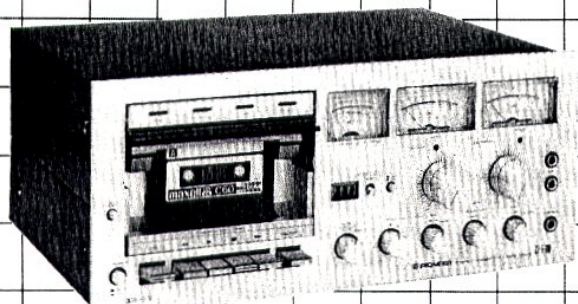


STEREO CASSETTE TAPE DECK

CT-F700

OPERATING INSTRUCTIONS

D
D/G
HG



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CT-F700 are designed to operate 220V or 240V (HG model) main and 120V, 220V or 240V (D, D/G model) main. Before turning on the power, please confirm the line voltage setting indicated on the rear of your unit corresponds to the supply voltage in your area; if not, change the setting as described in Line Voltage and Rear Panels on page 16.

 **PIONEER**

FEATURES

Highly Reliable Transport Mechanism

The CT-F700 adopts a DC servo-control motor with superb stability to maintain the speed of the tape transport at its rating. The operation of the capstan, belt and large-sized flywheel which are all precision-finished to very high standards of accuracy, and the high-precision tape winding mechanism, makes for superb wow/flutter characteristics and stability. Furthermore, the cassette shell loading mechanism ensures only the very best in handling ease and reliability, and it features a simple construction, too.

Ferrite-solid Head

Ferrite is used for the recording/playback head in order for it to display the special characteristics of chrome tapes and ferrichrome tapes to maximum advantage. The resulting creation is a highly reliable head with excellent wear resistance, frequency response and signal-to-noise ratio. No wonder then that this head opens the door to a new dimension in recording and playback sound quality.

Newly Developed Dynamic Level Meter for Enhanced Recording Sound Quality

A new dynamic level meter is incorporated in this splendid package to detect the low-end and high-end frequency components of the program source which is to be recorded. It is designed to prevent any deterioration in the output characteristics often caused by excessive input signals in the high-end frequency components and also any downgrading in the distortion rate often caused by excessive input signals in the low-end frequency components. This means that it enables the recording level to be set which is best for the program source. It is used with the level meters which have always been a feature of Pioneer's cassette decks. The result is undeniable: tape recordings

which are only of the very best quality. This meter also function as a peak meter during tape playback.

Built-in Dolby* System for Reduced Tape Hiss

The CT-F700's self-contained Dolby noise reduction system brings about a notable decrease in the amount of tape hiss (10dB improvement with high-end frequencies) which is irritating to the ear during playback. And it performs this duty without in any way downgrading the sound quality of the program source. This expands the dynamic range and makes for recording and playback with a high signal-to-noise ratio.

Bias Adjustment Mechanism and Equalizer Circuit to Bring out the Best in the Tapes

Not only does the CT-F700 employ an equalizer circuit which is specially designed for chrome tapes, ferrichrome tapes, low-noise tapes and standard tapes, but it also features a meter and an adjustment knob which allow the bias to be adjusted in accordance with the type of cassette tape being used. You can, therefore, easily set the bias optimally whatever type of tape you are using. With the accurate equalizer circuit and the optimum bias you can always make low-distortion tape recordings. You can also take advantage of the fact that the high-end frequency response changes when the bias is varied so you can obtain the frequency response of your preference.

Rich Selection of Accessory Mechanisms

Input selector switch: Use this switch to smoothly select the audio input of the microphone and the program source connected to the input jacks.

Remaining tape display mark: The illuminated light with its remaining tape display mark allows you to easily check how much tape has run and how much is left.

Chrome tape detector: This mechanism automatically sets the bias and equalizer circuits to the chrome position for a chrome tape with detection holes.

INSTALLATION PRECAUTIONS

To ensure the best sound quality and trouble-free operation, avoid setting up the tape deck in any of the locations described below.

Location liable to downgrade performance and result in breakdowns	Resulting trouble
1. Locations exposed to direct sunlight, or near heaters or other heat sources.	1. External heat causes the performance of the circuit parts to deteriorate, and operation becomes unstable.
2. Locations with poor ventilation, with high humidity or moisture contents, or dusty locations.	2. Cause of faulty contact in input/output terminals, and rust. High humidity and a high moisture content cause deterioration in insulation. There is also the danger of current leakage and heat generation in the circuit parts. Dust or grease in the rotating parts causes the parts to deteriorate.
3. Locations susceptible to vibration.	3. These locations affect the precision parts adversely.
4. Locations where there are thinners, benzine and other types of volatile liquids, insect sprays or any kind of inflammable objects at hand.	4. These help to corrode the front panel. In particular, the heads are precision-finished to micron dimensions. Chemicals may reduce their performance, so exercise all due care.

MAIN APPLICATIONS OF THE CT-F700

- Mono or stereo playback of pre-recorded music tapes.
- Recording of FM broadcasts and records (using the input jacks)
- Live mono or stereo recording with a microphone (using the MIC jack)
- Automatic rewind as far as a program for replay by means of the MEMORY STOP mechanism.
- Unattended recording and wake-up playback (used together with timer switch).

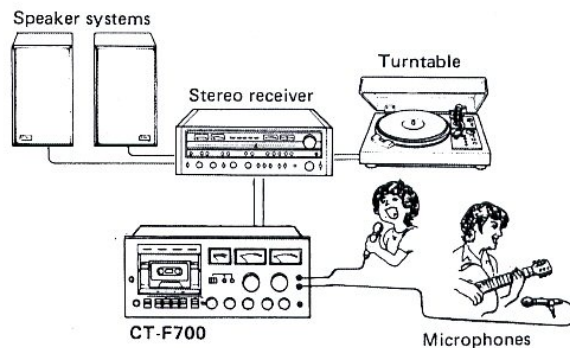


Fig. 1

CONNECTION

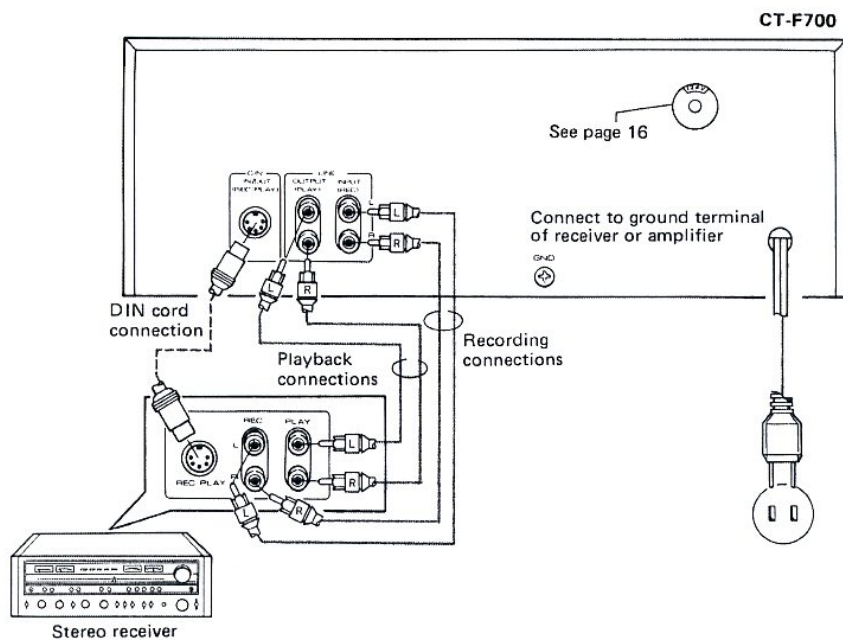


Fig. 2

Connect the CT-F700's terminals (OUTPUT-INPUT) to the tape terminals on the receiver (or stereo amplifier) with the accessory cords. The top terminal is for the left channel and the bottom for the right channel.

