PRELIMINARY INSTRUCTIONS

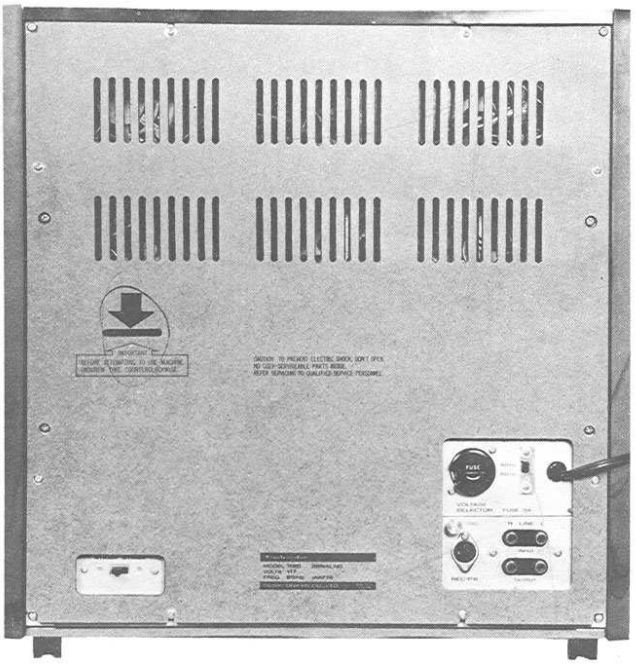
Because we want you to be thoroughly satisfied with your Dokorder, we suggest you read this booklet carefully before assembling and operating the tape deck. It is very important that proper procedures be followed when operating it.

Complete the Warranty Registration Card and mail it immediately. This will validate your warranty.

Should you discover either obvious or concealed damage upon unpacking, contact your Dokorder dealer at once.

IMPORTANT

1. This booklet is to be used for operation of both the Model #1120 (4-track, 2-channel) and the Model #1122 (2-track, 2-channel). Black dots (●) are to indicate the instructions applicable to the 1122 only.
2. The flywheel is locked into place with a screw for protection from vibration and shock during shipping. This screw must be removed before operating the deck (see photo below). It is advisable to keep this screw for use in the event that the deck is shipped again.



3. Avoid installing the deck in any extremely hot, humid or dusty place or where it may be subjected to constant vibration. Do not obstruct the ventilation openings of the deck. Further details are discussed in "Installation Locations" on Page 15.
4. The Models 1120/1122 are available in two versions each: one, called USA Type, is set for 117V, 60Hz only (mainly for the U.S.A.), and the other, called Universal Type, has selectable voltage and frequency, adjusted for the district of its sales before shipment. If a change is required, see "Adjusting Voltage and Frequency Settings" on Page 14.
5. In normal operation, dust from the air and oxide particles from the tape may adhere to the heads. Such particles, though almost invisible, cause attenuation in level (dropouts) or deterioration in tonal quality. We recommend that you clean the heads from time to time even when they do not appear to need it. Regular lubrication of vital moving parts is also important. For details, see "Care and Maintenance" on Page 20.

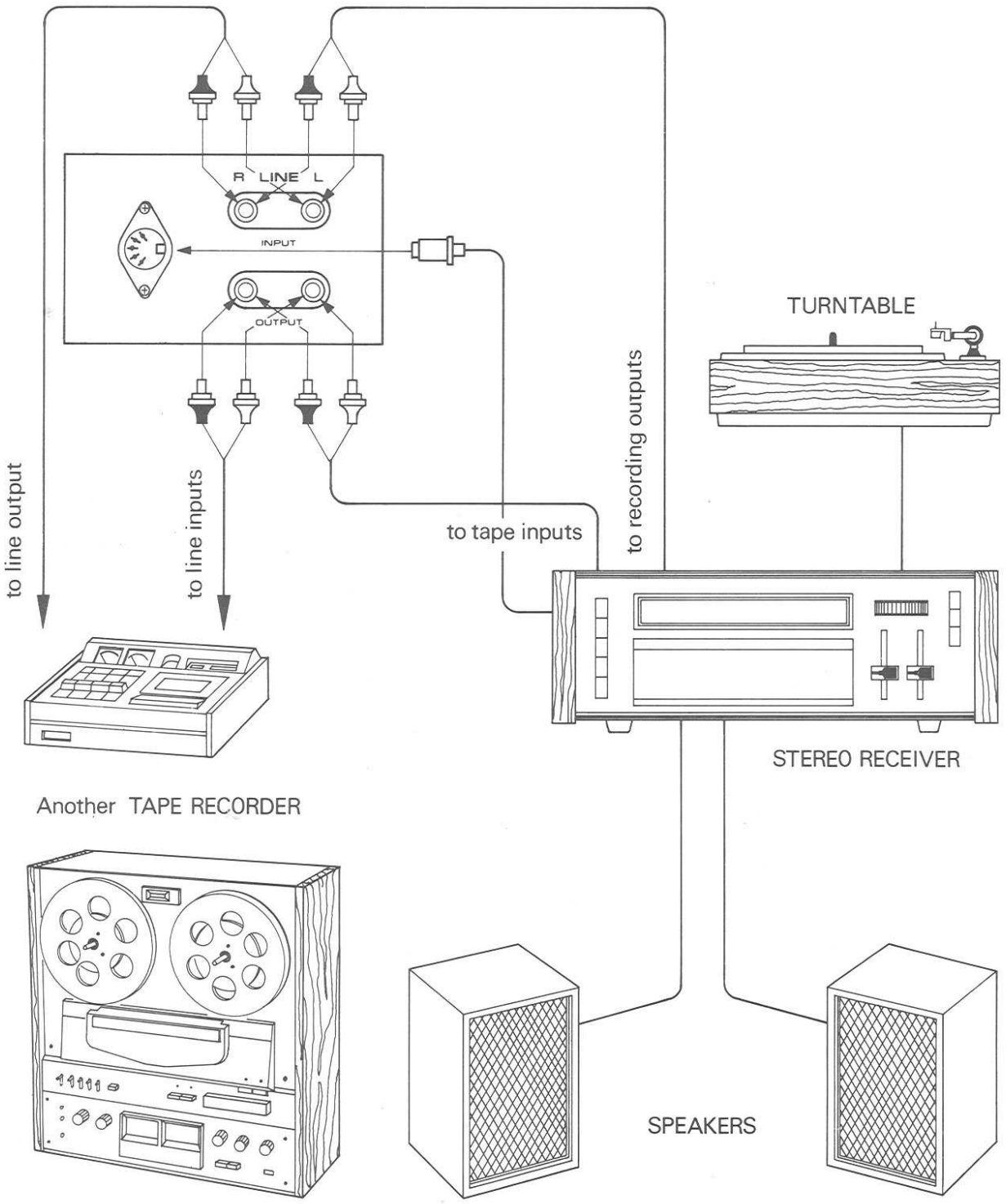
GENERAL DESCRIPTION

Your new Dokorder 1120/1122 open-reel stereo tape deck has been engineered to provide maximum high fidelity performance, top professional-quality flexibility and unfailing reliability: Model 1120 is a 4-track, 2-channel system with tape speeds of 19 cm/sec (7½ ips) and 9.5 cm/sec (3¾ ips); Model 1122 is a 2-track, 2-channel system with tape speeds of 38 cm/sec (15 ips) and 19 cm/sec (7½ ips). To protect your tapes, the three-motor transport system has been designed for smooth, quick-response use. The controls and features include built-in circuitry for special electronic effects such as echo, sound-on-sound and sound-with-sound recording, a bias switch for recording on any type of tape, a special recording equalizer circuit, a lockable, click-free pause button, useful cue facility, separate MIC/LINE inputs and level controls, large VU meters, tape/source monitoring switches and more. The noiseless electronic direction controls, twist-lock reel holders and other advanced features add to your pleasure. Remember, too, that your Dokorder 1120/1122 comes with a 2-years parts warranty and 1-year labor warranty.

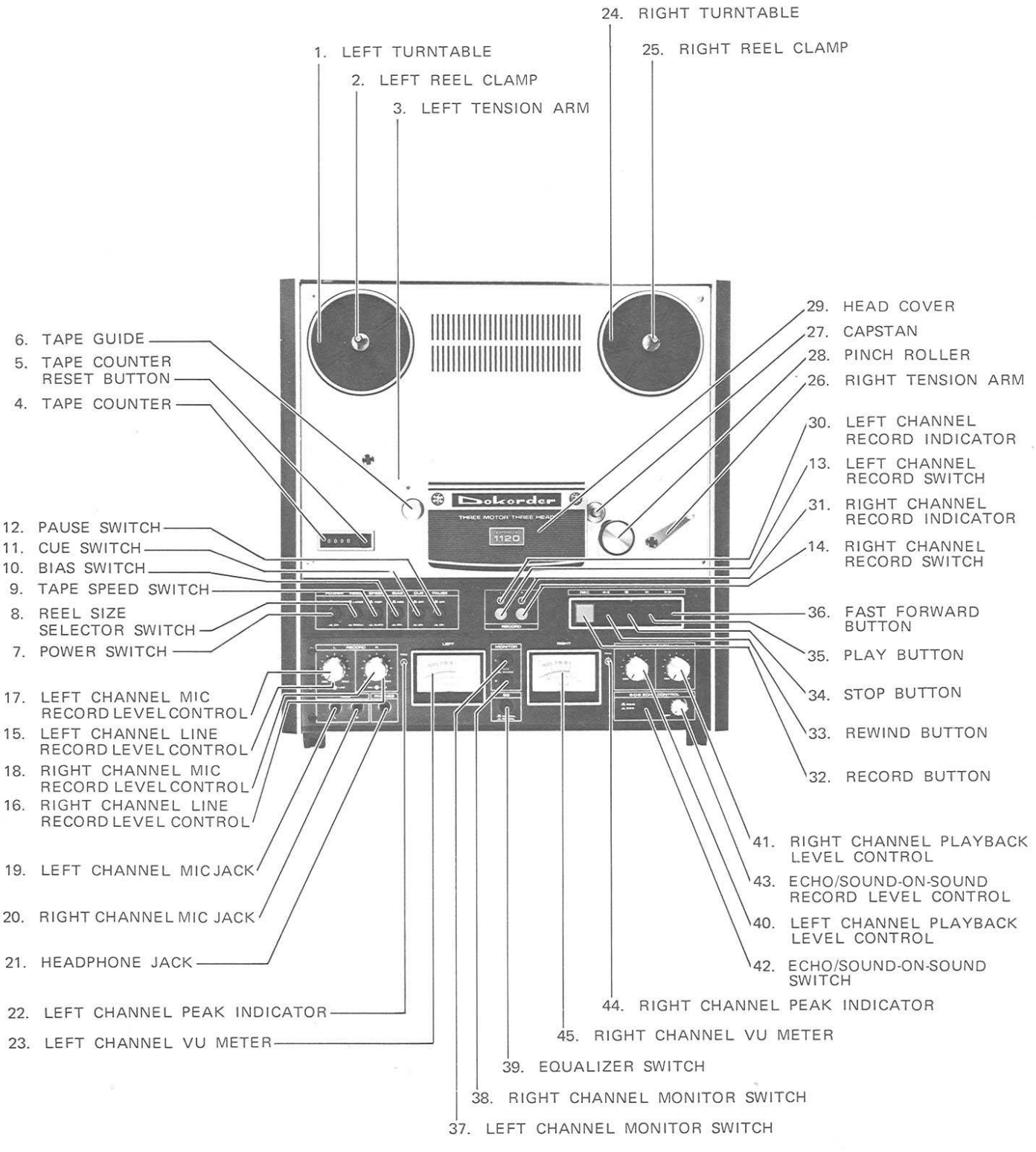
*Note: For the 1120, an optional 2-track, 2-channel head assembly is available, and for the 1122, an optional 4-track, 2-channel head assembly. Refer to your nearest Dokorder Service Station for head assembly replacement.

INCORPORATING INTO A STEREO SYSTEM

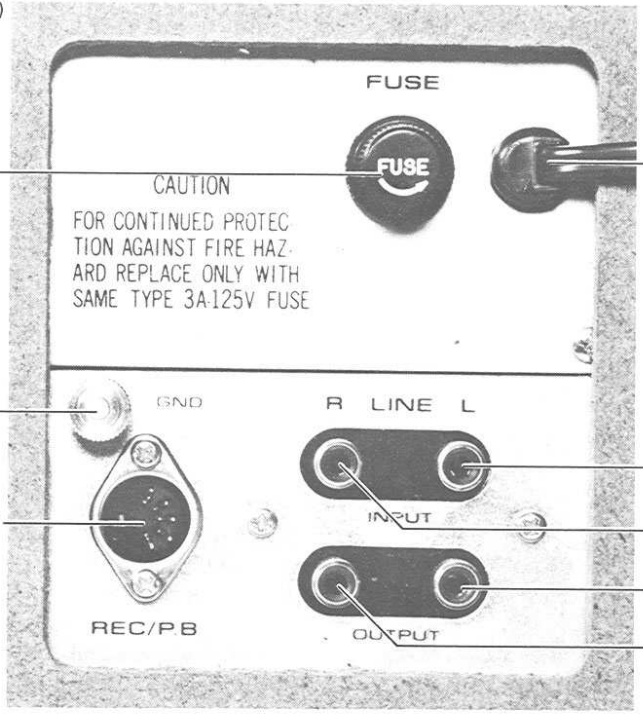
Like any quality tape deck, the Dokorder Models 1120/1122 can be used in a hi-fi stereo system comprising a tuner, amplifier, turntable and other components. The illustration shows a typical system hookup utilizing standard components. Shielded cable of good quality should be used for making interconnections.



