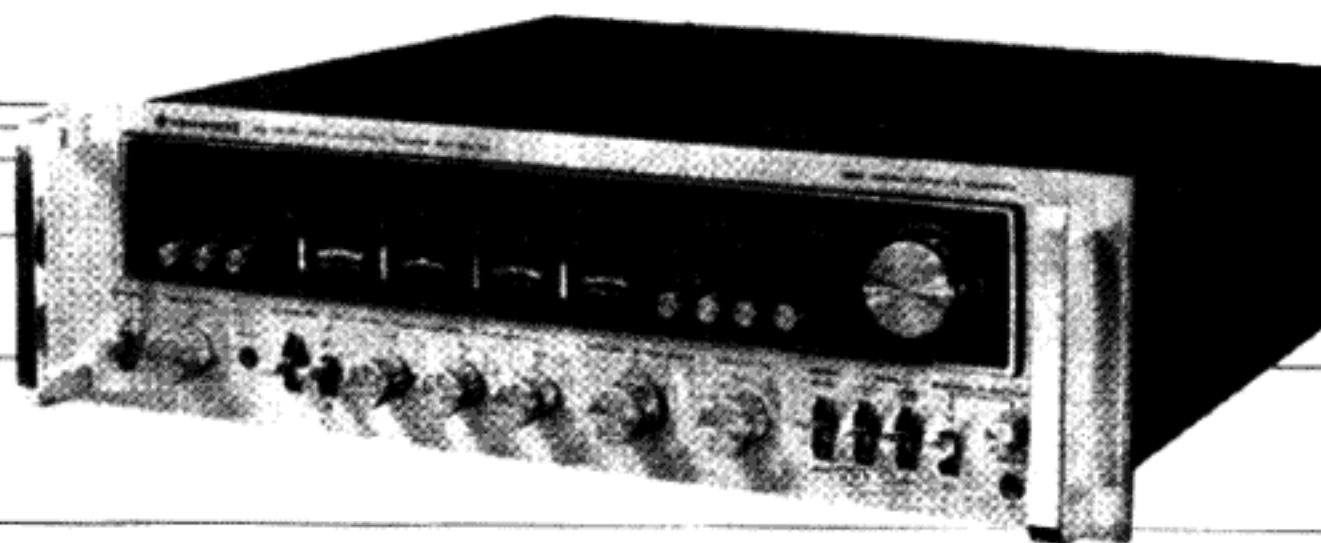


AM-FM
STEREO RECEIVER

KR-9600

INSTRUCTION MANUAL



INTRODUCTION

Thank you for purchasing our receiver. Because we take great pride in the long tradition of quality components the name Kenwood represents, your purchase of a Kenwood receiver places you in a distinguished family of connoisseurs of superb high-fidelity sound reproduction.

The purpose of this manual is to acquaint you with the operating features of your new receiver. You will notice that in every detail of planning, engineering, styling, operating convenience, and adaptability, we have sought to anticipate your needs and desires.

We suggest that you read this manual carefully. Knowing how to set up your receiver, to the best advantage, will enhance your listening pleasure right from the start. You will also become aware of the ease with which you can adjust your receiver to meet your special requirements.

Turn the pages and become acquainted with the exciting features of your new receiver, features that will remain new for endless hours of listening pleasure.

PRECAUTIONS CONCERNING INSTALLATION

- (a) The KR-9600 is heavy and should always be handled with great care.
- (b) Avoid locations subject to direct sunlight.
- (c) Avoid high or low temperature extremes.
- (d) Keep the receiver away from heat radiating sources.

CONTENTS

FEATURES	2
INTERCONNECTING DIAGRAM	3
CONNECTING INSTRUCTIONS.....	4
CONTROLS AND THEIR FUNCTIONS	7
OPERATING INSTRUCTIONS	9
TROUBLE SHOOTING	13

NOTES

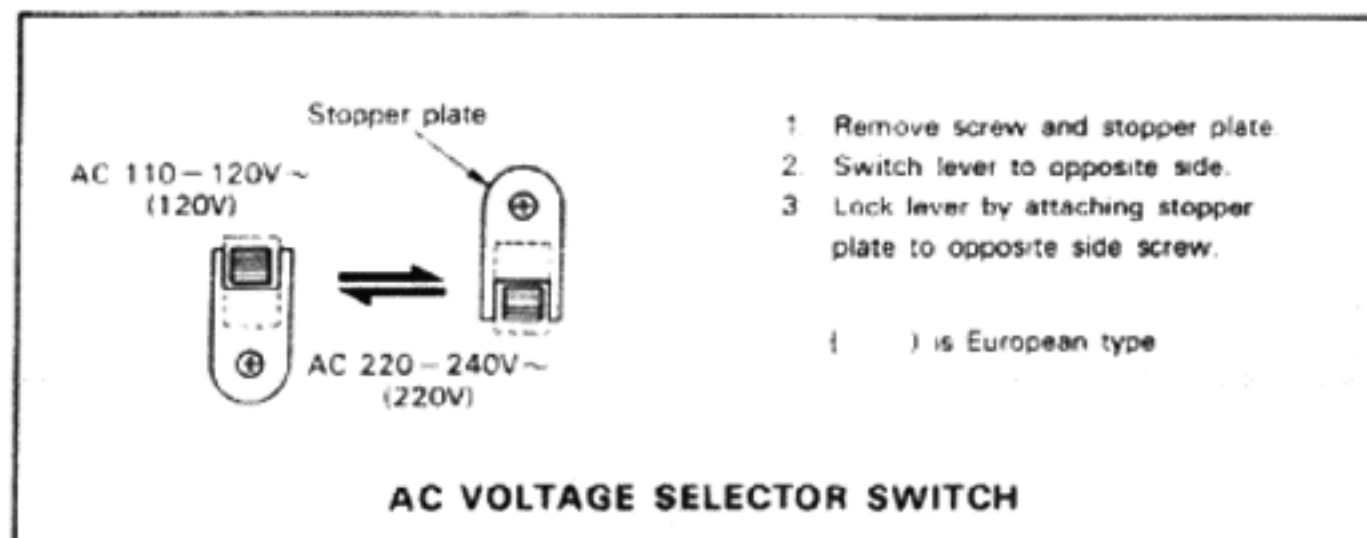
1. Units shipped to the U.S.A. and CANADA are designed to be operated with 120 volts AC only. Units shipped to the Scandinavian countries are designed to be operated with 220 volts AC only. Therefore the above units are not equipped with an AC Voltage Selector Switch so all reference to such a switch throughout this manual should be disregarded.
2. Units shipped to all other countries are equipped with an AC Voltage Selector Switch on the rear panel that is preset at the factory to the voltage generally available in the destination area.

AC VOLTAGE SELECTION AND POWER FUSE

The KR-9600 operates on 110 ~ 120 volt or 220 ~ 240 volt AC. The AC Voltage Selector switch on the rear panel is set to the voltage that prevails in the area to which the receivers are shipped. Before operating this receiver, make sure that the position of the AC Voltage Selector Switch matches your line voltage. If not, it must be changed to the proper setting.

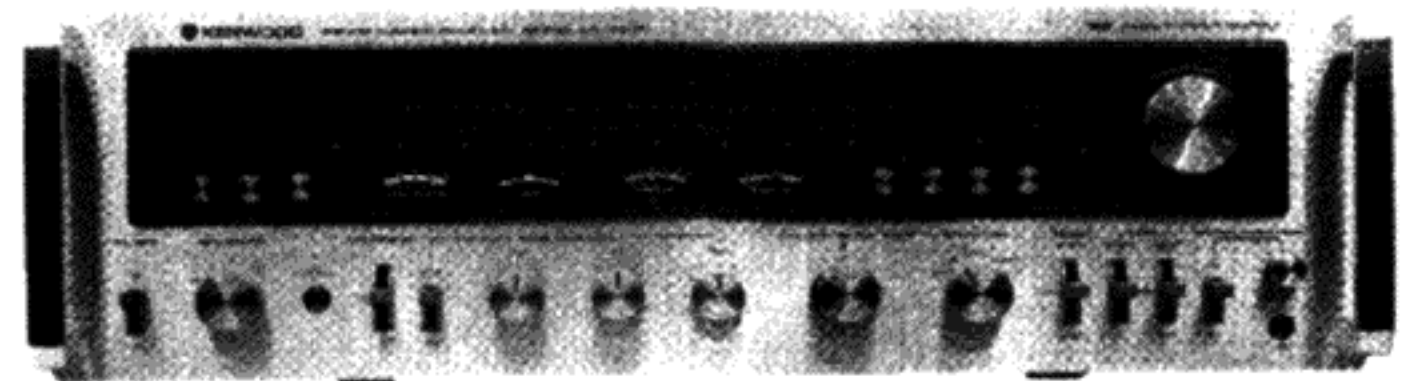
To change, first disconnect the AC line cord. Then remove the stopper plate and slide the AC Voltage Selector Switch to the opposite side. Then reattach the stopper plate to the other side.

