

Owner's Manual

**BOSE** MODEL 360  
Direct/Reflecting<sup>®</sup> Music System



# Table of Contents

<b>I. Introduction</b>	<b>4</b>
<b>II. Unpacking Instructions – Model 360 Receiver and Loudspeaker</b>	<b>5</b>
<b>III. Placement and Connection – Model 360 Receiver</b>	<b>6</b>
<b>IV. Loudspeaker Installation</b>	<b>7</b>
Asymmetrical Design Speaker Placement Direct Energy Control Room Acoustics	
<b>V. Turntable</b>	<b>10</b>
Unpacking/Assembly (separate instruction manual enclosed) Installing the Turntable Playing Records Care of the Phono Stylus Record Care	
<b>VI. Receiving FM Radio</b>	<b>12</b>
Tuning Improving Reception	
<b>VII. Receiving AM Radio</b>	<b>14</b>
Tuning Improving Reception	

<b>VIII. Operating Controls</b>	<b>15</b>
Power	
Speaker Selector	
Bass	
Treble	
Balance	
Volume	
Loudness	
Tape Monitor	
Input Selector	
<b>IX. Connecting Other Equipment</b>	<b>17</b>
Tape Recorder	
Auxiliary Program Sources	
Headphones	
Extension Speakers	
Speaker Cables	
<b>X. Design Features</b>	<b>19</b>
<b>XI. Technical Information</b>	<b>20</b>
In Case of Difficulty	
Specifications	
Care and Maintenance	
<b>XII. Warranty</b>	<b>23</b>

## I. Introduction

---

Congratulations on your purchase of the BOSE Model 360 Music System. Its unique design, innovative engineering, and quality construction will provide long-term satisfaction and listening pleasure. Your Model 360 is the culmination of many years of BOSE research and dedication to the art of bringing superb musical reproduction into the home.

The BOSE Model 360 consists of high-performance components that have been designed to work together as a unique high-fidelity system. The careful design and "interaction" of these components provides a level of performance normally associated with stereo system costing several times the price of the Model 360.

Since the turntable, receiver, and speakers can be unpacked separately, we have arranged the Owner's Manual in a manner that permits you to connect the receiver and speakers first. After completing the first four sections of the manual, you may then operate the AM or FM radio while assembling the turntable and reading the remaining portion of the Owner's Manual.

The BOSE Model 360 with its high-performance turntable, Direct/Reflecting® loudspeaker design and integrated electronics is installed and operated somewhat differently than ordinary stereo systems. Please take the time to read this manual. It is intended to help you obtain the full measure of listening pleasure the Model 360 can provide.



## II. Unpacking Instructions – Model 360 Receiver and Speakers

**Note:** Unpack carefully. If any components are found to be damaged or missing, contact your dealer immediately. When you have finished installing the system, we recommend that you save the cartons and packing materials for possible use later.

The BOSE 360 music system is packed in two large cartons. The main carton contains the receiver and turntable, each packed in its own inner carton. The second carton contains the two loudspeakers.

After opening the main carton, remove the inner carton containing the receiver. Open its top flaps, grasp the receiver and lift out of the carton. Place the receiver on a table and detach the end caps.

**(Caution: Do not attempt to lift the receiver by grasping the white styrofoam end caps.)**

Remove the turntable carton and set aside. Next, open the loudspeaker carton and lift out the loudspeakers as shown. Remove each speaker from its protective plastic bag. Unwrap the speaker cables, and plug one end of each cable into the jack on the rear of each loudspeaker (See Figure1).

**(Caution: When positioning the loudspeakers, grasp only the wooden cabinet; do not grasp any portion of the speaker covered by the protective grillecloth.)**



PLUG SPEAKER  
CABLE HERE

Figure 1

### III. Model 360 Receiver Placement and Connection

Your Model 360 receiver should be placed in a convenient location. Many people prefer to place the receiver close to a favorite chair, with its controls and tuning dial approximately at eye level.

The following are precautions that need to be observed:

- Do not install the receiver in a totally enclosed cabinet. Although the Model 360 is a solid-state receiver and generates little heat, it does need a certain amount of ventilation. If you place the receiver in a cabinet, make sure that it has an open back or, at least, large ventilating holes or slots in the back of the cabinet both below and above the receiver (See Figure 2).
- Place the receiver where no liquids are likely to be splashed or spilled on it.
- Position the receiver within three feet of the turntable.

Next, plug the speaker cables into the jacks on the rear of the receiver labeled "A" (See Figure 3.)\* Unwrap the folded dipole antenna (this is the T-shaped antenna). Note that one end of the dipole antenna terminates in a pair of brass lugs: These should be connected to the antenna terminals labeled "300". Stretch the dipole antenna to its full length and "T" shape, as free as possible from kinks, twists, and loops. The crossbar of the "T" should be positioned horizontally at a convenient location close to the receiver—either on the floor, tacked along a shelf, or fastened to a wall or cabinet.\*\* (See Figure 4).

\*If you require cables longer than those supplied, see Section IX, Speaker Cables.

\*\*For suggestions to improve FM reception, see Section VI.

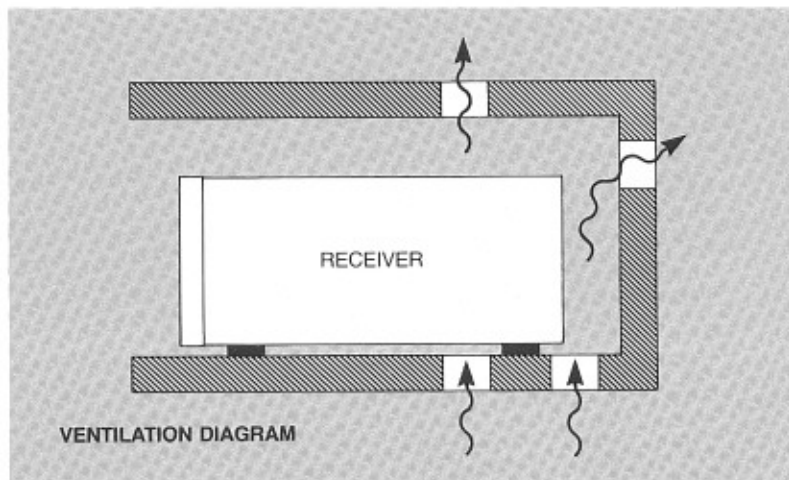


Figure 2

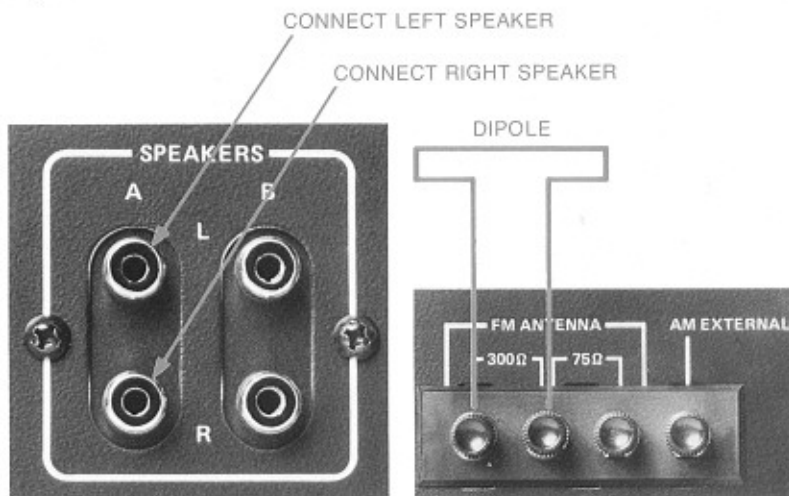


Figure 3

Figure 4

## IV. Loudspeaker Installation

The loudspeakers in this system incorporate several features that make their operation and placement different from other loudspeakers. To a great degree, the exceptional performance of the BOSE 360 System can be attributed to the Asymmetrical Design and the Direct Energy Control of the loudspeaker system.

