

Service Manual

Power Amplifier

Amplifier
SE-CH10



Color

(K) Black Type

Area

Country Code	Area	Color
(P)	U.S.A.	(K)

System: SC-CH10

Because of unique interconnecting cables,
when a component requires service, send
or bring in the entire system.

SPECIFICATIONS

Power output:
WOOFER; 50 Hz~1.2 kHz, 0.9% 2×30 W (6Ω)
TWEETER; 1.2 kHz~20 kHz, 0.9% 2×6 W (8Ω)
REAR; 1 kHz, 0.9% 2×6 W (8Ω)
Total harmonic distortion
half power at 1 kHz: 0.07% (6Ω)
Headphones output level/
impedance: 300 mV/330Ω

Power consumption: 130 W
Power supply: AC 120 V, 60 Hz
Dimensions (W×H×D): 215×110×287 mm
(8¹⁵/₃₂"×4¹/₃₂"×11⁵/₁₆")
Weight: 5.2 kg (11.5 lb.)

Notes:

1. Specifications are subject to change without notice.
2. Weight and dimensions are approximate.
3. Total harmonic distortion is measured by the digital spectrum analyzer.

System	Tuner/CD player	Control Amplifier	Power Amplifier	Cassette Deck	Speakers
SC-CH10	SL-CH10	SU-CH10	SE-CH10	RS-CH10	SB-CH10

Panasonic®

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NOTES:

Refer to the service manual for Model No. SU-CH10, Order No. AD9012330C1 for information on ACCESSORIES, INSTALLATION OF THE SYSTEM, CONNECTIONS and PACKAGING.

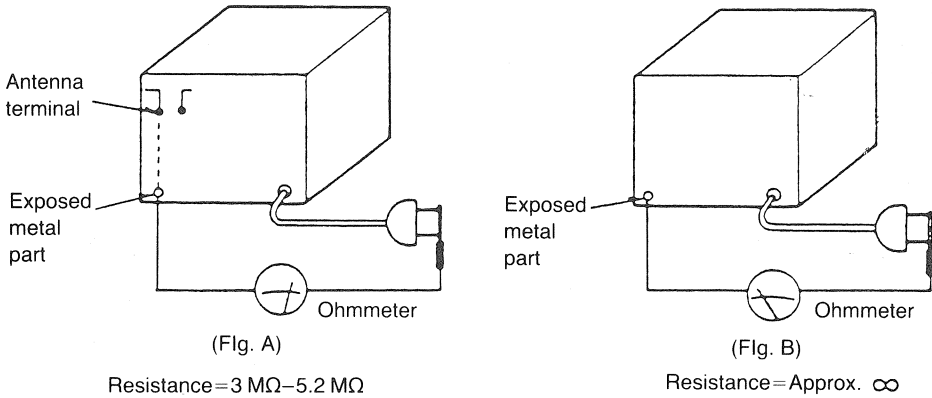
SAFETY PRECAUTION

- 1. Before servicing, unplug the power cord to prevent an electric shock.
- 2. When replacing parts, use only manufacturer's recommended components for safety.
- 3. Check the condition of the power cord. Replace if wear or damage is evident.
- 4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
- 5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

•INSULATION RESISTANCE TEST

- 1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
- 2. Turn on the power switch.
- 3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3 MΩ and 5.2 MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



- 4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

BEFORE REPAIR

- (1) Turn off the power supply. Using a 10Ω, 10 W resistor, connect both ends of power supply capacitors (C703, C704) in order to discharge the voltage.
- (2) Before turning the power supply on, after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 120 V, 60 Hz in NO SIGNAL mode is 275~825 mA.

PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

*No sound is heard when the power is switched ON.

*Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

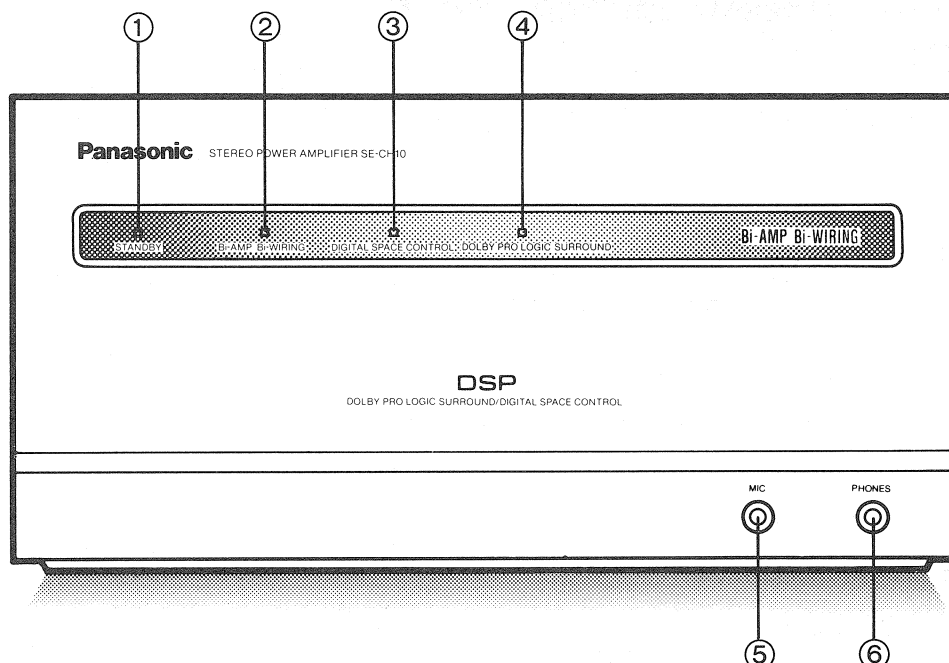
If this occurs, follow the procedure outlined below:

1. Switch OFF the power.
2. Determine the cause of the problem and correct it.
3. Switch ON the power once again.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first switched OFF and then ON again.

LOCATION OF CONTROL



① Standby indicator

This indicator illuminates when the power switch of this unit or that of the remote control is switched "OFF". Its purpose is to alert the user of the constant supply voltage to the internal circuitry even with the power switch OFF.

For this unit, even if this switch is switched to the "STANDBY" position, there is still a slight power consumption of about 11 watts; this is in order to assure the retention of the preset-memory functions.

② Bi-Amp/Bi-Wiring indicator

Illuminates when the power is turned "ON".

