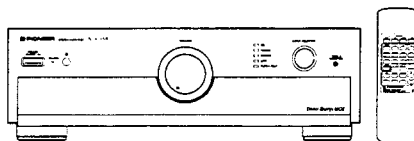


# Service Manual

**PIONEER**  
The Art of Entertainment



The illustration shows model A-605R.

ORDER NO.  
**RRV 1594**

STEREO AMPLIFIER

# A-605R

## A-605R-G

## A-505R

## A-405R

## A-405R-G

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.
	A-605R	A-605R-G	A-505R	A-405R	A-405R-G		
HY/EW	○	○	○	○	○	AC220 - 230V	_____
HY/GR	○	-	○	○	-	AC220 - 230V	_____
SD	○	-	-	-	-	AC110V/120 - 127V/220V/240V	With the voltage selector
HV	○	-	-	○	-	AC230V	_____

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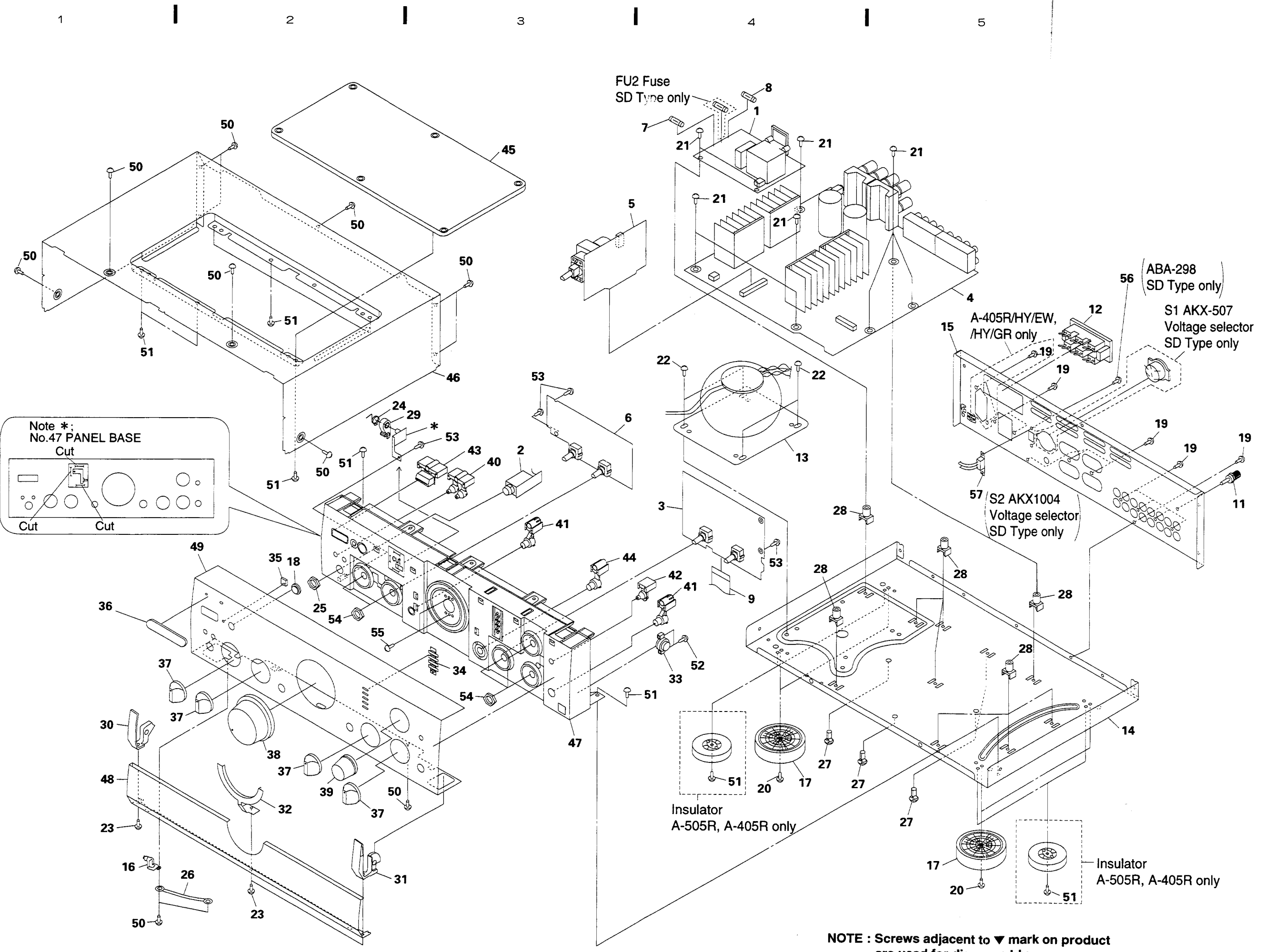
# 1. EXPLODED VIEWS AND PARTS LIST

## NOTES:

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

## Parts List (for A-605R/HY/EW)

Mark	No.	Description	Parts No.	Mark	No.	Description	Parts No.
	1	AC PRIMARY ASSY	AWZ7944		31	HINGE R	AMR7116
NSP	2	HEADPHONE ASSY	AWZ7947		32	PANEL STOPPER MOULD	AMR7117
	3	FRONT R ASSY	AWZ8398		33	DUMPER	AXA7036
	4	AF ASSY	AWZ7932		34	LED LENS	AAK7260
	5	VOLUME ASSY	AWZ7941		35	LED LENS	PNW2019
	6	FRONT L ASSY	AWZ8397		36	NAME PLATE	VAM1032
$\Delta$	7	FU3 FUSE (T500mA)	AEK1051		37	ROTARY KNOB C	AAB7089
$\Delta$	8	FU1 FUSE (T2A)	AEK1057		38	ROTARY KNOB L	AAB7090
	9	J1 FLEXIBLE CABLE	ADD1114		39	ROTARY KNOB B	AAB7091
	10	.....			40	SPEAKER BUTTON	AAD7290
	11	TERMINAL SCREW	AKE - 031		41	SELFILLMI BUTTON A	AAD7291
$\Delta$	12	AC SOKET 3 - P	AKP - 502		42	SELFILLMI BUTTON B	AAD7292
$\Delta$	13	T1 POWER TRANSFORMER	ATS7128		43	POWER BUTTON	AAD7293
NSP	14	CHASSIS	ANA7048		44	MUTING BUTTION	AAD7294
	15	REAR PANEL	ANC7424		45	TOP COVER	AME1086
	16	POCKET HOLDER ASSY	ANG1864		46	METAL BONNET	ANE7119
	17	FOOT	AMR1159		47	PANEL BASE	AMB7362
	18	REMOCON WINDOW	AAK2457		48	DOOR PANEL	ANB7050
	19	SCREW	ABA - 298		49	FRONT PANEL	ANB7052
	20	SCREW (STEEL)	ABA1004		50	SCREW	BBT30P080FZK
	21	SCREW	ABA1018		51	SCREW	BBZ30P080FMC
	22	SCREW (STEEL)	ABA1053		52	SCREW	BPZ20P080FMC
	23	SCREW	ABA7023		53	SCREW	BPZ26P080FMC
	24	POCKET SPRING	ABH7114		54	NUT	NK90FUC
	25	NUT	ABN - 065		55	SCREW	VMZ30P060FMC
NSP	26	CORD WITH PLUG	ADH1003		56	SCREW	BMZ30P080FZK
NSP	27	PCB HOLDER	AEC7057	$\Delta$	57	SWITCH (MAIN POWER)	ASH - 501
NSP	28	PCB MOULD	AMR1525				
	29	POCKET LOCK	AMR2587				
	30	HINGE L	AMR7115				



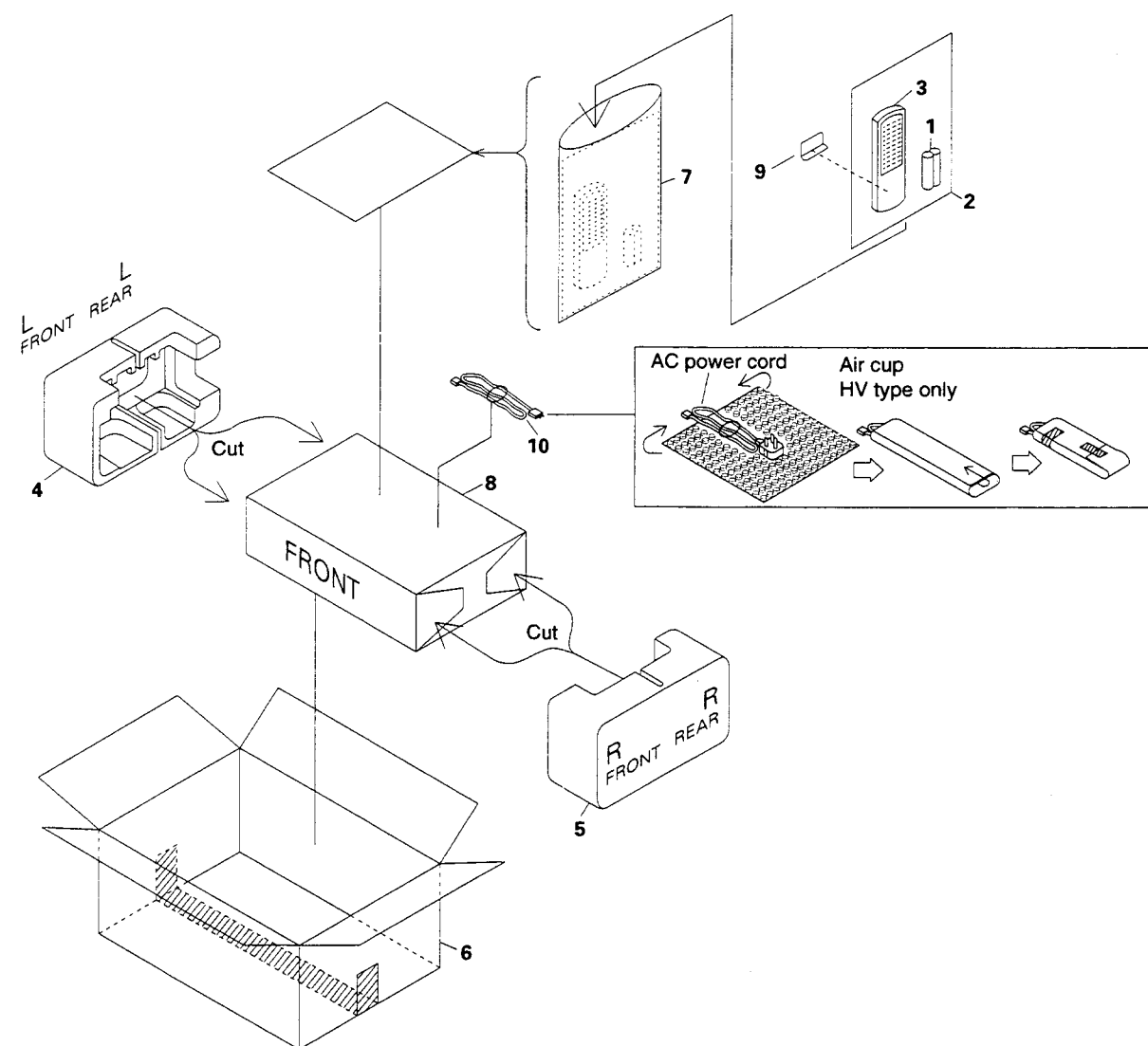
Note \*: No.47 PANEL BASE  
 Cut  
 Cut  
 Cut

NOTE : Screws adjacent to ▼ mark on product are used for disassembly.

## 2. PACKING AND PARTS LIST

### Parts List (for A-605R/HY/EW)

Mark	No.	Description	Parts No.
NSP	1	BATTERY (R6P, AA)	AEX - 010
	2	OPERATING INSTRUCTIONS (English/German/French/Italian/ Swedish/Spanish/Dutch/Portuguese)	ARE7077
	3	REMOTE CONTROL UNIT (CU - A013)	AXD7053
	4	SIDE PROTECTOR L	AHA7127
	5	SIDE PROTECTOR R	AHA7128
	6	PACKING CASE	AHD7308
NSP	7	LITERATURE BAG	AHG - 117
	8	PACKING SHEET	AHG1016
	9	BATTERY COVER	AZN2249
△	10	AC POWER CORD	ADG1154



## 3. SCHEMATIC AND PCB CONNECTION DIAGRAMS

### NOTE FOR SCHEMATIC DIAGRAMS (Type 1A)

1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".

