

# **OWNER'S MANUAL**

**Model Two Hundred, Model Two Ten**

By **harman kardon**

# *Nocturne*

## INTRODUCTION

Congratulations. You have just purchased one of the finest stereophonic music centers available. Your receiver represents the successful culmination of many years of intensive research in solid-state technology—a product literally born of space-age development. Before you lies the magnificent sound of recorded music as you have never heard it before.

We know how anxious you are to install and listen to your new receiver. However, a few moments spent in reading this instruction booklet will pay vast dividends in the ultimate enjoyment of your music system.

Please retain this booklet for it contains valuable information.

### WARRANTY POLICY

Please fill in your warranty card and mail it to the factory without delay to protect your rights under warranty. The Harman-Kardon warranty is not valid unless we have your card on file.

### WARRANTY

We warrant each unit to be free from defects in material and workmanship under normal use and service, and in accordance with the conditions herein below set forth, for a period of two (2) years from date of delivery to the original purchaser.

Should a defect occur within the said two (2) years, and provided that the unit is returned to us with transportation prepaid and which our examination shall disclose to our satisfaction to have been thus defective, we will:

1. During the first ninety (90) days from date of sale at our option, either replace or repair and install any defective parts, free of charge.
2. After ninety (90) days and for the balance of the two (2) years, at our option, either replace or repair all defective parts charging only for labor.

This warranty is not applicable to any instrument which shall have been repaired or altered in any way so as in our judgement to affect its stability or reliability nor which has been subject to neglect, misuse, abuse, negligence or accident nor which has had the serial number altered, effaced or removed. Neither shall this warranty apply to any instrument which has been connected otherwise than in accordance with instructions furnished by us.

This warranty is expressly in lieu of all other warranties, express or implied, and of all other obligations or liability on our part, and we neither assume nor authorize any representative or other person to assume for us any other liability in connection with the sale of this instrument.

### SERVICE POLICY

Harman-Kardon has established a special consumer division to answer all questions pertinent to the installation and operation of your unit. Please feel free to write us at any time and we will endeavor to offer prompt and complete advice.

If your problem cannot be resolved through our combined efforts we may wish to refer you to one of our authorized warranty stations. The unit must be shipped via Railway Express, Prepaid to the station designated, accompanied by a brief note describing the exact nature of the difficulty. Under no circumstances should the set be shipped directly to the factory without prior authorization!

### INSTALLATION PROCEDURE

#### VENTILATION

Although your new Nocturne Receiver rarely develops high heat, it is still recommended that you leave the back of the cabinet open. If this is not possible, provide several large holes or slots as low down and as high up in the cabinet back as possible. As an alternate, holes may be provided in the sides, bottom or top of the cabinet. Remember that really effective ventilation requires provision for cool air to enter at the bottom and hot air to leave at the top. A minimum clearance of two (2) inches should be allowed on each side and in the rear, between the chassis and the cabinet, and three (3) inches are required above it.

Isolate any accessories which might interfere with ventilation. For example, do not drape plastic or rubber covered interconnecting cable over the equipment.

The rear panel surface of your receiver has been designed as a heat dissipating device for the output transistors. This area will become warm under normal use and should not be cause for concern.

#### POWER REQUIREMENTS

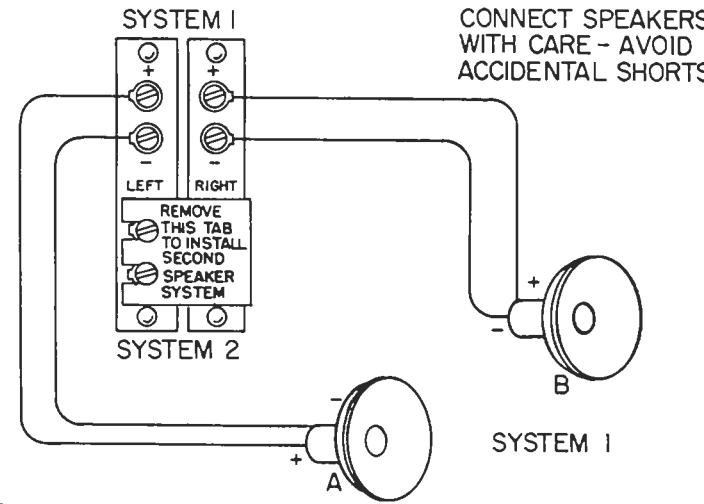
Connect the AC line cord into any outlet furnishing 117 volts, 50 or 60 cycle AC current. The voltage may vary between 105 and 125 volts. An auxiliary AC power outlet is provided on the rear panel of your receiver. Any accessory equipment (tape recorder, phonograph record player, etc.) may be connected to this receptacle and will be controlled by the ON OFF switch on the front panel of your receiver.

## CONNECTING THE SPEAKERS FOR STEREO OPERATION (1 SYSTEM)

Your two speakers should be identical, if possible, to obtain optimum results. Experts agree that a perfectly matched system offers the best stereophonic reproduction. The speakers should be placed along the same wall approximately 8 to 10 feet apart depending upon room size and furniture placement. It may be necessary to experiment with speaker placement until best results are obtained.

Use any type of wire to connect your speakers to your receiver. Lamp cord "zip cord" is excellent and may be easily dressed around the molding for an inconspicuous and neat installation. Do not drive the staples or tacks through the center of the wire for this may short out the two sections and will decrease the overall volume or short out the speakers entirely. It is permissible to use approximately 50 feet of speaker connecting wire for each speaker without loss of volume. CONNECT SPEAKERS WITH CARE. AVOID SHORTS—RECEIVER HAS BEEN DESIGNED TO PREVENT DAMAGE FROM ACCIDENTAL SHORTING; HOWEVER, REPETITIVE SHORTING CAN DAMAGE TRANSISTORS.

1. Connect one length of lamp cord to the left speaker. (This is the speaker on your left as you face the speakers. This speaker will now be referred to as Channel A.)
2. Attach the other end of the lamp cord to the terminals marked SYSTEM 1 CHAN A located on the rear of the receiver.
3. Similarly connect another length of lamp cord to your right speaker. (This speaker will now be referred to as Channel B.)
4. Attach the other end of the lamp cord to the terminals marked SYSTEM 1 CHAN B.
5. Your receiver is now connected for 1 system stereo operation and is operative when the speaker switch on the front panel is in the System 1 on position selector.



