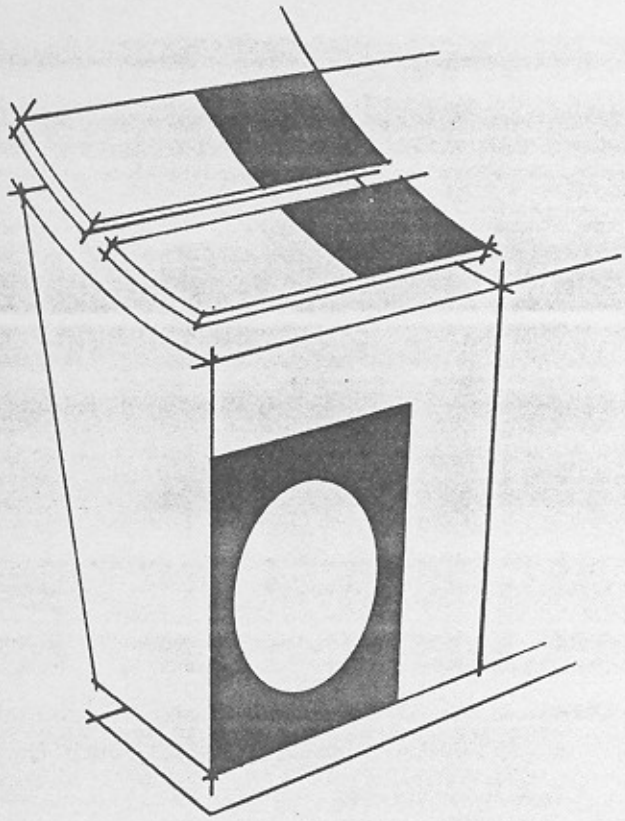


Rowe AMI phonograph

credit unit and pricing system service manual

Sold by:

ROWE AC SERVICES
Division of Automatic Canteen Company of America

18 South Michigan Ave.
Chicago 3, Illinois

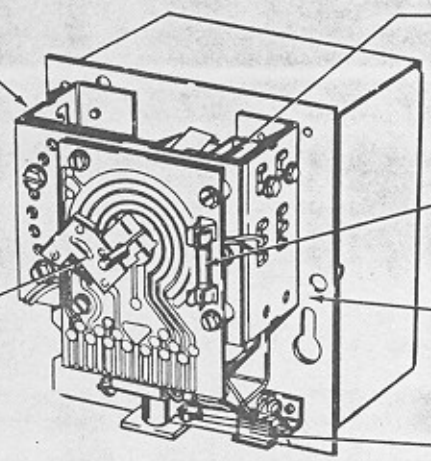
Manufactured by:

ROWE AC MANUFACTURING
Division of Automatic Canteen Company of America
Grand Rapids Plant
1500 Union Avenue, S. E., Grand Rapids 2, Michigan

Rowe AMI phonograph

REVISED

COMPONENTS ..... WHAT THEY DO



SIDE FRAME
Three mounting positions available for credit stop coil.

STOP COIL (Cancel)
Two positions available. (2 or 3 credits)

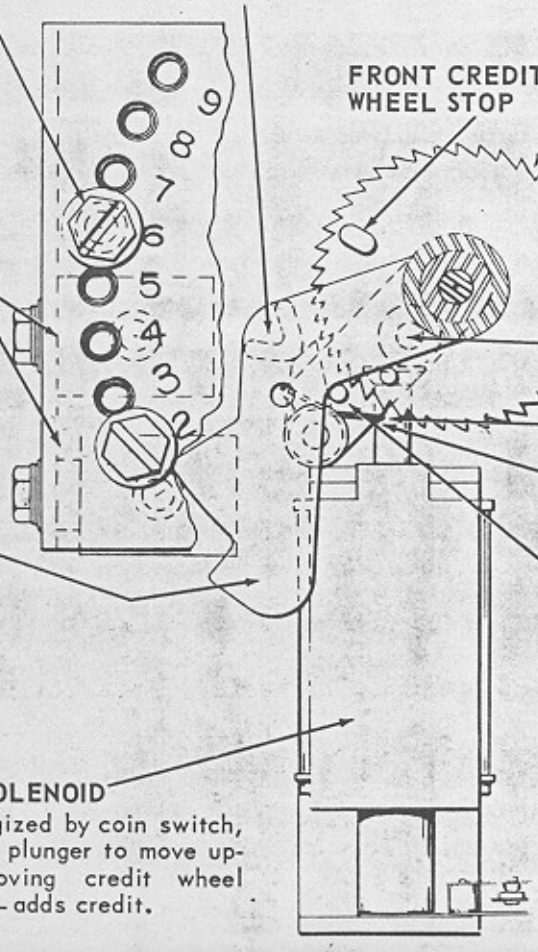
FUSE

SWITCH CIRCUIT BOARD

WIPER ASSEMBLY

PLUNGER SWITCH
(Not Present on R-1473D)

● FRONT CREDIT WHEEL AND RELATED PARTS



STOP SCREW (Credit)
(8 positions possible — 2 to 9 credits)
Limits credit stop arm travel at any of eight positions where stop screw is inserted.

STOP ARM BOSS (Credit)

FRONT CREDIT WHEEL STOP

FRONT CREDIT WHEEL
Clockwise rotation away from home (no-credit) position establishes one credit for each tooth space. One credit may be worth one or two coins (5¢ or 10¢) depending upon price-of-play desired. One play may equal 1, 2, or 3 credits.

STOP COILS (Establish credit)
Positions optional to limit number of credits established. Limits credit stop arm rotation.

ROLLER (Credit)

PAWL SPRING

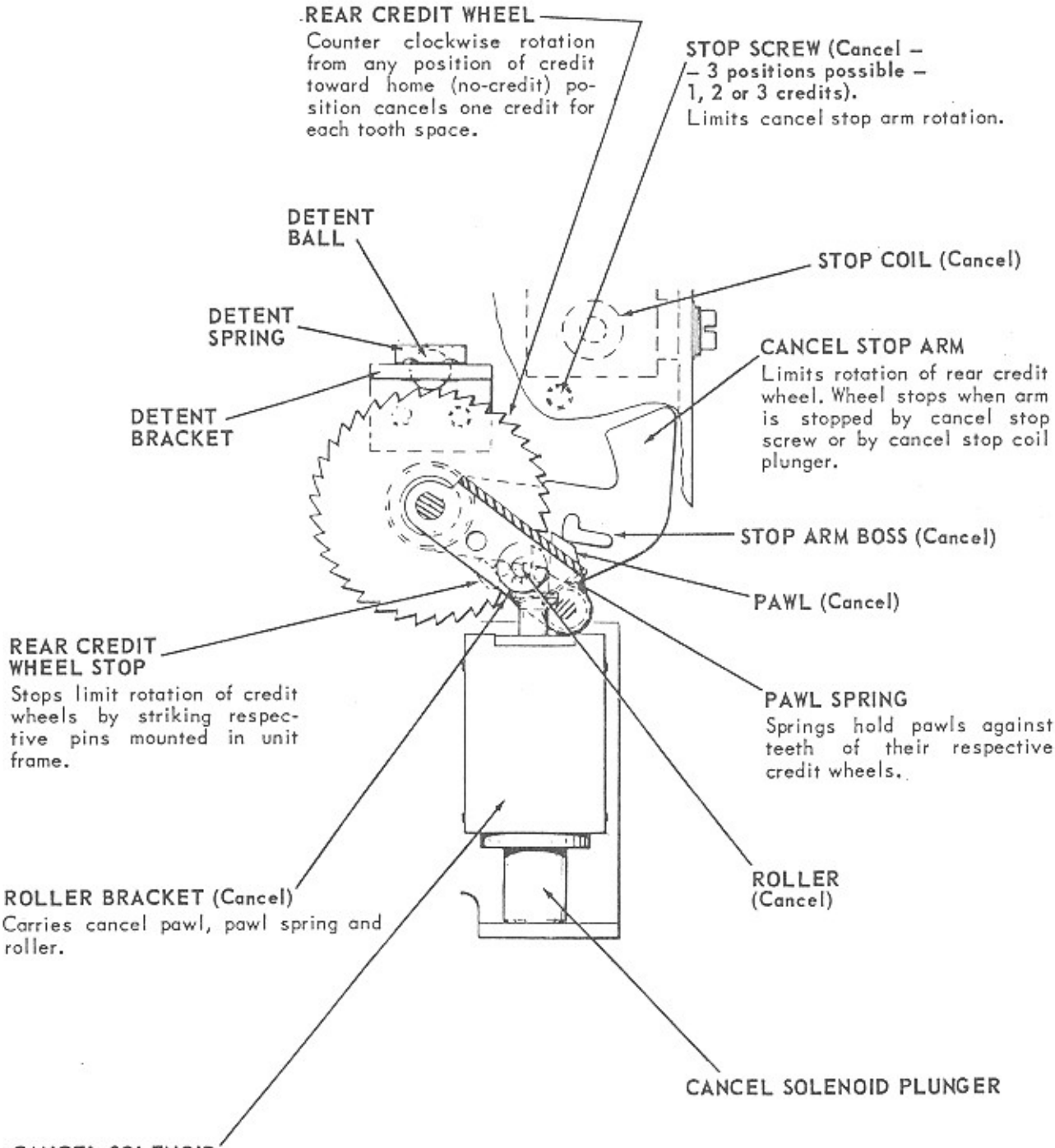
ROLLER BRACKET (Credit)
Carries credit pawl, pawl spring and roller.