**ASYMMETRICAL DESIGN.** The Asymmetrical Design of Model 360 loudspeakers provides a high proportion of reflected sound at high frequencies and contributes to exceptionally spacious stereophonic reproduction. To provide balanced spatial properties in stereo reproduction, these speakers are designed so that the speaker used on the left side of the listening room (called Part 1) is a mirror image of the speaker on the right side (called Part 2). The Asymmetrical Design and the mirror-image construction of the speakers are shown in the photograph below, taken with the grillecloth removed from the speakers. The tweeters direct much of their energy toward the side walls of the listening room. The side walls reflect the high-frequency energy uniformly throughout the listening area, resulting in a spacious stereo image extending across the room from one wall to the other (See Figures 5 & 6).

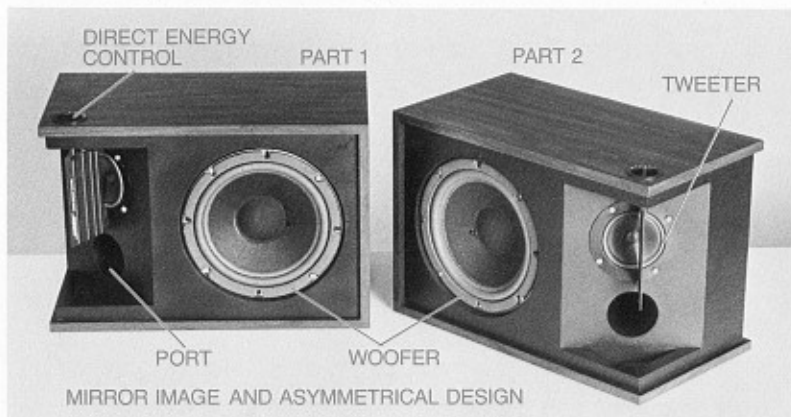


Figure 5

**SPEAKER PLACEMENT.** For best results, the loudspeakers should be positioned horizontally on a shelf or cabinet. The speaker labelled "Part 1" is normally used on the left side of the room, and "Part 2" is normally placed on the right side. The speakers should not be placed directly on the floor. The height of the loudspeakers should be no closer than 1½ feet to the floor or ceiling. Typically, the ideal height will be 3-to-4 feet above the floor, i.e., approximately ear level. For best results, these speakers should be located approximately 1½ to 3 feet from each reflecting side wall (a surface that feels hard, such as wood, glass, wallboard, plaster, or brick is a good reflector for sound. A soft surface such as acoustical tile, drapes, or upholstered furniture is a poor reflector). For best results, there should be as much free space as possible around the side of the speaker covered by the protective grillecloth. For example, if

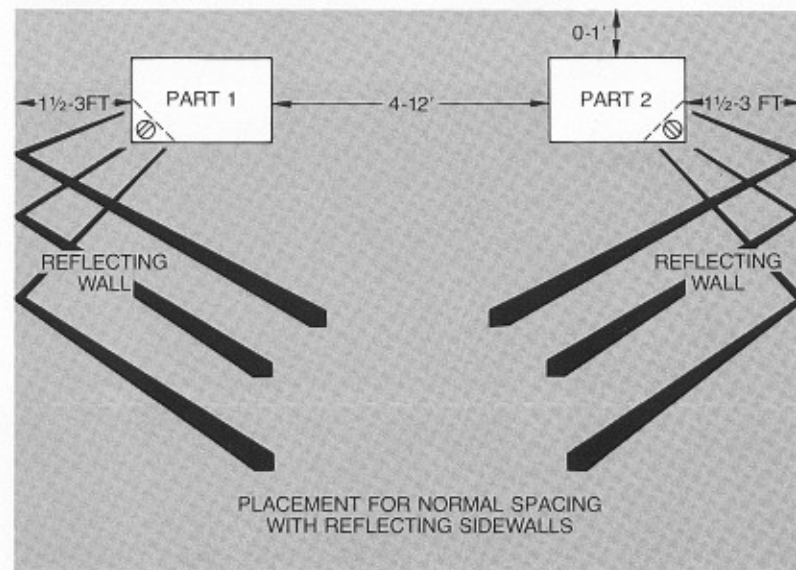


Figure 6

## Loudspeaker Installation

the speakers are mounted on a bookshelf, the space between the speakers may be filled with books, but the end of the speaker covered with grillecloth must be kept unobstructed. (See Fig. 6).

The spacing between the loudspeakers will depend on the room size. For example, in a 12-foot wide room, if each speaker is placed 3 feet from a side wall, the speakers will be approximately 6 feet apart (minimum recommended spacing between the speakers is 4 feet). In large rooms, where the speakers are being placed along a wall exceeding 16-to-18 feet in length, the alternative placement shown in Figure 7 is recommended with the Part 1 and Part 2 loudspeakers reversed.

In most installations, the speakers will be installed with their backs against a wall. However, the speakers may be moved forward one or two feet from the wall with no significant loss of bass energy. As with any speaker, moving them farther away from the walls will result in some weakening of the low-frequency response of the speakers.

If it is not convenient to position the speakers horizontally, stand the speakers on end (with the section covered by grillecloth on top) and place them at midwall height. This allows the high-frequency energy to reflect off the ceiling of the room. The direct-energy control can then be used to adjust the balance of high-frequency energy.

### ADJUSTMENT OF THE DIRECT ENERGY CONTROL

The Direct Energy Control has been carefully designed to provide the optimum performance of the Model 360 under a wide range of listening conditions. This control primarily affects the spatial distribution of high frequency energy. At distances close to the loudspeaker, the listener will notice significant changes in high frequency energy. However, the effect becomes subtle with increasing distance from the speaker and will be less noticeable in larger rooms, where the listener is principally in the reverberant field.

Under most listening conditions, critical listeners will find that the Direct Energy Control provides a significant aid in optimizing the performance of the Model 360.

