

ROCK-OLA *Manufacturing Corporation*

Models

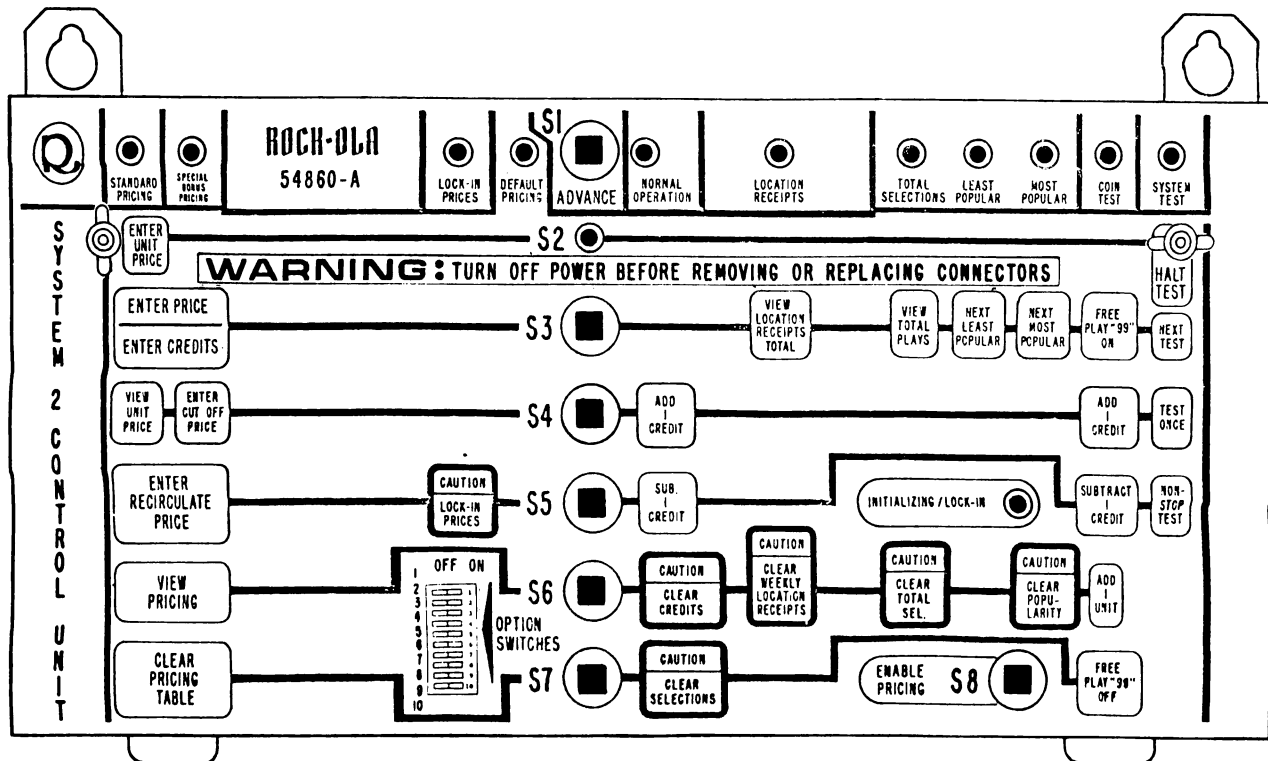
490-1, 2

494-1, 2

1000

Stereo Phonograph – 200 Selections

DIGITAL MICROCOMPUTER SYSTEM



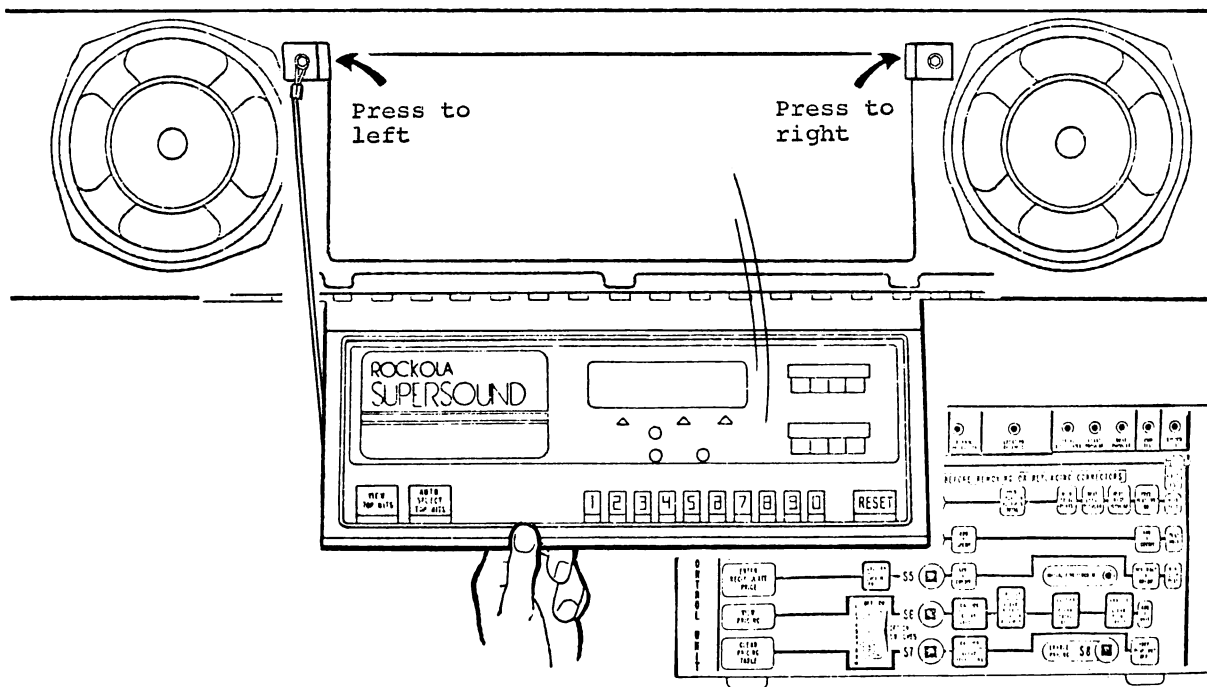
SYSTEM 2 CONTROL UNIT OPERATING MANUAL

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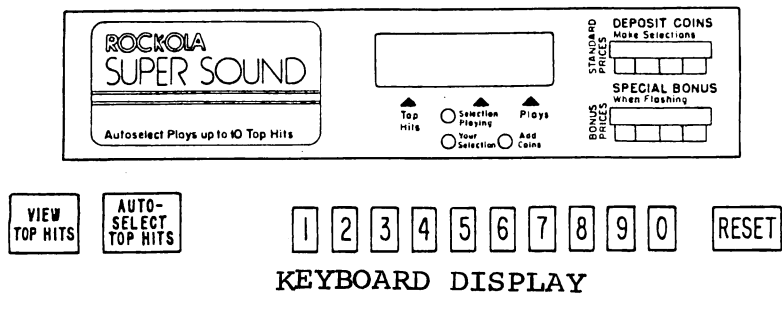
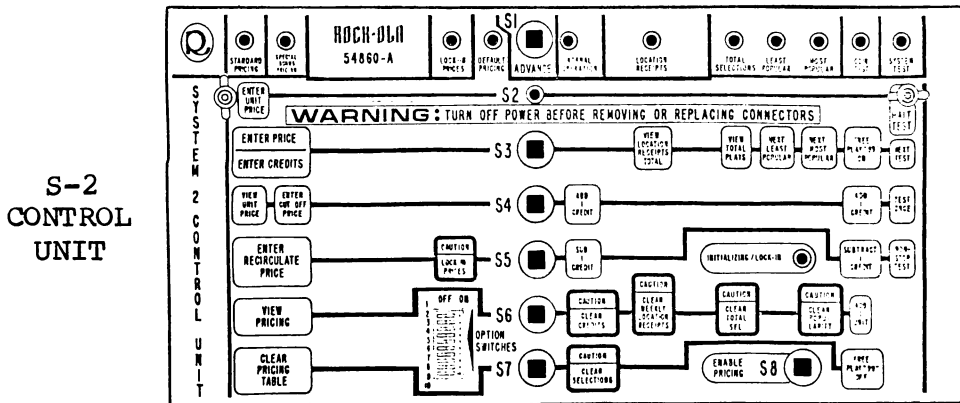
KEYBOARD AND DISPLAY ACCESS FOR SYSTEM 2 PROGRAMMING

1. Open and raise DOME.
2. Press SPRING RETAINERS outward.
3. Lower KEYBOARD AND DISPLAY.



INTRODUCTION

Your new ROCK-OLA SYSTEM 2 PHONOGRAPH is an extremely versatile record-playing device. It uses a microcomputer to convert coins spent by the customer into credit or "plays", using a pricing scheme designed by you. SYSTEM 2 keeps track of record popularity so you can provide your customers with the selections they want to hear. In addition, ROCK-OLA provides a long list of customer-attracting options and operating modes for the SYSTEM 2 PHONOGRAPH. All of these features are designed to let you tailor SYSTEM 2 to meet your needs.....and maximize your profits.



HOW TO USE THIS MANUAL

SYSTEM 2's versatility goes hand in hand with added complexity. This manual will divide the operation of the SYSTEM 2 CONTROL UNIT into related groups of functions called service mode. Each group function and operation will be explained and, in most cases, a short "operator exercise" will be provided. These exercises are meant to familiarize you with systems and they are as simple as adding two numbers on a calculator. You should be able to operate each group with confidence before you move on to the next group. It is also recommended that you read each section through before you attempt the exercise. This way, you will know the ultimate goal of the exercise.

MAJOR
COMPONENTS

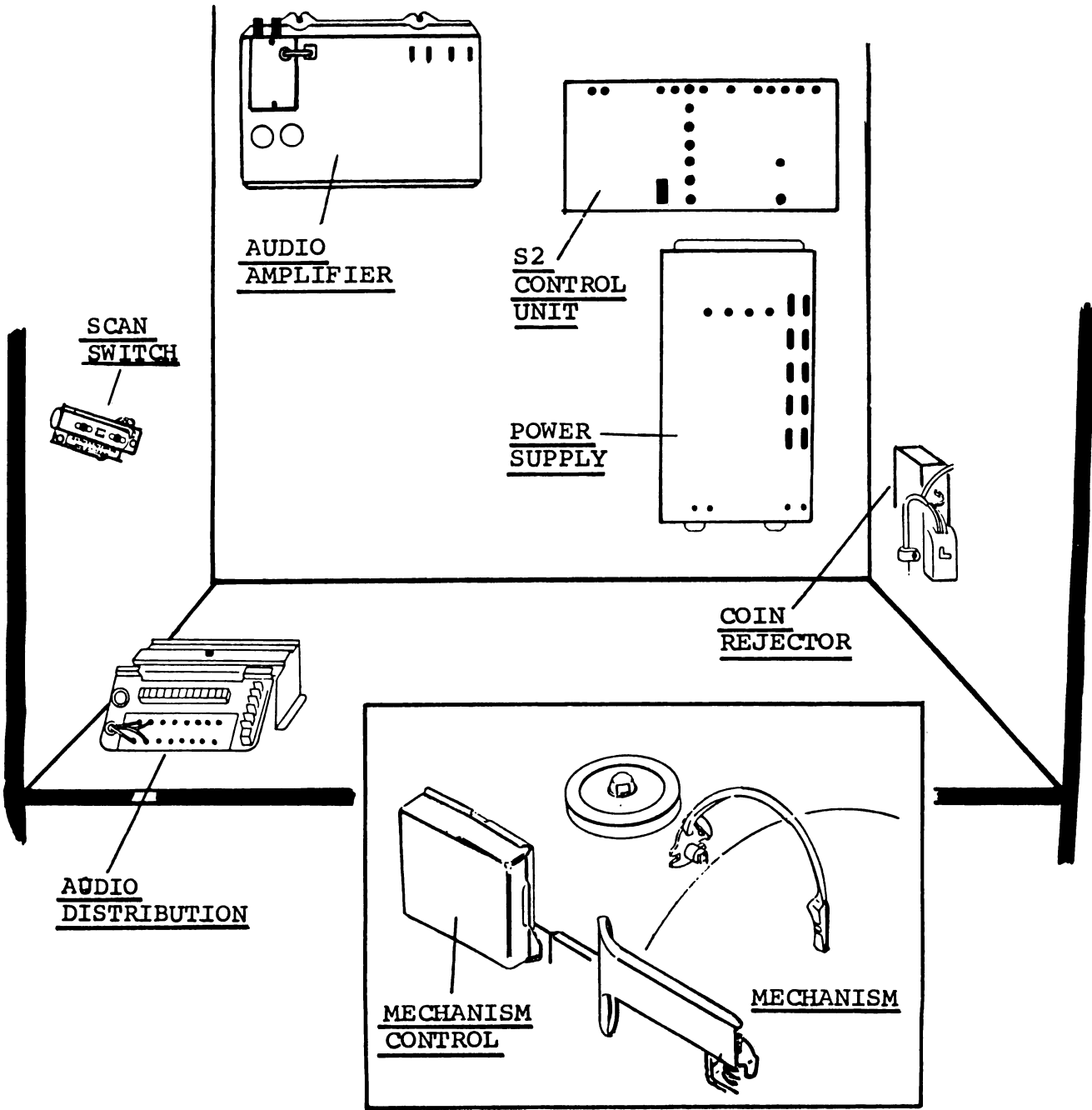
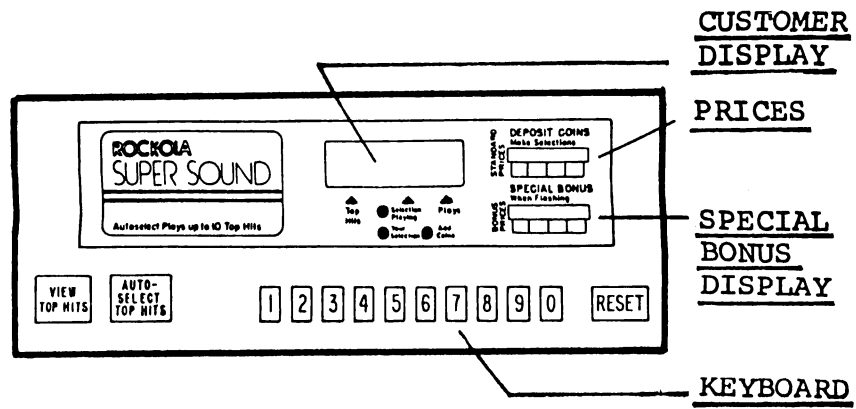
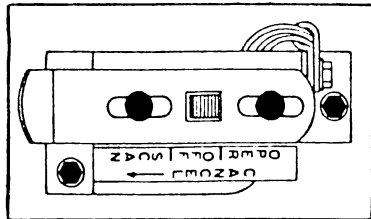
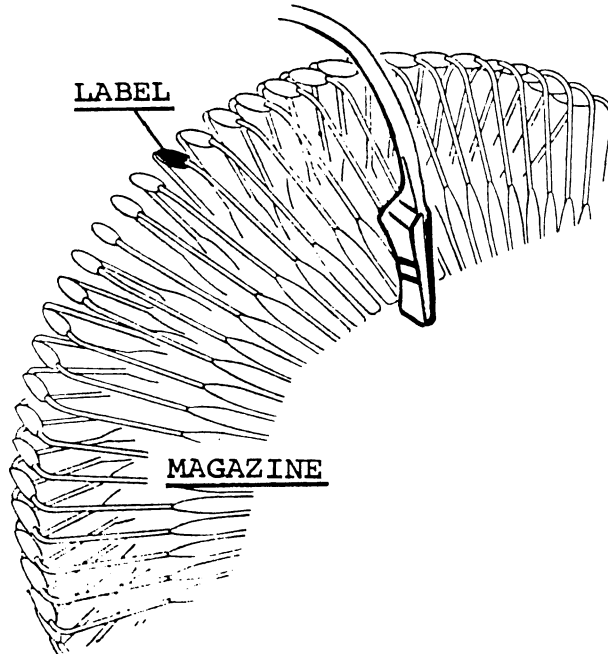


