Hifi ENGINE®

TEAC®

R-919X/V-970X

STEREO CASSETTE DECK

Thanks for buying a TEAC. Read this manual carefully to get the best performance from this deck.

Nous vous remercions pour l'achat d'un appareil TEAC. Lire ce manuel avec attention pour en obtenir les meilleures performances possibles.

Vielen Dank für den Kauf dieses TEAC-Geräts. Bitte lesen Sie diese Anleitung sorgfältig durch, um die Leistungsfähigkeit dieses Decks optimal nutzen zu können.

Grazie per aver acquistato un prodotto TEAC. Leggere attentamente questo manuale per ottenere le migliori prestazioni da questo registratore.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

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.

This appliance has a serial number located on the rear panel. Please record the model number and serial number and retain them for your records.
Model number _____
Serial number _____

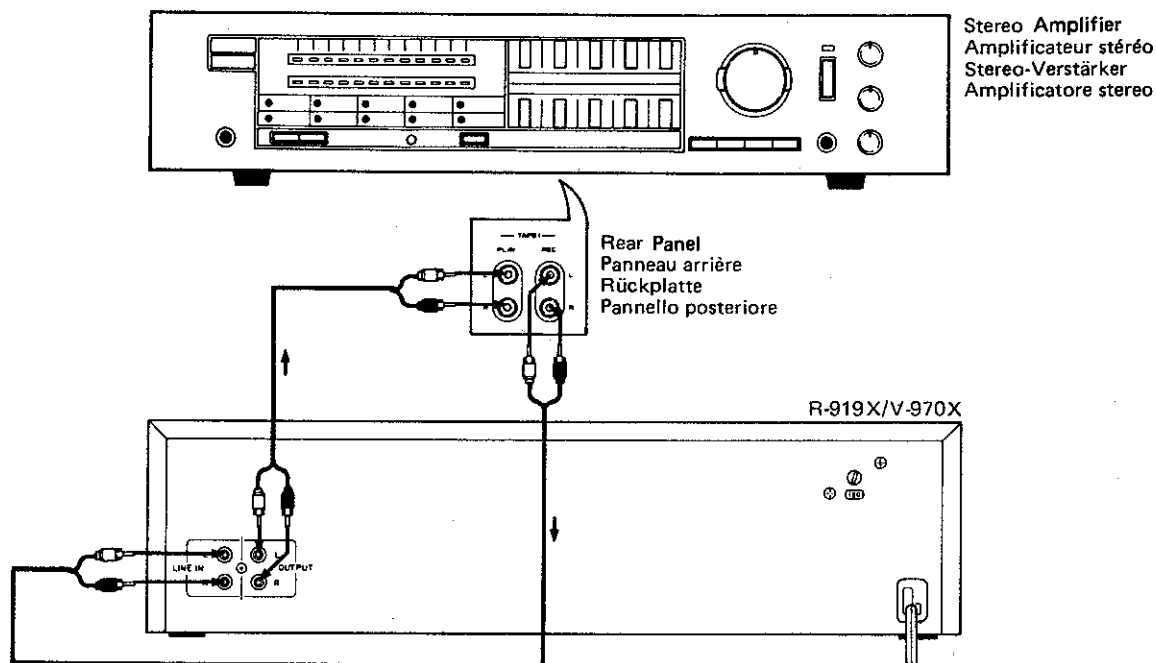# WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
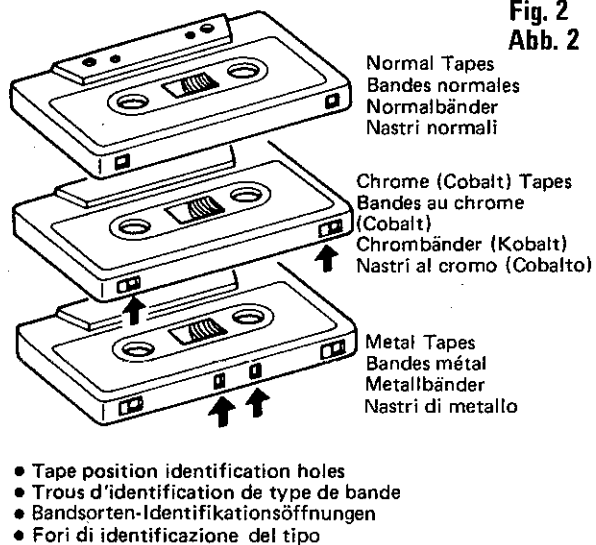
Fig. 1
Abb. 1

Stereo Amplifier
Amplificateur stéréo
Stereo-Verstärker
Amplificatore stereo

Rear Panel
Panneau arrière
Rückplatte
Pannello posteriore

R-919X/V-970X

LINE IN   OUTPUT

Fig. 2
Abb. 2

Normal Tapes
Bandes normales
Normalbänder
Nastri normali

Chrome (Cobalt) Tapes
Bandes au chrome
(Cobalt)
Chrombänder (Kobalt)
Nastri al cromo (Cobalto)

Metal Tapes
Bandes métal
Metallbänder
Nastri di metallo

- Tape position identification holes
- Trous d'identification de type de bande
- Bandsorten-Identifikationsöffnungen
- Fori di identificazione del tipo

Fig. 3
Abb. 3

Voltage Conversion
Changemend de tension
Spannungsumstellung
Selettore di tensione

Fig. 4
Abb. 4

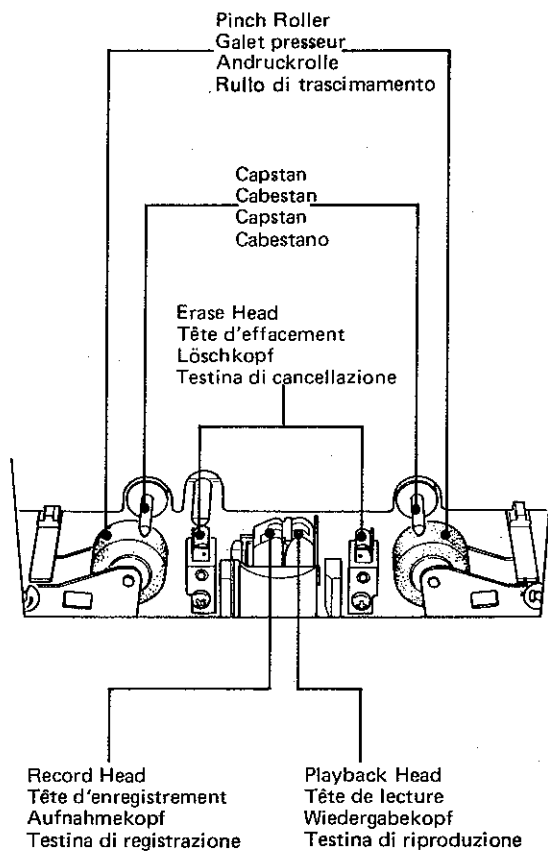Pinch Roller
Galet presseur
Andruckrolle
Rullo di trascimamento

Capstan
Cabestan
Capstan
Cabestano

Erase Head
Tête d'effacement
Löschkopf
Testina di cancellazione

Record Head
Tête d'enregistrement
Aufnahmekopf
Testina di registrazione

Playback Head
Tête de lecture
Wiedergabekopf
Testina di riproduzione

(R-919X)

