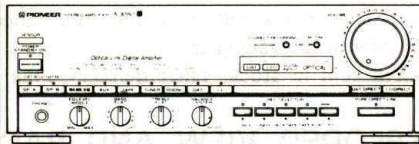


# Service Manual



ORDER NO.  
ARP1791

STEREO AMPLIFIER

# A-X550

A-X550 HAS FOLLOWING VERSIONS :

Type	Power requirement	Export destination
HE	AC220V, 240V (switchable) *	European continent
HB	AC220V, 240V (switchable) *	United Kingdom
HEZ	AC220V, 240V (switchable) *	West Germany

\*Change the primary wiring of the power transformer.

- This manual is applicable to the A-X550/HE and HB types.
- For the HB type, refer to page 38.
- For the other types, refer to additional service manuals.

## CONTENTS

1. EXPLODED VIEW, PACKING AND PARTS LIST .....	2
2. SCHEMATIC AND P. C. BOARDS CONNECTION DIAGRAM .....	6
3. ELECTRICAL PARTS LIST .....	25
4. IC DESCRIPTIONS .....	29
5. FOR HB TYPE .....	36
6. SPECIFICATIONS .....	37
7. PANEL FACILITIES .....	38

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# 1. EXPLODED VIEW, PACKING AND PARTS LIST

## NOTES :

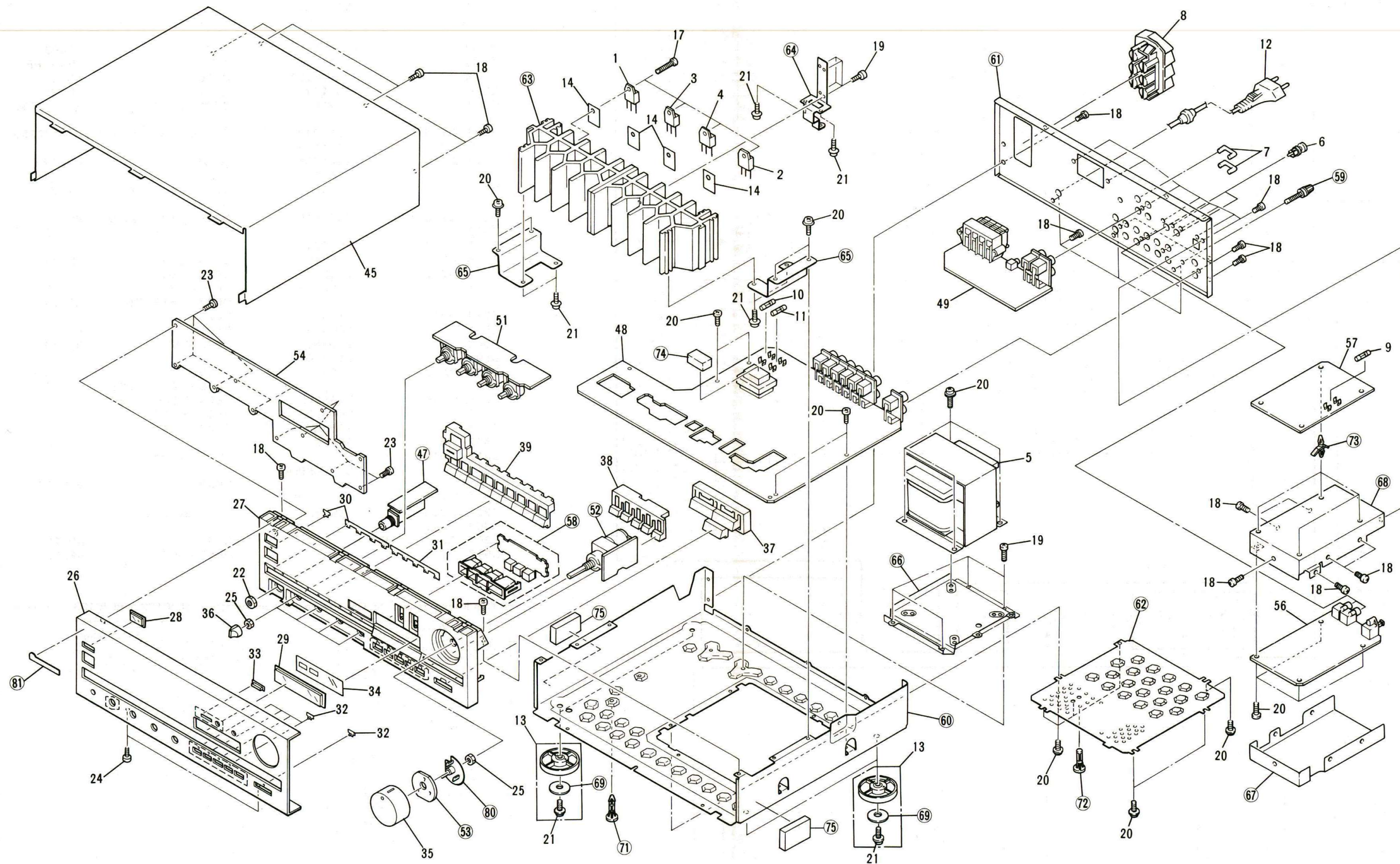
- Parts without part number cannot be supplied.
- The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## 1.1 PARTS LIST OF EXPLODED VIEW AND PACKING

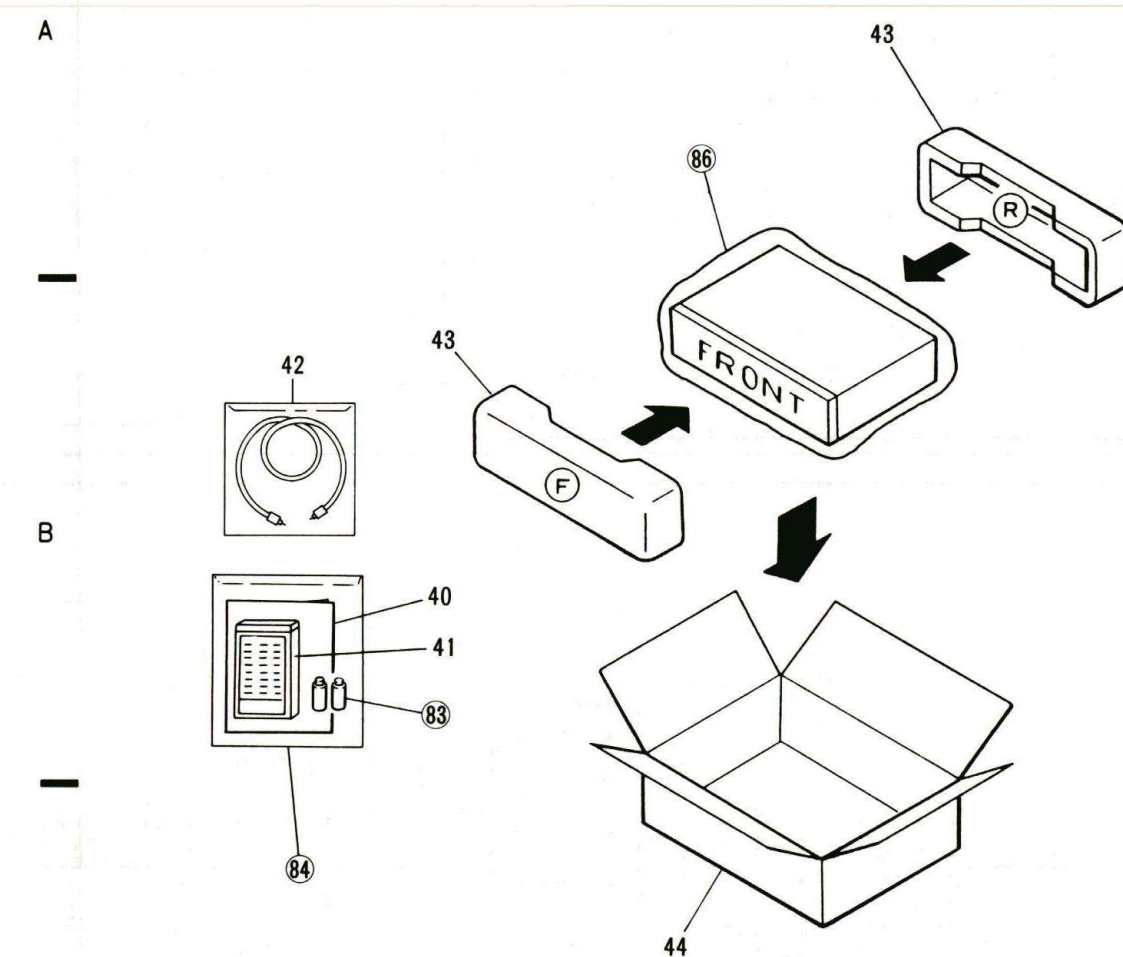
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	2SA1302	TRANSISTOR Q3	51	AWZ1773	TONE ASSEMBLY	
	2	2SA1302	TRANSISTOR Q4	52		VR ASSEMBLY	
	3	2SC3281	TRANSISTOR Q1	53		LED ASSEMBLY	
	4	2SC3281	TRANSISTOR Q2	54	AWZ2255	CONTROL MAIN ASSEMBLY	
$\Delta$	5	ATS1195	POWER TRANSFORMER T1	55		.....	
	6	AKM-050	SHORT PIN PLUG	56	AWZ2256	DAC ASSEMBLY	
	7	AKM1019	JUMPER PLUG	57	AWZ2257	DAC PS ASSEMBLY	
$\Delta$	8	AKP-502	AC SOCKET 3-P	58		LAMP ASSEMBLY	
$\Delta$	9	AEK-402	FUSE(T1A) FU3	59		TERMINAL SCREW	
$\Delta$	10	AEK-403	FUSE(T2.5A) FU1	60		CHASSIS	
	11	AEK-403	FUSE(T2.5A) FU2	61		REAR PANEL	
	12	ADG1021	AC POWER CORD	62		BOTTOM PLATE	
	13	AMR1459	INSULATOR ASSEMBLY	63		HEAT SINK	
	14	AEE1014	SHEET	64		HEAT SINK HOLDER A	
	15		.....	65		HEAT SINK HOLDER B	
	16		.....	66		TRANS HOLDER	
	17	ABA-297	SCREW (STEEL)	67		DAC SHIELD CASE A	
	18	ABA-298	SCREW	68		DAC SHIELD CASE B	
	19	ABA1009	SCREW (STEEL)	69		ABSORBER	
	20	ABA1011	SCREW (STEEL)	70		.....	
	21	ABA1050	SCREW (STEEL)	71		SPACER	
	22	ABN-065	NUT	72		PCB SPACER	
	23	BBZ26P080FMC	SCREW	73		PCB SUPPORT	
	24	BBZ30P080FZK	SCREW	74		CUSHION	
	25	NK90FUC	NUT	75		CUSHION	
	26	ANB1297	FRONT PANEL	76		.....	
	27	AMB1479	PANEL BASE	77		.....	
	28	AAK1333	SENCER ACRYLIC LENS	78		.....	
	29	AAK1473	LAMP PANEL	79		.....	
	30	AAK1482	INDICATOR LENS L	80		VOL PCB HOLDER	
	31	AAK1484	INDICATOR LENS R	81		NAME PLATE	
	32	AAK1485	INDICATOR LENS A	82		.....	
	33	AAK1487	DIRECT REC LENS	83		"AAA" DRY CELL	
	34	AAK1690	DISPLAY SHEET	84		VINYL BAG	
	35	AAB1044	VOL ROTARY KNOB	85		.....	
	36	AAB1070	ROTARY KNOB	86		SHEET	
	37	AAD1384	DIRECT KNOB				
	38	AAD1386	REC SELECTOR KNOB				
	39	AAD1564	FUNCTION KNOB				
	40	ARE1116	INSTRUCTION MANUAL				
	41	AXD1053	REMOTE CONSOLE UNIT				
	42	AKX1031	OPTICAL CABLE				
	43	AHA1202	PAD				
	44	AHD1614	PACKING CASE				
	45	AZN1802	BONNET COVER				
	46		.....				
	47		HEAD PHONE ASSEMBLY				
	48	AWZ2253	AF MAIN ASSEMBLY				
	49	AWZ2254	SP ASSEMBLY				
	50		.....				



