

# TA-E90ES

## SERVICE MANUAL

US Model  
AEP Model

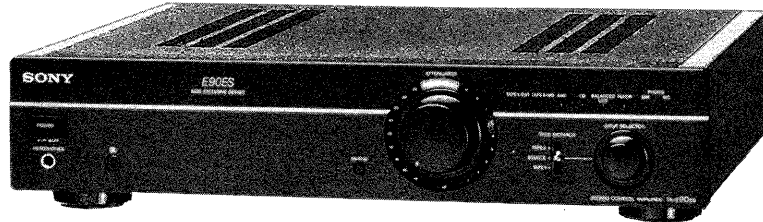


PHOTO : BLACK

### SPECIFICATIONS

#### System

Low-noise FET high gain, NFB type equalizer amplifier  
Low noise FET, single stage differential, MOS FET push-pull output, flat amplifier

Total harmonic distortion at rated 20 Hz - 20 kHz  
0.003%

Intermodulation (IM) distortion at rated output 60 Hz : 7 kHz = 4 : 1  
0.003%

Residual noise at network A  
Less than 9  $\mu$ V

#### Frequency response

PHONO MM: RIAA equalization curve  $\pm 0.2$  dB  
TAPE1/DAT, TAPE2/MD, AUX, CD,  
TUNER: 3 Hz - 300 kHz  $\pm 3$  dB

#### S/N (network)

PHONO MC (0.5 mV): 78 dB (A)  
MM (5 mV): 95 dB (A)  
TAPE1/DAT, TAPE2/MD, AUX, CD,  
TUNER: 105 dB (A)

#### Muting

-  $\infty$  dB

#### Input

##### Input sensitivity

PHONO MC: 0.25 mV, 100 ohms  
MM: 2.5 mV, 50 kilohms  
TAPE1/DAT, TAPE2/MD, AUX, CD  
TUNER: 150 mV, 20 kilohms  
CD (BALANCED): 150 mV, 20 kilohms

##### Maximum input capability (1 kHz)

PHONO (1 kHz, THD 0.01%) MC: 10 mV  
MM: 200 mV

#### Output

##### Output voltage impedance

TAPE1/DAT, TAPE2/MD: 150 mV, 1 kilohms  
PRE OUT: 1.5 V, 300 ohms  
BALANCED OUTPUT: 3 V, 600 ohms  
HEADPHONES: 25 milliwatts (at 8 ohms)

#### General

##### Power requirements

U.S.A. model: 120 V AC, 60 Hz  
European countries model: 220 - 230 V AC,  
50/60 Hz

##### Power consumption

20 W

##### Dimensions (approx.) (w/h/d)

430  $\times$  100  $\times$  360 mm (17  $\times$  4  $\times$  14 1/4 inches)  
incl. projecting parts and controls

##### Mass (approx.)

10.3 kg (22 lb. 11 oz)

#### Supplied accessories

Remote commander (remote) RM-J90(1)  
Sony batteries SUM-3(NS) (2)  
Audio connecting cord (1)

Design and specifications are subject to change without notice.



STEREO PREAMPLIFIER  
**SONY**<sup>®</sup>

— MODEL IDENTIFICATION —  
(Specification Label)

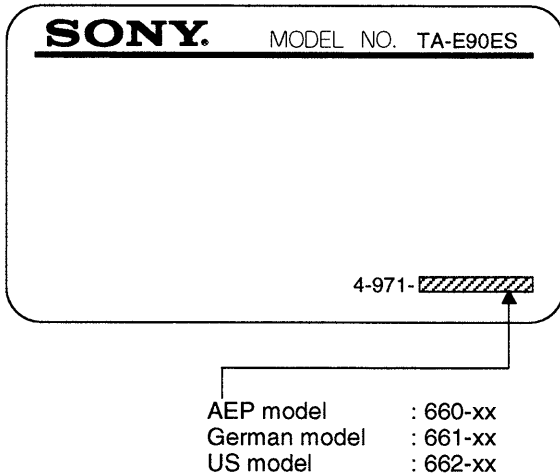


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SAFETY CHECK-OUT

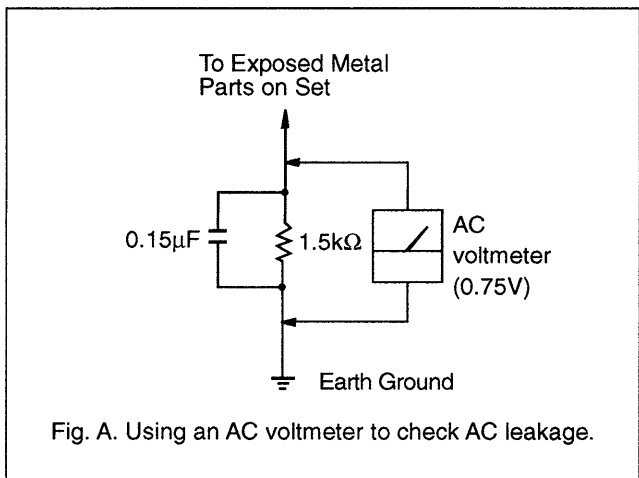
After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the antenna terminals, metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

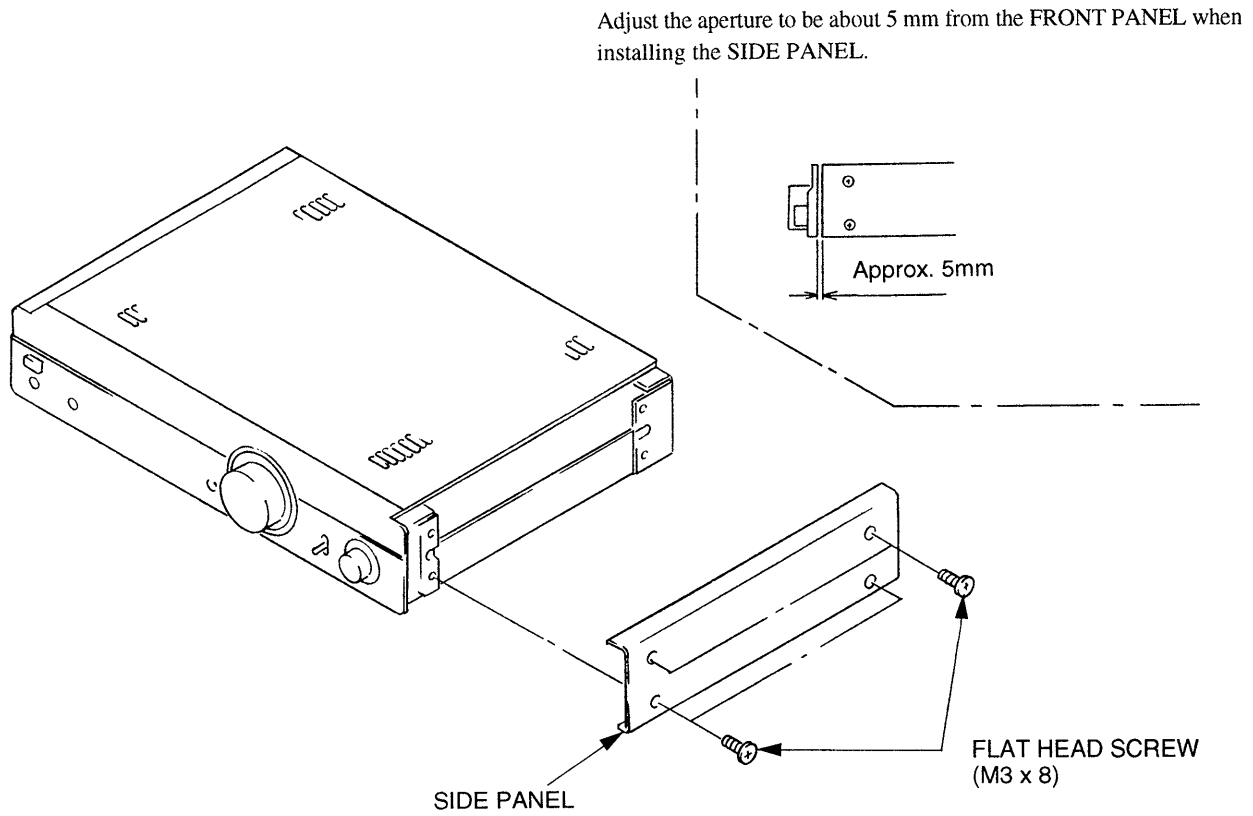


**SAFETY-RELATED COMPONENT WARNING !!**  
COMPONENTS IDENTIFIED BY MARK  $\Delta$  OR DOTTED LINE WITH MARK  $\Delta$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

# SECTION 1

## SERVICING NOTE

### NOTE FOR INSTALLATION OF THE SIDE PANEL



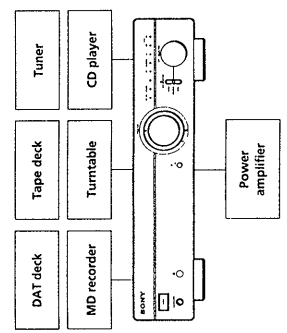
# SECTION 2 GENERAL

This section is extracted from instruction manual.

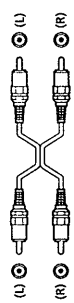
## Hooking Up the System

### Overview

This section describes how to hook up the preamplifier to a variety of audio components. Hook up your audio components according to the connection diagrams that follow.



**What cords will I need?**  
The following audio connecting cord (one) comes with your preamplifier:

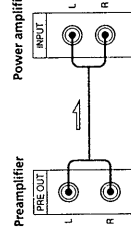


Use one audio connecting cord to connect the preamplifier to a power amplifier, a CD player or a tuner.  
Use two balanced cables (equivalent to Canon XLR-3; contact your dealer) when connecting a CD player with balanced line output connectors or a power amplifier with balanced input connectors.  
Use two audio connecting cords to connect the preamplifier to a tape deck, a DAT deck or an MD recorder

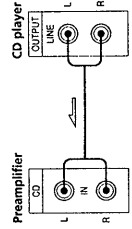
### Hookup procedure

- Turn off the power to all components before making any connections.
- Do not connect the AC power cords until all connections are completed.
- Be sure to make connections firmly to prevent hum and noise.
- When connecting an audio cord, be sure to connect the (Right) and (Left) connectors of the preamplifier to the R and L connectors of the other equipment.

