



# HITACHI

## SERVICE MANUAL

TY

No. 465EGF

**D-909**  
(BS, VS, ZS)

DX-10D chassis



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### SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety related characteristics, always use genuine Hitachi's replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers. Critical parts are marked with  $\Delta$  in the circuit diagram and printed wiring board.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without danger of electrical shock.

### SPECIFICATIONS

Track System:	4 track 2 channel stereo
Tape:	Cassette tape
Tape Speed:	4.75 cm/s
Recording System and Bias	
Frequency:	AC bias, 105 kHz
Erasing System:	AC erase
Erase Ratio:	65 dB (at 1 kHz) or more
Frequency Response:	NOR-I: 20 Hz to 18 kHz 30 Hz to 18 kHz $\pm 3$ dB 30 Hz to 18 kHz*
	CrO <sub>2</sub> -II: 20 Hz to 20 kHz 30 Hz to 19 kHz $\pm 3$ dB 30 Hz to 19 kHz*
	METAL-IV: 20 Hz to 21 kHz 30 Hz to 20 kHz $\pm 3$ dB 30 Hz to 20 kHz*
Wow and Flutter:	0.022% (W-RMS) 0.065%*

Specifications are subject to change without notice for performance improvement.

Signal to Noise Ratio:	Dolby NR OFF: 61 dB *
(A weighted, Reference 3% T.H.D)	Dolby B NR: 69 dB *
	Dolby C NR: 75 dB *
Distortion:	Less than 0.8% (at 1 kHz, 160nWb/m)
Crosstalk:	60 dB (at 1 kHz) or more
Input Sensitivity and Impedance:	Line in: 80mV, 50 kohms
Output Level and Impedance:	Line out: 500 mV (Suitable Load Impedance 50 kohms or more) Headphones: 80mV (8 ohms) (Suitable Load Impedance 8 ohms to 2 kohms)
Power Supply:	AC220V, 50 Hz (ZS, VS) AC240V, 50 Hz (BS)
Power Consumption:	38 W
Dimensions:	435(W) x 115(H) x 279(D) mm
Weight:	6.0 kg
	* According to DIN 45 500

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT.

## STEREO CASSETTE TAPE DECK

August 1985

TOYOKAWA WORKS

## DISASSEMBLY

### 1. How to replace the parts.

- (1) **Upper Cover (Fig. 1)**  
Remove two screws (1).
- (2) **Bottom Cover (Fig. 1)**  
Remove screw. (2 ~ 5)
- (3) **Cassette lid (Fig. 2)**  
Push the EJECT button and open the cassette door. Then, remove the cassette lid forward while pulling upward.  
  
Note) Normal service should be performed in this condition.
- (4) **Front Panel (Fig. 1, 3)**  
Remove the upper cover and cassette lid. (Fig. 1) Then, remove two screws (6), three screws (7), three screws (8) and one screw (9). Next, remove connectors (12 places) and pull the front panel forward. (Fig. 3)
- (5) **Cassette chassis (Fig. 5)**  
After removing the front panel, remove two screws (14).

### 2. How to remove the P.W.Bs.

- (1) **D.D Motor control P.W.B. (Fig. 5)**  
Remove screw (15).
- (2) **FL Meter counter P.W.B. (Fig. 4)**  
Remove four screws (10). After this, open claws. (4 places)
- (3) **REC caribration P.W.B. (Fig. 4)**  
Remove two screws (11).
- (4) **Volume P.W.B. (Fig. 4)**  
Remove three knobs. After this, remove two screws (12).
- (5) **Switch P.W.B. (Fig. 4)**  
Remove four screws (13).
- (6) **Meter AMP P.W.B. (Fig. 6)**  
Remove two screws (16).
- (7) **RM P.W.B. (Fig. 6)**  
Remove one rivet and pull it upward.
- (8) **Main P.W.B. (Fig. 7)**  
Remove four screws (17) and pull them forward.

## DEMONTAGE

### 1. Auswechseln von Teilen

- (1) **Oberer Deckel (Abb. 1)**  
Zwei Schrauben entfernen (1).
- (2) **Bodenplatte (Abb. 1)**  
Schraube entfernen (2 ~ 5)
- (3) **Kassettenfachdeckel (Abb. 2)**  
Auswurfaste drücken und Kassettenklappe öffnen. Dann Kassettenfachdeckel nach vorne unter gleichzeitigem Ziehen nach oben entfernen. Hinweis) Normaler Service ist in diesem Zustand durchzuführen.
- (4) **Vordertafel (Abb. 1, 3)**  
Oberer Deckel und Kassettenfachdeckel entfernen. (Abb. 1) Dann zwei (6), drei (7), drei (8) und eine (9) Schrauben entfernen. Sodann Verbindungsklemmen (12 Stellen) lösen und Vordertafel nach vorne ziehen. (Abb. 3)
- (5) **Kassettenchassis (Abb. 5)**  
Nach Abnahme der Vordertafel zwei Schrauben entfernen (14).

### 2. Auswechseln von Schaltplatte

- (1) **D.D-Motorkontroll-Schaltplatte (Abb. 5)**  
Schraube entfernen (15).
- (2) **FL-Meßzähler-Schaltplatte (Abb. 4)**  
Vier Schrauben entfernen (10). Danach Krallen entfernen (4 Stellen).
- (3) **REC-Aufnahmeaussteuerung-Schaltplatte (Abb. 4)**  
Zwei Schrauben entfernen (11).
- (4) **Lautstärke-Schaltplatte (Abb. 4)**  
Drei Knöpfe entfernen. Danach zwei Schrauben lösen (12).
- (5) **Regler-Schaltplatte (Abb. 4)**  
Vier Schrauben entfernen (13).
- (6) **Meßverstärker-Schaltplatte (Abb. 6)**  
Zwei Schrauben entfernen (16).
- (7) **RM-Schaltplatte (Abb. 6)**  
Eine Niete entfernen und Platte nach oben ziehen.
- (8) **Haupt-Schaltplatte (Abb. 7)**  
Vier Schrauben entfernen (17) und Wände und Tafel nach vorne ziehen.

## DÉMONTAGE

### 1. Comment enlever des pièces mécaniques

- (1) **Couvercle de haut (Fig. 1)**  
Retirer les deux vis de fixation ①.
- (2) **Couvercle de fond (Fig. 1)**  
Retirer les vis de fixation (② ~ ⑤).
- (3) **Trappe à cassette (Fig. 2)**  
Presser le bouton d'éjection de la cassette et faire basculer la trappe à cassette peut être retirée par coulissement vers le haut.  
Remarque) Le dépannage normal doit être effectué dans ces conditions.
- (4) **Panneau avant (Fig. 1, 3)**  
Retirer le couvercle de haut et la trappe à cassettes.  
(Fig. 1) Retirer ensuite les deux vis de fixation ⑥, les trois vis de fixation ⑦, les trois vis de fixation ⑧ et la vis de fixation ⑨.  
Ensuite, déposer les connecteurs (à 12 emplacements) et dégager le couvercle de haut en le tirant vers soi. (Fig. 3)
- (5) **Chassis de cassette (Fig. 5)**  
Après avoir déposé le couvercle de haut retirer les deux vis de fixation ⑭.

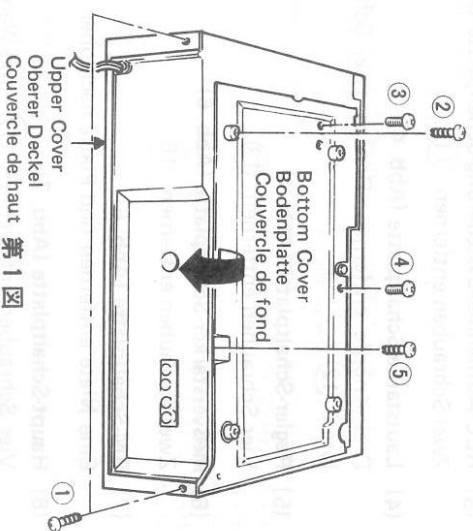


Fig. 1 Abb. 1

### 2. Comment enlever des cartes à circuits.

- (1) **Carte à circuit imprimé de contrôleur moteur D.D. (Fig. 5)**  
Retirer la vis de fixation ⑮.
- (2) **Carte à circuit imprimé de décibelmètre FL (Fig. 4)**  
Retirer les quatre vis de fixation ⑩.  
Ensuite, dégager les griffes de fixation (à 4 emplacements).
- (3) **Carte à circuit imprimé d'étalonnage REC (Fig. 4)**  
Retirer les deux vis de fixation ⑪.
- (4) **Carte à circuit imprimé de volume (Fig. 4)**  
Retirer les trois boutons de potentiomètre.  
Ensuite, retirer les deux vis de fixation ⑫.
- (5) **Carte à circuit imprimé des commutateurs (Fig. 4)**  
Retirer les quatre vis de fixation ⑬.
- (6) **Carte à circuit imprimé d'amplificateur de décibelmètre (Fig. 6)**  
Retirer les vis de fixation (① ~ ⑤).  
Quand ceci est Terminé, retirer les deux vis de fixation ⑯.
- (7) **Carte à circuit imprimé RM (Fig. 6)**  
Retirer le rivet de fixation et dégager vers le haut.
- (8) **Carte à circuit imprimé principale (Fig. 7)**  
Retirer les quatre vis de fixation ⑰ et dégager en tirant vers soi.