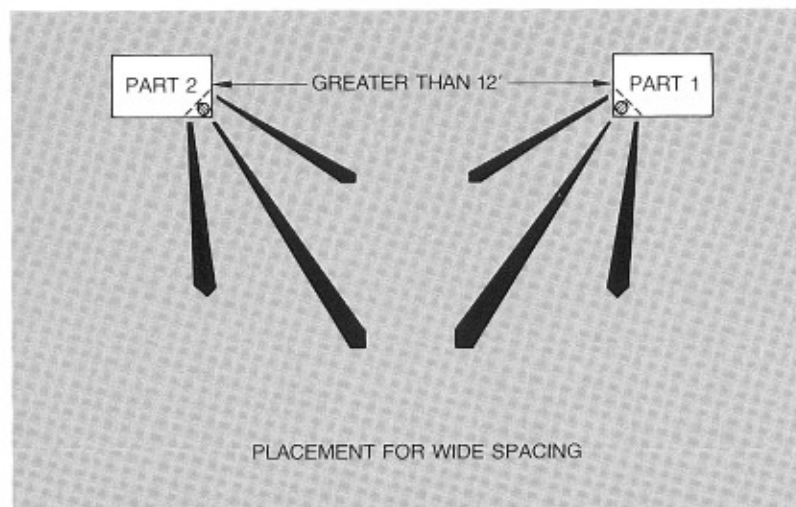


Figure 7



Please note that the numbers which appear in Figure 8 are for reference only and do not appear on your speaker system. They are there to help you understand the positioning required for optimum performance in your listening environment. In the diagram, the left speaker, when starting from the top marking, is rotated clockwise for increasingly high numbers. The right speaker is rotated counterclockwise for the same increase in reference numbers.

The following guidelines should be followed:

**POSITIONS 1 AND 2.** These positions provide the maximum direct sound energy at high frequencies. For horizontal placement, they are used to establish high frequency balance if side reflecting walls are not present or are covered with sound absorbing material. These positions provide less stereo spread than higher numbers and will be preferred by some listeners for reproduction of soloists and small ensembles. Use Positions 1 and 2 for vertical placement if the speaker is placed higher than 4 feet.

**POSITION 3.** This is the normal setting of the Direct/Energy Control. This position is used for horizontal placement when a side reflecting wall is located near the side of the speaker, as shown in Diagram 1, Page 7. Under this condition, most of the high frequency energy from the tweeter will be reflected by the side wall into the center of the room. Use Position 3 for vertical placement if the speaker is placed lower than 4 feet or within 2 feet of a hard ceiling.

**POSITIONS 4 AND 5.** These positions provide minimum direct sound energy at high frequencies and are used for horizontal placement if a reflecting side wall is present. Operation in Positions 4 and 5 will provide very spacious stereo reproduction, especially suited for large ensembles such as an orchestra or a chorus.

## ROOM ACOUSTICS

The sound quality of loudspeakers depends on many environmental factors other than speaker placement, such as the size, shape and construction of the room, and the amount and type of furniture, rugs, and draperies present. A lack of bass response frequently may be attributed to walls of thin panel construction, large openings (e.g., doorways) or excessive window glass which allows low frequencies to pass through rather than reflecting them into the room.

The overly bright sound of acoustically "live" rooms (e.g., those with uncovered floors or scatter rugs, small amounts of furniture, hard walls) can be improved by the addition of rugs and heavy draperies which also serve to eliminate echoes and standing waves. For acoustically "dead" rooms (e.g., those with wall-to-wall carpets, heavily upholstered furniture, large amounts of draperies), furnishings should be arranged so that speakers have unobstructed sound transmission paths to the listening areas. Finally, since no room is acoustically perfect, you are encouraged to use your Model 360 receiver tone controls to adjust the sound for your maximum listening enjoyment.

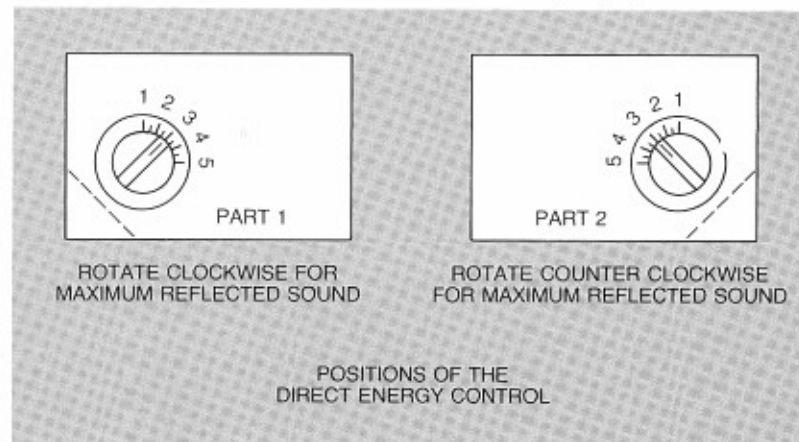


Figure 8

## V. Turntable

Complete the turntable UNPACKING/ASSEMBLY instructions before proceeding.

**INSTALLING THE TURNTABLE.** The phono turntable should be installed on a solid surface not more than 3 ft. from the receiver. (If installing the phono turntable on a shelf, allow ample space above for the hinged cover to open.) Note these additional considerations:

1. The turntable must be level and must rest on all of its vibration-absorbing rubber feet.
2. The phono pickup stylus is sensitive to vibrations produced by footsteps and to the vibrations produced by the speakers. For best results, the turntable should be installed on a surface which is relatively immune to vibrations.
3. Locate the two cables emerging from the rear of the turntable. One is a conventional AC power cord. Plug it into the accessory AC outlet on the rear of the receiver.
4. The other cable is the phono signal cable, terminating in white and red "phono" plugs. Insert these firmly into the PHONO JACKS in the rear of the receiver. (The white plug is for the left channel, and the red plug is for the right channel.) Note: Keep the AC power cords and the phono signal cables separated for optimum performance and minimum hum. (See Figure 9).

**PLAYING RECORDS.** The following procedure is recommended for playing a record:

1. Raise the cover of the turntable. Note that when the cover is raised fully, it will remain open without additional support.
2. Place the record on the turntable platter. (If the record is a 7" disk with a large center hole, use the 45 r.p.m. adapter [stored at the left rear of the turntable].)
3. Set the speed-change lever to the correct speed (33 rpm or 45 rpm).
4. If the tone arm is locked in place on its arm rest, release the tone-arm clip.

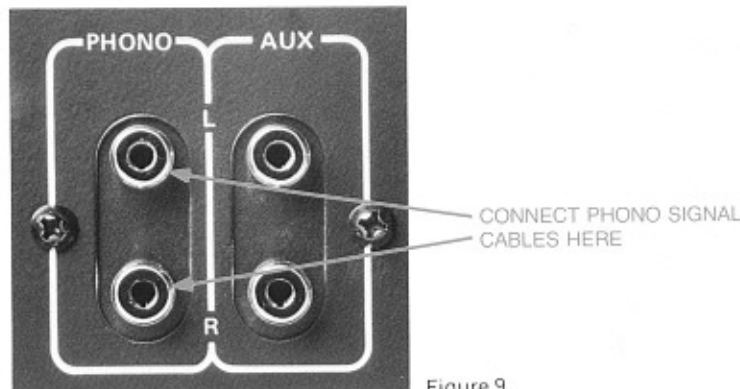


Figure 9

5. Place the cueing lever in the "raised" position. (We recommend leaving the cueing lever in the "raised" position except when a record is actually being played; this minimizes the chance of damage to the phono stylus and your records.)
6. Grasp the tone arm by its finger lift and place the phono pickup above the edge of the record. (Note that as the tone arm is moved toward the record, the platter begins to rotate.)
7. Position the phono pickup cartridge directly above the lead-in groove near the edge of the record. (The vertical black line on the front of the cartridge may be used as an indexing guide.)
8. Move the cueing lever to the "lower" position. The cueing mechanism is hydraulically damped, so that the tone arm will gently lower to the surface of the record.
9. Push the "Power" and "speakers A" button and rotate the Model 360 Receiver Input Selector to the Phono position. Adjust the Volume control on the receiver to the desired loudness. When the record is ended, the tone arm will automatically lift off the record, return to its armrest, and turn the motor off.

