

# PART ONE

# INSTALLATION AND MODULAR MAINTENANCE

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**DIGITAL ANNUNCIATOR** — displays each selection as it is made on keyboard below, scan cycle, and selection playing.

**SELECTION KEYBOARD** — enters customer's selection.

**DOLLAR BILL ACCEPTOR** — enters selection credit for a dollar bill (optional).

**MID-HIGH FREQUENCY SPEAKER** — provides extended range and clarity.

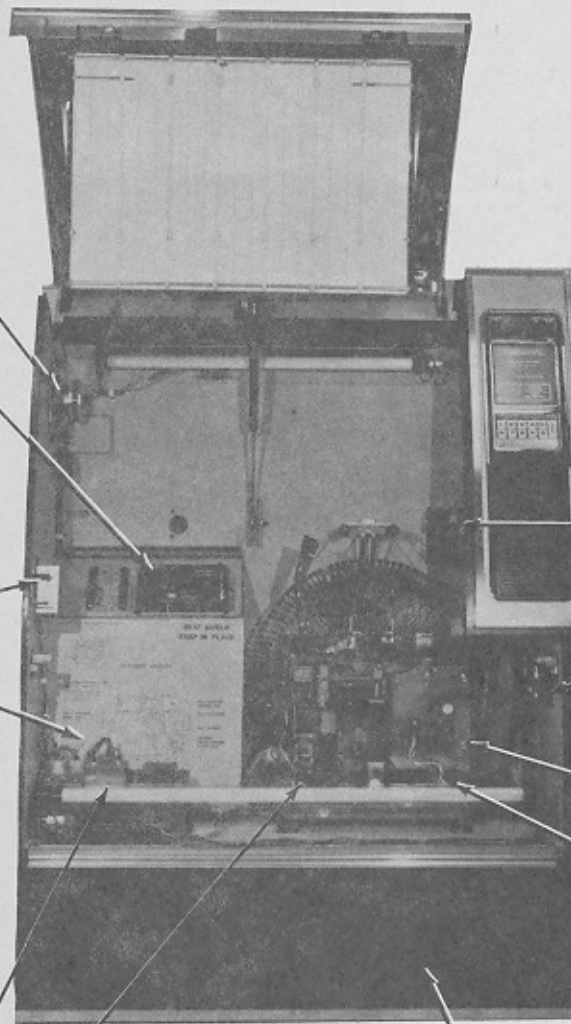
**MID-HIGH FREQUENCY SPEAKERS** — two 6-inch wide range speakers distribute sound over a large area. Matching capacitors are provided.

**SELECTION COMPUTER** — digital display shows the selections chosen most often or least often and the number of times each selection is made. Selections are displayed one at a time starting from the most popular to the least popular or the least popular to the most popular. This unit also displays total selections made.

**SCAN CONTROL CONSOLE** — contains scan switch for rotating record changer mechanism.

**PREAMPLIFIER, AMPLIFIER, & OUTPUT TRANSFORMER PACKAGE** — amplify cartridge output and drive speaker system. Output transformer matches speaker system impedance to amplifier output and provides a wide variety of impedance taps for extension speakers including 70.7 volt lines. Units are mounted in a separate chamber to reduce airflow through cabinet and keep records clean.

**MAIN POWER SUPPLY** — distributes 120-volt power to components and provides 28 VAC, 28 VDC, -7 VDC, and -27 VDC. All supplies are regulated and circuit breaker protected.



**CREDIT COMPUTER** — registers credit for record play when coins operate coin switches. Credit is removed when a selection is made. Contains price programming switches.

**SELECTOR LOGIC** — operates digital annunciator display and transmits selection data to memory unit on record changer mechanism. Includes free play switch.

**ENCODER** — positions record magazine for desired selection.

**MEMORY UNIT** — stores customer record selections which have not been played. Includes built-in charger to maintain selections in memory if power is turned off. Features **AUTO-PLAY** which automatically plays a selection at random every 20 or 40 minutes. Continuous random play is also possible.

