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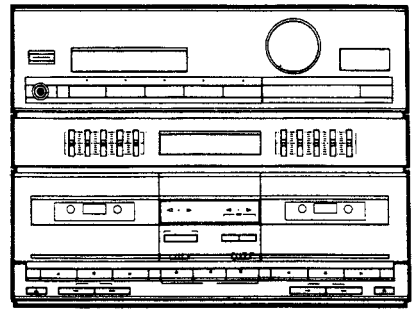
Service Manual



ORDER NO.
ARP1918

STEREO DOUBLE CASSETTE DECK AMPLIFIER

DC-Z73

DC-Z73 HAS FOLLOWING VERSIONS:

Type	Power requirement	Export destination
HE	AC220V, 240V (switchable)*	European continent
HEWZ	AC220V, 240V (switchable)*	West Germany
YPW	AC240V only	Australia
SD	AC110V, 120V-127V, 220V, 240V (switchable)	Kingdom of SaudiArabia and General market

*: Change the Jumper wires of assembly boards.

- **This manual is applicable to the DC−Z73/HE type.**
- **As to the other types, refer to applicable service manuals.**
- **As to the system composition, refer to the S−111 service manual (ARP1937).**
- **Ce manuel pour le service comprend les explications de réglage en français.**
- **Este manual de servicio trata del método ajuste escrito en español.**

CONTENTS

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YV JAN. 1990 Printed in japan.

1. EXPLODED VIEWS,PACKIMG AND PARTS LIST

1.1 PARTS LIST OF EXTERIOR AND PACKING

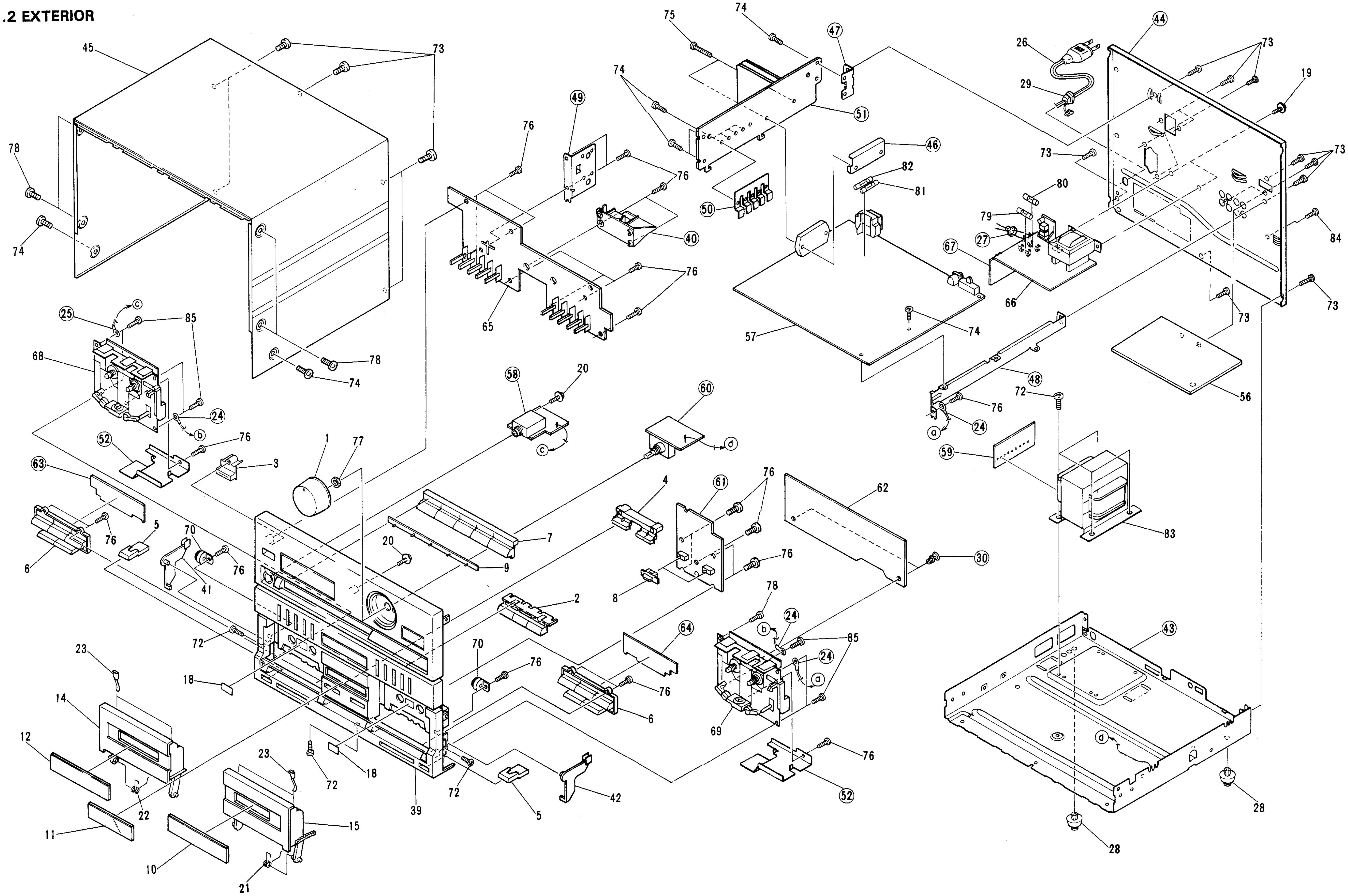
NOTES:

- *Parts without part number cannot be supplied.*
- *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 designa-*
- *Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Mark	No.	Description	Parts No.
	1	Knob (VOLUME)	AAB1135
	2	Button (REC)	AAD1668
	3	Button (POWER)	AAD1674
	4	Button (COPY)	AAD1676
	5	Button (EJECT)	AAD1716
	6	Button (DECK)	AAD1718
	7	Button (FUNCTION)	AAD1724
	8	Slide knob	AAE1128
	9	Indicator lens	AAK1801
	10	Decorative plate (DOOR R)	AAK1873
	11	Decorative plate (DECK)	AAK1881
	12	Decorative plate (DOOR L)	AAK1882
	13		
	14	Cassette door (L)	AAN1182
	15	Cassette door (R)	AAN1183
	16	...	...
	17	...	...
	18	Label (PAPER)	AAX1301
	19	Screw	ABA1084
	20	Screw (STEEL)	ABA1095
	21	Spring 1	ABH1062
	22	Spring 2	ABH1063
	23	Keep plate	ABK1011
	24	Earth lead	
	25	Earth lead	
⚠	26	AC power cord	ADG1049
	27	Nylon binder	
	28	Leg assembly	AEC−847
⚠	29	Strain relief	AEC−882
	30	Nylon revet	
	31	...	...
	32	"AAA" DRY CELL	
	33	Front pad (L•R)	AHA1316
	34	Rear pad (L•R)	AHA1317
	35	Packing case	AHD1826
	36	...	...
	37	Sheet	
	38	Battery cover	AZN1856
	39	Front panel	AMB1635
	40	P.C.B mold	
	41	Eject arm (L)	AMR2031
	42	Eject arm (R)	AMR2032
	43	Chassis	
	44	Rear panel	
	45	Bonnet case	ANE1220

Mark	No.	Description	Parts No.
	46	Plate	
	47	Plate B	
	48	Plate	
	49	Plate A	
	50	Plate	
	51	Heat sink	
	52	Shield plate (MECHA)	
	53	Operating instructions	ARC1180
	54	Operating instructions	ARE1144
	55	...	...
	56	FUNCTION assembly	AWK1245
	57	AF assembly	AWZ2627
	58	HEAD PHONE assembly	
	59	TRANS CONNECT assembly	
	60	MAIN VR assembly	
	61	DECK CENTER assembly	
	62	DECK CTRL assembly	AWZ2635
	63	DECK−1 SW assembly	
	64	DECK−2 SW assembly	
	65	AMP,GEQ CTRL assembly	AWZ2639
	66	POWER SUPPLY assembly	AWZ2239
	67	CONNECT assembly	
	68	Mecha unit 1	AWY1052
	69	Mecha unit 2	AWY1053
	70	Damper assembly	AXA1008
	71	Remote control unit (CU−DC019)	AXD1133
	72	Screw	BBZ30P060FMC
	73	Screw	BBZ30P080FCU
	74	Screw	BBZ30P080FZK
	75	Screw	BBZ30P180FMC
	76	Screw	BPZ26P080FMC
	77	Nut	NK90FUC
	78	Screw	VPZ30P080FZK
⚠	79	Fuse (T1.25A/250V,FU2001)	AEK−018
⚠	80	Fuse (T800mA/250V,FU2003)	AEK−031
⚠	81	Fuse (T1.25A/250V,FU2004)	AEK−018
⚠	82	Fuse (T1.25A/250V,FU2005)	AEK−018
⚠	83	Power transformer (T2001)	ATS1253
	84	Screw (EARTH)	VBZ35P080FMC
	85	Screw	VPZ30P080FMC

1.2 EXTERIOR



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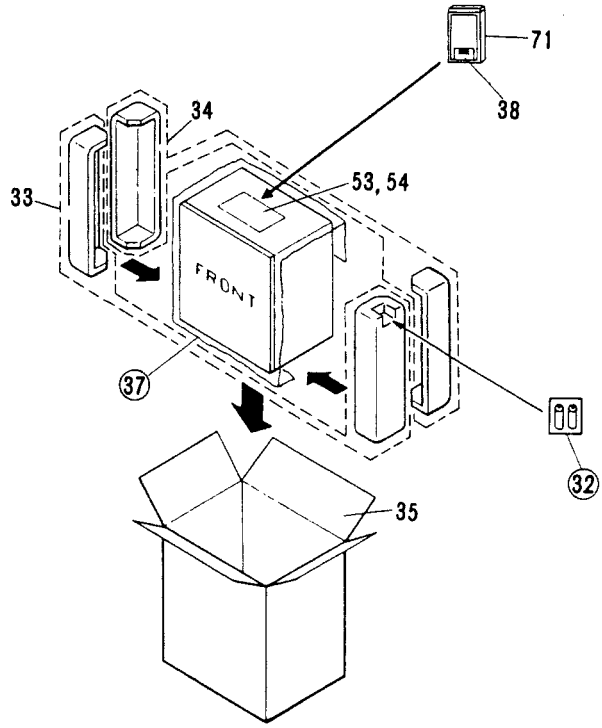
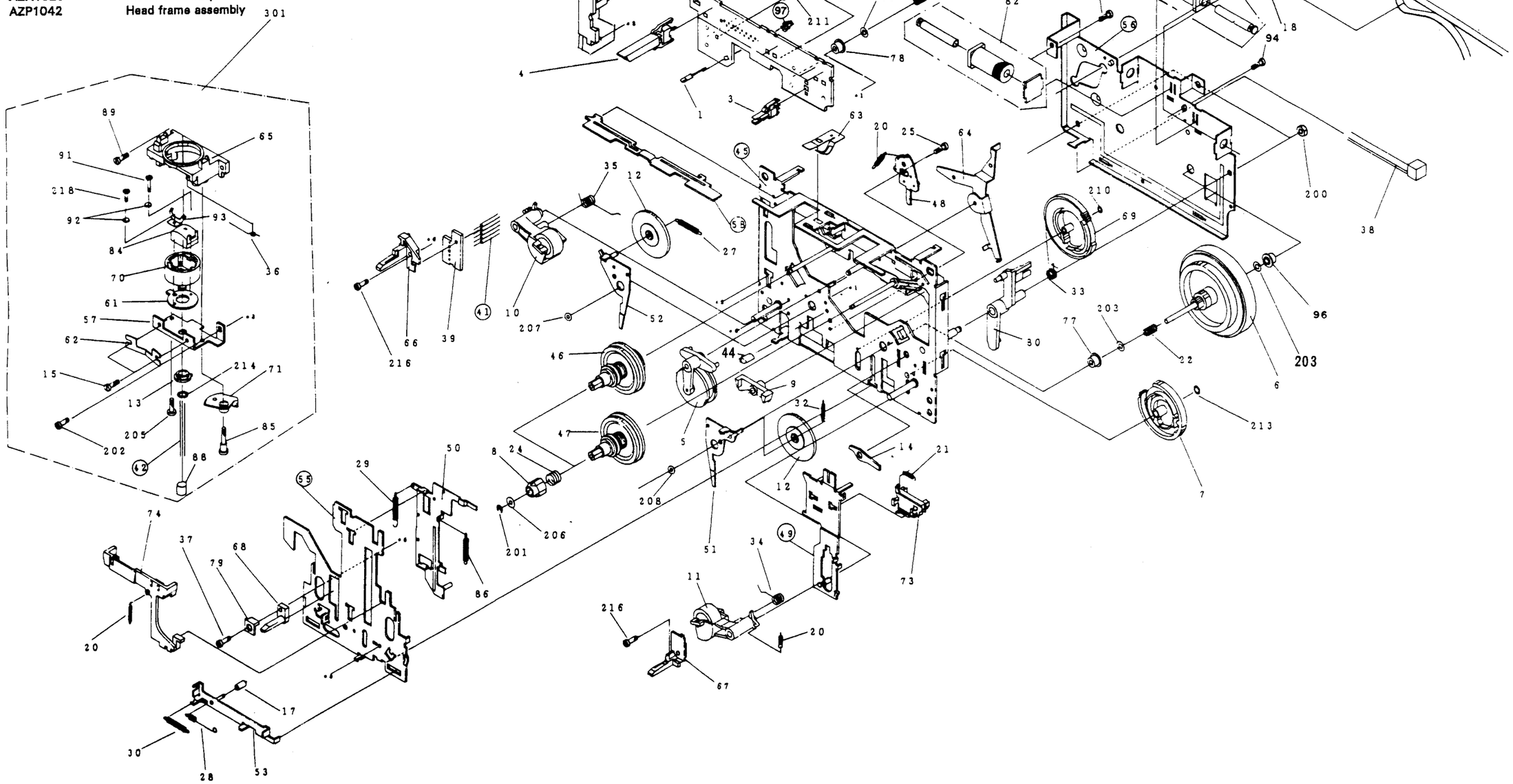
1.3 PACKING



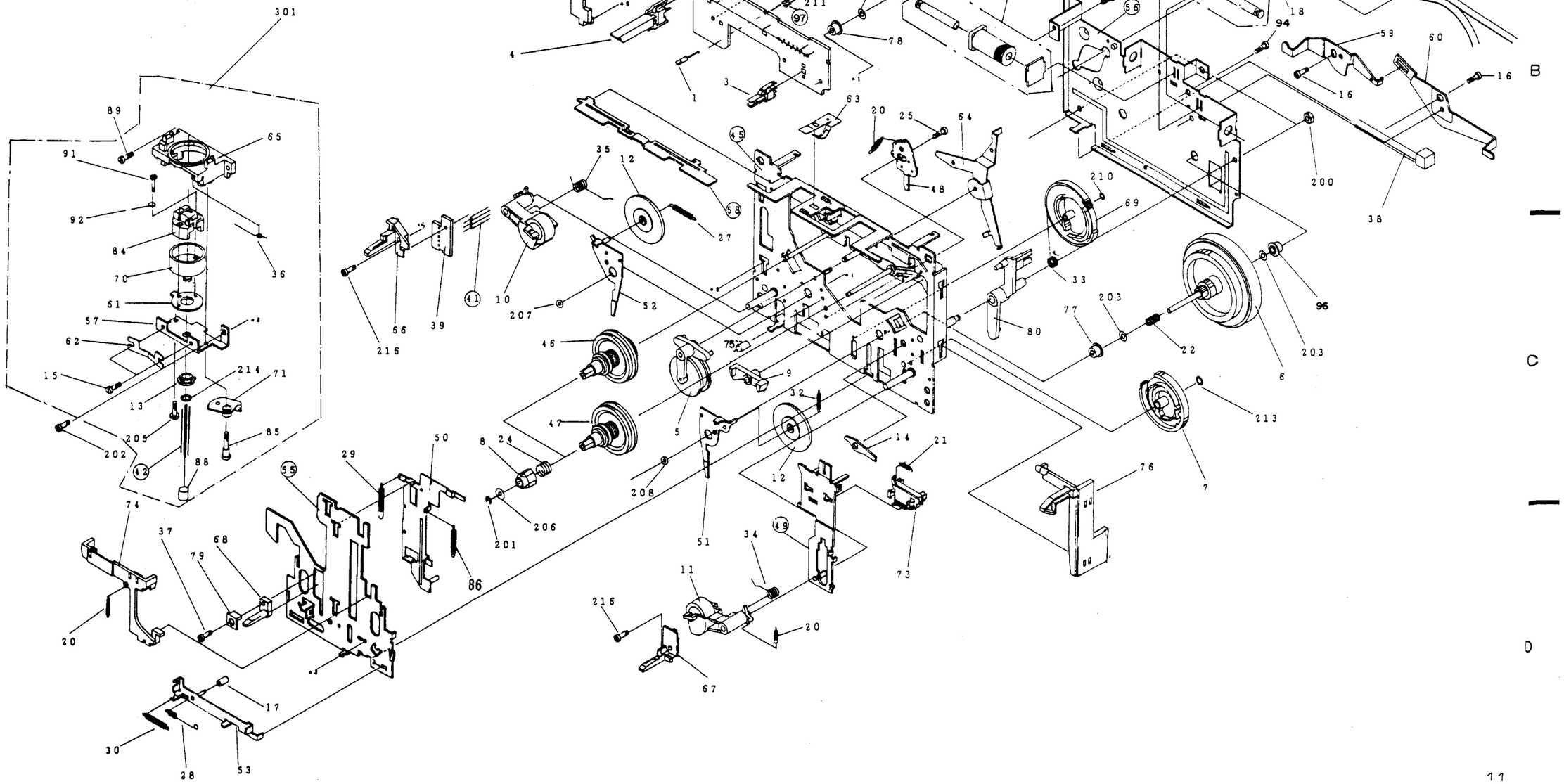
1.4 MECHA UNIT 1 (AWY1052)

Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC
	2	AZX1019	Motor
	3	AZS1054	Leaf SW (MODE)
	4	AZS1034	Leaf SW (CrO2)
	5	AZN1286	Drive arm assembly
	6	AZN1287	FW assembly A
	7	AZN1288	Cam gear
	8	AZN1289	Reel
	9	AZN1971	FR arm
	10	AZN1972	Pinch arm L assembly
	11	AZN1973	Pinch arm R assembly
	12	AZN1293	Gear
	13	AZN1294	H Gear
	14	AZN1793	CUE arm
	15	AZB1079	Screw
	16	...	...
	17	AZN1984	Collar C
	18	AZN1297	Motor pully
	19	AZN1298	Belt
	20	AZN1299	Spring
	21	AZN1300	FR lever spring
	22	AZN1301	FWF spring
	23	AZN1302	FWR spring
	24	AZN1303	Spring
	25	AZB1297	Screw
	26	AZN1305	Cable holder
	27	AZN1306	Spring
	28	AZN1307	Spring
	29	AZN1308	Spring
	30	AZN1309	Spring
	31	AZN1310	Spring
	32	AZN1311	Spring
	33	AZN1312	Spring
	34	AZN1313	Spring
	35	AZN1314	Spring
	36	AZN1315	Spring
	37	AZB1081	Screw
	38	AZN1316	Nylon band
	39	AZN1995	P.C.board
	40		Jumper wire
	41		Wire assembly
	42		Lead wire
	43		Lead wire
	44	AZN1468	Tube
	45		Mecha P.C.board calking assembly
	46	AZN1319	R reel assembly
	47	AZN1320	F reel assembly
	48	AZN1321	Reverse arm calking assembly
	49		FR lever assembly
	50	AZN1975	PLAY lever calking assembly
	51	AZN1976	Gear arm R calking assembly
	52	AZN1977	Gear arm L calking assembly
	53	AZN1326	Head lever calking assembly
	54	AZN1327	FW assembly
	55		Head P.C.board
	56		Plate (FLY WHEEL)
	57	AZN1328	Azimuth plate
	58		SW arm
	59	...	...
	60	...	...
	61	AZN1330	Head arm
	62	AZN1331	Azimuth spring
	63	AZN1332	Cassette stopper
	64	AZN1978	Trigger arm
	65	AZN1334	Head frame
	66	AZN1335	Cassette guide L
	67	AZN1336	Cassette guide R
	68	AZN1337	Cassette guide
	69	AZN1338	Cam gear
	70	AZN1994	Head holder
	71	AZN1340	Head gear
	72	AZN1980	Eject arm 2
	73	AZN1342	Select lever
	74	AZN1343	Brake
	75	...	...
	76	AZN1981	Ratch lever L
	77	AZN1346	Metal
	78	AZN1347	Metal
	79	AZN1348	Cushion
	80	AZN1349	Trigger arm
	81	...	...
	82	AZS1085	Solenoid
	83	...	...
	84	AZP1022	P Head
	85	AZB1099	Screw
	86	AZN1352	Spring
	87	AZN1304	Spacer
	88	AZN1470	Tube
	89	AZB1100	Screw
	90	AZS1087	Solenoid
	91	AZB1101	Screw
	92	AZB1102	Spring washer
	93	AZN1471	Head spring
	94	AZB1298	Screw
	95	AZN1833	Capstan holder
	96	AZN1834	Capstan holder
	97		Holder
	200	AZB1084	Nut
	201	AZB1085	E ring
	202	AZB1086	D screw
	203	AZB1121	P washer
	204	AZB1087	N washer

Mark	No.	Parts No.	Description
	205	AZB1089	U screw
	206	AZB1090	P washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	···	···
	210	AZB1094	P washer
	211	AZB1095	D screw
	212	···	···
	213	AZB1097	P washer
	214	AZB1098	M washer
	215	AZB1105	P screw
	216	AZB1106	D screw
	217	···	···
	218	AZB1164	P screw
	300	AZX1020	Motor assembly
	301	AZP1042	Head frame assembly



Mark	No.	Parts No.	Description
	205	AZB1089	U screw
	206	AZB1090	P washer
	207	AZB1091	Oil cut
	208	AZB1092	Oil cut
	209	···	···
	210	AZB1094	P washer
	211	AZB1095	D screw
	212	···	···
	213	AZB1097	P washer
	214	AZB1098	M washer
	215	AZB1105	P screw
	216	AZB1106	D screw
	300	AZX1020	Motor assembly
	301	AZP1041	Head frame assembly



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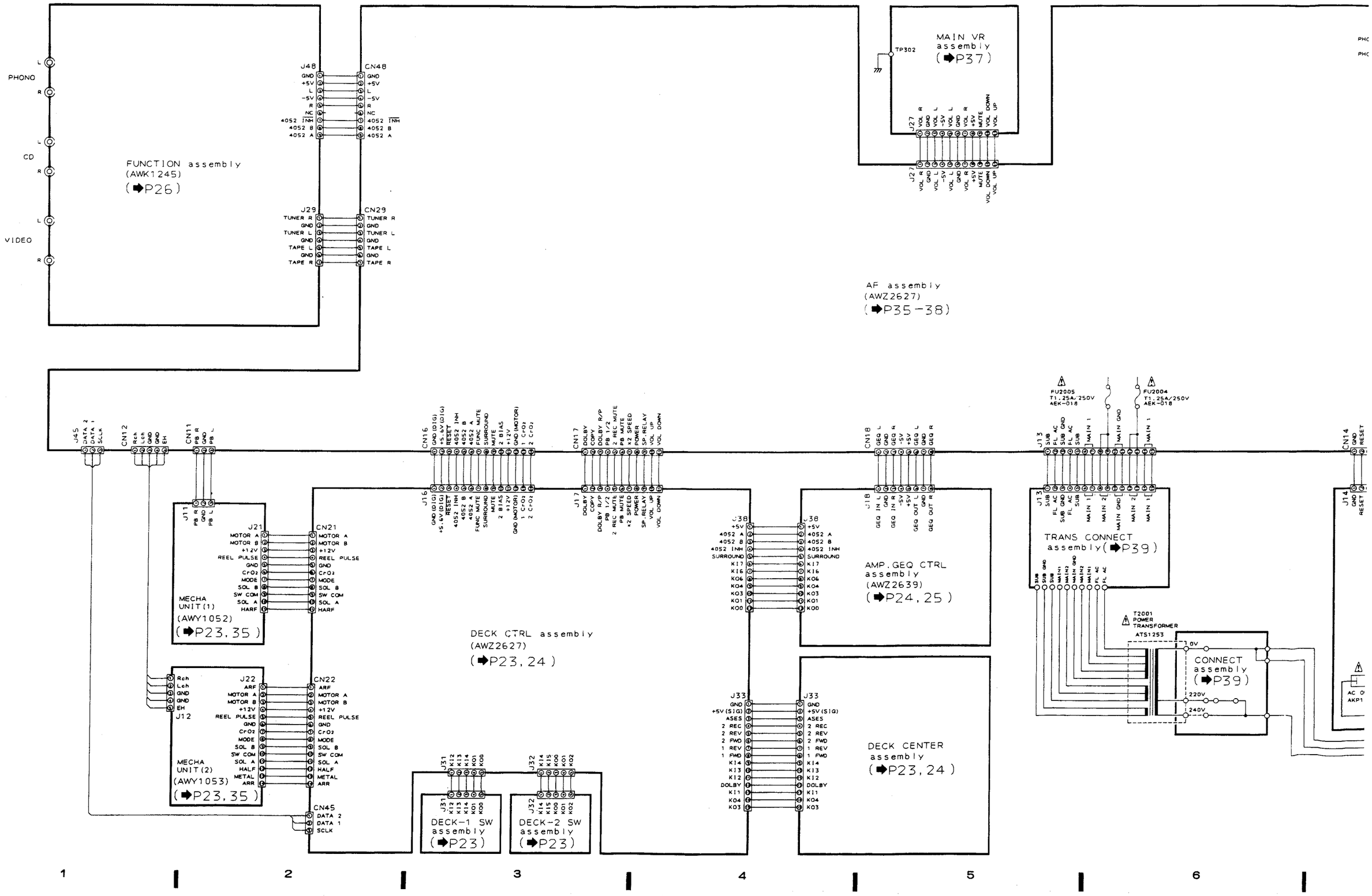
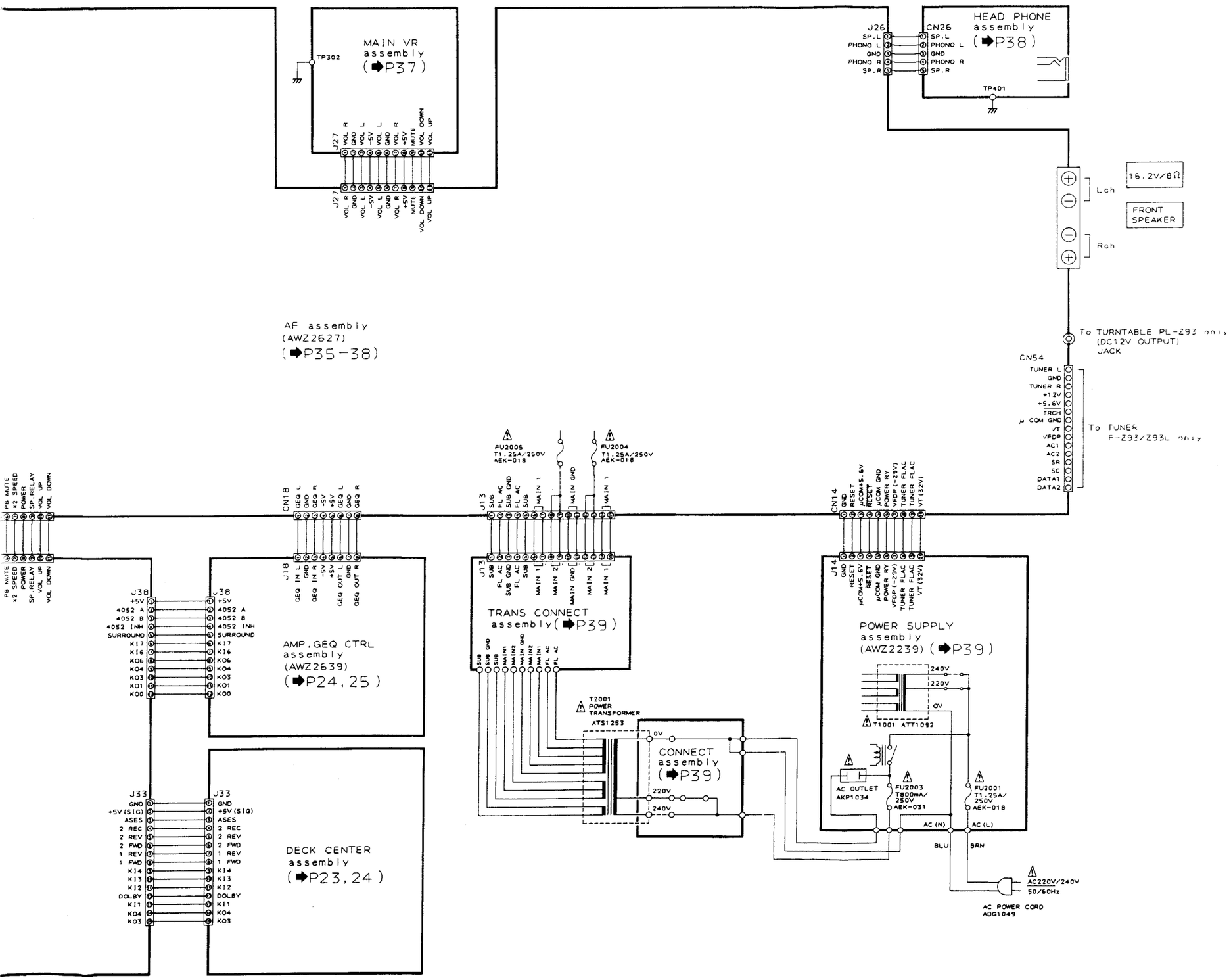
1.5 MECHA UNIT 2 (AWY1053)

Mark	No.	Parts No.	Description
	1	AZE1018	Hall IC
	2	AZX1019	Motor
	3	AZS1064	Leaf SW (MODE)
	4	AZS1034	Leaf SW (CrO2)
	5	AZN1286	Drive arm assembly
	6	AZN1287	FW assembly A
	7	AZN1288	Cam gear
	8	AZN1289	Reel
	9	AZN1971	FR arm
	10	AZN1972	Pinch arm L assembly
	11	AZN1973	Pinch arm R assembly
	12	AZN1293	Gear
	13	AZN1294	H Gear
	14	AZN1793	CUE arm
	15	AZB1079	Screw
	16	AZB1080	Screw
	17	AZN1984	Collar C
	18	AZN1297	Motor pully
	19	AZN1298	Belt
	20	AZN1299	Spring
	21	AZN1300	FR lever spring
	22	AZN1301	FWF spring
	23	AZN1302	FWR spring
	24	AZN1303	Spring
	25	AZB1080	Screw
	26	AZN1305	Cable holder
	27	AZN1306	Spring
	28	AZN1307	Spring
	29	AZN1308	Spring
	30	AZN1309	Spring
	31	AZN1310	Spring
	32	AZN1311	Spring
	33	AZN1312	Spring
	34	AZN1313	Spring
	35	AZN1314	Spring
	36	AZN1315	Spring
	37	AZB1081	Screw
	38	AZN1316	Nylon band
	39	AZN1983	P.C.board
	40		Jumper wire
	41		Wire assembly
	42		Lead wire
	43		Lead wire
	44	AZN1344	Eject lever L
	45		Mecha P.C.board calking assembly
	46	AZN1319	R reel assembly
	47	AZN1320	F reel assembly
	48	AZN1321	Reverse arm calking assembly
	49		FR lever assembly
	50	AZN1975	PLAY lever calking assembly
	51	AZN1976	Gear arm R
	52	AZN1977	Gear arm L
	53	AZN1326	Head lever calking assembly
	54	AZN1327	FW assembly
	55		Head P.C.board
	56		Plate (FLY WHEEL)
	57	AZN1328	Azimuth plate
	58		SW arm
	59	AZN1988	Eject arm L
	60	AZN1989	Eject arm R
	61	AZN1330	Head arm
	62	AZN1331	Azimuth spring
	63	AZN1332	Cassette stopper
	64	AZN1978	Trigger arm
	65	AZN1334	Head frame
	66	AZN1335	Cassette guide L
	67	AZN1336	Cassette guide R
	68	AZN1337	Cassette guide
	69	AZN1338	Cam gear
	70	AZN1979	Head holder
	71	AZN1340	Head gear
	72	AZN1980	Eject arm 2
	73	AZN1342	Select lever
	74	AZN1343	Brake
	75	AZN1468	Tube
	76	AZN1985	Ratch lever R
	77	AZN1346	Metal
	78	AZN1347	Metal
	79	AZN1348	Cushion
	80	AZN1349	Trigger arm
	81	...	...
	82	AZS1085	Solenoid
	83	...	...
	84	AZP1014	R/P Head
	85	AZB1099	Screw
	86	AZN1352	Spring
	87	AZN1304	Spacer
	88	AZN1470	Tube
	89	AZB1100	Screw
	90	AZS1087	Solenoid
	91	AZB1101	Screw
	92	AZB1102	Washer
	93		...
	94	AZB1298	Screw
	95	AZN1833	Capstan holder
	96	AZN1834	Capstan holder
	97		Holder
	200	AZB1084	Nut
	201	AZB1085	E ring
	202	AZB1086	D screw
	203	AZB1121	P washer
	204	AZB1087	N washer

2. SCHEMATIC DIAGRAMS AND P.C.BOARD CONNECTION DIAGRAMS

2.1 OVER ALL SCHEMATIC DIAGRAM





1. RESISTORS:
Indicated in Ω, ¼W, ⅛W, ±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:
: Signal voltage at (33W + 33W 8Ω)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.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

DECK-1 SW assembly
- S811 1FWD
- S812 1REV
- S813 1FF
- S814 1REW
- S815 1STOP

DECK-2 SW assembly
- S821 2FWD
- S822 2REV
- S823 2FF
- S824 2REW
- S825 2STOP

DECK CENTER assembly
- S848 DOLBY OFF—ON
- S849 REVERSE MODE
- S853 COPY
- S861 DECK-2 REC
- S862 HI-SPEED COPY
- S871 DECK-2 MUTE
- S872 A.S.E.S
- S875 DECK-2 PAUSE

AMP,GEQ CTRL assembly
- S701 CD
- S702 PHONO
- S703 TUNER
- S704 TAPE
- S705 VIDEO
- S707 POWER

The underline indicates the switch position

2.2 AMP, GEQ CTRL (AWZ2639), DECK-1 SW, DECK-2 SW, DECK CTRL (AWZ2635), DECK CENTER assembly, MECHA UNIT(1)(AWY1052) and MECHA UNIT(2)(AWY1053)

NOTE

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

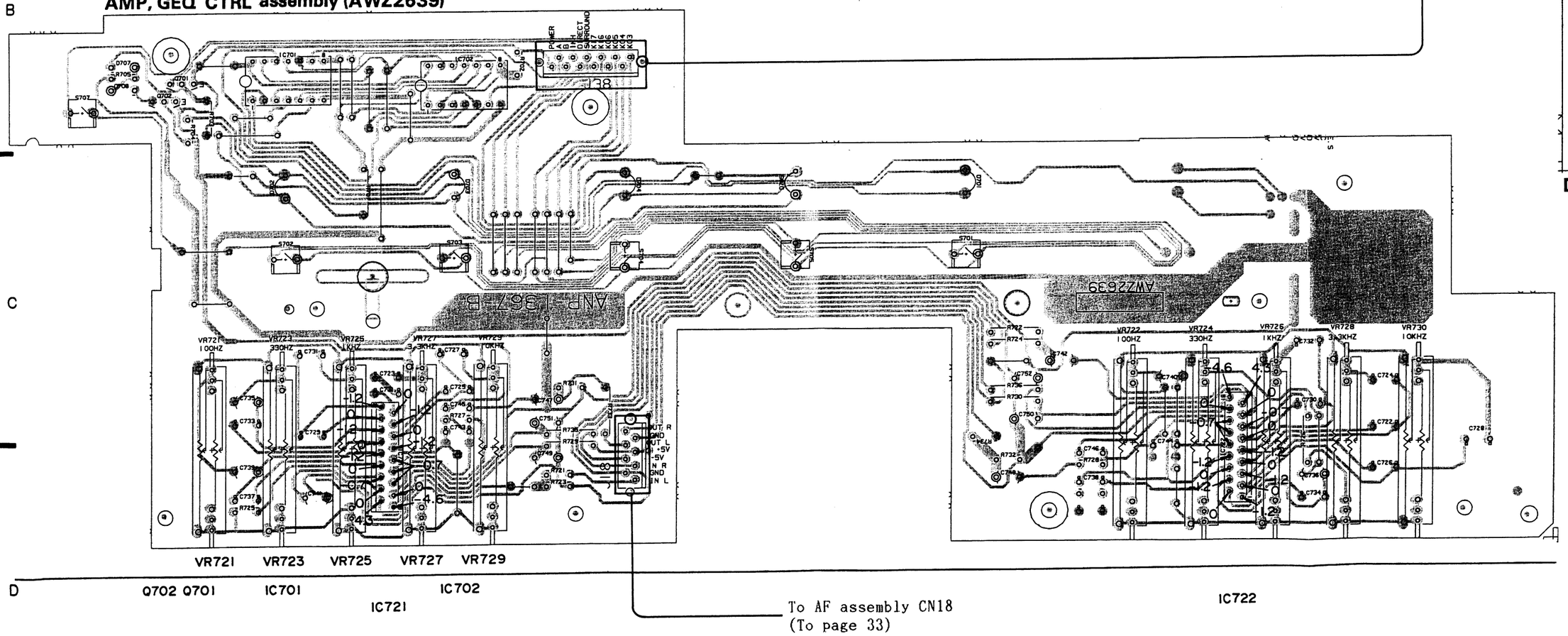
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E B C	E B C or E B C	Transistor
Q215 E B C	E B C or E B C	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	C513 +	Capacitor (Polarity)
C518	C518	Capacitor (Non-polarity)

