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# YAMAHA KX-55

*Natural Sound Stereo Cassette Deck  
Yamaha Music Search System  
Yamaha Auto Function System Compatibility  
Timer-Controlled Recording/Playback Capability  
Compact Design with Sensor-Touch Controls*



## OWNER'S MANUAL

*Thank you for purchasing the YAMAHA KX-55 stereo cassette deck.*

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### IMPORTANT

Please record the serial number of your unit in the space below.

Model: KX-55

Serial No.:

The serial number is located on the rear of the cabinet.  
Retain this Owner's Manual in a safe place for future reference.

### WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

## CAUTION (PREPARED IN ACCORDANCE WITH UL STANDARD 1270)

**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 other 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 swimming pool, etc.

**6** Carts and Stands — The appliance should be used only with a cart or stand that is recommended by the manufacturer.

**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, stoves, or other appliances 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** 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.

**12** Cleaning — The appliance should be cleaned only as recommended by the manufacturer.

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

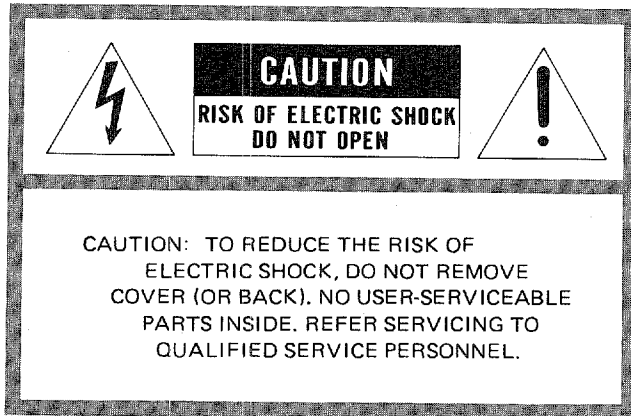
**14** Object and Liquid Entry — Care should be taken so that objects do not fall into and liquids not spilled into the inside of the appliance.

**15** Damage Requiring Service — The appliance should be serviced by qualified service personnel when:

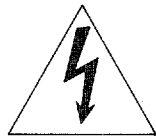
- A. The power-supply cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled into the appliance; or
- C. The appliance has been exposed to rain; or
- D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
- E. The appliance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

**16** Servicing — The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

**CAUTION: READ THIS BEFORE  
OPERATING YOUR KX-55**



• Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you 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 you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**1**

The KX-55 is a sophisticated stereo cassette deck. To ensure proper operation for the best possible performance, please read this manual carefully.

**2**

Choose the installation of your KX-55 carefully. Avoid placing it in direct sunlight or close to a source of heat. Also avoid locations subject to vibration and excessive dust, heat, cold or moisture. Keep it away from such sources of hum as transformers or motors.

**3**

Do not open the cabinet as this may result in damage to the deck or electrical shock. If a foreign object should get into the deck, contact your local dealer.

**4**

Do not use force when operating switches and knobs.

**5**

When moving the deck be sure to first pull out the power connector and remove all cords connecting the deck to other equipment.

**6**

Do not attempt to clean the KX-55 with chemical solvents as this may damage the finish. Use a clean, dry cloth.

**7**

Never allow metallic items (e.g. screwdrivers, tools, etc.) to come near the record/playback head assembly. Doing so may not only scratch or damage the head's mirror-smooth finish, it may change the magnetic characteristics of the heads, causing a deterioration in reproduction performance quality.

**8**

Although the record/playback head used in the KX-55 is a high quality permalloy laminate head with outstanding reproduction characteristics, it can become dirty through the use of old tapes or from dust accumulation over time. This can have a serious effect on reproduction quality. Clean the heads regularly with one of the commonly available head cleaners or with cleaning solutions as explained later in this manual.

**9**

This Cassette Deck is not adjustable for use with Ferrichrome tapes. Make sure to use either Normal, Chrome (CrO<sub>2</sub>) or Metal tapes.

**10**

Be sure to read the "Troubleshooting" section of this manual for advice on common operating errors before concluding that your KX-55 is faulty.