Fig. 5
Abb. 5

R-919X

R-919X Auto Reverse Stereo Cassette Deck

V-970X

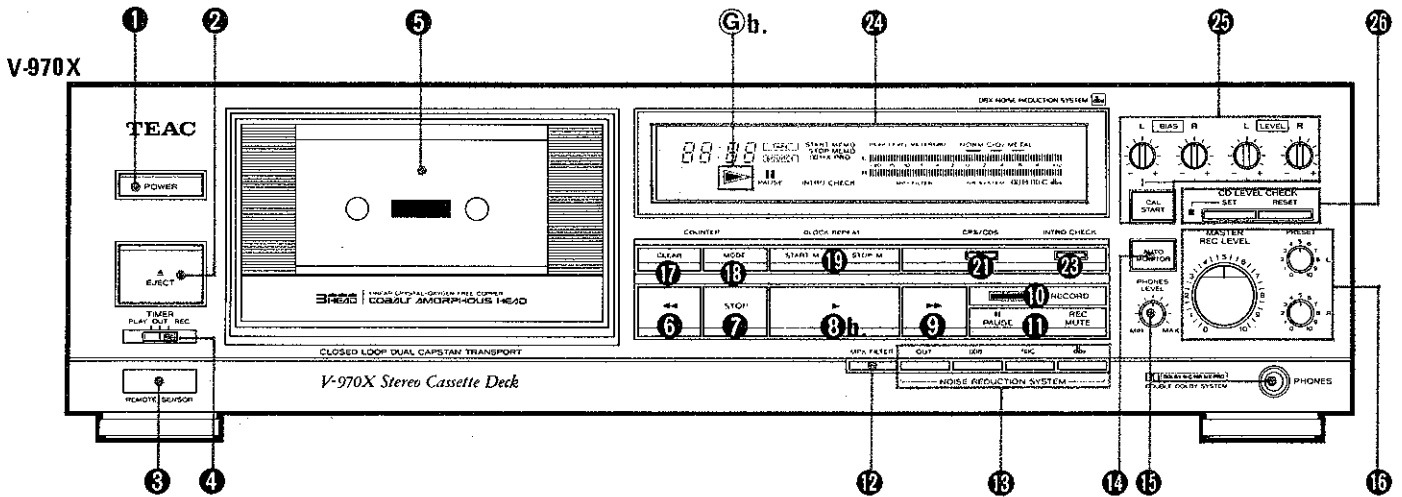V-970X Stereo Cassette Deck
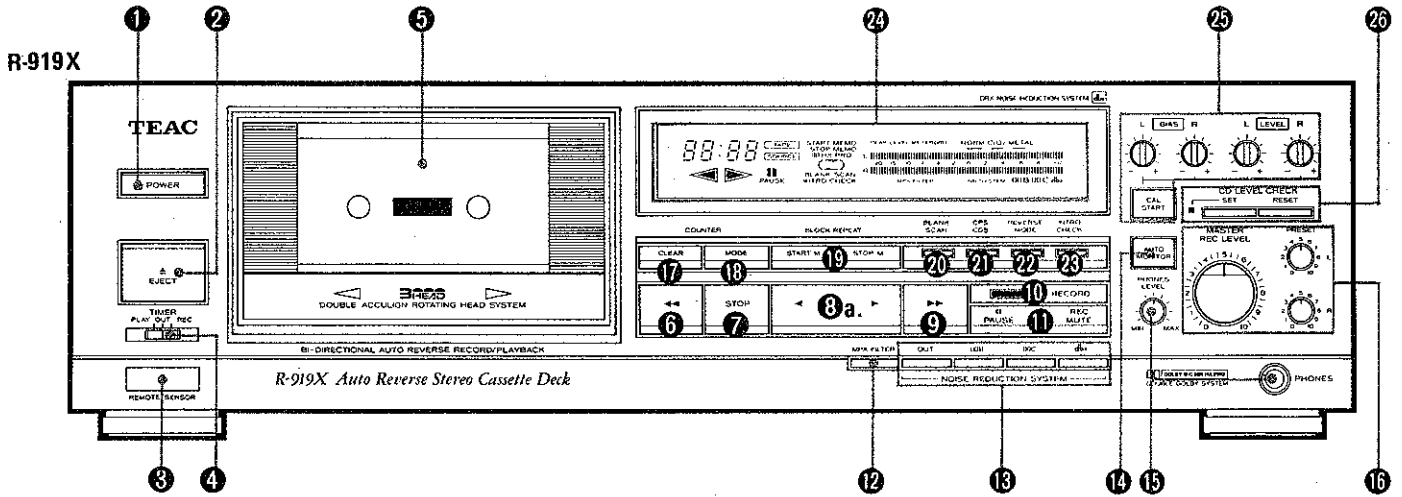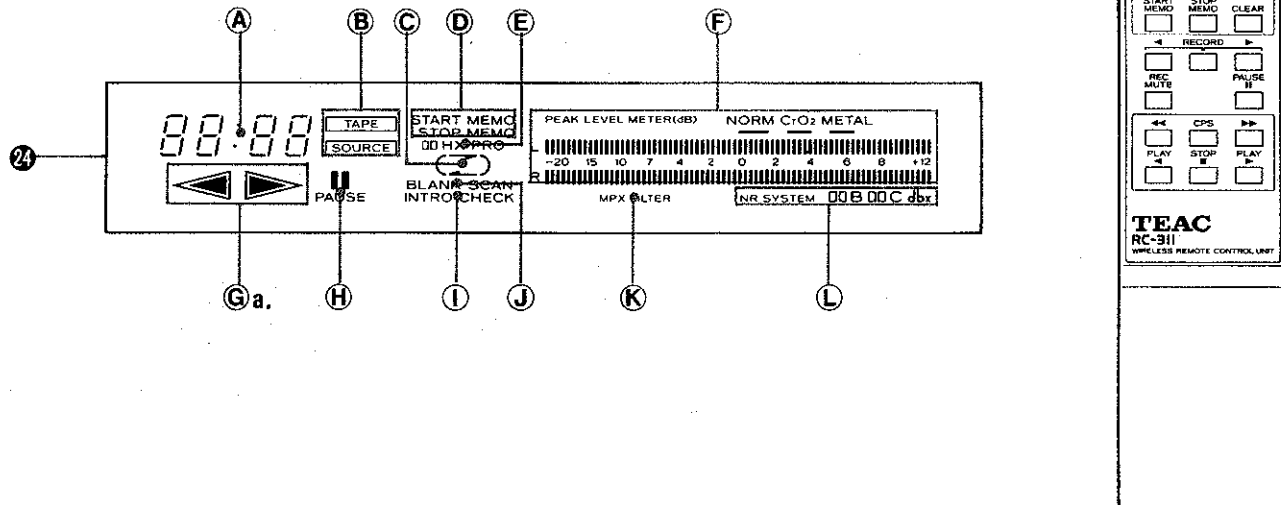
Fig. 7   RC-311
Abb. 7   Remote control unit
          Boîtier de télécommande
          Fernbedienung
          Unitià per il controllo a distanza
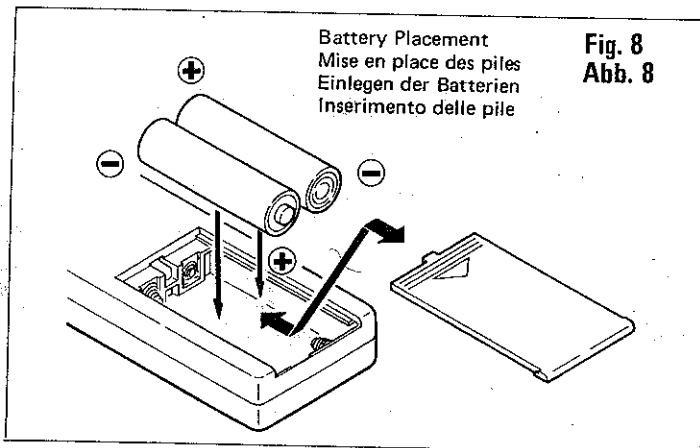
Fig. 6
Abb. 6

Battery Placement
Mise en place des piles
Einlegen der Batterien
Inserimento delle pile

Fig. 8
Abb. 8

Fig. 10
Abb. 10

Side Panel Installation
Installation de paneaux latéraux
Anbringen der Seitenverkleidung
Installazione dei pannelli laterali

Within 7 m
Jusqu'à 7 m
Innerhalb von 7 m
Fino a 7 m

Washer   Screw
Rondelle   Vis
Beilegscheibe Schraube
Rondella   Vite

V-970X US Military model
Modèle militaire V-970X U.S.
US-Mititärmarkt-Ausführung von Modell V-970X
V-970X Modello ad uso dei militare U.S.A.

Fig. 9
Abb. 9

Fig. 11
Abb. 11

Tuner
Syntoniseur
Tuner
Sintonizzatore

Amplifier
Amplificateur
Verstärker
Amplificatore

Spare AC outlet
Prise CA de rechange
Zusätzliche Netzsteckdose
Presa CA di riserva

