



FISHER®

CR-W46

SPECIFICATIONS

	CAUTION RISK OF ELECTRIC SHOCK. DO NOT OPEN!	
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER.</p> <p>NO USER-SERVICEABLE PARTS INSIDE.</p> <p>REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		

	This symbol indicates that dangerous voltage constituting a risk of electric shock is present within this unit.
	This symbol indicates that there are important operating and maintenance instructions in the literature accompanying this unit.

Motor	(2) DC Governor
Cassette Loading	(2) Front
Drive System	(2) Capstan
Number of Heads	2/2
Head Material	Hard Permalloy/Ferrite
Operation	(2) Powered Mechanism
Wow and Flutter	0.06 % WRMS
Signal-to-Noise Ratio (CCIR Weighted)	
Dolby* NR OFF	51 dB
Dolby* NR ON	61 dB
Erase Ratio	70 dB
Channel Separation	40 dB
Signal Crosstalk	70 dB
Frequency Response 1-7/8 IPS	
Normal Tape (±3 dB)	40 Hz - 13 kHz
CrO ₂ Equivalent Tape (±3 dB)	40 Hz - 14 kHz
Metal Tape (±3 dB)	40 Hz - 15 kHz
Total Harmonic Distortion at 0 VU	1.2 %
Fast Forward/Rewind Time (C-60)	110 sec.
Level Indicators	(2) LED Meters
Inputs (Sensitivity/Impedance)	(2) Line 100 mV/50 kΩ
Outputs (Level at 0 VU/Impedance)	(2) Line 500 mV/1.2 kΩ
Tape Selector Switch	Normal, CrO ₂ , Metal
Tape Counter	Mechanical
GENERAL	
Power Requirements	120 VAC ±10 % (50/60 Hz) 12 Watts
Dimensions (WxHxD)	17.33"x4.88"x10.25"
Weight (approx.)	10 lbs.

*Dolby is a registered trademark of Dolby Laboratories Licensing Corporation.

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

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WARNING: TO AVOID THE HAZARDS OF FIRE OR ELECTRICAL SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR OTHER MOISTURE.

IMPORTANT . . . This Stereo Double Cassette Deck was developed by FISHER to give you many years of enjoyment. Please read the following instructions carefully. They have been prepared to assist you during the initial set-up procedure and to assure you of optimum performance at all times.

THE WARRANTY ON THIS UNIT DOES NOT COVER DAMAGE CAUSED BY MISHANDLING OR MISUSE.

CONNECTING THE DOUBLE CASSETTE DECK

CAUTION:

- Do not plug the power cord into an AC wall outlet until after all connections have been made.
- Be sure to make the correct connections, paying attention to the L (left channel) and R (right channel), and LINE OUT and LINE IN marks. Plug in the cables securely. Loose connections will result in unsatisfactory sound reproduction or cause noise problems. Refer to Fig. 1 below.

1 LINE IN (RECORD) Jacks . . .

Connection of recording cables between the double cassette deck and the amplifier should be made as follows:

Connect the LINE IN L jack of the double cassette deck to the TAPE REC OUT LEFT output jack of the amplifier. Connect the LINE IN R jack of the double cassette deck to the TAPE REC OUT RIGHT output jack of the amplifier.

2 LINE OUT (PLAYBACK) Jacks . . .

Connection of playback cables between the double cassette deck and the amplifier should be made as follows:

Connect the LINE OUT L jack of the double cassette deck to the TAPE PB LEFT input jack of the amplifier. Connect the LINE OUT R jack of the double cassette deck to the TAPE PB RIGHT input jack of the amplifier.

3 AC (Power Cord) . . .

After completing installation and all connections, make sure that the POWER switch on the front panel of the double cassette deck is set to OFF. Then plug the power cord into an AC wall outlet.

