

Service Manual

dbx*/Dolby B-C NR,
6×-speed Tape-to-Tape Recording
Double Cassette Deck

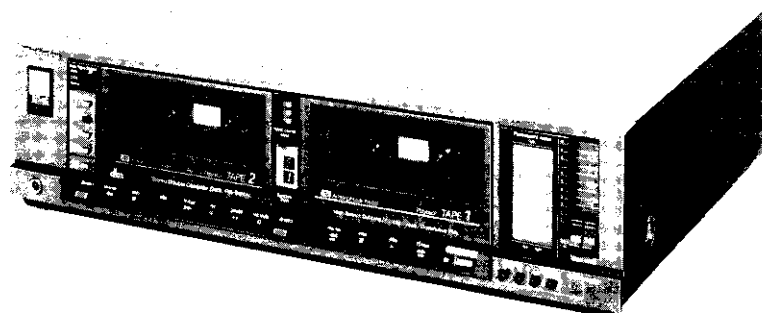
Cassette Deck
RS-B66W

Color

(K)...Black Type



DOLBY B-C NR



Color	Area
(K)	[PA]....Far Fast PX.
(K)	[PE]....European Military.

RS-8R MECHANISM SERIES

- Please use this manual together with the service manual for model No. RS-B66W ([XA] mark areas) order No. HAD85022416C8.
- This Service Manual indicates the main differences between; original RS-B66W ([XA] mark areas) and RS-B66W ([PA][PE] mark areas).

SPECIFICATIONS

Deck system	Stereo cassette deck	S/N (Signal level = max. recording level, CrO ₂ type tape)	
Track system	4-track, 2-channel	dbx in	92 dB (A weighted)
Heads (TAPE 1) PLAY	AX head	Dolby C NR in	75 dB (CCIR)
(TAPE 2) REC/PLAY	AX head	Dolby B NR in	67 dB (CCIR)
Erasing	Double-gap ferrite head	NR out	57 dB (A weighted)
Motors		Wow and flutter	0.06% (WRMS)
Capstan	1 motor		±0.1% (DIN)
Reel drive	2 motor	Max. Input level improvement (with dbx in)	10 dB
Mechanism	2 motor	Fast Forward and Rewind Time	
Recording system	AC bias		Approx. 85 seconds with C-60 cassette tape
Bias frequency	300 kHz	Input sensitivity and impedance	
Erasing system	AC bias	LINE	60 mV/47 kΩ
Tape speed	4.8 cm/sec.	Output voltage and impedance	
Frequency response		LINE	400 mV/2.5 kΩ
Metal	20 Hz–21,000 Hz	HEADPHONES	80mV/8Ω
	30 Hz–20,000 Hz (DIN)	Power consumption	38 W
	30 Hz–19,000 Hz (±3 dB)	Power supply	AC 50 Hz/60 Hz
CrO₂	20 Hz–20,000 Hz		110 V/127 V/220 V/240 V,
	30 Hz–19,000 Hz (DIN)		preset power voltage 240 V for
	30 Hz–18,000 Hz ±3 dB		Europe, 127 V for other area
Normal	20 Hz–19,000 Hz	Dimensions (W×H×D)	430×110×325 mm
	30 Hz–18,000 Hz (DIN)	Weight	6.9 kg
	30 Hz–17,000 Hz ±3 dB		
Dynamic Range (with dbx in)	110 dB (1 kHz)		

Design and specifications are subject to change without notice.

*The term dbx is a registered trademark of dbx Inc.

**'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

Technics

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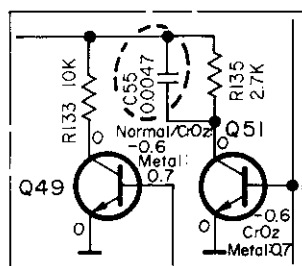
PARTS COMPARISON TABLE:

Please revise the original parts list in the Service Manual RS-B66W ([XA] mark areas) to conform to the changes shown herein.
If new part numbers are shown, be sure to use them when ordering parts.

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

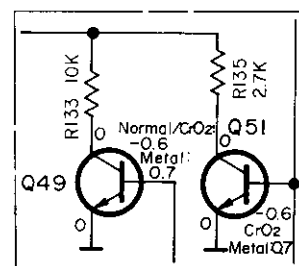
Ref. No.	Part Name & Description	Part Numbers		Remarks
		For [XA] mark areas.	For [PA][PE] mark areas.	
R55, 56	Resistors	ERD25FJ472 (4.7k Ω)	ERD25FJ432 (4.3k Ω)	
R248	Resistor	ERD25FJ221 (220 Ω)	ERD25FJ331 (330 Ω)	
R251	Resistor	ERD25FJ391 (390 Ω)	ERD25FJ331 (330 Ω)	
R306	Resistor	ERD25FJ100 (10 Ω)	ERD25FJ330 (33 Ω)	
R307	Resistor	ERD25FJ222 (2.2k Ω)	ERD25FJ122 (1.2k Ω)	
R308	Resistor	ERD25FJ222 (2.2k Ω)	ERD25FJ471 (470 Ω)	
R309	Resistor	ERD25FJ562 (5.6k Ω)	ERD25FJ561 (560 Ω)	
C55, 56	Capacitor	ECFDD472KV (0.0047 μ F)	—	Deleted
VR301	Variable Resistor	QVNB3A00B103	QVNB3A00B332	
RL1	Relay	SFDYG5A273P	SFDYG5A237P	
17	Fuse Holder	SJT347	QTF1054	Δ
A2	Instruction Book	SQF12313	SQF12540	

■ SCHEMATIC DIAGRAM

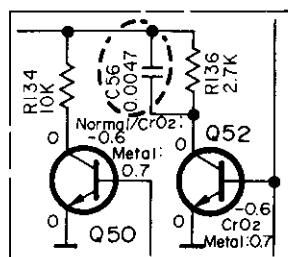


For [XA] mark areas.

(Deletion)

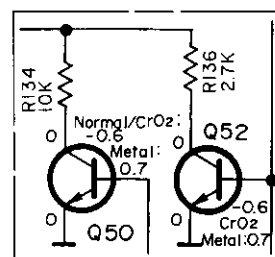


For [PA][PE] mark areas.



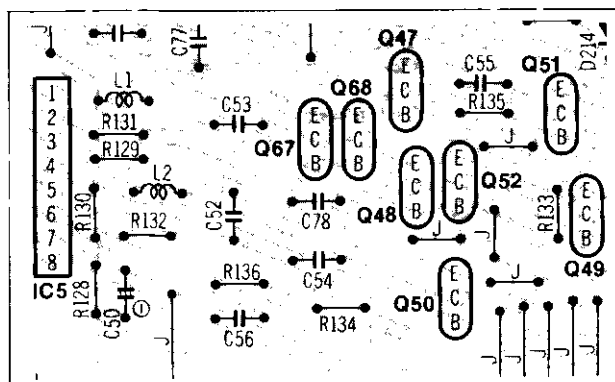
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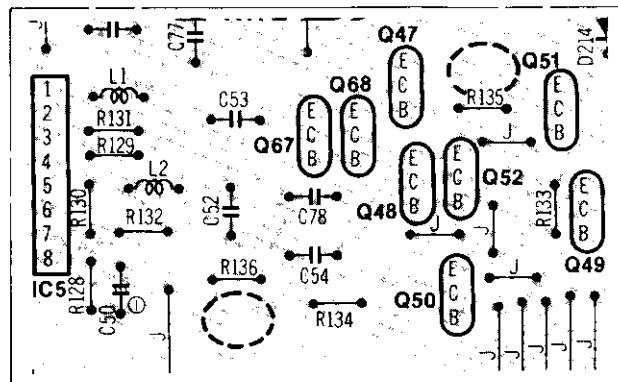
For [PA][PE] mark areas.

PRINTED CIRCUIT BOARD

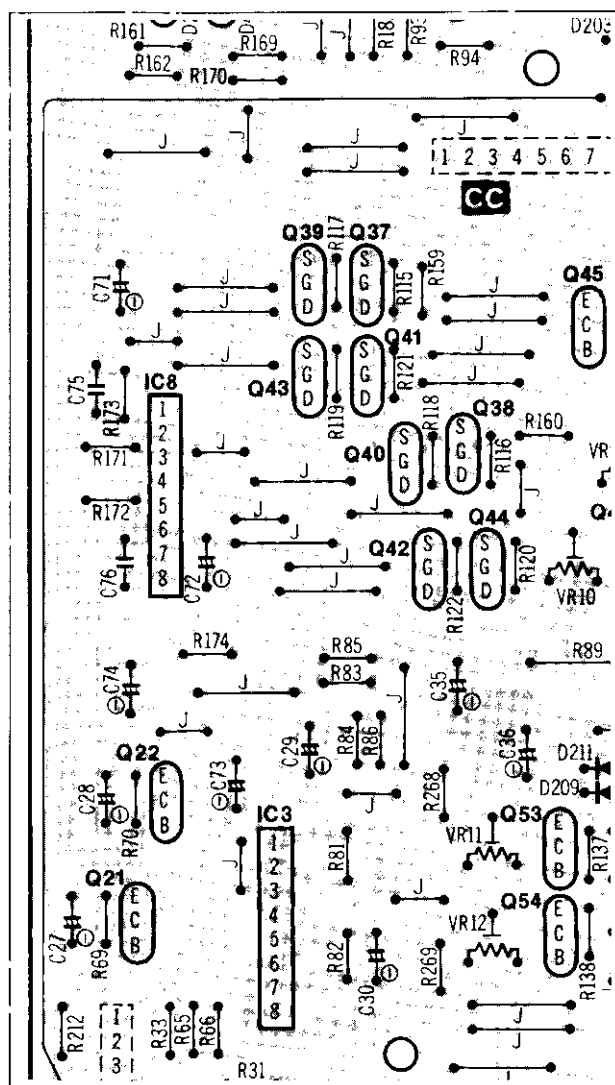


For [XA] mark areas.

(Deletion)

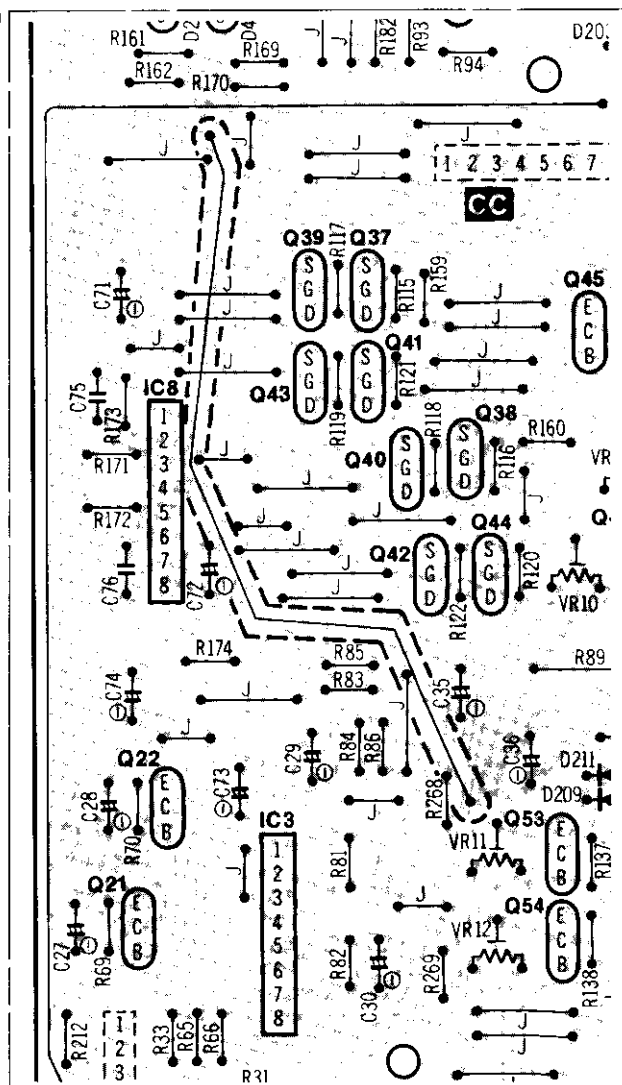


For [PA][PE] mark areas.



For [XA] mark areas.

(Difference)



For [PA][PE] mark areas.

■ MEASUREMENT AND ADJUSTMENT METHODES

⑥ Overall gain (TAPE [2])

Condition:

- Record/playback mode
- Normal tape mode
- Input level controls...MAX
- Standard input level;
LINE IN ...-24±4dB (63mV)

Equipment:

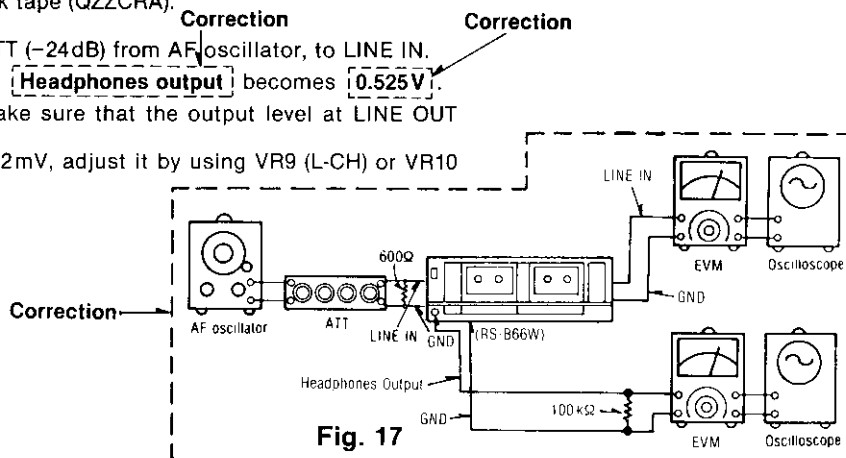
- EVM (Electronic Voltmeter)
- ATT
- Resistor (600Ω)
- Test tape
(reference blank tape)
... QZZCRA for Normal

- AF oscillator
- Oscilloscope

• Test tape
... QZZCFM (315Hz, 0dB)

Addition

1. Test equipment connection is shown in fig. 17.
2. Insert the normal reference blank tape (QZZCRA).
3. Place UNIT into record mode.
4. Supply a 1kHz signal through ATT (-24dB) from AF oscillator, to LINE IN.
5. Adjust ATT until monitor level at **Headphones output** becomes **0.525V**.
6. Playback recorded tape, and make sure that the output level at LINE OUT becomes $0.4V \pm 22mV$.
7. If measured value is not $0.4V \pm 22mV$, adjust it by using VR9 (L-CH) or VR10 (R-CH).
8. Repeat from step (2).



• Adjustment of overall gain during dubbing

Normal speed adjustment

1. Make the connection as in Fig. 17-1.
2. Set the dubbing speed switch to ×1 mode (normal speed).
3. Set the standard playback gain adjustment tape QZZCFM (315Hz, 0dB) to TAPE [1], and normal tape to TAPE [2] when dubbing.
4. Playback TAPE [2], then adjust VR9 (L-CH) {VR10 (R-CH)} so that the output level is within the standard value.

Standard value: $0.4V \pm 0.5dB$ (11mV)

High speed Adjustment

5. Set the dubbing speed switch to ×6 mode (6 times higher speed).
6. Operate the step 3.
7. Playback TAPE [2], then adjust VR11 (L-CH) {VR12 (R-CH)} so that the output level is within the standard value.

Standard value: $0.4V \pm 0.5dB$ (11mV)

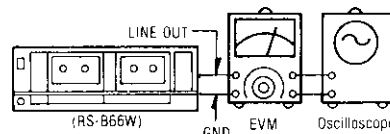


Fig. 17-1

⑦ Fluorescent meter (TAPE [2])

Condition:

- Record mode
- Input level controls...MAX

Equipment:

- EVM (Electronic Voltmeter)
- ATT
- AF oscillator
- Oscilloscope
- Resistor (600Ω)
- Test tape (reference blank tape)... QZZCRA

1. Make connections as shown in fig. 17.
2. Insert the normal reference blank test tape (QZZCRA).
3. In the recording pause mode, apply 1kHz (-24dB) to LINE IN.
4. Adjust ATT so that output level at **Headphones output** is **0.525V**.
5. At this time, check that 0dB indicator is lighted halfway (intermediate brightness between full brightness and light-out: See fig. 18).
6. If the indicator is not lighted halfway as described in step 4, adjust VR701 (L-CH), VR702 (R-CH).
7. Repeat adjustments and checks at steps 3, 4 and 5 two or three times.

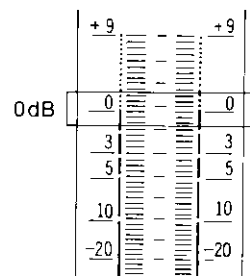


Fig. 18

Service Manual

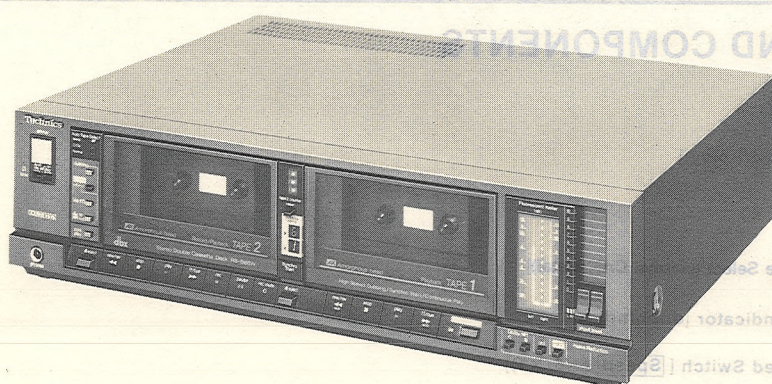
Cassette Deck

RS-B66W

dbx*/Dolby B-C NR,
6×-speed Tape-to-Tape Recording
Double Cassette Deck

Color

(K)...Black Type



Color	Area
(K)	[E].....All European areas except United Kingdom.
(K)	[EH]...Holland.
(K)	[XA]....Asia, Latin America, Middle East and Africa areas.
(K)	[XL]....Australia.

RS-8R MECHANISM SERIES SPECIFICATIONS

Deck system	Stereo cassette deck	S/N (Signal level = max. recording level, CrO ₂ type tape)	
Track system	4-track, 2-channel	dbx in	92 dB (A weighted)
Heads (TAPE 1) PLAY	AX head	Dolby C NR in	75 dB (CCIR)
(TAPE 2) REC/PLAY	AX head	Dolby B NR in	67 dB (CCIR)
Erasing	Double-gap ferrite head	NR out	57 dB (A weighted)
Motors		Wow and flutter	0.06% (WRMS) ±0.1% (DIN)
Capstan	1 motor	Max. input level improvement (with dbx in)	10 dB
Reel drive	2 motor	Fast Forward and Rewind Time	Approx. 85 seconds with C-60 cassette tape
Mechanism	2 motor	Input sensitivity and impedance	
Recording system	AC bias	LINE	60 mV/47 kΩ
Bias frequency	300 kHz	Output voltage and impedance	
Erasing system	AC bias	LINE	400 mV/2.5 kΩ
Tape speed	4.8 cm/sec.	HEADPHONES	80mV/8Ω
Frequency response		Power consumption	38 W
Metal	20 Hz-21,000 Hz 30 Hz-20,000 Hz (DIN) 30 Hz-19,000 Hz (±3 dB)	Power supply	AC 50 Hz/60 Hz 110 V/127 V/220 V/240 V, preset power voltage 220 V for Europe except United Kingdom, 240 V for other area
CrO₂	20 Hz-20,000 Hz 30 Hz-19,000 Hz (DIN) 30 Hz-18,000 Hz ±3 dB	Dimensions (W×H×D)	430×110×325 mm
Normal	20 Hz-19,000 Hz 30 Hz-18,000 Hz (DIN) 30 Hz-17,000 Hz ±3 dB	Weight	6.9 kg
Dynamic Range (with dbx in)	110 dB (1 kHz)		

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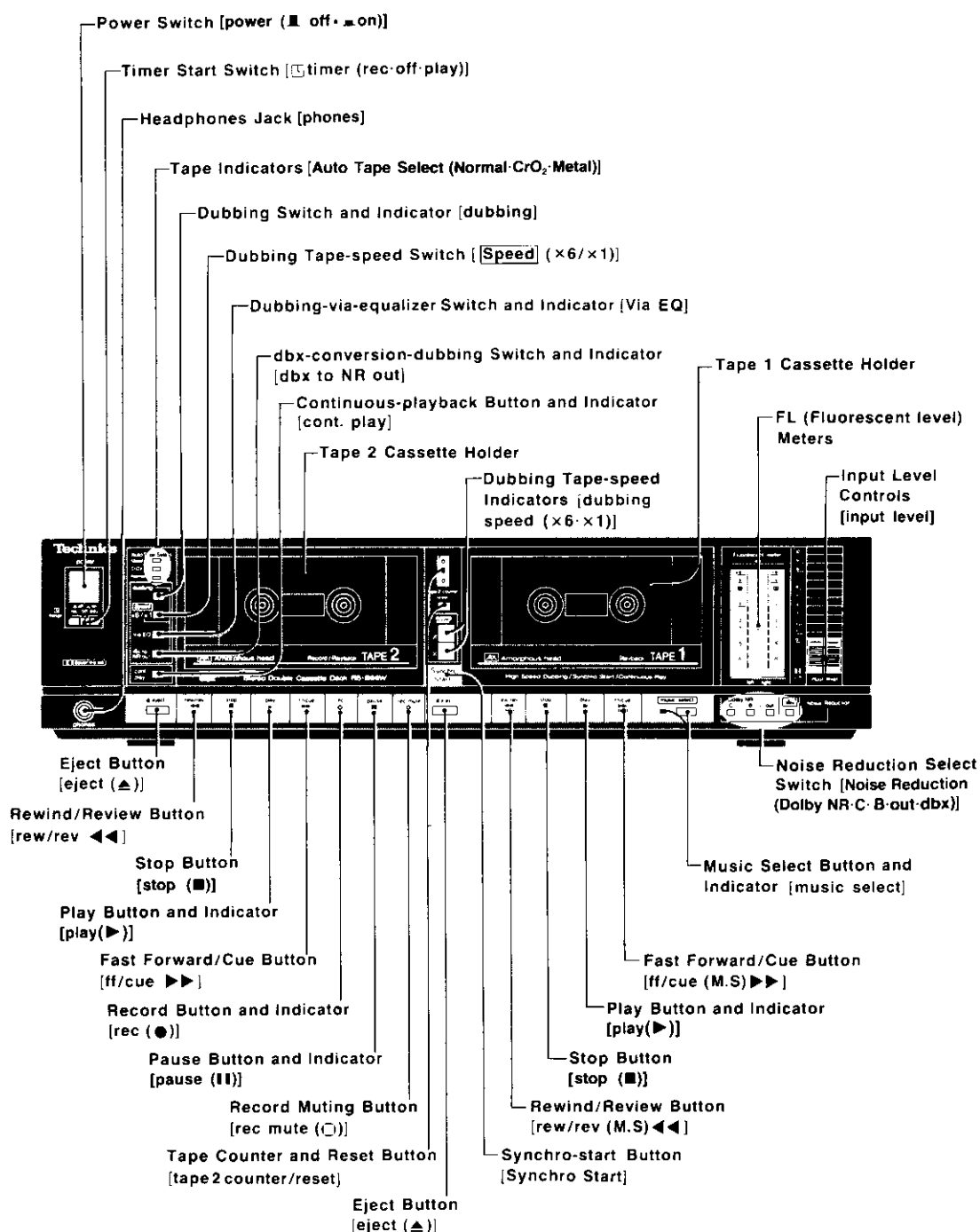
Technics

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■ LOCATION OF CONTROLS AND COMPONENTS



TAPE-TO-TAPE RECORDING

It is possible with this unit to make 4 different types of tape-to-tape recordings.

- **Ordinary tape-to-tape recording** This is tape-to-tape recording while listening to the playback sound.
- **dbx-conversion tape-to-tape recording** This is tape-to-tape recording which returns tape sounds which were originally recorded by using a dbx noise-reduction system to ordinary sounds on the newly recorded tape.
- **6 x-speed tape-to-tape recording** This is tape-to-tape recording which is made at a speed 6 times faster than the ordinary speed.
- **Via-equalizer tape-to-tape recording** . . . This is tape-to-tape recording which can be used to create, on the newly recorded tape, any desired tone quality. The recording is made through a graphic equalizer (SH-8075, SH-8055 or SH-8066, available as separately purchased options) connected to this unit.

Synchro-start function

By simply pressing the synchro-start button, the tape playback (on tape deck 1) and tape recording (on tape deck 2) can be started simultaneously, thus avoiding any worry about an incorrect start.

To cancel a tape-to-tape recording

To stop a tape-to-tape recording, press the dubbing switch once again. Check to be sure that the indicator stops illuminating.