### 1.2 EXPLODED VIEW



### 1.3 PACKING



## 2. SCHEMATIC AND P. C. BOARDS CONNECTION DIAGRAM

### NOTES : SCHEMATIC DIAGRAM

- RESISTORS:**  
Indicated in  $\Omega$ , 1/4W, 1/8W,  $\pm 5\%$  tolerance unless otherwise noted k; k $\Omega$ , M; M $\Omega$ , (F);  $\pm 1\%$ , (G);  $\pm 2\%$ , (K);  $\pm 10\%$ , (M);  $\pm 20\%$  tolerance.
- CAPACITORS:**  
Indicated in capacity ( $\mu F$ ) /voltage (V) unless otherwise noted p; pF.  
Indication without voltage is 50V except electrolytic capacitor.
- VOLTAGE CURRENT:**  
  - : Signal voltage at (100W+100W, 8  $\Omega$ ) output (1kHz).
  - ▭: DC voltage (V) at no input signal.
  - Value in ( ) is DC voltage at rated power.
- OTHERS**  
  - : Signal routes.
  - ⊗: Adjusting point.

The  $\Delta$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.  
\*marked capacitors and resistors have parts numbers.  
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

- SWITCHES**  
Control main assembly  
  - S601: POWER
  - S602: SP-A
  - S603: SP-B
  - S604: BASS EQ.
  - S605: AUX
  - S606: TAPE
  - S607: TUNER
  - S608: PHONO
  - S609: DAT
  - S610: CD
  - S611: DAT DIRECT
  - S612: CD DIRECT
  - S613: SOURCE
  - S614: TUNER
  - S615: DAT → TAPE
  - S616: TAPE → DAT
  - S617: OFF
  - S618: CD DIRECT RECORDING
  - S619: MUTING
  - S620: PURE DIRECT LINE

### Line Voltage Selection

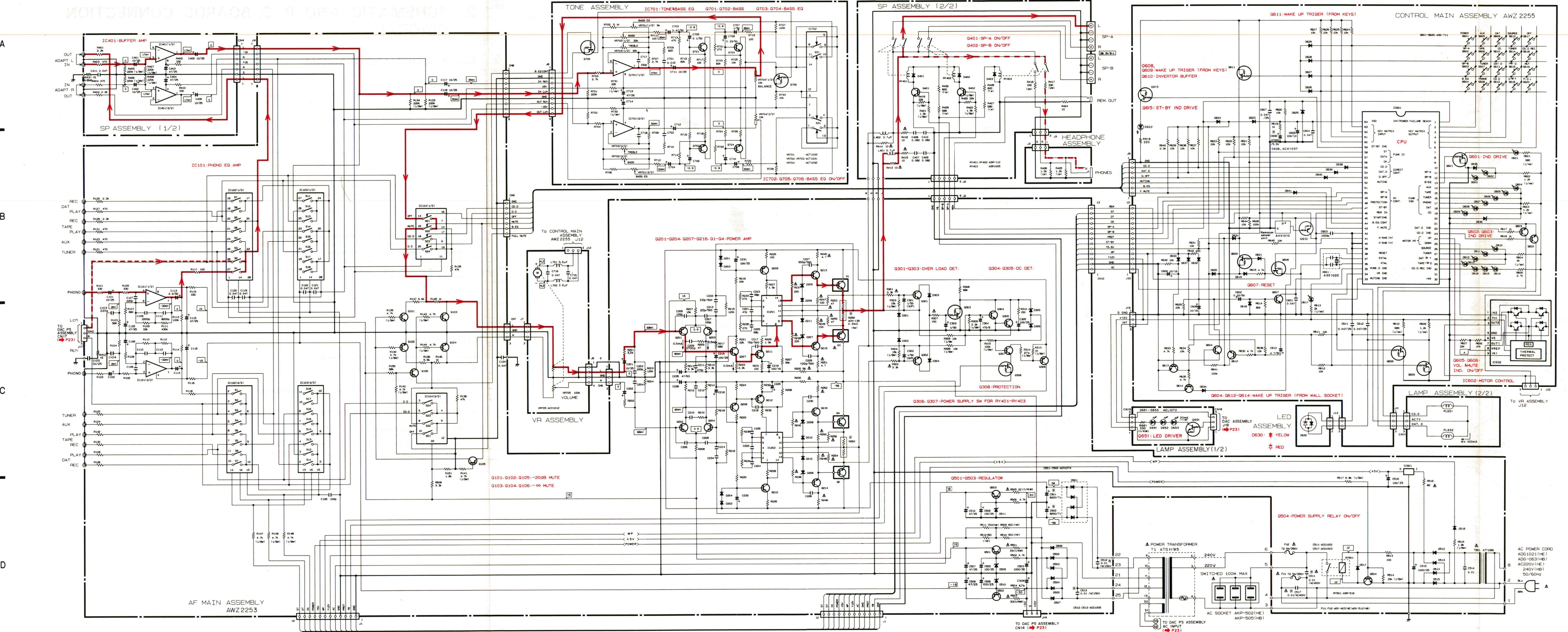
Line voltage can be changed with following steps.

1. Disconnect the AC power cord.
2. Remove the Bonnet case.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltege label on the rear panel.

Part No.	Description	
AAX-193	220v label	———— 220V
AAX-192	240V label	----- 240V



2.1 SCHEMATIC DIAGRAM OF AF AND CONTROL SECTIONS



AF MAIN assembly (AWZ2253)		SP assembly (AWZ2254)	
Q3, Q4	2SA1302	IC401	M5218PF
Q1, Q2	2SC3281	Q401, Q402	2SC2235
IC101	M5218P	D401-D403	1SS252
IC501	M5278L56	Tone assembly (AWZ1773)	
IC201, IC202	PA0016	IC702	LC4966
IC103	TC9163N	IC701	M5218PF
IC102	TC9164N	Q705	μ PD6362C
IC104	μ PD6362C	Q706	RN1201
Q308	RN1201	Q701-Q704	RN2201
Q303	RN2203	Control main assembly (AWZ2255)	
Q105, Q106	2SA1048	IC601	PDG022
Q209, Q210	2SA1145	IC602	TA7291S
Q215, Q216	2SA1306	Q601, Q605, Q606, Q608	RN1201
Q201-Q204	2SA992	Q609-Q611, Q615	RN2201
Q306, Q502	2SB560	Q602, Q603	2SC2235
Q207, Q208, Q301, Q302	2SC1845	Q604, Q607, Q612-Q614	2SC2458
Q307, Q504	2SC2240	D614-D616	AEL1053
Q304, Q305	2SC2458	D602-D613, D617, D622	AEL1072
Q211, Q212	2SC2705	D601	AEL1073
Q101-Q104	2SC2878	D635, D636	RD3.0ESB
Q213, Q214	2SC3298	D625	RD4.7ESB2
Q501	2SD438	D618-D621, D623, D624, D626-D629, D631-D634, D637-D641	1SS252
Q503	2SD880	LED assembly	
D501	D5S820F	D630	AEL1071
D207, D208	HZS5BLL	Lamp assembly	
D205, D206	HZS5CLL	Q651	RN1201
D305	RD13ESB	D651-D653	AEL1072
D306	RD5.6ESB		
D502-D507, D512-D515, D511	S5566		
D509, D510	UZ-13BSA		
D201-D204, D209-D212, D301-D304, D516, D517	UZ-16BSC 1SS252		

Conditions to set to ON the respective switches of IC102 and IC103

Function	IC No. IC102 (TC9164N)	IC No. IC102 (TC9164N)	IC No. IC103 (TC9163N)
PHONO	S1	PANEL SW PURE DIRECT LINE	S7, S8
CD	S2	IC103 (TC9163N)	S12, S17, S18
TUNER	S3	IC104 (μ PD6362C)	S7, S8
AUX	S4	PANEL SW CD & DAT DIRECT (OFF)	S21
DAT	S5	MUTING (OFF)	S22
TAPE	S6	CD DIRECT	S23
		DAT DIRECT	S24

NOTE:  
 #1: The switch with this mark is OFF when the function is set to DAT.  
 #2: The switch with this mark is OFF when the function is set to TAPE.  
 #3: The switch with this mark is OFF when REC SELECTOR is set to SOURCE.

