

PA-200/400 SERVICE NOTES

POWERED MIXER

ERRATA & SUPPLEMENT is attached at the end of the page.
最終頁に正誤表&追加情報があります。

Third Edition

*This Service Notes includes the contents and corrections on the First and Second Editions and make it obsolete.
*本サービスノートには第一版、第二版の内容及び訂正が含まれていますので、第一版と第二版は廃版とします。

NOTICE

This Service Notes covers three types of products which are defined by their serial numbers as indicated below.
In this Notes, all explanations are based on the following definitions.
For full information on the differences between Types A, B and C, see the "APPENDIX: CROSS-COMPARISON OF BOARDS AND PARTS" (P.30).

Type A: PA-200 (SNo.ZA50100-ZB21049) Type B: PA-200 (SNo.ZB31150-ZC41899) Type C: PA-200 (SNo.ZD11900-up/以降)
PA-400 (SNo.ZA50100-ZB21149) PA-400 (SNo.ZB31150-ZC52849) PA-400 (SNo.ZC62850-up/以降)

注意

本サービスノートには、3タイプの製品が掲載されています。
それぞれシリアル・ナンバーで、タイプを分けて下記のように定義します。
以後、本文中では下記の定義に従って説明していきます。
Type A, Type B, Type C の違いの詳細は、“付録 基板と部品の相関表” (p.30) を参照して下さい。

TABLE OF CONTENTS

目次

Page

SPECIFICATION	仕様	1
FRONT PANEL	フロントパネル	2, 3
REAR PANEL	リアパネル	4
EXPLODED VIEW	分解図	5
DISASSEMBLING AND REASSEMBLING PROCEDURE	分解, 組立手順	6 ~ 9
PARTS LIST	パーツリスト	9 ~ 12
RE: TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)	Main Amp Board (230/240V) の Type A, Type B, Type C について	13, 14
ADJUSTMENT	調整仕様	14
IC DATA	IC データ	15
CHANGE INFORMATION	変更案内	16, 17
BLOCK DIAGRAM	ブロック図	18
WIRING DIAGRAM	ワイヤリングダイヤグラム	18, 19
MASTER BOARD	MASTER BOARD	20, 21
CHANNEL BOARD	CHANNEL BOARD	22, 23
MAIN AMP BOARD	MAIN AMP BOARD	24 ~ 28
REVERB BOARD	REVERB BOARD	29
CORRELATION TABLE (PCBs and Parts)	基板と部品の相関表	30

Input/Output Standard/入力/出力 標準値

Input Socket	Input Sensitivity	Rated Input Level	Input Impedance	Recommended Source Impedance	Type of Connectors	
CHANNEL INPUT (SENS=MAX) (PAD=OFF)	CH1-8(6) (XLR-BAL)	-66 dBm (0.39 mV)	-60 dBm (0.78 mV)	3 kΩ	Less than 600 Ω	XLR-3-31 (XLR Connector)
	CH1-8(6) (PHONE-BAL)	-66 dBm (0.39 mV)	-60 dBm (0.78 mV)	8.5 kΩ	Less than 1 kΩ	STEREO PHONE
	CH1-8(6) (PHONE-UNBAL)	-66 dBm (0.39 mV)	-60 dBm (0.78 mV)	5 kΩ	Less than 1 kΩ	STEREO PHONE
STEREO CHANNEL INPUT (SENS=MAX)	AUX1,2,4,5	-26 dBm (38.8 mV)	-20 dBm (77.5 mV)	11 kΩ	Less than 2 kΩ	RCA Phono
	AUX3,6	-26 dBm (38.8 mV)	-20 dBm (77.5 mV)	11 kΩ (STEREO) 5.5 kΩ (MONO)	Less than 2 kΩ (STEREO) Less than 1 kΩ (MONO)	PHONE
INSERT (RETURN)	CH7,8(5,6)	-6 dBm (398 mV)	0 dBm (775 mV)	12 kΩ	Less than 2 kΩ	STEREO PHONE
RETURN	RTN 1	-2 dBm (615 mV)	+4 dBm (1.23 V)	10 kΩ (STEREO) 5 kΩ (MONO)	Less than 2 kΩ (STEREO) Less than 1 kΩ (MONO)	PHONE
	RTN 2	-26 dBm (38.8 mV)	-20 dBm (77.5 mV)	10 kΩ (STEREO) 5 kΩ (MONO)	Less than 2 kΩ (STEREO) Less than 1 kΩ (MONO)	PHONE

Input Socket	Input Sensitivity	Rated Input Level	Input Impedance	Recommended Source Impedance	Type of Connectors
POWER AMP IN (L, R, MONO)	-2 dBm (615 mV)	+4 dBm (1.23 V)	18 kΩ	Less than 2 kΩ	PHONE

Output Socket	Rated output Sensitivity	Non-Clip Max. Output	Output Impedance	Recommended Load Impedance	Type of Connectors	
MASTER OUT	UNBALANCED	+4 dBm (1.23 V)	+20 dBm (7.75 V)	300 Ω	More than 3 kΩ	PHONE
		+4 dBm (1.23 V)	+20 dBm (7.75 V)	300 Ω	More than 3 kΩ	PHONE
SUB OUT	L,R	+4 dBm (1.23 V)	+20 dBm (7.75 V)	300 Ω	More than 3 kΩ	PHONE
		MONO	+4 dBm (1.23 V)	+20 dBm (7.75 V)	3 kΩ	More than 10 kΩ
INSERT (SEND)	CH7,8(5,6)	0 dBm (0.775 V)	+20 dBm (7.75 V)	300 Ω	More than 3 kΩ	STEREO PHONE
SEND	EFF.REV, MON	+4 dBm (1.23 V)	+20 dBm (7.75 V)	300 Ω	More than 3 kΩ	PHONE
REC OUT		-10 dBm (0.245 V)	+20 dBm (7.75 V)	300 Ω	More than 3 kΩ	RCA Phono
PHONES		100 mW ± 100 mW	100 Ω	More than 8 Ω	STEREO PHONE	

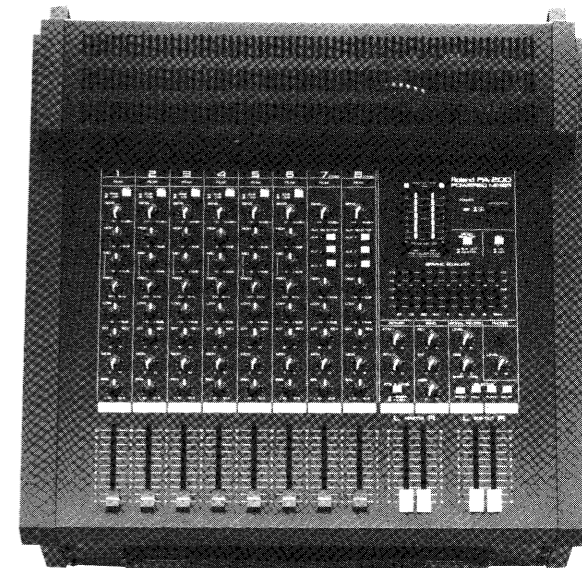
Output Socket	Rated output Sensitivity	Non-Clip Max. Output	Recommended Load Impedance	Type of Connectors
SPEAKERS OUT	STEREO 200W (100W) *2	28.3 (20 Vrms (4Ω)) 32.2 (21.9 Vrms (8Ω))	More than 4 Ω	PHONE, BINDING POST
		BTL 400W (200W) *3	56.5 Vrms (8Ω) (40 Vrms (8Ω))	More than 8 Ω

{ : PA-200 *1 : Both Channels 100 Ω Loaded
⊙ : 0 dBm=0.775 Vrms *2 : Both Channels 4 Ω Loaded
*3 : 8 Ω Loaded

PA-200 SPECIFICATION

- 1. Mixer Section (ミキサー部)
Frequency Response/周波数特性 15Hz - 25kHz +1/-2dB (SENS = min.)
Total Harmonic Distortion/全高調波歪 0.05% or less (20Hz - 20kHz rated output)
Noise Level/ノイズ・レベル (Input Shorted/入力ショート, IHF-A, Typ.)
Equivalent Input Noise/入力換算ノイズ・レベル -128dBm
Residual Noise/残留ノイズ・レベル -98dBm [All Fader :min.]
-82dBm [Master Fader :max.]
-76dBm [All channel Fader :min.]
-50dBm [All channel Fader :max.]
[All SENS. :min.]
[Master Fader :max.]
[All channel Fader :max.]
[All SENS. :max.]
- Crosstalk/クロストーク -70dB or less (1kHz Between channels)
-60dB or less (1kHz Between L and R)
- Equalizer/イコライザー
Normal Channel/ノーマル・チャンネル
HIGH EQ ±15dB (10kHz shelving type)
MID EQ ±15dB (0.2 - 5kHz peaking type)
LOW EQ ±15dB (100Hz shelving type)
Stereo Channel/ステレオ・チャンネル
HIGH EQ ±15dB (10kHz shelving type)
LOW EQ ±15dB (100Hz shelving type)
Graphic Equalizer/グラフィック・イコライザー
Frequencies/周波数 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16k [Hz]
Variable Width/可変幅 ±12dB
Digital Reverb/デジタル・リバーブ
Sampling Frequency/サンプリング周波数 31.25 kHz
Signal Processing/信号処理 16bits
Delay Time/ディレイ・タイム 50 ms - 480 ms
- 2. Power Amplifier Section (パワー・アンプ部)
Rated Output/定格出力
Stereo, both chan. 4ohm load/4Ω負荷時 100W x 2
Stereo, both chan. 8ohm load/8Ω負荷時 65W x 2
BTL, 8ohm load/8Ω負荷時 200W
Recommended load impedance/推奨負荷インピーダンス
Stereo more than 4ohms
BTL more than 8ohms
Frequency Response/周波数特性 10Hz - 50kHz (±1dB 1W/8ohm)

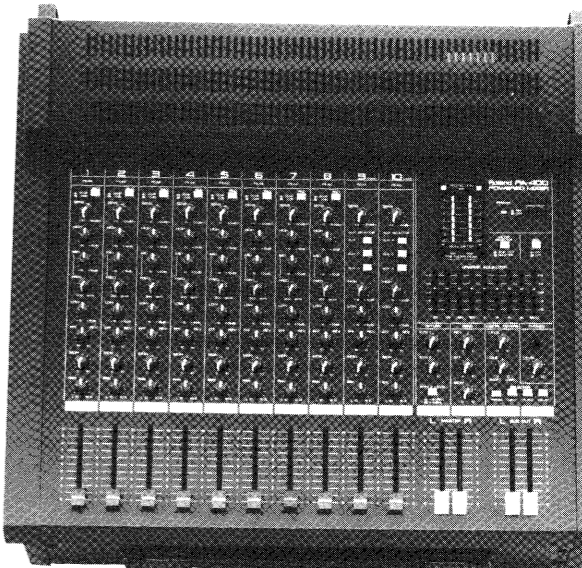
- Total Harmonic Distortion/全高調波歪
Stereo, both chan. 8ohm load/8Ω負荷時 0.1% or less (8ohm, 1kHz)
S/N Ratio/ S/N 比 102dB or greater (main in shorted/パワー・アンプ・イン・ショート, IHF-A, Typ.)
- 3. Others
Power/電源 AC 100/117/220/240V (50/60Hz)
Power Consumption/消費電力 140W (100V)
270VA, 220W (117V)
500VA (220/240V)
- Dimensions 460(W) x 501(D) x 235(H) mm
18-1/4(W) x 19-23/32(D) x 9-1/4 inch.
- Weight 14.7kg / 32 lb 7oz.
- Accessories Owner's Manual (English/Japanese common/共通):26035261



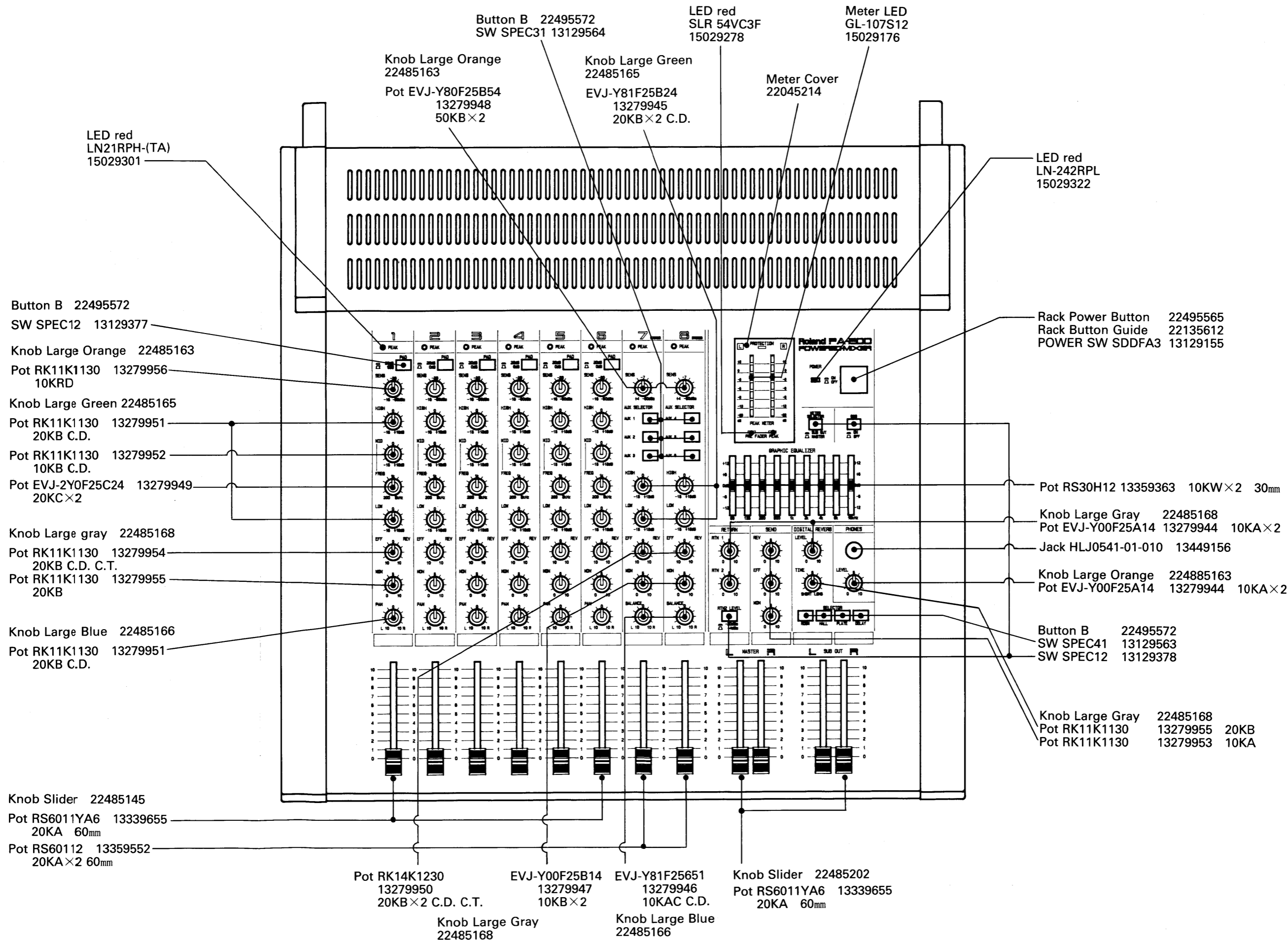
PA-400 SPECIFICATION

- 1. Mixer Section (ミキサー部)
Frequency Response/周波数特性 15Hz - 25kHz +1/-2dB (SENS-min.)
Total Harmonic Distortion/全高調波歪 0.05% or less (20Hz - 20kHz rated output)
Noise Level/ノイズ・レベル (Input Shorted/入力ショート, IHF-A, Typ.)
Equivalent Input Noise/入力換算ノイズ・レベル -128dBm
Residual Noise/残留ノイズ・レベル -81dBm [All Fader :min.]
-81dBm [Master Fader :max.]
-75dBm [All channel Fader :min.]
-48dBm [All channel Fader :max.]
[All SENS. :min.]
[Master Fader :max.]
[All channel Fader :max.]
[All SENS. :max.]
- Crosstalk/クロストーク -70dB or less (1kHz Between channels)
-60dB or less (1kHz Between L and R)
- Equalizer/イコライザー
Normal Channel/ノーマル・チャンネル
HIGH EQ ±15dB (10kHz shelving type)
MID EQ ±15dB (0.2 - 5kHz peaking type)
LOW EQ ±15dB (100Hz shelving type)
Stereo Channel/ステレオ・チャンネル
HIGH EQ ±15dB (10kHz shelving type)
LOW EQ ±15dB (100Hz shelving type)
Graphic Equalizer/グラフィック・イコライザー
Frequencies/周波数 63, 125, 250, 500, 1k, 2k, 4k, 8k, 16k [Hz]
Variable Width/可変幅 ±12dB
Digital Reverb/デジタル・リバーブ
Sampling Frequency/サンプリング周波数 31.25 kHz
Signal Processing/信号処理 16bits
Delay Time/ディレイタイム 50 ms - 480 ms
- 2. Power Amplifier Section (パワー・アンプ部)
Rated Output/定格出力
Stereo, both chan. 4ohm load/4Ω負荷時 200W x 2
Stereo, both chan. 8ohm load/8Ω負荷時 130W x 2
BTL, 8ohm load/8Ω負荷時 400W
Recommended load impedance/推奨負荷インピーダンス
Stereo more than 4ohms
BTL more than 8ohms
Frequency Response/周波数特性 10Hz - 50kHz (±1dB 1W/8ohm)

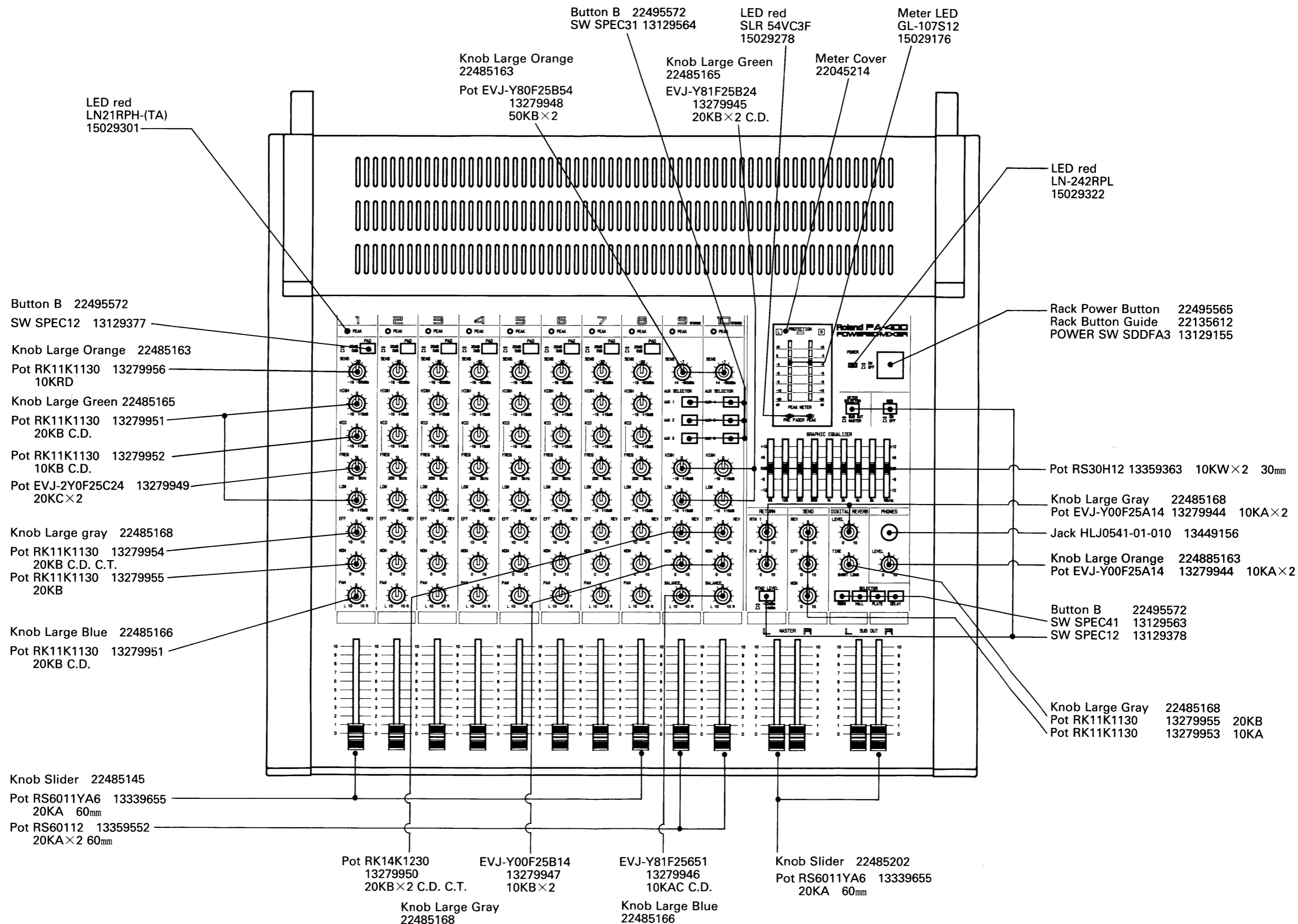
- Total Harmonic Distortion/全高調波歪
Stereo, both chan. 8ohm load/8Ω負荷時 0.1% or less (8ohm, 1kHz)
S/N Ratio/ S/N 比 104dB or greater (main in shorted/パワー・アンプ・イン・ショート, IHF-A, Typ.)
- 3. Others
Power/電源 AC 100/117/220/240V (50/60Hz)
Power Consumption/消費電力 250W (100V)
400VA, 310W (117V)
1000VA (220/240V)
488(W) x 501(D) x 235(H) mm
19-1/4(W) x 19-23/32(D) x 9-1/4 inch.
- Weight 18.1kg / 39 lb 15oz.
- Accessories Owner's Manual (English/Japanese common/共通):26035261



PA-200 FRONT PANEL

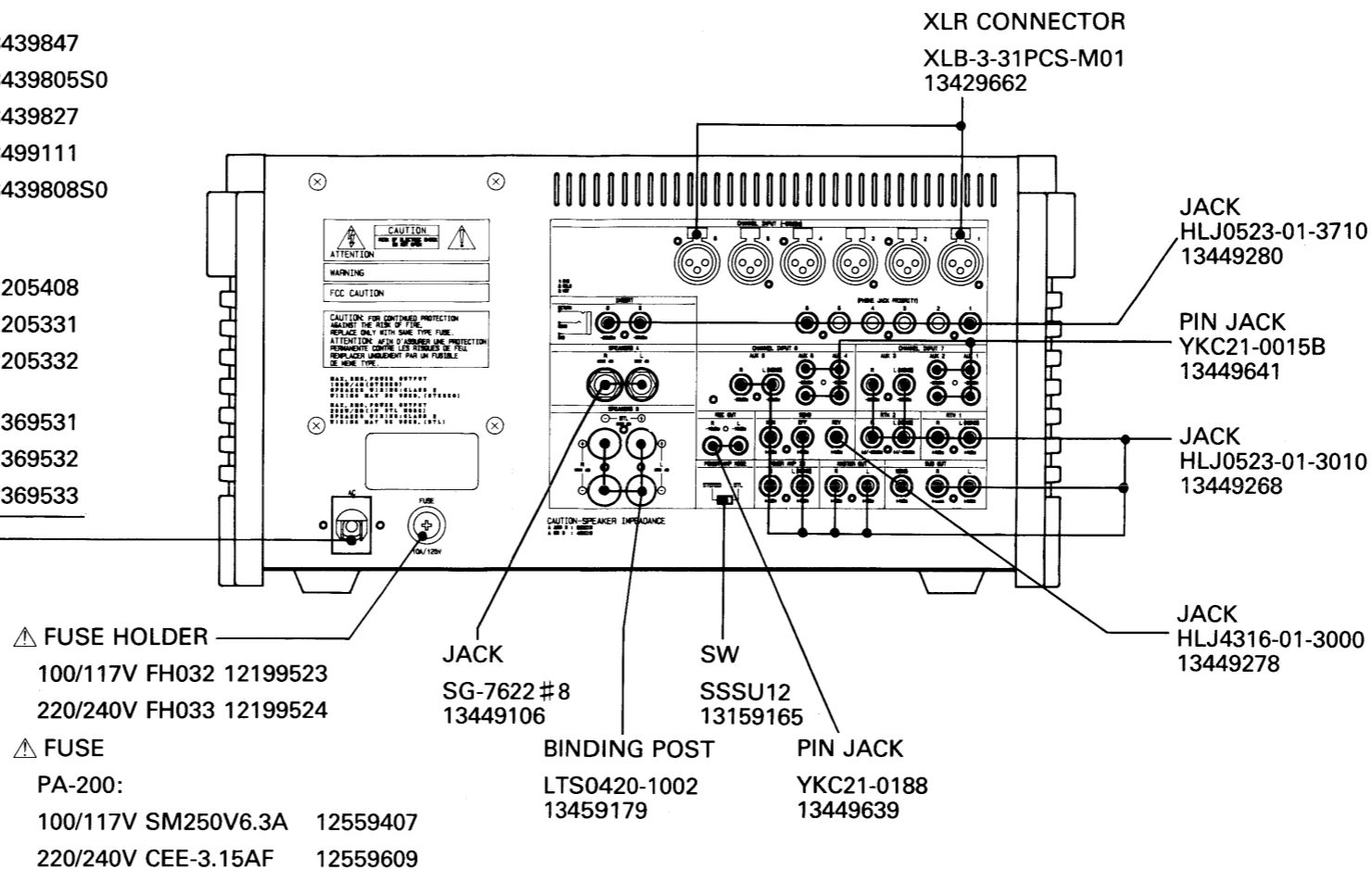


PA-400 FRONT PANEL



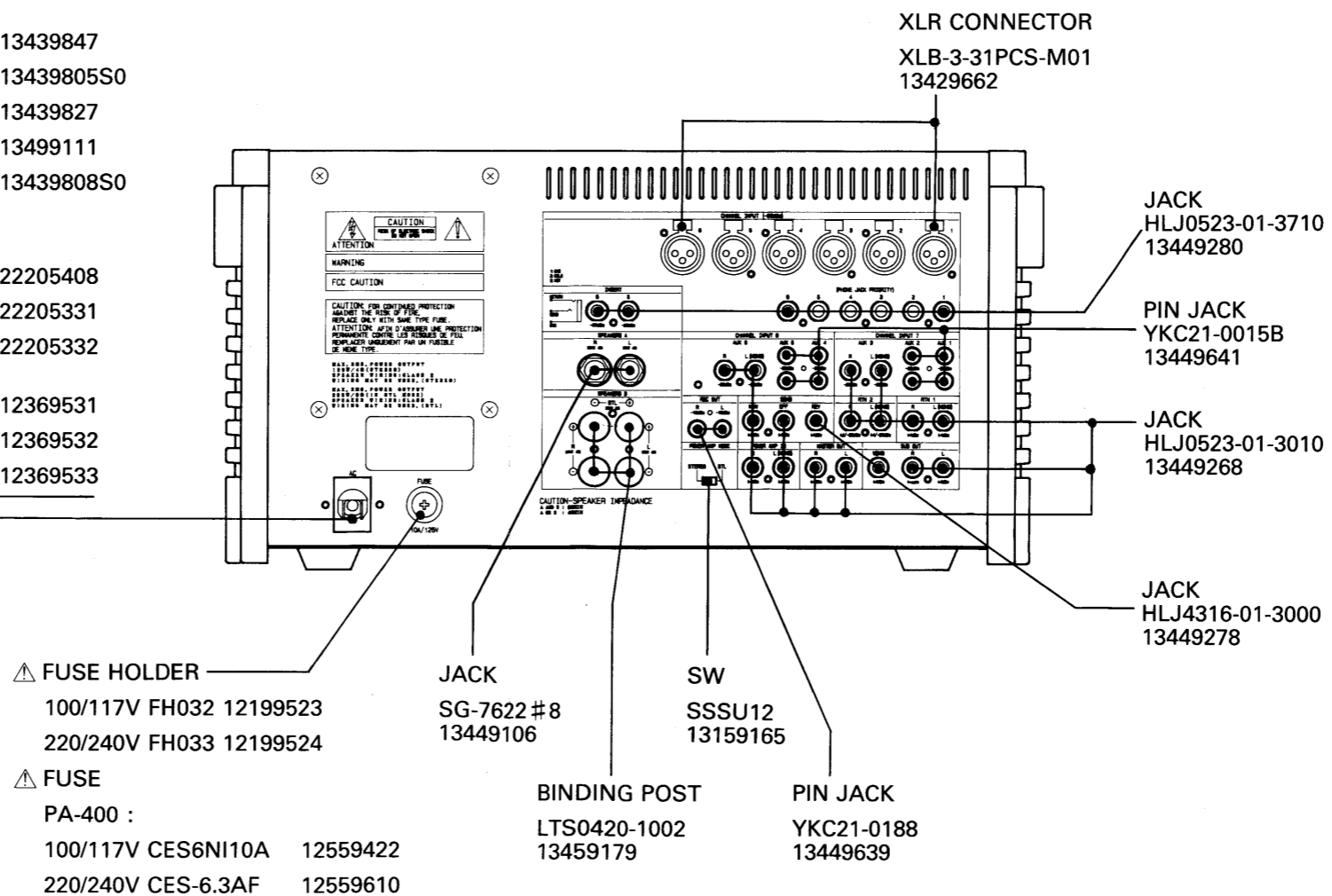
PA-200 REAR PANEL

△ AC CORD		
100V	VCTF 2.5M BLACK 2×1.25	13439847
117V	SJT # 18 3P	13439805S0
220V	EP-528-E05	13439827
240VE	5722-660-4527	13499111
240VA	SP-305	13439808S0
△ CORD BUSHING/BLACKET		
100V, 240VE	CORD BUSH HOLDER	22205408
117V	CORD BUSH HOLDER	22205331
220V, 240VA	CORD BUSH HOLDER	22205332
100V, 240VE, 240VA	KR-51	12369531
117V	KR-61	12369532
220V	KR-41	12369533



