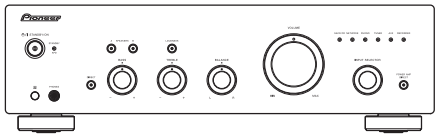
Pioneer

Service Manual



A-30-K

ORDER NO.
RRV4297

INTEGRATED AMPLIFIER

A-30-K
A-30-S
A-20-K
A-20-S
A-20
A-10-K
A-10-S

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

Model	Type	Power Requirement	Remarks
A-30-K/-S	PWSYXE8	AC 220 V to 230 V	
A-20-K/-S	PWSYXE8	AC 220 V to 230 V	
A-20	CUXE	AC 120 V	
A-10-K/-S	SYXE8	AC 220 V to 230 V	

PIONEER CORPORATION 1-1, Shin-ogura, Saiwai-ku, Kawasaki-shi, Kanagawa 212-0031, Japan
PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER EUROPE NV Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

K-FZV MAY 2012 Printed in Japan

SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

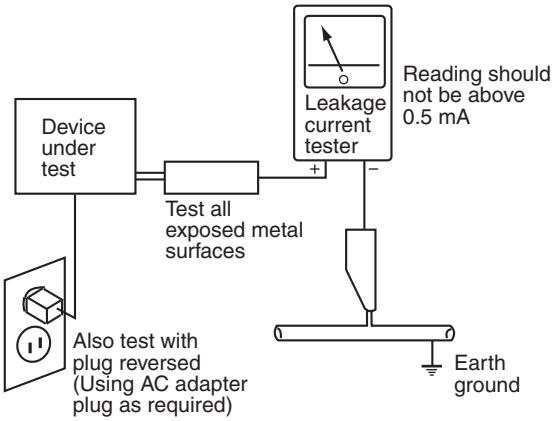
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60 Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5 mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

CONTENTS

1. SERVICE PRECAUTIONS
1.1 NOTES ON SOLDERING

- For environmental protection, lead-free solder is used on the printed circuit boards mounted in this unit.
  Be sure to use lead-free solder and a soldering iron that can meet specifications for use with lead-free solders for repairs accompanied by reworking of soldering.

- Compared with conventional eutectic solders, lead-free solders have higher melting points, by approximately 40 ºC.
  Therefore, for lead-free soldering, the tip temperature of a soldering iron must be set to around 373 ºC in general, although the temperature depends on the heat capacity of the PC board on which reworking is required and the weight of the tip of the soldering iron.

Do NOT use a soldering iron whose tip temperature cannot be controlled.

Compared with eutectic solders, lead-free solders have higher bond strengths but slower wetting times and higher melting temperatures (hard to melt/easy to harden).

The following lead-free solders are available as service parts:
- Parts numbers of lead-free solder:
  GYP1006 1.0 in dia.
  GYP1007 0.6 in dia.
  GYP1008 0.3 in dia.

2. SPECIFICATIONS

2.1 ACCESSORIES

- Remote control unit (A-30-K/-S : CARTA30)
  (A-20-K/-S,A-20 : CARTA20)
- AC Power cord (A-30-K/-S : CJA2B054Z)
  (A-20-K/-S, A-10-K/-S : CJA2B020Z)
- Operating instructions (A-30-K/-S, A-20-K/-S, A-10-K/-S : CQX1A1640Y)
  (A-20 : CQX1A1644Z)
- AAA/R03 dry cell battery x 2 (A-30-K/-S, A-20-K/-S, A-20)
- Warranty card (A-30-K/-S, A-20-K/-S, A-10-K/-S : CQE1A541Z)

2.2 SPECIFICATIONS

Amplifier section

Power output specification is for when power supply is 230 V.
(A-30-K/-S, A-20-K/-S, A-10-K/-S)

Power output specification is for when power supply is 120 V.
(A-20)

•Continuous power output (both channels driven at 20 Hz to 20 kHz)

A-30 . . . . . .70 W + 70 W
A-20, A-10 . . . . . .50 W + 50 W
(THD 0.1 %, 4 Ω)
A-30 . . . . . .40 W+40 W
A-20, A-10 . . . . . .30 W+30 W
(THD 0.05 %, 8 Ω)

Audio section

•Input (Sensitivity/Impedance)

SACD/CD, NETWORK, TUNER, AUX, RECORDER
. . . . . 200 mV/50 kΩ
POWER AMP DIRECT (A-30 only). . . . . .1 V/10 kΩ
PHONO (MM). . . . . 2.8 mV/50 kΩ

•Output (Level/Impedance)

RECORDER OUT . . . . . 200 mV/2.2 kΩ
PHONES . . . . . 250 mV/32 Ω

•Frequency response

SACD/CD, NETWORK, TUNER, AUX, RECORDER
. . . . . 5 Hz to 100 kHz $^{+0}_{-3}$ dB*
PHONO (MM). . . . . .20 Hz to 20 kHz ±0.5 dB*
* Measured with DIRECT button switched on.

•Tone control

(When VOLUME is set to -30 dB)
Bass. . . . . .± 10 dB (100 Hz)
Treble. . . . . .± 10 dB (10 kHz)

•Signal-to-Noise Ratio (IHF SHORTED, A-NETWORK)

SACD/CD, NETWORK, TUNER, AUX, RECORDER
. . . . . 105 dB*
PHONO (MM, 2.8 mV input) . . . . . .77 dB*
* Measured with DIRECT button switched on.

•Speaker load impedance

A, B . . . . . 4 Ω to 16 Ω
A+B. . . . . 8 Ω to 32 Ω
Bi-wiring . . . . . 4 Ω to 16 Ω

Miscellaneous

Power requirements
. . . . . AC 220 V to 230 V, 50 Hz
(A-30-K/-S, A-20-K/-S, A-10-K/-S)
. . . . . AC 120 V, 60 Hz
(A-20)

Power consumption
A-30 . . . . . 175 W
A-20/A-10. . . . . 135 W
In standby . . . . . 0.3 W
Dimensions
. . . . . .435 mm (W) x 128 mm (H) x 360 mm (D)
Weight (without package)
A-30 . . . . . 7.9 kg
A-20 . . . . . 7.2 kg
A-10 . . . . . 6.7 kg

Note

- Specifications and the design are subject to possible modifications without notice, due to improvements.
- Corporation and product names mentioned herein are trademarks or registered trademarks of the respective corporations.

3. BASIC ITEMS FOR SERVICE
3.1 CHECK POINTS AFTER SERVICING

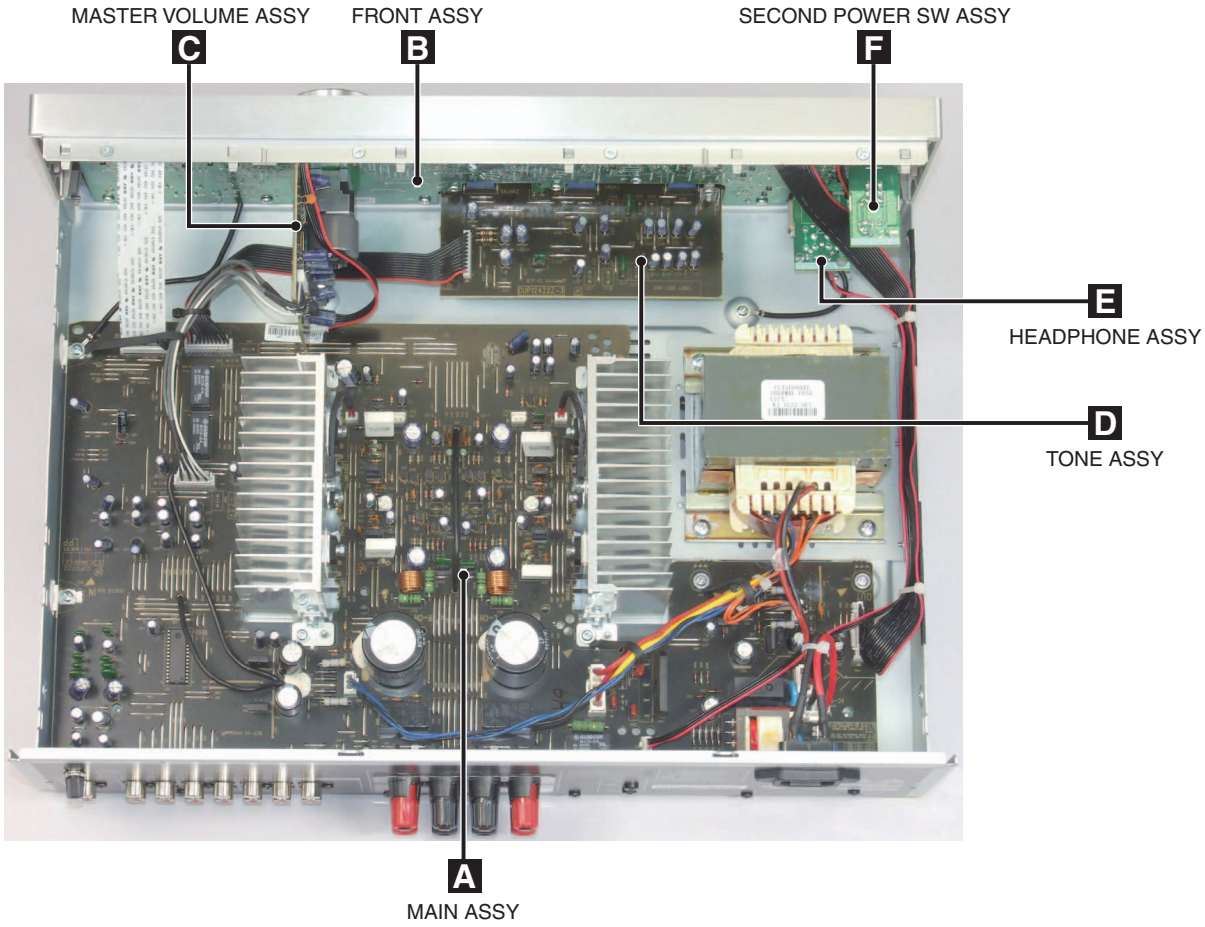
To keep the product quality after servicing, confirm recommended check points shown below.

No.	Procedures	Check points
1	Check the symptom pointed out by a customer	The pointed content should not reoccur Sound and operation should not be defective
2	Check each input and main VOL (check the operation of selector)	The sound is output by selecting an analog-connected input with a selector and the sound volume should change by rotating main VOL knob
3	Check the tone control, balance, and function	The sound quality or right and left balances should change by rotating each VOL knob
4	Check LOUDNESS and DIRECT functions	The sound quality should change by setting LOUDNESS function to ON. LOUDNESS function should be disabled by setting DIRECT function to ON.
5	Check POWER AMP DIRECT terminal (only A-30) (connected from pre-out terminal of AV AMP to POWER AMP DIRECT terminal)	The sound volume should change by adjusting the sound volume of connected AV AMP. The sound volume should not be changed by the main VOL on the main unit.
6	Check SPEAKER A/B and headphone terminal	There should not be defect in sound such as noise
7	Check the external package	Check scratch or taint is not generated after accepting the repair

See the table below for the items to be checked regarding audio.

Item to be checked regarding audio
Distortion
Noise
Volume too low
Volume too high
Volume fluctuating
Sound interrupted

3.2 PCB LOCATIONS



NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *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.*

LIST OF ASSEMBLIES

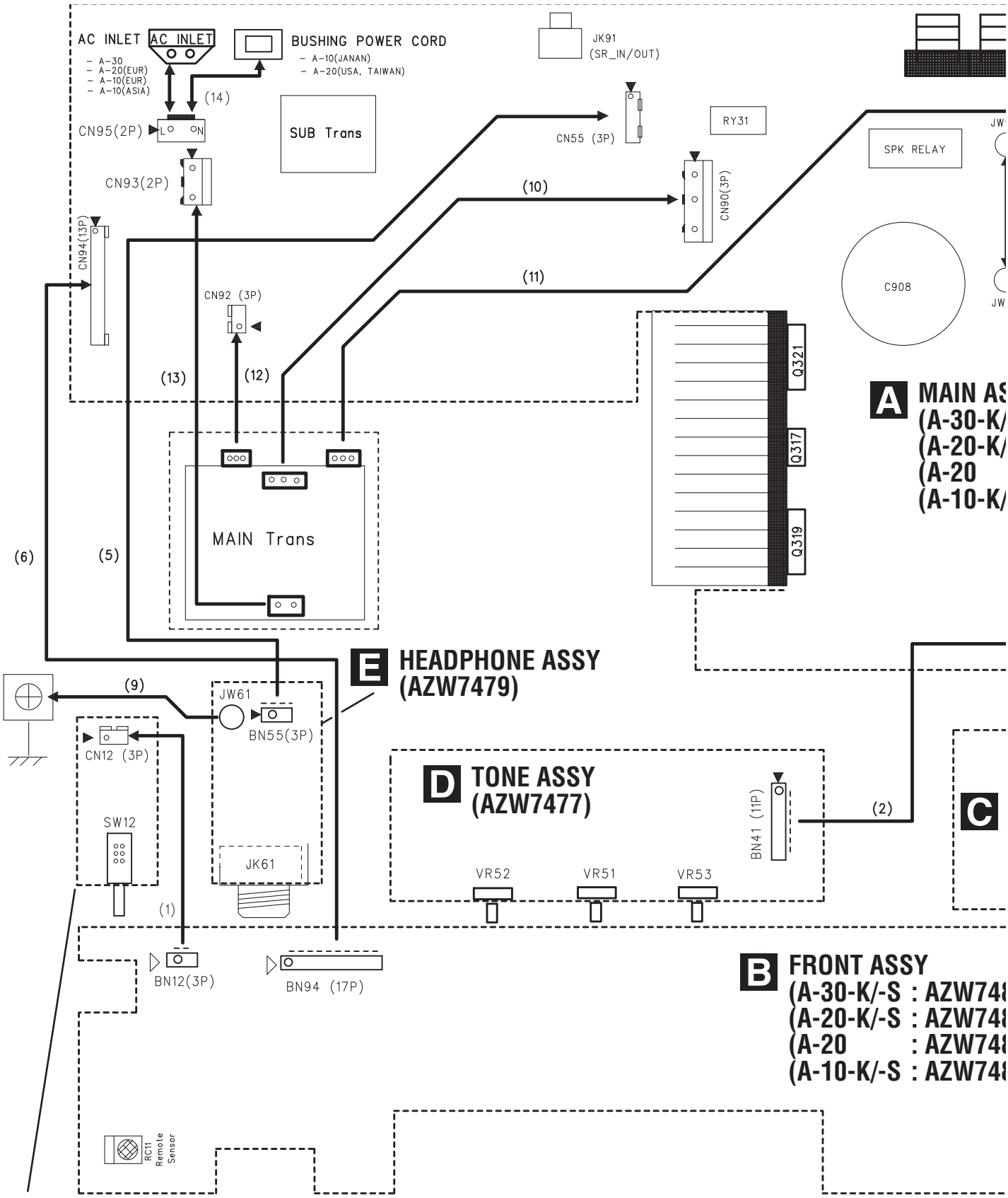
Mark	No.	Description	Part No.
NSP	1.	MAIN ASSY (A-30-K/-S)	COP12421B
	2.	MAIN ASSY	AZW7487
NSP	1.	MAIN ASSY (A-20-K/-S)	COP12421D
	2.	MAIN ASSY	AZW7489
NSP	1.	MAIN ASSY (A-20)	COP12421E
	2.	MAIN ASSY	AZW7490
NSP	1.	MAIN ASSY (A-10-K/-S)	COP12421F
	2.	MAIN ASSY	AZW7491
NSP	1.	FRONT ASSY (A-30-K/-S)	COP12422B
	2.	FRONT ASSY	AZW7482
	2.	MASTER VOLUME ASSY	AZW7476
	2.	TONE ASSY	AZW7477
	2.	HEADPHONE ASSY	AZW7479
	2.	SECOND POWER SW ASSY	AZW7478

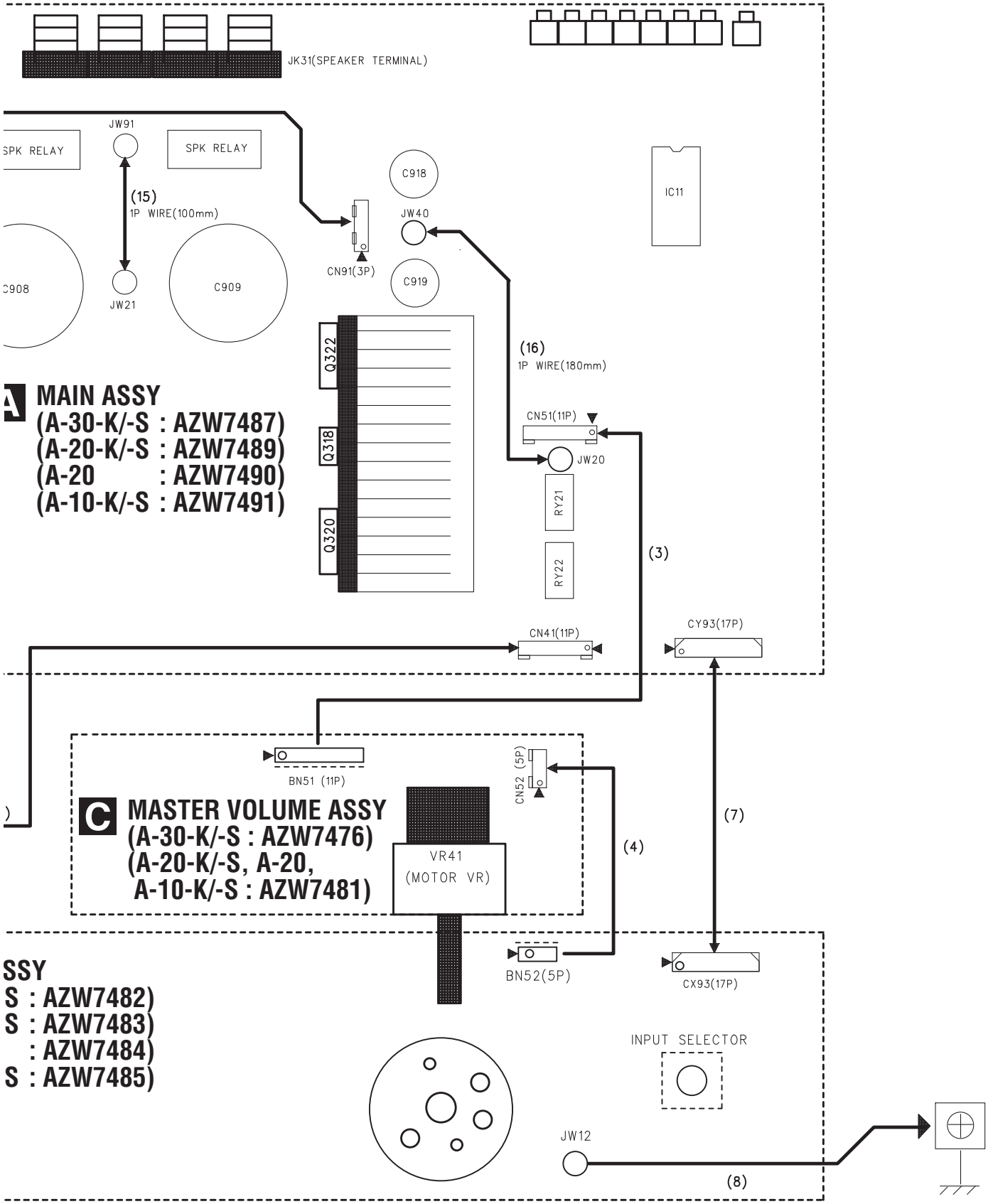
Mark	No.	Description	Part No.
NSP	1.	FRONT ASSY (A-20-K/-S)	COP12422C
	2.	FRONT ASSY	AZW7483
	2.	MASTER VOLUME ASSY	AZW7481
	2.	TONE ASSY	AZW7477
	2.	HEADPHONE ASSY	AZW7479
	2.	SECOND POWER SW ASSY	AZW7478
NSP	1.	FRONT ASSY (A-20)	COP12422G
	2.	FRONT ASSY	AZW7484
	2.	MASTER VOLUME ASSY	AZW7481
	2.	TONE ASSY	AZW7477
	2.	HEADPHONE ASSY	AZW7479
	2.	SECOND POWER SW ASSY	AZW7478
NSP	1.	FRONT ASSY (A-10-K/-S)	COP12422D
	2.	FRONT ASSY	AZW7485
	2.	MASTER VOLUME ASSY	AZW7481
	2.	TONE ASSY	AZW7477
	2.	HEADPHONE ASSY	AZW7479

3.3 JIGS LIST

Name	Jig No.	Remarks
UPDATE JIG	GGF1675	Farmware Update

4. BLOCK DIAGRAM
4.1 OVERALL CONNECTION DIAGRAM





MAIN ASSY
(A-30-K/-S : AZW7487)
(A-20-K/-S : AZW7489)
(A-20 : AZW7490)
(A-10-K/-S : AZW7491)

MASTER VOLUME ASSY
(A-30-K/-S : AZW7476)
(A-20-K/-S, A-20,
A-10-K/-S : AZW7481)

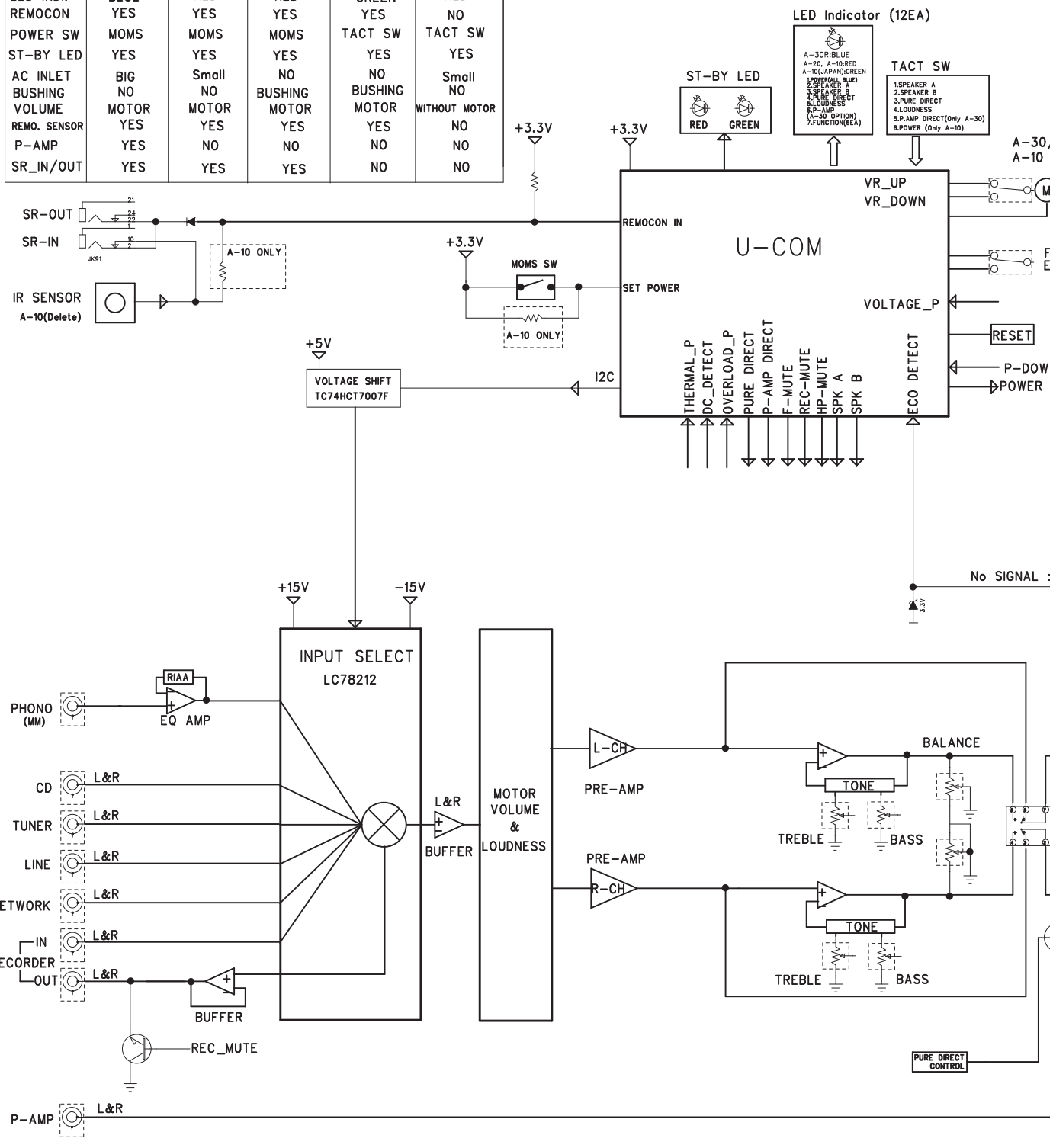
SSY
S : AZW7482)
S : AZW7483)
: AZW7484)
S : AZW7485)

