

AMI Continental 2



Service Manual & Parts Catalog

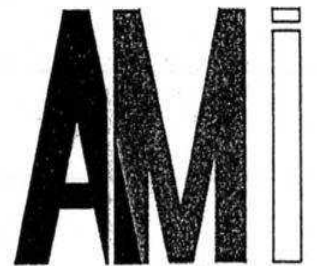
LEGEND

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**CABINET
MAINTENANCE
MANUAL**

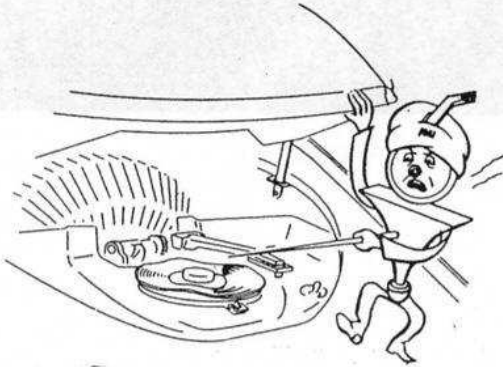
Continental 2



AUTOMATIC MUSIC, INC.

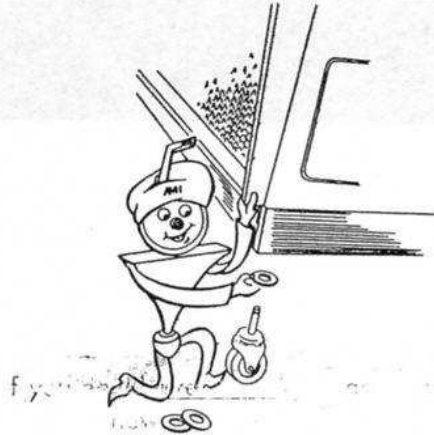
GENERAL

Select a location for the phonograph that is away from radiators, exhaust fans and other sources of heat that cause record warp.



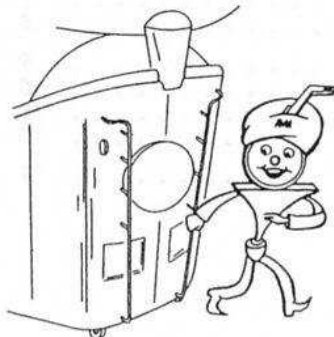
Untie mechanism, tone arm, latches, etc. Remove any mechanism tie-down bolts and shipping blocks. Install amplifier tubes, turn table and decorative disc. Perform all other untying operations according to unpacking instructions supplied with phonograph. (Unpacking instructions are also listed in the beginning pages of this manual.) Save all packing materials.

Make sure phonograph is level or rejector may not work properly. Do this by slipping one or more washers over the shaft of the caster that needs to be increased in height. Casters are then plugged into caster sockets.



All locks in the phonograph are opened with a common key, with the exception of the cash box lock which requires an individual type key.

PHONOGRAPH RELOCATION



If phonograph must be moved from one location to another, reverse the above procedure and protect your phonograph from damage by again tying down all parts with tie-down hardware, etc. saved from original packing.

CLEANING

All exposed glass parts have the designs and letters fired on in ceramics and need no special care other than washing occasionally with mild soap and water.

Clean all painted wood and metal surfaces with mild soap and water followed with an application of a good auto or furniture wax to preserve and protect the finish.

TRIM CASTINGS

All decorative trim castings plus the front door trim are bright chrome plated and should not be cleaned with abrasive cleaning and polishing compounds. Use a mild soap or detergent with water and a soft cloth or sponge.

ALUMINUM TRIM

The exterior surfaces of the balance of the aluminum extrusions are buffed to high luster, anodized or coated with a protective hardware finish. Do not use solvents or abrasive materials on these surfaces. Clean with a mild soap or detergent and water, followed with an application of a good auto or furniture wax to restore and maintain luster.

PLASTIC TRIM

Wipe all inside plastic surfaces with a clean damp cloth only, to remove accumulated dust.

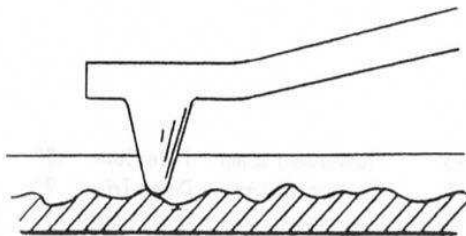
Grease and oil stains may be removed from the mechanism base with a clean cloth and carbon tetrachloride. Do not allow carbon tetrachloride to come in contact with mechanism trim or other plastic parts.

RECORD CARE

Stereophonic records have a very complex groove. The groove wiggles from side to side just as in a conventional record but it also moves up and down at the same time.

Part of the information required for stereophonic reproduction is recorded in these up and down movements of the record groove.

Because of the special groove, the pickup stylus must have high compliance (it must be free to move and follow the wiggles of the groove exactly) in the sideways and up and down directions.

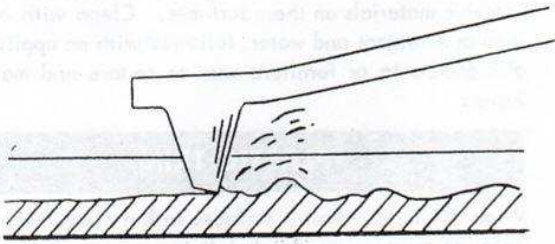


All stereo pickups have good lateral (sideways) and vertical (up and down) compliance. Some monaural or standard pickups have very poor vertical compliance. If a stereo record is played with a pickup having poor vertical compliance, the stylus will gouge out the bottom of the groove and literally cut out the stereo effect recorded on the record. The stereo record could be ruined in a single play.

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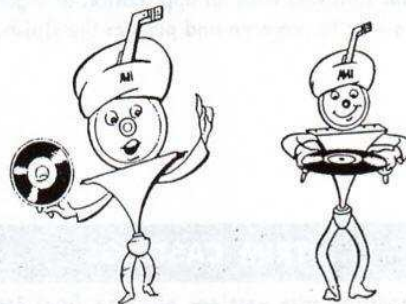
RECORD CARE

Worn styli are bad for standard records but they can be even worse for stereo records. As a stylus wears, its tip becomes chisel shaped. This forms a very efficient cutting tool that can ruin a record in short order.



For this reason, we supply a long wearing diamond stylus in our stereo pickup and recommend that replacement styli have diamond tips. If sapphire styli are used for stereo machines, they should be replaced much more frequently than on monaural machines.

Keep records clean and free from dust and dirt. This can best be accomplished by exercising care in handling and storing the records. Do not lay the records on a dusty surface. Do not wipe record with a dirty cloth. Avoid excessive handling of records as the natural oil in the skin will leave oil on the surface of the record and this will cause an accumulation of dust and dirt. It is best to handle the record by the center hole and the outside edge.

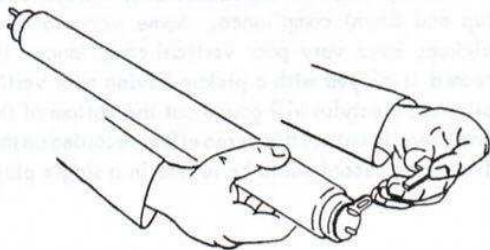


CARE OF STYLUS

Keep stylus clean at all times and replace at first sign of wear. Keep needle brush clean and free of accumulated dust and dirt.

LIGHTING

Standard lamps and starters are used throughout the phonograph. Caution should be exercised in changing lamps as some lamps are locked in place with a fibre locking tab that must be pulled out prior to lamp rotation for removal.



The following is a list of the lamps and starters used in the Continental 2 phonograph:

T-5	Fluorescent Lamp - Title Case	12"	8 Watt
T-5	Fluorescent Lamp - Dome Trim	9"	6 Watt
T-12	Fluorescent Lamp - Front Door	24"	20 Watt
T-3 1/4	Pilot Light - Credit Light	#47	6-8 Volt
FS-2	Fluorescent Starter for	14-15-20	Watt
FS-5	Fluorescent Starter for		6-8 Watt

FRONT DOOR

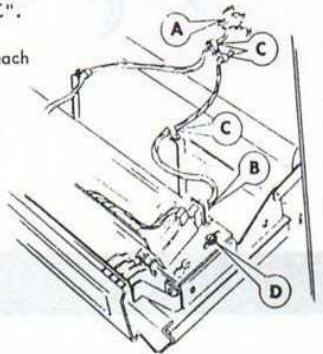
To open the front door insert one key into each of the two locks located on either side of the cabinet near the center of the door and turn each lock one quarter of a turn. The keys are removable in either the locked or open position. Grasp the door by the push buttons and pull forward on the top only. The door will swing forward and down on a continuous piano hinge and be retained in the horizontal position by a sliding bar on each end of the door frame.

The push buttons are removed after the automatic selector by removing the four self tapping screws holding each of the push button guide brackets to the front trim.

AUTOMATIC SELECTOR

To remove the automatic selector, first unplug all cables to the unit and remove all necessary cable clamps. Remove one hex head machine screw from each end of the selector frame. Slide selector frame toward the cabinet until the head of the shoulder stud is centered in the hole in the keyhole slug. Lift selector frame and assembly from door frame.

1. Disconnect harness "A" and credit lights "B". Remove 3 cable clamps "C".
2. Remove screws "D" from each end of selector unit.
3. Grasp entire selector unit firmly, (to avoid dropping) and slide toward cabinet to disengage pins in key slots. Lift unit straight up.
4. To replace selector, reverse above procedure.



FRONT DOOR GLASS

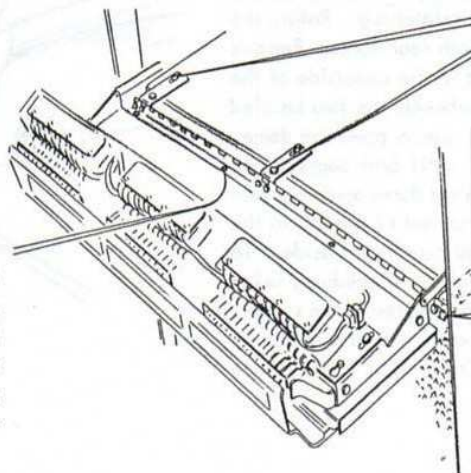
It is not necessary to remove the push buttons on the automatic selector assembly to change the glass in the front door. The glass may be changed by removing the six hex machine screw nuts located on the inside of the door frame, three above and three below the glass. This permits the front frame to be removed from the outside of the door and gives access to the glass panel and other decorative parts.

DOMES ACCESS

The front door also provides access to the dome locking latch, side speakers, receiver, credit lights, play meter, front grille lamp and starter, and the slug rejector actuating lever for length adjustment as well as to the mechanism for minor services.

ADJUSTMENT FRONT DOOR

The door is adjustable to the right and left by means of three screws and three nuts located in the front leg of the piano hinge along the bottom of the door frame.



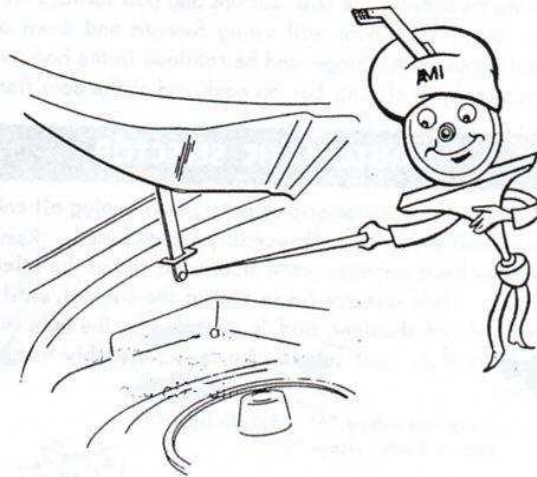
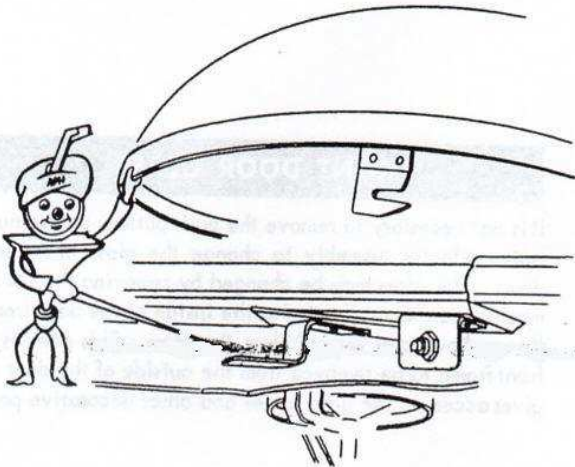
The door is adjustable in and out by means of two wood screws located in each of the three door mounting straps attached to the mechanism shelf.

The door is adjustable up and down by means of the six machine screws used to attach the piano hinge to the three door mounting straps.

DOME

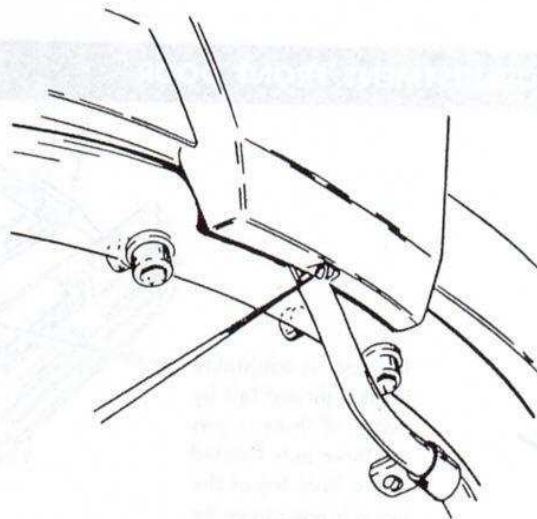
To change cartridges, styli, price cards, records, license or to read the play meter or perform minor adjustments on the mechanism it is necessary to open the front door as explained on page CM-7. Then rotate the dome lock latch

located to the right of center under the front edge of the top panel. Raise the front edge of the dome and support it by pulling forward and latching the window supports.



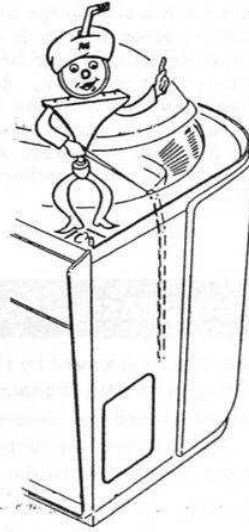
DOME REMOVAL

For major service or maximum accessibility to the mechanism compartment, remove the complete dome assembly. Open and raise the dome. Remove the knurled retaining thumb screws from the end of each window support. Reclose dome. Unlock rear doors and pull the key approximately 1/8 out of the lock to prevent the lock from relatching. Rotate the upper and lower latches and open both rear doors. Remove the retaining-studset screw located in the underside of the lower lip of the support stand, between the two knurled head cap screws. Using caution, again open the dome. Raise the front edge of the dome until both supports are free of their brackets. Pull the entire dome assembly forward until the dome hinge spring slips out of the slot in the support stand. Dome is now free and may be set aside. To reassemble the dome, reverse the above procedure, using extreme caution to insure that power wires in the support stand are properly routed and will not be cut or pinched by the dome hinge spring when it is reinserted in the slot in the support stand.



SLUG REJECTOR ACCESS DOOR

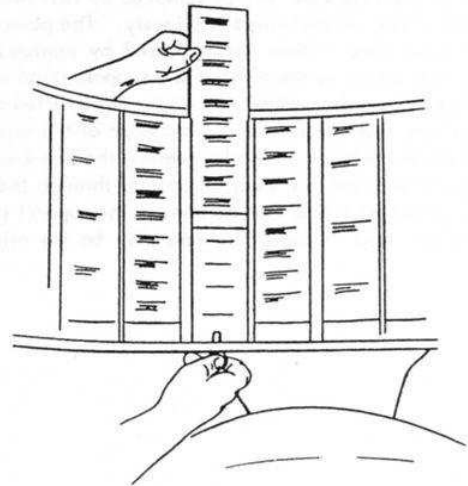
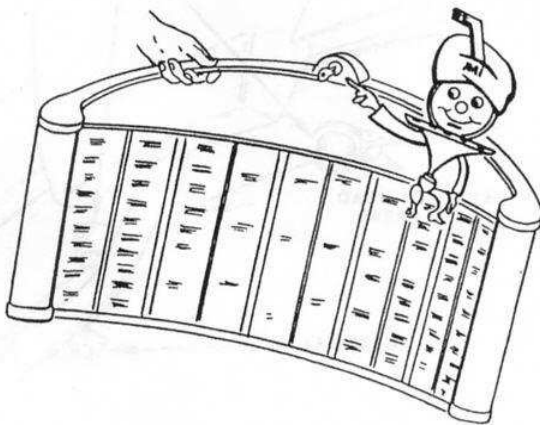
The slug rejector access door lever latch is located to the right hand side of the mechanism trim and is accessible when the dome is opened. Lift the latch tab to open the access door which is spring loaded. When closing the access door it is advisable to push down on the latch tab and press firmly on the outside of the door to insure proper latching. The slug rejector access door provides access to the slug rejector for cleaning or removal and to the coin switches for adjustment or removal.



TITLE PANEL

Access is gained to the title racks by first unlocking the lid casting across the top of the title case. This lid is lifted upward and forward. Title racks are removed by inserting a key, coin or other flat object through the slot in the lower trim casting and pushing upward. This raises the title rack high enough to permit easy removal. Titles and programming labels may now be inserted in the rack. Each rack carries a large identifying letter as well as a group of smaller numbers to identify each slot.

The Continental title racks are designed to hold the three inch long double title strip and are front lighted. They have one additional slot at the bottom of each rack to permit insertion of a programming label supplied with the phonograph.



CM

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SIDE LAMPS

Access is gained to the two side lamps in the title case by opening the lid casting across the top as in title changing. Grasp the top lamp holder firmly and lift lamp holder assembly approximately half way out. Bulb may then be removed and replaced, after which the lamp assembly is pushed back into its housing. Care must be exercised at this point to avoid pinching the wires. Also make certain no wires are in a position to be pinched when lid casting is closed and locked.

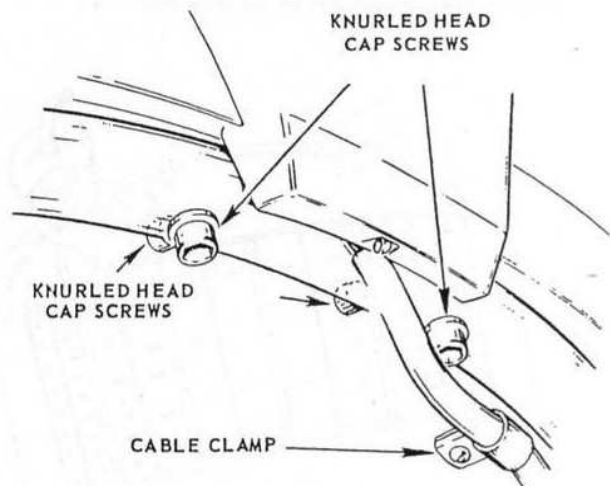


TITLE CASE GLASS

The title case glass may be removed by first unlocking and raising the lid casting as in title changing. The glass may then be lifted straight upward and removed for cleaning of inside surfaces. Make certain the rubber gasket is firmly seated on the edges of the glass when the glass is replaced.

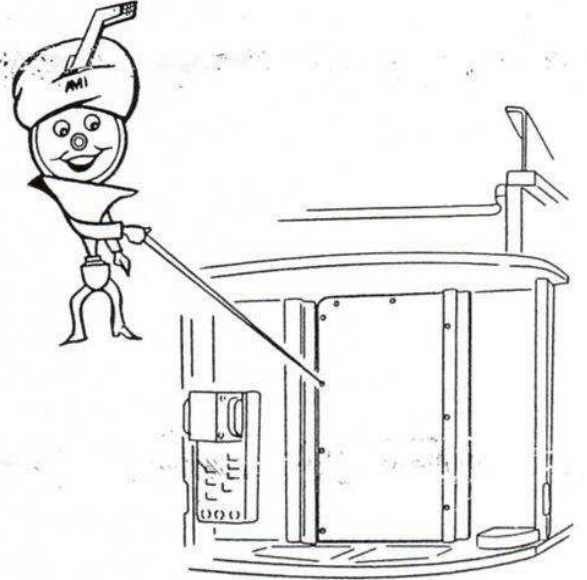
REMOVING TITLE CASE

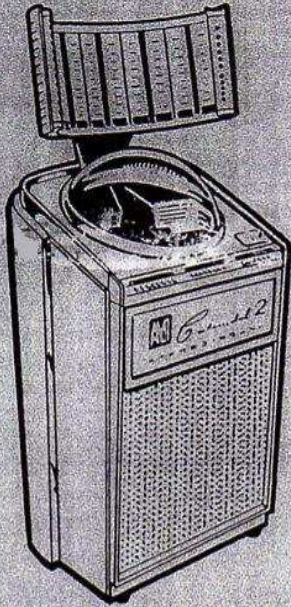
The entire title case may be removed by first removing the glass dome, as explained previously. The power cable to the title case is then disconnected by unplugging under the top panel to the right of the support stand at the rear of the phonograph. Next remove the two knurled cap screws that are inserted into the front edge of the support stand under the top panel. Finally, remove the two knurled head cap screws that are inserted upward through the tube and top panel and into the bottom of the support stand. The support stand is now free and may be set aside.



SOUND COMPARTMENT

Access is gained to the sound compartment through a large opening in the rear panel of the sound chamber. Disconnect all wires, including power cords, to both amplifiers. Remove screws holding control amplifier to mounting rails and set amplifier aside. Remove screws holding master amplifier to the mounting rails and set amplifier aside. Do not remove amplifier mounting rails. Unplug but do not remove the transformer and fustat assembly. Remove all flat head wood screws around edge of access panel and set panel aside. Speakers and speaker dividing network are now accessible for service or removal. Make certain the access panel is properly seated and all screws are fully driven when replacing this panel.





**RECORD CHANGER
SERVICE MANUAL**

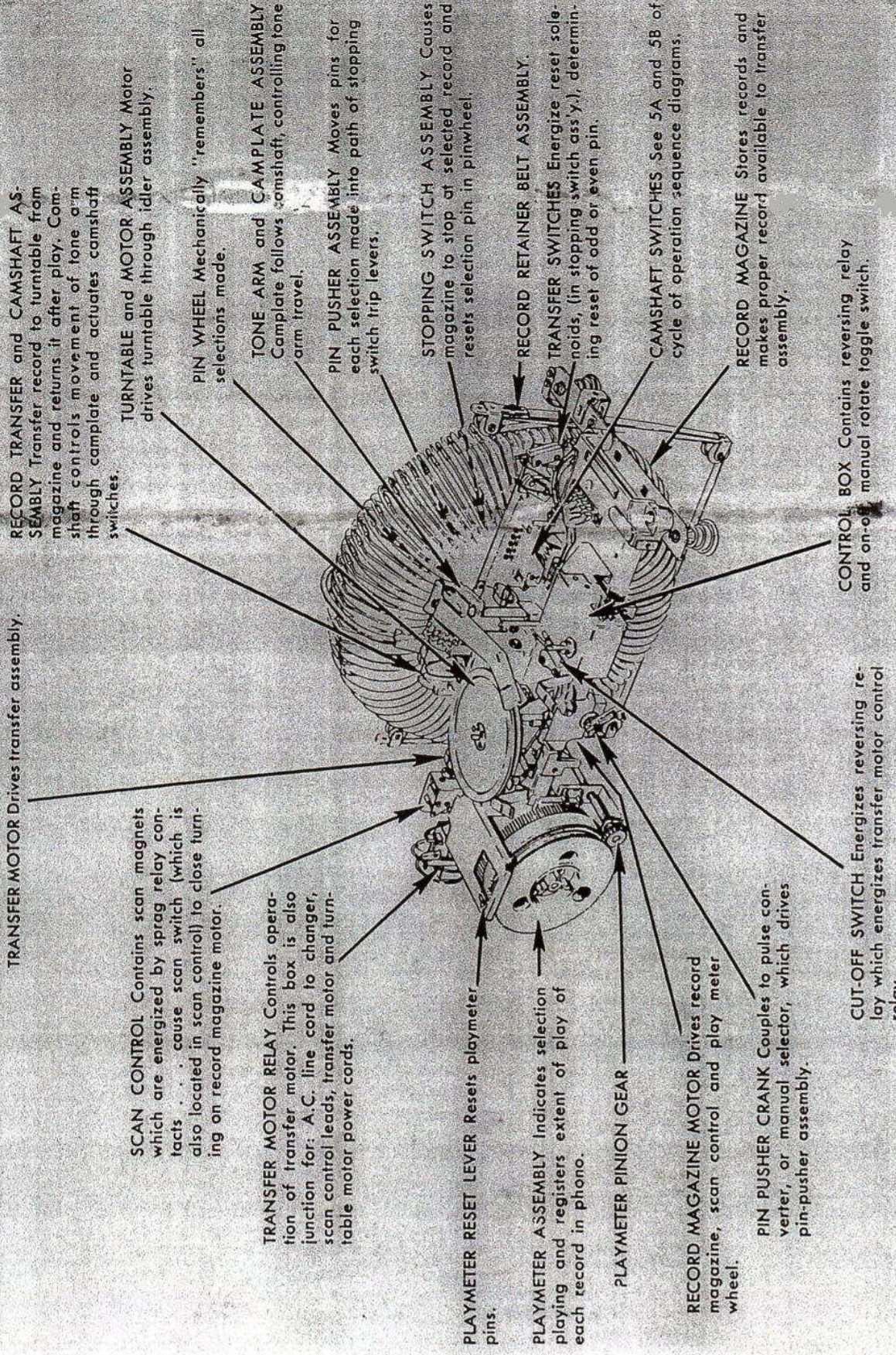
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COMPONENTS . . . WHAT THEY DO

Continental 2



TRANSFER MOTOR Drives transfer assembly.

SCAN CONTROL Contains scan magnets which are energized by sprag relay contacts . . . cause scan switch (which is also located in scan control) to close turning on record magazine motor.

TRANSFER MOTOR RELAY Controls operation of transfer motor. This box is also junction for: A.C. line cord to changer, scan control leads, transfer motor and turntable motor power cords.

PLAYMETER RESET LEVER Resets playmeter pins.

PLAYMETER ASSEMBLY Indicates selection playing and registers extent of play of each record in phono.

PLAYMETER PINION GEAR

RECORD MAGAZINE MOTOR Drives record magazine, scan control and play meter wheel.

PIN PUSHER CRANK Couples to pulse converter, or manual selector, which drives pin-pusher assembly.

CUT-OFF SWITCH Energizes reversing relay which energizes transfer motor control relay.

RECORD TRANSFER and CAMSHAFT ASSEMBLY Transfer record to turntable from magazine and returns it after play. Camshaft controls movement of tone arm through camplate and actuates camshaft switches.

TURNTABLE and MOTOR ASSEMBLY Motor drives turntable through idler assembly.

PIN WHEEL Mechanically "remembers" all selections made.

STONE ARM and CAMPLATE ASSEMBLY Camplate follows camshaft, controlling tone arm travel.

PIN PUSHER ASSEMBLY Moves pins for each selection made into path of stopping switch trip levers.

STOPPING SWITCH ASSEMBLY Causes magazine to stop at selected record and resets selection pin in pinwheel.

RECORD RETAINER BELT ASSEMBLY

TRANSFER SWITCHES Energize reset solenoids, (in stopping switch assembly), determining reset of odd or even pin.

CAMSHAFT SWITCHES See 5A and 5B of cycle of operation sequence diagrams.

RECORD MAGAZINE Stores records and makes proper record available to transfer assembly.

CONTROL BOX Contains reversing relay and on-off manual rotate toggle switch.

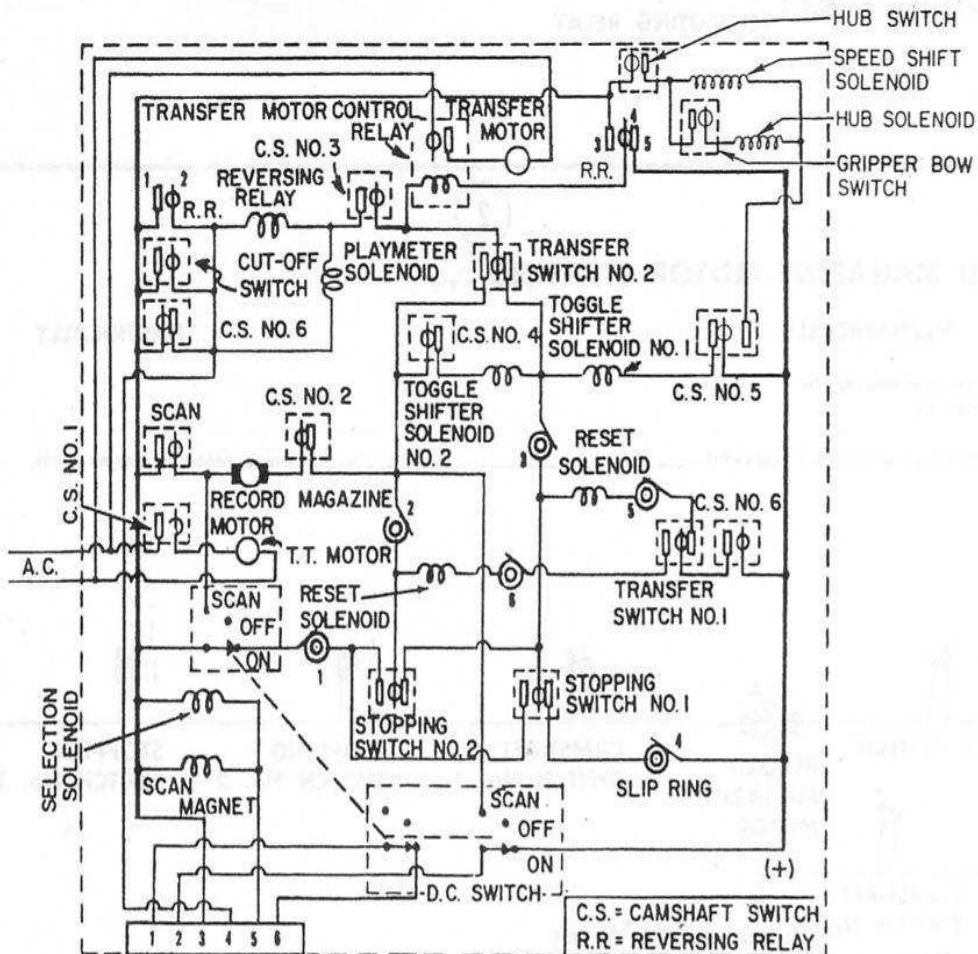
CYCLE OF OPERATION

The record changer and its electrical system operate in a definite, orderly sequence. Each step in the sequence depends on the successful completion of the one just before it.

While trial and error methods may get a machine back into operation, really efficient trouble-shooting and repair can be done only if the normal operating cycle of the unit is thoroughly understood.

The following illustrations show, in schematic form, the step by step functioning of all the electrical devices in the record changer. The explanation of each step correlates the electrical and the mechanical action of each part.

RECORD CHANGER SCHEMATIC



1

N.O. = NORMALLY OPEN
N.C. = NORMALLY CLOSED

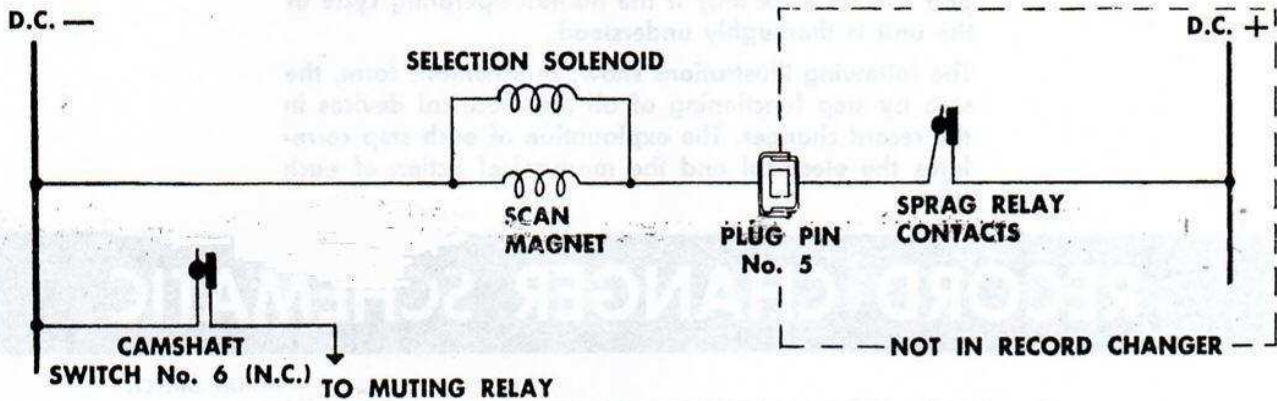
SELECTION MADE ...

MECHANICALLY:

Sprag relay contacts close
Camshaft switch No. 6 (N.C.) closed (at rest)

ELECTRICALLY:

Scan magnet energized
Selection solenoid energized
Muting relay energized



2

RECORD MAGAZINE MOTOR STARTING ...

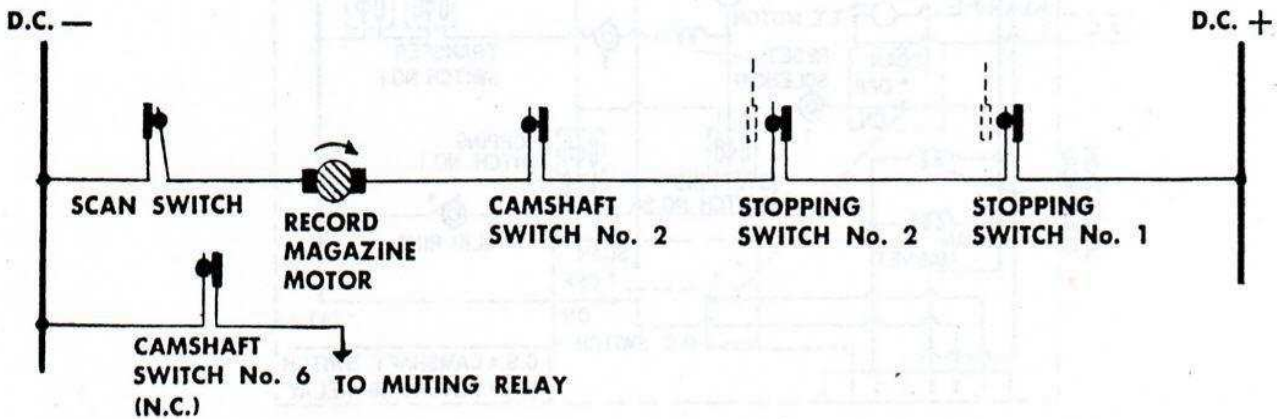
MECHANICALLY

Selection solenoid extends pin for particular selection.

Scan magnet energized — closes scan switch.

Energizes record magazine motor.

ELECTRICALLY



3A

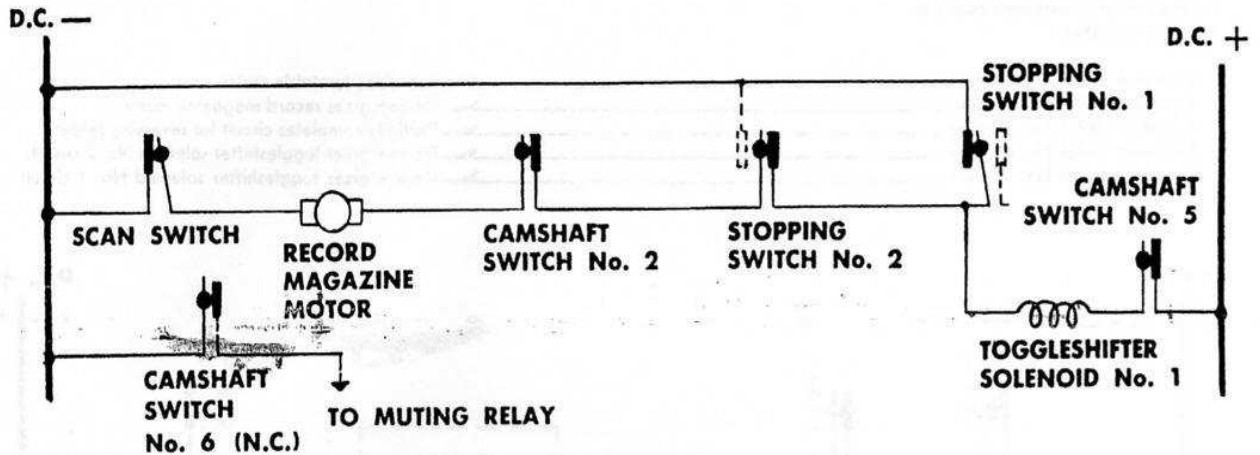
ODD NUMBERED SELECTION . . .

MECHANICALLY

Stopping switches, (located on record magazine), rotate until stopping switch No. 1 encounters extended pin — stopping switch No. 1 closes

ELECTRICALLY

Record magazine motor dynamically braked. Togglesifter solenoid No. 1 energized.



3B

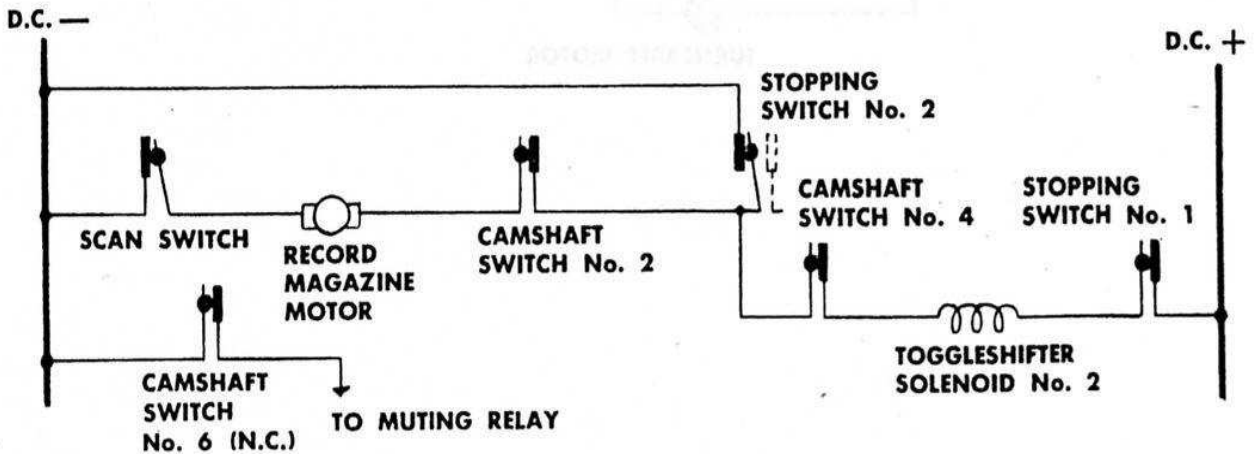
EVEN NUMBERED SELECTION . . .

MECHANICALLY

Stopping switches, (located on record magazine), rotate until stopping switch No. 2 encounters extended pin — stopping switch No. 2 closes

ELECTRICALLY

Record magazine motor dynamically braked. Togglesifter solenoid No. 2 energized.



