

Service Manual



ORDER NO.
ARP1529

STEREO AMPLIFIER

A-223

A-223-S

A-223 AND A-223-S HAVE FIVE VERSIONS :

Type	Applicable model		Power requirement	Export destination
	A-223	A-223-S		
HE	<input type="radio"/>	—	AC220V, 240V (switchable) *	European continent
HB	<input type="radio"/>	—	AC220V, 240V (switchable) *	United Kingdom
HEZ	<input type="radio"/>	<input type="radio"/>	AC220V, 240V (switchable) *	West Germany
SD	<input type="radio"/>	—	AC110V, 120-127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and general market
YP	<input type="radio"/>	—	AC240V only	Australia

* Change the primary wiring of the power transformer.

- This manual is applicable to the A-223/HE, HB, HEZ and A-223-S/HEZ types.
- For the A-223/HB, HEZ and A-223-S/HEZ types, refer to page 18.
- A-223-S/HEZ type is a silver model of A-223/HEZ type.
- For the other types, refer to additional service manuals.

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1. EXPLODED VIEW AND PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- 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.
- For your parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.
★★ GENERALLY MOVES FASTER THAN **★**.
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊕" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

Parts List of Exterior

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	AWZ1429	AF assembly		101		Power SW assembly
	2	CKDYF473Z50	Capacitor (C1)		102		Headphone assembly
	3	CQMA222K50	Capacitor (C2)		103		SP SW assembly
Δ ★	4	ATS1050	Power transformer (220/240V, T1)		104		Tone assembly
Δ ★★	5	AEK-018	Fuse(T1.25A/250V, FU1)		105		VR assembly
	6	AMR1350	Insulator assembly		106		LED assembly
	7	AMR1353	Insulator assembly		107		Terminal (GND)
	8	AMB1319	Panel base assembly		108		Chassis
	9	AAB1061	Knob (VOLUME)		109		Rear panel
	10	AAB1075	Knob (BASS, TREBLE, BALANCE)		110		Bottom plate
	11	AAD1057	Push knob A (SPEAKERS)		111		Transformer holder
	12	AAD1343	Knob (POWER)		112		Heat sink
	13	AAD1345	Push rod assembly		113		GND ring
	14	AAM-030	Friction plate		114		Terminal 2P (GND) (HEZ only)
	15	AMR1330	Indicator lens		115		.....
	16	ANB1173	Front panel		116		Barrier
	17	ANE1053	Bonnet case				
	18	ABH1021	Spring				
	19	ABH-052	Spring B				
	20	AMR1066	Plastic rivet				
	21	ABA-298	Screw				
	22	ABA1009	Screw				
	23	ABA1011	Screw				
	24	ABA1047	Screw (GND)				
	25	ABN-065	Nut				
	26	ABN1006	Flange nut (M9)				
	27	BBZ30P100FZK	Screw				
	28	BYC40P120FMC	Screw				
	29	NK70FUC	Nut				
	30	VMZ30P060FMC	Screw				
	31	WS30FMC	Washer				
	32	WS40FMC	Washer				
	33	ADG1021	AC power cord				
	34	AAD1056	Knob (CD, PHONO, TUNER, TAPE1, ADPT/TAPE2)				
	35	ABH1017	Spring				
	36	ABA-297	Screw				
	37	AEC1035	Plastic rivet				
	38	AEC-818	Mica sheet				

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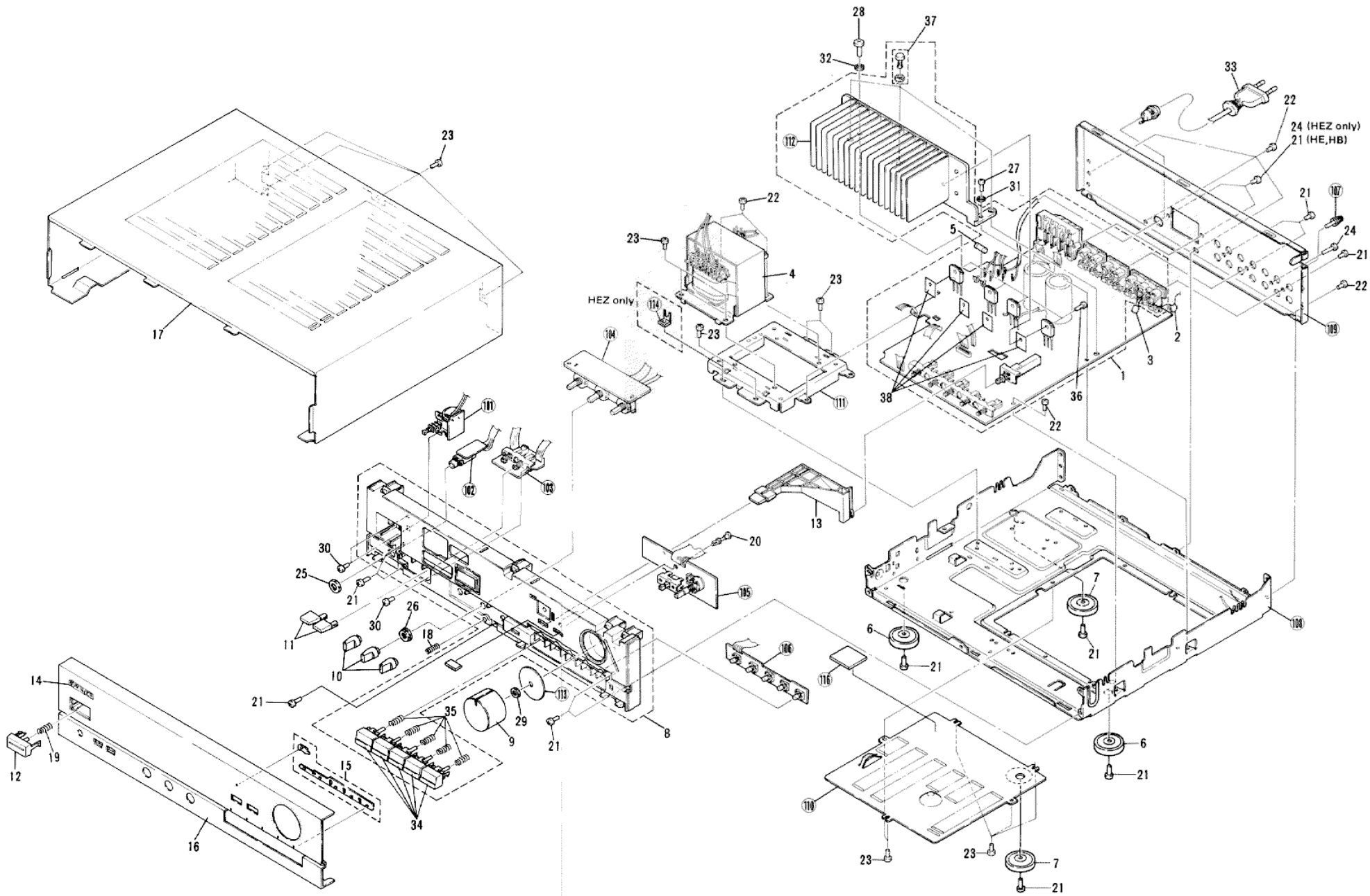
Exterior