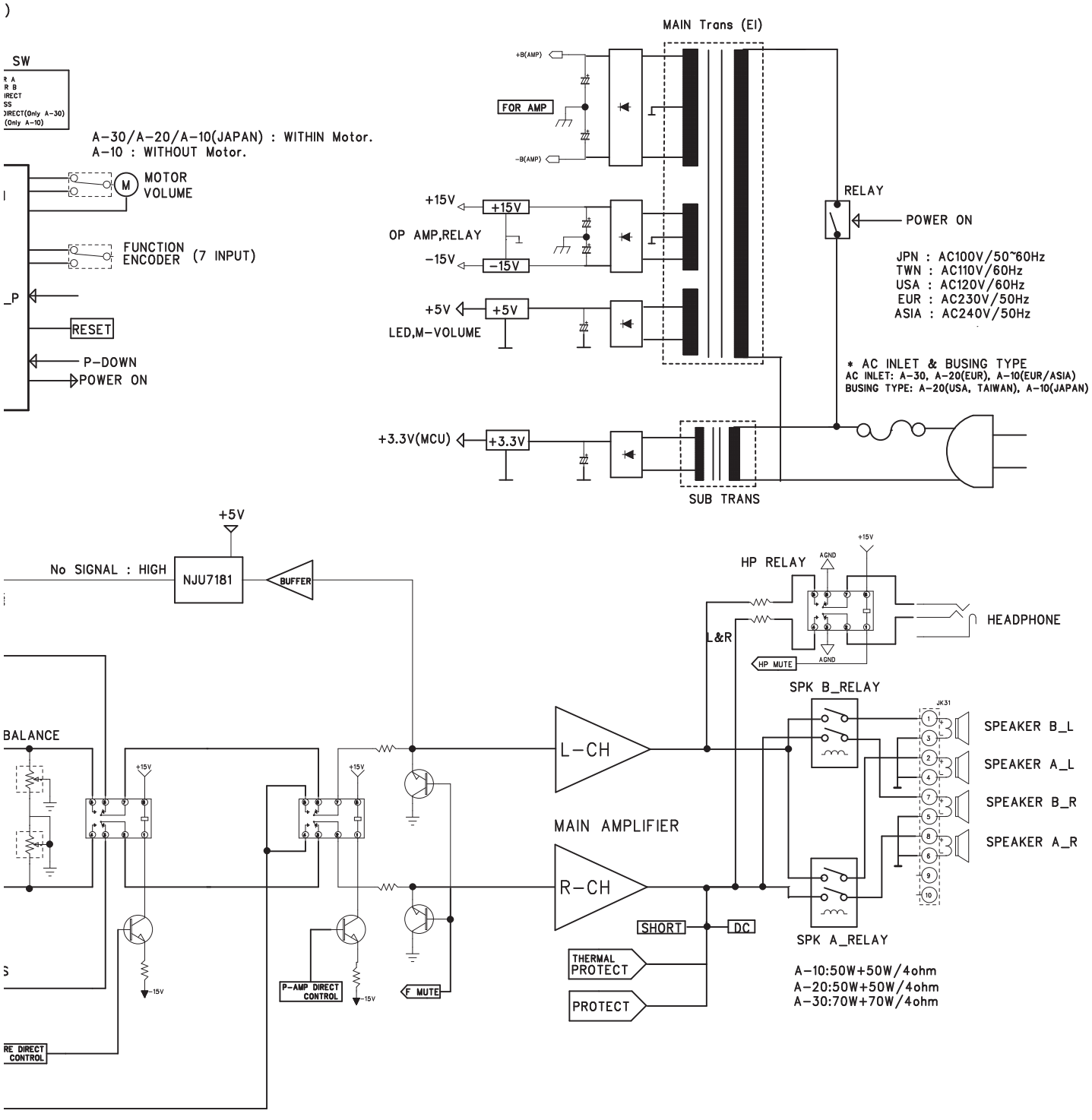
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

4.2 BLOCK DIAGRAM

* COMPARE LIST *

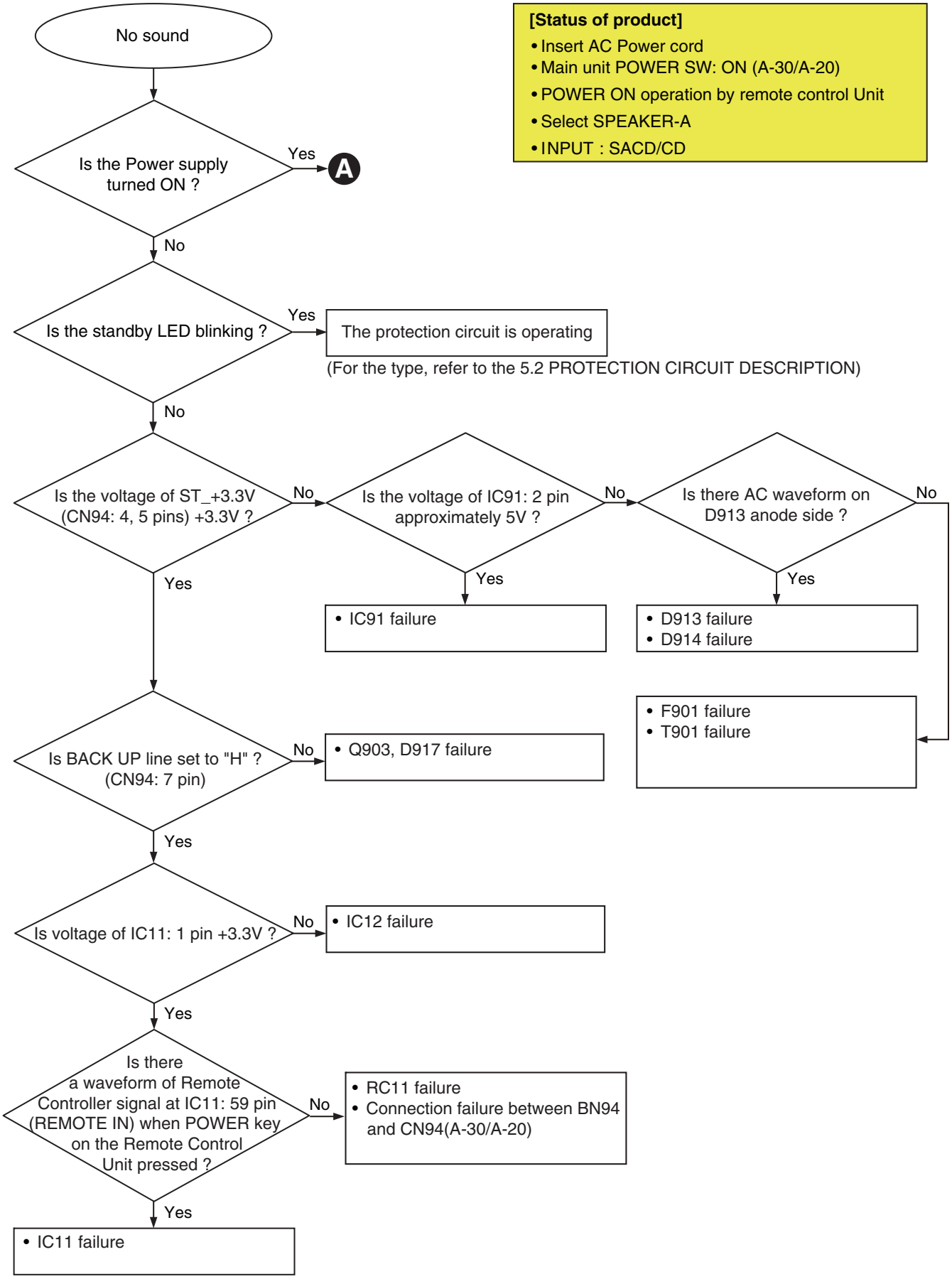
	A-30	A-20(EUR)	A-20(USA/TAIWAN)	A-10(JAPAN)	A-10(EUR/ASIA)
OUTPUT	70W+70W	50W+50W	50W+50W	50W+50W	50W+50W
LED INDI.	BLUE	RED	RED	GREEN	RED
REMOCON	YES	YES	YES	YES	NO
POWER SW	MOMS	MOMS	MOMS	TACT SW	TACT SW
ST-BY LED	YES	YES	YES	YES	YES
AC INLET	BIG	Small	NO	NO	Small
BUSHING	NO	NO	BUSHING	BUSHING	NO
VOLUME	MOTOR	MOTOR	MOTOR	MOTOR	WITHOUT MOTOR
REMO. SENSOR	YES	YES	YES	YES	NO
P-AMP	YES	NO	NO	NO	NO
SR_IN/OUT	YES	YES	YES	NO	NO

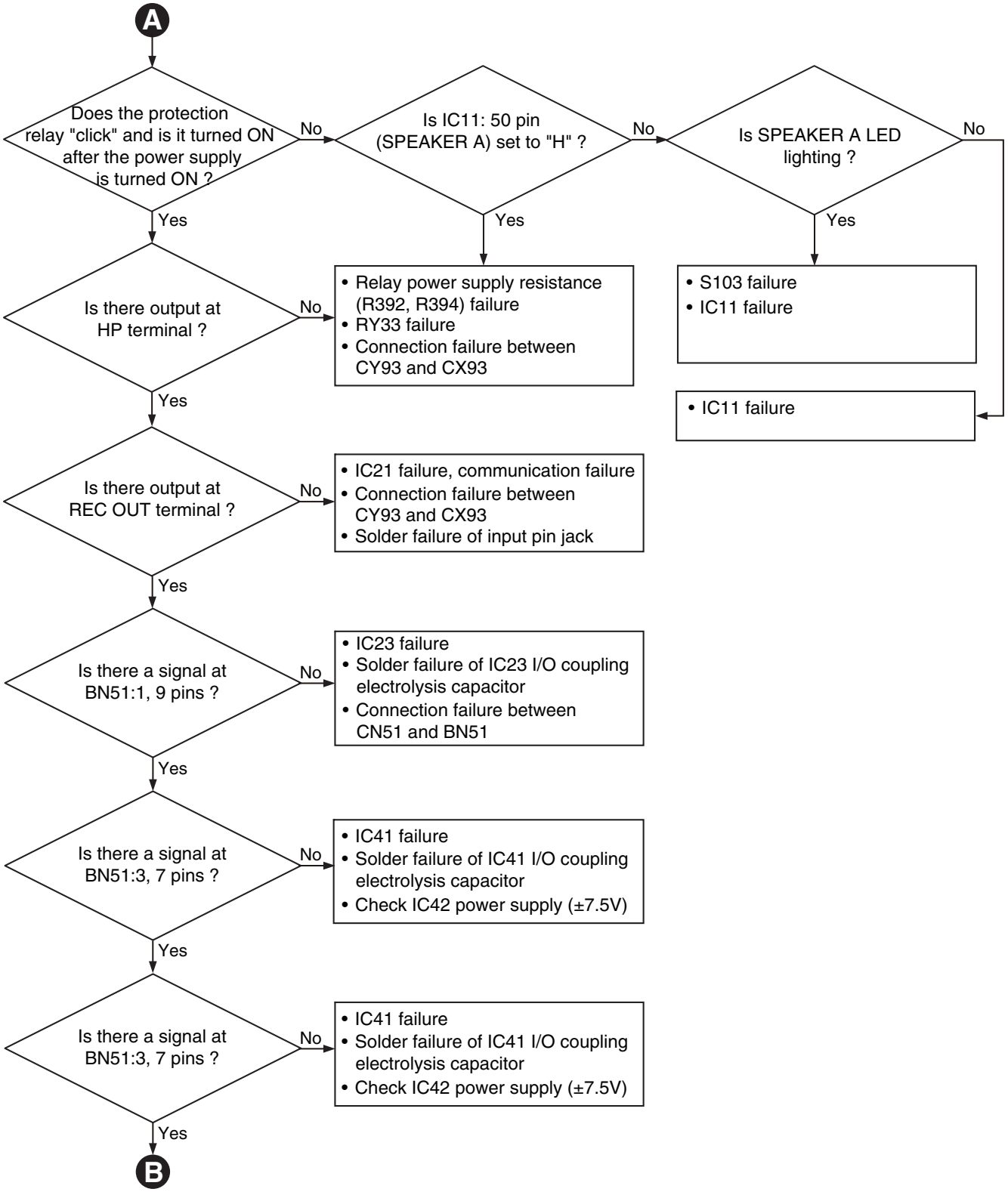


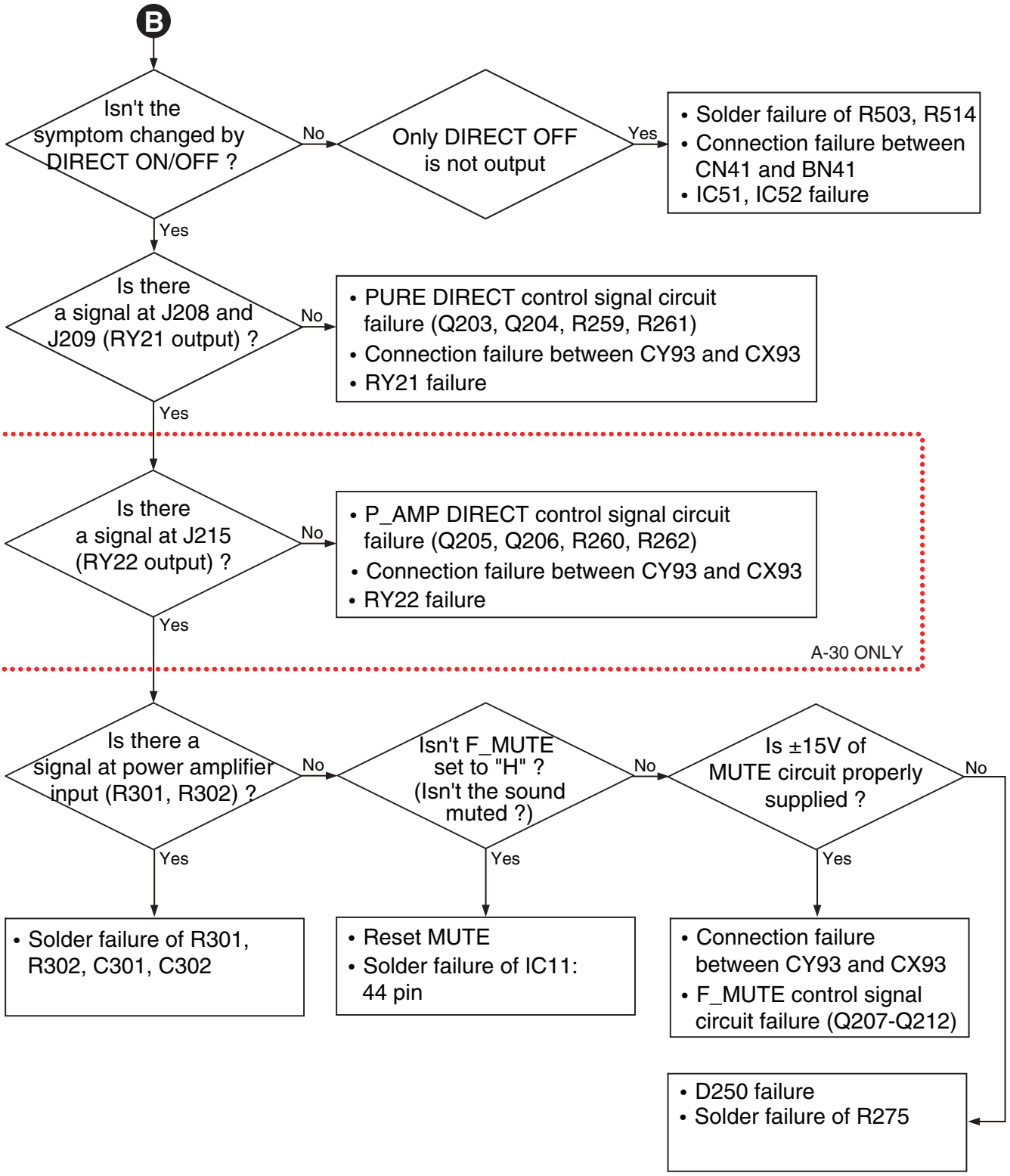

SW
A-30/A-20/A-10(JAPAN) : WITHIN Motor.
A-10 : WITHOUT Motor.
MOTOR VOLUME
FUNCTION ENCODER (7 INPUT)
RESET
P-DOWN
POWER ON
MAIN Trans (EI)
+B(AMP)
FOR AMP
-B(AMP)
+15V
OP AMP,RELAY
-15V
+5V
LED,M-VOLUME
+3.3V(MCU)
SUB TRANS
RELAY
POWER ON
JPN : AC100V/50~60Hz
TWN : AC110V/60Hz
USA : AC120V/60Hz
EUR : AC230V/50Hz
ASIA : AC240V/50Hz
* AC INLET & BUSING TYPE
AC INLET: A-30, A-20(EUR), A-10(EUR/ASIA)
BUSING TYPE: A-20(USA, TAIWAN), A-10(JAPAN)
No SIGNAL : HIGH
NJU7181
BUFFER
HP RELAY
AGND
HEADPHONE
L&R
HP MUTE
SPK B_RELAY
SPK A_RELAY
SPEAKER B_L
SPEAKER A_L
SPEAKER B_R
SPEAKER A_R
BALANCE
L-CH
R-CH
MAIN AMPLIFIER
SHORT
DC
THERMAL PROTECT
PROTECT
P-AMP DIRECT CONTROL
F MUTE
A-10:50W+50W/4ohm
A-20:50W+50W/4ohm
A-30:70W+70W/4ohm

5. DIAGNOSIS
5.1 TROUBLESHOOTING

●No sound




A
Does the protection relay "click" and is it turned ON after the power supply is turned ON ?
No
Is IC11: 50 pin (SPEAKER A) set to "H" ?
No
Is SPEAKER A LED lighting ?
No
Yes
Yes
Yes
• S103 failure
• IC11 failure
• IC11 failure
Is there output at HP terminal ?
No
• Relay power supply resistance (R392, R394) failure
• RY33 failure
• Connection failure between CY93 and CX93
Yes
Is there output at REC OUT terminal ?
No
• IC21 failure, communication failure
• Connection failure between CY93 and CX93
• Solder failure of input pin jack
Yes
Is there a signal at BN51:1, 9 pins ?
No
• IC23 failure
• Solder failure of IC23 I/O coupling electrolysis capacitor
• Connection failure between CN51 and BN51
Yes
Is there a signal at BN51:3, 7 pins ?
No
• IC41 failure
• Solder failure of IC41 I/O coupling electrolysis capacitor
• Check IC42 power supply (±7.5V)
Yes
Is there a signal at BN51:3, 7 pins ?
No
• IC41 failure
• Solder failure of IC41 I/O coupling electrolysis capacitor
• Check IC42 power supply (±7.5V)
Yes
B


B
Isn't the symptom changed by DIRECT ON/OFF ?
No
Only DIRECT OFF is not output
Yes
• Solder failure of R503, R514
• Connection failure between CN41 and BN41
• IC51, IC52 failure
Yes
Is there a signal at J208 and J209 (RY21 output) ?
No
• PURE DIRECT control signal circuit failure (Q203, Q204, R259, R261)
• Connection failure between CY93 and CX93
• RY21 failure
Yes
Is there a signal at J215 (RY22 output) ?
No
• P_AMP DIRECT control signal circuit failure (Q205, Q206, R260, R262)
• Connection failure between CY93 and CX93
• RY22 failure
Yes
A-30 ONLY
Is there a signal at power amplifier input (R301, R302) ?
No
Isn't F_MUTE set to "H" ? (Isn't the sound muted ?)
No
Is ±15V of MUTE circuit properly supplied ?
No
Yes
Yes
Yes
• Solder failure of R301, R302, C301, C302
• Reset MUTE
• Solder failure of IC11: 44 pin
• Connection failure between CY93 and CX93
• F_MUTE control signal circuit failure (Q207-Q212)
• D250 failure
• Solder failure of R275

5.2 PROTECTION CIRCUIT DESCRIPTION

1. PROTECTION operation

Purpose of PROTECTION operation

- Protection of operation due to failure of product
- Protection of operation due to wrong use by a user

e.g.) Rare short of speaker connection is generated, or product is installed by blocking the heat release hole

1.1 DC DETECT

After DC DETECT is detected, MUTE ON & PROTECTION RELAY OFF are carried out.

If DC DETECT is detected for 3 seconds or more continuously, it is evaluated as "1.1.1 AMP failure" shown below.

If DC DETECT is detected for less than 3 seconds, it is evaluated as 1.1.2 SIGNAL CLIP" shown below.

1.1.1 AMP failure

If DC DETECT is detected for 3 seconds or more continuously, it is evaluated as "AMP failure" and the power is turned OFF.

If the power supply is automatically turned OFF after AMP failure is detected, all key operations are prohibited (power ON is prohibited).

For turn ON the power supply again, refer to "3. How to reset the prohibition of power ON" shown below.

1.1.2 SIGNAL CLIP

If DC DETECT is detected for less than 3 seconds, it is evaluated as "SIGNAL CLIP".

If the detection of DC DETECT is reset within 3 seconds, MUTE OFF & PROTECTION RELAY ON are carried out.

NOTE) If the detection of DC DETECT is reset within 3 seconds and DC detection functions immediately, PROTECTION RELAY OFF/ON is repeated, however, there is no problem.

1.2 OVER LOAD

MUTE ON & PROTECTION RELAY OFF are carried out immediately after the detection and the power is turned OFF.

After OVER LOAD is detected, the key operation is not prohibited (the power supply can be turned ON).

NOTE) If a short of speaker cable may be generated, the connection is made again and the power supply cannot be turned ON by a user, so a complaint is generated.

If AMP is broken actually, DC detection operates, so there is no problem.

1.3 Temperature PROTECTION

MUTE ON & PROTECTION RELAY OFF are carried out immediately after the detection and the power is turned OFF.

After temperature PROTECTION is detected, the key operation is not prohibited (the power supply can be turned ON).

NOTE) After the detection, if the temperature is still high even by turning ON the power supply, the temperature PROTECTION is detected again and the power supply is turned OFF.

1.4 Power PROTECTION

MUTE ON & PROTECTION RELAY OFF are carried out immediately after the detection and the power is turned OFF.

If the power supply is automatically turned OFF after the power PROTECTION is detected, all key operations are prohibited (power ON is prohibited).

For turn ON the power supply again, refer to "3. How to reset the prohibition of power ON" shown below.

2. Keeping the prohibition of power ON after 1.1.1 AMP failure is detected and 1.4 power PROTECTION is detected

If the power supply is automatically turned OFF after AMP failure is detected and power PROTECTION is detected, all key operations are prohibited (power ON is prohibited).

The power ON prohibition status is kept even if the backup is carried out and the power cord is disconnected and inserted.

For turn ON the power supply again, refer to "3. How to reset the prohibition of power ON" shown below.

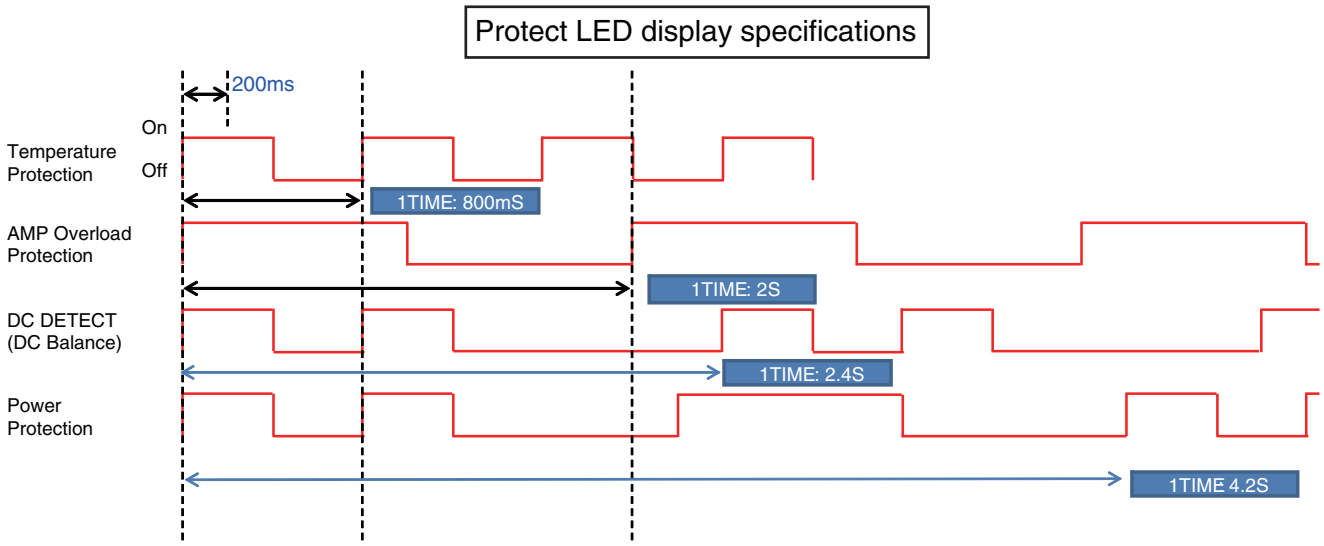
3. How to reset the prohibition of power ON

Press Front Key [DIRECT] + [SPEAKER B] at the same time for 2 seconds or more continuously.
The key prohibition mode after 1.1.1 AMP failure is detected and 1.4. power PROTECTION is detected is released and the power supply is turned ON.