RCS

4

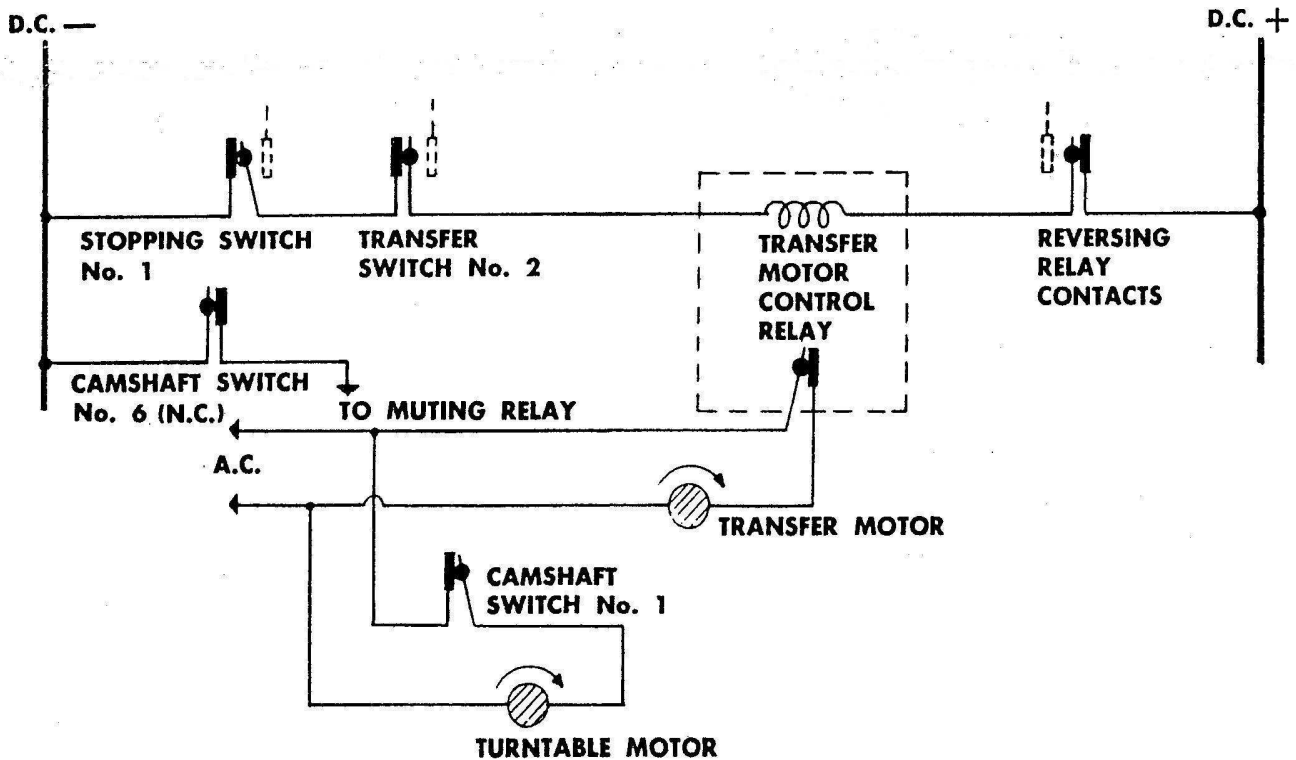
RECORD MOVES TOWARD TURNTABLE . . .

MECHANICALLY

ELECTRICALLY

Stopping switch closing, also: energizes transfer motor control relay.
 Transfer motor control relay contacts close: energizing transfer motor.
 Transfer motor rotates.
 Togglesifter actuates transfer switch.
 Lever on transfer assembly operates camshaft switches:

Camshaft switch No. 1 closes Energizes turntable motor.
 Camshaft switch No. 2 opens De-energizes record magazine motor.
 Camshaft switch No. 3 closes Partially completes circuit for reversing relay.
 Camshaft switch No. 4 opens De-energizes togglesifter solenoid No. 2 circuit.
 Camshaft switch No. 5 opens De-energizes togglesifter solenoid No. 1 circuit.



5A

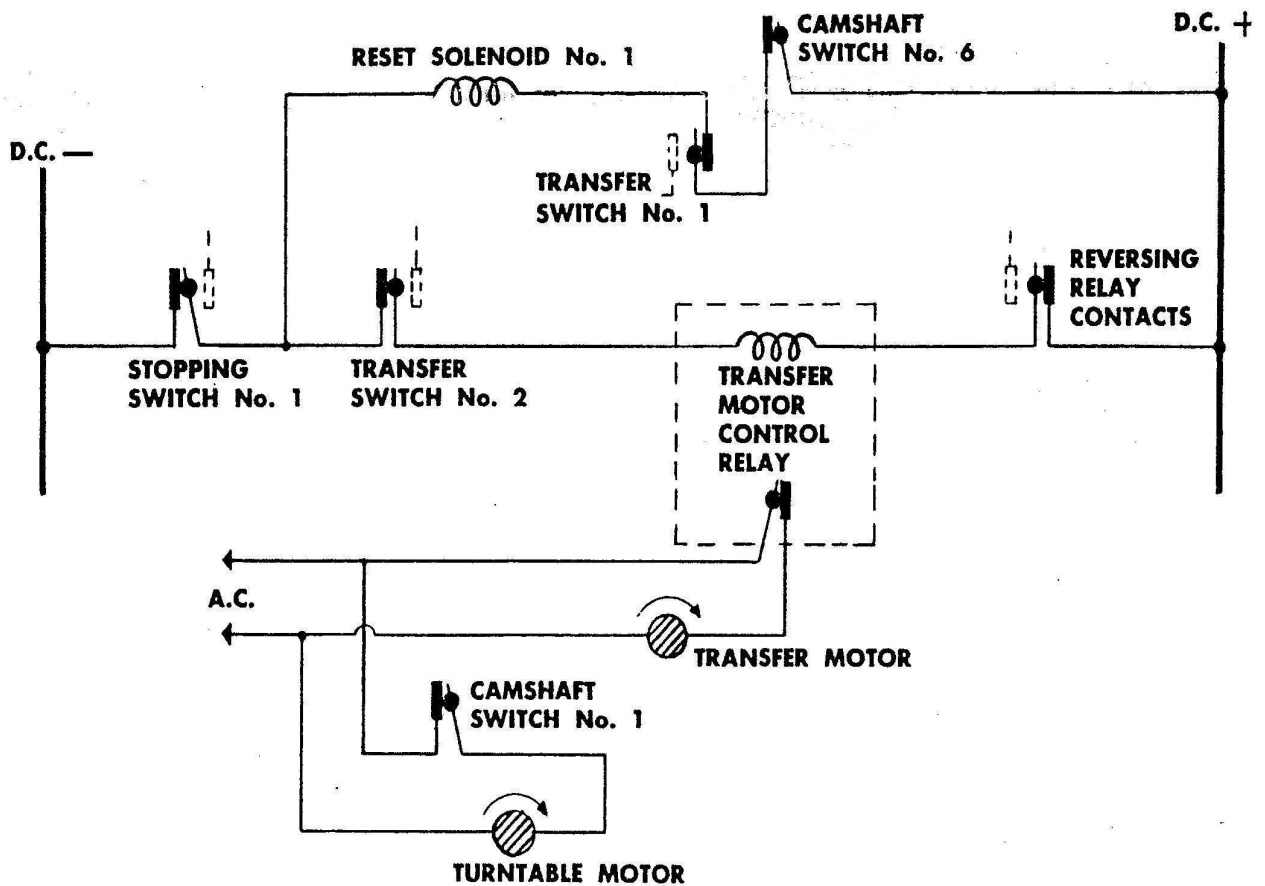
RECORD PLACED ON TURNTABLE (ODD SELECTION) ...

MECHANICALLY

Transfer assembly has positioned record over turntable; gripper bow releases record.
Cam positions tone arm onto record.
Lever engages camshaft switch No. 6.

ELECTRICALLY

Camshaft switch No. 6, (N.C.), opens → De-energizes muting relay circuit.
Camshaft switch No. 6, (N.O.), closes → Energizes reset solenoid No. 1.



5B

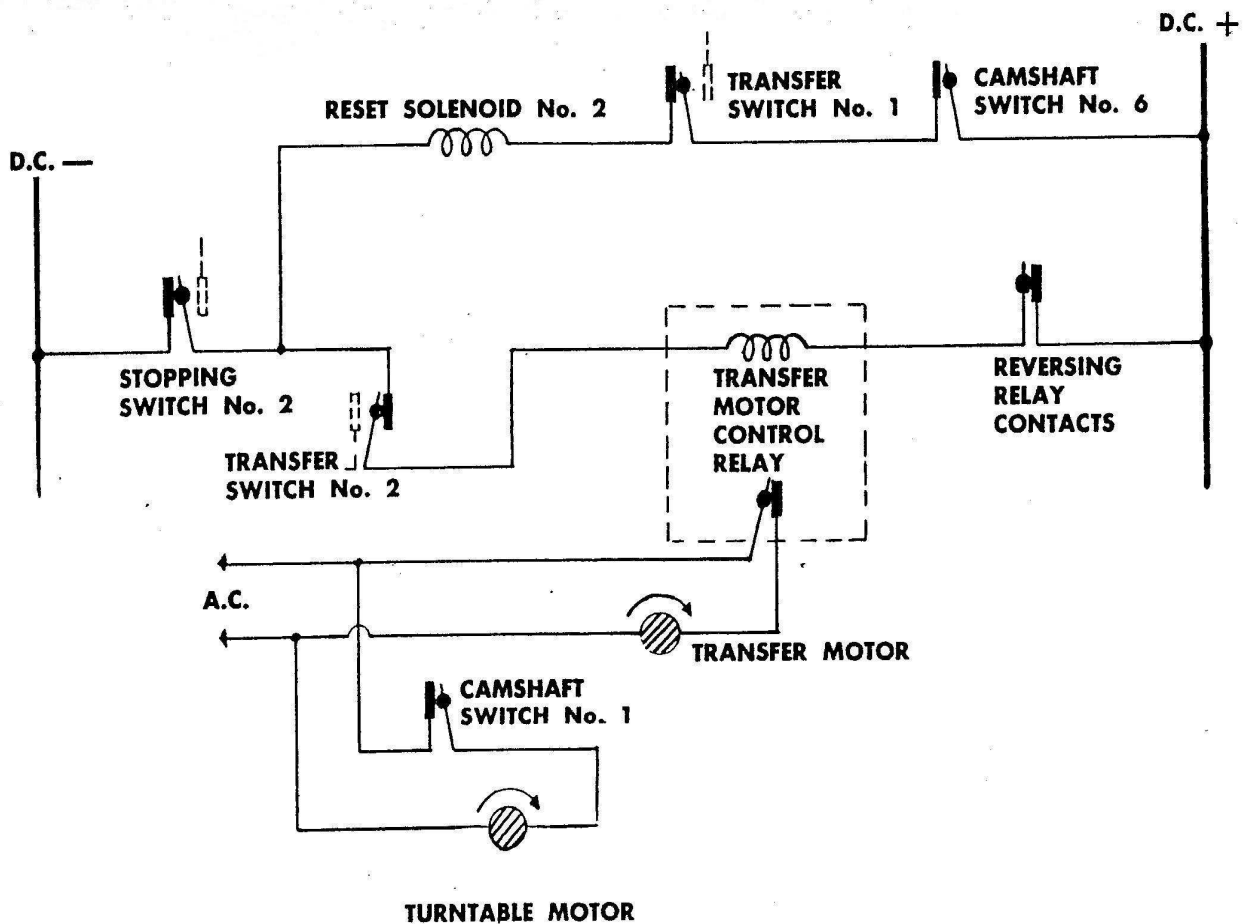
RECORD PLACED ON TURNTABLE (EVEN SELECTION) . . .

MECHANICALLY

Transfer assembly has positioned record over turntable-gripper bow releases record-cam positions tone arm onto record.
Lever engages camshaft switch No. 6.

ELECTRICALLY

Camshaft switch No. 6, (N.C.), opens → De-energizes muting relay circuit.
Camshaft switch No. 6, (N.O.), closes → Energizes reset solenoid No. 2.



6

TRANSFER MOTOR STOPS—RECORD PLAYS . . .

MECHANICALLY

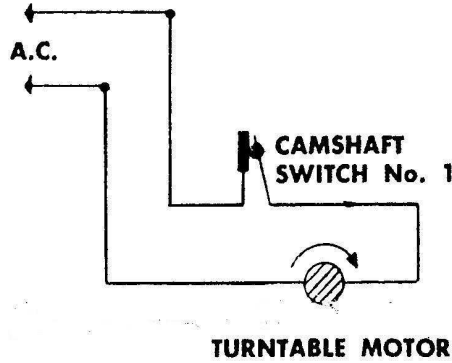
Reset solenoid restores selector pin, allowing the stopping switch to resume its rest position.

Transfer motor stops.

ELECTRICALLY

De-energizes:

Reset solenoid
Transfer motor control relay.



7

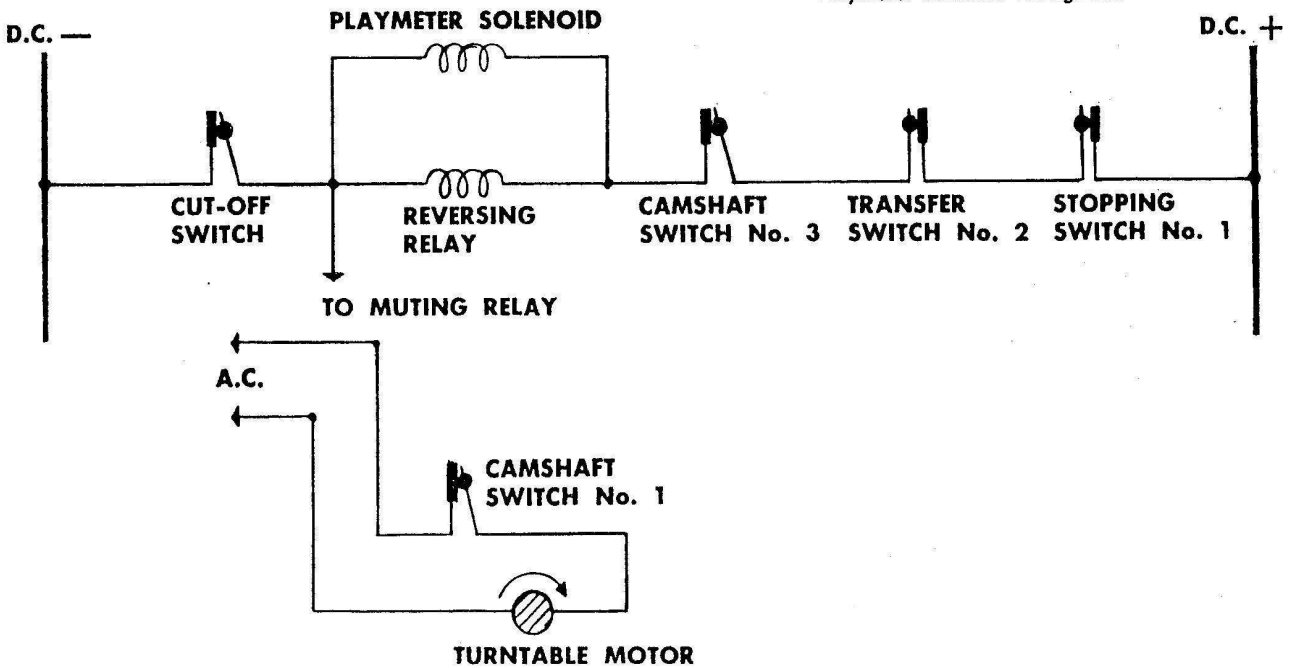
RECORD FINISHES PLAYING . . .

MECHANICALLY

Tone arm enters cut-off grooves in record: lever on tone arm assembly actuates cut-off switch.

ELECTRICALLY

Reversing relay energized.
Muting relay energized.
Playmeter solenoid energized.



RECORD MOVES TOWARD RECORD MAGAZINE . . .

MECHANICALLY

8

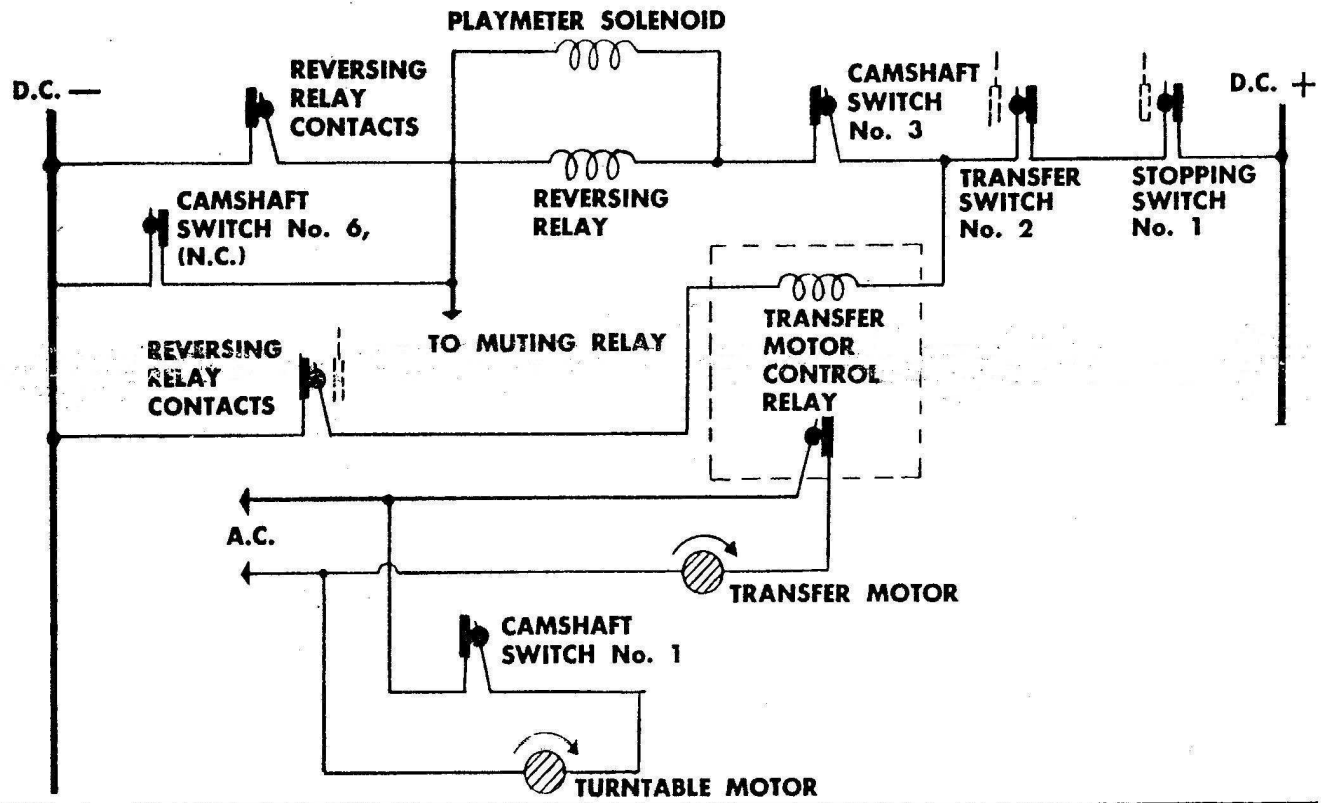
ELECTRICALLY

Reversing relay energizing, actuates reversing relay contacts.

Energizes transfer motor control relay, (transfer motor energized.)

Transfer motor rotates.
Lever disengages camshaft switch No. 6.
Camshaft switch No. 6, (N.C.), closes:
Camshaft switch No. 6, (N.O.), opens.

takes over job of cut-off switch.



RECORD RETURNED TO RECORD MAGAZINE . . .

MECHANICALLY

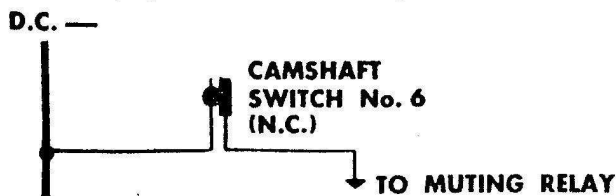
9

ELECTRICALLY

Transfer motor drives transfer assembly so that record is restored to magazine.
Lever on transfer assembly actuates camshaft switches No. 1 through No. 5 as follows:

- Camshaft switch No. 1 opens → De-energizes turntable motor.
- Camshaft switch No. 2 closes → Energizes record magazine motor.
- Camshaft switch No. 3 opens → De-energizes reversing relay.
- Camshaft switch No. 4 closes → and playmeter solenoid.
- Camshaft switch No. 5 closes

Pin on playmeter advances one position



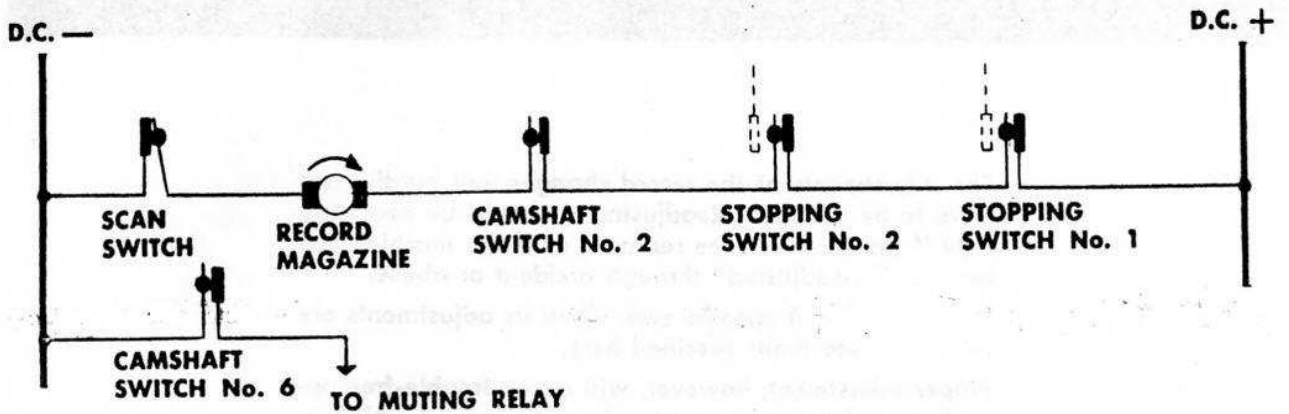
10

SCAN CYCLE CONTINUES . . .

MECHANICALLY

ELECTRICALLY

Scan switch still closed. Record magazine motor energized.



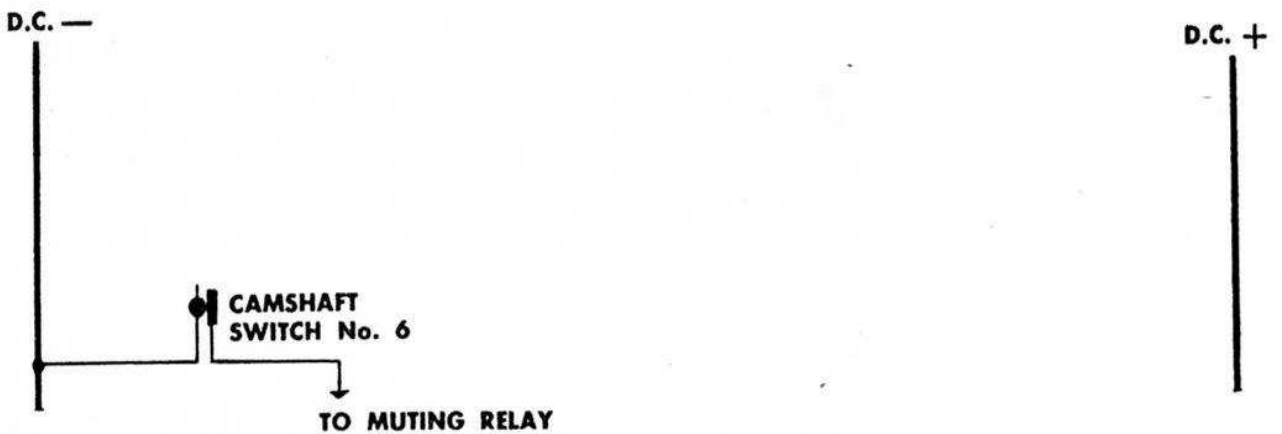
11

SCAN CYCLE STOPS—CHANGER AT REST . . .

MECHANICALLY

ELECTRICALLY

As record magazine rotates, scan assembly "winds up" until scan switch is opened. De-energizes record magazine motor — changer now at rest.



RCS

MECHANICAL ADJUSTMENTS

The adjustments of the record changer will hardly ever have to be changed. Readjustment should be necessary only if parts have to be replaced or if the machine has become "misadjusted" through accident or abuse.

The changer will operate even when its adjustments are outside of the limits specified here.

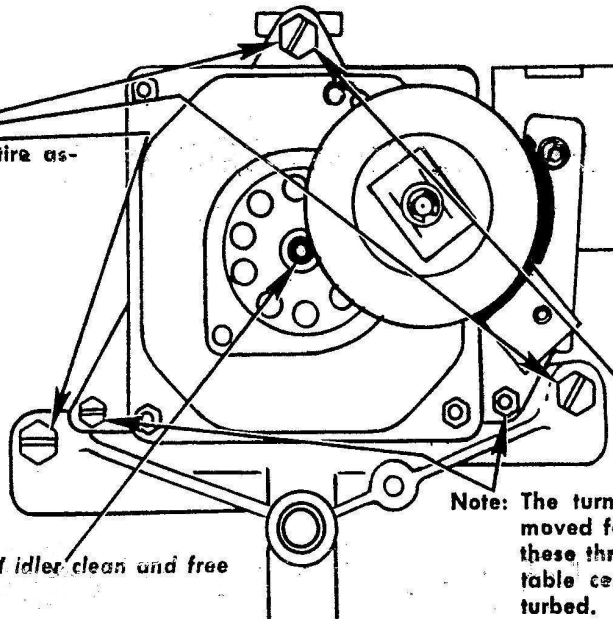
Proper adjustment, however, will insure trouble-free operation under a wide range of conditions, i.e., high or low voltage, hot or cold weather or humid or dry climates. Careful adjustments pay dividends in reliability. Many of the adjustments are interdependent, that is changing one may change another. They are listed in the order they should be checked and readjusted if necessary.

TURNTABLE CENTERING . . .

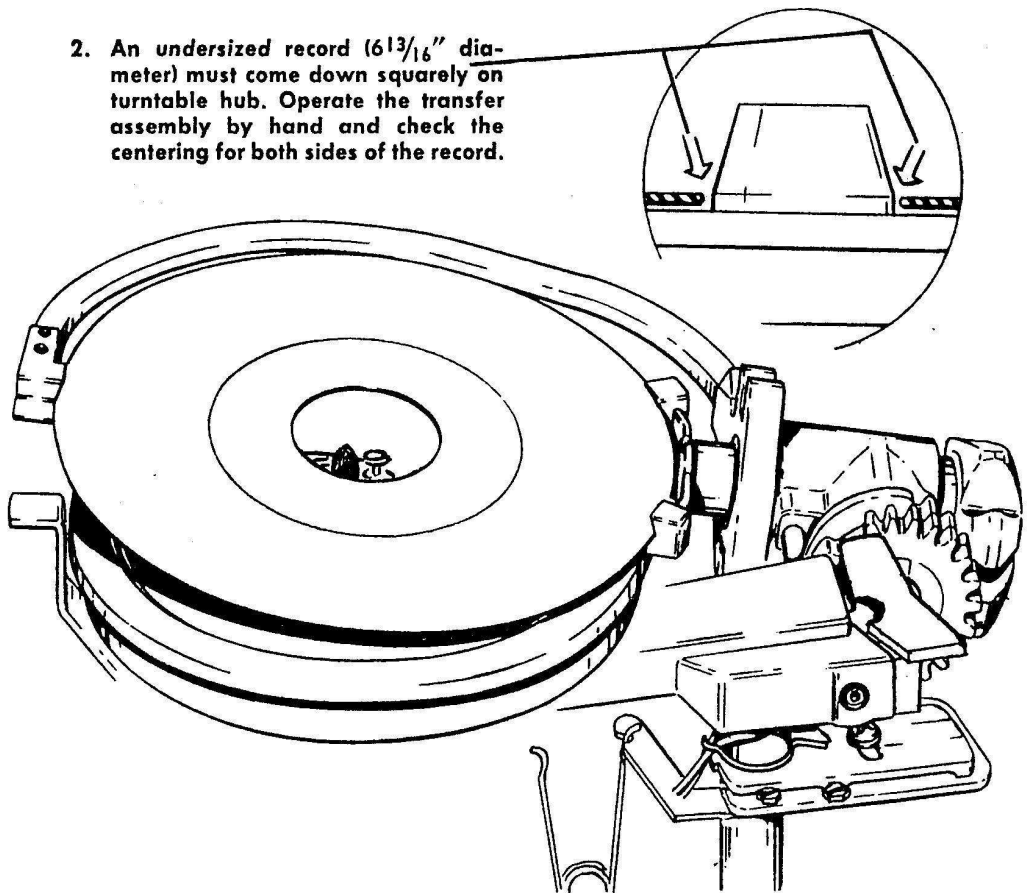
1. Loosen screw and shift entire assembly as required.

Keep shaft and idler clean and free of oil.

Note: The turntable motor can be removed for servicing by removing these three screws, and the turntable centering will not be disturbed.

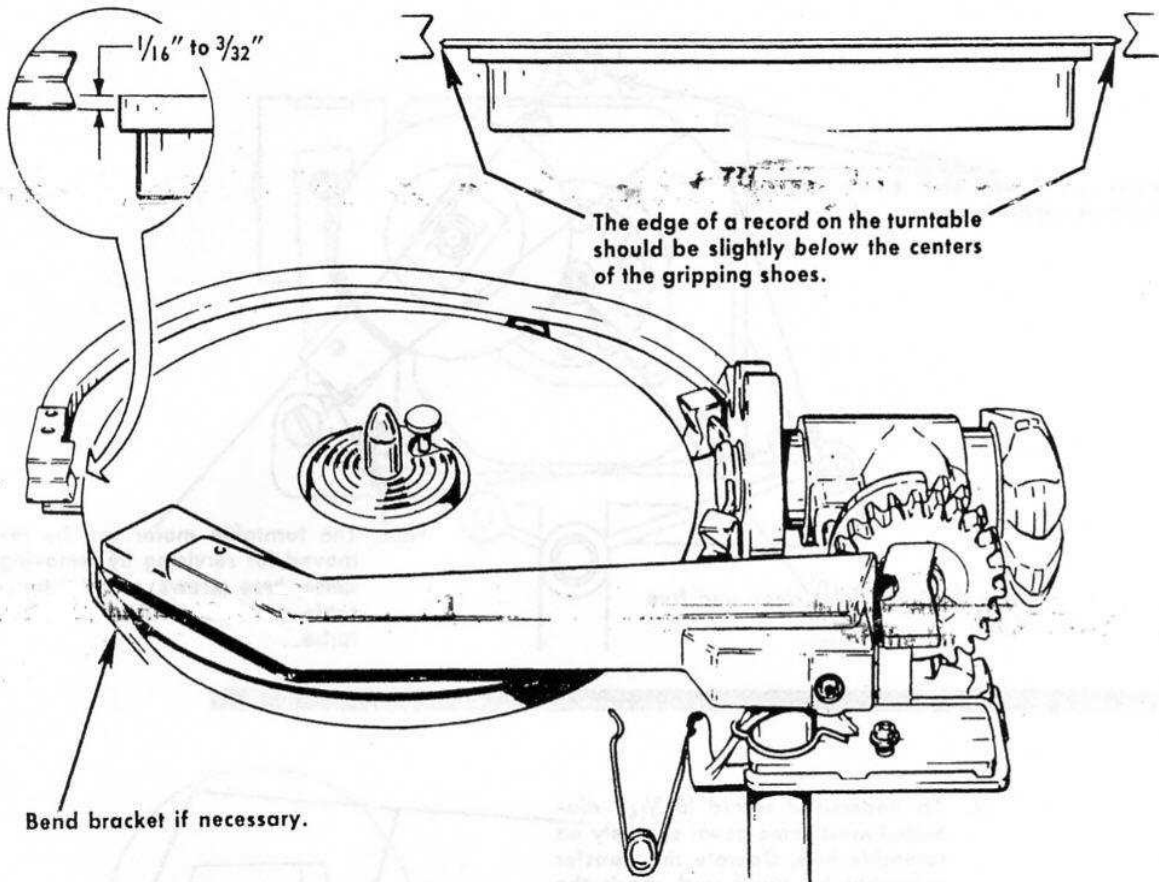


2. An undersized record (6 13/16" diameter) must come down squarely on turntable hub. Operate the transfer assembly by hand and check the centering for both sides of the record.



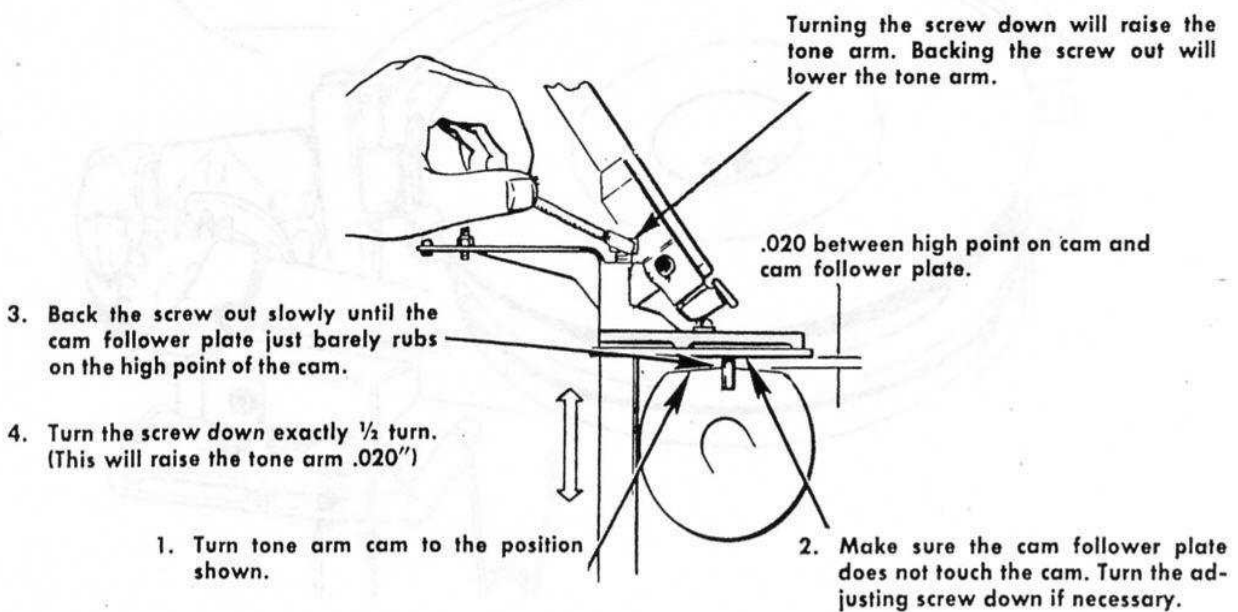
Continental 2

OUTER SHOE HEIGHT

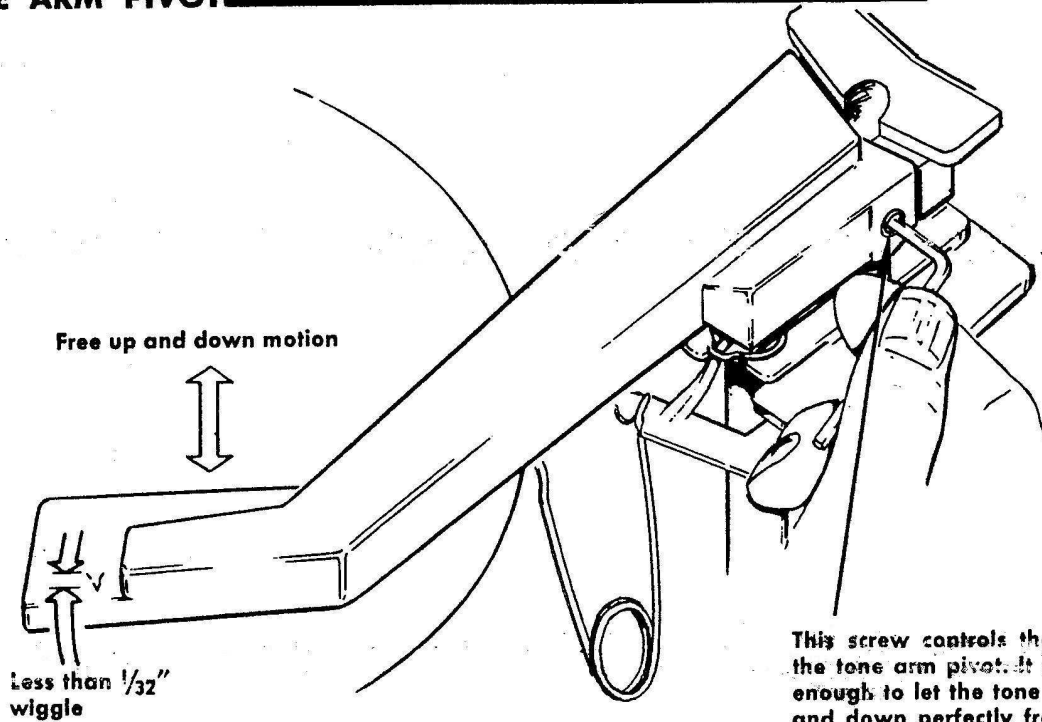


TONE ARM . . .

TONE ARM HEIGHT

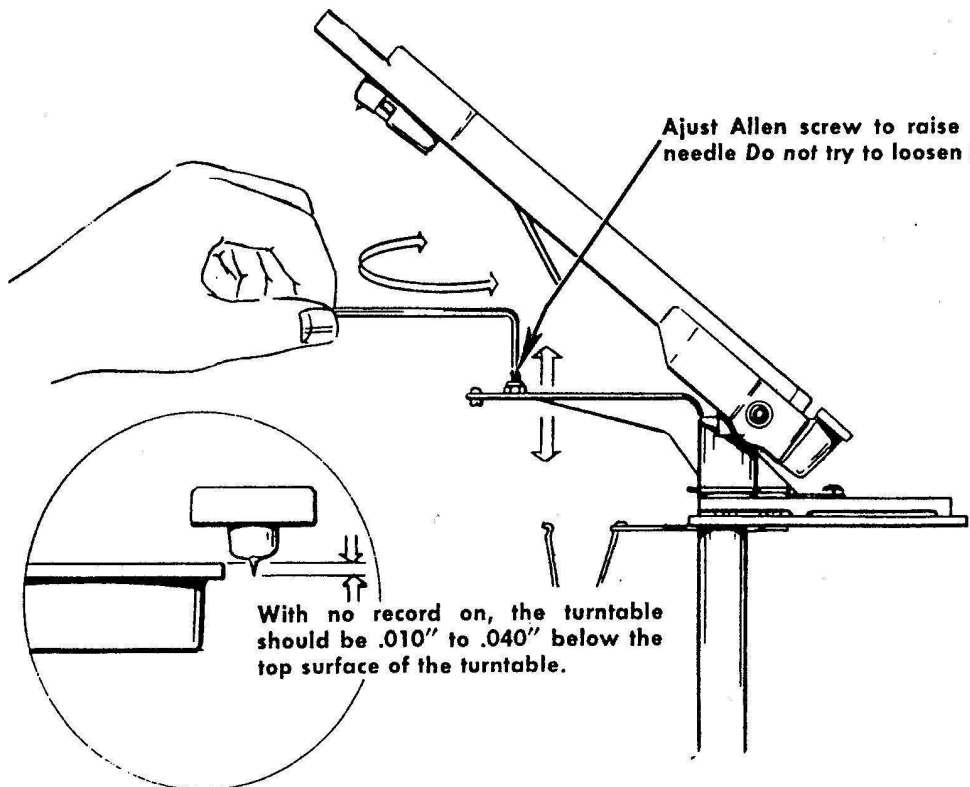


TONE ARM PIVOT



This screw controls the tightness of the tone arm pivot. It must be loose enough to let the tone arm move up and down perfectly freely, but tight enough to prevent excessive sideways movement of the needle.