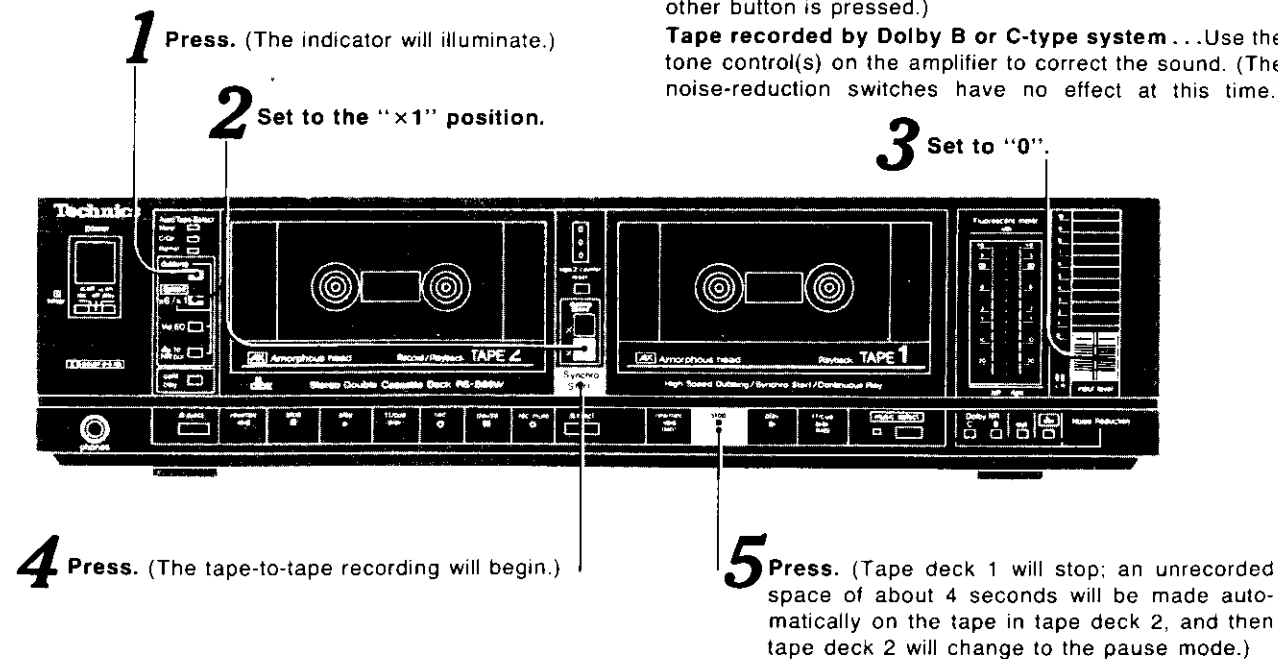
- The type of tape-to-tape recording cannot be changed (such as from 6x recording to dbx-conversion recording, etc.) while a tape-to-tape recording is being made.
- The noise-reduction system cannot be used while making a tape-to-tape recording (except when making a dbx-conversion recording or a via-equalizer recording). Thus the noise-reduction switch will have no effect if it is pressed when the dubbing switch is pressed (while the indicator is illuminated).

However, the noise-reduction switch should be pressed (after first pressing the dubbing switch once again in order to cancel the tape-to-tape recording mode) when you want to listen to a tape which has been recorded as a tape-to-tape recording.

Note:

- To stop tape deck 1 and tape deck 2 simultaneously, press the stop button for tape deck 2.
- If, during a tape-to-tape recording, the tape in tape deck 1 reaches its end before the tape in tape deck 2, tape deck 2 will change to the pause mode after a few moments.
- If, during a tape-to-tape recording, the tape in tape deck 2 reaches its end before the tape in tape deck 1, tape deck 1 will stop after a few moments.

Ordinary tape-to-tape recording



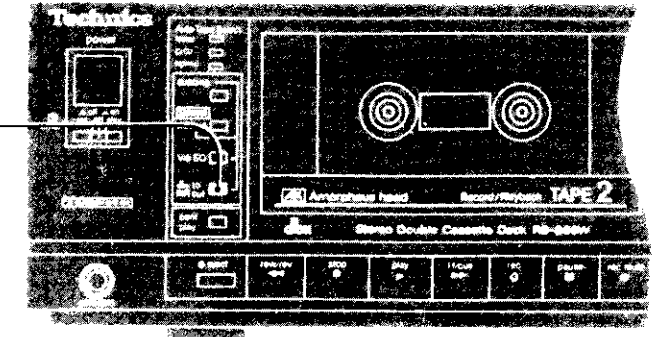
Monitoring during ordinary tape-to-tape recording dbx-recorded tape . . . Press the noise-reduction switch marked "dbx". (The monitor sound cannot be heard if any other button is pressed.)

Tape recorded by Dolby B or C-type system . . . Use the tone control(s) on the amplifier to correct the sound. (The noise-reduction switches have no effect at this time.)

dbx-conversion tape-to-tape recording

Follow the procedure described below after first following step 2. of steps 1. to 5. in the section "Ordinary tape-to-tape recording" on page 3.

Press. (The indicator will illuminate.)



- This conversion from dbx sound to ordinary sound is useful when you want to make another tape of the dbx-recorded music onto a tape which will be played back on a tape recorder not equipped with a dbx decoding system, such as a small portable tape player or a tape player in your car.

To cancel the dbx-conversion tape-to-tape recording mode

To cancel the dbx-conversion tape-to-tape recording mode, once again press the dbx-conversion dubbing switch; check to be sure that the indicator illumination stops.

- When the dubbing switch is pressed once again, the indicator illumination will stop and, at the same time, the tape-to-tape recording mode will be stopped.
- Before playing a tape which has been recorded from another tape, be sure to first stop the tape-to-tape recording mode and then press the noise-reduction button marked "out".

Note:

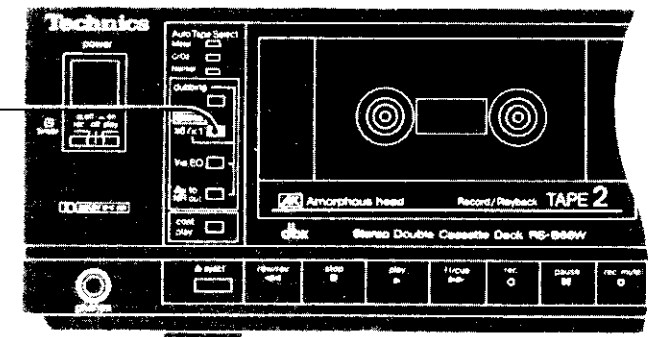
A dbx-conversion tape-to-tape recording cannot be made at the 6x speed, and the unit cannot be changed from the 6x tape-to-tape recording mode dbx-conversion tape-to-tape recording mode.

To make such a change, it is necessary to first press the dubbing tape-speed switch to set it to "x1", and then press the dbx-conversion switch.

6 x-speed tape-to-tape recording

Step 2. (of steps 1. to 5.) in the section "Ordinary tape-to-tape recording" on page 3 changes, as described below.

2 Press (to set to "x6").



To cancel the 6x tape-to-tape recording mode

To cancel the 6x tape-to-tape recording mode, press the dubbing tape-speed switch once again; check to be sure that the indicator (x1) illuminates (flashes).

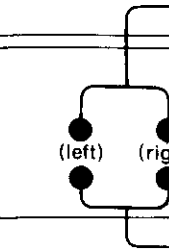
- When the dubbing switch is pressed once again, the indicator illumination will stop and, at the same time, the tape-to-tape recording mode will be stopped. Note that if the tape in tape deck 1 or tape deck 2 is fast forwarded, rewound or played at any time other than when tape deck 2 is in the recording stand-by condition (in other words, while the record and pause indicators are illuminated), the tape speed will change to the ordinary (x1) speed.

Notes:

- Wait a short time (about 5 to 10 seconds) after changing the tape-to-tape recording speed before beginning the next operation. The "x1" indicator will flash when the tape speed is changed from the 6x speed to the ordinary speed. Begin the next operation only after the flashing ends and the indicator illuminates steadily. This is so that the tape-speed mechanism will have time to become fully stabilized.
- Before beginning a 6x tape-to-tape recording, check to be sure that the tape in the cassette is tightly wound, without slack, in order to avoid damage to the tape.
- When the tape speed is changed, the motor sound will momentarily become louder, but this is not a malfunction.

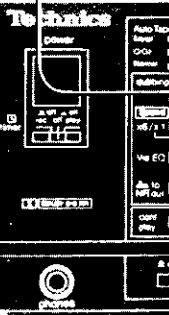
Via-equalizer

Connections



Operation

1 Press. (T



5 Press

Notes regarding

After making a sure to switch the tape to listen not switched OF plied, and this du tion of the music Be sure to also c the graphic equal

dbx-conversion tape-to-tape recording

Follow the procedure described below after first following step 2. of steps 1. to 5. in the section "Ordinary tape-to-tape recording" on page 3.

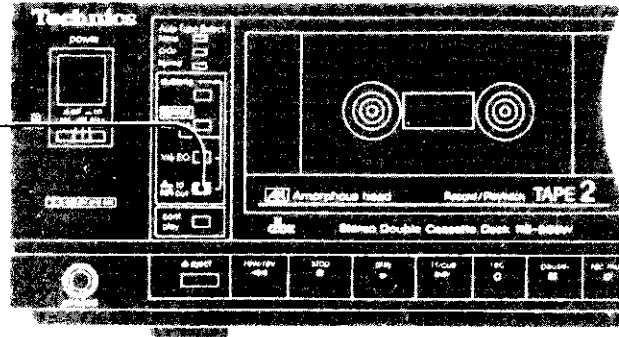
Press. (The indicator will illuminate.)

- This conversion from dbx sound to ordinary sound is useful when you want to make another tape of the dbx-recorded music onto a tape which will be played back on a tape recorder not equipped with a dbx decoding system, such as a small portable tape player or a tape player in your car.

To cancel the dbx-conversion tape-to-tape recording mode

To cancel the dbx-conversion tape-to-tape recording mode, once again press the dbx-conversion dubbing switch; check to be sure that the indicator illumination stops.

- When the dubbing switch is pressed once again, the indicator illumination will stop and, at the same time, the tape-to-tape recording mode will be stopped.
- Before playing a tape which has been recorded from another tape, be sure to first stop the tape-to-tape recording mode and then press the noise-reduction button marked "out".

**Note:**

A dbx-conversion tape-to-tape recording cannot be made at the 6× speed, and the unit cannot be changed from the 6× tape-to-tape recording mode dbx-conversion tape-to-tape recording mode. To make such a change, it is necessary to first press the dubbing tape-speed switch to set it to "×1", and then press the dbx-conversion switch.

6×-speed tape-to-tape recording

Step 2. (of steps 1. to 5.) in the section "Ordinary tape-to-tape recording" on page 3 changes, as described below.

2 Press (to set to "×6").

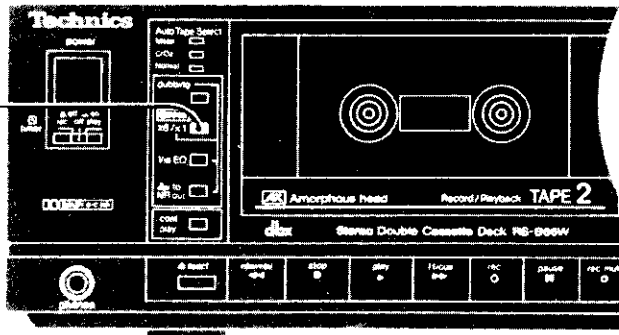
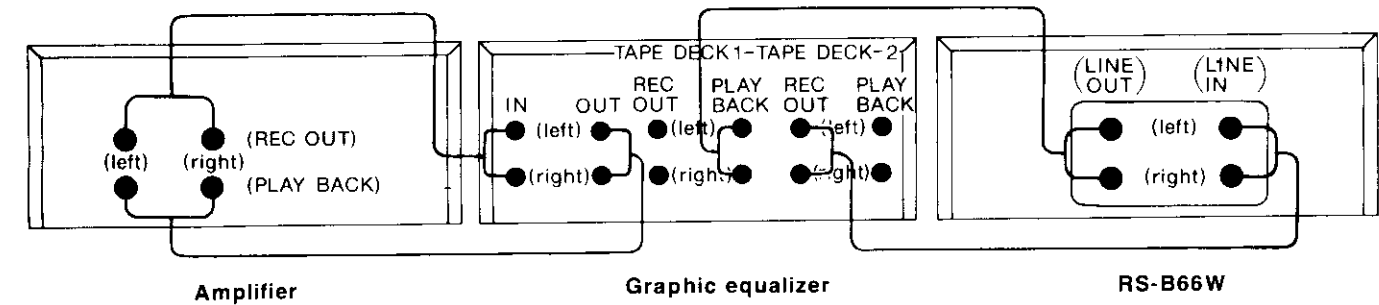
To cancel the 6× tape-to-tape recording mode

To cancel the 6× tape-to-tape recording mode, press the dubbing tape-speed switch once again; check to be sure that the indicator (×1) illuminates (flashes).

- When the dubbing switch is pressed once again, the indicator illumination will stop and, at the same time, the tape-to-tape recording mode will be stopped. Note that if the tape in tape deck 1 or tape deck 2 is fast forwarded, rewound or played at any time other than when tape deck 2 is in the recording stand-by condition (in other words, while the record and pause indicators are illuminated), the tape speed will change to the ordinary (×1) speed.

Notes:

- Wait a short time (about 5 to 10 seconds) after changing the tape-to-tape recording speed before beginning the next operation. The "×1" indicator will flash when the tape speed is changed from the 6× speed to the ordinary speed. Begin the next operation only after the flashing ends and the indicator illuminates steadily. This is so that the tape-speed mechanism will have time to become fully stabilized.
- Before beginning a 6× tape-to-tape recording, check to be sure that the tape in the cassette is tightly wound, without slack, in order to avoid damage to the tape.
- When the tape speed is changed, the motor sound will momentarily become louder, but this is not a malfunction.

**Via-equalizer tape-to-tape recording****Connections**

- Be sure that the left and right channel connections are made correctly.

Operation

1 Press. (The indicator will illuminate.)

2 Set to "×1".

3 Press. (The indicator will illuminate.)

4 Press the record button. Begin the sound source to be recorded. (Adjust the recording level so that the maximum meter reading is "+5 dB".) Then rewind tape 1 and leave it in the stop mode.

5 Press. (The tape-to-tape recording will begin.)

Notes regarding via-equalizer tape-to-tape recording
After making a via-equalizer tape-to-tape recording, be sure to switch the graphic equalizer OFF when you play the tape to listen to it, because, if the graphic equalizer is not switched OFF, the equalizer effect will again be applied, and this duplicated effect will not be a true reproduction of the music on the tape.

Be sure to also carefully read the operation instructions for the graphic equalizer which is to be used.

Be sure not to press the via-equalizer dubbing switch when a graphic equalizer is not connected to this unit. (If it is pressed, tape-to-tape recordings cannot be made.)

Keep convenient notes on the cassette index card. It is convenient, by making a note such as described below, to keep a record of the process used when a via-equalizer tape-to-tape recording is made, such as the setting of the graphic equalizer's input selector and the monitor sound.

Graphic equalizer input selector: tape 1

Speaker monitor sound:

Tape 1 sound through equalizer

- Be sure to set the graphic equalizer's input selector to the "source" position when making an ordinary recording (such as from a phono disc or radio broadcast). Oscillation may occur if it is set to any other position.

TECHNICAL GUIDE

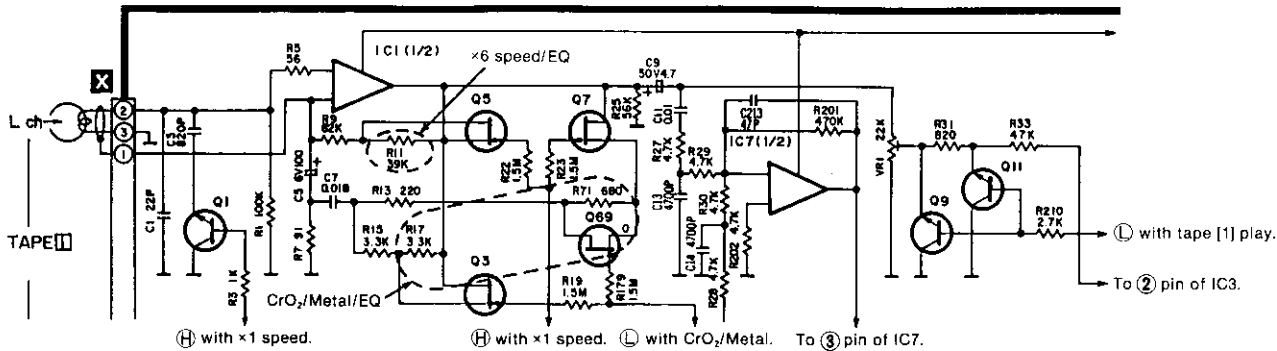
• RS-B66W is equipped with a ×6 speed editing function, 2 times higher than the conventional editing speed, which can meet all purposes as an editing unit. At the same time, it is capable of ensuring sufficient performance required for a high fidelity equipment.

<Main Features>

- 4-edition recording functions (normal, ×6 speed, dbx conversion, via equalizer).
- 3 NR functions (Dolby-B, C, dbx).
- Microcomputer logic mechanism (Synchro drive mechanism).
Only the ×6 speed edition recording is described.
(The “New Technical Description RS-B66W” is separately issued. So, refer to this manual for the details.)
- Each of the following is selected during ×6 speed edition.
 - (1) Playback equalizer
 - (2) Record equalizer
 - (3) Tape speed
 - (4) Muting circuit

(I) Selection of playback equalizer

- * The parenthesized is Rch Ref. No.
- During ×6 speed edition, the output at high frequencies is greater because the playback frequency of the head is 6 times higher than the normal speed. Therefore, the correction level in ×6 speed mode is reduced as compared with the normal speed mode.
- (1) Q1 (Q2) is provided for playback peaking condenser selection. Q1 (Q2) turns OFF during ×6 speed mode, then C3 (C4) stops working.
 - (2) Q3 (Q4) and Q69 (Q70) are provided for 70μs and 120μs selection, which turn ON when 120μs is selected.
 - (3) Q5 (Q6) and Q7 (Q8) turn ON in ×6 speed mode, lowering the gain at high frequencies.
 - (4) Q9 (Q10) and Q11 (Q12) are provided for muting of TAPE 1, which turn OFF when only TAPE 1 is played back, and turn ON when both TAPE 1 and TAPE 2 are played back.



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g x6 speed
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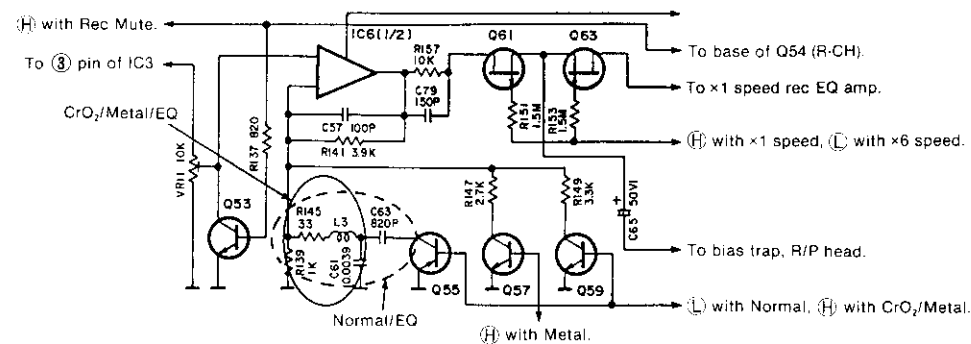
is played

ith tape [1] play.

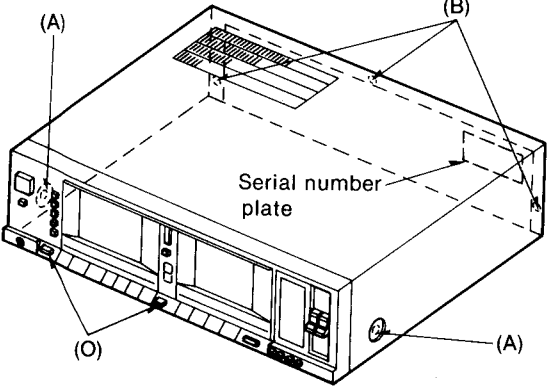
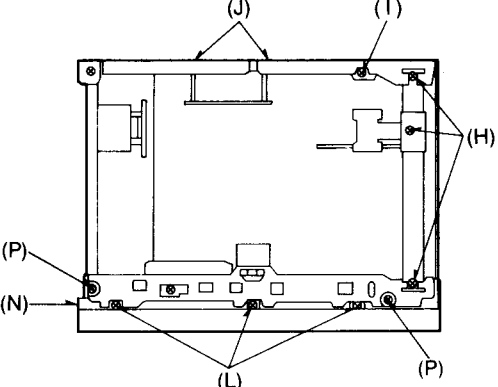
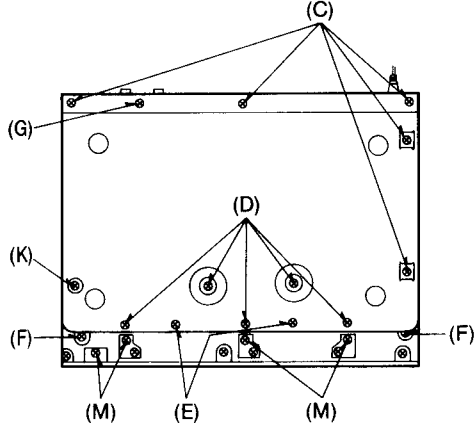
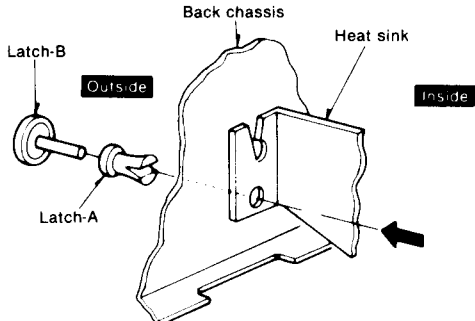
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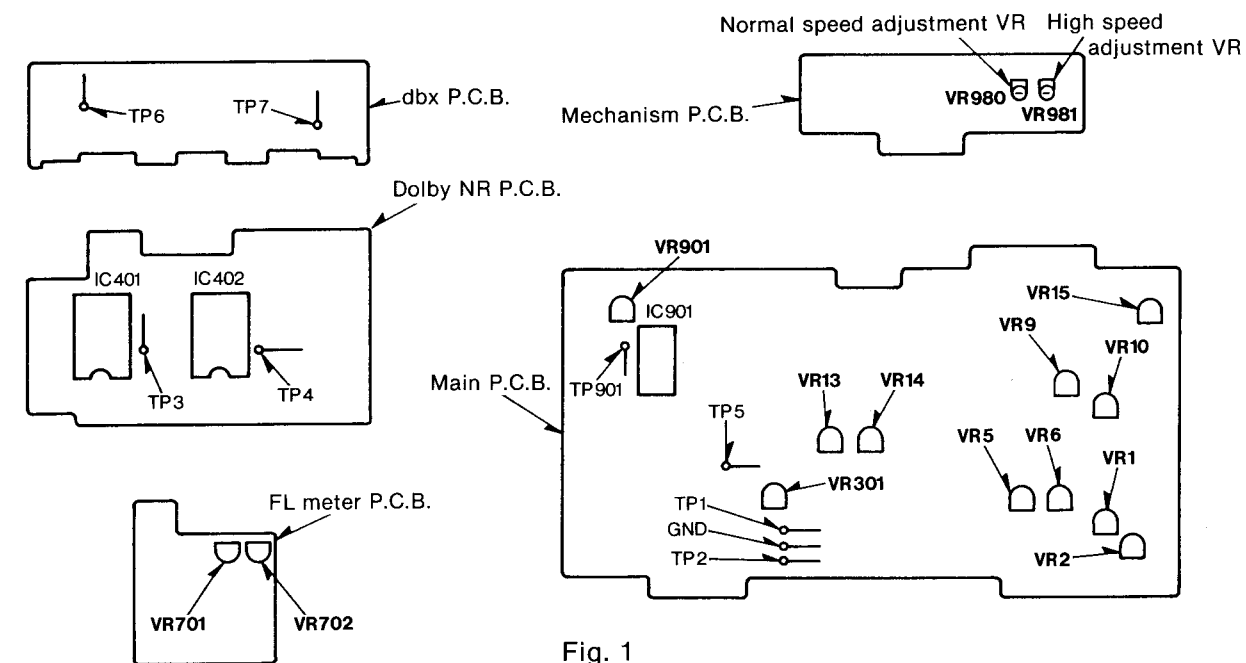
■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the case cover Procedure 1 Remove 2 screws (A) and 3 screws (B).	Ref. No. 3	How to remove the main P.C.B. Procedure 1 → 3 - Remove 3 screws (H) and one screw (I). - Remove one screw (K) (see fig. 2).
 Fig. 1		 Fig. 3	
Ref. No. 2	How to remove the bottom cover	Ref. No. 4	How to remove the mechanism unit
Procedure 2 - Remove 5 screws (C) and 5 screws (D). - Remove 2 screws (E) and 2 screws (F). - Remove one screws (G).  Fig. 2		Procedure 1 → 3 Remove 2 latches (J) (see fig. 3 and 4). (J) How to remove latch  To remove a heat sink from the back chassis, first press latch-A from the inside in the direction indicated by the arrow as shown above, and extract the rivet to the outside. Next remove latch-B from the outside. Consequently, the heat sink can be removed from the back chassis. Fig. 4	
Ref. No. 4	How to remove the front panel assembly Procedure 1 → 4 - Remove 2 screws (F) and 4 screws (M) (see fig. 2). - Remove 2 screws (E) (see fig. 2). - Remove 3 screws (L) and one screws (N) (see fig. 3). - Push the eject button (O) to open the cassette lid assembly (see fig. 1).	Ref. No. 5	How to remove the mechanism unit Procedure 1 → 5 - Remove 5 screws (D) and 4 screws (M) (see fig. 2). - Remove 3 screws (L) 2 screws (P) (see fig. 3).