CREDIT STOP ARM
Limits rotation of front credit wheel. Wheel stops when arm is stopped by credit stop screw or by credit stop coil plunger.

PAWL PIN
Causes pawl to disengage from credit wheel in rest position.

CREDIT SOLENOID
When energized by coin switch, causes its plunger to move upward, moving credit wheel clockwise — adds credit.

● REAR CREDIT WHEEL AND RELATED PARTS



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 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 25¢ 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 10¢ coin switch is also connected to the *credit solenoid* but thru another solenoid (stop solenoid) whose position is movable. When the 10¢ *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 5¢ coin switch is connected to the *credit solenoid thru the fixed stop solenoid*. Operation, when the unit is energized thru the 5¢ switch, is the same as when it is energized thru the 10¢ 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:

5¢ – Fixed stop solenoid
10¢ – adjustable stop solenoid
25¢ – credit solenoid (direct)
50¢ – auxiliary 50¢ circuit
5¢ – } fixed stop solenoid
10¢ – }
25¢ – adjustable stop solenoid
50¢ – 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 the phonograph is programmed for both "Standard" and "Premium" play selections, it becomes necessary to remove credit at different rates, dependent upon which type of selection is made. This will apply unless all selections are being offered at the same price of play, in which case, the rate of credit removal would be the same for all selections.

To differentiate between "Standard" selections and "Premium Priced" (EP or Stereo) selections, a bank of five manually-operated switches are mounted over the Number Pushbutton Bank. These switches provide a means by which "Standard" selections (in groups of forty) can be converted to "Premium Priced" selections (refer to the Selection System Service Manual for a full explanation of the Premium Pricing Unit). The Premium Pricing Unit shorts out the Cancel Stop Solenoid, leaving only the Cancel Stop Screw, to limit the number of credit teeth taken off after a Premium Priced selection has been made. When a Standard selection is made, the Premium Pricing Unit has no function and does not short out the Cancel Stop Solenoid. Thus, the Cancel Stop Solenoid limits the number of credit teeth taken off to the number corresponding to the position that the Cancel Stop Solenoid occupies on the Credit Unit, In this manner, two different rates of credit removal are made possible.

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 of E.PI selections. With standard selections priced at 10¢ E.P.'s can be priced at 15¢; or with Standards priced at 5¢, E.P.'s can be priced at 10¢. (Standard selections priced at 10¢ with E.P.'s at 20¢ requires the same screw location as Standards at 5¢, E.P.'s at 10¢.) From this it can be seen that E.P.'s can be 1-1/2 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 – 15¢
2 Plays – Quarter

– it is necessary to remove 1-1/2 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 15¢ 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. Similary, each quarter must put on 6 teeth.

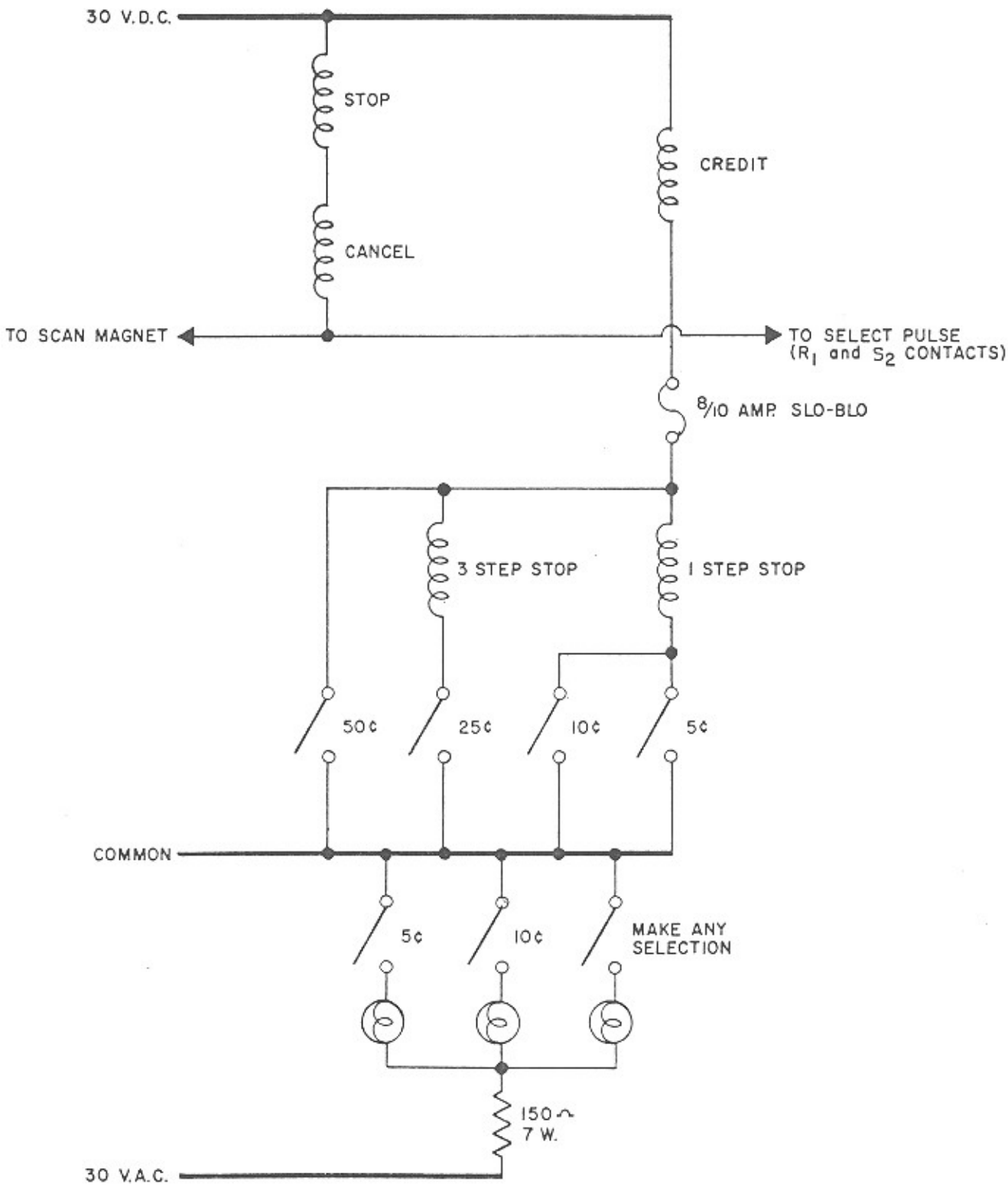
Other combinations can be set up using the same theory.

