

SERVICE  
MANUAL 

STEREO POWER AMPLIFIER **M120A**





ALIGNMENT PROCEDURE

(1) Set up the Amplifier

Input Level Vol.	Minimum
Speaker Sel.	Main Position
Power Indicator	Off
DUO-ALPHA Sel.	Normal

(2) Turn on the Power Switch and wait 3 minutes for warm up.

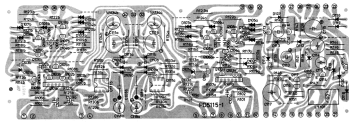
DC offset Adjustment

(1) Connect DC Voltmeter at Main Speaker terminal.

(2) Adjust on P85115-1

VR 134a - Left Channel  
VR 134b - Right Channel

to get 0(Zero) Volt in DC Voltmeter.



< Fig.-1 >

Bias (Idle current) Adjustment

< Left Channel >

(1) Take off Fuse, F805 on P85115-8.

(2) Connect DC Ammeter between Pin No.8(+) and Pin No.11(-) on P85115-8.

(3) Adjust VR 201a to get 70 mA in DC Ammeter.

< Right Channel >

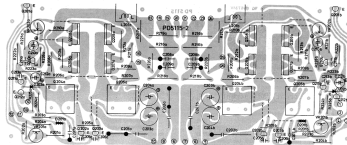
- (1) Take off Fuse, F801 on P8115-8.
- (2) Connect DC Ammeter between Pin No.4(+) and Pin No.16(-) on P8115-8.
- (3) Adjust VR 201b to get 70 mA in DC Ammeter.

Over load protection threshold Level Adjustment.

< Connection method of test equipment >

Oscilloscope  
AC Voltage meter | ----- Connect to main Speaker terminal.  
Audio Signal Generator ----- Input terminal.

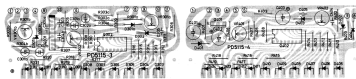
- (1) Connect load (4 Ohm 180W) at main speaker terminal.
- (2) Put 1 KHz sine wave into the left (Right) channel input with the level control at maximum
- (3) Adjust the input level to obtain 26V at the output level.
- (4) Adjust VR202a/left chan. (VR202b/Right Chan.) on the P8115-2 so that the output should disappear. (See Fig. 2)



< Fig. - 2 >

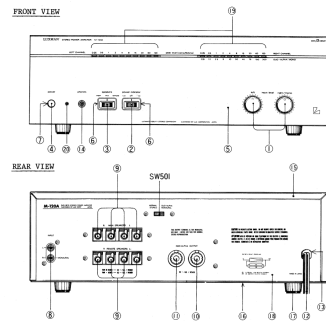
Power Indicators Level Adjustment.

- Don't Connect any load to the Speaker terminal.
- (1) Set up the power indicator switch to "1/100" position.
  - (2) Adjust the input level to get 3V at the output level.
  - (3) Adjust the VR401 (VR302) on the PD5115-4 (PD5115-3) to light up the 120 W LED Indicator.
  - (4) Set up the power indicator switch to full position
  - (5) Adjust the input level to get 30V at the output.
  - (6) Adjust the VR301a (VR301b) on the PD5115-3 to light up the 120W LED Indicator.
  - (7) Repeat the step (1) — (6). (2 - 3 times)
  - (8) Set up the power indicator switch to "1/100" position.
  - (9) Adjust the input level to light up the 0.25W LED indicator of right channel.
  - (10) Adjust the VR402 on the PD5115-4 to light up to 0.25W LED Indicator of left channel.
  - (11) Adjust the input level to get 3V at the output.
  - (12) Adjust the VR401 on the PD5115-4 to light up the 120W LED Indicator of left channel.
  - (13) Repeat the Step (8) — (12). (2 - 3 times)



< Fig.- 3 >

REPLACEMENT PARTS (Cosmetic)



Parts List

REF. NO.	STOCK NO.	DESCRIPTION
< Packing Material >		
	X45101B	Carton (U.S.)
	X45101A	Carton (U.C.)
	X85055B	Pad (U.S.)
	X85055A	Pad (U.C.)
	M85014	Owner's Manual

S: 240V or 220V  
 U: 120V (For U.S.A.)  
 C: 120V (For Canada)  
 E: 220V (With Line Voltage Selector)

Parts List (Cosmetic)

REF. NO.	STOCK NO.	DESCRIPTION
< Knob >		
1	W55009	Input Level, Left, Right (E,S)
	W5500A	(U,C)
2	WJ3009	Power IND. (E,S)
	WJ1121	(U,C)
3	WJ3009	Speaker (E,S)
	WJ1121	(U,C)
4	WJ1133	Power Switch
< Front Panel >		
5	WA5058A	Front Panel
6	WD1122M	Escutcheon (Lever SW.)
	W50316	(Power Ind. LED)
7	WE1089	Protector (Power SW.)
< Terminal >		
8	AT5025	Input
9	AT0080	Speaker, Main Remote
10	AT5026B	Speaker, Duo alpha (Red)
11	AT5026A	Speaker, Duo alpha (Black)
< Power Cord >		
12	BK0022	240V or 220V (S)
	BK0019	120V (U)
	BK0027	120V (C)
	BK0019	100 - 240V (E)
< Bushing, Power Cord >		
13	B00039	For Power Cord BK0019, 27
	B00033	For Power Cord BK0022
14	AJ0016	Phone Jack
15	US5022	Bonnet (E,S)
15'	WS5004	Wooden Case (U,C)
	WE1029	Ventilator (U,C)
16	UE5021	Bottom Plate (E,S)
17	WR007	Foot (E,S)
	WR1019	(U,C)
18	UC5036	Rear Panel (E,S,U)
	UC5034	(U,C)
19	TR0134	LED, Power Indicator
20	TR0186	Pilot Lamp
	AS0167	Socket, Pilot Lamp
< Switch >		
SW601	SL5014	Speaker Selector
SW701	SL5014	Power Indicator
SW801	SS5023	DDO Alpha-Normal
SW01	SP0090	Power (E,S)
	SP0063	(U,C)
< Variable Resistor >		
VR01ab		Input Level





