

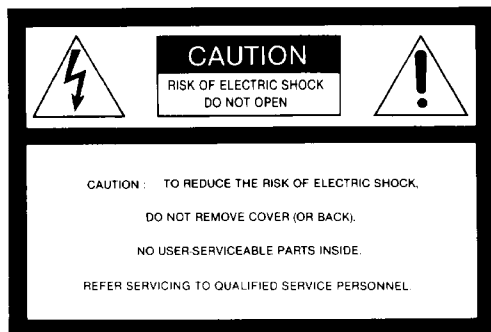
Stereo Cassette Deck

Operating Instructions

TC-FX120

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.



This symbol 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.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

*The graphical symbols are on the rear enclosure.

For the customers in Canada

This apparatus complies with the Class B limits for radio noise emissions set out in Radio Interference Regulations.

Owner's Record

The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. TC-FX120

Serial No. _____

NOTICE FOR CUSTOMERS IN THE UNITED KINGDOM

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue:Neutral

Brown:Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black. The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

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Features

- **Band C type Dolby NR* systems** which reduce tape noise.
- **Automatic tape type selection** during playback and recording.
- **Bias control** for optimum bias current adjustment.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.

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

Precautions

On safety

- Before operating your unit, be sure that its operating voltage matches that of your local power supply.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

On operation

- When the unit is not being used, turn the power off to conserve energy and to extend the useful life of your unit.
- Because of a safety mechanism, the function buttons will not operate if the cassette holder is not completely closed, if there is no cassette in the cassette holder, or if the cassette has been incorrectly inserted into the cassette holder.

On head cleaning

The heads and tape path should be cleaned after 10 hours of operation. Dirty heads and a dirty tape path may cause:

- Loss of high-frequency response
- Loss of sound volume
- Sound drop-out

Note on cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous playback.

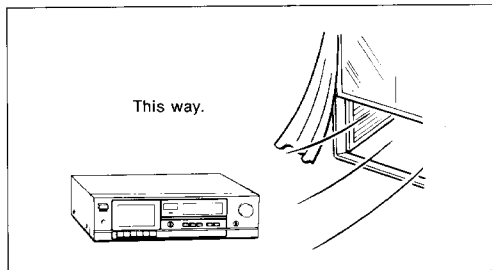
If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

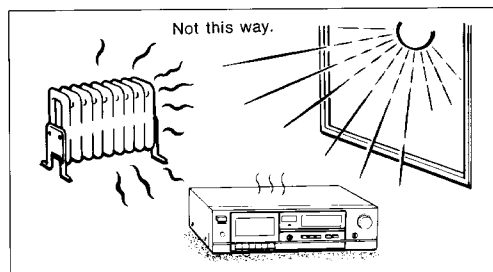
Installation

Notes on Installation

Place the unit with the front panel facing toward you in a location with adequate air circulation to prevent overheating of the unit.



Do not place the unit on a soft surface, such as a rug, that would block the ventilation holes on the bottom.



Install the unit with the front panel facing toward you.

Do not install the unit:

- near heat sources such as radiators or air ducts.
- in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- in an inclined position.
- on a soft surface, such as a rug, that would block the ventilation holes on the bottom.

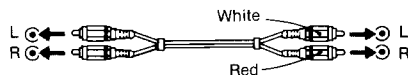
Do not throw away the carton and the packing material!

They will come in handy when transporting the unit or shipping it for servicing.

Connections

Notes on Connections

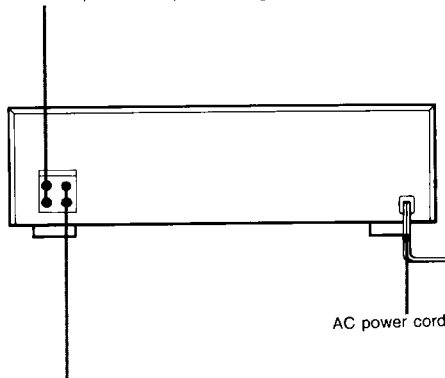
- Turn off the power to all equipment to be connected before making any connection.
- Note that the red plug of the supplied connecting cord is for right-channel (R) connection and the white plug for left-channel (L) connection.