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.

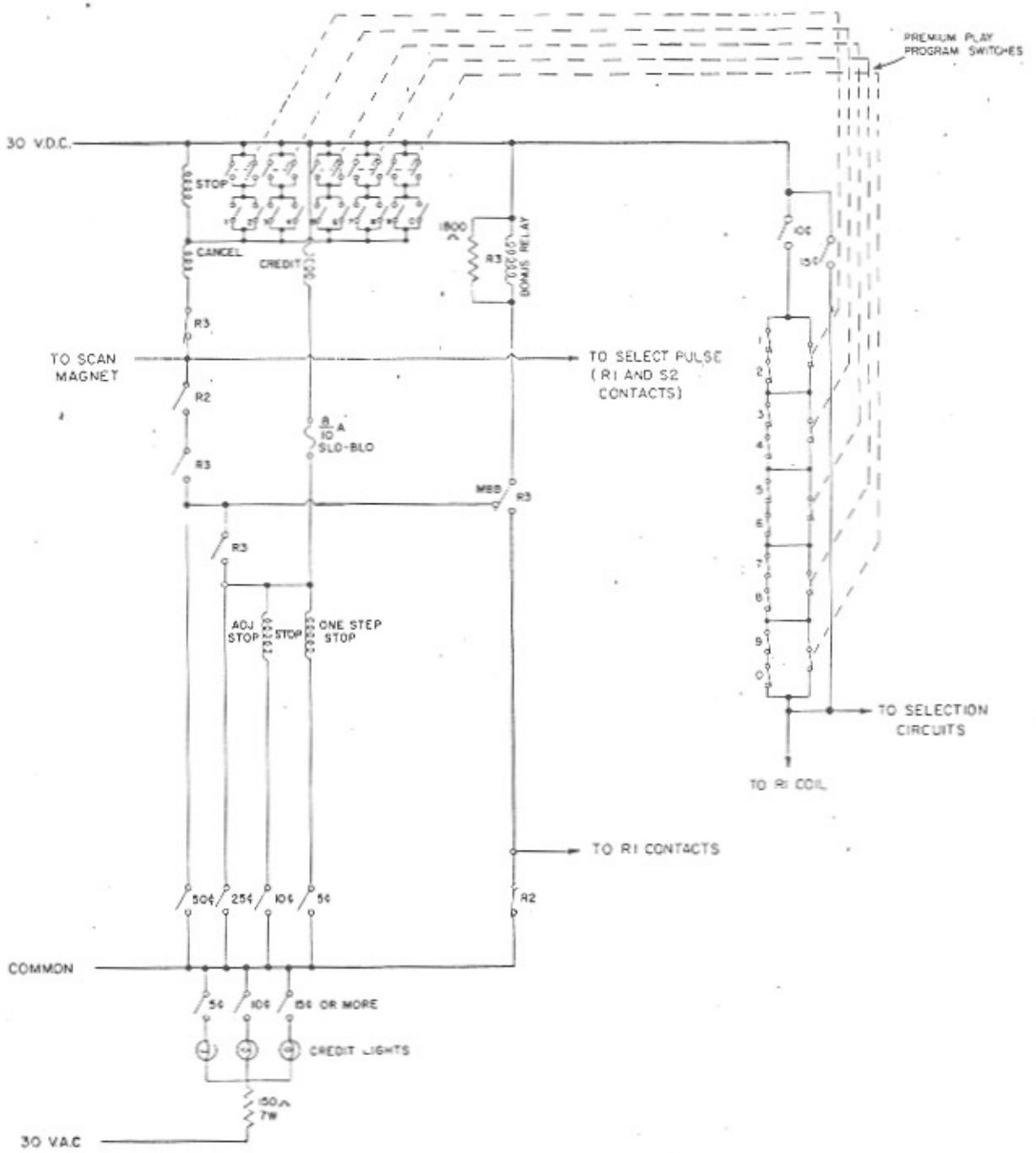
REVISED

CREDIT AND PRICING SYSTEM SCHEMATIC DIAGRAM

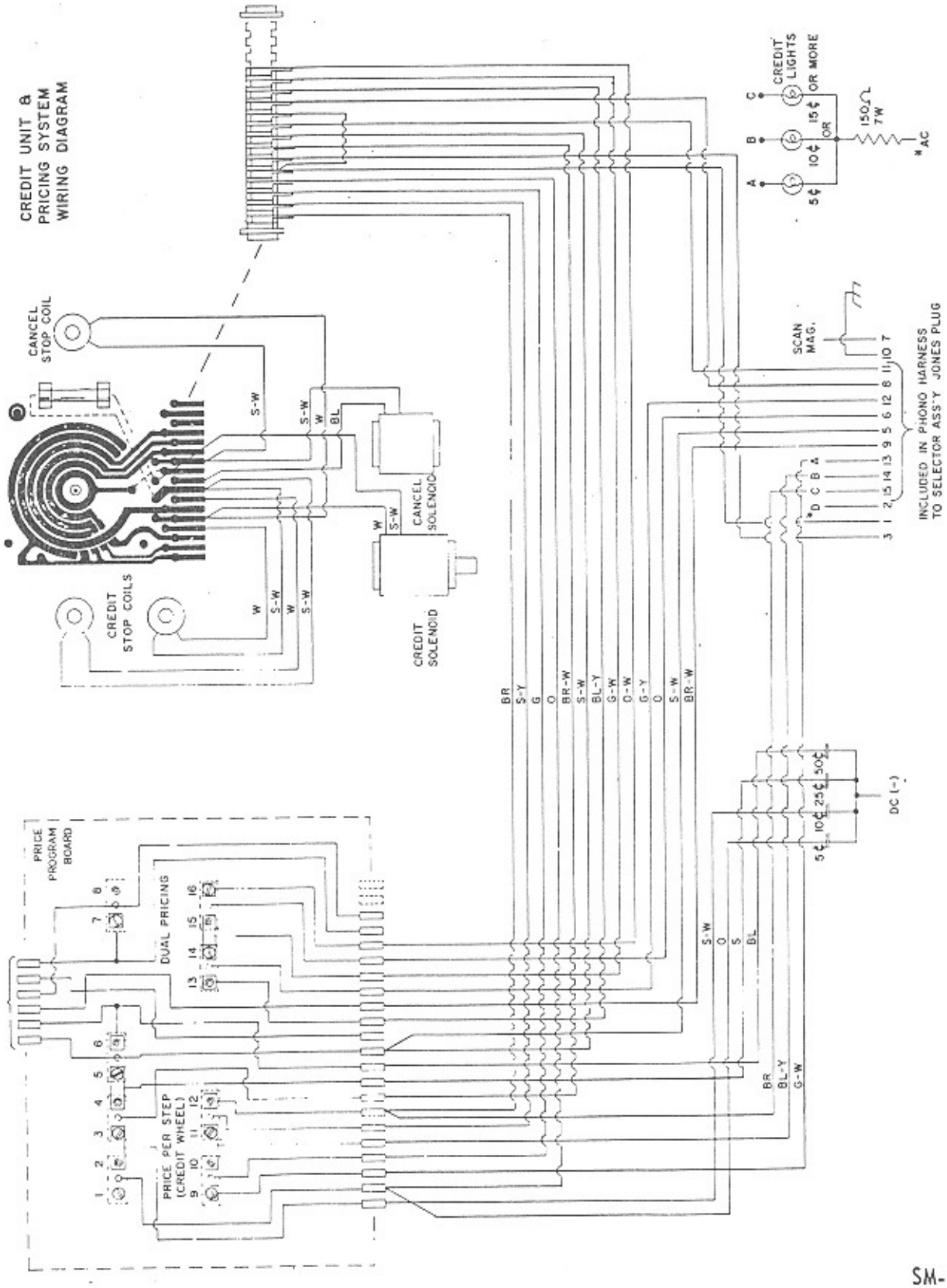


CREDIT AND PRICING SYSTEM SCHEMATIC DIAGRAM

(SHOWING 50¢ BONUS AND PREMIUM PRICING)

