

YAMAHA KX-1200U

*Natural Sound Stereo Cassette Deck
Closed Loop-Dual Capstan Mechanism
3-Head Configuration with Amorphous Rec/Play Heads
High-Quality, Low-Distortion Amplifiers
ORBiT (Optimum Recording Bias Tuning) System
Dolby HX Pro Dynamic Bias Servo
Double dbx, Double Dolby B/C Noise Reduction
Random Program Play, Music Search and Intro Scan
Master Fader Control/Auto Rec Mute
28-Key Wireless Remote Control*

Thank you for purchasing the YAMAHA KX-1200U stereo cassette deck.

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OWNER'S MANUAL



IMPORTANT

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

Model: **KX-1200U**

Serial No: _____

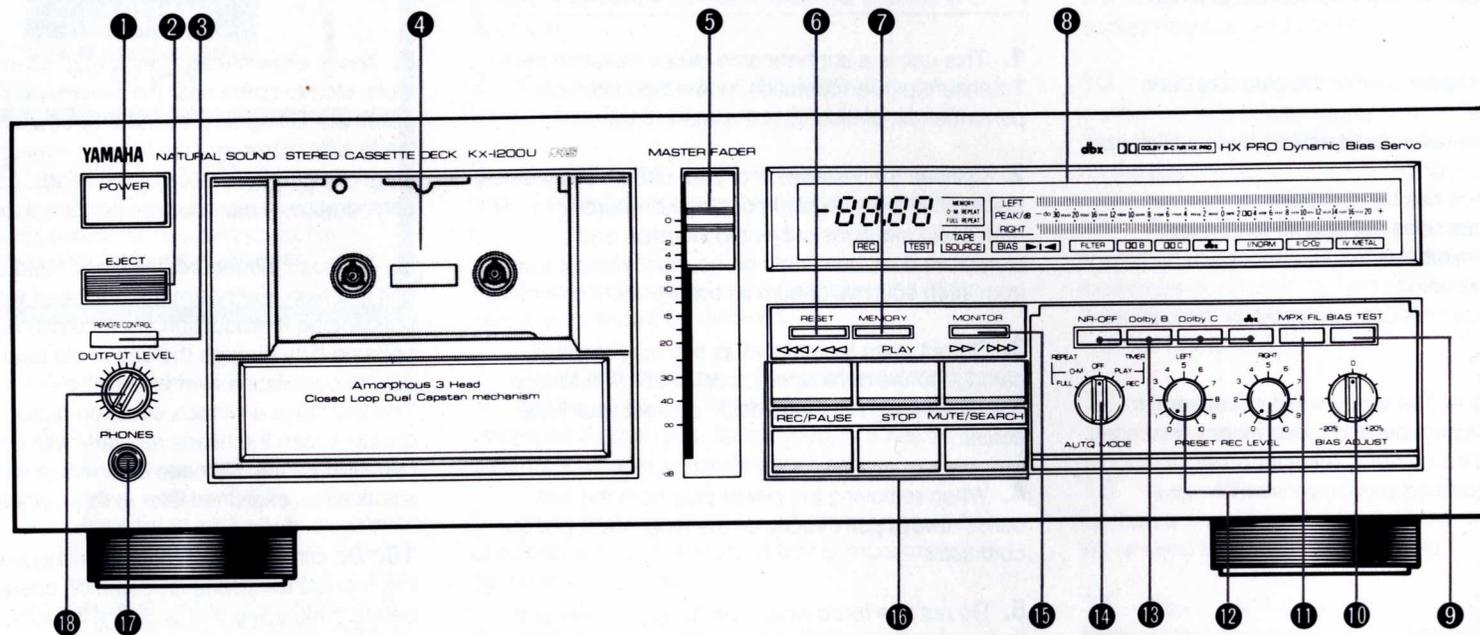
The serial number is located on the rear of the unit.
Retain this Owner's Manual in a safe place for future reference.

WARNING

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

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FRONT PANEL PARTS AND FUNCTIONS



1 POWER switch

Press this switch to turn the power on. Press again to turn the power off.

2 EJECT button

To load a cassette tape, press the EJECT button and the cassette compartment will open. Depress the cassette compartment to close it.

3 REMOTE CONTROL sensor

Receives the signal from the remote control transmitter.

4 Cassette compartment

5 MASTER FADER control

Used to fade in or fade out during recording. Normally it should be set to the "0" position.

* The MASTER FADER control will function only during the recording.

6 RESET button

Press the RESET button to reset the counter reading to "0.00". It can also be used to cancel the memorized counter reading.

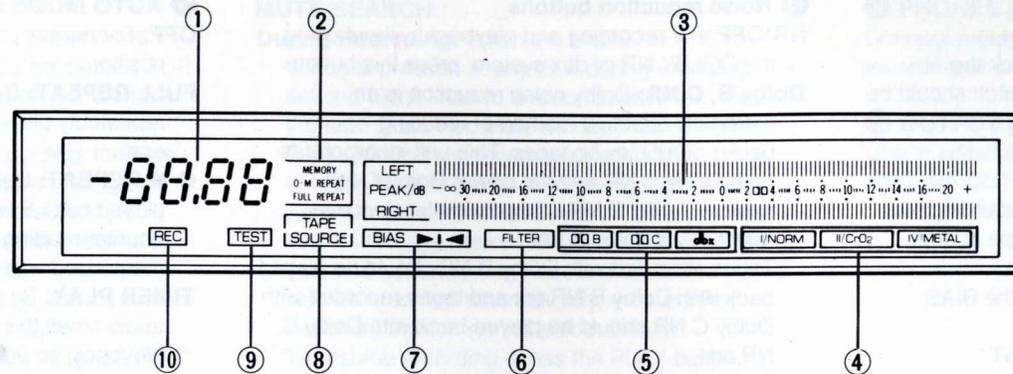
7 MEMORY button

Press the MEMORY button when the counter is at the desired counter reading for O-M repeat playback. Press the button again to release the memory function.

When the memory position is set, the tape will automatically stop at that position during fast-rewind or forward mode.

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8 Display



① Linear counter/tape length/remaining time/program display

Linear counter: Displays the elapsed time of the tape's running.

* The linear counter is not a actual watch and its accuracy of the linear counter depends on the kind of the tape used.

Tape length: Displays the tape length (C60, C90, C46 and C46L) by pressing the TAPE key on the remote control transmitter.

Remaining time: Displays remaining unrecorded tape time by pressing REMAIN key on the remote control transmitter.

Program: Displays the program number and tune number to be memorized.

② Repeat function indicators

MEMORY: When the count number is memorized by pressing MEMORY button, MEMORY indicator lights.

O-M REPEAT: This initiates repeat playback 8 times between "0.00" setting of the counter and the memorized counter number. When the AUTO MODE selector is set to O-M REPEAT position, the O-M REPEAT indicator lights.

FULL REPEAT: When the AUTO MODE selector is set to FULL REPEAT position, the FULL REPEAT indicator lights. One side of the cassette is repeatedly played back 8 times from beginning to end.

③ PEAK level meters

Indicate the peak of the signal level during recording and playback over a range from -30 dB to +20 dB. They will also display the optimum recording level monitor.