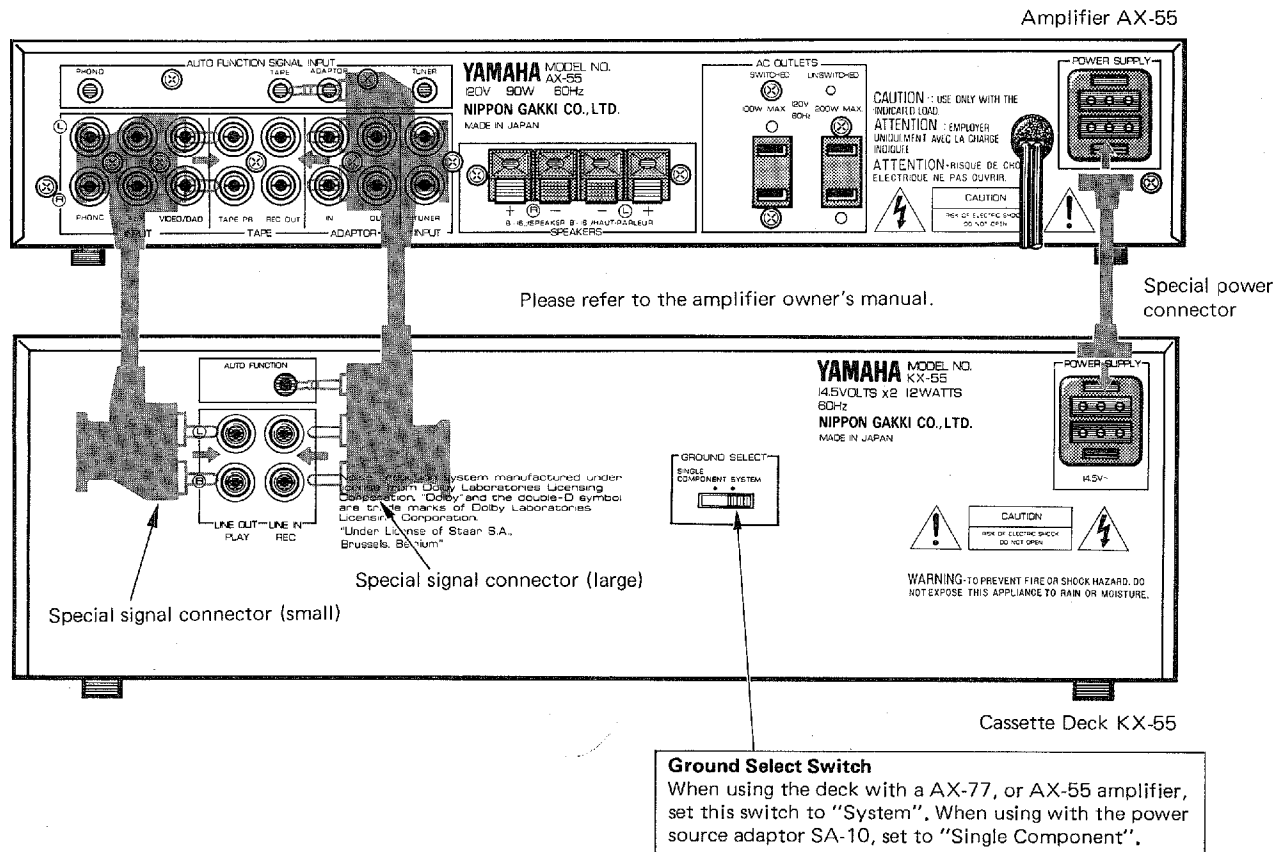
**11**

Keep this manual in a safe place for future reference.

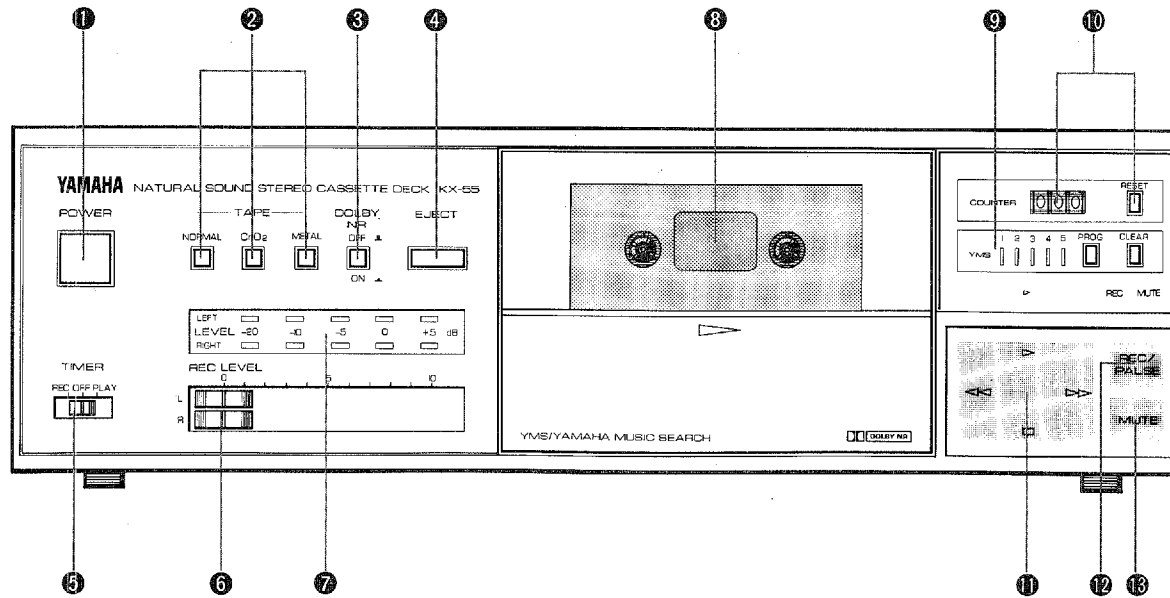
# KX-55


## CONNECTION DIAGRAM

- Make sure that power to your amplifier is turned off; check the terminals before making connections.
- Insert connector plugs firmly. Incomplete insertion may result in noise disturbances.
- Input-Output terminals of control signals are connected at the same time, which enables the Cassette Deck to control the amplifier's functions.
- Set the Earth (Ground) Select switch to "System".
- \* This deck provides no microphone terminal as it is exclusive for line-recording. If microphone-recording is to be performed, a microphone amplifier can be purchased separately.



## FRONT PANEL PARTS AND FUNCTIONS



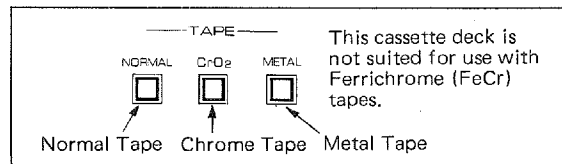
\* Dolby NR and the  symbol are trademarks of Dolby Laboratories Licensing Corp. Dolby noise reduction system is manufactured under license from Dolby Laboratories Licensing Corp.