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3. SCHEMATIC DIAGRAM

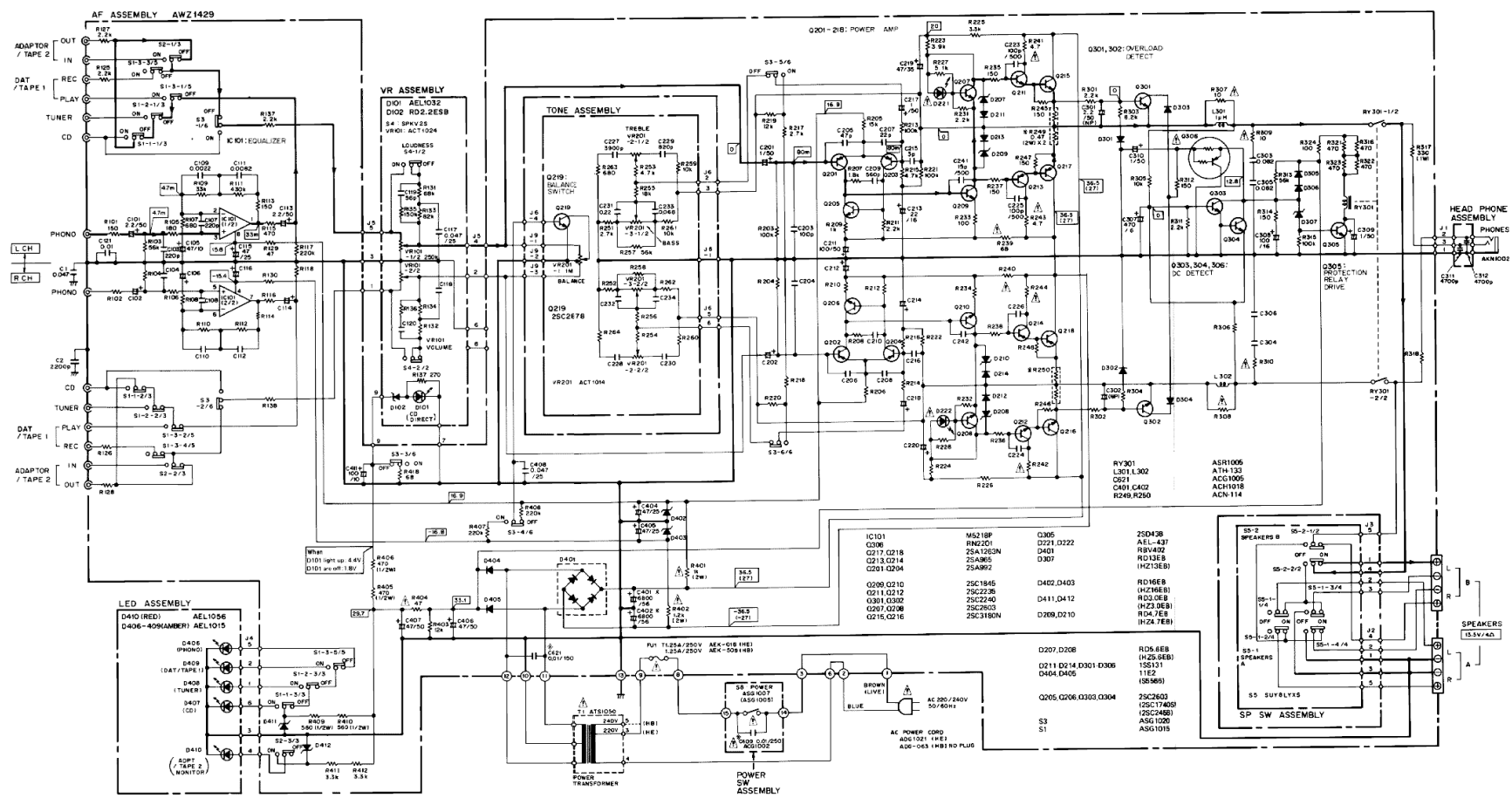
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B



- RESISTORS:**
Indicated in Ω, kΩ, %W, ±5% tolerance unless otherwise noted; k, M, M, MΩ, (F), ±1%, (G), ±2%, (K), ±10%, (M), ±20% tolerance
 - CAPACITORS:**
Indicated in capacity (μF) (Voltage (V)) unless otherwise noted; p, nF. Indication without voltage is 50V except electrolytic capacitor.
 - VOLTAGE CURRENT:**
Signal voltage at (45W, 45W, 41) (1kHz)
DC voltage (V) at no input signal
Value in () is DC voltage at rated power.
 - OTHERS:**
Signal route
Adjusting point
The 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.

- 5. SWITCHES:**
- AF ASSEMBLY ON - OFF
 - S1-1 CD ON - OFF
 - S1-2 TUNER ON - OFF
 - S1-3 DAT/TAPE 1 ON - OFF
 - S2 ADPT/TAPE 2 MONITOR ON - OFF
 - S3 CD DIRECT ON - OFF
 - VR ASSEMBLY ON - OFF
 - S4 LOGNESS ON - OFF
 - SP SW ASSEMBLY S1-1 SPEAKERS A ON - OFF
 - S5-2 SPEAKERS B ON - OFF
 - POWER SW ASSEMBLY SB POWER ON - OFF
- The underline indicates the switch position.

IC101	M5218P	G305	Z50438
C106	FN201	G211, G222	AE-437
G217, G218	2SA1263N	D401	RV402
G213, G214	2SA865	R135B	RD135B
G201, G204	2SA992	D402, D403	HN13EB
G209, G210	2SC1846	D411, D412	RD166B
G211, G212	2SC2236	D208, D210	HN23EB
G301, G302	2SC2240	D207, G208	HN23EB
G207, G208	2SC2803	G215, G216	HN247EB
G215, G216	2SC3180N	D207, D208	RD5.6EB
		D211, D214, D301, D306	HN25.6EB
		D404, D405	1S131
			11E2
			1S59B5
		G205, G206, G303, G304	2SC2803
			2SC1740B
			2SC246B
			RSK 7E3
			ASG 1029
			ASG 1015

4. P.C.BOARDS CONNECTION DIAGRAM

• View from component side

AF ASSEMBLY AWZ1429

Q305 Q304

Q306 Q301

Q302

Q214 Q212 Q211 Q213

Q208 Q207 Q215 Q217

Q210

Q209 Q205

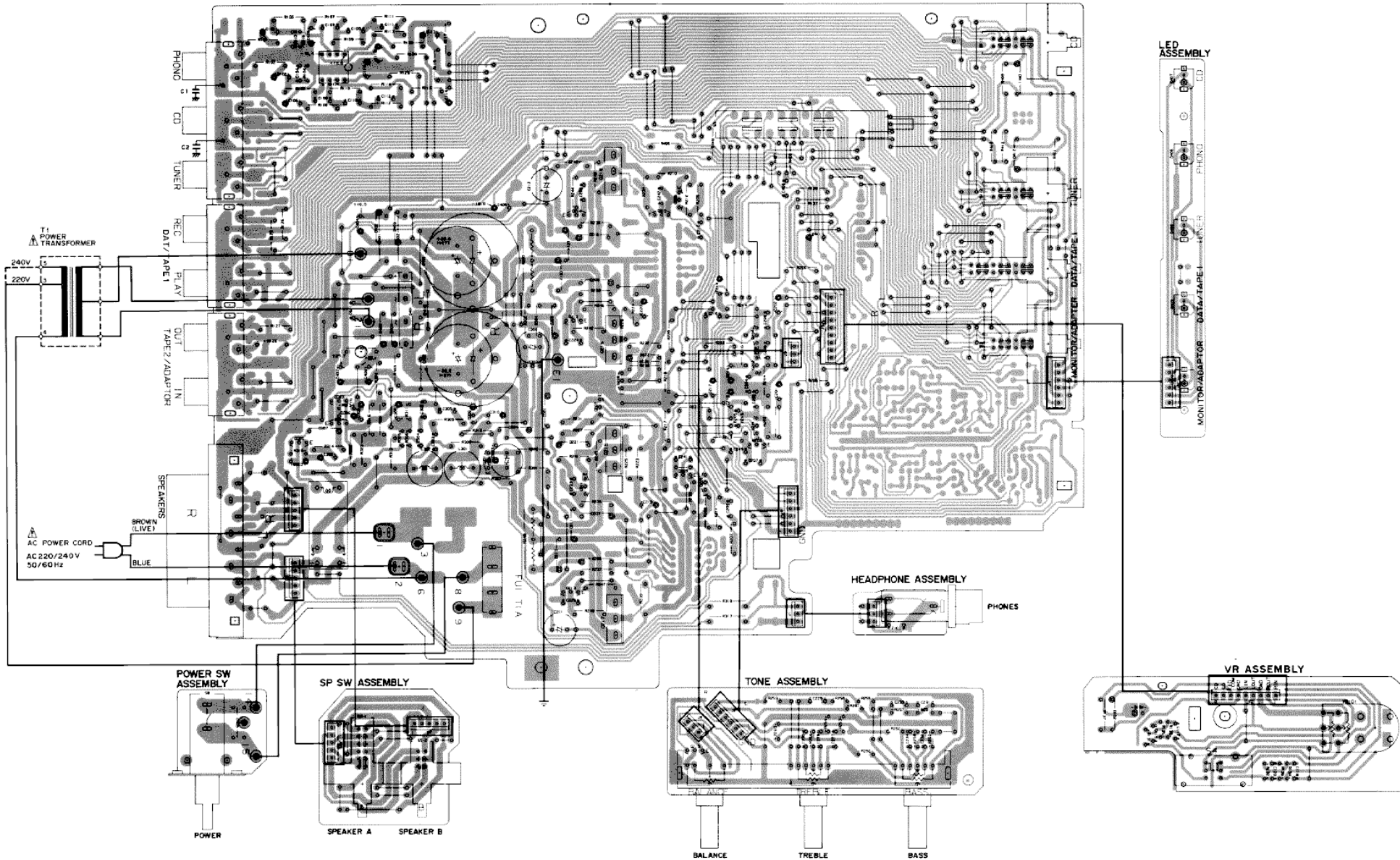
Q204 Q202 Q201 Q203

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External Appearance of Transistors and ICs

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.