PA-400 REAR PANEL

△ AC CORD		
100V	VCTF 2.5M BLACK 2×1.25	13439847
117V	SJT # 18 3P	13439805S0
220V	EP-528-E05	13439827
240VE	5722-660-4527	13499111
240VA	SP-305	13439808S0
△ CORD BUSHING/BLACKET		
100V, 240VE	CORD BUSH HOLDER	22205408
117V	CORD BUSH HOLDER	22205331
220V, 240VA	CORD BUSH HOLDER	22205332
100V, 240VE, 240VA	KR-51	12369531
117V	KR-61	12369532
220V	KR-41	12369533



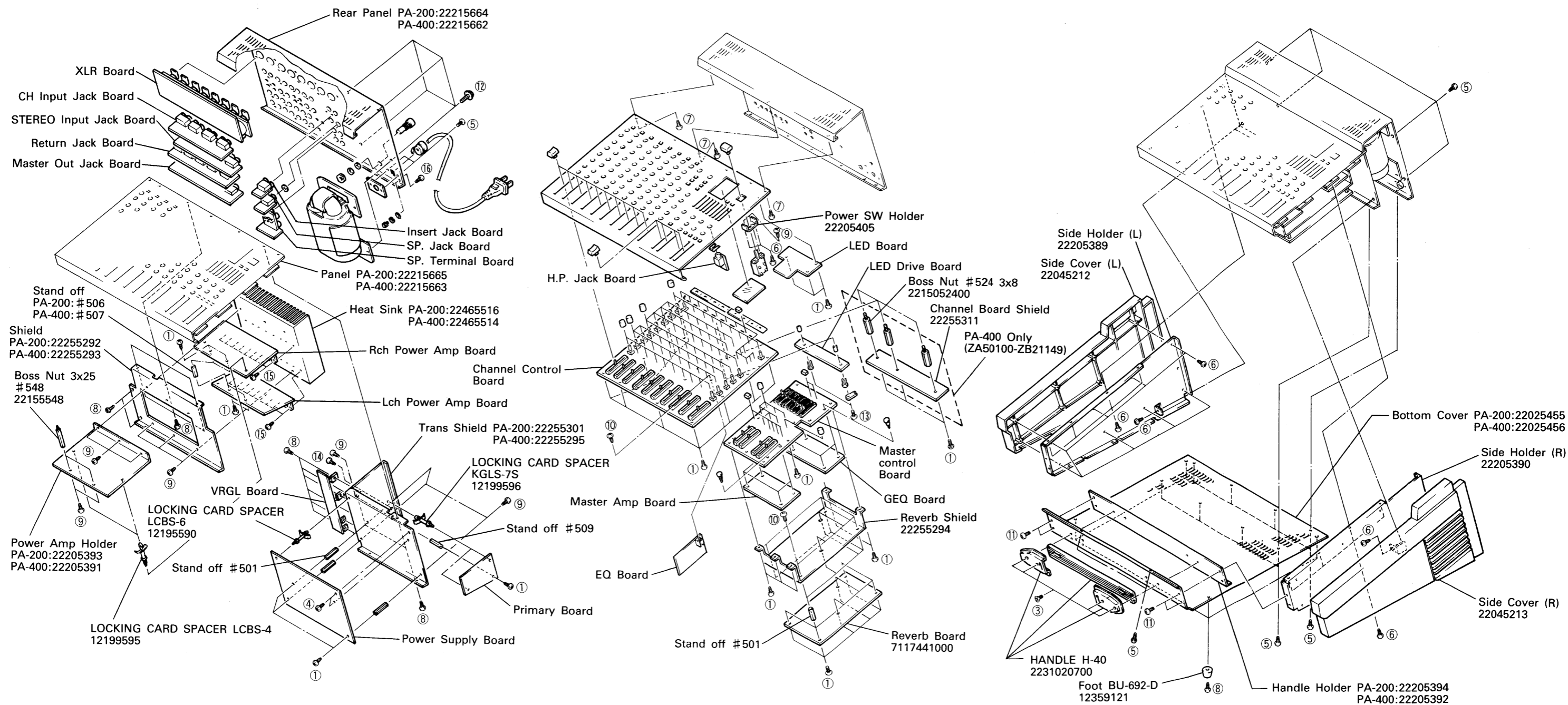
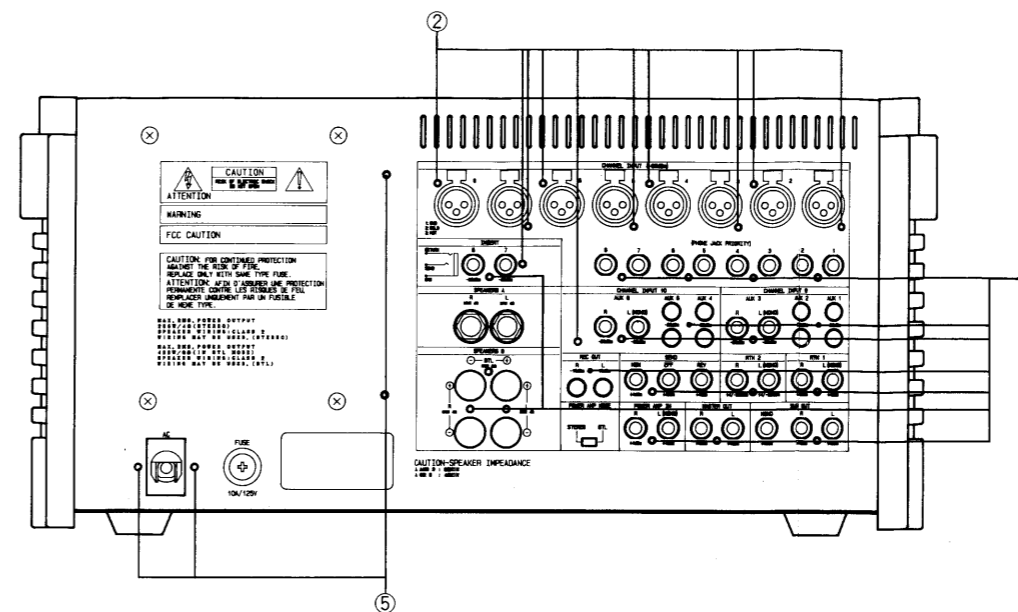
PA-200/400 EXPLODED VIEW

PA-200/400 分解図

SCREWS

- ① 3 x 6 mm Binding Machine FeCm w/ External tooth
- ② 3 x 8 mm Binding Machine FeBc w/ Internal tooth
- ③ 5 x 25 mm Flat FeBc
- ④ 3 x 16 mm Binding B-tight FeCm
- ⑤ 3 x 6 mm Binding B-tight FeBc
- ⑥ 3 x 6 mm Binding B-tight FeCm
- ⑦ 3 x 8 mm Binding B-tight FeBc
- ⑧ 3 x 8 mm Binding B-tight FeCm
- ⑨ 3 x 6 mm SEMS FeCm
- ⑩ 3 x 8 mm SEMS FeCm
- ⑪ 4 x 8 mm W-SEMS FeBc
- ⑫ 5 x 10 mm W-SEMS FeBc
- ⑬ 3 x 20 mm W-SEMS FeCm
- ⑭ 3 x 18 mm Binding B-tight FeCm (PA-200 only)
- ⑮ 3 x 10 mm W-SEMS FeCm
- ⑯ 4 x 8 mm Binding Machine FeBc

NOTE : Refer to the "DISASSEMBLING PROCEDURE" about removing PA-200/400 Bottom Cover.
 注 : PA-200/400 ボトム・カバーの外し方は、分解手順を参照して下さい。

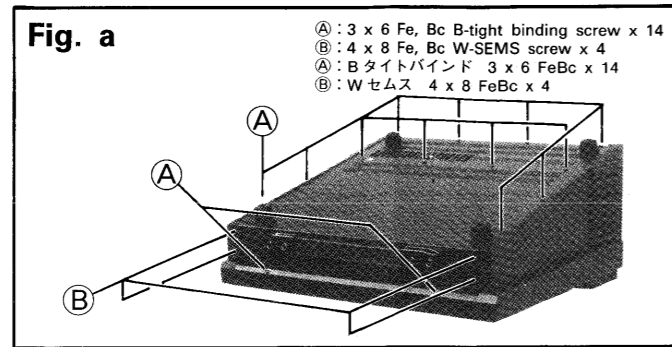


PA-200/400 DISASSEMBLING AND REASSEMBLING PROCEDURE

PA-200/400 分解, 組立手順

Disassembling procedure

◎Removal of Bottom Cover
Remove screws A and B in Fig.a. And then remove the bottom cover.



分解手順

◎Bottom Cover の外し方
Fig.a のネジ (A, B) を外し, Bottom Cover をとる。

• Refer to "Disassembling procedure of each PCB" for details about internal disassembling procedure.

• 内部の詳しい分解手順は, "各基板の分解手順" を参照して下さい。

◎Disassembling procedure of each PCB.

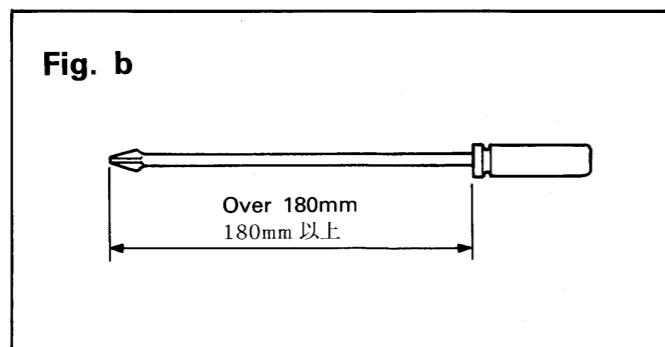
- How to remove MASTER BOARD. (P.6)
- How to remove MAIN AMP BOARD. (P.7)
- How to remove POWER SUPPLY BOARD. (P.7)
- How to remove VRGL BOARD. (P.8)
- How to remove CHANNEL BOARD. (P.8)

◎各基板の分解手順

- MASTER BOARD の外し方(P. 6)
- MAIN AMP BOARD の外し方(P. 7)
- POWER SUPPLY BOARD の外し方(P. 7)
- VRGL BOARD の外し方(P. 8)
- CHANNEL BOARD の外し方(P. 8)

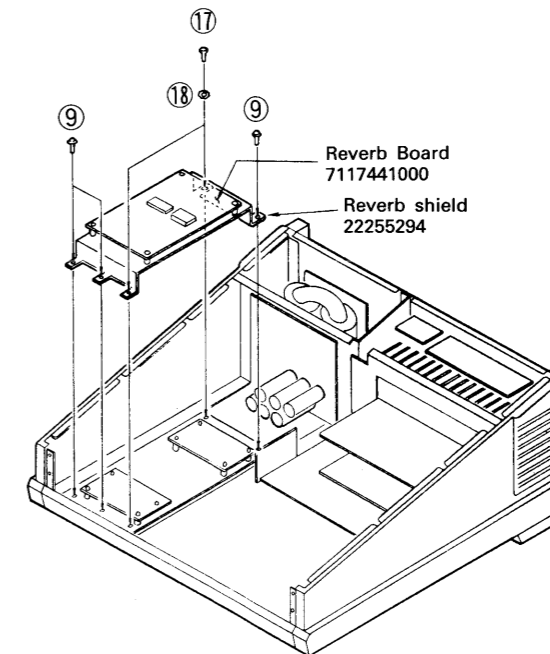
NOTE: When removing the power amp block, prepare the philips driver as shown in Fig.b.

注: パワー・アンプ・ブロックを外す時, Fig.b のような (+) ドライバー (No.2) が必要です。

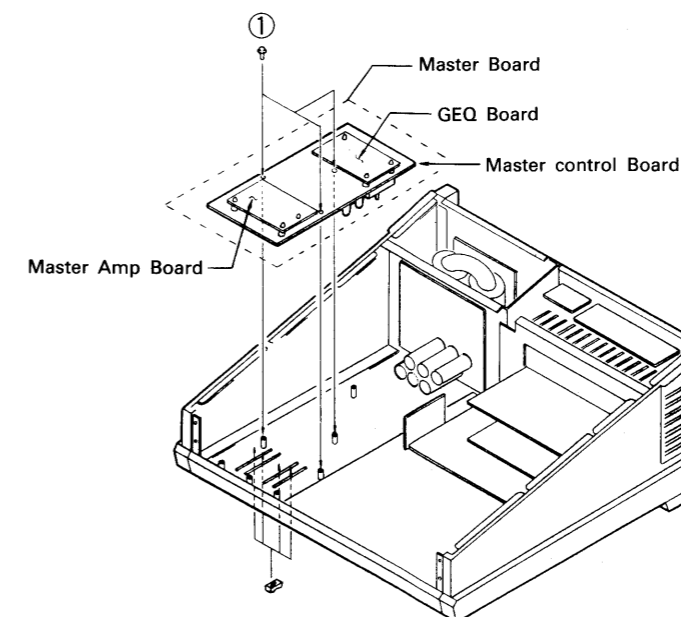


HOW TO REMOVE MASTER BOARD MASTER BOARD の外し方

1 Remove the reverb shield.
リバーブ・シールドを外す。



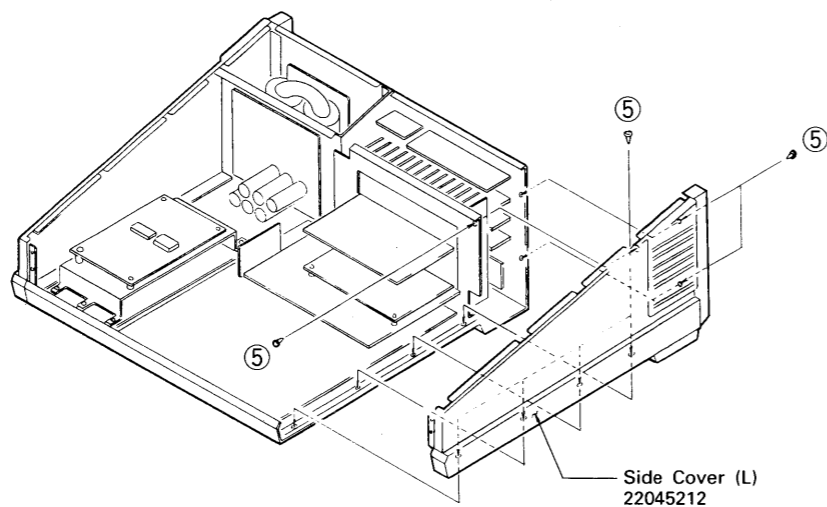
2 Remove the Master Board.
マスター・ボードを外す。



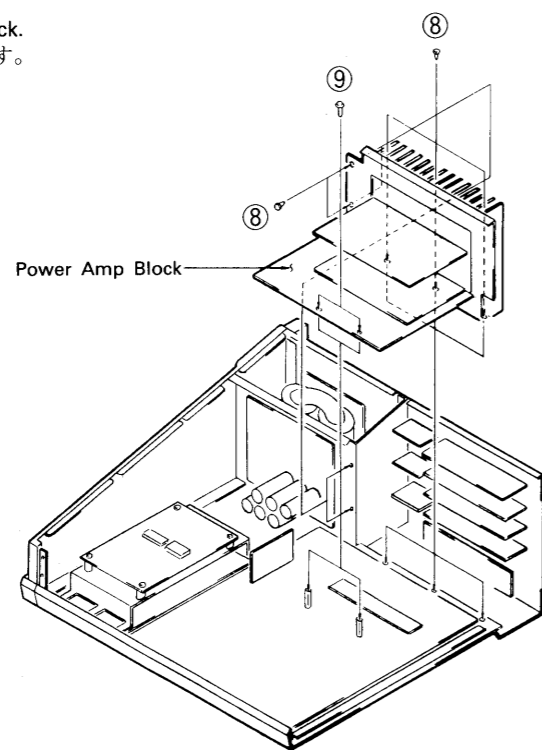
- SCREWS**
- ① 3 x 6 mm Binding Machine FeCm w/External tooth.
 - ⑨ 3 x 6 mm SEMS FeCm.
 - ⑰ 3 x 6 mm Binding Machine FeCm.
 - ⑱ External tooth washer.

HOW TO REMOVE MAIN AMP BOARD MAIN AMP BOARD の外し方

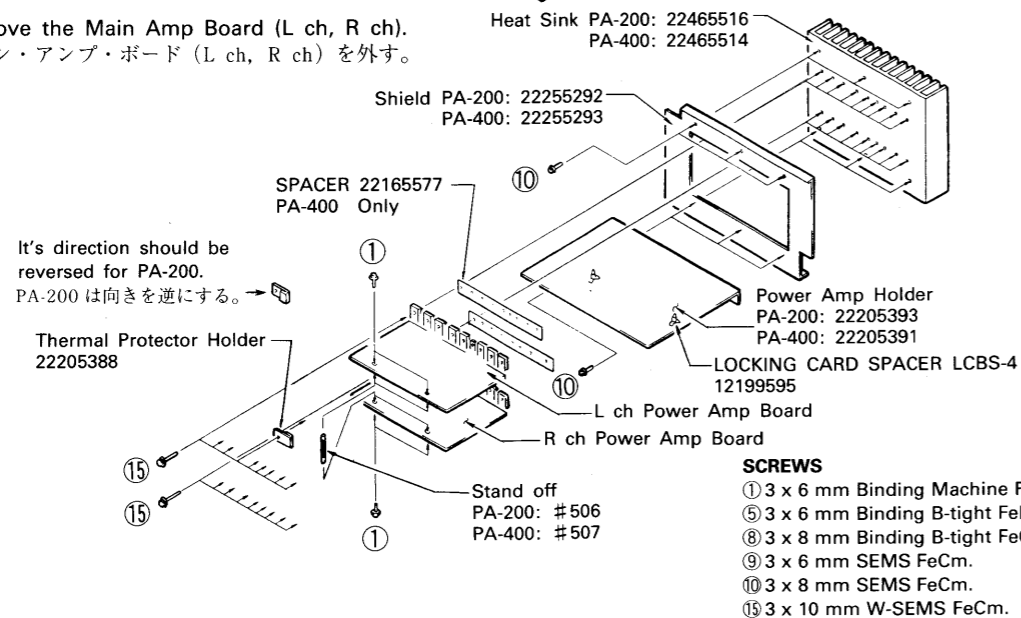
1 Remove the Side Cover (L).
サイド・カバー (L) を外す。



2 Remove the Power Amp Block.
パワー・アンプ・ブロックを外す。



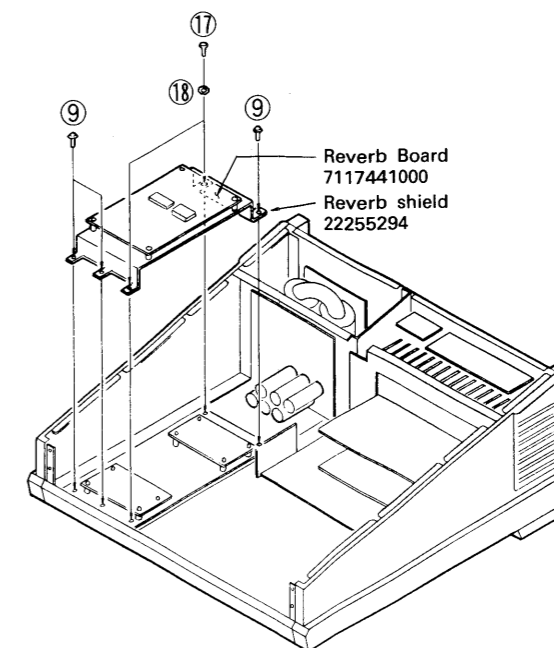
3 Remove the Main Amp Board (L ch, R ch).
メイン・アンプ・ボード (L ch, R ch) を外す。



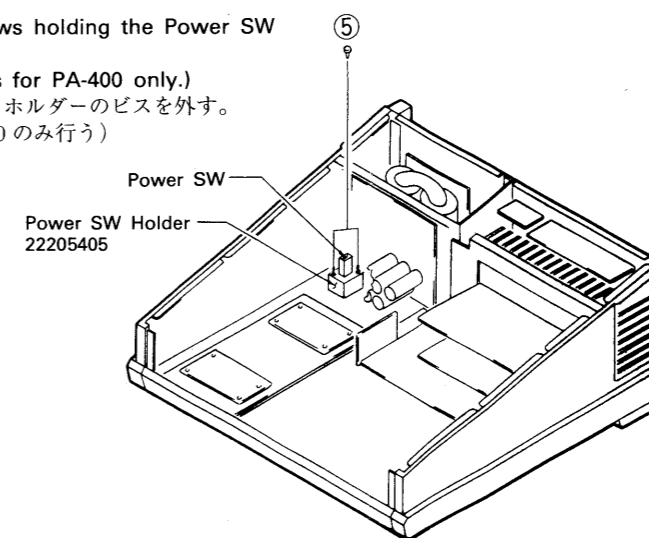
- SCREWS**
- ① 3 x 6 mm Binding Machine FeCm w/External tooth.
 - ⑤ 3 x 6 mm Binding B-tight FeBc.
 - ⑧ 3 x 8 mm Binding B-tight FeCm.
 - ⑨ 3 x 6 mm SEMS FeCm.
 - ⑩ 3 x 8 mm SEMS FeCm.
 - ⑮ 3 x 10 mm W-SEMS FeCm.

HOW TO REMOVE POWER SUPPLY BOARD POWER SUPPLY BOARD の外し方

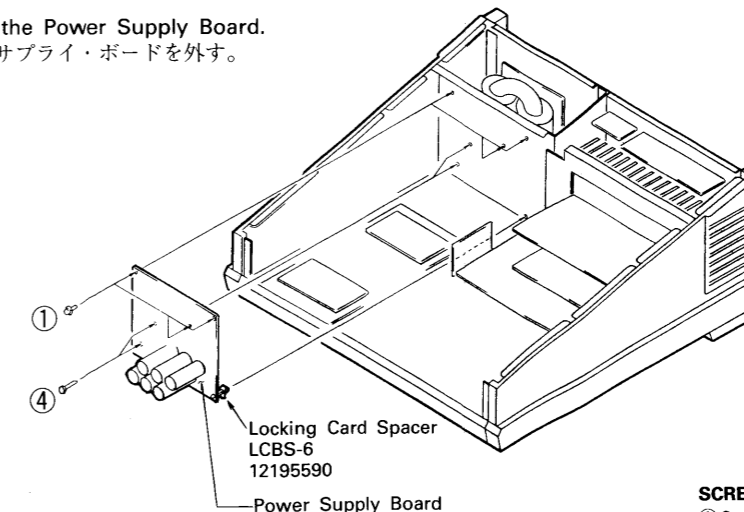
1 Remove the reverb shield.
リバーブ・シールドを外す。



2 Remove two screws holding the Power SW Holder.
(This procedure is for PA-400 only.)
パワー・スイッチ・ホルダーのビスを外す。
(この作業は PA-400 のみ行う)



3 Remove the Power Supply Board.
パワー・サプライ・ボードを外す。

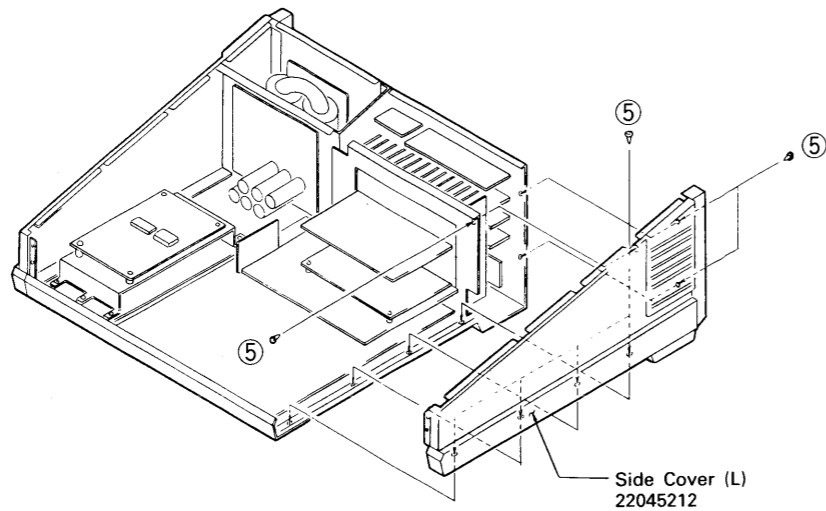


- SCREWS**
- ① 3 x 6 mm Binding Machine FeCm w/External tooth.
 - ④ 3 x 16 mm Binding B-tight FeCm.
 - ⑤ 3 x 6 mm Binding B-tight FeBc.
 - ⑨ 3 x 6 mm SEMS FeCm.
 - ⑰ 3 x 6 mm Binding Machine FeCm.
 - ⑱ External tooth washer.

