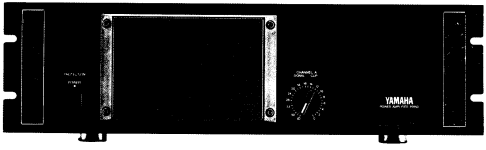
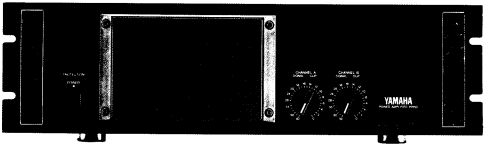
Scan Revision
2007 Dec 15

POWER AMPLIFIERS
P1150/P1250/ P2150/P2250
SERVICE MANUAL



• P1250



• P2250

■CONTENTS

006650

SINCE 1887 YAMAHA
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN
1.85K-845 Printed in Japan '85.4

IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual **or** firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

■SPECIFICATIONS

P1150

Output Power Specs meet FTC preconditioning criteria	OUTPUT SPECIFICATIONS			
	8 ohms		4 ohms	
	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz
Continuous sine wave output power at less than 0.05% THD	100 W	105 W	150 W	165 W
Total Harmonic Distortion (THD)	≤0.007% @ 55 W	≤0.003% @ 55 W	≤0.01% @ 75 W	≤0.005% @ 75 W
Intermodulation Distortion (IHD) 60 Hz & 7 kHz 4 : 1	≤0.005% @ 55 W		≤0.01% @ 75 W	
Power Bandwidth (@ THD ≤0.1%)	10 Hz to 100 kHz @ 55 W		10 Hz to 100 kHz @ 75 W	
Frequency Response (1 watt output)	+0, –1 dB, 10 Hz to 50 kHz			
Damping Factor	≥110 @ 1 kHz		≥55 @ 1 kHz	
Slew Rate	±50 volts/microsecond full swing			
Signal-to-Noise (Input shorted)	≥110 dB, –6 dB/octave LPF @ 12.47 kHz ≥115 dB, IHF-A network			
Residual Noise (Input ATT @ minimum)	≤–80 dBm, –6 dB/octave LPF @ 12.47 kHz ≤–90 dBm, IHF-A network			
Input Impedance	≥15 kohms, balanced or unbalanced (ATT @ max)			
Sensitivity	+4 dBm (1.23 V rms) for nominal output (4 ohm load)			
Voltage Gain	26.0 dB			
Indicators	Signal: Green LED turns on when signal present at output is at or above 2 volts RMS (20 Hz – 20 kHz). Clipping: Red LED turns on when THD ≥ 1%. Protection: Red LED turns on when protection or muting is on. Pilot: Red LED turns on when power is on.			
Protection Circuits	Muting: Output muted 6 seconds (±2 sec.) after power is on. DC sense: Output shut off if ±2V DC sensed at output. Thermal: Output shut off if heat sink temp. ≥ 85 degrees C. Current Limiter: Output reduced if load ≤ 2 ohms.			
Fan Circuit	Fan is normally at low speed; when heat sink reaches 60 degrees Centigrade, fan goes to high speed; then resets to low at 45°C.			
Controls	Front: 32 step Input Attenuator; 0 to –20 dB in 1 dB steps, –20 to –30 dB in 2 dB steps, then –33, –37, –42, –50, –60 dB, and infinite attenuation. Push On/Push Off POWER switch.			
Power Requirements	105 – 130 volts, 50 or 60 Hz, AC, 250 W (300 VA)			
Weight	28.6 lbs (13 kg)			
Dimensions	Width: 18-7/8 inches (480 mm) Height: 5-1/4 inches (132 mm) Overall Depth: 16-3/4 inches (423 mm) Depth Behind Front Panel: 15-1/8 inches (384 mm)			
Accessory	Rubber cap to discourage unauthorized or accidental changes in setting of input attenuator (included).			

P1250

Output Power Specs meet FTC preconditioning criteria	OUTPUT SPECIFICATIONS			
	8 ohms		4 ohms	
	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz
Continuous sine wave output power at less than 0.05% THD	170 W	185 W	250 W	265 W
Total Harmonic Distortion (THD)	≤0.007% @ 85 W	≤0.003% @ 85 W	≤0.01% @125 W	≤0.005% @ 125 W
Intermodulation Distortion (IHD) 60 Hz & 7 kHz 4 : 1	≤0.005% @ 85 W		≤0.01% @ 125 W	
Power Bandwidth (@ THD ≤0.1%)	10 Hz to 100 kHz @ 85 W		10 Hz to 100 kHz @ 125 W	
Frequency Response (1 watt output)	+0, –1 dB, 10 Hz to 50 kHz			
Damping Factor	≥110 @ 1 kHz		≥55 @ 1 kHz	
Slew Rate	±50 volts/microsecond full swing			
Signal-to-Noise (Input shorted)	≥110 dB, –6 dB/octave LPF @ 12.47 kHz ≥115 dB, IHF-A network			
Residual Noise (Input ATT @ minimum)	≤–80 dBm, –6 dB/octave LPF @ 12.47 kHz ≤–90 dBm, IHF-A network			
Input Impedance	≥15 kohms, balanced or unbalanced (ATT @ max)			
Sensitivity	+4 dBm (1.23 V rms) for nominal output (4 ohm load)			
Voltage Gain	28.3 dB			
Indicators	Signal: Green LED turns on when signal present at output is at or above 2 volts RMS (20 Hz – 20 kHz). Clipping: Red LED turns on when THD ≥1%. Protection: Red LED turns on when protection or muting is on. Pilot: Red LED turns on when power is on.			
Protection Circuits	Muting: Output muted 6 seconds (±2 sec.) after power is on. DC sense: Output shut off if 2V DC sensed at output. Thermal: Output shut off if heat sink temp. ≥85 degrees C. Current Limiter: Output reduced if load ≤2 ohms.			
Fan Circuit	Fan is normally at low speed; when heat sink reaches 60 degrees Centigrade, fan goes to high speed; then resets to low at 45°C.			
Controls	Front: 32 step Input Attenuator; 0 to –20 dB in 1 dB steps, –20 to –30 dB in 2 dB steps, then –33, –37, –42, –50, –60 dB, and infinite attenuation. Push On/Push Off POWER switch.			
Power Requirements	105 – 130 volts, 50 or 60 Hz, AC, 400 W (450 VA)			
Weight	33 lbs (15 kg)			
Dimensions	Width: 18-7/8 inches (480 mm) Height: 5-1/4 inches (132 mm) Overall Depth: 16-3/4 inches (423 mm) Depth Behind Front Panel: 15-1/8 inches (384 mm)			
Accessory	Rubber cap to discourage unauthorized or accidental changes in setting of input attenuator (included).			

P2150

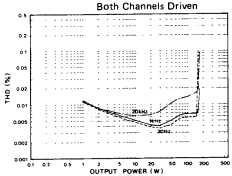
Output Power Specs meet FTC preconditioning criteria	STEREO OPERATION (Power output specified per channel, with both channels driven)				BRIDGED MONO OPERATION			
	8 ohms		4 ohms		16 ohms		8 ohms	
	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz
Continuous sine wave output power at less than 0.05% THD	100 W	105 W	150 W	165 W	220 W	250 W	300 W	330 W
Total Harmonic Distortion (THD)	≤0.007% @ 55 W	≤0.003% @ 55 W	≤0.01% @ 75 W	≤0.005% @ 75 W	≤0.007% @ 110 W	≤0.003% @ 110 W	≤0.01% @ 150 W	≤0.005% @ 150 W
Channel Separation (@ 3 dB below nominal power output, ATT @ max, input shorted)	≥70 dB	≥90 dB						
Intermodulation Distortion (IHD) 60 Hz & 7 kHz 4 : 1	≤0.005% @ 55 W		≤0.01% @ 75 W		≤0.01% @ 110 W		≤0.01% @ 150 W	
Power Bandwidth (@ THD ≤0.1%)	10 Hz to 50 kHz @ 55 W		10 Hz to 50 kHz @ 75 W		10 Hz to 50 kHz @ 110 W		10 Hz to 50 kHz @ 150 W	
Frequency Response (1 watt output)	+0, −1dB, 10Hz to 50kHz							
Damping Factor	≥110 @ 1 kHz		≥55 @ 1 kHz					
Slew Rate	±50 volts/microsecond full swing				±90 volts/microsecond full swing			
Signal-to-Noise (Input shorted)	≥110 dB, −6 dB/octave LPF @ 12.47 kHz ≥115 dB, IHF-A network				≥106 dB, −6 dB/octave LPF @ 12.47 kHz ≥110 dB, IHF-A network			
Residual Noise (Input ATT @ minimum)	≤−80 dBm, −6 dB/octave LPF @ 12.47 kHz ≤−90 dBm, IHF-A network							
Input Impedance	≥15 kohms, balanced or unbalanced (ATT @ max)							
Sensitivity	+4 dBm (1.23 V rms) for nominal output (4 ohm load)							
Voltage Gain	26.0 dB							
Indicators	Signal: Green LED turns on when signal present at output is at or above 2 volts RMS (20 Hz – 20 kHz) Clipping: Red LED turns on when THD ≥1% (x 2). Protection: Red LED turns on when protection or muting is on. Pilot: Red LED turns on when power is on.							
Protection Circuits	Muting: Output muted 6 seconds (± 2 sec.) after power is on. DC sense: Output shut off if ± 2V DC sensed at output. Thermal: Output shut off if heat sink temp ≥85 degrees C. Current Limiter: Output reduced if load ≤2 ohms.							
Fan Circuit	Fan is normally at low speed; when heat sink reaches 60 degrees Centigrade, fan goes to high speed; then resets to low at 45°C.							
Controls	Front: 2 x 32 step Input Attenuators; 0 to −20 dB in 1 dB steps, −20 to −30 dB in 2 dB steps, then −33, −37, −42, −50, −60 dB, and infinite attenuation. Push On/Push Off POWER switch. Rear: MONO/STEREO MODE switch.							
Power Requirements	105 – 130 volts, 50 or 60 Hz, AC, 500 W (600 V A)							
Weight	37.4 lbs (17 kg)							
Dimensions	Width: 18-7/8 inches (480 mm) Height: 5-1/4 inches (132 mm) Overall Depth: 16-3/4 inches (423 mm) Depth Behind Front Panel: 15-1/8 inches (384 mm)							
Accessories	Rubber caps of discourage unauthorized or accidental changes in setting of input attenuators (included).							