**MECHANISM CONTROL UNIT** — controls scan, transfer, and toggle shift functions of mechanism.

**LOW FREQUENCY SPEAKERS** — two 10-inch speakers in a duct-tuned bass reflex enclosure.

FIGURE 1-1. PHONOGRAPH MAJOR COMPONENTS

## SECTION 1 - DESCRIPTION

### INTRODUCTION

The Rowe/AMI Model R-83 is a 200 Selection Stereo Phonograph with a 100% solid state control system. Major features of the R-83 include a new selection computer which remembers the most and least popular selections and displays them, one at a time, at the touch of a button. It also provides a total selection reading for the time span since the unit was last reset. Because the selection computer registers all selections, including overplay, it provides a more accurate indication of record popularity than ever before. The selection computer is mounted to the amplifier compartment lid. Total plays register on the total play counter located on the record changer mechanism.

Another exclusive R-83 feature is auto play. Auto play automatically plays a selection, completely at random, at either 20 or 40 minute time intervals. The unit also permits continuous random play, or it can be switched off completely if desired. Auto play selections do not register on the selection computer because the computer enters only selections made on the keyboard. Auto play circuitry and controls are part of the memory unit module on the right side of the record changer mechanism.

Credit is registered by the versatile credit computer which permits a wide variety of price of play programs at the flick of a switch. A selector module on the right side cabinet wall incorporates a free play switch for test purposes. This unit also has a receptacle to accept an optional plug-in premium pricing unit.

The memory module is mounted to the right side of the mechanism frame. This module includes a charger and batteries for maintaining selections in memory when power is turned off and incorporates the auto play feature. Record changer operation is controlled by a plug-in mechanism control unit on the left side of the record changer mechanism.

Light emitting diodes (LED's) on the mechanism control, memory, and main power supply modules indicate the presence of voltage and signal information. The credit and

selection panel uses five LED's to signal the customer. The three digit selection code is displayed on a digital annunciator which confirms selections as well as showing the selection playing.

The preamplifier, amplifier, and transformer package are mounted in a sealed compartment. The reason for this is to maintain adequate air circulation to cool these components but to prevent outside air from entering the cabinet. This keeps the cabinet interior and records cleaner.

In addition to exclusive operating features and eye-catching good looks, the R-83 sounds good. No need for regular maintenance; a few drops of oil every five years keeps the record changer mechanism running smoothly.

The big sound starts with a fine quality Shure cartridge and diamond stylus mounted in a counterbalanced tone arm. The sound is then boosted by a 125-watt (RMS) solid state preamplifier and amplifier. Automatic volume control, automatic record quality control, and automatic loudness contour built into the preamplifier maintain a consistent high quality regardless of record condition. Two low frequency speakers in a duct-tuned bass reflex enclosure, two wide-range mid-high frequency speakers, and one front firing mid-high frequency speaker project high level sound over a wide listening area.

### ACCESSORY EQUIPMENT

Phonograph accessory equipment is listed in the following table. All accessory equipment and kits include mounting parts and installation instructions. These accessories are available from your Rowe/AMI Distributor. Contact Rowe Customer Services for information on special accessories and hookups. New accessories will be announced as they become available in service bulletins issued by Rowe International, Inc. These service bulletins are mailed to all Rowe Distributors.

\* Trademark CBS, Inc.

TABLE 1-1. ACCESSORY EQUIPMENT

PART NO.	DESCRIPTION	FUNCTION
2-66808-09	Dollar Bill Acceptor Kit (Includes Bill Stacker)	Accepts valid one dollar bills in U.S. currency and establishes one dollar's worth of credit in the phonograph credit computer.
2-66819-08	Model HBB Digital Print-Out Money Meter Kit	Solid state device records total receipts on ticket inserted at each service call. The surest security device available. Plug-in installation.

