

LUXMAN

OWNER'S MANUAL

TP-114

Tuner Preamplifier System Remote Control Center

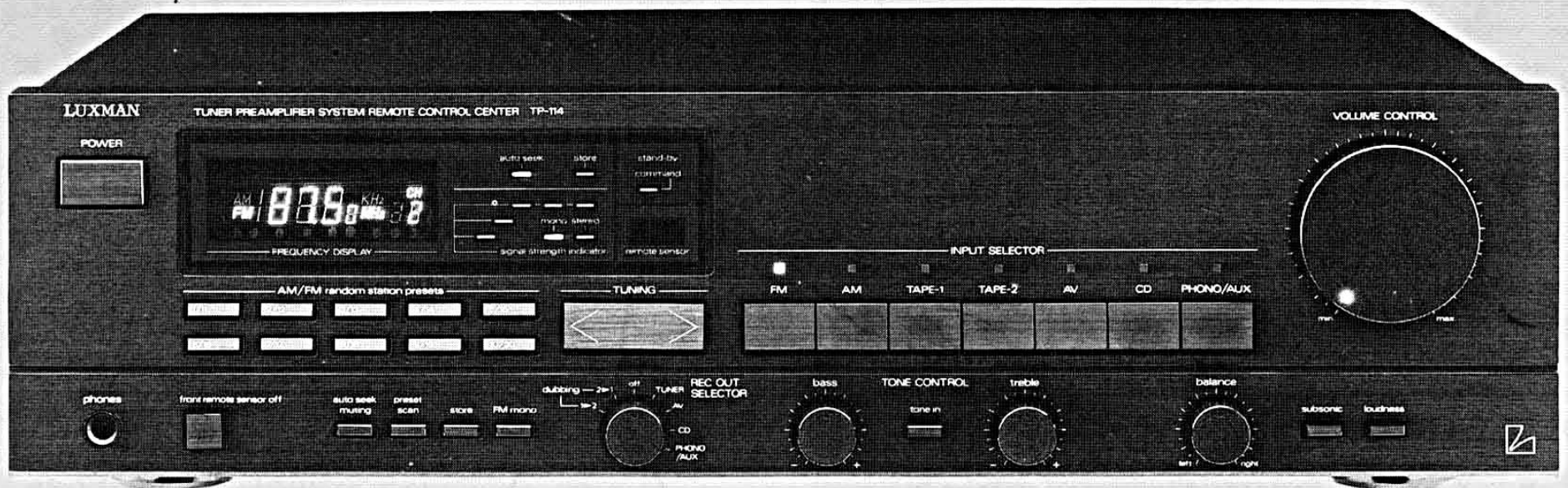


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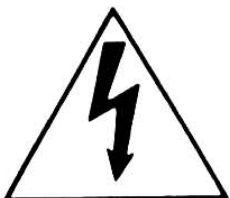
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WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

Note to the CATV system installer:

This reminder is provided to call the CATV system installer's attention to Article 820-22 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

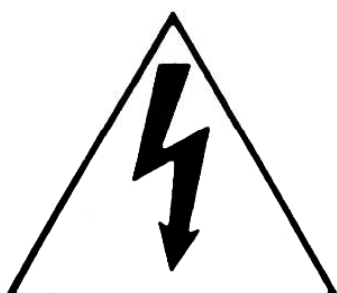
CAUTION: To prevent electric shock, do not use this (polarized) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.



The lightning-flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
CAUTIONS: TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT REMOVE COVER (OR BACK) NO USER-SERVICEABLE PARTS INSIDE, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



INTRODUCTION

WELCOME!

At Luxman, Ultimate Fidelity is a goal we consider most important. Your purchase of this component has told us you feel the same. We take great pride in the long tradition of excellence in sonic quality that the Luxman name represents. Now, as part of that tradition, we welcome you to the growing number of discerning audiophiles who own and operate Luxman products. This manual has been prepared to help you to maximize your enjoyment of the outstanding performance and features of your new Luxman TP-114.

This Tuner Preamplifier Remote Control Center incorporates an unusual combination of preamp and tuner functions along with a highly flexible multi-room single zone remote control system. 20 FM/AM random station presets, full system remote control, remote room sensor inputs, repeater output, motor driven volume control, fixed and variable pre-out jacks, high sonic quality design.... are examples of its many special features.

To realize the exceptional performance for which this tuner preamplifier is capable, it is necessary that all signal sources, power amplifier and speaker systems used with it are of the highest sonic quality. We recommend complementary Luxman components wherever possible.

Please study this manual carefully and become acquainted with all the special features, operation and capabilities of your new Luxman TP-114. Should you have any questions or desire information on other Luxman products, please contact your local Luxman dealer or call LUXMAN INFORMATION direct at 1-800-4-LUXMAN.

WHEN YOU OPEN THE BOX

Before any Luxman product leaves the factory it is carefully inspected for physical imperfections as a routine part of Luxman's systematic quality control. This, along with full electrical testing, should insure quality craftsmanship and performance. After you have unpacked the unit, inspect it for any physical damage. Save the shipping carton and all packing materials, as they are essential to reduce to a minimum the possibility of transportation damage, should the product ever need to be shipped again. In the unlikely event that damage has occurred, notify your dealer immediately and request the name of the carrier so that a written claim to cover shipping damages can be initiated.

THE RIGHT TO ANY CLAIM AGAINST A PUBLIC CARRIER CAN BE FORFEITED IF THE CARRIER IS NOT NOTIFIED PROMPTLY AND IF THE SHIPPING CARTON AND PACKING MATERIAL ARE NOT AVAILABLE FOR INSPECTION. SAVE ALL PACKING MATERIALS UNTIL THE CLAIM HAS BEEN SETTLED.

INSTALLATION AND PLACEMENT

Because some heat is generated by the Luxman TP-114, adequate air circulation must be provided to maintain cool operation. Leave adequate space around the unit (at least 3 inches on the top and 1 inch on the sides and rear) for proper air circulation. Also, the Luxman TP-114 should not be completely enclosed with other heat producing components. If the Luxman TP-114 is going to be mounted in an enclosed cabinet, it is recommended that the rear of the cabinet have vents to allow air to circulate around the unit. With these considerations implemented, the Luxman TP-114 should provide exceptional performance in any reasonable environment.

Of course, such normal considerations as protection from excessive dust and moisture should always be observed. The Luxman TP-114 receiver has been carefully designed with high quality components so that long-term undiminished performance may be expected when it is operated in accordance with the instructions provided.

SAFETY INSTRUCTIONS

1. Read Instructions

All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Heed Warnings

All warnings on the appliance and in the operating instructions should be adhered to.

4. Follow Instructions

All operating and use instructions should be followed.

5. Water and Moisture

The appliance should not be used near water—for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.

6. Carts and Stands

The appliance should be used only with a cart or stand that is recommended by the manufacturer.



S3125A

An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting

The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.

8. Ventilation

The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. Heat

The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

10. Power Sources

The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11. Grounding or Polarization

Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

12. Power-Cord Protection

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

13. Protective Attachment Plug

The appliance is equipped with an attachment plug having overload protection. This is a safety feature. See Instruction Manual for replacement or resetting of protective device. If replacement of the plug is required, be sure the service technician has used a replacement plug specified by the manufacturer that has the same overload protection as the original plug.

14. Cleaning

The appliance should be cleaned only as recommended by the manufacturer.

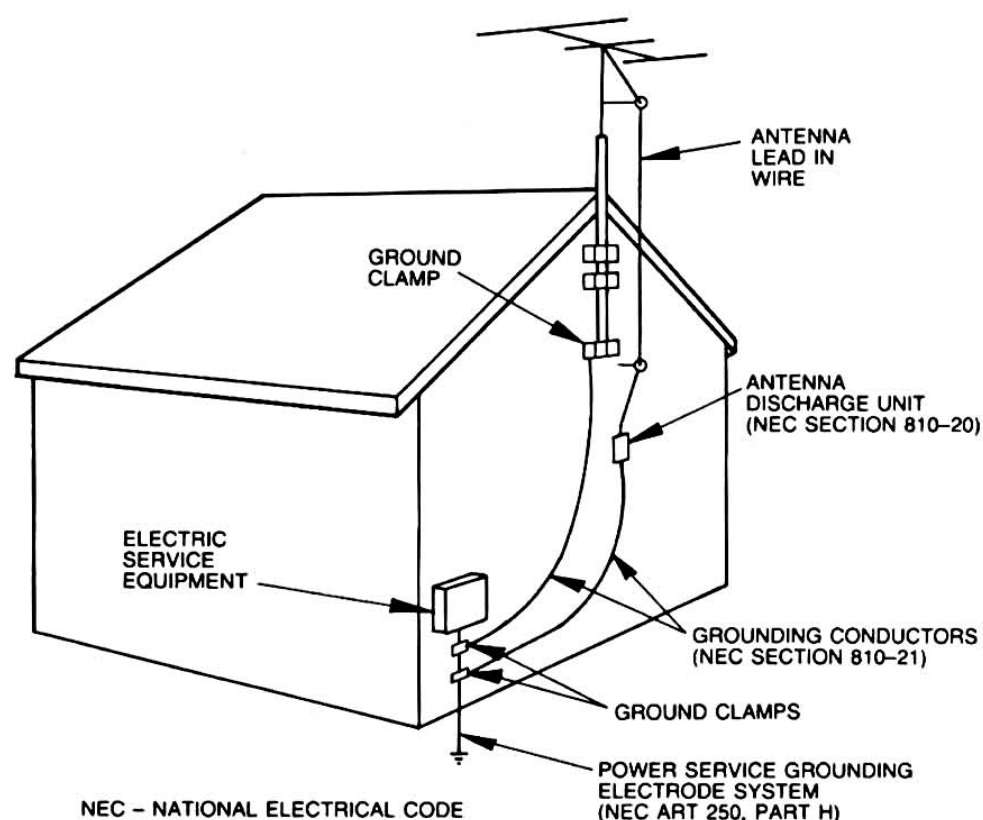
15. Power Lines

An outdoor antenna should be located away from power lines.

