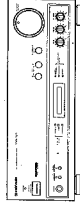


Service Manual



ORDER NO.
ARP2856

AV SURROUND AMPLIFIER

VSA-303

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	The voltage can be converted by the following method.
	VSA-303			
HB		○	AC240V	AC220-230V, *
HEZ		○	AC220-230V	AC240V, *
HL		○	AC220-230V	AC240V, *
SD		○	AC110V/120-127V/220V/240V	With the voltage selector

*: After the wiring of the Power-supply block at the primary winding of Power transformer referring to the "Line Voltage Selection" described in Service Manual.

- For HEZ, HL and SD types, refer to page 32.

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1. EXPLODED VIEWS, PACKING AND PARTS LIST

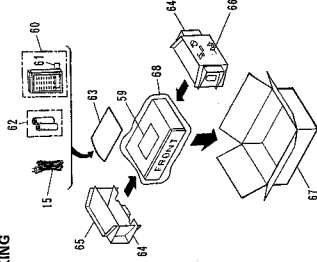
NOTES :

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- 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.
- 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 and Packing

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
Δ	1	FRONT PANEL	AMB2237		46	HINGE BUTTON	AAD2556
Δ	2	POWER TRANSISTOR (Q8)	2SA1803		47	TOP COVER (PLS)	AME1086
Δ	3	POWER TRANSISTOR (Q3)	2SA1804		48	BONNET CASE (MET)	AME1482
Δ	4	POWER TRANSISTOR (Q4)	2SA1804		49	POWER AMP ASSY	AWZ5471
Δ	5	POWER TRANSISTOR (Q6)	2SA1804		50	M. VOL ASSY	AWZ5472
Δ	6	POWER TRANSISTOR (Q7)	2SC4888		51	TRON ASSY	AWZ5473
Δ	7	POWER TRANSISTOR (Q1)	2SC4889	NSP	52	REG. ASSY	AWZ5562
Δ	8	POWER TRANSISTOR (Q2)	2SC4889		53	MOTHER ASSY	AWZ5456
Δ	9	POWER TRANSISTOR (Q5)	2SC4889		54	VIDEO AMP ASSY	AWZ5467
Δ	10	POWER TRANSFORMER (T1)	ATS1534		55	FRONT ASSY	AWZ5458
Δ	11	TERMINAL SCREW	AKE-031	NSP	56	H. PHONE ASSY	AWZ5459
Δ	12	FUSE (T2.5A/250V, FU1)	AEK-512	NSP	57	SECONDARY TRANS ASSY	AWZ5568
Δ	13	FUSE (T4A/250V, FU3)	AEK-514		58	DOL. PRO. MOD. ASSY	AXQ1021
Δ	14	FUSE (T4A/250V, FU4)	AEK-514		59	OPERATING INSTRUCTIONS (English)	ARB1487
Δ	15	AC POWER CORD	ADG1143		60	REMOTE CONTROL UNIT (CU-VSA025)	AXD1382
NSP	16	CHASSIS (MET)	ANA1228				
	17	REAR PANEL	ANC2232				
NSP	18	HEAT SINK (MET)	ANH1458		61	BATTERY COVER	AZA7031
	19	INSULATOR	FNW1912	NSP	62	BATTERY (6P, 4A)	AEX-010
	20	VOLUME HOLDER (MTL)	ANG1613	NSP	63	LITERATURE BAG	AHG-117
					64	PAD SIDE A	AHA3006
					65	PAD SIDE B (L)	AHA3027
	21	PCB HOLDER (MET)	ANG1889				
	22	SPRING (FE)	ABH1097		66	PAD SIDE B (R)	AHA2028
NSP	23	NYLON BINDER	AEC-093		67	PACKING CASE	AHD2735
	24	PCB SUPPORT	AEC1286		68	PACKING SHEET	AHG1220
	25	PVC SHEET	AEC1584				
	26	BARRIER (PLS)	AEC1586				
	27	BINDER	AEP-215				
NSP	28	PCB Mould	AMR1525				
	29	SPACER (PLS)	AMR2544				
	30	SCREW	ABA-298				
	31	SCREW	ABA1018				
	32	SCREW	ABA1062				
	33	SCREW (STEEL)	ABA1065				
	34	SCREW	ABA1200				
	35	SCREW	BEZ29P06057K				
	36	SCREW	BFZ26P0609FMC				
	37	NUT	NK70FUC				
	38	WASHER	WA73F118U050				
	39	FL FILTER	AAK1430				
	40	LED LENS (PLS)	AAK2553				
	41	FL PANEL	AAK2564				
	42	NAME PLATE	PAM1608				
	43	ROUND KNOB M (PLS)	AAE1341				
	44	ROTARY KNOB L (PLS)	AAE1343				
	45	POWER BUTTON (PLS)	AAE2531				

● PACKING



1

2



△

5

1

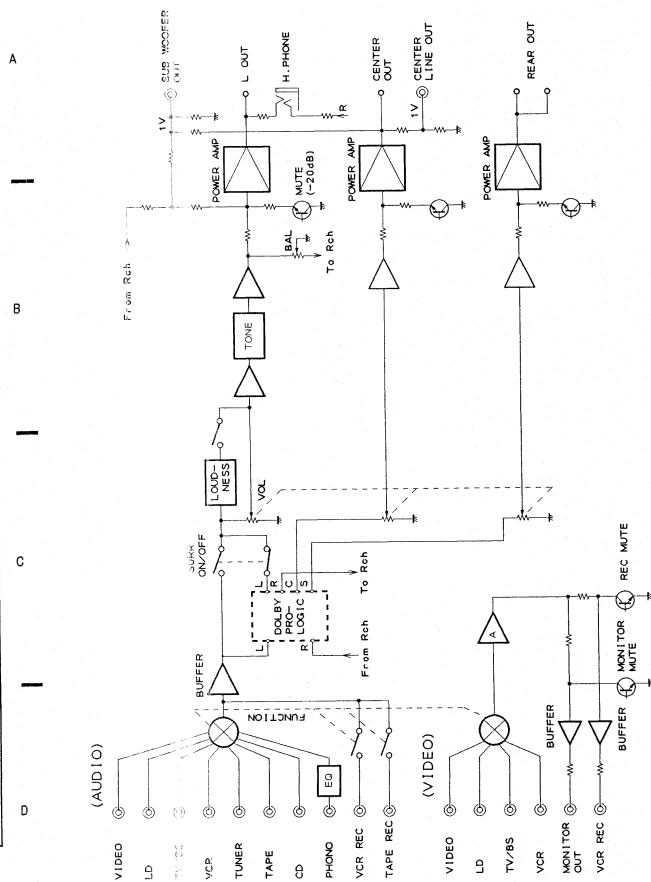
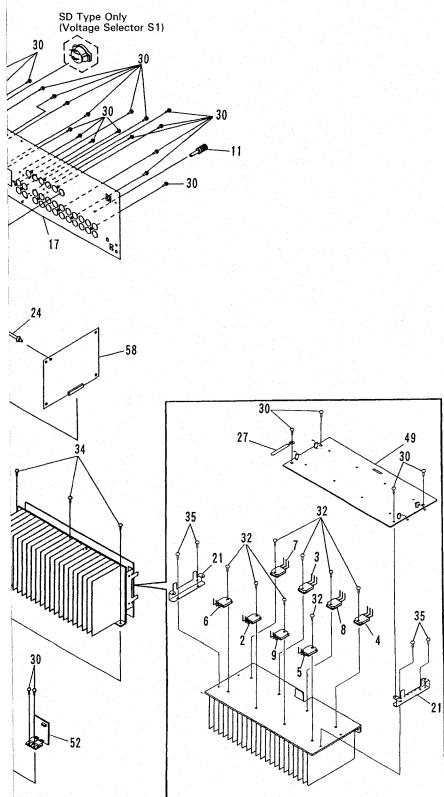
2

3

4

1

2. BLOCK DIAGRAM



• This diagram is viewed from the mounted parts side.