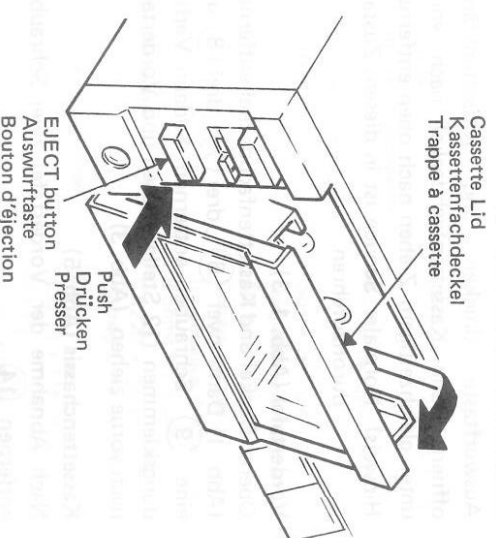


Fig. 2 Abb. 2

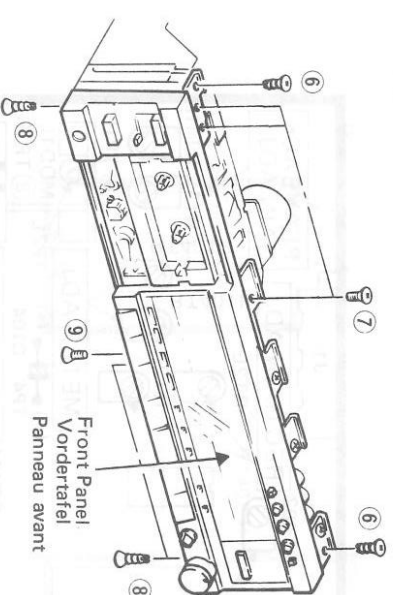


Fig. 3 Abb. 3

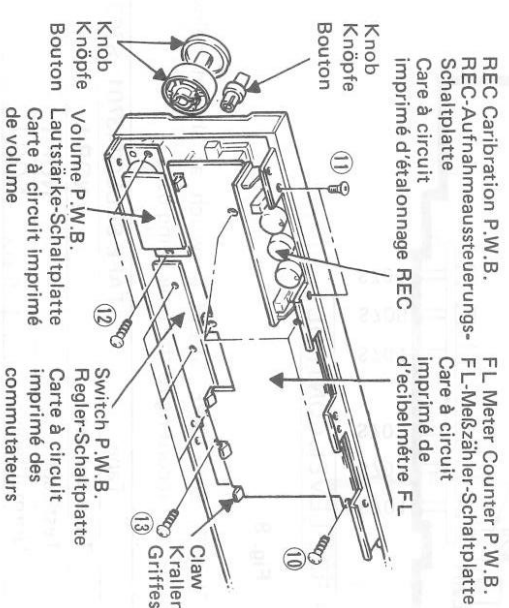


Fig. 4 Abb. 4

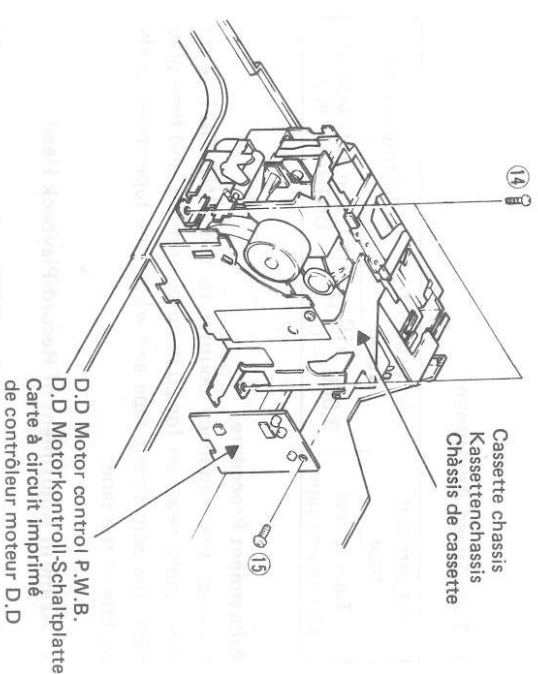


Fig. 5 Abb. 5

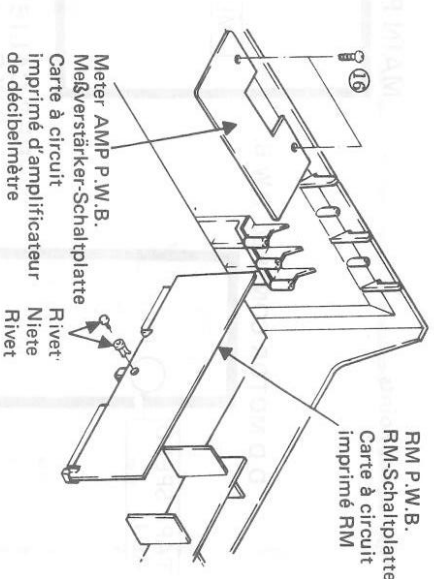


Fig. 6 Abb. 6

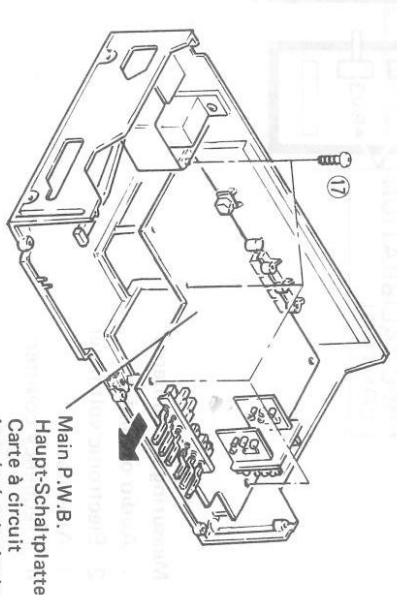


Fig. 7 Abb. 7

# ADJUSTMENT

● Adjustment Points

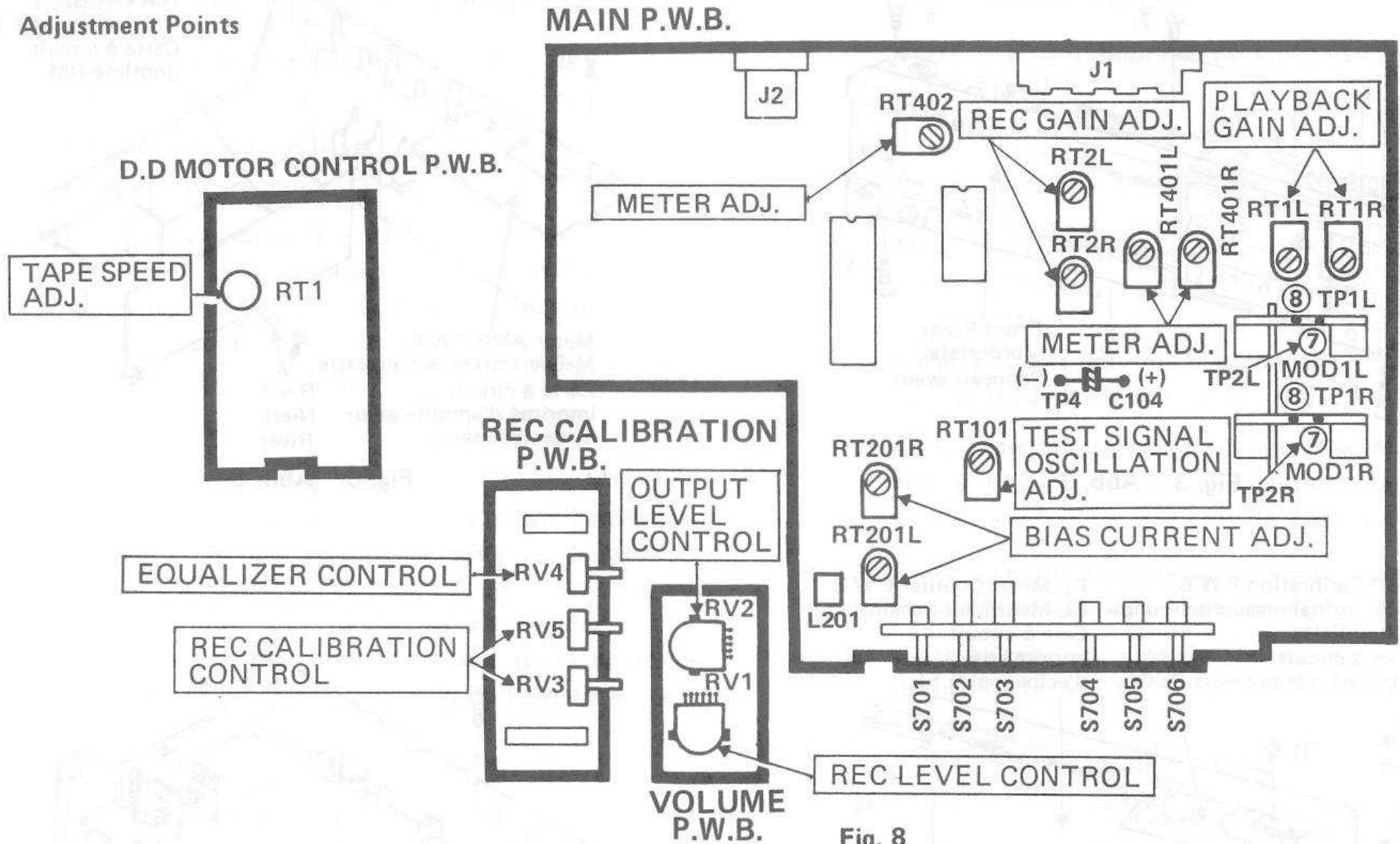


Fig. 8

Note 1. Set TAPE SELECT switch as shown below according to the tape being used.

Tape	TAPE SELECT (S701~S703)
Tape not used	NOR-I
Test tape	NOR-I
Normal tape	NOR-I
Chrome tape	CrO <sub>2</sub> -II
Metal tape	METAL-IV

Remove the cassette lid and then clean the heads, pressure roller and capstan using alcohol; then perform adjustment according to the following procedure.

1. Tape Speed Adjustment

Adjustment tape	Adjustment value	Adjustment point
Tape speed adjustment tape	3,000 $\begin{matrix} +10 \\ -0 \end{matrix}$ Hz	RT1 of D.D MOTOR CONTROL P.W.B.

Adjustment Procedure

Connect the frequency counter to the LINE OUT terminals, apply heat-run for 20 minutes or more, and then playback the adjustment tape and adjust the tape speed at the middle of the tape.

2. Azimuth Adjustment of Record/Playback Head

Adjustment tape	Adjustment value	Adjustment point
Azimuth correction tape	Maximum output	Azimuth adjustment screw

● Measuring Instruments

1. Audio oscillator
2. Electronic voltmeter
3. Attenuator
4. Frequency counter

● Jigs, and Test and Check Tapes

1. Head mounting jig
2. 400 Hz, Dolby reference tape
3. 12.5 kHz, azimuth correction tape
4. 3,000 Hz, tape speed adjustment tape
5. Mirror tape (for tape running check)
6. IEC STANDARD TAPE I (Nor)  
IEC STANDARD TAPE II (CrO<sub>2</sub>)  
New METAL TAPE (New ME Tape)

● Positions of Knobs

Match the positions of switches and knobs to those shown in the table below unless otherwise specified.

REC level control (RV1)	MAX
Output level control (RV2)	MAX
Dolby NR switch (S704)	OFF
Dolby B/C NR switch (S705)	B or C
MPX FILTER switch (S706)	OFF
Monitor switch (S408)	TAPE
FIXED/ATRS switch (S407)	FIXED
TAPE SELECT switch (S701~703)	NOR-I
AUTO/MEMORY REW switch (S709)	OFF
Timer switch (S708)	OFF
EQUALIZER TEST switch (S2)	OFF
REC, CAL, control (RV3, RV5)	MAX
EQUALIZER control (RV4)	CENTER

**Adjustment Procedure**

- 1) Playback the test tape MTT-256U or MTT-356U or an equivalent tape at 12.5KHz and adjust the screw at a portion so that the output reaches its maximum values.

- 2) By means of (a) head adjusting jig and following its using procedure, adjust the front and rear heights of the head with screws of the portions (b) and (c) so that the deflection stays at  $0^{\circ} \pm 3^{\circ}$ . When the maximum value differs between both channels, adjust to the maximum value of L channel. At this time, make sure that the difference of the maximum value between both channels is within 2 dB. When the difference is excessive, proceed to readjustment.
- 3) If the azimuth has been off considerably, readjust by means of the head attachment tools.

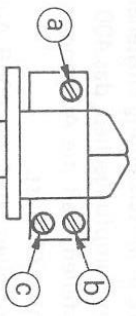


Fig. 9

**3. Playback Gain Adjustment and Meter Adjustment**

Adjustment tape	Adjustment value	Adjustment point
400 Hz Dolby reference tape	580mV ± 0.2dB	RT11L, R

**Adjustment Procedure**

Connect an electronic voltmeter to TP1L, R (pins ⑧ of MOD1L, R) and playback the Dolby reference tape so that the reading of the electronic voltmeter becomes the adjusted value.

**5. Bias Current Adjustment and REC Gain Adjustment**

Connect a audio oscillator to the LINE IN terminal via attenuator, turn the tape selector switch to NORMAL and set the Normal tape in record mode. With the monitor switch in SOURCE, adjust the output of the audio oscillator by applying 1.4KHz signals so that the voltages of TP1L, R are 580mV-10dB. Turn the monitor switch to TAPE and adjust RT2L, R so that the output of TP1L, R becomes roughly 580mV-10dB.

Procedure	Tape	Tape select switch	Recording level		Playback level		Adjustment procedure
			Frequency (Hz)	Level	Level	Adjustment	
1	Normal tape	NOR I	1.4K/14K	580mV-23dB	ATT	within ±0.5dB	RT201L, R (1)
2	Normal tape	NOR I	1.4K	580mV-10dB	ATT	within ±0.5dB	RT2L, R (2)
3	Normal tape	NOR I	1.4K/14K	580mV-23dB	ATT	within ±0.5dB	Confirm (1)
4	Chrome tape	CrO <sub>2</sub> II	1.4K/14K	580mV-23dB	ATT	within ±3dB	Confirm (1)
5	METAL tape	METAL IV	1.4K/14K	580mV-23dB	ATT	within ±3dB	Confirm (1)

(1) Set the Monitor switch to the SOURCE position, adjust the output of the audio oscillator so that the voltage at TP1L, R is 580mV-10dB, and then adjust the attenuator for the voltage of 580mV-23dB.

Change over the Monitor switch to the TAPE position and switch over between 1.4KHz and 14KHz frequencies of the audio oscillator alternately; adjust RT201L, R so that the output difference between 2 frequencies is within ±0.5dB.

**(2) Adjustment of Meter**

Adjustment tape	Adjustment value	Adjustment point
400 Hz Dolby reference tape	580mV - 0.5dB	RT401L, R
	580mV - 37dB	RT402

**Adjustment Procedure**

- 1) Turn the monitor switch to SOURCE and connect the audio oscillator to the record terminal through the attenuator. Then, adjust with an attenuator applying 400Hz signals so that the output voltages of TP2L, R (pins ⑦ of MOD1L, R) are 580mV-0.5dB.
- 2) Adjust RT401L, R at this time so the point of 0dB on the meter changes from OFF to ON (At this time, adjust RT402 at the center.)
- 3) Next, adjust with an attenuator applying 400Hz signals so that the output voltage at TP2L, R are 580mV-37dB.
- 4) Adjust RT402 so that the -40dB indicators of the meter change from ON to OFF for both L, Rch.

**4. Bias oscillation frequency adjustment**

- 1) Move the tape select switch to the METAL position and insert a measuring rod into the pin of connector (P33) for erasure head as shown in Fig. 10.
- 2) Adjust L201 until the oscillation frequency is 105-KHz ± 0.5KHz.

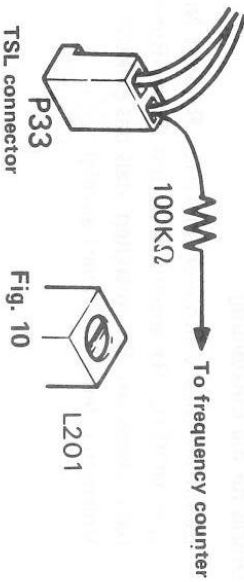


Fig. 10

\*Only confirm the above for both Chrome and Metal tapes; if it is out of the specified ±3dB range, re-adjust using Normal tape again.

(2) Set the Monitor switch to the SOURCE position and adjust the output of the audio oscillator so that the voltage at the LINE IN terminal is 580mV-10dB.

Change over the Monitor switch to the TAPE position and adjust RT2L, R so that the voltage at the playback terminal is 580mV-10dB.

**6. Adjustment of AF oscillator**

Input	Adjustment value	Adjustment point
—	The wave form of Fig. 11.	RT101

**Adjustment Procedure**

- 1) Connect an oscilloscope to TP4 [negative(-) side of C104] through the electronic voltmeter and observe to make sure that the AF oscillator indicates 400Hz.
- 2) Adjust RT101 so that the output waveform of the



Fig. 11

The clip waveform (round) comes to a halt at the square portion.

AF oscillator comes equal to one as shown in Fig. 11.

After carrying out an ATRS test with Normal tape, make sure that the level difference between 400Hz and 12KHz is within 1dB.