* Serial No. Indication

- The serial number plate of this product to attached to the back chassis (shown in fig. 1).

■ MEASUREMENT AND ADJUSTMENT METHODS



NOTES: Set switches and controls in the following positions, unless otherwise specified.

- Make sure heads are clean
- Make sure capstan and pressure roller are clean
- Judgeable room temperature $20 \pm 5^\circ\text{C}$ ($68 \pm 9^\circ\text{F}$)
- Input level controls: Maximum
- Dolby NR switch: OUT
- Dubbing switch: OFF
- Dubbing tape speed switch: Normal ($\times 1$)
- Timer switch: OFF

A Head azimuth adjustment (TAPE 1, TAPE 2)

Condition:

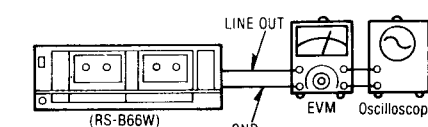
- Playback mode
- Normal tape mode

Equipment:

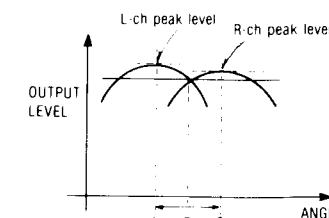
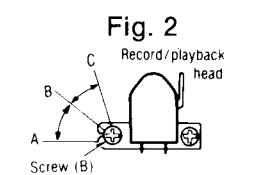
- EVM (Electronic Voltmeter)
- Oscilloscope
- Test tape (azimuth)...QZZCFM

L-CH/R-CH output balance adjustment

- Make connections as shown in fig. 2.

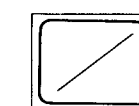
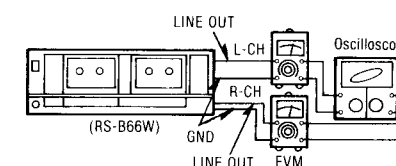


- Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 3 for maximum output L-CH and R-CH levels. When the output levels of L-CH and R-CH are not at maximum at the same point adjust as follows.
- Turn screw (B) shown in fig. 3 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate angle B between angles A and C, i.e., point where L-CH and R-CH outputs are balanced. (Refer to figs. 3 and 4.)



L-CH/R-CH phase adjustment

- Make connections as shown in fig. 5.
- Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 3 so that pointers of the two EVMs swing to maximum and a lissajous waveform as illustrated in fig. 6 is obtained on the oscilloscope.



E Tape speed
(TAPE [1], TAPE [2])

Condition:
• Playback mode

Equipment:
• Digital frequency counter
• Test tape...QZZCWAT
• Test tape...QZZCFM

Normal speed adjustment

1. Test equipment connection is shown in fig. 7.
2. Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to the digital frequency counter.
3. Measure this frequency.
4. On the basis of 3,000Hz, determine value by following formula:
Tape speed accuracy = $\frac{f-3,000}{3,000} \times 100(\%)$ where, f = measured value
5. Take measurement at middle section of tape.

Standard value: TAPE [1] 3024±66Hz, TAPE [2] 3000±45Hz

High speed adjustment

7. Set the test tape QZZCFM (315Hz, 0dB) on TAPE [1] (for playback) side, and play it back at the normal speed.
8. The output is then (A) Hz.
9. Make the connection as in Fig. 8.
10. Set the dubbing speed switch to ×6 (6 times higher).
11. Adjust VR981 (for high speed adjustment) so that the output between TP3 and ground is 6 times the (A) Hz of step 8 ((A) Hz×6) Hz).

Notes:

- Make the adjustment about 10sec. after motor operation.
- Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.

Tape speed fluctuation

Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:

$$\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3,000} \times 100(\%) \quad f_1 = \text{maximum value, } f_2 = \text{minimum value}$$

Standard value: Less than 1.5%

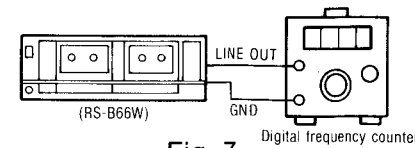


Fig. 7

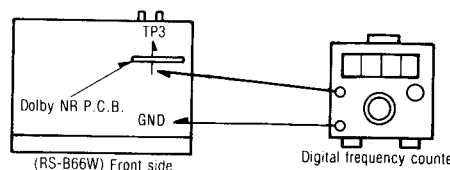


Fig. 8

C Playback frequency response
(TAPE [1], TAPE [2])

Condition:
• Playback mode
• Normal tape mode

Equipment:
• EVM (Electronic Voltmeter)
• Oscilloscope
• Test tape...QZZCFM

1. Test equipment connection is shown in fig. 2.
2. Playback the frequency response portion of test tape (QZZCFM).
3. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz and compare each output level with the standard frequency 315Hz, at test LINE OUT.
4. Make measurements for both channels.
5. Make sure that the measured values are within the range specified in the frequency response chart. (Shown fig. 9.)

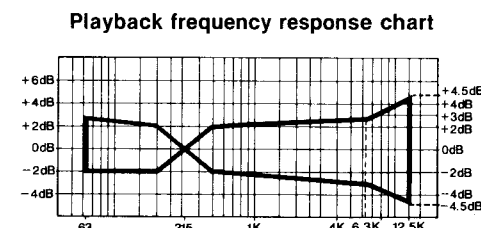


Fig. 9

D Playback gain
(TAPE [1], TAPE [2])

Condition:
• Playback mode
• Normal tape mode

Equipment:
• EVM (Electronic Voltmeter)
• Oscilloscope
• Test tape...QZZCFM

1. Test equipment connection is shown in fig. 10.
2. Playback standard recording level portion on test tape (QZZCFM 315Hz) and, using EVM, measure the output level at test points [TP3 (L-CH), TP4 (R-CH)].
3. Make measurements for both channels.

Standard value: 0.4V±1dB (0.4V±22mV): at LINE OUT jack

Adjustment

1. If the measured value is not within the standard, adjust TAPE [1] VR1 (L-CH) or VR2 (R-CH), TAPE [2] VR5 (L-CH) VR6 (R-CH) (See fig. 1).
2. After adjustment, check "Playback frequency response" again.

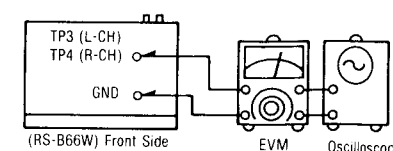


Fig. 10

E Erase current

Condition:
• Record mode
• Metal tape mode

Equipment:
• EVM (Electronic Voltmeter)
• Oscilloscope

1. Test equipment connection is shown in fig. 11.
2. Place UNIT into metal tape mode.
3. Press the record and pause buttons.
4. Read voltage on EVM and calculate erase current by following formula:

$$\text{Erase current (A)} = \frac{\text{Voltage across resistor R301}}{1 (\Omega)}$$

Standard value: 155±15mA (Metal)

5. If the measured value is not within the standard value, adjust it by using VR301.

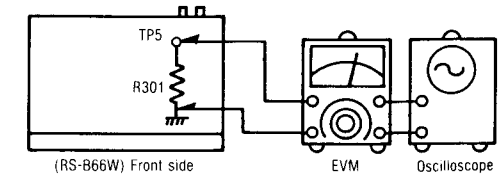


Fig. 11

F Overall frequency response
(TAPE [2])

Condition:
• Record/playback mode
• Normal tape mode
• CrO₂ tape mode
• Metal tape mode
• Input level controls...MAX

Equipment:
• EVM (Electronic Voltmeter)
• ATT
• AF oscillator
• Oscilloscope
• Resistor (600Ω)
• Test tape (reference blank tape)
...QZZCRA for Normal
...QZZCRX for CrO₂
...QZZCRZ for Metal

Note:

Before measuring and adjusting, the overall frequency response make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).

(Recording equalizer is fixed)

1. Make connections as shown in fig. 13.
2. Place UNIT into normal tape mode and insert the normal reference blank test tape (QZZCRA).
3. Supply a 1kHz signal from the AF oscillator through ATT to LINE IN.
4. Adjust ATT so that input level is -20dB below standard recording level (standard recording level = 0 VU).
5. Adjust the AF oscillator frequency to 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12.5kHz and 14kHz signals, and record these signals on the test tape.
6. Playback the signals recorded in step 5, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 12). (If the curve is within the charted specifications, proceed to steps 7, 8 and 9.)
If the curve is not within the charted specifications, adjust as follows;

Overall frequency response chart (Normal)

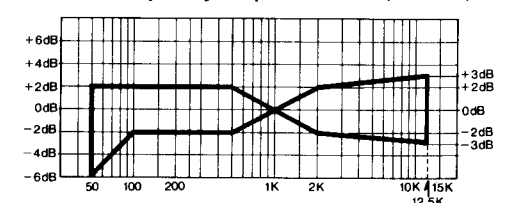


Fig. 12

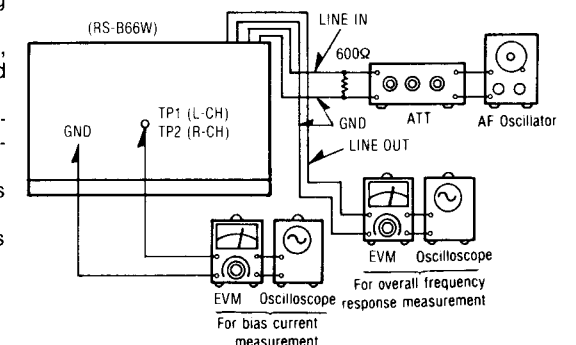


Fig. 13

Adjustment (A):

When the curve exceeds the overall specified frequency response chart (fig. 12) as shown in fig. 14.

- 1) Increase bias current by turning VR13 (L-CH) and VR14 (R-CH). (See fig. 1 on page 10.)
- 2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 12.)
- 3) If the curve still exceeds the specifications (fig. 12), increase bias current further and repeat steps 5 and 6.

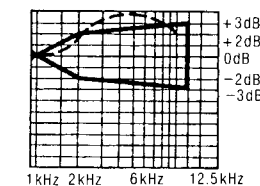


Fig. 14

Adjustment (B):

When the curve falls below the overall specified frequency response chart (fig. 12) as shown in fig. 15.

- 1) Reduce bias current by turning VR13 (L-CH) and VR14 (R-CH).
- 2) Repeat steps 5 and 6 for confirmation (Proceed to steps 7, 8 and 9 if the curve is now within the charted specifications as shown fig. 12.)
- 3) If the curve still falls below the charted specifications (fig. 12), reduce bias current further and repeat steps 5 and 6.

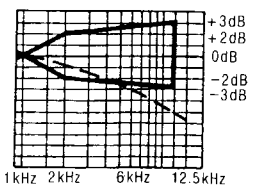


Fig. 15

- Place UNIT into CrO₂ tape mode.
- Change test tape to CrO₂ reference blank test tape (QZZCRX), and record 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12.5kHz, 14kHz and 16kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO₂ tapes (fig. 16).
- Place UNIT into metal tape mode and change test tape to metal reference blank test tape (QZZCRZ), and record 1kHz, 50Hz, 100Hz, 200Hz, 500Hz, 4kHz, 8kHz, 10kHz, 12.5kHz, 14kHz and 16kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 16).
- Confirm that bias currents are approximately as follows when the UNIT is set at different tape mode.
 - Read voltage on EVM between ground and test point (TP1 for L-CH, TP2 for R-CH) and calculate bias current by following formula:

$$\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 (\Omega)}$$

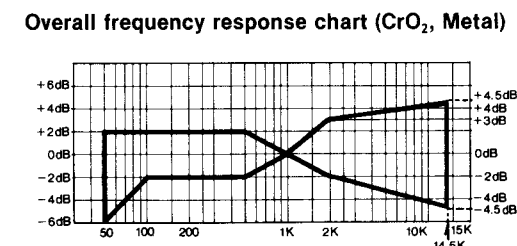


Fig. 16

around 500μA (Normal position)
 Standard value: around 600μA (CrO₂ position)
 around 1mA (Metal position)

Overall gain (TAPE 2)

- Condition:
- Record/playback mode
 - Normal tape mode
 - Input level controls...MAX
 - Standard input level; LINE IN ... -24±4dB (63mV)
- Equipment:
- EVM (Electronic Voltmeter)
 - ATT
 - Resistor (600Ω)
 - Test tape (reference blank tape) ...QZZCRA for Normal
 - AF oscillator
 - Oscilloscope

- Test equipment connection is shown in fig. 17.
- Insert the normal reference blank tape (QZZCRA).
- Place UNIT into record mode.
- Supply a 1kHz signal through ATT (-24dB) from AF oscillator, to LINE IN.
- Adjust ATT until monitor level at LINE OUT becomes 0.4V±22mV.
- Playback recorded tape, and make sure that the output level at LINE OUT becomes 0.4V±22mV.
- If measured value is not 0.4V±22mV, adjust it by using VR9 (L-CH) or VR10 (R-CH).
- Repeat from step (2).

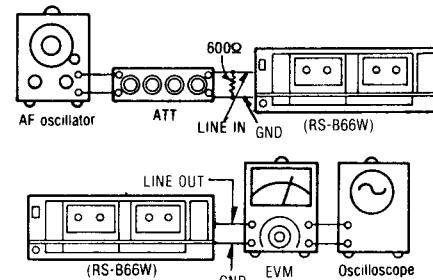


Fig. 17

Fluorescent meter (TAPE 2)

- Condition:
- Record mode
 - Input level controls...MAX
- Equipment:
- EVM (Electronic Voltmeter)
 - ATT
 - AF oscillator
 - Oscilloscope
 - Resistor (600Ω)

- Make connections as shown in fig. 17.
- In the recording pause mode, apply 1kHz (-24dB) to LINE IN.
- Adjust ATT so that output level at LINE OUT is 0.4V.
- At this time, check that 0dB indicator is lighted halfway (intermediate brightness between full brightness and light-out: See fig. 18).
- If the indicator is not lighted halfway as described in step 4, adjust VR701 (L-CH), VR702 (R-CH).
- Repeat adjustments and checks at steps 3, 4 and 5 two or three times.

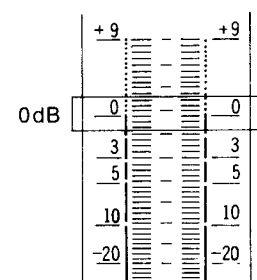


Fig. 18

MN1564STJ (IC901) EACH TERMINAL FUNCTION AND WAVEFORM

Terminal No.	Symbol	Name	Function/operation
1.	Vss	GND	
2.	Pφφ	Input/mechanism switch scan.	Pulse width: Ta = Approx. 2.7msec., Tb = Approx. 100μsec.
3.	Pφ1		
4.	Pφ2		
5.	Pφ3		
6.	STO	Non connection	Not used.
7.	P1φ	Reading of input switch state TAPE 1 HALF (S984) TAPE 1 CAM B (S983) TAPE 1 HALL IC signal MS signal	Reads switch states corresponding to scanning of Pφφ — 3. "H" between tunes "L" with tape inserted
8.	P11	Reading of input switch state REC INH (S982) TAPE 2 HALF (S984) TAPE 2 CAM B (S983) TAPE 2 HALL IC signal	Reads switch state corresponding to scanning of Pφφ — 3. Tape without erase prevention lug is inserted → "L".
9.	P12	Reading of input switch state GEQ (S804) dbx conversion (S802) ×1/×6 (S801) Timer Play (S806)	Reads switch state corresponding to scanning of Pφφ — 3. GEQ dbx ×1/×6 Conv. Timer Play
10.	P13	Reading of input switch state Dub. (S805) CONT. (S803) Synchro start (S819) Timer rec (S806)	Reads switch state corresponding to scanning of Pφφ — 3. Dubbing Cont Synchro Start Timer Rec

Terminal No.	Symbol
11.	ST1
12.	SYNC
13.	
16.	
17.	RST
18.	P2φ
19.	P21
20.	P22
21.	P23
22.	P3φ
23.	P31
24.	P32
25.	P33
26.	P4φ
27.	P41

N AND WAVEFORM

ation

b = Approx. 100μsec.

scanning of Pφφ — 3.

When each switch is pressed, each shaded part goes "L".

be inserted

scanning of Pφφ — 3.

When each switch is pressed, each shaded part goes "L".

scanning of Pφφ — 3.

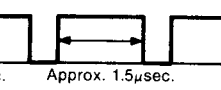
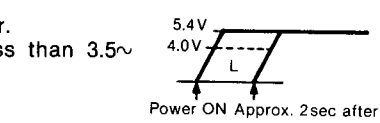
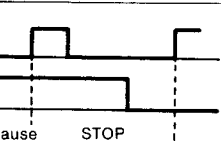
When each switch is pressed, each shaded part goes "L".

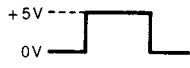
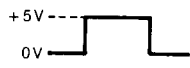
scanning of Pφφ — 3.

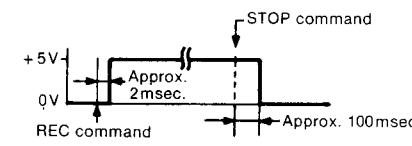
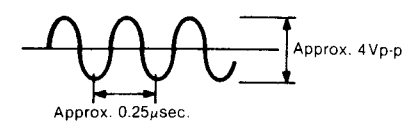
When each switch is pressed, each shaded part goes "L".

Terminal No.	Symbol	Name	Function/operation
11.	ST1	Non connection	Not used.
12.	SYNC		SYNC: Output waveform during operation.
13. 2 16.		Non connection	Not used.
17.	RST	Reset terminal	Reset terminal of computer. Automatically reset at less than 3.5~4.0V.
18.	P2φ	Reading of input switch state REC (S807)	"L" with REC switch ON.
19.	P21	Reading of input switch state PAUSE (S808)	"L" with PAUSE switch ON.
20.	P22	Reading of input switch state Rec mute (S809)	"L" with REC MUTE switch ON.
21.	P23	Reading of input switch state TAPE 2 CAM A (S981)	
22.	P3φ	Reading of input switch state TAPE 2 STOP (S810)	"L" with TAPE 2 STOP switch ON.
23.	P31	Reading of input switch state TAPE 2 PLAY (S811)	"L" with TAPE 2 PLAY switch ON.
24.	P32	Reading of input switch state TAPE 2 FF (S812)	"L" with TAPE 2 FF switch ON.
25.	P33	Reading of input switch state TAPE 2 REW (S813)	"L" with TAPE 2 REW switch ON.
26.	P4φ	Reading of input switch state TAPE 1 STOP (S814)	"L" with TAPE 1 STOP switch ON.
27.	P41	Reading of input switch state TAPE 1 PLAY (S815)	"L" with TAPE 1 PLAY switch ON.

Terminal No.	Symbol	Name	Function/operation
28.	P42	Reading of input switch state TAPE 1 FF (S816)	"L" with TAPE 1 FF switch ON.
29.	P43	Reading of input switch state TAPE 1 REW (S817)	"L" with TAPE 1 REW switch ON.
30.	P5φ	Reading of input switch state MS (S818)	"L" with music select switch ON.
31.	P51	Reading of input switch state TAPE 1 CAM A (S981)	Refer to terminal number 21.
32.	P52	Capstan motor brake command	"H" pulse when x6 is shifted to x1.
33.	VDD	Power supply terminal	Operative on 4.5 to 5.5 volts.
34.	VMM	Memory power supply terminal	Operative on 4.5 to 5.5 volts.
35.	HLDM	Memory power hold designating terminal	Operative on 4.5 to 5.5 volts.
36.	P53	Capstan motor drive command	"L" with tape inserted.
37.	P6φ	TAPE 1 muting command	"H" when only TAPE 1 is playback mode.
38.	P61	Cont play indication output	"H" with cont play mode.
39.	P62	MS indication output	"H" with music select switch ON.
40.	P63	TAPE 1 PLAY command	"H" with TAPE 1 playback mode.
41.	P7φ	TAPE 1 FF/REW motor CW rotation command	"H" with TAPE 1 PLAY and FF mode.
42.	P71	TAPE 1 FF/REW motor CCW rotation command	"H" with TAPE 1 REW mode.
43.	P72	TAPE 1 drive motor CW rotation command	"H" pulse when TAPE 1 STOP is shifted to PLAY.
44.	P73	TAPE 1 drive motor CCW rotation command	"H" pulse when TAPE 1 is shifted to STOP.

Function/operation
During operation.

Less than 3.5V

ON.

Switch ON.
Switch ON.
Switch ON.
Switch ON.
Switch ON.
Switch ON.

Terminal No.	Symbol	Name	Function/operation
28.	P42	Reading of input switch state TAPE 1 FF (S816)	"L" with TAPE 1 FF switch ON.
29.	P43	Reading of input switch state TAPE 1 REW (S817)	"L" with TAPE 1 REW switch ON.
30.	P5φ	Reading of input switch state MS (S818)	"L" with music select switch ON.
31.	P51	Reading of input switch state TAPE 1 CAM A (S981)	Refer to terminal number 21.
32.	P52	Capstan motor brake command	"H" pulse when x6 is shifted to x1. 
33.	VDD	Power supply terminal	Operative on 4.5 to 5.5 volts.
34.	VMM	Memory power supply terminal	Operative on 4.5 to 5.5 volts.
35.	HLDM	Memory power hold designating terminal	Operative on 4.5 to 5.5 volts.
36.	P53	Capstan motor drive command	"L" with tape inserted.
37.	P6φ	TAPE 1 muting command	"H" when only TAPE 1 is playback mode.
38.	P61	Cont play indication output	"H" with cont play mode.
39.	P62	MS indication output	"H" with music select switch ON.
40.	P63	TAPE 1 PLAY command	"H" with TAPE 1 playback mode.
41.	P7φ	TAPE 1 FF/REW motor CW rotation command	"H" with TAPE 1 PLAY and FF mode.
42.	P71	TAPE 1 FF/REW motor CCW rotation command	"H" with TAPE 1 REW mode.
43.	P72	TAPE 1 drive motor CW rotation command	"H" pulse when TAPE 1 STOP is shifted to PLAY. 
44.	P73	TAPE 1 drive motor CCW rotation command	"H" pulse when TAPE 1 is shifted to STOP. 

Terminal No.	Symbol	Name	Function/operation
45.	P8φ	6x-speed command	"H" with 6x-speed.
46.	P81	1x-speed command	"H" with 1x-speed.
47.	P82	Dubbing command	"H" with dubbing mode.
48.	P83	dbx conversion command	"H" with dbx conversion.
50.	P91	Rec mute command	"H" with REC MUTE SW ON; "H" in modes other than Rec.
51.	P92	Cue/rev command	"H" with Cue/rev mode.
52.	P93	All amp. mute	"H" with FF, REW and STOP mode. "H" with REC, PLAY and Cue/rev mode.
53.	PAφ	Bias oscillation command	"H" about 2msec. after REC command. "H" throughout REC and PLAY. "L" about 100msec. after STOP command. 
54.	PA1	Pause indication output	"H" with pause mode.
55.	PA2	TAPE 2 PLAY command	"H" with TAPE 2 PLAY mode.
56.	PA3	REC command	"H" with REC mode.
57.	PBφ	TAPE 2 FF/REW motor CW rotation command	"H" with TAPE 2 PLAY and FF mode.
58.	PB1	TAPE 2 FF/REW motor CCW rotation command	"H" with TAPE 2 REW mode.
59.	PB2	TAPE 2 drive motor CW rotation command	"H" pulse with STOP → Pause → PLAY. "H" pulse with STOP → PLAY. 
60.	PB3	TAPE 2 drive motor CCW rotation command	"H" pulse with PLAY → Pause → STOP. "H" pulse with PLAY → STOP. 
61.	OSC2	Oscillation element connecting terminal of clock.	Oscillated at about 4MHz. 
62.	OSC1	GND	
63.	TC1	Non connection	Not used.
64.	TCφ	Non connection	Not used.

1 Dolby NR circuit

Condition:

- Record mode/playback mode
- Dolby NR switch...IN/OUT
- Dolby NR select switch...B/C
- Input level controls...MAX

Equipment:

- EVM (Electronic Voltmeter)
- ATT
- Resistor (600Ω)
- AF oscillator
- Oscilloscope

Record side

- Check of the Dolby-B type encoder characteristics
 1. Make connections as shown in fig. 19.
 2. Set the unit to the record mode. (NR select switch is OUT.)
 3. Apply a 1 kHz signal to LINE IN.
 4. Adjust the ATT so that the output level at TP3 (L-CH) and TP4 (R-CH) is 12.3mV.
 5. The output level at pin 21 should be 0dB.
 6. Set the NR select switch to B, and make sure that the output signal level at pin 12 of IC401 (L-CH) and IC402 (R-CH) is +6dB±2dB (753mV).
 7. Set the NR select switch to OUT, and adjust the frequency to 5kHz. The output signal level at pin 21 should be 0dB.
 8. Set the NR select switch to B and make sure that the output signal level at pin 21 of IC401 (L-CH) and IC402 (R-CH) is +8dB±2dB (948mV).
- Check of the Dolby-C type encoder characteristics
 9. Repeat steps 1-5 above.
 10. Set the NR select switch to C and make sure that the output signal level at pin 21 of IC401 (L-CH) and IC402 (R-CH) is 11.5dB±2dB (1.4V).
 11. Set the NR select switch to OUT and adjust the frequency to 5kHz. The output signal at pin 21 should be 0dB.
 12. Set the NR select switch to C and make sure that the output signal level at pin 21 of IC401 (L-CH) and IC402 (R-CH) is 8.5dB±2dB.