③ Digital Space Control indicator

This indicator illuminates when the Digital Space Control function on the control amplifier is turned ON.

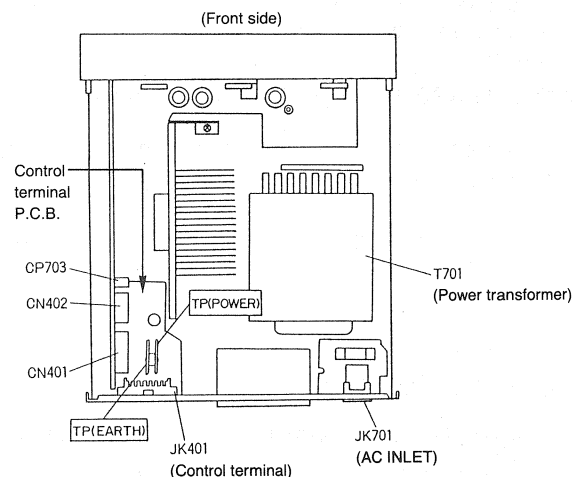
④ Dolby Pro-Logic Surround indicator

When the Dolby Pro-Logic Surround function on the control amplifier is turned ON, this indicator will be illuminated.

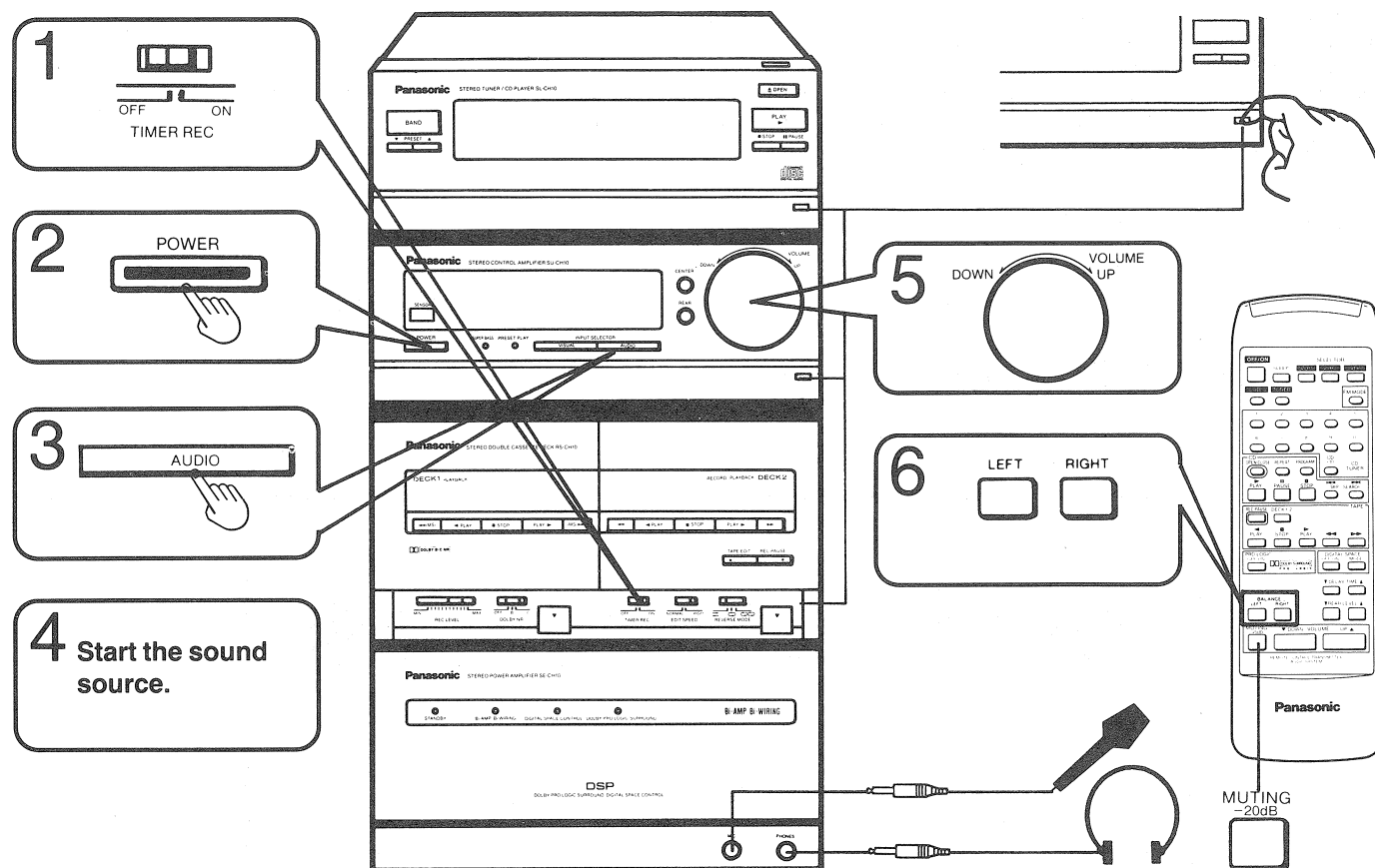
⑤ Microphone jack (MIC)

⑥ Headphones jack (PHONES)

Because the SE-CH10 has no power switch, short-circuit between TP (EARTH) and TP (POWER) on the control terminal P.C.B. for power on and off.



Basic Operating Procedure



1 Set the timer recording selector to OFF.

2 Set the power switch to ON.

3 Select the desired source.
Each time the audio input selector button is pressed, CD, TUNER and TAPE will be alternately be displayed.

4 Start the sound source.

5 Adjust the volume level.

If the audio output has been muted with the muting button on the remote control transmitter (the muting indicator is lit), the muted state can be cancelled by pressing the muting button once again or setting the volume level to the "-- dB" position.

6 Adjust the left-right volume balance.

Perform fine balance adjustment while playing the selected music source.
The balance indication on the control amplifier display is only a rough guide.

While enjoying playback

How to use the microphone (not included)

Connect the microphone to the microphone jack after reducing the volume level.

If strange noises (squealing or howling) are emitted during mixing, either change the direction of the microphone or turn down the volume.

It is possible to record the singing voice accompanying the tuner, tape or CD.

Plug type: Monaural mini

How to use headphones (not included)

Connect the headphones to the headphones jack after reducing the volume level.