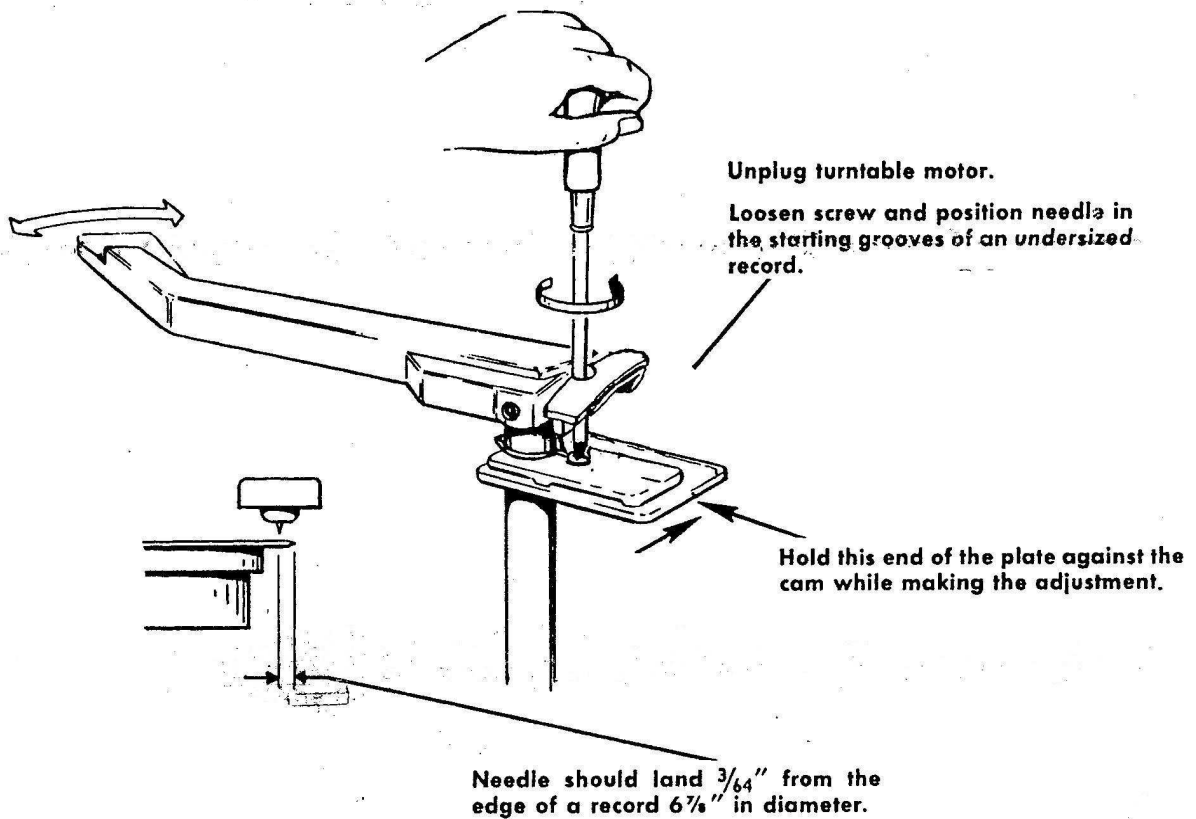
STYLUS HEIGHT



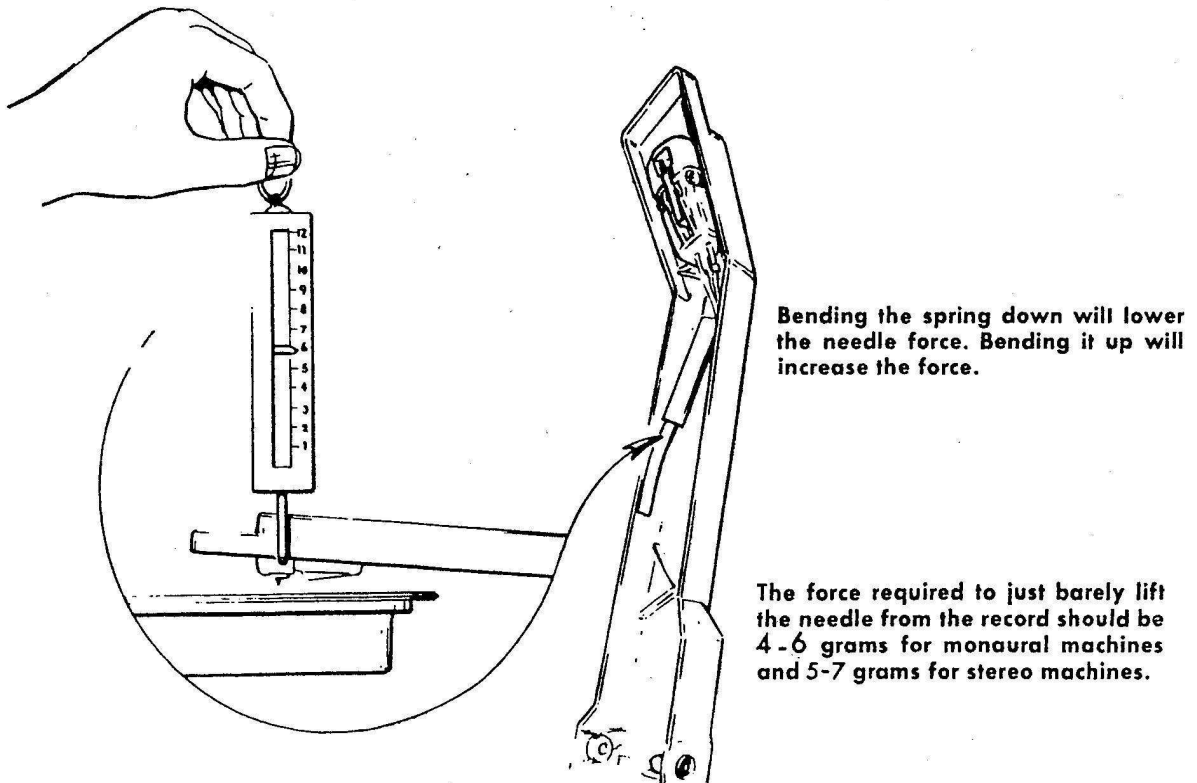
Adjust Allen screw to raise or lower needle. Do not try to loosen the nut.

With no record on, the turntable should be .010" to .040" below the top surface of the turntable.

STYLUS LANDING POSITION

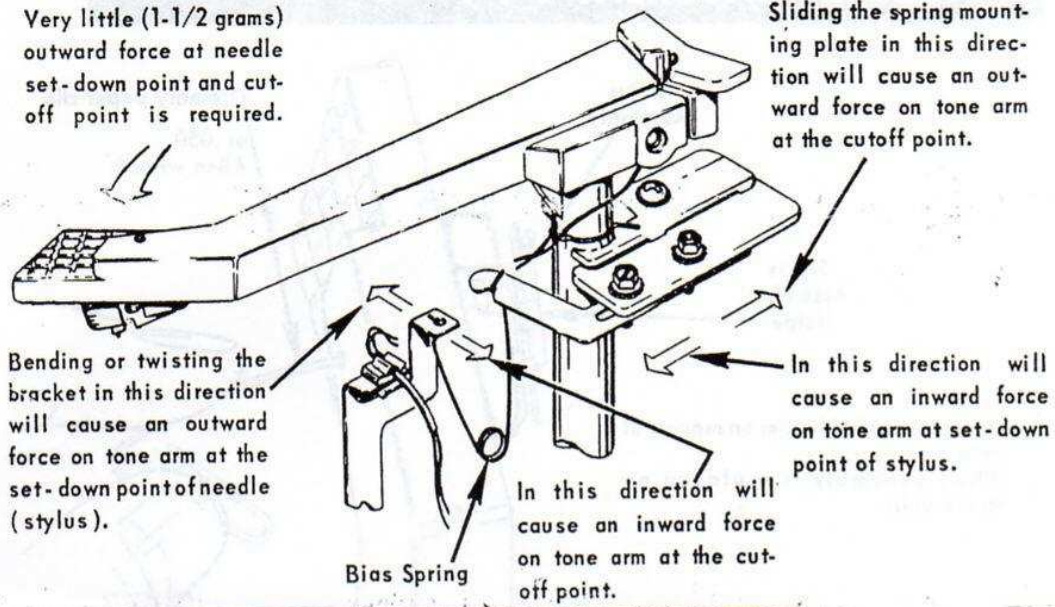


STYLUS PRESSURE

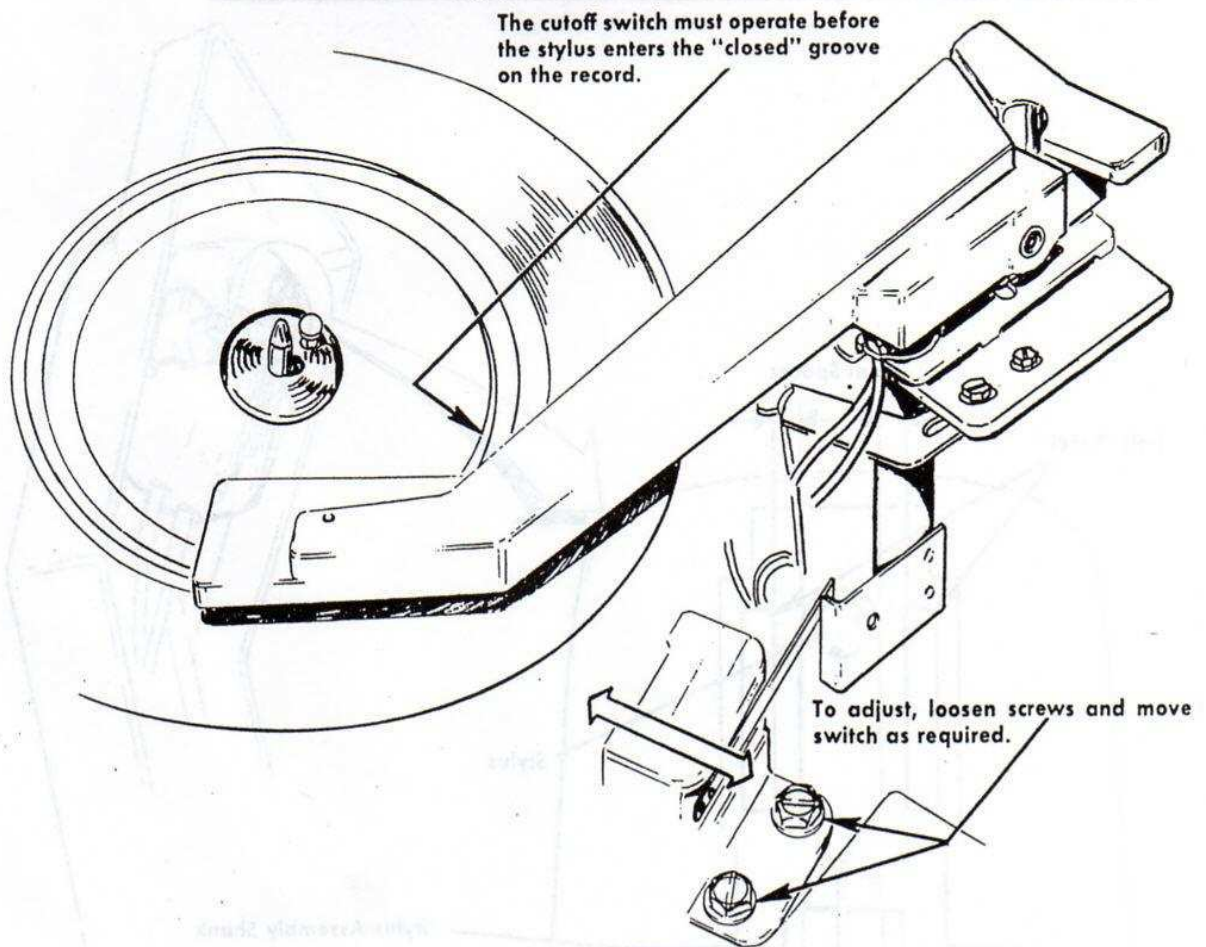


TONE ARM BIAS SPRING

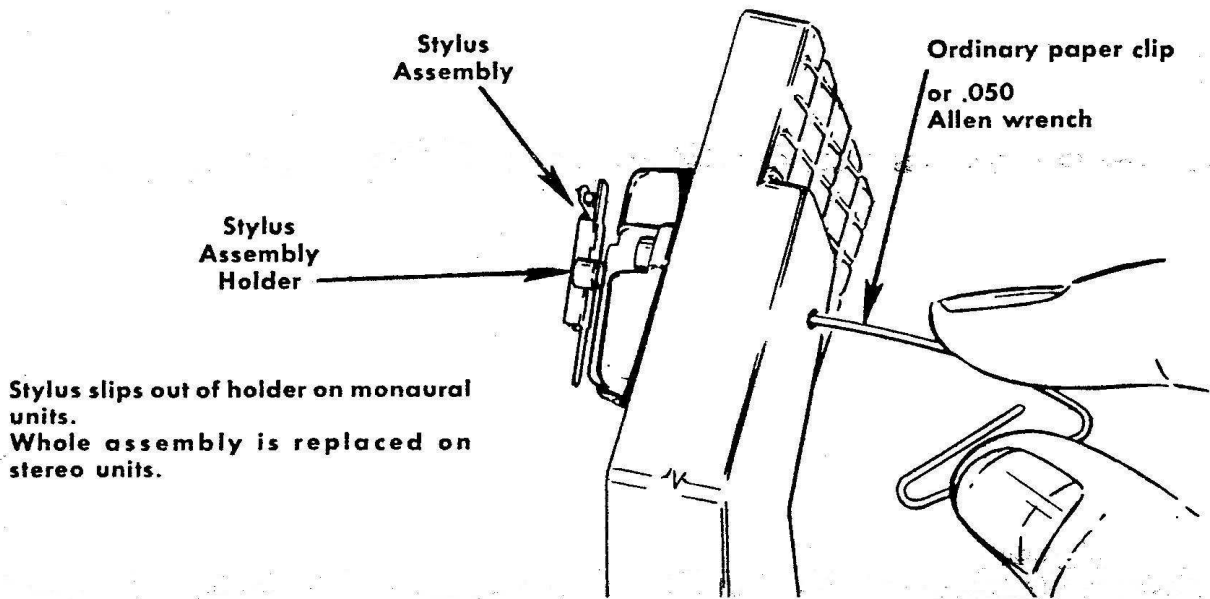
Very little (1-1/2 grams) outward force at needle set-down point and cut-off point is required.



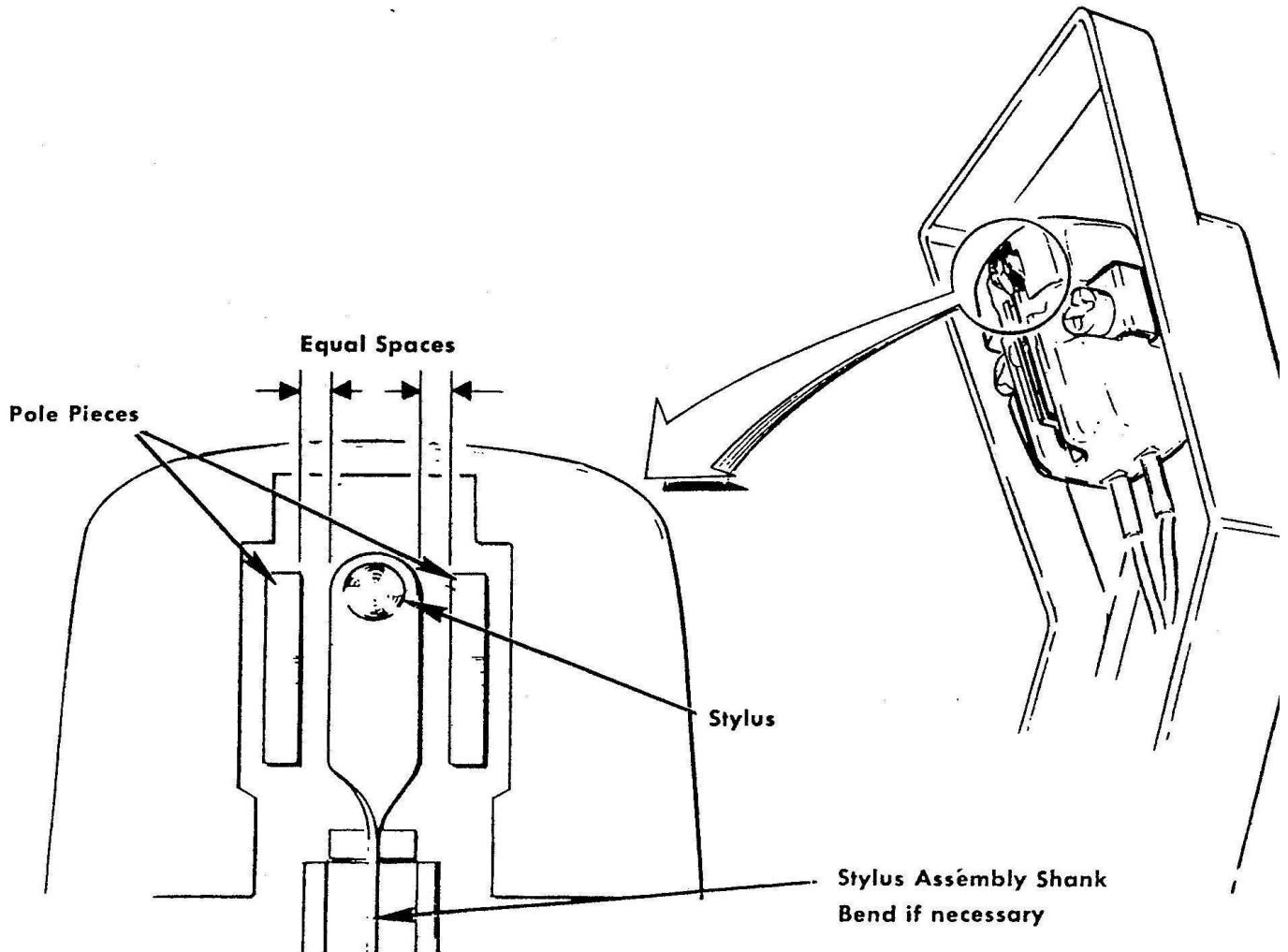
CUT OFF SWITCH . . .



STYLUS REPLACEMENT . . .



STYLUS CENTERING-MONAUURAL . . .

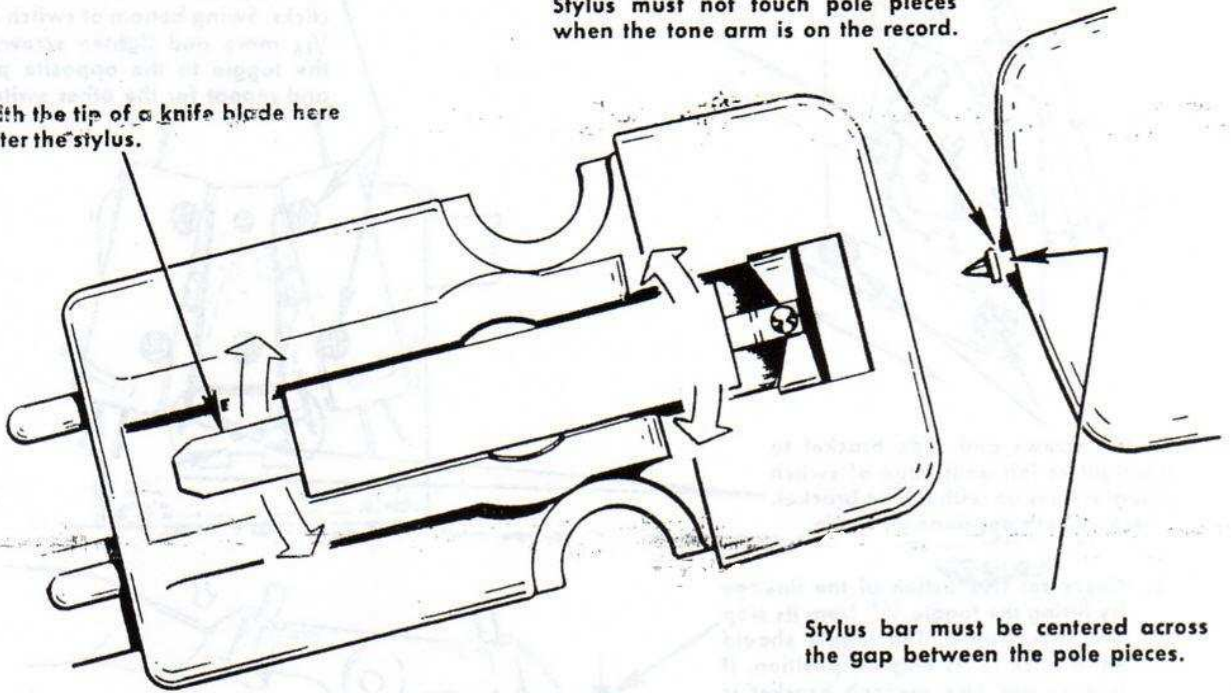


STYLUS CENTERING-STEREO . . .

his motor's gears are twice as large as the motor's gears to provide a 2:1 speed reduction. This provides the correct speed for the record.

Pry with the tip of a knife blade here to center the stylus.

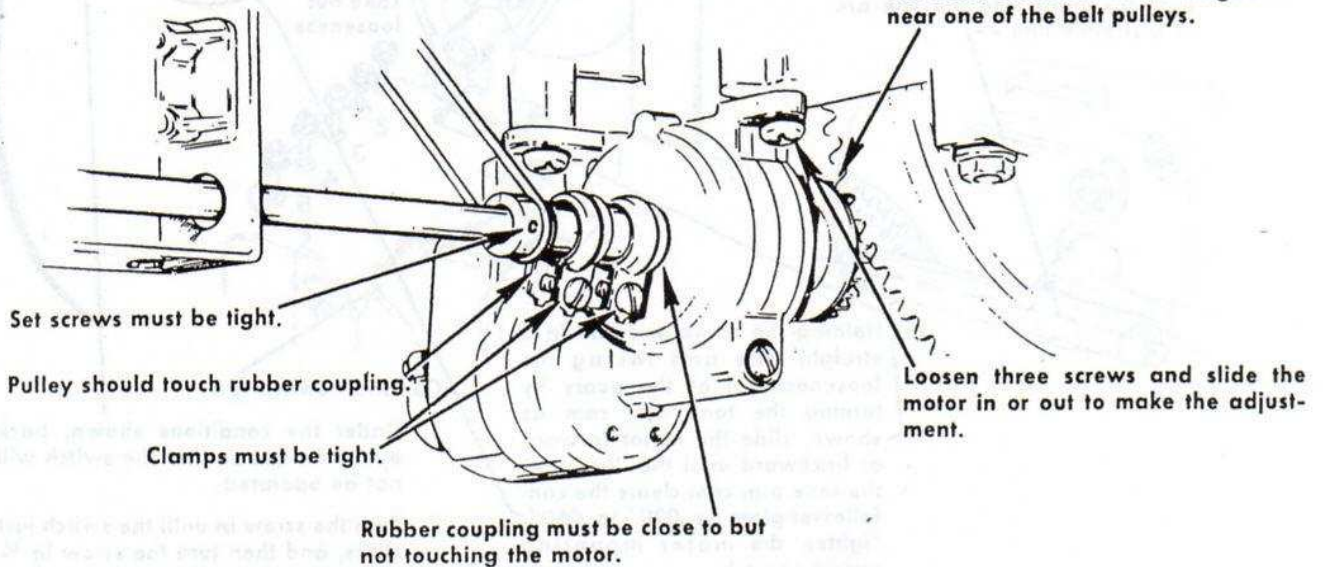
Stylus must not touch pole pieces when the tone arm is on the record.



Stylus bar must be centered across the gap between the pole pieces.

RECORD MAGAZINE MOTOR . . .

Gears should fit with minimum backlash but with no tendency to bind. With the small gear held still, the record magazine must not "rock" more than $\frac{1}{16}$ ". This is measured at the outer diameter of the magazine near one of the belt pulleys.



Set screws must be tight.

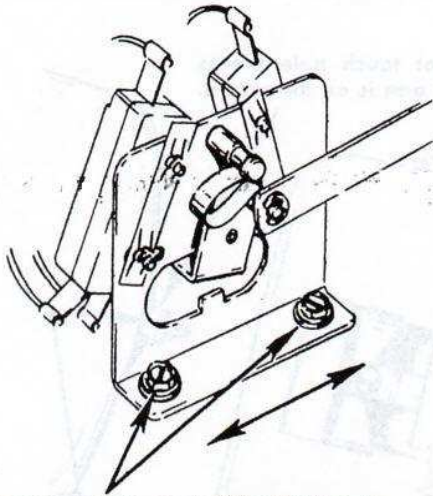
Pulley should touch rubber coupling.

Clamps must be tight.

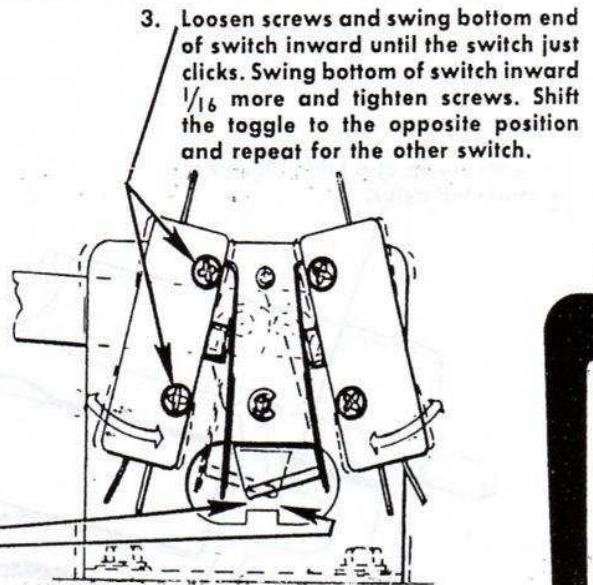
Rubber coupling must be close to but not touching the motor.

Loosen three screws and slide the motor in or out to make the adjustment.

TRANSFER SWITCH ASSEMBLY . . .

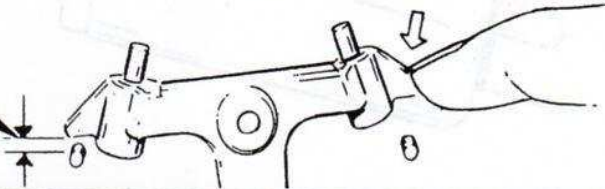


1. Loosen screws and slide bracket to the right or left until edge of switch actuator lines up with tab on bracket. Check in both positions of toggle.



3. Loosen screws and swing bottom end of switch inward until the switch just clicks. Swing bottom of switch inward $\frac{1}{16}$ more and tighten screws. Shift the toggle to the opposite position and repeat for the other switch.

2. Check for free action of the linkage by lifting the toggle $\frac{1}{8}$ " from its stop and releasing it. The toggle should snap back to its original position. If it does not, the switch bracket is probably not square on the base.

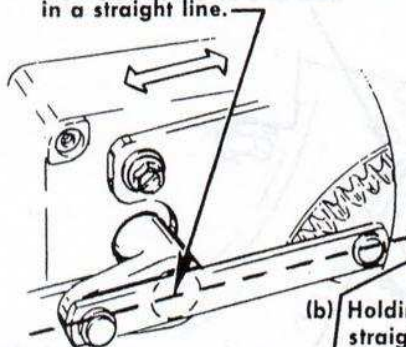


TRANSFER MOTOR POSITION . . .

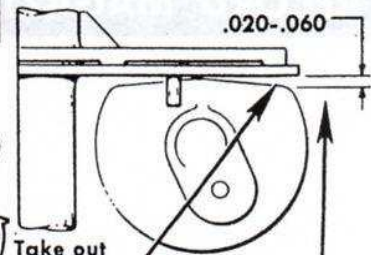
Note: The tone arm pivot height adjustment must be made first.

1. Playing position

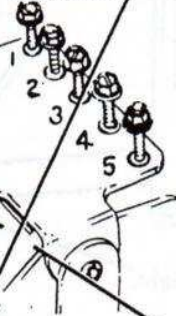
(a) Loosen motor mounting screws. Turn the transfer assembly and the crank on the transfer motor until the crank and the link are in a straight line.



(b) Holding the crank and link in a straight line and taking the looseness out of the gears by turning the tone arm cam as shown, slide the motor forward or backward until the "heel" of the tone arm cam clears the cam follower plate by $.020"$ to $.060"$. Tighten the motor mounting screws securely.



Take out looseness

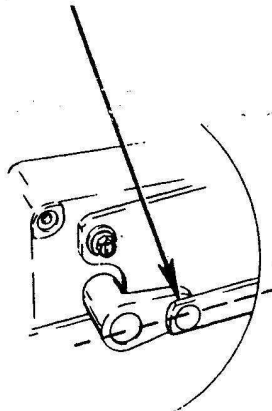


Camshaft Switch #6

1. Under the conditions shown, back out screw #6 so that the switch will not be operated.
2. Turn the screw in until the switch just clicks, and then turn the screw in $\frac{1}{4}$ turn extra.

2. Rest position (Motor position)

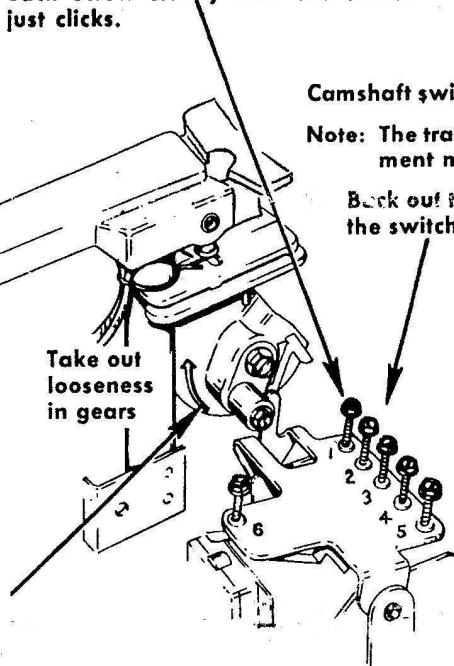
(a) Turn the transfer assembly and the crank on the transfer motor until the crank and the link form a straight line.



(b) Taking the looseness out of the gears in the direction shown, check to see that the gripping shoes are fully retracted and will clear an oversize record in the magazine.

If the gripping shoes are not retracted enough, move the transfer motor slightly to the rear. If the motor must be shifted, recheck in the playing position.

2. Under the conditions shown, turn in each screw slowly until the switch just clicks.



Camshaft switches 1, 2, 3, 4, & 5

Note: The transfer motor position adjustment must be made first.

Back out the adjusting screws so that the switches will not be operated.

Take out looseness in gears

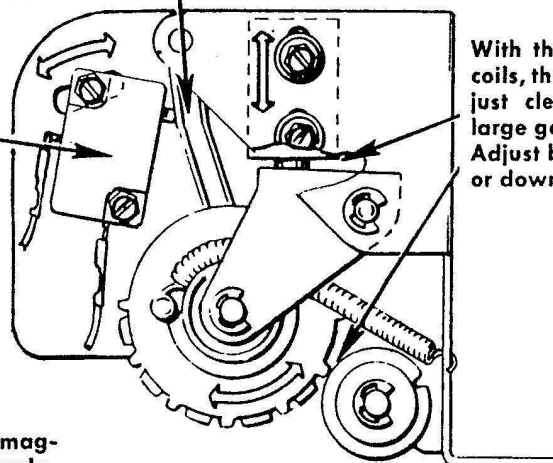
3. Turn in screws 1, 2, 4, & 5 one complete turn extra.

Turn in screw #3 3/4 turn extra.

SCAN CONTROL ASSEMBLY . . .

Tilting the scan switch toward the switch actuator will shorten the scan cycle.

Tilting it away from the actuator will lengthen the scan cycle. Adjust by loosening the nuts on the back of the frame.



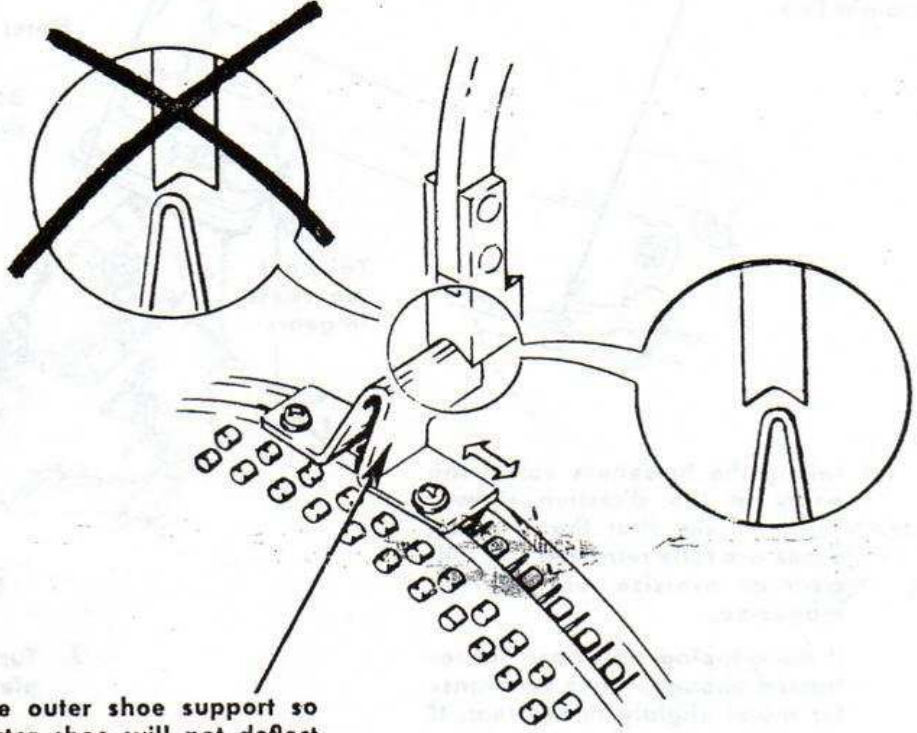
With the armature held against the coils, the teeth on the large gear must just clear the small pulley as the large gear turns.

Adjust by moving the coil bracket up or down.

Minimum Scan Cycle — Record magazine must turn one complete revolution plus three record slots.

Maximum Scan Cycle — 1 1/2 revolutions of the record magazine.

OUTER SHOE SUPPORT . . .



Position the outer shoe support so that the outer shoe will not deflect when it drops into position. Raise and lower the outer shoe by turning the tone arm cam slightly, not by lifting the transfer arm directly.

PAWL LIFTER . . .



"Just touching" to $\frac{1}{32}$ " clearance. Brass roller must not ride up on nylon pawl lifter.

STOPPING SWITCHES . . .

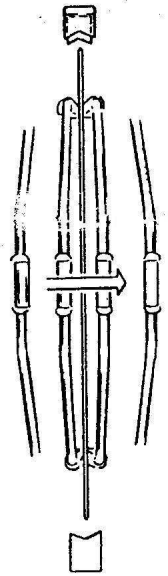
To adjust stopping switches

1. Turn off DC switch and unplug the transfer motor.
2. Push in pin A-1 and trip the scan control armature. Turn on the DC switch and allow the magazine to rotate until it is stopped by the "selected" pin. Turn off the DC switch as soon as the magazine stops or the lamp mechanism fuse will blow.

(A-1 is marked on the pin wheel)

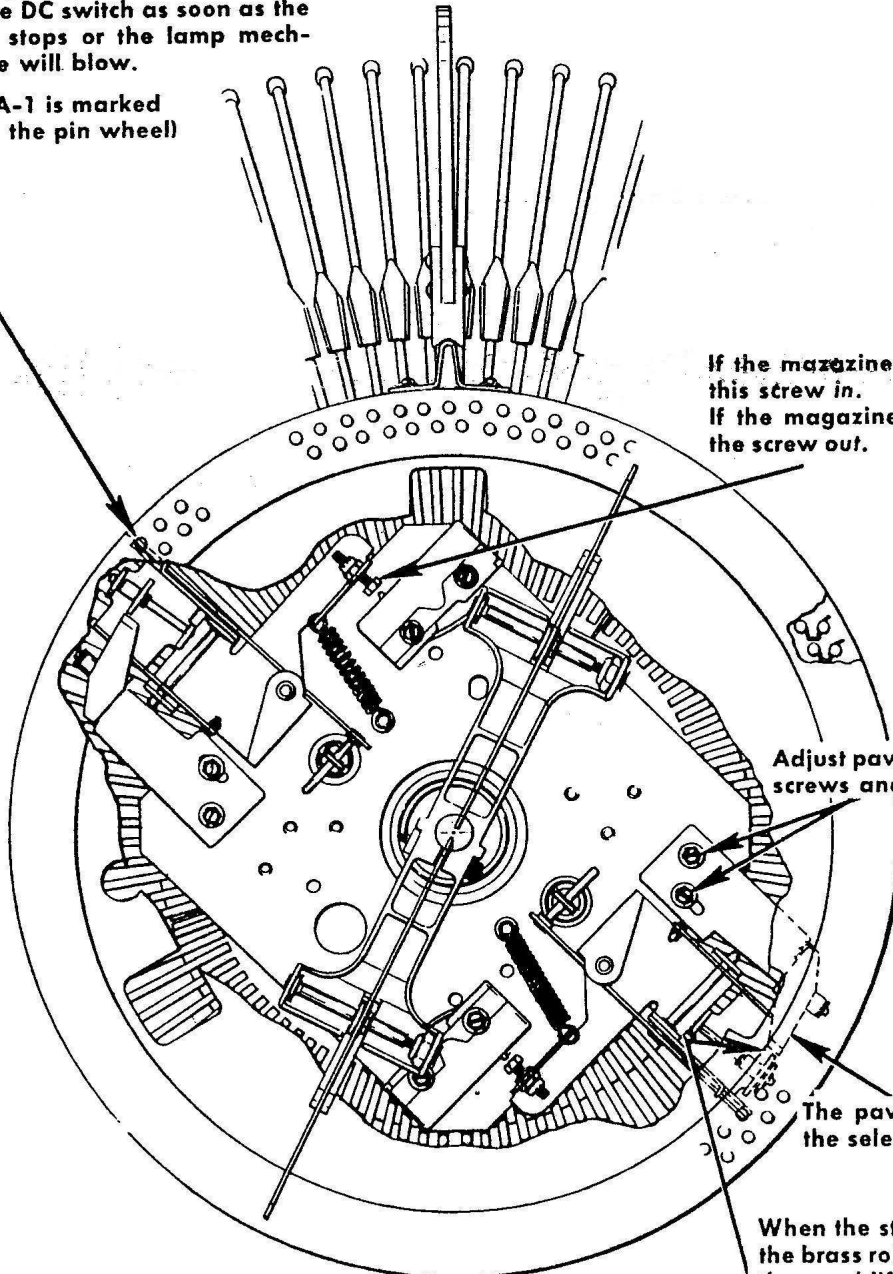
3. Observe the stopping position of the magazine. It should stop so that a record held in the center of the A-1 record slot will be perfectly centered between the gripping shoes of the transfer assembly.

Inner Shoes



Outer Shoe

If the magazine stops too soon, turn this screw in.
If the magazine stops too late, turn the screw out.



Adjust pawl lifters by loosening these screws and shifting the bracket.

The pawl lifters must not track on the selector pins.

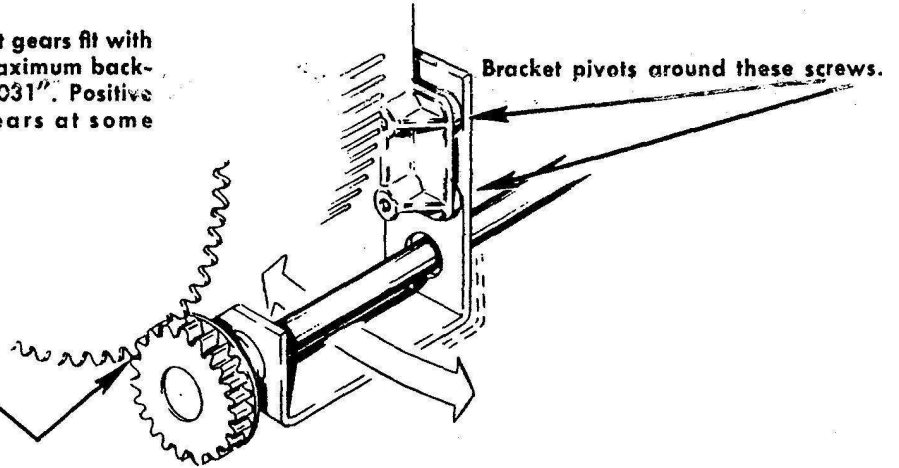
When the stopping switch is tripped, the brass roller should not quite touch the pawl lifter.

See illus. - bottom of preceding page

5. Repeat steps 2, 3, & 4 until the magazine stops as shown.
6. Repeat this procedure for the even stopping switch using pin A-2 (marked on the pin wheel).

PLAYMETER GEAR and DRIVE PINION . . .

Position bracket so that gears fit with minimum backlash (Maximum backlash at any point — .031". Positive interference of the gears at some point is permissible).



POPULARITY METER ALIGNMENT . . .

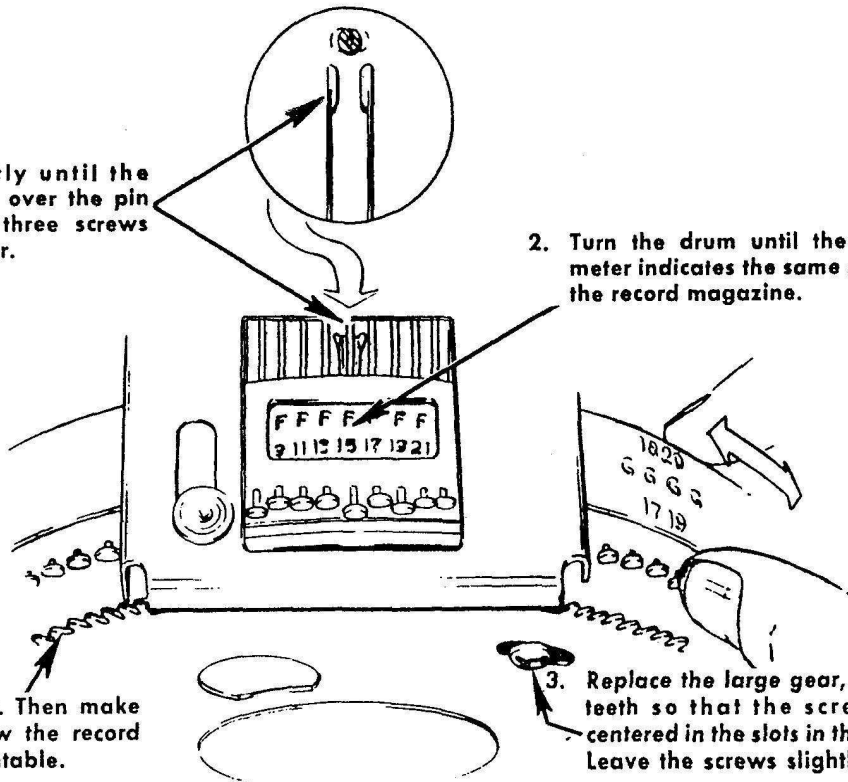
To align the popularity meter (this must be done after the stopping switches are adjusted).