DESCRIPTION AND LOCATION OF CONTROLS AND SWITCHES

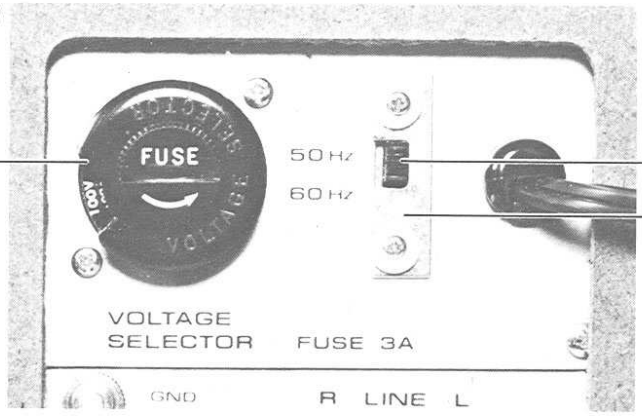


(U.S.A. TYPE)

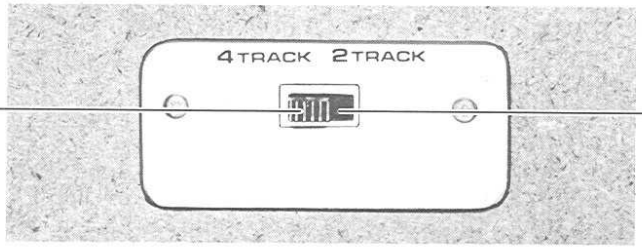


50. FUSE HOLDER
51. POWER CABLE
56. GROUND TERMINAL
52. LEFT CHANNEL LINE INPUT JACK
57. RECORD/PLAY DIN SOCKET
53. RIGHT CHANNEL LINE INPUT JACK
54. LEFT CHANNEL LINE OUTPUT LACK
55. RIGHT CHANNEL LINE OUTPUT JACK

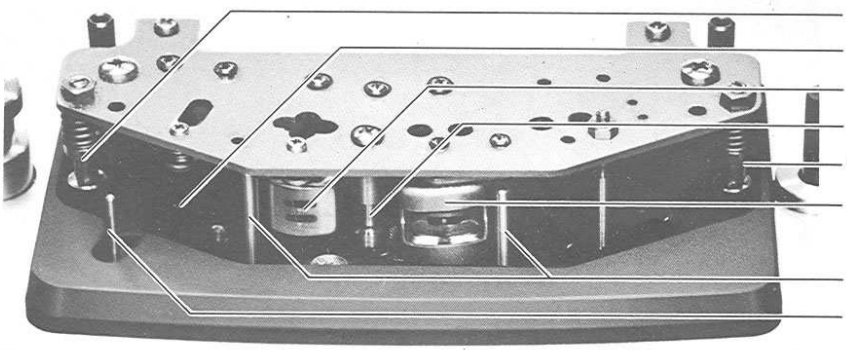
(UNIVERSAL TYPE)



61. VOLTAGE SELECTOR
60. FREQUENCY SWITCH
62. LOCKING PLATE



58. 4/2-TRACK SELECTOR SWITCH
59. LOCKING PLATE



63. LEFT OUTER TAPE GUIDE
65. ERASE HEAD
67. RECORD HEAD
66. INNER TAPE GUIDE
69. RIGHT OUTER TAPE GUIDE
68. PLAY HEAD
70. LIFTER POLES
64. AUTO SHUT-OFF ARM

(1) LEFT TURNTABLE
Accepts 7-inch or 10½-inch reels.

(2) LEFT REEL CLAMP
Secures the mounted reel (pull out and turn clockwise or counterclockwise).

(3) LEFT TENSION ARM
Keeps the tape under proper tension at all times, regardless of the amount of tape on either reel.

(4) TAPE COUNTER
The 4-digit counter helps you to locate any given point of the tape.

(5) TAPE COUNTER RESET BUTTON
When pressed, sets the four digits of Tape Counter to "0000."

(6) TAPE GUIDE
Coupled with Left Tension Arm, this guide absorbs any irregularity of the unspooling tape to assure smooth tape-to-head contact.

(7) POWER SWITCH
Push in to operate the deck.

(13, 14) RECORD SWITCHES
Push either or both to select channel(s) for recording.

(15, 16) LINE RECORD LEVEL CONTROLS
Use to adjust the recording levels when recording from the line inputs.

(17, 18) MIC RECORD LEVEL CONTROLS
Adjust the recording levels when recording through the mic inputs.

(19, 20) MIC JACKS
To record in stereo from microphones, insert the plugs of a pair of low-impedance (600Ω) microphones. See Page 15 for a list of optional accessories.

(21) HEADPHONE JACK
Accepts phone plug from any standard set of stereo headphones with an impedance of 8Ω.

(23) LEFT CHANNEL VU METER
Indicates output levels of the left channel during playback operation or input levels during recording.

(24) RIGHT TURNTABLE
Accepts 7-inch or 10½-inch reels.
Note: It is recommended that the empty or take-up reel used be of the same size and material as that of the loaded reel.

(25) RIGHT REEL CLAMP
Secures the mounted reel (pull out and turn clockwise or counterclockwise).

(26) RIGHT TENSION ARM
Allows the tape to wind on the empty reel smoothly.

(28) PINCH ROLLER
When pressed to Capstan, advances tape during play or recording at selected regulated speed.

(29) HEAD COVER
Below this cover is housed a 4-track, 2-channel head assembly. With the 1122, a 2-track, 2-channel head assembly is located under the cover.

(30, 31) RECORD INDICATORS
When Record Button(s) is pushed, glow(s) to indicate that the deck is in the record mode according to the channel(s) selected.

(40, 41) PLAYBACK LEVEL CONTROLS
Adjust playback levels during play. They also control the VU meters during tape monitoring.

(42) ECHO/SOUND-ON-SOUND SWITCH
With this switch pushed IN, you can make a composite recording (see "Sound-On-Sound Recording" page 12).
With this switch OUT you can add echo during recording (see "Echo Recording," page 13).

(43) ECHO/SOUND-ON-SOUND RECORD LEVEL CONTROL
Adjusts the level of the echo/sound-on-sound recording. Normally it should be turned fully counterclockwise to OFF.

(45) RIGHT CHANNEL VU METER
Indicates output levels of the right channel during playback operation or input levels during recording.

(51) POWER CABLE
Plugs into an AC outlet.

(52, 53) LINE INPUT JACK
Used when recording signals from your amplifier or receiver, or from another tape deck.

(54, 55) LINE OUTPUT JACKS
Connect to the tape monitor ("TAPE PLAY") terminals of your amplifier or receiver.

(56) GROUND TERMINAL
Be sure to ground your deck to your amplifier or receiver to minimize hum.

(57) RECORD/PLAY DIN SOCKET
A multi-pin record/play DIN cable can be used to simplify connections between the deck and amplifier or receiver.

(58) 4/2-TRACK SELECTOR SWITCH
This switch is moved to "4 TRACK" or "2 TRACK" depending on the type of the head assembly the deck has.

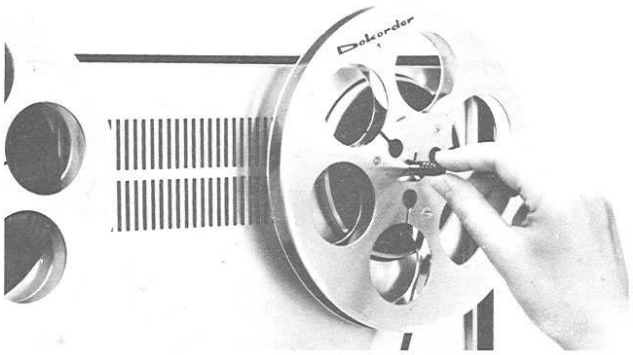
(60) FREQUENCY SWITCH
Must be set to the power source frequency of your area.

(61) VOLTAGE SELECTOR
Must be set to the power source voltage of your area.

Operating Buttons (32 through 36) and various switches (8 through 12, 37 through 39, and 64) are discussed in detail in their respective sections below.

LOADING AND THREADING TAPE

Your deck accepts either 7-inch (or smaller) or 10½-inch reels. To mount a loaded tape reel and to thread the tape through the guidepath, follow the precedures below:

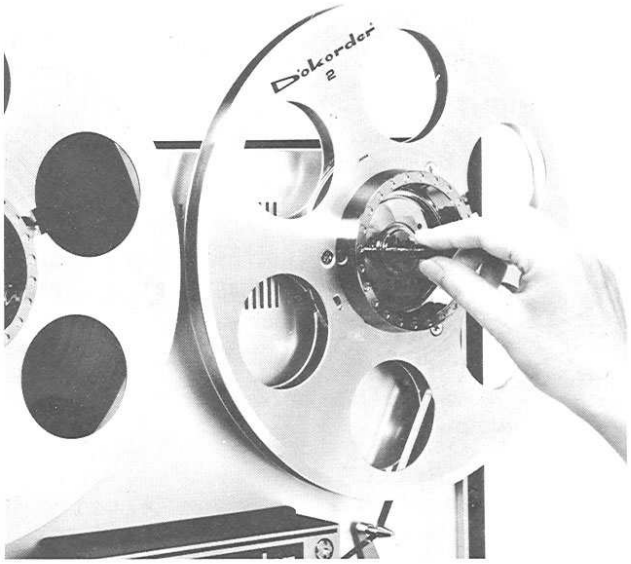


7-Inch Reel

1. Select the SMALL position on Reel Size Button (8).
2. Align the fins of the Left Reel Clamp (outer part) with those of the reel shaft in the center of the Left Turntable.
3. Mount a loaded tape reel onto the Left Turntable, pull Left Reel Clamp toward you and turn it slightly clockwise or counterclockwise to firmly secure the reel.
4. Mount an empty reel onto the Right Turntable and secure it with the Right Reel Clamp as described above.
5. Turn the Left Turntable counterclockwise by hand and unspool several inches of tape (or attached tape leader).
   Thread the tape end in the following manner: inside the Left Tension Arm (3), around the Tape Guide (6), through the Head Housing (29), between the Pinch Roller (28) and the Capstan (27), then around the Right Tension Arm (26).
6. Insert the tape end into the empty reel, hold it to the hub with one finger and turn the reel counterclockwise a few times until the tape stays in place.
7. Turn the Left Turntable clockwise and the Right Turntable counterclockwise at the same time until the slack is taken up and light tension is put on the threaded tape. If the tape tension is too tight, stretching may result; if it is too loose, the automatic shut-off mechanism will be activated and the tape will not run when the motors are started.

10½-Inch Reel

1. Select the LARGE position on Reel Size Button (8).
2. Align the fins of Left and Right Reel Clamps (outer part) with those of the reel shafts in the center of Left and Right Turntables.
3. First mount the reel height-adjusting rubber sheet (supplied), then align the hole in a tape-loaded 10½-inch reel with that on the reel adaptor, and mount the reel and adaptor through the Left Reel Clamp on the Left Turntable. Pull the Left Reel Clamp toward you and turn it slightly clockwise or counterclockwise to firmly secure the reel.
4. Mount an empty 10½-inch reel onto the Right Turntable and repeat the procedure described in step 3 above.

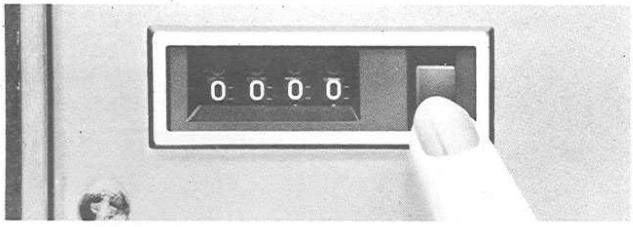


5. Follow steps 5 through 7 as given for mounting and threading a 7-inch reel, above.

Note: The empty or "take-up" reel should be of the same size and material as the tape-loaded reel in order to avoid accidental tape breakage. You may mount the empty reel on the Left Turntable and the tape-loaded reel on the Right Turntable when rewinding, if you wish.

TAPE COUNTER

During record or playback operation, it is recommended to use Tape Counter (4) and Tape Counter Reset Button (5) for quick access. Before beginning to record, set the Tape Counter to "0000" by pushing the Tape Counter Reset Button; when the recording is over, you can return to the starting point easily: rewind the tape by pushing Rewind Button (33) and push Stop Button (34) when Tape Counter reading reaches "0000"



Note: When the Stop Button is pushed while the tape is running at high speed in rewind or fast forward mode, a moment or so is required for the brakes fitted to the reel motors to slow then stop the tape travel. Thus, if you intend to stop the tape at "0000" for reasons outlined above, push the Stop Button as the index counter approaches that position and let the tape glide to a stop. See also the instructions for operating the Cue Switch, page 8.