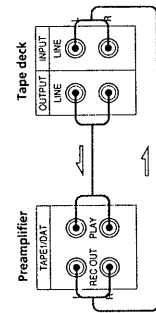
### Power amplifier (unbalanced connection)



### CD player (unbalanced connection)

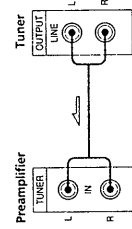


### Tape deck (DAT deck or MD recorder)

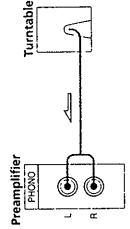


Use the same configurations to connect a tape deck or MD recorder to the TAPEZ/MD connectors.

### Tuner



### Turntable

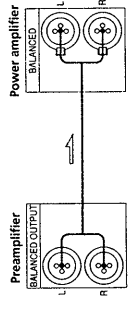


**If your turntable has an earth lead**  
Connect the earth lead to the # earth terminal to prevent hum.

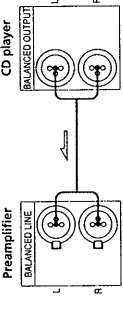
### Balanced connection

Do not use balanced and unbalanced connections at the same time.  
Use of both connections at the same time will result in sound deterioration.

### Power amplifier



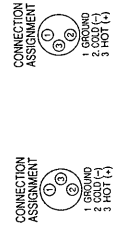
### CD player



Connection assignment of balanced cables for European countries model



Connection assignment of balanced cables for U.S.A. model



### Connecting the AC power cord

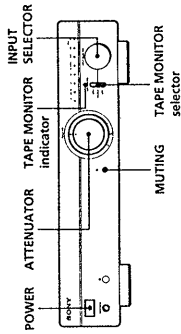
Connect the AC power cords from this preamplifier and the various audio components to a wall outlet.

### Where do I go next?

Now you're ready to use your preamplifier.  
First, turn on the preamplifier and the audio components you're going to use.

## Listening to a Program Source

This section describes how to select and listen to a program source.  
Before you begin, make sure you have connected the preamplifier to audio components correctly and firmly as indicated on page 5.



- 1 Press POWER to turn on the preamplifier. The indicator of the program source last used flashes for about 8 seconds, then lights.
- 2 Turn on the power amplifier.
- 3 Set the TAPE MONITOR selector to SOURCE. The TAPE MONITOR indicator goes off.

- 4 Select the program source by turning the INPUT SELECTOR control. The indicator of the selected program source lights. If the TAPE MONITOR selector is set to either TAPE 1 or TAPE 2, sound from the audio component connected to TAPE 1 or 2 will be output instead of the selected program source.

- 5 Start the program source.
- 6 Adjust the volume by turning the ATTENUATOR control.

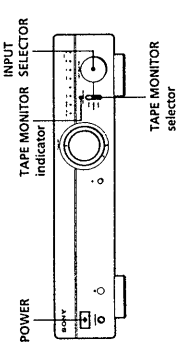
**When using a turntable**  
Ascertain the type of cartridge being used, then, depending on the cartridge type, select PHONO MM or MC by turning the INPUT SELECTOR control.

**You can turn the sound off temporarily**  
Press the MUTING button. Press again to turn the sound on again. If MUTING is on when you turn off the preamplifier, the sound will still be muted the next time you turn on the preamplifier.

**When you use headphones**  
Connect the headphones to the HEADPHONES jack. Output from the speakers will be cut off.

## Recording

This section describes how to record a program source. Before you begin, make sure you have connected the preamplifier to audio components correctly and firmly as indicated on page 5.



- 1 Press POWER to turn on the preamplifier.
- 2 Turn on the power amplifier.
- 3 Select the program source to be recorded by turning the INPUT SELECTOR control. Make sure to set the TAPE MONITOR selector to SOURCE, otherwise you will not be able to hear the selected program source.
- 4 Place the recording unit into recording pause.
- 5 Make the recording level adjustments on the recording unit with the program source playing.
- 6 Restart the program source.
- 7 Start recording on the recording unit.

**You can monitor the recorded sound**  
If your cassette deck has separate recording and playback heads, you can monitor the recorded sound by setting the TAPE MONITOR selector to either TAPE 1 or TAPE 2. The TAPE MONITOR indicator will light.

**When dubbing a tape**  
When dubbing from TAPE 1 to TAPE 2, select TAPE 1 in step 3 of the recording procedure.  
When dubbing from TAPE 2 to TAPE 1, select TAPE 2 in step 3 of the recording procedure.

**Note**  
If you change the program source by turning the INPUT SELECTOR control during recording, the newly selected program source will be recorded.

# SECTION 3 ELECTRICAL ADJUSTMENT

## DC Bias Adjustment (with no signal input)

**Note:**

1. Before measuring, desolder the two test lands of the MAIN board and EQ board (four test lands altogether) and then return the boards to their original positions.

Set up:

Volume: minimum

Adjusting method:

1. Connect a DC volt meter to both edges of the R418 and R468 of the MAIN board and turn on the power supply. Adjust RV401 and RV451 so that the DC volt meter reading satisfies the specified value.
2. Adjust the EQ board in the same way.
3. After completing all adjustments, solder all parts desoldered again.

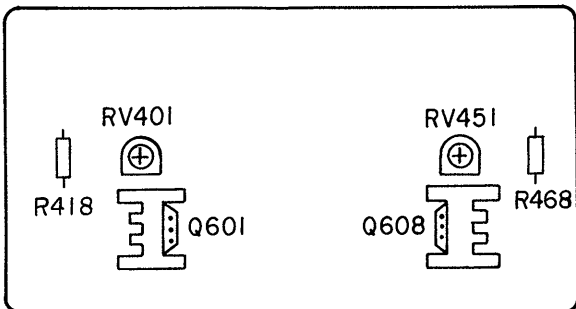
\* Specified Value: 200 mV ± 20 mV

		Measurement Point	Adjustment Point
MAIN BOARD	L-ch	R418	RV401
	R-ch	R468	RV451
EQ BOARD	L-ch	R125	RV101
	R-ch	R175	RV151