NOTE: Our warranty does not cover damage caused by excessive line voltage due to improper setting of the AC Voltage Selector Switch.



FEATURES

1. Front end features ultra-sensitive 2-stage RF amplification, 3 Dual Gate MOS FET circuitry and 5-gang variable capacitor.
2. 8-element Ceramic Filter and low distortion Quadrature Discriminator ensure high IF selectivity.
3. Excellent stereo separation is due to superior Phase-Lock-Loop (PLL) circuitry.
4. Independent Low Pass Filters are made available in both Left and Right Channels. High stability output circuitry is due to Operational Amp.
5. Independent Equalizer Amplifiers are built in for Phono 1 and Phono 2.
6. Buffer Amp features output selector control which guarantees stable operation.
7. Triple Tone Control incorporates Tone Defeat (Skip Circuit).
8. Final Power Output Stages employ the reliable Parallel Push-Pull Circuitry which used Darlington ICs.
9. Dual Power Supply System has practically eliminated *Dynamic Crosstalk*.
10. Reliable Protection Circuits are made available independently for both Left and Right channels.
11. Unique sound injection system permits microphone mixing with other program source.
12. Sturdy Power Meter enables checking large dynamic power.
13. 2-Way Signal Meter permits reading FM Deviation Level.
14. Other Features include:
 - 2-step Loudness Control
 - Built-in De-emphasis to match any Dolbyized* FM broadcasts.
 - 20 dB Attenuation Control
 - Low Filter, High Filter
 - FM Muting
 - Connecting Terminals for three pairs of speakers.
 - Selector Indicator
 - FM DET OUT
 - Wide dial scale and smooth flywheel-action Tuning Knob for easy tuning.
 - Mode Selector
 - Speaker Indicator
 - Handsomely Styled Handles

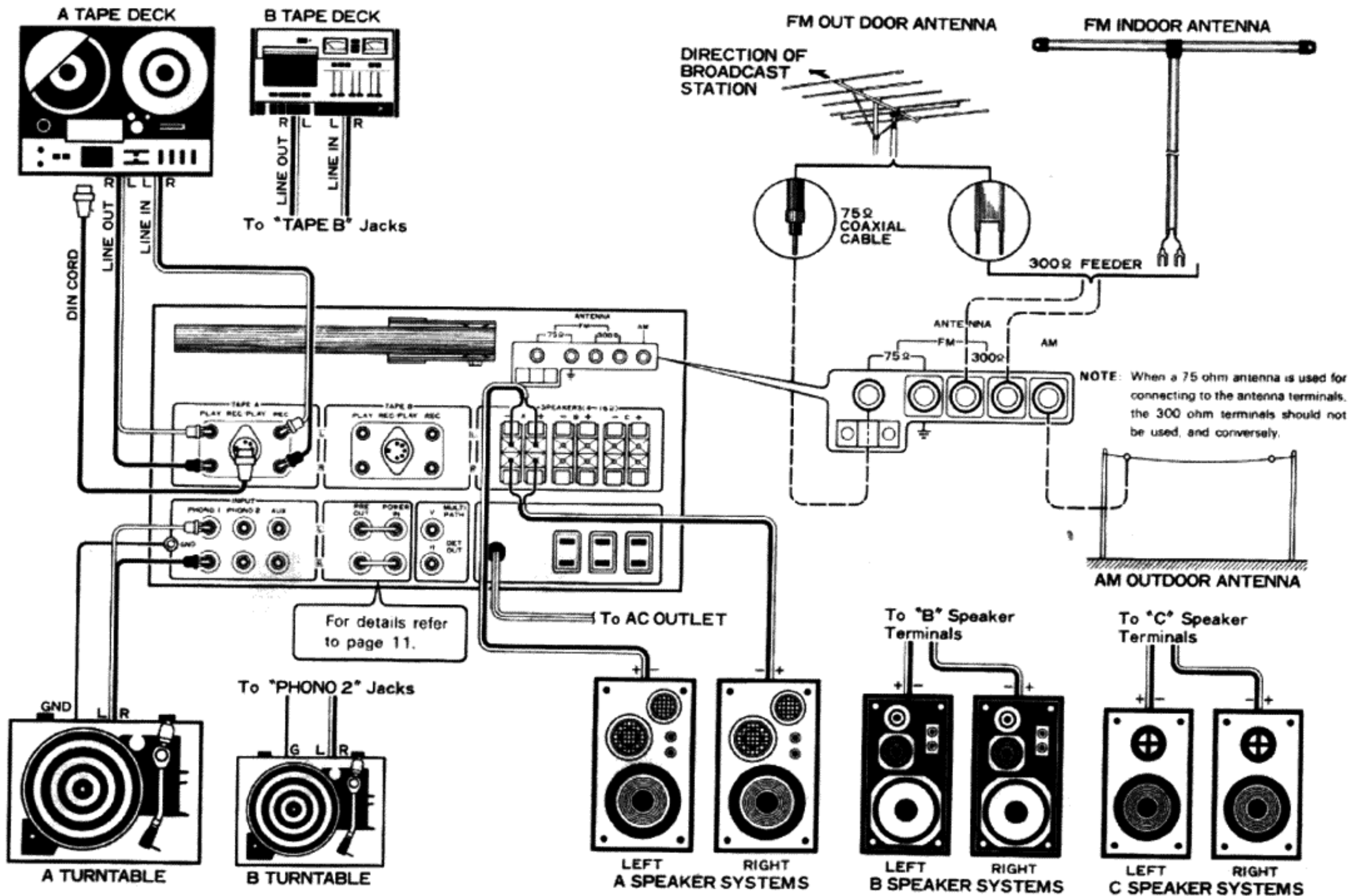


WARNING:

TO PREVENT FIRE OR SHOCK HAZARD,
DO NOT EXPOSE THIS APPLIANCE TO
RAIN OR MOISTURE.

* Dolby is a Trade Mark of Dolby Laboratories, Inc.

INTERCONNECTING DIAGRAM



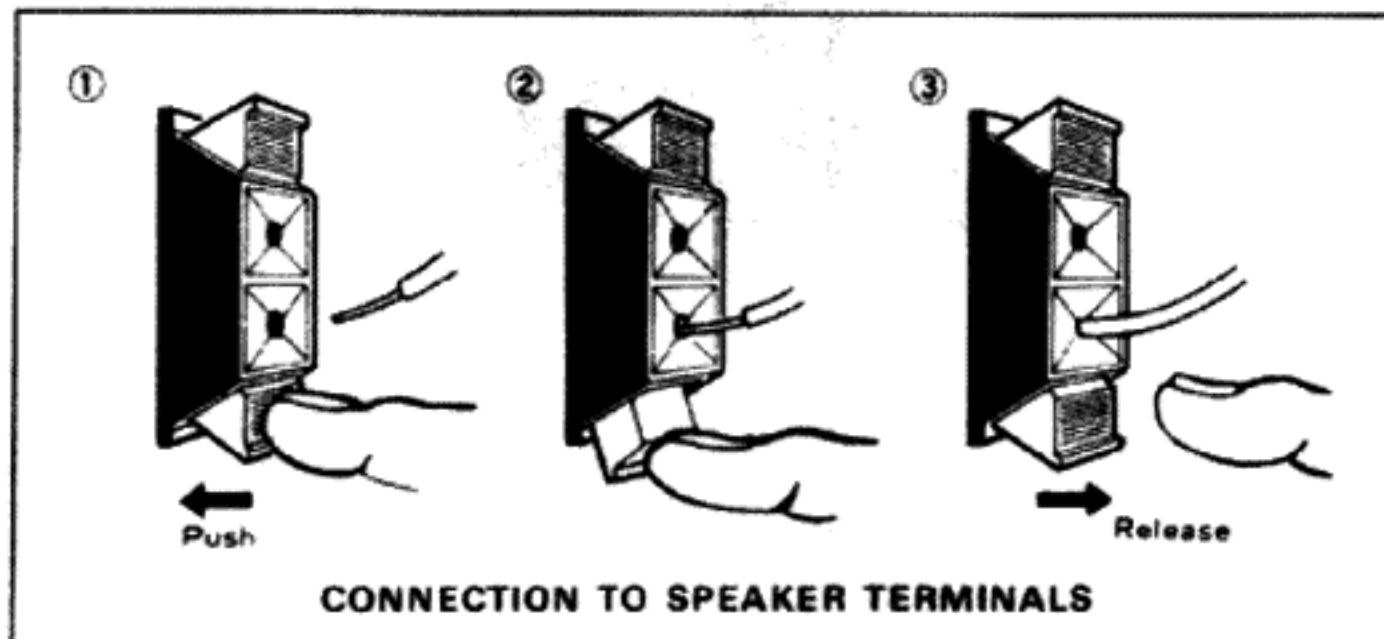
CONNECTING INSTRUCTIONS

SPEAKER CONNECTIONS AND SPEAKER SWITCH

In connecting only one set of speakers, connect the right speaker to right terminals and left speaker to left speaker terminals of "A" terminals. Should plus or minus of either right or left channel be reversely connected, sounds at the center section will be adversely affected by lack of bass sound. To connect a second set of speakers, connect right speaker to right speaker terminals and left speaker to left speaker terminals of "B" terminals. In the same manner, a third set of speakers can be connected to "C" terminals.

