Film-Tech

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INSTRUCTIONS

for

25 WATT RCA AMPLIFIER

MI 12233 - Amplifier only
MI 4939 - Amplifier and phono top

GENERAL INSTRUCTIONS

This equipment has been tested thoroughly and with reasonable care will give years of excellent service. These instructions have been designed to assist in obtaining the maximum performance from this equipment and should be read carefully.

Immediately upon receipt, the equipment should be inspected to see if any damage has occurred in transit. If any damage is found, it should be reported to the express or freight agent at once. The agent should indicate the damage on the bill of lading, and a claim for damages should be filed immediately with the transportation company or with the dealer from whom the equipment was purchased.

IMPORTANT NOTICE: This equipment must be operated from an A-C power source of the frequency and voltage as specified on the nameplate. If in doubt concerning the power available, the electric light company should be consulted.

TECHNICAL DATA

Power Supply
105-120 volts
60 cycles

Fuse
AC line 2 ampere

Source Impedance
Microphone input - High impedance
Phonograph input - Any standard type of phonograph pickup having an impedance of 250 ohm or greater

Power Output
Rated 25 watts
Peak 31 watts

Tubes
Input stage - 1 RCA 6SC7
Intermediate state - 1 RCA 6SC7
Driver stage - 1 RCA 6N7
Output stage - 2 RCA 6L6
Rectifier - 1 RCA 5V4

Field Supply (if needed) for 2 - 5000 or 2500 ohm Electro Dynamic speakers

Load Impedance
250/15/8/4 ohms

Physical Dimensions
11" high
11" wide
16" long

DESCRIPTION:

The MI 12233 amplifier is designed for public address and similar applications and is provided with separate volume controls for two microphones and phonograph and tone control with power switch. The MI 4339 includes a phono motor, switch, and pickup in addition to the MI 12233 amplifier above.

INSTALLATION:

TUBES: Before attempting to operate the amplifier see that all tubes are firmly in their respective sockets.

MICROPHONES: This amplifier will operate from one or two dynamic microphones, RCA junior microphones or any high impedance type microphones. The microphone output should be connected to terminals #2 and #3 of the plug supplied, and the shield of the cable connected to terminal #1. (Should an RCA high impedance microphone using a single conductor shielded cable be used, the conductor should be connected to terminal #3 of the plug, and the shield to terminal #1).

CAUTION: Care should be exercised to keep the AC power line away from the microphone cable or terminals. Otherwise hum may be heard in the loudspeakers.

PHONOGRAPH CONNECTIONS: The amplifier will operate from any standard type phonograph pickup that has an impedance of 250 ohms or greater. For making connections a standard phone-type plug (furnished with RCA turntables) is required. For convenience, turntables with electric motors in convenient carrying cases are listed in the RCA Catalog of Commercial Sound Equipment, and these phonograph units may easily be connected to the amplifier.

Superior results will be obtained by the use of Victor records and RCA-Victor High Fidelity phonograph needles.

OUTPUT CONNECTIONS & FEEDBACK: It will be helpful in making installations of sound equipment to consider that the loudspeakers are similar to search lights. Sound coming from the speakers is found to follow much the same path as do light rays from a searchlight, and the focusing effect may be increased

by the use of directional baffles or projectors. If sound waves from the loudspeakers of a sufficient intensity reach the microphone an audio frequency oscillation will be set up in the amplifying system causing the speakers to emit a howl. Directional projectors will, to a great extent, prevent howling by directing the sound waves in a restricted area, which will permit the sound system to be operated at a much greater volume. The microphone should be slightly behind the speakers, and when two speakers are used, one should be pointed in the general direction of and at the proper angle to the audience. The speakers should be AIMED in the same fashion as a searchlight, in such a manner that the sound distribution will be approximately uniform throughout the desired area.

In some installations, due to unusual room conditions, it may be desirable to use a number of speakers placed at various points in the room and operating at low volume. If an installation of this type is contemplated, the adjacent speakers should be close enough, usually about 40 feet, so that a listener at a point between two speakers will hear the sound from both at approximately the same time. The volume from the speakers should be low enough so that interference will not be caused by speakers not adjacent.