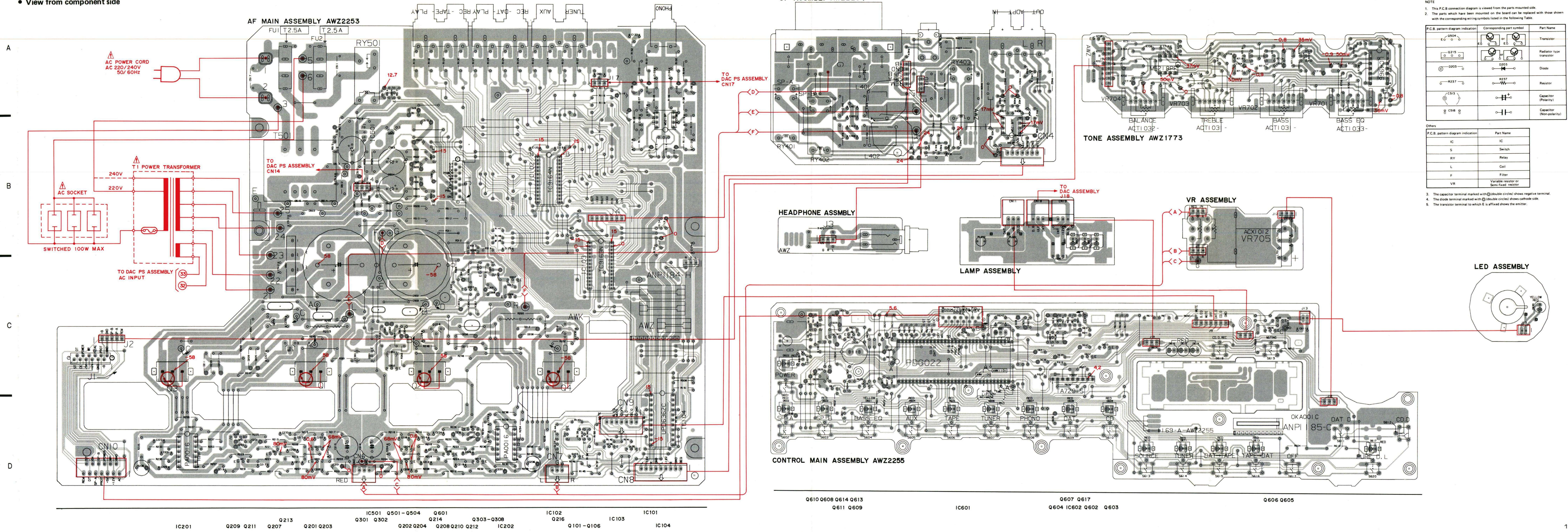
REC SEL.	IC No. IC102 (TC9164N)	IC No. IC103 (TC9163N)
SOURCE	#1 S7, #2 S8	S11, S17, S18
OFF	S7, S8	S12, S17, S18
TUNER	S7, S8	S14, S17, S18
TAPE-DAT	#3 S7	S15, S17
DAT-TAPE	#3 S8	S16, S18

PANEL SW	IC No. IC702 (LC4966)
BASS EQ (ON)	S31



2.2 P. C. BOARDS CONNECTION DIAGRAM OF AF AND CONTROL SECTIONS

• View from component side



NOTE

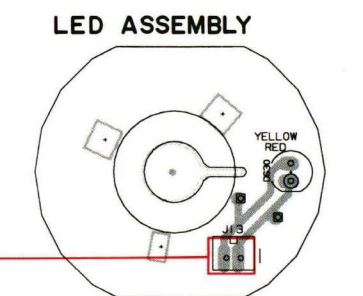
1. This P.C.B. connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203		Diode
R237		Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊖ (double circles) shows negative terminal.
4. The diode terminal marked with ⊕ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.



Q610 Q608 Q614 Q613 Q611 Q609 IC601 Q607 Q617 Q604 IC602 Q602 Q603 Q606 Q605

IC201 Q209 Q211 Q207 Q213 Q201 Q203 Q301 Q302 Q202 Q204 Q214 Q208 Q210 Q212 IC202 IC102 Q216 Q101-Q106 IC103 IC101 IC104

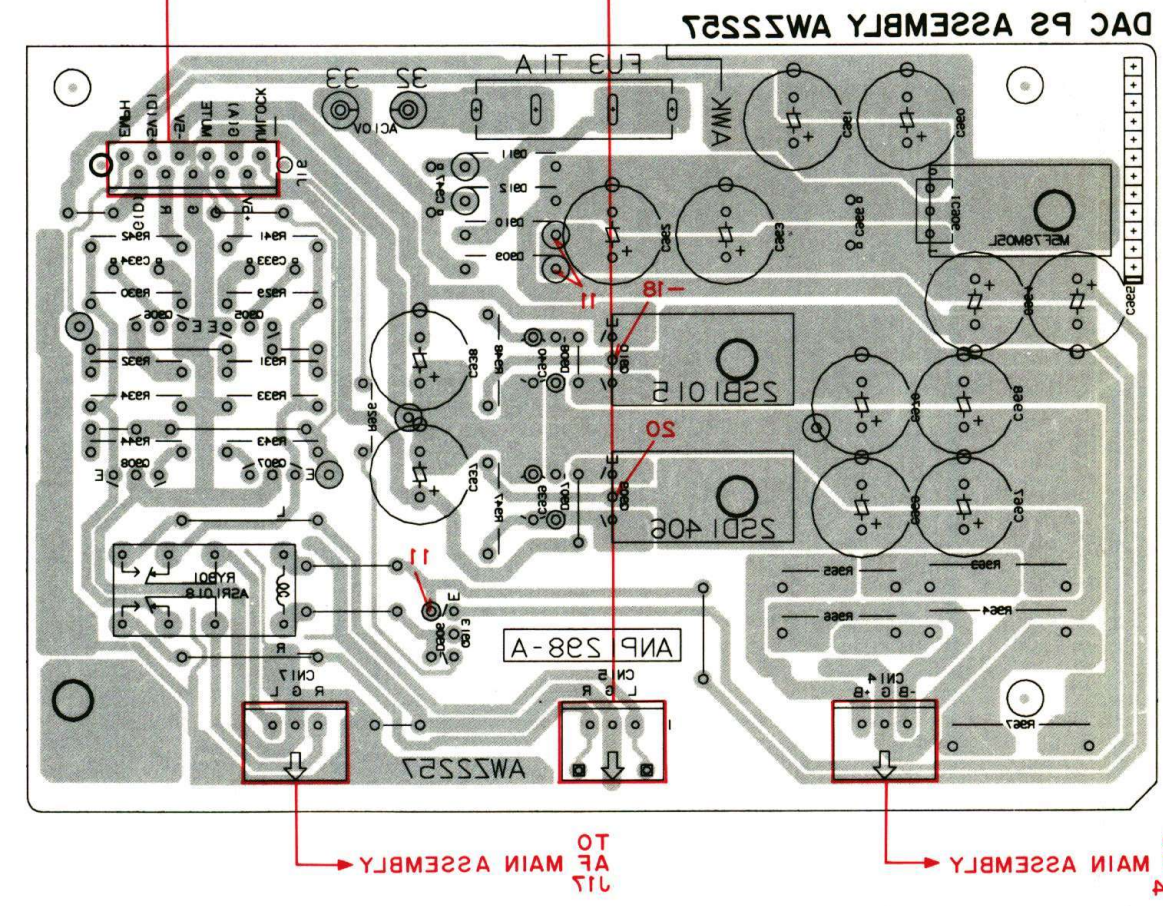
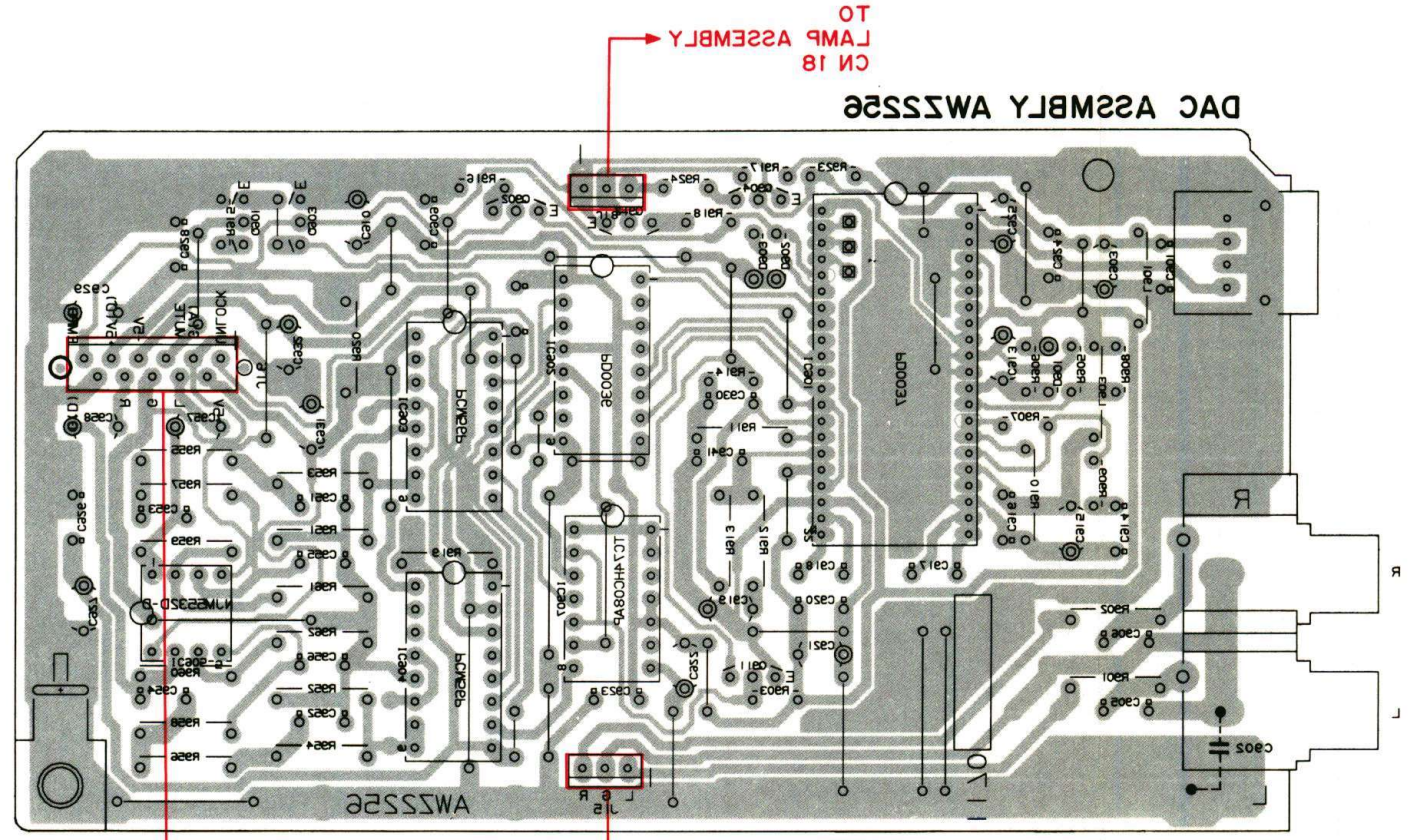






