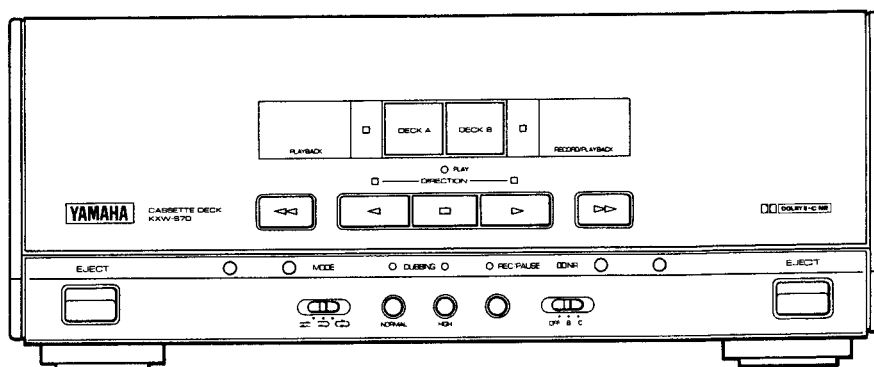


# STEREO DOUBLE CASSETTE DECK KXW-S70

## SERVICE MANUAL

KXW-S70 is a DOUBLE CASSETTE DECK for System CC-70W or CC-50



### IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

**WARNING:** Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that all service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

**IMPORTANT:** The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

**WARNING:** Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

### ■ CONTENTS

TO SERVICE PERSONNEL .....	1
REAR PANEL .....	1
SPECIFICATIONS .....	2
INTERNAL VIEW .....	2
DISASSEMBLY PROCEDURES .....	3~5
ADJUSTMENTS .....	5~9

SYSTEM CONNECTOR CHECK .....	10
μ-COM DATA .....	11~13
PRINTED CIRCUIT BOARD .....	14~16
BLOCK DIAGRAM .....	17
SCHEMATIC DIAGRAM .....	18
PARTS LIST .....	19~29

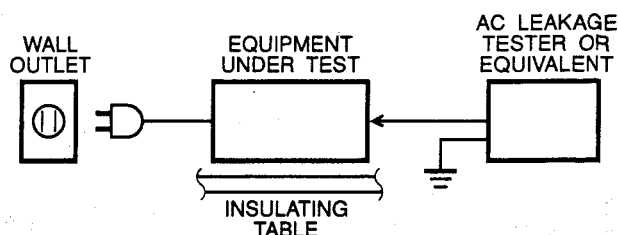
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**YAMAHA**  
YAMAHA CORPORATION  
P.O.Box 1, Hamamatsu, Japan

3.2K-382 ☐ Printed in Japan '93.8

## ■ TO SERVICE PERSONNEL

1. Critical Components Information.  
Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.
2. Leakage Current Measurement (For 120V Models Only).  
When service has been completed, it is imperative to verify that all exposed conductive surfaces are properly insulated from supply circuits.
  - Meter impedance should be equivalent to 1500 ohm shunted by 0.15μF.
  - Leakage current must not exceed 0.5mA.
  - Be sure to test for leakage with the AC plug in both polarities.



\* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "DOLBY" and the double-D symbol  are trademarks of Dolby Laboratories Licensing Corporation.

## WARNING: CHEMICAL CONTENT NOTICE!

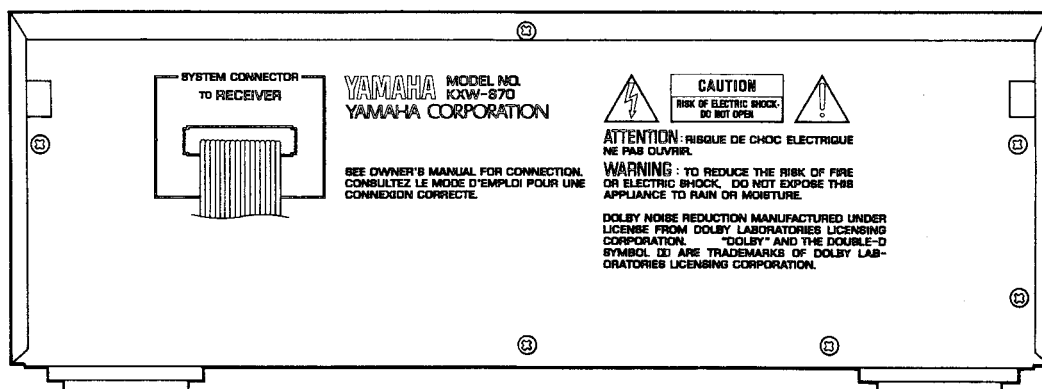
The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHATSOEVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

## ■ REAR PANEL



## ■ SPECIFICATIONS

<b>Type</b>	Auto Reverse 4-Track 2-Channel playback/recording and playback stereo double Cassette Deck
<b>Heads</b>	
PB	Hard permalloy
REC/PB	Hard permalloy
Erase	Double Gap Ferrite
<b>Motors</b>	DC servo motor x 2
<b>Wow &amp; Flutter</b>	
W.PEAK	±0.19%
W.RMS	0.09%
<b>Fast Winding Time</b>	about 120 seconds (C-60 tape)
<b>Frequency Response</b> (-20dB)	
Type I/Normal tape	30-15000Hz±3dB
Type II/High (CrO <sub>2</sub> ) tape	30-16000Hz±3dB
Type IV/Metal tape	30-18000Hz±3dB
<b>S/N Ratio</b>	
NR off	58dB
Dolby B NR on	66dB
Dolby C NR on	74dB
<b>Harmonic Distortion</b>	Less than 1.2%
<b>Channel Separation</b> (1kHz)	More than 40dB
<b>Crosstalk</b> (125Hz)	More than 55dB
<b>Power Source</b>	AC supplies from RECEIVER unit

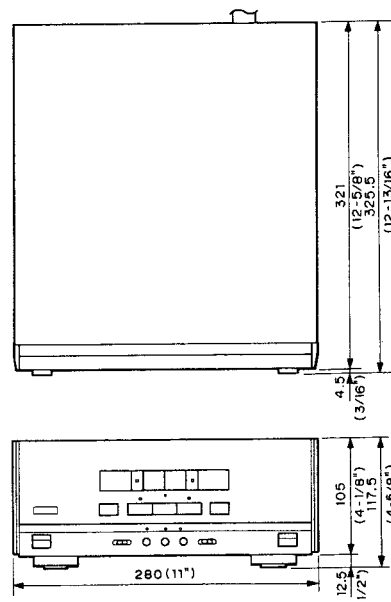
**Dimensions** (W x H x D) 280 x 117.5 x 325.5 mm  
(11" x 4-5/8" x 12-13/16")

**Weight** 4.2kg (9 lbs 4 oz)

*\*Specifications are subject to change without notice.*

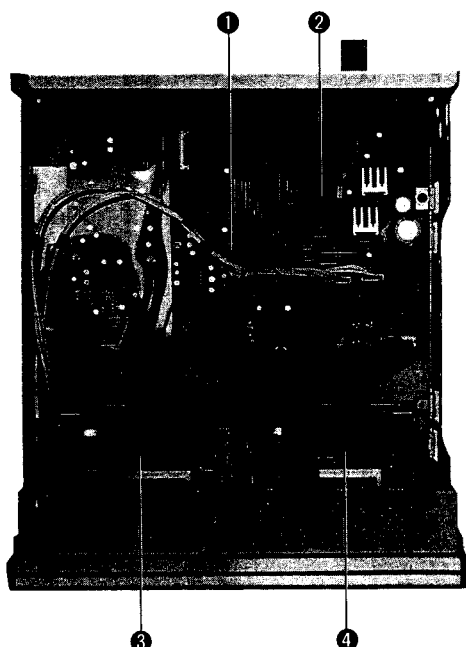
U..... U. S. A. model      G..... European model  
C..... Canadian model      B..... British model  
A..... Australian model      R..... General model

## ● DIMENSIONS



Unit : mm (inch)

## ■ INTERNAL VIEW



- ① MAIN P.C.B. ASS'Y (1)
- ② 4 BIT  $\mu$ -COM (IC9 : LC65204A-4B83)
- ③ CASSETTE MECHANISM UNIT (PB)
- ④ CASSETTE MECHANISM UNIT (R/P)

## ■ DISASSEMBLY PROCEDURES

(Remove parts in disassembly order as numbered.)

### 1. Removal of Top Cover

Remove 4 screws (①) and 1 screw (②) in Fig. 1.

### 2. Removal of Mechanism Unit

- Remove 2 screws (③) and then remove the Frame/Top in Fig. 2.
- Remove 1 retaining ring-E type (④) in Fig. 2.
- Remove 2 screws (⑤) and then remove the Mechanism Unit in Fig. 2.
- Detach 4 connectors (#1 to #4).

### 3. Removal of Front Panel Unit

- Remove 4 screws (⑥) and then remove the Side Plate in Fig. 1.
- Remove 2 screws (⑦) and then remove the Front Panel Unit in Fig. 1.
- Detach 2 connectors (#5 and #6).

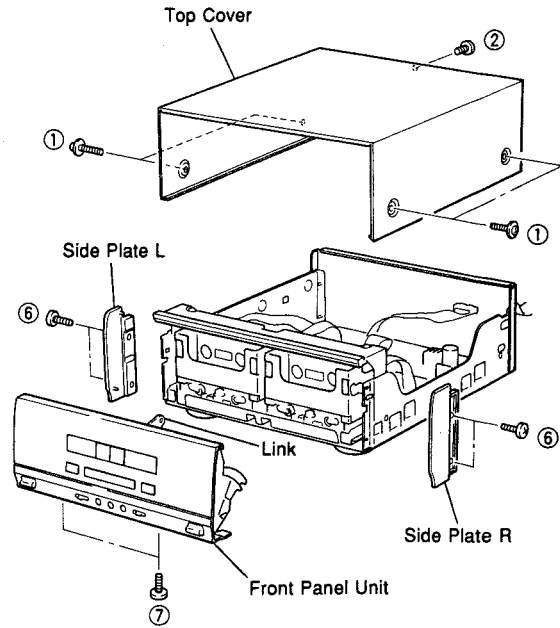


Fig. 1

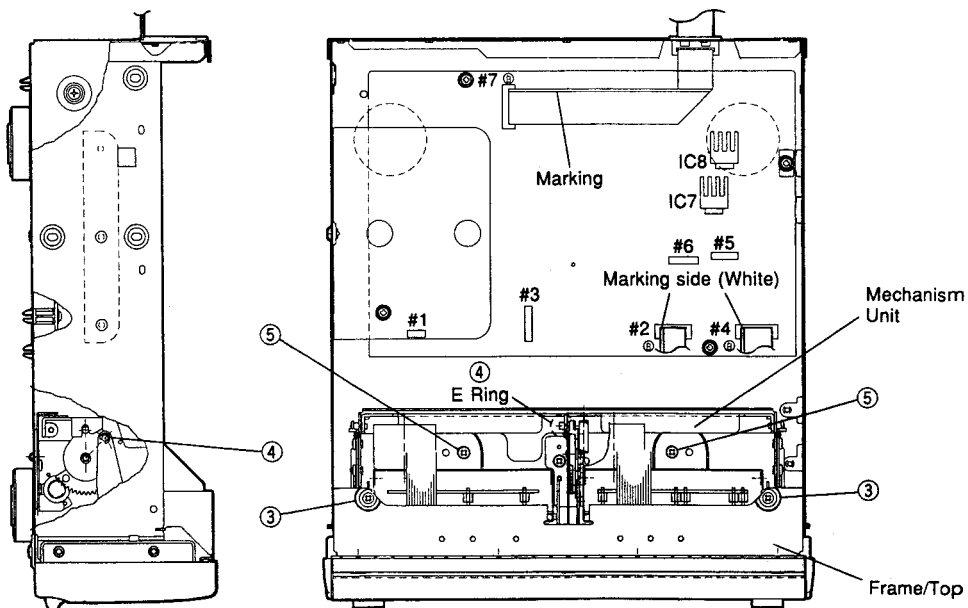
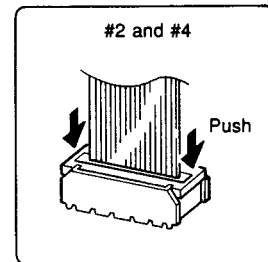


Fig. 2

#### 4. Removal of Cassette Mechanism

- Remove 3 screws (⑧) and then remove the Cassette Mechanism PB in Fig. 3.
- Remove 3 screws (⑨) and then remove the Cassette Mechanism R/P in Fig. 3.

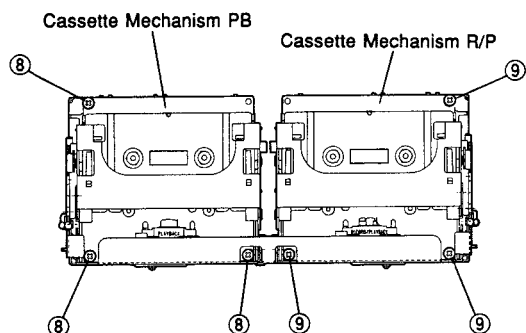


Fig. 3

#### 5. Removal of Pinch Roller

Detach the hook and then remove the Pinch Roller in Fig. 4.

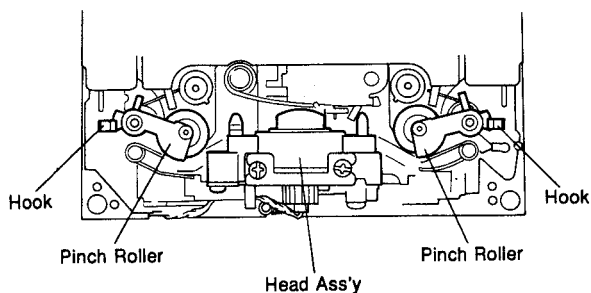


Fig. 4

#### 6. Removal of Head Ass'y

- Pull out the Back Plate in Fig. 5.

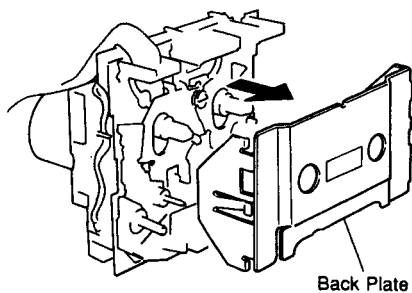


Fig. 5

- Detach 2 Springs (⑩ and ⑪) and then remove the Arm Assist in Fig. 6.

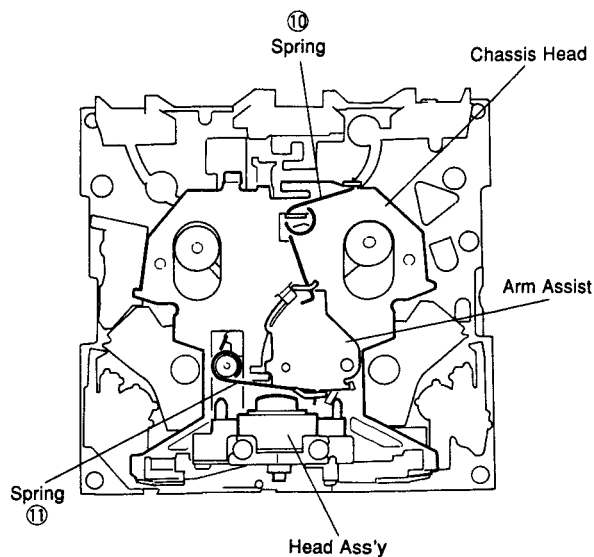


Fig. 6

- Remove 1 screw (⑫) and then remove the P.C.B. for head in Fig. 7.
- Remove 1 screw (⑬) and then remove the Gear Arm in Fig. 7.
- Remove 1 screw (⑭) and 2 screws (⑮) and then remove the Head Ass'y in Fig. 7.