④ Tape type indicators

When a tape is loaded, the deck's circuitry will automatically adjust for proper bias, level, and equalization for that type of tape, and the type of tape will be indicated.

- Automatic tape selection does not function for the old type metal tapes which do not have a detection hole on the cassette shell.
- This deck is not suited for use with Ferrichrome (FeCr) tapes.

⑤ Noise reduction indicators

The corresponding noise reduction indicator will light up by pressing the noise reduction button.

⑥ FILTER indicator

This indicator will light up when the MPX FILTER switch is on.

⑦ BIAS tuning indicator

Indicates turning direction of BIAS ADJUST control for optimum bias setting.

⑧ TAPE/SOURCE monitor indicator

Indicates either the tape or source monitor position.

⑨ TEST indicator

This indicator will light up during the ORBIT (Optimum Recording Bias Tuning) operation (bias adjustment). It will flicker during the standby mode.

⑩ REC indicator

This indicator will light up during recording and rec/pause modes. It will flicker during the auto rec mute mode.

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9 BIAS TEST switch

This switch will cause the ORBiT (Optimum Recording Bias Tuning) function to check the adjustment of the bias. Normally this switch should be turned off.

10 BIAS ADJUST control

This function is provided to adjust the recording bias to its optimum value according to the type of tape used.

Choose the optimum bias by watching the BIAS tuning indicator.

* Refer to page 11, "BIAS ADJUSTMENT".

11 MPX FILTER switch

Press this switch when recording from an FM station while using the Dolby-NR system. As the 19 kHz pilot signal may leak into the audio output, depending on the tuner and the broadcast condition and may cause improper operation of the Dolby NR system, this switch should be turned on when recording from an FM station to filter out the (19 kHz) pilot signal. This switch should be turned off when recording from other program sources.

12 PRESET REC LEVEL controls

Adjusts the input level of the recording signal coming from the rear panel LINE IN/REC jacks, and adjustable signal level is displayed on the PEAK level meters. Independent left/right controls also permit balance level setting.

13 Noise reduction buttons

NR OFF: For recording and playback without using the DOLBY NR or dbx system, press this button.

Dolby B, C NR: Dolby noise reduction is an extremely effective method of reducing background hiss on tapes. This unit incorporates both Dolby B NR and the newer Dolby C NR system. Dolby C NR is approximately twice as effective as Dolby B NR. Tapes recorded with Dolby B NR should be played back with Dolby B NR on, and tapes recorded with Dolby C NR should be played back with Dolby C NR on.

* Dolby and the double D mark are trademarks of Dolby Laboratories Licensing Corp. Dolby noise reduction system manufactured under license from Dolby Laboratories Licensing Corp.

dbx: When recording with dbx NR, input signals with a large dynamic range are compressed to 1/2, and expanded by a factor of 2 to their original state when played back. This means that a large dynamic range can be obtained even from cassette tapes with small dynamic range recordings, and noise can also be reduced at the same time. If metal tapes are used for recording and playback, a dynamic range which would have been thought impossible with cassette tapes can be obtained. For recording and playback with the dbx system, press this button.

For playing back tapes which are not dbx recorded, set to the NR-OFF position.

* "dbx" is a trademark of dbx incorporated.

14 AUTO MODE selector

OFF: For normal playback or recording, set to this position.

FULL REPEAT: One side of the cassette is repeatedly played back 8 times from beginning to end.

O-M REPEAT: Desired section can repeatedly be played back 8 times between "0.00" on linear counter reading and the counter number memorized with the MEMORY button.

TIMER PLAY: By using a commercially available audio timer, this function permits timer activated playback, so you can wake-up to your favorite music, etc.

TIMER REC: By using a commercially available audio timer, this function allows you to carry out unattended recording.

• Be sure to set this selector to OFF when not using the repeat playback feature or the timer feature. If power is turned on with a cassette loaded in the deck and the selector in the TIMER REC position, the record mode will be engaged and the prerecorded contents of the tape will be erased.

15 MONITOR button

This button switches the monitor function between the SOURCE and the TAPE. This unit is equipped with an auto monitor function, but it can be changed to manual if so desired, for example, monitoring the just-recorded signal during tape recording.

16 Main operation buttons

◀◀◀/◀◀: Press this button to rapidly rewind the tape. To release the rewind mode, press the STOP button. When the button is kept pressed, the tape is rewound at a high speed.

By pressing this button during recording, the tape will rewind to the beginning of the recording and stop (Rec Return). If the counter is set to "0.00" during recording, the tape will rewind and stop at that position by pressing this button.

▶▶▶: Press for playback. It is also necessary to use this button to engage the record mode.

▶▶/▶▶▶: Press this button to rapidly advance the tape. To release the fast forward mode, press the STOP button. When the button is kept pressed, the tape is advanced at a high speed.

REC/PAUSE: Pressing this button engages the Rec Standby mode, and REC indicator will light. While in this mode, the PEAK level meters will function, allowing you to monitor the recording signal level of your program source. (Refer to the "SETTING RECORDING LEVEL" section of this manual.) To initiate recording from the Rec Standby mode, press the PLAY button. Pressing the REC/PAUSE button during actual recording engages the Pause mode. To resume recording, press the PLAY button.

STOP: Press this button to stop the tape while in any mode.

MUTE/SEARCH:

During Recording: When the MUTE/SEARCH button is pressed at any time during recording, a 4-second blank interval is automatically recorded on the tape (Auto Rec Mute mode). Then, the Rec Pause mode is engaged automatically.

In order to record a blank interval longer than 4 seconds, press the MUTE/SEARCH button and hold it in for the desired length of time. After the button is released, the 4-second blank interval will also be recorded automatically, then the Rec Pause mode is engaged automatically.

To resume recording, press the PLAY button.

During Playback: By pressing either the ▶▶/▶▶▶ or ◀◀◀/◀◀ button simultaneously with this button, the tape will move to the beginning of the current or next selection, from which point play will be resumed.

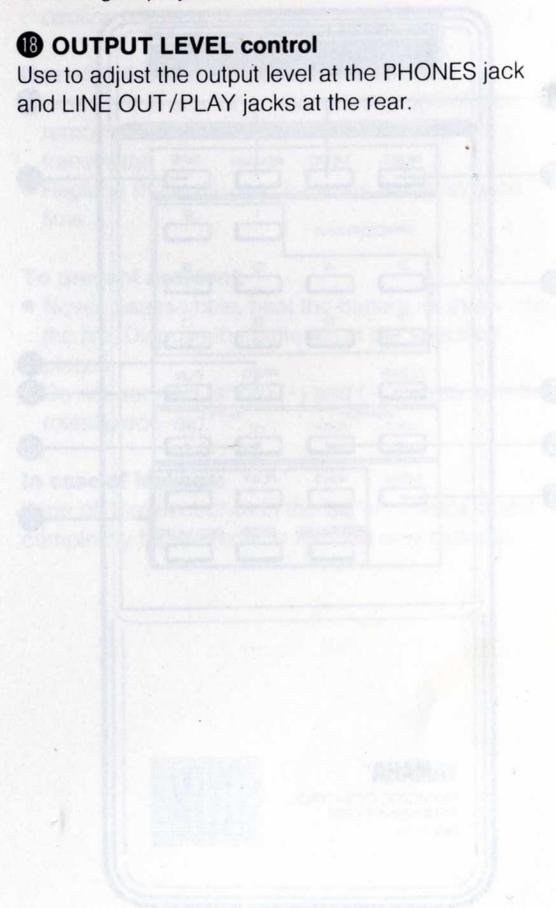
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17 PHONES jack

Connect headphones to this jack for monitoring recording or playback.