- **To skip a portion of the record or play only a desired band,** move the cueing lever to the "raise" position; grasp the tone arm by its finger lift and place the stylus above the portion of the record which you wish to hear. Move the cueing lever to the "lower" position to resume playing.
- **To interrupt the playing of a record,** move the cueing lever to the "raise" position. When you wish to resume listening, move the cueing lever to the "lower" position and playing will resume at approximately the same point.
- **If you wish to stop playing a record before it has finished,** either of the following procedures may be used:
  1. Move the reject lever to the "Auto Stop" position. This will cause the tone arm to lift off the record, return to its armrest, turning the turntable motor off.
  2. Move the cueing lever to the "raise" position, then move the tone arm back to the tone arm rest by hand. (The motor will automatically stop.)

#### CARE OF THE PHONO STYLUS

The surface area between the phono stylus tip and the record groove wall is only a few thousandths of an inch in diameter. Even if you are careful to play records which appear clean, inevitably, enough microscopic particles will accumulate on the stylus tip to affect its operation. We recommend regular cleaning of the stylus tip with a small camel's hair artist's brush or stylus cleaning brush which are made by several manufacturers, including Disc Washer, Watts, and Bibb. Regardless of which brush you use, turn the volume control down, and stroke the brush from the rear of the phono pickup cartridge toward the front. Do not stroke the brush from the front toward the back, or from side to side.

While regular dry brushing usually suffices to keep the stylus tip clean, occasionally it is useful to brush with a solvent to remove sticky deposits adhering to the phono stylus tip. If no

solvent was supplied with your stylus brush, pure isopropyl alcohol (without lanolin or other compounds) may be used. The brush should be lightly moistened, not dripping wet, and should be stroked repeatedly over the stylus assembly with a back-to-front motion.

#### RECORD CARE

Much of your musical enjoyment will depend on the quality and condition of the records you play. If you play a record which is dirty or worn by repeated playing on an inferior phonograph, it will probably display considerable noise and distortion. Turning down the treble control on the receiver will reduce the severity of this annoyance. But for maximum musical pleasure, you should try to keep your records in optimum condition. If you take good care of a record, it can continue to sound like new after dozens of playings; however, if you handle your records indifferently, they will become noisy and worn rapidly.

When handling records, avoid placing your fingers on the grooved area. (With a little practice you can become accustomed to picking up records while touching only the edges and the label.)

Don't leave records laying around unprotected where they can acquire dust and scratches. Store records in their jackets with protective paper or plastic-lined inner sleeves. If the inner sleeves become torn or lost, replacement sleeves can be obtained from many record shops and hi-fi equipment stores.

Do not stack records in a pile. This may cause warpage and the pressure may imbed loose dirt permanently into the record groove walls. Records should be stored vertically, standing on edge, and should never be placed near a hot object such as a hot radiator.

To keep a record sounding like new, it should be cleaned every-time it is played using a brush designed to remove microscopic dust particles from the grooves. Never use silicone-treated record cloths or sprays.

## VI. Receiving FM Radio

---

### TUNING

To receive an FM radio program, place the selector switch in the FM stereo position. In this mode, the Model 360 will receive all FM programs, regardless of whether they are broadcast in the monophonic, stereophonic, or quadraphonic four-channel mode. (Quadraphonic programs will be received in normal two-channel sound.)

Rotate the tuning knob to select FM radio broadcasts. As you tune between stations, you will hear noise and distorted sounds. As you approach the frequency of the desired station, you will hear the sound of the program and the needle of the tuning meter will deflect toward the left or right.

You will note that FM stations occupy reception channels of varying widths, across which you can tune while continuing to hear the program. Stations that are being received strongly occupy relatively wide tuning channels on the dial, while weak stations occupy relatively narrow tuning channels. For best reception, especially of stereo FM programs, you should tune the receiver to the exact center of the tuning meter (at "zero" on the upper meter scale).

When the receiver is accurately tuned to an FM station that is broadcasting in stereo, the tip of the dial pointer will glow red and the program will be heard in stereo. When the receiver is tuned to a monophonic (non-stereo) FM transmission, the tip of the dial pointer remains amber in color, and the stereo decoding circuits in the receiver do not operate.

In some cases, you may find that an FM broadcast is received in stereo (with the tip of the dial pointer glowing red) but with noisy, distorted, or garbled sound. (The station's signal is not being received well enough to permit clear stereo decoding.) If the problem is one of reception, it can be remedied usually by re-orienting the FM antenna or by connecting the receiver to a better antenna. If the station is some distance from you, and you do not have a better antenna, you may simply turn the selector switch to "FM"; this switches off the stereo decoding circuits in the receiver and reduces the noise and distortion.\*

### IMPROVING FM RECEPTION

Stereo FM and color TV are technological twins; with color TV, the primary broadcast signal is the basic black and white picture, while the variations in color are transmitted as subsidiary "multiplex" signals.

Similarly, in FM the primary broadcast signal is the monophonic sound, while the left to right information (the stereo separation information) is transmitted via the multiplexed signal.

In FM, as well as TV, the subsidiary multiplex signals are weaker and more susceptible to interference than the primary broadcast signal. Thus, FM stereo and color TV often demand a better quality, more thoughtfully planned antenna installation. Often you can use the quality of your TV picture as a guide; if you find that in your location you must connect a TV set to a cable system or roof antenna in order to get clear, ghost-free reception, then it's likely that a better antenna will insure consistently satisfying reception of FM stereo broadcasts as well.

\* The "FM" position of the selector switch causes all FM programs to be received in mono, regardless of how they are broadcast. The selector switch should be placed at "FM Stereo" for normal reception of FM programs, with the "FM" position of the selector switch reserved ONLY for those stations which are noisy or distorted in the stereo mode.

We suggest the following approaches to improving FM reception, listed in order of increasing likelihood of success.

1. Try altering the height and orientation of the folded dipole antenna, remembering that the strongest reception usually occurs when the crossbar of the "T" is broadside to the direction of the FM signal (See Figure 10).
2. Replace the folded dipole antenna with a "rabbit ears" TV antenna. For FM reception, the simplest and least expensive "rabbit ears" antenna with the fewest switches, knobs, and coils, is usually the best. Extend each arm horizontally (or at an angle not greater than 45 degrees from the horizontal) to a length of approximately 30 inches. Mount the antenna away from the wall so that it is free to rotate, and orient the antenna for optimum reception.
3. If your TV set is connected to an outside antenna, try connecting the FM receiver to the same antenna, using a signal-splitting device designed for this purpose. (Before connecting to an apartment master antenna or community cable system, determine if FM reception is included with the cable signal.)