2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.

#### 3. RESISTORS:

Unit: k:kΩ, M:MΩ, or Ω unless otherwise noted.  
Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.  
Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.

#### 4. CAPACITORS:

Unit: p:pF or μ:μF unless otherwise noted.  
Ratings: capacitor (μF)/voltage(V) unless otherwise noted.  
Rated voltage: 50V except for electrolytic capacitors.

#### 5. COILS:

Unit: m:mH or μ:μH unless otherwise noted.

#### 6. VOLTAGE AND CURRENT:

$\overline{V}$  : Signal voltage at rated output.  
or  $\leftarrow V$  :  
DC voltage (V) at no input signal unless otherwise noted.  
Value in ( ) is DC voltage at rated power.  
 $\overline{mA}$  or  $\leftarrow mA$  :  
DC current at no input signal unless otherwise noted.

#### 7. OTHERS:

- $\odot$  or  $\ominus$  : Adjusting point.
- $\blacktriangleleft$  : Measurement point.
- The  $\triangle$  mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.

#### 8. SCH-□ ON THE SCHEMATIC DIAGRAM:

- SCH-□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)

#### 9. SWITCHES (Underline indicates switch position):

##### FRONT L ASSY

- S701 : POWER STANDBY/ON
- S702 : LOUDNESS
- S703 : SPEAKER A
- S704 : SPEAKER B

##### FRONT R ASSY

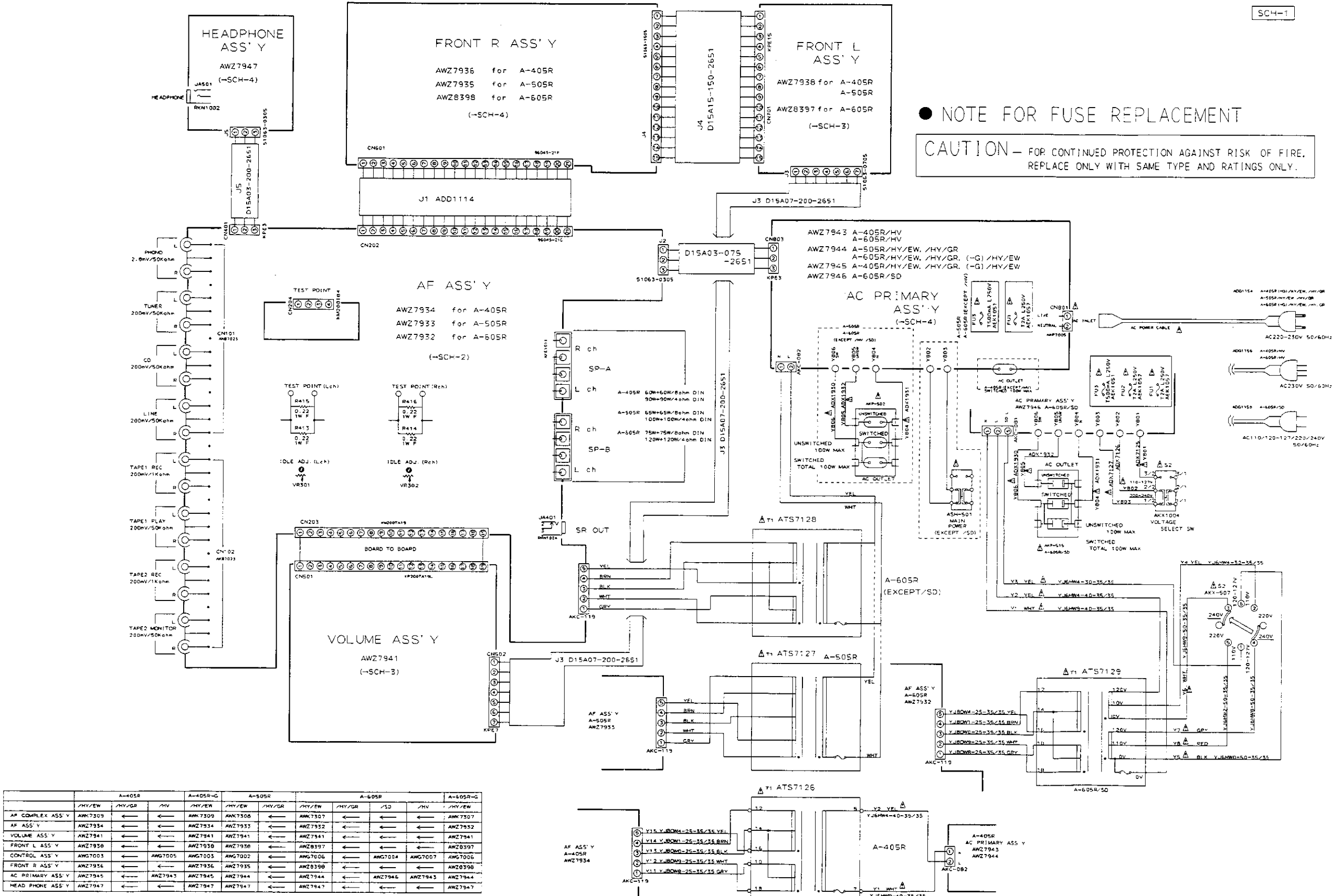
- S601 : INPUT SELECTOR
- S602 : REC SELECTOR(SOURCE/OFF/CD/TUNER)
- S603 : TAPE2 MONITOR
- S604 : DIRECT
- S605 : MUTING

### NOTE FOR PCB DIAGRAMS

- Part numbers in PCB diagrams match those in the schematic diagrams.
- 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
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

### 3.1 OVERALL WIRING DIAGRAM

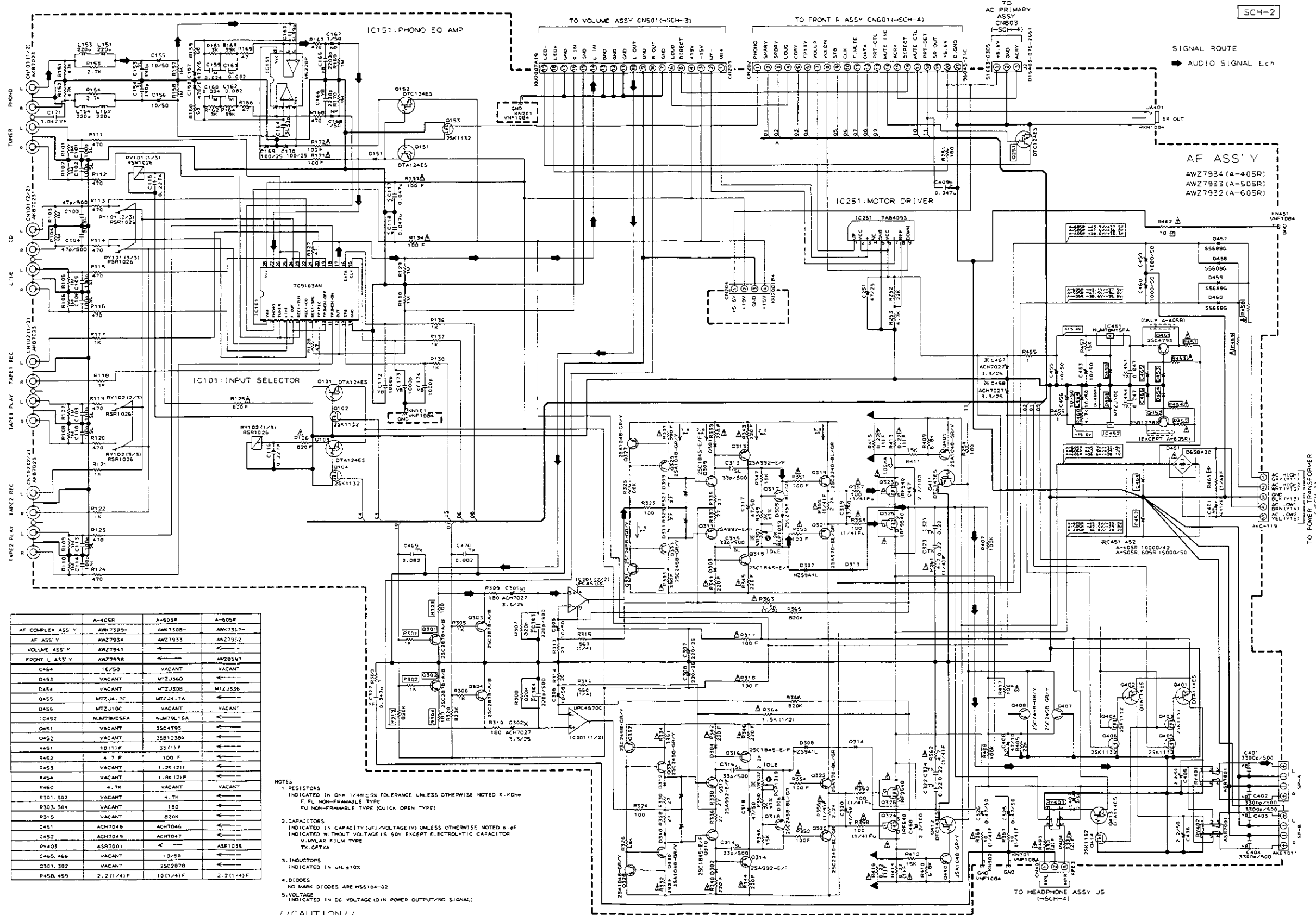


	A-40SR		A-40SR-G		A-50SR		A-60SR		A-60SR-G	
	/HY/GR	/HY/GR	/HY	/HY/GR	/HY/GR	/HY/GR	/HY/GR	/SD	/HY	/HY/GR
AF COMPLEX ASS'Y	AWZ7309	AWZ7309	AWZ7309	AWZ7309	AWZ7307	AWZ7307	AWZ7307	AWZ7307	AWZ7307	AWZ7307
AF ASS'Y	AWZ7934	AWZ7934	AWZ7934	AWZ7933	AWZ7932	AWZ7932	AWZ7932	AWZ7932	AWZ7932	AWZ7932
VOLUME ASS'Y	AWZ7941	AWZ7941	AWZ7941	AWZ7941	AWZ7941	AWZ7941	AWZ7941	AWZ7941	AWZ7941	AWZ7941
FRONT L ASS'Y	AWZ7938	AWZ7938	AWZ7938	AWZ7938	AWZ8397	AWZ8397	AWZ8397	AWZ8397	AWZ8397	AWZ8397
CONTROL ASS'Y	AWZ7003	AWZ7003	AWZ7003	AWZ7002	AWZ7006	AWZ7006	AWZ7006	AWZ7006	AWZ7006	AWZ7006
FRONT R ASS'Y	AWZ7936	AWZ7936	AWZ7936	AWZ7935	AWZ8398	AWZ8398	AWZ8398	AWZ8398	AWZ8398	AWZ8398
AC PRIMARY ASS'Y	AWZ7945	AWZ7943	AWZ7945	AWZ7944	AWZ7944	AWZ7946	AWZ7943	AWZ7944	AWZ7944	AWZ7944
HEADPHONE ASS'Y	AWZ7947	AWZ7947	AWZ7947	AWZ7947	AWZ7947	AWZ7947	AWZ7947	AWZ7947	AWZ7947	AWZ7947

**SCH-1** OVERALL WIRING DIAGRAM

OVERALL WIRING DIAGRAM **SCH-1**

3.2 AF ASSEMBLY



	A-40SR	A-50SR	A-60SR
AF COMPLEX ASS'Y	AWK7309	AWK7308	AWK7307
AF ASS'Y	AWZ7934	AWZ7933	AWZ7932
VOLUME ASS'Y	AWZ7941		
FRONT L ASS'Y	AWZ7938		AWZ8547
C454	16/50	VACANT	VACANT
D453	VACANT	MTZ3560	
D454	VACANT	MTZ3588	MTZ3538
D455	MTZ357C	MTZ357A	
D456	MTZ3570C	VACANT	VACANT
IC452	N.M.P.7905FA	N.M.P.7905SA	
Q451	VACANT	25C4795	
Q452	VACANT	25B1238X	
R451	10 (1/4)F	35 (1/4)F	
R452	4.7 F	100 F	
R453	VACANT	1.2K (2)F	
R454	VACANT	1.8K (2)F	
R460	4.7K	VACANT	VACANT
R501, 502	VACANT	4.7K	
R503, 504	VACANT	18Ω	
R519	VACANT	820K	
C451	ACH704B	ACH704G	
C452	ACH704A	ACH704T	
R403	ASR7001		ASR1035
C465, 466	VACANT	10/50	
Q501, 502	VACANT	25C287B	
R45B, 459	2.2 (1/4)F	10 (1/4)F	2.2 (1/4)F