FIG. 1



SCAN SWITCH



MAGAZINE

LOADING THE RECORD MAGAZINE

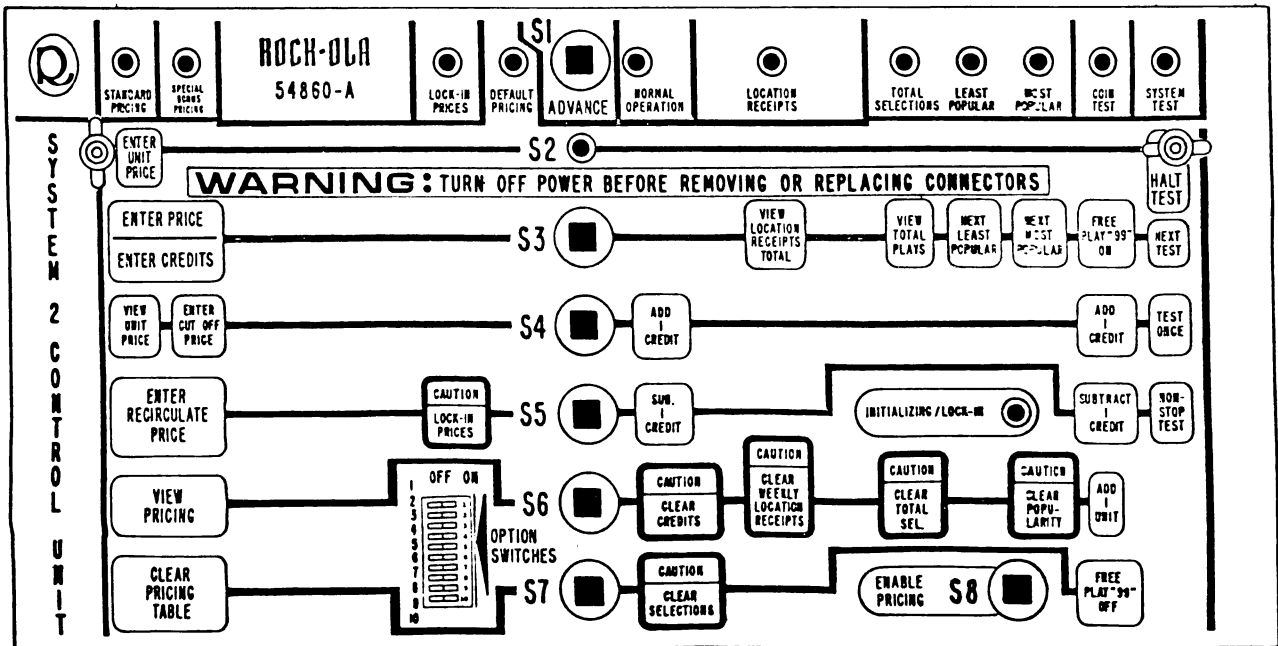
The record magazine is the cage-like wheel located in the MECHANISM. The standard magazine size is 100 records. Note that each slot in the magazine is pointed to by a numbered label. Look at the slot indicated by 100. Place the SCAN SWITCH in the OFF position and insert a record into this slot. The record side pointed to by the triangle is selection 100. The other side of this record is selection 200. The record itself is referred to by the last two digits of its selection numbers. Selections 100 and 200 are located on record 00. This terminology will become important later on when we discuss the CONTROL UNIT'S operation.

To load the next record, push the SCAN SWITCH down to the SCAN position until record slot 110 is within your reach, then release the switch to stop the magazine. Place a record in this slot and repeat this SCAN-and-load process until all 100 records have been loaded into the record magazine.

It is extremely important that the magazine be filled to capacity!

USING THE CONTROL UNIT

The SYSTEM 2 CONTROL UNIT is the "brain" of the phonograph. Before you can take advantage of its many useful features, you must learn how to communicate with it. Your customers will "talk" with the CONTROL UNIT using the KEYBOARD and the CONTROL UNIT will reply via the CUSTOMER DISPLAY. In addition to these two devices, you will use the SCAN SWITCH and the red lights and designated buttons located on the CONTROL UNIT to tell it what you want it to do. Look at the CONTROL UNIT so you can easily locate the parts mentioned in the description below.



SERVICE MODES

Look at the CONTROL UNIT. When your SYSTEM 2 PHONOGRAPH was powered-up, it initialized itself for NORMAL OPERATION, as indicated by the red light. The phonograph will spend the majority of its time in NORMAL OPERATION so that it can be used by your customers. In order to use the CONTROL UNIT'S many special features, you must select one of the SERVICE MODES.

SERVICE COLUMNS are selected with the S1 ADVANCE button. Press this button and watch the top row of lights on the CONTROL UNIT. The red light labelled LOCATION RECEIPTS should be lit. Press this button repeatedly until the red SYSTEM TEST light is lit. Press ADVANCE S1 button once more and you'll be back where you started in NORMAL OPERATION.

Step through the SERVICE COLUMNS a few times using ADVANCE S1 button and get a "feel" for how rapidly you can press the button without "getting ahead" of the CONTROL UNIT. When you feel comfortable with the operation of this button, select NORMAL OPERATION and leave the control unit in this state. The CONTROL UNIT should now be set up for NORMAL OPERATION.

Look at FIG. 3. When a column light is on, it means that all of the things listed in rectangular boxes directly below that light are available for you to use.

To select a function in a column, simply press the designated button on the CONTROL UNIT to the left of that function. This means the function associated with each button changes, depending on which column you have selected. Note that some buttons are inactive in certain columns.

If the above explanation confuses you, please read it again. When it starts to make a little sense, try the exercises given below in the description of NORMAL OPERATION.

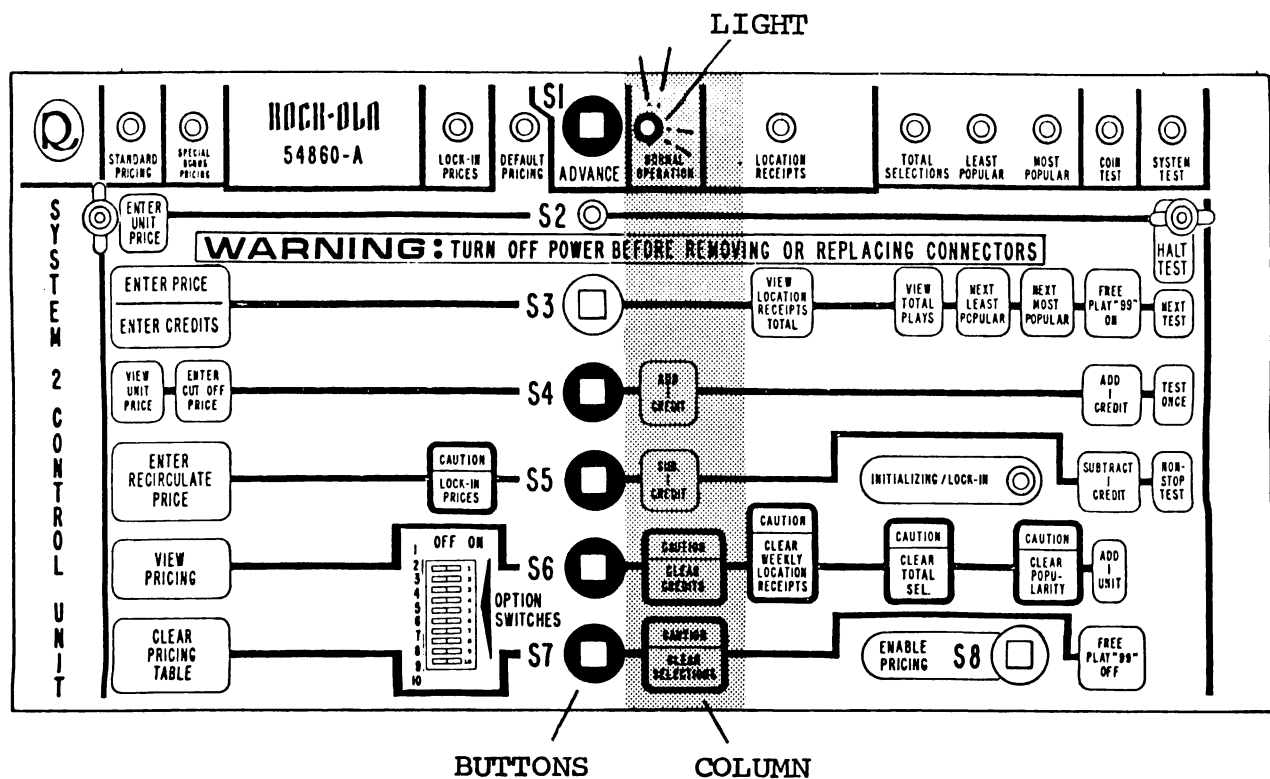


FIG. 3

The functions in the shaded column are the only actions available when NORMAL OPERATION is selected.

ADD 1 CREDIT ————— S4 BUTTON
 SUBTRACT 1 CREDIT ————— S5 BUTTON
 CAUTION: CLEAR CREDITS ————— S6 BUTTON
 CAUTION: CLEAR SELECTIONS ————— S7 BUTTON
 (INACTIVE - S2 & S3 BUTTONS)

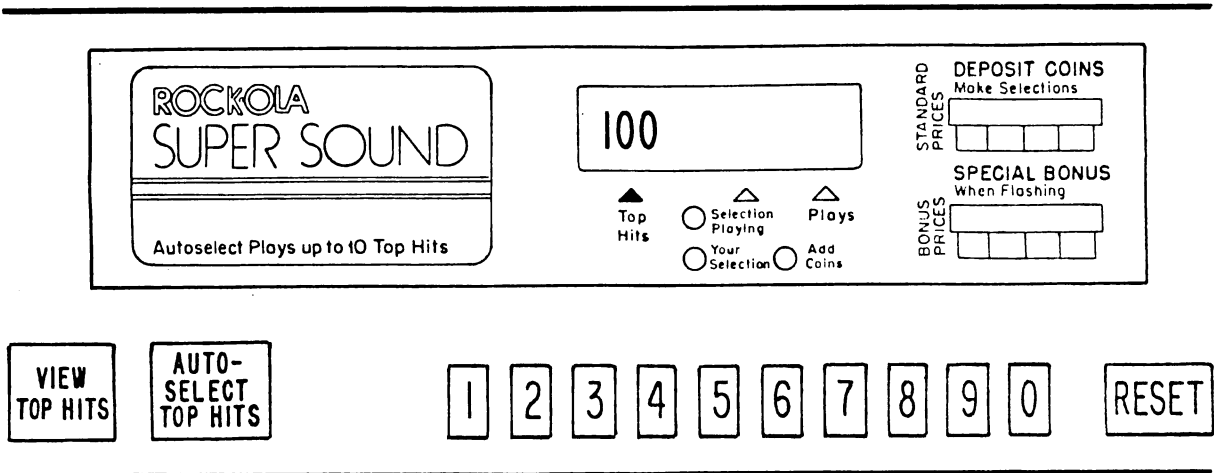


FIG. 4

NORMAL OPERATION

Select NORMAL OPERATION on the CONTROL UNIT and make sure that the SCAN SWITCH is in the OPERate position. This is how your SYSTEM 2 PHONOGRAPH will be set up when your customers use it. The CUSTOMER DISPLAY should look like FIG. 4.

