UNIT POSITION"

This adjustment positions the Tormat Memory Unit so the contact plungers and Tormat contacts will be correctly aligned for tripping the mechanism at the selected record.

**NOTE:** If for any reason the Tormat Memory Unit is removed from the mechanism the Contact Plunger Block adjustments must be checked and, if necessary, corrected before making the Tormat adjustment. This may be done with a preliminary lateral adjustment of the unit by placing the mechanism at A1 and mounting it on the magazine with rear plunger just touching contact rivet for adjacent selection (to the left of the contact for A1).



**NOTE 1:** The Tormat Memory Unit and the Contact Plunger Block positions are related so each must be checked if any one is changed.

**NOTE 2:** Check "Clutch 3" for minimum carriage side play also check "Magazine" and "Transfer Arm 1" adjustments before making this adjustment.

**A** Place the mechanism in PLAY position at a record space near the center of the magazine and turn off power.

**B** Loosen the two mounting screws at each end of the Memory Unit.

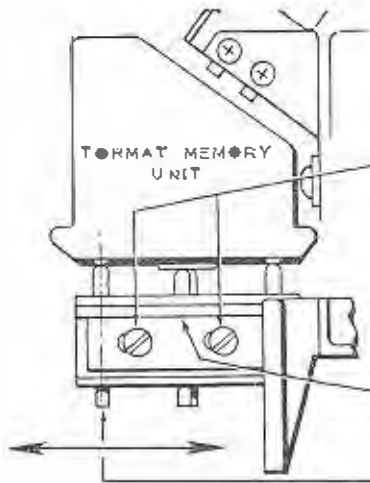
**C** Adjust the lateral position of the Unit so the R and L contact plungers are, respectively, to the right and left of the contacts associated with the record being "played". The contacts and plungers will be separated by approximately  $1/64"$  ( $.017$ ) as shown and the gap should be the same for each.

Place mechanism in PLAY position at the end record spaces of the magazine, then check the positions of the plungers relative to the Memory Unit contacts. The gaps between the plungers and the end contacts should be approximately  $.017"$  as in C (above) and should be equal. Exactly equal separation at both end positions is not necessary but if it is not equal, shift the Memory Unit, as required, so variation of gap is equally divided at each end of the magazine.

## "CONTACT PLUNGER BLOCK 1" -- HORIZONTAL POSITION

This adjustment positions the Contact Plunger Block horizontally (front to back) and determines proper alignment of the contact plunger and the Tormat contact rivets.

*NOTE: The Tormat Memory Unit and the Contact Plunger Block positions are related so each must be checked if any one is changed.*



REFERENCE SCALE

THESE LINES  
SPACE: 1/16"  
ACTUAL SIZE

- (A) Place the mechanism in Play position near the center of the record magazine and turn off power.
- (B) Loosen adjustment screws.
- (C) Adjust contact plunger block in horizontal direction as indicated so that the contact plunger is exactly centered on the contact rivet of the Tormat Unit.
- (D) Securely tighten adjusting screws.

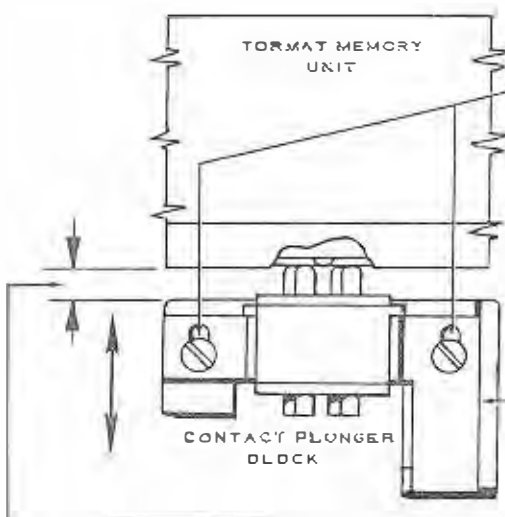
*NOTE: Edge of bracket must be against flange on casting during adjustment and tightening of screws.*

- (E) Check adjustment at the end record positions of the magazine.

## "CONTACT PLUNGER BLOCK 2" -- VERTICAL POSITION

This adjustment positions the Contact Plunger Block vertically to assure proper contact pressure and movement of the plungers.