Sound cannot be heard when the SPEAKERS switch on the front panel is set to the A + B position, when only one pair of speaker system is used with connections made either to "A" terminals or "B" terminals. When connecting the speaker leads to the SPEAKERS terminals, make sure that the bare wire strands at the ends of the speaker leads do not touch the adjacent terminal.

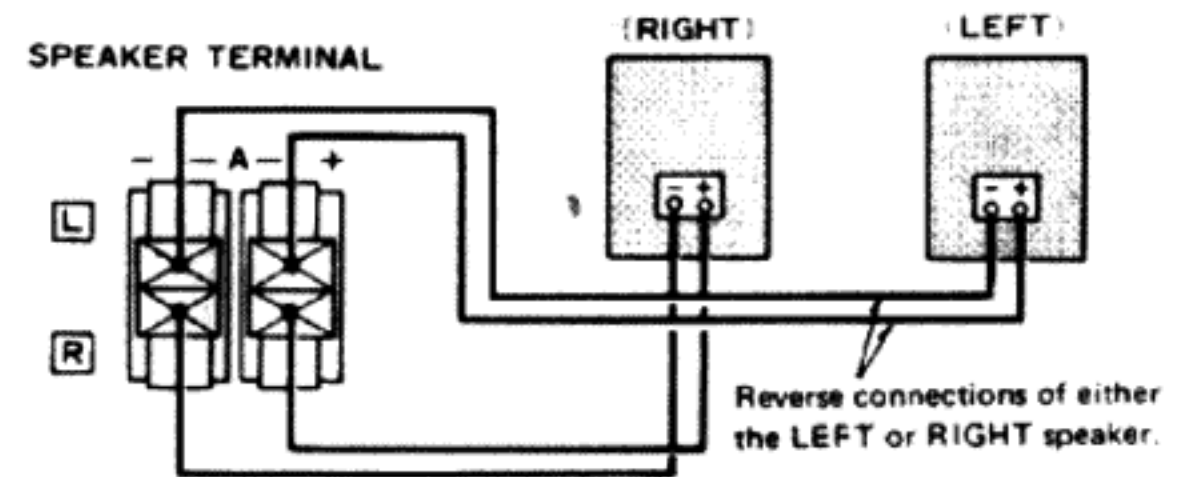
It is recommended that the tips of speaker cord leads are soldered, or the strands of each individual lead twisted together to eliminate any possibility of short-circuits forming in the speaker connecting network.



PHASING OF THE SPEAKERS

Speaker phasing can be determined in the following manner:

1. Set the SELECTOR switch to FM.
2. Set the MODE switch to MONO.
3. Tune in the desired station with the TUNING knob.
4. If the sound is coming directly from the front, the speakers are in phase.
If the sound comes from both sides and there is a noticeable loss in low frequencies, the speakers are out of phase.
In this case reverse the leads on one speaker.



CONNECTING INSTRUCTIONS

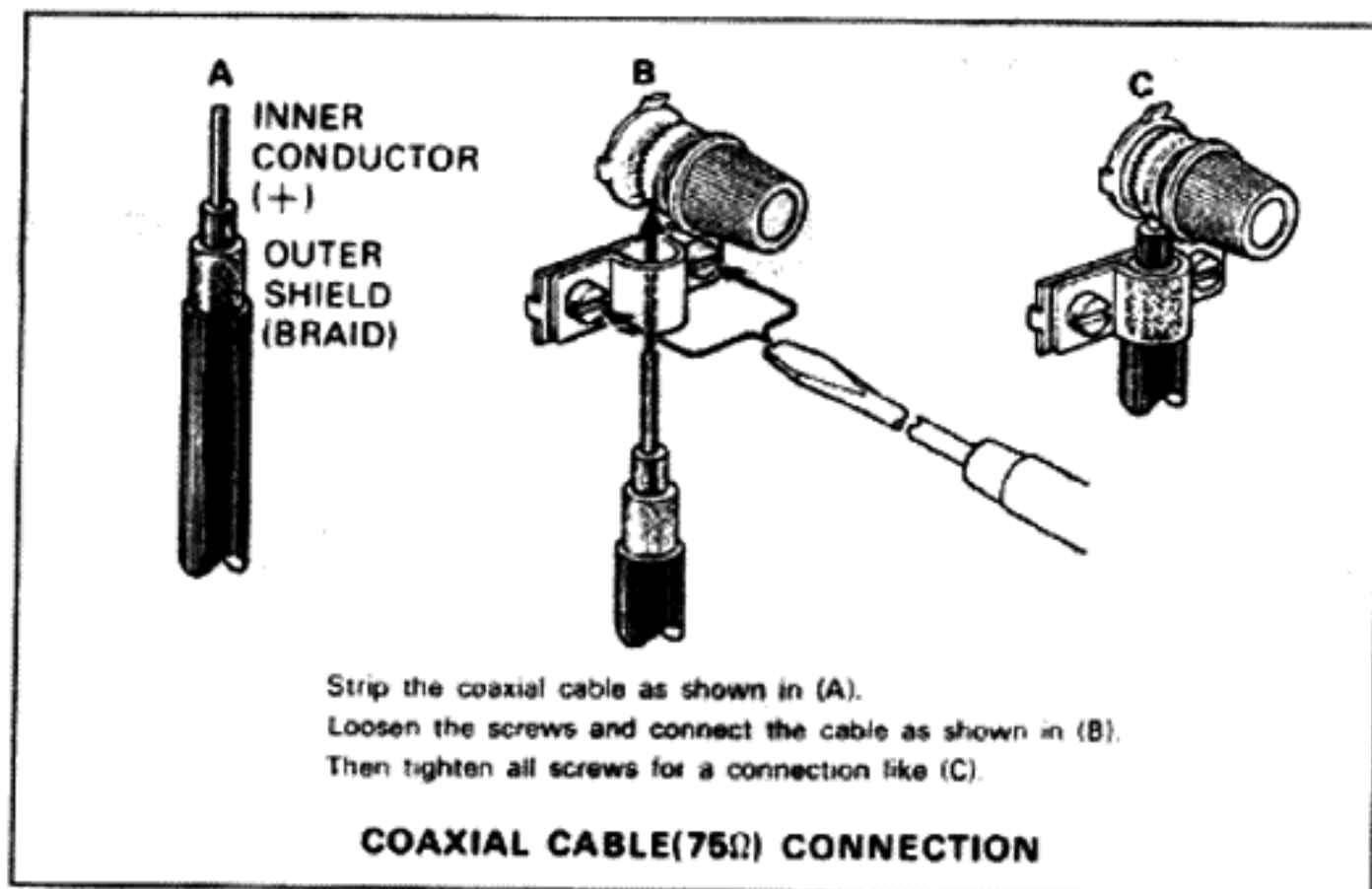
ANTENNA CONNECTION

Connecting The FM Antenna

Since FM broadcast signals travel along a straight, direct-line path, they become rather weak behind hills and buildings even in the vicinity of a broadcasting station. FM signals also become weak in areas distant from a station even though there may not be any obstruction to the direct-line path of the signal. Therefore, a good FM antenna should be installed in the most effective manner for best possible FM reception.

In areas near the FM station, where signals are strong, stretch the T-type indoor antenna that is supplied, to its maximum, and connect it to the FM 300 Ω ANTENNA terminals. This antenna should be carefully hung in the direction that provides best reception and clarity.

In areas subject to FM multipath interference such as locations behind hills or in the shadow of buildings, an outdoor FM antenna should be used. An outdoor FM antenna is also recommended for the reception of weak and distant FM stations. Connections should be made as follows: 300 ohm twin leads should be connected to the FM 300 Ω terminals, and 75 ohm coaxial cable to the FM 75 Ω terminals.