Speakers are automatically cut off when the headphones are connected.

When using headphones, avoid listening at excessive volume levels for extended time periods.

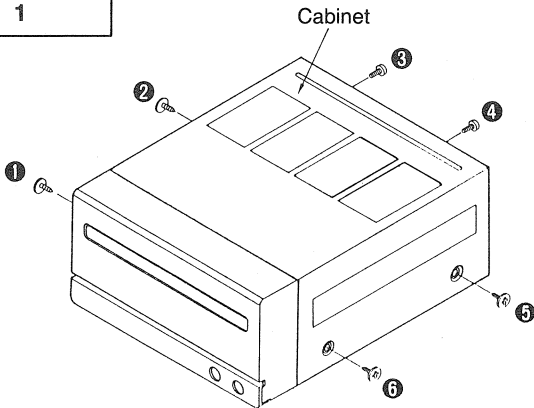
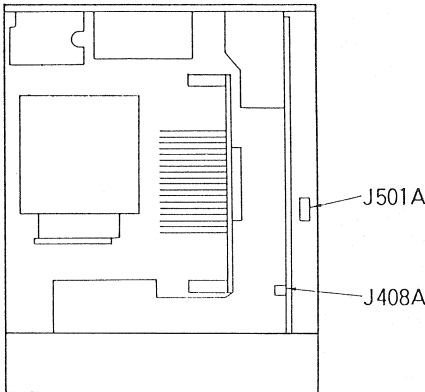
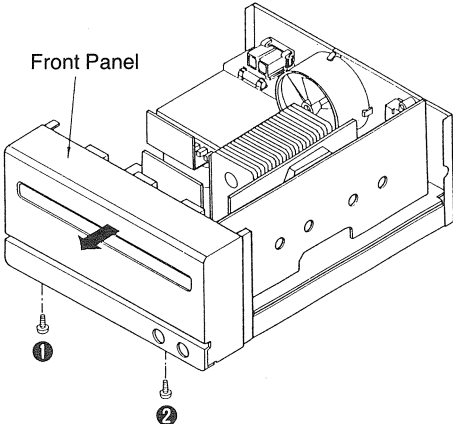
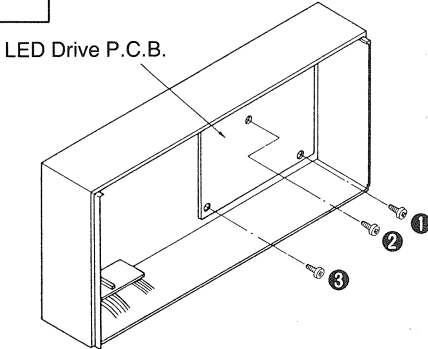
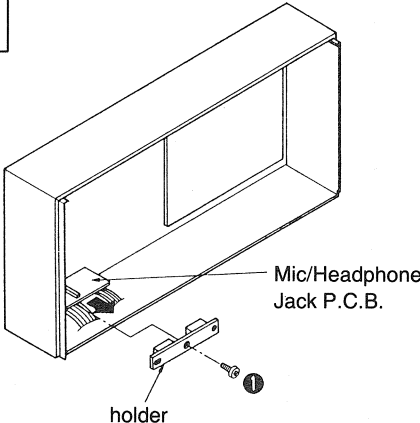
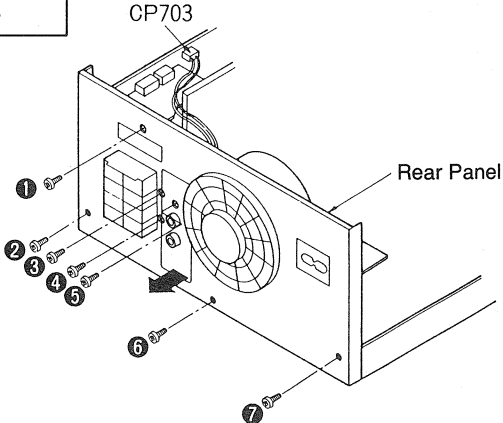
You cannot enjoy the benefits of Dolby Pro-Logic Surround while using headphones. Also, even when using headphones with this system, the sound from the center speaker will not be cut off.

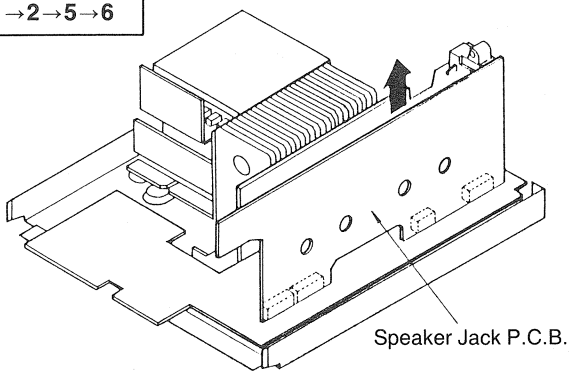
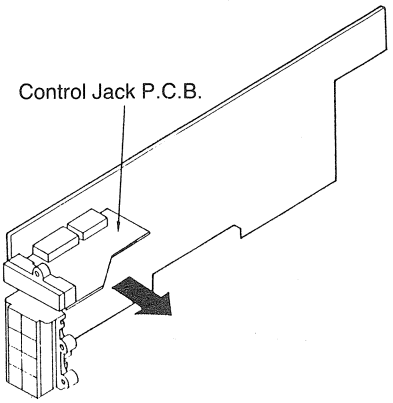
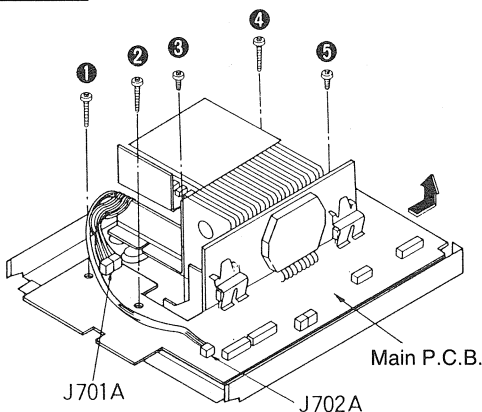
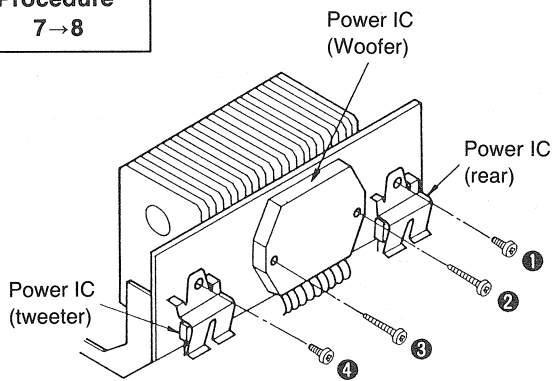
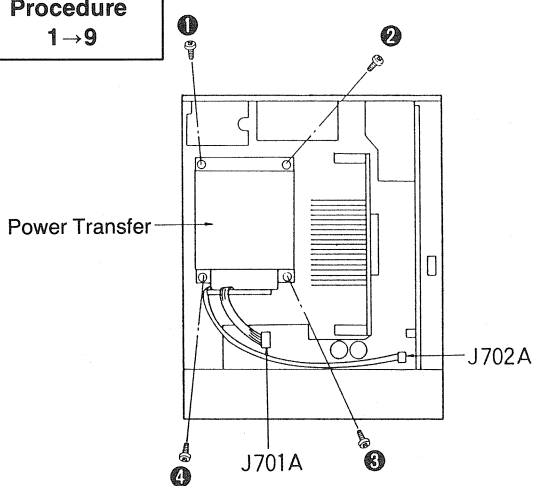
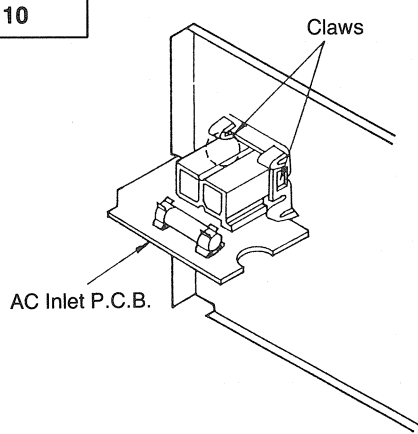
Plug type: Stereo mini