Audio timer
Minuterie audio
Audio-Schaltuhr
Timer audio

R-919X/V-970X
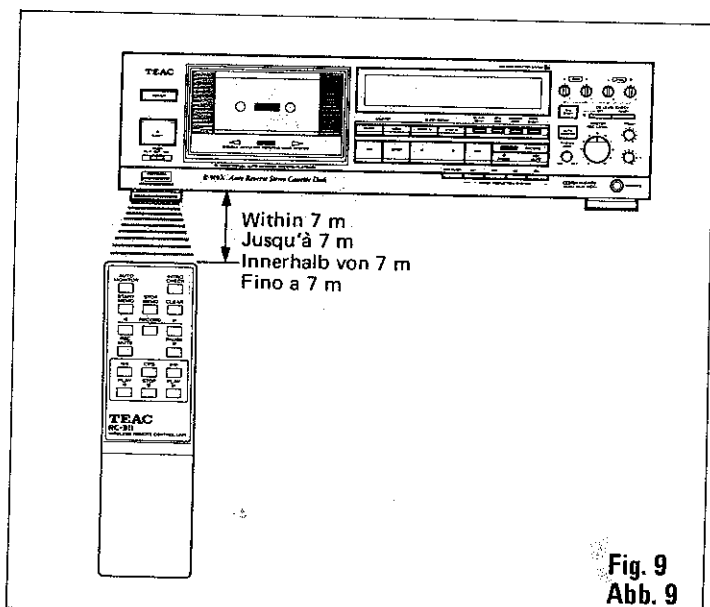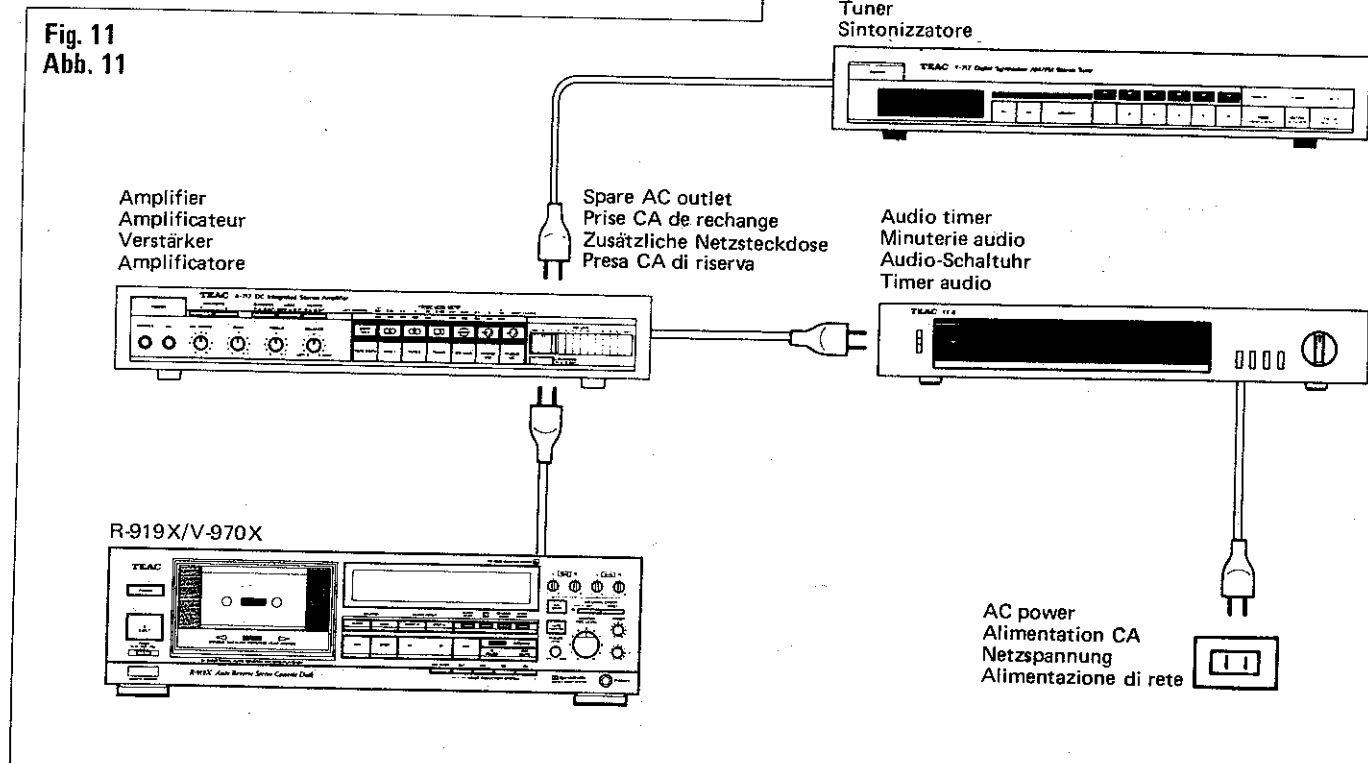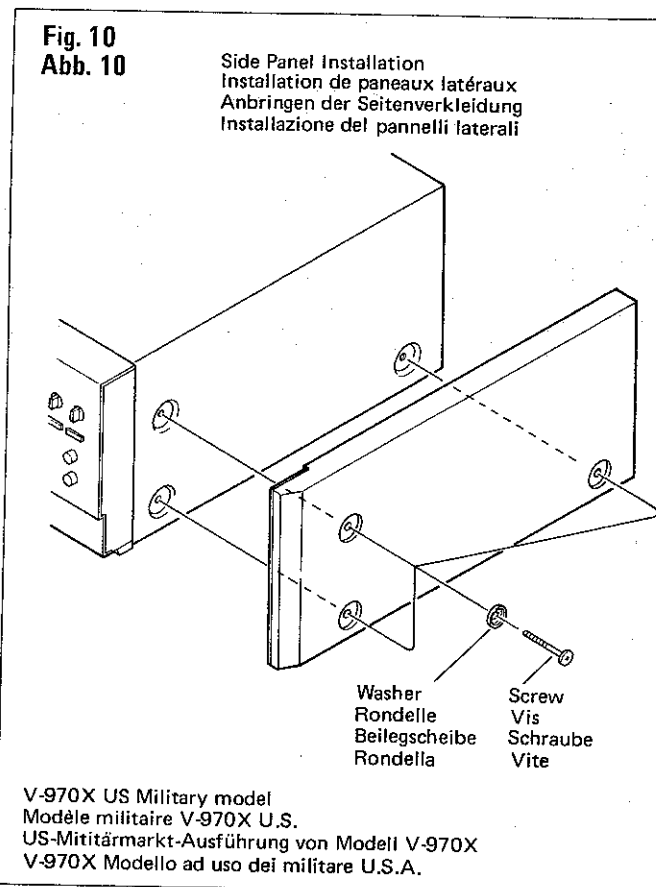
AC power
Alimentation CA
Netzspannung
Alimentazione di rete

Precautions

Environment

Avoid using the deck in the following circumstances:

● High temperature (such as heater, direct sunlight).
● Extremely low temperature.
● Excessive humidity.
● Dusty atmosphere.
● Where power line voltage fluctuation is severe (the use of a voltage regulator may be advisable).

Cassette Tape (Fig. 2)

Tape Selection:
For the automatic tape select function to work properly, metal and chrome (cobalt) formula tapes must have tape identification holes.

Tape Handling:
Do not store tape in the following places:

● On top of heaters, in direct sunlight or in any other high-temperature areas.
● Near speakers, on TV sets or amplifiers or near any strong magnetic fields.
● High-humidity areas or dirty, dusty areas.
Avoid dropping or subjecting the cassettes to excessive shock.

Voltage Conversion (For general export models) (Fig. 3.)

If it is necessary to change the voltage requirements of the deck to match your area, use the following procedure:

1. DISCONNECT POWER LINE CORD.
2. Using a screwdriver, turn the selector until the desired voltage marking appears.

This product is manufactured to comply with the radio interference of EEC directive "82/499/EEC."

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*Dolby noise reduction and HX PRO headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX PRO originated by Bang and Olufsen. "Dolby", the double-D symbol and "HX PRO" are trademarks of Dolby Laboratories Licensing Corporation.

** dbx is a trademark of dbx incorporated. dbx noise reduction system manufactured under license from dbx Incorporated.

Connections (Fig. 1)

● Turn off power for all equipment before making connections.
● Read instructions for each component you intend to use with the deck.

Features and Controls (Fig. 5 and 6)

❶ POWER Switch

Press to switch the deck on. The display window will be illuminated. Press again to turn the deck off.
Note: If you switch the power on again, be sure to wait more than 2 seconds after the power has been switched off.

❷ EJECT Button

Press in the stop mode to open the cassette holder.

❸ REMOTE SENSOR (Remote Control Infrared Signal Receptor)

This receives signals from the RC-311 infrared remote control unit. See page 11.

❹ TIMER Switch

PLAY: For timer playback
OUT: Set to this position when not using a timer.
REC: For timer recording
(Refer to page 11.)

❺ Cassette Holder

❻ ◄◄ (Rewind) Button

Pressing this button rewinds the tape at high speed from right to left. When the tape is fully rewound, the auto stop mechanism stops automatically the tape transport. For the R-919X, this buttons functions as the fast-forward and rewind button, depending on the tape travel. For example, pressing this button fast-forwards the tape in the reverse side.

❼ STOP Button

Press to stop the tape travel and release any other mode.

❽a. Forward/Reverse Play (◄ / ►) Button (R-919X)

Press ► side to play the tape in the forward direction, and press ◄ side to play in the reverse side.

❽b. Play (►) Button (V-970X)

Pressing this button causes the tape to run at normal speed (from left to right).

❾ ►► (Fast-Forward) Button

Pressing this button fast-forwards the tape at high speed for left to right. In the same way, tape transport stops automatically when the tape is fully wound. For the R-919X, this button functions as both fast-forward and rewind button, depending on the tape travel.

❿ RECORD Button

Press this button together with the ► button (◄ or ► on the R-919X) to start recording. The RECORD indicator lights in red.

⓫ PAUSE (‖)/REC MUTE Button

Press the left side of this button to temporarily stop tape travel during recording or playback (the PAUSE indicator lights). Pressing the right side of this button, during recording, leaves about 4 seconds of blank space on a tape. Then the deck enters the record-pause mode. To restart recording, press the left side of the button.

⓬ MPX FILTER Button

Press this button when making a Dolby NR recording of an FM broadcast; the indicator lights. It eliminates the pilot tone (19 kHz) and sub carrier tone (38 kHz) of the FM broadcast which could affect operation of the Dolby noise reduction system. To release this function, press the MPX FILTER button again.