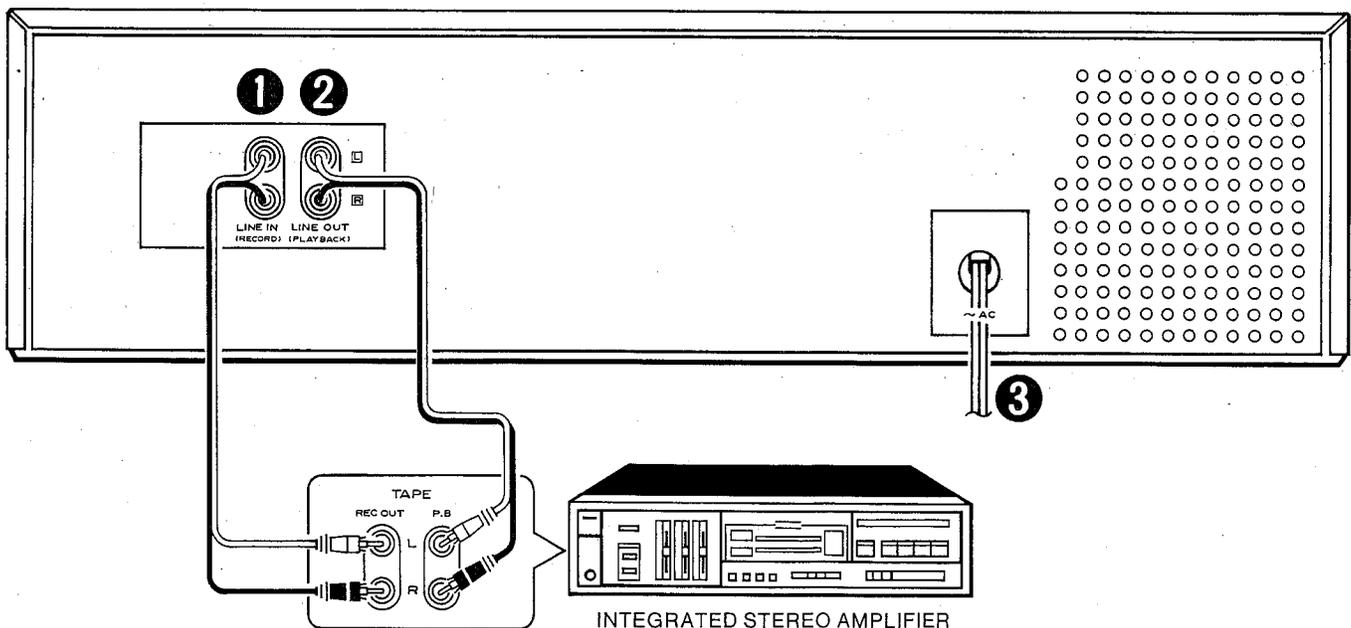


Fig. 1

CONTROLS AND OPERATION

This section describes the double cassette deck's controls in the order in which you would normally use them. Follow the instructions in a step-by-step sequence and in a very short time you will master complete operation of the unit.