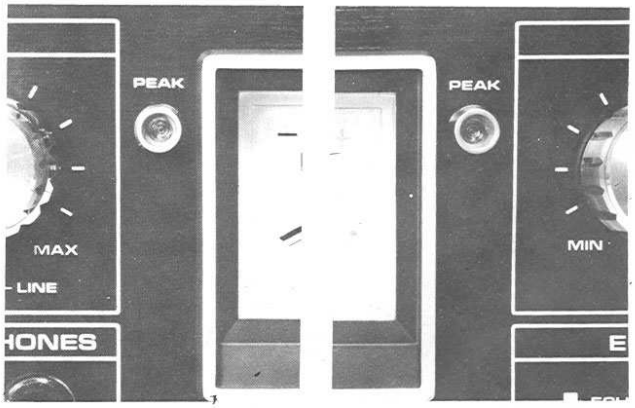
PEAK INDICATORS (22) & (44)

In addition to the VU meters, your deck is equipped with highly-sensitive Peak Indicators (for left and right channels) to help you make ideal recordings. These indicators light up when an incoming signal is too high (over-level) to be properly recorded on tape without distortion.

Most VUs are inherently less responsive to the changes in level of input signals than are peak indicators. Specifically, the pointers of VUs deflect in approximate proportion to the levels in input signals when the increase (or decrease) in level is gradual. Sudden changes in level are not accurately indicated: VUs tend to under-indicate by a few decibels (dB) when fed signals with widely-varying pulsive level changes; Peak Indicators are not fooled by sudden changes and flash instantly when a signal is over-level by even a fraction of 8 dB.

To make recordings which are free of distortion and which have a high signal-to-noise content, use the controls and Peak Indicators in the following manner:

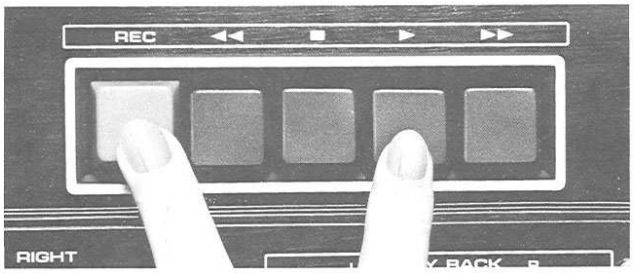
First set the Monitor Buttons (37) and (38) to their SOURCE positions. Then increase the input level by adjusting Line (15) and (16) or Mic (17) and (18) Record Level Controls so that the VU meter pointers deflect close to "OVU." If the Peak Indicators flash constantly, turn down the Record Level Controls slightly but allow occational flickering of the Indicators.



FUNCTIONS OF TAPE OPERATION BUTTONS

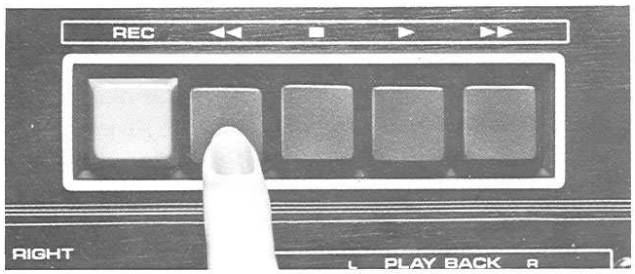
1. RECORD BUTTON (32)

Sets the deck in record mode. When pushed simultaneously with Play Button (35), this button locks in and recording begins. The erase head is activated during recording to erase previous signals on the tape prior to the recording of new signals.



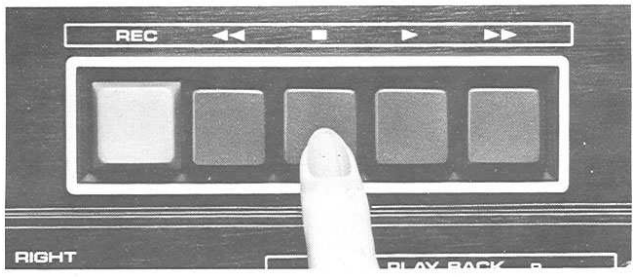
2. REWIND BUTTON (33)

Begins tape movement from right to left at a rapid speed. If you push Cue Switch (11) when the deck is operating in rewind mode, you can hear high-pitched sound to help you locate desired portion of the tape.



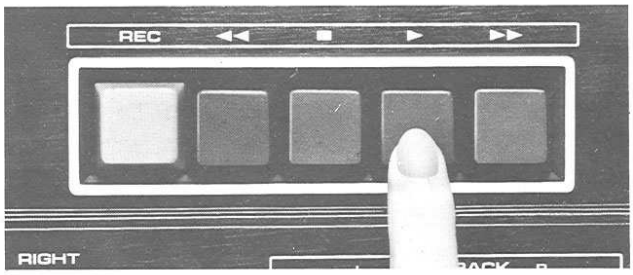
3. STOP BUTTON (3)

Stops all tape movement and returns all mode buttons (except Pause) to neutral.



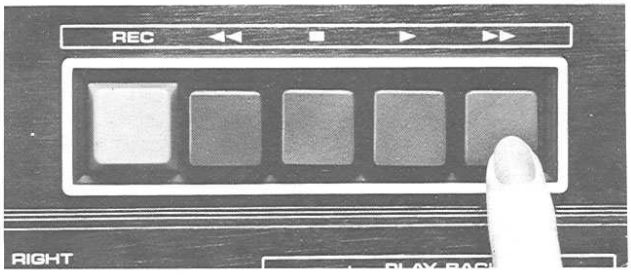
4. PLAY BUTTON (35)

Begins tape movement from left to right at the regulated speed in record or playback mode. To record, this button and the Record Button (32) must be pushed simultaneously.



5. FAST FORWARD BUTTON (36)

Begins tape movement from left to right at a rapid speed. When you push Cue Switch (11) in fast forward mode, you can easily locate any particular portion of the tape as in rewind mode.

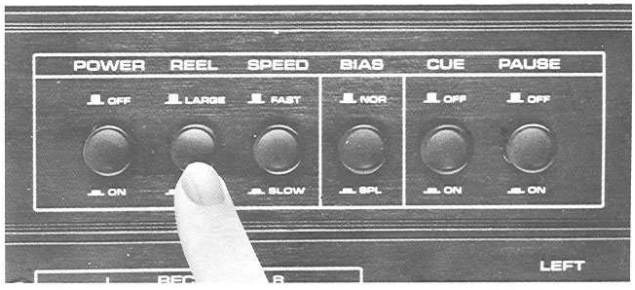


Note: When you have pushed the Stop Button (34) in fast forward or rewind mode, be sure to wait until the reels come to a complete halt, then select the mode you wish; otherwise the tape may break or be damaged. Changes from fast forward to rewind (or vice versa) may be made without going through the stop mode, but the Play Button will not lock in fast forward or rewind mode.

FUNCTIONS OF EACH SWITCH

1. REEL SIZE SELECTOR SWITCH (8)

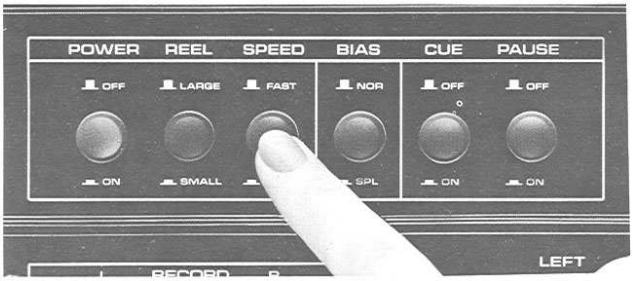
Selects proper deck operation for use with 10½-inch reels (button out) or 7-inch or smaller reels (button in).



2. TAPE SPEED SWITCH (9)

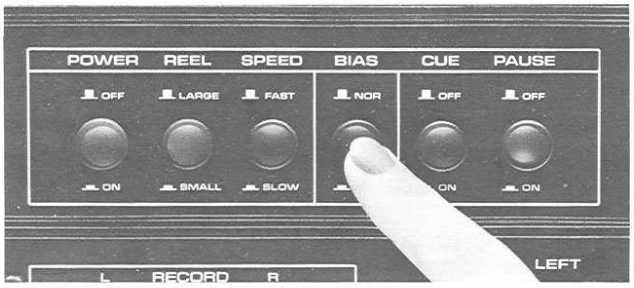
Changes speed or running tape in play or record mode. Since the speed switchover is electrical, not mechanical, prevention of tape damage is further assured. Fast speed (button out) is 19cm/sec or 7½ips and is generally used for recording music for maximum high fidelity. Slow speed (button in) is 9.5cm/sec or 3¾ips and is generally used for recording voice or other material requiring less critical high fidelity treatment.

- With the 1122, fast speed (button out) in 38cm/sec or 15ips, while slow speed (button in) is 19cm/sec or 7½ips. Both speeds offer a wide dynamic range and a wide frequency response essential for high-fidelity recordings.



3. BIAS SWITCH (10)

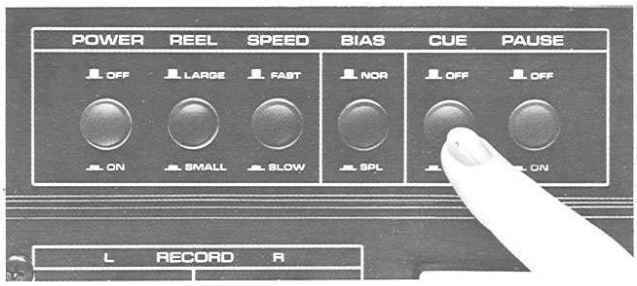
Changes the bias current during the recording process. This switch, to be used in combination with Equalizer Switch (39), is provided to make the best of most tapes you use. When set to the "SPL" (Special) position (button in), the switch increases the bias current by about 30%, compared with



the current when the switch is set to "NOR" (Normal) (button out), so that you can use a high-performance tape. Since the bias current is preadjusted, you do not need to adjust it each time you use a different type of tape. For details, see instructions for Equalizer Switch (39), at right.

4. CUE SWITCH (11)

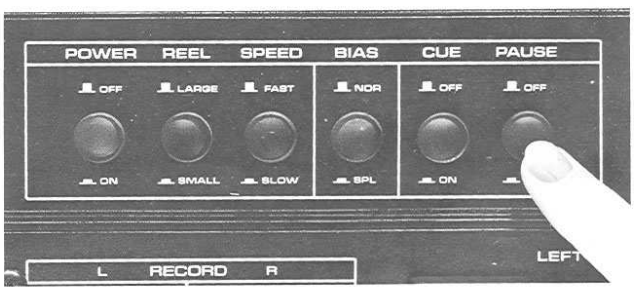
Normally, when a tape is travelling at fast speed in either the fast forward or rewind mode, no sound is heard. This is because the tape is moved out of contact with the playback head by tape lifters. The Cue Switch, however, cancels the operation of the tape lifters and allows the tape to lightly touch the playback head, sending a signal to the preamplifier. If the deck is in the tape monitor mode and able to send a signal to your speakers via your amplifier or receiver, and if the Cue Switch is pushed while the tape is moving at high speed, you will hear a high-pitched sound whenever there is pre-recorded material on the tape. Thus the Cue Switch can help you locate portions of the tape where there is recorded material (or where there is none). Pushing the Cue Switch automatically reduces the gain of the built-in amplifier by 20dB. And once it is pushed, it will not be released by the Auto Shut-off Switch at the end of tape.



Caution: Do NOT jump from the record mode directly to the rewind or fast forward mode in order to use the Cue Switch. Recorded signals may be erased if you push the Cue Switch and rewind the tape (or fast forward it) immediately after you have stopped recording. This is because the bias current remains in the record head for some time even after the record mode is disengaged. So, always be sure to push the Stop Button and release the Cue Switch, before moving from the record mode to the rewind or fast forward mode to use the Cue Switch.

5. PAUSE SWITCH (12)

With this switch engaged (button in), tape movement in the play or record mode is temporarily halted (allowing you to skip commercials while recording broadcasts, for instance). The switch is engineered to not



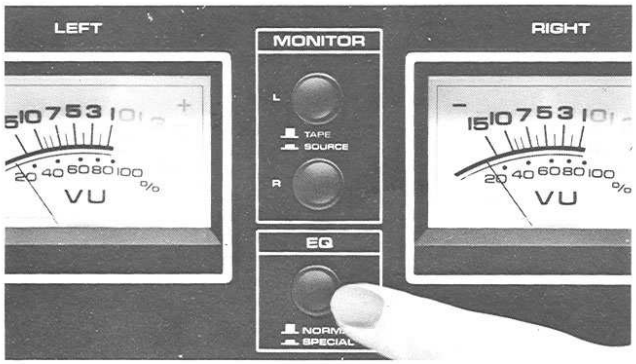
cancel the engagement of the Record and Play buttons, thus allowing you to continue recording (or play) whenever the switch is disengaged (button out).

