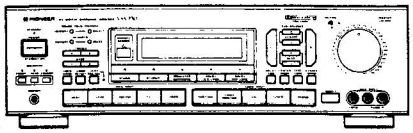
PIONEER®
The future of sound and vision.

Service Manual



ORDER NO.
ARP2012

AV DIGITAL SURROUND AMPLIFIER

VSA-730

VSA – 730 HAS FOLLOWING VERSIONS :

Type	Power requirement	Export destination
HE	AC220V, 240V (switchable) *	European continent
YPW	AC240V only	Australia
SD	AC110V, 120 – 127V, 220V, 240V (switchable)	Kingdom of Saudi Arabia and General market

* Change the primary wiring of the power transformer.

●This manual is applicable to the VSA – 730/HE, YPW and SD types.
●As to the YPW and SD types, refer to page 69.
●Ce manuel pour le service comprend les explications de réglage en français.
● Este manual de servicio trata del método ajuste escrito en español.

CONTENTS

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONICS OF CANADA, INC. 505 Cochrane Drive, Markham, Ontario L3R 8E3 Canada
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia TEL: [03] 580-9911

SV APR. 1990 Printed in Japan

SA-730

1. SPECIFICATIONS

Audio Section

Power output (DIN)
- SURROUND (Center OFF)
  - Front (1 kHz, 1%, 8 Ω) ..... 95 W + 95 W
- SURROUND (Center ON)
  - Front (1 kHz, 1%, 8 Ω) ..... 60 W + 60 W
  - Center (1 kHz, 1%, 8 Ω) ..... 60 W
- Rear (1 kHz, 1%, 8Ω) ..... 15 W + 15 W

Music power (1 kHz, 1%, 8 Ω)
- SURROUND (Center OFF)
  - Front ..... 160 W + 160 W
- SURROUND (Center ON)
  - Front ..... 130 W + 130 W
  - Center ..... 130 W
- Rear ..... 40 W + 40 W

Dynamic power output
- 4 Ω/8 Ω ..... 180 W/110 W

Continuous power output
- STEREO
  - Front (20 Hz to 20 kHz, 0.04%, 8 Ω) ..... 80 W + 80 W
- SURROUND (Center OFF)
  - Front (20 Hz to 20 kHz, 0.04%, 8 Ω) ..... 75 W + 75 W
- SURROUND (Center ON)
  - Front (20 Hz to 20 kHz, 0.04%, 8 Ω) ..... 50 W + 50 W
  - Center (20 Hz to 20 kHz, 0.04%, 8 Ω) ..... 50 W
- Rear (1 kHz, 5%, 8 Ω) ..... 23 W + 23 W

Signal-to-noise ratio (IHF, A network, shorted) DIRECT ON
- PHONO MM 72dB
- CD, TUNER, TAPE 1/DAT, TAPE 2, VDP/CDV, TV, VIDEO, VCR 1, VCR 2 ..... 96dB

Frequency response (DIRECT ON)
- PHONO MM, 20Hz to 20kHz ..... ± 0.3dB
- CD, TUNER, TAPE 1/DAT, TAPE 2, VDP/CDV, TV, VIDEO, VCR 1, VCR 2, 5Hz to 100kHz ..... $^{+0}_{-3}$ dB

Phono overload level
- PHONO MM 1kHz, 0.1% ..... 110 mV

Damping factor (1kHz, 6 Ω) ..... Over 100

Input (sensitivity/impedance)
- PHONO MM ..... 2.5 mV/50 kΩ
- CD, TUNER, TAPE 1/DAT, TAPE 2, VDP/CDV, TV, VIDEO, VCR 1, VCR 2 ..... 150 mV/30 kΩ
- POWER IN (Front, rear, center) ..... 1.0 V/47 kΩ

Output (level/impedance)
- TAPE 1/DAT, TAPE 2 REC OUT ..... 150 mV/2.2 kΩ
- VCR 1, VCR 2 AUDIO REC OUT ..... 150 mV/2.2 kΩ
- PRE OUT (Front, rear, center) ..... 1.0 V/2.2 kΩ

Tone control
- BASS ..... ± 8dB (100 Hz)
- TREBLE ..... ± 8dB (10 kHz)

Loudness contour ..... +6dB/+3dB (100 Hz/10 kHz)

Surround Section

Surround mode
DOLBY PRO LOGIC (NORMAL, WIDE, PHANTOM)
DOLBY 3CH LOGIC (NORMAL, WIDE, PHANTOM)
SIMULATED
STADIUM
STUDIO

Delay time
- For STADIUM, SIMULATED.. 5 mS to 35 mS (Seven 5 mS steps)
- For DOLBY PRO LOGIC ..... 15 mS to 30 mS (Four 5 mS steps)

Composite Video section

Input jacks (Sensitivity/impedance)
- VDP/CDV, TV, VIDEO, VCR 1, VCR 2 ..... 1 Vp-p/75 Ω

Output jacks (Output level/impedance)
- VCR1, VCR 2, MONITOR TV out ..... 1 Vp-p/75 Ω

Frequency response
- VDP/CDV, TV, VIDEO, VCR 1, VCR 2, 10 Hz to 10 MHz .. $^{+0}_{-3}$ dB

Signal-to-noise ratio 60dB

DG/DP ..... 3%/2 degrees

Miscellaneous

Power requirements ..... a.c. 220 Volts~, 50/60 Hz
Power consumption ..... 530 W
Dimensions ..... 420 (W) x 126 (H) x 351 (D) mm
Weight (without package) ..... 10 kg

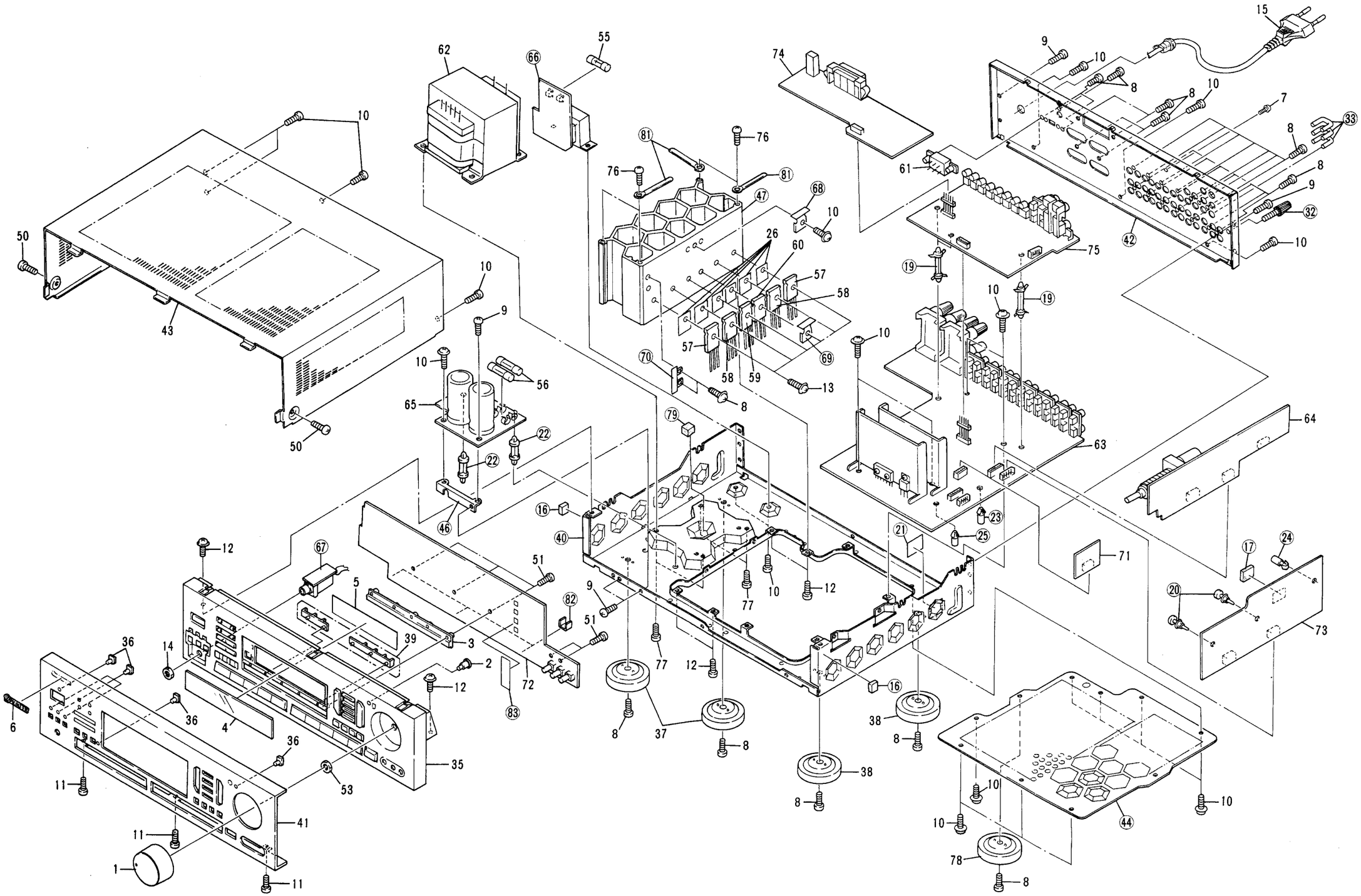
Accessories

Operating instructions 1
Remote control unit 1
Alkaline dry batteries (LR6/AM-3) 2
Templates 2
Cushion spacers (large) 2
Cushion spacers (small) 2

NOTE:
Specifications and design are subject to change without notice due to improvements.

2. EXPLODED VIEW, PACKING AND PARTS LIST

2.1 EXTERIOR

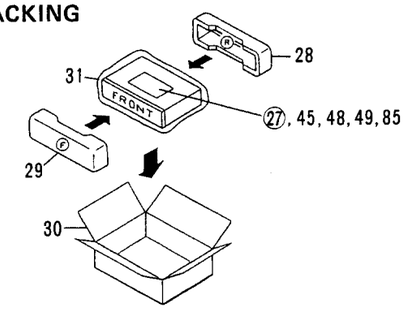


NOTES :
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time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

Parts List of Exterior and Packing

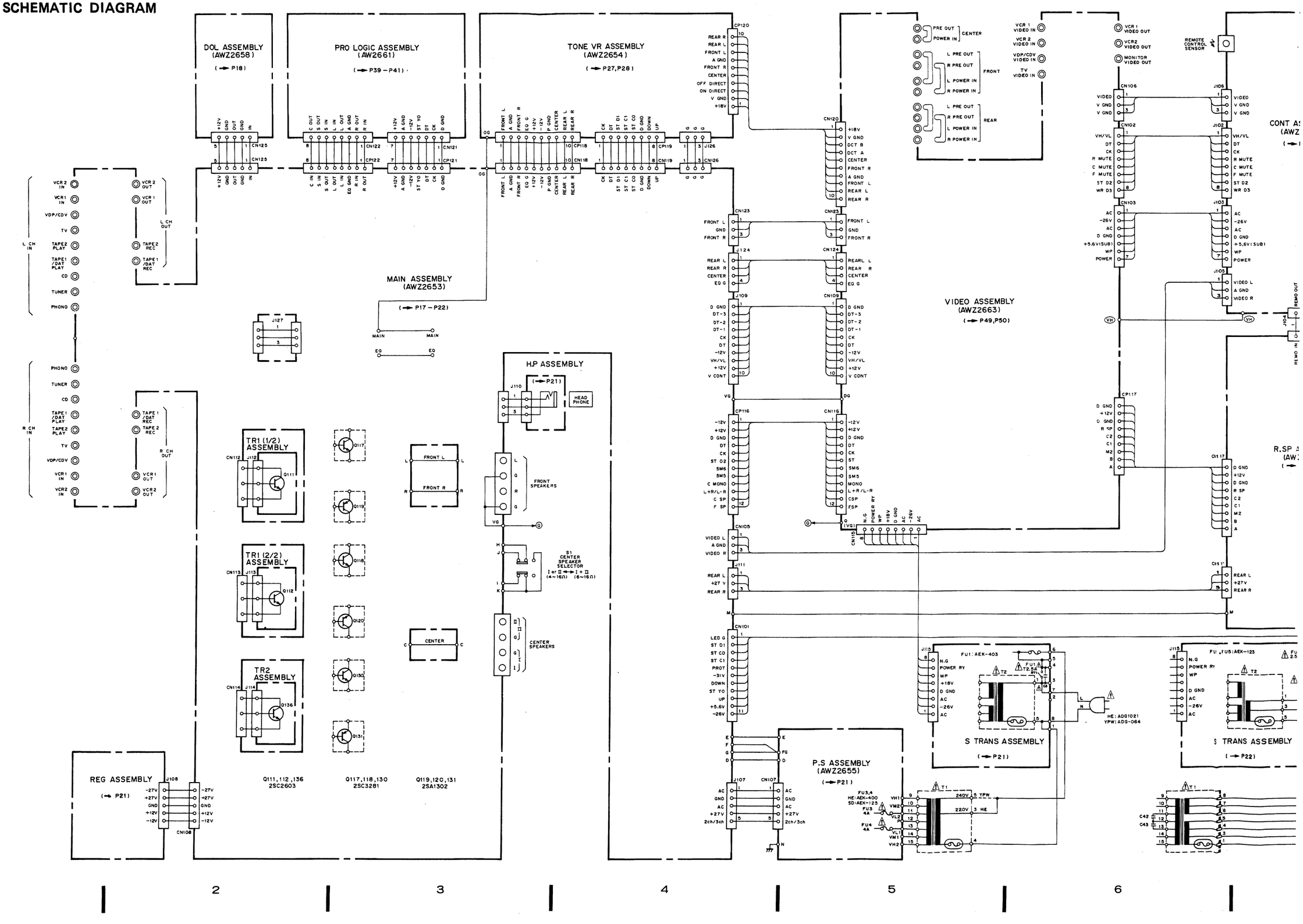
Mark	No.	Part No.	Description
	1	AAB1140	VOL knob
	2	AAD1398	Tact knob
	3	AAD1640	Surround knob
	4	AAK1794	Acrylic panel
	5	AAK1795	FL filter
	6	AAM1029	Name plate
	7	ABA1047	Screw
	8	ABA−298	Screw
	9	ABA1009	Screw
	10	ABA1011	Screw
	11	ABA1048	Screw
	12	ABA1050	Screw
	13	ABA1082	Screw
	14	ABN−065	Nut
⚠	15	ADG1021	AC power cord
	16		Cushion
	17		Cushion rubber
	18		.....
	19		P.C.B. support
	20		Rivet
	21		Sheet
	22		P.C.B. support A
	23		P.C.B. support (H9.3)
	24		P.C.B. support (H20)
	25		P.C.B. support (H14)
	26	AEE1014	Mica sheet
	27		Battery
	28	AHA1210	Rear pad
	29	AHA1302	Front pad
	30	AHD1848	Packing case
	31	AHG1016	Sheet
	32		Terminal screw
	33		Jumper plug
	34		.....
	35	AMB1552	Panel base
	36	AMR1160	Indicating lens
	37	AMR1434	Insulator assembly
	38	AMR1435	Insulator assembly
	39	AMR1941	Acrylic lens
	40		Chassis
	41	ANB1351	Front panel
	42		Rear panel
	43	ANE1205	Bonnet
	44		Bottom plate
	45	ARC1206	Operating instructions (Dutch/Swedish/Spanish/Portguese)
	46		P.C.B. holder
	47		Heat sink
	48	ARE1159	Operating instructions (English/German/French/Italian)
	49	AXD1144	Remote control unit (CU−VSA007)
	50	BBT30P060FZK	Screw
	51	BBZ26P080FMC	Screw
	52		.....
	53	ABN1006	Nut
	54		.....
⚠	55	AEK−403	Fuse (FU1 T2.5A)
⚠	56	AEK−400	Fuse (FU4, 3 T4A)
⚠	57	2SC3281	Transistor Q117, 118
⚠	58	2SA1302	Transistor Q119, 120
⚠	59	2SC3281	Transistor Q130
⚠	60	2SA1302	Transistor Q131
	61	AKX1004	Speaker selector S1
⚠	62	ATS1270	Power transformer T1
	63	AWZ2653	Main assembly
	64	AWZ2654	Tone VR assembly
	65	AWZ2655	PS assembly
	66		S.Trans assembly
	67		H.P assembly
	68		TR1 assembly
	69		TR2 assembly
	70		REG. assembly
	71	AWZ2658	DOL assembly
	72	AWZ2660	CONT assembly
	73	AWZ2661	Prologic assembly
	74	AWZ2922	R.SP assembly
	75	AWZ2663	Video assembly
	76	ABA1073	Screw
	77	ABA1053	Screw
	78	AEC1212	Leg assembly
	79		Cushion rubber
	80		.....
	81		Nylon binder
	82		Spacer
	83		Acetate tape
	84		.....
	85	AEC1219	Spacer set

2.2 PACKING

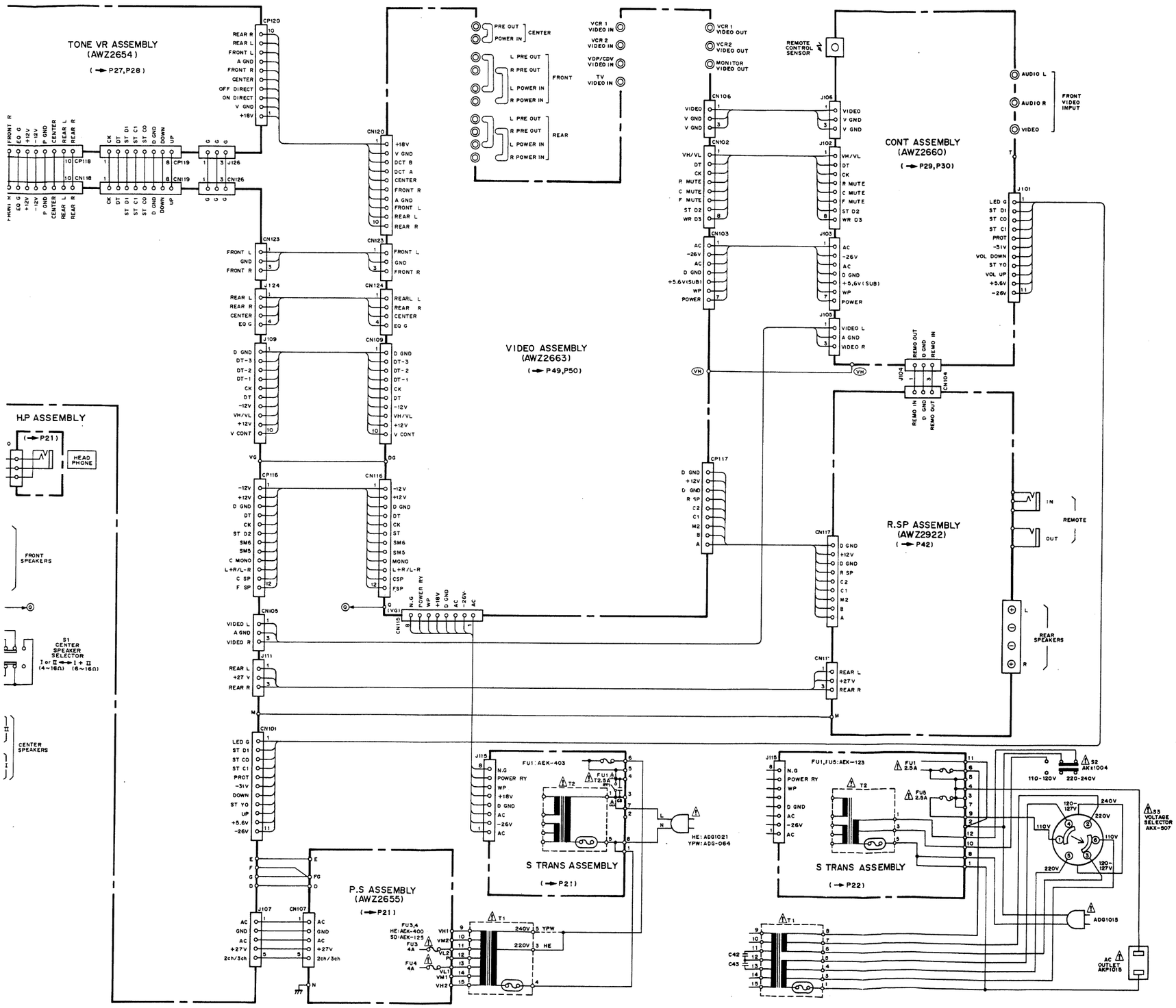


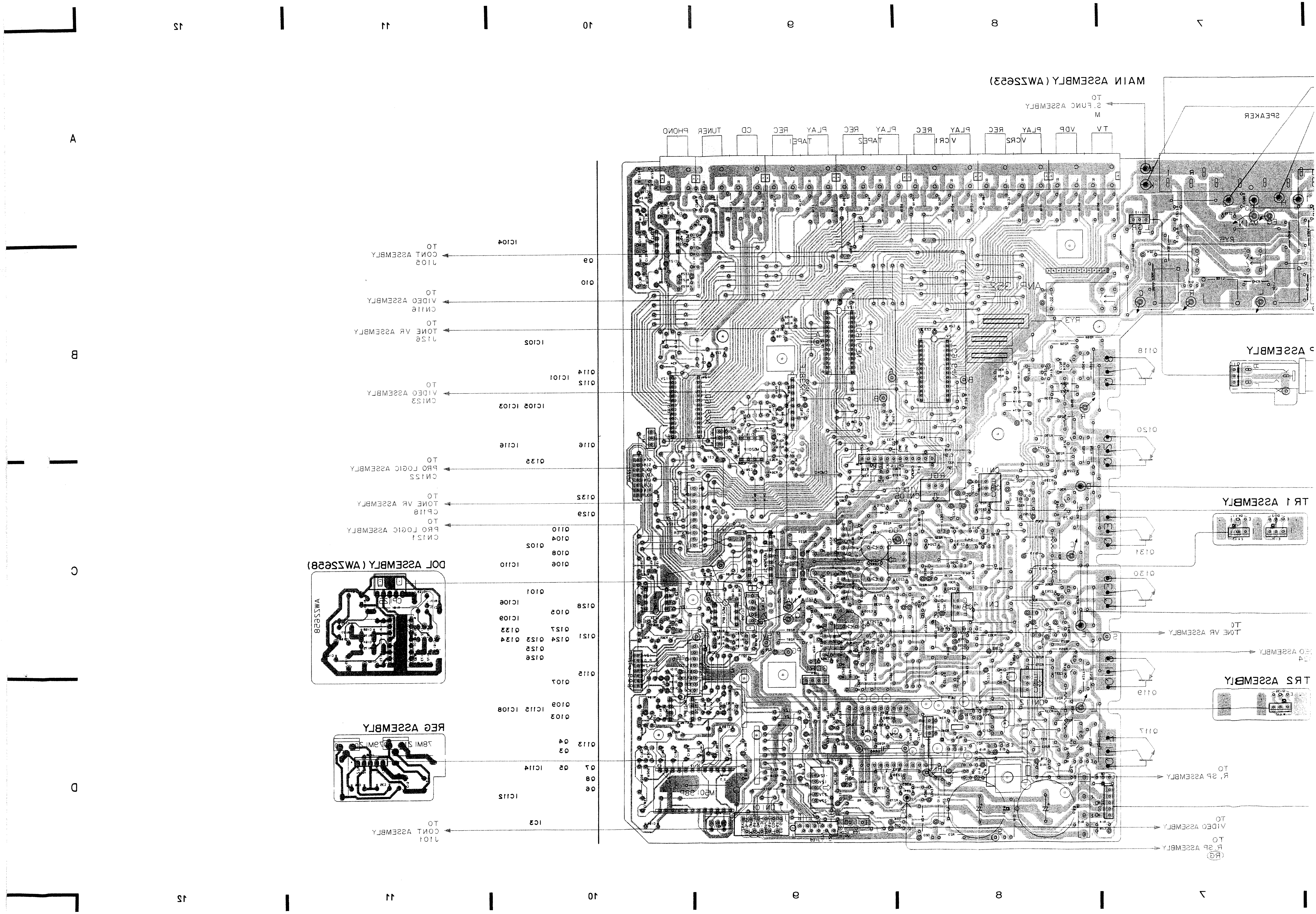
3. SCHEMATIC AND P.C. BOARDS CONNECTION DIAGRAMS

3.1 OVER ALL SCHEMATIC DIAGRAM



RAMS

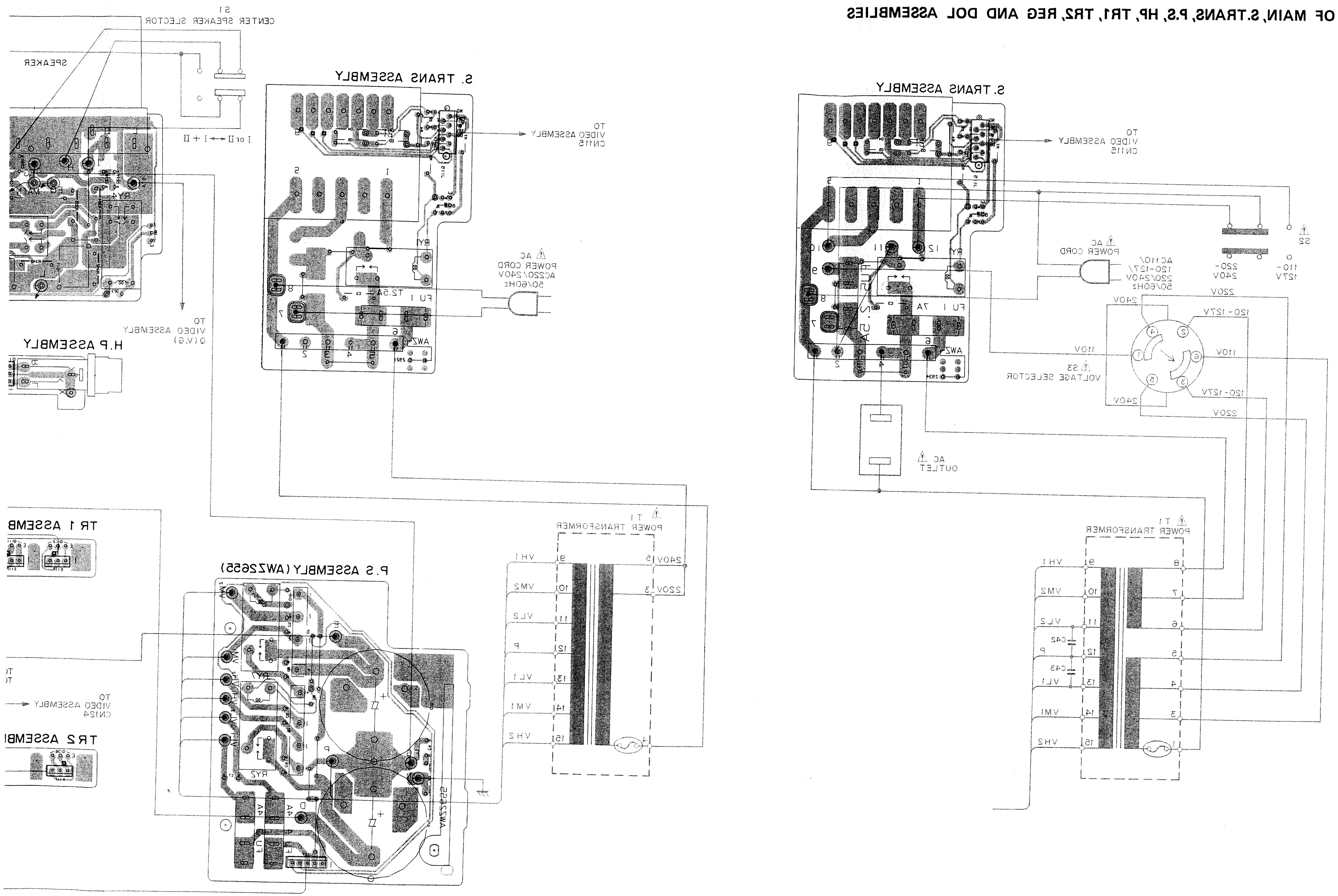

TONE VR ASSEMBLY
(AWZ2654)
(➡P27,P28)
VIDEO ASSEMBLY
(AWZ2663)
(➡P49,P50)
CONT ASSEMBLY
(AWZ2660)
(➡P29,P30)
R.SP ASSEMBLY
(AWZ2922)
(➡P42)
P.S ASSEMBLY
(AWZ2655)
(➡P21)
S TRANS ASSEMBLY
(➡P21)
S TRANS ASSEMBLY
(➡P22)
H.P ASSEMBLY
(➡P21)
HEAD PHONE
FRONT SPEAKERS
S1 CENTER SPEAKER SELECTOR
CENTER SPEAKERS
REMOTE CONTROL SENSOR
FRONT VIDEO INPUT
REMOTE
REAR SPEAKERS
VOLTAGE SELECTOR AKX-907
AC OUTLET AKP1015
ADG1015
FU1:AEK-403
FU1,FU5:AEK-123
HE:ADG1021
YPW:ADG-064