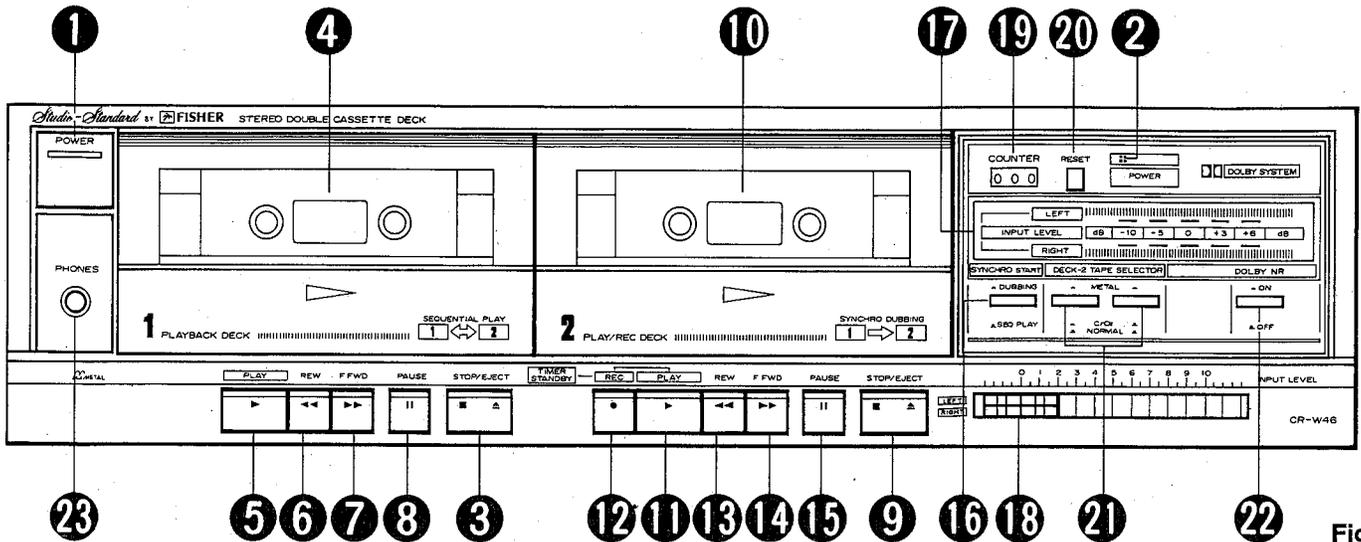


Fig. 2

DECK 1 **PLAYBACK ONLY**
DECK 2 **RECORD/PLAYBACK**

- 1** **POWER Switch (DECKS 1, 2) ...**
Set the VOLUME control of your amplifier to the position marked "0" (minimum) before switching on the power.
By gently depressing the POWER switch, the unit is switched on. Simultaneously, the POWER indicator will light up. To switch the power off, release the switch by depressing it again.
- 2** **POWER Indicator (DECKS 1, 2) ...**
Lights up when the POWER switch is depressed.
- 3** **STOP/EJECT Button (DECK 1 only) ...**
Stops tape movement of DECK 1. When depressed once, it unlocks all other buttons (except the PAUSE button) of DECK 1 and stops the tape movement. When depressed a second time, the cassette compartment of DECK 1 will open and eject the cassette.
- 4** **Cassette Compartment Lid (DECK 1 only) ...**
Depress the STOP/EJECT button of DECK 1 to open the cassette compartment. To close the compartment, gently push the compartment lid. In case the compartment does not close, check if the cassette is inserted properly. DO NOT use force.
- 5** **PLAY Button (DECK 1 only) ...**
For playback of recorded cassettes. To stop tape transport temporarily during playback, depress the PAUSE button of DECK 1.
- 6** **REW (Rewind) Button (DECK 1 only) ...**
Rewinds tape rapidly to the left hand reel.
- 7** **F-FWD (Fast Forward) Button (DECK 1 only) ...**
Moves tape rapidly to the right hand reel.
- 8** **PAUSE Button (DECK 1 only) ...**
Instantly stops tape movement while DECK 1 is in playback mode. When the button is depressed a second time, operation is resumed.
NOTE:
When the PAUSE button of DECK 1 is depressed, while DECK 1 is in the fast forward or rewind mode, the tape does not stop running until fast forward or rewind operation is completed.
- 9** **STOP/EJECT Button (DECK 2 only) ...**
Stops tape movement of DECK 2. When depressed once, it unlocks all other buttons (except the PAUSE button) of DECK 2 and stops the tape movement. When depressed a second time, the cassette compartment of DECK 2 will open and eject the cassette.
- 10** **Cassette Compartment Lid (DECK 2 only) ...**
Depress the STOP/EJECT button of DECK 2 to open the cassette compartment. To close the compartment, gently push the compartment lid. In case the compartment does not close, check if the cassette is inserted properly. DO NOT use force.

- 11** **PLAY Button (DECK 2 only) . . .**
For playback of recorded cassettes. To stop tape transport temporarily during playback, depress the **PAUSE** button of DECK 2.
Playback can also be started by a connected audio timer. See page 10.
- 12** **REC (Record) Button (DECK 2 only) . . .**
Depress the REC button and while holding it, depress the **PLAY** button of DECK 2 to record. The REC button will remain locked if no cassette or one with erase guard tabs removed is inserted, or while DECK 2 is in the playback mode with the **PLAY** button depressed. Never force this button.
To stop recording temporarily, depress the **PAUSE** button of DECK 2.
When recording with an external audio timer, depress the **POWER** switch on the double cassette deck to the **ON** position and depress the REC button and while holding it, depress the **PLAY** button. The connected audio timer will switch the power on. For details see page 10.
- 13** **REW (Rewind) Button (DECK 2 only) . . .**
Rewinds tape rapidly to the left hand reel.
- 14** **F-FWD (Fast Forward) Button (DECK 2 only) . . .**
Moves tape rapidly to the right hand reel.
- 15** **PAUSE Button (DECK 2 only) . . .**
Instantly stops tape movement while DECK 2 is in either recording or playback mode. When the button is depressed a second time, operation is resumed.
NOTE:
When the **PAUSE** button of DECK 2 is depressed, while DECK 2 is in the fast forward or rewind mode, the tape does not stop running until fast forward or rewind operation is completed.
- 16** **SYNCHRO START Switch (DECKS 1, 2) . . .**
For synchro dubbing from DECK 1 to DECK 2 or for recording from line input to DECK 2. Set according to the input source to be recorded. Also to select sequential playback or playback from both DECK 1 and DECK 2.
– **SEQ. PLAY** position (button out): For sequential playback from DECK 1 to DECK 2 or from DECK 2 to DECK 1, or for recording from the amplifier through **LINE IN** jacks to DECK 2.
– **DUBBING** position (button in): For synchro dubbing from DECK 1 to DECK 2, or for playback from both DECK 1 and DECK 2.
- 17** **INPUT LEVEL Indicators (DECKS 1, 2) . . .**
Aid in adjusting optimum recording levels with the **SYNCHRO START** switch released to the **SEQ. PLAY** position on DECK 2. They may be used for continuous monitoring to provide an instantaneous indication of channel output for DECK 1 and/or DECK 2.
- 18** **INPUT LEVEL Controls (DECK 2 only) . . .**
For independent adjustment of each channel's recording level for precise balancing of stereo signals with the **SYNCHRO START** switch released to the **SEQ. PLAY** position on DECK 2.
With the **SYNCHRO START** switch depressed to the **DUBBING** position, recording level cannot be adjusted by the **INPUT LEVEL** controls. Signals to be dubbed from DECK 1 to DECK 2 are directly recorded on DECK 2.
- 19** **COUNTER Numbers (DECK 2 only) . . .**
Used as a reference when recording or playing back tapes.
- 20** **RESET Button (DECK 2 only) . . .**
Resets tape counter to "000."
- 21** **DECK-2 TAPE SELECTOR Switches (DECK 2 only) . . .**
Select proper recording bias and also the recording or playback equalization for the type of tape being used.
– For **METAL** tapes, depress both switches.
– For **CrO₂** (chromium dioxide or equivalent) tapes, depress left-hand switch, and release right-hand switch.
– For **NORMAL** (low noise, ferric oxide) tapes, release both switches.
NOTE:
Operation of tape selector for DECK 1 is automatic, with no external setting required.
- 22** **DOLBY* NR Switch (DECKS 1, 2) . . .**
Activates the **DOLBY** Noise Reduction System during recording (DECK 2) and playback (DECKS 1, 2). Depress to the **ON** position when playing back a tape recorded with **Dolby NR**.
NOTE:
When dubbing from DECK 1 to DECK 2, the **Dolby NR** circuits are automatically set in the **OFF** position even with the **DOLBY NR** switch depressed to the **ON** position.
* 'Dolby' and the double-D symbol are trademarks of **Dolby Laboratories Licensing Corporation**.
Noise Reduction System manufactured under license from **Dolby Laboratories Licensing Corporation**.
- 23** **PHONES Jack (DECKS 1, 2) . . .**
Provides for headphone monitoring during recording (DECK 2) as well as listening during playback (DECKS 1, 2).