⓭ NOISE REDUCTION SYSTEM Switches

OUT: Press this button when you do not want to use any of noise reduction systems.
□□B: Press this button when making a recording using the Dolby B type noise reduction system, or playing back tapes recorded with Dolby B type NR.
□□C: Press this button when making a recording using the Dolby C type noise reduction system, or playing back tapes recorded with Dolby C type NR.
dbx: Press this button when making recordings with the dbx NR system or when playing back tapes recorded with dbx NR.

⓮ AUTO MONITOR Button

This button allows you to select which signal is to be monitored and to display its level on the meter. When the power is applied to the deck, the monitor mode is set to TAPE, showing the signal recorded on the tape is monitored and displayed on the meter. When the deck enters the record-pause mode, the monitor mode is automatically switched to SOURCE, showing the signal input to the deck (from the LINE IN jacks on the rear panel) is monitored and displayed. And when the record-pause mode

is released, it is automatically changed to TAPE.

To manually change the monitor mode, press this button.

⑮ PHONES Jack and PHONES LEVEL Control

Adjust the output level to the PHONES jack. This knob does not affect the output level to the OUTPUT jacks on the rear panel nor the level indicated on the PEAK LEVEL METER.

⑯ Recording Level Controls

MASTER REC LEVEL Control:

When recording, turn the MASTER REC LEVEL control clockwise to fade the input sound in or turn it counterclockwise to fade out, for smooth tune-to-tune transitions. To balance between the left and right channels, use the PRESET controls.

PRESET Level Controls (L/R):

Adjust the precise recording level for the left and right channels independently to keep the level at a fixed level, so that the same recording level can be obtained at any time.

⑰ COUNTER CLEAR Button

Pressing the CLEAR button resets either the conventional tape counter or the tape-run-time counter to zero.

⑱ COUNTER MODE Button

Press this button to alternate the display mode between the conventional tape counter and the tape-run-time counter.

⑲ BLOCK REPEAT Memory Buttons

START M: Press this button at the desired start position to be stored for repeat playback.

STOP M: Press this button at the desired stop position when the START M button has been pressed.

For details, refer to page 10.

⑳ BLANK SCAN Button (R-919X only)

With this button engaged, (indicator lights in the display window), when a blank portion of more than 10 seconds is detected, tape skips until the beginning of the next tune from which point playback resumes. When the button is pressed again, this function is cancelled (the indicator goes off). (See page 11.)

㉑ CPS/CDS Button

This button is used for the CPS (Computomatic Program Search) and CDS (Computomatic Direct Selection) facilities. For details of each feature, refer to page 9.

㉒ REVERSE MODE Button (R-919X only)

Press this button to select the reverse mode. Reverse modes will be selected in the order ⊃, ⊂⊃, ⊃⊂ then ⊃ again. The current reverse mode is indicated by the

Reverse Mode indicator. The operations in each mode are as follows:

⊃⊂ : When the tape reaches the end, playback (or recording) will stop.

⊃ : This mode is selected whenever the power is turned ON. In the forward play or record mode, when the tape reaches the end, the direction of tape travel is reversed and playback or recording continues until the end of the reverse side. In this mode, when both sides of the tape have been played or recorded, the deck will stop.

⊂⊃ : When the tape reaches the end during either forward or reverse play, the direction of tape travel will be reversed and playback will be continued repeatedly until the STOP button is pressed. In this mode, recording will be done in the same way as in ⊃ position.

㉓ INTRO CHECK Button

When this button is pressed, the deck plays the first 10 seconds (approximately) of each tune and fast-winds the sections in between. (See page 8.)

㉔ Display Window

Ⓐ Multi-Counter

Tape Counter Mode

In this mode, the counter functions like a conventional tape counter, counting up when the tape is moving forward and down when the tape is being rewound (or reversed for the R-919X). The display can be cleared by pressing the COUNTER CLEAR button ⑰, resetting the counter index to "0000".

Tape-Run-Time Counter Mode

In this mode, tape travel is measured in increasing minutes and seconds up to a maximum of 99:59 (99 minutes 59 seconds). Since this counter only functions in the play or record mode, it will be interrupted when the tape is fast-forwarded or rewound (and, of course, in the stop mode); counting up will be resumed when playback or recording restarts. The display can be cleared by pressing the COUNTER CLEAR button ⑰, resetting the counter index to "00:00". To change the display mode press the COUNTER MODE button ⑱.

CPS Display

Indicates the number preset through the CPS (Computomatic Program Search) facilities. (See page 9.)

CDS Display

Indicates the number preset through the CDS (Computomatic Direct Selection) facilities. (See page 9.)

Ⓑ Auto Monitor Indicators

TAPE: Lights when the tape signal either in playback and record mode is selected.

SOURCE: Lights when the source signal is selected. The Auto Monitor indicator is changed automatically to the monitor mode so that SOURCE indicator lights when the deck enters the record-pause mode. When recording starts, the SOURCE indicator automatically goes out and the TAPE indicator lights. (See page 7.)

Ⓒ Reverse Mode Indicator (R-919X only)

Shows the auto reverse mode according to the setting of the REVERSE MODE button ㉒.

Ⓓ Block Repeat Indicators

START MEMO: Lights up when the BLOCK REPEAT START M button ⑲ is pressed, indicating the memorization request is accepted.

STOP MEMO: Lights up in the similar way when the BLOCK REPEAT STOP M button ⑲ is pressed.

(See page 10.)

Ⓔ DOLBY HX PRO indicator

Lights when the deck enters the record mode, showing the built-in Dolby HX Pro circuit functions. For details, refer to page 12.

Ⓕ PEAK LEVEL METER and Tape Type Indicators

This meter shows the peak level of the input or playback signal. The meter has a peak hold feature, which will hold very brief peaks that might otherwise pass unnoticed. In the record mode, the meter indicates the level of the source signals which have been adjusted with the record level controls. The highest peak to be recorded should generally not exceed the meter reference reading for the type of tape used. During playback, the meter indicates the level of the signals recorded on the tape.

Tape type indicator above the meter indicates the type of tape being used. The R-919X/V-970X provides the auto tape selector function, with which the NORM, CrO_2 or METAL indicator lights when the tape is loaded into the cassette holder.

Ⓖa. Direction Indicators/Record Indicator (R-919X)

Indicates the tape running direction. When the power is turned ON, either ◁ or ▷ blinks then lights continuously when the deck enters the playback or record mode.

The previously selected tape direction will be maintained even when the power is switched off. The triangular indicator lights in red when the deck enters the record mode, and blinks during record muting.

⑥b. Tape Running Indicator/Record Indicator (V-970X)
The triangular indicator lights when the deck enters the playback mode.
The triangular indicator lights in red when the deck enters the record mode, and blinks during record muting.

⑪ PAUSE (❚❚) Indicator
Lights when the deck is set to the play-pause or record-pause mode.

⑫ INTRO CHECK Indicator
Lights when the INTRO CHECK button ㉓ is engaged.

⑬ BLANK SCAN Indicator (R919X only)
Lights when the BLANK SCAN button ㉒ is engaged.

⑭ MPX FILTER Indicator
Lights when the MPX FILTER switch ⑫ is pressed.

⑮ NR SYSTEM Indicators
Lights to show the NR system currently selected.

㉕ Calibration Level Controls
CAL START Button:
Press this button to start the calibrating operation. After setting the deck to the record-pause mode, pressing this button enters the LEVEL calibration mode (the LEVEL indicator lights), then pressing again enters the BIAS calibration mode (the BIAS indicator lights). For details, refer to "Calibration Procedure" on the right.
LEVEL Controls:
Used to adjust the level difference between the left and right channels precisely.
BIAS Controls:
Used to adjust the bias current of the left and right channels independently to obtain the optimum recording characteristics for the type of tape used.

㉖ CD LEVEL CHECK Buttons and Indicator
SET: Press this button to activate the CD Level Check mode (the indicator lights); the sensitivity of the PEAK LEVEL METER is raised so that the input level from the CD player in the manual search mode can be adjusted easily.
RESET: Press this button to release the CD Level Check mode. The normal operation of the PEAK LEVEL METER is restored.
(For details, see page 8.)

Operations

Playback and Recording

Stereo Playback
1. Set the TIMER switch to OUT.
2. Press the POWER switch to ON.
3. Load a pre-recorded cassette.
4. R-919X only: Set the REVERSE MODE button to the desired tape travel mode.
5. Select the NR system with the NOISE REDUCTION SYSTEM buttons.
6. Press the ▶ button on V-970X, ◀ or ▶ button on R-919X to start playback.
7. Adjust the volume with the amplifier's control.