\* Perform the adjustment of azimuth after attaching the Head Ass'y.

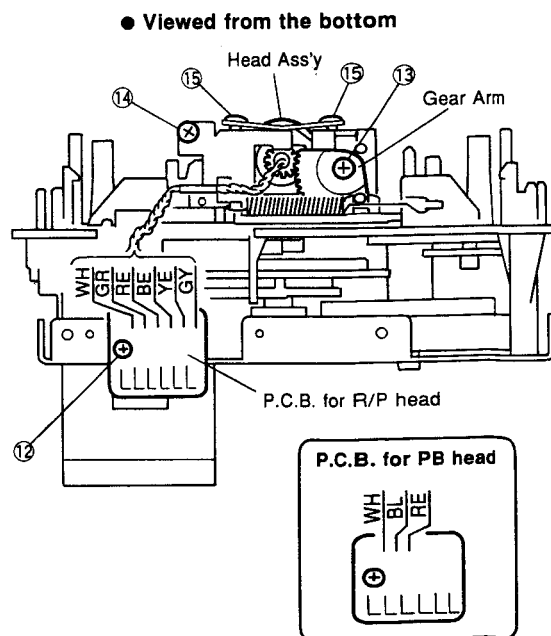


Fig. 7

## 7. Removal of Main Motor

Remove 3 screws (16) and 1 screw (17) and then remove the Bracket FW with the Main Motor in Fig. 8.

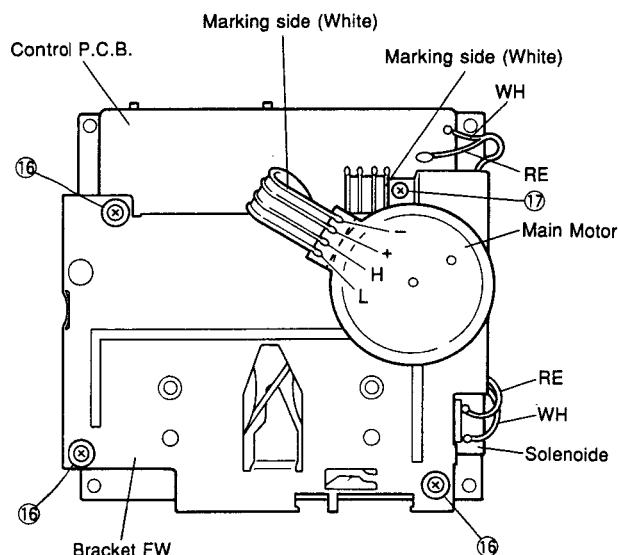


Fig. 8

## ● Main belt installation

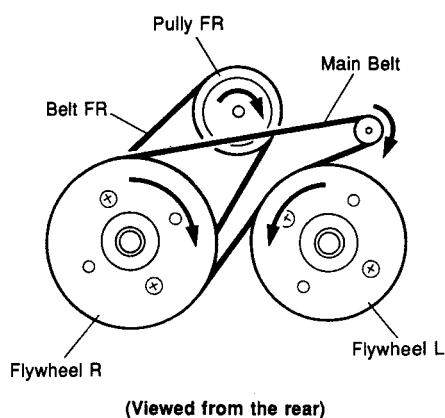
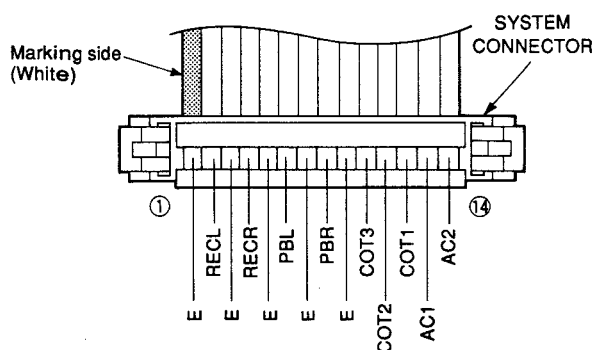


Fig. 9

## ■ ADJUSTMENTS

### 1. Before adjustment:

- This unit operates on the power fed from RX-S70 (receiver) of System CC-70. When taking measurements, be sure to connect it to RX-S70 or apply AC17.0V or DC24.0V to pins No.13 (AC1) and No.14 (AC2) of the system connector.



- Since head magnetization, dust accumulations, etc. are likely to introduce error in the various characteristics, it is very important that the heads are properly demagnetized and cleaned.
- Make adjustments of mechanical system, playback system and recording system in that order.
- Except for azimuth adjustment, adjust in the forward direction.

### 2. Instruments required

- Audio frequency oscillator
- ACVM or dual channel (ACVM)
- Wow/flutter meter
- Oscilloscope
- Frequency counter
- Torque meter
- TW-2111A (TX911580) ... Take up/back tension (FWD)
- TW-2121A (TX911570) .... Take up/back tension (RVS)
- CT-160L (TX911120) ..... FF/REW
- DCVM

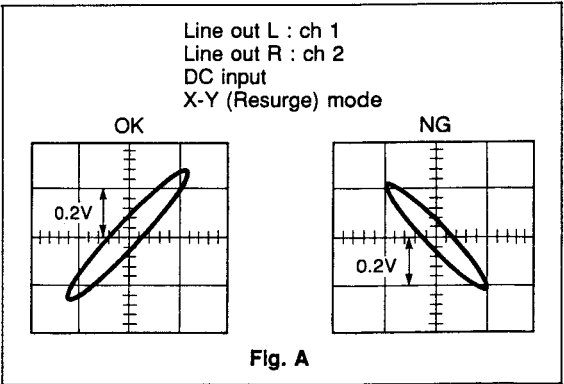
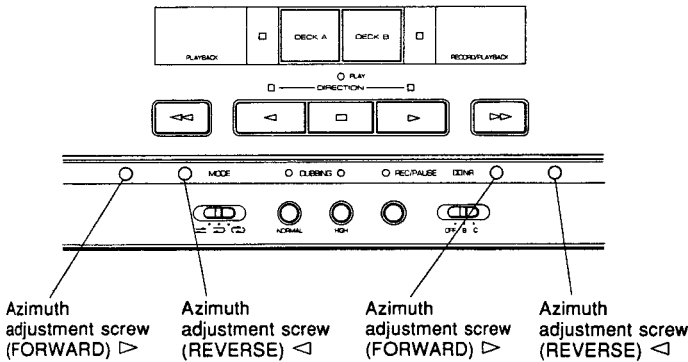
### 3. Test tape required

- MTT-111N (TX911650) ..... Normal speed
- TCW-211 (TX911550) ..... High speed
- MTT-114N (TX911680) ..... Azimuth
- MTT-212N (TX911660) ..... Playback level
- MTT-256 (TX911300) ..... Playback frequency response (Normal)
- MTT-356 (TX911310) ..... Playback frequency response (CrO2)
- Reference tape
  - Type I/Normal (LH) : ..... TDK AC224 (TX912190)
  - Type II/High (CrO2) : ..... TDK AC513 (TX911750)
  - Type IV/METAL : ..... TDK AC712 (TX911590)

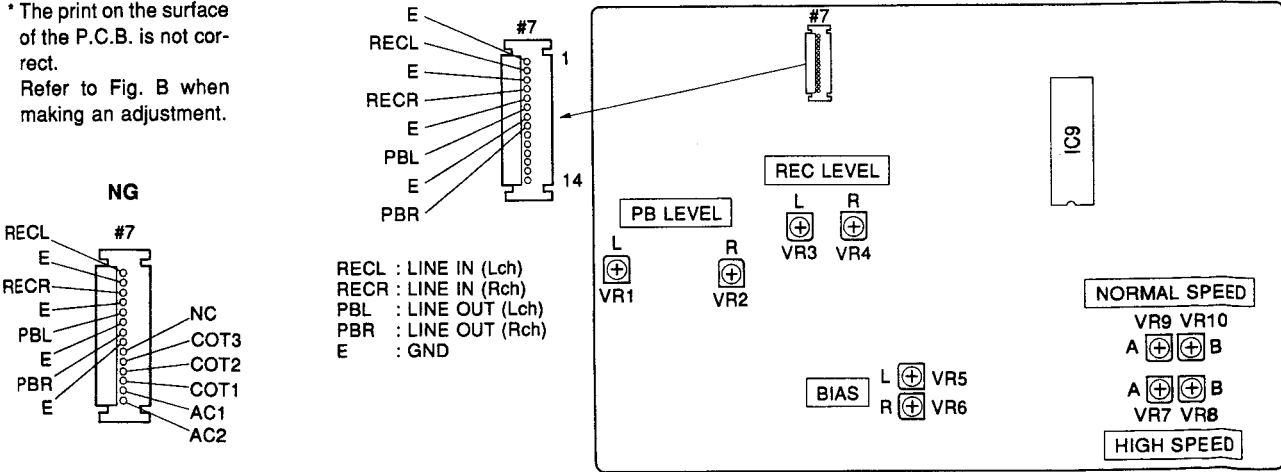
“MECHANICAL ADJUSTMENT”

Step	Item to be Adjusted	Tape	Instrument required	Mode	Adjustment part	Rating	Remarks
1	Check each torque	CT-160L (FF, REW)	Torque meter	FF REW		FF, REW torque : within 80~170g/cm.	
		TW-2111A (FWD)		PLAY		Take up torque : 35~70g/cm.	
		TW-2121A (RVS)				Back tension : 2.5~6g/cm.	
2	Check FF, REW take up time	AC-513 (C-60)		FF REW		100 to 140 seconds.	
3	Azimuth	MTT-114N 10kHz, -10dB	ACVM Oscilloscope	PLAY	Azimuth adjustment screw.	Playback output of L and R is maximum and phase difference should be minimum both directions. (Fig. A)	After the adjustment make sure to apply screw lock paint.
4	Tape Speed  [Adjust the high speed initially, and next the normal speed.]	TCW-211 1.5kHz, -4dB	Frequency counter	PLAY (HIGH)	DECK A VR7	DECK A : 3000Hz $\pm$ 60Hz	During playback, press the PLAY key and H.Dubbing key simultaneously to enter high-speed mode.
					DECK B VR8	DECK B : 3000Hz $\pm$ 60Hz	
		MTT-111N 3kHz, -10dB		PLAY (NORM)	DECK A VR9	DECK A : 3000Hz $\pm$ 60Hz	
					DECK B VR10	DECK B : 3000Hz $\pm$ 60Hz	
5	Wow/Flutter	MTT-111N 3kHz, -10dB	Wow/flutter meter	PLAY		Less than 0.15% (WRMS)	Perform adjustment at the center of the test tape length if possible.

● TEST POINT



\* The print on the surface of the P.C.B. is not correct. Refer to Fig. B when making an adjustment.



“ELECTRICAL ADJUSTMENT”

- Use 560mV (250nwb/m) for 0dB as the standard level of the unit.  
0dB = 250nwb/m (315Hz) = -5dBV (Line out level)

< Playback section >

Step	Item to be Adjusted	Tape	Instrument required	Mode	Measurement conditions	Points of measurement	Adjustment parts	Rating
1	Playback level (315Hz) (DECK B)	MTT-212N 315Hz, 250nwb/m	ACVM	PLAY		LINE OUT (#7 Connector)	VR1 (L ch) VR2 (R ch)	-5dBV
2	Confirmation of playback frequency response	Test tape for frequency check. 3180μs+120μs (LH) (MTT-256) 3180μs+70μs (CrO2) (MTT-356)	ACVM Oscilloscope	PLAY		LINE OUT (#7 Connector)		Check that the 10kHz playback level is within 0 ± 4dB of the 315Hz playback level. (Fig. C)

● PLAYBACK FREQUENCY RESPONSE

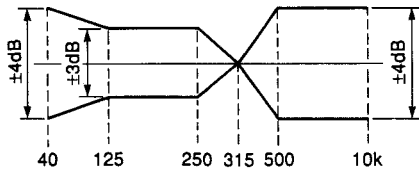


Fig. C

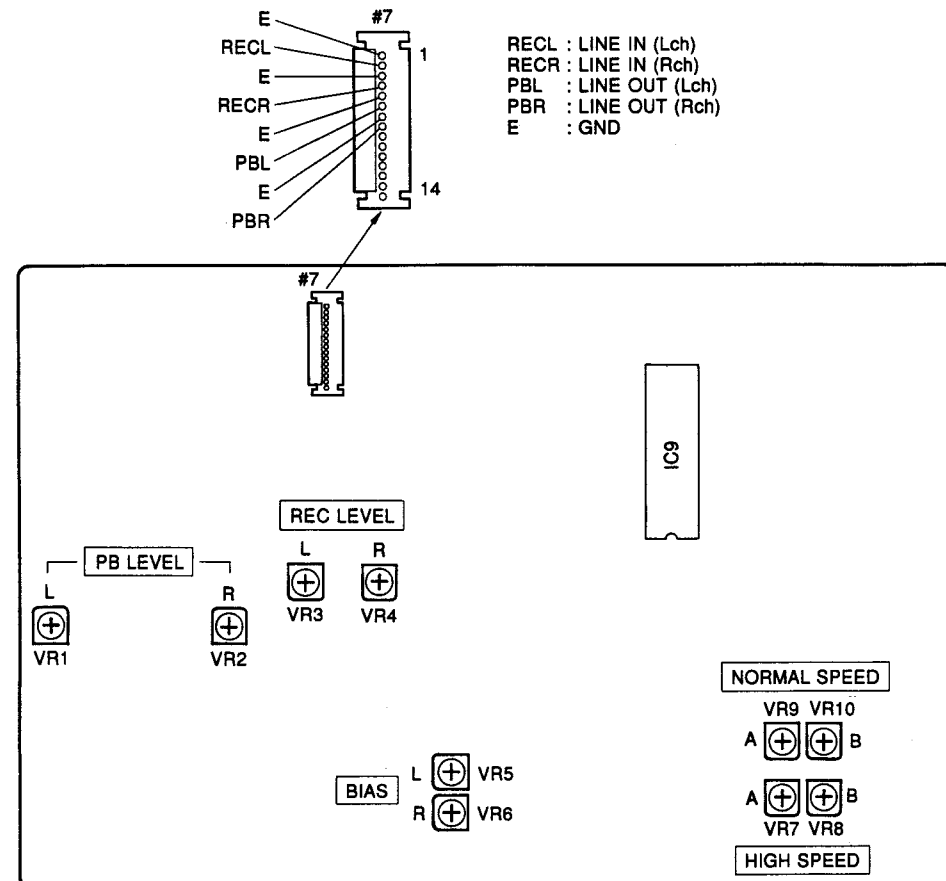
< Recording section > Use the REC RETURN mode as the TEST mode when performing Steps 1 to 3.