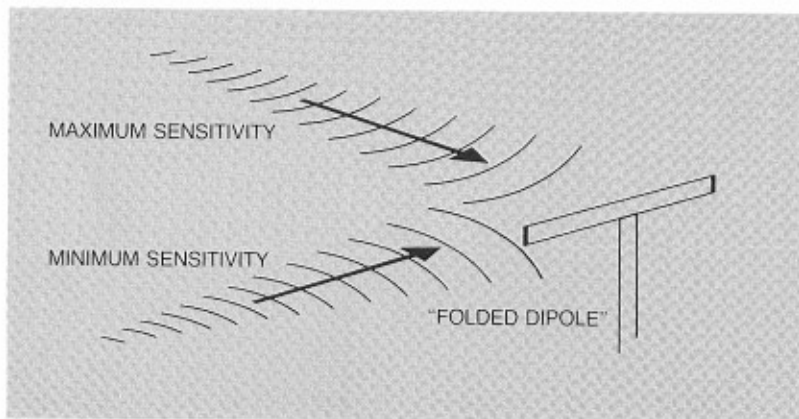


Figure 10

4. Erect your own FM antenna outside, either on the roof or on a porch or balcony. Excellent FM outdoor antennas are made by several manufacturers, including Finco, Wineguard, and Channel Master. Such antennas have several advantages:
  - a. Since FM signals are weakened close to the ground, a rooftop antenna naturally pulls in stronger signals. Furthermore, since FM transmission is largely along "line of sight," a rooftop antenna can receive stations located further away.
  - b. Much interference in stereo FM reception is caused by "multipath" reflections off of metal objects (airplanes, trucks, and steel frame buildings). A rooftop antenna may be located above most of these reflected signals; furthermore, since it is designed to be highly directional, it can be aimed to reject most reflected signals and pull in the signal direct from the station.

For best results, connections for external antennas should be made via shielded cable. Shielded 300-ohm cable is available and connects to the 300-ohm terminals at the rear of the Model 360. (Disconnect the dipole antenna from those terminals before connecting any external antenna.)

In some cases, it will be more convenient to use 75-ohm "coaxial" cable (the type of antenna cable commonly used for master antenna and community cable systems.) See Figure 11.

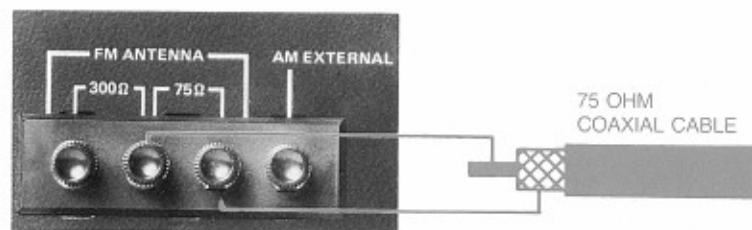


Figure 11

## VII. Receiving AM Radio

To receive AM radio broadcasts, turn the input selector switch to "AM;" turn the tuning knob to set the illuminated dial pointer to the frequency of the AM station (indicated by the lower tuning scale). While observing the tuning meter, turn the tuning knob to achieve maximum deflection of the needle toward the right. (AM stations with stronger signals will cause the meter to deflect further toward the right than will stations having weak signals.)

In comparing the sound of AM broadcasts versus FM broadcasts, you may detect that AM programs lack the brilliance and clarity of FM programs. Depending on your location, AM signals may be more affected by static and other forms of interference. (These differences are normal, and are why FM is preferable for music listening, while AM is valued most for news, sports, and programs of conversation.)

The Model 360 receiver contains a built-in AM antenna designed to combine high sensitivity with good rejection of interference. In urban and suburban areas, no external antenna should be used. If you find it difficult to obtain strong and clear reception of an AM station which you know to be easily received in your area, try repositioning the receiver to improve reception.

### IMPROVING AM RECEPTION

If AM reception is poor, try to determine the source of the interference. Major sources of AM interference (static) may be located relatively close to the receiver, often in the same house. Try to eliminate these sources of interference by switching them off; i.e. turn off fluorescent lights, dimmer controls for lights, electric controls on furnaces, and brush contact motors used in many electric tools and household appliances (i.e., electric drills, sanders, mixers, blenders, hair dryers, etc.).

If you are located in a rural area with no major sources of electrical interference, you may wish to connect an external AM antenna to improve reception of distant AM stations. A suitable antenna can be made using a piece of insulated single conductor wire anywhere from 15 to 150 feet in length. Connect one end of the wire to the AM terminal on the rear panel of the receiver. The remaining length of wire should be mounted parallel to the ground, and as high as is practical, and extended in a straight line as long as is practical. For best results, the antenna should not be mounted close to any metal objects and should be neither close to nor parallel to power lines which would introduce static into the signal (See Figure 12).

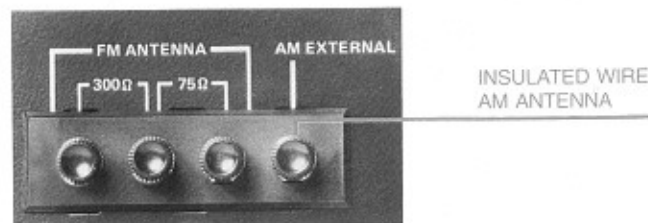


Figure 12

## VIII. Operating Controls

The Quick Set-up Guide accompanying this Owner's Manual provides basic information on the operation of the controls of the BOSE Model 360 receiver. This chapter provides additional information on how to use these controls to obtain the most satisfying performance from your music system.

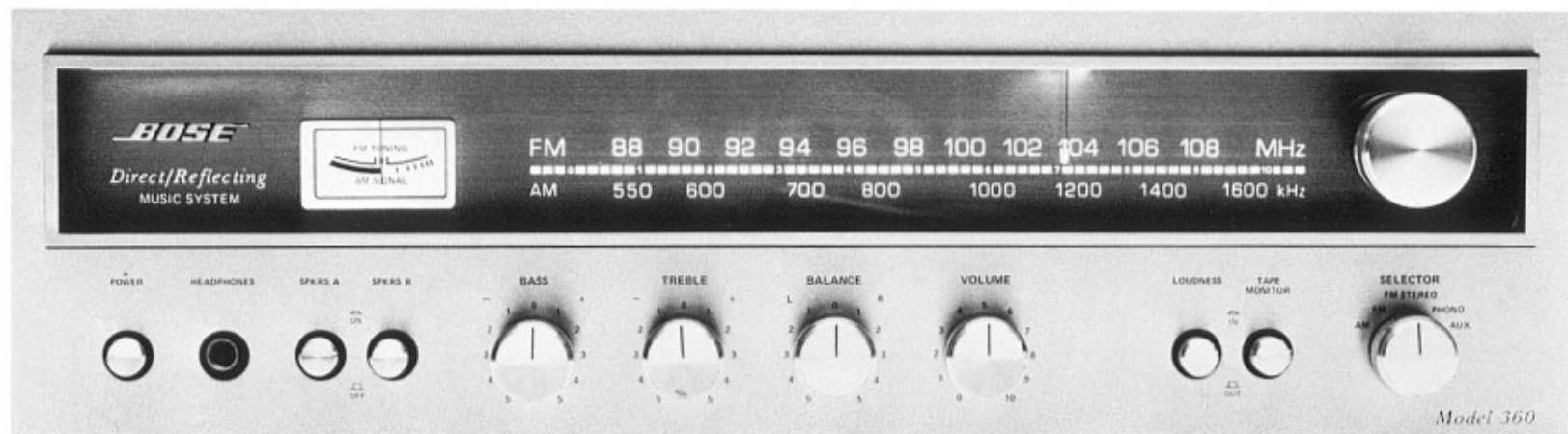
### POWER.