16. Outdoor Antenna Grounding

If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70—1984, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See below.

FIGURE 75.1
EXAMPLE OF ANTENNA GROUNDING AS PER
NATIONAL ELECTRICAL CODE



NEC - NATIONAL ELECTRICAL CODE

S2898A

17. Nonuse Periods

The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

18. Object and Liquid Entry

Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

19. Damage Requiring Service

The appliance should be serviced by qualified service personnel when:

- The power-supply cord or the plug has been damaged; or
- Objects have fallen, or liquid has been spilled into the appliance; or
- The appliance has been exposed to rain; or
- The appliance does not appear to operate normally or exhibits a marked change in performance; or
- The appliance has been dropped, or the enclosure damaged.

20. Servicing

The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

SPECIAL FEATURES

The TP-114 employs some of the most refined technology available to achieve high sonic purity and remote control multi-room operational flexibility. Examples are as follows:

EXTERNAL REMOTE SENSOR INPUTS

These three "F" connectors permit the new Luxman RC-501 sensor eyes to be connected directly to the TP-114 via standard RG-59 or RG-6 co-ax cable (without the need of an RC-502 adapter) for remote room remote control applications.

REPEATER OUTPUT

This repeater output jack, when used with an RC-503 IR repeater unit, will permit control of non Luxman units, such as a VCR, through the TP-114 remote system.

FIXED LEVEL PRE-OUT JACKS

These jacks provide a fixed output level that is independent of the volume control. Their purpose is to drive external power amplifiers in multi-room applications. They permit the input gain controls on external amplifiers to be preset so that a constant level can be fed down speaker lines to speaker volume controls in remote rooms.

MULTI-FUNCTION REMOTE CONTROL

This unified infrared unit (RR-114a) will control a Luxman CD player or CD changer and a cassette deck in addition to the tuner/preamplifier functions and will work with Luxman's multi-room remote systems. Remote control serial and parallel connection jacks for these devices are located on the rear panel of the preamplifier.

SIGNAL PROCESSOR JACKS

Surround sound processors or other desired signal processing equipment may be connected into the TP-114 signal path with these jacks.

PHONO/AUX SWITCH (rear panel)

If a phono turntable is not required in the system, this switch allows the phono jacks to be used as an additional set of high level inputs.

20 RANDOM-ACCESS AM/FM STATION MEMORIES

A total of 20 AM and/or FM stations can be memorized in any random pattern. Any station can be instantly recalled by touching the appropriate random station preset button without any need to change the AM or FM INPUT SELECTOR, and the 20 stations can be scanned by local or remote control.

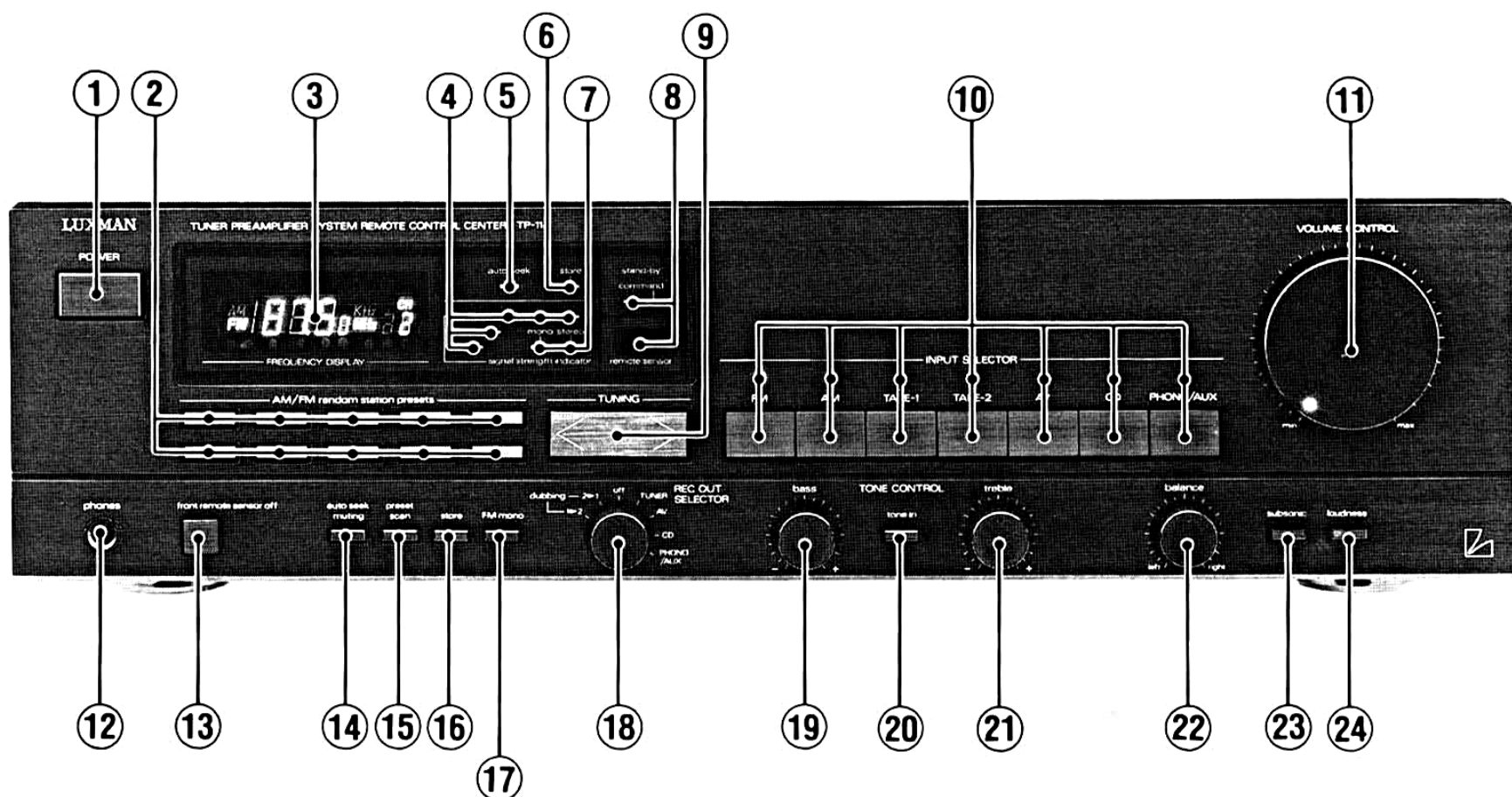
CABLE-READY FM FINE TUNING

Some cable distribution systems providing FM service shift FM station frequencies by 50 kHz increments to avoid interference with other cable channels. A switch located inside the TP-114 allows this receiver to be precision-tuned to the exact frequencies of these cable-carried stations. (See page 14 for details).

AUTO-SEEK FM/AM TUNING

Allows automatic tuning of all stations (except weak stations below the muting level) on a station-by-station basis. This eliminates the tedium of manually fine tuning every station.

CONTROLS & SWITCHES—FRONT PANEL



1. POWER Button

Pressing this button turns the unit on, along with other equipment that may be plugged into the rear panel switched AC outlets.

2. AM/FM RANDOM STATION PRESETS

A total of 20 AM and/or FM stations may be placed into memory in any random order and recalled for instant play, with these buttons.

A station represented by the first number on the button is accessed by pressing it for less than 1 second. Holding the button longer will access the 2nd number (station) on the button.

Each station preset number selected will appear in the digital display area just under the letters "CH".

3. DISPLAY

This display window shows the frequency of tuned AM and FM stations. In addition, the station pre-set number, currently selected from memory, is displayed to the right of the station frequency.

4. SIGNAL STRENGTH Indicators

Five LED indicators will light upward and to the right with increasing strength of AM or FM stations tuned.

5. AUTO SEEK Indicator

Will light up to show that AUTO SEEK MUTING has been selected (see item #14).

6. STORE Indicator

Lights up when the store button (item #16) is pressed.

