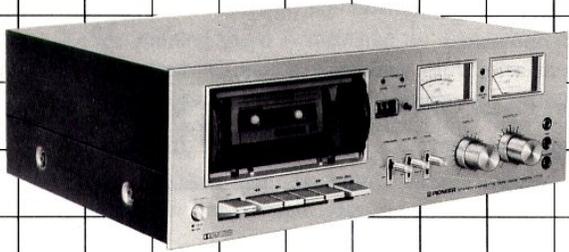2-CHANNEL STEREO
CASSETTE TAPE DECK

CT-F7070

OPERATING INSTRUCTIONS

D
HG

Ⓟ PIONEER®

CONTENTS

LINE VOLTAGE AND REAR PANELS

CT-F7070 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

Changing line voltage setting (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. Replace the fuse and FUSE CAP.

120V, 220V and 240V MODEL

Changing line voltage and fuse setting (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.
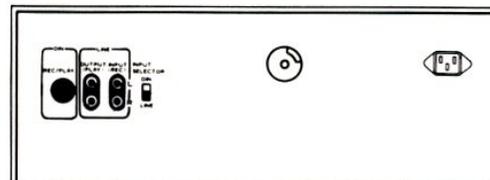
220V, 240V model Rear Panel
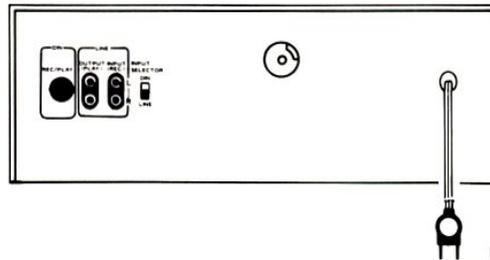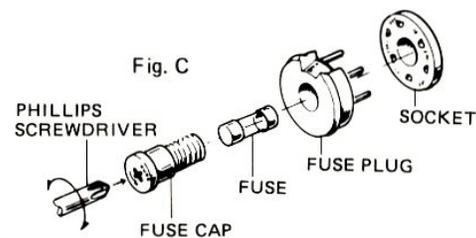

Fig. A

120V, 220V, 240V model Rear Panel

Fig. B

Fig. C

PHILLIPS SCREWDRIVER
FUSE CAP
FUSE
FUSE PLUG
SOCKET

TABLE

VOLTAGE	FUSE
120V	1A
220V 240V	0.5A

FEATURES

Adds New Dimension to Audio Enjoyment

Fast and easy front panel operation is achieved through carefully apportioned control layout and Pioneer's original vertical cassette transport system. Simple stand up cassette loading makes handling effortless.

Engineered for High Reliability

Tape running speed is regulated by a superbly stable DC servo controlled motor. Combined with the ultra precision machined capstan, massive flywheel, and high precision drive belt and tape take up mechanism, truly remarkable performance is obtained in terms of wow and flutter characteristics and stability. The cassette loading mechanism is also simple, easy to use, and precise.

Select Transport Modes Directly

Direct change system allows any mode (record, play, fast forward, rewind) to be selected without alternating with the stop switch. Operating convenience becomes additionally increased, while tape is protected from undue stress.

Reduced Tape Noise with Built-in Dolby* System

Without adversely affecting the sound quality of the program source, the built-in Dolby system can significantly reduce bothersome tape hiss noise (by up to approximately 10 dB at high frequencies). Wide dynamic range, excellent Signal-to-Noise ratio recording and playback can be fully enjoyed.

Tough and Durable Ferrite Solid Head

Ferrite solid composing the record/playback head resists abrasion and features long durability, superior high frequency response and head touch, in addition to minimized problems of dirt adhesion and magnetization noise.

Automatic Chrome Tape Selection

Bias and equalization become automatically switched for chrome (CrO2) tape specifications when the employed cassette is provided with extra detecting holes. Since manual switch positions for standard and ferrichrome (Fe-Cr) tape are also included, optimum performance can be obtained from all types of cassette tapes, including chrome, ferrichrome, low noise and standard. The high performance design adopts the new equalization standard for chrome tape ($3180\mu s + 70\mu s$), while noise during switching is eliminated by the electronic switching circuit.

Valuable Back Up Mechanisms

Full Auto Stop: When the tape becomes completely wound onto one reel during any operating mode (record, playback, fast forward and rewind), the transport is automatically stopped without imparting stress to the tape or mechanism.
Memory Stop Switch: Activated by registering the desired starting point on the tape counter during recording or playback. After completion of recording or playback, when the rewind lever is pressed the tape will rewind to the preset location and automatically stop.
Illuminated Cassette Compartment: Remaining tape quantity and tape running condition can be easily observed by providing a built-in illuminating lamp for the cassette compartment.
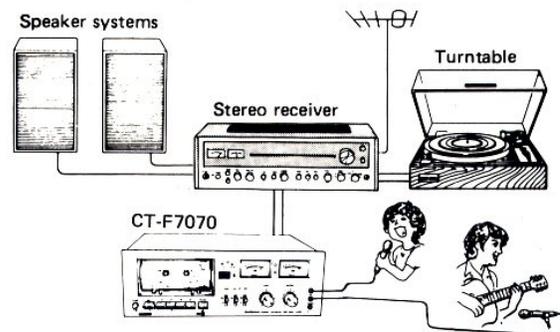
CT-F7070 APPLICATIONS

● Stereo and mono play of commercially sold pre-recorded music tapes.
● Recording from FM broadcasts and records.
● Live stereo or mono recording with microphones.

INSTALLATION CAUTIONS ————————

Avoid conditions such as the following when installing the CT-F7070, as these may lead to impaired sound quality or malfunctions.

● Direct sunlight, near radiators or other heat sources.
● Sites with poor ventilation or high humidity.
● Dusty locations.
● Near magnetic field generating appliances (TV set, motors, transformers, etc.)
● Unlevel supports or where subject to vibration.

FRONT PANEL FACILITIES

POWER SWITCH

Press to turn power ON. Level meters and internal illuminating lamp will light. To turn power OFF, again press the button to release it.

CASSETTE DOOR

Open and close door gently by hand. To protect tape and transport from dust, keep door closed whenever possible.

TAPE COUNTER

Indicates tape running position.

RESET BUTTON

Press to reset tape counter digits to "000".

CrO2 INDICATOR LAMP

Lights when chrome tape is being used. Also lights when there is no cassette in the cassette compartment.

Fe-Cr INDICATOR LAMP

Lights when TAPE selector switch is set to Fe-Cr (for ferri-chrome tape).