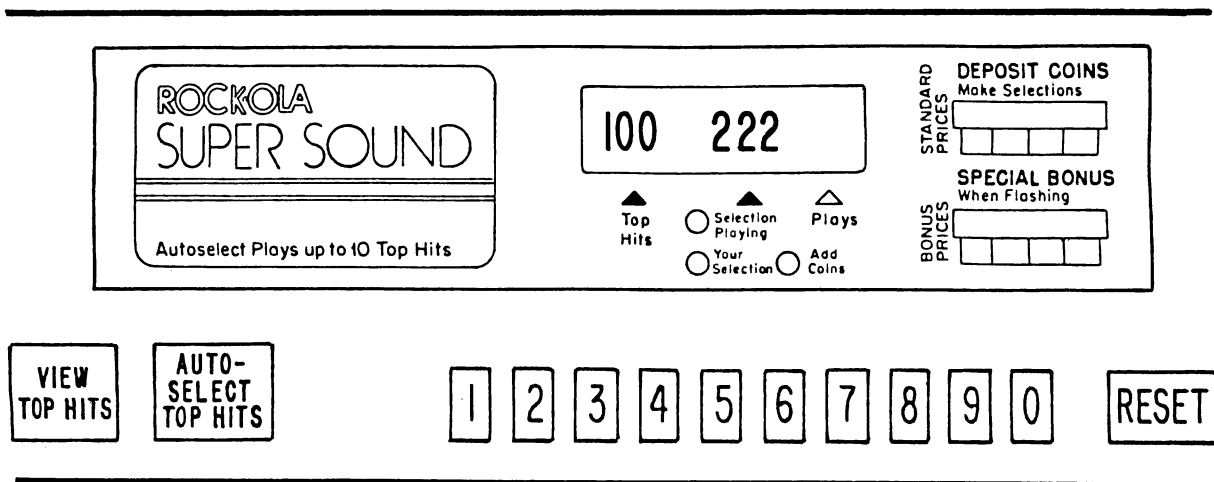
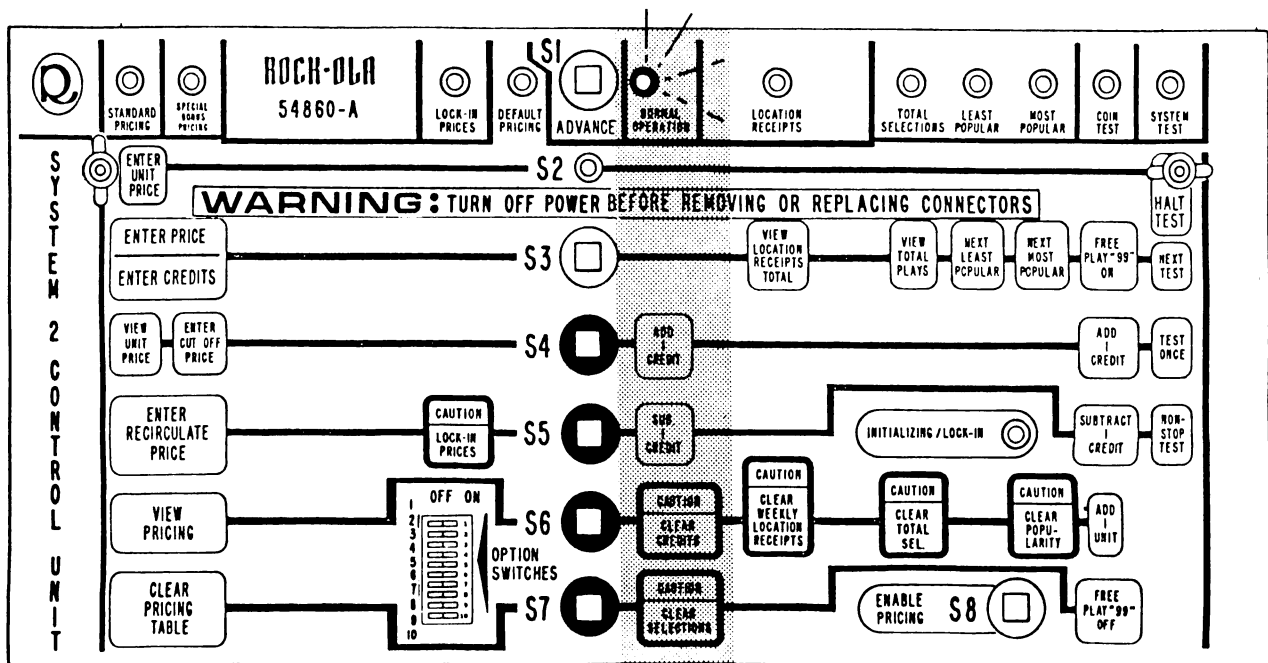


FIG. 5

The ADD 1 CREDIT and SUBTRACT 1 CREDIT actions are very straight forward. Try adding a few credits and then subtracting them. Add a few more credits and then push the S6 CLEAR CREDIT button which resets the credits to zero. The S7 CLEAR SELECTION button clears all the selections made by customers that have not yet been played.

To reject a selection that is already playing on the turntable, you can use the MECHANISM'S CANCEL feature. To see how this works, first add a credit using the S4 button. Then request selection 222 using the KEYBOARD. Watch what the CUSTOMER DISPLAY does during this time so you get used to the way it operates. While the record is playing, the CUSTOMER DISPLAY should resemble FIG. 5.



Now cancel the selection by holding the SCAN SWITCH in the SCAN position just until the phonograph arm lifts up from the record. Then return the SCAN SWITCH to the OPERate position. The record will then be returned to its slot in the record magazine and the record magazine will rotate through home 2 times. Since you only made one selection, the selection queue is now empty and the record magazine will return to its HOME position, awaiting a selection.

The CANCEL feature is useful when a scratch on a record prevents the record from finishing. If you desire to silence the SYSTEM 2 PHONOGRAPH quickly, use the S6 CLEAR CREDITS & S7 CLEAR SELECTIONS buttons and then CANCEL the selection that is currently playing.

If you or one of your customers request a selection that does not exist, the CUSTOMER DISPLAY will display an error message and the RESET key will flash. Pressing the RESET key will clear the error. Add a credit and try to request selection 399 (non-existent), then compare the CUSTOMER DISPLAY to FIG. 6. Now push the RESET key on the keyboard.

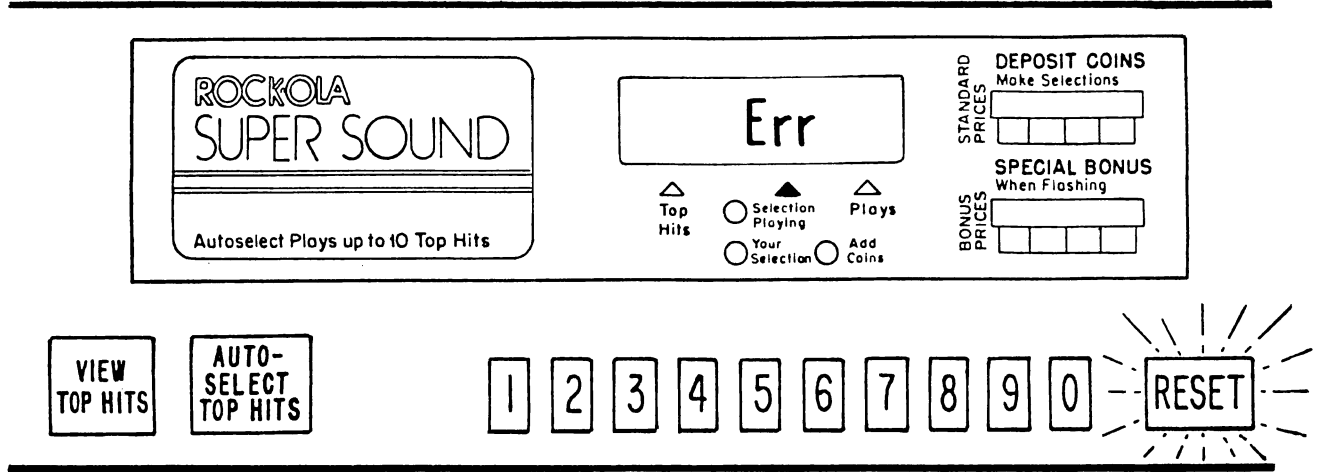


FIG. 6

Correcting a mistake while entering information from the keyboard is usually this easy. Remember this when using the other SERVICE MODES. Note also that correcting an error with the RESET key has no effect on the customer's credits. A record number must start with a 1 or 2.

VIEW TOP HITS

1st TOP HIT record is always displayed on the TOP HIT DISPLAY, (see FIG. 8) and the TOP 10 HIT LIST in queue can be found by repeatedly pressing VIEW TOP HITS key. To continue pressing key after 10th HIT RECORD will only show the last TOP HIT. The TOP HIT DISPLAY will always return to 1ST TOP HIT when VIEW TOP HIT key has not been pressed for a few seconds.

VIEW TOP HITS (CONTINUED)

If in doubt on TOP HIT records, advance to the MOST POPULAR column by pressing the S1 ADVANCE button on S2 Control Box and view the display by pressing the S3 button. (See FIG. 9) Left side will display MOST POPULAR 1st, middle section will be blank, and right side will be displaying number of times selected. By getting the plays difference between the #1 & #2 plays, and adding 1 more play to the 2nd MOST POPULAR record, the 2 TOP HITS will exchange places.

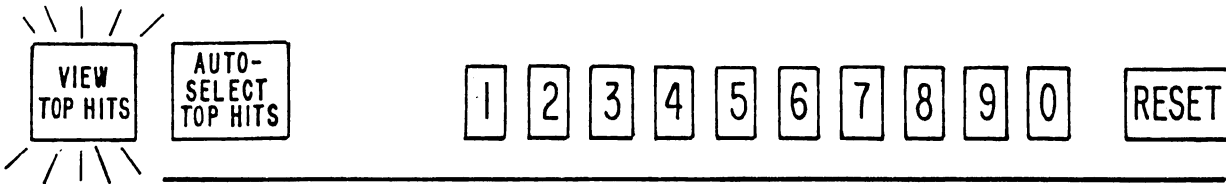
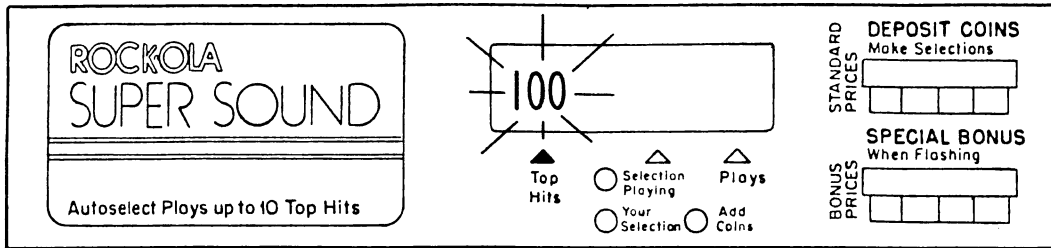


FIG. 8

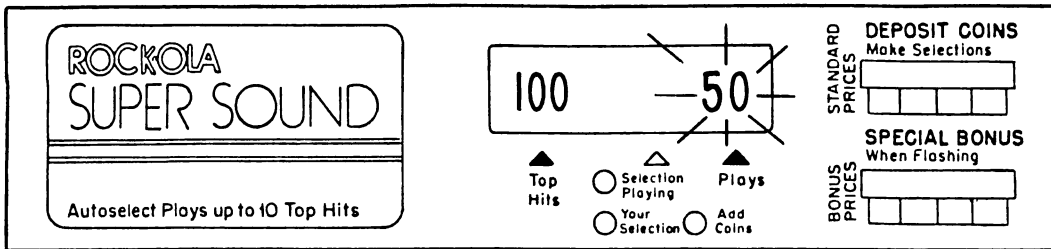
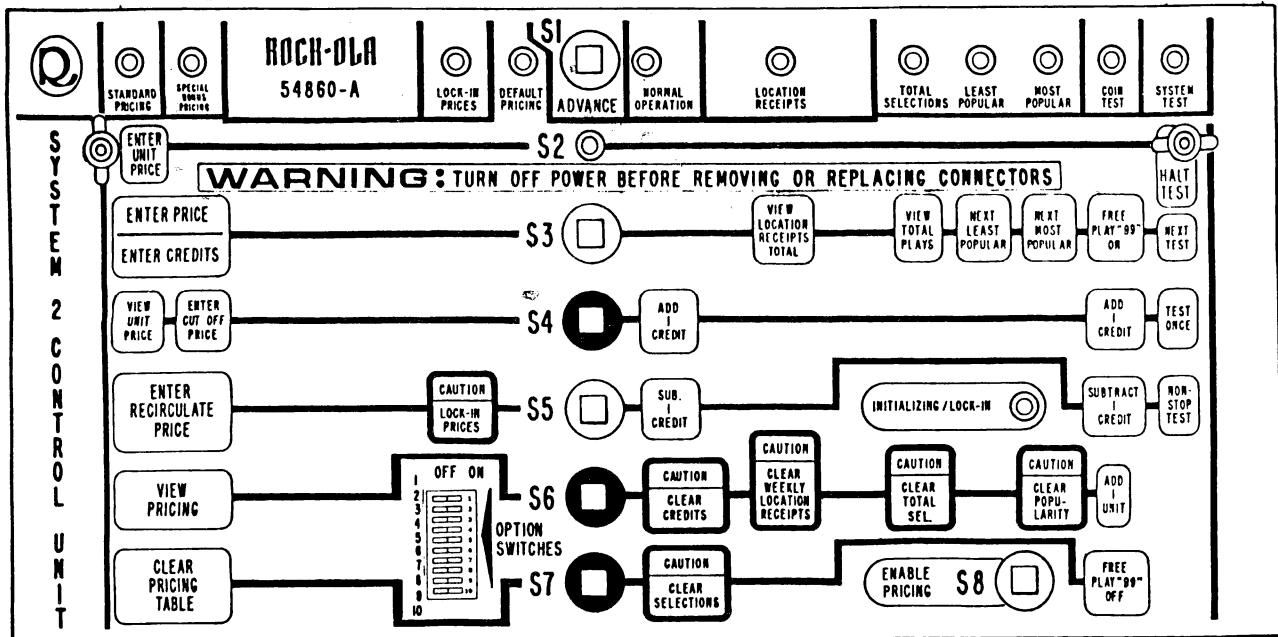
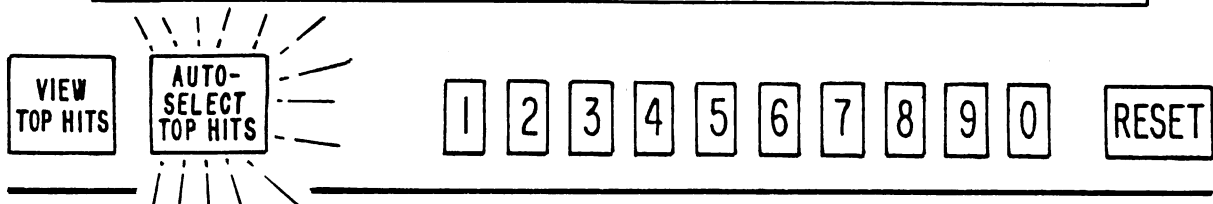
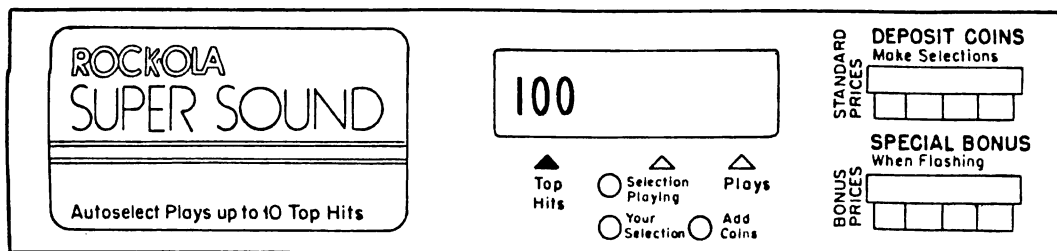


FIG. 9



Add ten credits and press the AUTO SELECT TOP HITS key. The SYSTEM 2 PHONOGRAPH will subtract one credit for each of the top hits and then play the top hits. The top hits will be played in the order that is most convenient for the phonograph rather than in the order of their popularity. This reduces the time it takes for the phonograph to locate a selection and reduces wear in the MECHANISM. Press the S7 and S6 buttons to CANCEL the credits, to end this demonstration.