If you do not connect properly, you will hear a monotonous single-pitched hum and this will impair your recording.

Connections for playback: connect the TAPE PLAY input terminals on the receiver to the CT-F700's OUTPUT (PLAY) terminals.

Connections for recording: connect the receiver's

TAPE REC output terminals to the CT-F700's INPUT (REC) terminals.

Using the DIN (REC/PLAY) connectors: If the receiver is equipped with DIN recording/playback connectors, use DIN recording/playback cords, which are sold separately, to connect the DIN (REC/PLAY) connectors on the CT-F700 and the receiver. There is no need for the accessory connecting cords since the same connections serve for both recording and playback.

FRONT PANEL FACILITIES

POWER SWITCH

The power comes on when the POWER switch is depressed. The level meters and the remaining tape display light will then light up. To turn off the power, release the switch by depressing it again.

CASSETTE DOOR OPEN BUTTON

Depress this button to open the cassette door. To close the door, press it lightly and close.

CASSETTE DOOR

Always keep this door closed to prevent dirt and dust from adhering to the head section and rotating parts.

DYNAMIC LEVEL/BIAS METER

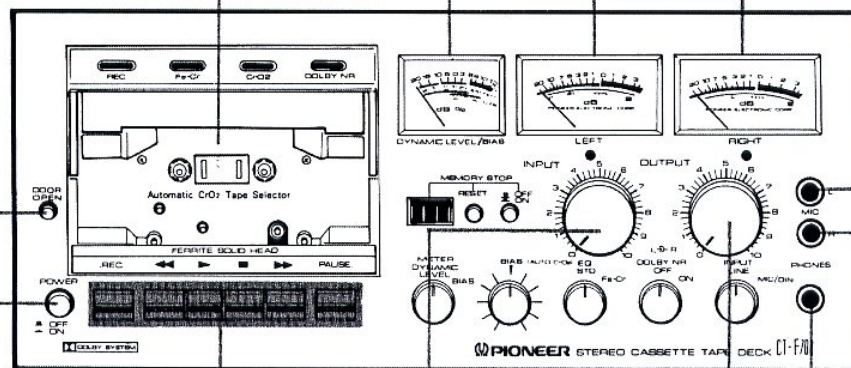
Dynamic level meter: When setting the recording level, you will be able to record any program source at the correct recording level if you adjust this meter so that the pointer does not deflect more than +6dB with respect to a peak signal of the program source even if the level meter pointer deflects up to +3dB.

This meter serves as a peak meter during playback.

Bias meter: Use this meter to adjust the bias in accordance with the characteristics of the tape being used. Meter indication is in percent.

LEVEL METERS

These indicate the input level during recording and the output level during playback.



OPERATING LEVERS

REC lever: To record, depress this lever and the play lever together.

This lever will not work when a cassette is not loaded or when the erasure prevention tabs of a loaded cassette have been broken off.

Rewind lever (◀): Depress this lever to rewind the tape (the tape will travel from right to left at high speed).

Play lever (▶): Depress this lever when playing back a tape. Depress it together with the REC lever for recording (the tape will travel from left to right).

Stop lever (■): When this lever is depressed during tape play, the operating levers in use will be released and the tape will stop.

Fast forward lever (▶▶): Depress this lever to send the tape forward at top speed (the tape will travel from left to right).

PAUSE lever: Depress this lever to stop the tape temporarily during recording or playback. When it is released, the tape will continue to travel as before. This lever is also depressed for unattended recording when the cassette deck is being used together with a timer. For further details, refer to page 12.

NOTES:

1. Apart from the play and REC levers, do not depress any of the levers simultaneously.
2. The operating levers will not return to their original positions even when the power is switched OFF.

PHONES JACK

This is the output jack for stereo headphones. Use it when you want to monitor the quality of a recording or if you want to listen to a tape privately.

NOTES:

- Use low-impedance headphones. If you use a high-impedance model, you will not be able to obtain sufficient volume.
- You can damage the microphone if you plug it into the PHONES jack mistakenly.

MIC JACKS

These are the input jacks for microphone recording. Plug the left channel microphone into L and the right channel microphone into R.

OUTPUT LEVEL CONTROLS

Use them to adjust the output signal level during playback. Turning the control to the right increases the level. The controls are coupled when turned but it is also possible to adjust the right channel (rear) and left channel (front) independently.

INPUT LEVEL CONTROLS

Use them to adjust the input signal from the MIC jacks and the rear panel INPUT jacks, and DIN connector. Turning the control to the right increases the level. The controls are coupled to the left and right channels although you can also use them to adjust the right channel (rear) and the left channel (front) independently.

REC INDICATOR

This light comes on when the play and REC levers are depressed together to indicate that the cassette deck is now set to the recording mode.

DOLBY NR INDICATOR

This light comes on when the DOLBY NR switch is set to ON to indicate that the cassette deck is now set up for Dolby recording or Dolby playback.

CrO₂ INDICATOR

This light comes on when a chrome tape is being used. It will come on when a cassette is not loaded but this does not indicate a failure.

Fe-Cr INDICATOR

This light comes on when the EQ switch is set to Fe-Cr.

TAPE COUNTER

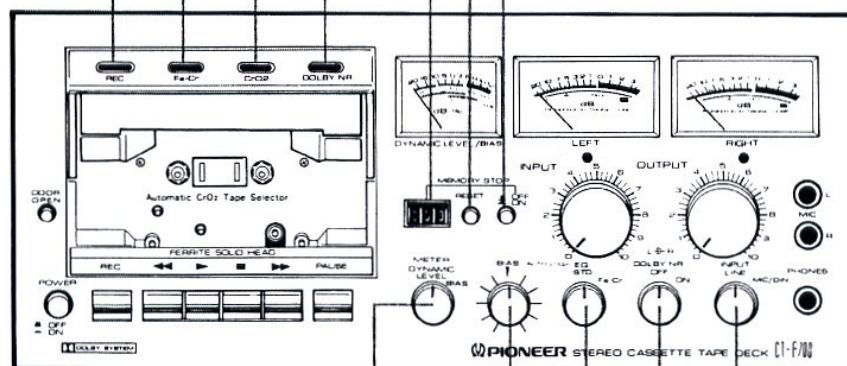
This indicates the position of the tape run.