*NOTE: The Tormat Memory Unit and the Contact Plunger Block positions are related so each must be checked if any one is changed.*



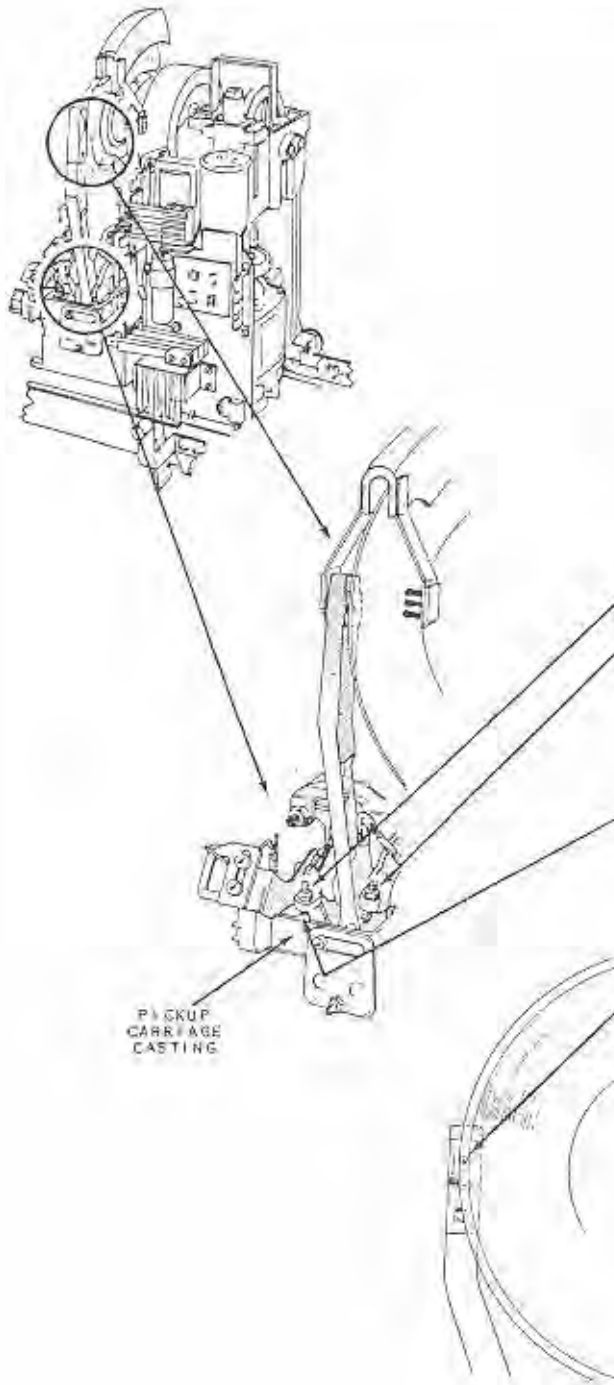
- (A) Place the mechanism at in Play position near the center of the record magazine and turn off power.
- (B) Loosen adjustment screws.
- (C) Adjust Contact Plunger Block in vertical direction so that the top surface of the contact plunger bearing plate is  $\frac{1}{4}$ " from the surface of the Tormat Memory Unit.
- (D) Securely tighten adjusting screws.

*NOTE: Edge of bracket must be against flange on casting during adjustment and tightening of screws.*

- (E) Check adjustment at the end record positions of the magazine.

# "PICKUP 1" - - NEEDLE LANDING ADJUSTMENT

This adjustment establishes the point of landing of the needle on the record at the beginning of Play. It should be made so the needle lands half way between the edge of the record and the first playing groove.



A Select the Left side of a normal\* record (preferably a transparent type) and place the record and the mechanism in Left Side PLAY position.

B Loosen Lock Nuts on - - - "Pickup 1" and - - - "Pickup 2". Turn Adjusting Screw out to limit. ("Pickup 2" Adjusting Screw is loosened to avoid possibility of binds in the levers when the mechanism is later returned to SCAN.)

C Hold Adjusting Screw down against casting and adjust so - - -

D - - needle is halfway between outer edge of record and the playing edge of grooves. (If transparent type record is used, point where needle touches can be seen through the record.)

E Tighten "Pickup 1" Lock Nut.