Q809 Q808 Q805

IC801

Q810 Q812 Q811

Q803 Q804

Q801

A

FRONT assy

B

C

To M. VOL assy CN7

To DOL. PRO. MOD. assy CN1801

D

MOTHER assy

E

F

To REG assy J12

To M. VOL assy CN9

To POWER AMP assy CN3

To P

IC254 Q269-Q271

IC271

IC263

Q261-Q265

IC261

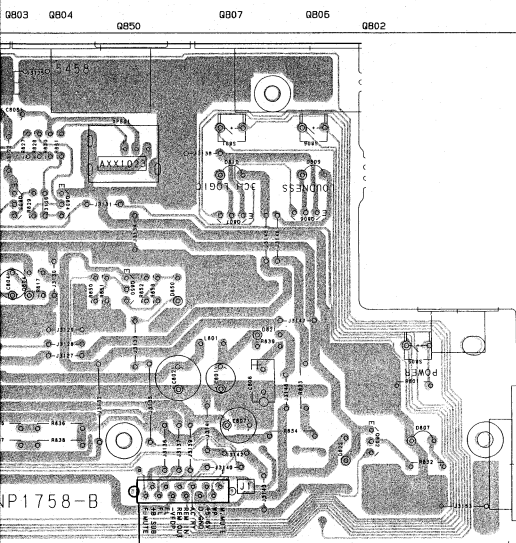
IC262

Q753 Q755-Q757

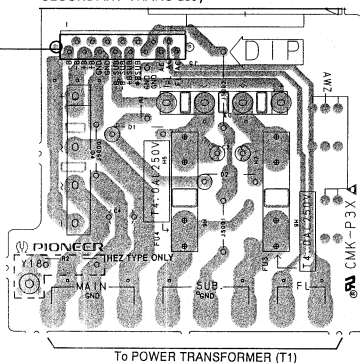
Q751 Q750 Q754

IC703

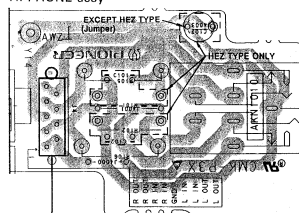
IC201



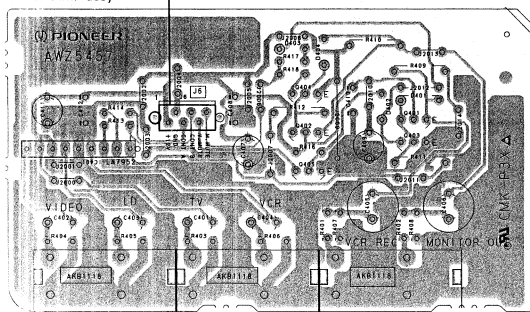
SECONDARY TRANS assy



H. PHONE assy



VIDEO AMP assy



*To POWER TRANSFORMER (T1)

*To S2

*To S2

*To S1

*: For SD TYPE ONLY

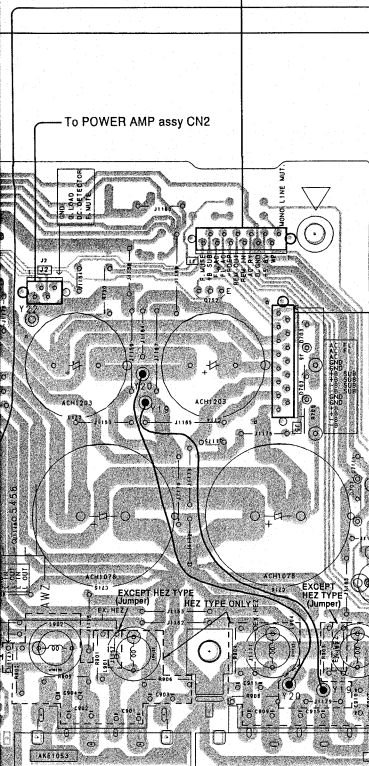
NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.

2. A comparison between the main parts of PCB and schematic diagrams is shown below.

Symbol in PCB Diagrams	Symbol in Schematic Diagrams	Part Name
		Transistor
		Diode
		Capacitor (Polarized)

3. The transistor terminal marked with E or C shows the emitter.
 4. The diode terminal marked with @ or C shows cathode side.
 5. The capacitor terminal marked with @ or C shows negative terminal.



Q752

Q701

To POWER TRANSFORMER (T1)
(EXCEPT SD TYPE)

A

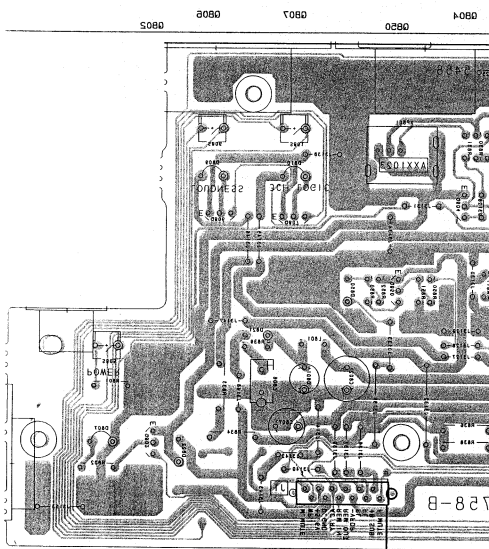
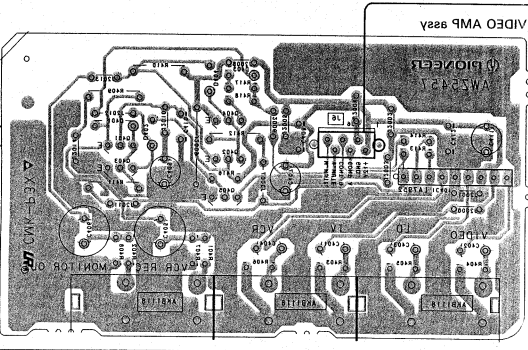
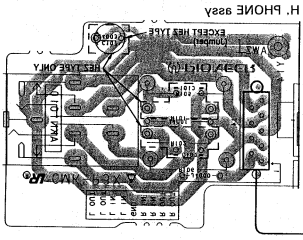
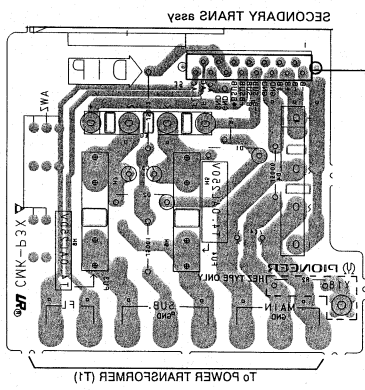
B

C

D

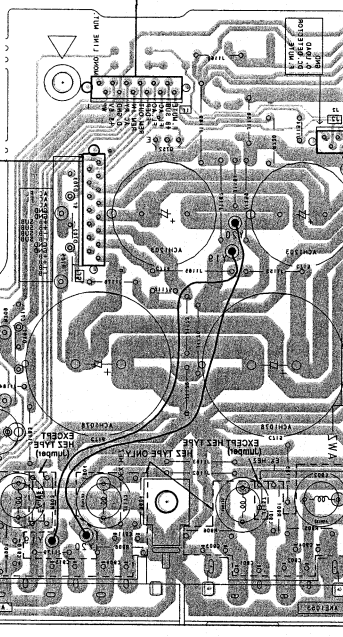
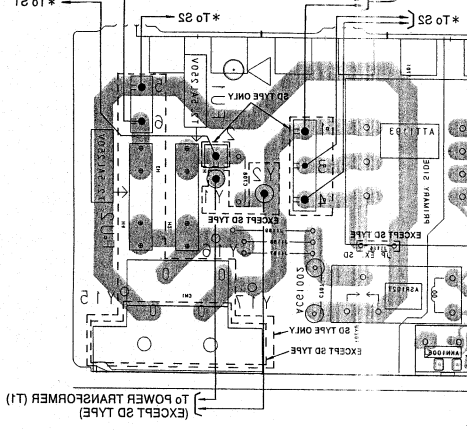
E

F



* TO POWER TRANSFORMER (T1)

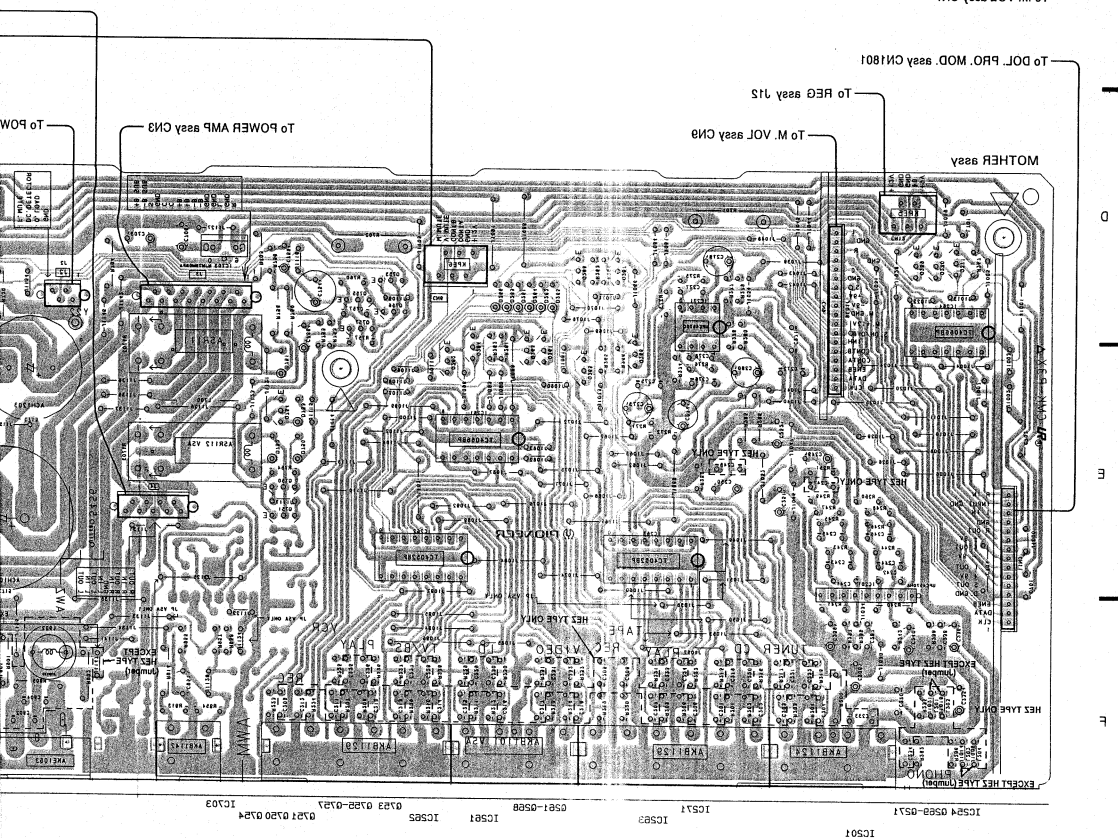
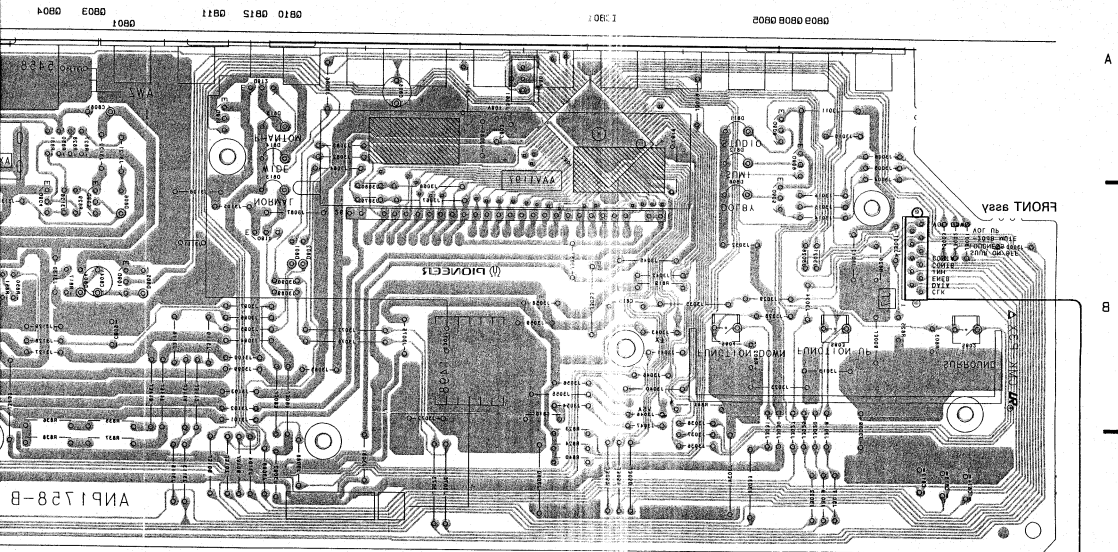
* TO S1
* For SD TYPE ONLY