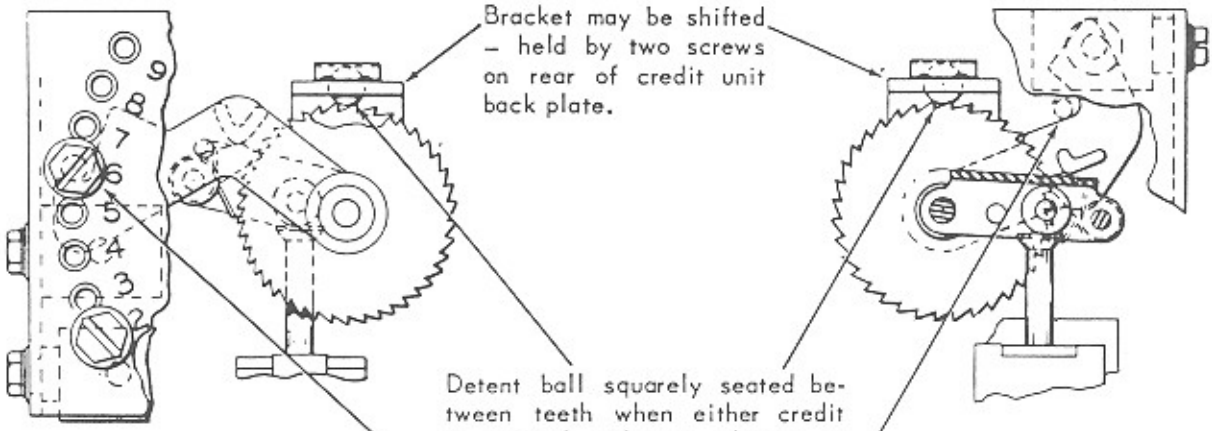


CREDIT AND PRICING SYSTEM WIRING DIAGRAM

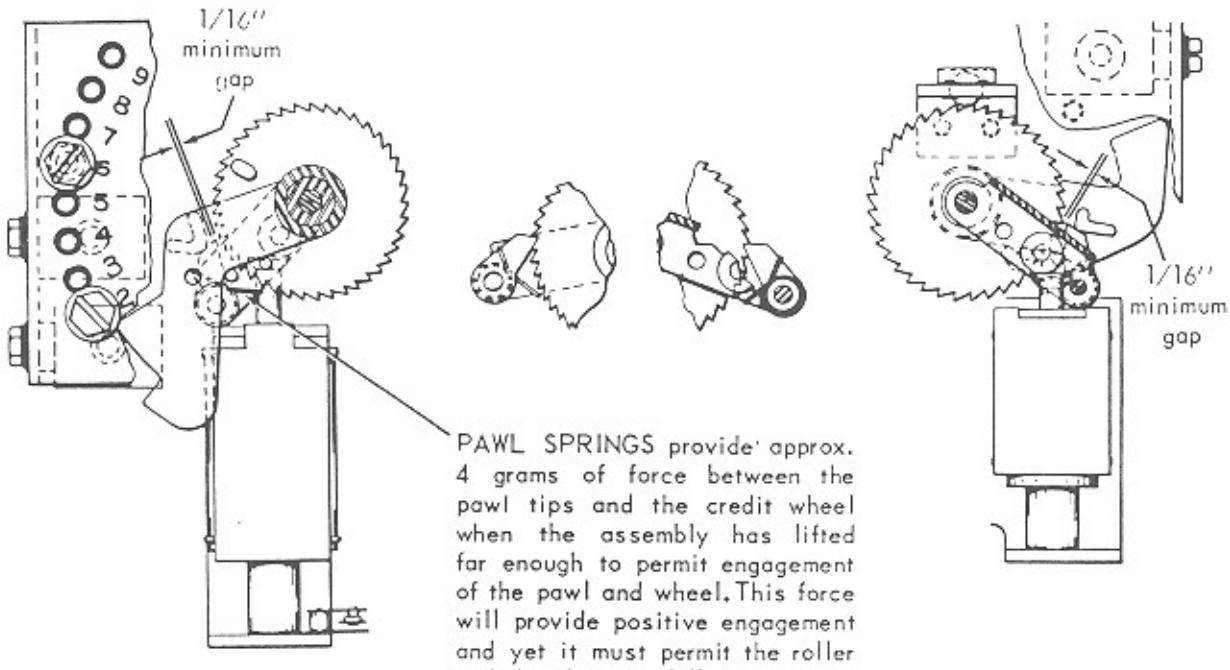


MECHANICAL ADJUSTMENTS

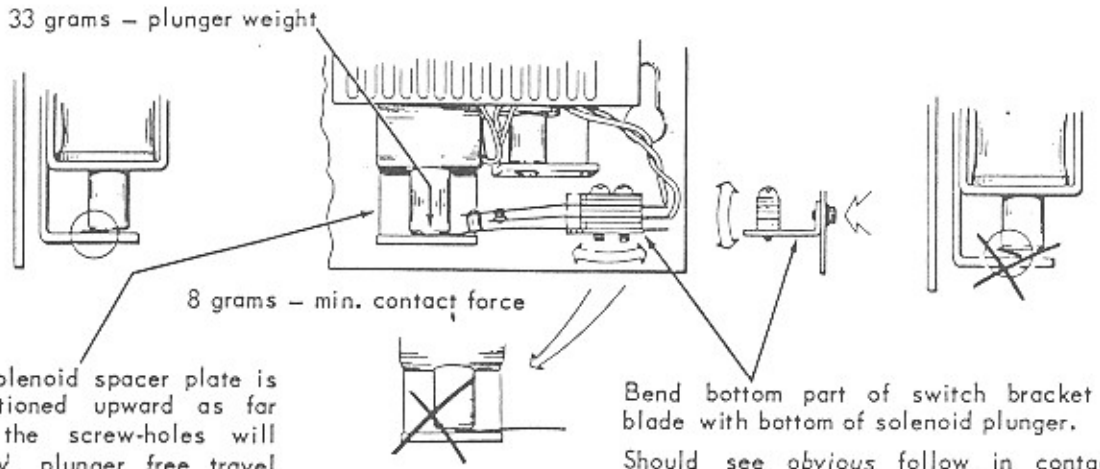
● DETENT BRACKET



● PAWL SPRINGS



● PLUNGER SWITCH (Not Present On R-1473D)



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.

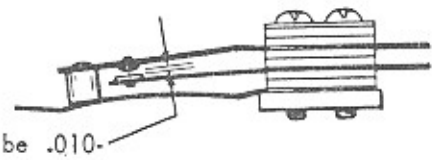
1/32" free vertical travel movement is necessary for proper adjustment.

See CREDIT and CANCEL SOLENOID PLUNGERS.

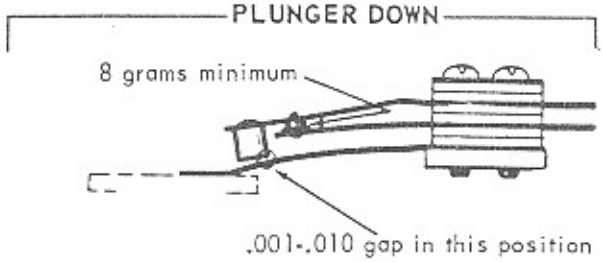
Bend bottom part of switch bracket to align blade with bottom of solenoid plunger.