LEVEL METERS

Display input level during recording and output level during playback.
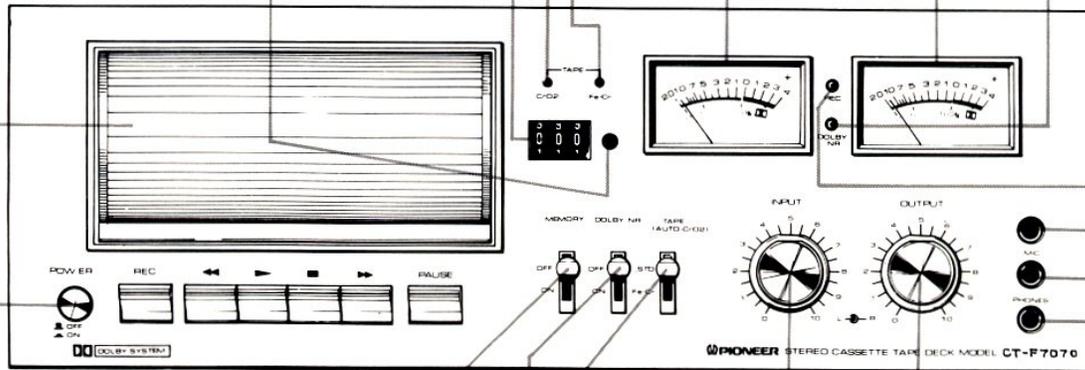
REC INDICATOR

Lights red during recording.

NOTE:
Be sure to confirm REC indicator lighting before proceeding to record.

DOLBY INDICATOR LAMP

Lights to indicate Dolby recording or Dolby playback.

MEMORY STOP SWITCH

When set to ON, the tape running position during record or playback corresponding to "000" counter indication becomes registered. Employ in such situations as when desiring to again listen to the same program.

DOLBY NR SWITCH

Set to ON position to use the built-in Dolby system to perform Dolby recording or to playback Dolby recorded tape.

TAPE SELECTOR SWITCH

Selects bias and equalization according to type of tape.
STD: When using standard and LH tape
Fe-Cr: When using ferri-chrome tape
Bias and equalization become automatically selected when chrome tape equipped with extra detecting holes is used. When using chrome tape, be sure that it is provided with these holes (see Page 9), since the automatic selector mechanism will not function if the holes are absent.

OUTPUT LEVEL CONTROLS

Adjust the output signal level during playback. The outer knob controls the right (R) channel, while the inner knob controls the left (L) channel.

INPUT LEVEL CONTROLS

Adjust recording signal input level from LINE INPUT (REC), DIN REC/PLAY and MIC jacks. The outer knob controls the right (R) channel, while the inner knob controls the left (L) channel. Observe level meters when adjusting.

PHONES JACK

Output jack for stereo headphones. These can be used for monitoring recording conditions or private listening.

CAUTION:
Do not connect a microphone to this jack, as the microphone may be damaged.

OPERATING LEVERS

RECORD (REC)

Press simultaneously with Play (▶) lever to perform recording.

PLAY (▶)

Press to play tape. To record, press simultaneously with REC lever. (Tape travels from left to right.)
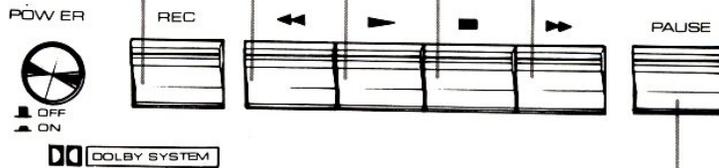
REWIND (◀◀)

Press to rewind tape (tape travels from right to left).

STOP (■)

Press to stop tape and release other operating levers.

FAST FORWARD (▶▶)

Press for tape fast forward (tape travels from left to right).

POWER   REC   ◀◀   ▶   ■   ▶▶   PAUSE

▮ OFF
▲ ON

▯▯ ▮DOLBY SYSTEM▮

MIC JACKS

To employ microphones for recording, connect them to these jacks. Connect the left channel microphone to the L jack and the right channel microphone to the R jack.

NOTE:
Be sure to disconnect microphones when not employing them. If they remain connected, recording cannot be performed from a source connected to the LINE (INPUT) or DIN jacks.
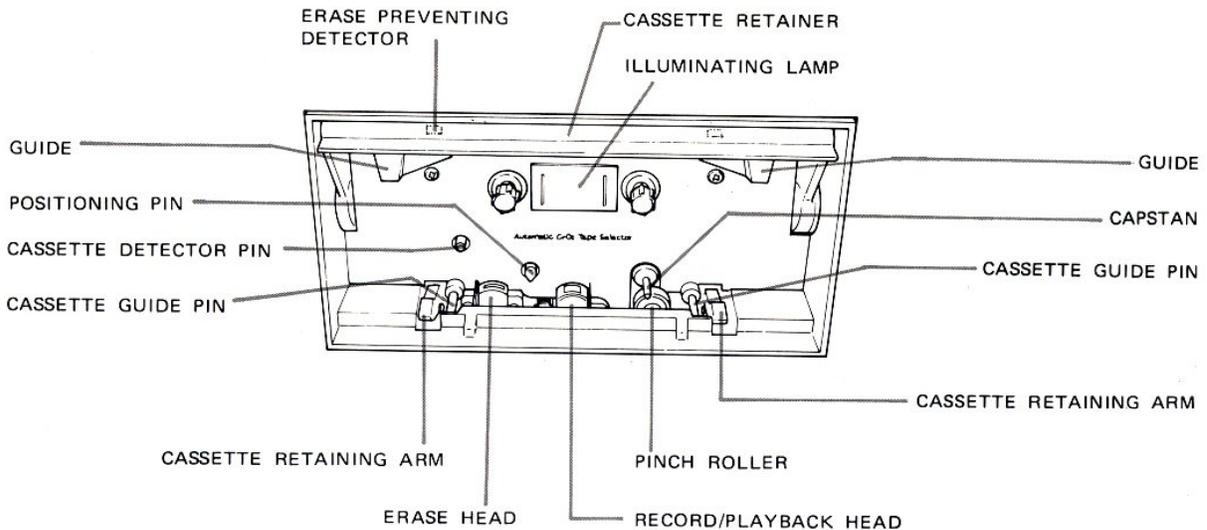
PAUSE LEVER

Depress this lever during recording or playback to temporarily stop tape motion. Press and release the lever to resume tape motion.