NOTES  
 1. RESISTORS  
 INDICATED IN OHM 1/4W ±5% TOLERANCE UNLESS OTHERWISE NOTED. X-MON-F, FL, NON-FRAGILE TYPE  
 FU, NON-FRAGILE TYPE (QUICK OPEN TYPE)  
 2. CAPACITORS  
 INDICATED IN CAPACITY (UF), VOLTAGE (V) UNLESS OTHERWISE NOTED. B, BF INDICATED WITHOUT VOLTAGE IS 50V EXCEPT ELECTROLYTIC CAPACITOR.  
 M, MYLAR FILM TYPE  
 TX, CPTX  
 3. INDUCTORS  
 INDICATED IN UH ±10%  
 4. DIODES  
 NO MARK DIODES ARE HSS104-02  
 5. VOLTAGE  
 INDICATED IN DC VOLTAGE (DIN POWER OUTPUT/NO SIGNAL)  
 //CAUTION//  
 HEATSINKS (Q523-526) DC LEVEL IS EQUAL TO +B OR -B.  
 DON'T TOUCH OR YOU WILL BE ELECTRICALLY SHOCKED.

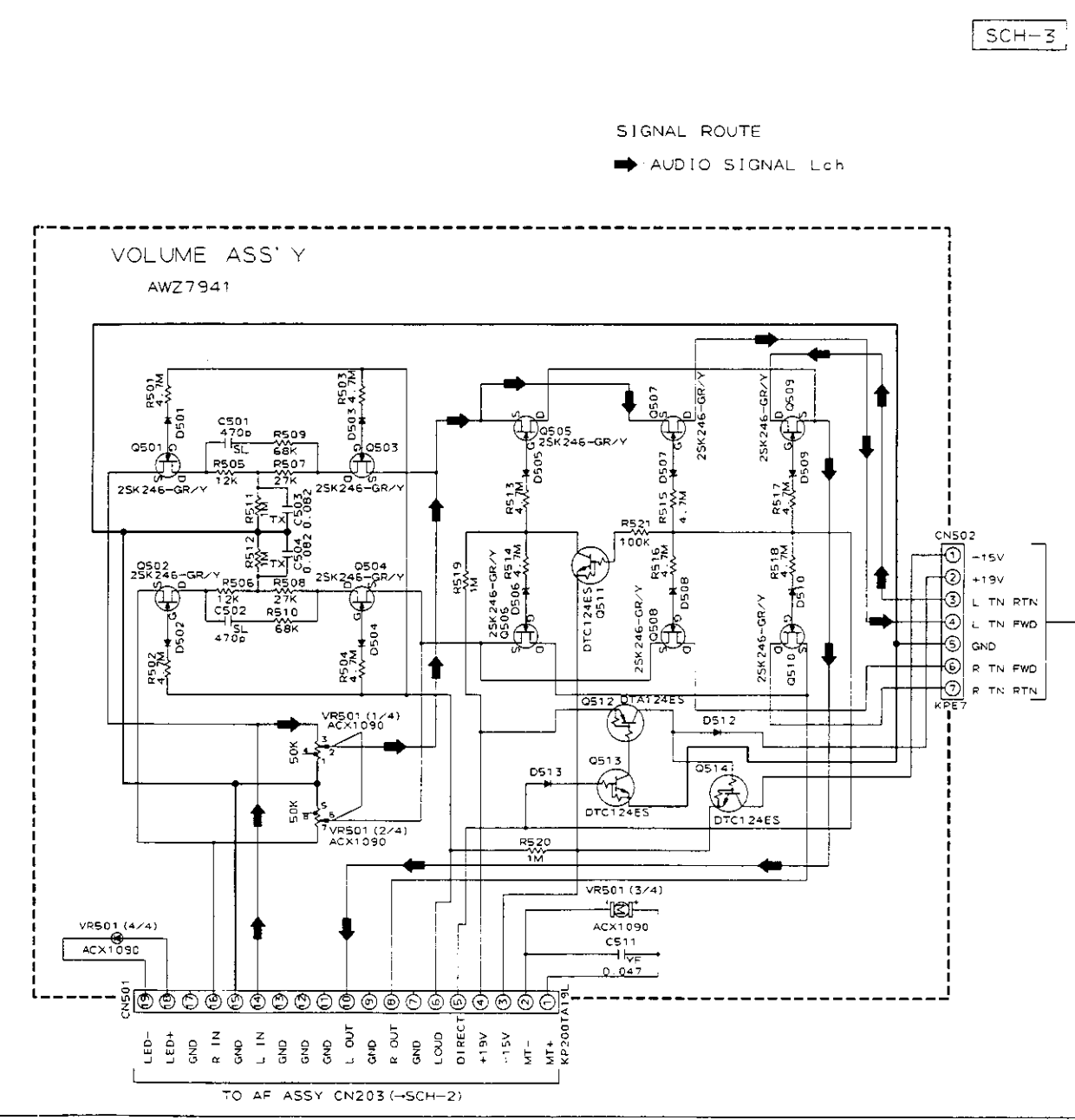
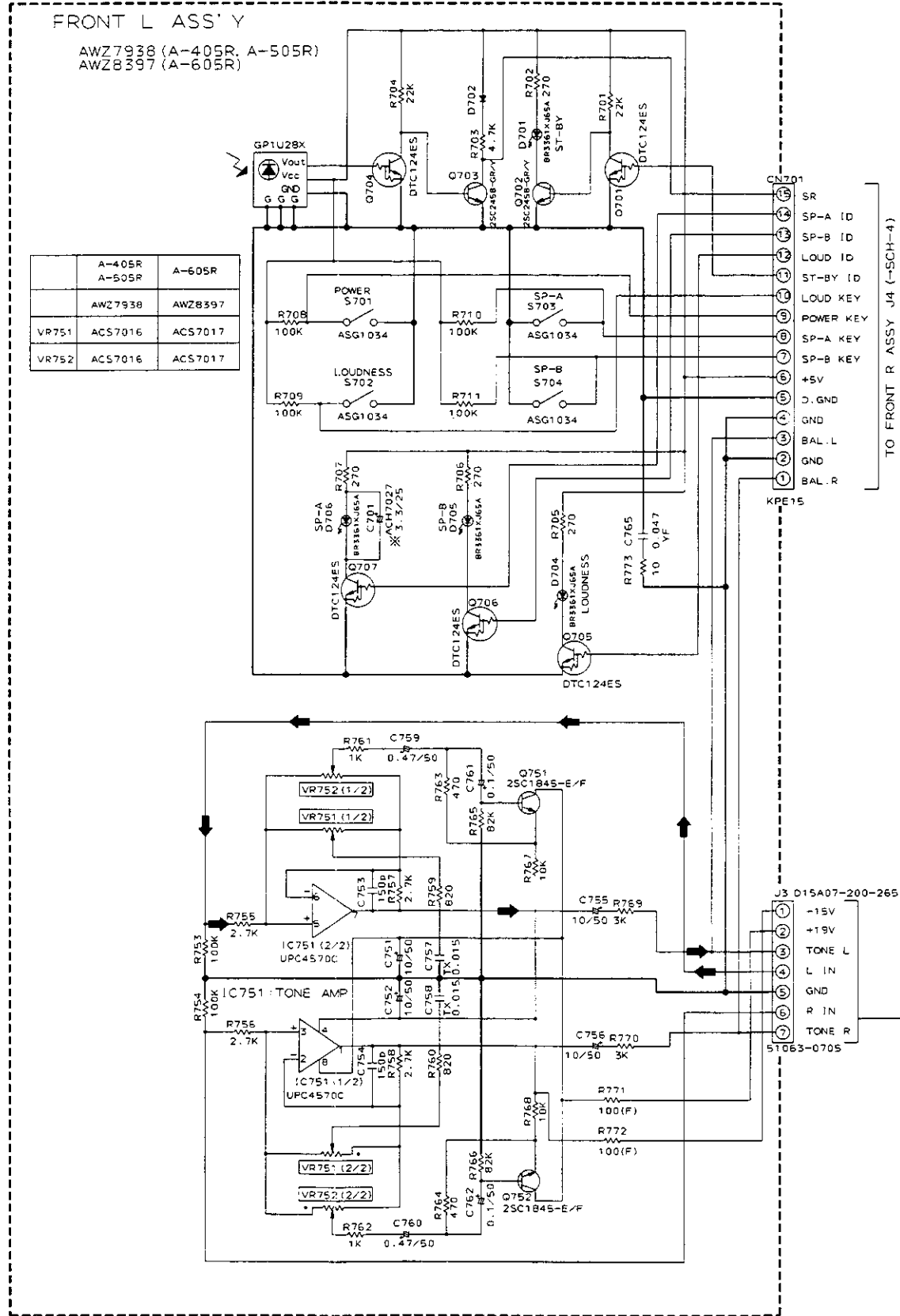
SCH-2

AF ASSY

AF ASSY  
 SCH-2



### 3.3 FRONT L AND VOLUME ASSEMBLIES



- NOTES
- RESISTORS  
 INDICATED IN Ohm 1/4W ±5% TOLERANCE UNLESS OTHERWISE NOTED K, Kohm  
 F, FL - NON-FRAMABLE TYPE
  - CAPACITORS  
 INDICATED IN CAPACITY (uF)/VOLTAGE (V) UNLESS OTHERWISE NOTED p, pF  
 INDICATED WITHOUT VOLTAGE IS 50V EXCEPT ELECTROLYTIC CAPACITOR.  
 M, MYLAR FILM TYPE  
 TX, CFTXA
  - DIODES  
 NO MARK DIODES ARE HSS104-02