4. Shift the drum slightly until the proper pin is centered over the pin grippers. Tighten the three screws that hold the large gear.

2. Turn the drum until the popularity meter indicates the same selection as the record magazine.

1. Remove the large gear. Then make any selection and allow the record to be placed on the turntable.

3. Replace the large gear, meshing the teeth so that the screws will be centered in the slots in the large gear. Leave the screws slightly loose.



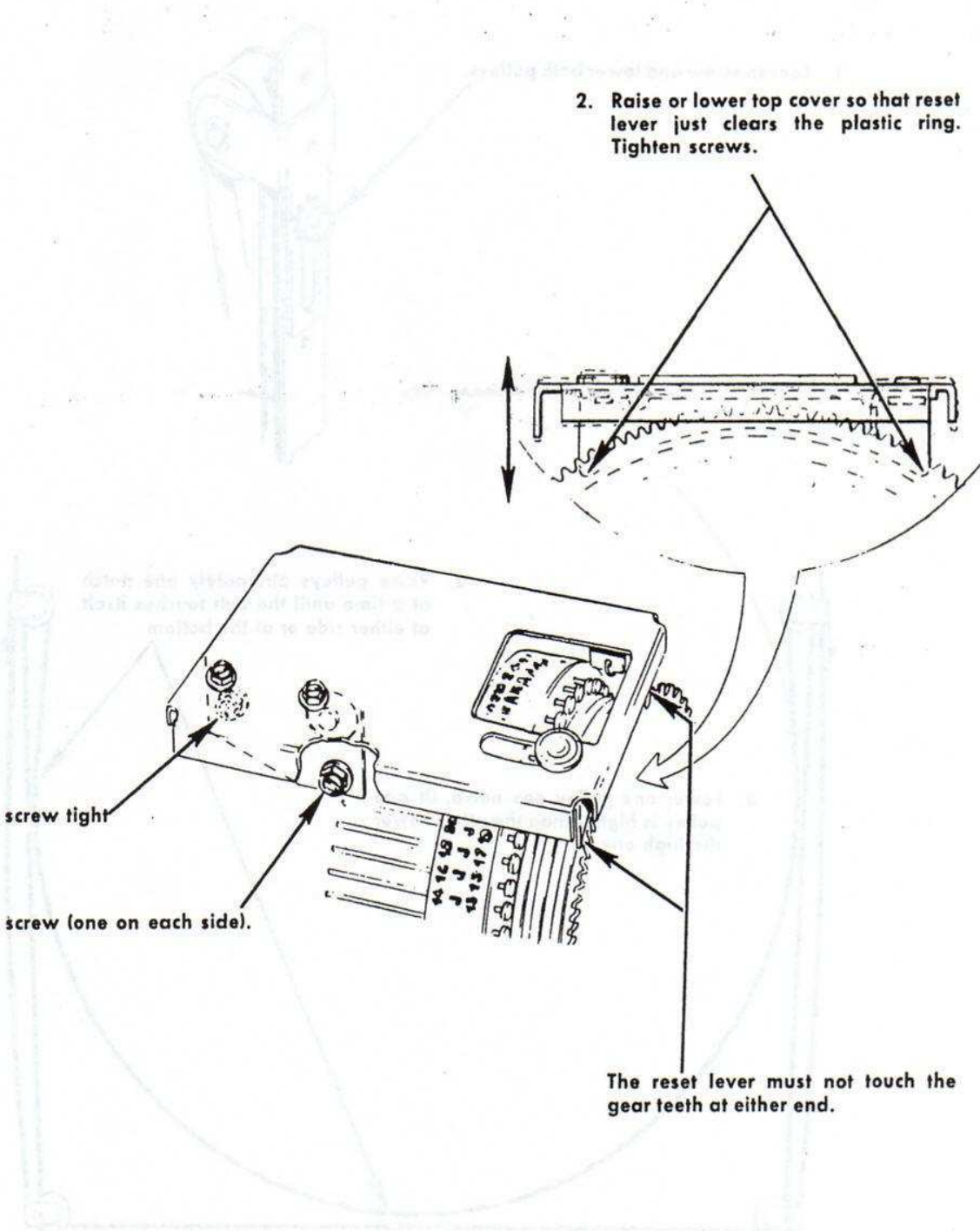
RESET LEVER . . .

2. Raise or lower top cover so that reset lever just clears the plastic ring. Tighten screws.

Leave this screw tight

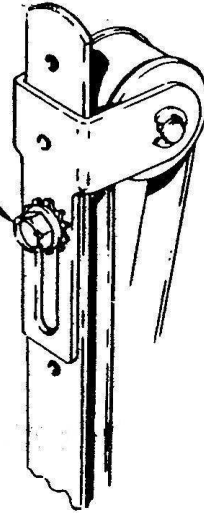
1. Loosen screw (one on each side).

The reset lever must not touch the gear teeth at either end.

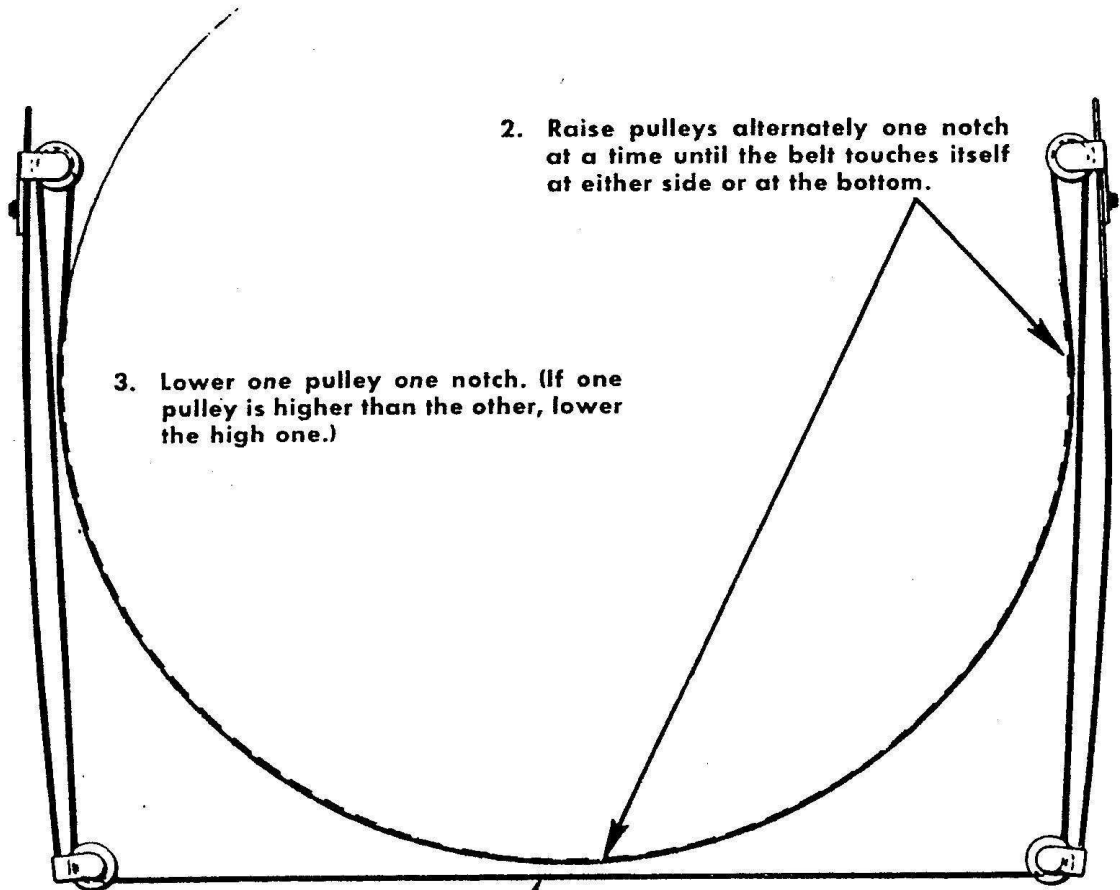


BELT TENSION . . .

1. Loosen screw and lower both pulleys.



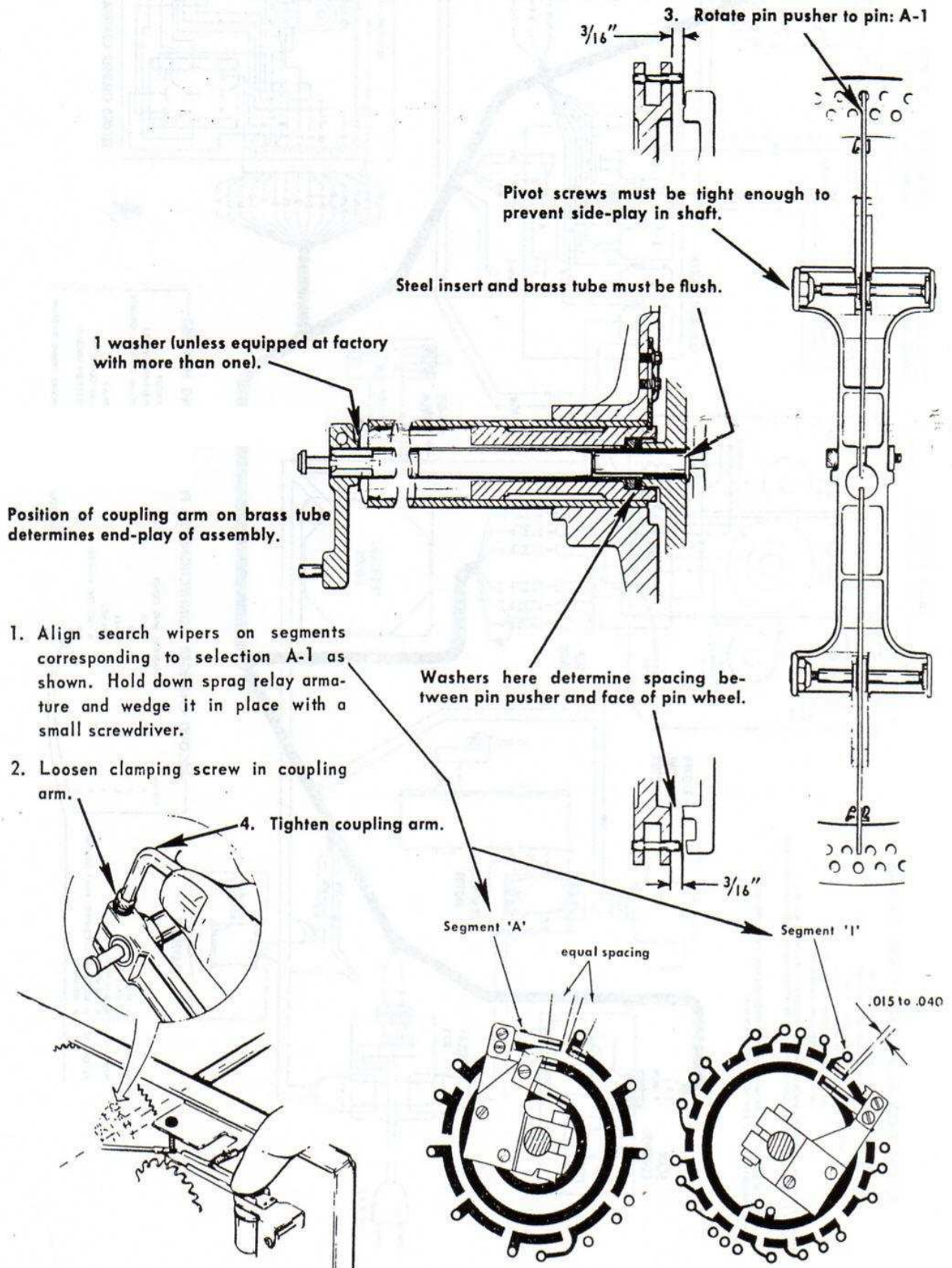
2. Raise pulleys alternately one notch at a time until the belt touches itself at either side or at the bottom.



3. Lower one pulley one notch. (If one pulley is higher than the other, lower the high one.)

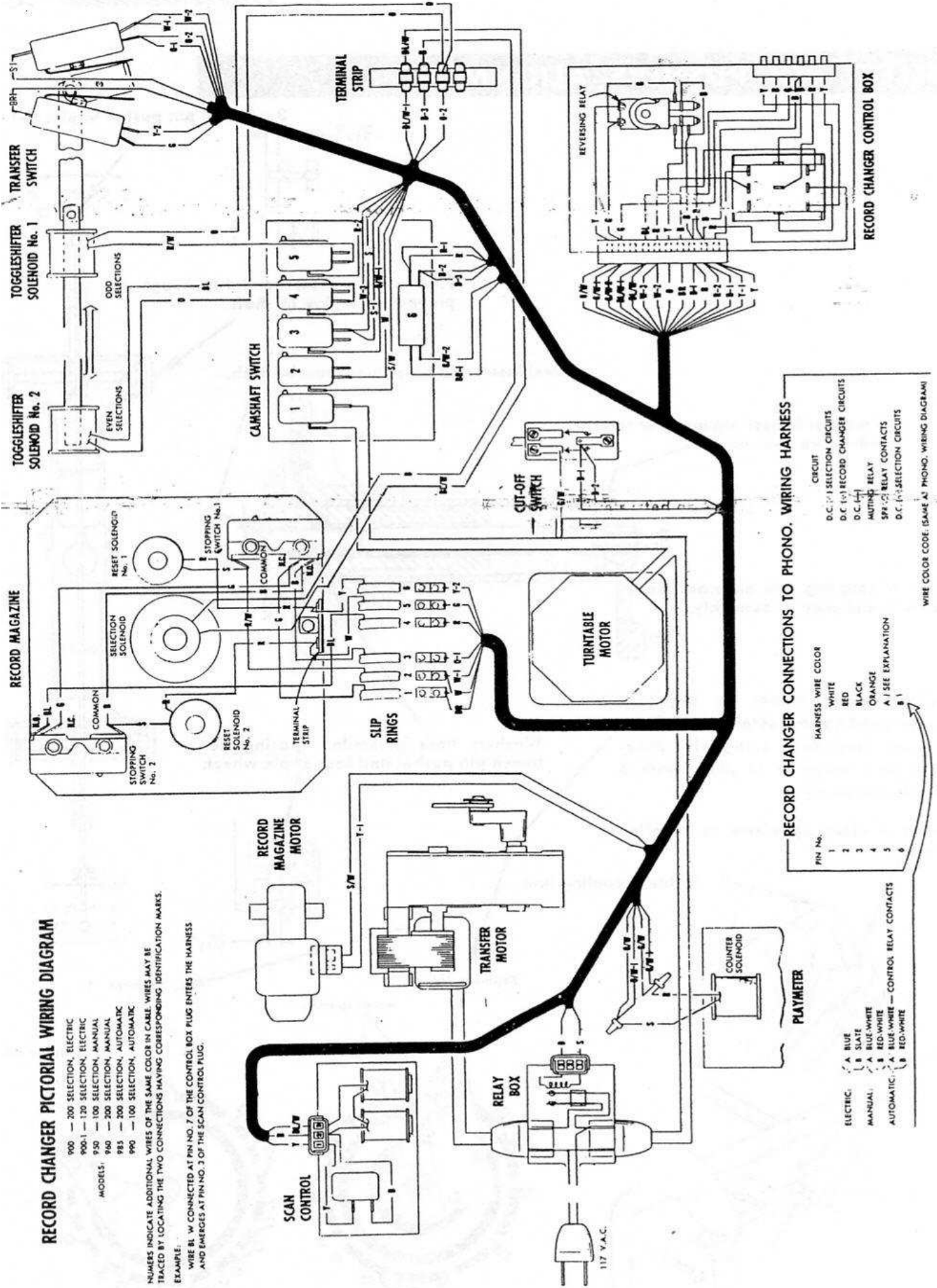
4. The belt must not touch itself or any stationary part.

SELECT PIN PUSHERS ALIGNMENT . . .



RCS-61

Continental 2



RECORD CHANGER PICTORIAL WIRING DIAGRAM

- 900 — 200 SELECTION, ELECTRIC
- 900.1 — 120 SELECTION, ELECTRIC
- 950 — 100 SELECTION, MANUAL
- 960 — 200 SELECTION, MANUAL
- 985 — 200 SELECTION, AUTOMATIC
- 990 — 100 SELECTION, AUTOMATIC

NUMBERS INDICATE ADDITIONAL WIRES OF THE SAME COLOR IN CABLE. WIRES MAY BE TRACED BY LOCATING THE TWO CONNECTIONS HAVING CORRESPONDING IDENTIFICATION MARKS.

EXAMPLE:

WIRE B1, W CONNECTED AT PIN NO. 7 OF THE CONTROL BOX PLUG ENTERS THE HARNESS AND EMERGES AT PIN NO. 3 OF THE SCAN CONTROL PLUG.

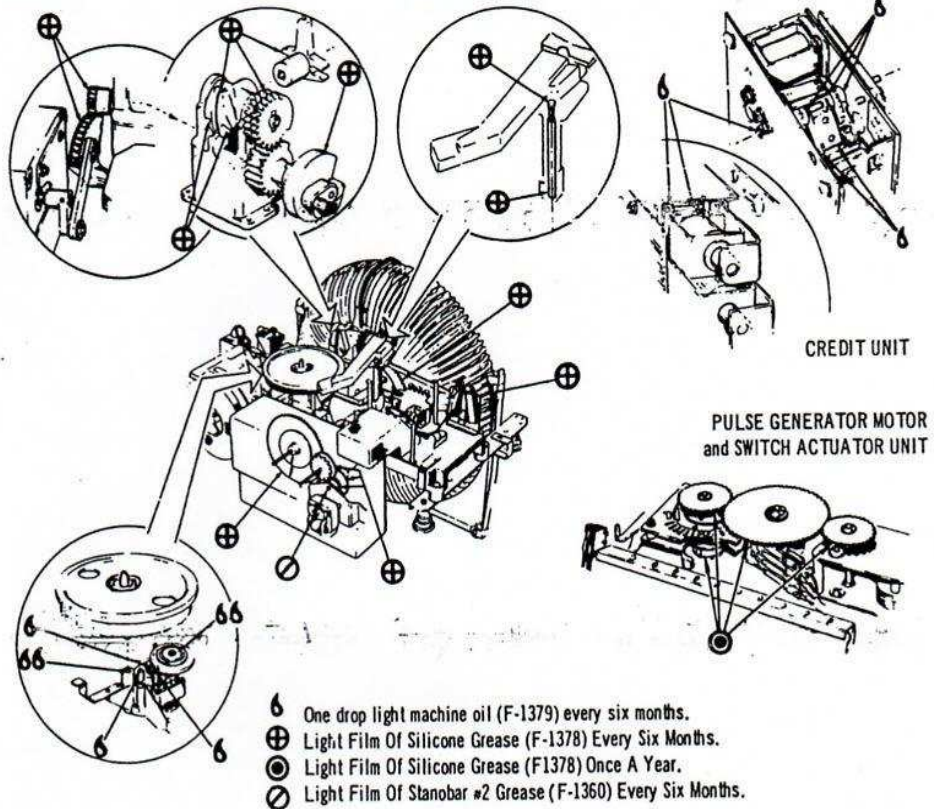
RECORD CHANGER CONNECTIONS TO PHONO. WIRING HARNESS

CIRCUIT	HARNESS WIRE COLOR
D.C. (1) SELECTION CIRCUITS	WHITE
D.C. (2) RECORD CHANGER CIRCUITS	RED
D.C. (4) AUTOMATIC RELAY	BLACK
D.C. (5) SELECTION CIRCUITS	ORANGE

PIN No.	WIRE COLOR	EXPLANATION
1	WHITE	A
2	RED	B
3	BLACK	A
4	ORANGE	B
5	WHITE	A
6	RED	B

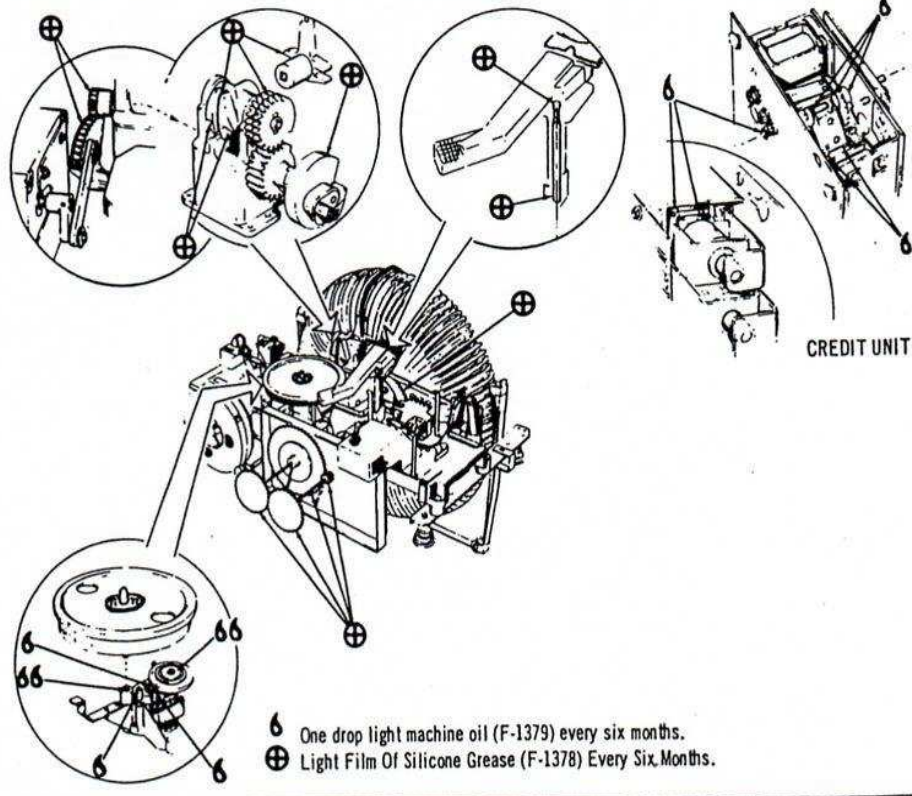
WIRE COLOR CODE (SAME AS PHONO. WIRING DIAGRAM)

LUBRICATION CHART



DO NOT OVER-OIL

LUBRICATION CHART



DO NOT OVER-OIL

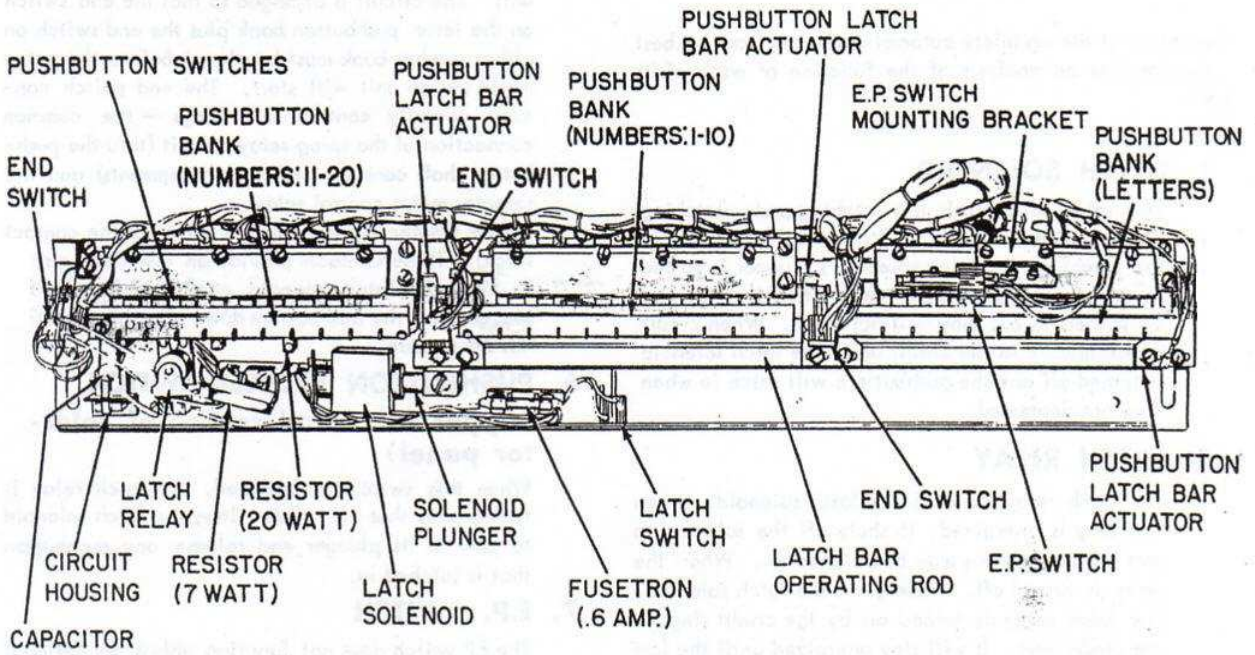
R-1865-E SELECTOR

AND

R-2405 SEARCH UNIT

SERVICE MANUAL

COMPONENTS . . . R-1865-E SELECTOR



R-1865-E SELECTOR

All versions of the automatic selector are functionally the same. They differ only in the physical arrangement of the parts and in the way they are mounted in the phonographs.

Operation of the complete automatic selector can be best understood by an analysis of the function of each of its parts.

1. LATCH SOLENOID

This solenoid controls the latching and unlatching of the pushbuttons. In the "stand-by" condition of the machine, the latch solenoid's plunger is pulled in and the pushbuttons are free; that is, they can be pushed in but they will not latch. When credit is established in the credit unit, the latch solenoid is turned off and the pushbuttons will latch in when they are depressed.

2. LATCH RELAY

The latch relay controls the latch solenoid. When the relay is energized, it shuts off the solenoid so that the pushbuttons may be latched in. When the relay is turned off, it energizes the latch solenoid. The latch relay is turned on by the credit rings in the credit unit. It will stay energized until the last credit has been played off.

3. LATCH SWITCH

When the switch is closed, it shorts out a resistor that is in series with the latch solenoid. This allows a heavy current pulse to flow through the solenoid so it will have a strong pull at the time the pushbuttons must be unlatched. When the latch solenoid is pulled in all the way, the latch switch opens and removes the short from the series resistor. The resistor now limits the current through the solenoid to an amount sufficient to hold the plunger in but low enough to prevent over heating of the solenoid coil.

4. PUSHBUTTON SWITCHES

These switches are connected through the cable and plugs to the individual segments on the commutators in the automatic search unit. When the pushbutton switches are closed, they complete a circuit to the search segments that can be "found" by the search unit's wipers.

5. END SWITCHES

Top Contacts (closest to the top of the contact stack). These contacts turn on the automatic search unit. The circuit is arranged so that the end switch on the letter pushbutton bank plus the end switch on either number bank must be closed before the automatic search unit will start. The end switch contacts actually control two things — the common connection of the sprag relay circuit (thru the pushbutton shaft contacts and search segments) and the selector motor control relay.

Bottom Contacts (closest to the bottom of the contact stack). These contacts provide an auxiliary circuit to keep the latch solenoid energized in case the player holds the pushbuttons down after his selection has been made.

6. PUSHBUTTON RELEASE SWITCH (Upper left hand corner of selector panel)

When this switch is operated, the latch relay is temporarily shut off. This allows the latch solenoid to pull in its plunger and release any pushbutton that is latched in.

7. E.P. SWITCH

The EP switch does not function unless an optional EP switch actuator is installed on the letter pushbutton bank.

The normally closed contacts connect the standard price credit ring (in the credit unit) to the selection system. If the EP switch is operated, only the premium price credit ring will be connected.

The normally open contacts are connected across the cancel stop solenoid in the credit unit. If the switch is operated, the cancel stop solenoid will not operate so credit for a premium priced record will be taken off when the selection is made.

Note: When the EP switch is to be used, the jumper between the normally closed contacts must be removed.

Removing the Selector from the Phonograph

1. Open front door.
2. Unplug the harnesses and disconnect the pushbutton release switch.
3. Remove the two large screws holding the selector to the front door.
4. Slide the selector free of the mounting stack.

Replacing Selector in the Phonograph

When the automatic selector is replaced in the phonograph, its position must be adjusted so that there is the proper relationship between the ends of the metal pushbutton switch shafts and the plastic pushbuttons.

The shafts must support the pushbuttons against their stops, but the selector must not be so close to the pushbuttons that the shafts are partially depressed. If the shafts are partially depressed, or are too far

from the pushbuttons, they will not latch and release properly.

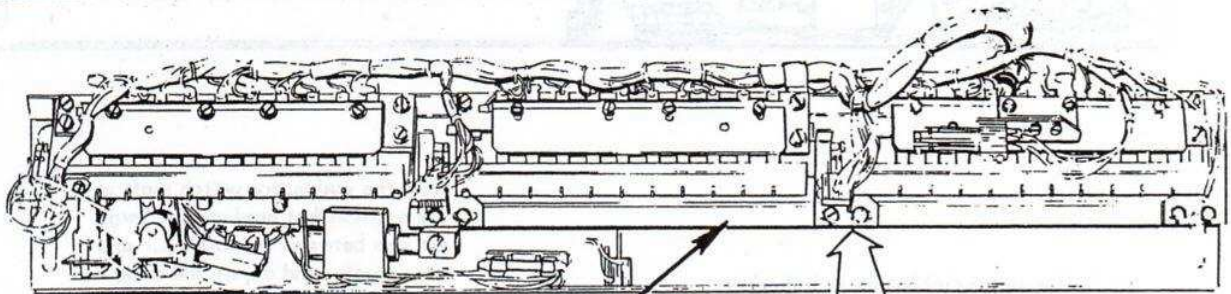
The frame of the automatic selector used in Lyric and Continental phonographs is slotted so that the entire unit may be moved closer to or farther away from the pushbuttons as required. The selector must be level -- that is one end must not be higher than the other. The selector will be in perfect position if all the pushbutton switch shafts touch the plastic buttons at the same time without any of the shafts being partially depressed.

MECHANICAL ADJUSTMENTS

Check the adjustments of the automatic selector in the following order:

Note: The adjustments of the automatic selector should be checked when the selector is free from the influence of the plastic pushbuttons. The unit should either be moved clear of the pushbuttons or removed from the phonograph unless it is absolutely certain that none of the pushbutton switch shafts are depressed.

1. THE LATCH BAR OPERATING ROD



The latch bar operating rod must slide freely with no tendency to bind. It should be lubricated with a small amount of DC-44 silicone grease where it slides on the guide bushings.

LATCH BAR ACTUATOR

LUBRICATE

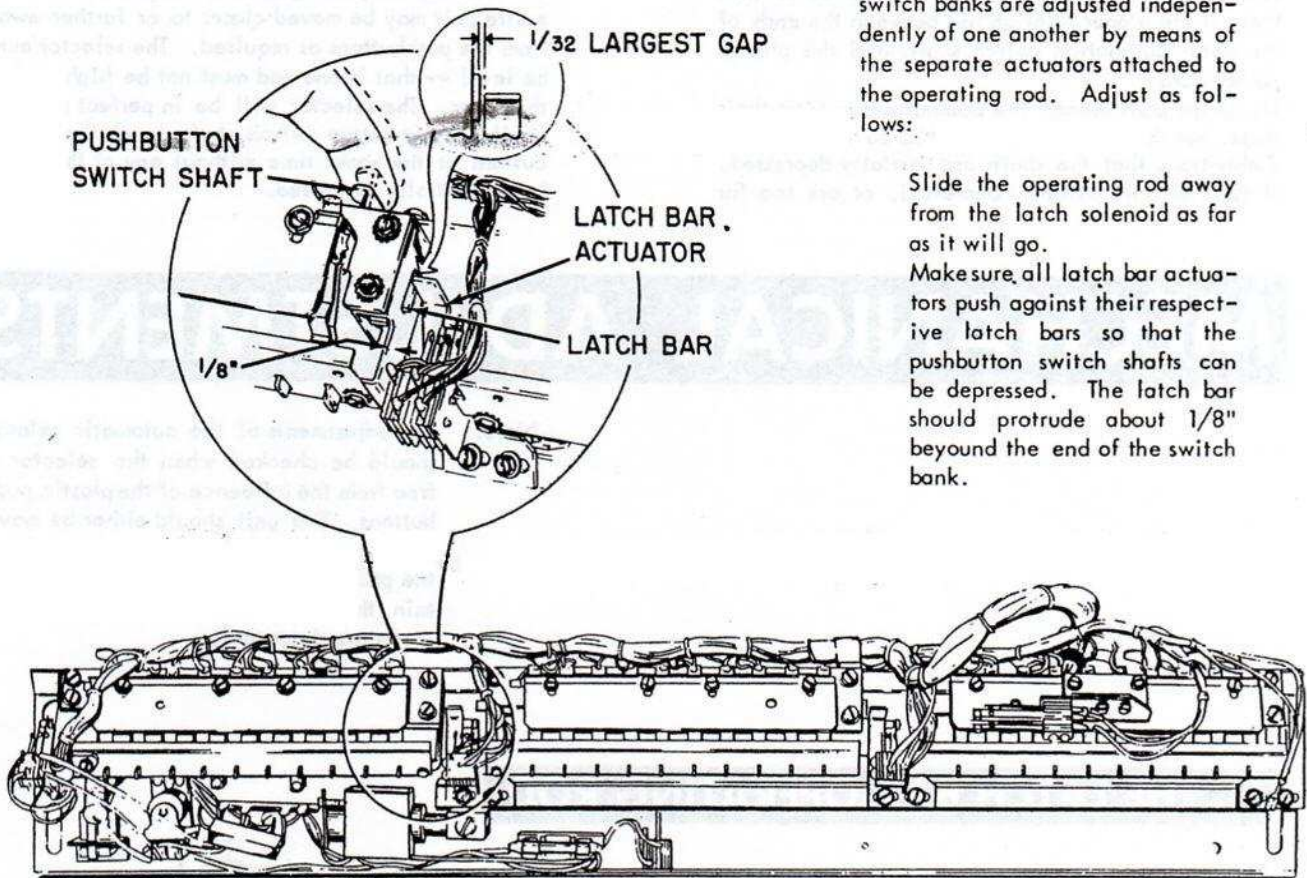
2. LATCH BARS

Latch Bars

The latch bars in the pushbutton switch banks are adjusted independently of one another by means of the separate actuators attached to the operating rod. Adjust as follows:

Slide the operating rod away from the latch solenoid as far as it will go.

Make sure all latch bar actuators push against their respective latch bars so that the pushbutton switch shafts can be depressed. The latch bar should protrude about $1/8$ " beyond the end of the switch bank.



Depress a pushbutton switch slowly and observe the gap that appears between the end of the latch bar and the actuator. At one point in the travel of the shaft the gap will reach a maximum. Further travel of the shaft will cause it to latch in and the latch bar will snap back against the actuator.

Hold the pushbutton switch shaft in the position that produces the largest gap between the latch bar and the actuator and adjust the actuator so that this gap is $1/32$ ". This is about thickness of an ordinary paper match. As a check, slip the cover of a paper match book between the end of the latch bar and the actuator. All the pushbutton switch shafts should still latch and release properly.

Follow this procedure for each pushbutton bank.

3. LATCH SOLENOID

Latch Solenoid

The plunger of the latch solenoid must have 1/64" to 1/32" over travel beyond the point where the pushbutton switch shafts are released.

Adjust as follows:

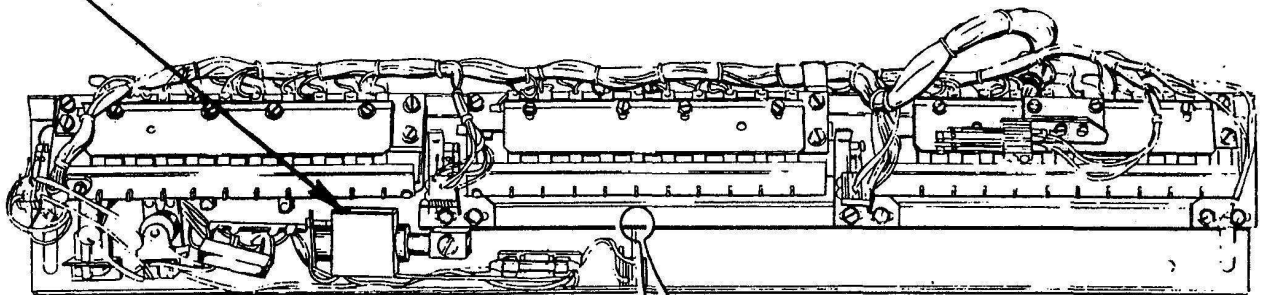
Loosen the mounting screws holding the solenoid to the main frame and slide the solenoid in toward the center of the selector.

Latch in a pushbutton switch shaft in the bank that exhibits the largest gap between the bar and its actuator as described above.

Pull the plunger all the way into the latch solenoid. Holding the plunger in, slide the entire solenoid out (toward the end of the selector) until the pushbutton switch shaft is released. Slide the solenoid out 1/64" more and tighten the mounting screws.

Makesure the solenoid is level so that the plunger will not tend to bind in the core.

Check the over travel of the plunger carefully by operating the plunger slowly by hand to unlatch shafts in each bank.



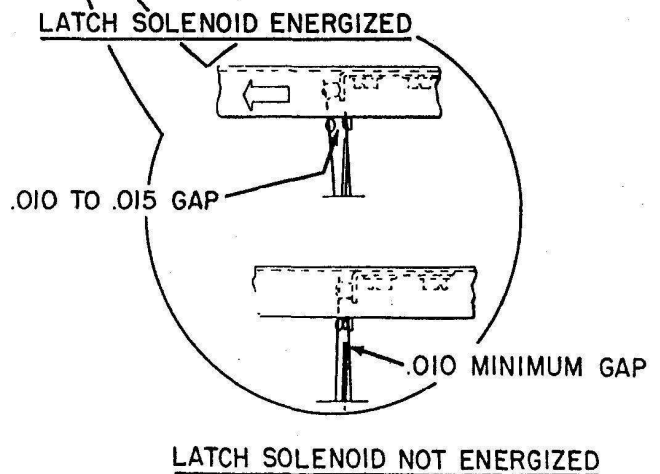
4. LATCH SWITCH

Latch Switch

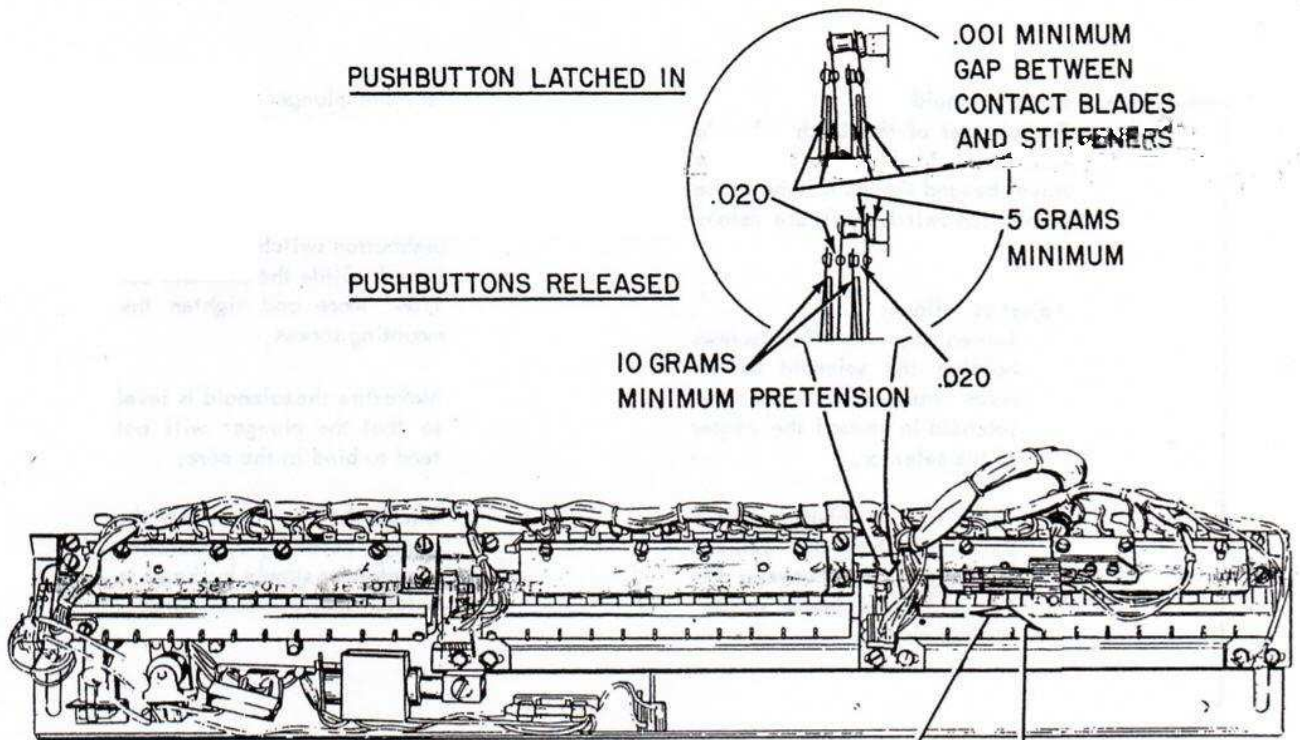
When the latch solenoid is not energized, the latch switch must be closed. As the contacts close, the non-moving switch blade must deflect at least .010.

