

Service Manual



ORDER NO.
RRV2393

STEREO POWER AMPLIFIER

M-LA21

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

Type	Model M-LA21	Power Requirement	The voltage can be converted by the following method.
DBDXCN	○	AC110-127V / 220-230V / 240V	With the Voltage Selector
DDXCN/AR	○	AC110-127V / 220-230V / 240V	With the Voltage Selector

- This product is a system(s) component.
This product does not function properly independently ; to avoid malfunctions, be sure to connect it to the prescribed system component(s), otherwise damage may result.
- Please connect it to the STEREO CD TUNER XC-LA21, for operation inspection.
- System component Table

Component	Model	Service manual	Remarks
COMPACT MINI COMPONENT	X-LA21	RRV2370	
STEREO CD TUNER	XC-LA21	RRV2392	
STEREO POWER AMPLIFIER	M-LA21	RRV2393	This manual.
SPEAKER SYSTEM	S-LA21	RRV2394	

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1. 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.

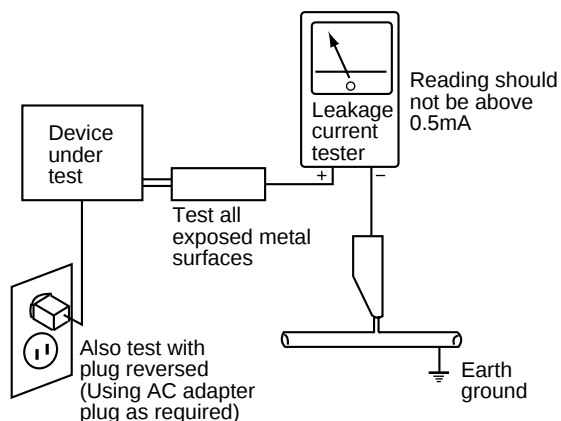
(FOR USA MODEL ONLY)

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 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



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 Δ on the schematics and on the parts list in this Service Manual.

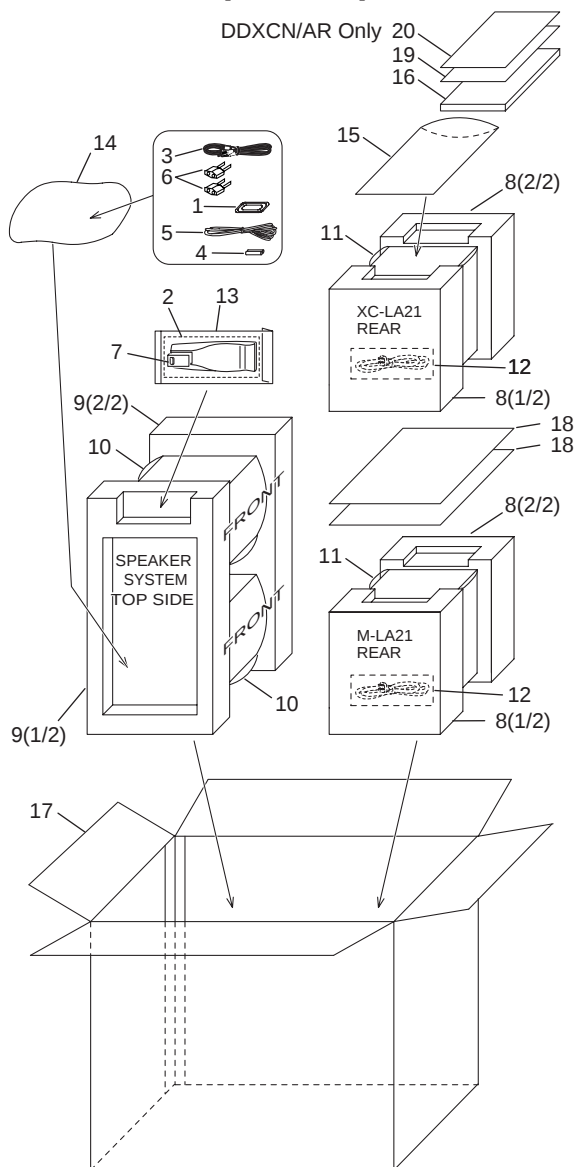
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

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.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
 ● The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 ● Screws adjacent to ∇ mark on the product are used for disassembly.

2.1 PACKING (X-LA21)



(1) PACKING PARTS LIST

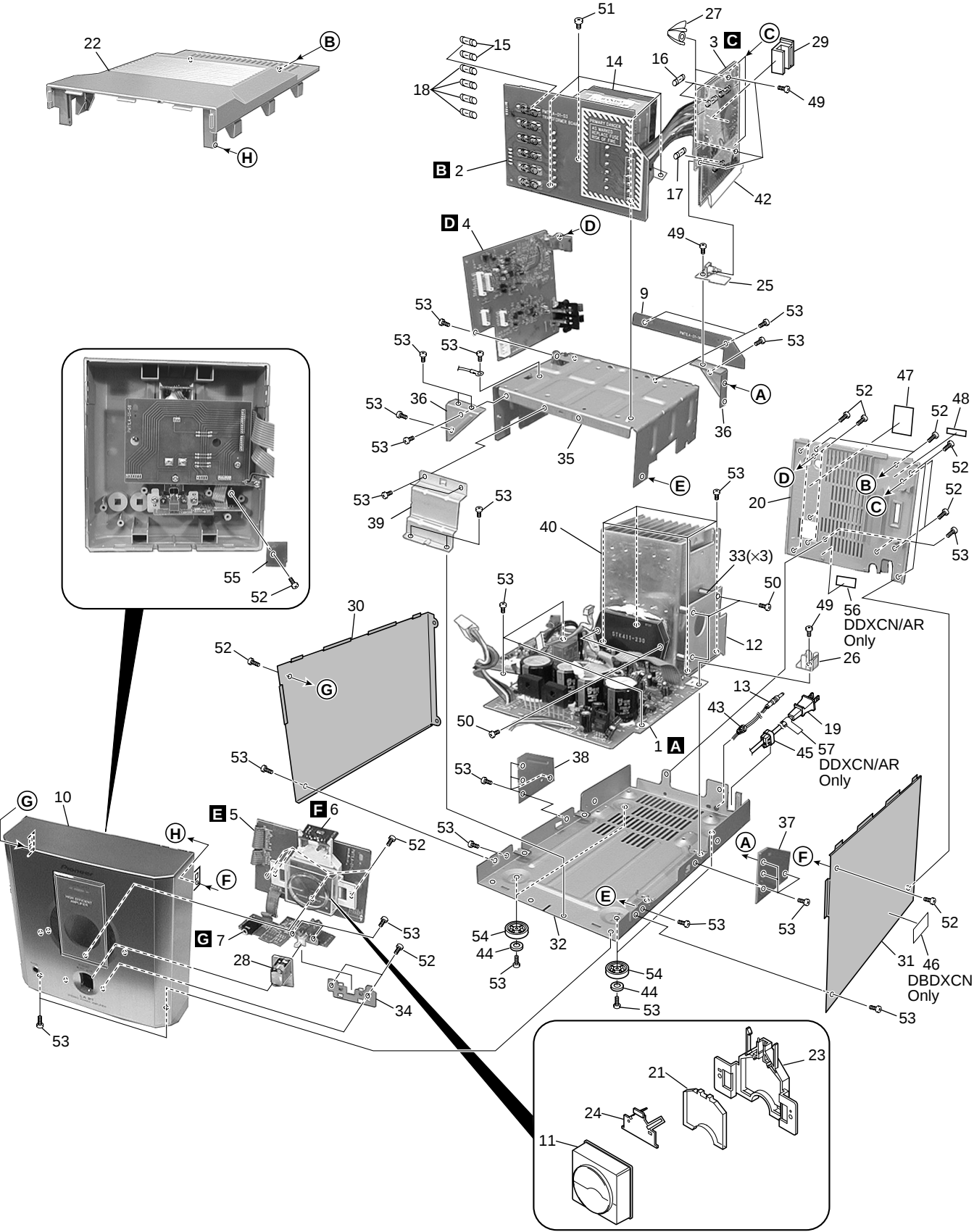
Mark	No.	Description	Part No.
NSP	1	AM Loop Antenna	ANT-PMT1E-AL
	2	Remote Control Unit	AXD7289
	3	RCA Audio Cable	122003220100
	4	'AAA' Size R03 Batteries	130115004000
	5	FM Wire Antenna	132030001001
NSP	6	Power-cord Plug Conversion Adaptor	138011722000
	7	Battery Door	500RC4603070
	8	Polyform Unit	800PMT190001
	9	Polyfoam (Speaker)	800PMT390000
	10	Poly Foam Sheet (C) SP	801999000002
NSP	11	Polythenefoam Sheet	801999000005
	12	PE Polybag (AC Cord)	805032115000
	13	PE Polybag (Remocon)	805035105000
	14	PE Polybag (Antenna)	805070100000
	15	PE Polybag (I Book)	805085140000
NSP	16	Operating Instructions (English/Spanish/Chinese)	811PMT391011
	17	Carton	See Contrast table (2)
	18	Corrugate Card	815001405213
	19	Additional Sheet	810PMT395010
	20	Correction Sheet	See Contrast table (2)

(2) CONTRAST TABLE

X-LA21/DBDXCN and DDXCN/AR are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			X-LA21 /DBDXCN	X-LA21 /DDXCN/AR	
	17	Carton	813PMT393020	813PMT393010	
	20	Correction Sheet	Not used	810PMT395020	