### ① POWER SWITCH

This is a push-on, push-off type power switch that lights up when on.

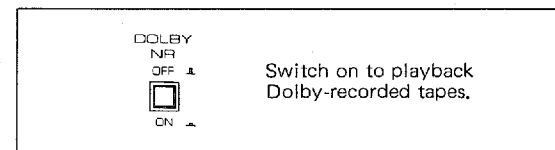
### ② TAPE SELECTOR

Press button for specific type of tape to be used. The Cassette Deck adjusts automatically for proper bias, level and equalization.



### ③ DOLBY NR SWITCH

Dolby noise reduction is an extremely effective method of reducing background hiss on tapes. When the Dolby NR system is on, recording and playback can be made with the minimum noise even at pianissimo. Dolby playback is to be done only with Dolby-recorded tapes. Tapes *not* Dolby-recorded should be played with the Dolby NR Switch off.



### ④ EJECT BUTTON

Pressing the button will open the cassette compartment cover and unloading of tapes.

### ⑤ TIMER SWITCH

Provides the option of unattended recording or wake-up playback when a separate timer unit is used.

**REC** – for unattended recording

**PLAY** – for wake-up playback

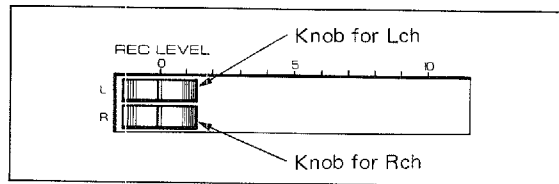
\* When the timer is not being used, set the Switch to off. If a cassette is loaded in the deck and the switch is left in the REC position, when power comes on, the record mode will be engaged, thus erasing the tape.

# KX-55

## 6 REC LEVEL CONTROL

Before recording, adjust the recording input level by watching the level indicators. Left and right channels can be adjusted independently: the upper knob is for the left channel, the lower knob for the right channel.

\* Refer to page 6 for adjustment instructions.



## 7 PEAK LEVEL INDICATOR

Indicates the peak of the signal level during recording and playback over a range from -20 dB to +8 dB. Peaks over 0 VU are indicated by a red light to facilitate level setting.

## 8 CASSETTE COMPARTMENT

Press the eject button to open the cassette compartment cover.

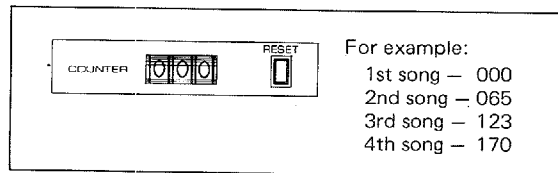
Keep cover shut when the Cassette Deck is not in use to protect heads and mechanism from dust, etc.

## 9 YAMAHA MUSIC SEARCH SYSTEM

A desired song from among up to five songs before and after the one being currently playing can be selected automatically. Refer to page 7 for operation instructions.

## 10 TAPE COUNTER/RESET BUTTON

Before starting to record, press this button to set the tape counter to "000". Noting the counter number at the beginning of each selection will be useful for later reference.



## 11 REWIND/PLAY/FAST FORWARD/STOP

(Tape Travel Operation Control Panel)

**REW** . . . . Press the << section of the control panel to rewind the tape.

**PLAY** . . . . Press the > section for playback. When starting to record, press this section after the REC Standby button is pressed. Refer to section 12).

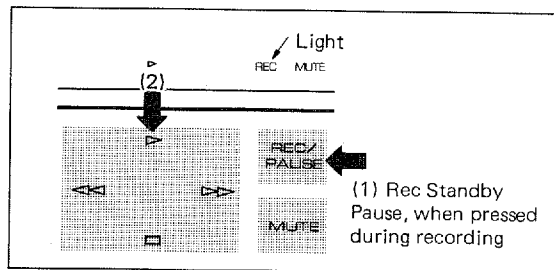
**FFWD** . . . . Press the >> section to fast forward the tape.

**STOP** . . . . Press the □ section to stop the tape while in any mode.

- \* When switching from Play to Fast Forward or Rewind, be sure to press the Stop button first.
- \* The Cassette Deck will stop automatically when the tape reaches the end of a side during playback, record, fast forward or rewind. (Auto-stop mechanism)
- \* Pressing the control panel between the indicated sections instead of directly on them may give you a mode other than the one you want.

## 12 REC STANDBY/REC PAUSE

When this button is pressed, the Rec Standby mode will be engaged, and the REC indicator will light. While in this mode, the recording level meters will operate, allowing you to set the proper level before starting to record. Then, pressing the > PLAY section of the control panel will engage the recording mode. When the Rec/Pause button is pressed while recording, the Pause mode will be engaged. Press the play section of the control panel to resume play.