Connecting The AM Antenna

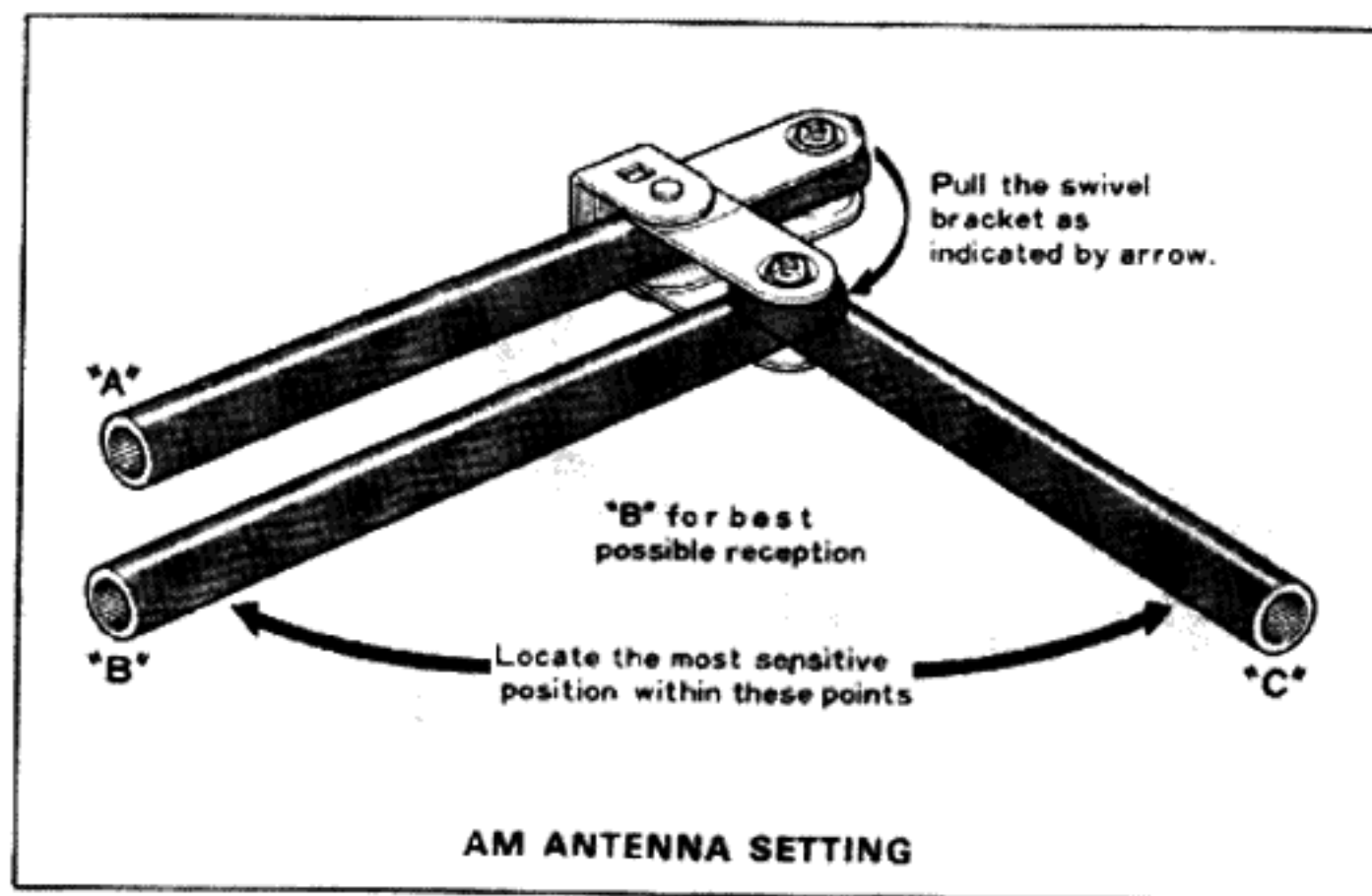
The AM ferrite loopstick antenna incorporated in this unit assures satisfactory reception of all local AM stations. Since the ferrite loopstick antenna has directional properties, you should adjust the antenna to the position which brings in the strongest signal.

In fringe areas or in locations surrounded by steel frame buildings where satisfactory reception cannot be obtained with the ferrite loopstick antenna, an AM outdoor antenna should be connected to the AM terminal.

NOTE: AC cords, speaker leads, etc, which run adjacent to antenna leads, may interfere with reception. Keep them away as far as possible from the AM ferrite loopstick antenna.

TURNTABLE CONNECTION

The two shielded audio cables from your stereo turntable are normally terminated with phono plugs. Connect the left channel of the turntable to the "L" PHONO 1 input jack, and the right channel to the "R" PHONO 1 input jack.



CONNECTING INSTRUCTIONS

If an additional turntable is used in order to operate two turntables, connect the left channel to the "L" PHONO 2 input jack, and the right channel to the "R" PHONO 2 input jack.

If the turntable has a grounding wire, connect it to this receiver's GND terminal to avoid hum.

TAPE DECK CONNECTION

Recording

A tape deck can be connected for recording as follows. Left channel input of the tape deck to TAPE A "L" REC jack. Right channel input of the tape deck to TAPE A "R" REC jack.

Playback

A tape deck can be connected for playback as follows. Left channel output of the tape deck to TAPE A "L" PLAY jack. Right channel output of the tape deck to TAPE A "R" PLAY jack.

DIN CONNECTOR (REC/PLAY CONNECTOR)

If your tape deck is equipped with a DIN connector, connect it to the REC/PLAY connector with a DIN connecting cord. A DIN connector enables recording and playback with this single cord.

NOTE: When a DIN cord is used for connecting to the tape deck, the PLAY and REC jacks should not be used.

AUX (AUXILIARY INPUTS)

High level AUX input jacks are for miscellaneous sources, such as extra tape decks, additional tuners, TV sound outputs, and other external components.

FM DET OUT JACK

The FM detector circuit output is made available here so that this receiver will be ready for 4-channel broadcasting developments in the future. When FM discrete 4-channel broadcasting becomes a reality, a simple demodulator connected here will enable you to fully enjoy this coming development.

PRE OUT POWER IN

If a DOLBY NR adaptor is connected to the receiver "PRE OUT POWER IN" jacks, not only can FM Dolby broadcasts be played back, but if a tape deck is connected to the adaptor itself, Dolby system recording and playback is possible. For further details refer to page 11.

MULTIPATH JACKS

Those who have general oscilloscope may connect it and actually see the incoming FM waveform, and turn the antenna to the setting which results in the least distorted waveform.

For detailed instructions on connections, etc., see the instruction manual supplied with the oscilloscope.

AC OUTLET

The AC outlets on the rear panel of the receiver may be used to supply power to other components such as a turntable, tape deck, etc.

1. SWITCHED outlet

This outlet is controlled by the POWER switch on the front panel. (The capacity is 100 watts maximum.)

2. UNSWITCHED outlets

These outlets are available at all times. (The total capacity is 300 watts maximum.)

NOTE: Units shipped to the European countries are not equipped with AC OUTLETS.

CONTROLS AND THEIR FUNCTIONS

1 POWER switch

ON — This position turns the receiver on.
OFF — This position turns the receiver off.

2 SPEAKERS switch

OFF — This position silences all speakers for private headphones listening.
A — Activates speakers connected to the A SPEAKERS terminals on the rear panel.
B — Activates speakers connected to the B SPEAKERS terminals on the rear panel.
A + B — Activates simultaneously two sets of speaker systems connected to the A and B SPEAKERS terminals.
C — Activates speakers connected to the C SPEAKERS terminals on the rear panel.

3 PHONES jack

Plug a stereo headphones into this jack for private listening. The speakers are silenced when the SPEAKERS switch is set to OFF position.

4 LOUDNESS control

The LOUDNESS control boosts bass and treble tones at low listening levels. Our ears have less sensitivity to low and high frequencies at low listening levels and the LOUDNESS control compensates for this deficiency. This control should be switched off when listening at normal and high levels.

5 TONE controls

BASS control

Turning it clockwise increases bass tone and counterclockwise decreases it. Tone is flat at zero position.

MID control

Turning it clockwise increases mid range tone and counterclockwise decreases it. Tone is flat at zero position.

TREBLE control

Turning it clockwise increases treble tone and counterclockwise decreases it. Tone is flat at zero position.

DEFEAT switch

This switch provides flat frequency response with tone control circuit deactivated. BASS, MID and TREBLE controls do not operate when this switch is set to ON.

6 VOLUME and BALANCE control

The VOLUME control (Inner Knob) performs simultaneous adjustment of volumes in both channels (right and left). Set it to your convenient listening level.

The BALANCE control (Outer Knob) adjusts unequal volume from any program source in right and left channels. The left channel is accentuated when this adjuster is turned from center toward the left side, and conversely.