The output terminal board is located at the rear of the amplifier base, and is connected as it leaves the factory to give the following standard output impedances: 250/15/8/4 ohms. Other impedances can be obtained by making connections to the terminals as follows:

TERMINALS	IMPEDANCES
4 to 8	* 0.75 ohms
8 to 15	* 0.95 ohms
4 to 15	* 5.3 ohms
15 to 250	145 ohms
8 to 250	165 ohms
4 to 250	192 ohms

* Use only for light loads, such as for Monitoring purposes.

PARALLEL OUTPUT CONNECTIONS: Connection of the output of these amplifiers in parallel with other amplifiers or amplifiers of the same type is not recommended.

When connecting speakers to the amplifier, the impedance of the group of speakers should be equal to or slightly greater (Never Less) than the amplifier output impedance that is used. For example, a speaker load of 200 ohms impedance should never be connected

across the 250 ohm output terminals of the amplifier. The correct match would be from terminal 4 to 250, giving 192 ohms.

In order to determine the impedance of a group of identical speakers, the impedance of one speaker should be divided by the number of speakers connected in parallel. For example, the total impedance of a group of four speakers each of 60 ohms, when connected in parallel is 15 ohms and should be connected across the 15 ohm output of the amplifier.

The amplifier is also equipped with two speaker sockets which use the two small prongs for the voice coil or speaker line and the two large prongs for field supply for two electro dynamic speakers having 5000 ohms or 2500 ohms DC resistance. When electro dynamic speakers are used both speakers should have the same DC field resistance since their fields are connected in series across the rectifier B supply.

The voice coil terminals on these speaker sockets are in parallel and connected to the red flexible lead on the terminal strip and should be connected to the proper terminal such as the 4 ohm terminal when 2-8 ohm speakers are used (without transformers) or to the 250 ohm terminal when two speakers with 500 ohm line transformers are being used.

CAUTION: The AC power cable should not be plugged in until all other connections to the amplifier have been made.

OPERATION: The tone control should be turned all the way to the left (counter clockwise) until the AC switch is off and the volume controls turned to their farthest counter clockwise position. The loudspeakers, microphone and/or phonograph should be connected as described in previous paragraphs. The AC line plug should then be inserted into any convenient power receptacle that is connected to a source of power of the voltage and frequency specified on the amplifier nameplate.

The AC switch on the tone control should be thrown to the "ON" position and the tubes allowed to heat for about 30 seconds before attempting operation of the amplifier.

The volume control of the input desired (microphone or phonograph) should be rotated in a clockwise direction until the desired volume is obtained while speaking into the microphone, or while operating the phonograph as the case may be. Microphone and phonograph may be used at the same time,

blending them together is any desired combination by means of the two volume controls.