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

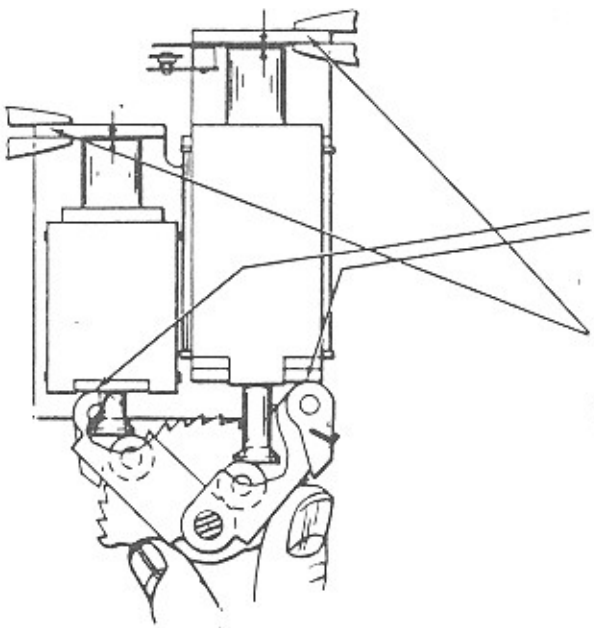
UNMOUNTED POSITION OF SWITCH (or with credit solenoid plunger up.)



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



● 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.

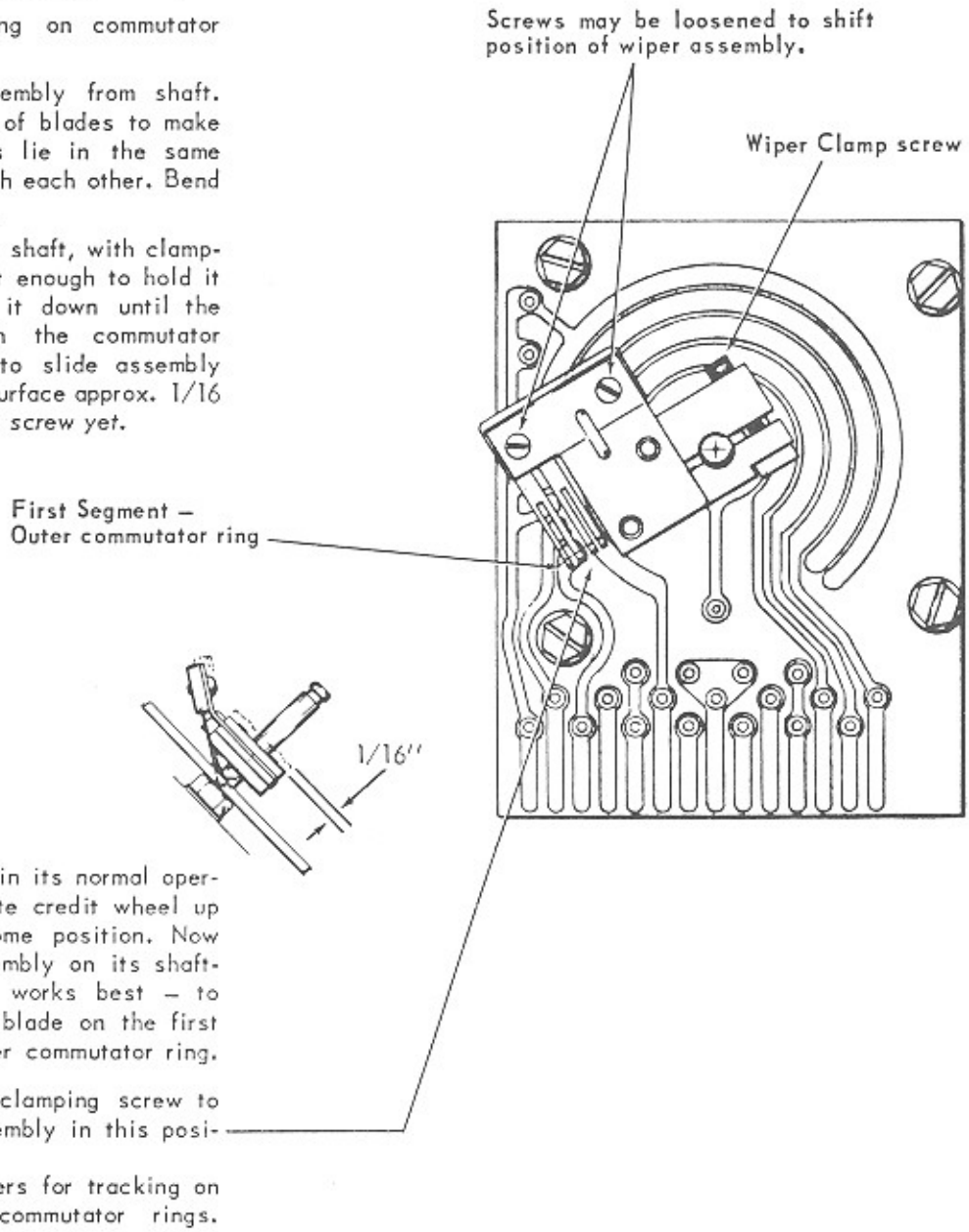
● WIPER ASSEMBLY

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. 1/16 more. *Do not tighten screw yet.*

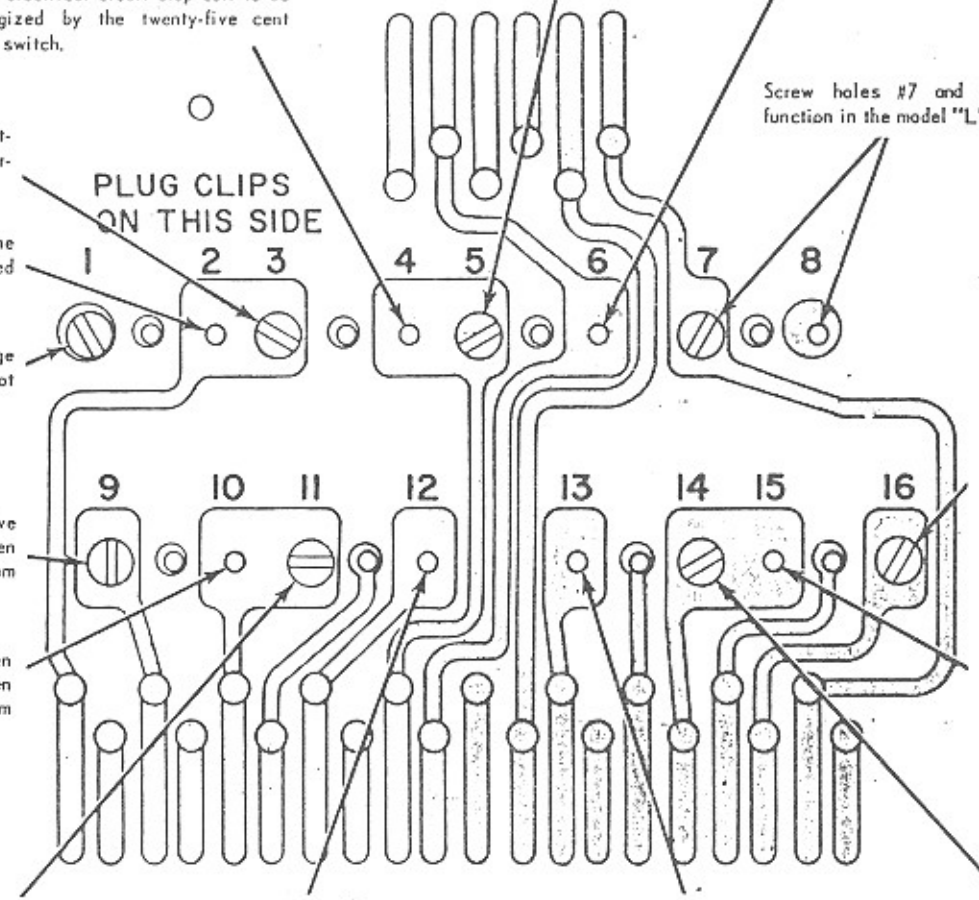


(C) Holding credit unit in its normal operating position, rotate credit wheel up one notch from home position. Now turn the wiper assembly on its shaft-counter-clock wise works best – to center the outside blade on the first segment of the outer commutator ring.