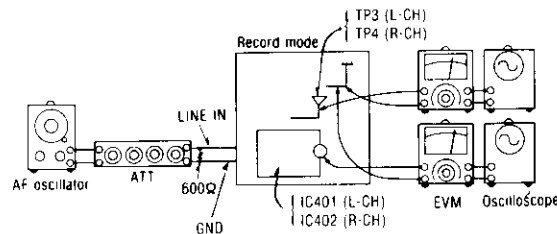


Fig. 19

2 Attack recovery time adjustment (dbx circuit)

Condition:

- Record mode
- Input level control...MAX

Equipment:

- EVM (Electronic Voltmeter)
- ATT
- AF oscillator
- DC voltmeter

Record side

1. Make the connections as shown in fig. 20 and apply 1 kHz -27dB signal from LINE IN, and set the noise reduction selector to dbx IN position.
2. Set the unit to record mode, adjust ATT so that the signal level at C541 (L-CH) and C542 (R-CH) is 300mV.
3. Read voltage on DC voltage meter.

Reference value: 15±0.5mV

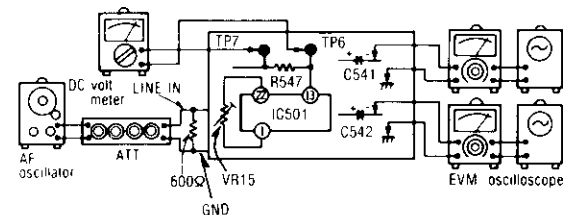
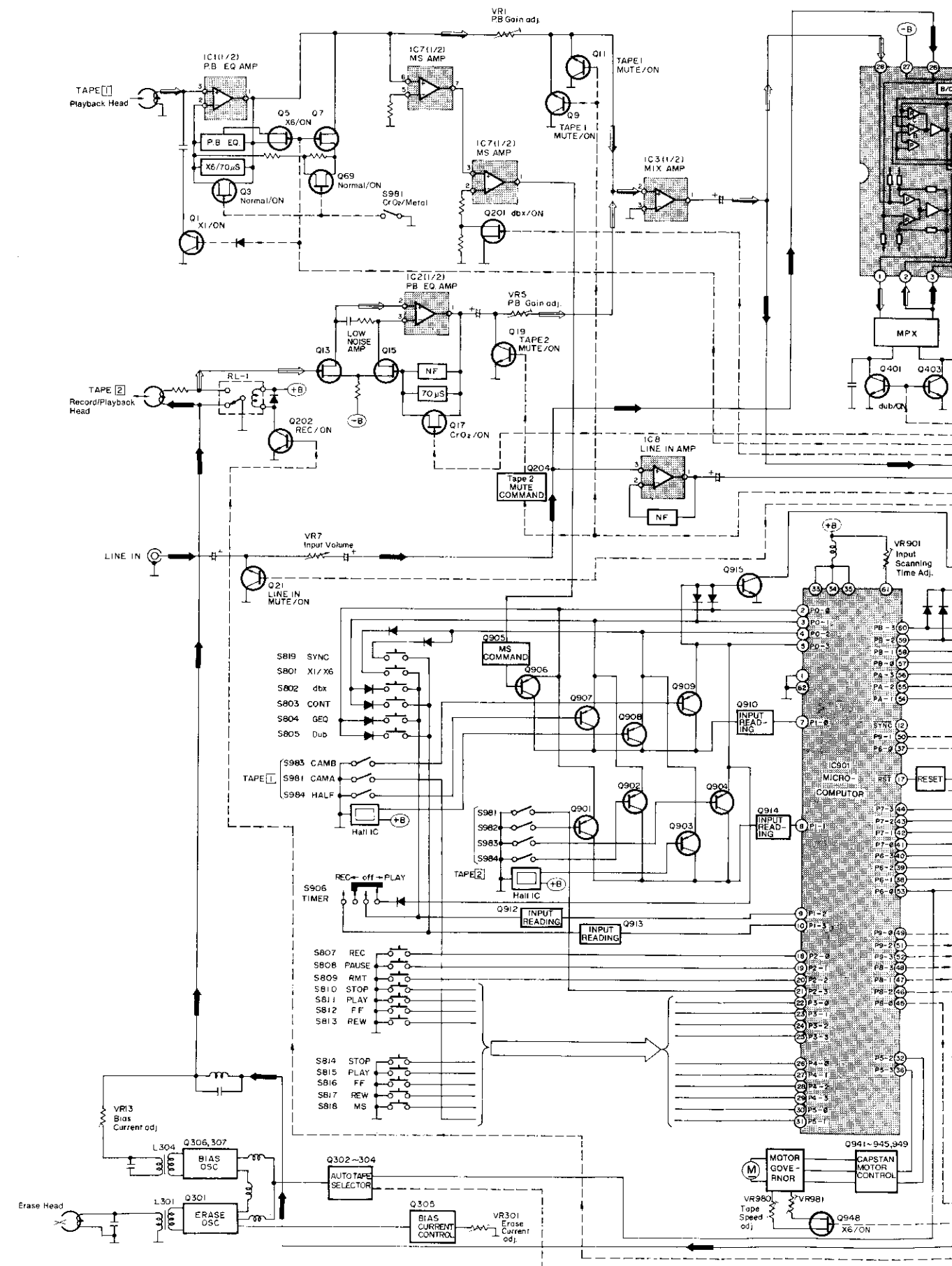


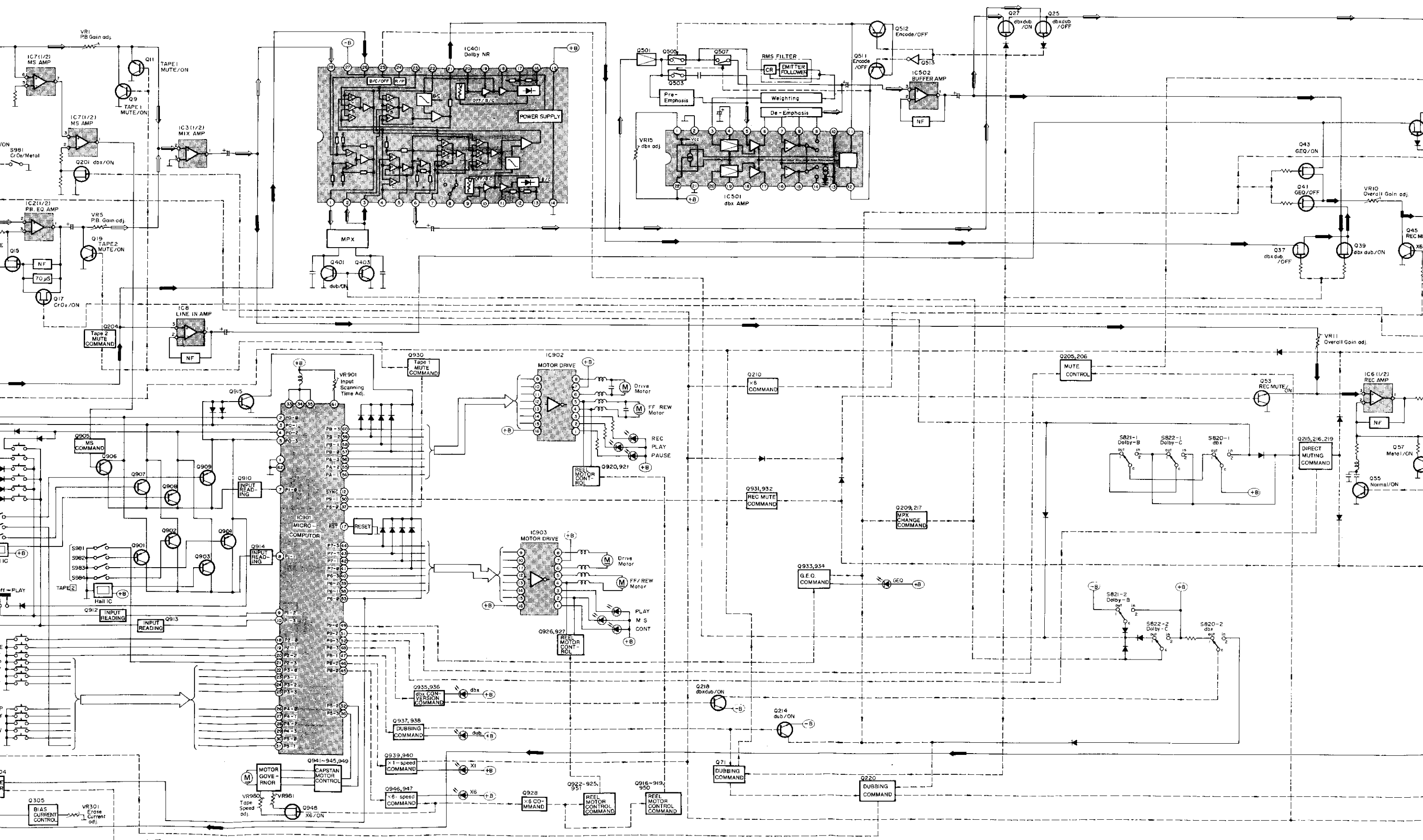
Fig. 20

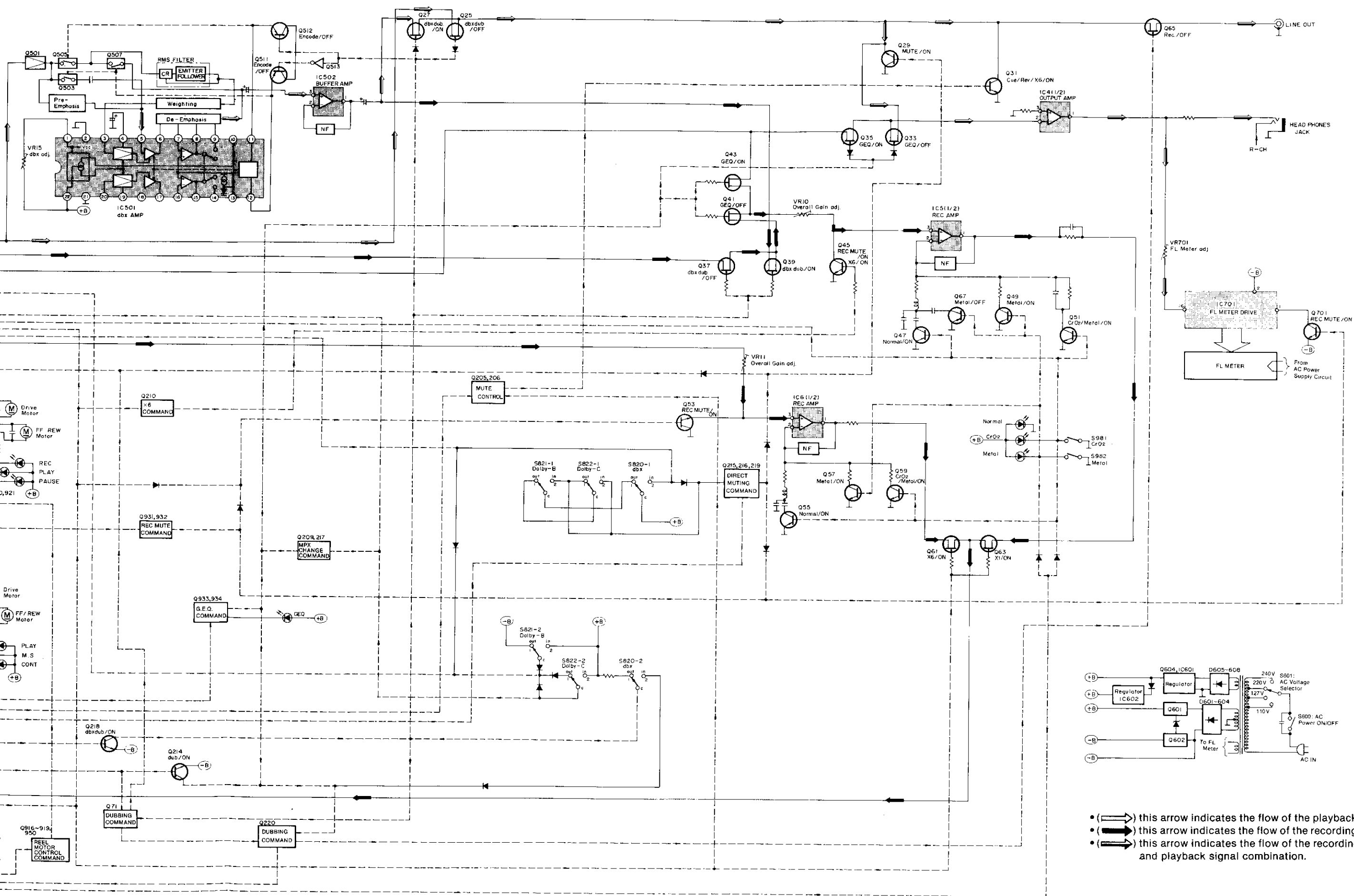
Note:

It is practical to remove the Dolby NR board when adjusting each part on dbx board. In that case, however, apply 1 kHz, 400mV signal from No. 3 pin (L-CH) (No. 1 pin (R-CH) of BB of connector CC on main P.C.B.

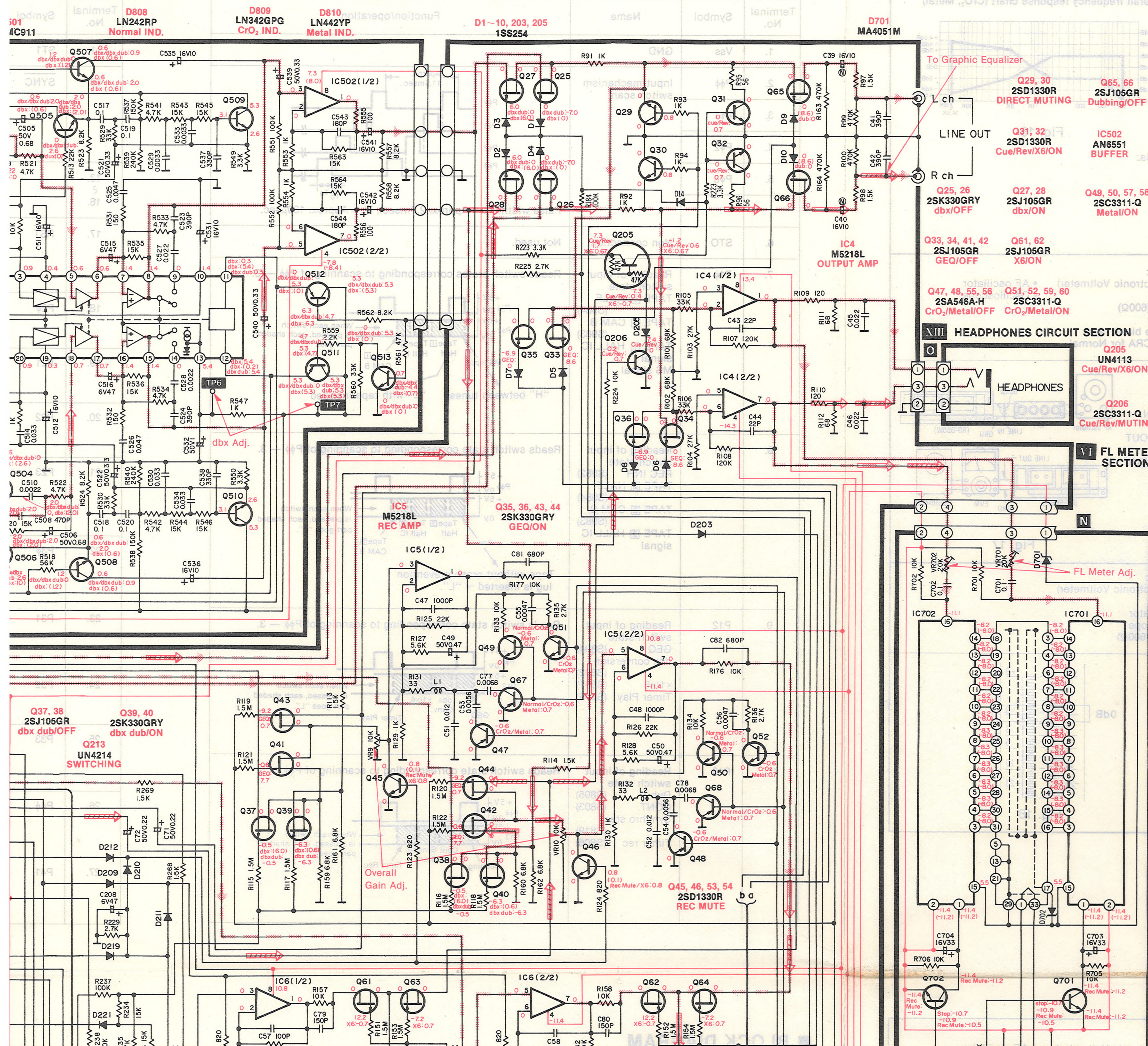
■ BLOCK DIAGRAM







- (→) this arrow indicates the flow of the playback signal.
- (→) this arrow indicates the flow of the recording signal.
- (→) this arrow indicates the flow of the recording signal and playback signal combination.



NOTES:

- S600 : Power switch (shown in ON position).
- S601 : AC power voltage selector.
- S801 : Dubbing speed select switch (shown in $\times 1$ position).
- S802 : dbx dubbing switch (shown in OFF position).
- S803 : Cont. play switch (shown in OFF position).
- S804 : Graphic equalizer switch (shown in OFF position).
- S805 : Dubbing switch (shown in OFF position).
- S806 : Timer switch (shown in OFF position).
- S807 : Tape [2] REC switch (shown in OFF position).
- S808 : Tape [2] PAUSE switch (shown in OFF position).
- S809 : Tape [2] REC MUTE switch (shown in OFF position).
- S810 : Tape [2] STOP switch (shown in OFF position).
- S811 : Tape [2] PLAY switch (shown in OFF position).
- S812 : Tape [2] FF switch (shown in OFF position).
- S813 : Tape [2] REW switch (shown in OFF position).
- S814 : Tape [1] STOP switch (shown in OFF position).
- S815 : Tape [1] PLAY switch (shown in OFF position).
- S816 : Tape [1] FF switch (shown in OFF position).
- S817 : Tape [1] REW switch (shown in OFF position).
- S818 : Tape [1] MS switch (shown in OFF position).
- S819 : Synchro start switch (shown in OFF position).
- S820 : dbx switch (shown in OUT position).
- S821 : Dolby B NR switch (shown in OUT position).
- S822 : Dolby C NR switch (shown in OUT position).
- S981 : CrO₂ tape detection switch (shown in OFF position).
- S982 : Metal tape detection switch (shown in OFF position).

- S983 : Tape [2] rec inhibit switch (shown in OFF position).
- S984 : Half switch (shown in OFF position).
- S985 : Mode switch (shown in OFF position).

Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.

1K = 1,000(Ω), 1M = 1,000k(Ω)

Capacity are in micro-farads (μ F) unless specified otherwise.

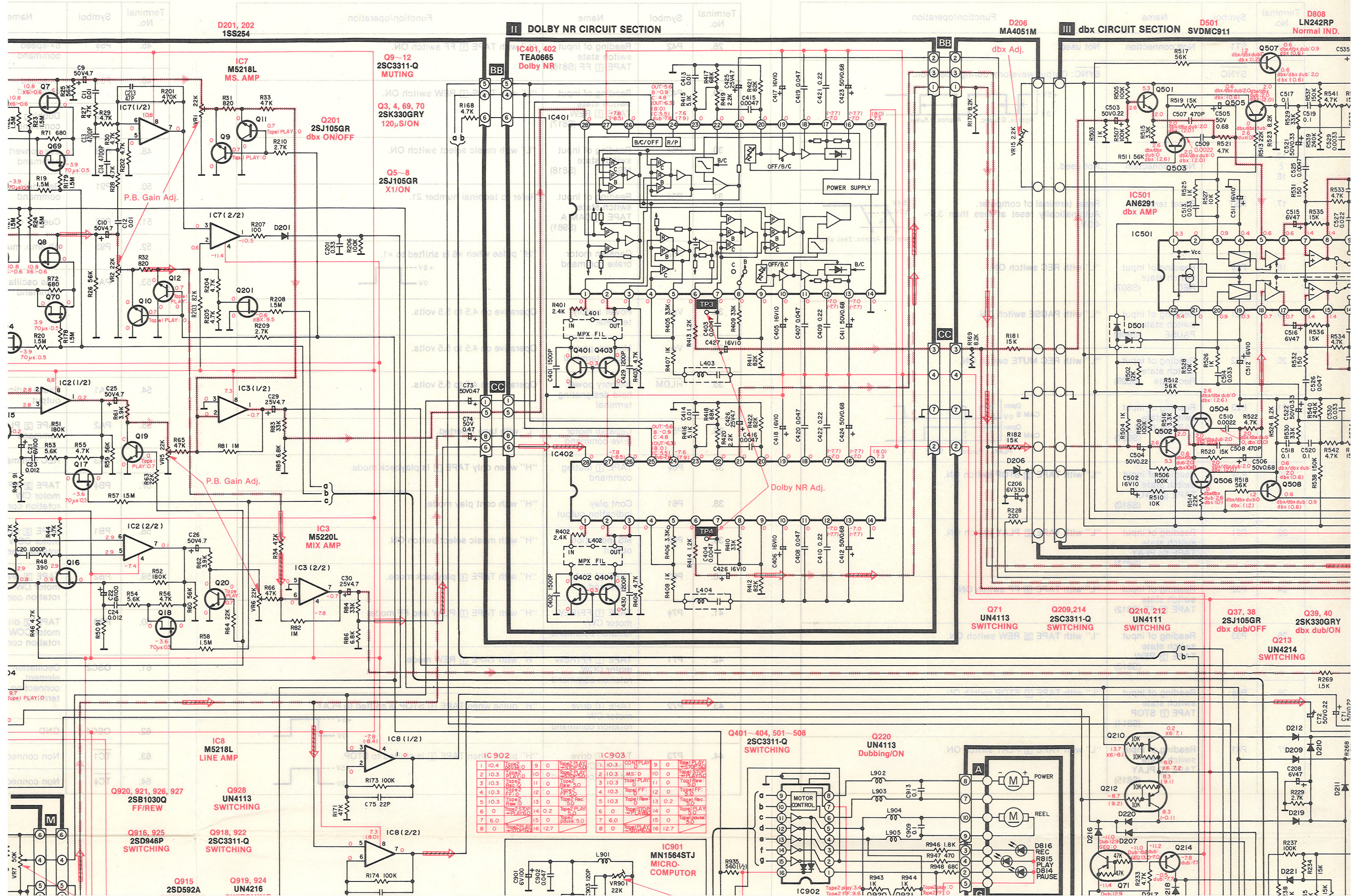
All voltage values shown in circuitry are under no signal condition and playback mode with volume control at minimum position otherwise specified.

() Voltage values at record mode.
 CrO₂ Voltage values at CrO₂ tape mode.
 Metal Voltage values at Metal tape mode.
 Stop Voltage values at Stop mode.
 TAPE Voltage values at Tape monitor mode.
 dbx Voltage values at dbx mode.
 B Voltage values at Dolby B NR mode.
 C Voltage values at Dolby C NR mode.
 OUT Voltage values at NR OUT mode.
 FF/REW Voltage values at FF/REW mode.
 Rec mute Voltage values at Rec mute mode.
 Dub. Voltage values at dubbing mode.
 dbx dub Voltage values at dbx dubbing mode.
 $\times 6 \rightarrow \times 1$ Voltage values at 6 $\times$ -speed $\rightarrow$ 1 $\times$ -speed mode.
 $\times 6$ Voltage values at 6 $\times$ -speed mode.
 GEQ Voltage values at graphic equalizer dubbing mode.
 CONT PLAY Voltage values at continuation playback mode.
 MS Voltage values at music select mode.
 CUE/REV Voltage values at cue/review mode.
 Pause Voltage values at pause mode.
 Play $\rightarrow$ Stop Voltage values at play $\rightarrow$ stop mode.
 Stop $\rightarrow$ Play Voltage values at stop $\rightarrow$ play mode.

For measurement use EVM.
 () indicates B (bias).
 () indicates the flow of the playback signal.
 () indicates the flow of the recording signal.
 () indicates the flow of the dbx dubbing signal.
 () indicates the flow of the equalizer dubbing signal.