6. EQUALIZER SWITCH (39)

Must be used in combination of Bias Switch (10), above. Changes the equalization curve of the recording amplifier during the recording process. By using it in combination with the Bias Switch, you can use four different types of tape and make the most of each. Use these switches in the following combinations:

When the Bias Switch and Equalizer Switch are both set to the "NOR" position, you can use Scotch #111 or 150 (or equivalents); with the Bias Switch to "SPL" and the Equalizer Switch to "NOR," Scotch #212 (or equivalents); and with the Bias Switch and Equalizer Switch both to "SPL," Maxell #UD-35. Such combinations are charted in the following table for your convenience.

BIAS SWITCH	EQUALIZER SWITCH	TYPE OF TAPE
NOR	NOR	Scotch #111, 150
SPL	NOR	Scotch #212
	SPL	Maxell #UD-35



7. MONITOR SWITCHES (37) & (38)

Monitor switches are provided for each (left and right) channels. When in their SOURCE (button(s) in) positions you hear the sounds which are reaching the recording head. The VU meters register the level of the incoming signals as they enter the deck, and thus can be used to visually check the level of the signals passing through the recording head to the tape. When in their TAPE (button(s) out) positions the monitor switches allow you to hear the sounds which have just been recorded on tape. The VU meters register the level of the signals as they are picked up from the playback head after passing through the deck's preamplifier on their way to your amplifier or receiver. Use the TAPE positions to hear any recorded signals on any tape.

Note: The playback level control for each channel determines 1) the level of the signals reaching your amplifier or receiver, and 2) the level of the signals reaching the VU meters, and headphones if they are plugged in.

8. AUTO SHUT-OFF (64)

The Auto Shut-Off mechanism is released (activated) the instant tape tension is relieved. This can occur if a tape breaks, but normally happens only when a tape reaches an end in any mode (fast forward, rewind, play or record). It should be noted that the mechanism affects only the reel motors; the capstan motor continues to revolve and the preamplifier is supplied with power as long as the power switch remains ON.

VU METERS

The pointers of the VU Meters indicate the levels of the recorded signals during recording or the levels of reproduced signals during reproduction. Adjust the line/mic record level controls (during recording) and the playback level controls (during reproduction), so that the pointers will swing to "OdB" at the loudest passages of the program. If you let the pointers deflect into the zone over the "OdB" reading frequently, distortion may result.

OPERATION

Recording

Stereo

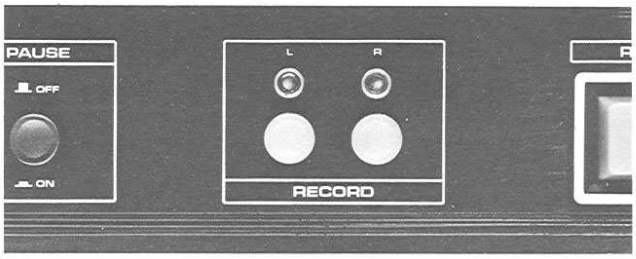
1. Load and thread the tape referring to "Loading and Threading Tape" on Page 5.
2. Set Power Switch (7) to ON.
3. Select the reel size by Reel Size Selector Switch (8): LARGE for 10½-inch reels or SMALL for 7-inch (or smaller) reels.
4. Select the desired tape speed with Tape Speed Switch (9).
5. Select the recording bias and equalization with Bias Switch (10) and Equalizer Switch (39) according to the type of tape you use.
6. Turn Echo/Sound-on-Sound Record Level Control (43) fully counterclockwise to OFF.
7. Turn Playback Level Controls (40) (41) fully clockwise to MAX.

8. Push Tape Counter Reset Button (5) to reset index to "0000."
9. If you are going to record from the line inputs, connect your amplifier or receiver to Line Input Jacks (52) (53) on the rear panel, using the pin-to-pin plug cables supplied, or connect the deck with your amplifier or receiver using RECORD/PLAY DIN Socket (57) on the rear panel. Turn Mic Record Level Controls (17) (18) fully counterclockwise to MIN.

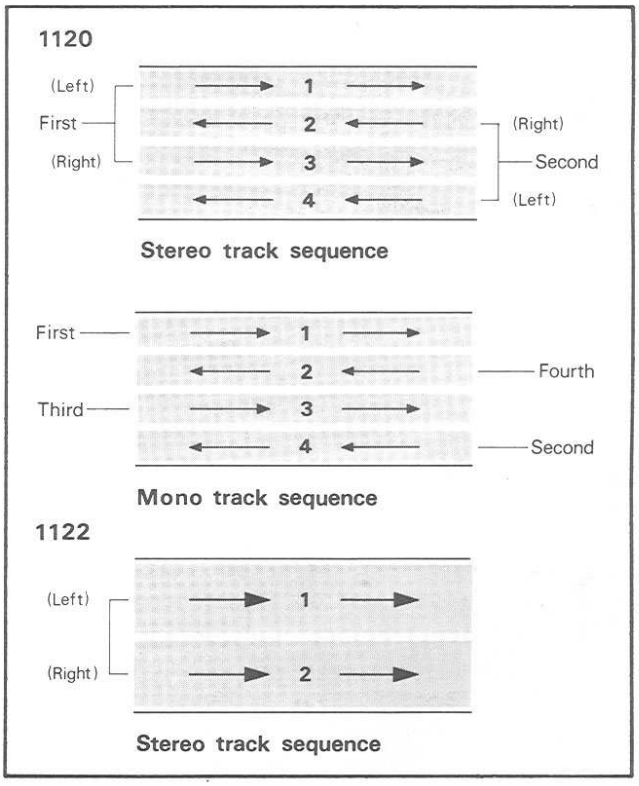
   If you are going to record from microphones, connect them to Mic Jacks (19) (20). Turn Line Record Level Controls fully counterclockwise to MIN.

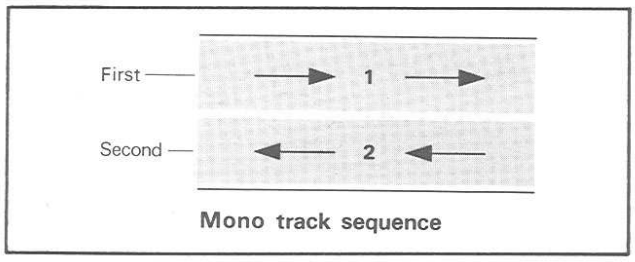
   Note: To avoid picking up "feedback" during microphone recording, turn the volume controls of your amplifier or receiver down and use headphones plugged into the Headphone Jack (21) on your deck to listen.

10. Push both Record Switches (13) (14).



11. Push the Pause Switch (12) and the Cue Switch (11).
12. Push Record (32) and Play Buttons (35) simultaneously. Record Indicators (30) (31) will light up, and your deck is now in record mode.
13. Push Monitor Switches (37) (38) to SOURCE.
14. Adjust the recording levels with Line Record Level Controls if you are recording from the line inputs, or with Mic Record Level Controls if recording from microphones. Make this adjustment while watching VU meters (23) (45), and set the controls so that the pointers of the meters will swing to "0dB" at the loudest passages of the program. Then confirm that Peak Indicators (22) (44) are not flickering constantly. If they are, turn the corresponding Record Level Controls counterclockwise until the indicators occational flickering.
15. Disengage Pause Switch (button out). The tape begins to run and the deck will record onto tracks 1 and 3 for a stereo recording.
    - With the 1122, recording will be made on tracks 1 and 2.





Mono track sequence

STANDARD DESIGNATION OF TRACKS ON OXIDE COATED SIDE OF TAPE FACING AWAY FROM OBSERVER

16. If you wish to monitor the recorded signals while recording, push the Monitor Switches to TAPE again.
17. When you finish recording, push the Cue Switch (11) and the Stop Button (34).
18. To record into tracks 4 and 2, change (reverse) the reels and repeat the above steps.
    - With the 1122, this step is unnecessary.

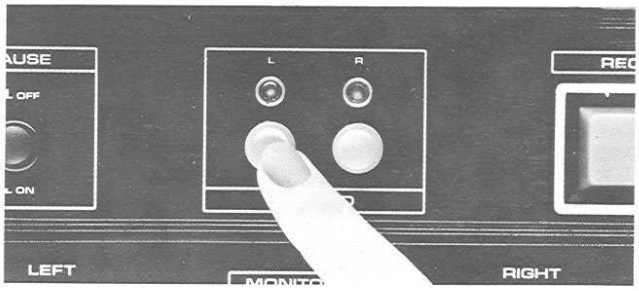
Note: 1. If the Cue Switch is not pushed in step 11 above, when the deck is set to functions other than record and playback (such as STOP, FAST FORWARD, REWIND and PAUSE), the tape shifters will automatically move the tape away from the heads to protect the latter. This will mean that, if you push the Pause Switch (12) during recording, the tape will lose contact with the heads. It also means that, when you release the Pause Switch, the tape will again come into contact with the heads. These movements, however, have the effect of moving the tape slightly, thus leaving tiny portions of tape unerased. During playback, you will then hear remnants of the previous recording.
Pushing the Cue Switch before entering the record mode will prevent this trouble by keeping the tape in contact with the heads at all times. When the recording is finished, push the Stop Button and then the Cue Switch, and only then, move onto the next operation. This will ensure best recording results.

2. When you finish recording, push the REC switches 'OFF' position.

Mono

1. Follow the steps 1 through 6 of "Recording: Stereo."
2. Turn Left Channel Playback Level Control (40) fully clockwise to MAX. And turn Right Channel Playback Level Control (41) fully counterclockwise to MIN.

3. Push Tape Counter Reset Button (5).
4. If you are going to record from a line input, connect your amplifier or receiver to Left Channel Line Input Jack (52) on the rear panel, using the pin-to-pin plug cables supplied. Turn Mic Record Level Controls (17) (18) fully counterclockwise to MIN.
   If you are going to record from a microphone, connect it to Left Channel Mic Jack (19), then turn Line Record Level Controls (52) (53) fully counterclockwise to MIN.
5. Push Left Channel Record Switch (13).



6. Push Pause Switch and the Cue Switch.
7. Push Record and Play Buttons (32) and (35) simultaneously. The Left Channel Record Indicator (30) lights up, and your deck is now in record mode.
8. Push Left Channel Monitor Switch (37).
9. Adjust the recording levels with the Left Channel Line Record Level Control if you are recording from the line input, or with the Left Channel Mic Record Level Control if recording from the microphone. Make this adjustment while watching Left Channel VU Meter (23). Set the recording levels referring to step 14 of "Recording: Stereo."
10. Set Pause Switch to OFF. The tape begins to run and the deck will record onto track 1.
11. Push Left Channel Monitor Switch to TAPE to monitor the recording signals during the recording.
12. When you finish recording, push the Stop Button, and the push the REC Switch OFF.
13. To recording into track 4, change (reverse) the reels and repeat the above steps.
    - With the 1122, the recording is made on the track 2, and this is the final step.
14. To record onto the right channel, simply repeat the steps 1 through 12 above reading

"right" for "left." The recording is made onto the track 3.

15. To recording into track 2, change (reverse) the reels and repeat the above steps.

Sound-on-Sound Recording

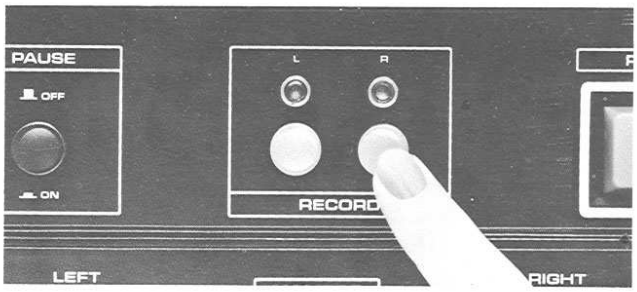
Sound-on-sound recording is a simple process of recording one track first, then superimposing an additional sound over it, then recording the mixture into the other track for a composite recording. This means, for example, you can create a chorus by yourself or produce an effective mixture of commentary and background music for your 8-mm movie films, etc. Suppose you are using the left ohannel (track 1) first and then right channel (track 3) (the composite signals are on the right channel):

- With the 1122, the recording will be made onto the left channel (track 1) and then the right channel (track 2).

1. Record onto track 1 first, using Left Channel Mic Jack (19) or Left Channel Line Input Jack (52), referring to "Recording: Mono." Then rewind the tape to the beginning of the recording.
2. Plug a microphone into Right Channel Mic Jack (20) or connect a cable into Right Channel Line Input Jack (53).
3. Plug headphones to Headphone Jack (21).
4. Set Left Channel Monitor Switch (37) to TAPE and Right Channel Monitor Switch (38) to SOURCE.

5. Push the Echo/Sound-on-Sound Switch (42) in for S.O.S.

6. Push Right Channel Record Switch (14).



7. Push Play Button (35). As you monitor the first-recorded sound in the left channel on your headphones, adjust the levels of the right channel with Right Channel Mic Record Level Control (18) or Right Channel Line Record Level Control (16).
8. When the playback level of the left channel and the recording level of the right channel are thus adjusted, rewind the tape to the beginning.
9. Push Record (32) and Play Buttons (35) simultaneously. Monitoring with your headphones, record onto the right channel, adjusting the record level with Echo/Sound-on-Sound Record Level Control (43). Right Channel VU Meter (45) indicates the levels of the composite signal. Thus the sound in the left channel is transferred to the right channel (track 3) and at the same time mixed with the signals from the microphone or line input.