- The connecting cords should be fully inserted into the jacks. A loose connection may cause hum pick-up.

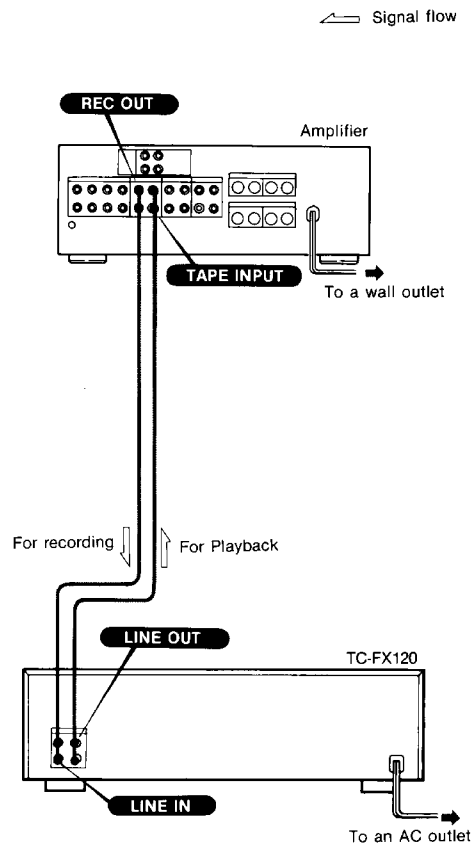
Identification of Rear Panel Parts

LINE IN (line input) jacks (phone jacks)
Connect to the tape outputs (recording jacks) of an amplifier for tape recording.

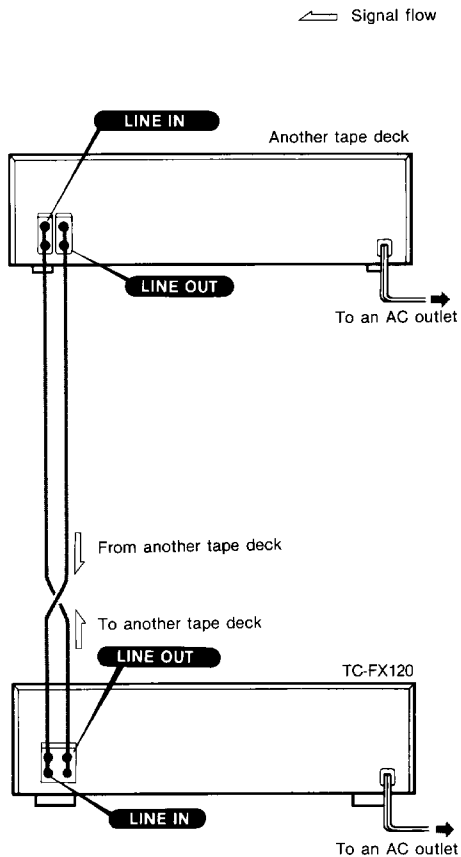


LINE OUT (line output) jacks (phono jacks)
Connect to the tape inputs of an amplifier for playback.

Basic Connection

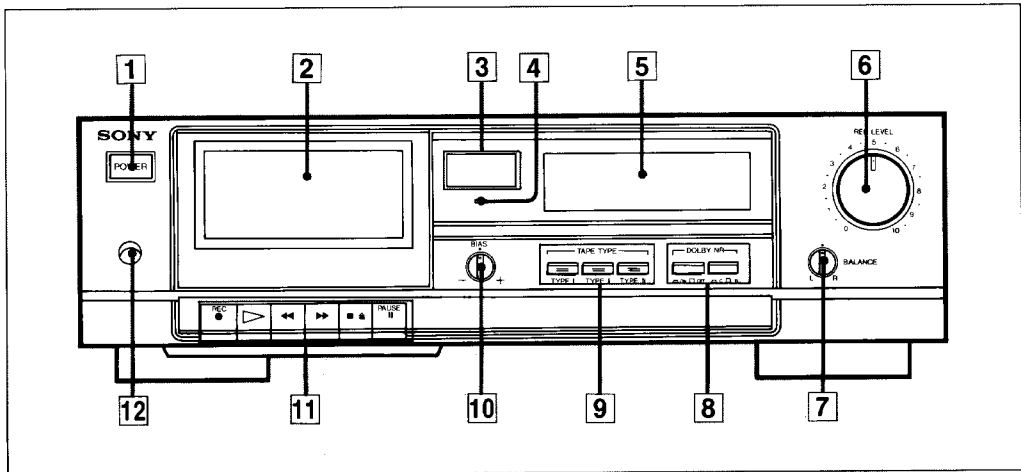


Connection for Tape Dubbing



Identification of Front Panel Parts

Refer to the page number indicated in ● for details.