Important safety notice
 Components identified by Δ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

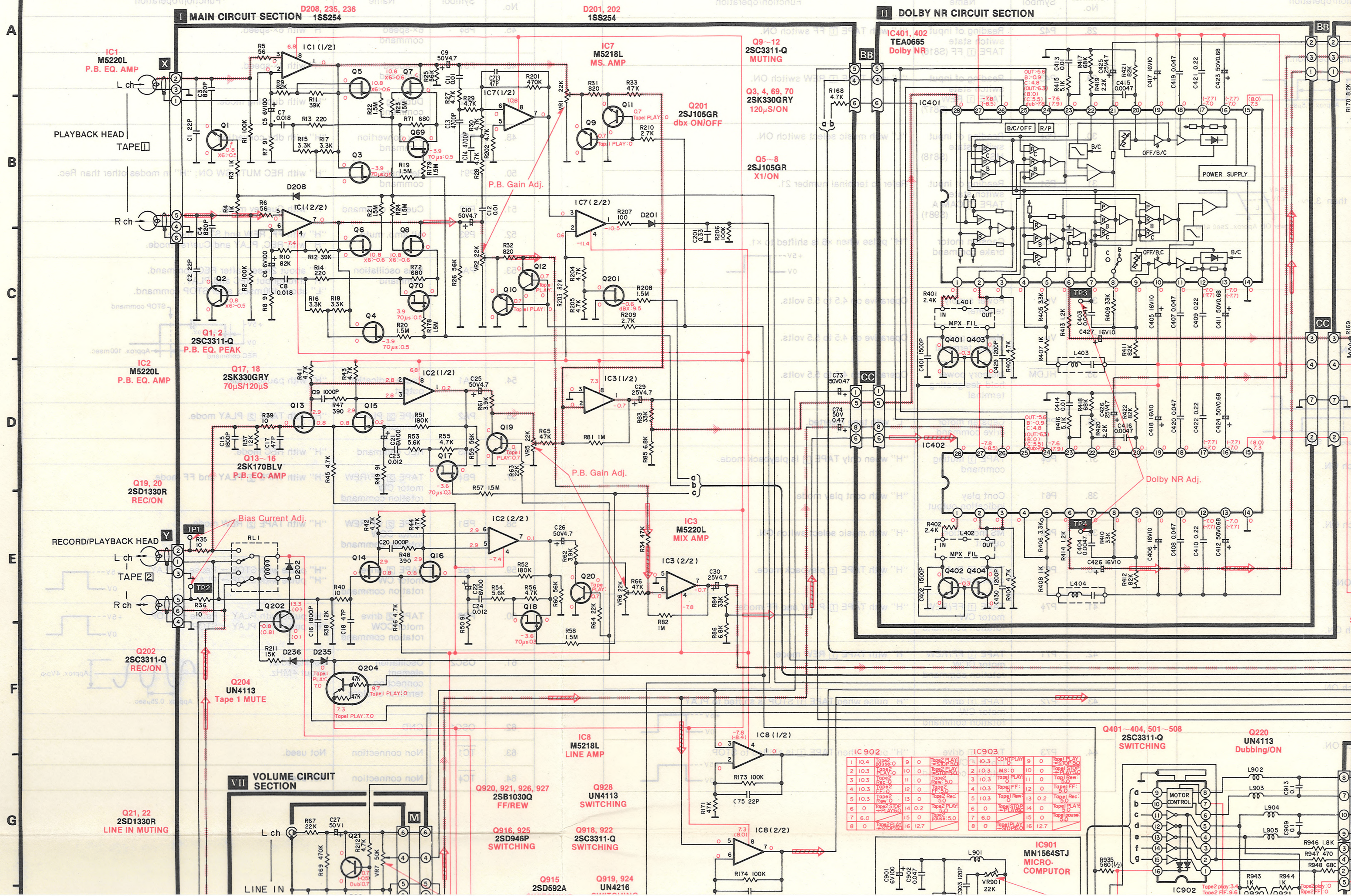
The part no. of diodes mentioned in the schematic diagram

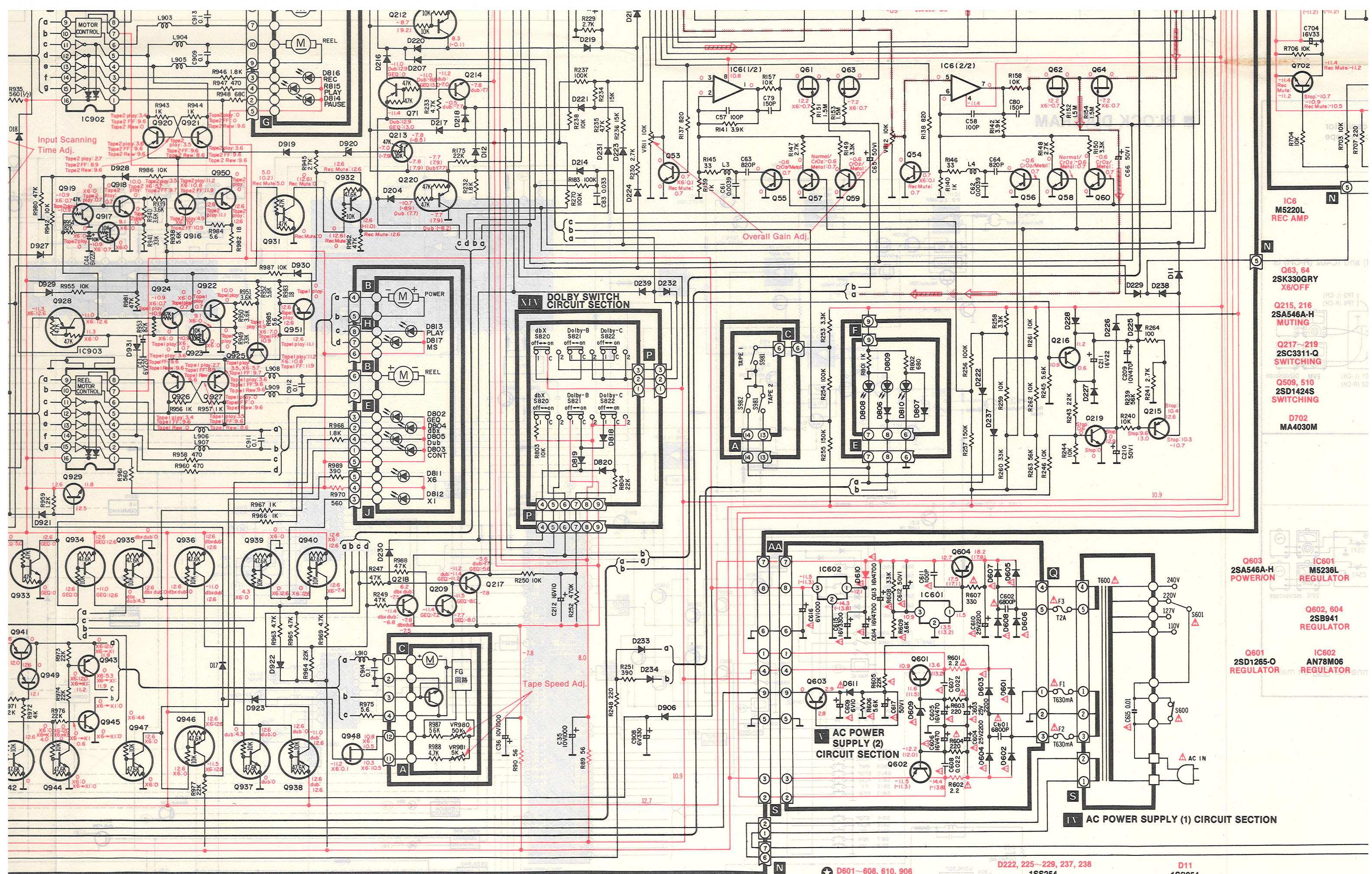


MAIN CIRCUIT SECTION

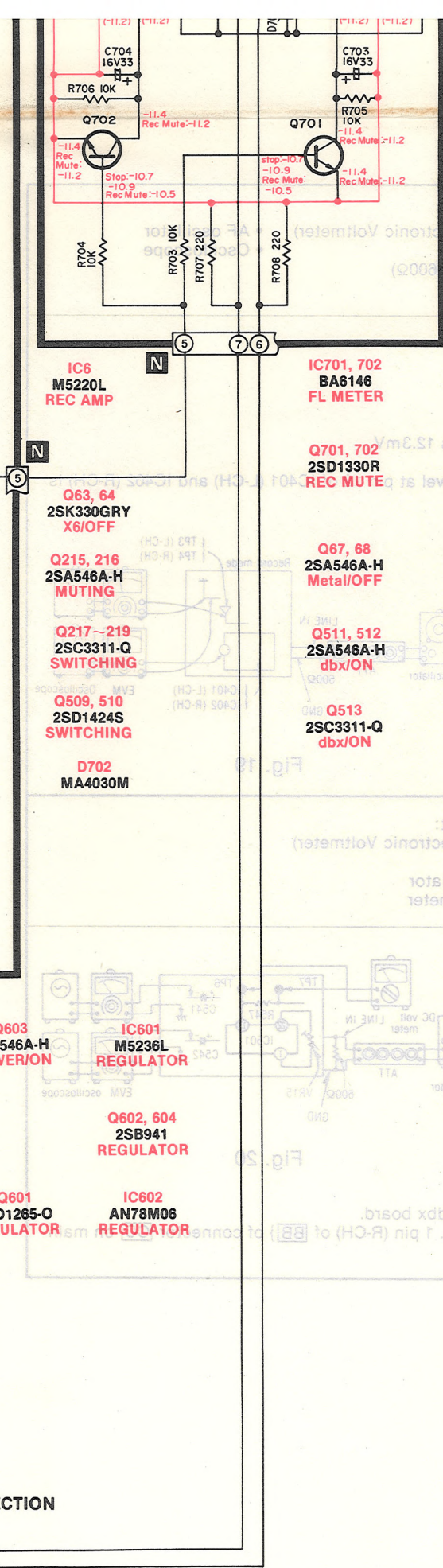
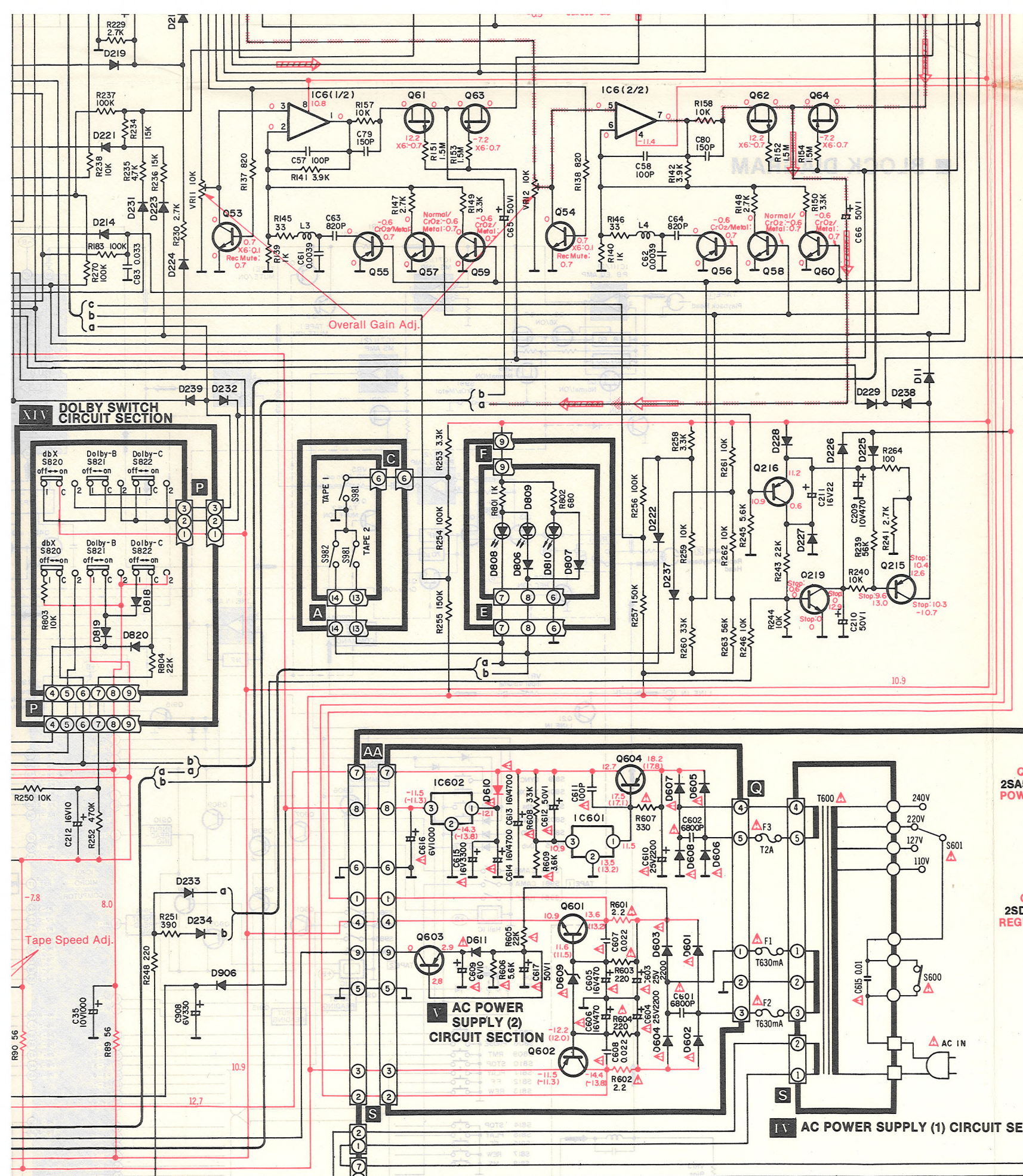


II DOLBY NR CIRCUIT SECTION





D926~931 1SS254 D815 SVGA2202SB1 PLAY D813, 814, 817 SVGPY2222SB1 PLAY/PAUSE/MS D816 SVGPR2222SB1 REC D216~221, 223, 224 1SS254 D811 LN846RP X6 IND. D812 LN346GP X1 IND. D12, 204 1SS254 D207, 209~212 1SS254 D230~234, 239 1SS254 D601~608, 610, 906 1SR35200TB D611, 806, 807 1SS254 D609 MA4220 D222, 225~229, 237, 238 1SS254 D11 1SS254

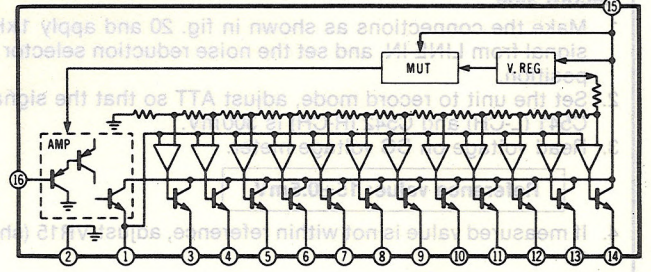


- () indicates the flow of the playback signal.
- () indicates the flow of the recording signal.
- () indicates the flow of the dbx dubbing signal.
- () indicates the flow of the equalizer dubbing signal.
- Important safety notice
- Components identified by **Δ** mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
- The part no. of diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with **⊙** mark the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement parts list.
- The supply parts number is described alone in the replacement parts list.
- This schematic diagram may be modified at any time with the development of new technology.

SPECIFICATIONS

Playback S/N ratio * Test tape...QZZCFM	Greater than 45dB
Overall distortion * Test tape ...QZZCRA for Normal ...QZZCRX for CrO ₂ ...QZZCRZ for Metal	Normal... Less than 3.5% CrO ₂ , Metal... Less than 4%
Overall S/N ratio * Test tape...QZZCRA	Greater than 43dB (without NAB filter)

EQUIVALENT CIRCUIT IC701, 702: BA6146



- 204 1SS254 D207, 209~212 1SS254 D230~234, 239 1SS254
- D601~608, 610, 906 1SR35200TB
- D611, 806, 807 1SS254
- D609 MA4220
- D222, 225~229, 237, 238 1SS254
- D11 1SS254

■ ELECTRICAL PARTS LIST

REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Areas

* [E] For all European areas except United Kingdom.	* [XA] For Asia, Latin America, Middle East and Africa areas.
* [EH] For Holland.	* [XL] For Australia.

• RESISTORS

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
R 1, 2	ERD25TJ104	100k	R 157, 158	ERD25FJ103	10k	R 309	ERD25FJ562	5.6k	R 803	ERD25FJ103	10k
R 3, 4	ERD25FJ102	1k	R 159, 160,			R 310	ERD25TJ473	47k	R 804	ERD25TJ223	22k
R 5, 6	ERD25FJ560	56	R 161, 162	ERD25FJ682	6.8k	R 311	ERD25TJ223	22k	R 901, 902,		
R 7, 8	ERD25FJ910	91	R 163, 164	ERD25TJ474	470k	R 312	ERD25FJ472	4.7k	903, 904,		
R 9, 10	ERD25TJ823	82k	R 168	ERD25FJ472	4.7k	R 313, 314	ERD25TJ333	33k	905, 906,		
R 11, 12	ERD25TJ393	39k	R 169, 170	ERD25FJ822	8.2k	R 315, 316	ERD25FJ100	10	907, 908,		
R 13, 14	ERD25FJ221	220	R 171, 172	ERD25TJ473	47k	R 401, 402	ERD25FJ242	2.4k	909, 910,		
R 15, 16, 17, 18	ERD25FJ332	3.3k	R 173, 174	ERD25TJ104	100k	R 403, 404	ERD25FJ472	4.7k	914	ERD25FJ472	4.7k
R 19, 20, 21,			R 176, 177	ERD25FJ103	10k	R 405, 406	ERD25FJ332	3.3k	R 917	ERD25TJ123	12k
22, 23, 24	ERD25TJ155	1.5M	R 178, 179	ERD25TJ155	1.5M	R 407, 408	ERD25FJ102	1k	R 918	ERD25TJ473	47k
R 25, 26	ERD25TJ563	56k	R 181, 182	ERD25TJ153	15k	R 409, 410	ERD25TJ333	33k	R 919, 920,		
			R 183, 184	ERD25TJ104	100k	R 411, 412	ERD25TJ823	82k	921, 922	ERD25FJ821	820
R 27, 28, 29, 30	ERD25FJ472	4.7k				R 413, 414	ERD25FJ122	1.2k	R 923	ERD25FJ272	2.7k
R 31, 32	ERD25FJ821	820	R 201	ERD25TJ474	470k	R 415, 416	ERD25FJ512	5.1k	R 924	ERD25FJ101	100
R 33, 34	ERD25TJ473	47k	R 202	ERD25FJ472	4.7k	R 417, 418	ERD25TJ683	68k	R 925, 926,		
R 35, 36	ERD25FJ100	10	R 203	ERD25TJ823	82k	R 419, 420	ERD25FJ222	2.2k	927, 928	ERD25FJ821	820
R 37, 38	ERD25TJ123	12k	R 204, 205	ERD25FJ472	4.7k	R 421, 422	ERD25TJ823	82k	R 929, 930,		
R 39, 40	ERD25FJ100	10	R 206	ERD25TJ104	100k				931, 932	ERD25FJ272	2.7k
R 41, 42, 43,			R 207	ERD25FJ101	100	R 502	ERD10TLJ123U	12k	R 933, 934	ERD25FJ103	10k
44, 45, 46	ERD25FJ472	4.7k	R 208	ERD25TJ155	1.5M	R 503, 504	ERD10TLJ102U	1k	R 935	ERD50FJ561	560
R 47, 48	ERD25FJ391	390	R 209	ERD25FJ272	2.7k	R 505, 506,			R 937	ERD25FJ821	820
R 49, 50	ERD25FJ910	91	R 209, 210			R 507, 508	ERD10TLJ104U	100k	R 938	ERD25FJ562	5.6k
R 51, 52	ERD25TJ184	180k	R 211	ERD25TJ153	15k	R 510	ERD10TLJ103U	10k	R 939, 940	ERD25FJ362	3.6k
			R 212	ERD25FJ472	4.7k	R 511, 512	ERD10TLJ563U	56k	R 941	ERD25TJ333	33k
R 53, 54	ERD25FJ562	5.6k				R 513, 514	ERD10TLJ223U	22k	R 942	ERD25FJ103	10k
R 55, 56	ERD25FJ472	4.7k	R 223	ERD25FJ332	3.3k	R 515, 516	ERD10TLJ332U	3.3k			
R 57, 58	ERD25TJ155	1.5M	R 224	ERD25FJ103	10k	R 517, 518	ERD10TLJ563U	56k	R 943, 944	ERD25FJ102	1k
R 59, 60	ERD25TJ563	56k	R 225	ERD25FJ272	2.7k	R 519, 520	ERD10TLJ153U	15k	R 945	ERD25FJ272	2.7k
R 61, 62	ERD25FJ392	3.9k	R 226	ERD25FJ221	220	R 521, 522	ERD10TLJ472U	4.7k	R 946	ERD25FJ182	1.8k
R 65, 66	ERD25TJ473	47k	R 229, 230	ERD25FJ272	2.7k				R 947	ERD25FJ471	470
R 67, 68	ERD25TJ223	22k	R 232	ERD25FJ182	1.8k	R 523, 524	ERD10TLJ822U	8.2k	R 948	ERD25FJ681	680
R 69, 70	ERD25TJ474	470k	R 233	ERD25TJ473	47k	R 525, 526	ERD10TLJ102U	1k	R 949	ERD25TJ333	33k
R 71, 72	ERD25FJ681	680	R 234	ERD25TJ153	15k	R 527, 528	ERD10TLJ103U	10k	R 950, 951	ERD25FJ362	3.6k
R 81, 82	ERD25TJ105	1M	R 235	ERD25FJ472	4.7k	R 529, 530	ERD10TLJ333U	33k	R 952	ERD25FJ562	5.6k
			R 236	ERD25TJ153	15k	R 531, 532	ERD10TLJ151U	150	R 953, 954	ERD25TJ823	82k
R 83, 84	ERD25TJ333	33k				R 533, 534	ERD10TLJ472U	4.7k	R 955	ERD25FJ103	10k
R 85, 86	ERD25FJ682	6.8k	R 237	ERD25TJ104	100k	R 535, 536	ERD10TLJ153U	15k			
R 87, 88	ERD25FJ331	330	R 238	ERD25FJ103	10k	R 537, 538	ERD10TLJ154U	150k	R 956, 957	ERD25FJ102	1k
R 89, 90	ERD51FJ560	56	R 239	ERD25TJ563	56k	R 539, 540	ERD10TLJ244U	240k	R 958	ERD25FJ471	470
R 91, 92, 93, 94	ERD25FJ102	1k	R 240	ERD25FJ102	1k	R 541, 542	EDR10TLJ472U	4.7k	R 959	ERD25FJ122	1.2k
R 95, 96	ERD25FJ560	56	R 241	ERD25FJ272	2.7k				R 960	ERD25FJ471	470
R 97, 98	ERD25FJ152	1.5k	R 243	ERD25TJ223	22k	R 543, 544,			R 961	ERD25FJ561	560
R 99, 100	ERD25TJ474	470k	R 244	ERD25FJ103	10k	R 545, 546	ERD10TLJ153U	15k	R 962	ERD25TJ473	47k
R 101, 102	ERD25TJ683	68k	R 245	ERD25FJ562	5.6k	R 547	ERD10TLJ102U	1k	R 963	ERD25FJ472	4.7k
R 103, 104	ERD25TJ273	27k	R 246	ERD25FJ103	10k	R 549, 550	ERD10TLJ332U	3.3k	R 964	ERD25TJ223	22k
			R 247	ERD25TJ473	47k	R 551, 552	ERD10TLJ104U	100k	R 965	ERD25FJ472	4.7k
R 105, 106	ERD25TJ333	33k	R 248	ERD25FJ221	220	R 553, 554	ERD10TLJ102U	1k	R 966, 967	ERD25FJ102	1k
R 107, 108	ERD25TJ124	120k	R 249	ERD25TJ473	47k	R 555, 556	ERD10TLJ101U	100			
R 109, 110	ERD25FJ121	120	R 250	ERD25FJ103	10k	R 557, 558	ERD10TLJ822U	8.2k	R 968	ERD25FJ182	1.8k
R 111, 112	ERD25FJ680	68	R 251	ERD25FJ391	390	R 559	ERD10TLJ222U	2.2k	R 969	ERD25FJ272	2.7k
R 113, 114	ERD25FJ152	1.5k	R 252	ERD25TJ474	470k	R 560	ERD10TLJ333U	33k	R 970	ERD25FJ561	560
R 115, 116,			R 253	ERD25FJ332	3.3k	R 561	ERD10TLJ473U	47k	R 971	ERD25TJ223	22k
117, 118,			R 254	ERD25TJ104	100k				R 972	ERD25FJ472	4.7k
119, 120,			R 255	ERD25TJ154	150k	R 562	ERD10TLJ822U	8.2k	R 973	ERD25TJ223	22k
121, 122	ERD25TJ155	1.5M	R 256	ERD25TJ104	100k	R 563, 564	ERD10TLJ153U	15k	R 974	ERD25FJ102	1k
R 123, 124	ERD25FJ821	820	R 257	ERD25TJ154	150k	R 601, 602	Δ ERD25FJ2R2	2.2	R 975	ERX1ANJP5R6	5.6
R 127, 128	ERD25FJ562	5.6k				R 603, 604	Δ ERD25FJ221	220	R 977	ERD25TJ223	22k
R 129, 130	ERD25FJ102	1k	R 258	ERD25FJ332	3.3k	R 605	Δ ERD25TJ223	22k	R 980, 981	ERD25TJ473	47k
R 131, 132	ERD25FJ330	33	R 259	ERD25FJ103	10k	R 606	Δ ERD25FJ562	5.6k			
			R 260	ERD25TJ333	33k	R 607	Δ ERD25FJ331	33k	R 982, 983	ERD25FJ180	1.8
R 133, 134	ERD25FJ103	10k	R 261, 262	ERD25FJ103	10k	R 608	Δ ERD25TJ333	33k	R 984, 985	ERD25FJ5R6	5.6
R 135, 136	ERD25FJ272	2.7k	R 263	ERD25TJ563	56k	R 609	Δ ERD25FJ362	3.6k	R 986, 987	ERD25FJ103	10k
R 137, 138	ERD25FJ821	820	R 264	ERD25FJ101	100	R 701, 702,			R 988	ERD25TJ473	47k
R 139, 140	ERD25FJ102	1k	R 268, 269	ERD25FJ152	1.5k	703, 704,			R 989	ERD25FJ391	390
R 141, 142	ERD25FJ392	3.9k	R 270, 271	ERD25TJ104	100k	705, 706	Δ ERD25FJ103	10k	R 990, 991	ERD25FJ101	100
R 145, 146	ERD25FJ330	33	R 301	ERD25FJ1R0	10				R 997	ERD52TJ563	56k
R 147, 148	ERD25FJ272	2.7k	R 302	ERD25FJ100	10				R 998	ERD52TJ472	4.7k
R 149, 150	ERD25FJ332	3.3k	R 303, 304	ERD25FJ562	5.6k	R 707, 708	ERD25FJ221	220	J 501 ~ 529	ERD10TLOU	0
R 151, 152,			R 305, 306	ERD25FJ100	10	R 801	ERD25FJ102	1k	J 531 ~ 533	ERD10TLOU	0
153, 154	ERD25TJ155	1.5M	R 307, 308	ERD25FJ222	2.2k	R 802	ERD25FJ681	680			