## SPEAKER PHASING

When more than one speaker is used in any music reproducing system the speakers must be connected in a manner to work together rather than work out of phase. If one speaker is pushing air out while the other is moving in the opposite direction this will result in diminishing bass response. Checking for proper phase and correcting if necessary is quite simple.

1. Place a stereophonic recording on your record player.
  2. Place the Function switch in the Phono Mono position for monophonic playback.
  3. Play the record. The sound should emerge from approximately the center area between the two speakers.
  4. While the record is playing place the Function switch in the Phono Stereo position.
  5. The sound should now move across the wall of the room and should appear to come from both speakers as well as the center.
  6. If your speakers are out of phase, the sound source will not pinpoint itself between the two speakers when the Function switch is in the Phono Mono position. Instead it will appear to come from both sides.
- If the speakers are out of phase, turn off the receiver and disconnect both leads from either the left or right speaker and reverse them. Your system will now be in phase.

This completes your speaker connections. Your receiver is a solid state device which does not contain audio output transformers. It is therefore not necessary to match the impedance of your speakers to the receiver. Your unit will perform perfectly with any speaker which has an impedance of 4, 8 or 16 ohms.

## SPEAKER SYSTEM SELECTOR SWITCHES

Your receiver has been provided with 2 independent speaker selector switches.

If your receiver is connected with 1 set of speakers (1 system) as described in previous paragraph on speaker connectors, the system 1 speaker selector switch must be in the "on" position. If you have 2 sets of speakers (2 systems) the system 1 and system 2 speaker selector switches must both be in the "on" position for both systems to operate.

Should you desire to listen to stereo-headphone alone, the speakers (either one or both systems can be turned off at your discretion.)

## STEREO HEADPHONE RECEPTACLE

The stereo headphone receptacle located on the front panel will accept any headphone with any impedance rating. The headphone receptacle is "on" at all times. If you wish to listen to the headphones alone, see the paragraph "Speaker Selector Switches".

## CONNECTING THE SPEAKERS FOR STEREO OPERATION (2 SYSTEMS)

1. Connect all 4 speakers for your two system operation as shown in Diagram B.
2. You may now select either system 1, system 1 and 2 or system 2 by the use of the speaker selector switches located on the left side of the front panel of your Nocturne receiver.

NOTE: WHEN ALL THE SPEAKERS USED IN YOUR 2 SYSTEM CONNECTION ARE 4 OHMS, CONNECT A 2 OHM, 10 WATT RESISTOR IN SERIES WITH THE HOT SIDE OF EACH OF THESE SPEAKERS. (IF TWO OF THE SPEAKERS ARE 4 OHMS AND 2 OF THE SPEAKERS ARE ANY HIGHER IMPEDANCE THIS PRE-CAUTION IS NOT NECESSARY.)

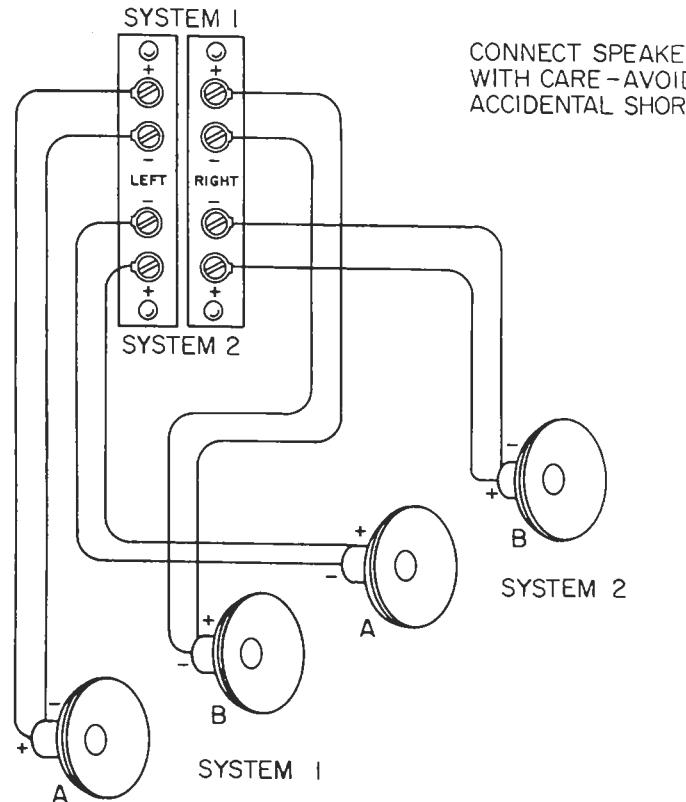


DIAGRAM B

90718560

## CONNECTING THE SPEAKERS FOR MONOPHONIC OPERATION (1 SYSTEM)

If your receiver is to be used monophonically and stereo is to be added at a later date, it is essential that both speaker output terminals are terminated into a proper load to prevent damage to the output stage of the receiver. Refer to Diagram C for proper installation of the loading resistor.

At no time should the output terminals be paralleled for monophonic operation!

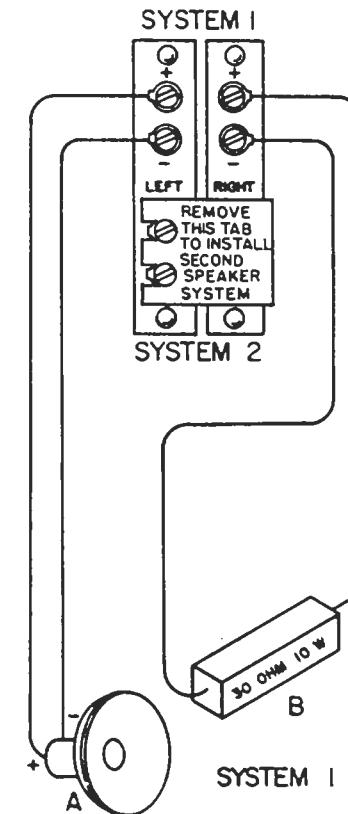


DIAGRAM C

90718561

THIS IS THE ONLY CORRECT METHOD FOR  
CONNECTING ONE SPEAKER TO YOUR RECEIVER

## CONNECTING THE SPEAKERS FOR MONOPHONIC OPERATION (2 SYSTEMS)

If your receiver is to be used monophonically and stereo is to be added at a later date, it is essential that both speaker output terminals are terminated into a proper load to prevent damage to the output stage of the receiver. Refer to Diagram D for proper installation of the loading resistors.

