

# SECTION 1- SYSTEM DESCRIPTION

## INTRODUCTION

The Rowe-AMI Model RI-3 is a 160 Selection Stereo Phonograph. It has a new 100% Microprocessor Based Solid State Control.

The Central Control Computer is mounted on the rear wall of the cabinet. This unit controls all functions of the phonograph.

Grouped around the Central Control Computer are the Mechanism mounted on the center of the cabinet base, the coin acceptor and coin switches on the right side panel, and the digital annunciator, selector keyboard all located on the top door.

The pricing board is located on the rear wall.

The Main Power Supply is located on the rear wall.

The display area includes a three digit numerical display and five LED lamps. The numerical display has five distinct functions while the lamps indicate which function is in effect.

### MOST POPULAR SELECTION

When the phonograph is "scanned out" the numerical display shows the number of the tune which has been selected the greatest number of times since the last time the machine was serviced.

### SELECTION BEING MADE

While a selection is being made the numerical display shows the number of the tune being selected. This number remains on the display for 5 seconds after the third digit is entered at the keyboard.

### SELECTIONS REMAINING

After each selection and after each deposit of money the number of selections which remain to be made is displayed for 5 seconds.

## SELECTION PLAYING

While the phonograph is playing, if no selection is in the process of being made, the number of the tune being played will appear on the display.

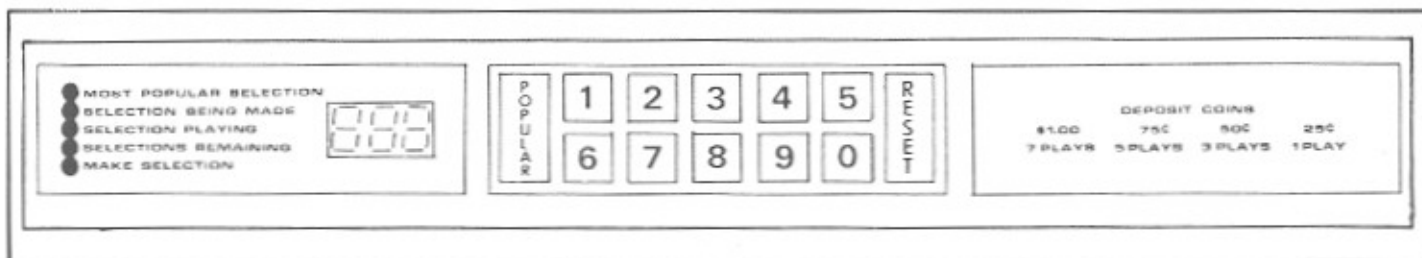
## MECHANISM

An aim of the mechanism design was to eliminate mechanical units such as the annunciator, popularity meter, and search unit. These have been replaced by electronic assemblies. By redesigning the mechanism to incorporate the latest electronics we have eliminated some of the drive train. This means less parts for wear, plus quiet and smooth operation.

## CENTRAL CONTROL COMPUTER

The Central Control Computer is the brain of the phonograph. It controls the memory for the select system and the credit system. It can store up to \$12.25 in credit and convert this into plays (up to 99). When the On-Off service switch is in "Service" position the microcomputer will search and display popularity. The most or least popular records can be found. Total selections and money are also displayed.

The Playmaker is part of the computer. It will stimulate plays by letting the customer know that the phonograph is there. It plays a flip side selected at random whenever the phonograph has been silent for twenty or forty minutes. The phonograph is shipped from the factory with the four position switch set on 20 minutes. The switch can be set for 40 minutes, 20 minutes, continuous or off.



The Memorec function has been expanded and incorporated into the Central Control Computer. Memorec has the following features:

- Records the number of times each record side is selected. Selections made by use of the "Most Popular Selection" key do not increase the count of the individual record side but are counted separately and also included in the total.
- Records the total number of selections made. Selections made by "Playmaker" are not included in the total or in the individual side counts.
- Records the total amount of money deposited in the phonograph including any Wallettes which are connected to it.