**CASSETTE CHASSIS INSPECTION AND ADJUSTMENT**

No.	Inspection item	Measurement procedure	Standard value
1	Pressure roller (for Right)	Pressure	Measured by tension gauge (Fig. 12)
2	Pressure roller (for Left)	Driving force	Cleaned with alcohol and measured by driving force cassette (Fig. 12)
3	Take-up idler	Pressure	Measured by tension gauge (Fig. 13)
4	Torque	Pressure	Using a specified spring, measured by tension gauge (Fig. 14)
5	Back tension	Torque	Measured by torque cassette (Fig. 14)
6	Brake torque	FF REW	Measured by torque cassette.
7	Head plate	Supply side Take-up side Take-up side Take-up side Recoveribility Lock allowance Pressing strength	In playback mode, measured by means of reel jig or torque cassette (Fig. 15) At a standstill, measured by reel jig or tension gauge (Fig. 16) At a standstill, measured by tension gauge (Fig. 17) In playback mode, measured by tension gauge (Fig. 18) In playback mode, measured by tension gauge (Fig. 19)

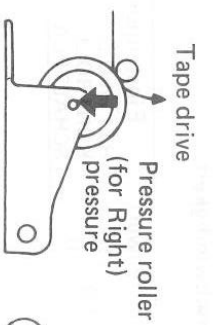


Fig. 12

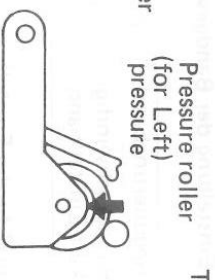


Fig. 13

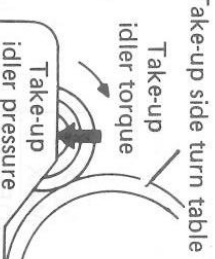


Fig. 14

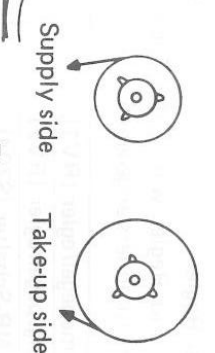


Fig. 15

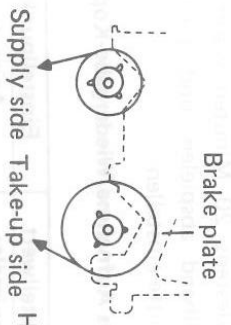


Fig. 16

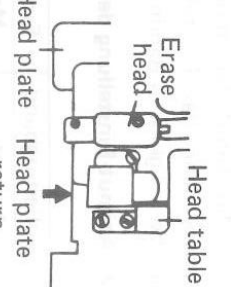


Fig. 17

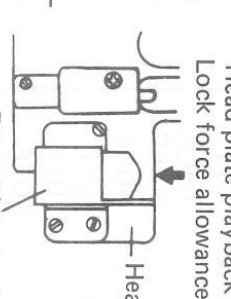


Fig. 18

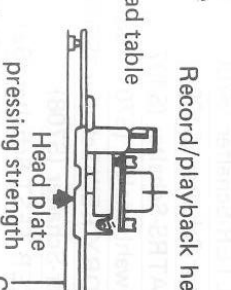


Fig. 19

## LUBRICATION

Apply one or two drops of pan motor oil or sonic slider oil to rotating parts. Coat sliding parts with Molycoat (EL-10M).

Lubricate once a year or every 1000 hours of operation. Do not let oil contact belts or idlers.

Rotating parts	Metal to metal Plastics to metal	Pan motor oil (10W-40) Sonic slider oil (#1600)
Sliding parts	(Note) Plastics to Plastics Plastics to metal	Molycoat (EL-10M)
Spring vibration prevention		Floyl (GB-TS-1)

Note:  
When front frame and slide knob are replaced, coat both contacting parts lightly with white grease.

## SCHMIERUNG

An die drehenden Teilen ein oder zwei Tropfen Motoröl oder Schmieröl (Sonic Slider) geben, und die Gleitteile mit Molycoat (EL-10M) schmieren.

Einmal im Jahr oder alle 1000 Betriebsstunden schmieren. Darauf achten, daß das Öl nicht auf den Riemen oder die Zwischenscheiben gelangt.

Drehende Teile	Zwischen Metallteilen Zwischen Plastik und Metall	Motoröl (10W-40) Schmieröl (Sonic Slider #1600)
Gleitteile	(Hinweis) Zwischen Plastikteilen Zwischen Plastik und Metall	Molycoat (EL-10M)
Verhinderung von Federvibrationen		Floyl (GB-TS-1)

Hinweis:  
Wenn der Frontrahmen und Schieberegler ersetzt werden, beide Kontaktflächen leicht mit weißem Schmierfett überziehen.

## LUBRIFICATION

Appliquer une ou deux gouttes d'huile moteur ou d'huile Sonic pour curseur, sur les membres rotatifs. De la graisse Molycoat (EL-10M) est appliquée sur les membres coulissants.

Lubrifier une fois par an ou toutes les 1000 heures de fonctionnement.

Veiller à ne pas appliquer d'huile sur les courroies ou les galets.

Membres rotatifs	Entre les parties métalliques Entre le moulage et les parties métalliques	Huile moteur (10W-40) Huile pour curseur Sonic (#1600)
Membres coulissants	(Note) Entre moulures Entre moulures et pièces métalliques	Molycoat (EL-10M)
Prévention de vibration de ressort		Floyl (GB-TS-1)

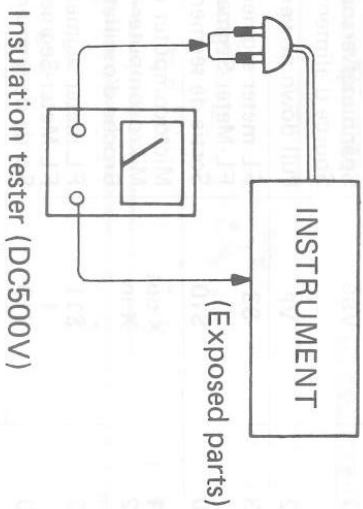
Note:  
Lorsque le châssis avant et le bouton curseur doivent être remplacés, appliquer une couche légère de graisse blanche sur les parties de contact.

Check that exposed parts are acceptably insulated from the supply circuit before returning the instrument repaired to the customer.

### ● Checking method

Power switch is set to ON.

Next, measure the resistance value between the both poles of attachment cup (Power supply plug) and the exposed parts (Parts such as Ground terminal, Knob, Cover, etc. where the customer is easy to touch.) and check that the resistance value is 500 kohms or more.

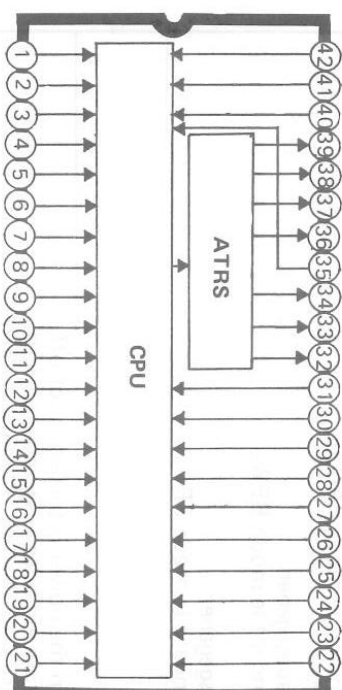


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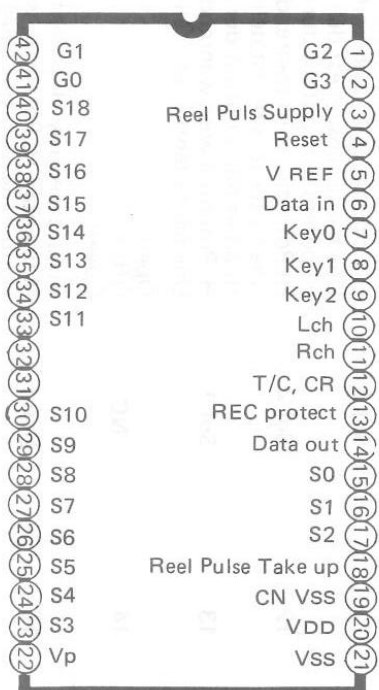
D-909

## DESCRIPTION OF NEW PARTS. BESCHREIBUNG DER NEUEN BAUTEILE. DESCRIPTION DES NOUVELLES PIÉCES.

IC301  
HD44801C17



IC401  
M58845-402P



Pin Functions of HD44801C17 (IC301)  
Stift-Funktionen von HD44801C17 (IC301)  
Fonctions des braches de HD44801C17 (IC301)

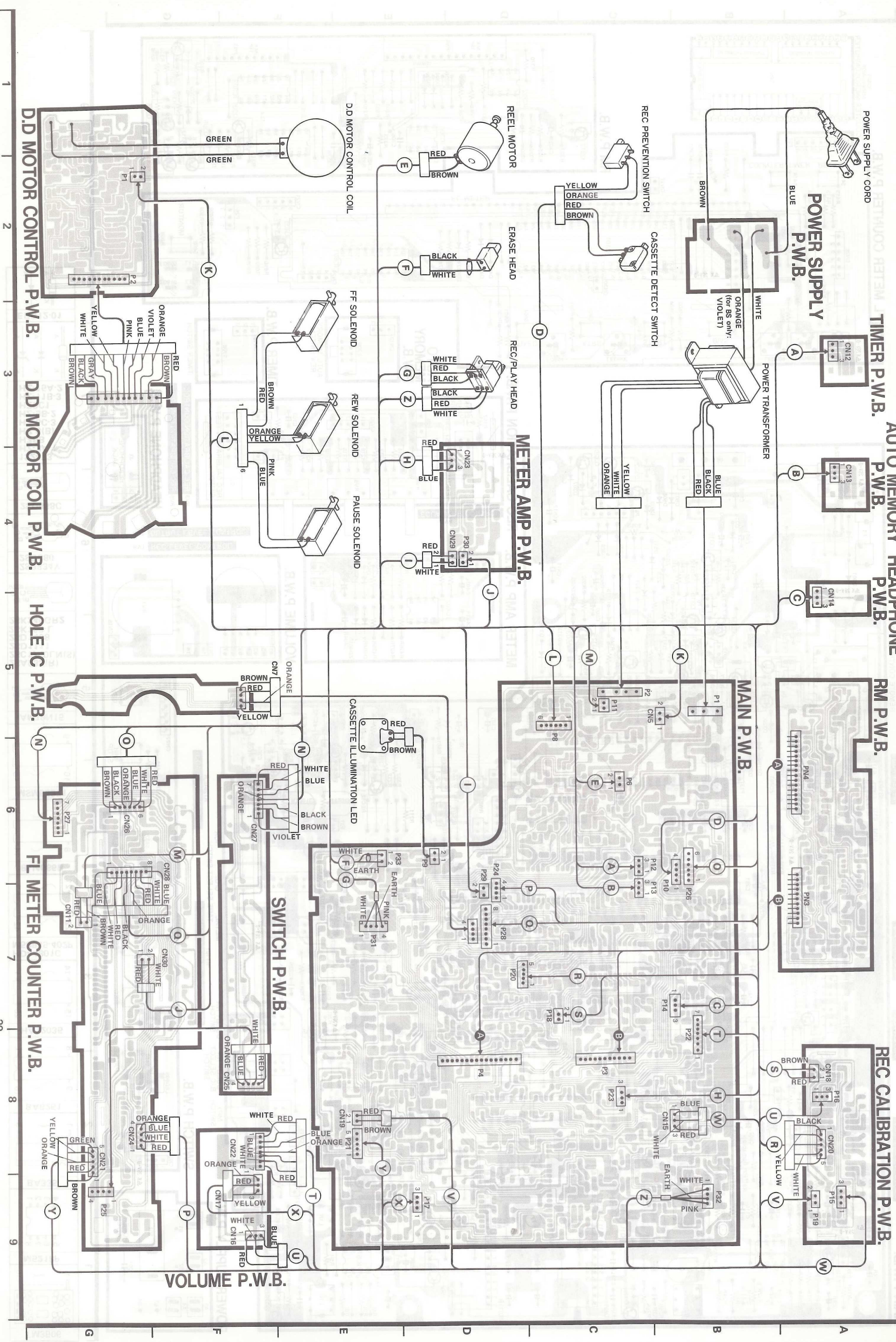
Pin No. Stift-Nr. No borne	Pin Symbol Stift-Symbol Symbole broche	Function Funktion Fonction
1	Timer	Lo potential is output for 4 seconds after power-on or when the auto/memory rewind switch is detected. Lo-Potential wird 4 Sekunden nach Einschalten ausgegeben oder dann, wenn die Auto/Speicher-Rückspulschaltung erfährt worden ist. Une basse tension est délivrée pendant 4 seconds après la mise sous tension de l'appareil ou lorsque le commutateur de rembobinage automatique/par mémoire est détecté.
2	Source	Lo potential is output when source select signal is issued. Lo-Potential wird bei Anlegen des Programmquellenwahlsignals ausgegeben. Une basse tension est délivrée quand le signal de sélection de source est produit.
3	Tape	Lo potential is output when tape select signal is issued. Lo-Potential wird bei Anlegen des Bandwahlsignals ausgegeben. Une basse tension est délivrée quand le signal de sélection de bande est produit.
4	AD Reset	Hi potential is output when IC202 (2/2) is reset. Only during ATRS TEST Hi-Potential wird bei Rückstellung von IC202 (2/2) ausgegeben. Nur während ATRS TEST Une haute tension est délivrée quand le circuit intégré IC202 (2/2) est réinitialisé. Une quement pendant le mode ATRS TEST.
5	ATRS	Hi potential is output during ATRS and ATRS TEST. Hi-Potential wird während ATRS and ATRS TEST ausgegeben. Une haute tension est délivrée pendant les modes ATRS et ATRS TEST.
6	Music	Music select input Lo potential Hi potential Musikwahleingang Lo-Potential Hi-Potential Zone sans signal basse tension d'entrée pour sélection de passage musical Zone avec signal haute tension
7	Tape Sel 1	CrO <sub>2</sub> with Lo potential input CrO <sub>2</sub> mit Lo-Potential-Eingang Bande CrO <sub>2</sub> avec entrée basse tension.
8	Tape Sel 0	Metal with Lo potential input. Metal mit Lo-Potential-Eingang Bande Métal avec entrée basse tension.
9	Rec mute	Lo potential is output during REC MUTE. Lo-Potential wird während REC MUTE ausgegeben. Une basse tension est délivrée pendant le mode REC MUTE.
10	Bias	Hi potential is output during bias oscillation. Hi-Potential wird während Vormagnetisierungsschwingung ausgegeben. Une haute tension est délivrée pendant le mode d'oscillation de polarisation.