P2250

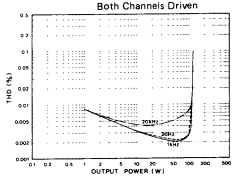
Output Power Specs meet FTC preconditioning criteria	STEREO OPERATION (Power output specified per channel, with both channels driven)				BRIDGED MONO OPERATION			
	8 ohms		4 ohms		16 ohms		8 ohms	
	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz	20Hz – 20kHz	1kHz
Continuous sine wave output power at less than 0.05% THD	170 W	185 W	250 W	265 W	340 W	370 W	500 W	530 W
Total Harmonic Distortion (THD)	≤0.007% @ 85 W	≤0.003% @ 85 W	≤0.01% @ 125 W	≤0.005% @ 125 W	≤0.007% @ 85 W	≤0.003% @ 85 W	≤0.01% @ 125 W	≤0.005% @ 125 W
Channel Separation (@ 3 dB below nominal power output, ATT @ max, input shorted)	≥70 dB	≥90 dB						
Intermodulation Distortion (IHD) 60 Hz & 7 kHz 4 : 1	≤0.005% @ 85 W		≤0.01% @ 125 W		≤0.01% @ 170 W		≤0.01% @ 250 W	
Power Bandwidth (@ THD ≤0.1%)	10 Hz to 50 kHz @ 85 W		10 Hz to 50 kHz @ 125 W		10 Hz to 50 kHz @ 170 W		10 Hz to 50 kHz @ 250 W	
Frequency Response (1 watt output)	+0, −1dB, 10Hz to 50kHz							
Damping Factor	≥110 @ 1 kHz		≥55 @ 1 kHz					
Slew Rate	±50 volts/microsecond full swing				±90 volts/microsecond full swing			
Signal-to-Noise (Input shorted)	≥110 dB, −6 dB/octave LPF @ 12.47 kHz ≥115 dB, IHF-A network				≥106 dB, −6 dB/octave LPF @ 12.47 kHz ≥110 dB, IHF-A network			
Residual Noise (Input ATT @ minimum)	≤−80 dBm, −6 dB/octave LPF @12.47 kHz ≤−90 dBm, IHF-A network							
Input Impedance	≥15 kohms, balanced or unbalanced (ATT @ max)							
Sensitivity	+4 dBm (1.23 V rms) for nominal output (4 ohm load)							
Voltage Gain	28.3 dB							
Indicators	Signal: Green LED turns on when signal present at output is at or above 2 volts RMS (20 Hz – 20 kHz). Clipping: Red LED turns on when THD ≥1% (x 2). Protection: Red LED turns on when protection or muting is on. Pilot: Red LED turns on when power is on.							
Protection Circuits	Muting: Output muted 6 seconds (± 2 sec.) after power is on. DC sense: Output shut off if ± 2V DC sensed at output. Thermal: Output shut off if heat sink temp. ≥85 degrees C. Current Limiter: Output reduced if load ≤2 ohms.							
Fan Circuit	Fan is normally at low speed; when heat sink reaches 60 degrees Centigrade, fan goes to high speed; then resets to low at 45°C.							
Controls	Front: 2 x 32 step Input Attenuators; 0 to −20 dB in 1 dB steps, −20 to −30 dB in 2 dB steps, then −33, −37, −42, −50, −60 dB, and infinite attenuation. Push On/Push Off POWER switch. Rear: MONO/STEREO MODE switch.							
Power Requirements	105 – 130 volts, 50 or 60 Hz, AC, 850 W (950 VA)							
Weight	41.8 lbs (19 kg)							
Dimensions	Width: 18-7/8 inches (480 mm) Height: 5-1/4 inches (132 mm) Overall Depth: 16-3/4 inches (423 mm) Depth Behind Front Panel: 15-1/8 inches (384 mm)							
Accessories	Rubber caps to discourage unauthorized or accidental changes in setting of input attenuators (included).							

■PERFORMANCE GRAPHS

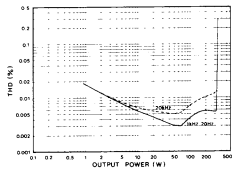
THD vs OUTPUT POWER CHARACTERISTICS
<Model: P2150>
Load Impedance: 4Ω
Mode: STEREO
Both Channels Driven



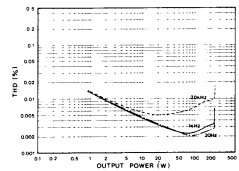
THD vs OUTPUT POWER CHARACTERISTICS
<Model: P2150>
Load Impedance: 8Ω
Mode: STEREO
Both Channels Driven



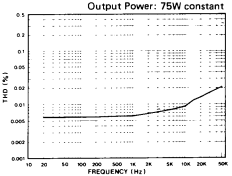
THD vs OUTPUT POWER CHARACTERISTICS
<Model: P2150>
Load Impedance: 8Ω
Mode: MONO (BTL)



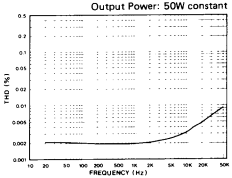
THD vs OUTPUT POWER CHARACTERISTICS
<Model: P2250>
Load Impedance: 4Ω
Mode: STEREO
Both Channels Driven



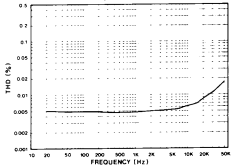
THD vs FREQUENCY CHARACTERISTICS
<Model: P2150>
Load Impedance: 4Ω
Mode: STEREO
Both Channels Driven
Output Power: 75W constant



THD vs FREQUENCY CHARACTERISTICS
<Model: P2150>
Load Impedance: 8Ω
Mode: STEREO
Both Channels Driven
Output Power: 50W constant



THD vs FREQUENCY CHARACTERISTICS
<Model: P2150>
Load Impedance: 8Ω
Mode: MONO (BTL)
Output Power: 150W constant



THD vs FREQUENCY CHARACTERISTICS
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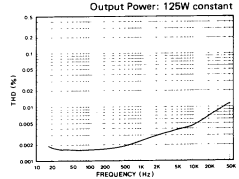
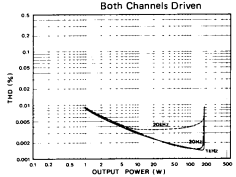
Load Impedance: 4Ω
Mode: STEREO
Both Channels Driven
Output Power: 125W constant



THD vs OUTPUT POWER CHARACTERISTICS

<Model: P2250>

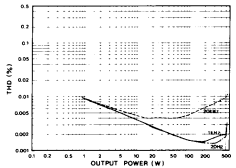
Load Impedance: 8Ω
Mode: STEREO
Both Channels Driven



THD vs OUTPUT POWER CHARACTERISTICS

<Model: P2250>

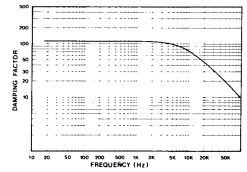
Load Impedance: 8Ω
Mode: MONO (BTL)



DAMPING FACTOR CHARACTERISTICS

<Model: P2250>

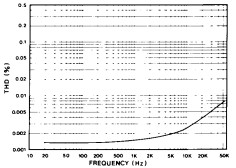
Load Impedance: 8Ω



THD vs FREQUENCY CHARACTERISTICS

<Model: P2250>

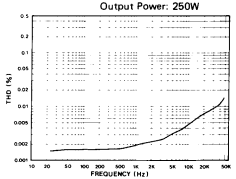
Load Impedance: 8Ω
Mode: STEREO
Both Channels Driven
Output Power: 85W constant



THD vs FREQUENCY CHARACTERISTICS

<Model: P2250>

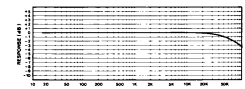
Load Impedance: 8Ω
MODE: MONO (BTL)
Output Power: 250W



FREQUENCY RESPONSE CHARACTERISTICS

<Model: all models>

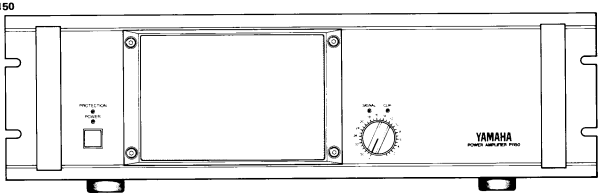
Load Impedance: 8Ω
Input Attenuators: Max



■PANEL LAYOUT

FRONT PANEL

• P1150



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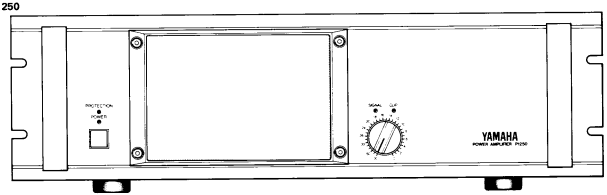

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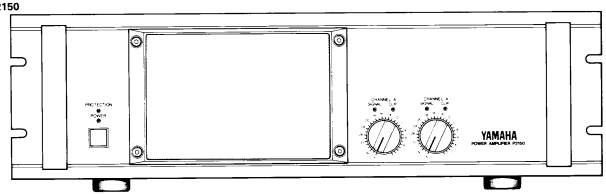
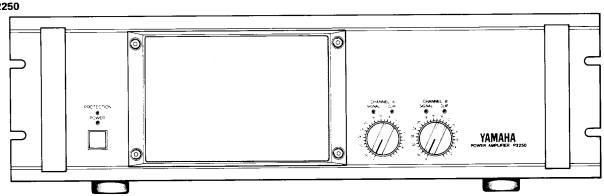
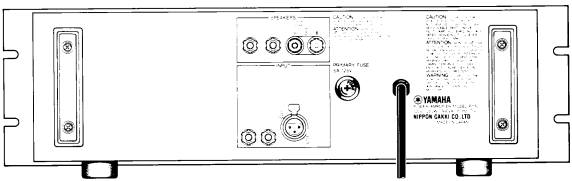


• P2250



REAR PANEL (U.S. model)

• P1150



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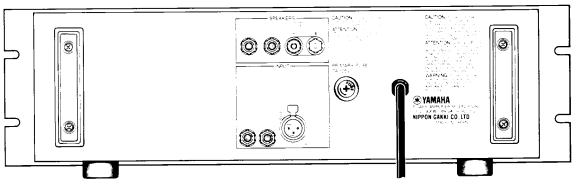

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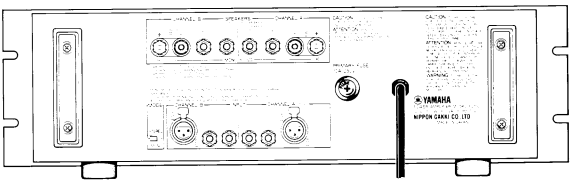
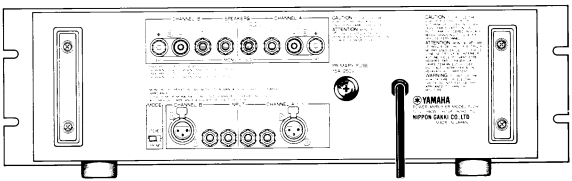


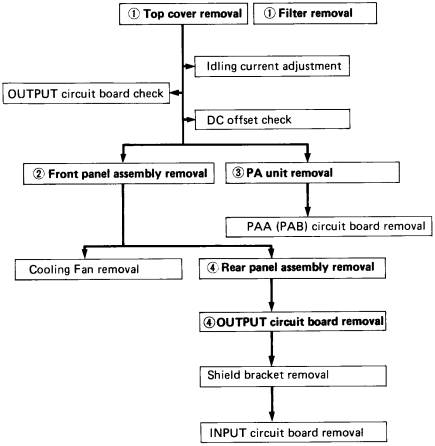
• P2250



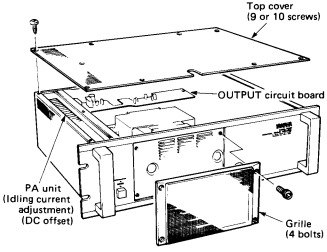
■DISASSEMBLY PROCEDURES

- Disconnect each connector as necessary for the part removal.
- Electric charge may be accumulated at the electrolytic capacitor of the power supply. Discharge it by shorting across the capacitor terminals with a resistor of 8Ω, 100W or so.