MAIN ASSEMBLY (AWZ2653)
TO S.FUNC ASSEMBLY M
SPEAKER
PHONO
TUNER
CD
REC PLAY TAPE1
REC PLAY TAPE2
REC PLAY VCR1
REC PLAY VCR2
VDP
TV
TO CONT ASSEMBLY J105
TO VIDEO ASSEMBLY CN116
TO TONE VR ASSEMBLY J126
TO VIDEO ASSEMBLY CN123
TO PRO LOGIC ASSEMBLY CN122
TO TONE VR ASSEMBLY CP118
TO PRO LOGIC ASSEMBLY CN121
DOL ASSEMBLY (AWZ2658)
AWZ2658
REG ASSEMBLY
TO CONT ASSEMBLY J101
TO TONE VR ASSEMBLY
TO R, SP ASSEMBLY
TO VIDEO ASSEMBLY
TO R, SP ASSEMBLY (RG)
TR1 ASSEMBLY
TR2 ASSEMBLY
ANP1352
M50138P

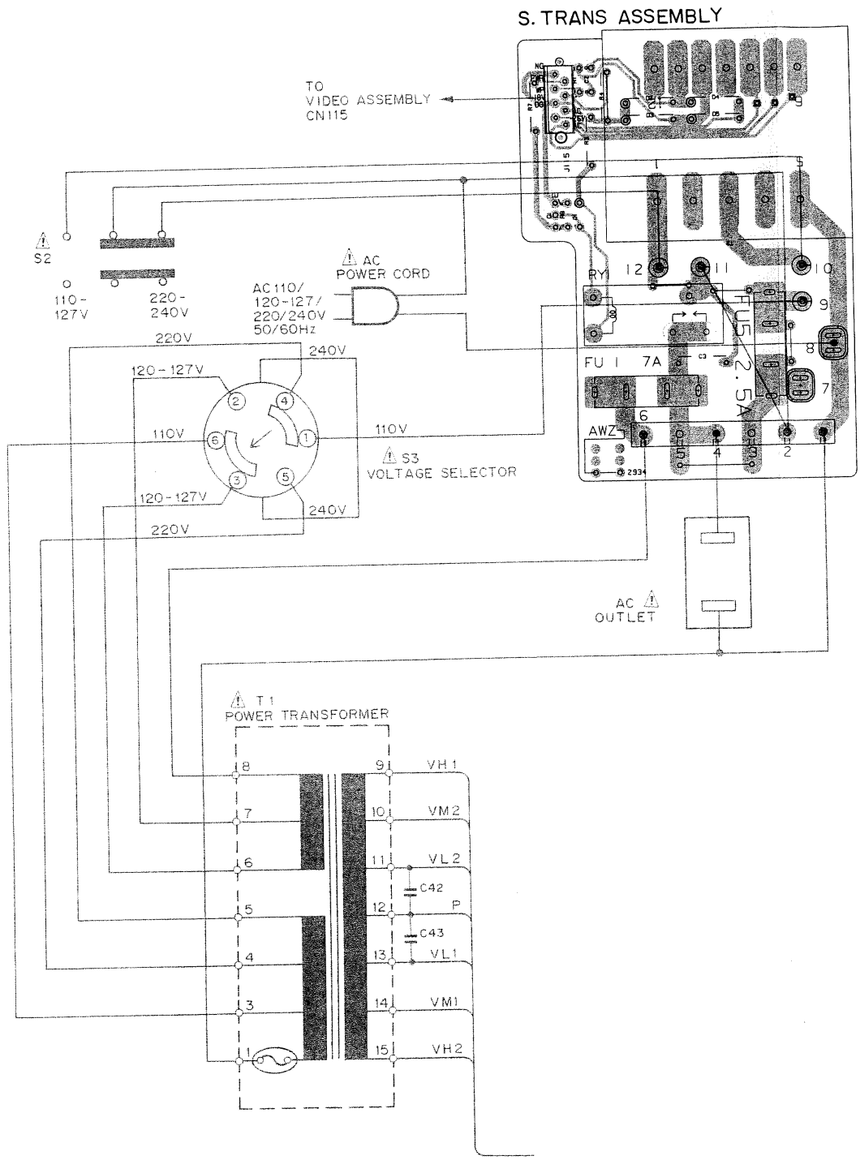
3.2 P.C.BOARD PATTERNS OF MAIN, S.TRANS, P.S, HP, TR1, TR2, REG AND DOL ASSEMBLIES

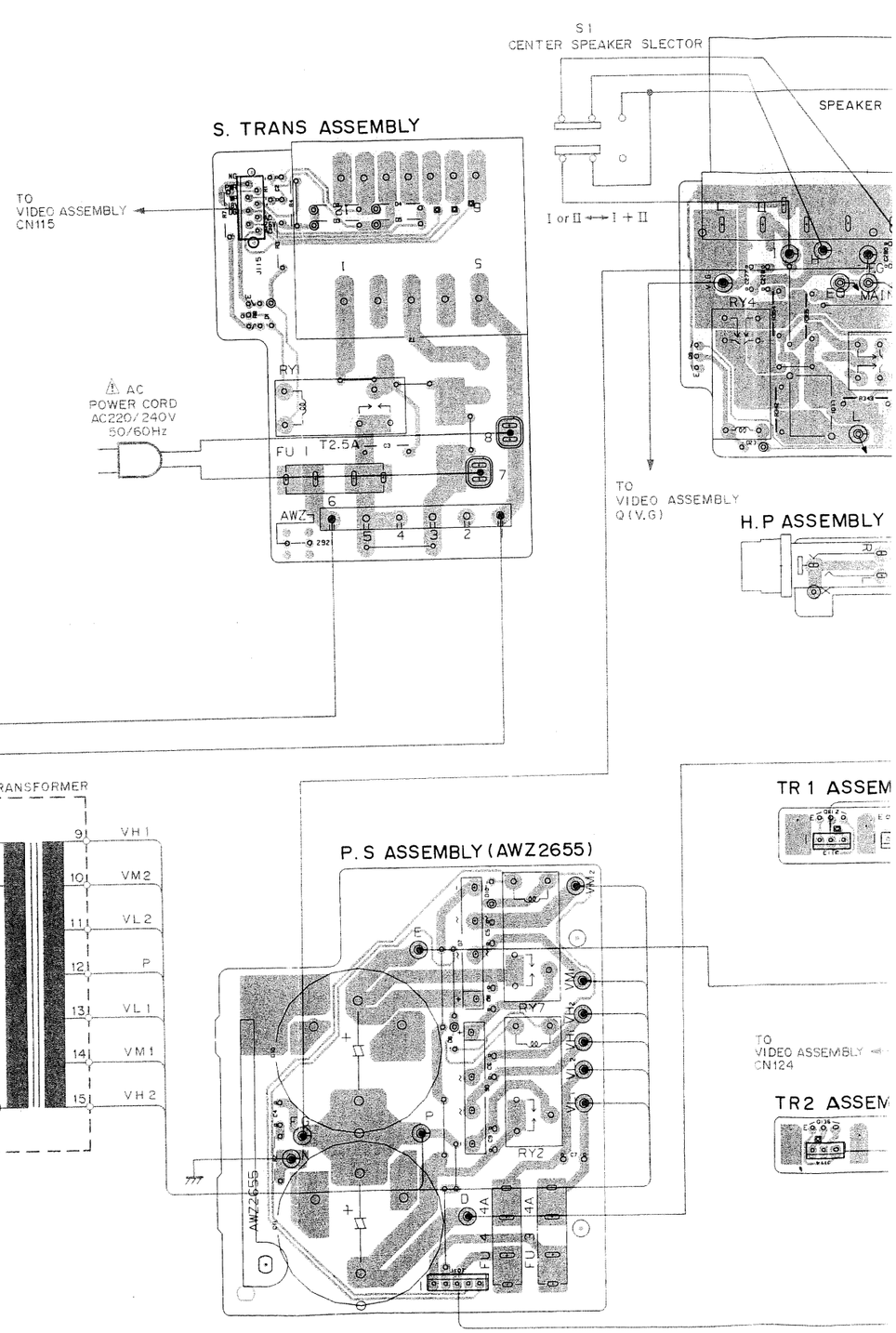
• View from soldering side



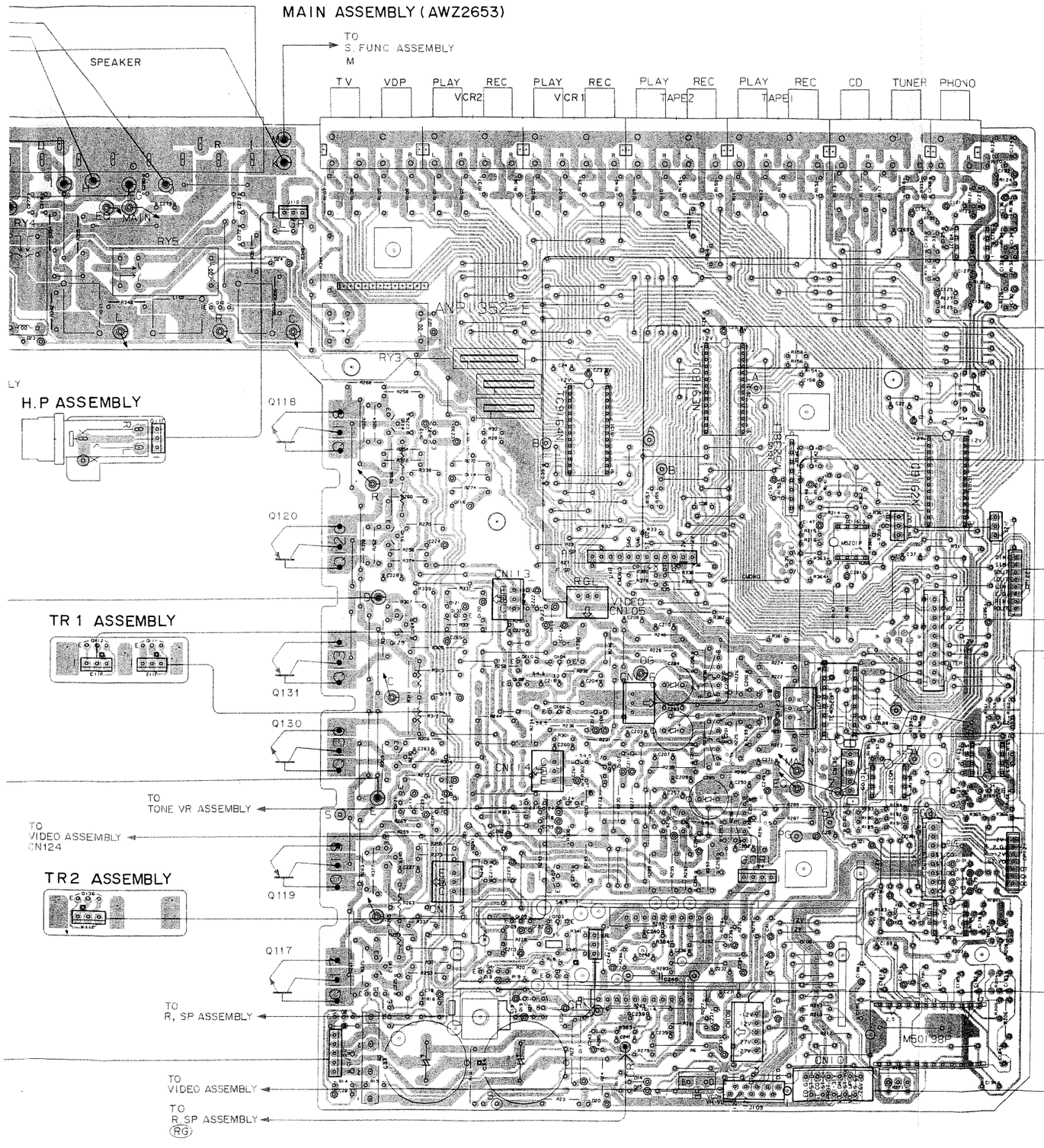
3.2 P.C.BOARD PATTERNS OF MAIN, S.TRANS, P.S, HP, TR1, TR2, REG AND DOL ASSEMBLIES

- View from component side





MAIN ASSEMBLY (AWZ2653)



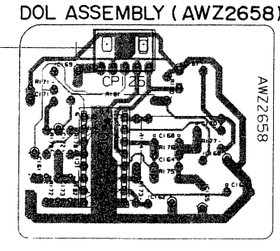
IC104
- Q9 → TO CONT ASSEMBLY J105
- Q10 → TO VIDEO ASSEMBLY CN116

IC102
- TO TONE VR ASSEMBLY J126

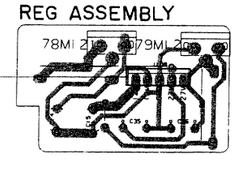
IC101
- Q114, Q112 → TO VIDEO ASSEMBLY CN123

IC105 IC103
- Q116 → IC116
- Q135 → TO PRO LOGIC ASSEMBLY CN122
- Q132 → TO TONE VR ASSEMBLY CP118
- Q129 → TO PRO LOGIC ASSEMBLY CN121
- Q110, Q104, Q102, Q108, Q106 → IC110
- Q101, IC106, IC109, Q128, Q105, Q127, IC133, Q121, Q124, Q123, Q134, Q125, Q126, Q115, Q107, Q109, Q103, IC115, IC108
- Q113 → Q4, Q3
- Q7, Q8, Q6 → Q5, IC114, IC112
- IC3 → TO CONT ASSEMBLY J101

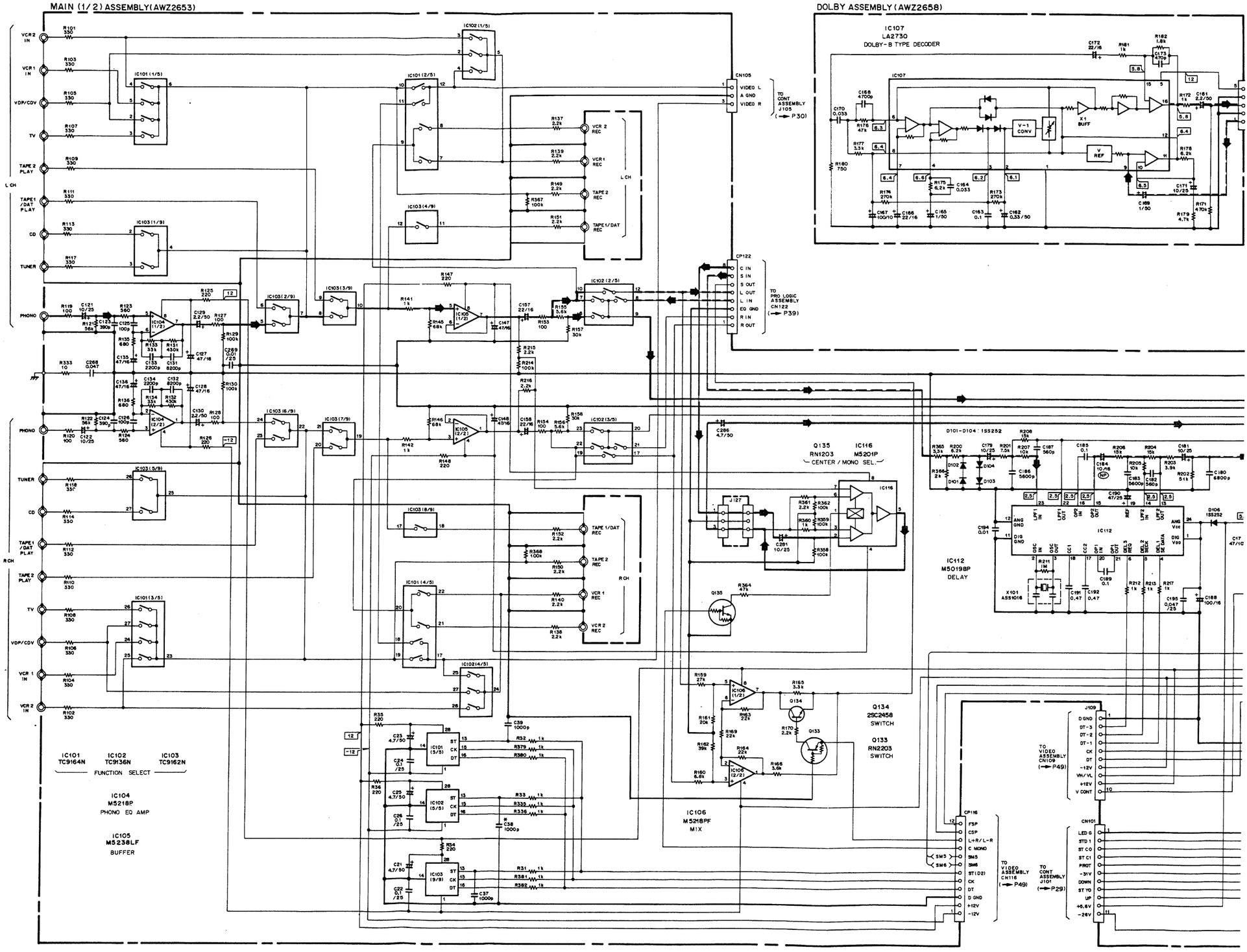
DOL ASSEMBLY (AWZ2658)

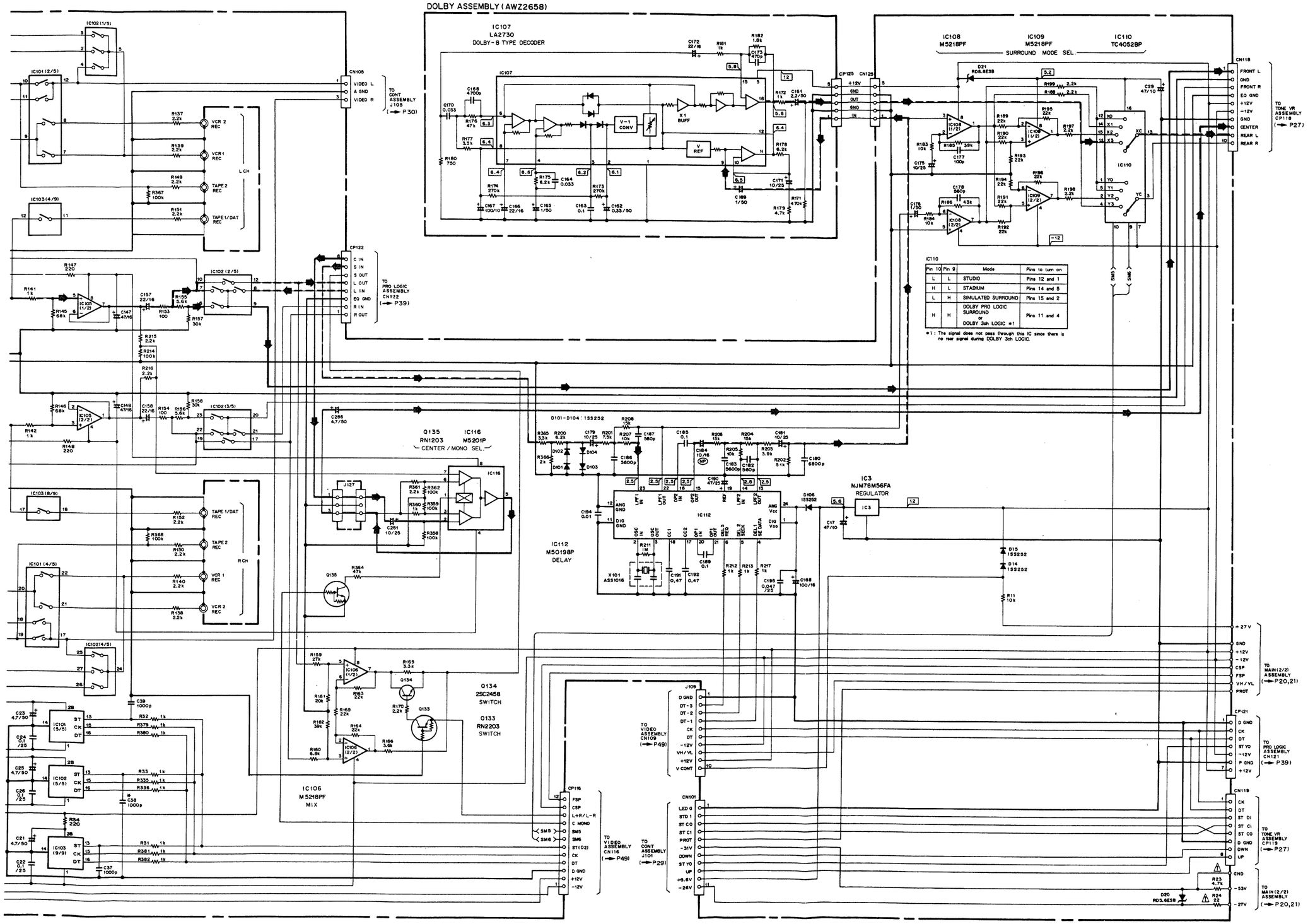


REG ASSEMBLY

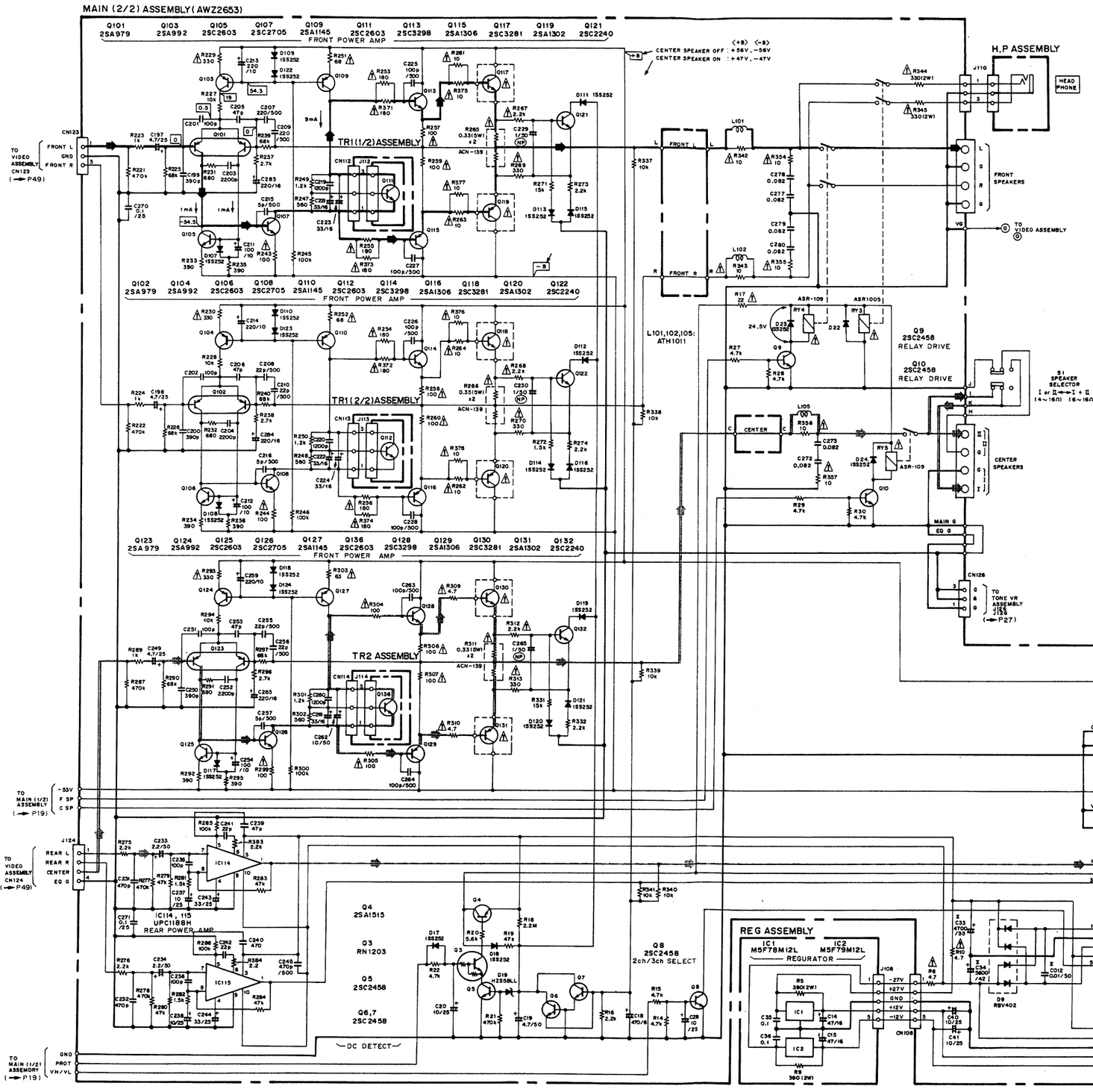


3.3 SCHEMATIC DIAGRAMS OF MAIN(1/2) AND DOL ASSEMBLIES




DOLBY ASSEMBLY (AWZ2658)
IC107
LA2730
DOLBY-B TYPE DECODER
IC108
M5218PF
IC109
M5218PF
IC110
TC40528P
SURROUND MODE SEL.
IC110
Pin 10 | Pin 9 | Mode | Pins to turn on
L | L | STUDIO | Pins 12 and 1
H | L | STADIUM | Pins 14 and 5
L | H | SIMULATED SURROUND | Pins 15 and 2
H | H | DOLBY PRO LOGIC SURROUND or DOLBY 3ch LOGIC *1 | Pins 11 and 4
*1 : The signal does not pass through this IC since there is no rear signal during DOLBY 3ch LOGIC.
IC112
M50198P
DELAY
IC106
M5218PF
MIX
Q135 IC116
RN1203 M5201P
CENTER / MONO SEL.
Q134
2SC2458
SWITCH
Q133
RN2203
SWITCH
IC3
NJM78M56FA
REGULATOR
D101-D104 : 1SS252
CN105
VIDEO L
A GND
VIDEO R
TO CONT ASSEMBLY J105 (→P30)
CP122
C IN
S IN
S OUT
L OUT
L IN
EQ GND
R IN
R OUT
TO PRO LOGIC ASSEMBLY CN122 (→P39)
CN118
FRONT L
GND
FRONT R
EQ GND
+12V
-12V
GND
CENTER
REAR L
REAR R
TO TONE VR ASSEMBLY CP118 (→P27)
CP125 CN125
+12V
GND
OUT
GND
IN
VCR 2 REC
VCR1 REC
TAPE 2 REC
TAPE1/DAT REC
L CH
TAPE 1/DAT REC
TAPE 2 REC
VCR 1 REC
VCR 2 REC
R CH
J109
D GND
DT-3
DT-2
DT-1
CK
DT
-12V
VH/VL
+12V
V CONT
TO VIDEO ASSEMBLY CN109 (→P49)
CP116
FSP
CSP
L+R/L-R
C MONO
SM5
SM6
ST(D2)
CK
DT
D GND
+12V
-12V
TO VIDEO ASSEMBLY CN116 (→P49)
CN101
LED 0
STD 1
ST C0
ST C1
PROT
-31V
DOWN
ST Y0
UP
+5.6V
-26V
TO CONT ASSEMBLY J101 (→P29)
CP121
D GND
CK
DT
ST Y0
-12V
P GND
+12V
TO PRO LOGIC ASSEMBLY CN121 (→P39)
CN119
CK
DT
ST DI
ST CI
ST CO
D GND
DWN
UP
GND
-53V
-27V
TO TONE VR ASSEMBLY CP119 (→P27)
TO MAIN(2/2) ASSEMBLY (→P20,21)
+27V
GND
+12V
-12V
CSP
FSP
VH/VL
PROT
TO MAIN(2/2) ASSEMBLY (→P20,21)
D15 1SS252
D14 1SS252
D106 1SS252
D21 RD6.8ES8
D20 RD5.6ES8