• CAPACITORS

Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value	Ref. No.	Part No.	Value
C 1, 2	ECCD1H220K	22p	C 67, 68	ECCD2H101K	100p	C 409, 410	ECQM1H224JZ	0.22	C 537, 538	ECCD1H331K	330p
C 3, 4	ECKD1H821KB	820p	C 69, 70	ECCD1H101K	100p	C 411, 412	ECEA50MR68RB	0.68			
C 5, 6	ECEA0JU101	100	C 71, 72	ECEA1HU2R2	2.2	C 413, 414	ECQB1H103JZ	0.01	C 539, 540	ECEA1HUR33	0.33
C 7, 8	ECQB1H183JZ	0.018	C 73, 74	ECEA1HUR47	0.47	C 415, 416	ECQB1H472JZ	4700p	C 541, 542	ECEA1CU100	10
C 9, 10	ECEA1HU4R7	4.7	C 75, 76	ECCD1H220K	22p	C 417, 418	ECEA1CU100	10	C 543, 544	ECKD1H181KB	180p
C 11, 12	ECFDD103KX	0.01	C 77, 78	ECQB1H682JZ	6800p	C 419, 420	ECQM1H473JZ	0.047	C 601, 602	Δ ECKD2H682	6800p
C 13, 14	ECKD1H472ZF	4700p	C 79, 80	ECKD1H151KB	150p	C 421, 422	ECQM1H224JZ	0.22	C 603, 604	Δ ECEA1EU222	2200
C 15, 16	ECFDD182KV	1800p	C 81, 82	ECKD1H681KB	680p	C 423, 424	ECEA50MR68RB	0.68	C 605, 606	Δ ECEA1CU471	470
C 17, 18	ECKD1H470K	47p	C 83	ECQM1H333JZ	0.033	C 425, 426	ECEA1EU4R7	4.7	C 607, 608	Δ ECKD1H223ZF	0.022
C 19, 20	ECCD1H102KB	1000p	C 201	ECQM1H334JZ	0.33	C 427, 428	ECEA1CU100	10	C 609	Δ ECEA1CU100	10
									C 610	Δ ECEA1EU222	2200
									C 611	Δ ECCD1H101K	100p
C 21, 22	ECEA0JU101	100	C 206	ECEA0JU331	330	C 429, 430	ECKD1H122KB	1200p	C 612	Δ ECEA1HU010	1
C 23, 24	ECQB1H123JZ	0.012	C 208	ECEA0JU470	47	C 502	ECEA1CK100	10	C 613, 614	Δ ECEA1CS472	4700
C 25, 26	ECEA1HU4R7	4.7	C 209	ECEA1AU471	470	C 503, 504	ECEA1HUR22	0.22	C 615	Δ ECEU2A103MF	0.01
C 27, 28	ECEA1HU010	1	C 210	ECEA1HU010	1	C 505, 506	ECEA50MR68RB	0.68	C 616	Δ ECEA0JU102	1000
C 29, 30	ECEA1EU4R7	4.7	C 211	ECEA1CU220	22	C 507, 508	ECCD1H471J	470p	C 617	Δ ECEA1HU010	1
C 33, 34, 35, 36	ECEA1AU102	1000	C 212	ECEA1CU100	10	C 509, 510	ECQB1H223JZ	0.022	C 701, 702	ECQM1H104JZ	0.1
C 37, 38	ECEA0JU221	220	C 213	ECCD1H470K	47p	C 511, 512	ECEA1CU100	10	C 703, 704	ECEA1CU330	33
C 39, 40	ECEA1CN100	10	C 301	ECOP1153JZ	0.015	C 513, 514	ECQM1H333JZ	0.033	C 901	ECEA0JU101	100
C 41, 42	ECKD1H391KB	390p	C 302	ECFDD153KX	0.015	C 515, 516	ECEA0JU470	47	C 902	ECFDD473KX	0.047
C 43, 44	ECCD1H220K	22p	C 303	ECFDD822KV	8200p	C 517, 518, 519, 520	ECQM1H104JZ	0.1	C 903	ECCD1H121K	120p
C 45, 46	ECKD1H223ZF	0.022	C 304	ECEA1HF100	10	C 521, 522	ECEA50MR33R	0.33	C 904	ECEA1HU010	1
C 47, 48	ECKD1H102KB	1000p	C 305	ECQP1221JZ	220p	C 523, 524	ECCD1H391J	390p	C 905, 906, 907	ECKD1H102KB	1000p
C 49, 50	ECEA1HU47	0.47	C 306	ECFDD332KV	3300p	C 525, 526	ECQB1H472JZ	4700p	C 908	ECEA0JU331	330
C 51, 52	ECQB1H123JZ	0.012	C 307	ECFDD103KX	0.01	C 527, 528	ECQB1H223JZ	0.022			
C 53, 54	ECQB1H562JZ	5600p	C 308	ECFDD332KV	3300p	C 529, 530	ECQB1H332JZ	3300p			
C 55, 56	ECFDD472KV	4700p	C 309	ECEA1HF100	10	C 531	ECEA1CU100	10			
C 57, 58	ECCD1H101K	100p	C 401, 402	ECKD1H152KB	1500p	C 532	ECEA1HN010S	1			
C 61, 62	ECQB1H392JZ	3900p	C 403, 404	ECQB1H472JZ	4700p	C 533, 534	ECQB1H332JZ	3300p			
C 63, 64	ECKD1H821KB	820p	C 405, 406	ECEA1CU100	10	C 535, 536	ECEA1CU100	10			
C 65, 66	ECEA1HU010	1	C 407, 408	ECQM1H473JZ	0.047						

- CAPACITORS

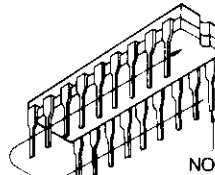
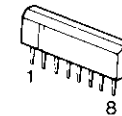
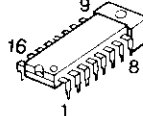
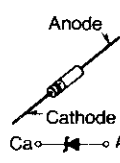
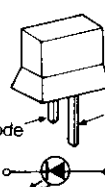
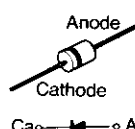
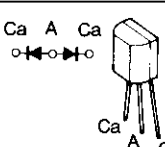
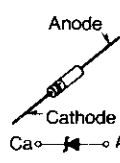
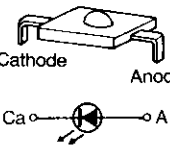
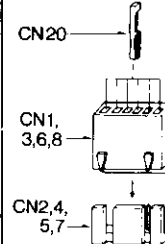
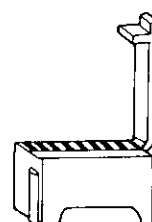
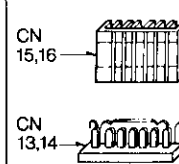
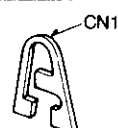
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C 1, 2	ECCD1H220K	22p	C 67, 68	ECCD2H101K	100p	C 409, 410	ECQM1H224JZ	0.22	C 537, 538	ECCD1H331K	330p
C 3, 4	ECKD1H621KB	820p	C 69, 70	ECCD1H101K	100p	C 411, 412	ECEA50MR68RB	0.68			
C 5, 6	ECEA0JU101	100	C 71, 72	ECEA1HU0R2	2.2	C 413, 414	ECQB1H103JZ	0.01	C 539, 540	ECEA1HUR33	0.33
C 7, 8	ECQB1H183JZ	0.018	C 73, 74	ECEA1HUR47	0.47	C 415, 416	ECQB1H472JZ	4700p	C 541, 542	ECKD1CU100	10
C 9, 10	ECEA1HU4R7	4.7	C 75, 76	ECCD1H220K	22p	C 417, 418	ECEA1CU100	10	C 543, 544	ECKD1H181KB	180p
C 11, 12	ECFDD103KX	0.01	C 77, 78	ECQB1H682JZ	6800p	C 419, 420	ECQM1H473JZ	0.047	C 601, 602	Δ ECKD2H682	6800p
C 13, 14	ECKD1H472ZF	4700p	C 79, 80	ECKD1H151KB	150p	C 421, 422	ECQM1H224JZ	0.22	C 603, 604	Δ ECEA1EU222	2200
C 15, 16	ECFDD182KV	1800p	C 81, 82	ECKD1H681KB	680p	C 423, 424	ECEA50MR68RB	0.68	C 605, 606	Δ ECEA1CU471	470
C 17, 18	ECCD1H470K	47p	C 83	ECQM1H333JZ	0.033	C 425, 426	ECEA1EU4R7	4.7	C 607, 608	Δ ECKD1H223ZF	0.022
C 19, 20	ECKD1H102KB	1000p	C 201	ECQM1H334JZ	0.33	C 427, 428	ECEA1CU100	10	C 609	Δ ECEA1CU100	10
									C 610	Δ ECEA1EU222	2200
									C 611	Δ ECCD1H101K	100p
C 21, 22	ECEA0JU101	100	C 206	ECEA0JU331	330	C 429, 430	ECKD1H122KB	1200p			
C 23, 24	ECQB1H123JZ	0.012	C 208	ECEA0JU470	47	C 502	ECEA1CKR100	10			
C 25, 26	ECEA1HU4R7	4.7	C 209	ECEA1AU471	470	C 503, 504	ECEA1HKR22	0.22	C 612	Δ ECEA1HU010	1
C 27, 28	ECEA1HU010	1	C 210	ECEA1HU010	1	C 505, 506	ECEA50MR68R	0.68	C 613, 614	Δ ECEA1CS472	4700
C 29, 30	ECEA1EU4R7	4.7	C 211	ECEA1CU220	22	C 507, 508	ECCD1H471J	470p	C 615	Δ ECEU2A103MF	0.01
C 33, 34, 35, 36	ECEA1AU102	1000	C 212	ECEA1CU100	10	C 509, 510	ECQB1H223JZ	0.022	C 616	Δ ECEA0JU102	1000
C 37, 38	ECEA0JU221	220	C 213	ECCD1H470K	47p	C 511, 512	ECEA1CU100	10	C 617	Δ ECEA1HU010	1
C 39, 40	ECEA1CN100	10	C 301	ECQP1153JZ	0.015	C 513, 514	ECQM1H333JZ	0.033	C 701, 702	ECQM1H104JZ	0.1
C 41, 42	ECKD1H391KB	390p	C 302	ECFDD153KX	0.015	C 515, 516	ECEA0JU470	47	C 703, 704	ECEA1CU330	33
C 43, 44	ECCD1H220K	22p	C 303	ECFDD822KV	8200p	C 517, 518			C 901	ECEA0JU101	100
						519, 520	ECQM1H104JZ	0.1	C 902	ECFDD473KX	0.047
C 45, 46	ECKD1H223ZF	0.022	C 304	ECEA1HF100	10				C 903	ECCD1H121K	120p
C 47, 48	ECKD1H102KB	1000p	C 305	ECQP1221JZ	220p	C 521, 522	ECEA50MR33R	0.33			
C 49, 50	ECEA1HUR47	0.47	C 306	ECFDD332KV	3300p	C 523, 524	ECCD1H391J	390p	C 904	ECEA1HU010	1
C 51, 52	ECQB1H123JZ	0.012	C 307	ECFDD103KX	0.01	C 525, 526	ECQB1H472JZ	4700p	C 905, 906,		
C 53, 54	ECQB1H562JZ	5600p	C 308	ECFDD332KV	3300p	C 527, 528	ECQB1H223JZ	0.022	907	ECKD1H102KB	1000p
C 55, 56	ECFDD472KV	4700p	C 309	ECEA1HF100	10	C 529, 530	ECQB1H332JZ	3300p	C 908	ECEA0JU331	330
C 57, 58	ECCD1H101K	100p	C 401, 402	ECKD1H152KB	150p	C 531	ECEA1CU100	10	C 909, 911,		
C 61, 62	ECQB1H392JZ	3900p	C 403, 404	ECQB1H472JZ	4700p	C 532	ECEA1HN010S	1	912, 913,		</

Part No.	Value
ERD25FJ103	10k
ERD25TJ223	22k
ERD25FJ472	4.7k
ERD25TJ123	12k
ERD25TJ473	47k
ERD25FJ821	820
ERD25FJ272	2.7k
ERD25FJ101	100
ERD25FJ821	820
ERD25FJ272	2.7k
ERD25FJ103	10k
ERD50FJ561	560
ERD25FJ821	820
ERD25FJ562	5.6k
ERD25FJ362	3.6k
ERD25TJ333	33k
ERD25FJ103	10k
ERD25FJ102	1k
ERD25FJ272	2.7k
ERD25FJ182	1.8k
ERD25FJ471	470
ERD25FJ681	680
ERD25TJ333	33k
ERD25FJ362	3.6k
ERD25FJ562	5.6k
ERD25TJ823	82k
ERD25FJ103	10k
ERD25FJ102	1k
ERD25FJ471	470
ERD25FJ122	1.2k
ERD25FJ471	470
ERD25FJ561	560
ERD25TJ473	47k
ERD25FJ472	4.7k
ERD25TJ223	22k
ERD25FJ472	4.7k
ERD25FJ102	1k
ERD25FJ182	1.8k
ERD25FJ272	2.7k
ERD25FJ561	560
ERD25TJ223	22k
ERD25FJ472	4.7k
ERD25TJ223	22k
ERD25FJ102	1k
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ERD25TJ223	22k
ERD25TJ473	47k
ERD25FJ180	18
ERD25FJ5R6	5.6
ERD25FJ103	10k
ERD25TJ473	47k
ERD25FJ391	390
ERD25FJ101	100
ERD52TJ563	56k
ERD52TJ472	4.7k
ERD10TLOU	0
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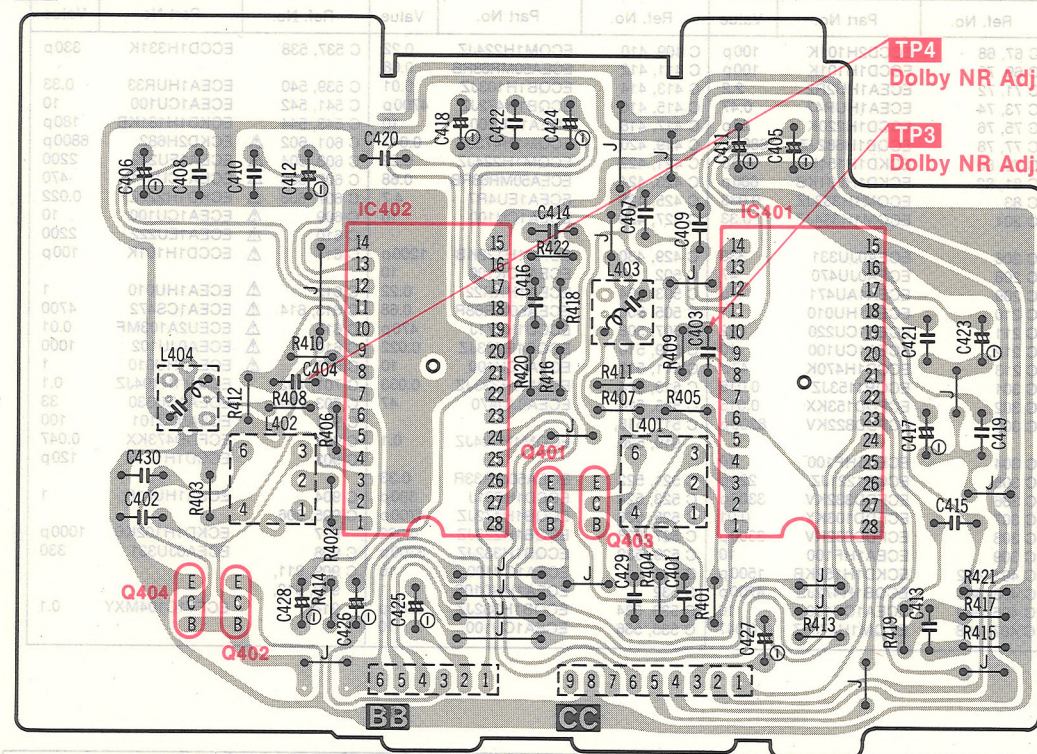
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INTEGRATED CIRCUITS														
IC 1, 2, 3	M5220L	Q 61, 62	2SJ105GR	Q 923	UN4211	D 609	Δ MA4220	COILS	L 1, 2	QLQX2722D	Peaking Coil			
IC 4, 5	M5218L	Q 63, 64	2SK330GRY	Q 924	UN4216	D 610	Δ SM112		L 3, 4	SLOXS61-1D	Choke Coil			
IC 6	M5220L	Q 65, 66	2SJ105GR	Q 925	2SD946P	D 611	Δ 1SS254		L 5, 6	QLQX2722D	Peaking Coil			
IC 7, 8	M5218L	Q 67, 68	2SA1309Q	Q 926, 927	2SB1030Q	D 701	MA4051M		L 301	QLB0198KA	Erase Oscillation Coil			
IC 401, 402	TEA0665	Q 69, 70	2SK330GRY	Q 928	UN4113	D 702	MA4030M		L 302, 303					
IC 501	AN6291	Q 71	UN4113			D 801, 802, 803, 804, 805, 806, 807	1SS254							
IC 502	AN6551	Q 201	2SJ105GR	Q 929	2SD14230	D 808	LN242RP			QLQX2722D	Peaking Coil			
IC 601	M5236L	Q 202	2SC3311-Q	Q 930	UN4214	D 809	LN342GPMS		L 304	SL09C15-Z	Bias Oscillation Coil			
IC 602	AN78M06	Q 204, 205	UN4113	Q 931	UN4213	D 810	LN442YPMS		L 305	QLQX2722D	Peaking Coil			
IC 701, 702	BA6146	Q 206, 209	2SC3311-Q	Q 932	UN4114	D 811	LN846RP		L 401, 402	QLM9Z10K	MPX Coil			
		Q 210, 212	UN4111	Q 933	UN4213									
		Q 213	UN4214	Q 934	UN4114									
		Q 214	2SC3311-Q	Q 935	UN4214	D 812	LN346GP							
IC 801, 802	DN6838-S	Q 215, 216	2SA1309Q	Q 936	UN4114	D 813, 814	SVGPY2222SB1			ELM7Q306A	Skewing Network			
IC 901	MN1564STJ	Q 217, 218, 219	2SC3311-Q	Q 937	UN4214	D 815	SVGAY2202SB1		L 901, 902, 903, 904, 905, 906, 907, 908, 909, 910	ELEH101KA	Choke Coil			
IC 902, 903	AN6270	Q 220	UN4113	Q 938	UN4114	D 816	SVGPR2222SB1							
		Q 301, 302	2SD592A	Q 939	UN4214	D 817	SVGPV2222SB1							
				Q 940	UN4114	D 818, 819, 820	1SS254							
				Q 941	2SA684-RNC	D 901, 902, 903, 904, 905	1SS254							
				Q 942	UN4214		1SS254							
				Q 943	2SA684-RNC	D 906	Δ SM112	Z 901, 902, 903, 904, 905	EXBEQ4472K	FL 1	SADBGB269Z			
				Q 944	UN4214	D 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919	1SS254	Z 907, 908, 909	EXBEQ4272K					
				Q 945	2SC3311-Q	D 920	MA4100M							
				Q 946	UN4114									
				Q 947	UN4214									
				Q 948	2SK330GRY									
				Q 949, 950, 951	2SA1309Q	D 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932	1SS254							
TRANSISTORS														
Q 1, 2	2SC3311-Q	Q 303	2SA1309Q											
Q 3, 4	2SK330GRY	Q 304	2SC3311-Q											
Q 5, 6, 7, 8	2SJ105GR	Q 305	2SB1030Q											
Q 9, 10, 11, 12	2SC3311-Q	Q 306, 307	2SD592A											
		Q 401, 402, 403, 404	2SC3311-Q											
Q 13, 14, 15, 16	2SK170BLV	Q 501, 502, 503, 504, 505, 506, 507, 508	2SC3311-Q											
Q 17, 18	2SK330GRY	Q 509, 510	2SD1424R											
Q 19, 20, 21, 22	2SD1330R	Q 511, 512	2SA1309Q											
		Q 513	2SC3311-Q											
Q 25, 26	2SK330GRY	Q 601	2SD1265-0											
Q 27, 28	2SJ105GR													
Q 29, 30, 31, 32	2SD1330R	Q 602	2SB941											
		Q 603	2SA1309Q											
Q 33, 34	2SJ105GR	Q 604	2SB941											
Q 35, 36	2SK330GRY	Q 701, 702	2SD1330R											
Q 37, 38	2SJ105GR	Q 901, 902, 903, 904	2SA1309Q											
Q 39, 40	2SK330GRY	Q 905	UN4213											
Q 41, 42	2SJ105GR	Q 906, 907, 908, 909	912, 913, 914											
Q 43, 44	2SK330GRY	Q 910, 911, 912, 913, 914	UN4214											
Q 45	2SD1330R	Q 915	2SD592A											
Q 47	2SA1309Q	Q 916	2SD946P											
Q 48	2SA1309Q													
Q 49, 50, 51, 52	2SC3311-Q	Q 917	UN4211											
		Q 918	2SC3311-Q											
Q 53, 54	2SD1330R	Q 919	UN4216											
Q 55, 56	2SA1309Q	Q 920, 921	2SB1030Q											
Q 57, 58, 59, 60	2SC3311-Q	Q 922	2SC3311-Q											
					</									

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
S 803	SSG20-4	Push Switch (Cont. Play)	JACK			CN 4	QJP1922TN	6 Pin Plug
S 804	SSG20-5	Push Switch (Graphic Equalizer Dubbing)				CN 5	QJP1923TN	9 Pin Plug
S 805	SSG20-3	Push Switch (Dubbing)				CN 6	QJS1923TN	9 Pin Socket
S 806	QSS1306H	Timer Switch	J 1	SFDYG5A237P	Headphones Jack	CN 7	QJP1925TN	15 Pin Plug
S 807, 808, 809, 810, 811, 812, 813	SSG13	Tape [2] Operation Switches	RELAY			CN 8	QJS1925TN	15 Pin Socket
S 814, 815, 816, 817, 818, 819	SSG13	Tape [1] Operation Switches				CN 9	SJS5327	Jumper Connector (3 Pin)
S 820, 821, 822	SSH484-1	NR Switch				CN 10	SJS5519	Jumper Connector (5 Pin)
S 981, 982, 983, 984	QSB0296C	Leaf Switch (CrO ₂ , Metal, Rec Inhibit, Half)	RL 1	SFDYG5A273P	Relay	CN 11	SJS5707	Jumper Connector (7 Pin)
S 985	QSB0295C	Leaf Switch (Mode)	CONNECTORS			CN 12	SJS5903	Jumper Connector (9 Pin)
						CN 13	SJT3607	6 Pin Post
						CN 14	SJT3901	9 Pin Post
						CN 15	SJS5625	6 Pin Socket
						CN 16	SJS5901	9 Pin Socket
			CN 1	QJS1920TN	2 Pin Socket	CN 17	QJT1090	Check Pin
			CN 2	QJP1920TN	3 Pin Plug	CN 18	SJT777	Pin Terminal
			CN 3	QJS1922TN	6 Pin Socket	CN 20	QJT1054	Contact

