

MINI COMPONENT SYSTEM

GX-50

SERVICE MANUAL

This system is composed of GX-50 electronics module and 1 pair of NX-GX50 loud speakers.

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 any 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 part replacement. Recheck all work before you apply power to the unit.

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■ 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 0.15 μ F.
- Leakage current must not exceed 0.5mA.
- Be sure to test for leakage with the AC plug in both polarities.



"CAUTION"

"F501 : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 2.0A, 125V FUSE."

"F502 : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE T3.15A, 125V FUSE."

CAUTION

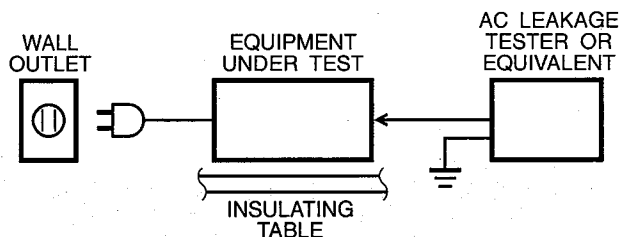
F501 : REPLACE WITH SAME TYPE 2.0A, 125V FUSE.

F502 : REPLACE WITH SAME TYPE T3.15A, 125V FUSE.

ATTENTION

F501 : UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE 2.0A, 125V.

F502 : UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE DE T3.15A, 125V.



CAUTION : USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to carefully follow the instructions below when servicing .

1. Laser Diode Properties

- Material : GaAlAs
- Wavelength : 780 nm
- Emission Duration : Continuous
- Laser Output : max. 44.6 μ W*

* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

2. When checking the laser diode emission, keep your eyes more than 30 cm away from the objective lens.

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!

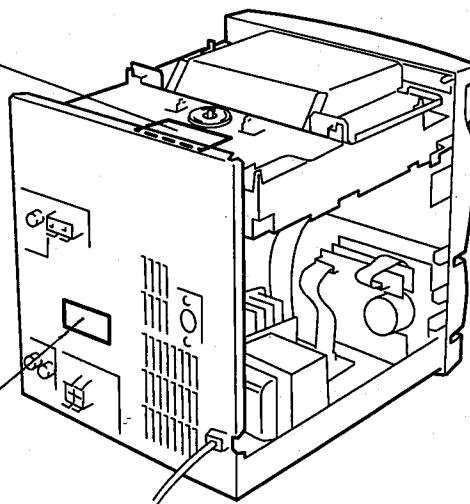
If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

② G, L models

VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÅREN ÄR UTKOPPLAD. BETRÄKTA EJ STRÅLEN. STRÅLEN ÄR FARLIG.
 VARSEL : AVATTAESSA JA SUOJALUKITUS OMPETÄÄSSÄ OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
 ADVARSEL : USYNLIG LASERSTRÅLNING VED ÅBNING NÄR SIKKERHEDSÅF-BRYDERE ER UDE FUNKTION. UNDGÅ UDSÆTTELSE FOR STRÅLING.

① G, L models

CLASS 1 LASER PRODUCT



English

- ① THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) INFORMS THE USER THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) WARNS THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.

CAUTION : USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Swedish

- ① DENNA MÄRKNING (SE FIGUR) UPPLYSER OM ATT DET I APPARATEN INGÅR EN LASERKOMPONENT AV TYP KLASS 1.
- ② VARNINGSMÄRKNING (SE FIGUR) FÖR STRÅLNING. INGREPP I APPARATEN BÖR ENDAST FÖRETAGAS AV FACKMAN MED KÄNNEDOM OM LASER. APPARATEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER STRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD: BETRÄKTA EJ STRÅLEN.

Danish

- ① DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.
- ② DETTE MÆRKAT OM LASEREN ER ANBRAGT PÅ APPARATET SOM EN OPLYSNING OM AT APPARATET INDEHOLDER ET LASERKOMPONENT.

ADVARSEL : INDGREB BOR KUN FORETAGES AF EN FAGMAND DA DER ER RISIKO FOR RADIOAKTIV STRÅLING.

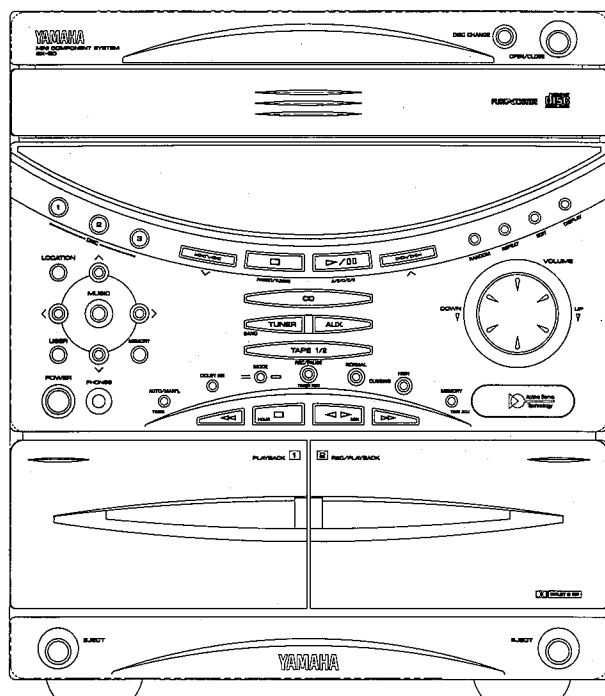
ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING.
 UNGDÅ UDSÆTTELSE FOR STRÅLING.

Finnish

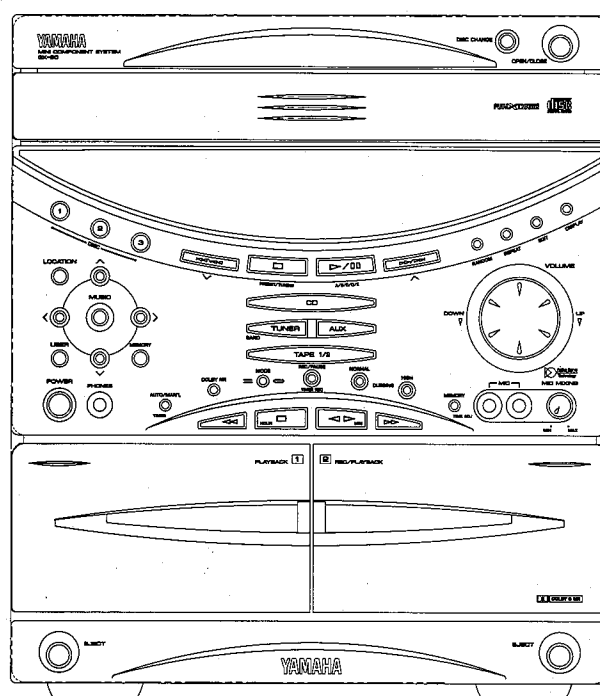
VARO! :
 AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

FRONT PANELS

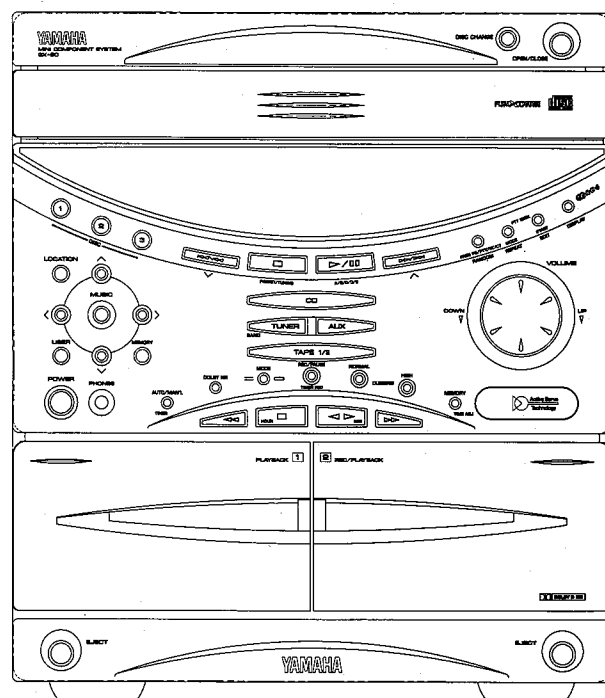
▼ U, C models



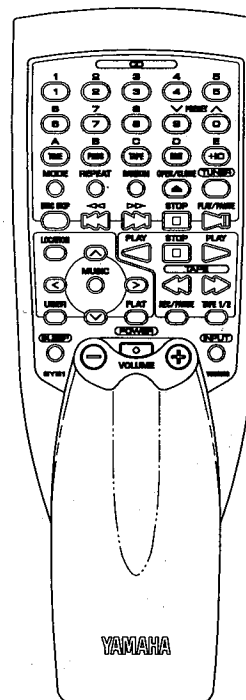
▼ R, A, L, T models



▼ B, G models

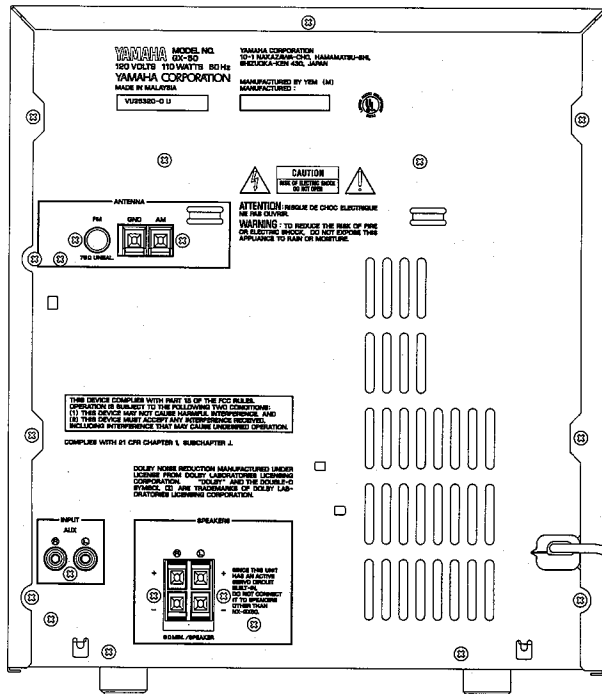


● Remote control transmitter

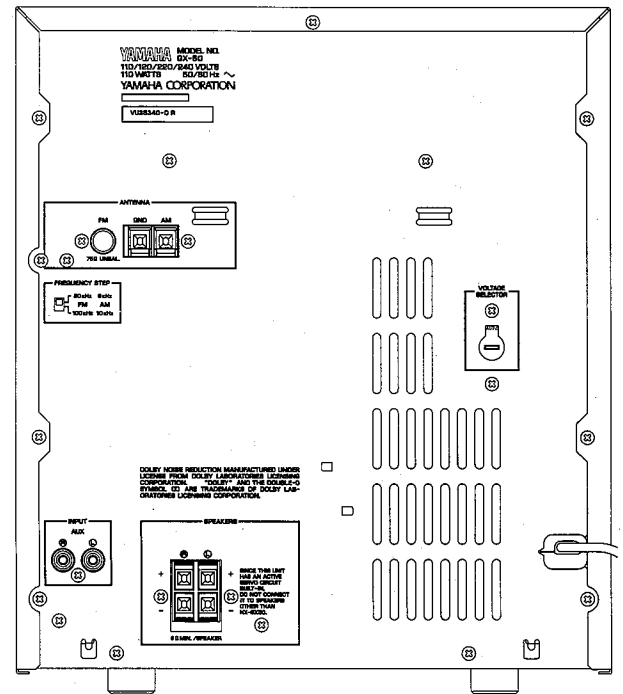


REAR PANELS

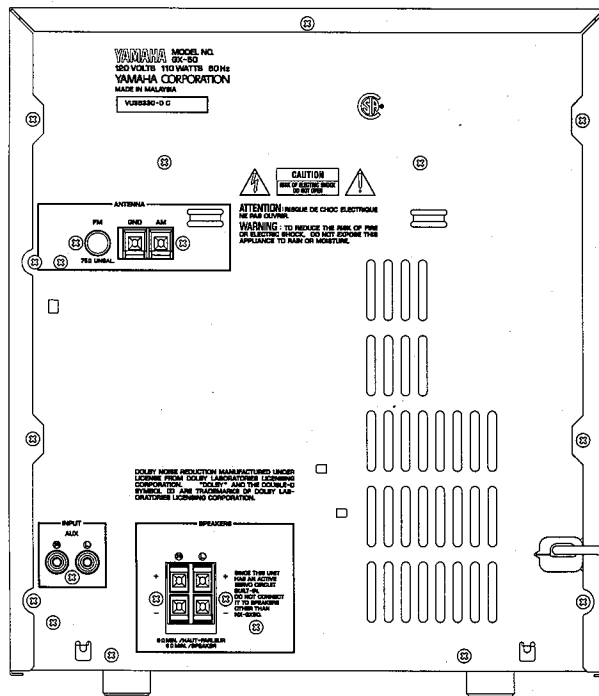
▼ U model



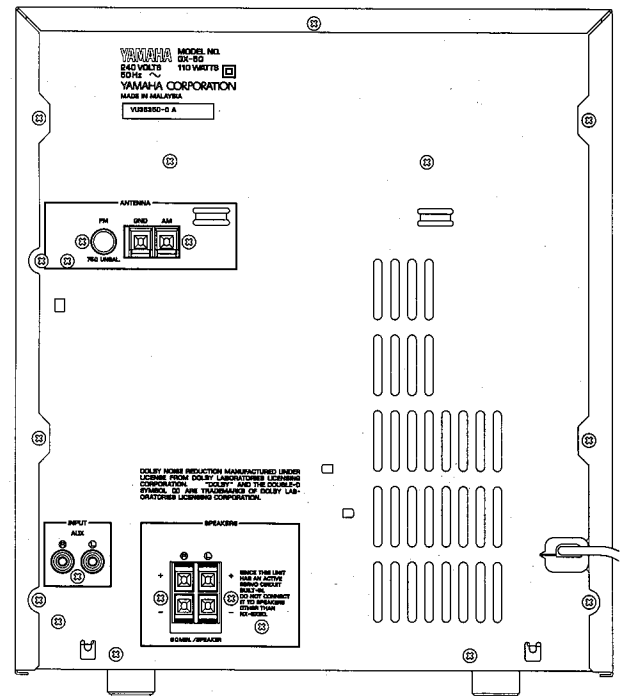
▼ R model



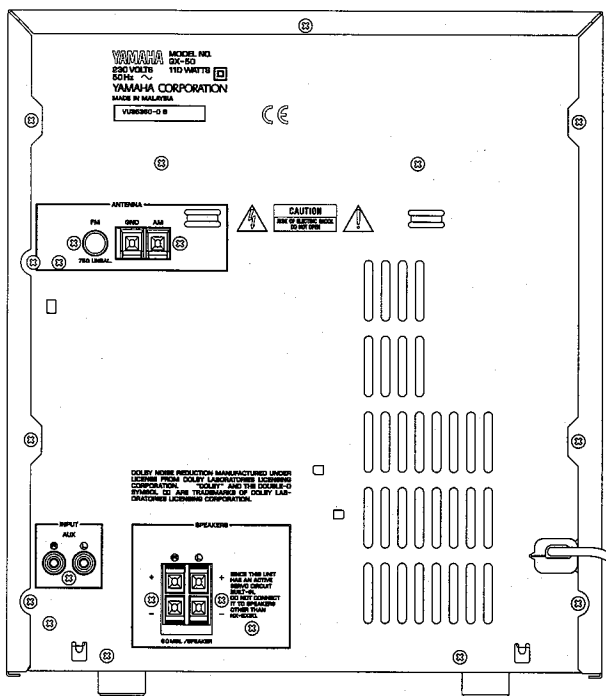
▼ C model



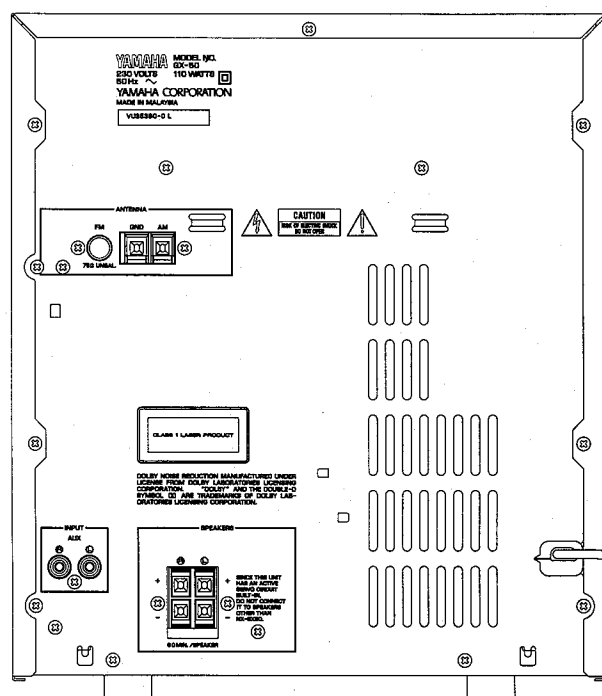
▼ A model



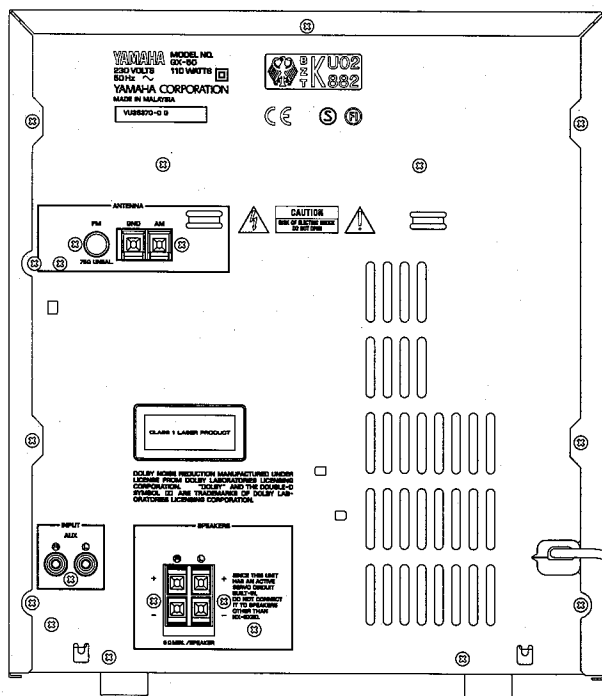
▼ B model



▼ L, T models



▼ G model



SPECIFICATIONS

AMPLIFIER SECTION

Graphic Equalizer	
Control Frequency	100Hz, 350Hz, 1kHz, 3.5kHz, 10kHz
Boost/Cut	±10dB
Signal to Noise Ratio (IHF-A-Network)	
AUX (Shorted)	80dB
Headphone Output Impedance	
	68Ω
Total Harmonic Distortion (1kHz)	
AUX to Speaker Out, 22.5W/6Ω	0.08%
Minimum RMS Output Power per Channel	
1kHz, 1% THD, 6Ω	45W
1kHz, 10% THD, 6Ω U, C, R, L, T only	50W
DIN Standard Output Power per Channel (G only)	
1kHz, 1% THD, 6Ω	45W
IEC Power (G only)	
1kHz, 0.1% THD, 6Ω	35W
Input Sensitivity/Impedance	
AUX	175mV/39kΩ

FM SECTION

Tuning Range	
U, C models	87.5 to 107.9MHz
R model	87.5 to 108.0MHz/87.50 to 108.00MHz
A, B, G, L, T models	87.50 to 108.00MHz
Usable Sensitivity (75Ω)	
30dB S/N Quieting, Mono, 1kHz, 100% mod. R, U, C, L, T models	1.5μV (14.8dBf)
DIN Mono, S/N 26dB (A, B, G only)	1.8μV

AM SECTION

Tuning Range	
U, C models	530 to 1,710kHz
R model	530 to 1,710kHz/531 to 1,611kHz
A, B, G, L, T models	531 to 1,611kHz
Usable Sensitivity	280μV/m

LW SECTION (B, G only)

Tuning Range	153 to 288kHz
Usable Sensitivity	560μV/m

CD CHANGER SECTION

Type	3-Disc Carousel Auto-changer
Signal Readout	Non-contact, 3-beam semi-conductor laser pick-up
D/A Converter	1bit DAC
Filter	8-time oversampling digital filter
Wow & Flutter	Unmeasurable

TAPE DECK SECTION

Type	Auto Reverse 4-Track 2-Channel playback/recording and playback stereo double Cassette Deck
Heads	
PB	Hard permalloy
REC/PB	Hard permalloy
Erase	Double Gap Ferrite
Motors	DC servo motor X 2

Wow & Flutter

W. PEAK	±0.19%
W. RMS	0.09%

Fast Winding Time about 110 seconds (C-60 tape)

Frequency Response (-20dB)

Type I/Normal tape	30 to 15,000Hz ± 3dB
Type II/High (CrO ₂) tape	30 to 16,000Hz ± 3dB

S/N Ratio

NR off	58dB
Dolby B NR on	66dB

Harmonic Distortion Less than 0.8%

Channel Separation (1kHz) More than 40dB

Crosstalk (125Hz) More than 55dB

SPEAKER SECTION

Type	Active Servo Processing type
Speakers	
	13cm (5-1/8") woofer
	5cm (1-15/16") tweeter
	2cm (13/16") super tweeter
Frequency Range	60 to 20,000Hz
Maximum Power Handling Capacity	67.5W
Impedance	6Ω
Sound Pressure Level	86.0dB/1m • 2.45V (1W/6Ω)

GENERAL

Power Supply	
U, C models	AC120V, 60Hz
A model	AC240V, 50Hz
B, G, L, T models	AC230V, 50Hz
R model	AC110/120/220/240V, 60/50Hz
Power Consumption	110W
Dimensions (W X H X D)	
GX-50	280 X 320 X 360mm (11" X 12-5/8" X 14-3/16")
NX-GX50	200 X 320 X 243mm (7-7/8" X 12-5/8" X 9-9/16")
Weight	
GX-50	9.3kg (20 lbs. 8 oz)
NX-GX50	3.5kg (7 lbs. 11 oz)/each
Accessories	
	AM loop antenna X 1
	Indoor FM antenna X 1
	Remote Control Transmitter X 1
	Battery (size "AA", R06) X 2

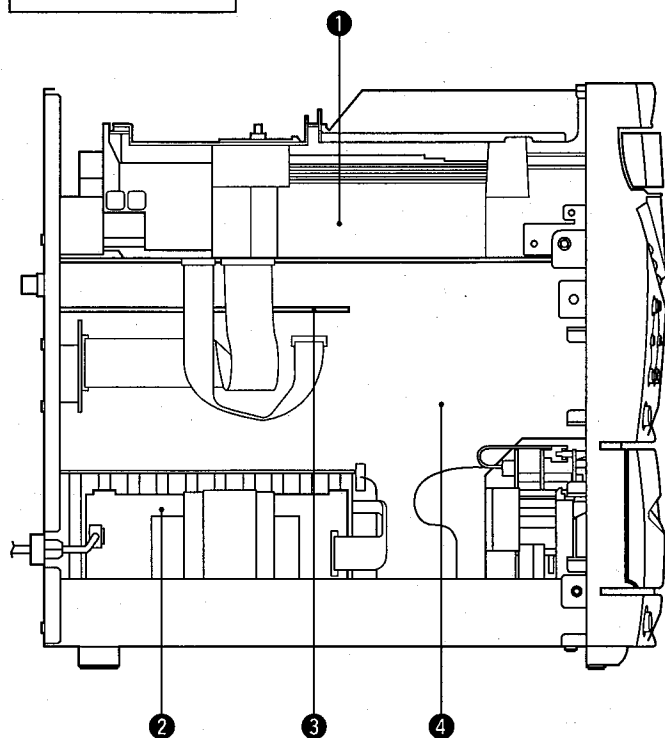
* Specifications subject to change without notice.

U	U.S.A. model	G	European model
C	Canadian model	R	General model
A	Australian model	L	Singapore model
B	British model	T	China model

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

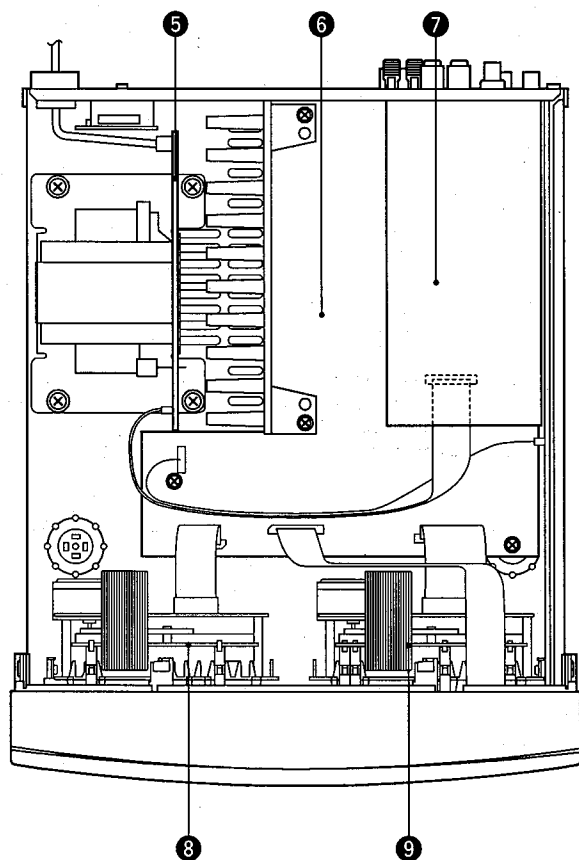
INTERNAL VIEW

Left side



- ① CD MECHANICAL UNIT
- ② P.C.B. MAIN (2)
- ③ P.C.B. TUNER
- ④ P.C.B. INPUT (1)

Top side



- ⑤ P.C.B. MAIN (2)
- ⑥ P.C.B. MAIN (1)
- ⑦ P.C.B. TUNER
- ⑧ CASSETTE DECK MECHANISM (PB)
- ⑨ CASSETTE DECK MECHANISM (R/P)

■ DISASSEMBLY PROCEDURES (Remove parts in the order as numbered.)

1. Removal of Top Cover

Remove 11 screws (①) in Fig. 1.

2. Removal of CD Mechanical Unit

- Push the Friction Arm (the bottom side of the CD Mechanical Unit) with a screwdriver or the like as shown in Fig. 2.
- Pull the Tray forward approx. 5cm (2") and remove the CD Lid as shown in Fig. 1.
- Push the Tray back to the original, closed position.
- Remove 2 screws (②) and then remove the Holder in Fig. 1.
- Disconnect the Flat Connecting Cables (#6, #7) in Fig. 2
- Remove 2 screws (③) and 2 screws (④), and then remove the CD Mechanical Unit as shown in Fig. 3.

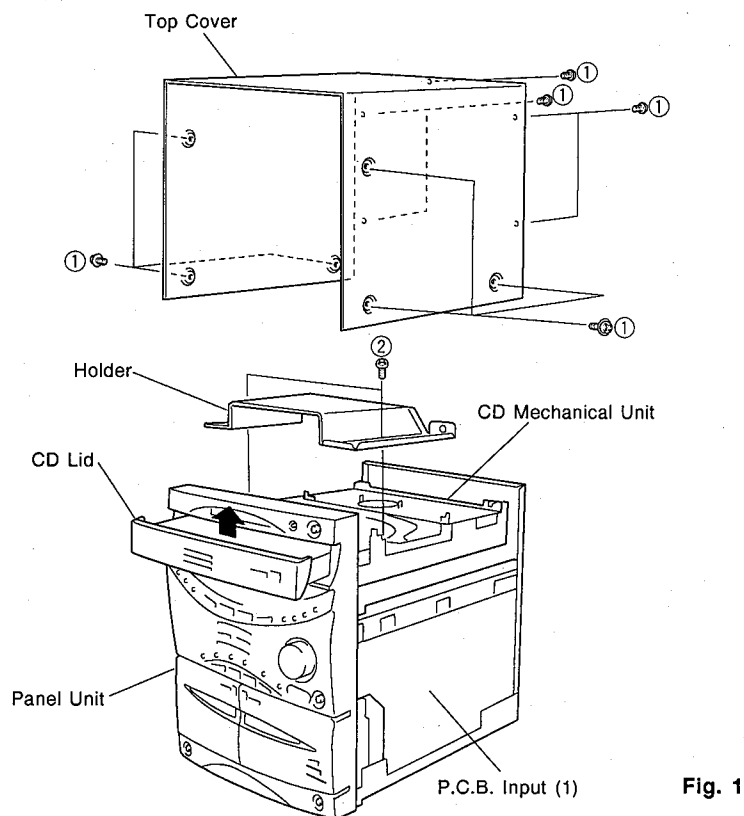


Fig. 1

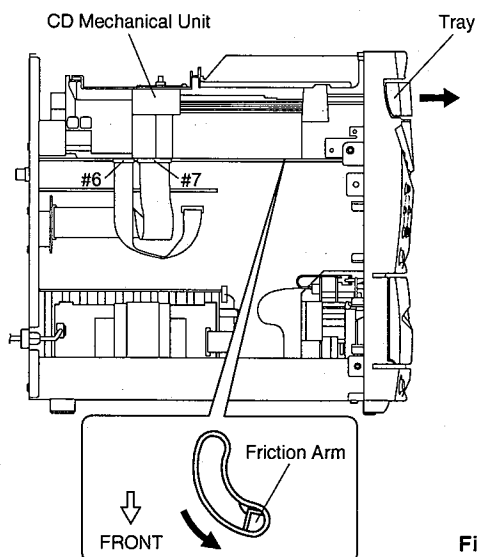


Fig. 2

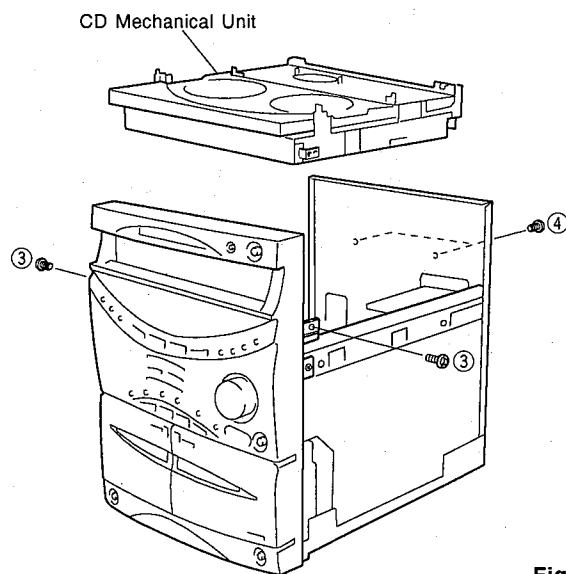


Fig. 3

3. Removal of Panel Unit

- Remove 6 screws (⑤) in Fig. 4.
- Disconnect the Flat Connecting Cables (#2 to 4, #8) and remove a connector (#1) in Fig. 5.
- Remove 4 screws (⑥) and then remove the Panel Unit (with the Input P.C.B. / Tuner P.C.B. attached) in Fig. 6.
- If necessary, remove a screw (⑦) and then remove the Input P.C.B. / Tuner P.C.B. in Fig. 6.

4. Check and Part Replacement of Main P.C.B. (1)

- Install the Input P.C.B. / Tuner P.C.B. to the Panel Unit in advance. (Fix them with a screw (⑦) in Fig. 6.)
- Remove 4 screws (⑧) from the Rear Panel in Fig. 4.
- Remove 4 screws (⑨) in Fig. 5.
- Lift the Rear Panel (with the Main P.C.B. attached) and turn it as shown in Fig. 7, and then install the Panel Unit (with the Input P.C.B. / Tuner P.C.B. attached) to the Rear Panel. (Fix it with 6 screws (⑤) in Fig. 4.)
- Reconnect the Flat Connecting Cables (#2 to 4, #8) and the Connector (#1) in Fig. 5.
- Connect the power plug and turn ON the power switch.

Note : As a poor contact is apt to occur between Connectors CB801, 802 of the Operation P.C.B and connectors CB213, 214 of the Input P.C.B., special care is required for them. When installing the Input P.C.B., fit Connectors CB213 and CB214 of the Input P.C.B. into Connectors CB801 and CB802 of the Operation P.C.B. properly (vertically). Then check for operation before proceeding to the next step of assembly.

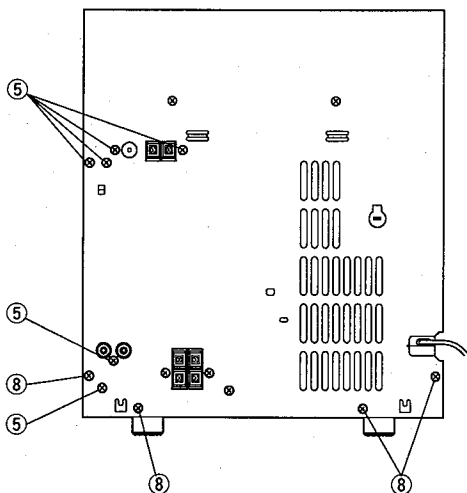


Fig. 4

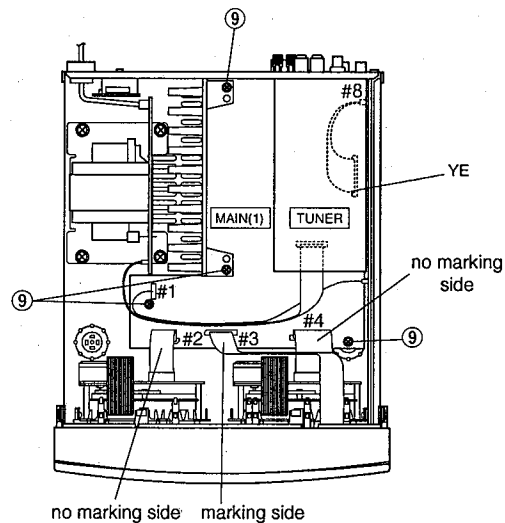


Fig. 5

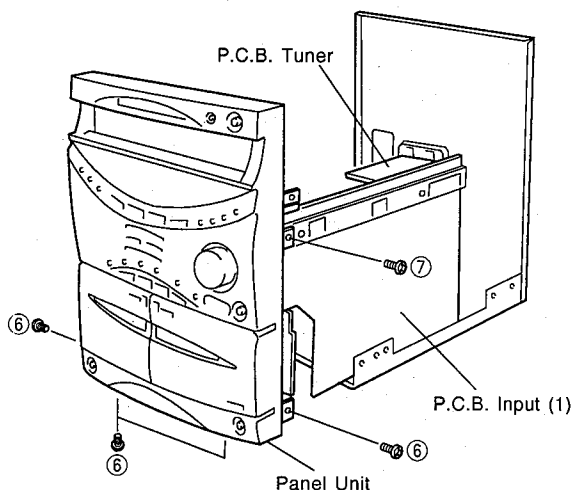


Fig. 6

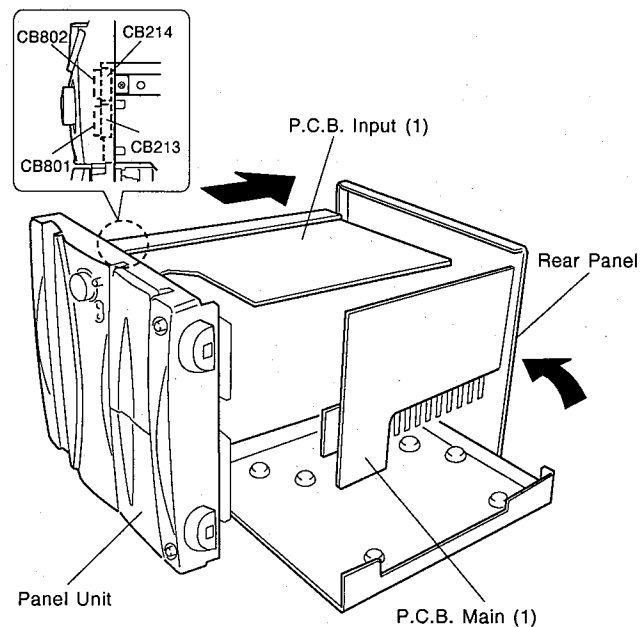


Fig. 7

5. Removal of Tray & Traverse Unit

- Remove 4 screws (10) and then remove the Clamp Bracket in Fig. 8.
- Remove 2 screws (11) and then remove the Tray Brackets in Fig. 8.
- Push the Friction Arm (the bottom side of the CD Mechanical Unit) with a screwdriver or the like and pull out the Tray forward as in Fig. 8.
- Remove 4 screws (12) and take out the Slider in Fig. 9.
- Disconnect the Flat Connecting Cable (16P) and connectors (6P) and then remove the Traverse Unit in Fig. 9.

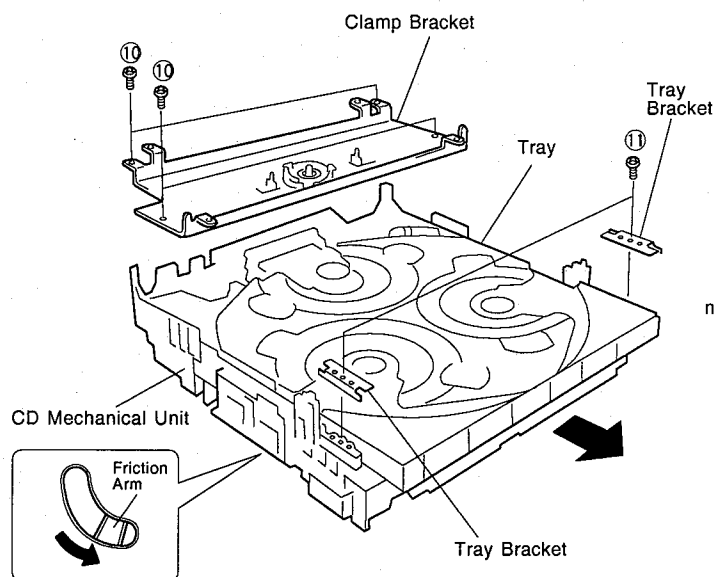


Fig. 8

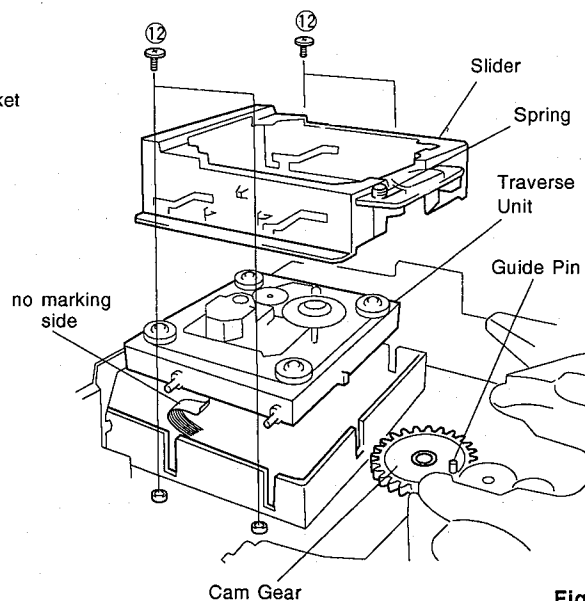


Fig. 9

● Precaution for Installation of Tray

Be sure to fit the shaft of the Friction Gear into the groove in the Tray.

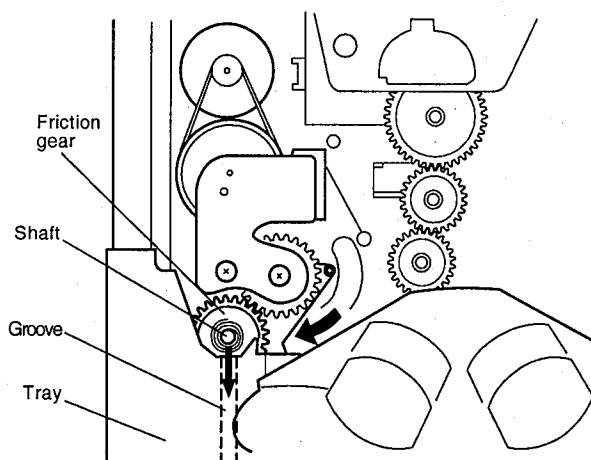


Fig. A

● Installation of Traverse Unit & Slider

- Fit the Traverse Unit into the Chassis.
 - Turn the Cam Gear till its Guide Pin comes to the position as shown in Fig. 9.
 - Fit the Slider into the Traverse Unit. Set the Spring of the Slider so that it holds down the Guide Pin of the Cam Gear (as shown in Fig.B).
- (Press the Spring of the Slider once and release it, and it will hold down the Guide Pin of the Cam Gear.)
- After installation, check that the Clamp moves up and down by turning the Load Gear.

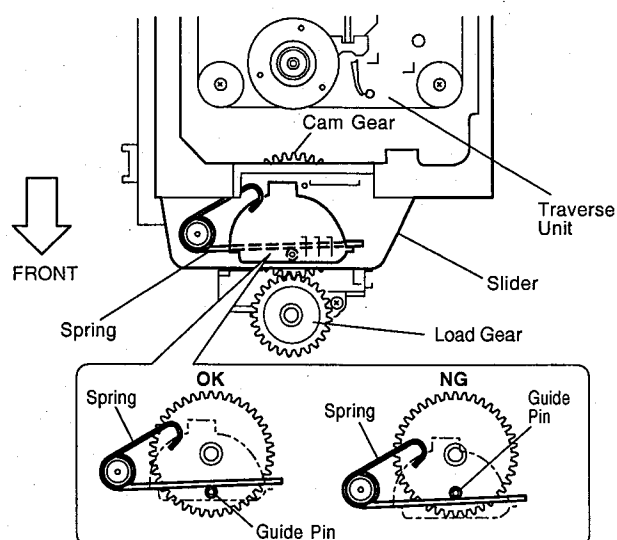


Fig. B

6. Removal of Pick-up Head

- Remove the Gear A in Fig. 10.
- Pull out the Sled Shaft and remove the Pick-up Head in Fig. 10.