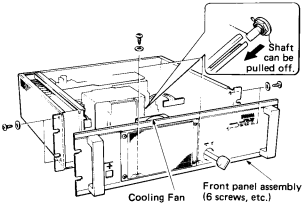
FLOW CHART



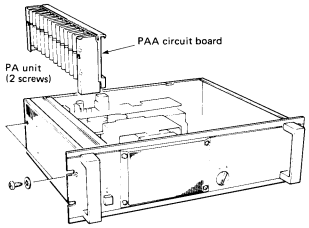
① TOP COVER REMOVAL/GRILLE REMOVAL



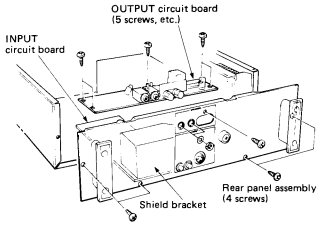
② FRONT PANEL ASSEMBLY REMOVAL



③ PA UNIT REMOVAL



④ REAR PANEL ASSEMBLY REMOVAL/
OUTPUT CIRCUIT BOARD REMOVAL



■CHECK AND ADJUSTMENT

BEFORE ADJUSTING

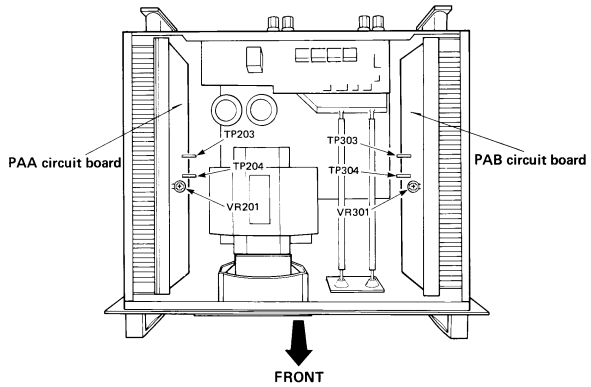
Be sure to wait for about 5 minutes after turning the power switch on, in order for the main amp's operation to become stable.

1. Idling current adjustment

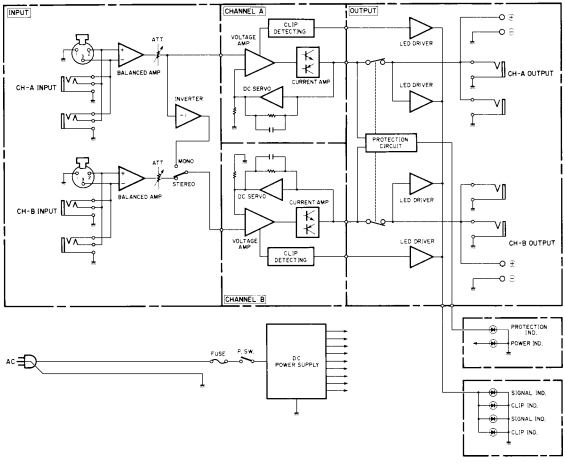
Adjust VR201 (and/or VR301) so that the voltage across the test points TP203 and TP204 on the PAA circuit board (and/or TP303 and TP304 on the PAB circuit board) is 12mV ± 0.5mV in a no signal condition.

2. DC offset check

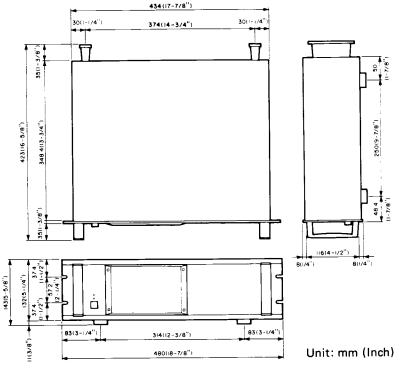
Check that the voltage across the SPEAKER terminals ⊕ and ⊖ is 0 ± 10mV in a no signal condition.



■BLOCK DIAGRAM

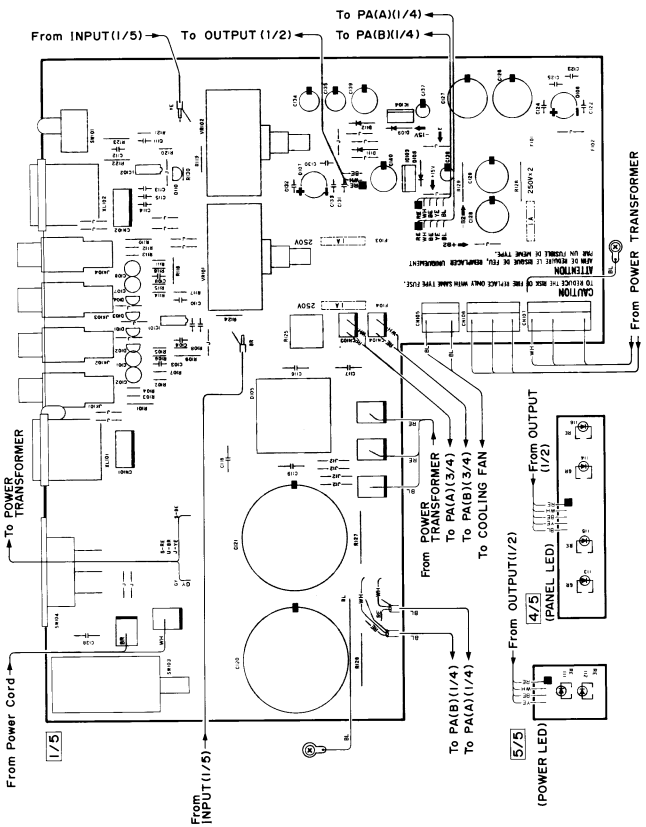


■DIMENSIONS

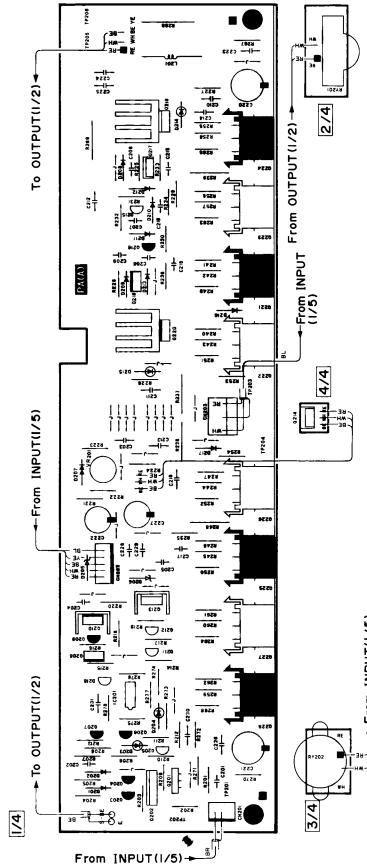


■CIRCUIT BOARDS (Parts side)

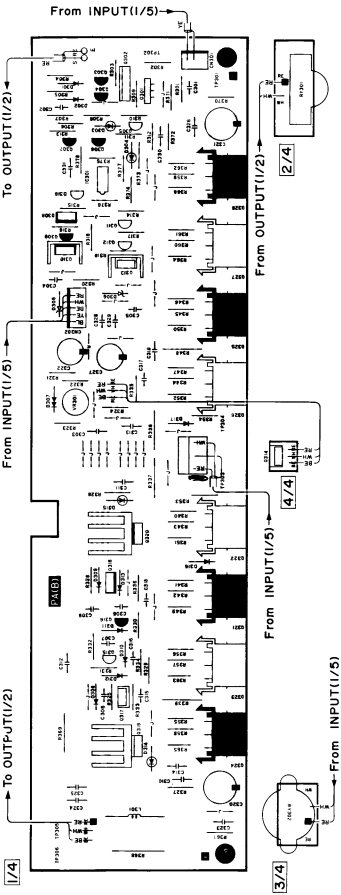
- INPUT CIRCUIT BOARD



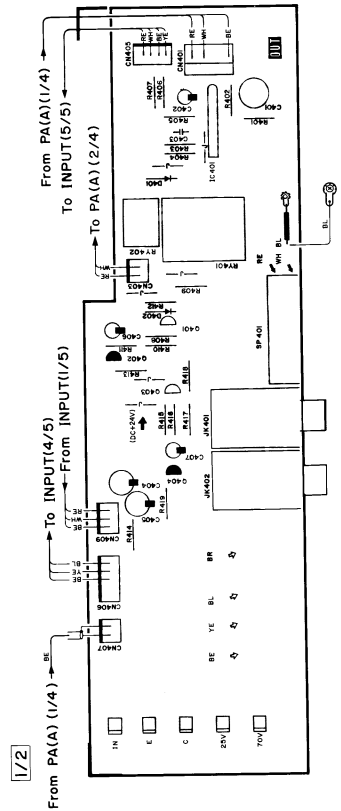
- PAA CIRCUIT BOARD



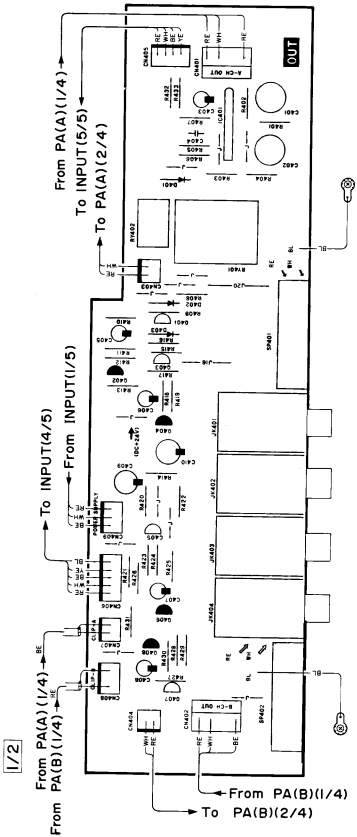
- PAB CIRCUIT BOARD (P2150 and P2250 only)



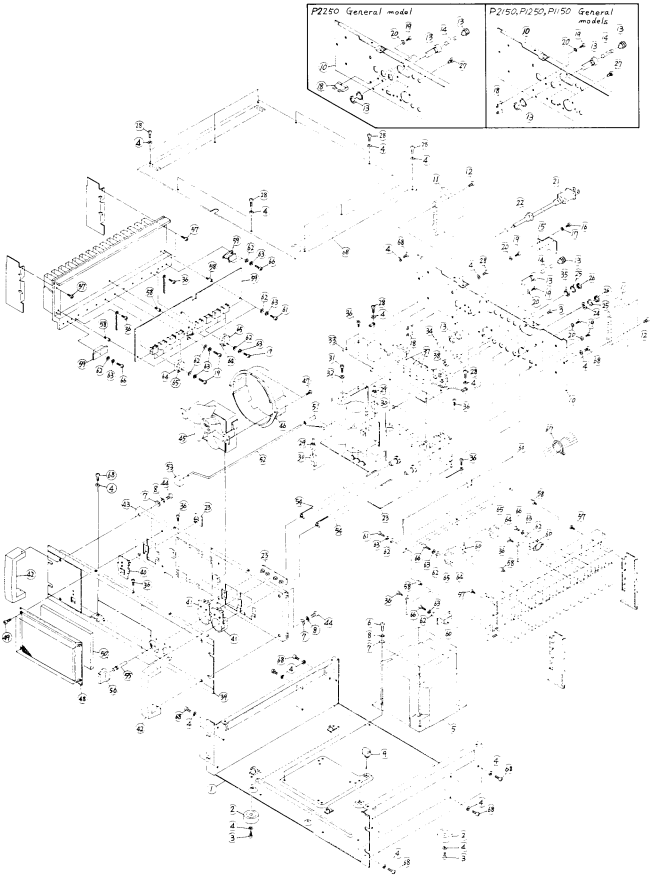
- OUTPUT CIRCUIT BOARD (Except P2250)