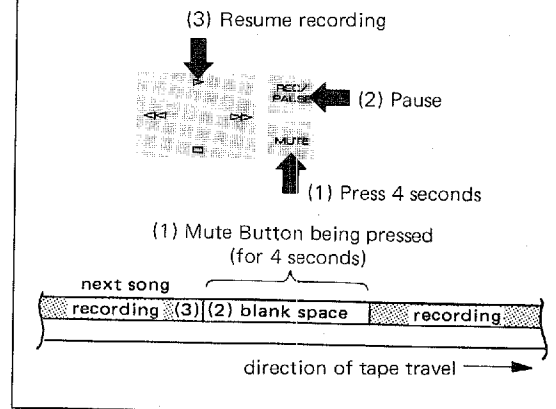
## 13 REC MUTE BUTTON

When the MUTE button is pressed during recording, tape travel will continue but the record amplifiers will be muted for as long as the button is held in. This enables you to record a blank section on the tape to eliminate commercials or DJ chatter while taping FM broadcasts, noise between tracks on a disc, or to space out selections on your tape for better playback results.

### How to use Mute Button

For precise performance of the automatic music search system, provide at least 4 seconds of unrecorded blank sections between each song.

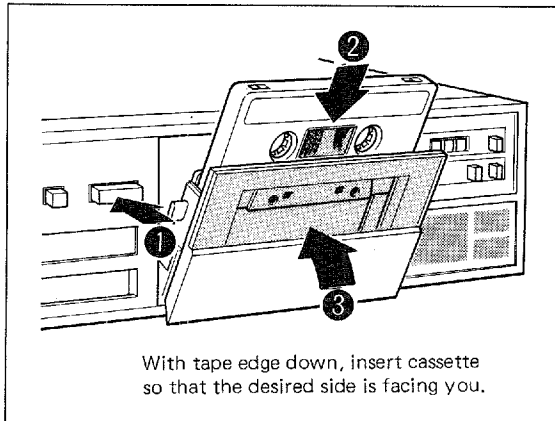
- 1) When a song ends, press the Mute Button for 4 seconds
- 2) Press REC/PAUSE button
- 3) Press > PLAY section before the next song begins, and the Cassette Deck resumes record mode.



## RECORDING AND PLAYBACK

### ■ HOW TO LOAD AND UNLOAD CASSETTES

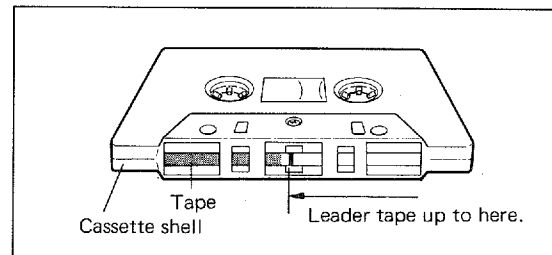
- 1) Open the cassette compartment cover by pressing the Eject button. ①
- 2) The side of the tape you wish to record or playback should be facing you. Insert the cassette with the exposed tape edge down, and fit into the chamber. ②
- 3) Push the cassette cover closed until you hear an audible click. ③
- 4) To unload the cassette, press the Eject button. ④
- 5) Keep the cover closed when the Cassette Deck is not in use.



### ■ RECORDING

#### ● Prior to Recording

- 1) Refer to the diagram and make sure that all connections are properly made.
- 2) Make sure that the Timer Switch is off, then turn on the Power Switch.
- 3) Load a cassette tape and briefly fast forward the tape until the leader tape at the beginning of the cassette is past.



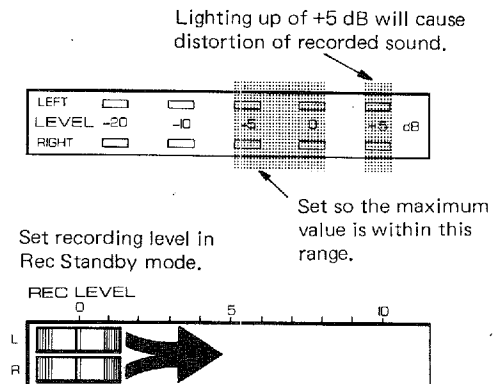
- 4) Press the Tape Selector button according to the type of tape to be used.
- 5) For recordings to be made with Dolby NR, press the Dolby NR switch on.
- 6) Press the REC/PAUSE button to engage the REC Standby mode.
- 7) Start the program source (FM broadcasts, records) to be recorded so that the proper recording level can be set.
- 8) Reset the Tape Counter button to "000".

#### ● Starting to record

- 1) The Cassette Deck will begin recording when the ▷ PLAY section of the control panel is pressed.
- 2) You can monitor the recording through speakers.
- 3) Blank sections of the tape may be created while recording by pressing the Mute button.
- 4) If you wish to suspend recording temporarily, press the REC/PAUSE button. To resume recording, press the ▷ PLAY section of the control panel.
- 5) When recording is over, press the << REWIND section of the control panel for playback or the □ STOP section for stop.

### ■ SETTING RECORDING LEVEL

In order to make recordings with the best possible signal-to-noise ratio, it is important to set the recording level at the highest level possible within the dynamic range. Push the REC/PAUSE button to engage the Rec Standby mode. Adjust the input level with the recording level controls L and R, so that with normal music levels, the maximum meter reading is between -5 dB and 0 dB, and the +5 dB indicator does not light even at peaks. When taping a record, playback the record beforehand to check the levels.



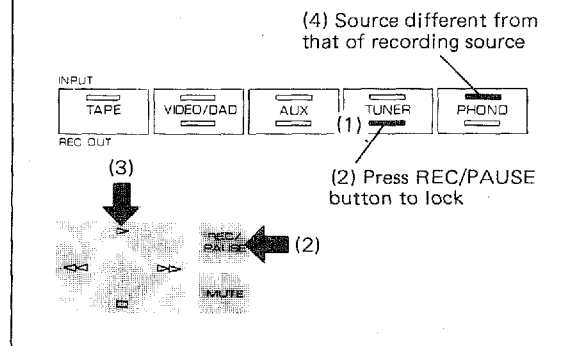


## ■ INDEPENDENT RECORDING/LISTENING

You may select your amplifier's REC OUT source for recording, while its INPUT source is different. This characteristic enables you to, for example, listen to a record and record an FM broadcast at the same time.