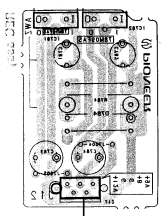
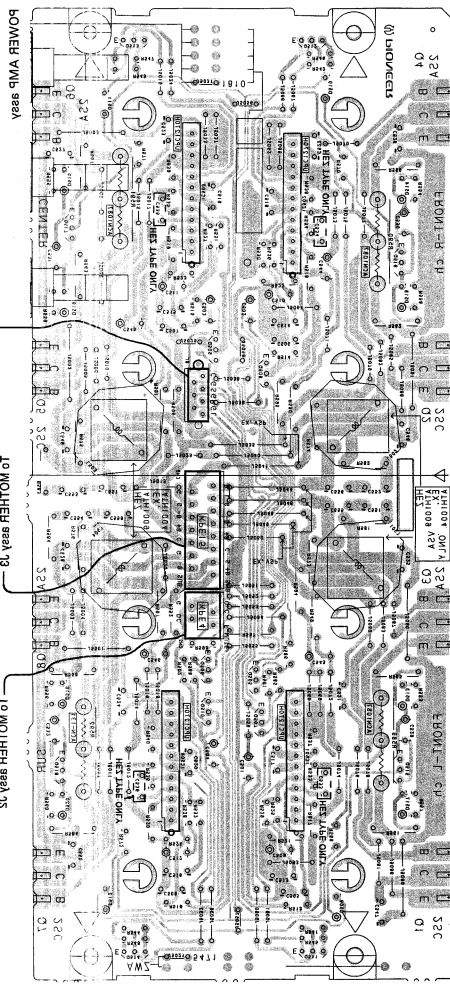
0101

0105

• This diagram is viewed from the foil side.



1 2 3 4 5 6
 01 02 03 04 05 06
 0815 0816 0817 0818 0819 0820
 0821 0822 0823 0824 0825 0826
 0827 0828 0829 0830 0831 0832



• This diagram is viewed from the foil side.

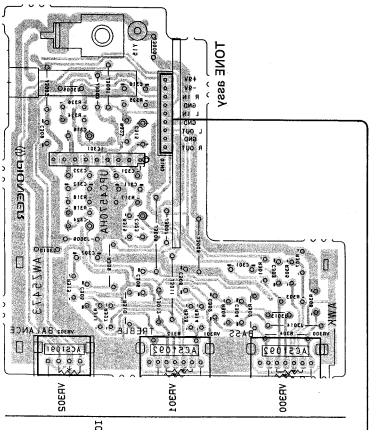
POWER VMB 9999

10 WOLTER 999 0115

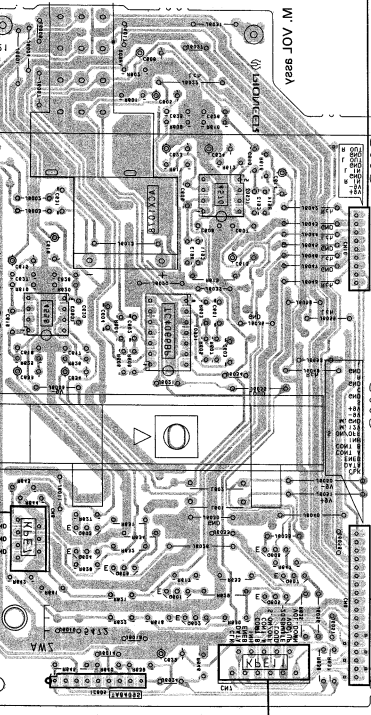
10 WOLTER 999 0115

10 WOLTER 999 0115

10 WOLTER 999 0115



10 WOLTER 999 0115

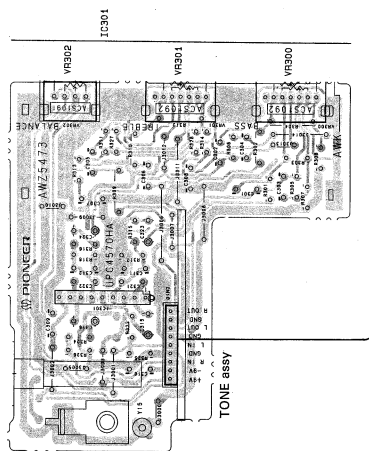


10 WOLTER 999 0115

ASV-303

REG V99A
 3.5 POWER VMB 9999, W. VOR V99A, LONE V99A VMD

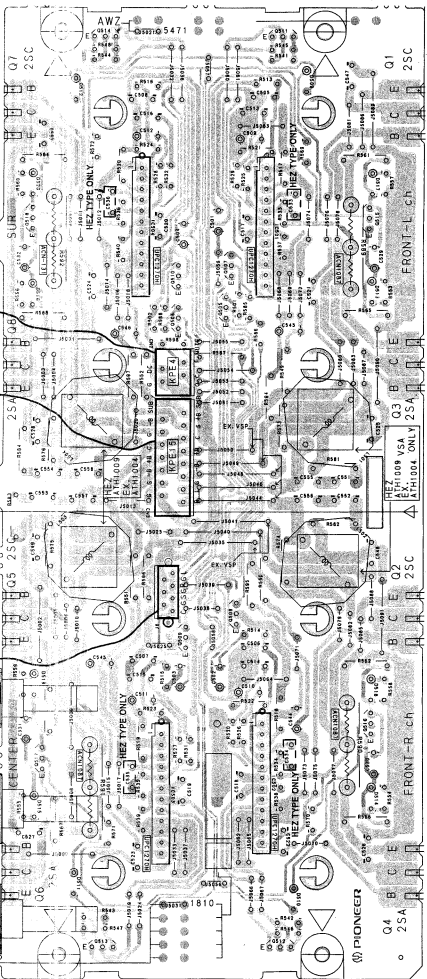
3.2 POWER AMP ASSY, M. VOL ASSY, TONE ASSY AND REG ASSY