- OUTPUT CIRCUIT BOARD (P2250 only)



■EXPLODED VIEW



■PARTS LIST

	Ref. No.	Part No.	Description			部品名	Remarks	Common Model	Markets	ランク
※	1	AA 83 29 00	Chassis			シャーシ	P1150/P1250			
※	〃	AA 83 28 90	〃			〃	P2150/P2250			
	2	CB 80 65 90	Foot			脚				
	3	Ei 34 01 06	Bind Head Tapping Screw	4×10	BI	バインドタッピングネジ	M4			
	4	EV 41 30 46	Toothed Lock Washer	A4S	BI	歯付座金				
※	5	NB 83 18 70	Power Transformer			電源トランス	P1150		J	
※	〃	NB 83 19 10	〃			〃	〃		U,C	
※	〃	NB 83 19 50	〃			〃	〃		G	
※	〃	NB 83 18 50	〃			〃	P1250		J	
※	〃	NB 83 18 90	〃			〃	〃		U,C	
※	〃	NB 83 19 30	〃			〃	〃		G	
※	〃	NB 83 18 60	〃			〃	P2150		J	
※	〃	NB 83 19 00	〃			〃	〃		U,C	
※	〃	NB 83 19 40	〃			〃	〃		G	
※	〃	NB 83 18 90	〃			〃	P2250		J	
※	〃	NB 83 18 80	〃			〃	〃		U,C	
※	〃	NB 83 19 20	〃			〃	〃		G	
	6	ED 35 01 06	Bind Head Screw	5×10	BI	バインド小ネジ				
	7	EV 20 30 56	Flat Washer	5S	BI	平座金				
	8	EV 30 35 06	Spring Washer	5S	BI	バネ座金				
	9	CB 03 54 00	Holder,Circuit Board	D-85		シートホルダー				
※	10	AA 83 31 20	Rear Panel			リアパネル	P1150M;		J	
※	〃	AA 83 31 30	〃			〃	〃		U,C	
※	〃	AA 83 31 40	〃			〃	〃		G	
※	〃	AA 83 30 00	〃			〃	P1250M;		J	
※	〃	AA 83 30 10	〃			〃	〃		U,C	
※	〃	AA 83 30 20	〃			〃	〃		G	
※	〃	AA 83 30 60	〃			〃	P2150M;		J	
※	〃	AA 83 30 70	〃			〃	〃		U,C	
※	〃	AA 83 30 80	〃			〃	〃		G	
※	〃	AA 83 29 40	〃			〃	P2250M;		J	
※	〃	AA 83 29 50	〃			〃	〃		U,C	
※	〃	AA 83 29 60	〃			〃	〃		G	
	11	CB 80 86 50	Power Cord Holder			コードリール				
	12	Ei 34 01 26	Bind Head Tapping Screw	4×12	BI	バインドタッピングネジ				
	13	LB 20 29 40	Fuse Holder	15A	250V	ヒューズホルダー			J,U,C	
	〃	LB 20 05 90	〃	6.3A	250V	〃			G	
	14	KB 00 04 00	Fuse	5A	250V	ヒューズ	P1150		J	
	〃	KB 00 14 20	〃	5A	125V	〃	〃		U,C	
	〃	KB 00 07 60	〃	T3.15A	250V	〃	〃		G	
	〃	KB 00 13 00	〃	7A	250V	〃	P1250		J	
	〃	KB 00 15 20	〃	7A	125V	〃	〃		U,C	
	〃	KB 00 07 90	〃	T4.0A	250V	〃	〃		G	
	〃	KB 00 14 90	〃	10A	250V	〃	P2150		J	
	〃	KB 00 13 90	〃	10A	250V	〃	〃		U,C	
※	〃	KB 00 07 70	〃	T6.3A	250V	〃	〃		G	
	〃	KB 00 12 70	〃	15A	125V	〃	P2250		J	
	〃	KB 00 13 80	〃	15A	250V	〃	〃		U,C	
	〃	KB 00 07 90	〃	T4.0A	250V	〃	〃		G	
※	15	AA 83 32 50	Fuse Cover			ヒューズカバー	P2250M; C		J,C	
	16	Ei 33 00 86	Bind Head Tapping Screw	3×8	BI	バインドタッピングネジ	〃		J,C	
	17	EV 41 30 36	Toothed Lock Washer	A3S	BI	歯付座金	〃		J,C	
	18	LA 00 07 60	Lug Terminal	2P		ラグ端子板			J	

※New Parts (新規部品)

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	19	Ei 33 00 86	Bind Head Tapping Screw	3×8 Bl	バインドタッピングネジ				
	20	EV 41 30 36	Toothed Lock Washer	A3S Bl	歯付座金				
	21	MG 00 06 10	Power Cord	15A 125V 2.1m	電源コード			J	
	〃	MG 00 05 30	〃	10A 125V 2.2m	〃			U,C	
	〃	MG 00 11 30	〃	6A 250V 3.5m	〃			G	
	22	CB 80 68 50	Cord Stopper	6N3-4	コードストッパー			J,U,C	
	〃	CB 03 28 40	〃	5N-4	〃			G	
※	23	NA 81 39 60	INPUT Circuit Board	＝91980	INPUT シート	P1150用		J	
※	〃	NA 81 39 70	〃	〃	〃	〃		U,C	
※	〃	NA 81 39 80	〃	〃	〃	〃		G	
※	〃	NA 81 40 80	〃	〃	〃	P1250用		J	
※	〃	NA 81 40 90	〃	〃	〃	〃		U,C	
※	〃	NA 81 41 00	〃	〃	〃	〃		G	
※	〃	NA 81 40 20	〃	〃	〃	P2150用		J	
※	〃	NA 81 40 30	〃	〃	〃	〃		U,C	
※	〃	NA 81 40 40	〃	〃	〃	〃		G	
※	〃	NA 81 41 40	〃	〃	〃	P2250用		J	
※	〃	NA 81 41 50	〃	〃	〃	〃		U,C	
※	〃	NA 81 41 60	〃	〃	〃	〃		G	
	24	EV 41 00 98	Toothed Lock Washer	A9S Bl	歯付座金	M4 P2250C			
	25	LX 20 00 10	Plain Washer	9S Cr	特殊平座金				
	26	LX 20 00 60	Hexagonal Nut	9S Ni	特殊六角ナット				
	27	CB 06 88 80	Plastic Rivet		プラスチックリベット			G	
	28	Ei 34 00 86	Bind Head Tapping Screw	4×8 Bl	バインドタッピングネジ				
	29	LB 10 11 60	Receptacle		ポジティブロックレセプタクル	AMP			
	30	LB 10 11 80	Housing		ポジティブロックハウジング	〃			
	31	Ei 34 00 86	Bind Head Tapping Screw	4×8 Bl	バインドタッピングネジ			U,C	
	32	EV 41 30 46	Toothed Lock Washer	A4S Bl	歯付座金			U,C	
※	33	NA 81 42 40	OUTPUT Circuit Board	＝92350	OUTPUT シート	P1150/P1250用		J,G	
※	〃	NA 81 46 00	〃	〃	〃	〃		U	
※	〃	NA 81 45 70	〃	〃	〃	〃		C	
※	〃	NA 81 45 30	〃	〃	〃	P2150用		J,G	
※	〃	NA 81 45 90	〃	〃	〃	〃		U	
※	〃	NA 81 45 60	〃	〃	〃	〃		C	
※	〃	NA 81 42 60	〃	＝91990	〃	P2250用		J,G	
※	〃	NA 81 45 80	〃	〃	〃	〃		U	
※	〃	NA 81 45 50	〃	〃	〃	〃		C	
※	34	CA 80 91 60	Insulating Washer		絶縁ワッシャー			C	
	35	CB 81 00 90	Insulating Nut		絶縁ナット	P2250用		J	
	36	Ei 33 00 66	Bind Head Tapping Screw	3×6 Bl	バインドタッピングネジ				
	37	LB 20 15 40	Phone Jack		ホーンジャック	M4		C	
	38	EV 41 00 98	Toothed Lock Washer	A9S Bl	歯付座金			C	
※	39	BA 81 01 40	Front Panel		フロントパネル	P1150用			
※	〃	BA 81 01 00	〃		〃	P1250用			
※	〃	BA 81 01 20	〃		〃	P2150用			
※	〃	BA 81 00 80	〃		〃	P2250用			
※	40	CB 83 57 00	Switch Escutcheon		スイッチエスカッション				
※	41	CB 83 56 90	Knob Escutcheon		ツマミエスカッション				
	42	BA 80 19 50	Handle		アンプハンドル				
※	43	AA 83 29 20	Sub Panel		サブパネル				
	44	ED 35 01 26	Bind Head Screw	5×12 Bl	バインド小ネジ				
※	45	JC 00 11 50	Cooling Fan		放熱ファン				
※	46	CB 83 58 70	Duct		ダクト				

※New Parts（新規部品）

	Ref. No.	Part No.	Description			部品名	Remarks	Common Model	Markets	ランク
	47	Ei 33 01 26	Bind Head Tapping Screw	3×12	Bl	バインドタッピングネジ				
※	48	NB 83 15 70	Front Grill			フロントグリル				
※	49	EX 80 01 80	Cap Screw	4×8	Bl	六角穴付ボルト				
※	50	CB 83 57 10	Filter			フィルター				
※	51	CB 83 61 70	Rod Holder			ロッドホルダー				
※	52	AA 83 28 40	Rod			ロッド				
	53	CB 81 23 80	Push Button			プッシュボタン				
※	54	BA 81 00 60	Shaft			シャフト				
※	55	CB 83 56 60	Joint			ジョイント				
	56	CB 81 23 70	Attenuator Knob			アッテネーターツマミ				
	57	Ei 33 01 06	Bind Head Tapping Screw	3×10	Bl	バインドタッピングネジ				
	58	AA 07 75 90	Prop			支柱				
※	59	NA 81 42 00	PAA Circuit Board		≠92000	PAAシート	P1150/P1250			
※	〃	NA 81 42 20	〃		〃	〃	P1250/P2250			
※	60	NA 81 42 10	PAB Circuit Board		≠92010	PABシート	P2150			
※	〃	NA 81 42 30	〃		〃	〃	P2250			
	61	EA 03 00 66	Pan Head Screw	3×6	Ye	ナベ小ネジ				
	62	EV 20 00 36	Flat Washer	3S	Ye	平座金				
	63	EV 30 00 36	Spring Washer	3S	Ye	バネ座金				
	64	iL 00 06 80	Insulator			マイカベース				
※	65	iX 80 12 70	Transistor	2SA1186(O,Y)		トランジスタ	P1150/P2150			
※	〃	iX 80 12 90	〃	2SC2837(O,Y)		〃	〃			
※	〃	iX 80 12 80	〃	2SA1303(O,Y)		〃	P1250/P2250			
※	〃	iX 80 13 00	〃	2SC3284(O,Y)		〃	〃			
	66	EA 03 01 26	Pan Head Screw	3×12	Ye	ナベ小ネジ				
	67	CB 06 92 50	Binding Tie			インシュロックタイ				
※	68	AA 83 28 80	Top Cover			トップカバー	P1150/P1250			
※	〃	AA 83 28 70	〃			〃	P2150			
※	〃	BA 81 06 40	〃			〃	P2250 P2150			
		CB 83 56 70	Knob			ツマミ	C			
		CB 83 56 10	Cover, Knob			ノブカバー	C			
		BA 81 00 70	Panel			パネル	P2250C			
		BA 81 01 10					P1250C			
		BA 81 01 30					P2150C			
		BA 81 01 50					P1150C			
		AA 83 36 30	Rear Panel			リアパネル	P2250C		J	
		AA 83 29 80							U, C	
		AA 83 29 90							G	
		AA 83 36 50					P1250C		J	
		AA 83 30 40							U	
		AA 83 30 50							G	
		AA 83 43 30							C	
		AA 83 36 70					P2150C		J	
		AA 83 31 00							U, C	
		AA 83 31 10							G	
		AA 83 36 40					P1150C		J	
		AA 83 31 60							U	
		AA 83 31 70							G	
		AA 83 43 20							C	
		NA 81 41 70	P.C.B Assy, IN			INシート	P2250C		J	
		NA 81 42 70	OUT			OUTシート				
		NA 81 41 80	IN			INシート			U, C	
		NA 81 41 90	IN			INシート			G	