(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.

● LUBRICATION

See GENERAL PHONOGRAPH INFORMATION.



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.

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

Screw holes #7 and #8 have no function in the model "L" phonograph.

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

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

Hole #1 merely provides storage space for screw when hole #2 is not used.

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

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 #15 connects the "two step" credit ring as the Premium Price (E.P. or STEREO) credit switch. (This makes it possible to make a Premium Price selection when the credit unit is two steps 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.

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.

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.

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

* — Alternate method of setting-up price combination.

NOTE: If dual price combination (PREMIUM PRICING UNIT) is used, see SELECTION SYSTEM Service Manual regarding use of sliding switches.

	(1)	(1) *	(2)	(2) *	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(12) *	(13)	(14)	(14) *	(15)	(16)
CREDIT CIRCUIT BOARD Place screws in hole no's. (See Figure 2)	1, 3, 5, 7, 9, 11, 14 & 16	2, 4, 6, 7, 10, 12, 13 & 15	2, 4, 6, 7, 10, 12, 13 & 15	1, 3, 5, 8, 9, 11, 14 & 16	1, 3, 5, 7, 9, 11, 14 & 16	1, 3, 5, 8, 9, 11, 14 & 16	1, 3, 5, 7, 9, 11, 13 & 15	1, 3, 5, 8, 9, 11, 13 & 15	1, 3, 5, 7, 9, 11, 13 & 15	1, 3, 5, 8, 9, 11, 13 & 15	1, 3, 5, 7, 9, 11, 13 & 15	1, 3, 5, 8, 9, 11, 13 & 15	2, 4, 6, 7, 10, 12, 13 & 15	2, 4, 6, 7, 10, 12, 13 & 15	1, 3, 5, 7, 9, 11, 14 & 16	2, 4, 6, 7, 10, 12, 13 & 15	2, 4, 6, 7, 10, 12, 13 & 15	2, 4, 5, 8, 10, 12, 13 & 15	2, 4, 5, 7, 10, 12, 13 & 15	2, 4, 5, 8, 10, 12, 13 & 15
R-1473 CREDIT UNIT (See Figure 3) — Place CREDIT STOP COIL in slot no.	2	3	3	2	2	2	2	2	2	2	2	2	3	4	2	4	4	2	2	2
Place CREDIT STOP SCREW in hole no.	6	See note A	7	6	6	6	6	6	6	6	5	5	6	6	8	8	9	4	5	5
Place CANCEL STOP COIL in slot no.	2	1 or 2	1 or 2	2	2	2	1 or 2	1 or 2	1	1	1 or 2	1 or 2	1 or 2	1 or 2	2	1 or 2	1 or 2	1 or 2	1 or 2	1 or 2
Place CANCEL STOP SCREW in hole no.	3	1	1	3	3	3	1	1	2	2	1	1	1	1	2	1	1	1	1	1
	Blocked	Free	Free	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Blocked	Free	Free	Blocked	Free	Free	Free	Free	Free
SLUG REJECTOR (See Figure 1) nickel diverter	NO	NO	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	NO	NO	NO	NO	YES	NO	YES
50c RELAY UNIT REQUIRED? (If YES: see note 'B')																				

NOTE: (A) Stop screw may be located in hole No. 3 or higher, since it has no function in this price-setting.
GENERAL: If CREDIT STOP SCREW is located in hole No. 2, 3 or 4, the mounting screw, which is normally in hole No. 2, should be in hole No. 9.

NOTE (B): 50c BONUS RELAY KIT (PH-42)
Edge Connector (See INSTALLATION INSTRUCTIONS provided with kit)

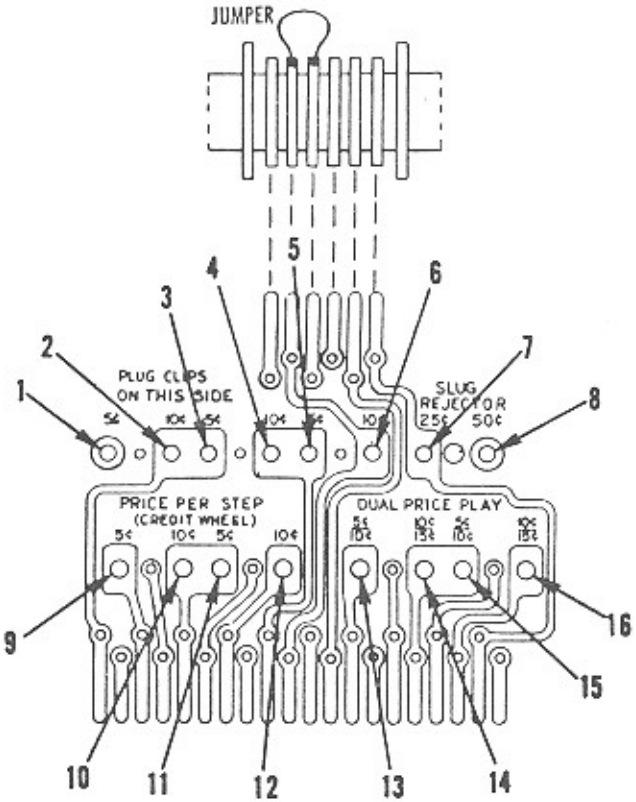
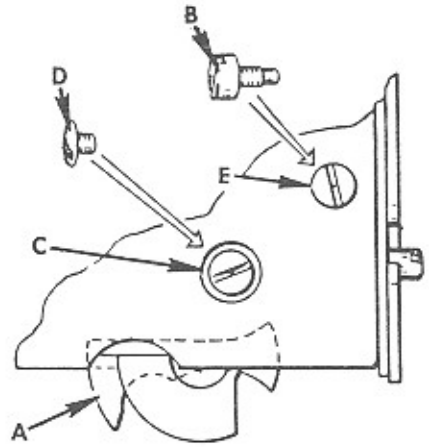


Fig. 2 — (Credit Circuit Board)



When nickel diverter (flipper) is blocked, every nickel will operate the coin switch. When the diverter is free, only every OTHER nickel will operate the coin switch.

To Block nickel diverter: With diverter (A) positioned as shown, move screw (B) to lower hole (C) and other screw (D) to upper hole (E). Tighten both screws. To free diverter, reverse above procedure. Note that the blocking screw (B) is heavier and has an extension beyond its threaded portion.