2.2 EXTERIOR SECTION



(1) EXTERIOR SECTION PARTS LIST

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
	1	AMP Assy	PMT1LA100011		29	Voltage Selector Knob	510PMT319000
△	2	TRANSFORMER Assy	PMT1LA100031		30	Side Panel-L	600PMT117002
△	3	PRIMARY Assy	PMT1LA100041		31	Side Panel-R	600PMT118002
	4	JACK Assy	PMT1LA100021	NSP	32	Bottom Tray	600PMT302000
	5	POWER METER Assy	PMT1LA100081		33	Copper Post	603PMT381000
	6	LED Assy	PMT1LA100051		34	Power Switch Bracket	605PMT313000
△	7	HP JACK Assy	PMT1LA100111		35	Transformer Bracket	605PMT317000
	8	•••••			36	Mounting Bracket-1	605PMT373000
NSP	9	PROTECTION PCB	PMT1LA100141		37	Mounting Bracket-2	605PMT374000
	10	S-Assy PMT3 FP01	SUBPMT3AMFP		38	Mounting Bracket-3	605PMT375000
	11	Meter Assy	SUBPMT3MTR		39	Mounting Bracket-4	605PMT376000
NSP	12	Heat Sink Board	033PMT1LS100		40	•••••	
	13	DC Cord	122006020060		41	Heat Sink CDG-74	6130CDG74000
△	14	Transformer (TR701)	1236C0250140		42	PCB Sheet	650PMT377000
△	15	Fuse (F322, F323 : T1AL/250V)	124010020001		43	Bushing	700PMT156000
△	16	Fuse (F328, F329 : T2.5A/250V)	124025020001		44	Rubber Foot	700PMT384000
△	17	Fuse (F321 : T3.15A/250V)	124031520003		45	Strain Relief Bushing	700036022000
△	18	Fuse (F324-F327 : T6.3AL/250V)	124063020001	NSP	46	EMC Label	See Contrast table (2)
					47	Back Label	See Contrast table (2)
					48	Serial Label	809000009000
△	19	AC Cord	See Contrast table (2)		49	Screw	BBZ30P100FNI
	20	Back Cover	See Contrast table (2)		50	Screw	BBZ30P180FMC
	21	Diffuser Lens	500PMT309000		51	Screw	BBZ40P060FMC
	22	Top Panel	500PMT311001		52	Screw	BPZ30P100FNI
	23	Meter Holder	505PMT307000		53	Screw	KBZ30P060FNI
	24	Lens Holder	505PMT308000		54	Foot Stand	509PMT329000
	25	Rectifier PCB Bracket	505PMT370000		55	Holding PCB	PMT1LA-100-121
	26	PCB Bracket-R	505PMT372000		56	Caution Label	See Contrast table (2)
	27	Mounting Bracket	505266422000		57	AC Cord Label	See Contrast table (2)
	28	Power Knob	510PMT312001				

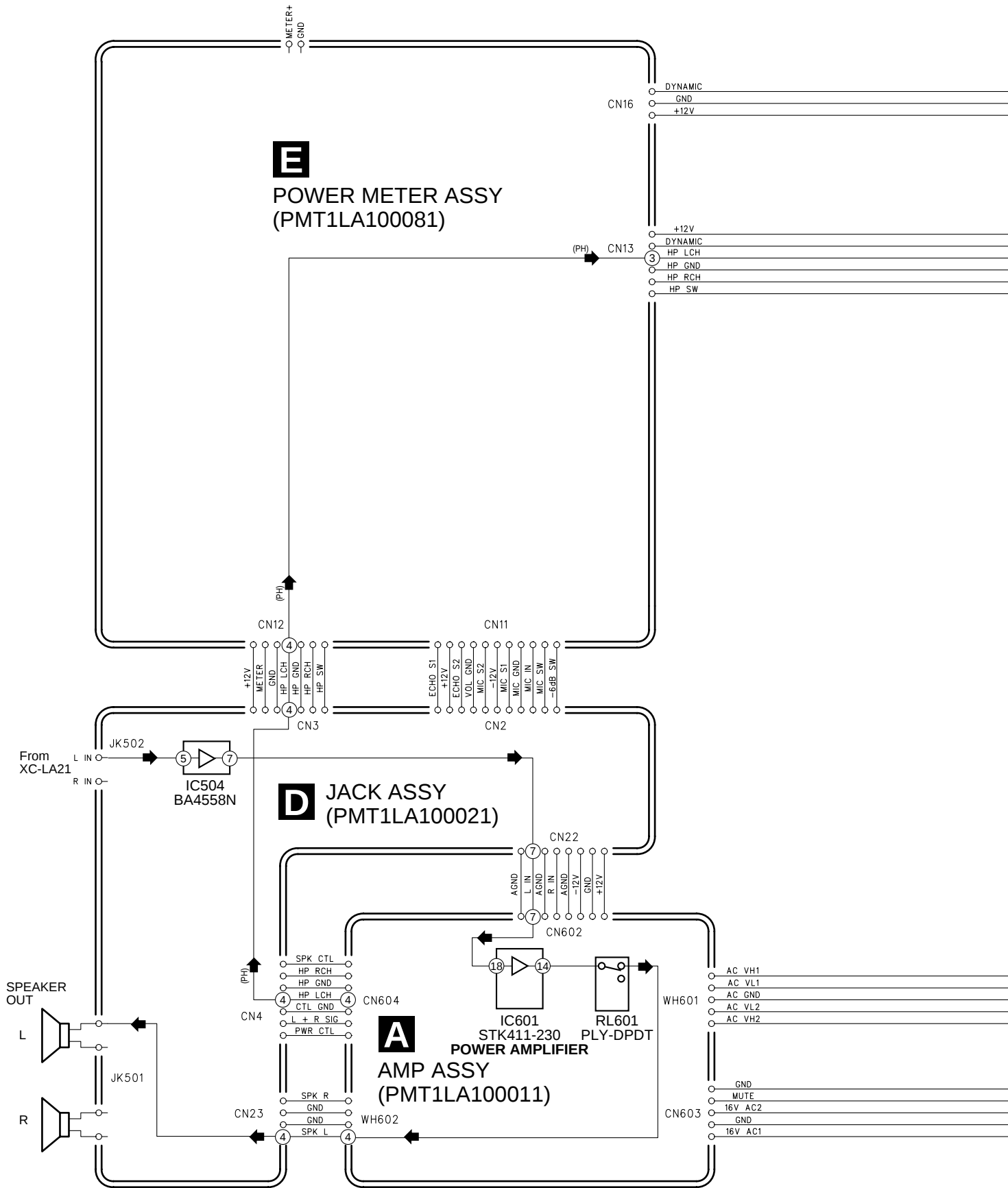
(2) CONTRAST TABLE

M-LA21/DBDXCN and DDXCN/AR are constructed the same except for the following :

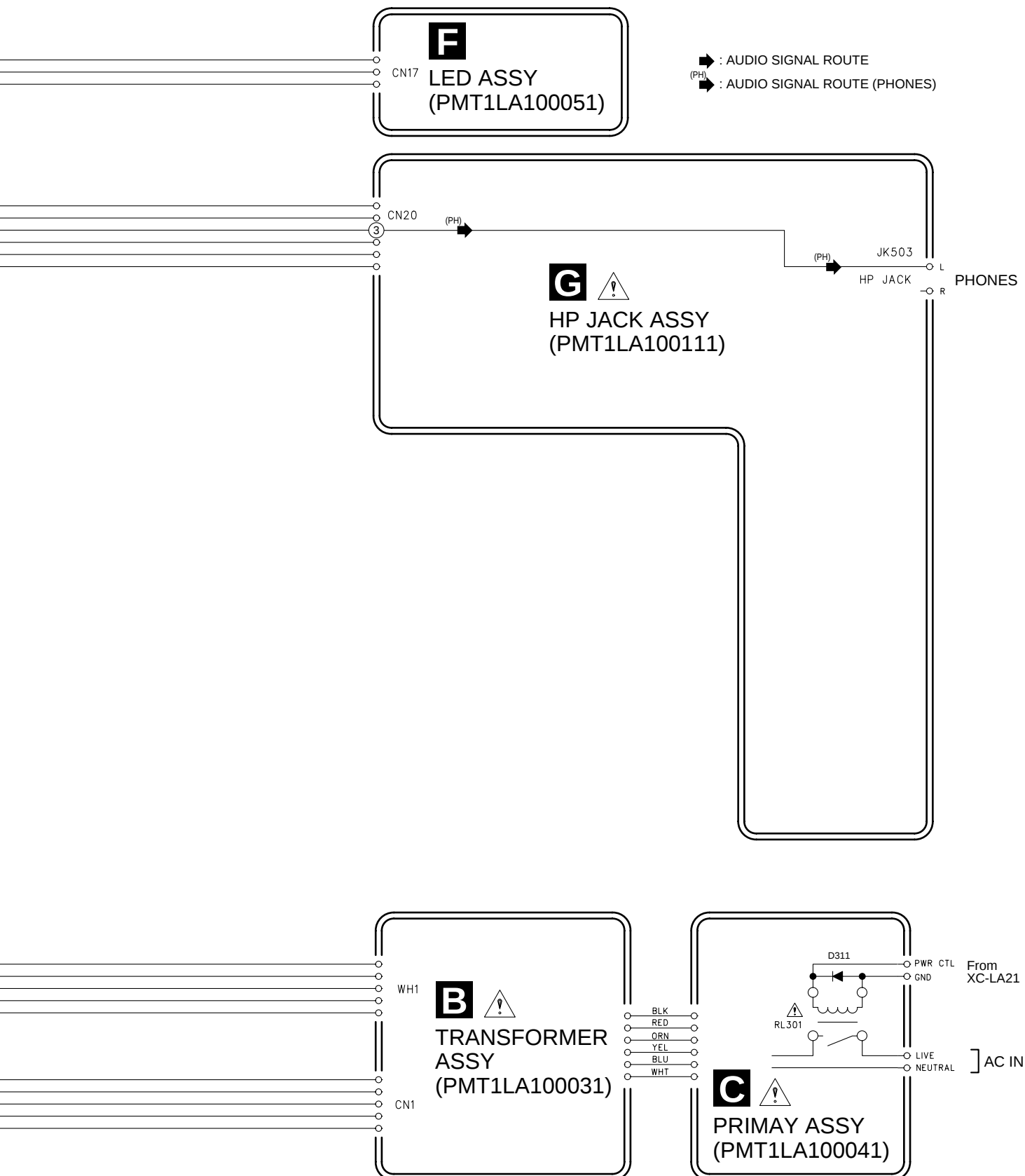
Mark	No.	Symbol and Description	Part No.		Remarks
			M-LA21 /DBDXCN	M-LA21 /DDXCN/AR	
△	19	AC Cord	134250220000	134220120016	
	20	Back Cover	500PMT303000	500PMT388000	
	46	EMC Label	809PMT394030	Not used	
	47	Back Label	809PMT396040	809PMT396060	
	56	Caution Label	Not used	809PMT394070	
	57	AC Cord Label	Not used	809PMT394100	

3. SCHEMATIC DIAGRAM

3.1 OVERALL WIRING DIAGRAM



Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".