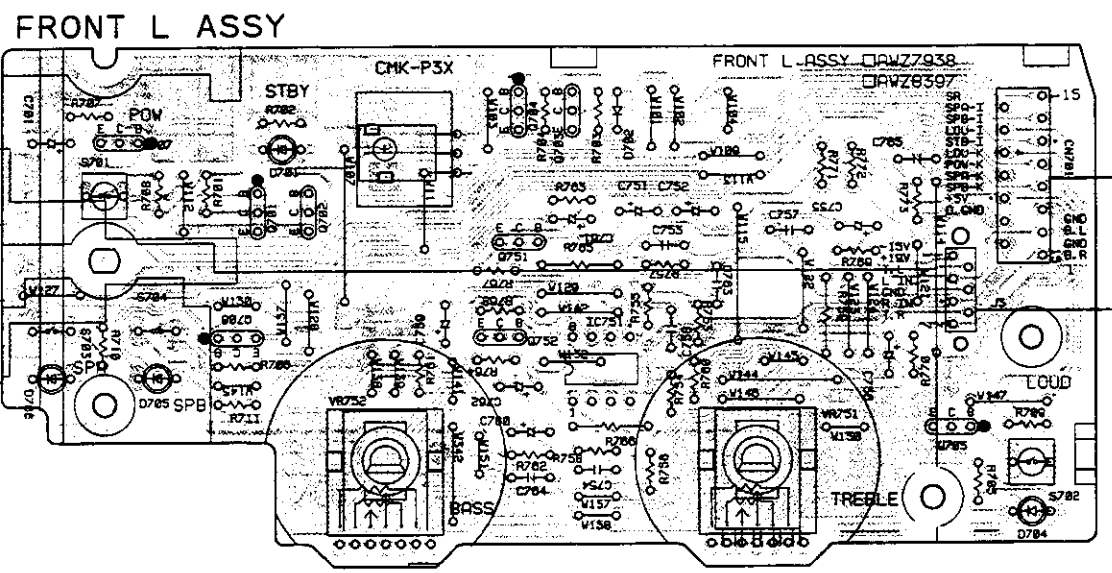
SCH-3 FRONT L ASSY, VOLUME ASSY

FRONT L ASSY, VOLUME ASSY SCH-3



A

A

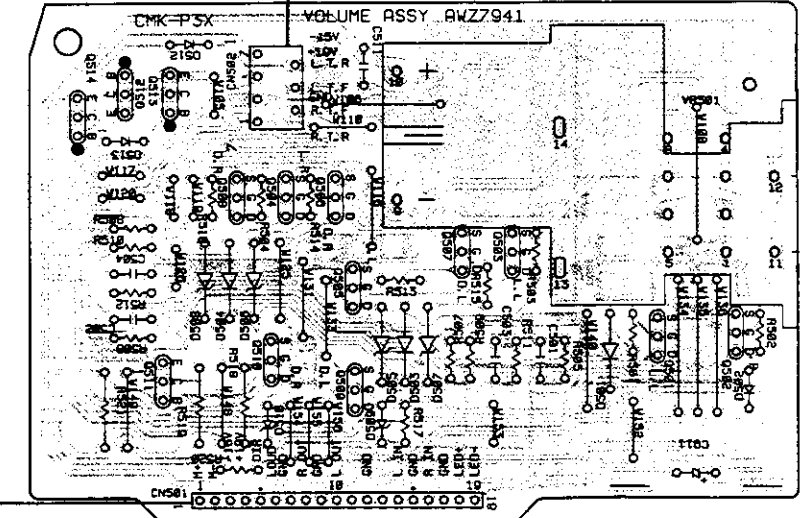


Q707 Q701 Q702 Q704 Q703 Q705  
 Q706 Q751 IC751  
 Q752

B

B

VOLUME ASSY



Q511-Q514 Q508 Q504 Q507 Q503 Q501 Q502  
 Q510 Q506  
 Q505  
 Q509

C

C

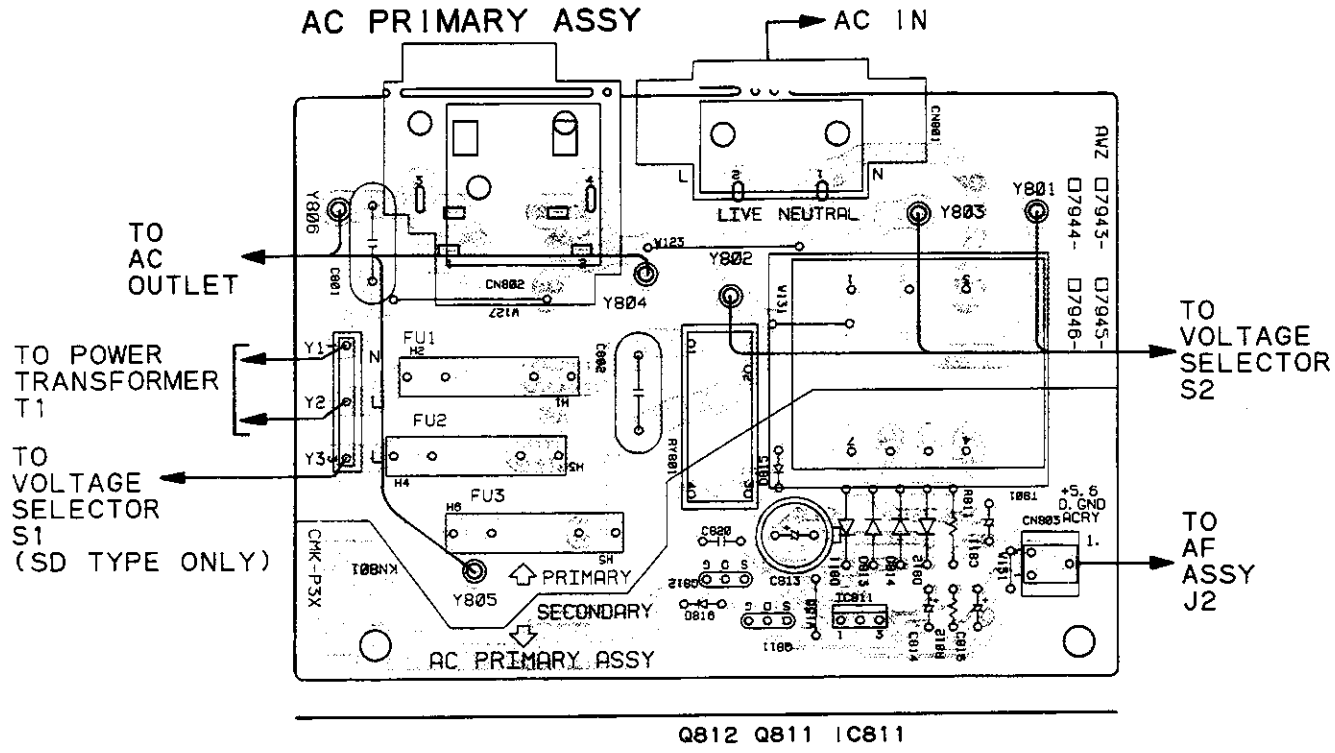
- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

D

D

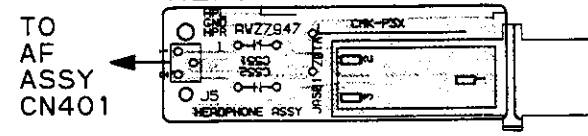


AC PRIMARY ASSY

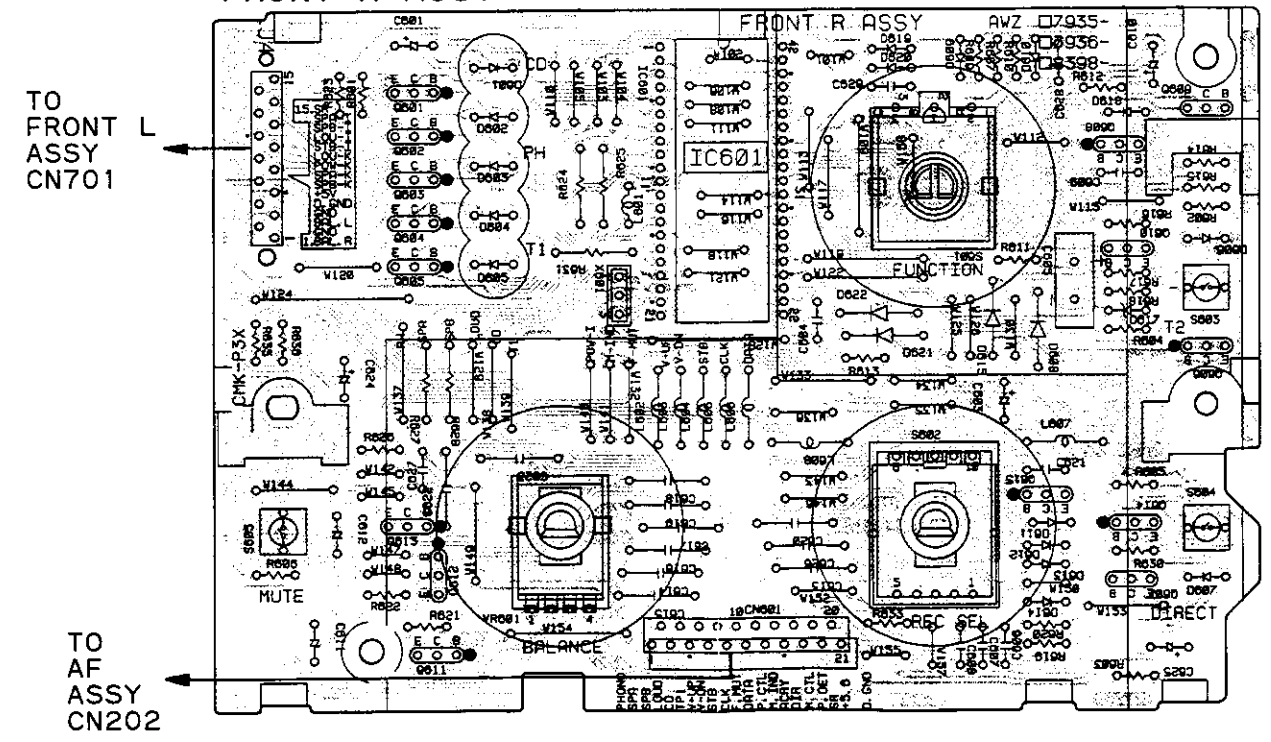


PCB-3

HEADPHONE ASSY



FRONT R ASSY



- This diagram is viewed from the mounted parts side.
- The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.

## 4. PCB PARTS LIST

(for A-605R/HY/EW)

### NOTES:

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

560Ω → 56 × 10<sup>1</sup> → 561 ..... RD1/4PU561J  
 47kΩ → 47 × 10<sup>3</sup> → 473 ..... RD1/4PU473J  
 0.5Ω → 0R5 ..... RN2H0R5K  
 1Ω → 1R0 ..... RS1P1R0K

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

5.62kΩ → 562 × 10<sup>1</sup> → 5621 ..... RNI/4PC5621F

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>LIST OF ASSEMBLIES</b>					
NSP	CONTROL ASSY	AWG7006			
	├ AC PRIMARY ASSY	AWZ7944			
NSP	├ HEADPHONE ASSY	AWZ7947			
	└ FRONT R ASSY	AWZ8398			
NSP	AF COMPLEX ASSY	AWK7307			
	├ AF ASSY	AWZ7932			
	├ VOLUME ASSY	AWZ7941			
	└ FRONT L ASSY	AWZ8397			
<b>AC PRIMARY ASSY</b>					
<b>SEMICONDUCTORS</b>					
	IC811	NJM78M56FA			
	Q811, Q812	2SK1132			
	D815, D816	HSS104 - 02			
	D811 - D814	S5688G			
<b>TRANSFORMERS</b>					
$\Delta$	T801	ATT7009			
<b>SWITCHES AND RELAYS</b>					
$\Delta$	RY801	ASR1044			
<b>CAPACITORS</b>					
$\Delta$	C801, C802 (10000pF/250V)	ACG7020			
	C815 (3.3μF/25V)	ACH7027			
	C814	CEAS010M50			
	C813	CEAS471M25			
<b>RESISTORS</b>					
	All Resistors	RD1/4PU□□□J			
<b>OTHERS</b>					
$\Delta$	CN801 AC INLET	AKP7005			
	CN803 CONNECTOR(3P)	KPE3			
	H1, H2, H5, H6 FUSE HOLDER	RKR1003			
<b>HEADPHONE ASSY</b>					
<b>CAPACITORS</b>					
	C551, C552	CKCYB392K50			