F Select the Right side of the same record and check for proper needle landing at the beginning of Right Side PLAY.

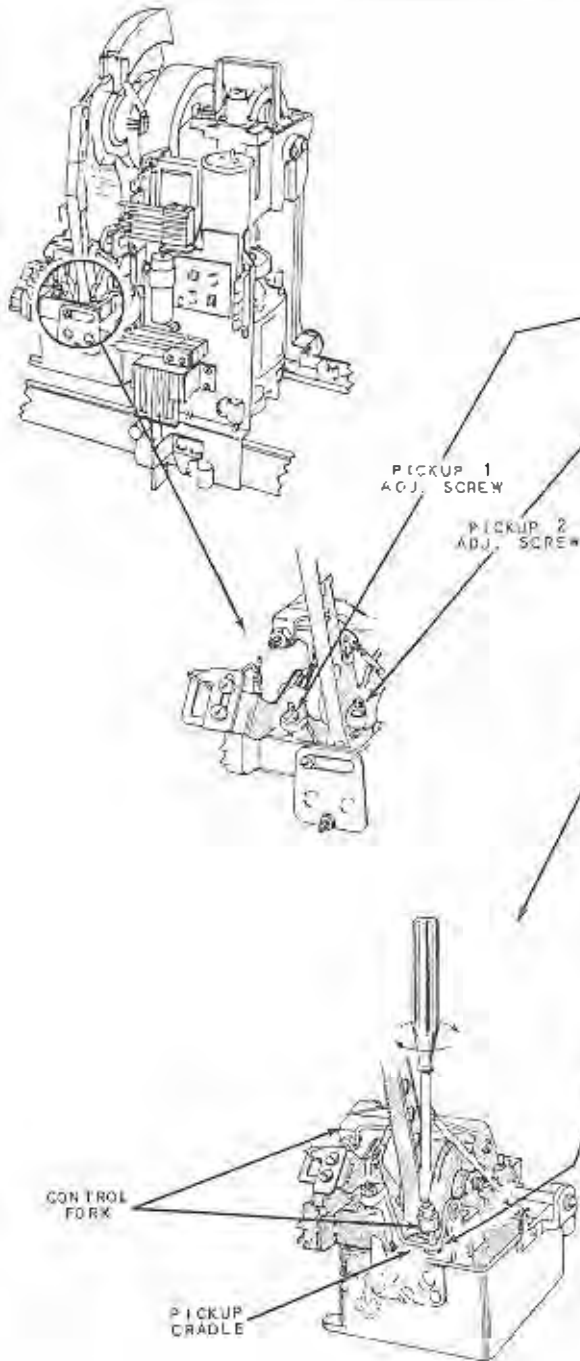
G After this adjustment had been made, adjust "Pickup 2" as shown on the following page.

\*Nominal diameter for 45 R.P.M. records is  $6-7/8 \pm 1/32$ .

## PICKUP 2 - - PICKUP RETURN ADJUSTMENT

This adjustment results in proper return of the Pickup Arm to SCAN position and allows enough play between the Cradle and the Adjusting Screw to avoid binds.

NOTE: - "Pickup 1" adjustment should be correct before making this adjustment.