NOTES:
1. Do not press two or more levers simultaneously, except for the play and REC levers during recording.
2. It is not necessary to first press the stop lever when switching between modes.

MAIN SECTIONS OF TAPE TRANSPORT

ERASE PREVENTING DETECTOR

CASSETTE RETAINER

ILLUMINATING LAMP

GUIDE

POSITIONING PIN

CASSETTE DETECTOR PIN

CASSETTE GUIDE PIN

Automatic Cr-O₂ Tape Selector

GUIDE

CAPSTAN

CASSETTE GUIDE PIN

CASSETTE RETAINING ARM

CASSETTE RETAINING ARM

ERASE HEAD

PINCH ROLLER

RECORD/PLAYBACK HEAD

CONNECTION DIAGRAM

DIN REC/PLAY JACK   LINE VOLTAGE SELECTOR (See page 2)

DIN
REC/PLAY

LINE
OUTPUT INPUT
(PLAY) (REC)

INPUT
SELECTOR
DIN
L
R
LINE

INPUT SELECTOR SWITCH
Set according to jacks
(LINE or DIN) being used
for recording.

GND

PLAYBACK
CONNECTIONS

*DIN CORD
CONNECTION

RECORDING
CONNECTIONS

AC POWER CORD

R   L   R   L   STEREO AMPLIFIER

Do not connect LINE
and DIN jacks simulta-
neously. If the acces-
sory cord is too short,
employ a separately
sold connecting cord.

TAPE
PLAY   REC

INPUT
PHONO TUNER
L
R

GND

SPEAKERS

AC OUTLET

A

B

R   L

INPUT SELECTOR SWITCH OPERATION

Set switch according to program source to be
recorded (Fig. 1).

LINE .... Use accessory cords to connect LINE
(INPUT) jacks of CT-F7070 to record-
ing output (TAPE REC) jacks of a
stereo receiver (or amplifier), then set
switch to this position for recording.

DIN .... Use separately sold DIN record/play
cord to connect DIN REC/PLAY jack
of CT-F7070 to the same type jack (if
provided) on a stereo receiver (or
amplifier). Then set switch to this
position for recording.

NOTE:
If microphones are connected to front panel MIC jacks, a
source connected to the LINE (INPUT) or DIN REC/
PLAY jacks cannot be recorded.
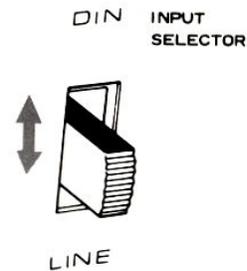
DIN   INPUT
SELECTOR

LINE

Fig. 1

CASSETTE TAPES

Cassette tapes are manufactured according to international standards and are generally classified by tape performance and recording time.

Performance Classifications

1. Standard tape.
2. Low noise or low noise high output tape (also known as LH tape).
3. Chrome (i.e., chromium dioxide) tape.
4. Ferrichrome tape

Although 3 and 4 are termed high performance tape, their full performance cannot be realized unless the employed tape deck is matched to their characteristics. In some cases, incorrect matching can even yield inferior results than with standard tape.

Recording (Playback) Time Classifications

Although the external dimensions of cassettes are standardized, playing and recording time differs according to tape thickness (length).

Table 1

RECORDING TIME (MINUTES)		CASSETTE TAPE DESIGNATION
ONE SIDE	BOTH SIDES	
15	30	C-30
30	60	C-60
45	90	C-90
60	120	C-120

Currently C-60 and C-90 are the most commonly used.
C-120 is not recommended due to excessive mechanical and electrical differences.

CHECK CASSETTE BEFORE USE

Slack or Protruding Tape

If the tape protrudes from the cassette, as shown in Fig. 2, the tape can run without passing between the capstan and pinch roller, and may possibly be damaged. Take up the slack by inserting a pencil through the reel hub and turning as indicated in Fig. 2.
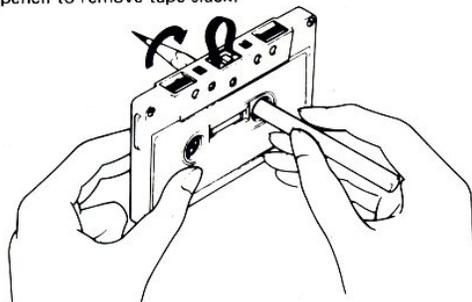
Turn pencil to remove tape slack.

Fig. 2

Erase Preventing Tabs

One feature of cassette tape is the provision of erase preventing tabs, shown in Fig. 3, which can be used to prevent accidental erasure of an important recording. To protect a valuable recording, use a screwdriver or similar tool to break off the tab corresponding to the desired side of the tape. To re-record, cover the tab opening with adhesive tape (Fig. 4).

NOTES:
1. Since tabs are provided for each side of the tape (A & B or 1 & 2), each side can be protected individually.
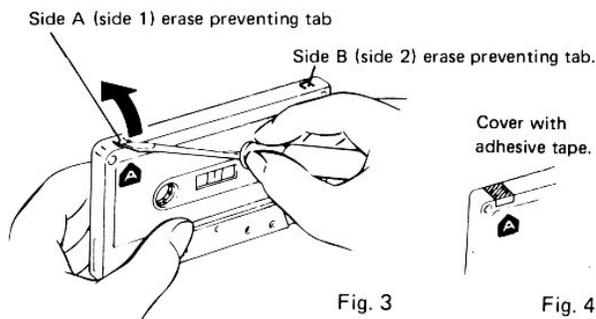*2. Take care that the broken off tab does not drop inside the cassette.*

Side A (side 1) erase preventing tab

Fig. 3   Fig. 4

POINTS WHEN HANDLING CASSETTES

Check Tape Before Recording

Before recording, first run the tape through fast forward and rewind. This is to prevent jamming or running irregularities from affecting the recording.

Allow for Leader Tape

Leader tape (which cannot be recorded) is provided at the beginning of the cassette tape. Since the leader tape takes about 5 seconds to clear the heads, allow for it when starting recording.

Do Not Touch Tape

Do not touch the tape surface directly by hand, since this can cause possible sound skipping.