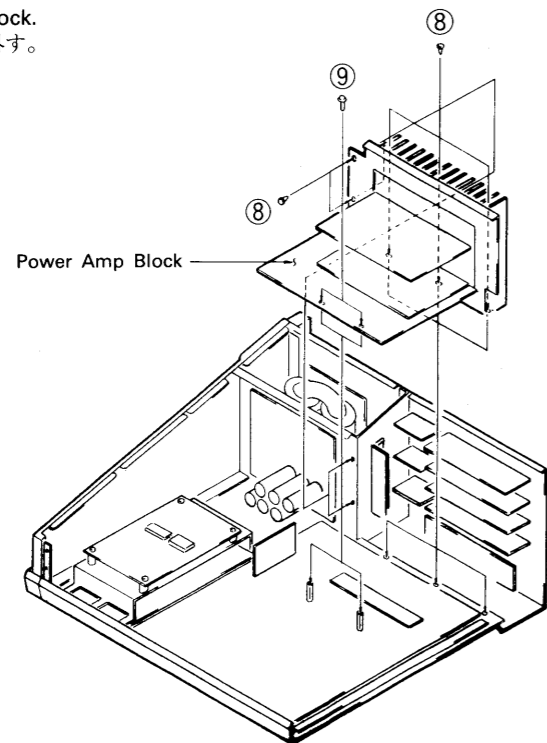
* Also to remove the VRGL Board. The Power Amp Block must be removed first. (Refer to "HOW TO REMOVE VRGL BOARD".)
* VRGL (3端子レギュレーター)・ボードも外したい場合は、パワー・アンプ・ブロックを外さなければならない。(「VRGL・ボードの外し方」を参照のこと。)

HOW TO REMOVE VRGL BOARD
VRGL (3 端子レギュレーター) BOARD の外し方

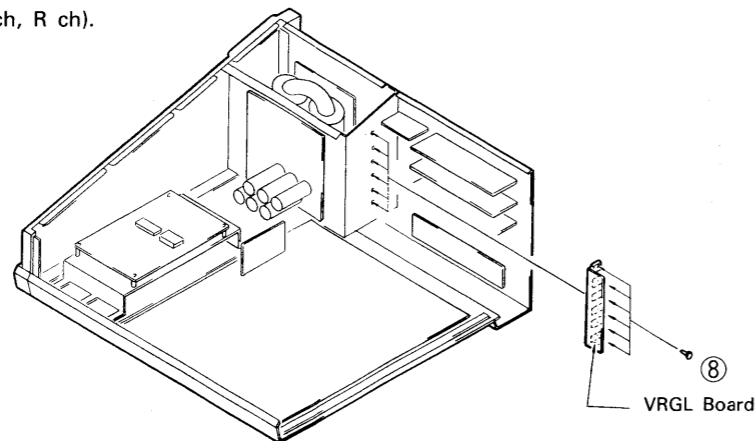
- 1** Remove the Side Cover (L).
サイド・カバー (L) を外す。



- 2** Remove the Power Amp Block.
パワー・アンプ・ブロックを外す。



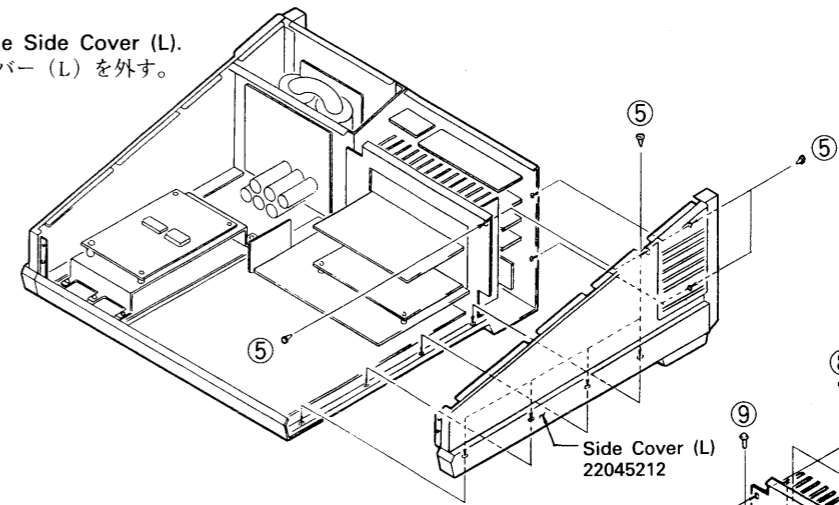
- 3** Remove the VRGL Board (L ch, R ch).
VRGL・ボードを外す。



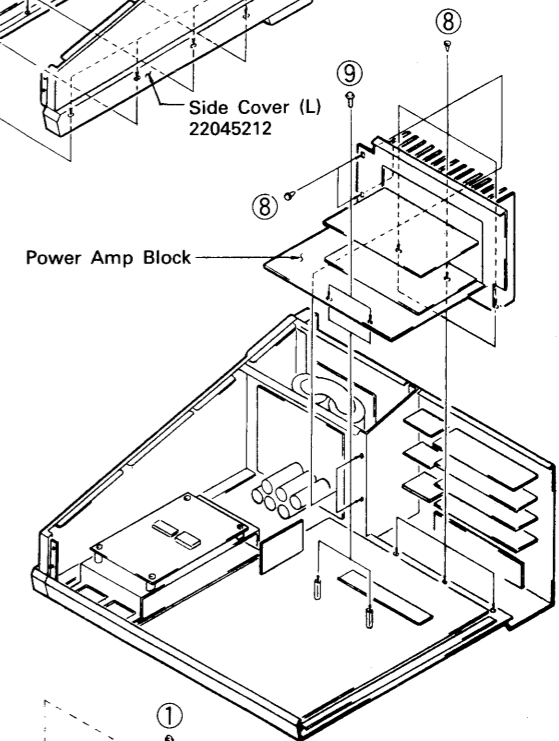
- SCREWS**
⑤ 3 x 6 mm Binding B-tight FeBc.
⑧ 3 x 8 mm Binding B-tight FeCm.
⑨ 3 x 6 mm SEMS FeCm.

HOW TO REMOVE CHANNEL BOARD
CHANNEL BOARD の外し方

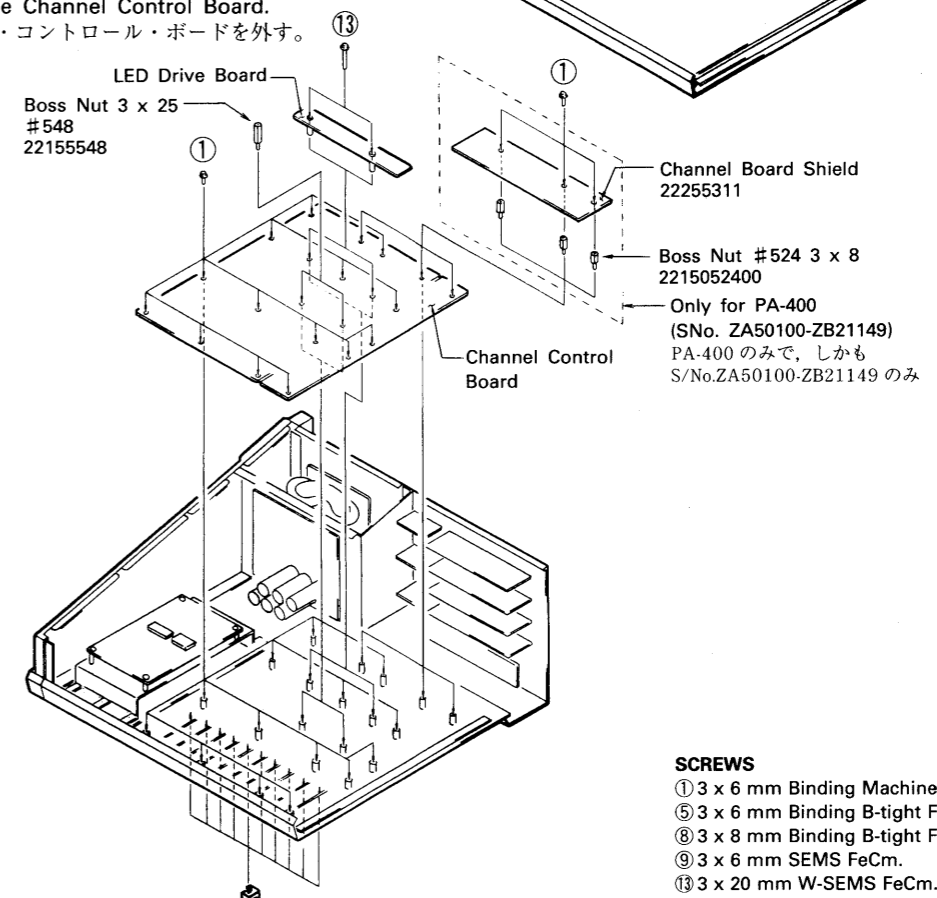
- 1** Remove the Side Cover (L).
サイド・カバー (L) を外す。



- 2** Remove the Power Amp Block.
パワー・アンプ・ブロックを外す。



- 3** Remove the Channel Control Board.
チャンネル・コントロール・ボードを外す。



- SCREWS**
① 3 x 6 mm Binding Machine FeCm w/External tooth.
⑤ 3 x 6 mm Binding B-tight FeBc.
⑧ 3 x 8 mm Binding B-tight FeCm.
⑨ 3 x 6 mm SEMS FeCm.
⑩ 3 x 20 mm W-SEMS FeCm.

Reassembling procedure

◎Caution on reassembling

Before assembling PA-200/400 after repairing which needed disassembling, be sure to dress wirings and clamp them in place as shown in below figure.

PA-200: SNo. ZA50100 - ZB21049

PA-400: SNo. ZA50100 - ZB21149

*Refer to Fig.c, d, e

PA-200: SNo. ZB31050 -up

PA-400: SNo. ZB31150 -up

*Refer to Fig.f, g, h

組立手順

◎組立上の注意

PA-200/400 を分解して修理した後、組み立てる時、クランプ、ワイヤリングの位置は、必ず下図の様にして下さい。

PA-200 : SNo. ZA50100 - ZB21049

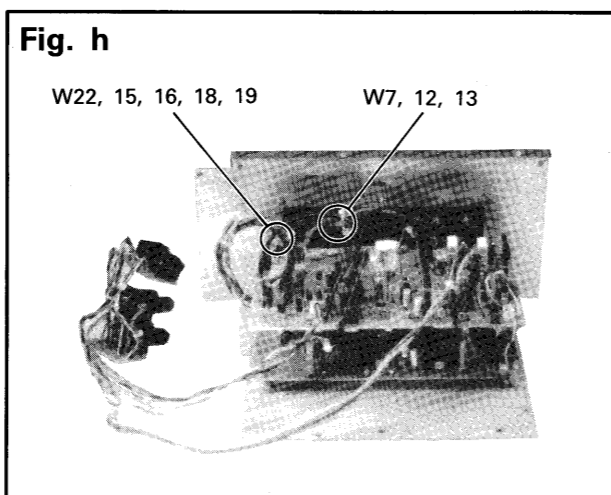
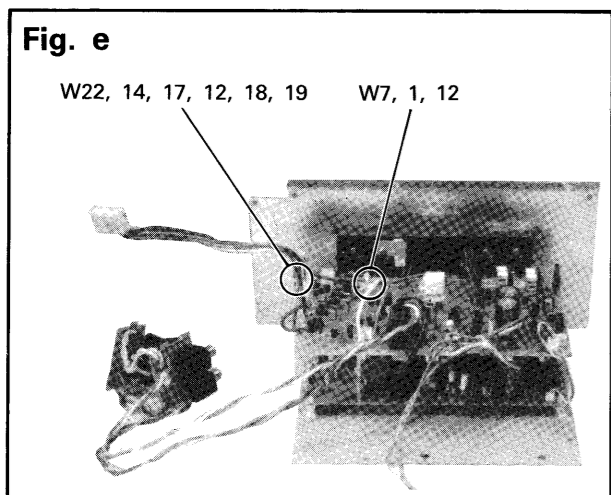
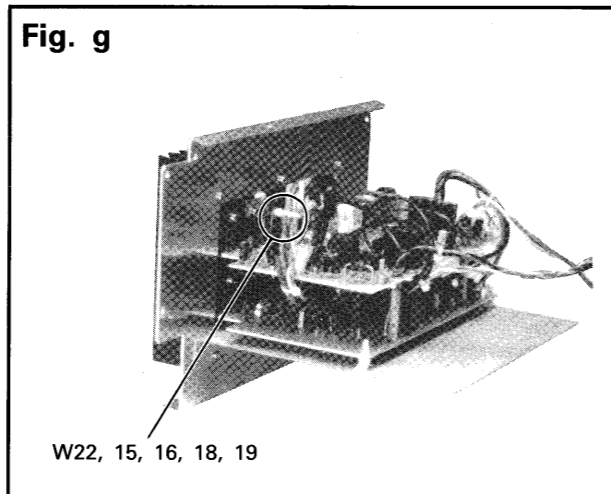
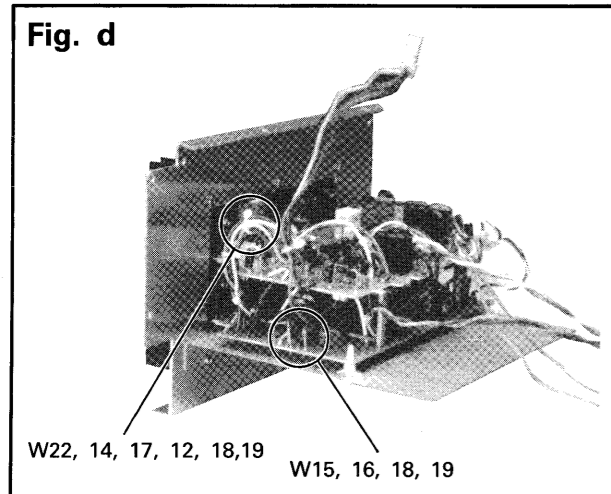
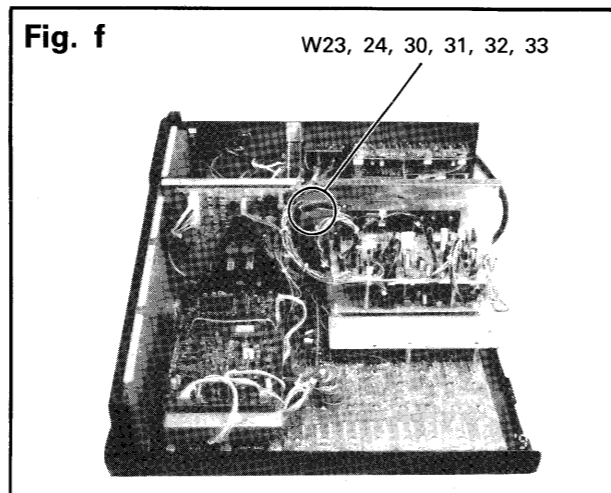
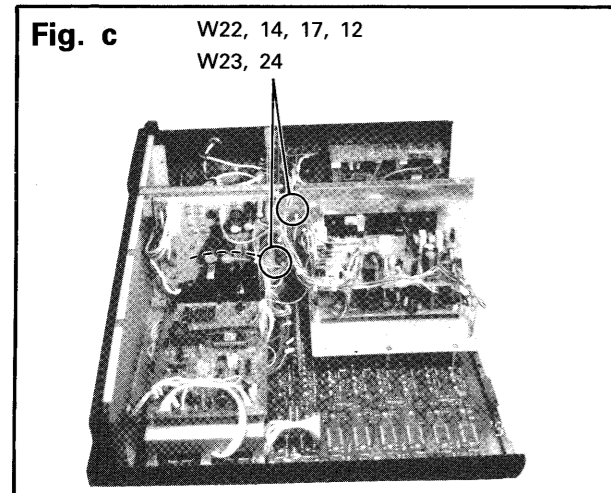
PA-400 : SNo. ZA50100 - ZB21149

*Fig.c, d, e 参照

PA-200 : SNo. ZB31050 以降

PA-400 : SNo. ZB31150 以降

*Fig.f, g, h 参照



PA-200 PARTS LIST/パーツリスト

SAFETY PRECAUTIONS:

The parts marked Δ have safety-related characteristics. Use only listed parts for replacement.

安全上の注意:

Δが付いている部品は、安全上特別な規格でつくられたものです。交換の際は、指定された部品番号以外の部品は使わないようにして下さい。

CONSIDERATIONS ON PARTS ORDERING

When ordering any parts listed in the parts list, please specify the following items in the order sheet.

Ex.	QTY	PART NUMBER	DESCRIPTION	MODEL NUMBER
	10	22575241	Sharp Key	C-20/50
	15	2247017300	Knob (orange)	DAC-15D

Failure to completely fill the above items with correct number and description will result in delayed or even undelivered replacement.

パーツ発注に関するお願い

オーダーシートには、必ず下記の4項目は正確に記入して下さい。(例外は除く)

必要数	パーツナンバー	品名	使用機種
例) 10	22575241	Sharp Key	C-20/50
15	2247017300	Knob (orange)	DAC-15D

もし記入漏れ、誤記等がある場合、必要部品が発送出来なかったり、大幅な遅れの原因になります。御協力をお願いします。

CASING/ケース

22215665	Panel
22215664	Rear Panel
22025455	Bottom Cover
22045212	Side Cover (L)
22045213	Side Cover (R)
22045214	Meter Cover
22045192	Ch LED Lens
12359121	Rubber Foot BU-692-D
2231020700	HANDLE H-40

CHASSIS/シャーシ

22205389	Side Holder (L)
22205390	Side Holder (R)
22205405	Power SW Holder
2205394	Handle Holder
22205393	Power Amp Holder
22205388	Thermal Switch Holder
22255292	Shield
22255294	Reverb Shield
22255301	Trans Shield
22135612	Rack Botton Guide
22205954	VRGL Holder (Use for Type C)

KNOB, BOTTON/ツマミ, ボタン

22485163	Knob Large (大) orange (橙)	SENS, PHONES
22485165	Knob Large (大) green (緑)	CH EQ
22485166	Knob Large (大) blue (青)	PAN, BALANCE
22485168	Knob Large (大) gray (灰色)	EFF, MON, etc.
22485145	Knob Slider	CHANNEL
22485202	Knob Sllder	MASTER, SUBOUT
22495572	Button B	PAD, SELECTOR (ROOM, HALL, PLATE, DELAY), RTN 2 LEVEL, METER SELECTOR GEQ, AUX SELECTOR (AUX 1, AUX 2, AUX 3, AUX 4, AUX 5, AUX 6)
22495565	Rack Power Botton	POWER SW

SWITCH/スイッチ

13129377	SPEC12 (push) 2 poles, shorting	CH1-6 PAD
13129378	SPEC12 (push) 2 poles, nonshorting	GEQ, etc.
13129564	SPEC31 (push) 3 keys, shorting	AUX SELECTOR (AUX 1, AUX 2, AUX 3, AUX 4, AUX 5, AUX 6)
13129563	SPEC41 (push) 4 keys, shorting	SELECTOR (ROOM, HALL, PLATE, DELAY)
13159165	SSSU12 (slide)	POWER AMP MODE
13129155	SDDFA3 (push)	POWER SW

JACK, SOCKET/ジャック, ソケット

13449268	HLJ0523-01-3010	AUX 3 (R/L), AUX 6 (R/L), RTN 1 (R/L), RTN 2 (R/L), SUB OUT (R/L), MASTER OUT (R/L), POWER AMP IN (R/L), SEND (MON/EFF) (PHONE JACK PRIORITY) (ch 1-6), INSERT
13449280	HLJ0523-01-3710	PHONES
13449156	HLJ0541-01-010	SUBOUT (MONO), SEND (REY)
13449278	HLJ4316-01-3000	SPEAKERS A (R/L)
13449106	SG-7622 #8	REC OUT
13449639	YKC21-0188 (pin)	AUX 1 (R/L), AUX 2 (R/L), AUX 4 (R/L), AUX 5 (R/L)
13449641	YKC21-0015B (pin)	

PCB ASSY/基板組立

7117441000	Reverb Board (pcb 2292579400)
7117542002	Master Board

NOTE: Master Board consists of the following 12 PCBs.

注: マスター基板は下記の12点から構成されます。

Master Contorol Board	(pcb 2292579502 1/12)
Master Amp Board	(pcb 2292579502 2/12)
GEQ Board	(pcb 2292579502 3/12)
LED Board	(pcb 2292579502 4/12)
Master Out Jack Board	(pcb 2292579502 5/12)
Return Jack Board	(pcb 2292579502 6/12)
H.P. Jack Board	(pcb 2292579502 7/12)
EQ Board	(pcb 2292579502 8/12)
XLR Board B	(pcb 2292579502 9/12)
XLR Board A	(pcb 2292579502 10/12)
Spacer Board	(pcb 2292579502 11/12)
Spacer Board	(pcb 2292579502 12/12)

SCREWS/ネジ類

Table listing screws with specifications: 3x 6 mm Binding Machine FeCm w/External tooth, 3x 8 mm Binding Machine FeBC w/Internal tooth, etc.

MISCELLANEOUS/その他

Table listing miscellaneous parts: CORD BUSH HOLDER, SNAP PLATE, STAND OFF, BOSS NUT, LOCKING CARD SPACER, etc.

ACCESSORIES/標準付属品

Table listing accessories: Owner's Manual (English/Japanese common/共通)

PA-400 PARTS LIST/パーツリスト

SAFETY PRECAUTIONS and CONSIDERATIONS ON PARTS ORDERING. Includes instructions on safety and ordering procedures.

CASING/ケース

Table listing casing parts: Panel, Rear Panel, Bottom Cover, Side Cover (L), etc.

CHASSIS/シャーシ

Table listing chassis parts: Side Holder (L), Side Holder (R), Power Sw Holder, etc.

KNOB, BOTTON/ツマミ, ボタン

Table listing knobs and buttons: Knob Large (大) orange (橙), Knob Large (大) green (緑), etc.

SWITCH/スイッチ

Table listing switches: SPEC12 (push) 2 poles, shorting, SPEC12 (push) 2 poles, nonshorting, etc.

JACK, SOCKET/ジャック, ソケット

Table listing jacks and sockets: HLJ0523-01-3010, HLJ0523-01-3710, etc.

PCB ASSY/基板組立

Table listing PCB assemblies: Reverb Board (pcb 2292579400), Master Board, Master Contorol Board, etc.

7117443002 Channel Board

NOTE: Channel Board consists of the following 8 PCBs. 注: チャンネル基板は下記の8点から構成されます。

Table listing channel board components: Channel Contorol Board A (pcb 2292579602 1/8), Channel Contorol Board B, etc.

NOTE: Type A, Type B and Type C of replacement Main Amp Board (220/240V) is incompatible for wiring.

Refer to the "RE: TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)" (P.13, 14) for details and below documents are common to Type A, Type B and Type C.

注: 補修用 Main Amp Board (230/240V) の Type A, Type B, Type C, ワイヤリングのため互換性はありません。詳細は, "Main Amp Board (230/240V) の Type A, Type B, Type C について" (P.13, 14) を参照して下さい。

NOTE: Main Amp Board (230/240V) consists of the following 9 PCBs.

Table listing main amp board components: L ch Power Amp Board (pcb 22925797** 1/10), R ch Power Amp Board, etc.

**=00 (Type A) **=01 (Type B) **=02 (Type C)

NOTE: Replacement Main Amp Board is 230/240V versions only. 230/240V Version differs from 100/117V version only in fuse system.

Order proper fuses and fuse labels separately if necessary. (Refer to the table below)

注: 補修用 Main Amp Board として 230/240V が共通使用されます。電圧区分による違いはヒューズ値, ヒューズ貼マークのみです。100/117V 用のヒューズ, ヒューズ貼マークが必要な場合は別途発注してください。(下表参照)

Table with columns: Fuse, Parts No., Fuse Label, Parts No. listing fuse specifications for 100/117V and 220/240V.

IC/集積回路

Table listing IC components: uPC4570HA, NJM2068SD, NJM4556S, BA15218N, etc.

TRANSISTOR/トランジスタ

Table listing transistors: 2SA970-GR, 2SA1015-GR, 2SA1265N-O, etc.

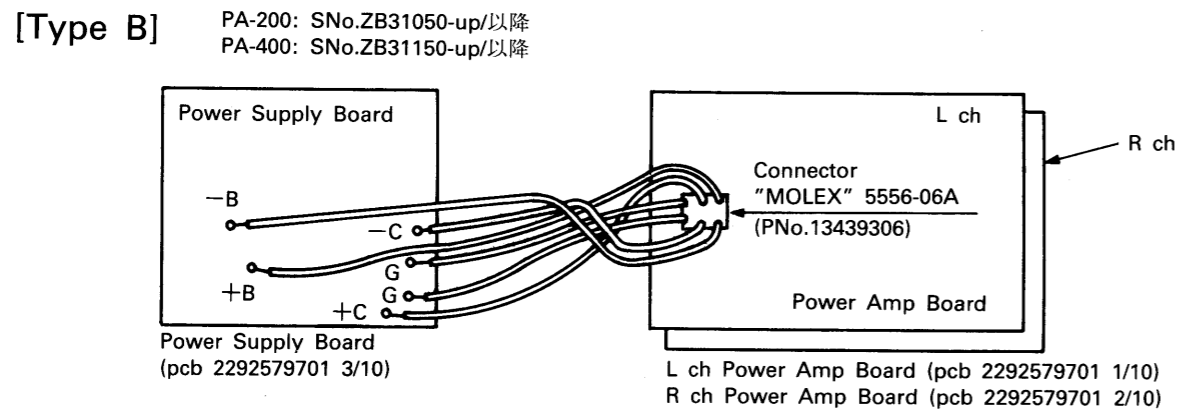
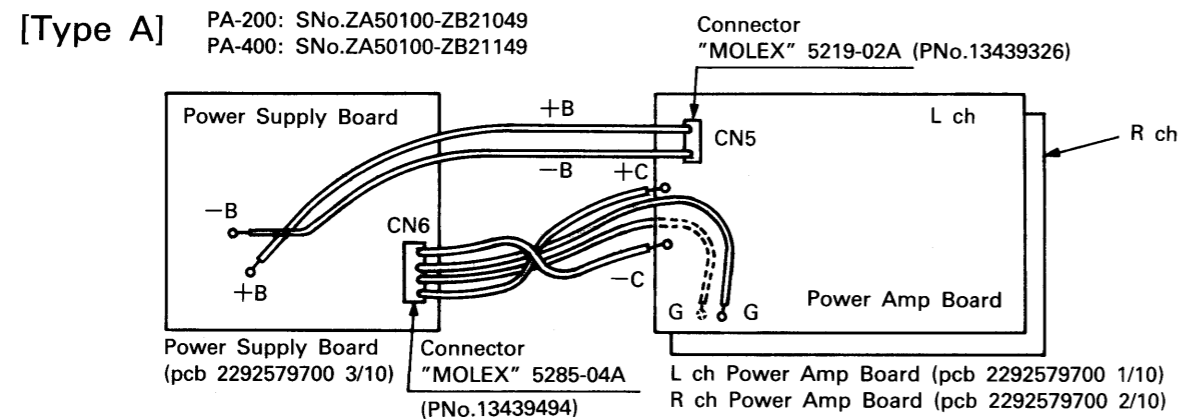
RE: TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)

The following sentences apply to both the PA-200 and PA-400:

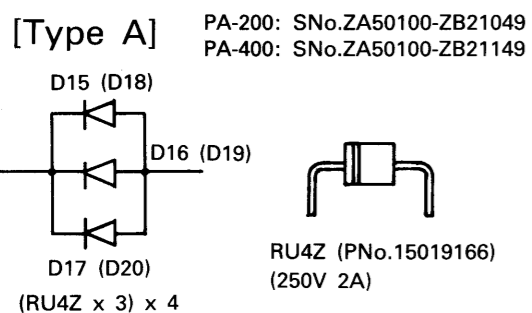
—Differences between Types A, B and C—

a) Type A and Type B are different in wiring connecting the "Power Supply Board" and "L and R ch Power Amp Boards" and in diodes on the "L and R ch Power Amp Boards". (See Fig. 1.) Due to the incompatibility of the "Power Supply Board" and "L and R ch Power Amp Boards", these boards must be changed with care, i.e. Type A cannot be used instead of Type B and vice versa. The other boards comprising the Main Amp Board are common to Types A and B.