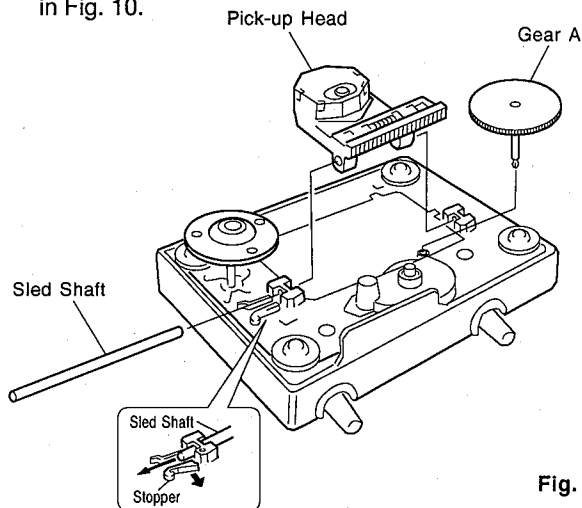


Fig. 10

7. Removal of Cassette Deck Mechanism

Remove 2 screws (13) and 2 screws (14), and then pull out the Cassette Deck Mechanism in Fig. 12.

8. Removal of Pinch Roller

Detach the hook and then remove the Pinch Roller in Fig. 13.

9. Removal of Head Ass'y

Remove 2 screws (15) and then remove the Head Ass'y in Fig. 13.

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

10. Removal of Main Motor

Remove 2 screws (16) in Fig. 13.

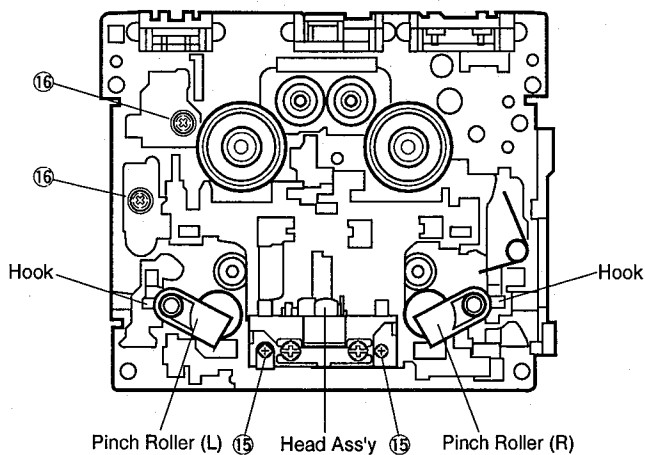


Fig. 13

- Check that the disc table height is as specified below.

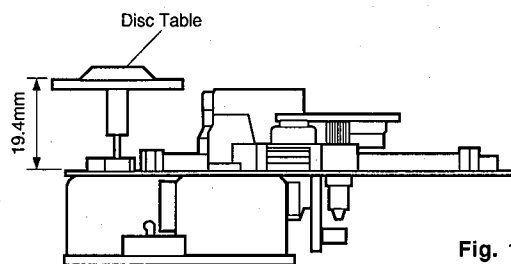


Fig. 11

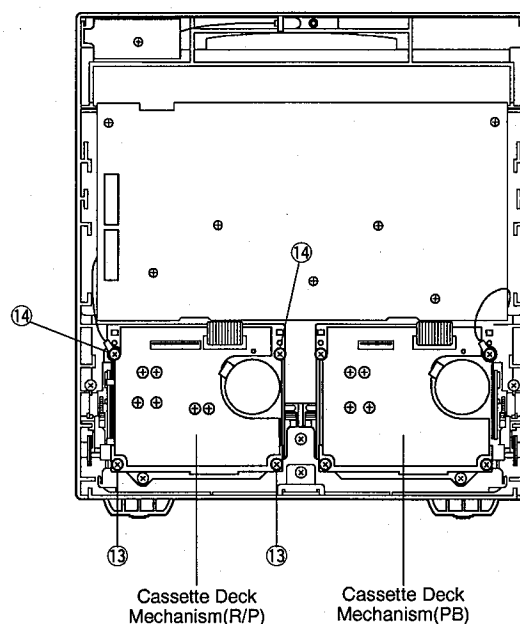


Fig. 12

● Belt installation (Viewed from the back)

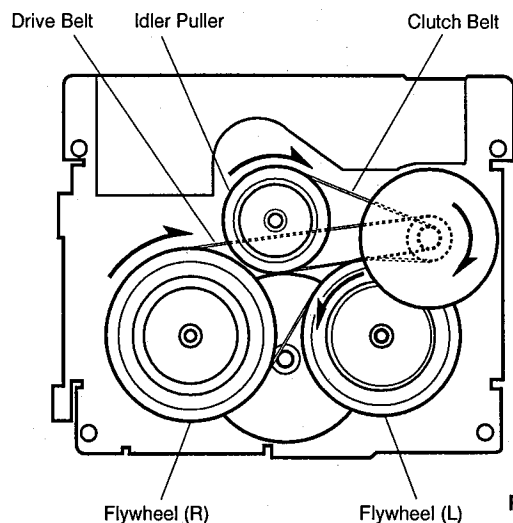
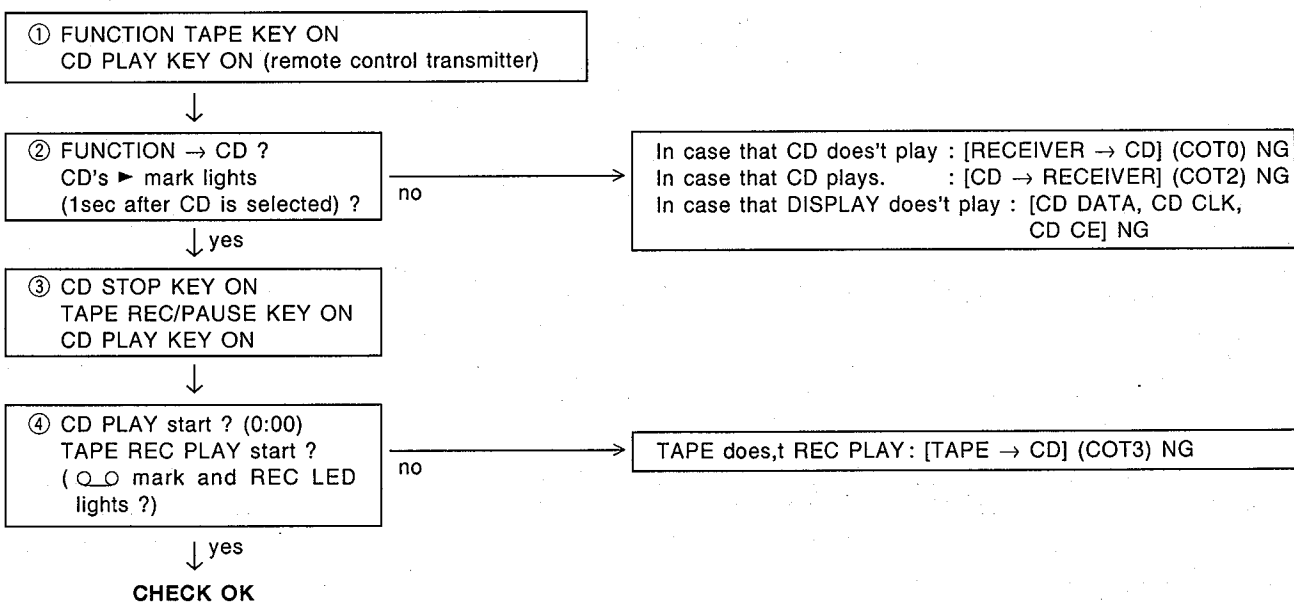


Fig. 14

■ VOLUME RANGE

DISPLAY	dB	DISPLAY	dB	DISPLAY	dB	DISPLAY	dB
VOL MIN	-∞	VOL 10	-37.5	VOL 20	-25	VOL 30	-11.25
VOL 01	-80	VOL 11	-36.25	VOL 21	-23.75	VOL 31	-10
VOL 02	-70	VOL 12	-35	VOL 22	-22.5	VOL 32	-8.75
VOL 03	-61.25	VOL 13	-33.75	VOL 23	-21.25	VOL 33	-7.5
VOL 04	-56.25	VOL 14	-32.5	VOL 24	-20	VOL 34	-6.25
VOL 05	-52.5	VOL 15	-31.25	VOL 25	-17.5	VOL 35	-5
VOL 06	-48.75	VOL 16	-30	VOL 26	-16.25	VOL 36	-3.75
VOL 07	-45	VOL 17	-28.75	VOL 27	-15	VOL 37	-2.5
VOL 08	-42.5	VOL 18	-27.5	VOL 28	-13.75	VOL 38	-1.25
VOL 09	-40	VOL 19	-26.25	VOL 29	-12.5	VOL MAX	0

■ SYSTEM CONTROL CHECK



■ TEST PROGRAM MODE

TEST PROGRAM MODE is initialized when POWER switch is pushed while pressing and holding both AUTO/MAN'L and AUX switches during power-on.

IN TEST PROGRAM MODE, program (function) No. can be selected by TAPE FF ▷▷ (up) and REW ◁◁ (down) switches, and operated by POWER switch.

No. & DISPLAY	FUNCTION	PURPOSE & OPERATION
01 G , E , TEST	Equalizer check mode	Used for checking EQ characteristics. The highlighted item on display changes at every pressing of MUSIC key after turning OFF the power once and then ON again. → OFF → TEST1 → TEST2 → TEST3 → TEST4 (FLAT) (MAX) (MIN) (MAX for 1kHz only)
02 FL + CLERR	FL display full lighting, RAM CLEAR	Used to turn OFF all FL lights and to clear memories of the tuner and EQ. (Note that memories set by the user will be erased.) When the power switch is pressed, all FL lights turn ON and when pressed again, CLEAR appears on display. Pressing the power switch with CLEAR on display will cause MEMORY and CLEAR to light for 2 seconds and the power to turn OFF. (CPU RAM is in the initialization state.) Also, the preset contents of the tuner are restored to the maker preset ones.
03 FL FULL	FL display full lighting	Used to check lighting of all FL lights. Pressing the power switch will turn ON all FL lights and pressing it again will turn OFF the power. (cancel)
04 APO. - ON/OFF	Not used (Do not use this function as it is not for servicing.)	
05 RDS - OFF/ON		
06 A , PS - ON/OFF		
07 A , M , - RDS/ALL		
08 CT > C - ON/OFF		
09 L > CT - ON/OFF		
10 PSR2 - ON/OFF		
11 RTBL - ON/OFF		
12 SEC - OFF/ON		
13 LO / F - ON/OFF		
14 PEAK - ON/OFF		
15 AMPC - OFF/ON		
16 CDCH - ON/OFF		
17 REM CODE		
18 L , EN - ON/OFF		
19 CANCEL	Test program mode cancel	

● MAKER'S PRESET

BAND	MARKETS	PRESET No.							
		1	2	3	4	5	6	7	8
FM (MHz)	U, C, R (100k/10k)	98.1	95.1	87.5	101.5	107.9	88.1	106.1	107.9
	A, B, G, R (50k/9k)	98.10	95.10	87.50	101.50	108.00	88.10	106.10	107.90
AM (kHz)	U, C, R (100k/10k)	630	1080	1400	530	1710	900	1350	1440
	A, B, G, R (50k/9k)	630	1080	1404	531	1611	900	1350	1440
LW (kHz)	B, G	270	171	225	153	288	180	207	252

NOTE 1) PRESET PAGE { B, G (with LW) A : FM B : MW C : LW D : FM E : MW
OTHERS (w.o. LW) A : FM B : AM C : FM D : AM E : FM

CAUTION : When executing Test program No. 2 RAM CLEAR, be sure to write down the preset memory contents of the tuner, using a table like the one shown below. Execution of RAM CLEAR will set the memory contents of the tuner back in the factory preset state which means that all the memories preset by the user will be erased.

Preset group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

■ CD TEST MODE

Change the function to CD while holding CD's  (play/pause) and  (stop) switches, the TEST MODE is brought about. While  (play/pause) and  (stop) switches are held, the display lights fully. Each switch operates as the following on each mode. The MODE shall be set up by  to  (disc) switches after the push of  switch.

Function list of panel switches

SW	MODE 1 (M1)	MODE 2 (M2)	MODE 3 (M3)
EDIT	Bring about mode setting		
OPEN/CLOSE	Open/close the tray	DISC change	Rotate the disc motor
DISC CHANGE	Clamp up/down	Mecha. home process	Retard the disc motor
 (STOP)	Controls for the tray, the disc table and clamping stop. STANDBY command for the servo system.		
 /  (PLAY/PAUSE)	Play		Read and display the servo coefficient
	Feed forward (outer direction)	+10 track kick	port TBLR ← High
	Feed backward (inner direction)	-10 track kick	Tray port control (open/close)
(DISC) 1	Auto adjustment mode 1 *1 Tracking Offset, Focus Offset, Focus Gain	+1 track kick	Displayed servo coefficient address up
(DISC) 2	Auto adjustment mode 2 *1 Tracking Balance, Tracking Gain	-1 track kick	Displayed servo coefficient address down
(DISC) 3	Auto adjustment mode 3 *1 Focus Gain, Tracking Gain, Focus Balance	+30 track kick	Displayed servo coefficient increment
RANDOM	Enter normal operation (without mecha. INIT.)	-30 track kick	Displayed servo coefficient decrement
REPEAT	Focus search	Start TEST REPEAT (Do not use this function as it is not for servicing.)	Port TSLW High/Low alternate

Function by remote control transmitter switches

SW	MODE 1 (1X)	MODE 2 (2X)	MODE 3 (3X)
TIME	Enter normal operation	Focus on, Tracking off, Feed off	Send the displayed servo coefficient *2
TAPE	Line mute on/off		
PROG	port TBLL ← Low, port TBLR ← High		
DISC SKIP	port TSLW High/Low alternate		
"0"	Play (without PLL)		
"1"	Rotate the disc motor		
"2"	Retard the disc motor		

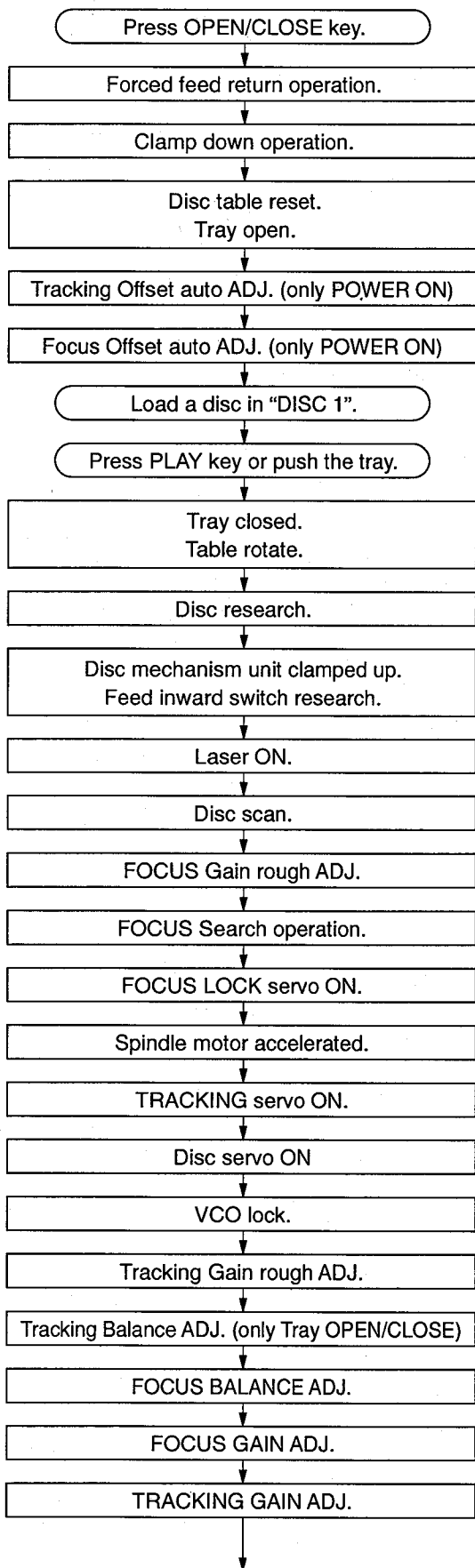
*1 "Adj-" lights in the adjustment and disappears at the end of the adjustment.

*2 CD does not auto adjustment in TEST REPEAT, if the servo coefficients are renewed by this operation.

[SHIPMENT SPECIFICATION]

Before packaging in manufacturing, the tray must be closed and the P.U. unit must be clamped up on CD.
(These are automatically achieved by turning off the  switch.)

■ CD STANDARD OPERATION CHART



"OPEN" appears in the TIME indicator.

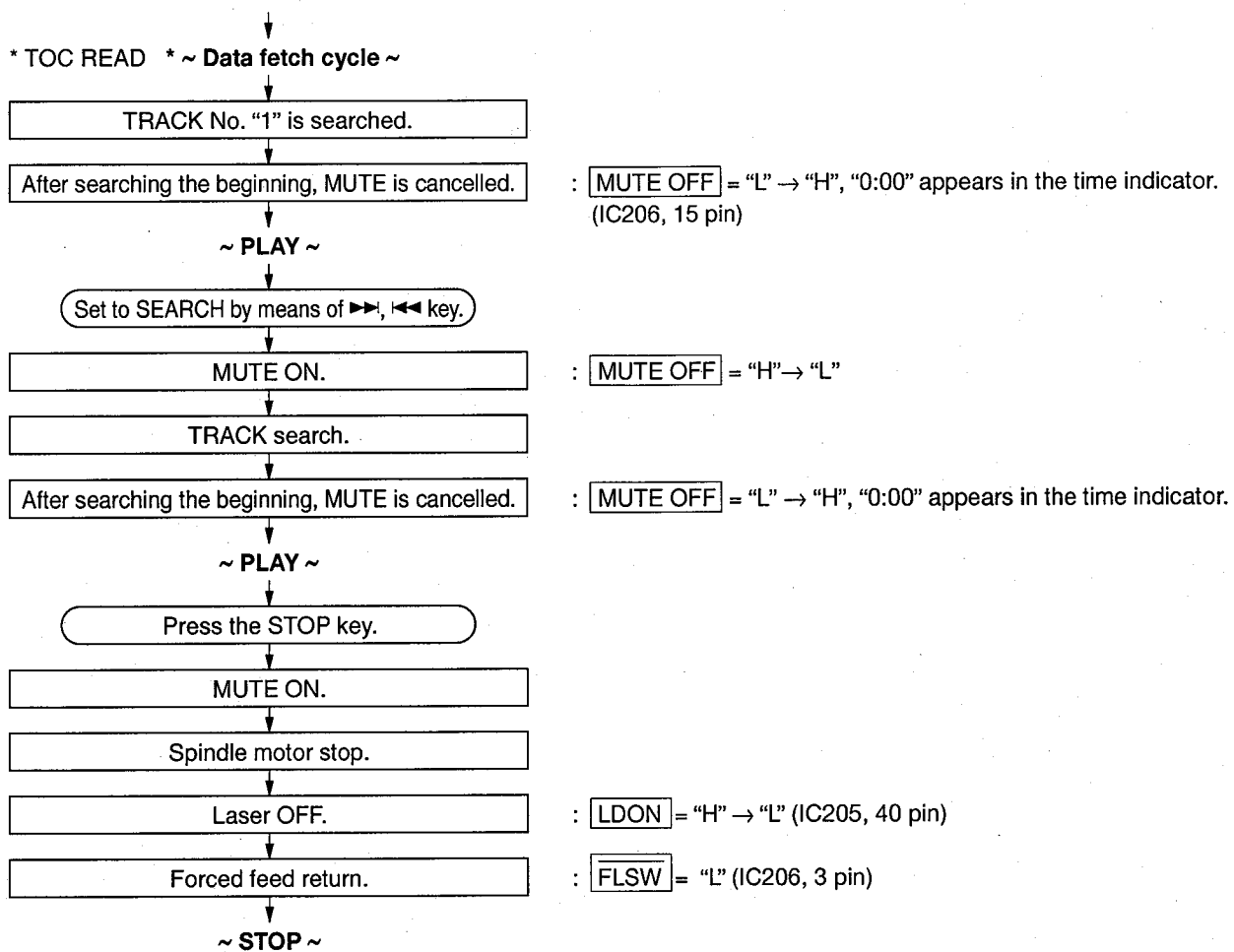
"TRV" signal is output until detection of LIMIT switch.

DISC "1" is turned to DM clamp position.

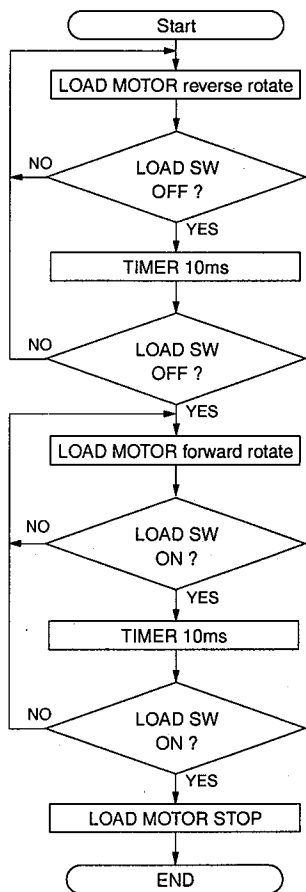
LDON = "H" (IC205, 40 pin)

$\overline{\text{FLOCK}}$ = "H" → "L" (IC206, 10 pin)

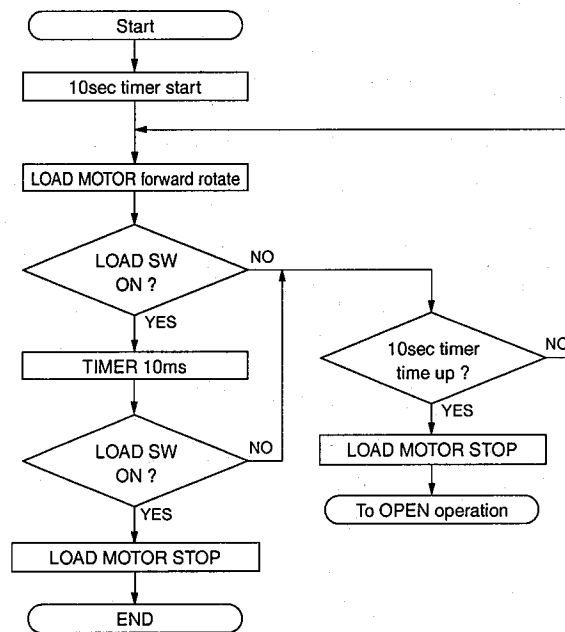
$\overline{\text{TLOCK}}$ = "H" → "L" (IC206, 11 pin)



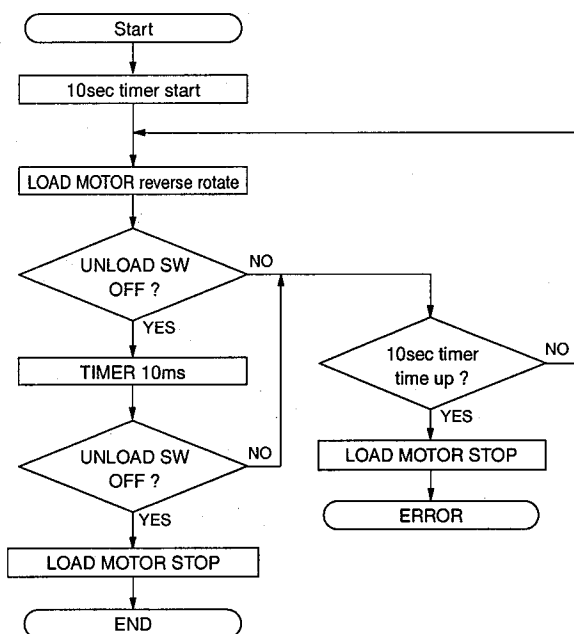
● HOME operation



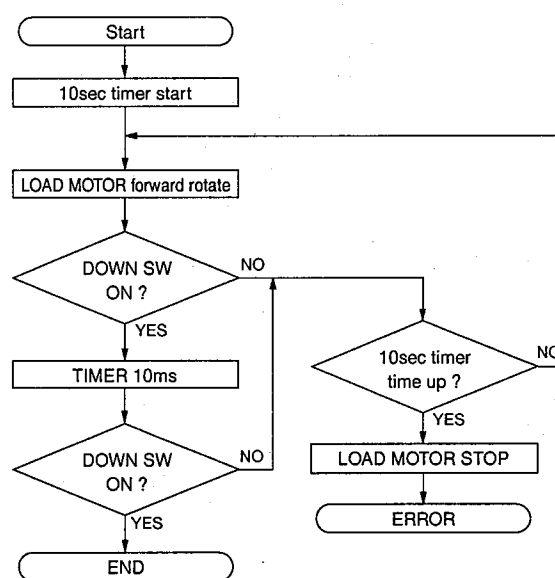
● CLOSE operation



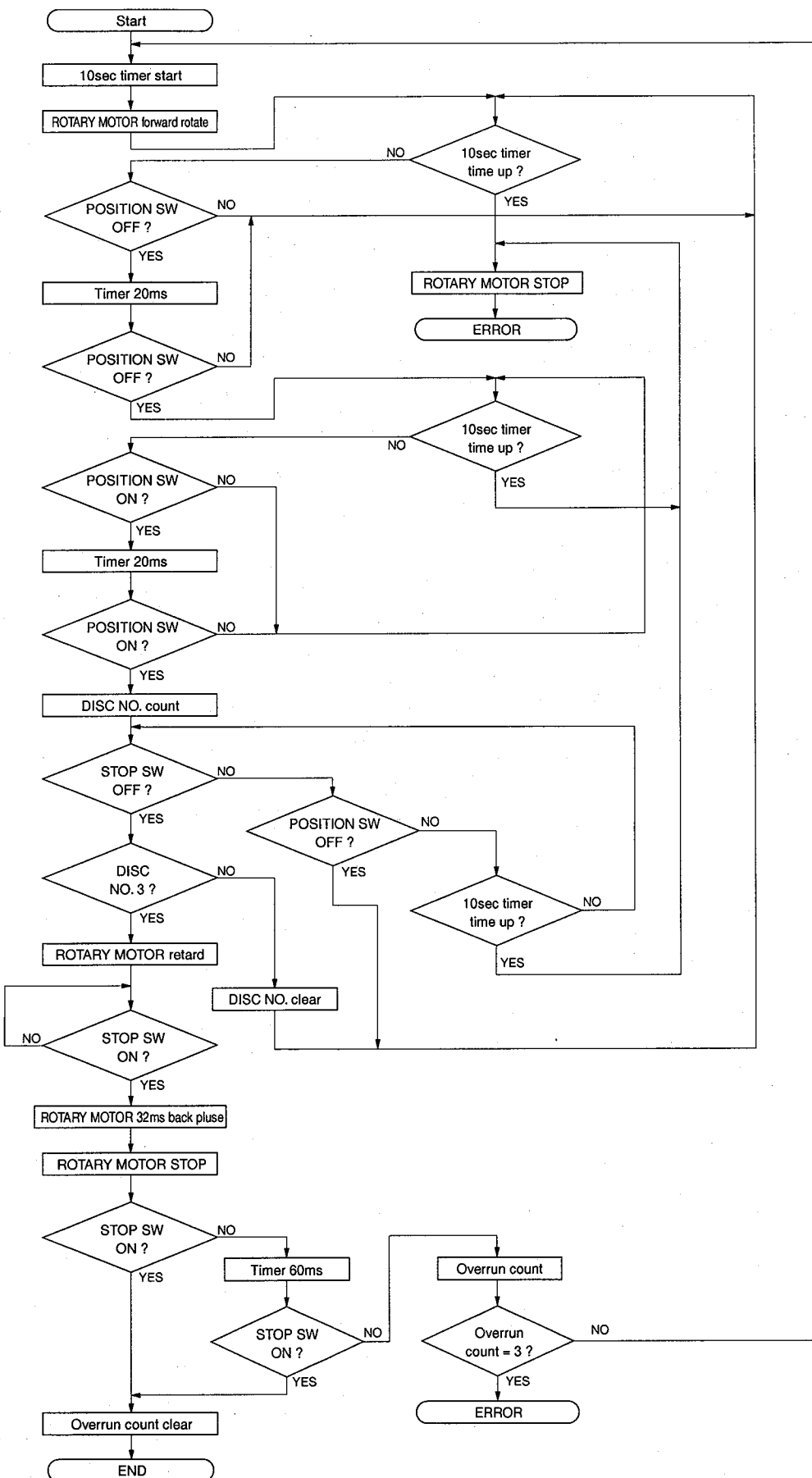
● OPEN operation



● DOWN operation



● ROTARY TRAY initialization operation



■ CD ERROR MESSAGE

Error message can be obtained on the display by pushing  (stop) and  (play/pause) switches simultaneously when CD has stopped (sometimes with the tray open) by an accident.

INDICATION	STATE	CONTENTS OF ERROR
E-10	PLAY	CD fails in the disc data reading after the state shift.
E-20	SCAN	
E-30	PAUSE	
E-70	SEARCH	
E-11	PLAY	CD fails in the disc data reading.
E-21	SCAN	
E-31	PAUSE	
E-73	SEARCH	CD fails in the TOC data reading.
E-04	LOAD, SEARCH	Tracking servo is not effective at the disc motor servo PLL.
E-14	LOAD, SEARCH	Disc motor servo PLL is not effective.
E-35		CD fails in focus search.
E-06	SEARCH, PLAY, PAUSE	CD fails in escaping from the lead-in area.
E-47	SEARCH	The inner limit switch dose not operate at the feed inner control.
E-57	STOP	
E-77	LOAD, EJECT, CHANGE	
E-18	PLAY	CD fails in recovery from the focus out.
E-28	SCAN	
E-38	PAUSE	
E-48	SEARCH	
E-68	LOAD, DISC CHANGE	
E-AA		Clamp down switch does not operate at the clamp down control.
E-AB		Clamp up switch does not operate at the clamp up control.
E-AC		Close switch does not operate at the tray close control.
E-AD		Open switch does not operate at the tray open control.
E-AE		CD fails in the table control.
E-AF		CD fails in the mecha. home process.
MN ERR		MN66271 does not give response of SENSE with resetting by the units microcomputer.

■ ADJUSTMENTS (DECK SECTION ONLY)

1. Before adjustment

- 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)
- DCVM
- 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

3. Test tape required

- MTT-111N (TX911650) Normal speed/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 I/Normal (LH) TDK AC225 (VU167200)
 - Type II/High (CrO₂) TDK AC514 (VU167300)

Note) When AC514 was used for adjustment, be sure to confirm with AC225.

Also, when AC513 was used for adjustment, be sure to confirm with AC224.

4. Initialization of mechanical section

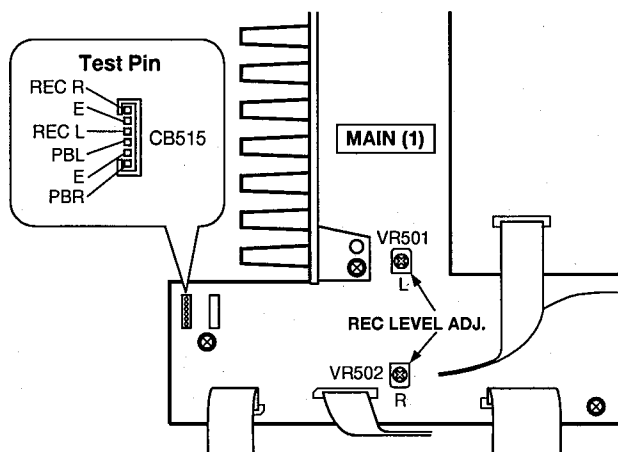
- Initialize the mechanical section if it does not work when operation is attempted

Example : When the PLAY key is pressed while the cassette holder is not closed completely, the head stops on its way and will not work.

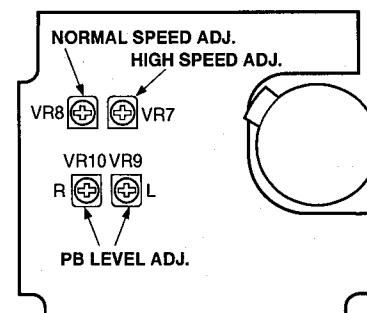
- 1) Disconnect the power cord and then reconnect it.
- 2) The normal condition is restored when initialized.

● Test point

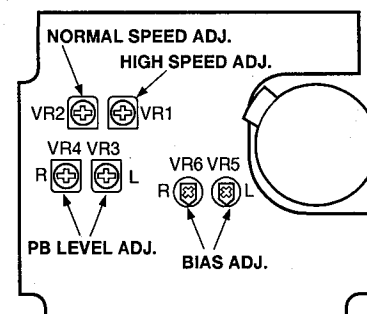
LINE OUTTest pins (CB515) PBL, PBR
LINE INTest pins (CB515) RECL, RECR



DECK 1 (Mechanism P. C. B.)



DECK 2 (Mechanism P. C. B.)



"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 70~160g/cm.	
		TW-2111A (FWD)		PLAY		Take up torque : 30~75g/cm.	
		TW-2121A (RVS)				Back tension : 1.5~8g/cm.	
2	Check FF, REW take up time	AC-513 (C-60)		FF REW		95 to 125 seconds.	
3	Azimuth	MTT-114N 10kHz, -10dB	ACVM Oscilloscope	PLAY	Azimuth adjustment screw. (Fig. A)	Playback output of L and R is maximum and phase difference should be minimum both directions. (Fig. B)	After the adjustment make sure to apply screw lock paint.
4	Tape Speed [Adjust the high speed initially, and next the normal speed.]	MTT-111N 3kHz, -10dB	Frequency counter	PLAY (HIGH)	DECK 1 VR7	DECK 1 : 6000Hz $\pm$ 30Hz	During playback, press the PLAY key and H.Dubbing key simultaneously (while pressing HIGH DUBBING key, press PLAY key) to enter high-speed mode.
					DECK 2 VR1	DECK 2 : 6000Hz $\pm$ 30Hz	
				PLAY (NORM)	DECK 1 VR8	DECK 1 : 3000Hz $\pm$ 15Hz	
					DECK 2 VR2	DECK 2 : 3000Hz $\pm$ 15Hz	
5	Wow/Flutter	MTT-111N 3kHz, -10dB	Wow/flutter meter	PLAY		Less than 0.18% (WRMS)	Perform adjustment at the center of the test tape length if possible.

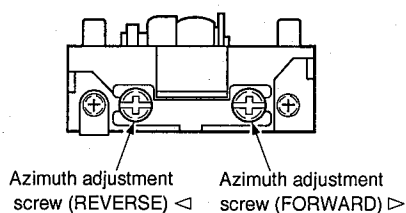


Fig. A

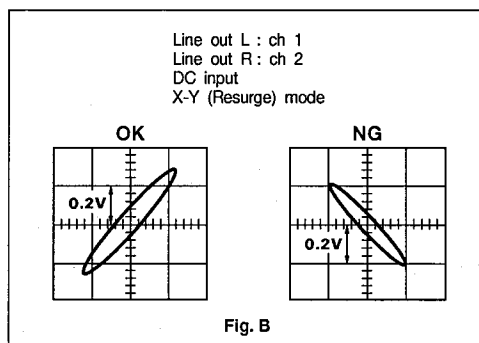


Fig. B

"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	Points of measurement	Adjustment parts	Rating
1	Playback level (315Hz)	MTT-212N 315Hz, 250nwb/m	ACVM	PLAY	LINE OUT	DECK 1 VR9 (L ch) VR10 (R ch) DECK 2 VR3 (L ch) VR4 (R ch)	-5dBV $\pm$ 0.3dBV
2	Confirmation of playback frequency response	Test tape for frequency check. 3180 μ s + 120 μ s (LH) (MTT-256) 3180 μ s + 70 μ s (CrO ₂) (MTT-356)	ACVM Oscilloscope	PLAY	LINE OUT		Check that the 10kHz playback level is within 0 $\pm$ 3dB of the 1kHz playback level. (Fig. C)

● PLAYBACK FREQUENCY RESPONSE

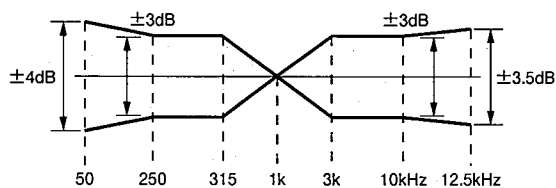


Fig. C

LINE OUT Test pins (CB515) PBL, PBR
 LINE IN Test pins (CB515) RECL, RECR

< Recording section >

Step	Item to be Adjusted	Tape	Instrument required	Mode	Measurement conditions	Points of measurement	Adjustment parts	Rating
1	Recording level (DECK 2)	AC-513 or AC-514 High (CrO ₂)	ACVM Audio frequency oscillator	REC PLAY	Input 315Hz Signal to LINE IN from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT becomes -25dBV.	LINE OUT	VR501 (L ch) VR502 (R ch)	Adjust for equal record and playback levels. (-25dBV $\pm$ 0.3dBV)
2	Recording bias (Total frequency response) (DECK 2)	AC-513 or AC-514 High (CrO ₂) AC-224 or AC-225 Normal (LH)	ACVM Audio frequency oscillator	REC PLAY	Input 12.5kHz Signal to LINE IN from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of LINE OUT becomes -25dBV.	LINE OUT	DECK 2 VR5 (L ch) VR6 (R ch)	Adjust for equal record and playback levels. (-25dBV $\pm$ 0.3dBV) Adjust for equal record and playback levels. (Fig. D) Perform record bias adjustment of High (CrO ₂) tape again, if the rating was not satisfied.
3	Confirmation of recorded level	AC-513 or AC-514 High (CrO ₂)	ACVM Audio frequency oscillator	REC PLAY		LINE OUT		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.

● TOTAL FREQUENCY RESPONSE (-20dB)

Dolby NR B, OFF

Type I (Normal)/Type II (High)

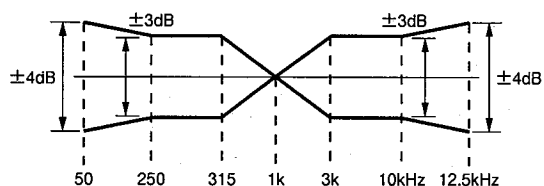


Fig. D

● DUBBING RESPONSE

Normal/High Speed

Type I (Normal)

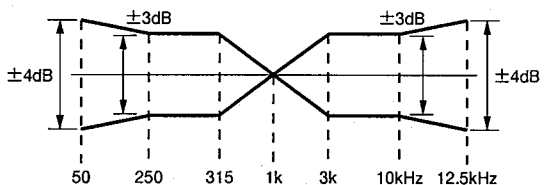


Fig. E

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).

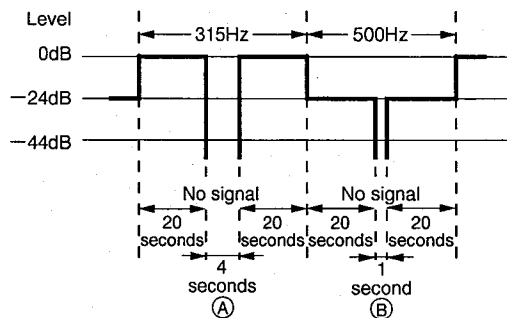
[Confirmation]

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

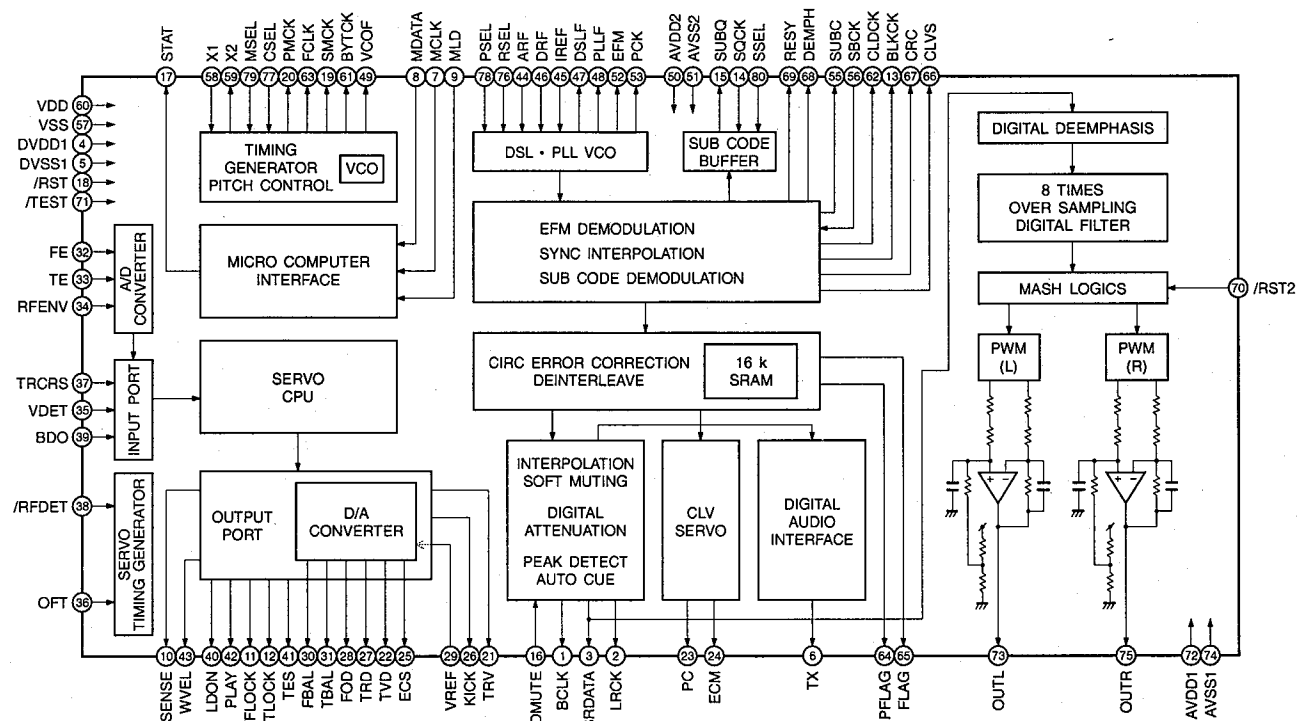
* Perform check at the center of the searching check tape length possible.

