

SPECTRAL DMC-10  
OPERATION AND MAINTENANCE MANUAL

SPECTRAL AUDIO ASSOCIATES

*Precision Instruments for the Reproduction of Music*

## SECTION I

### INTRODUCTION AND INSTALLATION

#### INTRODUCTION

Congratulations on your choice of the Spectral DMC-10 Preamplifier. The DMC-10 is the product of an ambitious development program and employs advanced design techniques and precision, high performance components which are unique in audio today.

A great deal of care and effort have gone into the realization of this precision instrument. By understanding its function, you can be assured of a remarkable level of musical performance.

#### INSTALLATION

The Spectral DMC-10 Preamplifier is equipped with a remote power supply to eliminate hum pick-up.

1. Check that the voltage switch on the rear of the supply indicates the voltage of the power source being used. Two cables are included with the power supply, one for connecting to the AC wall outlet and the other for connecting the power supply to the DMC-10.

2. Connect the AC power cord to the AC receptacle on the back of the supply and to the AC wall outlet. The electro-luminescent lamp will light the front panel logo.

3. Connect the large female plug to the power supply and the male plug to the rear panel connector on the rear of the DMC-10. Front panel lamps should light green.

4. The power supply should be set at a distance from the DMC-10.



## SECTION II

### CONNECTIONS

On the back of the DMC-10 Preamplifier there are six pairs of RCA TYPE connectors. These are marked LEFT or RIGHT Channel. The use of high quality connectors and cables cannot be stressed too highly. We recommend the use of high quality cables such as those made by D&K Imports, "Gold Connection" or "Phono Link" made by Monster Cable Co. Other equivalent quality cables will prove suitable.

1. **PHONO INPUTS.** Phono inputs on the DMC-10 are equalized for constant velocity transducers. They are suitable for conventional moving magnet or moving iron cartridges such as Shure, Stanton, Grado and high and medium output moving coil cartridges such as Koetsu, Denon and Dyna-vector. The input impedance is factory set to 47 k ohms in parallel with 100 pF. This can be user adjusted, see section 4-1.
2. **AUX INPUTS.** This input is suitable for either a tuner or other conventional high output device. Input impedance is 10 k ohms. If more input flexibility is required, several after market products can be used to expand the input capabilities in elaborate systems. Contact your Spectral dealer for specific recommendations.
3. **TAPE INPUT.** This input is for the signal output from a tape deck. Input impedance is 10 k ohms.
4. **TAPE OUTPUT.** This output comes from the source selected by the Phono/Aux switch. The source impedance in the Phono position is 200 ohms. The source impedance in the Aux position will be the same as the signal source.
5. **MAIN OUTPUT - DC COUPLED.** These outputs are controlled by the volume and balance controls. They are coupled for flat gain to DC. It is important that these outputs only be used with AC coupled amplifiers.
6. **MAIN OUTPUT - AC.** These outputs are the same as those above except the signal is coupled through 10 uF film capacitors. These outputs may be used with direct-coupled amplifiers.

## SECTION III

### CONTROLS

The Spectral DMC-10 was designed to provide essential controls and flexibility with a minimum intrusion on the audio signal.

1. **PHONO/AUX.** Selects between the Phono input and the Aux input.
2. **SOURCE/TAPE.** Selects between the source selected by the Phono/Aux switch or the output of a tape deck.
3. **STEREO/MONO.** Connects the two channels together to create a mono signal.
4. **MUTE/OFF.** In the mute position attenuates the signal approximately 20 dB and is suggested for cueing records.
5. **BALANCE CONTROL.** Attenuates the louder channel to balance the left-right signal level. The last step to the right or left will shut off the attenuated channel. This control is to be used to compensate for source material imbalances. Correction for system imbalances is accomplished with internal controls outlined in Section 4-2.
6. **OUTPUT ATTENUATION.** Adjusts the output for the desired signal level.

### FRONT PANEL INDICATORS

7. **POWER.** Indicates DC power is supplied to the preamp.
8. **PROTECTION MONITOR.** Indicates in green when the system is operating within safe limits. A red indication shows excessive DC or a high frequency signal is being presented to the high level section. These signals can cause damage to some power amplifiers. When these conditions are detected, protection circuitry mutes the preamplifier outputs. The monitor will show red as long as the output is muted.



## SECTION IV

### INTERNAL ADJUSTMENTS

Several internal adjustments in the DMC-10 permit you to optimize the unit in your system.