LOCATION RECEIPTS

Select **LOCATION RECEIPTS** using the **S1 ADVANCE** button. The dollar amount shown on the **CUSTOMER DISPLAY** is the amount of money received by the phonograph and any wallbox units that can report money connected to the phonograph as shown on **FIG. 10**.

CAUTION: Copy total receipt on paper before pressing **S6** button. **LOCATION RECEIPT** total cannot be reset to zero but weekly **RECEIPT TOTAL** can be reset to zero by pressing the **S6** button.

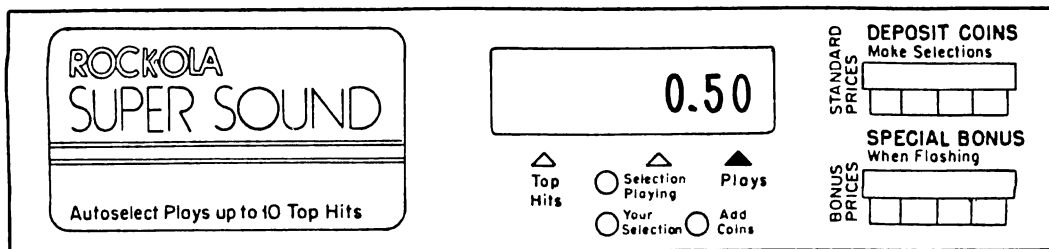
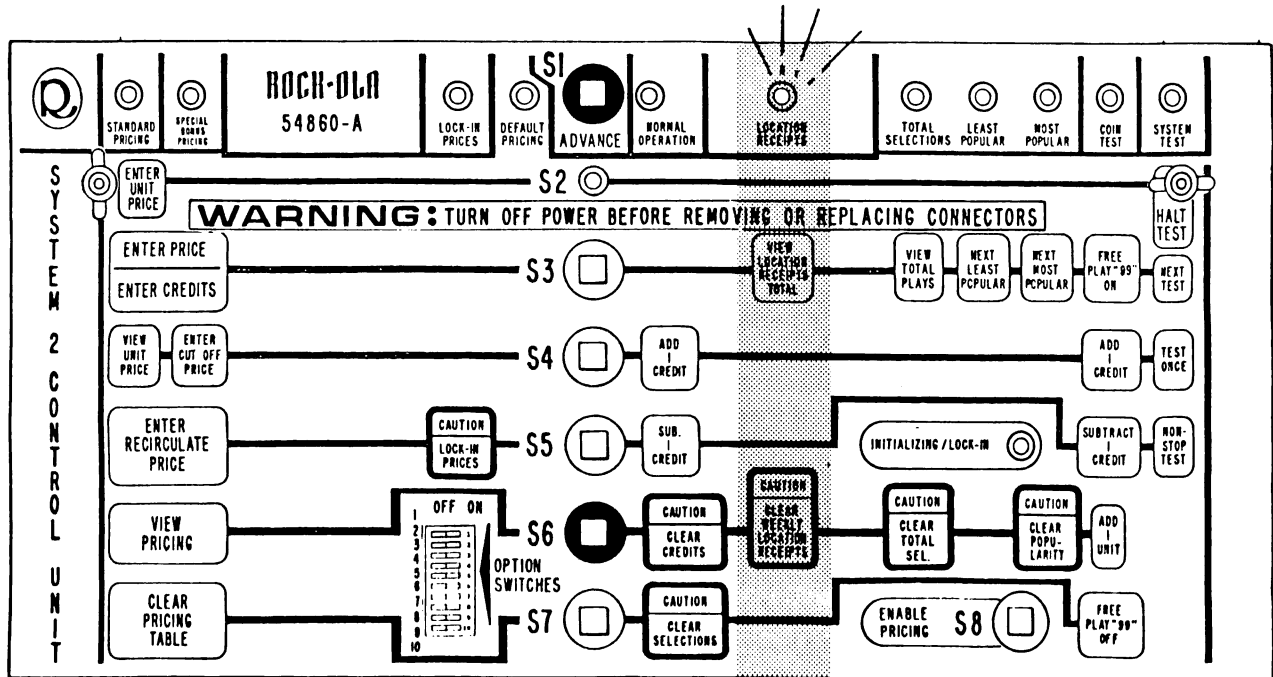


FIG. 10

TOTAL SELECTIONS

Select the TOTAL SELECTIONS SERVICE COLUMN. The CUSTOMER DISPLAY should now look like FIG. 11. This indicates that twenty-one selections have been made.

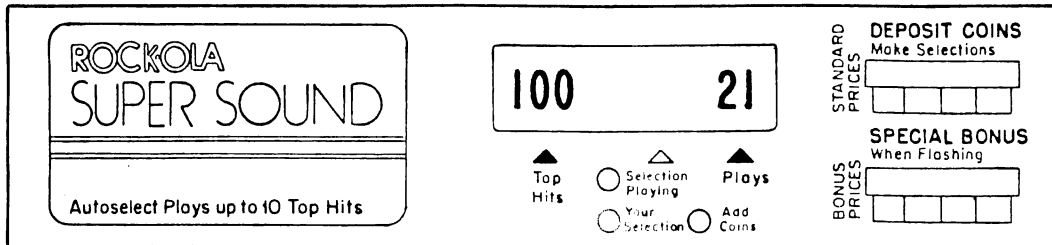
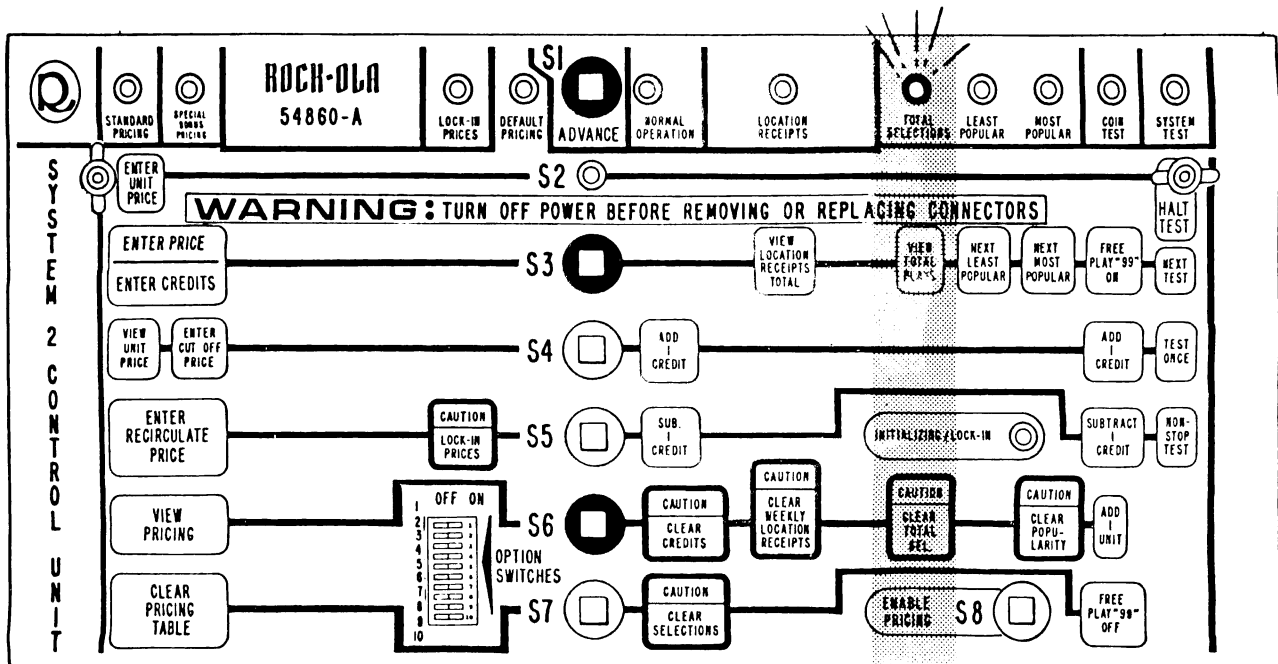


FIG. 11

CAUTION: Copy TOTAL SELECTIONS on paper before pressing S6 button. Now press the S3 VIEW TOTAL PLAYS button. This is the total number of records that have actually been played by the MECHANISM. The S6 CLEAR TOTAL SELECTIONS button will reset the total selections to zero.



The VIEW TOTAL PLAYS function can be used to determine how much wear the MECHANISM and phonograph needle have endured. Your ROCK-OLA service representative will use this total to decide when periodic preventative maintenance should be performed. TOTAL PLAYS is unaffected by CLEAR TOTAL SELECTIONS.

LEAST POPULAR

Select the LEAST POPULAR column and compare the CUSTOMER DISPLAY to FIG. 12. This display means that record 199 is the least popular record and it was selected 0 times. Selections 199 and 299 have never been requested by a customer. The display will never display selection in the 200's.

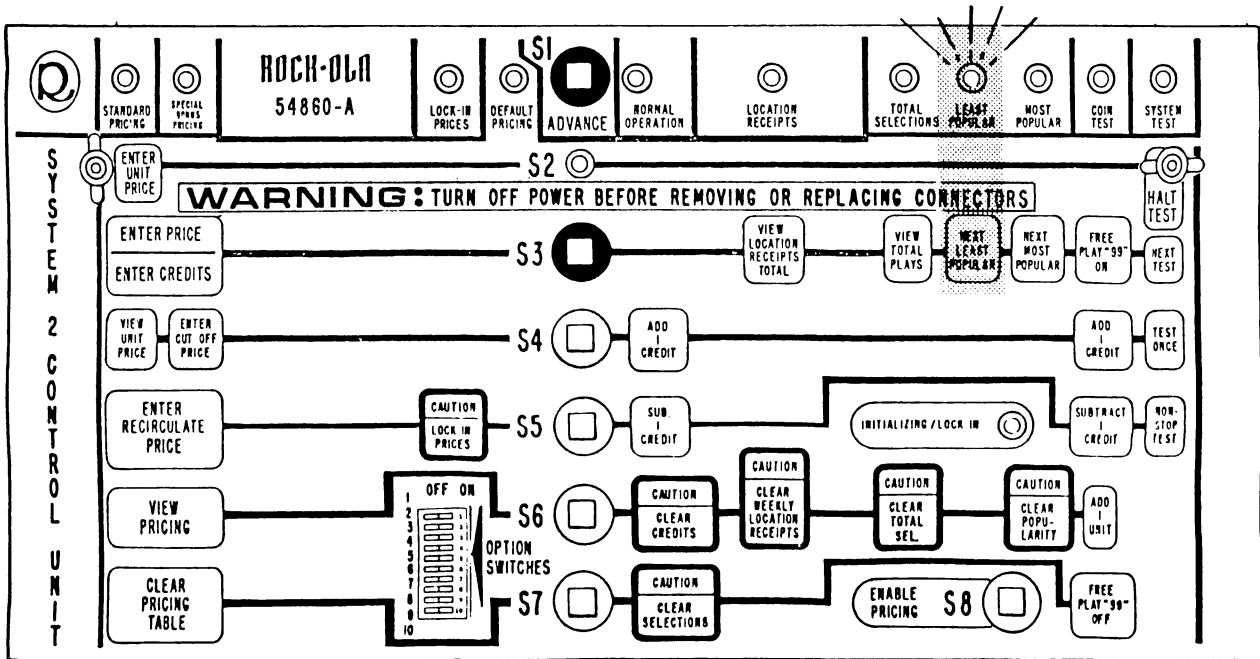
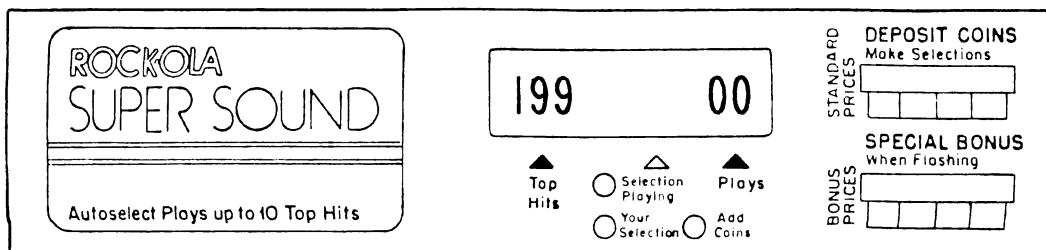


FIG. 12

Press the S3 NEXT LEAST POPULAR button. Record 198 also has a popularity of zero. The records are sorted from least popular to most popular in this list. Records with the same popularity are also sorted by record number.

If you repeatedly press the S3 NEXT LEAST POPULAR button, you will see that most of the records in the magazine have a popularity of zero.