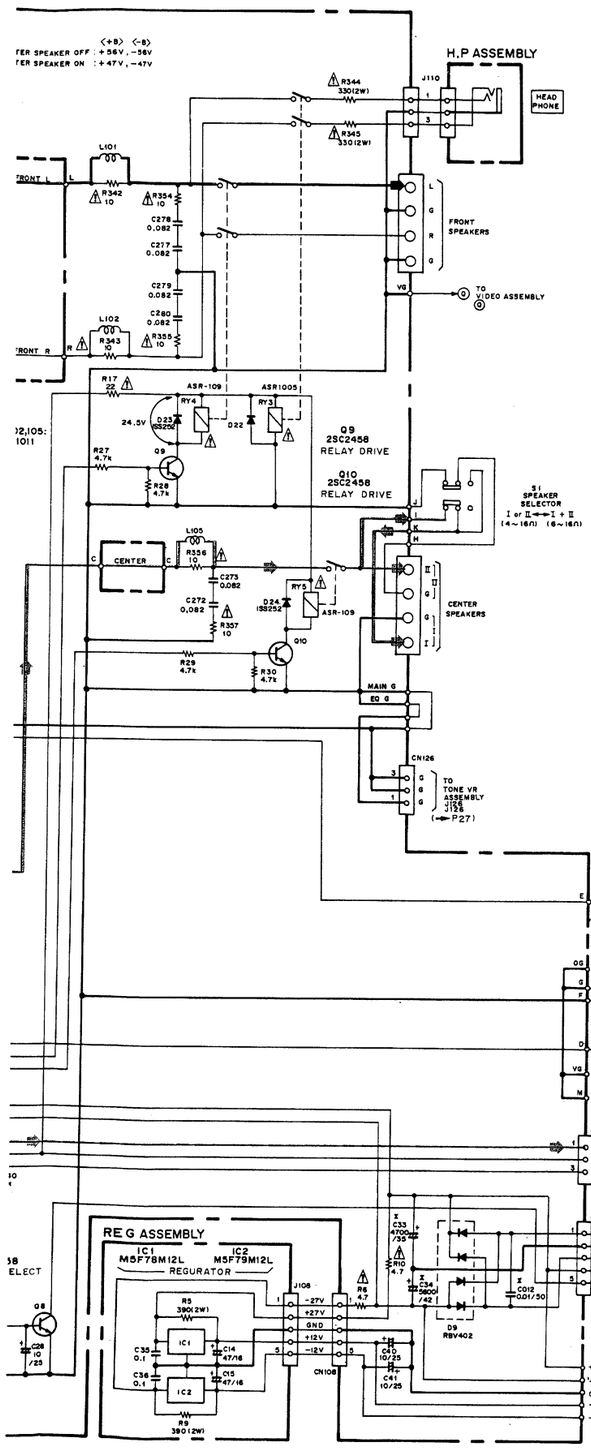
3.4 SCHEMATIC DIAGRAMS OF MAIN(2/2), P.S, S.TRANS, HP, REG, TR1 AND TR2 ASSEMBLIES



1. RESISTORS :
Indicated in Ω, 1/4W, 1/6W, 1/8W, ±5% tolerance unless otherwise noted k;kΩ, M;MΩ, (F):±1%, (G):±2%, (K):±10%, (M):±20% tolerance.
2. CAPACITORS :
Indicated in capacity (μF)/voltage (V) unless otherwise noted p;pF.
Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT :
V: Signal voltage at (110W+110W, 6Ω) output (1kHz).
DC voltage (V) at no input signal.
Value in ( ) is DC voltage at rated power.
⇦mA; DC current at no input signal.
4. 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.

MAIN FRONT SIGNAL
PRO LOGIC (FRONT) SIGNAL
PRO LOGIC (CENTER) SIGNAL
PRO LOGIC (REAR) SIGNAL

ES



1. RESISTORS :
   Indicated in Ω, 1/4W, 1/6W, 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10%, (M) : ±20% tolerance.
2. CAPACITORS :
   Indicated in capacity (μF) / voltage (V) unless otherwise noted p ; pF.
   Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT :
   V : Signal voltage at (110W+110W, 6Ω) output (1kHz).
   : DC voltage (V) at no input signal.
   Value in ( ) is DC voltage at rated power.
   ⇐mA ; DC current at no input signal.
4. 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.

——— MAIN FRONT SIGNAL
– – – – PRO LOGIC (FRONT) SIGNAL
——— PRO LOGIC (CENTER) SIGNAL
– – – – PRO LOGIC (REAR) SIGNAL

Line Voltage Selection (For HE type)

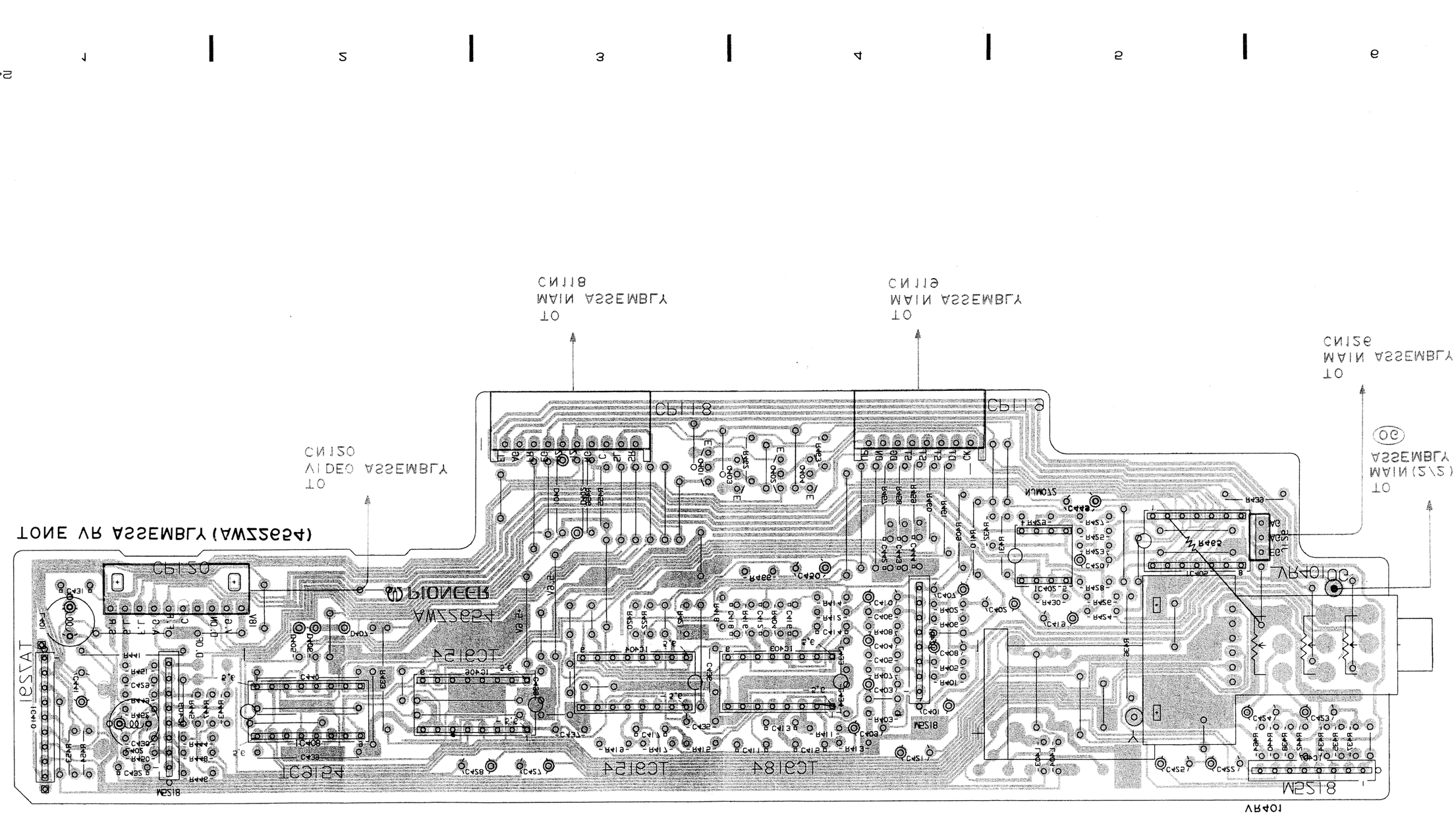
Line voltage can be changed with following steps.
1. Disconnect the AC power cord.
2. Remove the Bonnet case.
3. Change the connection of the power transformer lead wire.
4. Stick the line voltage label on the rear panel.

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

——— 220V
– – – – 240V

FOR HE, YPW TYPE
S. TRANS ASSEMBLY

FOR SD TYPE
S. TRANS ASSEMBLY



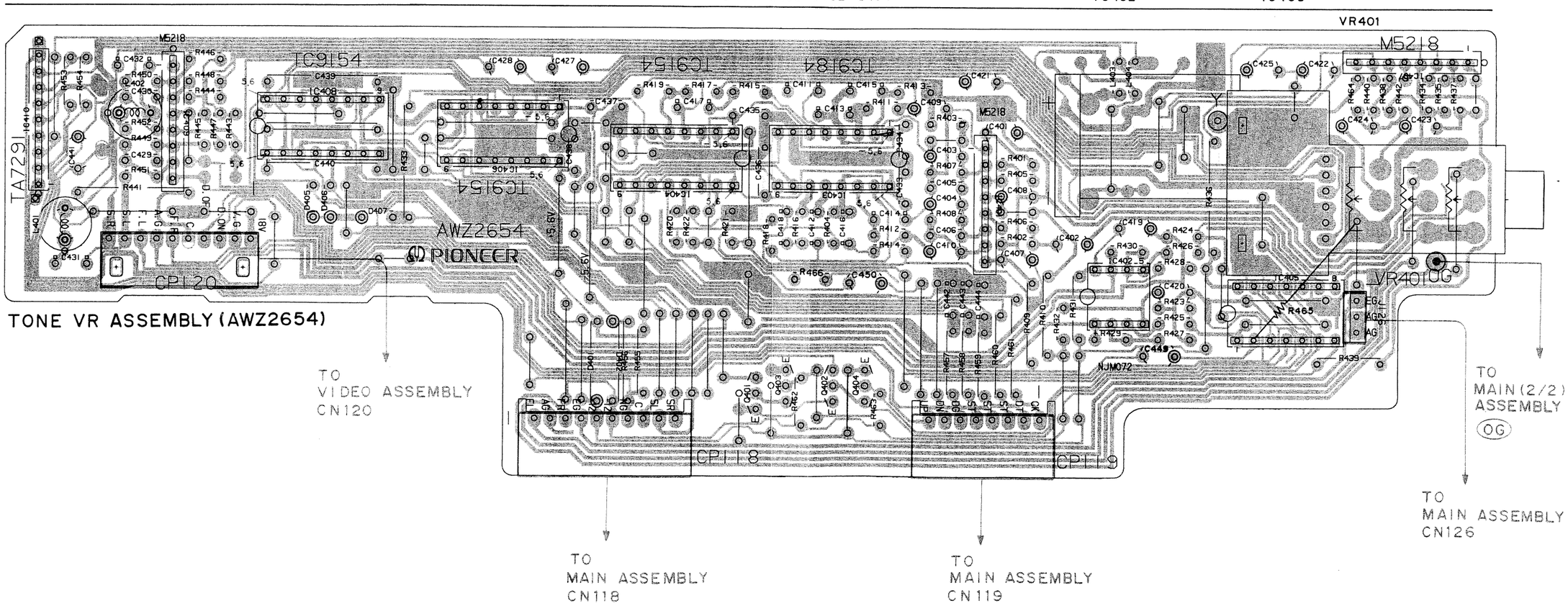
3.5 P.C.BOARD PATTERN OF TONE VR ASSEMBLY

- View from soldering side

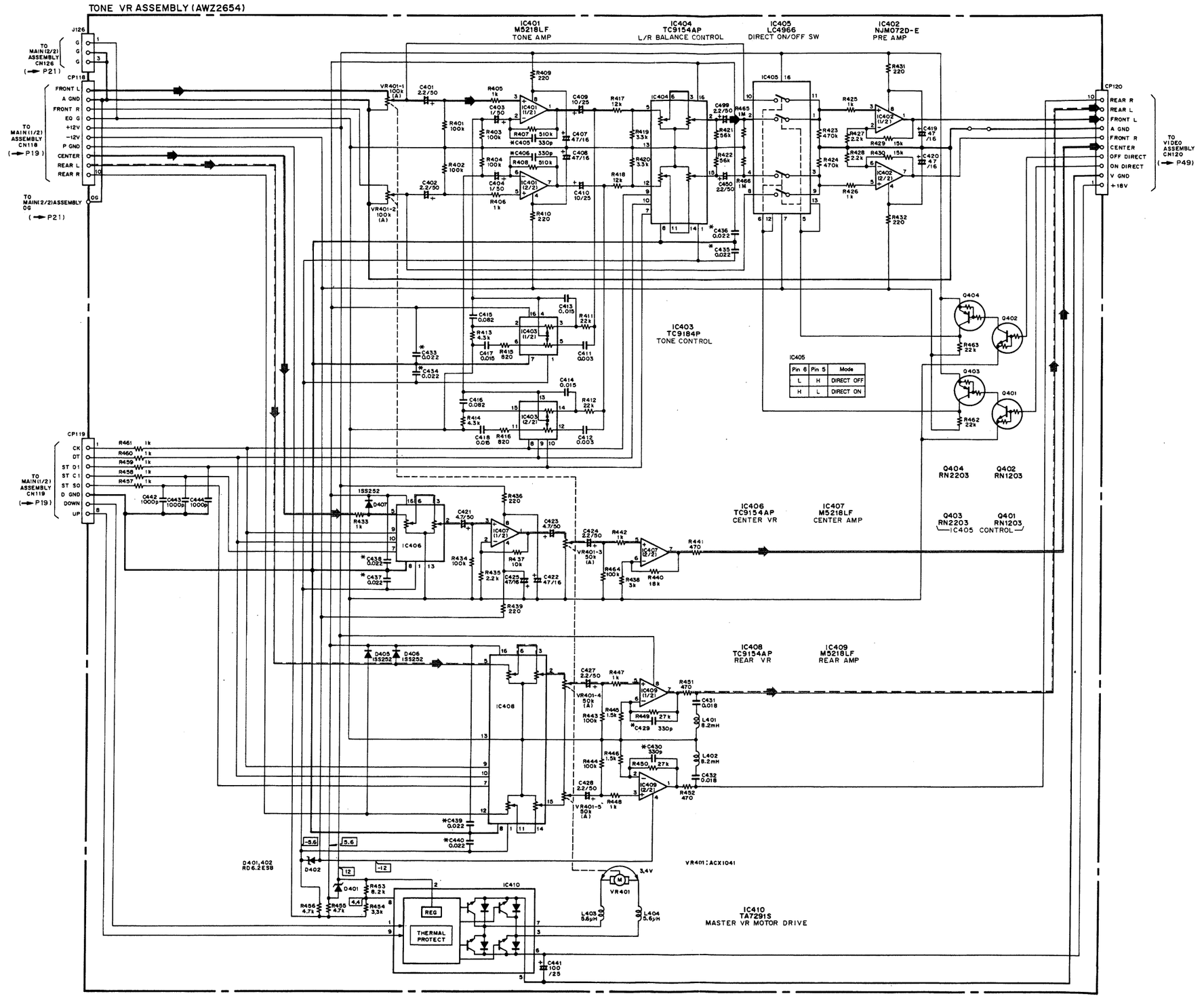
TONE VR ASSEMBLY (AWZ2654)

3.5 P.C.BOARD PATTERN OF TONE VR ASSEMBLY

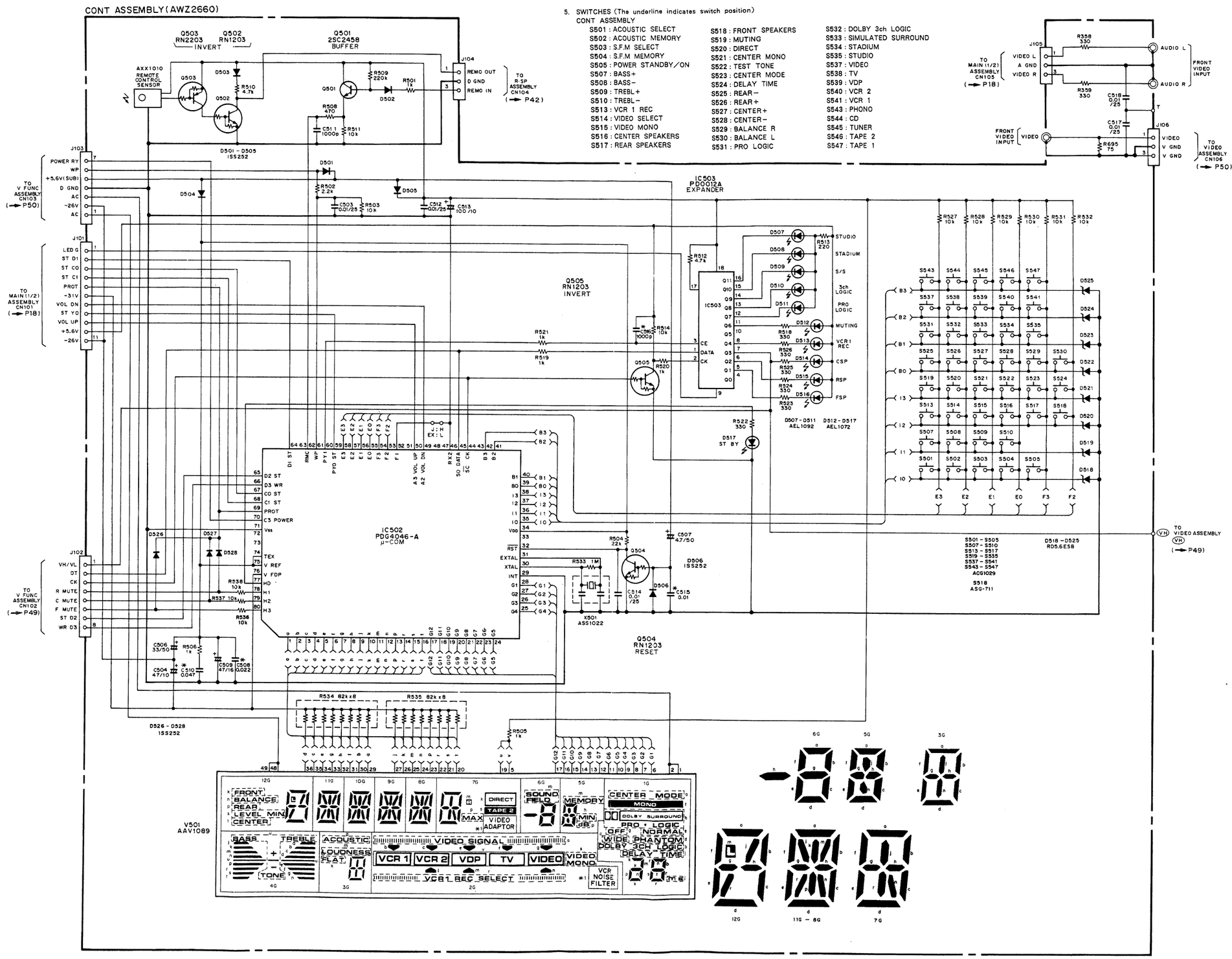
- View from component side



3.6 SCHEMATIC DIAGRAM OF TONE VR ASSEMBLY



3.7 SCHEMATIC DIAGRAM OF CONT ASSEMBLY



5. SWITCHES (The underline indicates switch position)

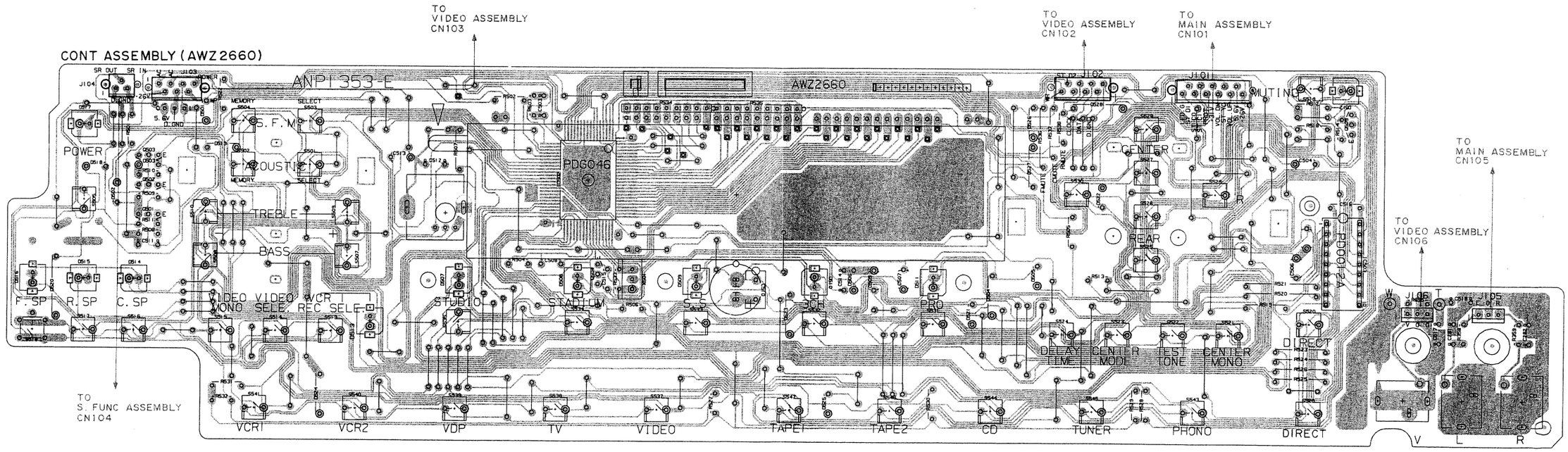
CONT ASSEMBLY

S501 : ACOUSTIC SELECT
S502 : ACOUSTIC MEMORY
S503 : S.F.M SELECT
S504 : S.F.M MEMORY
S505 : POWER STANDBY/ON
S507 : BASS+
S508 : BASS−
S509 : TREBL+
S510 : TREBL−
S513 : VCR 1 REC
S514 : VIDEO SELECT
S515 : VIDEO MONO
S516 : CENTER SPEAKERS
S517 : REAR SPEAKERS
S518 : FRONT SPEAKERS
S519 : MUTING
S520 : DIRECT
S521 : CENTER MONO
S522 : TEST TONE
S523 : CENTER MODE
S524 : DELAY TIME
S525 : REAR−
S526 : REAR+
S527 : CENTER+
S528 : CENTER−
S529 : BALANCE R
S530 : BALANCE L
S531 : PRO LOGIC
S532 : DOLBY 3ch LOGIC
S533 : SIMULATED SURROUND
S534 : STADIUM
S535 : STUDIO
S537 : VIDEO
S538 : TV
S539 : VDP
S540 : VCR 2
S541 : VCR 1
S543 : PHONO
S544 : CD
S545 : TUNER
S546 : TAPE 2
S547 : TAPE 1

3.8 P.C.BOARD PATTERN OF CONT ASSEMBLY

- View from component side

CONT ASSEMBLY (AWZ2660)