Allow Heads to Dry After Cleaning

After cleaning the heads with head cleaning fluid, allow them to dry completely (2 ~ 3 minutes) before inserting a tape.
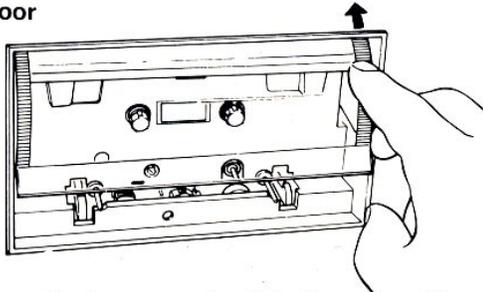
Cassette Storage

Avoid storing uncovered cassettes. Store them in their individual boxes to protect from dust, dirt and unwinding of the tape. Select a storage site that is free from dust, dirt, oil and magnetic fields.
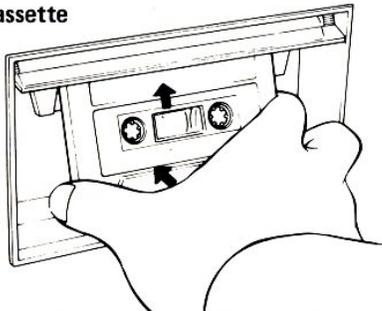
BASIC OPERATION

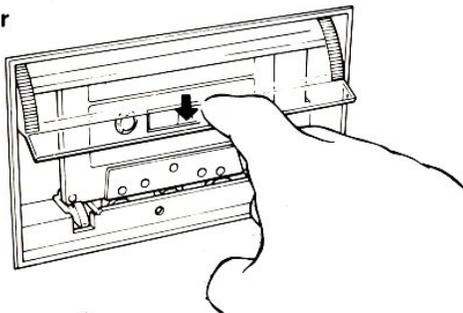## TAPE SETTING AND REMOVAL

Open Door

Use scored edges to gently slide door upward by hand.
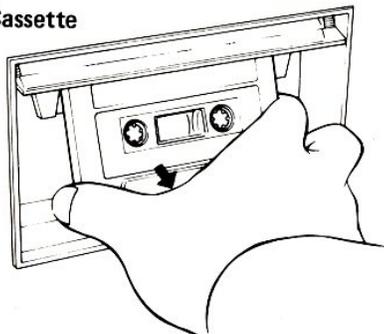
Insert Cassette

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

Close Door

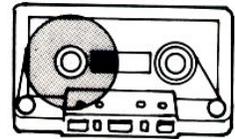Gently slide door downward to close.
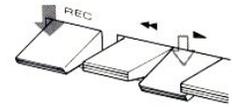
Removing Cassette

Open door and pull cassette outward.

TAPE RUNNING

Play (▶) and Record

1. Confirm presence of tape on left reel.
2. Press Play (▶) lever (and REC lever if recording). Tape will travel from left to right.

Stop (■)

Press Stop (■) lever to stop tape motion. This also releases other operating levers.
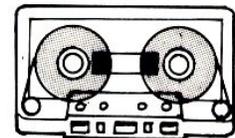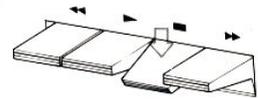
Fast Forward (▶▶)

1. Confirm presence of tape on left reel.
2. Press Fast Foward (▶▶) lever. Tape will travel from left to right at high speed.
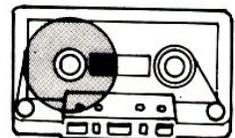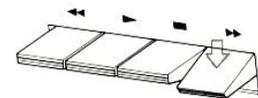
Rewind (◀◀)

1. Confirm presence of tape on right reel.
2. Press Rewind (◀◀) lever. Tape will travel from right to left at high speed.
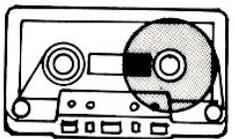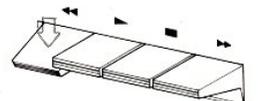
NOTES:
1. *Do not press more than one lever at a time, except for the Play (▶) and REC levers during recording.*
2. *It is not necessary to press the Stop (■) lever when selecting between modes.*

PAUSE LEVER OPERATION

1. Tape motion can be temporarily stopped during recording or playback without releasing the Play (▶) lever (and REC lever if recording) by setting the PAUSE lever to depressed position.
2. Set the PAUSE lever to undepressed position to resume tape motion.

Typical Applications

Setting PAUSE lever to depressed position is convenient in situations such as the following.

● When setting the recording level.
● To skip unnecessary portions of the program source, then continue recording.
● To temporarily interrupt the sound during playback.

NOTES:
1. Be sure to press the Stop lever to stop the tape for an extended period.
2. When recording onto previously recorded tape, operating the PAUSE lever will cause a section of the earlier sound to remain. This should be allowed for when recording.
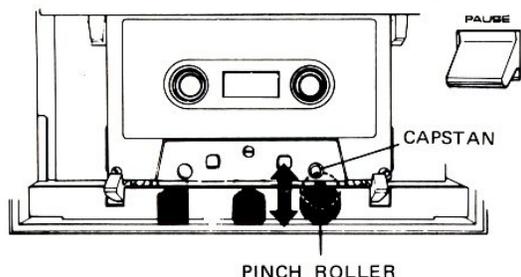
PINCH ROLLER

With PAUSE lever ON (depressed), pinch roller separates from capstan to stop only the tape motion. Motor (capstan) and amplifier continue to operate.   Fig. 5

AUTOMATIC STOPPING MECHANISM

Even if the Stop (■) lever is not pressed, when the tape becomes completely wound onto one reel during any operating mode (record, play, fast forward, rewind), this mechanism functions to automatically stop the tape and release the operating levers. Several seconds are required to complete this function.

ERASING TAPE

● Recording onto previously recorded tape automatically erases the earlier sound and replaces it with the new program source.
● To completely erase a program, turn the INPUT controls fully counter-clockwise and run tape in recording mode.

MEMORY STOP FUNCTION

This extreme convenience feature makes it possible to perform immediate playback of a cassette just recorded, or the repeated playback of a single passage.

Fig. 6

Operating Steps

1. Insert cassette and set MEMORY switch to ON.
2. While tape is running (record or playback), and the desired playback starting location is reached, press the counter RESET button. The tape counter will indicate "000".
3. Continue with recording or playback.
4. At the desired stopping point, press the Rewind (◀◀) lever. Tape will rewind.
5. When the tape counter indication reaches "999", the tape will be automatically stopped and Rewind (◀◀) lever released.

● To start playback, press the Play (▶) lever.
● Be sure to set the MEMORY switch to OFF when not employing the memory stop function.