4. STANDBY LED display after PROTECTION is detected

Each PROTECTION operations above are identified by blinking timing of STANDBY LED.
The blinking of LED is continued until the power supply is turned ON again.

For the blinking specification of LED, refer to "Protect LED display specifications" shown below.



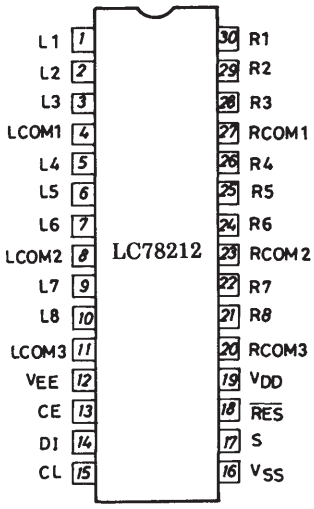
5.3 IC INFORMATION

HVILC78212

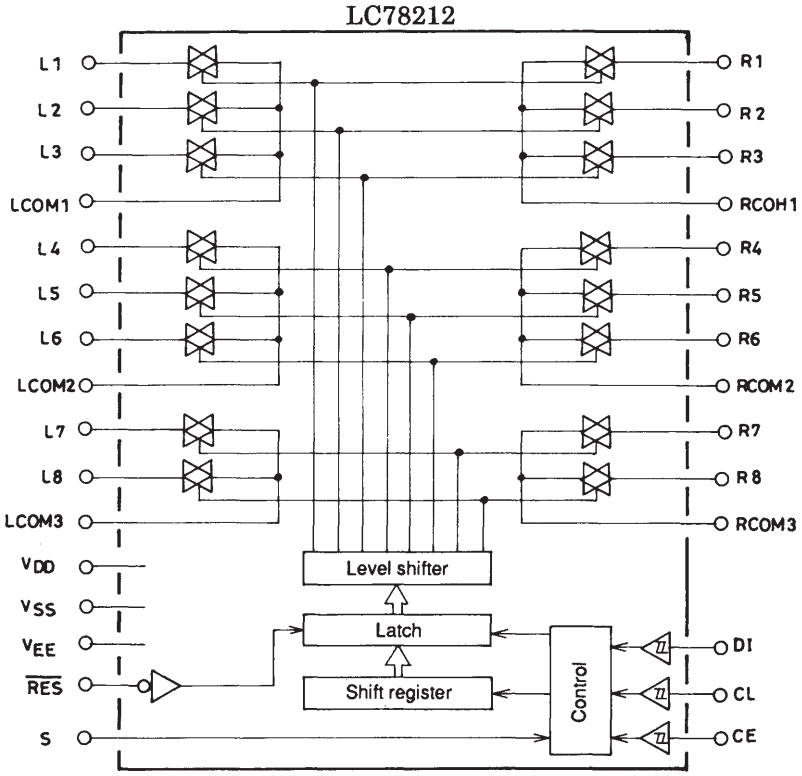
(Analog Function Switch)

● **Pin Layout**

(Top View)



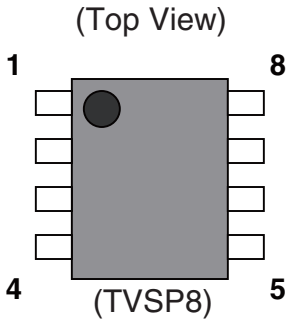
● **Block Diagram**



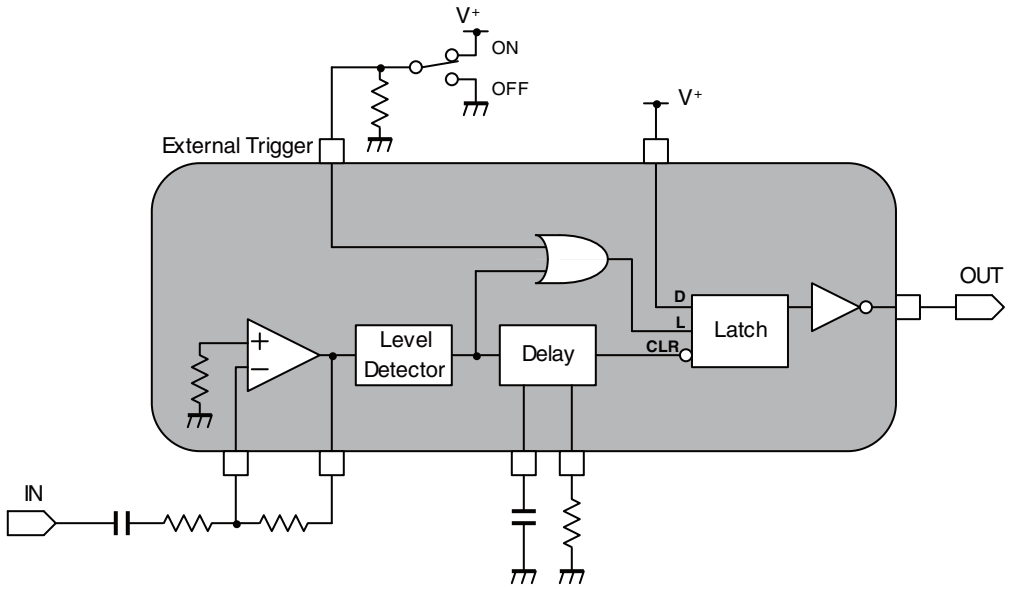
CVINJU7181RB1

(Signal Level Sensor System)

● **Pin Layout**



● **Block Diagram**



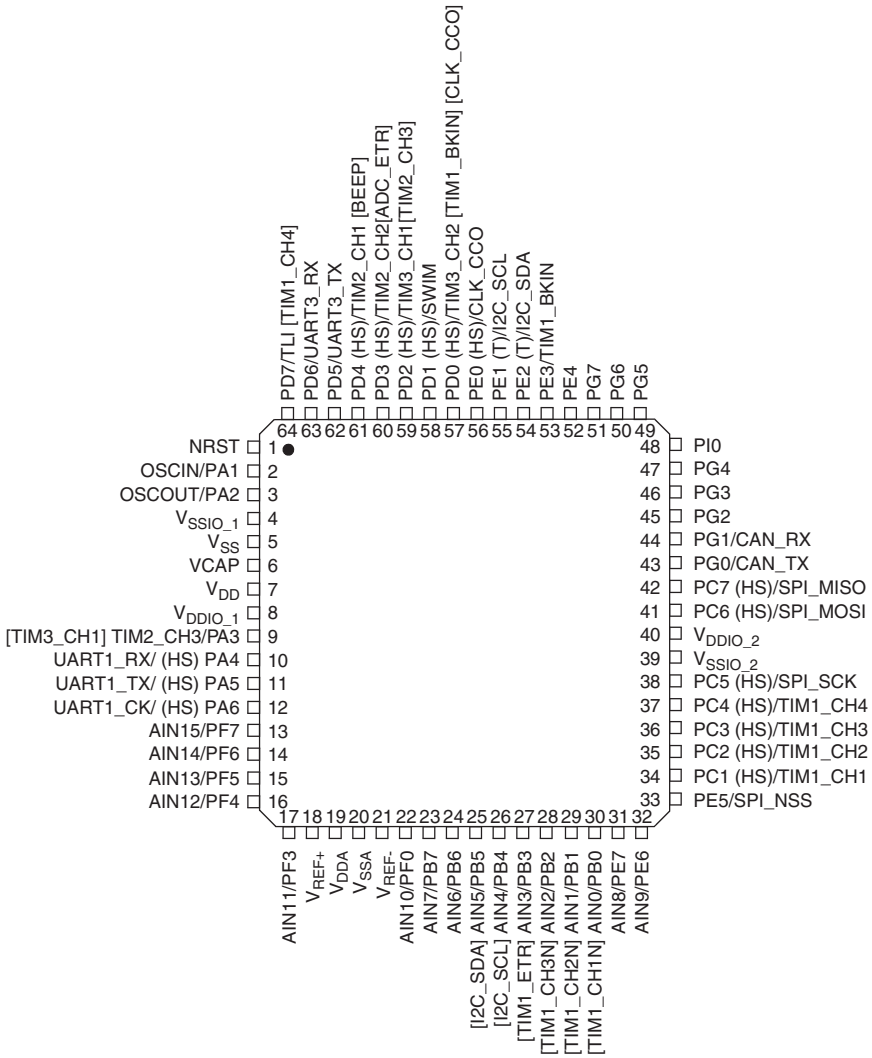
● **Pin Function**

No.	Pin Name	Function
1	IN	AC Input
2	AMP_OUT	Amplifier Output
3	TRIN	External Trigger Input
4	GND	Ground
5	CAP_D	Capacitor connection terminal for delay time setting
6	RES_D	Resister connection terminal for delay time setting
7	OUT	DC Output
8	V^+	Power Supply Voltage

CVIANAM1656A

(Micro Controller)

● **Pin Layout**

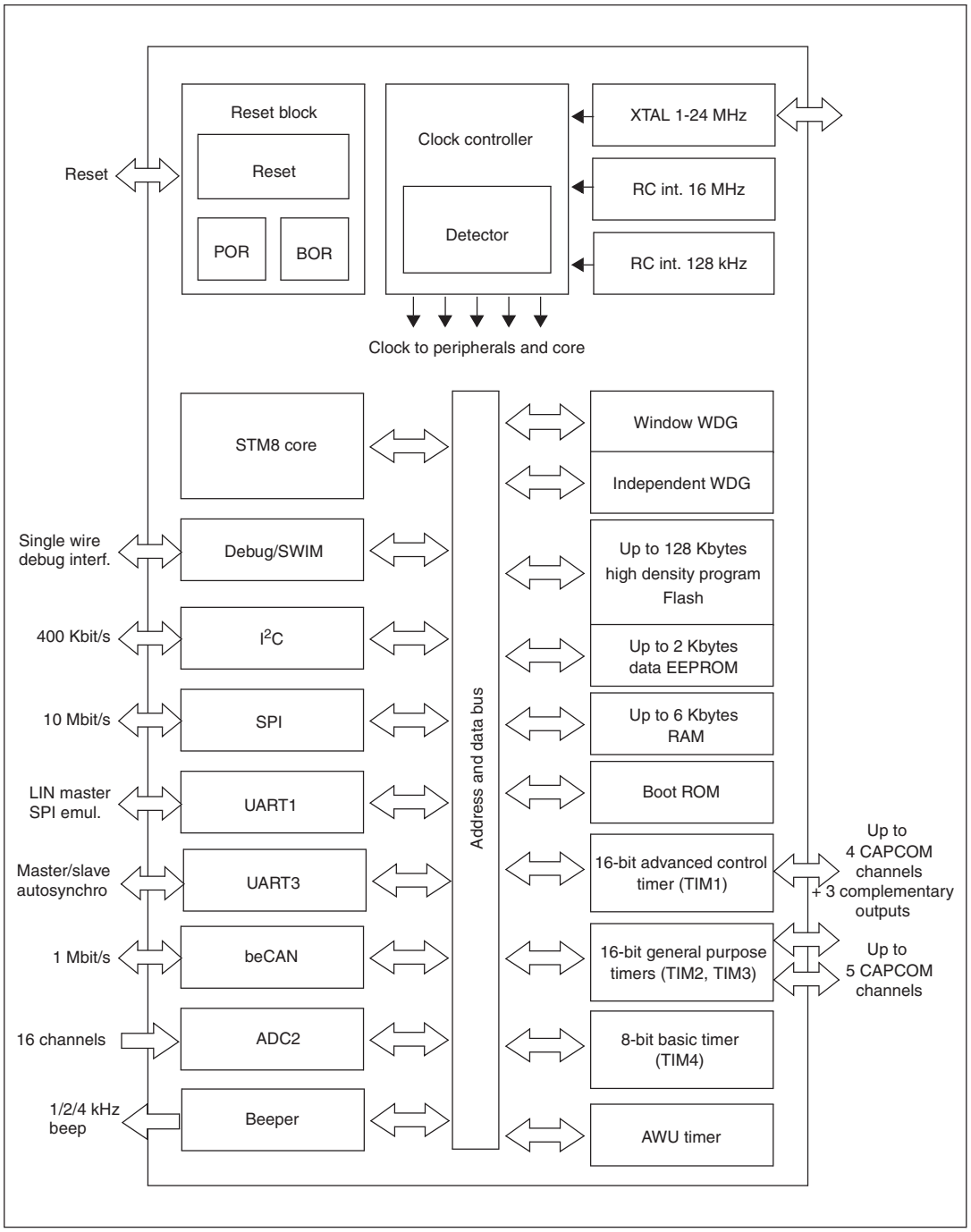


1. (HS) high sink capability.
2. (T) True open drain (P-buffer and protection diode to VDD not implemented).
3. [ ] alternate function remapping option (If the same alternate function is shown twice, it indicates an exclusive choice not a duplication of the function).
4. CAN_RX and CAN_TX is available on STM8S208xx devices only.

CVIANAM1656A

(Micro Controller)

● Block Diagram



CVIANAM1656A

(Micro Controller)

● Pin Function

Pins	Pin Name	TYPE	Main Function (After reset)	Default Alternate functions	USE	Status			Pin Description
						init	stby	Act.Lvl	
1	NRST	I/O				-	-	-	NRST
2	PA1/OSCIN	I/O	OSC_IN	GPIO	O	L	L	-	OSC_IN
3	PA2/OSCOUT	I/O	OSC_OUT	GPIO	O	L	L	-	OSC_OUT
4	Vssio_1	S				-	-	-	VSSIO_1
5	Vss	S				-	-	-	VSS
6	Vcap	S				-	-	-	VCAP
7	Vdd	S				-	-	-	VDD
8	Vddio_1	S				-	-	-	VDDIO1
9	PA3/TIM2_CH3	I/O	PA3	TIM2_CH3	I	-	-	H	SEC_POWER
10	PA4/UART1_Rx	I/O	PA4	UART1	I/O	-	L	-	UPDATE_TX
11	PA5/UART1_Tx	I/O	PA5	UART1	O	H	L	L	UPDATE_RX
12	PA6/UART1_Clk	I/O	PA6	UART1	I	-	-	H	ECO_DETECT
13	PF7/AN15	I/O	PF7	ADC	O	L	L	L	STBY_LED
14	PF6/AN14	I/O	PF6	ADC	O	L	L	H	LOUDNESS_LED
15	PF5/AN13	I/O	PF5	ADC	O	L	L	H	SPEAKER_B_LED
16	PF4/AN12	I/O	PF4	ADC	O	L	L	H	SPEAKER_A_LED
17	PF3/AN11	I/O	PF3	ADC	O	L	L	H	P_AMP_DIRECT
18	Vref+	S				-	-	-	
19	Vdda	S				-	-	-	
20	Vssa	S				-	-	-	
21	Vref-	S				-	-	-	
22	PF0/AN10	I/O	PF0	ADC	O	L	L	H	P_AMP LED
23	PB7/AN7	I/O	PB7	ADC	O	L	L	H	PHONO_LED
24	PB6/AN6	I/O	PB6	ADC	I	-	-	H	MODEL_OPT
25	PB5/AN5	I/O	PB5	ADC	O	L	L	H	TUNER_LED
26	PB4/AN4	I/O	PB4	ADC	O	L	L	H	RECORDER_LED
27	PB3/AN3	I/O	PB3	ADC	O	L	L	H	AUX_LED
28	PB2/AN2	I/O	PB2	ADC	O	L	L	H	NETWORK_LED
29	PB1/AN1	I/O	PB1	ADC	O	-	-	-	KEY_IN#2
30	PB0/AN0	I/O	PB0	ADC	O	-	-	-	KEY_IN#1
31	PE7/AN8	I/O	PE7	ADC	O	L	L	H	CD_LED
32	PE6/AN9	I/O	PE6	ADC	O	L	L	H	VR_DOWN
33	PE5/SPI_NSS	I/O	PE5	SPI	O	L	L	H	FUNC_CE
34	PC1/TIM1_CH1	I/O	PC1	TIM1_CH1	O	L	L	H	VR_UP
35	PC2/TIM1_CH2	I/O	PC2	TIM1_CH2	I	-	-	L	THERMAL_P
36	PC3	I/O	PC3		I	-	-	L	DC_DETECT
37	PC4/TIM1_CH4	I/O	PC4	TIM1_CH4	I	-	-	L	OVERLOAD_P
38	PC5/SPI_SCK	I/O	PC5	SPI	O	L	L	H/L	FUNC_CLK
39	Vssio_2	S							
40	Vddio_2	S							
41	PC6/SPI_MOSI	I/O	PC6	SPI	O	L	L	H/L	FUNC_DATA
42	PC7/SPI_MISO	I/O	PC7	SPI	I	-	-	L	VOLTAGE_P
43	PG0/CAN_Tx	I/O	PG0		O	H	H(OD)	H	REC_MUTE
44	PG1/CAN_Rx	I/O	PG1		O	H	H(OD)	H	F_MUTE
45	PG2	I/O	PG2		O	L	L	H	P_ON_RELAY
46	PG3	I/O	PG3		O	L	L	H	LOUDNESS
47	PG4	I/O	PG4		O	L	L	H	PURE_DIRECT
48	PI0	I/O	PI0		O	L	L	-	
49	PG5	I/O	PG5		O	L	L	H	SPEAKER_B
50	PG6	I/O	PG6		O	L	L	H	SPEAKER_A
51	PG7	I/O	PG7		O	L	L	H	PURE_DIRECT_LED
52	PE4	I/O	PE4		I	-	-	H/L	FUNCTION_EN1
53	PE3/TIM1_BKIN	I/O	PE3	TIM1_BKIN	I	-	-	H/L	FUNCTION_EN2
54	PE2/I2C_SDA	I/O	PE2	I2C	I	-	-	L	UPDATE_SEL
55	PE1/I2C_SCL	I/O	PE1	I2C	O	L	L	-	
56	PE0/CLK_CCO	I/O	PE0	CLK_CCO	O	L	L	H	POWER_LED
57	PD0/TIM3_CH2	I/O	PD0	TIM3_CH2	O	L	L	H	APD_LED
58	PD1/SWIM	I/O	DEBUG	GPIO	O				Debug Jig
59	PD2/TIM3_CH1	I/O	PD2	TIM3_CH1	I	-	-	H/L	REMOTE_IN
60	PD3/TIM2_CH2	I/O	PD3	TIM2_CH2	O	L	L	H	DIMMER
61	PD4/TIM2_CH1	I/O	PD4	TIM2_CH1	O	L	L	-	
62	PD5/UART3_Tx	I/O	PD5	UART3	O	L	L	-	
63	PD6/UART3_Rx	I/O	PD6	UART3	O	L	L	L	HP_MUTE
64	PD7/TLI	I/O	PD7	TLI	O	-	-	L	BACK_UP

6. SERVICE MODE

There is no information to be shown in this chapter.

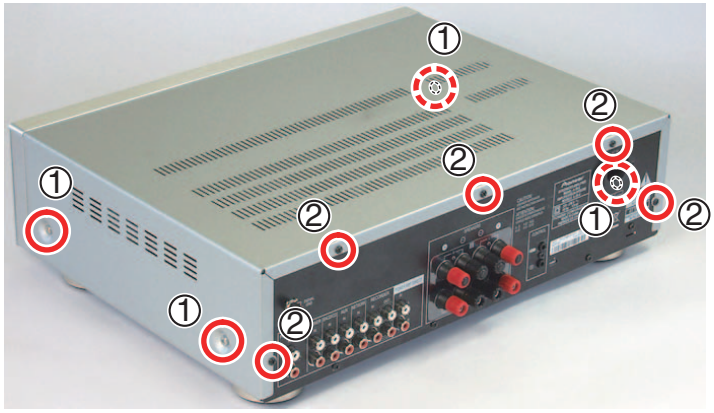
7. DISASSEMBLY

Note 1 : Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.
Note 2 : As for the assembling, please perform assembling following to the opposite procedures of How to Disassemble. If any notes are existed, please follow those instructions.
Note 3 : Before starting the diagnosis, wait for several seconds until the electricity of the unit is discharged.

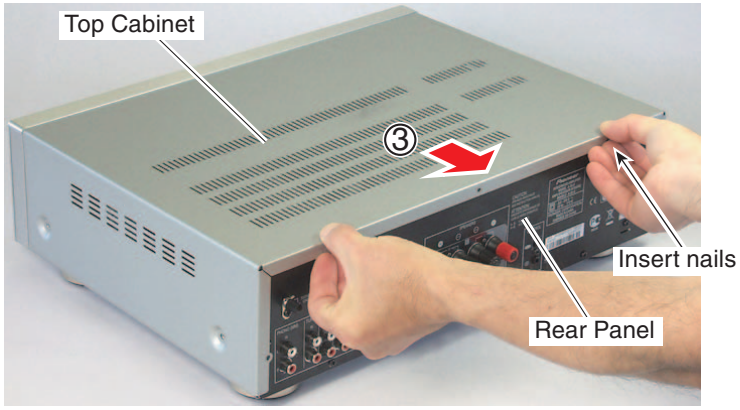
[1] Top Cabinet

(1) Remove the four screws.
(A-30-K, A-20-K, A-20, A-10-K: CTB4+6FFZRP)
(A-30-S, A-20-S, A-10-S: CTB4+6FFCP)

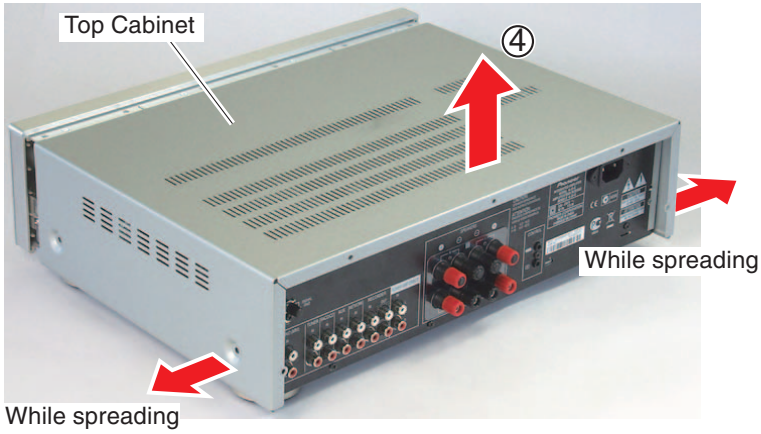
(2) Remove the five screws.
(BBZ30P060FTB)



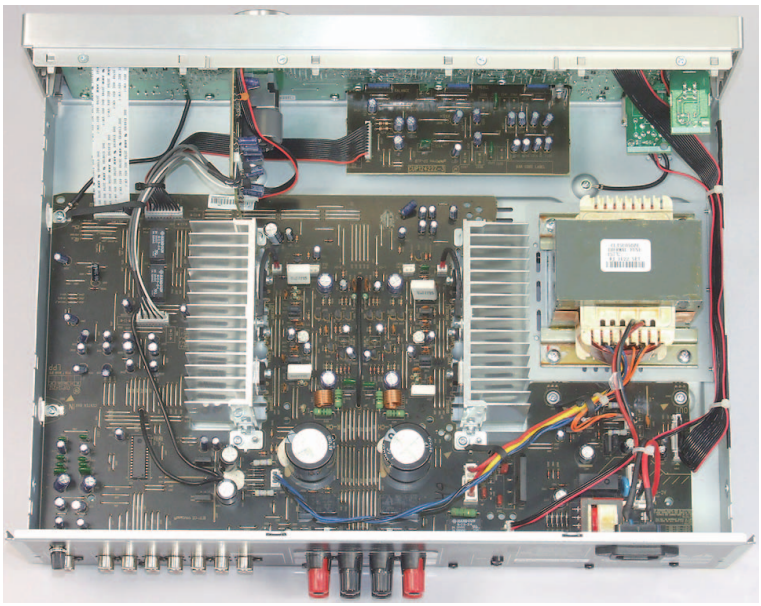
(3) Insert nails between the Top Cabinet and Rear Panel and pull the Top Cabinet backward horizontally.



(4) Take out Top Cabinet upward while spreading Rear Side Piece.