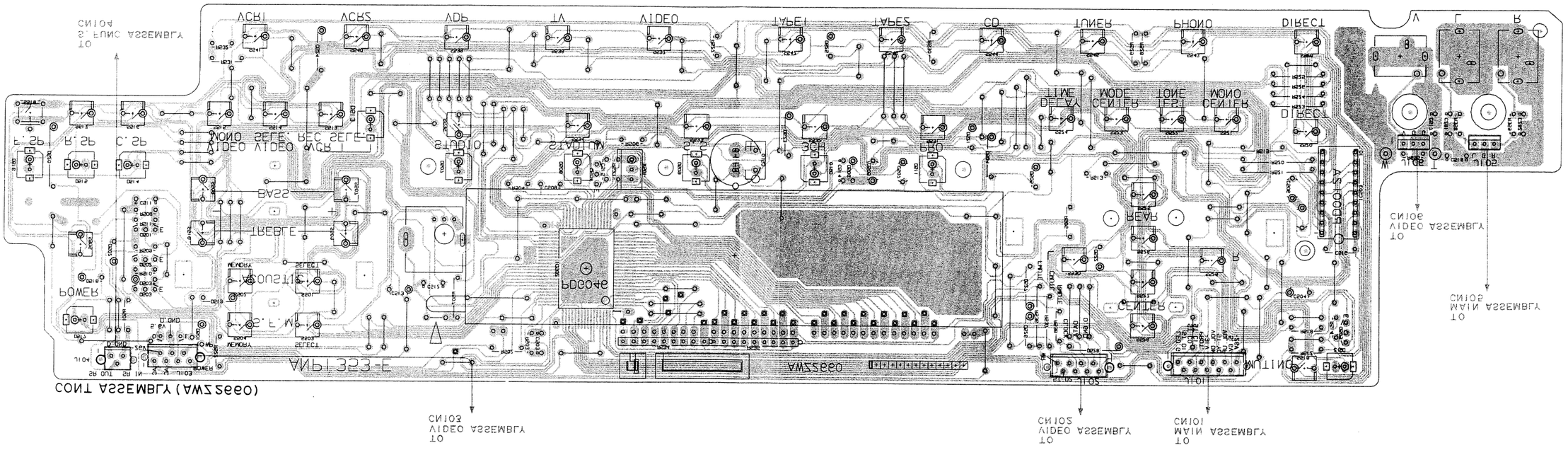
Q503
Q502
Q501

IC502
Q504

Q505
IC503

3.8 P.C.BOARD PATTERN OF CONT ASSEMBLY

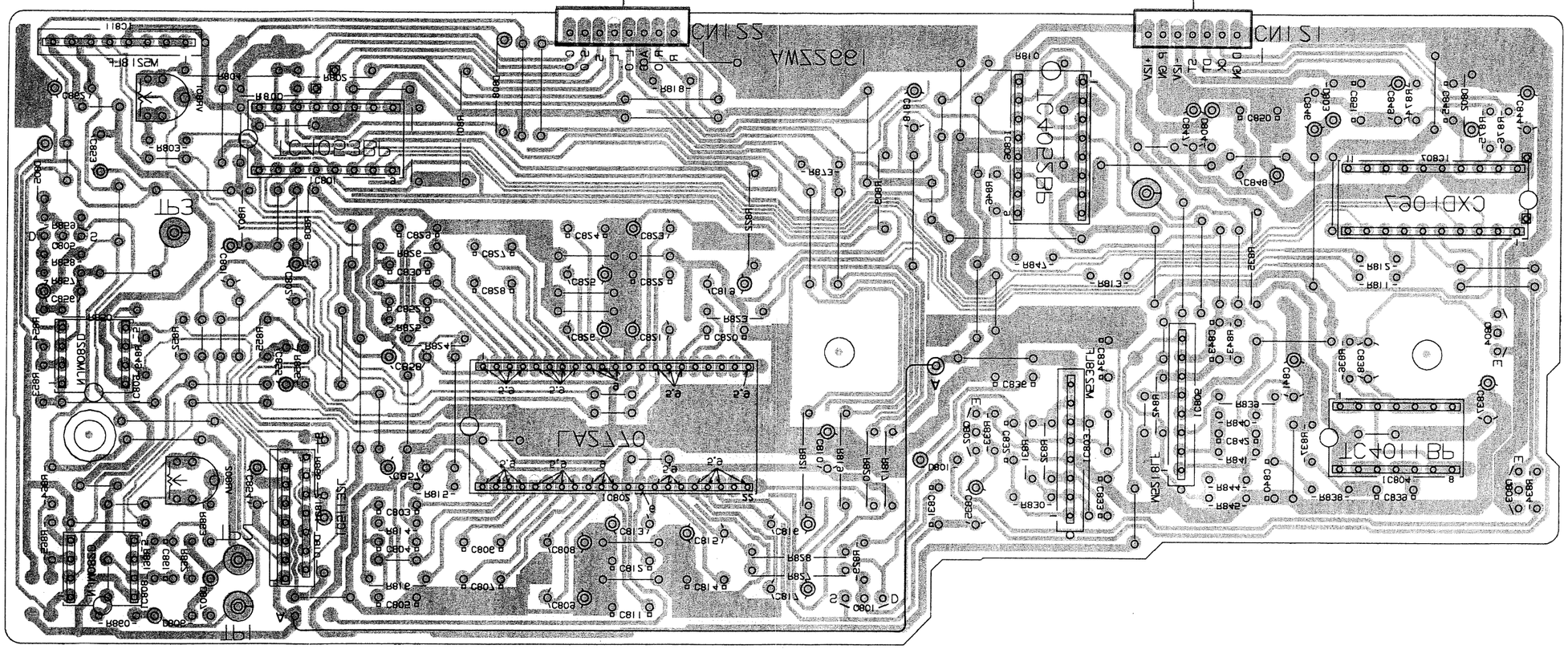
- View from soldering side



3.9 P.C.BOARD PATTERN OF PRO-LOGIC ASSEMBLY

- View from soldering side

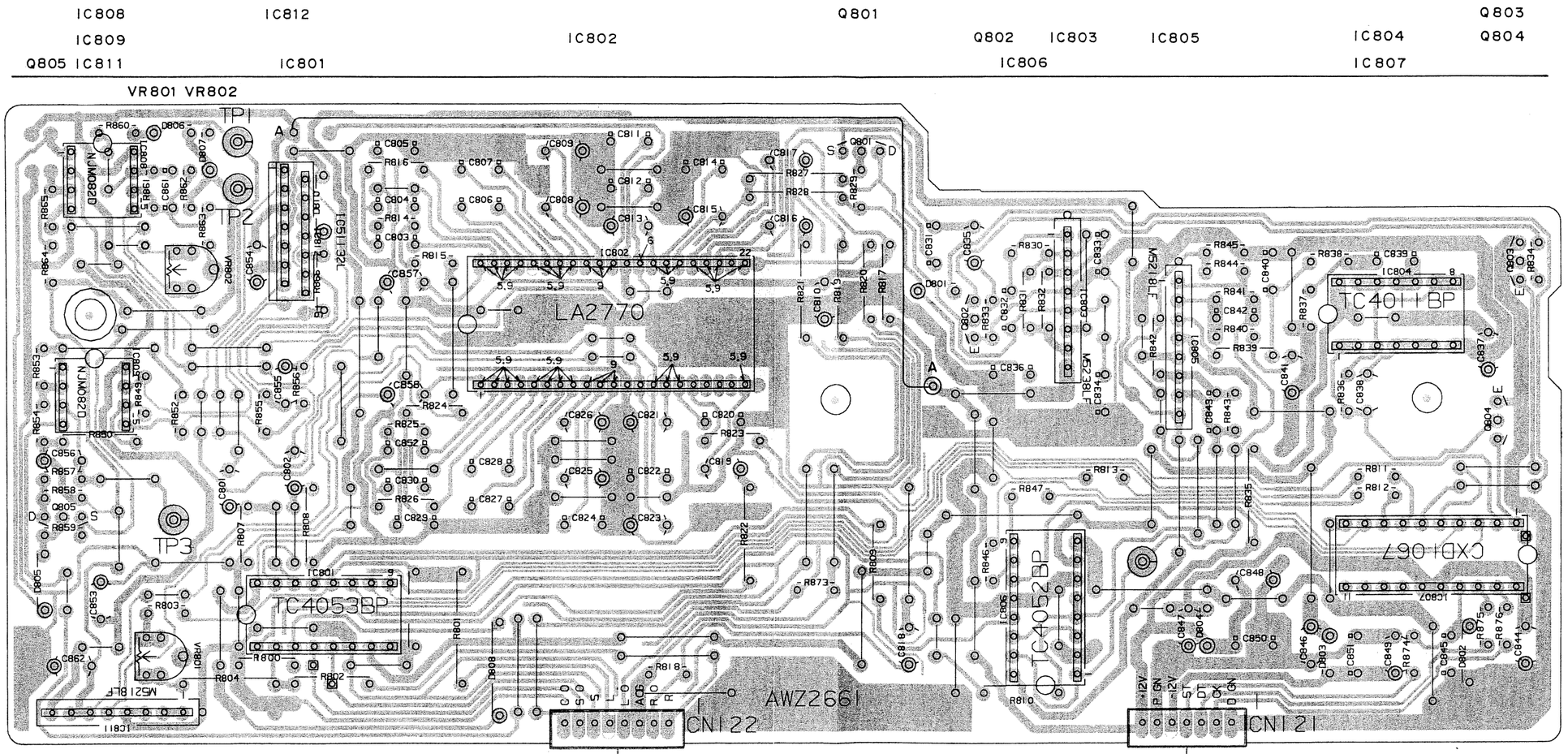
1	2	3	4	5	6
IC808 IC809 Q805 IC811 VR801 VR802	IC812 IC801	IC802	Q801 Q802 IC803 IC805 IC806	IC804 IC807	Q803 Q804



PRO LOGIC ASSEMBLY (AWZ2661)

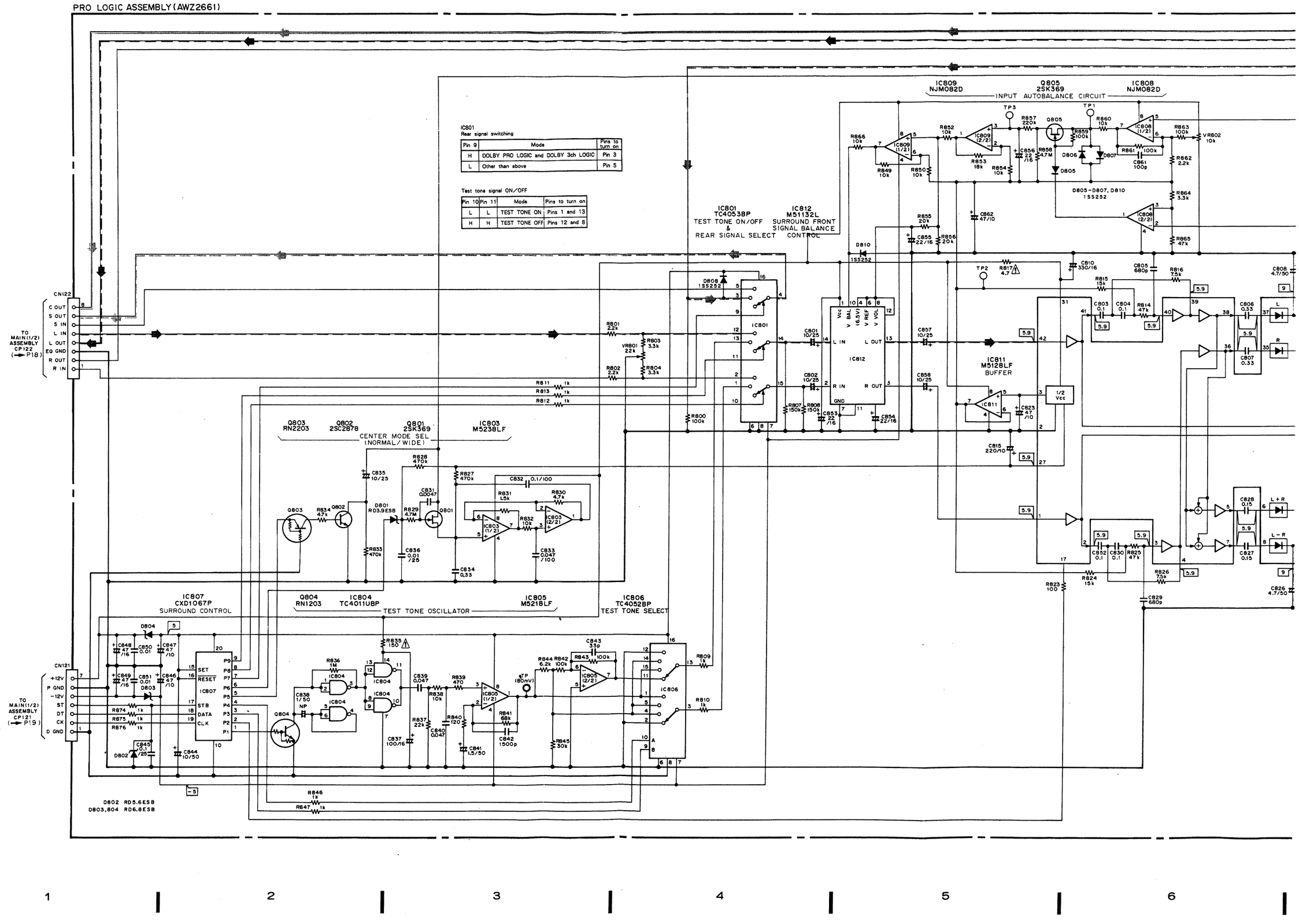
3.9 P.C.BOARD PATTERN OF PRO-LOGIC ASSEMBLY

- View from component side



PRO LOGIC ASSEMBLY (AWZ2661)