POWER AMP assy

To MOTHER assy J3

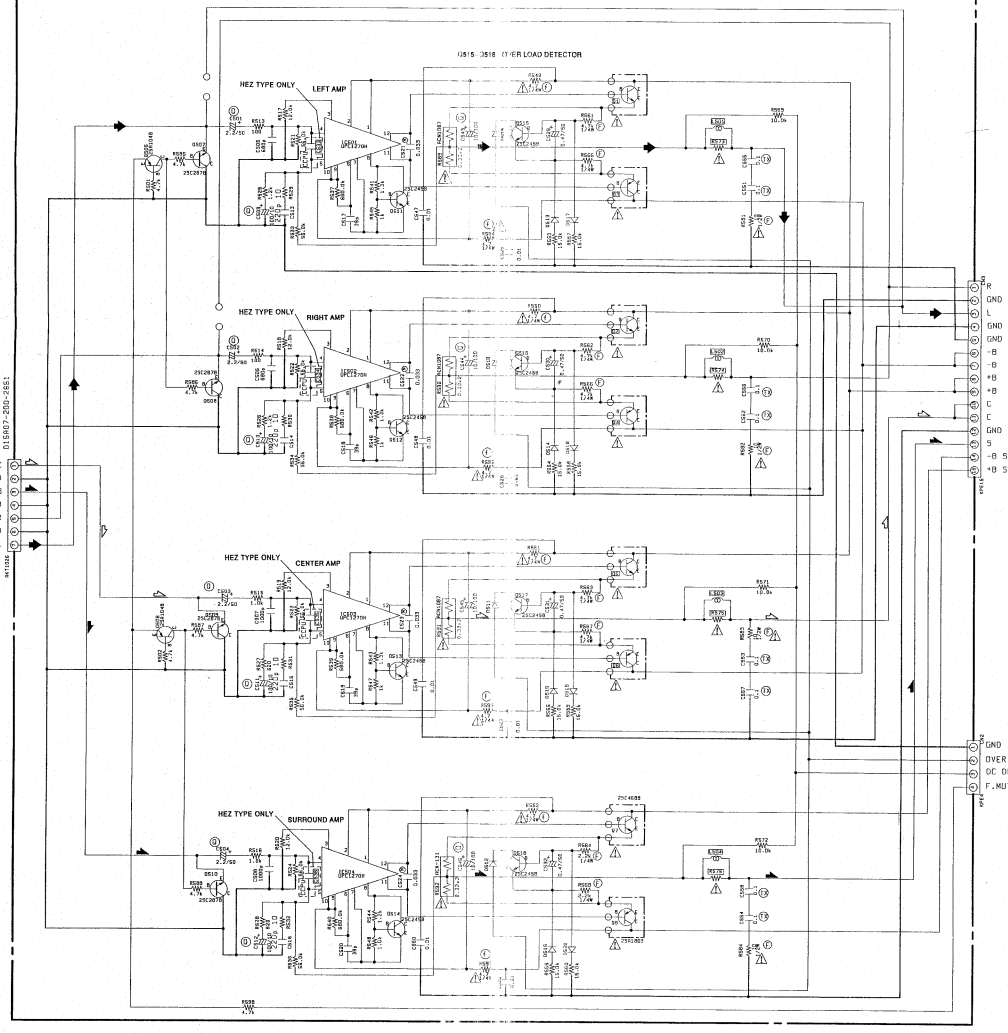
To MOTHER assy CN9



0513 0512 0517 0516 0515 0514 0511 0510 0509 0508 0507 0506 0505 0504 0503 0502 0501 0500 0499 0498 0497 0496 0495 0494 0493 0492 0491 0490 0489 0488 0487 0486 0485 0484 0483 0482 0481 0480 0479 0478 0477 0476 0475 0474 0473 0472 0471 0470 0469 0468 0467 0466 0465 0464 0463 0462 0461 0460 0459 0458 0457 0456 0455 0454 0453 0452 0451 0450 0449 0448 0447 0446 0445 0444 0443 0442 0441 0440 0439 0438 0437 0436 0435 0434 0433 0432 0431 0430 0429 0428 0427 0426 0425 0424 0423 0422 0421 0420 0419 0418 0417 0416 0415 0414 0413 0412 0411 0410 0409 0408 0407 0406 0405 0404 0403 0402 0401 0400 0399 0398 0397 0396 0395 0394 0393 0392 0391 0390 0389 0388 0387 0386 0385 0384 0383 0382 0381 0380 0379 0378 0377 0376 0375 0374 0373 0372 0371 0370 0369 0368 0367 0366 0365 0364 0363 0362 0361 0360 0359 0358 0357 0356 0355 0354 0353 0352 0351 0350 0349 0348 0347 0346 0345 0344 0343 0342 0341 0340 0339 0338 0337 0336 0335 0334 0333 0332 0331 0330 0329 0328 0327 0326 0325 0324 0323 0322 0321 0320 0319 0318 0317 0316 0315 0314 0313 0312 0311 0310 0309 0308 0307 0306 0305 0304 0303 0302 0301 0300 0299 0298 0297 0296 0295 0294 0293 0292 0291 0290 0289 0288 0287 0286 0285 0284 0283 0282 0281 0280 0279 0278 0277 0276 0275 0274 0273 0272 0271 0270 0269 0268 0267 0266 0265 0264 0263 0262 0261 0260 0259 0258 0257 0256 0255 0254 0253 0252 0251 0250 0249 0248 0247 0246 0245 0244 0243 0242 0241 0240 0239 0238 0237 0236 0235 0234 0233 0232 0231 0230 0229 0228 0227 0226 0225 0224 0223 0222 0221 0220 0219 0218 0217 0216 0215 0214 0213 0212 0211 0210 0209 0208 0207 0206 0205 0204 0203 0202 0201 0200 0199 0198 0197 0196 0195 0194 0193 0192 0191 0190 0189 0188 0187 0186 0185 0184 0183 0182 0181 0180 0179 0178 0177 0176 0175 0174 0173 0172 0171 0170 0169 0168 0167 0166 0165 0164 0163 0162 0161 0160 0159 0158 0157 0156 0155 0154 0153 0152 0151 0150 0149 0148 0147 0146 0145 0144 0143 0142 0141 0140 0139 0138 0137 0136 0135 0134 0133 0132 0131 0130 0129 0128 0127 0126 0125 0124 0123 0122 0121 0120 0119 0118 0117 0116 0115 0114 0113 0112 0111 0110 0109 0108 0107 0106 0105 0104 0103 0102 0101 0100 0099 0098 0097 0096 0095 0094 0093 0092 0091 0090 0089 0088 0087 0086 0085 0084 0083 0082 0081 0080 0079 0078 0077 0076 0075 0074 0073 0072 0071 0070 0069 0068 0067 0066 0065 0064 0063 0062 0061 0060 0059 0058 0057 0056 0055 0054 0053 0052 0051 0050 0049 0048 0047 0046 0045 0044 0043 0042 0041 0040 0039 0038 0037 0036 0035 0034 0033 0032 0031 0030 0029 0028 0027 0026 0025 0024 0023 0022 0021 0020 0019 0018 0017 0016 0015 0014 0013 0012 0011 0010 0009 0008 0007 0006 0005 0004 0003 0002 0001 0000

• This diagram is viewed from the mounted parts side.

POWER AMP assy (AWZ5471: Except HEZ Type)
(AWZ5672: HEZ Type)



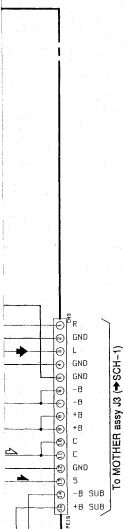
The values of parts enclosed with indicates the following

	HEZ TYPE	HEZ TYPE
Q5, Q6, Q7	2SA1804	2SA1804
Q8, Q9, Q10	2SC4683	2SC4683
C611, C612	22μ	22μ
C613, C614	4.7μF	4.7μF
C615, C616	NOT USED	470
C617, C618	NOT USED	470
C619	220μ	220μ
R611, R612	10	10
R613, R614	10	10
R615, R616	10	10
R617, R618	10	10
R619, R620	10	10
R621, R622	10	10
R623, R624	10	10
R625, R626	10	10
R627, R628	10	10
R629, R630	10	10
R631, R632	10	10
R633, R634	10	10
R635, R636	10	10
R637, R638	10	10
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R997, R998	10	10
R999, R1000	10	10

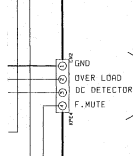
Pin No.	V _{OL} [V]	Pin No.	V _{OL} [V]	Pin No.	V _{OL} [V]	Pin No.	V _{OL} [V]
1	35.7	1	35.7	1	35.7	1	29.4
2	35.7	2	35.7	2	35.7	2	29.4
3	29.5	3	29.5	3	29.5	3	23.5
4	143.0m	4	143.0m	4	143.0m	4	144.0m
5	143.0m	5	143.0m	5	143.0m	5	145.0m
6	-34.0	6	-34.0	6	-34.0	6	-28.9
7	-1.0	7	-1.0	7	-1.0	7	-1.0
8	0.5	8	0.5	8	0.5	8	0.5
9	-35.7	9	-35.7	9	-35.7	9	-30.6
10	-35.7	10	-35.7	10	-35.7	10	-30.5
11	-0.5	11	-0.5	11	-0.5	11	-0.5
12	0.5	12	0.5	12	0.5	12	0.5