A

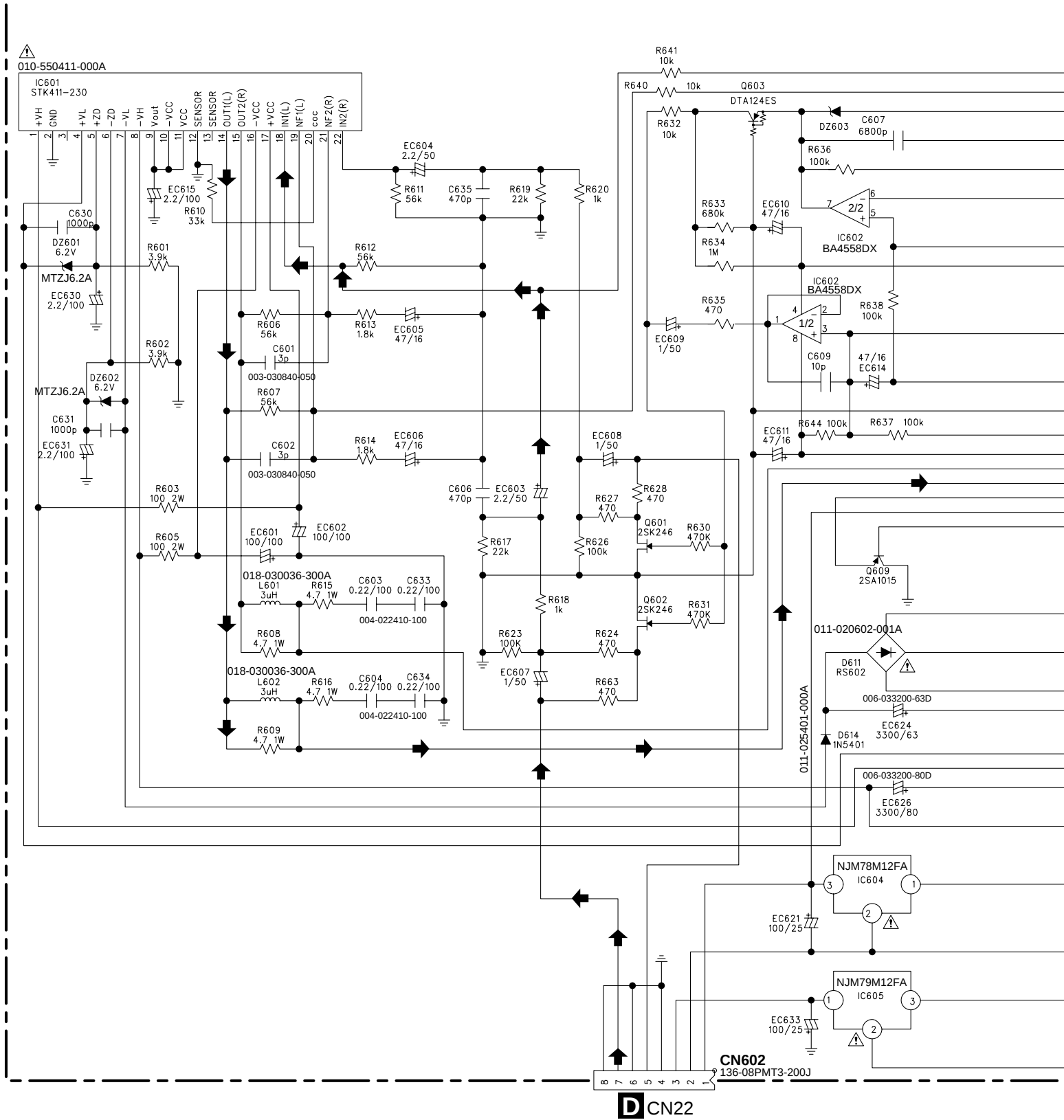
B

C

D

3.2 AMP, TRANSFORMER and PRIMARY ASSYS

A AMP ASSY (PMT1LA100011)