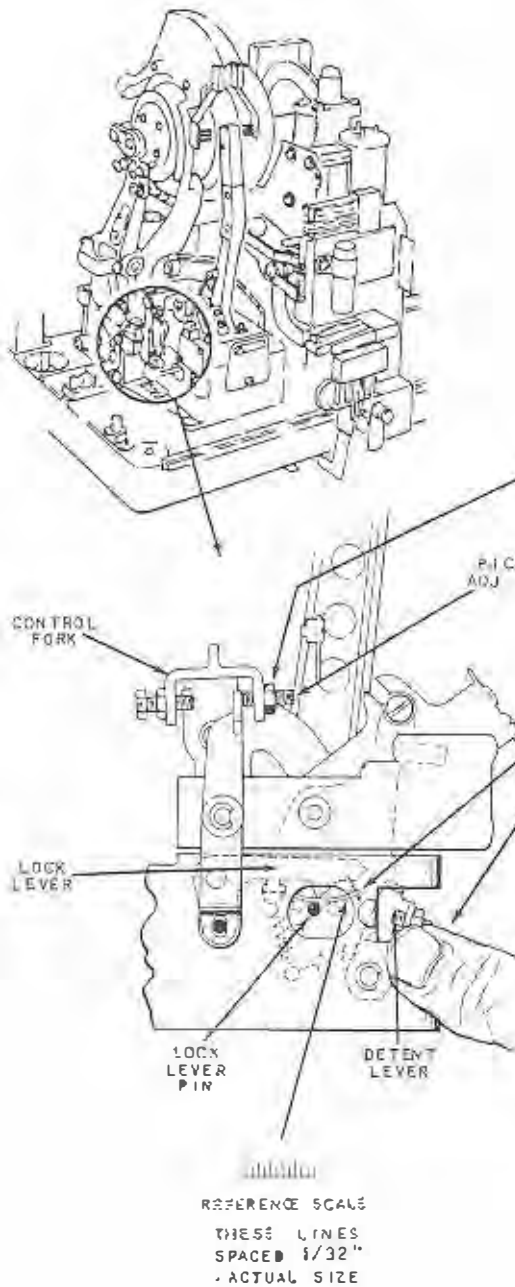


- A Place mechanism in SCAN position with Pickup Arm on Left Side. "Pickup 1" Adjusting Screw should be against the casting.
- B Loosen Lock Nut and turn "Pickup 2" Adjusting Screw out to limit.
- C Insert screw driver in screw slot. Push straight down on screw with screw driver, then release. Note clearance between screw and cradle and note the up and down play in the Control Fork.
- D While gently pushing down and releasing the screw with screw driver, turn screw down carefully, a little at a time, until all the up and down play is just taken out.
- E Back out screw 1/4 turn from the above position and tighten Lock Nut. (This allows a small amount of clearance under the screw and a slight amount of up and down play in the Control Fork.)
- F Place mechanism in Right side PLAY position then return it to SCAN with Pickup Arm on Right Side. Check for equivalent up and down play of Control Fork with Pickup Arm on Right side.

**CAUTION:** If "Pickup 2" Adjusting Screw is down too far (no up and down play in Control Fork) it may place a bind on the Levers and interfere with proper Pickup shifting action. A check for proper shifting of Pickup can be made by alternately selecting and playing several Right and Left sides of records. Each time Pickup shifts it should move smoothly all the way over to its Right or Left position.

# "PICKUP 3" - - PICKUP RELEASE ADJUSTMENT

This adjustment establishes  $1/32"$  clearance between the path of the Lock Lever Pin and the lower projection of the Lock Lever when the mechanism is in PLAY position.



**A** Place mechanism in Left Side PLAY position.

**B** Loosen Lock Nut - - and while holding Detent Lever away from the Lock Lever, - - -

**C** adjust screw so that the lower projection of the Lock Lever and the Lock Lever Pin clear by  $1/32"$  when the Pin is moved past the Lever.

**D** Tighten Lock Nut.

**E** Place mechanism in Right side PLAY position. While holding Detent Lever away from Lock Lever, move Pickup Arm in along record and again check for required  $1/32"$  clearance.

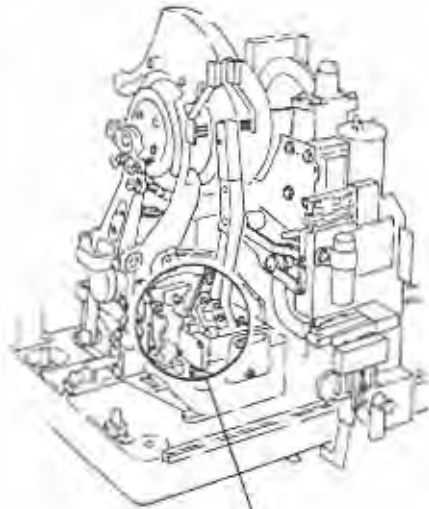
If clearance is not approximately the same in both Right and Left side PLAY positions, check Lock Lever Pin alignment. Straighten Pin, if necessary.

NOTE - This adjustment should be followed by "Pickup 4" adjustment.