Music search function check tape · Searching check tape

Signal as shown below are recorded as they are repeated.



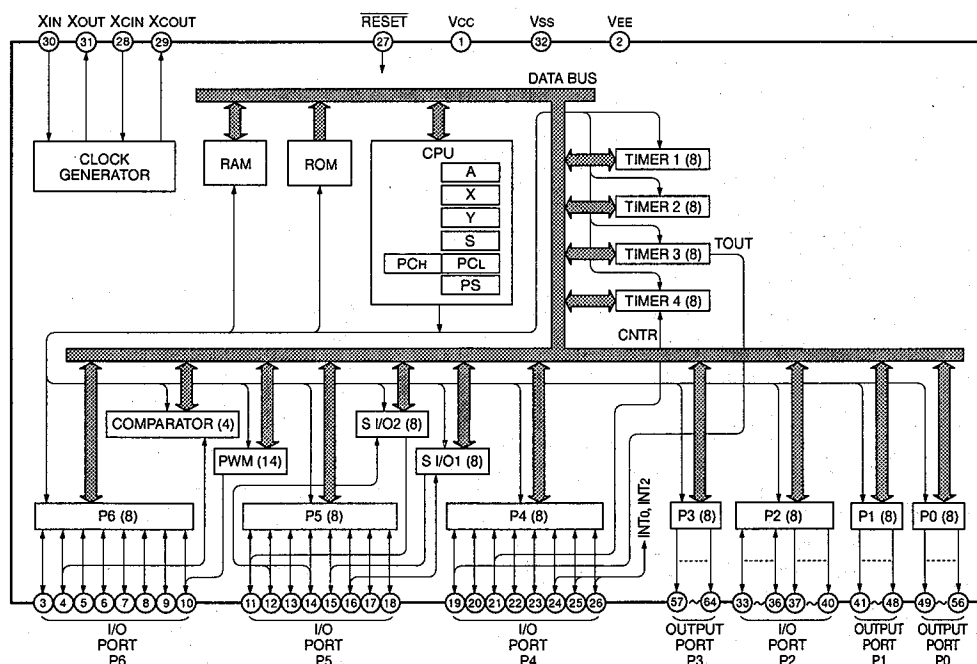
IC DATA

IC205 : MN66271RA
Signal Processor & Controller


Pin No.	Name	I/O	Function
1	BCLK	O	Bit clock output for SR DATA (NC)
2	LRCK	O	L/R identification signal output (NC)
3	SRDATA	O	Serial data output (NC)
4	DVDD1	I	Power supply for digital circuit (+5)
5	DVSS1	I	GND for digital circuit
6	TX	O	Digital, audio, interface output signal (NC)
7	MCLK	I	Microprocessor command clock signal input (data latched at leading edge)
8	MDATA	I	Microprocessor command data input
9	MLD	I	Microprocessor command load signal input L : LOAD
10	SENSE	O	Sense signal output
11	FLOCK	O	Focus servo drawing signal (L : when drawn)
12	TLOCK	O	Tracking servo drawing signal (L : when drawn)
13	BLKCK	O	Sub code block clock signal
14	SQCK	I	Clock input for sub-code Q register
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input H : MUTE
17	STAT	O	Status signal
18	RST	I	Reset input L : RESET
19	SMCK	O	8.4672MHz clock signal output when MSEL = H 4.2336MHz clock signal output when MSEL = L (NC)
20	PMCK	O	88.2KHz clock signal output (NC)
21	TRV	O	Traverse (Feed) forced feed output
22	TVD	O	Traverse (Feed) drive output
23	PC	O	Spindle motor ON signal L : ON (NC)
24	ECM	O	Spindle motor drive signal (forced mode output) 3-State
25	ECS	O	Spindle motor drive signal (servo error signal output)

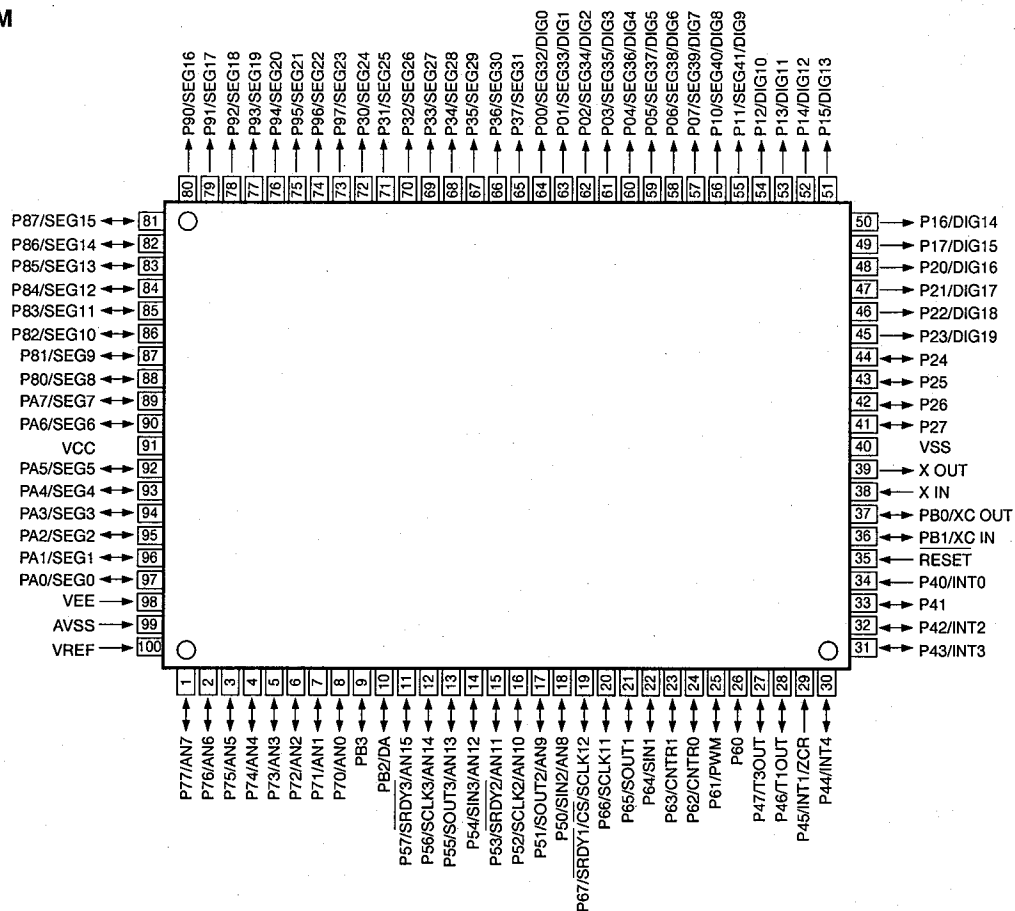
Pin No.	Name	I/O	Function
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	Reference voltage for DA output block
30	FBAL	O	Focus balance adjustment output
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input (analog input)
35	VDET	I	Oscillation detect signal input (H : DETECT)
36	OFT	I	Off track signal input (H : OFF TRACK)
37	TRCRS	I	Track cross signal input
38	RFDET	I	RF detect signal input (L : DETECT)
39	BDO	I	Drop out signal input (H : DROP OUT)
40	LDON	O	Laser ON signal output (H : ON)
41	TES	O	Tracking error shunt signal output (H : SHUNT)
42	PLAY	O	Play signal output (H : PLAY) (NC)
43	WVEL	O	Double speed status signal output (NC)
44	ARF	I	RF signal input
45	IREF	I	Reference current input terminal
46	DRF	I	Bias terminal for DSL (NC)
47	DSLIF	I/O	Loop filter terminal for DSL
48	PLLIF	I/O	Loop filter terminal for PLL
49	VCOF	I/O	Loop filter terminal for VCO (NC)
50	AVDD2	I	Power supply for analog circuit (for DSL, PLL, OA output blocks) (+5)
51	AVSS2	I	GND for analog circuit (for DSL, PLL, DA output blocks) (GND)
52	EFM	O	EFM signal output (NC)
53	PCK	O	PLL extract clock output (f PCK = 4.321MHz) (NC)
54	PDO	O	EFM signal to PCK signal phase comparison signal output (NC)
55	SUBC	O	Sub-code serial output data output (NC)
56	SBCK	I	Clock input for sub-code serial output (GND)
57	VSS	I	GND for oscillation circuit
58	X1	I	Crystal oscillation circuit input terminal (f = 16.9344MHz)
59	X2	O	Crystal oscillation circuit output terminal (f = 16.9344MHz)
60	VDD	I	Power supply for oscillation circuit (+5)
61	BYTCK	O	Byte clock output (NC)
62	CLDCK	O	Sub-code frame clock signal output (f CLDCK = 7.35kHz) (NC)
63	FCLK	O	Crystal frame clock output (f FCLK = 7.35kHz) (NC)
64	IPFLAG	O	Interpolation flag output H : INTERPOLATION (NC)
65	FLAG	O	Flag output (NC)
66	CLVS	O	Spindle servo phase synchronous status signal out H : CLV L : ROUGH SERVO (NC)
67	CRC	O	Sub-code CRC check result output H : OK , L : NG (NC)
68	DEMPH	O	Deemphasis detect signal output H : ON (NC)
69	RESY	O	Re-synchronous signal output of frame synchronization H : SYNCHRONOUS L : ASYNCHRONOUS (NC)
70	RST2	I	Reset terminal for stop after MASH circuit (L : RESET) (+5)
71	TEST	I	Test terminal (Normal : H) (+5)
72	AVDD1	I	Power supply for analog circuit (for audio output section (used for both L and R channels))
73	OUTL	O	L channel output
74	AVSS1	I	GND for analog circuit (for audio output section (used for both L and R channels))
75	OUTR	O	R channel output
76	RSEL	I	RF signal polarity specifying terminal RSEL = H when Bright level is at "H" RSEL = L when Bright level is at "L" (+5)
77	CSEL	I	Crystal oscillation frequency specifying terminal (Normal : L) (GND)
78	PSEL	I	Test terminal (Normal : L) (GND)
79	MSEL	I	SMCK terminal Output frequency switch terminal H : SMCK = 8.4672MHz , L : SMCK = 4.2336MHz (GND)
80	SSEL	I	SUBQ terminal Output mode switch terminal H : Q code buffer use mode (+5)

VCC	1	64	→ P30
VEE	2	63	→ P31
P67	3	62	→ P32
P66/AN	4	61	→ P33
P65	5	60	→ P34
P64	6	59	→ P35
P63	7	58	→ P36
P62	8	57	→ P37
P61	9	56	→ P00
P60/PWM	10	55	→ P01
P57/S RDY2	11	54	→ P02
P56/S CLK2	12	53	→ P03
P55/S OUT2	13	52	→ P04
P54/S IN2	14	51	→ P05
P53/S RDY1	15	50	→ P06
P52/S CLK1	16	49	→ P07
P51/S OUT1	17	48	→ P10
P50/S IN1	18	47	→ P11
P47/IT OUT	19	46	→ P12
P46	20	45	→ P13
P45/CNTR	21	44	→ P14
P44	22	43	→ P15
P43	23	42	→ P16
P42/INT 2	24	41	→ P17
P41/INT 1	25	40	→ P20
P40/INT 0	26	39	→ P21
RESET	27	38	→ P22
XCIN	28	37	→ P23
XCOUT	29	36	→ P24
XIN	30	35	→ P25
XOUT	31	34	→ P26
Vss	32	33	→ P27



Pin No.	Port	Name	I/O	Function
1	Vcc	Vcc		+5V
2	Vref	Vref		AD, DA reference voltage (+5V)
3	AVss	AVss		GND
4	P67	/FLSW	I	Feed origin SW
5	P66	ADR	I	Tray table address detect SW
6	P65	OPSW	I	Tray open SW
7	P64	/CLSW	I	Tray close SW
8	P63	/STOP	I	Tray table STOP position detect SW
9	P62	/UPSW	I	Clamper UP SW

Pin No.	Port	Name	I/O	Function
10	P61	/DWSW	I	Clamper down SW
11	P60	(NC)		
12	P57	/FLOCK	I	Focus servo lock
13	P56	/TLOCK	I	Tracking servo lock
14	P55	STAT	I	Servo status signal
15	P54	/MUTE	O	Line mute
16	P53	(NC)		
17	P52	/SCK	O	Serial clock to servo LSI
18	P51	SO	O	Serial out to servo LSI
19	P50	SI	I	Serial in from servo LSI
20	P47	DSTRT	O	Display data start signal
21	P46	/LSCK	O	Display data serial clock
22	P45	LSO	O	Display data serial out
23	P44	(NC)		
24	P43	/MNRST	O	Servo LSI reset signal
25	P42	BLKCK	I	Q-cord read OK signal
26	CNVss	(NC)		
27	RESET	RESET	I	
28	P41	DAT3	I	System data from DECK
29	P40	DAT0	I	System data from RECEIVER
30	XIN	XIN		4MHz IN (CLOCK)
31	XOUT	XOUT		4MHz OUT (CLOCK)
32	Vss	GND		
33	P27	K3	I	KEY SCAN INPUT3
34	P26	K2	I	KEY SCAN INPUT2
35	P25	K1	I	KEY SCAN INPUT1
36	P24	K0	O	KEY SCAN INPUT0
37	P23	KD3	O	KEY SCAN DIGIT3
38	P22	KD2	O	KEY SCAN DIGIT2
39	P21	KD1	O	KEY SCAN DIGIT1
40	P20	KD0	O	KEY SCAN DIGIT0
41	P17	(NC)		Not used
42	P16	(NC)		
43	P15	(NC)		
44	P14	(NC)		
45	P13	(NC)		
46	P12	(NC)		
47	P11	(NC)		
48	P10	(NC)		
49	P07	TROP	O	Tray open control signal
50	P06	TRCL	O	Tray close control signal
51	P05	TBL+	O	Tray table revolution
52	P04	TBL-	O	Tray table brake
53	P03	(NC)		
54	P02	(NC)		
55	P01	(NC)		
56	P00	(NC)		
57	P37	/PON	O	Servo LSI power control
58	P36	DAT2	O	System data out
59	P35	DMUTE	O	Digital mute
60	P34	/MLD	O	Microprocessor command store request
61	P33	/CMDSEL	O	SCK MCLK select
62	P32	/QSEL	O	SCK SQCK select
63	P31	(NC)		
64	P30	TSPD	O	Tray table revolution speed control DA port

IC803 : M38197MA-140FP
8 bit μ -COM


Pin No.	Port	Name	Function
1	AN7		GND (A-D)
2	AN6	SPEIN	SPECTRE ANALYZER (BA3835F) IN (A-D)
3	AN5	DSEL	MARKET SELECT IN (A-D)
4	AN4	KEY4	KEY 4 IN (A-D)
5	AN3	KEY3	KEY 3 IN (A-D)
6	AN2	KEY2	KEY 2 IN (A-D)
7	AN1	KEY1	KEY 1 IN (A-D)
8	AN0	KEY0	KEY 0 IN (A-D)
9	PB3	HPIN	H.P DET IN [0 : HP 1 : SP]
10	DA	D/A	ECHO LEVEL CONTROL OUT (D-A)
11	AN15		NOT USED (PULL-DOWN THROUGH RESISTOR) (A-D)
12	AN14	TAPESW2	TAPE MECHA. SW 2 IN (PULL-DOWN THROUGH RESISTOR) (A-D)
13	AN13	TAPESW1	TAPE MECHA. SW 1 IN (PULL-DOWN THROUGH RESISTOR) (A-D)
14	AN12	TAPESW0	TAPE MECHA. SW 0 IN (PULL-DOWN THROUGH RESISTOR) (A-D)
15	P53	/PRT	PRT DETECT IN [0 : PRT DETECT]
16	SCLK2	TU/VRCLK	LC72130/ELECTRIC VR CLK OUT (SERIAL I/O2)
17	SOUT2	TU/VRDATA	LC72130/ELECTRIC VR DATA OUT (SERIAL I/O2)
18	SIN2	TUDATA	LC72130 DATA/STEREO/IF END IN (SERIAL I/O2)
19	P67	STIN	STATION IN (TUNER) [0 : STATION AVAILABLE]
20	SCLK12	CD/RDSCLK	CD DISPLAY/RDS DATA CLK IN (SERIAL I/O1)
21	P65	/MDAUX	ELECTRIC VR -20dB DOWN OUT [0 : -20dB 1 : 0dB]
22	SIN1	CD/RDSDATA	CD DISPLAY/RDS DATA IN (SERIAL I/O1)
23	P63	COT2	CD DATA IN (SYSTEM COMMUNICATION COT2)
24	P62	COT0	CD DATA OUT (6 bit) (SYSTEM COMMUNICATION COT0)
25	P61	TUCE/VRCE	LC72130/LC75395 CE OUT [1 : DATA TRANSFER]
26	P60		
27	P47	ENCAIN	ROTARY ENCODER A IN (PULL-DOWN THROUGH RESISTOR)

See page 29

IC803 : M38197MA-140FP
8 bit μ -COM

Pin No.	Port	Name	Function
28	P46	ENCBIN	ROTARY ENCODER B IN (PULL-DOWN THROUGH RESISTOR)
29	INT1	ACIN	POWER DOWN AC PULSE IN
30	INT4	RDSRES	RDS RESET OUT [0 : RESET]
31	INT3	CDCE	CD DISPLAY CE IN [1 : START]
32	INT2	REMIN	REMOCON IN
33	P41	CONT3	CD DATA OUT (4 bit) (SYSTEM COMMUNICATION COT 3)
34	INT0	RDSAST	RDS DATA START IN [0 : START]
35	/RESET	RESET	RESET
36	XCIN	XCIN	32.768 kHz IN (SUB CLOCK)
37	XCOUT	XCOUT	32.768 kHz OUT (SUB CLOCK)
38	XIN	XIN	8 MHz IN (MAIN CLOCK)
39	XOUT	XOUT	8 MHz OUT (MAIN CLOCK)
40	VSS	GND	GND
41	P27	CLK1OUT	BU2090 CLK 1 OUT
42	P26	DATA1OUT	BU2090 DATA 1 OUT
43	P25	CLK2OUT	BU2090 CLK 2 OUT
44	P24	DATA2OUT	BU2090 DATA 2 OUT
45	P23	SPESEL	SPECTRE ANALYZER (BA3835F) SEL OUT (VEE PULL-DOWN)
46	P22	SPEC	SPECTRE ANALYZER (BA3835F) C OUT (VEE PULL-DOWN)
47	P21	SPEB	SPECTRE ANALYZER (BA3835F) B OUT (VEE PULL-DOWN)
48	P20	SPEA	SPECTRE ANALYZER (BA3835F) A OUT (VEE PULL-DOWN)
49	P17	DIG15	DIG 15
50	P16	DIG14	DIG 14
51	P15	DIG13	DIG 13
52	P14	DIG12	DIG 12
53	P13	DIG11	DIG 11
54	P12	DIG10	DIG 10
55	P11	DIG9	DIG 9
56	P10	DIG8	DIG 8
57	P07	DIG7	DIG 7
58	P06	DIG6	DIG 6
59	P05	DIG5	DIG 5
60	P04	DIG4	DIG 4
61	P03	DIG3	DIG 3
62	P02	DIG2	DIG 2
63	P01	DIG1	DIG 1
64	P00	DIG0	DIG 0
65	P37	SEG31	SEG 31
66	P36	SEG30	SEG 30
67	P35	SEG29	SEG 29
68	P34	SEG28	SEG 28
69	P33	SEG27	SEG 27
70	P32	SEG26	SEG 26
71	P31	SEG25	SEG 25
72	P30	SEG24	SEG 24
73	P97	SEG23	SEG 23
74	P96	SEG22	SEG 22
75	P95	SEG21	SEG 21
76	P94	SEG20	SEG 20
77	P93	SEG19	SEG 19
78	P92	SEG18	SEG 18
79	P91	SEG17	SEG 17
80	P90	SEG16	SEG 16
81	P87	SEG15	SEG 15 (EXTERNAL PULL-DOWN)
82	P86	SEG14	SEG 14 (EXTERNAL PULL-DOWN)
83	P85	SEG13	SEG 13 (EXTERNAL PULL-DOWN)
84	P84	SEG12	SEG 12 (EXTERNAL PULL-DOWN)

IC803 : M38197MA-140FP
8 bit μ -COM

Pin No.	Port	Name	Function
85	P83	SEG11	SEG 11 (EXTERNAL PULL-DOWN)
86	P82	SEG10	SEG 10 (EXTERNAL PULL-DOWN)
87	P81	SEG9	SEG 9 (EXTERNAL PULL-DOWN)
88	P80	SEG8	SEG 8 (EXTERNAL PULL-DOWN)
89	PA7	T.RMOUT	TAPE BAIS ON/OFF [1 : ON]
90	PA6	T.MOTORB	TAPE MOTOR (DECK 2) OUT [1 : ON]
91	VCC	+5V	+5V
92	PA5	SOLENOIDB	TAPE SOLENOID (DECK 2) OUT [1 : ON]
93	PA4	T.MOTORA	TAPE MOTOR (DECK 1) OUT [1 : ON]
94	PA3	SOLENOIDA	TAPE SOLENOID (DECK 1) OUT [1 : ON]
95	PA2	T.PULSEB	TAPE REEL PULSE (DECK 2) IN
96	PA1	T.PULSEA	TAPE REEL PULSE (DECK 1) IN
97	PA0	T.M.SENSOR	TAPE MUSIC SENSOR IN
98	VEE	VEE	P0, P1, P3, P9 PULL-DOWN RESISTOR POWER IN
99	AVSS	AVSS	GND (VSS)
100	VREF	VREF	A-D, D-A REFERENCE VOLTAGE IN

● A-D INPUT PORT (Pin8 to 3)

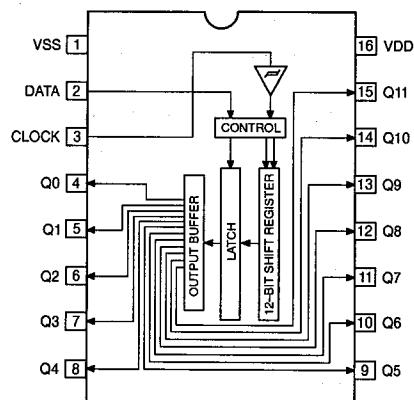
V	0 ~ 0.56	~ 1.11	~ 1.67	~ 2.22	~ 2.78	~ 3.33	~ 3.89	~ 4.44
KEY 0	POWER	GE-USER	GE-LEFT	GE-LOCATION	GE-DOWN	GE-MEMORY	NO KEY	NO KEY
KEY 1	TAPE-STOP HOUR	TAPE-PLAY MIN	TAPE-FF	TAPE-REW	TAPE	TUNER BAND	CD	AUX
KEY 2	CD-PLAY A/B/C/D/E	CD-SKIP FF TUNING UP	RANDOM RDS-FRQ/	REPEAT RDS-MODE	EDIT RDS-START	DISPLAY	OPEN/CLOSE	DISC CHANGE
KEY 3	TU-MEMORY TIME ADJ	H. DUB	N. DUB	REC/PAUSE TIMER REC	TA-MODE	DOLBY NR	TU-AUTO TIMER	NO KEY
KEY 4	CD-STOP PRESET/TUNING	CD-SKIP REW TUNING DOWN	DISC 3	DISC 2	DISC 1	GE-UP	GE-MUSIC	GE-RIGHT
DSEL	R model (50k / 9k)	R model (100k / 10k)	A, L, T models	B, G models	U, C models	—	—	—

Extension Port 1
IC218 : BU2090

Pin No.	Port	Function
1	VSS	GND
2	DATA	DATA IN
3	CLOCK	CLOCK IN
4	Q0	CD/RDS DATA SELECT OUT [0 : CD 1 : RDS]
5	Q1	AMP MUTE OUT [0 : MUTE ON]
6	Q2	IC (POWER) MUTE OUT [0 : MUTE ON]
7	Q3	POWER RELAY OUT [0 : ON 1 : OFF]
8	Q4	POWER ON OUT [0 : ON 1 : OFF]
9	Q5	TUNER MUTE OUT [1 : MUTE ON]
10	Q6	KARAOKE (BA7726AS 3PIN) 1 OUT 10 : [00 : Norm 01 : Norm]
11	Q7	KARAOKE (BA7726AS 3PIN) 0 OUT [10 : Mid 11 : High]
12	Q8	KARAOKE (BA7726AS 31PIN) OUT [0 : NORMAL 1 : VOCAL CUT]
13	Q9	CD MICROPROCESSOR RESET OUT [0 : RESET]
14	Q10	EFFECT MODE A AB : [00 : ARENA 01 : STUDIO]
15	Q11	EFFECT MODE B [10 : CLUB 11 : PASS]
16	VDD	+5V

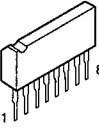
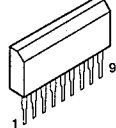
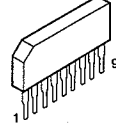
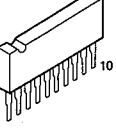
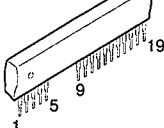
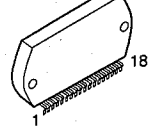
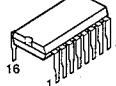
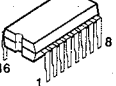
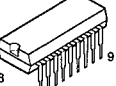
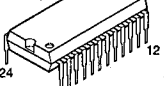
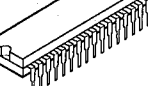
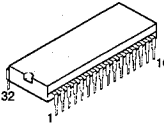
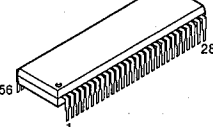
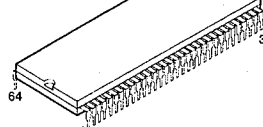
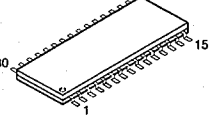
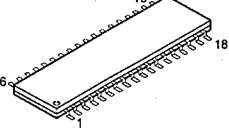
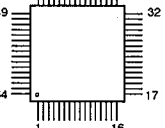
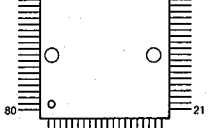
Extension Port 2
IC506 : BU2090

Pin No.	Port	Function
1	VSS	GND
2	DATA	DATA IN
3	CLOCK	CLOCK IN
4	Q0	TAPE BEAT CANCEL ON/OFF [0 : ON 1 : OFF]
5	Q1	TAPE SPEED NORMAL/HIGH [0 : HIGH 1 : NORMAL]
6	Q2	TAPE HEAD R/P [0 : PB 1 : REC]
7	Q3	TAPE LM ON/OFF [0 : OFF 1 : ON]
8	Q4	TAPE REC/PB [0 : PB 1 : REC]
9	Q5	TAPE NR ON/OFF [0 : OFF 1 : ON]
10	Q6	TAPE RM ON/OFF [0 : ON 1 : OFF]
11	Q7	TAPE REC SENSITIVITY SELECT [0 : OFF 1 : ON]
12	Q8	TAPE 120/70 (DECK 2) [0 : 120 1 : 70]
13	Q9	TAPE NORMAL/HIGH [0 : NORMAL 1 : HIGH]
14	Q10	TAPE 120/70 (DECK 1) [0 : 120 1 : 70]
15	Q11	TAPE PB DECK 1/DECK 2 [0 : DECK 1 1 : DECK 2]
16	VDD	+5V

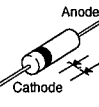
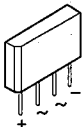
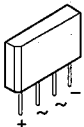
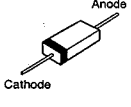
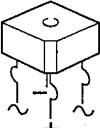
IC218, 506 : BU2090
Serial In/Parallel Out Driver


PIN CONNECTION DIAGRAM

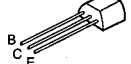
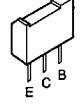
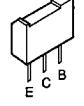
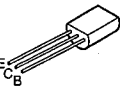
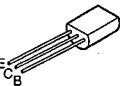
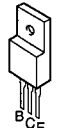
● ICs

BA15218N NJM2082L 	μPC4570HA 	TA8409S 	BA3312N 	STK311-020B 	STK4142II 
HD74HC125P 	BU2090 	TC4052BP TC4053BP 	BA3835 BU9252S 	LC72130 	LA1835 
BA7726AS 	HA12182NT 	M38024M6-088SP 	LA6536M 		
AN8803SB 	LC75359E 	MN66271RA 	M38197MA-140FP 		

● Diodes

1SS133 1SR139-400 	MTZJ4.7C MTZJ5.6A MTZJ5.6B MTZJ5.6C MTZJ6.2B MTZJ6.2C MTZJ13.0B MTZJ27.0D 	S1VB20 
1SS355 UDZ7.5B 	S4VB20 	

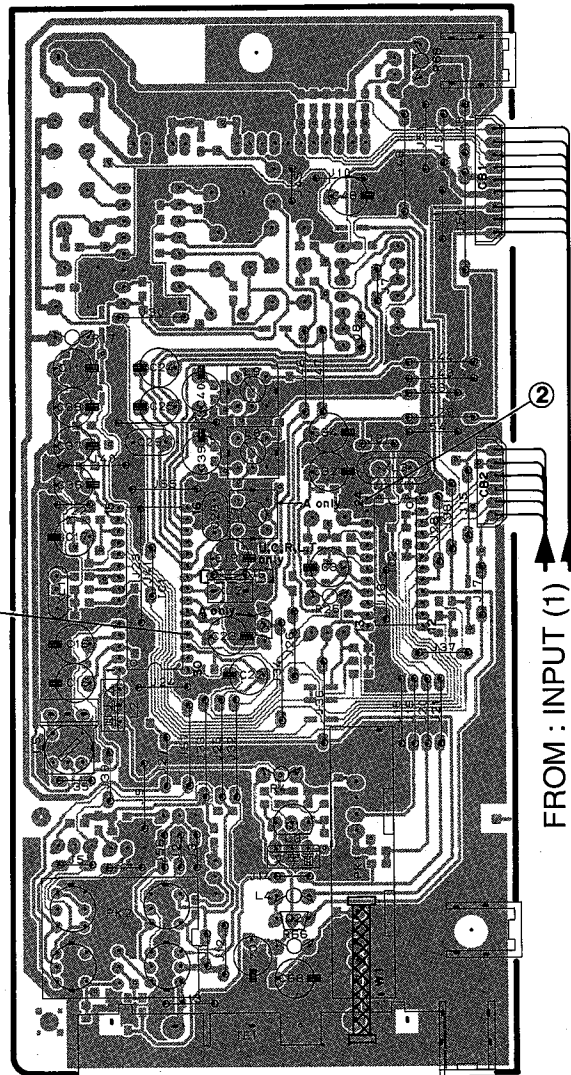
● Transistors

2SA933S (Q, R) 2SC1740S (R, S) 	DTA114ES DTA144ES DTC144ES DTC143XS 	2SD1858TV2 (Q, R) 
2SB647 (C, D) 	2SC535 (A, B, C) 2SC2878 (A, B) 2SC4208A (Q, R, S) 	2SB1565 (E, F) 2SD2396 (J, K) 

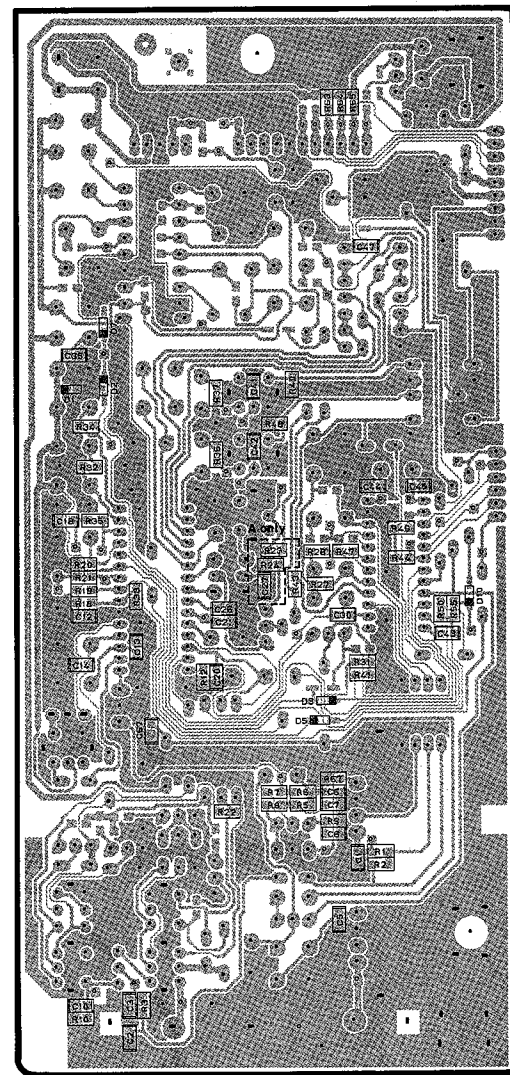
■ PRINTED CIRCUIT BOARD (Foil side)

① and ② : TEST POINT WAVEFORMS (See page 44)

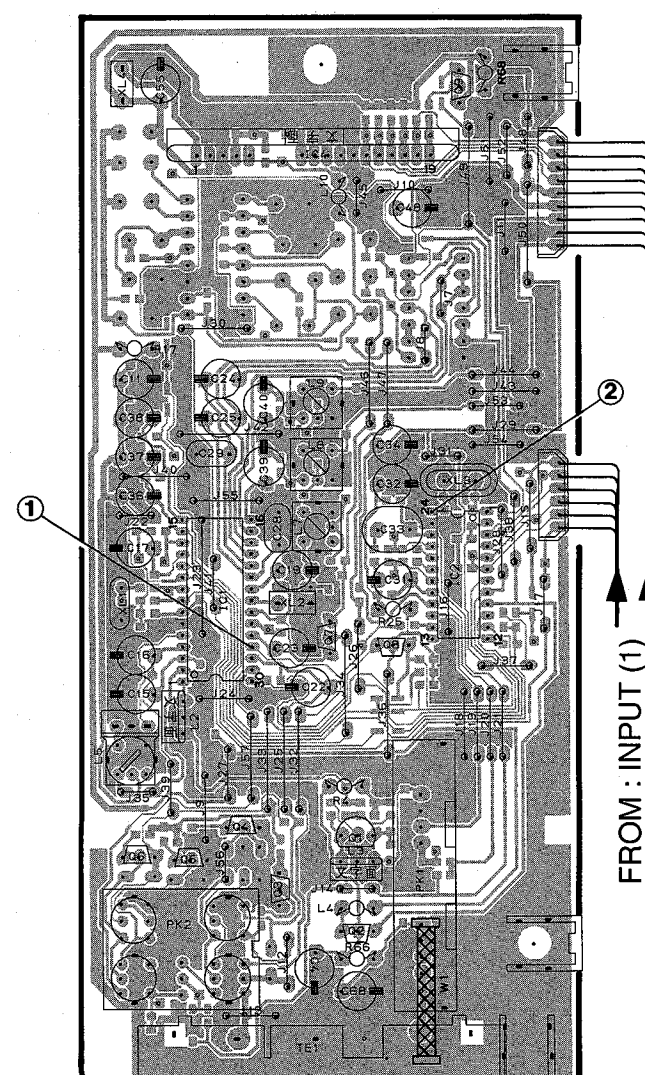
● U, C, R, A, L, T models
P. C. B. TUNER



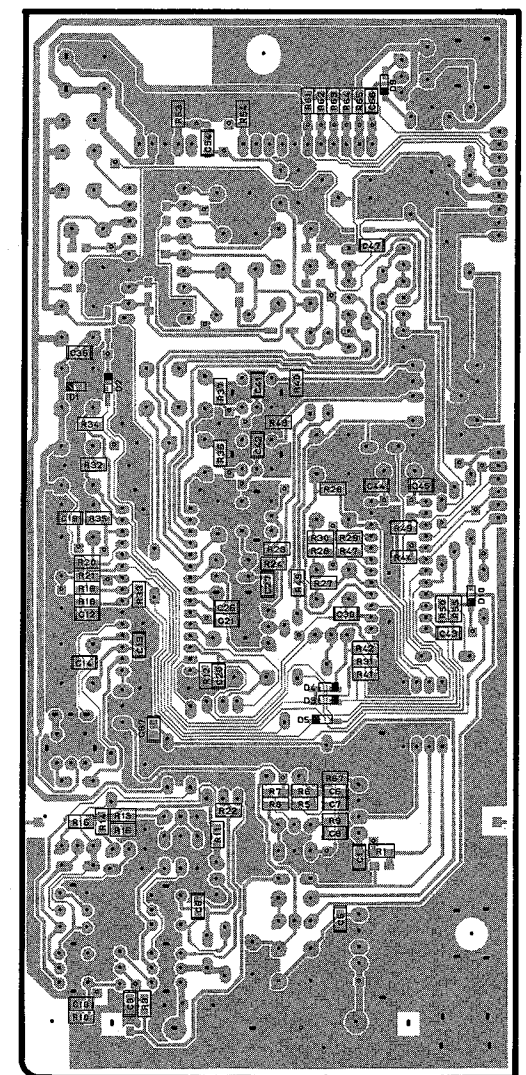
● U, C, R, A, L, T models
P. C. B. TUNER



● B, G models
P. C. B. TUNER

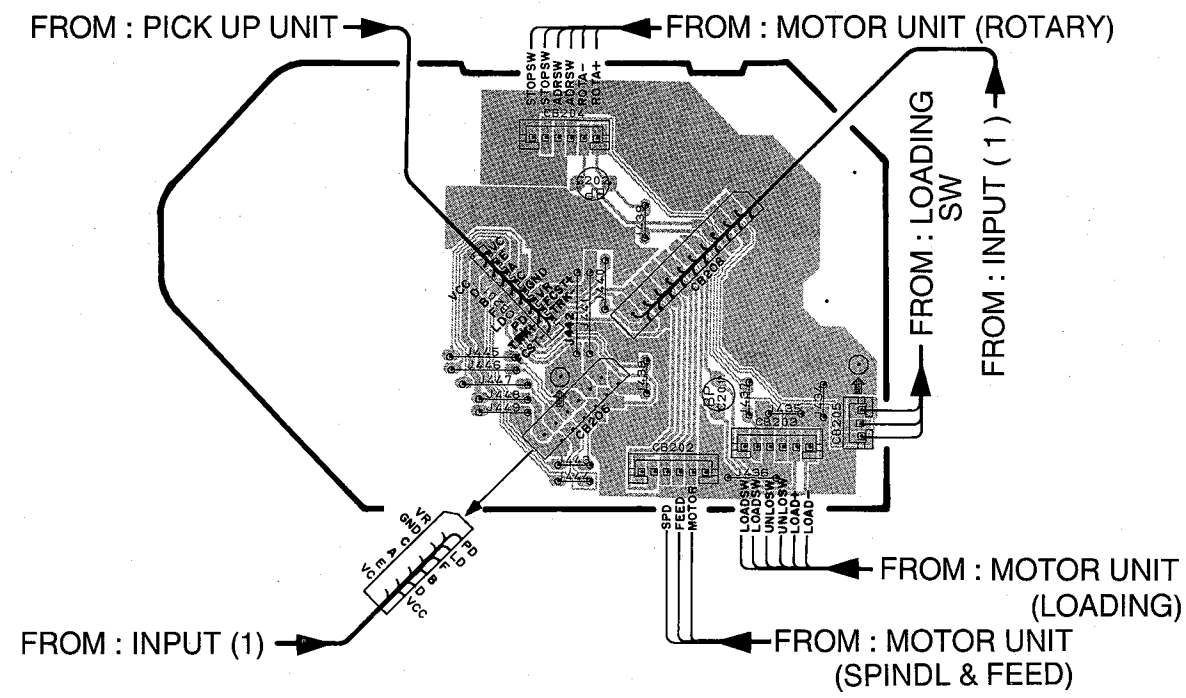
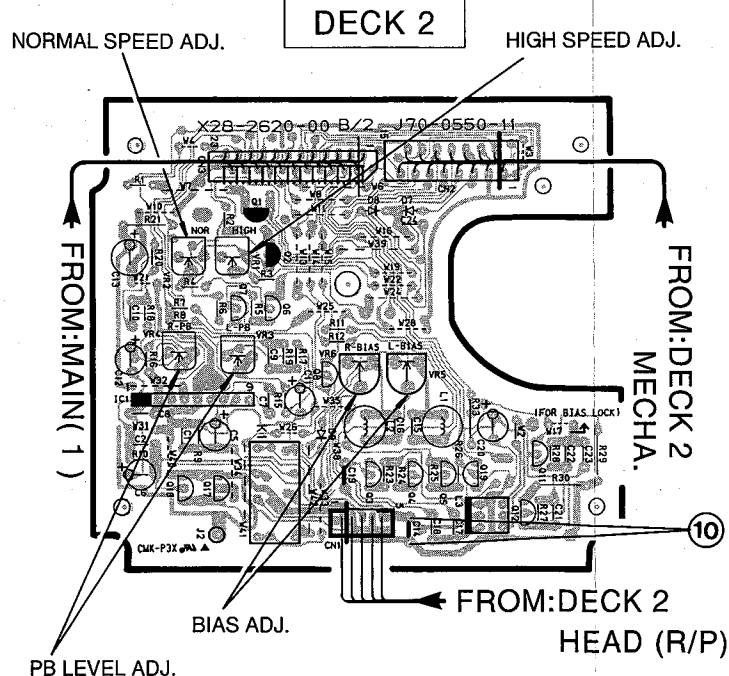
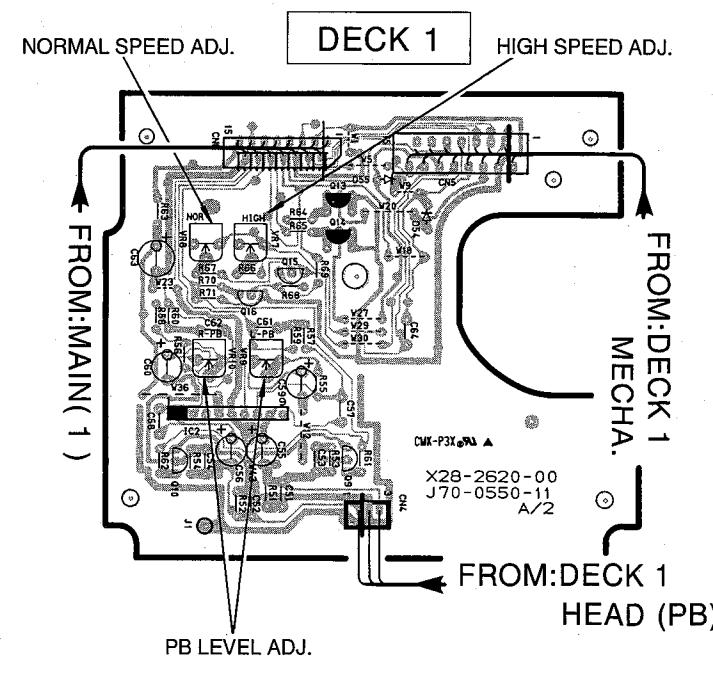
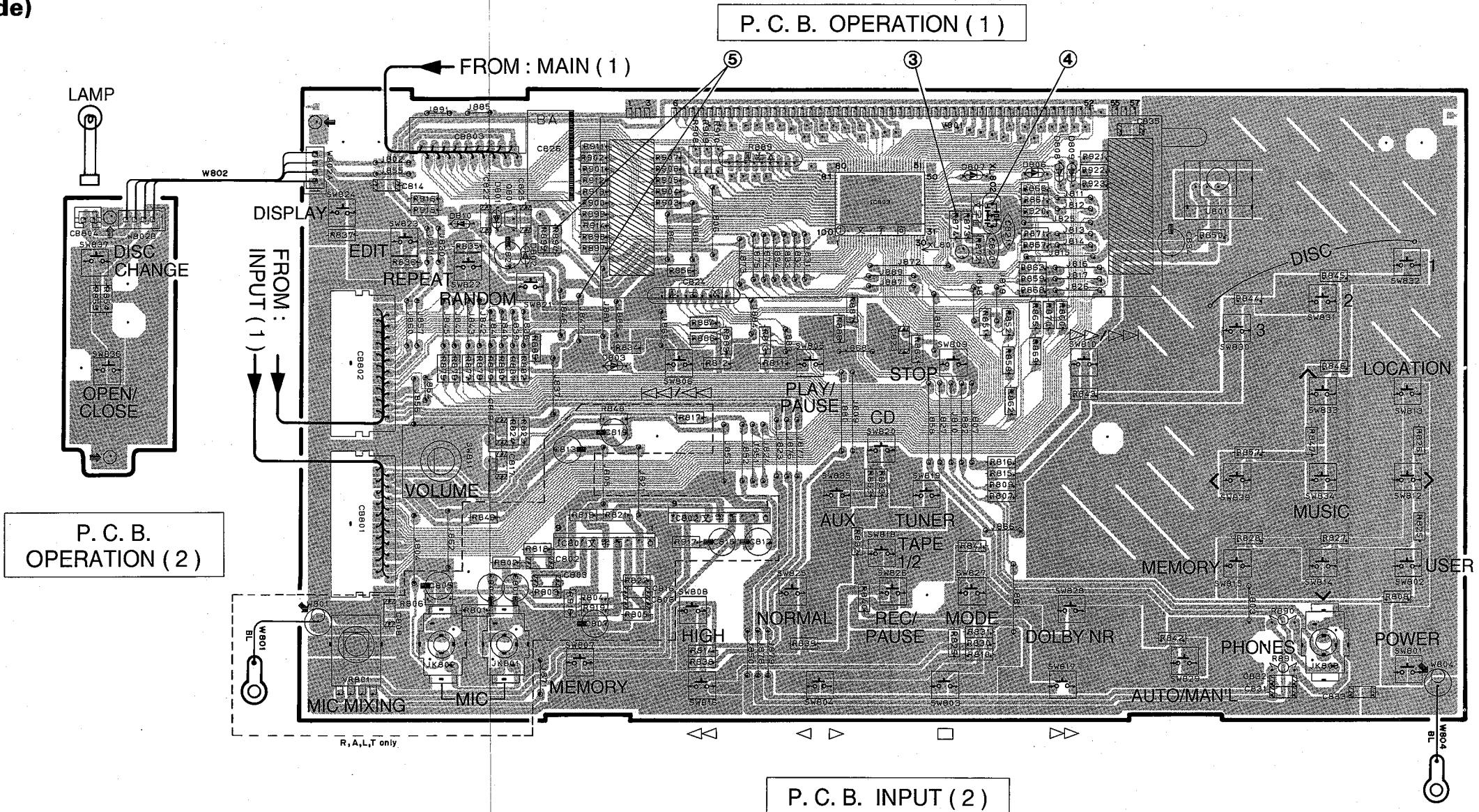