7. MONO/STEREO Indicators

These will light up to show FM stereo or FM mono operation, as selected by the FM mono button (see item #17).

8. REMOTE SENSOR and STANDBY COMMAND Indicator

When using the hand held remote control, it must be pointed toward this sensor to activate operational functions. The "standby command indicator" will blink to show when the remote signal is actually received.

It will also light up when the power button is turned off to show that the remote system is ready to receive a power ON command.

9. TUNING Button (< >)

Allows manual up/down tuning and initiates auto tuning in the AUTO SEEK mode (see item #14).

10. INPUT SELECTOR Buttons/Indicators

Press one of these buttons to select any one of seven sources; FM, AM, TAPE-1, TAPE-2, AV, CD, and PHONO/AUX. A corresponding indicator will light up as each button is selected.

CONTROLS & SWITCHES—FRONT PANEL

11. VOLUME CONTROL

Allows precision, low noise adjustment of volume level, both manually and by remote control. It is recommended that the volume control be set to a low position prior to power turn on and when switching between sources.

The red LED on the knob will blink when the VOLUME and MUTE buttons are operated on the RR-114a remote control.

NOTE: This control does not affect the output of the Fixed PRE-OUT jacks (item #42).

12. PHONES Jack

Connection of stereophonic headphones to this jack allows private listening. There is signal at the jack at all times.

13. FRONT PANEL REMOTE SENSOR OFF Button

When using the remote control unit, this button must be depressed to the "on (out)" position to activate the remote sensor on the front panel (item #8).

When placed in the depressed (in) position it allows use of an external RC-501 eye in the same room when connected to a remote sensor jack on the rear panel.

14. AUTO SEEK MUTING Button

Press this button to turn the auto seek indicator ON (item #5). Auto seek tuning will now start with an up or down press of the TUNING button (item #9) and muting is also activated to suppress interstation noise.

Manual tuning returns and muting is removed when the auto seek indicator is OFF.

15. PRESET SCAN Button

When pressed, each station in memory will be scanned for a 5 second interval. To defeat, press this button again or one of the preset buttons.

16. STORE Button

Depressing this button will allow any tuned AM or FM station to be stored in any one of the 20 AM/FM RANDOM STATION PRESET locations (see also item #2).

The STORE indicator will light when this button is depressed.

17. FM MONO Button

This button selects either MONO or STEREO modes for FM listening. It works with the MONO/STEREO indicators (item #7).

18. REC OUT SELECTOR

This 7 position rotary switch selects any one of 4 sources, TUNER (FM or AM), AV, CD and PHONO/AUX, to be fed to the REC OUT jacks of both TAPE-1 and TAPE-2 for recording purposes. And two tape dubbing positions, 1 ► 2 and 2 ► 1, are selectable. All of these recording operations can be performed independently of any selected source that you may wish to listen to at the same time. In addition, select the off position when recordings or dubs are not being made.

19. BASS Control

This control will increase or decrease low frequency content in the program material. At the center detent position, a flat frequency response results.

20. TONE IN Button

When pressed to the IN position, the tone controls are activated. When in the OUT position, the tone circuits are completely bypassed, resulting in ruler-flat frequency response.

21. TREBLE Control

This control will increase or decrease high frequency content in the program material. At the center detent position, a flat frequency response results.

22. BALANCE Control

Adjusts for unequal volume level between channels. Normally, with today's high quality sources, it is seldom necessary to move this control from its precision center detent position.

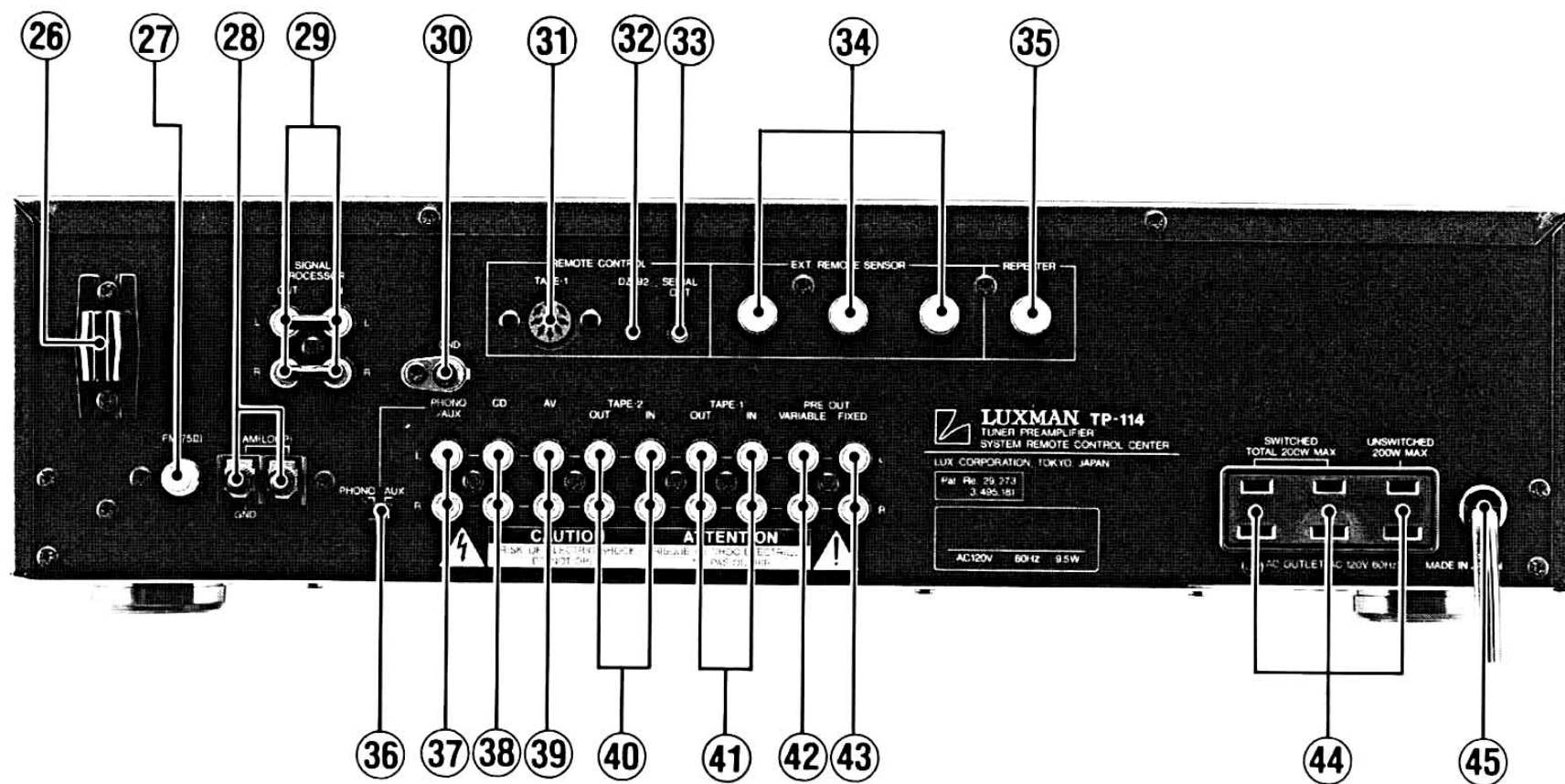
23. SUBSONIC Filter Button

When depressed, a subsonic filter suppresses very low frequency rumble, below the audible range, to prevent excessive woofer cone excursions and distortion.

24. LOUDNESS Button

Depressing this button introduces a moderate boost of the very low and high frequencies when the volume control is set below the half-way position. This compensates for the human ear's characteristic at low listening levels.

JACKS & TERMINALS—REAR PANEL

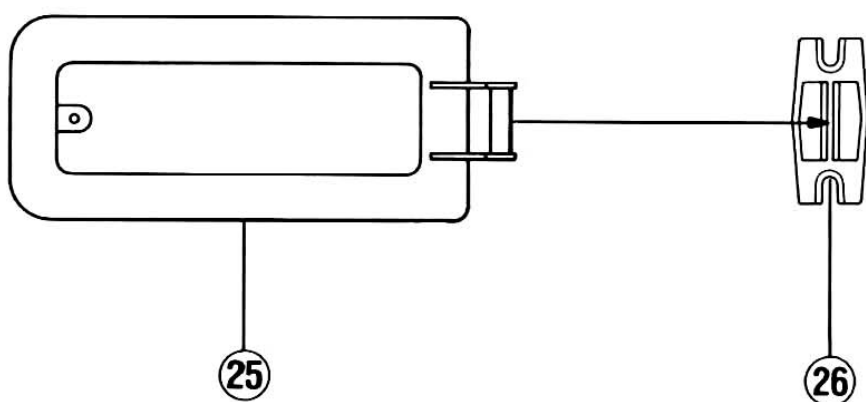


25. AM Loop Antenna

This antenna can be rotated on its holder (item #26) for maximum pick-up, or removed and placed elsewhere for best reception (within the limitation of its 23" lead length).