SCH-2

POWER AMP ASSY, M. VOL ASSY,
TONE ASSY, REG ASSY



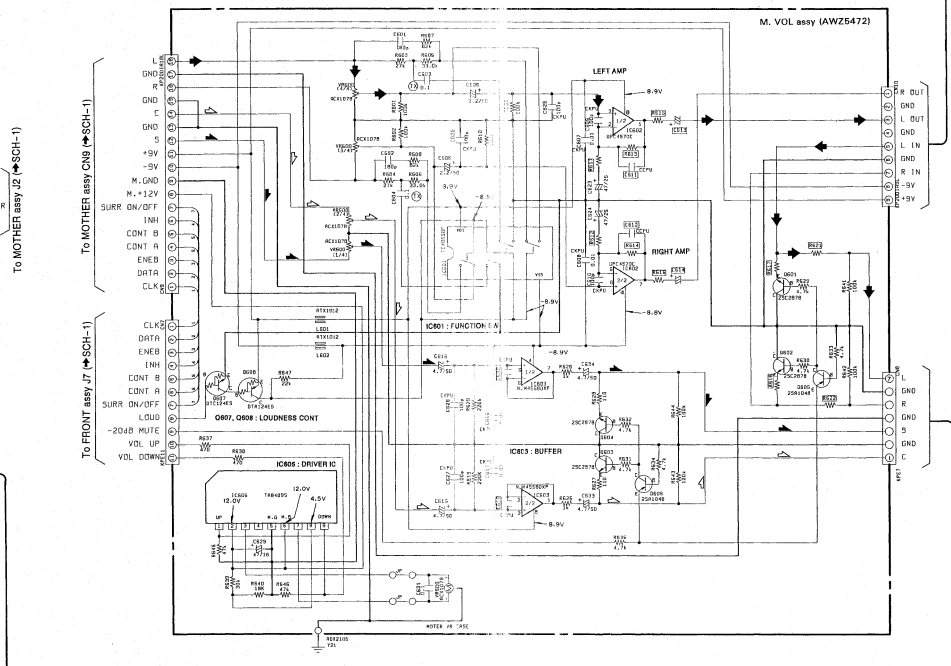
To MOTHER assy J3 (SCH-1)



To MOTHER assy J2 (SCH-1)

To FRONT assy J7 (SCH-1)

To MOTHER assy CN8 (SCH-1)



SIGNAL IN (PT)

➤ MAIN SIGNAL ROUTE

➤ CENTER SIGNAL ROUTE

➤ REAR SIGNAL ROUTE

TONE assy (AW25472)

TONE 100 OHM

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

0.5V

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0.5V

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0.5V

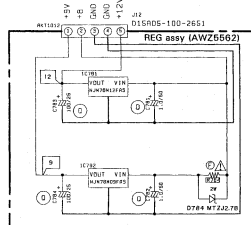
0.5V

0.5V

0.5V

SCH-2

To MOTHER assy CN12 (SCH-1)

POWER AMP ASSY, M. VOL ASSY,
TONE ASSY, REG ASSY

SCH-2

4. PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- 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.
- Parts marked by "©" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- 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%).

560Q $\rightarrow 56 \times 10^1 \rightarrow 561$ RD1/8PM $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix} J$
 47KQ $\rightarrow 47 \times 10^3 \rightarrow 473$ RD1/4PS $\begin{bmatrix} 4 & 7 & 3 \end{bmatrix} J$
 0.5Q $\rightarrow 0R5$ RN2H $\begin{bmatrix} 5 & 6 & 1 \end{bmatrix} K$
 1Q $\rightarrow 010$ RSIP $\begin{bmatrix} 0 & 1 & 0 \end{bmatrix} K$

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

5.62kQ $\rightarrow 562 \times 10^1 \rightarrow 5621$ RM1/4PC $\begin{bmatrix} 5 & 6 & 2 & 1 \end{bmatrix} F$

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
LIST OF ASSEMBLIES							
NSP	AF ASSY		AWK1810	Δ	R561 - R563, R565 - R567		RD1/4PMF47J
	POWER AMP ASSY		AWZ5471	Δ	R549 - R552, R554 - R557		RFA1/4PS47J
	M. VOL ASSY		AWZ5472		Other Resistors		RD1/8PM $\begin{bmatrix} \square & \square & \square & \square \end{bmatrix} J$
NSP	— TONE ASSY		AWZ5473				
	— REG ASSY		AWZ5562				
NSP	MAIN ASSY		AWN1468		OTHERS		
	— MOTHER ASSY		AWZ5486		CN3 CONNECTOR (18P)		KEP15
	— VIDEO AMP ASSY		AWZ5457		CN2 CONNECTOR (4P)		RPE4
	— FRONT ASSY		AWZ5458				
NSP	H. PHONE ASSY		AWZ5459				
NSP	— SECONDARY TRANS ASSY		AWZ5608				
	DOL. PRO. MOD. ASSY		AXQ1021				
POWER AMP ASSY							
SEMICONDUCTORS							
	IG501 - IG504		UPCL270H				NPM65SDXP
	Q505, Q506		2SA1048				TA8058S
	Q511 - Q513		2SC2458				TC4069P
	Q507 - Q510		2SC2878				TPCA570C
	D509 - D520		15S522				2SA1048
COILS AND FILTERS							
	L501 - L504 (0.7UH)		ATH1004				2SC2878
CAPACITORS							
	C517 - C520						DTA124ES
	C545						DTCL24ES
	C529 - C532						
	C543, C544, C546						
	C519 - C512						
	C501 - C504						
	C551 - C553						
	C507, C508						
	C505, C506						
	C525 - C528, C547 - C550						
	C515 - C516						
	C521 - C524						
RESISTORS							
Δ	R592 (0.22, 2W)		ACN - 131				ACXL078
Δ	R588 - R591 (0.33, 5W)		ACN1087				RD1/8PM $\begin{bmatrix} \square & \square & \square & \square \end{bmatrix} J$
Δ	R581 - R584		RED1/2PMF100J				KEP11
Δ	R573 - R576		RED1/4PMF100J				KEP7
Δ	R564, R568		RED1/4PMF22J				
COILS AND FILTERS							
CAPACITORS							
	C501 - C504						
	C551 - C553						
	C507, C508						
	C505, C506						
	C525 - C528, C547 - C550						
	C515 - C516						
	C521 - C524						
RESISTORS							
Δ	R592 (0.22, 2W)		ACN - 131				ACXL078
Δ	R588 - R591 (0.33, 5W)		ACN1087				RD1/8PM $\begin{bmatrix} \square & \square & \square & \square \end{bmatrix} J$
Δ	R581 - R584		RED1/2PMF100J				KEP11
Δ	R573 - R576		RED1/4PMF100J				KEP7
Δ	R564, R568		RED1/4PMF22J				

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
TOPE ASSY				SWITCHES AND RELAYS			
SEMICONDUCATORS				R7702			
IC301			UPC4570HA	R7703			
CAPACITORS				X7701			
C311, C312			CCSL221J50	CAPACITORS			
C323, C324			CEAS22M50	C707, C708 (0.01000V)			
C315, C316			CEAS47M50	C715, C716 (1000050V)			
C301, C302			CFTXA153J50	C719, C714 (470042)			
C307, C308			CFTXA183J50	C375, C376			
C303, C304			CFTXA82J50	C351			
C305, C310			CKCYP103Z50	C300, C703			
C306, C306			CKCYP103Z50	C335, C246, C249, C250			
RESISTORS			QJMA332J50	C373, C274, C275, C280			
V2302 (500K-150)			ACS1091	C351, C252, C706			
V3300, V3301 (100K-20A x 2)			ACS1092	C711			
Other Resistors			RD1/RPM□□□□	C755			
OTHERS			ANK1250	C764			
SHIELD CASE (MTL)				C710			
REG ASSY				C235, C240			
SEMICONDUCATORS				C343, C244			
IC782			NIM78M09FAS	C345, C246			
IC781			NIM78M12FAS	C270-C272			
D784			MTJ22.7B	C709			
CAPACITORS				C257, C238, C241, C242			
C781, C782			CEHAQ010M50	C277, C278			
C783, C784			CEHAQ010M25	C701, C702, C704, C757			
RESISTORS				RESISTORS			
R784			RS2LMP270J	R708			
MOTHER ASSY				R914			
SEMICONDUCATORS				R235, R286			
IC703			NIM79M09FA	R704			
IC262, IC263			TC4652BP	R758, R759			
IC261, IC264			TC4665BP	R703, R720			
IC271			UPC4570C	R709			
IC260			UPC4570HA	R704, R702			
Q757			SSA1046	Other Resistors			
Q750, Q751, Q755, Q756			SSC2145	OTHERS			
Q752, Q753			SSC2145	PIN JACK (4P) (VIDRO, LD)			
Q752, Q753			SSC2145	PIN JACK (4P) (PRONO (AUX), TUNER)			
Q701, Q704			DTIC124ES	CNR415 PIN JACK (6P)			
D261-D266, D705, D751-D753			DTIC124ES	VCR PLAY/REC			
D750			IS2522	VCR PLAY/REC			
D702			MT2112C	PIN JACK (2P)			
D703			MT2114B	CENTER FREQU.			
D706			MT2123.9B	SUB WOOFER OUT			
D707			MT215.5A	SPEAKER (TERMINAL 6-P)			
D704, D706			MT215.6C	CNR415 JACK (REMOTE IN/OUT)			
COILS AND FILTERS			SS556	CNR1 AC INLET (P)			
L700			ATX1012	CNR1 15P PLUG			
L701			LAU220K	CNR2 CONNECTOR (SP)			
TRANSFORMERS				CNR5 CONNECTOR (6P)			
T701			ATT1153	VIDEO AMP ASSY			
SEMICONDUCATORS				SEMICONDUCATORS			
IC401			IC401	Q401, Q402			
Q403, Q404			Q403, Q404	Q405			
D401-D404			D401-D404	VIDEO AMP ASSY			
OTHERS				SEMICONDUCATORS			
ATT1153			ATT1153	Q401, Q402			
SEMICONDUCATORS				Q403, Q404			
Q405			Q405	Q405			
VIDEO AMP ASSY				D401-D404			
SEMICONDUCATORS				OTHERS			
IC401			IC401	PIN JACK (4P) (VIDRO, LD)			
Q401, Q402			Q401, Q402	PIN JACK (4P) (PRONO (AUX), TUNER)			
Q403, Q404			Q403, Q404	CNR415 PIN JACK (6P)			
Q405			Q405	VCR PLAY/REC			
D401-D404			D401-D404	VCR PLAY/REC			
OTHERS				PIN JACK (2P)			
ATT1153			ATT1153	CENTER FREQU.			
SEMICONDUCATORS				SUB WOOFER OUT			
Q401, Q402			Q401, Q402	SPEAKER (TERMINAL 6-P)			
Q403, Q404			Q403, Q404	CNR415 JACK (REMOTE IN/OUT)			
Q405			Q405	CNR1 AC INLET (P)			
D401-D404			D401-D404	CNR1 15P PLUG			
OTHERS				CNR2 CONNECTOR (SP)			
ATT1153			ATT1153	CNR5 CONNECTOR (6P)			