Pressing this button turns on the power to the receiver. Pressing the button again shuts off the power to the receiver. When the receiver is switched off, the tuning dial and meter darken. Note that the accessory AC receptacle on the rear panel of the receiver is not affected by the front panel power switch. Any accessory (turntable or tape recorder) plugged into the accessory receptacle must be switched on or off independently of the Model 360 receiver.

### SPEAKER SELECTOR SWITCHES.

The A and B speaker terminals on the rear panel of the receiver are connected to the amplifier circuitry via these front panel buttons. When both buttons are disengaged, the speakers are disconnected and no sound can be heard except through headphones. For normal loudspeaker listening, Button A must be depressed. If you connect a second set of loudspeakers to the B terminal on the rear of the receiver, they are activated by pressing Button B\*. (If you have made no connections to the B speaker terminals of the rear panel, then pressing Button B on the front panel has no effect and does no harm.)

\*The frequency response of the electronics of the Model 360 has been specifically designed to complement the Model 360 speaker system. Consequently, optimum performance of your second set of loudspeakers can only be achieved using Model 360 speakers. If you would like an additional pair of Model 360 speakers to connect to your receiver, contact your selling dealer or write directly to BOSE Corporation.



Model 360

## Operating Controls

---

### **BASS.**

This control regulates the strength of the low frequencies in the sound. The normal centered position of this control is indicated by a detent at "zero". Turn the knob clockwise to strengthen the low frequencies. Counterclockwise rotation lessens the low frequencies. Boosting the bass will restore a solid foundation to the musical sound of a poorly-made recording with weak bass. Turning down the bass control will correct an overly heavy or "boomy" recording containing too much bass energy. Reducing the bass also helps filter out low frequency "rumble" found in poorly engineered recordings or broadcasts.

### **TREBLE.**

This control regulates the strength of the high frequencies in the sound. The normal centered position of this control is indicated by a detent at "zero." Rotate the knob clockwise to boost the level of high frequencies in the sound. Boosting the treble will restore the brilliance of an otherwise dull recording or broadcast, and can also be used to compensate for the furnishings of your listening room. (See Section IV, Room Acoustics.) Rotating the control counterclockwise reduces the level of high frequencies in the sound. The most frequent use of treble "cut" is to reduce annoying harshness, hiss, or noise due to worn recordings or poor radio reception.

### **BALANCE.**

The balance control regulates the relative strength of the sounds produced by the left channel and right channel speakers. When the correct balance is achieved, musical sounds in stereo will appear to originate from a spacious imaginary stage stretching across the room between the left and right loudspeakers. The circuitry in the receiver provides equal volume in both channels, and most recordings and broadcasts are made with correct balance. Therefore, the balance control normally will be left in its detented position at "zero".

### **VOLUME.**

The volume control adjusts the sound level for both channels identically. In addition to adjusting the sound level, the volume control also controls the headphone output level.

### **LOUDNESS.**

This control does not affect the overall volume of the sound. Rather, when pressed, it engages a "loudness compensation" circuit in the receiver. At low sound levels, the human ear becomes relatively insensitive to sound energy at very low and very high frequencies. The loudness compensation circuit automatically corrects this deficiency by boosting the low and high frequencies when the volume control is set at low settings. The compensation is automatically eliminated at volume control settings above "6".

### **TAPE MONITOR.**

If you have connected an optional tape machine to the tape jacks on the rear panel of the receiver, then pressing the Tape Monitor Button permits you to hear a tape recording played back (regardless of the setting of the Input Selector on the receiver). Press the button again and release to hear the source selected by the Input Selector. If you press the Tape Monitor with no tape machine connected, or with a tape machine connected but not operating, you will hear no sound, regardless of the volume control setting (See Section IX, Tape Recorder).

### **INPUT SELECTOR.**

This five-position rotary switch selects the signal source which is heard: AM radio, FM radio, phonograph, or auxiliary input. Two FM radio positions are provided: "FM stereo" for normal FM radio listening to either stereophonic or monophonic FM broadcasts, and "FM" for use when an FM stereo broadcast is noisy or garbled. AUX is used to connect additional signal sources. (See Section IX, Auxiliary Program Sources.)



## IX. Connecting Other Equipment

### TAPE RECORDER

The Model 360 may be used with all types of tape recorders to play back previously recorded tapes or to record new tapes.

#### TO PLAY A PREVIOUSLY RECORDED TAPE.

Connect the tape recorder's AC line cord to any convenient AC outlet. Connect a pair of cables from the "TAPE-IN" jacks on the rear panel of the receiver to the "line out" jacks on the tape machine. (In case of doubt, consult the instruction manual supplied with the tape recorder to properly identify the jacks.)

After completing the connection, operate the "play" mode of the tape machine and press the Model 360 TAPE MONITOR BUTTON. (With the tape monitor button depressed, the output of the tape machine is connected to the receiver's amplifying circuits regardless of the position of the Model 360 receiver's INPUT SELECTOR.) The VOLUME and TONE control can be used to adjust the sound quality.

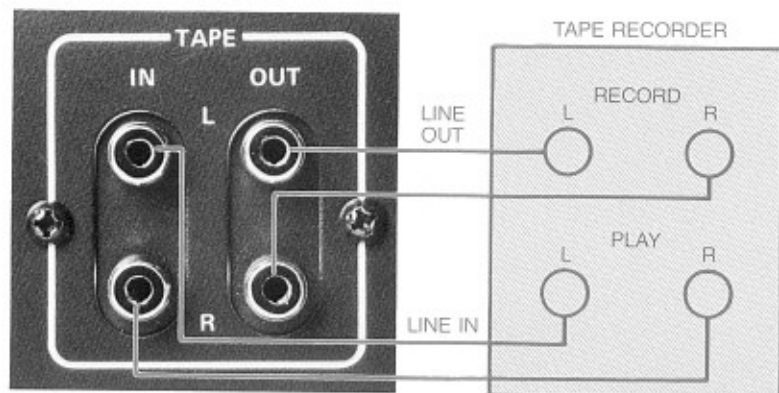


Figure 13

#### TO MAKE A TAPE RECORDING.

Connect a pair of cables from the "TAPE OUT" jacks on the rear panel of the receiver to the "LINE INPUT" jacks on the tape machine. (On some tape machines these input jacks may be labeled AUX, HIGH-LEVEL INPUT, RADIO or RECORD.) (Be certain to connect all cables maintaining the correct left and right connections.) See Figure 13.