CASSETTE TAPES

CHECKING THE CASSETTES

Before inserting a cassette into either deck, make sure that the tape has no slack. If the tape is slack, use a pencil or similar object to take it up on one of the reels. (Fig. 3)

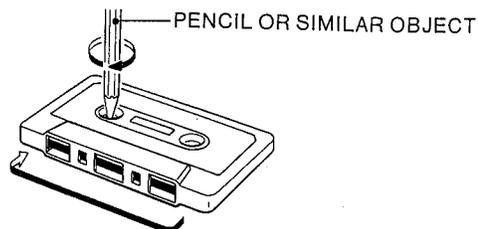


Fig. 3

TO INSERT A CASSETTE INTO EITHER DECK

Depress the STOP/EJECT button of that deck. Depress it again if any of the other buttons were in the depressed position. Insert the cassette with the full reel to the left and with tape slots at bottom. The cassette will fit into the cassette compartment only in the correct position. Close the cassette compartment by gently pressing in on the lid at top center.

TO EJECT A CASSETTE FROM EITHER DECK

Depress the STOP/EJECT button of that deck. Depress it again if any of the other buttons were in the depressed position and eject the cassette. To use the other side of the cassette, turn it over and reinsert it into the cassette compartment.

RECOMMENDED CASSETTE TAPES

In order to obtain optimum performance, it is essential that you use only high quality cassette tapes. The bias (DECK 2) and equalization (DECKS 1, 2) of your double cassette deck are adjusted to yield excellent results if used with brand name tapes, such as TDK, BASF, Maxell, Scotch, Memorex, Ampex and Fuji. Use C-30, C-60 and C-90 cassettes only. We do not recommend the C-120 cassettes because they are subject to mechanical instability and proper and constant tape tension cannot be controlled.

SAFEGUARD AGAINST ACCIDENTAL ERASURE

Every time a recording is made on DECK 2, the previous recording on the tape is erased automatically. To protect valuable recordings from accidental erasure, both the cassette and DECK 2 are equipped with special safeguards.

Cassettes have two tabs on the back. If you wish to preserve the recording on a cassette, break out the tabs with a knife or key. Remove tab A at the right to preserve sound on SIDE 1 and tab B for SIDE 2. (Fig. 4)

The resulting opening interlocks with the REC button of DECK 2. The REC button cannot be depressed when a cassette that has no erase guard tabs is inserted. If you want to re-record the tape, cover the opening with adhesive tape.

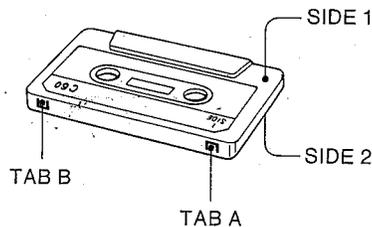


Fig. 4

DOUBLE CASSETTE DECK OPERATION

FULL AUTOMATIC STOP SYSTEMS

Both decks have full automatic stop systems. After one side of a tape has played to the end, the PLAY button of DECK 1 or 2 is released by the automatic stop mechanism and the tape stops automatically. The automatic stop mechanism operates in the RECORD mode (DECK 2), PLAY, REW or F-FWD modes (DECKS 1, 2).

TO STOP THE TAPE ON EITHER DECK

Depress the STOP/EJECT button of DECK 1 or 2 once in any mode: RECORD (DECK 2), PLAY, REW, F-FWD (DECKS 1, 2).

NOTE:

To prevent damage to the pinch rollers, always depress the STOP/EJECT button before switching the power off when in the recording mode (DECK 2) or playback mode (DECKS 1 and 2).

PAUSE BUTTONS

Both decks have convenient PAUSE buttons which stop the tape temporarily. While preparing your next selection or program, depress the PAUSE button. When you want to continue recording (DECK 2) and/or playback (DECK 1 or 2), depress the PAUSE button again to release it. When the tape movement has to be interrupted for a longer period of time, depress the STOP/EJECT button to prevent tape damage.

FAST FORWARD AND REWIND (DECKS 1 and 2)

To skip a selection on the tape, depress the F-FWD or REW button. The tape will then run faster than normal speed. After winding or rewinding to the desired program, depress the STOP/EJECT button. When the beginning or end of the tape is reached, the F-FWD or REW button will automatically release.

3-DIGIT TAPE COUNTER (DECK 2)

This counter assists you in identifying the beginning and end of each recorded selection and in locating a specific selection quickly. When recording, observe the reading on the counter at the start and finish of each recording and note this on the cassette. To set the tape counter to "000," push the RESET button.