Step	Item to be Adjusted	Tape	Instrument required	Mode	Measurement conditions	Points of measurement	Adjustment parts	Rating
1	Recording level (DECK B)	AC-513 High (CrO2)	ACVM Audio frequency oscillator	REC PLAY	Input 315Hz Signal to LINE IN TERMINAL from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT TERMINAL becomes -25dBV.	LINE OUT (#7 Connector)	VR3 (L ch) VR4 (R ch)	Adjust for equal record and playback levels. (-25dBV)
2	Recording bias (Total frequency response) (DECK B)	AC-513 High (CrO2) AC-224 Normal (LH) AC-712 METAL	ACVM Audio frequency oscillator	REC PLAY	Input 14kHz Signal to LINE IN TERMINAL from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT TERMINAL becomes -25dBV.	LINE OUT (#7 Connector)	VR5 (L ch) VR6 (R ch)	Adjust for equal record and playback levels. (-25dBV)  Adjust for equal record and playback levels. (Table 1) Perform record bias adjustment of High (CrO2) tape again, if the rating was not satisfied.
3	Confirmation of recorded level	AC-513 High (CrO2)	ACVM Audio frequency oscillator	REC PLAY		LINE OUT (#7 Connector)		Confirm recorded level rating as in step 1 When recorded level rating is improper, go back to step 1 and also carry out adjustments in step 2 again.

LINE IN : AUX

KXW-S70





### ● TEST mode

1. With the power of the RECEIVER (RX-S70) turned ON, set the function to TAPE. Disconnect the system connector (black) from the back side of the cassette. While pressing the STOP button simultaneously, insert the system connector (black).

→ LED check mode (ALL LED ON)

2. Release the STOP button. → REC RETURN mode

### ● CHECKING THE MUSIC SEARCH FUNCTION (Use a searching check tape for this check.)

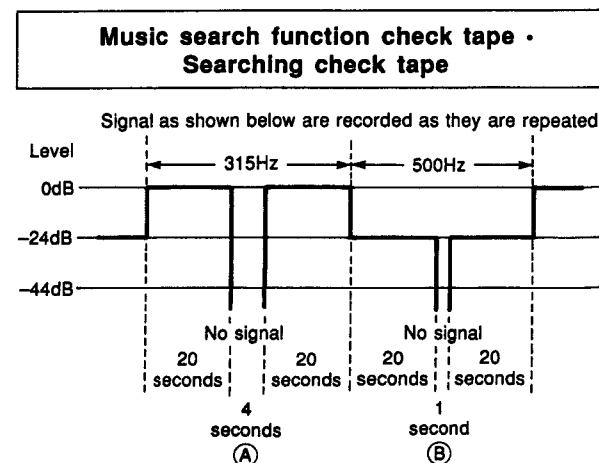
#### \* Preparation of Check Tape

Using a C-60 tape, make a recording so that the value of the line out level is -5dBV (0dB), -29dBV (-24dB) or -49dBV (-44dB).

#### [Confirmation]

Make sure that the tape stops during (A) but not during (B). ((A) and (B) are intervals between musics.)

- \* Perform check at the center of the searching check tape length possible.



### ● TOTAL FREQUENCY RESPONSE (-20dB)

Table 1

NR & TAPE	Rating
NR off	40 125 250 315 500 5K 10kHz
Normal (LH)	±4dB -5dB 14kHz
NR off	40 125 250 315 500 5K 10kHz
High(CrO <sub>2</sub> )	±4dB -5dB 14kHz
NR off	40 125 250 315 500 5K 10kHz
METAL	±4dB -5dB 14kHz
Dolby B NR on	40 125 250 315 500 5K 10kHz
Normal (LH)	±4dB -5dB 14kHz
High(CrO <sub>2</sub> )	±4dB -5dB 14kHz
METAL	±4dB -5dB 14kHz
Dolby C NR on	40 125 250 315 500 5K 10kHz
Normal (LH)	±5dB -6dB 14kHz
High(CrO <sub>2</sub> )	±5dB -6dB 14kHz
METAL	±5dB -6dB 14kHz

B & C NR : Reference level must be recorded level.

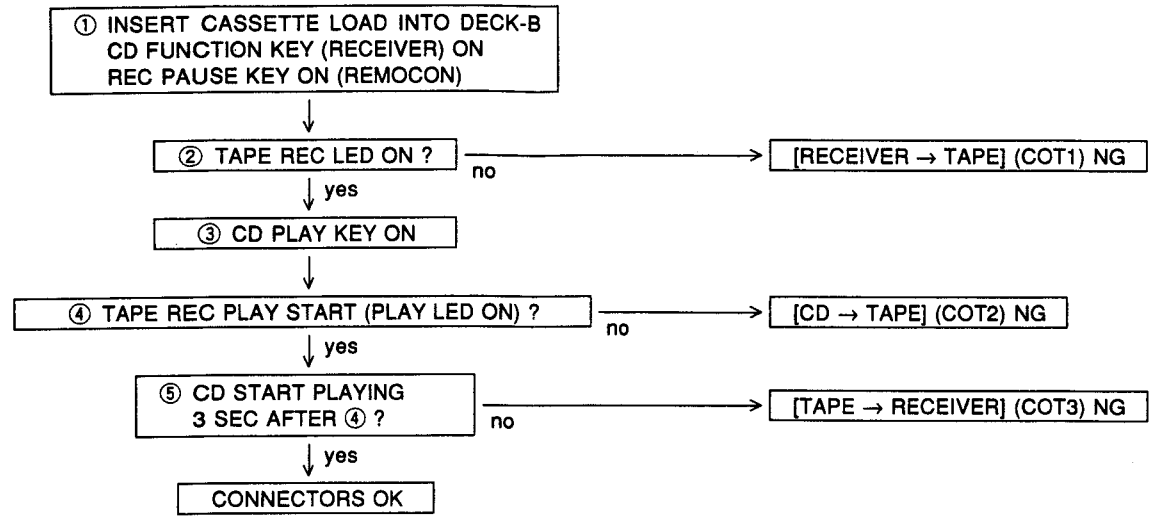
### ● DUBBING RESPONSE

Table 2

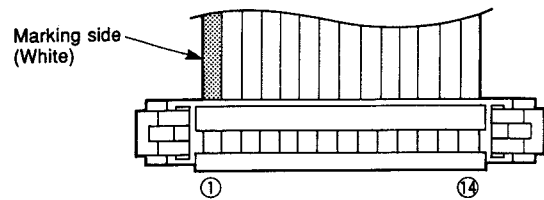
SPEED & TAPE	Rating
Normal Speed	40 125 250 315 500 5K 10kHz
Normal (LH)	±5dB -6dB 14kHz
High(CrO <sub>2</sub> )	±5dB -6dB 14kHz
Normal Speed	40 125 250 315 500 5K 10kHz
METAL	±5dB -6dB 14kHz
High Speed	40 125 250 315 500 5K 10kHz
Normal (LH)	±6dB -7dB 14kHz
High(CrO <sub>2</sub> )	±6dB -7dB 14kHz
METAL	±6dB -7dB 14kHz

■ SYSTEM CONNECTOR CHECK (SYSTEM CONTROL)

● CONNECTOR CHECK ROUTINE



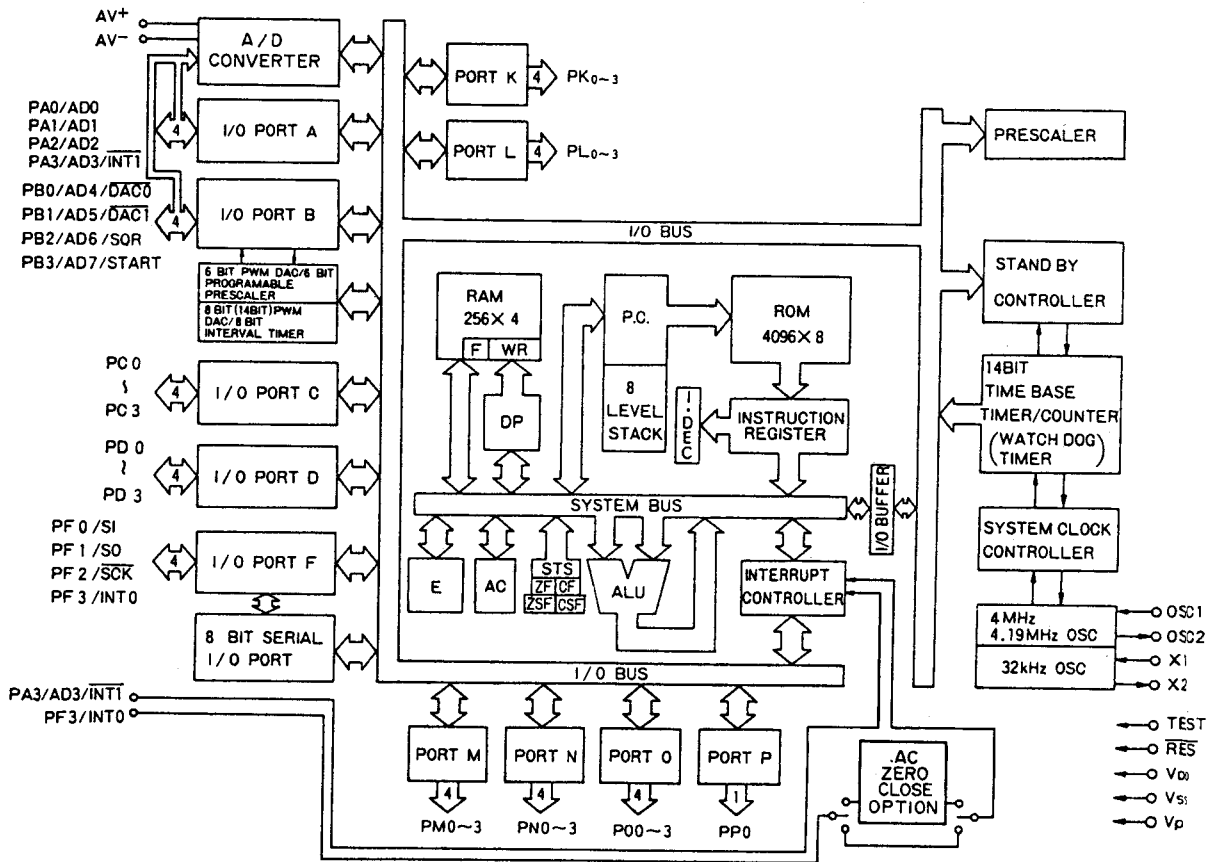
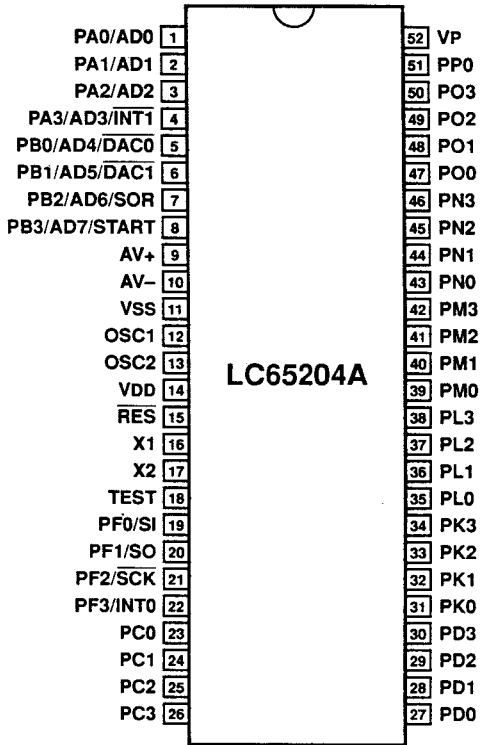
● SYSTEM CONNECTOR



No.	NAME	FUNCTION
1	E	GND
2	RECL	LINE IN (Lch)
3	E	GND
4	RECR	LINE IN (Rch)
5	E	GND
6	PBL	LINE OUT (Lch)
7	E	GND
8	PBR	LINE OUT (Rch)
9	E	GND
10	COT3	SYSTEM CONTROL 3
11	COT2	SYSTEM CONTROL 2
12	COT1	SYSTEM CONTROL 1
13	AC1	AC IN (AC17V)
14	AC2	