Others

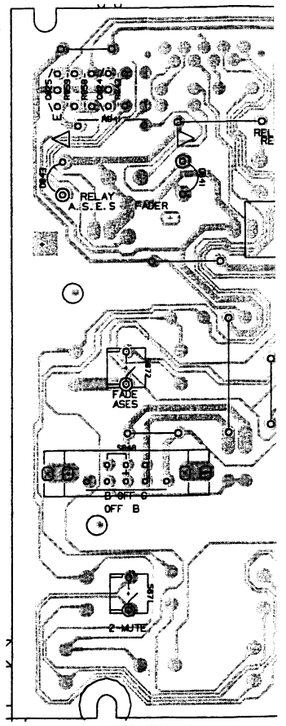
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

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

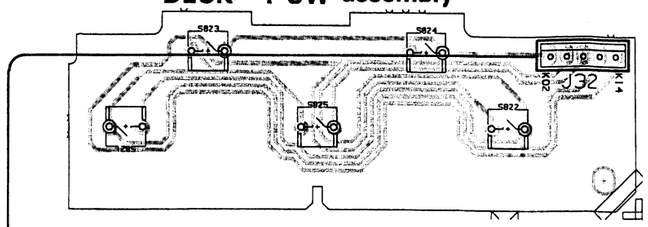
AMP, GEQ CTRL assembly (AWZ2639)



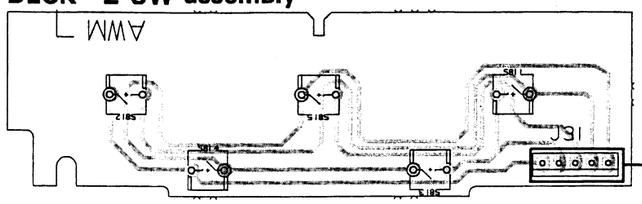
DECK CENTER assem

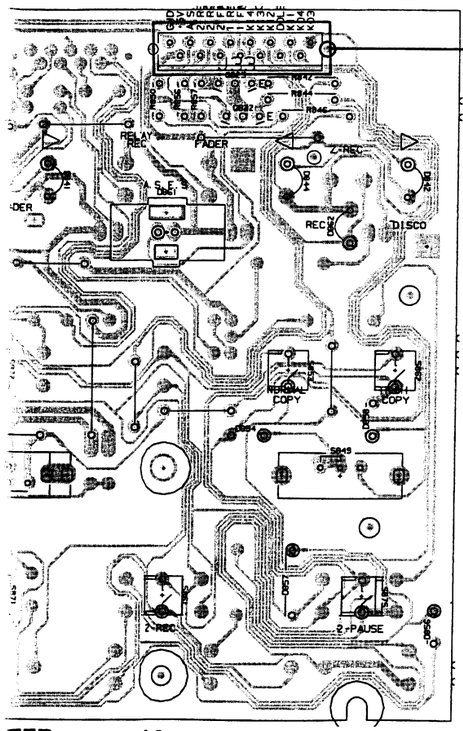


DECK−1 SW assembly



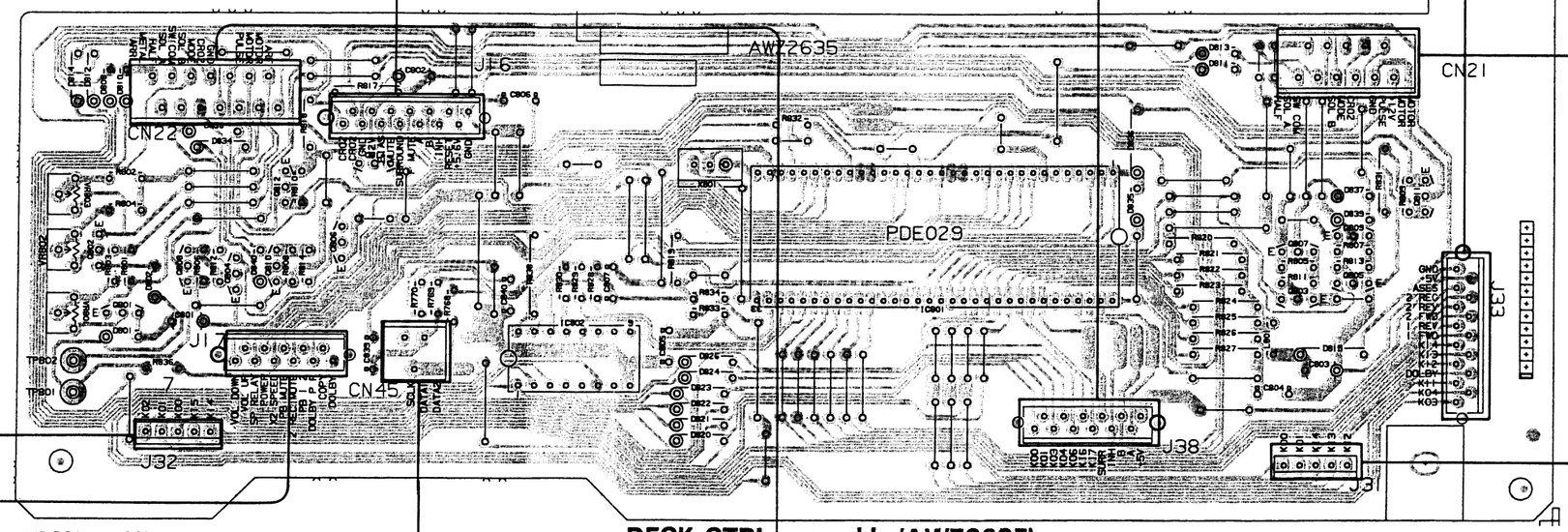
DECK−2 SW assembly





TER assembly

To AF assembly CN16
(To page 33)



To AF assembly CN17
(To page 33)

VR801-VR803

DECK CTRL assembly (AWZ2635)

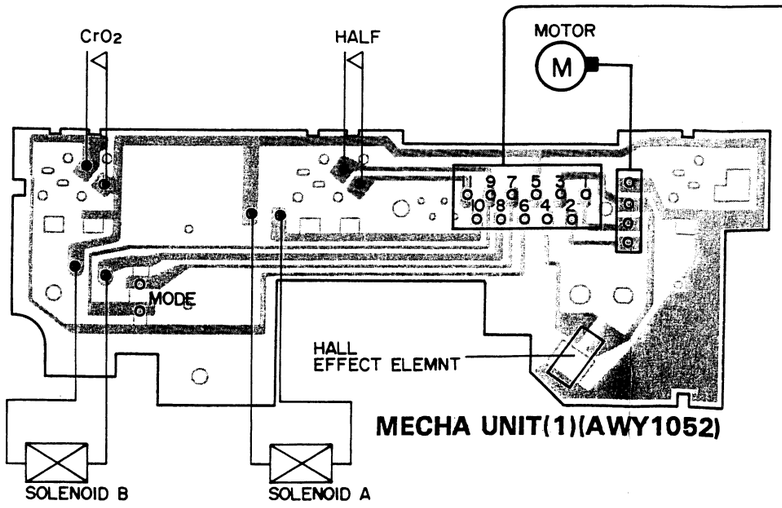
Q802 Q808 Q804 Q812 Q806 Q814
Q801 Q810

IC802

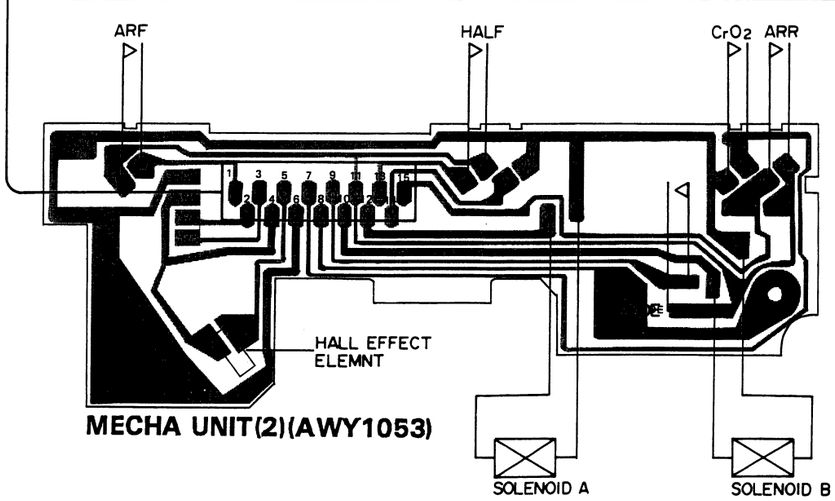
IC801

Q807 Q809 Q811
Q803 Q805

To AF assembly J45
(To page 34)



MECHA UNIT(1)(AWY1052)



MECHA UNIT(2)(AWY1053)

DECK CTRL assembly
(AWZ2635)

MECHA UNIT(1)

MECHA UNIT(2)

DECK-1 SW assembly

DECK-2 SW assembly

Q801,Q802:
SPEED SWITCHING

Q812:MECHA-2 MOTOR ON/OFF

Q811:MECHA-1 MOTOR ON/OFF

IC801:MICRO COMPUTER

Q807-Q810:
PRANGER
DRIVER

Q803-Q806:
INVERTER

Q814:MECHA-2 REC BIAS ON/OFF

IC802:EXPANDER

IC801	PDE029-C	D801,802	HSS104-02	Q801,802	RN2204
IC802	SN74LS42N	D808,810-815,820-824		Q803-806,814	RN1201
		D826,834-840		Q807-812	2SA1515

(To page 35)
To AF assembly
J45

AMP,GEQ CTRL assembly

IC702:IND SEL

IC701(1/6),(2/6):INVERTE

IC701(3/6)-(6/6),Q701,Q7

IC701	SN74LS05
IC702	TC4081BF
IC721,722	BA3812L
Q701,702	RN2201
D701-705	AEL1099
D707,708	HSS104-0

To AF assembly
CN17
(To page 38)

To AF assembly
CN16
(To page 37)

To AF assembly
CN18
(To page 3E

DECK CENTER assembly

Q822-Q825:LED DRIVE

S848
DOLBY
OFF-ON

Q822-825	2SA1048
D862	AEL1065
D841-844	AEL1084
D861	AEL1091
D854,856-858	HSS104-02

AMP. GEQ CTRL assembly (AWZ2639)

IC801:MICRO COMPUTER

Q807-Q810: PRANGER DRIVER

Q803-Q806 INVERTER

Q814:MECHA-2 REC BIAS ON/OFF

EXPANDER

IC801	PDE029-C	D801, 802	HSS104-02	Q801, 802	RN2204
IC802	SN74LS42N	D808, 810-815, 820-824		Q803-806, 814	RN1201
		D826, 834-840		Q807-812	2SA1515

(To page 35)
To AF assembly
J45

To AF assembly
CN17
(To page 38)

To AF assembly
CN16
(To page 37)

IC702:IND SELECTOR

IC701(1/6),(2/6):INVERTER

IC701(3/6)-(6/6),Q701,Q702:IND DRIVER

IC701	SN74LS05N
IC702	TC4081BP
IC721,722	BA3812L
Q701,702	RN2201
D701-705	AEL1099
D707,708	HSS104-02

IC721,IC722: GEQ CONTROL

To AF assembly
CN18
(To page 38)

MECHA-2 Lch PLAY

DECK CENTER assembly

D822-825	2SA1048
D862	AEL1065
D841-844	AEL1084
D861	AEL1091
D854, 856-858	HSS104-02

2.3 FUNCTION assembly (AWK1245)

NOTE

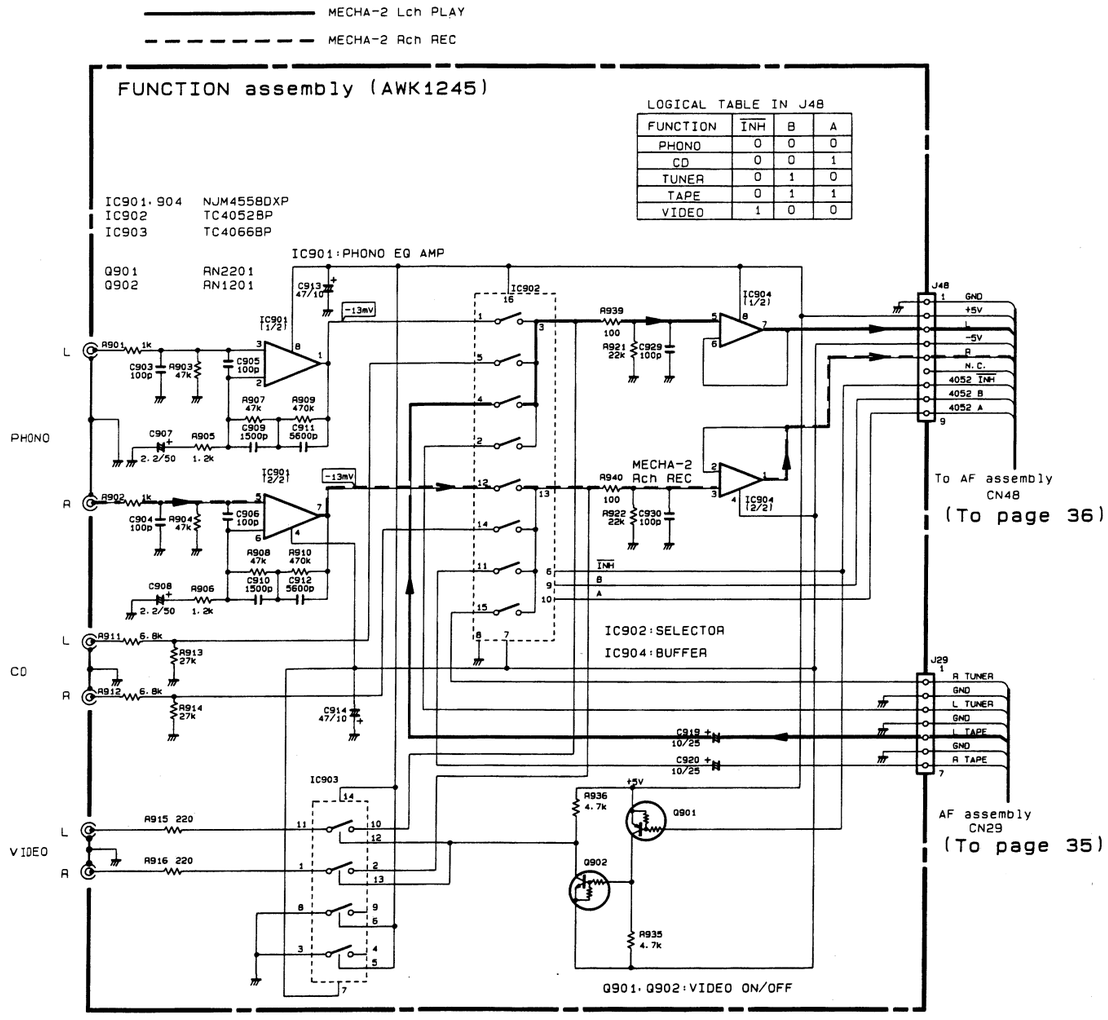
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

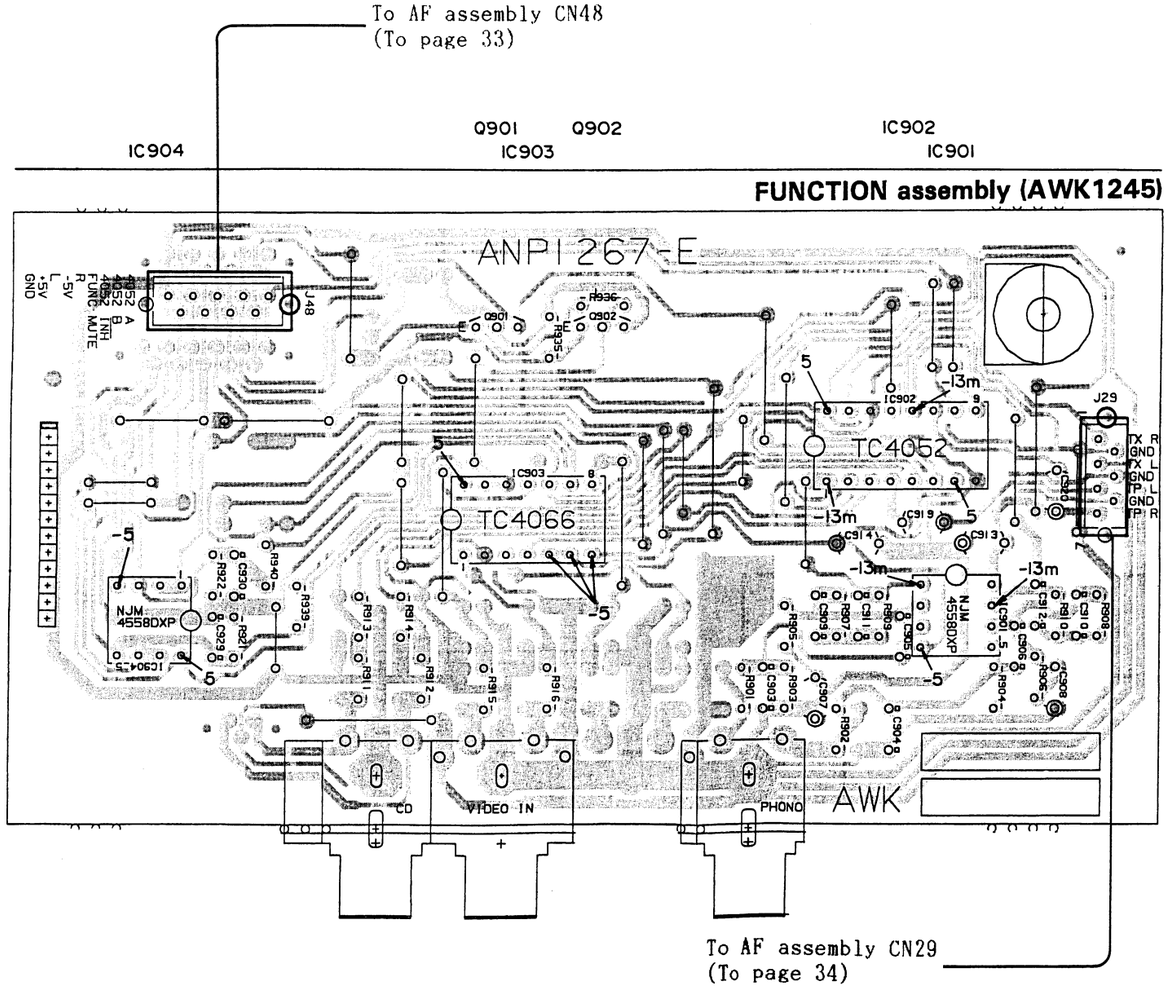
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E○ ○ ○	E○ ○ ○ or E○ ○ ○	Transistor
Q215 ○ ○ ○	or	Radiator type transistor
D203 ○—	D203	Diode
—R237—	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

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

3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.