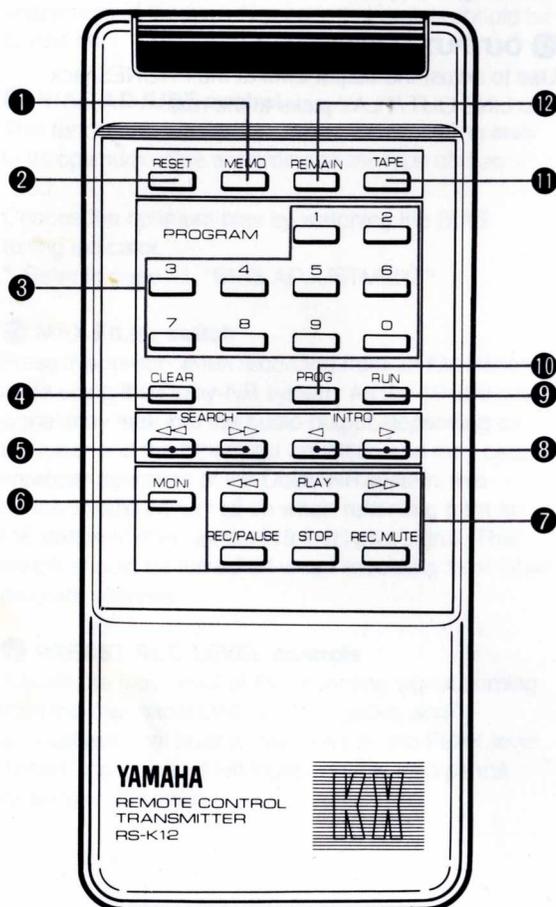
18 OUTPUT LEVEL control

Use to adjust the output level at the PHONES jack and LINE OUT/PLAY jacks at the rear.



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REMOTE CONTROL TRANSMITTER



1 MEMO (memory) key

2 RESET key

6 MONI (monitor) key

7 Main operation keys

These keys have the same functions as those on the main unit.

3 Numeric keys

Used to directly select the selection number to be played.

4 CLEAR key

Used to clear the memorized program.

5 SEARCH keys

◀◀: By pressing this key, the tape will be rewound to the beginning of the current selection.

▶▶: By pressing this key, the tape will be advanced to the beginning of the next selection.

It is also used to directly select the selection if the selection number is selected with numeric keys.

8 INTRO SCAN keys

Press one of these keys to play back the beginning of the selection for about 14 seconds in the selected direction.

9 RUN key

Press this key for program execution.

10 PROG (program) key

Used to memorize the selection number to be programmed, check or correct the program content.

11 TAPE key

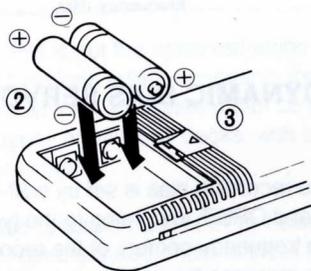
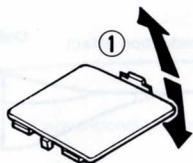
Used to memorize the tape length. Each time this key is pressed, display shows C60 → C90 → C46 → C46L and the displayed tape length is memorized.

12 REMAIN key

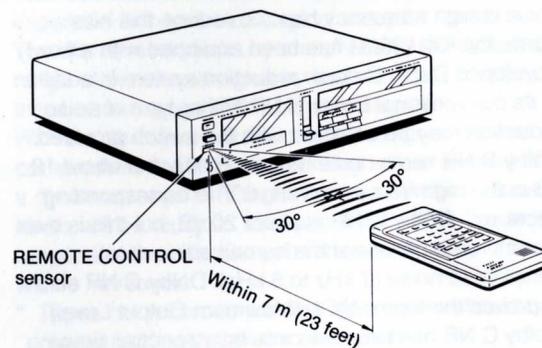
When the tape length is memorized with TAPE key, display shows the remaining tape time by pressing this key.

■ BATTERY INSTALLATION

- ① Slide out the battery compartment lid in the direction of the arrow.
- ② Install the batteries (size "AA", R06) with correct polarities.
- ③ Attach the battery compartment lid until it clicks.



■ REMOTE CONTROL OPERATION RANGE



■ BATTERY REPLACEMENT

When the remote controllable distance becomes short, batteries are exhausted. Replace two batteries with new ones.

Battery cautions

Incorrect use of the battery may cause leakage or explosion.

Be careful the following items:

When replacing:

- Place the batteries in correct (+) and (-) polarities as indicated in the battery compartment.
- Do not use the old battery together with new one.
- Do not use the different kind of batteries at the same time even though in the same shape.

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Rechargeable batteries:

- There are two kinds of batteries in the market: rechargeable and non-rechargeable. Read the caution labels on the battery carefully.

Use with the remote control transmitter:

- When not in use for an extended period of time, remove the batteries from the remote control transmitter.
- Replace the exhausted batteries earlier in good time.

To prevent accident:

- Never disassemble, heat the battery, or throw into the fire. Dispose the batteries in the specified places.
- Do not connect (short) (+) and (-) directly with the metal piece, etc.

In case of leakage:

Wipe off the electrolyte in the battery compartment completely before replace with the new batteries.

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3-HEAD CONFIGURATION AND AUTO MONITOR SYSTEM

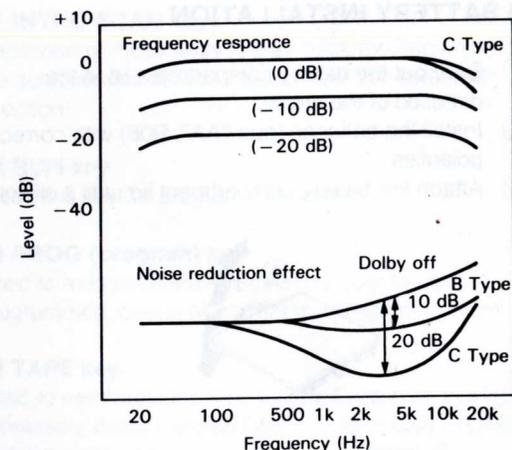
This tape recorder uses a full-scale three-head configuration, with independent recording, playback and erase tape heads, as well as independent recording and playback amplifiers. Since a major characteristic of a three-head tape deck system is simultaneous tape recording and tape playback, tapes can be monitored directly as they are made. The auto monitor function automatically switches to source monitor during the rec/pause and recording, and to tape monitor during the playback. The auto monitor function can also be manually switched by using the MONITOR button if required (tape monitor during recording).