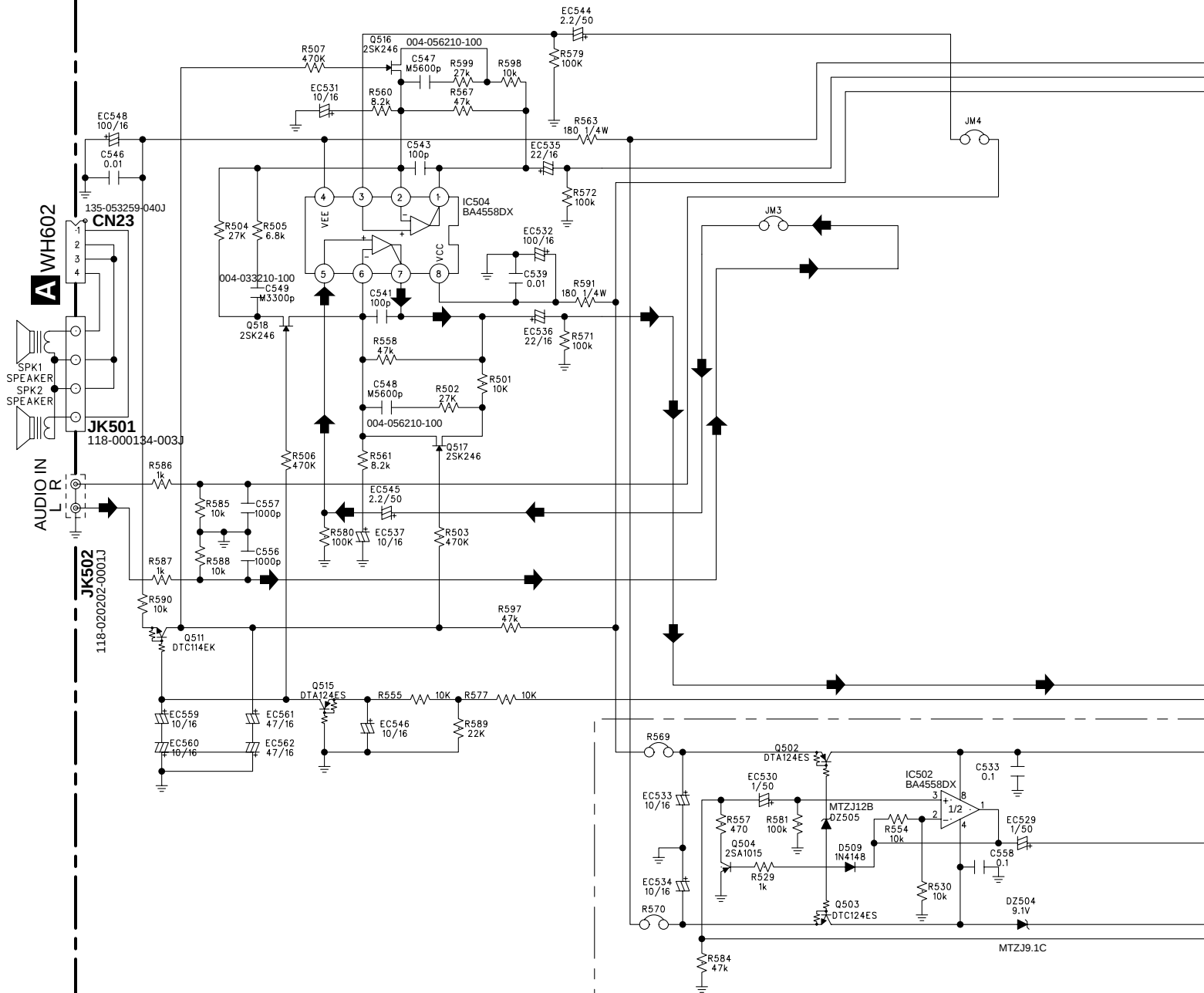




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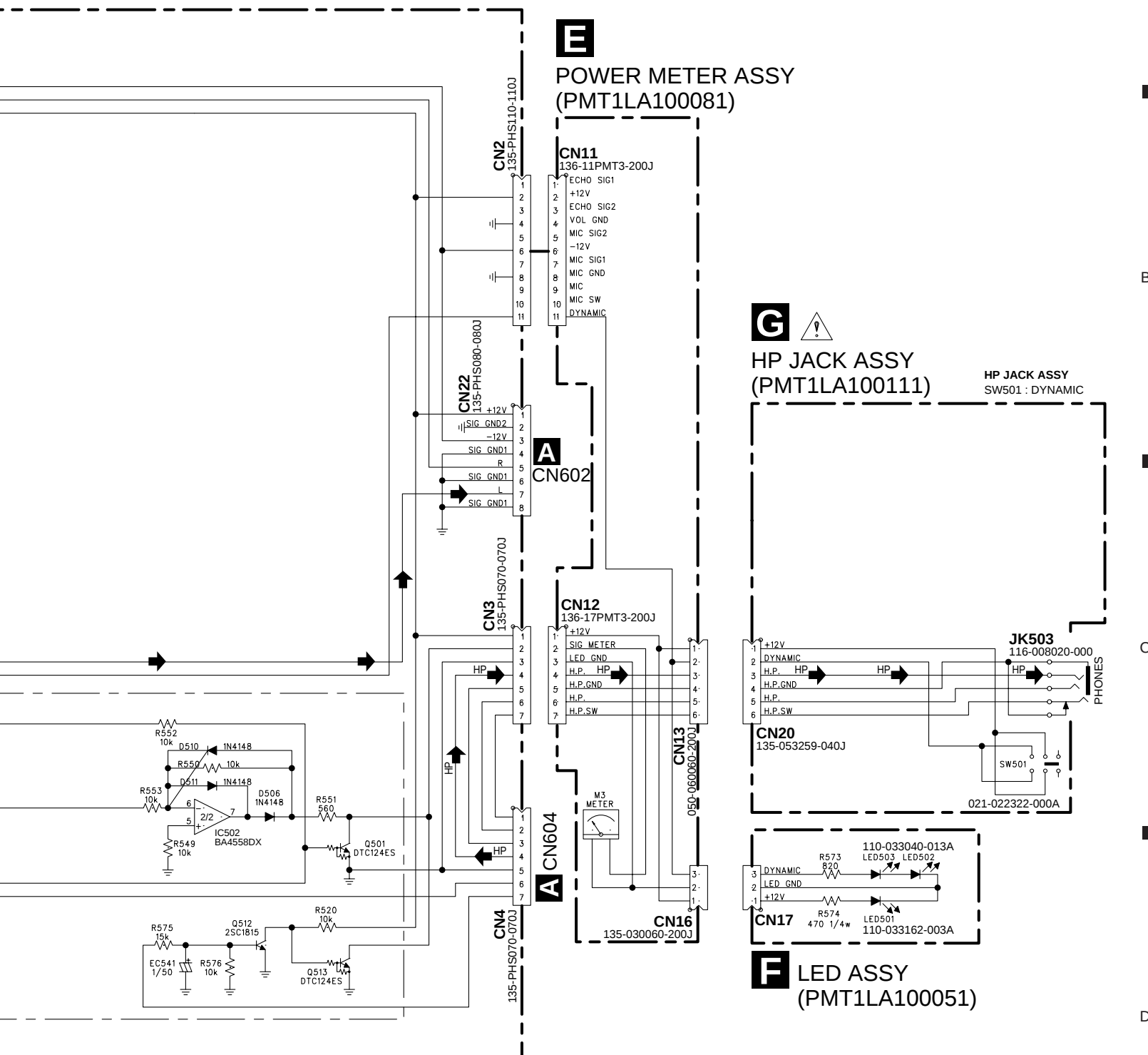
3.3 JACK, POWER METER, LED and HP JACK ASSYS

D JACK ASSY (PMT1LA100021)



➡ : AUDIO SIGNAL ROUTE (L ch)

HP ➡ : AUDIO SIGNAL ROUTE (PHONES)

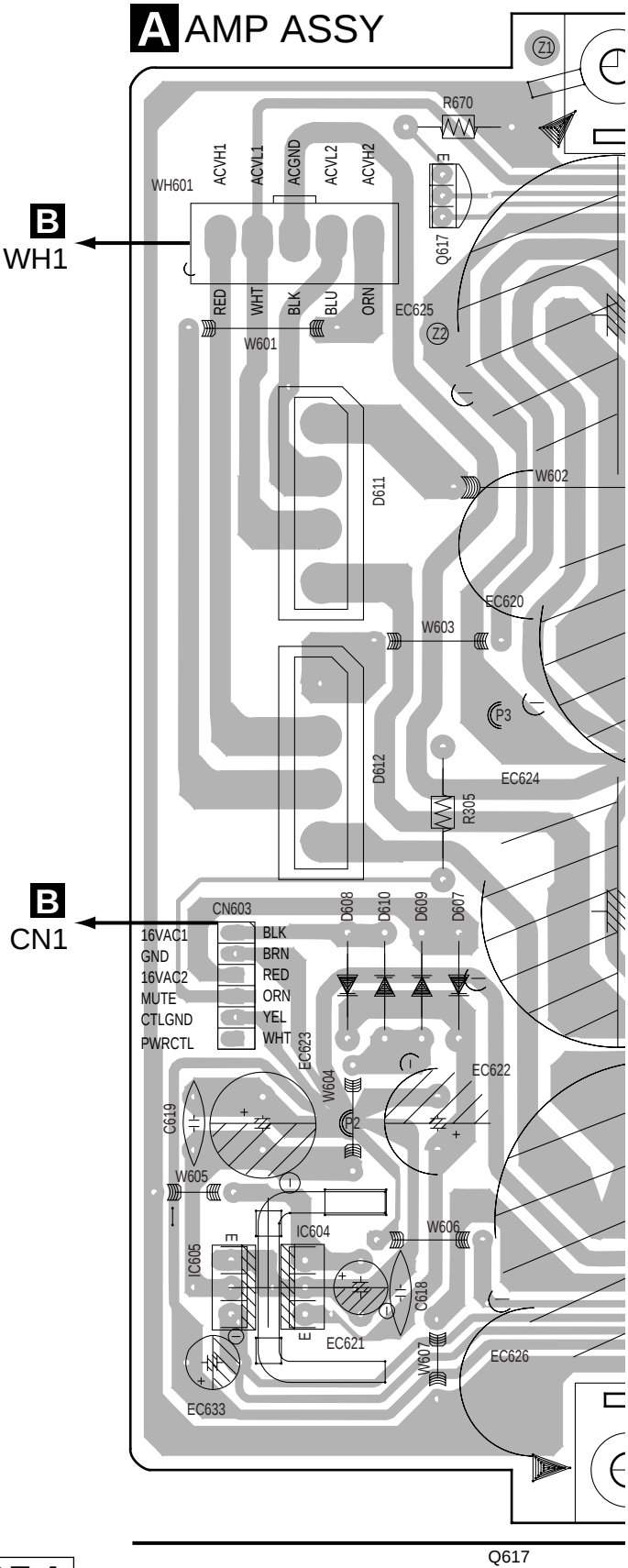
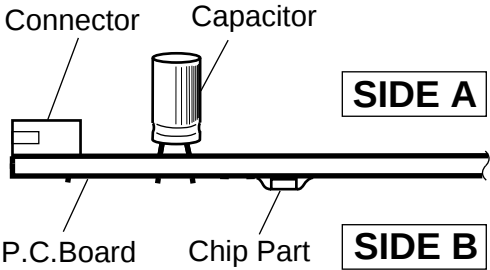


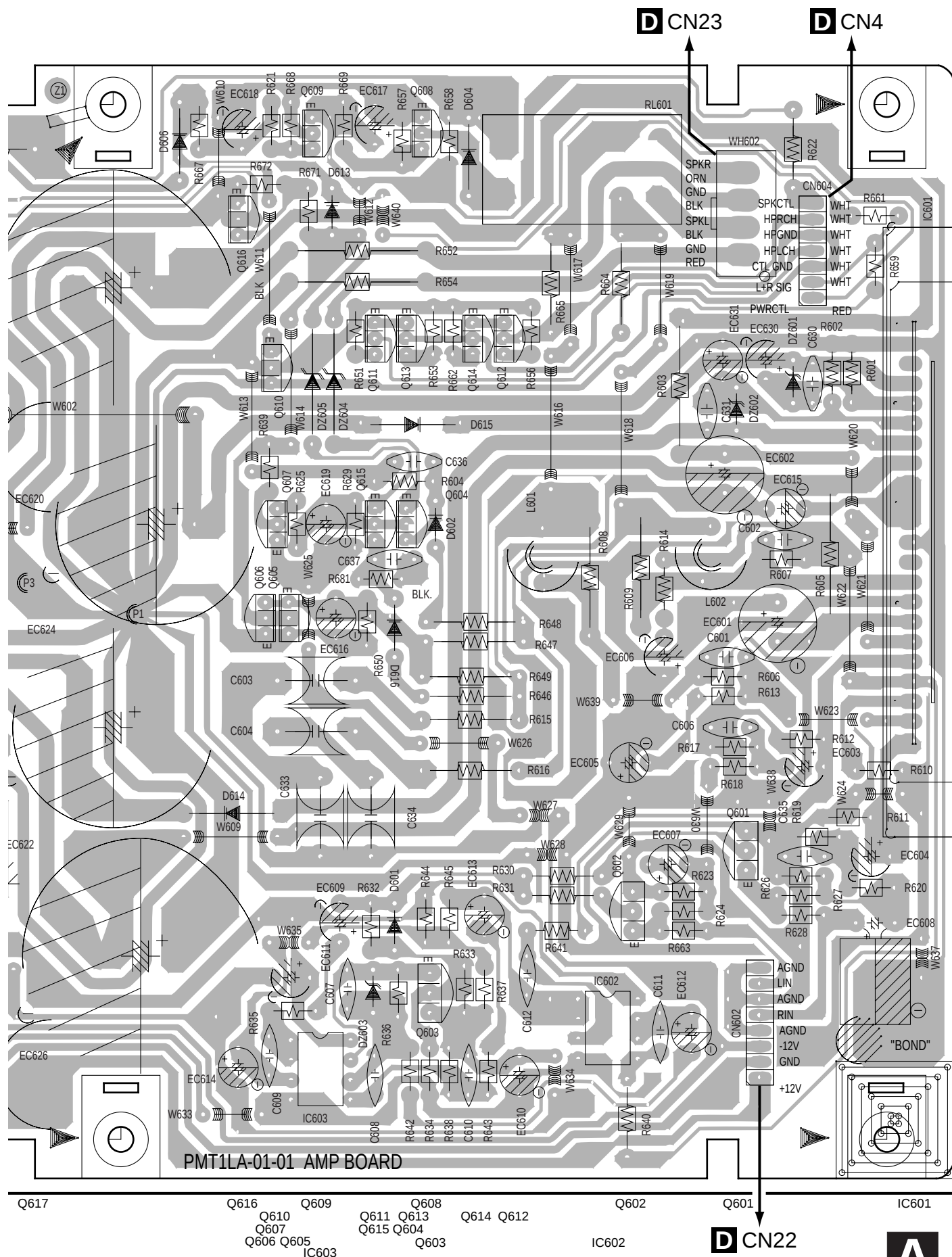
4. PCB CONNECTION DIAGRAM

4.1 AMP ASSY

NOTE FOR PCB DIAGRAMS :