1. Change of "Power Supply Board—L, R ch Power Amp Board" wiring.



2. Change of Diodes (D15 - D20) on the L, R ch Power Amp Board.



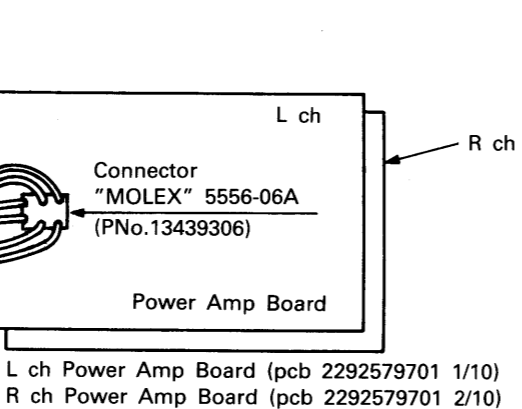
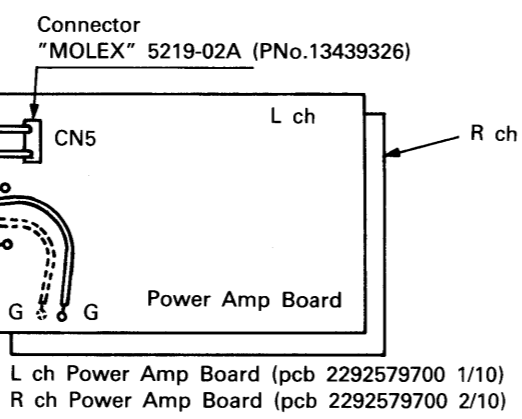
Main Amp Board (230/240V)の Type A, Type B, Type C について

以下の文章は、PA-200、PA-400 に共通の内容です。

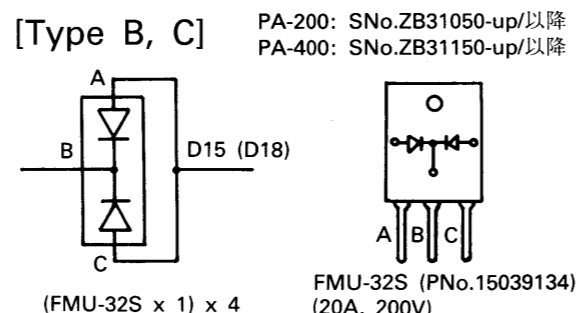
—Type A, Type B, Type C の相違点—

a) Type A と Type B は、"Power Supply Board" と "L, R ch Power Amp Board" を接続するワイヤリングと "L, R ch Power Amp Board" 上のダイオードが違います。(図1参照) "Power Supply Board" と "L, R ch Power Amp Board" には、相性がありますので基板交換時には注意が必要です。つまり、Type A と Type B の混用は不可ですので注意して下さい。他の Main Amp Board を構成する基板は、Type A, Type B 共通です。

1. "Power Supply Board" と "L, R ch Power Amp Board" を接続するワイヤリングを変更。



2. "L, R ch Power Amp Board" 上のダイオード (D15～D20) を変更。



b) Type B and Type C are different in wiring and connectors connecting the "Power Supply Board", "L and R ch Power Amp Boards", "SP Jack Board", "SP Terminal Board" and "VRGL Board". (See Fig. 2.)

Note that Type B cannot be used instead of Type C and vice versa.

The other boards comprising the Main Amp Board are common to Types B and C.

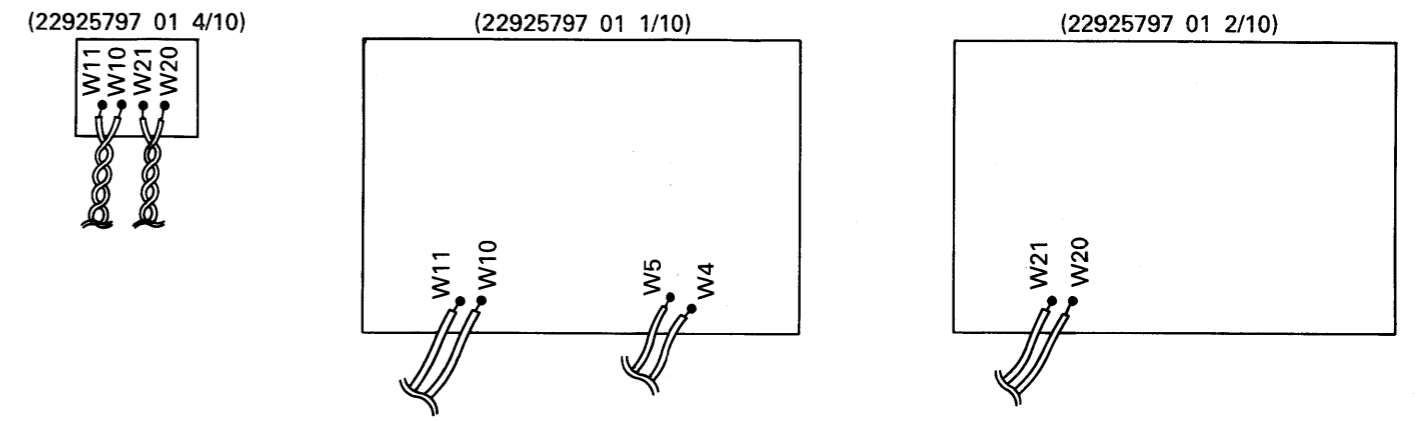
b) Type B と Type C は、"Power Supply Board", "L, R ch Power Amp Board", "SP Jack Board", "SP Terminal Board", "VRGL Board" を、それぞれ接続するワイヤリング、コネクタが違います。(図2参照)

Type B と Type C の混用は不可ですので注意して下さい。

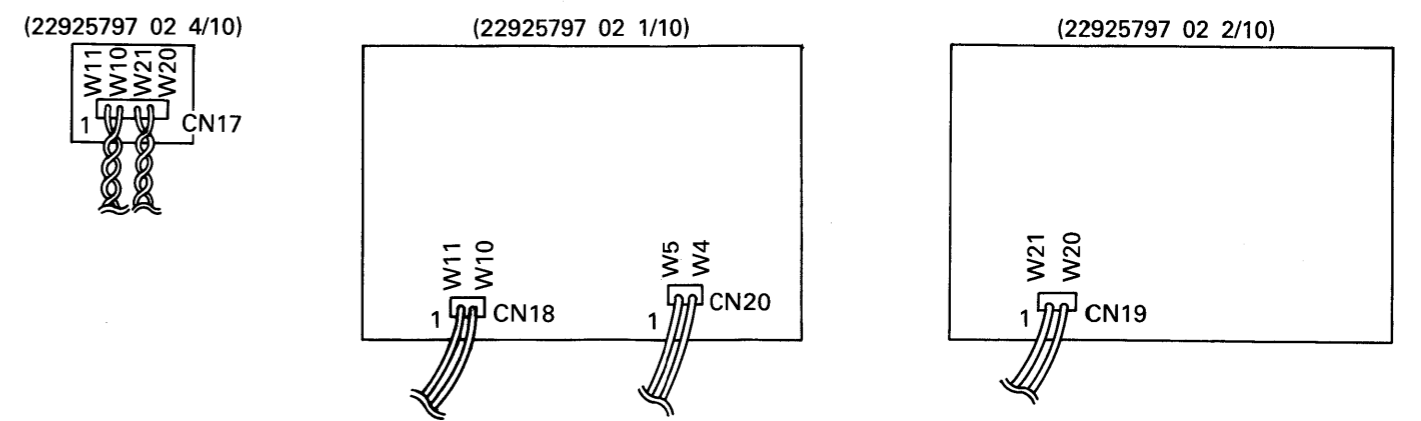
その他の Main Amp Board を構成する基板は、Type B, Type C 共通です。

SP Jack Board Lch Power Amp Board Rch Power Amp Board

[Type B] PA-200: SNo.ZB31150-ZC41899
PA-400: SNo.ZB31150-ZC52849



[Type C] PA-200: SNo.ZD11900-up/以降
PA-400: SNo.ZC62850-up/以降



c) Since Types A and C are incompatible, Type A cannot be used in place of Type C and vice versa.

c) Type A と Type C は、全く互換性はありませんので、Type A と Type C の混用は不可です。

Parts Ordering Information

* Types A, B and C of the repair boards are incompatible because of their wiring. Please order any repair board after checking its serial number.

	PA-200	PA-400
Type A	SNo.ZA50100 - ZB21049 (PNo.7117554400)	SNo.ZA50100 - ZB21149 (PNo.7117454400)
Type B	SNo.ZB31150 - ZC41899 (PNo.7117554401)	SNo.ZB31150 - ZC52849 (PNo.7117454401)
Type C	SNo.ZD11900 -up/以降 (PNo.7117554402)	SNo.ZC62850 -up/以降 (PNo.7117454402)

* If Type A or B specified in your purchase order is out of stock, the board of Type C will be supplied. In this case, change the board with the following precautions:

(Note: When the board of Type B is used with the product of Type A, change the "Power Supply Board" and "L and R ch Power Amp Boards" at the same time.)

- Step 1. Change the "L and R ch Power Amp Boards", "SP Jack Board" and "SP Terminal Board" as a set at the same time.
- Step 2. Change the "Power Supply Board" and "VRGL Board" as a set at the same time.
- Step 3. If, in step 1, the "Shield" is not provided with an "edge holder", tear the tube of Type A, Type B, wind it around the wiring area contacting the "Shield", and fix it to the "Shield" with a sub-tie.

* If the repair board of Type C is used with the product of Type A or B, the product specifications remain unchanged.

オーダー上の注意点

補修用基板の Type A, B, C は、ワイヤリングのため互換性がありません。
補修用基板をオーダーする場合は、シリアル・ナンバーを確認してオーダーして下さい。

*また、Type A, B をオーダーされても、当社に在庫が無い場合は Type C の基板を供給しますので、下記の点に注意して交換して下さい。

(注: Type A の製品に Type B の基板を使用する場合は、"Power Supply Board" と "L, R ch Power Amp Board" を同時に交換して下さい。)

- 手順 1. "L, R ch Power Amp Board", "SP Jack Board", "SP Terminal Board" は、セットで同時に交換して下さい。
- 手順 2. "Power Supply Board", "VRGL Board" は、セットで同時に交換して下さい。
- 手順 3. 手順 1 をおこなう場合、"Shield" に "エッジ・ホルダー" が付いていない製品に関しては、Type A, Type B のチューブを裂いて、それを "Shield" に接触する部分のワイヤリングに巻きサブタイで "Shield" に固定して下さい。

*Type C の補修用基板を、Type A, B の製品に使用しても、製品の仕様は変わりません。

ADJUSTMENT

1. IDOLING (Lch/Rch Power Amp Board)

- Keep AC source to the rated voltage on the unit's nameplate during adjustments.
- Dieconnect the DC voltmeter to be used from any ground points (IDRING only)
- Do not attempt adjustment while the unit is overlated (above 50°C or 120°F) at the power heatsinks.
- Allow at least 10 for warm up period
- INPUT no signal
- SP OUT no load
- MASTER FADER MIN

Connect the DC voltmeter between any pair of test points of a channel. Adjust the VR1 for 10mV reading. (The locations of test points and "VR1" is common) to both Type A, Type B and Type C.

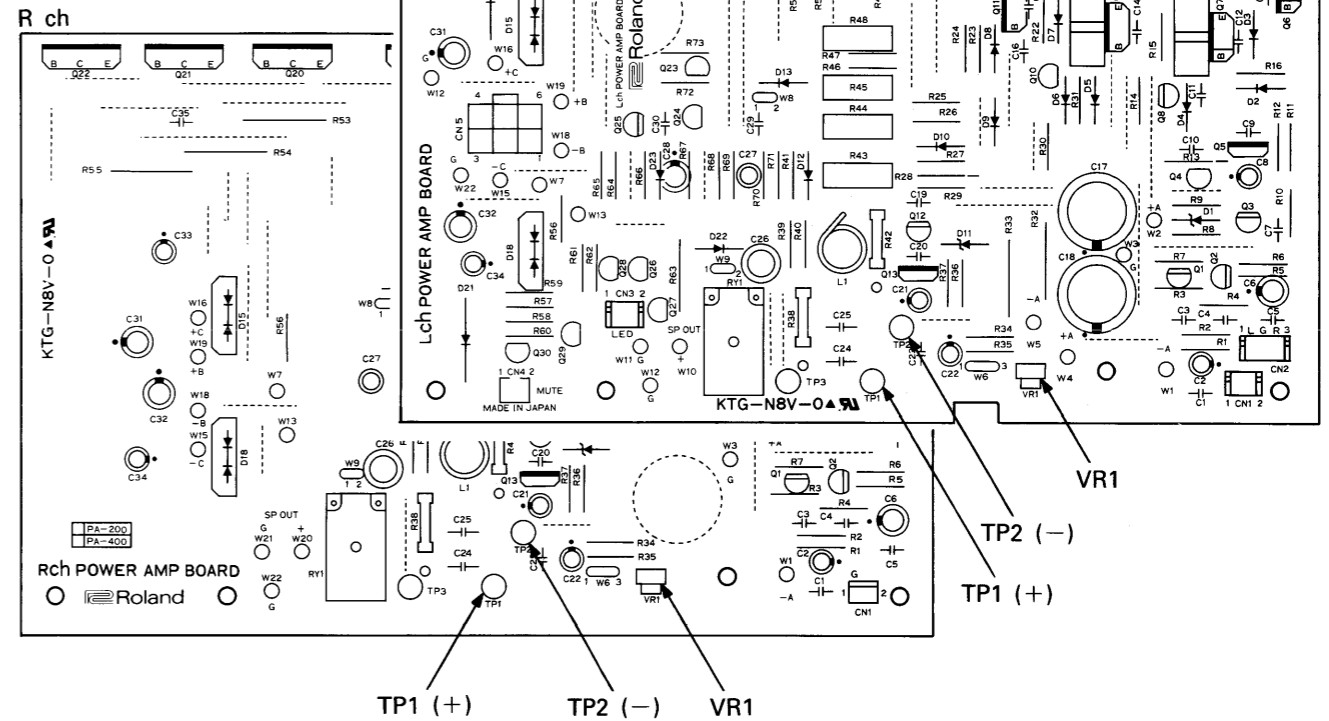
調整仕様

1. アイドリング (Lch/Rch Power Amp Board)

- 注) •長時間又は過負荷使用で、ヒートシンクが過熱している場合は50°C以下になってから行うこと。
•測定器のGNDはアースされていないこと。(アイドリング調整のみ)

電源電圧を定格電圧に合わせる
 入力 無信号
 SP-OUT 無負荷
 MASTER FADER MIN
 電源 SW ON してから10秒後に、下表の各テスト・ポイント間の電圧が、10mVDC になる様に各 Ch の VR1 を調整する。(テスト・ポイントと "VR1" の位置は、Type A, Type B, Type C とも共通です。)

Fig. A. Power Amp Board



2. A/D/A BIAS (Reverb Board)

- 2-1. Connect an oscilloscope to TP1 on Reverb board (GND → Chassis) (RANGE :50mV/div. 5us/div .AC coupling)
- 2-2. Adjust VR1 on Reverb Board for A ≤10mV as shown in Fig. C.

オシロスコープを Reverb Board の TP1 に接続する。(グラウンドはシャーシからとること) (レンジ:50mV/div. 5us/div, AC 接続)

Fig. C の "A" (電位差) が 10mV 以下になる様に基板上の VR1 を調整する。

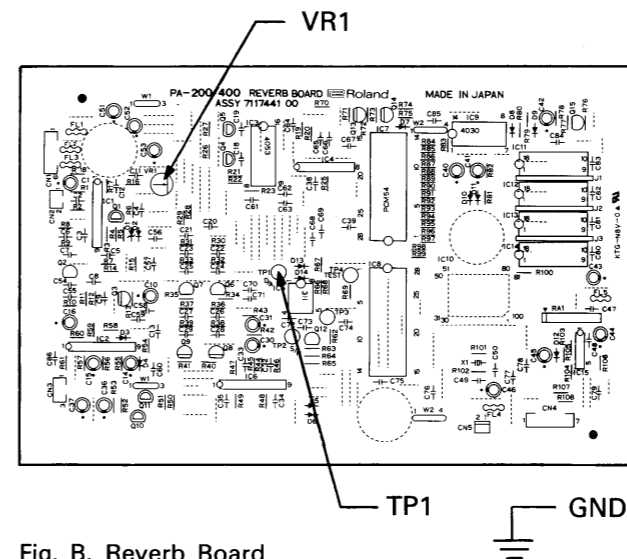


Fig. B. Reverb Board

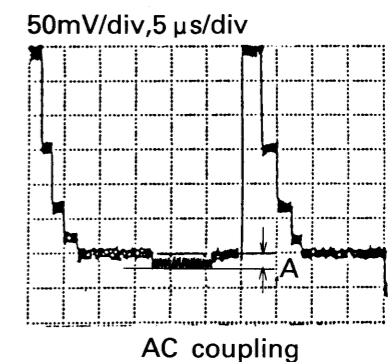
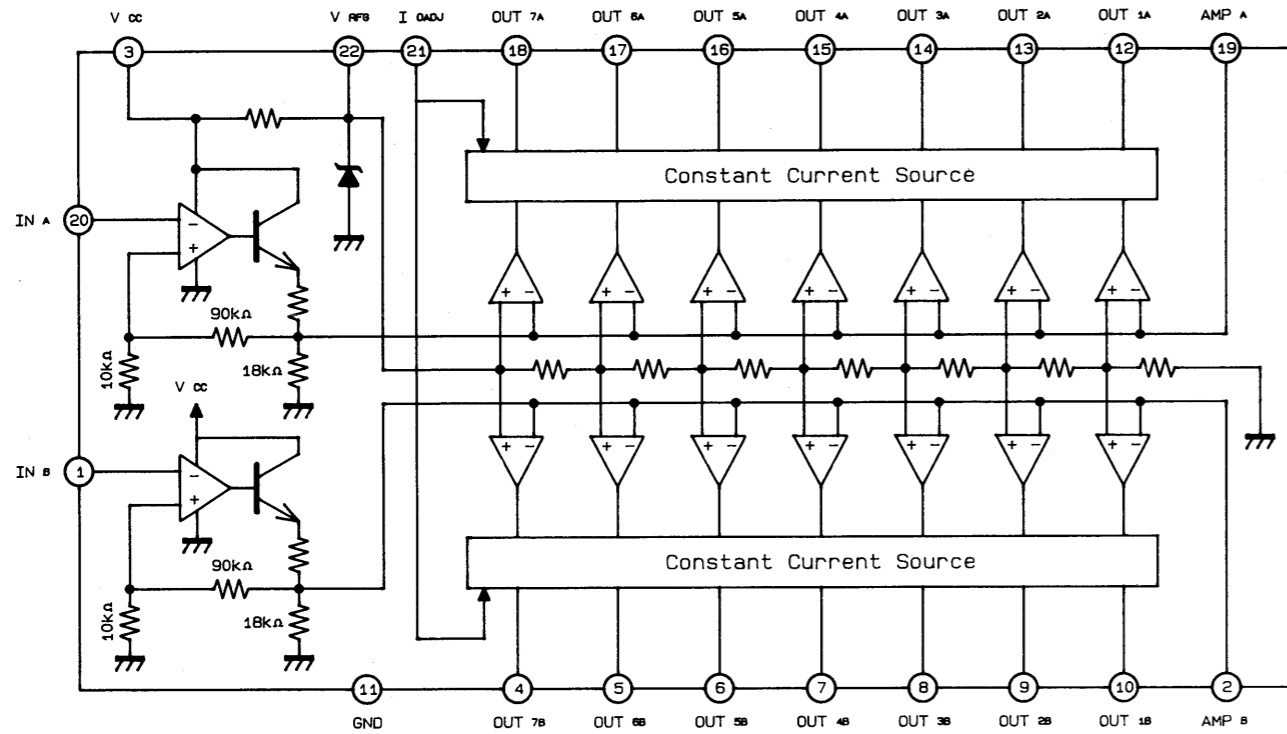


Fig. C (DA OUT)

IC DATA

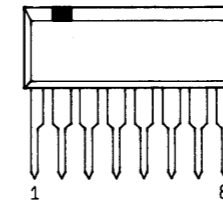
7-Dotx2-Channel
LED Display Driver
IR2E28 (15209130)



Note: Each OP amp is electrically incompatible with the others though pin-for-pin compatible. Replacement must be only the OP amp specified on the circuit diagram.

注: 各OP .ampは、足ピン配置は同じですが、性能の互換性はありません。修理する際は、回路図で指定されたOP .ampを使用して下さい。

OP Amp
BA15218N (15189235)
M5238L (15189188)

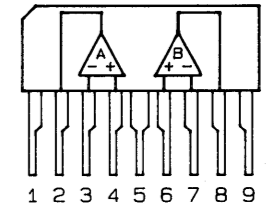


- 1. OUTPUT A
- 2. -INPUT A
- 3. +INPUT A
- 4. V-
- 5. +INPUT B
- 6. -INPUT B
- 7. OUTPUT B
- 8. V+

Note: Each OP amp is electrically incompatible with the others though pin-for-pin compatible. Replacement must be only the OP amp specified on the circuit diagram.

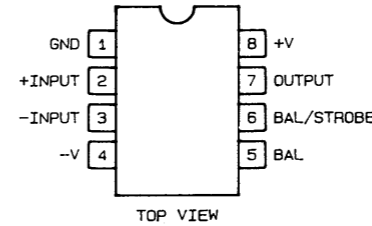
注: 各OP .ampは、足ピン配置は同じですが、性能の互換性はありません。修理する際は、回路図で指定されたOP .ampを使用して下さい。

OP Amp
uPC4570HA (15189189),
NJM4556S (15189201),
NJM4565SD (15189242),
NJM2068SD (15189192)

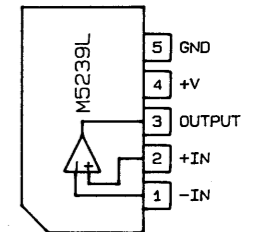


- 1. V+
- 2. OUTPUT A
- 3. -INPUT A
- 4. +INPUT A
- 5. V-
- 6. +INPUT B
- 7. -INPUT B
- 8. OUTPUT B
- 9. V+

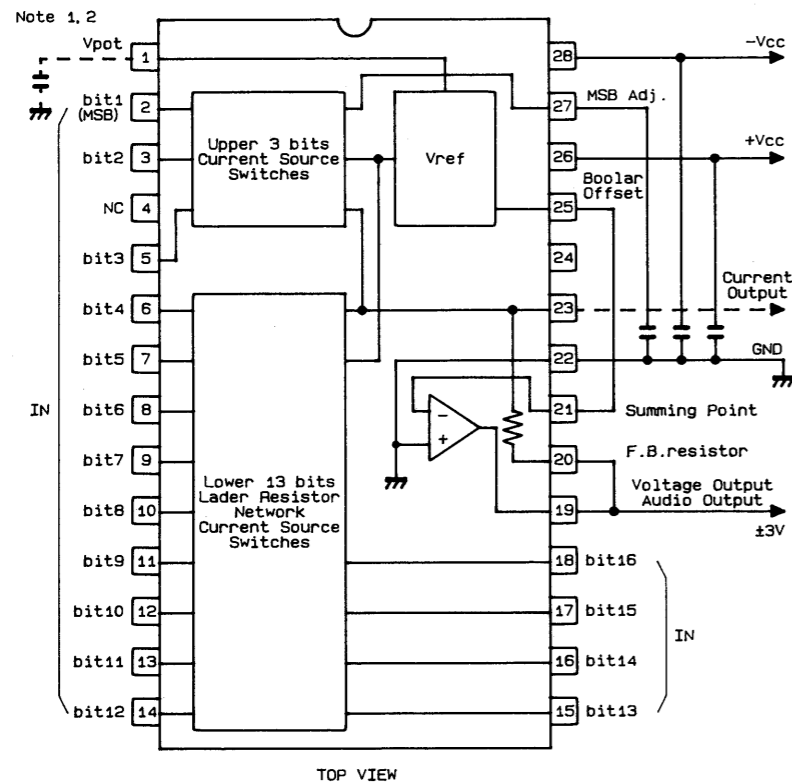
Comparator
NJM311D
(15189111J1)



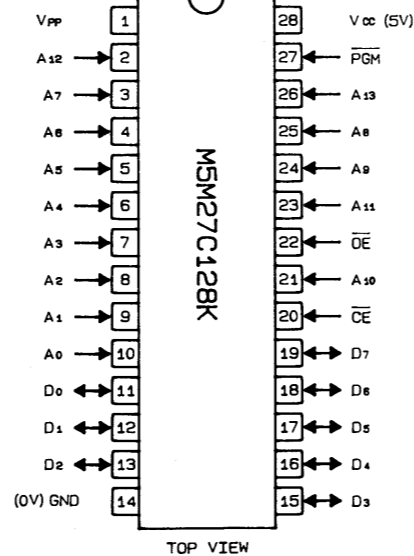
Comparator
M5239L
(15189202)



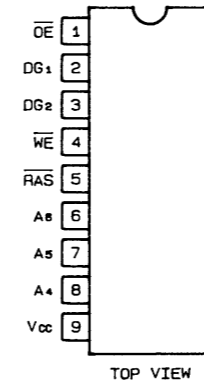
D/A Converter
(IC7 on Reverb Board)
PCM54 (15219162)



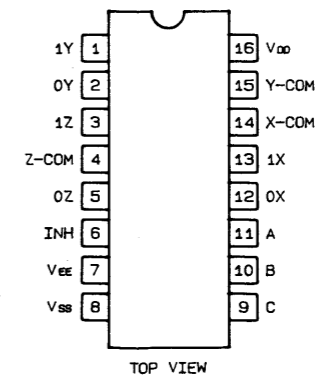
EP ROM
(IC8 on Reverb Board)
M5M27C128K-2
(15449197: program)
(15179799: blank)



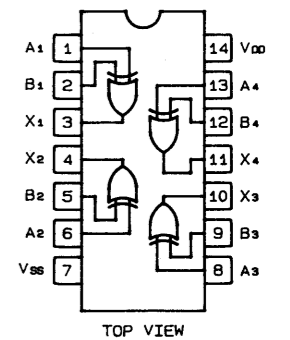
D RAM
(IC11-14 on RB)
MB81416-10
(15179376)



Analog SW
BU4053BP
(15159129D0)



Quad EX OR Gate
BU4030BP
(15159110D0)



CHANGE INFORMATION

—MAIN AMP BOARD—

◎Main Amp Board:
Relayout of pattern and change of components and deleted surface parts and components.

Changed parts: Wiring,
Connector
(5219-02A (PNo.13439326)
→ 5566-06A (PNo.13439306))
Diode
(RU4Z (PNo.15019166)
→ FMU-32S (PNo.15039134))

Deleted parts: Connector
5285-04A

EFF. SNo. : ZB31050 -up (PA-200)
ZB31150 -up (PA-400)

Reason : To prevent unusual oscillation.

◎SP Jack Board (pcb 2292579700 4/10):

Relayout of foil pattern and surface mounting of jumper wire on rear side.
(See Fig. A for details.)

EFF. SNo. : ZA50100—ZB21049 (PA-200)
ZA50100—ZB21149 (PA-400)

Reason : To improve circuit response characteristic.

—CHANNEL BOARD—

◎Channel Board:
Relayout of pattern, addition of components and surface mount. (See Fig. B for details.)

Added parts: R1 (47Ω), R30 (1kΩ), C37 (0.0012μF) and jumper.

EFF. SNo. : ZA50100—ZB21049 (PA-200)
ZA50100—ZB21149 (PA-400)

Reason : To improve circuit response characteristic.

◎Channel Board:

Relayout of pattern.

EFF. SNo. : ZB31050 -up (PA-200)
ZB31150 -up (PA-400)

Reason : To delete surface parts.

—MASTER BOARD—

◎GEQ Board (pcb 2292579500 3/12):
Relayout of pattern and addition of components.

Added parts: C151-154 (0.1μF/25V)

EFF. SNo. : ZB31050 -up (PA-200)
ZB31150 -up (PA-400)

Reason : To prevent unusual oscillation.