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
CAPACITORS				SECONDARY TRANS ASSY			
	C407, C408, C411		CEAS101M16	SEMICONDUCTORS			
	C405, C406		CEAS471M6	D3			DS8RA20 (A)
	C401 - C404		CEAS47M50	D4			DSE90F
	C409, C410, C412		CKDY7473250	D1, D2			S5506
RESISTORS				CAPACITORS			
	R409, R410		RD1/2PM271J	C3, C4			CEANPR47M100
	R411, R412		RD1/4PM151J	RESISTORS			RFAL14FS220J
	Other Resistors		RD1/8PM100000	△ R1			
OTHERS				DOL. PRO. MOD. ASSY			
	CN8103 PIN JACK (2P)		AKB1115	SEMICONDUCTORS			
	(VIDEO, LD, TV, VCR			IC1804			1A2785
	VCR REC. MONITOR OUT)			IC1803			1V1010N
				IC1801, IC1802			NIM4558M - D
FRONT ASSY				Q1801			2SD468
SEMICONDUCTORS				D1802 - D1810			1SS226
	C3001		PVG116A	D1801			RD10MB
	C301		2SA1034	CAPACITORS			
	Q303, Q304		2SC2459	C1864, C1865 (10025V)			ACH1262
	Q302		DTA124ES	C1853, C1853 (1055V)			ACH1262
	Q301, Q305 - Q312		DTC124ES	C1802, C1803			ACH1262
	D301, D302, D305, D306		1SS252	C1858, C1840, C1857, C1859			CEANLR7M50
	D321, D322, D350		1SS252	C1823, C1847 - C1869			CEAS101M50
	D307 - D315		AE11151	C1831 - C1833, C1847 - C1859			CEAS100M50
	D304		MTZ12.7B	C1805, C1808, C1811, C1814			CEAS220M16
				C1819			CEAS221M10
COILS AND FILTERS				C1817, C1824, C1846, C1851			CEAS221M16
	L301		LAU100K	C1804, C1807, C1810, C1813, C1825			CEAS220M50
SWITCHES AND RELAYS				C1804			CEAS47M50
	S301 - S306		ASG1209	C1813			CEAS470M16
CAPACITORS				C1841, C1860			CEASR10M50
	C306		ACH1246	C1837, C1839, C1856, C1858			CEASR47M50
	C303, C304, C308		CCS101J50	C1835, C1836, C1854, C1855			CFTYA104J50
	C302		CEAS101M50	C1843, C1862			CFTYA154J50
	C307		CEAS470M35	C1820, C1822			CFTYA333J50
	C305		CEAOR1M50	C1853			CFTYA47J50
	C312 - C314		CKCYB102K50	C1818, C1846, C1870			CKSQY104J250
	C311		CKPUY103Z25	C1821			QMA152J50
	C303, C310, C315, C316		CKPUY7473216	C1844			QMA223J50
RESISTORS				C1850			QMA473J50
	R333, R335, R337		ED1/2PM102J				QMA68J50
	R334, R336, R338		ED1/2PM122J	RESISTORS			
	Other Resistors		ED1/8PM100000	All Resistors			RS1/10S00000
OTHERS				OTHERS			
	R301, FL TUBE		AXV1197	X1801 CRYSTAL RESONATOR			ASS1015
	RESPACE		AXS127	CN1801 1SP SOCKET			KP200B15L
	X301 CRYSTAL RESONATOR		AXS1015				
	REMOTE RECEIVER UNIT		AXX1263				
H. PHONE ASSY							
RESISTORS							
	△ R136, RL06		RS1LAF331J				
OTHERS							
	JACK		AKN1210				

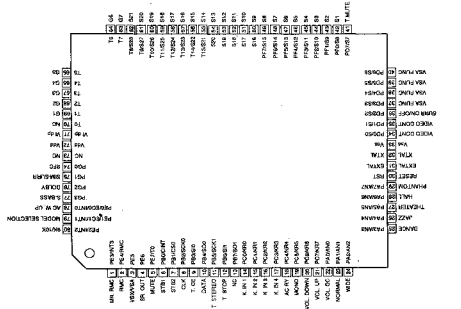
5. IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

■ PDG115A (IC801) CPU

● Pin Function

No	Pin name	I/O	Function	ACTIVE
1	PE3/INT3 MR, RMC	I	Remote control unit signal input from sub-room	L
2	PE4/RMC RMC	I	Remote control unit signal input	H
3	PE5 VSA/VSA	I	VSA/VSA, VSP select (L/H)	
4	PE6 SR, OUT	O	SR output from Remote control signal	H
5	PE7/T0 MUTE	O	MUTE	H
6	PE8/CINT STB1	O	CE (LA2785, LV1010, LV1020) output for SURROUND IC	L
7	PE1/CS0 STB5	O	STROBE output for function IC	H
8	PE2/CLK0 CLK	O	CLOCK output	
9	PE3/SIO T, CE	O	PLL IC (LLM7201) CE	H
10	PE4/S00 DATA	O	DATA output	
11	PE6/SCV1 T, STEREO	I	TUNER STEREO ON/OFF	L
12	PE6/SH T, STOP	I	TUNED input	L
13	PE7/SO1 NC		NC	
14	PC0/KR0 K, IN 1	I	KEY scan input 1	H
15	PC1/KR1 K, IN 2	I	KEY scan input 2	H
16	PC2/KR2 K, IN 3	I	KEY scan input 3	H
17	PC3/KR3 K, IN 4	I	KEY scan input 4	H
18	PC4/KR4 AC, TV	O	AC relay output	H
19	PC5/KR5 MONO	O	FM MONO	H
20	PC6/KR6 VOL, DOWN	O	VOLUME DOWN	H



21	PC7/KR7 VOL UP	O	VOLUME UP	H
22	PA6/A10 VOL DC	I	VOLUME position selection	
23	PA1/A11 NORMAL	O	CENTER MODE display (NORMAL)	H
24	PA2/A12 WIDE	O	CENTER MODE display (WIDE)	H
25	PA3/A13 DANCE	O	VSA : SFC MODE display (DANCE) VSA, VSP : SURR MODE display (3CH LOGIC)	H
26	PA4/A14 JAZZ	O	SFC MODE display (JAZZ)	H
27	PA5/A15 THEATER	O	VSA : SFC MODE display (THEATER) VSA, VSP : MONO OUT MUTE	H
28	PA6/A16 HALL	O	SFC MODE display (HALL)	H
29	PA7/A17 PHANTOM	O	CENTER MODE display (PHANTOM)	H
30	RST RESET	I	RESET Input	
31	EXTAL EXTAL	I	oscillator 8MHz	
32	VTAL XTAL	O		
33	Ves Ves		GND	
34	PD0/S0 VIDEO CONT	O	VIDEO CONTROL	
35	PD1/S1 VIDEO CONT	O	VIDEO CONTROL	
36	PD2/S2 SURR ON/OFF	O	SURROUND ON/OFF	H
37	PD3/S3 VSA FUNC	O	VSA, VSP FUNCTION (INH A)	H
38	PD4/S4 VSA FUNC	O	VSA, VSP FUNCTION (INH V)	H
39	PD5/S5 VSA FUNC	O	VSA, VSP FUNCTION (A)	H
40	PD6/S6 VSA FUNC	O	VSA, VSP FUNCTION (B)	H
41	PD7/S7 T. MUTE	O	VSA : mute for TUNER VSA, VSP : 20dB MUTE	H
42	PF0/S8 S11 K. OUT1	O	FL segment output1/KEY scan output1	H
43	PF1/S9 S21 K. OUT2	O	FL segment output2/KEY scan output2	H
44	PF2/S10 S31 K. OUT3	O	FL segment output3/KEY scan output3	H
45	PF3/S11 S4K. OUT4	O	FL segment output4/KEY scan output4	H
46	PF4/S12 S5K. OUT5	O	FL segment output5/KEY scan output5	H
47	PF5/S13 S6K. OUT6	O	FL segment output6/KEY scan output6	H
48	PF6/S14 S7K. OUT7	O	FL segment output7/KEY scan output7	H
49	PF7/S15 S8K. OUT8	O	FL segment output8/KEY scan output8	H
50	S16 S5K. OUT9	O	FL segment output9/KEY scan output9	H