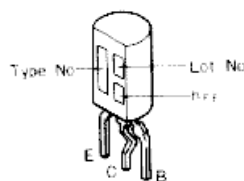
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
		Transistor
		Radiator type transistor
		Diode
		Resistor
		Capacitor (Polarity)
		Capacitor (Non-polarity)

Others

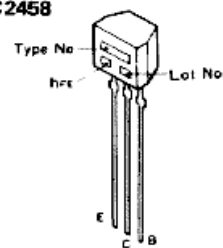
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

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

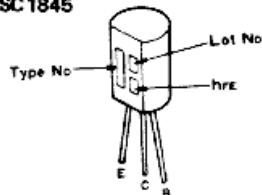
2SA965



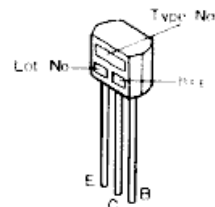
2SC2458



2SA992
2SC1845



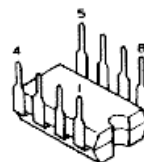
2SC2603



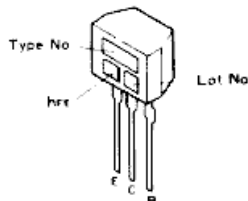
2SA1263N
2SC3180N



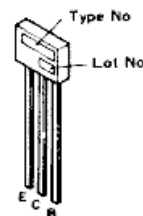
M5218P



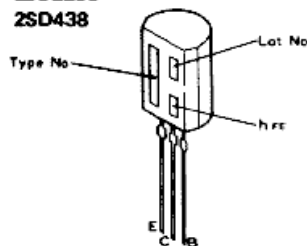
2SC1740S



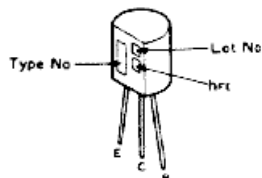
RN2201



2SC2235
2SD438



2SC2240
2SC2878



A

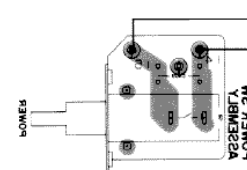
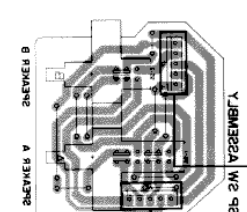
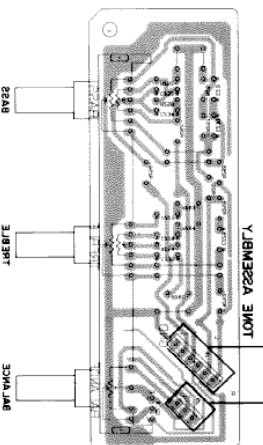
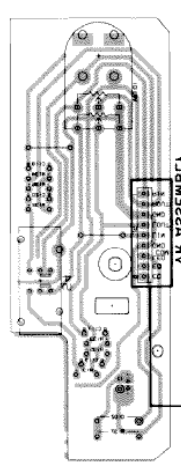
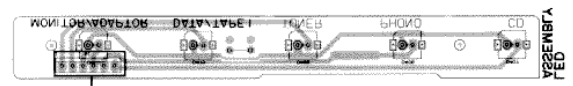
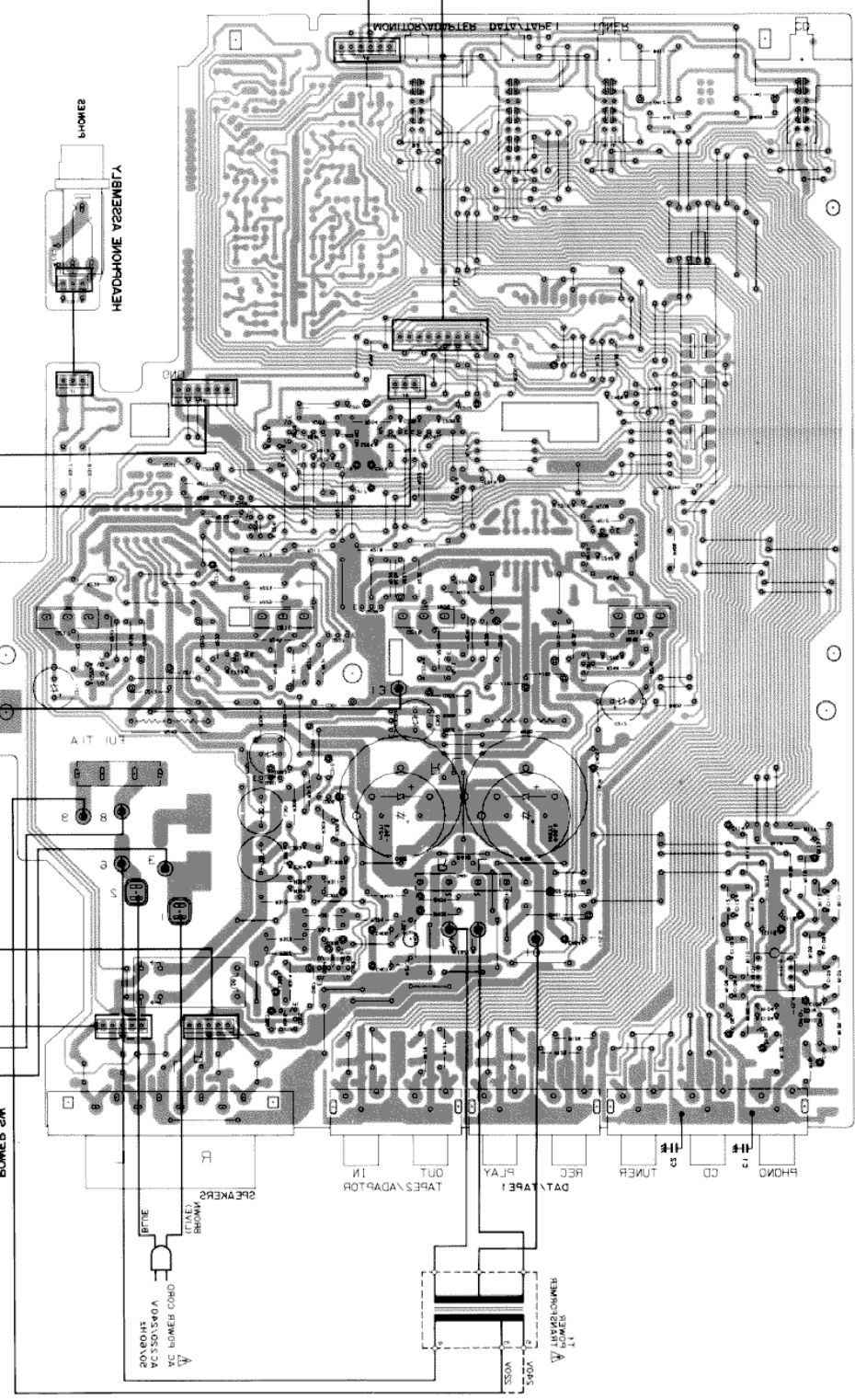
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1 2 3 4 5 6 7 8 9

GS P1 SWM YASSEMBLY YA
0200 0300 0400 0500
0600 0700 0800 0900
1000 1100 1200 1300
1400 1500 1600 1700
1800 1900 2000 2100
2200 2300 2400 2500
2600 2700 2800 2900
3000 3100 3200 3300
3400 3500 3600 3700
3800 3900 4000 4100
4200 4300 4400 4500
4600 4700 4800 4900
5000 5100 5200 5300
5400 5500 5600 5700
5800 5900 6000 6100
6200 6300 6400 6500
6600 6700 6800 6900
7000 7100 7200 7300
7400 7500 7600 7700
7800 7900 8000 8100
8200 8300 8400 8500
8600 8700 8800 8900
9000 9100 9200 9300
9400 9500 9600 9700
9800 9900 10000



1 2 3 4 5 6 7 8 9

A

B

C

D

5. 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.
- For your parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.