変更案内

—MAIN AMP BOARD—

◎Main Amp Boardのパターン修正, 部品変更, 部品削除, 裏付け部品の削除

部品変更: ワイヤリング,
コネクター
(5219-02A (PNo.13439326)
→ 5566-06A (PNo.13439306))
ダイオード
(RU4Z (PNo.15019166)
→ FMU-32S (PNo.15039134))

部品削除: コネクター 5285-04A

実施製番: ZB31050 以降 (PA-200)
ZB31150 以降 (PA-400)

理由 : 発振対策のため。

◎SP Jack Board (pcb 2292579700 4/10):

パターン修正とジャンパー線の裏付け。
(詳細は, Fig. A 参照)

実施製番: ZA50100—ZB21049 (PA-200)
ZA50100—ZB21149 (PA-400)

理由 : 特性改善のため。

—CHANNEL BOARD—

◎Channel Boardのパターン修正, 部品追加(裏付け)
(詳しくは, Fig. B 参照)

部品追加: R1(47Ω), R30(1kΩ), C37(0.0012μF),
ジャンパー線

実施製番: ZA50100—ZB21049 (PA-200)
ZA50100—ZB21149 (PA-400)

理由 : 特性改善のため。

◎Channel Boardのパターン修正

実施製番: ZB31050 以降 (PA-200)
ZB31150 以降 (PA-400)

理由 : 裏付け部品の削除のため。

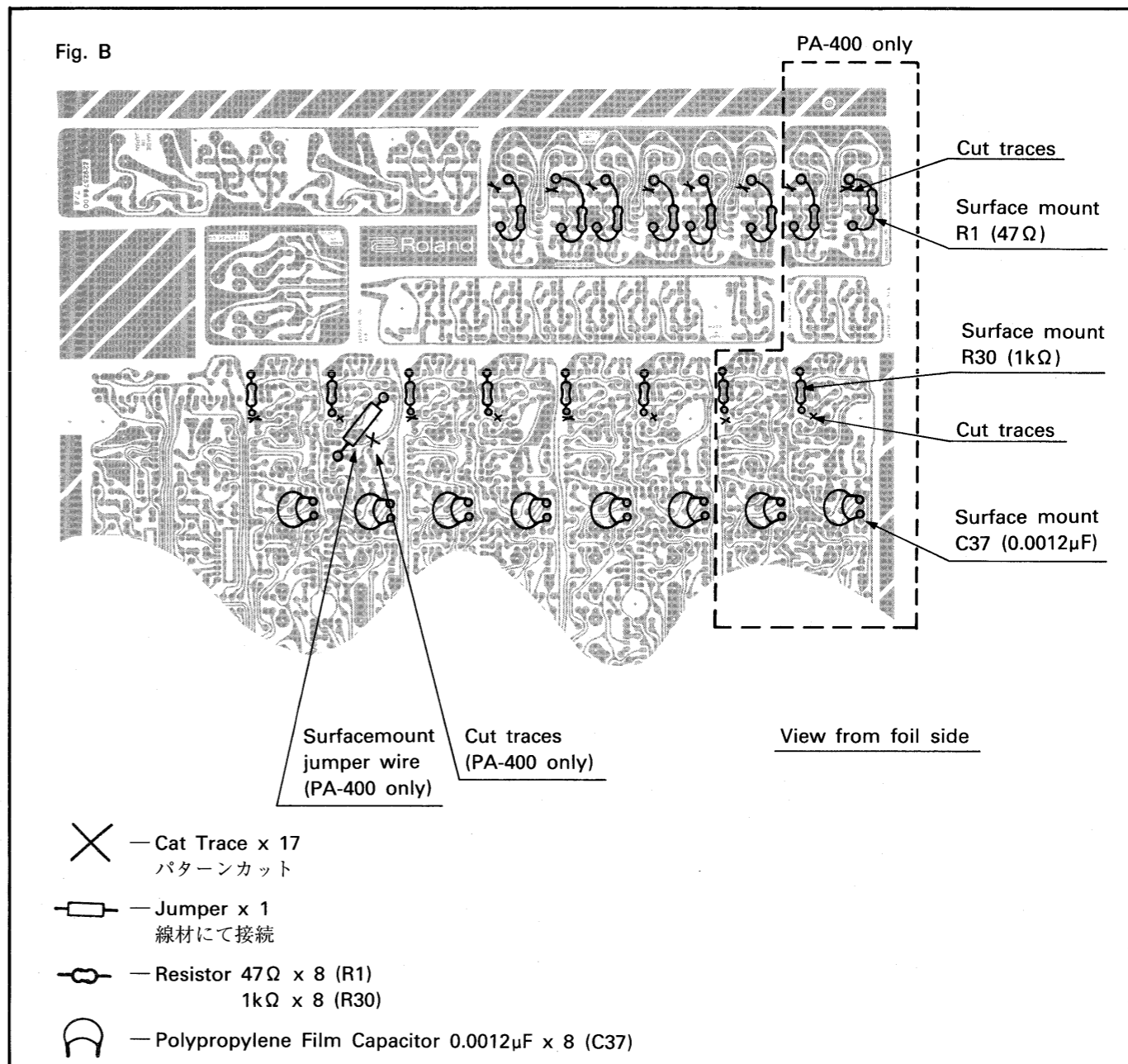
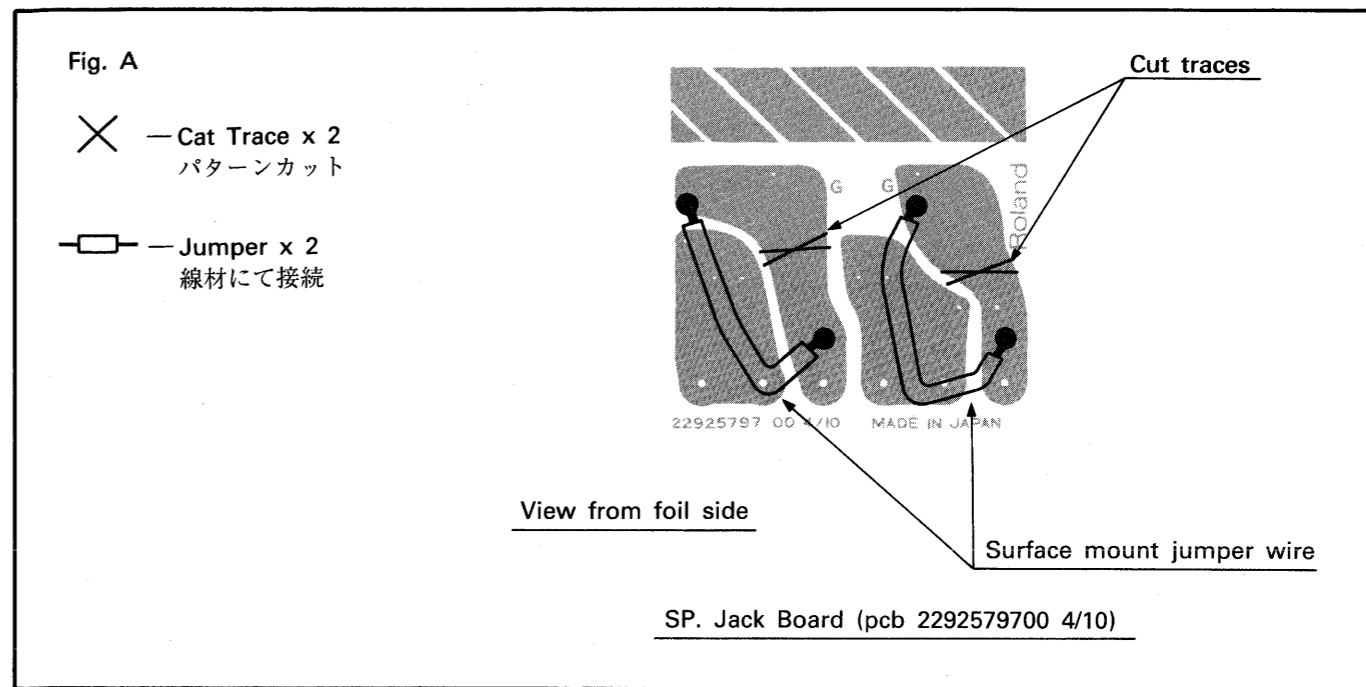
—MASTER BOARD—

◎GEQ Board (pcb 2292579500 3/12):
パターン修正と部品追加

部品追加: C151-154(0.1μF/25V)

実施製番: ZB31050 以降 (PA-200)
ZB31150 以降 (PA-400)

理由 : 発振対策のため。



◎Addition of VR MASK (CHANNEL BOARD) (for details, see Fig. C.)

Added parts: PA-200: VR MASK B (PNo.22245576)
VR MASK C (PNo.22245577)
PA-400: VR MASK B (PNo.22245576)
VR MASK C (PNo.22245577)
VR MASK D (PNo.22245578)

EFF. SNo. : SNo.ZD11900-up (PA-200)
SNo.ZC62850-up (PA-400)

Reason : To prevent the variable resistor from becoming loose.

Application to servicing : If you have received a claim, insert the VR Mask between the variable resistor and knob.

◎Addition of VR MASK (MASTER BOARD) (for details, see Fig. D.)

Added parts: VR MASK A (PNo.22245563)

EFF. SNo. : SNo.ZD11900-up (PA-200)
SNo.ZC62850-up (PA-400)

Reason : To prevent the variable resistor from becoming loose.

Application to servicing : If you have received a claim, insert the VR Mask between the variable resistor and knob.

◎Addition of FADER MASK (for details, see Fig. E.)

Added parts: PA-200: FADER MASK (PNo.22245214)
PA-400: FADER MASK (PNo.22245215)

EFF. SNo. : SNo.ZD11900-up (PA-200)
SNo.ZC62850-up (PA-400)

Reason : To prevent the Fader from becoming loose.

Application to servicing : If you have received a claim, install the Fader Mask.

◎Change in installation of voltage regulator (for details, see Fig. F.)

Parts modification: Change in Trans Shield shape

PA-200:
PNo.***** ==> PNo.22255301
PA-400:
PNo.***** ==> PNo.22255295

Added parts: VRGL HOLDER (PNo.22205654)

EFF. SNo. : SNo.ZD11950-up (PA-200)
SNo.ZC73000-up (PA-400)

Reason : To improve workability.

Application to servicing : If the old type Trans Shield specified in your purchase order is out of stock, we will send a new type Trans Shield, Please install the new type.

Caution: The VRGL Holder (PNo.22205654) is required to change the old type Trans Shield into the new type. Please order this part separately.

◎VR MASKの追加 (CHANNEL BOARD) (詳しくは、Fig. C 参照)

部品追加: PA-200: VR MASK B (PNo.22245576)
VR MASK C (PNo.22245577)
PA-400: VR MASK B (PNo.22245576)
VR MASK C (PNo.22245577)
VR MASK D (PNo.22245578)

実施製番: SNo.ZD11900 以降 (PA-200)
SNo.ZC62850 以降 (PA-400)

理由 : ボリュームのグラツキを防ぐため。

サービスの対応 : クレームがあった場合、VR MASK をボリュームとツマミの間に挿入して下さい。

◎VR MASKの追加 (MASTER BOARD) (詳しくは、Fig. D 参照)

部品追加: VR MASK A (PNo.22245563)

実施製番: SNo.ZD11900 以降 (PA-200)
SNo.ZC62850 以降 (PA-400)

理由 : ボリュームのグラツキを防ぐため。

サービスの対応 : クレームがあった場合、VR MASK をボリュームとツマミの間に挿入して下さい。

◎FADER MASKの追加 (詳しくは、Fig. E 参照)

部品追加: PA-200: FADER MASK (PNo.22245214)
PA-400: FADER MASK (PNo.22245215)

実施製番: SNo.ZD11900 以降 (PA-200)
SNo.ZC62850 以降 (PA-400)

理由 : フェーダーのグラツキを防ぐため。

サービスの対応 : クレームがあった場合、FADER MASK を取り付けて下さい。

◎三端子レギュレーターの取付方法変更 (詳しくは、Fig. F 参照)

部品変更: TRANS SHIELD の形状変更

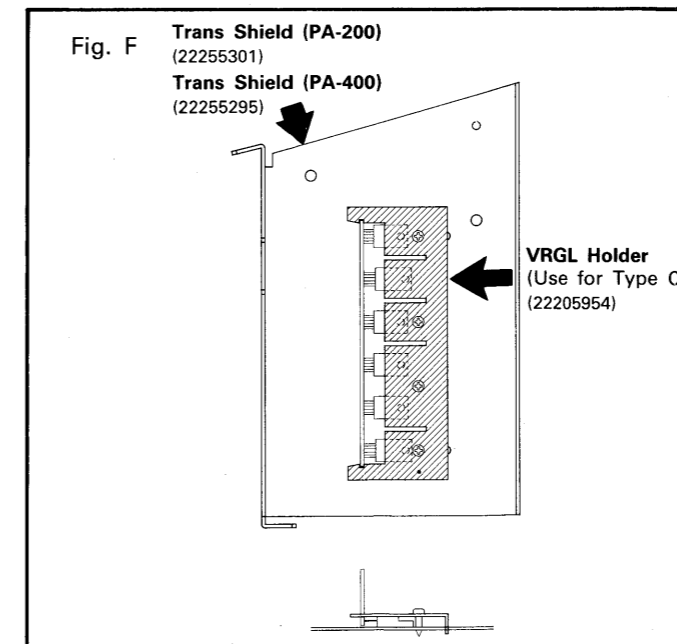
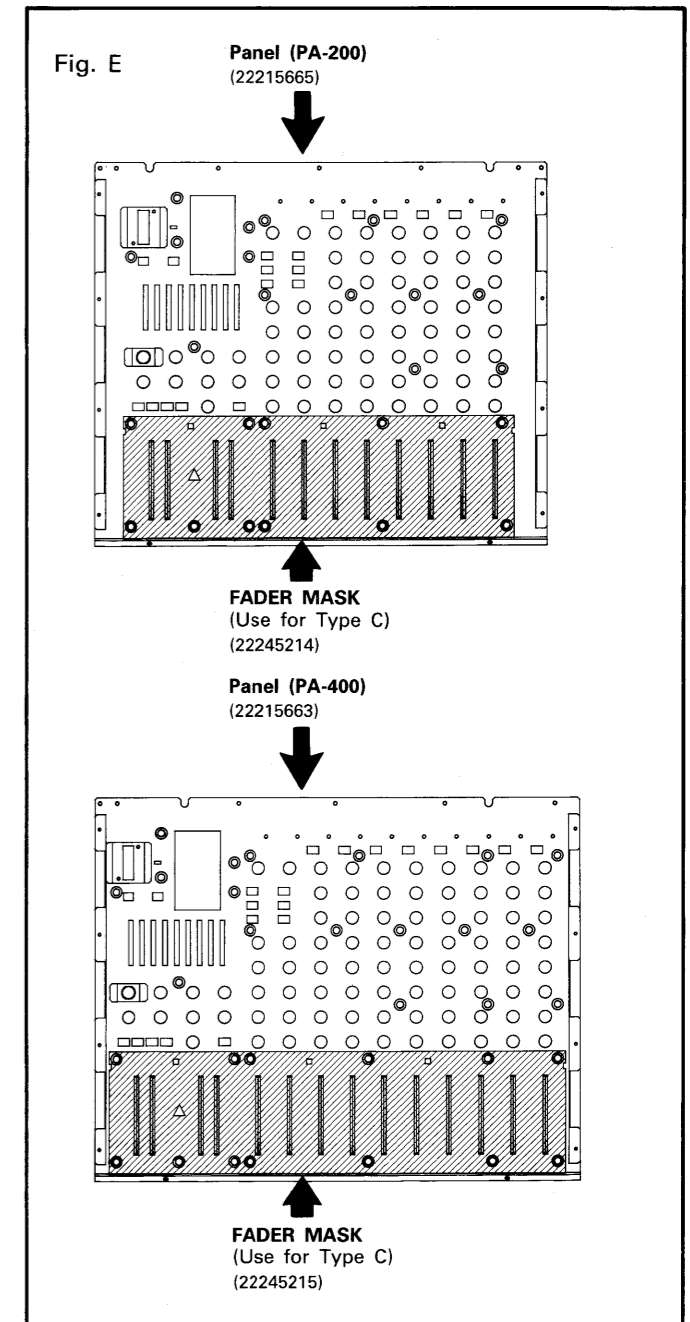
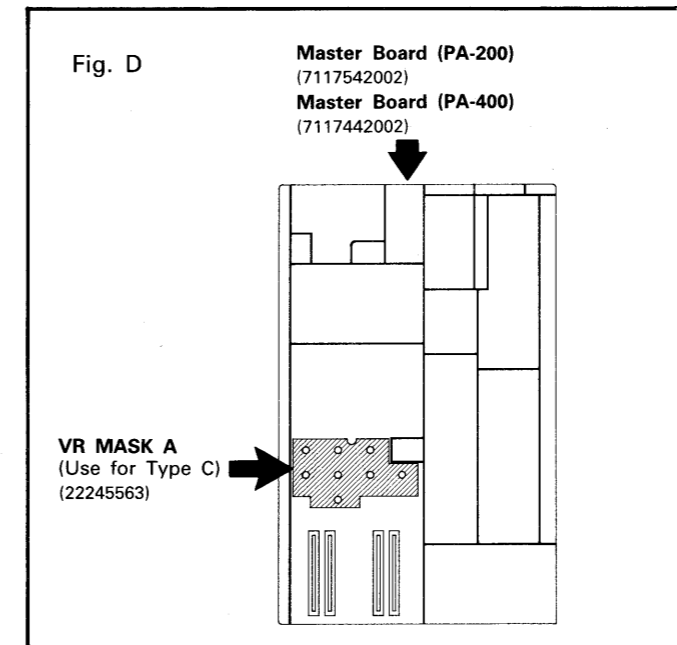
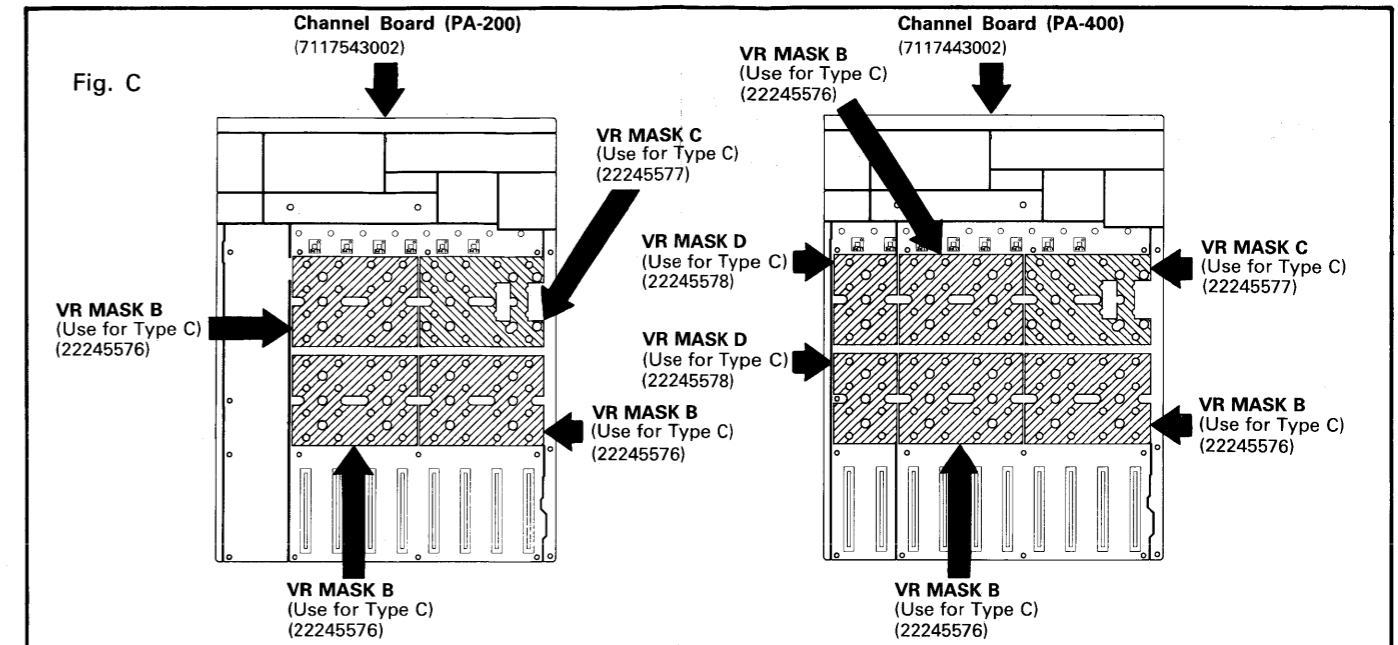
PA-200:
PNo.***** ==> PNo.22255301
PA-400:
PNo.***** ==> PNo.22255295

部品追加: VRGL HOLDER (PNo.22205654)

実施製番: SNo.ZD11950 以降 (PA-200)
SNo.ZC73000 以降 (PA-400)

理由 : 作業性改善のため。

サービスの対応 : 旧タイプの TRANS SHIELD をオーダーされても、当社に在庫が無い場合は新タイプの TRANS SHIELD を送りますので新タイプの TRANS SHIELD を取り付けて下さい。
注意: TRANS SHIELD を旧タイプから新タイプに交換する際は、VRGL HOLDER (PNo.22205654) が必要ですので、別途オーダーして下さい。



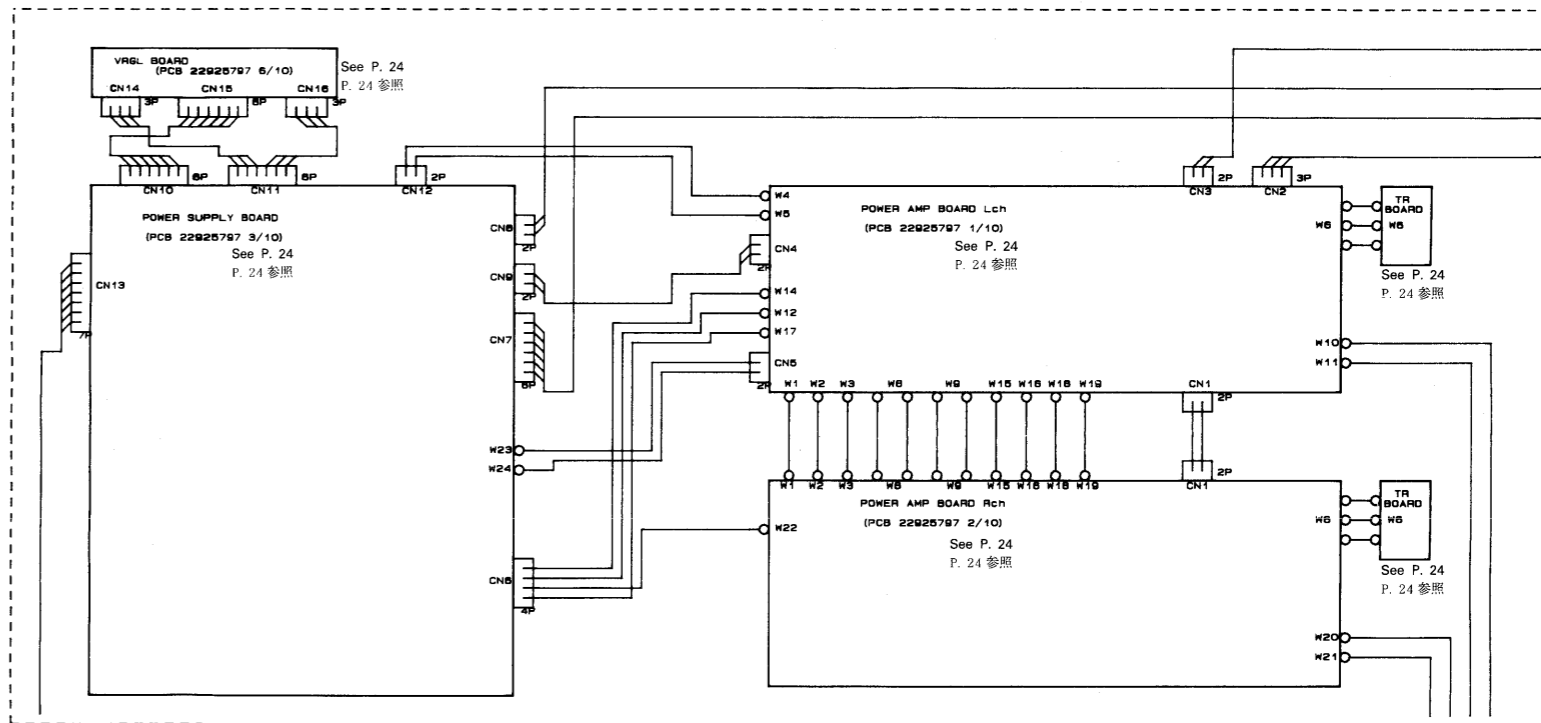
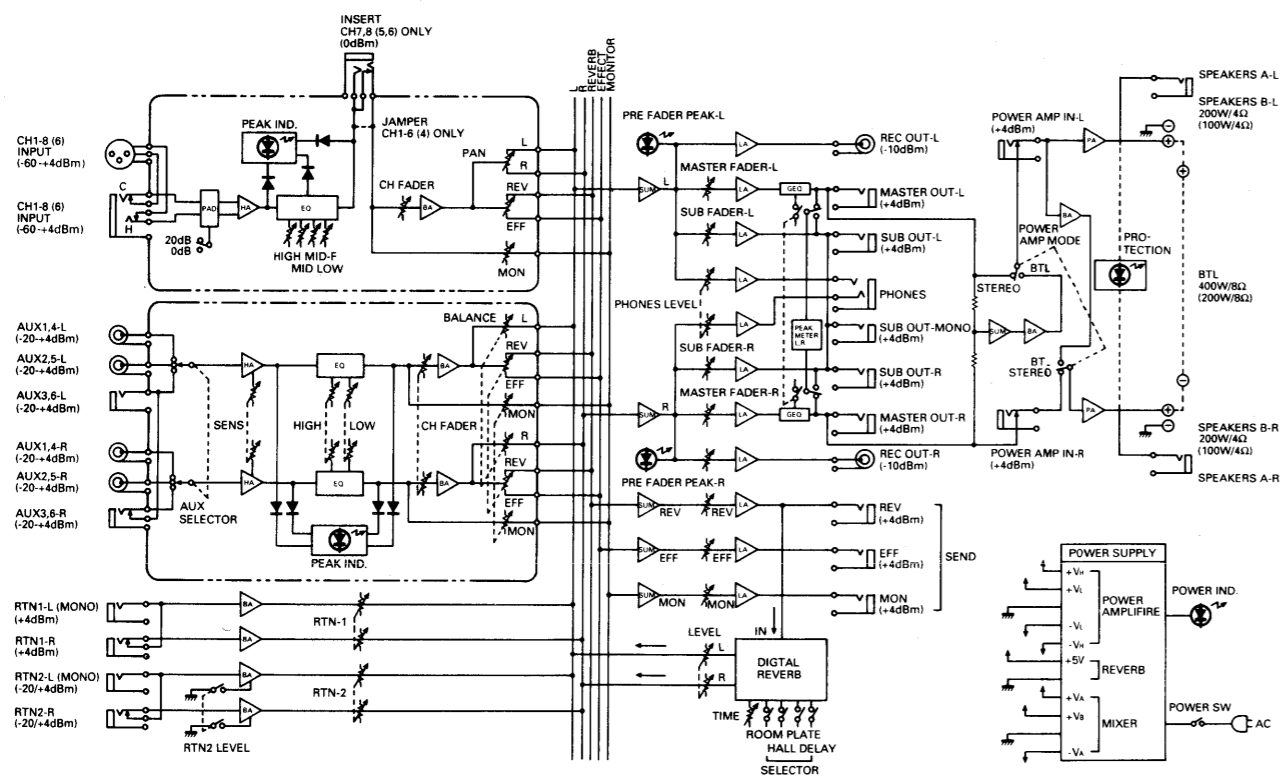
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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BLOCK DIAGRAM (PA-200/400 common) PA-200/400 共通

WIRING DIAGRAM

PA-200: SNo.ZA50100-ZB21049 } Type A
PA-400: SNo.ZA50100-ZB21049 }

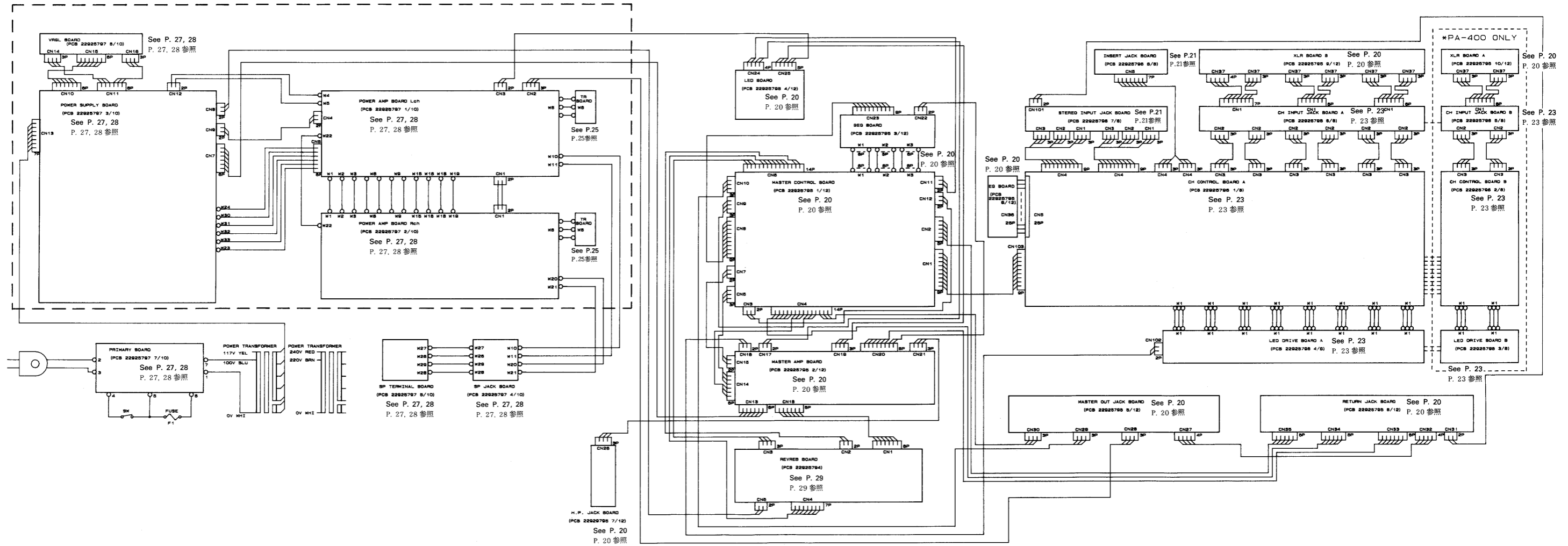


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A PA-200: SNo.ZB31050-ZC41899 } Type B
PA-400: SNo.ZB31150-ZC52849 }

B PA-200: SNo.ZD11900-up/以降 } Type C
C PA-400: SNo.ZC62850-up/以降 }

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A MASTER BOARD

ASSY 7117542002 : PA-200 (pcb 2292579502)

ASSY 7117442002 : PA-400

REPLACEMENT (補修用)

NOTE: Replacement Master Board of PA-200 and that of PA-400 have dedicated wiring Assy, respectively, and cannot be substituted for each other.