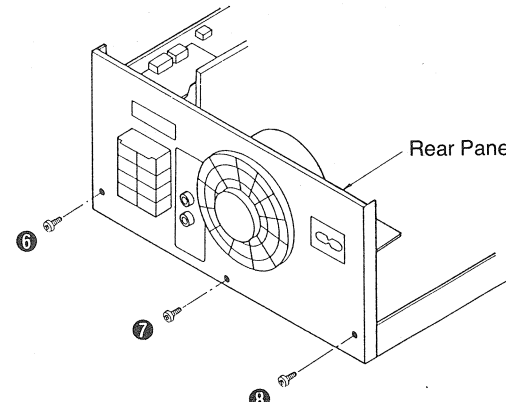
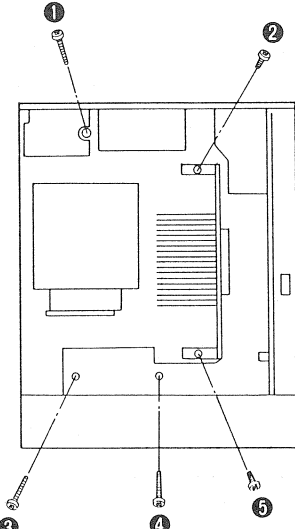
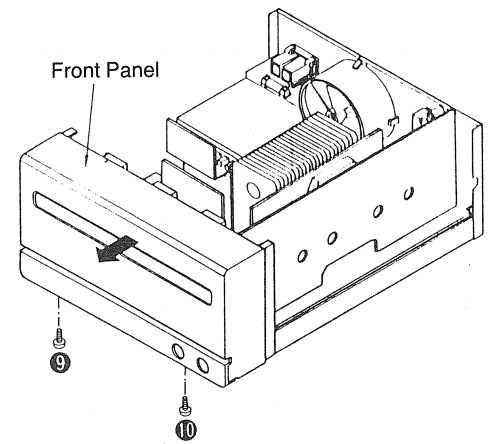
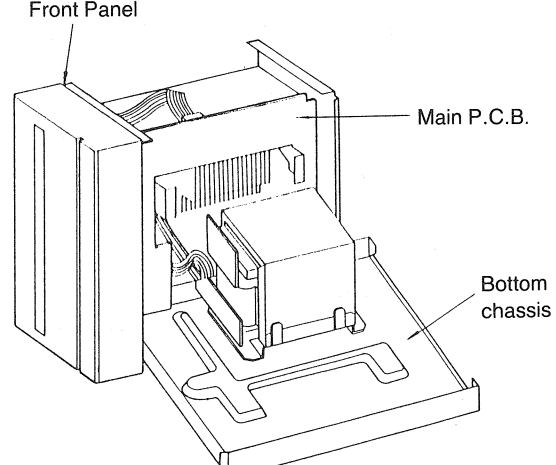
To open the door

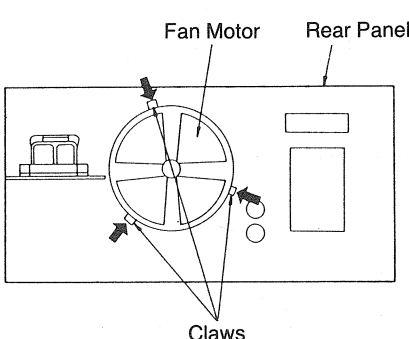
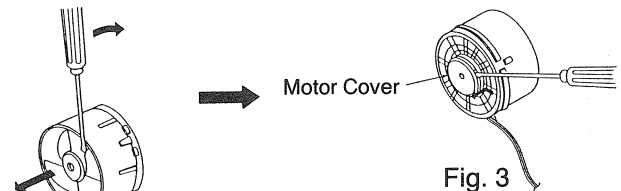
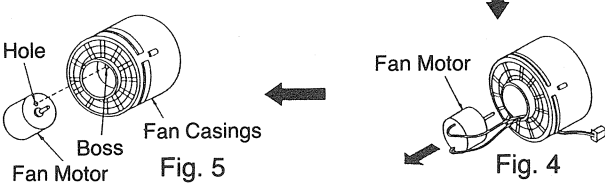
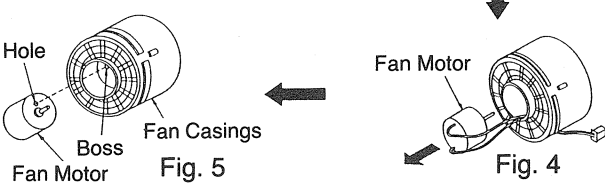
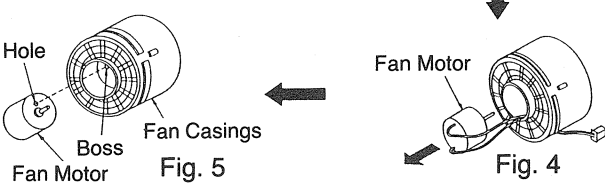
Pressing the small projection on the door will open it.