※New Parts (新規部品)

■CIRCUIT BOARDS & ELECTRICAL PARTS

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
※		*NA 81 39 60*	*INPUT Circuit Board*	*≒91980*	INPUT シート	P1150用		J	
※		*NA 81 39 70*	〃	〃	〃	〃		U,C	
※		*NA 81 39 80*	〃	〃	〃	〃		G	
※		*NA 81 40 20*	〃	〃	〃	P2150用		J	
※		*NA 81 40 30*	〃	〃	〃	〃		U,C	
※		*NA 81 40 40*	〃	〃	〃	〃		G	
※		*NA 81 40 80*	〃	〃	〃	P1250用		J	
※		*NA 81 40 90*	〃	〃	〃	〃		U,C	
※		*NA 81 41 00*	〃	〃	〃	〃		G	
※		*NA 81 41 40*	〃	〃	〃	P2250用		J	
※		*NA 81 41 50*	〃	〃	〃	〃		U,C	
※		*NA 81 41 60*	〃	〃	〃	〃		G	
※※		UJ 15 71 00	Electrolytic Cap.	10μF 35V	ケミコン				
		UJ 15 81 00	〃	100μF 35V	〃				
		UJ 15 84 70	〃	470μF 35V	〃				
		UW 69 81 00	〃	100μF 100V	〃				
		UJ 29 84 70	〃	470μF 100V	〃				
※		FZ 00 70 10	〃	0.01F 80V	〃	P1250			
※		FZ 00 72 20	〃	0.01F 63V	〃	P1150			
※		FZ 00 67 90	〃	0.015F 63V	〃	P2150			
※		FZ 00 67 80	〃	0.015F 80V	〃	P2250			
		UK 13 72 20	Bipolar Electrolytic Cap.	22μF 16V	BPケミコン				
		HU 07 63 90	Metal Film Resistor	3.9kΩ 1/4W	金属皮膜抵抗				
		HU 07 71 20	〃	12kΩ 1/4W	〃				
		HU 07 71 60	〃	16kΩ 1/4W	〃				
		HU 07 73 00	〃	30kΩ 1/4W	〃				
		HU 07 73 90	〃	39kΩ 1/4W	〃	P2150/P2250			
		HU 07 75 10	〃	51kΩ 1/4W	〃				
		HL 31 51 00	Metal Oxide Film Resistor	100Ω 1W	酸化金属皮膜抵抗				
		HL 32 71 00	〃	10kΩ 2W	〃				
※		HZ 00 50 80	Wire Wound Resistor	680Ω 15W	セメント抵抗	P1150/P2150			
※		HZ 00 50 30	〃	1kΩ 15W	〃	P1250/P2250			
※		HY 00 19 20	Detent Variable Resistor	20kΩ	ディテント抵抗				
		iH 00 00 30	Diode	10D1	ダイオード				
		iF 00 51 20	〃	MC931	ダブルダイオード				
		iH 00 14 00	Bridge Rectifier	1G4B1	ブリッジダイオード				
		iH 00 03 90	〃	KBH-2504	〃				
		iF 00 17 20	LED	LN222RP	LED				
		iF 00 21 80	〃	LN322GP	〃				
※		iG 14 28 00	IC	NJM5532D	IC				
※		iG 14 95 00	〃	NJM5534D	〃	P2150/P2250			
		iG 06 39 00	〃	μPC7815H	〃				
		iG 07 75 00	〃	μPC7915H	〃				
		KA 40 12 30	Slide Switch		スライドスイッチ	Voltage Selector		G	
		KA 40 12 80	〃	SSP32204	〃	P2150 P2250 STEREO MONO			
※		KA 80 49 70	Power Switch		電源スイッチ			J	
※		KA 80 49 80	〃		〃			U,C	
※		KA 80 49 90	〃		〃			G	
		KB 00 03 30	Fuse	1A 250V	ヒューズ			J	
		KB 00 10 60	〃	1A 250V	〃			U,C	
		KB 00 06 70	〃	T630mA 250V	〃			G	
		LA 00 44 00	Terminal		ファストン端子				
		LB 20 15 30	Fuse Clip		ヒューズホルダーピン				

※New Parts (新規部品)

	Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
		LB 30 20 70	Phone Jack	stereo	ホーンジャック	INPUT Hi Type			
※		LB 30 23 20	XLR Connector	XLB-3-31-PCV	キャノンソケット	〃			
		LB 91 80 30	Connector Base Pin	3P TE	コネクタベースピン	XH			
		LB 92 80 30	Connector	3P	ウェハーアッセンブリー				
		LB 40 08 90	〃	4P	〃				
		LB 50 04 70	〃	5P	〃				
		LB 01 40 30	Connector Housing	3P	コネクタハウジング				
		LB 00 90 50	〃	5P	〃	XH			
		LB 00 90 30	〃	3P	〃				
		LB 00 90 40	〃	4P	〃				
		LB 10 10 00	Contact Pin		コンタクトピン				
		LB 10 11 30	〃		〃	XH			
		LB 30 11 50	Connector	3P	レコネクター				
※		LB 10 18 20	Contact Pin		コンタクトピン				
		Ei 33 00 66	Bind Head Tapping Screw	3×6 Bl	バインドタッピングネジ				
		Ei 34 01 66	〃	4×16 Bl	〃				
		Ei 34 00 86	〃	4×8 Bl	〃				
		ED 24 05 02	Bind Head Screw	4×50 Cr	バインド小ネジ				
		EV 30 34 06	Spring Washer	4S Bl	バネ座金				
		EV 41 30 46	Toothed Lock Washer	A4S Bl	歯付座金				
					〃				
※		***NA 81 42 00***	***PAA Circuit Board***	***=92000***	PAAシート	P1150/P2150			
※		***NA 81 42 20***	〃	〃	〃	P1250/P2250			
※		***NA 81 42 10***	***PAB Circuit Board***	***=92010***	PABシート	P2150			
※		***NA 81 42 30***	〃	〃	〃	P2250			
		HV 35 34 70	Flame Proof Carbon Resistor	4.7Ω	不燃化カーボン抵抗				
		HV 35 42 20	〃	22Ω	〃				
		HV 35 44 70	〃	47Ω	〃				
		HV 35 51 00	〃	100Ω	〃				
		HV 35 51 20	〃	120Ω	〃				
		HV 35 52 20	〃	220Ω	〃				
		HV 35 52 70	〃	270Ω	〃				
		HV 35 53 30	〃	330Ω	〃				
		HV 35 55 60	〃	560Ω	〃				
※		HV 35 63 00	〃	3kΩ	〃				
		HU 57 54 30	Metal Film Resistor	430Ω 1/4W	金属皮膜抵抗	P1150/P2150			
		HU 57 68 20	〃	8.2kΩ 1/4W	〃				
		HU 57 71 80	〃	18kΩ 1/4W	〃				
		HU 57 53 30	〃	330Ω 1/4W	〃	P1250/P2250			
		HL 31 41 00	Metal Oxide Film Resistor	10Ω 1W	酸化金属皮膜抵抗				
		HL 31 48 20	〃	82Ω 1W	〃				
		HL 32 34 70	〃	4.7Ω 2W	〃				
		HZ 00 39 50	Wire Wound Resistor	0.33Ω 5W	金属板抵抗				
		HZ 00 48 20	〃	10Ω 5W	〃				
		UA 25 32 20	Mylar Film Cap.	0.0022μF 50V	マイラーコン				
		UA 25 51 00	〃	0.1μF 50V	〃				
		FZ 00 52 00	Metalized Mylar Cap.	0.1μF 100V	MMコン				
		FZ 00 52 10	〃	0.22μF 100V	〃				
		FZ 00 52 20	〃	0.48μF 100V	〃				
		FU 35 13 30	Mica Cap.	33pF 500V	FEマイカコン				
		FU 35 21 50	〃	150pF 500V	〃				
		FT 55 21 00	Polypropylene Cap.	100pF 50V	ポリプロコン				
		FT 55 24 70	〃	470pF 50V	〃				

※New Parts (新規部品)