■ μ-COM DATA

IC9 : LC65204A-4B83  
4 bit μ-COM

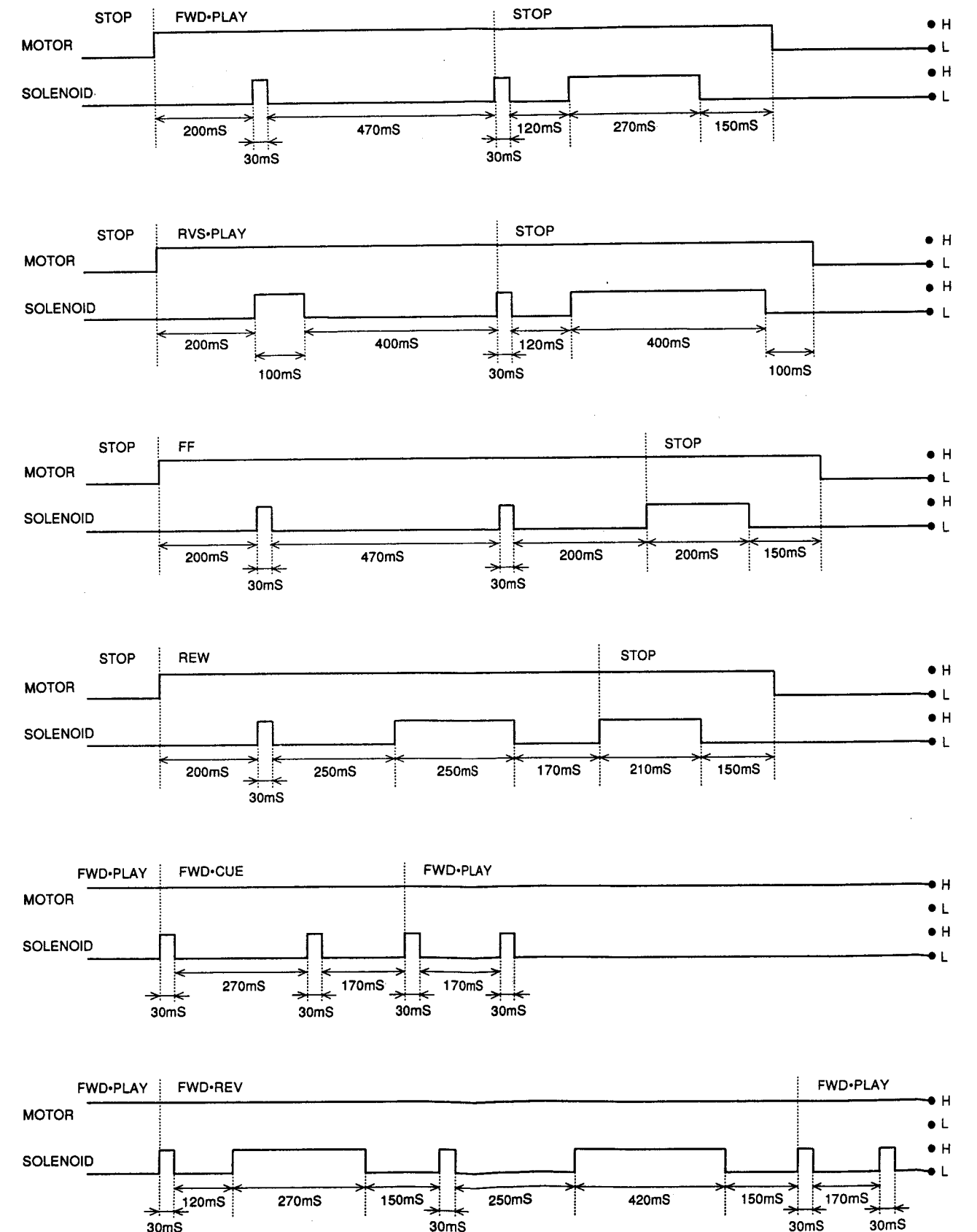


No.	Port	Function	Logic	No.	Port	Function	Logic
1	PA0	OPERATION KEY (1)	A/D	52	Vp	GND	
2	PA1	OPERATION KEY (2)	A/D	51	PP0	Not use (+5V)	
3	PA2	REVERSE SW	A/D	50	PO3	LED HIGH DUBBING	H : ON
4	PA3	MECHA SW (A DECK)	A/D	49	PO2	LED NORMAL DUBBING	H : ON
5	PB0	MECHA SW (B DECK)	A/D	48	PO1	LED B	H : ON
6	PB1	MECHA SW (B DECK)	A/D	47	PO0	LED A	H : ON
7	PB2	REEL PULSE (A DECK)		46	PN3	LED REC	H : ON
8	PB3	REEL PULSE (B DECK)		45	PN2	LED RUN	H : ON
9	AV+	+5V		44	PN1	LED R-PLAY	H : ON
10	AV-	GND		43	PN0	LED F-PLAY	H : ON
11	VSS	GND		42	PM3	MECHA CONT SOLENOID (B)	H : ON
12	OSC1	4MHz		41	PM2	MECHA CONT MOTOR (B)	H : ON
13	OSC2	4MHz		40	PM1	MECHA CONT SOLENOID (A)	H : ON
14	VDD	+5V		39	PM0	MECHA CONT MOTOR (A)	H : ON
15	RES	RESET		38	PL3	HIGH SPEED	H : LOW
16	X1	+5V		37	PL2	AMP CONT R/P	H : REC
17	X2	OPEN		36	PL1	AMP CONT RM	H : ON
18	TEST	GND		35	PL0	AMP CONT LM	H : OFF
19	PF0	DOLBY R/P	H : REC	34	PK3	AMP CONT 70N	H : OFF
20	PF1	AMP CONTROL METAL	H : OFF	33	PK2	AMP CONT 70H	H : OFF
21	PF2	AMP CONTROL HIGH	H : OFF	32	PK1	AMP CONT A/B	H : A
22	PF3	Not use (GND)		31	PK0	AMP CONT HD	H : NS
23	PC0	Not use (4.7k GND)		30	PD3	AMP CONT BIAS	H : OFF
24	PC1	DATA1 (FROM RECEIVER)		29	PD2	Not use (4.7K GND)	
25	PC2	DATA2 (FROM CD)		28	PD1	Not use (4.7K GND)	
26	PC3	DATA3 (TO CD & RECEIVER)		27	PD0	Song select	

# MODE & PIN SIGNAL

PIN No.	OUTPUT	STOP	PLAY	FF/REW	CUE/REV	R-PAUSE	R-PLAY	N-DUB	H-DUB
35	LINE MUTE	L	H	L	L	H	H	H	H
36	REC MUTE	H	H	H	H	H	L	L	L
30	BIAS	H	H	H	H	H	L	L	L
37	R/P	L	L	L	L	H	H	H	H
19	DOLBY R/P	L	L	L	L	H	H	L	L
31	HIGH DUB	H	H	H	H	H	H	H	L
39 or 41	MOTOR	L	H	H	H	H	H	H	H
38	HIGH SPEED	H	H	H	H	H	H	H	L

# MECHA. TIMING CHART

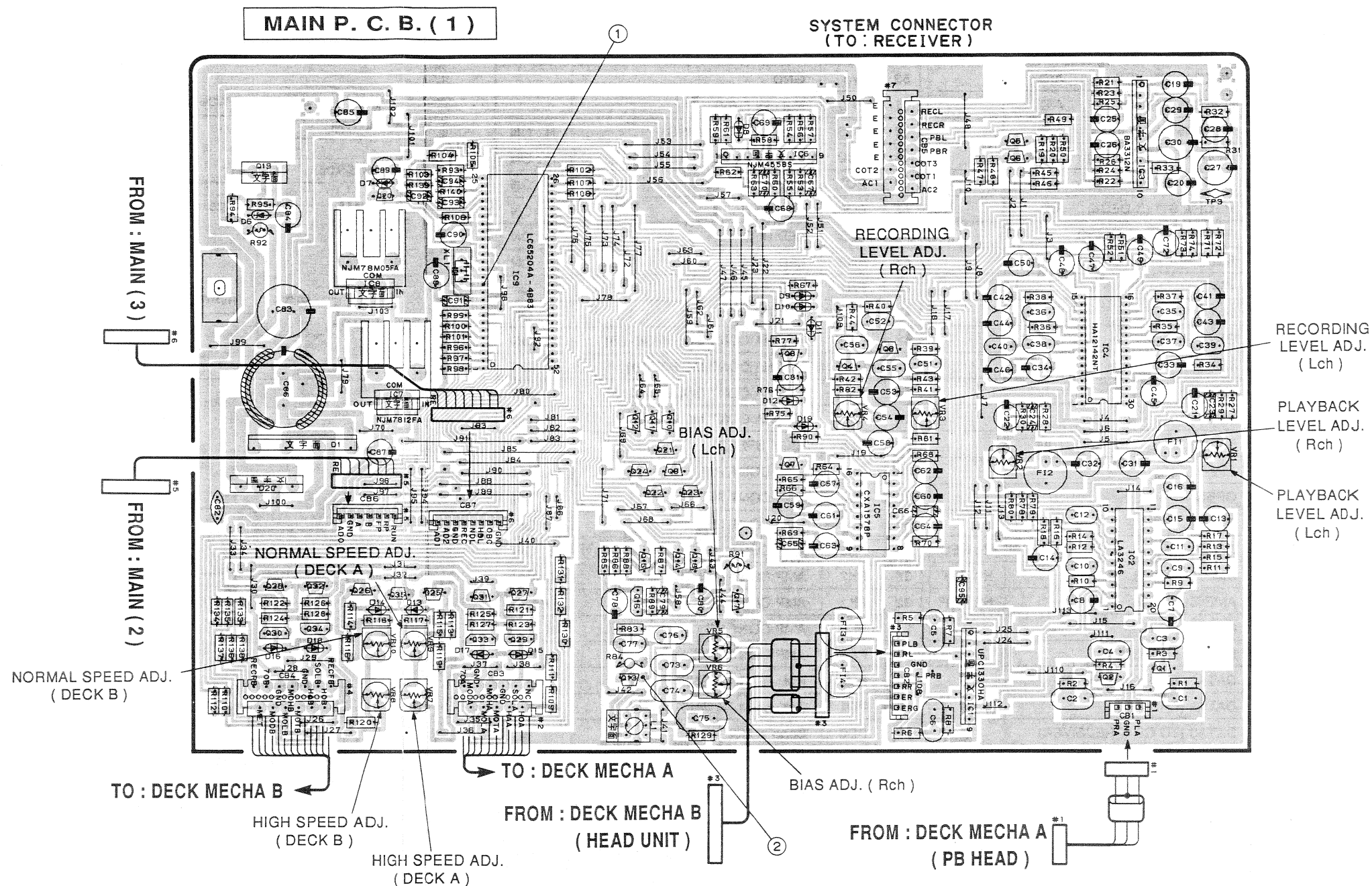


# **PRINTED CIRCUIT BOARD (Foil side)**

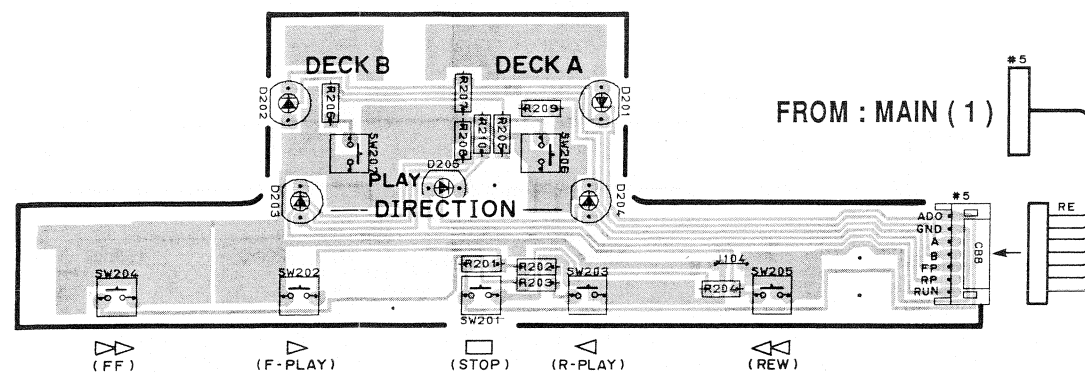
① and ② : TEST POINT WAVEFORMS (See page 18)

## ● Semiconductor Location

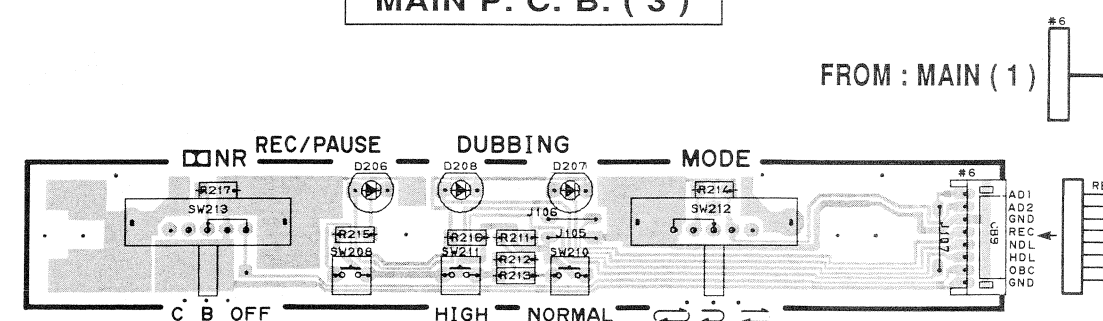
Ref. No.	Location
IC 1	F4
IC 2	G3
IC 3	G2
IC 4	G2
IC 5	F3
IC 6	F2
IC 7	D3
IC 8	D2
IC 9	E2
Q 1	G4
Q 2	G4
Q 3	F2
Q 4	F3
Q 5	G2
Q 6	G2
Q 7	F3
Q 8	F2
Q 9	E3
Q 10	E3
Q 11	E3
Q 12	E3
Q 13	E4
Q 14	E3
Q 15	E3
Q 16	E3
Q 17	F3
Q 18	E3
Q 19	D2
Q 20	D2
Q 21	E2
Q 22	E3
Q 23	E3
Q 24	E3
Q 25	D3
Q 26	D3
Q 27	E3
Q 28	D3
Q 29	E4
Q 30	D4
Q 31	E3
Q 32	D3
Q 33	E4
Q 34	D4
Q 35	D3



## MAIN P. C. B. (2)



## MAIN P. C. B. (3)



A

B

C

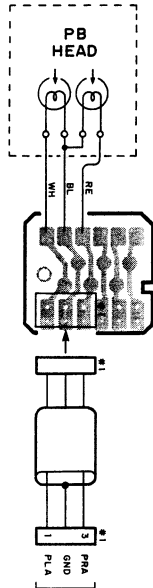
D

E

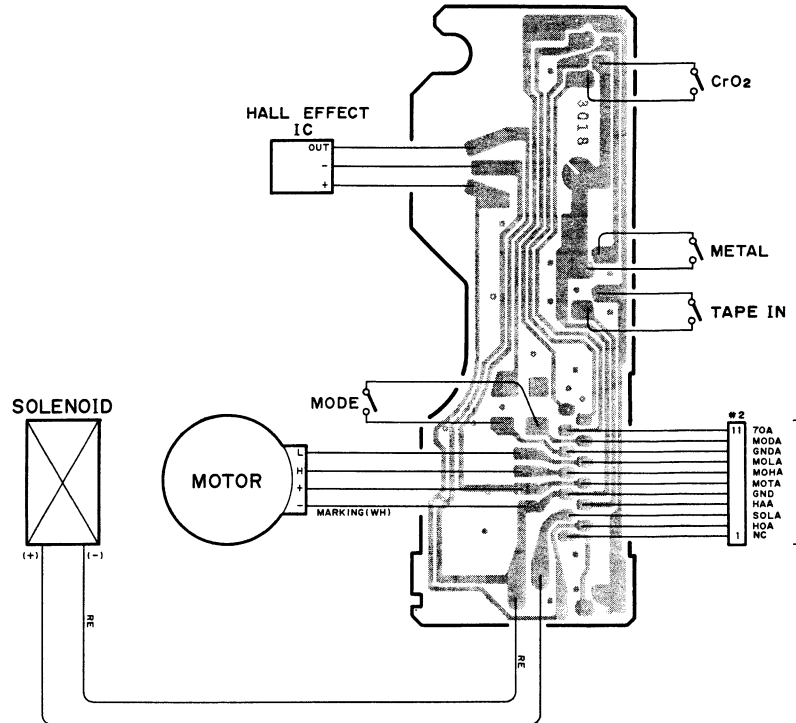
KXW-S70

# **PRINTED CIRCUIT BOARD (Foil side)**

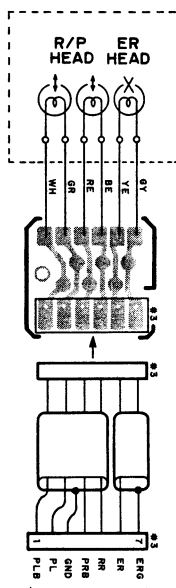
## **DECK A MECHANISM P. C. B.**



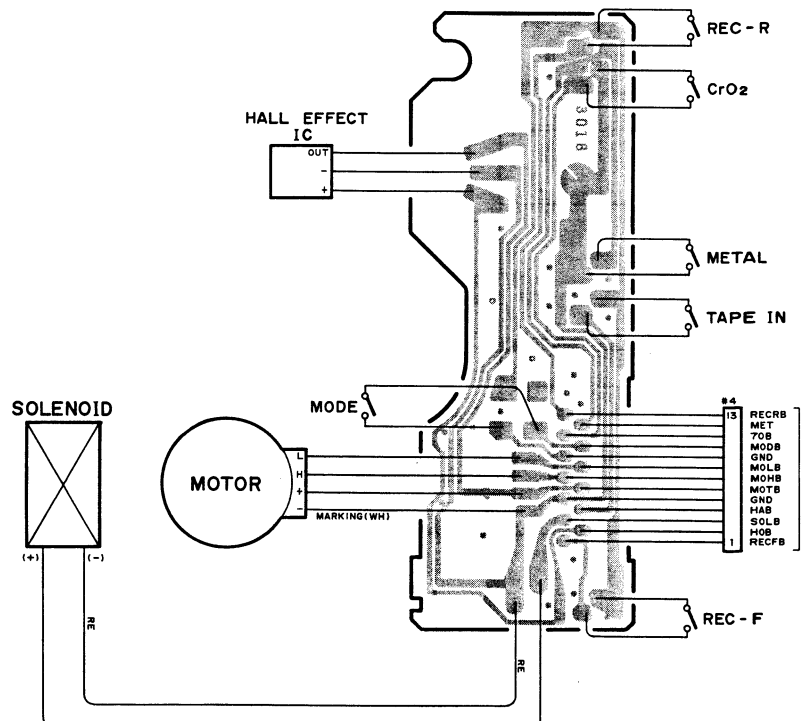
FROM : MAIN (1)