Pin function of M58845-402P (IC401)  
Stiftfunktionen von M58845-402P (IC401)  
Fonctions des bornes de M58845-402P (IC401)

Pin No. Stift-Nr. No borne	Pin Symbol Stift-Symbol Symbole broche	Function Funktion Fonction
11	Sol 3	Hi potential is output during PAUSE. Hi-Potential wird während PAUSE ausgegeben. Une haute tension est délivrée pendant le mode PAUSE.
12	Sol 2	Hi potential is output during REW. Hi-Potential wird während REW ausgegeben. Une haute tension est délivrée pendant le mode REW.
13	Sol 1	Hi potential is output during FF. Hi-Potential wird während FF ausgegeben. Une haute tension est délivrée pendant le mode FF.
14	NC	Open Offen Ouvert
15	Reset	Instantaneously Hi potential when the power is turned on or off. Momentan Hi-Potential, wenn Strom ein-oder ausgeschaltet wird. Haute tension instantanée à la mise sous tension et la mise à l'arrêt.
16	GND	Ground Erde Masse
17	OSC 1	Microcomputer oscillation.
18	OSC 2	Microcomputer-Oszillation. Oscillation de micro-ordinateur.
19	HLT	Program stop with Lo potential input. Programm-Stopp mit Lo-Potential-Eingang Arrêt de programme avec entrée basse tension. Normal operation with Hi potential input. Normalbetrieb mit Hi-Potential-Eingang Fonctionnement normal avec entrée haute tension.
20	TEST	Power source.
21	VSS	Spannungsversorgung. Source d'alimentation.
22	Clock	IC601 MSM58371 Transfer data.
23	Date	IC601 MSM58371 Datenübertragung.
24	Load	Donnée de transfert de circuit IC601 MSM58371.
25	Data IN	IC401 M58845-402P Pin for data transfer.
26	Data Out	IC401 M58845-402P Pin für Datenübertragung.
27	DBE	Broche de transfert de données de circuit IC601 MSM58371.
31	ACK	
28	AF OSC0	Hi potential with 4kHz oscillation during ATRS TEST. Hi-Potential mit 4-KHz-Oszillation während ATRS TEST. Haute tension avec oscillation de 4 KHz pendant le mode ATRS TEST.
29	AF OSC1	Hi potential with 14kHz oscillation during ATRS TEST. Hi-Potential mit 14-KHz-Oszillation während ATRS TEST. Haute tension avec oscillation de 14 kHz pendant le mode ATRS TEST.
30	Reel Pulse	Reel pulse is detected during tape run. Spulenimpuls wird während Bandlaufes erfaßt. Impulsion de bobine détectée pendant le transport de bande.
32	CM0	IC201 HA-12035 control output.
33	CM1	IC201 HA-12035 Steuerausgang.
34	CM2	Sortie de commande de circuit IC201 HA-12035.
35	ATRS TEST	Hi potential is output during ATRS TEST. Hi-Potential wird während ATRS TEST ausgegeben. Une haute tension est délivrée pendant le mode ATRS TEST.
36	DATA0	IC201 HA-12035 control output.
37	DATA1	IC201 HA-12035 Steuerausgang.
38	DATA2	Sortie de commande de circuit IC201 HA-12035.
39	DATA3	
40	AD IN	IC202 (2/2) comparator output is input. IC202 (2/2) Komparatorausgang wird eingeben. Injection de signal de sortie de comparateur de circuit IC202 (2/2).
41	TAPE L	MONITOR output with Lo potential. Changed to TAPE mode. MONITOR output with Hi potential. Changed to SOURCE mode.
42	TAPE R	MONITOR-Ausgang mit Lo-Potential. Gewechselt zu TAPE-Betrieb. MONITOR-Ausgang mit Hi-Potential. Gewechselt zu SOURCE-Betrieb. Sortie MONITOR basse tension. Commutation en mode TAPE. Sortie MONITOR haute tension. Commutation en mode SOURCE.

Pin No. Stift-Nr. No borne	Pin Symbol Stift-Symbol Symbole broche	Function Funktion Fonction
1	G2	FL meter grid output Hi potential.
2	G3	FL-Meter-Gitterausgang-Hi-Potential. Haute tension de grille de décibelimètre FL.
3	Supply	Supply side reel pulse is detected. Abwickelspulenimpuls wird erfaßt. Détection d'impulsion de bobine débitrice.
4	Reset	Microcomputer reset. Microcomputer-rückstellung. Réinitialisation de micro-ordinateur.
5	VREF	Always +9V (DC) after power-on. Stets +9V (Gleichspannung) nach Einschalten. Toujours sur +9V (courant continu) après la mise sous tension.
6	DATA IN	Data transfer input from IC301 HD44801C17 Datenübertragungseingang von IC301 HD44801C17 Entrée de transfert de données de circuit IC301 HD44801C17
7	Key 0	VSS - (0.29-1.8)
8	Key 1	VSS - (1.8-3.31)
9	Key 2	VSS - (3.31-4.81)
10	Leh	L channel level meter input
11	Rch	R-Kanal-Pegelmeter-Eingang L-Kanal-Pegelmeter-Eingang Entrée décibelimètre de canal gauche Entrée décibelimètre de canal droit
12	T/C, CR	Time/counter select ON VSS - (2.51 ~ 3.26)V Counter clear ON VSS - (1.00 ~ 2.51)V Zeit/Zählwerk-Wahl ein (ON) VSS - (2.51 ~ 3.26)V Zählwerk löschen ein (ON) VSS - (1.00 ~ 2.51)V Sélection ON chronomètre/compteur VSS (2.51 à 3.26)V Annulation compteur VSS (1 à 2.51)V
13	REC Protect	REC PROTECTOR detection SW ON VSS - 3.26V or less SW OFF VSS - 3.26V or more Schalter ein (ON) VSS - 3.26V oder weniger Schalter aus (OFF) VSS - 3.26V oder mehr Commuteur SW OFF VSS 3,26V ou plus
14	Data out	Data transfer input from IC301 HD44801C17. Datenübertragungseingang von IC301 HD44801C17. Entrée de transfert de données de circuit IC301 HD44801C17.
15	S0	FL meter segment output.
16	S1	FL-Meter-Segmentausgang.
17	S2	Sortie de segment de décibelimètre FL.
18	Take up	Take-up side reel pulse is detected. Aufwickelspulenimpuls wird erfaßt. Détection d'impulsion de bobine débitrice.
19	CN VSS	Same as power source. Wie Spannungsversorgung. Identique à la source d'alimentation.
20	VDD	Ground Erde Masse
21	VSS	Power source DC 15V. Spannungsversorgung DC 15V. Source d'alimentation DC 15V.
22	Vp	Pull down power source
23	S3	FL meter segment output.
30	S10	FL-Meter-Segmentausgang. Sortie de segment de décibelimètre FL.
31	X out	Microcomputer oscillation pin. Microcomputer-Oszillationsstift. Broche d'oscillation de micro-ordinateur.
32	X in	
33	S11	FL meter segment output.
40	S18	FL-Meter-Segmentausgang. Sortie de segment de décibelimètre FL.
41	G0	FL meter grid output Hi potential.
42	G1	FL-Meter-Gitterausgang-Hi-Potential. Haute tension de grille de décibelimètre FL.

WIRING DIAGRAM · SCHALTPLAN · SCHEMA DE CABLAGE  
 AUTO MEMORY HEADPHONE





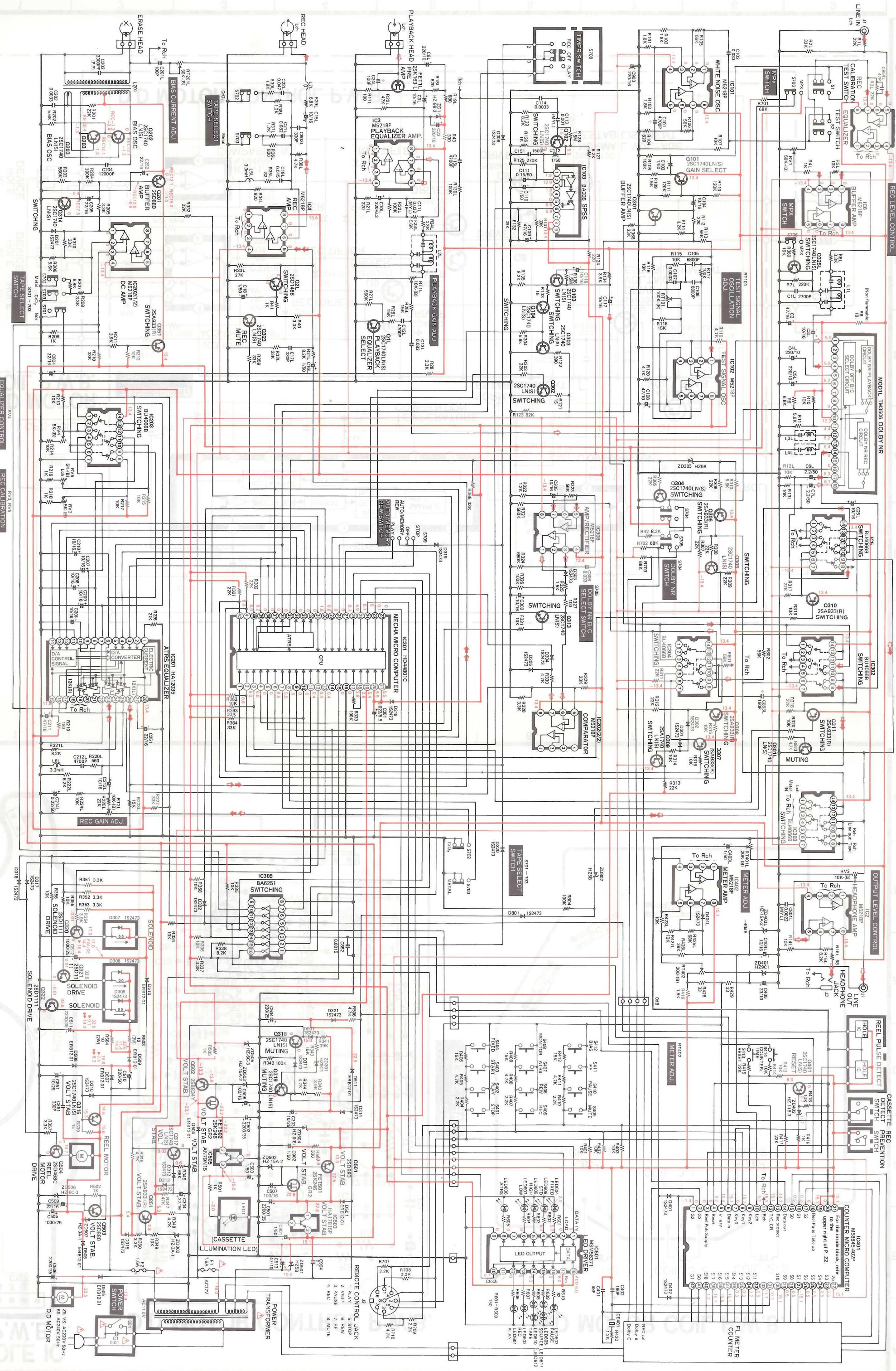


➡ for Recording

↔ for Playing back

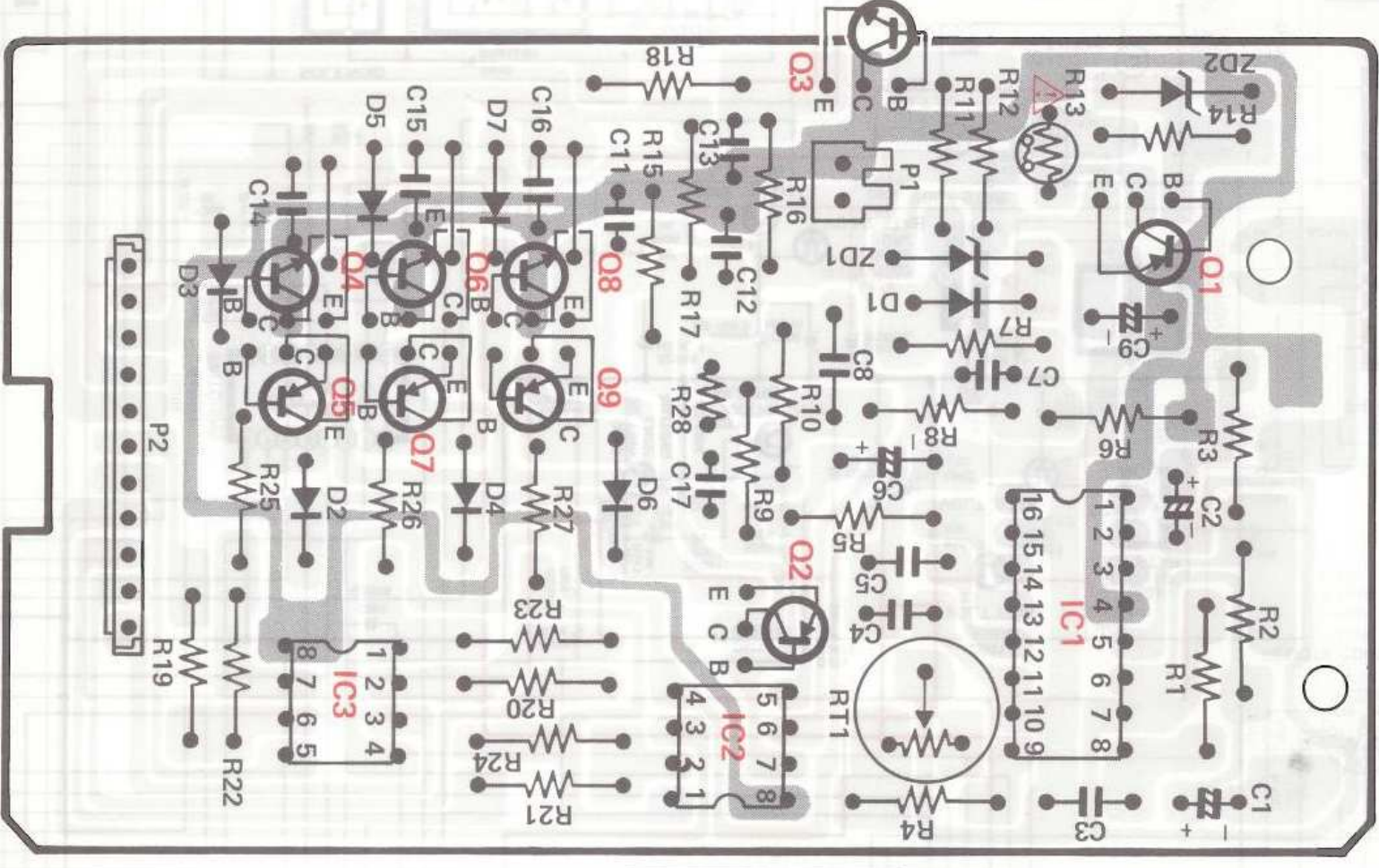
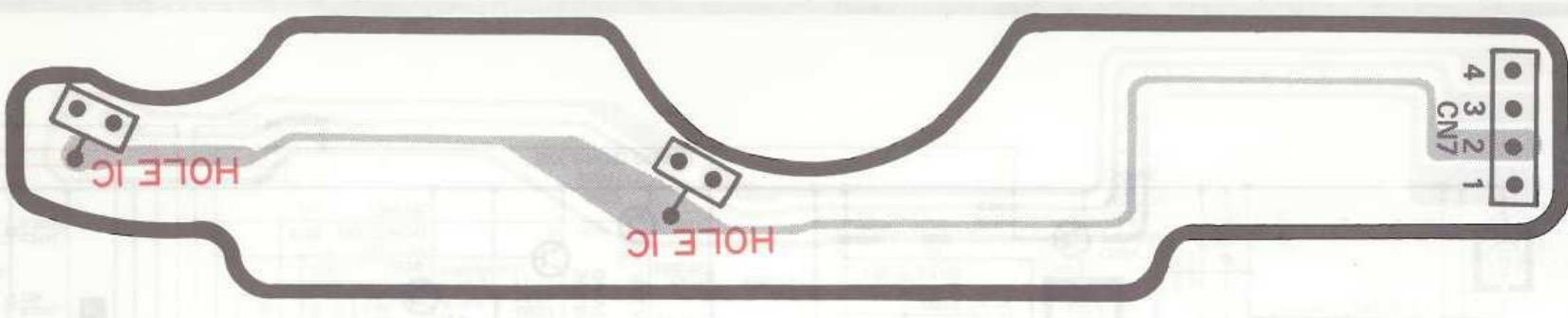
↔ for ATRS Test