1. **PHONO LOADING.** Two connectors are provided next to each phono input cable on the main P.C. board, labeled "PHONO LOADING". By inserting resistors or capacitors in the sockets for each channel, phono loading is accommodated. Resistors are supplied with the DMC-10 for this purpose.
2. **RIGHT & LEFT GAIN ADJUST.** Two trim pot controls are provided internally on the main P.C. board to adjust the gain and balance of the system. The recommended adjustment procedure is as follows: with the system set up in its final configuration, play a MONAURAL record. With the volume set to a reasonable level and the balance control centered, advance the gain control for the weaker channel until the sound source is clearly centered. Some adjustment in the loudspeaker placement may also help balance the image balance.

#### **Caution**

Do not turn any other adjustments on the board.

## SECTION V

### CALIBRATION

*These adjustments are to be made by qualified service personnel only!*

The Spectral DMC-10 is equipped with eight internal adjustment trim pots for optimizing operating parameters. An accurate  $3\frac{1}{2}$  digit DMM is required.

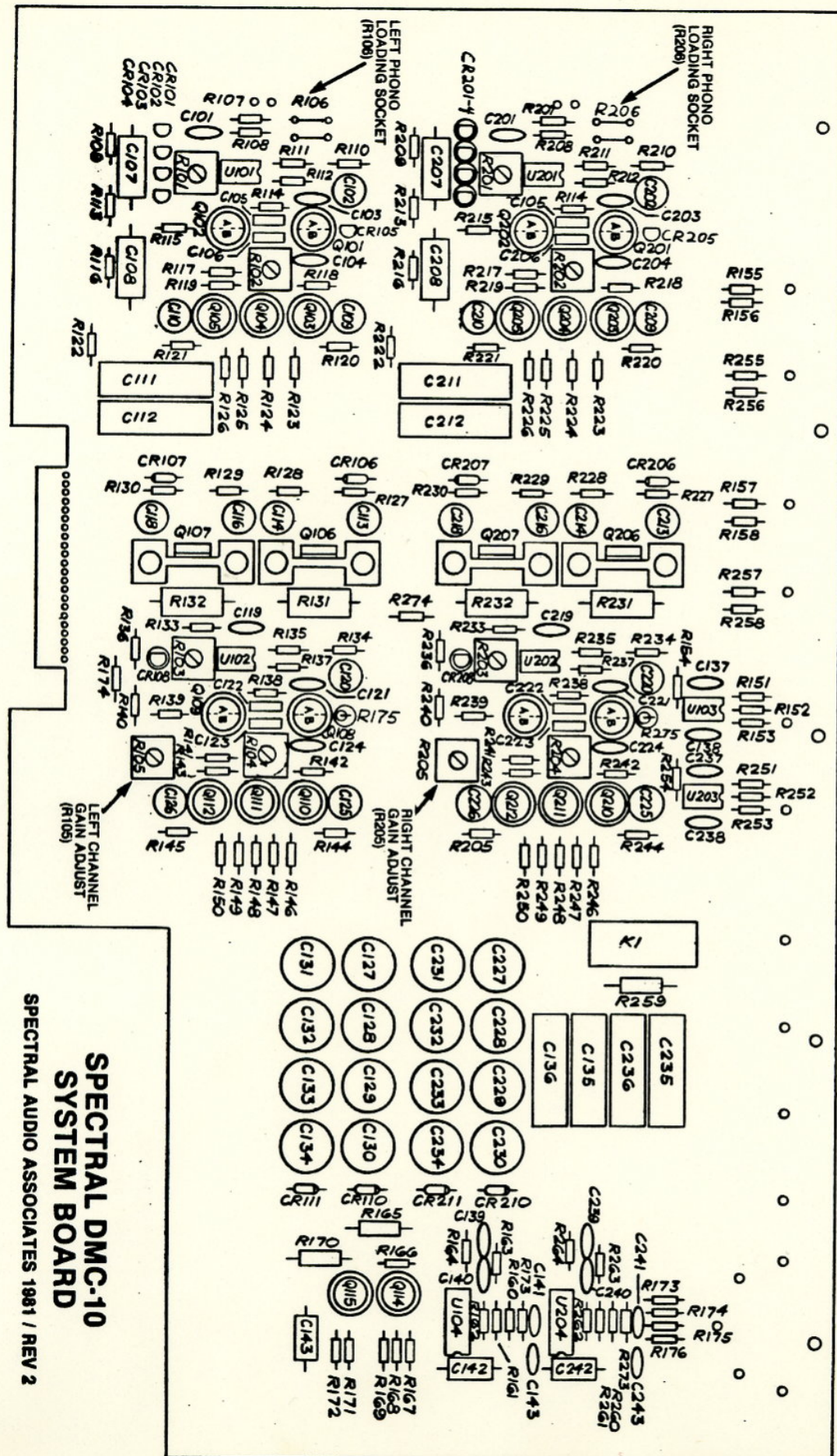
There are two adjustments on each stage of the preamp: one adjusts the output offset, the other adjusts the bias in the output stage.