7 SELECTOR switch

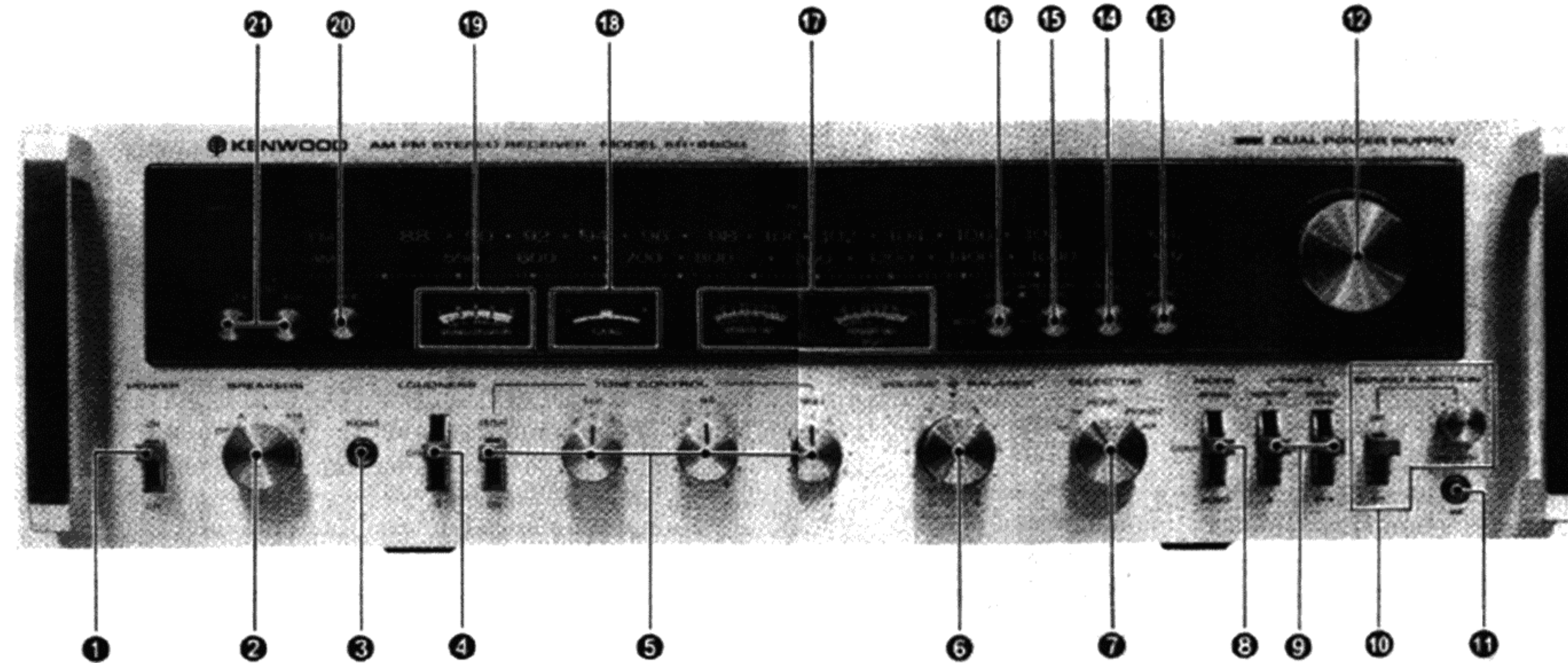
Switch positions and functions are as follows:

AM — For AM reception.

FM — For the reception of both FM monaural and stereo signals. Automatic switching operates between FM monaural and stereo sources.

When an FM stereo broadcast is tuned in, the STEREO indicator lights up.

PHONO 1 — In this position the turntable is available if connected to the PHONO 1 input jacks on the rear panel.



PHONO 2 — In this position the turntable is available if connected to the PHONO 2 input jacks on the rear panel.

AUX — Selects source connected to the AUX jacks.

8 MODE switch

Switch positions and functions are as follows:

STEREO — This provides stereophonic reproduction of any stereo program source. The left channel is heard from the left speaker, and the right channel is heard from the right speaker.

REVERSE — This reverses positions of two speakers. The left channel is now heard from the right speaker, and the right channel from the left speaker.

MONO — Mixes left and right channels.

9 TAPE switches

MONITOR switch

Switch positions and functions are as follows:

SOURCE — The source signal is heard.

A — For monitoring a recording or for playback on a tape deck connected to the TAPE A jacks. Sound recorded on the tape is heard.

B — For monitoring a recording or for playback on a tape deck connected to the TAPE B jacks. Sound recorded on the tape is heard.

For further details refer to pages 9 and 10.

DUBBING switch

Switch positions and functions are as follows:

DUBBING (A → B) — For dubbing from a tape deck connected to the TAPE A jacks into a tape deck connected to the TAPE B jacks.

DUBBING (B → A) — For dubbing from a B tape deck to A. For further details refer to pages 9 and 10.

10 SOUND INJECTION

The SOUND INJECTION system is used to make mixing recording with your desired sound source selected by the INPUT SELECTOR switch and the microphone. The SOUND INJECTION switch must be set to the ON position. Mixing level can be adjusted by the MIX LEVEL control. This switch should be turned OFF except when using the SOUND INJECTION. For further details refer to page 12.

11 MIC jack

This is a microphone jack for monophonic sound only. The SOUND INJECTION switch should be turned ON when using the microphone.

12 TUNING knob

The TUNING knob selects the desired AM or FM station signal. Adjust it for maximum deflection of the SIGNAL meter as you listen to the sound output from the speakers. For broadcasts also observe the TUNING meter to achieve accurate reception.

CONTROLS AND THEIR FUNCTIONS

13 FM MUTING switch

This switch silences interstation noise on the FM band, but it may also eliminate the signal of a weak and distant station along with the interstation noise. Therefore, set this switch to OFF (by pressing button release) in the reception of a weak and distant station.

14 FM 25 μs (De-emphasis) switch

Selects 25μs De-emphasis for accurate reception of Dolbyized FM signals. Normally, this switch should be left in the OFF (button release) position. However, if the station is broadcasting the Dolbyized signal using a 25μs pre-emphasis, put the switch in the "25μs" position to obtain flat FM frequency response after connecting this unit to a Dolby Decoder. If in doubt, call the station.

NOTE: For correct reception of Dolby broadcast, the Dolby Adaptor must be used without fail.

15 DEVIATION/SIGNAL switch

The SIGNAL/DEVIATION meter functions as a Deviation meter when the DEVIATION/SIGNAL switch is pushed in. It functions only during reception of an FM broadcast. The SIGNAL/DEVIATION meter functions as a signal meter when the DEVIATION/SIGNAL switch is released.

16 METER RANGE control

This switch controls the sensitivity of both the left and right channel output level meters. Use the switch suitable for your listening requirements.

NOTE: To protect the meters from overswinging, make it a practice to push the "200W" first and advance successively to "3W" when no deflection can be observed.

17 POWER meters

These meters indicate the strength of the output volume level. They can be read directly in watts from 0.01 to 200 watts into 8 ohms (controlled by the Meter Range Control switch).

18 TUNING meter

This meter is used for precise tuning to the center of an FM channel. Turn the tuning knob until the meter pointer is in the center of the meter scale. This provides maximum separation and minimal distortion.

19 SIGNAL/DEVIATION meter

SIGNAL — Meter indicates signal strength during this function mode. Maximum deflection indicates best receiving condition.

DEVIATION — When the SIGNAL/DEVIATION switch is pushed in, this meter indicates the peak modulation ratio of the FM broadcast. For further details refer to page 9 "AM-FM RECEPTION".

20 ATTENUATOR -20 dB

This switch reduces volume level momentarily as during a telephone call, etc. Attenuator is reduced 20 dB without touching the VOLUME control. Setting this switch to off returns volume level to original level.

21 LOW and HIGH FILTER switches

LOW FILTER — Setting this switch to on reduces low frequency noise such as turntable rumble, etc. which may interfere with program material. The low filters attenuate the low frequencies.

HIGH FILTER — Setting this switch to on reduces any high frequency noise such as tape hiss, record scratch, etc.

OPERATING INSTRUCTIONS

AM-FM RECEPTION

1. Set the SELECTOR switch to FM or AM.
2. Set the MODE switch to STEREO and the TAPE switch to SOURCE.
3. Adjust the VOLUME control to the desired listening level.
4. Use the BASS, MID, TREBLE, FILTERS and LOUDNESS controls to adjust sound as desired and to match the acoustic conditions of your room.

ABOUT DEVIATION

The Deviation Meter is very handy for "air-checking" FM reception conditions and for tape recording FM broadcasts. Used in conjunction with the VU meter of the tape deck, it helps to prevent distortion that is caused by excessive input recording levels.

The Deviation Meter indicates the frequency deviation of an FM broadcast and degree of modulation in terms of ± 75 kHz deviation at 100% modulation, and thus its swing pattern differs from that of the VU meter whose characteristics are closer to human hearing patterns and does not respond as well to pulse type and high frequency sounds. For ordinary music and sounds, best recording condition will be obtained if the recording level adjustment is made according to the average values of the two meters as shown in the table below.

Deviation Meter Indication (%) (KR-9600)	100	80	60	40	20
VU Meter Indication (VU) (TAPE DECK)	0	-2	-4.5	-8	-14

PHONO OPERATION

1. Two pairs of phono input jacks, PHONO 1 and PHONO 2, are provided to enable connections to two turntables. To reproduce the output of the turntable that is connected to PHONO 1 jacks, set the SELECTOR switch to PHONO 1. To reproduce the output of the turntable that is connected PHONO 2 jacks, set the SELECTOR switch to PHONO 2.
2. Set the MODE switch to STEREO and the TAPE switches to SOURCE.
3. Adjust the VOLUME to the desired listening level.