AUTO TAPE SELECT MECHANISM ON DECK 1

When a cassette is inserted, the auto tape select mechanism is activated and the type of tape is identified by the sensing holes of the cassette. Simultaneously, the optimum equalization for the inserted tape is adjusted automatically.

DECK-2 TAPE SELECTOR SWITCHES

This double cassette deck has two TAPE SELECTOR switches for METAL, CrO₂ and NORMAL tapes when using DECK 2. They select the proper recording bias and also the recording and playback equalization for the type of tape being used. For best results, set to correspond to the type of tape being used before recording or playback.

For METAL tapes ... depress both switches.

For CrO₂ (chromium dioxide or equivalent) tapes ... depress left-hand switch, release right-hand switch.

For NORMAL (low noise, ferric oxide) tapes ... release both switches.

DOLBY* NR SWITCH (DECKS 1, 2)

Depress to the ON position for recording (DECK 2) and playback (DECKS 1, 2) to improve signal-to-noise ratio. The Dolby Noise Reduction system consists of switchable recording (DECK 2) and playback (DECKS 1, 2) Dolby NR circuits. If the switch is set incorrectly, optimum performance will not be obtained. For instance, if a tape recorded with the Dolby NR circuit is played back with the DOLBY NR switch in the OFF position, the treble will be excessively emphasized, and the resulting sound will not be pleasing; or if a tape recorded without the Dolby NR circuit is played back with the DOLBY NR switch in the ON position, then the treble will be suppressed and the resulting sound will be unsatisfactory.

NOTE:

When dubbing from DECK 1 to DECK 2, the Dolby NR circuits are automatically set in the OFF position even with the DOLBY NR switch depressed to the ON position.

* Dolby is a registered trademark of Dolby Laboratories Licensing Corporation.

LISTENING TO CASSETTE TAPES WITH EITHER DECK 1 OR DECK 2

First, depress the TAPE MONITOR switch of the amplifier. Make sure that you turn down the VOLUME control on the amplifier before operating either deck.

1. Depress the POWER switch of the amplifier to switch on the power.
2. Depress the POWER switch of the double cassette deck to switch on the power.
3. Depress the STOP/EJECT button of DECK 1 or 2.
4. Insert a pre-recorded cassette into the compartment with the side to be played facing you. Close the compartment lid of DECK 1 or 2.
5. When DECK 2 is used, set the DECK-2 TAPE SELECTOR switches according to the type of tape being used (METAL, CrO₂ or NORMAL).
6. Depress the DOLBY NR switch to the ON position for pre-recorded cassettes recorded with Dolby Noise Reduction system. For all other pre-recorded cassettes, release the DOLBY NR switch to the OFF position.
7. Depress the PLAY button of DECK 1 or 2. DECK 1 or 2 begins playing back.
8. Adjust the amplifier's VOLUME, BALANCE and TONE controls to your preference.
9. To stop the playback temporarily, depress the PAUSE button of DECK 1 or 2. Depress it again to resume playback.
10. When playback of one side is completed, DECK 1 or 2 will stop automatically. Depress the STOP/EJECT button, turn the cassette over and reinsert it to play the other side.
11. Release the POWER switch to the OFF position.

NOTE:

- Be sure to release the TAPE MONITOR switch of the amplifier after playback is completed.
- When DECK 1 and DECK 2 are both in the playback mode with the SYNCHRO START switch depressed to the DUBBING position, recorded material from DECK 1 and DECK 2 will be reproduced simultaneously; however, the sound heard will be a mixture of DECK 1 and DECK 2 programs.

IMPORTANT NOTE:

During playback from both DECK 1 and DECK 2, the SYNCHRO START switch must be in the DUBBING position. Do not release the SYNCHRO START switch to the SEQ. PLAY position.

If the SYNCHRO START switch is released, this will cause the motor mechanism on DECK 2 to stop and there is a possibility that the tape may be damaged.

Also, if the STOP/EJECT button is depressed in the above condition with the motor mechanism stopped, the cassette compartment lid will not open. In this case, immediately depress the SYNCHRO START switch to the DUBBING position.

SEQUENTIAL PLAYBACK

First, depress the TAPE MONITOR switch of the amplifier. Make sure that you turn down the VOLUME control on the amplifier before operating both decks.