*At no time should the output terminals be paralleled for monophonic operation!*

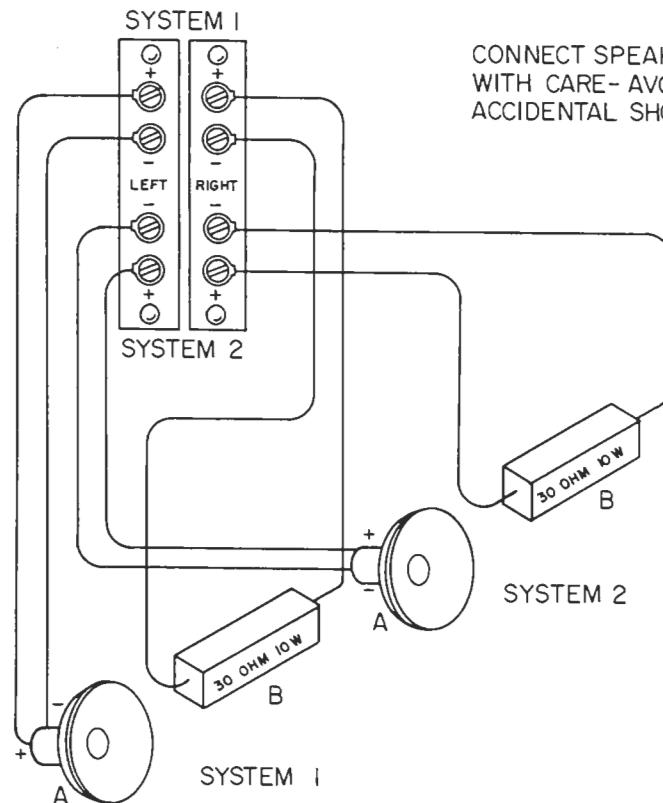


DIAGRAM D

90718562

THIS IS THE ONLY CORRECT METHOD FOR CONNECTING  
TWO SPEAKERS MONOPHONICALLY TO YOUR RECEIVER

## CONNECTING THE SPEAKER FOR STEREOPHONIC OPERATION (SYSTEM 1) AND MONOPHONIC OPERATION (SYSTEM 2)

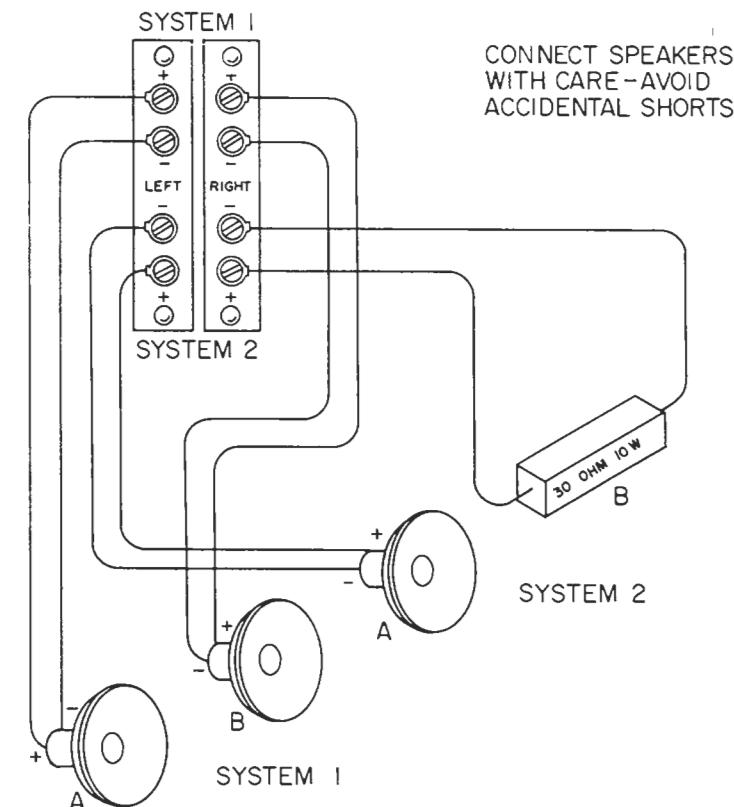


DIAGRAM E

90718563

## CONNECTING THE FM ANTENNA

Due to the exceptionally high sensitivity of your receiver, the 48" wire supplied is sufficient for all but the most difficult locations. The balanced antenna input is designed to accept a 300  $\Omega$  antenna, indoor or outdoor type. When using the antenna supplied connect one end of the 48" wire to either of the FM antenna terminals. Horizontal placement of the antenna will yield optimum reception. The antenna may be tacked to the back of the molding behind the equipment or to the shelf you use.

As FM signals are in the same broadcast frequency range as TV signals, they are affected by the same external conditions. Just as TV reception is improved, you can improve your FM reception with an external antenna. When using an external antenna connect both leads of the antenna wire to the two FM antenna terminal posts on the rear of your receiver.

## CONNECTING THE AM ANTENNA

The AM loopstick fastened on the rear of your receiver comprises all the antenna usually required for normal signal areas. In more remote locations an additional outdoor antenna may be required. This should consist of a single wire, as long as is reasonably practical. It must be kept away from large metal objects, power lines or electrical machinery to insure reception without extraneous noise. Attach this length of wire to the AM terminal of the ANTENNA TERMINAL STRIP.

## CONNECTING A STEREO RECORD PLAYER — (MAGNETIC PICKUP)

Connect both leads from your record player to the CHAN A and CHAN B PHONO MAG input receptacles on the rear of the receiver chassis. If your record player has a special ground wire emerging with the two input leads, connect this ground wire to the ground terminal on the rear of the receiver.

## CONNECTING A MONOPHONIC RECORD PLAYER — (MAGNETIC PICKUP)

Connect the single lead from your monophonic record player to either the A or B PHONO MAG input receptacles on the rear of the receiver chassis.