DISASSEMBLY INSTRUCTIONS

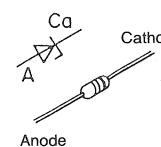
Ref. No. 1	Removal of the Cabinet	Ref. No. 2	Removal of the Front Panel
Procedure 1	 •Remove 6 screws (①~⑥).	Procedure 1→2	 1. Release 2 flat cables (J408A, J501A).  2. Remove 2 screws (①, ②). 3. Remove the front panel in the direction of arrow.
Ref. No. 3	Removal of the LED Drive P.C.B.		
Procedure 1→2→3	 •Remove 3 screws (①~③).		
Ref. No. 4	Removal of the Mic/ Headphones Jack P.C.B.	Ref. No. 5	Removal of the Rear Panel
Procedure 4	 1. Remove the screw ①. 2. Remove the holder. 3. Remove the mic/headphone jack P.C.B. in the direction arrow.	Procedure 1→5	 1. Release the connector (CP703). 2. Remove 7 screws (①~⑦). 3. Remove the rear panel in the direction of arrow.

Ref. No. 6	Removal of the Speaker Jack P.C.B. and Control Jack P.C.B.	
Procedure 1→2→5→6	 Speaker Jack P.C.B.  Control Jack P.C.B. 1. Remove the speaker jack P.C.B. in the direction arrow. 2. Remove the control jack P.C.B. in the direction arrow.	
Ref. No. 7	Removal of the Main P.C.B.	Ref. No. 8
Procedure 1→2→5→6→7	 Main P.C.B. J701A J702A 1. Release the flat cable (J701A, J702A). 2. Remove 5 screws (①~⑤).	
Procedure 7→8	 Power IC (Woofer) Power IC (rear) Power IC (tweeter) 1. Unsolder the power IC. 2. Remove the 4 screws (①~④). •When mounting the power IC or regulator transistor. Apply silicone compound (SZZOL 15) to the rear side of power IC or regulator transistor.	
Ref. No. 9	Removal of the Power Transfer.	Ref. No. 10
Procedure 1→9	 Power Transfer J701A J702A 1. Release the flat cable (J701A, J702A). 2. Remove the 4 screws (①~④).	
Procedure 1→10	 Claws AC Inlet P.C.B. •Remove the 2 claws.	

Ref. No. 11	Check the Main P.C.B.	 Diagram showing the removal of three screws (6, 7, 8) from the rear panel of the unit.
Procedure 1→11	 Diagram showing the removal of five screws (1, 2, 3, 4, 5) from the main P.C.B.	2. Remove 3 screws (6~8)  Diagram showing the removal of two screws (9, 10) from the front panel and the front panel being moved in the direction of the arrow. 3. Remove 2 screws (9, 10). 4. Remove the front panel in the direction of the arrow. Note: Connect the flat cable to the connectors (J408A, J501A).  Diagram showing the main P.C.B. being removed from the bottom chassis. 5. Remove the main C.B.A. from the bottom chassis. 6. Reinstall the front panel to the main P.C.B. and place the unit as shown above.

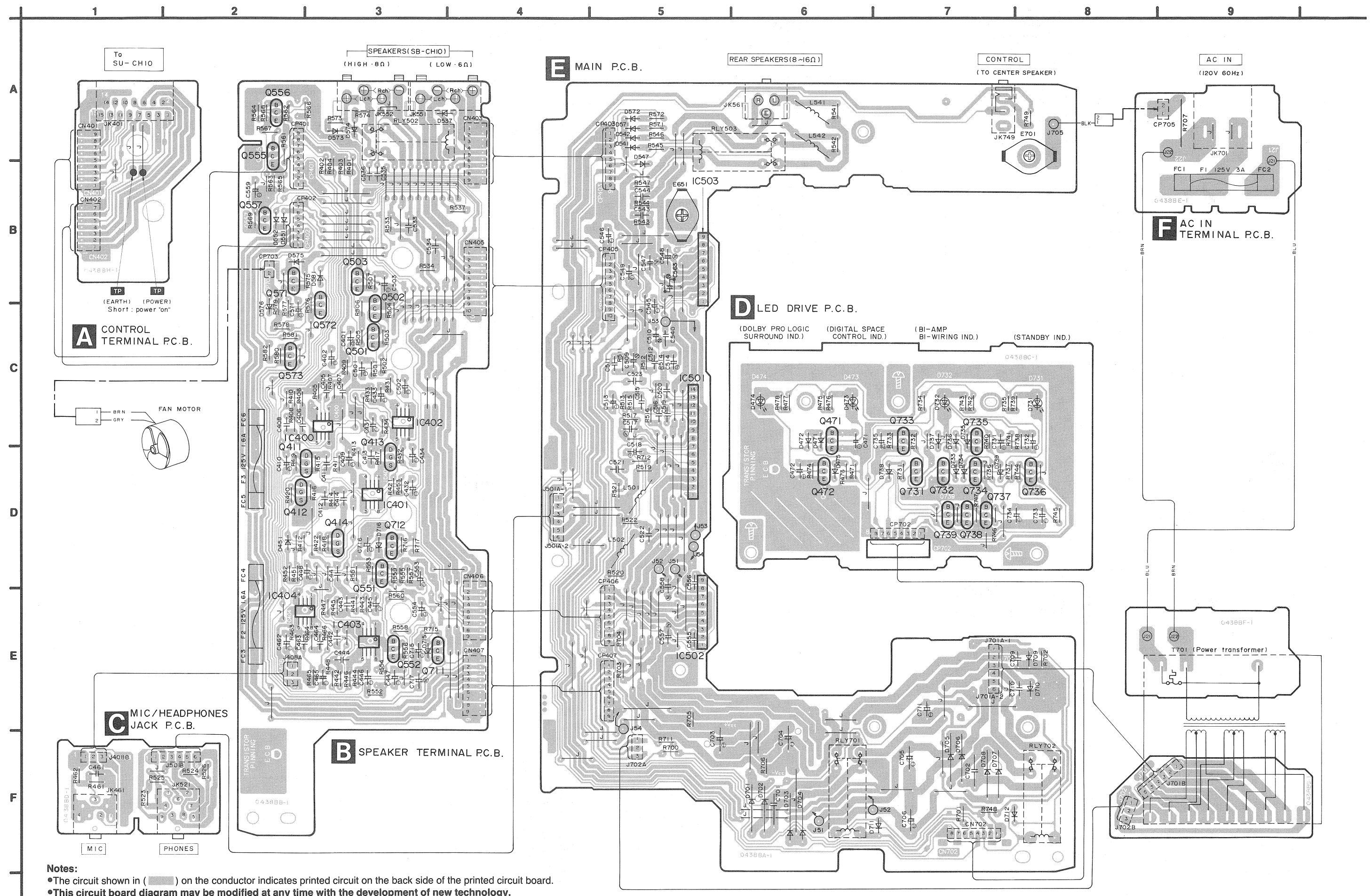
Ref. No. 12	Removal of the Fan Motor	3. Remove the motor cover. (See Fig. 3) 4. Remove the motor from the fan casing. (See Fig. 4) 5. When mounting the motor fan, align the fan casing's projection with the hole of the fan motor. (See Fig. 5)
Procedure 1→5→12	1. Release the 3 claws. (See Fig. 1) 2. Insert a screwdriver at the root of the cooling fan. Force it out of the motor shaft. (See Fig. 2)  Diagram showing the fan motor and rear panel with claws being released. Fig. 1	 Diagram showing the removal of the motor cover from the cooling fan. Fig. 2  Diagram showing the fan motor being removed from the fan casing. Fig. 3  Diagram showing the fan motor being aligned with the fan casing. Fig. 4  Diagram showing the fan motor being aligned with the fan casing. Fig. 5