1. Depress the POWER switch of the amplifier to switch on the power.
2. Depress the POWER switch of the double cassette deck to switch on the power.
3. Depress both STOP/EJECT buttons.
4. Insert a pre-recorded cassette into each compartment with the side to be played facing you. Close each compartment lid.
5. Set the DECK-2 TAPE SELECTOR switches according to the type of tape being used (METAL, CrO₂ or NORMAL).
6. Depress the DOLBY NR switch to the ON position for pre-recorded cassettes recorded with Dolby Noise Reduction system. For all other pre-recorded cassettes, release the DOLBY NR switch to the OFF position.
7. Be sure to release the SYNCHRO START switch to the SEQ. PLAY position.
8. Depress the PLAY button on either deck. For example, depress the PLAY button of DECK 1. DECK 1 begins playing back.
9. During playback on DECK 1, depress the PLAY button of DECK 2 to set to standby mode for playback.
10. Adjust the amplifier's VOLUME, BALANCE and TONE controls to your preference.
11. To stop the playback temporarily, depress the PAUSE button of DECK 1. Depress it again to resume playback.
12. When the tape on DECK 1 is wound completely to the right hand reel, DECK 1 will automatically stop and DECK 2 will automatically begin playing back.
13. After DECK 2 has started playing back, depress the STOP/EJECT button of DECK 1, turn the cassette over and reinsert it to play the other side. Then depress the PLAY button of DECK 1 to set to standby mode for playback.
14. If you want to play back the same side of the tape on DECK 1 again during playback on DECK 2, depress the SYNCHRO START switch to the DUBBING position and depress the REW button of DECK 1. After rewinding the tape completely, DECK 1 will stop automatically. Then release the SYNCHRO START switch to the SEQ. PLAY position again and depress the PLAY button of DECK 1 to set to standby mode for playback.
15. If the PLAY button of DECK 2 is depressed first, the operation will be reversed (substitute 2 for 1 in the above explanation).
To play back sequentially, repeat steps 9 to 13.
16. To stop the playback completely, depress the STOP/EJECT button during playback.
17. Release the POWER switch to the OFF position.

RECORDING LEVEL ADJUSTMENT (DECK 2)

The adjustments of the recording level with the SYNCHRO START switch released to the SEQ. PLAY position on DECK 2 have a great effect on the recording result. It is important that the level be set as high as possible so that it is very close to the saturation level if you want to make a recording with minimal distortion and tape hiss.

While observing the INPUT LEVEL indicators, adjust the recording level with the INPUT LEVEL controls as follows:

- **Optimum Recording Level:**
Adjust the recording level so that all the indicators up to "0 dB" light during the loudest portion of your recording. (No practical problems are posed even if all the indicators up to "+3 dB" light momentarily.)
- **Excessively High Recording Level:**
If all the indicators up to "+6 dB" light, this may result in distorted sound being recorded on the tape.
- **Excessively Low Recording Level:**
If all the indicators up to "-10 dB" light momentarily, this may result in excessive noise being recorded on the tape.

CASSETTE RECORDING WITH DECK 2

1. Switch the power on to all components being used.
2. Set the function switch on the amplifier to the program source you want to record: PHONO, TUNER, CD or AUX.
3. If recording from a tuner, set the tuner's band button to FM or AM.
4. Release the SYNCHRO START switch to the SEQ. PLAY position.
5. Depress the STOP/EJECT button of DECK 2. Insert a cassette into the compartment with the side to be recorded facing you. When using an unrecorded cassette, the full reel will be on the left side. Close the compartment lid of DECK 2.
6. Set the DECK-2 TAPE SELECTOR switches according to the type of tape being used (METAL, CrO₂ or NORMAL).
7. Depress the DOLBY NR switch if you wish to record with Dolby Noise Reduction system.
8. Push the RESET button of the tape counter to reset to "000."
9. Depress the PAUSE button of DECK 2.
10. Depress the REC button and while holding it, depress PLAY button. DECK 2 of your double cassette deck is now ready for recording.
11. Adjust the recording level with the INPUT LEVEL controls so that the "0 dB" INPUT LEVEL indicators are illuminated. Refer to RECORDING LEVEL ADJUSTMENT section.
12. After setting the proper recording level, start recording by depressing the PAUSE button a second time. You are now recording. If you wish to stop recording temporarily without resetting the REC and PLAY buttons, depress the PAUSE button. Depress the PAUSE button again to resume recording.
13. When recording is finished, depress the STOP/EJECT button once. If the tape is wound completely to the right hand reel while recording, DECK 2 will stop automatically.
14. To record side 2 of the tape, depress the STOP/EJECT button twice to eject the cassette. Turn the cassette over, reinsert it and close the compartment lid. To begin recording again, repeat steps 6 to 13.
15. Release the POWER switch to the OFF position.

ERASURE (DECK 2)

During recording with DECK 2, all previously recorded material is erased automatically. If you wish to erase without recording new material, follow this procedure:

1. Insert the cassette properly with the side to be erased facing you.
2. Release the SYNCHRO START switch to the SEQ. PLAY position.
3. Slide the LEFT and RIGHT INPUT LEVEL controls to the "0" position.
4. Set the DECK-2 TAPE SELECTOR switches according to the type of tape being used (METAL, CrO₂ or NORMAL).
5. Depress the REC button and while holding it, depress the PLAY button of DECK 2. The side of the tape facing you will be erased.
6. To stop tape transport, depress the STOP/EJECT button of DECK 2.
7. To erase the other side, turn the cassette over and repeat steps 1 through 6.

SYNCHRO DUBBING FROM DECK 1 TO DECK 2

First, depress the TAPE MONITOR switch of the amplifier. Make sure that you turn down the VOLUME control on the amplifier before operating both decks.