※: Axial lead cylindrical ceramic capacitor  
 ※: Zylindrischer Keramikcondensator mit axialer Zuleitung  
 ※: Condensateur céramique cylindrique à conducteur axial

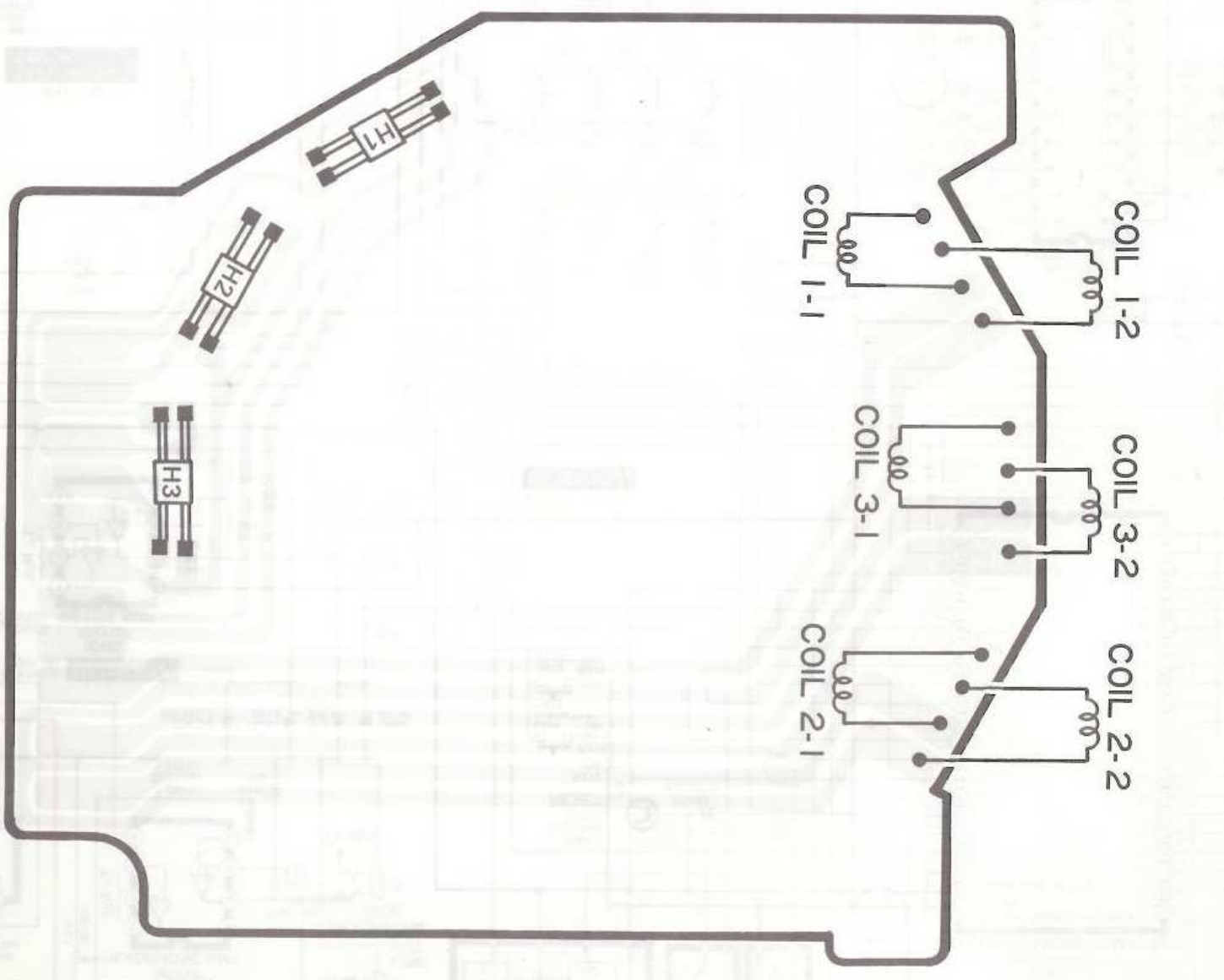


HOLE IC  
P.W.B.

D.D MOTOR CONTROL P.W.B.



D.D MOTOR COIL P.W.B.



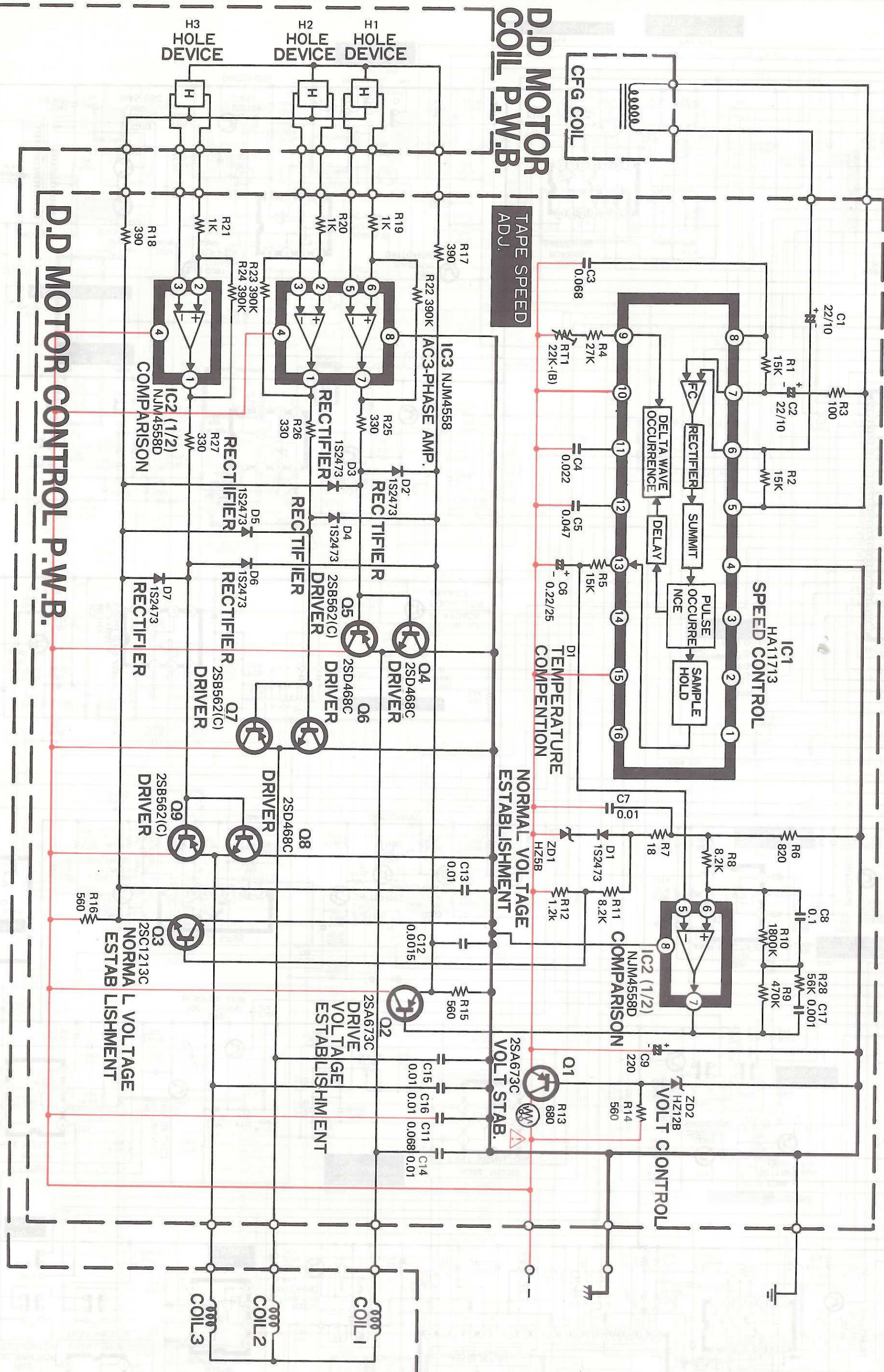
RT1  
ADJ.  
TAPED SPEED

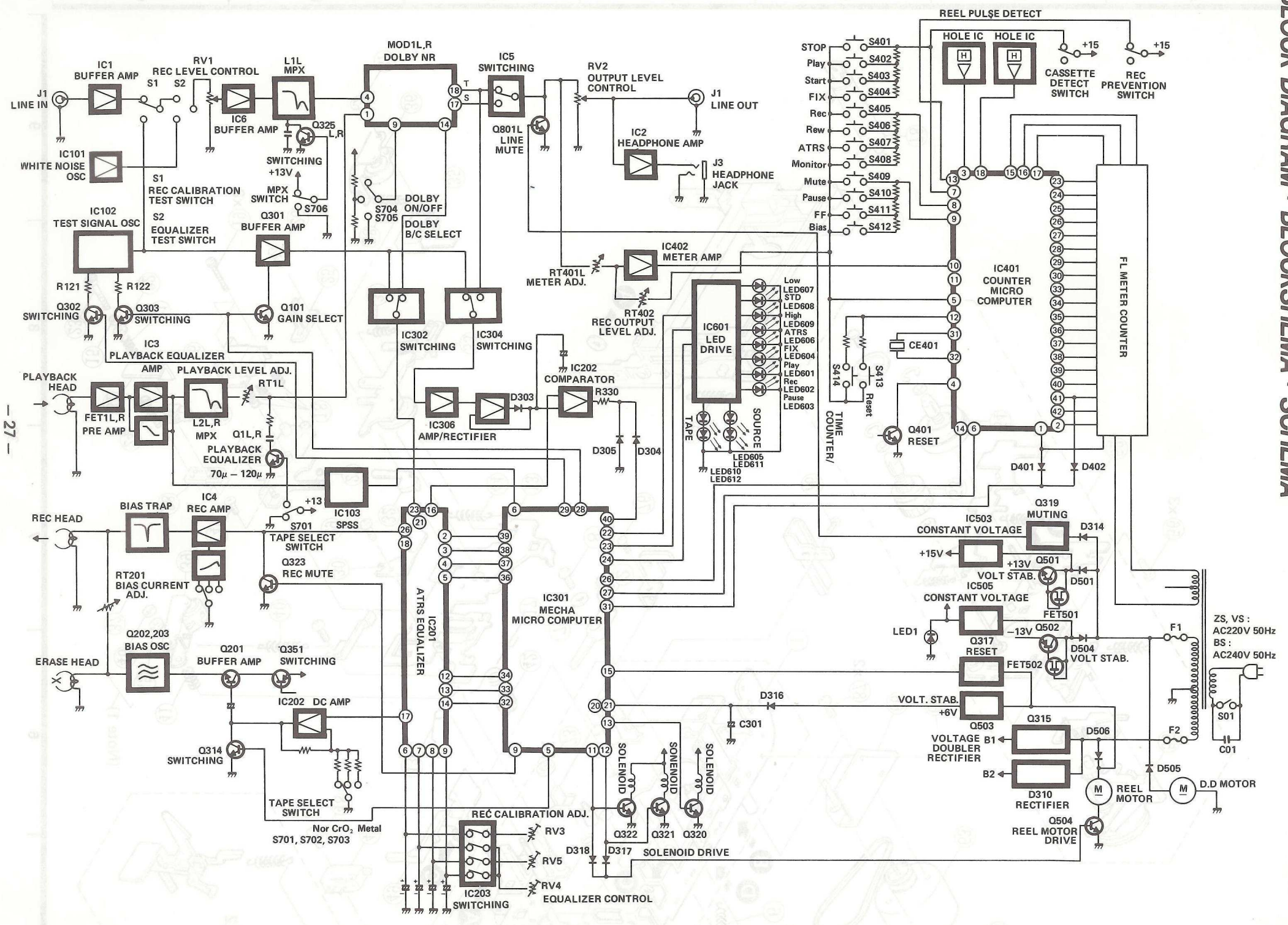
1 2 3 4 5 6 7 8 9

CIRCUIT DIAGRAM (D.D Motor Control)