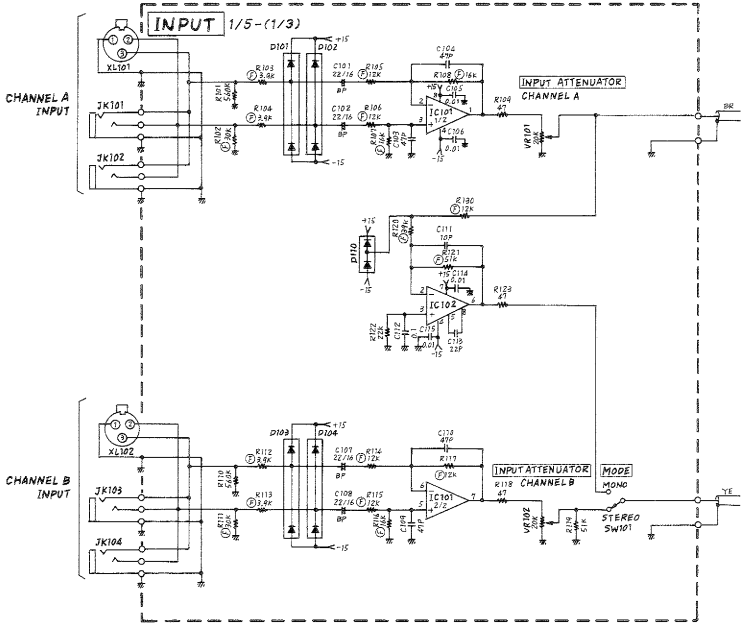
Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	FT 55 25 60	Polypropylene Cap.	560pF 50V	ポリプロコン				
	FT 55 26 80	〃	680pF 50V	〃				
※	FT 55 31 50	〃	1500pF 50V	〃				
	UJ 28 82 20	Electrolytic Cap.	220μF 80V	ケミコン				
	UJ 29 74 70	〃	47μF 100V	〃				
	iA 09 68 00	Transistor	2SA968 (O,Y)	トランジスタ				
	iC 22 38 00	〃	2SC2238(O,Y)	〃				
※	iA 13 60 00	〃	2SA1360(O,Y)	〃				
※	iC 34 23 00	〃	2SC3423(O,Y)	〃				
	iA 09 70 00	〃	2SA970(GR,BL)	〃				
※	iA 10 15 30	〃	2SA1015(Y,GR)	〃				
	iC 18 15 30	〃	2SC1815 (GR)	〃				
	iC 22 91 00	〃	2SC2291(F,G,HI	〃				
	iC 22 40 00	〃	2SC2240(GR,BL)	〃				
※	iE 10 45 10	FET	2SK389 (BL,V)	FET				
	iF 00 06 70	Diode	1S2473	ダイオード				
	iF 00 14 00	〃	1SS82	〃				
	iH 00 03 20	〃	1S1888	〃				
	iF 00 51 20	〃	MC931	ダブルダイオード				
	iF 00 56 00	Zener Diode	RD5.6EB2	ツェナーダイオード				
	iF 00 07 90	Varistor Diode	MV-12	バリスタ				
	iF 00 61 90	LED	LTZ-R17	LED				
	iG 10 70 00	IC	NJM072D	IC				
※	HT 41 03 70	Trimmer Potentiometer	B470Ω	ソリッドVR				
	GD 90 05 80	Coil	2.0μF	コイル				
	BA 01 18 70	Heat Sink		放熱板				
	KA 00 02 20	Thermal Reed Switch	OHD-85B	サーマルガード				
※	KA 90 70 00	Relay	INT60M15	リレー				
※	LB 60 77 70	Transistor Socket	M168Z	トランジスタソケット				
	LB 92 80 30	Connector	3P	ウェハーアッセンブリー				
	LB 91 80 30	Connector Base Pin	3P	コネクタベースピン	XH			
	LB 91 80 50	〃	5P	〃	〃			
※	LB 00 70 40	Connector Housing	4P	コネクタハウジング				
	LB 00 90 30	〃	3P	〃	XH			
	LB 00 90 20	〃	2P	〃	〃			
	LB 10 10 00	Contact Pin		コンタクトピン				
	LB 10 11 30	〃		〃	XH			
	Ei 33 00 86	Bind Head Tapping Screw	3×8 BI	バインドタッピングネジ				
	EV 30 33 06	Spring Washer	3S BI	バネ座金				
	EV 20 30 36	Flat Washer	3S BI	平座金				
※	***NA 81 42 40***	***OUTPUT Circuit Board***	***≒92350***	OUTPUT シート	P1150/P1250用		J,G	
※	***NA 81 46 00***	〃	〃	〃	〃		U	
※	***NA 81 45 70***	〃	〃	〃	〃		C	
※	***NA 81 45 30***	〃	〃	〃	P2150用		J,G	
※	***NA 81 45 90***	〃	〃	〃	〃		U	
※	***NA 81 45 60***	〃	〃	〃	〃		C	
※	***NA 81 42 60***	〃	***≒91990***	〃	P2250用		J,G	
※	***NA 81 45 80***	〃	〃	〃	〃		U	
※	***NA 81 45 50***	〃	〃	〃	〃		C	
※※	UJ 12 81 00	Electrolytic Cap.	100μF 10V	ケミコン				
	UW 55 74 70	〃	47μF 35V	〃				
	UW 56 61 00	〃	1μF 50V	〃				

※New Parts (新規部品)

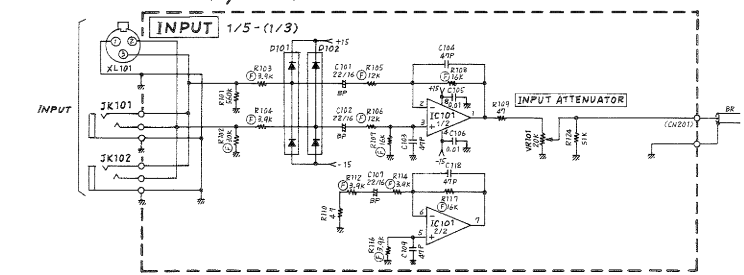
Ref. No.	Part No.	Description		部品名	Remarks	Common Model	Markets	ランク
	UK 74 81 00	Bipolar Electrolytic Cap.	100μF 25V	BP ケミコン				
	iA 09 70 00	Transistor	2SA970(GR,BL)	トランジスタ				
	iC 22 40 00	〃	2SA2240(GR,BL)	〃				
	iF 00 06 70	Diode	1S2473	ダイオード				
	iH 00 00 30	〃	10D-1	〃				
	iG 03 48 00	IC	TA7317P	I C				
*	KC 00 20 10	Relay	MS24D4	リレー	P1150/P1250/P2150			
*	KC 00 19 80	〃	MZ-24	〃				
*	KC 00 19 70	〃	MSJ24	〃	P2250			
	LB 10 05 00	Phone Jack		ホーンジャック			J,U,G	
*	LA 00 55 10	Speaker Terminal	Left	スピーカーターミナル	P1250,2250,2150 Mix		J,G	
*	LA 00 55 30	〃	〃	〃	Mix C		U,C	
*	LA 00 55 20	〃	Right	〃	P2150/P2250 Mix		J,G	
*	LA 00 55 40	〃	〃	〃	〃 Mix C		U,C	
	LB 91 80 20	Connector Base Pin	2P	コネクタベースピン	XH			
	LB 91 80 30	〃	3P	〃	〃			
	LB 91 80 40	〃	4P	〃	〃			
	LB 91 80 50	〃	5P	〃	〃			
*	LB 40 08 50	Connector	4P	ウェハーアッセンブリー				
*	CA 80 91 60	Insulating Washer		絶縁ワッシャー	Mix Type		J,U,G	
	NA8141 1C	P.C.B Assy, IN		INシート	P1250C		J	
	NA8142 5C	CUT		CUT				
	NA8141 2C	IN		IN			U,C	
	NA8141 3C	IN		IN			G	
	NA8140 5C	IN		IN	P2150C		J	
	NA8145 4C	CUT		CUT				
	NA8146 6C	IN		IN			U,C	
	NA8140 7C	IN		IN			G	
	NA8139 9C	IN		IN	P1150C		J	
	NA8142 5C	CUT		CUT				
	NA8140 0C	IN		IN			U,C	
	NA8140 1C	IN		IN			G	
	AA83 28 6C			BS金具(大)	C			
	CB32 74 2C	Cover		カバー	P2250C		J,U	
	LA00 56 1C			スプット K103	P2250C		J,U	
	CB31 00 7C			絶縁プット	P1250C		J	
	CB31 00 9C			〃	P2250C		U,C,G	
	AA83 33 3C			ソケットスペーサ	P1250C, P1150C			
	EK00 23 7C		16×9×0.3	ファイバーワッシャー	P2250C, P1250Mix			
	AA83 34 3C			BS金具(小)	Cap			
	HJ35 73 0C		30Kvab	カーボン抵抗	C type			
	KA40 17 1C			スライドSW	C type			
	LA00 55 6C			カン通端子台	P2150C, P2250C			
	LB60 30 3C			オクソルソケット	C type			
	CA80 41 6C			絶縁ワッシャー	P1250C			
	LA00 54 7C			カンウラ端子台	P2250C, P2150C			
	LB10 05 0C			ジャック	P1250, P2150, P2250		J,U,G	
	LA00 55 3C			スピーカーターミナル	C type			
	LA00 55 4C			〃	C type			

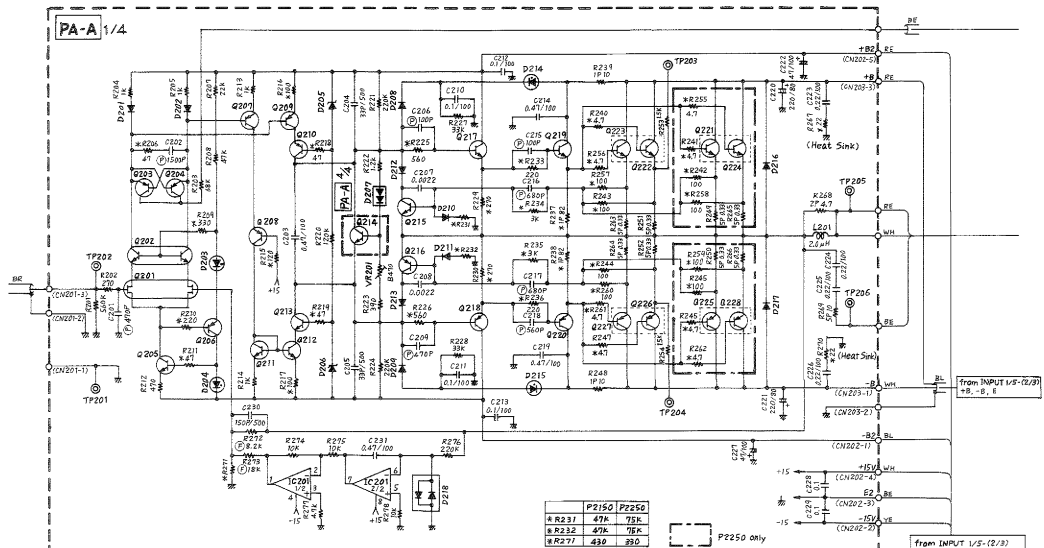
*New Parts (新規部品)

P2150, P2250

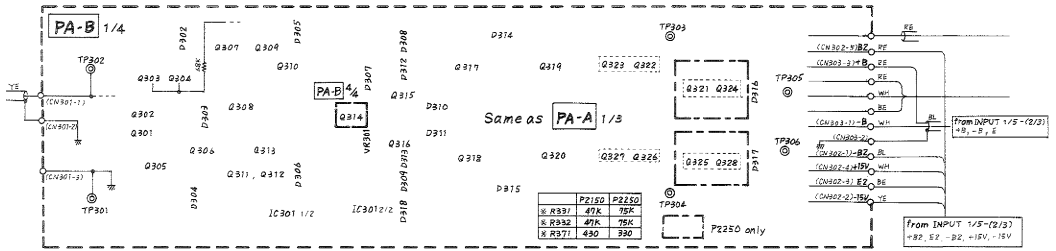


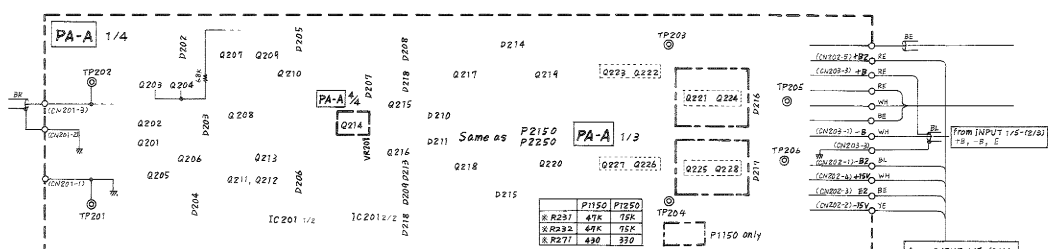
P1150, P1250





	P2150	P2250
*R231	47K	75K
*R232	47K	75K
*R271	430	330


PA-B 1/4
TP302
(CN301-1)
(CN301-2)
(CN301-3)
TP301
Q302
Q301
Q303
Q304
Q305
Q306
Q307
Q308
Q309
Q310
Q311 , Q312
Q313
D302
D303
D304
D305
D306
IC301 1/2
IC301 2/2
PA-B 4/4
Q314
VR301
D307
D308
D309
D310
D311
D312
D313
D314
D315
D316
D317
D318
D319
D320
Q315
Q316
Q317
Q318
Q319
Q320
Q321 Q324
Q323 Q322
Q325 Q328
Q327 Q326
Same as PA-A 1/3
TP303
TP304
P2250 only
TP305
TP306
(CN302-9)+BZ
(CN303-3)+B
(CN303-1)-B
(CN302-7)-BZ
(CN302-4)+15V
(CN302-5) EZ
(CN302-2)-15V
from INPUT 1/5-(2/3)
+B, -B, E
from INPUT 1/5-(2/3)
+BZ, EZ, -BZ, +15V, -15V
R331 47K 75K
R332 47K 75K
R371 430 330
Same as PA-A 1/3