The controls on the tape machine may now be used to make a recording from whatever program source is selected by the receiver's INPUT SELECTOR. The INPUT SELECTOR and the TUNING KNOB are the only receiver controls that affect the signal being sent to the tape machine. The VOLUME, TONE, and other controls on the receiver may be used to adjust the sound quality heard through the loudspeakers, but have no effect on the signal sent to the tape machine. (Check your tape recorder owner's instruction manual for further instructions when recording.)

#### AUXILIARY PROGRAM SOURCES.

The Model 360 receiver is equipped with an auxiliary input used to connect other program sources to your Music System. Almost any stereo or mono high-level source may be plugged into the AUX jacks; typical examples include an additional tape recorder, a tape player, the soundtrack of a film projector, or the audio output of a television set.

After connecting the appropriate cable, adjust the VOLUME control of the program source (if any) so that the sound level remains approximately the same as FM or PHONO. (If you are connecting a mono (single channel) source and wish to have both channels operate, purchase a "Y" connector and connect the audio output to both AUX inputs.)

## Connecting Other Equipment

---

### HEADPHONES

All conventional headphones may be used with the Model 360 receiver. Plug the headphone cable into the jack found on the front panel of the receiver.

Due to the Integrated Design of the Model 360 System, some stereo headphones may produce a bass-heavy sound. If this occurs, adjust the BASS and TREBLE controls for the most pleasing sound quality. Switch the loudspeakers off and adjust the VOLUME control for a convenient headphone listening level.

**CAUTION: Unplug the headphones whenever they are not being used. They may be damaged if accidentally connected while playing the speakers at high listening levels.**

### EXTENSION SPEAKERS

The BOSE 360 receiver is equipped with two sets of loudspeaker jacks, activated by the A and B speaker switches on the front panel. This permits operation of a main pair of stereo speakers plus an additional pair of stereo speakers.

Only BOSE Model 360 extension speakers should be used (identical to the main loudspeakers supplied with the 360 System). Using identical extension speakers permits taking full advantage of the Integrated Design circuitry found in the Model 360 receiver and provides extension speaker sound as spacious and accurate as that produced by the main loudspeakers.\*

**CAUTION: Conventional loudspeakers will not provide the same performance as the Model 360 loudspeakers and may be damaged if played at high volumes.**

BOSE Model 360 extension loudspeakers may be purchased either from your selling dealer or directly from BOSE. Using the front panel speaker switches on the receiver, you may operate either the main speakers (with BUTTON A depressed), or the extension speakers (with BUTTON B depressed), or both speaker systems (depress both buttons) at the same time.

### SPEAKER CABLES

The speaker cables provided with the Model 360 are made of #18 wire for connection to your speakers. For runs up to 50 feet, #18 gauge wire should be used. Runs over 50 feet should use #16 gauge wire. Your BOSE dealer or any competent electronics repair shop can assist you in assembling or purchasing the additional speaker cables for your music system.

\* An additional pair of speakers can be used to substantially improve the performance of your music system. Four speakers can be placed in your listening room to provide greater realism and a more spacious sound. This improved performance adds considerably to the musical performance of the Model 360 System.

Alternatively, you may wish to have an additional pair of speakers providing music in another location in your home. In either case, using BOSE 360 extension speakers will generally increase your enjoyment of the Model 360 music system.

## X. Design Features

---

**HIGH-PERFORMANCE TURNTABLE.** The Model 360 employs a high-performance semi-automatic turntable which provides the following advantages:

- Belt drive operation for low noise (rumble) and accurate speed.
- Precision tone arm with calibrated counterweights for tone arm balance and antiskating adjustment.
- Low distortion phono cartridge, featuring a dual magnet design for uniformly excellent stereo separation.
- Elliptical diamond stylus for accurate tracking and minimum record wear.
- Automatic shutoff. At the end of the record, the tone arm returns to the rest position, and the motor turns off.

**DIRECT/REFLECTING® LOUDSPEAKER DESIGN.** To actually recreate the excitement of a live musical performance, a loudspeaker must radiate sound in a carefully controlled manner. BOSE research has shown that in a live musical performance, a listener receives sound both directly from the musical instruments and reflected from the floor, walls, and ceiling of the concert hall. To faithfully recreate this mixture of direct and reflected sound, the Model 360 speaker system uses the acoustics of your listening room to recreate the open, spacious sound normally associated with live performances by reflecting a high proportion of sound energy off the reflecting surfaces of your listening area.

**INTEGRATED DESIGN.** The Model 360 features a loudspeaker that produces excellent frequency response, and at the same time is highly efficient. This performance combination has been achieved by designing the Model 360 speaker system to perform specifically with the Model 360 receiver. The receiver utilizes special electronic circuitry that interacts with the loudspeakers to provide extremely accurate tonal balance over the entire frequency range.

**FLAT-POWER RADIATION.** All BOSE loudspeakers are designed so that the total energy radiated into the room is the same at every frequency. This "flat-power radiation" results in accurate reproduction of instrumental timbre by maintaining the correct balance between all musical frequencies in the actual listening environment. Thus, you can be sure of accurately hearing the subtle differences of musical timbre so important to musical enjoyment.

## XI. Technical Information

---

### IN CASE OF DIFFICULTY

If you suspect a problem with the operation of one or more components of your Model 360, please take a few minutes to determine whether the defect is in your system or whether a simple adjustment or connection may solve the difficulty. If the trouble persists, please contact your BOSE dealer for servicing instructions. Alternatively, please feel free to contact BOSE Corporation directly for servicing instructions.

### TURNTABLE

**If your records sound distorted and the stylus skips**, please make certain that your records and stylus have been properly cleaned and the tone arm is in proper adjustment. (See Section V.) If this does not solve the problem, have your stylus checked by your closest authorized BOSE service center.

**If only one channel plays or there is hum in Phono only** make certain that the cables coming from the turntable are located away from any AC power line. Check that the cables are properly and firmly seated on the back of the receiver and that the tone arm shell is held tightly in place by the locking nut on the tone arm.\*

**If turntable does not change speed correctly**, contact your closest BOSE Authorized Service Agency. Do not attempt to make the necessary adjustment.

### RECEIVER/SPEAKERS

**If FM reception is noisy or poor**, make certain the receiver is properly tuned and the dipole antenna properly connected and oriented for optimum performance. Place the input selector in the "FM" position (See Section VI. Improving Reception). Stereo FM can be distorted but mono reception of that same station may be perfectly acceptable. This indicates the station stereo signal is not strong enough for proper reception.

**No sound on either channel.** Check to make certain the unit is properly plugged in and "on" and that the AC power is reaching the unit. Make certain the Input Selector is turned to the musical source you wish to hear. Make sure the speaker cable connections are connected between the receiver and the speaker terminals. Check that the speaker selector button is engaged for the pair of speakers you are using. Check the tape monitor switch and make certain it's not on (unless you're attempting to play your tape recorder). Verify that the volume is turned up. Check the 1-amp fast blow fuses on the rear of the unit to see that they are intact. If the 1-amp fast blow fuse repeatedly opens, this is an indication that your Model 360 requires service.)