A horizontal number line with tick marks at every integer from 1 to 10. The numbers 1 through 10 are written above the corresponding tick marks.





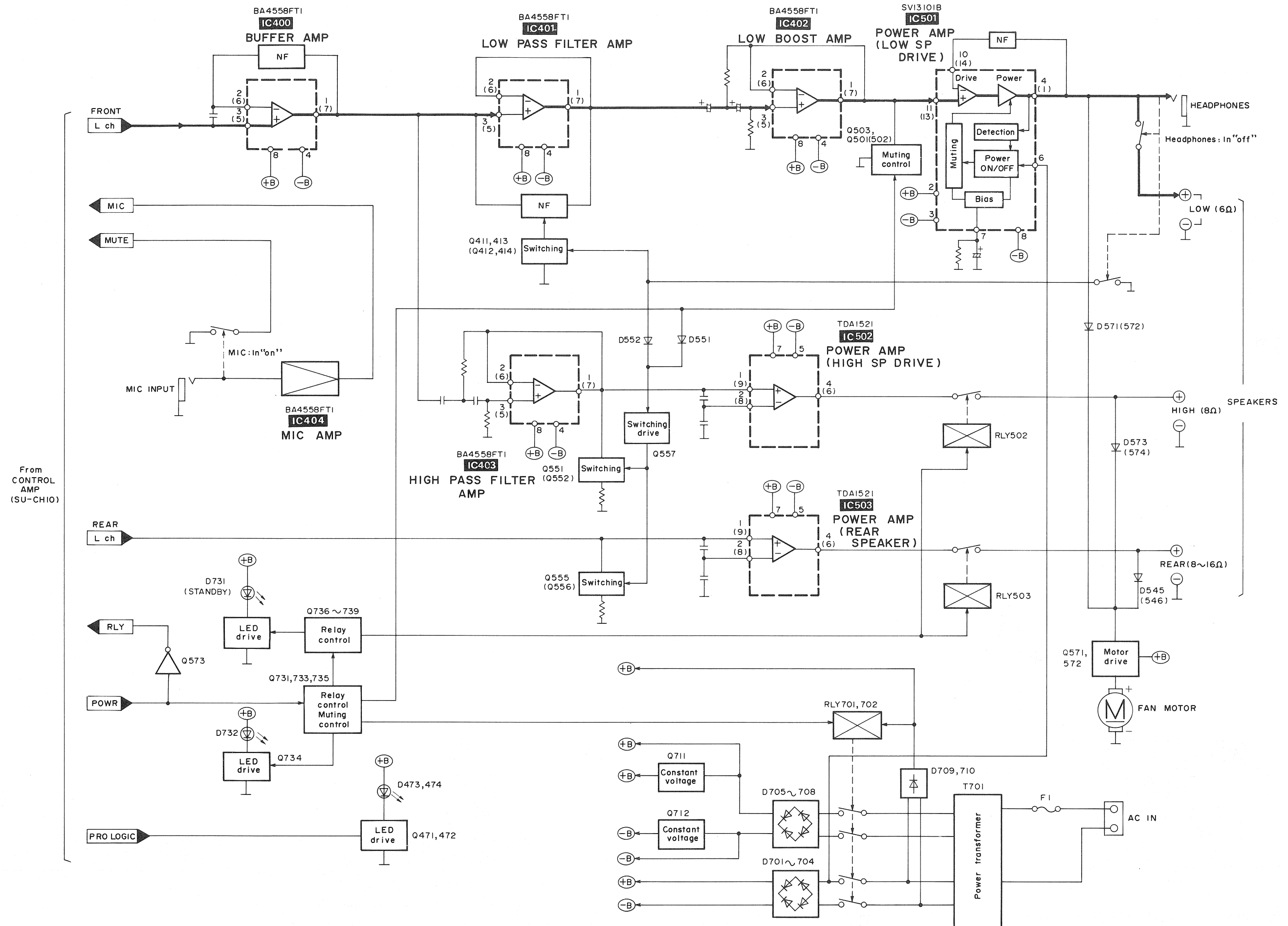
PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



BLOCK DIAGRAM

SE-CH10

SE-CH10



REPLACEMENT PARTS LIST

Note : * Important safety notice:

Components identified by $\triangle$ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.