● B, G models
P. C. B. TUNER



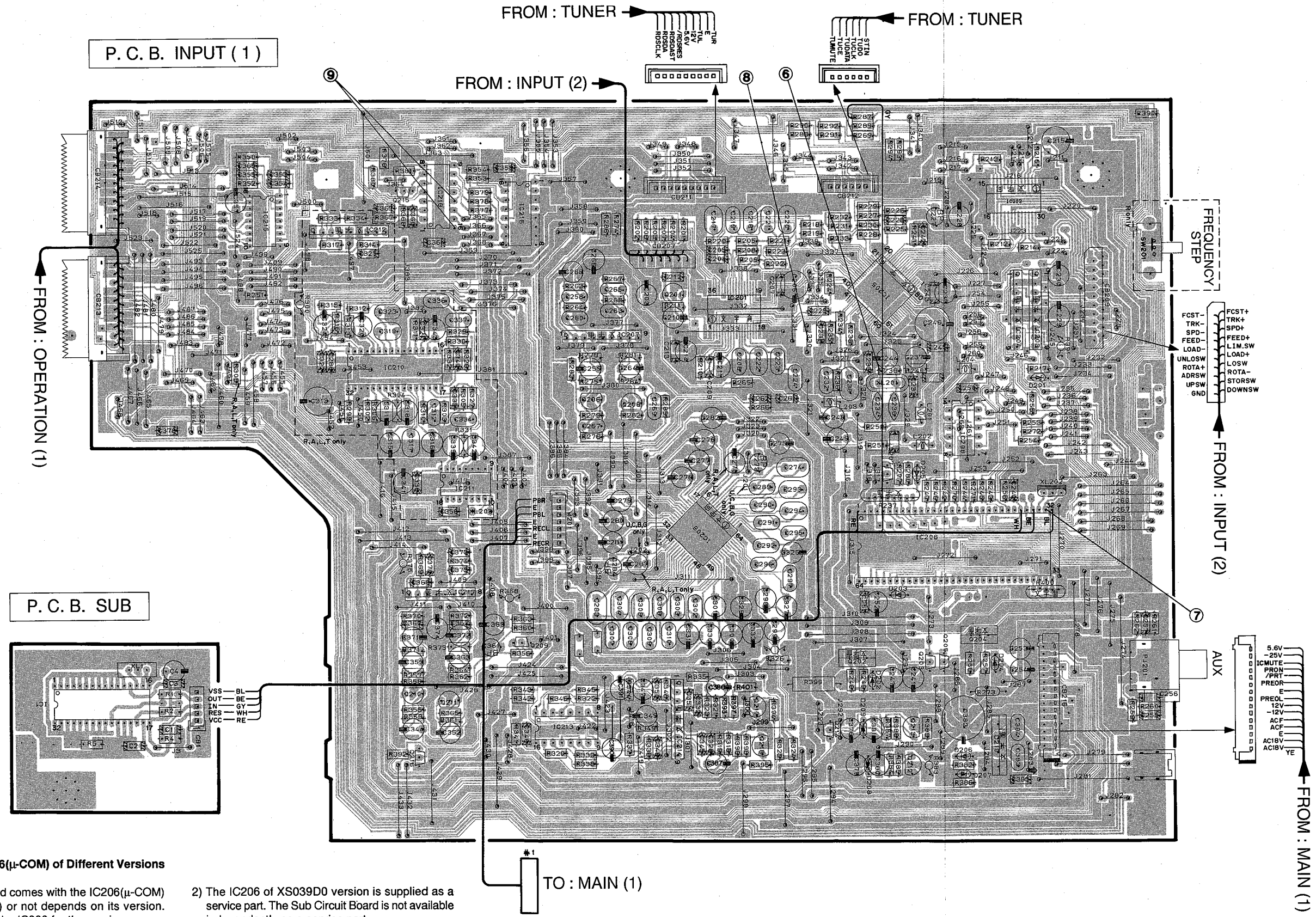
PRINTED CIRCUIT BOARD (Foil side)

③ to ⑤ : TEST POINT WAVEFORMS (See page 45)
⑩ : TEST POINT WAVEFORMS (See page 48)



PRINTED CIRCUIT BOARD (Foil side)

⑥ to ⑧ : TEST POINT WAVEFORMS (See page 46)
⑨ : TEST POINT WAVEFORMS (See page 47)



Sub Circuit Board and IC206(μ-COM) of Different Versions

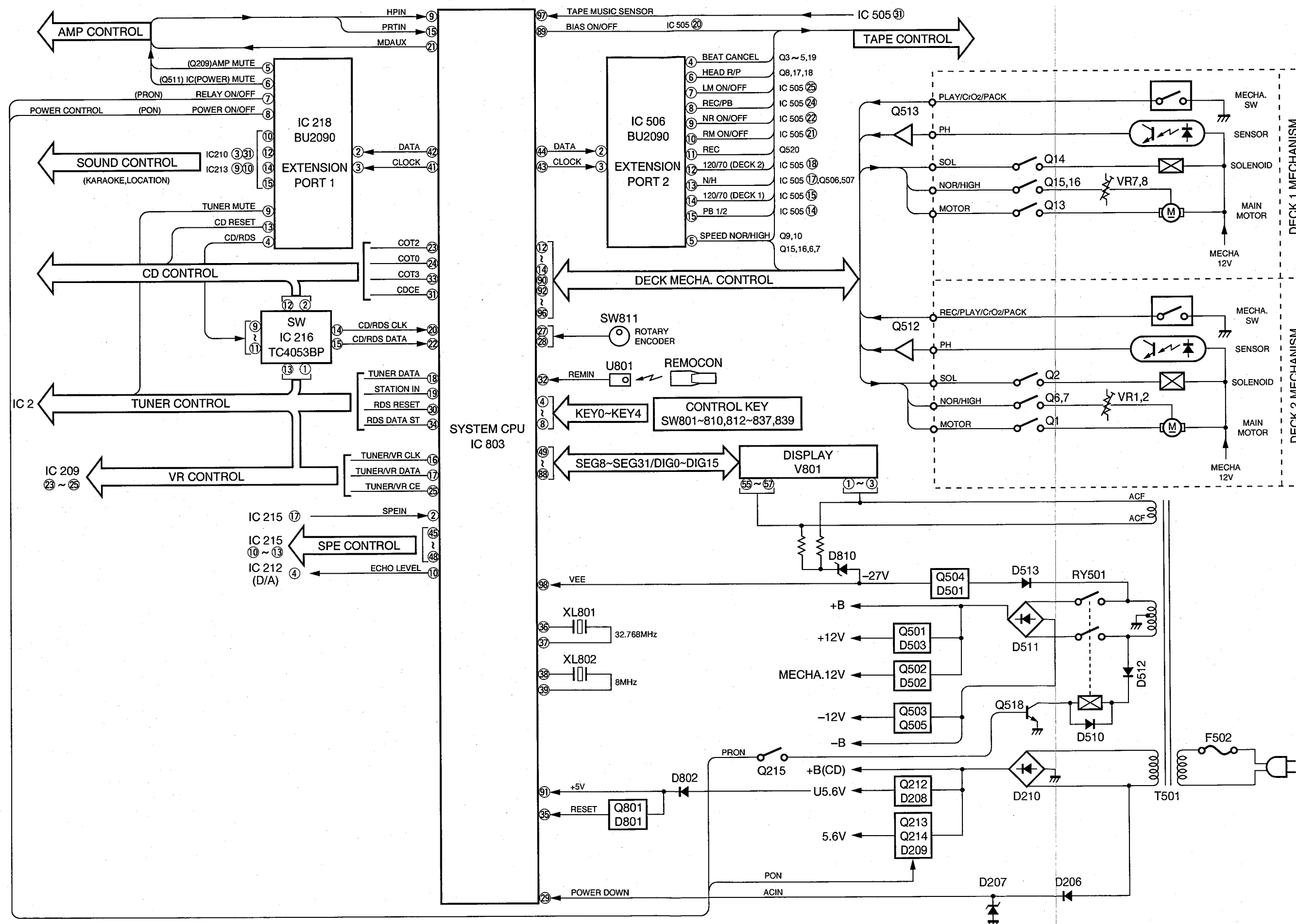
1) Whether the Sub Circuit Board comes with the IC206(μ-COM) of the Input Circuit board (1) or not depends on its version. Check the label attached on the IC206 for the version.

Version of IC206	with/without Sub Circuit Board
XS039A0 (#1,501 ~ #10,500)	with
XS729A0 (#10,501 ~ #12,500)	without
XS039D0 (#12,501 ~)	without

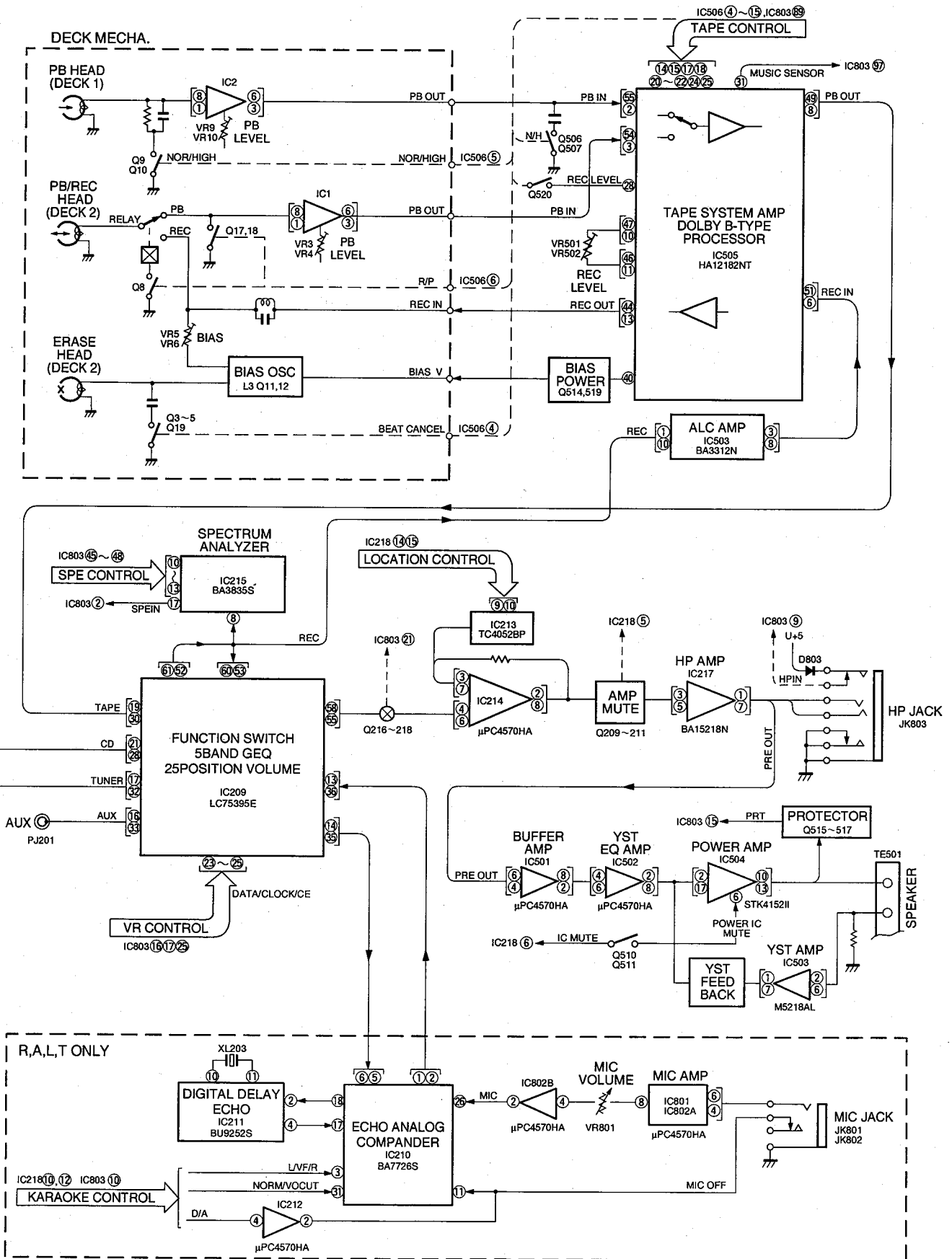
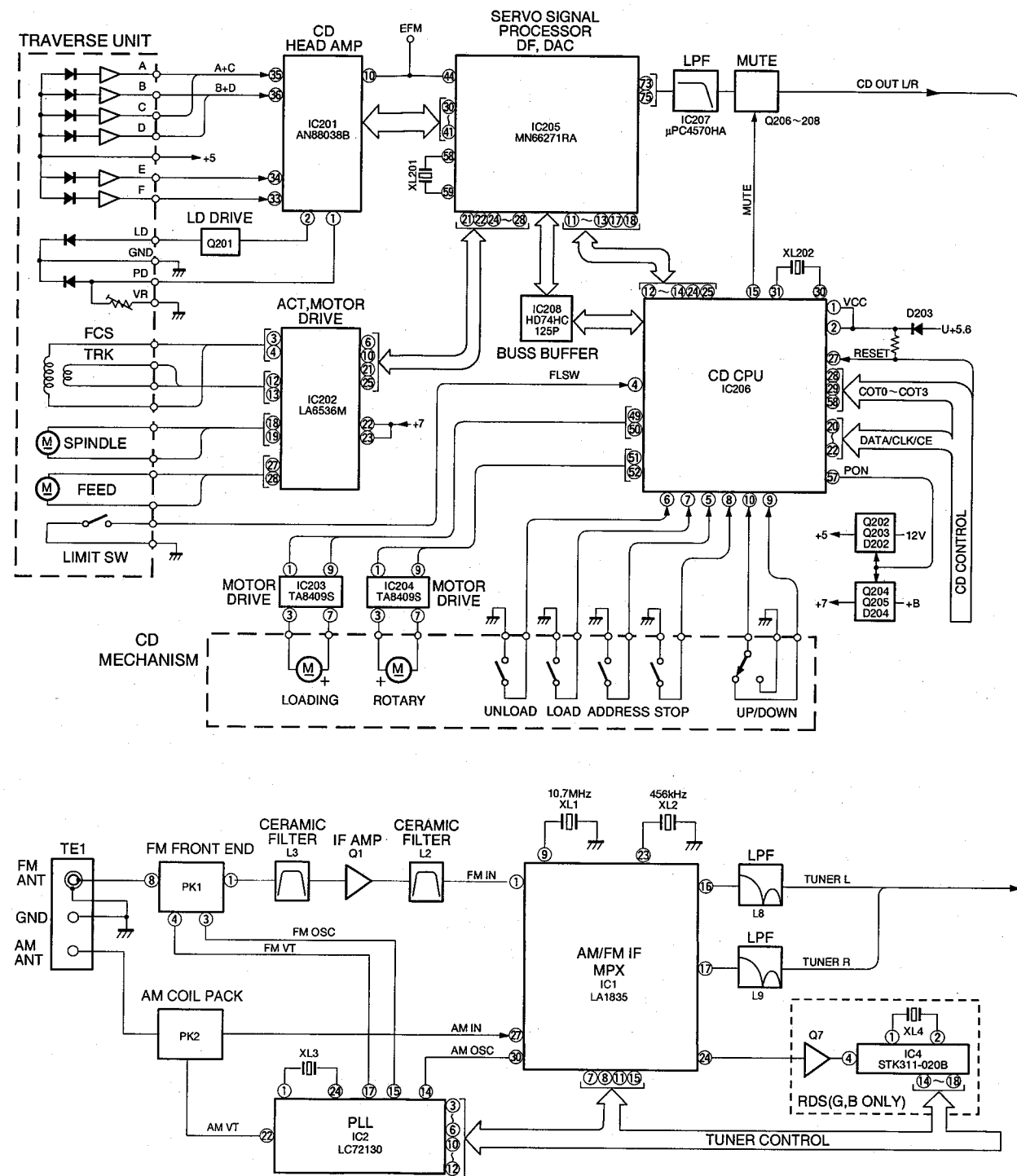
2) The IC206 of XS039D0 version is supplied as a service part. The Sub Circuit Board is not available independently as a service part.

3) Even after replacing the IC206 of XS039A0 version with that of XS039D0 version, use it with the Sub circuit Board installed. Removal of the Sub Circuit Board requires addition of R287 (1kΩ).

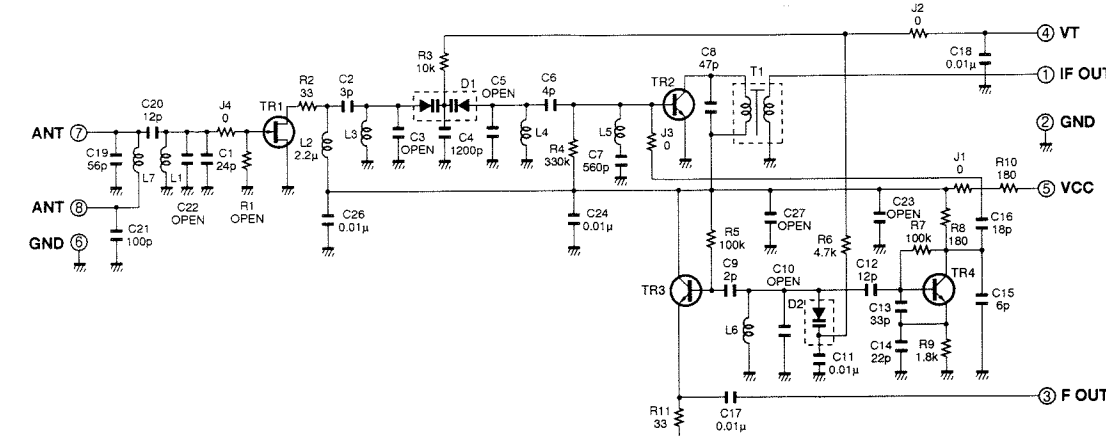
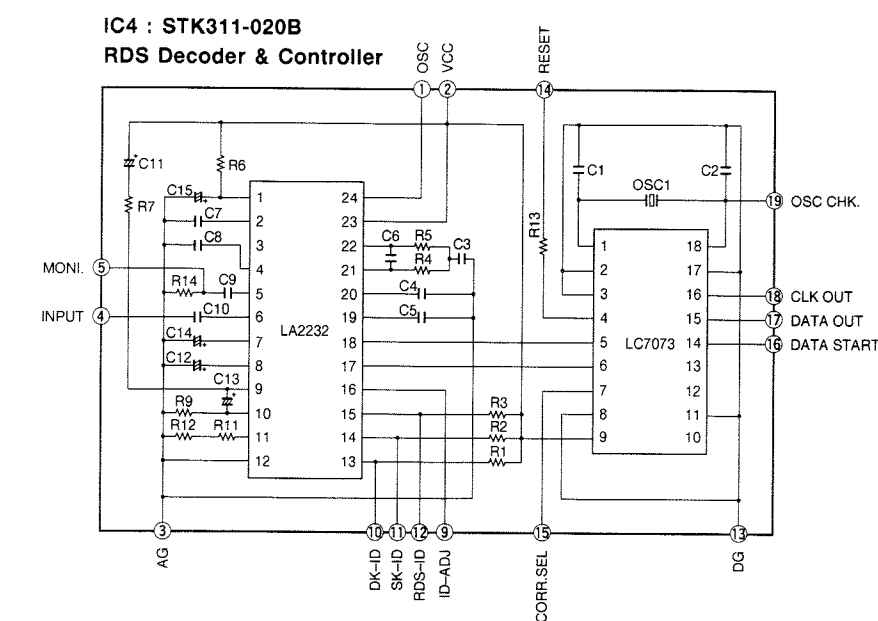
■ BLOCK DIAGRAM



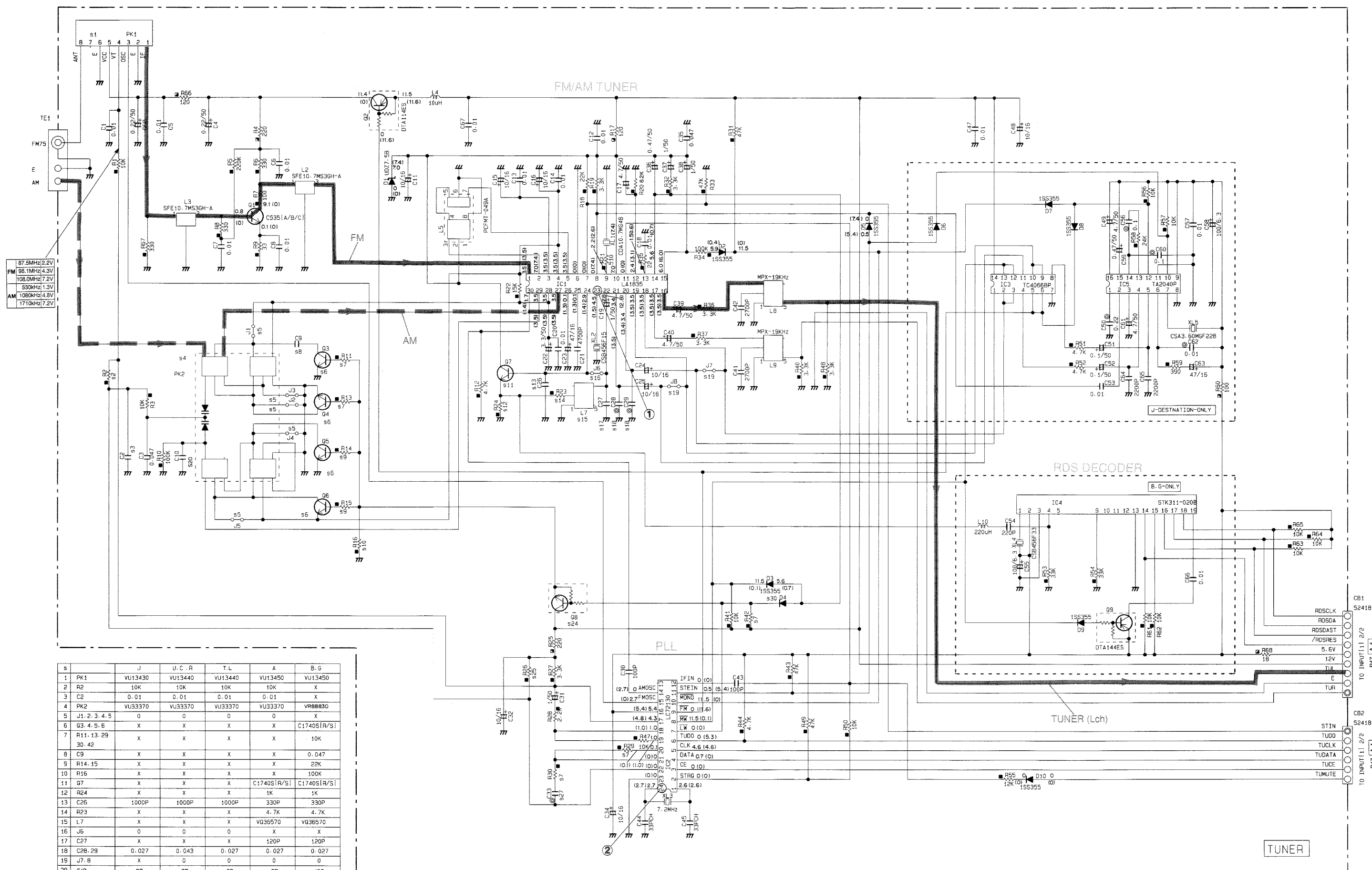
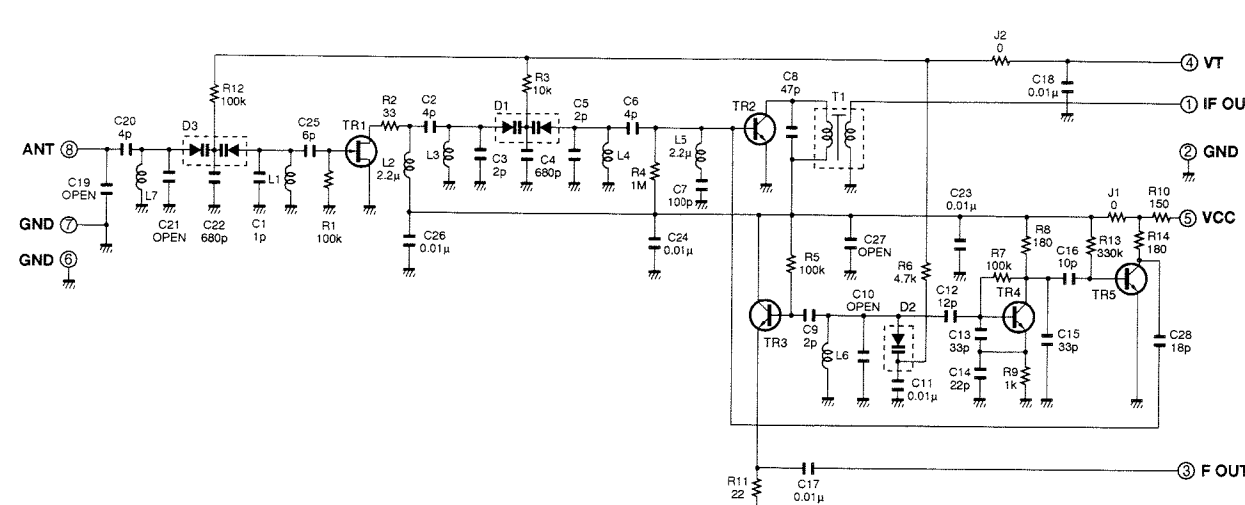
BLOCK DIAGRAM



- U, C, R, L models
PK1 : ENV-17298G1 (VU134400)



- A, B, G models
PK1 : ENV-1729G1 (VU134500)



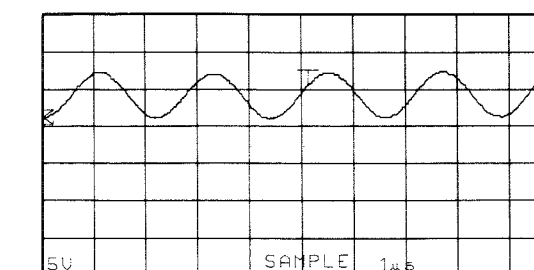
S	J	U.C.R	T.L	A	B.G
1 PK1	VU13430	VU13440	VU13440	VU13450	VU13450
2 R2	10K	10K	10K	10K	X
3 C2	0.01	0.01	0.01	0.01	X
4 PK2	VU13370	VU13370	VU13370	VU13370	VVR8830
5 J1-2-3-4-5	0	0	0	0	X
6 D3-4-5-6	X	X	X	X	C1740S/R/S
7 R14-13-29	X	X	X	X	10K
8 C2	X	X	X	X	0.047
9 R14-15	X	X	X	X	22K
10 R16	X	X	X	X	100K
11 D7	X	X	X	C1740S/R/S	C1740S/R/S
12 R24	X	X	X	1K	1K
13 C25	1000P	1000P	1000P	33K	33K
14 R23	X	X	X	4.7K	4.7K
15 L7	X	X	X	VQ36570	VQ36570
16 J6	0	0	0	X	X
17 C27	X	X	X	120P	120P
18 C28-29	0.027	0.043	0.027	0.027	0.027
19 J7-8	0	0	0	0	0
20 C10	BP	BP	BP	BP	BP
21					
22					
23					
24 G8	X	X	X	X	D1C144ES
25 R26	X	X	X	X	3.3K
26					
27 C33	X	X	X	X	1
28					
29					
30 D4	X	X	X	X	155355

```
NOTICE (model1)
(J).... JAPANESE
(U).... U. S. A
(C).... CANADIAN
(R).... GENERAL
(A).... AUSTRALIAN
(B).... BRITISH
(G).... EUROPEAN
(L).... SINGAPORE
```

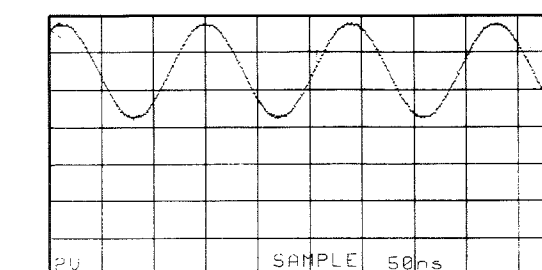
RESISTOR		PARTS NAME
REMARKS	NO MARK	
☒		CARBON FILM RESISTOR (P=5)
☒		CARBON FILM RESISTOR (P=10)
☒		METAL OXIDE FILM RESISTOR
☒		METAL FILM RESISTOR
☒		METAL PLATE RESISTOR
☒		FIRE PROOF CARBON FILM RESISTOR
☒		CEMENT MOLDED RESISTOR
☒		SEMI VARIABLE RESISTOR
☒		CHIP RESISTOR

CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊙	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
⊕	SEMICONDUCTIVE CERAMIC CAPACITOR

Point ① FM reception (Pin23 of IC1)
V : 5V/div H : 1 μ sec/div
DC range 1 : 1 probe



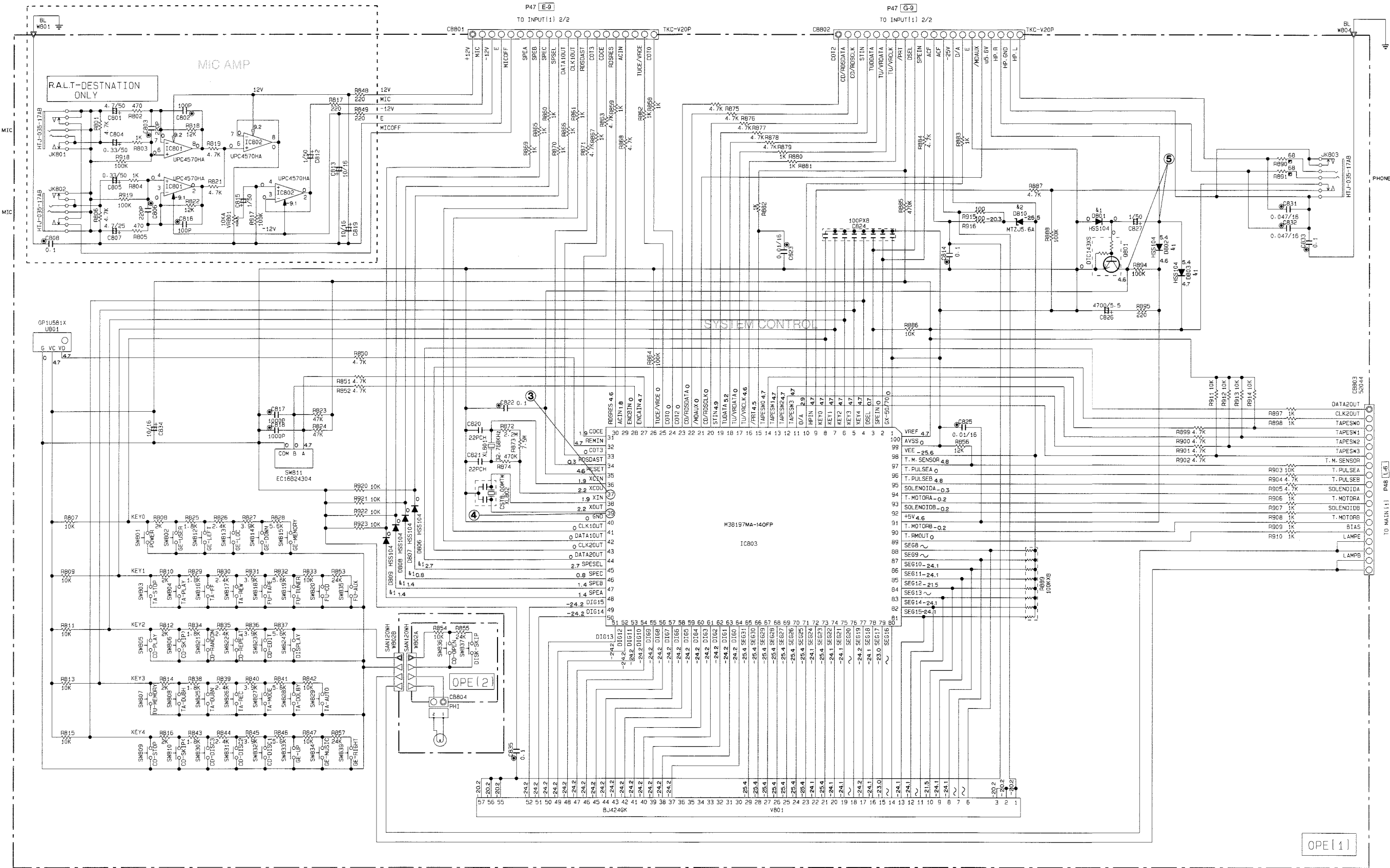
Point ② (Pin24 of IC2)
V : 2V/div H : 50nsec/div
DC range 1 : 1 probe



- * All voltage are measured with a 10M Ω /V DC electric volt meter.
- * Components having special characteristics are marked $\triangle$ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

GX-50

■ SCHEMATIC DIAGRAM (OPERATION)



Interchangeable Parts at Manufacture Stage

Mark	Reference Parts Number	Parts Name
1	D801-003-006-009	H5S104
	155133	155176
2	D810	MTZ-25 GA
		H25642

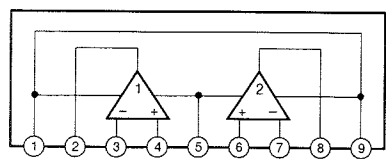
NOTICE (model1)

(J)..... JAPANESE
(U)..... U.S.A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(L)..... SINGAPORE

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P+5)
⊠	CARBON FILM RESISTOR (P+10)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊞	METAL PLATE RESISTOR
▢	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
⊕	SEMI VARIABLE RESISTOR
■	ICHP RESISTOR

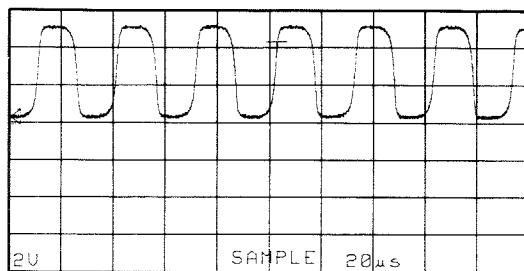
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	CERAMIC TUBULAR CAPACITOR
⊖	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊕	MICA CAPACITOR
●	POLYPROPYLENE FILM CAPACITOR
⦿	SEMICONDUCTIVE CERAMIC CAPACITOR

IC801, 802 : μ PC4570HA
Dual OP-Amp

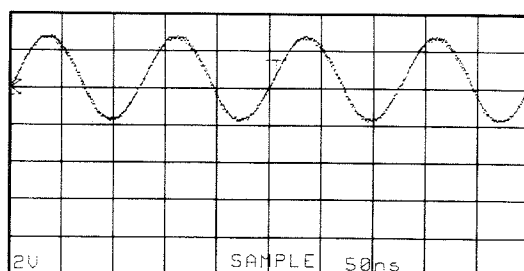


Other ICs
● IC803 : M38197MA-140FP → See page 27

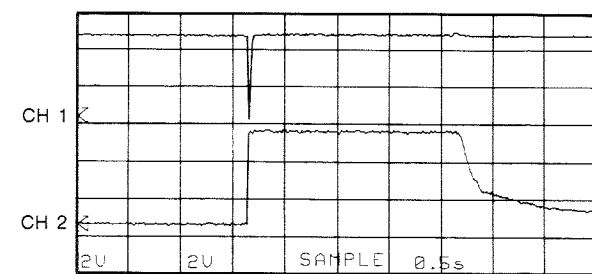
Point ③ (Pin37 of IC803)
V : 2V/div H : 20 μ sec/div
DC range 1 : 1 probe



Point ④ (Pin39 of IC803)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



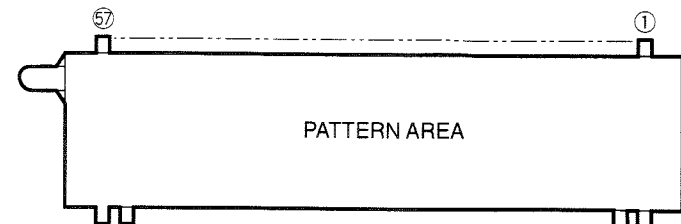
Point ⑤
CH1 : Pin35 of IC803 V : 2V/div (CH1)
CH2 : Anode of D802 V : 2V/div (CH2)
H : 1 sec/div DC range 1 : 1 probe
(This waveform is not available by pushing the power switch ON and OFF.)



With the POWER ON, disconnect the A/C power cord. Reconnect the A/C power cord and the above waveforms will start.

Disconnect the power cord from the AC outlet.