Stereo recording
Recording from a stereo system:
1. Set the TIMER switch to OUT.
2. Press the POWER switch to ON.
3. Load a recordable cassette.
4. R-919X only: Set the REVERSE MODE button to the ⊂⊃ position for recording only on one side. If you want to make a bi-directional recording, set to ⊃⊃ position.
5. Select the NR system with the NOISE REDUCTION SYSTEM buttons.
6. Play the source to be recorded to adjust the recording level.
7. Press the AUTO MONITOR button so that the SOURCE indicator lights. This enables you to adjust the recording level without actually recording on the tape.
8. Adjust the recording level controls so that the loudest peak briefly reaches the meter reference reading for the type of tape used.
9. If required, adjust the calibration controls referring to the section "Calibration Procedure" on the right. When calibration adjustment is not required before recording, set the calibration controls to their center click positions.
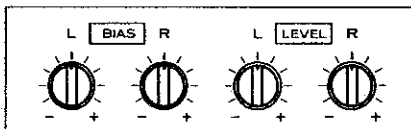
10. Press the RECORD button and the ▶ button (◀ or ▶ for the R-919X) to start recording.
The Auto Monitor indicator is automatically changed to TAPE and the signal can be directly monitored immediately after it is recorded. To compare the recorded sound with the original source, press the AUTO MONITOR button to switch the signal being monitored between TAPE and SOURCE.
Notes:
● To stop recording, press the STOP button.
● To momentarily stop recording, press the PAUSE button. To resume recording, press it again.

Record Muting Operation

The capability of creating blank unrecorded

(erased) portions on a tape during recording is a real advantage in many recording situations. For instance, you may want to eliminate undesired portions of an FM broadcast that you are recording, such as commercials, station breaks or announcements. You may want to record a complete program with controlled spacing between each song. Such blank portions on a tape can be easily left using the REC MUTE function.

1. **Automatic Spacing Operation – for a 4-second blank – (during recording)**
Press the REC MUTE button during recording. The tape movement continues, and a blank space of about 4 seconds is recorded (the RECORD indicator flashes).
The deck then switches automatically to the record-pause mode (both the RECORD and PAUSE indicators light). To begin recording the next tune, press the PAUSE button (the PAUSE indicator goes off).

2. **Automatic Spacing Operation – for a 4-second blank – (during record-pause)**
During the record-pause mode, pressing the REC MUTE button causes the RECORD indicator to blink to show the record-muting stand-by mode. As soon as the PAUSE button is pressed, the tape runs and the above-mentioned automatic spacing operation will be initiated.

3. **For a Blank of More Than 4 Seconds**
During recording, keep the REC MUTE button pressed for a longer blank period. Release the button to enter the record-pause mode. To begin recording, press the PAUSE button.

4. **For a Blank of Less Than 4 Seconds**
After pressing the REC MUTE button during recording, press the PAUSE button, before the 4-second interval has expired, to cancel the muting mode and engage the record-pause mode. To begin recording, press the PAUSE button. Or press the REC MUTE button again to resume recording without stopping the tape.

Erasing

A previously recorded tape will be automatically erased when you make a new recording on it. Alternatively it can be erased by "recording" on it with the MASTER REC LEVEL control set to "0".

Calibration Procedure

Tapes with various formulas are available from different manufacturers. In some cases, however, tapes of the same type may differ depending on the brand or lot. The calibration controls allow you to adjust the

recording level and bias independently for the left and right channels to assure optimum use of any type of tape.

1. Load the tape on which you want to record.
2. Press the PAUSE button, then press the RECORD and the ► (Play) buttons simultaneously. (On the R-919X, if the reverse play button ◄ is pressed together with the RECORD button, calibration adjustment is impossible.)
3. Press the CAL START button. The recording of the internal calibration signal starts, and the LEVEL indicator lights above the Calibration LEVEL controls.
4. Turn the LEVEL controls clockwise so that the "0 dB" indicator (red) of the PEAK LEVEL METER for each channel lights.
5. Press the CAL START button again. The BIAS indicator above the Calibration BIAS controls lights.
6. Adjust the BIAS controls in the same way as LEVEL (in step 4.).
7. Press the ◄◄ (rewind) button to release the calibration adjustment mode and return to the calibration start point.
8. Start recording with the BIAS and LEVEL controls in the positions to which they have just been set.

Notes:
● When recording without calibration adjustment, be sure to set the LEVEL and BIAS controls to the center click positions.
● Before releasing the calibration mode, the values set in calibration can be checked by pressing the CAL START button again.
● Pressing the STOP button also releases the calibration adjustment mode.
● Due to the characteristics of metal tape, the deck cannot be calibrated for optimum response with this type of tape. This is not a malfunction.
● With some tapes, the "0" dB point on the Peak Level Meter may not be set by the above calibration operation. In such a case, adjust the calibration controls so that the PEAK LEVEL METER reaches between −2 and +2 dB.
● During calibration adjustment, the signal from the LINE IN jacks will be automatically cut off.

The CD LEVEL CHECK function let you confirm the input level of signals from a CD player by raising the sensitivity of the PEAK LEVEL METER, while fast-forwarding the CD player to search the peak value recorded on the disc (to be recorded).

Note:
● This function is available only with CD players equipped with a manual search function so that slightly muted but audible sound can be heard.

1. Set the Input Selector (or Rec Selector) of the amplifier to the CD position.
2. Press the CD LEVEL CHECK "SET" button in the stop mode; the indicator lights.

At the same time, the Auto Monitor indicator is changed to SOURCE automatically.
3. Start the CD player and set it to the fast-forward mode (audible manual search mode).
At this time, the PEAK LEVEL METER shows the signal input from the CD player.
4. Adjust the input level with the recording level controls.
5. To release the CD Level Check mode, press the CD LEVEL CHECK "RESET" button.

Multi-Counter Function

With the multi-counter facilities incorporated in the unit, there are two different display modes available, depending on the setting of the COUNTER MODE button.
Tape Counter Mode: The counter functions as a conventional tape counter.
TRT Counter mode: The counter functions as a tape-run-time counter, measuring tape travel in minutes and seconds.

Using as a Tape Counter
Using the COUNTER MODE button, call up the tape counter mode; a 4-digit display will appear. Its function is identical to that of conventional tape indexing counters. During forward recording (included record muting), playback and fast-forward, the counter counts upwards as the tape moves from left to right, and downwards during reverse modes and rewind as the tape moves from right to left. The indicated numerals are not related to time lapse and are not compatible with the counter readings of other cassette decks. One typical example of using this display in the conventional tape counter mode is: First load a cassette and before recording, press the COUNTER CLEAR button to reset the counter to "0000". Then note the counter reading at the beginning of each piece of music to facilitate locating a particular selection when you wish to play it back.

Using as a TRT Counter
Using the COUNTER MODE button, call up the tape-run-time mode; a colon appears between the 2nd and 3rd digit. In this mode, tape travel is measured in increasing minutes and seconds while the tape is running at normal speed during recording (including record muting) and playback. Counting stops during rewind and fast-forward. This function can be used to measure the approximate length of a recorded song or to make a calculated estimation of how much tape is left.

"Visible" and "Invisible" Counters
Both counter modes are switchable at any time, with the one selected appearing on the display and the other functioning in memory. For example, when the conventional tape counter is selected with the COUNTER MODE button, counting of the tape-run-time also takes place and its reading can be called up at any time by pressing the COUNTER MODE button. Pressing the COUNTER CLEAR button resets only the counter which is visible. Both counters, "visible" and "invisible" are reset when power is switched off.

INTRO CHECK

This facility makes searching for a specific tune much easier by continuously detecting the beginning of each tune.
1. Press the INTRO CHECK button.
2. The deck will fast-forward to the beginning of a tune, play about the first 10 seconds, and fast-forward to the beginning of the next tune, where the cycle starts over.
3. To cancel intro check function, press the STOP button or during the 10 seconds playback press PLAY.
(V-970X)
4. If the STOP is not pressed, the intro check function is released when the tape reaches the end stop.
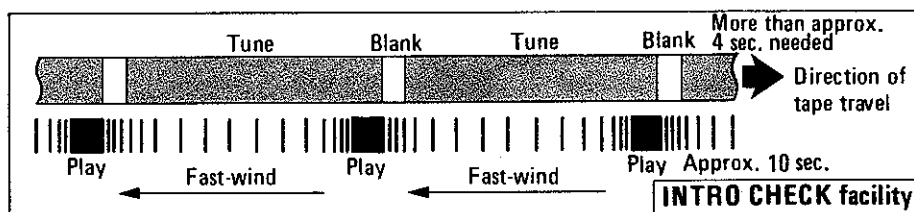(R-919X)
5. If STOP is not pressed, the intro check function is released depending on the setting of the REVERSE MODE button.
⇌ : Released when tape reaches the end stop.
⇒ : Released when tape reach the end of the reverse side.
⊂⊃ : Released after completing one full loop of the tape after the initial side.

Notes:
● Pressing the INTRO CHECK button is possible in any tape operation mode except play-pause and record-pause.
● During intro check, if any tape operation button except REC MUTE is pressed, the intro check function is canceled and the corresponding mode is entered.
● For the intro check function to work properly, there must be a blank of at least 4 seconds or more between tunes.
(R-919X)
● Search direction is determined by the lit direction indicator.