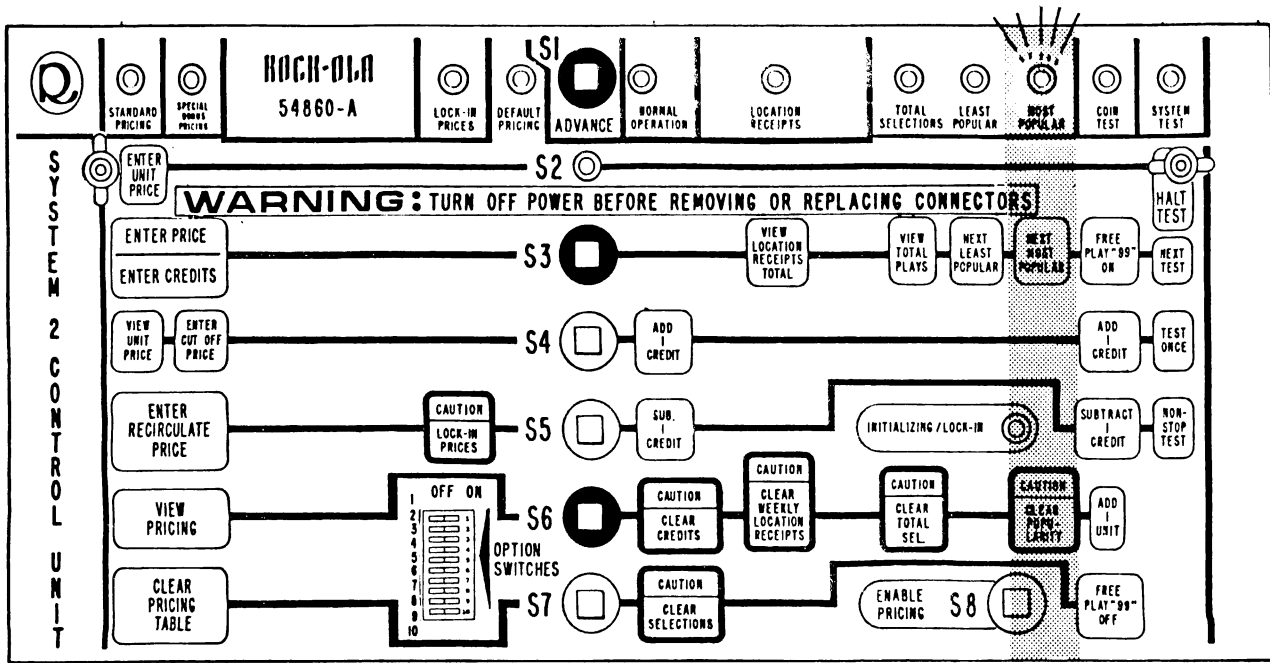


This is true because the only selections you have requested are 100, 110, 120...170, and 180.

The LEAST POPULAR column allows you to see which records are no longer popular. These records should be replaced by new releases.

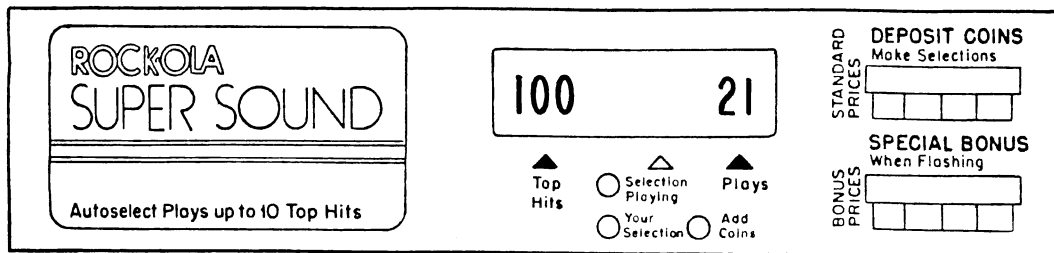
MOST POPULAR

Select the MOST POPULAR SERVICE COLUMN. The CUSTOMER DISPLAY should now resemble FIG. 13. The display is in the same format as that used for LEAST POPULAR, except that the list of popularity is read in the other direction. Record 100 is the most popular record and it was selected 21 times, and pressing the S3 NEXT MOST POPULAR button will show 2nd most popular record and so on. Pressing the S6 CLEAR POPULARITY button will clear all popularity selections to zero, except 1st 10 MOST POPULAR records. The selection most popular is given a popularity of 10, 2nd most popular is given 9 and so on until 10th most popular is given popularity of 1. This initialization gives the control unit a place to start from when it updates the list of popularity. Normal customer use will update the popularity list and this initial preset of popularity will disappear.



As your customers use the phonograph, their selections will eventually become popular enough to displace the original top hits. Selections made with AUTO SELECT are not counted in a record's popularity.

CLEAR POPULARITY with the S6 button whenever new releases are added to the record magazine.



COIN TEST

Select the COIN TEST column and compare the CUSTOMER DISPLAY to FIG. 14. This function lets you verify the pricing scheme programmed into the CONTROL UNIT.

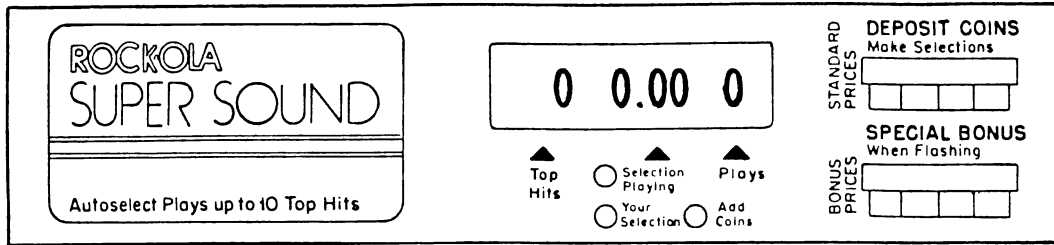


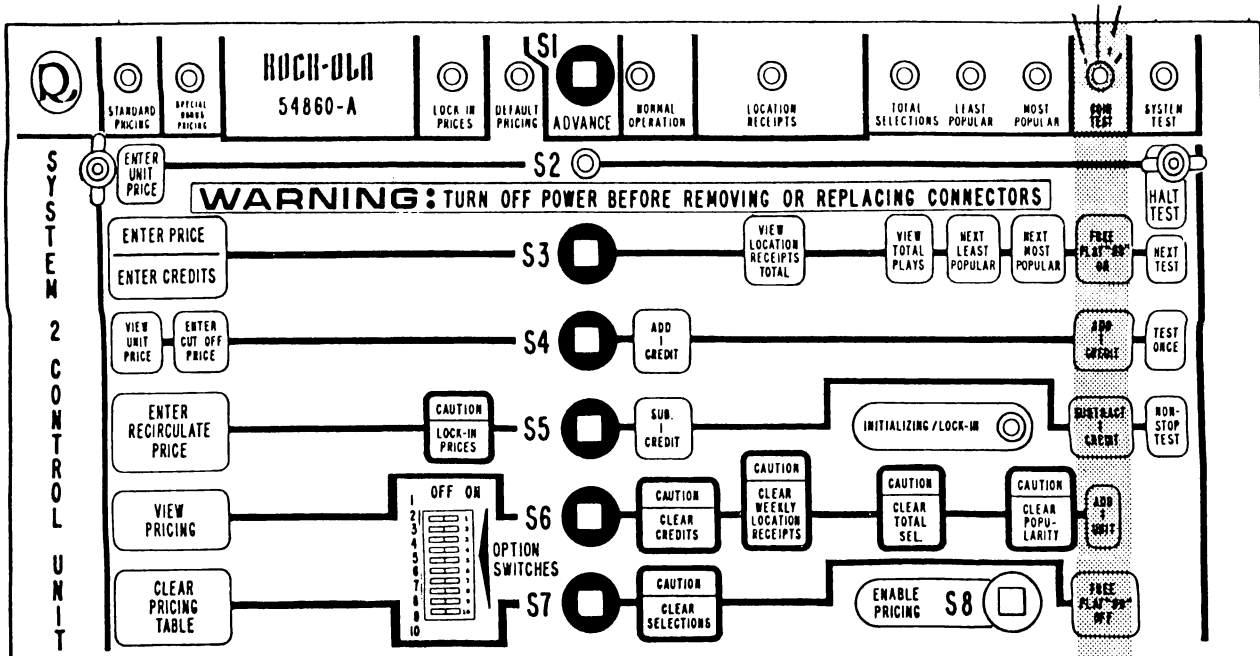
FIG. 14

When you powered-up your SYSTEM 2 PHONOGRAPH, the CONTROL UNIT initialized itself with a pricing scheme programmed into it at the factory. The pricing scheme is very simple and is shown in TABLE 14.

PRICING TABLE	\$0.05 - 1 Unit (\$0.25 - 1 Credit (5 Units)) (\$0.00 - Recirculate Price)
---------------	--

TABLE 14

The UNIT price is determined by the smallest amount of money that the COIN REJECTOR can recognize. In this case it is one nickel. The price for one credit is \$0.25. The RECIRCULATE PRICE of \$0.00 tells the CONTROL UNIT to continue giving one credit for \$0.25 if more than \$0.25 is spent by the customer. The RECIRCULATE PRICE will be described in more detail later on page 25.



Referring back to FIG. 14, UNITS RECEIVED keeps track of how many units of money have been collected by the phonograph. UNUSED UNITS are units that have not yet been converted into a credit.

To see how this PRICING DEMONSTRATION works, press the S6 ADD 1 UNIT button once and watch the CUSTOMER DISPLAY, FIG. 15. The ADD COINS indicator will flash whenever the customer has not inserted enough money to earn one credit. Left side of display shows you how many units (nickels) customer inserted, center display shows the total of cents spent, and right display show total credits. Add four more units and you have now "spent" \$0.25 and earned a credit. By using the ADD 1 UNIT function, you can "spend" nickels without affecting the TOTAL RECEIPTS or PHONO RECEIPTS. After 1st credit the ADD COIN indicator will stop flashing even after inserting additional nickels, but the displays will show the correct amount of units, cents, and credits.

The ADD 1 CREDIT and SUBTRACT 1 CREDIT functions operate the same as they did in NORMAL OPERATION. Press the S3 button to turn on FREE PLAY "99". This maintains 99 credits on the CUSTOMER DISPLAY no matter how many selections are made. Note that pressing this S3 button also selects the NORMAL OPERATION for you. FREE PLAY "99" allows you and your customers to use the SYSTEM 2 PHONOGRAPH without paying for the selections played.

To end FREE PLAY "99", you must return to COIN TEST COLUMN. Then press the S7 FREE PLAY "99" OFF button. This also selects NORMAL OPERATION.

The COIN TEST will become more important when we begin to discuss the PRICING MODE. Be sure that you are familiar with its operation before you continue reading this manual.

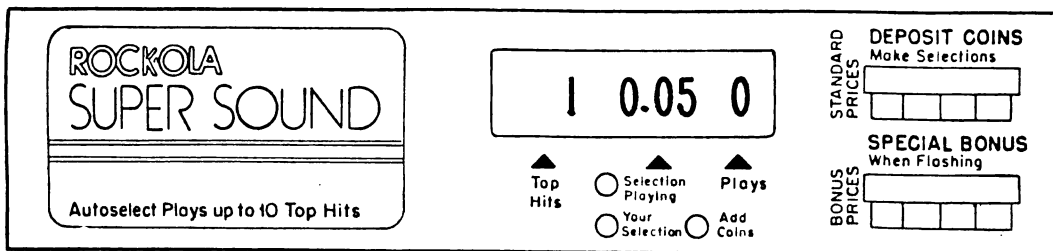


FIG. 15

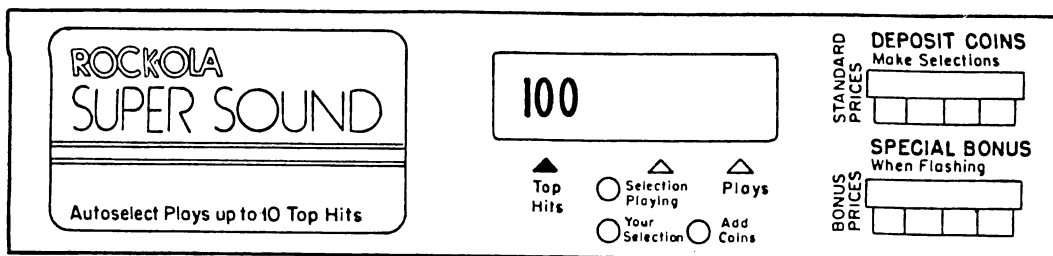


FIG. 16

SYSTEM TEST

The SYSTEM TEST MODE provides a series of tests intended for use by your ROCK-OLA service representative. Interpreting the results of these tests requires a working knowledge of the internal operation of the SYSTEM 2 CONTROL UNIT. A description of SYSTEM TEST is provided in the TROUBLE-SHOOTING GUIDE, TABLE 16.

TABLE 16

TROUBLE-SHOOTING GUIDE			
TEST	<i>DIAGNOSTICS</i>	S4 BUTTON	S5 BUTTON
0 -	Cycles thru Tests #1, 2, 3, 5, 6, 7	Run Test(s) <u>once</u>	Run Test(s) <u>continuously</u>
1 -	Short Mech Test (Plays 100, 193, 199, 200, 293, 299)		
2 -	Long Mech Test (Plays all 100's then all 200's)		
3 -	Display Test (Flashes all lamps/LEDS, Displays all 0,1,2...9)		
4 -	Keyboard Test (Push a button & see a # on display)		
5 -	EPROM Test (Checks for good program chips)	(Original #) (00000000) (11111111) (01010101) (10101010) (Original #)	for each of 1024 Memory Locations
6 -	RAM Test (Performs checkerboard test of RAM)		
7 -	CTC Test (Critical part that is hard to diagnose)		
8 -	UART Test (Sends out S1/S2 wall box code...Receives same code.. checks if components in box are good). Rock-Ola <u>will not</u> supply this chip as standard...it will be a part of wallbox kit. Test will display fail...		
9 -	Option Switch Test (Test option switches 1 through 10 for open or close)		

THE OPTION SWITCHES

There are 10 OPTION SWITCHES located to the left of the S6 and S7 buttons on the CONTROL UNIT. These switches control the various options listed in FIG. 17 and their operation is not affected by any of the SERVICE or PRICING OPTIONS.