CHROME TAPE DETECTOR

A chrome tape detecting mechanism is incorporated into this tape deck. When the employed chrome tape is equipped with extra detecting holes, as shown in Fig. 7, bias and equalization become automatically switched for chrome tape specifications. Be sure to use only chrome tape that is provided with these holes, since the correct response curves will not be obtained if the holes are absent.

CHROME TAPE EXTRA HOLES

CHROME TAPE
(Chrome dioxide tape)
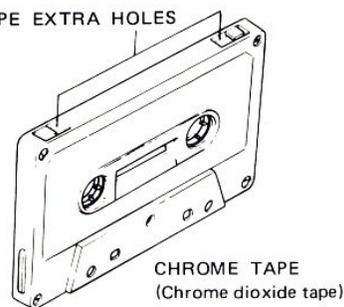
Fig. 7
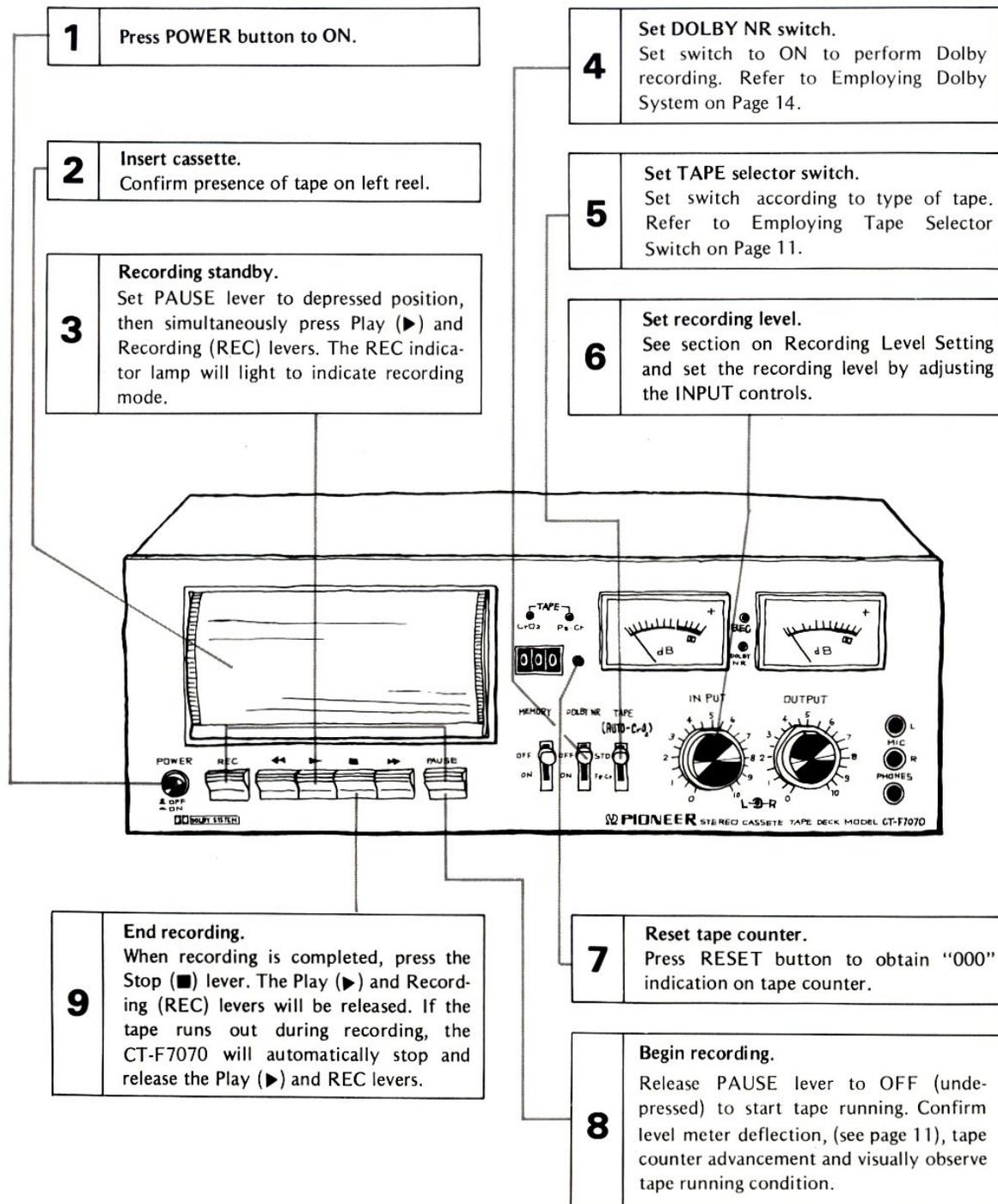
RECORDING STEPS

1   Press POWER button to ON.

2   Insert cassette.
Confirm presence of tape on left reel.

3   Recording standby.
Set PAUSE lever to depressed position, then simultaneously press Play (▶) and Recording (REC) levers. The REC indicator lamp will light to indicate recording mode.

4   Set DOLBY NR switch.
Set switch to ON to perform Dolby recording. Refer to Employing Dolby System on Page 14.

5   Set TAPE selector switch.
Set switch according to type of tape. Refer to Employing Tape Selector Switch on Page 11.

6   Set recording level.
See section on Recording Level Setting and set the recording level by adjusting the INPUT controls.

9   End recording.
When recording is completed, press the Stop (■) lever. The Play (▶) and Recording (REC) levers will be released. If the tape runs out during recording, the CT-F7070 will automatically stop and release the Play (▶) and REC levers.

7   Reset tape counter.
Press RESET button to obtain "000" indication on tape counter.

8   Begin recording.
Release PAUSE lever to OFF (undepressed) to start tape running. Confirm level meter deflection, (see page 11), tape counter advancement and visually observe tape running condition.

RECORDING LEVEL SETTING

The recording level setting strongly influences the playback sound. If set so high that the level meters deflect beyond scale, distortion will be produced. Conversely, insufficient recording level results in lowered Signal-to-Noise ratio, making noise more apparent during playback. Normally set the recording level so that at high points within the program source, the level meters indicate in the range of -3 dB ~ 0 dB. Use care when setting, since meter deflection varies considerably according to the program source.
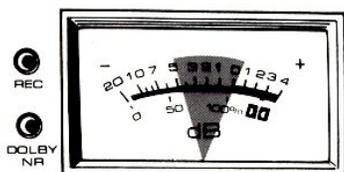
Fig. 8

As shown in Fig. 9, recording levels can be adjusted independently for right (R) and left (L) channels by using the INPUT controls.