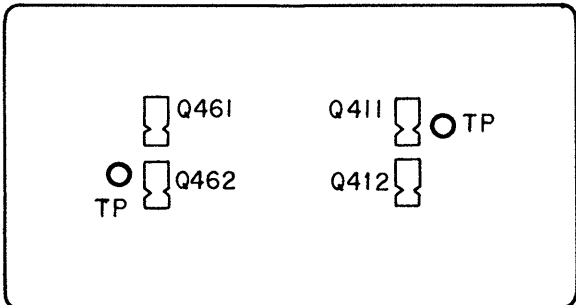
**Adjustment Location:**

**【MAIN BOARD】**

Component Side

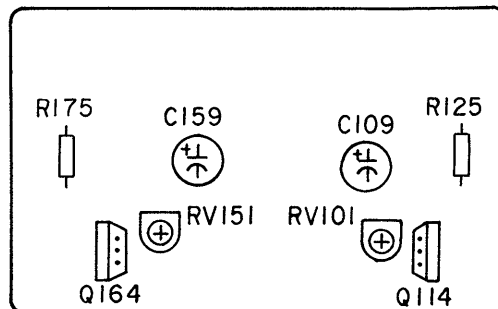


Conductor Side

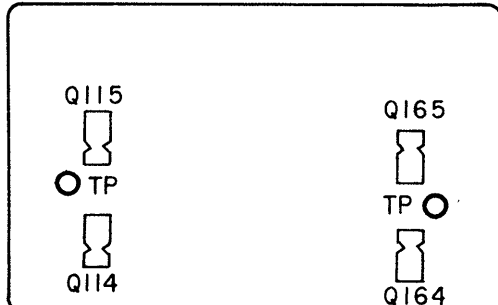


**【EQ BOARD】**

Component Side

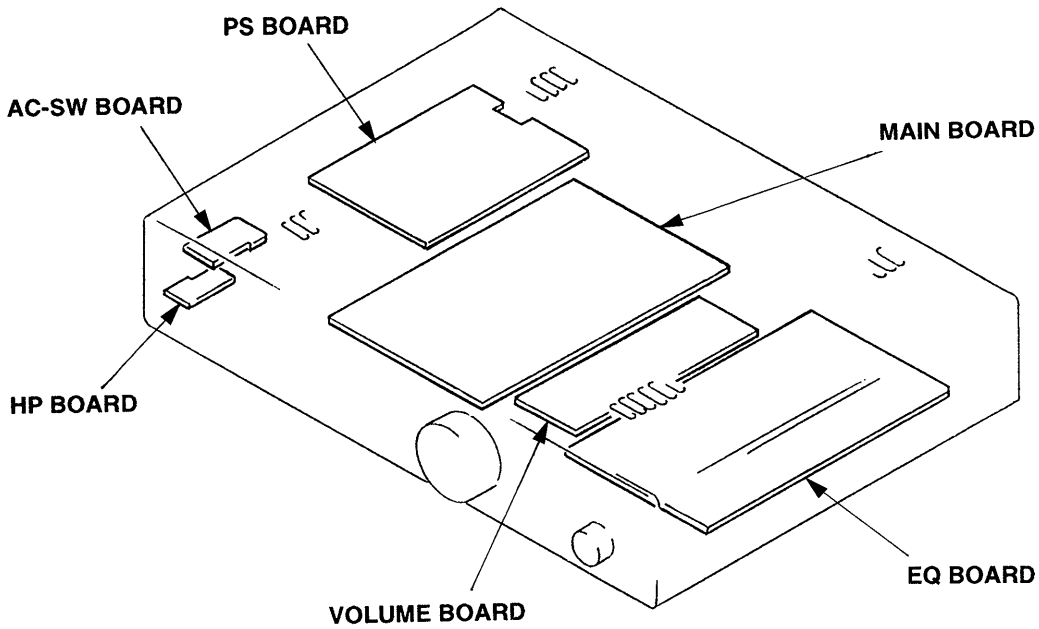
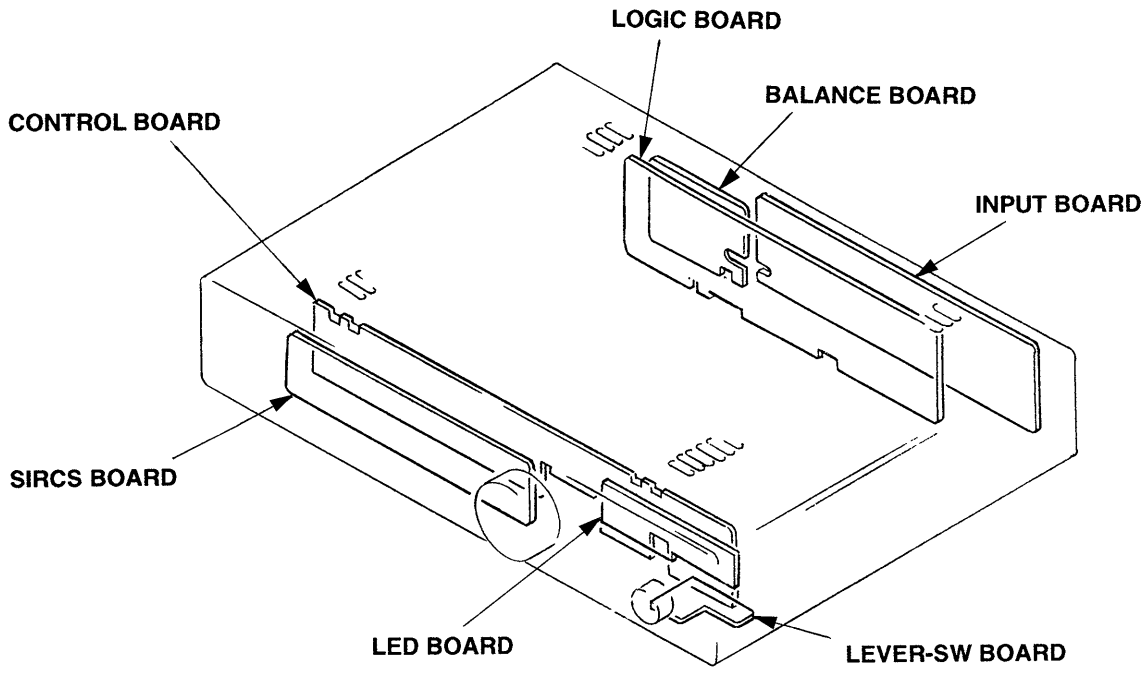


Conductor Side

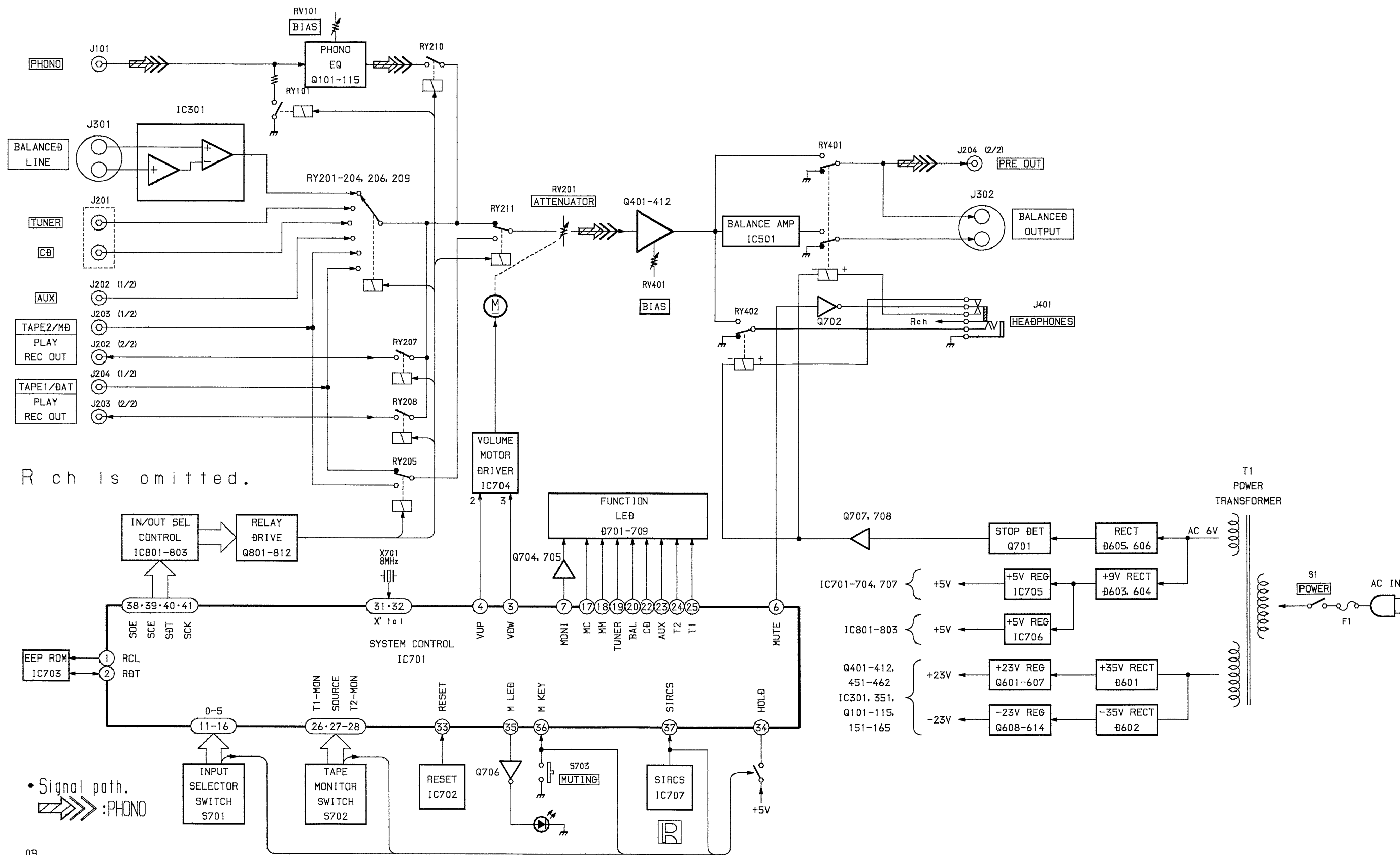


# SECTION 4 DIAGRAMS

## 4-1. CIRCUIT BOARDS LOCATION



4-2. BLOCK DIAGRAM



09



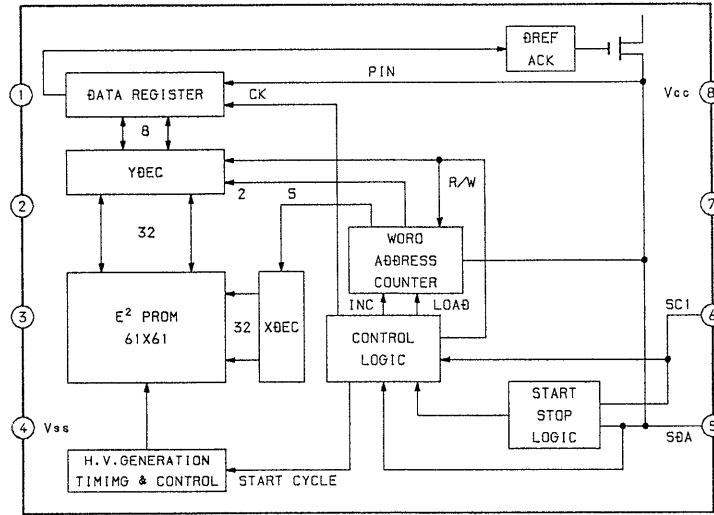




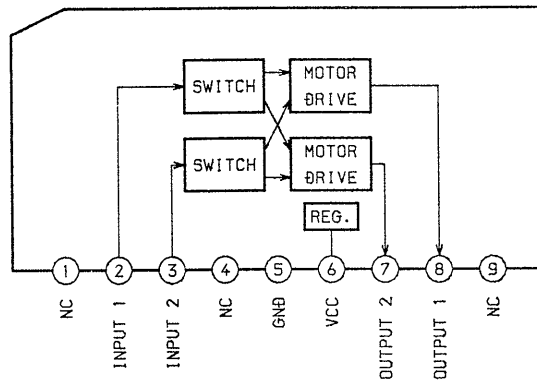


IC BLOCK DIAGRAMS

IC703 X24C01P

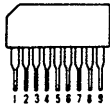


IC704 BA6208

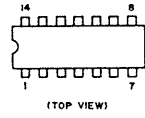


4-5. SEMICONDUCTOR LEAD LAYOUTS

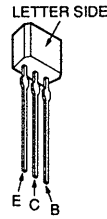
BA6208



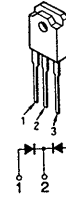
TC74HC14AP



2SA1175-HFE  
2SC2785-HFE



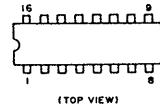
C16P20F  
C16P20FR



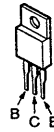
GP1U57XB



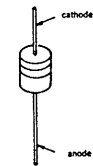
TC74HC595AP



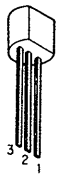
2SA985A-QP  
2SC2275A-P  
2SK2013-Y  
2SJ313-Y