3.10 SCHEMATIC DIAGRAM OF PRO-LOGIC ASSEMBLY



Mode	Pins to turn on
OGIC and DOLBY 3ch LOGIC	Pin 3
ve	Pin 5

FF

de	Pins to turn on
ONE ON	Pins 1 and 13
ONE OFF	Pins 12 and 8

IC809 NJM082D — Q805 2SK369 — INPUT AUTOBALANCE CIRCUIT — IC808 NJM082D

IC801 TC4053BP TEST TONE ON/OFF & REAR SIGNAL SELECT

IC812 M51132L SURROUND FRONT SIGNAL BALANCE CONTROL

D805–D807, D810 1SS252

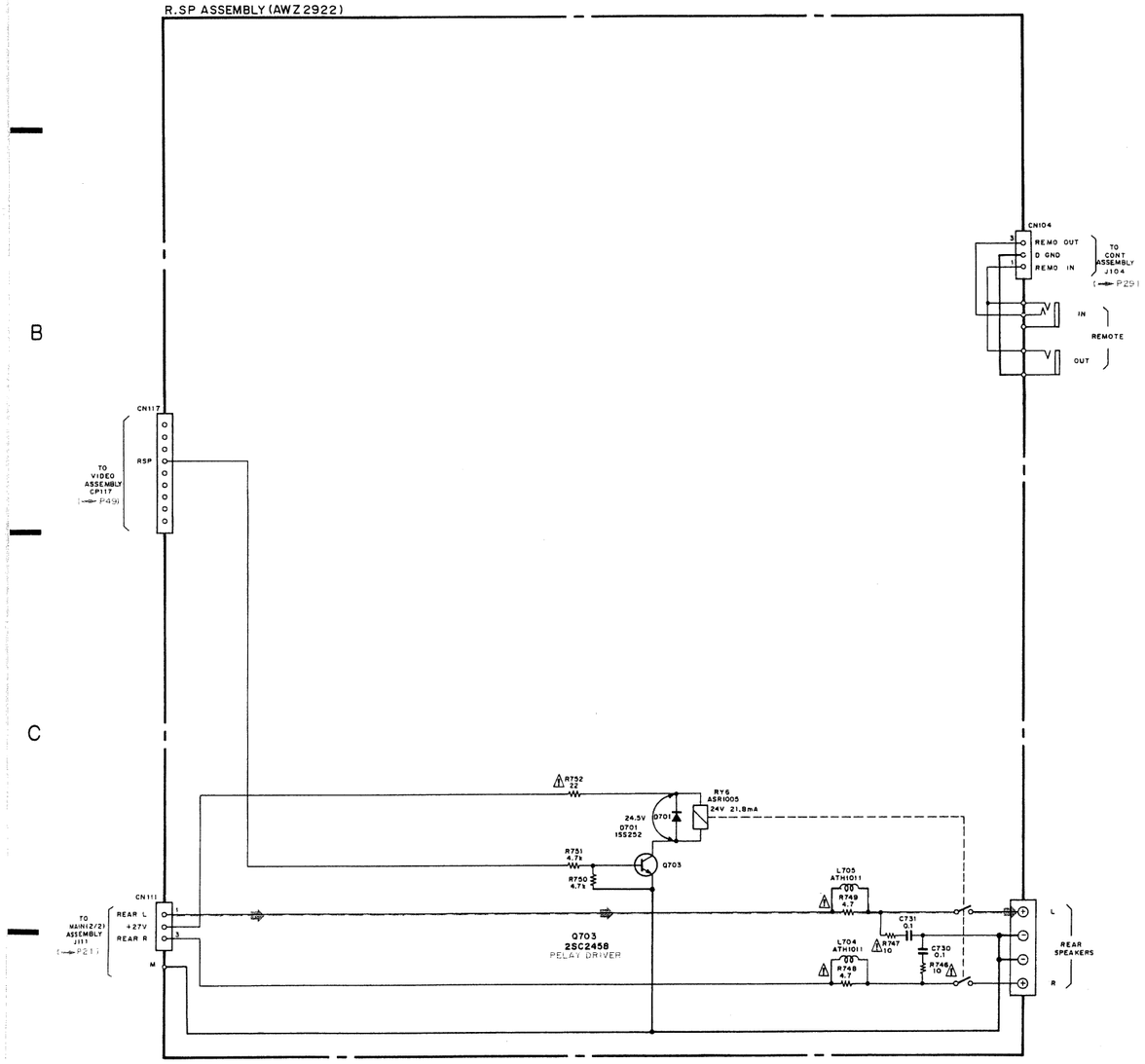
IC811 M5218LF BUFFER

IC802 LA2770 ACTIVE MATRIX

IC805 M5218LF

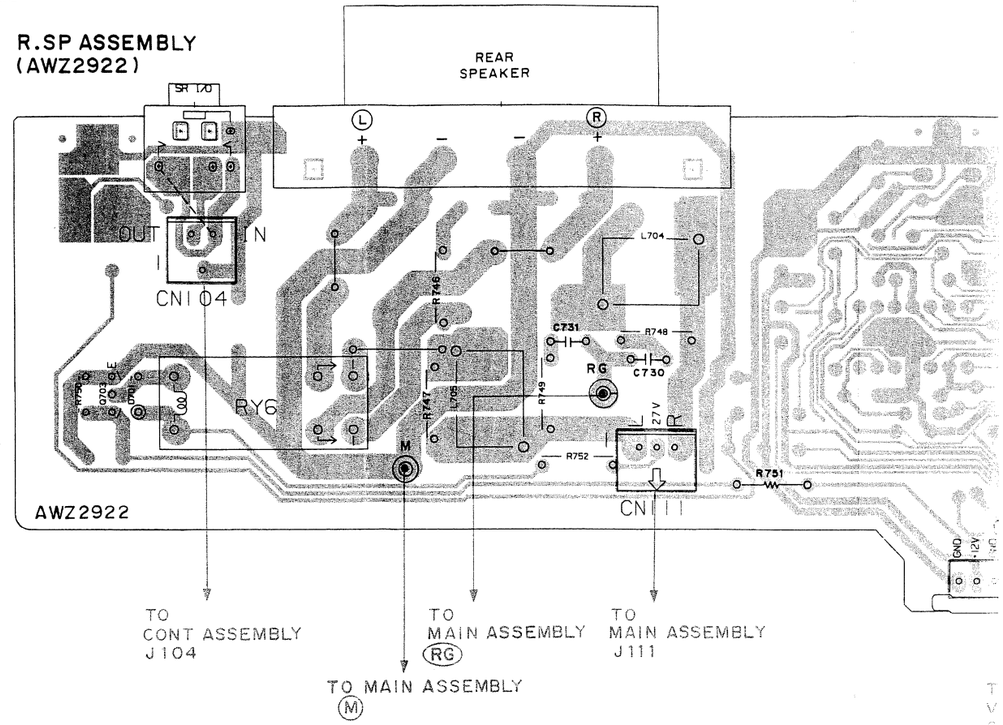
IC806 TC4052BP TEST TONE SELECT

3.11 SCHEMATIC DIAGRAM OF R.SP ASSEMBLY

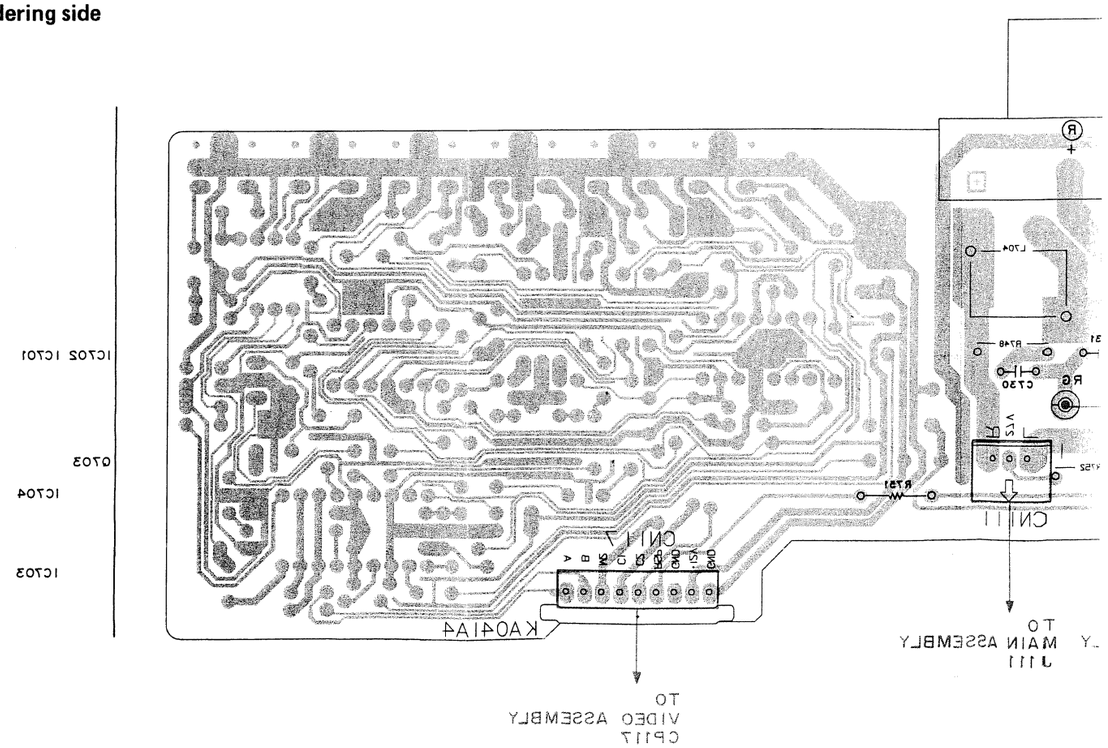


3.12 P.C.BOARD PATTERN OF R.SP ASSEMBLY

- View from component side

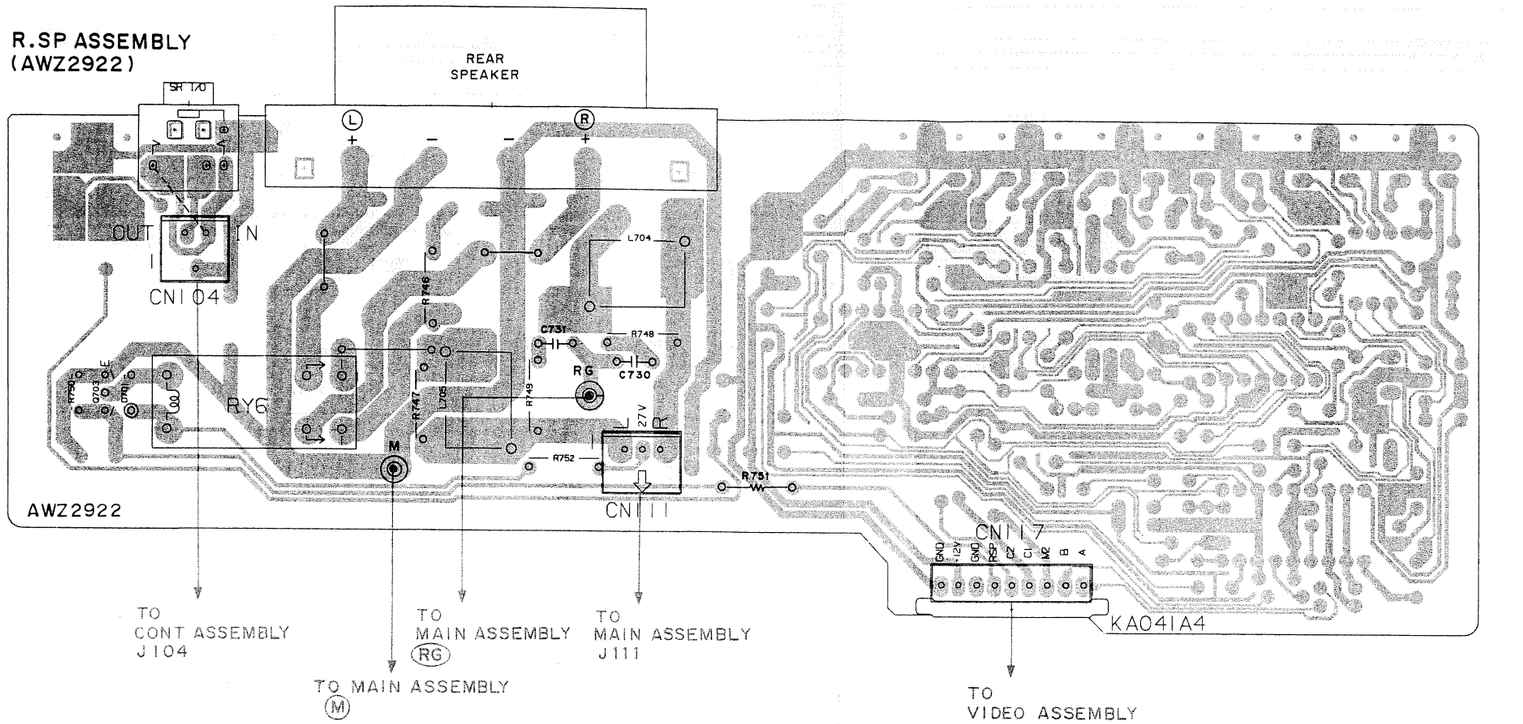


- View from soldering side

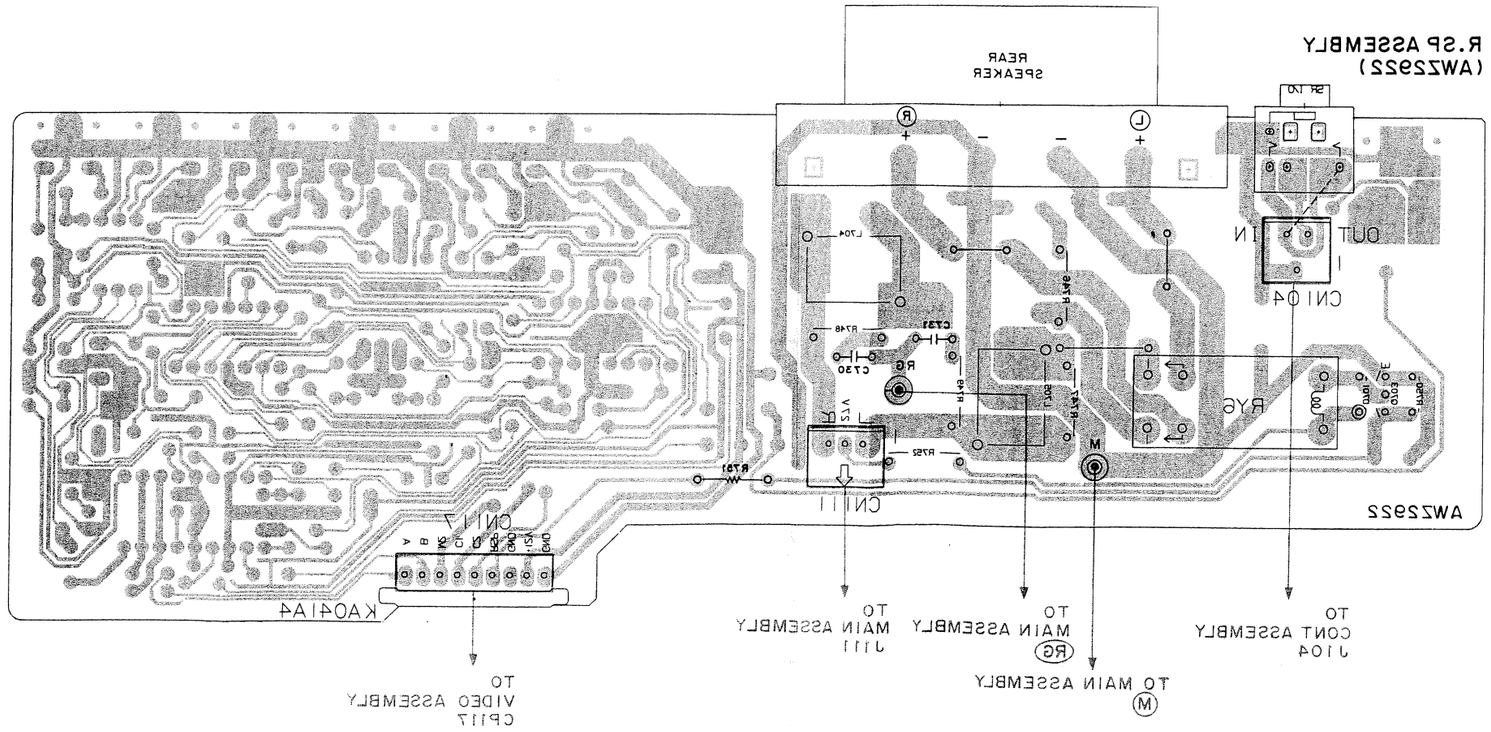


3.12 P.C.BOARD PATTERN OF R.SP ASSEMBLY

- **View from component side**



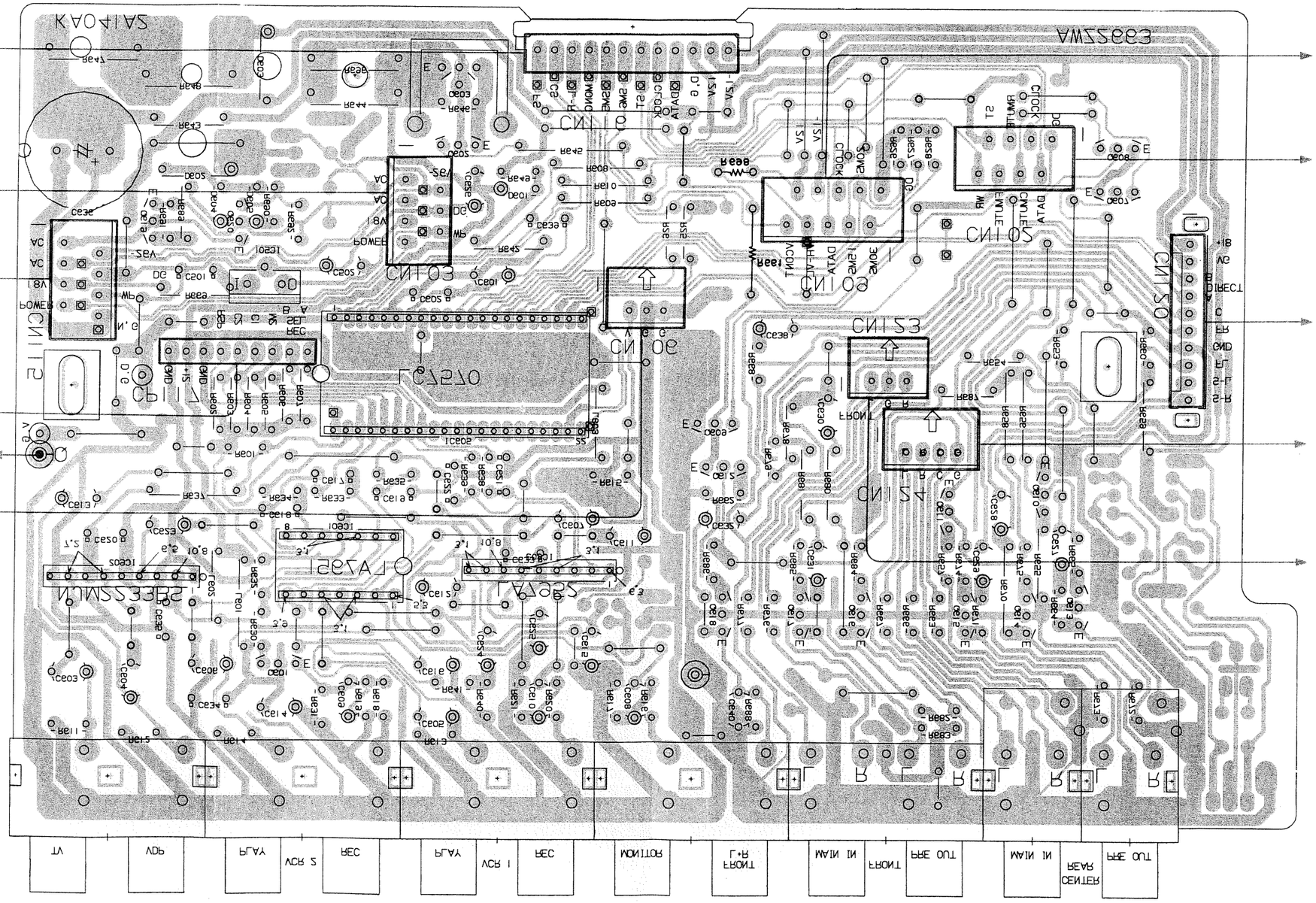
- **View from soldering side**



3.13 P.C.BOARD PATTERN OF VIDEO ASSEMBLY

● View from soldering side

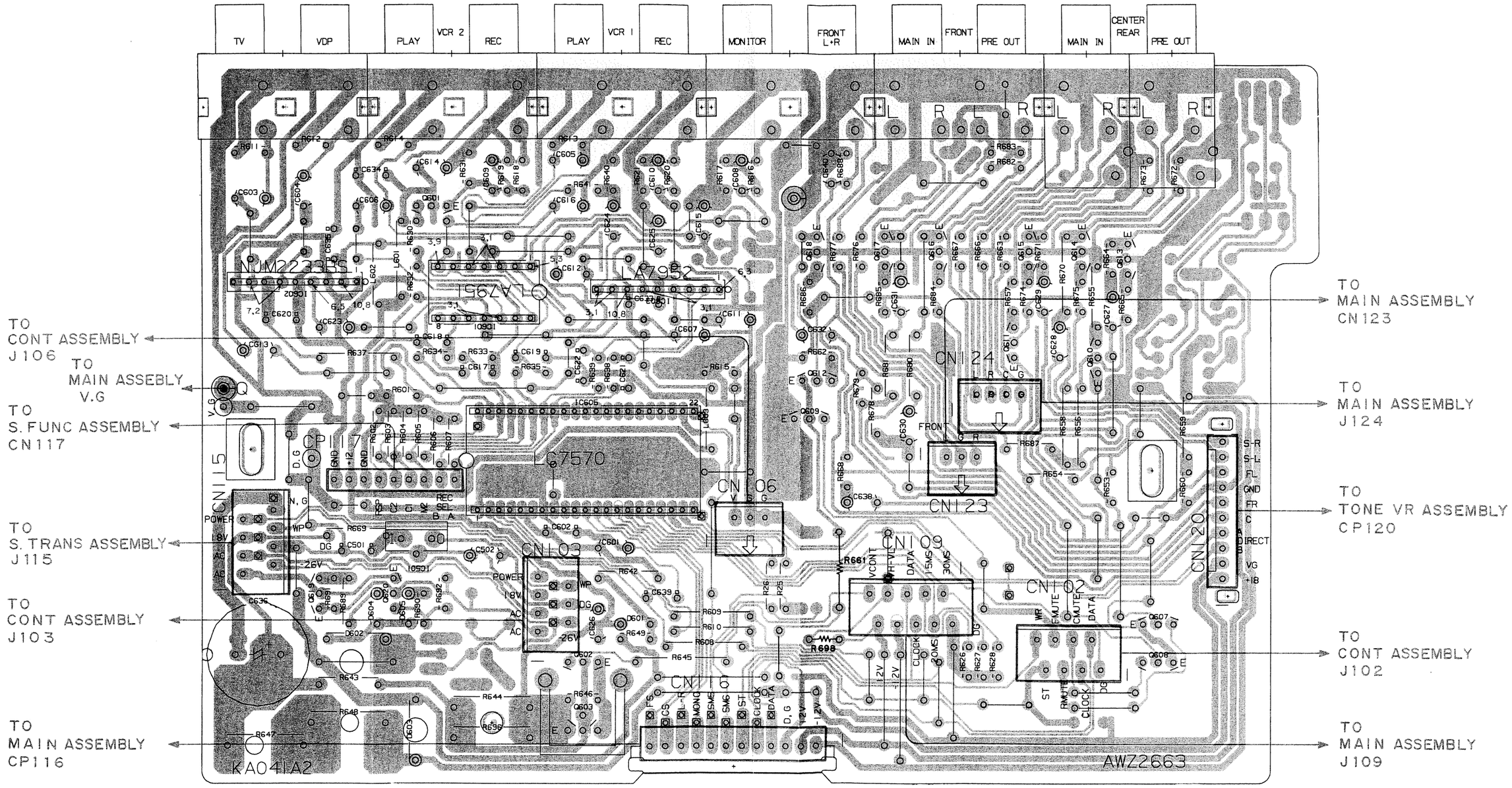
VIDEO ASSEMBLY (AWZ5663)



3.13 P.C.BOARD PATTERN OF VIDEO ASSEMBLY

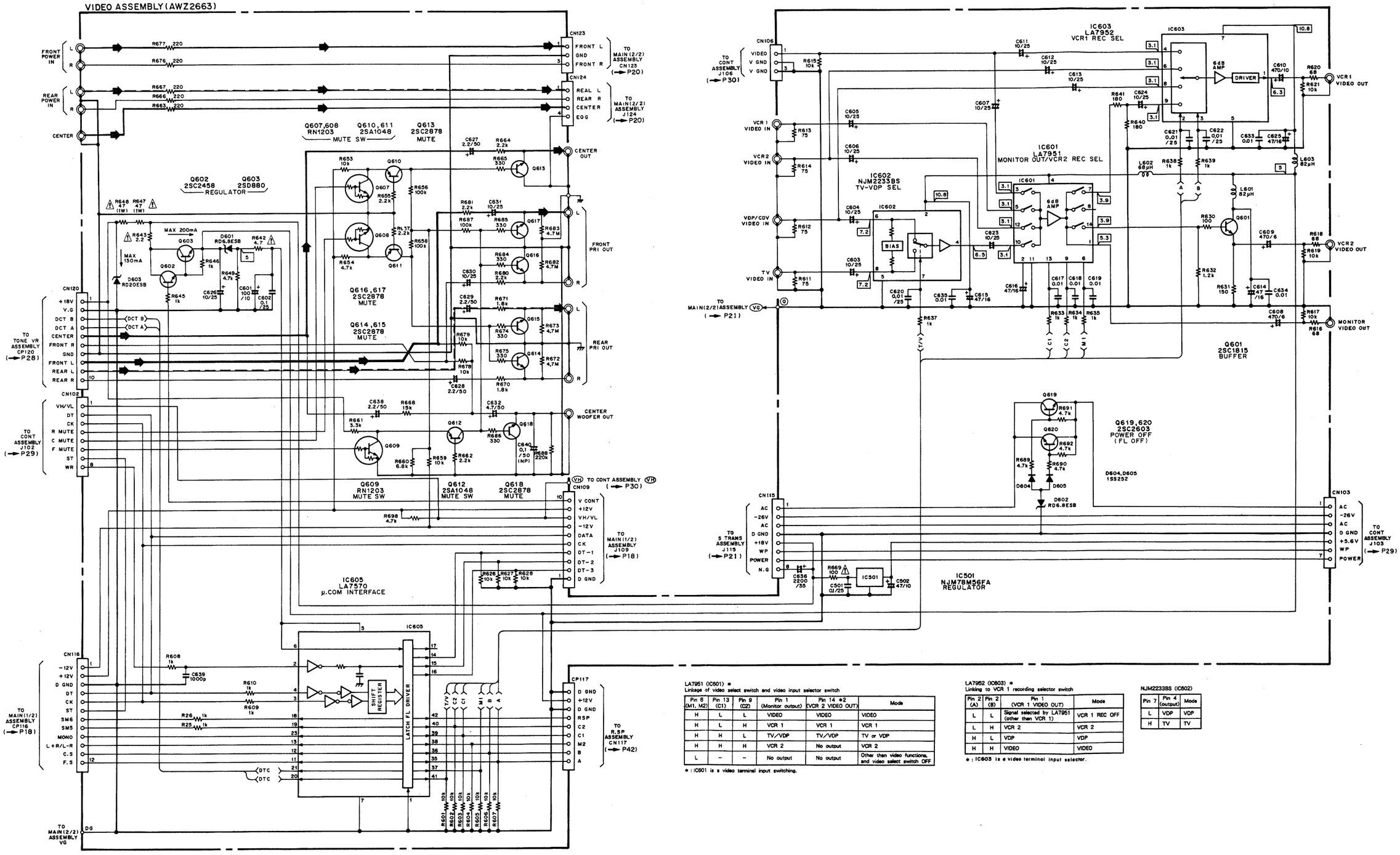
- View from component side

VIDEO ASSEMBLY (AWZ2663)



IC602 Q601 IC601 IC603 Q618 Q617 Q616 Q615 Q614 Q613
Q612 Q611 Q610
Q609
IC501 IC605
Q619 Q620 Q602 Q607
Q603 Q608

3.14 SCHEMATIC DIAGRAM OF VIDEO ASSEMBLY



LA7951 (IC601) *
Linkage of video select switch and video input selector switch

Pin 6 (M1, M2)	Pin 13 (C1)	Pin 9 (C2)	Pin 1 (Monitor output)	Pin 14 *2 (VCR 2 VIDEO OUT)	Mode
H	L	L	VIDEO	VIDEO	VIDEO
H	L	H	VCR 1	VCR 1	VCR 1
H	H	L	TV/VDP	TV/VDP	TV or VDP
H	H	H	VCR 2	No output	VCR 2
L	–	–	No output	No output	Other than video functions, and video select switch OFF

* : IC601 is a video terminal input switching.

LA7952 (IC603) *
Linking to VCR 1 recording selector switch

Pin 2 (A)	Pin 2 (B)	Pin 1 (VCR 1 VIDEO OUT)	Mode
L	L	Signal selected by LA7951 (other than VCR 1)	VCR 1 REC OFF
L	H	VCR 2	VCR 2
H	L	VDP	VDP
H	H	VIDEO	VIDEO

* : IC603 is a video terminal input selector.

NJM2233BS (IC602)

Pin 7	Pin 4 (output)	Mode
L	VDP	VDP
H	TV	TV

4. P.C.B's 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 ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 Ω → 56 × 10¹ → 561 ····· RD1/4PS 5 6 1 J
47k Ω → 47 × 10³ → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

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

5.62k Ω → 562 × 10¹ → 5621 ····· RN1/4SR 5 6 2 1 F

Mark	No.	Symbol & Description	Part No.
MAIN ASSEMBLY(AWZ2653)			
SEMICONDUCTORS			
	IC101	E-SW IC	TC9164N
	IC102	E-SW IC	TC9163N
	IC103	E-SW IC	TC9162N
	IC104		M5218P
	IC105		M5238LF
	IC106		M5218PF
	IC108, 109		M5218PF
	IC110		TC4052BP
	IC112		M50198P
	IC114, 115		UPC1188H
	IC116		M5201P
	IC3		NJM78M56FA
	Q10	TRANSISTOR	2SC2458
	Q101, 102	TRANSISTOR	2SA979
	Q103, 104	TRANSISTOR	2SA992
	Q105, 106	TRANSISTOR	2SC2603
	Q107, 108	TRANSISTOR	2SC2705
	Q109, 110	TRANSISTOR	2SA1145
	Q113, 114	TRANSISTOR	2SC3298
	Q115, 116	TRANSISTOR	2SA1306
	Q121, 122	TRANSISTOR	2SC2240
	Q123	TRANSISTOR	2SA979
	Q124	TRANSISTOR	2SA992
	Q125	TRANSISTOR	2SC2603
	Q126	TRANSISTOR	2SC2705
	Q127	TRANSISTOR	2SA1145
	Q128	TRANSISTOR	2SC3298
	Q129	TRANSISTOR	2SA1306
	Q132	TRANSISTOR	2SC2240
	Q133	TRANSISTOR	RN2203
	Q134	TRANSISTOR	2SC2458
	Q135	TRANSISTOR	RN1203
	Q3	TRANSISTOR	RN1203
	Q4	TRANSISTOR	2SA1515
	Q5-9	TRANSISTOR	2SC2458

Mark	No.	Symbol & Description	Part No.
	D101-104	DIODE	1SS252
	D106-124	DIODE	1SS252
	D14, 15	DIODE	1SS252
	D17, 18	DIODE	1SS252
	D19	ZENER DIODE	HZS5BLL
	D20	ZENER DIODE	RD5.6ESB
	D21	ZENER DIODE	RD6.8ESB
	D22-24	DIODE	1SS252
	D9	DIODE	RBV402
RELAYS			
	RY3	RELAY	ASR1005
	RY4, 5	RELAY	ASR-109
COILS/TRANSFORMERS			
	L101, 102	COIL	ATH1011
	L105	COIL	ATH1011
CAPACITORS			
	C12	CKA (0.01/AC250V)	ACG1005
	C121, 122	ELECTR. CAPACITOR	CEAS100M25
	C123, 124	CERAMIC CAPACITOR	CKMYB391K50
	C125, 126	CERAMIC CAPACITOR	CCMSL101J50
	C127, 128	ELECTR. CAPACITOR	CEAS470M16
	C129, 130	ELECTR. CAPACITOR	CEAS2R2M50
	C131, 132	MYLOR FILM CAPACITOR	CQMA822J50
	C133, 134	MYLOR FILM CAPACITOR	CQMA222J50
	C135, 136	ELECTR. CAPACITOR	CEAS470M16
	C147, 148	ELECTR. CAPACITOR	CEAS470M16
	C157, 158	ELECTR. CAPACITOR	CEEA220M16
	C17	ELECTR. CAPACITOR	CEHAQ470M10
	C175	ELECTR. CAPACITOR	CEAS100M25
	C176	ELECTR. CAPACITOR	CEAS010M50
	C177	CERAMIC CAPACITOR	CCMSL101J50
	C178	MYLOR FILM CAPACITOR	CQMA561J50
	C179	ELECTR. CAPACITOR	CEAS100M25
	C18	ELECTR. CAPACITOR	CEAS471M6
	C180	MYLOR FILM CAPACITOR	CQMA682J50
	C181	ELECTR. CAPACITOR	CEAS100M25
	C182	MYLOR FILM CAPACITOR	CQMA561J50

Mark	No.	Symbol & Description	Part No.
	C183	MYLOR FILM CAPACITOR	CQMA562K50
	C184	ELECTR. CAPACITOR	CEANP100M16
	C185	AUDIO FILM CAPACITOR	CFTXA104J50
	C186	MYLOR FILM CAPACITOR	CQMA562K50
	C187	MYLOR FILM CAPACITOR	CQMA561J50
	C188	ELECTR. CAPACITOR	CEAS101M16
	C189	AUDIO FILM CAPACITOR	CFTXA104J50
	C19	ELECTR. CAPACITOR	CEHAQ4R7M50
	C190	ELECTR. CAPACITOR	CEAS470M25
	C191, 192	AUDIO FILM CAPACITOR	CFTXA474J50
	C194	CERAMIC CAPACITOR	CKCYF103Z50
	C195	CERAMIC CAPACITOR	CKCYX473M25
	C197, 198	ELECTR. CAPACITOR	CEEA4R7M25
	C199	CERAMIC CAPACITOR	CKMYB391K50
	C20	ELECTR. CAPACITOR	CEAS100M25
	C200	CERAMIC CAPACITOR	CKMYB391K50
	C201, 202	CERAMIC CAPACITOR	CCMSL101J50
	C203, 204	MYLOR FILM CAPACITOR	CQMA222J50
	C205, 206	CERAMIC CAPACITOR	CCMSL470J50
	C207-209	CERAMIC CAPACITOR	CCCSL220K500
	C21	ELECTR. CAPACITOR	CEYA4R7M50
	C210	CERAMIC CAPACITOR	CCCSL220K500
	C211, 212	ELECTR. CAPACITOR	CEAS101M10
	C213	ELECTR. CAPACITOR	CEHAQ221M10
	C214	ELECTR. CAPACITOR	CEAS221M10
	C215, 216	CERAMIC CAPACITOR	CCCSL050C500
	C219	MYLOR FILM CAPACITOR	CQMA122J50
	C22	CERAMIC CAPACITOR	CKCYX104M25
	C220	MYLOR FILM CAPACITOR	CQMA122J50
	C221-224	ELECTR. CAPACITOR	CEYA330M16
	C225, 226	CERAMIC CAPACITOR	CCCSL101K500
	C227	CERAMIC CAPACITOR	CCDSL101K500
	C228	CERAMIC CAPACITOR	CCCSL101K500
	C229	ELECTR. CAPACITOR	CEANP010M50
	C23	ELECTR. CAPACITOR	CEYA4R7M50
	C230	ELECTR. CAPACITOR	CEANP010M50
	C231, 232	CERAMIC CAPACITOR	CKMYB471K50
	C233	ELECTR. CAPACITOR	CEAS2R2M50
	C234	ELECTR. CAPACITOR	CEHAQ2R2M50
	C235, 236	CERAMIC CAPACITOR	CCMSL101J50
	C237, 238	ELECTR. CAPACITOR	CEHAQ100M25
	C239	CERAMIC CAPACITOR	CCMSL470J50
	C24	CERAMIC CAPACITOR	CKCYX104M25
	C240	CERAMIC CAPACITOR	CCMSL470J50
	C241, 242	CERAMIC CAPACITOR	CCMSL220J50
	C243	ELECTR. CAPACITOR	CEAS330M25
	C244	ELECTR. CAPACITOR	CEHAQ330M25
	C249	ELECTR. CAPACITOR	CEEA4R7M25
	C25	ELECTR. CAPACITOR	CEYA4R7M50
	C250	CERAMIC CAPACITOR	CKMYB391K50
	C251	CERAMIC CAPACITOR	CCMSL101J50
	C252	MYLOR FILM CAPACITOR	CQMA222J50
	C253	CERAMIC CAPACITOR	CCMSL470J50
	C254	ELECTR. CAPACITOR	CEAS101M10

Mark	No.	Symbol & Description	Part No.
	C255, 256	CERAMIC CAPACITOR	CCCSL220K500
	C257	CERAMIC CAPACITOR	CCCSL050C500
	C259	ELECTR. CAPACITOR	CEAS221M10
	C26	CERAMIC CAPACITOR	CKCYX104M25
	C260	MYLOR FILM CAPACITOR	CQMA122J50
	C261	ELECTR. CAPACITOR	CEAS330M16
	C262	ELECTR. CAPACITOR	CEYA100M50
	C263, 264	CERAMIC CAPACITOR	CCCSL101K500
	C265	ELECTR. CAPACITOR	CEANP010M50
	C268	CERAMIC CAPACITOR	CKCYX473M25
	C269	CERAMIC CAPACITOR	CKCYX103M25
	C270, 271	CERAMIC CAPACITOR	CKDYX104M25
	C272, 273	AUDIO FILM CAPACITOR	CFTXA823J50
	C277-279	AUDIO FILM CAPACITOR	CFTXA823J50
	C28	ELECTR. CAPACITOR	CEHAQ100M25
	C280	AUDIO FILM CAPACITOR	CFTXA823J50
	C281	ELECTR. CAPACITOR	CEAS100M25
	C283-285	ELECTR. CAPACITOR	CEEA221M16
	C286	ELECTR. CAPACITOR	CEYA4R7M50
	C29	ELECTR. CAPACITOR	CEAS470M10
	C33, 34	CEA (4700/35V)	ACH-267
	C37	CERAMIC CAPACITOR	CKMYB102K50
	C38	CERAMIC CAPACITOR	ACG1020
	C39	CERAMIC CAPACITOR	CKMYB102K50
	C40, 41	ELECTR. CAPACITOR	CEHAQ100M25
RESISTORS			
⚠	R10	FUSLIBLE RESISTOR	RFA1/4PS4R7J
	R101-109	CARBONFILM RESISTOR	RD1/4PM□□□J
	R11	CARBONFILM RESISTOR	RD1/8PM□□□J
	R110-112	CARBONFILM RESISTOR	RD1/4PM□□□J
	R113, 114	CARBONFILM RESISTOR	RDR1/4PM□□□J
	R117-124	CARBONFILM RESISTOR	RD1/8PM□□□J
	R125, 126	CARBONFILM RESISTOR	RD1/4PM□□□J
	R127-139	CARBONFILM RESISTOR	RD1/8PM□□□J
	R14	CARBONFILM RESISTOR	RD1/8PM□□□J
	R140-142	CARBONFILM RESISTOR	RD1/8PM□□□J
	R145, 146	CARBONFILM RESISTOR	RD1/8PM□□□J
	R147, 148	CARBONFILM RESISTOR	RD1/4PM□□□J
	R149	CARBONFILM RESISTOR	RD1/8PM□□□J
	R15	CARBONFILM RESISTOR	RD1/8PM□□□J
	R150-159	CARBONFILM RESISTOR	RD1/8PM□□□J
	R16	CARBONFILM RESISTOR	RD1/8PM□□□J
	R160-166	CARBONFILM RESISTOR	RD1/8PM□□□J
	R169	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R17	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R170	CARBONFILM RESISTOR	RD1/8PM□□□J
	R18	CARBONFILM RESISTOR	RD1/8PM□□□J
	R183-186	CARBONFILM RESISTOR	RD1/8PM□□□J
	R188, 189	CARBONFILM RESISTOR	RD1/8PM□□□J
	R19	CARBONFILM RESISTOR	RD1/8PM□□□J
	R190-199	CARBONFILM RESISTOR	RD1/8PM□□□J
	R20	CARBONFILM RESISTOR	RD1/8PM□□□J
	R200-208	CARBONFILM RESISTOR	RD1/8PM□□□J
	R21	CARBONFILM RESISTOR	RD1/8PM□□□J
	R211-217	CARBONFILM RESISTOR	RD1/8PM□□□J