1. Depress the POWER switch to the ON position.
2. Depress the SYNCHRO START switch to the DUBBING position.
3. Depress the STOP/EJECT button of DECK 1. Insert a pre-recorded cassette into the compartment with the side to be played facing you. Close the compartment lid of DECK 1.
4. Depress the STOP/EJECT button of DECK 2. Insert a cassette into the compartment with the side to be recorded facing you. When using an unrecorded cassette, the full reel will be on the left side. Close the compartment lid of DECK 2.
5. Set the DECK-2 TAPE SELECTOR switches according to the type of tape being used (METAL, CrO₂ or NORMAL).
6. Push the RESET button of the tape counter to reset to "000."
7. To set to standby mode for synchro dubbing, depress the REC button and while holding it, depress the PLAY button of DECK 2.
8. Start synchro dubbing by depressing the PLAY button of DECK 1. You are now dubbing.
9. To stop dubbing temporarily, depress the PAUSE button of DECK 1. DECK 1 and DECK 2 will stop simultaneously. Depress the PAUSE button of DECK 1 again to resume dubbing.
10. When dubbing is finished, depress the STOP/EJECT buttons of DECKS 1 and 2 once. If the tape is wound completely to the right hand reel while dubbing, DECKS 1 and 2 will stop automatically.
11. To dub side 2 of the tape, depress the STOP/EJECT buttons of DECKS 1 and 2 twice to eject the cassettes. Turn the cassettes over, reinsert them and close the compartment lids. To begin dubbing again, repeat steps 5 to 10.
12. Release the POWER switch to the OFF position.

NOTE:

- When dubbing, the Dolby NR circuits are automatically set in the OFF position even with the DOLBY NR switch depressed to the ON position.
- When a tape recorded with the Dolby NR system is played back with DECK 1, the Dolby NR sounds are directly dubbed into DECK 2. However, the sounds reproduced through the speakers connected to the amplifier and PHONES jack will be excessively emphasized in the treble range while the dubbing process is in progress.
- The INPUT LEVEL indicators show the playback level of DECK 1 during dubbing.

IMPORTANT NOTE:

In case the length of the tape inserted in DECK 1 is shorter than that of the tape inserted in DECK 2, the PLAY button of DECK 1 is released automatically at the end of the tape and the recording operation will stop simultaneously. To stop DECK 2, depress the STOP/EJECT button of DECK 2.

If the length of the tape inserted in DECK 2 is shorter than that of the tape inserted in DECK 1, the RECORD and PLAY buttons of DECK 2 will be released automatically at the end of the tape. But DECK 1 will continue to play back until it reaches its end.

OPERATING DECK 2 WITH AN EXTERNAL AUDIO TIMER

1. Switch the power on to all components being used.
2. Set the SYNCHRO START switch to the SEQ. PLAY position.
3. Insert a cassette with the full reel on the left side.
4. Depress the PAUSE button of DECK 2. Then depress the REC button and while holding it, depress the PLAY button of DECK 2.
5. Select the program to be recorded and adjust the recording level. See CASSETTE RECORDING WITH DECK 2 section for details on recording procedure.
6. Depress the STOP/EJECT button of DECK 2 after setting the recording level. Depress the PAUSE button a second time, and then release the POWER switch to the OFF position. Then depress the REC button and while holding it, depress the PLAY button.
7. When you play back a pre-recorded cassette using an audio timer, insert the cassette, release the POWER switch to the OFF position, and then depress the PLAY button of DECK 2.
8. Refer to the operating instructions manual supplied with the audio timer.

9. Set the start and end times on the audio timer for recording or playback operation.

NOTE:

If you use a C-60 cassette you have approximately 30 minutes of recording time per side. The timer time interval should be set for more than 30 minutes in order to fully record the 30 minute tape. After the tape has been fully recorded, the deck will switch off automatically.

10. Set the timer to standby mode (no power supplied to switched AC outlets).
11. Connect the amplifier to the switched AC outlet on the timer.
12. Depress the POWER switch on the double cassette deck to the ON position.

NOTE:

The power to the double cassette deck will now be supplied by the timer, and the double cassette deck will start to operate once the timer has switched on at the preset time.

Before the double cassette deck is prepared for timer playback or timer record operation, make certain that the timer switch is in the standby mode.

MAINTENANCE

Please remember that your double cassette deck is a sensitive electro-mechanical device which needs occasional maintenance.

WARNING:

FOR YOUR PERSONAL SAFETY DISCONNECT THE UNIT FROM THE AC POWER LINE BEFORE PROCEEDING WITH CLEANING OR LUBRICATION.

1. Cleaning the heads, pinch rollers and capstans ...
To assure continued high performance from your double cassette deck, periodically clean the heads, pinch rollers and capstans whenever an accumulation of dust and red-brown oxide particles is noticed.

These particles may be removed with a cotton swab moistened with isopropyl alcohol or special head-cleaning fluid.

To do this properly, depress the STOP/EJECT buttons of DECKS 1 and 2 to open the cassette compartments. Remove any cassettes still in the compartments and switch off the deck. Carefully rub the face of the heads with alcohol. Also clean the surfaces of the capstans and pinch rollers. (Fig. 5)

2. Cleaning the cabinet and visible metal parts ...
Use a clean soft cloth moistened with plain lukewarm water. Never use benzol, benzine or other strong chemical cleaners since these could damage the finish of your unit. It is important that no liquid reaches the insides of the double cassette deck.