INTRO CHECK facility

The CDS system allows direct access to any recorded tune by presetting the tune number counted from the beginning of the tape. (R-919X only: Before starting CDS search, set the REVERSE MODE button to position.) The tune number can be preset by pressing the ◄◄ (◄◄ or ►► on R-919X) button first and then the CDS/CPS button. "PL 1" will appear in the Multi Counter when the CDS/CPS button is pressed first, then the PL number will increase by one each time the CDS/CPS button is pressed. Thus "PL 5" will appear if the button is pressed 5 times. In the CDS system, as the CDS searching is always started from the beginning of SIDE A or SIDE B (R-919X only), first you must know the side on which the tune to be searched has been recorded.

To exit from the CDS mode,
- Push the COUNTER CLEAR button while the tape is being rewound.
- Push the ◄◄ or ►► button if the tape is being forwarded for searching.

Note:
- When the tape has already been rewound to its beginning, use the CPS function to locate the desired tune instead of the CDS function.

CPS (Computomatic Program Search) Function

CPS allows playback up to 15 tunes ahead or before the one being played. This function is performed by detecting blank spaces of at least 4 seconds between tunes. Blanks can be created using the REC MUTE facility.

1. Press the CDS/CPS button repeatedly or hold it until the number of tunes to be skipped appears in the multi function counter. Refer to the chart "How to Select a Desired Tune Using CPS".
   - If the displayed number exceeds the required one, keep pressing the CDS/CPS button as 1 appears after tune number 15 is indicated.
2. Press ◄◄ or ►► button, depending on the search direction.
3. As the tape is fast-wound and blank spaces between tunes are detected, the displayed number will decrease until it reaches "1", at which point playback will start.

(R-919X)

CPS tape side is determined by the setting of the REVERSE MODE button. See chart "CPS Tape Side Decided by REVERSE MODE button".

Notes:
- CPS setting is possible in any tape operation mode.
- To cancel the CPS function before pressing ◄◄ or ►► button, press the COUNTER CLEAR, COUNTER MODE, STOP, ► (and ◄ on R-919X) and PAUSE button.
- See also: "Notes Common to INTRO CHECK, CDS, CPS".

Notes Common to INTRO CHECK, CDS, CPS

Various search functions — INTRO CHECK, CDS, CPS — are performed by detecting and counting blanks of about 4 seconds, such as intervals between tunes.

Therefore, with the following types of tapes, search functions may not work correctly.
- When the intervals between tunes cannot be detected.
  - Intervals of less than 4 seconds.
  - High levels of noise in intervals (due to recording old scratched records, poor FM or AM reception, etc.).
- When parts of the program are likely to be detected as intervals between tunes:
  - Long low level sections in classical music, etc.
  - Momentary pauses in a speech at a conference, etc.
  - Continuing low level portions created by fading out, etc.
- In the case of tapes containing fade-outs, because the length of the blanks can differ depending on how the fade-out was performed, some tune intervals may be detected and others may not.

This problem can be corrected using the REC MUTE facility.

This correction is particularly necessary when making recordings using the dbx NR system.

Tape Memory Functions

Memory Start Playback
1. Press the START M button at the desired point on the tape during play, play-pause, record, record-pause or record-mute.
2. Press the ◄◄ button after playback or recording. When the memorized position is reached, the deck will automatically start playback.
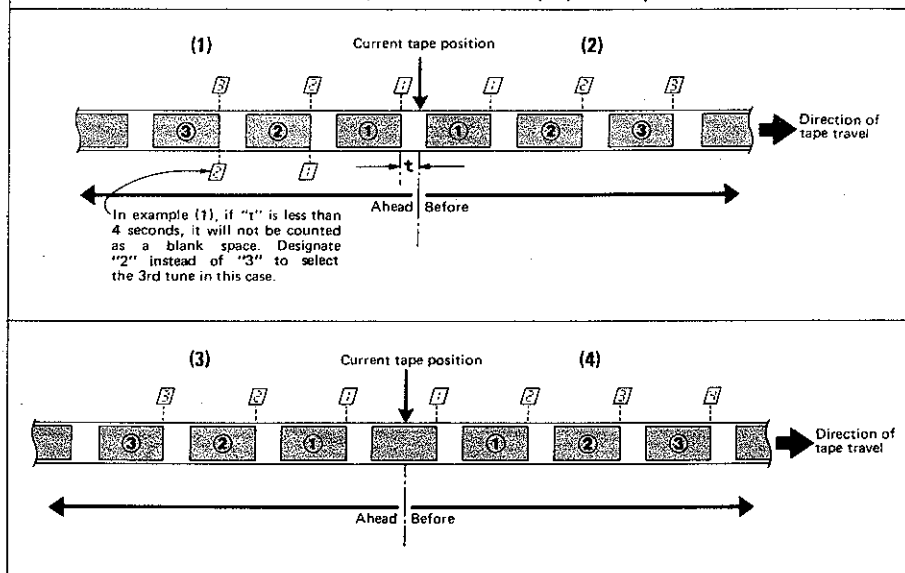
Memory Stop
1. Press the STOP M button at the desired position on the tape during play, play-pause, record, record-pause or record-mute.
2. Press the ◄◄ button after playback or recording. When the memorized position is reached, the tape will stop automatically.

Notes:
- Tape transport may not always start or stop exactly at the memorized counter index due to the force of inertia from fast winding.

How to Select a Desired Tune Using CPS
Ex: See (1). To select the 3rd tune past the current tape position, select "3".

In example (1), if "t" is less than 4 seconds, it will not be counted as a blank space. Designate "2" instead of "3" to select the 3rd tune in this case.

CPS Tape Side Decided by REVERSE MODE Button (R-919X)

Search Direction	Direction Indicator	CPS Tape Side ⊏	CPS Tape Side ⊐	CPS Tape Side ⊏⊐
►►	▷	Side A only	Side A → Side B	Side A ⇄ Side B
►►	◁	Side B only	Side B → Side A	Side B ⇄ Side A
◄◄	▷	Side A only	Side A only	Side A ⇄ Side B
◄◄	◁	Side B only	Side B only	Side B ⇄ Side A

- Memory start and stop can be cancelled by pressing the corresponding button a second time (the relevant indicator goes off).
- Memory position setting is not possible during rewind, fast-forward or stop, though the indicator will light. In this case, memory start or stop will take place at the previously-memorized position.
- New start and stop positions are memorized whenever the START M or STOP M button is pressed (in a functional mode). The memory is cleared when power is switched off or the cassette is ejected.

Block Repeat Playback
1. Set the START MEMO position as described before (the START MEMO indicator lights) at the start of the 'block' you want to repeat.
2. Set the STOP MEMO position (the STOP MEMO indicator lights) at the end of the block.

(V-970X)
3. Press the ◄◄ button to initiate block repeat playback.
   - The tape will rewind to the START MEMO position.
   - The tape will play automatically from this position to the STOP MEMO position.
   - The tape will rewind to the START MEMO position again.
   - Thus the designated block will be played back repeatedly.
4. Press the STOP button to stop block repeat playback. (See illustration A.)

(R-919X)
3. Press the ◄◄ or ►► depending on the start/stop memory positions to reach the START MEMO position. The designaged block will then be repeated until STOP is pressed. (See illustration B.)
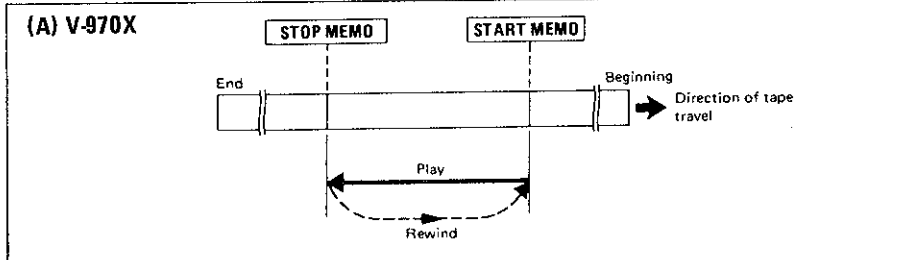
Notes:
1. For block repeat playback to function, the difference between the START MEMO and STOP MEMO positions on the tape counter must be at least a two-digit number (10 or larger).

(R-919X)
2. Tape memory functions including block repeat playback are not compatible with

(A) V-970X — STOP MEMO / START MEMO; End / Beginning / Direction of tape travel; Play; Rewind

(B) R-919X

- Plays the start memory position No. 3 to the beginning of the stop memory position No. 10 and rewinds tape to the start memory position No. 3
- Same as above.
- Same as above.
- Plays No. 10 to "X" position and rewinds "X" position to No. 10.
- Plays No. 10 to No. 20 stop memory position, and rewinds No. 20 to No. 10.
- Same as above.
- Plays No. 10 to No. 15 (end stop on SIDE A) and stops.
- Plays No. 10 to No. 25 stop memory position, and rewinds No. 25 to No. 10.
- Same as above.
- Plays No. 25 to No. 30 (end stop on SIDE B) and stops.
- Same as above.
- Plays No. 25 to No. 10 and rewinds No. 10 to No. 25.
- Plays No. 20 to "Y" position and fast-forwards "Y" to No. 20.
- Plays No. 20 to No. 30 (end stop on SIDE B) and stops.
- Plays No. 20 to No. 5, and fast-forwards No. 5 to No. 20.
- Plays No. 10 to No. 15 (end stop on side A) and stops.
- Plays No. 10 to No. 30 (end stop on side B) and stops.
- Plays No. 10 to No. 5 (through No. 15, 16, 30 and 1) and fast-forwards No. 5 to No. 10.
- Plays No. 25 to No. 30 (end stop on SIDE B) and stops.
- Same as above.
- Plays No. 25 to No. 20 (through No. 30, 1, 15 and 16) and rewinds No. 20 to No. 25.

the CPS and INTRO CHECK functions; they have priority.