LEFT CHANNEL

RIGHT CHANNEL
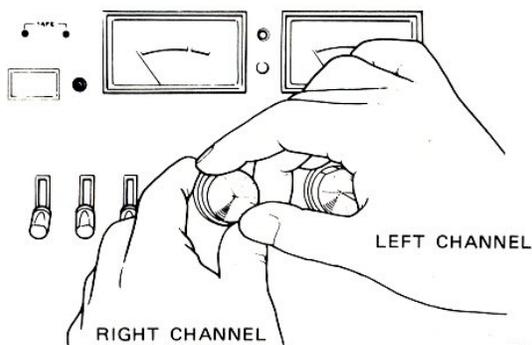
Fig. 9

EMPLOYING TAPE SELECTOR SWITCH

This switch selects response characteristics according to type of tape in order to derive full tape performance and obtain low distortion recording and playback. Table 2 shows the recommended settings for popular brands of tape.

Since selection becomes automatic in the case of chrome tape, the position of this switch can be disregarded when using this type of tape.

NOTE:
Avoid using chrome tape that is not provided with extra detecting holes, since the automatic selector does not function if the holes are absent.

Major Tape Brands & Switch Settings

Table 2

TAPE		SWITCH POSITION
BASF	C-60LH SUPER, C-90LH SUPER	STD POSITION
AGFA	C-60, C-90	
	SUPER C-60+6	
	SUPER C-90+6	
SCOTCH	C-60, C-90(MASTER)	
MAXELL	LN C-60, C-90	
	UD C-60, C-90	
	UDXL C-60	
TDK	D C-60, D C-90	
	SD C-60, SD C-90	
	ED C-60, ED C-90	
FUJI	FM C-60, FL C-60, FX C-60	
	FM C-90, FL C-90, FX C-90	
	FX DUO C-45, C-60, C-90	
SONY	C-60, C-90	
	C-60HF, C-90HF	
SONY	DUAD C-60 C-90	Fe-Cr POSITION (Ferri-chrome)
SCOTCH	CLASSIC C-60	
	CLASSIC C-90	
BASF	FERROCHROM C-60, C-90	
BASF	CHROMDIOXID C-60	CrO2 (Chrome) Automatically selected regardless of switch position.
	CHROMDIOXID C-90	
PHILIPS	CHROMIUM DIOXIDE C-60	
	CHROMIUM DIOXIDE C-90	
MAXELL	CHROME DIOXIDE C-60(CR)	
	CHROME DIOXIDE C-90(CR)	
TDK	KR C-60, KR C-90	
	SA-C-60	
FUJI	FC C-60, FC C-90	
SONY	C-60CR, C-90CR	
SCOTCH	CHROME C-60, C-90	

RECORDING VIA MICROPHONES

STEREO RECORDING

As shown in Fig. 10, connect a stereo type microphone or two units of the same model microphone to the L and R MIC jacks. Then proceed with recording as described in Recording Steps on Page 10.
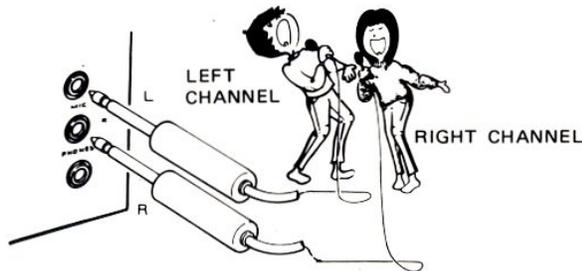
Separate microphones from speakers when recording.   Fig. 10

MICROPHONE RECORDING NOTES

● Employ dynamic or electret condenser microphones.
● Use high impedance microphones with cord lengths of less than 5 meters (about 16 ft.).
● Monitoring by headphones is suggested when recording with microphones.
● Since feedback howling can be caused when monitoring with speakers, separate microphones from speakers if using this method.

OTHER RECORDING TECHNIQUES

FOLLOW-ON RECORDING

While playing a previously recorded program, a new program source can be recorded immediately following it.

1. Connect new program source to LINE INPUT (REC) or MIC jacks.
2. Adjust recording level.
3. Press Play (▶) lever to play tape. When the desired point for follow-on recording is reached, hold down the Play (▶) lever and press the REC lever.
4. Recording of the new program source will begin.

NOTES:
● *Before recording onto previously recorded tape, observe that the erase protector tab of the desired side has not been broken off. If the tab has been removed, cover the tab opening with cellophane tape.*
● *If the REC lever only is pressed, the Play (▶) lever will become released, stopping the tape motion. Be sure to press both Play (▶) and REC levers simultaneously.*

MONO RECORDING

● When connecting only one monophonic microphone, turn the INPUT control of the unused channel (L or R) fully counter-clockwise to minimum.

● If recording via the INPUT (REC) jacks, improved results may be obtained by connecting the mono signal to both left and right channels of the CT-F7070. This requires a separately sold connecting cord.

MIXING BETWEEN MIC AND INPUT (REC) JACK SIGNALS

As shown in Fig. 11, a microphone signal can be recorded on the left tape track and an INPUT (REC) jack signal on the right track simultaneously (or vice versa).

1. Connect microphone to L (or R) MIC jack.
2. Connect line signal (from stereo receiver or amplifier, tuner, etc.) to R (or L) INPUT (REC) jack.
3. Proceed with recording as described in Recording Steps. Adjust recording levels separately with the L and R INPUT controls.

Fig. 11

PLAYBACK STEPS

1 Depress POWER button to ON.

2 Insert cassette.
Confirm presence of tape on left reel of pre-recorded cassette.

3 Reset tape counter.
Press RESET button to obtain "000" indication on tape counter.

4 Set DOLBY NR switch.
Set switch to play Dolby recorded tape.

5 Set TAPE selector switch.
Set switch according to type of tape. Refer to Employing Tape Selector Switch on Page 11.

8 End of Playback.
When playback is completed, press the Stop (■) lever. The Play (▶) lever will be released. If the tape runs out during playback, the CT-F7070 will automatically stop and release the Play (▶) lever.