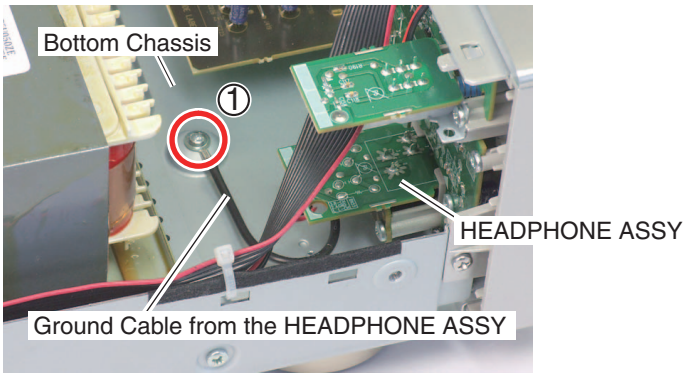


[2] Diagnosis

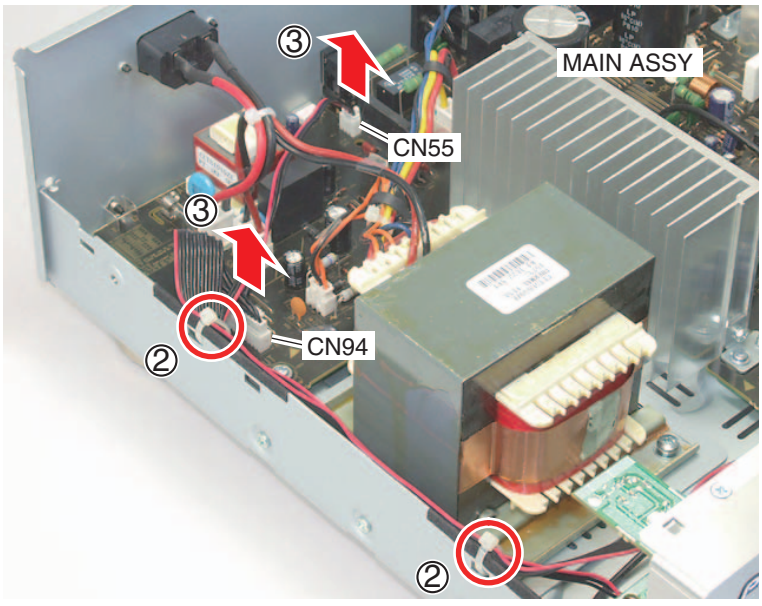


[3] Front Section

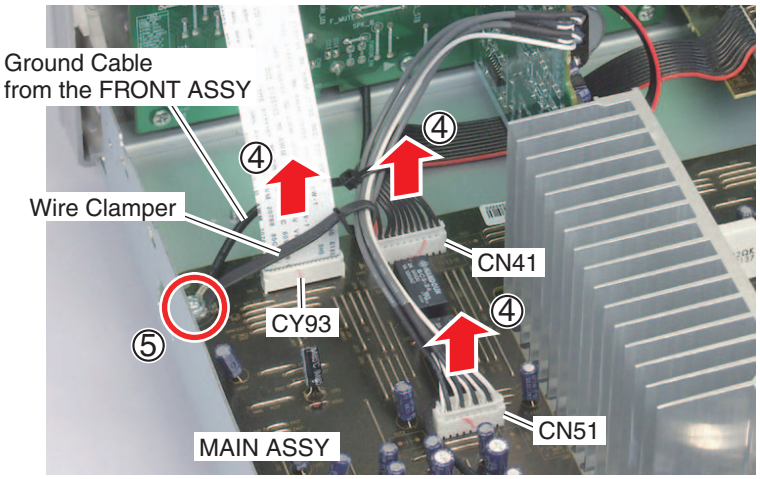
(1) Remove the screw. (CTW3+6JR)



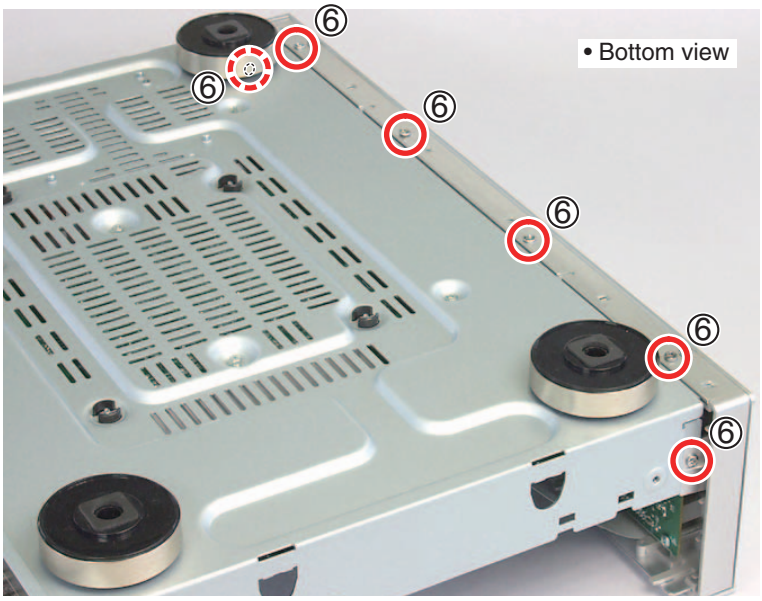
(2) Cut the two Clampers. (CHR301)
(3) Disconnect the two connectors.



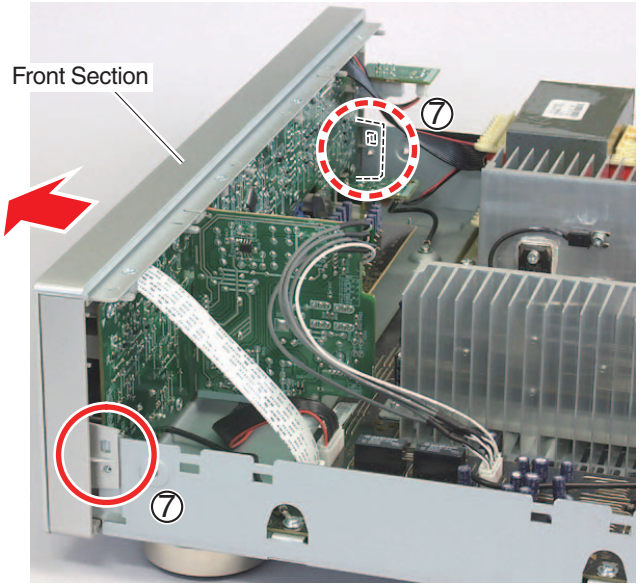
(4) Disconnect the three connectors.
(5) Remove the screw. (CTW3+6JR)



(6) Remove the six screws.
(A-30-K, A-20-K, A-20, A-10-K: BBZ30P080FTB)
(A-30-S, A-20-S, A-10-S: CTB3+8JFC)



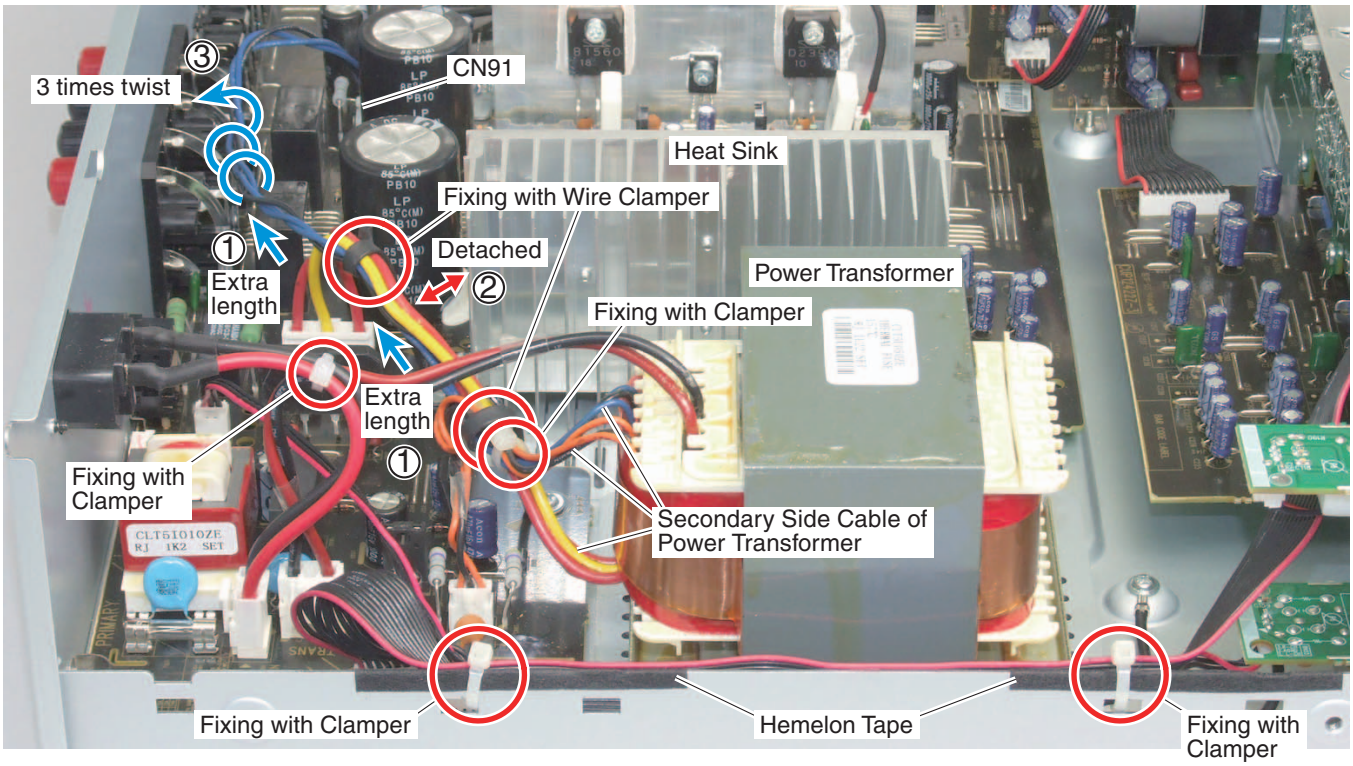
(7) Unhook the two hooks and remove the Front Section.



Notes on assembling

[1] Styling of cables

When you attach each unit, make styling, connection of cables and other parts as shown in the photo.



(1) Secondary Side Cable of the Power Transformer (*)

Fix the cable from the position near the Power Transformer with a Clamper (x1) and Wire Clampers (x2) and release the extra length to the opposite direction of the Power Transformer.

(2) Secondary Side Cable of the Power Transformer (*)

Release it not to touch with the Heat Sink.

(3) Secondary Side Cable of the Power Transformer (*) connect to CN91

After checking it is not twisted, twist it three times.

(4) Cable from the HEADPHONE ASSY

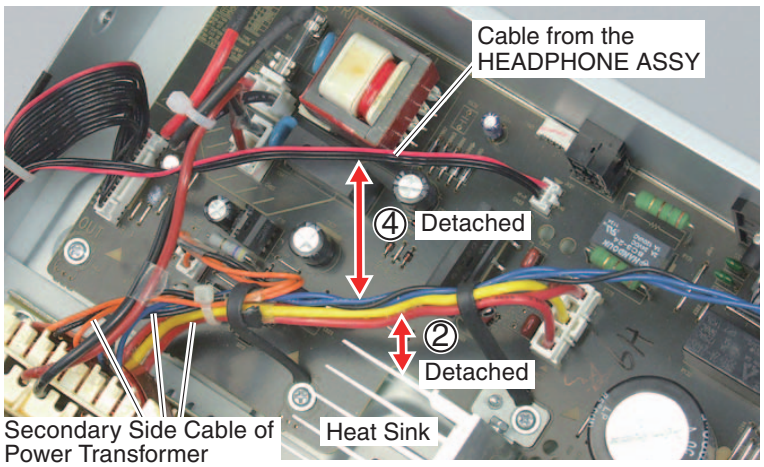
Release it not to touch with the Secondary Side Cable of Power Transformer.

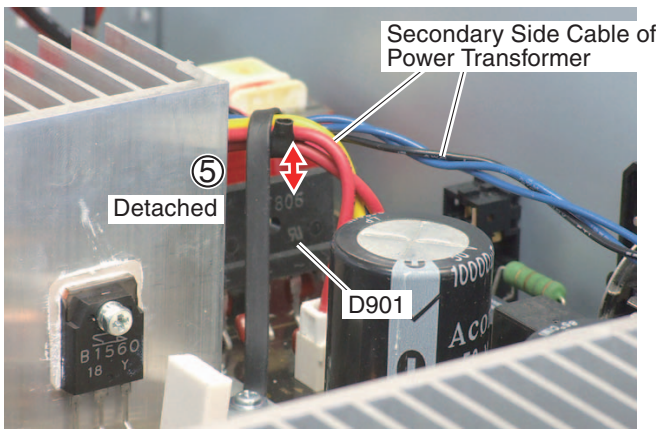
(5) Secondary Side Cable of the Power Transformer (*)

Release it not to touch with the D901.

* Power Transformer

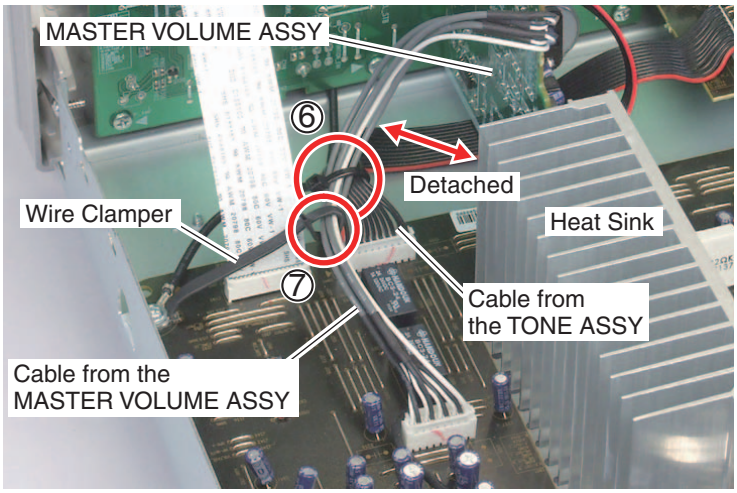
A-30-K, A-30-S:	CLT5U050ZE
A-20-K, A-20-S, A-10-K, A-10-S:	CLT5R043ZE
A-20:	CLT5R043ZU



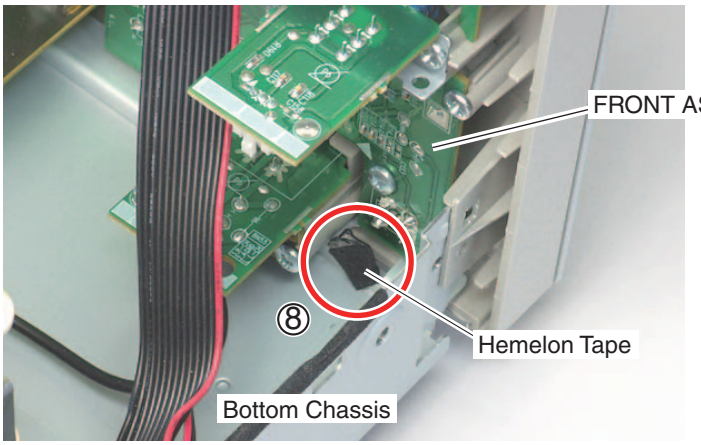


(6) Cable from the MASTER VOLUME ASSY
Fix it with the Cable from the TONE ASSY, using the Clamper. Release it not to touch with the Heat Sink.

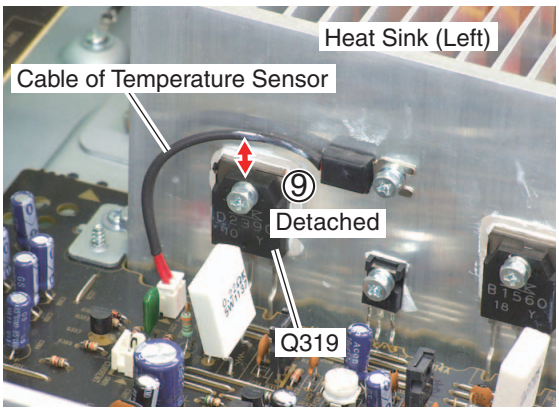
(7) Cable from the MASTER VOLUME ASSY
Fix it with the Wire Clamper and release it not to touch with the Heat Sink.

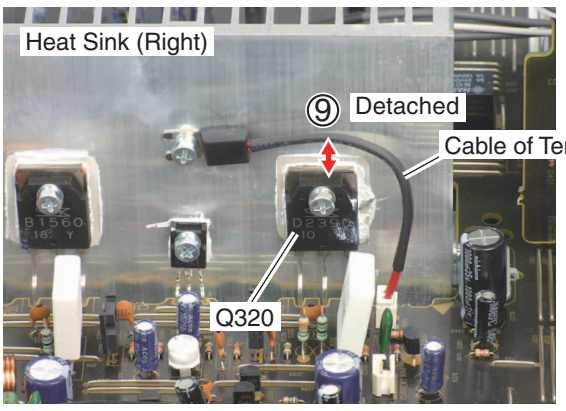


(8) Wrap the protrusion at the lower part of left front side of the Bottom Chassis with Hemelon Tape to prevent short with the FRONT ASSY.



(9) Cable of right and left Temperature Sensors
Release it not to touch with the transistor (Q319, Q320).



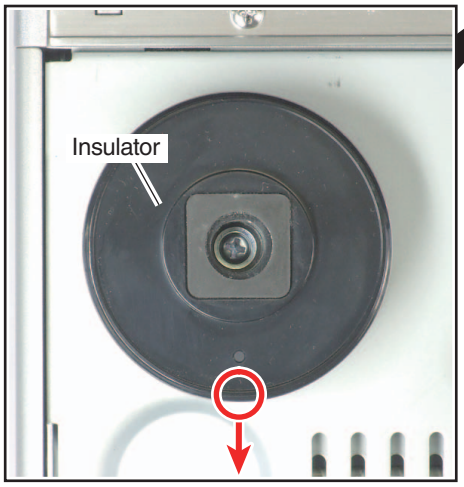


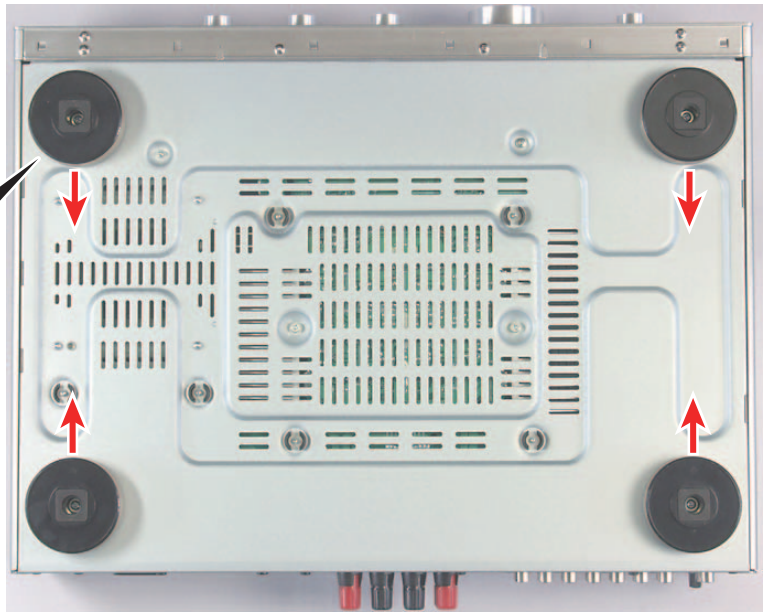
[2] Direction of Insulator

Align the mark at under surface of the Insulator with the direction of photo.

(A-30-K, A-20-K, A-20, A-10-K: CKL1A204)

(A-30-S, A-20-S, A-10-S: CKL1A204H65)





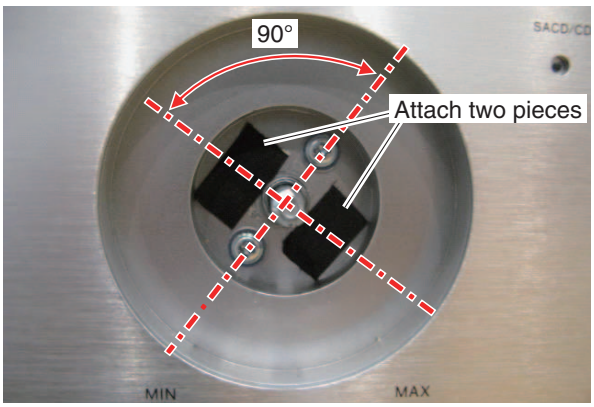
[3] Where to attach the sound quality improvement tape

Acetate Tape or Double Side Tape is attached to some parts in this model to improve sound quality. When the following components are replaced, be sure to attach designated the Acetate Tape and Double Side Tape again to the designated location. Concerning the Acetate Tape, if it is difficult to reuse the Tape, order a new Tape and attach it. (You can use other Acetate Tape than that designated by cutting it to a designated size.)

The Double Side Tape cannot be reused easily. When the knob is removed, attach a new Tape.

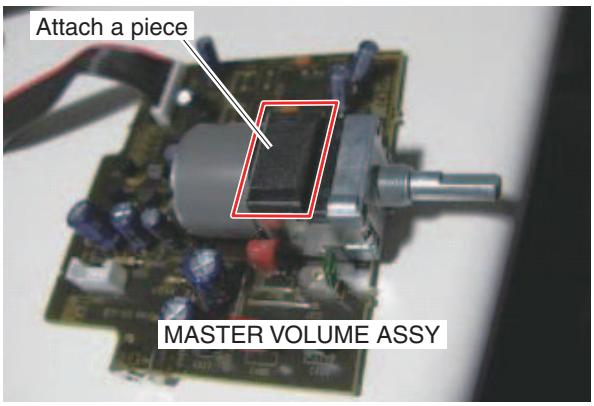
(1) Panel section

Attach two pieces of Acetate Tape (Part No.: CHS1A217, 10 mm x 15 mm) to a flat surface around the Volume Knob as shown in the photo.
Be sure to attach the Tape to a flat surface.



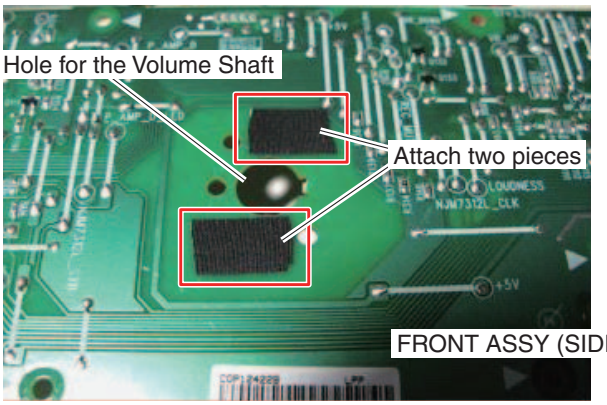
(2) MASTER VOLUME ASSY

Attach a piece of Acetate Tape (Part No.: CHS1A217, 10 mm x 15 mm) to the specified position on the lateral side of the Electric Volume as shown in the photo.



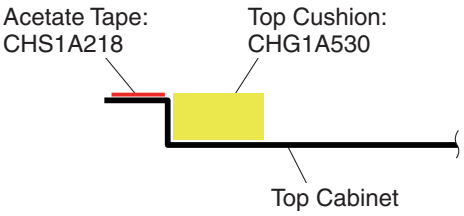
(3) FRONT ASSY

Attach two pieces of Acetate Tape (Part No.: CHS1A217, 10 mm x 15 mm) to the pattern surface of the FRONT ASSY as shown in the photo.
The Acetate Tape comes between the Electric Volume and the FRONT ASSY, but fix them directly with screws from the FRONT ASSY.



(4) Top Cabinet

Attach four pieces of Acetate Tape (Part No.: CHS1A218, 5 mm x 25 mm) to the front side of the reverse surface at the same location as that of the Top Cushion.

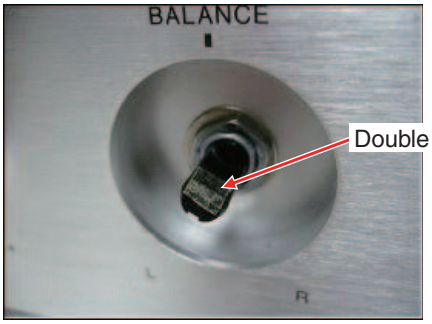


(5) FRONT ASSY (INPUT SELECTOR), TONE ASSY

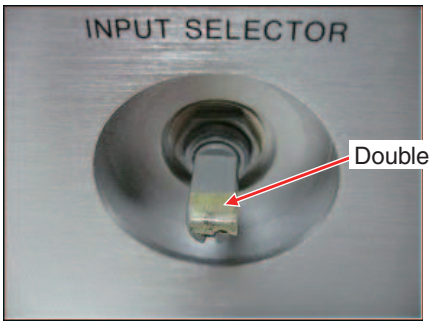
(Carry out the operation shown below when Volume part or Encoder part of each ASSY is replaced too)

Attach a piece of Double Side Tape (Part No.: C4FA051, 5 mm x 5 mm) to flat surface at the tip of each axis at Volume part and axis at Encoder part.

Each axis of BASS, TREBLE and BALANCE in TONE ASSY



INPUT SELECTOR part



8. EACH SETTING AND ADJUSTMENT

8.1 HOW TO CHECK THE FIRMWARE VERSION

1. In STANDBY status, press Front Key [DIRECT] + [SPEAKERS A] at the same time (5 seconds).
   At this time, the version can be checked with the indicator.