COUNTER RESET BUTTON

Depress this button to reset the tape counter display to '000'.

MEMORY STOP SWITCH

When this switch is depressed to the ON position, the position the tape counter is set to '000' is memorized during recording and playback, and the tape can be stopped with this memory. For further details, refer to the section on "HOW TO USE THE MEMORY STOP SWITCH" on page 11.



METER SELECTOR SWITCH

Set this switch to DYNAMIC LEVEL when you want to make use of the dynamic level meter, and to BIAS when you want to use the bias meter.

BIAS CONTROL

Use this control to adjust the bias in accordance with the characteristics of the tape being used. It is set so that the center position (center click) corresponds to the standard bias. For further details refer to "HOW TO ADJUST THE BIAS" on page 9.

EQ SWITCH

Use this switch to select the recording and playback equalization characteristics in accordance with the type of tape being used.

STD: For ordinary tapes and low-noise/high-output tapes.
Fe-Cr: For ferrichrome tapes.

NOTE:

There is no need to operate this switch if you are using a chrome tape since the bias and equalizer are selected automatically by the built-in mechanisms. Make sure that your chrome tape has detection holes (see page 10). The chrome tape detector will not work with chrome tapes which are not equipped with these detection holes, and so this type of tape cannot be used.

DOLBY NR SWITCH

Set this switch to ON for recording with the built-in Dolby noise reduction system and for the playback of tapes which have been Dolby-recorded.

INPUT SELECTOR SWITCH

Use this switch to select the program source which you intend to record.

LINE: Set to this position for recording a program source which is connected to the rear panel INPUT jacks.

MIC/DIN: Set to this position for recording signals from a microphone which is connected to the MIC jack or rear panel DIN connector.

NOTE:

If microphones are connected to front panel MIC jacks, a source connected to DIN connector cannot be recorded.

CASSETTE TAPES

Cassette tapes are manufactured according to international standards governing their construction, and they are generally classified according to their tape performance and recording time.

Table 1 Performance classifications

Standard type	Low-noise type	High-performance type
• Standard tape • Dynamic tape	• Low-noise tape • Low-noise, high-output tape	• Chrome tape • Ferrichrome tape

NOTE:

You can set the EQ SWITCH on the CT-F700 to the suitable positions for all these tapes. For further details, refer to page 9 and the section on "HOW TO ADJUST THE BIAS" and "SETTING THE EQ SWITCH."

Table 2 Recording time classifications

Cassette tape designation	Recording time (minutes)	
	One side	Both sides
C-30	15	30
C-46	23	46
C-60	30	60
C-90	45	90
C-120	60	120

The size of the cassette tapes is the same but their playing (and recording) times differ according to the tape thickness (length).

The C-60 and C-90 tapes are most commonly used. The C-120 tapes are not recommended because their mechanical and electrical specifications vary.

CHECK CASSETTE BEFORE USE

Slack or protruding tapes

If the tape protrudes from the cassette as shown in Fig. 3 or is slack, the tape may run without passing through between the capstan and the pinch roller and so may be damaged. Take up the slack by inserting a pencil through the reel hub and turning it as indicated in the figure.

Some tapes provide a tape stopper to prevent tape slack. Make sure that you remove the tape stopper before inserting the tape into the deck.

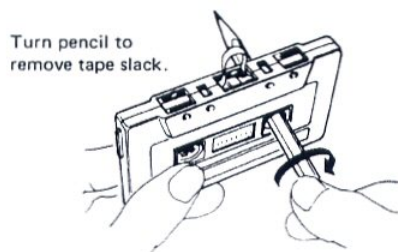


Fig. 3

Erasure prevention tabs

Cassette tapes are provided with erasure prevention tabs, as shown in Fig. 4, which act as a protection device to prevent the accidental erasure of a recording which you want to keep. If you remove the tabs, as shown in Fig. 4, with a screwdriver you will be able to prevent erasure if you accidentally set the CT-F700 to the recording mode by depressing the REC lever.

To re-record, cover the tab opening with a double layer adhesive tape (Fig. 5).

NOTE:

Cassette tapes are provided with two tabs (A or 1 and B or 2) so you can protect the recordings on both sides.

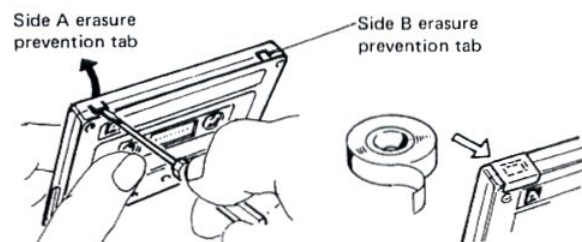


Fig. 4

Fig. 5

HINTS ON HANDLING CASSETTE TAPES

• Check the tape before recording

Before starting to use the tape for recording, load it. Then set the cassette deck to fast forward and rewind. This will safeguard the deck from damage caused by irregularities in the tape winding.

• Take care with the leader tape

A leader tape is attached to the beginning of the cassette tape (you cannot record on it). It takes about 5 seconds for it to pass through, and so bear this point in mind when recording.

• Do not load a cassette immediately after cleaning heads

Do not load a cassette immediately after you have cleaned the heads until the head surfaces are completely dry (this takes 2–3 minutes).

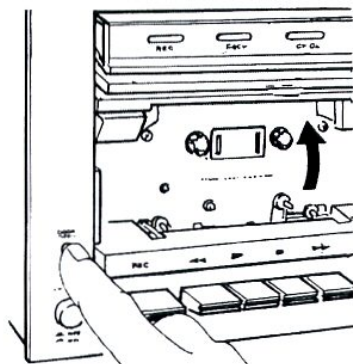
• Storing cassette tapes

Do not store your cassette tapes without putting them in their cases since dust and dirt will adhere to them. Always store in a location which is free from dust, dirt, oil and the effects of magnetism.

BASIC OPERATION

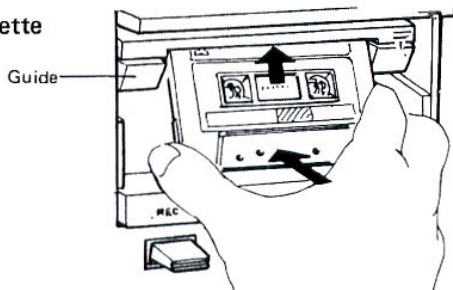
TAPE SETTING AND REMOVAL

Open Door



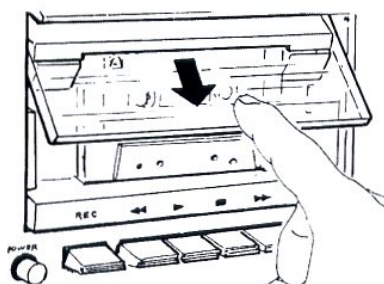
Depress the DOOR OPEN button.

Insert Cassette



Align cassette between guides and insert carefully with an upward motion.