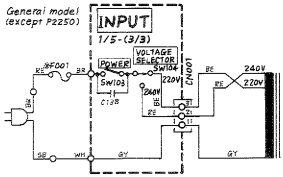

PA-A 1/4
TP202
(CN201-3)
(CN201-2)
(CN201-1)
TP201
Q202
Q201
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211, Q212
Q213
D202
D203
D204
D205
D206
IC201 1/2
IC201 2/2
PA-A 4/4
Q214
VR201
D207
D208
D209
D210
D211
D212
D213
D214
D215
D216
D217
D218
Q215
Q216
Q217
Q218
Q214
Q220
Same as P2150 P2250 PA-A 1/3
TP203
TP204
P1150 only
TP205
TP206
(CN202-5)+BZ
(CN203-3)+B
(CN203-1)-B
(CN202-1)-BZ
(CN202-4)+15V
(CN202-3) EZ
(CN202-2)-15V
from INPUT 1/5-(2/3)
+B, -B, E
from INPUT 1/5-(2/3)
+BZ, EZ, -BZ, +15V, -15V
R231 47K 75K
R232 47K 75K
R271 430 330
Same as P2150 P2250 PA-A 1/3

	※R125	※C120 ※C121	Wire Color				
			※A	※B	※C	※D	※E
P1150	15P 680	10000/63	YE	YE	OR	BE	BE
P1250	15P 1K	10000/80	YE	YE	OR	BE	BE
P2150	15P 680	15000/63	BE	BE	VI	OR	OR
P2250	15P 1K	15000/80	Pk	Pk	VI	OR	OR

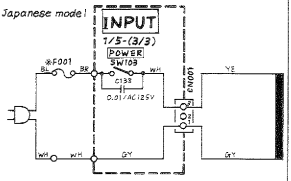
	※F101 ~ 104
Japanese	1A 250V
U.S and Canadian	1A 250V
General	T630mA 250V

	Japanese		U.S. and Canadian		General (except P2250)		General (P2250 only)		
	Power Transformer	※F001	Power Transformer	※F001	Power Transformer	※F001	Power Transformer	※F001	※F002
P1150	GA83780	5A 250V	GA83790	5A 125V	GA83800	T3.15A 250V			
P1250	GA83810	7A 250V	GA83820	7A 125V	GA83830	T4.0A 250V			
P2150	GA83920	10A 250V	GA83930	10A 250V	GA83740	T6.3A 250V			
P2250	GA83750	15A 250V	GA83760	15A 250V			GA83770	T4.0A 250V	T4.0A 250V

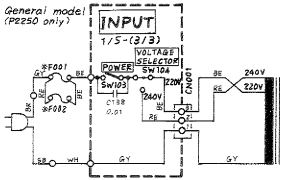
General model (except P2250)



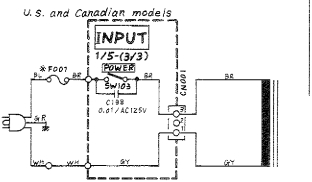
Japanese model

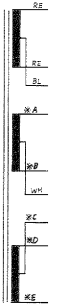


General model (P2250 only)



U.S. and Canadian models



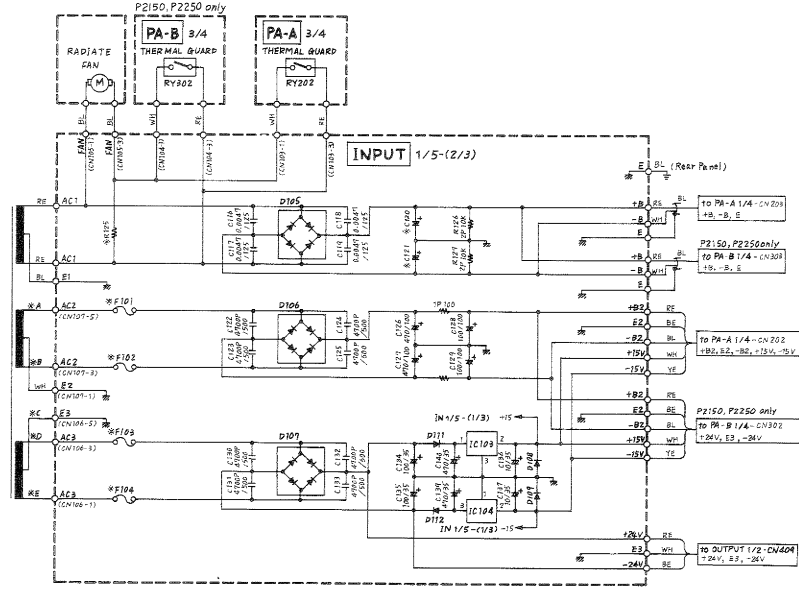


Notes)
INPUT Circuit Board

IC101	:NJM5532D (1G142000)
IC102	:NJM5534D (1G145000)
IC103	:μPC7915H (1G063000)
IC104	:μPC7915H (1G077000)
D101~104.110	:MC931
D105	:KBR-Z5D4
D106.107	:1G491
D108.109. 111.112	:1DD1
LED111.112	
115.116	:LN222RP
LED113.114	:LN322GP
VR101.102	:20kΩ

Notes)
PAA Circuit Board

IC201	:NJM072D (1G107000)
Q201	:2SK389(BL.V)
Q202	:2SC2291(P.G.H)
Q203.204.205. 207.215	:2SA970(GR.BL)
Q205.215	:2SC2240(GR.BL)
Q206.210.218	:2SA1350(O.Y)
Q209	:2SA1015(Y.GR)
Q211.212	:2SC1815(GR)
Q213.214.217	:2SC3423(O.Y)
Q219	:2SC2238(O.Y)
Q220	:2SA968(O.Y)
Q221~224 (P1150/P2150)	:2SC2837(O.Y)
(P1250/P2250)	:2SC3284(O.Y)
Q225~228 (P1150/P2150)	:2SA1186(O.Y)
(P1250/P2250)	:2SA1303(O.Y)
D201.202.212. 213	:1S2473
D203.204.214. 215	:LTZ-R17
D205.206	:RD5.6EB2
D207	:MV-12
D208~211	:1SS82
D216.217	:1S1888
D218	:MC931
VR201	:B470Ω
RY201	:OMD-85B
RY202	:LNT6DM15

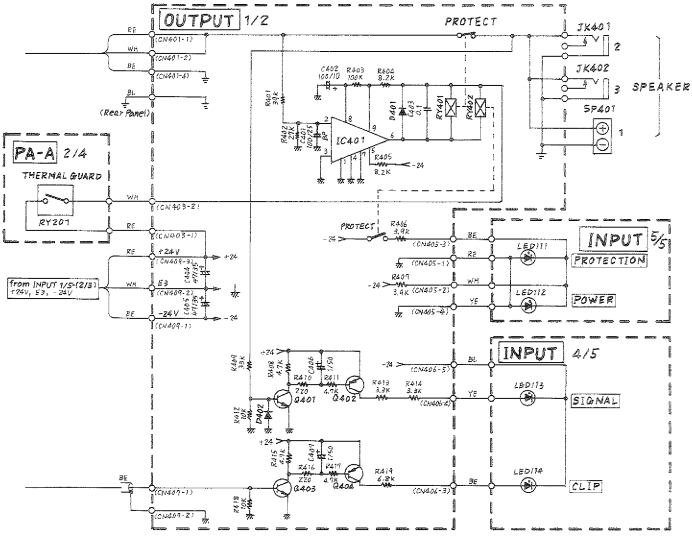


Notes)
PAB Circuit Board

IC301	:NJM072D (iG107000)
Q301	:2SK389(BL.V)
Q302	:2SC2291(P,G,H)
Q303.304.306. 307.316	:2SA970(GR.BL)
Q305.315	:2SC2240(GR.BL)
Q308.310.318	:2SA1360(O.Y)
Q309	:2SA1015(Y.GR)
Q311.312	:2SC1815(GR)
Q313.314.317	:2SC3423(O.Y)
Q319	:2SC2238(O.Y)
Q320	:2SA968(O.Y)
Q321-324 (P2150)	:2SC2837(O.Y)
(P2250)	:2SC3284(O.Y)
Q325-328 (P2150)	:2SA1186(O.Y)
(P2250)	:2SA1303(O.Y)
D301.302.312. 313	:1S2473
D303.304.314. 315	:LTZ-R17
D305.306	:RD5.6EB2
D307	:MV-12
D308-311	:1SS82
D316.317	:1S1888
D318	:MC931
VR301	:B470Ω
RY301	:OMD-05B
RY302	:INT90M15

Notes)
OUTPUT Circuit Board

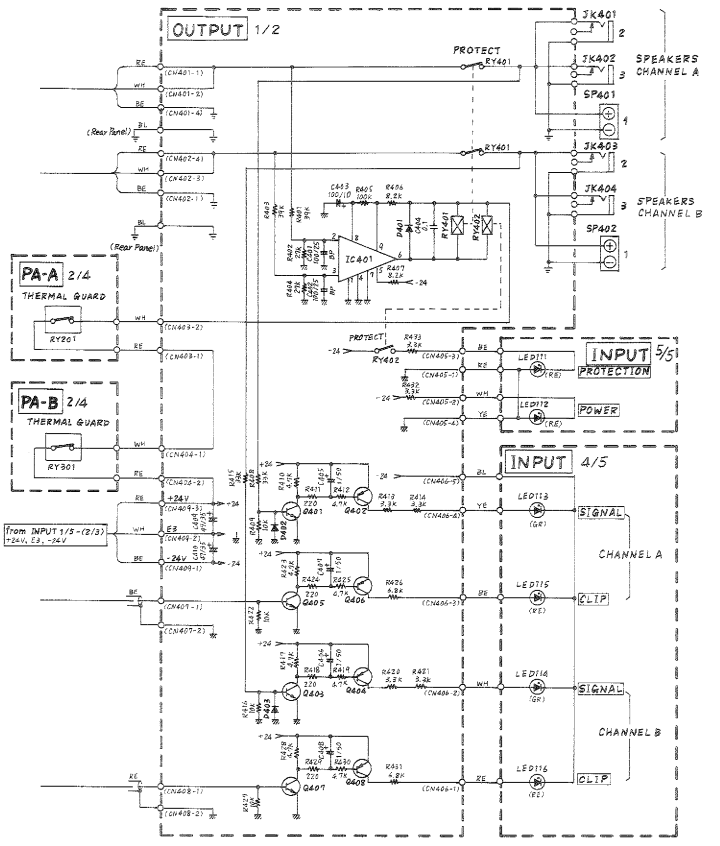
IC401	:TA7317P (iG034800)
Q401.403.405. 407	:2SC2240(GR.BL)
Q402.404.406. 408	:2SA970(GR.BL)
D401	:10D-1
D402.403	:1S2473
RY401 (P1150/P1250/P2150)	:MS24D4
(P2250)	:MSJ24
RY402	:MZ-24