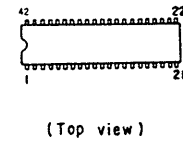
UZL-7L2  
11ES2-NTA2B



M51943BSL



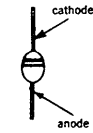
TMP47C200BN-H327



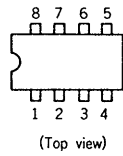
2SK246-GR2



U05G



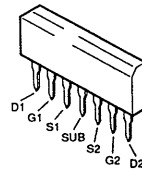
OPA2604AP  
X24C01P-S



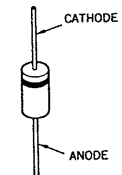
DTA124ES  
DTA144ES  
2SC2603-EF



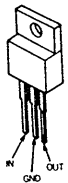
2SK389-GR



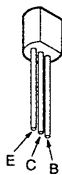
1N4148M



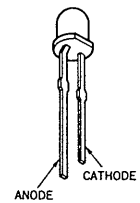
TA7805S



2SA1015-GR



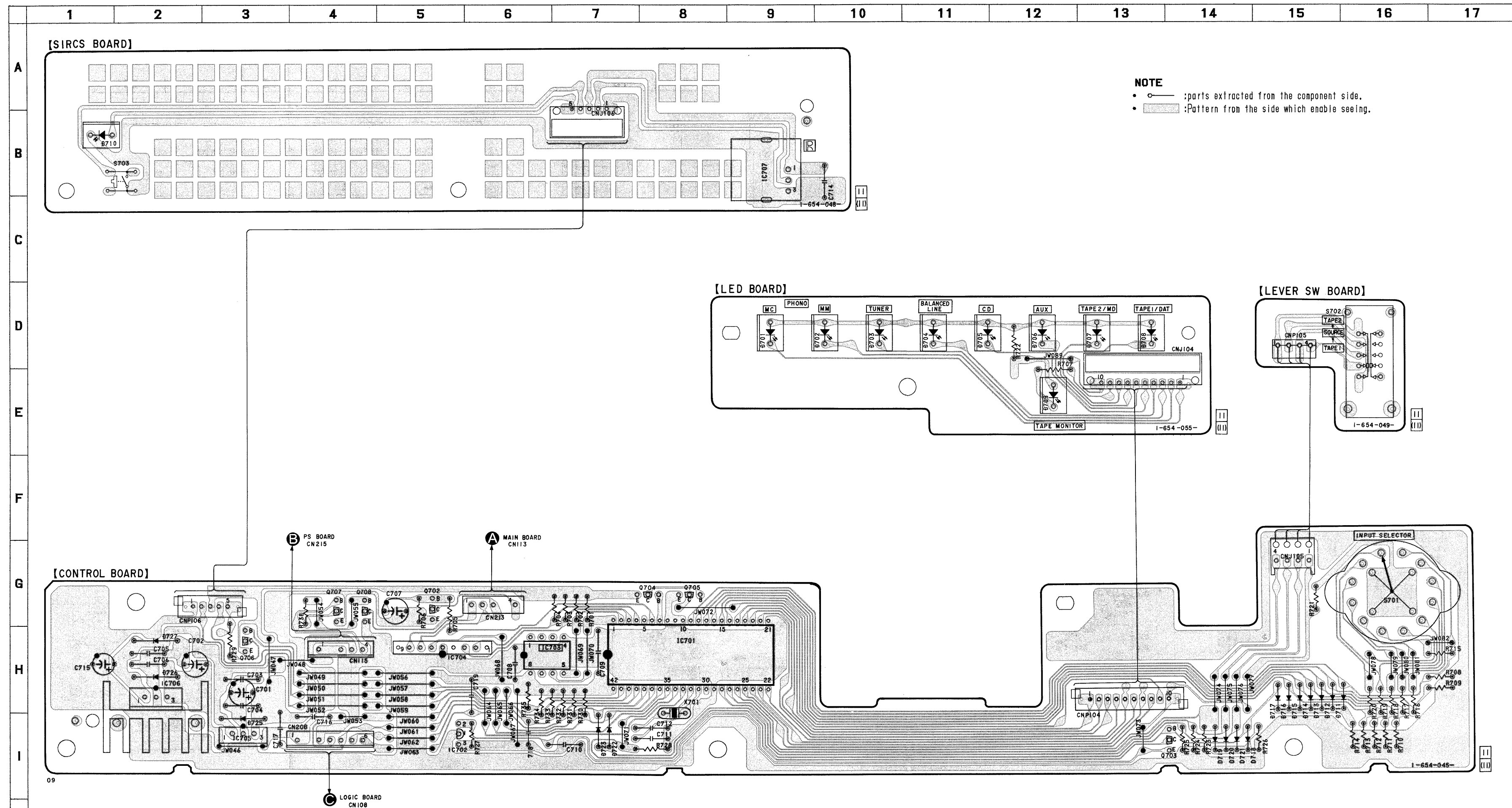
SEL2810A



4-6. PRINTED WIRING BOARD — CONTROL SECTION —  
 •See page 6 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D701	D-9
D702	D-10
D703	D-10
D704	D-11
D705	D-11
D706	D-12
D707	D-13
D708	D-13
D709	E-12
D710	B-1
D711	H-16
D712	H-15
D713	H-15
D714	H-15
D715	H-15
D716	H-15
D717	H-15
D718	I-15
D719	I-14
D720	I-14
D721	I-14
D722	D-7
D723	D-7
D725	I-3
D726	H-2
D727	H-2
IC701	H-8
IC702	I-5
IC703	H-7
IC704	H-5
IC705	I-3
IC706	H-2
IC707	B-9
Q702	G-5
Q703	I-14
Q704	G-8
Q705	G-8
Q706	H-3
Q707	G-4
Q708	G-4



**NOTE**  
 • :parts extracted from the component side.  
 • :Pattern from the side which enable seeing.





## 4-8. IC PIN FUNTION

## · IC701 TMP47C200BN-H327

Pin No.	Pin Name	I/O	Function
1	RCL	O	Clock Data } Serial data of EEPROM. (X24C01)
2	RDT	I/O	
3	VUP	O	Up Down } VR motor control signal. (Active : H, Stop : L-L, Brake : H-H)
4	VDW	O	
5	—	—	Not Used. (Open)
6	MUT	O	Mute control signal output when switching. (Mute : H)
7	MONI	O	TAPE MONITOR LED display signal. (L : Function LED is turned on.)
8	—	I	Not Used. (Pull down to GND.)
9	—	I	Not Used. (Pull down to GND.)
10	—	I	Not Used. (Pull down to GND.)
11	SW0	I	Relativity position detection signal of rotary switch. (one of them terminal : H, the other terminal : L) Direction from SW5 to SW0, CD → AUX → TAPE2 → TAPE1 → MC → MM → TUNER → BALANCE → CD ...
12	SW1	I	
13	SW2	I	
14	SW3	I	
15	SW4	I	
16	SW5	I	
17	MC	O	Function LED drive signal. (ON : L)
18	MM	O	
19	TUNER	O	
20	BAL	O	
21	GND	—	GND terminal.
22	CD	O	Function LED drive signal. (ON : L)
23	AUX	O	
24	TAPE 2	O	
25	TAPE 1	O	
26	TAPE 1M	I	Signal of TAPE MONITOR SWITCH (one of them : H, the other : L)
27	SOURCE	I	
28	TAPE 2M	I	
29	—	I	Not Used. (Pull down to GND.)
30	TEST	—	Test terminal. (Open)
31	XIN	—	Oscillation signal. 8.19MHz
32	XOUT	—	
33	RESET	I	Reset signal. (Reset : L)
34	HOLD	I	Cancellation of hold mode signal. (Start : H)
35	M-LED	O	MUTING LED drive signal. (ON : L)
36	M-KEY	I	MUTING Switch signal. (Active : L)
37	SIRCS	I	SIRCS signal (Active : L)
38	SOE	O	Serial control signal to function IC. (IC801, 802)
39	SCE	O	
40	SDT	O	
41	SCK	O	
42	VDD	—	Power supply (+5V) terminal.