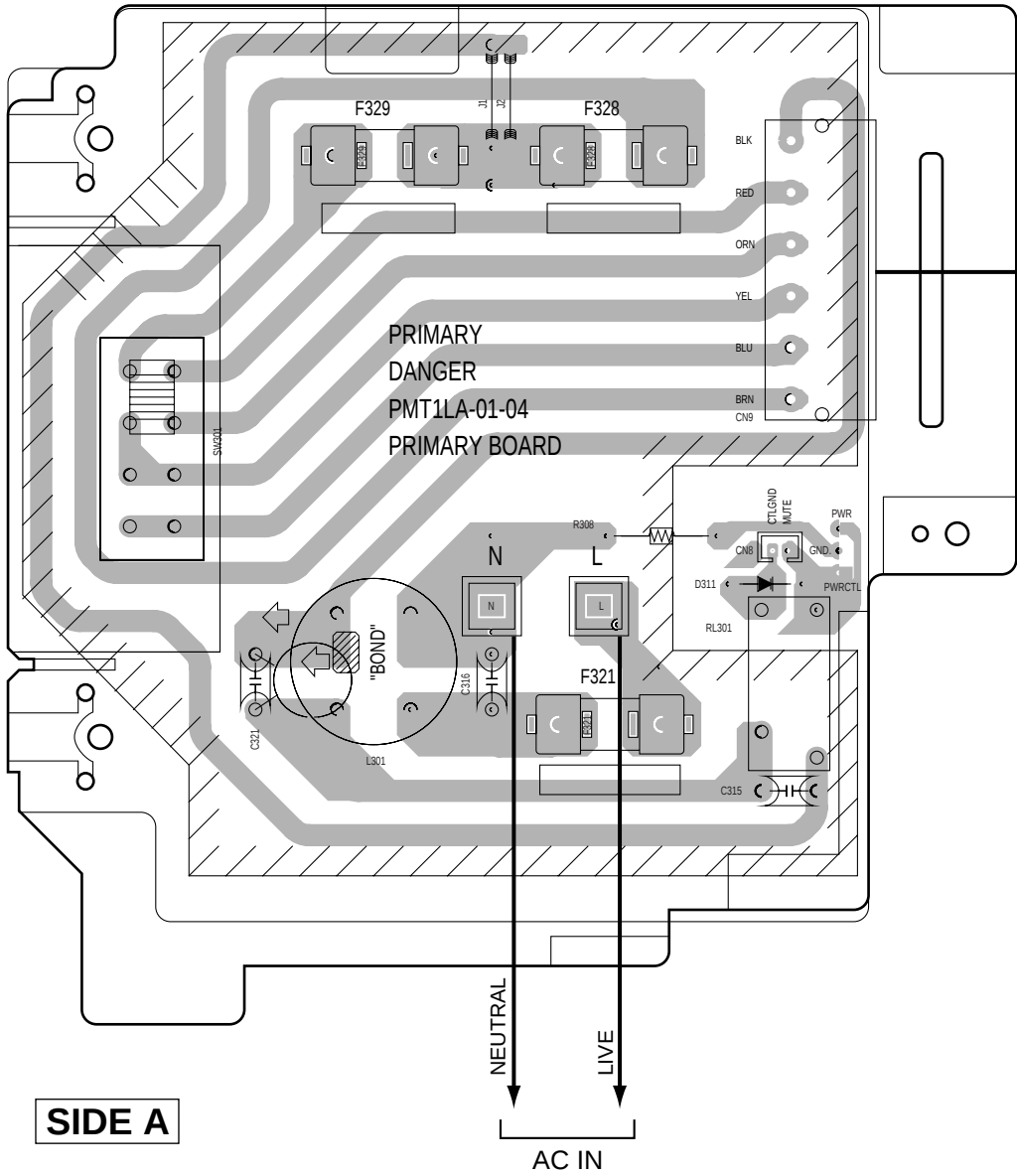
- Part numbers in PCB diagrams match those in the schematic diagrams.
- The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.
- View point of PCB diagrams.