注: PA-200 と PA-400 の補修用マスター基板は、ワイヤリングのため互換性はありません。

MASTER BOARD
ASSY 7117542002 : PA-200
ASSY 7117442002 : PA-400

◆ Master Board consists of the following 12PCBs
◆ マスター基板は、下記の12点から成ります。

- Master Control Board (pcb 2292579502 1/12)
- Master Amp Board (pcb 2292579502 2/12)
- GEQ Board (pcb 2292579502 3/12)
- LED Board (pcb 2292579502 4/12)
- Master Out Jack Board (pcb 2292579502 5/12)
- Return Jack Board (pcb 2292579502 6/12)
- H. P. Jack Board (pcb 2292579502 7/12)
- EQ Board (pcb 2292579502 8/12)
- XLR Board B (pcb 2292579502 9/12)
- XLR Board A (pcb 2292579502 10/12)
- Spacer Board (pcb 2292579502 11/12)
- Spacer Board (pcb 2292579502 12/12)

Master Out Jack Board
(pcb 2292579502 5/12)

XLR Board B
(pcb 2292579502 9/12)

Return Jack Board
(pcb 2292579502 6/12)

XLR Board A
(pcb 2292579502 10/12)

Spacer Board
(pcb 2292579502 11/12)

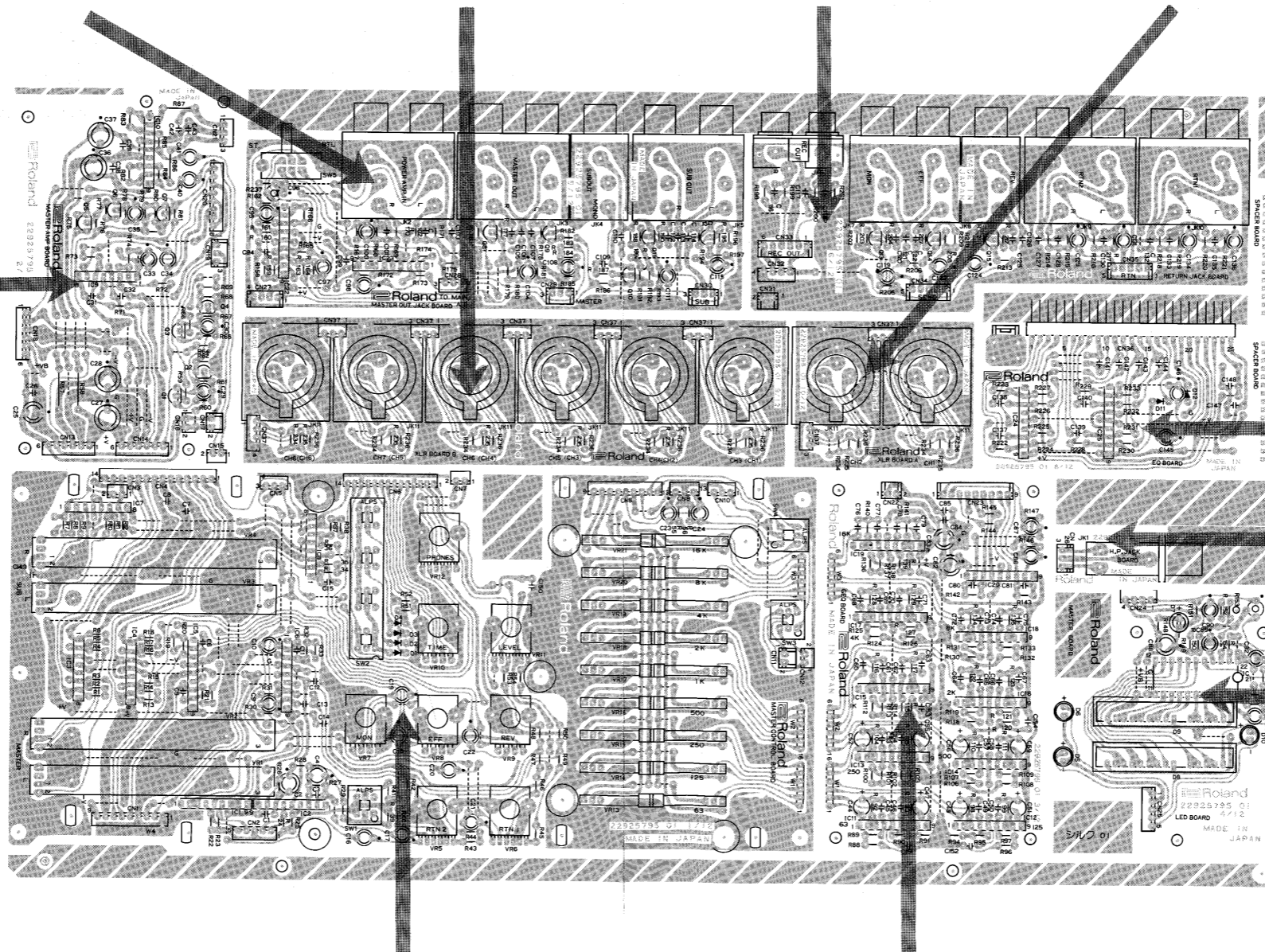
Spacer Board
(pcb 2292579502 12/12)

EQ Board
(pcb 2292579502 8/12)

H. P. Jack Board
(pcb 2292579502 7/12)

LED Board
(pcb 2292579502 4/12)

Master Amp Board
(pcb 2292579502 2/12)



Master Control Board
(pcb 2292579502 1/12)

GEQ Board
(pcb 2292579502 3/12)

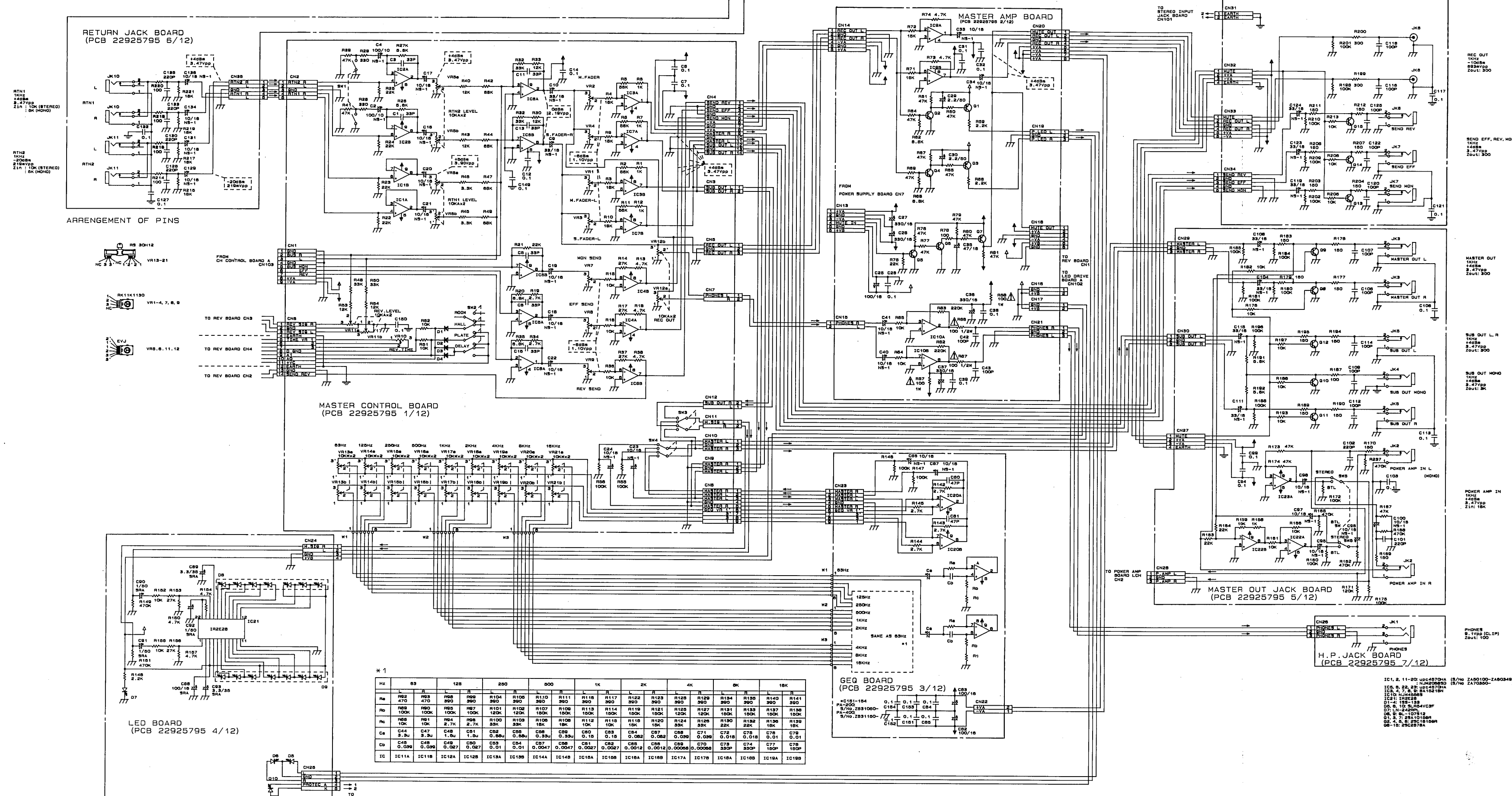
View from foil side

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CIRCUIT DIAGRAM (Master Board)



NO.	QTY	UNIT	NO.	QTY	UNIT	NO.	QTY	UNIT	NO.	QTY	UNIT	NO.	QTY	UNIT
101	1	RES	101	1	RES	101	1	RES	101	1	RES	101	1	RES
102	1	RES	102	1	RES	102	1	RES	102	1	RES	102	1	RES
103	1	RES	103	1	RES	103	1	RES	103	1	RES	103	1	RES
104	1	RES	104	1	RES	104	1	RES	104	1	RES	104	1	RES
105	1	RES	105	1	RES	105	1	RES	105	1	RES	105	1	RES
106	1	RES	106	1	RES	106	1	RES	106	1	RES	106	1	RES
107	1	RES	107	1	RES	107	1	RES	107	1	RES	107	1	RES
108	1	RES	108	1	RES	108	1	RES	108	1	RES	108	1	RES
109	1	RES	109	1	RES	109	1	RES	109	1	RES	109	1	RES
110	1	RES	110	1	RES	110	1	RES	110	1	RES	110	1	RES
111	1	RES	111	1	RES	111	1	RES	111	1	RES	111	1	RES
112	1	RES	112	1	RES	112	1	RES	112	1	RES	112	1	RES
113	1	RES	113	1	RES	113	1	RES	113	1	RES	113	1	RES
114	1	RES	114	1	RES	114	1	RES	114	1	RES	114	1	RES
115	1	RES	115	1	RES	115	1	RES	115	1	RES	115	1	RES
116	1	RES	116	1	RES	116	1	RES	116	1	RES	116	1	RES
117	1	RES	117	1	RES	117	1	RES	117	1	RES	117	1	RES
118	1	RES	118	1	RES	118	1	RES	118	1	RES	118	1	RES
119	1	RES	119	1	RES	119	1	RES	119	1	RES	119	1	RES
120	1	RES	120	1	RES	120	1	RES	120	1	RES	120	1	RES

* Signal levels (dBm, Vpp) in circuit diagram are taken under conditions.
 * 回路図内の信号レベル (dBm, Vpp) は下記のモックアップ時のレベルです。

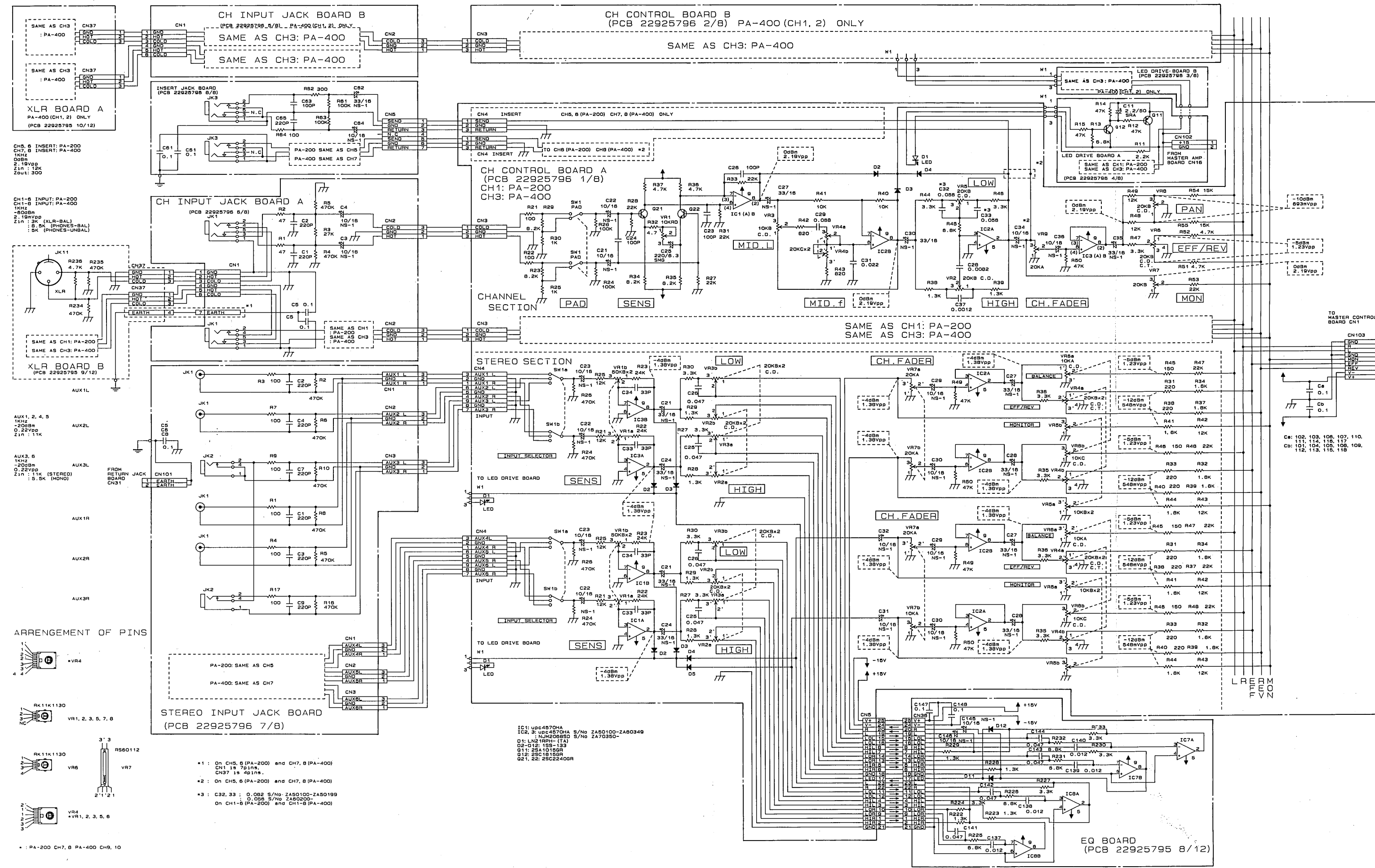
SETTINGS

CHANNEL SECTION	MASTER SECTION
SENS : -60dBm	RETURN : 10 (IMAX)
FAD : OFF	RTN2 : 10 (IMAX)
AUX SELECTOR : Select it if necessary	SEND : 8
EQ (HIGH) : center	REV : 8
(MID) : center	MON : 8
(LOW) : center	EFF : 8
REVEFF : REV circuit is checked : REV to (MAX)	RTN2-LEVEL : Select this button according to
When EFF circuit is checked : EFF to (MAX)	PHONES : 10
MON : 10 (IMAX)	INPUT LEVEL : OFF
PAN : center	MASTER Faders : 8
CH Faders : 10 (IMAX)	SUBOUT Faders : 8

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

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CIRCUIT DIAGRAM (Channel Board)



*Signal labels (dBm, Vpp) in circuit diagram are taken under conditions.
*回路図内の信号レベル (dBm, Vpp) は下記のセッティング時のレベルです。

SETTING LEVEL	
CHANNEL SECTION	MASTER SECTION
SENS : 40dBm	RETURN : 10 (MAX)
PAD : OFF	RTN2 : 10 (MAX)
AUX SELECTOR : Select it if necessary	SEND : 8
EQ IN/ON : center	REV : 8
(MID) : center	EFF : 8
(LOW) : center	MON : 8
REVEFF : REV circuit is checked	PHONES : 10
When REV circuit is checked	RTN2-LEVEL : Select this button
REV to (MAX)	INPUT LEVEL
EFF to (MAX)	according to
MON : 10 (MAX)	GEO
PAN : center	MASTER faders : 8
CH Faders : 10 (MAX)	SUBOUT faders : 8

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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CHANNEL BOARD

ASSY 7117543002 : PA-200 (pcb 2292579602)

ASSY 7117443002 : PA-400

REPLACEMENT (補修用)

NOTE: Replacement Channel Board of PA-200 and that of PA-400 have dedicated wiring Assy, respectively, and cannot be substituted for each other.

■Difference between replacement Channel Board of PA-200 and that of PA-400.

PA-200 と PA-400 の補修用チャンネル基板の違い (In addition to wiring difference) PA-200 Channel Board lacks some components on Channel Control Board B, which are found on PA-400's.

PA-200 補修用チャンネル基板には、一部、部品が実装されていません (Channel Control Board B上)

CHANNEL BOARD

ASSY 7117543002 : PA-200

ASSY 7117443002 : PA-400

◆ Channel Board consists of the following 8PCBs.

◆ チャンネル基板は、下記の8点から成ります

- Channel Control Board A (pcb 2292579602 1/8)
- Channel Control Board B (pcb 2292579602 2/8)
- LED Drive Board A (pcb 2292579602 3/8)
- LED Drive Board B (pcb 2292579502 4/8)
- Channel Input Jack Board B (pcb 2292579602 5/8)
- Channel Input Jack Board A (pcb 2292579602 6/8)
- Stereo Input Jack Board (pcb 2292579602 7/8)
- Insert Jack Board (pcb 2292579602 8/8)

LED Drive Board B (pcb 2292579602 3/8)

Channel Input Jack Board B (pcb 2292579602 5/8)

Channel Input Jack Board A (pcb 2292579602 6/8)

LED Drive Board A (pcb 2292579602 4/8)

Insert Jack Board (pcb 2292579602 8/8)

Stereo Input Jack Board (pcb 2292579602 7/8)

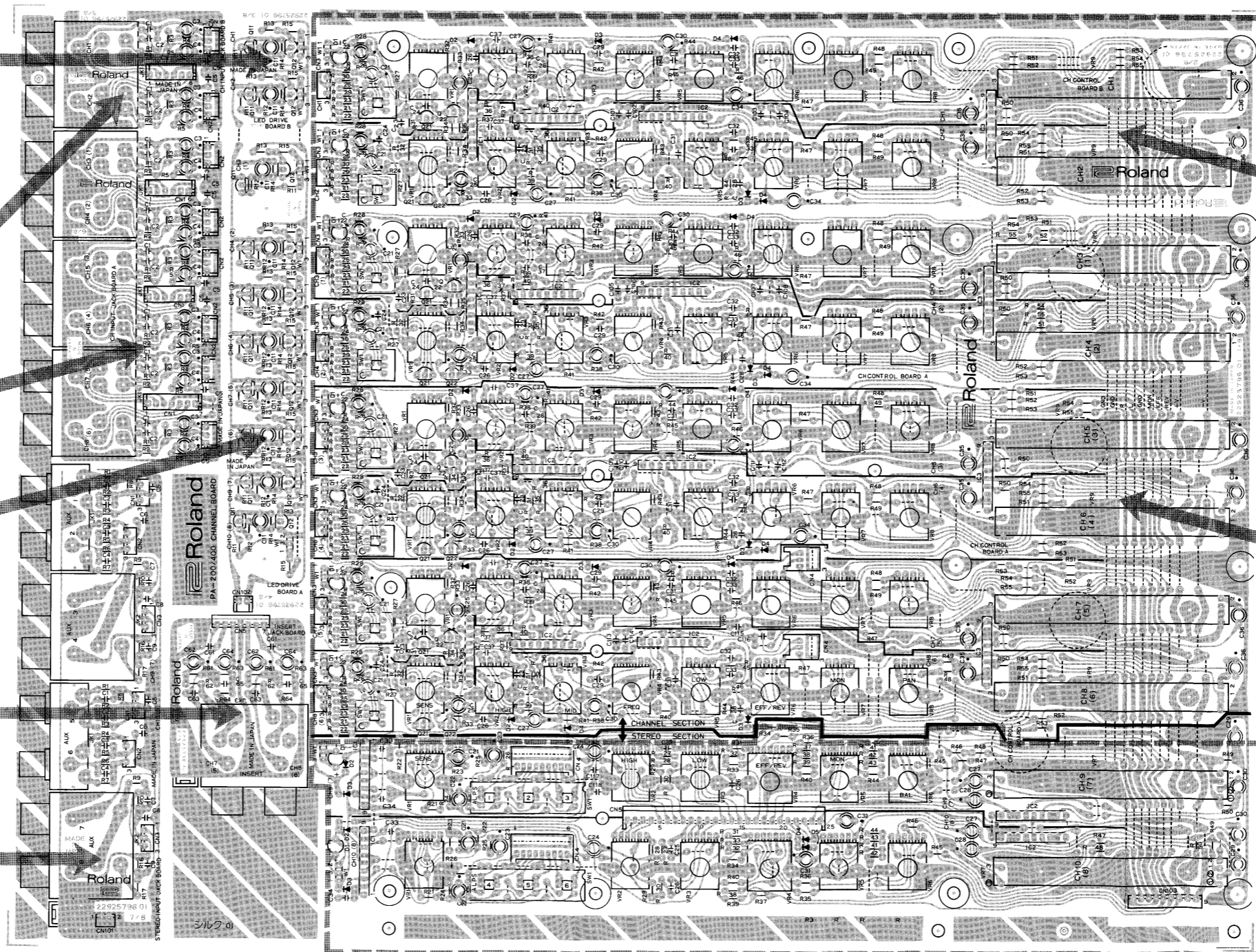
Channel Control Board B (pcb 2292579602 2/8)

Channel Control Board A (pcb 2292579602 1/8)

Channel Section

Stereo Section

View from foil side



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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MAIN AMP BOARD (230/240V)

ASSY 7117554400 : PA-200 (pcb 2292579700)
ASSY 7117454400 : PA-400

Type A

PA-200 : SNo.ZA50100-ZB21049
PA-400 : SNo.ZA50100-ZB21149

* Refer to the "RE: TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)" (P. 13, 14) about compatibility of Type A, Type B and Type C.
* Type A, Type B, Type C の互換性については, "Main Amp Board (230/240V) の Type A, Type B, Type C について" (P. 13, 14) を参照して下さい。

REPLACEMENT (補修用)

NOTE: Replacement Main Amp Board of PA-200 and that of PA-400 have dedicated wiring Assy, respectively, and cannot be substituted for each other.
注: PA-200 と PA-400 の補修用メイン・アンプ基板は、ワイヤリンクのため互換性はありません。

NOTE: Replacement Main Amp Board is 230/240V versions only. 230/240V version differs from 100/117V version only in fuse system Order proper fuses and fuse labels separately if necessary.
(Refer to the table right)
注: 補修用 Main Amp Board として 230/240V が共通使用されます。電圧区分による違いはヒューズ値、ヒューズ貼マークのみです。100/117V 用のヒューズ、ヒューズ貼マークが必要な場合は別途発注してください。(右表参照)

MAIN AMP BOARD (230/240V)
ASSY 7117554400 : PA-200
ASSY 7117454400 : PA-400

- ◆ Main Amp Board (230/240V) consists of the following 11PCBs.
- ◆ メイン・アンプ基板は、下記の11点から成ります
- Lch Power Amp Board (pcb 2292579700 1/10)
- Rch Power Amp Board (pcb 2292579700 2/10)
- Power Supply Board (pcb 2292579700 3/10)
- SP Jack Board (pcb 2292579700 4/10)
- SP Terminal Board (pcb 2292579700 5/10)
- VRGL Board (pcb 2292579700 6/10)
- Primary Board (pcb 2292579700 7/10)
- Spacer Board (pcb 2292579700 8/10)
- Spacer Board (pcb 2292579700 9/10)
- TR Board (Lch)
- TR Board (Rch)

PA-200

	Fuse	Parts No.	Fuse Label	Parts No.
100/117V	F1, F2	GGL-8A (12559421)	8.0A 250V	(41015174)
	F3, F4	T-GGS1A (12559335)	1.0A 250V	(41015163)
	F5, F6	TSC3A-N1 (12559402)	3.0A 125V	(41015119)
	F7	T-GGS1A (12559335)	1.0A 250V	(41015163)
220/240V	F1, F2	SF8A (12559608)	8.0A 60V	(41075199)
	F3, F4	CEE-400MAT (12559563)	T400mA 250V	(41015212)
	F5, F6	CEE-2.5AT (12559571)	T2.5A 250V	(41015220)
	F7	CEE-250MAT (12559561)	T250mA 250V	(41015210)

PA-400

	Fuse	Parts No.	Fuse Label	Parts No.
100/117V	F1, F2	GGL-10A (12559384)	10.0A 250V	(41015175)
	F3, F4	T-GGS1A (12559335)	1.0A 250V	(41015163)
	F5, F6	TSC3A-N1 (12559402)	3.0A 125V	(41015119)
	F7	T-GGS1A (12559335)	1.0A 250V	(41015163)
220/240V	F1, F2	SF10A (12559607)	10.0A 60V	(41075200)
	F3, F4	CEE-400MAT (12559563)	T400mA 250V	(41015212)
	F5, F6	CEE-2.5AT (12559571)	T2.5A 250V	(41015220)
	F7	CEE-250MAT (12559561)	T250mA 250V	(41015210)