NOTE

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

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

Others

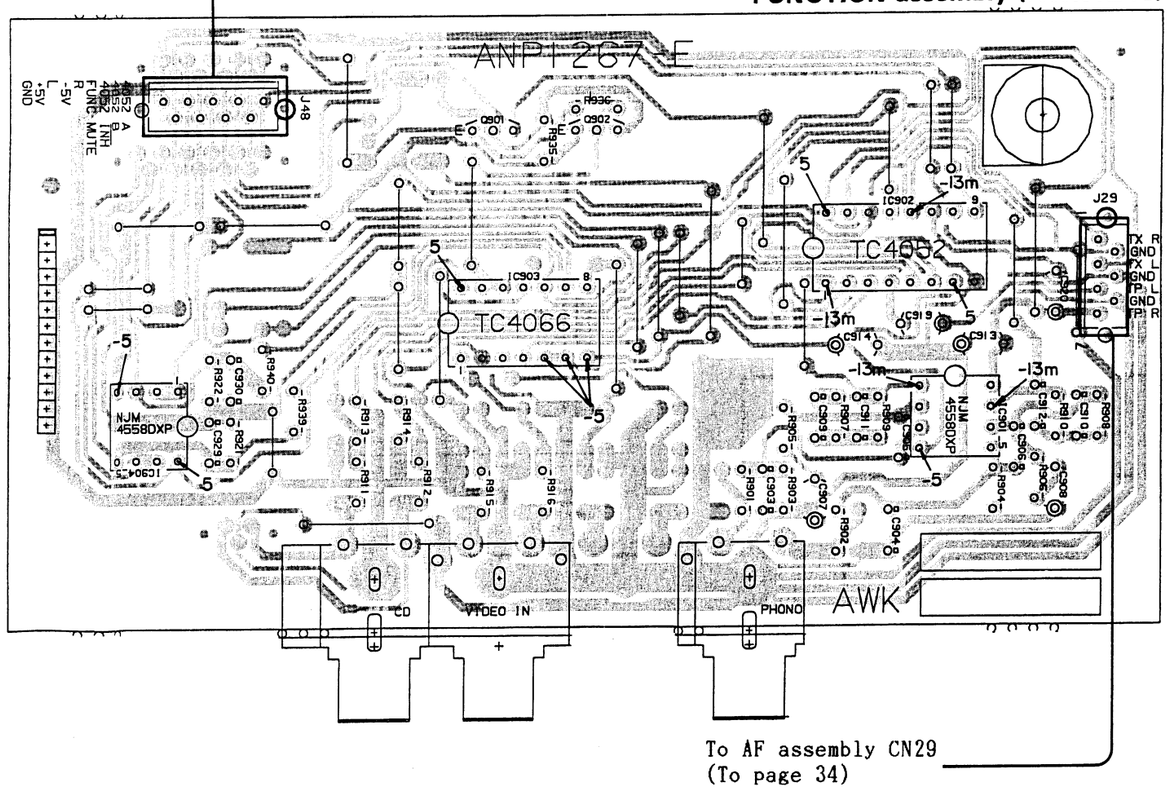
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capactor terminal marked with ⓞ(double circles) shows negatine termianl.
4. The diode terminal marked with ⓞ(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

NOTE:
This picture shows the foil side of the printed circuit.

To AF assembly CN48
(To page 33)

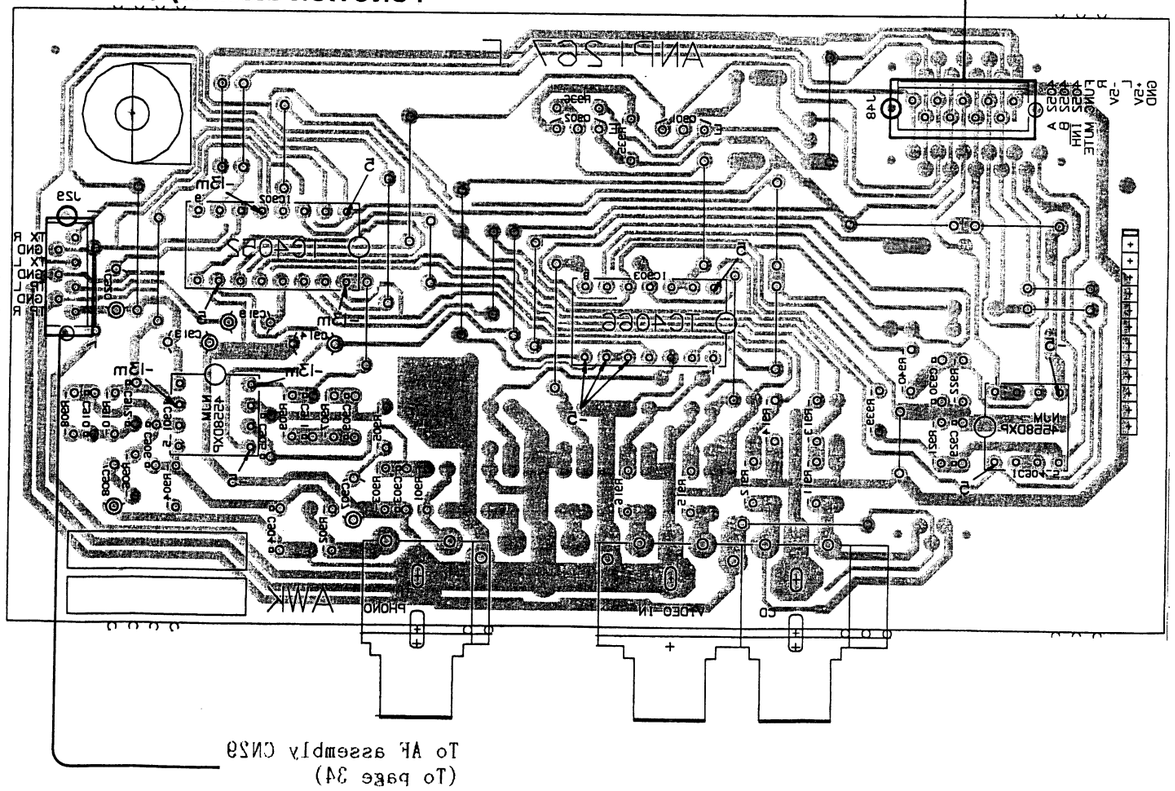
FUNCTION assembly (AWK1245)



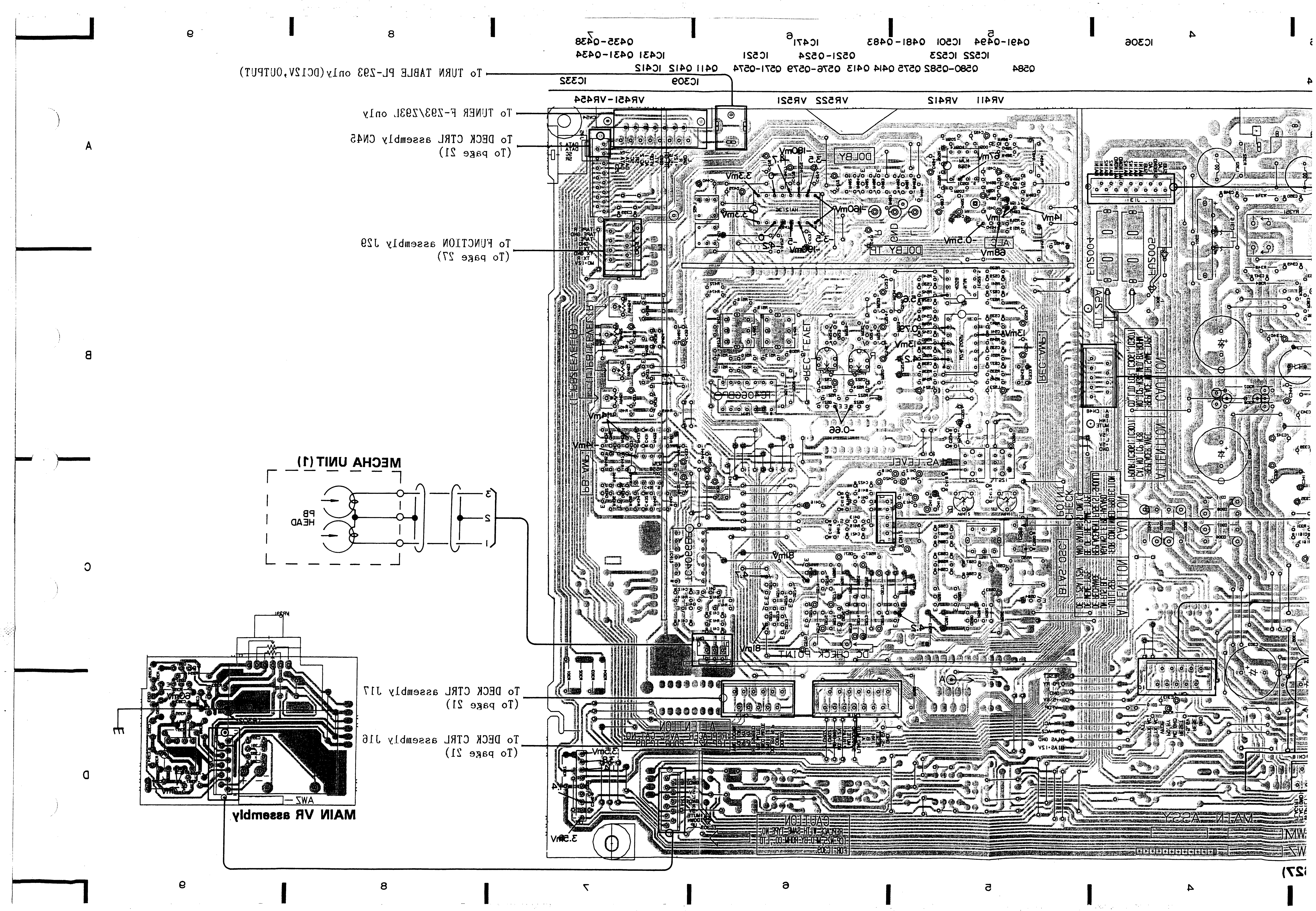
To AF assembly CN29
(To page 34)

To AF assembly CN48
(To page 33)

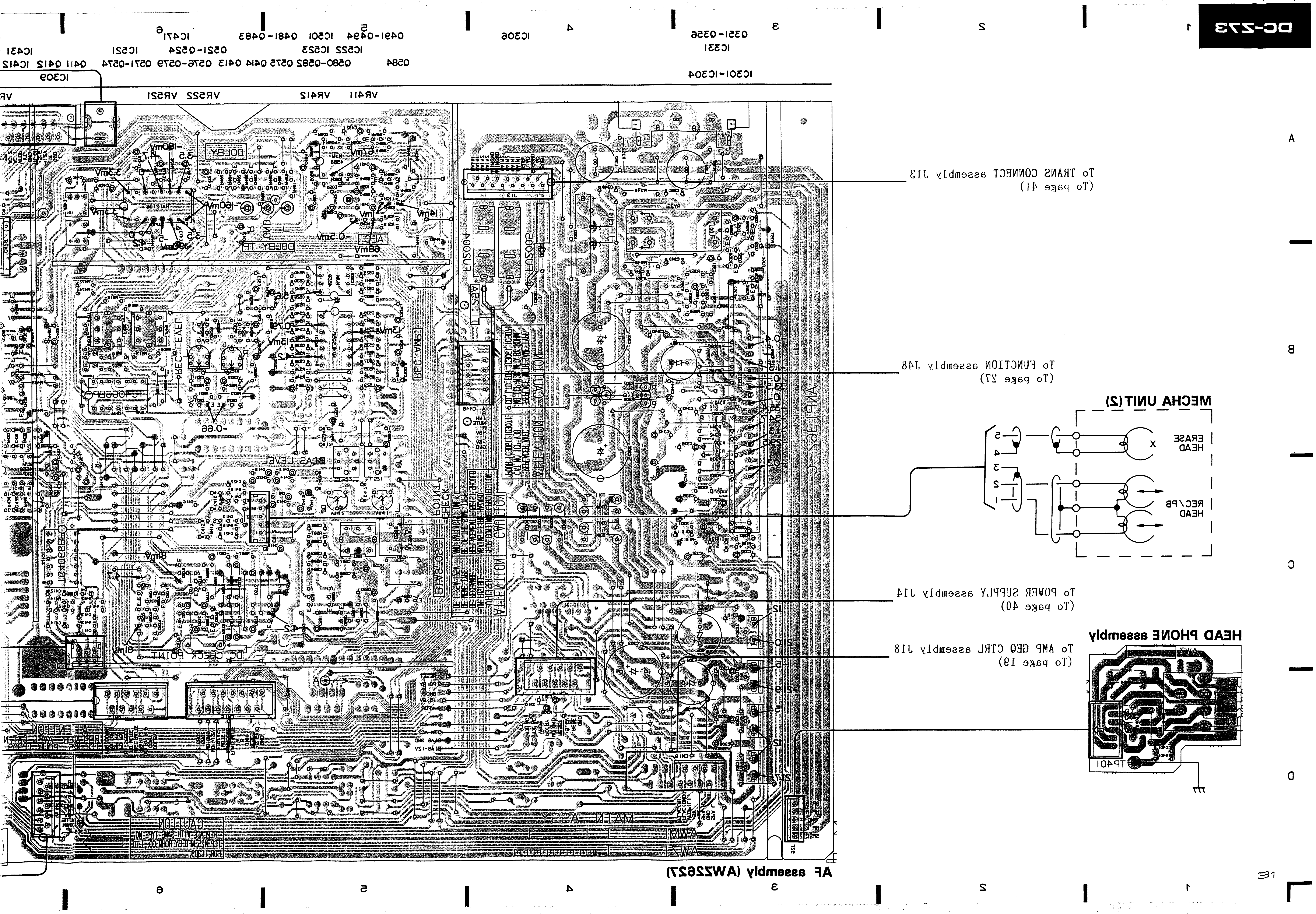
FUNCTION assembly (AWK1245)



To AF assembly CN29
(To page 34)



Q435–Q438 IC431 Q431–Q434
IC471 IC521 Q521–Q524
Q491–Q494 IC501 Q481–Q483 IC522 IC523
Q584 Q580–Q582 Q575 Q414 Q413 Q576–Q579 Q571–Q574 Q411 Q412 IC412
IC306
IC332 IC309
VR451–VR454 VR521 VR522 VR411 VR412
To TURN TABLE PL-293 only(DC12V,OUTPUT)
To TUNER F-293/293L only
To DECK CTRL assembly CN45
(To page 21)
To FUNCTION assembly J29
(To page 27)
MECHA UNIT(1)
PB HEAD
To DECK CTRL assembly J17
(To page 21)
To DECK CTRL assembly J16
(To page 21)
MAIN VR assembly
DOLBY
REC LEVEL
BIAS LEVEL
REC AMP
PB AMP
BIAS OSC
CHECK POINT
ATTENTION
CAUTION
MAIN ASSY


To TRANS CONNECT assembly J13
(To page 41)
To FUNCTION assembly J48
(To page 27)
MECHA UNIT(2)
ERASE HEAD
REC/PB HEAD
To POWER SUPPLY assembly J14
(To page 40)
HEAD PHONE assembly
To AMP GEQ CTRL assembly J18
(To page 19)
TP401
DOLBY
DOLBY TP
ALC
GND
REC LEVEL
BIAS LEVEL
REC AMP
BIAS OSC
POINT CHECK
DC CHECK POINT
CAUTION
ATTENTION
MAIN ASSY
AWZ
AWM
IC301-IC304
IC331
Q351-Q356
IC306
IC309
VR411
VR412
VR521
VR522

AF assembly (AWZ2627)

2.4 AF (AWZ2627), MAIN VR and HEAD PHONE assembly

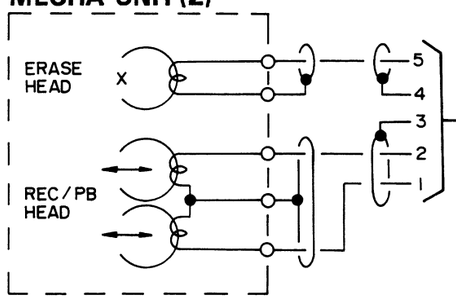
To TRANS CONNECT assembly J13
(To page 41)

To FUNCTION assembly J48
(To page 27)

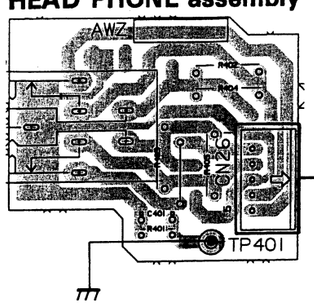
To POWER SUPPLY assembly J14
(To page 40)