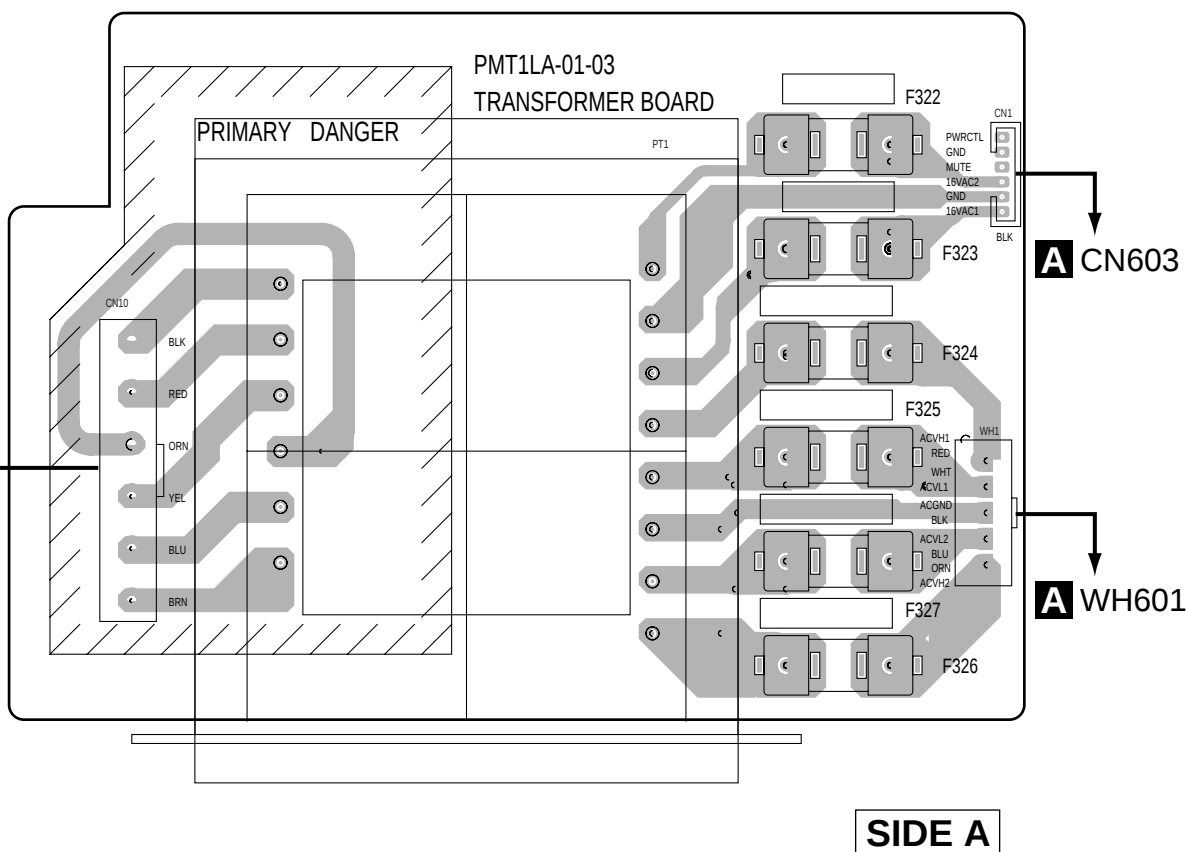


4.2 TRANSFORMER and PRIMARY ASSYS

C PRIMARY ASSY

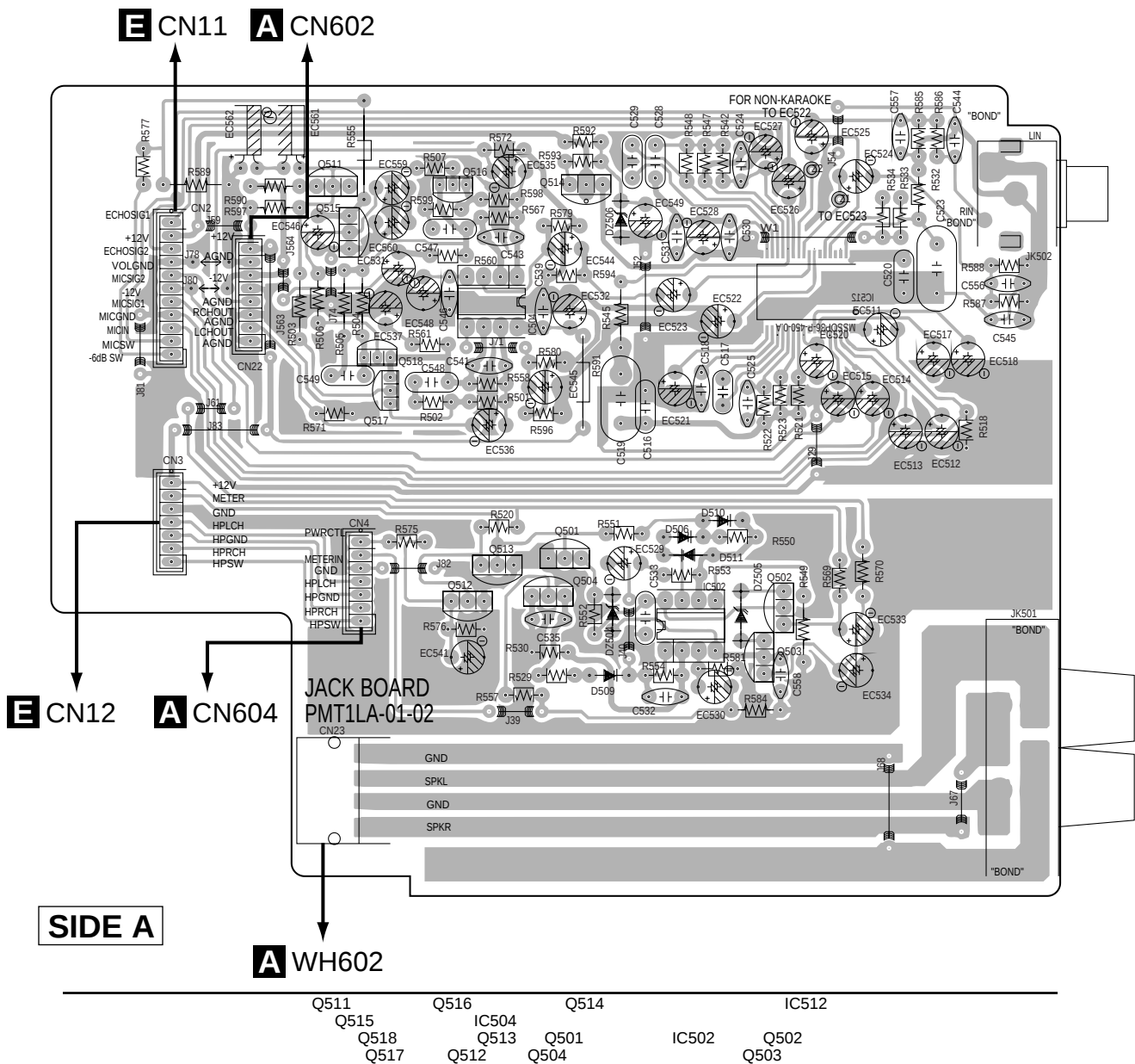


B TRANSFORMER ASSY

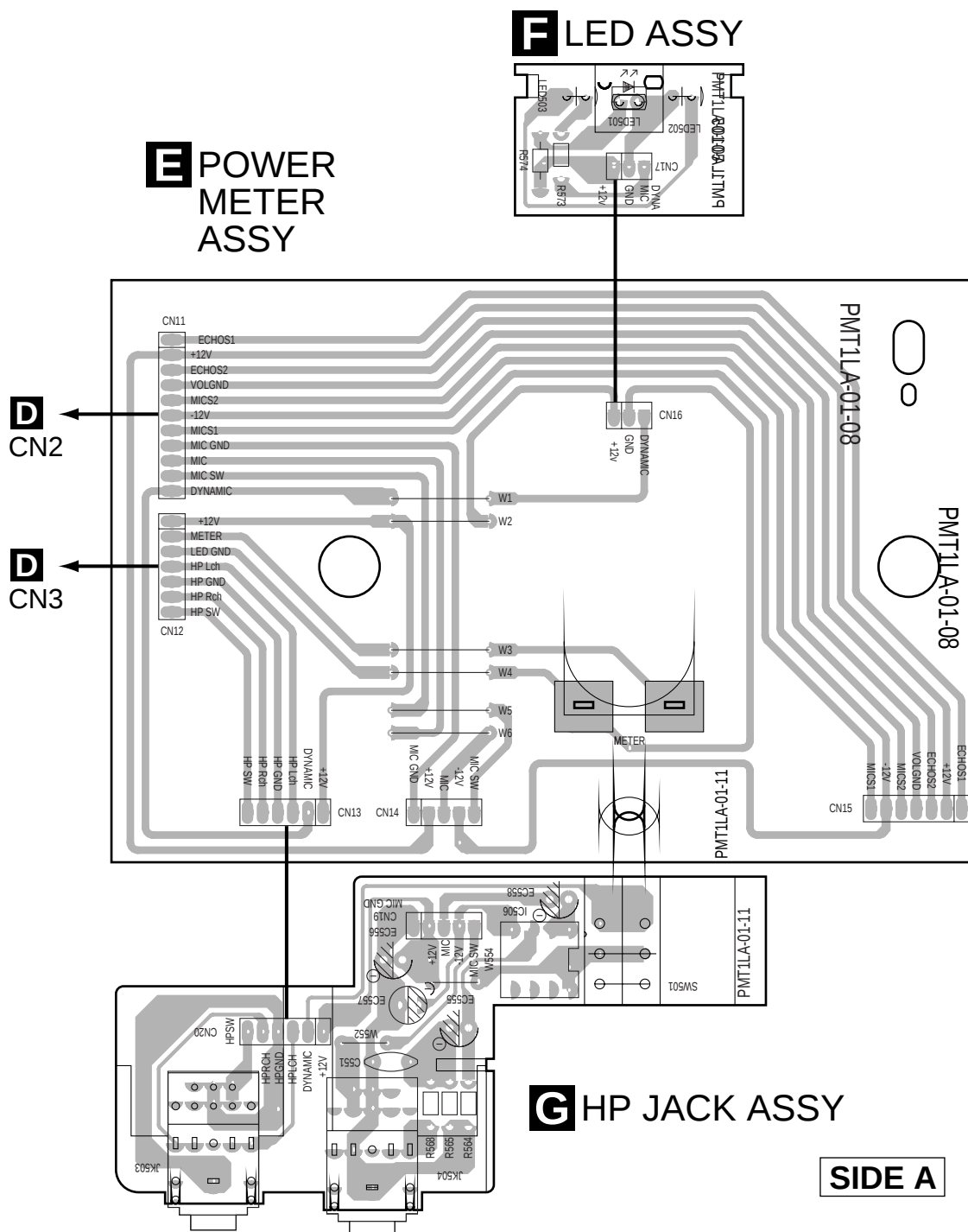


4.3 JACK ASSY

D JACK ASSY



4.4 POWER METER, LED and HP JACK ASSYS



5. PCB PARTS LIST

NOTES: ●Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
●The Δ mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.
●When ordering resistors, first convert resistance values into code form as shown in the following examples.
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).
560 Ω → 56 × 10¹ → 561 RD1/4PU 5 6 1 J
47k Ω → 47 × 10³ → 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).
5.62k Ω → 562 × 10¹ → 5621 RN1/4PC 5 6 2 1 F

Mark	No.	Description	Part No.
LIST OF ASSEMBLIES			
		AMP ASSY	PMT1LA100011
Δ		TRANSFORMER ASSY	PMT1LA100031
Δ		PRIMARY ASSY	PMT1LA100041
		JACK SSY	PMT1LA100021
		POWER METER AASSY	PMT1LA100081
		LED ASSY	PMT1LA100051
Δ		HP JACK ASSY	PMT1LA100111

A AMP ASSY
SEMICONDUCTORS

Δ	IC601 (STK411-230)	010-550411-000A
	IC602,IC603	BA4558DX
Δ	IC604	NJM78M12FA
Δ	IC605	NJM79M12FA
	Q601,Q602	2SK246
	Q603	DTA124ES
	Q605-Q608,Q616	2SC1815
	Q611-Q614	2SD1468S
	Q604,Q609,Q615	2SA1015
	Q610,Q617 (DTA114YS)	008-801144-000A
	D602,D616	1N4148
Δ	D604,D606 (RECTIFIER IN-4001B)	011-024001-000A
Δ	D607-D610 (RECTIFIER J-05)	011-020005-000A
Δ	D611,D612 (BRIDGE RECTIFIER)	011-020602-001A
	D614,D615 (RECTIFIER IN-5401BL)	011-025401-000A
	BZ604,BZ605	MTZJ3.0A
	DZ601,DZ602	MTZJ6.2A

COILS

L601,L602 (3μH)	018-030036-300A
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RELAY

RL601 (12V OSA-SS-212DM5)	128-122125-000A
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CAPACITORS

C603,C604,C633,C634 (MYLAR CAP 0.22 uF/100V)	004-022410-100
C606,C635	CKCYB471K50
C607,C610	CKCYB682K50
C608,C609,C611,C612	CCCCH100D50

Mark	No.	Description	Part No.
	C618,C619		CKCYB103K50
	C630,C631		CKCYB102K50
	C636,C637		CKCYB101K50
	C601,C602		CCCCH030D50
	EC607-EC609,EC618		CEAT1R0M50
	EC615,EC630,EC631		CEAT2R2M2A
	EC603,EC604		CEAT2R2M50
	EC619		CEAT100M50
	EC601,EC602		CEAT101M2A
	EC621,EC633		CEAT101M25
	EC616		CEAT221M16
	EC617		CEAT331M10
	EC620,EC624 (ELECT3300μF/63V)		006-033200-63D
	EC625,EC626 (ELECT3300μF/80V)		006-033200-80D
	EC605,EC606,EC610-EC614		CEAT470M16
	EC622,EC623		CEAT471M25

RESISTORS

R603,R605	RS2LMF101J
R608,R609,R615,R616	RS1LMF4R7J
R652,R654	RS3LMFR22J
R664,R665	RS1LMF681J
Other Resistors	RD1/4PU□□□J

OTHERS

CN602	HSG PMT3-8A JST PHR-	136-08PMT3-200J
CN604	HSG PMT3-7C JST PHR-	136-07PMT3-202J
WH602	HSG MOLEX 51067-0400	136-04PMT3-350J
WH601	HSG MOLEX 51067-0500	136-05PMT3-350J
CN603	HSG PMT3-6A JST PHR-	136-06PMT3-200J

Δ	JP WIRE AWG22 80MM B	051-275080-009J
Δ	JP WIRE AWG26 80MM B	051-675080-009J
	ROUND PIN	137-500001-000J

B TRANSFORMER ASSY

OTHERS

CN1	HEADER CTL 6 PINS	135-PHS060-060J
WH1	HEADER MOLEX 5 PINS	135-053258-050J
	FUSE HOLDER 7900,HT	550-790000-000J

Mark	No.	Description	Part No.
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C PRIMARY ASSY

SEMICONDUCTOR

△	D311 (RECTIFIER IN-4001B)	011-024001-000A
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RELAY • SWITCH

△	RL301 (RELAY 9 OSA-SS-212DM)	128-090109-000A
	SW301 (SLIDE SW VOLT.SELECTOR)	025-230041-000A

CAPACITORS

△	C315,C321 (CERAMIC CAP 0.01μF)	003-010320-250A
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OTHERS

CN8	HEADER CTL 2 PINS	135-PHS020-020J
	JP WIRE AWG22 BROWN	054-010150-010J
	JP WIRE AWG22 ORANGE	054-010150-030J
	JP WIRE AWG22 BLUE	054-010150-050J
	JP WIRE AWG22 RED	054-010150-061J
	JP WIRE AWG22 BLACK	054-010150-093J
	JP WIRE AWG22 YELLOW	054-010150-100J
	AC CONTACT TERMINAL	137-400001-000J
	FUSE HOLDER 7900,HT	550-790000-000J

D JACK ASSY

SEMICONDUCTORS

IC502,IC504	BA4558DX
Q502,Q515	DTA124ES
Q501,Q503,Q513	DTC124ES
Q504	2SA1015
Q511	DTC114ES
Q512	2SC1815
Q516-Q518	2SK246
D506,D509,D510,D511	1N4148
DZ504	MTZJ9.0C
DZ505	MTZJ12B