Major Version				Minor1							Minor2	
SPK A	SPK B	LOUD		CD	NET A	PHONO	TUNER	AUX	REC		PURE D	
□	□	□	No USE	□	□	□	□	□	□	0	□	0
□	□	■	1	□	□	□	□	□	■	1	■	1
□	■	□	2	□	□	□	□	■	□	2		
□	■	■	3	□	□	□	■	□	□	3		
■	□	□	4	□	□	■	□	□	□	4		
■	□	■	5	□	■	□	□	□	□	5		
■	■	□	6	■	□	□	□	□	□	6		
■	■	■	7									

<e.g.> Ver.3.6.0

□	■	■	3	■	□	□	□	□	□	6	□	0

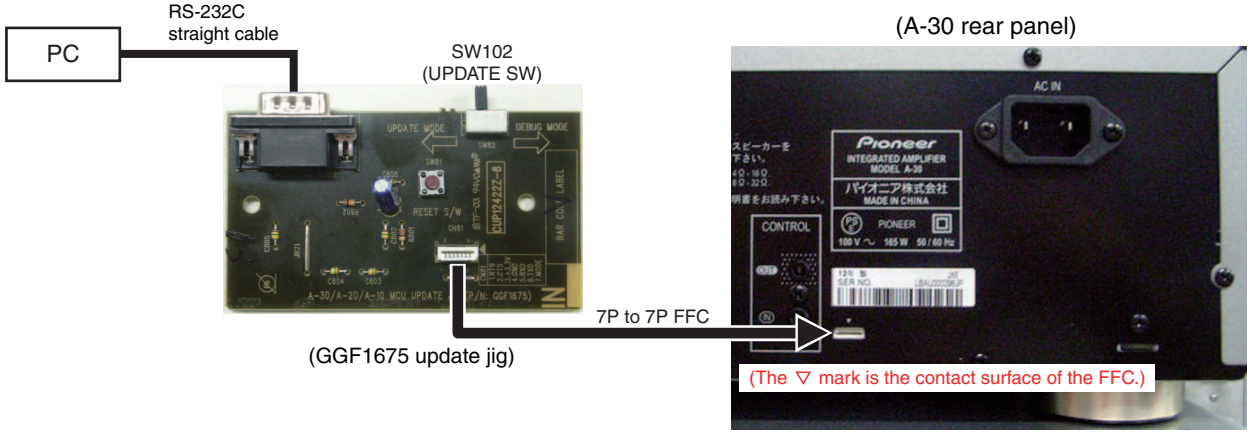
If the power supply is turned ON in this status, the product is reset to the factory-shipping status.

8.2 FARMWARE UPDATING

[Necessary Tool]

- Firmware
- PC with a serial port (for PC without a serial port, a commercially-available USB serial conversion cable is also available)
- RS-232C cable (9-pin to 9-pin, straight cable)
- RS-232C update jig: GGF1675 (use included FFC (7P to 7P))

[Connection Diagram]



[Update Procedure]

1. Connect UPDATE JIG (GGF1675) to A-30/20/10 and PC when the power cord is disconnected.
   MAIN ASSY CN95 ⇔ UPDATE JIG CN101
   PC (RS-232C connector) ⇔ UPDATE JIG JK101

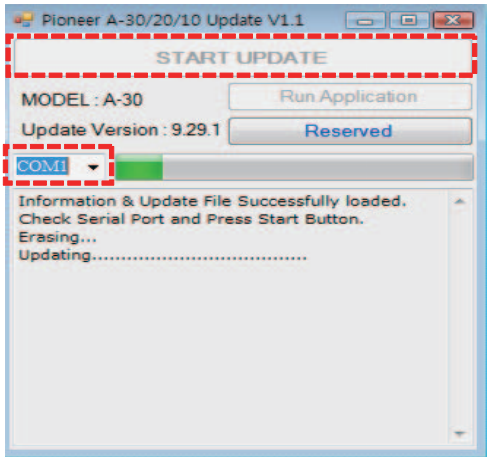
2. Set SW102 (UPDATE SW) of UPDATE JIG to UPDATE MODE side and connect the power cord.
   (At this time, the front LED enters in Update Mode (Waiting) status)

3. Prepare update application and update file.
   It is necessary to store 3 files in the same folder of PC.
   a. PioneerAxxUpdate.ini : Update Information File
   b. UpdateAppPioneerA30_1v2.exe : Windows Update Application File
   c. PIONEER_A-30SOFT_REL.BIN : Update Binary File

4. Double-click UpdateAppPioneerA30_1v2.exe and start up the update application.

5. Select the serial port you connected and click "START UPDATE" button.
   (At this time, the front LED enters in Update Mode (Updating) status)

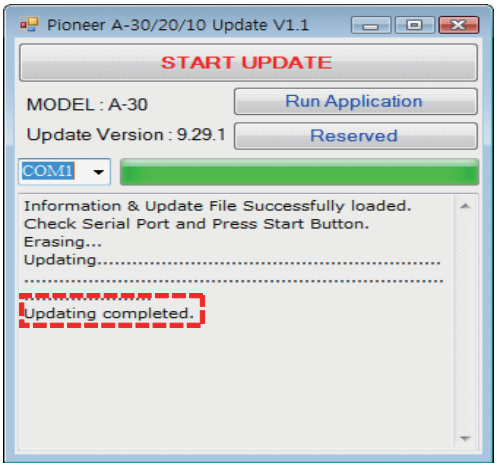
Click



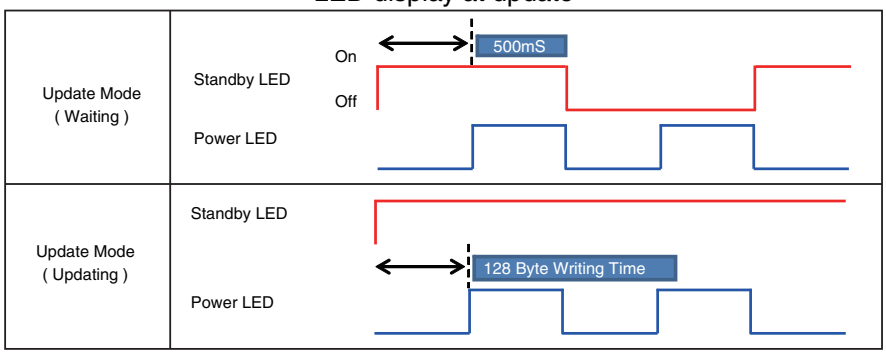
*** If the update cannot be executed because of "Connection Error" message, connect RS-232C cable again and carry out the operation from the beginning.**

6. If "Updating completed" is displayed, quit the update application and disconnect the power cord.

7. Disconnect UPDATE JIG.



LED display at update



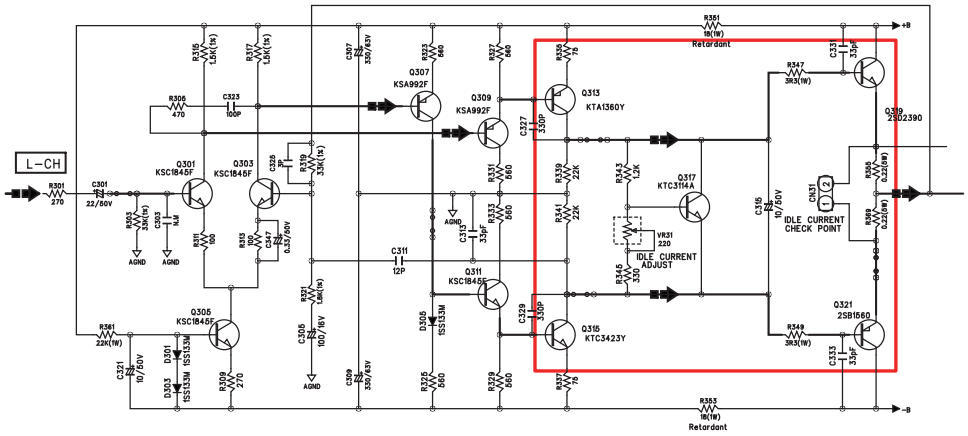
8.3 HOW TO ADJUST THE IDLE CURRENT

[Adjustment Condition]

Idle current needs to be adjusted when the following components are replaced:

1. MAIN ASSY (Adjust the idle current for both channels)

2. Components within the red frame (excluding the capacitors)
   The circuit diagram below is for Lch, but it is only necessary to adjust the idle current only for the channel in which the components are replaced.



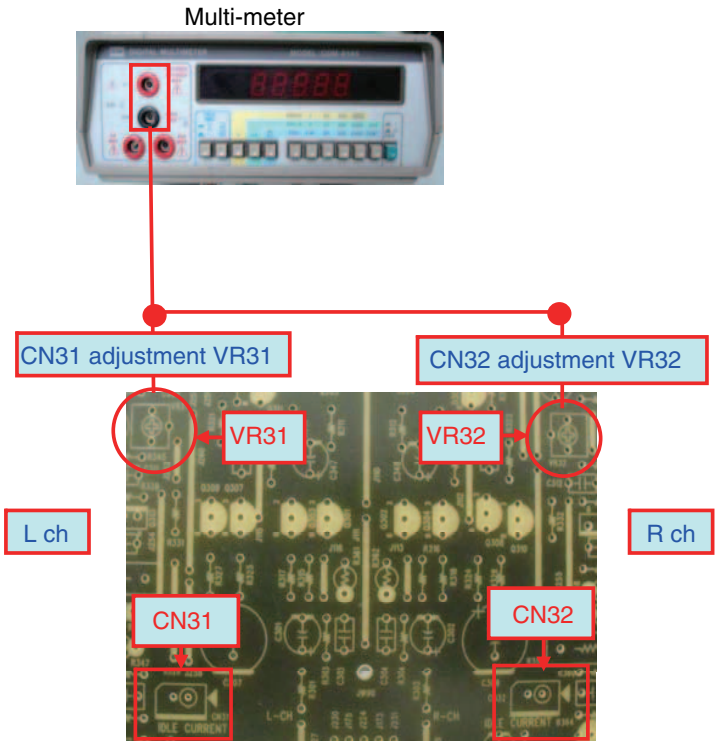
[Adjustment Procedure]

1. Turn ON the power supply of the product.

2. Set INPUT SELECTOR to SACD/CD and set VOL to MIN, and wait for 3 minutes.

3. Connect a multi-meter to CN31 and CN32 of MAIN ASSY.

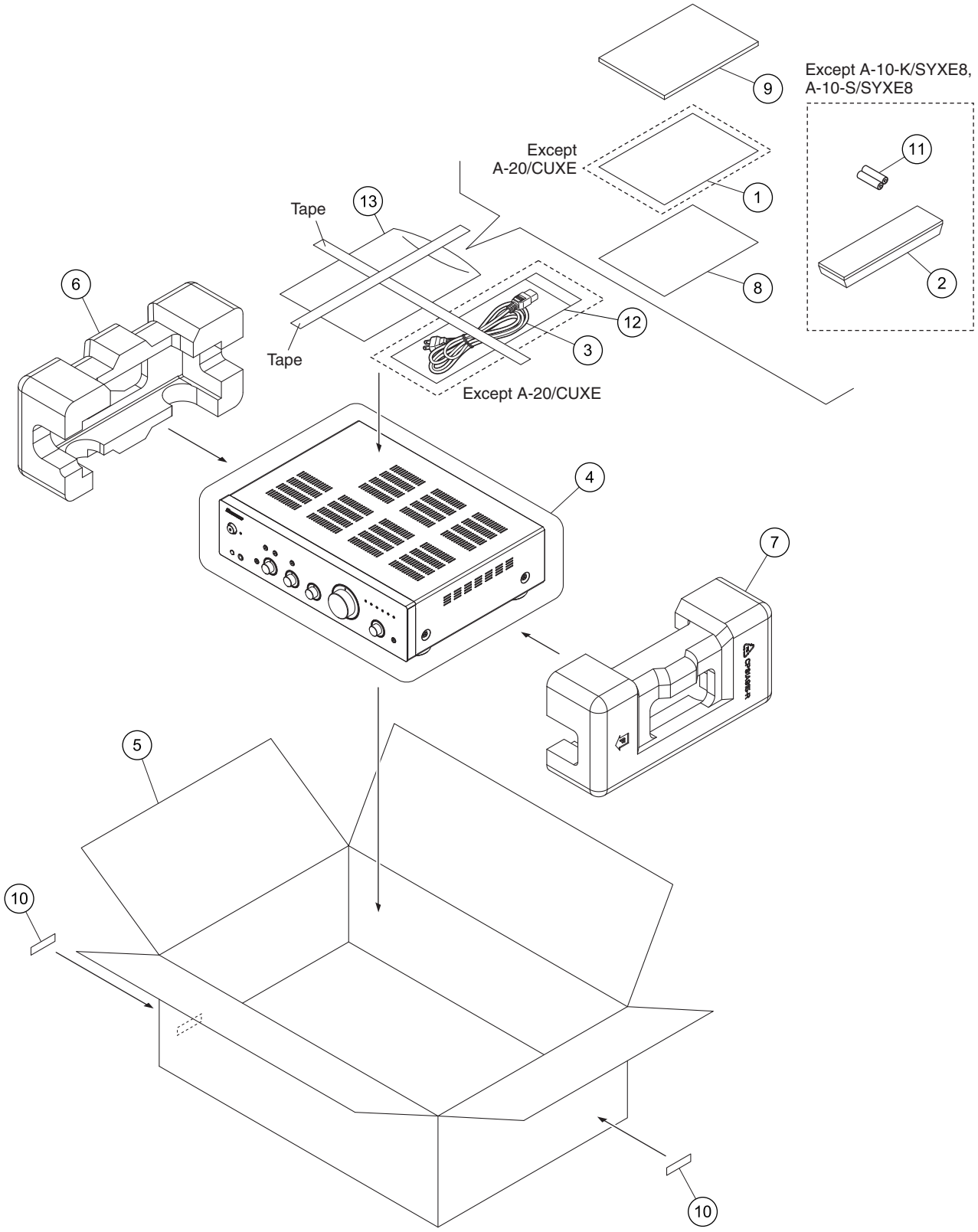
4. Adjust VR31 and VR32 so that DC LEVEL becomes 8 ± 2 mV.



9. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *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.*
● *Screws adjacent to ▼ mark on product are used for disassembly.*
● *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

9.1 PACKING SECTION



(1) PACKING SECTION PARTS LIST

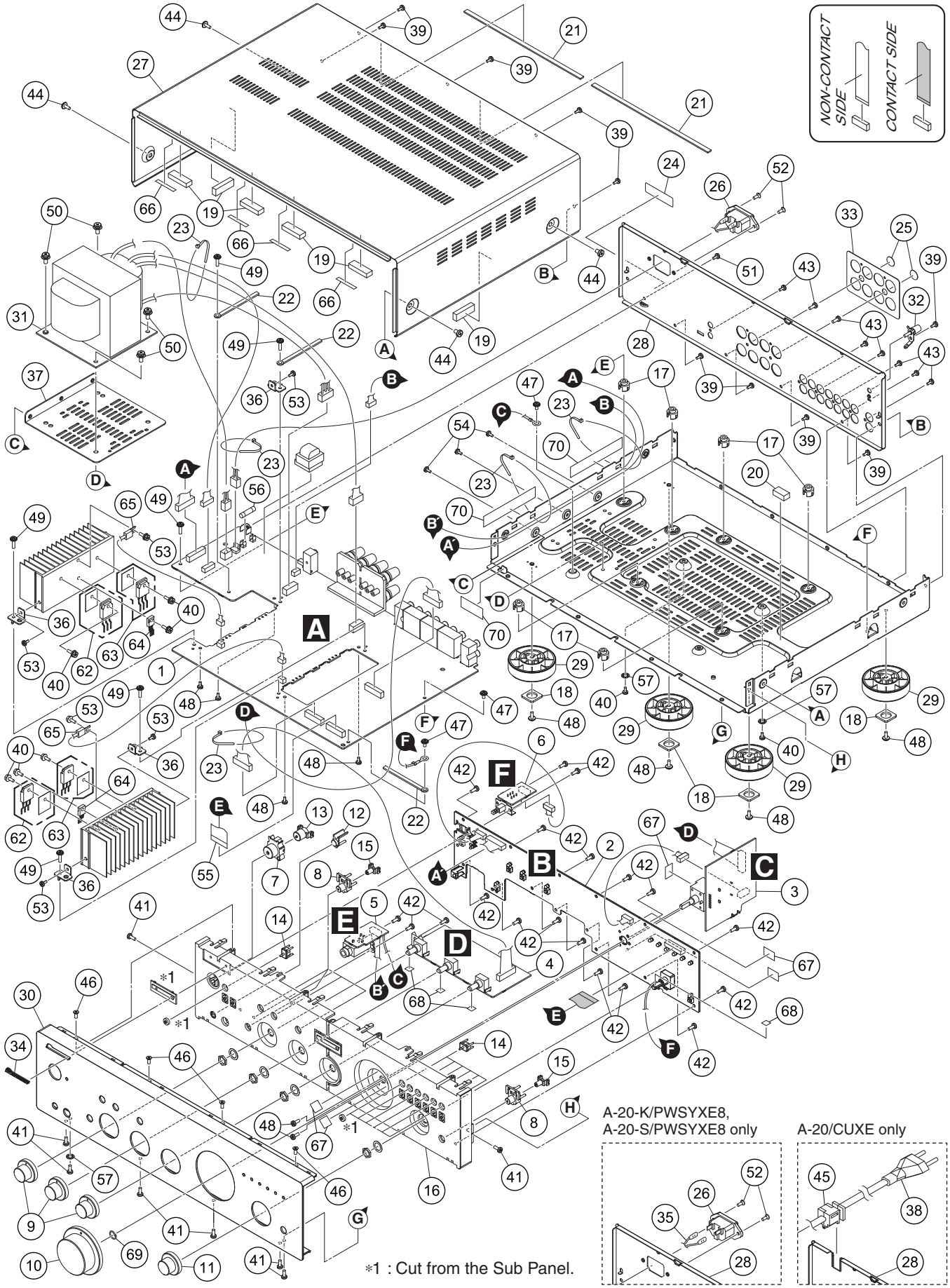
Mark	No.	Description	Part No.
	1	Warranty Card SY	See Contrast table (2)
	2	Remote Control Unit	See Contrast table (2)
⚠	3	AC Power Cord	See Contrast table (2)
	4	Polyethylene Bag	CPB1A013W
	5	Packing Case	See Contrast table (2)
	6	Packing Pad (L)	CPS1A914
	7	Packing Pad (R)	CPS1A915
	8	Speaker Caution En	CQE1A539Z
	9	Operating Instructions	See Contrast table (2)
NSP	10	Serial Label S	VRW2017
NSP	11	AAA/R03 Dry Cell Battery x 2	• • • • •
	12	Polyethylene Bag (Accessary)	See Contrast table (2)
	13	Polyethylene Bag (Manual)	CPB1A197Z

(2) CONTRAST TABLE

A-30-K/PWSYXE8, A-30-S/PWSYXE8, A-20-K/PWSYXE8, A-20-S/PWSYXE8, A-20/CUXE, A-10-K/SYXE8 and A-10-S/SYXE8 are constructed the same except for the following:

Mark	No.	Symbol and Description	A-30-K/ PWSYXE8	A-30-S/ PWSYXE8	A-20-K/ PWSYXE8	A-20-S/ PWSYXE8	A-20/ CUXE	A-10-K/ SYXE8	A-10-S/ SYXE8
	1	Warranty Card SY	CQE1A541Z	CQE1A541Z	CQE1A541Z	CQE1A541Z	Not used	CQE1A541Z	CQE1A541Z
	2	Remote Control Unit	CARTA30	CARTA30	CARTA20	CARTA20	CARTA20	Not used	Not used
⚠	3	AC Power Cord	CJA2B054Z	CJA2B054Z	CJA2B108ZV	CJA2B108ZV	Not used	CJA2B108ZV	CJA2B108ZV
	5	Packing Case	CPG1A961Z	CPG1A961W	CPG1A961Y	CPG1A961U	CPG1A961T	CPG1A961X	CPG1A961R
	9	Operating Instructions	CQX1A1640Y	CQX1A1640Y	CQX1A1640Y	CQX1A1640Y	CQX1A1644Z	CQX1A1640Y	CQX1A1640Y
	12	Polyethylene Bag (Accessary)	CPB1A008Z	CPB1A008Z	CPB1A008Z	CPB1A008Z	Not used	CPB1A008Z	CPB1A008Z

9.2 EXTERIOR SECTION (A-30/A-20)



(1) EXTERIOR SECTION (A-30/A-20) PARTS LIST

Mark	No.	Description	Part No.
	1	MAIN ASSY	See Contrast table (2)
	2	FRONT ASSY	See Contrast table (2)
	3	MASTER VOLUME ASSY	See Contrast table (2)
	4	TONE ASSY	AZW7477
	5	HEADPHONE ASSY	AZW7479
	6	SECOUND POWER SW ASSY	AZW7478
	7	Power Knob	See Contrast table (2)
	8	Function Knob	See Contrast table (2)
	9	Balance Knob	See Contrast table (2)
	10	Volume Knob	See Contrast table (2)
	11	Input Knob	See Contrast table (2)
	12	IR Window	See Contrast table (2)
	13	Power Indicator	CGL1A296
	14	Standby Indicator	CGL1A297
	15	Funkcion Indicator	CGL1A298
	16	Sub Panel	See Contrast table (2)
	17	PCB Holder	CHE170
	18	Foot Cushion	CHG1A528
	19	Top Cushion	CHG1A530
	20	Main Cushion	CHG1A531
	21	PEF Cushion	CHG1A532
	22	Wire Clamper	CHK1A009
	23	Clamper	CHR301
NSP	24	Serial Label S	VRW2017
	25	Cover Sheet	CHS1A154
	26	AC Inlet	See Contrast table (2)
	27	Top Cabinet	See Contrast table (2)
	28	Rear Panel	See Contrast table (2)
	29	Insulator	See Contrast table (2)
	30	AL Panel	See Contrast table (2)
⚠	31	Power Transformer	See Contrast table (2)
	32	Ground Terminal	CMA1A006
	33	Speaker Sheet	CMZ1A139Z
	34	Pioneer Badge (AL)	See Contrast table (2)
	35	AC Inlet Wire (SY)	See Contrast table (2)

Mark	No.	Description	Part No.
	36	Heat Sink Bracket	CMD1A800
	37	Trans Bracket	CMD1A801
⚠	38	AC Power Cord (CU)	See Contrast table (2)
	39	Screw	BBZ30P060FTB
	40	Special Screw	CHD3A012R
	41	Screw	See Contrast table (2)
	42	Screw	CTB3+8JR
	43	Screw	BBZ30P100FTB
	44	Screw	See Contrast table (2)
	45	AC Cord Bushing	See Contrast table (2)
	46	Screw	See Contrast table (2)
	47	Screw	CTW3+6JR
	48	EOL Item Screw	CTW3+8JR
	49	Screw	CTW3+12JR
	50	Trans Screw	CHDR1A023R
	51	Screw	BSZ30P060FTB
	52	Screw	See Contrast table (2)
	53	Special Screw	CHD4A012R
	54	Screw	CTB3+6JR
	55	17P FFC Cable	CWC4F4A17B150B10
⚠	56	Fuse (250V)	See Contrast table (2)
	57	Ground Washer	CNW1A035
	58	•••••	
	59	•••••	
	60	•••••	
	61	•••••	
	62	Power TR	CVT2SD2390P43M
	63	Power TR	CVT2SB1560P43M
	64	Bias TR	HVTKTC3114A
	65	Posistor ASSY	CRTDHTS100070W2
	66	Acetate Tape (5 x 25)	CHS1A218
	67	Acetate Tape (10 x 15)	CHS1A217
	68	Double Side Tape	C4FA051
	69	Knob Spring	CUS2A169
	70	Hemelon Tape	CHS1A032

(2) CONTRAST TABLE

A-30-K/PWSYXE8, A-30-S/PWSYXE8, A-20-K/PWSYXE8, A-20-S/PWSYXE8 and A-20/CUXE are constructed the same except for the following:

Mark	No.	Symbol and Description	A-30-K/ PWSYXE8	A-30-S/ PWSYXE8	A-20-K/ PWSYXE8	A-20-S/ PWSYXE8	A-20/ CUXE
	1	MAIN ASSY	AZW7487	AZW7487	AZW7489	AZW7489	AZW7490
	2	FRONT ASSY	AZW7482	AZW7482	AZW7483	AZW7483	AZW7484
	3	MASTER VOLUME ASSY	AZW7476	AZW7476	AZW7481	AZW7481	AZW7481
	7	Power Knob	CBT1A1162	CBT1A1162C81	CBT1A1162	CBT1A1162C81	CBT1A1162
	8	Funktion Knob	CBT1A1163	CBT1A1163MQG69	CBT1A1163	CBT1A1163MQG69	CBT1A1163
	9	Balance Knob	CGK1A164ZA	CGK1A164YA	CBN1A260	CBN1A260MQG69	CBN1A260
	10	Volume Knob	CGK1A165ZA	CGK1A165YA	CBN1A262	CBN1A262MQG69	CBN1A262
	11	Input Knob	CGK2A164ZA	CGK2A164YA	CBN1A261	CBN1A261MQG69	CBN1A261
	12	IR Window	CGL1A295Z	CGL1A295	CGL1A295Z	CGL1A295	CGL1A295Z
	16	Sub Panel	CGW1A517	CGW1A517MQG69	CGW1A517	CGW1A517MQG69	CGW1A517
	26	AC Inlet	CJJ8A006ZW	CJJ8A006ZW	CJJ8A018Z	CJJ8A018Z	Not used
	27	Top Cabinet	CKC2A214B62	CKC2A214G70	CKC2A214B62	CKC2A214G70	CKC2A214B62
	28	Rear Panel	CKF1A452Z	CKF1A452R	CKF2A452X	CKF2A452Q	CKF4A452W
	29	Insulator	CKL1A204	CKL1A204H65	CKL1A204	CKL1A204H65	CKL1A204
	30	AL Panel	CKM1A243ZC79	CKM1A243YC80	CKM2A243XC79	CKM2A243WC80	CKM2A243VC79
⚠	31	Power Transformer	CLT5U050ZE	CLT5U050ZE	CLT5R043ZE	CLT5R043ZE	CLT5R043ZU
	34	Pioneer Badge (AL)	BAM1004	VAM1124	BAM1004	VAM1124	PAN1376
	35	AC Inlet Wire (SY)	Not used	Not used	CWZA10CN96A	CWZA10CN96A	Not used
⚠	38	Power Cord (CU)	Not used	Not used	Not used	Not used	CJA523FBYA
	41	Screw	BBZ30P080FTB	CTB3+8JFC	BBZ30P080FTB	CTB3+8JFC	BBZ30P080FTB
	44	Screw	CTB4+6FFZRP	CTB4+6FFCP	CTB4+6FFZRP	CTB4+6FFCP	CTB4+6FFZRP
	45	AC Cord Bushing	Not used	Not used	Not used	Not used	CHR1A028
	46	Screw	CTS3+8JFZR	CTS3+8JR	CTB3+8JFZR	CTB3+8JFZR	CTB3+8JFZR
	52	Screw	CBZ30P080FTB	CBZ30P080FTB	CTB3+8JFZR	CTB3+8JFZR	Not used
⚠	56	Fuse (250V)	CBA2C2000TLEC	CBA2C2000TLEC	CBA2C2000TLEC	CBA2C2000TLEC	CBA2C3150TLEC