## CONNECTING A STEREO TAPE RECORDER

Connect the two tape recorder output cables to the LEFT and RIGHT TAPE AMP/AUX input receptacles on the rear of your receiver. With the Function Switch in the TAPE AMP/AUX position you will now be able to play your stereo tapes.

In order to make a recording, connect the inputs of your tape recorder to the TAPE OUT receptacles on the rear of the receiver. This will allow you to make a stereophonic recording while simultaneously listening to the program material through your speaker system.

## CONNECTING A MONOPHONIC TAPE RECORDER

If a monophonic tape recorder is to be used with your receiver connect the recorder output to either the CHAN A or CHAN B AUX input receptacle located on the rear panel. This will enable you to play back your monophonic tapes.

If your recorder is stereo playback but records monophonically, connect the output as described in the previous section on connecting a stereo tape recorder. Connect the input for recording monophonically as described below.

Connect the input of your recorder to either the CHAN A or CHAN B TAPE OUT receptacle. This will enable you to record monophonically while simultaneously listening to the program through the receiver and speakers.

## OPERATION PROCEDURE

Every control on this receiver serves a specific useful function and is important for the proper operation of your stereo system.

We recommend that you read the following section carefully so you may take full advantage of the performance capabilities of your receiver.

## BALANCE CONTROL

The balance control is used to adjust the sound level of each channel with relation to each other.

The nature of stereophonic reproduction is such that it requires two identical channels to obtain the optimum stereo effect. As there may be slight differences between the location of the two speakers, tape heads, cartridges, etc., the balance control is provided to permit re-balancing of the overall system even in extreme cases where unbalance exists.

It should be noted that the Balance Control may be set anywhere within its range of adjustment to attain system balance.

## VOLUME CONTROL AND POWER SWITCH

The Volume Control is used to adjust the volume level of any program material fed into the stereo system. The control varies both channels simultaneously therefore eliminating the necessity of balancing your system each time you change the volume level.

In the full counter-clockwise position your receiver is OFF. In order to turn your receiver ON, turn the control clockwise until a click is heard and then adjust the volume level of the program you wish to hear.

## BASS AND TREBLE CONTROLS

The BASS and TREBLE tone controls on your receiver provide the full range of tonal adjustment necessary for stereo high fidelity listening. The tone control range is considerable and can adequately adjust the low and high frequencies in accordance with your listening preference, speaker characteristics and room acoustics.

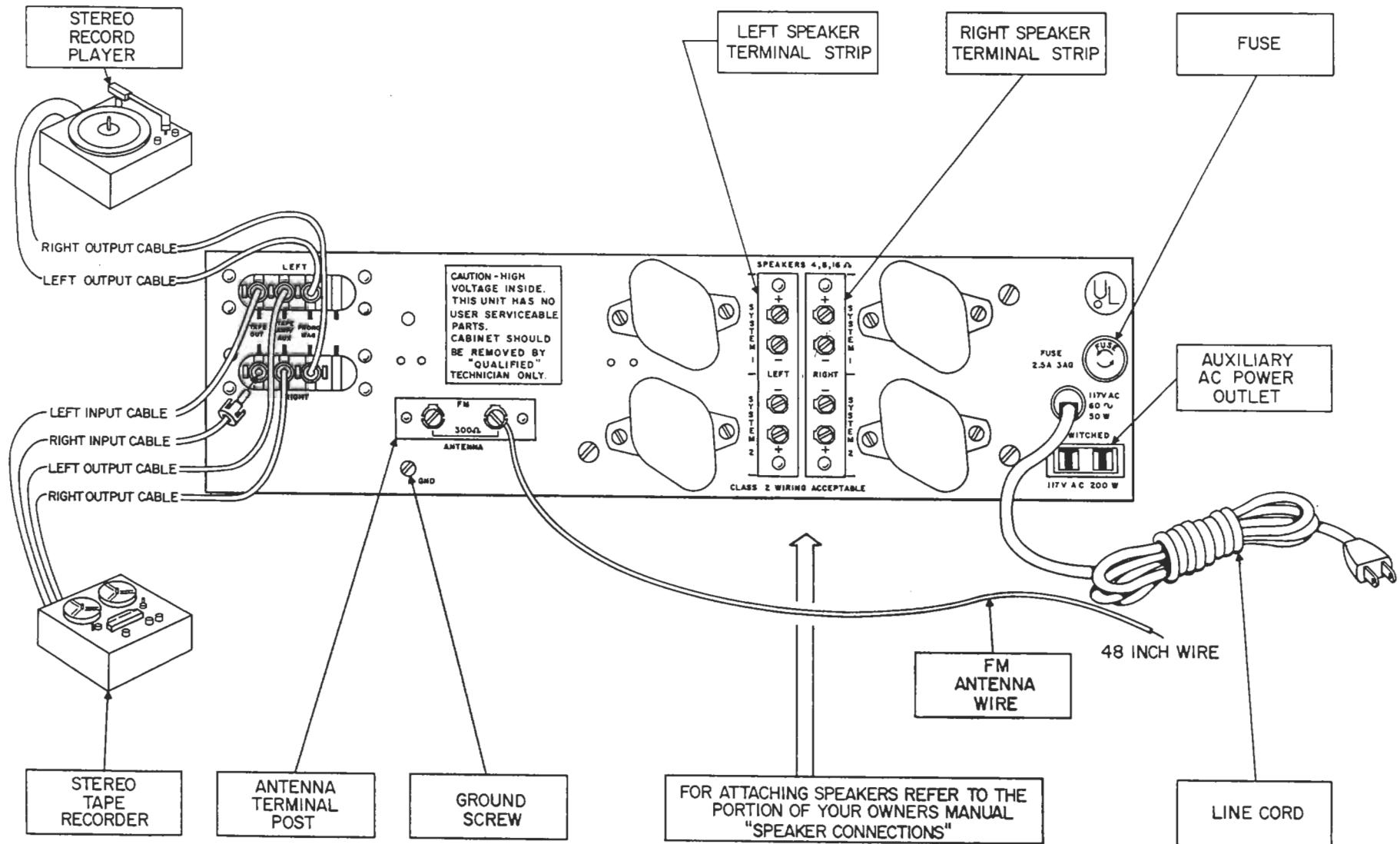
For your convenience the "Contour Defeat Switch" is now an integral part of the "Bass Tone Control." For warm full bodied reproduction at low listening levels leave the switch in the normal (in) position. To defeat the contour pull the bass control out. At high levels the contour/defeat switch has no effect.