## SECTION 5 EXPLODED VIEWS

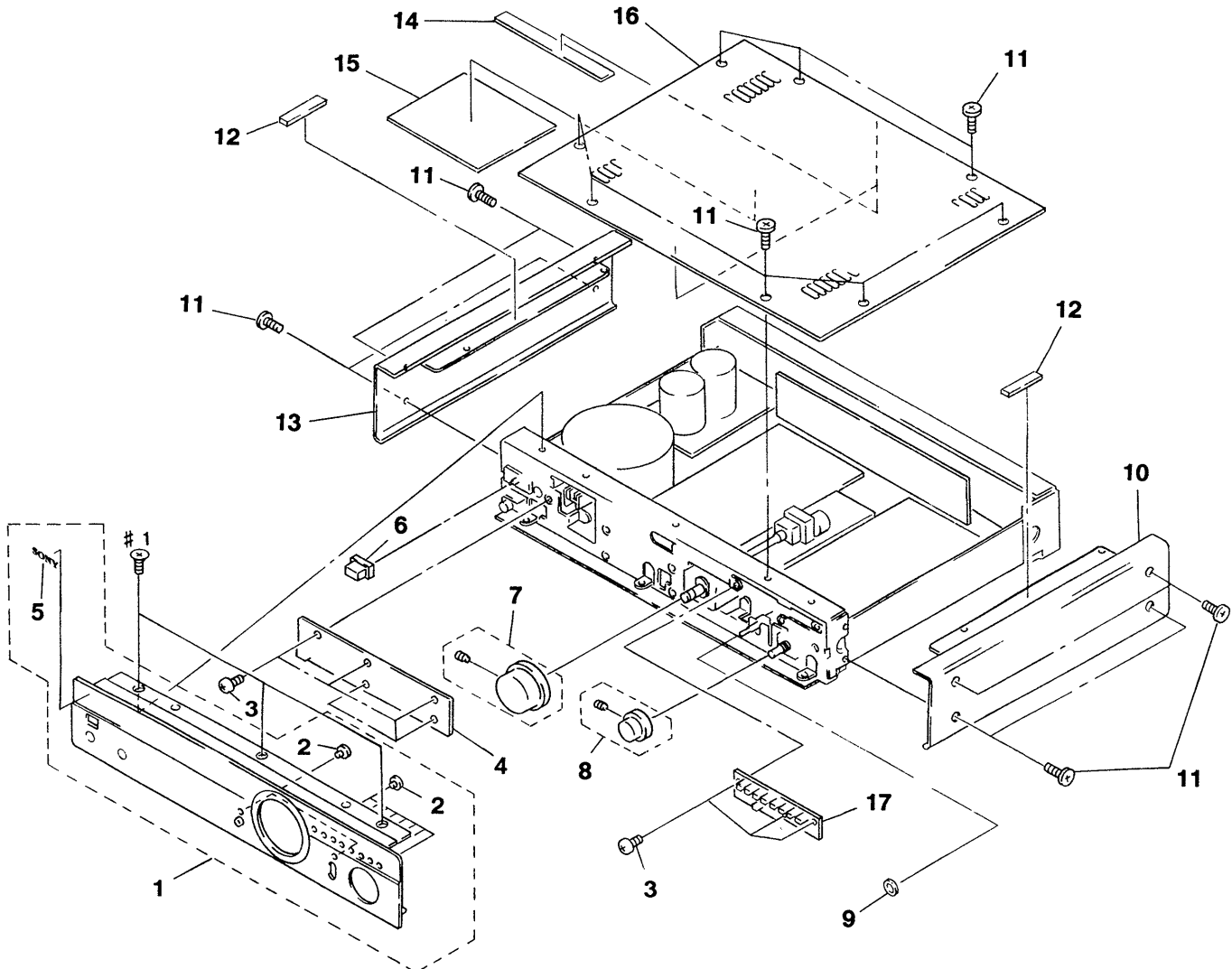
**NOTE:**

- Items marked “ \* ” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.

- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation  
G : German model

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

### 5-1. FRONT AND SIDE PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	A-4361-172-A	PANEL ASSY, FRONT (US, AEP, G(BLACK))		9	4-971-312-01	SHEET (DIA. 8), BLIND	
1	A-4361-174-A	PANEL ASSY, FRONT (G(GOLD))		* 10	4-969-320-01	PANEL (R), SIDE (US, AEP, G(BLACK))	
2	4-969-325-01	LENS, LED					
3	4-967-961-01	SCREW (3X8) (SPECIAL)		* 10	4-969-320-11	PANEL (R), SIDE (G(GOLD))	
* 4	1-654-048-11	SIRCS BOARD		11	4-924-242-11	SCREW (M3X6), FLAT HEAD (US, AEP, G(BLACK))	
				11	4-924-242-61	SCREW (M3X6), FLAT HEAD (G(GOLD))	
5	4-942-568-01	EMBLEM (NO. 5), SONY (US, AEP, G(BLACK))		* 12	4-971-317-01	CUSHION (C)	
5	4-942-568-21	EMBLEM (NO. 5), SONY (G(GOLD))		* 13	4-969-319-01	PANEL (L), SIDE (US, AEP, G(BLACK))	
6	4-969-330-01	KNOB (POWER) (US, AEP, G(BLACK))					
6	4-969-330-11	KNOB (POWER) (G(GOLD))		* 13	4-969-319-11	PANEL (L), SIDE (G(GOLD))	
7	4-969-322-01	KNOB (DIA. 55) (US, AEP, G(BLACK))		14	4-969-347-01	CUSHION	
		(ATTENUATOR)		15	4-971-316-21	DAMPER	
7	4-969-322-11	KNOB (DIA. 55) (G(GOLD)) (ATTENUATOR)		16	4-969-318-01	PLATE, TOP (US, AEP, G(BLACK))	
8	4-969-323-01	KNOB (DIA. 34) (US, AEP, G(BLACK))		16	4-969-318-11	PLATE, TOP (G(GOLD))	
		(INPUT SELECT)		* 17	1-654-055-11	LED BOARD	
8	4-969-323-11	KNOB (DIA. 34) (G(GOLD)) (INPUT SELECT)					





## SECTION 6

## ELECTRICAL PARTS LIST

## NOTE:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation  
G : German model
- RESISTORS  
All resistors are in ohms  
METAL: Metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F : nonflammable
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A..., uPA...:  $\mu$ PA..., uPB...:  $\mu$ PB...,  
uPC...:  $\mu$ PC..., uPD...:  $\mu$ PD...
- CAPACITORS  
uF :  $\mu$ F
- COILS  
uH :  $\mu$ H

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
*	1-654-050-11	AC-SW BOARD ***** < CONNECTOR >		C717	1-162-302-11	CERAMIC 0.0022uF 30% 16V	
* CN3	1-568-226-11	PIN, CONNECTOR 2P		C718	1-162-294-31	CERAMIC 0.001uF 10% 50V	
CN4	1-580-629-11	PIN, CONNECTOR 2P		C719	1-162-294-31	CERAMIC 0.001uF 10% 50V	
		< SWITCH >				< CONNECTOR >	
$\Delta$ S1	1-554-920-11	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)		CN115	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
		*****		CN208	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
				CNJ105	1-562-087-00	SOCKET, CONNECTOR 4P	
				CNP104	1-766-800-11	CONNECTOR, BOARD TO BOARD 10P	
				CNP106	1-766-801-11	CONNECTOR, BOARD TO BOARD 5P	
						< DIODE >	
*	1-654-047-11	BALANCE BOARD ***** < CONNECTOR >		D711	8-719-987-63	DIODE 1N4148M	
CNP103	1-766-802-11	PIN, CONNECTOR 10P		D712	8-719-987-63	DIODE 1N4148M	
		< JACK >		D713	8-719-987-63	DIODE 1N4148M	
J301	1-750-786-11	CONNECTOR (XLR TYPE) 3P(BALANCED LINE)		D714	8-719-987-63	DIODE 1N4148M	
J302	1-750-785-11	CONNECTOR (XLR TYPE) 3P(BALANCED OUTPUT)		D715	8-719-987-63	DIODE 1N4148M	
		*****		D716	8-719-987-63	DIODE 1N4148M	
*	A-4371-725-A	CONTROL BOARD, COMPLETE *****		D717	8-719-987-63	DIODE 1N4148M	
				D718	8-719-987-63	DIODE 1N4148M	
*	4-363-146-00	HEAT SINK, V. OUT < CAPACITOR >		D719	8-719-987-63	DIODE 1N4148M	
				D720	8-719-987-63	DIODE 1N4148M	
C701	1-126-101-11	ELECT 100uF 20% 16V		D721	8-719-987-63	DIODE 1N4148M	
C702	1-126-101-11	ELECT 100uF 20% 16V		D722	8-719-987-63	DIODE 1N4148M	
C703	1-164-159-11	CERAMIC 0.1uF 50V		D723	8-719-987-63	DIODE 1N4148M	
C704	1-164-159-11	CERAMIC 0.1uF 50V		D725	8-719-024-99	DIODE 11ES2-NTA2B	
C705	1-164-159-11	CERAMIC 0.1uF 50V		D726	8-719-024-99	DIODE 11ES2-NTA2B	
C706	1-164-159-11	CERAMIC 0.1uF 50V		D727	8-719-024-99	DIODE 11ES2-NTA2B	
C707	1-126-101-11	ELECT 100uF 20% 16V				< IC >	
C708	1-164-159-11	CERAMIC 0.1uF 50V		IC701	8-759-325-18	IC TMP47C200BN-H327	
C709	1-164-159-11	CERAMIC 0.1uF 50V		IC702	8-759-635-63	IC M51943BSL	
C710	1-162-294-31	CERAMIC 0.001uF 10% 50V		IC703	8-759-188-67	IC X24C01P-S	
				IC704	8-759-962-08	IC BA6208	
				IC705	8-759-231-53	IC TA7805S	
				IC706	8-759-231-53	IC TA7805S	
						< TRANSISTOR >	
C711	1-162-207-31	CERAMIC 22PF 5% 50V		Q702	8-729-119-76	TRANSISTOR 2SA1175-HFE	
C712	1-162-207-31	CERAMIC 22PF 5% 50V		Q703	8-729-900-63	TRANSISTOR DTA124ES	
C715	1-124-903-11	ELECT 1uF 20% 50V		Q704	8-729-900-63	TRANSISTOR DTA124ES	
C716	1-162-302-11	CERAMIC 0.0022uF 30% 16V		Q705	8-729-900-36	TRANSISTOR DTC124ES	



Ref. No.	Part No.	Description	Remark
Q706	8-729-900-63	TRANSISTOR DTA124ES	
Q707	8-729-900-63	TRANSISTOR DTA124ES	
Q708	8-729-620-05	TRANSISTOR 2SC2603-EF	
< RESISTOR >			
R701	1-249-429-11	CARBON 10K 5% 1/4W	
R702	1-249-429-11	CARBON 10K 5% 1/4W	
R703	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R704	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R705	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R706	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R708	1-249-433-11	CARBON 22K 5% 1/4W	
R709	1-249-433-11	CARBON 22K 5% 1/4W	
R710	1-249-433-11	CARBON 22K 5% 1/4W	
R711	1-249-433-11	CARBON 22K 5% 1/4W	
R712	1-249-433-11	CARBON 22K 5% 1/4W	
R713	1-249-433-11	CARBON 22K 5% 1/4W	
R714	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R715	1-247-807-31	CARBON 100 5% 1/4W	
R716	1-247-807-31	CARBON 100 5% 1/4W	
R717	1-247-807-31	CARBON 100 5% 1/4W	
R718	1-247-807-31	CARBON 100 5% 1/4W	
R719	1-247-807-31	CARBON 100 5% 1/4W	
R720	1-247-807-31	CARBON 100 5% 1/4W	
R721	1-247-807-31	CARBON 100 5% 1/4W	
R723	1-249-433-11	CARBON 22K 5% 1/4W	
R724	1-249-433-11	CARBON 22K 5% 1/4W	
R725	1-249-433-11	CARBON 22K 5% 1/4W	
R726	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R727	1-249-429-11	CARBON 10K 5% 1/4W	
R728	1-249-433-11	CARBON 22K 5% 1/4W	
R729	1-247-816-11	CARBON 240 5% 1/4W	
R730	1-249-433-11	CARBON 22K 5% 1/4W	
R731	1-249-433-11	CARBON 22K 5% 1/4W	
R732	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R733	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R734	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R735	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R738	1-249-413-11	CARBON 470 5% 1/4W	F
< SWITCH >			
S701	1-572-095-21	SWITCH, ROTARY (INPUT SELECTOR)	
< OSCILLATOR >			
X701	1-579-223-11	OSCILLATOR, CERAMIC (8MHz)	