Mark No.	Description	Parts No.	Mark No.	Description	Parts No.
<b>OTHERS</b>					
CN601	CABLE HOLDER(15P) CONNECTOR	51063 - 1505 9604S - 21F	C103, C104		CCCSL470K500
<b>AF ASSY</b>					
<b>SEMICONDUCTORS</b>					
	IC151	M5220P	C167, C168		CEANP010M50
	IC451	NJM78M15FA	C408		CEANP470M10
	IC452	NJM79L15A	C155, C156, C305, C306		CEAS100M50
	IC251	TA8409S	C455, C456, C463, C465, C466		CEAS100M50
	IC101	TC9163AN	C169, C170		CEAS101M25
	IC301	UPC4570C	C459, C460		CEAS102M50
	Q327 - Q330, Q409, Q410	2SA1048	C307, C308		CEAS221M25
	Q321, Q322	2SA970	C405 - C407		CEAS2R2M50
	Q311 - Q314	2SA992	C467, C468		CEAS2R2M100
	Q452	2SB1238X	C251		CEAS470M25
	Q309, Q310, Q315, Q316	2SC1845	C317 - C320		CEAS470M50
	Q319, Q320	2SC2240	C157, C158		CEAS471M6
	Q317, Q318, Q331 - Q334	2SC2458	C325, C326		CEASR47M50
	Q407, Q408	2SC2458	C115, C116, C321 - C324		CFTXA224J50
	Q301 - Q304	2SC2878	C469, C470		CFTXA823J50
	Q451	2SC4793	C165, C166		CKCYB222K50
	Q102, Q104, Q153, Q403 - Q406	2SK1132	C401 - C404		CKCYB332K500
	Q414	2SK1132	C117, C118, C171, C327, C409		CKCYF473Z50
	Q401, Q402, Q413	DTA114ES	C453, C454		CKCYF473Z50
	Q101, Q103, Q151	DTA124ES	C172 - C174		CKPUYB102K50
	Q152, Q251	DTC124ES	C159, C160		CQMA243J50
	Q411, Q412	DTC143ES	C161, C162		CQMA823J50
	Q323, Q324	IRF540	<b>RESISTORS</b>		
	Q325, Q326	IRF9540	$\Delta$	R363, R364	RD1/2PM152J
	D451	D5SBA20	$\Delta$	R133, R134, R171, R172	RD1/4MUF101J
	D151, D301 - D306, D309 - D314	HSS104 - 02	$\Delta$	R317, R318, R351 - R354, R417	RD1/4MUF101J
	D307, D308	HZS9AIL	$\Delta$	R452	RD1/4MUF101J
	D454	MTZJ33B	$\Delta$	R339 - R346	RD1/4MUF221J
	D453	MTZJ36D	$\Delta$	R331 - R334	RD1/4MUF391J
	D455	MTZJ4.7A	$\Delta$	R125, R126	RD1/4MUF821J
	D457 - D460	S5688G	$\Delta$	R315, R316	RD1/4PM561J
<b>COILS AND FILTERS</b>					
	L151 - L154	LAU221J	$\Delta$	R367, R368	RD1/4PMF100J
<b>SWITCHES AND RELAYS</b>					
	RY403	ASR1035	$\Delta$	R355, R356	RD1/4PMF222J
	RY401, RY402	ASR7001	$\Delta$	R458, R459	RD1/4PMF2R2J
	RY101, RY102 (12V/960Ω)	RSR1026	$\Delta$	R461	RD1/4PMF470J
<b>CAPACITORS</b>					
	C461 (1μF/100V)	ACH1237	$\Delta$	R361, R362	RD1/4PMF4R7J
	C301, C302, C457, C458 (3.3μF/25V)	ACH7027	$\Delta$	R462	RD1/4PU100J
	C451 (15000pF/42V)	ACH7046	$\Delta$	R357 - R360	RFA1/4PS101J
	C452 (15000pF/42V)	ACH7047	$\Delta$	R349, R350	RNI/6PQ2001F
	C101, C102, C105, C106	CCCSL101J50	$\Delta$	R451	RS1MMF330J
	C109, C110, C113, C114	CCCSL101J50	$\Delta$	R413 - R416	RS1MMF22J
	C303, C304	CCCSL221K500	$\Delta$	R453	RS2MMF122J
	C313 - C316	CCCSL330K500	$\Delta$	R454	RS2MMF182J
	C163, C164	CCCSL390J50	$\Delta$	R403, R404	RS2MMF331J
	C153, C154	CCCSL391J50	$\Delta$	VR301, VR302 (2.2kΩ, 0.1W)	RCP1019
<b>OTHERS</b>					
	CN202	CABLE HOLDER(3P) CONNECTOR	Other Resistors RD1/4PU□□□J		
		SCREW			
		SCREW (STEEL)			
		SCREW			
	CN101, CN102	PIN JACK(8P) SPEAKER TERMINAL 8 - P	AKB7023		
		HEAT SINK FITTING	AKE1011		
		HEAT SINK B	ANG7095		
		HEAT SINK	ANH1021		
			ANH1150		

Mark No.	Description	Parts No.
	HEAT SINK L	ANH7044
J2	JUMPER WIRE	D15A03-075-2651
CN204	4P PLUG	KM200IB4
CN203	19P PLUG	KM200TA19
CN401	CONNECTOR(3P)	KPE3
JA401	JACK	RKN1004
	PCB BINDER	VEF1040
KN101, KN201	EARTH METAL FITTING	VNF1084
KN301, KN302, KN451	EARTH METAL FITTING	VNF1084

## VOLUME ASSY

### SEMICONDUCTORS

Q501 - Q510	2SK246
Q512	DTA124ES
Q511, Q513, Q514	DTC124ES
D501 - D504, D512, D513	HSS104 - 02
D505 - D510	HSS104 - 02

### CAPACITORS

C501, C502	CCCSL471J50
C503, C504	CFTXA823J50
C511	CKCYF473Z50

### RESISTORS

VR501	VARIABLE RESISTOR	ACX1090
	Other Resistors	RD1/4PU□□□J

### OTHERS

CN501	19P SOCKET	KP200TA19L
CN502	CONNECTOR(7P)	KPE7

## FRONT L ASSY

### SEMICONDUCTORS

IC751	UPC4570C
Q751, Q752	2SC1845
Q702, Q703	2SC2458
Q701, Q704 - Q707	DTC124ES
D701, D704 - D706	BR3361XJ65A
D702	HSS104 - 02

### SWITCHES AND RELAYS

S701 - S704	ASG1034
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### CAPACITORS

C701 (3.3μF/25V)	ACH7027
C753, C754	CCCSL151J50
C751, C752, C755, C756	CEAS100M50
C761, C762	CEASR10M50
C759, C760	CEASR47M50
C757, C758	CFTXA153J50
C765	CKCYF473Z50

### RESISTORS

R771, R772	RD1/4MUF101J
VR751, VR752 (30kΩ - B5X2)	ACS7017
Other Resistors	RD1/4PU□□□J

### OTHERS

CN701	CABLE HOLDER(7P) CONNECTOR(15P)	51063 - 0705 KPE15
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# 5. ADJUSTMENTS

## 1) IDLE CURRENT ADJUSTMENT

1. Connect the measuring instrument as Fig.5-1. (R413 or R414)
2. Set the VOLUME CONTROL to minimum, BASS TONE CONTROL to center, TREBLE TONE CONTROL to center, BALANCE CONTROL to center and REC SELECTOR SWITCH to off. Set VR301 and VR302 to minimum.
3. Set the POWER switch to ON.
4. Adjust VR301 (VR302) so that the voltage between both sides of R413 (R414) becomes  $16\text{mV} \pm 1\text{mV}$ . (Within 10 seconds from when the relay is turned ON)
5. Ages for 7 minutes.
6. Adjust VR301 (VR302) so that the voltage between both sides of R413 (R414) becomes  $11\text{mV} \pm 1\text{mV}$ .

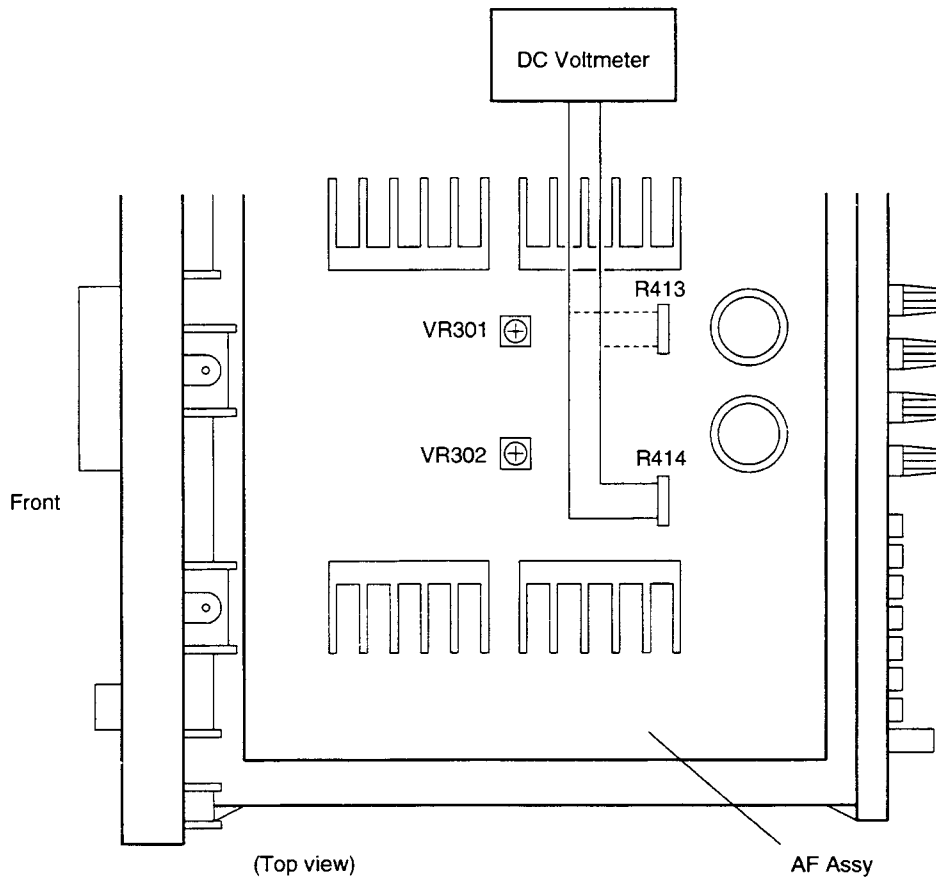
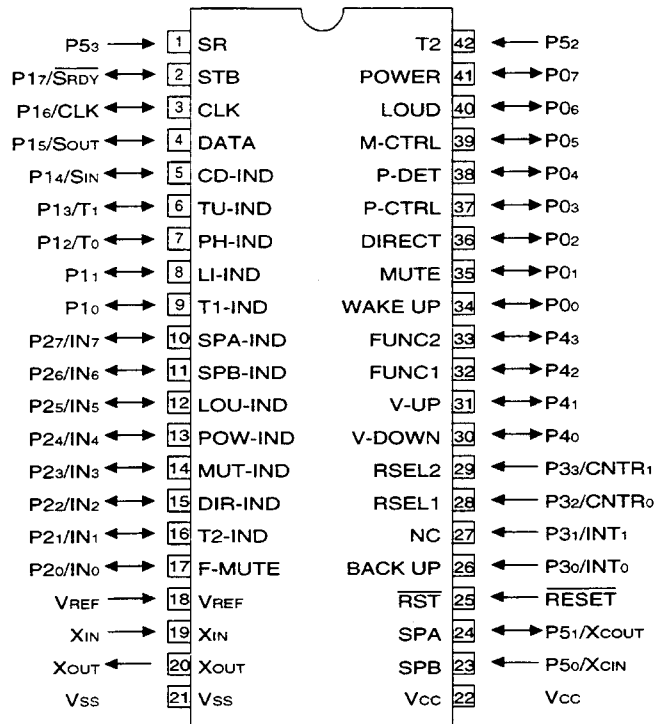


Fig.5-1 Adjustment Method

# 6. IC INFORMATION

- PD5369A (FRONT R ASSY : IC601)
- REMOTE CONTROL AMP MICROCOMPUTER
- Pin Assignment (Top view)