PART NO.	DESCRIPTION	FUNCTION
2-15377-01	Model MCA Money Counter Kit	Records total cash input. Does not have print-out feature.
3-65327-01	Amplifier Overload Tester	Warns installer if extension speaker hook-up causes an overload.
2-15303-01	Monitor Alarm Kit	Makes an incredibly loud noise if an attempt is made to pry open or smash in cash box door. Consists of a horn operated by a replaceable Freon aerosol can. Because the alarm is not electrically operated and is not accessible without a key, it cannot be disarmed.
2-66681-04	Automix Kit	Enables phonograph to play 33 and 45 RPM records interchangeably.
2-66946-01	Phono Paging System Amplifier Accessory Kit (Includes 2-66947-01)	New improved Paging System, not affected by A.V.C. All Plug-in unit, complete with microphone and 50 feet of microphone cable. Allows use of phono sound system for paging.
2-66947-01	Amplifier Accessory Kit	Provides access to auxiliary inputs and outputs of the preamplifier. Inputs will accept signals from most background music sources such as tape players and AM or FM radios. Outputs available to drive slave amplifiers before or after volume control.
6-03441-01 6-03441-04	WRD Wallethe Wallbox (3 Coin) WRD Wallethe Wallbox (4 Coin)	Remote control unit for solid state phonograph. Has self-contained credit and pricing and selection system. Takes nickels, dimes, quarters and half-dollars. No stepper or code converter needed.
4-06891-01	Auxilliary Power Supply	Permits solid state phono operation with WRD Wallbox.
2-15336-06	Code Converter Kit	Permits solid state phono operation with WRA and WRC wallboxes.
2-66934-05	Code Converter Kit	Permits solid state phono operation with Seeburg 160 digital wallbox.
4-05627-01	Auxillary Power Supply	Powers up to 6 Rowe/AMI WRA or WRC Wallethe wallboxes. Low voltage supply separate from that required for the phonograph.
4-05678-01	Secondary Power Supply	Powers each additional six or more Rowe/AMI WRA or WRC Wallethe wallboxes.
SPEC 0-05054-00	12-Conductor Cable	For connecting Wallethe WRA or WRC to phonograph.
SPEC 0-05076-00	9-Conductor Cable	For connecting WRD Wallethe to phonograph.
6-021287-01	Extension Speaker (Model EX-201)	12-watt, compact "bookshelf" speaker system contains one 8-inch full range speaker.
6-07447-01	Extension Speaker (Model EX-350)	32-watt, two channel system includes 3-1/2 inch tweeter and 10-inch bass speaker.
2-66945-01	125 Watt Amplifier Kit	Amplifier and Adapter Cable for Phonographs MM-1 through R-82.
3-06322-01	Remote Volume and Cancel Control	Remote stereo volume control and cancel button.

TABLE 1-1. ACCESSORY EQUIPMENT (Continued)

PART NO.	DESCRIPTION	FUNCTION
2-08199-07	Remote Volume and Cancel Control Cable	For connecting remote volume control to Phonograph. 3-conductor cable, 50' length.
2-08199-08	Remote Volume and Cancel Control Cable	For connecting remote volume control to Phonograph. 4-conductor cable, 50' length.
3-06322-09	Dual Channel Remote Volume Control	Controls volume of each channel separately.
4-07139-01	Selection Computer Kit (R80S, R81 Models)	Stores record selections for popularity readout. Standard on R82, R-83
7-00430-02	Premium Pricing Switch	Plugs into selector logic module. Sets premium price in 60, 70, 80 and 90 selection groups.

### OPTIONAL TEST EQUIPMENT

Rowe International, Inc. has arranged with Kurz Kasch, Inc. to provide diagnostic circuit boards to check phonograph components. These circuit boards must be used together with the Kurz Kasch Model TF-650-5A Test Fixture. The following circuit boards are available from Kurz Kasch, Inc., Electronics Division, 1501 Webster Street, Dayton, Ohio 45404. Please order as follows:

<u>BOARD PART NO.</u>	<u>COMPONENT TESTED</u>
193A	Credit Computer
203	Memory Module
204	Selector Logic Module

### OPERATION SELECTION CYCLE

The phonograph incorporates a three digit numerical identification system (100 through 299) instead of letters and numbers. Selections beginning with the number 1 are left side selections, while a selection beginning with a 2 designation is on the right side of the record. For example: selection 200 is on the flip side of selection 100.

Before making a selection, the three digit selection number appears on the annunciator display as the record playing. Pressing the first digit of a selection erases the display and lights the "Your Selection" lamp. When the selection is entered and has been displayed for five seconds, the display switches back to the selection playing.