3.3 P. C. BOARDS CONNECTION DIAGRAM OF D\A CONVERTER SECTION

• View from soldering side



0a04  
0a05 0a01  
0a01 0a03  
0a03  
0a07  
0a04  
0a05

0a06  
0a06 0a02  
0a08  
0a01  
0a13

A  
B  
C  
D

A  
B  
C  
D



### 2.3 P. C. BOARDS CONNECTION DIAGRAM OF D/A CONVERTER SECTION

• View from component side

**NOTE**

1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

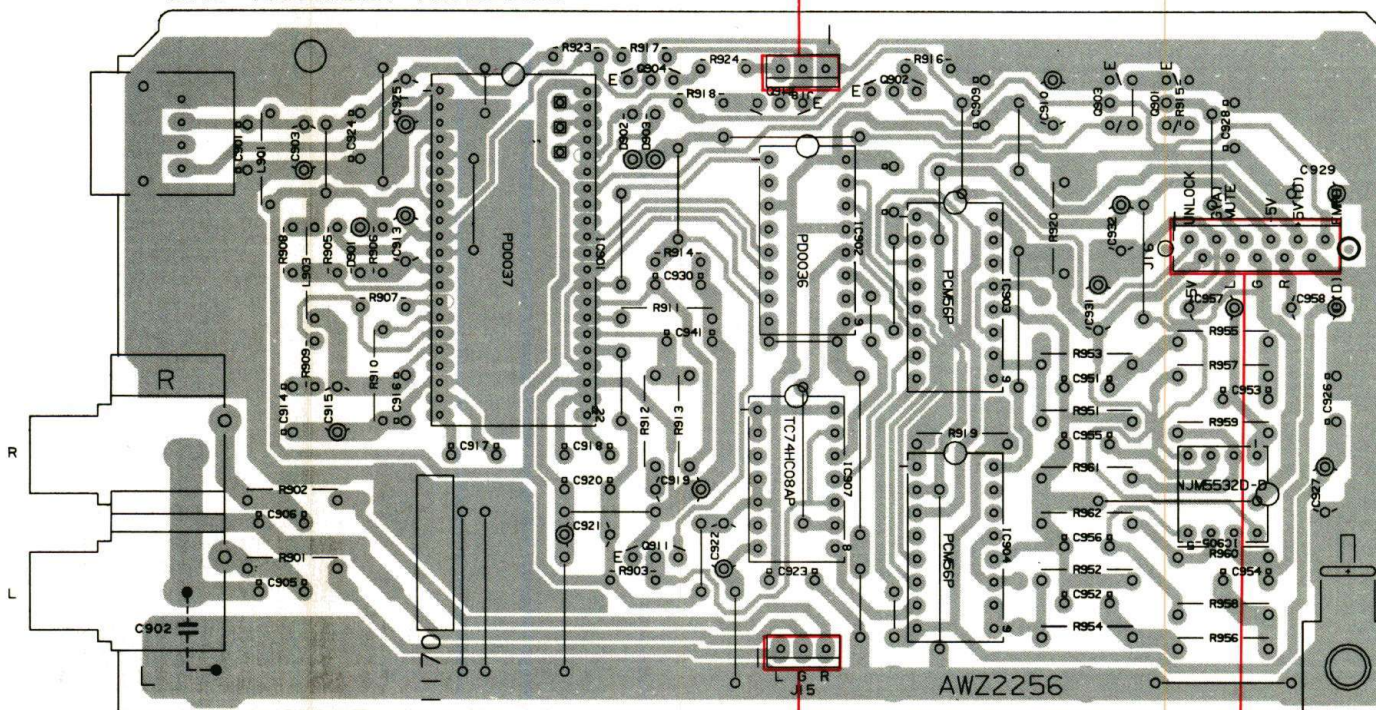
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

**Others**

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ⊙ (double circles) shows negative terminal.
4. The diode terminal marked with ⊙ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

**DAC ASSMBLY AWZ2256**



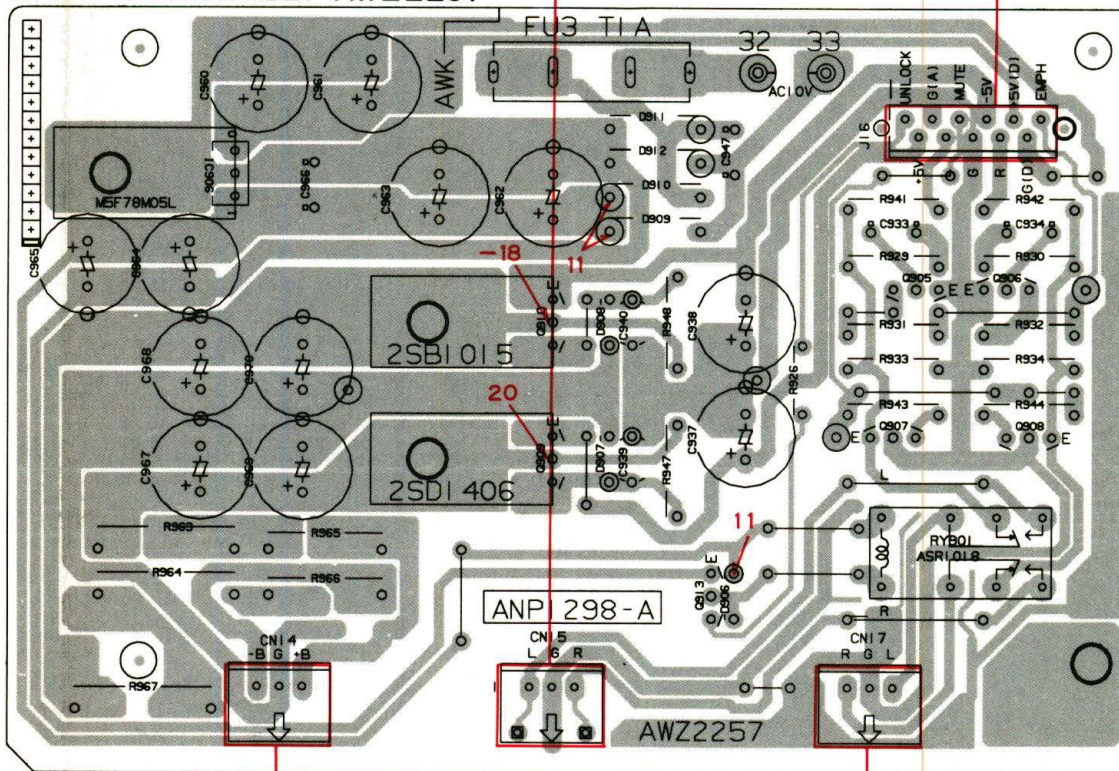
TO LAMP ASSEMBLY  
CN 18

Q904  
Q901 Q903  
Q902 Q901

IC901 IC902  
IC903

IC907  
IC905  
IC904  
Q911

**DAC PS ASSEMBLY AWZ2257**



TO AF MAIN ASSEMBLY  
J14

TO AF MAIN ASSEMBLY  
J17

IC906

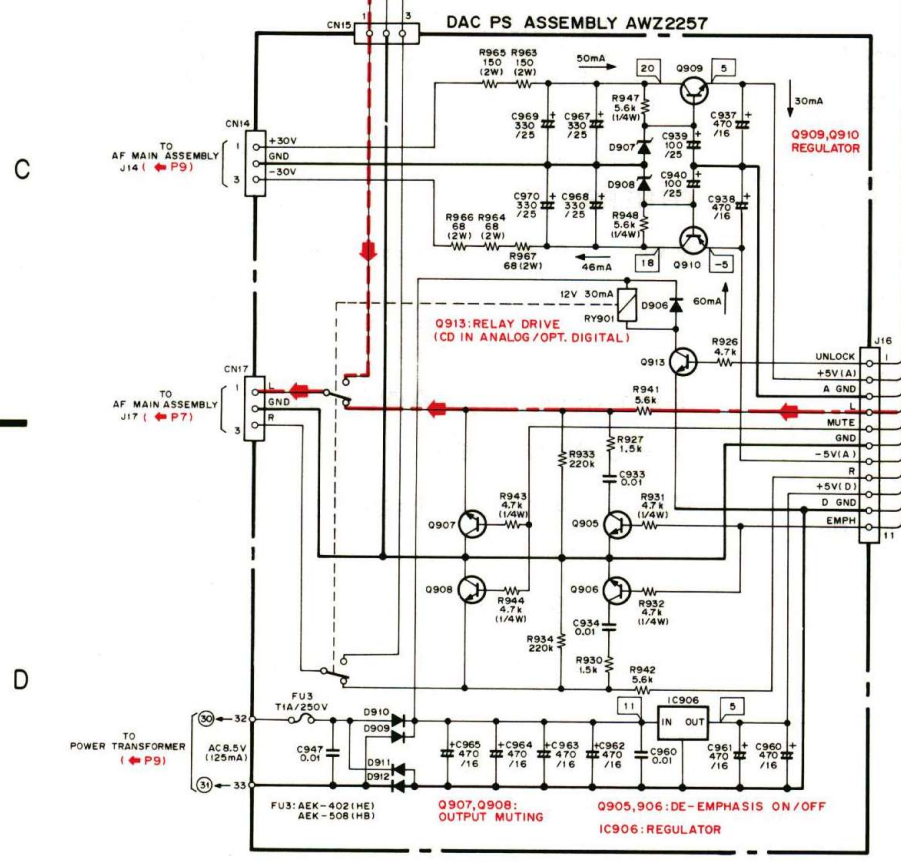
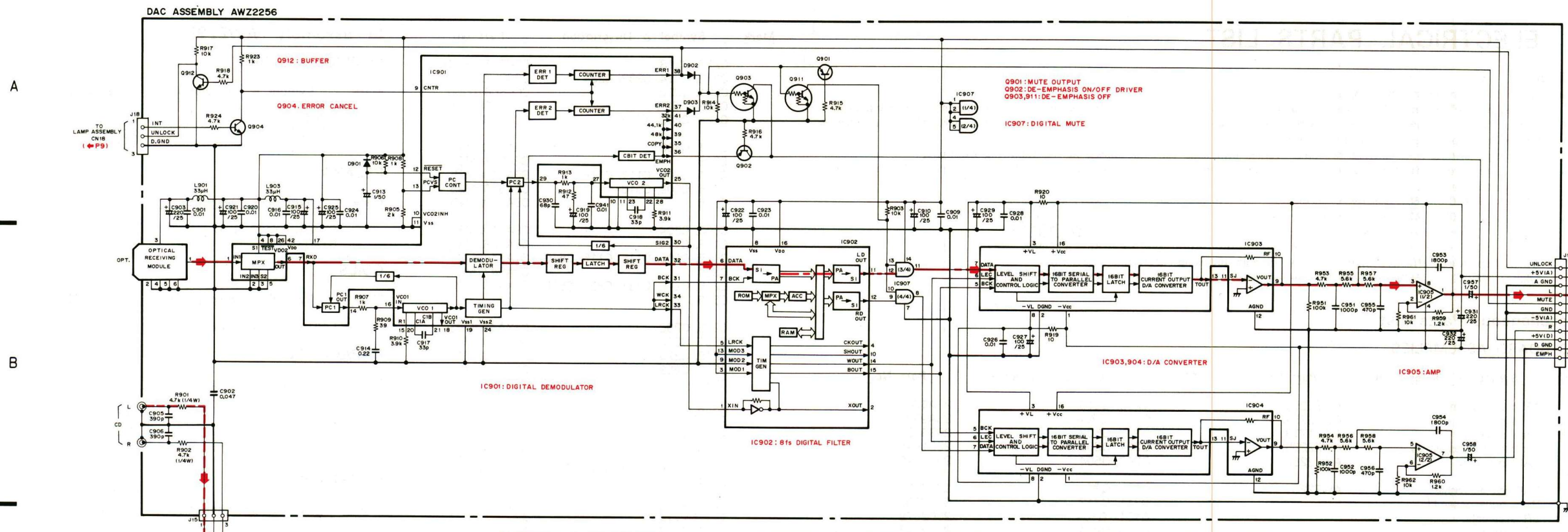
Q905  
Q910 Q906