● V801 : BJ424GK (VR952200)

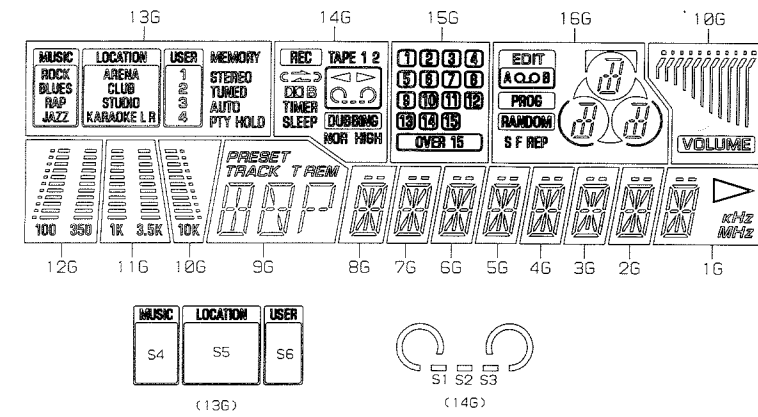


● PIN CONNECTION

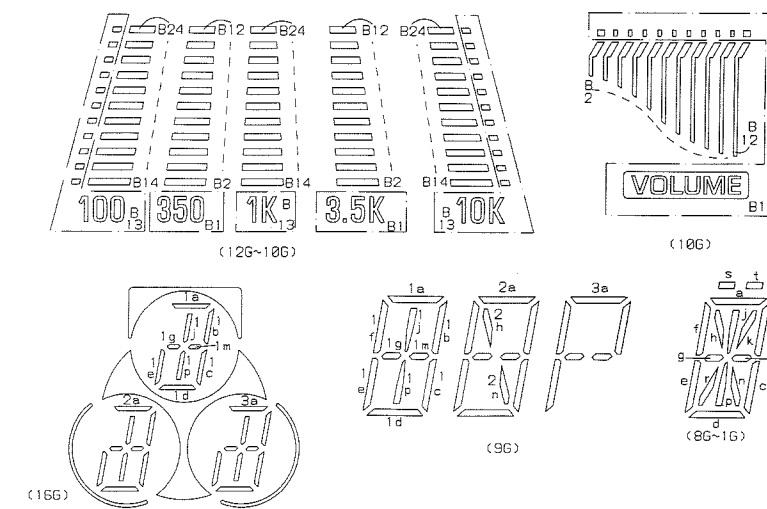
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Connection	F1	F1	F1	NP	NP	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	NC
Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57			
Connection	NC	NC	NC	NC	NC	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G	14G	15G	16G	NP	F2	F2	F2					

Note 1) F1, F2 Filament 3) NC No Connection 5) 1G-16G Grid
2) NP No Pin 4) P1-P24 Datum Line

● GRID ASSIGNMENT



● SEGMENT DESIGNATION



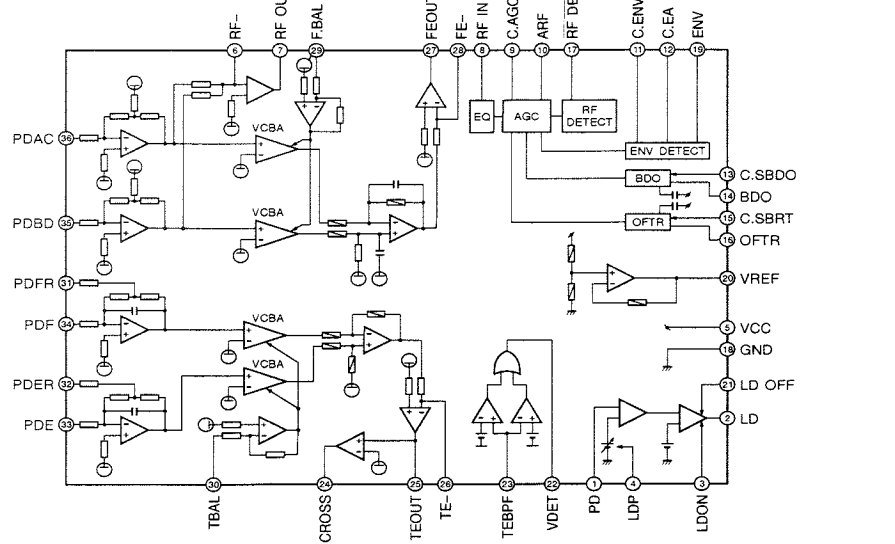
● ANODE CONNECTION

	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P4	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P13	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P14	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P15	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P16	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P17	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P18	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P19	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P20	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P21	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P22	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P23	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P24	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

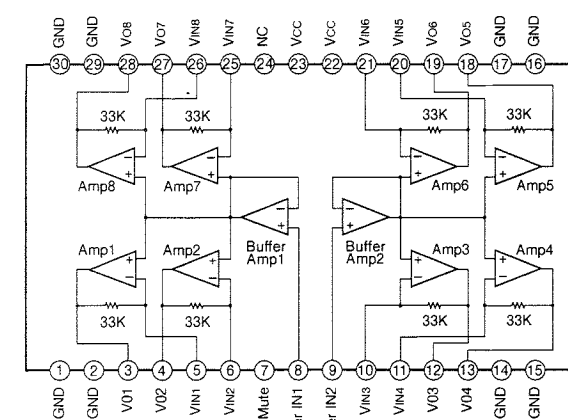
* All voltage are measured with a 10M Ω /V DC electric volt meter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

SCHEMATIC DIAGRAM (INPUT 1/2)

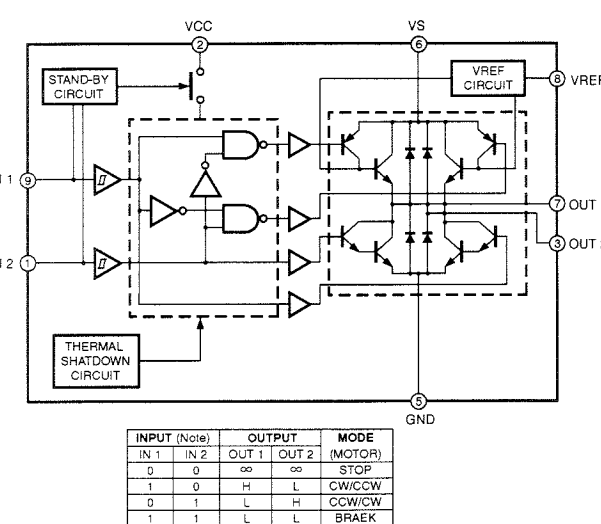
IC201 : AN8803SB
Digital Servo Head Amp



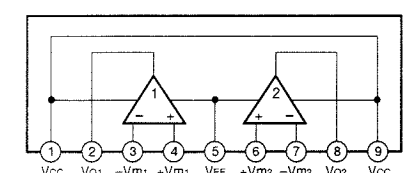
IC202 : LA6536M
4 Channel BTL Driver



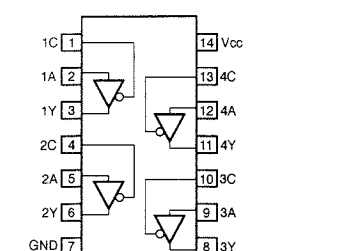
IC203, 204 : TA8409S
Full Bridge Motor Driver



IC207 : μ PC4570HA
Dual OP-Amp



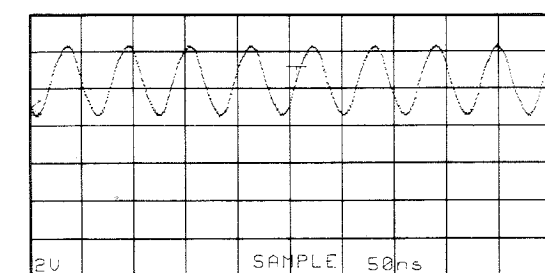
IC208 : HD74HC125P
Quad 3 State Bus Buffers



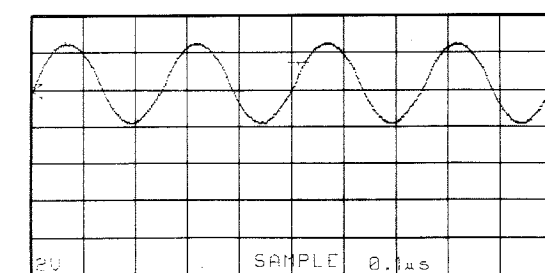
Other ICs

- IC205 : MN66271RA → See page 23
- IC206 : M38024M6-088SP → See page 25

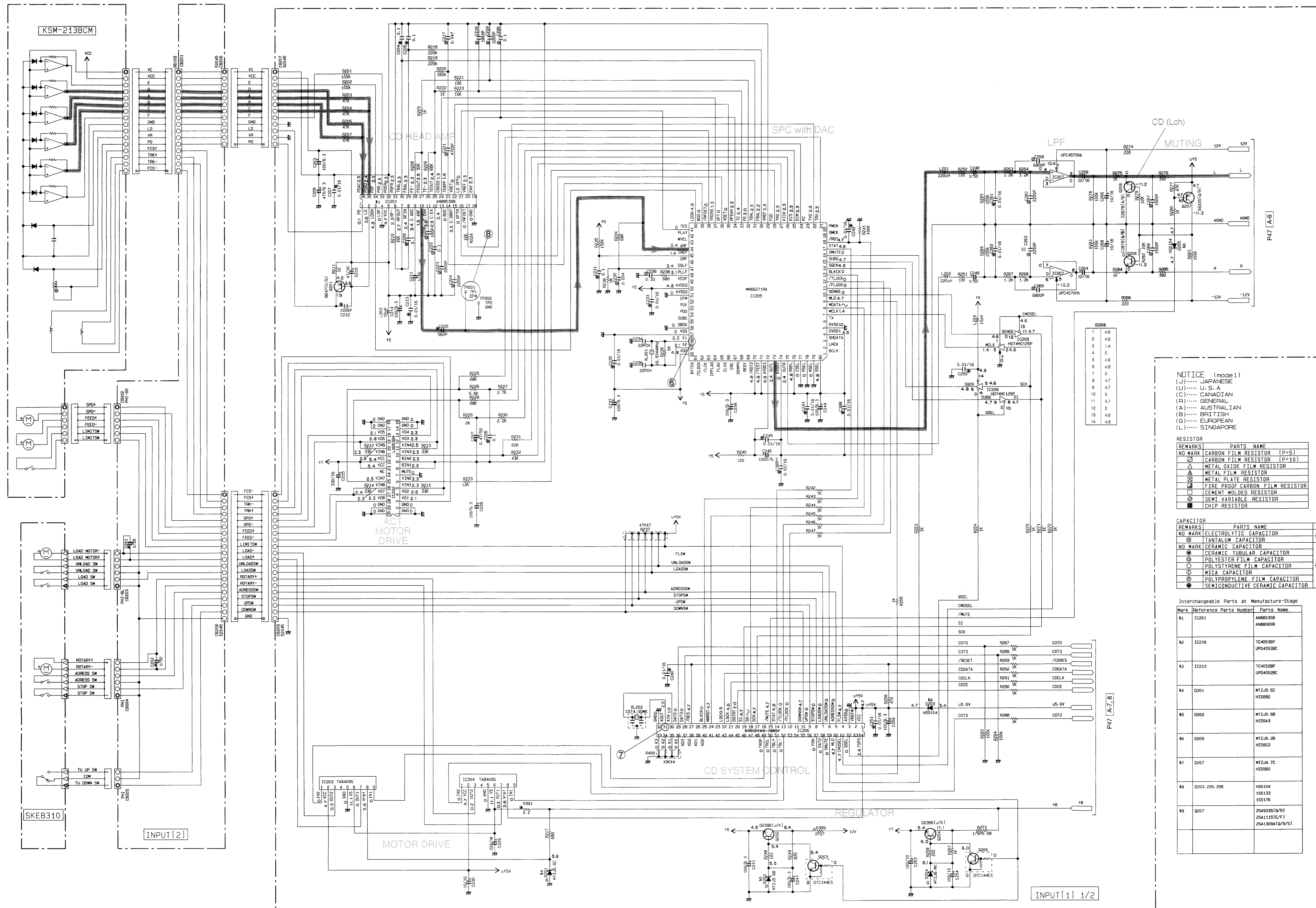
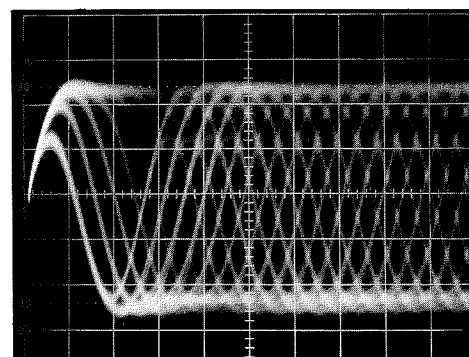
Point ⑥ (Pin58 of IC205)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ⑦ (Pin31 of IC206)
V : 2V/div H : 0.1 μ sec/div
DC range 1 : 1 probe



Point ⑧ (TP201 : Pin44 of IC205)
V : 0.2V/div H : 0.5 μ sec/div
AC range 1 : 1 probe



NOTICE (model)

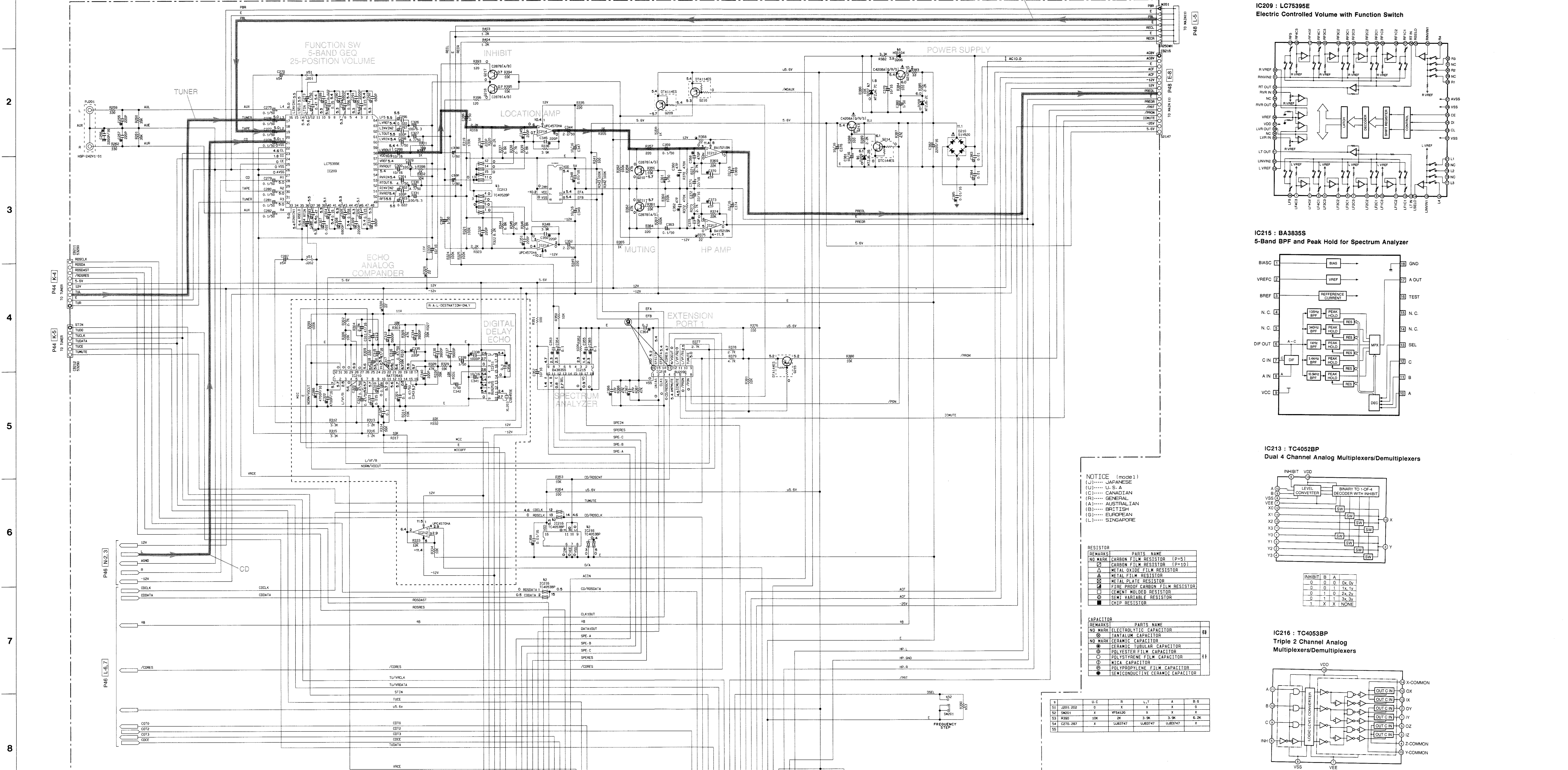
- (J)..... JAPANESE
- (U)..... U.S.A
- (C)..... CANADIAN
- (R)..... GENERAL
- (A)..... AUSTRALIAN
- (B)..... BRITISH
- (E)..... EUROPEAN
- (L)..... SINGAPORE

REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
△	METAL OXIDE FILM RESISTOR
△	METAL FILM RESISTOR
△	METAL PLATE RESISTOR
△	FIRE PROOF CARBON FILM RESISTOR
△	CEMENT MOLDED RESISTOR
△	SEMI VARIABLE RESISTOR
△	CHIP RESISTOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
△	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
△	CERAMIC TUBULAR CAPACITOR
△	POLYSTYRENE FILM CAPACITOR
△	MICA CAPACITOR
△	POLYPROPYLENE FILM CAPACITOR
△	SEMICONDUCTIVE CERAMIC CAPACITOR

Interchangeable Parts at Manufacture Stage

Max. Reference	Parts Number	Parts Name
41	IC201	AN8803SB
42	IC216	TC4053BP
43	IC213	TC4052BP
44	D001	MT2.5-6C
45	D002	MT2.5-6B
46	D009	MT2.5-2B
47	D007	MT2.4-7C
48	D003, 205, 206	HSS104
49	D007	25A030510/P1
		25A110510/P1
		25A130510/P1



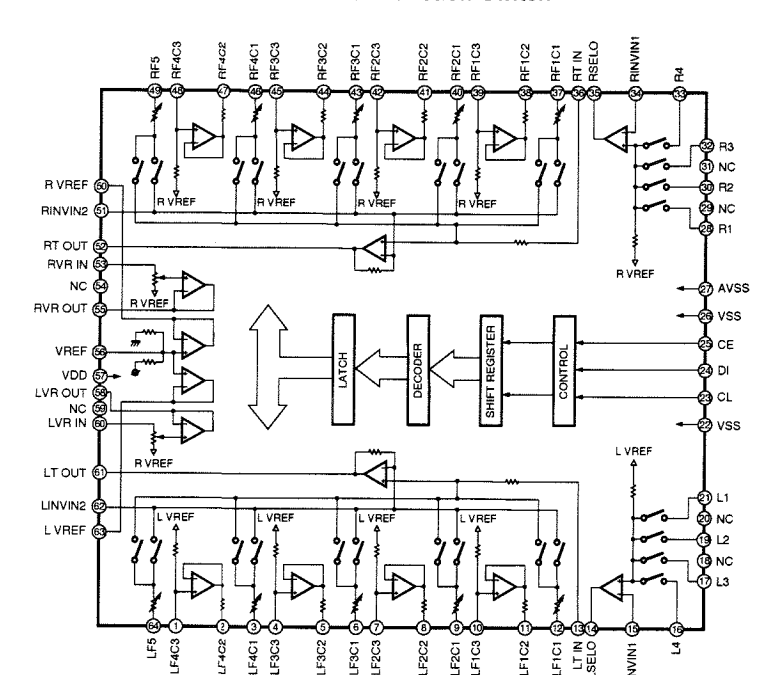
RESISTOR		PARTS NAME
REMARKS		
NO MARK		CARBON FILM RESISTOR (P=5)
☒		CARBON FILM RESISTOR (P=10)
☒		METAL OXIDE FILM RESISTOR
☒		METAL FILM RESISTOR
☒		METAL PLATE RESISTOR
☒		FIRE PROOF CARBON FILM RESISTOR
☒		CEMENT MOLDED RESISTOR
☒		SEMI VARIABLE RESISTOR
☒		CHIP RESISTOR

	U.C	R	L.T	A	B
202	0	X	X	X	0
	X	VF54120	X	X	X
	10K	2K	3.9K	3.9K	6
207	X	UJ83747	UJ83747	UJ83747	X

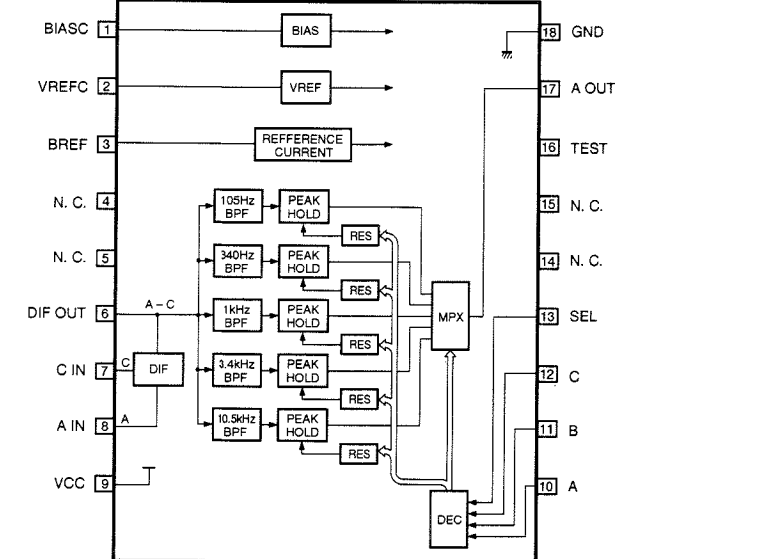
Point ⑨

CH1 : Pin13 of IC218
CH2 : Pin16 of IC218

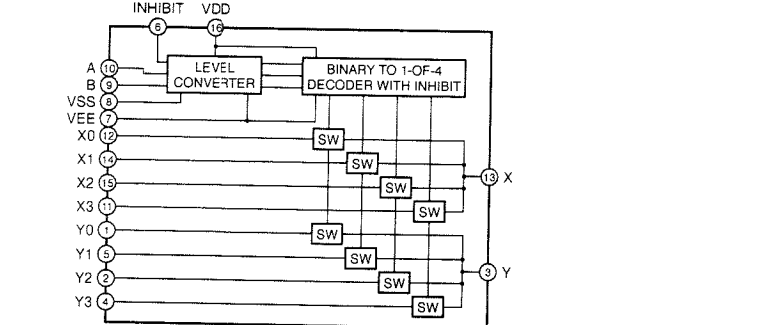
V : 2V/div (CH1) V : 2V/div (CH2)
H : 0.5 sec/div
DC range 1 : 1 probe



IC215 : BA3835S
5-Band BPF and Peak Hold for Spectrum Analyzer

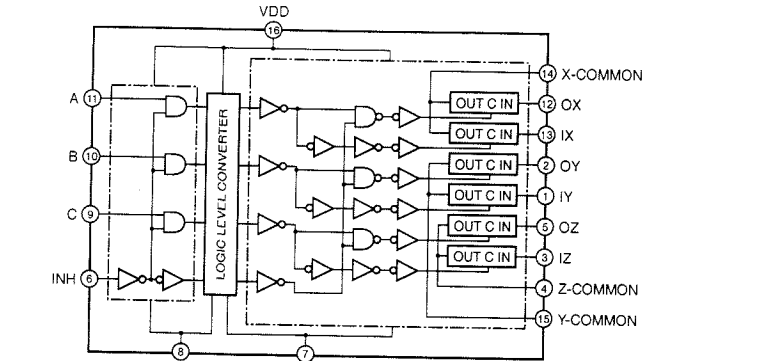


IC213 : TC4052BP
Dual 4 Channel Analog Multiplexers/Demultiplexers



INHIBIT	B	A	
0	0	0	0x, 0y
0	0	1	1x, 1y
0	1	0	2x, 2y
0	1	1	3x, 3y
1	X	X	NONE

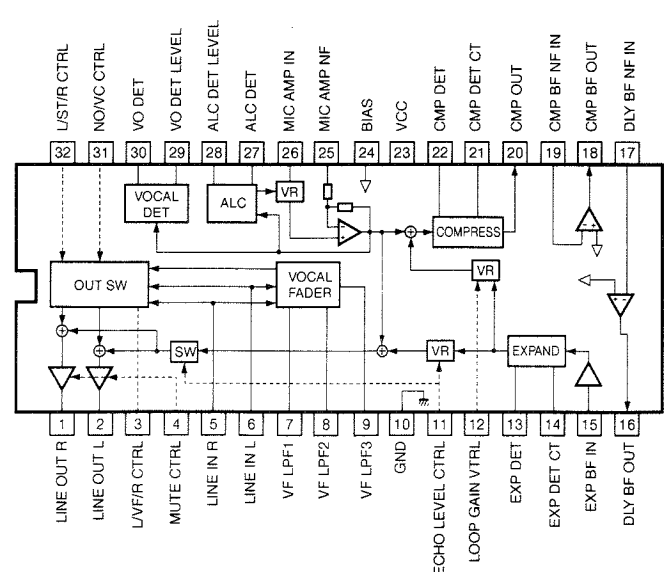
IC216 : TC4053BP
Triple 2 Channel Analog
Multiplexers/Demultiplexers



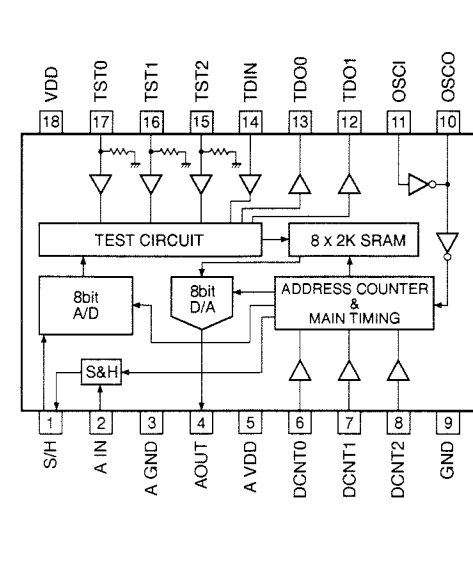
CONTROL INPUTS				"ON" CHANNEL
INHIBIT (Pin 6)	C (Pin 9)	B (Pin 10)	A (Pin 11)	0X (Pin 12), 0Y (Pin 2), 0Z (Pin 13) 1X (Pin 13), 1Y (Pin 1), 1Z (Pin 14)
L	L	L	L	0X, 0Y, 0Z
L	L	L	H	1X, 0Y, 0Z
L	L	H	L	0X, 1Y, 0Z
L	L	H	H	1X, 1Y, 0Z
L	H	L	L	0X, 0Y, 1Z
L	H	L	H	1X, 0Y, 1Z
L	H	H	L	0X, 1Y, 1Z
L	H	H	H	1X, 1Y, 1Z
H	-	-	-	NOTE

* Don't Care

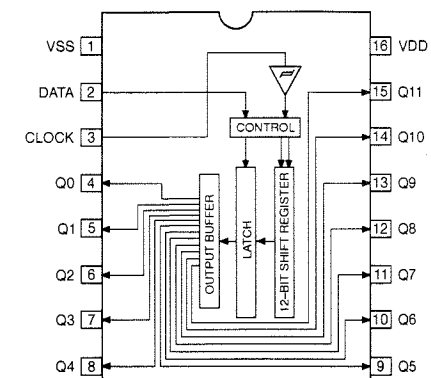
IC210 : BA7726AS
Analog Componder for Karaoke Echo System



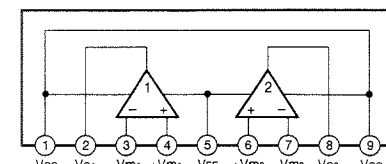
IC211 : BU9252S
Digital Delay for Karaoke Echo System



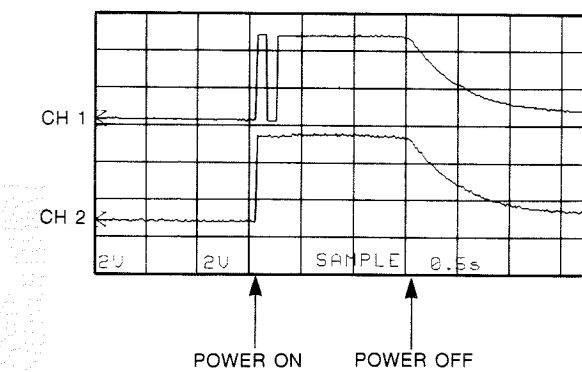
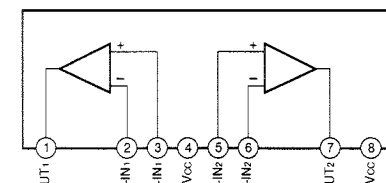
IC218 : BU2090
Serial In/Parallel Out Driver



IC212, 214 : μ PC4570HA
Dual OP-Amp



IC217 : BA15218N
Dual OP-Amp

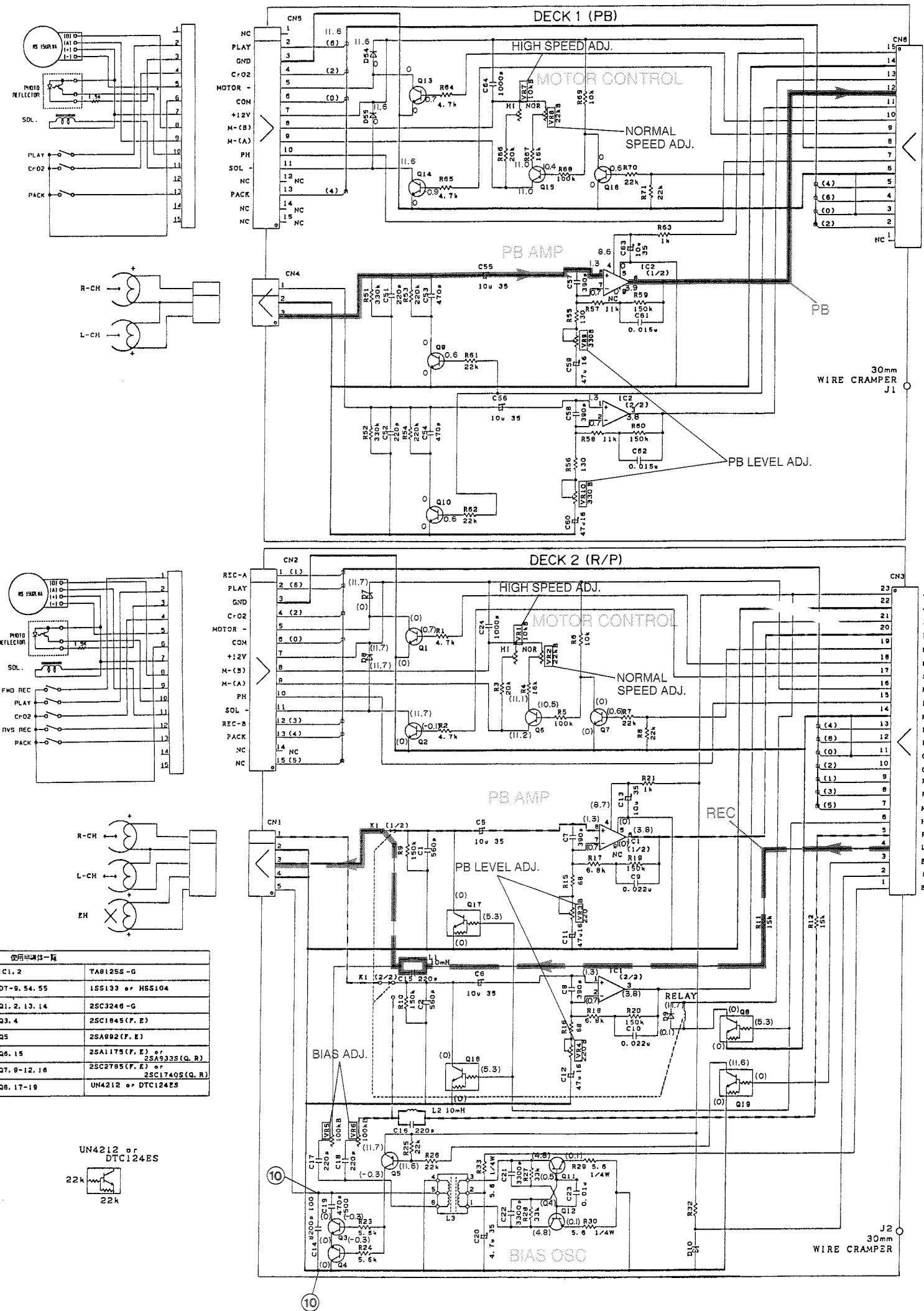


- * All voltage are measured with a 10M Ω /V DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (MAIN & DECK

The voltages are measured by LH tape at PLAY mode (no-signal condition).
Only the voltages () are at REC mode.

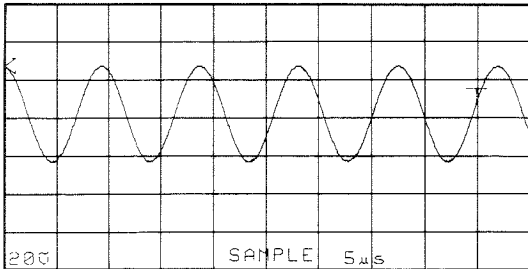
- DOLBY NR OFF



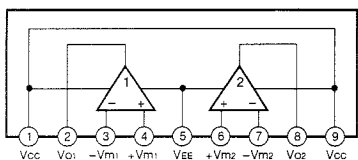
Point 10 (Both ends of C14) REC mode

V : 20V/div H : 5 μ sec/div

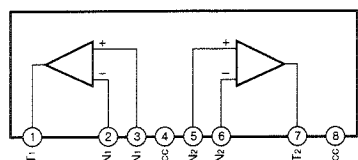
AC range 1 : 1 probe



IC501, 502 : μ PC4570HA
Dual OP-Amp

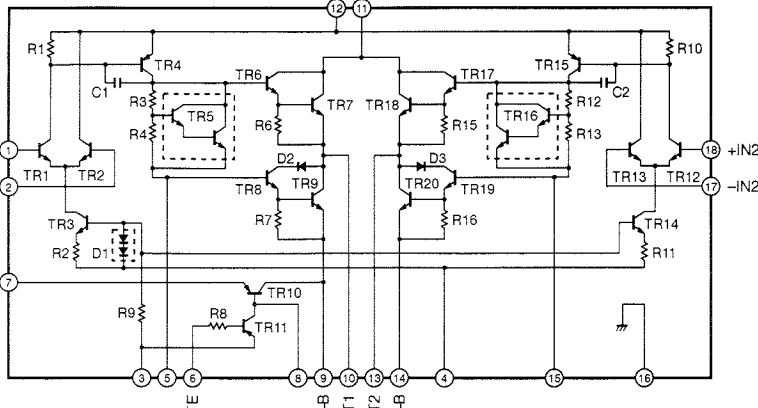


IC503 : NJM2082L
Dual OP-Amp

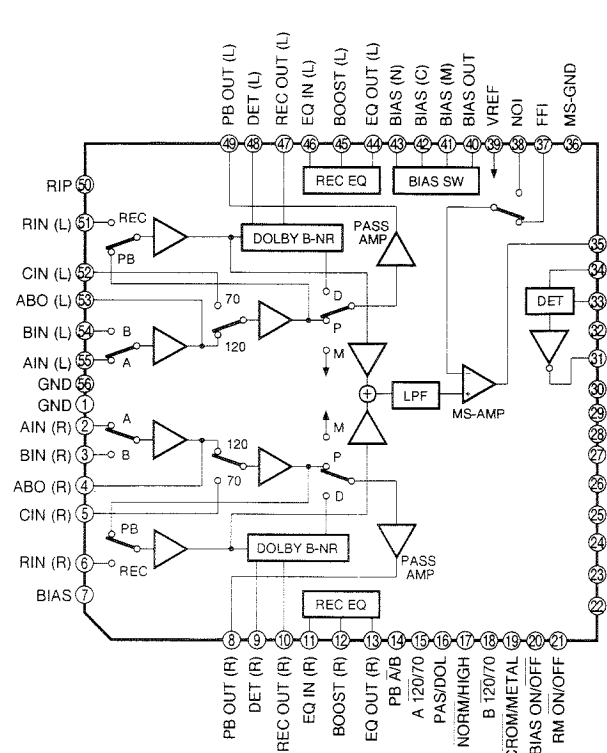


IC504 : STK4152II
2 Channel AF Power Amp

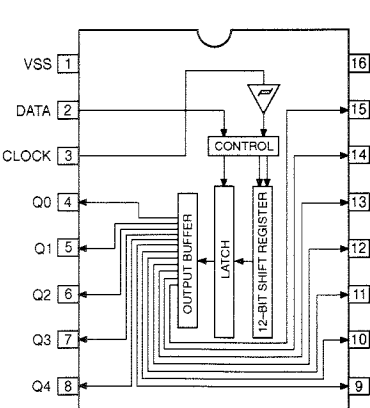
2 Channel AF Power Amp



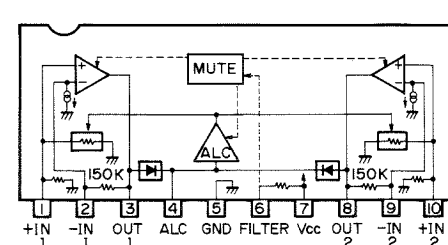
IC505 : HA12182NT
Tape System Processor (with Dolby B-Type)



IC506 : BU2090
Serial In/Parallel Out Driver



IC507 : BA3312N
Dual Pre Amp with ALC



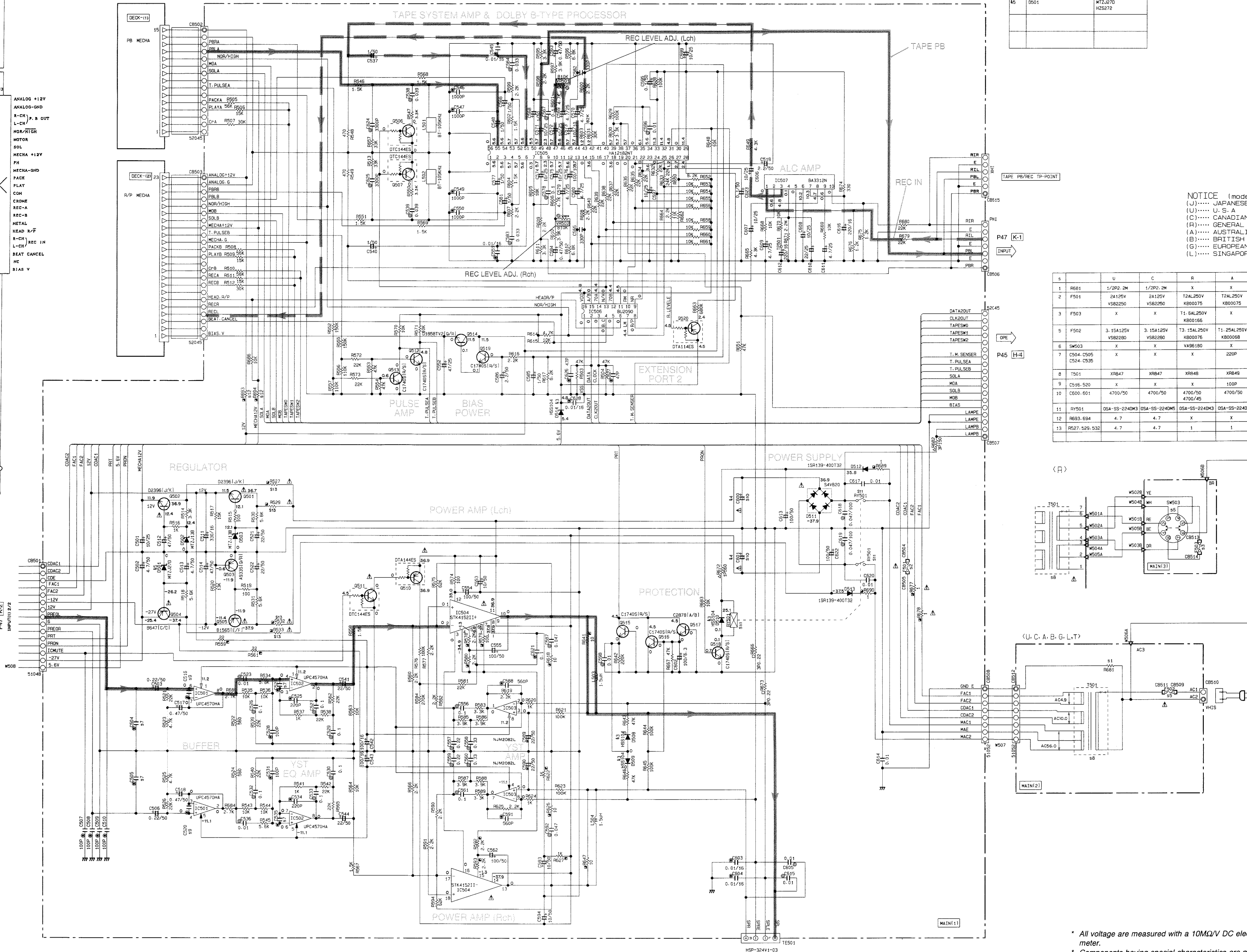
RESISTOR		PARTS NAME
REMARKS		
NO MARK		CARBON FILM RESISTOR (P=5)
☒		CARBON FILM RESISTOR (P=10)
☒		METAL OXIDE FILM RESISTOR
☒		METAL FILM RESISTOR
☒		METAL PLATE RESISTOR
☒		FIRE PROOF CARBON FILM RESISTOR
☒		CEMENT MOLDED RESISTOR
☒		SEMI VARIABLE RESISTOR
☒		CHIP RESISTOR

CAPACITOR		PARTS NAME
NO MARK		ELECTROLYTIC CAPACITOR
⊗		TANTALUM CAPACITOR
NO MARK		CERAMIC CAPACITOR
⊙		CERAMIC TUBULAR CAPACITOR
⊙		POLYESTER FILM CAPACITOR
⊙		POLYSTYRENE FILM CAPACITOR
⊖		MICA CAPACITOR
⊙		POLYPROPYLENE FILM CAPACITOR
⊙		SEMICONDUCTIVE CERAMIC CAPACITOR

Interchangeable Parts at Manufacture-Stage		
Mark	Reference Parts Number	Parts Name
11		
42	0514	250185612v(a/s) 25C4391(a/s)
43	0508-510-514	H55104 153133 155276
44	C500-601	4700/50 4700/45
45	D501	W7.3270 W2572

NOTICE (model)
(J)..... JAPANESE
(U)..... U. S. A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(L)..... SINGAPORE

S	U	C	R	A	B-E-L
1	R681	1/292_2M	1/292_2M	X	X
2	F501	2A125V V58220	2A125V V58220	12A1250V K800175	17A1250V K800175
3	F502	X	X	11_5A1250V K800185	X
4	F503	3_15A125V V58280	3_15A125V V58280	13_15A125V K800076	17_25A125V K800008
5	SW653	X	X	VAB8100	X
6	C544 C545 C546 C548	X	X	X	220P
7	T561	V5847	V5847	V5848	200P
8	C116_520	X	X	100P	100P
9	5500-661	470/50	470/50	470/50-470/50	470/50
10	5500-661	470/50	470/50	470/50-470/50	470/50
11	RY501	05A-33-24DMS	05A-33-24DMS	05A-33-24DMS	05A-33-24DMS
12	W693-694	4-7	4-7	X	X
13	W527-529-532	4-7	4-7	X	X



- * All voltage are measured with a 10M Ω /V DC electric volt meter.
- * Components having special characteristics are marked $\triangle$ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

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.