- 1) Set the amplifier's INPUT (REC OUT) to the source you wish to record.
  - 2) Press the REC/PAUSE button on the Cassette Deck to engage the REC Standby mode. Now the amplifier's REC OUT is locked.
  - 3) Press the ▷ PLAY section of the control panel to start recording.
  - 4) Since REC OUT is locked during recording, change of INPUT will not affect the recording. Thus, it is possible to listen to a source other than the one the recording is made from.
  - 5) If you engage the amplifier's Tape mode, you can monitor what is being recorded.
- \* In order to change the REC OUT source, disengage the recording mode first, and then select the desired recording REC OUT source. A change in the amplifier's function during recording of a record will not cause the phono-player to cut.

**Example:** when you want to record a broadcast while listening to a record.



## ● Examples

Amplifier INPUT	Amplifier REC OUT	Result
PHONO	TUNER	Can record FM or AM broadcast while listening to a record through speakers.
TUNER	TUNER	Can listen to FM or AM broadcasts through speakers and record them at the same time.
PHONO	PHONO	Can listen to a record and record it at the same time.
TUNER	PHONO	Can record a record while listening to an FM or AM broadcast through speakers.

## ■ PLAYBACK

### ● Prior to playback

- 1) Make sure that all connections are properly made.
- 2) Make sure the Timer Switch is off, then turn the Power Switch on.
- 3) Open the cassette compartment cover, and load a recorded tape.
- 4) Press the Tape Selector button according to the type of tape to be used.
- 5) For tapes recorded with Dolby NR, make sure that the Dolby NR switch is turned on.

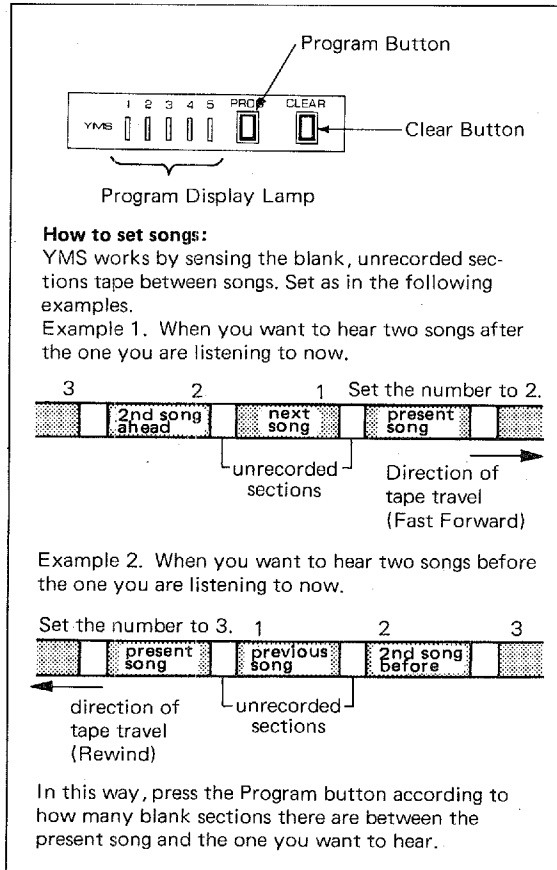
### ● Starting playback

- 1) When the ▷ PLAY section of the control panel is pressed, the Play mode will be engaged.
- 2) Adjust the Volume and Tone controls of your amplifier to the desired settings.
- 3) Press the □ STOP section of the control panel to end play.

## ■ HOW TO SET YMS

YMS lets you skip songs, selecting a song up to five songs before or after the one currently being played.

- 1) Press the program button to set the number of songs to be skipped.
    - Since the deck is always set to YMS 1 (1 is always displayed on the program display), it is not necessary to press the program button in order to skip to the next song or the previous song.
  - 2) The program displays the set number.
  - 3) In case of mis-setting, press the clear button and reset number.
  - 4) To skip to another song, leave the Play button as is, and press the ▷▷ button (fast forward) to skip forward, and the << button (rewind) to skip backward.
  - 5) YMS counts the blanks between songs; when the display reads 1, playback begins.
- \* YMS operates by sensing the blank, unrecorded sections of the tape. It will not work precisely with such tapes as the following.
- Tapes with less than 4 seconds of blank sections
  - Tapes with noise in their blank sections
  - Tapes with music that halts in the middle of the performance
  - Tapes with very low recording level
  - Tapes that have no continuity in sound production, such as a recorded conversation



## ■ UNATTENDED RECORDING AND WAKE-UP PLAYBACK

When using the Timer Rec/Play Switch in combination with a conventional audio timer such as Yamaha DT-10, it is possible to make unattended recordings and initiate wake-up playback at any time automatically by setting the Cassette Deck in advance.