DOLBY C TYPE NOISE REDUCTION

With cassette tapes, the most noticeable form of noise is high frequency hiss. To reduce this hiss noise, the KX-1200U has been equipped with a newly developed Dolby C noise reduction system in addition to its conventional Dolby B NR. Either type of noise reduction may be selected with the switch provided. Dolby B NR has a noise reduction effect of about 10 dB in the high frequency range. The corresponding figure with Dolby C NR is about 20 dB, but this is over the entire range where the human ear is most sensitive to noise (2 kHz to 8 kHz). Dolby C NR also improves the tape's MOL (Maximum Output Level). Dolby C NR has two new circuits; a spectral skewing circuit and an anti-saturation network. By improving the saturation level of the tape it is possible to prevent high frequency loss and encode/decode error, etc., improve dynamic range and signal-to-noise ratio, and make it easier to set the recording level. With Dolby C NR it is possible to achieve the same noise reduction effect at both high and low signal levels and to set the recording level at a point where side effects such as "breathing" are eliminated. Also, by expanding the operating frequency range to two octaves more than that of Dolby B NR, overall noise balance is obtained and the system also becomes effective against high frequencies from the power supply.

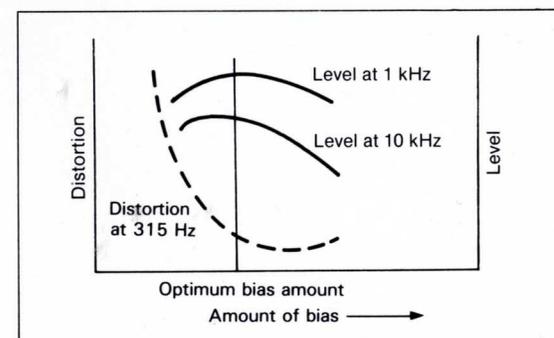
The graph shows the frequency response and the noise reduction effect of recording and playback with Dolby B NR and Dolby C NR. The noise reduction effect of Dolby C NR is larger — approximately 20 dB. Dolby noise reduction is a 2 part process that acts both on recording and playback; be sure that the noise reduction button is set to the same position on record and play.

* Noise in the source material cannot be reduced with the Dolby NR system.

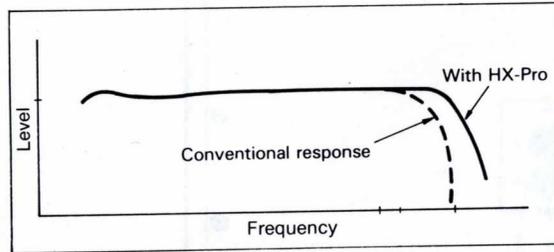


HX-PRO DYNAMIC BIAS SERVO SYSTEM

Even when the recording bias is set by built-in auto tape selector and ORBiT according to the type of tape used, the high frequency content of the recording signal tends to increase the set bias, causing loss of high frequency headroom, tape saturation and intermodulation distortion in the low-frequency range.



To prevent this problem, the HX-Pro Dynamic Bias Servo circuit constantly monitors the total effective bias during recording and instantly lowers the increased bias, keeping the total bias constant. The circuit works independently on each channel, and no decoding is necessary during playback.



* The HX-Pro is not the noise reduction system. Since it functions only in recording, the tape recorded with HX-Pro system can be played back on any types of cassette decks, with a richer dynamic range.

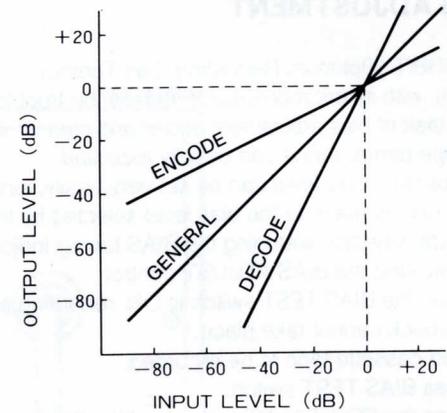
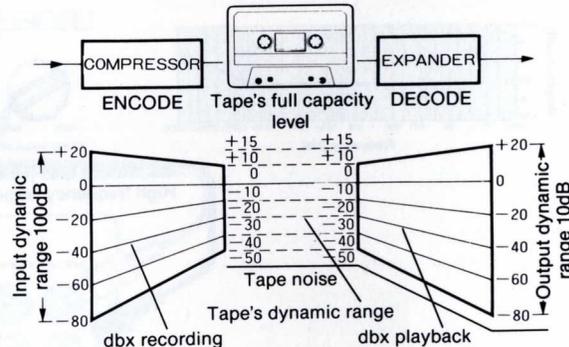
Dolby Noise reduction and HX-Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX-Pro originated by Bang & Olufsen.

"DOLBY", the double-D symbol  and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

dbx SYSTEM

This unit incorporates a dbx system which apparently expands the dynamic range of cassette tapes. The dbx system works by compressing the dynamic range of the record signal by half and then doubling the dynamic range of the playback signal. With the dbx system functioning, a program source compressed to 50 dB at recording will be expanded to a dynamic range of 100 dB. At the same time, noise levels will be reduced throughout the entire frequency range, and the effective saturation level of the tape will be increased.

* Tapes not recorded with the dbx system should be played back with the dbx system off.



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BIAS ADJUSTMENT

The ORBiT (Optimum Recording Bias Tuning) system, with its microprocessor, makes the troublesome task of bias adjustment easier and clearer, so that tape performance can be fully exploited.

The optimum bias level can be set very easily; further adjustment is made to the bias level selected by the auto tape selector, watching the BIAS tuning indicator and adjusting the BIAS ADJUST control.

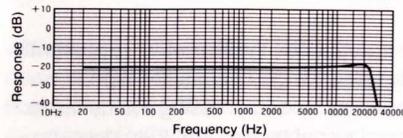
* When the BIAS TEST switch is ON, recording and playback cannot take place.

1. Load cassette tape to be recorded.
2. Press BIAS TEST switch.
3. Press the REC/PAUSE button and the PLAY button.

The deck then enters the recording mode.

4. Watching the BIAS tuning indicator, adjust the BIAS ADJUST control so that both left and right indicators light to give a flat frequency response.
5. After completing bias adjustment, press BIAS TEST switch to off. The tape will be rewound to the beginning of the bias adjustment.

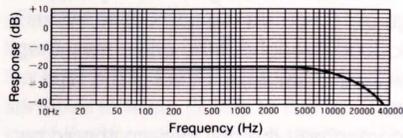
- If the heads are dirty or the tape is unsatisfactory, etc., it may not be possible to carry out bias adjustment.
- When the BIAS TEST switch is ON, ordinary recording and playback cannot be carried out.