### SOUND SYSTEM PRINCIPLES OF OPERATION

The phonograph sound system translates stylus vibration into electrical voltage, amplifies the voltage and the speaker converts it into sound. The sound system consists of a stylus and cartridge, a stereo preamplifier and amplifier unit, a speaker system, a volume control and an output transformer package. Identification and location of each major component is shown in figure 1. The purpose and description of each major component is explained in the following paragraphs.

**Stylus and Cartridge** The stylus and cartridge convert mechanical movement into equivalent electrical voltage. The unit is mounted on the record changer tone arm. This output voltage is transmitted through shielded cable to the amplifier.

**Amplifier** (see figure 2). The amplifier unit amplifies phonograph cartridge output and drives the speaker system. The latest concepts in silicon transistor circuitry are designed into the 50 watt stereo system. It delivers a full 25 watts rms power per channel. Its wide frequency response and low distortion assure good record reproduction. The unit incorporates automatic volume control (AVC).

The output stage is coupled to the speakers. Treble range and bass boost controls are provided on the preamplifier to compensate for differences in room acoustics. A mute relay silences the amplifier while a record is being transferred to or from the turntable. Preamplifier circuitry is completely solid state for durability and long service life.

Protection is included for voltage transients, excessive heat and accidental shorting of speaker leads.

**Preamplifier** The preamplifier amplifies the phonograph cartridge output to drive the power amplifier. The components for both the right and left audio channels are contained in a single plug-in circuit board mounted under the amplifier chassis.