- With the 1122, the sound in the track 1 is transferred to the track 2, and over the transferred sound is dubbed the sounds, picked by microphone or from the line input.

Note: 1. Likewise, you can record into the right channel first and transfer the recording into the left channel, mixing at the same time with the signals from a microphone or left channel line input.

2. To reproduce sound-on-sound recording onto track 3, refer to Step 9 of "Playback: Mono."

- With the 1122, the track on which sound-on-sound recording is made is track 2.

3. When you finish recording sound-on-sound, be sure to turn the Echo/Sound-on-Sound Record Level Control fully counterclockwise.

Sound-with-Sound Recording

To record sound-with-sound means recording one track first, recording the other track as you reproduce and monitor the first track, then finally reproducing the two tracks together.

The recording procedures are almost the same as those for sound-on-sound except that the Echo/Sound-on-Sound Record Level Control (43) must always be turned fully counterclockwise to OFF. Also bear in mind that the signal recorded in one track and signal recorded later in another track are slightly out of synchronization.

Note: To reproduce sound-with-sound recording, refer to "Playback: Stereo."

Echo Recording

Your deck includes facilities to let you add any desired amount of echo or reverberation to a signal being recorded from microphones or line inputs.

1. When adding echo while recording in stereo, follow the steps 1 through 7 of "Recording: Stereo."
2. Set Echo/Sound-on-Sound Switch (42) to ECHO (button out).
3. Follow the steps 8 through 14 of "Recording: Stereo."
4. Push Monitor Switches (37) (38) to TAPE.
5. Disengage Pause Switch (12). The tape will begin to run and the deck will record onto tracks 1 and 3.
   - With the 1122, the recording will be made onto tracks 1 and 2.
6. Turn Echo/Sound-on-Sound Record Level Control (43) clockwise and adjust the amount of echo with it to your liking, monitoring the recording with headphones.
7. When you finish recording, push Stop Button (34).

Note:
1. To reproduce echo recording, refer to "Playback: Stereo."
2. Likewise, you can add echo in making a mono recording on tracks 1 or 3.
   - With the 1122, you add echo to tracks 1 or 2.
3. When you finish echo recording, be sure to turn the Echo/Sound-on-Sound Record Level Control fully counterclockwise to OFF.
4. If no echo is added during recording, no echo is reproduced on playback even when the Echo/Sound-on-Sound Record Level Control is employed.

Playback

Stereo

1. Load and thread the tape referring to "Loading and Therading Tape" on Page 5.
2. Set Power Switch (7) ON.
3. Select the reel size by Reel Size Selector Switch (8): LARGE for 10½-inch reels or SMALL for 7-inch or smaller reels.
4. Select the tape speed with Tape Speed Switch (9).
5. Set Monitor Switches (37) (38) to TAPE; your deck is ready to play a pre-recorded tape. The tape monitor switch (indicated by the words TAPE or PLAYBACK or MONITOR) on your amplifier or receiver to which you have connected the deck must also be turned on.
6. Push Play Button (35).
7. Adjust Playback Level Controls (40) (41) so that the pointers of VU meters (23)(45) will swing to "OdB" at the loudest passages of the recording. Adjust the volume and tone quality to your liking with the controls on your amplifier or receiver. You are now hearing tracks 1 and 3.
   - With the 1122, you are hearing tracks 1 and 2.
8. When you finish playback, push the Stop Button (34).
9. To play tracks 4 and 2, change (reverse) the reels and repeat the above steps.
   - With the 1122, this step is unnecessary.

Mono

1. Load and thread the tape referring to "Loading and Threading Tape" on Page 5.
2. Set Power Switch (7) ON.
3. Select the reel size with Reel Size Selector Switch (8): LARGE for 10½-inch reels or SMALL for 7-inch (or smaller) reels.
4. Select the tape speed with Tape Speed Switch (9).
5. Set Left Channel Monitor Switch (37) to TAPE: your deck is ready to play a pre-recorded tape. Now the tape monitor switch (indicated by the words TAPE or PLAYBACK or MONITOR) on your amplifier or receiver to which you have connected the deck must also be turned on.
6. Push Play Button (35).
7. Adjust Left Channel Level Control (40) so that the pointer of Left Channel VU Meter (23) will swing to "OdB" at the loudest passages of the recording. Adjust the volume and tone quality to your liking with the controls on your amplifier or receiver. You are now hearing track 1.
8. When you finish playback of the tape, push Stop Button (34).

9. To play back track 4, switch the left and right reels and repeat the above steps.
   - With the 1122, this procedure will reproduce track 2, the only remaining track for mono playback.
10. For the 1120 only: When the playback of track 4 is completed, switch the reels and repeat steps 1~8 reading "Right" for "Left," to play track 3. Finally, reproduce track 2 in a similar manner.

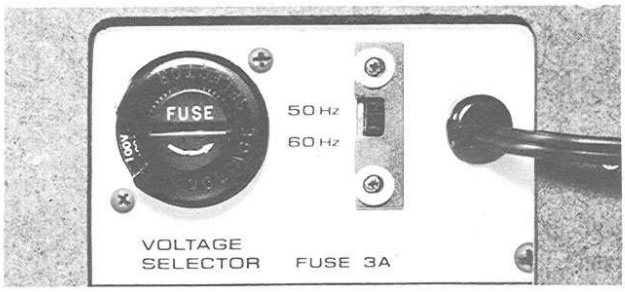
ADJUSTING VOLTAGE AND FREQUENCY SETTINGS

The Models 1120/1122 are available in two versions each. One has a fixed voltage/frequency of 117V/60Hz, primarily intended for the U.S.A. (U.S.A. Type). The other has the selectable voltage/frequency of 110, 117, 125, 220, 240V, 50/60Hz (Universal Type).

If you find it necessary to change the voltage/frequency settings of your deck and if your deck is of the Universal type, you can adjust them as follows (before attempting to change the settings, be sure that Power Cable (51) is unplugged from the AC outlet):

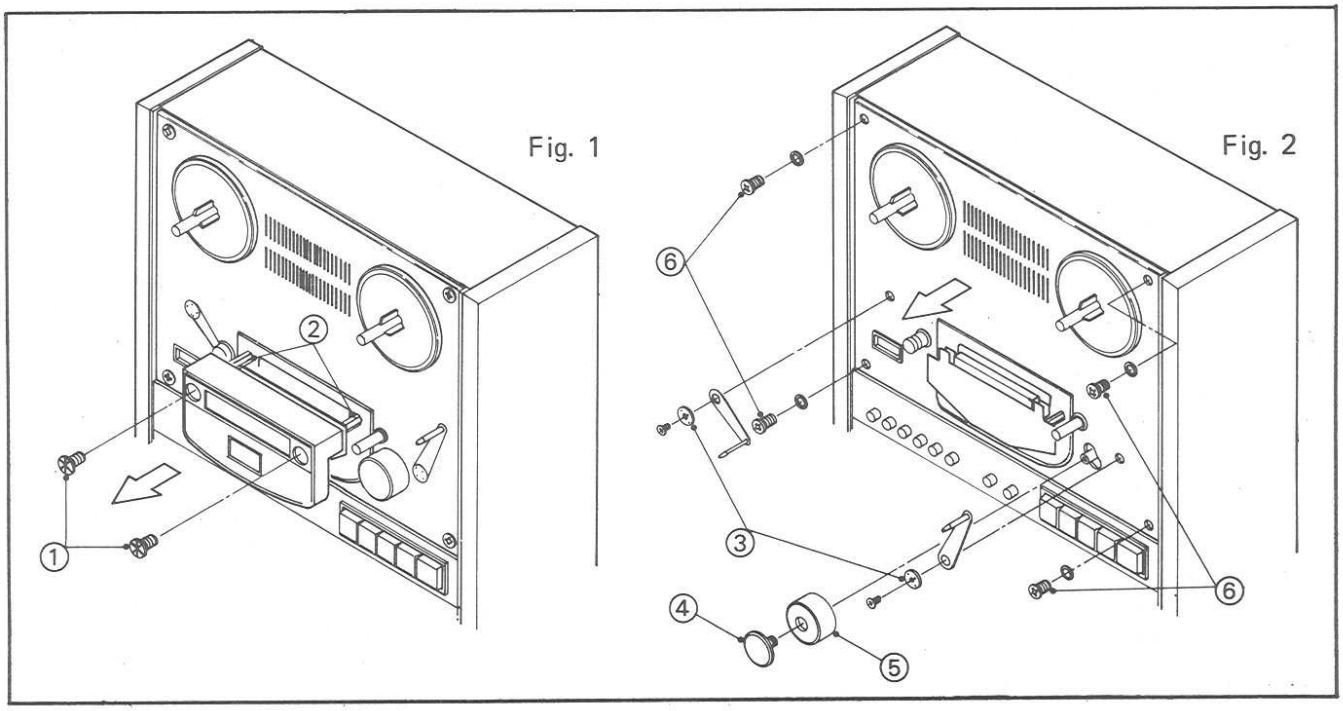
Voltage

1. Remove Fuse Holder (50) inside Voltage Selector (61) on the rear panel of the deck. This can be accomplished by turning the holder counterclockwise.
2. Unplug Voltage Selector first, then reinsert it so that the correct voltage figure appears in the notch.
3. Screw Fuse Holder back into place.



Frequency

1. Loosen the screws securing Frequency Switch (60) on the rear panel of the deck, then remove Locking Plate (62) holding the knob of the switch in place. Slide the switch to the correct frequency, insert Locking Plate into the reverse position, then tighten the screws. (see Fig.3 B on page15).
2. When you have completed the frequency switch change, you must re-attach the capstan drive belt behind the front panel. To do this, first remove the Head Cover (29), Tension Arms (3) (26), Pinch Roller (28) and the front panel. This may be done in the following manner:
   a. Remove the two dressing screws ① securing the Head Cover by turning them with a coin counterclockwise. Pull the Head Cover as indicated by the arrow in Fig. 1. Then remove the poles ② securing the Head Cover by turning them counterclockwise with pliers.
   b. Remove the screws and dressing washers



③ securing the tensionarms, then remove the tension arms. (Fig. 2)

c. Remove the dressing screw ④ securing the Pinch Roller by turning it counter-clockwise while applying the pressure on it, then remove the Pinch Roller ⑤ itself from the pinch roller arm.

d. Remove the four screws ⑥ securing the front panel, then remove the front panel itself.

3. Re-hook the capstan drive belt running between the motor pulley and the flywheel. (Fig. 3) To change from 60Hz to 50Hz, use a finger to transfer from the small-diameter pulley to the large-diameter one. To change from 50Hz to 60Hz, move the belt from the large-diameter pulley to the small-diameter one.

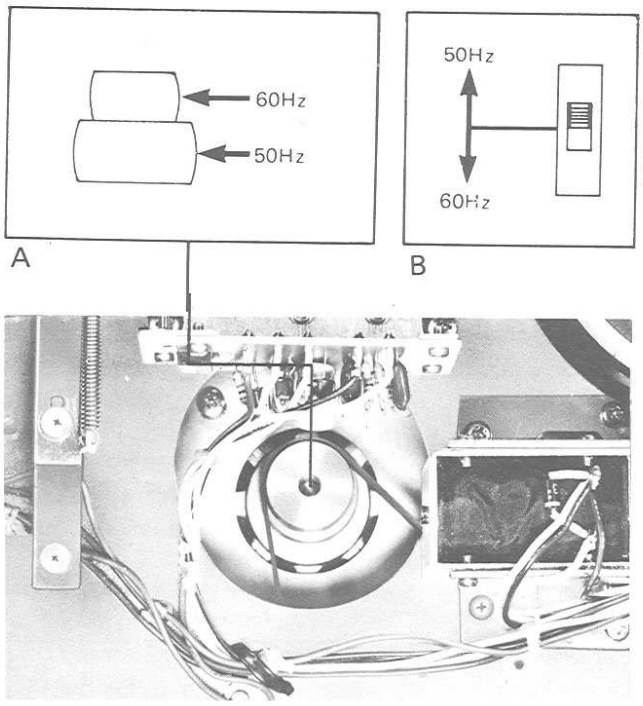


Fig. 3

4. When the belt is properly re-hooked, turn the Capstan (27) by hand and see if the belt moves smoothly.
5. Mount the front panel and the head cover reversing the steps a through d in 2 above.