TO : MAIN (1)  
TAPE (1)

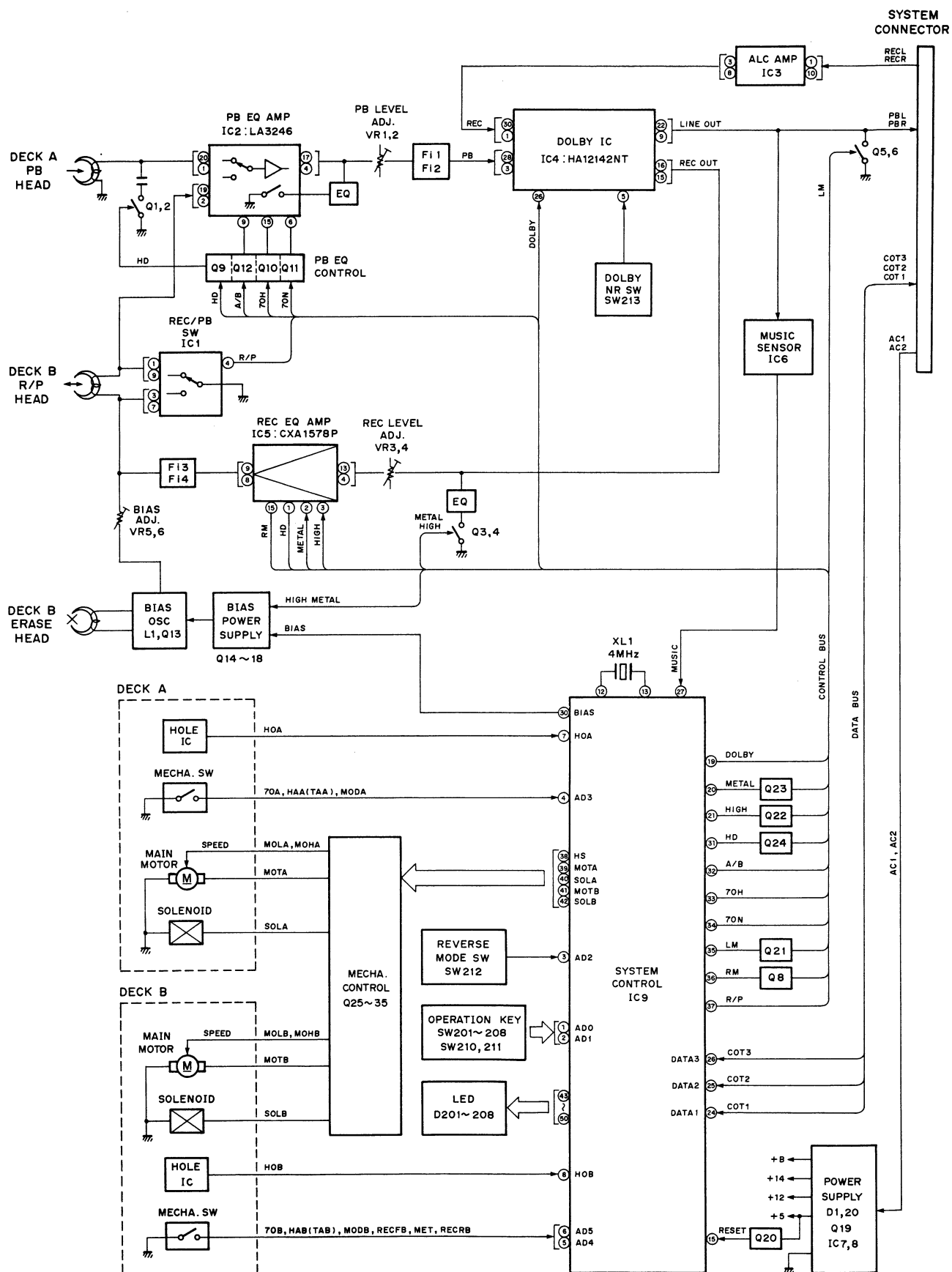
## **DECK B MECHANISM P. C. B.**



FROM : MAIN (1)

TO : MAIN (1)  
TAPE (8)

# BLOCK DIAGRAM



A

B

C

D

E

F

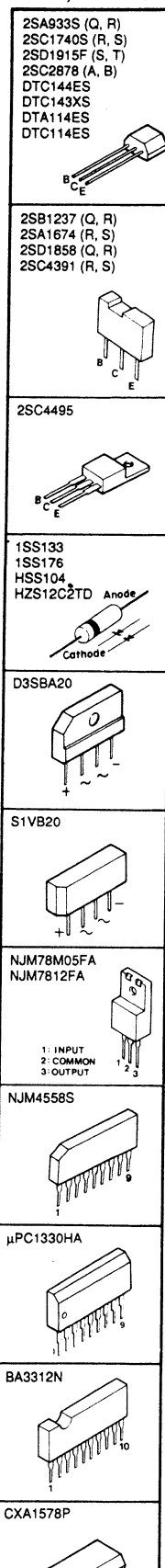
G

H

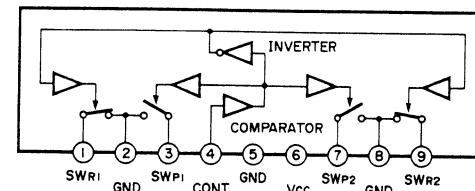
## SCHEMATIC DIAGRAM

- The voltages are measured by LH tape at PLAY mode (DECK B).  
Only the voltages ( ) are at REC mode.

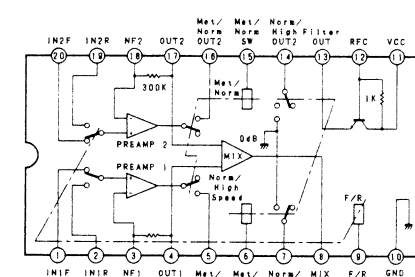
### PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODES AND ICs.



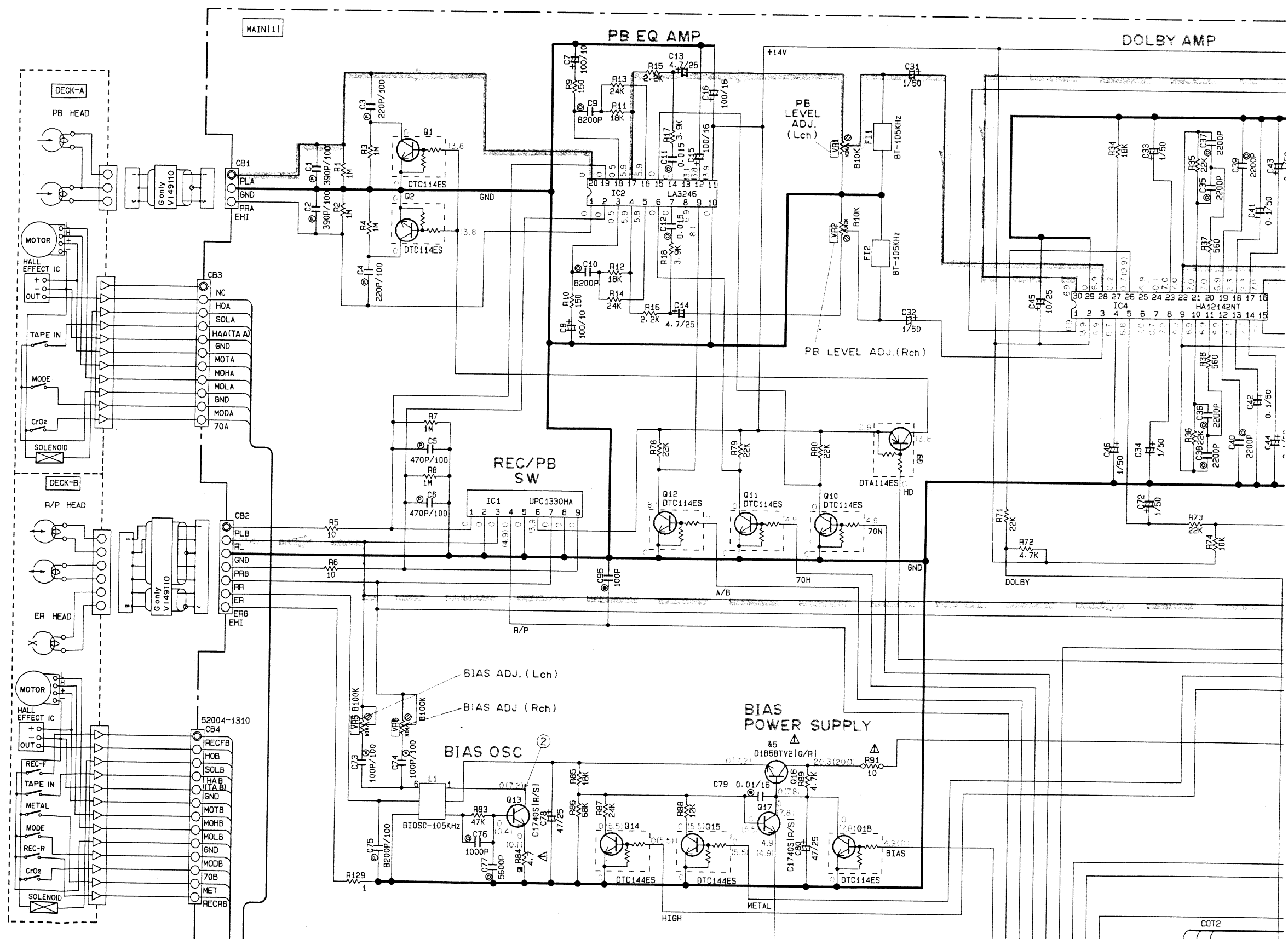
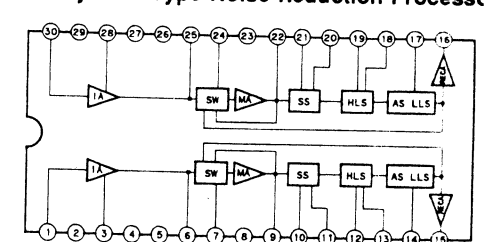
IC1 : μPC1330HA  
2ch Head Selector Switch



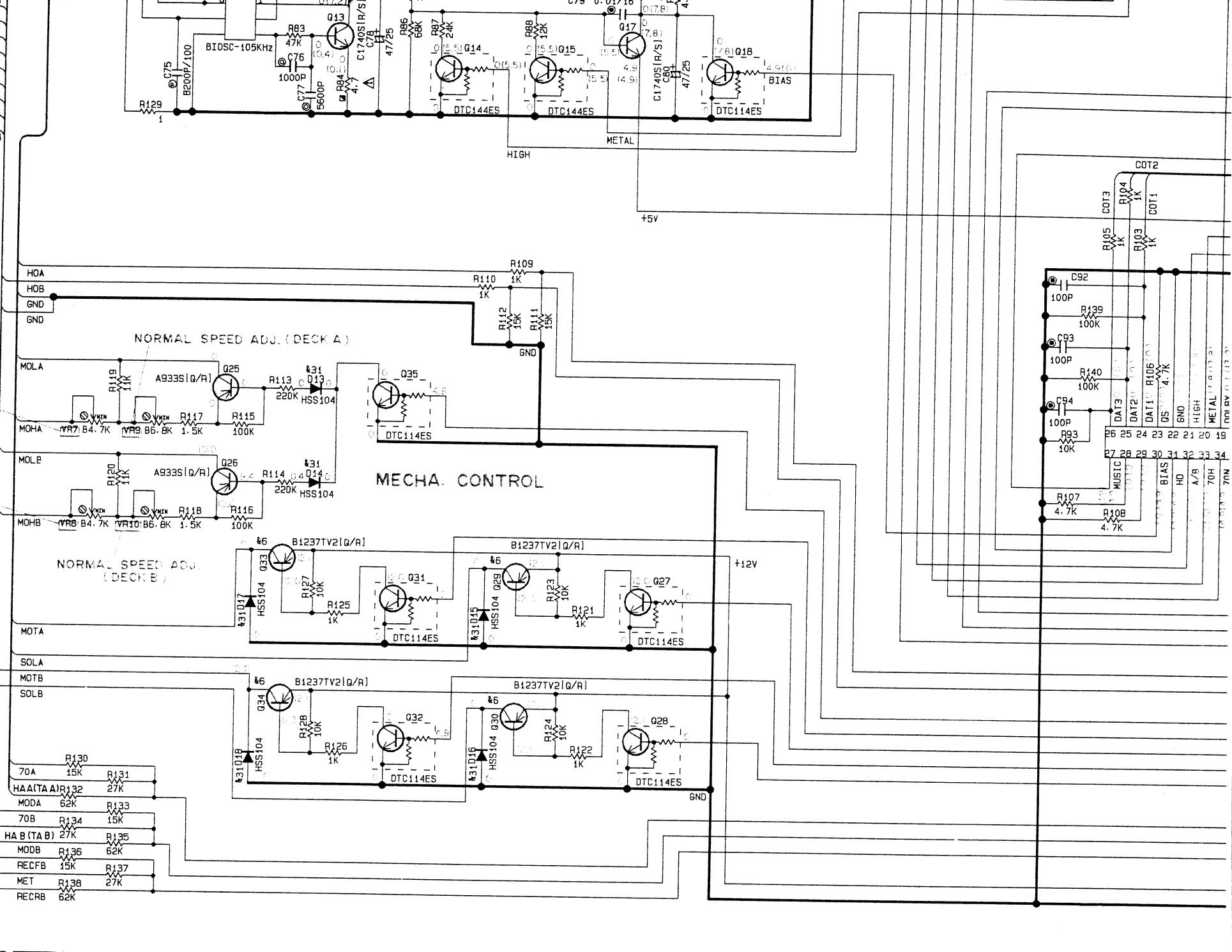
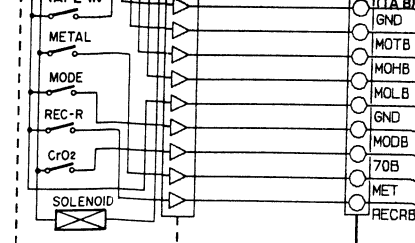
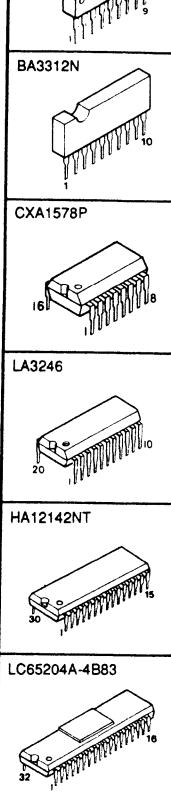
IC2 : LA3246  
Playback Amp



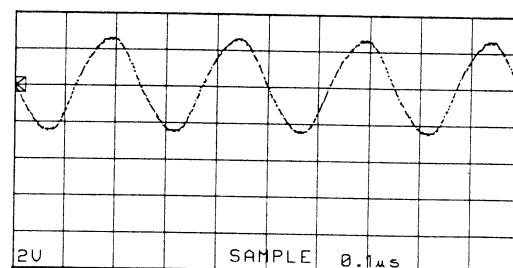
IC4 : HA12142NT  
Dolby B&C-Type Noise Reduction Process