## CONTOUR DEFEAT SWITCH

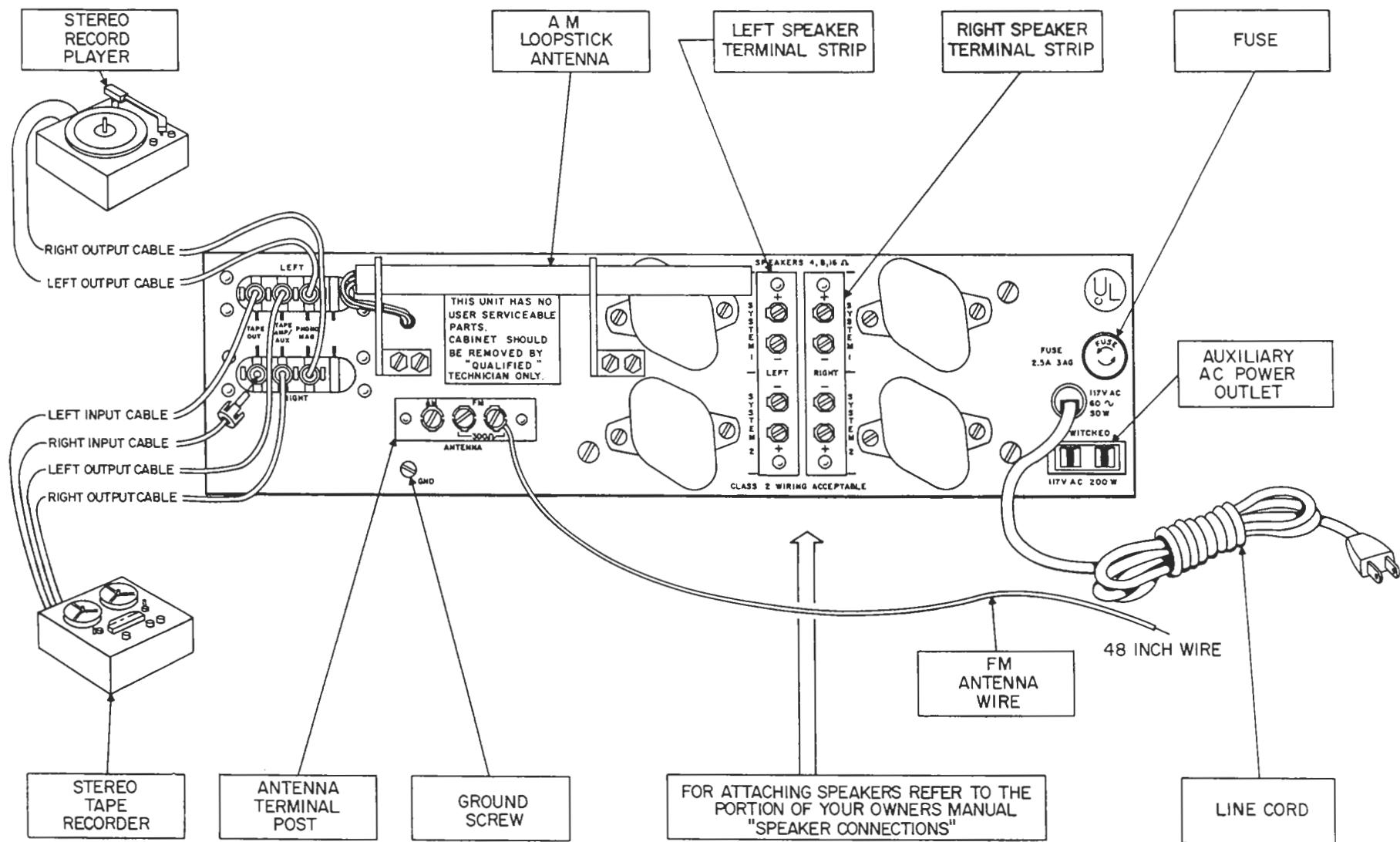
One of the limitations of human hearing is its tendency to lose sensitivity to the very low pitched sounds as the program sound level is reduced. It is this characteristic (known as the Fletcher-Munson effect) which causes one to play music programs at high listening levels in order to experience the full rich tone available from fine modern recordings.

The Contour/Defeat switch compensates for this effect; thereby eliminating high listening levels as a requisite for full enjoyment of reproduced music.

REAR PANEL TWO-HUNDRED



## REAR PANEL TWO-TEN



### FUNCTION SELECTOR SWITCH

The Function Selector Switch selects the desired type of program source to be heard thru your system.

1. PHONO MONO: Selects your record player for monophonic operation.
2. PHONO STEREO: Selects your record player for stereophonic operation.
3. TAPE AMP/AUX: Selects any program source such as tape recorder, the output of your television set, or any other high level equipment connected to the tape amp/aux receptacles on the rear of your receiver.
4. FM MONO: Selects the FM section of your receiver. In this position you can listen to stereophonic broadcasts monophonically while monophonic broadcasts will appear unchanged.
5. FM STEREO: This is the normal listening position for all monophonic or stereophonic FM broadcasts. In this position the stereo indicator light and automatic switching circuit built into your receiver are operative. For further details see the paragraphs on "Stereo Indicator Light" and "Selecting Monophonic or Stereo FM Broadcasts".
6. AM: This position selects the AM section of your receiver for AM reception. (Two Ten only)

### TAPE MONITOR SWITCH

If your tape recorder has a special monitoring feature throwing the tape monitor switch to the "in" position will enable you to listen to your tapes a second after they are recorded. When not in use, this switch must be in the "out" position. If your tape recorder does not have any monitoring feature, throwing this switch will result in zero output from your speaker system.

### SPEAKER SELECTOR SWITCHES

Refer to paragraph on speaker connections

### TUNING METER

Your receiver incorporates a D'arsonval movement tuning meter for precise tuning of your receiver.

Proper tuning is indicated by maximum deflection (higher number) of the needle. Stronger stations show greater needle movement.