4. Use the BASS, MID, TREBLE, FILTERS and LOUDNESS controls to adjust the sound to your preference and to the acoustic conditions of your room.

TAPE DECK OPERATION

Tape Monitoring

If you use the receiver with 3-head type tape decks, you can check the sound quality of the recording that is being made by momentarily comparing the recorded signal with the source signal as follows. Set the TAPE (MONITOR) switch to A (or B) to monitor the recorded sound. Set the TAPE (MONITOR) switch to SOURCE to monitor the source signal before it is recorded.

When Recording with One Tape Deck

Connect the tape deck to either the TAPE A jacks or TAPE B jacks on the rear panel.

Recording

1. Set the SELECTOR switch to the desired program source. Set the TAPE (DUBBING) switch to SOURCE. To monitor the recording, set the TAPE (MONITOR) switch to A or B, whichever side the tape deck is connected.
2. Recording level should be adjusted with the volume control of your tape deck.
3. Recording is not affected by the VOLUME, BASS, MID, TREBLE, FILTERS, LOUDNESS, etc., controls of the receiver.

When Recording with Two Tape Decks

Connect one tape deck to TAPE A jacks and the other to TAPE B jacks on the rear panel.

Recording

1. Set the SELECTOR switch to the desired program source.
2. Set the TAPE (DUBBING) switch to SOURCE.
3. Recordings can now be made into both tape decks simultaneously. To monitor these recordings, use the TAPE (MONITOR) switch as follows. Set it to A to monitor the recording being made with the tape deck connected to TAPE A jacks. Set it to B to monitor the recording being made in the tape recorder connected to TAPE B jacks.

OPERATING INSTRUCTIONS

4. Recording levels should be adjusted exactly as described previously for single tape deck operation.

Playback

1. The SELECTOR switch can be at any position.
2. Set the TAPE (MONITOR) switch to the corresponding position (A or B).
3. Adjust volume and tonal quality.

Dubbing

Tape recordings may be easily duplicated from one tape deck to another with minimal loss of quality by setting the TAPE switch to DUBBING (A ► B) or DUBBING (B ► A) as follows:

1. The SELECTOR switch can be at any position.
2. Set the TAPE switch to DUBBING (A ► B) when it is desired to copy recorded material on the tape deck A for re-recording on the tape deck B.

Set the TAPE switch to DUBBING (B ► A) when it is desired to copy a recording on the tape deck B for re-recording on the tape deck A.

The recording can be monitored.

3. Operate both tape decks simultaneously.

THE THROUGH CIRCUIT

Moreover, this unit permits listening to other program sources such as FM broadcasts or records while tape dubbing.

- FM broadcasts can be tape recorded while simultaneously listening to records as follows:
 1. Connect the Tuner to the "PLAY" jacks of the TAPE A group connector jacks on the rear panel of this unit, and the Tape Deck to the TAPE B group connectors.
 2. Connect the Turntable to either PHONO 1 or PHONO 2 and set the SELECTOR switch to whichever connector that is used.
 3. FM broadcasts can be recorded when the TAPE (DUBBING) switch is then set to A ► B and the Tape Deck operated in recording mode.
 4. Disc record sound is reproduced when the TAPE (MONITOR) switch is set to SOURCE.

5. FM broadcasts are reproduced when the TAPE (MONITOR) switch is set to A. The recorded sound of FM broadcasts are reproduced and can be monitored when the TAPE (MONITOR) switch is set to B.

- Disc record sound sources can be tape recorded while simultaneously listening to FM broadcasts as follows:

1. Connect the Tuner to the "PLAY" jacks of the TAPE A group connector jacks on the rear panel of this unit and the Tape Deck to the TAPE B group connectors.
2. Connect the Turntable to either PHONO 1 or PHONO 2, and set the SELECTOR switch to whichever connector that is used.
3. Set the TAPE (MONITOR) switch to A and tune in FM broadcasts.
4. Set the TAPE (DUBBING) switch to SOURCE and the Tape Deck to recording mode. The sound from the disc record can then be recorded.
5. The FM broadcasts are reproduced when the TAPE (MONITOR) switch is then set to A. When it is set to SOURCE, the sound of the disc record will be reproduced. When it is set to B the tape recorded sound of the disc record can be monitored.

OPERATING INSTRUCTIONS

HOW TO USE THE PRE OUT POWER IN JACKS (1)

When it is desired to set up a 4 CHANNEL stereo system, remove the attached jumper connector and connect another decoder amplifier or demodulator to the PRE OUT POWER IN jacks at rear of the receiver. In this case, turn the FM 25 μ s switch to OFF. It must be remembered, however, that a 4 CHANNEL program source is necessary for such operation. See figure below (A).

HOW TO USE THE PRE OUT POWER IN JACKS (2)

● Dolbyized FM Broadcasts Reception

1. Remove the attached jumper connector and connect the Dolby NR adaptor to the PRE OUT POWER IN jacks as shown in the figure below (B).
2. Set the SELECTOR switch to FM and tune in to a Dolbyized FM Broadcast.
3. Turn the FM 25 μ s switch (on the front panel) to ON.

NOTE: When using the PRE OUT POWER IN jacks do not use the attached jumper connector for other jacks. Keep it, because it must be plugged back into these jacks when it is not used.