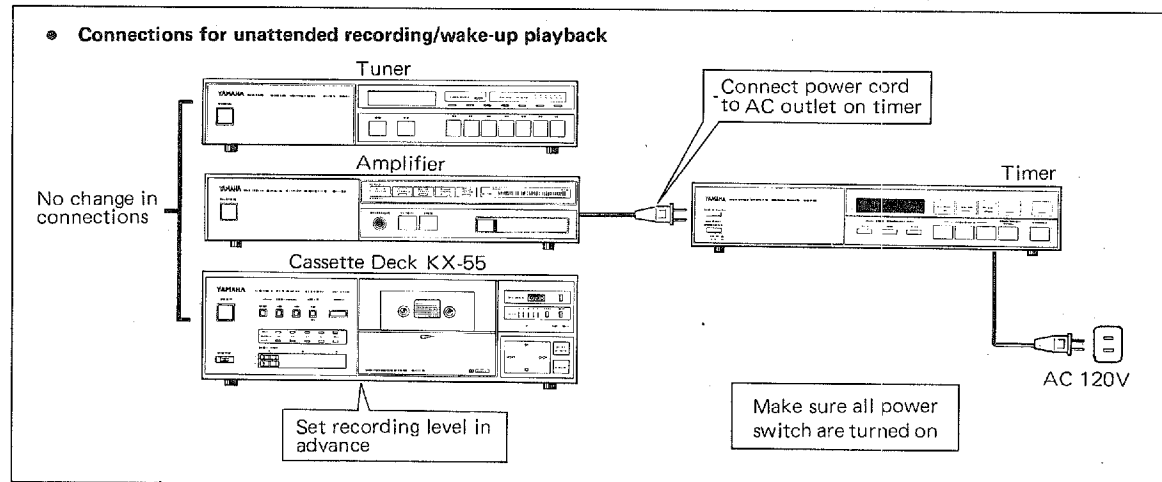
### ● Unattended recording

- 1) Refer to the Connection Diagram and make sure all power cord connections are properly made between the timer and amplifier. No change in any of the other connections between the Cassette Deck and amplifier, etc. is necessary.
- 2) After turning on the power to each component, select the station on your tuner which you want to record, and turn down the Volume on your amplifier to the lowest level. This will have no effect on the recording signal level.
- 3) Load a tape into the Deck, and follow the instructions given in the "Prior to recording" section, 3 to 7 of this manual.

- 4) Set the Timer Switch to the REC position.
- 5) Set the timer to the desired time. Power to all components goes off automatically.
- \* It is advisable to set the time to allow a little extra time both before and after the actual recording time.
- 6) At the prescribed time, all the components will be turned on and recording will be engaged.

### ● Wake-up Playback

- 1) All connections are done in the same way as for unattended recording.
- 2) Follow the instructions given in the "Prior to playback" section, 1 to 5 of this manual.
- 3) Turn on the amplifier, set the INPUT mode selector to TAPE mode, and adjust the Volume control.
- 4) Set the Timer Switch on the Cassette Deck to the PLAY position.
- 5) Set the timer to a desired time. Power to every component goes off.
- 6) At the prescribed time, the timer will turn power on to every component, and playback will start.



# KX-55

## CASSETTE TAPES / MAINTENANCE

### ■ CASSETTE TAPES

There are many different types of cassette tapes sold on the market; however, they conform to standard specifications so that any brand may be used with the KX-55.

#### ● Classification of Cassette Tapes by Recording Time

Cassette tapes are available in a number of forms according to the amount of time in minutes it takes to record or playback both sides of the tape.

Type	Record/Playback Time		Length of Tape (m)
	One way (Min.)	Two way (Min.)	
C - 45 (C - 46)	23	45 (46)	68
C - 60	30	60	90
C - 90	45	90	135

\* Yamaha suggests that you not use C-120 cassettes since the extreme thinness of the tape in these cassettes makes them susceptible to mechanical and electrical problems.

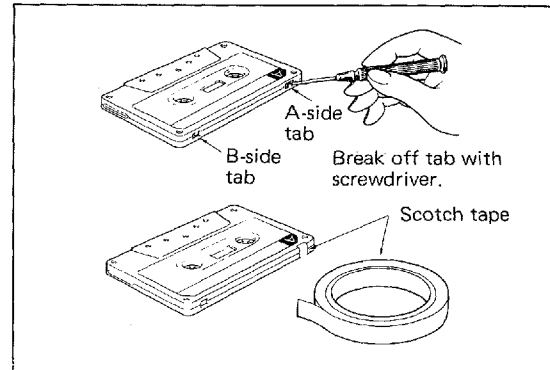
#### ● Classification of Cassette Tapes by Formulation

Cassette tapes are available in four basic types depending on their formulation, or type of magnetic material and manufacturing process. These four types are commonly known as Normal (LH), Chrome ( $\text{CrO}_2$ ), Ferrichrome (FeCr), and Metal (Metal), and they each require specific bias, level, and equalization settings for optimum performance. The KX-55 provides a tape type selector which gives you the proper bias, level, and equalization settings according to which type you have selected.

\* The KX-55 does not have the required settings for Ferrichrome (FeCr) tape, since this tape formulation is not widely used. Should you use a Ferrichrome tape, it should be recorded and played back at the Normal (LH) settings. This will result in an unnatural high frequency emphasis. But this effect may be compensated for somewhat by adjusting the tone controls of your amplifier.