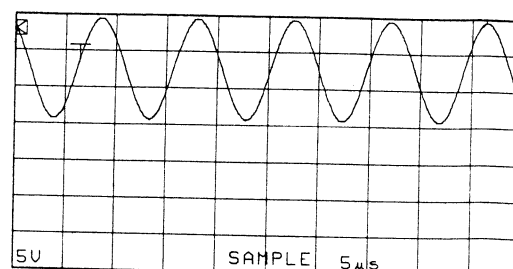












**Point ① (Pin 12 of IC9)**  
V : 2V/div      H : 0.1μsec/div  
DC range      1 : 1 probe



**Point ② (Collector of Q13)**  
REC mode  
V : 5V/div      H : 5μsec/div  
DC range      1 : 1 probe



CAPACITOR		
REMARKS	PARTS NAME	
NO MARK	ELECTROLYTIC CAPACITOR	77
⊗	TANTALUM CAPACITOR	
NO MARK	CERAMIC CAPACITOR	
⊙	AXIAL LEAD CERAMIC CAPACITOR	
⊙	POLYESTER FILM CAPACITOR	
○	POLYSTYRENE FILM CAPACITOR	41
⊖	MICA CAPACITOR	
Ⓟ	POLYPROPYLENE FILM CAPACITOR	
⊕	SEMICONDUCTIVE CERAMIC CAPACITOR	

RESISTOR		
REMARKS	PARTS NAME	
NO MARK	CARBON FILM RESISTOR	(1/6W)
	CARBON FILM RESISTOR	(1/4W)
	METAL OXIDE FILM RESISTOR	
	METAL FILM RESISTOR	
	METAL PLATE RESISTOR	
	FIRE PROOF CARBON FILM RESISTOR	
	CEMENT MOLDED RESISTOR	
	SEMI VARIABLE RESISTOR	
	CHIP RESISTOR	

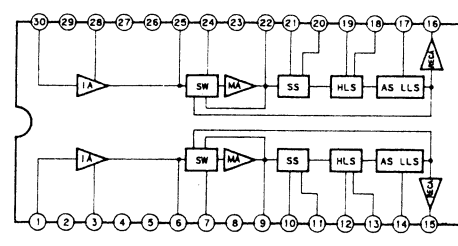
NOTICE

(J)..... Japanese model  
(U)..... U.S.A model  
(C)..... Canadian model  
(A)..... Australian model  
(G)..... European model  
(B)..... British model  
(R)..... General model  
(P)..... RP model

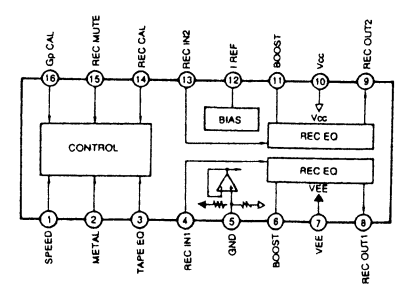
Mark	Refer
k5	Q16
k6	Q29, 30
k11	



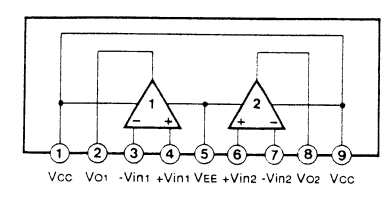
IC4 : HA12142NT  
Dolby B&C-Type Noise Reduction Processor



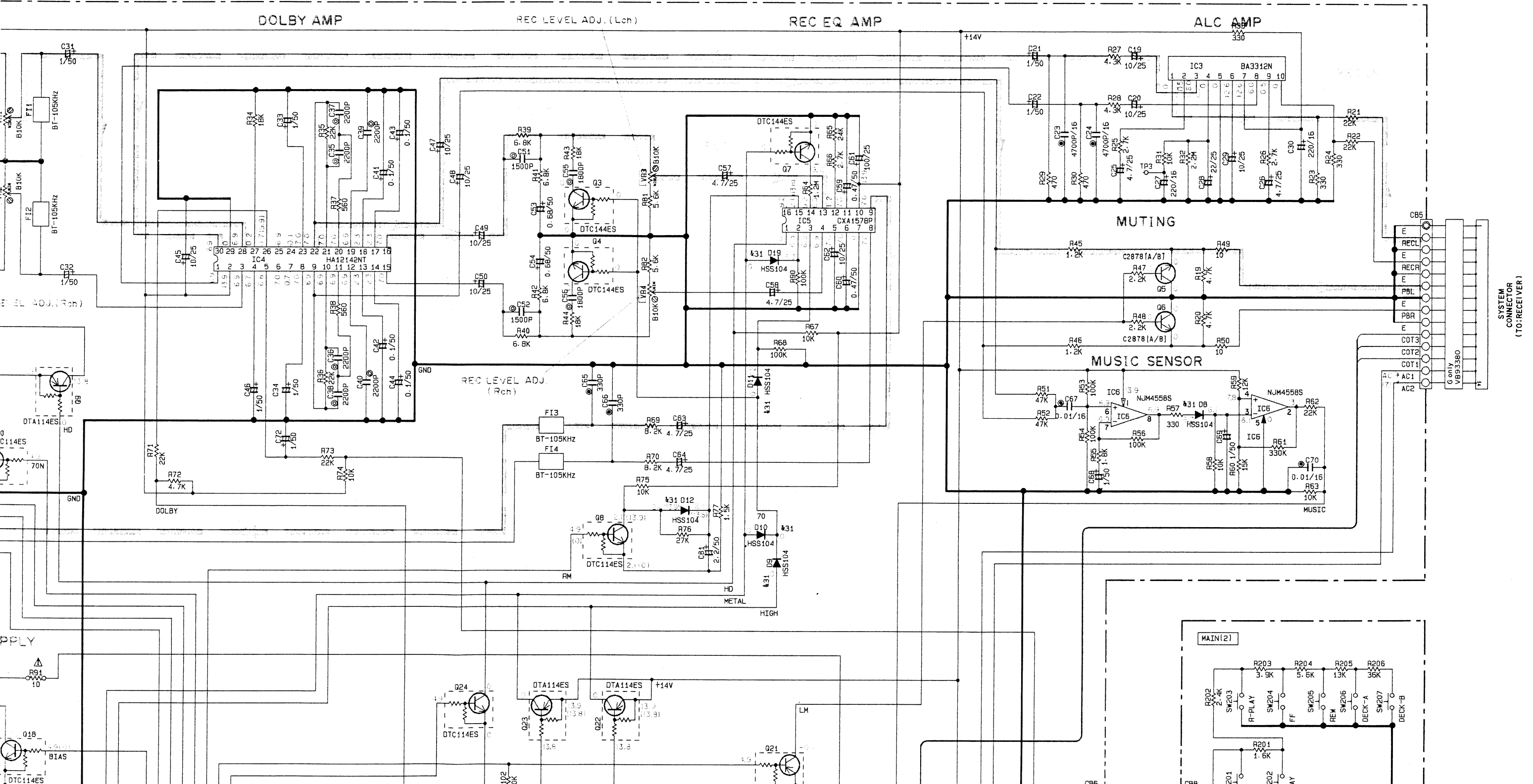
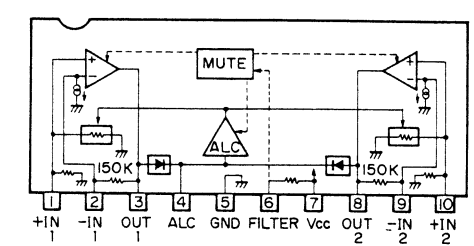
IC5 : CXA1578P  
Recording Equalizer Amp

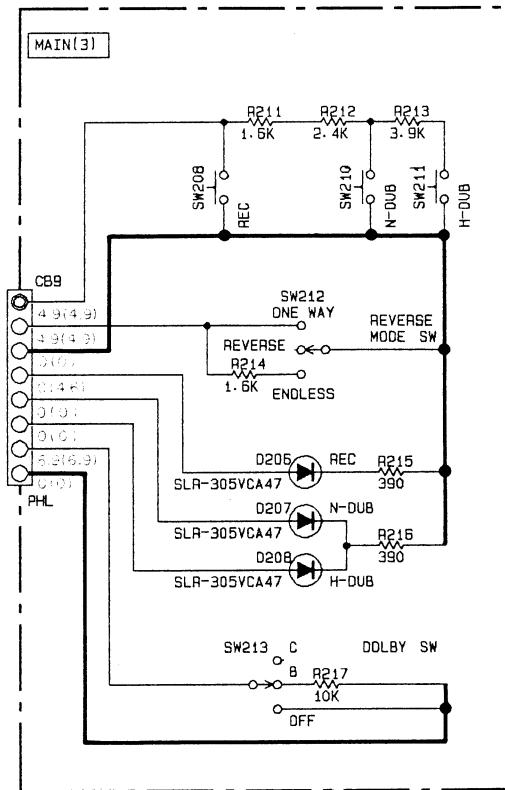


IC6 : NJM4558S  
Dual OP-Amp



IC3 : BA3312N  
Dual Pre Amp with ALC





18

# PARTS LIST

## ■ ELECTRICAL PARTS

### ■ WARNING

Components having special characteristics are marked  $\triangle$  and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the parts No. of the carbon resistors, refer to last page.

### ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

C.A.EL.CHP	: CHIP ALUMI. ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED, INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR, RF
C.CE.ML	: MULTILAYER CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PIN.TEST	: PIN, TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.WW	: WIRE WOUND RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TITE SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR, BASE PIN	SCR.CUP	: CUP TITE SCREW
CN.CANNON	: CONNECTOR, CANNON	SCR.TERM	: SCREW TERMINAL
CN.DIN	: CONNECTOR, DIN	SCR.TR	: SCREW, TRANSISTOR
CN.FLAT	: CONNECTOR, FLAT CABLE	SUPRT.PCB	: SUPPORT, P.C.B.
CN.POST	: CONNECTOR, BASE POST	SURG.PRTCT	: SURGE PROTECTOR
COIL.MX.AM	: COIL, AM MIX	SW.TACT	: TACT SWITCH
COIL.AT.FM	: COIL, FM ANTENNA	SW.LEAF	: LEAF SWITCH
COIL.DT.FM	: COIL, FM DETECT	SW.LEVER	: LEVER SWITCH
COIL.MX.FM	: COIL, FM MIX	SW.MICRO	: MICRO SWITCH
COIL.OUTPT	: OUTPUT COIL	SW.PUSH	: PUSH SWITCH
DIOD.ARRAY	: DIODE ARRAY	SW.RT.ENC	: ROTARY ENCODER
DIODE.BRG	: DIODE BRIDGE	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.CHP	: CHIP DIODE	SW.RT	: ROTARY SWITCH
DIODE.VAR	: VARACTOR DIODE	SW.SLIDE	: SLIDE SWITCH
DIOD.Z.CHP	: CHIP ZENER DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DSCR.CE	: CERAMIC DISCRIMINATOR	THRMST.CHP	: CHIP THERMISTOR
FER.BEAD	: FERRITE BEADS	TR.CHP	: CHIP TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT	: DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER ASS'y
FLTR.LC.RF	: LC FILTER ,EMI	TUNER.AM	: TUNER PACK, AM
GND.MTL	: GROUND PLATE	TUNER.FM	: TUNER PACK, FM
GND.TERM	: GROUND TERMINAL	TUNER.PK	: FRONT-END TUNER PACK
HOLDER.FUS	: FUSE HOLDER	VR	: ROTARY POTENTIOMETER
IC.PRTCT	: IC PROTECTOR	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SW	: POTENTIOMETER WITH ROTARY SW
JUMPER.TST	: JUMPER, TEST POINT	VR.SLIDE	: SLIDE POTENTIOMETER
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

**Note)** Those parts marked with "#" are not included in the P.C.B. ass'y.

Schm Ref.	PART NO.	Description		
* CB1	VQ351800	P.C.B.	MAIN	
CB1	VC014700	CN.BS.PIN	EH	3P TE
CB2	VC015100	CN.BS.PIN	EH	7P TE
* CB3	VE851200	CN	11P	
* CB4	VL498300	CN	13P	
* CB5	VL498400	CN	14P	
CB6	VD005000	CN.BS.PIN	7P	
CB7	VD005100	CN.BS.PIN	8P	
CB8	VB858600	CN.BS.PIN	7P	
CB9	VB858700	CN.BS.PIN	8P	
C1	UT452390	C.PP	390pF	100V
C2	UT452390	C.PP	390pF	100V
C3	UT452220	C.PP	220pF	100V
C4	UT452220	C.PP	220pF	100V
C5	UT452470	C.PP	470pF	100V
C6	UT452470	C.PP	470pF	100V
C7	VF760000	C.EL	100uF	10V
C8	VF760000	C.EL	100uF	10V
C9	UA653820	C.MYLAR	8200pF	50V
C10	UA653820	C.MYLAR	8200pF	50V
C11	UA654150	C.MYLAR	0.015uF	50V
C12	UA654150	C.MYLAR	0.015uF	50V
C13	UM416470	C.EL	4.7uF	50V
C14	UM416470	C.EL	4.7uF	50V
C15	VF964800	C.EL	100uF	16V
C16	VF964800	C.EL	100uF	16V
C19	UM417100	C.EL	10uF	50V
C20	UM417100	C.EL	10uF	50V
C21	VJ839100	C.EL	1uF	50V
C22	VJ839100	C.EL	1uF	50V
C23	VF467100	C.CE.TUBLR	4700pF	16V
C24	VF467100	C.CE.TUBLR	4700pF	16V
C25	UM416470	C.EL	4.7uF	50V
C26	UM416470	C.EL	4.7uF	50V
C27	UJ648220	C.EL	220uF	25V
C28	UM407220	C.EL	22uF	25V
C29	UM417100	C.EL	10uF	50V
C30	UJ648220	C.EL	220uF	25V
C31	VJ839100	C.EL	1uF	50V
C32	VJ839100	C.EL	1uF	50V
C33	VJ839100	C.EL	1uF	50V
C34	VJ839100	C.EL	1uF	50V
C35	UA653220	C.MYLAR	2200pF	50V
C36	UA653220	C.MYLAR	2200pF	50V
C37	UA653220	C.MYLAR	2200pF	50V
C38	UA653220	C.MYLAR	2200pF	50V
C39	UA653220	C.MYLAR	2200pF	50V
C40	UA653220	C.MYLAR	2200pF	50V
C41	UM215100	C.EL	0.1uF	50V
C42	UM215100	C.EL	0.1uF	50V
C43	UM215100	C.EL	0.1uF	50V
C44	UM215100	C.EL	0.1uF	50V
C45	UM417100	C.EL	10uF	50V