6 Begin Playback.
Press the Play (▶) lever to start tape motion.
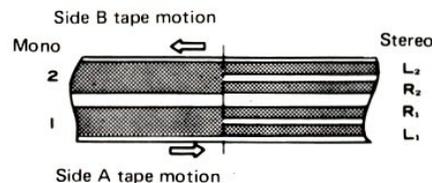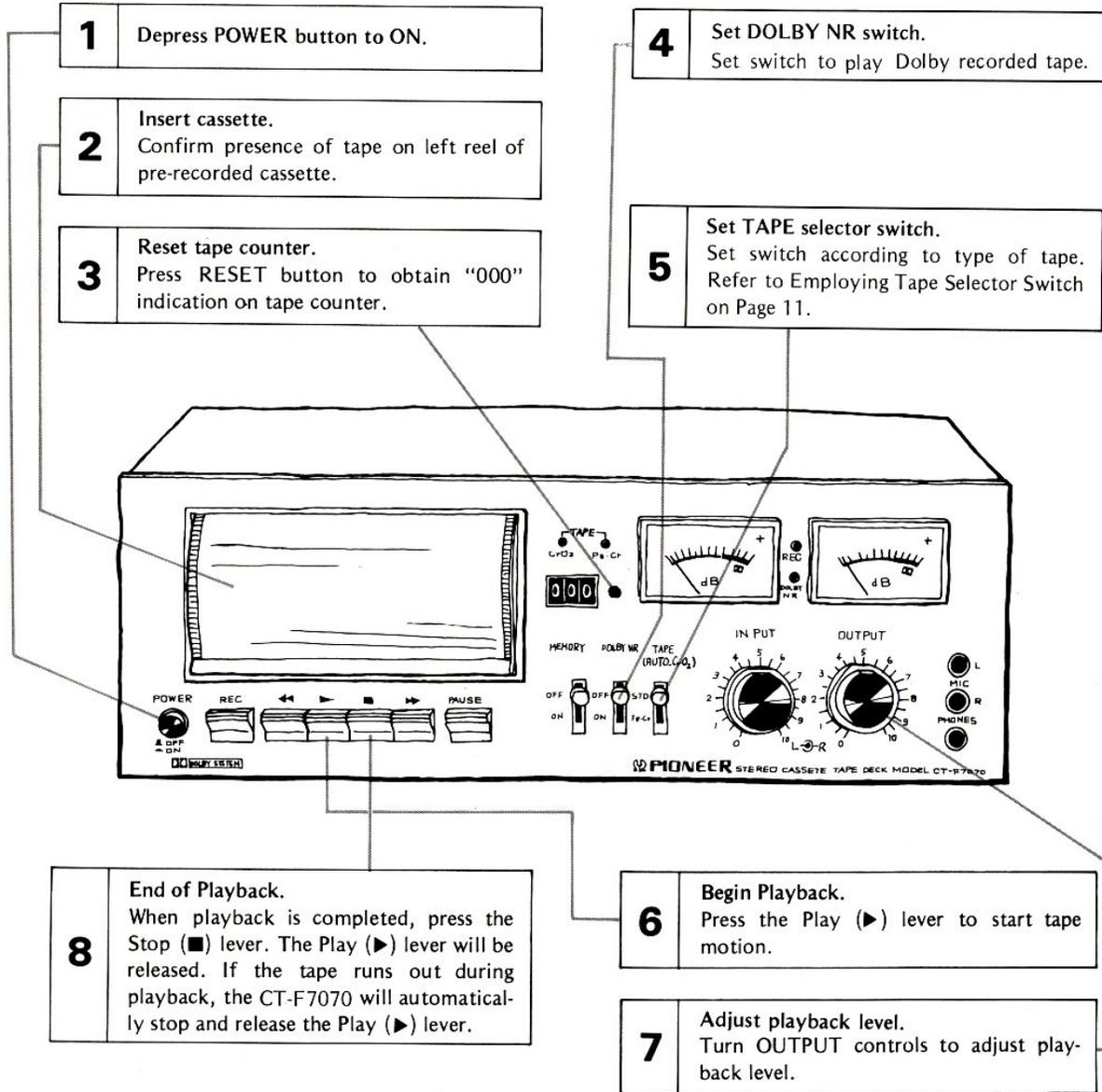
7 Adjust playback level.
Turn OUTPUT controls to adjust playback level.

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 noise 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-F7070 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 10 dB inprovement.

The B type noise reduction system performs as follows.

During recording, when the input signal declines 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 noise produced in the playback process becomes significantly reduced.

TAPE SELECTION

The CT-F7070 does not present special requirements. Although there are some differences among standard, chrome, ferri-chrome and LH types, nealy 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-F7070 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.

NOTE:
In some cases with particularly high sensitivity tape, Dolby recording and playback can produce frequency response deviation, rather than the improved tone normally expected.

MAINTENANCE

Regular maintenance is important for equipment that contains rotating parts, such as cassette tape decks. The simple maintenance steps described below should be performed regularly and carefully in order to ensure continued high performance.

HEAD ASSEMBLY CLEANING

With extensive use, dust, tape particles and other foreign matter can accumulate on the heads and capstan, which can lead to impaired sound quality and sound skipping. To prevent this, carefully clean the heads, capstan and surrounding parts at regular intervals with the accessory cleaning stick or a soft cloth.

Head Cleaning Steps (Fig. 12)

1. Set POWER switch to ON.
2. While using finger to hold cassette detector pin depressed, press the play lever.
3. When head section extends upward, release the cassette detector pin. While turning the supply reel shaft by hand, clean the pinch roller, capstan and heads.

NOTES:
1. *Avoid bringing metallic objects, such as screwdrivers, pliers, magnets, etc. near the heads.*
2. *Do not use paint thinner, benzene, alcohol or other volatile liquids to clean the case and panel.*

CLEANING DOOR INTERIOR

If the inner side of the cassette door becomes soiled, clean with a soft cloth as shown in Fig. 13 To clean the upper portion of the door, fold the cloth and wedge it between the door and the upper cover, then open and close the door several times to perform cleaning.

NOTE:
Static electricity may cause dust to adhere to the door during dry weather. In this case, dampen the polishing cloth slightly with water and perform cleaning.

HEAD DEMAGNETIZING

The heads can become slightly magnetized through long use, while they can become more strongly magnetized if magnetic objects such as magnetic tipped screwdrivers are brought into proximity with them. This can cause loss of high frequency response and induce noise into recording and playback. At regular intervals, employ a separately sold head eraser to demagnetize the heads and surrounding parts. Refer to the head eraser operating instructions for detailed information.
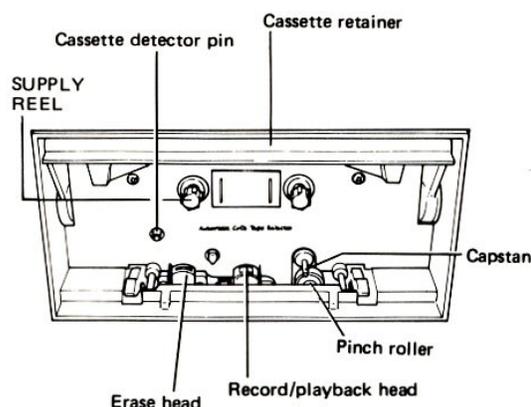
Cleaning Head Assembly

Fig. 12

Cleaning Door Interior

Wipe with accessory polishing cloth.