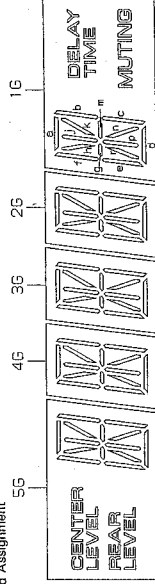
51	S17 S10K. OUT10	O	FL segment output10/KEY scan output10	H
52	S18 S11K. OUT11	O	FL segment output11/KEY scan output11	H
53	S19 S12K. OUT12	O	FL segment output12/KEY scan output12 (VSA, VSP)	H
54	S20 S13K. OUT13	O	FL segment output13/KEY scan output13 (VSA, VSP)	H
55	T15/S21 S14	O	FL segment output14	H
56	T14/S22 S15	O	FL segment output15	H
57	T13/S23 S16	O	FL segment output16	H
58	T12/S24 S17	O	FL segment output17	H
59	T11/S25 S18	O	FL segment output18	H
60	T10/S26 S19	O	FL segment output19	H
61	T9/S27 S20	O	FL segment output20	H
62	T8/S28 S21	O	FL segment output21	H
63	T7 G7	O	FL grid output7	H
64	T6 G6	O	FL grid output6	H
65	T5 G5	O	FL grid output5	H
66	T4 G4	O	FL grid output4	H
67	T3 G3	O	FL grid output3	H
68	T2 G2	O	FL grid output2	H
69	T1 G1	O	FL grid output1	H
70	T0 NC		NC	
71	Vf dp Vf dp		Power supply for FL	
72	Vdd Vdd		Power supply -5V	
73	NC NC		-5V	
74	PG0 SFC	O	K-112 : SURR MODE display (SFC) other than K-112 : SURR MODE display (STUDIO)	H
75	PG1 SWM-SURR	O	SURR MODE display (SIMULATED SURROUND)	H
76	PG2 DOLBY	O	SURR MODE display (DOLBY PRO LOGIC)	H
77	PG3 S-BASS	O	VSA : S-BASS ON/OFF VSA, VSP : LOUDNESS ON/OFF	H
78	REC/COINT0 AC WUP	I	AC pulse input	
79	PE1/INT1 K-112 SELECTION	I	VSA : K-112K-113, K-114 selection (K-112)	H
80	PE2/INT2 9K/10K	I	VSA : 9K/10K selection (H/L) VSA, VSP : EXU selection (L/H)	

6. FL INFORMATION

- AAV1197 (V801 : FRONT ASSY)

- FL Tube

- Grid Assignment



- Pin Connection

[illegible]

- NOTE
- | | | |
|-----------|-------|---------------|
| 1) F1, F2 | ----- | Filament |
| 2) NC | ----- | No pin |
| 3) NC | ----- | No connection |
| 4) NC | ----- | Defect Line |
| 5) 15-5G | ----- | Grid |

- Pin Assignment



- Anode Connection

	56	46	36	26	16
P1	a	e	a	a	a
P2	j	j	j	j	j
P3	h	h	h	h	h
P4	k	k	k	k	k
P5	b	b	b	b	b
P6	f	f	f	f	f
P7	m	m	m	m	m
P8	g	g	g	g	g
P9	c	c	c	c	c
P10	e	e	e	e	e
P11	r	r	r	r	r
P12	n	n	n	n	n
P13	p	p	p	p	p
P14	d	d	d	d	d
P15	CENTER LEVEL BEAR LEVEL	-	-	-	DELAY TIME
P16		-	-	-	MUTING

7. DISASSEMBLY

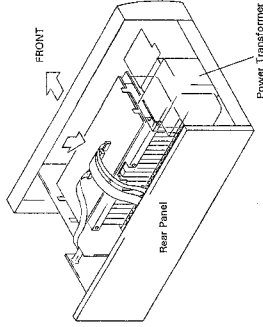
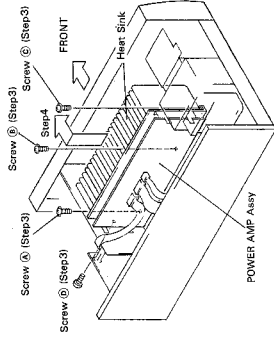
● POWER AMP ASSY

Step1. Disconnect the AC power cord.

Step2. Remove the bonnet case.

Step3. Remove the screws ④ through ⑥, which fasten the heat sink of the POWER AMP assembly.

Step4. Rotate the assembly so that the fins of the heat sink face the bottom. Then return the assembly to its original position. (Avoid shorting the assembly by inserting insulation sheets or the like between the assembly and other hazardous assemblies and parts.)



8. FOR HEZ, HL AND SD TYPES

NOTES :

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- 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.
- Parts marked by "☉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

CONTRAST OF MISCELLANEOUS PARTS

VSA - 303/HEZ, HL, SD and HB have the same construction except for the following :

Mark	Symbol & Description	Part No.				Remarks
		HB Type	HEZ Type	HL Type	SD Type	
	MOTHER Assy	AWZ5456	AWZ5462	AWZ5870	AWZ5465	
	H. PHONE Assy	AWZ5459	AWZ5463	AWZ5459	AWZ5459	
	SECONDARY TRANS Assy	AWZ5608	AWZ5461	AWZ5608	AWZ5608	
	POWER AMP Assy	AWZ5471	AWZ5572	AWZ5471	AWZ5471	
Δ	S1 Voltage selector (AC110V/120-127V/230V/240V)	.....	.....	.....	AKX-507	
Δ	S2 Voltage selector (AC110-127V/220-240V)	.....	.....	.....	AKX1004	
Δ	T1 Power transformer	ATS1534	ATS1534	ATS1534	ATS1535	
Δ	C10 Capacitor (0.01/400V)	.....	ACC1003	ACC1003	.....	
Δ	FU2 Fuse (T2.5A/250V)	.....	.....	.....	ABK-612	
Δ	AC power cord	ADG1143	ADG1127	ADG1127	ADG1129	
	Rear panel	ANC2322	ANC2229	ANC2323	ANC2230	
	Barrier	AEC1586	AEC1586	AEC1586	.....	
	FL filter	AAK1430	AAK1430	AAK2592	AAK2592	
	Bonnet case	ANE1462	ANE1514	ANE1514	ANE1514	
	Top cover	AME1086	.....	.....	.....	
	Operating instructions (English)	ARB1487	.....	ARB1487	ARB1487	
	Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese)	.....	ARE1317	.....	.....	
	Operating instructions (Chinese)	.....	.....	ARC1476	ARC1476	
	Operating instructions (Spanish)	AHD2735	AHD2735	.....	ARC1477	
	Packing case	.....	.....	AHD2735	AHD2736	

H. PHONE Assy

AWZ5463 and AWZ5459 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ5459	AWZ5463	
C101, C102 R101, R102			CGMYK392M25 RSILMF691J	

SECONDARY TRANS assy

AWZ5461 and AWZ5608 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ5608	AWZ5461	
R2			RD14PMM100J	

MOTHER assy

AWZ5462, AWZ5670, AWZ5465 and AWZ5456 have the same construction except for the following :

Mark	Symbol & Description	Part No.			Remarks
		AWZ5456	AWZ5462	AWZ5570	
	L201 - L204	.....	LAU221K	.....	
	L901 - L904	.....	ATH - 133	.....	
	C201 - C218	.....	CKPUB381K50	.....	
	C219 - C232	.....	CKPUB101K50	.....	
	C233, C234	.....	CCPUSL330I50	.....	
	C241, C242	.....	CKPUB381K50	CKPUB221K50	
	C247, C248	.....	CKCYB22K50	.....	
	C277, C278	.....	CCPUSL560I50	CKPUB221K50	
△	C708	ACG002	ACG1030	ACG1030	
	C901, C902, C909, C915	CFTYA103I50	.....	.....	
	C903, C904, C910, C911	CKCYB681K50	.....	.....	
	R200	.....	RD18PM100J	.....	
	R235, R236	.....	RD18PM122J	.....	
	R239, R240	RD18PM181J	RD18PM181J	RD18PM181J	
△	R901 - R904	.....	RD122PMF101J	.....	
△	R905 - R908	.....	RD147PMF100J	.....	
△	CN1 1P AC inlet	AKP1133	AKP1132	AKP1132	
△	CN1 1P AC inlet with outlet	.....	.....	AKP1123	

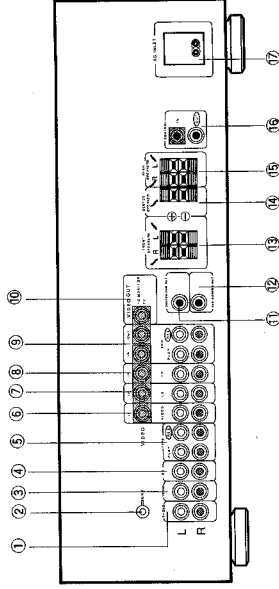
POWER AMP assy

AWZ5572 and AWZ5471 have the same construction except for the following :

Mark	Symbol & Description	Part No.		Remarks
		AWZ5471	AWZ5572	
	L501 - L504	ATH1004	ATH1009	
	C533 - C536	.....	CCPUSL470I50	

9. PANEL FACILITIES

REAR PANEL FACILITIES



The illustration shows the U.K. model.

① PHONO input jacks

Connect to the output cables from a turntable.