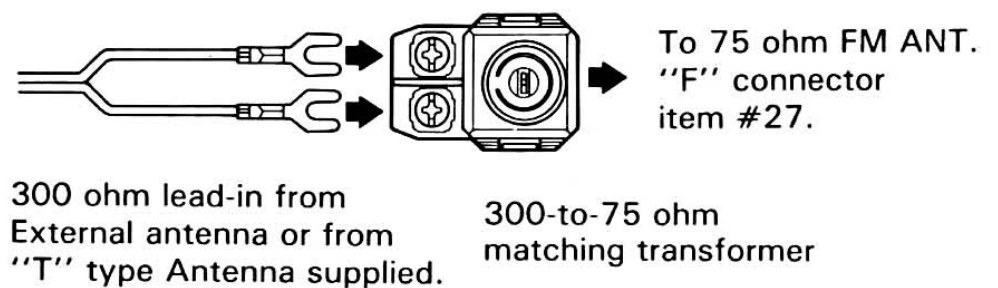
26. HOLDER-AM Antenna

This holder is designed for easy mounting or removal of the AM LOOP ANTENNA. Align mating surfaces carefully and install with a firm push.



27. 75 ohm FM Antenna "F" Connector

For connection of 75 ohm co-ax cable lead-in with "F" connector, or a 300 ohm lead-in used with the 300-to-75 ohm adapter supplied. See diagram following.



See also "CONNECTION DIAGRAM", page 10.

28. AM Loop Antenna Terminals

For connection of the leads of the AM LOOP ANTENNA (item #25) supplied with the TP-114.

29. SIGNAL PROCESSOR IN and OUT Jacks

For connection of a surround sound processor, an equalizer or other signal processor as desired.

NOTE: Jumper bars are factory installed in these jacks. They need to be removed when connecting a processor. Retain for possible future reuse.

30. GND Terminal

Connect the common (ground) lead of your phono turntable to this terminal.

JACKS & TERMINALS—REAR PANEL

31. CASSETTE DECK REMOTE DIN Jack for TAPE-1.

For unified system remote control using Luxman cassette decks, all controlled from the one hand held remote supplied with the TP-114.

32. DZ-92 REMOTE Jack

This special 2.5 mm mini phone jack permits System Remote Control operation with a later version of the Luxman DZ-92 CD player that has a Serial Remote IN jack.

A special cable, included with the TP-114, having a 2.5 mm mini phone plug on one end and a 3.5 mm plug on the other, is required to make this Serial Remote connection.

33. SERIAL REMOTE OUT Jack

For connection of Luxman's serial "Daisy Chain" unified remote control system, using Luxman models D-111, D-112, D-113, D-117, DZ-111, DZ-112, and future new models using the serial jacks system.

34. EXTERNAL REMOTE SENSOR Inputs

These "F" type co-ax connectors are for connection of Luxman's RC-501 remote room sensor "eyes". This permits remote control of a complete TP-114 system from other rooms.

35. REPEATER OUTPUT "F" Connector

For connection of Luxman's remote control command repeater, RC-503.

36. PHONO/AUX Switch

If a phono turntable is not required in the system, this switch allows the phono jacks to be used as an additional set of high level inputs. Move it to the AUX position for connection of an additional CD player, Tape deck, etc.

CAUTION: Be sure the volume control is set to minimum when setting this switch.

37. PHONO/AUX Jacks

A moving magnet (MM) type phono cartridge may be connected to these inputs. Also, they may be used as an additional set of high level inputs (see item #36).

38. CD Jacks

This set of jacks is for connection of a CD (compact disc) player. They may also be used for any other high level signal source.

39. AV Jacks

For playback of the **audio** tracks of a Laser/Video disc player, VCR, etc. Connect the audio line out jacks of such units to the AV jacks on the TP-114.

40. TAPE-2 OUT and IN Jacks

Connect a 2nd tape deck to these jacks in the same manner as item #41 below.

41. TAPE-1 OUT and IN Jacks

Connect the LINE IN and LINE OUT jacks of your audio tape deck to these OUT and IN (monitor) jacks respectively.

42. PRE-OUT Jacks (FIXED)

Connect these to the input jacks of external power amplifiers for multi-room applications. The output level is 300 mV fixed, referenced to 150 mV at the high level inputs.

43. PRE-OUT Jacks (VARIABLE)

Connect to the input jacks of external power amplifiers for multi-speaker or multi-room applications. The output level is controlled by the Volume Control (item #11) and by the remote control up/down buttons. The output level is 1 volt, referenced to 150 mV at the high level inputs, with the volume control at maximum.

44. AC OUTLETS

For convenient AC power connection of other audio and video components in your system, 2 SWITCHED outlets (total 200 Watts max.) and 1 UNSWITCHED outlet (200 Watts max.) are available. The wider opening of each outlet indicates the ground side of the polarized AC line.

45. AC POWER CORD

Insert the polarized plug of the TP-114 into any 120 Volt AC, 60 Hz wall outlet. The wider contact side of the plug is the ground side.

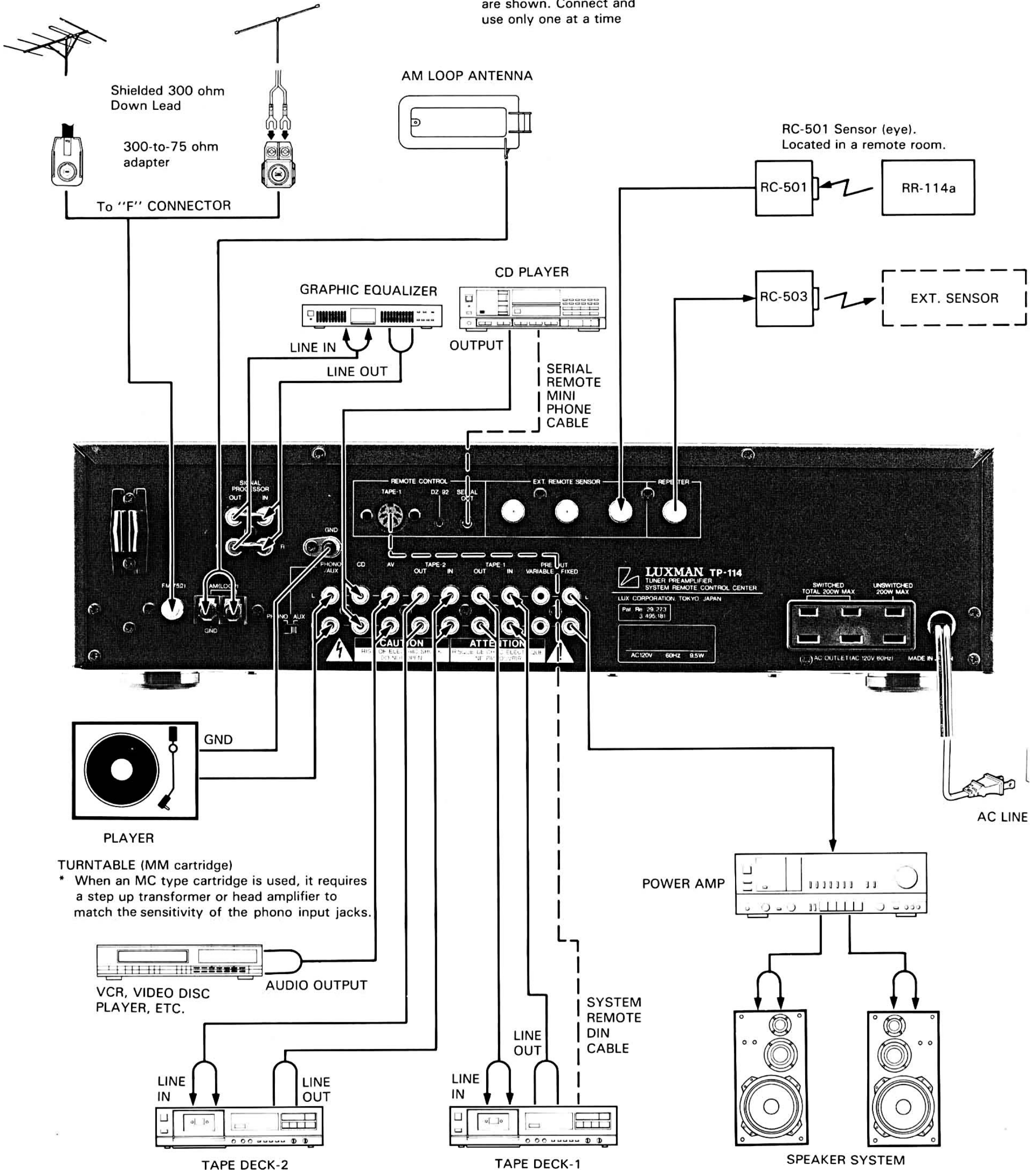
NOTE: See CONNECTION DIAGRAM, page 10, for typical connections to all jacks and terminals (item 25 through 43).