\* New Parts

Schm Ref.	PART NO.	Description		
C46	VJ839100	C.EL	1uF	50V
C47	UM417100	C.EL	10uF	50V
C48	UM417100	C.EL	10uF	50V
C49	UM417100	C.EL	10uF	50V
C50	UM417100	C.EL	10uF	50V
C51	UA653150	C.MYLAR	1500pF	50V
C52	UA653150	C.MYLAR	1500pF	50V
C53	UJ865680	C.EL	0.68uF	50V
C54	UJ865680	C.EL	0.68uF	50V
C55	UA653180	C.MYLAR	1800pF	50V
C56	UA653180	C.MYLAR	1800pF	50V
C57	UM416470	C.EL	4.7uF	50V
C58	UM416470	C.EL	4.7uF	50V
C59	VJ839000	C.EL	0.47uF	50V
C60	VJ839000	C.EL	0.47uF	50V
C61	UJ648100	C.EL	100uF	25V
C62	UM417100	C.EL	10uF	50V
C63	UM416470	C.EL	4.7uF	50V
C64	UM416470	C.EL	4.7uF	50V
C65	VG278600	C.CE.TUBLR	330pF	50V
C66	VG278600	C.CE.TUBLR	330pF	50V
C67	VF467300	C.CE.TUBLR	0.01uF	16V
C68	VJ839100	C.EL	1uF	50V
C69	VJ839100	C.EL	1uF	50V
C70	VF467300	C.CE.TUBLR	0.01uF	16V
C72	VJ839100	C.EL	1uF	50V
C73	UT452100	C.PP	100pF	100V
C74	UT452100	C.PP	100pF	100V
C75	UT653820	C.PP	8200pF	100V
C76	UA653100	C.MYLAR	1000pF	50V
C77	UA653560	C.MYLAR	5600pF	50V
C78	UJ667470	C.EL	47uF	50V
C79	VF467300	C.CE.TUBLR	0.01uF	16V
C80	UJ667470	C.EL	47uF	50V
C81	VJ839200	C.EL	2.2uF	50V
C82	UG444100	C.CE	0.01uF	50V
C83	UJ749100	C.EL	1000uF	25V
C84	UJ667470	C.EL	47uF	50V
C85	UM417100	C.EL	10uF	50V
C86	UJ749470	C.EL	4700uF	25V
C87	UM417100	C.EL	10uF	50V
C88	UM417100	C.EL	10uF	50V
C89	UM417100	C.EL	10uF	50V
C90	UJ865150	C.EL	0.15uF	50V
C91	VF467300	C.CE.TUBLR	0.01uF	16V
C92	VF466800	C.CE.TUBLR	100pF	50V
C93	VF466800	C.CE.TUBLR	100pF	50V
C94	VF466800	C.CE.TUBLR	100pF	50V
C95	VF466800	C.CE.TUBLR	100pF	50V
C96	VF466800	C.CE.TUBLR	100pF	50V
C97	VF466800	C.CE.TUBLR	100pF	50V
C98	VF466800	C.CE.TUBLR	100pF	50V
C99	VF466800	C.CE.TUBLR	100pF	50V

\* New Parts

Schm Ref.	PART NO.	Description
△ D1	VN011300	DIODE.BRG D3SBA20 4A 200V
△ D6	VM975700	DIODE.ZENR HZS12C2TD 12V
D7	VD631600	DIODE 1SS133,176,HSS104
D8	VD631600	DIODE 1SS133,176,HSS104
D9	VD631600	DIODE 1SS133,176,HSS104
D10	VD631600	DIODE 1SS133,176,HSS104
D11	VD631600	DIODE 1SS133,176,HSS104
D12	VD631600	DIODE 1SS133,176,HSS104
D13	VD631600	DIODE 1SS133,176,HSS104
D14	VD631600	DIODE 1SS133,176,HSS104
D15	VD631600	DIODE 1SS133,176,HSS104
D16	VD631600	DIODE 1SS133,176,HSS104
D17	VD631600	DIODE 1SS133,176,HSS104
D18	VD631600	DIODE 1SS133,176,HSS104
D19	VD631600	DIODE 1SS133,176,HSS104
△ * D20	VQ379300	DIODE.BRG S1VB20 1.0A 200V
D201	VP593800	LED(or) SLR-305DCA47
D202	VP593800	LED(or) SLR-305DCA47
D203	VP593800	LED(or) SLR-305DCA47
D204	VP593800	LED(or) SLR-305DCA47
D205	VP593800	LED(or) SLR-305DCA47
* D206	VP594000	LED(re) SLR-305VCA47
* D207	VP594000	LED(re) SLR-305VCA47
* D208	VP594000	LED(re) SLR-305VCA47
* Fi1	VP916900	COIL.BIAS 105KHz
* Fi2	VP916900	COIL.BIAS 105KHz
Fi3	GE900780	COIL.BIAS 105KHz
Fi4	GE900780	COIL.BIAS 105KHz
IC1	XD864A00	IC uPC1330HA
IC2	XF870A00	IC LA3246
* IC3	XL988A00	IC BA3312N
IC4	XH741A00	IC HA12142NT
IC5	XK202A00	IC CXA1578P
IC6	iG076800	IC NJM4558S
△ IC7	XJ608A00	IC NJM7812FA
△ IC8	XJ604A00	IC NJM78M05FA
* IC9	XL987B00	IC LC65204A-4B83
* L1	VP916800	COIL.BIAS
Q1	VD678700	TR.DGT DTC114ES
Q2	VD678700	TR.DGT DTC114ES
Q3	VG722000	TR.DGT DTC144ES
Q4	VG722000	TR.DGT DTC144ES
Q5	iC287820	TR 2SC2878 A,B
Q6	iC287820	TR 2SC2878 A,B
Q7	VG722000	TR.DGT DTC144ES
Q8	VD678700	TR.DGT DTC114ES
Q9	VD678500	TR.DGT DTA114ES
Q10	VD678700	TR.DGT DTC114ES
Q11	VD678700	TR.DGT DTC114ES
Q12	VD678700	TR.DGT DTC114ES
Q13	iC174020	TR 2SC1740S R,S
Q14	VG722000	TR.DGT DTC144ES
Q15	VG722000	TR.DGT DTC144ES

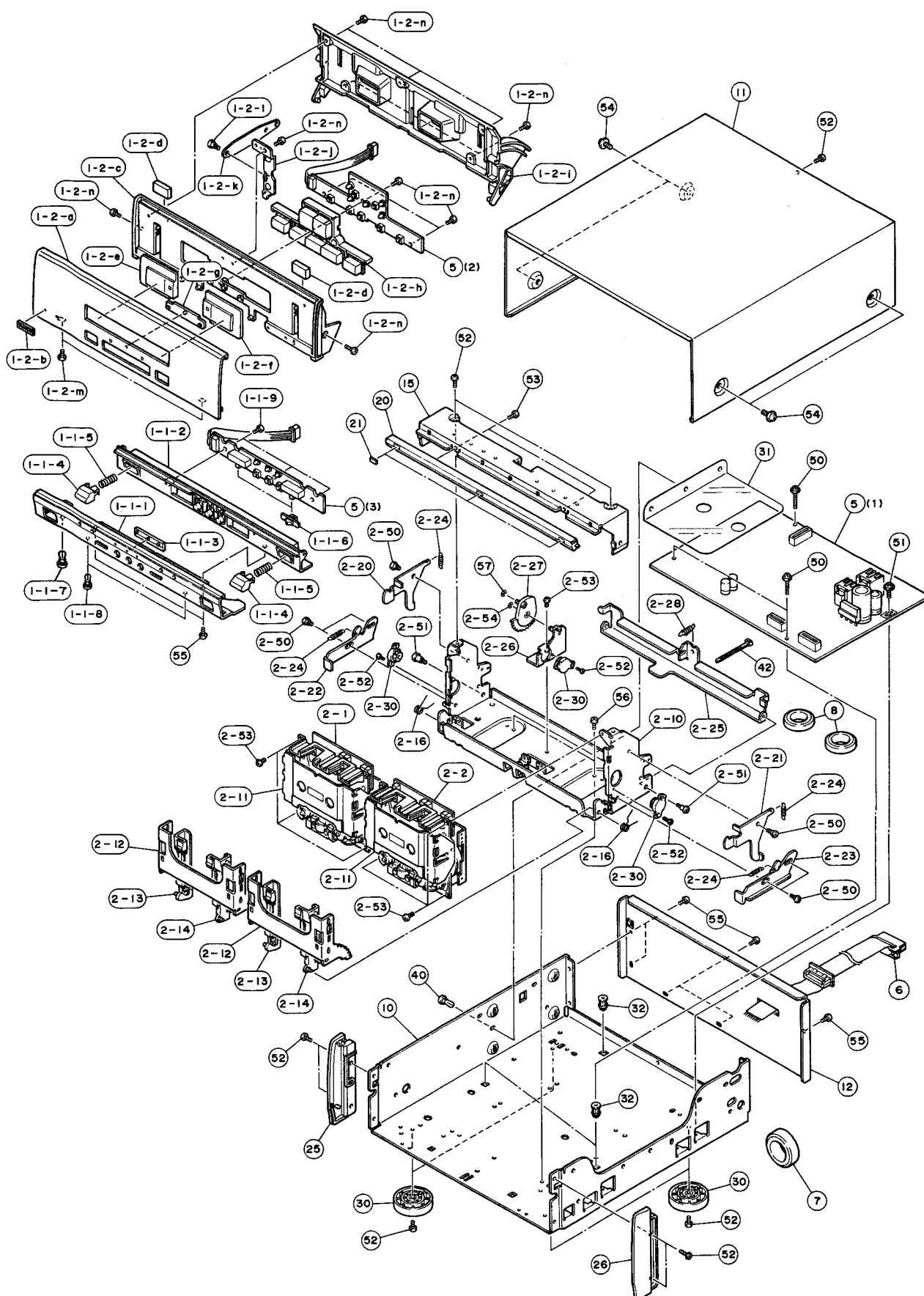
\* New Parts

Schm Ref.	PART NO.	Description
△ Q16	VE613400	TR 2SD1858 Q,R
Q17	iC174020	TR 2SC1740S R,S
Q18	VD678700	TR.DGT DTC114ES
△ * Q19	VN996900	TR 2SC4495
Q20	VD488500	TR.DGT DTC143XS
Q21	VD678500	TR.DGT DTA114ES
Q22	VD678500	TR.DGT DTA114ES
Q23	VD678500	TR.DGT DTA114ES
Q24	VD678700	TR.DGT DTC114ES
Q25	iA093320	TR 2SA933S Q,R
Q26	iA093320	TR 2SA933S Q,R
Q27	VD678700	TR.DGT DTC114ES
Q28	VD678700	TR.DGT DTC114ES
Q29	VE613300	TR 2SB1237 Q,R
Q30	VE613300	TR 2SB1237 Q,R
Q31	VD678700	TR.DGT DTC114ES
Q32	VD678700	TR.DGT DTC114ES
Q33	VE613300	TR 2SB1237 Q,R
Q34	VE613300	TR 2SB1237 Q,R
Q35	VD678700	TR.DGT DTC114ES
△ R84	HV453470	R.CAR.FP 4.7Ω 1/4W
△ R91	VK186600	R.FUS 10Ω 1/4W
△ R92	VE009700	R.FUS 4.7Ω 1/4W
SW201	VG392900	SW.TACT SKHVAA
SW202	VG392900	SW.TACT SKHVAA
SW203	VG392900	SW.TACT SKHVAA
SW204	VG392900	SW.TACT SKHVAA
SW205	VG392900	SW.TACT SKHVAA
SW206	VG392900	SW.TACT SKHVAA
SW207	VG392900	SW.TACT SKHVAA
SW208	VG392900	SW.TACT SKHVAA
SW210	VG392900	SW.TACT SKHVAA
SW211	VG392900	SW.TACT SKHVAA
* SW212	VP907400	SW.SLIDE SSSU-113
* SW213	VP907400	SW.SLIDE SSSU-113
TP3	VL448600	JUMPER.TST
VR1	VJ693600	VR.TRIM B10KΩ
VR2	VJ693600	VR.TRIM B10KΩ
VR3	VJ693600	VR.TRIM B10KΩ
VR4	VJ693600	VR.TRIM B10KΩ
VR5	VJ694200	VR.TRIM B100KΩ
VR6	VJ694200	VR.TRIM B100KΩ
VR7	VJ693400	VR.TRIM B4.7KΩ
VR8	VJ693400	VR.TRIM B4.7KΩ
VR9	VJ693500	VR.TRIM B6.8KΩ
VR10	VJ693500	VR.TRIM B6.8KΩ
XL1	VB759100	RSNR.CE 4MHz
	VB966900	CN IMSA-6024
	BB069510	GND.MTL No. 6951
	VN126800	HEAT.SINK UOT-16C25-MP

\* New Parts

KXW-S70

## ■ EXPLODED VIEW



**MECHANICAL PARTS** Note ) Ø : Diameter

Ref. No.	PART NO.	Description	Remarks	Markets
* 1-1-1	VP 987900	FRONT PANEL		
* 1-1-2	VP 988000	SUB PANEL		
* 1-1-3	VP 987400	LENS	3-D1.9	
* 1-1-4	VP 987000	BUTTON, EJ	EJ	
* 1-1-5	VQ122200	SPRING	D7.0C	
* 1-1-6	VP 985500	KNOB, SL		
* 1-1-7	VQ368500	PUSH RIVET	P3545-B	
* 1-1-8	VQ368600	PUSH RIVET	P3555-B	
* 1-1-9	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL	
* 1-2-a	VP 989000	LID PANEL		
* 1-2-b	VQ058200	EMBLEM	YAMAHA (22x6.5)	
* 1-2-c	VP 988100	SUB PANEL, LID	LID	
* 1-2-d	VQ122300	PAD, LID		
* 1-2-e	VP 988700	WINDOW L		
* 1-2-f	VP 988800	WINDOW R		
* 1-2-g	VP 987300	LENS	S1.8	
* 1-2-h	VP 987200	BUTTON, OP	OP	
* 1-2-i	VP 989100	COVER, LID		
* 1-2-j	VP 987700	HOLDER, LINK	LINK	
* 1-2-k	VP 987500	LINK		
* 1-2-l	VQ355900	SHOULDER SCREW	M3 D4x1.2	
* 1-2-m	VG893800	BIND HEAD P-TITE SCREW	2x6 ZMC2-BL	
* 1-2-n	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL	
* 1-2-o	VQ785300	RELIEF CONNECTOR ASS'y	1P 250mm	
* 2- 1	VQ356000	CASSETTE DECK MECHA	PB	
* 2- 2	VQ356100	CASSETTE MECHANISM	R/P	
* 2-10	VP 991000	CHASSIS, MECHANISM		
* 2-11	VP 990600	BACK PLATE		
* 2-12	VP 990400	FRAME, HOUSING		
* 2-13	VP 990100	CASSETTE GUIDE L		
* 2-14	VP 990200	CASSETTE GUIDE R		
* 2-16	VQ007100	SPRING	D5.9T	
* 2-20	VP 989500	LOCK LEVER L		
* 2-21	VP 989700	LOCK LEVER R		
* 2-22	VP 989900	SLIDE LEVER L		
* 2-23	VP 990000	SLIDE LEVER R		
* 2-24	VQ006900	SPRING	D3.2E	
* 2-25	VP 990800	LEVER, CAM		
* 2-26	VP 991200	HOLDER, CAM ASS'y		
* 2-27	VP 991100	CAM ASS'y		
* 2-28	VQ007000	SPRING	D4.5E	
* 2-30	VQ354000	DAMPER, GEAR		
* 2-50	VQ355900	SHOULDER SCREW	M3 D4x1.2	
* 2-51	VQ355800	SHOULDER SCREW	M3 D4x4.2	
* 2-52	EA020036	PAN HEAD SCREW	2x3 ZMC2-Y	
* 2-53	ED330046	BIND HEAD SCREW	3x4 ZMC2-BL	
* 2-54	VQ355700	E-RING	2.5	
* 5	VQ351800	P.C.B. ASS'y, MAIN		
* 6	VQ370000	REAR CONNECTOR ASS'y	14P 610mm	(UCRAB)
* 6	VR204500	REAR CONNECTOR ASS'y	14P 610mm	(G)
* 7	VB933800	FERRITE CORE	BP53RB310190NOA	(G)
* 8	Vi491100	FERRITE CORE	BP53RB19012080M	(G)
* 10	VP 982700	CHASSIS		