INSTALLATION LOCATIONS

Your deck is designed to operate **in a vertical position**; it should not be used in horizontal position, otherwise ventilation is inhibited and heat inside the deck may increase to the point of damage. Also, avoid using your deck where:

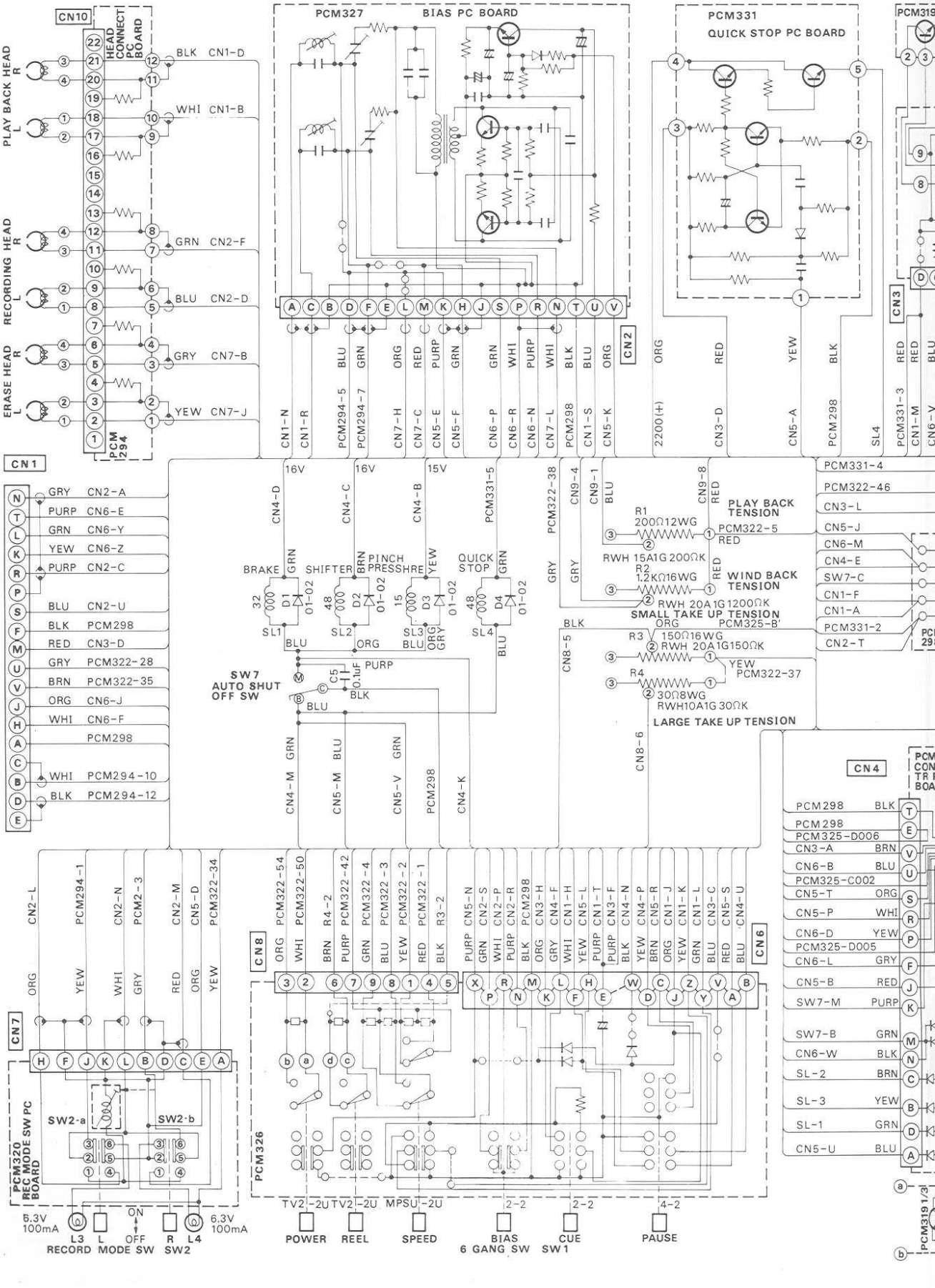
1. Temperature is excessively high: tonal quality is much deteriorated and the performance life will be shortened if the deck is placed in sunlight, near a sunlit window or a heater, or on your amplifier or receiver. Never use the deck where temperature exceeds **40 degrees Centigrade or 100 degrees Fahrenheit.** The deck operates best when the surrounding temperature is between **15 and 30 degrees Centigrade or 60 and 90 degrees Fahrenheit.**
2. Relative humidity is excessively high: avoid installing your deck in a kitchen or any humid room. Your deck operates best when humidity is less than **60%.** When you must use it where humidity is high, you may do so by providing sufficient ventilation.
3. There is excessive dust or vibration: your deck suffers from **quicker head wear** and **deteriorated mechanism.** Also when used at a place where there is excessive vibration, **screws may loosen or come off,** preventing stable mechanism performance.
4. Power voltage is subjected to heavy fluctuations: you will experience instability in the operation or even breakage. If you are living in an area where voltage fluctuations are excessive, use a voltage regulator to obtain the rated voltage. The deck operates best when the voltage is **within 5%** over or below the rated voltage.

ACCESSORIES

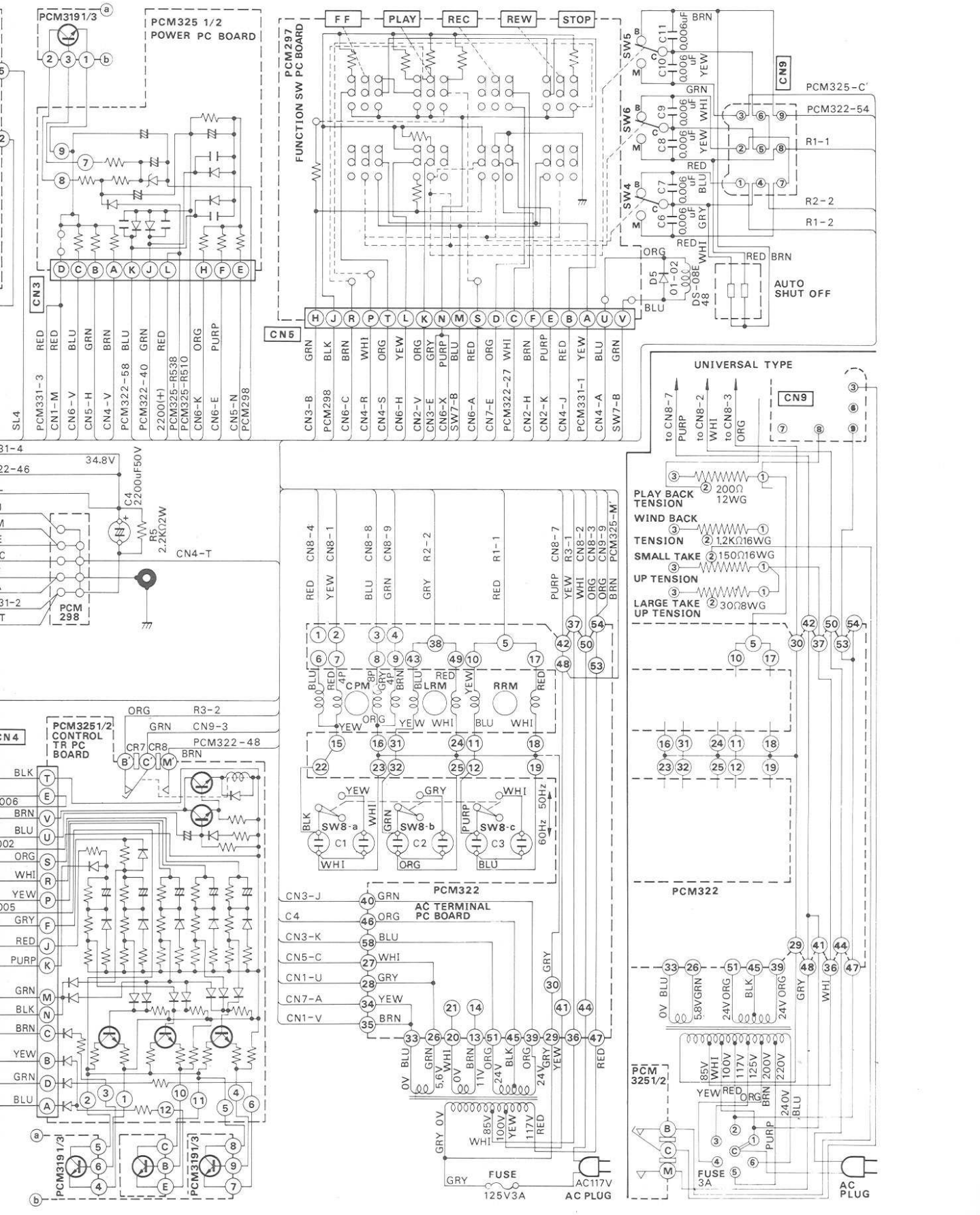
1. Owner's Reference Book 1
2. Warranty Card 1
3. Service Depot 1
4. 10½-inch Empty Metal Reel 1
5. 10½-inch Reel Adaptors 2
6. 10½-inch Rubber Sheets 2
7. Pin-to-Pin Plug Cables 2

Note: We have prepared optional accessories to enhance your recording and playback enjoyment. They include ACRYLIC DUST COVER (Model D-7), HEADPHONES (HS-303D), MICROPHONE (DX-195D), 10½-INCH EMPTY REEL (DR-10), 7-INCH EMPTY REEL (DR-7), etc. Use the name and model number of the accessory you want when ordering from your Dokorder dealer.

BLOCK DIAGRAM (DEC



(DECK) model 1120



Design and specifications subject to change without notice.

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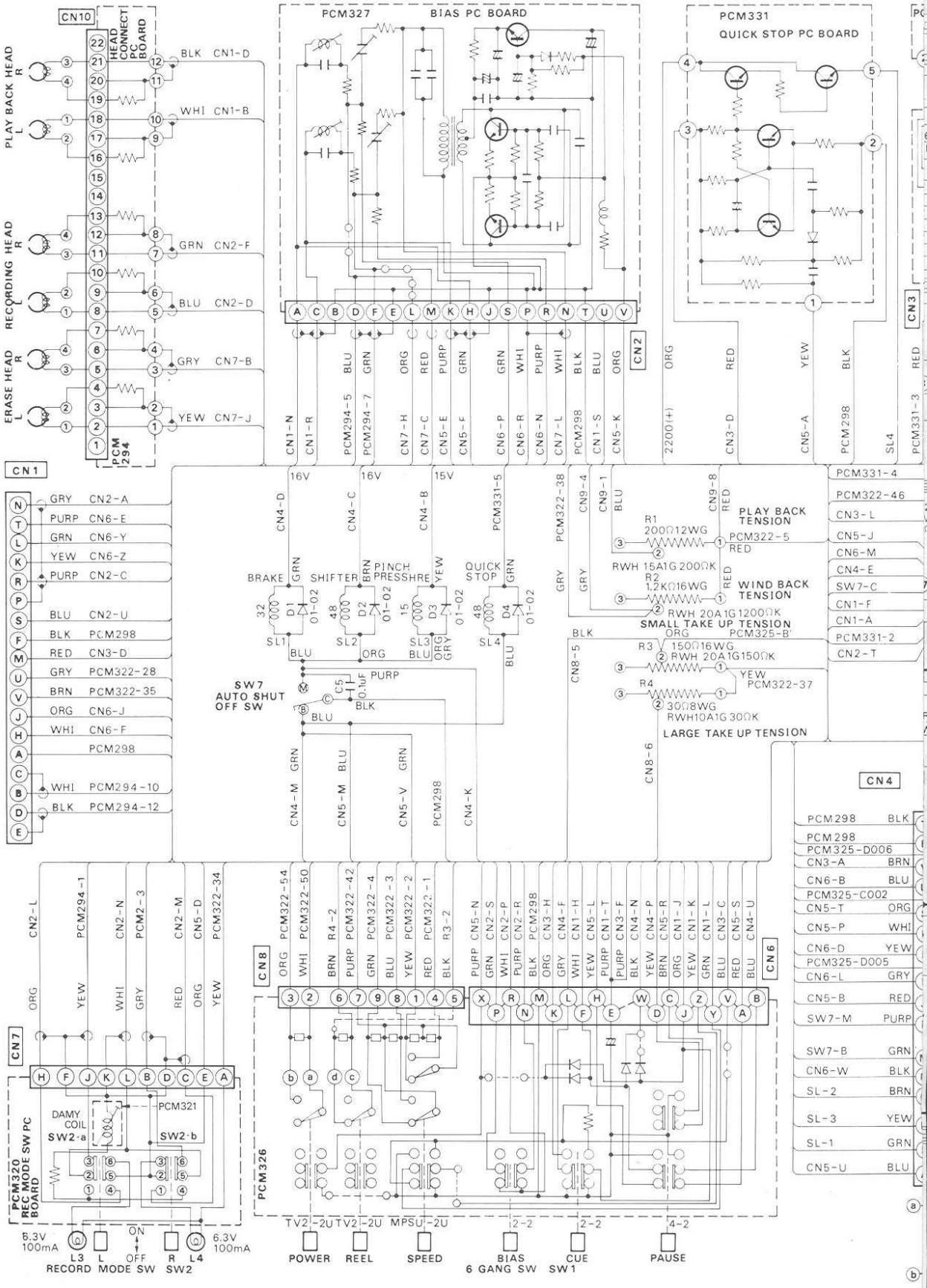
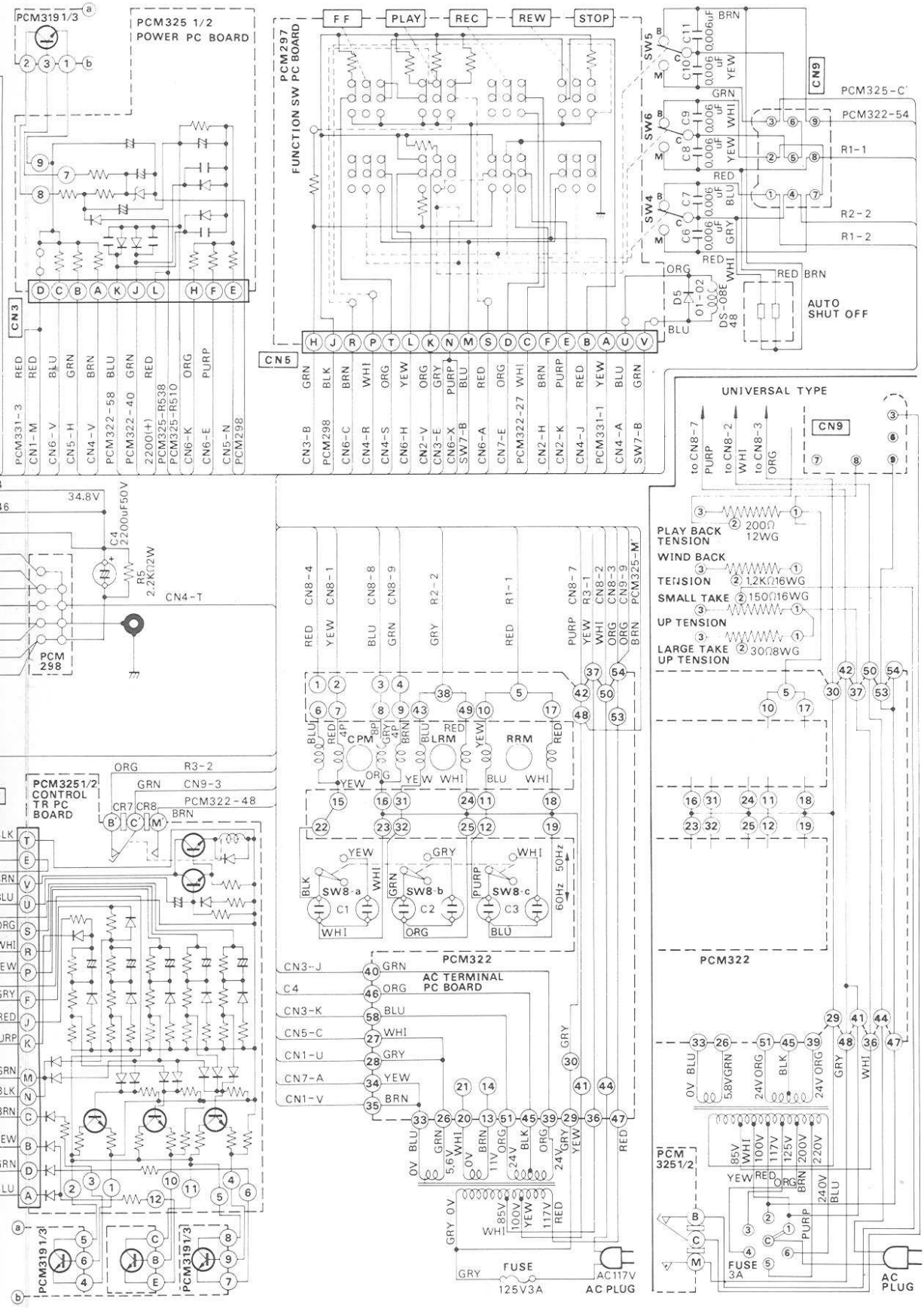