Mark	No.	Symbol & Description	Part No.
	R22	CARBONFILM RESISTOR	RD1/8PM□□□J
	R221, 222	CARBONFILM RESISTOR	RD1/4PM□□□J
	R223-226	CARBONFILM RESISTOR	RDR1/4PM□□□J
	R227, 228	CARBONFILM RESISTOR	RD1/4PM□□□J
⚠	R229	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R23	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R230	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R231-236	CARBONFILM RESISTOR	RD1/4PM□□□J
	R237-239	CARBONFILM RESISTOR	RDR1/4PM□□□J
⚠	R24	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R240	CARBONFILM RESISTOR	RDR1/4PM□□□J
⚠	R243, 244	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R245, 246	CARBONFILM RESISTOR	RD1/4PM□□□J
	R247-250	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R251, 252	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R253-256	FUSLIBLE RESISTOR	RFA1/4PS□□□J
⚠	R257-260	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R261-264	FUSLIBLE RESISTOR	RFA1/4PS□□□J
⚠	R265, 266	RESISTOR (0.33, 5W)	ACN-139
⚠	R267-269	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R27	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R270	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R271-279	CARBONFILM RESISTOR	RD1/8PM□□□J
	R28	CARBONFILM RESISTOR	RD1/8PM□□□J
	R280-286	CARBONFILM RESISTOR	RD1/8PM□□□J
	R287	CARBONFILM RESISTOR	RD1/4PM□□□J
	R289	CARBONFILM RESISTOR	RDR1/4PM□□□J
	R29	CARBONFILM RESISTOR	RD1/8PM□□□J
	R290	CARBONFILM RESISTOR	RDR1/4PM□□□J
	R291, 292	CARBONFILM RESISTOR	RD1/4PM□□□J
⚠	R293	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R294, 295	CARBONFILM RESISTOR	RD1/4PM□□□J
	R296, 297	CARBONFILM RESISTOR	RDR1/4PM□□□J
⚠	R299	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R30	CARBONFILM RESISTOR	RD1/8PM□□□J
	R300-302	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R303	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R304, 305	FUSLIBLE RESISTOR	RFA1/4PS□□□J
⚠	R306, 307	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R309	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R31	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R310	FUSLIBLE RESISTOR	RFA1/4PS□□□J
⚠	R311	RESISTOR (0.33, 5W)	ACN-139
⚠	R312, 313	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R32, 33	CARBONFILM RESISTOR	RD1/8PM□□□J
	R331	CARBONFILM RESISTOR	RD1/8PM□□□J
	R332	CARBONFILM RESISTOR	RD1/4PM□□□J
	R333	CARBONFILM RESISTOR	RD1/8PM□□□J
	R335-339	CARBONFILM RESISTOR	RD1/8PM□□□J
	R34	CARBONFILM RESISTOR	RD1/4PM□□□J
	R340, 341	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R342, 343	CARBONFILM RESISTOR	RD1/4PMFL□□□J
⚠	R344, 345	METAL OXIDE RESISTOR	RS2LMF□□□J
	R35	CARBONFILM RESISTOR	RD1/4PM□□□J
⚠	R354	CARBONFILM RESISTOR	RD1/4PMF□□□J
⚠	R355, 356	CARBONFILM RESISTOR	RD1/4PMFL□□□J
⚠	R357	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R358, 359	CARBONFILM RESISTOR	RD1/8PM□□□J
	R36	CARBONFILM RESISTOR	RD1/4PM□□□J
	R360-362	CARBONFILM RESISTOR	RD1/8PM□□□J
	R364-368	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R371-378	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R379-384	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R6	FUSLIBLE RESISTOR	RFA1/4PS□□□J

OTHERS

	PIN JACK 4-P	AKB1101
	PHONO JACK 6-P	AKB1121
	SPEAKER TERMINAL 8-P	AKE1011
	CN101	KPE11
	CN105 JUMPER CONNECTOR 3-P	KPC3
	CN108	KPC5
	CN112-114 JUMPER CONNECTOR 3-P	KPC3
	CN123 JUMPER CONNECTOR 3-P	KPC3
	CN126 JUMPER CONNECTOR 3-P	KPC3
	X101 CERAMIC OSCILLATOR	ASS1016

TONE VR ASSEMBLY(AWZ2654)

SEMICONDUCTORS

	IC401	M5218LF
	IC402	NJM072D-E
	IC403	TC9184P
	IC404 E-VR IC	TC9154AP
	IC405	LC4966
	IC406 E-VR IC	TC9154AP
	IC407	M5218LF
	IC408 E-VR IC	TC9154AP
	IC409	M5218LF
	IC410	TA7291S
	Q401, 402 TRANSISTOR	RN1203
	Q403, 404 TRANSISTOR	RN2203
	D401, 402 ZENER DIODE	RD6.2ESB
	D405-407 DIODE	1SS252

COILS/TRANSFORMERS

	L401, 402 INDUCTOR	LTA822J
	L403, 404 AXIAL INDUCTOR	LAU5R6K

CAPACITORS

	C401, 402 ELECTR. CAPACITOR	CEYA2R2M50
	C403, 404 ELECTR. CAPACITOR	CEAS010M50
	C405, 406 CERAMIC CAPACITOR	ACG1018
	C407, 408 ELECTR. CAPACITOR	CEAS470M16
	C409, 410 ELECTR. CAPACITOR	CEYA100M25
	C411, 412 MYLOR FILM CAPACITOR	CQMA302J50
	C413, 414	CFTXA153J50
	C415, 416 AUDIO FILM CAPACITOR	CFTXA823J50
	C417, 418	CFTXA153J50
	C419, 420 ELECTR. CAPACITOR	CEEA470M16
	C421 ELECTR. CAPACITOR	CEYA4R7M50
	C422 ELECTR. CAPACITOR	CEYA470M16

Mark	No.	Symbol & Description	Part No.
	C423	ELECTR. CAPACITOR	CEAS4R7M50
	C424	ELECTR. CAPACITOR	CEAS2R2M50
	C425	ELECTR. CAPACITOR	CEYA470M16
	C427, 428	ELECTR. CAPACITOR	CEAS2R2M50
	C429, 430	CERAMIC CAPACITOR	ACG1018
	C431, 432	AUDIO FILM CAPACITOR	CFTXA183J50
	C433-440	CERAMIC CAPACITOR	ACG1022
	C441	ELECTR. CAPACITOR	CEAS101M25
	C442-444	CERAMIC CAPACITOR	CKMYB102K50
	C449, 450	ELECTR. CAPACITOR	CEAS2R2M50
RESISTORS			
	R401-466	CARBONFILM RESISTOR	RD1/8PM□□□J
	VR401	VR	ACX1041
OTHERS			
		SOCKET 10-P	AKP1055

PS ASSEMBLY(AWZ2655)

SEMICONDUCTORS			
	D10	DIODE	1SS252
	D6, 7	DIODE	D5SB20F
	D8	DIODE	1SS252
RELAYS			
	RY2	RELAY	ASR1024
	RY7	RELAY	ASR1024
CAPACITORS			
	C10, 11	ELECTR. CAPACITOR	ACH1108
	C4	CERAMIC CAPACITOR	CKCYX473M25
	C5-7	CKA (0.01/AC250V)	ACG1005
	C8, 9		CQMXA103J100
RESISTORS			
	R2	CARBONFILM RESISTOR	RD1/4PM□□□J

H.P ASSEMBLY

OTHERS			
		JACK	AKN1002

TR1 ASSEMBLY

SEMICONDUCTORS			
	Q111, 112	TRANSISTOR	2SC2603

TR2 ASSEMBLY

SEMICONDUCTORS			
	Q136	TRANSISTOR	2SC2603

REG. ASSEMBLY

SEMICONDUCTORS			
	IC1		M5F78M12L
	IC2		M5F79M12L
CAPACITORS			
	C14, 15	ELECTR. CAPACITOR	CEAS470M16
	C35, 36	AUDIO FILM CAPACITOR	CFTXA104J50

Mark	No.	Symbol & Description	Part No.
RESISTORS			
⚠	R5	METAL OXIDE RESISTOR	RS2LMF□□□J
⚠	R9	METAL OXIDE RESISTOR	RS2LMF□□□J

S.TRANS ASSEMBLY

SEMICONDUCTORS			
	Q1	TRANSISTOR	2SC2458
	D1	DIODE	1SS252
	D2-5	DIODE	S5566
RELAYS			
⚠	RY1	RELAY	ASR1024
COILS/TRANSFORMERS			
⚠	T2	POWER TRANSFORMER	ATT1117
CAPACITORS			
	C2	CERAMIC CAPACITOR	CKCYF103Z50
⚠	C3	CKA (0.01/AC400V)	ACG1002
RESISTORS			
	R1	CARBONFILM RESISTOR	RD1/8PM□□□J
	R3	CARBONFILM RESISTOR	RD1/4PM□□□J
	R7, 8	CARBONFILM RESISTOR	RD1/8PM□□□J

DOL ASSEMBLY(AWZ2658)

SEMICONDUCTORS			
	IC107		LA2730
CAPACITORS			
	C161	ELECTR. CAPACITOR	CEAS2R2M50
	C162	ELECTR. CAPACITOR	CEASR33M50
	C163	AUDIO FILM CAPACITOR	CFTXA104J50
	C164	AUDIO FILM CAPACITOR	CFTXA333J50
	C165	ELECTR. CAPACITOR	CEAS010M50
	C166	ELECTR. CAPACITOR	CEAS220M16
	C167	ELECTR. CAPACITOR	CEAS101M10
	C168	MYLOR FILM CAPACITOR	CQMA472K50
	C169	ELECTR. CAPACITOR	CEAS010M50
	C170	AUDIO FILM CAPACITOR	CFTXA333J50
	C171	ELECTR. CAPACITOR	CEAS100M25
	C172	ELECTR. CAPACITOR	CEAS220M16
	C173	CERAMIC CAPACITOR	CKMYB471K50
RESISTORS			
	R171-182	CARBONFILM RESISTOR	RD1/8PM□□□J
OTHERS			
		SOCKET 5-P	AKP1001

CONT ASSEMBLY(AWZ2660)

SEMICONDUCTORS			
	IC502	AMP CONTROL UCOM	PDG046-A
	IC503	OUTPUT EXPANDER IC	PD0012A
	Q501	TRANSISTOR	2SC2458
	Q502	TRANSISTOR	RN1203
	Q503	TRANSISTOR	RN2203
	Q504, 505	TRANSISTOR	RN1203
	D501-506	DIODE	1SS252

Mark	No.	Symbol & Description	Part No.
		D507-511 LED	AEL1092
		D512-517 LED	AEL1072
		D518-525 ZENER DIODE	RD5.6ESB
		D526-528 DIODE	1SS252
SWITCHES			
		S501-505 SWITCH	ASG1029
		S507-510 SWITCH	ASG1029
		S513-517 SWITCH	ASG1029
		S518 SWITCH	ASG-703
		S519-535 SWITCH	ASG1029
		S537-541 SWITCH	ASG1029
		S543-547 SWITCH	ASG1029
CAPACITORS			
		C503 CERAMIC CAPACITOR	CKDYX103M25
		C504 ELECTR. CAPACITOR	CEJA470M10
		C506 ELECTR. CAPACITOR	CEAS330M50
		C507 ELECTR. CAPACITOR	CEJA4R7M50
		C508 CERAMIC CAPACITOR	ACG1022
		C509 ELECTR. CAPACITOR	CEJA470M16
		C510 CEA (47000/5.5V)	ACH1037
		C511 CERAMIC CAPACITOR	CKMYB102K50
		C512 CERAMIC CAPACITOR	CKDYX103M25
		C513 ELECTR. CAPACITOR	CEJA101M10
		C514 CERAMIC CAPACITOR	CKDYX103M25
		C515 CERAMIC CAPACITOR	ACG1021
		C516 CERAMIC CAPACITOR	ACG1020
		C517,518 CERAMIC CAPACITOR	CKDYX103M25
RESISTORS			
		R358,359 CARBONFILM RESISTOR	RD1/8PM□□□J
		R501-506 CARBONFILM RESISTOR	RD1/8PM□□□J
		R508-514 CARBONFILM RESISTOR	RD1/8PM□□□J
		R518-533 CARBONFILM RESISTOR	RD1/8PM□□□J
		R534,535 RESISTOR ARRAY (82K)	RA8S□□□J
		R536-538 CARBONFILM RESISTOR	RD1/8PM□□□J
		R695 CARBONFILM RESISTOR	RD1/8PM□□□J
OTHERS			
		PHONO JACK 1-P	AKB1082
		REMOTE RECEIVER UNIT	AXX1010
		V501 FL TUBE	AAV1089
		X501 CERAMIC OSCILLATOR	ASS1022

PROLOGIC ASSEMBLY(AWZ2661)

SEMICONDUCTORS

		IC801	TC4053BP
		IC802 OTHER IC	LA2770
		IC803	M5238LF
		IC804	TC4011UBP
		IC805	M5218LF
		IC806	TC4052BP
		IC807	CXD1067P
		IC808,809	NJM082D
		IC811	M5218LF
		IC812	M51132L
		Q801 N-FET	2SK369
		Q802 TRANSISTOR	2SC2878
		Q803 TRANSISTOR	RN2203
		Q804 TRANSISTOR	RN1203
		Q805 N-FET	2SK369
		D801 ZENER DIODE	RD3.9ESB
		D802 ZENER DIODE	RD5.6ESB
		D803,804 ZENER DIODE	RD6.8ESB
		D805-808 DIODE	1SS252
		D810 DIODE	1SS252
CAPACITORS			
		C801,802 ELECTR. CAPACITOR	CEYA100M25
		C803,804 AUDIO FILM CAPACITOR	CFTXA104J50
		C805 MYLOR FILM CAPACITOR	CQMA681J50
		C806,807	CFTXA334J50
		C808,809 ELECTR. CAPACITOR	CEYA4R7M50
		C810 ELECTR. CAPACITOR	CEAS331M16
		C811 MYLOR FILM CAPACITOR	CQMA682J50
		C812 AUDIO FILM CAPACITOR	CFTXA224J50
		C813 ELECTR. CAPACITOR	CEYA4R7M50
		C814 AUDIO FILM CAPACITOR	CFTXA224J50
		C815 ELECTR. CAPACITOR	CEAS221M10
		C816-819 ELECTR. CAPACITOR	CEAS4R7M50
		C820 AUDIO FILM CAPACITOR	CFTXA224J50
		C821 ELECTR. CAPACITOR	CEYA4R7M50
		C822 AUDIO FILM CAPACITOR	CFTXA224J50
		C823 ELECTR. CAPACITOR	CEAS470M10
		C824 MYLOR FILM CAPACITOR	CQMA682J50
		C825,826 ELECTR. CAPACITOR	CEYA4R7M50
		C827,828 AUDIO FILM CAPACITOR	CFTXA154J50
		C829 MYLOR FILM CAPACITOR	CQMA681J50
		C830 AUDIO FILM CAPACITOR	CFTXA104J50
		C831 MYLOR FILM CAPACITOR	CQMA472J50
		C832	CQMXA104J100
		C833	CQMXA473J100
		C834	CFTXA334J50
		C835 ELECTR. CAPACITOR	CEAS100M25
		C836 CERAMIC CAPACITOR	CKCYX103M25
		C837 ELECTR. CAPACITOR	CEAS101M16
		C838 ELECTR. CAPACITOR	CEANP010M50
		C839,840 AUDIO FILM CAPACITOR	CFTXA473J50
		C841 ELECTR. CAPACITOR	CEAS1R5M50
		C842 CERAMIC CAPACITOR	CKMYB152K50
		C843 CERAMIC CAPACITOR	CCMSL330J50
		C844 ELECTR. CAPACITOR	CEAS100M50
		C845 CERAMIC CAPACITOR	CKCYX103M25
		C846,847 ELECTR. CAPACITOR	CEAS470M10
		C848,849 ELECTR. CAPACITOR	CEAS470M16
		C850,851 CERAMIC CAPACITOR	CKCYF103Z50
		C852 AUDIO FILM CAPACITOR	CFTXA104J50
		C853-856 ELECTR. CAPACITOR	CEAS220M16
		C857,858 ELECTR. CAPACITOR	CEAS100M25
		C861 CERAMIC CAPACITOR	CCCSL101J50
		C862 ELECTR. CAPACITOR	CEAS470M10

Mark	No.	Symbol & Description	Part No.
RESISTORS			
	R800-804	CARBONFILM RESISTOR	RD1/8PM□□□J
	R807-816	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R817	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R818-834	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R835	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R836-847	CARBONFILM RESISTOR	RD1/8PM□□□J
	R849, 850	CARBONFILM RESISTOR	RD1/8PM□□□J
	R852-866	CARBONFILM RESISTOR	RD1/8PM□□□J
	R873-876	CARBONFILM RESISTOR	RD1/8PM□□□J
	VR801	VR	VRTB6VS223
	VR802	VR	VRTS6VS103

VIDEO ASSEMBLY(AWZ2663)

SEMICONDUCTORS			
	IC501		NJM78M56FA
	IC601		LA7951
	IC602		NJM2233BS
	IC603		LA7952
	IC605		LC7570
	Q601	TRANSISTOR	2SC1815
	Q602	TRANSISTOR	2SC2458
	Q603	TRANSISTOR	2SD880
	Q607-609	TRANSISTOR	RN1203
	Q610-612	TRANSISTOR	2SA1048
	Q613-618	TRANSISTOR	2SC2878
	Q619, 620	TRANSISTOR	2SC2603
	D601, 602	ZENER DIODE	RD6.8ESB
	D603	ZENER DIODE	RD20ESB
	D604, 605	DIODE	1SS252
COILS/TRANSFORMERS			
	L601	AXIAL INDUCTOR	LAU820K
	L602	AXIAL INDUCTOR	LAU680K
	L603	AXIAL INDUCTOR	LAU820K
CAPACITORS			
	C501	CERAMIC CAPACITOR	CKCYX104M25
	C502	ELECTR. CAPACITOR	CEAS470M10
	C601	ELECTR. CAPACITOR	CEAS101M10
	C602	CERAMIC CAPACITOR	CKCYX104M25
	C603-607	ELECTR. CAPACITOR	CEAS100M25
	C608, 609	ELECTR. CAPACITOR	CEAS471M6
	C610	ELECTR. CAPACITOR	CEAS471M10
	C611-613	ELECTR. CAPACITOR	CEAS100M25
	C614-616	ELECTR. CAPACITOR	CEAS470M16
	C617-619	CERAMIC CAPACITOR	CKCYF103Z50
	C620-622	CERAMIC CAPACITOR	CKCYX103M25
	C623, 624	ELECTR. CAPACITOR	CEAS100M25
	C625	ELECTR. CAPACITOR	CEAS470M16
	C626	ELECTR. CAPACITOR	CEAS100M25
	C627-629	ELECTR. CAPACITOR	CEAS2R2M50
	C630, 631	ELECTR. CAPACITOR	CEYA100M25
	C632	ELECTR. CAPACITOR	CEAS4R7M50
	C633-635	CERAMIC CAPACITOR	CKCYF103Z50
	C636	ELECTR. CAPACITOR	CEAS222M35
	C638	ELECTR. CAPACITOR	CEAS2R2M50
	C639	CERAMIC CAPACITOR	CKMYB102K50
	C640	ELECTR. CAPACITOR	CEANP0R1M50
RESISTORS			
	R25, 26	CARBONFILM RESISTOR	RD1/8PM□□□J
	R601-621	CARBONFILM RESISTOR	RD1/8PM□□□J
	R626-628	CARBONFILM RESISTOR	RD1/8PM□□□J
	R630-635	CARBONFILM RESISTOR	RD1/8PM□□□J
	R637-641	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R642	FUSLIBLE RESISTOR	RFA1/4PS□□□J
⚠	R643	CARBONFILM RESISTOR	RD1/4PMF□□□J
	R645, 646	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R647, 648	METAL OXIDE RESISTOR	RS1PMF□□□J
	R649	CARBONFILM RESISTOR	RD1/8PM□□□J
	R653-668	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R669	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R670-679	CARBONFILM RESISTOR	RD1/8PM□□□J
	R680, 681	CARBONFILM RESISTOR	RDR1/4PM□□□J
	R682-692	CARBONFILM RESISTOR	RD1/8PM□□□J
	R698	CARBONFILM RESISTOR	RD1/8PM□□□J
OTHERS			
	CN102		KPE8
	CN103		KPE7
	CN106	JUMPER CONNECTOR 3-P	KPC3
	CN109		KPE10
	CN115		KPE8
	CN123	JUMPER CONNECTOR 3-P	KPC3
	CN124		KPC4

R.SP ASSEMBLY(AWZ2922)

SEMICONDUCTORS			
	Q703	TRANSISTOR	2SC2458
	D701	DIODE	1SS252
RELAYS			
	RY6	RELAY	ASR1005
COILS/TRANSFORMERS			
	L704, 705	COIL	ATH10I1
CAPACITORS			
	C730, 731	MYLOR FILM CAPACITOR	CQMA103J50
RESISTORS			
⚠	R746-749	CARBONFILM RESISTOR	RD1/4PMFL□□□J
	R750, 751	CARBONFILM RESISTOR	RD1/8PM□□□J
⚠	R752	FUSLIBLE RESISTOR	RFA1/4PS□□□J
	R756	CARBONFILM RESISTOR	RD1/8PM□□□J
OTHERS			
		SPEAKER TERMINAL 4-P	AKE-109
		JACK	AKN1006
		SOCKET 9-P	AKP-076
	CN104		KPE3
	CN111	JUMPER CONNECTOR 3-P	KPC3

5. ADJUSTMENTS

● Preparations

1. Input the 1 kHz, 150 mV phase signal into the VDP input terminal, then set to VDP function.
2. Set the unit to the DOLBY PRO LOGIC SURROUND mode.
3. Short TP1 and TP2 inside the PRO LOGIC assembly. (Remove the short after the adjustment.)
4. Set the master control and the rear control to maximum during adjustment.

● Adjustment procedure

1. Adjust VR801 so that the REAR AMP PRE OUT left and right voltages become minimum.
2. Adjust VR802 so that the DC voltages at both sides of R860 become approx. ± 0 mV (0 ± 50 mV).
3. Repeat procedures 1 and 2 above until optimum is obtained.

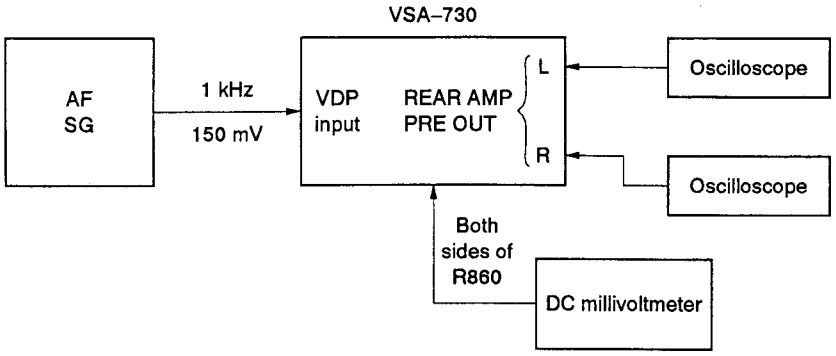


Fig. 5-1. Connections

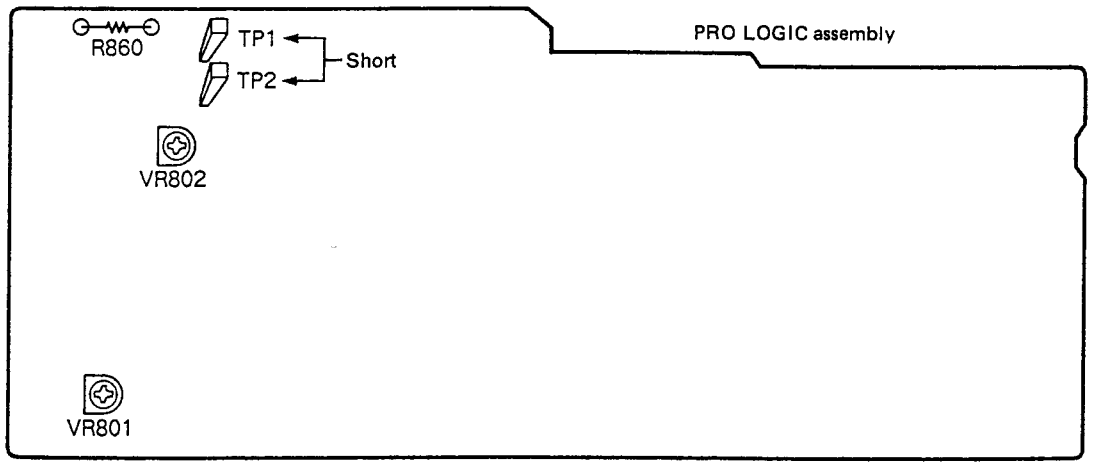


Fig. 5-2. Adjustment

5. RÉGLAGES

● Préparations

1. Entrer le signal de phase de 1 kHz, 150 mV dans la borne d'entrée du lecteur de vidéo disc VD, puis régler sur la fonction VDP.
2. Régler l'unité sur le mode DOLBY PRO LOGIC SURROUND.
3. Court-circuiter TP1 et TP2 à l'ensemble PRO LOGIC. (Décourt-circuiter apres le réglage).
4. Durant le réglage, mettre le volume principal et le volume arrière au maximum.

● Procédure de réglage

1. Régler VR801 afin que les tensions gauche et droite de sortie du préamplificateur arrière REAR AMP PRE OUT viennent au minimum.
2. Régler VR802 afin que les tensions CC aux deux cotes de R860 deviennent approx. ± 0 mV (0 ± 50 mV).
3. Répéter les procédures 1 et 2 ci-dessus jusqu'a l'obtention du réglage optimal.

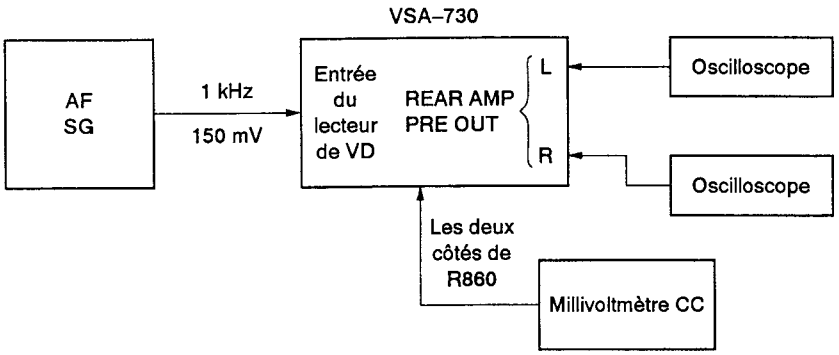


Fig. 5-1. Connexions

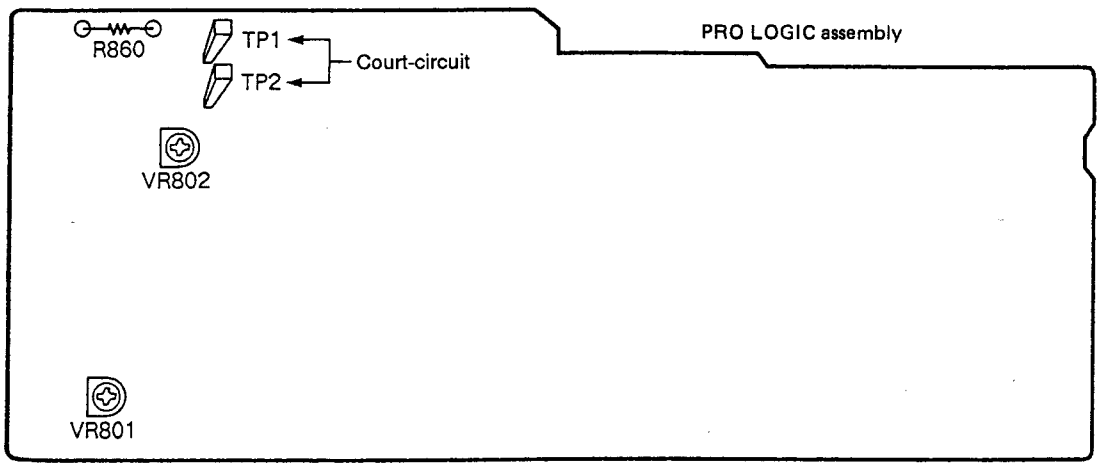


Fig. 5-2. Réglage

5. AJUSTES

● Preparaciones

1. Ingrese la señal de fase de 1 kHz y 150 mV por el terminal de entrada de VDP, y active la función VDP.
2. Ponga la unidad en el modo DOLBY PRO LOGIC SURROUND.
3. Ponga TP1 y TP2 en cortocircuito dentro del conjunto PRO LOGIC (desconéctelos después del ajuste).
4. Antes de comenzar el ajuste, coloque el control principal de volumen y el control trasero en màximo.