P.C.B. TUNER

Schm Ref.	PART NO.	Description
* VU690200	P. C. B.	TUNER (UCR)
* VU690400	P. C. B.	TUNER (A)
* VU690500	P. C. B.	TUNER (BG)
* VU690600	P. C. B.	TUNER (LT)
CB1	VQ961200	CN. BS. PIN 9P
CB2	VQ960900	CN. BS. PIN 6P
C1	UB044100	C. CE. M. CHP 0.01uF 50V
C2	UB044100	C. CE. M. CHP 0.01uF 50V
C3	UB044470	C. CE. M. CHP 0.047uF 50V
C4	VJ838800	C. EL 0.22uF 50V
C5	UB044100	C. CE. M. CHP 0.01uF 50V
C6	UB044100	C. CE. M. CHP 0.01uF 50V
C7	UB044100	C. CE. M. CHP 0.01uF 50V
C8	UB044100	C. CE. M. CHP 0.01uF 50V
C9	UB044470	C. CE. M. CHP 0.047uF 50V
* C10	UB050800	C. CE. M. CHP 8pF 50V
C10	UB051180	C. CE. M. CHP 18pF 50V
C11	VJ836900	C. EL 10uF 16V
C12	UB044100	C. CE. M. CHP 0.01uF 50V
C13	UB044100	C. CE. M. CHP 0.01uF 50V
C14	UB044100	C. CE. M. CHP 0.01uF 50V
C15	VJ836900	C. EL 10uF 16V
C16	VJ836900	C. EL 10uF 16V
C17	UM416470	C. EL 4.7uF 50V
C18	UB044100	C. CE. M. CHP 0.01uF 50V
C19	VJ839100	C. EL 1uF 50V
C20	UB044100	C. CE. M. CHP 0.01uF 50V
C21	UB013470	C. CE. M. CHP 4700pF 50V
C22	UM216330	C. EL 3.3uF 50V
C23	VJ837200	C. EL 47uF 16V
C24	VJ836900	C. EL 10uF 16V
C25	VJ836900	C. EL 10uF 16V
C26	UB012330	C. CE. M. CHP 330pF 50V
C26	UB013100	C. CE. M. CHP 1000pF 50V
C27	UB052120	C. CE. M. CHP 120pF 50V
C28	UA654270	C. MYLAR 0.027uF 50V
C28	UA654430	C. MYLAR 0.043uF 50V
C29	UA654270	C. MYLAR 0.027uF 50V
C29	UA654430	C. MYLAR 0.043uF 50V
C30	UB052100	C. CE. M. CHP 100pF 50V
C31	VJ839100	C. EL 1uF 50V
C32	VJ836900	C. EL 10uF 16V
C33	UA656100	C. MYLAR 1uF 50V
C34	VJ836900	C. EL 10uF 16V
C35	UB044470	C. CE. M. CHP 0.047uF 50V
C36	VJ839000	C. EL 0.47uF 50V
C37	VJ839100	C. EL 1uF 50V
C38	VJ839100	C. EL 1uF 50V
C39	UM416470	C. EL 4.7uF 50V
C40	UM416470	C. EL 4.7uF 50V
C41	UB013270	C. CE. M. CHP 2700pF 50V
C42	UB013270	C. CE. M. CHP 2700pF 50V
C43	UB052100	C. CE. M. CHP 100pF 50V

* New Parts

Schm Ref.	PART NO.	Description
C44	VJ900700	C. CE. M. CHP 33pF 50V
C45	VJ900700	C. CE. M. CHP 33pF 50V
C47	UB044100	C. CE. M. CHP 0.01uF 50V
C48	VJ836900	C. EL 10uF 16V
C54	UB012220	C. CE. M. CHP 220pF 50V
C55	VF760000	C. EL 100uF 10V
C66	UB044100	C. CE. M. CHP 0.01uF 50V
C67	UB044100	C. CE. M. CHP 0.01uF 50V
C68	VJ838800	C. EL 0.22uF 50V
* D1	VU172300	DIODE. ZENR UDZ7.5BTE-17 7.5V
D2	VT332900	DIODE 1SS355
D3	VT332900	DIODE 1SS355
D4	VT332900	DIODE 1SS355 (BG)
D5	VT332900	DIODE 1SS355
D9	VT332900	DIODE 1SS355 (BG)
D10	VT332900	DIODE 1SS355
IC1	XP246A00	IC LA1835
IC2	XQ360A00	IC LC72130
IC4	XQ359A00	IC STK311-020B (BG)
L2	GG000560	FLTR. CE SFE10.7MS3GHY-A
L3	GG000560	FLTR. CE SFE10.7MS3GHY-A
L4	VU887900	COIL 10uH
* L5	VU434500	FLTR. CE 450K PCFMT-049A
L7	VQ365700	FLTR. LP FB-7SG (ABG)
L8	VR888000	FLTR. LC 19KHz
L9	VR888000	FLTR. LC 19KHz
L10	VU889500	COIL 220uH (BG)
* PK1	VU134400	TUNER. FM TFFJ2U515A (UCRLT)
* PK1	VU134500	TUNER. FM TFFJ4E515A (ABG)
PK2	VR888300	COIL. AM RBQ07VB (BG)
* PK2	VU333700	COIL. AM 940536051A (UCRALT)
Q1	iC053540	TR 2SC535 A, B, C
Q2	VD678500	TR. DGT DTA114ES
Q3	iC174020	TR 2SC1740S R, S (BG)
Q4	iC174020	TR 2SC1740S R, S (BG)
Q5	iC174020	TR 2SC1740S R, S (BG)
Q6	iC174020	TR 2SC1740S R, S (BG)
Q7	iC174020	TR 2SC1740S R, S (ABG)
Q8	VG722000	TR. DGT DTC144ES (BG)
Q9	VG721700	TR. DGT DTA144ES (BG)
R1	RD257100	R. CAR. CHP 10KΩ 1/10W
R2	RD257100	R. CAR. CHP 10KΩ 1/10W
R3	RD257100	R. CAR. CHP 10KΩ 1/10W
R4	HV455220	R. CAR. FP 220Ω 1/4W
R5	RD258220	R. CAR. CHP 220KΩ 1/10W
R6	RD255330	R. CAR. CHP 330Ω 1/10W
R7	RD255100	R. CAR. CHP 100Ω 1/10W
R8	RD255330	R. CAR. CHP 330Ω 1/10W
R9	RD254330	R. CAR. CHP 33Ω 1/10W
R10	RD258100	R. CAR. CHP 100KΩ 1/10W
R11	RD257100	R. CAR. CHP 10KΩ 1/10W
R12	RD256560	R. CAR. CHP 5.6KΩ 1/10W
R13	RD257100	R. CAR. CHP 10KΩ 1/10W

* New Parts

P.C.B. TUNER & INPUT

Schm Ref.	PART NO.	Description
R14	RD257220	R. CAR. CHP 22K Ω 1/10W
R15	RD257220	R. CAR. CHP 22K Ω 1/10W
R16	RD258100	R. CAR. CHP 100K Ω 1/10W
R17	HV455120	R. CAR. FP 120 Ω 1/4W
R18	RD257220	R. CAR. CHP 22K Ω 1/10W
R19	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R20	RD256820	R. CAR. CHP 8.2K Ω 1/10W
R21	RD255510	R. CAR. CHP 510 Ω 1/10W
R22	RD257150	R. CAR. CHP 15K Ω 1/10W
R23	RD256470	R. CAR. CHP 4.7K Ω 1/10W
R24	RD256100	R. CAR. CHP 1K Ω 1/10W
R25	HV455220	R. CAR. FP 220 Ω 1/4W
R26	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R27	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R28	RD256220	R. CAR. CHP 2.2K Ω 1/10W
R29	RD257100	R. CAR. CHP 10K Ω 1/10W
R30	RD257100	R. CAR. CHP 10K Ω 1/10W
R31	RD257470	R. CAR. CHP 47K Ω 1/10W
R32	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R33	RD257470	R. CAR. CHP 47K Ω 1/10W
R34	RD258100	R. CAR. CHP 100K Ω 1/10W
R35	RD254220	R. CAR. CHP 22 Ω 1/10W
R36	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R37	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R40	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R41	RD257100	R. CAR. CHP 10K Ω 1/10W
R42	RD257100	R. CAR. CHP 10K Ω 1/10W
R43	RD257470	R. CAR. CHP 47K Ω 1/10W
R44	RD256470	R. CAR. CHP 4.7K Ω 1/10W
R47	RD257100	R. CAR. CHP 10K Ω 1/10W
R48	RD256330	R. CAR. CHP 3.3K Ω 1/10W
R49	RD257470	R. CAR. CHP 47K Ω 1/10W
R50	RD257100	R. CAR. CHP 10K Ω 1/10W
R53	RD257330	R. CAR. CHP 33K Ω 1/10W
R54	RD257330	R. CAR. CHP 33K Ω 1/10W
R55	RD257120	R. CAR. CHP 12K Ω 1/10W
R61	RD257100	R. CAR. CHP 10K Ω 1/10W
R62	RD257100	R. CAR. CHP 10K Ω 1/10W
R63	RD257100	R. CAR. CHP 10K Ω 1/10W
R64	RD257100	R. CAR. CHP 10K Ω 1/10W
R65	RD257100	R. CAR. CHP 10K Ω 1/10W
R66	HV455120	R. CAR. FP 120 Ω 1/4W
R67	RD255330	R. CAR. CHP 330 Ω 1/10W
R68	HV454180	R. CAR. FP 18 Ω 1/4W
* TE1	VU477800	TERM. ANT AJ-2038-040
XL1	VR888100	FLTR. CE CDA10.7MG48-A
XL2	VE905900	RSNR. CE 19KHz
XL3	QU003800	RSNR. CRY5 7.2MHz
XL4	VS860100	RSNR. CE 19KHz(BG)
	BB071360	SCR. TERM 8.3x13

* New Parts

Schm Ref.	PART NO.	Description
*	VU633700	P. C. B. INPUT(UC)
*	VU633800	P. C. B. INPUT(R)
*	VU633900	P. C. B. INPUT(ALT)
*	VU634000	P. C. B. INPUT(BG)
* CB201	VU160200	CN. BS. PIN 16P
CB202	VU929500	CN. BS. PIN 6P
CB203	VU534900	CN. BS. PIN 6P
CB204	VD004900	CN. BS. PIN 6P
CB205	VD004600	CN. BS. PIN 3P
CB206	VQ047300	CN. BS. PIN 12P
CB207	VQ047300	CN. BS. PIN 12P
CB208	VQ047500	CN. BS. PIN 20P
CB209	VQ047500	CN. BS. PIN 20P
CB211	VQ963000	CN. BS. PIN 9P
CB212	VQ962700	CN. BS. PIN 6P
* CB213	VU163200	SOCKET 20P
* CB214	VU163200	SOCKET 20P
CB216	VF667600	CN. BS. PIN 15P
C201	VG722100	C. EL 1uF 50V
C202	VG722100	C. EL 1uF 50V
C203	VF760000	C. EL 100uF 10V
C204	VH053100	C. CE. TUBLR 0.1uF 50V
C205	VH053100	C. CE. TUBLR 0.1uF 50V
C206	UJ628470	C. EL 470uF 10V
C207	VF467300	C. CE. TUBLR 0.01uF 16V
C208	UA652100	C. MYLAR 100pF 50V
C209	VH053100	C. CE. TUBLR 0.1uF 50V
C210	VJ837200	C. EL 47uF 16V
C211	VJ839100	C. EL 1uF 50V
C212	VF467000	C. CE. TUBLR 1000pF 50V
C213	VF467300	C. CE. TUBLR 0.01uF 16V
C214	VF760000	C. EL 100uF 10V
C215	UJ638330	C. EL 330uF 16V
C217	UA654470	C. MYLAR 0.047uF 50V
C218	UA653180	C. MYLAR 1800pF 50V
C219	UA653220	C. MYLAR 2200pF 50V
C220	UA655100	C. MYLAR 0.1uF 50V
C221	UA653470	C. MYLAR 4700pF 50V
C222	UA655100	C. MYLAR 0.1uF 50V
C223	UA653220	C. MYLAR 2200pF 50V
C224	UA653220	C. MYLAR 2200pF 50V
C225	VG278800	C. CE. TUBLR 560pF 50V
C226	VH053100	C. CE. TUBLR 0.1uF 50V
C227	UK665470	C. EL 0.47uF 50V
C228	VF760000	C. EL 100uF 10V
C229	UJ648220	C. EL 220uF 25V
C230	VJ836900	C. EL 10uF 16V
C231	VH053100	C. CE. TUBLR 0.1uF 50V
C232	UA654240	C. MYLAR 0.024uF 50V
C233	VF467300	C. CE. TUBLR 0.01uF 16V
C234	VA761000	C. CE 22pF 50V
C235	VF467300	C. CE. TUBLR 0.01uF 16V
C236	VA761000	C. CE 22pF 50V

* New Parts

P.C.B. INPUT

Schm Ref.	PART NO.	Description		
C237	VF760000	C. EL	100uF	10V
C238	UA655330	C. MYLAR	0.33uF	50V
C239	VF760000	C. EL	100uF	10V
C240	VF467300	C. CE. TUBLR	0.01uF	16V
C241	VF760000	C. EL	100uF	10V
C242	VF467300	C. CE. TUBLR	0.01uF	16V
C243	VF467300	C. CE. TUBLR	0.01uF	16V
C244	VF760000	C. EL	100uF	10V
C245	VF467300	C. CE. TUBLR	0.01uF	16V
C246	VF637900	C. EL	1000uF	10V
C247	VF760000	C. EL	100uF	10V
C248	VJ839100	C. EL	1uF	50V
C249	VJ839100	C. EL	1uF	50V
C250	VF467300	C. CE. TUBLR	0.01uF	16V
C251	VF467300	C. CE. TUBLR	0.01uF	16V
C252	VF760000	C. EL	100uF	10V
C253	VF760000	C. EL	100uF	10V
C254	VF760000	C. EL	100uF	10V
C255	VG278400	C. CE. TUBLR	220pF	50V
C256	VG279400	C. CE. TUBLR	2200pF	16V
C257	VG278400	C. CE. TUBLR	220pF	50V
C258	UA653680	C. MYLAR	6800pF	50V
C259	UM407220	C. EL	22uF	16V
C260	UA653220	C. MYLAR	2200pF	50V
C261	VF467300	C. CE. TUBLR	0.01uF	16V
C262	VF467300	C. CE. TUBLR	0.01uF	16V
C263	UA653220	C. MYLAR	2200pF	50V
C264	UM407220	C. EL	22uF	16V
C265	UA653680	C. MYLAR	6800pF	50V
C266	VJ836900	C. EL	10uF	16V
C267	UA653150	C. MYLAR	1500pF	50V
C268	VJ836900	C. EL	10uF	16V
C269	UA653150	C. MYLAR	1500pF	50V
C270	VJ837200	C. EL	47uF	16V
C273	VG722100	C. EL	1uF	50V
C274	UA655470	C. MYLAR	0.47uF	50V
C275	UM215100	C. EL	0.1uF	50V
C276	UM215100	C. EL	0.1uF	50V
C277	UM215100	C. EL	0.1uF	50V
C278	UM215100	C. EL	0.1uF	50V
C279	UM215100	C. EL	0.1uF	50V
C280	UM215100	C. EL	0.1uF	50V
C281	UM215100	C. EL	0.1uF	50V
C282	UM215100	C. EL	0.1uF	50V
C283	UA655470	C. MYLAR	0.47uF	50V
C284	VG722100	C. EL	1uF	50V
C287	VJ837200	C. EL	47uF	16V
C288	VF467100	C. CE. TUBLR	4700pF	16V
C289	UA654220	C. MYLAR	0.022uF	50V
C290	UA653680	C. MYLAR	6800pF	50V
C291	UA653220	C. MYLAR	2200pF	50V
C292	UA652680	C. MYLAR	680pF	50V
C293	UA655150	C. MYLAR	0.15uF	50V

* New Parts

Schm Ref.	PART NO.	Description		
C294	UA654560	C. MYLAR	0.056uF	50V
C295	UA654150	C. MYLAR	0.015uF	50V
C296	UA654220	C. MYLAR	0.022uF	50V
C297	UA652100	C. MYLAR	100pF	50V
C298	UM416470	C. EL	4.7uF	50V
C299	VJ836900	C. EL	10uF	16V
C300	VJ836900	C. EL	10uF	16V
C301	UM416470	C. EL	4.7uF	50V
C302	UA652100	C. MYLAR	100pF	50V
C303	UA654220	C. MYLAR	0.022uF	50V
C304	UA655150	C. MYLAR	0.15uF	50V
C305	UA654560	C. MYLAR	0.056uF	50V
C306	UA654150	C. MYLAR	0.015uF	50V
C307	UA654220	C. MYLAR	0.022uF	50V
C308	UA653680	C. MYLAR	6800pF	50V
C309	UA653220	C. MYLAR	2200pF	50V
C310	UA652680	C. MYLAR	680pF	50V
C311	VJ837200	C. EL	47uF	16V
C312	UA653560	C. MYLAR	5600pF	50V
C313	UJ638470	C. EL	470uF	16V
C315	VJ837200	C. EL	47uF	16V
C316	VJ839000	C. EL	0.47uF	50V
C317	UA655100	C. MYLAR	0.1uF	50V
C318	VJ839100	C. EL	1uF	50V
C319	UA654680	C. MYLAR	0.068uF	50V
C320	VJ839000	C. EL	0.47uF	50V
C321	VH053100	C. CE. TUBLR	0.1uF	50V
C322	VF467100	C. CE. TUBLR	4700pF	16V
C323	UA654150	C. MYLAR	0.015uF	50V
C324	VJ839000	C. EL	0.47uF	50V
C325	VH053100	C. CE. TUBLR	0.1uF	50V
C326	VF760000	C. EL	100uF	10V
C327	UM416470	C. EL	4.7uF	50V
C328	VG278400	C. CE. TUBLR	220pF	50V
C329	VF760000	C. EL	100uF	10V
C330	UM416470	C. EL	4.7uF	50V
C331	VF760000	C. EL	100uF	10V
C332	VG278400	C. CE. TUBLR	220pF	50V
C333	VJ836900	C. EL	10uF	16V
C334	UA653390	C. MYLAR	3900pF	50V
C335	VG278400	C. CE. TUBLR	220pF	50V
C336	UA653390	C. MYLAR	3900pF	50V
C337	UA653560	C. MYLAR	5600pF	50V
C338	VF467000	C. CE. TUBLR	1000pF	50V
C339	VJ839100	C. EL	1uF	50V
C340	VG278400	C. CE. TUBLR	220pF	50V
C341	VJ836900	C. EL	10uF	16V
C342	VJ839100	C. EL	1uF	50V
C343	VJ839000	C. EL	0.47uF	50V
C344	VJ839200	C. EL	2.2uF	50V
C345	VG278400	C. CE. TUBLR	220pF	50V
C346	VG278400	C. CE. TUBLR	220pF	50V
C347	VJ836900	C. EL	10uF	16V

* New Parts

P.C.B. INPUT

Schm Ref.	PART NO.	Description
C348	VF467300	C. CE. TUBLR 0.01uF 16V
C349	VJ836900	C. EL 10uF 16V
C350	VG278400	C. CE. TUBLR 220pF 50V
C351	VG278400	C. CE. TUBLR 220pF 50V
C352	VJ839200	C. EL 2.2uF 50V
C353	VH053100	C. CE. TUBLR 0.1uF 50V
C354	VH053100	C. CE. TUBLR 0.1uF 50V
C355	VH053100	C. CE. TUBLR 0.1uF 50V
C356	VH053100	C. CE. TUBLR 0.1uF 50V
C357	VJ836900	C. EL 10uF 16V
C358	VF467300	C. CE. TUBLR 0.01uF 16V
C359	UM215100	C. EL 0.1uF 50V
C360	VF466700	C. CE. TUBLR 47pF 50V
C361	VG722100	C. EL 1uF 50V
C362	VF466700	C. CE. TUBLR 47pF 50V
C363	UM215100	C. EL 0.1uF 50V
C364	VH053100	C. CE. TUBLR 0.1uF 50V
C365	VH053100	C. CE. TUBLR 0.1uF 50V
C366	VF466700	C. CE. TUBLR 47pF 50V
C367	VF466700	C. CE. TUBLR 47pF 50V
C368	VF466900	C. CE. TUBLR 470pF 50V
C369	UM407220	C. EL 22uF 16V
C370	VF466700	C. CE. TUBLR 47pF 50V
C371	UM407220	C. EL 22uF 16V
C372	UM407220	C. EL 22uF 16V
C373	VF466700	C. CE. TUBLR 47pF 50V
C374	UM407220	C. EL 22uF 16V
C375	VF466900	C. CE. TUBLR 470pF 50V
C376	VJ836900	C. EL 10uF 16V
C378	VF467300	C. CE. TUBLR 0.01uF 16V
C379	VJ836900	C. EL 10uF 16V
C380	VJ839100	C. EL 1uF 50V
C381	VJ836900	C. EL 10uF 16V
C382	VF904800	C. EL 2200uF 16V
C383	UA654100	C. MYLAR 0.01uF 50V
C384	UA654100	C. MYLAR 0.01uF 50V
C385	VF467300	C. CE. TUBLR 0.01uF 16V
C386	VJ839100	C. EL 1uF 50V
C387	VJ839100	C. EL 1uF 50V
C388	VF467300	C. CE. TUBLR 0.01uF 16V
C389	VF467300	C. CE. TUBLR 0.01uF 16V
C390	VJ839100	C. EL 1uF 50V
C391	VJ839100	C. EL 1uF 50V
D201	VG437800	DIODE. ZENR MTZJ5.6C 5.6V
D202	VG437700	DIODE. ZENR MTZJ5.6B 5.6V
D203	VD631600	DIODE 1SS133, 176, HSS104
D204	VG438300	DIODE. ZENR MTZJ6.8B 6.8V
D205	VD631600	DIODE 1SS133, 176, HSS104
D206	VD631600	DIODE 1SS133, 176, HSS104
D207	VG437200	DIODE. ZENR MTZJ4.7C 4.7V
D208	VG438100	DIODE. ZENR MTZJ6.2C 6.2V
D209	VG438000	DIODE. ZENR MTZJ6.2B 6.2V
D210	VQ379300	DIODE. BRG S1VB20 1.0A 200V

* New Parts

Schm Ref.	PART NO.	Description
IC201	XM571A00	IC AN8803SB
IC202	XN105A00	IC LA6536M
* IC203	XR274A00	IC TA8409SE
* IC204	XR274A00	IC TA8409SE
IC205	XM572A00	IC MN66271
IC206	XS039D00	IC M38024M6-257SP CPU
IC207	XB247301	IC uPC4570HA
IC208	iR012510	IC HD74HC125P
* IC209	XR273A00	IC LC75395E
* IC210	XR272A00	IC BA7726AS (RALT)
* IC211	XR276A00	IC BU9252S (RALT)
IC212	XB247301	IC uPC4570HA (RALT)
IC213	XA053A00	IC TC4052BP
IC214	XB247301	IC uPC4570HA
* IC215	XR275A00	IC BA3835S
IC216	iG055100	IC TC4053BP
IC217	XG938A00	IC BA15218N
IC218	XP265A00	IC BU2090
L201	Vi546100	COIL 220uH
L202	Vi546100	COIL 220uH
L203	Vi544500	COIL 10uH
L204	Vi544500	COIL 10uH
* PJ201	VT848700	JACK. PIN 2P
* Q201	VR402300	TR 2SB647 C, D
Q202	VR510800	TR 2SD2396 J, K
Q203	VG722000	TR. DGT DTC144ES
Q204	VR510800	TR 2SD2396 J, K
Q205	VG722000	TR. DGT DTC144ES
Q206	iC287820	TR 2SC2878 A, B
Q207	iA093320	TR 2SA933S Q, R
Q208	iC287820	TR 2SC2878 A, B
Q209	VD678500	TR. DGT DTA114ES
Q210	iC287820	TR 2SC2878 A, B
Q211	iC287820	TR 2SC2878 A, B
Q212	VK407600	TR 2SC4208A Q, R, S
Q213	VK407600	TR 2SC4208A Q, R, S
Q214	VG722000	TR. DGT DTC144ES
Q215	VG721700	TR. DGT DTA144ES
Q216	VD678500	TR. DGT DTA114ES
Q217	iC287820	TR 2SC2878 A, B
Q218	iC287820	TR 2SC2878 A, B
R237	VL207800	R. ARRAY RGL7X473J
R273	Vi868300	R. FUS 0.68Ω 1/6W
R300	HV454220	R. CAR. FP 22Ω 1/4W
R326	HV454220	R. CAR. FP 22Ω 1/4W
R368	HV454220	R. CAR. FP 22Ω 1/4W
R375	HV454220	R. CAR. FP 22Ω 1/4W
R383	HV454330	R. CAR. FP 33Ω 1/4W
R391	HV453220	R. CAR. FP 2.2Ω 1/4W
R399	VC757300	R. MIL. OXD 27Ω 2W
R400	VQ379500	R. ARRAY 10KΩ x4
SW201	VF541200	SW. SLIDE SSSF11 (R)
XL201	VJ719800	RSNR. CRY 16.9344MHz

* New Parts

P.C.B. INPUT & MAIN

Schm Ref.	PART NO.	Description
XL202	VE906000	RSNR. CE 4MHz
XL203	VJ958100	RSNR. CE CSB455E (RALT)
	VJ828000	PIN IMSA-6024-03E
	BB071360	SCR. TERM 8.3x13
	Vi835500	HEAT. SINK PH-0124S-B
* * * *	VU634700	P. C. B. MAIN(U)
	VU634800	P. C. B. MAIN(R)
	VU634900	P. C. B. MAIN(ABGLT)
	VV287500	P. C. B. MAIN(C)
	CB501	Vi879300 CN. BS. PIN 15P
	CB502	VM859600 CN. BS. PIN 15P
	CB503	VM689000 CN. BS. PIN 23P
	CB504	VP206500 HOLDER. FUS EYF-52BC
	CB505	VP206500 HOLDER. FUS EYF-52BC
	CB506	VD005000 CN. BS. PIN 7P
	CB507	VP573800 CN. BS. PIN 18P
*	CB508	VQ585000 CN. BS. PIN 8P
	CB509	VP206500 HOLDER. FUS EYF-52BC
	CB510	VG879900 CN. BS. PIN 2P
	CB511	VP206500 HOLDER. FUS EYF-52BC
*	CB512	VQ585000 CN. BS. PIN 8P
	CB513	VP206500 HOLDER. FUS EYF-52BC
	CB514	VP206500 HOLDER. FUS EYF-52BC
	CB515	VL845000 CN. BS. PIN 6P
	C501	UM417100 C. EL 10uF 50V
	C502	UM416470 C. EL 4.7uF 50V
	C503	VJ838800 C. EL 0.22uF 50V
	C504	VG278400 C. CE. TUBLR 220pF 50V
	C505	VG278400 C. CE. TUBLR 220pF 50V
	C506	VJ838800 C. EL 0.22uF 50V
	C507	VF466800 C. CE. TUBLR 100pF 50V
	C508	VF466800 C. CE. TUBLR 100pF 50V
	C509	VF466800 C. CE. TUBLR 100pF 50V
	C510	VF466800 C. CE. TUBLR 100pF 50V
	C511	UJ638330 C. EL 330uF 16V
	C512	UJ667470 C. EL 47uF 50V
	C513	UM416470 C. EL 4.7uF 50V
	C514	UJ667470 C. EL 47uF 50V
	C516	VF466800 C. CE. TUBLR 100pF 50V
	C517	VJ839000 C. EL 0.47uF 50V
	C518	VJ839000 C. EL 0.47uF 50V
	C519	VJ839200 C. EL 2.2uF 50V
	C520	VF466800 C. CE. TUBLR 100pF 50V
	C521	Ui367220 C. EL 22uF 50V
	C522	Ui367220 C. EL 22uF 50V
	C523	UA654100 C. MYLAR 0.01uF 50V
	C524	VG278400 C. CE. TUBLR 220pF 50V
	C525	VG278400 C. CE. TUBLR 220pF 50V
	C526	UA655100 C. MYLAR 0.1uF 50V
	C527	UA655100 C. MYLAR 0.1uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C528	VF466800	C. CE. TUBLR 100pF 50V
C529	UA655100	C. MYLAR 0.1uF 50V
C530	UA655100	C. MYLAR 0.1uF 50V
C531	VF466800	C. CE. TUBLR 100pF 50V
C532	UA655100	C. MYLAR 0.1uF 50V
C533	UA655100	C. MYLAR 0.1uF 50V
C534	VG278400	C. CE. TUBLR 220pF 50V
C535	VG278400	C. CE. TUBLR 220pF 50V
C536	UA654100	C. MYLAR 0.01uF 50V
C537	VJ839100	C. EL 1uF 50V
C538	UA654390	C. MYLAR 0.039uF 50V
C539	UA654390	C. MYLAR 0.039uF 50V
C540	VJ839100	C. EL 1uF 50V
C541	Ui367220	C. EL 22uF 50V
C542	VF964800	C. EL 100uF 16V
C543	VF964800	C. EL 100uF 16V
C544	Ui367220	C. EL 22uF 50V
C545	VF467300	C. CE. TUBLR 0.01uF 16V
C546	VF467000	C. CE. TUBLR 1000pF 50V
C547	VF467000	C. CE. TUBLR 1000pF 50V
C548	VJ839100	C. EL 1uF 50V
C549	VF467000	C. CE. TUBLR 1000pF 50V
C550	VF467000	C. CE. TUBLR 1000pF 50V
C551	VF467300	C. CE. TUBLR 0.01uF 16V
C552	UJ667470	C. EL 47uF 50V
C553	UM417100	C. EL 10uF 50V
C554	UJ668100	C. EL 100uF 50V
C555	UJ668100	C. EL 100uF 50V
C556	UA655100	C. MYLAR 0.1uF 50V
C557	UA655220	C. MYLAR 0.22uF 50V
C558	UA655330	C. MYLAR 0.33uF 50V
C559	UA655220	C. MYLAR 0.22uF 50V
C560	UA655330	C. MYLAR 0.33uF 50V
C561	UA655100	C. MYLAR 0.1uF 50V
C562	UJ668100	C. EL 100uF 50V
C563	VJ839000	C. EL 0.47uF 50V
C564	UA654330	C. MYLAR 0.033uF 50V
C565	FG212330	C. CE 330pF 50V
C566	VJ839100	C. EL 1uF 50V
C567	UA655100	C. MYLAR 0.1uF 50V
C568	VJ839100	C. EL 1uF 50V
C569	UM416470	C. EL 4.7uF 50V
C570	UM416470	C. EL 4.7uF 50V
C571	UM417100	C. EL 10uF 50V
C572	UM417100	C. EL 10uF 50V
C573	VF760000	C. EL 100uF 10V
C574	UM417100	C. EL 10uF 50V
C575	UM417100	C. EL 10uF 50V
C576	VF760000	C. EL 100uF 10V
C577	VJ839100	C. EL 1uF 50V
C578	UA655100	C. MYLAR 0.1uF 50V
C579	UM416470	C. EL 4.7uF 50V
C580	UM416470	C. EL 4.7uF 50V

* New Parts

P.C.B. MAIN

Schm Ref.	PART NO.	Description
C581	VJ839100	C. EL 1uF 50V
C582	FG212330	C. CE 330pF 50V
C583	UA654330	C. MYLAR 0.033uF 50V
C584	VJ839000	C. EL 0.47uF 50V
C585	VJ839100	C. EL 1uF 50V
C586	VJ839200	C. EL 2.2uF 50V
C587	UA654470	C. MYLAR 0.047uF 50V
C588	VG278800	C. CE. TUBLR 560pF 50V
C589	VS949500	C. EL 22uF 50V
C590	VS949500	C. EL 22uF 50V
C591	VG278800	C. CE. TUBLR 560pF 50V
C592	UA654470	C. MYLAR 0.047uF 50V
C593	UM417100	C. EL 10uF 50V
C594	UM417100	C. EL 10uF 50V
C595	UM215100	C. EL 0.1uF 50V
C596	UA654100	C. MYLAR 0.01uF 50V
C597	UM417100	C. EL 10uF 50V
C598	UA654100	C. MYLAR 0.01uF 50V
C599	UM417100	C. EL 10uF 50V
△* C600	VU434800	C. EL 4700uF 50V
△* C601	VU434800	C. EL 4700uF 50V
C602	VF760000	C. EL 100uF 10V
C603	VF467300	C. CE. TUBLR 0.01uF 16V
C604	VF467300	C. CE. TUBLR 0.01uF 16V
C605	UA654100	C. MYLAR 0.01uF 50V
C606	UM417100	C. EL 10uF 50V
C607	UM417100	C. EL 10uF 50V
C608	UM417100	C. EL 10uF 50V
C609	UM416470	C. EL 4.7uF 50V
C610	UM407220	C. EL 22uF 16V
C611	UM416470	C. EL 4.7uF 50V
C612	UJ648220	C. EL 220uF 25V
C613	UJ668100	C. EL 100uF 50V
C614	FG214100	C. CE 0.01uF 50V
C615	UA654100	C. MYLAR 0.01uF 50V
C616	UJ648220	C. EL 220uF 25V
C617	FG214100	C. CE 0.01uF 50V
C618	VR325300	C. MYLAR 0.047uF 100V
C619	VR325300	C. MYLAR 0.047uF 100V
C620	FG214100	C. CE 0.01uF 50V
C621	VH053100	C. CE. TUBLR 0.1uF 50V
C622	UJ668100	C. EL 100uF 50V
C623	UM215100	C. EL 0.1uF 50V
C624	UA653330	C. MYLAR 3300pF 50V
C625	UA653330	C. MYLAR 3300pF 50V
C626	VF466700	C. CE. TUBLR 47pF 50V
C627	VF466700	C. CE. TUBLR 47pF 50V
C628	VF467300	C. CE. TUBLR 0.01uF 16V
* D501	VG443100	DIODE. ZENR MTZJ27D 27V
D502	VG440500	DIODE. ZENR MTZJ13B 13V
D503	VG440500	DIODE. ZENR MTZJ13B 13V
D508	VD631600	DIODE 1SS133, 176, HSS104
D509	VD631600	DIODE 1SS133, 176, HSS104

* New Parts

Schm Ref.	PART NO.	Description
△ D510	VD631600	DIODE 1SS133, 176, HSS104
△ D511	iH001090	DIODE. BRG S4VB20 2.6A 200V
D512	VU264100	DIODE 1SR139-400
D513	VU264100	DIODE 1SR139-400
D514	VD631600	DIODE 1SS133, 176, HSS104
△ F501	KB000750	FUSE. MNI T2.0A 250V(RABGLT)
△ F501	VS822500	FUSE 2.0A 125V(UC)
△ F502	KB000680	FUSE 1.25A 250V(ABGLT)
△ F502	KB000760	FUSE T3.15A 250V(R)
△ F502	VS822800	FUSE T3.15A 125V(UC)
△ F503	KB001660	FUSE T1.60A 250V(R)
IC501	XB247301	IC uPC4570HA
IC502	XB247301	IC uPC4570HA
IC503	XN796A00	IC NJM2082L
△ IC504	Xi163A00	IC STK4152II 30W
* IC505	XR497A00	IC HA12182NT
IC506	XP265A00	IC BU2090
IC507	XL988A00	IC BA3312N
L501	VP916900	COIL. BIAS 105KHz
L502	VP916900	COIL. BIAS 105KHz
* L503	VU038100	COIL 1.5uH
* L504	VU038100	COIL 1.5uH
△ Q501	VR510800	TR 2SD2396 J, K
△ Q502	VR510800	TR 2SD2396 J, K
Q503	iA093320	TR 2SA933S Q, R
△* Q504	VR402300	TR 2SB647 C, D
△ Q505	VS883300	TR 2SB1565 E, F
Q506	VG722000	TR. DGT DTC144ES
Q507	VG722000	TR. DGT DTC144ES
△ Q510	VG721700	TR. DGT DTA144ES
△ Q511	VG722000	TR. DGT DTC144ES
Q512	iC174020	TR 2SC1740S R, S
Q513	iC174020	TR 2SC1740S R, S
Q514	VE613400	TR 2SD1858 Q, R
Q515	iC174020	TR 2SC1740S R, S
Q516	iC174020	TR 2SC1740S R, S
Q517	iC287820	TR 2SC2878 A, B
Q518	iC174020	TR 2SC1740S R, S
Q519	iC174020	TR 2SC1740S R, S
Q520	VD678500	TR. DGT DTA114ES
R515	VK187800	R. FUS 100Ω 1/4W
△ R527	HV453100	R. CAR. FP 1Ω 1/4W
△ R527	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R529	HV453100	R. CAR. FP 1Ω 1/4W
△ R529	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R532	HV453100	R. CAR. FP 1Ω 1/4W
△ R532	HV453470	R. CAR. FP 4.7Ω 1/4W
△ R533	HV453100	R. CAR. FP 1Ω 1/4W
R559	HV454220	R. CAR. FP 22Ω 1/4W
R561	HV454220	R. CAR. FP 22Ω 1/4W
R578	HV456220	R. CAR. FP 2.2KΩ 1/4W
R579	HV455100	R. CAR. FP 100Ω 1/4W
R580	HV456220	R. CAR. FP 2.2KΩ 1/4W

* New Parts

P.C.B. MAIN & OPERATION

Schm Ref.	PART NO.	Description
R592	HV456220	R. CAR. FP 2.2KΩ 1/4W
R593	HV456220	R. CAR. FP 2.2KΩ 1/4W
R618	HV454100	R. CAR. FP 10Ω 1/4W
R622	HV456100	R. CAR. FP 1KΩ 1/4W
R626	HV454100	R. CAR. FP 10Ω 1/4W
R627	HV456100	R. CAR. FP 1KΩ 1/4W
R641	HV454100	R. CAR. FP 10Ω 1/4W
R647	HV454100	R. CAR. FP 10Ω 1/4W
R666	VT424900	R. WW 0.22Ω 3W
R672	HL315560	R. MIL. OXD 560Ω 1W
R673	VT424900	R. WW 0.22Ω 3W
R677	HV453100	R. CAR. FP 1Ω 1/4W
R678	HV453100	R. CAR. FP 1Ω 1/4W
R682	HL335150	R. MIL. OXD 150Ω 3W
R689	HV453100	R. CAR. FP 1Ω 1/4W
R690	HV453100	R. CAR. FP 1Ω 1/4W
R693	HV453470	R. CAR. FP 4.7Ω 1/4W
R694	HV453470	R. CAR. FP 4.7Ω 1/4W
RY501	VU161600	RELAY SS-224DM3 (URABGLT)
RY501	VV272600	RELAY SS-224DM5 (C)
SW503	VA961800	VOLT. SELECT ESE-37247-F(R)
TE501	VT941500	TERM. SP 4P
TP501	VL448600	JUMPER. TST
VR501	VJ693600	VR. TRIM B10KΩ
VR502	VJ693600	VR. TRIM B10KΩ
	VJ828000	PIN IMSA-6024-03E
	VQ368600	PUSH. RIVET P3555-B
	VK865300	SCR 3x18 FCRM3-BL
	BB071360	SCR. TERM 8.3x13
	VN126800	HEAT. SINK UOT-16C25-MP
	VU635500	P. C. B. OPERATION (UCBG)
	VU635600	P. C. B. OPERATION (RALT)
CB801	VU163100	CN 20P
CB802	VU163100	CN 20P
CB803	VQ044800	CN. BS. PIN 18P
CB804	VD004500	CN. BS. PIN 2P
C801	UM416470	C. EL 4.7uF 50V
C802	VF466800	C. CE. TUBLR 100pF 50V
C803	VG278400	C. CE. TUBLR 220pF 50V
C804	VJ402700	C. EL 0.33uF 50V
C805	VJ402700	C. EL 0.33uF 50V
C806	VG278400	C. CE. TUBLR 220pF 50V
C807	UM416470	C. EL 4.7uF 50V
C808	VH053100	C. CE. TUBLR 0.1uF 50V
C812	VJ839100	C. EL 1uF 50V
C813	VJ836900	C. EL 10uF 16V
C814	VH053100	C. CE. TUBLR 0.1uF 50V
C815	VJ839100	C. EL 1uF 50V
C816	VF466800	C. CE. TUBLR 100pF 50V
C817	VF467000	C. CE. TUBLR 1000pF 50V