Q907  
Q908

Q913



### 2.4 SCHEMATIC DIAGRAM OF D/A CONVERTER SECTION



DAC assembly (AWZ2256)	
IC905	NJM5532D-D
IC903, IC904	PCM56P
IC902	PD0036
IC901	PD0037
IC907	TC74HC08AP
Q903, Q911	RN1201
Q901, Q902	2SA1115
Q904, Q912	2SC2603
D901-D903	1SS252
DAC PS assembly (AWZ2257)	
IC906	M5F78M05L
Q910	2SB1015
Q913	2SC2240
Q905-Q908	2SC2878
Q913	2SC2240
Q909	2SD1406
D909-D912	S5566
D907, D908	UZ-5.6BSB
D906	1SS252



### 3. ELECTRICAL PARTS LIST

**NOTES :**

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	56 × 10 <sup>1</sup>	561	.....RD1/4PS	561J
47k Ω	47 × 10 <sup>3</sup>	473	.....RD1/4PS	473J
0.5 Ω	0R5		.....RN2H	0R5K
1 Ω	010		.....RS1P	010K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	562 × 10 <sup>1</sup>	5621	.....RN1/4SR	5621F
---------	-----------------------	------	--------------	-------

**Miscellaneous Parts List**

**P. C. BOARD ASSEMBLIES**

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
	AF main assembly	AWZ2253		Q215, Q216	2SA1306
	SP assembly	AWZ2254		Q201 - Q204	2SA992
	Tone assembly	AWZ1773		Q306, Q502	2SB560
	Control main assembly	AWZ2255		Q207, Q208, Q301, Q302	2SC1845
	DAC assembly	AWZ2256		Q307, Q504	2SC2240
	DAC PS assembly	AWZ2257		Q304, Q305	2SC2458
	Headphone assembly			Q211, Q212	2SC2705
	VR assembly			Q101 - Q104	2SC2878
	LED assembly			Q213, Q214	2SC3298
	Lamp assembly			Q501	2SD438

**OTHERS**

Mark	Symbol & Description	Part No.
	Q3, Q4 Transistor	2SA1302
	Q1, Q2 Transistor	2SC3281
Δ	T1 Power transformer	ATS1195
	Short pin plug	AKM-050
	Jumper plug	AKM1019
Δ	AC socket (3P OUTLET)	AKP-502
Δ	FU3 Fuse (T1A)	AEK-402
Δ	FU1, FU2 Fuse (T2.5A)	AEK-403
Δ	AC Power cord	ADG1021

**AF main assembly (AWZ2253)**

**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC101	M5218P
	IC501	M5278L56
	IC201, IC202	PA0016
	IC103	TC9163N
	IC102	TC9164N
	IC104	μ PD6362C
	Q308	RN1201
	Q303	RN2203
	Q105, Q106	2SA1048
	Q209, Q210	2SA1145

**RELAY**

Mark	Symbol & Description	Part No.
Δ	RY501 Relay	ASR-516

**TRANSFORMER**

Mark	Symbol & Description	Part No.
Δ	T501 Power transformer	ATT1066

**CAPACITORS**

Mark	Symbol & Description	Part No.
Δ	C511 (0.01 μ F/400V)	ACG1002
Δ	C517 (0.01 μ F/400V)	ACG1003
	C512, C513	ACG1005
	C501, C502 (8200 μ F/71V)	ACH1074
	C227 - C230	CCCSL101K500

Mark	Symbol & Description	Part No.
	C217, C218	CCCSL150K500
	C213, C214, C233, C234	CCCSL220K500
	C221, C222	CCCSL470J50
	C223 - C226	CCCSL680J50
	C125, C205 - C208	CCMSL101J50

	C301, C302	CEANP010M50
	C303	CEAS010M50
	C101, C102, C117, C118	CEAS100M25
	C305, C509, C516	CEAS101M25
	C515	CEAS102M25

	C503, C504	CEAS102M35
	C113, C114	CEAS2R2M50
	C105, C106, C115, C116, C510	CEAS470M25
	C304	CEAS471M6
	C215, C216, C231, C232, C505, C506	CEXA101M25

	C235, C236	CEXA470M63
	C201, C202	CEYA100M25
	C219, C220	CEYA101M16
	C507, C508	CEYA470M25
	C514	CKCYB103K50

	C209, C210	CKCYB272K50
	C211, C212	CKCYB471K50
	C119 - C122, C124	CKCYF473Z50
	C123	CKCYX104M25
	C103, C104, C107, C108, C203, C204	CKMYB221K50

	C109, C110	CQMA222J50
	C111, C112	CQMA822J50

**RESISTORS**

Mark	Symbol & Description	Part No.
	R259, R260 0.33 (5W) × 2	ACN-139
	R511, R512	RS1LMF151J
	R509, R510	RS1LMF161J
Δ	R201, R202, R215 - R218	RDR¼PM□□□J
	R205, R206, R516	RD¼PMFL□□□J
Δ	R237 - R240, R247 - R250,	RD¼PMFL□□□J
Δ	R253 - R256, R301, R302, R307	RD¼PM□□□J
	R133, R134, R139 - R144,	RD¼PM□□□J
	R147 - R149, R303 - R306, R309,	
	R313 - R315, R514, R515, R517	
Δ	R245, R246, R251, R252, R501,	RFA¼PS□□□J
Δ	R503, R505	
	Other resistors	RD¼PM□□□J

**OTHERS**

Mark	Symbol & Description	Part No.
	Pin jack 4P (TAPE PLAY/REC)	AKB1007
	Pin jack 4P (INPUT TUNER/AUX, with earth plate)	AKB1033
	Pin jack 4P (DAT PLAY/REC)	AKB1051
	Pin jack 2P (PHONO)	AKB1052
	Transistor socket	AKH-017

**SP assembly (AWZ2254)**

**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC401	M5218PF
	Q401, Q402	2SC2235
	D401 - D403	1SS252

**RELAYS**

Mark	Symbol & Description	Part No.
	RY401, RY402 Relay	ASR-112
	RY403 Relay	ASR1005

**COILS**

Mark	Symbol & Description	Part No.
	L401, L402 AF choke coil	ATH1011

**CAPACITORS**

Mark	Symbol & Description	Part No.
	C401, C402, C405, C406	CEAS100M25
	C403, C404	CEAS470M25
	C407 - C410	CFTXA823J50
	C411	CKCYF473Z50

**RESISTORS**

Mark	Symbol & Description	Part No.
	R427, R429	RS1LMF681J
	R428, R430	RS1LMF821J
	R417, R418	RS2LMF331J
Δ	R415, R416	RD¼PMFL100J
Δ	R413, R414	RD¼PMFL100J
	R401 - R404, R409, R410	RD¼PM□□□J
	Other resistors	RD¼PM□□□J

**OTHERS**

Mark	Symbol & Description	Part No.
	Pin jack 4P (ADAPTOR)	AKB1033
	Speaker terminal 8P (SPEAKERS)	AKE-111
	Mini jack (CONTROL OUT)	AKN-207

**Tone assembly (AWZ1773)**

**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC702	LC4966
	IC701	M5218PF
	Q705	RN1201
	Q706	RN2201
	Q701 - Q704	2SC1740SLN



**CAPACITORS**

Mark	Symbol & Description	Part No.
	C709, C710	CEASR33M50
	C703, C704	CEASR47M50
	C705, C706	CEAS0R1M50
	C707, C708	CEAS010M50
	C711, C712	CEAS100M25
	C713, C714	CEAS470M25
	C717, C718	CKMYB151K50
	C701, C702	CQMA153K50

**RESISTORS**

Mark	Symbol & Description	Part No.
	VR702, VR703 Variable resistor 30k×2	ACT1031
	VR704 Variable resistor 10k×2	ACT1032
	VR701 Variable resistor 5k×2	ACT1033
	R731, R732	RD¼PM331J
	Other resistors	RD ½ PM □□□J

**Control main assembly (AWZ2255)****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC601	PDG022
	IC602	TA7291S
	Q601, Q605, Q606, Q608	RN1201
	Q609-Q611, Q615	RN2201
	Q602, Q603	2SC2235
	Q604, Q607, Q612-Q614	2SC2458
	D614-D616	AEL1053
	D602-D613, D617, D622	AEL1072
	D601	AEL1073
	D635, D636	RD3.0ESB
	D625	RD4.7ESB2
	D618-D621, D623, D624,	1S252
	D626-D629, D631-D634,	
	D637-D641	

**SEWITCHES**

Mark	Symbol & Description	Part No.
	S601-S620 Tact switch (POWER, SP-A, SP-B, BASS EQ, AUX, TAPE, TUNER, PHONO, DAT, CD, DAT DIRECT, CD DIRECT, SOURCE, TUNER, DAT ▶ TAPE, TAPE ▶ DAT, OFF, CD DIRECT RECORDING, MUTING, PURE DIRECT LINE)	ASG-711

**CAPACITORS**

Mark	Symbol & Description	Part No.
	C606 (47000 μ F/5.5V)	ACH1037
	C602	CEJAR22M50
	C608, C609	CEJA100M16
	C605	CEJA101M10
	C610	CEJA4R7M50
	C603	CKDYB102K50
	C601, C604	CKDYF473Z50
	C607, C611, C612	CKDYX473M25

**RESISTORS**

Mark	Symbol & Description	Part No.
	R601-R604, R609, R610, R613	RD¼PM □□□J
	Other resistors	RD ½ PM □□□J

**OTHERS**

Mark	Symbol & Description	Part No.
	X601 Ceramic resonator	ASS1022
	Remote control sensor unit	AXX1010
	2P wire assembly	ADX1189