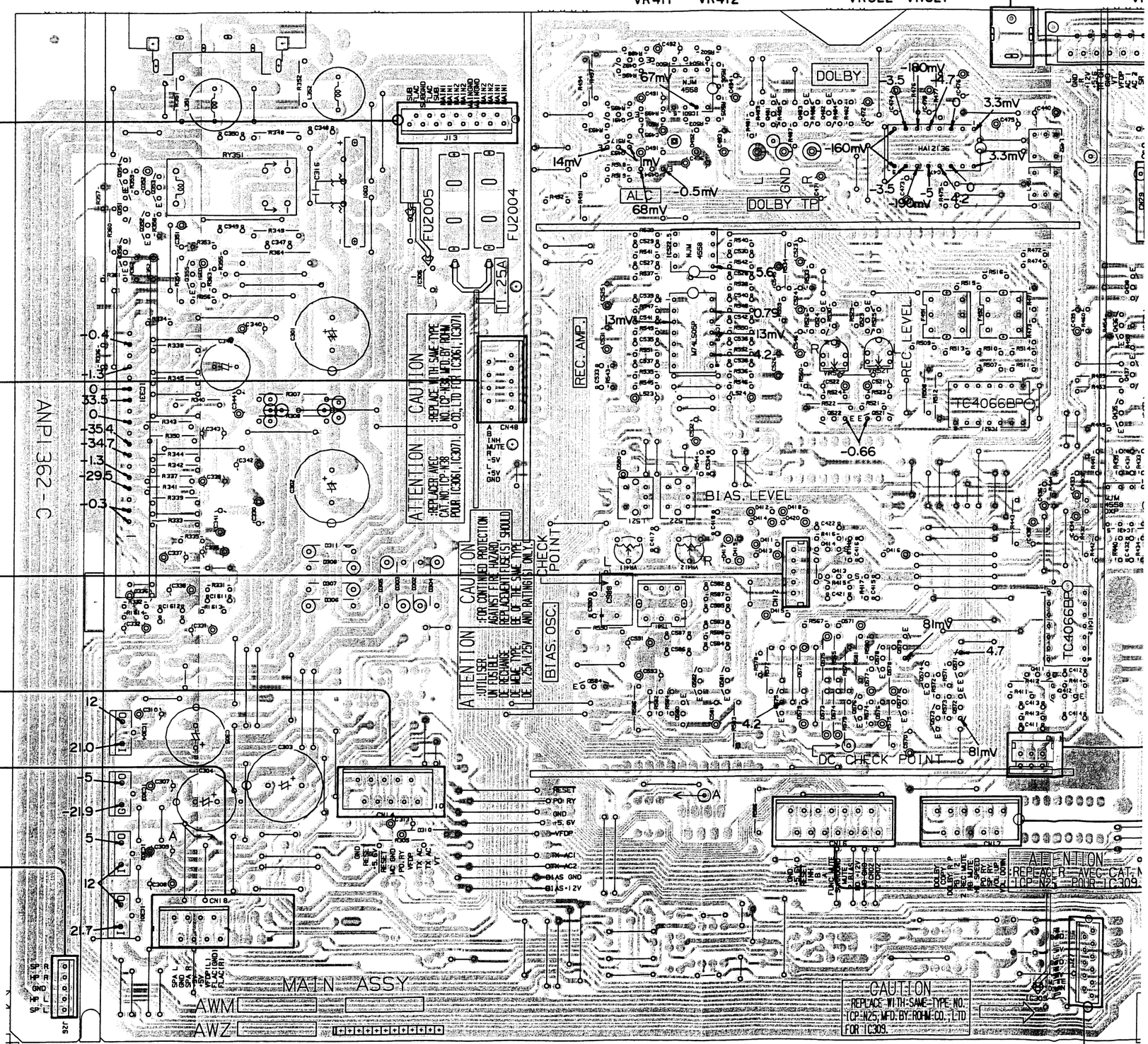
To AMP GEQ CTRL assembly J18
(To page 19)

MECHA UNIT (2)

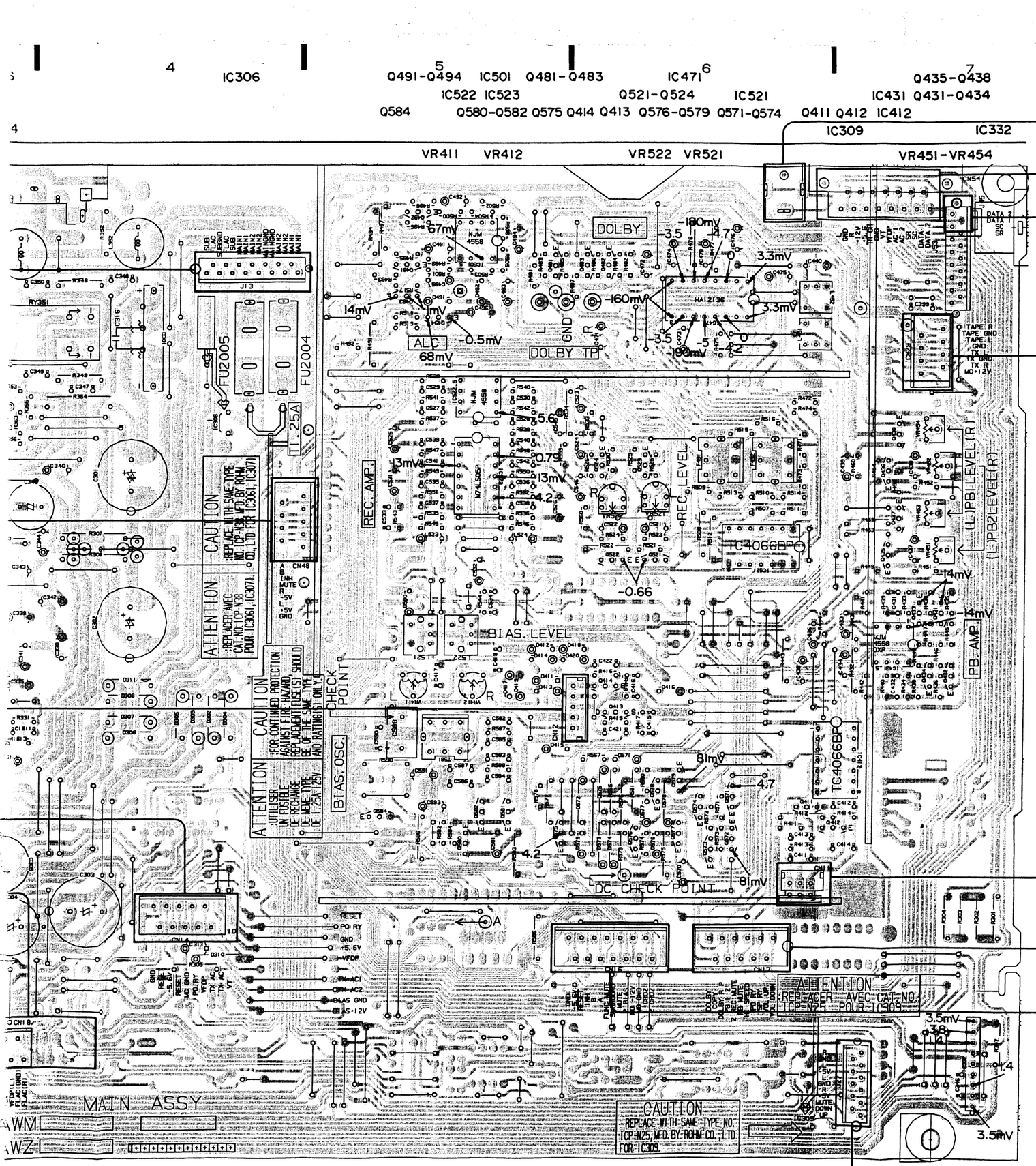


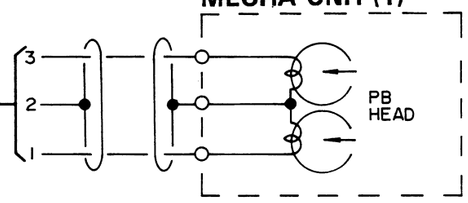
HEAD PHONE assembly

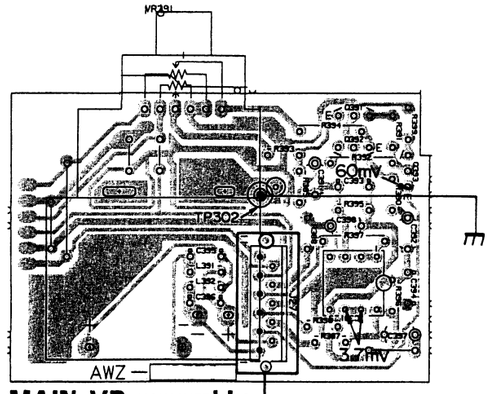




AF assembly (AWZ2627)







MAIN VR assembly

NOTE

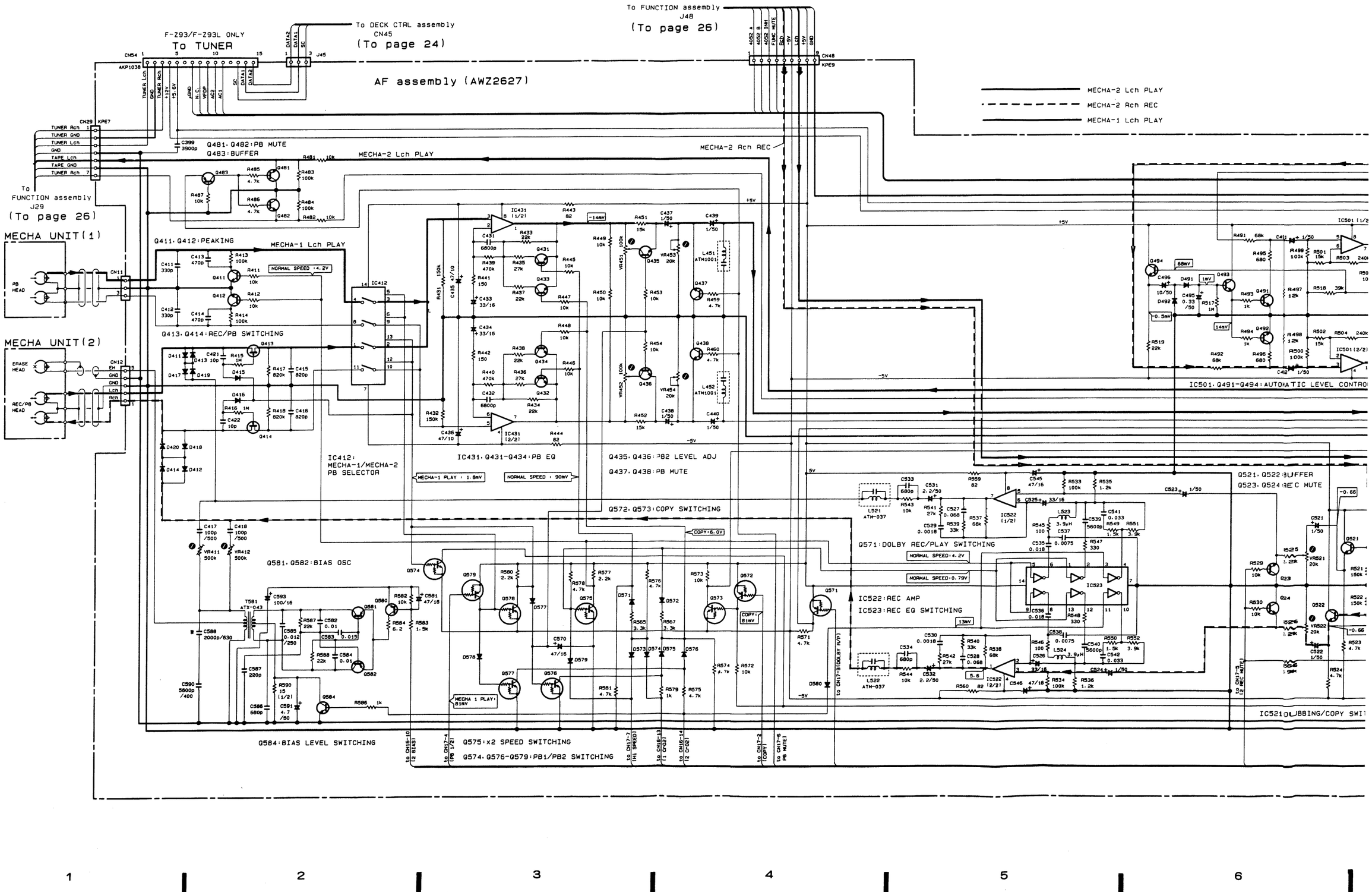
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

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

Others

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

3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.


F-Z93/F-Z93L ONLY
To TUNER
CN54
AKP1038
J45
To DECK CTRL assembly
CN45
(To page 24)
AF assembly (AWZ2627)
To FUNCTION assembly
J48
(To page 26)
CN48
KPE9
CN29
KPE7
TUNER Rch
TUNER GND
TUNER Lch
GND
TAPE Lch
TAPE GND
TUNER Rch
To
FUNCTION assembly
J29
(To page 26)
MECHA-2 Lch PLAY
MECHA-2 Rch REC
MECHA-1 Lch PLAY
Q481, Q482: PB MUTE
Q483: BUFFER
MECHA UNIT(1)
PB HEAD
CN11
Q411, Q412: PEAKING
NORMAL SPEED : 4.2V
Q413, Q414: REC/PB SWITCHING
MECHA UNIT(2)
ERASE HEAD
REC/PB HEAD
CN12
IC412:
MECHA-1/MECHA-2
PB SELECTOR
IC431, Q431-Q434: PB EQ
MECHA-1 PLAY : 1.8mV
NORMAL SPEED : 90mV
Q435, Q436: PB2 LEVEL ADJ
Q437, Q438: PB MUTE
Q572, Q573: COPY SWITCHING
COPY: 6.0V
Q581, Q582: BIAS OSC
Q584: BIAS LEVEL SWITCHING
Q575: x2 SPEED SWITCHING
Q574, Q576-Q579: PB1/PB2 SWITCHING
MECHA 1 PLAY: 81mV
COPY: 81mV
Q571: DOLBY REC/PLAY SWITCHING
IC522: REC AMP
IC523: REC EQ SWITCHING
NORMAL SPEED: 4.2V
NORMAL SPEED: 0.79V
13mV
5.6
Q521, Q522: BUFFER
Q523, Q524: REC MUTE
IC501, Q491-Q494: AUTOMATIC LEVEL CONTRO
IC5210 (BBING/COPY SWI
to CN16-10 (2 BIAS)
to CN17-4 (PB 1/2)
to CN16-13 (1 CYO2)
to CN16-14 (2 CYO2)
to CN17-7 (HI SPEED)
to CN17-2 (COPY)
to CN17-6 (PB MUTE)
to CN17-3 (DOLBY A/D)
to CN17-3 (REC MUTE)

MAIN VR assembly Q393 2SA1048 IC391 NJM4558DXP

IC331:POWER AMP

HEAD PHONE assembly

PHONE AKN1010

Q351-Q356:PROTECTION

FRONT SPEAKER Lch Rch 16.2V/8Ω

(To page 41)
To TRANS CONNECT assembly J13

IC301·304 MC7812CT
IC302 NJM78M05FA
IC303 NJM79M05FA
IC431·501·522 NJM4558DXP
IC331 STK4142-2GP
IC332 TA7291S
IC412·521 TC4066BP

IC523 M74LS05P
IC306 ICP-N38
IC471 HA12136
IC309 ICP-N25

IC501 (1/2)

MECHA-2 Lch PLAY

IC471:DOLBY NR IC

ATIC LEVEL CONTROL

BUFFER REC MUTE

DUBBING/COPY SWITCHING

MECHA-2 Ach REC

D310 UZ-13BSB
D352 UZ-22BS
D351·411-420·HSS104-02
D491·492·
D571-580

D301 RBV402
D302-308·311 S5566

Q578 RN1201
Q354·573-577 RN1203
Q571·572·579 RN2203
Q355·483·580 2SA1048
Q581·582 2SA1515
Q493·494 2SC1740SLN
Q351-353·356·2SC2458
Q411·412·
Q431-438·481·
Q482·491·492·
Q521·522
Q584 2SC2603
Q523·524 2SC2878
Q413·414 2SK373

IC332:MOTOR DRIVER

IC301-IC304·IC306:REGULATOR

TURNTABLE (DC12V OUTPUT) JACK PL-793 ONLY

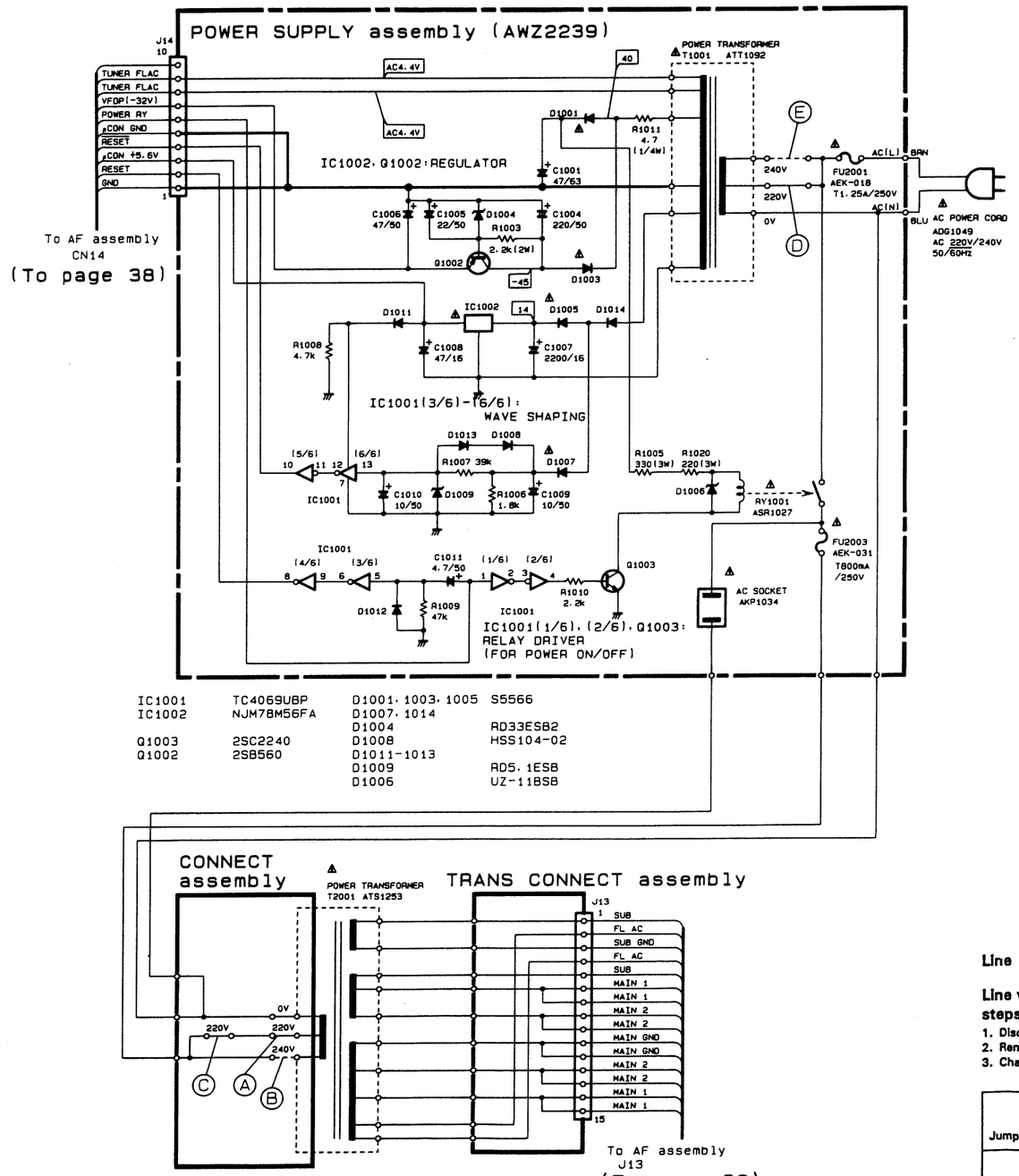
(To page 39)
To POWER SUPPLY assembly J14