1 POWER switch

2 Cassette holder

3 TAPE COUNTER and RESET button

4 RECORD INDICATOR ●

5 PEAK LEVEL METER

6 REC (recording) LEVEL control

7 BALANCE control ●

8 DOLBY NR (Dolby Noise Reduction) buttons ● ●

9 TAPE TYPE indicators

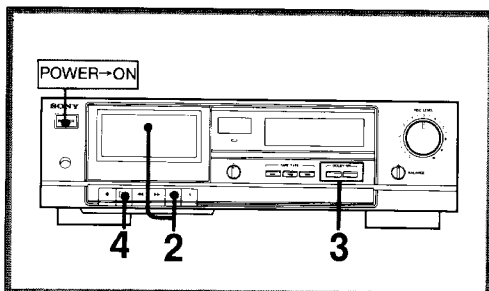
10 BIAS control ●

11 Tape operation buttons

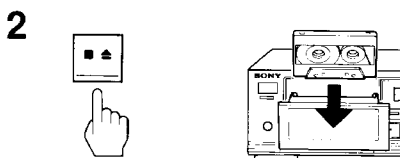
- REC (record) button
- ▶ (play) button
- ◀◀ (rewind) button
- ▶▶ (fast-forward) button
- ▲ (stop) and (eject) buttons
- || PAUSE button

12 HEADPHONES jack (stereo phone jack)

Playing Back a Tape

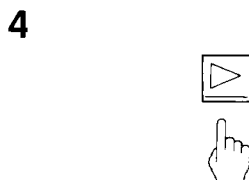


1 Turn on the amplifier and select the tape function.



3 Set the ☐ DOLBY NR buttons to the same position that was used when the cassette was recorded.

Dolby NR system	Setting	
	ON/OFF (left)	B/C (right)
B type	<input type="checkbox"/>	<input type="checkbox"/>
C type	<input type="checkbox"/>	<input type="checkbox"/>
OFF	<input type="checkbox"/>	Either position



When the tape ends, the unit will stop automatically.

To stop playback, press ■▲.

To stop playback momentarily, press ■■.

To fast forward the tape, press ►►.

To rewind the tape, press ◀◀.

To shut off the unit after winding the tape, press ■▲.

Is it necessary to set the tape type being used?

No. The deck has an automatic tape type detection system. Of the four major types of tapes, your unit can use TYPE I (normal), TYPE II (CrO₂) and IV (metal). The tape detection system automatically adjusts the equalization and bias current to the optimum level for the type of cassette detected.

What is the Dolby NR system?

The Dolby NR (noise reduction) system reduces tape hiss noise in low-level, high-frequency signals by boosting them during recording and lowering them during playback.

Before turning off the power

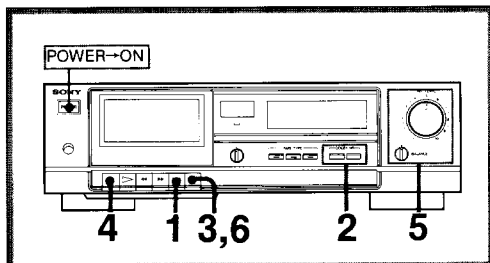
Be sure to release ► by pressing ■▲. Otherwise, the tape may become tangled when power is turned on again.

After winding the tape using ◀◀ or ►►

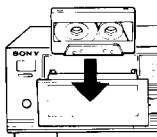
Be sure to press ■▲ to release the fast winding button.

Recording

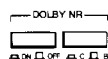
Select the program source you want to record. Any previously recorded material will be erase automatically.



1



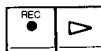
2 Set the DOLBY NR buttons.



3

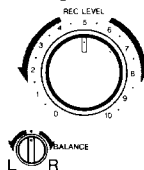


4



▶ will be activated automatically, and RECORD INDICATOR will turn on.