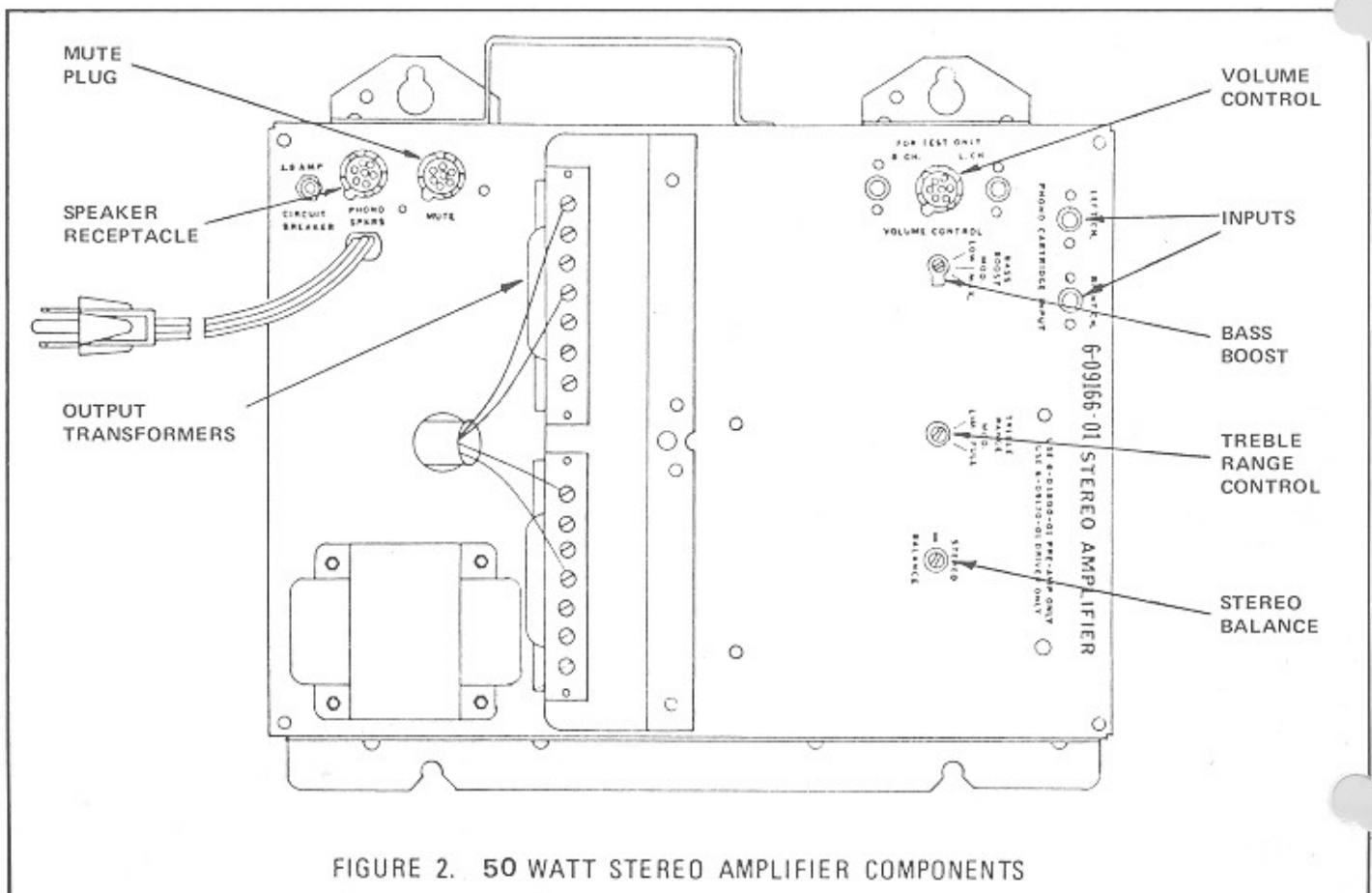


FIGURE 2. 50 WATT STEREO AMPLIFIER COMPONENTS

Output Transformers (see Figure 2). The transformers enables the amplifier to operate 70 volt lines for extension speakers. The transformers also provide terminal strips for obtaining several different power levels for both phonograph and extension speakers.

The output transformer secondary connections are available at two terminal strips. Phonograph speaker power is selected by connecting the leads according to figure 3. Extension speakers can be connected as directed in Table 3, of speaker connection chart.

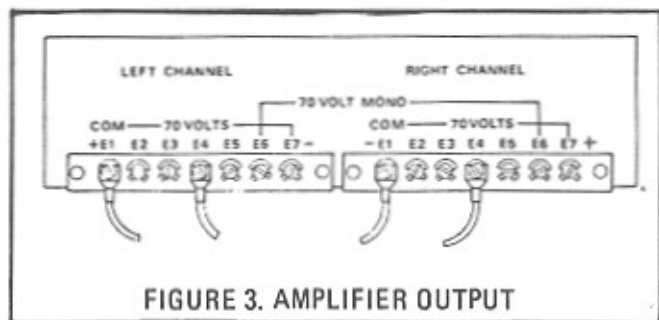


FIGURE 3. AMPLIFIER OUTPUT

**SPEAKER SYSTEM.** The speaker system consists of two 8 inch low frequency speakers and two 4 1/2 inch high frequency speakers.

#### SELECTION SYSTEM

The selection keyboard has ten numbered areas plus two which are marked "Reset" and "Popular."

To make a selection deposit money to establish credit. The numbered display will show the number of selections available. Press the numbered areas on the keyboard in order corresponding to the desired selection number as shown on the title rack. As the digits of the selection number are pressed, they will appear on the numerical display. Only legal selection numbers will be accepted. For example if any number other than a 1 or 2 is pressed as a first digit, it will be ignored. Nothing will happen. It is not necessary to press "Reset". Merely press the correct first digit.

If you change your mind after beginning to make a selection pressing "Reset" will erase the partial selection number and also allow you to enter a new number. "Reset" is not effective after the third digit has been entered.

Press "Popular" to select the tune which has been selected the greatest number of times since this phonograph was serviced last.

Press "Popular" a second time to select the second most popular tune. This process may continue until credit is used up.

#### NOTE

*If selections are made manually before "Most Popular Selection" is used, no selections are repeated even if the manual selections are most popular. Thus the customer is not "cheated".*

The most popular selection sequence is reset when credit is exhausted.