### TUNING

The tuning knob, located directly to the right of the dial glass is used to select the desired FM station when your selector switch is in the FM mono or FM stereo position.

### SELECTING MONOPHONIC OR FM STEREO BROADCASTS

Under normal use for all FM broadcasts the function Selector Switch should be placed in the FM STEREO position.

Your receiver is equipped with a stereo sensing circuit which can automatically determine if your unit is receiving monophonic or stereophonic broadcasts, and then automatically adjust the mode of operation.

If the station is transmitting stereo, your receiver will automatically switch in the multiplex section and you will hear the broadcast in full stereo. Should the station conclude broadcasting in stereo, your receiver will automatically switch back to monophonic reception.

Should you receive a weak stereo signal whose quality has been degraded by noise or poor signal conditions, and you wish to listen to this stereo broadcast, monophonically, place the function selector switch in the FM MONO position.

### STEREO INDICATOR

A stereo indicator is located directly behind the FM dial glass and operates in conjunction with the FM Stereo position of the Function switch. The indicator visually indicates the reproduction of FM stereo through your receiver.

To tune for FM stereo proceed as follows:

1. Place the function selector switch in the FM Stereo position.
2. Tune carefully to the desired station, using your tuning meter for maximum deflection. Your stereo indicator will now show if you are tuned to a stereo program. If the indicator is OFF, the program you are listening to is being broadcast monophonically.

### DIAL SCALE

The Dial Scale on your Two Hundred receiver is marked with two (2) scales, an FM frequency scale (88-108 mc) and a logging scale (0-100). The Two Ten receiver however is marked with three (3) scales, an AM frequency scale, FM frequency scale, and an FM logging scale.

Since most FM stations operate on frequencies which are not whole numbers (such as 96MC as compared to 96.3) ideally each megacycle division on the frequency scale should be divided into 10 parts to enable the user to pinpoint the location of the station. This would require a dial scale which would be longer than the front panel.

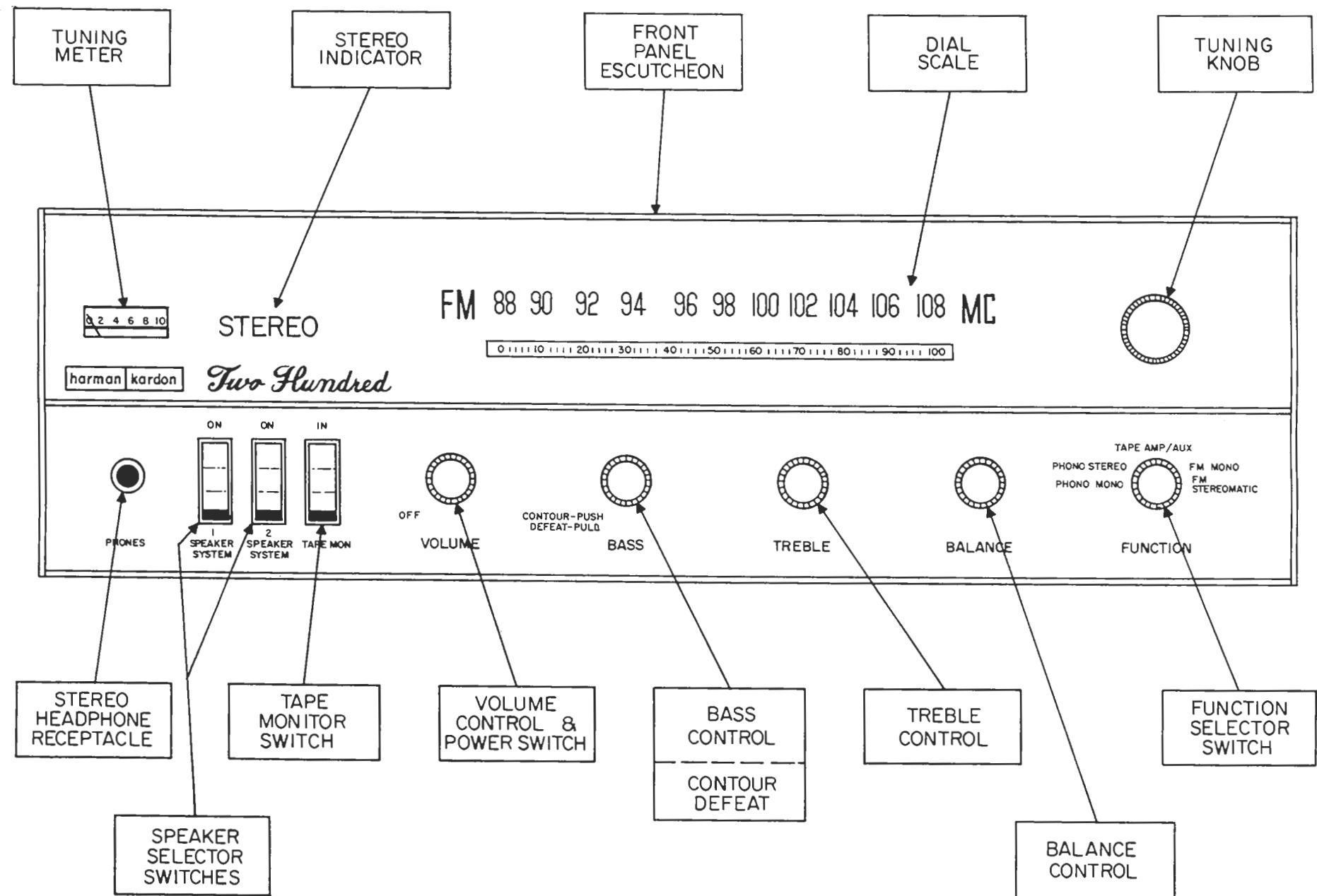
The logging scale which is divided into 100 equal parts provides a means of finding your favorite station, once you have noted its position on the logging scale. For example, in New York City, WQXR operates on 96.3 MC. After locating this station through the use of the frequency scale (between 96 and 98 MC), you find that the pointer may fall on 46 on the logging scale. Make a note of this setting and when you next want to tune to WQXR, all that is necessary is to set the pointer to 46 on the logging scale.