(To page 25)
To AMP GEQ CTRL assembly J18

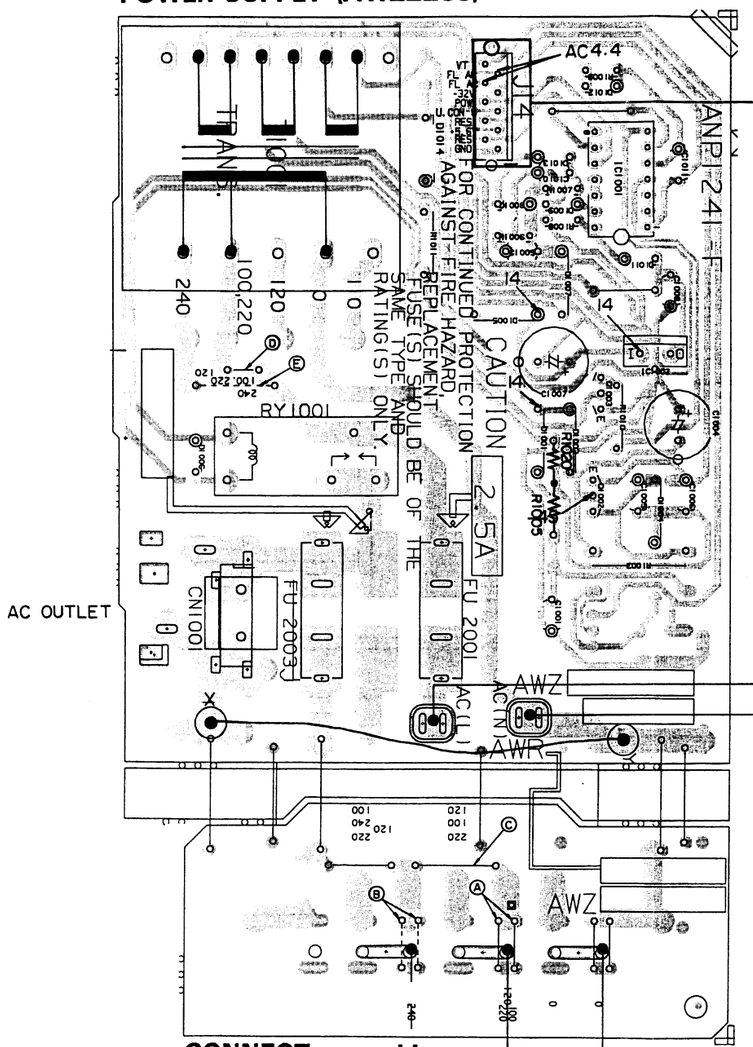
(To page 24)
To DECK CTRL assembly J16

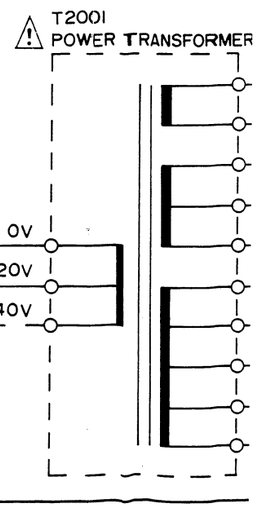
(To page 24)
To DECK CTRL assembly J17

2.5 POWER SUPPLY (AWZ2239), TRANS CONNECT and CONNECT assembly



POWER SUPPLY (AWZ2239)





Line Voltage Selection

Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the jumper wires Ⓐ–Ⓔ as follows.
4. Stick the line voltage label on the rear panel.

Voltage / Jumper wires	220V	240V
Ⓐ	○	×
Ⓑ	×	○
Ⓒ	○	×
Ⓓ	○	×
Ⓔ	×	○

○: Be needed
×: Be needless

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

NOTE

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

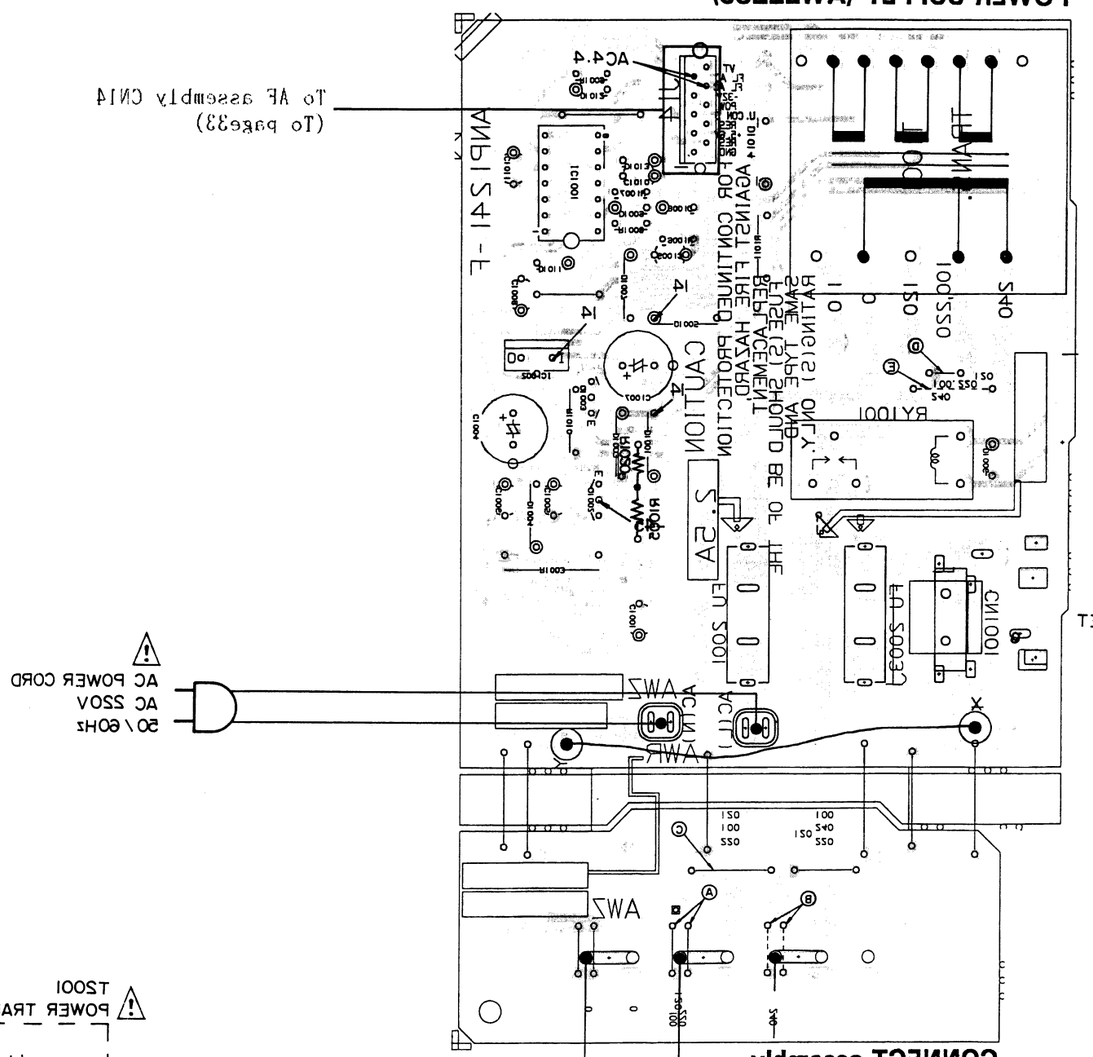
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

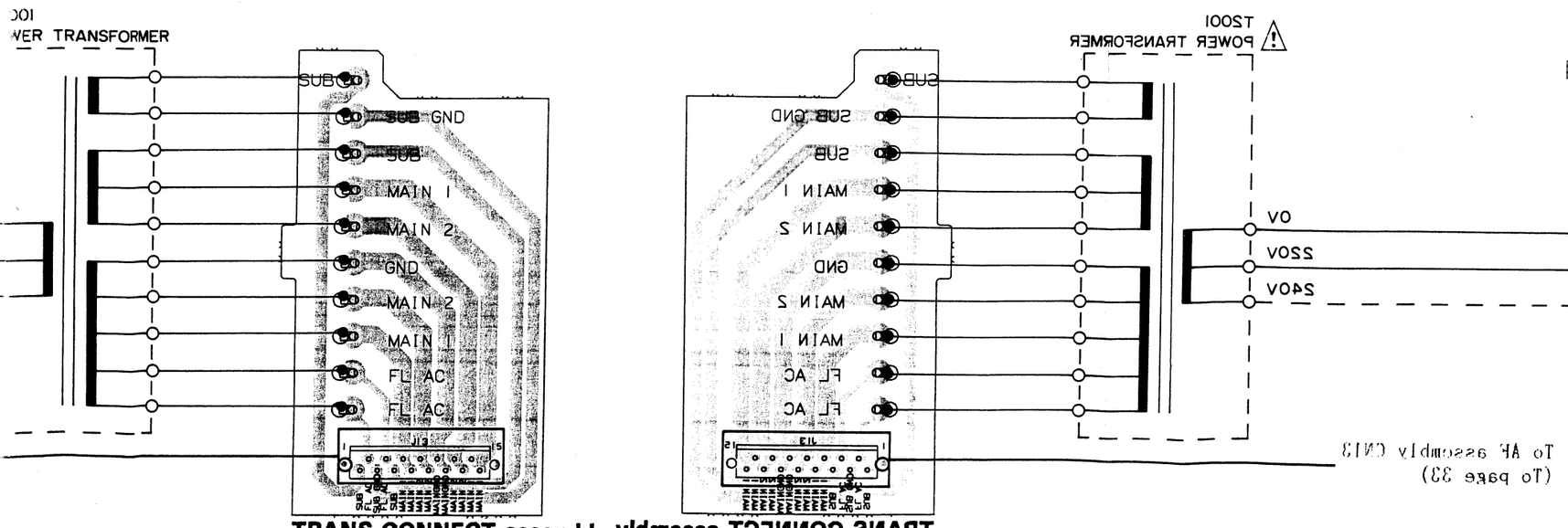
Others

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

3. The capactor terminal marked with ◎(double circles) shows negatine termianl.
4. The diode terminal marked with ◎(double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.

ER CORD





NOTE:
This picture shows the foil side of the printed circuit.

3. 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 importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

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

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

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

5.62kΩ	*562 × 10¹*	*5621*	*RN1/4SR 5 6 2 1 F*

Mark	No.	Description	Parts No.
FUNCTION assembly (AWK1245)			
SEMICONDUCTOR			
	IC901	OP−AMP IC	NJM4558DXP
	IC902	LOGIC IC	TC4052BP
	IC903	LOGIC IC	TC4066BP
	IC904	OP−AMP IC	NJM4558DXP
	Q901	TRANSISTOR	RN2201
	Q902	TRANSISTOR	RN1201
CAPACITORS			
	C903−906	CERAMIC CAPACITOR	CCCSL101J50
	C907,908	ELECTR.CAPACITOR	CEAS2R2M50
	C909,910	CERAMIC CAPACITOR	CKCYB152K50
	C911,912	CERAMIC CAPACITOR	CKCYB562K50
	C913, 914	ELECTR.CAPACITOR	CEAS470M10
	C919, 920	ELECTR.CAPACITOR	CEAS100M25
	C929, 930	CERAMIC CAPACITOR	CCCSL101J50
RESISTORS			
	All resistors		RD1/8PM□□□J
OTHERS			
		JACK−4P (VIDEO,CD)	AKB1009
		JACK 2−P (PHONO)	AKB1088
AF ASSY (AWZ2627)			
SEMICONDUCTORS			
	IC301	REGURATOR IC	MC7812CT
	IC302	REGULATOR IC	NJM78M05FA
	IC303	REGULATOR IC	NJM79M05FA
	IC304	REGURATOR IC	MC7812CT
	IC306	IC PROTECTOR	ICP−N38
	IC309	IC PROTECTOR	ICP−N25
	IC331	AUDIO IC	STK4142−2GP
	IC332	MECHANISM DRIVER IC	TA7291S
	IC412	LOGIC IC	TC4066BP
	IC431	OP−AMP IC	NJM4558DXP
	IC471	DOLBY−B IC	HA12136
	IC501	OP−AMP IC	NJM4558DXP
	IC521	LOGIC IC	TC4066BP
	IC522	OP−AMP IC	NJM4558DXP
	IC523	LOGIC IC	M74LS05P
	Q351−353	TRANSISTOR	2SC2458
	Q354	TRANSISTOR	RN1203
	Q355	TRANSISTOR	2SA1048
	Q356	TRANSISTOR	2SC2458
	Q411,412	TRANSISTOR	2SC2458
	Q413,414	N−FET	2SK373
	Q431−438	TRANSISTOR	2SC2458
	Q481,482	TRANSISTOR	2SC2458
	Q483	TRANSISTOR	2SA1048
	Q491,492	TRANSISTOR	2SC2458
	Q493,494	TRANSISTOR	2SC1740SLN
	Q521,522	TRANSISTOR	2SC2458
	Q523,524	TRANSISTOR	2SC2878
	Q571,572	TRANSISTOR	RN1203
	Q573−577	TRANSISTOR	RN1203
	Q578	TRANSISTOR	RN1201
	Q579	TRANSISTOR	RN1203
	Q580	TRANSISTOR	2SA1048
	Q581,582	TRANSISTOR	2SA1515
	Q584	TRANSISTOR	2SC2603
	D301	DIODE	RB402
	D302−308	DIODE	S5556
	D310	ZENER DIODE	UZ-13BSB
	D311	DIODE	S5556
	D351	DIODE	HS1004−02

Mark	No.	Description	Parts No.
	D352	ZENER DIODE	UZ−22BS
	D411−420	DIODE	HSS104−02
	D491,492	DIODE	HSS104−02
	D571−580	DIODE	HSS104−02
RELAY			
	RY351	RELAY	ASR−111
COILS & TRANSFORMER			
	F491,492	DOLBY FILTER	ATF1064
	L351,352	COIL(1μH)	ATH−133
	L451,452	COIL	ATM1001
	L521,522	COIL	ATM−037
	L523,524	INDUCTOR (3.9 mH)	LTA392J
	T581	OSC TRANSFORMER	ATX−043
CAPACITORS			
	C1611,1612	CERAMIC CAPACITOR	CCCSL221J50
	C301,302	ELECTR.CAPACITOR (2200pF/42V)	ACH1109
	C303	ELECTR.CAPACITOR	CEAS222M25
	C304,305	ELECTR.CAPACITOR	CEAS102M25
	C307−310	ELECTR.CAPACITOR	CEAS220M25
	C313	ELECTR.CAPACITOR	CEAS100M50
	C316	CERAMIC CAPACITOR	CKDYB392K500
	C330	ELECTR.CAPACITOR	CEAS470M50
	C331,332	ELECTR.CAPACITOR	CEAS100M50
	C335	ELECTR.CAPACITOR	CEAS470M25
	C336	ELECTR.CAPACITOR	CEHAQ470M25
	C337,338	ELECTR.CAPACITOR	CEAS470M25
	C339,340	ELECTR.CAPACITOR	CEAS101M25
	C341	ELECTR.CAPACITOR	CEAS470M50
	C342	ELECTR.CAPACITOR	CEAS100M50
	C343	ELECTR.CAPACITOR	CEANP100M50
	C344	ELECTR.CAPACITOR	CEAS100M50
	C345	ELECTR.CAPACITOR	CEANP470M50
	C346	CERAMIC CAPACITOR	CKDYX473M16
	C347−350	CERAMIC CAPACITOR	CKCYX104M25
	C351	ELECTR.CAPACITOR	CEAS221M10
	C352	ELECTR.CAPACITOR	CEAS100M50
	C399	CERAMIC CAPACITOR	CKDYB392K50
	C411,412	CERAMIC CAPACITOR	CKMYB331K50
	C413,414	CERAMIC CAPACITOR	CKMYB471K50
	C415,416	CERAMIC CAPACITOR	CKMYB821K50
	C417,418	CERAMIC CAPACITOR	CCCSL101K500
	C421,422	CERAMIC CAPACITOR	CCMSL100D50
	C431,432	MYLOR FILM CAPACITOR	CQMA682J50
	C433,434	ELECTR.CAPACITOR	CEAS330M16
	C435,436	ELECTR.CAPACITOR	CEAS470M10
	C437,438	ELECTR.CAPACITOR	CEAS010M50
	C439,440	ELECTR.CAPACITOR	CEAS010M50
	C471,472	ELECTR.CAPACITOR	CEAS100M50
	C473,474	ELECTR.CAPACITOR	CEASR22M50

Mark	No.	Description	Parts No.
	C475,476	ELECTR.CAPACITOR	CEAS101M10
	C478	ELECTR.CAPACITOR	CEAS220M25
	C491,492	ELECTR.CAPACITOR	CEAS010M50
	C493,494	ELECTR.CAPACITOR	CEAS100M50
	C495	ELECTR.CAPACITOR	CEASR33M50
	C496	ELECTR.CAPACITOR	CEAS100M50
	C521−524	ELECTR.CAPACITOR	CEAS010M50
	C525,526	ELECTR.CAPACITOR	CEAS330M16
	C527,528	AUDIO FILM CAPACITOR	CFTXA683J50
	C529,530	CERAMIC CAPACITOR	CKCYB182K50
	C531,532	ELECTR.CAPACITOR	CEAS2R2M50
	C533,534	CERAMIC CAPACITOR	CKMYB681K50
	C535,536	MYLOR FILM CAPACITOR	CQMA183J50
	C537,538	MYLOR FILM CAPACITOR	CQMA752J50
	C539,540	CERAMIC CAPACITOR	CKCYB562K50
	C541,542	AUDIO FILM CAPACITOR	CFTXA333J50
	C545,546	ELECTR.CAPACITOR	CEAS470M16
	C570	ELECTR.CAPACITOR	CEAS470M16
	C581	ELECTR.CAPACITOR	CEAS470M16
	C582	MYLOR FILM CAPACITOR	CQMA103K50
	C583	MYLOR FILM CAPACITOR	CQMA153K50
	C584	MYLOR FILM CAPACITOR	CQMA103K50
	C585	MYLOR FILM CAPACITOR	CQMA123K250
	C586	CERAMIC CAPACITOR	CKMYB681K50
	C587	CERAMIC CAPACITOR	CKMYB221K50
	C588	CQPA (2000pF/630V)	ACE1020
	C590	MYLOR FILM CAPACITOR	CQMA562K400
	C591	ELECTR.CAPACITOR	CEAS4R7M50
	C593	ELECTR.CAPACITOR	CEAS101M16
RESISTORS			
	R301−304	CARBON FILM RESISTOR	RD1/4PM10DJ
	R305	CARBON FILM RESISTOR	RD1/4PM56ZJ
	R307,308	METAL OXIDE RESISTOR	RS2LMFR22J
	R337−340	CARBON FILM RESISTOR	RD1/4PM222J
	R341	CARBON FILM RESISTOR	RD1/4PMFL471J
	R342	CARBON FILM RESISTOR	RD1/4PMFL101J
	R343,344	CARBON FILM RESISTOR	RD1/4PM222J
	R345	CARBON FILM RESISTOR	RD1/4PMFL101J