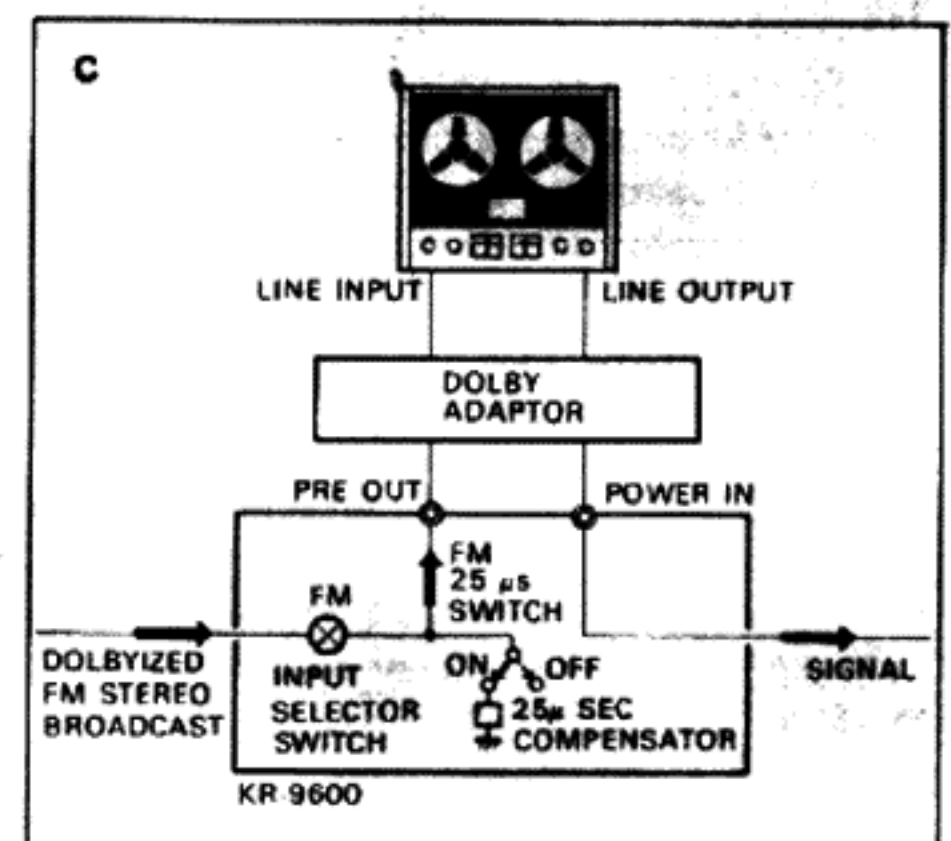
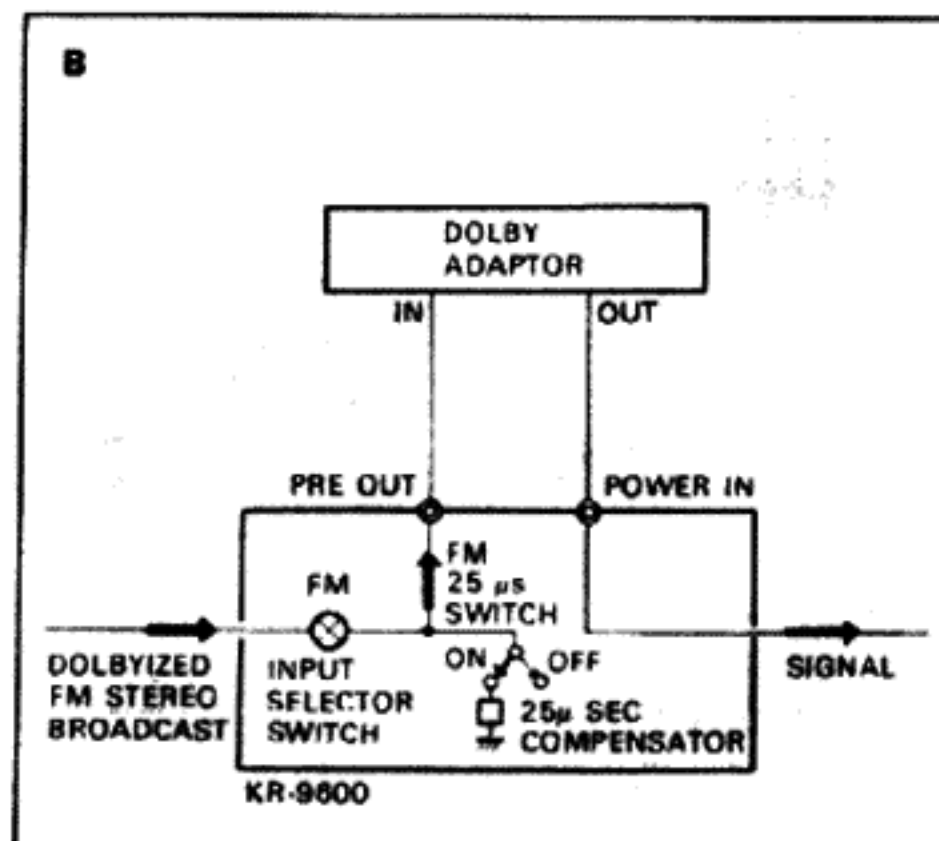
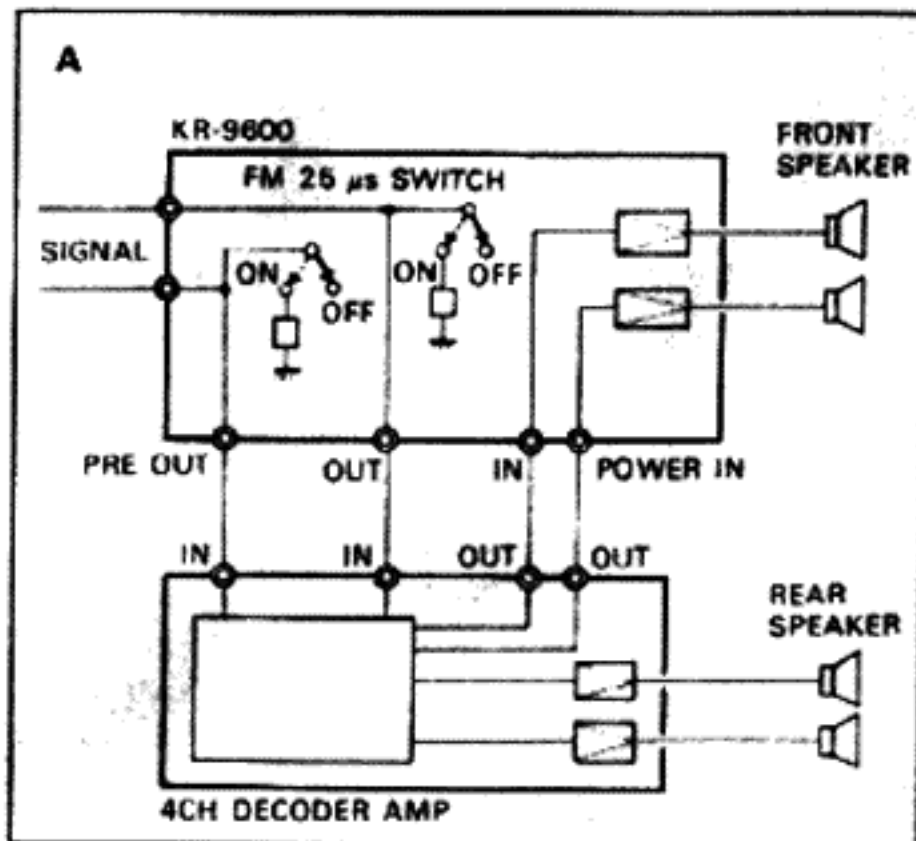
● Dolby System Recording and playback

Recording

1. Connect the Dolby adaptor output jacks to the tape deck LINE-INPUT jacks.
2. Select the program source of your choice with the SELECTOR switch.
3. Turn the FM 25 μ s switch to OFF. (When recording Dolbyized FM Broadcasts depress the FM 25 μ s switch to ON.)

Playback

1. Remove the attached jumper connector and connect the tape deck LINE-OUTPUT jacks to the input jacks of the Dolby adaptor.
2. Turn the FM 25 μ s switch to OFF and playback your Dolbyized recordings. See figure below (C).



OPERATING INSTRUCTIONS

SOUND INJECTION

1. MIC+TAPE SOUND

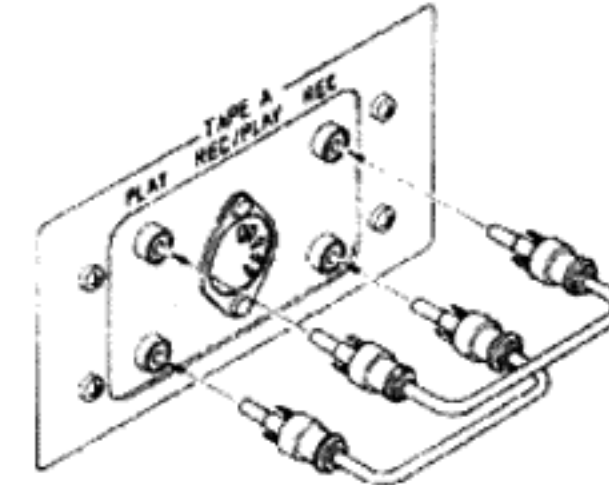
When it is desired to make a mixing recording of MIC and Tape Sound, first connect two tape decks to the TAPE A, TAPE B jacks on the rear panel and turn the SOUND INJECTION switch ON and set the DUBBING, MONITOR switch in accordance with the positions shown in table below, then you can enjoy various kinds of sound.

2. MIC+SOURCE SOUND

When it is desired to make a mixing recording of MIC and Source Sound (selected by the Selector switch), procedures are as follows.

- 1) Set the SOUND INJECTION switch to ON.
- 2) Short-circuit TAPE A's REC and PLAY jacks with short-plugs supplied with this unit (see Figure right). Inevitably a Tape Deck can not be connected to the TAPE A jacks. Mixing level can be adjusted by the MIX LEVEL control. Be sure to set the TAPE DUBBING switch to A ▶ B in this case.
- 3) Mixing recording can be made in the Tape Deck connected to the TAPE B jacks.

- 4) In this way, TAPE MONITOR switch to:
 - "SOURCE" The sound from speaker is MIC only.
 - "A" Mixing of MIC and source.
 - "B" Play back of TAPE B.



Connect the short-plugs supplied with this unit to the PLAY and REC jacks of "TAPE A" when it is desired to make MIC mixing (MIC and SOURCE selected by the SELECTOR switch).

SOUND INJECTION SWITCH	DUBBING SWITCH POSITION	MONITOR SWITCH POSITION	SPEAKER SOUND	SOUND FROM TAPE A "REC" JACKS	SOUND FROM TAPE B "REC" JACKS	REFERENCE	
"ON"	"SOURCE"	"SOURCE"	MIC ONLY	SOUND SELECTED BY SELECTOR	SOUND SELECTED BY SELECTOR	MIXING VOLUME INOPERATED	
		"A"	MIC AND TAPE A	SOUND SELECTED BY SELECTOR	SOUND SELECTED BY SELECTOR		
		"B"	TAPE B	SOUND SELECTED BY SELECTOR	SOUND SELECTED BY SELECTOR		
	"A ▶ B"	"SOURCE"	MIC ONLY	MIC ONLY	SOUND SELECTED BY SELECTOR	MIC AND TAPE A	
		"A"	MIC AND TAPE A	MIC AND TAPE A	SOUND SELECTED BY SELECTOR	MIC AND TAPE A	
		"B"	TAPE B	MIC AND TAPE A	SOUND SELECTED BY SELECTOR	MIC AND TAPE A	
	"B ▶ A"	"SOURCE"	MIC ONLY	MIC ONLY	TAPE B	SOUND SELECTED BY SELECTOR	
		"A"	MIC AND TAPE A	MIC AND TAPE A	TAPE B	SOUND SELECTED BY SELECTOR	
		"B"	TAPE B	TAPE B	TAPE B	SOUND SELECTED BY SELECTOR	

TROUBLE SHOOTING

In initially installing this receiver, improper connections may result in one of the following indications of trouble. Their possible causes and corrective measures are listed below to facilitate installation.