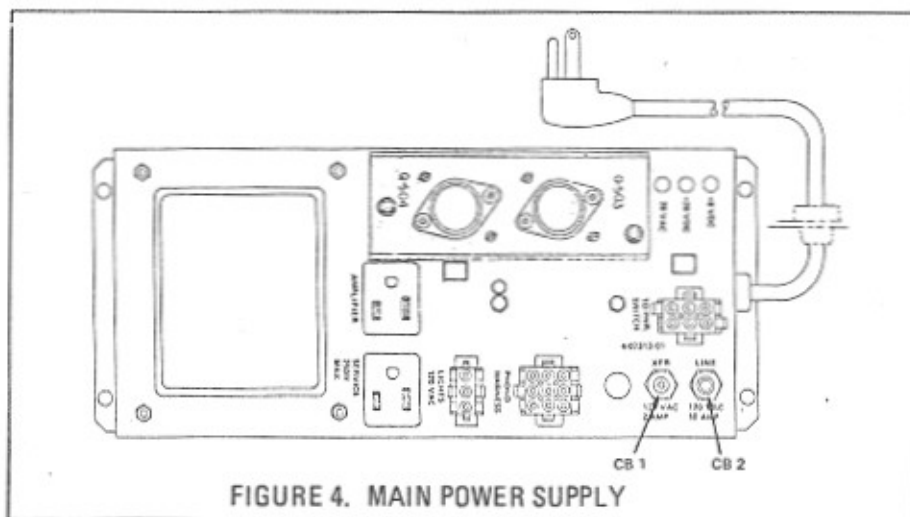


FIGURE 4. MAIN POWER SUPPLY

#### MAIN POWER SUPPLY

The main power supply distributes unregulated +28 VDC and 28 VAC, and regulated +8 VDC to the phonograph components. Power is controlled by a rocker switch located on the access door at the rear of the cabinet. 120 volt AC receptacles are provided for the amplifier, lights, accessories

and service equipment. The AC receptacles and transformer primary are protected by 10 amp circuit breaker CB2 while circuit breaker CB1 protects the transformer primary only. Both the circuit breakers can be reset from the front panel.

TABLE 1. ACCESSORY EQUIPMENT

PART NO.	DESCRIPTION	FUNCTION
3-65327-01	Amplifier Overload Tester - For All Rowe Solid State Amplifiers Except MM-1	Warns installer if extension speaker hook-up causes an overload.
2-66681-06 2-66681-08	Automix Kit (60 Hz.) Automix Kit (50 Hz.)	Enables phonograph to play 33 and 45 RPM records interchangeably.
6-03441-04 6-03441-01	WRD Walette Wall Box (4 Coin) WRD Walette Wall Box (3 Coin)	Remote control unit for solid state phonograph. Has self-contained credit and pricing and selection system. Takes nickels, dimes, quarters and dollar coins. (3 coin does not take dollar coins.)
4-06891-01	Auxilliary Power Supply	Permits operation with WRD Wall Box.
4-05627-01	Auxilliary Power Supply	Powers up to 6 Rowe/AMI WRA or WRC Walette Wall Boxes. 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 Walette Wall Boxes.
2-66965-02	Wall Box Interface Kit	Permits operation with WRA, WRC and Seeburg wall boxes.
2-66965-01	Wall Box Interface Kit	Permits operation with WRD Wall Boxes.
SPEC. 0-05076-00	9 Conductor Cable	For connecting WRD Walette to phonograph.
6-02187-01	Extension Speaker (Model EX-201)	12 watt, compact "bookshelf" speaker 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.
6-07439-03	125 Watt Amplifier Kit	Amplifier and Adapter Cable.
3-06322-03	Remote Volume and Cancel Control With Cable	Remote stereo volume control and cancel button.
6-65047-04	Service Kit	Includes Central Computer, Mech. Control, Power Supply Board and Fuses.
3-06322-08	Dual Remote Volume Control Without Cable	Controls, volume of each channel separately.
3-06322-07	Dual Remote Volume and Cancel With Cable	For connecting remote volume control to phonograph 5-conductor cable, 50 ft. length.
2-08199-05	Remote Volume and Cancel Control Cable	For connecting remote volume control to phonograph 5-conductor cable, 50 ft. length.
4-07473-01	Price Sheet	For changing pricings (stick on numbers).
6-09175-01	Price Chips	This is a set of 27 #1 price chips for price board. (-01 = 1, -.02 = 2, etc).
2-18507-26	Price Chips	This is a set of 16 Price Chips for Price Board consisting of 1 each of #0 thru #15.