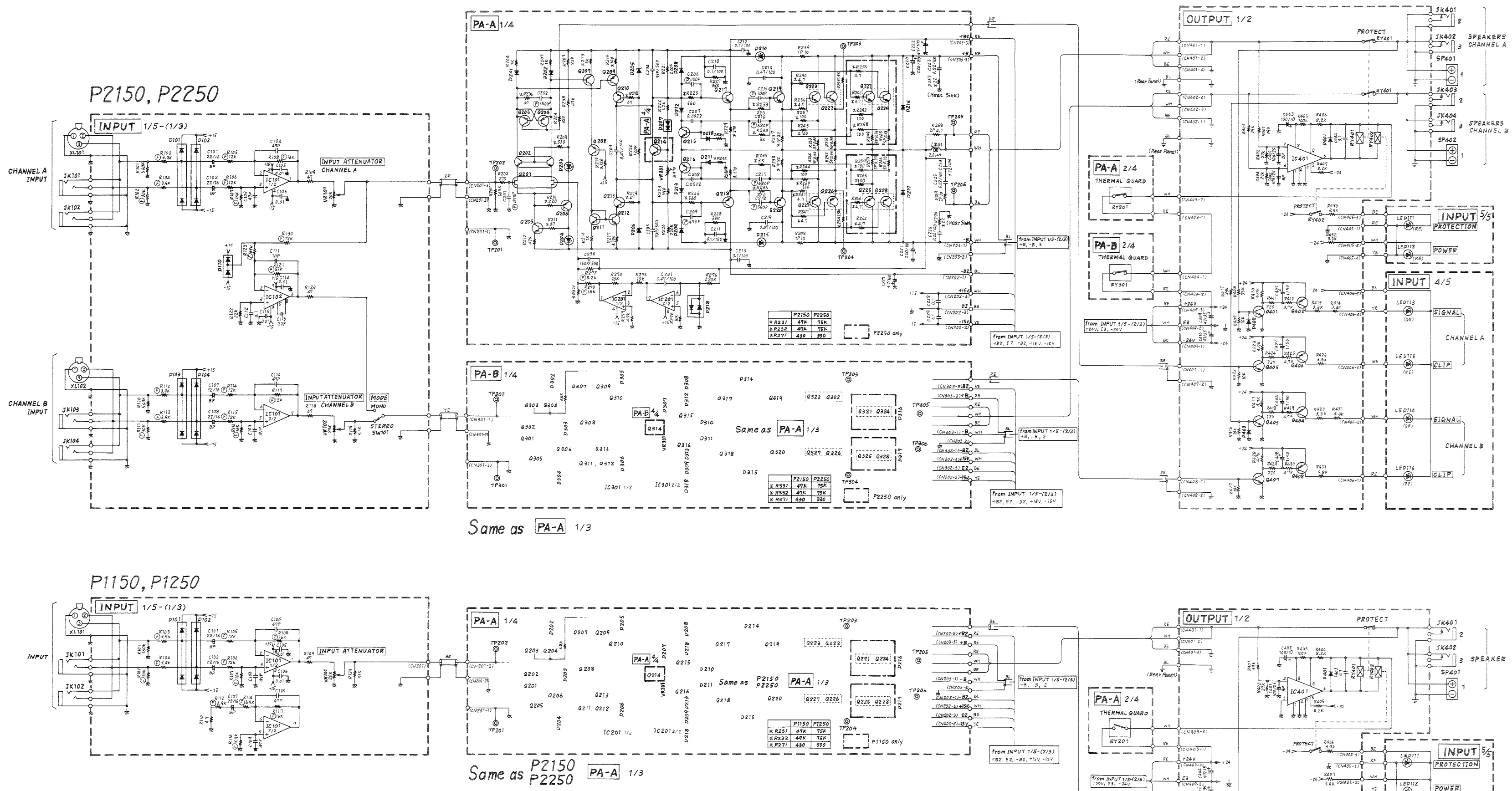
- WIRE COLOR ABBREVIATIONS

BE→Blue	RB→Red
BL→Black	SB→Sky Blue
BR→Brown	VI→Violet
GR→Green	WH→White
GY→Gray	YE→Yellow
OR→Orange	

*Schematic diagram subjects to change without notice.


OUTPUT 1/2
PROTECT
RY401
JK401
JK402
JK403
JK404
SP401
SP402
SPEAKERS CHANNEL A
SPEAKERS CHANNEL B
(Rear Panel)
IC401
PA-A 2/4
THERMAL GUARD
RY201
PA-B 2/4
THERMAL GUARD
RY301
RY402
INPUT 5/5
PROTECTION
POWER
INPUT 4/5
SIGNAL
CLIP
CHANNEL A
CHANNEL B
Q401
Q402
Q405
Q406
Q403
Q404
Q407
Q408
From INPUT 1/5~(2/3) +24V, E3, -24V

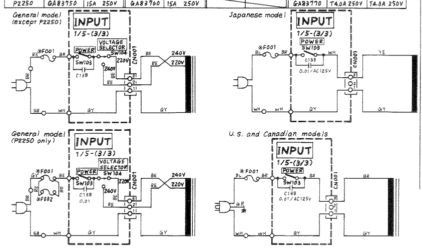
■SCHEMATIC DIAGRAM

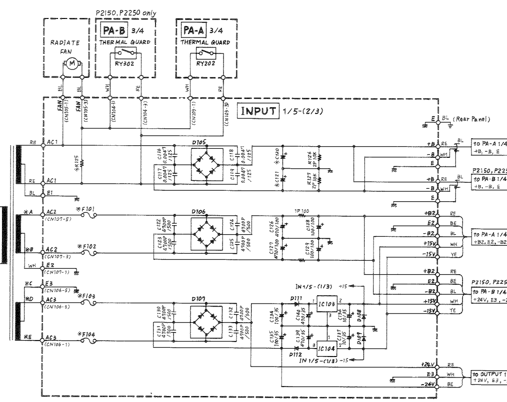


	※R125	※C120 ※C121	Wire Color ※A	※B	※C	※D	※E
P1150	15P 680	10000/63	YE	YE	OR	BE	BE
P1250	15P 1K	10000/80	YE	YE	OR	BE	BE
P2150	15P 680	15000/63	BE	BE	VI	OR	OR
P2250	15P 1K	15000/80	Pk	Pk	VI	OR	OR

	※F101～104
Japanese	1A 250V
U.S and Canadian	1A 250V
General	T630mA 250V

	Japanese		U.S. and Canadian		General (except P2250)		General (P2250 only)		
	Power Transformer	※F001	Power Transformer	※F001	Power Transformer	※F001	Power Transformer	※F001	※F002
P1150	GA83780	5A 250V	GA83790	5A 125V	GA83800	T3.15A 250V			
P1250	GA83810	7A 250V	GA83820	7A 125V	GA83830	T4.0A 250V			
P2150	GA83720	10A 250V	GA83730	10A 250V	GA83740	T6.3A 250V			
P2250	GA83750	15A 250V	GA83760	15A 250V			GA83770	T4.0A 250V	T4.0A 250V





Notes)
INPUT Circuit Board

IC101	:NJM5532D (iG142800)
IC102	:NJM5534D (iG149500)
IC103	:μPC7815H (iG063900)
IC104	:μPC7915H (iG077500)
D101~104,110	:MC931
D105	:KBH-2504
D106,107	:1G4B1
D108,109,111,112	:10D1
LED111,112,115,116	:LN222RP
LED113,114	:LN322GP
VR101,102	:20kΩ

Notes)
PAA Circuit Board

IC201	:NJM072D (iG107000)
Q201	:2SK389(BL,V)
Q202	:2SC2291(F,G,H)
Q203,204,206,207,216	:2SA970(GR,BL)
Q205,215	:2SC2240(GR,BL)
Q208,210,218	:2SA1360(O,Y)
Q209	:2SA1015(Y,GR)
Q211,212	:2SC1815(GR)
Q213,214,217	:2SC3423(O,Y)
Q219	:2SC2238(O,Y)
Q220	:2SA968(O,Y)
Q221~224	
(P1150/P2150)	:2SC2837(O,Y)
(P1250/P2250)	:2SC3284(O,Y)
Q225~228	
(P1150/P2150)	:2SA1186(O,Y)
(P1250/P2250)	:2SA1303(O,Y)
D201,202,212,213	:1S2473
D203,204,214,215	:LTZ-R17
D205,206	:RD5.6EB2
D207	:MV-12
D208~211	:1SS82
D216,217	:1S1888
D218	:MC931
VR201	:B470Ω
RY201	:OHD-85B
RY202	:INT60M15

Notes)
PAB Circuit Board

IC301	:NJM072D (iG107000)
Q301	:2SK389(BL,V)
Q302	:2SC2291(F,G,H)
Q303,304,306,307,316	:2SA970(GR,BL)
Q305,315	:2SC2240(GR,BL)
Q308,310,318	:2SA1360(O,Y)
Q309	:2SA1015(Y,GR)
Q311,312	:2SC1815(GR)
Q313,314,317	:2SC3423(O,Y)
Q319	:2SC2238(O,Y)
Q320	:2SA968(O,Y)
Q321~324	
(P2150)	:2SC2837(O,Y)
(P2250)	:2SC3284(O,Y)
Q325~328	
(P2150)	:2SA1186(O,Y)
(P2250)	:2SA1303(O,Y)
D301,302,312,313	:1S2473
D303,304,314,315	:LTZ-R17
D305,306	:RD5.6EB2
D307	:MV-12
D308~311	:1SS82
D316,317	:1S1888
D318	:MC931
VR301	:B470Ω
RY301	:OHD-85B
RY302	:INT60M15

Notes)
OUTPUT Circuit Board

IC401	:TA7317P (iG034800)
Q401,403,405,407	:2SC2240(GR,BL)
Q402,404,406,408	:2SA970(GR,BL)
D401	:10D-1
D402,403	:1S2473
RY401	
(P1150/P1250P2150)	:MS24D4
(P2250)	:MSJ24
RY402	:MZ 24

· WIRE COLOR ABBREVIATIONS

BE→Blue
BL→Black
BR→Brown
GR→Green
GY→Gray
OR→Orange
RE→Red
SB→Sky Blue
VI→Violet
WH→White
YE→Yellow

*Schematic diagram subjects to change without notice.