Mark	No.	Description	Parts No.
DECK CTRL assembly (AWZ2635)			
SEMICONDUCTORS			
	IC801		PDE029−C
	IC802	LOGIC IC	SN74LS42N
	Q801,802	TRANSISTOR	RN2204
	Q803−806	TRANSISTOR	RN1201
	Q807−812	TRANSISTOR	2SA1515
	Q814	TRANSISTOR	RN1201
	D801,802	DIODE	HSS104−02
	D808	DIODE	HSS104−02
	D810−815	DIODE	HSS104−02
	D820−824	DIODE	HSS104−02
	D826	DIODE	HSS104−02
	D834−840	DIODE	HSS104−02
COIL			
	L801	AXIAL INDUCTOR (22μH)	LAU220K
CAPACITORS			
	C801	ELECTR.CAPACITOR	CEASR33M50
	C802	ELECTR.CAPACITOR	CEAS101M16
	C803	ELECTR.CAPACITOR	CEAS101M10
	C804−807	CERAMIC CAPACITOR	CKCYF473Z50
	C839,840	CERAMIC CAPACITOR	CKCYB102K50
RESISTORS			
	VR801,802	VR (20kΩ)	VRTM6H203
	VR803	VR (10kΩ)	VRTM6H103
	Other resistors		RD1/8PM□□□J
OTHERS			
	CN21	JUMPER CONNECTOR 11P	KPE11
	CN22	JUMPER CONNECTOR 14P	KPE14
	CN45	JUMPER CONNECTOR 3P	KPE3
	X801	Ceramic resonator	ASS1018
DECK−1 SW assembly			
SWITCHES			
	S811−815	SWITCH	ASG1034
DECK−2 SW assembly			
SWITCHES			
	S821−825	SWITCH	ASG1034

Mark	No.	Description	Parts No.
AMP,GEQ CTRL assembly (AWZ2639)			
SEMICONDUCTORS			
	IC701	LOGIC IC	SN74LS05N
	IC702	LOGIC IC	TC4081BP
	IC721,722	AUDIO IC	BA3812L
	Q701,702	TRANSISTOR	RN2201
	D701−705	LED(RED)	AEL1099
	D707,708	DIODE	HSS104−02
SWITCHES			
	S701−705	SWITCH	ASG1034
	S707	SWITCH	ASG1034
CAPACITORS			
	C721,722	CERAMIC CAPACITOR	CKCYB182K50
	C723,724	CERAMIC CAPACITOR	CKCYX153M25
	C725,726	CERAMIC CAPACITOR	CKCYB391K50
	C727,728	CERAMIC CAPACITOR	CKCYB682K50
	C729,730	CERAMIC CAPACITOR	CKCYB392K50
	C731,732	CERAMIC CAPACITOR	CKCYX683M16
	C733,734	CERAMIC CAPACITOR	CKCYX183M25
	C735,736	ELECTR.CAPACITOR	CEJAR15M50
	C737	CERAMIC CAPACITOR	CKCYX393M25
	C738	CERAMIC CAPACITOR	CKDYX393M25
	C739,740	ELECTR.CAPACITOR	CEJAR68M50
	C741	ELECTR.CAPACITOR	CEJA100M25
	C742	ELECTR.CAPACITOR	CEAS100M25
	C743,744	CERAMIC CAPACITOR	CCMSL101J50
	C745,746	CERAMIC CAPACITOR	CKCYB331K50
	C747,748	ELECTR.CAPACITOR	CEAS100M25
	C749−750	ELECTR.CAPACITOR	CEAS101M10
RESISTORS			
	VR721−730	VR (30kΩ)	ACU1034
	Other resistors		RD1/8PM□□□J
POWER SUPPLY assembly (AWZ2239)			
SEMICONDUCTORS			
	IC1001	LOGIC IC	TC4069UBP
	IC1002	REGULATOR IC	NJM78M05FA
	Q1002	TRANSISTOR	2SB560
	Q1003	TRANSISTOR	2SC2240
	D1001	DIODE	S5566
	D1003	DIODE	S5566
	D1004	ZENER DIODE	RD33ESB2
	D1005	DIODE	S5566
	D1006	ZENER DIODE	UZ−11BSB
	D1007	DIODE	S5566
	D1008	DIODE	HSS104−02
	D1009	ZENER DIODE	RD5.1ESB

Mark	No.	Description	Parts No.
	R348,349	CARBON FILM RESISTOR	RD1/4PM100J
	R350	CARBON FILM RESISTOR	RD1/4PMFL102J
	R351,352	CARBON FILM RESISTOR	RD1/4PMFL100J
	R364	METAL OXIDE RESISTOR	RS2LMF471J
	R590	CARBON FILM RESISTOR	RD1/2PM150J
	VR411,412	VR (500kΩ)	VRTM6V504
	VR451,452	VR (100kΩ)	VRTM6H104
	VR453,454	VR (20kΩ)	VRTM6H203
	VR521,522	VR (22kΩ)	ACP1026
	Other resistors		RD1/8PM□□□J

OTHERS

	TERMINAL 4−P (SPEAKER)	AKE1012
	JACK (PL DC+12V)	AKN−203
	Socket 15−P (To TUNER)	AKP1038
CN14	JUMPER CONNECTOR 10P	KPE10
CN16	JUMPER CONNECTOR 14P	KPE14
CN17	JUMPER CONNECTOR 11P	KPE11
CN18	JUMPER CONNECTOR 8P	KPE8
CN29	JUMPER CONNECTOR 7P	KPE7
CN48	JUMPER CONNECTOR 9P	KPE9

HEAD PHONE assembly

CAPACITOR

C401	CERAMIC CAPACITOR	CKCYF473Z50

RESISTORS

R401	CARBON FILM RESISTOR	RD1/8PM100J
R402−405	CARBON FILM RESISTOR	RD1/2PMF681J

OTHERS

	JACK (HEAD PHONE)	AKN1010
CN25	JUMPER CONNECTOR 5P	KPC5

Mark	No.	Description	Parts No.

TRANS CONNECT assembly

No parts are supplied with the TRANS CONNECT assembly.

MAIN VR assembly

SEMICONDUCTORS

IC391	OP−AMP IC	NJM4558DXP
Q391,392	TRANSISTOR	2SC2878
Q393	TRANSISTOR	2SA1048

COILS

L391,392	AXIAL INDUCTOR (5.6μH)	LAU5R6K

CAPACITORS

C391,392	ELECTR.CAPACITOR	CEAS4R7M50
C393,394	CERAMIC CAPACITOR	CCMSL101J50
C395,396	CERAMIC CAPACITOR	CKCYF473Z50
C397,398	ELECTR.CAPACITOR	CEAS470M10

RESISTORS

VR391	VR (100kΩ×2)	ACX1021
Other resistors		RD1/8PM□□□J

DECK CENTER assembly

SEMICONDUCTORS

Q822−825	TRANSISTOR	2SA1048
D841−844	LED	AEL1084
D854	DIODE	HSS104−02
D856−858	DIODE	HSS104−02
D861	LED	AEL1091
D862	LED (RED)	AEL1065

SWITCHES

S848,849	SWITCH	ASH1014
S853	SWITCH	ASG1034
S861,862	SWITCH	ASG1034
S871,872	SWITCH	ASG1034
S875	SWITCH	ASG1034

RESISTORS

All resistors		RD1/8PM□□□J

Mark	No.	Description	Parts No.
	D1011−1013	DIODE	HSS104−02
	D1014	DIODE	S5566
RELAY			
⚠	RY1001	RELAY	ASR1027
TRANSFORMER			
⚠	T1001	POWER TRANSFORMER	ATT1092
CAPACITORS			
	C1001	ELECTR.CAPACITOR	CEAS470M63
	C1004	ELECTR.CAPACITOR	CEAS221M50
	C1005	ELECTR.CAPACITOR	CEHAQ220M50
	C1006	ELECTR.CAPACITOR	CEAS470M50
	C1007	ELECTR.CAPACITOR	CEAS222M16
	C1008	ELECTR.CAPACITOR	CEAS470M16
	C1009,1010	ELECTR.CAPACITOR	CEAS100M50
	C1011	ELECTR.CAPACITOR	CEAS4R7M50
RESISTORS			
	R1003	METAL OXIDE RESISTOR	RS2LMF222J
	R1005	METAL OXIDE RESISTOR	RS3PMF331J
	R1011	CARBON FILM RESISTOR	RD1/4PMFL4R7J
	R1020	METAL OXIDE RESISTOR	RS3PMF221J
	Other resistors		RD1/8PM□□□J
OTHERS			
⚠		AC SOCKET 1−P	AKP1034

CONNECT assembly

No parts are supplied with the CONNECT assembly.

4. ADJUSTMENTS

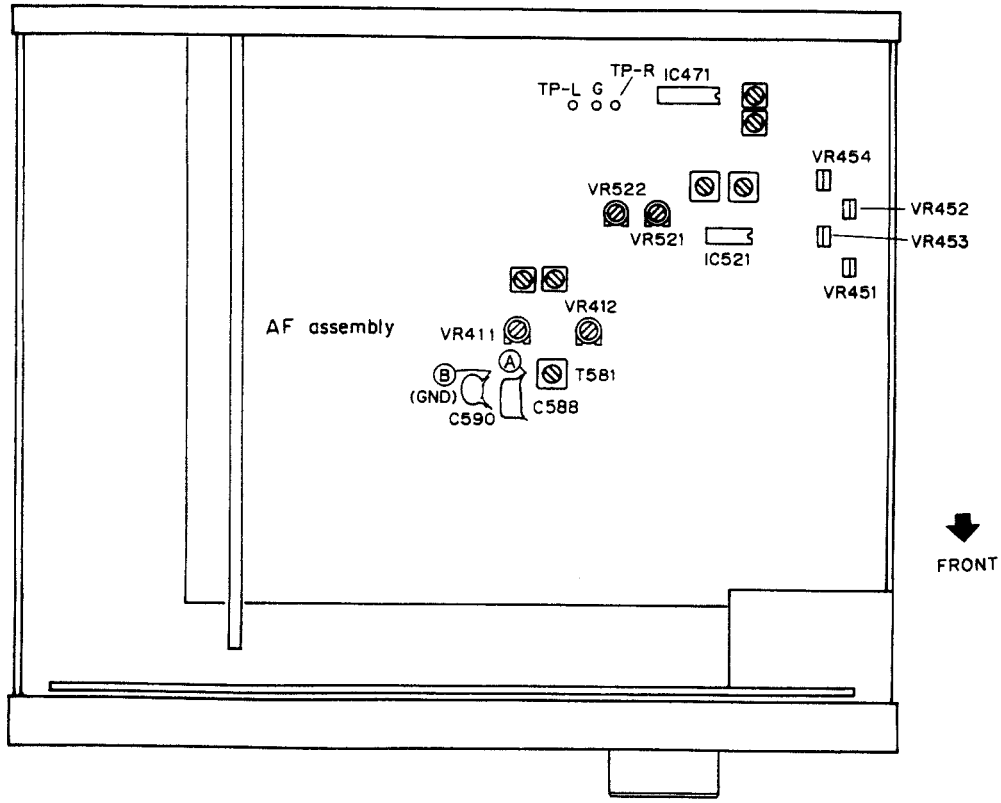


Fig 4.1. Adjustment location

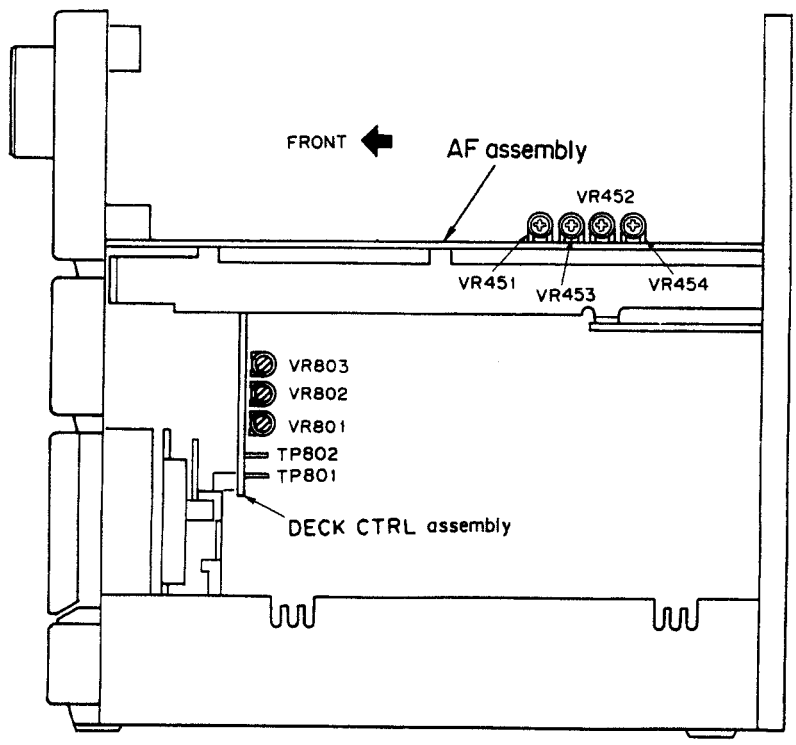


Fig 4.2. Adjustment location

- Adjustment and measurement are usually made in the AF assembly, unless specified otherwise.
- Set the graphic equalizer to FLAT. Depending on the country of destination, the unit may be equipped with a MIC mixing volume control.
  If a MIC mixing volume control is built in, please set to the MIN position.
- The function should always be set to "TAPE" unless otherwise specified.

Adjustment of Mechanical System

- Test tape: STD-301 (3 kHz, 30 min)
- Setting of double speed mode: Short-circuit TP801 and TP802 of the DECK CTRL assembly. To release the mode, break the short circuit.

1. Adjustment of tape speed

No.	Mode	Input signal & Test tape	Adjustment location		Measuring location	Adjustment value	Remarks
1	PLAY	Playback the STD-301 tape to 3 kHz.	Deck I	DECK CTRL Assembly VR801	TP-L (Lch)	Press the PLAY SW and adjust the frequency to 3010 Hz ±10 Hz. Make sure that the wow and flutter is within 0.2 %.	
2	PLAY (Double speed mode)			—		Press the PLAY SW in double speed mode and confirm that the frequency is 6000 Hz ±1000 Hz. Note down the figure.	Release the double speed mode after adjustment.
3	PLAY (Double speed mode)		Deck II	DECK CTRL Assembly VR803	TP-R (Rch)	Press the PLAY SW in double speed mode and adjust the frequency to be within ±30 Hz of the figure recorded at step No. 2.	Release the double speed mode after adjustment.
4	PLAY			DECK CTRL Assembly VR802		Press the PLAY SW and adjust the frequency to 3010 Hz ±10 Hz. Make sure that the wow and flutter is within 0.2 %.	

Adjustment of Electric System

■ Check and conduct the following before adjusting the electric system.

1. Adjustment of tape speed has been completed.
2. Clean and demagnetize the head using a head eraser.
3. When measured, the level should be 0 dBV = 1 Vrms.
4. Use side A of the specified tape for adjustment.
   STD-331B: For adjustment of playback system.
   STD-630: NORMAL blank tape
5. Prepare the following measuring devices:
   AC millivoltmeter, Low-frequency oscillator, Attenuator, Oscilloscope
6. Adjust both L and R channels, unless specified otherwise.
7. Set the DOLBY NR switches to OFF, unless specified otherwise.
8. Warm up the unit for several minutes before adjustment. Especially before adjusting the frequency characteristics of recording and playback, warm up for 3 to 5 minutes in REC/PLAY mode.
9. Make sure to follow the proper order of the adjustment procedure. Any change in the order may cause an imperfect result.

List of Adjustment

Deck I

1. Head azimuth adjustment
2. Playback level adjustment

Deck II

1. Head azimuth adjustment
2. Playback level adjustment
3. Bias oscillation frequency adjustment
4. Recording level adjustment
5. Adjustment frequency characteristics of recording / playback

Checking of Deck II

1. Make sure the ALC is operating properly.

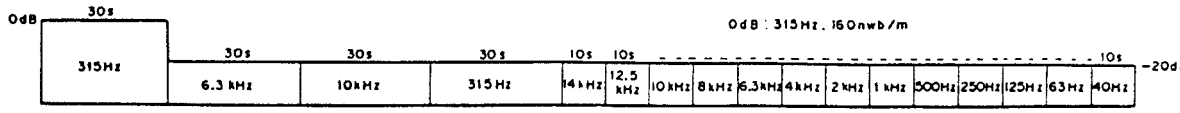


Fig. 4.3 Test tape STD-331B

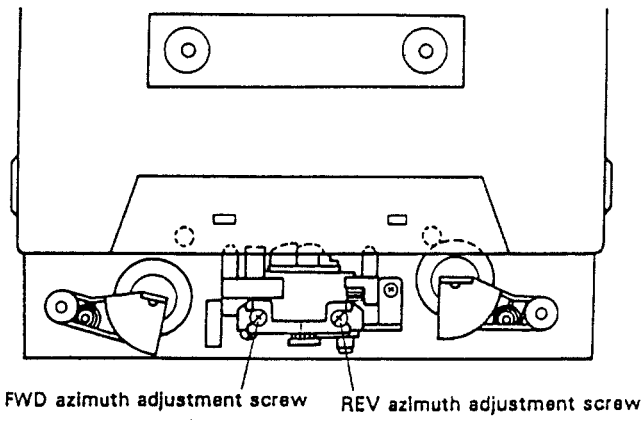


Fig. 4.4 Head azimath adjustment

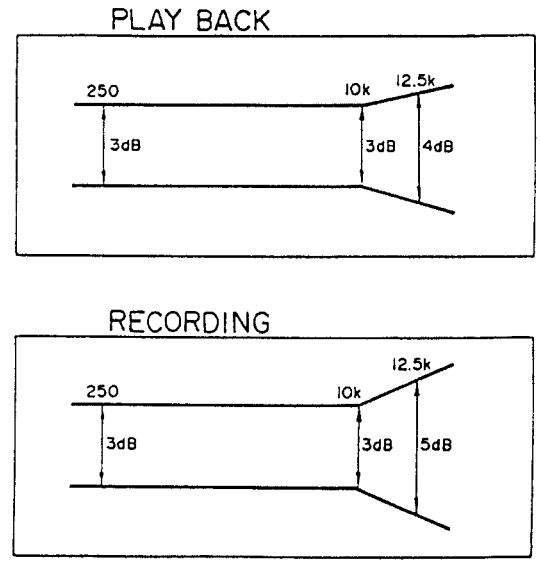


Fig. 4.5 Frequency characteristics

• Head Adjustment of Deck I

- Deck I is provided with an automatic tape selector mechanism.
- Note: Do not switch over FWD and REV while the driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (10 kHz, −20 dB).	Head azimuth adjustment screw (Fig. 4-4)	TP-L (Lch) TP-R (Rch)	Maximum playback signal level	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

- Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (315 Hz, 0 dB).	VR453 (Lch) VR454 (Rch)	TP-L (Lch) TP-R (Rch)	−6.7 dBV	

• Head Adjustment of Deck II

- Deck II is provided with an automatic tape selector mechanism.
- Note: Do not switch over FWD and REV while the driver is inserted.