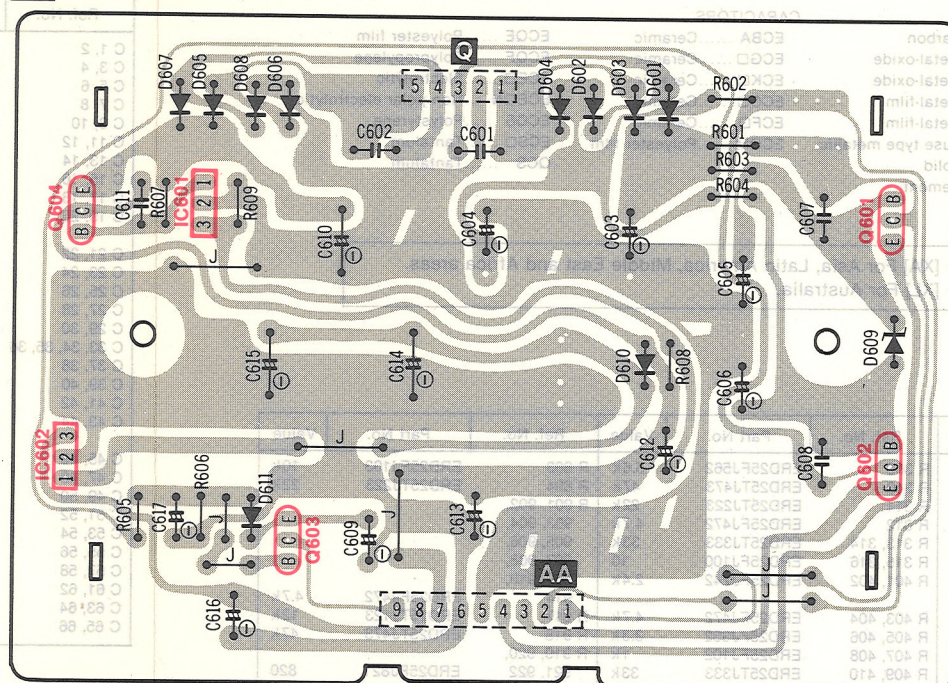
■ TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

M5218L, M5219L, AN6551	AN 6270	 NO.1				AN 78 M 06																															
		<table> <tr><td>BA6146</td><td>16 Pin</td></tr> <tr><td>AN6291</td><td>22 Pin</td></tr> <tr><td>TEA0665</td><td>28 Pin</td></tr> <tr><td>MN1564STJ</td><td>64 Pin</td></tr> </table>				BA6146	16 Pin	AN6291	22 Pin	TEA0665	28 Pin	MN1564STJ	64 Pin																								
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TEA0665	28 Pin																																				
MN1564STJ	64 Pin																																				
M 5236 L	2SA1309Q, 2SC3311-Q, UN4111, UN4113, UN4114, UN4213, UN4214, UN4211, UN4216	2SB1030-Q, 2SD592-A, 2SC1384A-R, 2SA684-RNC	2SK170BLV, 2SK330GRY, 2SJ105GR	2SD1330-R, 2SD1423-O, 2SD1424-S	2SB941, 2SD1265-O																																
																																					
SM112, 1SS254	SVDMC911	 MA4220, MA4051M, MA4100H, MA4030M				<table> <tr><td>LN242RP</td><td>RED</td></tr> <tr><td>LN342GPG</td><td>GRN</td></tr> <tr><td>LN346GP</td><td>GRN</td></tr> <tr><td>LN846RP</td><td>RED</td></tr> <tr><td>LN442YP</td><td>YEL</td></tr> </table>	LN242RP	RED	LN342GPG	GRN	LN346GP	GRN	LN846RP	RED	LN442YP	YEL																					
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	<table> <tr><td>SVGPY2222SB1</td><td>YEL</td></tr> <tr><td>SVGPR2222SB1</td><td>RED</td></tr> <tr><td>SVGAY2202SB1</td><td>YEL</td></tr> </table>	SVGPY2222SB1	YEL	SVGPR2222SB1	RED	SVGAY2202SB1	YEL					<table> <tr><td>2 Pin</td><td>CN1</td><td>QJS1920TN</td><td>CN2</td><td>QJP1920TN</td></tr> <tr><td>6 Pin</td><td>CN3</td><td>QJS1922TN</td><td>CN4</td><td>QJP1922TN</td></tr> <tr><td>9 Pin</td><td>CN5</td><td>QJP1923TN</td><td>CN6</td><td>QJS1923TN</td></tr> <tr><td>15 Pin</td><td>CN7</td><td>QJP1925TN</td><td>CN8</td><td>QJS1925TN</td></tr> <tr><td></td><td>CN20</td><td>QJT1054</td><td></td><td></td></tr> </table>	2 Pin	CN1	QJS1920TN	CN2	QJP1920TN	6 Pin	CN3	QJS1922TN	CN4	QJP1922TN	9 Pin	CN5	QJP1923TN	CN6	QJS1923TN	15 Pin	CN7	QJP1925TN	CN8	QJS1925TN		CN20	QJT1054		
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	CN20	QJT1054																																			
	<table> <tr><td>CN9</td><td>SJS5327</td><td>3 Pin</td></tr> <tr><td>CN10</td><td>SJS5519</td><td>5 Pin</td></tr> <tr><td>CN11</td><td>SJS5707</td><td>7 Pin</td></tr> <tr><td>CN12</td><td>SJS5903</td><td>9 Pin</td></tr> </table>	CN9	SJS5327	3 Pin	CN10	SJS5519	5 Pin	CN11	SJS5707	7 Pin	CN12	SJS5903	9 Pin					<table> <tr><td>6 Pin</td><td>CN13</td><td>SJT3607</td><td>CN15</td><td>SJS5625</td></tr> <tr><td>9 Pin</td><td>CN14</td><td>SJT3901</td><td>CN16</td><td>SJS5901</td></tr> </table>	6 Pin	CN13	SJT3607	CN15	SJS5625	9 Pin	CN14	SJT3901	CN16	SJS5901									
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	<table> <tr><td>CN17</td><td>QJT1090</td></tr> </table>	CN17	QJT1090					<table> <tr><td>CN18</td><td>SJT777</td></tr> </table>	CN18	SJT777																											
CN17	QJT1090																																				
CN18	SJT777																																				

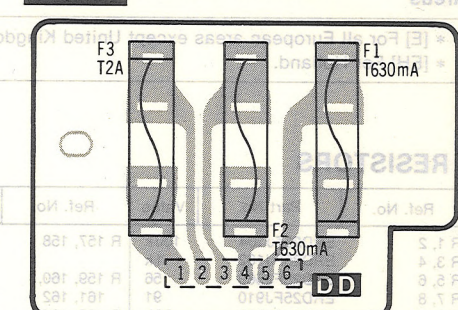
II DOLBY NR P.C.B.



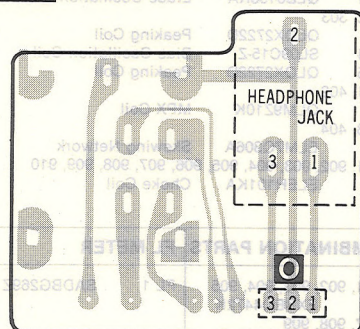
V AC POWER SUPPLY (2) P.C.B.



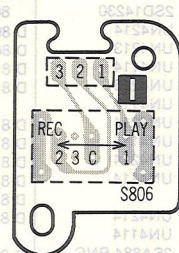
XVII FUSE P.C.B.



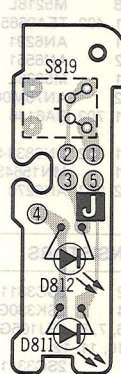
XIII HEADPHONES P.C.B.



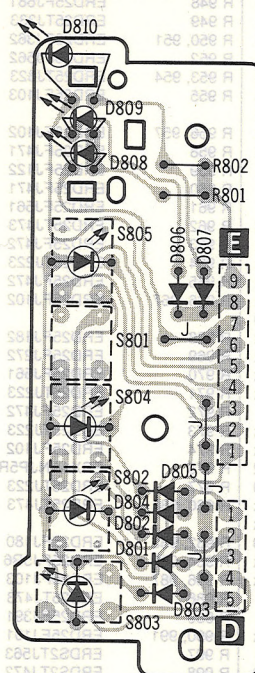
XII TIMER SWITCH P.C.B.



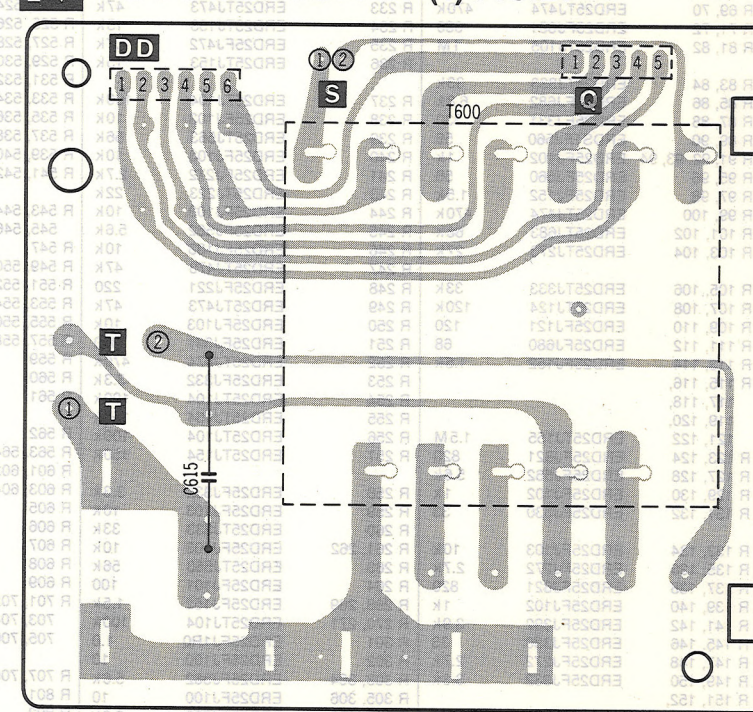
X SYNCHRO SWITCH P.C.B.



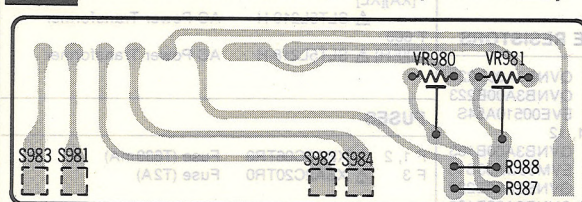
XI DUBBING SWITCH P.C.B.



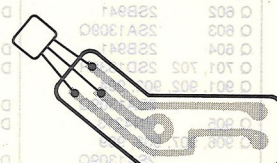
IV AC POWER SUPPLY (1) P.C.B.



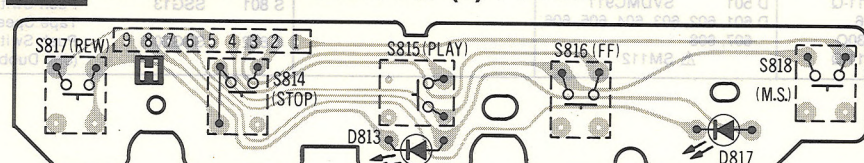
XV MECHANISM P.C.B. (TAPE 2)



XVI HALL IC P.C.B. (TAPE 1, 2)

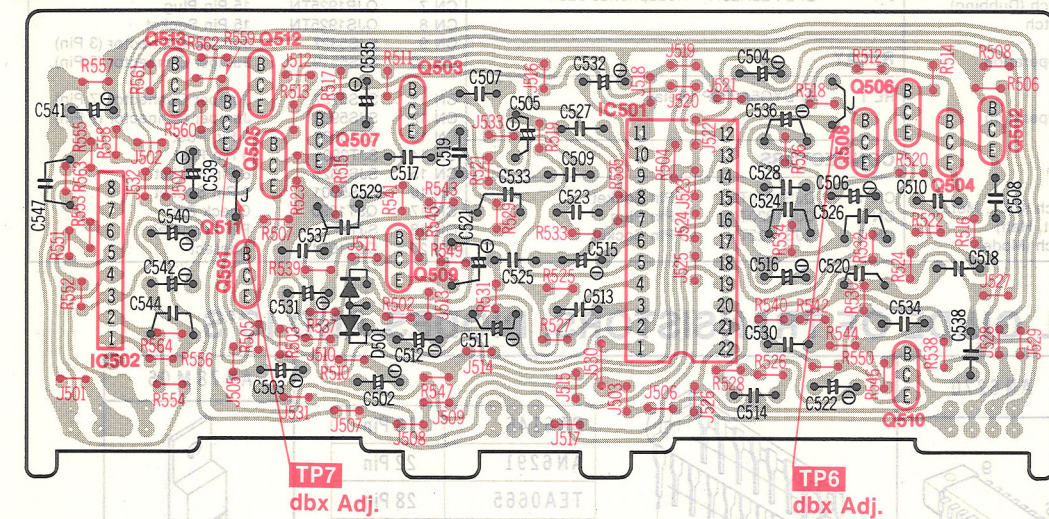


VIII OPERATION SWITCH (1) P.C.B.

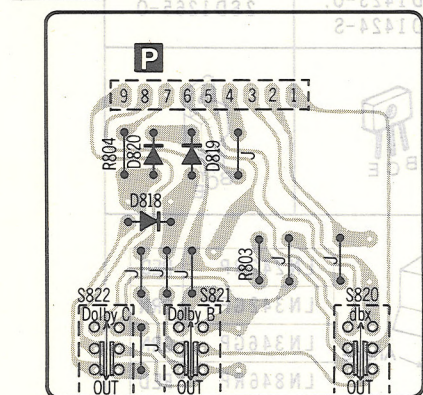


PRINTED CIRCUIT BOARD

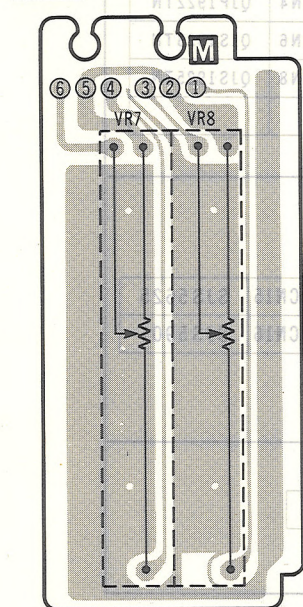
III dbx P.C.B.



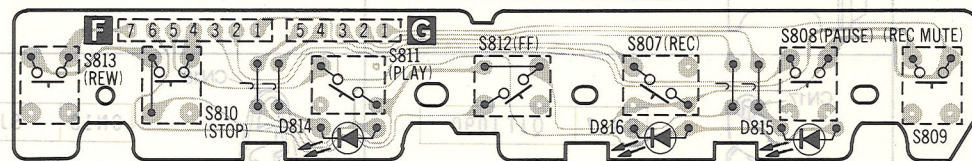
XIV DOLBY SWITCH P.C.B.



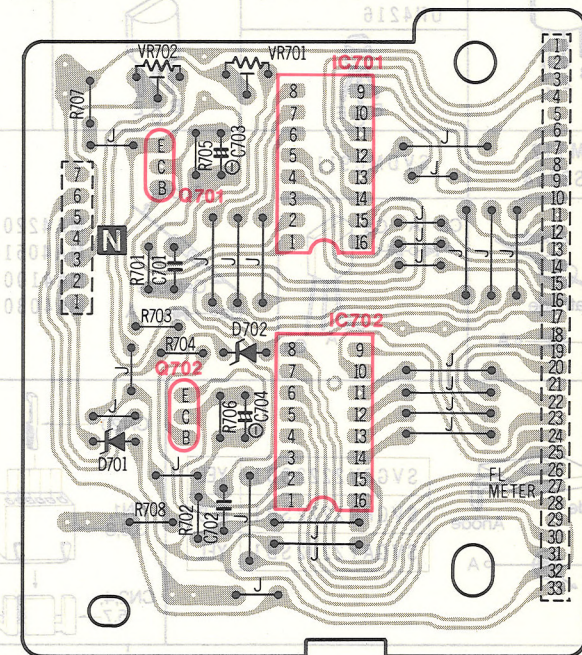
VII VOLUME P.C.B.



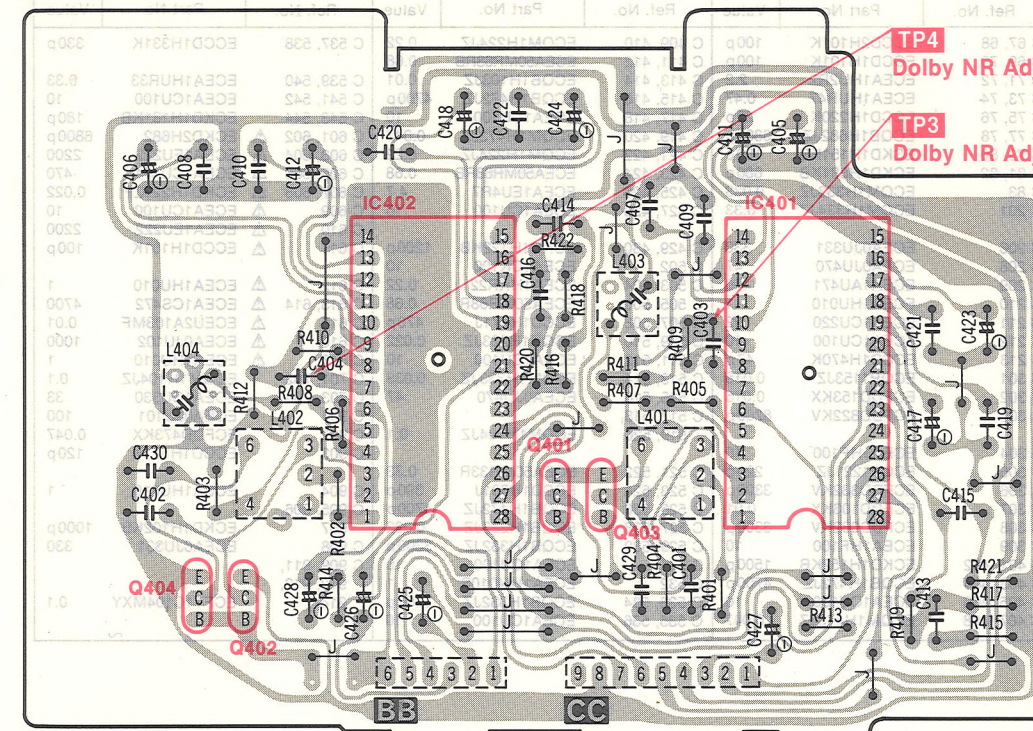
IX OPERATION SWITCH (2) P.C.B.



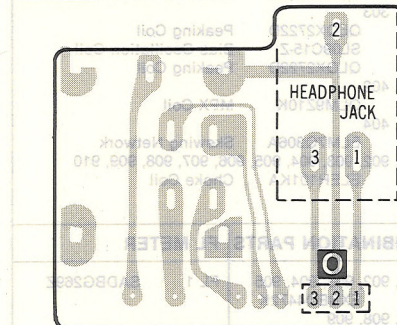
VI FL METER P.C.B.



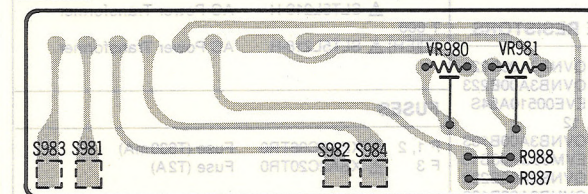
II DOLBY NR P.C.B.



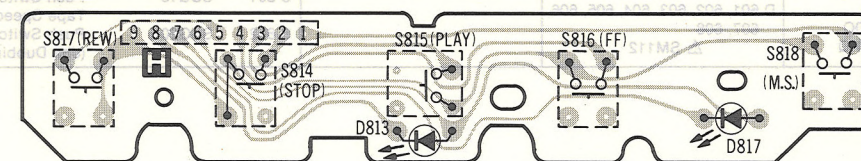
XIII HEADPHONES P.C.B.



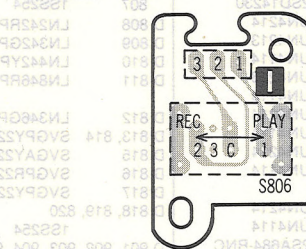
XV MECHANISM P.C.B. (TAPE 2)



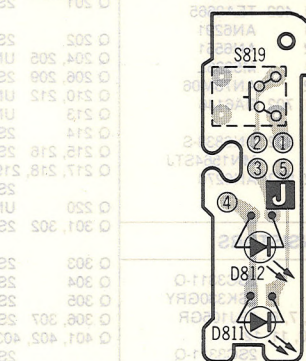
VIII OPERATION SWITCH (1) P.C.B.



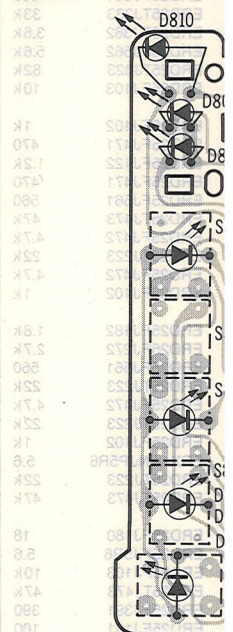
XII TIMER SWITCH P.C.B.



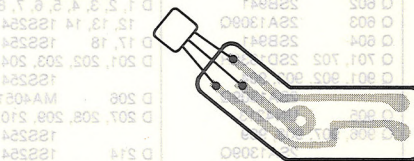
X SYNCHRO SWITCH P.C.B.

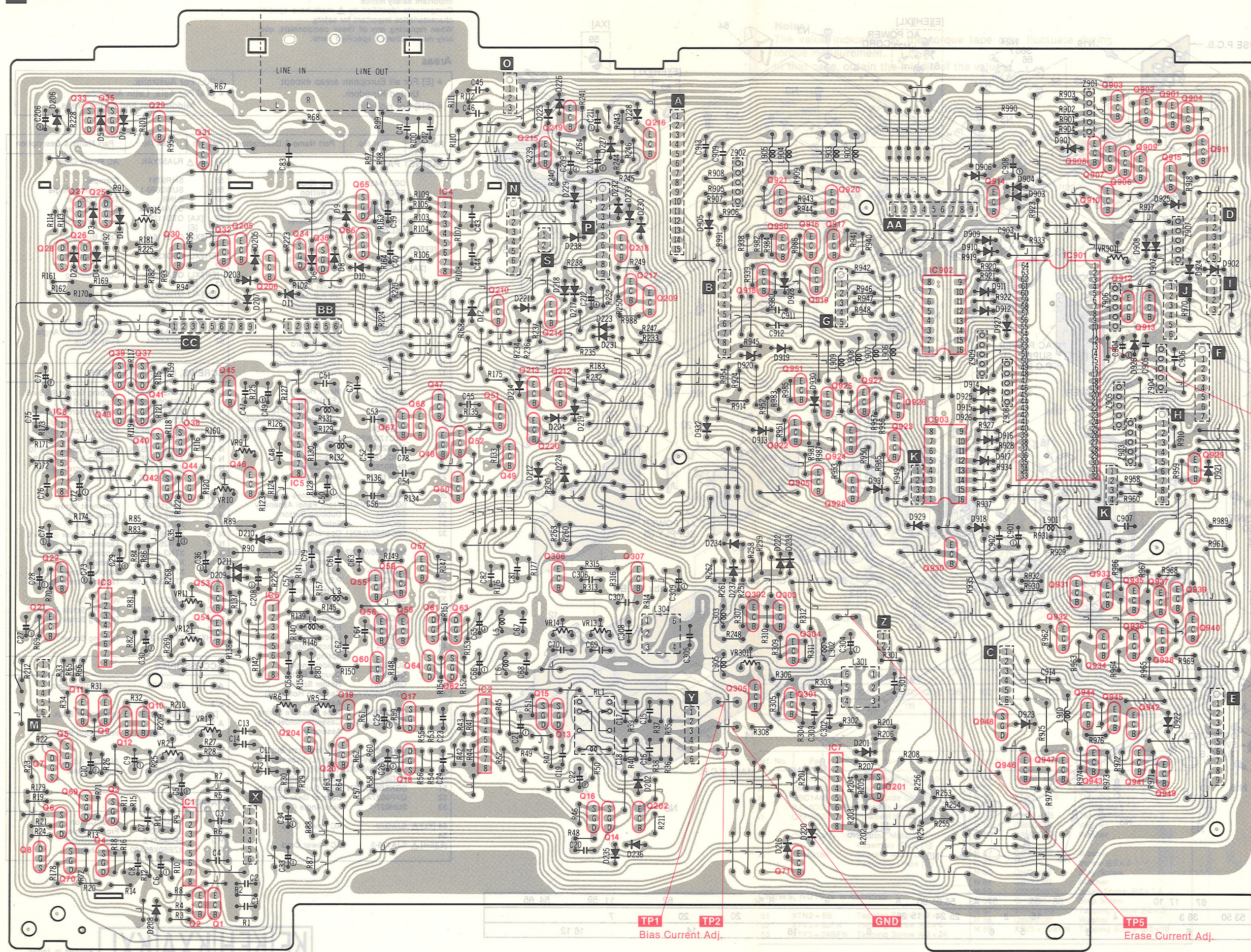


XI DUBBING

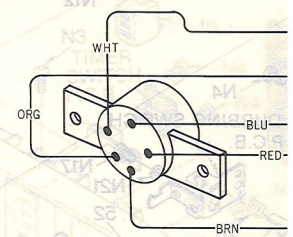
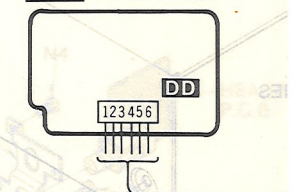


XVI HALL IC P.C.B. (TAPE 1, 2)





XVII FUSE P.C.B.