Ref. No.	Part No.	Part Name & Description	Remarks	Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)		D575	MA700	DIODE	
				D576	MA4051MTA	DIODE	
				D581	MA165	DIODE	
IC400	SVIBA4558F	IC, BUFFER AMP		D701-708	GP15GLF	DIODE	$\triangle$
IC401	SVIBA4558F	IC, L. P. F. AMP		D709, 710	SVDS5688GT3	DIODE	$\triangle$
IC402	SVIBA4558F	IC, SUPER BAS AMP		D711, 712	MA165	DIODE	
IC403	SVIBA4558F	IC, H. P. F. AMP		D715, 716	MA4150M	DIODE	
IC404	SVIBA4558F	IC, MIC AMP		D731	LN873RPX-TA2	DIODE	
IC501	SVI3101B	IC, POWER AMP		D732	LN473YPX-TA2	DIODE	
IC502	TDA1521	IC, POWER AMP		D733-738	MA165	DIODE	
IC503	TDA1521	IC, POWER AMP		D739	MA4051MTA	DIODE	
		TRANSISTOR(S)				COIL(S)	
Q411-414	2SJ40CDTA	TRANSISTOR		L501, 502	SLQY07G-40	COIL	
Q471, 472	KSC2785YGTA	TRANSISTOR		L541, 542	SLQY07G-40	COIL	
Q501, 502	2SD1450RTA	TRANSISTOR					
Q503	DTA124ESTP	TRANSISTOR				TRANSFORMER(S)	
Q551, 552	2SD1450RTA	TRANSISTOR					
Q555, 556	2SD1450RTA	TRANSISTOR		T701	RTP1N5P003-V	POWER TRANSFORMER	$\triangle$
Q557	DTA124ESTP	TRANSISTOR					
Q571	KSC2785YGTA	TRANSISTOR				FUSE(S)	
Q572	MSA1048ABCTA	TRANSISTOR					
Q573	2SA1309A-R	TRANSISTOR		F1	XBA1F30NU14	FUSE 125V, 3A	$\triangle$
Q711	2SC1815Y0GTA	TRANSISTOR		F2, 3	XBA1F16NU14	FUSE 125V, 1.6A	$\triangle$
Q712	2SA1015Y	TRANSISTOR					
Q731	DTA124ESTP	TRANSISTOR				CONNECTOR(S)	
Q732	DTC114ESTP	TRANSISTOR					
Q733	2SC3311A-Q	TRANSISTOR		J408A	RJS1A1703	CONNECTOR(3PIN)	
Q734	DTC114ESTP	TRANSISTOR		J501A-1	RJS1A1703	CONNECTOR(3PIN)	
Q735	DTA124ESTP	TRANSISTOR		J501A-2	RJS1A1703	CONNECTOR(3PIN)	
Q736	DTA114ESTP	TRANSISTOR		J701A-1	RJS1A1703	CONNECTOR(3PIN)	
Q737	DTC114ESTP	TRANSISTOR		J701A-2	RJS1A1703	CONNECTOR(3PIN)	
Q738, 739	2SC3311A-Q	TRANSISTOR		J702A	RJS1A1703	CONNECTOR(3PIN)	
		DIODE(S)		CN401	RJU057W009	CONNECTOR(9PIN)	
				CN402	RJU057W007	CONNECTOR(7PIN)	
				CN403	RJU057W009	CONNECTOR(9PIN)	
D451	MA165	DIODE		CN405	RJU057W010	CONNECTOR(10PIN)	
D471, 472	MA165	DIODE		CN406, 407	RJU057W009	CONNECTOR(9PIN)	
D473, 474	LN873RPX-TA2	DIODE		CN702	RJU003K008M1	CONNECTOR(8PIN)	
D475	MA165	DIODE		CP401	RJT057W009-1	CONNECTOR(9PIN)	
D537	MA165	DIODE		CP402	RJT057W007-1	CONNECTOR(7PIN)	
D541, 542	MA165	DIODE		CP403	RJT057W009-1	CONNECTOR(9PIN)	
D547	MA165	DIODE		CP405	RJT057W010-1	CONNECTOR(10PIN)	
D551, 552	MA165	DIODE		CP406, 407	RJT057W009-1	CONNECTOR(9PIN)	
D571, 572	MA700	DIODE		CP702	RJT003K008M1	CONNECTOR(8PIN)	
D573, 574	MA165	DIODE		CP703	SJT3213	CONNECTOR(2PIN)	

[illegible]

Notes : * Capacity valuse are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
 * Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM) , 1M=1,000k (OHM)