● Procedimiento de ajuste

1. Ajuste VR801 de modo que las tensiones en los terminales REAR AMP PRE OUT derecho e izquierdo sean mínimas.
2. Ajuste VR802 de modo que la tensión de DC a ambos lados de R860 sea 0 mV ± 50 mV.
3. Repita los pasos 1 y 2 hasta obtener el ajuste óptimo.

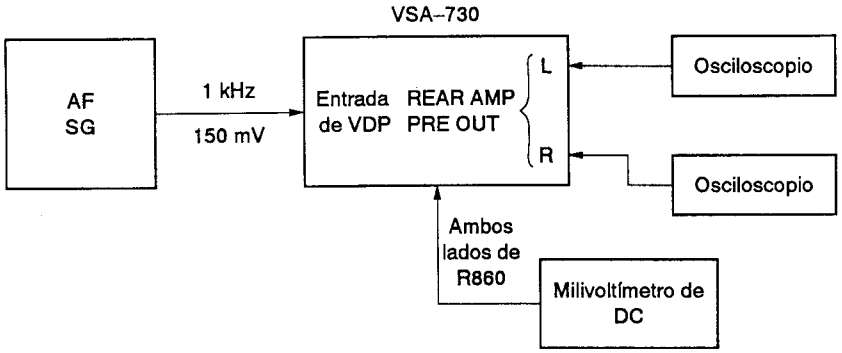


Fig. 5-1. Conexiones

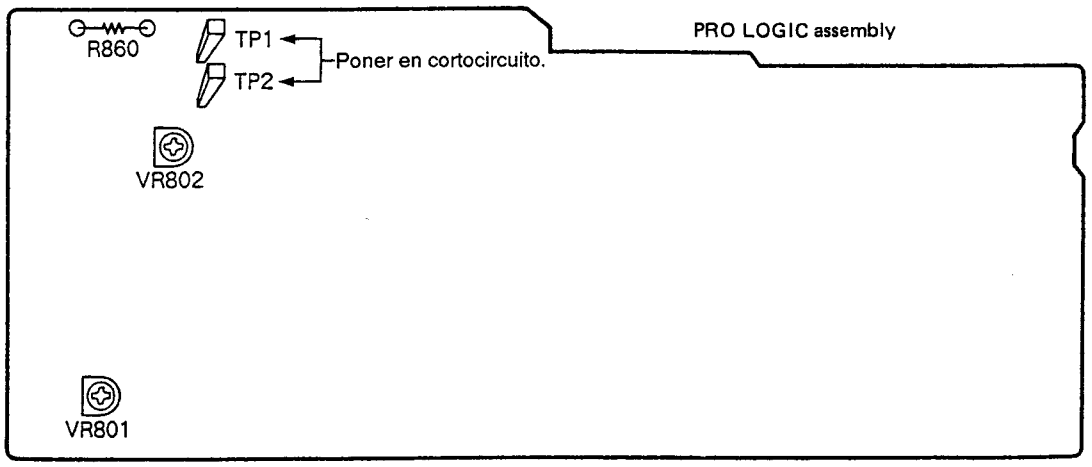


Fig. 5-2. Ajuste

6. IC INFORMATION

6.1 LA7952 (IC603)

S2 (Pin 2)	S3 (Pin 3)	VIN 1 (Pin 4)	VIN 2 (Pin 6)	VIN 3 (Pin 8)	VIN 4 (Pin 9)
L	L	OFF	OFF	OFF	ON
H	L	OFF	OFF	ON	OFF
L	H	OFF	ON	OFF	OFF
H	H	ON	OFF	OFF	OFF

Table 6-1. Truth Table

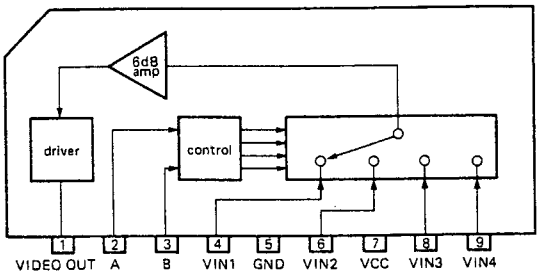


Fig. 6-1. Equivalent Circuit Diagram

6.2 LA7951 (IC601)

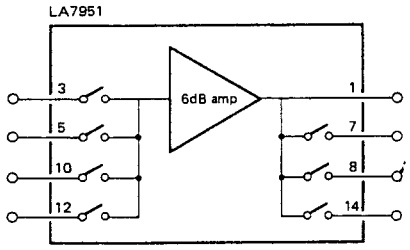


Fig. 6-2. Video Editing System

Control			Input				Output			
MUTE (Pin 6)	1 (Pin 13)	2 (Pin 9)	0 (Pin 3)	1 (Pin 5)	2 (Pin 10)	3 (Pin 12)	COMMON (Pin 1)	1 (Pin 7)	2 (Pin 8)	3 (Pin 14)
L	–	–	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
H	L	L	ON	OFF	OFF	OFF	ON	ON	ON	ON
H	L	H	OFF	ON	OFF	OFF	ON	OFF	ON	ON
H	H	L	OFF	OFF	ON	OFF	ON	ON	OFF	ON
H	H	H	OFF	OFF	OFF	ON	ON	ON	ON	OFF

Table 6-2. Truth Table

6.3 M51132L (IC812)

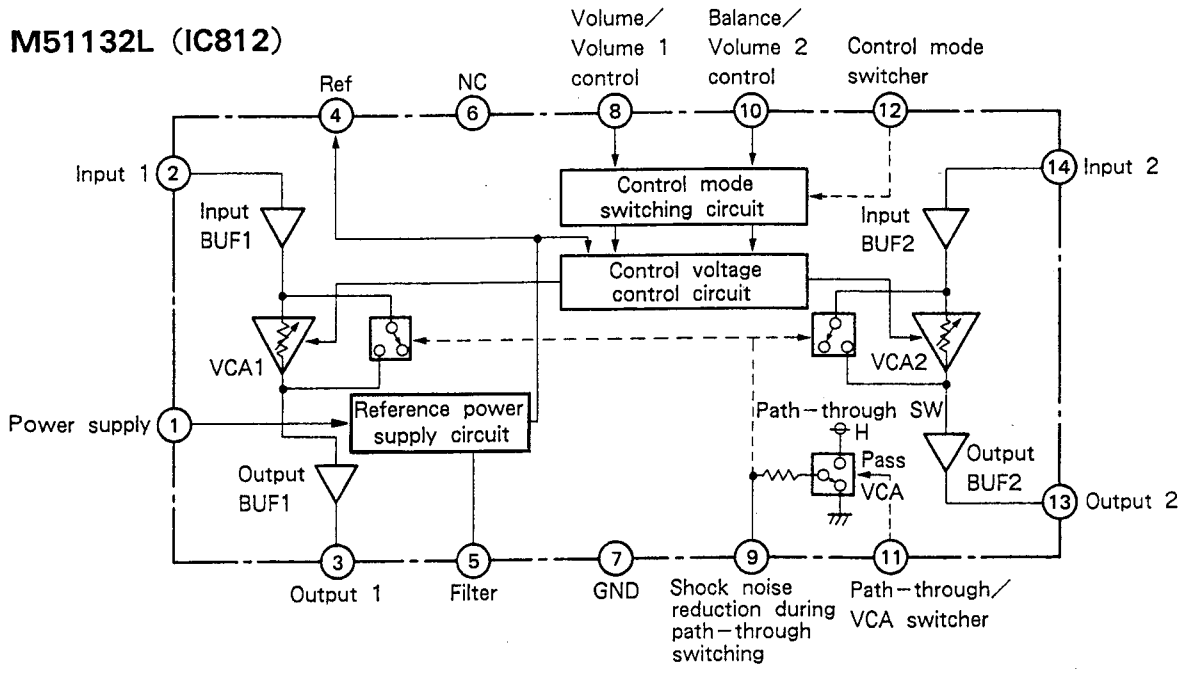


Fig. 6-3. Block Diagram

6.4 PDG046−A

Pin No.	Symbol	Name	I/O	Function	During back up	Active
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	a b c d e f g h j k m n p r s t	FL segment signal output	O	FL segment	L	H
17 18 19 20 21 22 23 24 25 26 27 28	G12 G11 G10 G9 G8 G7 G6 G5 G4 G3 G2 G1	FL timing signal output	O	FL grid	L	H
29	INT	External interruption	I	Not used (Connected to Vss)		−
30	XTAL	Clock output	O	4.19 MHz ceramic resonator		−
31	EXTAL	Clock input	I			
32	$\overline{RST}$	Reset input	I	External reset input		L
33	NC			OPEN		−
34	V_{DD}	Power supply voltage	I	Positive power supply (+5V) terminal		−
35 36 37 38	I_0 I_1 I_2 I_3	PORT I	O	Key matrix output	L	
39 40	B_0 B_1	PORT B	O	Key matrix output	L	

Table 6−3−1. PDG046−A Pin Function Table

Pin No.	Symbol	Name	I/O	Function	During back up	Active
41	B_2	PORT B	O	Key matrix output	L	
42	B_3					
43	NC			OPEN		–
44	$\overline{SC}$	Serial clock	O	Serial data clock	L	H
45	SO	Serial output	O	Serial data output	L	H
46	PX^2	PORT X	I	SUPER IMPOSE $\overline{VIDEO}$ input "L" when used/ "H" when not used		L
47	A_0	PORT A	O	Not used	L	H
48	A_1			Not used	L	H
49	A_2			Electrical VOL. IC (TA7291S) IN2 UP	L	L
50	A_3			Electric VOL. IC (TA7291S) IN1 DOWN	L	L
51	F_0	PORT F	I	Not used (Connected to Vss)		–
52	F_1			J : L/Overseas : H switching		–
53	F_2			Key matrix input		
54	F_3					
55	E_0	PORT E	I	Key matrix input		
56	E_1					
57	E_2					
58	E_3					
59	RY_0	PORT Y	O	PRO logic IC (CXD1067P) strobe	L	H
60	RY_1			LED IC (PD0012A) $\overline{CHIP\ ENABLE}$	L	L
61	WP	Wake up input	I	AC input		
62	RMC	Remote control input	I	Remocon signal input		
63	D_0	PORT D	O	Not used	L	L
64	D_1			Front BAL.(TC9154AP), TONE (TC9184P) strobe	L	H
65	D_2			FUNC. REC IC (TC9162N, 9163N, 9164N) strobe	L	H
66	D_3			V-FUNC. surround IC (LC7570) WR	L	H
67	C_0	PORT C	O	Rear VOL IC (TC9154AP) strobe	L	H
68	C_1			Center VOL IC (TC9154AP) strobe	L	H
69	C_2			Protection output	L	H
70	C_3			Power relay	L	H
71	Vss	GND voltage	I	GND terminal		–
72	TX	32 kHz T/C clock output	O	Not used (OPEN)		–
73	NC			OPEN		–
74	TEX	32 kHz T/C clock input	I	Not used (Connected to V_{DD})		–
75	V_{REF}	Reference voltage input	I	Not used (Connected to V_{DD})		–
76	V_{FDP}	Power supply for FL	I	−31V		–
77	H_0	PORT H	O	Not used (OPEN)		–
78	H_1			Rear mute	L	L
79	H_2			Center mute	L	L
80	H_3			Front mute	L	L

Table 6-3-2. PDG046-A Pin Function Table

6.5 M51198P

Pin No.	Name	Abbreviation	Usage	Standard output voltage
1	Digital V_{DD}	DIG. V_{DD}	Apply 4.5 to 5.5V (Rating : 5V)	–
2	Oscillator input	OSC. IN	Connect 3.27 MHz ceramic resonator, or external clock.	–
3	Oscillator output	OSC. OUT	Connect 3.27 MHz ceramic resonator, or open when using external clock.	5V
4	DEL1/REQ	DEL1/REQ	Used as DEL1 terminal during easy mode, or as REQ terminal during microprocessor mode.	–
5	DEL2/SECK	DEL2/SECK	Used as DEL2 terminal during easy mode, or as SECK terminal during microprocessor mode.	–
6	DEL3/SEDATA	DEL3/SEDATA	Used as DEL3 terminal during easy mode, or as SEDATA terminal during microprocessor mode.	–
7	DEL4	DEL4	80 μ sec mode control terminal.	–
8	μ COM/EASY	μ COM/EASY	Microprocessor mode/easy mode switching pin	–
9	Mute control pin	MUTE	Manual mute control pin	–
10	Mute timing selection	MUTE TIME	Auto mute timing selecting pin	–
11	Digital GND	DIG. GND		0V
12	Analog GND	ANG. GND		0V
13	Low pass filter 2 output	LPF2 OUT	Forms the 2nd stage low pass filter consisting of external capacitor and resistor	2.5V
14	Low pass filter 1 input	LPF2 IN		2.5V
15	OP AMP 2 output	OP2 OUT	Forms the mirror integrator consisting of external capacitor	2.5V
16	OP AMP 2 input	OP2 IN		2.5V
17	Current control 2	CC2		0.7 (For no signal)
18	Current control 1	CC1		
19	Reference	REF	=1/2Vcc	2.5V
20	OP AMP 1 input	OP1 IN	Forms the mirror integrator consisting of external capacitor	2.5V
21	OP AMP 1 output	OP1 OUT		2.5V
22	Low pass filter 1 output	LPF1 OUT	Forms the 2nd stage low pass filter consisting of external capacitor and resistor	2.5V
23	Low pass filter 1 input	LPF1 IN		2.5V
24	Analog Vcc	ANG. Vcc	Apply 4.5V to 5.5V (Rating : 5V)	–

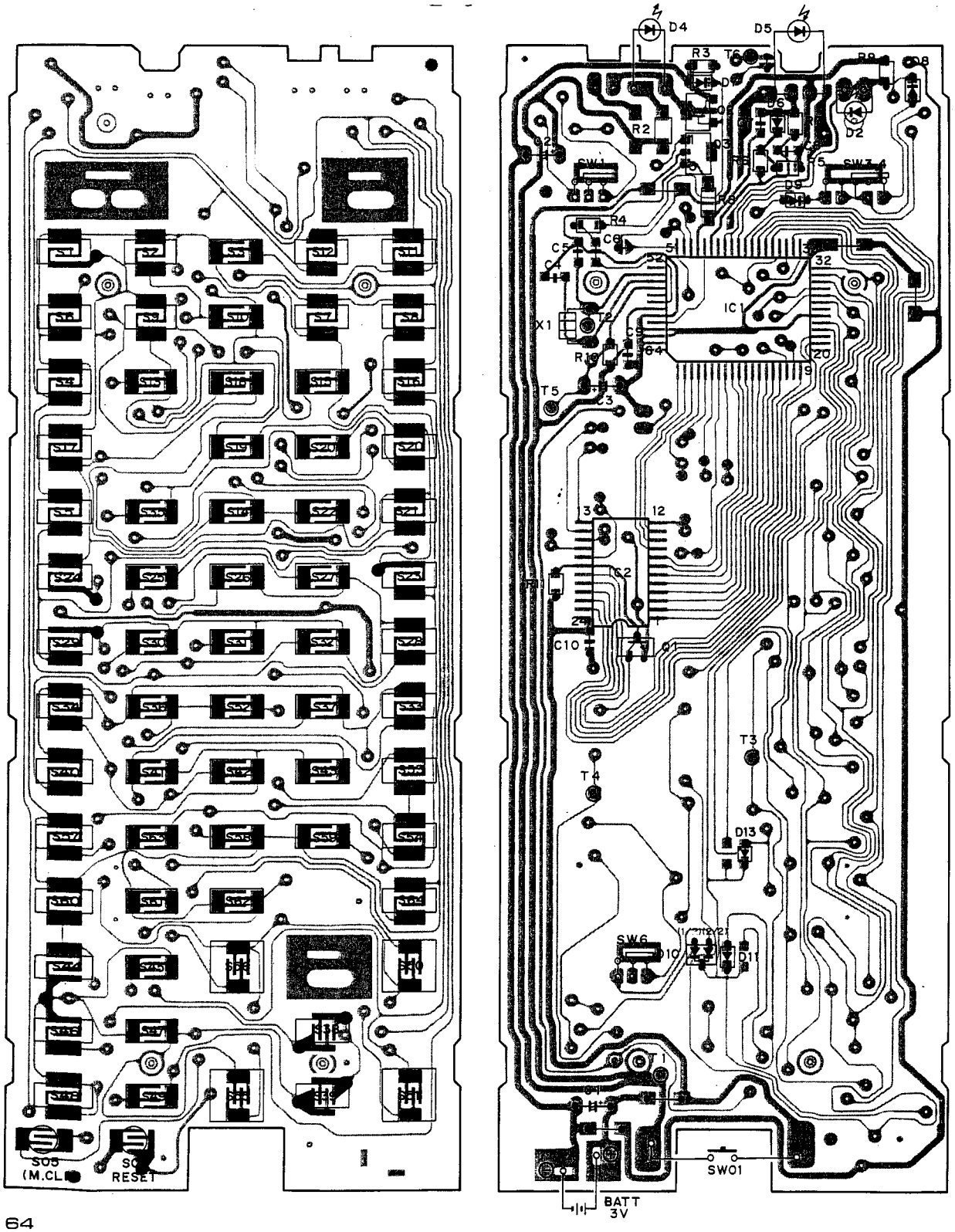
Table 6–4. M51198P Pin Name

7. PROGRAMABLE REMOTE CONTROL UNIT

7.1 P.C. BOARD PATTERN

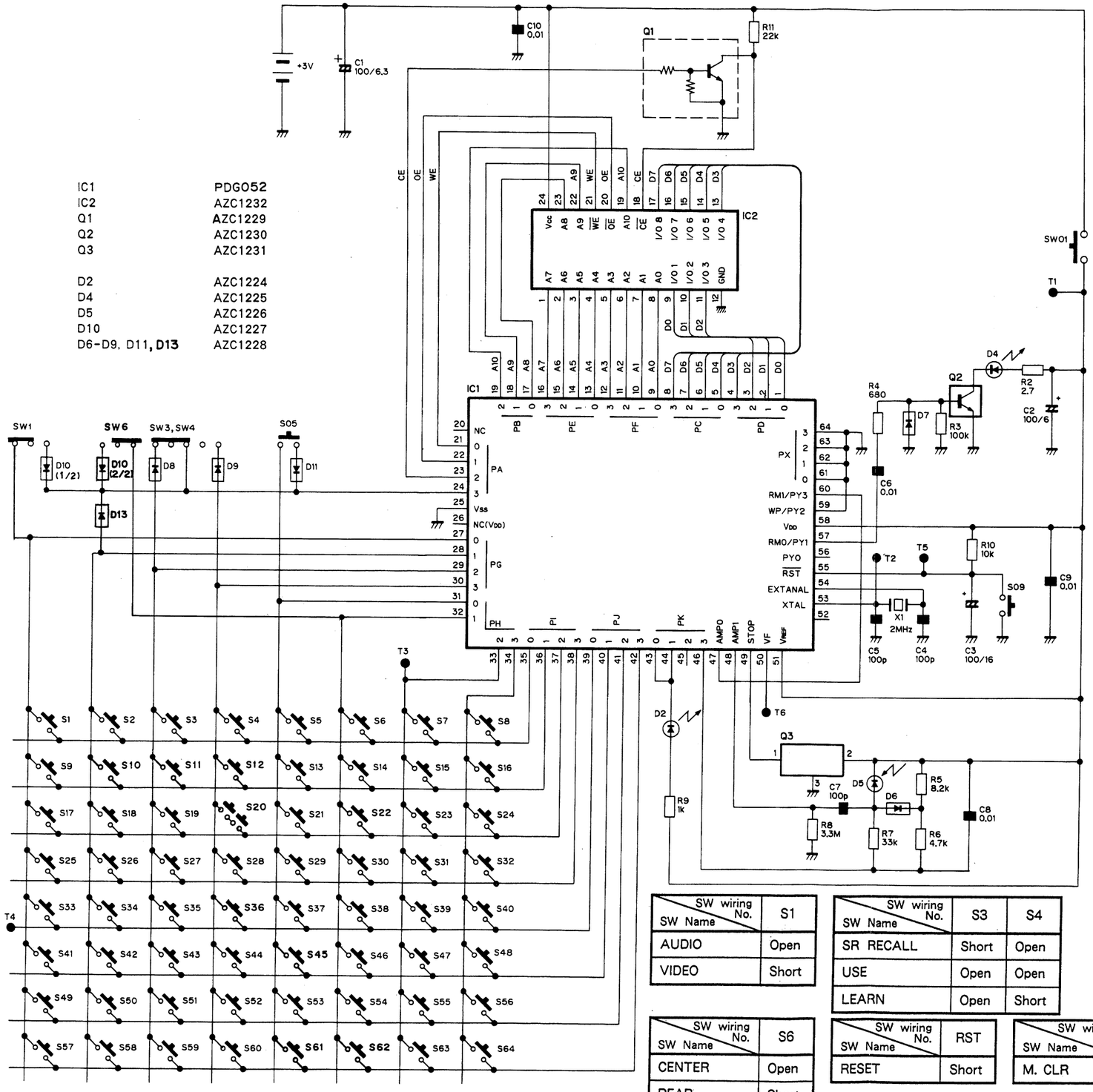
NOTE:

Indicates a chip resistor.
Indicates a chip capacitor.
Indicates a chip transistor.
Indicates a chip diode.
Indicates a chip inductor.
Diod



7.2 SCHEMATIC DIAGRAM

IC1	PDG052
IC2	AZC1232
Q1	AZC1229
Q2	AZC1230
Q3	AZC1231
D2	AZC1224
D4	AZC1225
D5	AZC1226
D10	AZC1227
D6-D9, D11, **D13**	AZC1228



SW wiring No. / SW Name	S1
AUDIO	Open
VIDEO	Short

SW wiring No. / SW Name	S3	S4
SR RECALL	Short	Open
USE	Open	Open
LEARN	Open	Short

SW wiring No. / SW Name	S6
CENTER	Open
REAR	Short

SW wiring No. / SW Name	RST
RESET	Short

SW wiring No. / SW Name	S5
M. CLR	Short

1. RESISTORS :
   Indicated in Ω, 1/4W, 1/6W, 1/8W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.
2. CAPACITORS :
   Indicated in capacity (μF) / voltage (V) unless otherwise noted p ; pF.
   Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT :
   ▭ ; DC voltage (V) at play state.
   ⬅mA ; DC current at play state.
   Value in ( ) is DC current at stop state.
4. 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.
5. SWITCHES (Underline indicates switch position)

S1 : TAPE 1/VCR 1
S2 : TAPE 2/VCR 2
S3 : CD/VDP
S4 : ⏮ (DC/VDP)
S5 : ⏮ (TAPE II/VCR)
S6 : POWER (VDP)
S7 : CD ⏮/VDP CHP/FR−TM
S8 : CD ⏭/VDP SEARCH
S9 : PROGRAM
S10 : CD DISC/VDP DISPLAY
S11 : PHONO/VIDEO AUX (V・ADPT)
S12 : TUNER/TV (VIDEO)
S13 : ⏸ (CD/VDP)
S14 : ■ (TAPE II/VCR)
S15 : ▶ (CD/VDP)
S16 : ⏩ (CD/VDP)
S17 : POWER (VCR)
S18 : ■ (CD/VDP)
S19 : ⏸ (TAPE II/VCR)
S20 : REC (TAPE II/VCR)
S21 : ⏩ (TAPE II/VCR)
S22 : ▶ (TAPE II/VCR)
S23 : TAPE I ⏩/VCR CH+
S24 : TAPE I ⏪/TV FANC TV
S25 : TAPE I ◀/TV FANC VDP
S26 : TAPE I ■/TV FANC VCR
S27 : TAPE I ▶/VCR CH−
S28 : TUNER STATION+/TV CH+
S29 : POWER (TV)
S30 : CD +10/TV DISPLAY
S31 : TUNER 12/24/TV FANC
S32 : TUNER BAND/TV DUAL
S33 : TUNER STATION/TV CH−
S34 : 1, 13 (TUN/CD, TV/VDP)
S35 : TAPE II ◀/VCR TV/VCR
S36 : 2, 14 (TUN/CD, TV/VDP)
S37 : 4, 16 (TUN/CD, TV/VDP)
S38 : SURROUND BALANCE→ (AMP)
S39 : TEST TONE
S40 : 5, 17 (TUN/CD, TV/VDP)
S41 : 6, 18 (TUN/CD, TV/VDP)
S42 : 7, 19 (TUN/CD, TV/VDP)
S43 : 8, 20 (TUN/CD, TV/VDP)
S44 : SURROUND MODE (AMP)
S45 : CENTER MODE (AMP)
S46 : DELAY TIME (AMP)
S47 : SURROUND BALANCE← (AMP)
S48 : SLEEP (AMP/TV)
S49 : DIRECT/V・SEL (AMP)
S50 : VOLUME+ (AMP)
S51 : VOLUME− (AMP)
S52 : 3, 15 (TUN/CD, TV/VDP)
S53 : VOLUME+ (TV)
S54 : VOLUME− (TV)
S55 : SURROUND BALANCE+ (AMP)
S56 : SURROUND BALANCE− (AMP)
S57 : 9, 21 (TUN/CD, TV/VDP)
S58 : 11, 23 MEMORY (TUN/CD, TV/VDP)
S59 : 12, 24 CLEAR (TUN/CD, TV/VDP)
S60 : POWER (AMP)
S61 : ACOUSTIC (AMP)
S62 : SOUND FIELD (AMP)
S63 : 0/10, 22 (TUN/CD, TV/VDP)
S64 : MUTING (AMP)