CONNECTION DIAGRAM

OUTDOOR FM ANTENNA
OPTION #1*

"T" TYPE FM ANTENNA (supplied)
OPTION #2*

*Note: 2 FM antenna options
are shown. Connect and
use only one at a time



CONNECTION GUIDELINES

BEFORE MAKING CONNECTIONS

It is always wise to ensure that all AC power cords of the various components that you are interconnecting are unplugged from the wall outlets during the hook-up process. This will prevent any inadvertent damage to your speakers or other equipment that could result from incorrect control settings or connections.

INTERCONNECTING LEADS (Patch Cords)

Be sure that left and right channel identification is correct when making interconnections. Most patch cords are color coded with RED ends for the right channel and BLACK or WHITE ends for the left channel, to make this job easier.

In addition, all jacks on the rear of the TP-114 have red centers for right channel and white for left channel.

CONNECTING THE RECORD PLAYER (TURNTABLE)

In addition to the audio lead connections, be sure to always connect the ground lead from the player to the GND terminal (item #30) on the TP-114.

CONNECTION OF AUDIO TAPE DECKS

One of the common problems in connecting tape decks is confusing the LINE IN and LINE OUT connections to the TP-114, resulting in no output even in the SOURCE modes. To prevent this, always connect the LINE OUT jacks of the deck to the IN (monitor) input jacks of the TP-114 and connect the LINE IN jacks of the deck to the OUT (record out) jacks on the TP-114.

SIGNAL PROCESSOR CONNECTIONS

Like tape decks, most of these types of equipment have LINE IN and LINE OUT jack identifications. Be sure the LINE IN and LINE OUT jacks of the signal processor are connected to the TP-114 SIGNAL PROCESSOR OUT and IN jacks respectively.

NOTE: Remove the jumper bars when you connect a signal processor to these jacks and retain them for possible future reuse.

USE OF FIXED LEVEL PRE-OUT JACKS

These jacks are primarily intended for the use of a multi-room system installer. They allow a constant level (not affected by the TP-114 volume control) to be applied to external power amplifiers so that in-

dependent speaker volume controls can be used in each remote room.

Be sure to use amplifiers, such as the Luxman M-113 and M-117, that have some means of adjusting gain levels at their inputs (for the M-113, set the input sensitivity switch to the 2 V position).

As a general rule, adjust the input level controls so that the amplifiers will always run below their maximum output clipping level. An oscilloscope should be used to verify the clipping level, in the system, with all speaker level controls and speakers connected. Use a variety of music selections and sources (CD, FM, Tape, etc.) and adjust so that there is no clipping on the highest peaks.

EXT. REMOTE SENSOR IN JACKS

These 3 jacks may be connected directly to Luxman RC-501 Infrared Remote Sensor "eyes", located in other rooms, via standard co-ax cable (RG-6 is recommended). This allows all remote functions to be controlled from other rooms as desired, or, in the same room if the TP-114 is placed behind closed cabinet doors.

Up to six RC-501's may be connected to the TP-114 if DC pass 2-way splitters (such as Gemini CV60's) are used at each sensor input.

REPEATER OUTPUT JACK

This repeater jack may be connected directly to a Luxman RC-503 IR repeater unit, also via standard co-ax cable. Remote control of non Luxman units, such as a VCR, may then take place through the TP-114 remote system.

AC OUTLET CONNECTIONS

These OUTLETS (item #44) may be used for power connection of most of the equipment used with your TP-114.

In general, connect your CD player and Graphic Equalizer to the SWITCHED outlets. Connect your Record Player (turntable), Cassette Deck, VCR, etc. to the UNSWITCHED outlet.

CAUTION: When connecting equipment to these outlets, be sure not to exceed their maximum power ratings of 200 Watts for the UNSWITCHED outlet and total 200 Watts for the SWITCHED outlets.

CONNECTION GUIDELINES

AM ANTENNA

An AM LOOP ANTENNA comes packed with your TP-114.

Carefully unwrap and mount to rear panel and connect leads referring to item #28 on page 8.

FM ANTENNA CONNECTIONS

Included also with your TP-114, is a T-type di-pole FM antenna. This type of antenna is simple and practical and will give adequate results in primary signal areas. To use it, unfold it into a "T" shape and connect its leads to the ADAPTER, and plug into "F" connector (item #27) on the rear of the TP-114 (see page 8). The antenna is designed to operate in a horizontal position, and may be attached to a nearby wall.

As shown, the TP-114 is also capable of accommodating other types of cable, including 75 ohm coaxial cable and 300 ohm shielded transmission line.

These types of cable are for use with outdoor antennas, which will be discussed next.

OUTDOOR FM ANTENNA

As stated before, the supplied folded dipole antenna will give satisfactory results in primary signal areas. However, if you are located in a fringe area where signals are weak, then an outdoor antenna will be necessary. Even if you live in a strong signal location, an outdoor directional antenna may be needed to eliminate "multipath" reflections.

Multipath reflections are responsible for much of the distortion and noise associated with poor FM reception.

They occur when radio waves from the transmitter bounce off of nearby mountains and tall buildings. The reflected waves follow different, more roundabout paths to your TP-114 and arrive slightly delayed and out of phase with the direct signal (hence, the term "multipath"). This causes distortion in the same manner that "ghost" images are generated on television.

The way to minimize multipath is to use a "beam type" antenna that can be aimed toward the FM transmitter and away from the multipath reflections. The best types of antennas to use are either a "Yagi" or "Log-Periodic" configuration with six or more elements designed expressly for FM reception.

If you want to receive stations from more than one general direction, then you will need a good quality antenna rotor system. This will enable you to point

the antenna in the direction giving the least multipath interference, by means of a control box located near the TP-114.

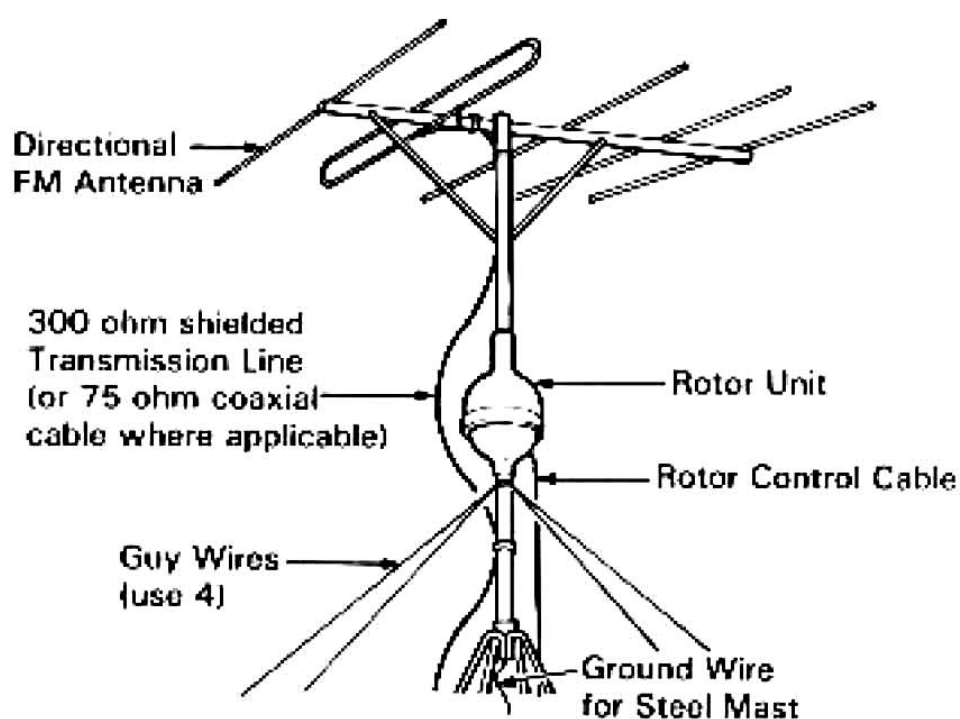
Another important factor is the type of lead-in wire to use. Unshielded lead-in wires, such as 300 ohm twin lead, can act as an omnidirectional antenna, and can cancel the directional benefits of your antenna. Therefore, we recommend using a balanced, shielded 300 ohm cable or a coaxial 75 ohm cable with a 300-to-75 ohm matching transformer at the antenna. These types of shielded cable effectively prevent the lead-in from contributing to multipath distortion.

If you decide to use 75 ohm coaxial cable, we recommend buying cable with "F" type connectors attached. These will fit both the matching transformer and the terminal on the TP-114 (see page 8).

It is considered good practice to connect the antenna mast to an earth ground, both for reasons of safety and noise reduction. If 300 ohm shielded cable is used, connect the shield to ground (GND) at the receiver end only (see page 8).

For rural areas, it is recommended to consult a local dealer about installation and lightning arrestor protection.

We don't recommend using master antenna systems, such as those found in apartment buildings. Such systems are usually designed expressly for television reception and frequently suppress or reduce the quality of the FM signals before distribution.