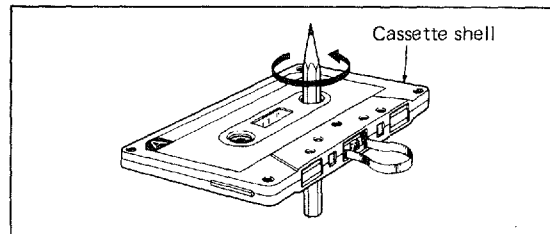
### ■ PROTECTING YOUR RECORDINGS

All cassette tapes are provided with erasure protection holes to prevent recorded tapes from being accidentally erased. There is a small tab covering the hole on each cassette, and it should be broken off with a screwdriver after recording a tape. Without this tab covering the hole, it is impossible to record on that tape again; thus, you can keep any recorded tape for as long as you wish without fear of accidental erasure. Should you wish to use a cassette tape protected in this way for later recording, simply covering the hole with scotch tape will permit erasure and re-recording.



### ■ TAKING UP SLACK IN THE TAPE

Slack in the tape inside of the cassette shell can be corrected by simply inserting a pencil into one of the spools and winding it until all the slack is taken up.



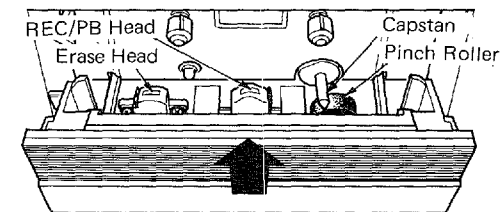
### ■ STORAGE OF YOUR CASSETTES

After putting a cassette back into its case, store in a location away from exposure to direct sunlight, humidity, high temperatures, and magnetic fields (away from television sets, speakers, etc.). High temperatures and humidity will damage the tape itself, while exposure to magnetic fields may cause a loss of recorded material.

### ■ MAINTENANCE OF YOUR KX-55

After using your KX-55 for a certain length of time, it is possible that the sound of your tapes may deteriorate with fading, vibration, or noise as a noticeable result. This is caused by an accumulation of dirt or dust on the heads, capstan, or pinch roller, and magnetization of the heads. It is advisable to periodically clean and demagnetize the heads and to clean the capstan and pinch roller. Use a commonly available cotton swab and head cleaning solution to do this, or use a special head cleaning tape. Head demagnetizers are also commonly available.

- \* When cleaning the heads, be careful not to apply unnecessary pressure. When demagnetizing the heads, be sure to follow the instructions of the head demagnetizer carefully.
- \* For better access to the head assembly, the cassette compartment cover is detachable by pulling upward on it after it has been opened. To re-attach it, reverse the same procedure.



## TROUBLESHOOTING

When your Cassette Deck fails to function properly, check up the following list which explains what measures to take. If you have any further problems, plug out the power cord and get in touch with your nearest Yamaha dealer.

FAULT	CAUSE	CURE
Tape does not move during recording or playback.	<ul style="list-style-type: none"> <li>● Power plug not properly plugged in.</li> <li>● End of tape.</li> </ul>	<ul style="list-style-type: none"> <li>● Reinsert plug properly.</li> <li>● Rewind tape or flip cassette over.</li> </ul>
Rec Standby button fails to function.	<ul style="list-style-type: none"> <li>● No cassette tape loaded.</li> <li>● Protective tab on cassette broken off.</li> </ul>	<ul style="list-style-type: none"> <li>● Load cassette tape.</li> <li>● Change to different tape, or cover hole with cellophane tape.</li> </ul>
Sound becomes faint. Sound jumps.	<ul style="list-style-type: none"> <li>● Head is dirty.</li> <li>● Head is magnetized.</li> <li>● Tape transport section is dirty.</li> </ul>	<ul style="list-style-type: none"> <li>● Clean head.</li> <li>● Demagnetize head using head eraser.</li> <li>● Change to new tape.</li> </ul>
Playback sound is poorly balanced.	<ul style="list-style-type: none"> <li>● Dolby NR switch is not properly set.</li> </ul>	<ul style="list-style-type: none"> <li>● Dolby-recorded tapes: playback with Dolby NR switch on.</li> <li>● Others: playback with Dolby NR switch off.</li> </ul>
Recorded sound is distorted.	<ul style="list-style-type: none"> <li>● Recording level is too high.</li> </ul>	<ul style="list-style-type: none"> <li>● Check recording level with meter and lower it.</li> </ul>
Excessive noise.	<ul style="list-style-type: none"> <li>● Head is dirty</li> <li>● Head is magnetized.</li> <li>● Tape is worn out or of poor quality.</li> <li>● Connection(s) improperly made.</li> <li>● Affected by external electrical noise.</li> <li>● Earth Select switch is set to "Single Component".</li> </ul>	<ul style="list-style-type: none"> <li>● Clean head.</li> <li>● Demagnetize head with head eraser.</li> <li>● Change to new or better quality tape.</li> <li>● Check input and output connections and reinsert properly.</li> <li>● Move away from electrical appliances (TV, fluorescent light, electric blanket etc.)</li> <li>● Earth Select switch is set to "System".</li> </ul>
Excessive wow (wavering of sound)	<ul style="list-style-type: none"> <li>● Dirty capstan, pinch roller, etc. or poor tape.</li> <li>● Tape is unevenly wound.</li> </ul>	<ul style="list-style-type: none"> <li>● Clean capstan, pinch roller, or change to better tape.</li> <li>● Rewind tape.</li> </ul>
Tape stops in the middle of recording or playback.	<ul style="list-style-type: none"> <li>● Slack tape, or tape spillage wound around capstan.</li> </ul>	<ul style="list-style-type: none"> <li>● Insert pencil in spool of cassette shell and turn to take up slack.</li> </ul>
Fails to record.	<ul style="list-style-type: none"> <li>● Rec Level control is too low.</li> <li>● Protective tab is broken off.</li> </ul>	<ul style="list-style-type: none"> <li>● Adjust rec level control.</li> <li>● Change tape or cover protective hole with cellophane tape.</li> </ul>
When the power is turned on, the deck enters the Play mode, and pressing the Stop button has no effect.	<ul style="list-style-type: none"> <li>● Signal connectors (input and output leads) are not properly connected to the amplifier.</li> </ul>	<ul style="list-style-type: none"> <li>● Connect the signal connectors properly.</li> </ul>