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

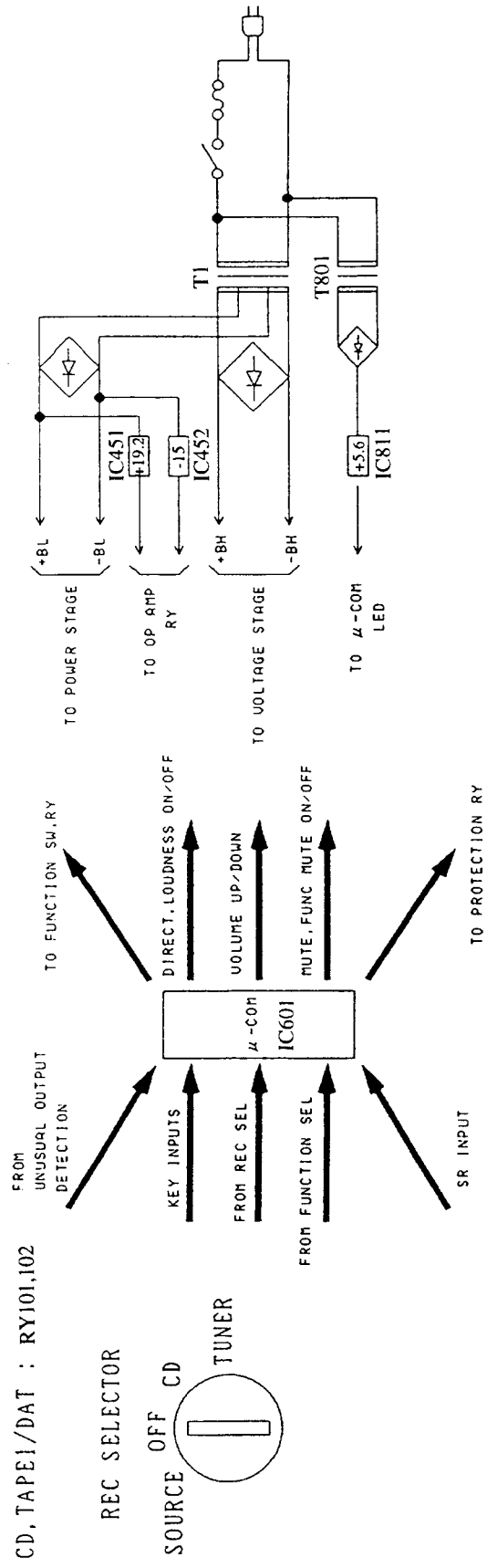
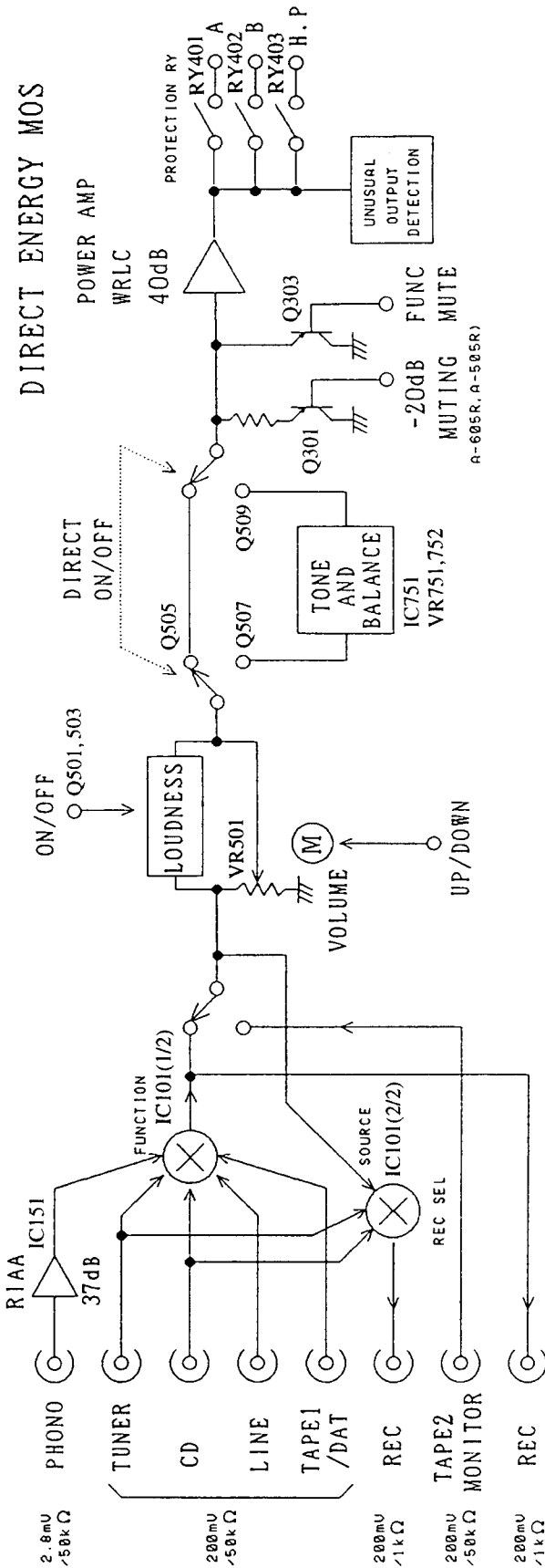


## ● Pin Function

No.	Pin name	I/O	Function
1	P5 <sub>3</sub>	I	Remote control signal input pin.
2	P17/ $\overline{\text{SRDY}}$	O	STB for TC9163N.
3	P16/CLK	O	CLOCK for TC9163N.
4	P15/SOUT	O	DATA for TC9163N.
5	P14/SIN	O	CD INDICATOR.
6	P13/T <sub>1</sub>	O	TUNER INDICATOR.
7	P12/T <sub>0</sub>	O	PHONO INDICATOR.
8	P1 <sub>1</sub>	O	LINE INDICATOR.
9	P1 <sub>0</sub>	O	TAPE1 INDICATOR.
10	P27/IN <sub>7</sub>	O	SPEAKER-A INDICATOR.
11	P26/IN <sub>6</sub>	O	SPEAKER-B INDICATOR.
12	P25/IN <sub>5</sub>	O	LOUDNESS INDICATOR.
13	P24/IN <sub>4</sub>	O	POWER (STAND-BY) INDICATOR.
14	P23/IN <sub>3</sub>	O	MUTE INDICATOR. MUTE ON : Repeats H and L every 1 second. Normal : "H"
15	P22/IN <sub>2</sub>	O	DIRECT INDICATOR.
16	P21/IN <sub>1</sub>	O	TAPE2 INDICATOR.
17	P20/IN <sub>0</sub>	O	FUNCTION switch MUTE.
18	VREF	I	Pulls up to 5V.
19	XIN	I	4.19MHz .
20	XOUT	O	Ceramic vibrating and connecting terminal.
21	VSS	-	Digital GND.
22	VCC	-	Power supply +5V.
23	P5 <sub>0</sub> /XCIN	I	SPEAKER-B KEY input.

No.	Pin name	I/O	Function
24	P5 <sub>1</sub> /XCOUT	I	SPEAKER-A KEY input.
25	RESET	I	Reset pin.
26	P3 <sub>0</sub> /INT <sub>0</sub>	I	BACK UP detection pin. interrupt specification.
27	P3 <sub>1</sub> /INT <sub>1</sub>	O	Not used.
28	P3 <sub>2</sub> /CNTR <sub>0</sub>	I	REC selector input 1.
29	P3 <sub>3</sub> /CNTR <sub>1</sub>	I	REC selector input 2. interrupt specification.
30	P4 <sub>0</sub>	O	Volume DOWN data output.
31	P4 <sub>1</sub>	O	Volume UP data output.
32	P4 <sub>2</sub>	I	FUNCTION selector input 1.
33	P4 <sub>3</sub>	I	FUNCTION selector input 2.
34	P0 <sub>0</sub>	I	WAKE UP input. Key on wake up specification.
35	P0 <sub>1</sub>	I	MUTE KEY input. Key on wake up specification.
36	P0 <sub>2</sub>	I	DIRECT KEY input. Key on wake up specification.
37	P0 <sub>3</sub>	O	Protection control pin.
38	P0 <sub>4</sub>	I	Output error detection pin
39	P0 <sub>5</sub>	O	MUTING control pin.
40	P0 <sub>6</sub>	I	LOUDNESS KEY input. Key on wake up specification.
41	P0 <sub>7</sub>	I	POWER KEY input. Key on wake up specification.
42	P5 <sub>2</sub>	I	TAPE2 KEY input.

# 7. BLOCK DIAGRAM





## 8. FOR A-605R/HY/GR, SD, HV, A-605R-G/HY/EW, A-505R/HY/EW, HY/GR, A-405R/HY/EW, HY/GR, HV AND A-405R-G/HY/EW TYPES

### NOTES:

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

### 8.1 FOR A-605R/HY/GR, SD, HV AND A-605R-G/HY/EW

A-605R/HY/GR, SD, HV, A-605-G/HY/EW and A-605R/HY/EW have the same construction except for the following:

Mark	Symbol & Description	Part No.					Remarks
		A-605R /HY/EW	A-605R /HY/GR	A-605R /SD	A-605R /HV	A-605R-G /HY/EW	
NSP	CONTROL assembly	AWG7006	AWG7006	AWG7004	AWG7007	AWG7006	
	AC PRIMARY assembly	AWZ7944	AWZ7944	AWZ7946	AWZ7943	AWZ7944	
$\Delta$	FU3 Fuse (T500mA)	AEK1051	AEK1051	AEK1051	Not used	AEK1051	*1
$\Delta$	FU2 Fuse (T2A)	Not used	Not used	AEK1057	Not used	Not used	
$\Delta$	AC power cord	ADG1154	ADG1154	ADG1158	ADG1156	ADG1154	
$\Delta$	Fuse (T5A) (With in AC pulg)	Not used	Not used	Not used	AEK1046	Not used	
$\Delta$	AC socket 3 - P	AKP - 502	AKP - 502	AKP - 515	Not used	AKP - 502	
$\Delta$	T1 Power transformer (AC220 - 230V)	ATS7128	ATS7128	Not used	ATS7128	ATS7128	
$\Delta$	T1 Power transformer (AC110V/120 - 127V/220V/240V)	Not used	Not used	ATS7129	Not used	Not used	
$\Delta$	Swith (Main power)	ASH - 501	ASH - 501	Not used	ASH - 501	ASH - 501	
$\Delta$	Voltage selector S1 (AC110V/120 - 127V/220V/240V)	Not used	Not used	AKX - 507	Not used	Not used	*1
$\Delta$	Voltage selector S2 (AC110 - 127V/220V - 240V)	Not used	Not used	AKX1004	Not used	Not used	*1
	Rear panel	ANC7424	ANC7424	ANC7425	ANC7426	ANC7424	
	Hinge L	AMR7115	AMR7115	AMR7115	AMR7115	AMR7118	
	Hinge R	AMR7116	AMR7116	AMR7116	AMR7116	AMR7119	
	Panel stopper mould	AMR7117	AMR7117	AMR7117	AMR7117	AMR7120	
	Name plate	VAM1032	VAM1032	VAM1032	VAM1032	VAM1051	
	Rotary knob C	AAB7089	AAB7089	AAB7089	AAB7089	AAB7094	
	Rotary knob L	AAB7090	AAB7090	AAB7090	AAB7090	AAB7096	
	Rotary knob B	AAB7091	AAB7091	AAB7091	AAB7091	AAB7095	
	Speaker button	AAD7290	AAD7290	AAD7290	AAD7290	AAD7298	
	Selfillmi button A	AAD7291	AAD7291	AAD7291	AAD7291	AAD7299	
	Selfillmi button B	AAD7292	AAD7292	AAD7292	AAD7292	AAD7300	
	Power button	AAD7293	AAD7293	AAD7293	AAD7293	AAD7301	
	Muting button	AAD7294	AAD7294	AAD7294	AAD7294	AAD7302	
	Top cover	AME1086	AME1086	AME1086	AME1086	AME7370	
	Metal bonnet	ANE7119	ANE7119	ANE7119	ANE7119	ANE7128	
	Panel base	AMB7362	AMB7362	AMB7362	AMB7362	AMB7369	
	Door panel	ANB7050	ANB7050	ANB7050	ANB7050	ANB7056	
	Front panel	ANB7052	ANB7052	ANB7052	ANB7052	ANB7057	
	Screw (For bonnet)	BBT30P080FZK	BBT30P080FZK	BBT30P080FZK	BBT30P080FZK	BBT30P080FNI	
	Operating instructions (English/French/German/Italian/Swedish/Spanish/Dutch/Portuguese)	ARE7077	Not used	Not used	Not used	ARE7077	

Mark	Symbol & Description	Part No.					Remarks
		A-605R /HY/EW	A-605R /HY/GR	A-605R /SD	A-605R /HV	A-605R-G /HY/EW	
NSP	Operating instructions (German)	Not used	ARC7125	Not used	Not used	Not used	*2
	Operating instructions (English/Spanish/Chinese)	Not used	Not used	ARE7078	Not used	Not used	
	Operating instructions (English)	Not used	Not used	Not used	ARB7080	Not used	
	Remote control unit (CU – A013)	AXD7053	AXD7053	AXD7053	AXD7053	Not used	
	Remote control unit (CU – A015)	Not used	Not used	Not used	Not used	AXD7054	
	Packing case	AHD7308	AHD7308	AHD7326	AHD7308	AHD7315	
	Battery cover	AZN2249	AZN2249	AZN2249	AZN2249	AZN2250	
Air cap	Not used	Not used	Not used	AHG1087	Not used		

Notes \*1 : Refer to page 4.  
\*2 : Refer to page 5.