Close Door



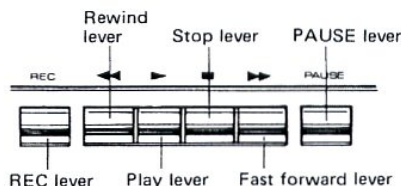
Gently slide door downward to close.

Removing Cassette



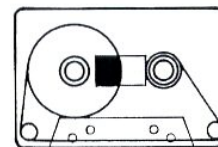
Open door and pull cassette outward.

TAPE RUN



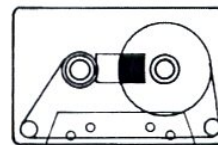
Play and record

1. Check that the tape is on the left-hand reel.
2. The tape runs from left to right when the play lever (and the REC lever if recording) is depressed.



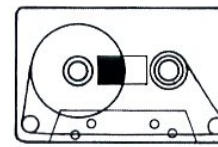
Rewind

1. Check that the tape is on the right-hand reel.
2. The tape runs from right to left at a high speed when the rewind lever is depressed.



Fast forward

1. Check that the tape is on the left-hand reel.
2. The tape runs from left to right at a high speed when the fast forward lever is depressed.



Stop

Press the stop lever to stop tape motion. This action also releases the other operating levers (except PAUSE lever).

PAUSE lever operation

1. The tape motion can be stopped during recording or playback by depressing the PAUSE lever. The play lever (and the REC lever if recording) is not released from its depressed position.
2. If the PAUSE lever is released, the tape will begin to run again.

NOTES:

1. Do not depress more than one lever at a time except when recording and PAUSE operation.
2. The operating levers will not be released if the power is turned OFF.

AUTO-STOP MECHANISM

The tape is automatically stopped and the operating levers released when the tape becomes completely wound onto one reel during each operating mode (record, playback, fast forward, rewind), even if the stop lever is not depressed.

NOTES:

1. The auto-stop mechanism swings into action several seconds after the tape has been wound up.
2. If you operate the fast forward or rewind lever with the PAUSE lever depressed, it will not return to its original position until the PAUSE lever is first released.

RECORDING PROCEDURE

Proceed by referring to the explanation and to the numbers indicated in the figure.

1 Set the POWER switch to ON

Set this switch ON after preparing the program source (FM broadcast, microphone performance) which you intend to record.

2 Load the cassette tape

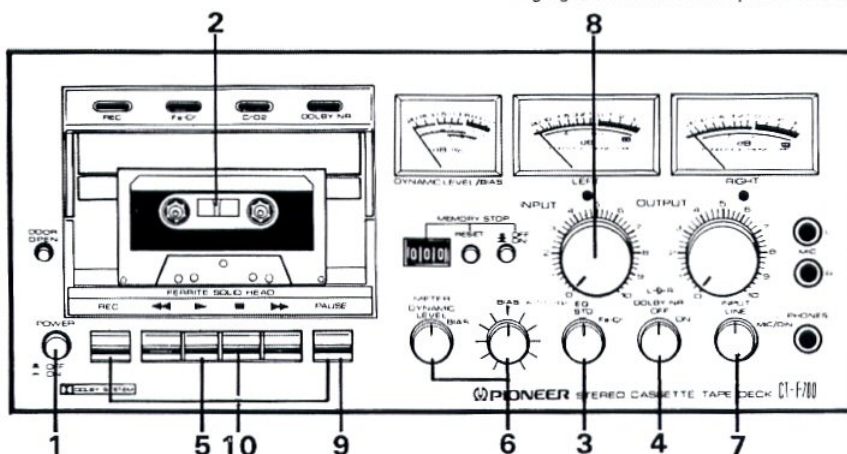
Check that the tape is wound onto the left reel, and load securely. Also check that the erasure prevention tabs on the cassette tape have not been broken off (see page 6).

6 Adjust the bias

Set the bias control to the center click position or adjust it in accordance with the characteristics of the tape being used. For further details, refer to "HOW TO ADJUST THE BIAS" on the next page.

7 Set the INPUT selector switch

Set this switch to LINE when recording signals from the INPUT jacks on the rear panel, and to MIC/DIN when recording signals from the microphone or DIN connector.



3 Set the EQ switch

Set this switch to the Fe-Cr position if you intend to use a ferrichrome tape, and to the STD position if you are going to use a standard tape. The automatic selector mechanism is actuated with chrome tapes and so there is no need to touch this switch (see page 10).

4 Set the DOLBY NR switch

Set this switch to ON for Dolby recording. For further details on the Dolby system refer to page 14.

5 Stand-by for recording

Depress the play and REC levers together and wait about five seconds for the leader tape to clear the heads. Then depress the PAUSE lever and set to the recording stand-by mode. The recording indicator (REC) will come on.

8 Set the recording level controls

Refer to the section on "HOW TO SET THE RECORDING LEVEL" on the below, and then adjust the controls.

9 Start recording

Release the PAUSE lever and the tape will then begin to run. Check that the pointers of the level meters deflect, that the tape counter counts and that the tape is running.

10 Complete recording

When you have finished recording, depress the stop lever and stop the tape. Depress the PAUSE lever for a temporary stop. When the tape is fully wound onto the right reel during recording, the play and REC levers will be automatically released.

HOW TO SET THE RECORDING LEVEL

Set the meter selector switch to DYNAMIC LEVEL. With relatively high peak level signals in the program source which you are recording, adjust the INPUT controls so that the level meter pointers (see Fig. 6) do not deflect past the +3dB mark and also so that the dynamic level meter pointer (see Fig. 6) does not deflect past the +6dB mark. The signal level fluctuates widely according to the program source and so it is a good idea to keep an eye on the deflection of the pointers while you are recording.

If the setting of the recording level is not satisfactory and you proceed with the recording without adjustment, the signal-to-noise ratio and the distortion will be downgraded.

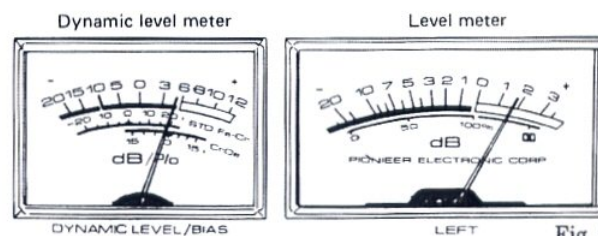


Fig. 6

HOW TO ADJUST THE BIAS

Your recordings will feature the maximum sound quality with the minimum distortion if you select a bias which agrees with the characteristics of the tape being used.

The center position of the BIAS control is for the standard bias, but you can also adjust the bias optimally in accordance with the tape being used.

1. Follow steps 1-5 in the recording procedure and set the cassette deck to the recording standby mode.
2. Set the meter selector switch to BIAS.
3. Refer to Table 3 and check the bias adjustment value (%) for the tape you are using.
4. Rotate the BIAS control until the bias meter pointer (see Fig. 7) deflects to the bias adjustment value (%).
5. When you have completed the adjustment, set the meter selector switch to DYNAMIC LEVEL.