M(DECK) model 1122



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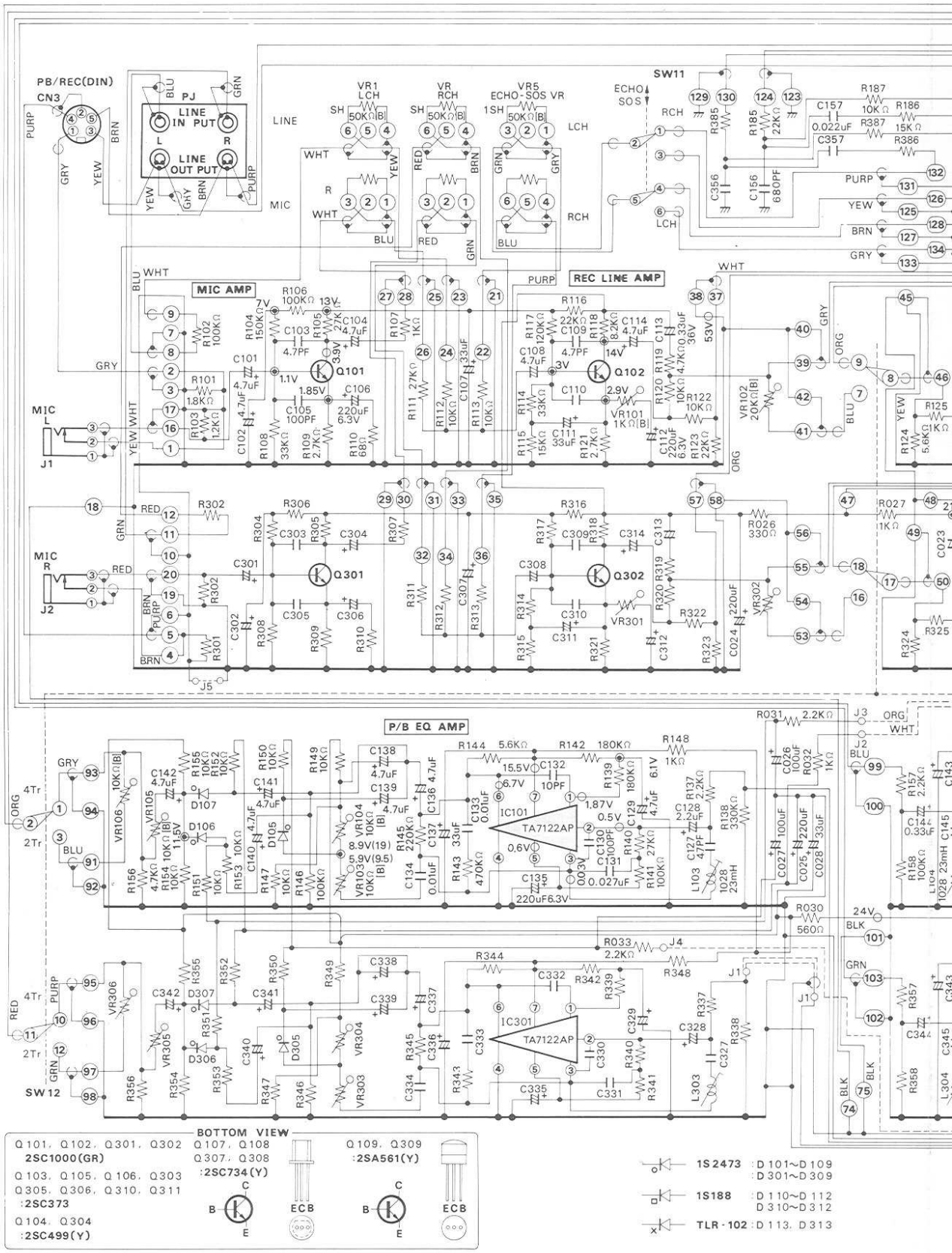
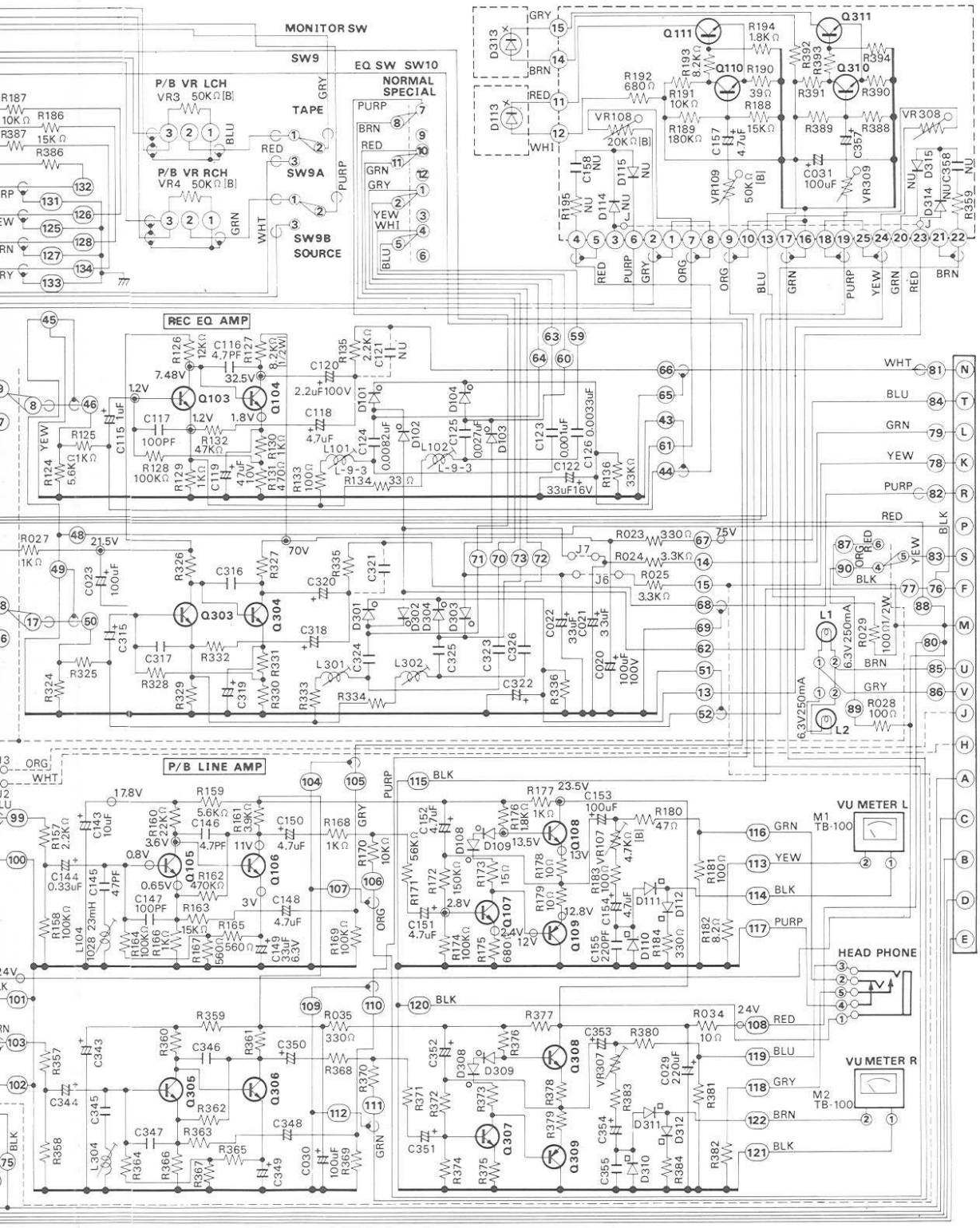