When the latch solenoid is energized, the latch switch must be open. The gap between the contacts .010 to .015.

Adjust the operating point of the switch by twisting the switch mounting bracket.



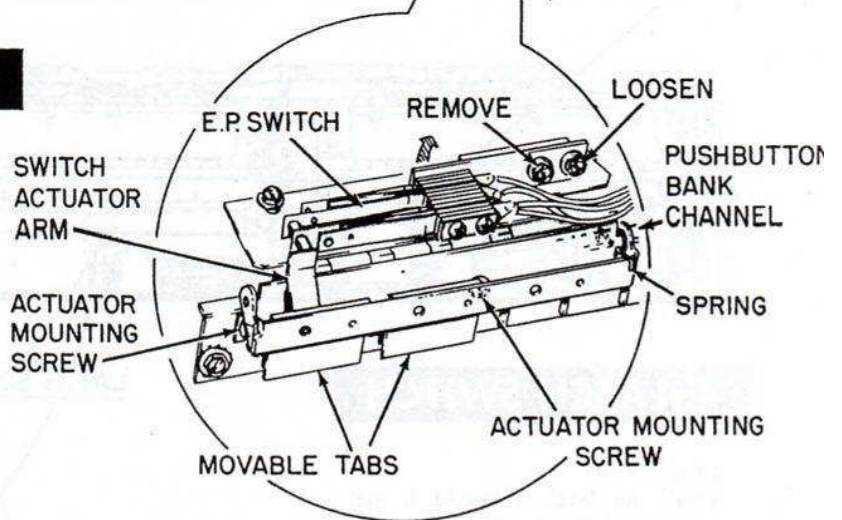
5. END SWITCHES



6. SWITCH ACTUATOR

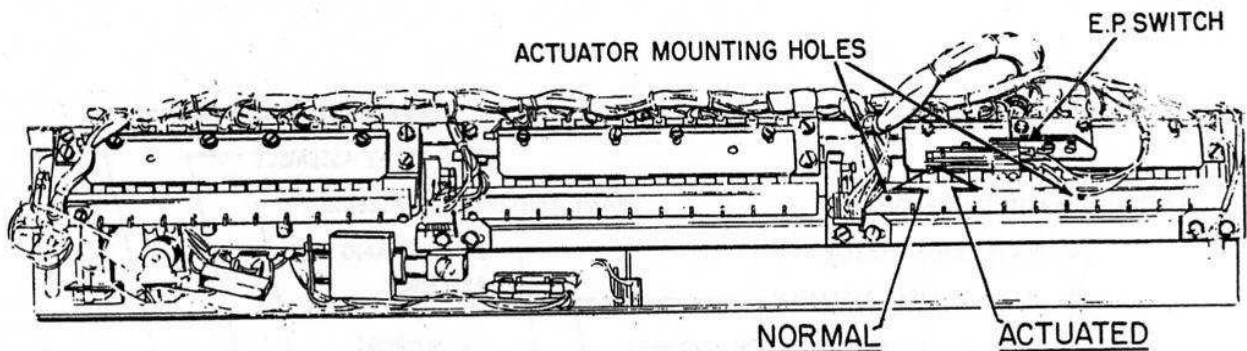
This actuator can be obtained from your AMI distributor. Movable tabs on the actuator make it possible for from 2 to 6 letter pushbuttons to be classified as "E.P." or "STEREO". There is no adjustment to the actuator except to make sure it operates without binding, and that it is operated by the desired pushbuttons.

Note the position of the actuator, in relation to the switch. Make sure the movable tabs are over the desired pushbuttons. As the actuator is located against the pushbutton bank channel, be sure to hook the rear end of the spring (right end of actuator) over turned edge of pushbutton bank channel.



Remove the mounting screw indicated and rotate switch assembly out of the way so that the actuator assembly may be attached with its two screws. Reposition both, the switch and actuator, before tightening any of the mounting screws.

7. E.P. SWITCH



E.P. Switch

The E.P. Switch must meet the following conditions:

When the Switch is not Actuated:
The contact pressure of the normally closed contacts should be 25-45 grams.

Blade "A" should be held at least .010" from its stiffener by the action of the second blade (B).

The gap between the normally open contacts (C & D) should be .030 to .040.

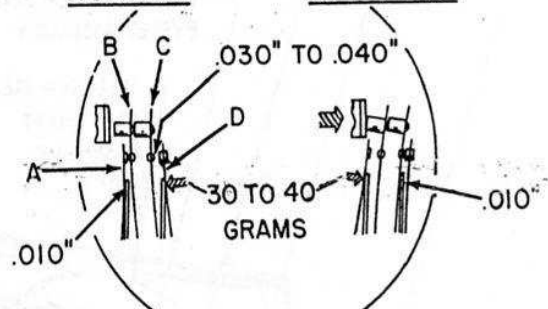
Blade "D" should push against its stiffener with a force of 30 to 40 grams.

When the Switch is Actuated:

Blade "D" should be moved at least .010" from its stiffener by the action of the moving contact (C).

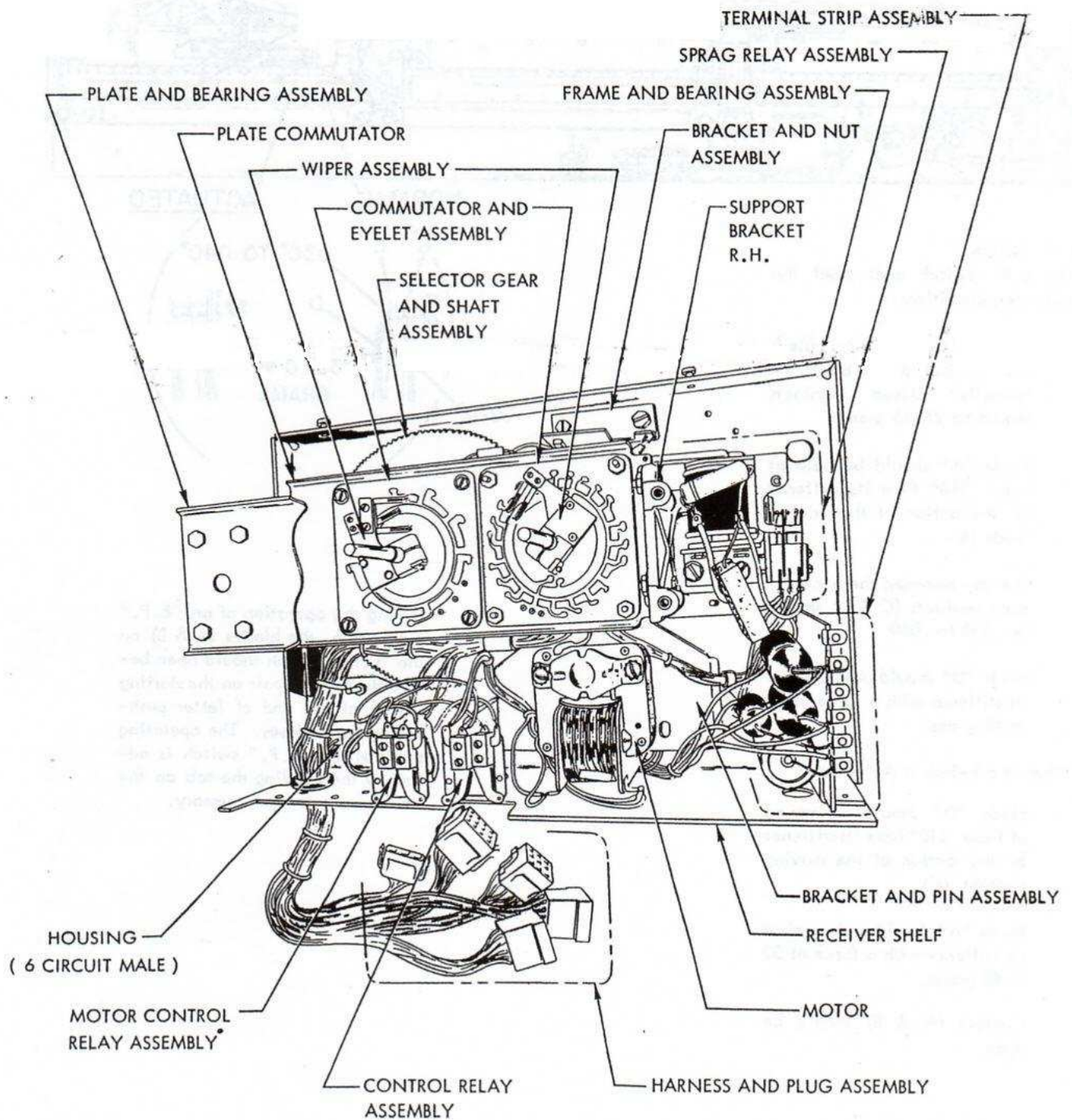
Blade "A" should push against its stiffener with a force of 30 to 40 grams.

Contact (A & B) should be open.



During the operation of an "E.P." pushbutton, the blades (A & B) on the "E.P." switch should open before the outside pair on the starting switch at the end of letter pushbutton bank closes. The operating point of the "E.P." switch is adjust by the bending the tab on the switch actuator as necessary.

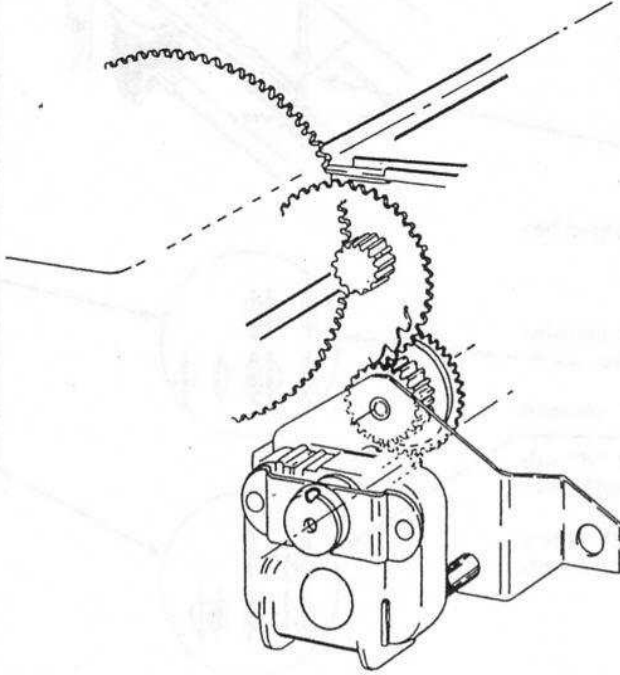
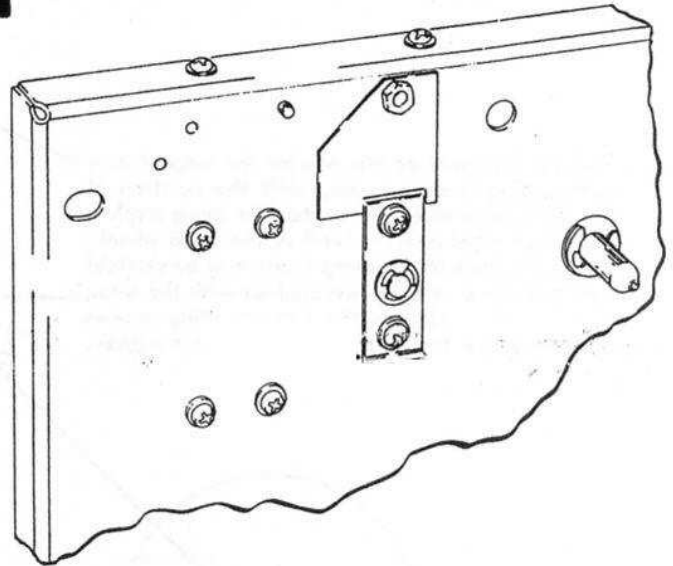
R-2504-F SEARCH UNIT



MECHANICAL ADJUSTMENTS

SEARCH WIPER DRIVE GEARS

Backlash between the search wiper drive gears is adjusted by shifting the movable bearing plate which holds the rear bearing of the sprag wheel shaft. It must be adjusted so the gears are meshed as closely as possible without binding at any point of the rotation of the large gear.



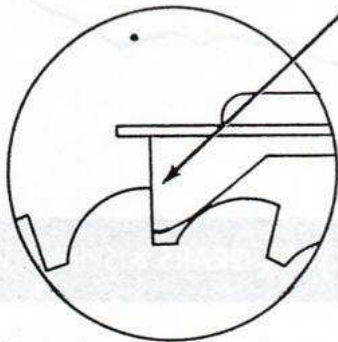
MOTOR GEARS & SPRAG WHEEL GEAR

All the small gears between the motor shaft and the sprag wheel should mesh with a small amount of play between the gear teeth. They should not, however, be excessively loose. The motor mounting bracket and the motor itself can be shifted to provide the proper gear fit.

SPRAG RELAY

The sprag relay is adjusted by loosening its mounting screws and positioning it to meet the following conditions:

- a. Holding the armature arm against the magnet core so that there is no air gap, shift the position of the sprag relay assembly so that the sprag tooth is fully seated between the teeth of the sprag wheel. The flat surface of the sprag tooth must be vertical and must make straight line contact with the sprag wheel tooth. Tighten the two mounting screws securely while the assembly is held in position.



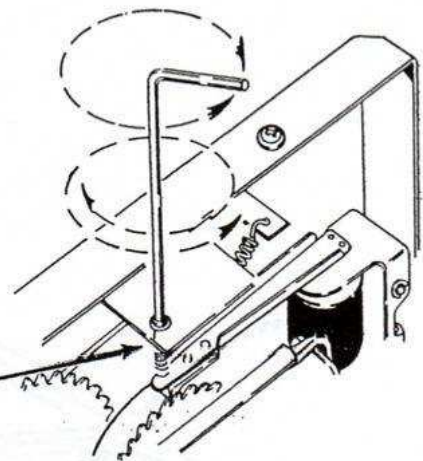
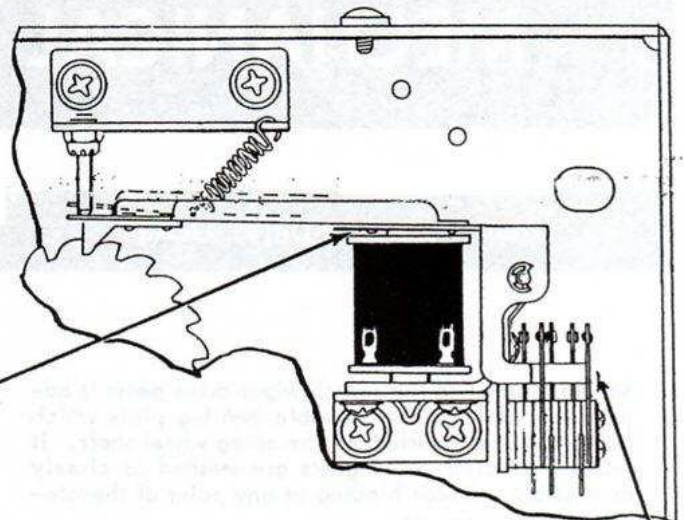
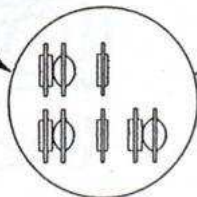
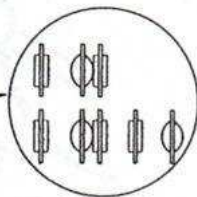
- b. Turn the stop screw down until the sprag tooth is fully engaged between two teeth of the sprag wheel.
CAUTION: Do not over tighten the screw.

- c. Back out screw exactly one complete turn. At this point examine the sprag relay contacts which should be actuated as shown.

- d. Back out stop screw exactly one-half turn more. The contacts should not be actuated.
NOTE: If contacts are not as described in steps "c" and "d" adjustments should be made by bending the fixed (non-moving) blade.

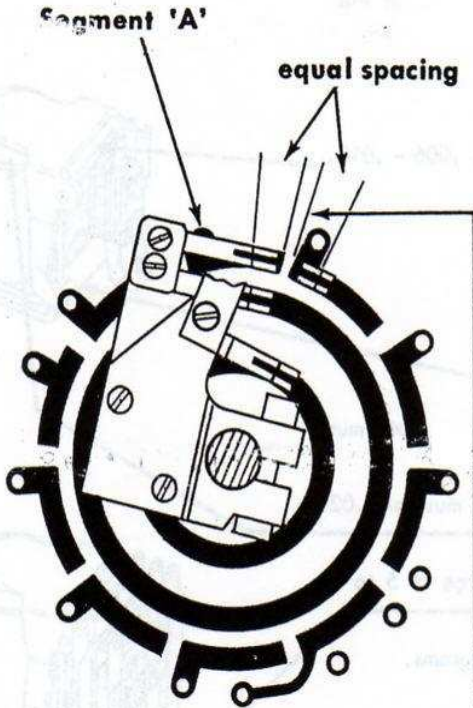
- e. Back out the stop screw to a point where the sprag tooth barely drags on the tops of the sprag wheel teeth as the wheel is rotated.

- f. Back out the stop screw an additional one-quarter turn.



WIPER ARMS

NOTE: ADJUST THE NUMBER WIPER FIRST.

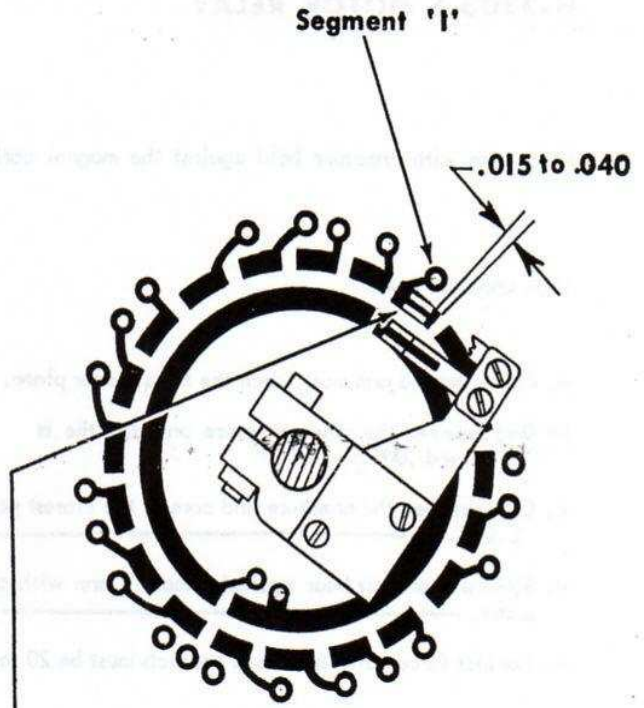
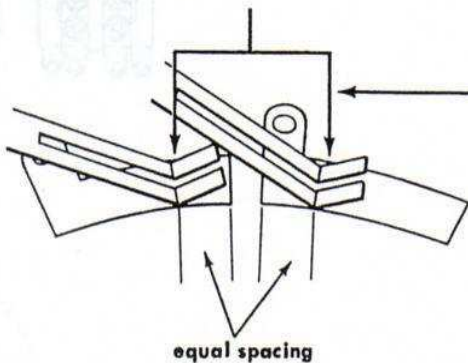


2. LETTER WIPER

The spacing between the wiper arm hub and the phenolic plate must be $\frac{3}{16}$ inch.

With the number search wiper in the number one position and the sprag tooth seated in the teeth of the sprag wheel, the rotational position of the letter wiper arm must be such that the two outside letter wiping blades are making contact with two separate segments.

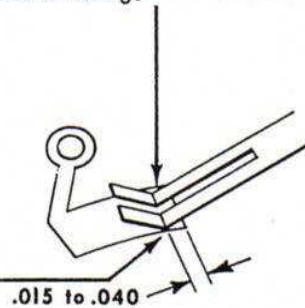
The point of contact of each blade must be equally spaced from the nearest edge of the respective segments.



1. NUMBER WIPER

The spacing between the extruded wiper arm hub and the commutator plate must be $\frac{3}{16}$ inch.

The rotational position of the arm must be such that when the sprag tooth of the armature is seated in the teeth of the sprag wheel, the point of contact of the wiping blade is $.015$ to $.040$ inch from the trailing edge of the particular segment upon which the blade is resting.



RELAY ADJUSTMENT DATA

H-8000-D CONTROL RELAY

H-3303-E MOTOR RELAY

Hinge gap with armature held against the magnet core is .006 - .010.

With armature open:

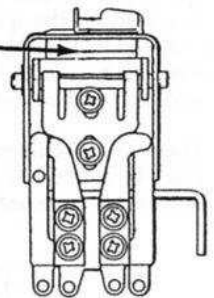
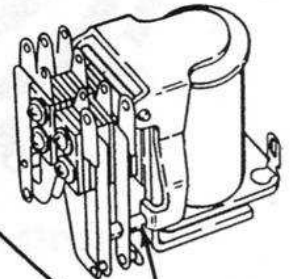
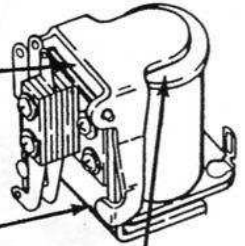
- a. One armature arm must touch the brass spacer plate.
- b. Gap between the other armature arm and the brass spacer plate must not exceed .005.
- c. Gap between the armature and core at the closest point must be .021 \pm .003.
- d. Blade pusher must bear against armature arm with a force of 5 to 50 grams.
- e. Contact force between closed contacts must be 20 to 30 grams.

With a .007 shim between the armature and magnet core the normally open contacts must close.

With a .011 shim between the armature and magnet core and the armature held against it, the normally closed contacts must open.

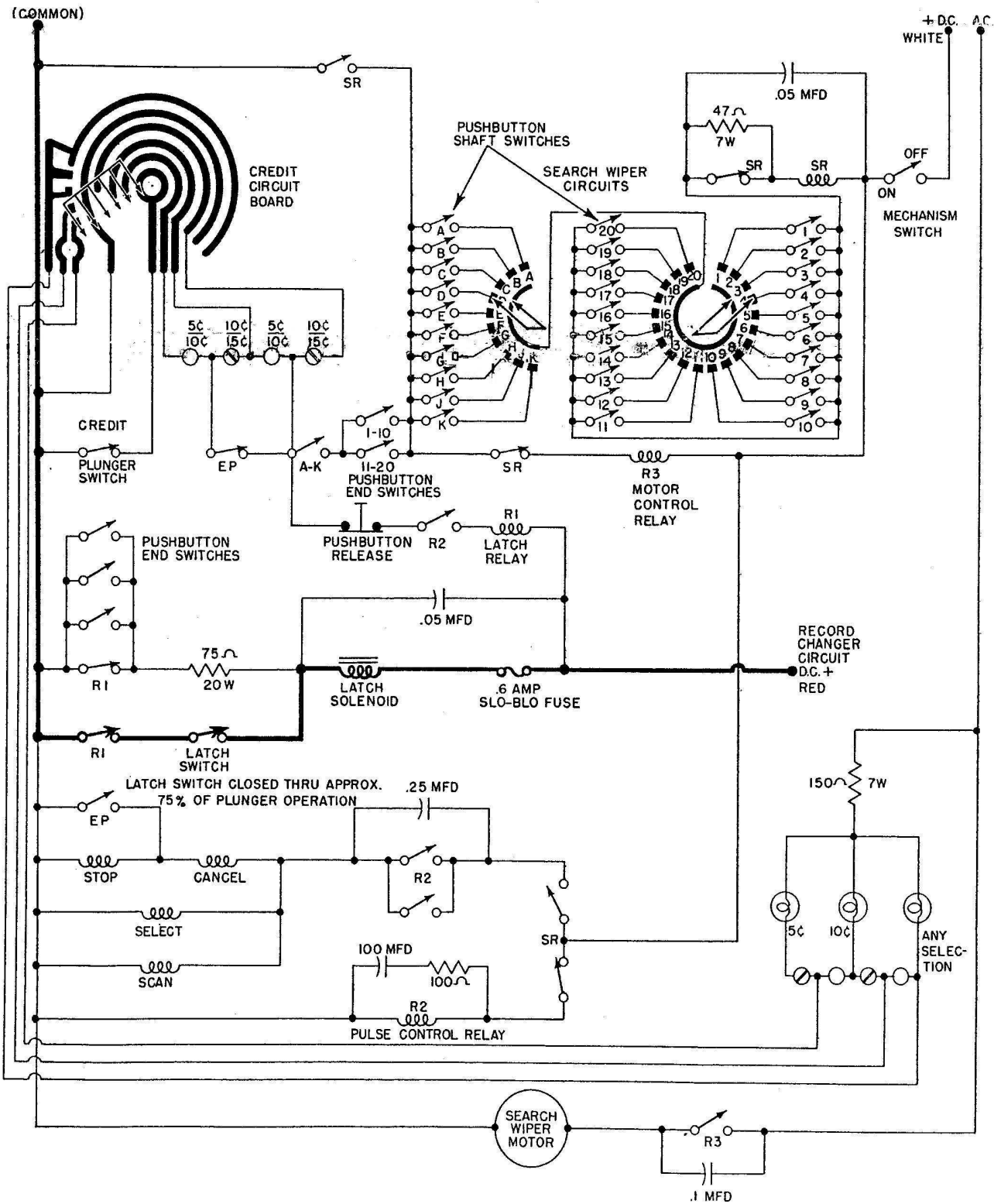
H-8050- SPRAG RELAY

Hinge gap with armature held against magnet core is .001 to .006. Contact pressure between normally closed contacts must be 8 to 14 grams. See page 14 for proper contact spacing.



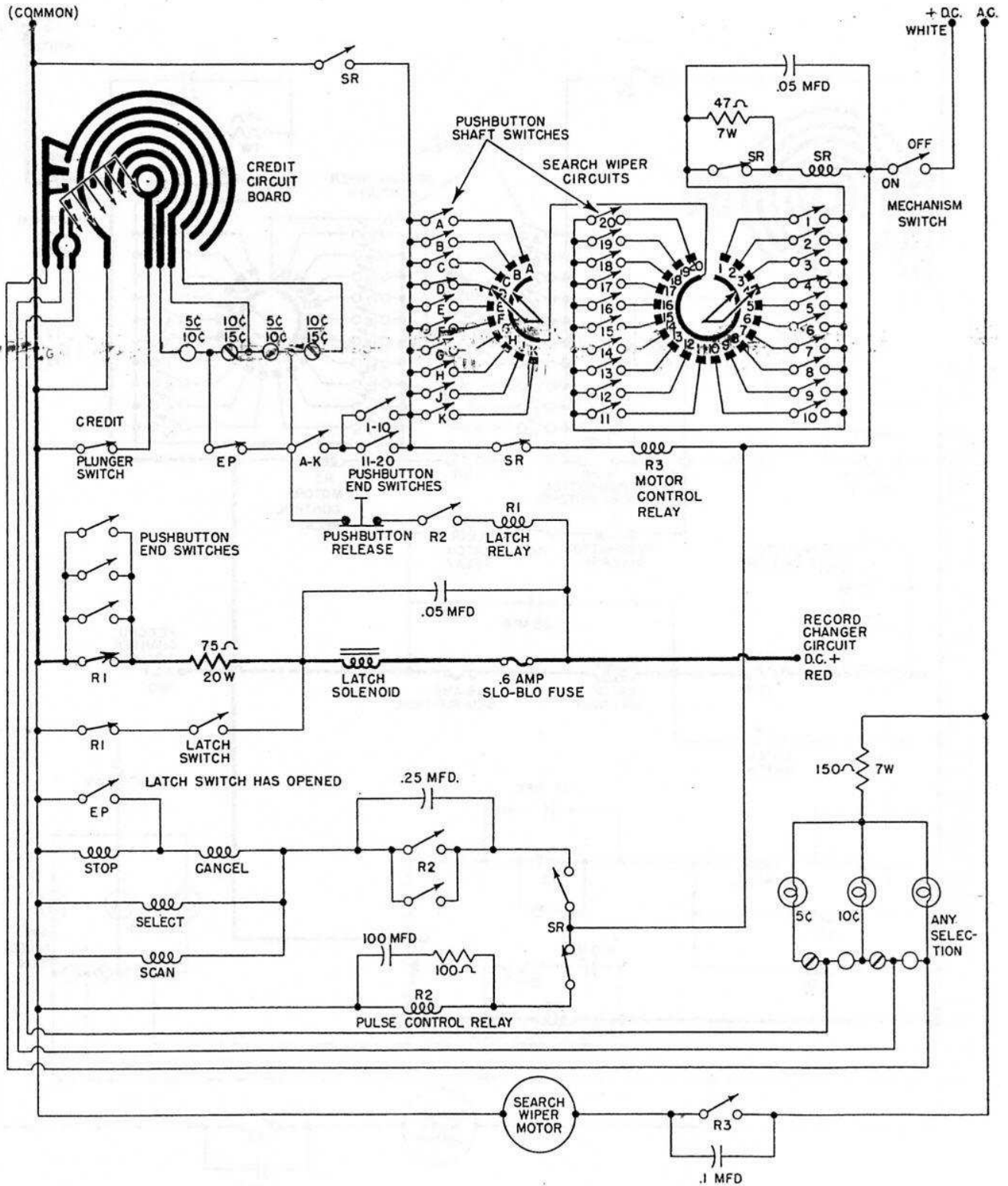
INSTANT PHONOGRAPH IS PLUGGED IN, NO-CREDIT, LATCH SOLENOID IS ENERGIZED THRU LATCH SWITCH.

2



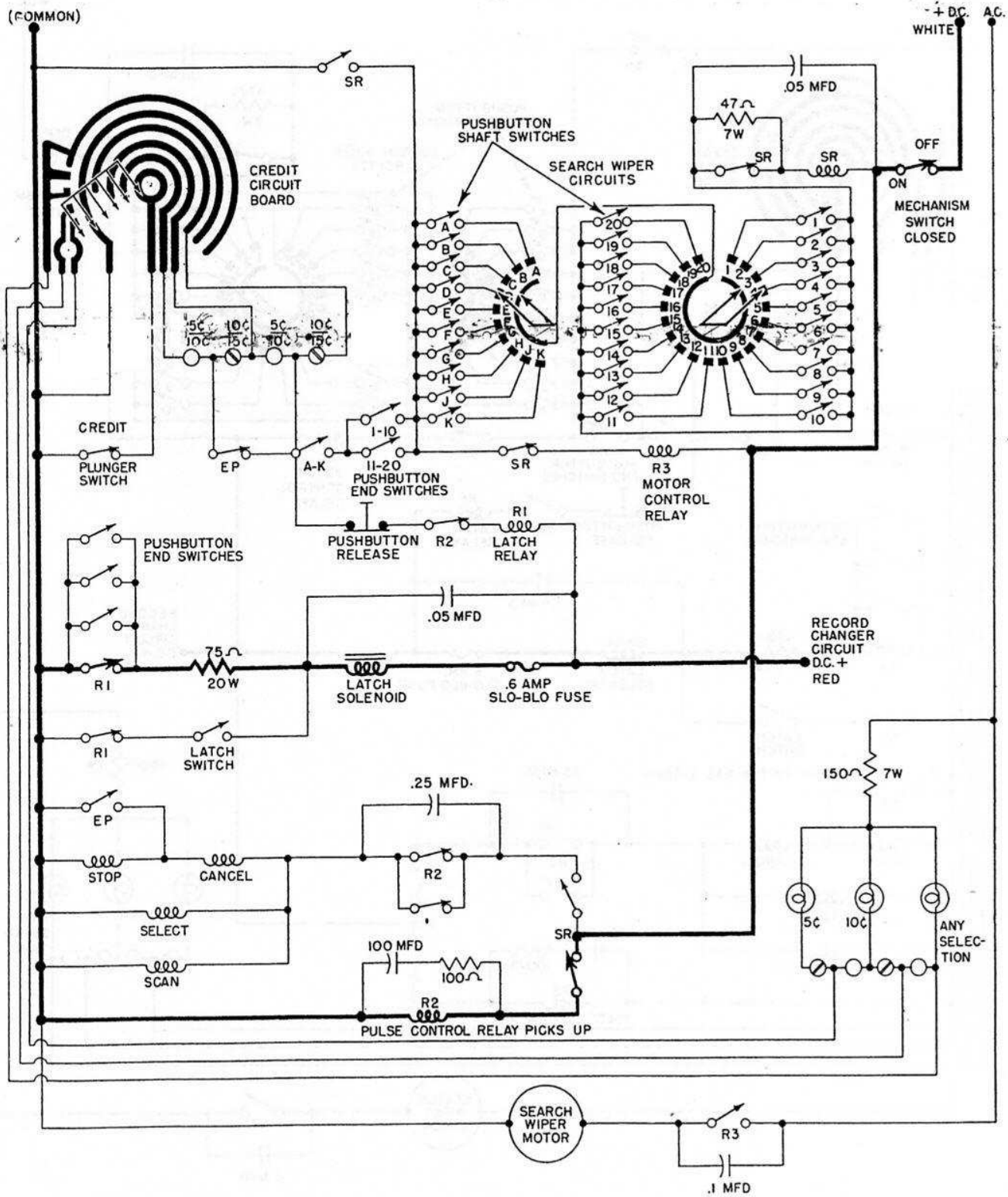
AFTER PHONO HAS BEEN PLUGGED IN. NO-CREDIT. LATCH SOLENOID IS PICKED UP AND HELD IN THRU DROPPING RESISTOR (CURRENT LIMITED).

3



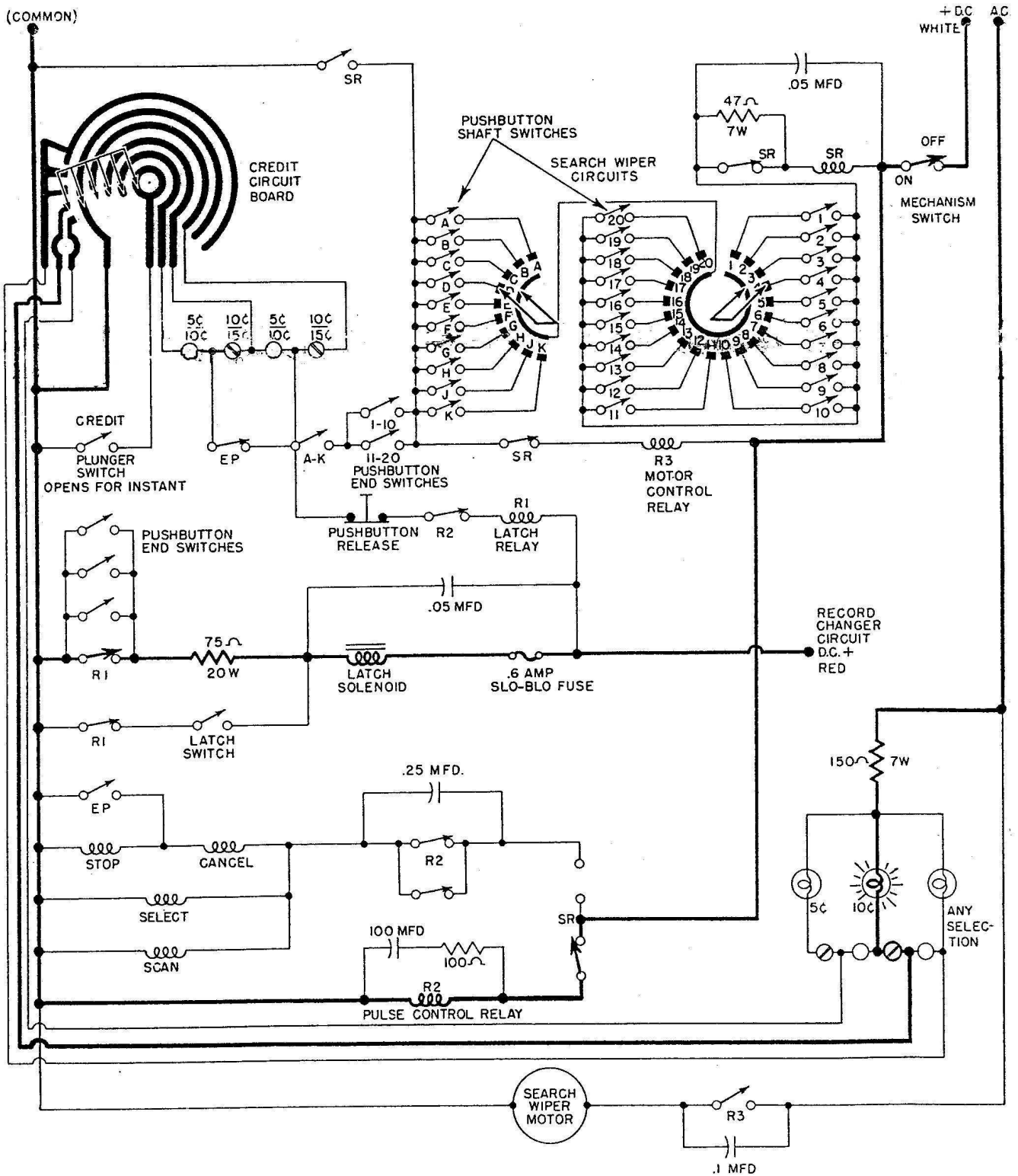
MECHANISM SWITCH TURNED ON PICKS UP R₂ RELAY AND CLOSES ASSO-
CIATED CONTACTS. NO-CREDIT.

4



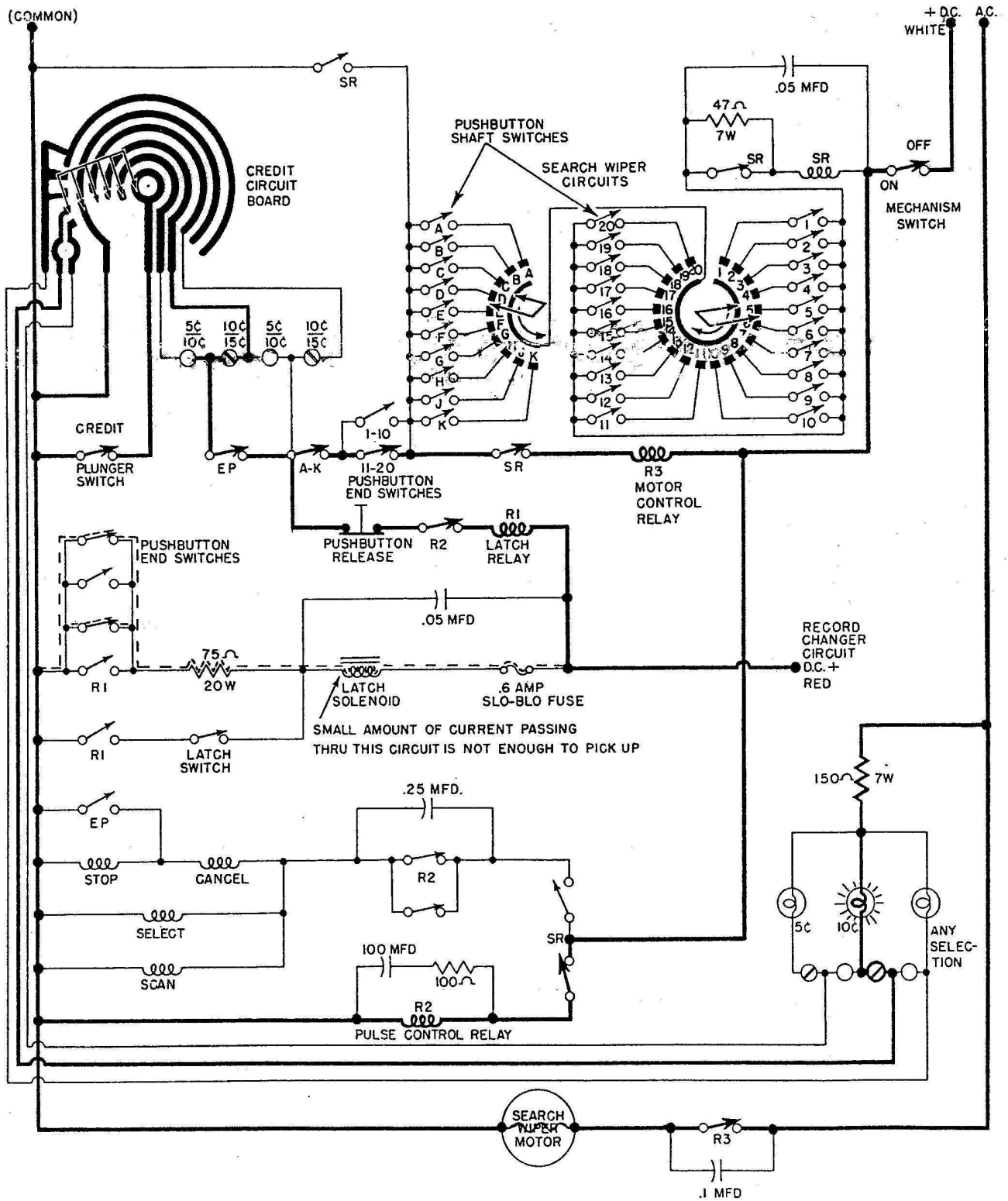
INSTANT CREDIT IS ESTABLISHED (10¢). CREDIT PLUNGER SWITCH OPENS - 10¢ CREDIT CIRCUIT CLOSSES.