INDICATIONS

Occurs Only During AM Reception	Cause	Correction
Continuous low frequency buzz. Most noticeable at night on weak signal stations.	<ul style="list-style-type: none"> Interference from electrical appliances or atmospherics. 	Erecting a 10 meter outdoor antenna and securing good ground conditions should reduce interference considerably. Complete elimination is difficult.
Continuous high frequency whine which increases at night.	<ul style="list-style-type: none"> TV interference. 10 kHz beat interference from adjacent AM station. 	Turn TV off. (Neighboring TV set may also be cause) Impossible to eliminate from receiver side. This is one disadvantage of the AM broadcast system. Use High Filter to cut off high frequency interference.
Intermittent buzzing or sharp crackling noise.	<ul style="list-style-type: none"> Lightening interference. Interference from fluorescent lamps. AC Plug Connection. 	Occurs when lamps are on and cannot be helped. Try reversing AC plug connections. Occurs only on certain stations due to high voltage power line and cannot be helped in many areas.
Occurs Only During FM Reception	Cause	Correction
Continuous hiss or buzzing interference with broadcast. Becomes louder during stereo.	<ul style="list-style-type: none"> Incoming signal too weak at ANT terminal. 	Erect outdoor FM antenna if only indoor T-type is used. A 5 or 7 element antenna is necessary if you are located at a considerable distance from the broadcasting station.
Occasional sharp buzzing or crackling noise.	<ul style="list-style-type: none"> Automobile ignition-noise. More noticeable on weak signals. 	Erect outdoor FM antenna as far away from roads as practicable.
Weak right channel response when listening to LEFT only test FM Stereo broadcast.	<ul style="list-style-type: none"> Called crosstalk. a very slight response is normal. 	It is not a sign of trouble. It cannot be reduced to zero.
FM Automatic Circuit fails to respond to stereo broadcast.	<ul style="list-style-type: none"> Incoming signal is exceptionally weak. 	Erect an FM outdoor antenna.

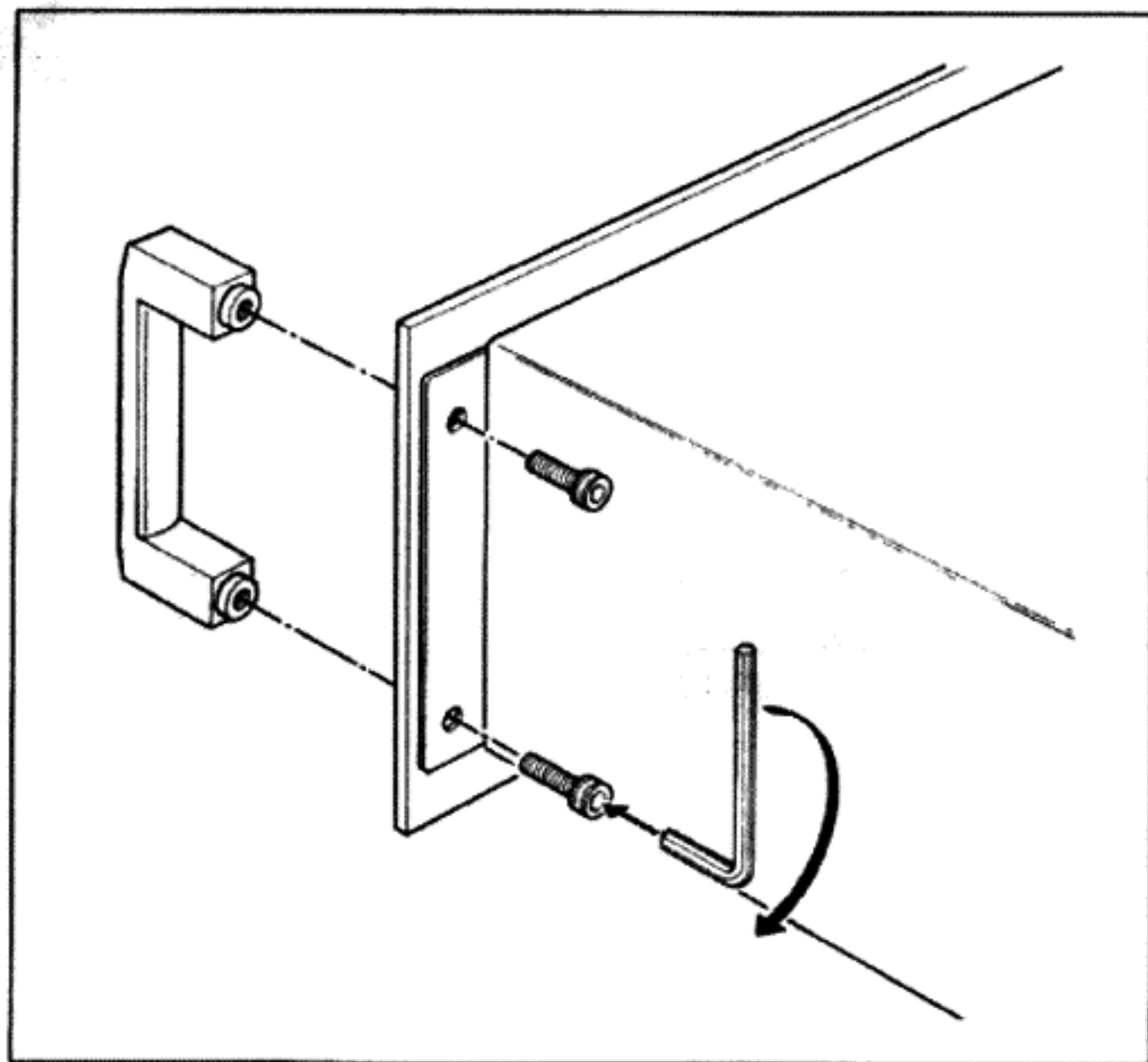
TROUBLE SHOOTING

INDICATIONS

During AM, FM or Record Playback	Cause	Correction
No illumination, no sound although Power is switched ON.	<ul style="list-style-type: none"> Poor AC plug connection. Blown fuse. 	<p>Check plug contact.</p> <p>Replace fuse. If it blows again, trouble must be corrected.</p>
No sound from LEFT and RIGHT.	<ul style="list-style-type: none"> SPEAKERS switch set to A + B position. Speaker cords disconnected. SPEAKERS switched to OFF. Volume Control (extreme left). TAPE MON switch at A or B position 	<p>A-B groups of speakers are required in this case for response from both sides.</p> <p>Check connections from amp output to speakers. SPEAKERS switch should be switched to OFF only when using stereo headphones.</p> <p>Set to appropriate volume level.</p> <p>Always set to SOURCE except when using tape decks.</p>
Sound only from one side.	<ul style="list-style-type: none"> Poor speaker cord connections. BALANCE control set to one extreme or other. 	<p>Check amp. output and speakers connections.</p> <p>Adjust BALANCE control.</p>
Noise when AC is switched ON or when volume is adjusted immediately after.	<ul style="list-style-type: none"> Insufficient circuit warmup. 	<p>Allow 2 ~ 3 second interval after switching AC ON, before manipulating volume control.</p>
Unbalance results when volume is lowered.	<ul style="list-style-type: none"> LEFT RIGHT resistor values unbalanced. 	<p>Adjust BALANCE control.</p>
Difference in volume level of radio and phono.	<ul style="list-style-type: none"> Difference in received signal and phono output levels. 	<p>Set to appropriate volume level.</p>
During Phono Record Playbacks Only	Cause	Correction
No sound from LEFT and RIGHT, or sound only from one side.	<ul style="list-style-type: none"> Turntable output disconnected. 	<p>See that turntable output cord is firmly plugged into amp. input.</p>
Loud hum drowns out sound.	<ul style="list-style-type: none"> Poor turntable output cord prong connections. 	<p>See that turntable output cord is firmly plugged into amp. input.</p>
Sound audible but background hum occurs.	<ul style="list-style-type: none"> Turntable output cord picking up hum from AC cord Turntable not grounded. 	<p>Keep turntable output cord away from AC cords. Choose cord paths which keep hum at a minimum. Twist LEFT RIGHT turntable output cords together. Reverse turntable AC plug connections. Connect ground wire to GND terminal.</p>
Sound audible but continuous background buzz interference.	<ul style="list-style-type: none"> TV signal picked up by Turntable output cord. Frequency occurs near TV transmitting antenna. 	<p>Route turntable cord so that hum is minimized.</p>
Howling noise occurs when volume is raised or bass response is increased.	<ul style="list-style-type: none"> Speaker vibrations induce feedback in Pickup. 	<p>Increase distance between turntable and speakers. Choose speaker locations carefully. Remember, loose flooring induces howling.</p>

HANDSOMELY STYLED HANDLE

The accessory handles are provided with this unit. And the hex. wrench is also provided with this unit for attaching the handles, or for tightening its setscrews in the event it becomes loose. Be particularly careful not to scratch the front panel when employing the handles.



RATING

Power Consumption	820 watts at full power
Dimensions.....	W 22-27/32" (580mm)
	H 6-21/32" (169mm)
	D 16-17/32" (420mm)
Weight (Net)	52.9 lbs (24.0kg)