Using the selection keyboard, it is possible to choose a first number for which there is no selection; for example, the number 3. In this instance, the "Reset and Reselect" lamp flashes, indicating that this selection cannot be made. Pressing the RESET button on the selector keyboard resets the selection circuit to receive the correct selection.

The selector logic module incorporates a free play switch (TEST-NORM) and provisions for setting selections 60 through 99 for premium pricing.

The toggle shifter coil is energized for right side play only; left side shift is provided by a spring return mechanism. The mechanism rotates 360 degrees to scan for a selection and

will stop at selection 27 or 77, whichever is closer after the scan is complete.

The optional dollar bill acceptor operates directly from 120 vac and requires only one pigtail connection to the credit circuit. Instead of a stepper, a code converter is used to provide wallbox (WRA, WRC) operation. No stepper or code converter is necessary if the solid state WRD Walette is used.

The memory unit contains a DC converter incorporating a battery power source. The battery maintains voltage to the memory unit to retain selections when the phonograph is turned off temporarily or if power is interrupted. If power has been turned off for several hours, the battery may be discharged. If completely discharged, allow a few minutes before operating phonograph.

### ALLOW THE MECHANISM TO SCAN OUT ON INITIAL START BEFORE MAKING A SELECTION

#### AUTO PLAY

The auto play feature stimulates phonograph play by letting the customer know that it's there. It plays a flip side selection completely at random at 20 or 40 minute time intervals. The phonograph is shipped from the factory with the four position slide switch set to 20 minutes. The switch can be set for 20 or 40 minute time intervals or for continuous operation. Or it can be set to off.

Because auto play operates completely at random, it is completely independent from the selection and memory circuits. If a malfunction in one or both of these circuits should occur, the continuous operation feature provides music to the location until a replacement plug-in unit can be installed.

The auto play memory unit includes the battery and charger that was a separate unit in R80S and R81 Models. The auto play type memory with battery can be installed on these models. The R80S, R81 memory without auto play will operate the R-83 provided the D.C. Converter is also installed.

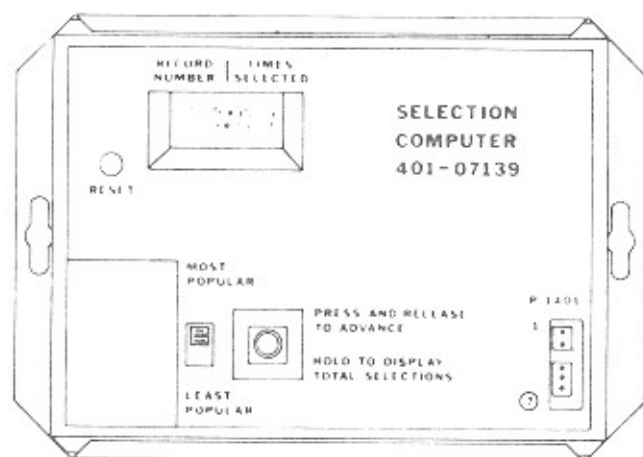


FIGURE 1-2. SELECTION COMPUTER

### SELECTION COMPUTER

The selection computer displays the most and least popular selections on a large, bright four digit display (see figure 1-2). The unit is microprocessor controlled. Without getting too technical at this point, let's just say that a microprocessor is a complete miniature computer which incorporates a program, a memory, and a central processing unit in one chip.

When the phonograph is operating normally and the console switch is in the on position, the computer monitors the clock and data lines. The format of the data on these lines is different for selection and play. When the computer recognizes a selection, it increments a spot in its memory. There is one spot in the memory for each record location. A battery in the computer insures that the selection record will be maintained even if the power plug is pulled.

The computer will count up to 99 selections for each record. Pushing the RESET button clears all memory to zero. Selections are read out one at a time.

To read the records selected the least, switch to the LEAST POPULAR position. When the console switch is set to off, the selection computer automatically goes into the read mode and searches its memory for a record which has zero selections. The record number will show on the first two digits of the display marked RECORD NUMBER. The number of times it was selected will appear on the second two digits marked TIMES SELECTED.