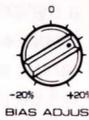
BIAS ►|◄



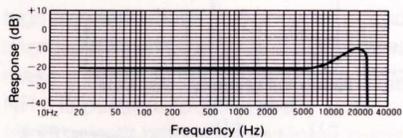
Optimum bias setting
Flat frequency response
Normal sound quality



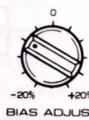
BIAS ►|◄



Excessive bias (Over bias)

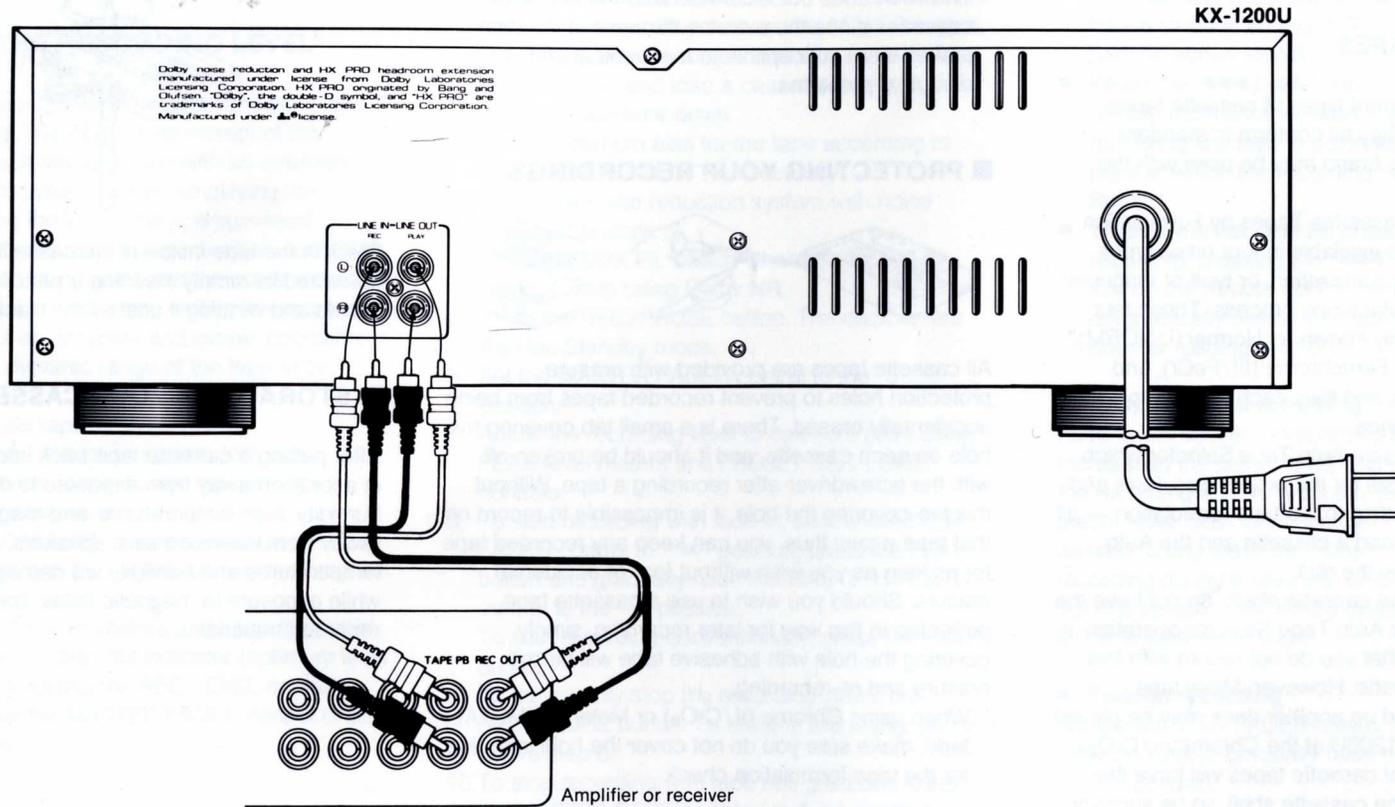


BIAS ►|◄



Insufficient bias (Under bias)
High frequency response rising

CONNECTIONS



■ REAR PANEL CONNECTIONS

The White plug on the paired connecting cables corresponds to the Left channel and the Red plug corresponds to the Right channel. The LINE OUT/PLAY jacks on the KX-1200U should be

connected to the Tape PB (Playback/Input) jacks on your amplifier, and the LINE IN/REC jacks on the KX-1200U should be connected to the Rec Out (Rec/Output) jacks on your amplifier. Make sure that the left and right channel connections are properly made, and that the plugs are inserted firmly.

Connect the power cord to an AC outlet or to the AC outlet provided on the rear panel of your receiver, integrated amplifier, or control amplifier, etc. Make sure that power to both the KX-1200U and your amplifier (receiver, etc.) are turned off before making connections.

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CASSETTE TAPES

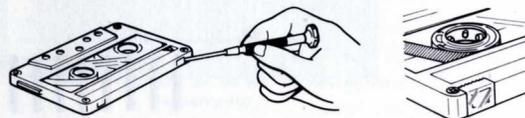
■ CASSETTE TAPES

There are many different types of cassette tapes available, however, they all conform to standard specifications so any brand may be used with the KX-1200U.

- * Classification of Cassettes 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 (I/NORM), Chrome (II/CrO₂), Ferrichrome (III/FeCr), and Metal (IV/METAL), and they each require specific optimum performance.
The KX-1200U has an Auto Tape Selector which automatically adjusts for the proper bias, level and equalization according to the tape formulation — all you have to do is load a cassette and the Auto Tape Selector does the rest.
- * Old-type Metal tape cassette shells do not have the necessary hole for Auto Tape Selector operation. It is recommended that you do not record with this kind of Metal cassette. However, Metal tape cassettes recorded on another deck may be played back with the KX-1200U at the Chrome (II/CrO₂) settings. All current cassette tapes will have this small opening in the cassette shell, so be sure you use suitable cassettes with the KX-1200U.
- * The KX-1200U does not have the required setting for Ferrichrome (III/FeCr) tape, since this tape formulation is not widely used. Should you use a Ferrichrome tape, it will be recorded and played back at the Normal (I/NORM) settings. And this will result in an unnatural high frequency emphasis.

This effect may be compensated for somewhat by adjusting the tone controls of your amplifier.
* YAMAHA does not recommended the use of C-120 cassettes since the extreme thinness of the tape makes them susceptible to mechanical and electrical problems.

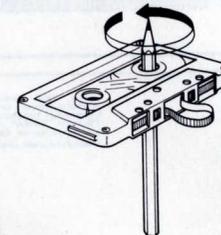
■ PROTECTING YOUR RECORDINGS



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 the 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 adhesive tape will permit erasure and re-recording.

- * When using Chrome (II/CrO₂) or Metal (IV/METAL) tape, make sure you do not cover the hole intended for the tape formulation check.

■ 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 CASSETTE

After putting a cassette tape 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.

OPERATION

■ SETTING THE RECORDING LEVEL

Setting the recording level is an important point for proper recording. The PEAK level meters of this cassette tape deck are equipped with an optimum level recording monitor function, simplifying the process of setting the level. The optimum level indicator will automatically change position according to the type of tape being used and the noise reduction system selected. Consequently, setting the optimum recording level is an accurate and simple operation, enabling the full dynamic range of the tape to be exploited.