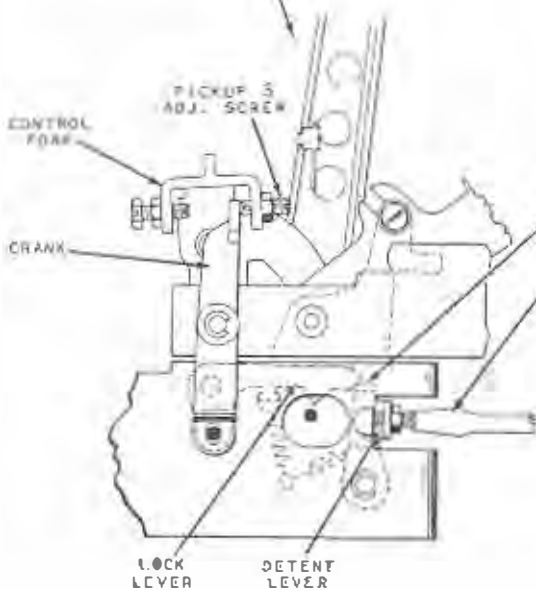
# "PICKUP 4" - - DETENT LEVER ADJUSTMENT

This adjustment establishes the Detent Lever position so that it just touches the lower slope of the end of the Lock Lever when the mechanism is in PLAY position.

NOTE: - "Pickup 3" adjustment should be correct before making this adjustment.



- (A) Place mechanism in Right side PLAY position.



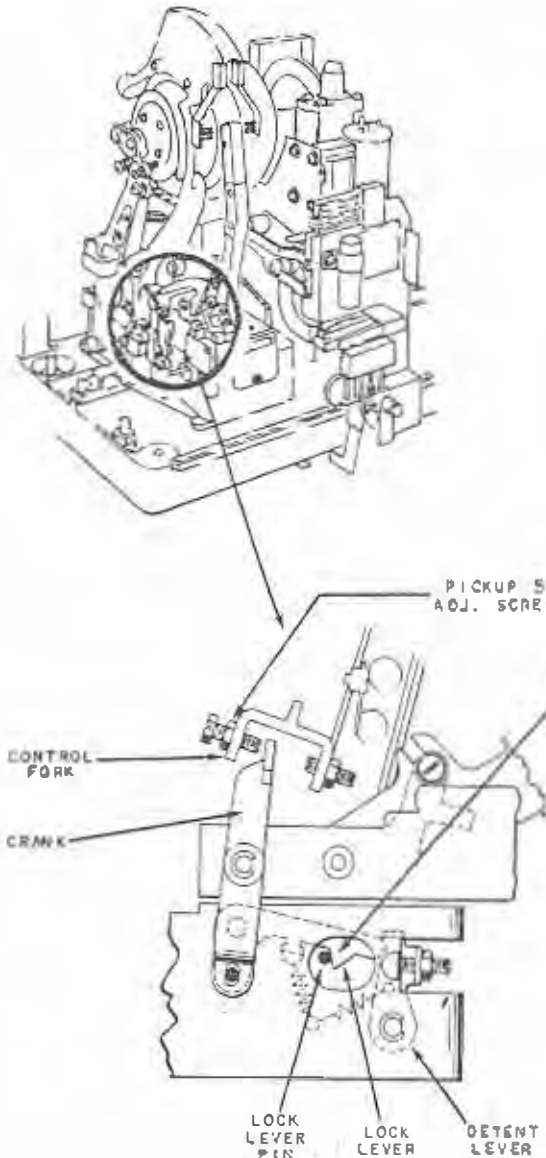
- (B) Loosen Lock Nut and adjust the screw until Detent Lever just touches lower slope of Lock Lever, as shown. The Detent Lever should meet the Lock Lever approximately half way along the lower slope. If the edge of the Detent Lever is above or below the lower slope of the Lock Lever, check "Pickup 3" adjustment.

- (C) Tighten Lock Nut.

- (D) To check - - manually pull top of Control Fork away from Crank. The Detent Lever should hold the Lock Lever and the Crank from moving.

# "PICKUP 5" - - PICKUP LOCKING ADJUSTMENT

This adjustment establishes  $1/32"$  clearance between the tip of "Pickup 5" adjusting screw and the upper end of the Crank to insure correct locking of the Pickup Assembly in SCAN position.



NOTE: - "Pickup 4" adjustment should be correct before making this adjustment.