★★ GENERALLY MOVES FASTER THAN ★.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- 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 $\times 10^1$	561	RD1/4PS	561J
47k Ω	47 $\times 10^3$	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 $\times 10^1$	5621	RN1/4SR	5621F
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Miscellaneous Parts

P. C. BOARD ASSEMBLY

Mark	Symbol & Description	Part No.
	AF assembly	AWZ1429
	Tone assembly	
	LED assembly	
	VR assembly	
	Headphone assembly	
	SP SW assembly	
	Power SW assembly	

OTHERS

Mark	Symbol & Description	Part No.
Δ ★★	FU1 Fuse (T1.25A/250V)	AEK-018
Δ	AC power cord	ADG1021
Δ ★	T1 Power transformer (220/240V)	ATS1050
	C1	CKDYF473Z50
	C2	CQMA222K50

AF Assembly (AWZ1429)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC101	M5218P
Δ ★★	Q306	RN2201
★★	Q217, Q218	2SA1263N
★★	Q213, Q214	2SA965
★★	Q201-Q204	2SA992
★★	Q209, Q210	2SC1845
★★	Q211, Q212	2SC2235
★★	Q301, Q302	2SC2240
★★	Q205, Q206, Q303, Q304	2SC2603 (2SC1740S) (2SC2458)
★★	Q207, Q208	2SC2603

Mark	Symbol & Description	Part No.
★★	Q215, Q216	2SC3180N
★★	Q305	2SD438
Δ ★	D221, D222	AEL-437
★	D401	RBV402
★	D307	RD13EB (HZ13EB)
★	D402, D403	RD16EB (HZ16EB)
★	D411, D412	RD3.0EB (HZ3.0EB)
★	D209, D210	RD4.7EB (HZ4.7EB)
★	D207, D208	RD5.6EB (HZ5.6EB)
★	D404, D405	11E2 (S5566)
★	D211-D214, D301-D306	1SS131

SWITCHES AND RELAY

Mark	Symbol & Description	Part No.
★★	S1 Push switch (FUNCTION)	ASG1015
★★	S3 Push switch (CD DIRECT)	ASG1020
★★	RY301 Relay	ASR1005

COILS

Mark	Symbol & Description	Part No.
	L301, L302 AF Choke coil	ATH-133

CAPACITORS

Mark	Symbol & Description	Part No.
	C621 (0.01 μ F/AC150V)	ACG1005
	C401, C402 (6800 μ F/56V)	ACH1018
	C215, C216	CCCSL030C50 (CCDSL030C50)
	C203, C204	CCCSL101J50 (CCDSL101J50)
	C223-C226	CCCSL101K500

Mark	Symbol & Description	Part No.
C241, C242 C207, C208		CCCSL150K500 CCCSL220J50 (CCDSL220J50)
C206		CCCSL470J50 (CCDSL470J50)
C205 C103, C104, C107, C108		CCDSL470J50 CCCSL221J50 (CCDSL221J50)
C301, C302 C309, C310 C411 C308 C211, C212		CEANP2R2M50 CEAS010M50 CEAS101M10 CEAS101M16 CEAS101M50
C101, C102, C113, C114 C105, C106 C115, C116, C404, C405 C219, C220 C406, C407		CEAS2R2M50 CEAS470M10 CEAS470M25 CEAS470M35 CEAS470M50
C307 C201, C202, C217, C218 C213, C214 C121 C209, C210		CEAS471M6 CEYA010M50 CEYA220M16 CKCYB103K50 CKCYB561K50 (CKDYB561K50)
C408		CKCYX473M25 (CKDYX473M25)
C109, C110 C111, C112 C303-C306		CQMA222J50 CQMA822J50 CQMA823K50

RESISTORS

Mark	Symbol & Description	Part No.
R249, R250 (0.47 Ω / 5W \times 2) R203, R204, R213-R220 R405, R406, R409, R410 R239, R240, R307-R310, R404 R245-R248		ACN-114 RDR $\frac{1}{4}$ PM□□□J RD $\frac{1}{2}$ PM□□□J RD $\frac{1}{4}$ PMFL□□□J RD $\frac{1}{4}$ PMF151J
R103, R104, R107, R108, R111-R114, R305, R306, R311, R313, R315 R241-R244		RD $\frac{1}{8}$ JPM□□□J RFA $\frac{1}{4}$ PS4R7J RN $\frac{1}{4}$ PQ□□□□F RS1LMF331J RS2LMF□□□J
R227, R228, R231, R232 R317, R318 R401, R402		
Other resistors		RD $\frac{1}{4}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 4P (DAT/TAPE1, ADAPTOR/TAPE2)	AKB-115
	Pin jack 6P (PHONO, CD, TUNER)	AKB-117
	Terminal 8P (SPEAKERS)	AKE-111

Tone Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	Q219	2SC2878

CAPACITORS

Mark	Symbol & Description	Part No.
	C231, C232 C227, C228 C233, C234 C229, C230	CQMA224K50 CQMA392K50 CQMA683K50 CQMA821K50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR201 Variable resistor (BASS, TREBLE, BALANCE) Other resistors	ACT1014 RD $\frac{1}{8}$ PM□□□J

LED Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D406-D409	AEL1015
★	D410	AEL1056

VR Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D101	AEL1032
★	D102	RD2.2ESB

SWITCH

Mark	Symbol & Description	Part No.
★★	S4 Push switch (LOUDNESS)	SPKV2S

CAPACITORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
	C119, C120	CCCSL560J50 (CCDSL560J50)
	C117, C118	CKCYX473M25 (CKDYX473M25)

RESISTORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
★	VR101 Variable resistor (250k) (VOLUME)	ACT1024
	R137 Other resistors	RD $\frac{1}{4}$ PM271J RD $\frac{1}{8}$ OPM □□□J

Headphone Assembly**CAPACITORS**

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
	C311, C312	CKCYB472K50

OTHERS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
	Jack (PHONES)	AKN1002

SP SW Assembly**SWITCH**

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
★★	S5 Push switch (SPEAKERS)	SUY8LYXS

Power SW Assembly**SWITCH**

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
†★★	S8 Push switch (POWER)	ASG1007 (ASG1005)

CAPACITOR

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
†	C409 (0.01 μ F/400V)	ACG1002

6. FOR A-223/HB, HEZ AND A-223-S/HEZ TYPES

6.1 CONTRAST OF MISCELLANEOUS PARTS

NOTES :

- Parts without part number cannot be supplied.
- 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.
- For your parts Stock Control, the fast moving items are indicated with the marks **★★** and **★**.
★★ GENERALLY MOVES FASTER THAN ★.
 This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

The **A-223/HB, HEZ** and **A-223-S/HEZ** types are the same as the **A-223/HE** type with the exception of the following sections.

Mark	Symbol & Description	Part No.				Remarks
		A-223 HE type	A-223 HB type	A-223 HEZ type	A-223-S HEZ type	
	AF assembly	AWZ1429	AWZ1429	AWZ1430	AWZ1430	
Δ ★★	FU1 Fuse (T1.25A/250V)	AEK-018	.....	AEK-018	AEK-081	
Δ ★★	FU1 Fuse (1.25A/250V)	.....	AEK-509	.....	.....
Δ	AC power cord	ADG1021	ADG-063	ADG1021	ADG1021	
	Bonnet case	ANE1053	ANE1053	ANE1053	ANE1072	
	Front panel	ANB1173	ANB1173	ANB1173	ANB1174	
	Panel base assembly	AMB1319	AMB1319	AMB1319	AMB1320	
	Knob (VOLUME)	AAB1061	AAB1061	AAB1061	AAB1062	
	Knob (BASS, TREBLE, BALANCE)	AAB1075	AAB1075	AAB1075	AAB1077	
	Knob (POWER)	AAD1343	AAD1343	AAD1343	AAD1344	
	Knob (CD, PHONO, TUNER, DAT/ TAPE1, ADPT/TAPE2)	AAD1056	AAD1056	AAD1056	AAD1405	
	Terminal (GND)	.....	.....	Non supply	Non supply	
	Push knob A (SPEAKERS)	AAD1057	AAD1057	AAD1057	AAD1387	
	Push rod assembly	AAD1345	AAD1345	AAD1345	AAD1346	
	Packing case	AHD1379	AHD1379	AHD1379	AHD1380	
	Operating instructions (English, German, French, Italian, Dutch, Swedish, Spanish, Portuguese)	ARE1076	.....	.....	.....
	(English)	.....	ARB1118	.....	.....
	(German)	.....	.....	ARC1079	ARC1079	
R1		.....	.....	RD $\frac{1}{2}$ PM100J	RD $\frac{1}{2}$ PM100J	
C3	(0.047 μ F/150V)	.....	.....	ACG-009	ACG-009	
	Flange nut (M9)	ANB1006	ANB1006	ABN1006	ABN-072	

6.2 FOR A-223/HEZ AND A-223-S/HEZ TYPES.

- As A-223-S/HEZ type is the silver model of A-223/HEZ type, the Electrical Parts List, Schematic Diagram and P.C. Board patterns are entirely the same as those of A-223/HEZ type.