(AMP) model 1120

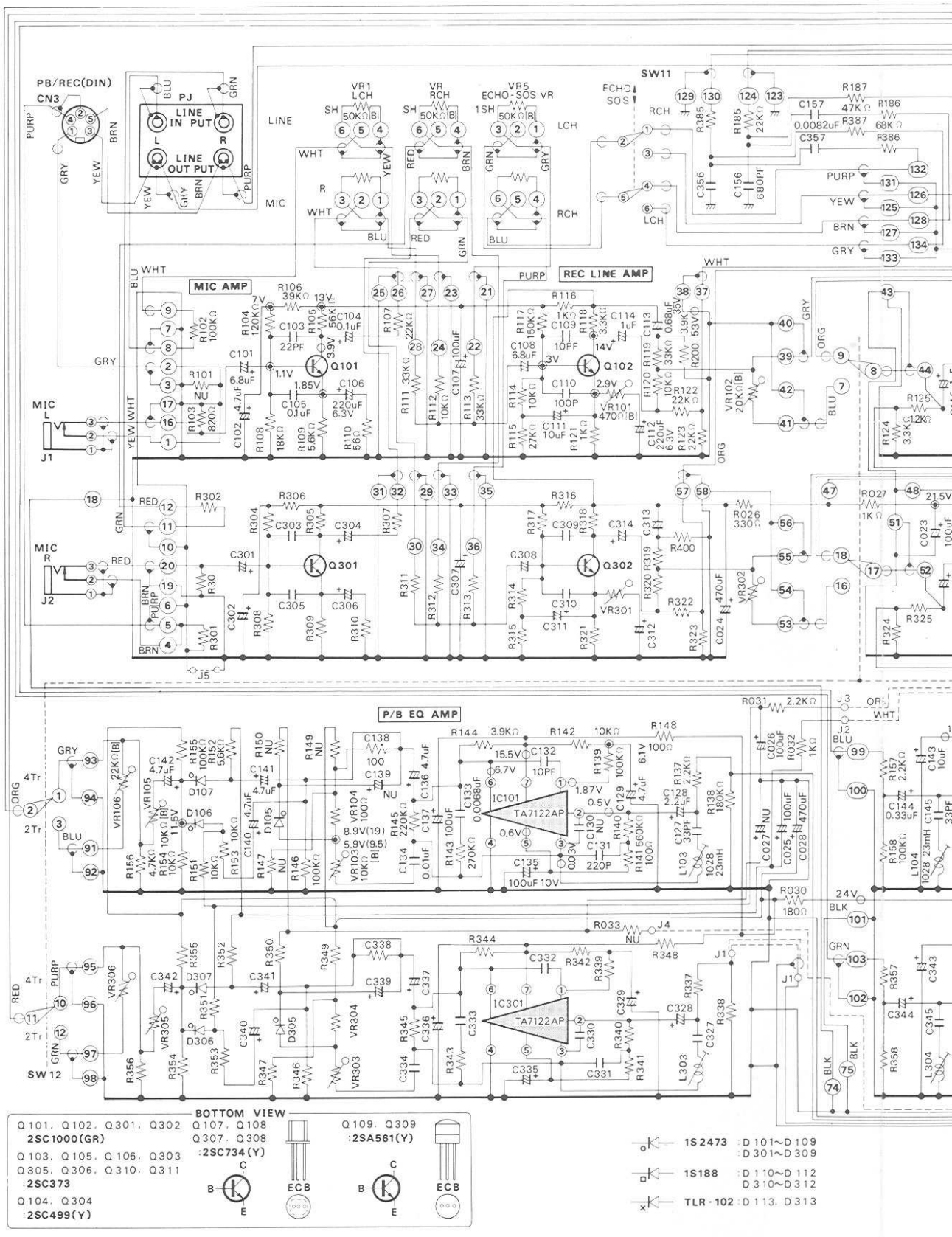


NOTE

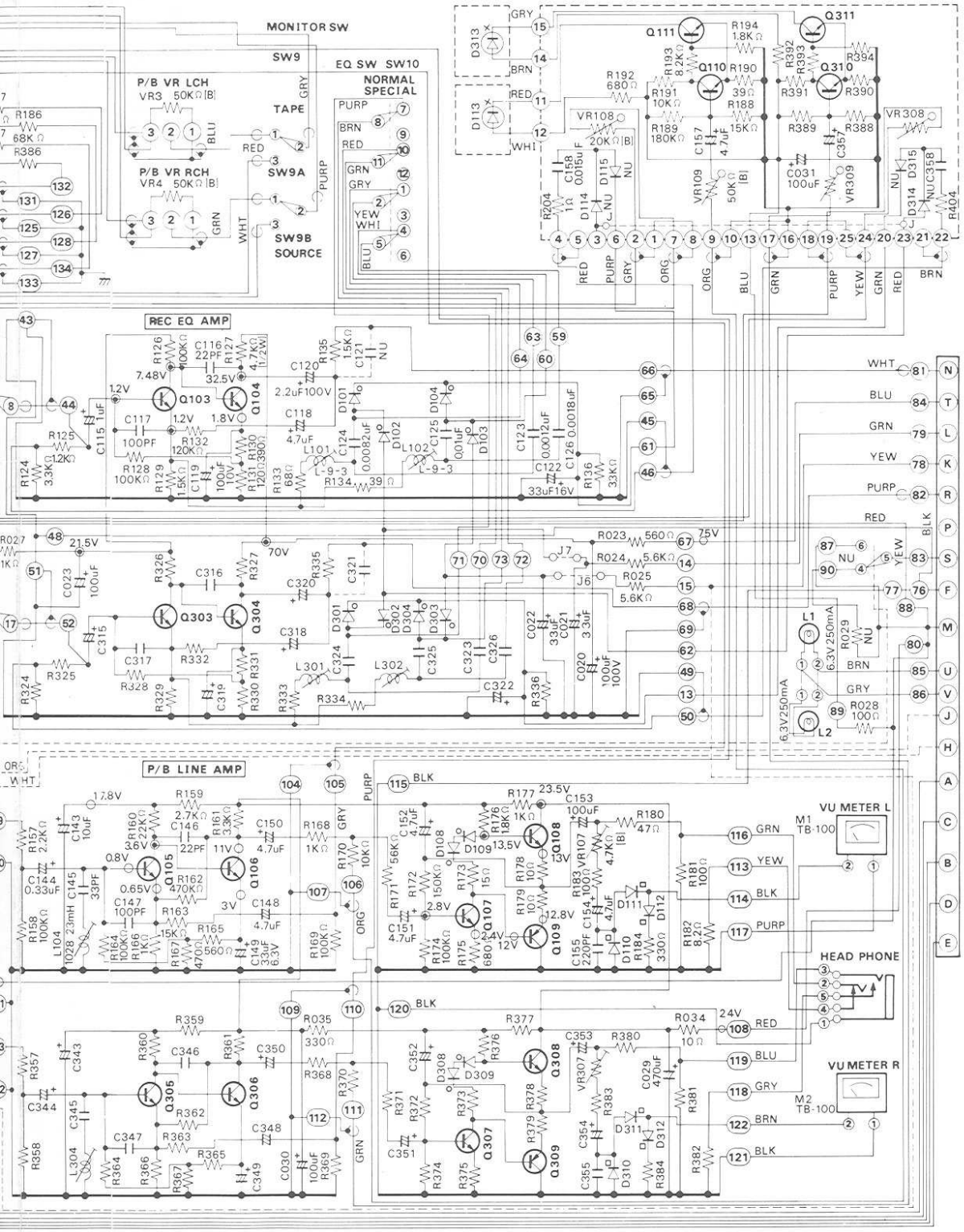
Voltages are measured with VTVM.[D.C]
Unless otherwise stated, resistors wattages are 1/4watts.
Unless otherwise stated, capacitors working voltages are 25volt.

Design and specifications subject to change without notice.

BLOCK DIAGRAM (AMP



(AMP) model 1122



NOTE

Voltages are measured with VTVM.[D.C]
Unless otherwise stated. resistors wattages are 1/4watts.
Unless otherwise stated. capacitors working voltages are 25volt.

MODEL **1122** 1ST5-247001

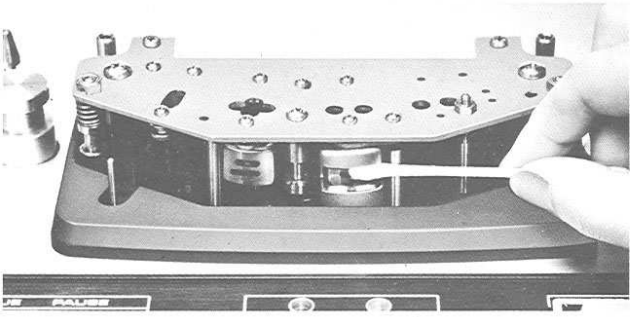
Design and specifications subject to change without notice.

CARE AND MAINTENANCE

Cleaning the Heads

The heads of any tape deck play the most important role in performance of recording and playback. Even a slight bit of dust on the heads can affect tonal quality, attenuate the recording and playback levels (causing dropouts), or leave the earlier-recorded signals unerased. Heavy dust or dirt build-up may mean you might not be able to record or play back at all. Therefore, you are advised to keep the heads of your deck clean at all times, even when they do not appear to need it.

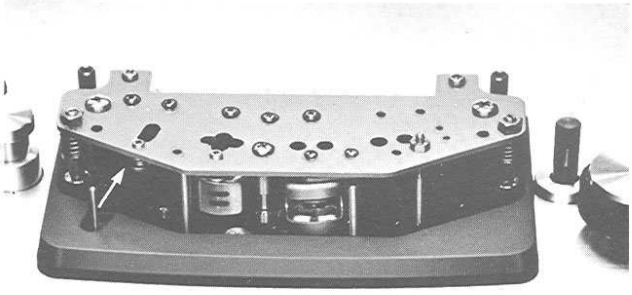
PROCEDURE: First remove the Head Cover (29) and clean the surface of the heads carefully and gently with a cotton swab moistened with commercially-available head cleaning liquid or with denatured or isopropyl alcohol.



Cleaning the Tape Guidepath

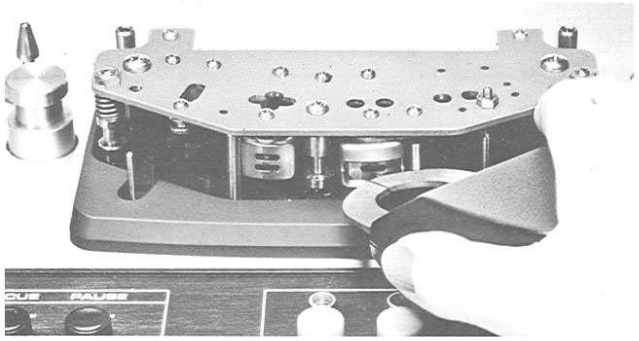
Dust, oil and other foreign matter will tend to adhere to parts in the tape path as the tension arms, tape guides, capstan, pinch roller, auto shut-off switch arm, guide poles and tape shifter poles. If allowed to accumulate, tape movement may become less smooth, and wow and flutter is likely to increase so much that the reproduction becomes fluttery and unlistenable. Therefore, you are advised to keep the tape guidepath parts of your deck clean at all times.

In cleaning these parts, be sure to use a clean piece of lintless cloth moistened with cleaning liquid. You can easily clean Capstan (27) and Pinch Roller (28) by allowing them to revolve together, moistened with the proper cleaning agent. To do this you must hold the Auto Shut-Off Arm (64) gently upward with a finger and push Play Button (35).



Demagnetizing Heads and Guidepath Parts

Over a period of time, the erase, record and playback heads slowly become magnetized, causing noise and curtailing high-frequency response. This can be rectified by demagnetizing the heads occasionally with a commercially-available head demagnetizer.



PROCEDURE: First plug the demagnetizer into an AC wall outlet, place the demagnetizer's tips as close to the head surface as possible, move it up and down several times and then put it away gently from the head surface. The demagnetizer's power must be turned off when it is about one foot away from the heads. If you find the heads are still magnetized (you still hear noise, etc.), repeat the above procedure. Also demagnetize tape guidepath parts (capstan shaft, etc.). Be especially careful to avoid nicking or scratching tape heads during this process: do not allow demagnetizer tips to touch or vibrate against heads. For added protection, try to use demagnetizer with protective cover over its tips.

Lubrication

In order to keep your deck in top condition, lubricate the vital moving parts periodically with commercially-available ("all-purpose") oil. The frequency of moderate lubrication is as follows:

Capstan bearing .....two drops every six months
Pinch Roller shaft....one drop every six months

Be careful not to apply excessive oil as it may cause slippage of the tape transport mechanism, and not to stain other parts—especially the drive belt, brake bands and pinch-roller rubber—with the lubricating oil. If something is stained by mistake, wipe it off with clean lintless cloth moistened with cleaner liquid or alcohol.

TROUBLESHOOTING CHART

If you experience any of the following troubles, please thoroughly check possible causes and try to correct them. If the trouble persists, however, see a Dokorder technician or contact a Dokorder Service Station.

Symptoms	Causes	What to Do
TAPE DOES NOT UNSPOOL.	Power cable is unplugged or loosened.	Check the power cable.
	Deck is in pause mode.	Disengage Pause Button.
	Auto Shut-Off Switch Arm is outside the tape path.	Set the arm inside the tape path.
DROPOUTS ARE HEARD.	Dust is accumulated on the heads.	Clean the heads.
	Tape may be physically distorted.	Use a new tape.
PLAYED-BACK SOUND IS DISTORTED.	Recorded tape contains distortion.	Play a proven pre-recorded tape.
	Playback level is excessively high.	Turn playback level controls counterclockwise.
	Amplifier's impedance does not match that of deck.	Check amplifier's impedance and use matched cables.
MONITORED SOUND IS DISTORTED.	Impedance of the amplifier and microphones is not matched.	Use matched amplifier or microphones.*
	Record level is excessively high.	Adjust the record level controls.
VIBRATING TONE IS HEARD.	Capstan, pinch roller are coated with dust or oil.	Clean parts. (See "Oare and Maintenance: Cleaning.")
	Tape is scraping the reel flange.	Use a reel in good condition. (Be sure that tape-loaded reel and empty or take-up reel are of same size and material.)
	The belt is stretched.	Replace the belt.
BACKGROUND NOISE IN RECORD/PLAYBACK MODE HAS NOTICEABLY INCREASED.	Heads are magnetized.	Demagnetize them with a demagnetizer. (See "Demagnetizing Heads and Guidepath Parts.")
	Input and output plugs are rusted, frayed or are unsuited for the deck's jacks.	Use cables with suitable plugs in good condition.
HUM IS HEARD IN PLAYBACK.	Input and output plugs are not properly connected.	Check pin plugs and plug them in firmly.
	External leakage flux such as induced hum from the amplifier's power transformer.	Move transformer-equipped equipment away from the deck.
PROPER RECORDING AND PLAYBACK IS IMPOSSIBLE THROUGH DIN CORD.	Amplifier's input and output levels are not matched.	Use the amplifier with a DIN socket that meets the DIN-specified specifications.
	DIN cord is internally disconnected.	Use a new cord.

* Your deck has input and output impedance as follows: Mic Input: 600Ω, Line Input: 100KΩ, Line Output: 10KΩ. Select your microphones after referring to our Optional Accessory Catalog.