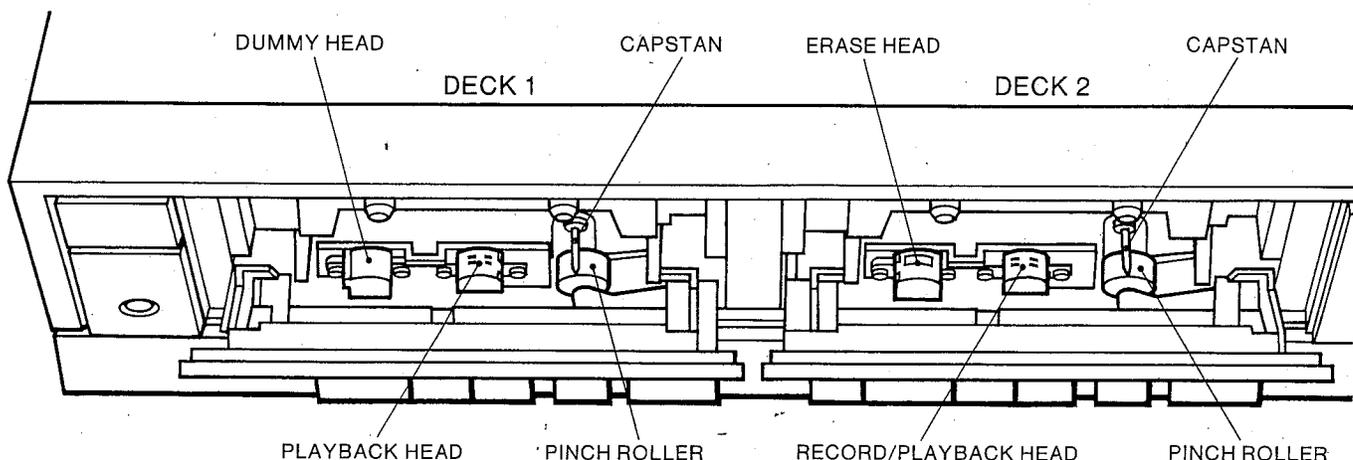


Fig. 5

TROUBLESHOOTING GUIDE

If you have followed the instructions in the CONNECTING and CONTROLS sections, and have difficulty operating your double cassette deck, locate the SYMPTOM in the left column below. Check the corresponding POSSIBLE CAUSE and CORRECTIVE ACTION columns to locate and remedy the problem.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
No tape transport.	The double cassette deck is not plugged in properly.	Check if the power cord is plugged in properly.
	Cassette is not inserted properly.	Insert the cassette properly.
	PAUSE button is depressed.	Depress the PAUSE button again.
No playback.	The double cassette deck is not connected properly.	Check cables between the double cassette deck and amplifier.
	The amplifier is not set properly.	Depress the TAPE MONITOR switch on amplifier.
Recording is not possible.	Erase guard tabs on the cassette have been removed.	Use another cassette, or cover the opening with adhesive tape.
	The double cassette deck is not connected properly.	Check connections between the double cassette deck and amplifier.
	INPUT LEVEL controls are at minimum position when using with DECK 2.	Slide INPUT LEVEL controls to the correct level.
	Tape heads are dirty.	Clean the heads.
	SYNCHRO START switch is not set properly.	Set SYNCHRO START switch to the correct position.
Playback distorted.	Input level too high.	Re-record at proper level.
	DECK-2 TAPE SELECTOR switches in the wrong position when using with DECK 2.	Set to the correct type of tape.
	Using the wrong type of tape for this double cassette deck.	Change over to the proper type of tape.
Poor high frequency reproduction.	DECK-2 TAPE SELECTOR switches in the wrong position when using with DECK 2.	Set to the correct type of tape.
	Wrong type of tape.	Change to the proper type of tape.
	Tape heads are dirty.	Clean the heads.
Previous recorded material is not or only partly erased.	Tape heads are dirty.	Clean the heads.
Recordings have background noise.	Tape heads are dirty.	Clean the heads.

TIPS FOR SAFE OPERATION...

1. **Location:**
For safe operation and satisfactory performance of the double cassette deck, keep the following in mind when selecting a place for its installation.
 - Shelter it from direct sunlight and keep it away from sources of intense heat.
 - Avoid dusty and humid places.
 - Avoid places where there is not enough ventilation for heat dissipation.
2. **When handling the power cord:**
 - Do not handle the power cord with wet hands.
 - Do not pull on the power cord when disconnecting it from the AC wall outlet. Grasp it at the plug.
3. **Avoiding the hazards of electrical shock or fire:**
If, by accident, water is spilled on the double cassette deck, unplug the power cord immediately and have the unit serviced by FISHER-authorized personnel. See Item 5.
4. **Cleaning:**
Wipe the front panel and other exterior surfaces of the double cassette deck with a soft, dry cloth. Stains should be removed by wiping the surfaces with a soft cloth immersed in lukewarm water and wrung dry. Never use a solvent or alcohol. Do not spray insecticide liquid near the double cassette deck. Such chemicals may cause surface discoloration and cracking.
5. **Servicing:**
Should this double cassette deck require service, refer to the Fisher service station list supplied with the unit.

If you do not have a convenient Fisher service station nearby, write to the Fisher dealer where you purchased the unit. Be sure to give the model number and explain the problem. The dealer will advise you how to obtain service.



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