Electrical Parts List of A-223/HEZ and A-223-S/HEZ types

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 ⚠ 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.
- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★ GENERALLY MOVES FASTER THAN ★.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- 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 ¹	561	RD1/4PS	561J
47k Ω	47 × 10 ³	473	RD1/4PS	473J
0.5 Ω	0R5		RN2H	0R5K
1 Ω	010		RSIP	010K

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

5.62k Ω	562 × 10 ²	5621	RN1/4SR	5621F
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Miscellaneous Parts

P. C. BOARD ASSEMBLY

Mark	Symbol & Description	Part No.
	AF assembly	AWZ1430
	Tone assembly	
	LED assembly	
	VR assembly	
	Headphone assembly	
	SP SW assembly	
	Power SW assembly	

Mark	Symbol & Description	Part No.
★★	Q209, Q210	2SC1845
★★	Q211, Q212	2SC2235
★★	Q301, Q302	2SC2240
★★	Q205, Q206, Q303, Q304	2SC2603 (2SC1740S) (2SC2458)
★★	Q207, Q208	2SC2603
★★	Q215, Q216	2SC3180N
★★	Q305	2SD438
⚠ ★	D221, D222	AEL-437
★	D401	RBV402
★	D307	RD13EB (HZ13EB)

OTHERS

Mark	Symbol & Description	Part No.
⚠★★	FU1 Fuse (T1.25A/250V)	AEK-018
⚠★	AC power cord	ADG1021
⚠★	T1 Power transformer (220/240V)	ATS1051
	C1	CKDYF473Z50
	C2	CQMA222K50
	C3 (0.047 μ F/150V)	ACG-009
	R1	RD¼PM100J

★	D402, D403	RD16EB (HZ16EB)
★	D411, D412	RD3.0EB (HZ3.0EB)
★	D209, D210	RD4.7EB (HZ4.7EB)
★	D207, D208	RD5.6EB (HZ5.6EB)
★	D404, D405	11E2 (S5566)
★	D211-D214, D301-D306	1SS131

AF Assembly (AWZ1430)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC101	M5218P
⚠★★	Q306	RN2201
★★	Q217, Q218	2SA1263N
★★	Q213, Q214	2SA965
★★	Q201-Q204	2SA992

SWITCHES AND RELAY

Mark	Symbol & Description	Part No.
★★	S1 Push switch (FUNCTION)	ASG1015
★★	S3 Push switch (CD DIRECT)	ASG1020
★★	RY301 Relay	ASR1005

COILS

Mark	Symbol & Description	Part No.
	L301, L302, L601-L604 Inductor (1 μ H)	ATH-133

CAPACITORS

Mark	Symbol & Description	Part No.
	C621 (0.01 μ F/AC150V) C401, C402 (6800 μ F/56V) C215, C216	ACG1005 ACH1018 CCCSL030C50 (CCDSL030C50) CCCSL101J50 (CCDSL101J50) CCCSL101K500
	C203, C204	
	C223-C226	
	C241, C242 C206-C208	CCCSL150K500 CCCSL470J50 (CCDSL470J50)
	C205 C301, C302 C309, C310	CCDSL470J50 CEANP2R2M50 CEAS010M50
	C411 C308 C211, C212 C101, C102, C113, C114 C105, C106	CEAS101M10 CEAS101M16 CEAS101M50 CEAS2R2M50 CEAS470M10
	C115, C116, C404, C405 C219, C220 C406, C407 C307 C201, C202, C217, C218	CEAS470M25 CEAS470M35 CEAS470M50 CEAS471M6 CEYA010M50
	C213, C214 C121 C103, C104 C107, C108, C601-C614 C209, C210	CEYA220M16 CKCYB103K50 CKCYB331K50 CKCYB391K50 CKCYB561K50 (CKDYB561K50)
	C408	CKCYX473M25 (CKDYX473M25)
	C109, C110 C615-C620 C111, C112 C303-C306	CQMA222J50 CQMA472K50 CQMA822J50 CQMA823K50

RESISTORS

Mark	Symbol & Description	Part No.
	R249, R250 (0.47 Ω /5W \times 2) R203, R204, R213-R220 R405, R406, R409, R410 R239, R240, R307-R310, R404 R245-R248	ACN-114 RDR $\frac{1}{4}$ PM $\square\square\square$ J RD $\frac{1}{2}$ PM $\square\square\square$ J RD $\frac{1}{4}$ PMFL $\square\square\square$ J RD $\frac{1}{4}$ PMF151J
\triangle	R103, R104, R107, R108, R111-R114, R305, R306, R311, R313, R315	RD $\frac{1}{8}$ JPM $\square\square\square$ J
\triangle	R241-R244 R227, R228, R231, R232 R317, R318	RFA $\frac{1}{4}$ PS4R7J RN $\frac{1}{4}$ PQ $\square\square\square$ F RS1LMF331J
\triangle	R401, R402 R412	RS2LMF $\square\square\square$ J RD $\frac{1}{4}$ PM332J
	Other resistors	RD $\frac{1}{4}$ PM $\square\square\square$ J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 4P (DAT/TAPE1, ADAPTOR/TAPE2)	AKB-115
	Pin jack 6P (PHONO, CD, TUNER)	AKB-117
	Terminal 8P (SPEAKERS)	AKE-111

Tone Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	Q219	2SC2878

CAPACITORS

Mark	Symbol & Description	Part No.
	C231, C232 C227, C228 C233, C234 C229, C230	CQMA224K50 CQMA392K50 CQMA683K50 CQMA821K50

RESISTORS

Mark	Symbol & Description	Part No.
★	VR201 Variable resistor (BASS, TREBLE, BALANCE) Other resistors	ACT1014 RD $\frac{1}{8}$ PM $\square\square\square$ J

LED Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D406-D409	AEL1015
★	D410	AEL1056

VR Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★	D101	AEL1032
★	D102	RD2.2ESB

SWITCH

Mark	Symbol & Description	Part No.
★★	S4 Push switch (LOUDNESS)	SPKV2S

CAPACITORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
	C119, C120	CCCSL560J50 (CCDSL560J50)
	C117, C118	CKCYX473M25 (CKDYX473M25)

RESISTORS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
★	VR101 Variable resistor (250k) (VOLUME)	ACT1024
	R137 Other resistors	RD¼PM271J RD ¼ OPM □□□J

Headphone Assembly**CAPACITORS**

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
	C311, C312	CKCYB472K50

OTHERS

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
	Jack (PHONES)	AKN1002

SP SW Assembly**SWITCH**

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
★★	S5 Push switch (SPEAKERS)	SUY8LYXS

Power SW Assembly**SWITCH**

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
▲★★	S8 Push switch (POWER)	ASG1007 (ASG1005)

CAPACITOR

<u>Mark</u>	<u>Symbol & Description</u>	<u>Part No.</u>
⊥	C409 (0.01 μ F / 400V)	ACG1002