### EQUALIZATION

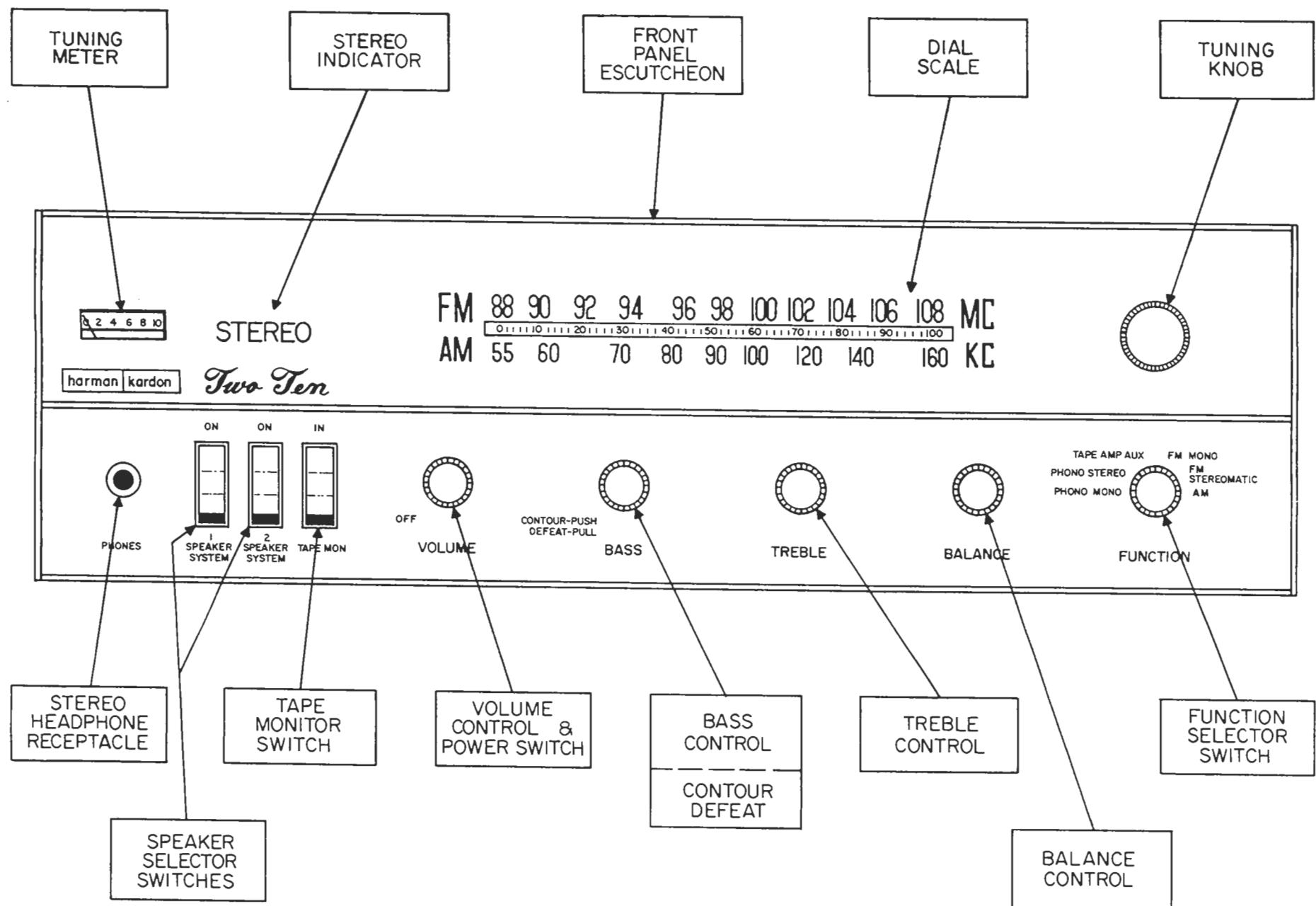
In order to achieve good reproduction of the wide range of frequencies in music and to make necessary adjustments for the limitations of the recording technique, record manufacturers have found it necessary to modify the actual frequency response of the music while it is being recorded. Thus, to avoid over-cutting and consequent distortion, a measured and deliberate reduction is effected in low frequency response by selecting a "turnover frequency" and by recording attenuated response below that point. To assure optimum signal to noise at the high frequency end when the record is played at home, the highs are deliberately exaggerated during the recording process. A measured and deliberate boost is effected above a certain frequency. This combination of deliberate exaggeration at the low and high ends of the frequency response can be expressed in a recording curve. When the record is played a mirror image of that curve should be available so that the ideal "flat" response may be achieved.

The PHONO positions of the Function Selector automatically select the proper equalization that is required.

FRONT PANEL TWO-HUNDRED



FRONT PANEL TWO-TEN



## FUSES

Your receiver is protected by a  $2\frac{1}{2}$  amp-3AG fuse. In the event of fuse failure replace ONLY with the same type used. Replacing with a fuse of a higher rating will not protect the instrument and may result in severe damage.