CAPACITORS

C541,C543	CKCYB101K50
C539,C546	CKCYF103Z50
C547,C548 (MYLAR CAP 5600pF)	004-056210-100
C549 (MYLAR CAP 3300pF)	004-033210-100
C556,C557	CKCYB102K50

C533,C558	CGCYF104Z25
EC544,EC545	CEJQ2R2M50
EC532,EC548	CEJQ101M16
EC535,EC536	CEJQ220M16
EC561,EC562	CEJQ470M16

EC531,EC533,EC534,EC537	CEJQ100M16
EC546,EC559,EC560	CEJQ100M16
EC529,EC530,EC541	CEJQ1R0M50

RESISTORS

All Resistors	RD1/4PU□□□□
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OTHERS

CN3,CN4	HEADER CTL 7 PINS	135-PHS070-070J
CN22	HEADER CTL 8 PINS	135-PHS080-080J
CN2	HEADER CTL 11 PINS	135-PHS110-110J
JK501	PUSH TERMINAL BOARD	118-000134-003J
JK502	PIN JACK BOARD	118-020202-001J

Mark	No.	Description	Part No.
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		JP WIRE AWG26 50MM R	051-675050-006J
		JP WIRE AWG26 50MM B	051-675050-009J
CN23		HEDER MOLEX 4PINS 53	135-053259-040J

E POWER METER ASSY

OTHERS

CN11	HSG PMT3-11A JST	136-11PMT3-200J
CN12	HSG PMT3-7A JST	136-07PMT3-200J
CN13	CONN PIN 6 PINS	050-060060-200J
CN16	CONN PIN 3 PINS	050-030060-200J

F LED ASSY

SEMICONDUCTORS

LED502,LED503 (LED-R-3MM&-S-STP)	110-033040-013A
LED501 (LED-BL-3MM&-S-&&&)	110-033162-003A

RESISTORS

All Resistors	RD1/4PU□□□□
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G HP JACK ASSY

SWITCH

SW501 (PUSH BOTTON SWICH 2P2T)	021-022322-000A
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OTHERS

JK503	HEADPHONE JACK ST	116-008020-000
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6. ADJUSTMENT

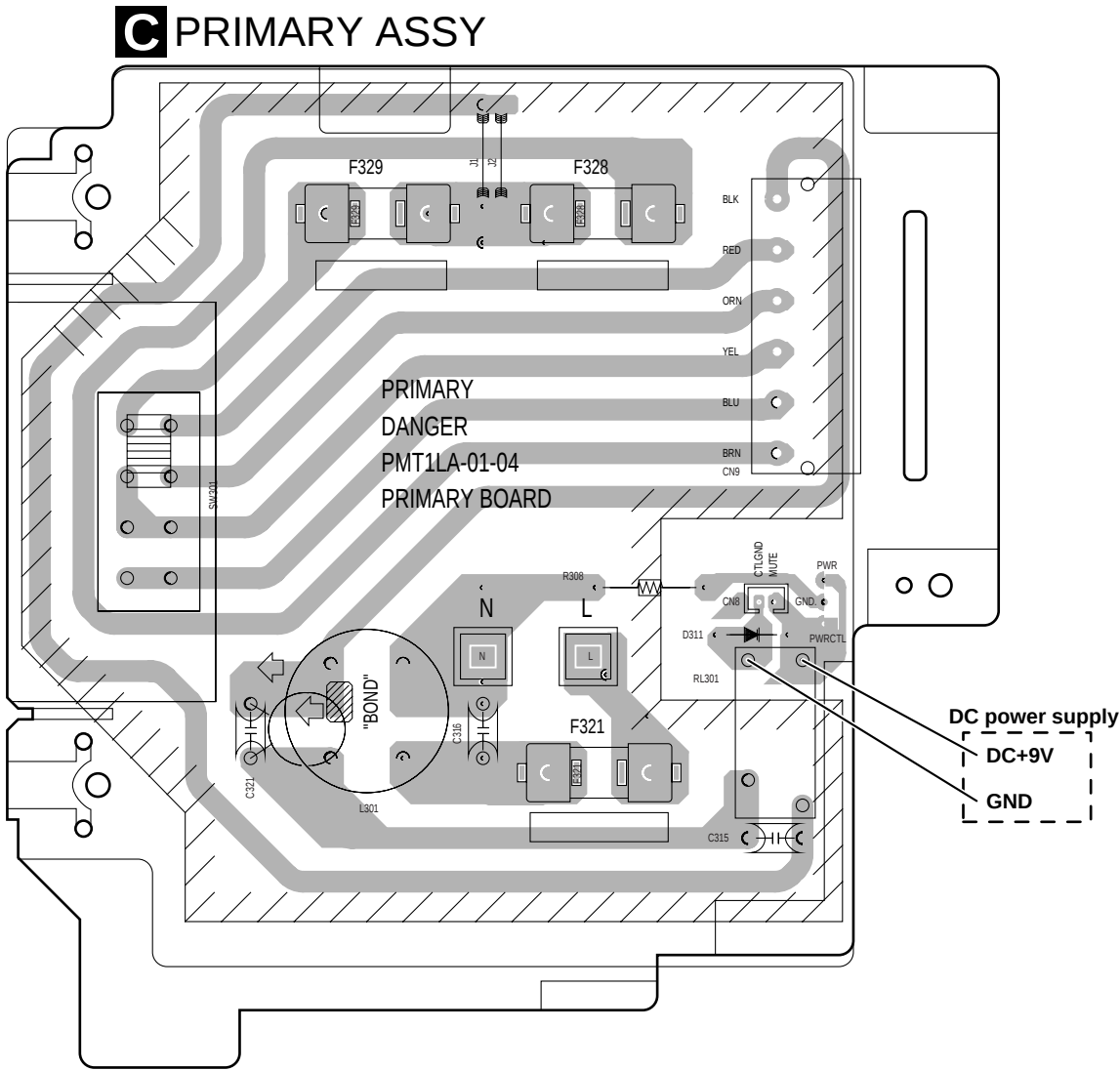
There is no information to be shown in this chapter.

7. GENERAL INFORMATION

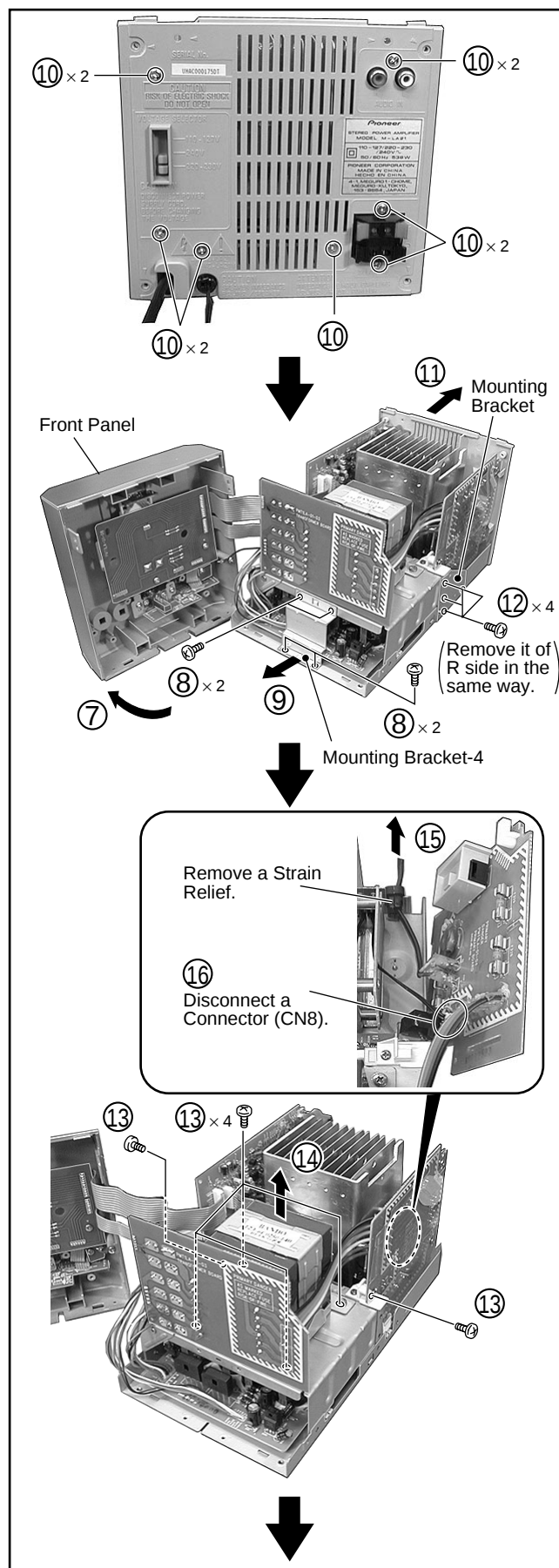
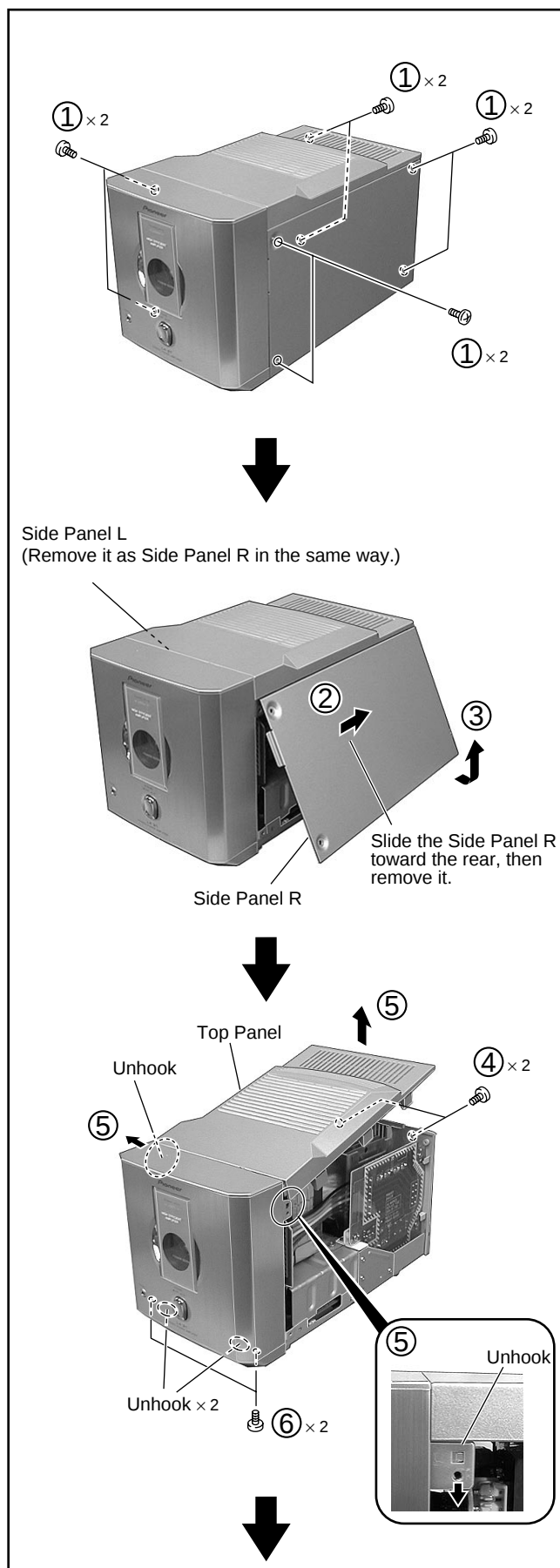
7.1 DIAGNOSIS