### AC PRIMARY ASSEMBLY

AWZ7946, AWZ7943 and AWZ7944 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ7944	AWZ7946	AWZ7943	
△	RY801 H3, H4 Fuse holder H5, H6 Fuse holder	ASR1044 Not used RKR1003	ASR1036 RKR1003 RKR1003	ASR1044 Not used Not used	*3

Note \*3 : Refer to SCH-4.

### 8.2 FOR A-505R/HY/EW AND HY/GR

A-505R/HY/EW, HY/GR and A-605R/HY/EW have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		A-605R /HY/EW	A-505R /HY/EW	A-505R /HY/GR	
NSP	CONTROL assembly	AWG7006	AWG7002	AWG7002	*4
	FRONT R assembly	AWZ8398	AWZ7935	AWZ7935	
NSP	AF COMPLEX assembly	AWK7307	AWK7308	AWK7308	
	AF assembly	AWZ7932	AWZ7933	AWZ7933	
	FRONT L assembly	AWZ8397	AWZ7938	AWZ7938	
△	T1 Power transformer (AC220 – 230V)	ATS7128	ATS7127	ATS7127	
	Pocket holder assembly	ANG1864	Not used	Not used	
	Foot	AMR1159	Not used	Not used	
	Insulator	Not used	PNW1912	PNW1912	
NSP	Screw (STEEL) (For foot)	ABA1004	Not used	Not used	
	Screw (For door panel)	ABA7023	Not used	Not used	
	Pocket spring	ABH7114	Not used	Not used	
	Cord with plug	ADH1003	Not used	Not used	
	Pocket lock	AMR2587	Not used	Not used	
	Hinge L	AMR7115	Not used	Not used	
	Hinge R	AMR7116	Not used	Not used	
	Panel stopper mould	AMR7117	Not used	Not used	
	Dumper	AXA7036	Not used	Not used	
	Rotary knob C	AAB7089	Not used	Not used	

Mark	Symbol & Description	Part No.			Remarks
		A-605R /HY/EW	A-505R /HY/EW	A-505R /HY/GR	
	Rotary knob A Rotary knob L Top cover Metal bonnet Door panel  Front panel Screw (For dumper) Operating instructions (English/French/German/Italian/ Swedish/Spanish/Dutch/Portuguese)  Operating instructions (German) Packing case	Not used AAB7090 AME1086 ANE7119 ANB7050  ANB7052 BPZ20P080FMC ARE7077  Not used AHD7308	AAB7088 AAB7087 Not used ANE7118 Not used  ANB7051 Not used ARE7077  Not used AHD7307	AAB7088 AAB7087 Not used ANE7118 Not used  ANB7051 Not used Not used  ARC7125 AHD7307	For rotary knob C

Note \*4 : Refer to page 4.

### FRONT R ASSEMBLY

AWZ7935 and AWZ8398 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8398	AWZ7935	
	S602 VR601 (500kΩ - B)	ASD7009 ACS7015	ASD7001 ACS7014	

### AF ASSEMBLY

AWZ7933 and AWZ7932 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7932	AWZ7933	
△	D454 R458, R459 RY403 Heat sink fitting Heat sink L  Heat sink M	MTZJ33B RD1/4PMF2R2J ASR1035 ANG7095 ANH7044  Not used	MTZJ30B RD1/4PMF100J ASR7001 Not used Not used  ANH7043	For heat sink L

### FRONT L ASSEMBLY

AWZ7938 and AWZ8397 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8397	AWZ7938	
	VR751, VR752 (30kΩ - B5X2)	ACS7017	ACS7016	

### 8.3 FOR A-405R/HY/EW, HY/GR, HV AND A-405R-G/HY/EW

A-405R/HY/EW, HY/GR, HV, A-405-G/HY/EW and A-605R/HY/EW have the same construction except for the following:

Mark	Symbol & Description	Part No.					Remarks
		A-605R /HY/EW	A-405R /HY/EW	A-405R /HY/GR	A-405R /HV	A-405R-G /HY/EW	
NSP	CONTROL assembly	AWG7006	AWG7003	AWG7003	AWG7005	AWG7003	
	AC PRIMARY assembly	AWZ7944	AWZ7945	AWZ7945	AWZ7943	AWZ7945	
	FRONT R assembly	AWZ8398	AWZ7936	AWZ7936	AWZ7936	AWZ7936	
NSP	AF COMPLEX assembly	AWK7307	AWK7309	AWK7309	AWK7309	AWK7309	
	AF assembly	AWZ7932	AWZ7934	AWZ7934	AWZ7934	AWZ7934	
△	FRONT L assembly	AWZ8397	AWZ7938	AWZ7938	AWZ7938	AWZ7938	
△	FU3 Fuse (T500mA)	AEK1051	Not used	Not used	Not used	Not used	
△	AC power cord	ADG1154	ADG1154	ADG1154	ADG1156	ADG1154	
△	Fuse (T5A) (With in AC pulg)	Not used	Not used	Not used	AEK1046	Not used	
△	AC socket 3 – P	AKP – 502	Not used	Not used	Not used	Not used	
△	T1 Power transformer (AC220 – 230V)	ATS7128	ATS7126	ATS7126	ATS7126	ATS7126	
	Rear panel	ANC7424	ANC7423	ANC7423	ANC7426	ANC7423	
	Pocket holder assembly	ANG1864	Not used	Not used	Not used	Not used	
	Foot	AMR1159	Not used	Not used	Not used	Not used	
	Insurator	Not used	PNW1912	PNW1912	PNW1912	PNW1912	*5
	Screw (STEEL) (For foot)	ABA1004	Not used	Not used	Not used	Not used	
	Screw (For door panel)	ABA7023	Not used	Not used	Not used	Not used	
	Pocket spring	ABH7114	Not used	Not used	Not used	Not used	
NSP	Cord with plug	ADH1003	Not used	Not used	Not used	Not used	
	Pocket lock	AMR2587	Not used	Not used	Not used	Not used	
	Hinge L	AMR7115	Not used	Not used	Not used	Not used	
	Hinge R	AMR7116	Not used	Not used	Not used	Not used	
	Panel stopper mould	AMR7117	Not used	Not used	Not used	Not used	
	Dumper	AXA7036	Not used	Not used	Not used	Not used	
	Name plate	VAM1032	VAM1032	VAM1032	VAM1032	VAM1051	
	Rotary knob C	AAB7089	Not used	Not used	Not used	Not used	
	Rotary knob A (For rotary knob C)	Not used	AAB7088	AAB7088	AAB7088	AAB7093	
	Rotary knob L	AAB7090	AAB7087	AAB7087	AAB7087	AAB7097	
	Rotary knob B	AAB7091	AAB7091	AAB7091	AAB7091	AAB7095	
	Speaker button	AAD7290	AAD7290	AAD7290	AAD7290	AAD7298	
	Selfillmi button A	AAD7291	AAD7291	AAD7291	AAD7291	AAD7299	
	Selfillmi button B	AAD7292	AAD7292	AAD7292	AAD7292	AAD7300	
	Power button	AAD7293	AAD7293	AAD7293	AAD7293	AAD7301	
	Muting button	AAD7294	Not used	Not used	Not used	Not used	
	Top cover	AME1086	Not used	Not used	Not used	Not used	
	Metal bonnet	ANE7119	ANE7118	ANE7118	ANE7118	ANE7127	
	Panel base	AMB7362	AMB7362	AMB7362	AMB7362	AMB7369	
	Door panel	ANB7050	Not used	Not used	Not used	Not used	
	Front panel	ANB7052	ANB7049	ANB7049	ANB7049	ANB7058	
	Screw (For dumper)	BPZ20P080FMC	Not used	Not used	Not used	Not used	
	Screw (For bonnet)	BBT30P080FZK	BBT30P080FZK	BBT30P080FZK	BBT30P080FZK	BBT30P080FNI	
	Operating instructions (English/French/German/Italian/ Swedish/Spanish/Dutch/Portuguese)	ARE7077	ARE7077	Not used	Not used	ARE7077	
	Operating instructions (German)	Not used	Not used	ARC7125	Not used	Not used	
	Operating instructions (English)	Not used	Not used	Not used	ARB7080	Not used	
	Remote control unit (CU – A013)	AXD7053	AXD7053	AXD7053	AXD7053	Not used	
	Remote control unit (CU – A015)	Not used	Not used	Not used	Not used	AXD7054	
	Packing case	AHD7308	AHD7306	AHD7306	AHD7306	AHD7316	
	Battery cover	AZN2249	AZN2249	AZN2249	AZN2249	AZN2250	
NSP	Air cap	Not used	Not used	Not used	AHG1087	Not used	*6

Notes \*5 : Refer to page 4.  
\*6 : Refer to page 5.

**AC PRIMARY ASSEMBLY**

AWZ7945, AWZ7943 and AWZ7944 have the same construction except for the following:

Mark	Symbol & Description	Part No.			Remarks
		AWZ7944	AWZ7945	AWZ7943	
△	CN802 AC socket 1 – P H5, H6 Fuse holder	Not used RKR1003	AKP1034 Not used	Not used Not used	

**FRONT R ASSEMBLY**

AWZ7936 and AWZ8398 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8398	AWZ7936	
	Q611 R621 S602 S605 VR601 (500kΩ – B)	DTA124ES RD1/4PU223J ASD7009 ASG1034 ACS7015	Not used Not used ASD7001 Not used ACS7014	

**AF ASSEMBLY**

AWZ7934 and AWZ7932 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ7932	AWZ7934	
	C451 C452 C464 C465, C466 D453	ACH7046 (15000µF/50V) ACH7047 (15000µF/50V) Not used CEAS100M50 MTZJ36D	ACH7048 (10000µF/42V) ACH7049 (10000µF/42V) CEAS100M50 Not used Not used	*7
	D454 D455 D456 IC452 Q301, Q302	MTZJ33B MTZJ4.7A Not used NJM79L15A 2SC2878	Not used MTZJ4.7C MTZJ10C NJM79M05FA Not used	*7
	Q451 Q452 R301, R302 R303, R304 R319	2SC4793 2SB1238X RD1/4PU102J RD1/4PU181J RD1/4PU824J	Not used Not used Not used Not used Not used	
△ △ △ △	R451 R452 R453 R454 R460	RS1MMF330J RD1/4MUF101J RS2MMF122J RS2MMF182J Not used	RS1MMF100J RD1/4MUF4R7J Not used Not used RD1/4PU472J	*7
	RY403 Heat sink fitting Heat sink Heat sink L Heat sink M	ASR1035 ANG7095 ANH1150 ANH7044 Not used	ASR7001 Not used Not used Not used ANH – 697	For heat sink
	Heat sink S	Not used	ANH7042	For heat sink L

Note \*7 : Refer to SCH-2.

## FRONT L ASSEMBLY

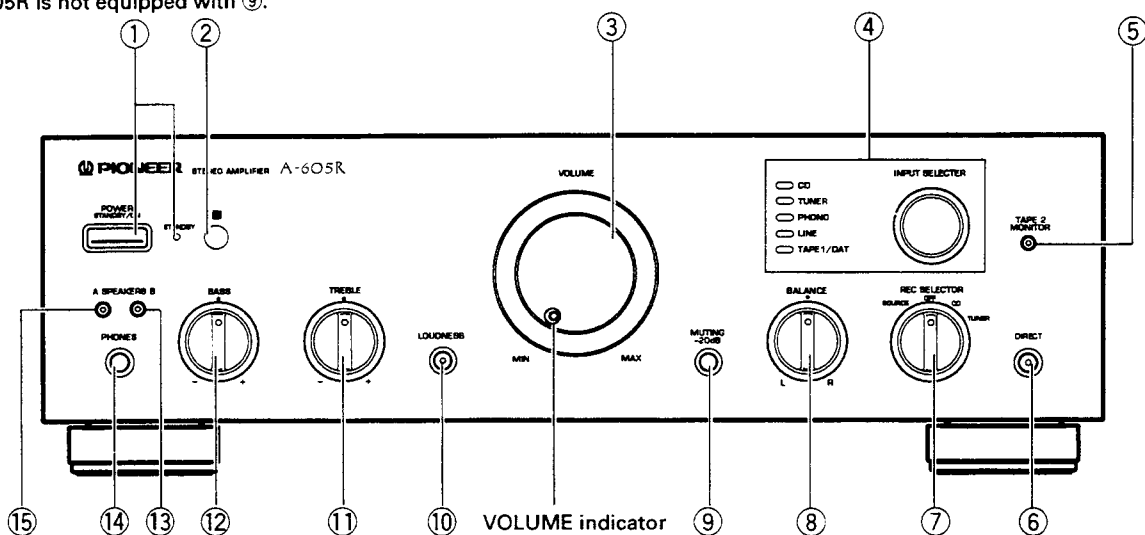
AWZ7938 and AWZ8397 have the same construction except for the following:

Mark	Symbol & Description	Part No.		Remarks
		AWZ8397	AWZ7938	
	VR751, VR752 (30kΩ - B5X2)	ACS7017	ACS7016	

## 9. PANEL FACILITIES

### [FRONT PANEL]

The illustration shows mode A-605R.  
The illustration shows the hinged panel open.  
Model A-405R is not equipped with ⑨.