6.3 SCHEMATIC DIAGRAM

A

B

C

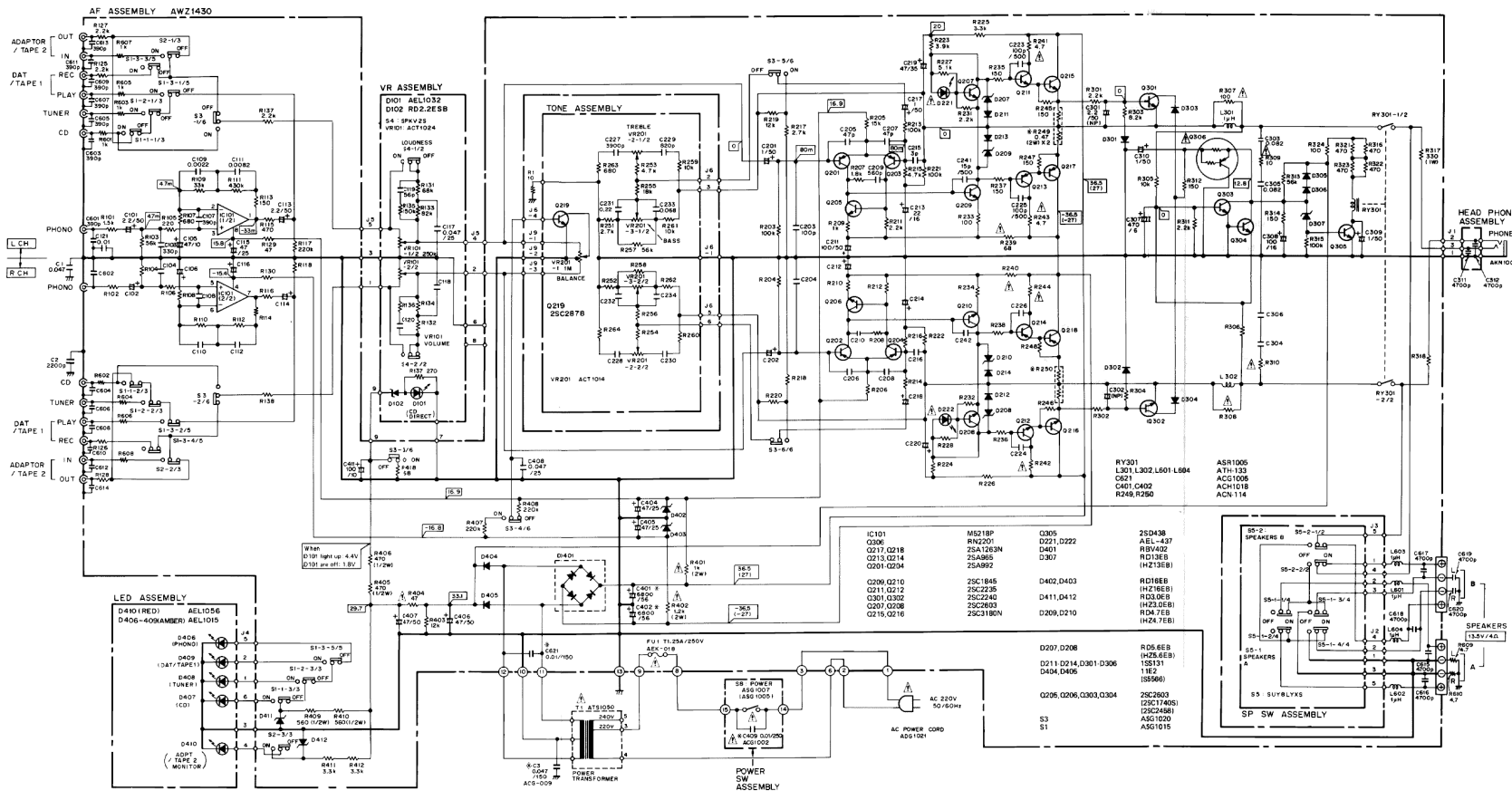
D

A

B

C

D

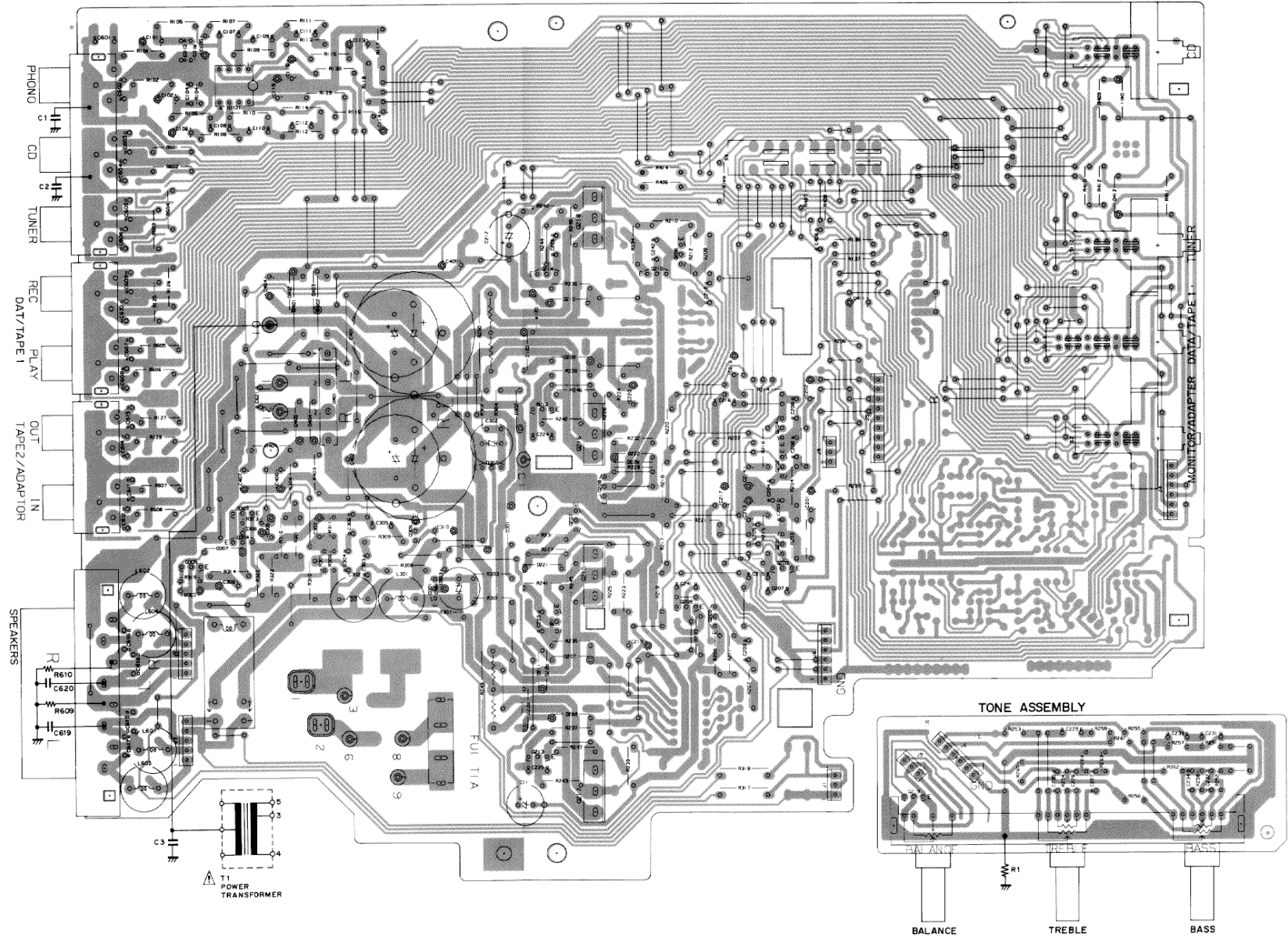


- RESISTORS:** Indicated in Ω, kW, 1/2 W, 5% tolerance unless otherwise noted; 1/4 W, 10%, 20% tolerance.
 - CAPACITORS:** Indicated in capacity (pF), voltage (V) unless otherwise noted; pF, pF. Indication without voltage is 50V except electrolytic capacitor.
 - VOLTAGE CURRENT:** Indicated in (45 W, 45 W, 4.1) output (1 kHz); DC voltage (V) at no input signal; Value in () is DC voltage at rated power.
 - OTHERS:**
 - ▲ Signal route
 - ⊙ Adjusting point
 - The 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.
 - at marked capacitors and resistors have parts numbers.
 - SWITCHES:**
 - AF ASSEMBLY
 - S1-1 CD ON - OFF
 - S1-2 TUNER ON - OFF
 - S1-3 DAT/TAPE 1 ON - OFF
 - S2 ADPT/TAPE 2 MONITOR ON - OFF
 - S3 CD DIRECT ON - OFF
 - VR ASSEMBLY
 - S4 LOUDNESS ON - OFF
 - SP SW ASSEMBLY
 - S5-1 SPEAKERS A ON - OFF
 - S5-2 SPEAKERS B ON - OFF
 - S5 POWER ON - OFF
- The underline indicates the switch position.