**DAC assembly (AWZ2256)****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC905	NJM5532D-D
	IC903, IC904	PCM56P
	IC902	PD0036
	IC901	PD0037
	IC907	TC74HC08AP
	Q903, Q911	RN1201
	Q901, Q902	2SA1115
	Q904, Q912	2SC2603
	D901-D903	1S252

**COILS**

Mark	Symbol & Description	Part No.
	L901, L903 Inductor	LAU330K

**CAPACITORS**

Mark	Symbol & Description	Part No.
	C901, C909, C916, C920, C923, C924, C926, C928, C941 (0.01 μ /DC25V)	ACG-036
	C913, C957, C958	CEXA010M50
	C910, C915, C919, C921, C922, C925, C927, C929	CEXA101M25
	C903, C931, C932	CEXA221M25
	C914	CFTXA224J50
	C905, C906	CKCYB391K50
	C917, C918	CMA330J500
	C930	CMA680J500
	C951, C952	CQPXA102J2A
	C953, C954	CQPXA182J2A
	C955, C956	CQPXA471J2A
	C902	CKDYF473Z50

**RESISTORS**

Mark	Symbol & Description	Part No.
	R901, R902	RD¼PM472J
	R903, R905-R910, R914-R918,	RD ½ PM □□□J
	R923, R924	
	Other resistors	RDR¼PM □□□J



**OTHERS**

Mark	Symbol & Description	Part No.
	Pin jack 1P (CD INPUT R)	AKB1027
	Pin jack 1P (CD INPUT L)	AKB1028

**DAC PS assembly (AWZ2257)****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC906	M5F78M05L
	Q910	2SB1015
	Q913	2SC2240
	Q905-Q908	2SC2878
	Q913	2SC2240
	Q909	2SD1406
	D909-D912	S5566
	D907, D908	UZ-5.6BSB
	D906	1SS252

**RELAY**

Mark	Symbol & Description	Part No.
	RY901 Relay	ASR1018

**CAPACITORS**

Mark	Symbol & Description	Part No.
	C966 (0.01 $\mu$ /DC25V)	ACG-036
	C939	CEXA101M25
	C967-C970	CEXA331M25
	C937, C938, C960-C965	CEXA471M16
	C940	CEYA101M25
	C947	CKCYF103Z50
	C933, C934	CQPXA103J2A

**RESISTORS**

Mark	Symbol & Description	Part No.
	R963, R965	RS2LMF151J
	R964, R966, R967	RS2LMF680J
	R926	RD $\frac{1}{8}$ PM472J
	R931, R932, R943, R944, R947, R948	RD $\frac{1}{4}$ PM $\square\square\square$ J
	Other resistors	RDR $\frac{1}{4}$ PM $\square\square\square$ J

**Headphone assembly****RESISTORS**

Mark	Symbol & Description	Part No.
	R425, R426	RS1PMF122J

**OTHER**

Mark	Symbol & Description	Part No.
	Jack (PHONES)	AKN1002

**VR assembly****COILS**

Mark	Symbol & Description	Part No.
	L701, L702 Inductor	LAU5R6K

**CAPACITORS**

Mark	Symbol & Description	Part No.
	C715, C716	CKCYF473Z50

**RESISTOR**

Mark	Symbol & Description	Part No.
	VR705 Variable resistor	ACX1012

**LED assembly****SEMICONDUCTOR**

Mark	Symbol & Description	Part No.
	D630	AEL1071

**Lamp assembly****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	Q651	RN1201
	D651-D653	AEL1072

**RESISTOR**

Mark	Symbol & Description	Part No.
	R661	RD $\frac{1}{4}$ PM331J



**OTHERS**

Mark	Symbol & Description	Part No.
	PL651, PL652 Pilot lamp	AEL1086







## 4. IC DESCRIPTIONS




### PDG022 (MICRO COMPUTER)

Terminal No.	Terminal name	I/O	Condition	Terminal status	Remarks												
1	WP	I	Power supply "ON"		If the input frequency is not 50/60Hz the mode will be switched to backup mode.												
2	PA0	O	Only when performing control operations		Key matrix output												
3	PA1																
4	PA2																
5	PA3																
6	PB0	O															
7	PB1	O			Non used												
8	PB2																
9	PB3																
10	PE0																
11	SP-A	O	SP selector...SP-A	L	SP-A IND illuminates												
12	SP-B	O	SP selector...SP-B	L	SP-B IND illuminates												
13	B-EQ	O	BASS EQ "ON"	H	BASS EQ IND illuminates												
14	AUX	O	When FUNCTION SEL. set at each position.	L	AUX IND illuminates												
15	TAPE	O		L	TAPE IND illuminates												
16	TUNER	O		L	TUNER IND illuminates												
17	PHONO	O		L	PHONO IND illuminates												
18	DAT	O		L	DAT IND illuminates												
19	CD	O		L	CD IND illuminates												
20	PC2	O	.....	.....	Non used												
21	PC3	O															
22	DAT.D	O	DAT DIRECT "ON"	H	DAT DIRECT IND illuminates												
23	CD.D	O	CD DIRECT "ON"	H	CD DIRECT IND illuminates												
24	UP	O	VOLUME CONTROL														
25	DOWN	O	UP/DOWN														
				<table border="1"> <thead> <tr> <th>MODE</th> <th colspan="2">Terminal No.</th> </tr> <tr> <td></td> <th>24</th> <th>25</th> </tr> </thead> <tbody> <tr> <td>VOL.UP</td> <td>H</td> <td>L</td> </tr> <tr> <td>VOL.DOWN</td> <td>L</td> <td>H</td> </tr> </tbody> </table>		MODE	Terminal No.			24	25	VOL.UP	H	L	VOL.DOWN	L	H
MODE	Terminal No.																
	24	25															
VOL.UP	H	L															
VOL.DOWN	L	H															
26	SOURCE	O		L	SURCE IND illuminates												
27	TUNER	O	When REC SEL. set at each position.	L	TUNER IND illuminates												
28	DAT→T	O		L	DAT→T IND illuminates												



Terminal No.	Terminal name	I/O	Condition	Terminal status	Remarks
29	TAPE→D	O	When REC SEL. set at each position.	L	TAPE→D IND. illuminates
30	CD.D.REC	O	CD DIRECT REC "ON"	L	CD DIRECT IND illuminates
31	NC	...	.....	.....	
32	V <sub>SS</sub>		GND		
33	MUT IND	O	MUTING "ON"	H	Red IND illuminates
34	VR IND	O	Power supply "ON"	H	Yellow IND illuminates
35	PURE DIRECT	O	LINE DIRECT	L	
36	XTAL	O	Connect Crystal resonator (4.19MHz)		CLOCK oscillating terminal (Oscillation if necessary.)
37	EXTAL	I			
38	RESET	I	When inputting RESET pulse		
39	PX <sub>0</sub> /SC	I	.....		GND.
40	PX <sub>1</sub> /SOB	I	Control pin for selecting other models	H	
41	PX <sub>2</sub> /SOA	I		L	
42	PX <sub>3</sub> /SI	I	.....	.....	GND
43	F•MUTE	O	When switching over FUNCTION, CD or DAT DIRECT.		Prevents click noise
			During -∞ MUTING	H	
44	B.EQ CONT.	O	BASS EQ "ON"	H	Activates BASS EQ circuit
45	PY <sub>2</sub> /WP	I	The IC601 (PDG022) is a "SUPERSILENT" micro computer which oscillates the CLOCK only when necessary. Therefore, this terminal will oscillate the CLOCK when the respective button on the front panel is pressed or when CLOCK oscillation is required. If, for example, a "H" signal is input when pressing the button, the terminal oscillates CLOCK and will determine the function. After the necessary actions, it stops CLOCK again and enters the STOP mode.		
46	REM IN	I			
47	ST-BY	O	Power supply "ON"	H	Relay (RY501) "ON"
48	PROTECTION	O	Power supply "ON"	H	Controls relay for SP (RY401 and RY402) and relay for HP (RY403).
			(7 seconds after power Supply ON.)	(L)	
49	SP-B	O	SP SELECTOR "SP-B"	H	Controls relay for SP-B (RY402).
50	SP-A	O	SP SELECTOR "SP-A"	H	Controls relay for SP-A (RY401).
51	PMO	O	.....	.....	Non used
52	MUTING	O	During MUTING (-20dB)	H	ON/OFF of -20dB MUTING.
53	D.OFF	O	LINE DIRECT "OFF"	L	



Terminal No.	Terminal name	I/O	Condition	Terminal status	Remarks
54	DAT.D	O	DAT DIRECT "ON"	L	
55	CD.D	O	CD DIRECT "ON"	L	
56	CK	O	When FUNCTION was changed.		For controlling FUNCTION.
57	DATA				
58	ST				
59	ST-BY IND	O	During STAND-BY.	L	STAND-BY IND illuminates
60	PJ <sub>0</sub>	I	Only when performing control operations		Key matrix input
61	PJ <sub>1</sub>				
62	PJ <sub>2</sub>				
63	PJ <sub>3</sub>				
64	V <sub>DD</sub>	...	.....		+5V Power supply terminal

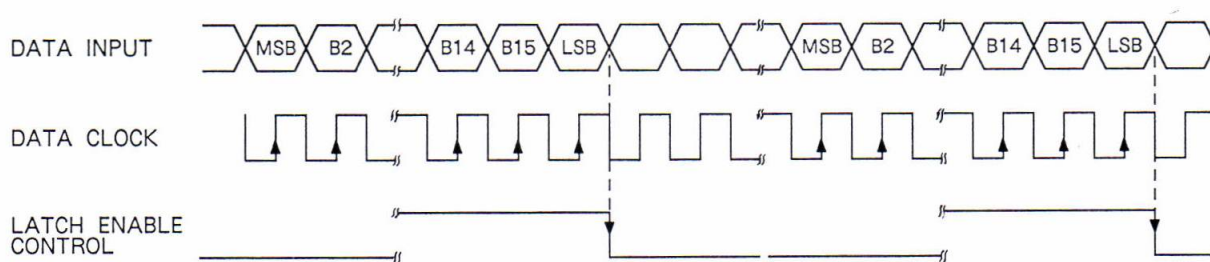


## PCM56P (16-bit, serial input D/A converter)

### Terminal Description

Pin No.	Pin Name	Pin Function	Pin No.	Pin Name	Pin Function
1	-Vcc	Analog negative power supply	16	+Vcc	Analog positive power supply
2	DIG GND	Digital ground	15	VPOT	Terminal for potentiometer
3	+VL	Logic positive power supply	14	MSB ADJ	Terminal for MSB adjustment
4	NC	No connection	13	I out	Current output
5	CK	Clock input	12	ANA GND	Analog ground
6	LEC	Latch enable control input	11	S. J	Samming junction (op amp input)
7	DATA	Data input	10	RF	Feedback resistor
8	-VL	Logic negative power supply	9	V out	Voltage output

### Timing Diagram



- The data format is 2's complement with the MSB first. The data is shifted to the right edge or is continuous data.
- Data is fetched into shift register at the rising edge of the data clock.
- Latch enable control is performed at a frequency double the L/R clock, and it is necessary that the falling edge be synchronized to the falling edge of the LSB data clock.