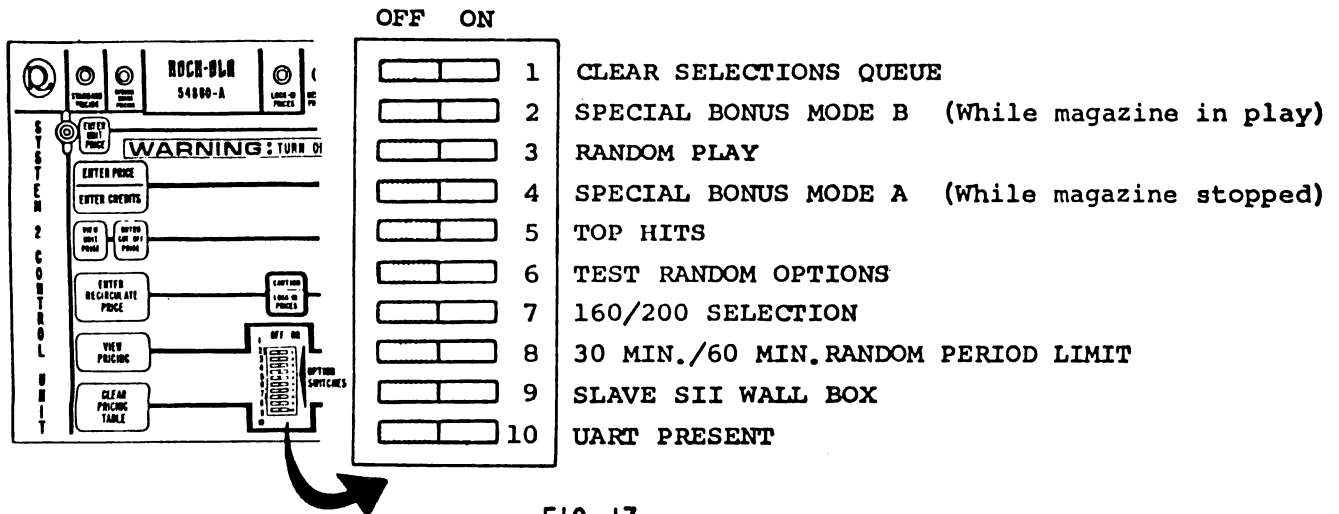


FIG. 17

The remaining options are related to a random period timer in the CONTROL UNIT. This timer generates a time delay that activates the SPECIAL BONUS MODES and the RANDOM PLAY option.

SWITCH #1

- 1 The CLEAR SELECTIONS QUEUE option causes the CONTROL UNIT to forget what selections it has left to play when the phonograph's power is turned off. This option is useful when your customers tend to make a lot of selections just before closing time and you don't want to hear these selections when the phonograph is powered-up the next morning. There is a trade-off, though. The CONTROL UNIT has protection circuitry that prevents it from forgetting selections during a short power failure. This protection is lost if the CLEAR SELECTIONS QUEUE option switch is closed.

SWITCH #2

- 2 SPECIAL BONUS MODE B enables bonus pricing if the record magazine has not stopped in the HOME position for an entire random period. This feature rewards customers who keep the phonograph busy.

SWITCH #3

- 3 Closing the RANDOM PLAY option switch causes the CONTROL UNIT to make a random selection if the record magazine remains in the HOME position for a random period. This option is designed to attract customers to the phonograph when it is idle.

SWITCH #4

- 4 If the SPECIAL BONUS MODE A switch is closed, the random timer starts timing when the record magazine stops in the HOME position. If the record magazine stays in the HOME position for an entire random time period, the CONTROL UNIT will start flashing the SPECIAL BONUS DISPLAY and enable bonus pricing.

The SPECIAL BONUS MODE A, SPECIAL BONUS MODE B, and RANDOM PLAY options can be used in any combination you choose. None of these features interferes with any other feature.

SWITCH #5

- 5 Option switch 5 determines whether 10 or 5 top hits can be viewed using the VIEW TOP HITS key. Closing the switches chooses the 5 top hits option.

SWITCH #6

- 6 The TEST RANDOM OPTION switch shortens the random period to a few seconds. You'll be using switch 6 when you learn about SPECIAL BONUS PRICING.

SWITCH #7

- 7 Option switch 7 selects 160 or 200 selections.

ON selects 200 selections
OFF selects 160 selections

SWITCH #8

- 8 Option switch 8 sets the maximum length of the random period to 30 minutes if it is open and 60 minutes if it is closed.

SWITCH #9

- 9 Option switch 9 determines whether control is MASTER (Phonograph) or SLAVE (Wallbox SII).
OFF selects Phonograph and ON selects Wallbox SII.

SWITCH #10

- 10 Option switch 10 must be left OFF if UART IC is not present in the CONTROL UNIT.

PRICING

Move SCAN switch to OFF.

Before the functions available in STANDARD PRICING can be described, it is necessary to define a few terms. A PRICING TABLE is a list of prices used by the CONTROL UNIT to determine how many credits a customer has earned. This table consists of one or more PRICE/CREDIT entries and a RECIRCULATE PRICE. Look at TABLE 17a. This is the pricing table that is currently used for STANDARD PRICING. The table shown in TABLE 17b is a sample pricing table that you will store in the CONTROL UNIT as an exercise.

The same pricing table gives the customer one credit for the first \$0.25 he spends. If he drops in more money, he will receive 3 credits for \$0.50, 6 credits for \$0.75, and 10 credits for \$1.00. This is the end of the pricing table and the RECIRCULATE PRICE becomes important at this point. Since the RECIRCULATE PRICE is \$0.00, the CONTROL UNIT starts back at the beginning of the pricing table.

The pricing information is stored in several ways in the controller. The price tables are stored in battery backed RAM in Word Alterable Read Only Memory and optionally in EPROM.

When a price is changed using the methods to be described, a TEMPORARY or "SCRATCH PAD" image is created in CMOS RAM. This image is temporary and will be erased on power turn-off until the LOCK-IN PRICES procedure is followed.

The LOCK-IN PRICES procedure adds up all the numbers in the price tables and stores the answer in a special place in CMOS Memory. This is called the "Check Sum". This procedure also writes the new prices into the WAROM and the EPROM if installed. Thus the price tables and associated "Check Sum" are stored in several places. Every time power is applied to the system, the controller calculates a check sum again and compares it to the check sum stored in memory. If they are equal then the price table stored in CMOS is considered OK. If check sums are different then the controller will make a CMOS copy of WAROM check sum it. If OK then proceed. If not then try a copy of EPROM. If OK then proceed. If not then try a copy from MAIN PROGRAM "default" table. Always assume this works.

a) <u>DEFAULT PRICING TABLE</u> \$0.20 - 1 \$0.00 RECIRCULATE PRICE	b) <u>SAMPLE PRICING TABLE</u> \$0.25 - 1 \$0.50 - 3 \$0.75 - 6 \$1.00 - 10 \$0.00 RECIRCULATE PRICE
---	---

TABLE 17A

TABLE 17b

Press and hold S8 ENABLE PRICING button in the lower right corner of the control unit. Press the S1 ADVANCE button to advance into PRICING. Release both buttons. NOTE: It is not possible to enter the PRICING MODE unless the SCAN SWITCH is in the OFF position. This is a safety feature to force the controller to return to the NORMAL MODE when the dome is closed. FIGURE 18a & b show the Control Unit and Customer Display.

The Red LED above the STANDARD PRICING column will be on, the .25 on the display means .25 for 1 play. Six things may now be done. The first thing to do is to check the UNIT PRICE. The UNIT PRICE sets the value of the eight coin inputs. For example, in the United States all coins (except pennies) are multiples of 5¢ so the U.S. Unit Price is 5¢. Other countries may require a different Unit Price.

This establishes the coin inputs at :

Add	1 Unit	.05
"	2 "	.10
"	4 "	--- Not used in U.S.
"	5 "	.25
"	8 "	--- Not used in U.S.
"	10 "	.50
"	20 "	1.00
"	40 "	--- Not used in U.S.

The PRICE TABLES in MEMORY will be entered in terms of money and plays but will be stored in terms of Unit & Plays. Therefore, if the UNIT PRICE is changed the Money and Plays will also change. Examples will help clarify these ideas.

UNIT PRICE	PRICING	MEMORY STORAGE
.05	.25 = 1 Play	5 Units = 1 Play
Now assume the serviceman changes the UNIT PRICE to .04. Here is what happens.		
.04	.20 = 1 Play	5 Units = 1 Play

Even though only the UNIT PRICE has changed, all pricing has changed. This is why UNIT PRICE is always checked first.

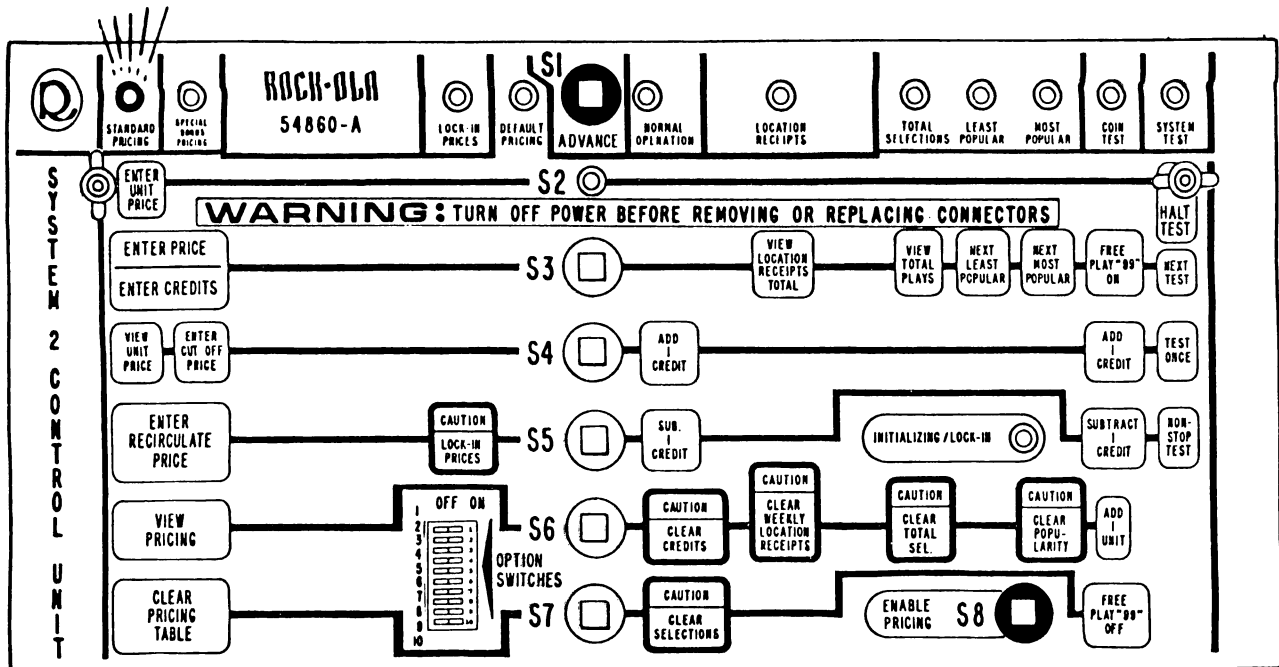


FIG. 18a

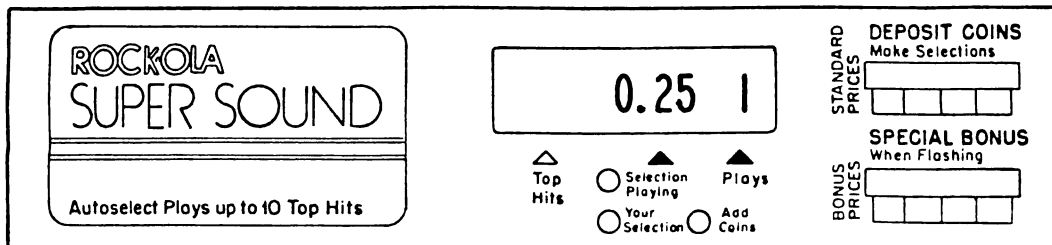


FIG. 18b

When entering PRICING, if the UNIT PRICE is wrong, then all the PRICING will be wrong.

CHECK UNIT PRICE by pressing the S4 VIEW UNIT PRICE button when the Red LED above the STANDARD PRICING column is on. The display should show .05. If .05 is shown (and will be shown almost always), then skip to VIEW PRICING.

If .05 is not shown on the display, then press 5 on the CUSTOMER KEYBOARD to show .05 on the display and then press the S2 ENTER UNIT PRICE button.

IMPORTANT: If you changed the UNIT PRICE or if the RED DEFAULT PRICING LED was ON you must go through the enter Pricing Procedure.

VIEW PRICING by pressing the S6 VIEW PRICING button. Each time it is pressed the next entry in the PRICE TABLE is shown. "RC" stands for recirculate price and is normally 0.00.

When you wish to change prices, press the S7 CLEAR PRICING TABLE button. This removes all of the PRICE/CREDIT entries from the table currently stored in the CONTROL UNIT and resets the RECIRCULATE PRICE to \$0.00. Press the S7 CLEAR PRICING TABLE button and watch the CUSTOMER DISPLAY. The display now indicates that the first entry in the pricing table is a RECIRCULATE PRICE of \$0.00 ("rc" stands for RECIRCULATE). When STANDARD PRICING is selected, the CUSTOMER DISPLAY always shows the first entry in the pricing table.

If you wish to check your work as you enter a new pricing table, you can use the VIEW PRICING function. This function shows each entry in the pricing table on the CUSTOMER DISPLAY. It starts with the first entry in the table and displays the next entry each time it is pressed. Press the S6 VIEW PRICING button. Since the RECIRCULATE PRICE is the only entry in the table at this time, it is the only entry that can be displayed.

You are now ready to enter the first entry in the sample pricing TABLE 17b. First study FIG. 19 for a moment so that you can predict what the CUSTOMER DISPLAY will look like at each step in the procedure. Then enter 25 using the KEYBOARD. Press the S3 ENTER PRICE button. Now press the 1 key to display one credit. Press the S3 ENTER CREDITS button. You now have the first two entries stored in the pricing table (\$0.25 - 1, \$0.00 RECIRCULATE PRICE). You can verify this by pressing the S6 VIEW PRICING button a few times.