OPERATION GUIDELINES

The following guidelines assume that all connections have been made according to the "CONNECTION DIAGRAM", page 10.

POWER AND SOURCE SWITCHING

To prevent the possibility of excessive, sudden sound levels, it is recommended that the volume control be placed at a low level position each time the power button is turned on or when switching between sources by the INPUT SELECTOR.

TAPE RECORDING OPERATIONS

To make a tape recording of any source, proceed as follows:

- (1) Rotate the REC OUT SELECTOR switch to the source you wish to record.
- (2) The source signal will now be fed to the tape deck.
Follow the recording instructions for the tape deck in use.
- (3) If you have a 3 head deck, you can monitor the actual recording by depressing the corresponding TAPE-1 or TAPE-2 button on the TP-114 INPUT SELECTOR.

TAPE PLAYBACK

Playback from either tape deck can be heard by depressing the corresponding TAPE-1 or TAPE-2 button on the TP-114.

TAPE DUBBING

Tape copies can be made from TAPE-1 to TAPE-2 or from TAPE-2 to TAPE-1 as follows:

- (1) To dub from TAPE-1 to TAPE-2, rotate the REC OUT SELECTOR to the 1 ► 2 dubbing position.
- (2) Place tape deck 1 in the PLAY mode and deck 2 in the RECORD mode.
- (3) If deck 2 is a 3 head machine, actual monitoring of the recorded dub can take place by depressing TAPE-2 on the INPUT SELECTOR.
- (4) Similarly, to dub from TAPE-2 to TAPE-1, rotate the REC OUT SELECTOR to the 2 ► 1 dubbing position.
- (5) Follow steps (2) and (3) above except remember decks 1 and 2 are reversed.

SIGNAL PROCESSOR JACKS

When using this facility, the following factors should be kept in mind:

The effects of other functions, such as the TONE controls, LOUDNESS, SUBSONIC FILTER, etc., should always be considered relative to the operation of the external processor.

For instance, "double boosting" effects can occur with a connected equalizer, causing severe overload distortion, if both the equalizer and the tone controls are boosted together in the same frequency range.

FM/AM TUNER OPERATIONS

The TP-114 incorporates several tuning methods to provide ease, yet great flexibility in station selection and use. Proceed as follows:

MANUAL TUNING

- (1) Depress FM or AM INPUT SELECTOR button as desired.
- (2) Depress AUTO SEEK MUTING button to ensure that the AUTO SEEK indicator (item #5) is OFF.
- (3) Depress the FM mono button for stereo or mono as desired.
- (4) Depress the up > down < TUNING button as necessary to tune the desired station.
Tune for the maximum number of lighted LED's on the signal strength indicators.

NOTE: This button can be pressed in one step increments for fine tuning or held down continuously for rapid tuning.

AUTO SEEK TUNING

- (1) Depress AM or FM INPUT SELECTOR button as desired.
- (2) Depress AUTO SEEK MUTING button to ensure that AUTO SEEK indicator (item #5) is ON.
- (3) Depress the TUNING button in the direction desired to initiate auto seek tuning.
- (4) The receiver will now tune automatically in 10 kHz increments on AM and *100 kHz increments on FM, until a station is found.

NOTE: Due to interfering signals in some areas, it may be found that the tuner will stop at some points off station. If this occurs, simply activate AUTO SEEK again with the TUNING button.

OPERATION GUIDELINES

STATION MEMORY OPERATIONS

A total of 20 stations, in any combination of AM and FM stations, and in any random order, may be stored in the receiver's AM/FM RANDOM STATION MEMORY system.

STORE PROCEDURE

- (1) Select AM or FM as desired.
- (2) Tune desired stations using either MANUAL or AUTO SEEK tuning modes.
- (3) Press the STORE button followed immediately by an AM/FM random station preset button of your choice. Repeat for each station, FM or AM, that you wish to store.

NOTE: To store to preset numbers 1 through 10, press the desired preset button for less than 1 second. To select preset numbers 11 through 20, press the desired preset button for more than 1 second.

- (4) Each time STORE button is pressed, the STORE indicator (item #6) will light for 5 seconds or until a preset button is depressed.
- (5) Each time a preset is selected, the preset number will appear in the display.
- (6) To replace a station already in memory, simply tune the new desired station and repeat the above procedure.

PRESET SCAN

- (1) When PRESET SCAN button is depressed, from any tuner mode, each station previously stored in memory will automatically be tuned in for a 5 second interval.
- (2) To cancel, press the PRESET SCAN button again or a random station preset button.

STATION RECALL

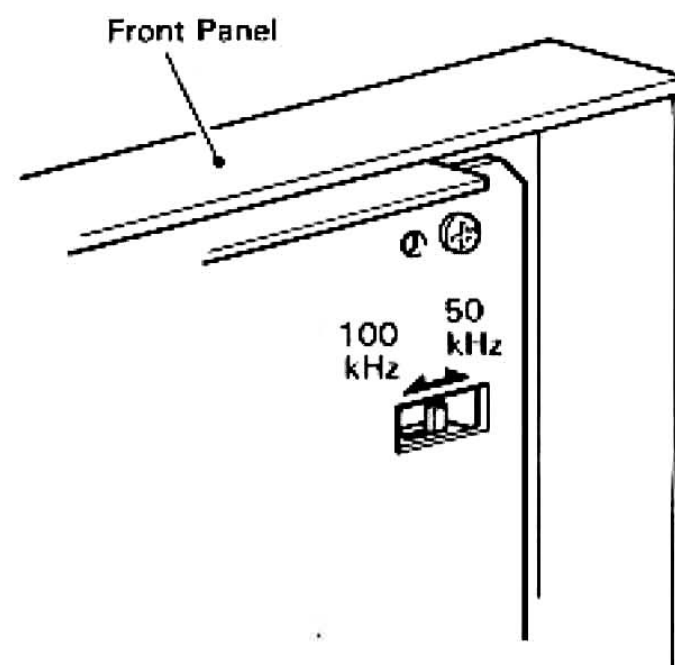
Stations stored can be recalled (played) instantly by pressing any preset button, selecting locations 1 through 10 and 11 through 20.

NOTE: To select preset numbers 1 through 10, press the desired preset button for less than 1 second. To select preset numbers 11 through 20, press the desired preset button for more than 1 second.

•50 kHz—100 kHz TUNING INCREMENT SWITCH

To tune FM stations on some cable systems, a 50 kHz tuning increment is required. The TP-114 is provided with an internal switch that allows either 50 or 100 kHz tuning increments and it is set to the 50 kHz position at the factory. This position is satisfactory for either cable or antenna systems and normally does not need to be changed. If you wish to use 100 kHz however, the change can be made by sliding the switch to the "100 K" position. See diagram below for switch location.

CAUTION: Since the top cover must be removed to gain access to this switch, hazardous voltage will be exposed. Refer this adjustment to your dealer or other qualified service personnel.



REMOTE CONTROL OPERATIONS

RR-114a HAND HELD REMOTE CONTROL UNIT

The RR-114a supplied with the TP-114 receiver, not only controls the TP-114 major functions but acts as a system unified remote for other Luxman connected components as well (that is a CD player and tape deck).

CONNECTIONS FOR LUXMAN'S SYSTEM REMOTE CONTROL

Referring to CONNECTION DIAGRAM page 10, connect each Luxman component to the rear panel of the TP-114. Make the audio connections, then connect the supplied remote DIN or serial remote cables to the respective DIN or serial remote jacks. If you connect each of the AC lines of these components to the SWITCHED AC OUTLETS (item #44) on the TP-114, then all units will turn on and off together when the POWER buttons (# 2) are activated on the RR-114a remote.

OPERATION GUIDELINES

REMOTE CONTROL BUTTONS AND FUNCTIONS

Each function selectable by remote operates in the same fashion as the front panel buttons on the TP-114, unless otherwise described here. In addition, all other system remote functions depend on the exclusive use of Luxman CD players and cassette decks.

1. TRANSMISSION WINDOW
2. POWER ON and OFF Buttons
3. INPUT SELECTOR Buttons
4. DIRECT ACCESS SELECT Buttons (1 through 10 and +10)

These buttons allow direct access to any track on a CD or to discs and tracks on a CD changer. They also allow direct access to the 20 AM/FM Random Station Presets when AM or FM is selected.

Proceed as follows:

- a) With a single disc player, press numbers 1 to 10 for direct access to desired track. For discs with more than 10 tracks, press +10 first, then the other numbers to choose desired track.
- b) With a CD changer, press DISC SELECT button (#13) first, then the desired disc number [1 to 6 or PLUS 1 (7)]. Next, press the button number(s) for desired track as in a) above.
- c) For direct access to station presets, press AM or FM button (#3) first. Then press buttons 1 to 10 for desired preset station (see also #2, page 6).

5. RECORD Buttons (●), (●)

Press both of these buttons together to place tape deck in Record mode. To defeat, press STOP button (#10) or ◀▶ buttons (#9). RECORD buttons work only when TAPE-1 (#3) is selected.

6. PLAY Button (▶)

Press for CD or Tape-1 play operation.