1. Head Azimuth Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (10 kHz, −20 dB).	Head azimuth adjustment screw (Fig. 4-4)	TP-L (Lch) TP-R (Rch)	Maximum playback signal level	Lock the screw with screw lock after completing adjustment.

2. Playback Level Adjustment

• Be sure to make a careful adjustment, as the adjustment determines the DOLBY NR level for playback.

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	PLAY	Playback the test tape STD-331B (315 Hz, 0 dB).	VR451 (Lch) VR452 (Rch)	TP-L (Lch) TP-R (Rch)	−6.7 dBV	

3. Bias oscillation frequency adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Load the test tape STD-630 and set to record mode.	——	Area between Ⓐ and Ⓑ (AF Assembly) shown in Fig. 4-1.	The oscillation frequency is 105 kHz ±1 kHz.	

4. Recording Level Adjustment

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	−7.7 dBV	
2	NORM	REC/ PLAY	Record and playback the test tape STD-630 (315 Hz).	VR521 (Lch) VR522 (Rch)	TP-L (Lch) TP-R (Rch)	Repeat the recording and correction so that the playback level of 315 Hz is −6.7 dBV.	

5. Adjustment of frequency characteristics of recording/playback

• As this procedure is for adjustment of the recording bias, be careful not to increase the distortion rate by under-adjusting the bias.

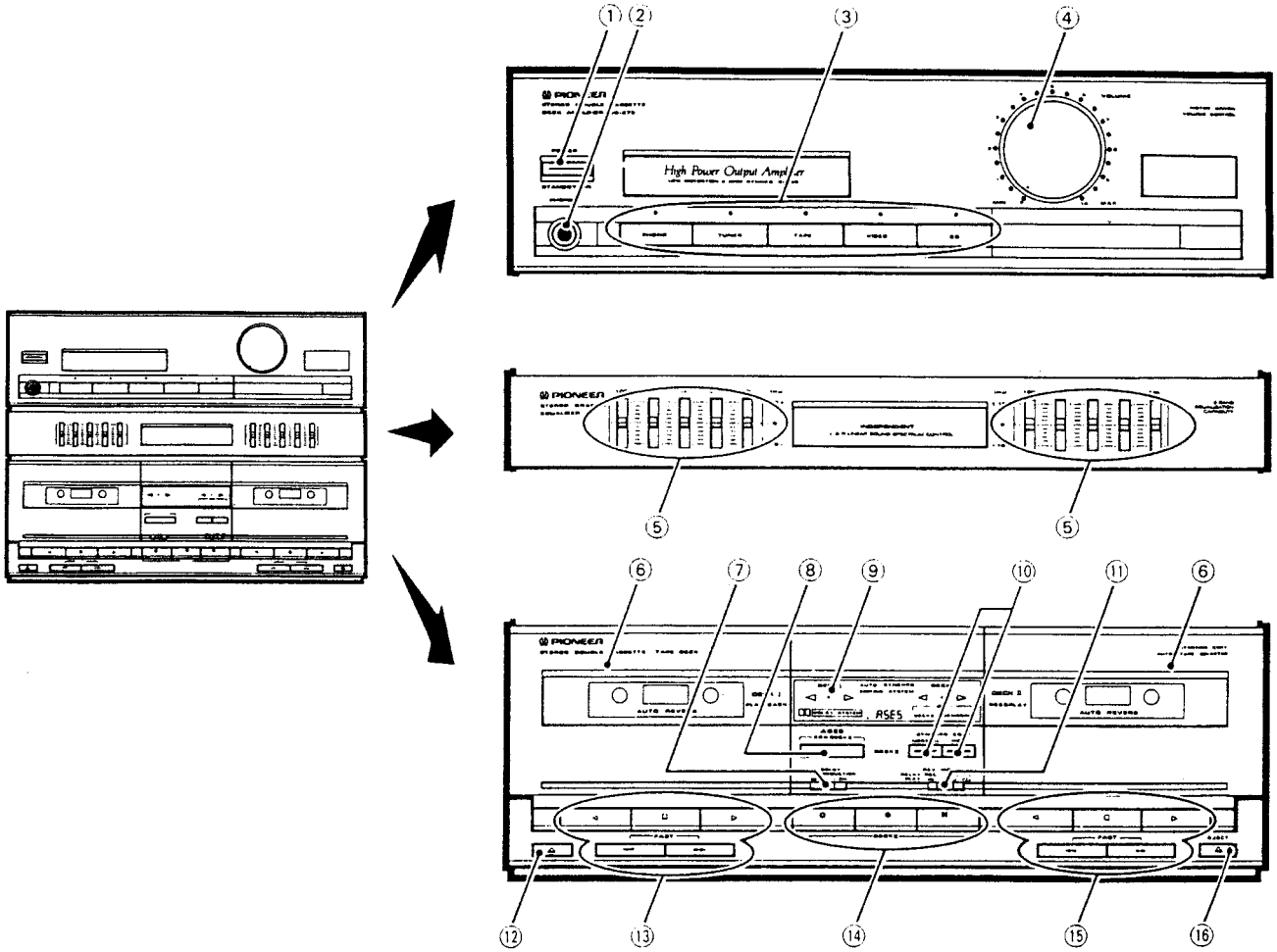
Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Adjustment value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	−27.7 dBV	
2	NORM	REC/ PLAY	Record and playback the test tape STD-630 (315 Hz and 10 kHz).	VR411 (Lch) VR412 (Rch)	TP-L (Lch) TP-R (Rch)	Repeat the correction so that the playback level of 10 kHz remains 0 ±0.5 dB in relation to 315 Hz.	

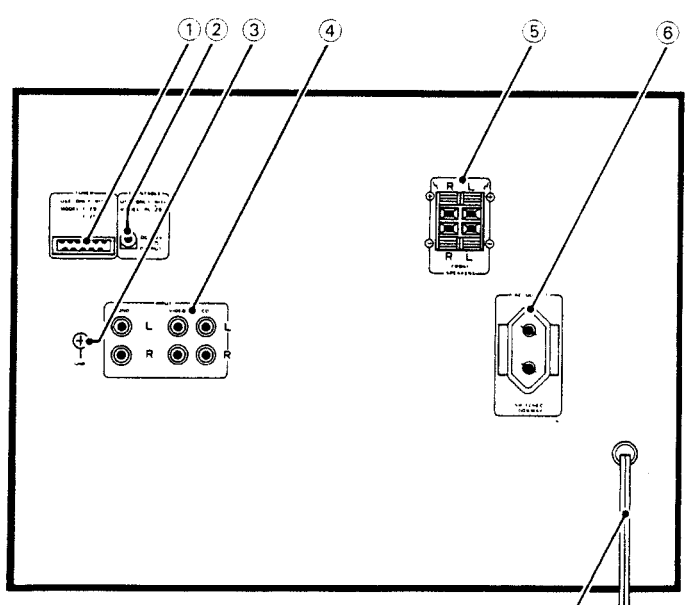
• Checking Procedure for Deck II

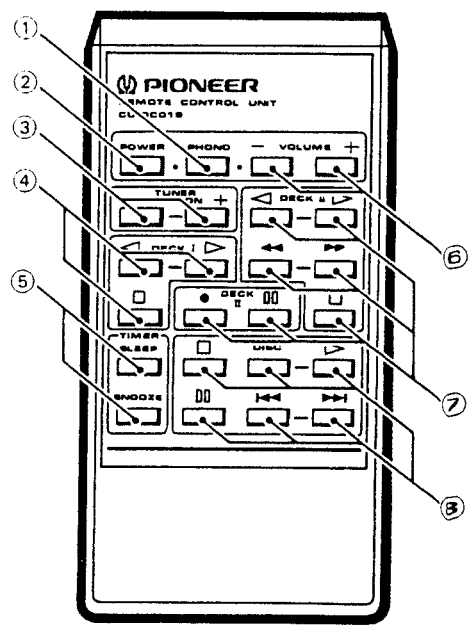
1. Action of ALC

Procedure	Tape selector	Mode	Input signal/test tape	Adjustment location	Measuring location	Checking value	Remarks
1	NORM	REC	Apply a signal of 315 Hz to the CD input terminal and set the function to "CD".	Input signal level	TP-L (Lch) TP-R (Rch)	−7.7 dBV	
2				+10 dB against the input level of step 1.		−2.7 dBV ±2.5 dB	

5. PANEL FACILITIES







REAR PANEL FACILITIES

① TUNER jacks
Connect the tuner cord here.

② TURNTABLE (DC 12 V OUTPUT) jack
This jack supplies power to the turntable (PL-Z93).

③ Ground terminal (GND)
Connect this to the ground terminal on the turntable (except for PL-Z93). Loosen screw with Phillips head screwdriver, connect, and tighten screw.

④ INPUT jacks
PHONO: Connect the output cord of the turntable to these jacks.
VIDEO: Connect to audio output jacks of LD player or VCR, etc.
CD: Connect to output jacks of a CD player.

⑤ SPEAKERS terminals
L: Connect the left speaker system as seen from the listening position.
R: Connect the right speaker system as seen from the listening position.

NOTE:
Connect a speaker system having a nominal impedance ranging from 6 Ω to 16 Ω.

⑥ AC OUTLET (SWITCHED 100 W MAX)
Power supplied through this outlet is turned on and off by the cassette tape deck amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.

NOTE:
Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET in order to avoid overheating or fire risk.
This can cause the cassette tape deck amplifier to malfunction.

⑦ Power cord
Connect this to the AC wall socket.

FRONT PANEL FACILITIES

- Tapes can be played back on deck I; tapes can be played back and recorded on deck II.
- Sound can be recorded as adjusted by the graphic equalizer.

Amplifier section/Graphic equalizer section

① POWER STANDBY/ON switch
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.
(The tuner display shows only the time.)

② PHONES (Headphones) jack
For stereo headphones.

NOTE:
There is no output from the speakers when headphones are plugged into PHONES jack.

③ Input selector switches/indicators
[PHONO]
Press to play records on a turntable connected to the PHONO jacks.
[TUNER]
Press to listen to radio broadcast.
[TAPE]
Press to listen to cassette tape.
[VIDEO]
Press to listen to stereo component connected to the VIDEO jacks.
[CD]
Press to listen to a CD player connected to the CD jacks.

④ VOLUME control

⑤ Graphic equalizer controls
Fine adjustment in sound quality are possible using the 5 controls on the graphic equalizer.

Cassette Tape Deck Section

⑥ Cassette door

⑦ DOLBY* NR switch
Set this switch to the ON position to activate the DOLBY NR system.
- Tapes recorded using Dolby noise reduction should always be played back with the noise reduction system on. Sound quality will be adversely affected if played back with the system off, or if tapes recorded using a different noise reduction system are played back with the Dolby NR system on.
- It is recommended that tapes recorded with Dolby B type NR be so marked on the label. This will help prevent incorrect setting of the noise reduction switch during playback.

*

Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ⧈ are trademarks of Dolby Laboratories Licensing Corporation.

⑧ ASES (CD ► DECK II) switch
Used for automatically recording a CD on cassette tape.

⑨ Operation indicators
ASES: Lights when the A.S.E.S. (Auto Synchro Editing System) is operating.
DECK II RECORDING: Lights when recording. Flashes when copying a tape.
Slow flashing = Normal copy
Rapid flashing = High speed copy
Direction (◁, ▷): Show direction of tape travel.

⑩ SYNCHRO COPY switches
Used for tape copying.
NORMAL: Copying from the Deck I tape to the Deck II tape at normal recording/playback speed.
HIGH: Copying at about twice normal tape speed. (Copies can be made in about half the NORMAL time.)

⑪ REV (REVERSE) MODE switch

Switch position	During playback	During recording
RELAY REC PLAY ⇄	Plays both tape sides. When one deck finishes playback, the other deck begins playback of both tape sides for 6 times. If there is a tape in only one deck, then that deck continuously plays both sides of the tape for 6 times.	Records on one side (Deck II only).
REC PLAY ↻	Plays both tape sides for 6 times.	Records on both sides (Deck II only).

⑫ Deck I EJECT switch

⑬ Deck I Operation switches

▷ **(PLAY: FWD)** .. For playing back a tape in the forward mode.
◁ **(PLAY: REV)** ... For playing back a tape in the reverse mode.
□ **(STOP)** ..... For stopping the tape.
►► **(FAST)** ..... Fast forward in forward mode, rewind in reverse mode.
◄◄ **(FAST)** ..... Rewind in forward mode, fast forward in reverse mode.

⑭ DECK II switches

MUTE (o) ..... Used for creating a blank space between songs. The unrecorded space is created for as long as this switch is kept depressed during recording.
REC (●) ..... To set to recording standby mode. Recording begins when you press the PLAY switch (◁ or ▷).
PAUSE (▯▯) ..... Temporarily stops tape travel. Cancels pause mode when pressed again or press the PLAY switch.

⑮ Deck II Operation switches:

Same as Deck I operation switches ⑬.

⑯ Deck II EJECT switch

Remote control unit

① PHONO key

Sets function to PHONO.

② POWER key

③ TUNER STATION keys

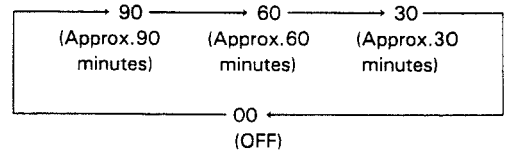
• Before operation, memorize broadcast stations in the STATION CALL switches.
+ ..... Stations change in order in the upward direction
− ..... Stations change in order in the downward direction.

④ Deck I operation keys

▷ ..... Forward play
◁ ..... Reverse play
□ ..... Stop

⑤ Timer operation keys

SLEEP: Sets the sleep timer. Each time you press this key, the setting changes as shown here. The current setting is shown on the tuner display.
Power turns off when your set time has elapsed.



If you press the SLEEP key during SLEEP operation, the display will show the time remaining till power turns off.

SNOOZE: Turns off power if pressed after timer playback begins. Timer playback begins again approx. 5 minutes later.

⑥ VOLUME + (UP)/− (DOWN) keys

When pressed, VOLUME on the amplifier is actually moved by a motor.

⑦ Deck II operation keys:

Same as Deck I operation switches ⑬ plus DECK II switches ⑮.

⑧ CD operation keys

Perform the connections so that the CD player is operated by the remote control unit.
▷ ..... Play
DISC..... DISC selection
□ ..... Stop
▯▯ ..... Pause
|◄◄, ►►|..... Track search

NOTE:
Note that the DISC selector key on the remote control unit may not operate, depending on the CD player used.

The amplifier input selector automatically switches to the music source being operated when you press the CD playback (▷), cassette tape deck playback (◁, ▷), or tuner station controls.

NOTE:
It is not possible to operate the CD player with the remote control unless the remote control cord is connected

Range of remote control

When the remote control unit is pointed at the remote sensor window on the tuner and any of its keys is pressed, the tuner and other components can be operated by remote control.
Distance: Within a range of approx. 7 meters from the remote sensor window on the tuner.
Angle: Within approx. 30 degrees from the center of the remote sensor window on the tuner.
Remote control will not be possible if there is an obstacle between the remote control unit itself and the remote sensor window on the tuner.
Performance of the remote control unit is adversely affected in the presence of strong fluorescent light. Keep such lights away, especially from the sensor window.

6. SPECIFICATIONS

Cassette tape deck amplifier: DC-Z73

Amplifier Section

Music power ..... 50 W + 50 W (1 kHz, T.H.D. 1 %, 8 Ω)
DIN music power ..... 50 W + 50 W (1 kHz, T.H.D. 1 %, 8 Ω)
Peak music power ..... 290 W (1 kHz, T.H.D. 10%, 6 Ω)
Continuous Power Output (DIN) ..... 33 W + 33 W
(1 kHz, T.H.D. 1 %, 8 Ω)
Graphic equalizer frequency band ..... 100 Hz, 330 Hz,
1 kHz, 3.3 kHz, 10 kHz, ± 7 dB
Hum and Noise (DIN, continuous Power/50 mW)
PHONO ..... 68 dB/60 dB
Total Harmonic Distortion
(40 Hz to 20,000 Hz, 15 W, 8 ohms)** ..... No more than 0.2 %

Tape Deck Section

Systems ..... 4 track, 2-channel stereo
Heads ..... Recording/playback head x 1
Playback head x 1
Erasing head x 1
Motor ..... DC servo 2 speed motor x 2
Wow and Flutter ..... No more than 0.09 % (WRMS)
Fast Winding Time ..... Approximately 95 seconds
(C-60 tape)
Frequency Response (– 20 dB recording):
Normal tape ..... 35 Hz to 14,000 Hz ± 6 dB
CrO_2 tape ..... 35 Hz to 15,000 Hz ± 6 dB
Signal-to-Noise ratio
Dolby NR OFF ..... 56 dB
Noise Reduction Effect
Dolby B type NR ON ..... More than 10 dB (at 5 kHz)

Furnished Parts

Operating Instructions 1
Remote control unit 1
Dry cell batteries 2

Miscellaneous

Power requirements ..... a.c. 220 Volts~, 50/60 Hz
Power Consumption ..... 216 W
Dimensions ..... 360 (W) x 271 (H) x 329 (D) mm
Weight (without package) ..... 8.3 kg

Accessories

EP Adaptor 1

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

** *Measured By Audio Spectrum Analyzer.*