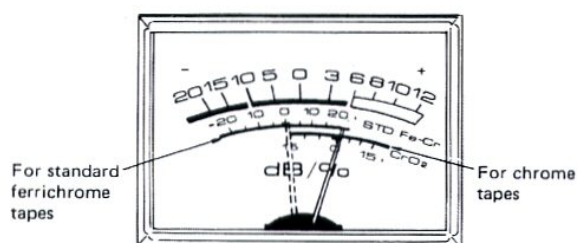


Fig. 7

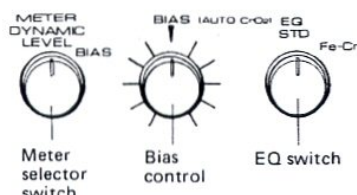


Fig. 8

SETTING THE EQ SWITCH

At the same time as you select the bias in accordance with the tape being used, it is necessary to compensate for the high-end of the frequency range. Set the EQ switch in accordance with the type of tape you are using (see Table 3). If you are using a chrome tape, the selection is performed automatically by the built-in mechanism.

NOTE:

Do not use chrome tapes that are not provided with chrome detection holes since the automatic selector mechanism will not be actuated (see page 10).

Table 3 Leading brands of tape, and recommended EQ switch and BIAS control positions

Brand of tape		Bias control position (%)	EQ switch position
BASF	LH C-60	-15 (-10~-20)	STD
	LH C-90	-10 (-5~-15)	
	LN C-60	-20 (-10~-20)	
	LN C-90	-10 (-5~-15)	
	LH SUPER C-60	-15 (-10~-20)	
	LH SUPER C-90	-10 (-5~-15)	
AGFA	SUPER COLOR C-60	-10 (-5~-15)	
	SUPER COLOR C-90	-10 (-5~-15)	
	SUPER DYNAMIC C-60 +6	-10 (-5~-15)	
	SUPER DYNAMIC C-90 +6	-5 (0~-10)	
SCOTCH	LH C-60, C-90	-20 (-10~-20)	
	CRYSTAL C-60, C-90	0 (-5~+5)	
	MASTER C-60, C-90	+5 (0~+10)	
TDK	D C-60, C-90	-15 (-10~-20)	
	SD C-60, C-90	-10 (-5~-15)	
	ED C-60, C-90	-10 (-5~-15)	
	AD C-60, C-90	+10 (+5~+15)	
MAXELL	LN C-60	-10 (-5~-15)	
	LN C-90	-5 (0~-10)	
	UD C-60, C-90	+10 (+5~+15)	
	UD XLI C-60, C-90	0 (-5~+5)	
FUJI	FL C-60, C-90	-15 (-10~-20)	
	FX C-60	0 (-5~+5)	
	FX C-90	+10 (+5~+15)	
	FX Jr C-60, C-90	+5 (0~+10)	
SONY	FX DUO C-60, C-90	0 (+5~+10)	
	LN C-60	-15 (-10~-20)	Fe-Cr
	LN C-90	-10 (-5~-15)	
	HF C-60, C-90	0 (-5~+5)	
SONY	DUAD C-60	0 (-10~+10)	
	DUAD C-90	-10 (0~-15)	
BASF	FERROCHROM C-60	0 (-10~+10)	
	FERROCHROM C-90	-10 (-5~-15)	
SCOTCH	CLASSIC C-60, C-90	-15 (-5~-15)	
AGFA	CARAT C-60	0 (-10~+10)	
	CARAT C-90	0 (-10~+10)	
BASF	CHROME C-60	-5 (0~-15)	
	CHROME C-90	-10 (-5~-15)	
SCOTCH	MASTER 70μs EQ C-60	0 (-5~+5)	CrO ₂ (Chrome) Automatically selected
TDK	SA C-60, C-90	0 (-5~+5)	
	KR C-60, C-90	0 (-5~+5)	
MAXELL	C-60 CR, C-90 CR	-10 (-5~-15)	
	UD XLII C-60, C-90	-15 (-5~-15)	
FUJI	FC C-60	-15 (-5~-15)	
	FC C-90	-10 (-5~-15)	
SONY	CR C-60, CR C-90	+10 (+5~+13)	
AGFA	STEREO CHROM C-60	0 (-10~+10)	
	STEREO CHROM C-90	0 (-10~+10)	

NOTE:

Set the position of the bias control to match the reference position given in the above table for every tape that you use. Sometimes you will get better results by choosing a different position — it depends on the tape. In cases like this, set to the optimum position within the range shown in parentheses in the above table.

MICROPHONE RECORDING

STEREO RECORDING

As shown in Fig. 9 use two identical stereo microphones, and connect the one for the left channel to the L MIC jack and the one for the right channel to the R MIC jack. For the actual recording, refer to page 8 and the section on "RECORDING PROCEDURE."

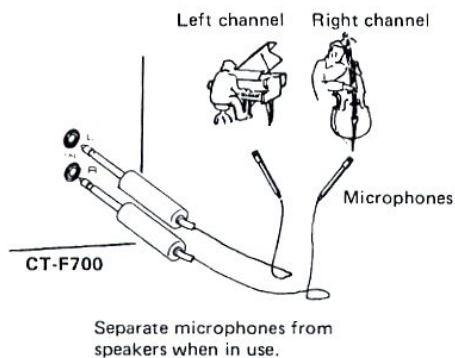


Fig. 9

Points to bear in mind

- Use dynamic or electret microphones.
- Make sure that the connecting cord for a high-impedance microphone (over 20 kilohms) is less than 5 meters long.
- When you want to check the quality of the recording or what is being recorded, it is a good idea to use the headphones.
- Monitoring the recording with the speakers very often gives rise to howl so use the microphones as far away from the speakers as possible.
- You can damage the microphone if you plug it into the phones jack mistakenly.

RECORDING PROGRAMS IN MONO

- When recording with a mono microphone, set the mike recording level control of the channel which is not being used (left or right) to the lowest setting.
- When recording a program source in mono with the INPUT (REC) terminals, it is a good idea to connect the mono signal to both the CT-F700's channels (left and right). Special connecting cords are required for this.

CHROME TAPE DETECTOR

The CT-F700 comes with a chrome tape detector mechanism. If the cassette tape is provided with extra holes, the deck's bias and equalization circuitry is actuated automatically and set to cater for the chrome tape, and there is no need to select the bias control and EQ switch settings.

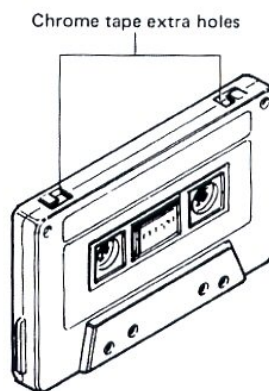


Fig. 10

PLAYBACK PROCEDURE

Proceed by referring to the explanation and to the numbers indicated in the figure.

1 Set the POWER switch to ON

Set the control on the stereo amplifier for the desired volume and set the TAPE MONITOR switch to ON. Then set the POWER switch ON.

2 Load the cassette tape

Check that the tape is wound onto the left reel and load securely, following the instructions on page 7.

3 Set the tape counter to '000'

Depress the RESET button and the counter will be reset to '000'.