## HUM AND NOISE

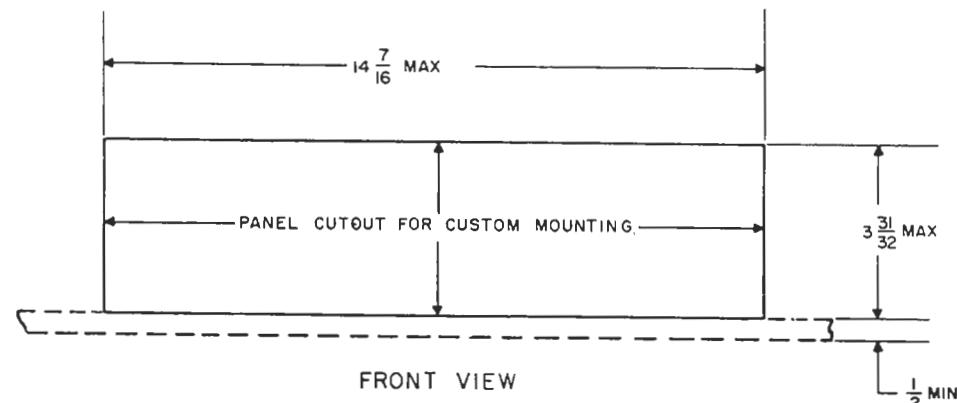
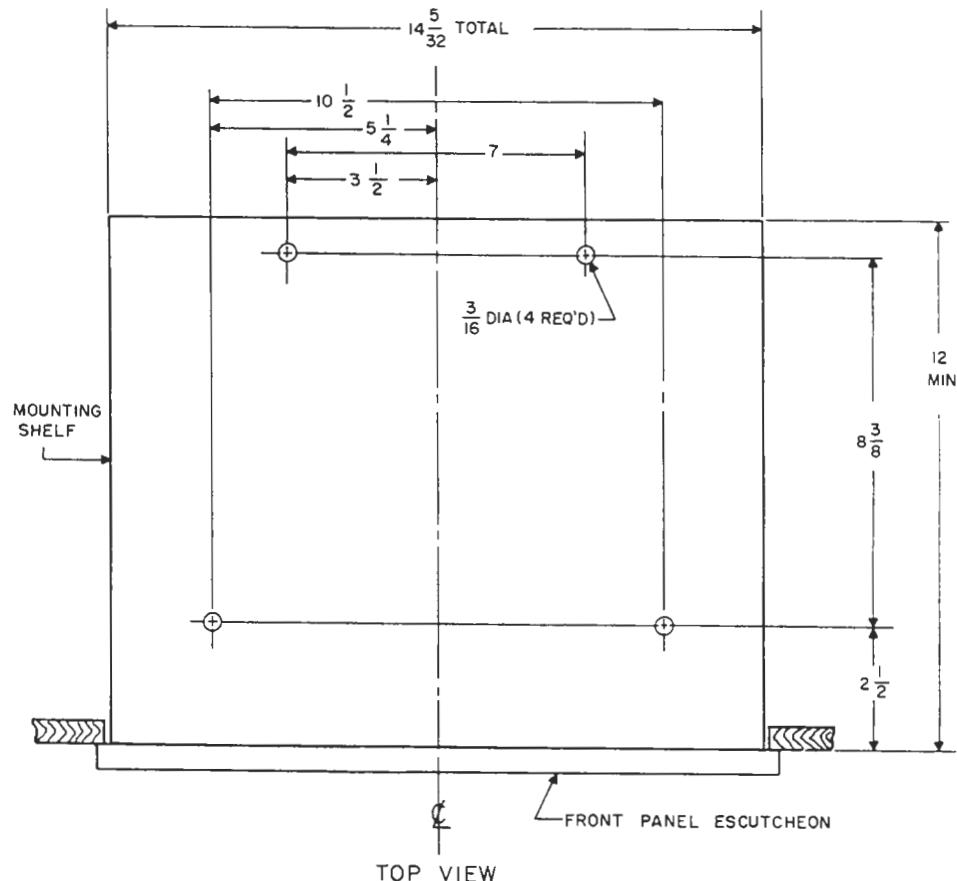
In any high fidelity installation, hum may be caused by the interconnection of a record player, tuner and amplifier, as a result of the cables and different grounds. If hum is experienced with your receiver, disconnect everything but the speakers from the receiver. If hum persists, reverse the AC line cord. Plug in the record player and if hum appears, reverse the record player power plug and connect a single lead from the record player chassis to the ground post on the rear of the receiver chassis. Connect your other devices in this manner. CAUTION: Hum may be also induced by defective connecting cables or by running these cables too close to a strong AC field.

## SERVICE

If this instrument should not perform properly during the first two (2) years after date of purchase, contact the factory for instructions. The factory has many authorized warranty service stations in the United States, and for the station nearest you, please write our Customer Service Department, Harman Kardon, Inc. Plainview, Long Island, New York. Be sure to include the model and serial number of the unit. A brief description of your other components is often of help in answering your questions. DO NOT return this instrument to Harman Kardon without first receiving authorization.

## CUSTOM INSTALLATION

1. Locate and drill (4)  $\frac{3}{16}$ " diameter holes on mounting shelf.
2. Position and cut out front panel opening. (Bottom of opening should be flush with top of mounting shelf.)
3. Remove (4) rubber feet from unit. (Rubber feet and screws are no longer used for cabinet installation).
4. Install unit from front through panel cutout opening.
5. Fasten unit to mounting shelf. If  $\frac{1}{2}$ " thick mounting shelf was used fasten with (4) #6 x  $\frac{3}{4}$ " long self-tapping screws and washers. If  $\frac{3}{4}$ " shelf was used fasten with (4) #6 x 1" long self-tapping screws and washers.



**TECHNICAL SPECIFICATIONS  
MODELS TWO HUNDRED and TWO-TEN**

**AUDIO SECTION**

**POWER OUTPUT** ..... 50 WATTS IHF  
**FREQUENCY RESPONSE**  
  1 WATT @ 8 OHMS ..... 8 TO 25,000 Hz  $\pm$  1 db  
**RATED POWER** ..... 10 TO 23,000 Hz  
**HARMONIC DISTORTION** ..... LESS THAN 1%  
**HUM & NOISE SUPPRESSION** ..... 90 db  
**DAMPING FACTOR** ..... 25:1 FROM 20 TO 20,000 Hz  
**SQUARE-WAVE RISE TIME** ..... 4  $\mu$  sec.

**TONE CONTROL**

**BASS BOOST** ..... 12 db  $\pm$  2 db  
**BASS CUT** ..... 12 db  $\pm$  2 db  
**TREBLE BOOST** ..... 12 db  $\pm$  2 db  
**TREBLE CUT** ..... 12 db  $\pm$  2 db

**FM TUNER SECTION**

**USABLE FM SENSITIVITY** ..... 2.7  $\mu$ v IHF  
**IMAGE REJECTION** ..... BETTER THAN 45 db  
**SPURIOUS RESPONSE REJECTION** ..... BETTER THAN 70 db  
**FM IF REJECTION** ..... BETTER THAN 75 db  
**MULTIPLEX SEPARATION** ..... BETTER THAN 30 db

**AM SECTION**

(AM specifications refer to Model Two-Ten only)

**AM SENSITIVITY** ..... 50  $\mu$ v / METER  
**AM SELECTIVITY** ..... 10,000 Hz BANDWIDTH AT 6 db POINTS  
**AM IF REJECTION** ..... 55 db