1. Load a cassette tape to be recorded.
 2. Select the noise reduction system with noise reduction buttons. Dot indicator indicates the optimum recording level.
 3. Press the REC/PAUSE button to engage the Rec Standby mode, and play a selection of the program to be recorded.
 4. Watch the PEAK level meters and keep the meter reading no higher than dot indicator (optimum level indicator) by adjusting the REC LEVEL controls.
- Make sure that the MASTER FADER control is set to "0" position.

■ RECORDING

1. Make sure that the AUTO MODE selector is set to the OFF position, then turn on the POWER switch.
2. Open the cassette compartment by pressing the EJECT button and load a cassette tape with the exposed tape face down.
3. Set the optimum bias for the tape according to "BIAS ADJUSTMENT" if necessary.
4. Select the noise reduction system with noise reduction buttons.
Press the MPX FIL switch when recording FM stations while using Dolby NR.
5. Press the REC/PAUSE button. The deck enters the Rec Standby mode.
6. Set the MASTER FADER control to the "0" position.
7. Adjust the recording level to optimum point using PEAK level meters and PRESET REC LEVEL controls.
8. To start recording with fade in, set the MASTER FADER control to "-∞" position, press the PLAY button and gradually raise the MASTER FADER control to the "0" position.
To start recording conventionally, press the PLAY button.
9. To temporarily stop the recording, press the REC/PAUSE button. To resume recording, perform above step 8.
10. To stop recording with fade out, gradually lower the MASTER FADER control to "-∞" position.
To stop recording conventionally, press the STOP button.

- When the MUTE/SEARCH button is pressed during recording, a 4-second blank interval is automatically recorded on the tape, then the Rec Pause mode is engaged. To resume recording, perform above step 8.
- When the ◀◀◀/◀◀ button (or ◀◀ key on the remote control transmitter) is pressed during recording, the tape is automatically rewound to the point at which the recording has been started (Rec Return).
- When the linear counter is set to 0.00 during recording, pressing the ◀◀◀/◀◀ button (or ◀◀ key on the remote control transmitter) will automatically rewind the tape to the point at which counter reading is 0.00.

Fade-in, Fade-out recording

Fade-in will cause the recording level to gradually increase to the preset level, and Fade-out will cause the recording level to gradually decrease from the preset level. Both functions can be controlled as desired. Using these functions to commence recording during a selection or for the gradual fading out of a selection will lend a distinctly professional touch to your recordings.

● Fade-in recording

Set the MASTER FADER control to "-∞". After the recording starts, gradually raise the control setting to the "0" position.

● Fade-out recording

Gradually lower the MASTER FADER control setting to the "-∞" position, and then stop the recording.

NOTE

The fade-in and fade-out features will not function during playback. These functions will operate only during recording.

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■ AUTO REC MUTE

Use this function to effectively cut off unwanted material during recording or to provide blank section between selections.

1. Press the MUTE/SEARCH button at the beginning of the section not to be recorded. The unit makes a blank section of about 4 seconds, then enters rec pause mode.
2. To resume recording, press the PLAY button. Keep the MUTE/SEARCH button pressed to provide a blank section of more than 4 seconds.

■ PLAYBACK

1. Make sure that the AUTO MODE selector is set to the OFF position, then turn on the POWER switch.
2. Open the cassette compartment by pressing the EJECT button and load a recorded cassette tape.
3. For a tape recorded with a noise reduction system, press either the Dolby B, Dolby C or dbx button according to the system used.
4. Press the PLAY button to start playback.
5. Set the volume and tone controls on the amplifier to adjust sound quality as desired.
6. To stop playback, press the STOP button.

■ O-M REPEAT PLAYBACK

With this function, the desired section can be played back repeatedly up to 8 times.

1. Set AUTO MODE selector to O-M REPEAT position.
2. Press RESET button at the beginning of the selection you want to play again, and set the counter to "0.00".
3. Press the MEMORY button at the end of the selection you want to play again. The MEMORY indicator lights up and the tape immediately begins rewinding.
4. The tape is rewound until the counter has returned to "0.00" (beginning of selection). The deck then enters the playback mode.
5. The tape plays back until it reaches the memorized counter number (end of selection). In this way, the same selection can be played again.
6. To erase the memory, press the MEMORY button once again. The MEMORY indicator goes out.
 - The length of the start and end points of the O-M repeat section should be more than 4 seconds.
 - The O-M repeat can be carried out between minus counter reading to 0.00.

■ FULL REPEAT PLAYBACK

Set the AUTO MODE selector to FULL REPEAT and start playback. The one side of the cassette is repeatedly played back 8 times. During full repeat playback FULL REPEAT indicator lights.

■ INTRO SCAN

During playback, press either of the INTRO keys on the remote control transmitter. The beginning of each selection is played back for about 14 seconds in the selected direction. Press the PLAY button while the beginning of the desired selection is being played back to set the unit to normal play mode.

■ MEMORY STOP

When the MEMORY button is pressed at the desired point, the tape automatically stops at that point during fast-forward or rewind operation.

- * This is possible even when the counter reading is minus.
- * To release memory, press the MEMORY button again.

■ 0 STOP

When the AUTO MODE selector is set to REPEAT O-M position and the memory function is not used, the tape stops at a counter reading of 0:00 during fast-forward or rewind operation.

■ SINGLE SELECTION

When the ◀◀/◀◀◀ or ▶▶/▶▶▶ button is pressed simultaneously with the MUTE/SEARCH button during playback, or when the SEARCH ◀◀ or ▶▶ key on the remote control transmitter is pressed, the tape will move to the beginning of the current or next selection from which point play will be resumed.

■ DIRECT MUSIC SEARCH

Direct music search is possible up to the selection located 99 selections after and 98 selections before that which you are now listening to.

Example: For listening to the selection located 10 selections after.

1. Press "1" key and "0" key on the remote control transmitter. Display indicates "--10".
 2. Press the SEARCH key (▶▶) on the remote control transmitter. The tape will be fast forwarded to the beginning of the selected selection, display will show the counter and playback will start automatically.
- Be sure to press the SEARCH key within 3 seconds. Otherwise, the direct music search is not possible.

Example: For listening to the located 10 selection before.

1. Press "1" key twice on the remote control transmitter. Display indicates "--11". When the selection number is set to "10", the beginning of the selection located 9 selections before is searched. In this way, selection is possible up to the selection located 98 selections before.
 2. Press the SEARCH key (◀◀) on the remote control transmitter. The tape will be fast rewound to the beginning of the selected selection, display will show the counter and playback will start automatically.
- When the specified selection does not exist on the tape, the tape will be fast forwarded or fast rewound to the end and the direct music search will be cleared.
 - When the fast rewind, fast forward, PLAY or STOP button is pressed while searching, the direct music search will be cleared.

■ RANDOM PROGRAMMED PLAYBACK

You can select 9 selections and rearrange them in your desired order of selections. For the selection numbers, the first selection to the 9th selection can be specified.