- (A) Place mechanism in SCAN position with Pickup Arm and Cradle fully reset on Left side.
- (B) Lock Lever should be engaged with Lock Lever Pin. Pull Detent Lever out of way, if necessary, to allow Lock Lever to drop against pin.
- (C) Loosen Lock Nut and adjust screw so that clearance between the Crank and the tip of the screw is  $1/32"$  to  $1/16"$ . Note reference scale.
- (D) Tighten Lock Nut.
- (E) Check adjusting screw clearance by selecting Right side of a record. Screw tip should not touch Crank while shifting.
- (F) Check resetting action - - by returning mechanism to Right side SCAN position. Lock Lever should be returned to lock position against Pin and clearance between screw tip and Crank should be  $1/32"$ .

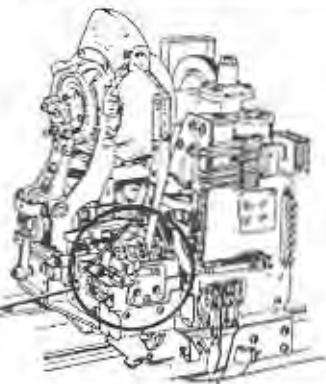
REFERENCE SCALE  
THESE LINES  
SPACE  $1/32"$   
ACTUAL SIZE



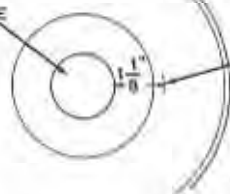
## SELECT-O-MATIC MECHANISM ADJUSTMENTS

### "PICKUP 6" - - PICKUP ARM STOP

This adjustment limits the inward travel of the Pickup Arm so the Pickup Cartridge cannot move in far enough to hit the Flywheel.



RECORD  
HOLE



A

Inscribe a mark on a record 1-1/8" away from the edge of hole. Use a transparent type record if available.

B

Place mechanism in Right side PLAY position with inscribed record on Flywheel. Turn off power.

C

Move Pickup Arm in as far as possible toward Flywheel.

D

Loosen Lock Nut and adjust screw so that needle cannot move in toward Flywheel any farther than the inscribed mark, as shown.

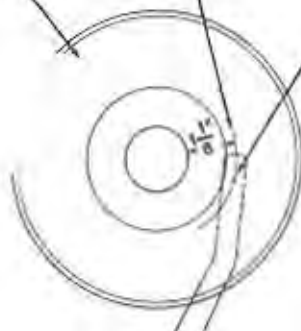
E

Tighten Lock Nut.

TRANSPARENT  
TYPE RECORD

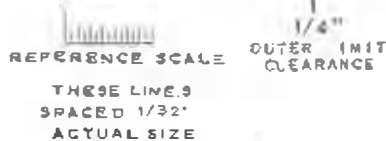
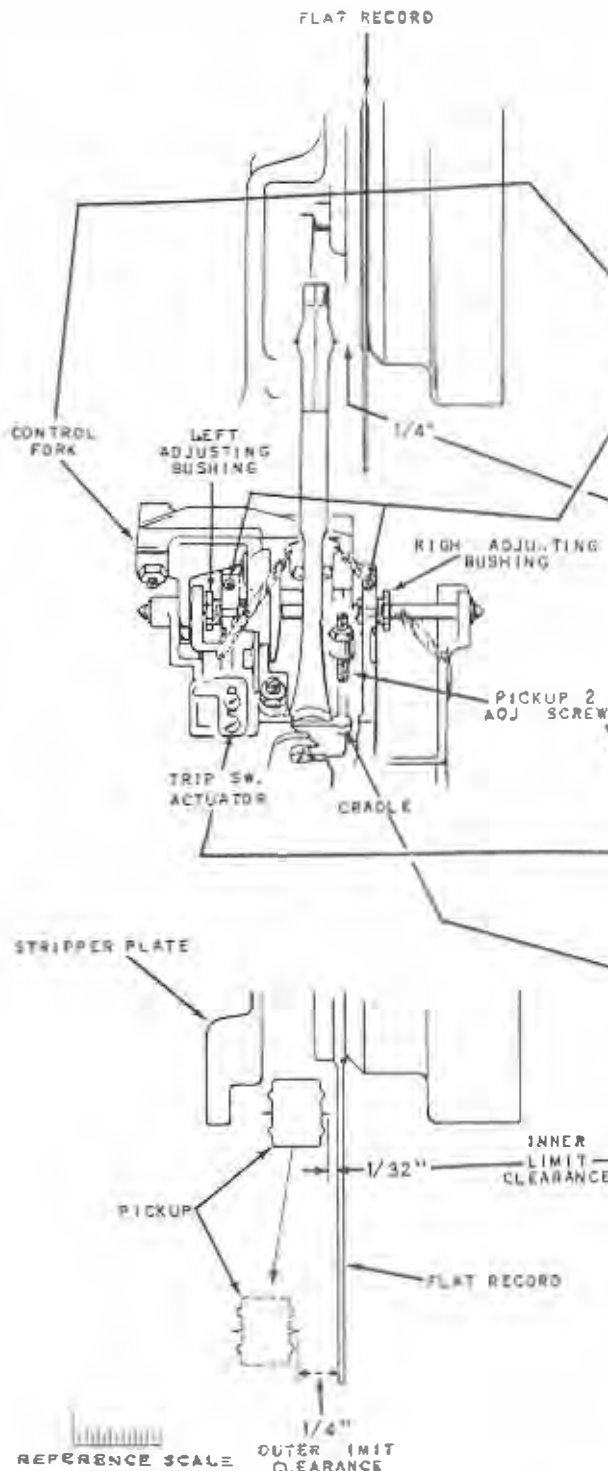
INSCRIBED  
MARK