4 Set the EQ switch

Set this switch to the Fe-Cr position if you intend to use a ferrichrome tape, and to the STD position if you are going to use a standard tape. The automatic selector mechanism is actuated with chrome tapes so there is no need to touch this switch. (See page 10)

5 Set the DOLBY NR switch

Set this switch to ON when playing back a Dolby recorded tape. For further details on the Dolby system, refer to page 14.

6 Start playback

Depress the play lever and the tape will start to run.

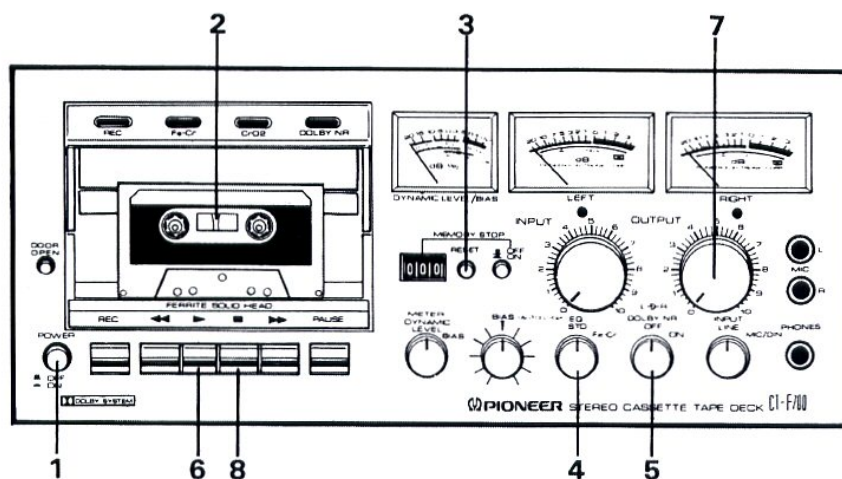
7 Adjust the playback level

Rotate the OUTPUT controls slowly and adjust them so that the level meter pointers do not deflect beyond full scale.

8 Complete playback

When the tape is fully wound onto the right reel during playback, the play lever will be released automatically. Depress the stop lever if you want to stop the tape run during playback.

Depress the PAUSE lever for a temporary stop.



HOW TO USE THE MEMORY STOP SWITCH

The CT-F700 comes with a MEMORY STOP switch which can be used to rewind a part of the program in a performance or a recording up to a desired point on the tape.

1. Load the cassette and set the MEMORY STOP switch to ON.
2. When playing back a tape or recording, depress the RESET button at that point where you want the playback to be repeated, and set the tape counter to '000'.
3. When the playback or recording is completed, depress the rewind lever and the tape will be rewound.
4. The memory stop mechanism will be actuated

when the tape counter which was set under step 2 registers '999', and the rewind lever will be released. The tape stops.

- Depress the play lever when the repeat playback begins.

NOTES:

- Always set the MEMORY STOP switch to OFF when you do not intend to use the memory stop function.
- The memory stop will not function if the PAUSE lever has been depressed.



Fig. 11

OPERATIONS WITH THE TIMER

UNATTENDED RECORDING

You can use the timer switch, which is sold separately, to automatically record an FM broadcast or other program source at a specified time. This switch is convenient for recording programs when you are out or asleep.

1. As shown in Fig. 12 connect the CT-F700's power cord to the timer. Also connect the receiver's power cord (or tuner, amplifier) so that the receiver's on/off functions are controlled by the timer.
2. Set the power switches on the CT-F700 and the receiver to ON, and then select the broadcasting station whose program you want to record.
3. As shown in Fig. 12 set the CT-F700 PAUSE lever to the depressed position.
4. Follow the steps in the section on "RECORDING" on page 8. Depress the play and REC levers which set the tape deck to the recording mode, and then set the recording level.
5. Set the timer so that the power will come on at the prescribed time. The power to the other audio components goes off.
6. At the prescribed time, the power will automatically come on and the PAUSE lever will be released, then the tape deck will start to record about 2 seconds later. When the tape is completely wound onto the reel, the auto-stop mechanism is activated and the CT-F700 is switched off. Next, the timer operates and switches the power off.

NOTES:

- Rotate the volume control on the amplifier during unattended recording so that sound cannot be heard

through the speakers, and set to its leftmost position.

- For further details on connections, refer to the instructions booklet that comes with the time switch.
- Set the timer so that the power goes off after the tape is wound up.

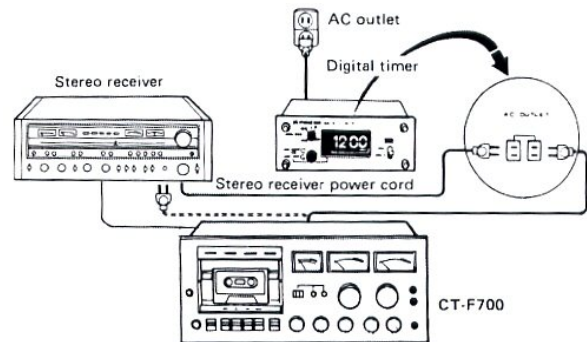


Fig. 12

WAKE-UP PLAYBACK

You can have the tape deck play back automatically at a desired time a pre-recorded tape. You can set the timer so that the tape's music wakes you up instead of an alarm clock.

As shown in Fig. 12 connect the CT-F700 and set the timer so that the power is switched on at the desired time. Follow the steps (1) to (5) in "PLAYBACK" on page 11 and set the PAUSE lever to the depressed position. Depress the play lever and then set the playback level, the tape deck will play back the tape at the desired time.

MAINTENANCE

Follow the maintenance instructions below to keep your tape deck working in tip-top condition.

CLEANING THE HEAD SECTION

The head section is composed of the heads, capstan, pinch roller (see Fig. 13), and with extensive use these parts accumulate dust, dirt and grease easily. If this assembly gets dirty, the contact between the tape and the surfaces of the heads is impaired, and this downgrades the sound quality and the stereo balance, and also leads to unstable operation. To prevent this, clean the head section and the surrounding parts regularly with the accessory cleaning swab or with a soft cloth dipped in the accessory cleaning fluid.

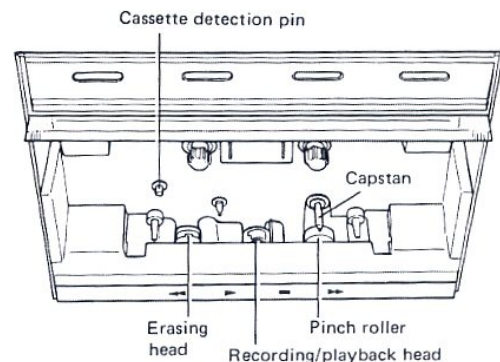


Fig. 13

Head cleaning steps (Fig. 13)

1. Set the POWER switch to ON.
2. While using a finger to hold the cassette detection pin depressed, press the play lever.
3. When the head section extends upward, release the cassette detection pin. Clean the pinch roller, capstan and heads.