* New Parts

Schm Ref.	PART NO.	Description
C818	VF467000	C. CE. TUBLR 1000pF 50V
C819	VJ836900	C. EL 10uF 16V
C820	VA761000	C. CE 22pF 50V
C821	VA761000	C. CE 22pF 50V
C822	VH053100	C. CE. TUBLR 0.1uF 50V
C823	VF467300	C. CE. TUBLR 0.01uF 16V
C824	VH484100	C. CE. ARRAY 100pF 50V
C825	VF467300	C. CE. TUBLR 0.01uF 16V
C826	VS672200	C. EL 4700uF 5.5V
C827	VJ839100	C. EL 1uF 50V
C831	VJ599000	C. CE. TUBLR 0.047uF 16V
C832	VJ599000	C. CE. TUBLR 0.047uF 16V
C833	VH053100	C. CE. TUBLR 0.1uF 50V
C834	VJ836900	C. EL 10uF 16V
C835	VH053100	C. CE. TUBLR 0.1uF 50V
D801	VD631600	DIODE 1SS133, 176, HSS104
D802	VD631600	DIODE 1SS133, 176, HSS104
D803	VD631600	DIODE 1SS133, 176, HSS104
D806	VD631600	DIODE 1SS133, 176, HSS104
D807	VD631600	DIODE 1SS133, 176, HSS104
D808	VD631600	DIODE 1SS133, 176, HSS104
D809	VD631600	DIODE 1SS133, 176, HSS104
D810	VG437600	DIODE. ZENR MTZJ5.6A 5.6V
IC801	XB247301	IC uPC4570HA (RALT)
IC802	XB247301	IC uPC4570HA (RALT)
IC803	XR226A00	IC M38197MA-XXXFP CPU
* JK801	VT941600	JACK. MNI HTJ-035-17AB (RALT)
* JK802	VT941600	JACK. MNI HTJ-035-17AB (RALT)
* JK803	VT941600	JACK. MNI HTJ-035-17AB
Q801	VD488500	TR. DGT DTC143XS
R889	VN001500	R. ARRAY 100KΩ x8
R890	HV454680	R. CAR. FP 68Ω 1/4W
R891	HV454680	R. CAR. FP 68Ω 1/4W
SW801	VG392900	SW. TACT SKHVAA
SW802	VG392900	SW. TACT SKHVAA
SW803	VG392900	SW. TACT SKHVAA
SW804	VG392900	SW. TACT SKHVAA
SW805	VG392900	SW. TACT SKHVAA
SW806	VG392900	SW. TACT SKHVAA
SW807	VG392900	SW. TACT SKHVAA
SW808	VG392900	SW. TACT SKHVAA
SW809	VG392900	SW. TACT SKHVAA
SW810	VG392900	SW. TACT SKHVAA
* SW811	VT941400	SW. RT. ENC EC16B24304
SW812	VG392900	SW. TACT SKHVAA
SW813	VG392900	SW. TACT SKHVAA
SW814	VG392900	SW. TACT SKHVAA
SW815	VG392900	SW. TACT SKHVAA
SW816	VG392900	SW. TACT SKHVAA
SW817	VG392900	SW. TACT SKHVAA
SW818	VG392900	SW. TACT SKHVAA
SW819	VG392900	SW. TACT SKHVAA
SW820	VG392900	SW. TACT SKHVAA

* New Parts

P.C.B. OPERATION

Schm Ref.	PART NO.	Description
SW821	VG392900	SW. TACT SKHVAA
SW822	VG392900	SW. TACT SKHVAA
SW823	VG392900	SW. TACT SKHVAA
SW824	VG392900	SW. TACT SKHVAA
SW825	VG392900	SW. TACT SKHVAA
SW826	VG392900	SW. TACT SKHVAA
SW827	VG392900	SW. TACT SKHVAA
SW828	VG392900	SW. TACT SKHVAA
SW829	VG392900	SW. TACT SKHVAA
SW830	VG392900	SW. TACT SKHVAA
SW831	VG392900	SW. TACT SKHVAA
SW832	VG392900	SW. TACT SKHVAA
SW833	VG392900	SW. TACT SKHVAA
SW834	VG392900	SW. TACT SKHVAA
SW835	VG392900	SW. TACT SKHVAA
SW836	VG392900	SW. TACT SKHVAA
SW837	VG392900	SW. TACT SKHVAA
SW839	VG392900	SW. TACT SKHVAA
U801	VM485300	L. DTCT GPIU581X
* V801	VT917100	FL. DSPLY BJ424GK
VR801	VR933500	VR A10KΩ (RALT)
XL801	VQ328900	RSNR. CRY32.768KHz
XL802	VJ802400	RSNR. CE 8MHz
	VJ828000	PIN IMSA-6024-03E
	VU351500	SPACER FL
	VU635800	SHEET. FL

* New Parts

P.C.B. DECK MECHANISM

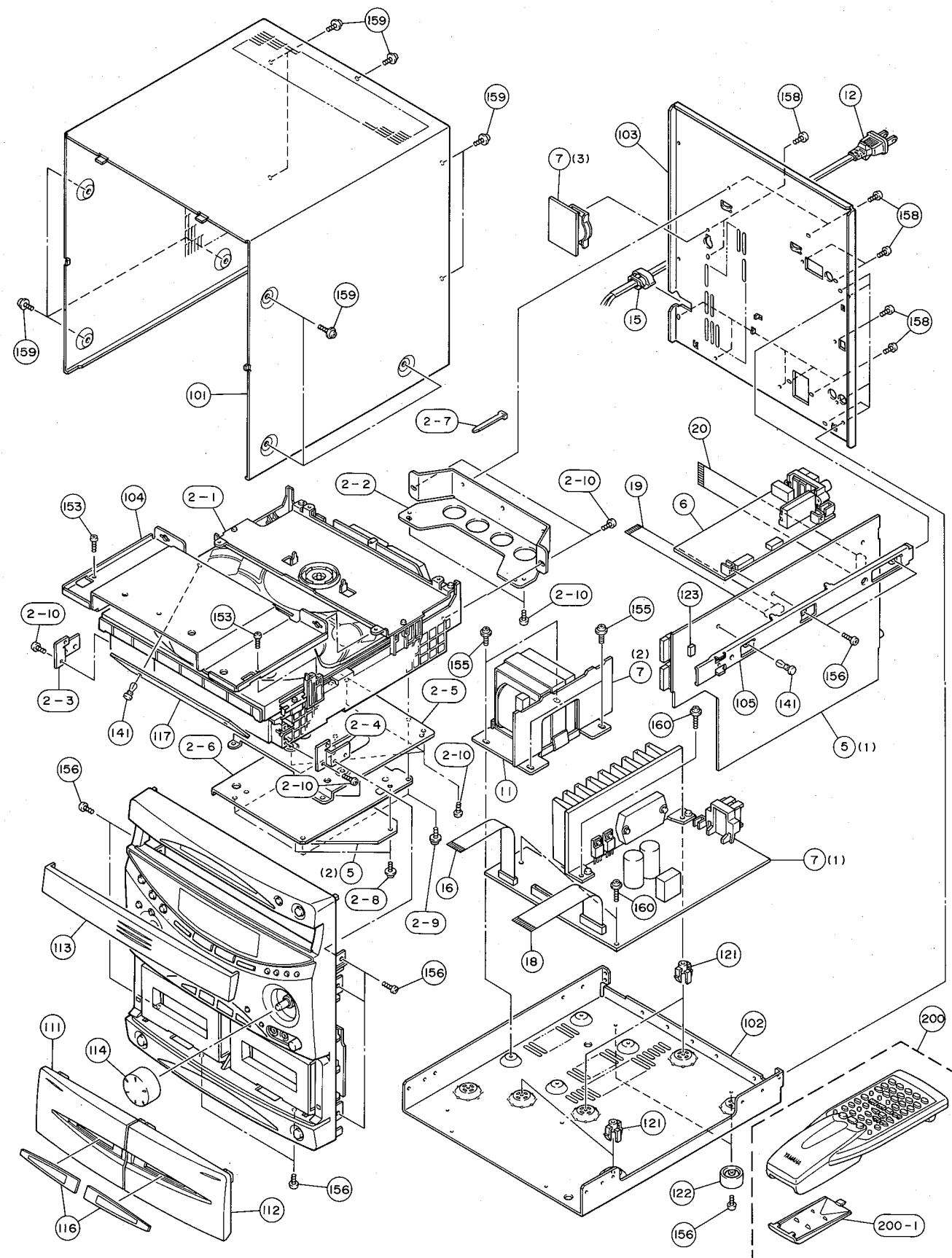
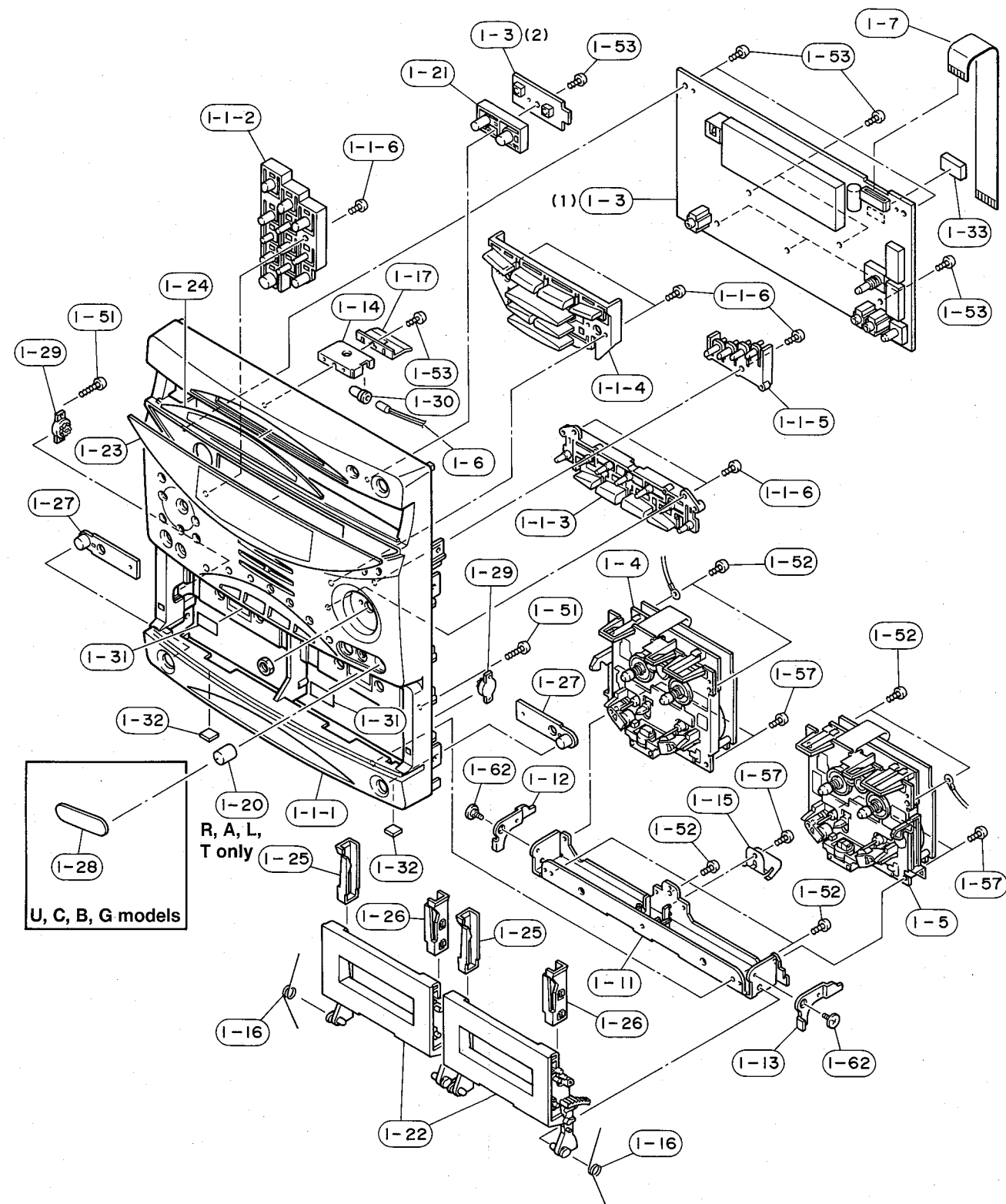
Schm Ref.	PART NO.	Description	Remarks
* NX635320	P. C. B.	MECH.	P282620000
C1	FG212560	C. CE	560pF 50V CK45FB1H561K
C2	FG212560	C. CE	560pF 50V CK45FB1H561K
C5	UM417100	C. EL	10uF 50V CE04LW1V100M
C6	UM417100	C. EL	10uF 50V CE04LW1V100M
C7	FG212390	C. CE	390pF 50V CK45FB1H391K
C8	FG212390	C. CE	390pF 50V CK45FB1H391K
C9	UA654220	C. POL	0.022uF 50V CQ92FMIH223J
C10	UA654220	C. POL	0.022uF 50V CQ92FMIH223J
C11	VJ837200	C. EL	47uF 16V CE04LW1C470M
C12	VJ837200	C. EL	47uF 16V CE04LW1C470M
C13	UM417100	C. EL	10uF 50V CE04LW1V100M
C14	UT653820	C. PP	8200pF 100V CQ93HP2A822J
C15	FG212220	C. CE	220pF 50V CC45FSL1H221J
C16	FG212220	C. CE	220pF 50V CC45FSL1H221J
C17	FG212220	C. CE	220pF 50V CC45FSL1H221J
C18	FG212220	C. CE	220pF 50V CC45FSL1H221J
C19	FX611440	C. CE	470pF 500V CK45FB2H471K
C20	UM416470	C. EL	4.7uF 50V CE04LW1V4R7M
C21	FG413330	C. CE	3300pF 50V CK45FB1H332K
C22	FG413330	C. CE	3300pF 50V CK45FB1H332K
C23	UG444100	C. CE	0.01uF 50V CK45FF1H103Z
C24	FG213100	C. CE	1000pF 50V CK45FB1H102K
C51	FG212220	C. CE	220pF 50V CC45FSL1H221J
C52	FG212220	C. CE	220pF 50V CC45FSL1H221J
C53	FG212470	C. CE	470pF 50V CK45FB1H471K
C54	FG212470	C. CE	470pF 50V CK45FB1H471K
C55	UM417100	C. EL	10uF 50V CE04LW1V100M
C56	UM417100	C. EL	10uF 50V CE04LW1V100M
C57	FG212390	C. CE	390pF 50V CK45FB1H391K
C58	FG212390	C. CE	390pF 50V CK45FB1H391K
C59	VJ837200	C. EL	47uF 16V CE04LW1C470M
C60	VJ837200	C. EL	47uF 16V CE04LW1C470M
C61	UA654150	C. POL	0.015uF 50V CQ92FMIH153J
C62	UA654150	C. POL	0.015uF 50V CQ92FMIH153J
C63	UM417100	C. EL	10uF 50V CE04LW1V100M
C64	FG213100	C. CE	1000pF 50V CK45FB1H102K
CN1	LX610080	CN	5P E40324905
CN2	LX610090	CN	15P E40424405
CN3	LX610110	CN. FLAT	23P E40416305
CN4	LX610070	CN	3P E40324705
CN5	LX610090	CN	15P E40424405
CN6	LX610100	CN. FLAT	15P E40415505
D7	iF006130	DIODE	1SS133 1SS133
D8	iF006130	DIODE	1SS133 1SS133
D9	iF006130	DIODE	1SS133 1SS133
D54	iF006130	DIODE	1SS133 1SS133
D55	iF006130	DIODE	1SS133 1SS133
IC1	iX636420	IC	TA8125S
IC2	iX636420	IC	TA8125S
J1	VB966900	PIN	30mm
J2	VB966900	PIN	30mm
K1	VM640200	RELAY	RY12W-OH-K DC12V S76001805

* New Parts

Schm Ref.	PART NO.	Description	Remarks
L1	GX609350	COIL	10mH LA0103520
L2	GX609350	COIL	10mH LA0103520
L3	GX609360	COIL	L32054205
Q1	iX636450	TR	2SC3246 H, J, K 2SC3246
Q2	iX636450	TR	2SC3246 H, J, K 2SC3246
Q3	iX636440	TR	2SC1845 F, E 2SC1845
Q4	iX636440	TR	2SC1845 F, E 2SC1845
Q5	iX636430	TR	2SA992 F, E 2SA992
Q6	iA093320	TR	2SA933S Q, R 2SA933S
Q7	iC174070	TR	2SC1740S R, S, Q, E 2SC1740
Q8	VF331200	TR. DGT	DTC124ES DTC124ES
Q9	iC174070	TR	2SC1740S R, S, Q, E 2SC1740
Q10	iC174070	TR	2SC1740S R, S, Q, E 2SC1740
Q11	iC174070	TR	2SC1740S R, S, Q, E 2SC1740
Q12	iC174070	TR	2SC1740S R, S, Q, E 2SC1740
Q13	iX636450	TR	2SC3246 H, J, K 2SC3246
Q14	iX636450	TR	2SC3246 H, J, K 2SC3246
Q15	iA093320	TR	2SA933S Q, R 2SA933S
Q16	iC174070	TR	2SC1740S R, S, Q, E 2SC1740
Q17	VF331200	TR. DGT	DTC124ES DTC124ES
Q18	VF331200	TR. DGT	DTC124ES DTC124ES
Q19	VF331200	TR. DGT	DTC124ES DTC124ES
VR1	VJ693600	VR. TRIM	B10KΩ R12368505
VR2	VJ693800	VR. TRIM	B22KΩ R12368605
VR3	VJ692600	VR. TRIM	B220Ω R12060505
VR4	VJ692600	VR. TRIM	B220Ω R12060505
VR5	HX609810	VR	100KΩ R12508605
VR6	HX609810	VR	100KΩ R12508605
VR7	VJ693600	VR. TRIM	B10KΩ R12368505
VR8	VJ693800	VR. TRIM	B22KΩ R12368605
VR9	VJ692700	VR. TRIM	B330Ω R12060605
VR10	VJ692700	VR. TRIM	B330Ω R12060605

* New Parts

■ EXPLODED VIEW



MECHANICAL PARTS

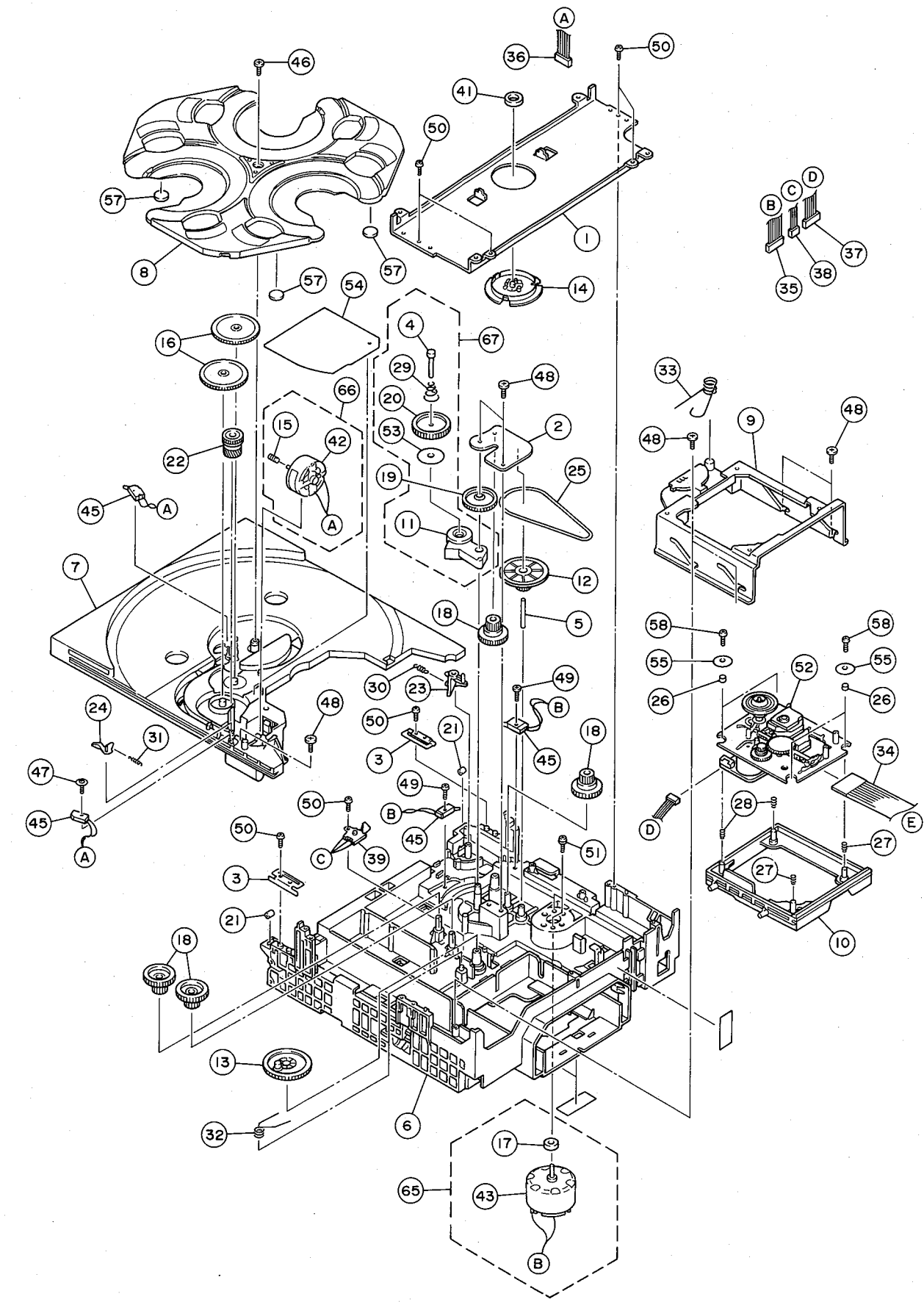
Ref. No.	PART NO.	Description	Remarks	Markets
* 1-1-1	VU352600	FRONT PANEL		(UC)
* 1-1-1	VU352700	FRONT PANEL		(BG)
* 1-1-1	VU354600	FRONT PANEL		(RALT)
* 1-1-2	VU350000	BUTTON	12P	
* 1-1-3	VU350100	BUTTON	11P	
* 1-1-4	VU350200	BUTTON	8P	
* 1-1-5	VU350300	BUTTON	4P	
1-1-6	VD887600	BIND HEAD P-TITE SCREW	2.6x10 MFZN2-BL	
* 1-3	VU635500	P.C.B. ASS'Y	OPERATION	(UCBG)
* 1-3	VU635600	P.C.B. ASS'Y	OPERATION	(RALT)
* 1-4	VU638500	CASSETTE DECK MECHANISM		
* 1-5	VU638600	CASSETTE DECK MECHANISM		
1-6	VH471600	LAMP	115mA 14.5V	
1-7	MF118350	FLEXIBLE FLAT CABLE	18P 350mm	
* 1-11	VU352000	HOLDER		
* 1-12	VU352100	LEVER	EJ-L	
* 1-13	VU360800	LEVER	EJ-R	
* 1-14	VU352500	HOLDER	LAMP	
* 1-15	VU352200	GROUND PLATE		
1-16	VS336600	SPRING	D5.6T	
1-17	VV173900	FRAME	SHIELD	
* 1-20	VU351000	KNOB	D10	(RALT)
* 1-21	VU350400	BUTTON	2P	
* 1-22	VU351700	HOUSING		
* 1-23	VU351100	WINDOW PANEL, LID	FL	
* 1-24	VU351400	WINDOW PANEL, LID	CD	
* 1-25	VU351800	GUIDE, CASSETTE	L	
* 1-26	VU351900	GUIDE, CASSETTE	R	
* 1-27	VU350500	BUTTON	EJ	
* 1-28	VU352800	PLATE	MASK	(UCBG)
1-29	VQ354000	DAMPER, GEAR		
1-30	VF444500	LAMP CAP	AG-4015	
1-31	VQ146900	LABEL B.P		
1-32	VS010000	CUSHION, LEG		
1-33	VV259300	SPACER	FFC	
1-51	EK093040	BIND HEAD P-TITE SCREW	3x12 ZMC2-Y	
1-52	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL	
1-53	VD887600	BIND HEAD P-TITE SCREW	2.6x10 MFZN2-BL	
1-57	EP600130	BIND HEAD B-TITE SCREW	3x6 ZMC2-Y	
1-62	VR020500	SHOULDER SCREW	ST3 D6x4	
* 2-1	VU638400	CDC MECHANISM UNIT	YMHB310	
* 2-2	VU353900	FRAME	REAR	
* 2-3	VU354100	FRAME	F-L	
* 2-4	VU354200	FRAME	F-R	
2-5	VU915700	FRAME	PCB	
2-6	VV262200	PLATE	PCB	
2-7	VU590000	BINDING TIE	CBTD001B	
2-8	VU398200	PW HEAD S-TITE SCREW	2x5-5 MFZN2Y	
2-9	EK930010	PW HEAD B-TITE SCREW	3x8-8 FCRM3-BL	
2-10	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL	
* 5	VU633700	P.C.B. ASS'Y	INPUT	(UC)
* 5	VU633800	P.C.B. ASS'Y	INPUT	(R)
* 5	VU633900	P.C.B. ASS'Y	INPUT	(ALT)

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 5	VU634000	P.C.B. ASS'Y	INPUT	(BG)
* 6	VU690200	P.C.B. ASS'Y	TUNER	(UC)
* 6	VU690400	P.C.B. ASS'Y	TUNER	(A)
* 6	VU690500	P.C.B. ASS'Y	TUNER	(BG)
* 6	VU690600	P.C.B. ASS'Y	TUNER	(LT)
* 7	VU634700	P.C.B. ASS'Y	MAIN	(U)
* 7	VU634800	P.C.B. ASS'Y	MAIN	(R)
* 7	VU634900	P.C.B. ASS'Y	MAIN	(ABGL)
7	VV287500	P.C.B. ASS'Y	MAIN	(C)
△ * 11	XR847A00	POWER TRANSFORMER		(UC)
△ * 11	XR848A00	POWER TRANSFORMER		(R)
△ * 11	XR849A00	POWER TRANSFORMER		(A)
△ * 11	XR850A00	POWER TRANSFORMER		(BGLT)
△ 12	VQ508500	POWER CORD ASS'Y		(R)
△ 12	VQ508600	POWER CORD ASS'Y		(A)
△ 12	VS168300	POWER CORD ASS'Y		(UC)
△ 12	VS168400	POWER CORD ASS'Y		(GLT)
△ 12	VS680700	POWER CORD ASS'Y		(B)
15	VN158600	CORD STOPPER	No. 2104	
16	MF115140	FLEXIBLE FLAT CABLE	15P 140mm	
18	MF123140	FLEXIBLE FLAT CABLE	23P 140mm	
19	MF112200	FLEXIBLE FLAT CABLE	12P 200mm	
20	MF120250	FLEXIBLE FLAT CABLE	20P 250mm	
* 101	VU352900	TOP COVER		
* 102	VU353000	CHASSIS		
* 103	VU353200	REAR PANEL		(U)
* 103	VU353300	REAR PANEL		(C)
* 103	VU353400	REAR PANEL		(R)
* 103	VU353500	REAR PANEL		(A)
* 103	VU353600	REAR PANEL		(B)
* 103	VU353700	REAR PANEL		(G)
* 103	VU353800	REAR PANEL		(LT)
* 104	VU352300	HOLDER	REFLECTOR	
* 105	VU354000	FRAME	SIDE	
* 111	VU350600	LID	DECK-L	
* 112	VU350700	LID	DECK-R	
* 113	VU350800	LID	CD	
* 114	VU350900	KNOB	D36	
* 116	VU351200	WINDOW PANEL, LID	DECK	
* 117	VU352400	REFLECTOR	CD	
121	VR264400	SPACER	H8	
122	VS009900	LEG	22x12.5	
123	VS936800	DAMPER	3x5x10	
141	VQ368500	PUSH RIVET	P3545-B	
153	VD887600	BIND HEAD P-TITE SCREW	2.6x10 MFZN2-BL	
155	VU081700	PAN W.HEAD TAPPING SCREW	4x6-10 MFZN2-BL	
156	Ei330086	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
158	EN301010	BIND HEAD BONDING TAP. SCREW	3x8 FCRM3-BL	
159	VE529700	PW HEAD B-TITE SCREW	3x6-8 FCRM3-BL	
160	VT669400	PW HEAD B-TITE SCREW	3x15-8 MFC2	
* 200	VU506200	ACCESSORIES		
200-1	CX679050	REMOTE CONTROL TRANSMITTER		
	VQ147100	LID	74x34BLALPS	
	VR248500	ANTENNA, FM	1P 1.4m	
		ANTENNA, AM LOOP	1P 1.0m	
		BATTERY, MANGANESE	SUM-3, AA, R06	

* New Parts

EXPLODED VIEW (CD Mechanical Unit)



MECHANICAL PARTS (CD Mechanical Unit)

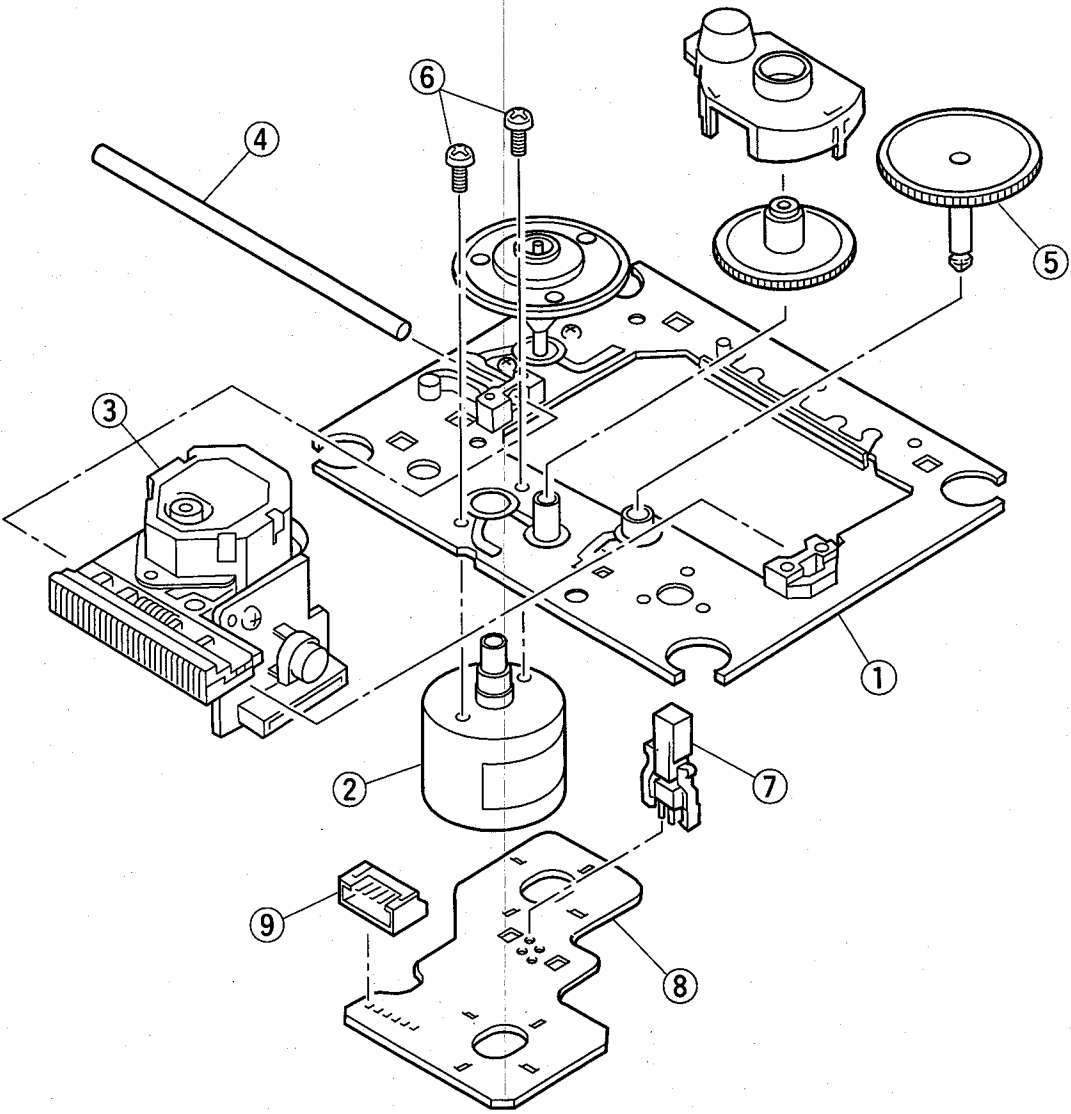
Ref. No.	PART NO.	Description	Remarks	Markets
*	VU633600	CD MECHANISM UNIT	YMHB310	
1	CX679550	BRACKET, CLAMP	C3B1007	
2	CX679540	BRACKET, GEAR	C3D1002	
3	CX679560	BRACKET, TRAY	C3D1003	
4	AX623770	SHAFT, FRICTION-B	C3D8014	
5	AX623780	SHAFT, PULLEY	C3D2002	
6	AX623930	CHASSIS, MAIN	C3A3001	
7	CX679430	TRAY, SLIDE	C3A3002	
8	CX679440	TRAY, ROTARY	C3A3003	
9	CX679410	SLIDER, LIFT	C3B3024	
10	AX623880	FRAME, MD-B	C3B3023	
11	AX623620	ARM, FRICTION	C3C3006	
12	AX623900	PULLEY, LOAD	C3C3010	
13	CX679280	CAM GEAR, UP/DOWN	C3C3014	
14	CX679380	CLAMPER	C3C3028	
15	CX679320	GEAR, WORM	C3D3007	
16	CX679310	GEAR, IDLER	C3D3008	
17	JX601690	MOTOR, PULLEY (B)	PD3039	
18	CX679360	GEAR, LOAD	C3D3011	
19	CX679330	GEAR, CENTER	C3D3012	
20	CX679340	GEAR, FRICTION	C3D3013	
21	AX623940	ROLLER, TRAY	C3D3015	
22	CX679350	GEAR, HELICAL	C3D3017	
23	CX679650	LEVER, LOCK	C3D3018	
24	CX679640	LEVER, BRAKE	C3D3029	
25	CX679460	DRIVE BELT	C3D4001	
26	CX679260	INSULATOR	C3D4003	
27	EX603430	SPRING, MD-G	C3D6011	
28	EX603440	SPRING, MD-H	C3D6012	
29	EX603460	SPRING, FRICTION	C3D6003	
30	EX603490	SPRING, LOCK	C3D6005	
31	EX603470	SPRING, BRAKE	C3D6014	
32	EX603450	SPRING, CAM	C3D6007	
33	EX603480	SPRING, LEFT	C3D6013	
34	LX610060	FFC	C3D9031	
35	MX605000	WIRE	C3D9035	
36	MX604960	FLAT WIRE	C3D9034	
37	MX605010	WIRE	C3D9020	
38	MX605020	WIRE	C3D9021	
39	CX679670	LEVER SWITCH	S332061	
41	AX623920	MAGNET	T990544	
42	JX601670	MOTOR	RF-500TB-12560	91300130
43	JX601680	MOTOR	MNN-6F1LBOK	91433136
45	CX679660	LEVER SWITCH	JPS1220-0201	C3C9032
46	EX603600	SCREW (F)		C3D8010
47	EX603570	SCREW (B)		C3D8004
48	EX603580	SCREW (C)		C3D8005
49	EX603630	BIND HEAD TAPPING SCREW	2x12	8114512012
50	EX603640	BIND HEAD TAPPING SCREW	2.6x8	8114512608
51	EX603590	SCREW (E)		C3D8009
52	NX635360	TRAVERSE UNIT	KSM-213BCM	90438002
53	CX679510	FELT, FRICTION		C3D8001
54	CX679270	NEW COVER		C3D8019

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
55	EX603810	WASHER	C3D8018	
57	CX679400	SHEET, TRAY-B	C3D8015	
58	EX603620	BIND HEAD TAPPING SCREW	8114512008	
65	JX601720	MOTOR ASS'Y, PULLEY	C3D9008	
66	JX601700	MOTOR ASS'Y, WORM	C3D9007	
67	AX623870	FRICITION ARM ASS'Y	C3D3022	

* New Parts

EXPLODED VIEW (Traverse Unit)

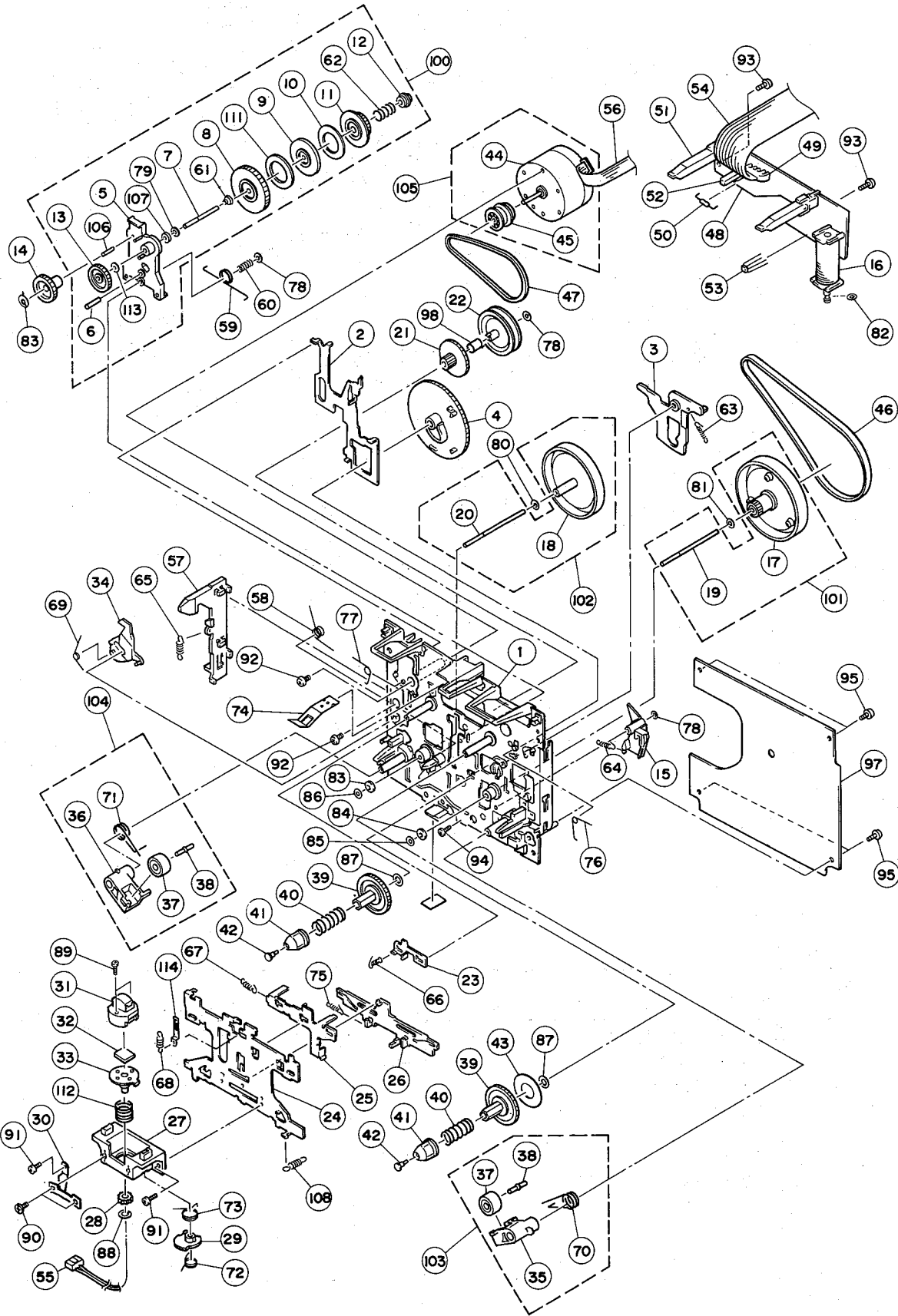


Ref. No.	PART NO.	Description	Remarks	Markets
*	NX635360	TRAVERSE UNIT	KSM-213BCM	90438002
*	1	NX635420	MOTOR CHASSIS ASS'Y (MB)	X26258771
*	2	CX679710	MOTOR GEAR ASS'Y (S)	X26257691
*	3	PX601970	OPTICAL DEVICE (RP)	884836711
*	4	AX623980	SLED SHAFT	262690801
*	5	CX679720	GEAR, A	262690701
*	6	EA020036	PAN HEAD SCREW 2x3 ZMC2-Y	762125515
*	7	KX604660	LEAF SWITCH	157208511
*	8	NX613040	PWB, MOTOR 6P(S)	163967813
*	9	LX610120	CONNECTOR PIN 6P	156472211