6.4 P.C.BOARD PATTERNS
 • View from component side

AF ASSEMBLY AWZ1430

Q303	Q306	Q218	Q204
Q305	Q301	Q214	Q208
Q304	Q302	Q212	Q207
		Q211	Q215
		Q213	Q217
		Q210	Q209
		Q205	Q203

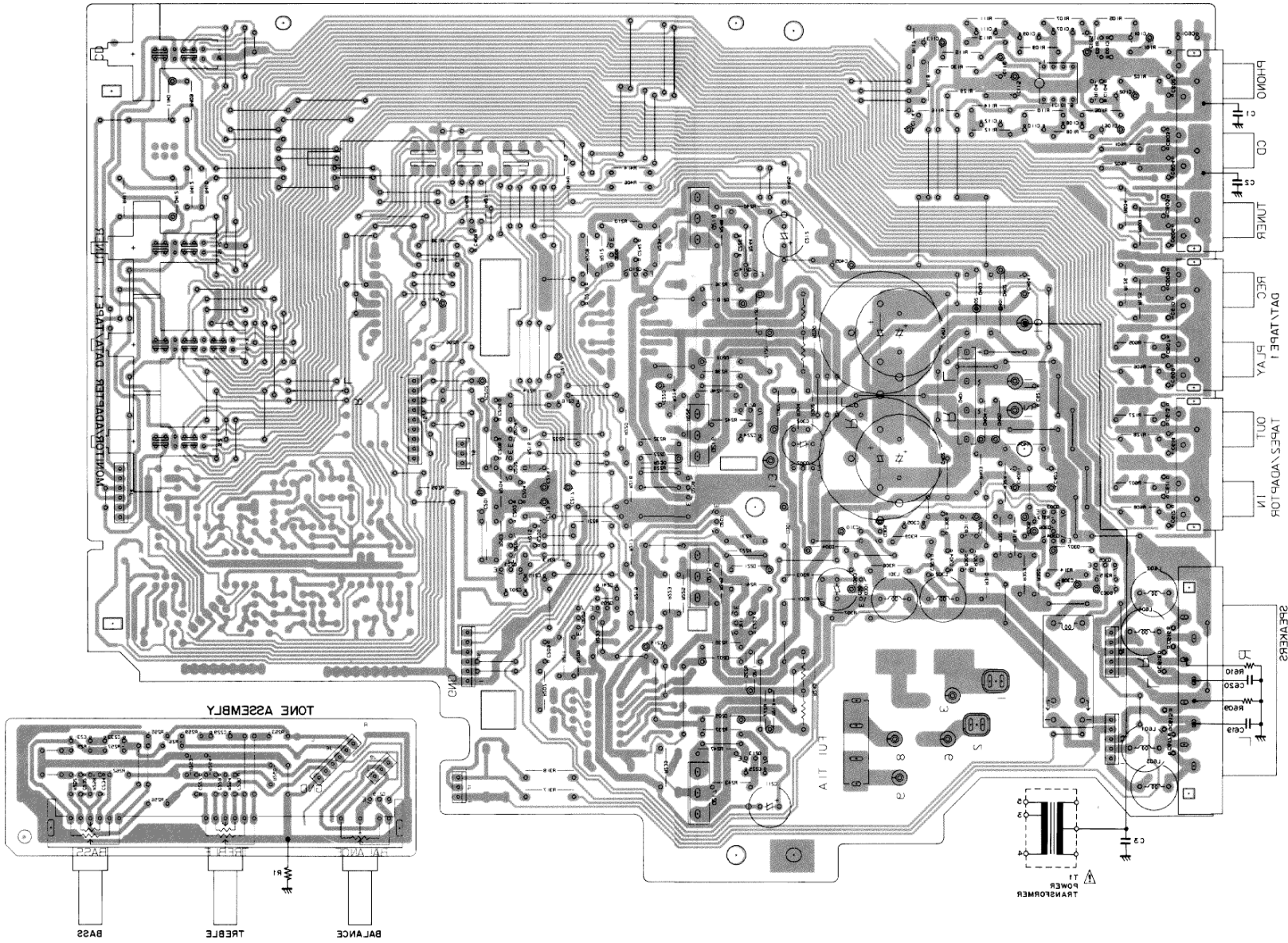


A
B
C
D

• View from soldering side

- 0302 0304
- 0303
- 0301
- 0305
- 0311
- 0312
- 0313
- 0314
- 0315
- 0316
- 0317
- 0318
- 0319
- 0320
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- 0396
- 0397
- 0398
- 0399
- 0400

AF ASSEMBLY WAZ1430



A

B

C

D

A

B

C

D

2

4

3

5

1

7. SPECIFICATIONS

Amplifier Section

Continuous power output (both channels driven)	
20 Hz to 20 kHz, T.H.D. 0.07%, 8 Ω	30 W + 30 W
DIN continuous power output (both channels driven)	
1 kHz, T.H.D. 1%, 8 Ω	38 W + 38 W
1 kHz, T.H.D. 1%, 4 Ω	45 W + 45 W
IEC continuous power output (both channels driven)	
63 Hz to 12.5 kHz, T.H.D. 0.7%, 8 Ω	35 W + 35 W
63 Hz to 12.5 kHz, T.H.D. 0.7%, 4 Ω	40 W + 40 W
Dynamic power output (on EIA dynamic test signal)	
8 Ω	50 W + 50 W
4 Ω	65 W + 65 W
Total harmonic distortion (measured by Audio Spectrum Analyzer)	
20 Hz to 20 kHz, 30 W, 8 Ω	0.07%
Input sensitivity/impedance	
PHONO.....	2.5 mV/50 k Ω
CD, TUNER, DAT/TAPE1 PLAY, ADAPTOR/TAPE2 (PLAY) IN	
.....	150 mV/50 k Ω
PHONO overload level	
1 kHz, T.H.D. 0.1%.....	150 mV
Output level/impedance	
DAT/TAPE1 REC, ADAPTOR/TAPE2 (REC) OUT..	150 mV/2.2 k Ω
Frequency response	
PHONO 20 Hz to 20 kHz.....	± 0.5 dB
CD, TUNER, DAT/TAPE1, ADAPTOR/TAPE2 10 Hz to 70 kHz..	$\pm 1/3$ dB
Tone control	
BASS.....	± 8 dB (100 Hz)
TREBLE.....	± 8 dB (10 kHz)

Loudness contour (volume control set at -40 dB position).....	
	+ 6 dB (100 Hz)/+ 3 dB (10 kHz)
Signal-to-Noise ratio (IHF short circuited, A network)	
PHONO (5 mV input).....	77 dB
CD (DIRECT).....	101 dB
CD, TUNER, DAT/TAPE1, ADAPTOR/TAPE2.....	100 dB
Signal-to-Noise ratio (DIN, continuous power/50 mW)	
PHONO.....	67 dB/61 dB
CD, TUNER, DAT/TAPE1, ADAPTOR/TAPE2.....	83 dB/63 dB