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Ref. No.	Part No.	Description	Remark
*	A-4371-733-A	EQ BOARD, COMPLETE *****	
< CAPACITOR >			
C103	1-136-808-11	FILM 100PF 5%	100V
C104	1-136-305-11	FILM 0.056uF 2%	0
C105	1-136-304-11	FILM 0.016uF 2%	0
C106	1-124-557-11	ELECT 1000uF 20%	25V
C107	1-136-252-00	FILM 0.0015uF 5%	100V
C109	1-110-495-51	ELECT 220uF 20%	25V
C110	1-136-817-91	FILM 0.0033uF 5%	100V
C111	1-136-817-91	FILM 0.0033uF 5%	100V
C112	1-124-916-11	ELECT 22uF 20%	63V
C114	1-124-915-11	ELECT 10uF 20%	63V
C153	1-136-808-11	FILM 100PF 5%	100V
C154	1-136-305-11	FILM 0.056uF 2%	0
C155	1-136-304-11	FILM 0.016uF 2%	0
C156	1-124-557-11	ELECT 1000uF 20%	25V
C157	1-136-252-00	FILM 0.0015uF 5%	100V
C159	1-110-495-51	ELECT 220uF 20%	25V
C160	1-136-817-91	FILM 0.0033uF 5%	100V
C161	1-136-817-91	FILM 0.0033uF 5%	100V
C162	1-124-916-11	ELECT 22uF 20%	63V
C164	1-124-915-11	ELECT 10uF 20%	63V
< CONNECTOR >			
CN201	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
CN206	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
< TRANSISTOR >			
Q101	8-729-203-21	TRANSISTOR 2SK389-GR	
Q102	8-729-203-21	TRANSISTOR 2SK389-GR	
Q103	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q104	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q105	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q106	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q107	8-729-201-56	TRANSISTOR 2SK246-GR2	
Q108	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q109	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q110	8-729-201-56	TRANSISTOR 2SK246-GR2	
Q111	8-729-201-53	TRANSISTOR 2SA1015-GR	
Q112	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q113	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q114	8-729-018-19	TRANSISTOR 2SK2013-Y	
Q115	8-729-018-21	TRANSISTOR 2SJ313-Y	
Q151	8-729-203-21	TRANSISTOR 2SK389-GR	
Q152	8-729-203-21	TRANSISTOR 2SK389-GR	
Q153	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q154	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q155	8-729-201-53	TRANSISTOR 2SA1015-GR	

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
Q156	8-729-201-53	TRANSISTOR	2SA1015-GR	R169	1-247-720-11	CARBON	3.9K 5% 1/4W F
Q157	8-729-201-56	TRANSISTOR	2SK246-GR2	R170	1-249-928-11	CARBON	1.6K 5% 1/4W
Q158	8-729-119-78	TRANSISTOR	2SC2785-HFE	R171	1-247-138-00	CARBON	2K 5% 1/4W
Q159	8-729-119-78	TRANSISTOR	2SC2785-HFE	R172	1-247-721-11	CARBON	4.7K 5% 1/4W F
Q160	8-729-201-56	TRANSISTOR	2SK246-GR2	R173	1-247-700-11	CARBON	100 5% 1/4W F
Q161	8-729-201-53	TRANSISTOR	2SA1015-GR	R174	1-247-700-11	CARBON	100 5% 1/4W F
Q162	8-729-119-78	TRANSISTOR	2SC2785-HFE	R175	1-249-504-11	CARBON	10 5% 1/4W
Q163	8-729-119-78	TRANSISTOR	2SC2785-HFE	R176	1-247-700-11	CARBON	100 5% 1/4W F
Q164	8-729-018-19	TRANSISTOR	2SK2013-Y	R177	1-249-469-11	CARBON	100K 5% 1/4W
Q165	8-729-018-21	TRANSISTOR	2SJ313-Y				
< RESISTOR >				< VARIABLE RESISTOR >			
R104	1-247-700-11	CARBON	100 5% 1/4W F	RV101	1-237-457-21	RES, ADJ, CARBON 2K	
R105	1-249-465-11	CARBON	47K 5% 1/4W	RV151	1-237-457-21	RES, ADJ, CARBON 2K	
R106	1-249-875-91	CARBON	10 1% 1/4W	< RELAY >			
R107	1-249-900-91	CARBON	110 1% 1/4W	RY101	1-515-725-11	RELAY	
R108	1-249-966-91	CARBON	62K 1% 1/4W	RY151	1-515-725-11	RELAY	
R109	1-249-939-11	CARBON	4.7K 1% 1/4W	*****			
R110	1-214-958-00	METAL	560K 1% 1/4W	* 1-654-044-11	HP BOARD		
R111	1-249-586-11	CARBON	27K 5% 1/4W		*****		
R112	1-247-720-11	CARBON	3.9K 5% 1/4W F	< CONNECTOR >			
R113	1-249-529-11	CARBON	110 5% 1/4W	CN212	1-691-768-11	PLUG (MICRO CONNECTOR) 6P	
R114	1-249-529-11	CARBON	110 5% 1/4W	< JACK >			
R115	1-247-706-11	CARBON	330 5% 1/4W F	J401	1-580-439-11	JACK, LARGE TYPE (HEADPHONES)	
R116	1-247-708-11	CARBON	470 5% 1/4W F	*****			
R117	1-247-725-11	CARBON	10K 5% 1/4W F	* A-4371-732-A	INPUT BOARD, COMPLETE		
R118	1-249-596-11	CARBON	68K 5% 1/4W		*****		
R119	1-247-720-11	CARBON	3.9K 5% 1/4W F	< CAPACITOR >			
R120	1-249-928-11	CARBON	1.6K 5% 1/4W	C102	1-162-284-31	CERAMIC	150PF 10% 50V
R121	1-247-138-00	CARBON	2K 5% 1/4W	C152	1-162-284-31	CERAMIC	150PF 10% 50V
R122	1-247-721-11	CARBON	4.7K 5% 1/4W F	C201	1-136-808-11	FILM	100PF 5% 100V
R123	1-247-700-11	CARBON	100 5% 1/4W F	C251	1-136-808-11	FILM	100PF 5% 100V
R124	1-247-700-11	CARBON	100 5% 1/4W F	< CONNECTOR >			
R125	1-249-504-11	CARBON	10 5% 1/4W	CN101	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
R126	1-247-700-11	CARBON	100 5% 1/4W F	* CN102	4-924-264-21	TERMINAL, MOUNT	
R127	1-249-469-11	CARBON	100K 5% 1/4W	* CN104	1-564-507-11	PLUG, CONNECTOR 4P	
R154	1-247-700-11	CARBON	100 5% 1/4W F	CNJ101	1-766-796-11	CONNECTOR, BOARD TO BOARD 12P	
R155	1-249-465-11	CARBON	47K 5% 1/4W	CNJ102	1-766-796-11	CONNECTOR, BOARD TO BOARD 12P	
R156	1-249-875-91	CARBON	10 1% 1/4W	* CNJ103	1-691-244-11	SOCKET, CONNECTOR 10P	
R157	1-249-900-91	CARBON	110 1% 1/4W	< JACK >			
R158	1-249-966-91	CARBON	62K 1% 1/4W	J101	1-766-795-11	JACK (PHONO)	
R159	1-249-939-11	CARBON	4.7K 1% 1/4W				
R160	1-214-958-00	METAL	560K 1% 1/4W				
R161	1-249-586-11	CARBON	27K 5% 1/4W				
R162	1-247-720-11	CARBON	3.9K 5% 1/4W F				
R163	1-249-529-11	CARBON	110 5% 1/4W				
R164	1-249-529-11	CARBON	110 5% 1/4W				
R165	1-247-706-11	CARBON	330 5% 1/4W F				
R166	1-247-708-11	CARBON	470 5% 1/4W F				
R167	1-247-725-11	CARBON	10K 5% 1/4W F				
R168	1-249-596-11	CARBON	68K 5% 1/4W				