**BIAS ADJUSTMENT 1.** Measure the output voltage to ground on a given stage and adjust the offset trim pot to a reading of less than 100 mV at the test points indicated.

**BIAS ADJUSTMENT 2.** Measure the voltage drop across the resistor indicated and adjust the bias trim pot to obtain a reading of  $2\text{ V} \pm .2$  across the resistor.

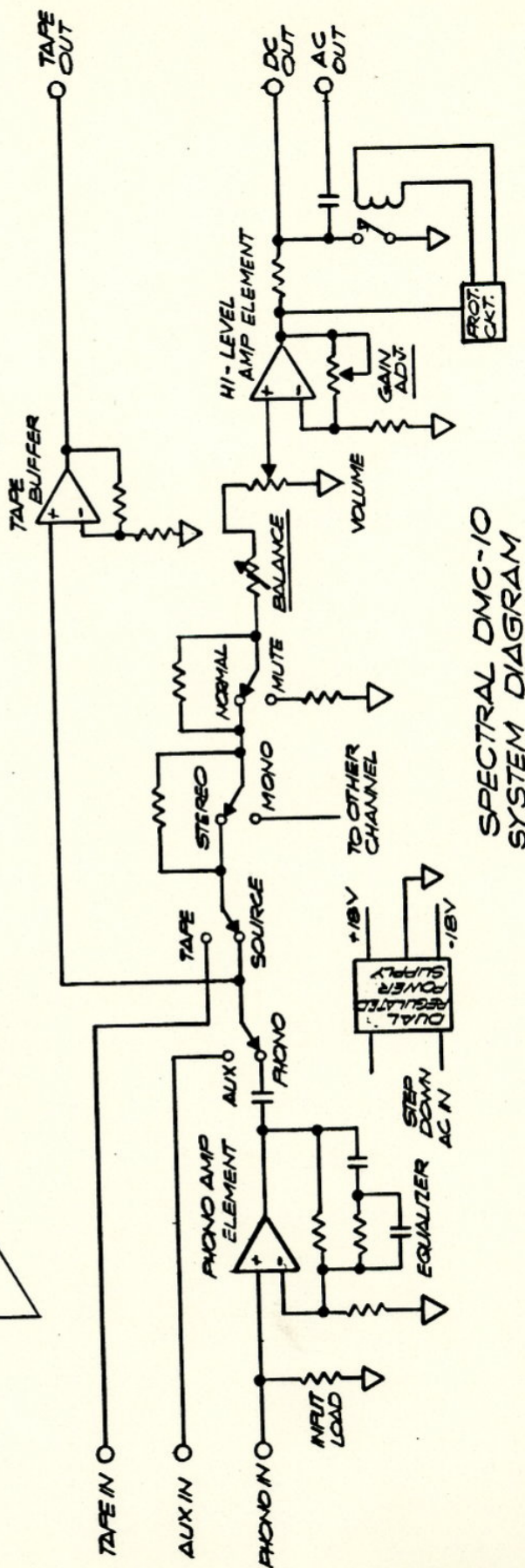
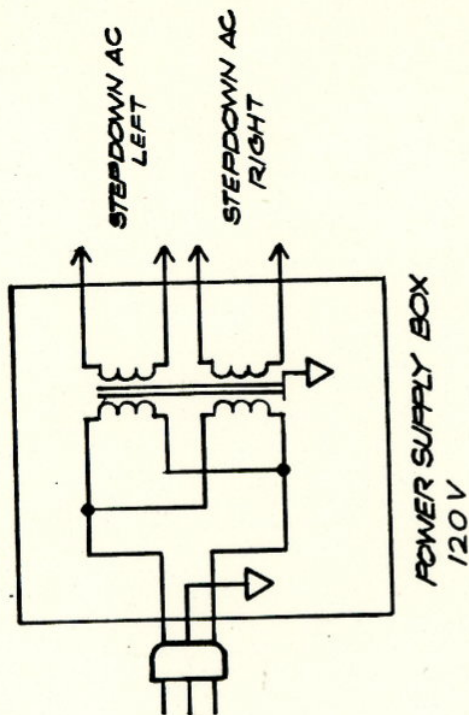
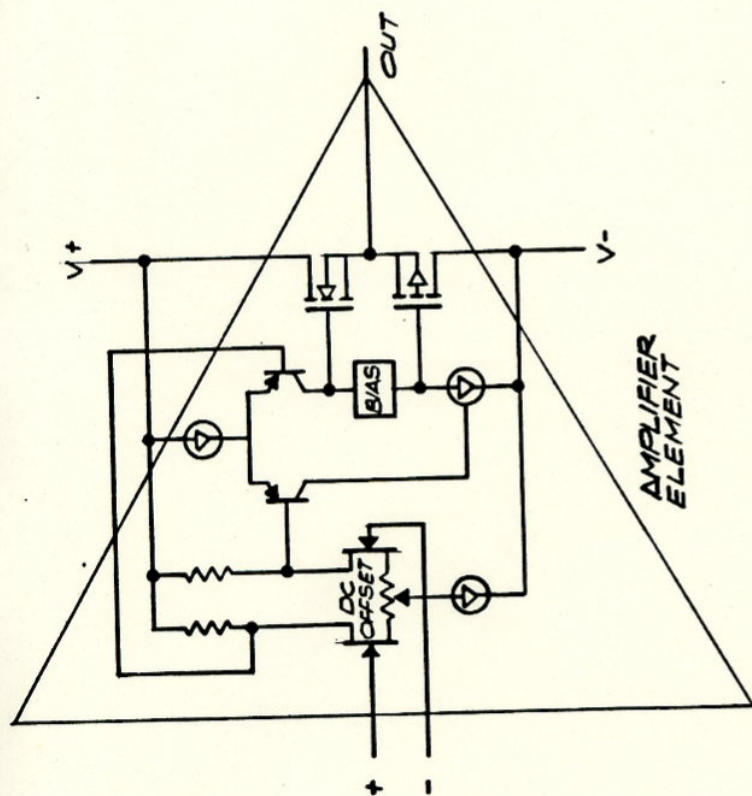