5 Adjust the recording level and the balance. (See page 9)



6 To start recording.



To stop recording, press ■▶.

If the side whose tab has been removed is selected for recording

You cannot start recording.

Before turning off the power

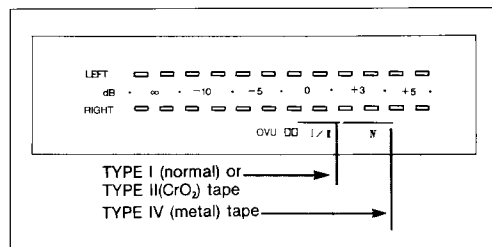
Be sure to release ● by pressing ■▶.

Adjusting the Recording Level

The optimum recording level, which differs according to the tape type, is indicated on the Peak Level Meter for each tape type.

Adjust the REC LEVEL control as high as possible without exceeding the recommended range for the tape type being used.

Recommended maximum PEAK LEVEL METER reading

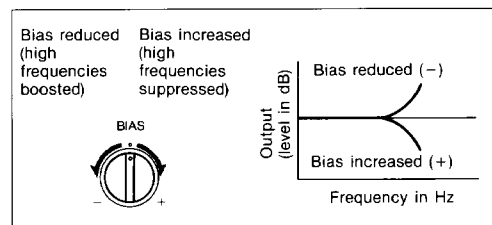


Tips on recording level adjustment

- Adjust the recording level as high as possible without causing distortion in the recorded sound. If the recording level setting is too high, the recording will be distorted; if it is too low, the tape will produce a hissing sound.
- If the program source to be recorded has many high frequency signals, set the level to a relatively low position.

Making an Optimum Recording According to the Tape Type—Bias Adjustment

To obtain the optimum frequency response, use the BIAS control to adjust the bias current according to the tape type being used. Reducing the bias boosts high frequencies but increases distortion. Increasing the bias decreases distortion but suppresses high frequencies. Balance the bias according to your listening preference.



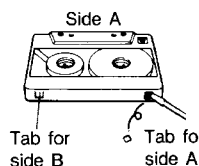
Note

In the case of TYPE IV cassette tapes, however, the frequency change for any given bias setting will be minimal.

Notes on Cassettes

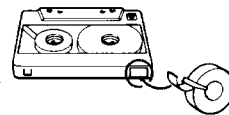
To protect a recording on side A or B

Break out the respective tab.



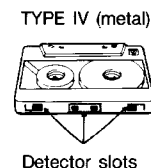
To recover a cassette for recording

Cover the respective slot with tape



When using TYPE II (CrO₂) or TYPE IV (metal) cassettes

Be careful not to cover the detector slots which are necessary for automatic tape type detection.



Cassette care

- Avoid touching the tape surface of a cassette to prevent contamination of the heads by dirt, dust, or oil on the skin, which will lower.
- Keep cassettes away from equipment such as speakers and amplifiers, as erasure or distortion of the recorded tapes could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures, or moisture.

Maintenance

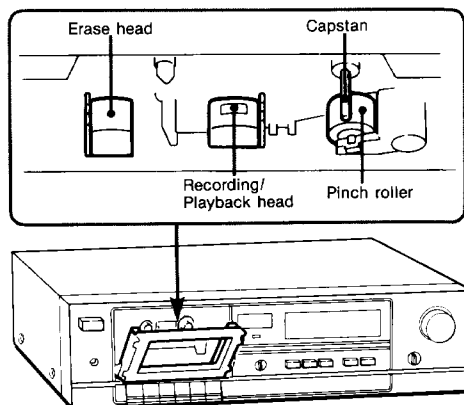
Cleaning the Heads and Tape Path

Clean all surfaces over which the tape travels after every 10 hours of operation to guard against:

- low-quality sound
- a decrease in sound level
- excessive wow, flutter or dropout
- incomplete erasure
- impairment of recording function

To obtain high-quality recorded sound, cleaning before every recording is recommended.