Example: P1 — 2nd selection
P2 — 4th selection

1. Set the unit to stop mode.
 2. Press the PROG key on the remote control transmitter. The program number "P1." appears on the display.
 3. Press "2" key on the remote control transmitter. "P1.2" appears on the display and the selection number "2" blinks.
- * Be sure to press the numeric key within 20 seconds. Otherwise, the program display change to counter display and programming is not possible. In this case, press the PROG key to call the program number to be memorized.
 - To correct the selection number, press "0" key and then memorize the selection number by pressing numeric key.
4. Press the PROG key to memorize the selection number. The programmed first selection is memorized, program number "P2." appears on the display and the second selection can be selected.
 5. Press "4" key. "P2.4" appears on the display and the selection number "4" blinks.
 6. Press the PROG key.
 7. Press the RUN key on the remote control transmitter. The tape will be fully rewound and the playback starts in the programmed order of selection. (The program number blinks during music search.)
- Display shows the program number and the selection number which is now playing.

After termination of programmed playback, "End" display lights on the display.

- To stop the playback, press the STOP button.
- Programmed playback does not repeat. To start programmed playback once again, press the RUN key.
 - Programming is possible during stop, playback, fast forward or fast rewind mode, but programmed playback can start only during stop mode.
 - When the specified selection number does not exist on the tape, "End" display blinks and the playback stops. When this display appears, check the program content.

For check of program content

1. Press the STOP key.
2. Each time the PROG key is pressed, the memorized selection number and program number are displayed.

For clearance of all the program content

1. Press the STOP key and PROG key.
 2. Press the CLEAR key on the remote control transmitter.
- When the POWER switch is pressed to OFF, the content of the program is also cleared.

For correction of the program content

1. Press the STOP key.
2. Press the PROG key to call the program number to be corrected.
3. Press the numeric key according to new selection number.
4. Press the PROG key to memorize the new selection number.

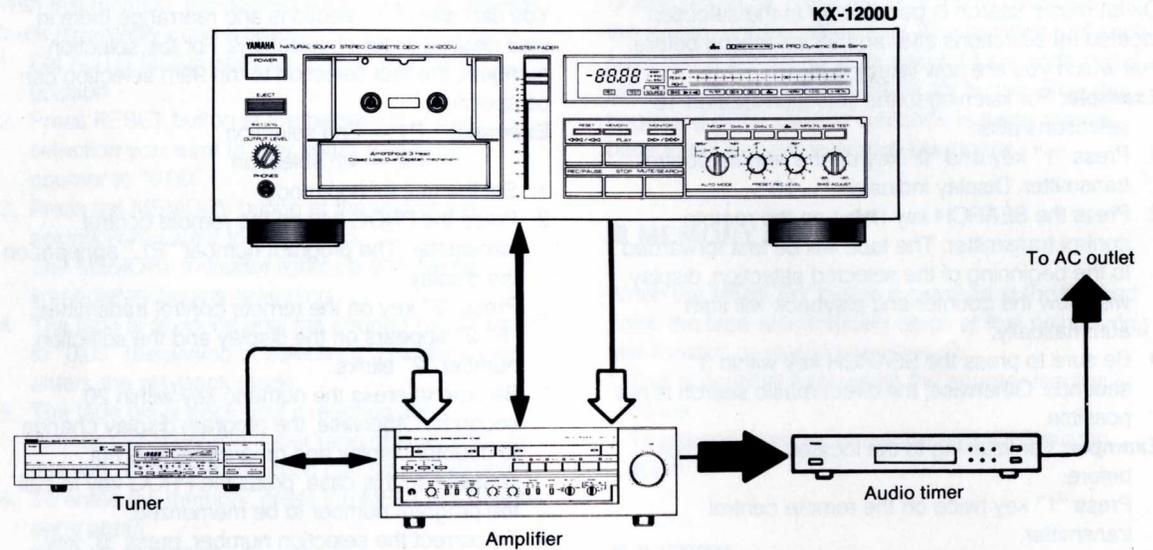
KX-1200U

■ FOR TROUBLE-FREE OPERATION

Scan functions are activated based on unrecorded tape sections of specified time. To ensure error-free operation, please follow these procedures:

- Use tape that is free from static or previously recorded music in the sections between selections.
- Do not use with tapes that include selections with long silences.
- Do not use with tapes that include selections with low level passages.
- Do not use with tapes of conversations or other recordings with many interruptions.

■ TIMER RECORDING/PLAYBACK



When using the AUTO MODE selector in combination with a commercially available audio timer, it is possible to make recordings and initiate playback at

any time automatically by presetting the deck in advance.

● Timer Recording

1. Make sure that all power cord connections between the timer and amplifier are properly made. No change in any of the other connections between 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. This will have no effect on the recording signal level. Remember to set the proper recording level.
3. Set the timer to the desired times. It is advisable to set the timer to begin recording slightly before the actual recording time, and end slightly after the actual recording time, so that you leave some room for later editing.
4. Set the AUTO MODE selector to the TIMER REC position.
5. The timer will send power to the amplifier, tuner and deck at the preset time, turning all the components on and initiating the recording mode.

CAUTION:

If the tape cannot be ejected after timer recording, turn the AUTO MODE selector OFF and the KX-1200U's POWER switch ON; the tape can then be ejected.

● Timer Playback

1. All connections are the same as for timer recording.
2. Turn on the amplifier and adjust the Volume and Tone controls.
3. Set the input mode selector of your amplifier to the Tape mode.
4. Set the timer to the time you wish to start and stop playback.
5. Set the AUTO MODE selector to the TIMER PLAY position.
6. At the preset time, the timer will turn power on to the amplifier and tape deck and begin playback. It will shut power OFF, at the preset time as well ending playback.

After using your KX-1200U 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, capstans, or pinch rollers, and magnetization of the heads. It is advisable 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. To reattach it, reverse the same procedure.

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TROUBLESHOOTING

When your cassette deck fails to function properly, before assuming it is faulty, check the following troubleshooting list. It details the corrective action you can take yourself without having to call a service engineer. If you have any doubts or questions, get in touch with your nearest YAMAHA dealer.

Fault	Cause	Cure
Tape doesn't move in recording or playback.	<ul style="list-style-type: none"> ● Power plug not properly plugged in. ● End of tape. 	<ul style="list-style-type: none"> ● Reinsert plug properly. ● Rewind tape or flip it over.
REC/PAUSE button fails to function.	<ul style="list-style-type: none"> ● No cassette tape loaded. ● Protective tab broken off. 	<ul style="list-style-type: none"> ● Load a cassette tape. ● Change to different tape, or cover the hole remaining after removal of tab with adhesive tape.
Sounds become faint and sometimes inaudible.	<ul style="list-style-type: none"> ● Head is dirty. ● Head is magnetized. ● Tape transport section dirty. 	<ul style="list-style-type: none"> ● Clean head using cleaning tape. ● Demagnetize head using head demagnetizer. ● Change to different tape.
Recorded sound is warped.	<ul style="list-style-type: none"> ● Tape is bad (stretched or deformed, etc.). ● Recording tape is itself warped. 	<ul style="list-style-type: none"> ● Replace with a fresh tape. ● As warping of tape itself cannot be rectified, replace with another tape and test.
Recorded sounds are distorted.	<ul style="list-style-type: none"> ● Recording level is too high. 	<ul style="list-style-type: none"> ● Check input level with meter and use lower rec level when recording.
Tape is playing back, but no sound is heard.	<ul style="list-style-type: none"> ● Faulty connection between deck and stereo amplifier. 	<ul style="list-style-type: none"> ● Rewire all connection from beginning.
Excessive noise.	<ul style="list-style-type: none"> ● Head is dirty. ● Head is magnetized. ● Worm out or poor quality tape. ● Connection(s) improperly made. ● Affected by external electrical noise. 	<ul style="list-style-type: none"> ● Clean head. ● Demagnetize head with head demagnetizer. ● Change to better tape. ● Check input and output connections and reinsert properly. ● Move away from electrical appliances (TV, fluorescent light, electric blanket, etc.)
Excessive wow (wavering of the sound).	<ul style="list-style-type: none"> ● Dirty capstan, pinch roller, etc., or poor tape. ● Tape is unevenly wound. 	<ul style="list-style-type: none"> ● Clean capstan, pinch roller, or change to better tape. ● Rewind tape.
Tape stops in the middle of recording or playback.	<ul style="list-style-type: none"> ● Slack tape, or tape spillage wound around capstan. 	<ul style="list-style-type: none"> ● Insert pencil in hole in cassette shell and turn to take up slack.
Fails to record.	<ul style="list-style-type: none"> ● PRESET REC LEVEL controls too low. ● Protective tabs broken off. 	<ul style="list-style-type: none"> ● Adjust PRESET REC LEVEL controls. ● Change tape or cover protective hole with adhesive tape.