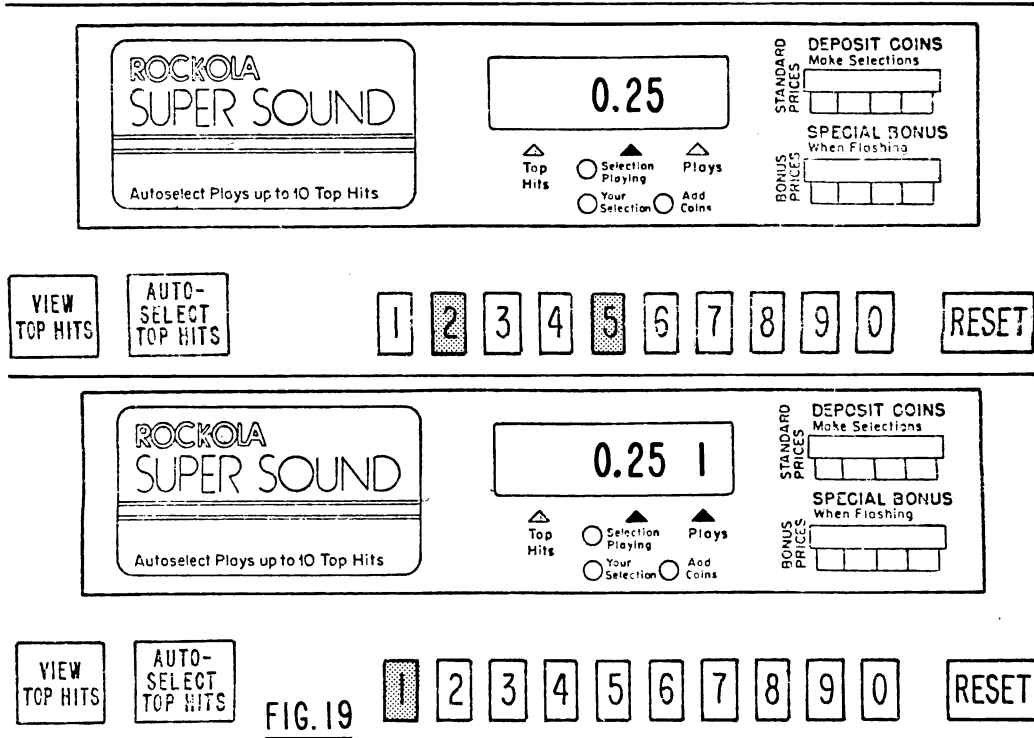


FIG. 19

<u>TABLE 17b</u>	a) Results of the CLEAR PRICING TABLE function.
	b) A price of \$0.25 is entered.
	c) The S3 ENTER PRICE button is pressed.
	d) One credit is entered for this price.
	e) The S3 ENTER CREDITS button is pressed. The PRICE/CREDIT entry of \$0.25 for 1 credit is now in the pricing table.

The next entry in the sample pricing table is \$0.50 (3 credits). Before you store this entry in the pricing table, try the following exercise. Enter 50 using the KEYBOARD. Press the S3 ENTER PRICE button. Enter 2 using the KEYBOARD. Now press the S3 ENTER CREDITS button. The CUSTOMER DISPLAY should match FIG. 20.

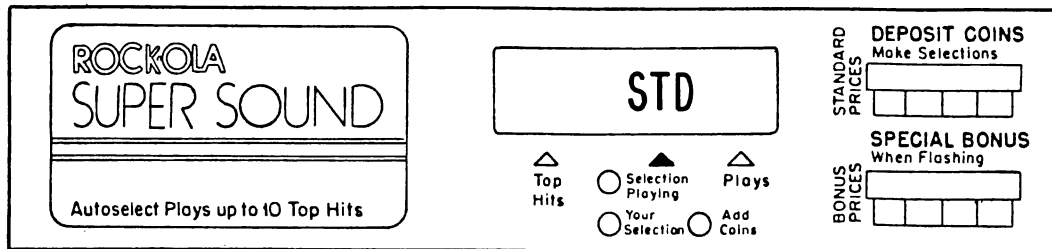


FIG. 20

The STD is an abbreviation for standard. This means that the PRICE/CREDIT entry you attempted to store in the pricing table is not needed because the CONTROL UNIT can compute this entry from other entries in the pricing table. In this case, you told the CONTROL UNIT to give the customer one credit for the first \$0.25 he spends and then give him another credit for the next \$0.25 (\$0.50 for 2 credits). By displaying STD, the CONTROL UNIT is letting you know that it would have given the customer 2 credits for \$0.50 anyway and that you do not need an entry in the pricing table for this situation. Press the S6 VIEW PRICING button a few times and note that STD PRICE/CREDIT entries are not stored in the pricing table.

Now that you understand STD pricing, let's discuss some common errors. Enter 53 using the keyboard and press the S3 ENTER PRICE button. The CUSTOMER DISPLAY indicates an error as in FIG. 21 because the UNIT PRICE is \$0.05 and \$0.53 is not a multiple of the UNIT PRICE. Only prices that end in 5 or 0 are legal when the UNIT PRICE is \$0.05.

Clear the error by pushing the RESET key and enter 50 using the KEYBOARD. Press the S3 ENTER PRICE button. Push the 1 key and then press the S3 ENTER CREDIT button. This PRICE/CREDIT entry is an error because you cannot give a customer 1 credit for \$0.25 and then ignore the next \$0.25 he spends!

Each entry in a pricing table must give the customer a better deal than the entry preceeding it.

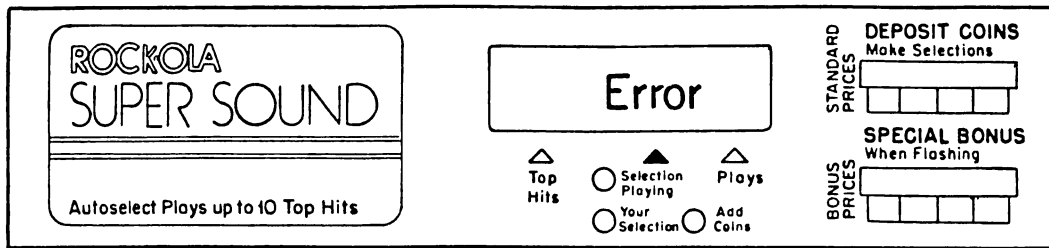


FIG. 21

The illustration given in TABLE 21 sums all of this up.

entries already in table	—————	\$0.25 - 1	—————	\$1.00 - 6	is standard because it can be computed from \$0.50 - 3.				
		\$0.50 - 3							
entry you attempt to add	—————	\$1.00 - 6	—————	\$1.00 - 4	—————	\$1.00 - 7	—————	\$1.00 - 4	is an error because it is less than \$0.50 - 3.
		STANDARD		ERROR		legal entry			

TABLE 21

There are three other errors that can occur. The maximum price allowed is \$9.99, the maximum number of credits is 99, and a pricing table cannot contain more than 15 PRICE/CREDIT entries. If any of these limits are exceeded the CUSTOMER DISPLAY will show an error that can be cleared with the RESET key. The RESET key will also erase a number on the CUSTOMER DISPLAY if it is used before one of the function buttons is pressed.

Clear the error on the CUSTOMER DISPLAY and enter \$0.50 for 3 credits. Enter the remaining two PRICE/CREDIT entries given in TABLE 17b. Use the S6 VIEW PRICING button to verify that the pricing table stored in the CONTROL UNIT matches the sample pricing table shown in TABLE 17b. The instructions given in TABLE 22 are a quick review of the procedure used to input a pricing table.

REFERENCE INSTRUCTIONS TO INPUT A PRICING TABLE

STEP	PROCEDURE
1.	Press the S7 CLEAR PRICING TABLE button.
2.	Enter the price using the KEYBOARD.
3.	Press the S3 ENTER PRICE button.
4.	Enter the credits using the KEYBOARD.
5.	Press the S3 ENTER CREDITS button.
6.	Repeat steps 2-6 until all of the PRICE/CREDIT entries in your pricing table are stored in the CONTROL UNIT.
7.	If you wish to have a RECIRCULATE PRICE <u>other</u> than \$0.00, enter the RECIRCULATE PRICE using the KEYBOARD and then press the S5 ENTER RECIRCULATE PRICE button. RECIRCULATE PRICE discussed on PAGE 26. <u>Note:</u> RECIRCULATE PRICE is entered after all the PRICE/CREDIT entries are completed.
8.	Using S1 ADVANCE button to LOCK-IN PRICES, press S5 button and wait until the INITIALIZING/ LOCK-IN indicator goes off, and display reads PASS 1 or PASS 2.
9.	Move SCAN SWITCH to OPERate. <u>Note:</u> Control Unit advances to NORMAL OPERATION or pressing S1 ADVANCE button to NORMAL OPERATION and move SCAN SWITCH to "OPERate".

TABLE 22

Now that you have the sample pricing table stored in the CONTROL UNIT, let's see how it works. Use the S1 ADVANCE button to select NORMAL OPERATION. Press the S6 CLEAR CREDIT button to remove any credits that might be left from previous exercises. Then select the COIN TEST column. Press the add one unit S4 button 5 times and watch the CUSTOMER DISPLAY closely. You will receive 1 credit for the first \$0.25. Add 5 more units and you will earn 2 more credits (\$0.50 - 3). The next \$0.25 will earn 3 additional credits (\$0.75 - 6) and the following 5 units adds 4 credits to the total (\$1.00 - 10). You now have 10 credits, 20 UNITS RECEIVED (20 X \$0.05 = \$1.00), and no UNUSED UNITS.

Add one more unit and watch what happens. This is the effect a RECIRCULATE PRICE of \$0.00 has on the conversion of money to credits. When the 21st unit was added, you exceeded \$1.00, the highest price in the pricing table. The control unit then looked at the RECIRCULATE PRICE. This told the CONTROL UNIT to act as if it had received no money at all (\$0.00) and it jumped to that point in the pricing table and set the UNITS RECEIVED total to the RECIRCULATE PRICE (\$0.00).

Having reset itself in this manner, the CONTROL UNIT accepted the 21st unit and showed this on the CUSTOMER DISPLAY. Note that when the CONTROL UNIT recirculates, it resets the UNITS RECEIVED total to a new value but it has no effect on the CREDITS total.

While the above explanation seems complicated, it is much easier to see the effects of the RECIRCULATE PRICE than it is to describe them in words. Keep adding units until you get used to this pricing table, Then select NORMAL PRICING and clear the credits using the S6 CLEAR CREDITS button.

MORE ON THE RECIRCULATE PRICE

The RECIRCULATE PRICE does not have to be \$0.00. In fact, it can be \$0.00 or any of the prices stored in the table. For the sample pricing table given in TABLE 17b, the RECIRCULATE PRICE can be \$0.00, \$0.25, \$0.50, \$0.75, or \$1.00. The effect that each of these RECIRCULATE PRICES has on the CONTROL UNIT can be seen in TABLE 23. If you wish to test any of these RECIRCULATE PRICES with the CREDIT DEMO, simply enter the price with the KEYBOARD and press the S5 ENTER RECIRCULATE PRICE button. Then select the "COIN TEST" UTILITIES and test the pricing table yourself, by pressing the S6 button ADD 1 UNIT.

Notice that setting the RECIRCULATE PRICE equal to the highest price in the pricing table has an unusual effect. When a pricing table is set up this way, the CONTROL UNIT uses the table until it has received enough money to exceed the highest price in the table. From that point on, the CONTROL UNIT uses only the lowest price in the table to convert money to credits. In the example given in TABLE 23, the customer receives 10 credits for the first \$1.00 he spends. After that, he receives 4 credits for each additional \$1.00 he spends (\$0.25 - 1).

SPECIAL BONUS

Select SPECIAL BONUS using the S1 ADVANCE button. You may now enter a pricing table the same way that you did in STANDARD PRICING (refer to TABLE 22). The PRICING TABLE you store here will be substituted for the STANDARD PRICING table whenever the SPECIAL BONUS DISPLAY is flashing.

RECIRCULATE PRICING CHART

AMOUNT SPENT BY CUSTOMER	\$0.00rc		\$0.25rc		\$0.50rc		\$0.75rc		\$1.00rc	
	UNITS RECEIVED	CREDITS	UNITS RECEIVED	CREDITS	UNITS RECEIVED	CREDITS	UNITS RECEIVED	CREDITS	UNITS RECEIVED	CREDITS
\$0.00	0	0	0	0	0	0	0	0	0	0
\$0.25	5	1	5	1	5	1	5	1	5	1
\$0.50	10	3	10	3	10	3	10	3	10	3
\$0.75	15	6	15	6	15	6	15	6	15	6
\$1.00	20	10	20	10	20	10	20	10	20	10
\$1.25	5	11	10	12	15	13	20	14	25	11
\$1.50	10	13	15	15	20	17	20	18	30	12
\$1.75	15	16	20	19	15	20	20	22	35	13
\$2.00	20	20	10	21	20	24	20	26	40	14
\$2.25	5	21	15	24	15	27	20	30	45	15
\$2.50	10	23	20	28	20	31	20	34	50	16
\$2.75	15	26	10	30	15	34	20	38	55	17
\$3.00	20	30	15	33	20	38	20	42	60	18

TABLE 23

The SPECIAL BONUS DISPLAY is activated by the SPECIAL BONUS MODE options described in the OPTION SWITCHES SECTION.

For an example of how SPECIAL BONUS may be used, take a look at the pricing tables in TABLE 24. If SPECIAL BONUS

a) NORMAL PRICING	b) SPECIAL BONUS
\$0.25 - 1	\$0.25 - 2
\$0.50 - 3	\$0.50 - 5
\$0.00 rc	\$0.75 - 9
	\$1.00 - 12
	\$0.00 rc
	\$2.00 co
Sample pricing tables	

TABLE 24

is not active, then the pricing table in TABLE 24a is in effect. If the SPECIAL BONUS DISPLAY is flashing, then the pricing table in TABLE 24b is used to convert the customer's money into credits. The SPECIAL BONUS DISPLAY will stop flashing when one of three situations occurs: 1) the customer makes a selection, 2) the display flashes for longer than 3 minutes, or 3) the customer spends enough money to exceed the CUTOFF PRICE (\$2.00 co). The CUTOFF PRICE can be \$0.00 if you do not wish to use SPECIAL BONUS pricing. Otherwise, the CUTOFF PRICE must be greater than or equal to the highest price in the SPECIAL BONUS pricing table.

Study TABLE 25 to see how SPECIAL BONUS pricing and the CUTOFF price work. When the SPECIAL BONUS DISPLAY is active, the customer earns 24 credits for the first \$2.00 he spends. Notice that the RECIRCULATE PRICE works the same way for SPECIAL BONUS as it does for NORMAL PRICING. If the customer spends more money, he exceeds the CUTOFF PRICE and NORMAL PRICING is restored. He earns 6 credits for the next \$1.00 he spends for a total of 30 credits. If SPECIAL BONUS pricing is not active, then the customer earns 18 credits for spending \$3.00 since NORMAL PRICING is in effect.