- 1 Press **■▲** to open the cassette holder. Grasp the front of the holder on both sides and gently lift to remove it.
- 2 **Wipe the heads, the pinch rollers and the capstans** with a cotton swab slightly moistened with tape cleaning fluid or alcohol.
- 3 **Replace the cassette holder.**



Demagnetizing the Heads

After 20 or 30 hours of use, or when you notice hiss and/or loss of high frequencies, the residual magnetism built up on the heads should be removed.

- 1 **Turn off the power.**
- 2 **Demagnetize the heads with any commercially available demagnetizer.**
Refer to the instruction manual of the demagnetizer for detailed instructions.

Cleaning the Cabinet

Clean the cabinet, panel and controls with a soft cloth slightly moistened with a mild detergent solution.

Important

Do not use any type of abrasive pad, scouring powder or solvents such as alcohol or benzene.

Specifications

Recording system

4-track 2-channel stereo
Fast winding Approx. 120 sec. (with C-60 cassette)
Bias AC Bias
Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch	OFF	B-TYPE ON	C-TYPE ON
Cassette			
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	56 dB	63 dB	69 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassettes)

Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30–15,000 Hz (± 3 dB, DIN) 30–13,000 Hz (0VU recording)
TYPE II cassette (Sony UX-S)	30–14,000 Hz (± 3 dB, DIN)
TYPE I cassette (Sony HF-S)	30–13,000 Hz (± 3 dB, DIN)

Wow and flutter 0.12% WRMS (NAB)
 $\pm 0.2\%$ (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	77.5 mV (-20 dB)
	Input impedance	50k ohms

Outputs

Line outputs (phono jacks)	Rated output level	0.44 V (-5 dB) at a load impedance of 47k ohms
	Load impedance	Over 10k ohms
Headphone output (stereo phone jack)	Output level	0.3 mW at a load impedance of 32 ohms

General

Power requirements

Model for the U.S.A. and Canada:
120 V AC, 60 Hz
Model for the United Kingdom:
240 V AC, 50 Hz

Power consumption

14 W

Dimensions

Approx. 430 × 123 × 286 mm (w/h/d)
(17 × 4 $\frac{7}{8}$ × 11 $\frac{3}{8}$ inches)

Weight

including projecting parts and controls
Approx. 3.5 kg (7 lbs 12 oz)

Supplied accessory

Audio connecting cord (2)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Troubleshooting Guide

The following trouble checks will help you correct the most common problems encountered with your tape deck. Should any problems persist after you have made these checks, consult your nearest Sony dealer.

Before proceeding with these trouble checks verify that

- The power cord is firmly connected.
- Amplifier connections are firmly made.
- Heads, capstans and pinch rollers are clean.
- The amplifier controls and switches are set correctly.

Function buttons and tape transport problems

Symptom	Cause	Remedy
Function buttons do not activate.	Cassette holder is not fully closed.	Close the holder completely.
● button cannot be depressed.	No cassette in the holder.	Insert a cassette.
	Tab has been removed from the cassette.	Cover the hole with tape. (page 9)
Automatic shut-off mechanism activates before the tape comes to its end.	Cassette shell is deformed.	Use another cassette.
Excessively loud tape transport noise during fast winding.	This noise is caused by the cassette and does not signify a mechanical problem.	—

Recording and playback problems

Symptom	Cause	Remedy
Recording or playback cannot be made or there is a decrease in sound level.	Recording/playback and erase heads are either dirty or magnetized.	Clean or demagnetize the heads.
	Improper connection	Make connections properly.
	Improper setting of the amplifier controls	Set the amplifier controls to the appropriate positions.
Excessive wow, flutter or dropout	Head, capstan or pinch roller is dirty.	Clean in accordance with instructions shown on page 10.
Incomplete erasure	Erase head is dirty.	Clean the erase head.
Increased noise or poor reproduction in high frequencies	Head is magnetized.	Demagnetize the head.
Unbalanced tone in high frequencies	Improper setting of the DOLBY NR buttons.	When playing back, set the buttons to the same position used in recording.
	The unit is placed near a television set.	Move the unit away from the television set.

Noise

Symptom	Cause	Remedy
Hum noise	The deck is stacked on or placed under the amplifier.	Separate the units.
Noise is recorded.	Recording was made near equipment such as a television set or a color monitor, and interference has affected the recording on the tape and the Dolby NR system.	Move the unit away from the television set or color monitor.