Fault	Cause	Cure
Mute Search does not operate.	<ul style="list-style-type: none"> Recorded section is too short. Recorded section has low-level portions. Conversation, etc. has been recorded. 	<ul style="list-style-type: none"> Blank sections must be at least 4 seconds long.
High frequencies in the playback sound are emphasized and unpleasant to listen to, and noise level (hiss) is also high.	<ul style="list-style-type: none"> dbx or Dolby-recorded tape is played back in OFF position. 	<ul style="list-style-type: none"> Playback in appropriate Dolby or dbx position.
Playback sound is muffled and high frequencies are inaudible.	<ul style="list-style-type: none"> Normally-recorded tape is played back in DOLBY or dbx. Heads are dirty. Heads are magnetized. 	<ul style="list-style-type: none"> Playback in OFF position. Clean heads and carry out demagnetization with head demagnetizer.
Playback sound balance is poor and sound seems muffled. Sound seems faint.	<ul style="list-style-type: none"> dbx-recorded tape is played back in Dolby B, C or NR OFF position. 	<ul style="list-style-type: none"> Playback in dbx position.
Playback sound balance is poor. Sounds are sometimes too loud, sometimes too soft, and meter deflection is abnormally high.	<ul style="list-style-type: none"> Normal or Dolby-recorded tape is played back through dbx. 	<ul style="list-style-type: none"> Playback in the position in which it was recorded.
When playing back tapes recorded on other decks, meter deflections are greater (smaller) than when recording.	<ul style="list-style-type: none"> Basic levels are different for different cassette decks. 	<ul style="list-style-type: none"> This is not a fault.
Does not operate when REC/PAUSE button is pressed.	<ul style="list-style-type: none"> No cassette tape has been loaded. Protective accidental erasure tabs on cassette have been broken off. 	<ul style="list-style-type: none"> Load a cassette tape. Replace cassette tape, or cover tab holes with tape, etc.
Recordings cannot be made.	<ul style="list-style-type: none"> PRESET REC LEVEL controls are set too low. MASTER FADER control is set too low. 	<ul style="list-style-type: none"> Adjust level with the level control. Set to "0" position.
Recordings cannot be made with TIMER REC (deck only plays back).	<ul style="list-style-type: none"> Protective accidental erasure tabs on cassette have been broken off. 	<ul style="list-style-type: none"> Replace cassette tape, or cover tab holes with tape, etc.

KX-1200U

SPECIFICATIONS

Track Configuration 4 track, 2 channel stereo
Motor DC servo motor (capstan)
Flat torque DC motor (reel)
DC motor (assist)
Heads Combination, Amorphous with
12-laminated core Rec and Playback heads
Double-gap ferrite erase head
Rapid Transport
(F.Fwd/Rew) 70 sec. (C-60)
Wow and Flutter
WRMS less than 0.03%
W.Peak less than $\pm 0.06\%$
Signal-to-Noise Ratio
(Off) better than 61 dB
(Dolby B) better than 69 dB
(Dolby C on) better than 77 dB
(dbx on) better than 95 dB

Frequency response

Normal tape (-20 dB) ... 20 — 20,000 Hz, ± 3 dB
CrO₂ tape (-20 dB) 20 — 22,000 Hz, ± 3 dB
Metal tape (-20 dB) 20 — 24,000 Hz, ± 3 dB

Harmonic Distortion

Normal tape less than 0.5%
Chrome tape less than 0.5%
Metal tape less than 0.5%

Input Sensitivity/Impedance

Line 40 mV/30 k-ohms

Output Level

Line 360 mV/47 k-ohms
Phones 3.6 mW/8 ohms

Channel Separation (3150 Hz) 40 dB
Cross Talk (125 Hz) 55 dB

GENERAL

Power Supplies

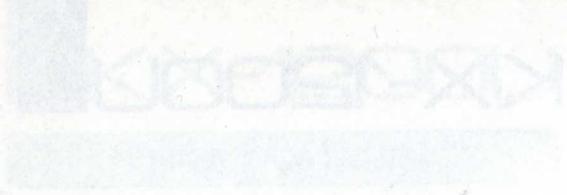
U.S.A. and Canada models 120V, 60 Hz

Power Consumption 28W

Dimensions (W x H x D) 435 x 134 x 379 mm
(17-1/8" x 5-1/4" x 14-15/16")

Weight 7.9 kg (17 lbs. 7 oz.)

* Specifications subject to change without notice.



Track Configuration 2 Track 2 Speakers
 Acoustic DC Servo Motor
 Tone 20 Hz to 20 kHz
 Noise 20 Hz to 20 kHz
 Right Transport (T-Cond/Stop) 20 Hz to 20 kHz
 Wing and Feather 20 Hz to 20 kHz
 W.Pack 20 Hz to 20 kHz
 Signal-to-Noise Ratio (Dolby B) 20 Hz to 20 kHz
 (Dolby C) 20 Hz to 20 kHz
 (Dolby S) 20 Hz to 20 kHz

Frequency response
 Normal tape (120 dB) 20 - 20,000 Hz ±1 dB
 CrO₂ tape (120 dB) 20 - 20,000 Hz ±1 dB
 Metal tape (120 dB) 20 - 20,000 Hz ±1 dB
 Harmonic Distortion
 Normal tape 0.01%
 Chrome tape 0.01%
 Metal tape 0.01%
 Total Spindle Runout
 L/R 0.002 mm
 Output Level
 Line 1.0 V (0 dB)
 Phono 0.5 V (0 dB)
 Channel Separation
 Stereo Track 20 dB

GENERAL
 Power Supply U.S.A. and Canada models
 Filter Capacitors 100 μF
 Dimensions (W x H x D) 140 x 100 x 100 mm
 Weight 1.2 kg

YAMAHA
 HAMAMATSU, JAPAN