Spacer Board

(pcb 2292579700 8/10)

SP Jack Board

(pcb 2292579700 4/10)

TR Board (Lch)

Spacer Board

(pcb 2292579700 9/10)

VRGL Board

(pcb 2292579700 6/10)

Primary Board

(pcb 2292579700 7/10)

SP Terminal Board

(pcb 2292579700 5/10)

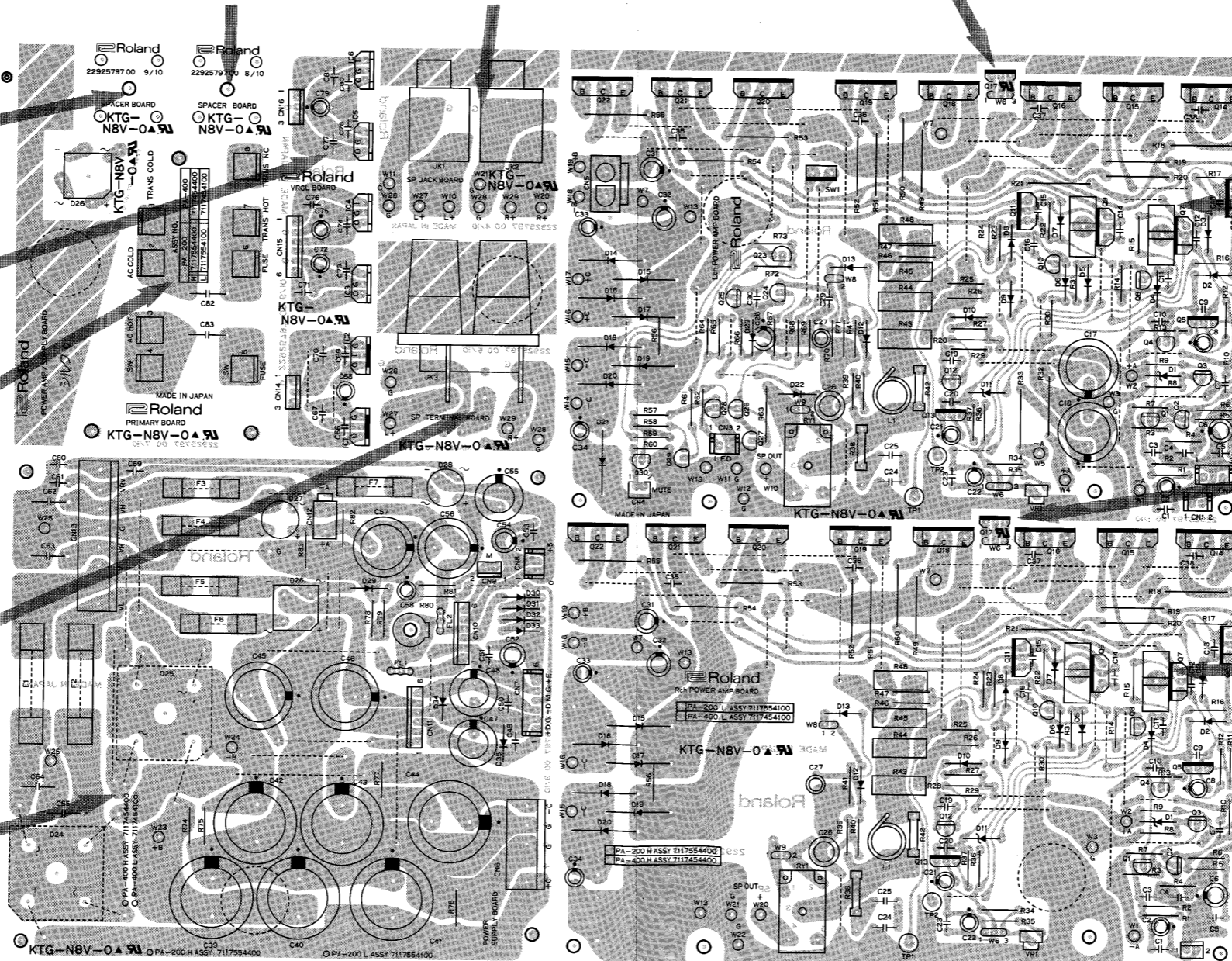
Power Supply Board

(pcb 2292579700 3/10)

Lch Power Amp Board
(pcb 2292579700 1/10)

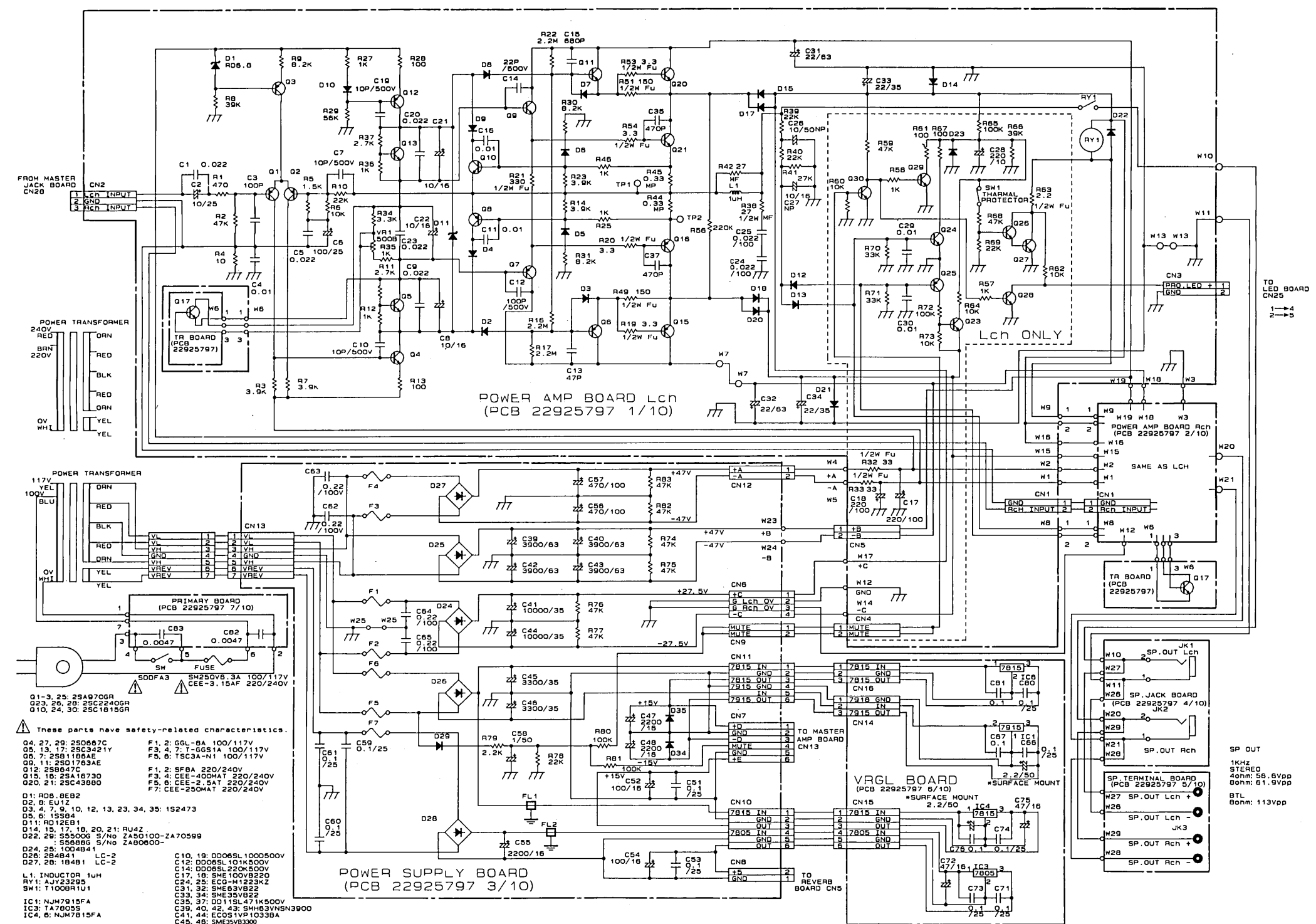
TR Board (Rch)

Rch Power Amp Board
(pcb 2292579700 2/10)



View from component side

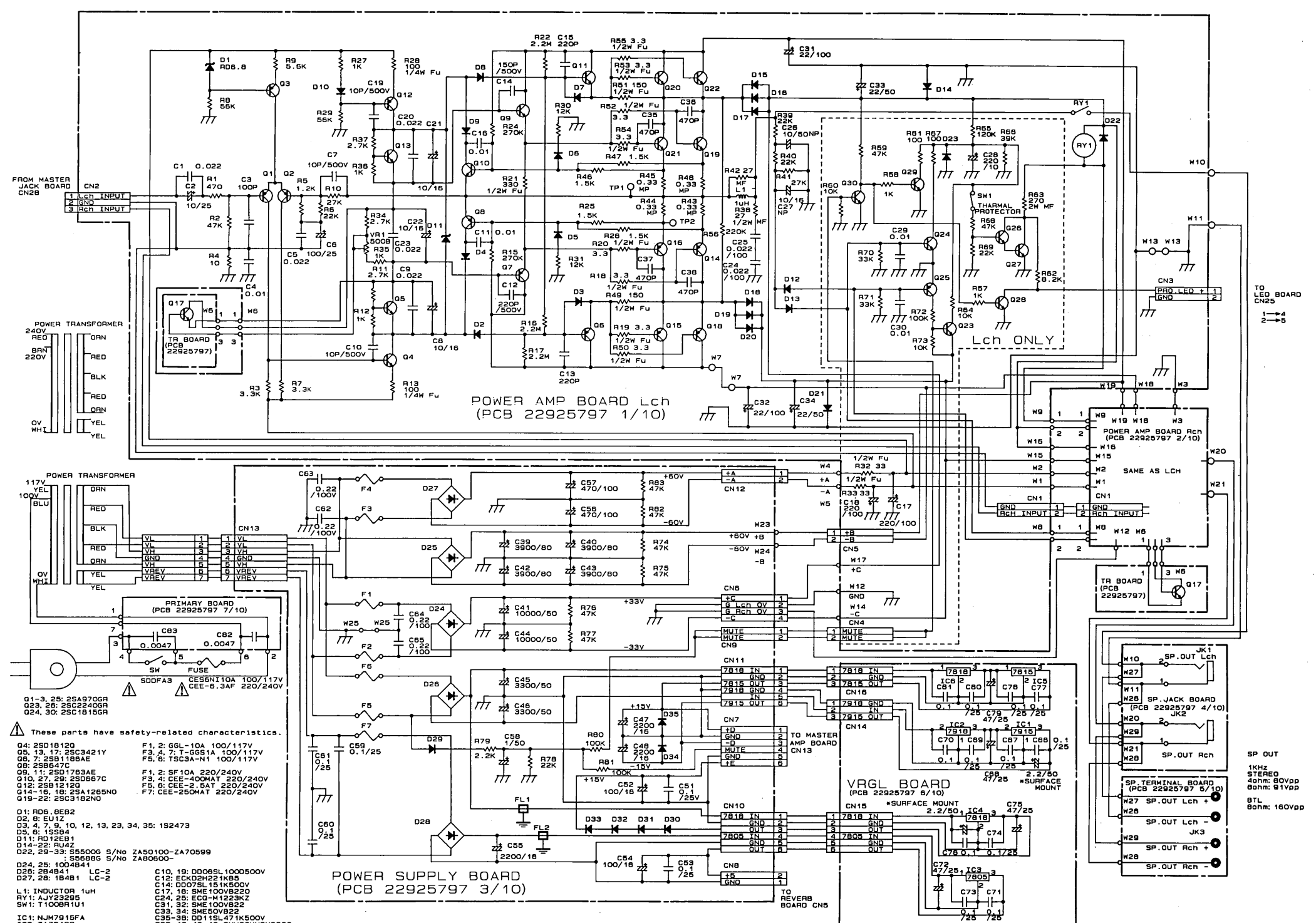
CIRCUIT DIAGRAM (Power Amp Board: PA-200)
Type A: SNo.ZA50100-ZB21049



- These parts have safety-related characteristics.
C1: 0.002
C2: 1000PF
C3: 1000PF
C4: 1000PF
C5: 1000PF
C6: 1000PF
C7: 1000PF
C8: 1000PF
C9: 1000PF
C10: 1000PF
C11: 1000PF
C12: 1000PF
C13: 1000PF
C14: 1000PF
C15: 1000PF
C16: 1000PF
C17: 1000PF
C18: 1000PF
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C94: 1000PF
C95: 1000PF
C96: 1000PF
C97: 1000PF
C98: 1000PF
C99: 1000PF
C100: 1000PF

* Signal levels (dBm, Vpp) in circuit diagram are taken under conditions.
CHANNEL SECTION: SENS: 40dBm, PAD: OFF, EG (HIGH): center, (MID): center, (LOW): center, REVEFF: center, MON: REV to (MAX), CH Faders: 10 (MAX)
MASTER SECTION: RETURN: 10 (MAX), RTN2: 10 (MAX), SEND: OFF, REV: 8, EFF: 8, MON: 8, PHONES: 10, RTN2-LEVEL: Select this button according to INPUT LEVEL, GEO: OFF, MASTER Faders: 8, SUBOUT Faders: 8

CIRCUIT DIAGRAM (Power Amp Board: PA-400)
Type A: SNo.ZA50100-ZB21149

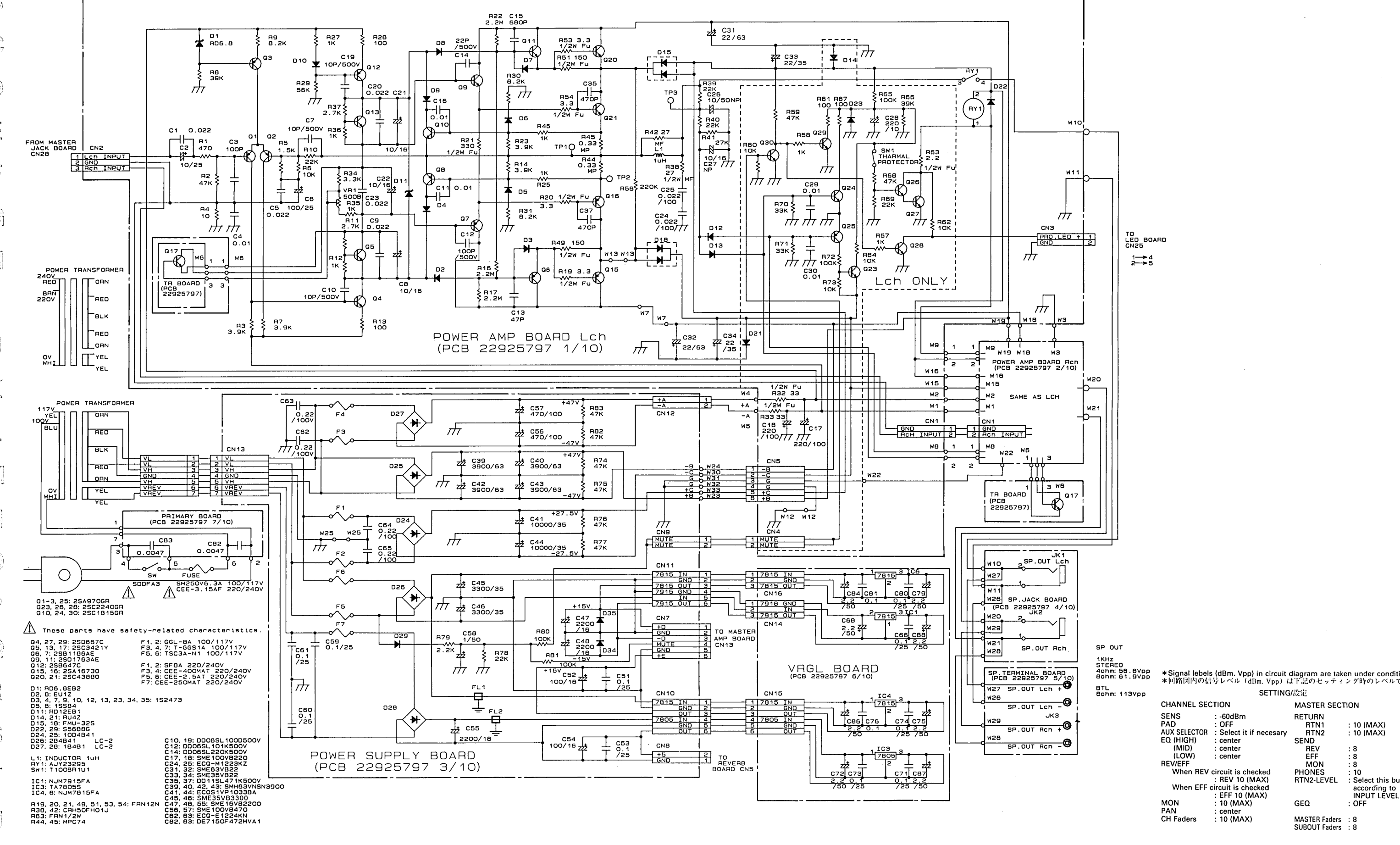


- These parts have safety-related characteristics.
C1: 0.002
C2: 1000PF
C3: 1000PF
C4: 1000PF
C5: 1000PF
C6: 1000PF
C7: 1000PF
C8: 1000PF
C9: 1000PF
C10: 1000PF
C11: 1000PF
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C95: 1000PF
C96: 1000PF
C97: 1000PF
C98: 1000PF
C99: 1000PF
C100: 1000PF

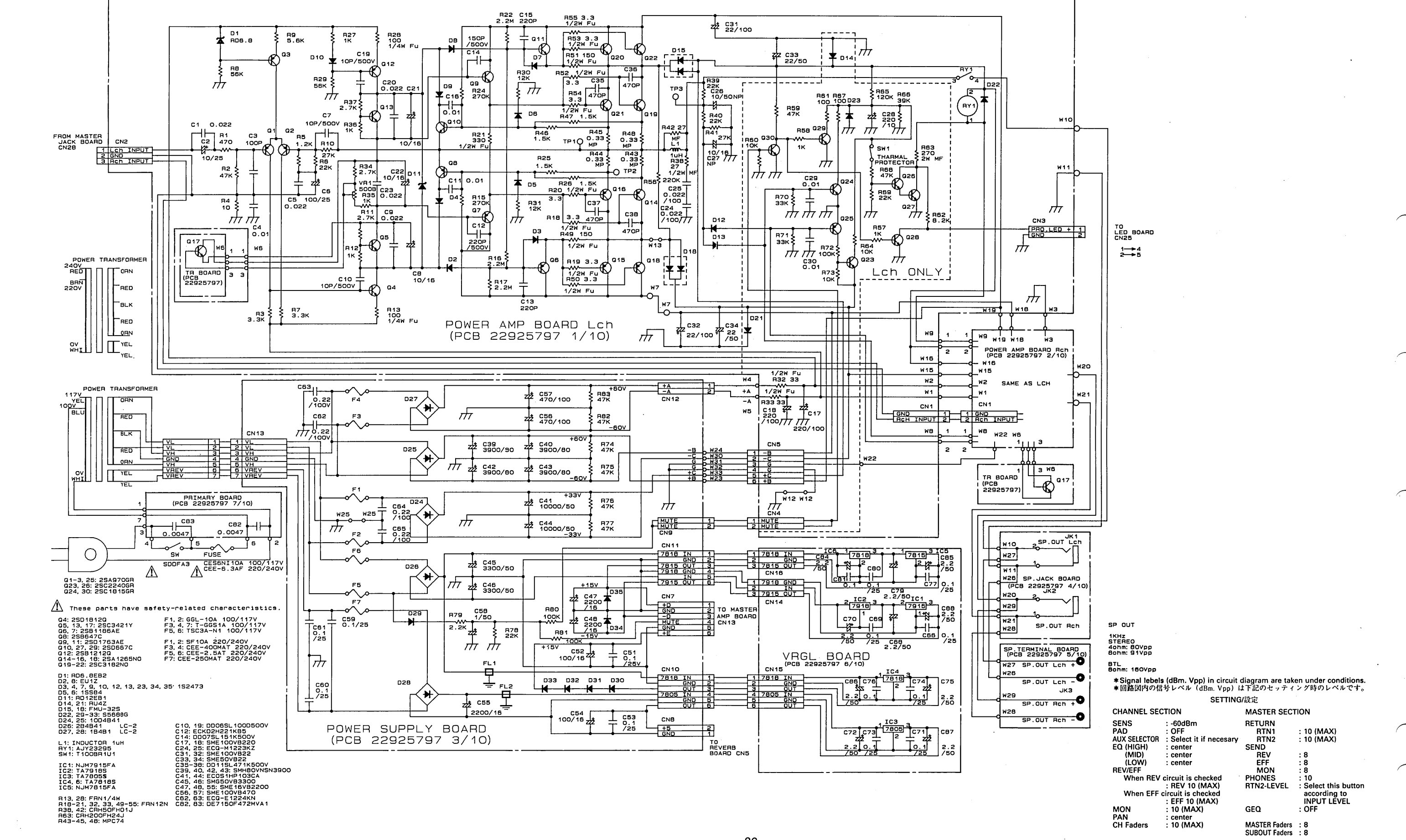
* Signal levels (dBm, Vpp) in circuit diagram are taken under conditions.
CHANNEL SECTION: SENS: 40dBm, PAD: OFF, EG (HIGH): center, (MID): center, (LOW): center, REVEFF: center, MON: REV to (MAX), CH Faders: 10 (MAX)
MASTER SECTION: RETURN: 10 (MAX), RTN2: 10 (MAX), SEND: OFF, REV: 8, EFF: 8, MON: 8, PHONES: 10, RTN2-LEVEL: Select this button according to INPUT LEVEL, GEO: OFF, MASTER Faders: 8, SUBOUT Faders: 8

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62

CIRCUIT DIAGRAM (Power Amp Board: PA-200)
Type B: SNo.ZA31050-ZC41899 Type C: SNo.ZD11900-up/以降



CIRCUIT DIAGRAM (Power Amp Board: PA-400)
Type B: SNo.ZA31150-ZC52849 Type C: SNo.ZC62850-up/以降



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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MAIN AMP BOARD (230/240V)

ASSY 7117554401 : PA-200 (pcb 2292579701)
ASSY 7117454401 : PA-400

Type B

PA-200 : SNo.ZB31050—ZC41899
PA-400 : SNo.ZB31150—ZC52849

* Refer to the "RE: TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)" (P. 13, 14) about compatibility of Type A, Type B and Type C.
* Type A, Type B, Type C の互換性については, "Main Amp Board(230/240V) の Type A, Type B, Type C について" (P. 13, 14) を参照して下さい。

REPLACEMENT (補修用)

MAIN AMP BOARD (230/240V)
ASSY 7117554401 : PA-200
ASSY 7117454401 : PA-400

◆ Main Amp Board (230/240V) consists of the following 11PCBs.

- ◆ メイン・アンプ基板は, 下記の11点から成ります
- Lch Power Amp Board (pcb 2292579701 1/10)
- Rch Power Amp Board (pcb 2292579701 2/10)
- Power Supply Board (pcb 2292579701 3/10)
- SP Jack Board (pcb 2292579701 4/10)
- SP Terminal Board (pcb 2292579701 5/10)
- VRGL Board (pcb 2292579701 6/10)
- Primary Board (pcb 2292579701 7/10)
- Spacer Board (pcb 2292579701 8/10)
- Spacer Board (pcb 2292579701 9/10)
- TR Board (Lch) (pcb 2292579701 4/10)
- TR Board (Rch) (pcb 2292579701 2/10)

NOTE: Replacement Main Amp Board of PA-200 and that of PA-400 have dedicated wiring Assy, respectively, and cannot be substituted for each other.

注: PA-200 と PA-400 の補修用メイン・アンプ基板は, ワイヤリンクのため互換性はありません。

NOTE: Replacement Main Amp Board is 230/240V versions only. 230/240V version differs from 100/117V version only in fuse system Order proper fuses and fuse labels separately if necessary.

(Refer to the table right)

注: 補修用 Main Amp Board として230/240V が共通使用されます。電圧区分による違いはヒューズ値, ヒューズ貼マークのみです。

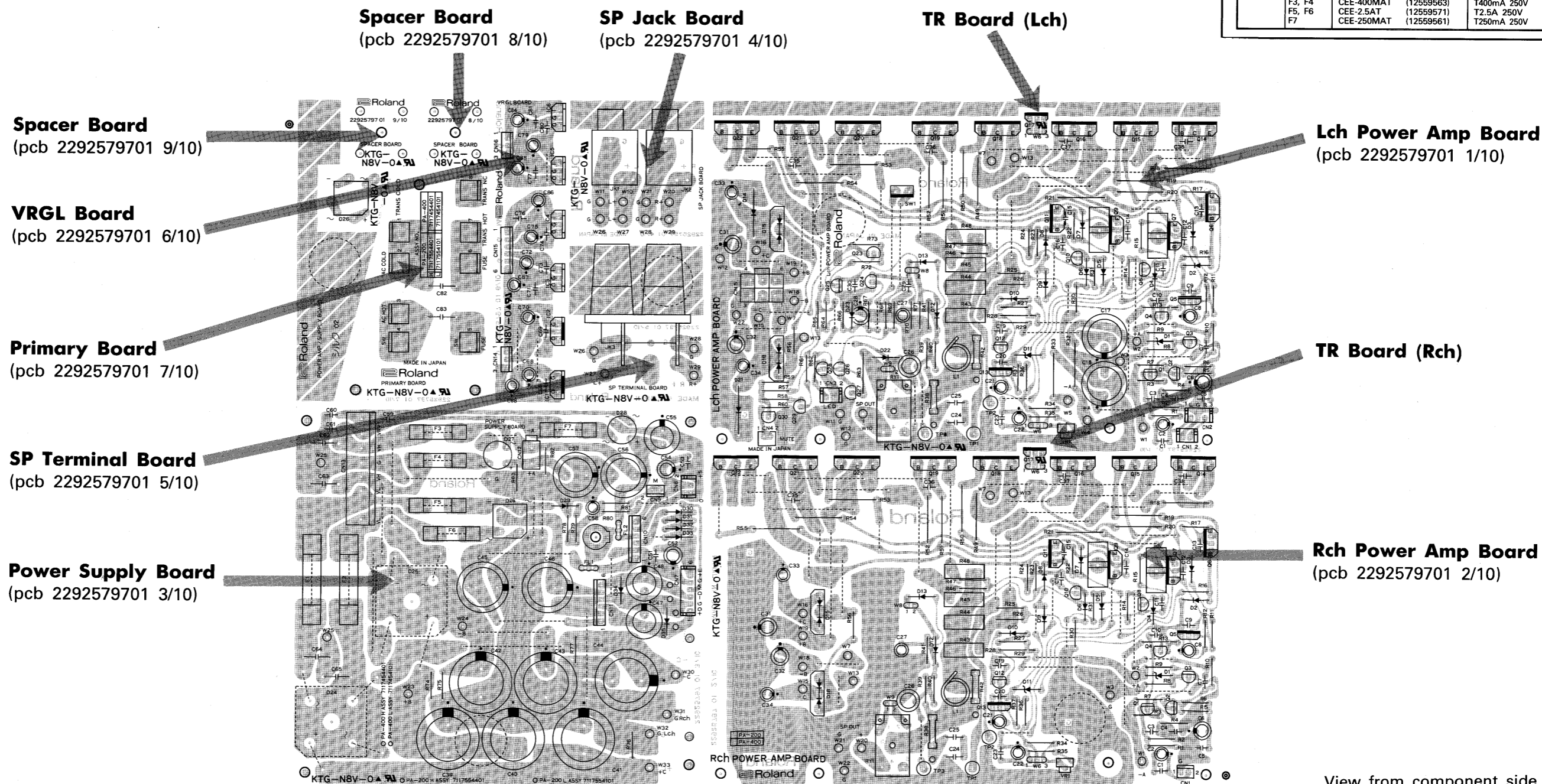
100/117V 用のヒューズ, ヒューズ貼マークが必要な場合は別途発注してください。(右表参照)

PA-200

	Fuse	Parts No.	Fuse Label	Parts No.
100/117V	F1, F2	GGL-8A (12559421)	8.0A 250V	(41015174)
	F3, F4	T-GGS1A (12559335)	1.0A 250V	(41015163)
	F5, F6	TSC3A-N1 (12559402)	3.0A 125V	(41015119)
	F7	T-GGS1A (12559335)	1.0A 250V	(41015163)
220/240V	F1, F2	SF8A (12559608)	8.0A 60V	(41075199)
	F3, F4	CEE-400MAT (12559563)	T400mA 250V	(41015212)
	F5, F6	CEE-2.5AT (12559571)	T2.5A 250V	(41015220)
	F7	CEE-250MAT (12559561)	T250mA 250V	(41015210)

PA-400

	Fuse	Parts No.	Fuse Label	Parts No.
100/117V	F1, F2	GGL-10A (12559384)	10.0A 250V	(41015175)
	F3, F4	T-GGS1A (12559335)	1.0A 250V	(41015163)
	F5, F6	TSC3A-N1 (12559402)	3.0A 125V	(41015119)
	F7	T-GGS1A (12559335)	1.0A 250V	(41015163)
220/240V	F1, F2	SF10A (12559607)	10.0A 60V	(41075200)
	F3, F4	CEE-400MAT (12559563)	T400mA 250V	(41015212)
	F5, F6	CEE-2.5AT (12559571)	T2.5A 250V	(41015220)
	F7	CEE-250MAT (12559561)	T250mA 250V	(41015210)



View from component side

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

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MAIN AMP BOARD (230/240V) Type C

ASSY 7117554402 : PA-200 (pcb 2292579702) PA-200 : SNo.ZD11900-up/以降
 ASSY 7117454402 : PA-400 PA-400 : SNo.ZC62850-up/以降

* Refer to the "RE: TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)" (P. 13, 14) about compatibility of Type A, Type B and Type C.
 * Type A, Type B, Type C の互換性については, "Main Amp Board (230/240V) の Type A, Type B, Type C について" (P. 13, 14) を参照して下さい。

REPLACEMENT (補修用)

MAIN AMP BOARD (230/240V)
 ASSY 7117554402 : PA-200
 ASSY 7117454402 : PA-400

◆ Main Amp Board (230/240V) consists of the following 11PCBs.