**INPUT LED LEVER-SW LOGIC**

Ref. No.	Part No.	Description	Remark
J201	1-766-795-21	JACK (CD, TUNER)	
J202	1-766-795-21	JACK (TAPE2/MD REC OUT, AUX)	
J203	1-766-795-21	JACK (TAPE1/DAT REC OUT, TAPE2/MD PLAY)	
J204	1-766-795-21	JACK (PRE-OUT, TAPE1/DAT PLAY)	
J251	1-766-795-31	JACK (CD, TUNER)	
J252	1-766-795-31	JACK (TAPE2/MD REC OUT, AUX)	
J253	1-766-795-31	JACK (TAPE1/DAT REC OUT, TAPE2/MD PLAY)	
J254	1-766-795-31	JACK (PRE-OUT, TAPE1/DAT PLAY)	
< RESISTOR >			
R103	1-259-416-11	CARBON	330 5% 1/6W
R153	1-259-416-11	CARBON	330 5% 1/6W
R201	1-249-210-11	CARBON	1K 5% 1/3W
R202	1-247-713-11	CARBON	1K 5% 1/4W F
R203	1-247-713-11	CARBON	1K 5% 1/4W F
R251	1-249-210-11	CARBON	1K 5% 1/3W
R252	1-247-713-11	CARBON	1K 5% 1/4W F
R253	1-247-713-11	CARBON	1K 5% 1/4W F
< RELAY >			
RY201	1-515-622-11	RELAY	
RY202	1-515-622-11	RELAY	
RY203	1-515-622-11	RELAY	
RY204	1-515-622-11	RELAY	
RY205	1-515-622-11	RELAY	
RY206	1-515-622-11	RELAY	
*****			
*	1-654-055-11	LED BOARD	*****
< CONNECTOR >			
CNJ104	1-766-797-11	CONNECTOR, BOARD TO BOARD 10P	
< DIODE >			
D701	8-719-301-49	DIODE	SEL2810A (PHONO/MC)
D702	8-719-301-49	DIODE	SEL2810A (PHONO/MM)
D703	8-719-301-49	DIODE	SEL2810A (TUNER)
D704	8-719-301-49	DIODE	SEL2810A (BALANCED LINE)
D705	8-719-301-49	DIODE	SEL2810A (CD)
D706	8-719-301-49	DIODE	SEL2810A (AUX)
D707	8-719-301-49	DIODE	SEL2810A (TAPE2/MD)
D708	8-719-301-49	DIODE	SEL2810A (TAPE1/DAT)
D709	8-719-301-49	DIODE	SEL2810A (TAPE MONITOR)
< RESISTOR >			
R707	1-247-816-11	CARBON	240 5% 1/4W
R722	1-247-816-11	CARBON	240 5% 1/4W
*****			

Ref. No.	Part No.	Description	Remark
*	1-654-049-11	LEVER-SW BOARD	*****
< CONNECTOR >			
CNP105	1-560-941-00	PIN, CONNECTOR 4P	
< SWITCH >			
S702	1-762-165-11	SWITCH, LEVER SLIDE (TAPE1/TAPE2/SOURCE)	
*****			
*	A-4371-734-A	LOGIC BOARD, COMPLETE	*****
< CAPACITOR >			
C301	1-136-808-11	FILM	100PF 5% 100V
C302	1-136-808-11	FILM	100PF 5% 100V
C303	1-124-916-11	ELECT	22uF 20% 63V
C304	1-136-817-91	FILM	0.0033uF 5% 100V
C305	1-136-817-91	FILM	0.0033uF 5% 100V
C306	1-102-233-00	CERAMIC	33PF 10% 500V
C307	1-102-233-00	CERAMIC	33PF 10% 500V
C351	1-136-808-11	FILM	100PF 5% 100V
C352	1-136-808-11	FILM	100PF 5% 100V
C353	1-124-916-11	ELECT	22uF 20% 63V
C354	1-136-817-91	FILM	0.0033uF 5% 100V
C355	1-136-817-91	FILM	0.0033uF 5% 100V
C356	1-102-233-00	CERAMIC	33PF 10% 500V
C357	1-102-233-00	CERAMIC	33PF 10% 500V
C801	1-162-302-11	CERAMIC	0.0022uF 30% 16V
C802	1-162-302-11	CERAMIC	0.0022uF 30% 16V
C803	1-164-159-11	CERAMIC	0.1uF 50V
C804	1-164-159-11	CERAMIC	0.1uF 50V
C805	1-164-159-11	CERAMIC	0.1uF 50V
C806	1-164-159-11	CERAMIC	0.1uF 50V
C807	1-164-159-11	CERAMIC	0.1uF 50V
< CONNECTOR >			
CN106	1-691-766-21	PLUG (MICRO CONNECTOR) 4P	
* CN107	1-564-506-11	PLUG, CONNECTOR 3P	
* CN108	1-564-521-11	PLUG, CONNECTOR 6P	
CNP101	1-766-799-11	CONNECTOR, BOARD TO BOARD 12P	
CNP102	1-766-799-11	CONNECTOR, BOARD TO BOARD 12P	
< DIODE >			
D617	8-719-024-99	DIODE	11ES2-NTA2B
D801	8-719-987-63	DIODE	1N4148M
D802	8-719-987-63	DIODE	1N4148M
D803	8-719-987-63	DIODE	1N4148M
D804	8-719-987-63	DIODE	1N4148M



# MAIN

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* CN207	1-564-506-11	PLUG, CONNECTOR 3P		Q607	8-729-201-53	TRANSISTOR 2SA1015-GR	
* CN210	1-564-507-11	PLUG, CONNECTOR 4P		Q608	8-729-141-10	TRANSISTOR 2SA985A-QP	
CN211	1-564-505-11	PLUG, CONNECTOR 2P		Q609	8-729-201-53	TRANSISTOR 2SA1015-GR	
	< DIODE >			Q610	8-729-201-56	TRANSISTOR 2SK246-GR2	
D401	8-719-987-63	DIODE 1N4148M		Q611	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D402	8-719-987-63	DIODE 1N4148M		Q612	8-729-201-53	TRANSISTOR 2SA1015-GR	
D451	8-719-987-63	DIODE 1N4148M		Q613	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D607	8-719-000-78	DIODE UZL-7L2		Q614	8-729-119-78	TRANSISTOR 2SC2785-HFE	
D608	8-719-987-63	DIODE 1N4148M			< RESISTOR >		
D609	8-719-987-63	DIODE 1N4148M		R401	1-249-995-11	CARBON 1M 5% 1/4W	
D612	8-719-000-78	DIODE UZL-7L2		R402	1-247-241-00	CARBON 1.1K 5% 1/3W	
D613	8-719-987-63	DIODE 1N4148M		R403	1-249-234-11	CARBON 10K 5% 1/3W	
D614	8-719-987-63	DIODE 1N4148M		R404	1-249-586-11	CARBON 27K 5% 1/4W	
	< IC >			R405	1-247-720-11	CARBON 3.9K 5% 1/4W F	
IC501	8-759-259-12	IC OPA2604AP		R406	1-247-717-11	CARBON 2.2K 5% 1/4W F	
IC551	8-759-259-12	IC OPA2604AP		R407	1-247-717-11	CARBON 2.2K 5% 1/4W F	
	< TRANSISTOR >			R408	1-247-721-11	CARBON 4.7K 5% 1/4W F	
Q401	8-729-203-21	TRANSISTOR 2SK389-GR		R409	1-249-551-11	CARBON 910 5% 1/4W	
Q402	8-729-119-78	TRANSISTOR 2SC2785-HFE		R410	1-249-551-11	CARBON 910 5% 1/4W	
Q403	8-729-119-78	TRANSISTOR 2SC2785-HFE		R411	1-247-725-11	CARBON 10K 5% 1/4W F	
Q404	8-729-201-56	TRANSISTOR 2SK246-GR2		R412	1-247-704-11	CARBON 220 5% 1/4W F	
Q405	8-729-119-78	TRANSISTOR 2SC2785-HFE		R413	1-247-712-11	CARBON 820 5% 1/4W F	
Q406	8-729-119-78	TRANSISTOR 2SC2785-HFE		R414	1-247-713-11	CARBON 1K 5% 1/4W F	
Q407	8-729-201-56	TRANSISTOR 2SK246-GR2		R415	1-247-721-11	CARBON 4.7K 5% 1/4W F	
Q408	8-729-201-53	TRANSISTOR 2SA1015-GR		R416	1-247-700-11	CARBON 100 5% 1/4W F	
Q409	8-729-119-78	TRANSISTOR 2SC2785-HFE		R417	1-247-700-11	CARBON 100 5% 1/4W F	
Q410	8-729-119-78	TRANSISTOR 2SC2785-HFE		R418	1-249-504-11	CARBON 10 5% 1/4W	
Q411	8-729-018-19	TRANSISTOR 2SK2013-Y		R419	1-259-664-51	CARBON 330 2% 1W	
Q412	8-729-018-21	TRANSISTOR 2SJ313-Y		R420	1-247-725-11	CARBON 10K 5% 1/4W F	
Q451	8-729-203-21	TRANSISTOR 2SK389-GR		R421	1-249-469-11	CARBON 100K 5% 1/4W	
Q452	8-729-119-78	TRANSISTOR 2SC2785-HFE		R422	1-249-469-11	CARBON 100K 5% 1/4W	
Q453	8-729-119-78	TRANSISTOR 2SC2785-HFE		R423	1-249-218-11	CARBON 2.2K 5% 1/3W	
Q454	8-729-201-56	TRANSISTOR 2SK246-GR2		R451	1-249-995-11	CARBON 1M 5% 1/4W	
Q455	8-729-119-78	TRANSISTOR 2SC2785-HFE		R452	1-247-241-00	CARBON 1.1K 5% 1/3W	
Q456	8-729-119-78	TRANSISTOR 2SC2785-HFE		R453	1-249-234-11	CARBON 10K 5% 1/3W	
Q457	8-729-201-56	TRANSISTOR 2SK246-GR2		R454	1-249-586-11	CARBON 27K 5% 1/4W	
Q458	8-729-201-53	TRANSISTOR 2SA1015-GR		R455	1-247-720-11	CARBON 3.9K 5% 1/4W F	
Q459	8-729-119-78	TRANSISTOR 2SC2785-HFE		R456	1-247-717-11	CARBON 2.2K 5% 1/4W F	
Q460	8-729-119-78	TRANSISTOR 2SC2785-HFE		R457	1-247-717-11	CARBON 2.2K 5% 1/4W F	
Q461	8-729-018-19	TRANSISTOR 2SK2013-Y		R458	1-247-721-11	CARBON 4.7K 5% 1/4W F	
Q462	8-729-018-21	TRANSISTOR 2SJ313-Y		R459	1-249-551-11	CARBON 910 5% 1/4W	
Q601	8-729-107-53	TRANSISTOR 2SC2275A-P		R460	1-249-551-11	CARBON 910 5% 1/4W	
Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE		R461	1-247-725-11	CARBON 10K 5% 1/4W F	
Q603	8-729-201-56	TRANSISTOR 2SK246-GR2		R462	1-247-704-11	CARBON 220 5% 1/4W F	
Q604	8-729-201-53	TRANSISTOR 2SA1015-GR		R463	1-247-712-11	CARBON 820 5% 1/4W F	
Q605	8-729-119-78	TRANSISTOR 2SC2785-HFE		R464	1-247-713-11	CARBON 1K 5% 1/4W F	
Q606	8-729-201-53	TRANSISTOR 2SA1015-GR		R465	1-247-721-11	CARBON 4.7K 5% 1/4W F	
				R466	1-247-700-11	CARBON 100 5% 1/4W F	
				R467	1-247-700-11	CARBON 100 5% 1/4W F	