# PHONO LOADING AND GAIN ADJUST LOCATIONS



**SPECTRAL DMC-10  
SYSTEM BOARD**  
SPECTRAL AUDIO ASSOCIATES 1981 / REV 2





SPECTRAL DMC-10  
SYSTEM DIAGRAM



## WARRANTY

Thank you and congratulations on your selection of the finest instruments for musical reproduction available.

For three years from the date of purchase, Spectral Audio will repair or replace any parts which fail to function properly because of defects in materials or workmanship.

The product to be repaired under this warranty shall be delivered by the purchaser to the factory only after return authorization has been obtained.

The attached warranty registration card should be properly filled out and returned to the factory within ten (10) days from the date the equipment was delivered to the using owner.

Excluded from this warranty are damages to the product resulting from neglect, misuse, improper repair procedures, or operation contrary to Spectral Audio's written instructions.

Spectral Audio's liability to any owner shall be to repair or replace any part of the product itself because of defects in workmanship and materials, and Spectral shall not be liable for any consequential damages as a result of defects in workmanship and materials.

Spectral Audio reserves the right to modify or change the equipment, all or in part, at any time prior to delivery thereof, in order to include electronic or mechanical refinements deemed appropriate by Spectral.

This warranty grants specific legal rights in additions to those rights which vary from state to state.

spectral audio associates

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### SPECTRAL WARRANTY REGISTRATION

PLEASE COMPLETE YOUR REGISTRATION CARD AND RETURN TO THE FACTORY WITHIN TEN DAYS OF PURCHASE.

Model # \_\_\_\_\_

Serial # \_\_\_\_\_

Purchased by \_\_\_\_\_

Address \_\_\_\_\_

City, State, Zip \_\_\_\_\_

Purchase Date \_\_\_\_\_

Dealer \_\_\_\_\_

### SYSTEM INFORMATION

PLEASE DESCRIBE THE COMPONENTS YOU CURRENTLY USE:

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WHAT DO YOU LIKE MOST ABOUT YOUR SPECTRAL COMPONENT?

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WHAT MIGHT WE IMPROVE? \_\_\_\_\_

THANK YOU

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