SCHALPLAN (D.D-Motorkontroll)

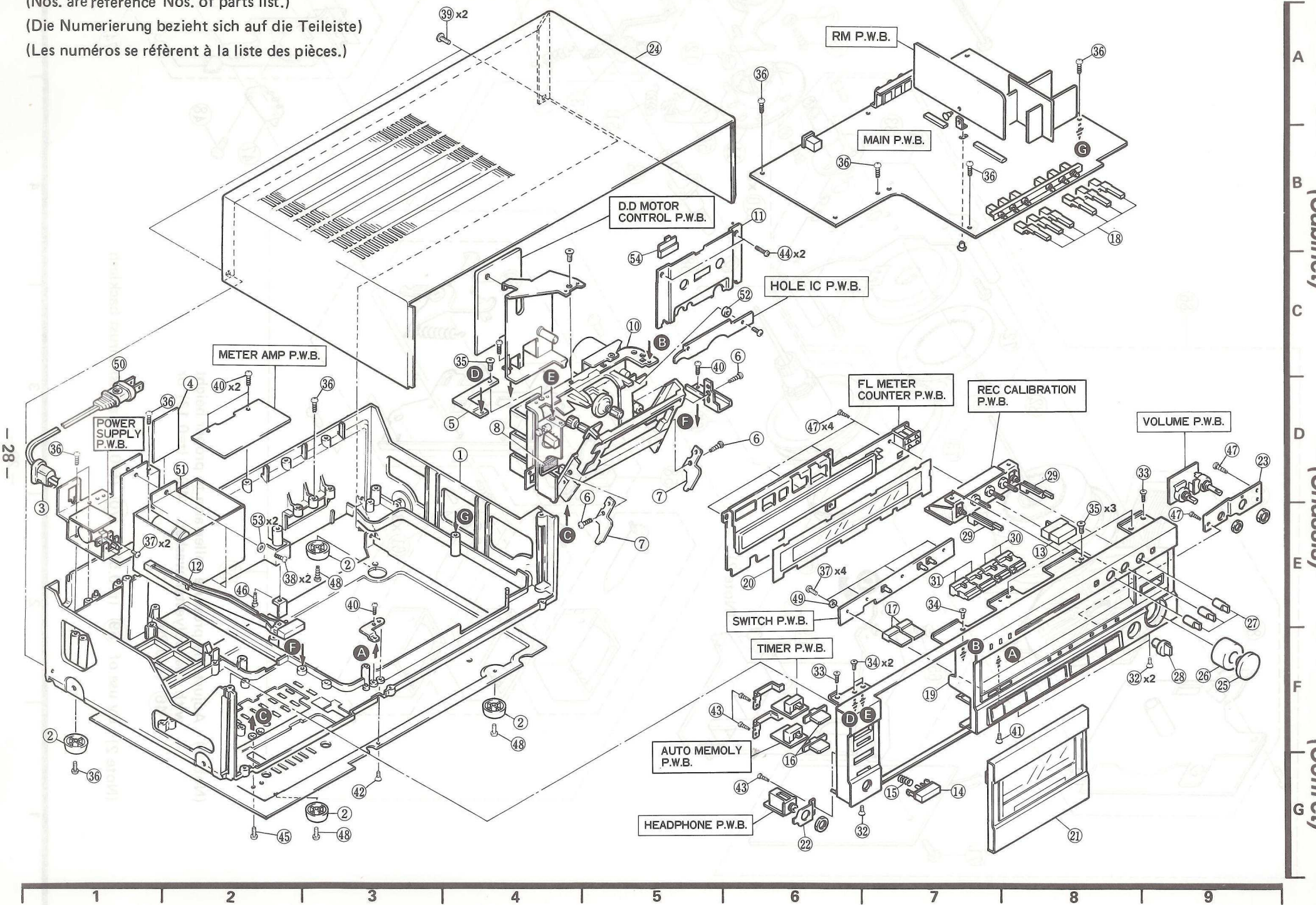
PLAN DE CIRCUIT (D.D-Moteur D.D)





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(Nos. are reference Nos. of parts list.)  
 (Die Numerierung bezieht sich auf die Teileliste)  
 (Les numéros se réfèrent à la liste des pièces.)



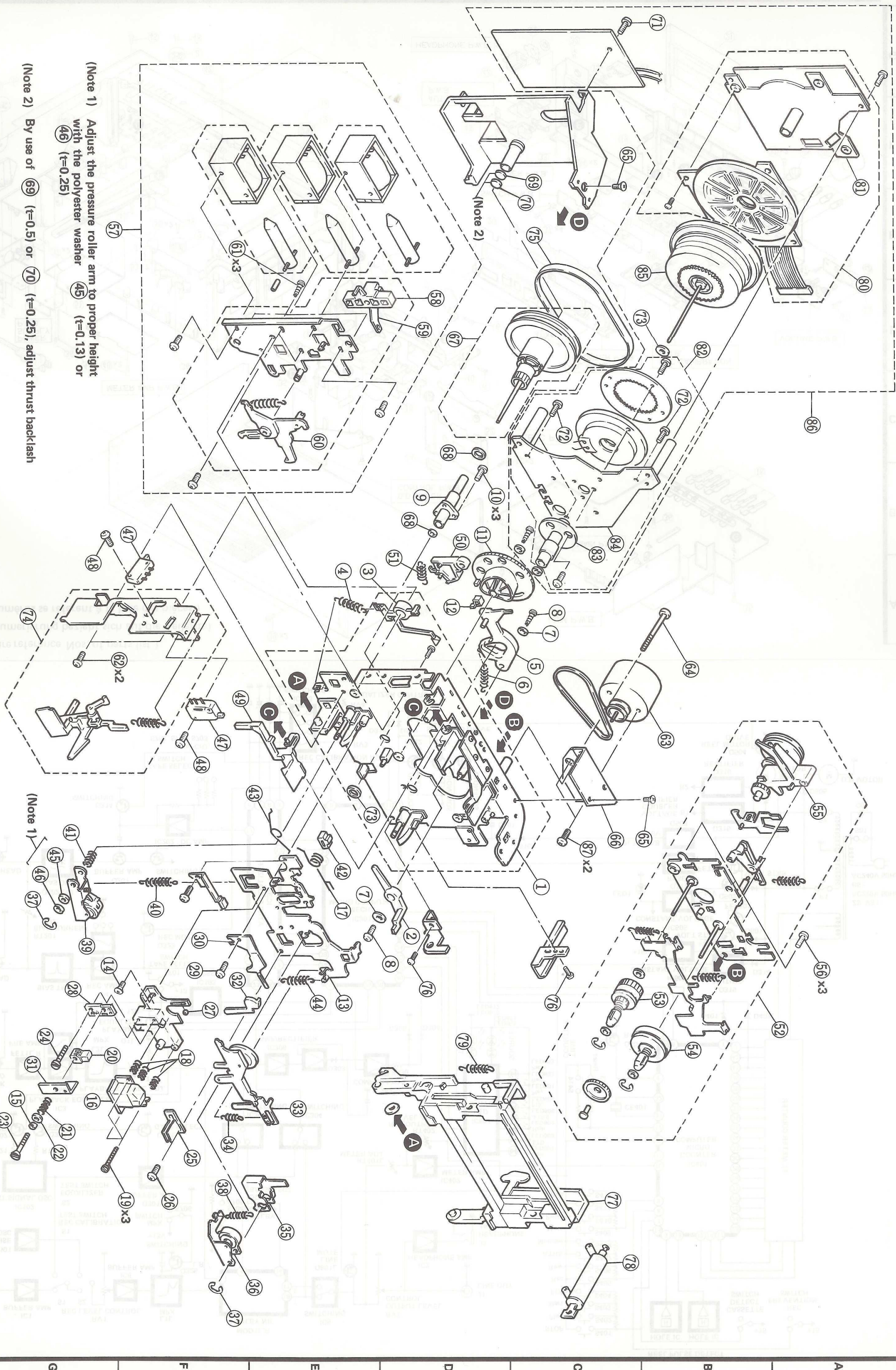
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D-909

EXPLODED VIEW · EXPLOSIONSANSICHT · VUE EXPLOSEE  
 (Cabinet) (Chassis) (Coffret)

EXPLODED VIEW EXPLOSIONSANSICHT VUE EXPLOSEE  
(Cassette Chassis) (Chasseten To nbandgerat) (Magnetphone)