Power Supply/Miscellaneous

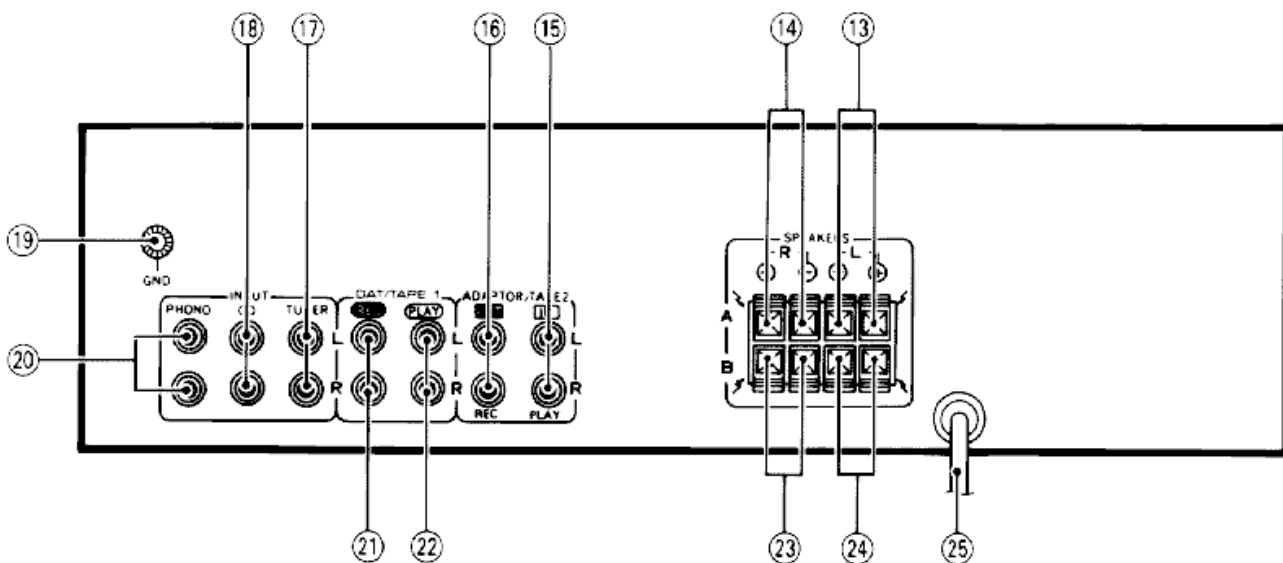
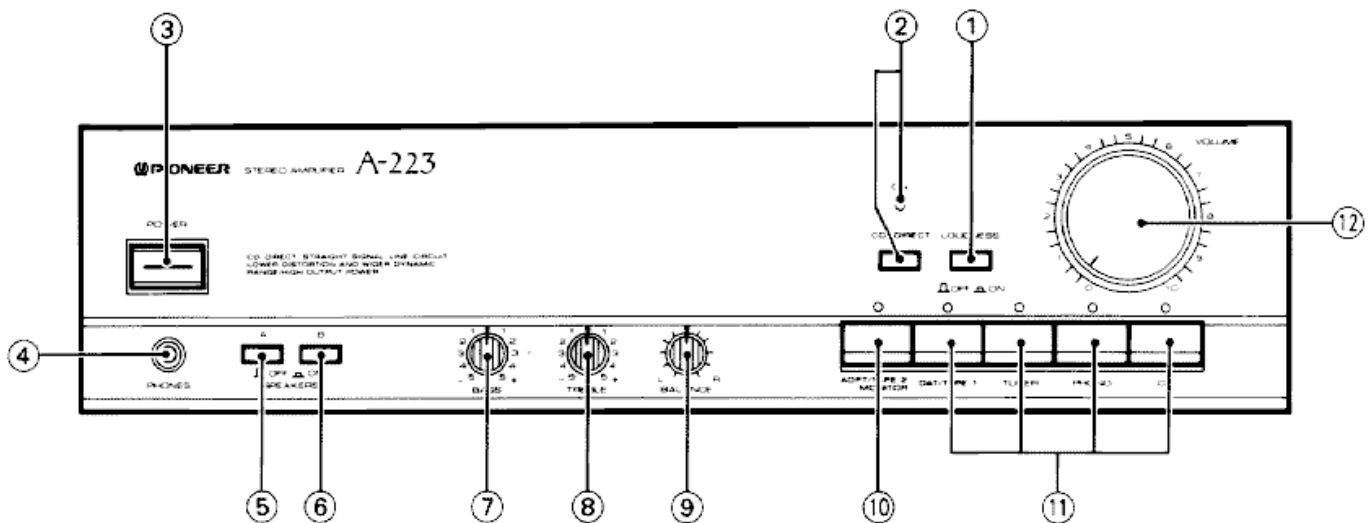
Power requirements	
European model.....	AC 220 V \sim , 50/60 Hz
U.K., Australian models.....	AC 240 V \sim , 50/60 Hz
Other destination models.....	\sim AC 110 V/120 $-$ 127V/ 220 V/240 V (switchable), 50/60 Hz
Power consumption	
European model.....	260 W
U.K., Australian models.....	260 W
Other destination models.....	260 W
Dimensions.....	420 (W) \times 348 (D) \times 110 (H) mm 16-1/2 (W) \times 13-3/4 (D) \times 4-5/16 (H) in
Weight.....	5.9 kg (13 lb)

Accessories

Operating instructions.....	1
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- *Specifications and design subject to possible modification without notice due to improvements.*

8. PANEL FACILITIES



FRONT PANEL

① LOUDNESS switch

Use when listening at low-volume levels.

[OFF] — Released position: Should normally be left in this position.
 [ON] — Depressed position: Boosts low and high frequencies to give added punch to play back even at low volume.

② CD DIRECT switch/indicator

Use this switch/indicator when you do not wish to pass the output from a piece of equipment connected to the CD terminals through the various frequency adjusting circuits (BASS, TREBLE, BALANCE).

The LOUDNESS circuit will continue to operate, however.

[ON] — When the switch is in this position, the indicator lights and the signals input from the CD 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 the switch is in this position, the indicator goes out, and the signal selected by the FUNCTION switches are reproduced.

NOTE:

When this switch is ON, the signals from the source connected to the CD terminals are output from the speaker system, and also the signals from the source selected by the FUNCTION switch are output from the DAT/TAPE 1 REC terminal and the ADAPTOR/TAPE 2 OUT terminal. Consequently, if you wish to compensate the sound from the source connected to the CD terminals using recording equipment or an adaptor, press the CD function switch to select the source connected to the CD terminals.

③ POWER switch

Press to turn power to the unit ON and OFF.

④ PHONES jack

When using headphones, insert headphone plug into this jack.

⑤ SPEAKERS A selector switch

Use this switch to listen to the speaker systems connected to the SPEAKERS A terminals.

[ON] — Depressed position: Sound is heard from the speaker systems.

[OFF] — Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

⑥ SPEAKERS B selector switch

Use this switch to listen to the speaker systems connected to the SPEAKERS B terminals.

[ON] — Depressed position: Sound is heard from the speaker systems.

[OFF] — Released position: No sound is heard from the speaker systems. Set to this position when listening with headphones.

NOTE:

When the speaker system is connected to only one speaker terminal (A or B) and both A and B selector switches are ON, there will be no sound. Turn ON only the selector to which the speaker system is connected.

⑦ BASS tone control

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

NOTE:

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

⑧ TREBLE tone control

Use to adjust the high-frequency tone.

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

NOTE:

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

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, turn toward the L (left) position and if the left side is louder, turn toward the R (right) position.

NOTE:

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

⑩ ADPT/TAPE 2 MONITOR switch/indicator

Use when there is an adaptor component (graphic equalizer, etc.) or tape deck connected to the ADAPTOR/TAPE 2 terminals.

[OFF] — Indicator goes out when not in use.

[ON] — Indicator lights when using the adaptor component or listening to the tape deck.

NOTE:

When no connections are made to the ADAPTOR/TAPE 2 terminals, or when they are not in use, be sure to set this switch to the OFF position. (No sound will be heard if it is set to the ON position.)

⑪ FUNCTION switches/indicators

Use to select playback source.

[CD] — Press when listening to a compact disc playback with a CD player.

[PHONO] — Press when listening to record playback on a turntable.

[TUNER] — Press when listening to AM or FM broadcasts with a tuner.

[DAT/TAPE 1] — Press when listening to tape playback with a tape deck or a DAT deck.

⑫ VOLUME control

Use to adjust volume level

Turn to the right side to increase volume.

Turn to the left side to decrease volume.

REAR PANEL

- ⑬ **SPEAKERS A terminals (left channel)**
- ⑭ **SPEAKERS A terminals (right channel)**
- ⑮ **ADAPTOR/TAPE 2 IN (PLAY) terminals**
- ⑯ **ADAPTOR/TAPE 2 OUT (REC) terminals**
- ⑰ **TUNER terminals**
- ⑱ **CD terminals**
- ⑲ **Turntable ground terminal (GND)**
- ⑳ **PHONO terminals**
- ㉑ **DAT/TAPE 1 REC terminals**
- ㉒ **DAT/TAPE 1 PLAY terminals**
- ㉓ **SPEAKERS B terminals (right channel)**
- ㉔ **SPEAKERS B terminals (left channel)**
- ㉕ **Power cord**
Connect this cord to an AC wall socket, or the AC outlet of an audio timer.