7. FORWARD/BACKWARD SKIP Buttons (◀▶, ▶▶)

These operate the same as the SKIP buttons on the front panel of the CD player.

8. PRESET SCAN Button (▶▶)

After AM or FM is selected (#3), press this button to activate PRESET SCAN (see #15, page 7). Scanning goes upward through the presets only.

NOTE: To step through the presets quickly, press the PRESET SCAN button at approx. 1 second intervals.

9. FAST FORWARD/BACKWARD Buttons (◀▶, ▶▶)

These operate the same as the scan buttons on CD player or FF/REW buttons on tape deck. On AM or FM, they operate tuning functions (see #14, page 7).

10. STOP Button (■)

Stops transport functions in CD and Tape-1 modes.

11. PAUSE Button (||)

Press for CD and Tape-1 pause. Activates reverse on Luxman K-105 & K-106 decks, except in Record mode. (On Luxman K-110 & K-110W, the first press pauses and the 2nd press changes tape direction. In Record mode, only pause operates.) To resume play or record operations, press the PLAY button.

12. RANDOM Button

Refer to owner's manual of CD changer for details.

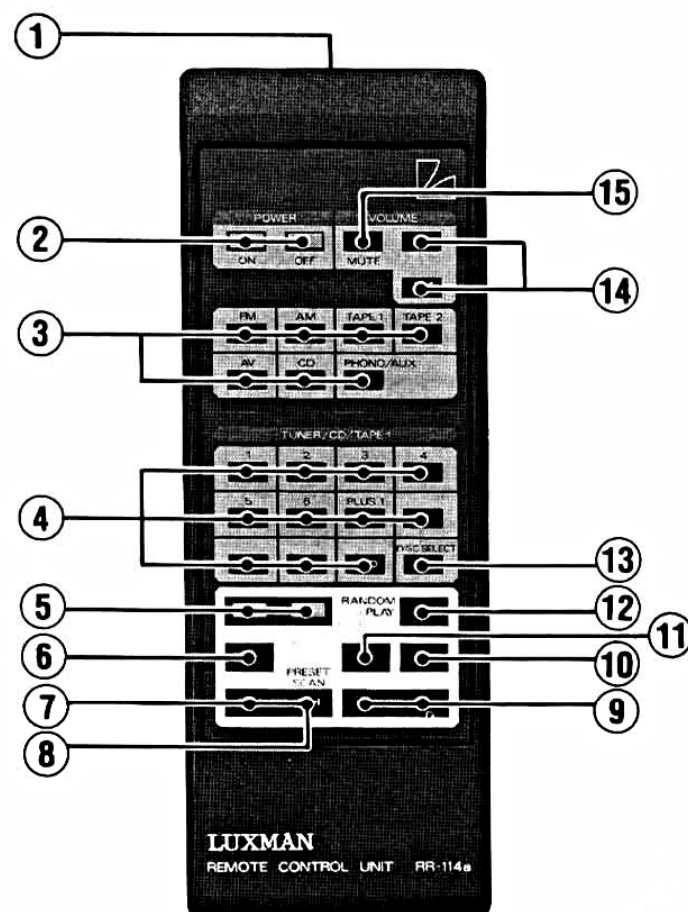
13. DISC SELECT Button

See #4 b) above for details and "SPECIAL NOTE" on page 16.

14. VOLUME Buttons (∨), (∧)

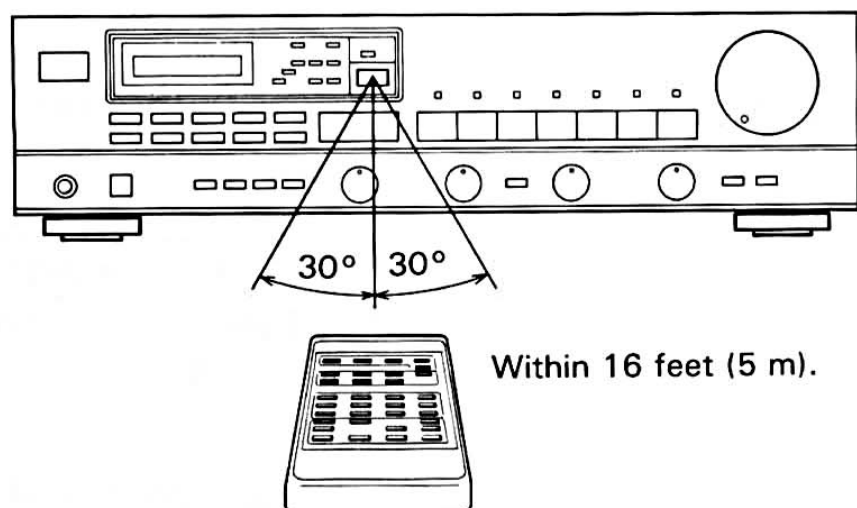
15. MUTE Button

Use for quick volume reduction (that is when answering the phone, etc). It releases with a 2nd press, or with VOLUME button operation (#14).



OPERATION GUIDELINES

OPERATION



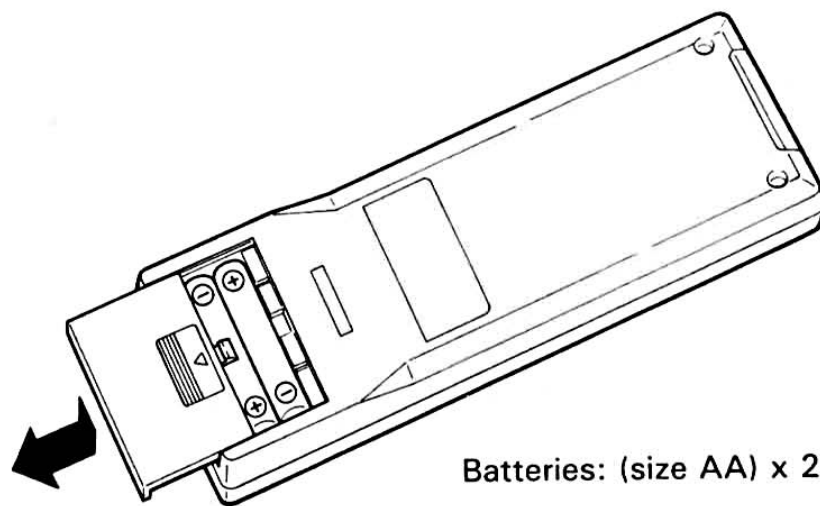
When aiming the RR-114a, stay within the above basic dimensional area for reliable operation.

SPECIAL NOTE

When using the RR-114a remote in an TP-114 system that includes a single disc Luxman CD player, the Disc Select button should not be pressed. Doing so, will, in some cases, inhibit operation of the CD functions. If this should occur unintentionally, simply repress the CD Input Selector button to restore full operation.

BATTERY REPLACEMENT

1. Open the battery compartment cover on the rear of the remote control unit. The cover should open easily if you press on it with your thumb and slide it in the direction of the arrow.



2. Place two "AA" size dry batteries in the battery compartment in accordance with the diagram in the compartment, then replace the cover.

Incorrect use of batteries may lead to leakage or rupture. Be sure to follow these guidelines:

- A. Always insert batteries into the battery compartment correctly matching the positive (+) and negative (-) polarities as shown in the diagram inside the compartment.
- B. Never mix new and used batteries together.
- C. Both rechargeable and non-rechargeable batteries are available. Be sure to use your batteries in accordance with the instructions provided on the cells.

CARE & MAINTENANCE

CLEANING

The durable finish of the knobs and heavy aluminum front panel will last indefinitely with proper care and cleaning. Never use scouring pads, steel wool, scouring powders, or harsh chemical agents, such as lye solution. These will mar the finish. Clean with a soft, lint-free cloth or cotton swab slightly dampened with a mild solution of detergent and water.

REPACKING FOR SHIPMENT

Should it become necessary to ship your TP-114 for any reason, use the original packing materials. If these are no longer available, be sure that adequate materials, at least equivalent to the original, are used.

REPAIRS

Only the most competent and qualified service technicians should be allowed to service the TP-114. The Luxman company and its factory-trained warranty station personnel have the knowledge and special equipment needed for repair and calibration of this precision instrument.

In the event of difficulty, call the toll free telephone number listed on the Warranty to obtain the name and address of the Luxman Authorized Service Station nearest your home or business. In many cases, the dealer where you purchased your Luxman unit will be equipped to provide service.

IN CASE OF DIFFICULTY

If you encounter a problem, please review the items in the following checklist. Also, be sure to thoroughly check other connected components, such as power

amplifier, speakers, turntable, CD player, cassette deck, equalizer, etc.