BLANK SCAN Facility (R-919X)

This facility is provided so that the deck will skip long blank portions during playback for greater efficiency.
1. During playback, press the BLANK SCAN button (its indicator will light).
2. If a blank section of more than about 10 seconds is detected during playback, the deck will automatically fast forward the tape to the beginning of the next recorded section from which point playback will resume.
3. To release this function, press the BLANK SCAN button again (its indicator will go off).
4. If the STOP button is not pressed, the point at which the deck stops is determined by the setting of the REVERSE MODE switch.
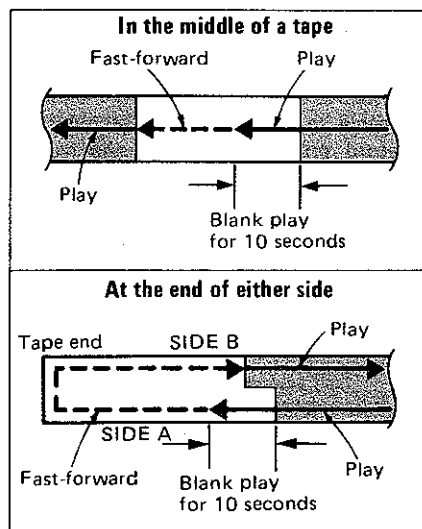   ⊐⊏ : Stops when the end of the tape is reached.
   ⊐⊐ : Stops when the end of the reverse side is reached.
   ⊂⊃ : As long as there is a recorded section before the end of the second side, blank scan is continuous; otherwise it automatically stops after completing a full loop of tape after the initial side.

Note:
● If a tape portion at a particularly low level is continued for more than 10 seconds, such as a pianissimo section in classical music, etc., it may be detected as a blank and the Blank Scan operation may not work correctly.

In the middle of a tape

Fast-forward   Play

Play

Blank play
for 10 seconds

At the end of either side

Tape end   SIDE B   Play

SIDE A

Fast-forward   Blank play   Play
                for 10 seconds

Timer-Controlled Operation (Fig. 11)

Timer-Controlled Recording Operation

1. Connect your deck and stereo system to a commercially available clock timer as shown in the diagram.
(R-919X)
Determine the side of tape on which you want start recording with the ◄ or ► button.

2. Make all the preparations as for normal recording, but leave the deck in the stop mode.
3. Set the audio timer to the required start (power on) and stop (power off) times.
4. Set the TIMER switch on the deck to REC.
   When the preset start time is reached, power will be supplied and recording will start.
(R-919X)
Note: The tape direction (◄ or ►) does not change when the power is cut. Take this into account for timer-controlled operation.

Timer-Controlled Playback Operation

1. Check that the deck is correctly connected to the amplifier for normal playback operation.
2. Connect the deck and amplifier to a audio timer as for timer-controlled recording (left).
(R-919X)
Determine the side of tape you want to play first.
3. Make all preparation as for normal playback, but do not set the tape in motion.
4. Set the audio timer to the required start (power on) and stop (power off) times.
5. Set the TIMER switch on the deck to PLAY.
   When the preset start time is reached, power will be switched on and playback will start.

Remote Controlled Operation (Fig. 7)

The provided RC-311 remote control unit allows the R-919X/V-970X to be operated from a distance. The control buttons on the remote control unit function in almost the same way as those on the front panel of the R-919X/V-970X, but they have slightly different names, etc. For differences, refer to the table below.

| Comparison between buttons on the remote control unit and on the front panel ||
Buttons on the remote control unit	Buttons on the front panel
RC-311	R-919X/V-970X
AUTO MONITOR	AUTO MONITOR
INTRO CHECK	INTRO CHECK
START MEMO	START M
STOP MEMO	STOP M
CLEAR	CLEAR
◄ RECORD ► *1	RECORD
REC MUTE	PAUSE/REC MUTE
PAUSE	PAUSE/REC MUTE
◄◄	◄◄
CPS	CPS/CDS
►►	►►
PLAY ◄ *2	◄
PLAY ►	►

*1 Press two buttons simultaneously. The ◄button does not function with the V-970X.
*2 This button does not function with the V-970X.

Precautions on Remote Control Operation (Fig. 8 and 9)

1. Battery Placement

1. Remove the lid.
2. Insert 2 "AA" type dry cell batteries. Be sure that batteries are inserted with the negative and positive terminals correctly positioned.
3. Close the unit until it snaps.

How often should the batteries be changed?
The batteries will normally last about six months. However if you notice that a shorter distance between the remote control unit and the R-919X/V-970X is required for operation, the batteries should be changed. Replace the batteries with two new ones.

Precautions regarding batteries
● Be sure to insert the batteries with the positive (+) and negative (−) terminals correctly positioned.
● Replace the batteries with the same type. Never try to use a different type of battery.
● Rechargeable and non-rechargeable batteries can be used. Refer to their precaution labels.
● Remove the batteries from the remote control unit when it will not going to be used for a long period of time.
● Replace weak batteries as soon as possible.
● Do not heat, take apart, or dispose of the batteries in a fire.

2. Remote Control Unit RC-311
When operating the remote control, point the front of the unit at the REMOTE SENSOR on the R-919X/V-970X. The remote control unit may be used within the range shown in the figure.

Notes:
● Even if the remote control unit is operated within the effective range, remote control operation may be impossible if there is any obstruction between the R-919X/V-970X and the remote control unit.
● If the deck is operated in the vicinity of other appliances generating infrared rays, or if other remote control devices using infrared rays are used near the R-919X/V-970X, the deck may operate improperly. Conversely, if the R-919X/V-970X's remote control unit is operated in the vicinity of other appliances which use an infrared remote control device, the other appliance may operate improperly.
● When the unit will not be used for a long period of time (more than one month), remove the batteries to prevent them from leaking. If leakage should take place, wipe up the liquid inside the compartment and replace the batteries with new ones.
● Do not place books or other objects on the remote control unit since they might depress the buttons and run down the batteries.
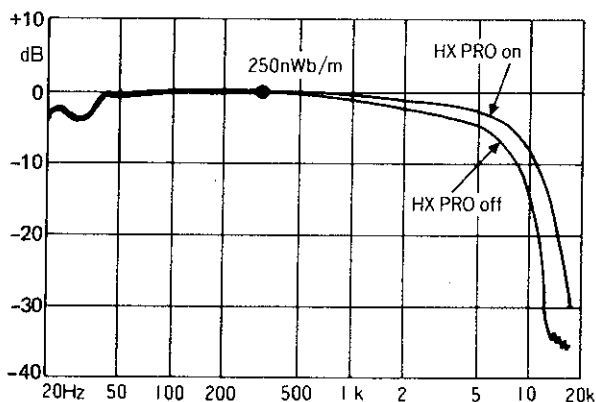
Dolby HX Pro is an "active bias" technique that can improve the quality of audio tape recordings. High-level high frequencies can be recorded more accurately, without sacrificing signal-to-noise ratio, while such side effects of tape saturation as distortion are reduced.

What Is Bias?

Bias is a very high-frequency signal generated within a tape deck and recorded on the tape simultaneously with the program material. This inaudible signal allows a low noise, low distortion recording and flat frequency response. Different magnetic tape formulations require different amounts of bias for optimum performance. If the bias level is too high, high-frequency Maximum Output Level (MOL) decreases.
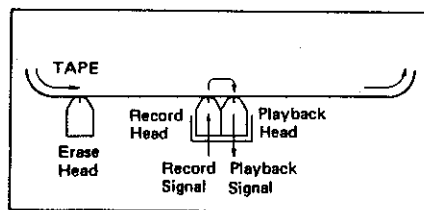
The Problem of Self-Bias

Unfortunately, bias level is often influenced by the signal being recorded. The high frequencies contained in some music act as bias. This unpredictable source of bias is added to the existing bias, resulting in a loss of high-frequency response. As the high-frequency content of the signal increases, the ability of the recorder to record high frequencies (MOL) decreases. This phenomenon is called self-biasing.

How Dolby HX Pro Solution

The Dolby HX Pro monitors the high-frequency content of the program material and adjusts the recorder bias oscillator to maintain a constant total bias level. The result is improved high-frequency response and lower distortion. Depending on the type of tape, the improvement in headroom can be 6 dB or more.

The Benefits

With Dolby HX Pro, it is easier to make more accurate recordings of the kind of music which contains high-level high frequencies. The improvement is similar to that of high-performance tape over conventional tape, so regardless of the type of tape used, the results will sound better.