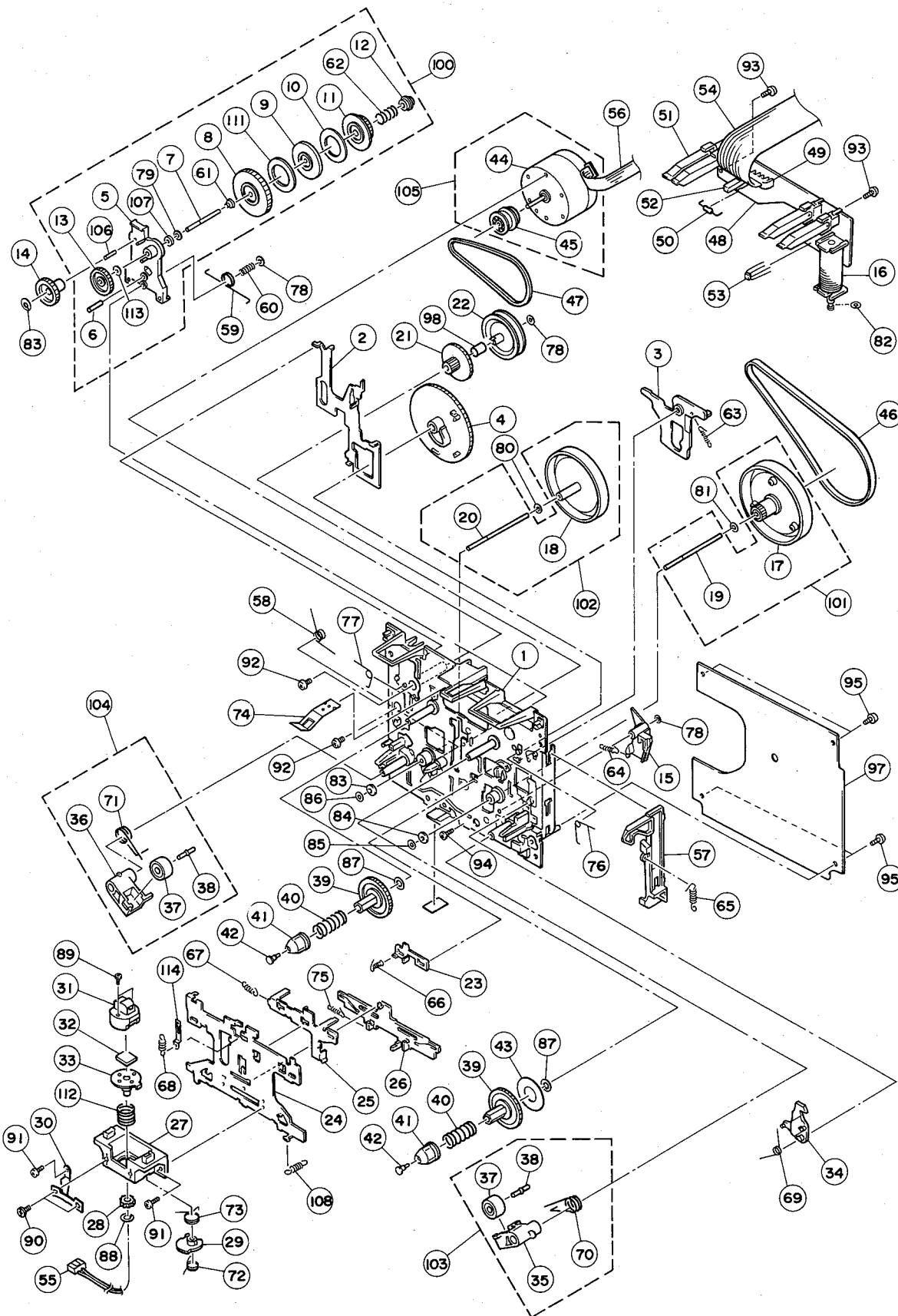
* New Parts

EXPLODED VIEW (Deck Mechanism)

Deck 1 (PB)



Deck 2 (R/P)



MECHANICAL PARTS (Deck 1 & 2)

Ref. No.	PART NO.	Description	Remarks	Markets
* 1	VU638500	CASSETTE DECK MECHANISM	(PB)YHMB2300	
* 2	VU638600	CASSETTE DECK MECHANISM	(R/P)YHMB2600	
1	AX623760	CHASSIS OS ASS'Y (B)		MOC3034
2	AX623720	SHIFT LEVER		MOC1003
3	AX623800	TRIGGER ARM		MOC3004
4	CX679290	CAM GEAR		MOB3002
5	AX623680	CLUTCH ARM		MOC3069
6	AX623690	CLUTCH PIN		MOD2005
7	AX623710	CLUTCH SHAFT		MOD2003
8	CX679570	PLAY GEAR		MOD3012
9	CX679500	FELT TABLE		MOD3010
10	CX679520	FELT (B)		MOD8007
11	CX679200	F/R GEAR		MOD3011
12	CX679220	SP STOPPER		MOD3013
13	CX679450	DRIVE GEAR		MOD3009
14	CX679210	REW GEAR		MOD3014
15	AX623950	HEAD CHANGE ARM		MOC3006
16	NX635350	SOLENOID ASS'Y		MOD9002
17	AX623860	FLYWHEEL (R)		MOC3007
18	AX623850	FLYWHEEL (L)		MOD3021
19	AX623670	CAPSTAN SHAFT (R)		MOD2009
20	AX623660	CAPSTAN SHAFT (L)		MOD2010
21	CX679230	IDLER GEAR		MOD3015
22	AX623630	IDLER PULLEY		MOD3016
23	CX679190	C/R LEVER		MOD1005
24	AX623740	HEAD CHASSIS		MOB1002
25	CX679690	SELECT LEVER		MOC1004
26	AX623960	HEAD RETURN PLATE		MOC3005
27	AX623910	HEAD BASE		MOB3036
28	CX679680	ROTATION GEAR		PD3034
29	CX679630	RETURN GEAR		MOD3019
30	EX603360	AZIMUTH SPR (B)		MOD1014
31	PX601950	ROTATION HEAD	(R/P)YK56R-AA405	92070222
31	PX601960	ROTATION HEAD	(PB)MK10P-AB215	92070223
32	CX679580	HEAD WIRE CLAMP		PD8011
33	NX635410	HEAD PLATE ASS'Y		MOD1036
34	AX623640	INTER LOCK ARM (L)		MOC3025
34	AX623650	INTER LOCK ARM (R)		MOC3024
35	AX623830	PINCH ARM (R)		MOC3022
36	AX623820	PINCH ARM (L)		MOC3023
37	AX623840	PINCH ROLLER (B)		MOD4018
38	AX623600	P ROLLER SHAFT (B)		MOD8013
39	CX679610	REEL GEAR		MOD3017
40	EX603300	B.T SPRING		MOD6015
41	CX679600	REEL CAP (A)		FC3037
42	CX679620	REEL BUSH		FDS3029
43	CX679700	REFLECT SEAL		GKD8002
44	JX601660	MOTOR	MS15U2LWA	91133135
45	AX623890	MOTOR PULLEY		MOD2016
46	CX679470	DRIVE BELT		MOD4001
47	CX679370	CLUTCH BELT		MOD4002
48	NX635330	P.C.B., MECH.		MOC9001
49	CX679390	CABLE HOLDER		FC3054

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
50	HX609820	RESISTOR	1.5K/RD16C15	99177073
51	KX604640	REC SWITCH		MOC9003
52	KX604650	PLAY SWITCH		MOC9004
53	IX636460	PHOTO INTERRUPTER	SG107LF	GKD9012
54	MX604950	FLAT RIBBON WIRE	15P	FD9025
55	MX604970	HEAD WIRE ASS'Y	3P	MOD9005
55	MX604980	HEAD WIRE ASS'Y	5P	MOD9006
56	MX604990	MOTOR WIRE		MOD9009
57	CX679240	EJECT LEVER (L)		MOC3027
57	CX679250	EJECT LEVER (R)		MOC3026
58	AX623730	SHIFT LEVER SP		MOD6002
59	EX603830	CLUTCH ARM SPRING (B)		MOD6022
60	EX603410	CLUTCH SP		MOD6035
61	EX603540	TORQUE SP (PLAY) C		MOD6031
62	EX603530	TORQUE SP (F/R)		MOD6014
63	AX623810	TRIGGER ARM SP		MOD6005
64	EX603800	HEAD CHANGE ARM SP		MOD6006
65	EX603370	EJECT SP		MOD6017
66	EX603310	C/R LEVER SP		MOD6007
67	EX603820	SELECT SP		MOD6003
68	EX603420	SHIFT SP		MOD6001
69	EX603380	INTER LOCK SP (L)		MOD6018
69	EX603390	INTER LOCK SP (R)		MOD6019
70	EX603680	PINCH SP (R)		MOD6009
71	EX603670	PINCH SP (L)		MOD6010
72	EX603790	RETURN SPR		MOD6008
73	EX603320	FWD SPR		MOD6016
74	EX603400	SPRING, CASSETTE		PD1009
75	AX623970	HEAD RETURN PLATE SP		MOD6004
76	EX603700	BRAKE SP (R)		MOD6020
77	EX603690	BRAKE SP (L)		MOD6021
78	EX603710	POLY WASHER	1.57x4x05	8341115998
79	EX603710	POLY WASHER	1.57x4x05	8341115998
80	EX603780	POLY WASHER	2.1x5.0x0.25	8342121030
81	EX603750	POLY WASHER	2.3x5.0x0.25	8341123103
82	EX603720	POLY WASHER	1.65x5.0x0.13	8341116104
83	EX603730	POLY WASHER	1.65x5.0x0.5	8341116591
84	EX603740	POLY WASHER	1.8x6.0x0.5	8341118065
85	EX603560	NYLON WASHER	2.19x5.5x0.5	8340421023
86	EX603550	NYLON WASHER	1.9x5.0x0.5	8340419002
87	EX603520	TEFRON WASHER	4.1x5.5x0.25	8340504111
88	EX603760	POLY WASHER	3.4x6.0x0.5	8541335018
89	EX603330	HEAD SCREW (RVS)		ZD8725
90	EX603350	AZIMUTH SCREW		MOD8005
91	EX603510	TAP TITE SCREW	2x5	8113112005
92	EX603660	BIND HEAD SCREW	2.6x4	8115512604
93	EX603500	TAPPING SCREW	2x6	8114112006
94	EX603650	BIND HEAD TAP TITE SCREW		8113512004
95	EX603610	BIND HEAD TAPPING SCREW		8114512006
97	NX635310	P.C.B. ASS'Y		P28262000
98	CX679420	TUBE		MOD9016
100	NX635340	CLUTCH ARM ASS'Y		MOC3083
101	NX635390	FLYWHEEL (R) ASS'Y		MOD3031

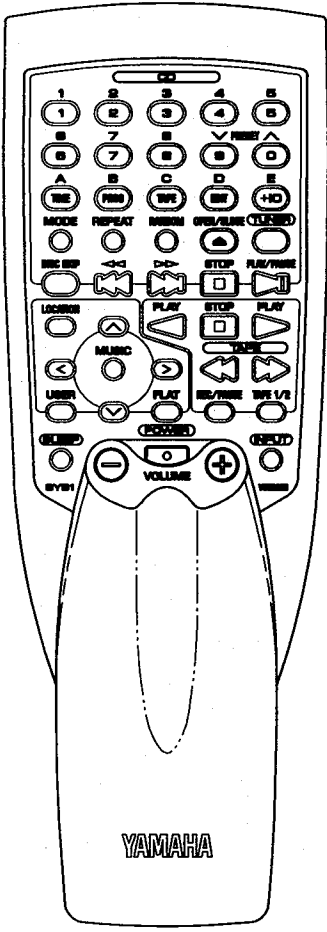
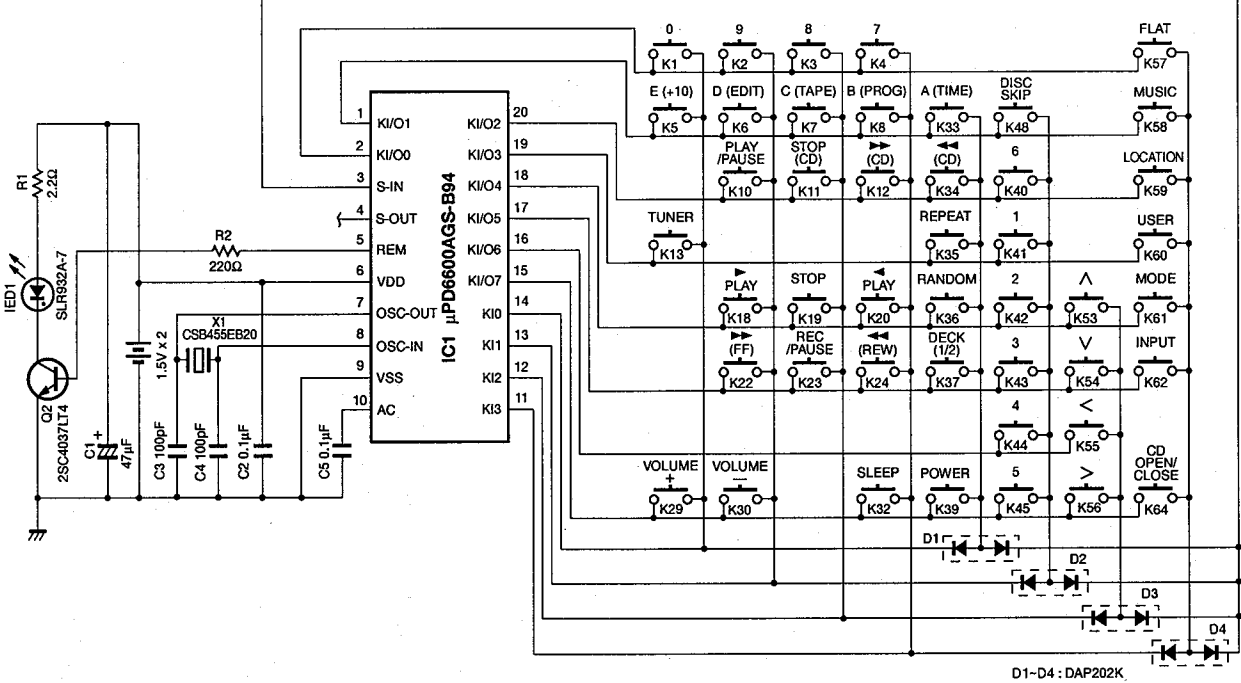
* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
102	NX635400	FLYWHEEL (L) ASS'Y	MOD3032	
103	NX635370	PINCH ARM (R) ASS'Y	MOD3040	
104	NX635380	PINCH ARM (L) ASS'Y	MOD3041	
105	JX601710	MOTOR ASS'Y	MOD9041	
106	AX623610	REW SHAFT	MOD8017	
107	AX623700	CLUTCH METAL	MOD7003	
108	AX623750	HEAD CHASSIS SP	MOD6025	
111	CX679530	FELT (C)	MOD8008	
112	EX603340	EARTH SPRING (B)	MOD6027	
113	EX603770	POLY WASHER	8342121013	
114	CX679300	SHIFT SP GUIDE	MOD1018	

* New Parts

REMOTE CONTROL TRANSMITTER

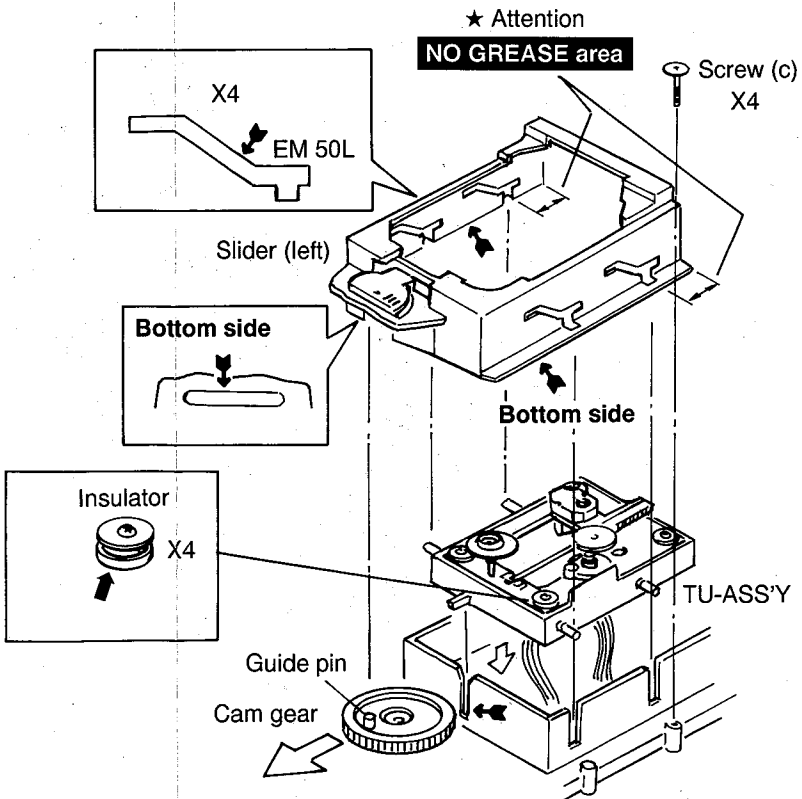
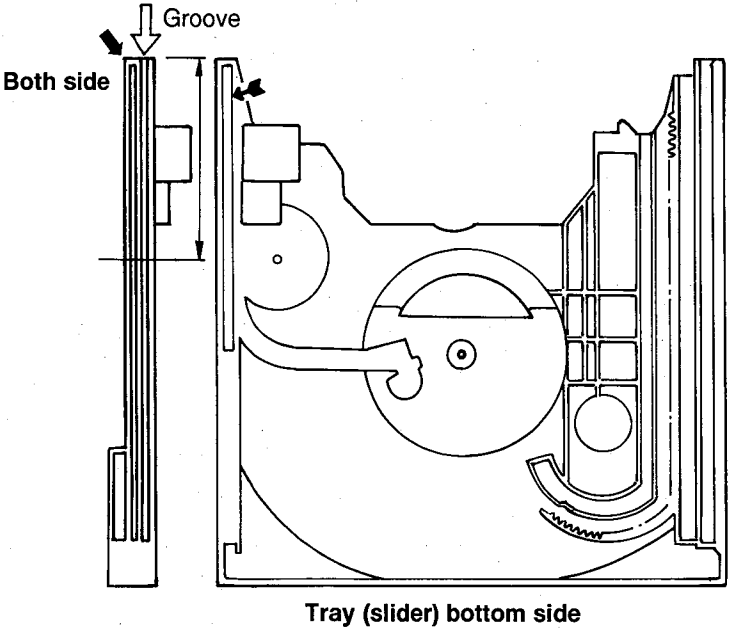
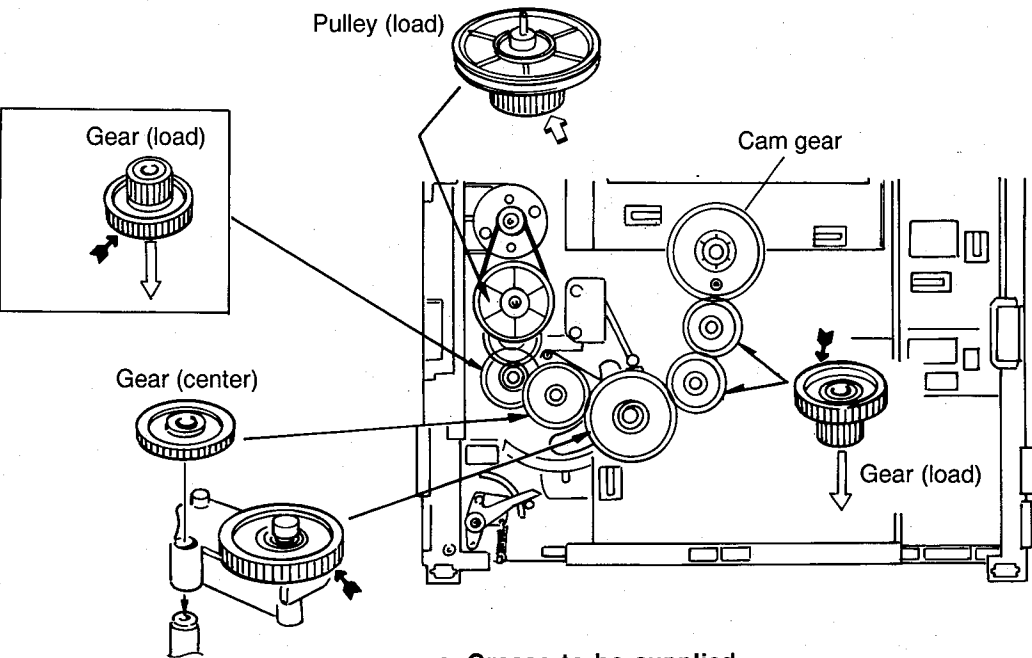
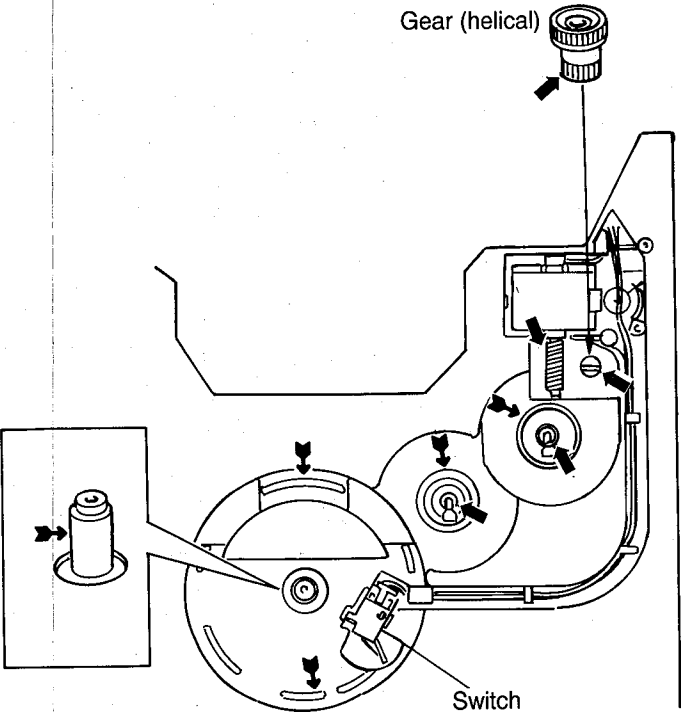
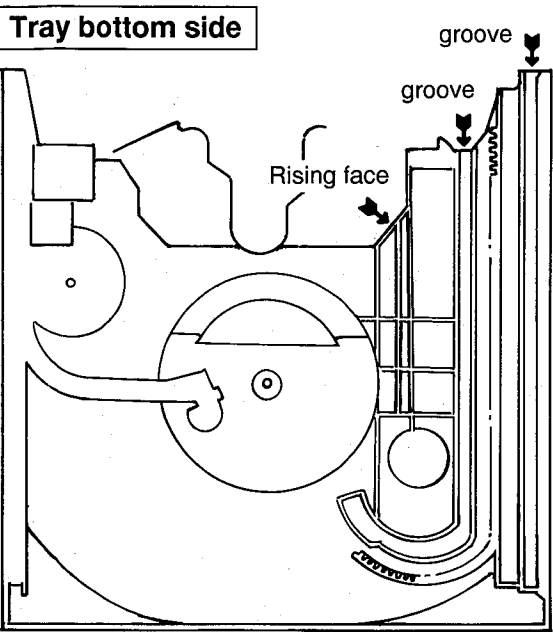
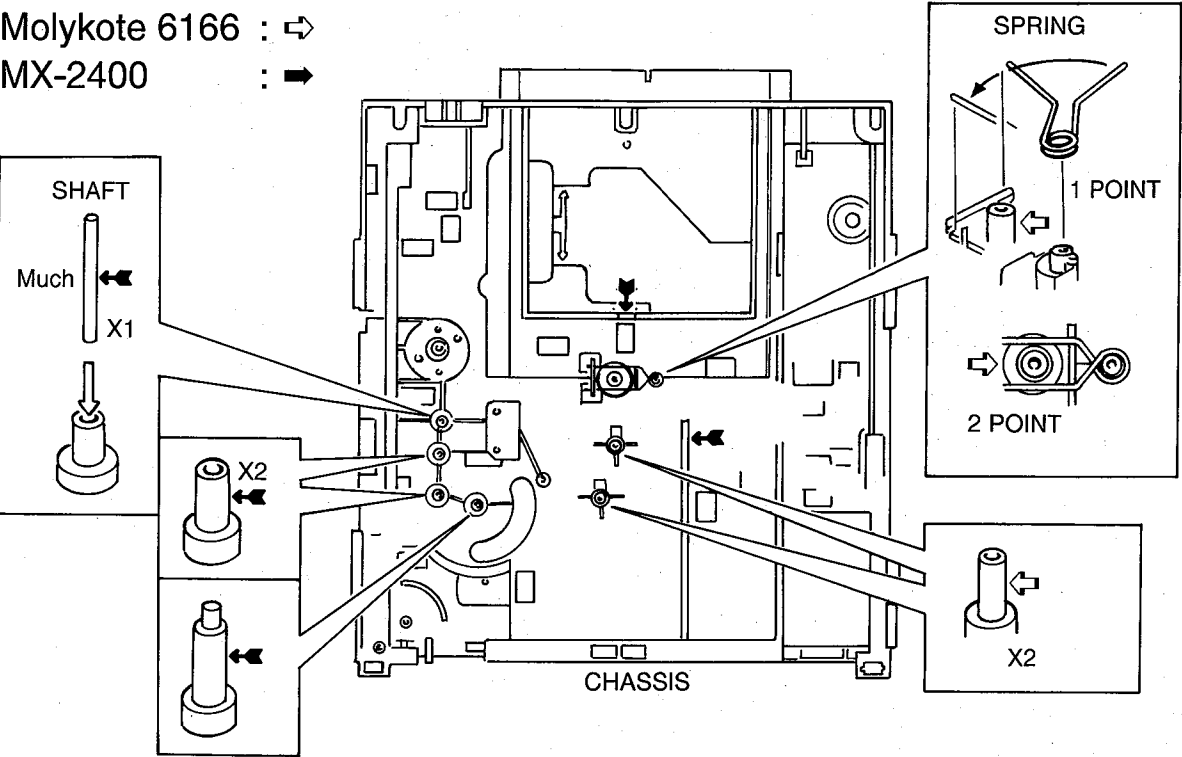
SCHEMATIC DIAGRAM



KEY No.	FUNCTION	CUSTOM CODE (HEX)	SUB CUSTOM CODE (HEX)	DATA CODE (HEX)
1	0 (TUNER PRESET UP)	78	87	10
2	9 (TUNER PRESET DOWN)	78	87	19
3	8	78	87	18
4	7	78	87	17
5	TUNER PAGE E (+10)	78	87	1A
6	TUNER PAGE D (CD EDIT)	78	87	09
7	TUNER PAGE C (CD TAPE)	78	87	08
8	TUNER PAGE B (CD PROG)	78	87	0B
10	CD PLAY/PAUSE	78	87	02
11	CD STOP	78	87	01
12	CD REPEAT	78	87	03
13	TUNER	78	87	4B
18	TAPE PLAY	78	87	42
19	TAPE STOP	78	87	41
20	TAPE PLAY	78	87	43
22	TAPE REW (FF)	78	87	44
23	TAPE REC/PAUSE	78	87	46
24	TAPE F.F. (REW)	78	87	45
29	VOLUME +	78	87	1E
30	VOLUME -	78	87	1F
32	SLEEP	78	87	4F
33	TUNER PAGE A (TIME)	78	87	0A
34	CD REPEAT	78	87	04
35	CD REPEAT	78	87	0C
36	CD RANDOM	78	87	07
37	TAPE DECK (1/2)	78	87	47
39	POWER	78	87	0F
40	6	78	87	16
41	1	78	87	11
42	2	78	87	12
43	3	78	87	13
44	4	78	87	14
45	5	78	87	15
48	CD DISC SKIP	78	87	0D
53	△	78	87	55
54	▽	78	87	56
55	<	78	87	57
56	>	78	87	58
57	FLAT	78	87	59
58	MUSIC	78	87	5A
59	LOCATION	78	87	5B
60	USER	78	87	5C
61	CD MODE	78	87	5D
62	INPUT	78	87	5E
64	CD OPEN/CLOSE	78	87	00

APPLY GREASE PICTURE (CD Mechanism)

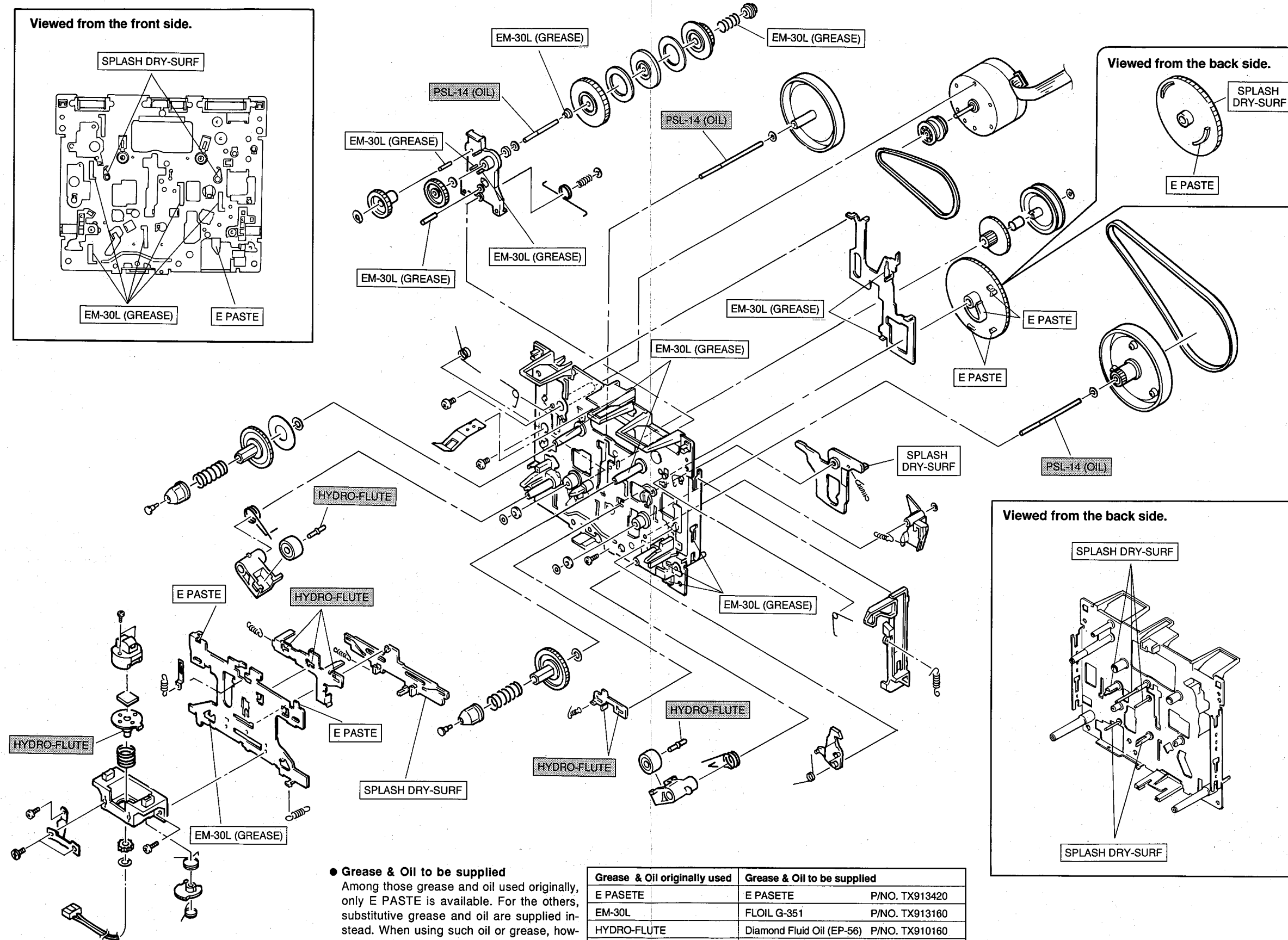
EM50L : ➡
Molykote 6166 : ➡
MX-2400 : ➡



● Grease to be supplied
The same grease as that originally used is not available but a substitutive grease is supplied instead. When using this grease, however, make sure to wipe off the attached grease thoroughly before applying the new one.

Grease originally used	Grease to be supplied	
EM50L	FLOIL G-351	P/NO. TX913160
Molykote 6166	FLOIL G-351	P/NO. TX913160
MX-2400	FLOIL G-351	P/NO. TX913160

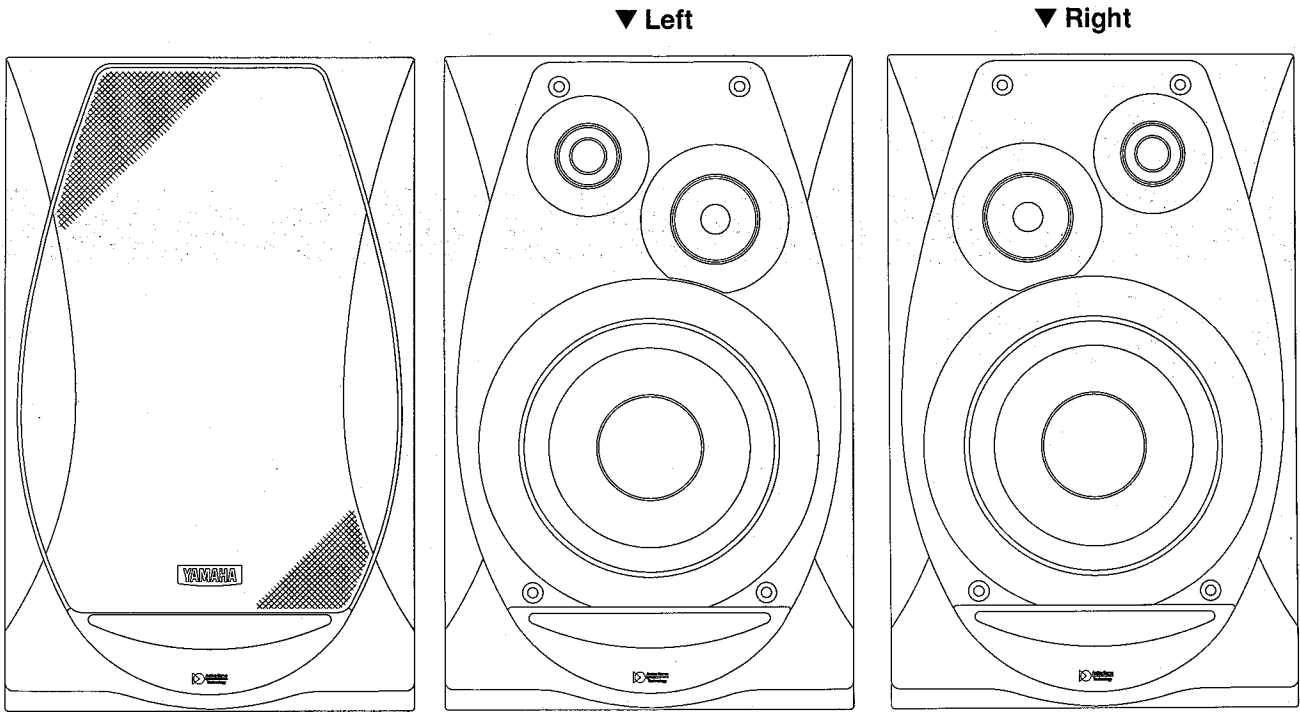
APPLY GREASE PICTURE (Deck Mechanism)



- **Grease & Oil to be supplied**
Among those grease and oil used originally, only E PASTE is available. For the others, substitutive grease and oil are supplied instead. When using such oil or grease, however, make sure to wipe off the attached grease or oil thoroughly before applying the new one.

Grease & Oil originally used	Grease & Oil to be supplied
E PASETE	E PASETE P/NO. TX913420
EM-30L	FLOIL G-351 P/NO. TX913160
HYDRO-FLUTE	Diamond Fluid Oil (EP-56) P/NO. TX910160
PSL-14	Diamond Fluid Oil (EP-56) P/NO. TX910160
SPLASH DRY-SURF	FLOIL G-351 P/NO. TX913160

NX-GX50 SPEAKER

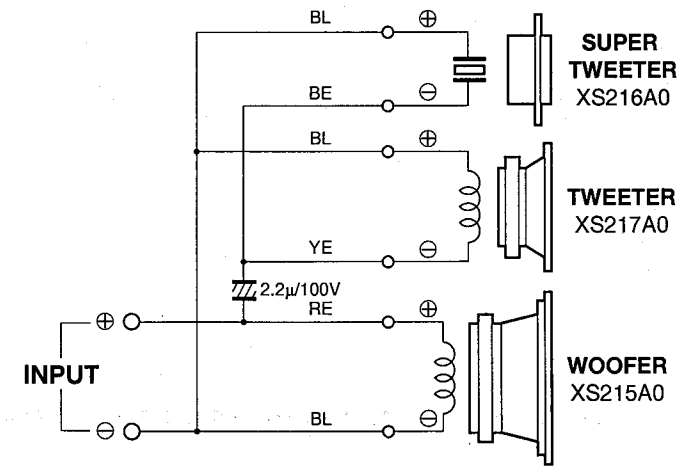
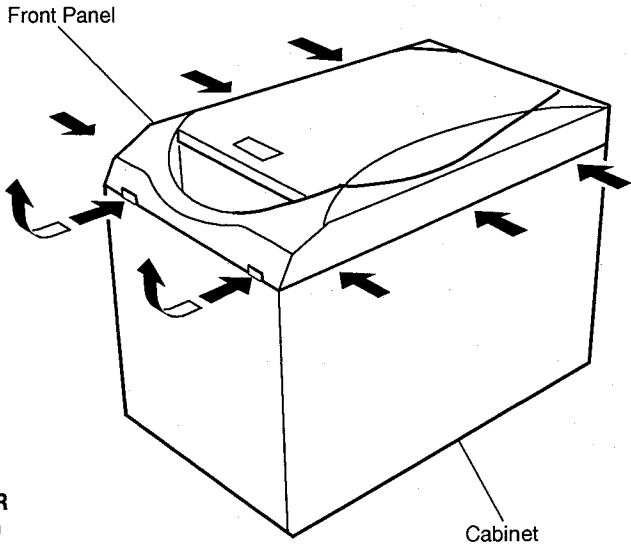


● Removal of Front Panel

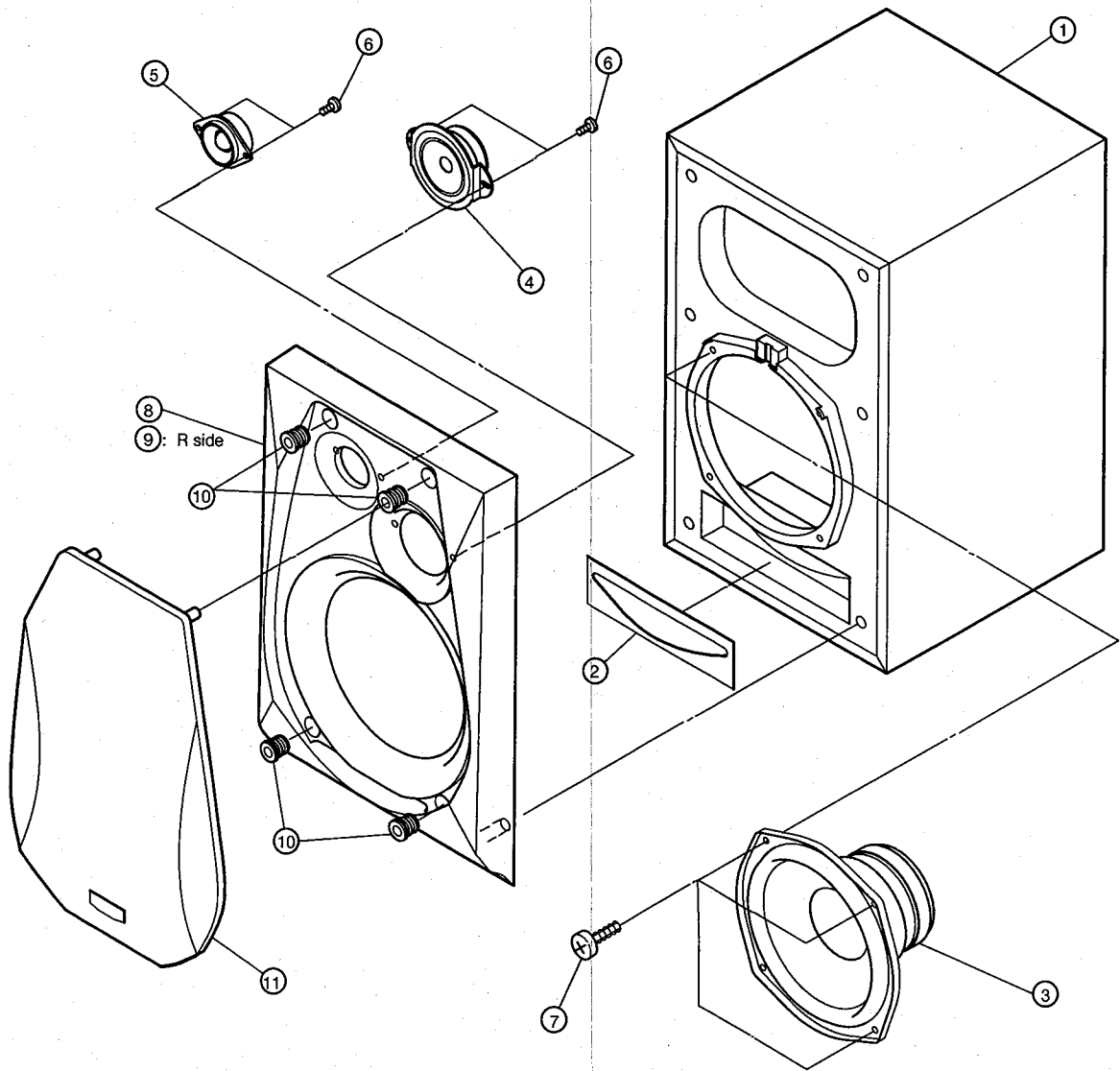
The front panel is fixed to the cabinet with dowels at 6 locations.

* As a screwdriver (for slotted head screw) is used for removal, use special care not to cause damage to the cabinet.

- a. Using the screwdriver inserted in the gap between the front panel and the cabinet (bottom side first), push up the front panel.
- b. Remove the front panel by lifting it up.



■ EXPLODED VIEW

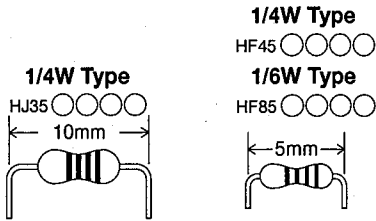


Ref. No.	PART NO.	Description	Remarks	Markets
1	NX635430	ENCLOSURE	053819500	(G)
1	NX635440	ENCLOSURE	053819501	(UCBRALT)
2	CX679740	SEAL	0561144100	
3	XS215A00	SPEAKER	C130L31N1510	
4	XS217A00	SPEAKER	C050N09N1514	
5	XS216A00	SPEAKER	E020P03N1510	
6	EX600310	BIND HEAD P-TITE SCREW	3x8 FCRM3-BL 05409902	
7	VB744600	BIND HEAD P-TITE SCREW	4x12 FCRM3-BL 05409600	
8	NX635460	FRONT PANEL	L 0511109000	
9	NX635470	FRONT PANEL	R 0511109100	
10	CX679730	GRILLE CATCH	05681900	
11	NX635450	GRILLE ASS'Y	B6131600	
	MX605030	ACCESSORIES CORD	055045600	

* 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			



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