② GND terminal

Connect the turntable ground lead to this terminal. Loosen the screw, connect the ground lead, and then tighten the screw.

③ TUNER input jacks

Connect to the output jacks of an FM/AM tuner.

④ CD input jacks

Connect to the output jacks of a compact disc player.

⑤ TAPE/PLAY jacks

Connect to recording input jacks of cassette deck.

REC:

PLAY:

Connect to playback jacks of cassette deck.

⑥ VIDEO jacks(input)

Connect the output jacks of video components. For example, connect a playback-only VCR or a video camera.

⑦ LD input jacks

Connect to an LD player's output jacks(audio, video).

⑧ TV jacks

Use these jacks if you wish to connect a TV tuner having both video and audio outputs.

⑨ VCR IN/OUT jacks

For connection of first VCR. If the VCR is equipped with S-VIDEO inputs and outputs, connection to the S-IN and S-OUT jacks is also possible.

VIDEO OUT:

Connect to VCR video input jacks.

VIDEO IN:

Connect to VCR video output jacks.

AUDIO OUT:

Connect to VCR audio input jacks.

AUDIO IN:

Connect to VCR audio output jacks.

⑩ VIDEO OUT TO MONITOR TV jack

Connect to a monitor TV.

⑪ CENTER PRE OUT jacks

When using the center speaker with another amplifier connect this to the amplifiers audio input. And when using the TV's built-in speakers as the center speaker, connect this to the TV's audio input.

⑫ SUB WOOFER OUT jack

If you want to boost the surround center channel low frequencies, or you want to use the unit in a 3D system, connect to a center woofer power amp. Frequencies above about 100Hz are cut at 60dB/oct.

⑬ FRONT SPEAKERS terminals

Connect to the first set of speakers, use speakers with impedance of 4Ω-16Ω.

⑭ CENTER SPEAKER terminals

Connect the center speaker to these terminals. Use center speakers with impedance of 8Ω-16Ω.

⑮ REAR SPEAKERS terminals

Connect the rear speakers to these terminals. Use rear speakers with impedance of 8Ω-16Ω.

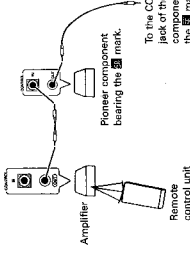
⑬ CONTROL IN/OUT jacks

IN: Connect this jack to other Pioneer components (main unit or remote control unit) when using those components to control this unit.

OUT: Connect this jack to other Pioneer components when using the remote control of this unit to control the other components.

NOTE:

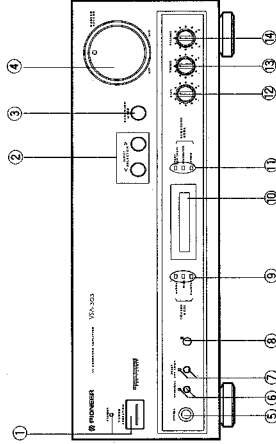
The receiver's remote sensor does not function when a plug is inserted in the IN jack. To operate, point the remote control unit at the remote sensor on the component to which the receiver's IN jack is connected.

**⑭ AC INLET jack**

Connect power cord to here and an AC outlet of an audio timer. If you are going to be away from home a long period of time, disconnect the unit from wall socket.

POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc. on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

FRONT PANEL FACILITIES**① POWER STANDBY/ON switch/STANDBY indicator**

This is the switch for electric power.

When set to the ON position, power is supplied and the unit becomes operational.

STANDBY: When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The STANDBY indicator lights when the power is STANDBY, and goes out during ON.

[Timer ON/OFF possible]

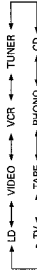
When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:

When the power is initially turned ON, muting will be applied to prevent sound from being output for about 6 seconds.

② INPUT SELECTOR buttons

Use this button to select the desired source. The setting change as follows each time this button is pressed.



- LD** : Press when performing playback on an LD player.
VIDEO : Press when performing playback on a VCR connected to VIDEO jack.
VCR : Press when performing playback on a video cassette recorder.
TUNER : Press when listening to FM/AM broadcasts.
CD : Press when playing compact discs on a CD player.
PHONO : Press when playing records on a turntable.
TAPE : Press when performing playback on a cassette deck.
TV : Press when using a TV tuner connected to the TV jacks.

③ SURROUND MODE selector buttons

- ④ MASTER VOLUME control**
 Use it to simultaneously adjust the sound volume from the front, center and rear speakers.

⑤ PHONES jack

Connect the plug on your headphones to this jack. Set all SPEAKERS A and B switches to OFF if you want to cut the sound from speakers and listen to it only through the headphones.

⑥ LOUDNESS button/indicator

use when listening at low volume levels.

ON:

The indicator lights. Boosts low and high frequencies to give added punch to playback at low volume.

OFF:

The indicator goes off. Should normally be left in this position.

⑦ DOLBY 3CH LOGIC button

This switches on and off the DOLBY 3CH LOGIC.

⑧ Remote sensor window**⑨ CENTER MODE indicators****⑩ Display section****⑪ SURROUND MODE indicator****⑫ BASS control**

Use to adjust the low-frequency level.

Turn clockwise to boost bass, and counterclockwise to attenuate bass.

⑬ TREBLE control

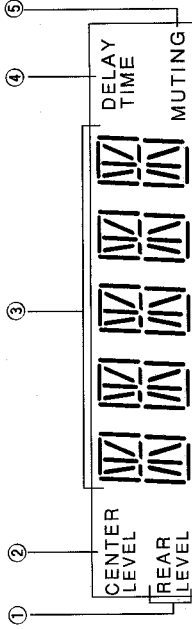
use to adjust the high-frequency level. Turn clockwise to boost treble, and counterclockwise to attenuate treble.

⑭ BALANCE control

Use to adjust the sound volume balance between left and right speakers.

L: Decrease the sound on the right side.

R: Decrease the sound on the left side. Usually, left and right volume levels should be the same.

DISPLAY SECTION**① REAR LEVEL indicator**

It light the rear level settings during adjustment.

② CENTER LEVEL indicator

It light the center level settings during adjustment.

③ Character/Level display

Displays function, center level, rear level and delay time.

④ DELAY TIME indicator

Lights during SIMULATED SURROUND or DOLBY PRO LOGIC SURROUND (when using a DELAY TIME).

⑤ MUTING indicator

Lights when MUTING is set to ON.

10. SPECIFICATIONS

Amplifier section

Continuous Power Output (in Stereo Mode)	
Front	50W+50W/20Hz to 20kHz, 1.0%, 4Ω
Continuous Power Output (DIN)	
Front	65W+65W/1kHz, 1.0%, 4Ω
Continuous Power Output when using SURROUND MODE*	
Rear only driven	20W+20W/1kHz, 1.0%, 8Ω
Front and Center driven	
Front	50W+50W/1kHz, 1.0%, 4Ω
Center (Only with DOLBY PRO LOGIC SURROUND)	
Dynamic Power (2.0/4.0/8.0)	50W/1kHz, 1.0%, 8Ω
Input Sensitivity (Impedance)	76W/72W/52W
PHONO MM	2.8mV/47kΩ
CD/VCR/TAPE1/TAPE2 LD	200mV/47kΩ
Phono Overload Level (T.H.D., 1.0%, 1kHz)*	
PHONO MM	70mV
Frequency Response	
PHONO MM	20Hz to 20,000Hz 0.5dB
CD, VCR, TAPE LD	10Hz to 50,000Hz ±3dB
Output (Level/Impedance)	
VCR REC, TAPE REC	200mV/2.2kΩ
CENTER PRE OUT, SUB WOOFER OUT	1V/2.2kΩ
Tone Control	
BASS	±8dB/100Hz
TREBLE	±8dB/10kHz
MUTING	6dB/3dB
Loudness control/100Hz/10kHz	
Signal-to-Noise Ratio (dBF, short circuited, A network)	
PHONO MM	83dB
CD, VCR, TAPE LD, TV, VIDEO	102dB
Signal-to-Noise Ratio (DIN, continuous power output/50mW)	
PHONO MM	71/64dB
CD, VCR, TAPE LD, TV, VIDEO	88/66dB

*Measured by Audio Spectrum Analyzer.

VIDEO Section

Input Sensitivity (Impedance)	
VCR/TAPE1 LD	1Vp-p/75Ω
Output (Level/Impedance)	
VCR/TAPE1 MONITOR	1Vp-p/75Ω
Frequency Response	
VCR/TAPE1 LD → MONITOR	5Hz to 10MHz ±3dB
Signal-to-Noise Ratio	63dB
Cross Talk	55dB

Miscellaneous

Power Requirements	
U.K. model	a.c. 240Volts ~, 50/60Hz
Multi-voltage model	110/120-127/220V
	240V, a.c. (switchable), 50/60Hz
Power Consumption	530W
Dimensions	
Weight (without package)	420W(X)140(H)X295(D)mm
	7.6kg

Furnished Parts

Dry Cell Batteries	
size "AA" (R6P/SUM-3)	2
Remote Control Unit	1
Power Cord	1
Operating Instructions	1

NOTE:

Specifications and the design are subject to possible modifications without notice due to improvements.

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 wring out well, and then wipe a dry cloth. Do not use furniture wax or cleaners.
- Never use trimmers, benzene, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.