A

B

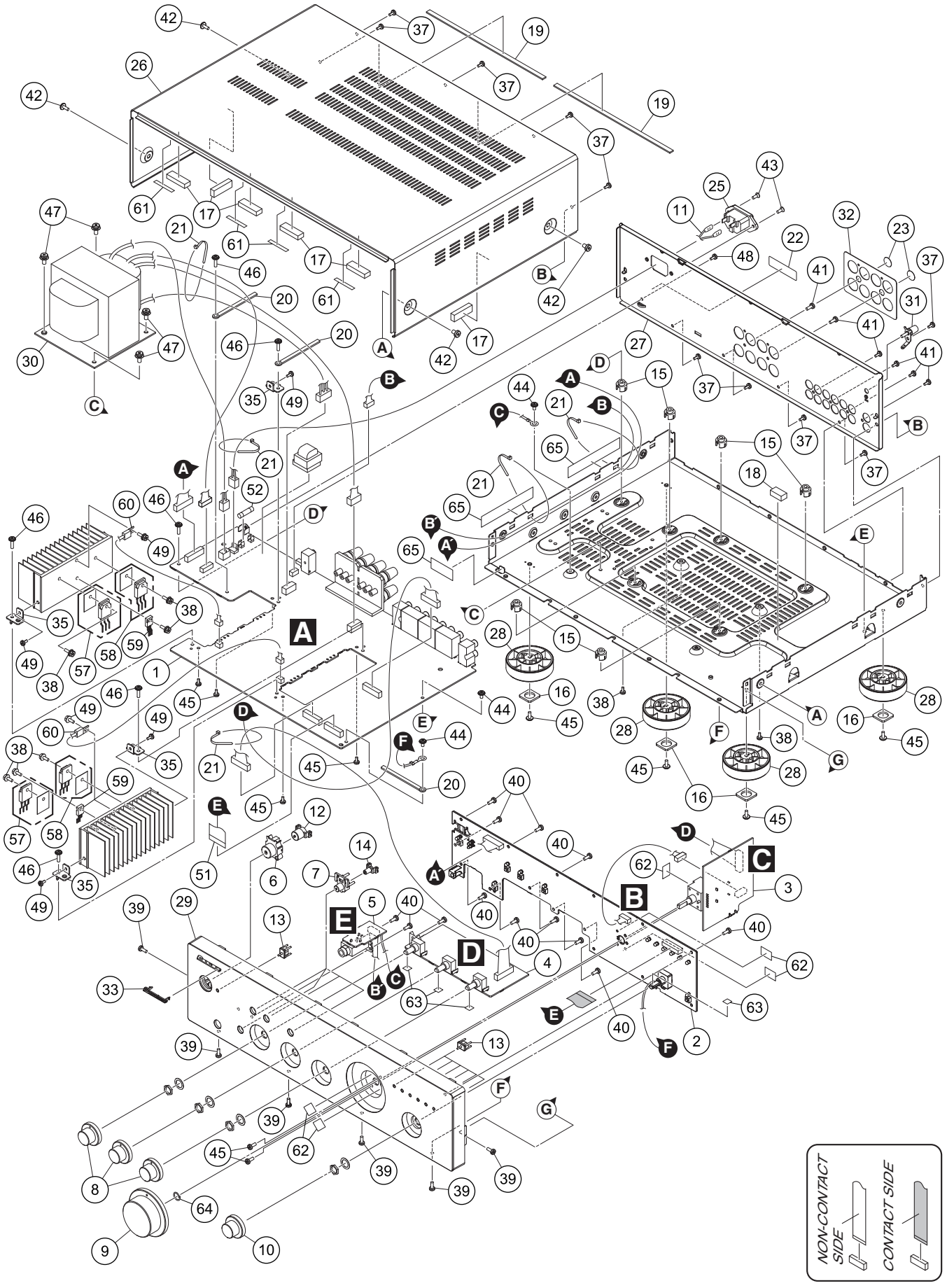
C

D

E

F

9.3 EXTERIOR SECTION (A-10)



(1) EXTERIOR SECTION (A-10) PARTS LIST

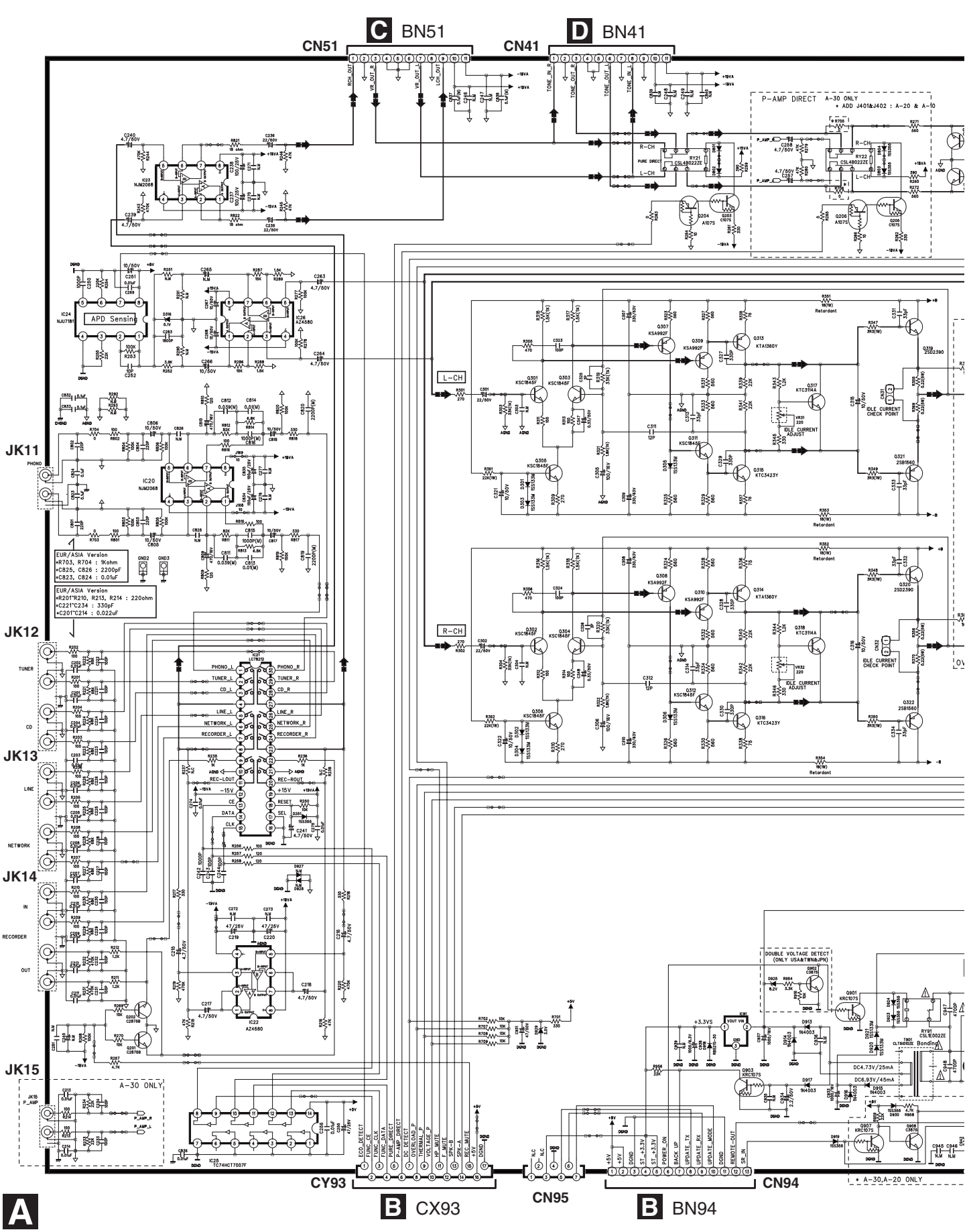
Mark	No.	Description	Part No.
	1	MAIN ASSY	AZW7491
	2	FRONT ASSY	AZW7485
	3	MASTER VOLUME ASSY	AZW7481
	4	TONE ASSY	AZW7477
	5	HEADPHONE ASSY	AZW7479
	6	Power Knob	See Contrast table (2)
	7	Function Knob	See Contrast table (2)
	8	Balance Knob	See Contrast table (2)
	9	Volume Knob	See Contrast table (2)
	10	Input Knob	See Contrast table (2)
	11	AC Inlet Wire (SY)	CWZA10CN96A
	12	Power Indicator	CGL1A296
	13	Standby Indicator	CGL1A297
	14	Function Indicator	CGL1A298
	15	PCB Holder	CHE170
	16	Foot Cushion	CHG1A528
	17	Top Cushion	CHG1A530
	18	Main Cushion	CHG1A531
	19	PEF Cushion	CHG1A532
	20	Wire Clamper	CHK1A009
	21	Clamper	CHR301
NSP	22	Serial Label S	VRW2017
	23	Cover Sheet	CHS1A154
	24	• • • • •	
	25	AC Inlet (Screw Type)	CJJ8A018Z
	26	Top Cabinet	See Contrast table (2)
	27	Rear Panel	See Contrast table (2)
	28	Insulator	See Contrast table (2)
	29	Front Panel	See Contrast table (2)
⚠	30	Power Transformer (74 x 53) SY	CLT5R043ZE
	31	Ground Terminal	CMA1A006
	32	Speaker Sheet	CMZ1A139Z
	33	Pioneer Badge	See Contrast table (2)
	34	• • • • •	
	35	Heat Sink Bracket	CMD1A800
	36	• • • • •	
	37	Screw	BBZ30P060FTB
	38	Special Screw	CHD3A012R
	39	Screw	See Contrast table (2)
	40	Screw	CTB3+8JR
	41	Screw	BBZ30P100FTB
	42	Screw	See Contrast table (2)
	43	Screw	CTB3+8JFZR
	44	Screw	CTW3+6JR
	45	EOL Item Screw	CTW3+8JR
	46	Screw	CTW3+12JR
	47	Trans Screw	CHDR1A023R
	48	Screw	BSZ30P060FTB
	49	Special Screw	CHD4A012R
	50	• • • • •	
	51	17P FFC Cable	CWC4F4A17B150B10
⚠	52	Fuse (250V 2A)	CBA2C2000TLEC
	53	• • • • •	
	54	• • • • •	
	55	• • • • •	
	56	• • • • •	
	57	Power TR	CVT2SD2390P43M
	58	Power TR	CVT2SB1560P43M
	59	Bias TR	HVTKTC3114A
	60	Posistor ASSY	CRTDHTS100070W2
	61	Acetate Tape (5 x 25)	CHS1A218
	62	Acetate Tape (10 x 15)	CHS1A217
	63	Double Side Tape	C4FA051
	64	Knob Spring	CUS2A169
	65	Hemelon Tape	CHS1A032

(2) CONTRAST TABLE

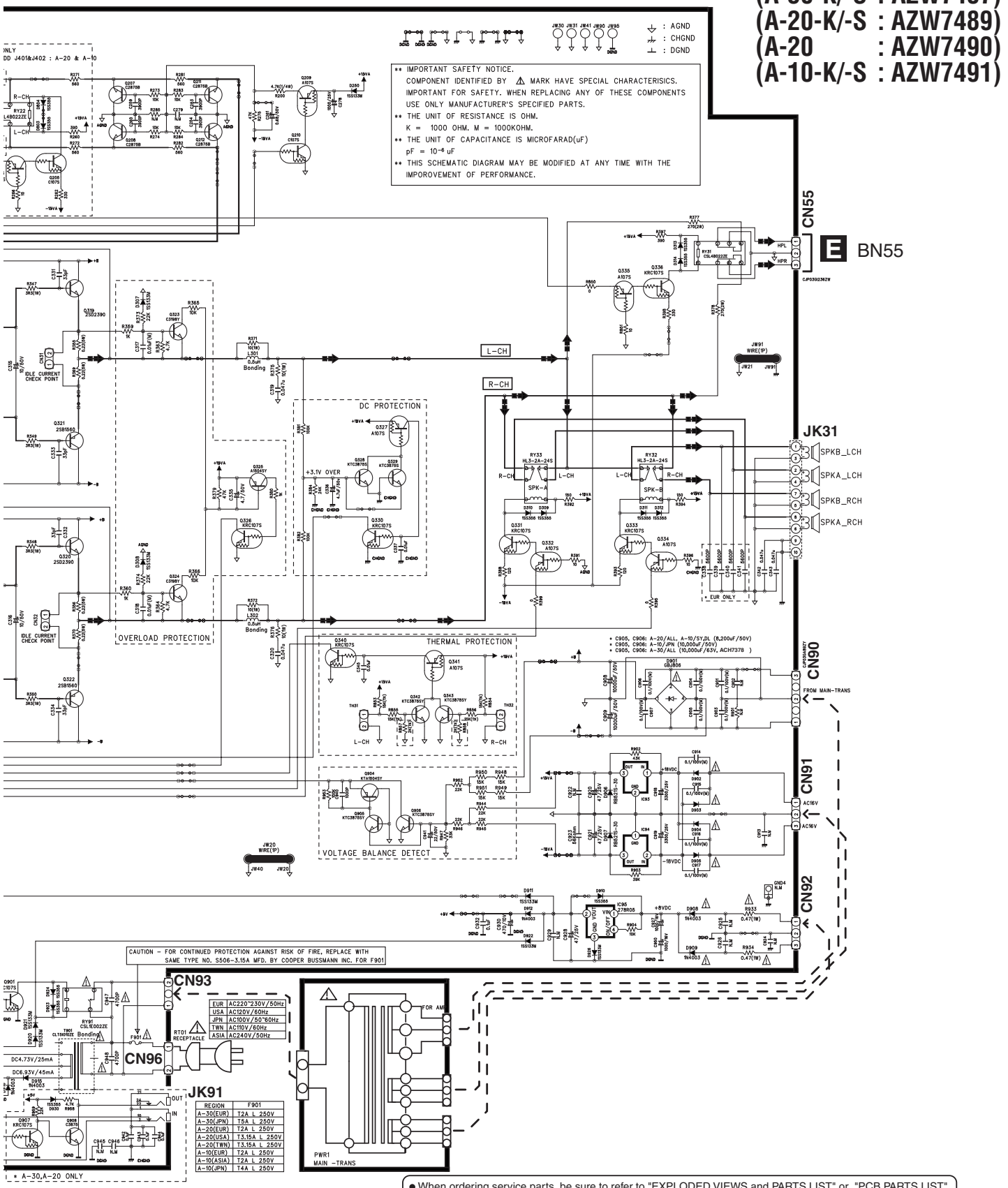
A-10-K/SYXE8 and A-10-S/SYXE8 are constructed the same except for the following:

Mark	No.	Symbol and Description	A-10-K/ SYXE8	A-10-S/ SYXE8
	6	Power Knob	CBT1A1162	CBT1A1162C81
	7	Function Knob	CBT1A1163	CBT1A1163MQG69
	8	Balance Knob	CBN1A260	CBN1A260MQG69
	9	Volume Knob	CBN1A262	CBN1A262MQG69
	10	Input Knob	CBN1A261	CBN1A261MQG69
	26	Top Cabinet	CKC2A214B62	CKC2A214G70
	27	Rear Panel	CKF3A452U	CKF3A452P
	28	Insulator	CKL1A204	CKL1A204H65
	29	Front Panel	CGW2A518H10Z	CGW2A518MQG69Y
	33	Pioneer Badge	AAM7016	VAM1129
	39	Screw	BBZ30P080FTB	CTB3+8JFC
	42	Screw	CTB4+6FFZRP	CTB4+6FFCP

10. SCHEMATIC DIAGRAM
10.1 MAIN ASSY



A MAIN ASSY
(A-30-K/-S : AZW7487)
(A-20-K/-S : AZW7489)
(A-20 : AZW7490)
(A-10-K/-S : AZW7491)

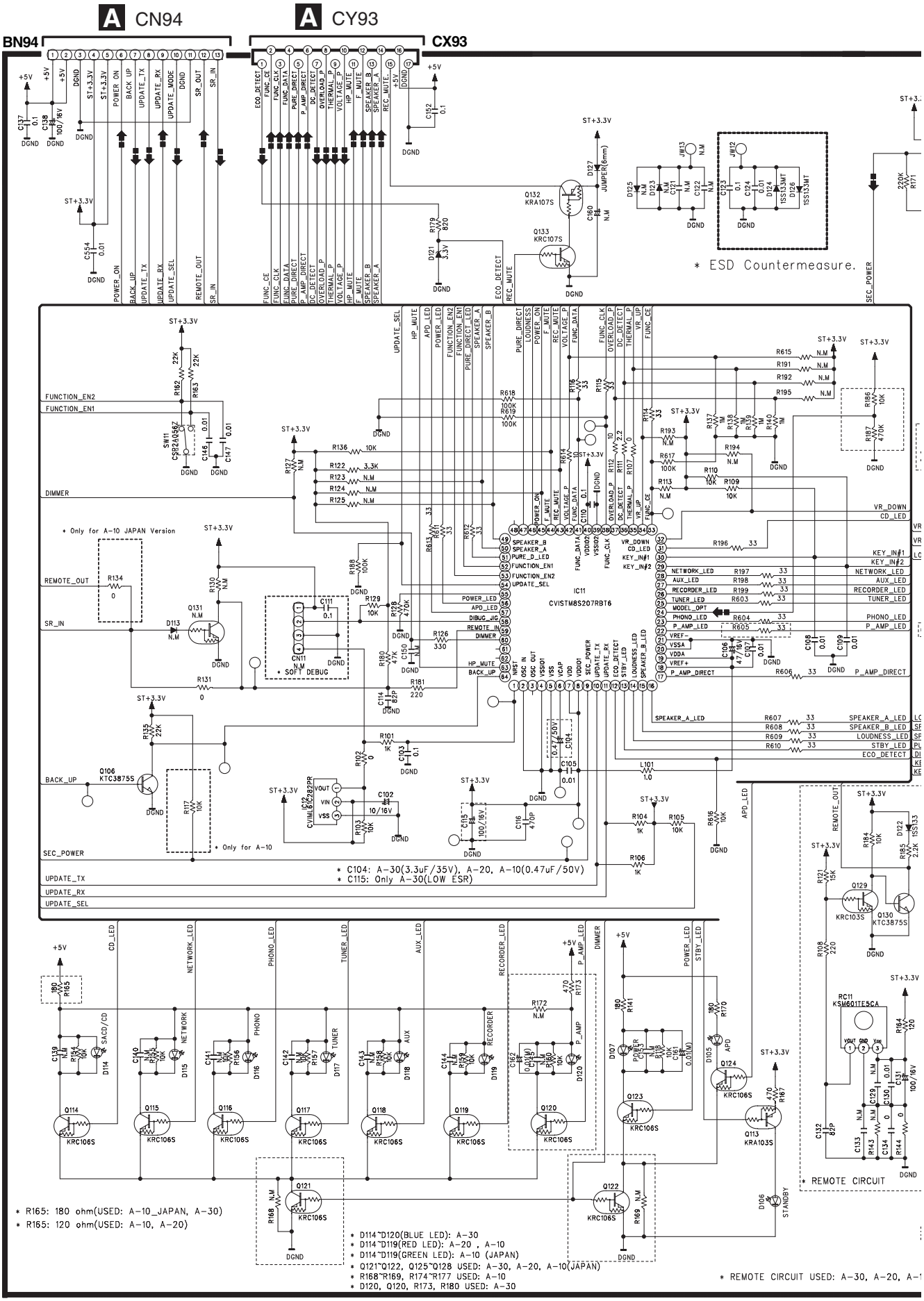


REGION	F901
A-30(EUR)	T2A L 250V
A-30(JPN)	T5A L 250V
A-20(EUR)	T2A L 250V
A-20(USA)	T3.15A L 250V
A-20(TWN)	T3.15A L 250V
A-10(EUR)	T2A L 250V
A-10(ASIA)	T2A L 250V
A-10(JPN)	T4A L 250V

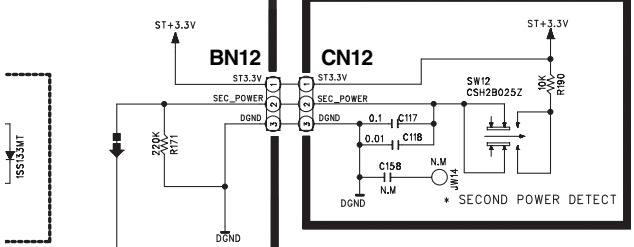
- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A

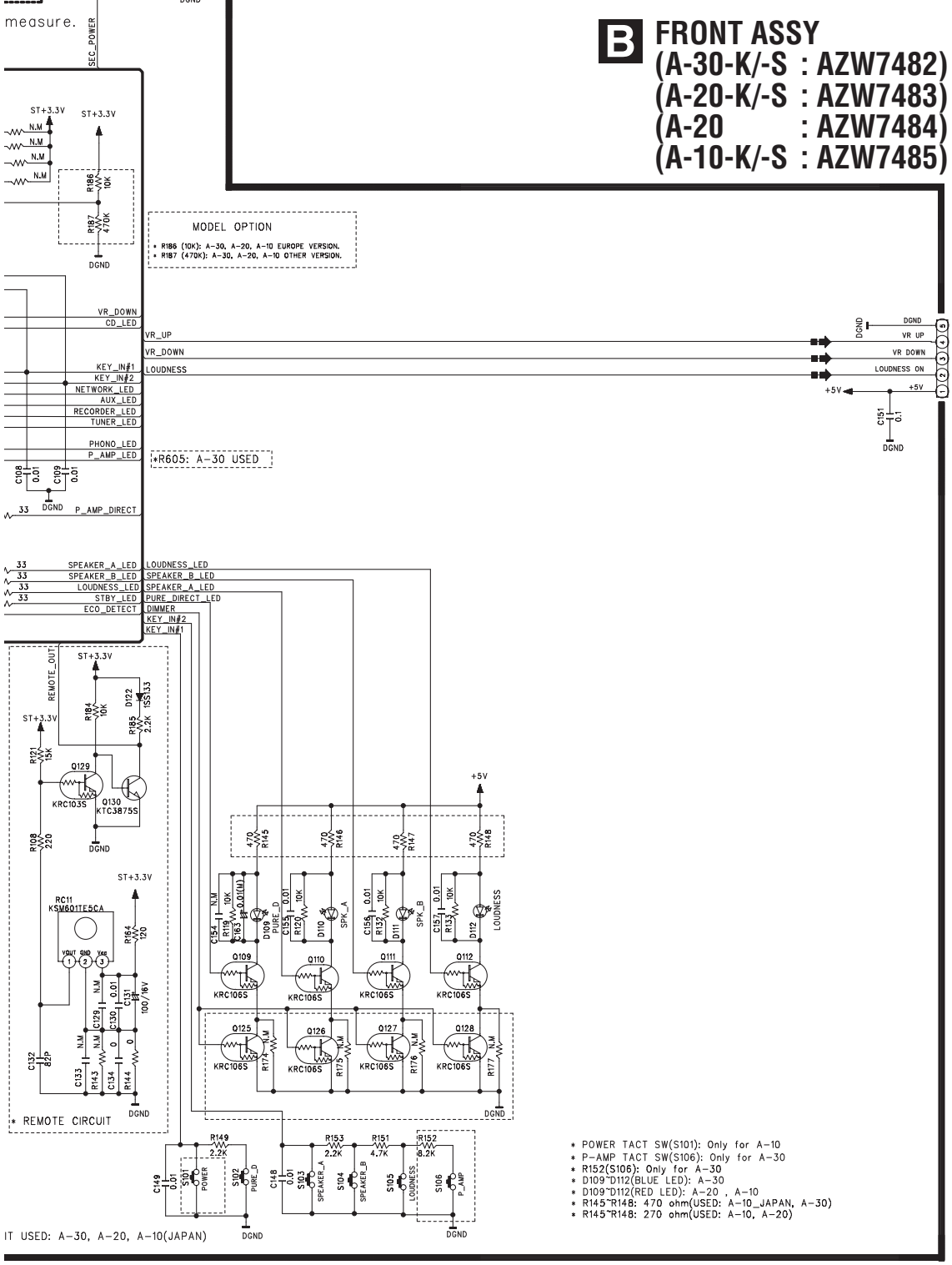
10.2 FRONT ASSY and SECOND POWER SW ASSY (A-30/A-20)