SW1 : AUDIO−VIDEO
SW3, SW4 : RECALL−USE−LEARN
SW6 : CENTER/FRONT−REAR
S05 : M. CLR
S09 : RESET
SW01 : REMOTE POWER

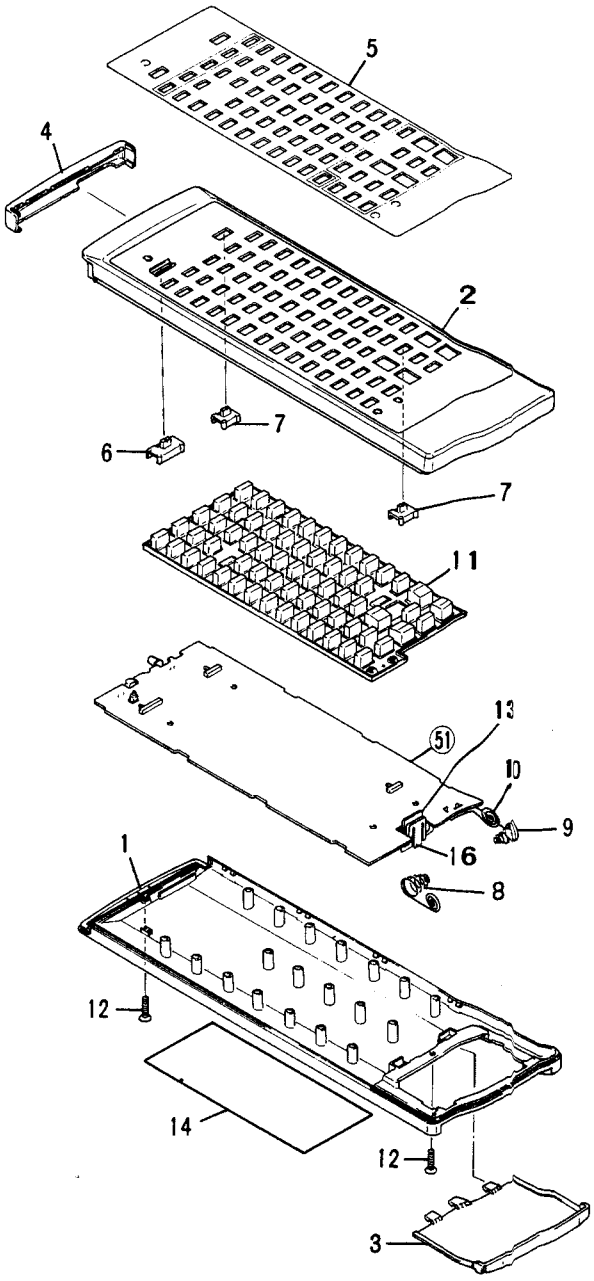
NOTES :

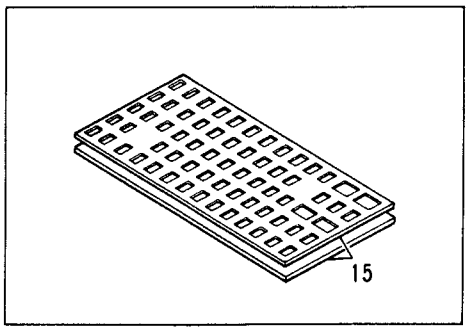
- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be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

7.3 EXPLODED VIEW AND PARTS LIST

Parts List

Mark	No.	Part No.	Description
	1	AZN1968	Case (A)
	2	AZN1969	Case (B)
	3	AZN1970	Battery cover
	4	AZA1139	Filter
	5	AZA1213	Aluminum plate
	6	AZA1142	Knob (A)
	7	AZA1143	Knob (B)
	8	AZB1268	Contact spring
	9	AZB1269	Contact spring
	10	AZB1270	Contact spring
	11	AZA1216	Conduction rubber sheet
	12	AZA1146	Screw
	13	AZS1077	Contact side (SW01)
	14	AZA1241	Label
	15	AZA1147	Characters sheet
	16	AZS1092	Contact side (SW01)
	51		PCB board





7.4 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 ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

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

560 Ω	56×10^{1}	561	RD1/4PS 5 6 1 J
47k Ω	47×10^{3}	473	RD1/4PS 4 7 3 J
0.5 Ω	0R5		RN2H 0 R 5 K
1 Ω	010		RS1P 0 1 0 K

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

5.62k Ω	562×10^{1}	5621	RN1/4SR 5 6 2 1 F

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1	PDG052
	IC2	AZC1232
	Q1	AZC1229
	Q2	AZC1230
	Q3	AZC1231
	D2	AZC1224
	D4	AZC1225
	D5	AZC1226
	D10	AZC1227
	D6–D9, D11, D13	AZC1228

SWITCHES

Mark	Symbol & Description	Part No.
	SW1, SW6 Slide SW	AZS1073
	SW3, SW4 Slide SW	AZS1074
	SW01 Contact side	AZS1077

CAPACITORS

Mark	Symbol & Description	Part No.
	C6, C8–C10	AZC1220
	C7	AZC1221
	C4, C5	AZC1222
	C1, C2	AZC1253
	C3	AZC1254

RESISTORS

Mark	Symbol & Description	Part No.
	R3 (100k Ω, 1/8)	AZC1210
	R7 (33k Ω, 1/8)	AZC1211
	R11 (22k Ω, 1/8)	AZC1212
	R10 (10k Ω, 1/8)	AZC1213
	R5 (8.2k Ω, 1/8)	AZC1214
	R6 (4.7k Ω, 1/8)	AZC1215
	R9 (1k Ω, 1/8)	AZC1216
	R4 (680 Ω, 1/8)	AZC1217
	R8 (3.3M Ω, 1/4)	AZC1218
	R2 (2.7 Ω, 1/4)	AZC1219

OTHERS

Mark	Symbol & Description	Part No.
	X1 Ceramic lock	AZC1223

8. FOR SD AND YPW TYPES

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

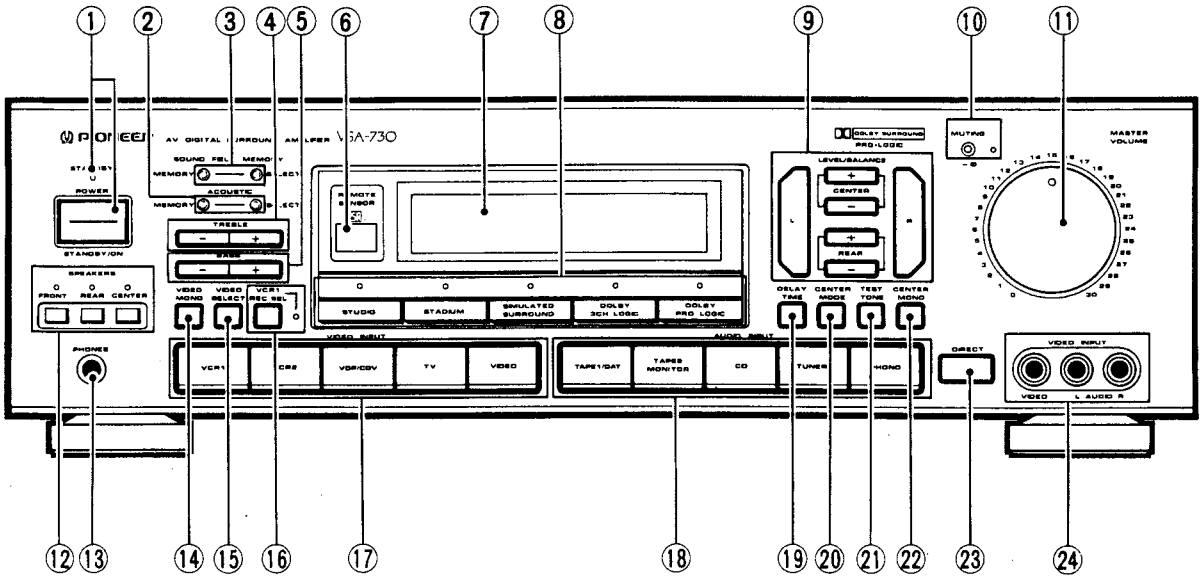
The VSA−730/SD and YPW types are the same as the VSA−730/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		VSA−730/HE type	VSA−730/SD type	VSA−730/YPW type	
	S. TRANS assembly	Non supply	Non supply	Non supply	*1
⚠	AC power cord	ADG1021	ADG1015	ADG−064	
⚠	FU3, FU4 Fuse	AEK−400	AEK−125	AEK−400	
⚠	FU1 Fuse	AEK−403	.....	AEK−403	
⚠	FU1, FU5 Fuse	.....	AEK−123	.....	
⚠	T1 Power transformer (AC220/240V)	ATS1270	.....	ATS1270	
⚠	T1 Power transformer (AC110/120−127/220/240V)	.....	ATS1271	.....	
⚠	S3 Voltage selector	.....	AKX−507	.....	
⚠	AC socket	.....	AKP1015	.....	
	FL filter	AAK1795	AAK1941	AAK1795	
	C42, C43 Capacitor	.....	CQMA473J50	.....	
	Operating instructions (Dutch/Swedish/Spanish/Portguese)	ARC1206	.....	.....	
	Operating instructions (English/German/French/Italian)	ARE1159	.....	.....	
	Operating instructions (English)	.....	ARB1243	ARB1243	

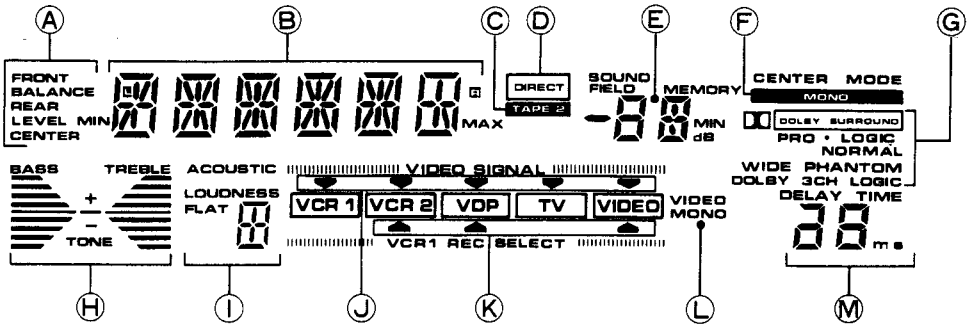
*1 ; S. TRANS assembly (SD type) and S. TRANS assembly (HE type) are different in jumper wires, fuse holders and terminals only. All the supplied parts for servicing are the same.
And S. TRANS assembly (HE type) and S. TRANS assembly (YPW type) are the same.

9. PANEL FACILITIES

FRONT PANEL FACILITIES



Display section



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.
The STANDBY indicator is off.

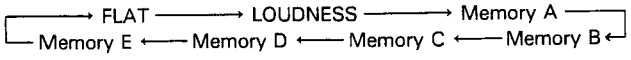
STANDBY: When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.
When the STANDBY indicator lights, the unit is in STANDBY.

② ACOUSTIC switches (MEMORY, SELECT)

Five types of tone (bass and treble) control settings can be preset.

MEMORY:
Press this switch to store in memory.

SELECT:
Tone setting changes as follows when pressing this switch repeatedly:



FLAT:
Flat tone characteristics.

LOUDNESS:
Low and high frequencies are emphasized. Use this setting to obtain a full-bodied sound when listening.

Presetting the acoustic memory

1. **Adjust the sound quality as desired using the BASS and TREBLE control switches.**
2. **Press the MEMORY switch.**
3. **Press the SELECT switch and select the sign to which you wish to assign the setting (A – E) while the indicator flashes.**
   - When the indicator lights after flashing, it indicates that the command has been stored in memory. If you don't select memory positions (A – E) while the ACOUSTIC indicator is flashing, nothing will be stored in memory.
   - In this way, the desired tone will be preset in one of the five acoustic memory positions. To preset four other desired tone settings, perform the same operations.
   - To recall the memorized tone settings, press the SELECT switch to select the desired memory position.

NOTE:
- *Even if the power switch is in the STANDBY position, provided the power cord is plugged into an AC wall socket, memory will not be erased. Even if the power cord is disconnected, memory will remain for about 2 weeks.*
- *If the memory is erased, program the presets once more.*

③ SOUND FIELD MEMORY switches (MEMORY, SELECT)

In the SOUND FIELD MEMORY:
- SURROUND MODE
- CENTER MODE (In the case of DOLBY PRO LOGIC SURROUND and DOLBY 3 CH LOGIC. In other cases the center mono out ON/OFF)
- FRONT balance
- CENTER volume level
- REAR balance
- DELAY TIME
- REAR volume level
- ACOUSTIC MEMORY

Up to five of these positions can be stored in memory. It is also possible to select positions previously stored in the memory ("P" is displayed)

[Contents of "P"]
- SURROUND MODE: DOLBY PRO LOGIC SURROUND
- CENTER MODE: NORMAL
- DELAY TIME: 20 ms
- FRONT, REAR balance: CENTER
- REAR, CENTER volume level: both −12 dB
- ACOUSTIC: FLAT

How to use the sound field memory

1. **Select ACOUSTIC MEMORY, SURROUND MODE, and adjust the DELAY TIME, balance and volume level.**
2. **Press the MEMORY switch.**
3. **While the SOUND FIELD MEMORY indicator is flashing, use the SELECT switch to select the position (A—E) to be memorized.**
   - A position is memorized when the SOUND FIELD MEMORY indicator stops flashing and lights. If the position to be memorized (A—E) is not selected while the indicator is flashing, it will not be memorized.
   - TONE settings not stored in ACOUSTIC MEMORY will not be memorized.
   - One of the five possible positions has now been stored in memory. The four remaining positions can be stored in memory using the same procedure.
   - When recalling the contents of the memory, select the memorized position with the SELECT switch.
   - In "P" nothing can be memorized.

④ TREBLE control switches

Use to adjust the high-frequency level. Press the + switch to increase high-frequency level, and the − switch to decrease it.
When both sides (+, −) of the TREBLE control are pressed simultaneously, the treble response will be set to the flat (normal) condition.

⑤ BASS control switches

Use to adjust the low-frequency level. Press the + switch to increase low-frequency level, and the − switch to decrease it.
When both sides (+, −) of the BASS control are pressed simultaneously, the base response will be set to the flat (normal) condition.

NOTE:
- *Sound quality adjustment can only be performed on the front channels. There is no change on the center channel and rear channels.*
- *Adjustment of treble and bass is not possible when the DIRECT switch is ON.*

⑥ REMOTE SENSOR

⑦ Display section

Ⓐ This lights when the front and rear balance and the rear and center volume levels are being adjusted.
During volume adjustment, Ⓑ and Ⓔ display the level, and during balance adjustment, Ⓑ displays the balance.
Ⓑ This gives alphanumeric display of the component selected by the INPUT SELECTOR.
When adjusting front and rear balance and volume or center volume, this displays balance and volume level.
It also gives alphanumeric display of SLEEP when the sleep timer is operating, and alphanumeric display of TEST when the test tone is ON.
Ⓒ This lights when the TAPE 2 MONITOR is ON.
Ⓓ This lights when the DIRECT switch is ON.

Ⓔ Displays the SOUND FIELD MEMORY selection.
During center or rear volume level adjustment, the volume level is displayed.
The time remaining when the SLEEP TIMER is operating is also displayed.
Ⓕ In any mode other than DOLBY PRO LOGIC SURROUND and DOLBY 3 CH LOGIC, if the CENTER MONO switch is pressed, this lights.
Ⓖ Displays the CENTER MODE of the DOLBY PRO LOGIC SURROUND and DOLBY 3 CH LOGIC.
Ⓗ Displays the TREBLE and BASS adjustment settings.
Ⓘ Displays the selected ACOUSTIC MEMORY.
Ⓙ Displays the currently selected video signal.
It also displays the video functions. If the VIDEO SELECT switch is pressed it changes.
Ⓚ Displays the component selected by the VCR 1 REC SEL (A component that can record to VCR 1).
Ⓛ This lights when the VIDEO MONO switch is ON.
Ⓜ Displays the selected DELAY TIME.

⑧ SURROUND MODE switches

Select surround mode to match program source.
STUDIO:
Enjoy the atmosphere of listening to music in a recording studio.
STADIUM:
Ideal for sports broadcasts, etc.
SIMULATED SURROUND:
Gives concert-hall presence to monaural sound (AM, TV, etc.).
DOLBY 3 CH LOGIC:
For playback from a stereo source, or when playing video or audio software bearing the DOLBY SURROUND mark without rear speakers connected, you can enjoy spacious sound field through the front L, front R, and center speakers.

DOLBY PRO LOGIC SURROUND:
Select this setting when watching video tapes or video disc player bearing the DOLBY SURROUND mark.
Press the mode switch that corresponds to the lit indicator once more to switch the surround mode OFF.

⑨ LEVEL/BALANCE adjustment switch

Use this to adjust the center and rear levels when you are in the surround mode, and the center level when center mono out is ON. Press the + side to raise the level, and the − side to decrease the level.
If you press both the + and − side at once, you will return to the initial level setting of −12dB. Rear level adjustment is not possible when the surround mode is OFF.
Adjust the front left and right balance with the L and R switches.

L ..... Press to adjust the left level.
R ..... Press to adjust the right level.
L, R ..... Press both at the same time to return to the center.

⑩ MUTING switch

Press to stop sound temporarily, and the indicator flashes. Press again to return to previous volume level.

⑪ MASTER VOLUME control knob

Use this adjust volume level.
Front and rear volume levels change at the same time.

⑫ SPEAKERS switches/indicators

ON/OFF switches for the speaker systems. An indicator lights when any of these switches is set to ON.
FRONT:
Switches and indicates for the front speaker systems.
REAR:
Switches and indicates for the rear speaker systems.
CENTER:
Switches and indicates for the front center channel speaker system.

⑬ PHONES jack

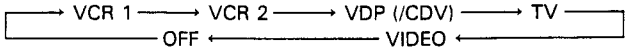
Connect the plug on your headphones to this jack. To listen to a program through the headphones, set all SPEAKERS switches to the OFF position.

⑭ VIDEO MONO switch

If you set this switch to ON, the sound from a video source connected to the VIDEO INPUT jack on the front panel ㉔ will be monaural. (VIDEO MONO on the display will light). If you connect a component with a monaural output to the L or R input jack, the sound will be the same from both left and right speakers when this switch is set to ON.

⑮ VIDEO SELECT switch

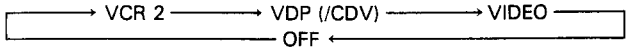
Press this to switch VIDEO OUT (TO MONITOR TV) and VCR OUT in the following sequence: (Audio doesn't change)
The recording selector has priority for VCR 1 video recording.



The display indicator (▼) lights to show the selected item.

⑯ VCR 1 REC SEL switch/indicator

Press this switch to change the source from which the VCR 1 will record in the following order.



The display indicator (▲) lights to show this.
OFF: The output signal is the same as the monitor output.

⑰ VIDEO INPUT selector switches

VCR 1:
Press this switch when playing back a tape in the video cassette recorder connected to the VCR 1 jacks.
VCR 2:
Press this switch when playing back a tape in the video cassette recorder connected to the VCR 2 jacks.
VDP/CDV:
Press to watch a program from a video disc player, CD CDV LD player connected to the VDP/CDV jacks.
TV:
Press to watch TV programs (reception with a TV tuner connected to the TV jacks).
VIDEO:
Press this when playing from equipment (video camera etc.) connected to VIDEO INPUT jack on the front panel.

⑱ AUDIO INPUT selector switches

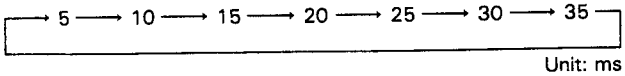
TAPE 1/DAT:
Press to listen to the device connected to the TAPE 1/DAT input.
TAPE 2 MONITOR:
Press to listen to playback sound of cassette deck connected to TAPE 2 input.
CD:
Press to listen to compact discs played on CD player connected to the CD input.

TUNER:
Press to listen to FM or AM broadcasts from tuner connected to TUNER input.
PHONO:
Press to listen to records played on turntable connected to the PHONO input.

NOTE:
If the TAPE 2 MONITOR switch is ON, sound will only be heard from components connected to TAPE 2 jacks.

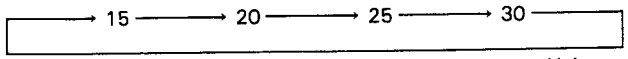
⑲ DELAY TIME switch

• STADIUM, SIMULATED SURROUND:
Switched the surround delay time in seven steps.



Unit: ms

• DOLBY PRO LOGIC SURROUND:
Switches the surround delay time in four steps.



Unit: ms

This does not operate when the surround mode is off or when STUDIO or DOLBY 3 CH LOGIC is used.

⑳ CENTER MODE switch

Selects the DOLBY PRO LOGIC SURROUND and DOLBY 3 CH LOGIC CENTER MODE (OFF, NORMAL, WIDE, PHANTOM) setting. This can only be performed when the DOLBY PRO LOGIC SURROUND or DOLBY 3 CH LOGIC is ON.

㉑ TEST TONE switch

This only operates when DOLBY PRO LOGIC SURROUND or DOLBY 3 CH LOGIC is used.
This switches the TEST TONE output ON/OFF to adjust the surround balance.
In the ON position the TEST TONE passes from the front left → center → front right → rear (L, R) (DOLBY PRO LOGIC) in that order, and can be heard for approximately 2 seconds from each speaker.

㉒ CENTER MONO OUT switch

This switches monaural (L + R) center speaker output on and off. (This switch cannot be used with DOLBY PRO LOGIC SURROUND and DOLBY 3 CH LOGIC)

NOTE:
Tone control doesn't operate with center speaker output.

㉓ DIRECT switch

Press this to listen to source sound without passing the audio signal through sound quality or balance adjusting circuitry.
To provide a better sound from the front speakers, the surround mode, center mono, and rear and center speakers are automatically switched OFF.
When DIRECT is ON, if you press the surround operation buttons ⑲, ⑳, ㉑, acoustic operation buttons ②, ④, ⑤, sound field memory operation buttons ③, ⑨, ㉒, or rear and center speaker switches, the DIRECT indicator flashes to warn you that they will not operate.

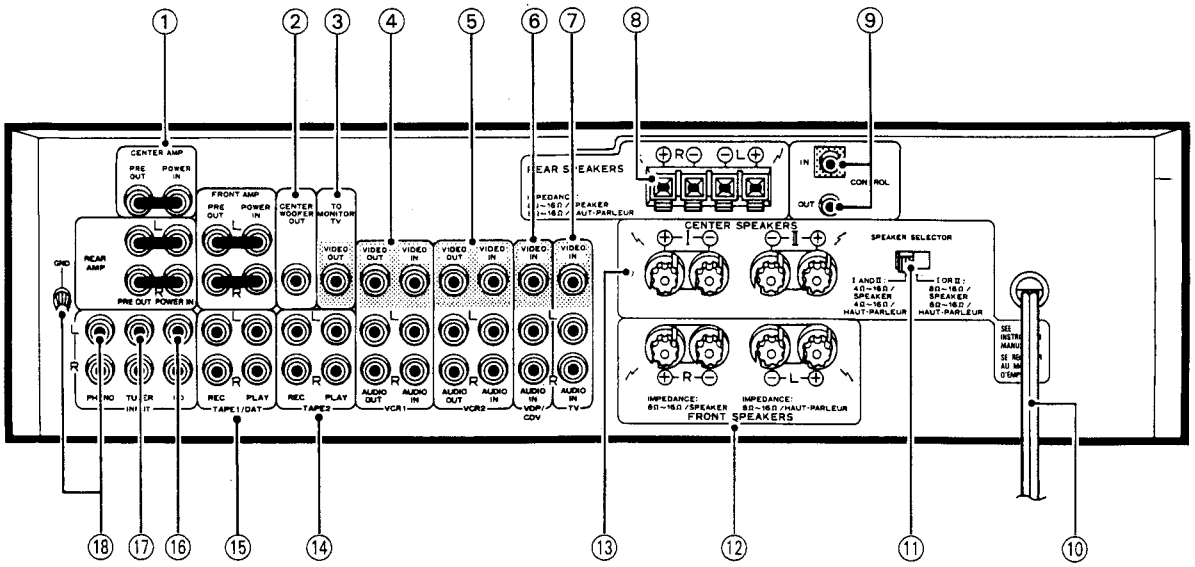
㉔ VIDEO INPUT jacks

Video components such as a video camera can be connected here.

• Last Memory Function

If you press the POWER switch after power has been cut, all settings other than MASTER VOLUME will be the same as before the power was cut.

REAR PANEL FACILITIES



① PRE OUT, POWER IN jacks

REAR AMP PRE OUT
CENTER AMP PRE OUT
FRONT AMP PRE OUT
When using a power amplifier to boost the volume of front, rear or center speakers, connect here.

REAR AMP POWER IN
CENTER AMP POWER IN
FRONT AMP POWER IN
When a preamplifier (optional) is used with the VSA-730 power amplifier to drive the front, rear or center speakers, use these jacks.
First switch the preamplifier power ON, and then switch the VSA-730 power ON.

NOTE:
When not using, be sure to connect the PRE OUT and the POWER IN with a connector bar.

② CENTER 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 200Hz are cut at 6dB/oct.

③ TO MONITOR TV jack

Connect to monitor TV or to TV set with video input jack.

④ VCR 1 IN/OUT jacks

For connection of first VCR.
VIDEO OUT:
Connect to VCR video input jack.
VIDEO IN:
Connect to VCR video output jack.
AUDIO OUT:
Connect to VCR audio input jacks.
AUDIO IN:
Connect to VCR audio output jacks.

⑤ VCR 2 IN/OUT jacks

⑥ VDP/CDV input jacks

Connect to videodisc (LD) player or CD CDV LD player output jacks (audio and video).

⑦ TV jacks

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

⑧ REAR SPEAKERS terminals

Connect the surround rear speakers to these terminals.
Speaker impedance
Connect speaker systems with a nominal impedance of between 8 Ω and 16 Ω.

⑨ CONTROL IN/OUT jacks

These jacks for input/output of control signals when operating other components with the attached remote control unit.

⑩ Power cord

Connect this to the AC wall socket.

⑪ SPEAKER SELECTOR (CENTER) switch

This lets you switch speaker impedance to the correct setting for one center speaker or two.
With just one speaker connected:
Be sure to set the switch to "I OR II" (right side), and use an 8 to 16 Ω speaker.
With two speakers connected:
Be sure to set the switch to "I AND II" (left side), and use 4 to 16 Ω speakers.

NOTE:
Select the impedance switch setting when the main unit's power is in standby. Don't switch impedance when the power is ON.

If you connect a speaker to either I or II, and set the speaker selector switch to the "I AND II" position, there will be no sound.

⑫ FRONT SPEAKERS terminals

Connect the front speakers to these terminals.
Speaker impedance:
Connect speaker systems with a nominal impedance of between 8 Ω and 16 Ω.

⑬ CENTER SPEAKERS terminals

Connecting the surround center channel speaker system(s).
You can connect two speakers for dual center, so you can locate speakers on both sides of the TV.
When the speaker selector is in the "I OR II" position, use a speaker with an impedance of 8 to 16 Ω. If the speaker selector is in the "I AND II" position, use speakers with an impedance of 4 to 16 Ω.

⑭ TAPE 2 REC/PLAY jacks

REC:
Connect to recording input jacks of second cassette deck.
PLAY:
Connect to playback jacks of second cassette deck.

⑮ TAPE 1/DAT REC/PLAY jacks

REC:
Connect to recording input jacks of cassette deck or digital audio tape deck.
PLAY:
Connect to playback jacks of cassette deck or digital audio tape deck.

NOTE:
When using digital audio tape deck, connect its analog input/output terminals.

⑯ CD input jacks

Connect to the output jacks of a compact disc player.

⑰ TUNER input jacks

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

⑱ PHONO input jacks/GND terminal

Connect here the output of a turntable. Connect the ground cable to the GND terminal.
Use a moving magnetic (MM) cartridge for the turntable.