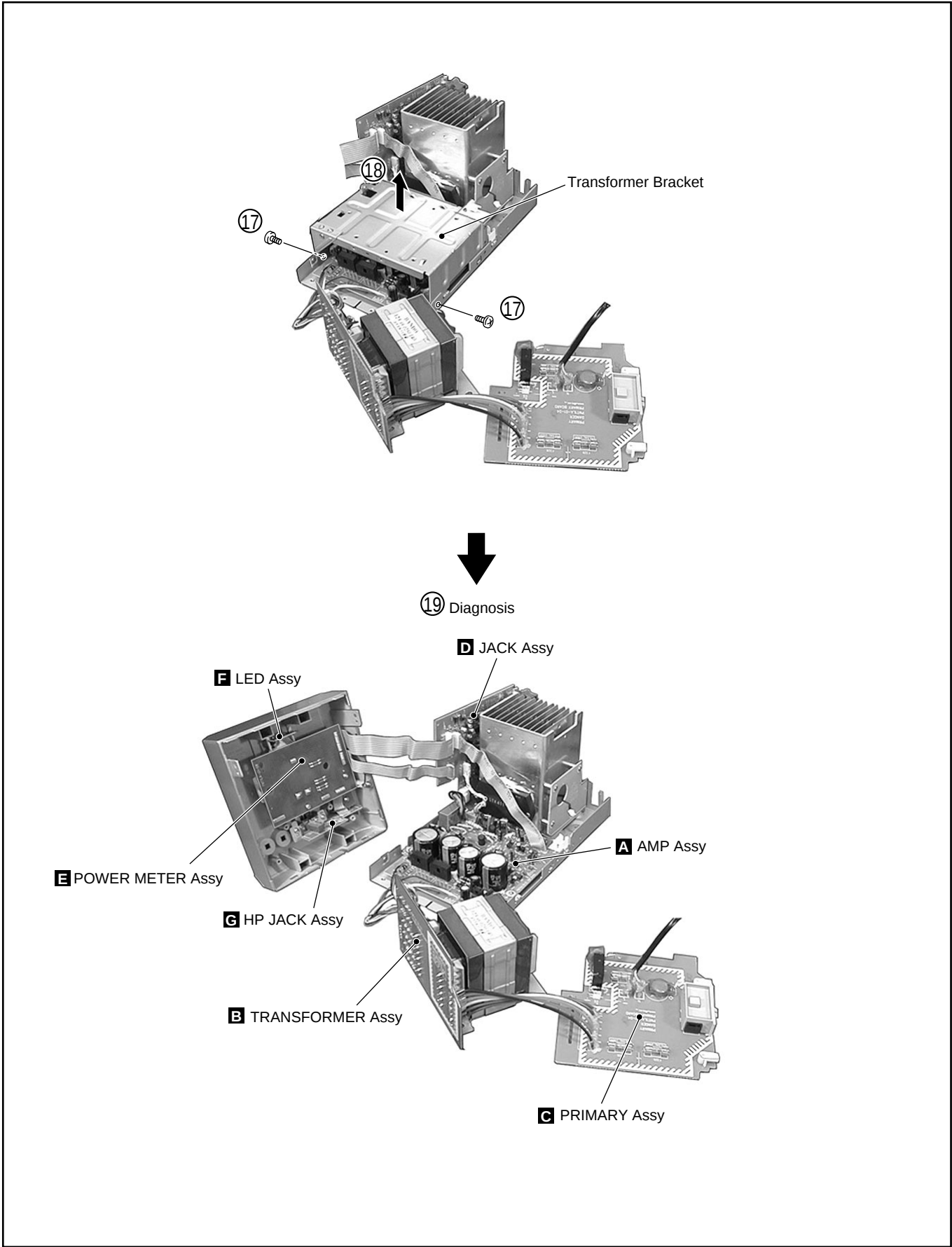
7.1.1 SINGLE OPERATION METHOD

Please supply +9V from DC power supply to the following point.



7.1.2 DISASSEMBLY

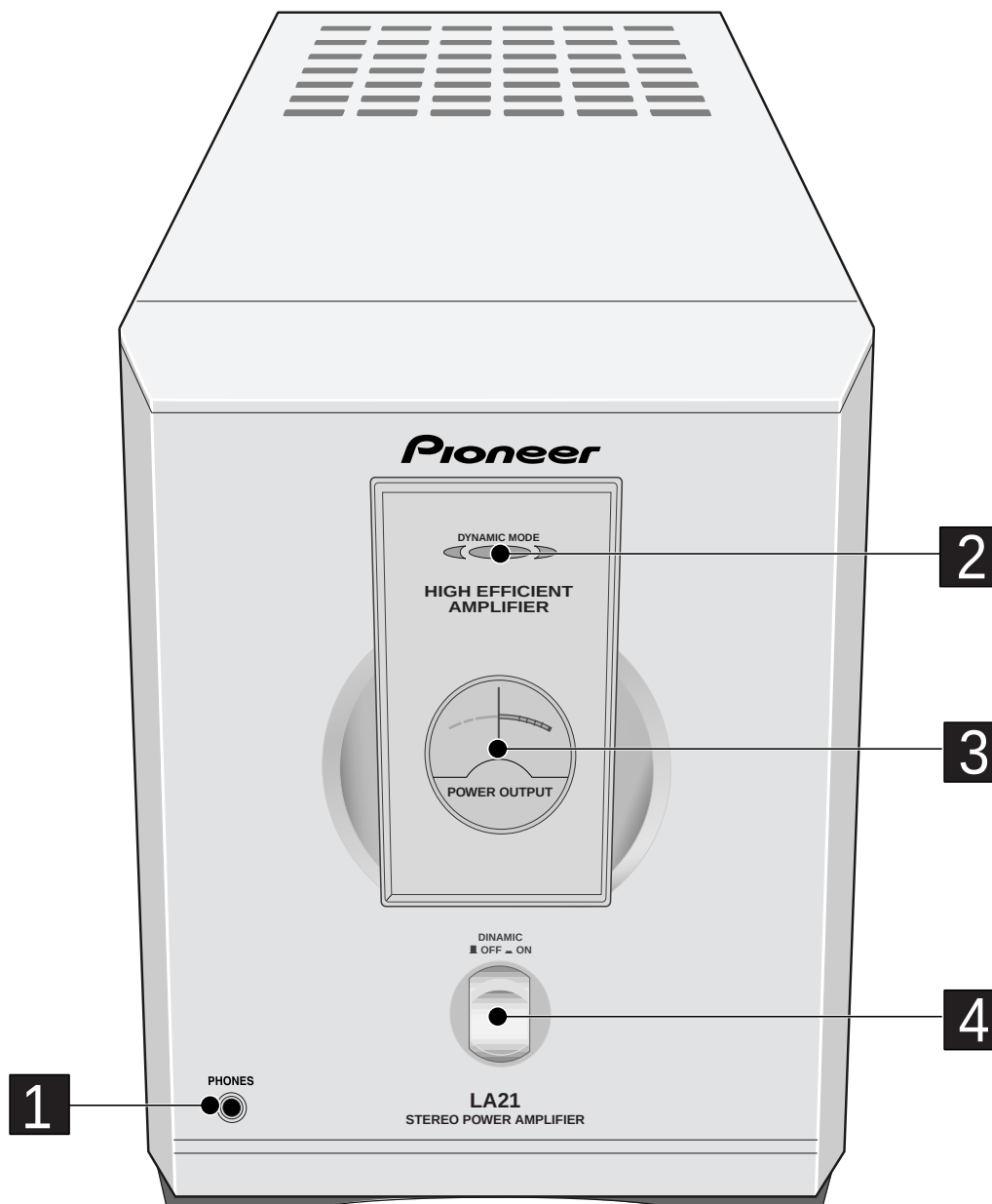




8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

■ Front Panel



- | | |
|--|--|
| <p>1 PHONES socket – Plug in a pair of headphones for private listening.</p> <p>2 DYNAMIC MODE indicator – Lights when the DYNAMIC is switched on.</p> | <p>3 POWER OUTPUT meter – Shows the output level of the currently selected source.</p> <p>4 DYNAMIC – Switch on for extra power in the bass and a richer treble.</p> |
|--|--|

8.2 SPECIFICATIONS

Power Section & Miscellaneous

Power Requirements

..... AC 110-127/220-230/240 V (switchable),
50/60 Hz

Power Consumption (ON mode)
(Total including XC-LA21) 538 W

Power Consumption (Standby mode) 1 W

Dimensions

Stereo power amplifier 160(W) x 176(H) x 315(D) mm

Weight

Stereo power amplifier 5.1 kg

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