Push and release the pushbutton and the next least chosen record will be displayed. If there are two records with the same number of selections, the lower record number will be displayed first, then the higher number.

After the pushbutton has been pushed 100 times and all the record selections have been displayed, the display will show hyphens. In most instances, an operator will want to know only his lowest five or six records. Setting the console switch to on and then back to off will set the count back to the least played selection.

The most popular records are read by switching to the MOST POPULAR position. When the console switch is set to off, the most popular selection will be displayed. When the pushbutton is pushed and released, the next popular record will be displayed. This can be continued 100 times until hyphens are displayed.

If you've read from the bottom up and you want to know the most popular records, switch to the MOST POPULAR position and push and release the pushbutton. The computer will automatically change modes and start from the top.

If the button is held down for one-half to one second, the display will stay blank for a while and then show the total selections made since the last time the unit was cleared. This can be done at any time. When the button is released, the display will continue to show total selections. Push and release the button to read the next most popular record. The selection computer will not recognize auto play selections, and, because it indicates only the number of times a selection is made, it provides an accurate indication of overplay.

The RESET button resets the computer recordkeeping to zero. This button is recessed to prevent it from being pressed accidentally.

### COMPATIBILITY CHART

The table on the following page shows the compatibility of various component systems and accessories with solid state phonographs. Use this table as an aid in determining interchangeability of accessories, for field exchange and ordering purposes.

To check if a component or accessory is applicable to a particular phonograph, first locate the item in the PRODUCT column, then reference across horizontally until the phonograph model designation is located in the EQUIPMENT column.

The following key explains abbreviations used in the chart:

O.K. component or accessory can be installed or is directly interchangeable.

X component or accessory cannot be used in the particular phonograph.

STD. supplied as original equipment.

OPT. available as an option on original equipment.

CONV. convertible for use with the phonograph model indicated. See remarks column, service text, or contact Rowe Customer Services.

TABLE 1-2. COMPATIBILITY CHART

EQUIPMENT	PRODUCT	R-80S	R-81	R-82	R-83	R1-2	CT1-1S	HMJ	WRD	COMMENTS
Record Changer Mech.	601-03065	STD.	STD.	O.K.	O.K.	O.K.	STD.	STD.	X	200 selections - Can use on R1-2 by adding jumper wire W-501 to 601-08060 selector logic or substituting 603-08060 sel. logic.
Record Changer Mech.	604-03065	X	X	STD.	STD.	X	X	STD.	X	120 Selections
Record Changer Mech.	602-03065	X	X	X	X	STD.	X	X	X	
Credit Computer	601-07674	STD.	STD.	STD.	STD.	STD.	STD.	X	STD.	
Selector Logic	601-08060	STD.	STD.	STD.	STD.	CONV.	STD.	X	WILL SELECT, NO SOUND.	
Selector Logic	602-08060	O.K.	O.K.	O.K.	O.K.	CONV.	O.K.	X	STD.	Same as 601-08060 but speaker relays added.
Selector Logic	603-08060	CONV.	CONV.	CONV.	CONV.	STD.	CONV.	X	CONVERTIBLE NO SOUND.	
Selection Computer	401-07139	O.K.	O.K.	STD.	STD.	O.K.	O.K.	O.K.	X	Same as 601-08060 but jumper W501 added to reduce to 120 selections.
Memory Unit	601-07666	STD.	STD.	O.K.	O.K.	STD.	STD.	STD.	X	
Memory Unit	301-07855	O.K.	O.K.	STD.	STD.	O.K.	O.K.	O.K.	X	D.C. Converter 301-07541 required for use with R-82 to hold selections when power is off.
Mechanism Control	401-06905	STD.	STD.	STD.	STD.	STD.	STD.	STD.	X	D.C. Converter 301-07541 not required for substitution in models other than R-82.
Digital Display	401-06904	STD.	STD.	X	X	X	X	X	X	
Digital Display	402-06904	X	X	X	X	STD.	X	X	X	
Digital Display	403-06904	X	X	X	X	X	STD.	X	X	

LED display units are interchangeable. Circuit boards are different.