## PD0037 (DIGITAL DEMODULATOR)

### ● Pin Functions

Pin No.	Pin Name	I/O	Function	
1	IN1	I	Data input 1	Digital audio data input (TTL level) in EIAJ format
2	IN2	I	Data input 2	
3	IN3	I	Data input 3	
4	S1	I	Input selector 1 (TTL level)	
5	S2	I	Input selector 2 (TTL level)	
6	OUT	O	Data MPX output	
7	RXD	I	Data input. Normally connected to OUT. (CMOS level)	
8	TEST	I	Test mode input. Normally fixed at "H". Built-in pull-up resistor. (TTL level)	
9	CNTR	I	Counter clock input for time setting ERR1 and 2 output. (CMOS level)	
10	VCO2INH	I	For stopping VCO2 oscillation. Oscillation stopped at "H". (TTL level)	
11	Vss	-	Logic system Vss	
12	RESET	I	Power ON reset input (CMOS level)	
13	PCVS	I	Input for setting VCO1 and 2 self-scanning frequencies	
14	PC1OUT	O	Phase comparator 1 output	
15	R1	-	Resistor connection pin for VCO1 adjustment	
16	VCO1IN	I	VCO1 control voltage input	
17	V <sub>DD</sub> 1	-	VCO1 system V <sub>DD</sub>	
18	VCO1OUT	O	VCO1 output (384 fs)	
19	Vss1	-	VCO1 system Vss	
20	C1A	-	Capacitor connection pin for VCO1 adjustment	
21	C1B	-	Same as above	
22	C2B	-	Capacitor connection pin for VCO2 adjustment	
23	C2A	-	Same as above	
24	Vss2	-	VCO2 system Vss	
25	VCO2OUT	O	VCO2 output (384 fs)	
26	V <sub>DD</sub> 2	-	VCO2 system V <sub>DD</sub>	
27	VCO2IN	I	VCO2 control voltage input	
28	R2	-	Resistor connection pin for VCO2 adjustment	
29	PC2OUT	O	Phase comparator 2 output	
30	SIG2	I	Phase comparator 2 V input. Normally connected to VCO2OUT. (CMOS level)	
31	BCK	O	Demodulation data bit clock output	
32	DATA	O	Demodulation audio data output	
33	LRCK	O	Demodulation data L/R channel output. L channel when "H".	
34	WCK	O	Demodulation data word clock output	
35	COPY	O	COPY prohibited information output. Copy prohibited when "H".	
36	EMPH	O	Emphasis information output. Emphasis when "H".	
37	ERR2	O	2nd PLL system UNLOCK output. UNLOCK when "H"	
38	ERR1	O	1st PLL system data read error output. Error when "H"	
39	48K	O	Sampling frequency information output. Open drain for LED driver. "L" active.	
40	44.1K			
41	32K			
42	V <sub>DD</sub>	-	Logic system V <sub>DD</sub>	



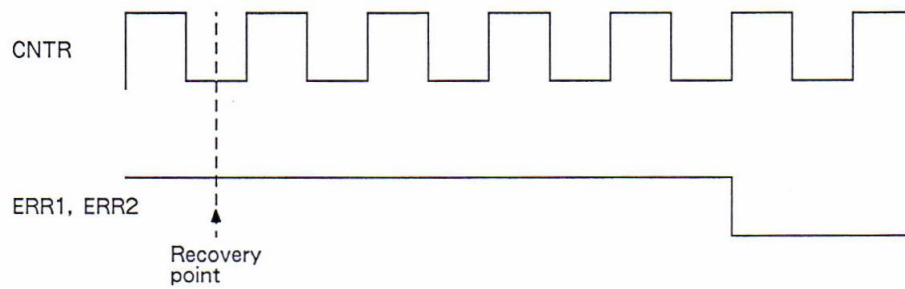
### ● Input Selectors

S2	S1	OUT
L	L	L
L	H	IN1
H	L	IN2
H	H	IN3

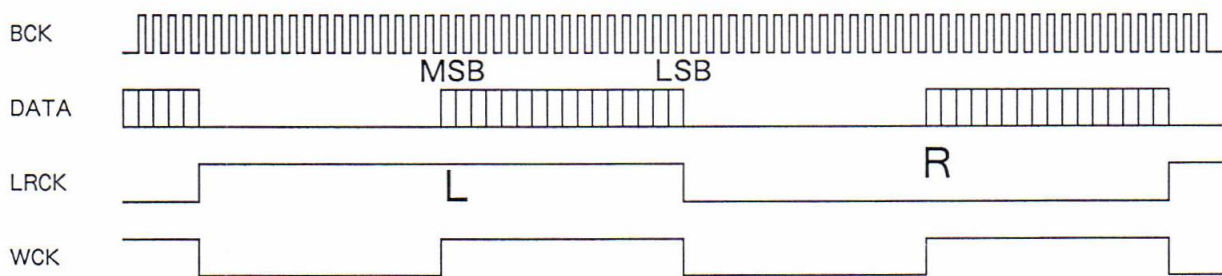
Terminals not used by IN1 through 3 are fixed at "H" or "L".

### ● Error Output

After recovering from the error, ERR1 and ERR2 output is released by the fifth rising edge of the pulse input from CNTR.



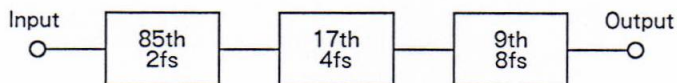
### ● Output Timing





**PD0036 (8 TIMES OVER-SAMPLING DIGITAL FILTER)****• Pin Functions**

Pin No.	Pin Name	I/O	Function
1	XIN	I	Crystal oscillation circuit input or external input
2	XOUT	O	Crystal oscillation circuit output
3	MODE1	I	16.9344 MHz when H, 8.4672 MHz when L
4	CLOCK OUT	O	16.9344 MHz clock output when MODE1=H, 8.4672 MHz clock output when MODE1=L
5	LR CLOCK	I	LR clock input
6	DATA	I	Serial data input (2's compliment, MSB first)
7	BIT CLOCK	I	Bit clock input for input data
8	Vss	-	Ground terminal
9	MODE2	I	18 bit data output when MODE2=H, 16 bit data output when MODE2=L
10	SHOUT	O	Sample and hold pulse output
11	Lch DATA OUT	O	Lch data output (2's compliment, MSB first)
12	Rch DATA OUT	O	Rch data output (2's compliment, MSB first)
13	MODE3	I	16 or 18 bit data output when MODE3=H, 20 bit data output when MODE3=L
14	WORD CK OUT	O	Word clock output
15	BIT CK OUT	O	Bit clock output for LD OUT or RD OUT
16	VDD	-	+5V power supply terminal

**• Functions and Features****• Filter Configuration****• Input Data**

2's compliment, MSB first

**• Output Data**

2's compliment, MSB first



## 5. FOR HB TYPE

### CONTRAST OF MISCELLANEOUS PARTS

#### NOTES :

- Parts without part number cannot be supplied.
- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The A-X550/HB type is the same as the A-X550/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		A-X550/HE type	A-X550/HB type	
$\triangle$	AC Power cord	ADG1021	ADG-063	
$\triangle$	AC socket (3P OUTLET)	AKP-502	AKP-505	
$\triangle$	FU3 Fuse (T1A/250V)	AEK-402	.....	
$\triangle$	FU1, FU2 Fuse (T2.5A/250V)	AEK-403	.....	
$\triangle$	FU3 Fuse (T1A/250V)	.....	AEK-508	
$\triangle$	FU1, FU2 Fuse (T2.5A/250V)	.....	AEK-512	
	Operating instructions (English/French/German/Italian/Dutch/ Swedish/Spanish/Portuguese)	ARE1116	.....	
	Operating instructions (English)	.....	ARB1167	



## 6. SPECIFICATIONS

### Amplifier Section

DIN continuous power output (both channels driven)	
1 kHz, 1%, 8 $\Omega$ .....	100W + 100W
DIN music power (both channels driven)	
1kHz, 1%, 8 $\Omega$ .....	160W + 160W
Continuous power output (both channel driven)	
20 Hz to 20 kHz, T.H.D 0.3%, 8 $\Omega$ .....	85W + 85W
IEC Continuous power output (both channel driven)	
63 Hz to 12.5 kHz, T.H.D 0.7%, 8 $\Omega$ .....	95W + 95W
Total harmonic distortion *	
1 kHz, 50W, 8 $\Omega$ .....	0.003% *
Input (sensitivity/impedance)	
PHONO .....	2.5 mV/50 k $\Omega$
TUNER, CD, AUX, TAPE PLAY, DAT PLAY, ADAPTOR .....	150 mV/50 k $\Omega$
Overload level	
PHONO 1 kHz, 0.1% .....	150 mV
Output level	
TAPE REC, DAT REC, ADAPTOR OUT .....	150 mV
Frequency Response	
PHONO .....	20 Hz to 20 kHz $\pm$ 0.5 dB
TUNER, CD, AUX, TAPE PLAY, DAT PLAY, ADAPTOR .....	10 Hz to 100 kHz $\begin{matrix} +1 \\ -3 \end{matrix}$ dB
CD (CD DIRECT ON) .....	10 Hz to 100 kHz $\begin{matrix} +1 \\ -3 \end{matrix}$ dB
Tone Control	
BASS .....	$\pm$ 8 dB (100 Hz)
TREBLE .....	$\pm$ 8 dB (10 kHz)
BASS EQUALIZER .....	+10 dB (60 Hz)
MUTING .....	- 20 dB / - $\infty$
Signal-to-Noise ratio (short circuited, A network)	
PHONO .....	72 dB
TUNER, CD, AUX, TAPE PLAY, DAT PLAY, ADAPTOR .....	93 dB
CD (CD DIRECT ON) (ANALOG) .....	102 dB
Signal-to-Noise ratio (DIN, continuous power/50 mW)	
PHONO .....	68 dB/60 dB
CD (CD DIRECT ON) .....	82 dB/62 dB
TUNER, CD, AUX, TAPE PLAY, DAT PLAY, ADAPTOR .....	82 dB/62 dB
D/A Converter Section	
Frequency Response .....	5 Hz to 20 kHz $\begin{matrix} +0.5 \\ -1 \end{matrix}$ dB
Signal-to-Noise ratio .....	103 dB (EIAJ)
Dynamic Range .....	96 dB (EIAJ)

### Note:

This component features a built-in microcomputer which will recall the last set positions of the following switches for up to about one week after the power cord is disconnected. As a result, when power is supplied again, the previously set positions will be recalled automatically:

- BASS EQ switch
- CD DIRECT and DAT DIRECT switches
- CD DIRECT RECORDING switch
- REC SELECTOR switches
- Input selector switches
- POWER STANDBY/ON
- MUTING switch
- PURE DIRECT LINE switch
- SP-A, SP-B selector switches

### Power Supply/Miscellaneous

Power requirements .....	AC 220V, 50/60 Hz
Power consumption .....	480W
AC outlets	
switched ( $\times$ 3) .....	100W
Dimensions .....	360 (W) $\times$ 346 (D) $\times$ 121 (H) mm
Weight .....	8.8 kg

### Accessories

Remote control unit .....	1
Batteries AAA/R03 .....	2
Optical cable .....	1
Operating instructions .....	1

- *Specifications and design subject to possible modification without notice, due to improvements.*

\* Measured by Audio Spectrum Analyzer.