5



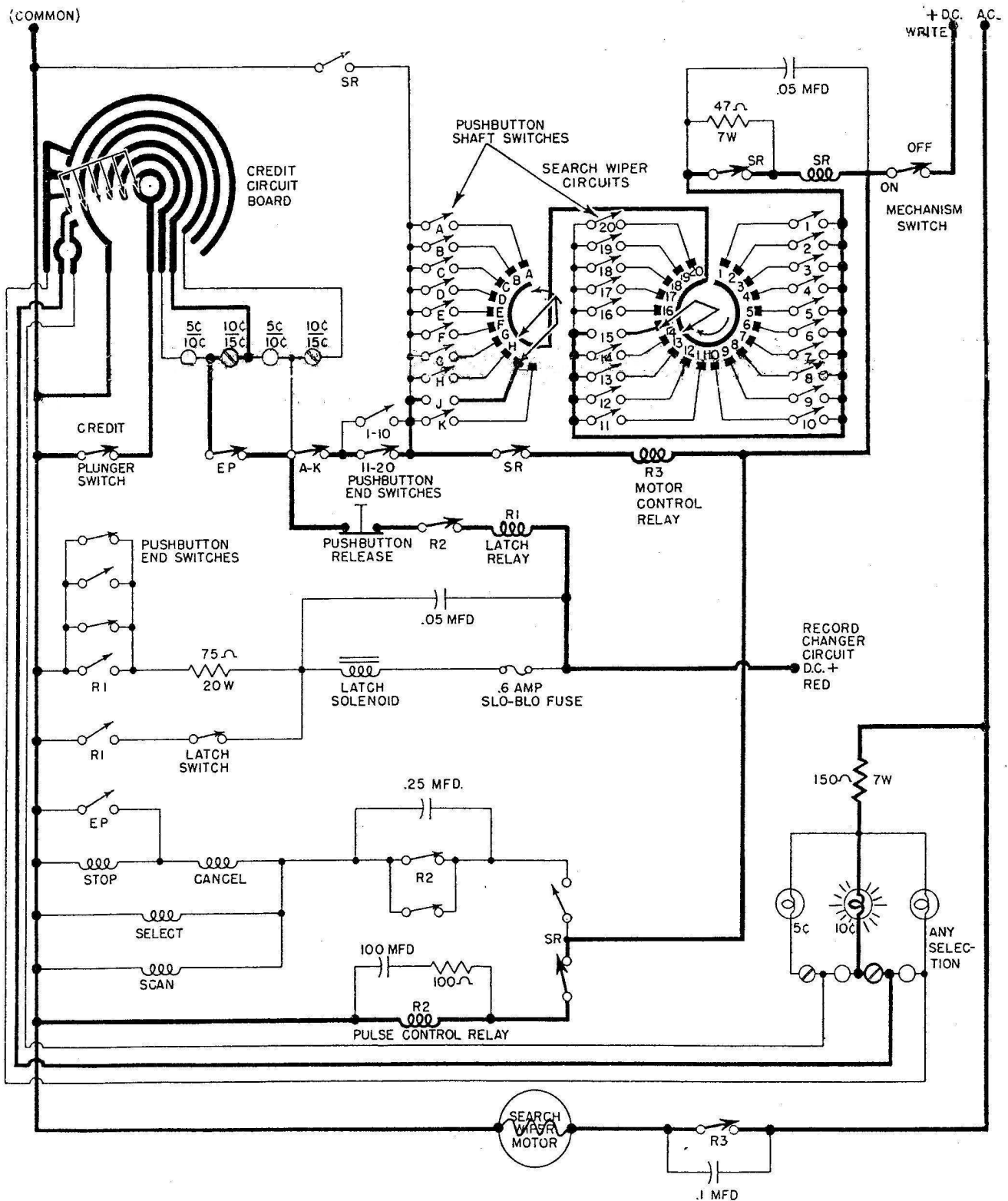
INSTANT PUSHBUTTON SHAFTS ARE DEPRESSED TO MAKE A SELECTION (J-15).
SEARCH MOTOR IN RECEIVER IS STARTED THRU R₃ CONTACTS.

7



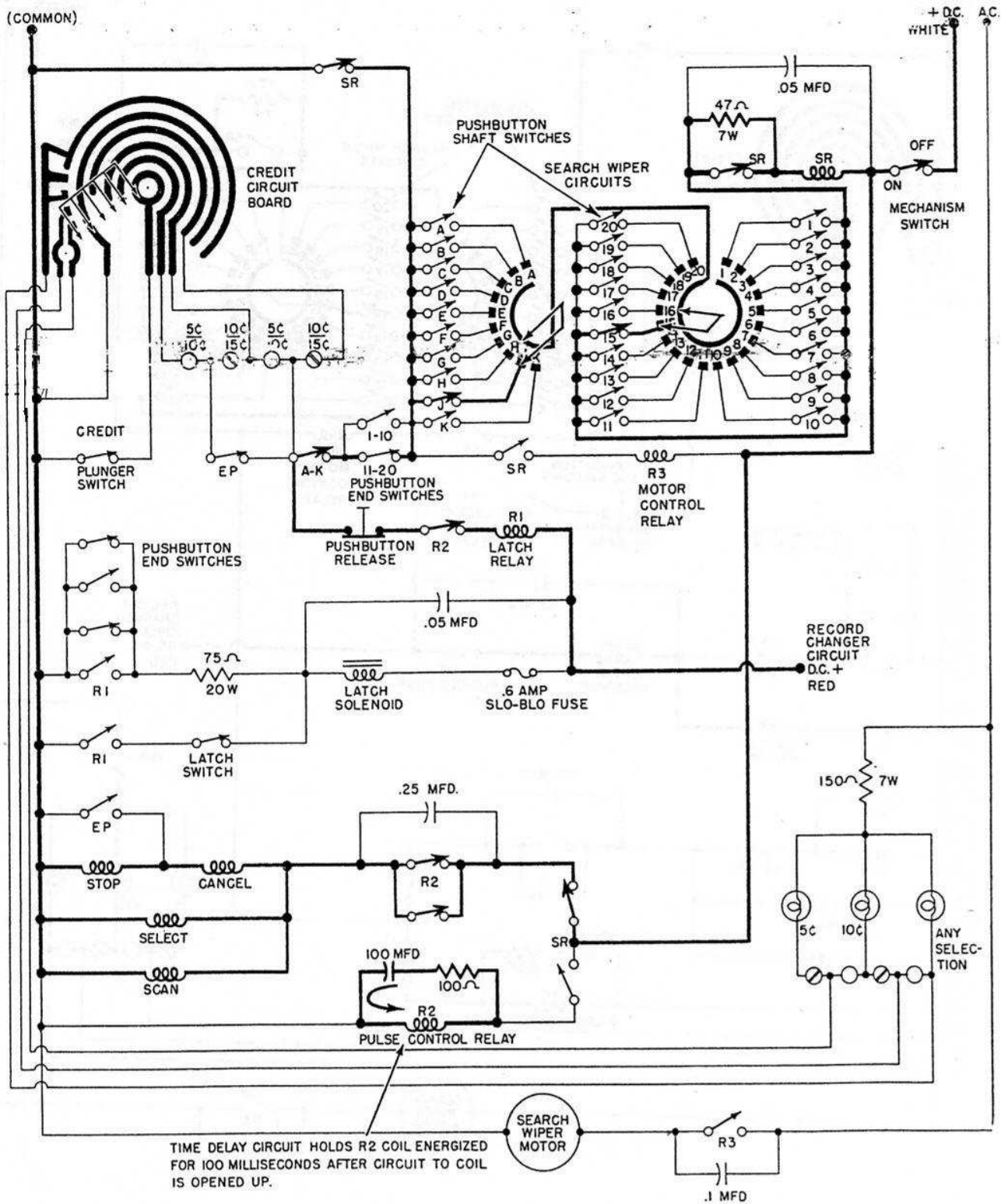
INSTANT SPRAG CIRCUIT IS INITIATED.

8



INSTANT SPRAG RELAY PICKS UP.

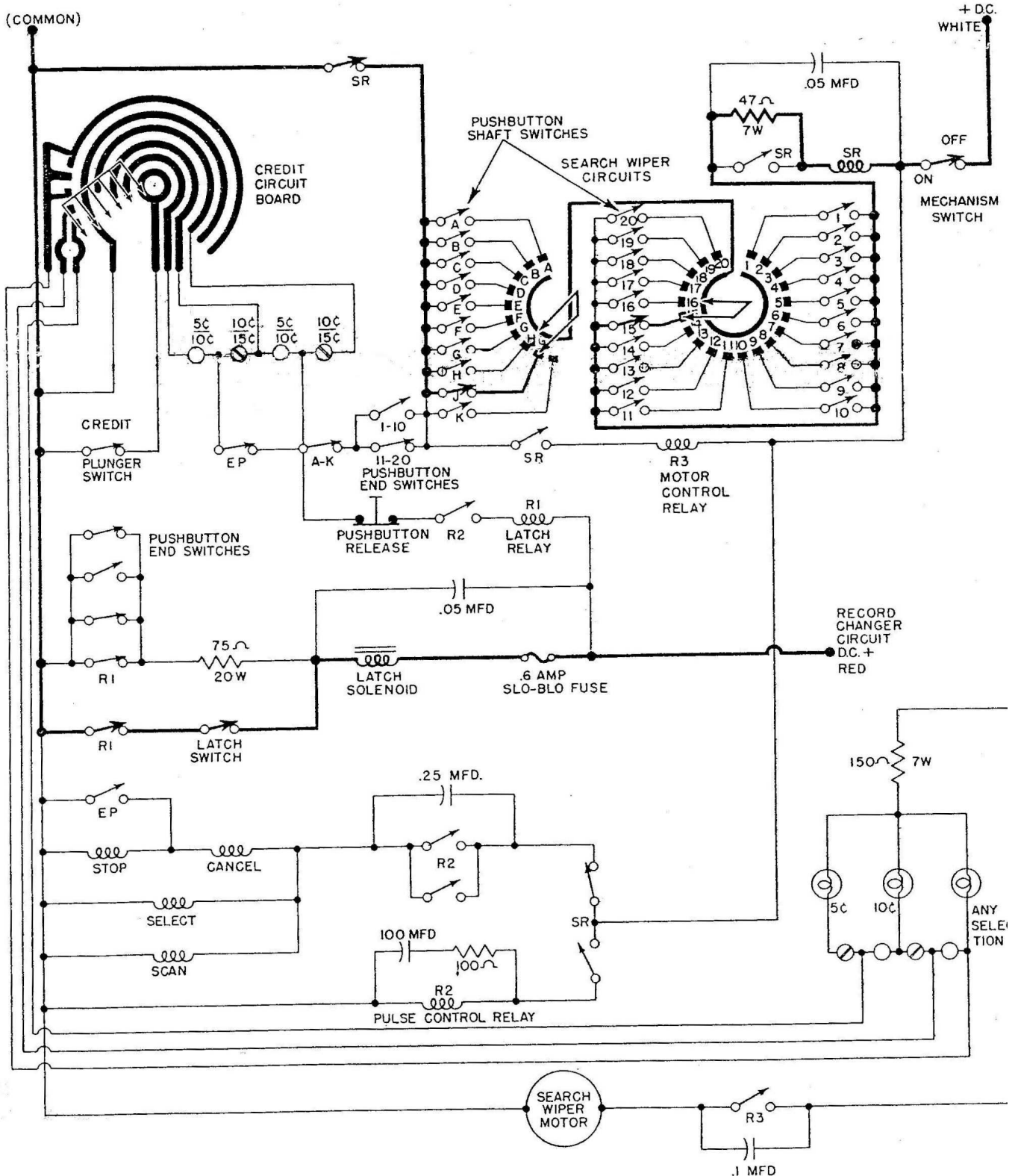
9



Continental 2

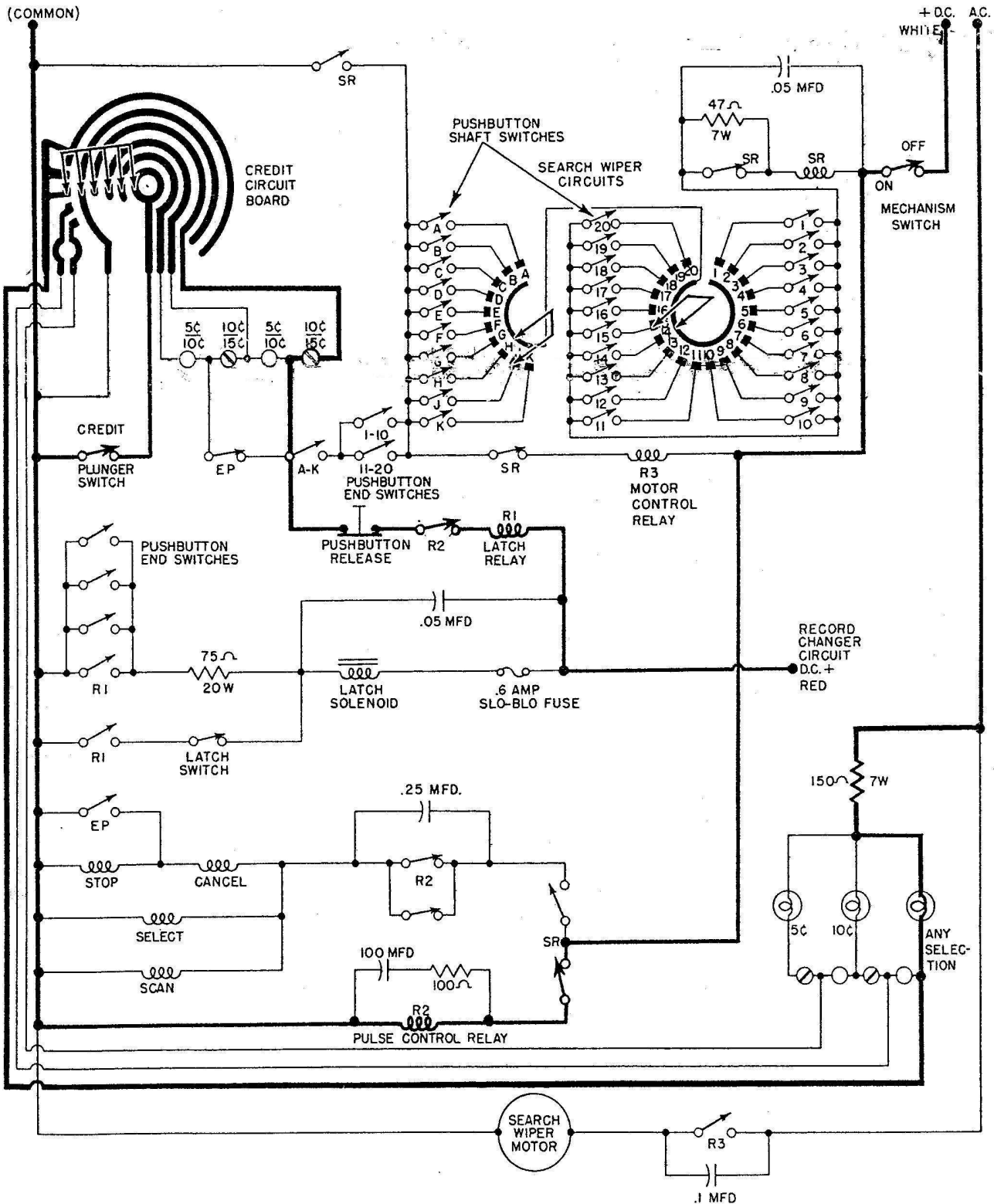
100 MILLISECS. AFTER SPRAG RELAY HAS PICKED UP, R₂ DROPS OUT WHICH IN TURN DROPS OUT R₁, THUS ENERGIZING THE LATCH SOLENOID.

10



IF ADDITIONAL CREDIT IS LEFT ON THE MACHINE OR MORE CREDIT IS PUT ON, THE CIRCUIT REVERTS TO THE CONDITION AS SHOWN IN STEP 6 READY TO MAKE NEXT SELECTION.

12





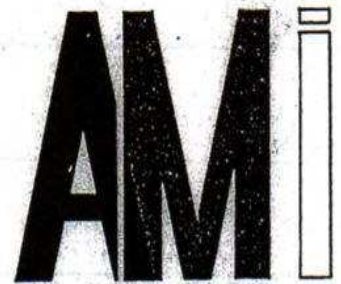
SOUND SYSTEM SERVICE MANUAL

Continental 2

This Printing 1986

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Arlington, WA 98223

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AUTOMATIC MUSIC, INC.

GENERAL

The Continental II Stereo Round Phonograph is a completely self contained stereo phonograph. Auxiliary remote speakers are not necessary to obtain full stereophonic reproduction. The speakers, speaker orientation within the cabinet and associated matrix circuitry result in a speaker system in which the sound is projected from the sides and front of

the cabinet to form the stereo sound image. The pick-up cartridge and amplifier are essentially unchanged from that used in the Model K, Continental I and Lyric phonographs. Adjustment of the High Frequency Range control, the Fidelity Equalizer control, the Channel Balance control and the Hum Balance controls continue unchanged.

INSTALLATION INSTRUCTIONS

The sound pattern from a Stereo Round phonograph is different from that of a conventional phonograph; hence this must be taken into consideration when installing the phonograph. These differences exist in both monaural and stereo reproduction.

The sound pattern of a conventional phonograph is non-

directional at low frequencies and increasingly directional at high frequencies. Thus in the important mid to high frequency range the sound is concentrated in front of the phonograph. Thus the phonograph must be "aimed" at the area to be covered. Areas to the side must frequently be covered by remote speakers to get adequate coverage. (See Figure 1.)

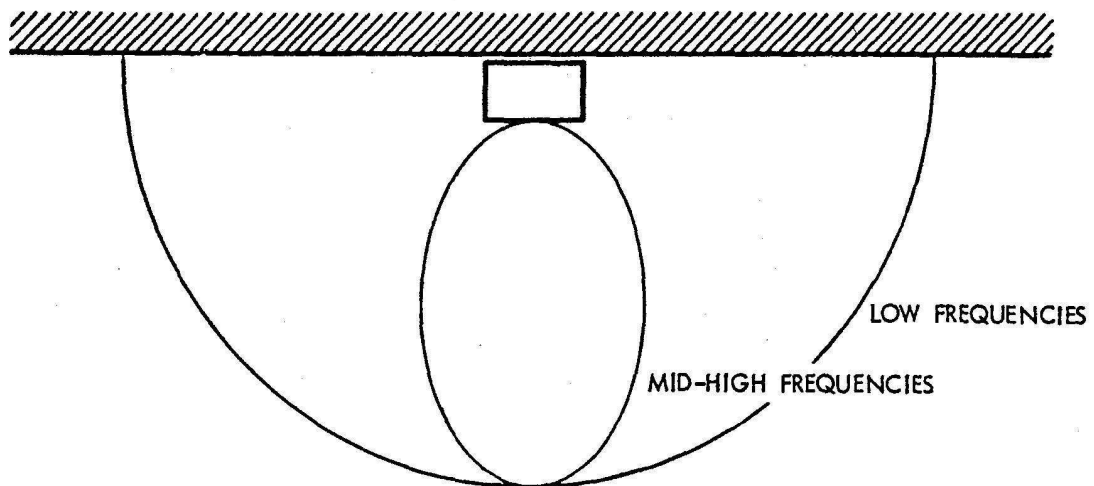


FIGURE 1 SOUND PATTERN - CONVENTIONAL PHONOGRAPH

INSTALLATION INSTRUCTIONS

In the Stereo Round system, the nondirectional low frequencies are from the "woofer" located in the front of the phonograph. Mid to high frequencies are from speakers located in each side and in the front. Thus sound is projected from both sides and from the front of the phonograph. This coverage holds for both monaural and stereo reproduction. In

stereo reproduction, the left channel sound is projected from the left side of the phonograph when facing the phonograph. Similarly the right channel sound is projected from the right side. The center of the sound image is filled in by sound from the front of the phonograph. (See Figure 2.)

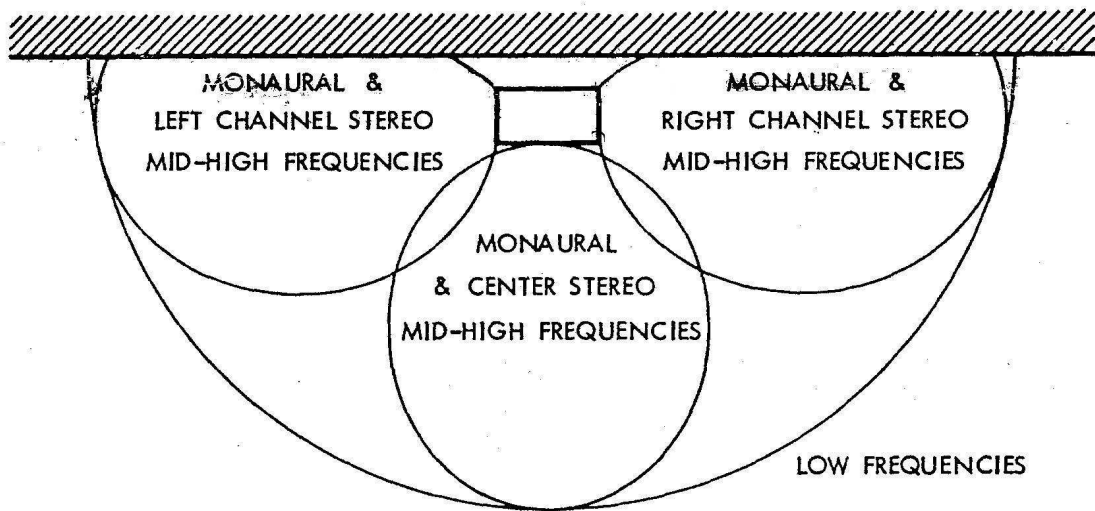


FIGURE 2 SOUND PATTERN - STEREO - ROUND PHONOGRAPH

INSTALLATION INSTRUCTIONS

Wall surfaces adjacent to and opposite each side speaker will reflect considerable sound into the listening area unless the phonograph is located outdoors or in an unusually large room. Sound images will be formed at these wall surfaces much as visual images are formed with mirrors. Thus, the phonograph should be centered between walls opposite the sides of the phonograph in order to establish a balanced sound image. (See Figure 3.) The location of the phonograph along the middle of the long wall instead of the middle of the short wall in a rectangular room is recommended because sound distribution will be more uniform

and the effective stereo listening area will be greater. This can be seen by comparing Figure 3 with Figure 4. In some installation, the phonograph may have to be located as in Figure 4. The results would not be disastrous - rather it would be like having the band located in that end of the room. The width of the stereo image is approximately equal to the distance between the walls on each side of the phonograph. Although the phonograph has been shown against a wall, it can be placed away from the wall without loss of effect.

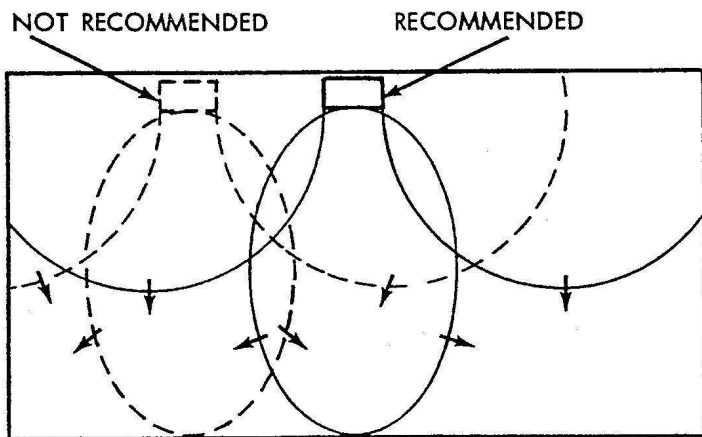


FIGURE 3 CENTERED PLACEMENT - LONG WALL

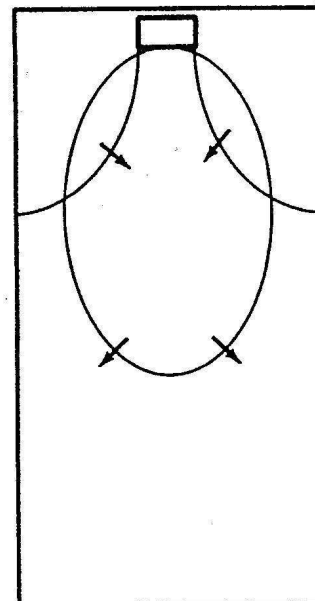


FIGURE 4 CENTERED PLACEMENT - SHORT WALL

INSTALLATION INSTRUCTIONS

The phonograph can be installed in the corner of a room with good effect especially if it can be pulled out of the corner a few feet so as to enlarge the stereo image. (See Figure 5.)

The side speakers have been placed as high as possible within the cabinet so as to project the sound at ear level. Obstructions in front of the side speakers will reduce the effectiveness of the Stereo Round system. The larger the obstruction and the closer the obstruction the less will be the effectiveness of the system. Obstructions in front of the phonograph will have much less effect upon the overall performance of the system.

In rare cases where the only place for the phonograph is in an alcove or where the side speakers are otherwise blocked off, the Stereo Round system can not be used. In these

cases, a conventional stereo installation can be made by using two remote speakers and by disconnecting the phonograph speakers at the amplifier. If the phonograph is located centrally between the remote speakers, then the front speakers can be left connected and used with the remote speakers as the middle speaker of a three speaker stereo installation. The side speakers should be disconnected at the amplifier (Black, Blue, Yellow, Brown leads). Connect E1 on the main amplifier chassis (left channel) to E1 on the left EX-600 AMI Remote Speaker. Also connect E6 (same amplifier) to E3 (same remote speaker). Connect E1 on Add-on power amplifier (right channel) to E3 on the right EX-600 AMI Remote Speaker. Also connect E1 (same amplifier) to E1 (same remote speaker). Set each remote speaker for 10 watts.

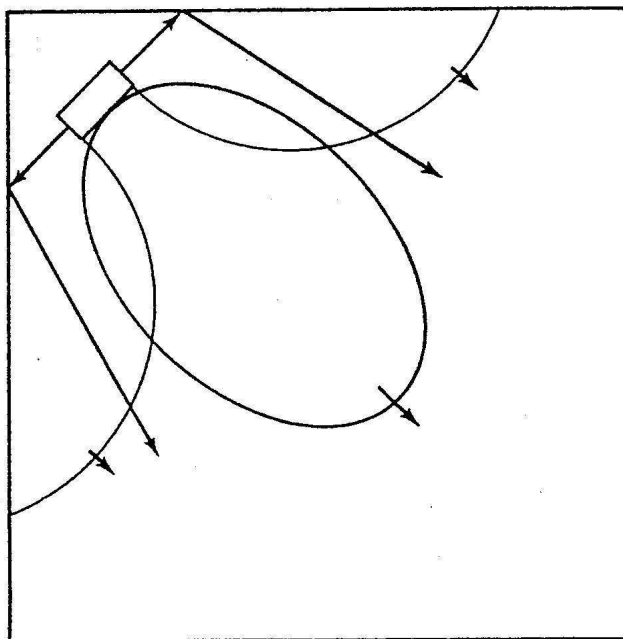


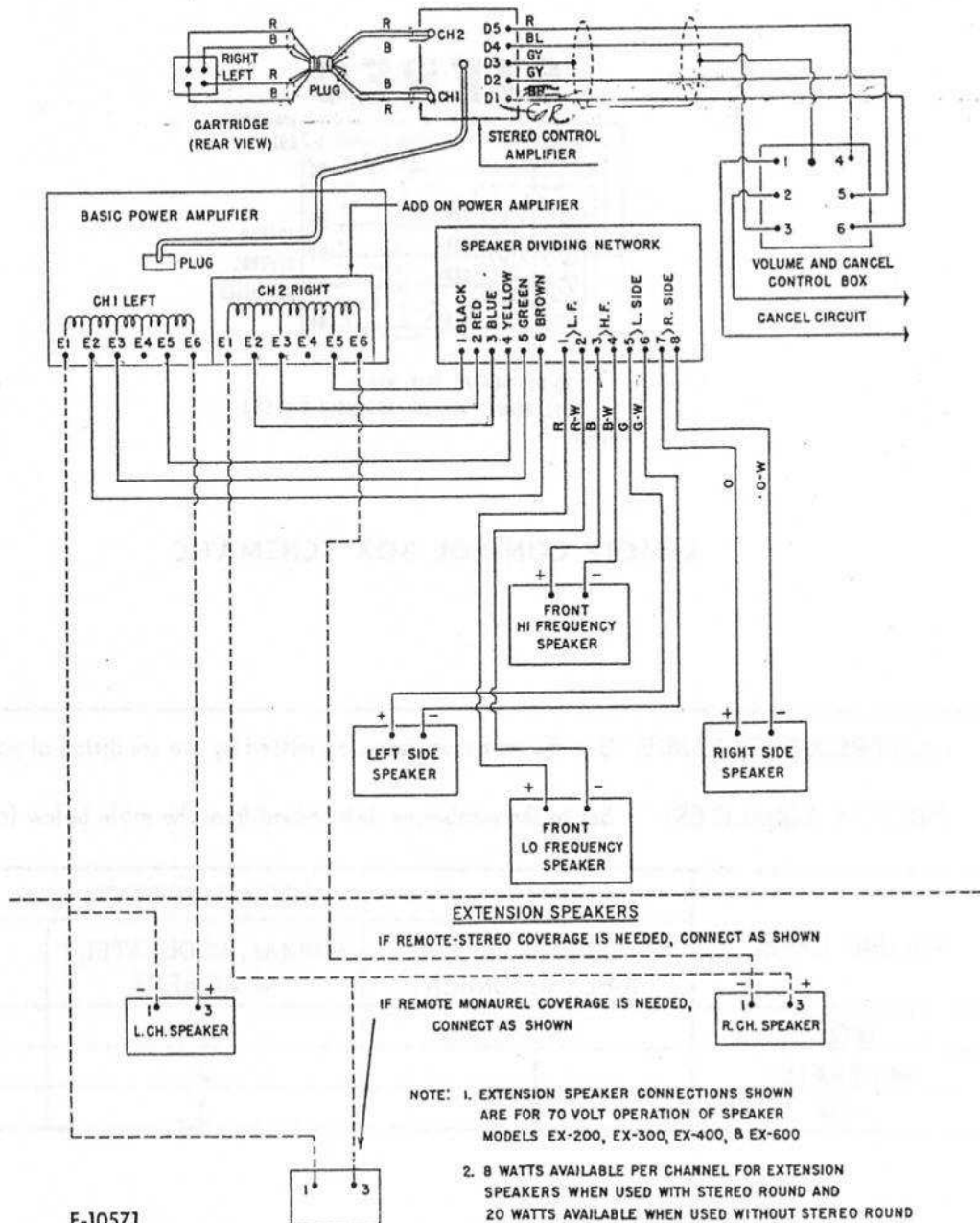
FIGURE 5 CORNER PLACEMENT

REMOTE SPEAKER OPERATION WITH STEREO ROUND

Where sound coverage is required in rooms or areas not covered by the Stereo Round phonograph, remote speakers should be installed in these areas and connected to the Stereo Round phonograph. Two remote speakers are required for stereo coverage in a given area and should be connected as indicated on the chart. (See Figure 6.) Where only monaural sound is required, one or more remote speakers can be connected as indicated on the chart. (See Figure 6.)

Note that the remote speakers in this case are connected to both amplifiers - each amplifier furnishes one half the power indicated by the power setting on the speaker. 8 watts per channel is available for remote speakers when monaural and stereo records are played. If only monaural records are used in the phonograph, 12 watts per channel is available for remote speakers.

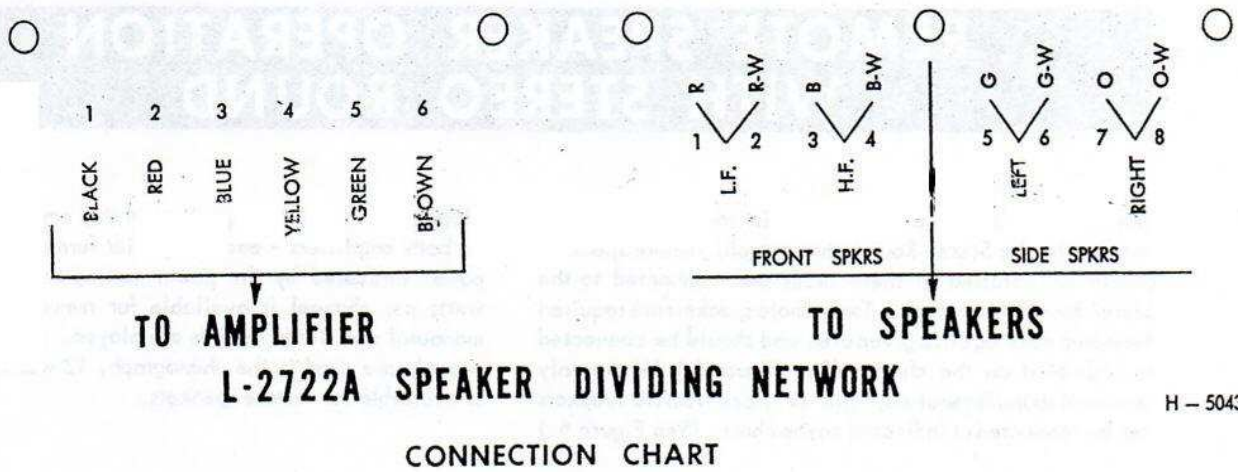
STEREO ROUND SOUND SYSTEM CHART



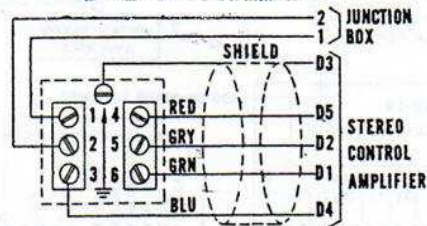
F-10571

FIGURE 6

NOTE: PAGE SSM-11 THE LARGE FOLD-OUT AMPLIFIER SCHEMATIC CHART IS SEPARATELY ENCLOSED.—AMR Publishing Co.



STEREO



DO NOT REMOVE THIS BOX -
 USE REMOTE CONTROL ASSEMBLY H-3037 A
 F-10581

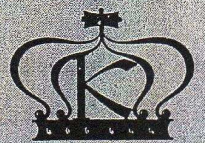
REMOTE CONTROL BOX SCHEMATIC

HIGH FREQUENCY RANGE: Use the maximum range permitted by the condition of your records.			
FIDELITY EQUALIZER: Set to the number as determined from the table below for best results.			
VOLUME LEVEL	ROOM ACOUSTICS		
	DEAD or SOFT, HIGHLY ABSORBENT	NORMAL, MODERATELY ABSORBENT	LIVE or HARD NON-ABSORBENT
HIGH	1	1	2
MODERATE	1	2	3
LOW	2	3	3

CHART USE OF AMPLIFIER CONTROLS

R-1473
CREDIT UNIT
and
PRICING
SYSTEM
Service
Manual

MODEL



AUTOMATIC MUSIC, INC.

Lyric

AND

Continental

PRICE-OF-PLAY SYSTEM USING R-1473 CREDIT UNIT AND THE F-7829 CREDIT CIRCUIT BOARD

REMOVING THE CREDIT UNIT FROM THE PHONOGRAPH

1. Pull off snap-cover. Do not twist.
2. Slide edge connector downward until it slips off the lower edge of the circuit board.
3. Slide rubber grommet out of back-plate slot.
4. Loosen two clamping screws at the mid point on each side of the back plate.
5. Lift unit until pins at top corners of the back plate clear the slots in the mounting bracket.
6. The clamp screws will now pass through the keyholes and the Credit Unit can be removed from the mounting bracket.

PRINCIPLE OF OPERATION

GENERAL

The credit unit is designed to operate with either a 3-coin slug rejector or a half dollar, 4-coin rejector. With the 3-coin rejector, the credit unit operates on nickels, dimes and quarters. With the 4-coin rejector, it can operate on nickels, dimes and quarters; dimes, quarters and half dollars; or, with proper setting of the slug rejectors nickel diverter, will operate on nickels, dimes, quarters and half dollars.

It is accumulative with provisions for dual price of play, and will store up to \$3 worth of credit. Credits are stored thru the action of a credit solenoid, plunger, and a pawl and ratchet wheel.

Credits are removed by means of a second (cancel) solenoid, plunger and a pawl and ratchet wheel. Both wheels are keyed to the same shaft. Rotating the ratchet wheels in one direction establishes credit. Rotating the ratchet wheels in the opposite direction removes credit. A ball-type detent holds the wheels in any rotational position.

ESTABLISHING CREDITS

Credit Solenoid

Each coin switch is connected to a separate circuit in the credit unit thru the credit circuit board. When the 3-coin slug rejector is used, the 25c coin switch connects directly to the *credit solenoid*. When this credit solenoid is energized, it will cause the credit wheel (ratchet wheel) to rotate.

Credit Stop Screw

The position to which the ratchet wheel will rotate is determined by the position of the *credit stop screw*. The credit stop screw may be in any one of 8 holes (marked 2 thru 9). These hole numbers correspond to the number of teeth that the credit stop screw will allow the wheel to advance.

Stop Solenoid (Adjustable)

The 10c coin switch is also connected to the *credit solenoid* but thru another solenoid (stop solenoid) whose position is movable. When the 10c coin switch completes the circuit thru both these solenoids, the tip of the *stop solenoid plunger* moves into the path of the stop arm. Therefore, as the *main credit solenoid* causes the credit wheel to move, it will be stopped at a position less advanced than the position it would have if stopped by the *credit stop screw*. This position (i.e. the number of teeth put on) depends upon the location of the *stop solenoid*. There are three locations (marked 2, 3, & 4) for the *adjustable stop solenoid*. The marking will be found at the screw holes on the left side of the frame. These markings correspond to the number of teeth which the stop solenoid will allow the ratchet wheel to advance.

Fixed Stop Solenoid (One Step)

The 5c coin switch is connected to the *credit solenoid* thru the *fixed stop solenoid*. Operation, when the unit is energized thru the 5c switch, is the same as when it is energized thru the 10c coin switch except that since the position of the solenoid is

not movable, the rotation of the ratchet wheel is always limited to *one tooth*.

When a 4-coin, half dollar rejector is used, the coin switches may be connected in the following combinations:

- 5c — Fixed stop solenoid
- 10c — adjustable stop solenoid
- 25c — credit solenoid (direct)
- 50c — auxiliary 50c circuit
- 5c — } fixed stop solenoid
- 10c — }
- 25c — adjustable stop solenoid
- 50c — credit solenoid (direct)

REMOVAL OF CREDITS (Teeth)

Cancel Solenoid

As each selection is made, the appropriate amount of credit must be removed. This is accomplished by rotating the ratchet wheel a certain number of teeth in the direction opposite to putting on credit. This opposite rotation is caused by the *cancel solenoid* whose pawl engages the other ratchet wheel.

Cancel Stop Solenoid

The *cancel solenoid* is energized through the *cancel stop solenoid*. The cancel stop solenoid plunger moves into the path of the cancel stop arm. Thus, the number of teeth taken off is determined by the position of the cancel stop solenoid. The *cancel stop solenoid* position is movable to either of two positions marked (1 & 2) on the side of the frame. These correspond to 1 or 2 teeth taken off.