F SECOND POWER SW ASSY (A-30-K/-S, A-20-K/-S, A-20 : AZW7478)

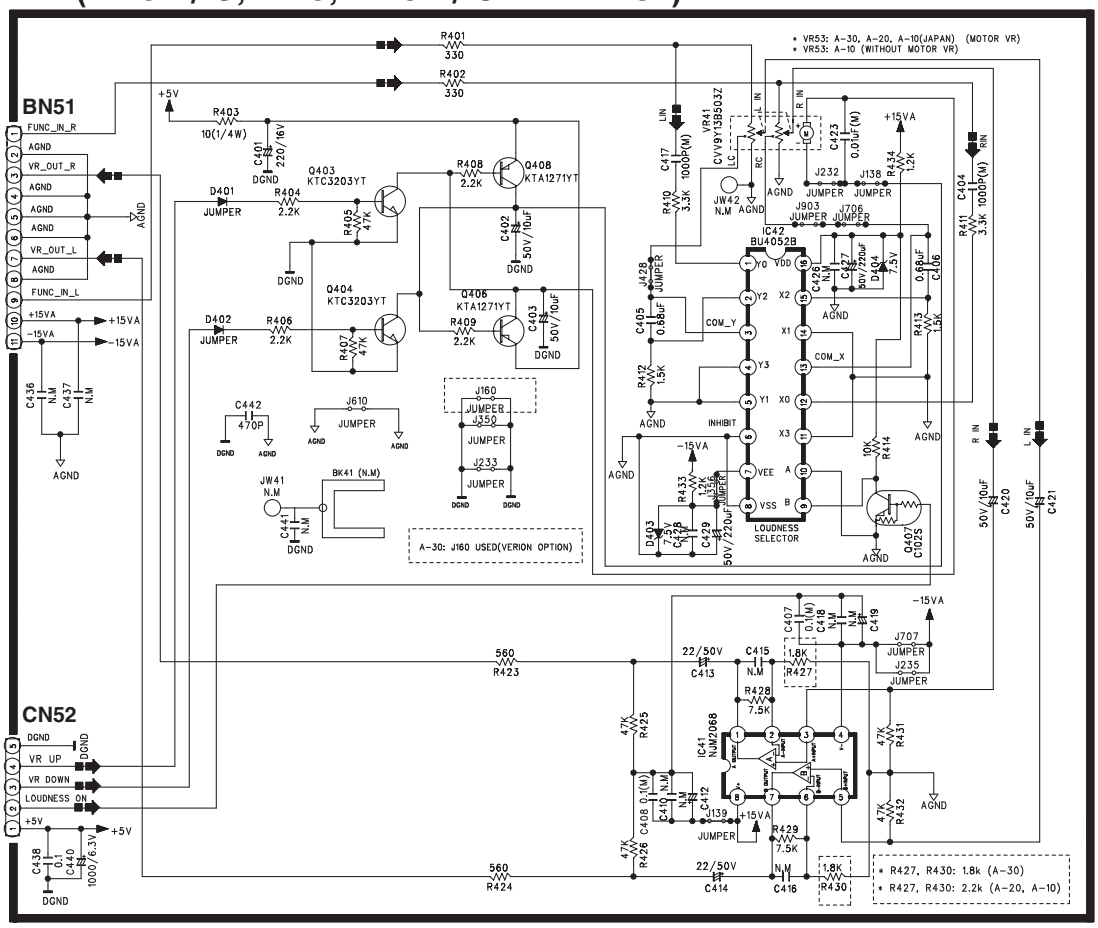


B FRONT ASSY (A-30-K/-S : AZW7482) (A-20-K/-S : AZW7483) (A-20 : AZW7484) (A-10-K/-S : AZW7485)

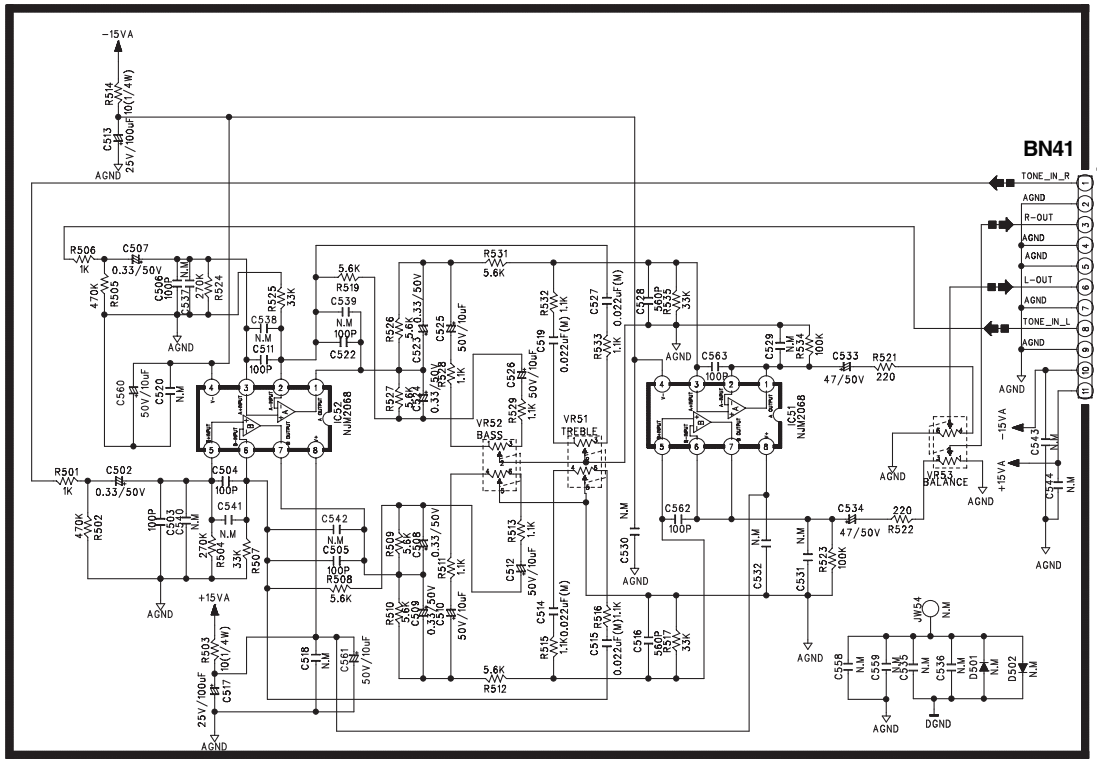


10.3 MASTER VOLUME ASSY, TONE ASSY and HEADPHONE ASSY

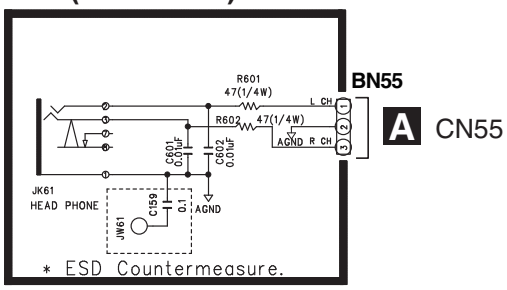
C MASTER VOLUME ASSY (A-30-K/-S : AZW7476) (A-20-K/-S, A-20, A-10-K/-S : AZW7481)



D TONE ASSY (AZW7477)

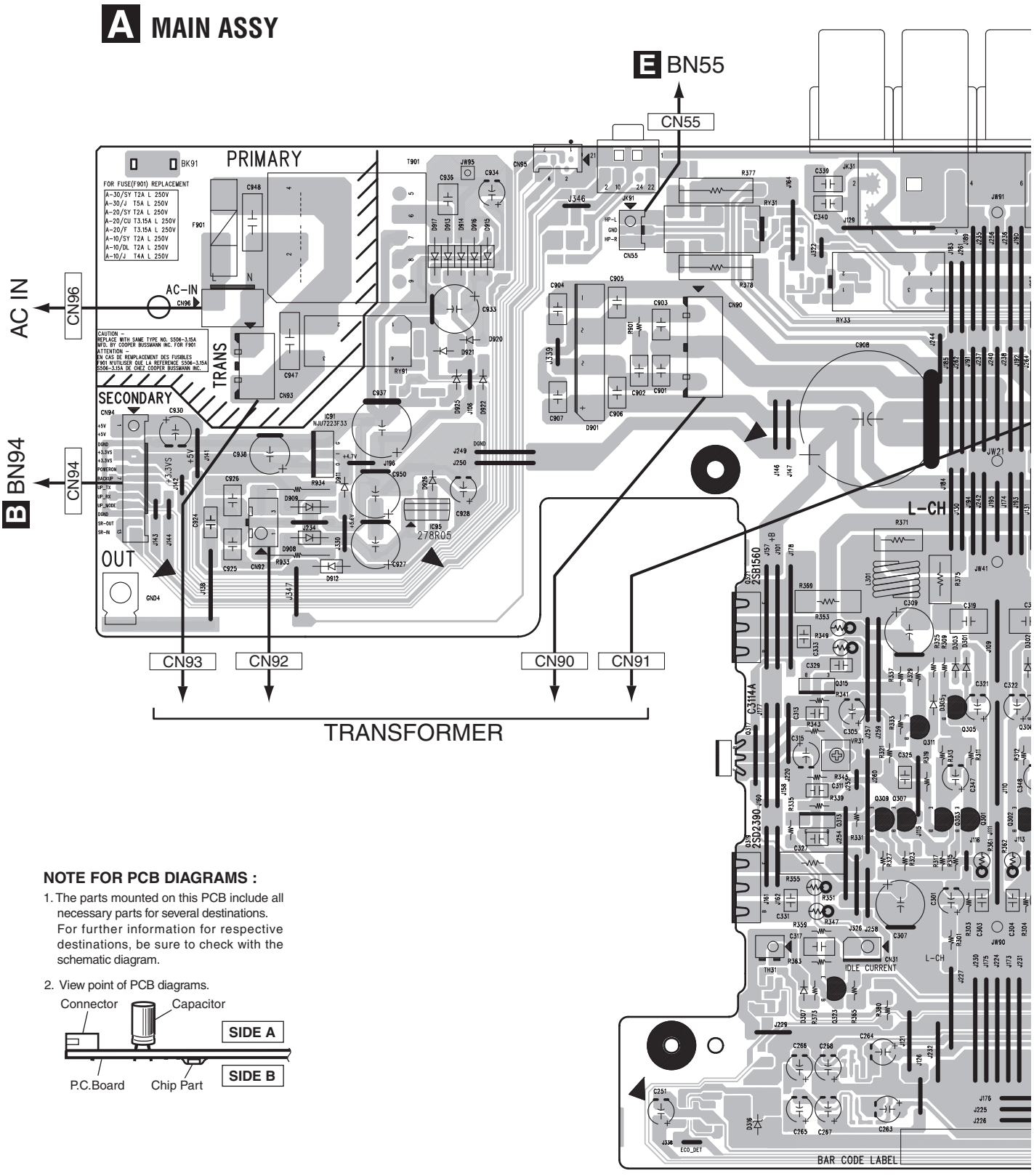


E HEADPHONE ASSY (AZW7479)



11. PCB CONNECTION DIAGRAM
11.1 MAIN ASSY

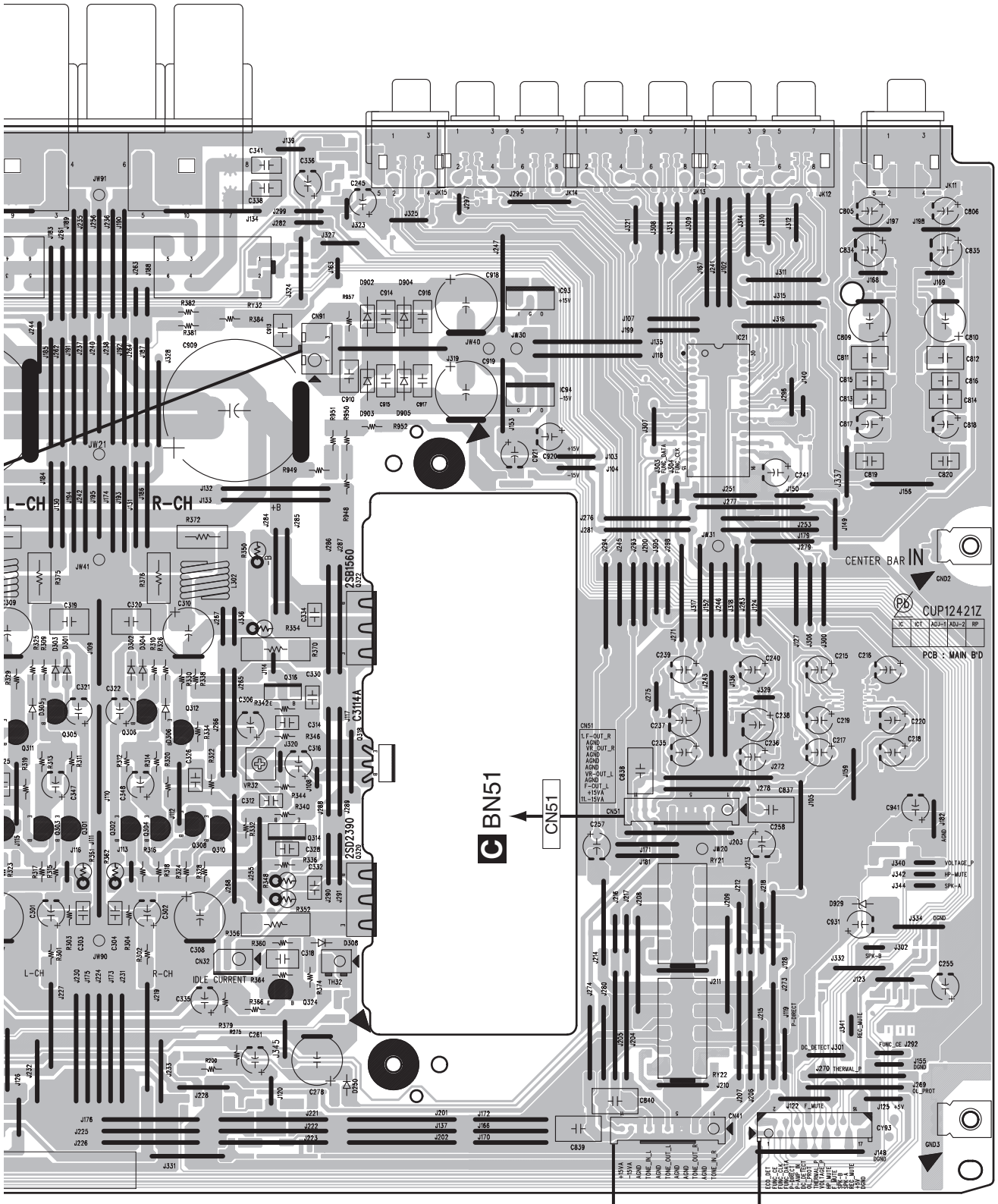
SIDE A



NOTE FOR PCB DIAGRAMS :

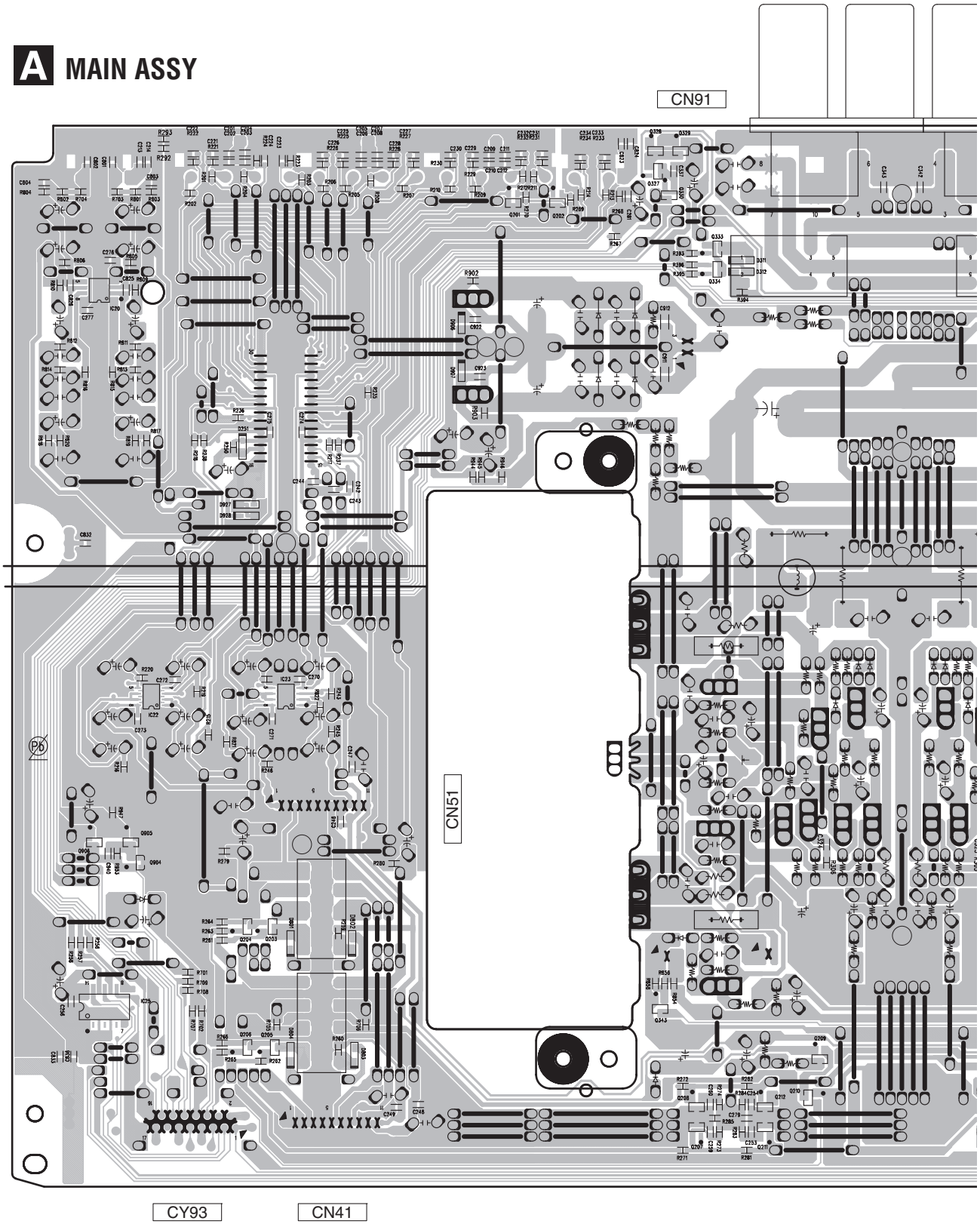
1. The parts mounted on this PCB include all necessary parts for several destinations. For further information for respective destinations, be sure to check with the schematic diagram.
2. View point of PCB diagrams.

SIDE A

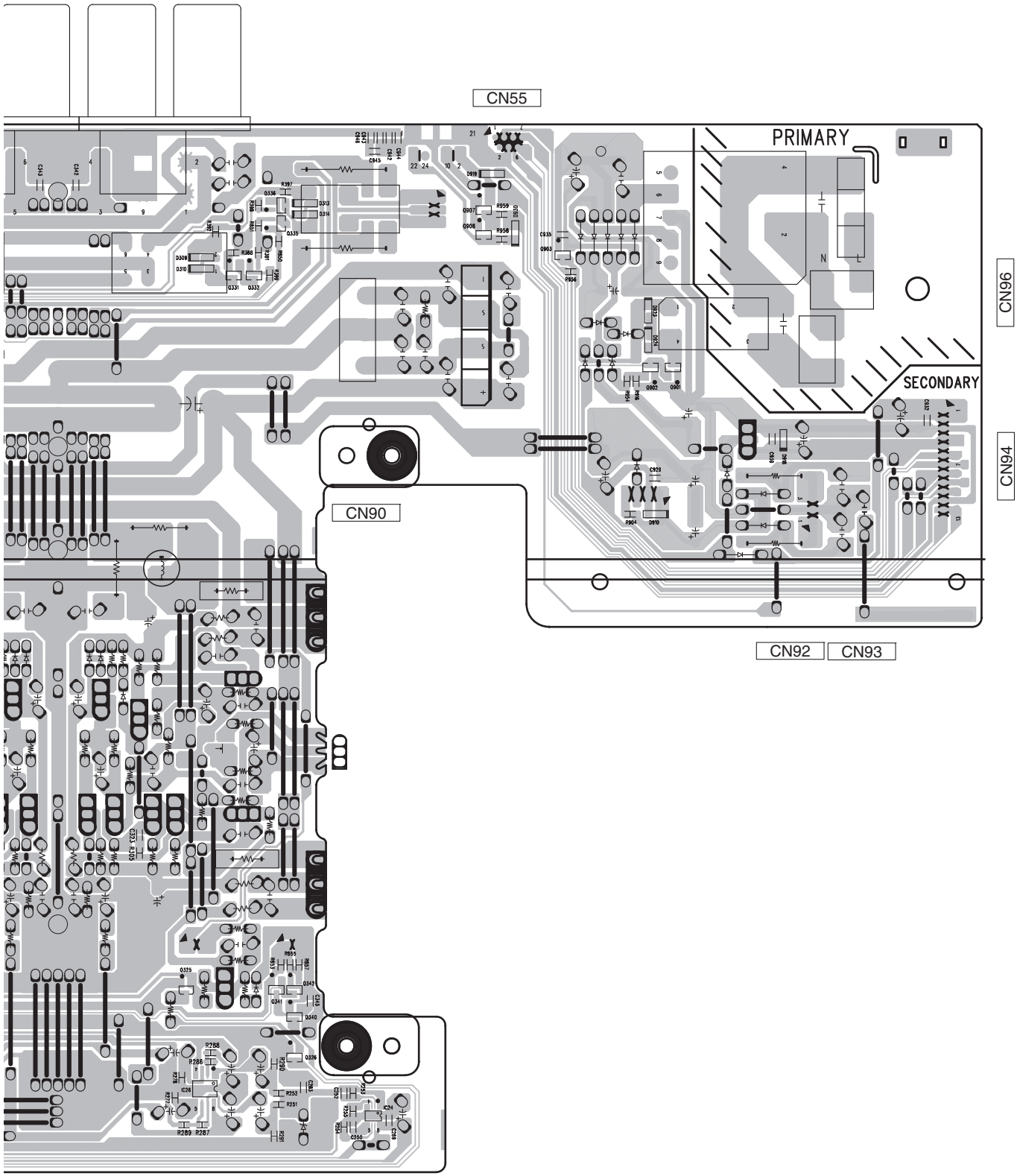

L-CH
R-CH
CENTER BAR IN
CUP12421Z
PCB : MAIN B'D
2SB1560
2SD2390
C3114A
IDLE CURRENT
C BN51
CN51
CN41
CY93
D BN41
B CX93
A-30-K