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
			R545, 546	ERDS2TJ682T	1/4W 6. 8K	C409, 410	ECEA1HPS3R3	50V 3. 3U
			R547 Δ	ERD25FVJ391T	1/4W 390	C411-414	ECFR1E223KR	25V 0. 022U
			R551, 552	ERDS2TJ272T	1/4W 2. 7K	C431-434	ECEA1HUR47B	50V 0. 47U
			R553, 554	ERDS2TJ183T	1/4W 18K	C441-444	ECFR1E822KR	25V 8200P
		RESISTORS	R555, 556	ERDS2TJ563	1/4W 56K	C445, 446	ECEA1HU4R7	50V 4. 7U
			R557, 558	ERDS2TJ472	1/4W 4. 7K	C447, 448	ECEA1HK010B	50V 1U
R401, 402	ERDS2TJ102	1/4W 1K	R559, 560	ERDS2TJ102	1/4W 1K	C461	ECBT1H102KB5	50V 1000P
R403-406	ERDS2TJ104	1/4W 100K	R561, 562	ERDS2TJ103	1/4W 10K	C462	ECEA1HPS3R3	50V 3. 3U
R407, 408	ERDS2TJ123	1/4W 12K	R563, 564	ERDS2TJ562	1/4W 5. 6K	C463, 464	ECBT1H101KB5	50V 100P
R409, 410	ERDS2TJ103	1/4W 10K	R565, 566	ERDS2TJ222	1/4W 2. 2K	C465	ECEA1HPS3R3	50V 3. 3U
R411-414	ERDS2TJ562	1/4W 5. 6K	R567, 568	ERDS2TJ102	1/4W 1K	C471	ECEA1HK220B	50V 22U
R415-418	ERDS2TJ224T	1/4W 220K	R569	ERDS2TJ472	1/4W 4. 7K	C472	ECEA1HK010B	50V 1U
R419-422	ERDS2TJ105T	1/4W 1M	R571-574	ERDS2TJ682T	1/4W 6. 8K	C501, 502	ECEA1HPS3R3	50V 3. 3U
R431, 432	ERDS2TJ681	1/4W 680	R575	ERDS2TJ333	1/4W 33K	C503	ECEA1HK3R3	50V 3. 3U
R433, 434	ERDS2TJ823T	1/4W 82K	R576	ERDS2TJ153	1/4W 15K	C509, 510	ECEA1ESN3R3B	25V 3. 3U
R441, 442	ERDS2TJ153	1/4W 15K	R577	ERDS2TJ103	1/4W 10K	C511, 512	ECBT1H820KB5	50V 82P
R443, 444	ERDS2TJ101	1/4W 100	R578, 579 Δ	ERDS1FVJ101T	1/2W 100	C513, 514	ECEA1CPS100	16V 10U
R445, 446	ERDS2TJ103	1/4W 10K	R580, 581	ERDS2TJ103	1/4W 10K	C515, 516	ECBT1H150J5	50V 15P
R447, 448	ERDS2TJ101	1/4W 100	R582 Δ	ERD25FJ471	1/4W 470	C517	ECEA1EN220SB	25V 22U
R451	ERDS2TJ332	1/4W 3. 3K	R700 Δ	ERD25FVJ150T	1/4W 15	C518	ECEA2AU100	100V 10U
R452	ERDS2TJ223	1/4W 22K	R701, 702 Δ	ERD25FVJ391T	1/4W 390	C519, 520	ECBT1H821KB5	50V 820P
R453	ERDS2TJ104	1/4W 100K	R703, 704 Δ	ERD25FVJ4R7T	1/4W 4. 7	C521-523	ECKR1H223ZF	50V 0. 022U
R461	ERDS2TJ473	1/4W 47K	R705, 706	ERDS2TJ822	1/4W 8. 2K	C533, 534	ECKR1H223ZF	50V 0. 022U
R462	ERDS2TJ102	1/4W 1K	R707 Δ	ERC12ZGK335	1/2W 3. 3M	C535, 536	ECBT1H102KB5	50V 1000P
R463	ERDS2TJ123	1/4W 12K	R711	ERDS2TJ154	1/4W 150K	C540	ECBT1E223ZF	25V 0. 022U
R464	ERDS2TJ154	1/4W 150K	R712	ERDS2TJ103	1/4W 10K	C543, 544	ECKR1H223ZF	50V 0. 022U
R465	ERDS2TJ821	1/4W 820	R715, 716	ERDS2TJ102	1/4W 1K	C545, 546	ECEA1HPS010	50V 1U
R466	ERDS2TJ102	1/4W 1K	R717 Δ	ERD25FVJ470T	1/4W 47	C547, 548	ECEA1EN100SB	25V 10U
R471	ERDS2TJ472	1/4W 4. 7K	R731	ERDS2TJ102	1/4W 1K	C549	ECEA1HK010B	50V 1U
R473	ERDS2TJ472	1/4W 4. 7K	R732, 733	ERDS2TJ103	1/4W 10K	C553, 554	ECEA1HPS010	50V 1U
R474, 475	ERDS2TJ222	1/4W 2. 2K	R734	ERDS2TJ471	1/4W 470	C555, 556	ECBT1C122KR5	16V 1200P
R476	ERDS2TJ182	1/4W 1. 8K	R735	ERDS2TJ222	1/4W 2. 2K	C557, 558	ECEA1EN100SB	25V 10U
R477	ERDS2TJ222	1/4W 2. 2K	R736	ERDS2TJ103	1/4W 10K	C559	ECEA1HK3R3	50V 3. 3U
R478	ERDS2TJ182	1/4W 1. 8K	R737	ERDS2TJ472	1/4W 4. 7K	C563	ECEA1HKN010B	50V 1U
R501, 502	ERDS2TJ153	1/4W 15K	R738	ERDS2TJ123	1/4W 12K	C571	ECEA1CK100B	16V 10U
R503, 504	ERDS2TJ103	1/4W 10K	R739	ERDS2TJ222	1/4W 2. 2K	C701, 702	ECKW2H103PE	500V 0. 01U
R505, 506	ERDS2TJ102	1/4W 1K	R740	ERDS2TJ152	1/4W 1. 5K	C703, 704	ECEA45V472YE	45V 4700U
R507	ERDS2TJ472	1/4W 4. 7K	R741	ERDS2TJ183T	1/4W 18K	C705, 706	ECEA1EU222	25V 2200U
R511, 512	ERDS2TJ104	1/4W 100K	R742, 743	ERDS2TJ471	1/4W 470	C709, 710	ECKR2H102ZF5	500V 1000P
R513, 514	ERDS2TJ562	1/4W 5. 6K	R744, 745	ERDS2TJ473	1/4W 47K	C711	ECEA1HU101	50V 100U
R515, 516	ERDS2TJ104	1/4W 100K	R746	ERDS2TJ102	1/4W 1K	C715, 716	ECEA1CK100B	16V 10U
R517	ERDS2TJ334	1/4W 330K	R747	ERDS2TJ223	1/4W 22K	C717	ECEA1HNR47SB	50V 0. 47U
R519, 520	ERDS2TJ100	1/4W 10	R748 Δ	ERD25FVJ150T	1/4W 15	C731	ECEA1EK470B	25V 47U
R521, 522 Δ	ERDS1FVJ100T	1/2W 10	R749	ERDS2TJ100	1/4W 10	C732	ECEA1HK3R3	50V 3. 3U
R523-526	ERDS2TJ181T	1/4W 180				C733, 734	ECEA0JK221B	6. 3V 220U
R533, 534 Δ	ERDS1FVJ8R2T	1/2W 8. 2			CAPACITORS	C735	ECEA1AK101	10V 100U
R537 Δ	ERD25FVJ391T	1/4W 390						
R541, 542	ERDS2TJ100	1/4W 10	C401, 402	ECEA1HPS3R3	50V 3. 3U			
R543, 544 Δ	ERDS1FVJ8R2T	1/2W 8. 2	C405-408	ECBT1H101KB5	50V 100P			

[illegible]