Cancel Stop Screw

If the cancel stop solenoid is intentionally shorted out, it will not provide limiting action on the number of teeth taken off and, in this case, a *cancel stop screw* provides the limiting action. The amount of limiting action (number of teeth) depends upon which of three positions the cancel stop screw occupies. These positions are marked 1, 2, & 3 corresponding to 1, 2, or 3 teeth.

Combined Action of the Cancel Stop Solenoid and Cancel Stop Screw

When a phonograph is programmed for both *Standard and Stereo or Extended Play Selections*, it becomes necessary to remove credit at different rates dependent upon which type of selection is made. This is true unless both Standard and Stereo play selections are offered at the same price-of-play. To differentiate between Standard and Extended play selections, a switch (E.P. Switch) is located at the *letter push-button bank* (or behind the letter wheel in manual machines). Thru levers or cams, this E.P. switch can be caused to close when a selection is made in letter group A or B, and to not close when a selection is made in the other letter groups. Up to 3 groups of two letters each can be made to actuate this E.P. switch.

This E.P. switch is in turn connected so as to short out the *cancel stop solenoid* leaving only the *cancel stop screw* to limit the number of teeth taken off. If, on the other hand, a selection is made which does not operate the E.P. switch (Standard selection), the *cancel stop solenoid* operates and limits the number of teeth taken off to the number indicated by the position the *cancel stop solenoid* occupies. In this way, it is possible to remove credits at two different rates.

CREDIT CIRCUIT BOARD

Inter-connections between the credit unit, coin switches and credit lights are necessary. Variations in these connections are provided by the *Credit Circuit Board*. The location of the nickel-plated screws determines the *value-per-tooth* of credit established and the price-of-play of all selections. Their location also determines the *ratio of pricing* between standard-rate selections and Stereo or E.P. selections. With standard selections priced at 10c, E.P.'s can be priced at 15c; or with Standards priced at 5c, E.P.'s can be priced at 10c. (Standard selections priced at 10c with E.P.'s at 20c requires the same screw location as Standards at 5c, E.P.'s at 10c.) From this it can be seen that E.P.'s can be $1\frac{1}{2}$ or 2 times the price of standard selections.

PRICE OF PLAY COMBINATIONS

In the operation of the credit system, it is the number of teeth taken off per selection that determines the price of play. Furthermore, the ratio of price-of-play between Standard and Premium selections is established by taking off more teeth per E.P. selection made than per Standard selection made. The "take-off" ratio determines how many teeth must be available for taking off. For example, in the price-of-play combination —

STANDARDS

- 1 Play — Dime or 2 nickels
- 3 Plays — Quarter

EXTENDED PLAY

- 1 Play — 15c
- 2 Plays — Quarter

— it is necessary to remove $1\frac{1}{2}$ times as much credit for each E.P. selection made as for each standard selection. The nearest whole numbers with this ratio are 3 and 2; therefore, it will be necessary to take off 2 credits for each standard selection made and 3 credits for each E.P. selection made. It follows that 15c will have to put on 3 credits in order for there to be 3 teeth to take off; therefore, each nickel will have to put on 1 tooth and each dime 2 teeth. Similarly, each quarter must put on 6 teeth.

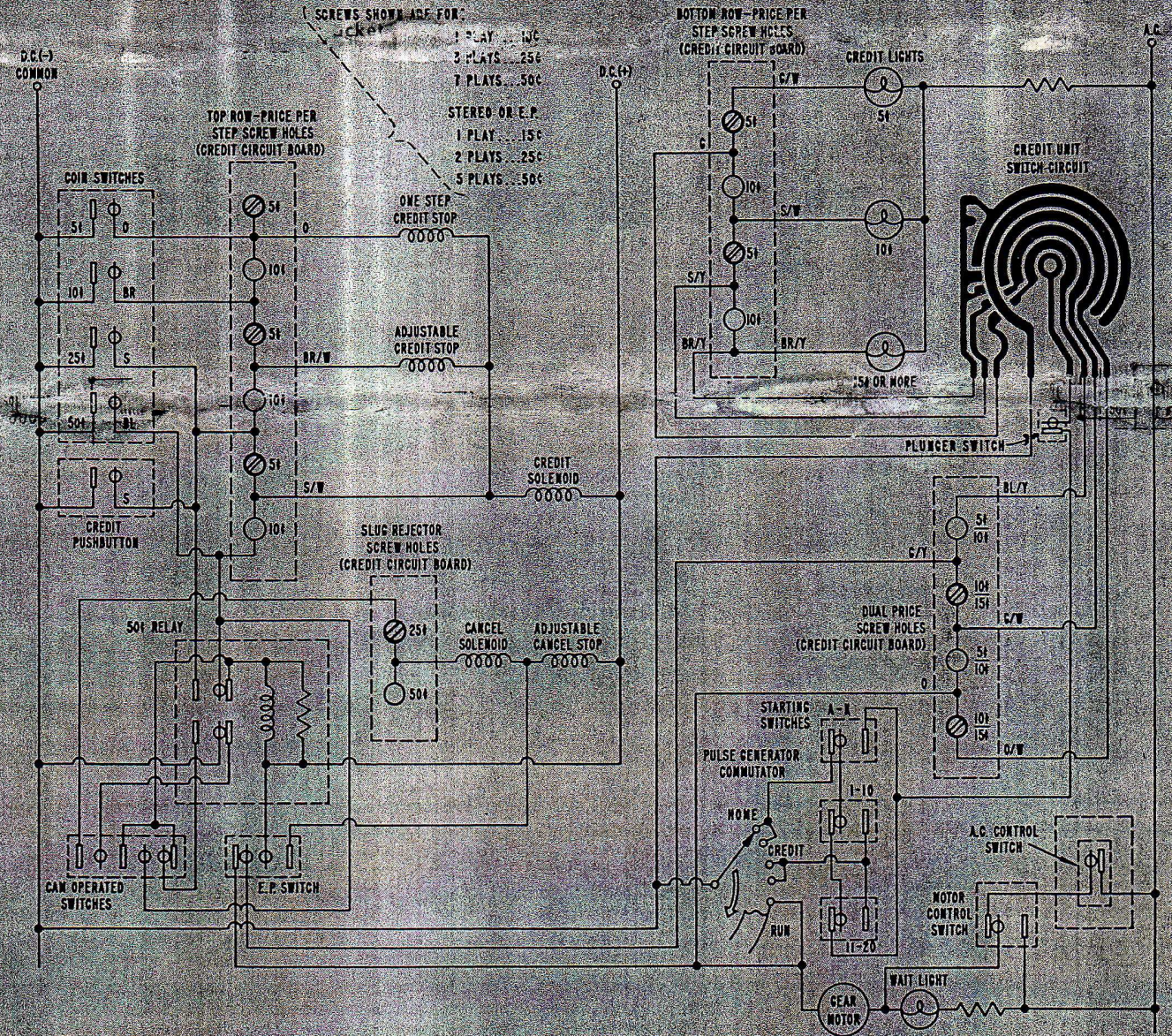
Other combinations can be set up using the same theory.

NOTE:

For any phonograph which is to be set for single-price-play follow step No. 1. If the machine has been equipped for dual-price-play, follow steps No. 1 and No. 2.

1. Put the Cancel Stop Screw in the Credit Unit in the hole number which corresponds to the number of teeth to be removed when a selection is made. Put the Cancel Stop Coil in slot No. 2. The number of teeth taken off will then be controlled by the Cancel Stop Screw exclusively.
2. By-pass the normally-closed contacts of the E.P. switch by installing an extra screw in the Credit Circuit Board. Always put this screw between the two screws in the "Dual Price Play" section so there will be three screws in a row. One of the two nickel-plated upper mounting screws can be used for this purpose.

CREDIT SYSTEM - ELECTRICAL



CREDIT SYSTEM - AUTOMATIC

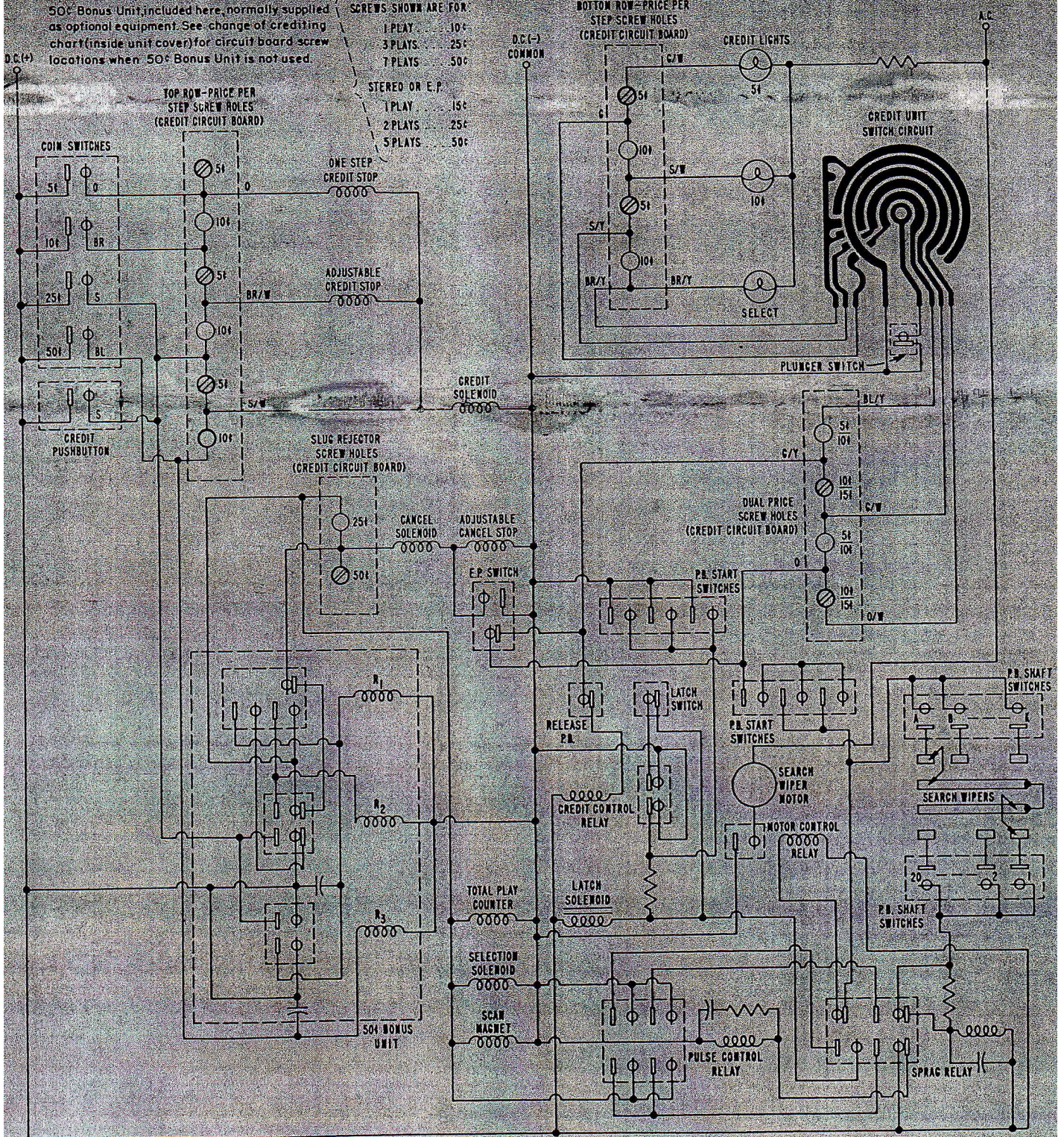
50¢ Bonus Unit included here, normally supplied as optional equipment. See change of Crediting chart (inside unit cover) for circuit board screw locations when 50¢ Bonus Unit is not used.

SCREWS SHOWN ARE FOR

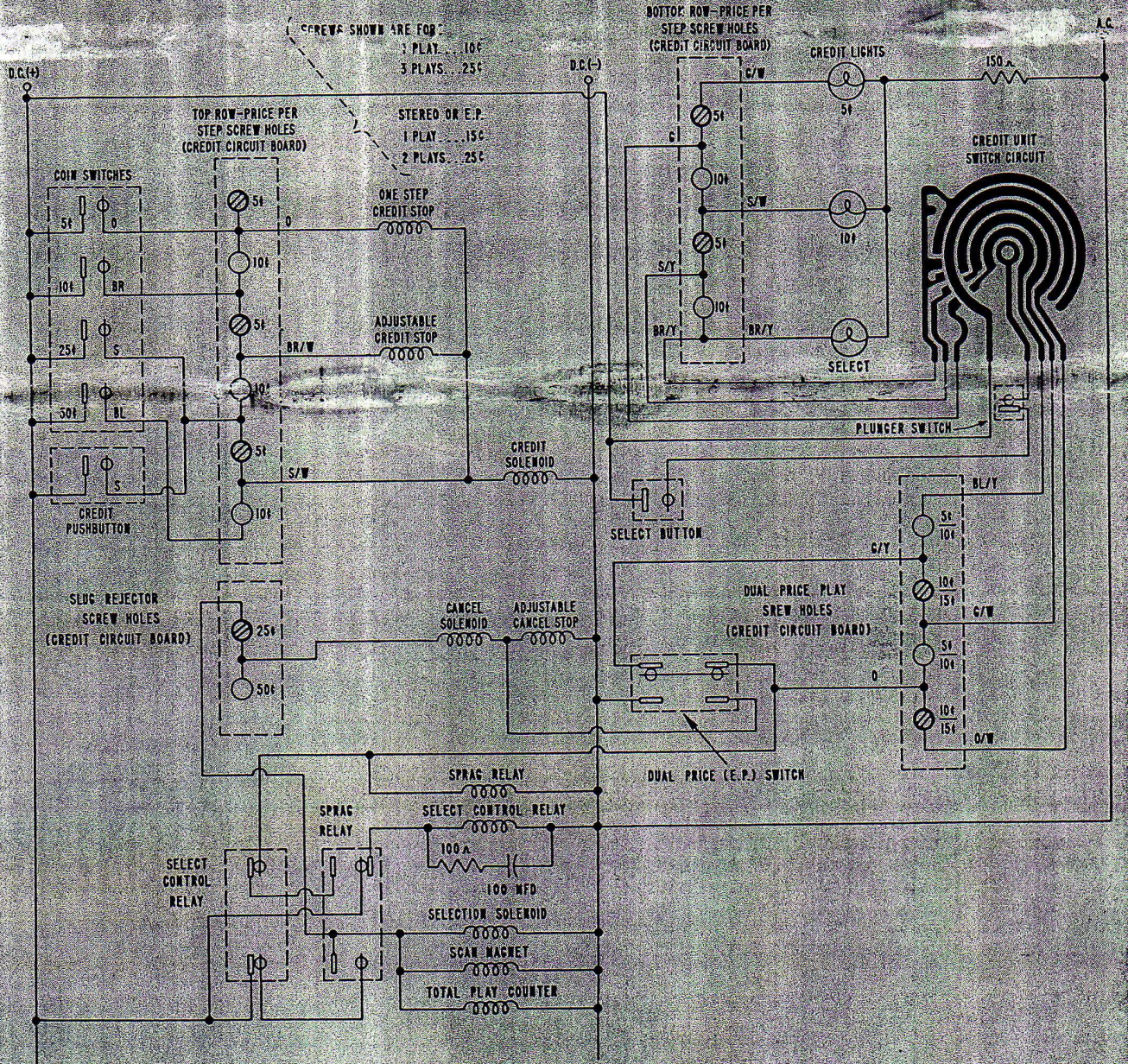
1 PLAY	30¢
3 PLAYS	25¢
7 PLAYS	50¢

STEREO OR E.P.

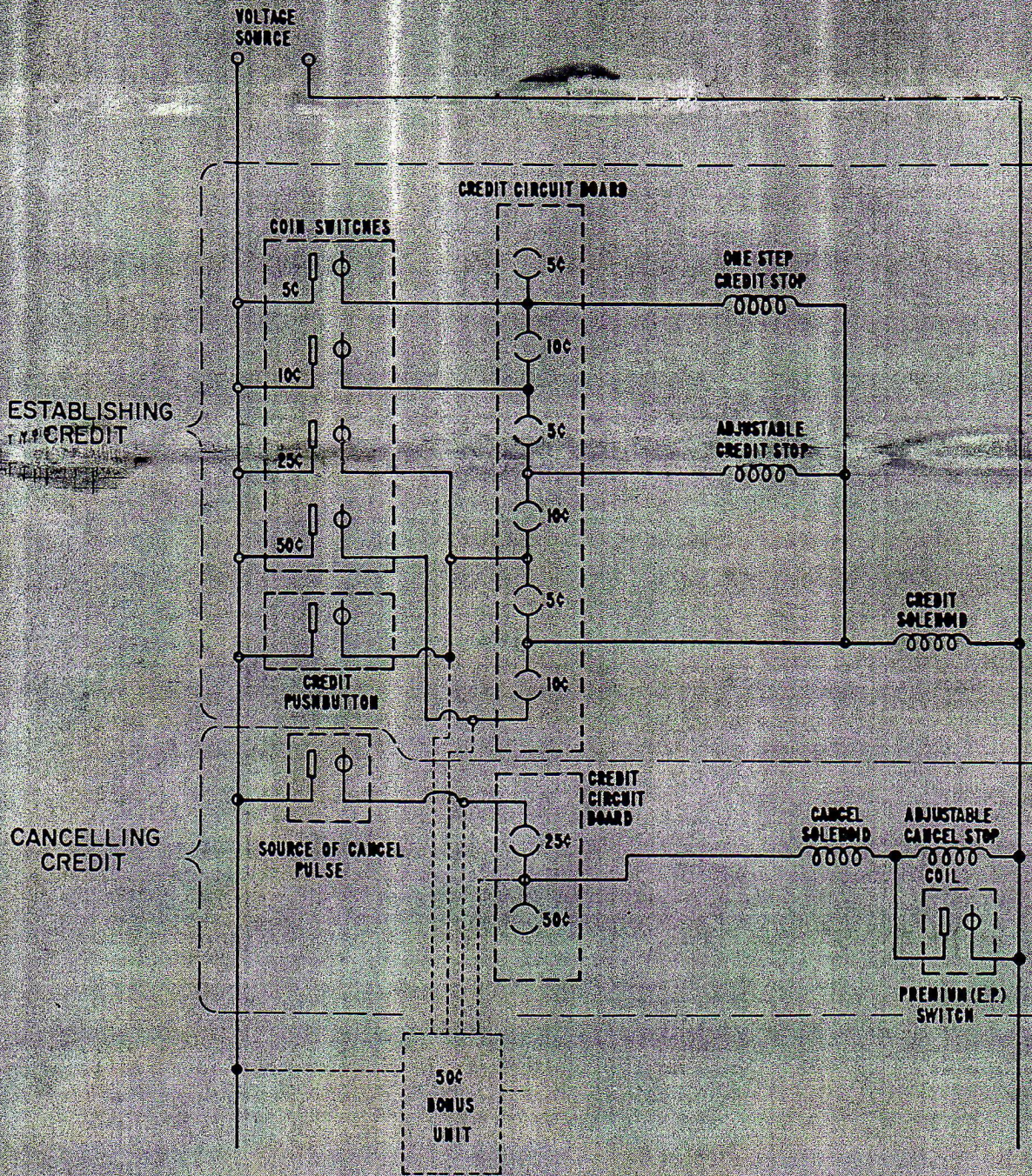
1 PLAY	15¢
2 PLAYS	25¢
5 PLAYS	50¢



CREDIT SYSTEM - MANUAL

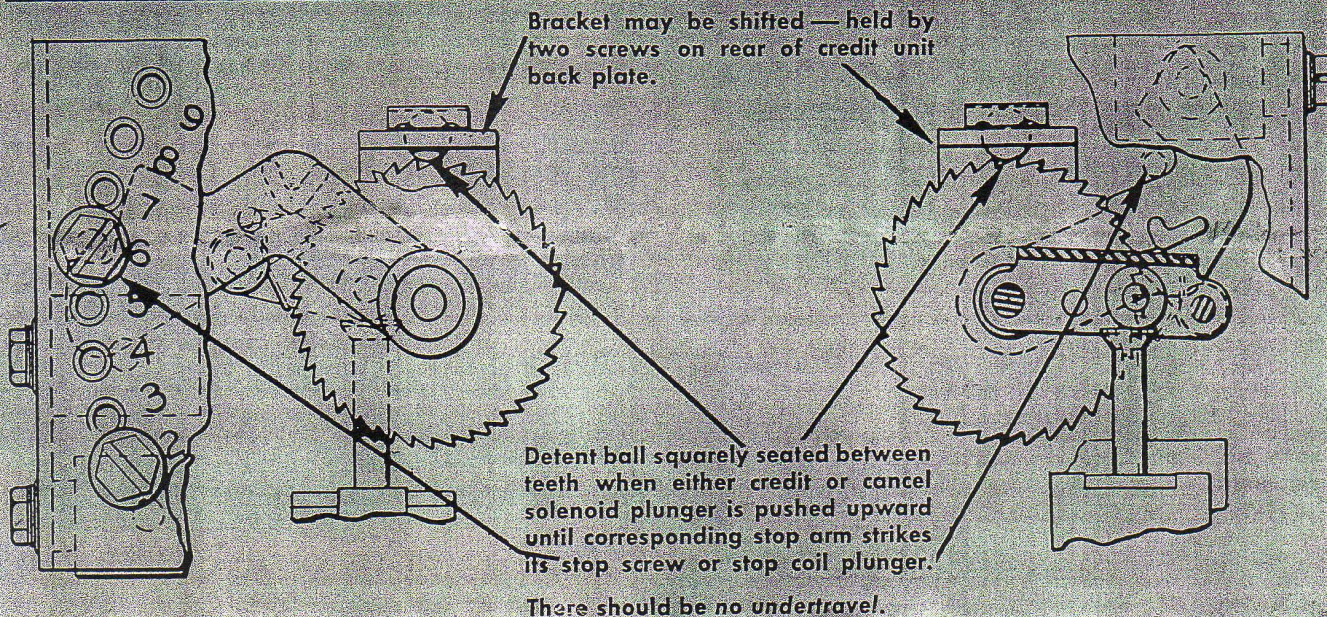


SIMPLIFIED SCHEMATIC DIAGRAM

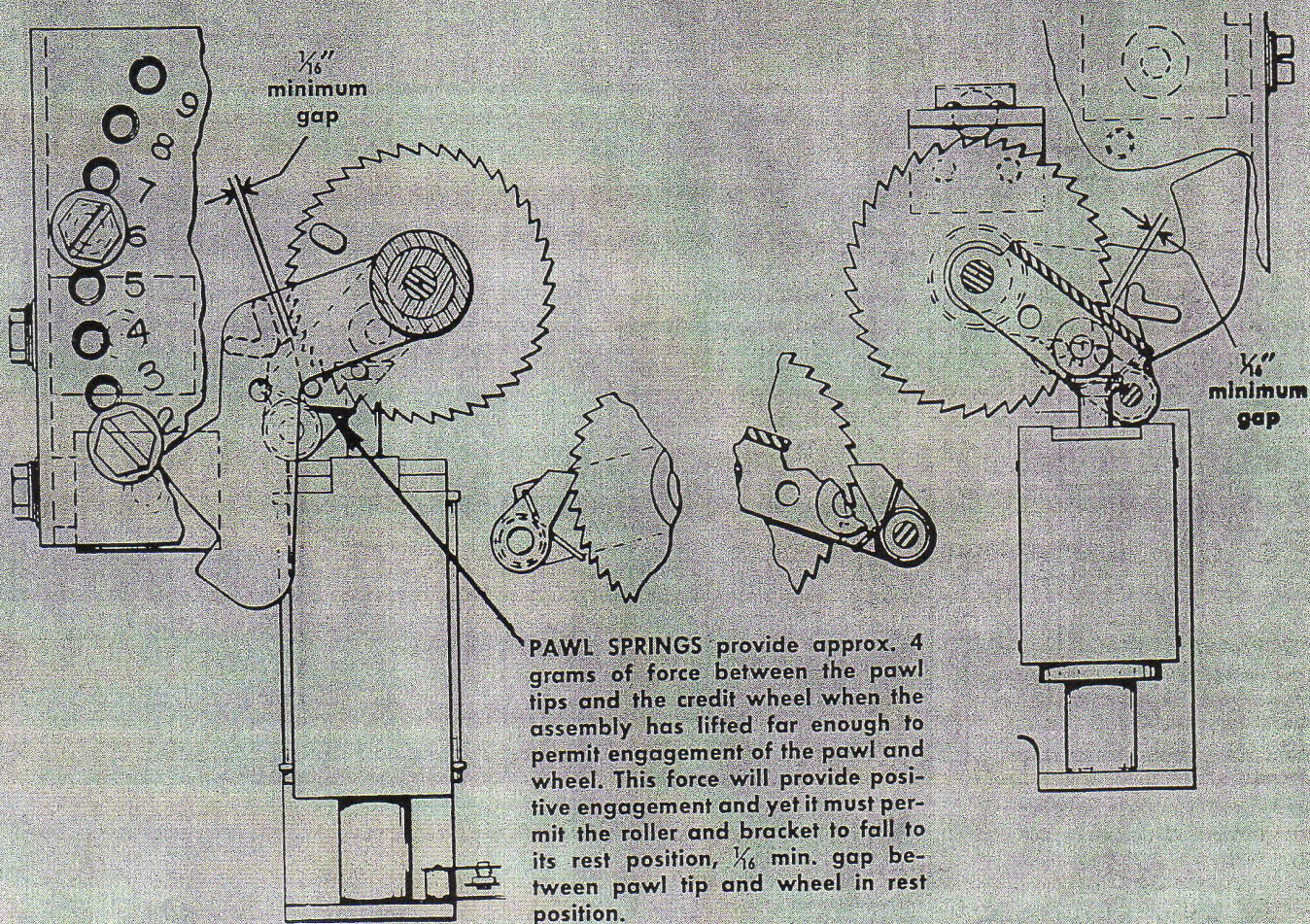


MECHANICAL ADJUSTMENTS

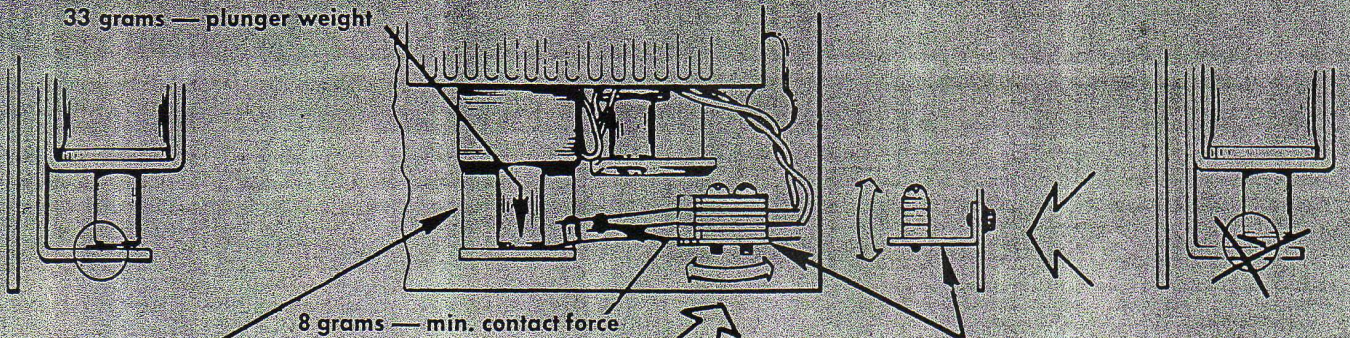
DETENT BRACKET . . .



PAWL SPRINGS . . .



PLUNGER SWITCH ...



If solenoid spacer plate is positioned upward as far as the screw-holes will allow, plunger free travel is restricted and the switch adjustment becomes critical.

$\frac{1}{32}$ " free vertical travel movement is necessary for proper adjustment.

See CREDIT and CANCEL SOLENOID PLUNGERS.

Bend bottom part of switch bracket to align blade with bottom of solenoid plunger.

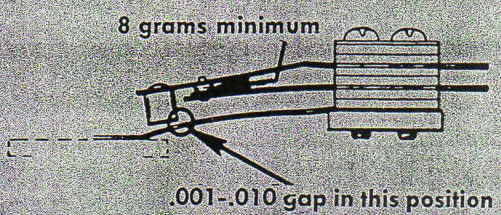
Should see obvious follow in contacts when plunger falls to rest.

UNMOUNTED POSITION OF SWITCH (or with credit solenoid plunger up.)

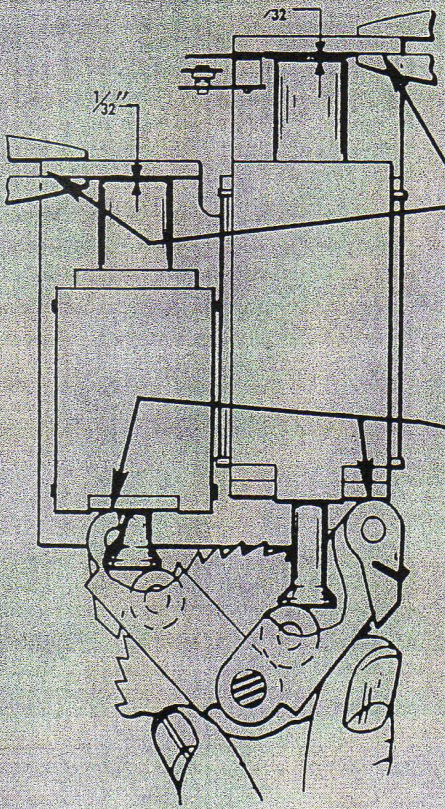


This gap should be .010-.020 when pawl tip just seats in credit wheel teeth.

PLUNGER DOWN



CREDIT and CANCEL



SOLENOID PLUNGERS ...

Hold the credit unit in a straight, upside-down position. At the same time, hold the roller and bracket assemblies in their rest positions.

Measure the gap between the ends of the plungers and the aluminum brackets with a feeler gauge. Bend the brackets as necessary.

Note: Make sure this adjustment is corrected before adjusting plunger switch.

WIPER ASSEMBLY...

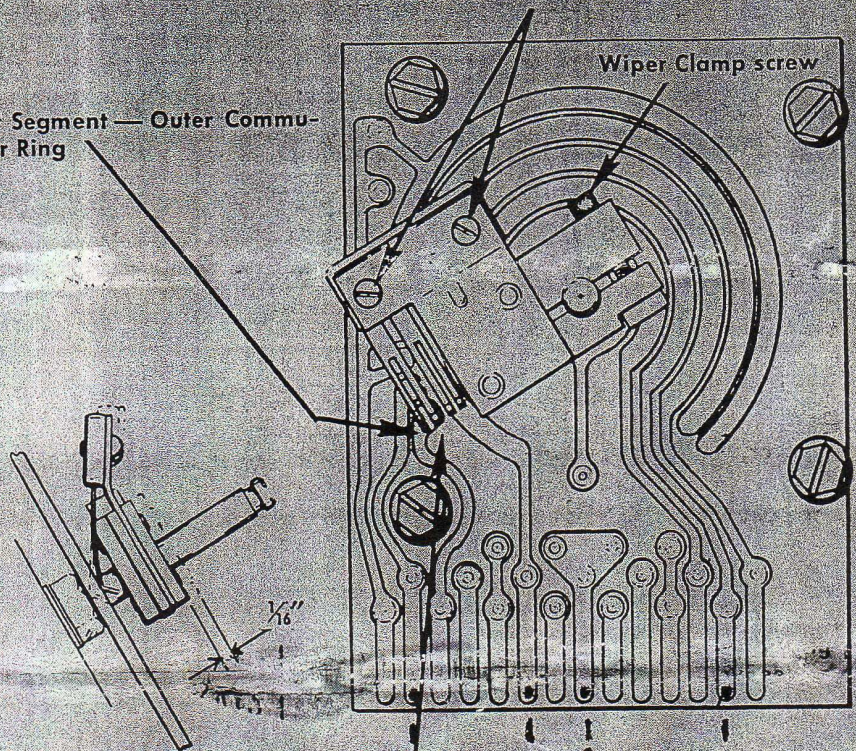
The wiper assembly must be positioned in two ways:

1. Wiper tips deflected against commutator plate. (Switch Circuit Board).
2. Wiper tip positioning on commutator segments.

- (A) Remove wiper assembly from shaft. Sight along profile of blades to make sure all blade-tips lie in the same plane, i.e., even with each other. Bend those which are not.
- (B) Slide assembly onto shaft, with clamping screw just tight enough to hold it in position. Push it down until the wipers just touch the commutator surface. Continue to slide assembly toward commutator surface approx. $\frac{1}{16}$ more. Do not tighten screw yet.
- (C) Holding credit unit in its normal operating position, rotate credit wheel up one notch from home position. Now turn the wiper assembly on its shaft-counter-clock wise works best — to center the outside blade on the first segment of the outer commutator ring.
- (D) Tighten the wiper clamping screw to hold the wiper assembly in this position. Now check the wipers for tracking on their respective commutator rings.

First Segment — Outer Commutator Ring

Screws may be loosened to shift position of wiper assembly.



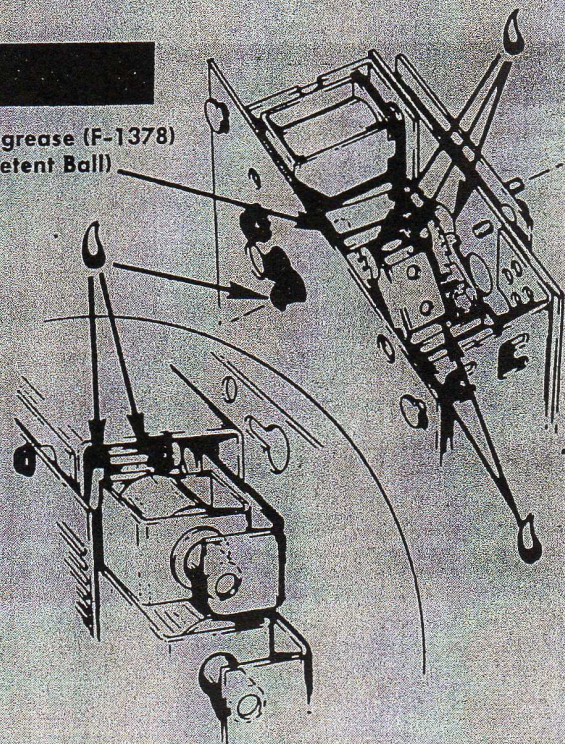
LUBRICATION...

Light film of silicone grease (F-1378) every six months. (Detent Ball)

One drop light machine oil (F-1379) every six months

NO OIL OR GREASE ON ANY SOLENOID PLUNGERS

DO NOT OVER-OIL



PRICE OF PLAY COMBINATIONS

①

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	3
.....	

②

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	3
half dollar	7
.....	

③

STANDARD PLAYS

dime or two nickels . . .	1
quarter	3

EXTENDED PLAYS

15¢	1
quarter	2

④

STANDARD PLAYS

dime or two nickels . . .	1
quarter	3
half dollar	7

EXTENDED PLAYS

15¢	1
quarter	2
half dollar	5

⑤

PRICE OF PLAYS

5¢	1
10¢	2
quarter	6
.....	

⑥

PRICE OF PLAYS

5¢	1
10¢	2
quarter	6
half dollar	13
.....	

⑦

STANDARD PLAYS

5¢	1
10¢	2
quarter	6

EXTENDED PLAYS

10¢	1
quarter	3

⑧

STANDARD PLAYS

5¢	1
10¢	2
quarter	6
half dollar	13

EXTENDED PLAYS

10¢	1
quarter	3
half dollar	7

⑨

PRICE OF PLAYS

5¢	1
10¢	2
quarter	5
.....	

⑩

PRICE OF PLAYS

5¢	1
10¢	2
quarter	5
half dollar	11
.....	

⑪

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	3
half dollar	6
.....	

⑫

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	4
.....	

⑬

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	4
half dollar	8
.....	

⑭

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	4
half dollar	9
.....	

⑮

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	5
.....	

⑯

PRICE OF PLAYS

dime or two nickels . . .	1
quarter	5
half dollar	11
.....	

A screw in hole "3 causes the adjustable electrical credit stop to be energized by the ten cent coin switch.

A screw in hole "4 causes the adjustable electrical credit stop coil to be energized by the twenty-five cent coin switch.

A screw in hole "5 causes the TWENTY-FIVE CENT COIN SWITCH to energize the main credit solenoid without energizing any electrical stop.

A screw in hole "6 causes the FIFTY CENT COIN SWITCH to energize the main credit solenoid without energizing any electrical stop.

Screw should be placed in hole "7 when a price-of-play is used which does not require the use of the PH-25 Fifty Cent Unit.

Screw should be placed in hole "8 when a price-of-play is used which requires a PH-25 Fifty Cent Unit.

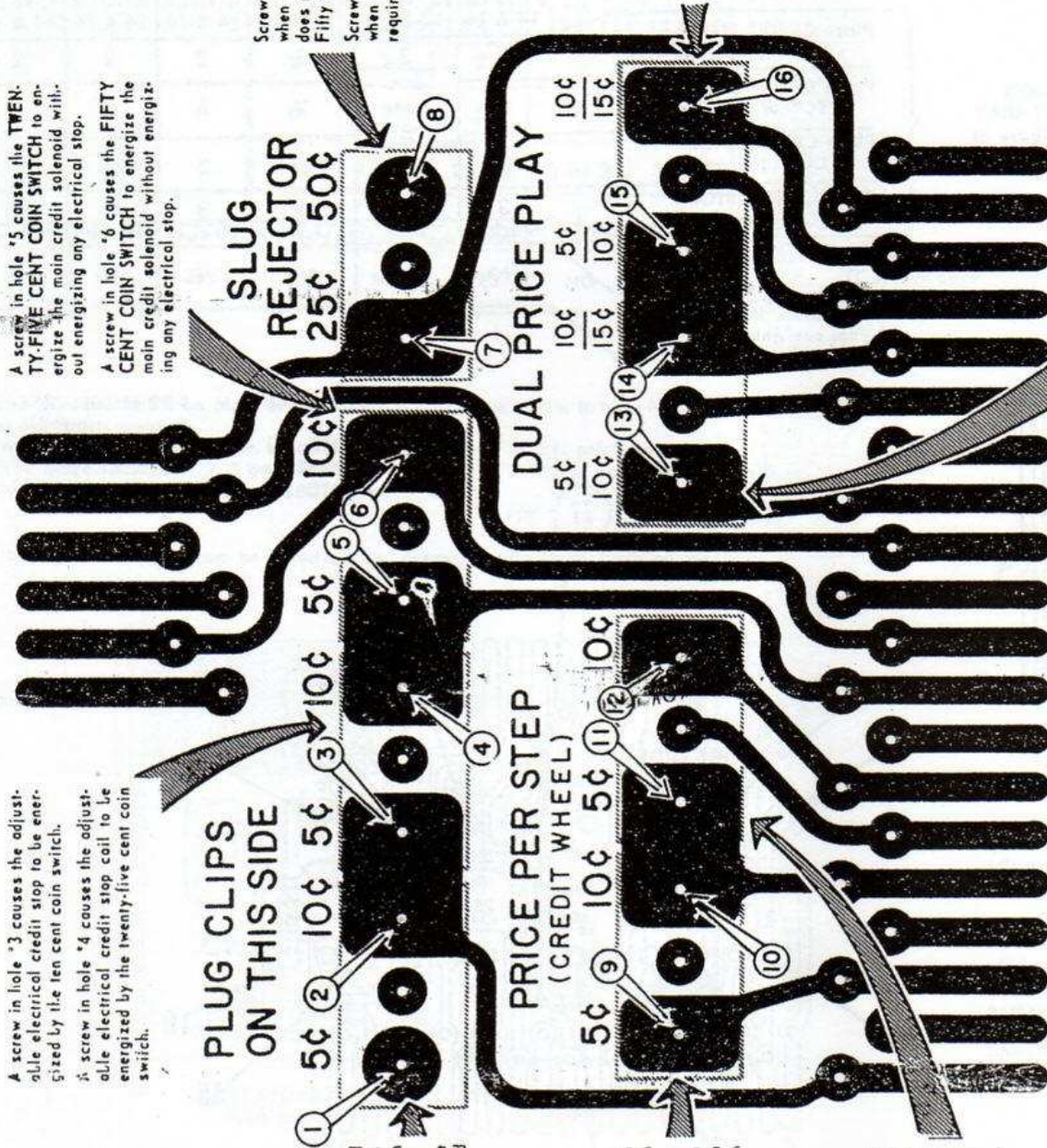
A screw in hole "15 connects the "two step" credit ring as the E.P. credit switch. (This makes it possible to make an E.P. selection when the credit unit is two steps from home position.)