Fig. 1. (Lower, right hand corner of slug rejector)

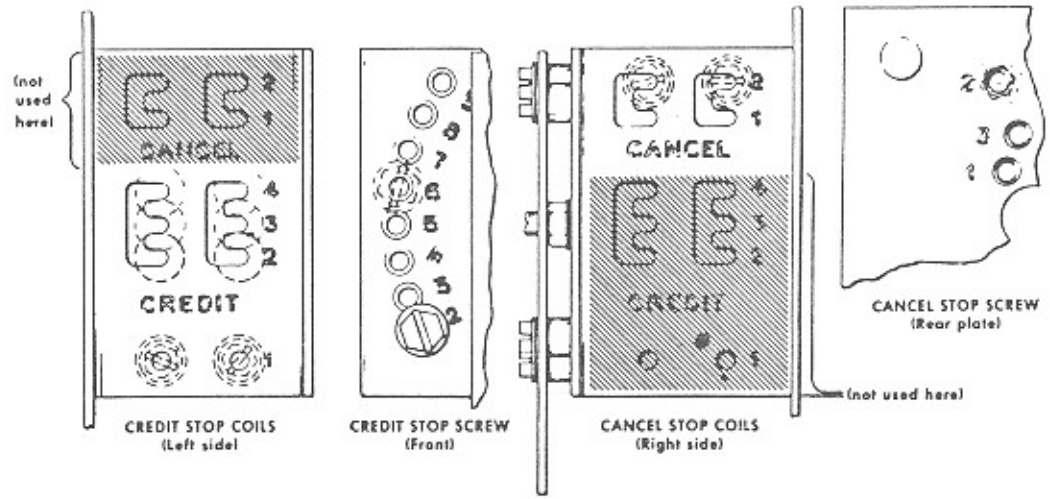


Fig. 3 — (CREDIT UNIT slot and screw locations)

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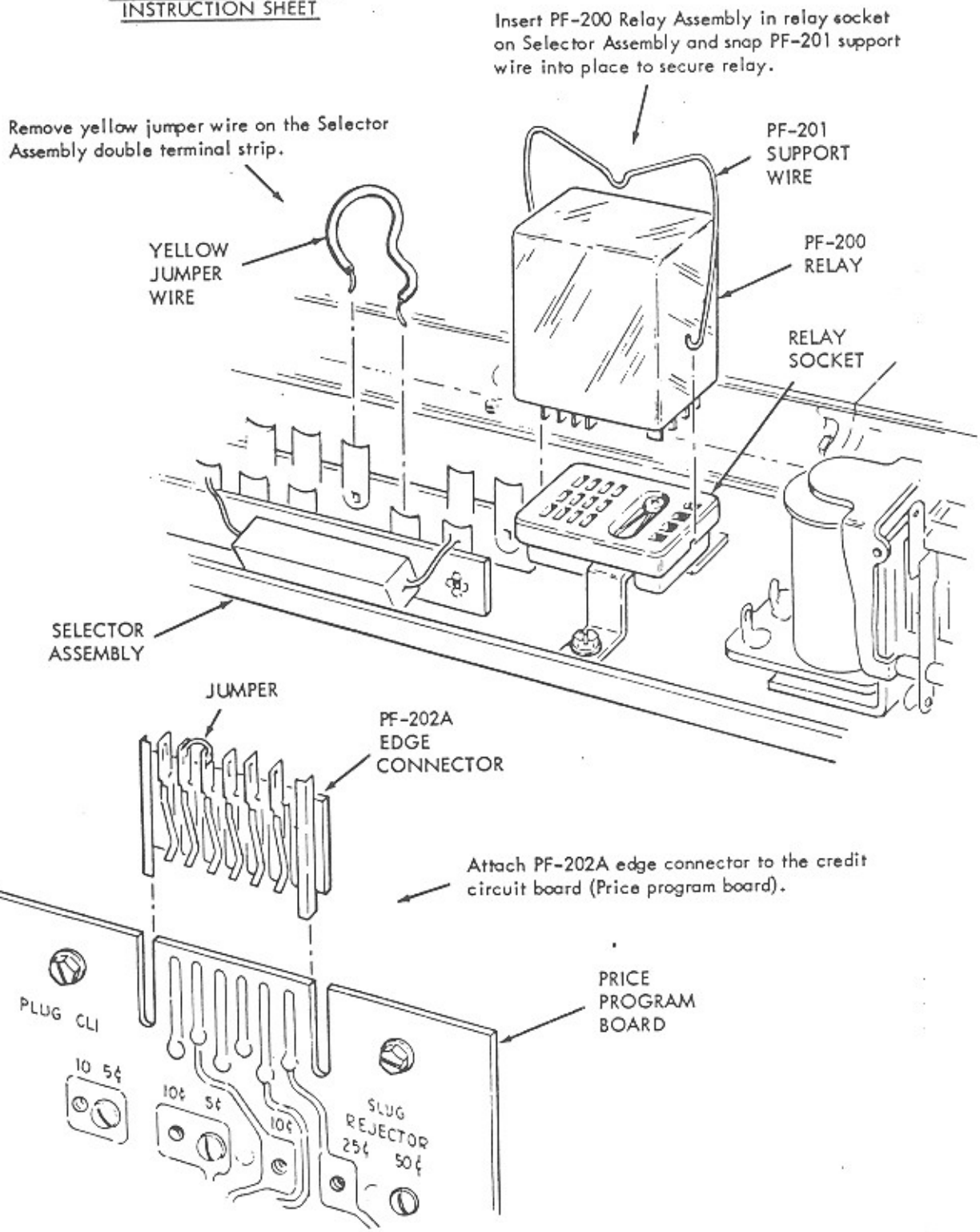
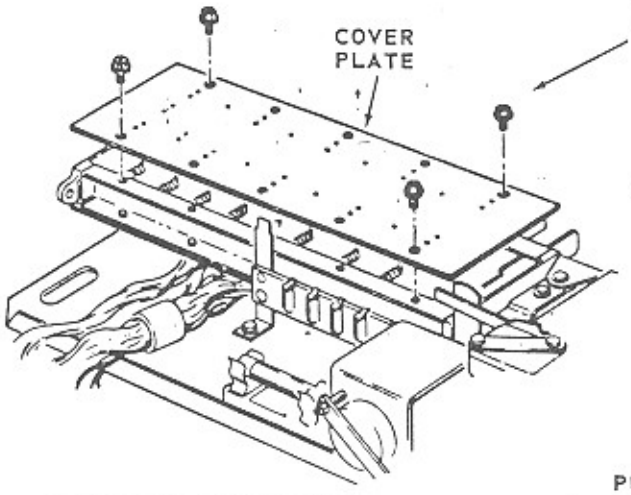
50¢ RELAY UNIT INSTRUCTIONS

50¢ RELAY UNIT PH-42
INSTRUCTION SHEET

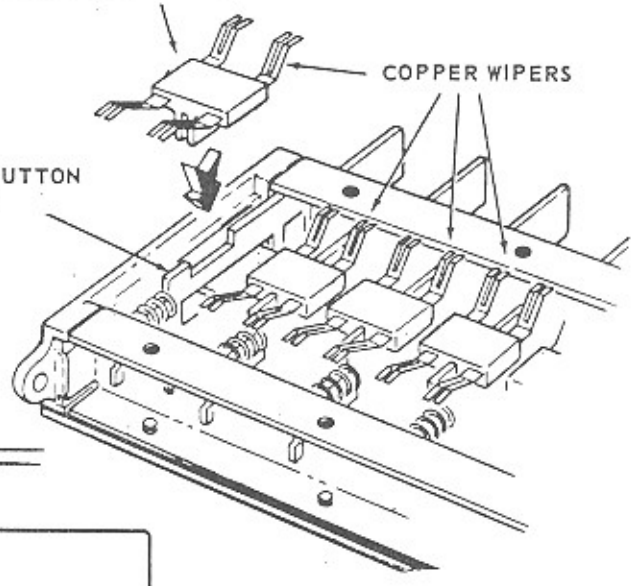


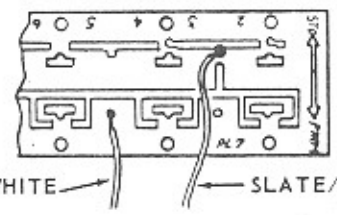
PREMIUM PRICING UNIT INSTRUCTIONS

. For Kit part numbers, refer to Rowe-AMI Selector and Credit Unit parts catalog.