Fig. 13

FOR USE IN UNITED KINGDOM ONLY

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 ⏚ 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.

2-CHANNEL STEREO

CASSETTE TAPE DECK

CT-F7070 D HG

SPECIFICATIONS

Systems	Compact cassette, 2-channel stereo
Motor	Electronically-controlled DC motor (built-in generator) x 1
Heads	"Ferrite Solid" recording/plaback head x 1
	Ferrite erasing head x 1
Fast Winding Time	Approximately 85 seconds (C-60 tape)
Wow and Flutter	No more than 0.07% WRMS (JIS), No more than ±0.2% WRMS (DIN)
Frequency Response	Standard, LH tapes: 30 to 14,000Hz (40 to 13,000Hz ±3dB)
	Chromium dioxide tape: 30 to 17,000Hz (40 to 15,000Hz ±3dB)
	Ferri-chrome tape: 30 to 16,000Hz (40 to 15,000Hz ±3dB)
Signal-to-Noise Ratio.................	Dolby OFF: More than 52dB
	Dolby ON: More than 62dB (over 5kHz, standard, LH tapes)
	(When chromium dioxide tape is used, signal-to-noise ratio is further improved by 4.5dB over 5kHz)
Harmonic Distortion	No more than 1.7%

Inputs (Reference level/Maximum allowable input/Impedance)

$\qquad$ MIC x 2; 0.23mV/80mV/23kΩ, 6ϕmm Jack

$\qquad$ (Reference MIC impedance; 600Ω to 50kΩ)

$\qquad$ LINE x 2 (2-channel stereo); 64mV/25V/100kΩ

$\qquad$ DIN (REC/PLAY) x 1; Input & Output, 10mV/3.6V/2.2kΩ, 5p jack (DIN standard)

Outputs (Reference level/Maximum level/Load Impedance)

$\qquad$ LINE x 2 (2-channel stereo); 450mV/800mV/50kΩ

$\qquad$ HEADPHONES x 1; 60mV/100mV/8Ω

$\qquad$ DIN (REC/PLAY) 1; 450mV/800mV/50kΩ (DIN standard)

$\qquad$ ● With output level controls

Semiconductors	
$\quad$ Amplifier Section	Transistors; 35, Diodes; 22, Zener Diode; 1, FETs; 2, LEDs; 2, Dolby module; 2
$\quad$ Motor Control Section	Transistors; 3, Diode; 1
Subfunctions	● Dolby system (ON-OFF) with indicator lamp
	● Tape selector (STD/FeCr/CrO$_2$) with CrO$_2$, Fe-Cr indicator lamp and chrome tape Auto-switchable mechanism
	● Cassette compartment illumination
	● Memory stop mechanism (ON/OFF)
Power Requirements	AC220V, 240V (switchable) 50Hz/60Hz or AC 120V, 220V, 240V (switchable) 50Hz/60Hz
Power Consumption	18watts, Max.
Dimensions	420(W) x 150(H) x 350(D) mm. max.
	16-9/16 x 5-7/8 x 13-1/2 in.
Weight $\quad$ Without package	8.5kg (18lb11oz)
Furnished parts	Stereo connecting cord with pin plugs; 2
	Head cleaning kit; 1
	Operating instructions; 1

NOTES:
1. Reference tape: standard, LH tapes are DIN no. 45513/BLATT6.
   : chrome tape is DIN no. 45513/BLATT 7 (CrO2).
2. Reference recording level: meter 0dB level (equivalent to 160 nwb/m).
3. Reference signal: 333Hz.
4. Wow & Flutter: at 3kHz.
5. Frequency response: measured at −20dB level, DOLBY OFF. Level deviation is ±6dB without indication.
6. Signal-to-Noise ratio: measured at +4dB level (equivalent to 250 nwb/m) with weighted IEC A curve.

7. Sensitivity: Input level (mV) for reference recording measured with input (recording) level control set at maximum position.
8. Maximum allowable input level: measured at the point where the output signal wave is clipped while gradually turning the input level control.
9. Reference output level: meter 0dB level.
10. Maximum output (playback) level: Output level to reference recording level, measured with output (playback) levell control set at maximum position.

NOTE: Specifications and the design subject to possible modification without notice due to improvements.

TROUBLE? PLEASE CHECK

Most cases of operating difficulty can be traced to simple causes such as improper maintenance, incorrect or loose connections, defective tape, and incorrect operating method. The following checklist is provided for correcting the most commonly experienced difficulties.

Difficulty	Probable Causes	Correction
Tape does not run	1. AC cord not plugged in or loose. 2. Tape has run out. 3. PAUSE lever ON position. 4. Cassette tape improperly inserted.	1. Insert cord correctly. 2. Rewind tape. 3. Set PAUSE lever to OFF (undepressed) position. 4. Remove and carefully reinsert cassette.
High frequencies weak	1. Heads soiled. 2. Incorrect TAPE SELECTOR switch setting during record or playback. 3. Normally recorded tape played with DOLBY NR switch ON.	1. Clean heads. 2. Set TAPE SELECTOR switch to match employed tape. 3. Set DOLBY NR switch to OFF.
Playback sound distorted	1. Playback level too high. 2. Distortion recorded onto tape.	1. Reduce playback level. 2. Replace cassette.
Sound unsteady	1. Capstan soiled. 2. Cassette defective.	1. Clean heads and capstan. 2. Replace cassette.
Excessive noise	1. Tape old. 2. Dolby recorded tape played with DOLBY NR switch OFF.	1. Replace cassette. 2. Set DOLBY NR switch to ON.
Cannot record	Cassette erase preventing tab broken off.	Replace cassette or cover tab opening with cellophane tape.
Recorded sound distorted	1. Input level too high. 2. Heads soiled.	1. Reduce input level when recording. 2. Clean heads.
Automatic stop functions before tape runs out.	1. Tape slack. 2. MEMORY switch set to ON.	1. Take up tape slack. 2. Set to OFF.
Memory stop does not function	MEMORY switch set to OFF.	Set to ON.