PICKUP 6  
ADJ. SCREW



# "PICKUP 7" - - PICKUP LIFTING ADJUSTMENTS

This adjustment establishes correct Pickup lifting action and clearance between the needle and record when the Pickup is lifted and returned to its rest position.

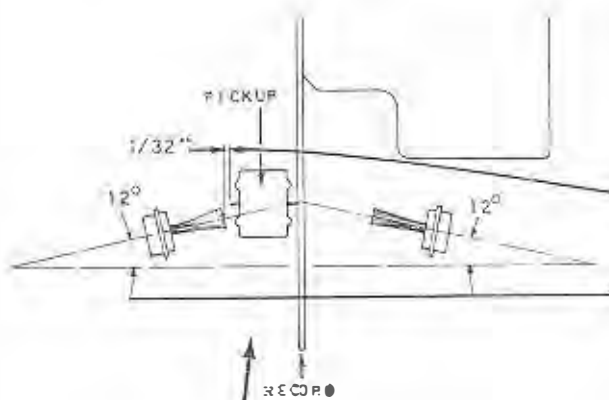


NOTE: - "Pickup 6" adjustment should be correct before making this adjustment.

- (A) Place mechanism in Left side PLAY position with a flat record clamped on Flywheel. Turn off power and loosen both socket head set screws holding Adjusting Bushings.
- (B) Pull Control Fork forward to the limit of its travel and - - -
- (C) adjust Left Adjusting Bushing for  $1/4''$  clearance between record and needle.
- (D) Release Control Fork and move Pickup toward center of Flywheel to limit of its travel.
- (E) Hold Pickup in this position by pressing inward lightly on Trip Switch Actuator.
- (F) Pull Control Fork down lightly until "Pickup 2" adjusting screw just touches Cradle.
- (G) In this position of the Pickup Arm and Control Fork the needle should be a minimum of  $1/32''$  from the record
- (H) Repeat above for Right side PLAY position using Right Adjusting Bushing to make adjustment.
- (I) Tighten both set screws.

## "PICKUP 8" - - BRUSH POSITION ADJUSTMENTS

This adjustment establishes  $1/32"$  clearance between the outer needle and the Brush while a record is being played.



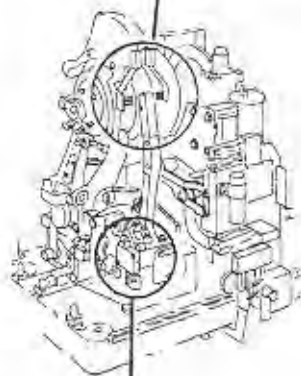
(A) The Brush Mounting Brackets are set so the bristles "point" approximately 12 degrees toward record center.

(B) The Brackets should be formed so the outer needle clears the brush by  $1/32"$  while a record is played.