# REPLACEMENT · ERSATZTEILLISTE · TABLEAU DES PIÈCES PARTS LIST

D-909

SYMBOL NO.	PART NO.	DESCRIPTION				SYMBOL NO.	PART NO.	DESCRIPTION				SYMBOL NO.	PART NO.	DESCRIPTION							
CAPACITORS																					
C01	1243901	CD	0.01μF	±100%	400V	C213LR	0252521	EL	10μF	±10%	16V	R21LR	0129569	CF	220Ω	±5%	SRD¼P				
C1LR	0274033	MF	2700PF	±10%	50V	C214LR	0252802	EL	0.22μF	±20%	50V	R22LR	0129661	CF	100KΩ	±5%	SRD¼P				
C2	0252525	EL	47μF	±20%	16V	C251	0252522	EL	22μF	±10%	16V	R23LR	0129619	CF	5.6KΩ	±5%	SRD¼P				
C3LR	0252521	EL	10μF	±10%	16V	C252	0252522	EL	22μF	±10%	16V	R24LR	0129613	CF	3.3KΩ	±5%	SRD¼P				
C4LR	0252332	EL	220μF	±20%	10V	C301	0259891	SC	0.022μF	+8% -20%	5.5V	R25LR	0129621	CF	15KΩ	±5%	SRD¼P				
C5LR	0252332	EL	220μF	±20%	10V	C302	0252521	EL	10μF	±10%	16V	R26LR	0129635	CF	15KΩ	±5%	SRD¼P				
C6LR	0252812	EL	2.2μF	±20%	50V	C303	0252621	EL	10μF	±10%	25V	R27LR	0129679	CF	560KΩ	±5%	SRD¼P				
C7LR	0252812	EL	2.2μF	±20%	50V	C304	0252522	EL	22μF	±10%	16V	R28	0129613	CF	3.3KΩ	±5%	SRD¼P				
C8L	0252332	EL	220μF	±20%	10V	C305	0252521	EL	10μF	±10%	16V	R29LR	0129621	CF	6.8KΩ	±5%	SRD¼P				
C8R	1252332	EL	220μF	±20%	10V	C306	0275014	MF	0.033μF	±10%	50V	R30LR	0129617	CF	4.7KΩ	±5%	SRD¼P				
C9LR	0252521	EL	10μF	±10%	16V	C401	0230032	CC	68PF	±5%	50V	R31LR	0129623	CF	8.2KΩ	±5%	SRD¼P				
C10LR	0252232	EL	220μF	±20%	6.3V	C402	0240003	CC	180PF	±10%	50V	R32LR	0129643	CF	33KΩ	±5%	SRD¼P				
C11LR	0275013	MF	0.022μF	±10%	50V	C403LR	0252811	EL	1μF	±10%	50V	R33LR	0129641	CF	27KΩ	±5%	SRD¼P				
C12LR	0274015	MF	4700PF	±10%	50V	C404LR	0252521	EL	10μF	±20%	16V	R34LR	0129583	CF	820Ω	±5%	SRD¼P				
C13LR	0275036	MF	0.082μF	±10%	50V	C405	0252323	EL	33μF	±20%	10V	R35LR	0129553	CF	82Ω	±5%	SRD¼P				
C15LR	0252521	EL	10μF	±10%	16V	C501	1259841	EL	2200μF	±20%	35V	R36LR	0129583	CF	820Ω	±5%	SRD¼P				
C16LR	0252811	EL	1μF	±10%	50V	C502	1259841	EL	2200μF	±20%	35V	R37LR	0129603	CF	1.2KΩ	±5%	SRD¼P				
C17LR	0209721	CD	330PF	±10%	50V	C503	0252811	EL	1μF	±10%	50V	R38LR	0129603	CF	1.2KΩ	±5%	SRD¼P				
C18	0252811	EL	1μF	±10%	50V	C504	1252632	EL	220μF	±20%	25V	R39LR	0129607	CF	1.8KΩ	±5%	SRD¼P				
C19LR	0275012	MF	0.015μF	±10%	50V	C505	1252636	EL	1000μF	±20%	25V	R40	0129613	CF	3.3KΩ	±5%	SRD¼P				
C21LR	0275036	MF	0.082μF	±10%	50V	C506	1259841	EL	2200μF	±20%	35V	R41	0129601	CF	1KΩ	±5%	SRD¼P				
C22LR	0275015	MF	0.047μF	±10%	50V	C507	0252531	EL	100μF	±20%	16V	R42	0129623	CF	8.2KΩ	±5%	SRD¼P				
C23	0252332	EL	220μF	±20%	10V	C508	0252531	EL	100μF	±20%	16V	R43	0129573	CF	330Ω	±5%	SRD¼P				
C24LR	0230036	CC	100PF	±5%	50V	C509	1252522	EL	22μF	±10%	16V	R101	0129607	CF	1.8KΩ	±5%	SRD¼P				
C25LR	0252521	EL	10μF	±10%	16V	C510	0259956	EL	220μF	±20%	50V	R102	0129607	CF	1.8KΩ	±5%	SRD¼P				
C101	0240104	CD	4700PF	±30%	25V	C511	1259841	EL	2200μF	±20%	35V	R103	0129607	CF	1.8KΩ	±5%	SRD¼P				
C102	0275014	MF	0.033μF	±10%	50V	C512	1252636	EL	1000μF	±20%	25V	R104	0129583	CF	820Ω	±5%	SRD¼P				
C103	0252811	EL	1μF	±10%	50V	C513	0252325	EL	47μF	±10%	10V	R105	0129649	CF	56KΩ	±5%	SRD¼P				
C104	0252521	EL	10μF	±10%	16V	C801LR	0274013	MF	0.0022μF	±10%	50V	R106	0129649	CF	56KΩ	±5%	SRD¼P				
C105	1279332	ST	6800PF	±5%	100V	C803LR	1239408	CD	330PF	±10%	50V	R107	0129631	CF	10KΩ	±5%	SRD¼P				
C106	1279332	ST	6800PF	±5%	100V	C804	0252522	EL	22μF	±10%	16V	R108	0129661	CF	100KΩ	±5%	SRD¼P				
C107	0274014	MF	0.0033μF	±10%	50V	C851	0252621	EL	10μF	±20%	25V	R109	0129605	CF	1.5KΩ	±5%	SRD¼P				
C108	0252325	EL	47μF	±10%	10V	C852	0274012	MF	0.0015μF	±10%	50V	R110	0129663	CF	120KΩ	±5%	SRD¼P				
C109	0252525	EL	47μF	±20%	16V	C853LR	0240002	CC	150PF	±10%	50V	R111	0129663	CF	120KΩ	±5%	SRD¼P				
C110	0252811	EL	1μF	±10%	50V	C854LR	1248676	CD	47PF	±5%	50V	R112	0129639	CF	22KΩ	±5%	SRD¼P				
C111	1252804	EL	0.15μF	±20%	50V	C861	1239408	CD	330PF	±10%	50V	R113	0129649	CF	56KΩ	±5%	SRD¼P				
C112	1252811	EL	1μF	±20%	50V	C901	1252811	EL	1μF	±20%	50V	R114	0129632	CF	8.2KΩ	±5%	SRD¼P				
C113	0274011	MF	0.001μF	±10%	50V	C902	1252811	EL	1μF	±20%	50V	R115	0129631	CF	10KΩ	±5%	SRD¼P				
C114	0274014	MF	0.0033μF	±10%	50V	C903	0252532	EL	220μF	±20%	16V	R116	0129631	CF	10KΩ	±5%	SRD¼P				
C115LR	0274015	MF	4700PF	±10%	50V	C904	1276011	MF	0.1μF	±10%	50V	R117	0129661	CF	100KΩ	±5%	SRD¼P				
C116	0252521	EL	10μF	±10%	16V	RESISTORS										R118	0129635	CF	15KΩ	±5%	SRD¼P
C117	0252521	EL	10μF	±10%	16V	R1LR	0129639	CF	22KΩ	±5%	SRD¼P	R119	0129617	CF	4.7KΩ	±5%	SRD¼P				
C151	1274012	MF	1500PF	±10%	50V	R2LR	0129643	CF	33KΩ	±5%	SRD¼P	R120	0129617	CF	4.7KΩ	±5%	SRD¼P				
C201LR	0230036	CC	100PF	±5%	50V	R3LR	0129639	CF	22KΩ	±5%	SRD¼P	R121	0129535	CF	15Ω	±5%	SRD¼P				
C202	0279324	PP	3300PF	±5%	100V	R4LR	0129601	CF	1KΩ	±5%	SRD¼P	R122	0129575	CF	390Ω	±5%	SRD¼P				
C203	0274014	MF	0.0033μF	±10%	50V	R5LR	0129631	CF	10KΩ	±5%	SRD¼P	R123	0129653	CF	82KΩ	±5%	SRD¼P				
C204	0275031	MF	12000PF	±10%	50V	R6LR	0129613	CF	3.3KΩ	±5%	SRD¼P	R124	0129569	CF	220Ω	±5%	SRD¼P				
C205	0252522	EL	22μF	±10%	16V	R7LR	0129669	CF	220KΩ	±5%	SRD¼P	R125	0129671	CF	270KΩ	±5%	SRD¼P				
C206	0252521	EL	10μF	±10%	16V	R8	1100631	NF	10Ω	±5%	SRD¼P	R126	0129601	CF	1KΩ	±5%	SRD¼P				
C207	0252521	EL	10μF	±10%	16V	R9	0129621	CF	6.8KΩ	±5%	SRD¼P	R127	0129623	CF	8.2KΩ	±5%	SRD¼P				
C208	0252521	EL	10μF	±10%	16V	R10	0129631	CF	10KΩ	±5%	SRD¼P	R128	0129705	CF	1.5MΩ	±5%	SRD¼P				
C209	0252521	EL	10μF	±10%	16V	R11LR	0129619	CF	5.6KΩ	±5%	SRD¼P	R129	0129623	CF	8.2KΩ	±5%	SRD¼P				
C210	0252521	EL	10μF	±10%	16V	R12LR	0129631	CF	10KΩ	±5%	SRD¼P	R130LR	0129661	CF	100KΩ	±5%	SRD¼P				
C211	0252525	EL	47μF	±20%	16V	R13LR	0129631	CF	10KΩ	±5%	SRD¼P	R131	0129645	CF	39KΩ	±5%	SRD¼P				
C212LR	0274015	MF	4700PF	±10%	50V	R14LR	0129631	CF	10KΩ	±5%	SRD¼P	R132	0129645	CF	39KΩ	±5%	SRD¼P				
						R15LR	0129623	CF	8.2KΩ	±5%	SRD¼P										
						R16LR	0129551	CF	68Ω	±5%	SRD¼P										
						R17LR	0129561	CF	100Ω	±5%	SRD¼P										
						R18LR	0129583	CF	820Ω	±5%	SRD¼P										
						R19LR	0129581	CF	680Ω	±5%	SRD¼P										
						R20LR	0129647	CF	47KΩ	±5%	SRD¼P										

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R133	0129635	CF 15Ω ±5%	R333	0129661	CF 100KΩ ±5%
R134	0129615	CF 3.9KΩ ±5%	R334	0129631	CF 10KΩ ±5%
R135	0129623	CF 8.2KΩ ±5%	R335	0129631	CF 10KΩ ±5%
R136	0129705	CF 1.5MΩ ±5%	R336	0129631	CF 10KΩ ±5%
R201	0129639	CF 2.2KΩ ±5%	R337	0129613	CF 3.3KΩ ±5%
R202	0129619	CF 5.6KΩ ±5%	R338	0129623	CF 8.2KΩ ±5%
R203	0129679	CF 560KΩ ±5%	R339	0129601	CF 1KΩ ±5%
R204	0129675	CF 390KΩ ±5%	R340	0129615	CF 3.9KΩ ±5%
R205	0129613	CF 3.3KΩ ±5%	R341	0129645	CF 39KΩ ±5%
R206	0129619	CF 5.6KΩ ±5%	R342	0129661	CF 100KΩ ±5%
R207	0129619	CF 5.6KΩ ±5%	R343	0129635	CF 15KΩ ±5%
R208	0129613	CF 3.3KΩ ±5%	R344	0129617	CF 4.7KΩ ±5%
R209	0129601	CF 1KΩ ±5%	R345	0129651	CF 68KΩ ±5%
R210	0129643	CF 3.9KΩ ±5%	R346	0129617	CF 4.7KΩ ±5%
R211	0129615	CF 3.9KΩ ±5%	R347	0129647	CF 4.7KΩ ±5%
R212	0129631	CF 10KΩ ±5%	R348	0129617	CF 4.7KΩ ±5%
R213	0129631	CF 10KΩ ±5%	R349	0129631	CF 10KΩ ±5%
R214	0129603	CF 10KΩ ±5%	R350	0129613	CF 3.3KΩ ±5%
R215	0129631	CF 10KΩ ±5%	R351	0129613	CF 3.3KΩ ±5%
R216	0129601	CF 1KΩ ±5%	R352	0129613	CF 3.3KΩ ±5%
R217	0129631	CF 10KΩ ±5%	R353	0129613	CF 3.3KΩ ±5%
R218	0129601	CF 1KΩ ±5%	R354	0129615	CF 3.9KΩ ±5%
R219	0129667	CF 180Ω ±5%	R355	0129631	CF 10KΩ ±5%
R220LF	0129579	CF 560Ω ±5%	R356	0129631	CF 10KΩ ±5%
R221LF	0129623	CF 8.2KΩ ±5%	R357	0129613	CF 3.3KΩ ±5%
R222LF	0129623	CF 8.2KΩ ±5%	R358	0129631	CF 10KΩ ±5%
R223LF	0129631	CF 10KΩ ±5%	R359	0129643	CF 33KΩ ±5%
R224LF	0129631	CF 10KΩ ±5%	R360	0129631	CF 10KΩ ±5%
R225LF	0129639	CF 22KΩ ±5%	R362	0129631	CF 10KΩ ±5%
R226	0129641	CF 27KΩ ±5%	R363	0129643	CF 33KΩ ±5%
R227	0129643	CF 33KΩ ±5%	R364	0129643	CF 33KΩ ±5%
R301	0129639	CF 22KΩ ±5%	R365	0129643	CF 33KΩ ±5%
R302	0129639	CF 22KΩ ±5%	R366	0129643	CF 33KΩ ±5%
R303	0129639	CF 22KΩ ±5%	R367	0129643	CF 33KΩ ±5%
R304	0129619	CF 5.6KΩ ±5%	R368	0129643	CF 33KΩ ±5%
R305	0129619	CF 5.6KΩ ±5%	R369	0129643	CF 33KΩ ±5%
R306	0129639	CF 22KΩ ±5%	R401	0129631	CF 10KΩ ±5%
R307	0129639	CF 22KΩ ±5%	R402	0129631	CF 10KΩ ±5%
R308	0129639	CF 22KΩ ±5%	R403	0129631	CF 10KΩ ±5%
R309	0129639	CF 22KΩ ±5%	R404	0129609	CF 2.2KΩ ±5%
R310	0129613	CF 5.6KΩ ±5%	R405	0129617	CF 4.7KΩ ±5%
R311	0129639	CF 22KΩ ±5%	R406	0129635	CF 15KΩ ±5%
R312	0129639	CF 22KΩ ±5%	R407	0129609	CF 2.2KΩ ±5%
R313	0129639	CF 22KΩ ±5%	R408	0129617	CF 4.7KΩ ±5%
R314	0129631	CF 10KΩ ±5%	R409	0129635	CF 15KΩ ±5%
R315	0129631	CF 10KΩ ±5%	R410	0129609	CF 2.2KΩ ±5%
R316	0129631	CF 10KΩ ±5%	R411	0129617	CF 4.7KΩ ±5%
R317	0129639	CF 22KΩ ±5%	R412	0129635	CF 15KΩ ±5%
R318	0129639	CF 22KΩ ±5%	R413	0129631	CF 10KΩ ±5%
R319	0129631	CF 10KΩ ±5%	R414	0129631	CF 10KΩ ±5%
R320	0129631	CF 10KΩ ±5%	R415	0129639	CF 22KΩ ±5%
R321	0129679	CF 560KΩ ±5%	R416	0129601	CF 1KΩ ±5%
R322	0129603	CF 1.2KΩ ±5%	R417	0129631	CF 22KΩ ±5%
R323	0129643	CF 56KΩ ±5%	R418	0129631	CF 10KΩ ±5%
R324	0239682	CF 680KΩ ±5%	R419	0129607	CF 1.8KΩ ±5%
R325	0129605	CF 1.5KΩ ±5%	R420	0129603	CF 1.2KΩ ±5%
R326	0129661	CF 100KΩ ±5%	R421R	0129631	CF 10KΩ ±5%
R327	0129661	CF 100Ω ±5%	R421R	0129661	CF 68KΩ ±5%
R328	0129613	CF 3.3KΩ ±5%	R421R	0129645	CF 39KΩ ±5%
R329	0129643	CF 33KΩ ±5%	R421R	0129633	CF 12KΩ ±5%
R330	0129617	CF 4.7KΩ ±5%	R428	0129643	CF 33Ω ±5%
R331	0129631	CF 10KΩ ±5%	R429	0129643	CF 33Ω ±5%
R332	0129639	CF 22KΩ ±5%	R501	0129601	CF 1KΩ ±5%

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
R502	0129601	CF 1KΩ ±5%	R602	0129665	CF 150Ω ±5%
R503	0119601	MO 10Ω ±5%	R603	0129665	CF 150Ω ±5%
R504	1119601	MO 10Ω ±10%	R604	0129665	CF 150Ω ±5%
R505	0129601	CF 1KΩ ±5%	R605	0129665	CF 150Ω ±5%
R506	0129601	CF 1KΩ ±5%	R606	0129665	CF 150Ω ±5%
R507	0129617	CF 4.7KΩ ±5%	R607	0129665	CF 150Ω ±5%
R508	0129673	CF 3.3KΩ ±5%	R608	0129665	CF 150Ω ±5%
R509	0129651	CF 150Ω ±5%	R609	0129665	CF 150Ω ±5%
R610	0129653	CF 82Ω ±5%	R610	0129653	CF 82Ω ±5%
R701	0129651	CF 68KΩ ±5%	R701	0129651	CF 68KΩ ±5%
R702	0129651	CF 68KΩ ±5%	R702	0129651	CF 68KΩ ±5%
R703	0129651	CF 68KΩ ±5%	R703	0129651	CF 68KΩ ±5%
R707	0129609	CF 2.2KΩ ±5%	R707	0129609	CF 2.2KΩ ±5%
R708	0129609	CF 2.2KΩ ±5%	R708	0129609	CF 2.2KΩ ±5%
R709	0129609	CF 2.2KΩ ±5%	R709	0129609	CF 2.2KΩ ±5%
R710	0129617	CF 4.7KΩ ±5%	R710	0129617	CF 4.7KΩ ±5%
R801	0129649	CF 56KΩ ±5%	R801	0129649	CF 56KΩ ±5%
R802	0129649	CF 56KΩ ±5%	R802	0129649	CF 56KΩ ±5%
R803LR	0129617	CF 4.7KΩ ±5%	R803LR	0129617	CF 4.7KΩ ±5%
R804	0129661	CF 100KΩ ±5%	R804	0129661	CF 100KΩ ±5%