Ref. No.	Part No.	Description	Remark
R468	1-249-504-11	CARBON	10 5% 1/4W
R469	1-259-664-51	CARBON	330 2% 1W
R470	1-247-725-11	CARBON	10K 5% 1/4W F
R471	1-249-469-11	CARBON	100K 5% 1/4W
R472	1-249-469-11	CARBON	100K 5% 1/4W
R473	1-249-218-11	CARBON	2. 2K 5% 1/3W
R501	1-249-234-11	CARBON	10K 5% 1/3W
R502	1-249-234-11	CARBON	10K 5% 1/3W
R503	1-259-664-51	CARBON	330 2% 1W
R506	1-247-739-11	CARBON	100 5% 1/2W F
R511	1-247-725-11	CARBON	10K 5% 1/4W F
R512	1-249-469-11	CARBON	100K 5% 1/4W
R551	1-249-234-11	CARBON	10K 5% 1/3W
R552	1-249-234-11	CARBON	10K 5% 1/3W
R553	1-259-664-51	CARBON	330 2% 1W
R556	1-247-739-11	CARBON	100 5% 1/2W F
R561	1-247-725-11	CARBON	10K 5% 1/4W F
R562	1-249-469-11	CARBON	100K 5% 1/4W
R603	1-247-719-11	CARBON	3. 3K 5% 1/4W F
R604	1-249-504-11	CARBON	10 5% 1/4W
R605	1-249-504-11	CARBON	10 5% 1/4W
R606	1-247-706-11	CARBON	330 5% 1/4W F
R607	1-247-725-11	CARBON	10K 5% 1/4W F
R608	1-247-704-11	CARBON	220 5% 1/4W F
R609	1-249-234-11	CARBON	10K 5% 1/3W
R610	1-249-226-11	CARBON	4. 7K 5% 1/3W
R611	1-247-719-11	CARBON	3. 3K 5% 1/4W F
R612	1-249-504-11	CARBON	10 5% 1/4W
R613	1-249-504-11	CARBON	10 5% 1/4W
R614	1-247-706-11	CARBON	330 5% 1/4W F
R615	1-247-725-11	CARBON	10K 5% 1/4W F
R616	1-247-704-11	CARBON	220 5% 1/4W F
R617	1-249-234-11	CARBON	10K 5% 1/3W
R618	1-249-226-11	CARBON	4. 7K 5% 1/3W
< VARIABLE RESISTOR >			
RV401	1-237-457-21	RES, ADJ, CARBON 2K	
RV451	1-237-457-21	RES, ADJ, CARBON 2K	
< RELAY >			
RY401	1-515-622-11	RELAY	
RY402	1-515-622-11	RELAY	
RY451	1-515-622-11	RELAY	

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Ref. No.	Part No.	Description	Remark
*	1-654-043-11	PS BOARD	
		*****	
	1-533-183-11	HOLDER, FUSE	
	1-533-183-11	HOLDER, FUSE	
< CAPACITOR >			
C601	1-136-814-11	FILM	0. 001uF 5% 100V
C602	1-136-880-11	FILM	2. 2uF 10% 160V
C603	1-130-471-00	MYLAR	0. 001uF 5% 50V
C604	1-136-177-00	FILM	1uF 5% 50V
C605	1-136-177-00	FILM	1uF 5% 50V
C606	1-110-493-11	CAP, ELECT	4700uF
C607	1-110-493-11	CAP, ELECT	4700uF
C608	1-128-489-11	ELECT	3300uF 20% 16V
C609	1-124-927-11	ELECT	4. 7uF 20% 100V
C610	1-128-489-11	ELECT	3300uF 20% 16V
< CONNECTOR >			
CN1	1-564-321-00	PIN, CONNECTOR 2P	
CN2	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P	
* CN5	1-564-243-11	PIN, CONNECTOR 6P	
CN215	1-691-766-11	PLUG (MICRO CONNECTOR) 4P	
< DIODE >			
D601	8-719-200-39	DIODE C16P20F	
D602	8-719-200-40	DIODE C16P20FR	
D603	8-719-911-55	DIODE U05G	
D604	8-719-911-55	DIODE U05G	
D605	8-719-911-55	DIODE U05G	
D606	8-719-911-55	DIODE U05G	
< FUSE >			
△F1	1-532-078-00	FUSE, TIME LAG (T1AL 250V) (AEP, G)	
△F1	1-532-742-11	FUSE, GLASS TUBE (1. 6A 125V) (US)	
< TRANSISTOR >			
Q701	8-729-620-05	TRANSISTOR 2SC2603-EF	
< RESISTOR >			
△R601	1-212-958-00	FUSIBLE	10 5% 1/2W F
△R602	1-212-958-00	FUSIBLE	10 5% 1/2W F
R736	1-249-417-11	CARBON	1K 5% 1/4W F
R737	1-249-422-11	CARBON	2. 7K 5% 1/4W F
< THERMISTOR (POSITIVE) >			
THP601	1-810-782-11	THERMISTOR, POSITIVE 3. 3 (US, AEP)	
THP602	1-810-782-11	THERMISTOR, POSITIVE 3. 3 (US, AEP)	

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The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

**SIRCS**

**VOLUME**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-654-048-11	SIRCS BOARD *****				MISCELLANEOUS *****	
		< CAPACITOR >		△51	1-559-479-11	CORD, POWER (US)	
C714	1-164-159-11	CERAMIC 0.1uF	50V	△51	1-575-953-11	CORD, POWER (AEP, G)	
		< CONNECTOR >		△F1	1-532-078-00	FUSE, TIME LAG (TIAL 250V) (AEP, G)	
CNJ106	1-766-798-11	CONNECTOR, BOARD TO BOARD 5P		△F1	1-532-742-11	FUSE, GLASS TUBE (1.6A 125V) (US)	
		< DIODE >		S701	1-572-095-21	SWITCH, ROTARY	
D710	8-719-301-49	DIODE SEL2810A (MUTING)		△T901	1-427-641-11	TRANSFORMER, POWER (AEP, G)	
		< IC >		△T901	1-427-642-11	TRANSFORMER, POWER (US)	
IC707	8-749-923-43	IC GPIU57XB		*****			
		< SWITCH >		ACCESSORIES & PACKING MATERIALS *****			
S703	1-554-303-21	SWITCH, TACTILE (MUTING)		1-467-890-11	COMMANDER, STANDARD (RM-J90)		
*****						(US, AEP, G(BLACK))	
*	1-654-046-11	VOLUME BOARD *****		1-467-890-21	COMMANDER, STANDARD (RM-J90) (G(GOLD))		
*	4-942-204-01	PLATE, GROUND (ET201)		1-558-271-11	CORD, CONNECTION (AUDIO 108cm)		
		< CAPACITOR >		3-759-991-11	MANUAL, INSTRUCTION (US, AEP)		
C713	1-136-165-00	FILM 0.1uF 5%	50V		(ENGLISH, FRENCH, SPANISH, PORTUGUESE)		
		< CONNECTOR >		3-759-991-41	MANUAL, INSTRUCTION (AEP, G)		
CN204	1-691-766-11	PLUG (MICRO CONNECTOR) 4P			(GERMAN, DUTCH, SWEDISH, ITALIAN)		
CN205	1-691-767-11	PLUG (MICRO CONNECTOR) 5P		4-962-615-01	COVER, BATTERY (for RM-J90)		
* CN209	1-564-506-11	PLUG, CONNECTOR 3P			(US, AEP, G(BLACK))		
		< DIODE >		4-962-615-11	COVER, BATTERY (for RM-J90) (G(GOLD))		
D210	8-719-987-63	DIODE 1N4148M		* 4-970-081-01	INDIVIDUAL CARTON		
D211	8-719-987-63	DIODE 1N4148M		* 4-970-082-01	CUSHION		
		< VARIABLE RESISTOR >		*****			
RV201	1-223-758-11	RES, VAR, CARBON 20K/20K (ATTENUATOR)		HARDWARE LIST *****			
		< RELAY >		#1	7-682-247-09	SCREW +K 3X6	
RY210	1-515-622-11	RELAY		#2	7-682-548-09	SCREW (3X8)	
RY211	1-515-622-11	RELAY		#3	7-682-575-09	SCREW +B 5X10 (AEP, G)	
*****				#4	7-688-005-01	WASHER (5. SMALL)	

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

# TA-E90ES

## SONY SERVICE MANUAL

US Model  
AEP Model

### CORRECTION-1

Correct your service manual as shown below.

\_\_\_\_\_ : indicates corrected portion.

Page	INCORRECT				CORRECT			
	No.	Part No.	Description	Remark	Part No.	Description	Remark	
33	***** LOGIC BOARD *****				***** LOGIC BOARD *****			
	Q801	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q802	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q803	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q804	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q805	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q806	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q807	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q808	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q809	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q810	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q811	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		
	Q812	8-729-900-65	TRANSISTOR DTA144ES		8-729- <u>029-46</u>	TRANSISTOR <u>DTA143ESA</u>		

(SPM-96032)