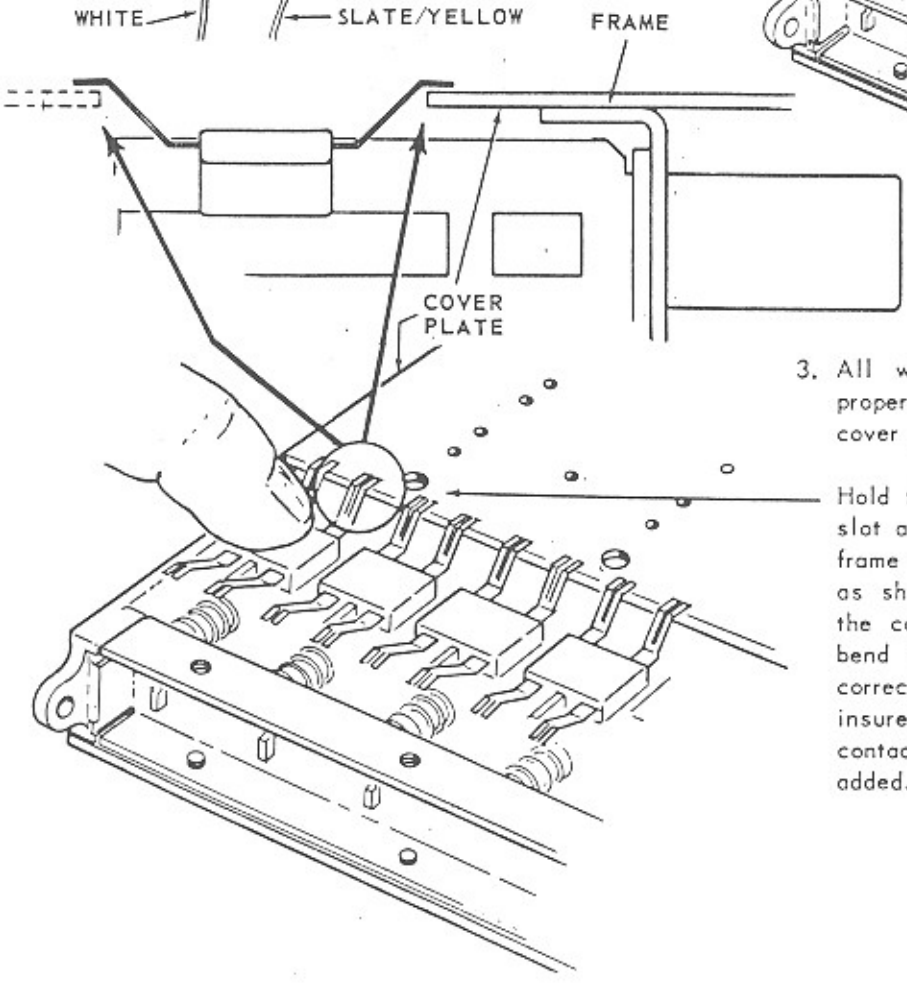


1. Remove metal cover plate from the number push-button bank. Later model phonographs will have a printed circuit board instead of the metal cover. The printed circuit board must be removed in the same manner. The two soldered wires, on the printed circuit, must be disconnected.
2. Place one copper wiper on each of the ten push-button shafts. Wiper will seat in the slot on the pushbutton shaft. Later model phonographs, with the printed circuit, will already have the wipers on the shafts.





Solder the two wires to the circuit board, provided in the kit, as shown.

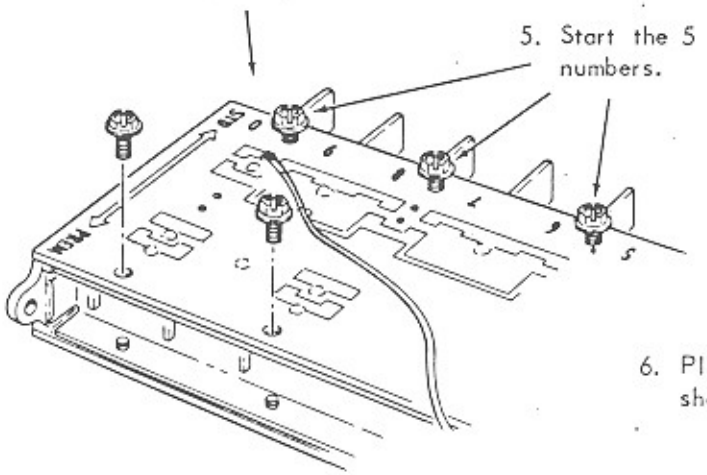


3. All wipers in the kit must be gauged for proper height and contact pressure using the cover plate as follows:

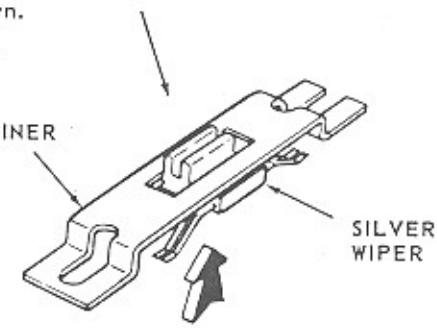
Hold the wiper firmly in the pushbutton shaft slot and place the cover plate flat against the frame and under the ends of the wiper blades as shown. All wiper blades should be above the cover plate without being forced. If not, bend the blade slightly to bring it into the correct position. This height gauging will insure that the wiper blades make proper contact with the circuit board when it is added.

4. Next, place the circuit board on top of the number pushbutton bank with the numbers to the front of the phonograph.

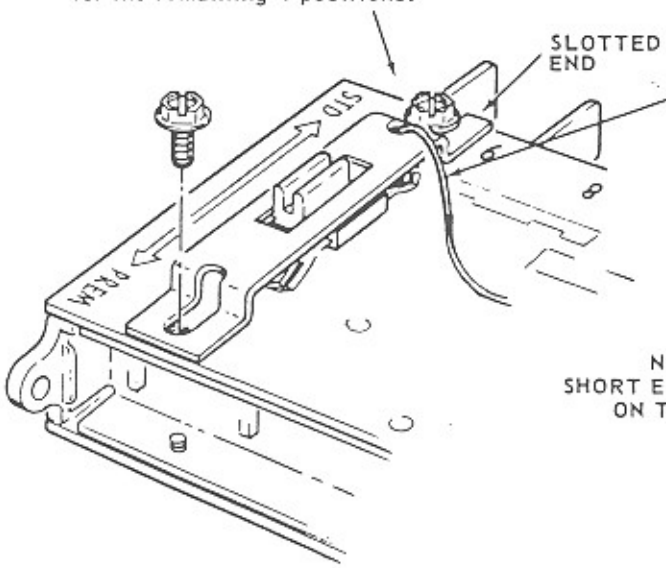
5. Start the 5 screws that are in line with the numbers.



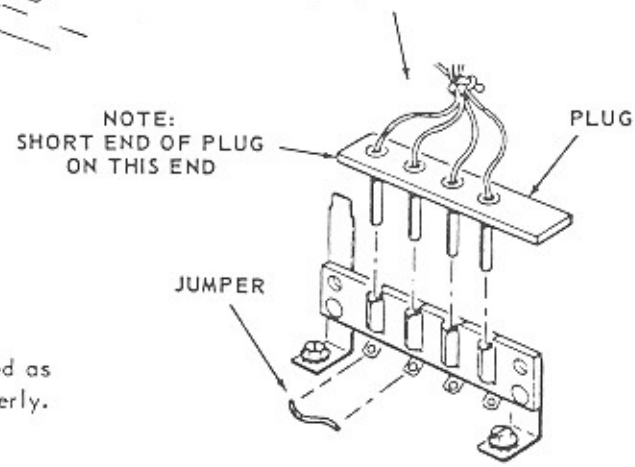
6. Place one silver wiper in one retainer as shown.



7. Slide the slotted end of the retainer under one of the screws that has been started and place a screw in the other end of the retainer. Tighten both screws. Repeat this procedure for the remaining 4 positions.



8. Insert the circuit board plug in the terminal strip-socket near the number pushbutton bank. Remove the jumper wire shown.



NOTE: All (15) wipers must be assembled as indicated or unit will not operate properly.

For premium pricing programming information, refer to Rowe-AMI Credit Unit and Pricing System Service Manual. If price combination number 8 (on the price of play combination chart) is used, a 50 cent BONUS RELAY KIT (PH-42) must be installed.