DEMAGNETIZING THE HEAD

The recording head becomes magnetized when you use the tape deck for prolonged periods of time. This results in noise being generated and the treble dropping off during recording and playback. The recording head should therefore be regularly demagnetized with the head eraser, which is sold separately. For further details, refer to the head eraser's instruction booklet.

CLEANING THE FRONT PANEL, CASSETTE DOOR

Wipe the front panel and the cassette door when dusty or greasy with a soft cloth containing a small amount of ordinary washing-up liquid. Then, wipe dry with a cloth. Never use volatile spirits like thinners, benzine or alcohol because they will damage the panel's finish.

NOTE:

Do not hold screwdrivers, metal objects or magnets close to the heads.

Moisture forms in the operating sections of this model and the model's performance will be impaired if the model is brought from cool surroundings into a warm room or if the temperature of the room rises suddenly.

To prevent any performance impairment, let the model stand in its new surroundings for about an hour before switching it on, or ensure that the room temperature rises gradually.

TROUBLESHOOTING

Although some failures and breakdowns can be traced to legitimate mechanical faults, some are in fact the results of improper maintenance, tape defects or lack of experience in operating the tape deck. If you think that there is a failure, refer first to the following checklist.

Symptom	Cause	Remedy
Tape does not run.	1. AC cord is not plugged in. 2. Tape has run out. 3. PAUSE lever to ON. 4. Cassette is inserted improperly.	1. Plug cord in correctly. 2. Rewind tape. 3. Set PAUSE lever to OFF (undepressed). 4. Remove tape and insert properly.
High frequencies are weak.	1. Heads are dirty. 2. BIAS, EQ switches are not set in accordance with tape during recording or playback. 3. A non-Dolby recorded tape is being played back with DOLBY NR switch set ON.	1. Clean heads. 2. Set BIAS, EQ switches correctly in accordance with tape. 3. Set DOLBY NR switch to OFF.
No playback sound.	OUTPUT controls are set to leftmost positions.	Turn controls to suitable position.
Playback sound is distorted.	1. Playback level is too high. 2. Distortion is recorded on tape.	1. Reduce playback level. 2. Replace cassette tape.
Sound is unsteady.	1. Dirty capstan. 2. Irregular cassette tape winding.	1. Clean capstan. 2. Replace tape.
Excessive noise.	1. Tape is old. 2. Dolby recorded tape is being played back with DOLBY NR switch set to OFF.	1. Replace tape. 2. Set DOLBY NR switch to ON.
Cannot record.	1. Cassette's erasure prevention tabs have been broken off. 2. INPUT selector switch is not set properly.	1. Replace tape or cover tab openings with adhesive tape. 2. Set INPUT selector switch to recording program source position.
Recorded sound is distorted.	1. Input level is too high. 2. Dirty heads.	1. Reduce input level. 2. Clean heads.
Auto-stop mechanism actuated before tape wound up.	MEMORY STOP switch is set to ON.	Set MEMORY STOP switch to OFF.
Memory stop does not function.	MEMORY STOP switch is set to OFF.	Set MEMORY STOP switch to ON.

EMPLOYING DOLBY SYSTEM

The Dolby System is a method of noise reduction pertaining to noise generated in the playback process. It is currently widely employed throughout the world. As the system is mainly concerned with noise produced by the tape itself, it cannot appreciably reduce noise contained in the program source being recorded. For this reason, the signal should be as free from noise as possible in order to derive maximum benefit from the Dolby process. Noisy records or FM signals, etc. should be avoided.

PRINCIPLE

The magnetic tape employed with a tape recorder possesses a certain degree of inherent noise. Within this noise, the most easily audible is mid-to high-frequency hiss noise, which is considered to arise from magnetic particle size. If the magnetic particles are small, or if the tape speed is increased, which in practice is equivalent to reducing the particle size, tape hiss becomes reduced. The slow speed employed by cassette tape however, places it at a disadvantage in this respect.

The Dolby system (B type) built into the CT-F700 is intended mainly for reducing this hiss noise. An A type system is also available which reduces all types of noise (employed only in special professional applications). Although the noise reduction frequency band differs, both types under optimum conditions are capable of providing up to 10dB improvement. The B type noise reduction system operates as follows. During recording, when the input signal falls below the reference level, the mid- and high-frequency components are successively enhanced prior to recording. The opposite process is employed during playback, i.e.: mid- and high-frequency components below the reference level are attenuated prior to playback. Although the signal is returned to its original form, hiss produced in the playback process becomes significantly reduced.

TAPE SELECTION

The CT-F700 does not demand special requirements. Although there are some differences among standard, chrome, ferrichrome and LH types, nearly all types of cassette tape can be employed. Caution is recommended however, regarding C-120, ultra-high sensitivity LH tape, and special purpose tapes.

RECORDING LEVEL

Recording level adjustment is generally the same as with non-Dolby recordings. With wide dynamic range sources, such as live recording via microphones, it may be advisable to set the recording level lower than normal. This is because a lower level will reduce the fear of over-loading the input circuits during the loud sounds, and the signal-to-noise ratio for the quieter sounds will be improved by the Dolby effect. A slightly "low" setting thus gives you the advantage of a wider dynamic range.

PLAYBACK

- Commercially sold pre-recorded tapes produced by the Dolby system (Dolby encoded tape) can be played via the CT-F700 Dolby mode for low-noise sound reproduction.
- The Dolby system must be applied during both recording and playback in order to provide satisfactory performance. Normal playback of Dolby recorded tape, or Dolby playback of normally recorded tape will result in unnatural frequency balance and interfere with program enjoyment.