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
MOD1LR	2377531	TM3506	Q326LR	2328652	25C1740LN(S)
IC1	2387301	M5218P	Q327	2317741	25D1111
IC2	2387301	M5218P	Q328	2317741	25D1111
IC3	2387301	M5218P	Q329	2328652	25C1740LN(S)
IC4	2387301	M5218P	Q330	2328652	25C1740LN(S)
IC5	2388901	BU40668	Q331	2328652	25C1740LN(S)
IC6	2387301	M5218P	Q332	2328652	25C1740LN(S)
IC101	2387301	M5218P	Q333	2328652	25C1740LN(S)
IC102	2387301	M5218P	Q334	2328652	25C1740LN(S)
IC103	2386463	BA335	Q335	2328652	25C1740LN(S)
IC201	2369381	HA12035	Q336	2328652	25C1740LN(S)
IC202	2387301	M5218P	Q337	2328652	25C1740LN(S)
IC203	2388901	BU40668	Q338	2328652	25C1740LN(S)
IC301	2387164	HD44801C17	Q339	2328652	25C1740LN(S)
IC302	2388901	BU40668	Q340	2328652	25C1740LN(S)
IC303	2388901	BU40668	Q341	2328652	25C1740LN(S)
IC304	2388901	BU40668	Q342	2328652	25C1740LN(S)
IC305	2387611	BA6251	Q343	2328652	25C1740LN(S)
IC306	2387301	M5218P	Q344	2328652	25C1740LN(S)
IC401	2387683	M58846-402P	Q345	2328652	25C1740LN(S)
IC402	2387301	M5218P	Q346	2328652	25C1740LN(S)
IC503	2369804	HA17815P	Q347	2328652	25C1740LN(S)
IC505	2389351	AN79N15	Q348	2328652	25C1740LN(S)
IC801	2398411	M5M56371	Q349	2328652	25C1740LN(S)
	2369242	DN68381(Hole IC)	Q350	2328652	25C1740LN(S)
	2329721	2SK163L	Q351	2328652	25C1740LN(S)
	2329243	2SK246GR2	Q352	2328652	25C1740LN(S)
	2329243	2SK246GR2	Q353	2328652	25C1740LN(S)
Q1LR	2328652	25C1740LN(S)	Q354	2328652	25C1740LN(S)
Q2LR	2317971	2SD1488	Q355	2328652	25C1740LN(S)
Q101	2329652	25C1740LN(S)	Q356	2328652	25C1740LN(S)
Q102	2328652	25C1740LN(S)	Q357	2328652	25C1740LN(S)
Q103	2328652	25C1740LN(S)	Q358	2328652	25C1740LN(S)
Q104	2328652	25C1740LN(S)	Q359	2328652	25C1740LN(S)

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
D201	2337601	1S2473	D504	2337762	ERR12-01
D301	2337601	1S2473	D505	2337762	ERR12-01
D302	2337601	1S2473	D506	2337762	ERR12-01
D303	2337601	1S2473	D507	2337762	ERR12-01
D304	2337601	1S2473	D508	2337762	ERR12-01
D305	2337601	1S2473	D509	2337762	ERR12-01
D306	2337601	1S2473	D510	2337762	ERR12-01
D307	2337601	1S2473	D511	2337762	ERR12-01
D308	2337601	1S2473	D801	2337601	1S2473
D309	2337601	1S2473	D901	2337601	1S2473
D310	2337601	1S2473			
D311	2337601	1S2473			
D312	2337601	1S2473			
D313	2337601	1S2473			
D314	2337601	1S2473			
D315	2337601	1S2473			
D316	2337601	1S2473			
D317	2337601	1S2473			
D318	2337601	1S2473			
D319	2337601	1S2473			
D320	2337601	1S2473			
D321	2337601	1S2473			
D322	2337601	1S2473			
D401	2338081	1S2473			
D402	2338081	1S2473			
D404LR	2337601	1S2473			
D501	2337762	ERR12-01			

SYMBOL NO.	PART NO.	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
L1LR	2228022	Dolby filter	L4LR	2136341	LC TRAP coil
L2LR	2228024	Dolby filter	L5LR	2227991	Choke coil 3.3mH
L3LR	2136341	LC TRAP coil	L6LR	2227991	Choke coil 3.3mH
			L7LR	2136782	BIAS TRAP coil
			L201	2136603	BIAS OSC coil

SYMBOL NO.	PART NO.	DESCRIPTION
CE401	2155211	Ceramic oscillator 600KHz
F1	2727194	Fuse 1.6A
F2	2727194	Fuse 1.6A
J1	2678031	Pinjack
J2	2657961	8P DIN socket
J3	2677752	Jack (headphones)
S1	2639869	Push switch (POWER)
S2	2639521	Push switch (EQUALIZER TEST)
S401	2639682	Tact switch (STOP)
S402	2639682	Tact switch (PLAY)
S403	2639682	Tact switch (START)
S404	2639682	Tact switch (FIXED)
S405	2639682	Tact switch (REC)
S406	2639682	Tact switch (REW)
S407	2639682	Tact switch (ATRS)
S408	2639682	Tact switch (MONITOR)
S409	2639682	Tact switch (MUTE)
S410	2639682	Tact switch (PAUSE)
S411	2639682	Tact switch (FF)
S412	2639682	Tact switch (BIAS)
S413	2639682	Tact switch (RESET)
S414	4567412	Tact switch (COUNT/TIME)
	2600134	36 x 6 tapping blind head screw (radiating plate)
		Push switch (S701-S706)
		(NORMAL) C-O <sub>2</sub> METAL
		DOLBY NR
		DOLBY NR B/C SELECT, MPX)
S708	2627821	Slide switch (TIMER)
S709	2627821	Slide switch (AUTO/MEMORY REWIND)



SYMBOL NO.	PART NO.	DESCRIPTION
CAPACITORS		
C1	0253222	EL 22μF ±20% 10V
C2	0253232	EL 22μF ±20% 10V
C3	0275016	MF 0.068μF ±10% 50V
C4	0275013	MF 0.022μF ±10% 50V
C5	0275015	MF 0.047μF ±10% 50V
C6	0256522	EL 0.22μF ±10% 25V
C7	0275011	MF 0.01μF ±10% 50V
C8	0275011	MF 0.1μF ±10% 50V
C9	0252532	EL 220μF ±20% 16V
C10	0275016	MF 0.068μF ±10% 50V
C11	0274012	MF 0.0015μF ±10% 50V
C12	0274012	MF 0.015μF ±10% 50V
C13	0275011	MF 0.01μF ±10% 50V
C14	0275011	MF 0.01μF ±10% 50V
C15	0275011	MF 0.01μF ±10% 50V
C16	0275011	MF 0.01μF ±10% 50V
C17	0274011	MF 0.001μF ±10% 50V

SYMBOL NO.	PART NO.	DESCRIPTION
RESISTORS		
R1	1129635	CF 15KΩ ±5% SRD%P
R2	1129635	CF 15KΩ ±5% SRD%P
R3	1129561	CF 100Ω ±1% RN%B
R4	0171257	ME 21KΩ ±1% RN%B
R5	1129635	CF 15KΩ ±5% SRD%P
R6	1129583	CF 820Ω ±5% SRD%P
R7	1129537	CF 18Ω ±5% SRD%P
R8	1129623	CF 8.2KΩ ±5% SRD%P
R9	1129677	CF 470KΩ ±5% SRD%P
R10	1129707	CF 1800KΩ ±5% SRD%P
R11	1129623	CF 8.2KΩ ±5% SRD%P
R12	1129603	CF 1.2KΩ ±5% SRD%P
R13	0170480	FR 680Ω ±5% RN%B
R14	1129579	CF 560Ω ±5% SRD%P
R15	1129579	CF 560Ω ±5% SRD%P
R16	1129579	CF 560Ω ±5% SRD%P
R17	1129575	CF 390Ω ±5% SRD%P
R18	1129575	CF 390Ω ±5% SRD%P
R19	1129801	CF 1KΩ ±5% SRD%P
R20	1129801	CF 1KΩ ±5% SRD%P
R21	1129601	CF 1KΩ ±5% SRD%P
R22	1129675	CF 390KΩ ±5% SRD%P
R23	1129675	CF 390KΩ ±5% SRD%P
R24	1129675	CF 390KΩ ±5% SRD%P
R25	1129573	CF 330Ω ±5% SRD%P
R26	1129573	CF 330Ω ±5% SRD%P
R27	1129573	CF 330Ω ±5% SRD%P
R28	0138179	CF 56KΩ ±5% SRD%P

SYMBOL NO.	PART NO.	DESCRIPTION
DIODES		
D1	2338012	1S2473
D2	2338012	1S2473
D3	2338012	1S2473
D4	2338012	1S2473
D5	2338012	1S2473
D6	2338012	1S2473
D7	2338012	1S2473
D8	2338362	HZ58
D9	2337102	HZ12B

SYMBOL NO.	PART NO.	DESCRIPTION
VARIABLE RESISTORS		
RT1	0199875	22KΩ-(B)(TAPE SPEED ADJ)

SYMBOL NO.	PART NO.	DESCRIPTION
ACCESSORIES		
2703111		Patch cord

SYMBOL NO.	PART NO.	DESCRIPTION
CABINET CHASSIS ASSEMBLY		
1	3965997	Mold chassis
2	3927411	Foot
3	3913006	Bushing
4	4700677	Spacer
5	4447361	Plate
6	8699306	2.6φ x 6BT screw
7	4462041	Tray bracket
8	3902501	Spacer
10	2563194	Cassette chassis ass'y (DX-10D)
11	4433868	Cassette metal
12	3296466	Power button ass'y
13	3301541	Button (MONITOR)
14	3299212	Eject button
15	3363665	Spring for eject button.
16	3295803	Timer knob
17	3301481	Program key
18	3301461	(RESET, COUNTER/TIME) BUTTON

SYMBOL NO.	PART NO.	DESCRIPTION
19	3200953	Front panel ass'y
20	3904301	FL filter
21	3201173	Cassette door ass'y
22	4447351	Holder
23	4461221	REC bracket
24	4449943	Upper cover
25	3301492	REC knob L ass'y
26	3301561	REC knob R ass'y
27	3292504	8φ knob
28	3967713	Knob
29	3299511	Button
30	3301501	Knob (ATRS, FIXED)
31	3301472	Knob (START, BIAS SELECT)
32	4577832	3φ x 10 BT flat head screw(B)
33	4577831	3φ x 10 BT flat head screw(Z)
34	4568832	3φ x 8 DT flat head screw(B)
35	4568812	(cassette chassis, L plate)
36	8691414	3φ x 8 DT flat head screw(Z)
37	4567411	(FL bracket, CAL bracket, L plate)
38	8691610	3φ x 14 BT bind head screw (MAIN P.W.B., US pinjack PT bracket)
39	8699410	3φ x 6 DT bind head screw (power switch, SWITCH PWB)
40	8691408	3φ x 10 BT bind head screw (power transformer)
41	4568851	3φ x 10 BT bind head screw (cover)
42	4568851	3φ x 8 BT bind head screw (earth plate, METER AMP PWB cassette chassis)
43	4568851	3φ x 6 DT flat head screw(C) (front panel)

SYMBOL NO.	PART NO.	DESCRIPTION
42	4567455	3φ x 14 DT bind head screw (earth plate)
43	8691308	2.6φ x 8 BT bind head screw (holder, timer bracket)
44	4578296	2.6φ x 12 DT bind head screw (cassette metal)
45	4567453	3φ x 10 DT bind head screw(C) (cassette chassis)
46	8691412	3φ x 12 BT bind head screw (bottom)
47	8691410	3φ x 10 BT bind head screw(Z)
48	4567412	(FL METER COUNTER P.W.B. VOLUME P.W.B.)
49	4930406	3φ x 8 DT bind head screw (foot)
50	2718092	Washer
51	2749584	AC cord (for ZS, VS)
52	4418002	Washer
53	4428377	Special washer
54	2339991	LED SLF-301C

SYMBOL NO.	PART NO.	DESCRIPTION
CASSETTE CHASSIS ASSEMBLY		
1	4462611	Base holder ass'y
2	3975101	Cassette detecting arm
3	3948262	Eject stopper
4	3341061	Spring (eject stopper)
5	3948972	Play arm
6	3340621	Spring (play arm)
7	8812114	3φ washer
8	8691106	2φ x 6 BT bind head screw
9	4786951	(cassette detecting arm, play arm) Flywheel holder L
10	0741303	2.6φ x 3 bind screw (flywheel holder)
11	3977491	Play gear
12	4689893	Rubber
13	4461821	Head plate ass'y
14	8721104	2φ x 4 flat head screw (head plate ass'y)
15	4587328	Collar
16	2556811	Record/playback head
17	3364111	Spring
18	3363956	Head spring
19	4585031	2φ screw (record/playback head)
20	2557092	Erase head
21	3340856	Spring
22	8812231	2φ washer
23	4585033	2φ x 25 special screw (head cover)
24	3948901	Special screw(adjust of erase head)
25	4578283	Lead wire guide
26	4581152	2φ ball
27	4461801	Head base
28	8691406	3φ x 6 BT bind head screw (head plate ass'y)
29		

SYMBOL NO.	PART NO.	DESCRIPTION
30	3364841	Spring
31	4462671	Cover
32	3956782	Rewind arm
33	4689808	Take up idler ass'y
34	3341017	Spring
35	4444082	Pause arm ass'y
36	4689833	Pressure roller arm ass'y (R)
37	4418011	2φ Ering
38	3363966	Spring
39	4689815	Pressure roller arm
40	3341494	Spring
41	3364262	Spring
42	4689702	Rubber for record prevention
43	3363993	Spring
44	3364681	Spring
45	4933085	Polyester washer (t=0.13)
46	4933086	Polyester washer (t=0.25)
47	2638901	Switch
48	4578285	(cassette detect, record prevention)
49	3948255	2.6φ x 10 DT bind head screw (switch)
50	3948963	Search arm
51	3364341	Spring

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