# KX-55

## SPECIFICATIONS

<b>Format</b>	4 track, 2 channel Stereo Cassette Deck Feather- Touch, Full Logic Control
<b>Tape Speed</b>	4.75 cm/sec
<b>Wow &amp; Flutter</b>	Less than 0.06% (WRMS) Less than $\pm 0.08\%$ (EIAJ)
<b>Fast Forward/Rewind Time</b>	90 seconds (using C-60 tape)
<b>Motor</b>	DC servo motor
<b>Mechanism</b>	1-motor, 2-plunger mecha- nism
<b>Rec/Playback Head</b>	Hard Permalloy
<b>Erase Head</b>	Double-gap, ferrite
<b>Recording Method</b>	AC bias (bias frequency 85 kHz)
<b>Erasure Method</b>	AC erasure
<b>Frequency Response</b>	40 - 15,000 Hz $\pm 3$ dB (Normal, -20 dB) 40 - 15,000 Hz $\pm 3$ dB (CrO <sub>2</sub> , -20 dB) 40 - 15,000 Hz $\pm 3$ dB (Metal, -20 dB)
<b>Input Level/Impedance</b>	Line: 60 mV/50 k-ohm
<b>Output Level/Impedance</b>	Line: 350 mV/2 k-ohm
<b>Signal-to-Noise Ratio</b> (CrO <sub>2</sub> tape)	55 dB (EIAJ, Dolby off) 63 dB (Dolby on)
<b>Overall Distortion</b> (315 Hz, EIAJ)	Less than 1% (Metal)
<b>Channel Separation</b>	Better than 35 dB (3150 Hz, EIAJ)
<b>Crosstalk</b>	Better than 60 dB (125 Hz, EIAJ)
<b>Power Supply</b>	AC 14.5 V
<b>Power Frequency</b>	60 Hz
<b>Power Consumption</b>	12 W
<b>Dimensions (W x H x D)</b>	340 x 107 x 263 mm (13-3/8 x 4-7/32 x 10-3/8")
<b>Weight</b>	3.5 kg (7.7 lbs)
<b>Accessories</b>	3P Power Connector 2P Signal Connector 3P Signal Connector

\* Specifications are subject to change without notice.

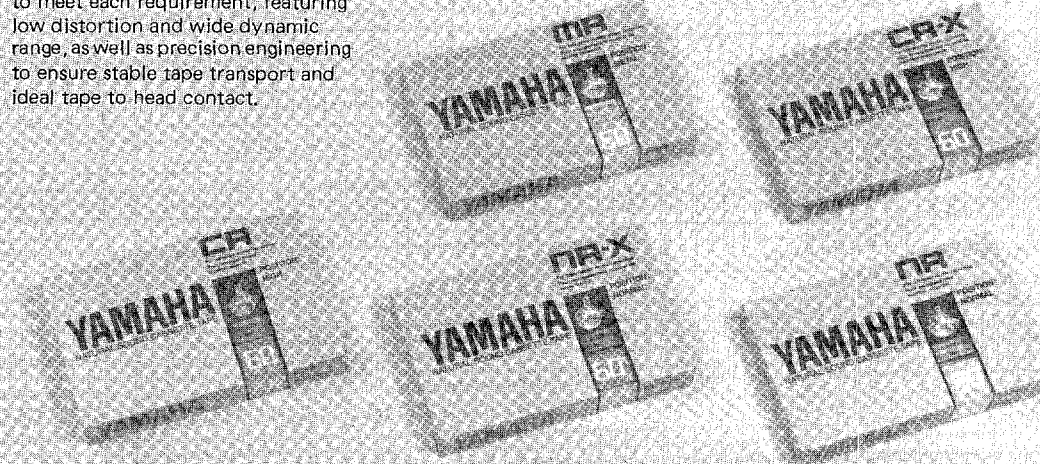
### ■ YAMAHA NATURAL SOUND CASSETTE TAPES

#### A Perfect Tape for Every Need

Every type of recording requirement demands a special kind of tape. Yamaha has specially blended tape to meet each requirement, featuring low distortion and wide dynamic range, as well as precision engineering to ensure stable tape transport and ideal tape to head contact.

★ **MR 60/90 min.**  
**Bias: Metal, EQ: 70  $\mu$ S**  
For Reference Quality Music  
Recording

★ **CR-X 60/90 min.**  
**Bias: High (CrO<sub>2</sub>), EQ: 70  $\mu$ S**  
For Top-Priority Music Recording



★ **CR 60/90 min.**  
**Bias: High (CrO<sub>2</sub>), EQ: 70  $\mu$ S**  
For Selected Music Recording

★ **NR-X 60/90 min.**  
**Bias: Normal, EQ: 120  $\mu$ S**  
For High-Definition Music  
Recording

★ **NR 60/90 min.**  
**Bias: Normal, EQ: 120  $\mu$ S**  
For Universal Music Recording

SINCE 1887



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