PROBLEM	PROBABLE CAUSE AND SOLUTION
Power Does Not Come On.	<ul style="list-style-type: none"> • Check AC power cord to ensure good connection at AC outlet.
No Output.	<ul style="list-style-type: none"> • Incorrect input selected. Check input leads on rear panel (be sure they match input selected). • Line inputs and outputs of a connected tape deck are reversed. • SIGNAL PROCESSOR jumper bars are removed (item #29). Replace if no signal processor is connected. If one is connected, turn it on and follow its owner's manual for correct operation.
No Record Signal.	<ul style="list-style-type: none"> • Incorrect setting of REC OUT SELECTOR.
No Sound on Tuner.	<ul style="list-style-type: none"> • AM or FM Antennas not connected or defective cable leads. • AUTO SEEK MUTING is ON in a weak signal area. Improve antenna and/or place AUTO SEEK MUTING in OFF mode.
Some FM stations Do Not Tune on Cable System.	<ul style="list-style-type: none"> • Set switch inside of unit (see page 14) to the 50 kHz incremental tuning position.
FM Sound Distorted. FM Interference.	<ul style="list-style-type: none"> • Rotate FM antenna, both indoor and outdoor types for cleanest sound (lowest multi-path interference), see page 12. • Use outdoor FM antenna if in weak reception area (see page 12).
AM Reception Poor.	<ul style="list-style-type: none"> • Rotate AM Loop Antenna on rear panel for best pick-up. • If necessary, remove Loop Antenna from rear mount any try a different location (within limits of 23" lead length, see item #26). • Determine if other appliances, TV's, fluorescent lights, CD's, computers, etc. are causing interference.
Remote control(s) inoperative	<ul style="list-style-type: none"> • Outside of remote control range of operation. Refer to page 16. • Some obstacle between remote control unit and the main unit. Make changes as necessary. • If using the front panel sensor on the TP-114 be sure the front panel sensor switch is set to the ON (out) position. • Check remote eye (RC-501) position. Keep out of direct sunlight or away from other strong light sources. • Weak batteries. Replace with same size "AA" type. See page 16.
CD functions do not operate.	<ul style="list-style-type: none"> • Disc Select button on remote may have been pressed when using single disc CD players. Simply press CD Input Selector button again to restore all CD functions.
Display freezes or other functions do not operate.	<ul style="list-style-type: none"> • Unplug power cord from wall outlet and replug after 30 seconds.

SPECIFICATIONS

AUDIO SECTION

Output Voltage

Rated (VARIABLE)	1.0 V
(FIXED)	300 mV
Max	8 V

Total Harmonic Distortion (VARIABLE):

AT 2 V Output 20 Hz to 20 kHz	0.007%
AT 8 V Output; 1 kHz	0.007%

IM Distortion (SMPTE; VARIABLE):

AT 2 V Out	0.005%
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Input Sensitivity/Impedance:

Phono (MM)	2.5 mV/47 k Ω
CD, Tape, AUX, AV	150 mV/47 k Ω

Input Overload:

Phono (MM)	150 mV
CD, Tape, AUX, AV	9 V

Signal-to-Noise Ratio (re 2 V Out, IHF-A):

Phono (MM)	82 dB (re 5 mV)
CD, Tape, AUX, AV	100 dB (re 0.5 V)

Frequency Response:

Phono	RIAA, 20 Hz to 20 kHz (± 0.5 dB)
CD, Tape, AUX, AV	3 Hz to 180 kHz (± 3.0 dB)

Tone Control Range:

Bass	± 10 dB at 100 Hz
Treble	± 10 dB at 10 kHz

Subsonic Filter:

Turnover Freq	18 Hz
Slope	-6 dB/octave

Loudness Compensation	+6 dB (at 100 Hz)
	+4 dB (at 10 kHz)

FM TUNER SECTION

Tuning Range	87.5 to 108.0 MHz
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Usable Sensitivity (IHF, 98.1 MHz):

Mono	10.8 dBf
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50 dB Quieting Sensitivity (98.1 MHz):

Mono	14.0 dBf
Stereo	38.0 dBf

S/N Ratio (IHF "A"):

Mono	80 dB
Stereo	74 dB

Total Harmonic Distortion (98.1 MHz):

Mono, 1 kHz	0.15%
Stereo, 1 kHz	0.20%

Stereo Separation (98.1 MHz)

1 kHz	47 dB
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Alternate Channel Selectivity	65 dB
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Capture Ratio (at 45 dBf)	1.5 dB
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Image Rejection (at 106.1 MHz)	45 dB
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Spurious Response Rejection	80 dB
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Frequency Response (30 Hz to 15 kHz)	-1.0 dB
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AM TUNER SECTION

Tuning Range	520 to 1,710 kHz
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Usable Sensitivity (1,000 kHz)	600 μ V/m
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S/N Ratio (1,000 kHz, 100 mV)	50 dB
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Total Harmonic Distortion (30% Mod.)	0.2%
--------------------------------------------	------

Image Rejection (1,400 kHz)	40 dB
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Selectivity (± 10 kHz)	30 dB
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IF Rejection	50 dB
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GENERAL

Power Supply	AC 120 V/60 Hz
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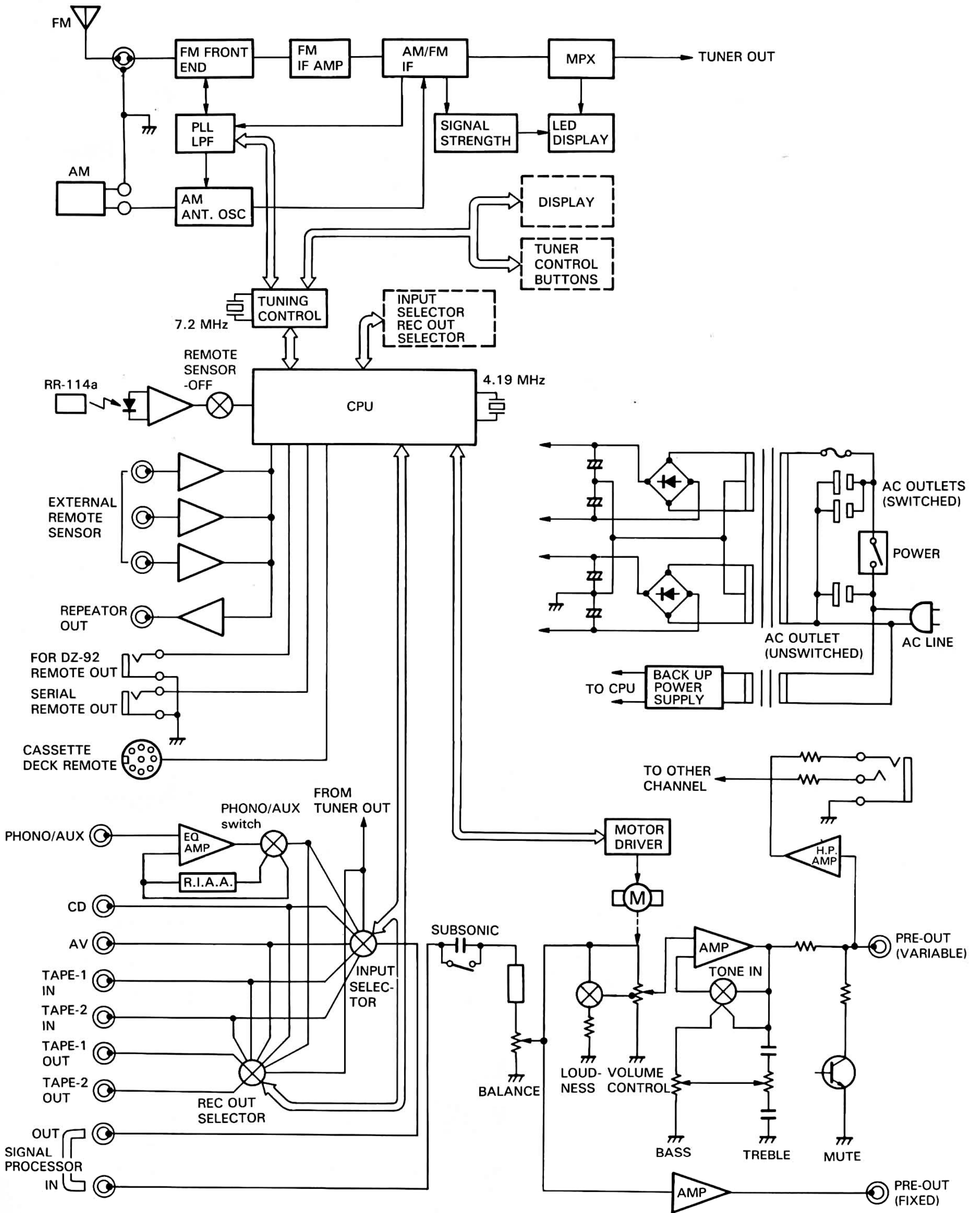
Power Consumption	9.5 W
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Dimensions	17-1/4" (W) \times 4-3/8" (H) \times 13" (D)
	438 mm (W) \times 123 mm (H) \times 369 mm (D)

Weight	(Net) 11.0 lbs. (5.0 kg)
	(Gross) 14.5 lbs. (6.6 kg)

Design and specifications are subject to change without notice.

BLOCK DIAGRAM





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