S601: AC Voltage Select

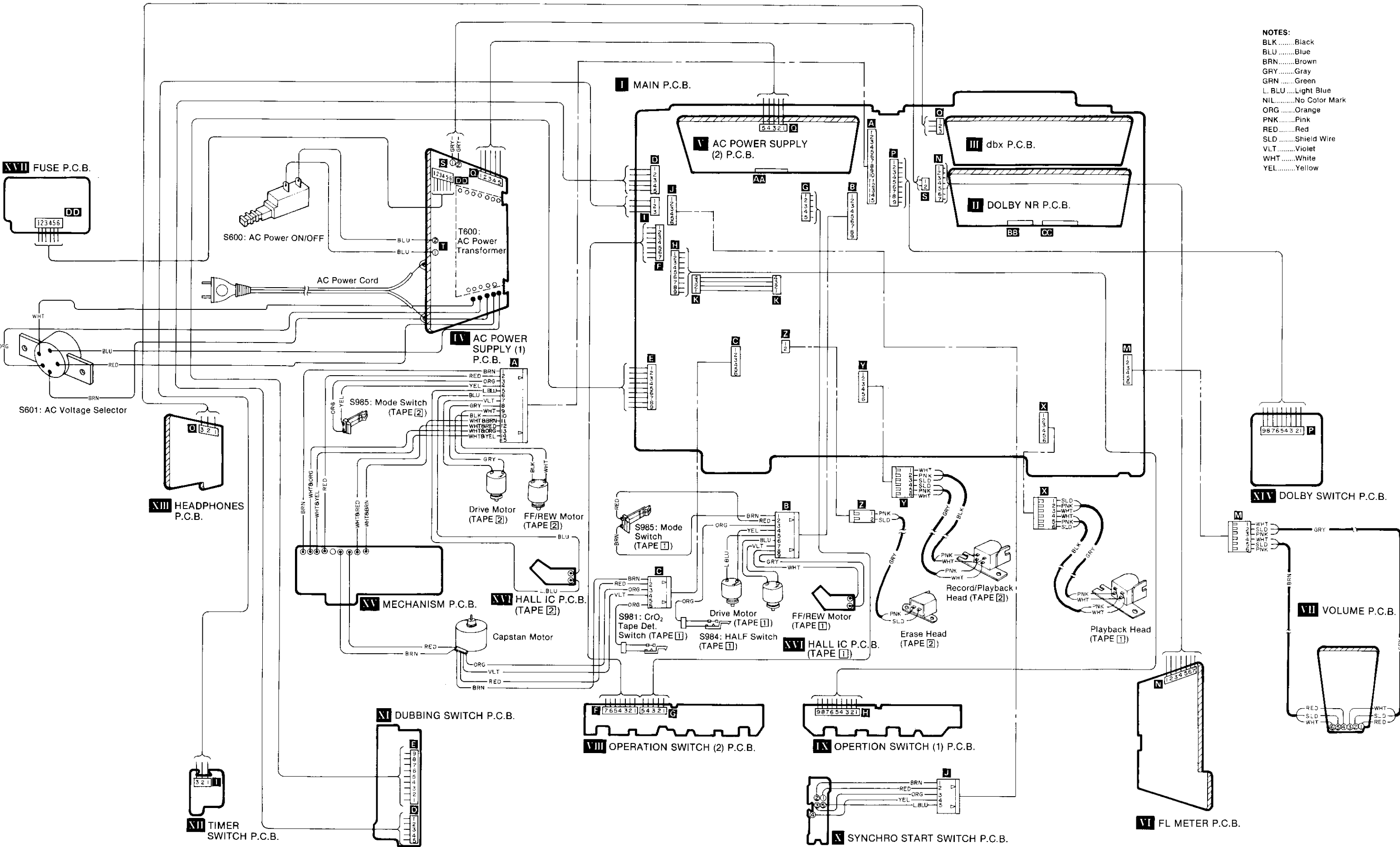
TP1 Bias Current Adj.

TP2

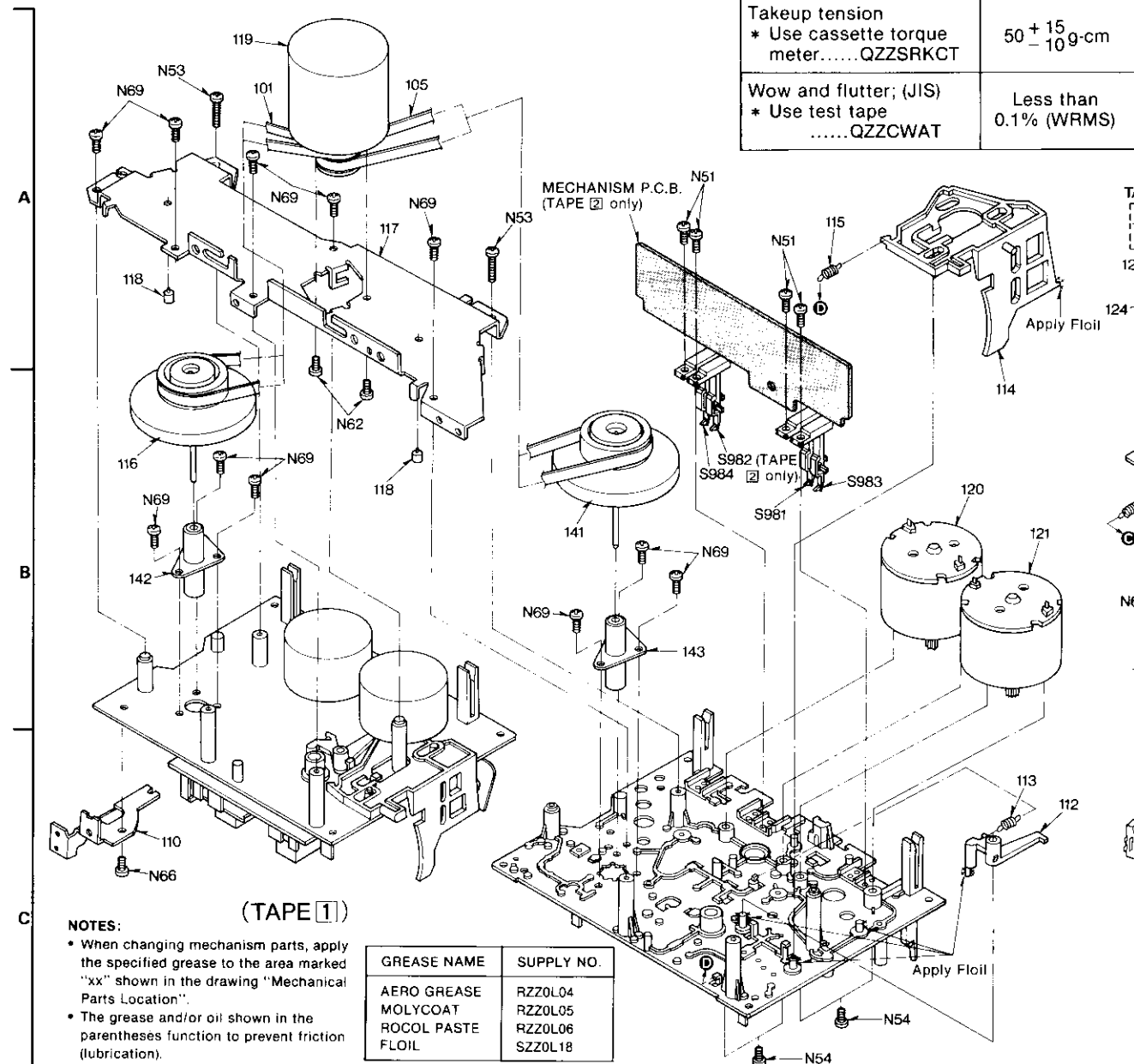
GND

TP5 Erase Current Adj.

■ WIRING CONNECTION DIAGRAM



■ MECHANICAL PARTS LOCATION

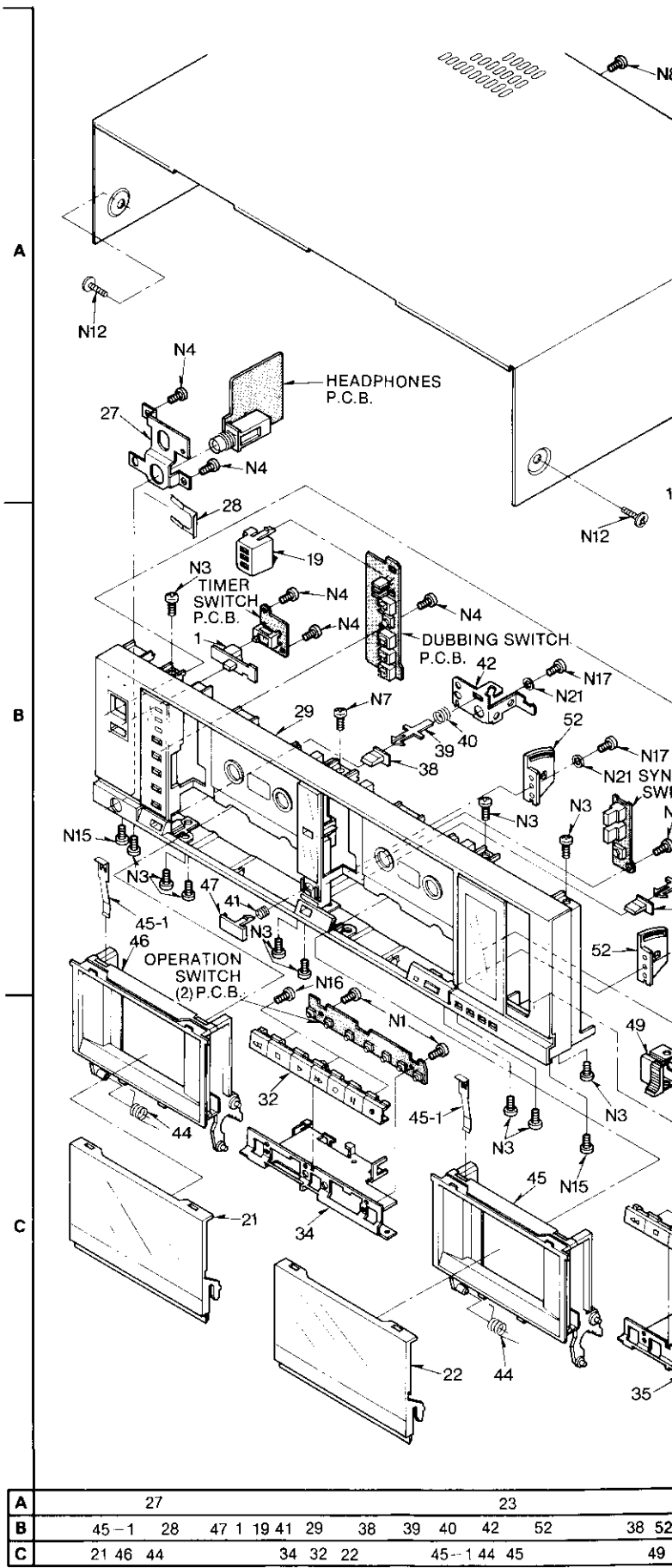


A	118	101 119	117 105	115				114		124 125 127 125	126	139 138	135	140	106 107	122-2 122-1 122
B	116 142		118	141	143	S984 S982	S981 S983	120	121	111-1 136	137	123 104	103 128-1 128	102 129	132 108 133 131	
C	110								113 112	S985 109		111		130		136 134

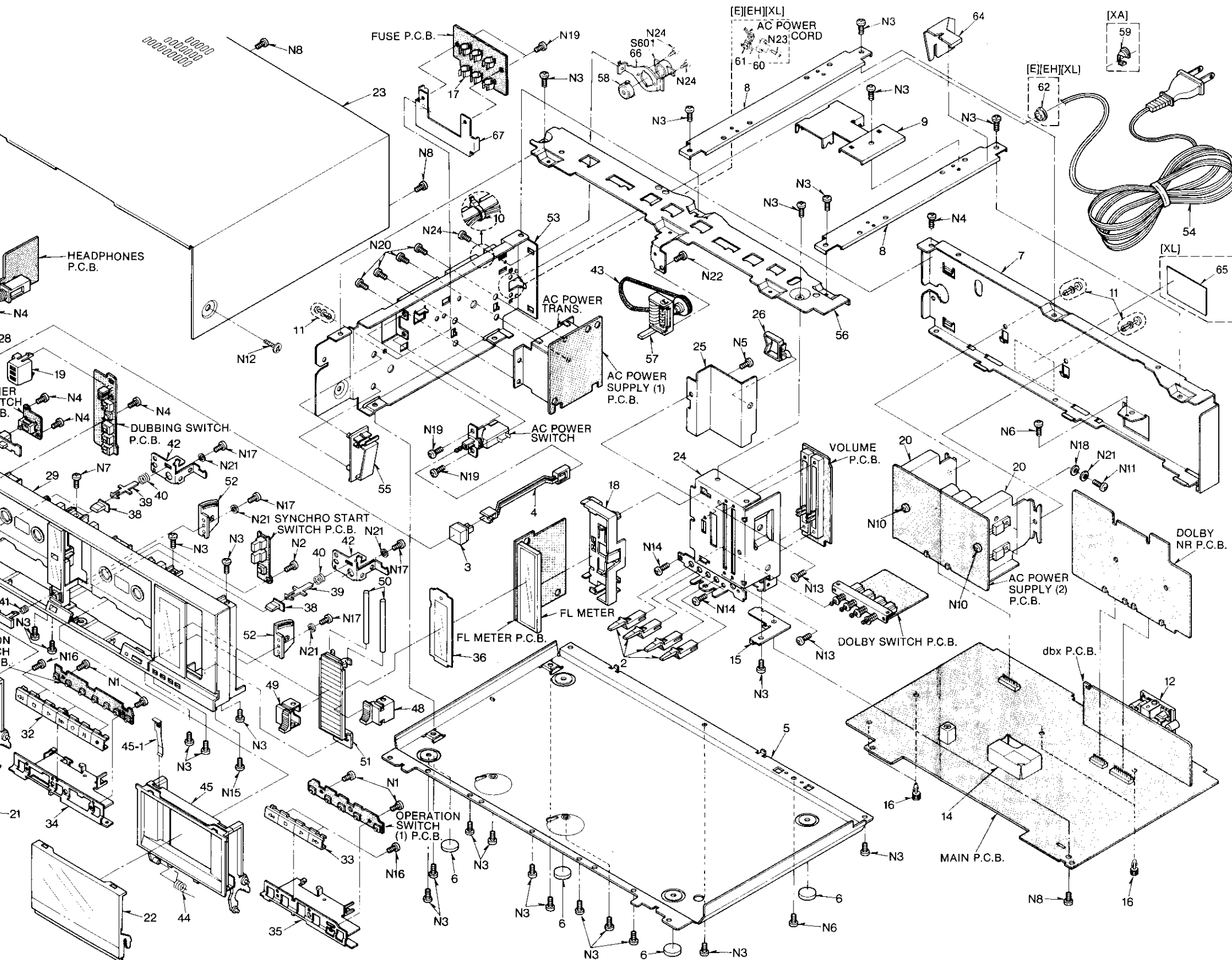
REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description		
MECHANICAL PARTS			113	QBT1962E	Stop Spring	125	QBC1103A	Head Adjustment Spring	137	QMA4870A	Mechanism Angle (L)	N 54	XSN26 + 10	Screw $\pm 2.6 \times 10$		
			114	QMR2217	Eject Rod	126	RJH4C01GZAD	Record/Playback Head	138	QMG0136	Tape Guide	N 55	XTT3 + 8F	Tapping Screw $\pm 3 \times 6$		
101	QDB0347	Capstan Belt (Tape [1])	115	QBT1947	Eject Rod Spring			(Tape [2])	139	QBC1448	Tape Guide Spring	N 56	XTN2 + 14B	Tapping Screw $\pm 2 \times 1.4$		
102	QDG1359	Sub Gear	116	QXF0252	Flywheel (A) Assembly				140	RJH4C02GZAD	Playback Head (Tape [1])	N 57	XSN2 + 18	Screw $\pm 2 \times 1.8$		
103	QDG1309A	Main Gear			(Tape [1])	127	RJH2C02GZAG	Erase Head (Tape [2])	141	QXF0253	Flywheel (B) Assembly	N 58	XTN3 + 6B	Tapping Screw $\pm 3 \times 6$		
104	QML4025	Changing Lever	117	QMA4869	Flywheel Angle						(Tape [2])	N 59	QBW2046	Washer		
105	QDB0333A	Capstan Belt (Tape [2])	118	QMM1470	Thrust Retainer	128	QXL1802	Pinch Roller Assembly	142	QXM0185	Bearing Metal (A)	N 60	QBW2012	Washer		
106	QDR1173	Supply Reel Table	119	QXU0387	Motor Assembly	128-1	QBN2118	Pinch Roller Spring			Assembly (Tape [1])	N 61	QBW2008	Washer		
107	QBC1449B	Reel Table Spring (L)				129	QMA4620A	Eject Angle	143	QXM0186	Bearing Metal (B)	N 62	XSN2 + 3	Screw $\pm 2 \times 3$		
108	QXD0165	Takeup Reel Table	120	QXU0373	FF/REW Motor Assembly	130	QBT2003EB	Eject Angle Spring			Assembly (Tape [1])	N 63	QHQ1168	Step Screw		
		Assembly	121	QXU0333	Drive Motor Assembly	131	QDP1319B	Reel Table Boss				N 64	QBW2007	Washer		
109	QTD1333	Cord Clamper	122	QXG1076	Center Gear Assembly	132	QMB1459	Reel Cap				N 65	XSN2DW14	Small Screw $\pm 2 \times 1.4$		
110	QMA4872	Mechanism Angle (R)	122-1	QDG1307	Center Gear	133	QBC1512A	Reel Table Spring	SCREWS, NUTS & WASHERS					N 66	QHQ1364	Step Screw
			122-2	QBH0151	Shelter	134	QMA4871A	Mechanism Angle (C)				N 67	XTN2 + 6B	Tapping Screw $\pm 2 \times 6$		
111	QXK3014	Chassis Assembly	123	QXK3051	Head Base Plate	135	QWY2175G	Erase Head (Dummy (Tape [1])	N 51	XTN2 + 8B	Tapping Screw $\pm 2 \times 8$	N 68	QBW2130	Washer		
111-1	QBT1742	Head Base Plate Spring			Assembly				N 52	XTV3 + 6JFN	Tapping Screw $\pm 3 \times 8$	N 69	XTV3 + 10BFN	Tapping Screw $\pm 3 \times 10$		
112	QML4026	Stop Lever	124	QMZ1322	Head Spacer	136	QMR2218	Eject Lever Rod	N 53	XTV3 + 24BFN	Tapping Screw $\pm 3 \times 24$					

■ CABINET PARTS LOCATION



PARTS LOCATION



23										11					67			17	10	58			66	57		43	56	61	60	8	9		8		64	62		11		59	54		65
1	19	41	29	38	39	40	42	52	38					52	39	40	42	55	53	50	36		3	4		18		2	25		24	15	26	20		20		7					
34				32	22	45-1				44	45	49				33	35	51	48		6		6		5		6	6		16		14		16		12							

REPLACEMENT PARTS LIST

Important safety notice
Components identified by Δ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Areas

* [E] For all European areas except United Kingdom.	* [XL] For Australia.
* [EH] For Holland.	* [XA] For Asia, Latin America, Middle East and Africa areas.

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
CABINET PARTS			54 [XA] Δ	RJA52YAK	AC Power Cord
1	QGT1642K	Timer Knob	55	SHR9751	Clamper
2	SBC697	NR Button	56	SUW2898-1	Mechanism Angle
3	QGO2399	Power Button	57	SJN8	Tape Counter
4	QMR2059A	Power Rod	58	QTMW0026	Switch Cover
5	SKU11200-1	Bottom Cover	59	QTD1129	Cord Bushing
6	SKL294	Case Foot	60	[XA] QTD1164A	Cord Bushing
7 [E][EH]	SGP6381-1B	Back Chassis	61 [E]	QTD1322	Cord Clamper
[XL]	SGP6381-1A	Back Chassis	62 [E]	QBJ1425A	Cord Bushing
8	SUW2911	Center Angle	63 [E]	QTW1307	Insulator
9	SMN1955	NR P.B. Holder	64 [EH][XL]	SMN1977	P.B. Holder
10	QTD1315	Cord Clamper	65 [XL]	SGT35010	Main Name Plate
11	QKJ0609	Latch	66	QMA4603	Voltage Select Angle
12	QJ5030C	Jack Board	67	QMA4804	Fuse Angle
13	SUS777	Earth Spring			
14	QTS1586	Shield Board			
15	SUW2895	P.B. Holder Angle			
16	SHR9672	Tapping Support			
17	Δ SJT347	Fuse Holder			
18	SHE179	Meter Holder	SCREWS, NUTS & WASHERS		
19	SHR9743	LED Holder	N 1	XTN26+6BFN	Tapping Screw $\varnothing 2.6 \times 6$
20	SMY864	Heat Shield Parts	N 2	XSN26+8BN	Screw $\varnothing 2.6 \times 8$
21	SGE1723	Cassette Lid (A) Assembly	N 3	XTB3+8BFN	Tapping Screw $\varnothing 3 \times 8$
22	SGE1724	Cassette Lid (B) Assembly	N 4	XTV3+8BFN	Tapping Screw $\varnothing 3 \times 8$
23	SKC1730K99	Case Cover	N 5	XTB3+6BFN	Tapping Screw $\varnothing 3 \times 6$
24	SUW2891	Side Angle (R)	N 6	XTB3+12BFZ	Tapping Screw $\varnothing 3 \times 12$
25	SMC1182	Shield Plate	N 7	XTS3+10BFN	Tapping Screw $\varnothing 3 \times 10$
26	SHR9752	Wire Clamper	N 8	XTB3+8BFZ	Tapping Screw $\varnothing 3 \times 8$
27	SMN1947	Jack Angle	N 9	XTN3+8B	Tapping Screw $\varnothing 3 \times 8$
28	QMA4624	Headphones Angle	N 10	XSN3+6FZ	Screw $\varnothing 3 \times 6$
29	SGYSB66W-KN	Front Panel Assembly	N 11	XSN3+8S	Screw $\varnothing 3 \times 8$
30	SBC694	Dubbing Button	N 12	QHQ1349K	Ornament Screw
31	SBC695	Select Button	N 13	XSS2+4	Screw $\varnothing 2 \times 4$
32	SBCSB66W-KN1	Operation Button (L) Assembly	N 14	XSN3+6S	Screw $\varnothing 3 \times 6$
33	SBCSB66W-KN2	Operation Button (R) Assembly	N 15	XTB26+8BFZ	Tapping Screw $\varnothing 2.6 \times 8$
34	SUW2892-1	P.B. Angle (L)	N 16	XTN26+6BFN	Tapping Screw $\varnothing 2.6 \times 6$
35	SUW2893-1	P.B. Angle (R)	N 17	XTN3+12	Tapping Screw $\varnothing 3 \times 12$
36	SDU264	Meter Filter	N 18	XWA3B	Washer 3 ϕ
37	SBC700-2	M.S. Button	N 19	XTV3+6BFN	Tapping Screw $\varnothing 3 \times 6$
38	SBC696	Eject Button	N 20	XTWQC3+6M	Tapping Screw $\varnothing 3 \times 6$
39	SUW2896	Eject Rod	N 21	XWG3	Washer 3 ϕ
40	SUS778	Eject Spring	N 22	XTS26+6B	Tapping Screw $\varnothing 2.6 \times 6$
41	SUS784	Synchro Start Button Spring	N 23	XTS3+8BFN	Tapping Screw $\varnothing 3 \times 8$
42	SUW2897	Holder Angle	N 24 [E]	XTN3+24B	Tapping Screw
43	QDB0167	Counter Belt	[EH][XL]		
44	QBN1961	Holder Spring			
45	SGXSB66W-KN2	Cassette Holder (B) Assembly	ACCESSORIES		
45-1	QBP2006A	Tape Pressure Spring	A 1	QEB0125	Connection Cord
46	SGXSB66W-KN1	Cassette Holder (A) Assembly	A 2	[XA][XL] SQF12313	Instruction Book
47	SBC698	Synchro Start Button	A 2	[E][EH] SQF12390	Instruction Book
48	SBDSB66W-KN1	Knob (L) Assembly	A 3	[XA] Δ SJP9215	AC Plug Adaptor
49	SBDSB66W-KN2	Knob (R) Assembly	A 4	SGK1910	Feature Plate
50	SUG85-1	Volume Shaft			
51	SGXSB66W-KN	Slide Guide Assembly			
52	QYF0627A	Damper Gear Assembly			
53	SUH627-1	Side Angle (L)			
54 [XL] Δ	SJAG23	AC Power Cord	PACKINGS		
54 [E][EH] Δ	SJA138-3	AC Power Cord	P 1	SPG5253	Inner Carton
			P 2	SPS4570-2	Front Cushion
			P 3	SPS4571-2	Rear Cushion
			P 4	XZB50X65A02	Poly Sheet