### MAINTENANCE OF EXTERNAL SURFACES

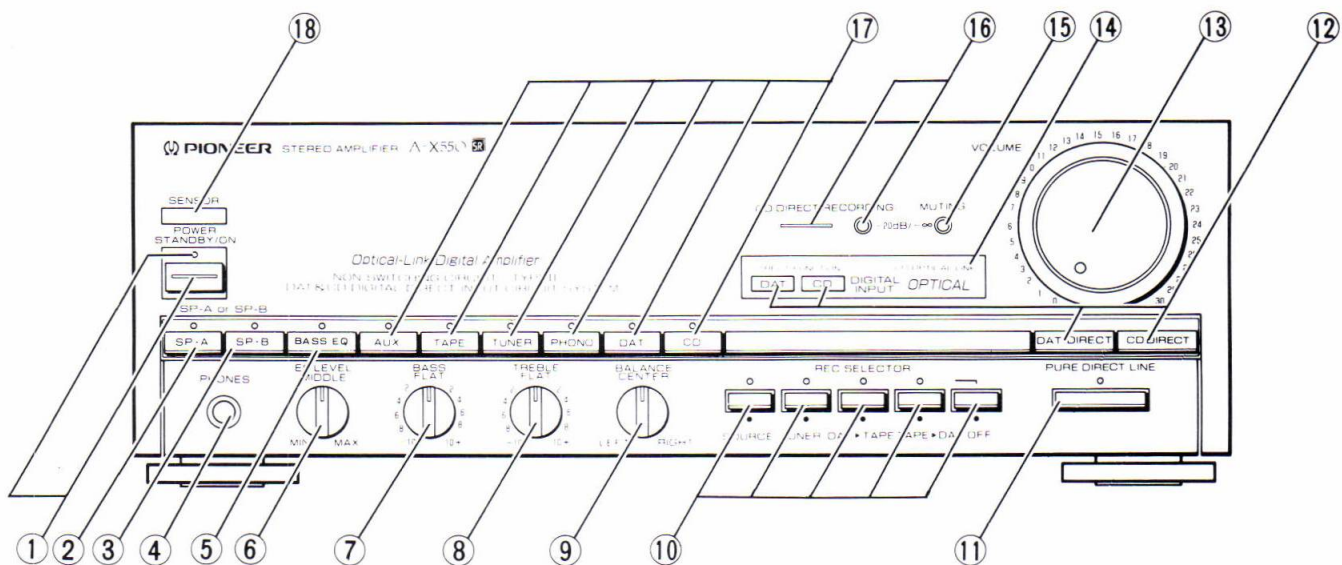
- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

When the unit is disconnected from the wall socket for more than a week, the memorized setting positions will be erased, and returned to the following settings:

- POWER switch .....
  - MUTING switch .....
  - Input selector switches .....
  - BASS EQ ON/OFF switch .....
  - CD DIRECT and DAT DIRECT switches .....
  - CD DIRECT RECORDING switch .....
  - REC SELECTOR switches .....
  - PURE DIRECT LINE switch .....
  - SP-A, SP-B selector switches .....
- STANDBY  
OFF  
TUNER  
OFF  
OFF  
OFF  
SOURCE  
OFF  
OFF



## 7. PANEL FACILITIES



### ① POWER (STANDBY/ON) switch/indicator

- With the power cord connected to a wall outlet, the unit will always be supplied with power and remains in standby condition when it is turned off by pressing the power switch.
- The indicator lights during standby.
- The accessory remote control unit can also be used to turn the amplifier on or off (STANDBY function).
- The POWER switch selects the transformer secondary even in STANDBY position. The unit circuitry will work as long as the power cord is connected to a power outlet.
- When not using the unit for a long period, disconnect the power cord.

### ② SP-A selector switch/indicator

Depress this switch for sound reproduction with the speaker systems connected to the SPEAKERS A terminals.

#### ON:

The indicator lights: Sound is heard from the speaker systems.

#### OFF:

The indicator is off: No sound is heard from the speaker systems. Set to this position when listening with headphones.

### ③ SP-B selector switch/indicator

Depress this switch for sound reproduction with the speaker systems connected to the SPEAKERS B terminals.

#### ON:

The indicator lights: Sound is heard from the speaker systems.

#### OFF:

The indicator is off: No sound is heard from the speaker systems. Set to this position when listening with headphones.

#### NOTE:

SP-A and SP-B cannot be used at the same time.

### ④ PHONES jack

When using headphones, insert the plug into this jack.

### ⑤ BASS EQ switch/indicator

By pressing this switch (ON), the indicator will light and powerful sound reproduction will be obtained. Use this function as desired when listening to a digital source such as a compact disc.

#### NOTE:

This function does not operate when the CD DIRECT or DAT DIRECT switch is in the ON position.

### ⑥ EQ LEVEL control

When the BASS EQ switch is ON, you can vary the degree of enhancement of very low frequencies below 60 Hz continuously, using this control. Set this control to the desired position.

#### NOTE:

This control does not operate when the CD DIRECT or DAT DIRECT switch is in the ON position.

### ⑦ BASS tone control

Use to adjust the low-frequency tone. The center position is the FLAT (normal) position. When moved to the right, low-frequency tones are emphasized; when moved to the left, low-frequency tones are de-emphasized.

#### NOTE:

This control does not operate when the CD DIRECT or DAT DIRECT switch is in the ON position.

### ⑧ TREBLE tone control

Use to adjust the high-frequency tone.

### ⑨ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, move toward the LEFT and if the left side is louder, move toward the RIGHT.

#### NOTE:

This control does not operate when the CD DIRECT or DAT DIRECT switch is in the ON position.



**⑩ REC SELECTOR switches/indicators**

For selection recording signal. When a switch other than SOURCE or OFF in, signals of the corresponding equipment can be recorded while listening to the equipment selected with the input selector switches.

**SOURCE:**

To record from the equipment selected by the input selector switches.

**TUNER:**

To record from the equipment connected to the TUNER terminals.

**DAT ► TAPE:**

To record (copy) from the tape deck connected to the DAT terminals over to the tape deck connected to the TAPE terminals.

**TAPE ► DAT:**

To record (copy) from the tape deck connected to the TAPE terminals over to the tape deck connected to the DAT terminals.

**OFF:**

In this position, nothing from the REC terminals of DAT and TAPE will be output. Set to this position when not recording; the tape decks will be disconnected, improving sound quality.

**NOTE:**

The REC SELECTOR switches (other than SOURCE) has no effect on the ADAPTOR terminals recording output.

**⑪ PURE DIRECT LINE switch/indicator**

When the CD DIRECT or DAT DIRECT switch is set to ON, and this switch is pressed, the indicator will light up, and the input signals of other sources which are not used are cut at the input and REC OUTPUT stage of the amplifier. When the PURE DIRECT LINE switch is set to ON, recording is not possible.

The center position is the FLAT (normal) position. When moved to the right, high-frequency tones are emphasized; when moved to the left, high-frequency tones are de-emphasized.

**NOTE:**

This control does not operate when the CD DIRECT or DAT DIRECT switch is in the ON position.

**⑫ CD DIRECT and DAT DIRECT switches/indicators**

Press the corresponding switch when you do not wish to pass the output from the unit connected to the CD or DAT terminals through the various frequency adjusting circuits (BASS, TREBLE, BASS EQUALIZER, BALANCE, ADAPTOR terminal). When the CD DIRECT or DAT DIRECT switch is pressed, the corresponding indicator will light.

**ON:**

When one of the switches is in this position, the corresponding indicator lights and the signals input from the CD or DAT terminals are reproduced without passing through the various frequency adjusting circuits.

This results in flat, pure sound which is a more faithful reproduction of the digital source.

**OFF:**

When both switches are in this position, the indicators go out, and the source selected with the input selector switches is reproduced.

**⑬ VOLUME control/indicator**

Use to adjust the volume level.

Move to the right to increase volume.

Move to the left to decrease volume.

The volume indicator shows the volume setting as follows:

When muting is off: Yellow

At  $-20$  dB: Red

At  $-\infty$ : Flashing red

When volume turned up or down: Flashing yellow or red adjustment can also be performed with the accessory remote control unit.

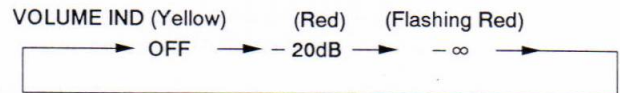
**⑭ OPTICAL indicator**

This indicator lights when a signal is input through the CD DIGITAL INPUT terminal (OPTICAL). When signals are input through the analog CD INPUT terminal and the OPTICAL terminal at the same time, the OPTICAL signal is reproduced.

**⑮ MUTING (  $-20$  dB/  $-\infty$  ) switch**

Use to temporarily cut sound volume.

The following settings can be selected in order by pressing the MUTING switch repeatedly.

**⑯ CD DIRECT RECORDING switch/indicator**

To record from the equipment connected to the CD terminals.

**⑰ Input selector switches/indicators**

Use to select playback source.

**CD:**

Press for compact disc playback with a CD player.

**DAT:**

Press for playback of a (DAT) tape with a (DAT) tape deck.

**PHONO:**

Press for record playback with a turntable.

**TUNER:**

Press for reception of AM or FM broadcasts with a tuner.

**TAPE:**

Press for playback of a tape with a tape deck.

**AUX:**

Press for playback with a stereo component connected to the AUX jacks.

**⑱ Remote SENSOR/window**

The accessory remote control unit can also be used to operate this component.