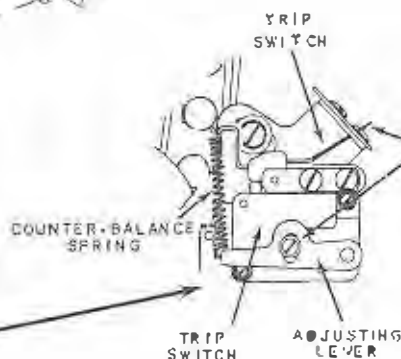
(C) Check for correct clearance on both Right and Left sides.

## "PICKUP 9" - - TRIP SWITCH PRESSURE ADJUSTMENT

This adjustment establishes the pressure required to operate the Trip Switch at 1 to 2 grams as measured at the end of the Trip Lever.



REFERENCE SCALE  
THESE LINES  
SPACED  $1/32"$   
ACTUAL SIZE



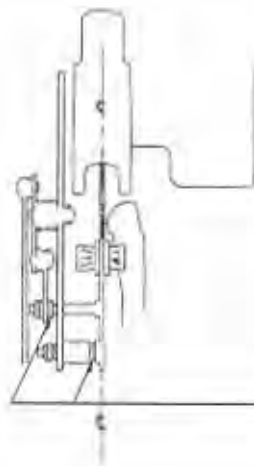
(A) Loosen screw and adjust Counter-balance Spring by moving Adjusting Lever up or down.

Pressure required to trip the Switch should be 1 to 2 grams as measured with a gram scale at this point.

# SELECT-O-MATIC MECHANISM ADJUSTMENTS

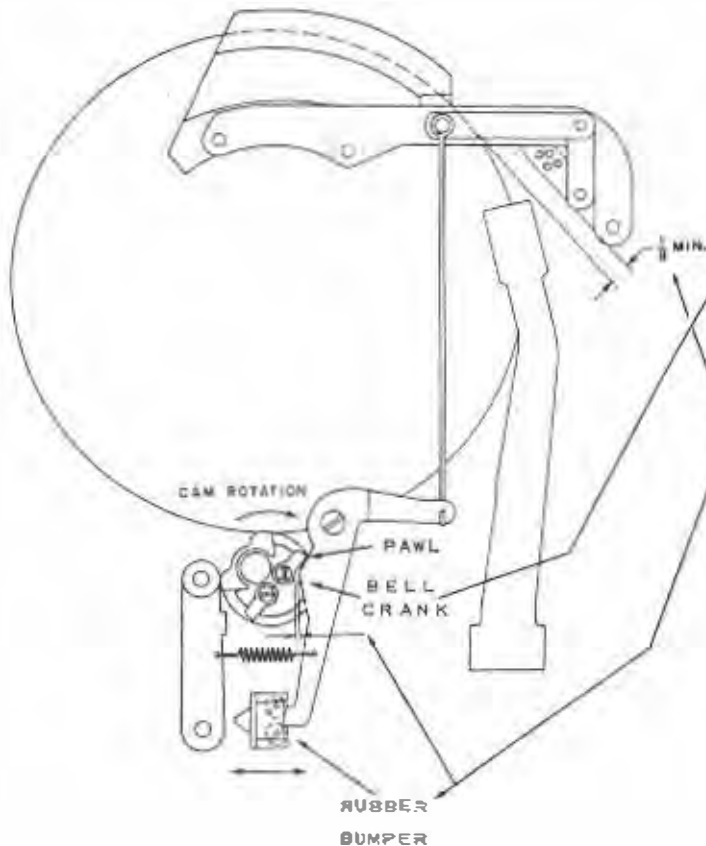
## "PICKUP 8" - - BRUSH ADJUSTMENTS (Stereo Pickup)

This adjustment positions the brush for correct operation and clearance.



- A** Place mechanism in PLAY position. Use washer (Part No. 920600) as required to center blade with record. Quantity of washers should be equal on both studs.

- B** With mechanism in SCAN position, manually operate the release lever to trip.



- C** Turn motor coupling manually so pawl on brake cam is rotated clockwise until adjacent to lobe on bell crank as shown.

- D** Position rubber bumper so that (as cam rotates in direction shown) bell crank does not touch hub of pawl.  $1/64''$  maximum clearance allowable.

- E** With rubber bumpers adjusted, as in **D** and with record in PLAY position, clearance between brush blade and record must be not less than  $1/8''$ .