Most important of all, Dolby HX Pro requires no decoding process. Once the tape is recorded with it, the improvements will be realized when playing the tape back on any machine.

Example of improved frequency response using Dolby HX Pro function

Three-Head System

A three-head system means that you can record on the tape and monitor from it at the same time (see illustration). Conventional combination record/playback heads permit only recording or playback. With the three-head system, you can check the quality of your recordings as you make them.

Record and Playback Heads

Side Panel Installation
(V-970X U.S. Military Version Only)
(Fig. 10)

1. Remove the three screws on both sides of the deck using a Phillips screwdriver (cross-tipped).
   (After removing, retain the removed screws for the future.)
2. Mount the side wood panels provided on both sides of the deck, using the exclusive screws (three for each side), as shown in the figure.
   If required, use the washers provided together with the mounting screws.
* Additional accessories for the V-970X U.S. Military Version
  • Side wood panel x 2
  • Mounting screw x 6
  • Washer x 6

Maintenance (Fig. 4)

The heads and tape path should be cleaned and demagnetized periodically.

Cleaning Tape Path

• Apply head cleaning fluid* to special cotton swabs or a soft cloth, and lightly rub the heads, capstans and all metal parts in the tape path.
• Also clean the pinch rollers using rubber cleaning fluid*.
* Both are available in TEAC HC-1 and RC-1 in the U.S.A. or TEAC TZ-261 Tape Recorder Cleaning Kit in other areas.

Demagnetizing Heads

Be sure that the power is off, then demagnetize the heads using a TEAC E-3 demagnetizer or equivalent. For details of its use, read its instructions.

Troubleshooting

Basic troubleshooting of a cassette tape deck is similar to troubleshooting any other electrical or electronic equipment. Always check the most obvious possible causes first. To give you a few ideas of what to look for, check the following:

• No power: Is the power cord connected?
• Tape begins running when power is turned on. Is the TIMER function on?
• No audio output. Are all connections properly made?
• Degraded sound quality: Are the heads dirty or magnetized? Are you using good quality tape? Is the proper NR System select switch on?
• Unable to select record mode: Are the record protection tabs on the tape in place?

Specifications

Track System 4-Track, 2-Channel Stereo
Heads R-919X 4: 2 Erase, 1 Record and 1
   Playback (Rotary)
   V-970X 3: 1 Erase, 1 Record and 1
   Playback (Combination)
Type of Tape Cassette tape C-60 and C-90
   (Philips type)
Tape Speed 4.76 cm/sec. (1-7/8 ips)
Motors 3: 1 DC Servo motor
   (for capstan drive)
   1 DC motor
   (for reel drive)
   1 DC motor (for ancillary control)
Wow and Flutter (WRMS) 0.03 %
   (R-919X), 0.025 % (V-970X)
Frequency Response (Overall) —20 dB
   20 – 21,000 Hz Metal Tape
   (25 – 20,000 Hz ± 3 dB)
   20 – 20,000 Hz CrO_2 Tape
   (25 – 19,000 Hz ± 3 dB)
   20 – 18,000 Hz Normal Tape
   (25 – 17,000 Hz ± 3 dB)
Signal-to-Noise Ratio (Overall)
   60 dB (3% THD Level, Weighted)
   70 dB (Dolby B In, over 5 kHz),
   80 dB (Dolby C In, over 1 kHz),
   92 dB (dbx In, at 1 kHz)
Dynamic Range 110 dB (dbx in, 1 kHz
   Peak Level)
Fast Winding Time Approximately 100
   seconds for C-60
Inputs Line: 60 mV, 50k ohms
Outputs Line: 0,3 V for load impedance of
   50k ohms or more
   Headphones: 8 ohms
Power Requirements 120/220/240 V
   AC, 50/60 Hz (General export
   models)
   120 V AC, 60 Hz (U.S.A./Canada)
   220 V AC, 50 Hz (Europe)
   240 V AC, 50 Hz (U.K./Australia)
Power Consumption 27 W
Dimensions (W x H x D)
   435 x 123.5 x 279.5 mm
   (17-1/8" x 4-7/8" x 11")
   471 x 123.5 x 279.5 mm
   (18-9/16" x 4-7/8" x 11")
   (V-970X, with side panel)
Weight 5.9 kg (13.01 lbs) net,
   6.6 kg (14.55 lbs) net (V-970X,
   with side panel)
Standard Accessories
   Wireless Remote Control Unit
   RC-311, Batteries (SUM-3, "AA",
   "R6" type) x 2, Input-output con-
   nection cords

- Specifications were determined using metal tape except as noted.
- Improvements may result in specifications or features changing without notice.
- Photos and illustrations may differ slightly from production models.

Précautions à observer

Environnement
Eviter d'utiliser l'appareil dans les conditions suivantes:
- Température élevée (par exemple, un radiateur, les rayons directs du soleil).
- Températures extrêmement basses.
- Humidité excessive.
- Atmosphère poussiéreuse.
- Dans les endroits où les fluctuations de la tension de ligne d'alimentation sont importantes (l'utilisation d'un régulateur de tension est recommandée dans certains cas).

Bandes (Fig. 2)
Sélection de bande:
Pour que la fonction de sélection automatique de bande agisse correctement, les bandes à formule métal et chrome (cobalt) doivent posséder des trous d'identification.

Manipulation des bandes
Ne pas entreposer les bandes dans les endroits suivants:
- Sur des radiateurs, au soleil ou dans un endroit où la température est élevée.
- Près de haut-parleurs, sur des téléviseurs ou amplificateurs ou encore près de champs magnétiques puissants.
- Dans des endroits où l'humidité est élevée ou poussiéreux et sales.
Eviter aux cassettes les chutes et les chocs excessifs.

Changement de tension (pour les modèles d'exportation générale) (Fig. 3)
S'il est nécessaire de changer la tension de votre appareil pour qu'elle corresponde à celle de votre région, procéder comme suit:
1. DEBRANCHER LE CORDON D'ALIMENTATION.
2. Avec un tournevis, tourner le sélecteur jusqu'à ce que la marque de la tension voulue apparaisse.

* Réduction de bruit Dolby et extension de hauteur HX PRO fabriquées sous licence de Dolby Laboratories Licensing Corporation. HX PRO vient de Bang and Olufsen. "Dolby", le symbole double-D et "HX PRO" sont des marques déposées de Dolby Laboratories Licensing Corporation.
** dbx est une marque déposée de dbx Incorporated. Le système de réduction de bruit dbx est fabriqué sous licence de dbx Incorporated.

Raccordements (Fig. 1)

- Couper l'alimentation de tous les appareils avant d'effectuer les raccordements.
- Lire les instructions concernant chacun des appareils que vous avez l'intention d'utiliser avec cette platine.

Caractéristiques et commandes (Fig. 5 et 6)

❶ Interrupteur d'alimentation (POWER)
Appuyer pour alimenter la platine. L'affichage sera allumé.
Appuyer à nouveau pour couper l'alimentation.
Remarque: Si vous remettez l'alimentation, s'assurer qu'au moins 2 secondes se sont écoulées depuis sa coupure.

❷ Touche d'éjection (EJECT)
Appuyer dans le mode d'arrêt pour ouvrir le porte cassette.

❸ REMOTE SENSOR (Récepteur du signal infrarouge de télécommande)
Il reçoit les signaux du boîtier de télécommande à infrarouge RC-311. (Voir page 20.)

❹ Commutateur de minuterie (TIMER)
PLAY: Pour la lecture par minuterie.
OUT: Régler dans cette position pour ne pas utiliser la minuterie.
REC: Pour l'enregistrement par minuterie. (Se reporter à la page 20.)

❺ Porte cassette

❻ Touche de réembobinage (◄◄)
Une pression sur cette touche fait réembobiner la bande à grande vitesse de la droite vers la gauche. Quand la bande est complètement réembobinée, le mécanisme d'arrêt automatique arrête automatiquement le transport de bande. Pour la R-919X, cette touche fonctionne comme touche d'avance rapide ou de réembobinage, selon le défilement de la bande. Par exemple, une pression sur cette touche fait défiler rapidement en avant la face inverse.

❼ Touche d'arrêt (STOP)
Appuyer pour arrêter le défilement de la bande et libérer tout autre mode.

❽a Touche de lecture inversée/avant (◄ / ►) (R-919X)
Appuyer sur le côté ► pour lire la bande dans le sens avant, et appuyer sur le côté ◄ pour lire la face inverse.

❽b Touche de lecture (►) (V-970X)
Une pression sur cette touche fait défiler la bande à vitesse normale (de la gauche vers la droite)

❾ Touche d'avance rapide (►►)
Une pression sur cette touche fait défiler en avant la bande à grande vitesse de la gauche vers la droite. De la même façon, le transport de bande s'arrête automatiquement quand la bande est complètement embobinée. Pour la R-919X, cette touche fonctionne comme touche d'avance rapide ou de réembobinage, selon le défilement de la bande.