SIDE B

A MAIN ASSY



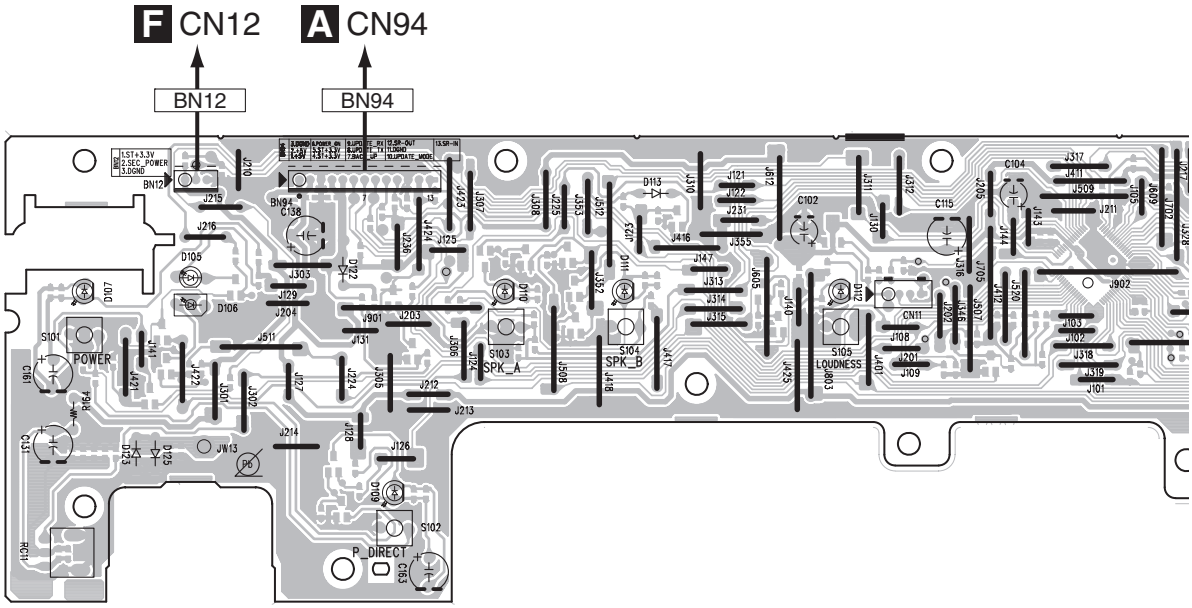
SIDE B



11.2 FRONT ASSY

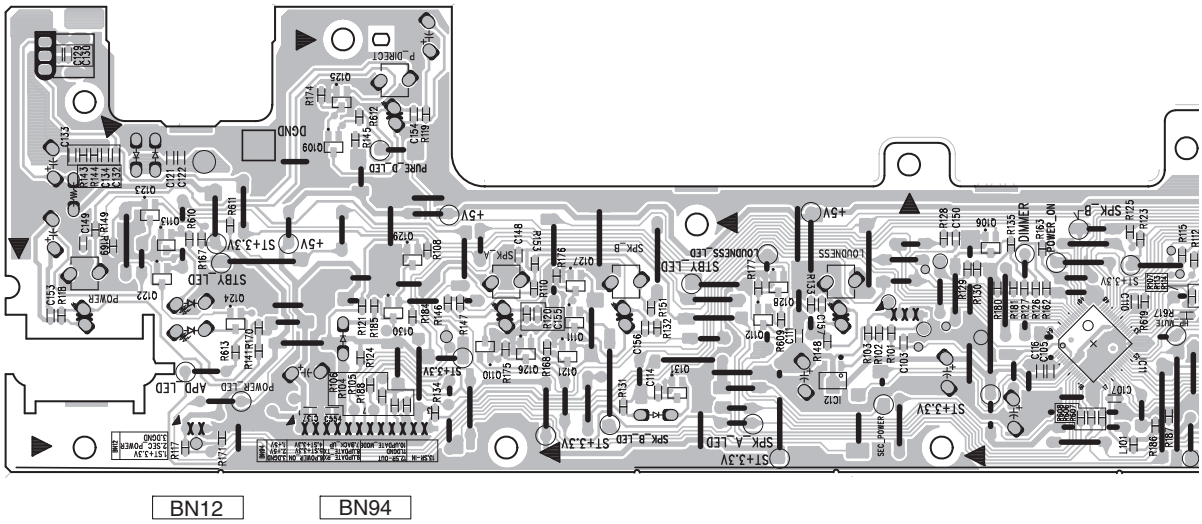
SIDE A

B FRONT ASSY



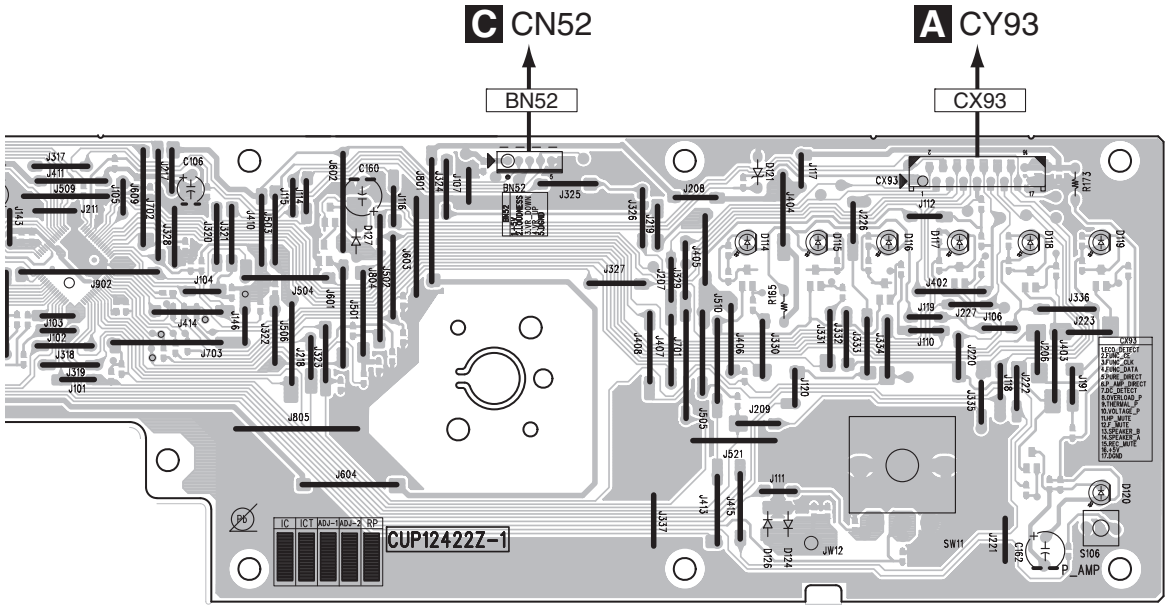
SIDE B

B FRONT ASSY

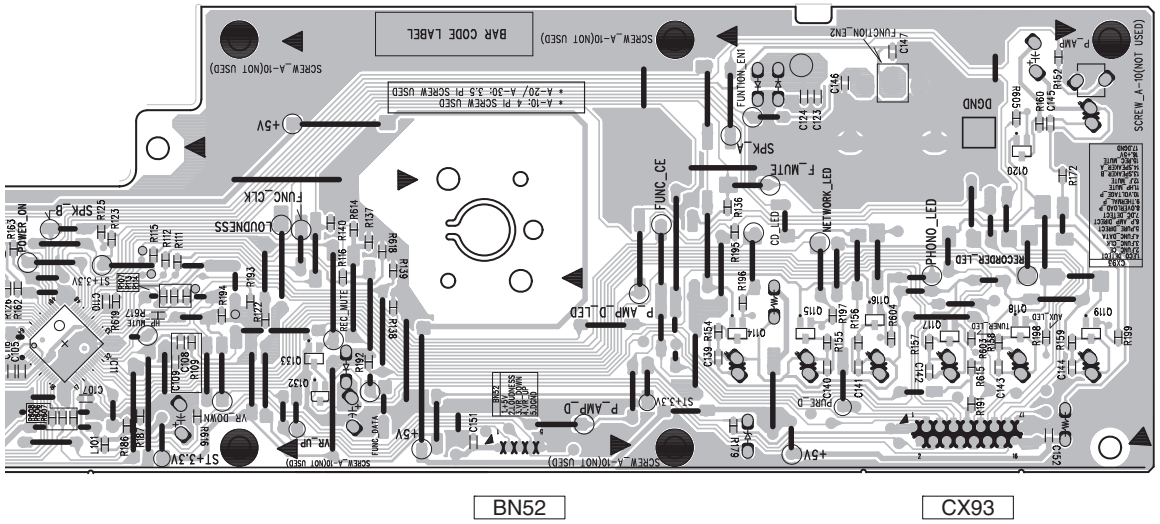


B

SIDE A


C CN52
A CY93
BN52
CX93
CUP12422Z-1
P_AMP

SIDE B

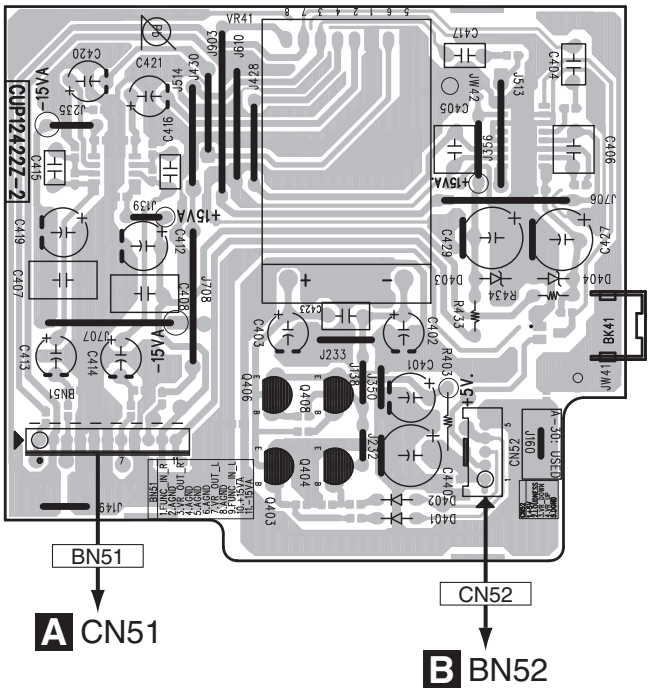

BAR CODE LABEL
SCREW_A-10(NOT USED)
+5V
SPK_A
F_MUTE
FUNC_CE
FUNC_CLK
LOUDNESS
P_AMP_D_LED
NETWORK_LED
CD_LED
PHONO_LED
RECORDER_LED
DGND
P_AMP
BN52
CX93

11.3 MASTER VOLUME ASSY

SIDE A

SIDE A

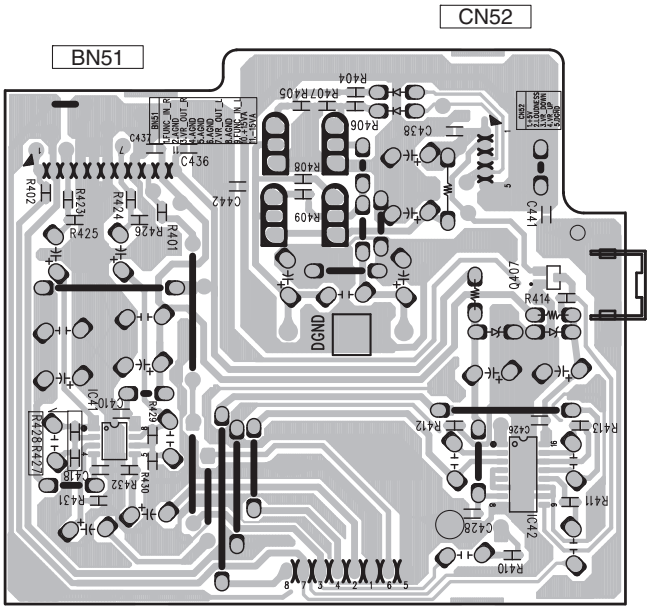
C MASTER VOLUME ASSY



SIDE B

SIDE B

C MASTER VOLUME ASSY



C

C

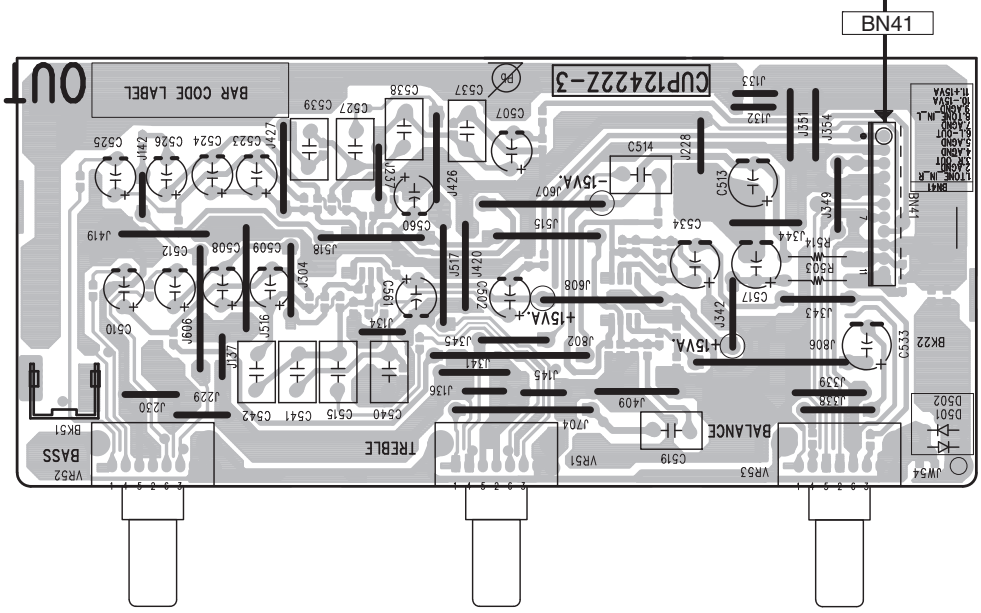
11.4 TONE ASSY

SIDE A

SIDE A

D TONE ASSY

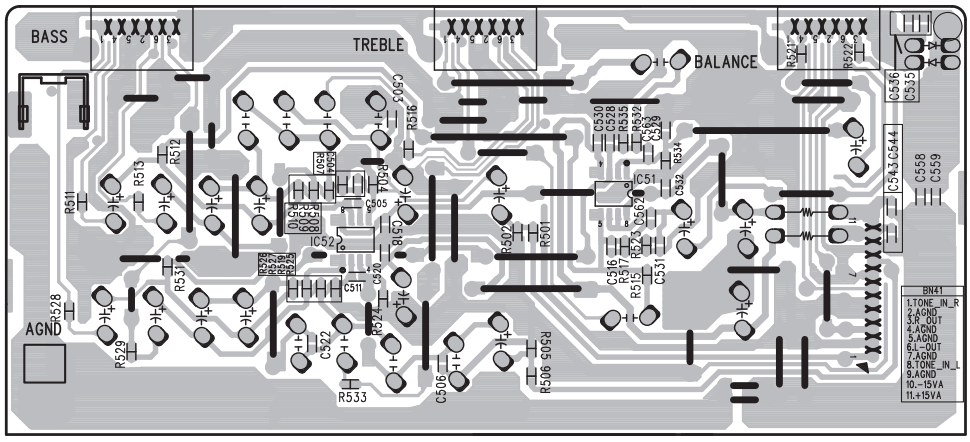
A CN41



SIDE B

SIDE B

D TONE ASSY



BN41

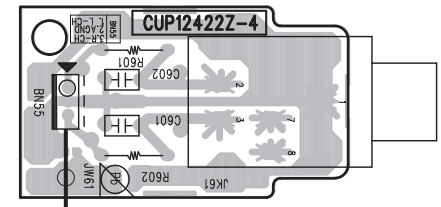
D D

11.5 HEADPHONE ASSY and SECOND POWER SW ASSY (A-30/A-20)

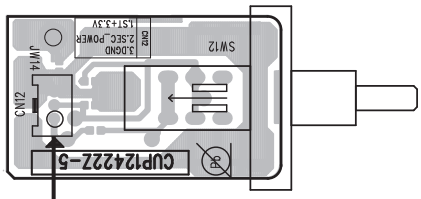
SIDE A

SIDE A

E HEADPHONE ASSY



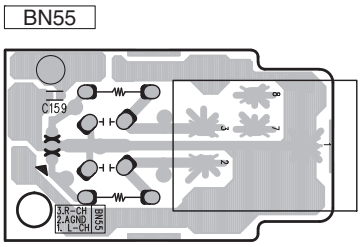
F SECOND POWER SW ASSY



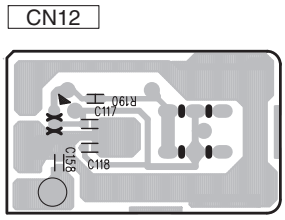
SIDE B

SIDE B

E HEADPHONE ASSY



F SECOND POWER SW ASSY



E F

E F

12. PCB PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *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 47 k ohm (tolerance is shown by J = 5%, and K = 10%).

560 Ω → 56 × 10[1] → 561 ····· RD1/4PU 5 6 1 J
47 kΩ → 47 × 10[3] → 473 ····· RD1/4PU 4 7 3 J
0.5 Ω → R50 ····· RN2H R 5 0 K
1 Ω → 1R0 ····· RS1P 1 R 0 K

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

5.62 kΩ → 562 × 10[1] → 5621 ····· RN1/4PC 5 6 2 1 F

[Wiring number reading substitute list]

SCHEMATIC DIAGRAM, PCB	Parts List	Parts No.	Name of Assembly
JK11	JA11	CJJ4N034Z	MAIN
JK12	JA12	CJJ4P028Z	MAIN
JK13	JA13	CJJ4P028Z	MAIN
JK14	JA14	CJJ4P028Z	MAIN
JK15	JA15	CJJ4N034Z	MAIN
JK31	JA31	CJJ5Q006Z	MAIN
JK91	JA91	HJJ1D002Z	MAIN
RC11	IC1011	CRVKSM601TE5CA	FRONT
BN12	J12	CWB1B00308047	FRONT
BN52	J52	CWB1B00515047	FRONT
BN94	J94	CWB1B01335047	FRONT
SW11	S11	CSR2A056Z	FRONT
BN51	J51	CWB1C0112004W001	MASTER VOLUME
BN41	J41	CWB1B01120047	TONE
BN55	J55	CWB4B00340047	HEADPHONE
JK61	JA61	CJJ2E020Z	HEADPHONE
SW12	S12	CSH2B024Z	SECOND POWER SW

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP	1	MAIN ASSY (A-30-K/-S)	COP12421B
	2	MAIN ASSY	AZW7487
NSP	1	MAIN ASSY (A-20-K/-S)	COP12421D
	2	MAIN ASSY	AZW7489
NSP	1	MAIN ASSY (A-20)	COP12421E
	2	MAIN ASSY	AZW7490
NSP	1	MAIN ASSY (A-10-K/-S)	COP12421F
	2	MAIN ASSY	AZW7491
NSP	1	FRONT ASSY (A-30-K/-S)	COP12422B
	2	FRONT ASSY	AZW7482
	2	MASTER VOLUME ASSY	AZW7476
	2	TONE ASSY	AZW7477
	2	HEADPHONE ASSY	AZW7479
	2	SECOND POWER SW ASSY	AZW7478
NSP	1	FRONT ASSY (A-20-K/-S)	COP12422C
	2	FRONT ASSY	AZW7483
	2	MASTER VOLUME ASSY	AZW7481
	2	TONE ASSY	AZW7477
	2	HEADPHONE ASSY	AZW7479
	2	SECOND POWER SW ASSY	AZW7478

Mark	No.	Description	Part No.
NSP	1	FRONT ASSY (A-20)	COP12422G
	2	FRONT ASSY	AZW7484
	2	MASTER VOLUME ASSY	AZW7481
	2	TONE ASSY	AZW7477
	2	HEADPHONE ASSY	AZW7479
	2	SECOND POWER SW ASSY	AZW7478
NSP	1	FRONT ASSY (A-10-K/-S)	COP12422D
	2	FRONT ASSY	AZW7485
	2	MASTER VOLUME ASSY	AZW7481
	2	TONE ASSY	AZW7477
	2	HEADPHONE ASSY	AZW7479

A MAIN ASSY

AZW7487, AZW7489, AZW7490 and AZW7491 are constructed the same except for the following:

Mark	Symbol and Description	AZW7487	AZW7489	AZW7490	AZW7491
	JA15	CJJ4N034Z	Not used	Not used	Not used
	RY22	CSL4B022ZE	Not used	Not used	Not used
	RY32	CSL4B023ZE	CSL4B024ZE	CSL4B024ZE	CSL4B024ZE
	RY33	CSL4B023ZE	CSL4B024ZE	CSL4B024ZE	CSL4B024ZE
	T901	CLT5I010ZE	CLT5I010ZE	CLT5I010ZU	CLT5I010ZE
	C908	ACH7378	CCET50VPLP822NCP	CCET50VPLP822NCP	CCET50VPLP822NCP
	C909	ACH7378	CCET50VPLP822NCP	CCET50VPLP822NCP	CCET50VPLP822NCP

B FRONT ASSY

AZW7482, AZW7483, AZW7484 and AZW7485 are constructed the same except for the following:

Mark	Symbol and Description	AZW7482	AZW7483	AZW7484	AZW7485
	D109	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D110	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D111	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D112	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D114	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D115	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D116	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D117	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D118	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D119	CVDGY34MD22B51CMCACL	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ	CVDGY34SU05R41BJDABJ
	D120	CVDGY34MD22B51CMCACL	Not used	Not used	Not used
	S101	Not used	Not used	Not used	CST1A023ZT
	S106	CST1A023ZT	Not used	Not used	Not used

PCB PARTS LIST FOR A-30-K/-S UNLESS OTHERWISE NOTED

A MAIN ASSY

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC	20	HVINJM2068MDTE1
	IC	21	HVILC78212
	IC	22,23,26	CVIAZ4580MTR-E1
	IC	24	CVINJU7181RB1
	IC	25	HVITC74HCT7007F
	IC	91	CVINJU7223F33
	IC	93,94	CVILM7815FTL
	IC	95	CVIISP278R05FTL
	Q	301-306,311,312	CVTKSC1845FTA
	Q	307-310	CVTKSA992FTA
	Q	313,314	HVTKTA1360Y
	Q	315,316	HVTKTC3423Y
	Q	323,324	HVTKTC3198YT
	D	901	HVDGBJ806
	D	902-905,908,909	CVD1N4003ST
	D	906,907,918	CVDRB521S-30
	D	912-917	CVD1N4003ST

MISCELLANEOUS

Mark	No.	Description	Part No.
	L	301,302 COIL , SPEAKER(0.5UH)	CLEY0R5KAK
	JA	11,15 JACK , IN/OUT	CJJ4N034Z
	JA	12-14 JACK , IN/OUT	CJJ4P028Z
	JA	31 TERMINAL , SPEAKER	CJJ5Q006Z
	JA	91 JACK , STEREO(2P 3.5PIE)	HJJ1D002Z
	VR	31,32 RES , SEMI FIXED (220 OHM)	CVN12A221B03T
	RY	21,22 RELAY , BC3-24H , DC24V , 2C2P	CSL4B022ZE
	RY	31 RELAY , BC3-24H , DC24V , 2C2P	CSL4B022ZE
	RY	32,33 RELAY , HL3-2A-24 , DC24V , 2C2P	CSL4B023ZE
	RY	91 RELAY,G5PA-1,DC6V,1C1P	CSL1E002ZE
	T	901 TRANS , SUB RCD-M37EUR	CLT5I010ZE

RESISTORS

Mark	No.	Description	Part No.
	R	347-350	CRG1SANJ3R3RT
	R	351-354	CRG1SANJ180RT
	R	355,356,369,370	CRF5EKR22H
	R	371,372,375,376	CRG1ANJ100H
	R	933,934	CRQ1AJR47H

CAPACITORS

Mark	No.	Description	Part No.
	C	278	CCEA1EH102ECP
	C	918,919	CCEA1EH222ECP
	C	927,933,937,950	CCEA1CH102ECP
	C	938	CCEA0JH102T
	C	947,948	KCKDKS472ME

CAUTIONS

The parts number of Q317, Q318 (BIAS Transistor), Q319, Q320, Q321, Q322 (Power Transistor) and TH31, TH32 (Posistor) are indicated in [9.2 EXTERIOR SECTION (A-30/A-20)] and [9.3 EXTERIOR SECTION (A-10)] of [9. EXPLODED VIEWS AND PARTS LIST]

Mark	No.	Description	Part No.

B FRONT ASSY

SEMICONDUCTORS

	IC	11	CVIANAM1656A
	IC	12	CVIML61C282PR
	IC	1011	CRVKSM601TE5CA
	D	105	CVDGY34MU22Y16BJTAA4
	D	106	CVDBLBUF4V5K1AV
	D	107,109-112	CVDGY34MD22B51CMCACL
	D	114-120	CVDGY34MD22B51CMCACL

MISCELLANEOUS

	J	12	ROCKING TYPE WIRE ASSY (3P, 80MM, 2.0MM) CWB1B00308047
	J	52	ROCKING TYPE WIRE ASSY (5P, 150MM, 2.0MM) CWB1B00515047
	J	94	ROCKING TYPE WIRE ASSY (13P, 350MM, 2.0MM) CWB1B01335047
	S	11	VR, ENCODER CSR2A056Z
	S	102-106	SW , TACT CST1A023ZT

C MASTER VOLUME ASSY

SEMICONDUCTORS

	IC	41	CVIAZ4580MTR-E1
	IC	42	CVIBU4052BCF

MISCELLANEOUS

	J	51	ROCKING TYPE SHIELD WIRE ASSY (11P, 200MM, 2.0MM) CWB1C0112004W001
	VR	41	VOLUME , MOTOR CVV9Y13B503Z

RESISTORS

	R	403	CRD25TJ100T

CAPACITORS

	C	440	CCEA0JH102TC

D TONE ASSY

SEMICONDUCTORS

	IC	51,52	CVIAZ4580MTR-E1

MISCELLANEOUS

	J	41	ROCKING TYPE WIRE ASSY (11P, 200MM, 2.0MM) CWB1B01120047001
	VR	51,52	RES, VARIABLE(ANGLE) CVV3W01B103Z
	VR	53	RES, VARIABLE(ANGLE) CVV3W02M203Z

RESISTORS

	R	503,514	CRD25TJ100T

Mark	No.	Description	Part No.

E HEADPHONE ASSY

MISCELLANEOUS

	J	55	ROCKING TYPE WIRE ASSY (3P, 400MM, 2.0MM) CWB4B00340047
	JA	61	JACK, PHONES(6.35MM,GOLD) CJJ2E020Z

RESISTORS

	R	601,602	CRD25TJ470T

F SECOND POWER SW ASSY(A-30/A-20)

MISCELLANEOUS

	S	12	SW, PUSH (FOR DC , 2C2P) CSH2B024Z