**Sound from one channel only.** Check the speaker cables by reversing them to see if the problem moves to the other channel. Check to make certain the Balance Control is properly centered at the "zero" position. If you are using a tape recorder, unplug the cables coming from the tape output of the receiver to determine if a short is present. Check that the speaker fuses are intact. (If this 1-amp fast blow fuse repeatedly opens, this is an indication that your Model 360 requires service.)

**Sound is distorted at relatively high volume with music containing heavy bass**, make certain loudness contour is not on. Reduce bass control to lower setting.

\*At full volume in "Phono", a certain amount of hum and noise is normal. For minimum hum pickup, try reversing (turning the plug over) both receiver and turntable AC plugs. Listen in "Phono" with the volume turned up, with both turntable (Cueing in "raise") and receiver operating. Select the plug orientation providing least hum.

## SPECIFICATIONS

### Electronic

#### FM TUNER SECTION

FM sensitivity .....	2 $\mu$ V for 30 dB quieting 6 $\mu$ V for 50 dB quieting
Signal to noise ratio.....	60 dB
Total harmonic distortion.....	1.0% mono or stereo
Stereo separation.....	30 dB at 1 kHz
External FM antenna impedance..	300 ohms balanced 75 ohms unbalanced

#### AM TUNER SECTION

If bandwidth, nominal.....	9 kHz
AM sensitivity, nominal.....	800 $\mu$ V/meter, 20 dB quieting
AM antenna .....	Ferrite Rod antenna with external antenna terminal

#### AMPLIFIER SECTION

Power .....	10 watts per channel, mini- mum RMS at 8 ohms from 40 Hz to 15 kHz with no more than 1% total har- monic distortion
Hum and noise .....	-70 dB
Input sensitivity and impedance..	2.7 mV at 47K $\Omega$
Aux. and tape .....	150 mV at 50K $\Omega$
Tone controls, treble .....	10 kHz $\pm$ 10 dB
bass .....	100 Hz $\pm$ 10 dB
Power requirements .....	120 Vac, 60 Hz, 50 watts

### Mechanical

#### RECEIVER

Dimensions:	5 $\frac{1}{4}$ "H x 17 $\frac{3}{4}$ "W x 12"D
Weight:	12 pounds

#### TURNTABLE

Dimensions:	5 $\frac{5}{8}$ "H x 17 $\frac{1}{8}$ "W x 13 $\frac{3}{4}$ "D (including dust cover)
Weight:	14 $\frac{1}{2}$ pounds

#### LOUDSPEAKER

Dimensions:	11 $\frac{1}{2}$ "H x 16 $\frac{1}{2}$ "W x 9 $\frac{1}{4}$ "D
Tweeter:	3" cone
Woofers:	8" cone with ported enclosure
Weight:	16 pounds

## Technical Information

---

### CARE AND MAINTENANCE

#### Turntable

Aside from keeping the stylus clean, the turntable, dust cover, and mat should be kept clean. Use a brush to remove any dust on the mat or turntable, then wipe with a damp cloth. Use a glass cleaner to clean the dust cover.

Approximately once a year the motor bearing should be lubricated with a drop of light machine oil. Lift the rubber mat off the turntable platter. Rotate the platter by hand until one of the large oval holes in the platter exposes the drive belt/motor pulley. (See Turntable Unpacking/Assembly Instructions.) Place a drop of light machine oil at the bottom of the brass motor pulley (the top bearing/motor assembly of the turntable): Be careful not to get any oil on the motor pulley surface or drive belt. If the drive belt becomes oily or dirty, it will be necessary to lift off the platter, wash and dry the belt, wipe the motor pulley clean, and then reassemble the platter, belt assembly, and mat.

#### Stylus Replacement

Your stylus assembly should be checked at least once a year. If you use the turntable frequently (playing records for an average of three hours per day), a new stylus assembly should be installed every year to prevent damaging your records. The replacement procedure is as follows:

1. Locate your Turntable Unpacking/Assembly Instructions and turn to the section describing how to remove the tone arm shell.
2. Remove the tone arm shell and place the stylus protector over the stylus assembly.
3. In most cases, a new stylus can be purchased from a nearby electronic outlet. Alternatively, contact the closest authorized BOSE service agency or BOSE directly. Be certain to bring the tone arm shell and cartridge with you.

#### Receiver

To clean the front panel of the Model 360 receiver, use a high-quality glass cleaner and wipe dry with a soft cloth. The cabinet may be cleaned with a soft cloth.

#### Speaker System

The enclosure of the Model 360 loudspeaker is covered with a walnut grained vinyl finish and may be cleaned by using a soft cloth. The grillecloth requires no maintenance but may be carefully vacuumed if necessary.

## XII. Warranty

### Bose Model 360 Direct/Reflecting® Music System Limited Warranty

Your Bose Model 360 Direct/Reflecting® Music System is warranted against defects in material and workmanship for the following periods of time from the original date of purchase:

Equipment	Warranty Period
Model 360 receiver .....	1 year
Model 360 turntable .....	1 year
Model 360 loudspeakers .....	2 years

During the applicable warranty period, Bose will remedy defects in material and workmanship, without charge for parts or labor, by repair or replacement (at Bose's option). This warranty does not extend to damage resulting from improper installation, misuse, neglect or abuse, or to exterior appearance, and does not apply to wear or breakage of the stylus assembly. This warranty covers only original purchasers and does not extend to transferees.

Should your Bose Model 360 Direct/Reflecting® Music System fail within the warranty period, you should contact your store of purchase for service instructions. Alternatively, you may return the unit together with the original sales receipt or other proof of purchase to your nearest Bose Model 360 service agency. For the closest Bose Model 360 service agency, contact your store of purchase or Bose Corporation in Framingham, Massachusetts.

You may elect to send the unit directly to the Bose factory by carefully following this procedure:

1. Obtain a "Return Authorization" number from the Bose Customer Service Department, 100 The Mountain Road, Framingham, Massachusetts 01701. The Return Authorization number will facilitate repair and return of your product. Returned units without Return Authorization numbers will not be accepted at the factory.

2. Return the unit together with proof of purchase to Bose Corporation, 100 The Mountain Road, Framingham, Massachusetts 01701, freight prepaid, in its original shipping carton. Display the Return Authorization number prominently on the outside of the carton. If you need a new carton, Bose Corporation will provide a free replacement carton. Any damage in transit due to improper packing is not covered by the warranty and will not be recognized as an insurance claim by the transportation companies.
3. Your unit will be repaired and returned to you at Bose's expense.

**UNDER NO CIRCUMSTANCES SHALL BOSE BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. THE DURATION OF ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL BE LIMITED TO THE DURATION OF THE EXPRESS WARRANTIES STATED HEREIN.**

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Some states do not allow the exclusion or limitation of incidental or consequential damages, or limitations on the duration of implied warranties, so that the above limitations may not apply to you.

Please return the enclosed postage-paid registration card to Bose Corporation. Return of the card is not a condition to coverage under this warranty.

***BOSE***<sup>®</sup>

BOSE CORPORATION • 100 THE MOUNTAIN ROAD • FRAMINGHAM, MASS. 01701

109520