SPECIFICATIONS

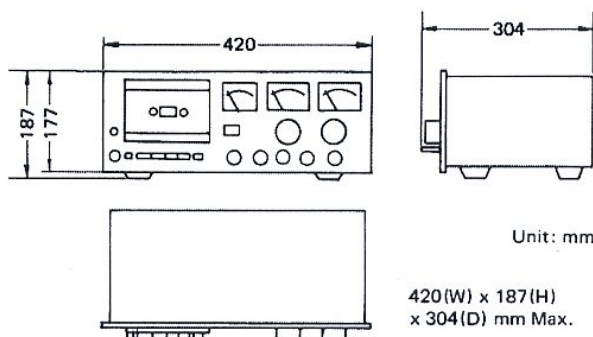
Systems	Compact cassette, 2-channel stereo
Motor	Electronically-controlled DC motor (built-in generator) x 1
Heads	"Ferrite Solid" recording/playback head x 1 Ferrite erasing head x 1
Fast Winding Time	Approximately 85 seconds (C-60 tape)
Wow and Flutter	No more than 0.05% (WRMS) No more than $\pm 0.17\%$ (DIN)
Frequency Response	Standard, LH tapes: 25 to 15,000Hz (30 to 14,000Hz $\pm 3\text{dB}$), (40 to 13,000Hz DIN) Ferrichrome tape: 25 to 17,000Hz (30 to 16,000Hz $\pm 3\text{dB}$) Chromium dioxide tape: 25 to 17,000Hz (30 to 16,000Hz $\pm 3\text{dB}$), (40 to 14,000Hz DIN)
Signal-to-Noise Ratio	Dolby NR OFF: More than 54dB Dolby NR ON: More than 64dB (over 5kHz, standard, LH tapes) (When chromium dioxide tape is used, signal-to-noise ratio is further improved by 4.5dB over 5kHz) More than 58dB (DIN)
Harmonic Distortion	No more than 1.5% (0dB)
Inputs (Sensitivity/Maximum allowable input/Impedance)	MIC (L, R): 0.3mV/100mV/10 kilohms, 6mm diam. jacks (Reference MIC impedance; 250 ohms to 10 kilohms) LINE (2-channel stereo): 64mV/25V/100 kilohms REC/PLAY x 1; Input & output, 14mV/4.5V/1.8 kilohms 5p jack (DIN standard)
Outputs (Reference level/Maximum level/Load impedance)	LINE (2-channel stereo): 450mV/710mV/50 kilohms REC/PLAY x 1; 450mV/710mV/50 kilohms 5p jack (DIN standard) Headphones x 1; 60mV/100mV/8 ohms, 6mm diam. jack
Semiconductors	
Amplifier Section	Transistors x 35 Diodes x 51, ICs x 4
Motor control section	Transistors x 3, Diodes x 1
Subfunctions	• Meter (Dynamic level meter: for recording) - Bias meter: for recording - Peak meter: for playback • Bias adjustment system • Input selector (LINE/MIC-DIN) • Memory stop (ON/OFF) • Dolby system (ON-OFF) with indicator lamp • Tape Selector (STD/FeCr/CrO₂) - Automatic tape selector for CrO₂ tape, and Manual tape selector of independently BIAS/EQ • Cassette compartment illumination
Power Requirements	AC 120V, 220V, 240V (switchable) 50/60Hz (D, D/G model) or AC 220V, 240V (switchable) 50/60Hz (HG model)
Power Consumption	21 watts
Dimensions	420(W) x 187(H) x 304(D) mm Max. 16-9/16 x 7-3/8 x 12 in
Weight	8.5kg (18 lb 12 oz) 10.2kg (22 lb 8 oz)

Furnished parts	Stereo connecting cord with pin plugs x 2 Head cleaning kit x 1 Fuse (D, D/G model only) x 1 (120V; 1A or 220, 240V 500mA) Operating instruction x 1
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NOTE:
Specifications and the design subject to possible modification without notice due to improvements.

NOTES:

- Reference Tapes: Standard & LH: DIN 45513/BLATT6 or equiv.
: CrO₂: DIN 45513/BLATT7 (CrO₂) or equiv.
- Reference Recording Level: Meter 0dB indicating level (160 nwb/m magnetic level = Philips cassette reference level)
- Reference Signal: 333Hz
- Wow & Flutter: • JIS [3kHz, with acoustic compensation (weighted), rms value] • DIN [3150Hz, with acoustic compensation (weighted) PEAK value]; DIN 45507
- Frequency Response: • Measured at -20dB level DOLBY NR OFF, level deviation is $\pm 6\text{dB}$ without indication • DIN is DIN 45500
- Signal-to-Noise Ratio: • Measured at +4dB level (250nwb/m magnetic level = DIN 45513 specified reference level). • DIN is DIN 45500 (weighted)
- Sensitivity: Input level (mV) required for reference recording level with input (REC) controls set to maximum.
- Maximum Allowable Input: While decreasing settings of input (REC) level controls and increasing level at input jacks, this is the maximum input level (mV) at the point where recording amplifier output waveform becomes clipped.
- Reference Output Level: Playback output level when meter indicates 0dB.
- Maximum Output Level: Playback output level with respect to reference recording level when output (PLAY) level controls are set to maximum.



LINE VOLTAGE AND REAR PANELS

CT-F700 are designed to accept different line voltages, according to the country in which they are to be used, although the operation of the various models is the same in every respect. Fig. A shows the model designed to operate at any of two pre-selected voltages (220V, 240V).

Fig. B shows the model designed to operate at any of three selected voltages (120V, 220V, 240V).

Line voltage and fuse can be changed and set as follows:

220V and 240V MODEL (Fig. C)

1. Disconnect the A.C. mains cord.
2. Use a Phillips screwdriver to take out the VOLTAGE SELECTOR plug locking screw.
3. Pull out the VOLTAGE SELECTOR plug from the socket.
4. Rotate the plug until the cutaway aligns with the appropriate line voltage marker on the back of the unit, and then replace it in the socket.
5. Replace the fuse and FUSE CAP.

120V, 220V and 240V MODEL (Fig. C)

1. Disconnect the A.C. mains cord.
2. Use a Phillips screwdriver to take out the FUSE CAP and fuse.
3. Pull out the VOLTAGE SELECTOR plug from the socket.
4. Put the selector plug back so that the appropriate line voltage marking can be seen through the cut in the edge of the plug.
5. Change the fuse in accordance with the table.
6. Replace the fuse and FUSE CAP.

220V, 240V model Rear Panel

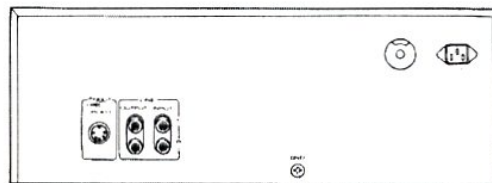


Fig. A

120V, 220V, 240V model Rear Panel

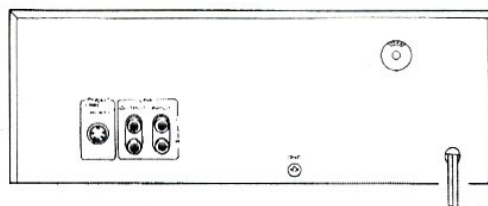


Fig. B

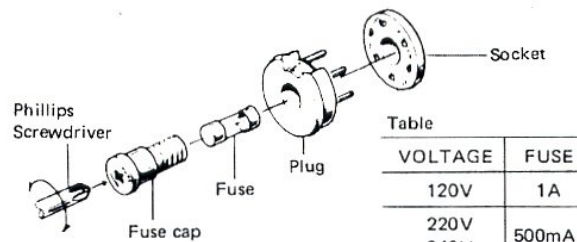


Fig. C

Table	
VOLTAGE	FUSE
120V	1A
220V 240V	500mA

FOR USE IN UNITED KINGDOM or AUSTRALIA

CAUTION 240V

Mains supply voltage is factory adjusted at 240 volts.

WARNING

This apparatus must be earthed.

IMPORTANT

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

Green-and-Yellow: Earth
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 green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol $\equiv$ or coloured green or green-and-yellow. The wire which is coloured blue must

be connected to the terminal which is marked with the letter N or coloured blue or black.

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

Do not unscrew the bottom plate and cabinet, no user serviceable parts inside.

Always disconnect all the equipment from the mains supply when connecting the signal leads. The Power cord should be connected last, make sure that the Power switch is OFF. First insert the female appliance connector of the mains cord into the AC inlet, then plug the cord to the wall socket.

Be sure the appliance connector is fully inserted into the AC inlet.

Unplug the set from the wall socket when it is not be used for an extended period of time.

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