- ◆ メイン・アンプ基板は, 下記の11点から成ります
- Lch Power Amp Board (pcb 2292579702 1/10)
- Rch Power Amp Board (pcb 2292579702 2/10)
- Power Supply Board (pcb 2292579702 3/10)
- SP Jack Board (pcb 2292579702 4/10)
- SP Terminal Board (pcb 2292579702 5/10)
- VRGL Board (pcb 2292579702 6/10)
- Primary Board (pcb 2292579702 7/10)
- Spacer Board (pcb 2292579702 8/10)
- Spacer Board (pcb 2292579702 9/10)
- TR Board (Lch)
- TR Board (Rch)

NOTE: Replacement Main Amp Board of PA-200 and that of PA-400 have dedicated wiring Assy, respectively, and cannot be substituted for each other.

注: PA-200 と PA-400 の補修用メイン・アンプ基板は, ワイヤリンクのため互換性がありません。

NOTE: Replacement Main Amp Board is 230/240V versions only. 230/240V version differs from 100/117V version only in fuse system. Order proper fuses and fuse labels separately if necessary.

(Refer to the table right)

注: 補修用 Main Amp Board として230/240V が共通使用されます。電圧区分による違いはヒューズ値, ヒューズ貼マークのみです。100/117V 用のヒューズ, ヒューズ貼マークが必要な場合は別途発注してください。(右表参照)

PA-200

	Fuse	Parts No.	Fuse Label	Parts No.
100/117V	F1, F2 F3, F4 F5, F6 F7	GGL-8A (12559421) T-GGS1A (12559335) TSC3A-N1 (12559402) T-GGS1A (12559335)	8.0A 250V 1.0A 250V 3.0A 125V 1.0A 250V	(41015174) (41015163) (41015119) (41015163)
220/240V	F1, F2 F3, F4 F5, F6 F7	SF8A (12559608) CEE-400MAT (12559563) CEE-2.5AT (12559571) CEE-250MAT (12559561)	8.0A 60V T400mA 250V T2.5A 250V T250mA 250V	(41075199) (41015212) (41015220) (41015210)

PA-400

	Fuse	Parts No.	Fuse Label	Parts No.
100/117V	F1, F2 F3, F4 F5, F6 F7	GGL-10A (12559384) T-GGS1A (12559335) TSC3A-N1 (12559402) T-GGS1A (12559335)	10.0A 250V 1.0A 250V 3.0A 125V 1.0A 250V	(41015175) (41015163) (41015119) (41015163)
220/240V	F1, F2 F3, F4 F5, F6 F7	SF10A (12559607) CEE-400MAT (12559563) CEE-2.5AT (12559571) CEE-250MAT (12559561)	10.0A 60V T400mA 250V T2.5A 250V T250mA 250V	(41075200) (41015212) (41015220) (41015210)

Spacer Board

(pcb 2292579702 8/10)

SP Jack Board

(pcb 2292579702 4/10)

TR Board (Lch)

Spacer Board

(pcb 2292579702 9/10)

VRGL Board

(pcb 2292579702 6/10)

Primary Board

(pcb 2292579702 7/10)

SP Terminal Board

(pcb 2292579702 5/10)

Power Supply Board

(pcb 2292579702 3/10)

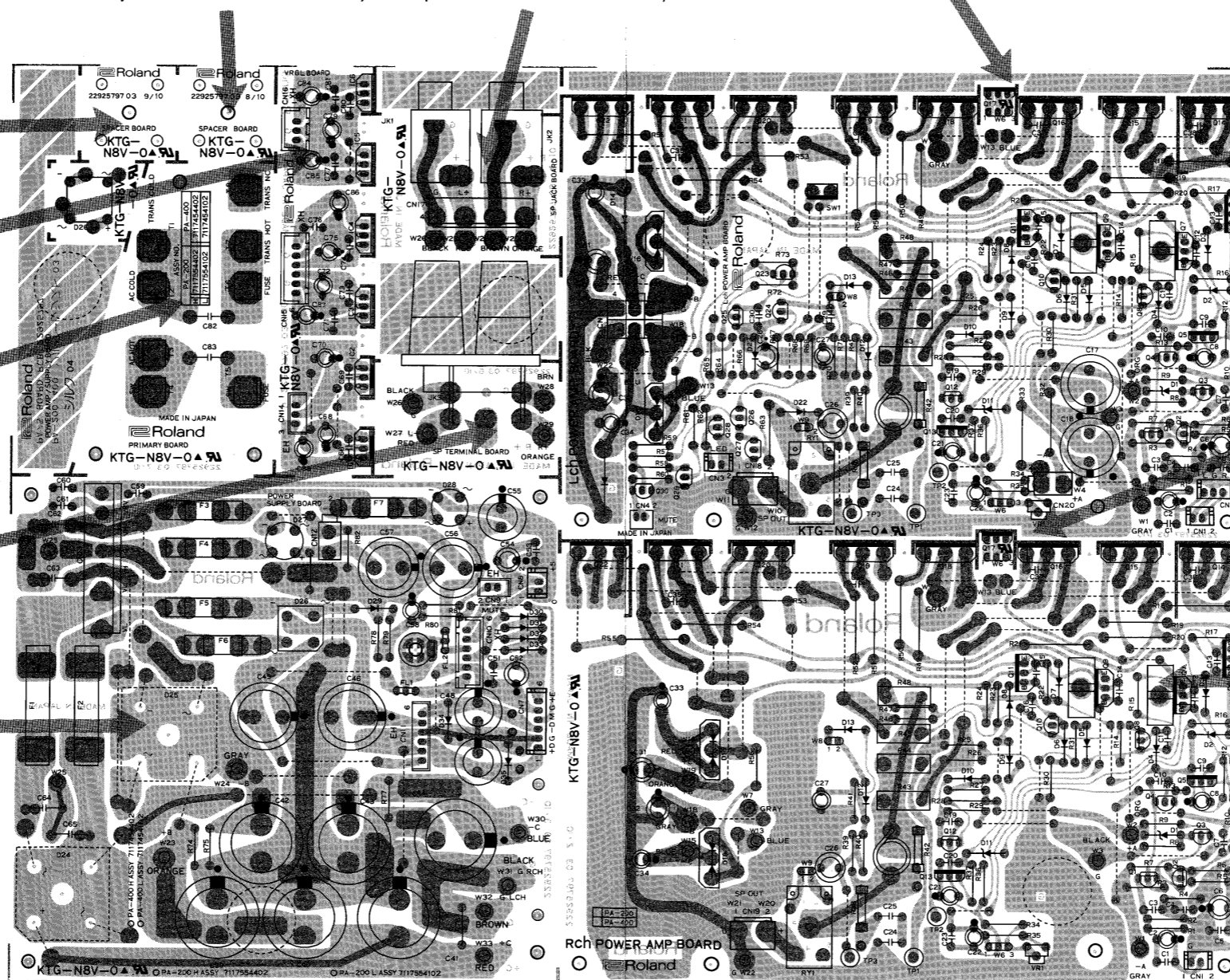
Lch Power Amp Board

(pcb 2292579702 1/10)

TR Board (Rch)

Rch Power Amp Board

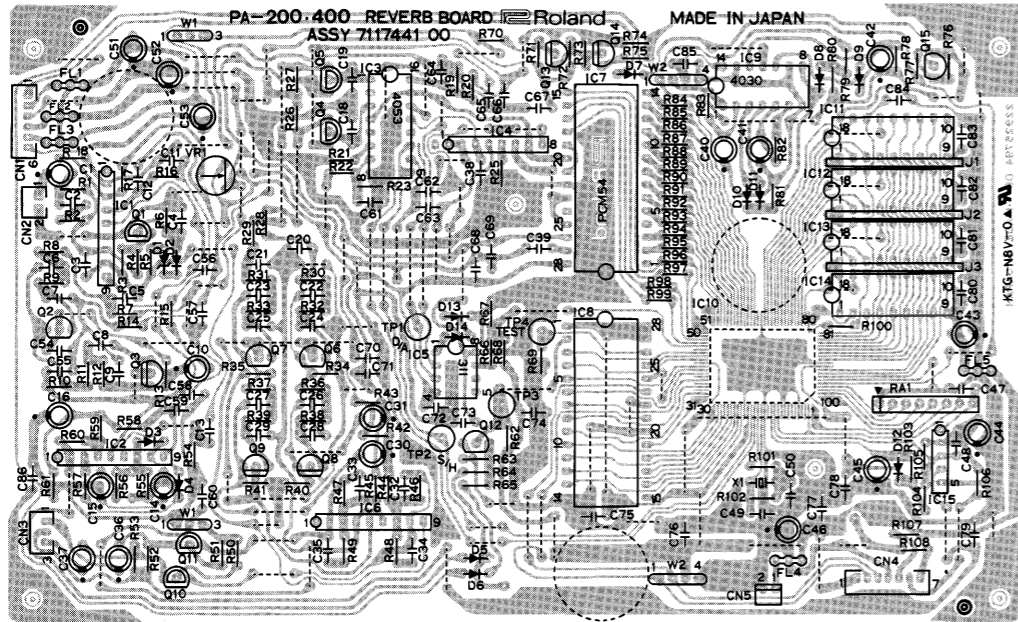
(pcb 2292579702 2/10)



View from component side

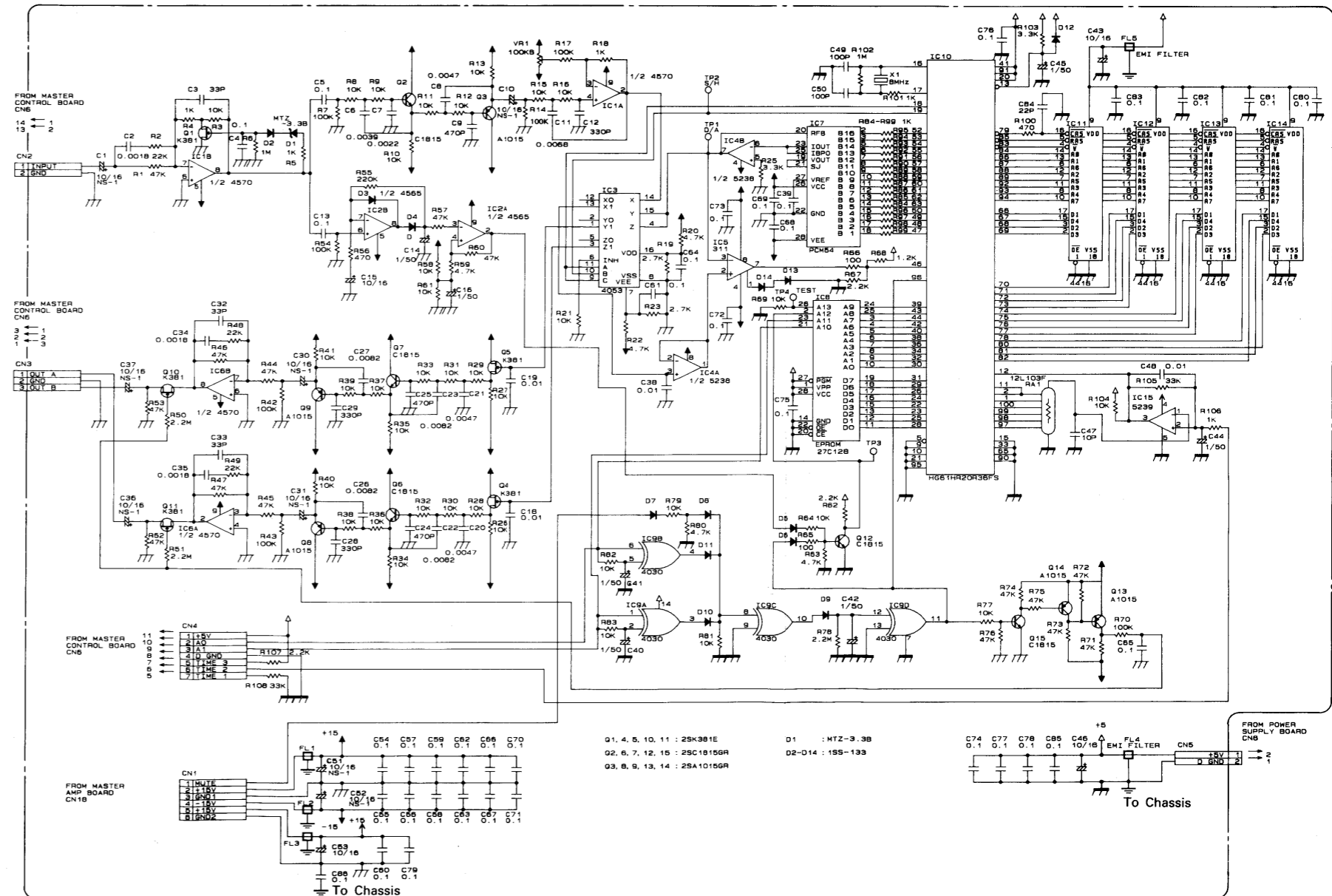
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

A REVERB BOARD
B ASSY 7117441000
C (pcb 2292579400)



View from component side

CIRCUIT DIAGRAM (Reverb Board)



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CORRELATION TABLE (PCBs and Parts)/基板と部品の相関表

Serial Number/製番																																											
PA-200	ZA50100 - ZB21049	ZB31050 - ZC41899	ZD11900 - up/以降																																								
PA-400	ZA50100 - ZB21149	ZB31150 - ZC52849	ZC62850 - up/以降																																								
Main Amp Board (incompatible) (互換無し)	-Type A- PA-200: ASSY 7117554400 (pcb 2292579700) PA-400: ASSY 7117454400 (pcb 2292579700) * Jumper (Surface Mount/裏付け) ◆Refer to "RE:TYPE A, TYPE B AND TYPE C OF MAIN AMP BOARD (230/240V)" (P. 13, 14) for details. ◆詳細は, "Main Amp Board(230/240V)の Type A, Type B, Type C について" (P. 13, 14) を参照して下さい。	-Type B- PA-200: ASSY 7117554401 (pcb 2292579701) PA-400: ASSY 7117454401 (pcb 2292579701) * Change parts Wiring, Connector (CN5), D15, D18 (FMU-32S: PNo. 15039134) * Deleted parts Connector (CN6) * relayont of pattern. * 部品変更 ワイヤリング, コネクター (CN5) D15, D18 (FMU-32S: PNo. 15039134) * 部品削除 コネクター (CN6) * パターン変更	-Type C- PA-200: ASSY 7117554402 (pcb 2292579702) PA-400: ASSY 7117454402 (pcb 2292579702) * Change of Connectors (from direct installation type to removable type.) CN1, 9, 10, 11, 14, 15, 16 * Addition of Connectors CN17, 18, 19, 20 NOTE: This corresponds to the WNo. of the Type B as indicated below. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2">CN17</td> <td colspan="2">CN18</td> <td colspan="2">CN19</td> <td colspan="2">CN20</td> </tr> <tr> <td>1</td><td>W29</td> <td>1</td><td>W11</td> <td>1</td><td>W21</td> <td>1</td><td>W4</td> </tr> <tr> <td>2</td><td>W28</td> <td>2</td><td>W12</td> <td>2</td><td>W20</td> <td>2</td><td>W5</td> </tr> <tr> <td>3</td><td>W27</td> <td></td><td></td> <td></td><td></td> <td></td><td></td> </tr> <tr> <td>4</td><td>W26</td> <td></td><td></td> <td></td><td></td> <td></td><td></td> </tr> </table> ◆The circuit diagram remains unchanged. ◆回路図上の変更はなし。 * コネクタ変更 (直付→脱着) CN1, 9, 10, 11, 14, 15, 16 * コネクタ追加 CN17, 18, 19, 20 注: これは Type B の WNo. と下記のように対応しています。	CN17		CN18		CN19		CN20		1	W29	1	W11	1	W21	1	W4	2	W28	2	W12	2	W20	2	W5	3	W27							4	W26						
CN17		CN18		CN19		CN20																																					
1	W29	1	W11	1	W21	1	W4																																				
2	W28	2	W12	2	W20	2	W5																																				
3	W27																																										
4	W26																																										
Channel Board (compatible) (互換有り)	PA-200: ASSY 7117543000 (pcb 2292579600) PA-400: ASSY 7117443000 (pcb 2292579600) * R1, R30, C37, Jumper (Surface Mount/裏付け)	PA-200: ASSY 7117543001 (pcb 2292579601) PA-400: ASSY 7117443001 (pcb 2292579601) * Relayout of pattern. * パターン変更	PA-200: ASSY 7117543002 (pcb 2292579602) PA-400: ASSY 7117443002 (pcb 2292579602) * Change of Connectors (from direct installation type to removable type.) Stereo Input Jack Board CN1, 2, 3 Channel Control Board A CN3 Channel Control Board B CN3 Insert Jack Board CN5 * Added Parts PA-200 (VR MASK B 22245576 VR MASK C 22245577) PA-400 (VR MASK B 22245576 VR MASK C 22245577 VR MASK D 22245578) * Deletion of parts PA-200 CH FADER MASK 22245550 PA-400 CH FADER MASK 22245553 NOTE: Note that the following parts must be installed to the panel. PA-200 FADER MASK 22245214 PA-400 FADER MASK 22245215 * コネクタ変更 (直付→脱着) Stereo Input Jack Board CN1, 2, 3 Channel Control Board A CN3 Channel Control Board B CN3 Insert Jack Board CN5 * 部品追加 PA-200 (VR MASK B 22245576 VR MASK C 22245577) PA-400 (VR MASK B 22245576 VR MASK C 22245577 VR MASK D 22245578) * 部品削除 PA-200 CH FADER MASK 22245550 PA-400 CH FADER MASK 22245553 注: ただし PANEL に下記の部品の取付が必要です。 PA-200 FADER MASK 22245214 PA-400 FADER MASK 22245215																																								
Master Board (compatible) (互換有り)	PA-200: ASSY 711754300 (pcb 2292579600) PA-400: ASSY 711744300 (pcb 2292579600)	PA-200: ASSY 7117542001 (pcb 2292579501) PA-400: ASSY 7117442001 (pcb 2292579501) * Added parts C151-154 * Relayout of pattern. * 追加部品 C151-154 * パターン変更	PA-200: ASSY 7117542002 (pcb 2292579502) PA-400: ASSY 7117442002 (pcb 2292579502) * Change of Connectors (from direct installation type to removable type.) CN1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 20, 21, 24, 25, 28, 32 * Added Parts PA-200/400 Common VR MASK A 22245563 To prevent the VR from becoming loose. * Deletion of parts PA-200/400 Common MASTER FADER MASK 22245549 NOTE: Note that the following parts must be installed to the panel. PA-200 FADER MASK 22245214 PA-400 FADER MASK 22245215 * コネクタ変更 (直付→脱着) CN1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 18, 20, 21, 24, 25, 28, 32 * 部品追加 PA-200/400 共通 VR MASK A 22245563 VR のグラツキ防止の為 * 部品削除 PA-200/400 共通 MASTER FADER MASK 22245549 注: ただし PANEL に下記の部品の取付が必要です。 PA-200 FADER MASK 22245214 PA-400 FADER MASK 22245215																																								
Reverb Board	PA-200/PA-400 (Common/共通) ASSY 7117441000 (pcb 2292579400)																																										

Page	WRONG 誤	CORRECT 正
12	<p><Parts List></p> <p>* FUSE, FUSE HOLDER</p> <p><u>12559422</u> CES6N1 10A 110/117V</p>	<p><u>12559467</u> CES6N1 10A 110/117V</p>

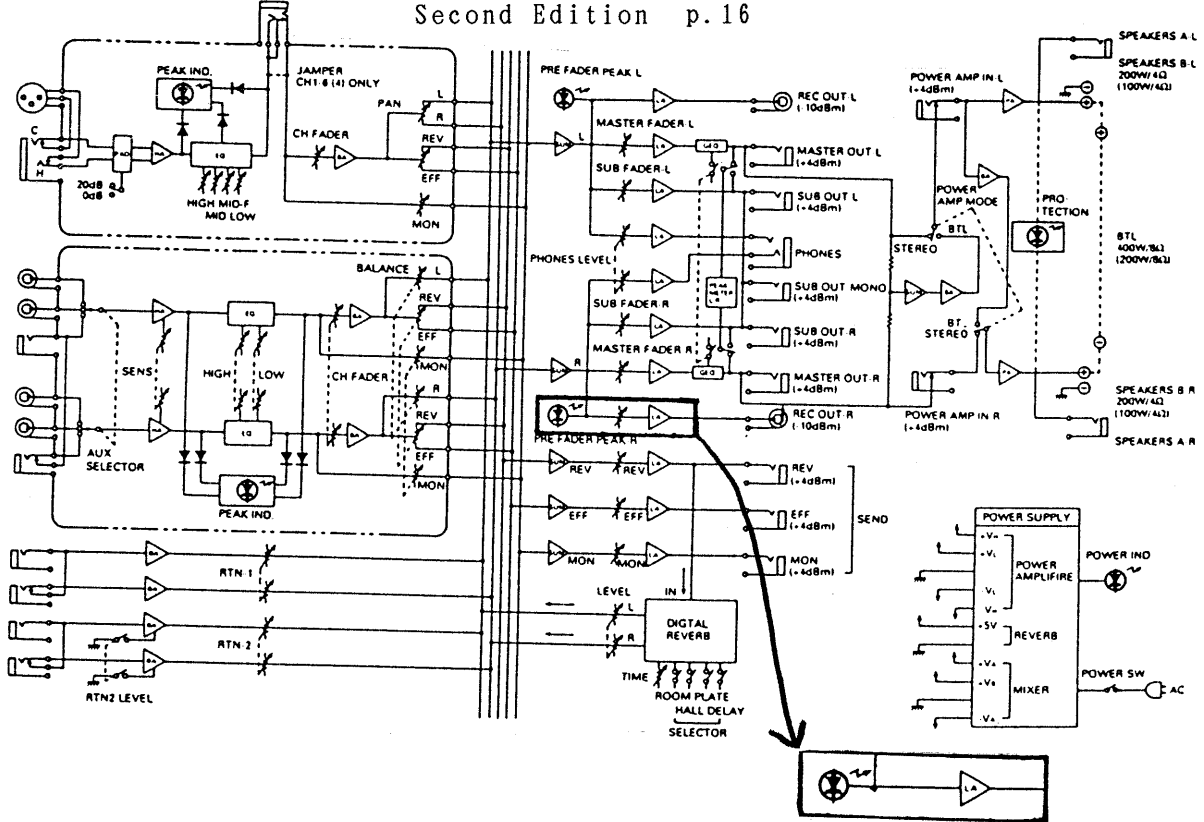
(Small errors are ignored. 重要でないエラーは無視します。)

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* Please amend all existing Service Notes as follows.
* 該当サービスノートを下記のように修正して下さい。

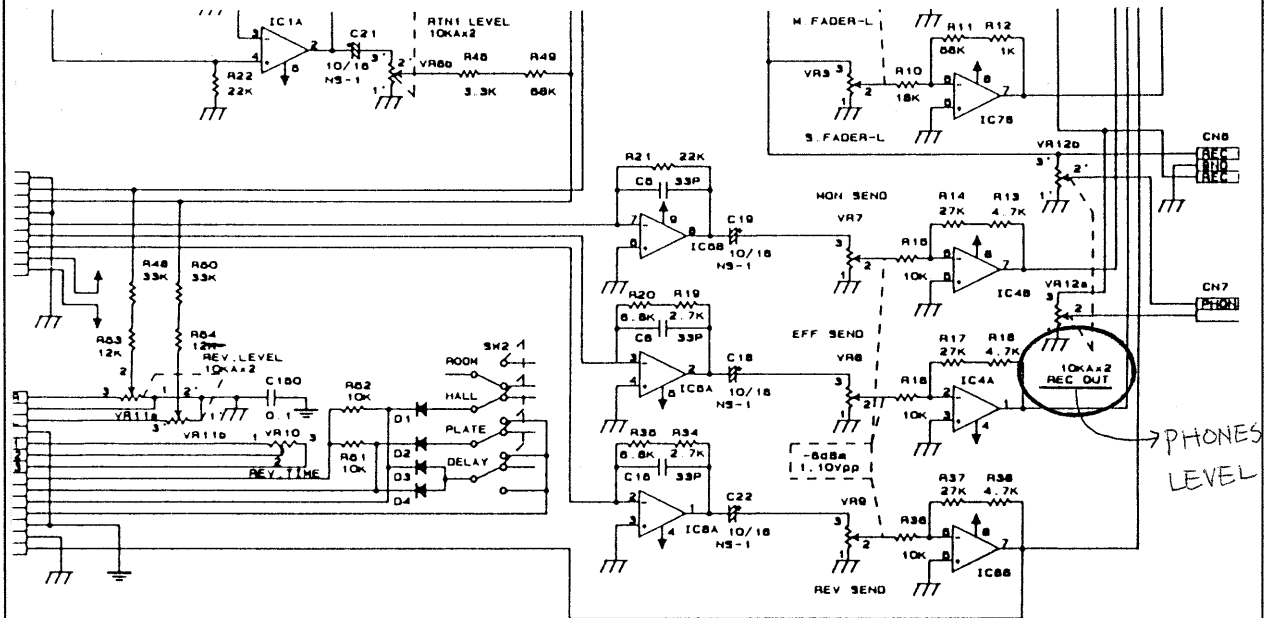
< BLOCK DIAGRAM >

Third Edition p.18
Second Edition p.16



< CIRCUIT DIAGRAM >

Third Edition p.21
Second Edition p.19



MASTER CONTROL BOARD
(PCB 22925795 1/12)