CREDITS

AMOUNT SPENT BY CUSTOMER	DISPLAY INACTIVE	DISPLAY FLASHING	PRICING
\$0.00 ———	————— 0 ———	————— 0	Special Bonus Pricing
\$0.25 ———	————— 1 ———	————— 2	
\$0.50 ———	————— 3 ———	————— 5	
\$0.75 ———	————— 4 ———	————— 9	
\$1.00 ———	————— 6 ———	————— 12	
\$1.25 ———	————— 7 ———	————— 14	
\$1.50 ———	————— 9 ———	————— 17	
\$1.75 ———	————— 10 ———	————— 21	
\$2.00 ———	————— 12 ———	————— 24	
\$2.25 ———	————— 13 ———	————— 25	
\$2.50 ———	————— 15 ———	————— 27	
\$2.75 ———	————— 16 ———	————— 28	
\$3.00 ———	————— 18 ———	————— 30	

TABLE 25

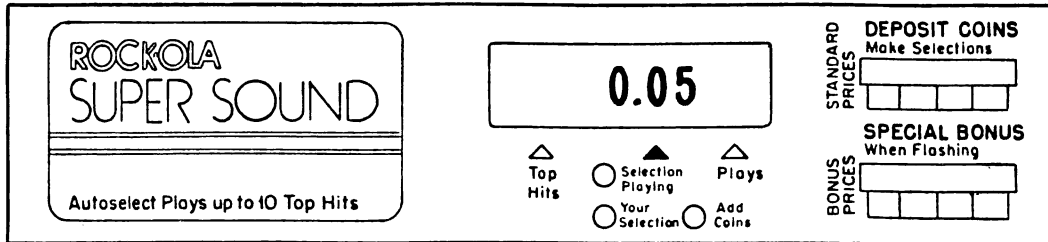
You are now ready for a demonstration of SPECIAL BONUS pricing. First store the pricing table of TABLE 24b. The CUTOFF PRICE is stored by first entering it with the KEYBOARD, and then pressing the S4 ENTER CUTOFF PRICE button. The other buttons operate the same way as they did in STANDARD PRICING.

Select STANDARD PRICING using the S1 ADVANCE button. Store the pricing table of TABLE 24a here. You are now ready to test these pricing tables. CAUTION: Always lock-in prices before leaving PRICING UTILITIES if any prices have been changed.

Move the SCAN SWITCH to the OPERate position. This will put you into NORMAL OPERATION. Press the S6 button to clear any leftover credits. Have a handful of coins ready and close option switches 4 and 6. The SPECIAL BONUS DISPLAY will begin to flash and you can start dropping coins into the COIN SLOT. Watch the CUSTOMER DISPLAY as you do this and compare your results with TABLE 25 as you spend the coins. Note that the SPECIAL BONUS DISPLAY stops flashing when you have spent more than \$2.00.

LOCK-IN PRICES

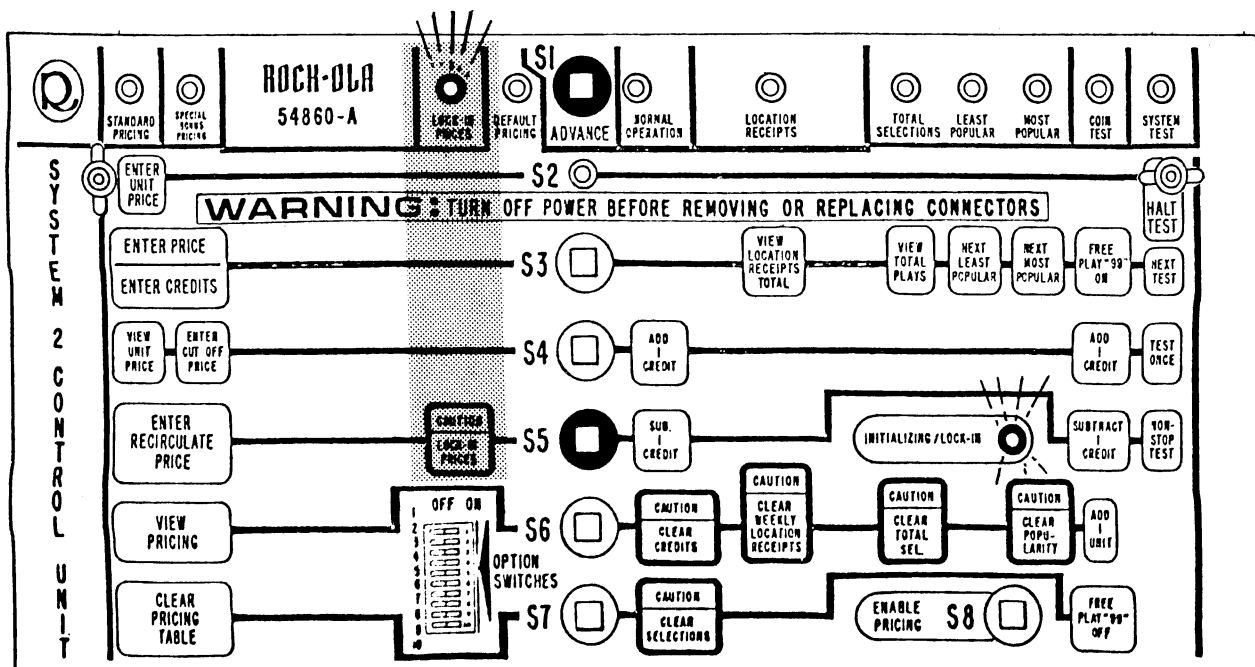
The LOCK-IN PRICES provided by the S5 button is extremely important!



When you have settled on a pricing scheme that you like, using the S5 LOCK-IN PRICES button guarantees that your pricing will not be lost when the phonograph's power is turned-off.

If you make any changes while using PRICING, you should select LOCK-IN PRICES and press the S5 button before you allow your customers to use the phonograph again. Failure to LOCK-IN PRICES will cause the CONTROL UNIT to use old PRICING when power is interrupted, either by a power failure or by turning it off. In this case you will have to store your pricing all over again and ensure that LOCK-IN PRICES button S5 is used.

Press S1 ADVANCE button to LOCK-IN PRICE column. Press the S5 LOCK-IN PRICES button now and watch the CONTROL UNIT. The red INITIALIZING/PROGRAMMING light will come on, indicating that programming is in progress. The red light will go out and the CUSTOMER DISPLAY will alternately flash the word PASS and a number. If the programming ever fails, it is defective and must be repaired.



CUSTOMIZING AND OPERATING

Congratulations! You have now completed the tutorial portion of this manual. All that remains is for you to initialize and customize your ROCK-OLA SYSTEM 2 PHONOGRAPH using what you have learned.

To start, write up a pricing table of your own design or use one of the suggested pricing tables listed at the end of this section. Store the pricing table using PRICING and be sure to lock-in the prices.

Select STANDARD PRICING and move the SCAN SWITCH to the OPERate position. Illustrate your pricing table for your customers using the self-stick labels provided. Adjust the AMPLIFIER'S controls to suit your taste. Double-check the selections listed on the PROGRAM PANEL. Set the OPTION SWITCHES to coincide with your pricing table (switches 6, 9 and 10 must be open). Close and lock the dome and your ROCK-OLA PHONOGRAPH is ready to make money.

ALWAYS INSIST ON GENUINE ROCK-OLA SERVICE PARTS



313 S. ROHLWING RD. (HWY 53)
ADDISON, ILLINOIS 60101
TELEPHONE - AREA CODE 312 629-9200

PRICING

IMPORTANT MOVE SCAN SWITCH TO OFF.		
STEP	PUSHBUTTON	INSTRUCTIONS
1	S8	PUSH AND HOLD THE ENABLE PRICING BUTTON IN THE LOWER RIGHT CORNER OF THE CONTROL UNIT. THEN PUSH
2	S1	ADVANCE BUTTON TO STANDARD PRICING & THEN RELEASE BOTH BUTTONS. PUSH THE
3	S4	VIEW UNIT PRICE BUTTON, IF 0.05 IS SHOWN THEN ADVANCE TO STEP 5, IF 0.05 IS NOT SHOWN ON THE DISPLAY, THEN PRESS 5 ON THE KEYBOARD TO SHOW 0.05 ON THE DISPLAY. THEN PUSH THE
4	S2	ENTER UNIT PRICE BUTTON.
IMPORTANT IF YOU ENTERED A UNIT PRICE OR IF THE DEFAULT PRICING LIGHT WAS LIT, YOU <u>MUST</u> PERFORM STEPS 6 THROUGH 14.		
5	S6	IS REPEATEDLY PRESSED TO VIEW PRICING. "rc" STANDS FOR RECIRCULATE PRICE AND IS NORMALLY 0.00.
6	S7	<u>TO CHANGE PRICING:</u> PUSH THE CLEAR PRICING TABLE BUTTON.
7	S3	PRESS KEYS ON KEYBOARD TO SHOW PRICE ON DISPLAY. EXAMPLE: PRESS 2 THEN 5. VIEW 0.25 ON DISPLAY. RESET KEY CLEARS ERRORS. BUTTON ENTERS PRICE.
8	S3	PRESS KEYS TO SHOW CREDIT FOR PRICE. EXAMPLE: PRESS 1. VIEW 0.25 1 ON DISPLAY. (25¢ FOR 1 PLAY). BUTTON ENTERS CREDIT. ADDITIONAL PRICING REPEAT 7 THROUGH 8.
9	S5 S6	(ENTER RECIRCULATE PRICE. THIS STEP IS USUALLY SKIPPED). VIEW PRICING. VERIFY THAT ALL ENTRIES ARE CORRECT.
10	S1	ADVANCES TO SPECIAL BONUS PRICING. REPEAT STEPS 6 THROUGH 8 FOR BONUS PRICING.
11	S4	PRESS KEYS ON KEYBOARD TO SHOW HIGHEST SPECIAL BONUS PRICE, PUSH THE ENTER CUT-OFF PRICE BUTTON. (THE CUTOFF PRICE DETERMINES WHEN THE PHONOGRAPH RETURNS TO STANDARD PRICING).
12	S1	ADVANCES TO LOCK-IN PRICES. VIEW 0.05 ON DISPLAY.
13	S5	LOCK-IN PRICES IN CONTROL UNITS' PERMANENT MEMORY. WAIT UNTIL RED INITIALIZING/LOCK-IN LIGHT TURNS OFF. DISPLAY SHOULD SHOW PASS 2 (PASS 1 IF NO WAROM IC K2, M2).
14		MOVE SCAN SWITCH TO OPERATE. NORMAL OPERATION LIGHT SHOULD BE LIT.
NOTE: SEE THE SERVICE MANUAL FOR A DETAILED EXPLANATION OF ALL SERVICE OPERATIONS.		
IMPORTANT YOU MUST LOCK-IN THE NEW PRICES IN PERMANENT MEMORY USING STEPS 12 AND 13. YOU MAY CHANGE BOTH STANDARD PRICING AND SPECIAL BONUS PRICING BEFORE YOU LOCK IN THE NEW PRICES. IF THIS IS NOT DONE, THE CONTROL UNIT WILL FORGET THE NEW PRICES AND USE THE OLD PRICES WHEN THE POWER IS TURNED OFF.		

NORMAL OPERATION:

PUSHBUTTON		
S4	ADD	1 CREDIT
S5	SUBTRACT	1 CREDIT
S6	CLEAR	CREDITS
S7	CLEAR	SELECTIONS
SERVICE MODE: MOVE SCAN SWITCH TO OFF.		
PUSHBUTTON		
S1	ADVANCE TO NEXT SERVICE MODE OR TO SKIP.	
S1	EXAMPLES: (START IN NORMAL OPERATION) ADVANCES TO LOCATION RECEIPTS.	RECORD AMOUNT IN DISPLAY
S3	VIEW TOTAL LOCATION RECEIPTS.	
S6	CLEAR WEEKLY LOCATION RECEIPTS.	
S1	ADVANCES TO TOTAL SELECTIONS.	
S6	CLEAR WEEKLY TOTAL SELECTIONS.	
S3	VIEWS TOTAL PLAYS.	
S1	ADVANCES TO LEAST POPULAR.	
S3	VIEW NEXT LEAST POPULAR.	
S1	ADVANCES TO MOST POPULAR.	
S3	VIEW NEXT MOST POPULAR.	
S6	CLEAR POPULARITY MEMORY.	
S1	ADVANCES TO COIN TEST.	
S4	ADD	1 CREDIT VIEW CREDITS IN DISPLAY.
S5	SUBTRACT	1 CREDIT SELECTIONS = CURRENCY
S6	ADD	1 UNIT INSERT COINS AND TEST COIN SWITCHES VIEW AMOUNT IN DISPLAY.
S3	TURN ON	FREE PLAY. DISPLAY SHOWS 99.
S7	TURN OFF	FREE PLAY. DISPLAY SHOWS BLANK.
NOTE: SYSTEM WILL AUTOMATICALLY GO TO NORMAL OPERATION AFTER PRESSING S3 OR S7 FOR FREE PLAY ON/OFF.		
S1	ADVANCES TO SYSTEM TEST. REFER TO SERVICE MANUAL FOR LIST OF TESTS.	
S1	ADVANCES TO NORMAL OPERATION.	

OPTION SWITCH FUNCTION:

OFF	ON	SWITCH	POSITION
	1	1	(ON) ERASES ALL SELECTIONS WHEN POWER IS TURNED OFF
	2	2	(ON) SPECIAL BONUS MODE "B"
	3	3	(ON) RANDOM PLAY
	4	4	(ON) SPECIAL BONUS MODE "A"
	5	5	(ON) TOP 5 (OFF) TOP 10 HITS
	6	6	(ON) TEST RANDOM PLAY
	7	7	(ON) 200 (OFF) 160 SELECTIONS
	8	8	(ON) 60 MINUTES (OFF) 30 MINUTES, RANDOM TIMER.
	9	9	(ON) SLAVE WALLBOX SII
	10	10	(ON) UART NOT PRESENT WALLBOX SII
SET THE OPTION SWITCHES FOR YOUR LOCATION			