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

This is the switch for electric power.

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

**STANDBY** : When set to the 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. When the STANDBY indicator lights, the unit is in STANDBY.

#### NOTE:

When performing timer recording with this unit, be sure to set the POWER STANDBY/ON switch to ON.

#### ② Remote control sensor window

#### ③ VOLUME control

Use to adjust the volume level.

#### NOTE:

The TONE effect functions regardless of volume levels.

#### ④ INPUT SELECTOR knob/indicators

Turn the knob clockwise or counterclockwise so that the indicator lights for your desired input source. Turning the knob clockwise cause the lit indicator to rise. Turning counterclockwise causes it to fall.

**CD** : For compact disc playback with a CD player.

**TUNER** : For AM or FM broadcast reception with a tuner.

**PHONO** : For record playback with a turntable.

**LINE** : Set to this position when listening to a program from a component connected to the LINE terminals.

**TAPE 1/DAT** : For playback with a cassette deck or digital audio cassette deck connected to the TAPE 1/DAT terminals.

#### ⑤ TAPE 2 MONITOR button/indicator

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

**Off** : Indicator goes out when not in use.

**On** : Indicator lights when using the adaptor component or listening to the cassette deck.

#### NOTE:

When no connections are made to the TAPE 2 MONITOR 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.)

**⑥ DIRECT button/indicator**

Use this button when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits (BASS, TREBLE, BALANCE, LOUDNESS).

**On** : The indicator lights. The signals input through the input 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 input source.

**Off** : The indicator goes out. The signal passes through the various frequency adjusting circuits.

**⑦ REC SELECTOR switch (For TAPE 1/DAT terminals)**

When this switch is set to a position other than SOURCE or OFF, the equipment selected by the REC SELECTOR switch can be recorded, irrespective of the INPUT SELECTOR knob and the DIRECT button settings (TAPE 1/DAT terminals).

**SOURCE** : To record from the equipment selected by the INPUT SELECTOR knob.

**OFF** : In this position, nothing from the REC terminals of TAPE 1/DAT is output. Set to this position when not recording; the cassette deck will be disconnected, improving sound quality.

**CD** : To record from the equipment connected to the CD terminals.

**TUNER** : To record from the equipment connected to the TUNER terminals.

**NOTE:**

*The function selected using the INPUT SELECTOR knob will be recorded irrespective of the position of the REC SELECTOR switch (TAPE 2 MONITOR terminals).*

**⑧ BALANCE control**

Should normally be left in the center position. Adjust the 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 control does not operate when the DIRECT button is in the on position.*

**⑨ MUTING button/indicator (A-605R and A-505R only)**

Use to temporarily lower sound volume.

**On** : The VOLUME indicator flashes. The sound volume is lowered to one-tenth (-20dB).

**Off** : The VOLUME indicator lights. The sound will return to its previous volume.

**⑩ LOUDNESS button/indicator**

Use when listening at low volume level.

**On** : The indicator lights. Boosts low and high frequencies to give added punch to playback even at low volume level.

**Off** : The indicator goes out. Should normally be left in this position.

**NOTE:**

*This button does not operate when the DIRECT button is in the on position.*

**⑪ TREBLE tone control**

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

**NOTE:**

*This control does not operate when the DIRECT button is in the on position.*

**⑫ BASS tone control**

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

**NOTE:**

*This control does not operate when the DIRECT button is in the on position.*

**⑬ SPEAKERS B selector button/indicator**

Use this button to listen to the speaker system connected to the SPEAKERS B terminals.

**On** : The indicator lights. Sound is heard from the speaker system.

**Off** : The indicator goes out. No sound is heard from the speaker system. Set to this position when listening with headphones.

**⑭ PHONES jack**

When using headphones, insert the plug into this jack.

**⑮ SPEAKERS A selector button/indicator**

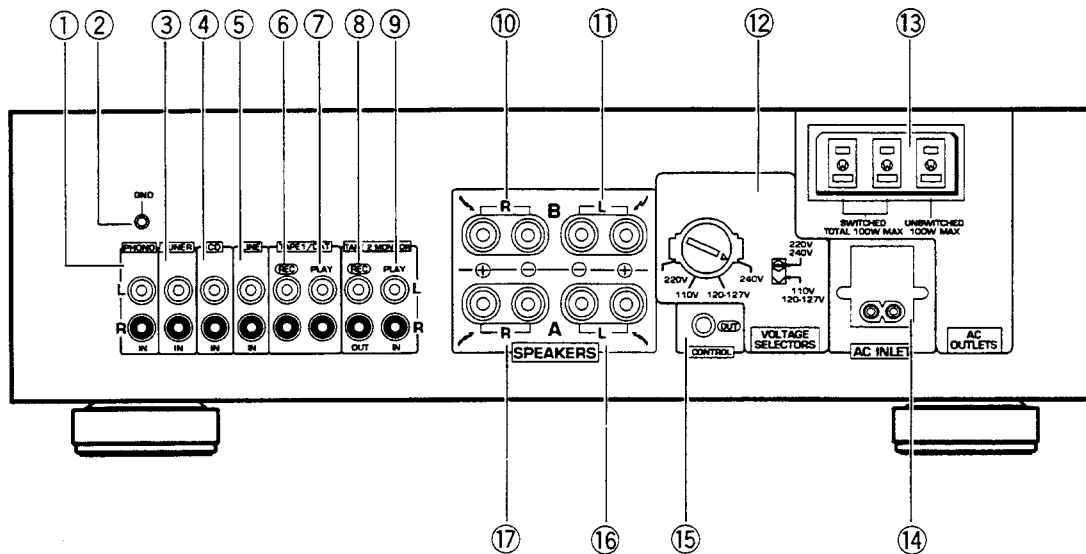
Use this button to listen to the speaker system connected to the SPEAKERS A terminals.


**On** : The indicator lights. Sound is heard from the speaker system.

**Off** : The indicator goes out. No sound is heard from the speaker system. Set to this position when listening with headphones.

## [REAR PANEL]

Illustration shows Multi-voltage model.



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>① PHONO terminals</li> <li>② GND (Turntable ground) terminal</li> <li>③ TUNER terminals</li> <li>④ CD terminals</li> <li>⑤ LINE terminals</li> <li>⑥ TAPE 1/DAT REC terminals</li> <li>⑦ TAPE 1/DAT PLAY terminals</li> <li>⑧ TAPE 2 MONITOR REC (OUT) terminals</li> <li>⑨ TAPE 2 MONITOR PLAY (IN) terminals</li> </ul> | <ul style="list-style-type: none"> <li>⑩ SPEAKERS B terminals (Right channel)</li> <li>⑪ SPEAKERS B terminals (Left channel)</li> <li>⑫ VOLTAGE SELECTORS</li> <li>⑬ AC OUTLETS</li> <li>⑭ AC INLET jack<br/>Connect one end of the power cord to here and the other end to an AC wall socket, or the AC outlet of an audio timer. If you are going to be away from home for a long period of time, disconnect the unit from the wall socket.</li> <li>⑮ CONTROL OUT jack<br/>This jack is for outputting control signals when operating other components bearing the  mark with the amplifier's remote control unit.</li> <li>⑯ SPEAKERS A terminals (Left channel)</li> <li>⑰ SPEAKERS A terminals (Right channel)</li> </ul> |
|--|--|

**CAUTION:**  
DO NOT CONNECT MONITOR OR TV SET TO THE AC OUTLET.



# 10. SPECIFICATIONS

## Amplifier Section

### Continuous power output

(both channels driven at 20 Hz to 20 kHz)\*\*

#### [A-605R]

T.H.D. 0.06 %, 8 Ω ..... 60 W + 60 W\*

T.H.D. 0.09 %, 4 Ω ..... 90 W + 90 W\*

#### [A-405R]

T.H.D. 0.06 %, 8 Ω ..... 45 W + 45 W\*

T.H.D. 0.09 %, 4 Ω ..... 65 W + 65 W\*

### DIN Continuous power output (both channels driven at 1 kHz)

#### [A-605R]

T.H.D. 1.0 %, 8 Ω ..... 75 W + 75 W

T.H.D. 1.0 %, 4 Ω ..... 120 W + 120 W

#### [A-405R]

T.H.D. 1.0 %, 8 Ω ..... 60 W + 60 W

T.H.D. 1.0 %, 4 Ω ..... 90 W + 90 W

### Dynamic power output (on EIA dynamic test signal)

#### [A-605R]

4 Ω/ 2 Ω ..... 140 W/ 190 W

#### [A-405R]

4 Ω/ 2 Ω ..... 100 W/ 115 W

### Total harmonic distortion\*\*

20 Hz to 20 kHz, 30 W, 8 Ω ..... 0.05 %\*

### Input sensitivity/ impedance

PHONO (MM) ..... 2.8 mV/ 50 kΩ

CD, TUNER, LINE, TAPE 1/DAT,

TAPE 2 MONITOR ..... 200 mV/ 50 kΩ

### PHONO overload level (MM)

1 kHz, T.H.D. 0.1 % ..... 150 mV

### Output level/ impedance

TAPE 1/DAT, TAPE 2 MONITOR output

..... 200 mV/ 1 kΩ

### Frequency response

PHONO (MM) ..... 20 Hz to 20 kHz ± 0.5 dB

CD, TUNER, LINE, TAPE 1/DAT,

TAPE 2 MONITOR ..... 5 Hz to 150 kHz  $\pm 0.5$  dB\*

### Tone control

BASS ..... ± 8 dB (100 Hz)

TREBLE ..... ± 8 dB (10 kHz)

### Loudness contour (volume control set at - 30 dB position)

..... + 5 dB (100 Hz)/ + 3 dB (10 kHz)

### Signal-to-Noise ratio (IHF short circuit, A network)

#### [A-605R]

PHONO (MM, 5 mV input) ..... 88 dB\*

CD, TUNER, LINE, TAPE 1/DAT,

TAPE 2 MONITOR ..... 108 dB\*

#### [A-405R]

PHONO (MM, 5 mV input) ..... 86 dB\*

CD, TUNER, LINE, TAPE 1/DAT,

TAPE 2 MONITOR ..... 106 dB\*

### Signal-to-Noise ratio (DIN, continuous power/ 50 mW)

PHONO (MM) ..... 71 dB/ 67 dB\*

CD, TUNER, LINE, TAPE 1/DAT,

TAPE 2 MONITOR ..... 95 dB/ 71 dB\*

### MUTING (volume control set at - 30 dB position)

[A-605R and A-505R only] ..... - 20 dB

## Power Supply/ Miscellaneous

Power requirements ..... AC 230 Volts, 50/ 60 Hz

### Power consumption

[A-605R] ..... 550 W

[A-405R] ..... 380 W

### Dimensions (including knobs and other protruding parts)

[A-605R] ..... 420 (W) × 344 (D) × 132 (H) mm

[A-405R] ..... 420 (W) × 344 (D) × 125 (H) mm

### Weight (without package)

[A-605R] ..... 6.6 kg

[A-405R] ..... 6.5 kg

## Accessories

Remote control unit ..... 1

Batteries (AA/R6P) ..... 2

Operating instructions ..... 1

Power cord ..... 1

### NOTE:

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

\* Measured with the DIRECT button set to on.

\*\* 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, benzene, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.