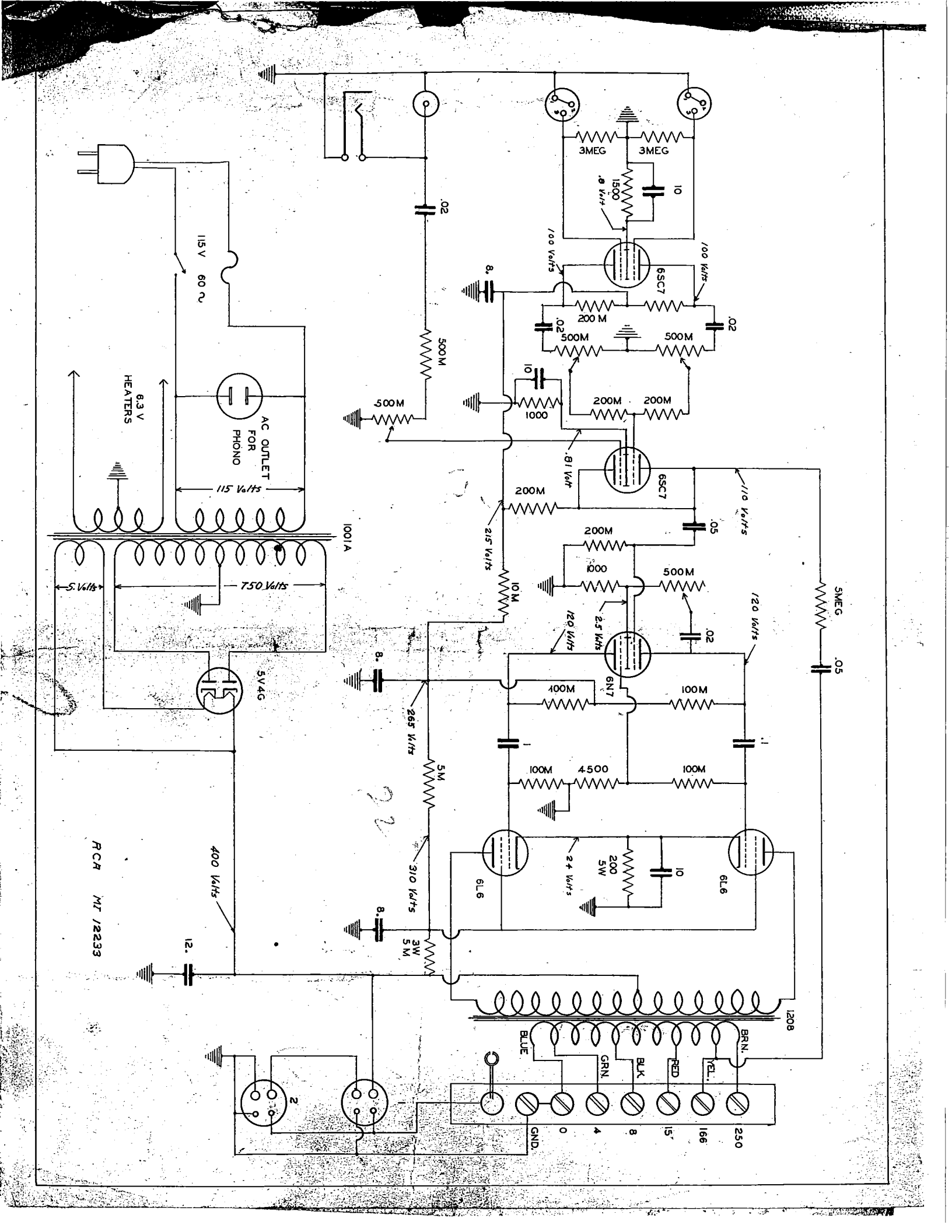
TONE CONTROL: The tone control provides a means of controlling the tone of the entire system. When the tone control is all the way to the right (clockwise) the response is best for the high voice frequencies. When all the way to the left (counter clockwise) the high frequencies are attenuated leaving the bass notes predominating. Normal operation is usually with the tone control set near 7 on its dial.

NOTE: Howling and squealing are not faults of the amplifier but are caused by sound from the loudspeaker reaching the microphone. Each installation will present a different problem and must be considered individually. The following suggestions may be helpful.

1. Reduce the amplifier volume.
2. Change the position of the microphone relative to the speakers.
3. Adjust the tone control.

AC LINE FUSE

The AC line fuse is a two-ampere fuse. This fuse should never be removed or replaced until the AC power switch has been thrown to the "OFF" position, and should then be replaced only with one of the same type and rating.


115 V 60 ~
6.3 V HEATERS
AC OUTLET FOR PHONO
115 Volts
1001A
5 Volts
750 Volts
5V4G
.02
500M
3MEG
3MEG
1500
.9 Volt
10
100 Volts
6SC7
8.
200 M
.02
500M
500M
.02
10
1000
200M
200M
.81 Volt
6SC7
200M
215 Volts
.05
110 Volts
200M
1000
500M
10 M
120 Volts
2.5 Volts
.02
120 Volts
5MEG
.05
8.
6N7
100M
100M
265 Volts
.1
5M
100M
4500
100M
6L6
24 Volts
200 5W
10
6L6
400 Volts
310 Volts
8.
12.
3W 5 M
1208
BLUE
GRN.
BLK.
RED
YEL.
BRN.
2
1
GND.
0
4
8
15
166
250
RCA MT 12233