\* New Parts

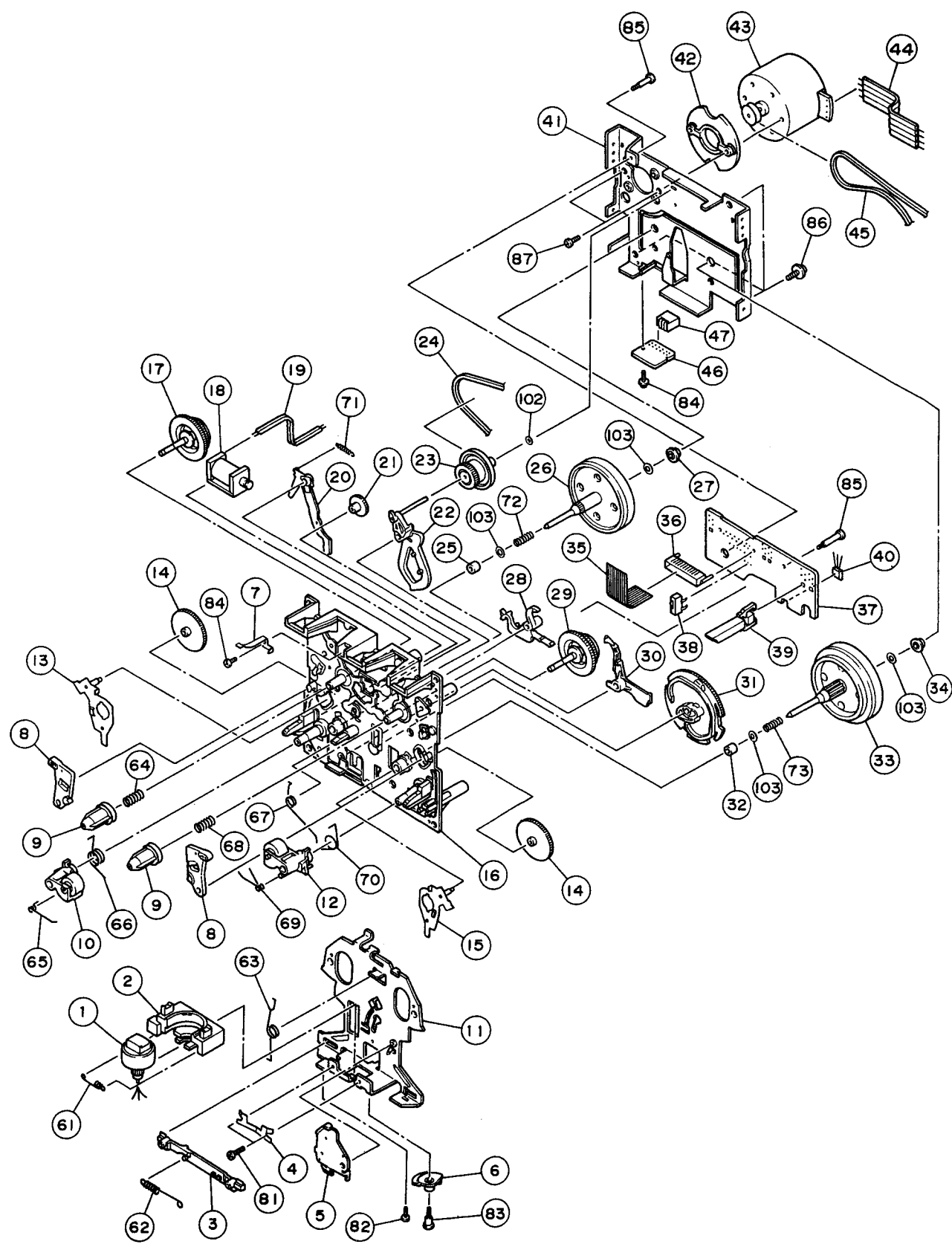
Ref. No.	PART NO.	Description	Remarks	Markets
* 11	VP989200	TOP COVER		
* 12	VP989300	REAR PANEL		
* 15	VP988900	FRAME, TOP		
* 20	VP987800	SUB PANEL, TOP	TOP	
* 21	VQ122400	CUSHION, TOP		
* 25	VP988300	PLATE, SIDE L		
* 26	VP988500	PLATE, SIDE R		
* 30	VP984800	LEG	Ø41xH12.5	
* 31	VQ122700	SHEET, PCB		
* 32	Vi048500	SUPPORT, P.C.B.		
* 40	VQ368500	PUSH RIVET	P3545-B	
* 42	CB069250	BINDING TIE	BK-1	
* 50	EX602560	BW HEAD P-TITE SCREW	3x20-8 FCRM3-BL	
* 51	EX600700	BW HEAD TAPPING SCREW	3x8 FCM3-CU	
* 52	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
* 53	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL	
* 54	EX601150	BW HEAD S-TITE SCREW	4x8-10 FNM3-BL	TI
* 55	EN301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	
* 56	EP600130	BIND HEAD B-TITE SCREW	3x6 ZMC2-Y	
* 57	VQ355700	E-RING	2.5	

\* New Parts

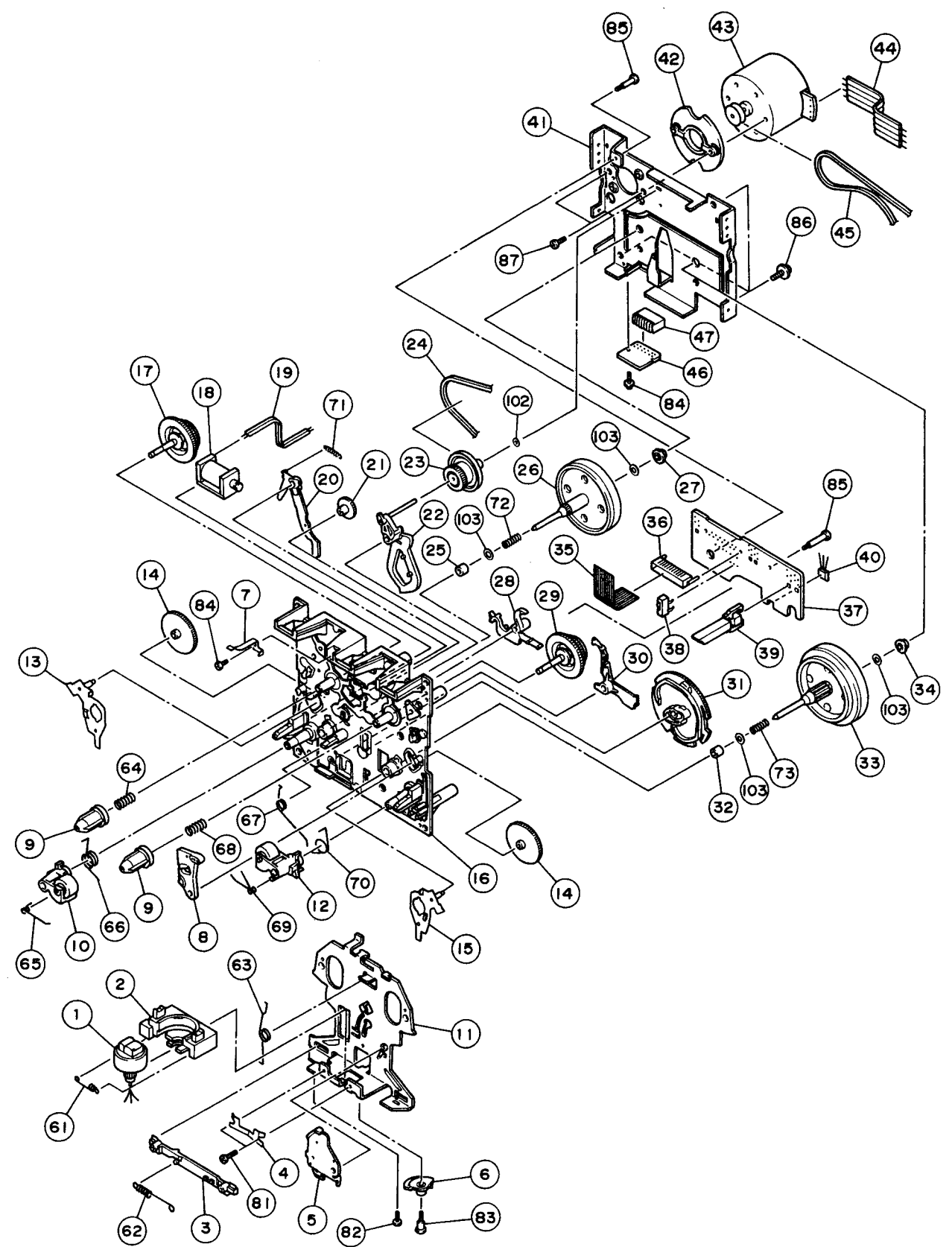
KXW-S70

EXPLODED VIEW (Cassette Mechanism)

DECK A



DECK B





**MECHANICAL PARTS (Cassette Mechanism)** Note ) Ø : Diameter

Ref. No.	PART NO.	Description	Remarks	Markets
*	VQ356100	CASSETTE DECK MECHA.	R/P	22-091-2659
*	VQ356000	CASSETTE DECK MECHA	PB	22-091-2661
* 1	NX612160	HEAD HOLDER ASS'y	PB	220934067
* 1	NX612200	HEAD HOLDER ASS'y	R/P	220934270
* 2	AX618570	FRAME, HEAD		222191026
* 3	AX618590	LEVER, HEAD		222592012
* 4	AX618510	SPRING, AZIMUTH		161604032
* 5	NX612140	ARM ASS'y, ASSIST		220934053
* 6	AX618580	GEAR ARM, HEAD		222394020
* 7	AX618550	SPRING, CASSETTE		221604017
* 8	AX618600	EJECT LOCK		222614043
* 9	CX674690	CAP, REEL		222224041
* 10	NX612170	PINCH ARM L ASS'y		220934149
* 11	AX618540	CHASSIS HEAD		221122022
* 12	NX612180	PINCH ARM R ASS'y		220934150
* 13	CX674750	PLAY ARM L		222393257
* 14	CX674710	GEAR, PLAY		222224282
* 15	CX674740	PLAY ARM R		222393256
* 16	AX618560	CHASSIS OS.		222101023
* 17	NX612130	SUB REEL L ASS'y		220933071
* 18	NX612210	SOLENOID		220934419
* 19	MX604390	WIRE		220724105
* 20	CX674720	ARM RVS		222393010
* 21	CX674700	GEAR, FF		222224048
* 22	NX612150	ARM FR ASS'y		220934061
* 23	NX612120	PULLEY FR ASS'y		220933060
* 24	CX674640	BELT, FR		020834059
* 25	AX618610	METAL		222624033
* 26	NX612110	FLYWHEEL L ASS'y		220933051
* 27	AX618530	METAL		162624031
* 28	CX674730	ARM, BRAKE		222393028
* 29	NX612190	SUB REEL R ASS'y		220934151
* 30	CX674760	ARM, TRIGER		222683008
* 31	CX674680	GEAR, CAM		222212090
* 32	AX618620	METAL		PBE16449
* 33	NX612100	FLYWHEEL R ASS'y		220933050
* 34	AX618520	METAL		162624030
* 35	MX604370	WIRE	PB 11P	220724097
* 35	MX604380	WIRE	R/P 13P	220724099
* 36	CX674660	HOLDER, WIRE		162192382
* 37	NX612080	P.C.BOARD		220703018
* 38	KX604010	SWITCH, MODE		04MPU10101MMB0
* 39	KX604020	SWITCH, LEAF		04MTS10041MVL0
* 40	IX632700	HALL IC		00LB9051A
* 41	BX602540	BRACKET, FW		221192016
* 42	CX674670	SPACER		222194045
* 43	NX612220	MOTOR ASS'y		220934531
* 44	MX604360	WIRE		160724056
* 45	CX674650	BELT, MAIN		020834060
* 46	NX612090	P.C.BOARD		220704046
* 47	LX608190	HOUSING	PB	00S3BEH
* 47	LX608200	HOUSING	R/P	00S6BEH
* 61	AX618370	SPRING		010804251

\* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 62	AX618360	SPRING		010804249
* 63	AX618430	SPRING		010824250
* 64	AX618390	SPRING		010814257
* 65	AX618450	SPRING		010824253
* 66	AX618480	SPRING		010824262
* 67	AX618440	SPRING		010824252
* 68	AX618400	SPRING		010814258
* 69	AX618460	SPRING		010824254
* 70	AX618470	SPRING		010824261
* 71	AX618380	SPRING		010804260
* 72	AX618420	SPRING		010814413
* 73	AX618410	SPRING		010814309
* 81	AX618500	SCREW		033004056
* 82	AX618670	SCREW		PGSU20A2005
* 83	AX618490	SCREW		033004043
* 84	AX618630	SCREW		PGSD10A2004
* 85	AX618640	SCREW		PGSD20A2016
* 86	AX618650	SCREW		PGSL15A2608
* 87	AX618660	SCREW		PGSP11A2607
* 102	AX618680	WASHER		PGWP16X040040
* 103	AX618690	WASHER		PGWP26X042013

\* New Parts

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 kΩ	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	*	11 kΩ	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 kΩ	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 kΩ	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 kΩ	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 kΩ	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 kΩ	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 kΩ	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 kΩ	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 kΩ	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 kΩ	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 kΩ	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 kΩ	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 kΩ	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 kΩ	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 kΩ	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 kΩ	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 kΩ	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 kΩ	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 kΩ	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 kΩ	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 kΩ	HF45 8110	HF45 8110
160 Ω	HJ35 5160	*	120 kΩ	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 kΩ	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 kΩ	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 kΩ	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 kΩ	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 kΩ	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 kΩ	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 kΩ	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 kΩ	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 kΩ	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 kΩ	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 kΩ	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 MΩ	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 MΩ	HJ35 9120	*
1.0 kΩ	HF45 6100	HF45 6100	1.5 MΩ	HJ35 9150	HF85 9150
1.2 kΩ	HF45 6120	HF45 6120	1.8 MΩ	HJ35 9180	HF85 9180
1.5 kΩ	HF45 6150	HF45 6150	2.2 MΩ	HJ35 9220	HF85 9220
1.8 kΩ	HF45 6180	HF45 6180	3.3 MΩ	HJ35 9330	HF85 9330
2.0 kΩ	HJ35 6200	HF85 6200	3.9 MΩ	HJ35 9390	*
2.2 kΩ	HF45 6220	HF45 6220	4.7 MΩ	HJ35 9470	HF85 9470
2.4 kΩ	HJ35 6240	HF85 6240			
2.7 kΩ	HF45 6270	HF45 6270			
3.0 kΩ	HF45 6300	HF45 6300			
3.3 kΩ	HF45 6330	HF45 6330			
3.6 kΩ	HJ35 6360	HF85 6360			
3.9 kΩ	HF45 6390	HF45 6390			
4.7 kΩ	HF45 6470	HF45 6470			
5.1 kΩ	HF45 6510	HF45 6510			
5.6 kΩ	HF45 6560	HF45 6560			
6.8 kΩ	HF45 6680	HF45 6680			
8.2 kΩ	HF45 6820	HF45 6820			
9.1 kΩ	HF45 6910	HF45 6910			

1/4W Type

10mm

1/4W Type  
HF45 ○○○○

1/6W Type  
HF85 ○○○○

5mm

KXW-S70

YAMAHA