A screw in hole "16 connects the "three step" credit ring as the E.P. credit switch. (This makes it necessary for the credit unit to move three steps from home position before an E.P. selection can be made.)

A screw in hole "14 connects the "two step" credit ring as the "standard" credit switch. (This makes it necessary for the credit unit to be two steps from home position before a "standard priced" selection can be made.)

A screw in hole "13 connects the "one step" credit ring as the "standard" credit switch. (This makes it possible to make a "standard priced" selection with the credit wheel one step from home position.)

REV. 3-61
IV. CEN



A screw in hole "1 causes the fixed "one step" electrical credit stop to be energized by the five cent coin switch.

A screw in hole "2 causes the "one step" electrical stop to be energized by the ten cent coin switch.

A screw in hole "9 causes the five cent credit light to be turned on when the credit wheel moves one step from home position.

A screw in hole "10 causes the ten cent credit light to be turned on when the credit wheel moves one step from home position.

A screw in hole "11 causes the ten cent light to go on when the credit unit moves two steps from home position.

A screw in hole "12 causes the "15¢ or more" light to go on when the credit unit moves two steps from home position.

When a single price combination (not dual pricing) is used:

- When giving one play for one credit tooth, screws must be placed in holes "13, 14 and 15 (no screw in hole "16).
- When giving one play for two credit teeth, screws must be placed in holes "14, 15 and 16.



AUXILIARY
EQUIPMENT

Continental 2

The Parts Catalog for the Continental 2 is available from AMR.
Order number is R-373

AMI
AUTOMATIC MUSIC, INC.

SERVICE DATA

The Automix 45-33 turntable, is designed to operate in a smooth, trouble-free manner. Readjustment should be necessary only if parts are worn or machine has been subjected to accident or abuse.

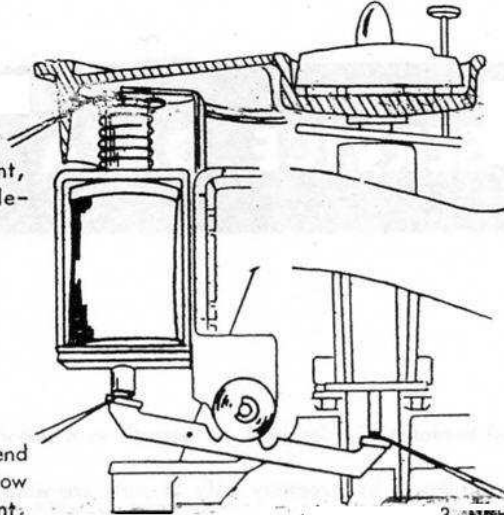
However, when readjustment becomes necessary, the following illustrations and information indicate points of adjustment and their proper positions to insure correct functioning of turntable. These adjustments are not complex and should prove adequate in correcting difficulties originating with the turntable mechanism.



HUB SOLENOID ADJUSTMENT

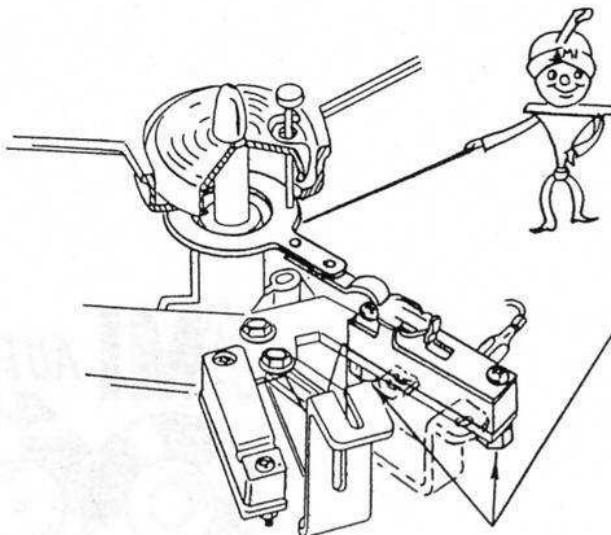
1. With hub solenoid in proper adjustment, top of "E" ring should be $5/8$ " above solenoid frame.

2. When hub is in "down" position, left end of lever should be $1/64$ " maximum below plunger tip. To achieve proper adjustment, bend left end of lever.



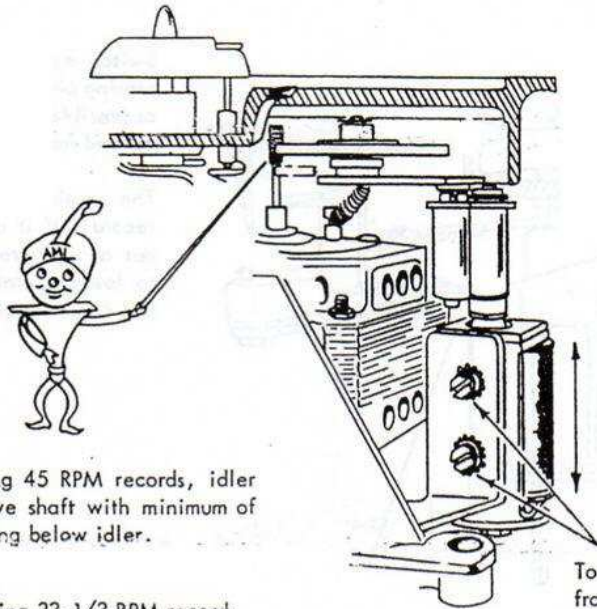
3. When solenoid is energized and hub is in "up" position, right end of lever must touch bearing retainer. Bend right hand end of lever if necessary.

CENTER RING



Center ring must not touch bearing casting throughout travel of switch arm. To adjust center ring, loosen nuts underneath switch and move switch backward or forward until ring is centered.

TURNTABLE IDLER

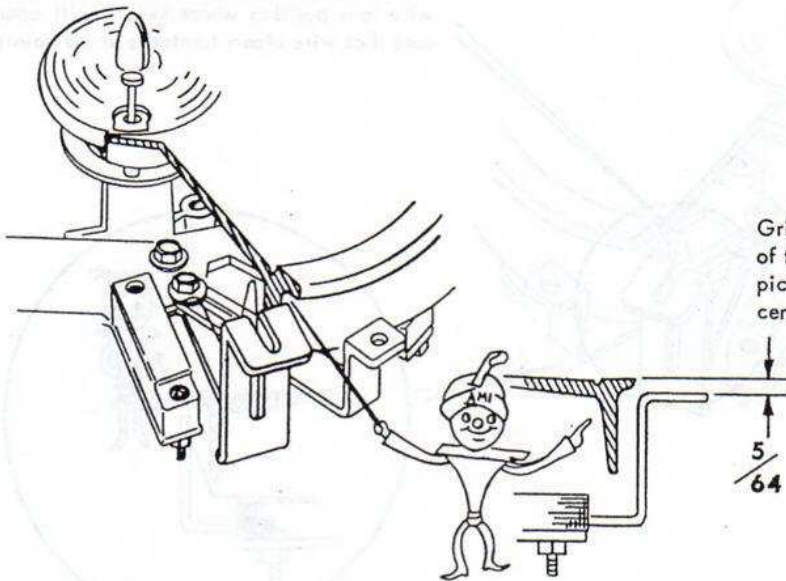


When hub is up, for playing 45 RPM records, idler must run ON spring of drive shaft with minimum of one full turn of spring showing below idler.

When hub is down, for playing 33-1/3 RPM records, idler must run a minimum of 1/32" BELOW spring on drive shaft.

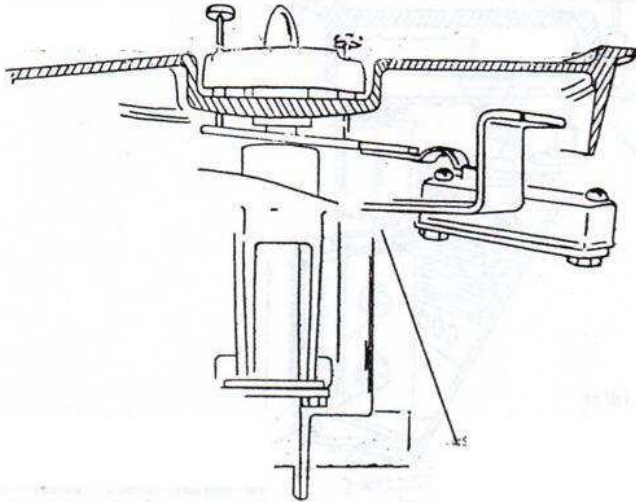
To adjust idler: Loosen screws in solenoid frame and cock solenoid to raise or lower idler.

GRIPPER BOW STOP



Gripper Bow Stop must be 5/64" below top of turntable to insure proper placement and pick-up of records. To adjust, bend in center of horizontal member.

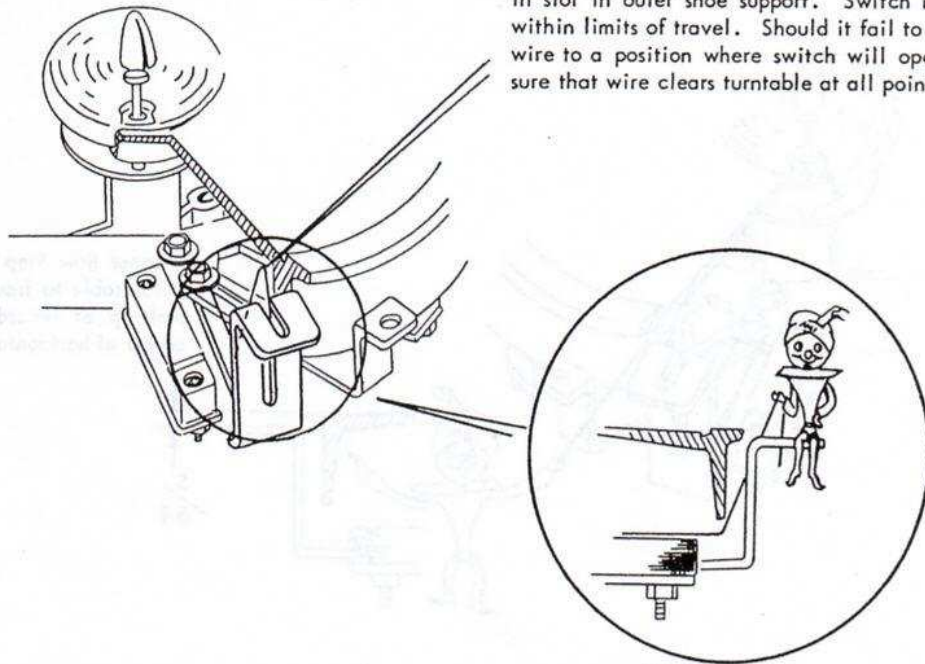
SENSING PIN SWITCH



Switch must operate and release with the sensing pin in the hub in as high a position as possible. Test operation with pin at nearest and farthest point from switch.

The sensing pin must not tilt a small hole record. If it does, the switch arm has run out of over-travel. Bend switch mounting to lower operating point of switch, should this condition prevail.

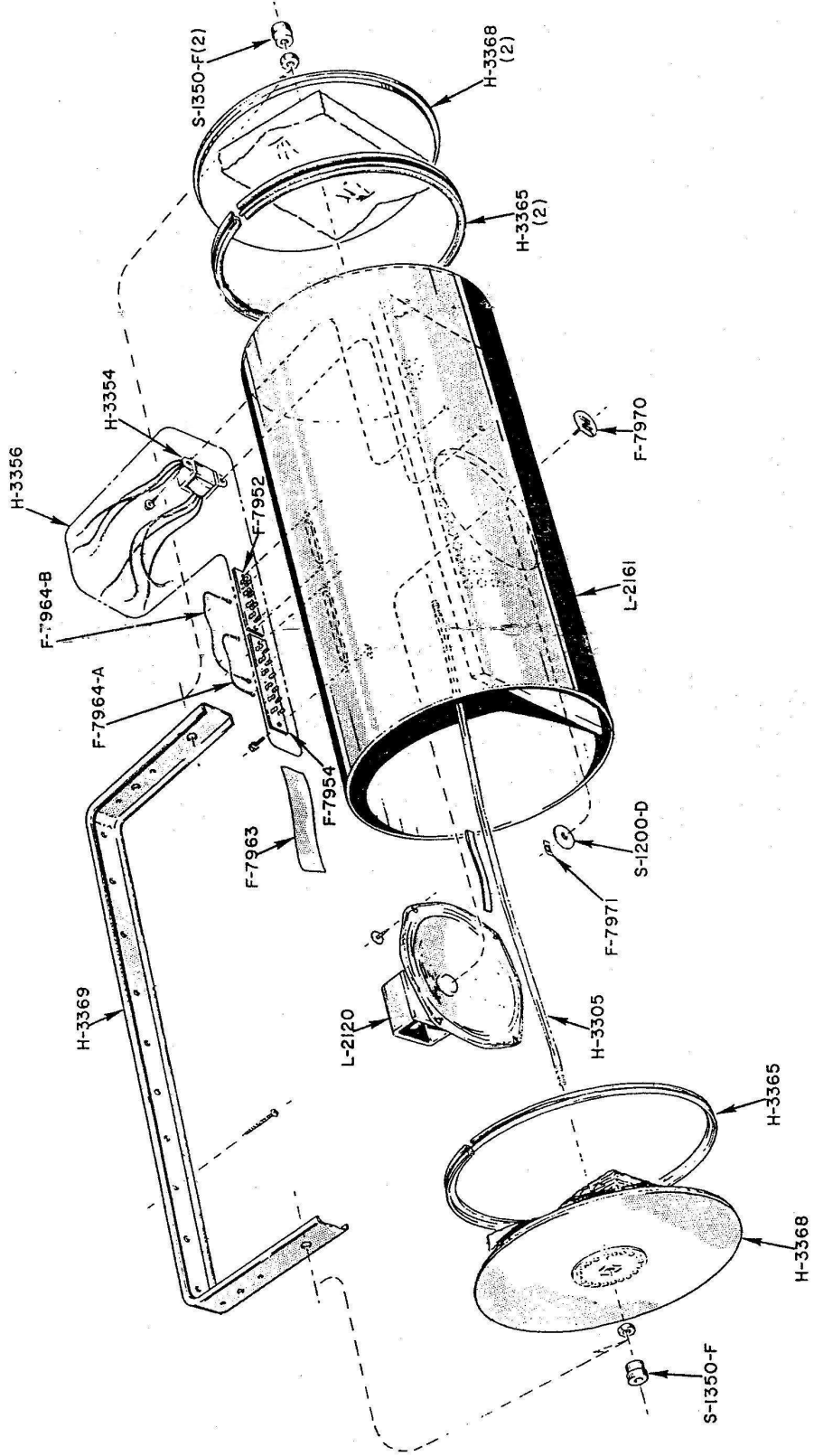
GRIPPER BOW SWITCH



Gripper Bow Switch Wire should always be centered in slot in outer shoe support. Switch must operate within limits of travel. Should it fail to do so, bend wire to a position where switch will operate, being sure that wire clears turntable at all points.

**SOUND SYSTEM
ACCESSORIES**

Continental 2



R-2004-B

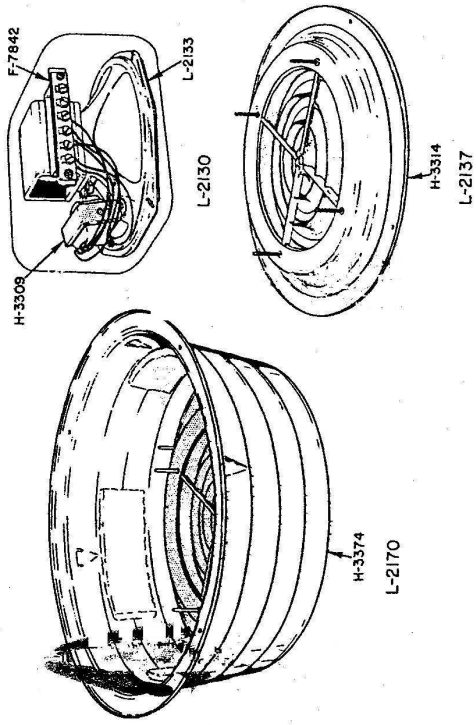
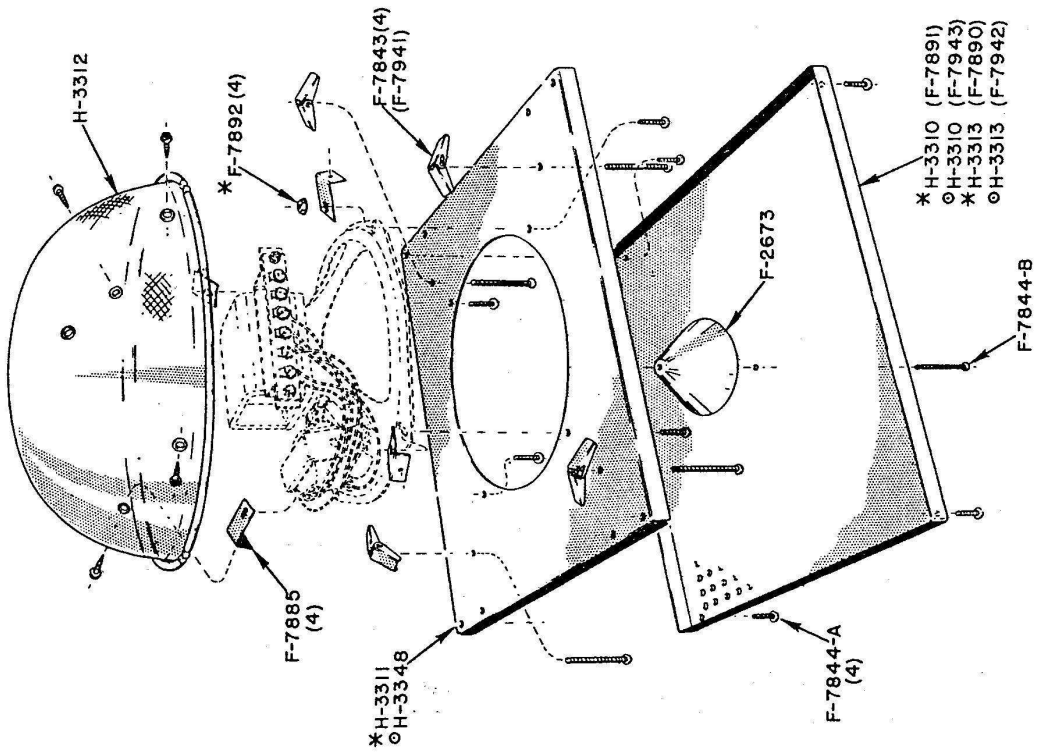
EX-600 CYLINDRICAL SPEAKER

R-2004-B

PART No.	QTY.	DESCRIPTION	PART No.	QTY.	DESCRIPTION
F-1277	4	Speed Nut (not shown)	H-3356		Transformer and Terminal Strip Assembly
F-7808		Cloth Key Bag (not shown - for shipping and packing)	Includes:		
F-7856		Envelope (not shown - for packing and shipping)	F-7918	1	Wire and Tab Receptacle Assembly (not shown)
F-7963	1	Connection Chart	F-7920	1	Wire and Tab Receptacle Assembly (not shown)
F-7964-A	1	Wire and Lug Assembly	F-7952	1	Terminal Strip
F-7964-B	1	Wire and Lug Assembly	F-7954	1	Terminal Strip
F-7970	1	Name Plate Assembly	H-3354	1	Transformer (Remote Speaker)
F-7971	1	Spring Clip	H-3365	2	End Panel Trim
F-7972	1	Bag (Not shown - for packing and shipping)	H-3368	2	End Panel Assembly
H-3305	1	Tie Rod	H-3369	1	Mounting Bracket
H-3318	1	Hanger Strap (Optional Equipment - for multiple installation)	L-2120	1	Speaker
			L-2161	1	Tube Assembly
			S-1200-D	1	Washer
			S-1350-F	2	Thumb Nut

Continental 2

Continental 2



- L-2135
- L-2136
- L-2137
- L-2158
- L-2159

CEILING SPEAKER

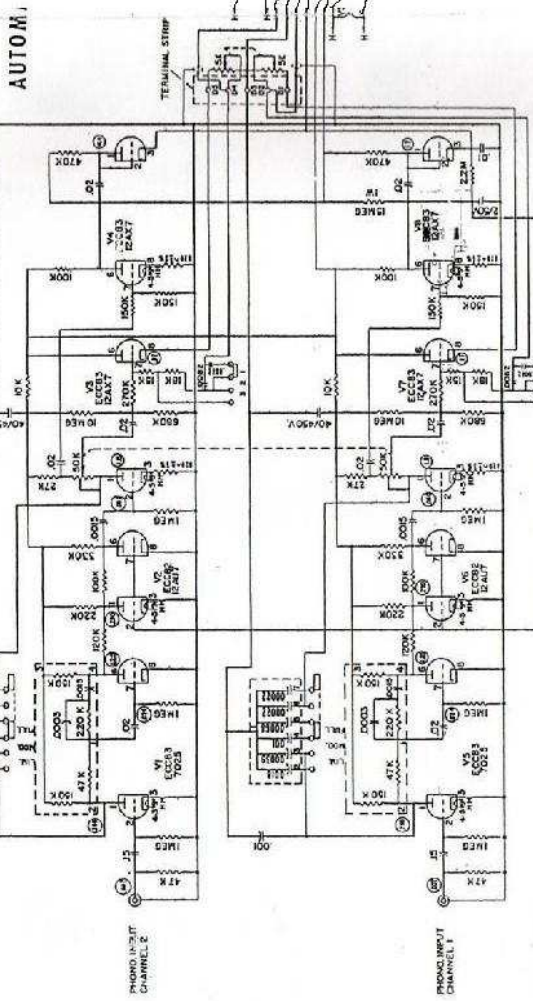
(L-2130)

MOUNTING PANELS AND BAFFLE

PART No.	QTY.	DESCRIPTION
L-2130	1	Ceiling Speaker
Includes:		
F-7842	1	Terminal Strip
H-3309	1	Transformer
L-2133	1	Speaker
L-2135		Random Pattern Panel (5/8")
L-2159		Random Pattern Panel (3/4")
L-2136		Uniform Pattern Panel (5/8")
L-2158		Uniform Pattern Panel (3/4")
Includes:		
F-2673	1	Retainer Trim
F-7843	4	Toggle Bolt
F-7844-B	1	Truss Head, Painted Screw
F-7885	4	Cover Mounting Clip
F-7890	1	Ceiling Tile Assembly
Includes:		
F-7844-A	4	Truss Head Painted Screw
F-7892	4	Pinnut
H-3311	1	Speaker Mounting Plate
H-3313	1	Perforated Tile - Standard
F-7891	1	Ceiling Tile Assembly - Random
Includes:		
Same as F-7890 except H-3313 is replaced by:		
H-3310	1	Perforated Tile - Random
F-7942	1	Ceiling Tile Assembly - Standard (3/4")
Includes:		
Same as F-7890 except H-3311 is replaced by:		
H-3348	1	Speaker Mounting Plate (3/4")
F-7943	1	Ceiling Tile Assembly - Random (3/4")
Includes:		
Same as F-7890 except H-3311 is replaced by:		
H-3348	1	Speaker Mounting Plate (3/4")
and: H-3313 is replaced by:		
H-3310	1	Perforated Tile - Random
H-3312	1	Speaker Cover Assembly
L-2137	1	Round, Flush Mount Panel
Includes:		
F-7885	4	Cover Mounting Clip
F-7941	4	Toggle Bolt (F-7843 with paint)
H-3312	1	Speaker Cover Assembly
H-3314	1	Flush Ceiling Baffle
L-2170	1	Round Wall Mount Baffle
Includes:		
F-7985	4	Screw Anchor
H-3374	1	Exterior Ceiling Baffle

Continental 2

STEREO
AMPLIFIER SYSTEM SCHEMATIC CHART
HF-8306-1

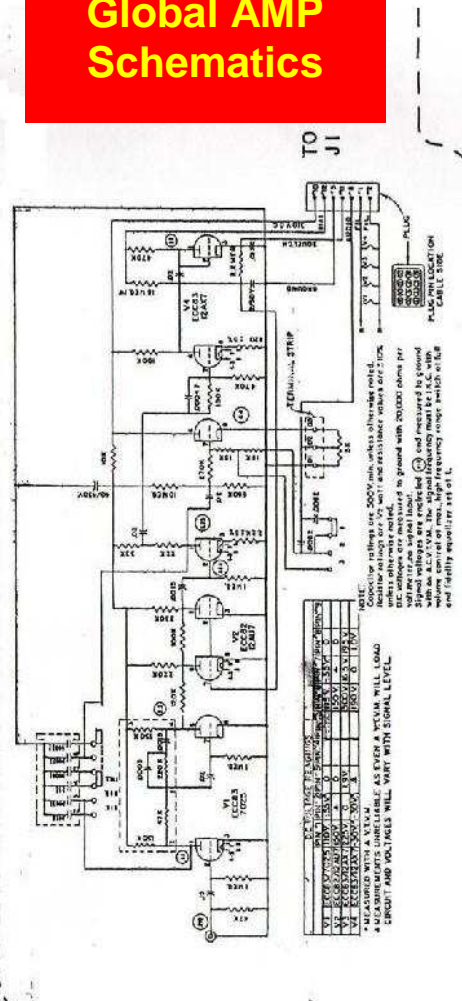


DC VOLTS PER VOLTAGE

TEST POINT	DC VOLTS PER VOLTAGE
V1	0.0
V2	0.0
V3	0.0
V4	0.0
V5	0.0
V6	0.0
V7	0.0
V8	0.0
V9	0.0
V10	0.0
V11	0.0
V12	0.0
V13	0.0
V14	0.0
V15	0.0
V16	0.0
V17	0.0
V18	0.0
V19	0.0
V20	0.0
V21	0.0
V22	0.0
V23	0.0
V24	0.0
V25	0.0
V26	0.0
V27	0.0
V28	0.0
V29	0.0
V30	0.0
V31	0.0
V32	0.0
V33	0.0
V34	0.0
V35	0.0
V36	0.0
V37	0.0
V38	0.0
V39	0.0
V40	0.0
V41	0.0
V42	0.0
V43	0.0
V44	0.0
V45	0.0
V46	0.0
V47	0.0
V48	0.0
V49	0.0
V50	0.0

MEASURED WITH A V.U.M.
*DC VOLTS PER VOLTAGE WILL VARY WITH SIGNAL LEVEL.

MONAURAL
L-2156 ADD-ON CONTROL AMPLIFIER

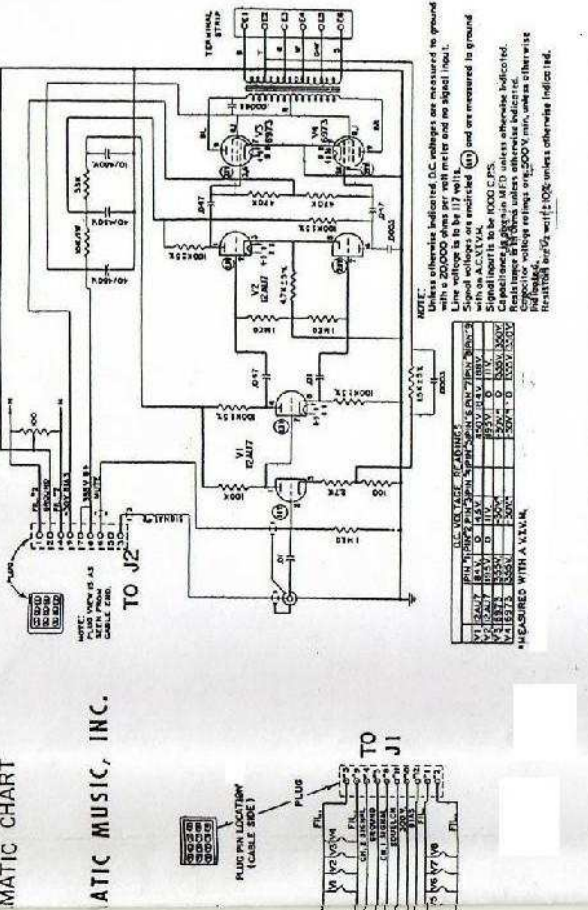


DC VOLTS PER VOLTAGE

TEST POINT	DC VOLTS PER VOLTAGE
V1	0.0
V2	0.0
V3	0.0
V4	0.0
V5	0.0
V6	0.0
V7	0.0
V8	0.0
V9	0.0
V10	0.0
V11	0.0
V12	0.0
V13	0.0
V14	0.0
V15	0.0
V16	0.0
V17	0.0
V18	0.0
V19	0.0
V20	0.0
V21	0.0
V22	0.0
V23	0.0
V24	0.0
V25	0.0
V26	0.0
V27	0.0
V28	0.0
V29	0.0
V30	0.0
V31	0.0
V32	0.0
V33	0.0
V34	0.0
V35	0.0
V36	0.0
V37	0.0
V38	0.0
V39	0.0
V40	0.0
V41	0.0
V42	0.0
V43	0.0
V44	0.0
V45	0.0
V46	0.0
V47	0.0
V48	0.0
V49	0.0
V50	0.0

MEASURED WITH A V.U.M.
*DC VOLTS PER VOLTAGE WILL VARY WITH SIGNAL LEVEL.

L-2155 ADD-ON POWER AMPLIFIER

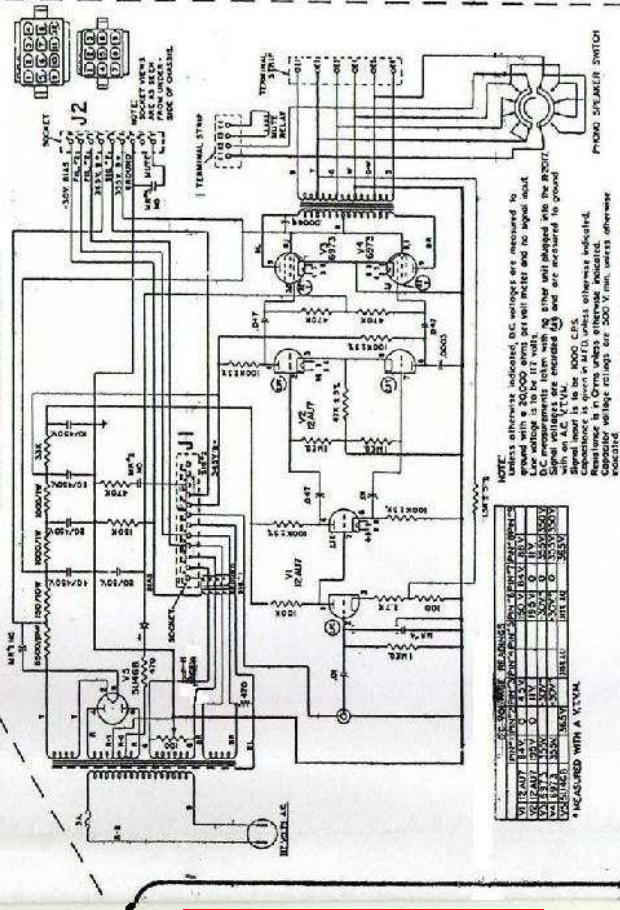


DC VOLTS PER VOLTAGE

TEST POINT	DC VOLTS PER VOLTAGE
V1	0.0
V2	0.0
V3	0.0
V4	0.0
V5	0.0
V6	0.0
V7	0.0
V8	0.0
V9	0.0
V10	0.0
V11	0.0
V12	0.0
V13	0.0
V14	0.0
V15	0.0
V16	0.0
V17	0.0
V18	0.0
V19	0.0
V20	0.0
V21	0.0
V22	0.0
V23	0.0
V24	0.0
V25	0.0
V26	0.0
V27	0.0
V28	0.0
V29	0.0
V30	0.0
V31	0.0
V32	0.0
V33	0.0
V34	0.0
V35	0.0
V36	0.0
V37	0.0
V38	0.0
V39	0.0
V40	0.0
V41	0.0
V42	0.0
V43	0.0
V44	0.0
V45	0.0
V46	0.0
V47	0.0
V48	0.0
V49	0.0
V50	0.0

MEASURED WITH A V.U.M.
*DC VOLTS PER VOLTAGE WILL VARY WITH SIGNAL LEVEL.

R-2017 BASIC AMPLIFIER



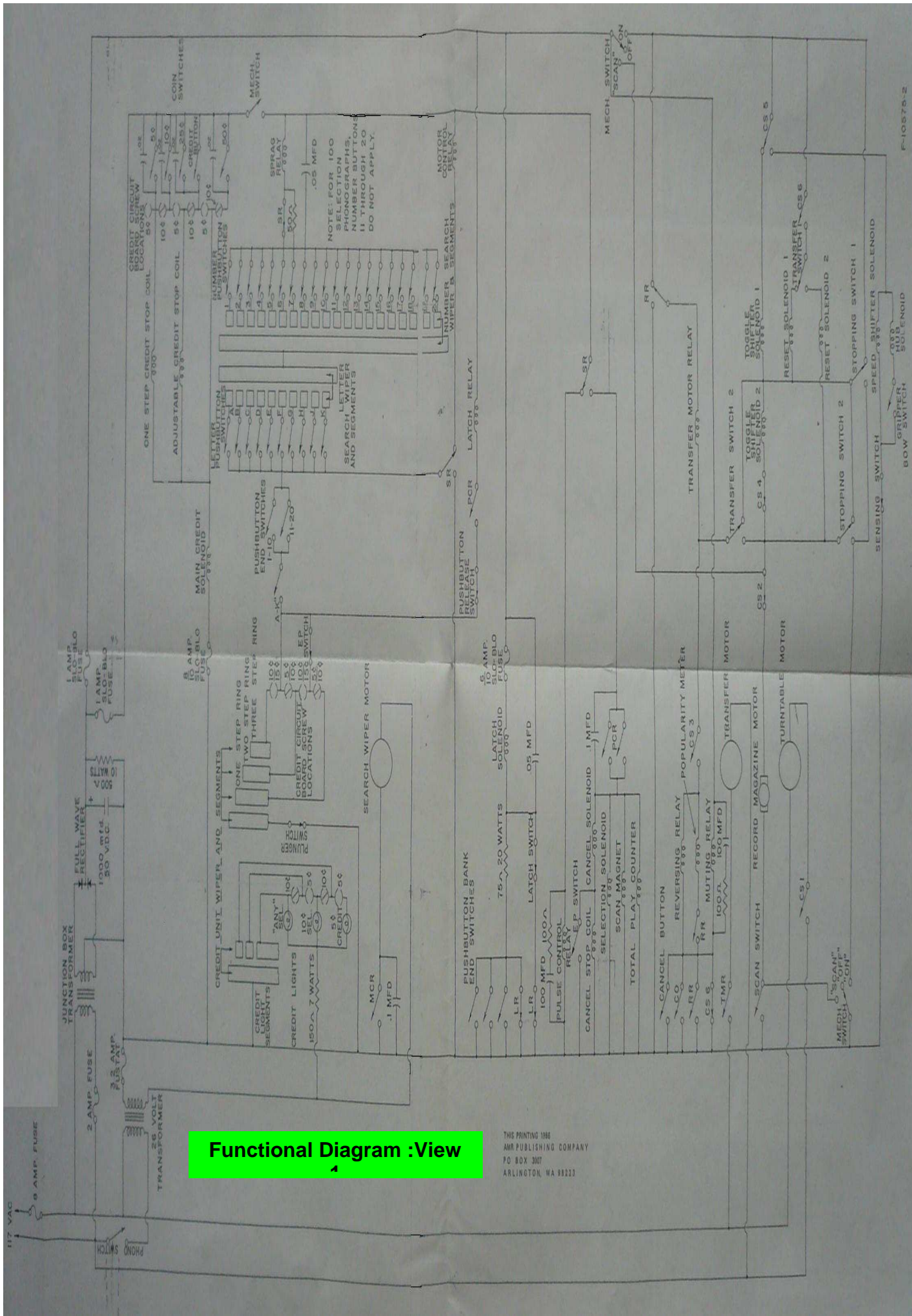
DC VOLTS PER VOLTAGE

TEST POINT	DC VOLTS PER VOLTAGE
V1	0.0
V2	0.0
V3	0.0
V4	0.0
V5	0.0
V6	0.0
V7	0.0
V8	0.0
V9	0.0
V10	0.0
V11	0.0
V12	0.0
V13	0.0
V14	0.0
V15	0.0
V16	0.0
V17	0.0
V18	0.0
V19	0.0
V20	0.0
V21	0.0
V22	0.0
V23	0.0
V24	0.0
V25	0.0
V26	0.0
V27	0.0
V28	0.0
V29	0.0
V30	0.0
V31	0.0
V32	0.0
V33	0.0
V34	0.0
V35	0.0
V36	0.0
V37	0.0
V38	0.0
V39	0.0
V40	0.0
V41	0.0
V42	0.0
V43	0.0
V44	0.0
V45	0.0
V46	0.0
V47	0.0
V48	0.0
V49	0.0
V50	0.0

MEASURED WITH A V.U.M.
*DC VOLTS PER VOLTAGE WILL VARY WITH SIGNAL LEVEL.

Global AMP Schematics

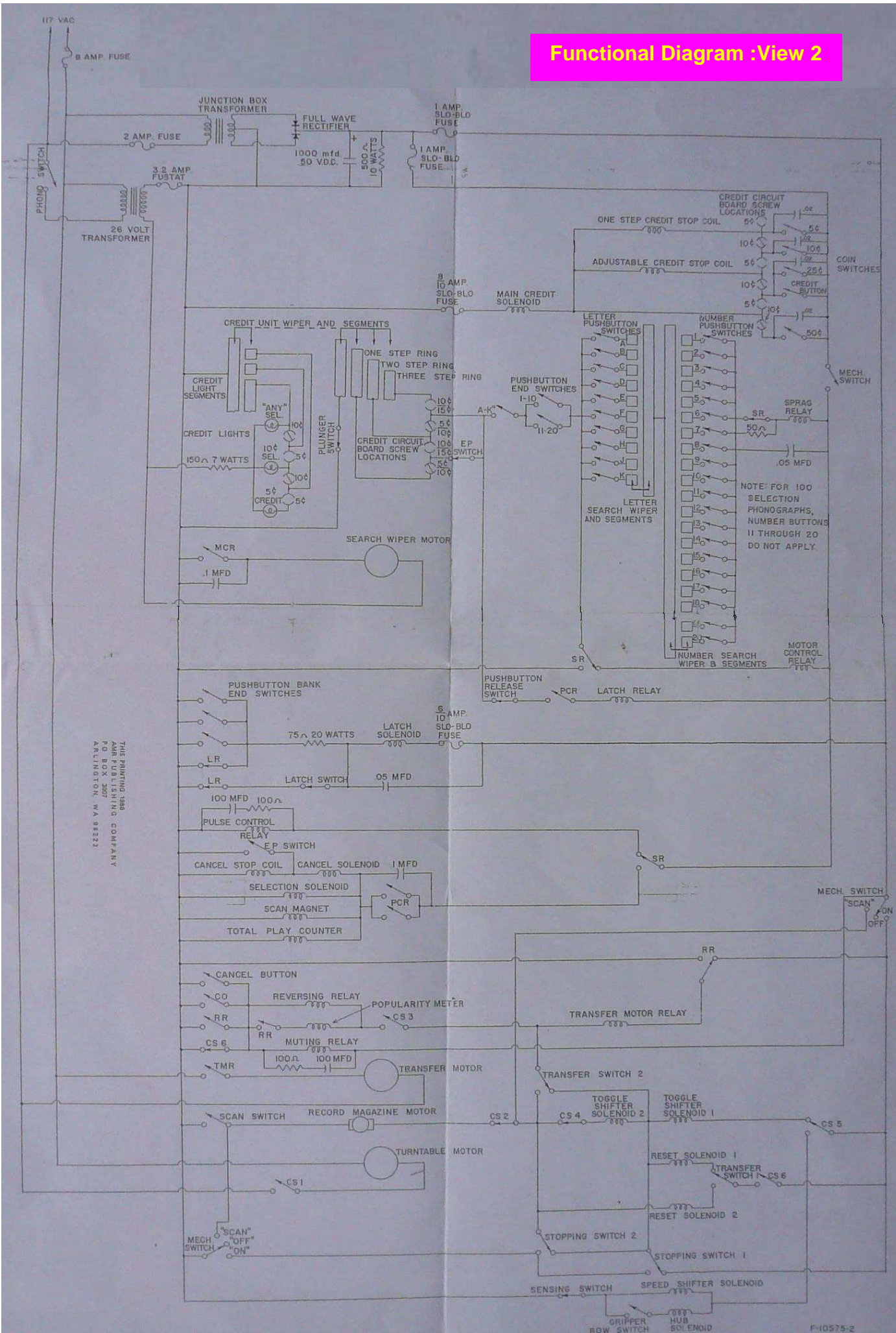
F-8306



Functional Diagram :View

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Functional Diagram View 2



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