P95115-1 Resistors

Symbol No.	Parts No.	Description & Specification
R101	R00474	220Ω
R102	R00474	220Ω
R103	R00470	470Ω
R104	None	
R105 a,b	R00430	1MΩ
R106 a,b	R00489	10Ω
R107 a,b	R00489	10Ω
R108 a,b	R00444	680Ω
R109 a,b	R00466	1KΩ
R110 a,b	R00466	1KΩ
R111 a,b	R00478	100Ω
R112 a,b	R00454	10KΩ
R113 a,b	R00448	330Ω
R114 a,b	R00466	1KΩ
R115 a,b	R00468	680Ω
R116 a,b	R00478	100Ω
R117 a,b	R00466	1KΩ
R118 a,b	R00466	1KΩ
R119 a,b	R00478	100Ω
R120 a,b	R00480	68Ω
R121 a,b	R00480	68Ω
R122 a,b	! RS3033	390Ω ±5% 1W F.P.O.
R123 a,b	! RZ2440	270Ω ±5% 1/2W C
R124 a,b	! RZ2554	1MΩ ±5% 1/2W C
R125 a,b	! RZ2460	270Ω ±5% 1/2W C
R126	R00450	22KΩ
R127 a,b	R00450	22KΩ
R128 a,b	R00451	18KΩ
R129 a,b	R00454	10KΩ
R130 a,b	R00457	5.0KΩ
R131 a,b	R00454	10KΩ
R132 a,b	! RZ139	240KΩ
R133 a,b	R00434	470KΩ
R134 a,b	! RZ139	240KΩ
R135 a,b	R00434	470KΩ
R136	R00478	100Ω
R137	R00454	10KΩ
R138	! RS3060	3.9KΩ ±5% 1W F.P.O.
R139	! RS396	3.3KΩ ±5% 1/2W C
R140	None	
R141	R00446	47KΩ
R142	R00460	3.3KΩ
R143	R00446	47KΩ
R144	R00442	150KΩ
R145	R00430	1MΩ
R146	R00450	1MΩ
R147	R00458	4.7KΩ
R148	R00456	10KΩ
R149	R00439	470KΩ
R150	R00478	100Ω
R151	R00446	47KΩ
R152	R00455	8.2KΩ
R153	R00450	22KΩ
R154	R00458	4.7KΩ

**FD5115-1 Capacitors**

Symbol No.	Parts No.	Description & Specification
C101 a,b	None	
C102 a,b	CQ0007	0.068uF ±10% 50V MY
C103 a,b	CQ0158	0.68uF C
C104 a,b	CQ0319	3300pF ±5% 50V P
C105 a,b	CQ0319	3300pF ±5% 50V P
C106 a,b	CM0164	5pF 5000V MC
C107 a,b	CM0164	5pF 5000V MC
C108 a,b	CQ0953	1uF ±10% 100V NM
C109 a,b	CQ0010	2.2uF ±10% 125V NM
C110 a,b	CE1729	22uF 25V E
C111 a,b	CE1741	100uF 100V E
C112	CE1739	10uF 35V E
C113	CE1739	10uF 35V E
C114	None	
C115	CE1713	100uF 35V E
C116	CE1740	22uF 35V E
C117	CE0937	100uF 25V B.P.
C118 a,b	None	
C119 a,b	CQ0079	470pF ±5% 50V P S56.1.
	CQ0968	0.47uF ±10% 100V NM S56.1.
	CQ0006	0.47uF ±10% 125V NM S56.1.
	CQ0906	0.47uF ±10% 125V NM
	CQ0079	470pF ±5% 50V F ADD. for C119 a,b
	CQ0080	470pF ±5% 125V F

**FD5115-1 Transistors, Diodes**

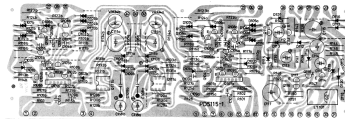
SYMBOL NO.	Parts No.	Description & Specification
Q101 a,b	TF5004	28K150 GR
Q102 a,b	TR5004	28C2240 BL
Q103 a,b	TR5004	28C2240 BL
Q104 a,b	TR5004	28C2240 BL
Q105 a,b	TR5005	28A970 BL
Q106 a,b	TR5005	28A970 BL
Q107 a,b	TR5005	28A970 BL
Q108 a,b	TR0237	28A849 O.Y
Q109 a,b	TR0236	28C2229 O.Y
Q110 a,b	TR5004	28C2240 BL
Q111 a,b	TC5002	82M6580
Q112	TR0198	28C1815 Y
Q113	TR0198	28C1815 Y
Q114	TR0264	28C2233 O.Y
Q115	TR0198	28C1815 Y
Q116	TR0687	28A4015 Y
Q117	TR0198	28C1815 Y
Q118	TR0198	28C1815 Y
D101 a,b	TD0043	W2061
D102 a,b	TD0132	152A12
D103 a,b	TV0030	KB-265-C4
D104 a,b	TV0030	KB-265-C4
D105 a,b	TV0030	KB-265-C4

D106 a,b	TV0030	K8-265-C4
D107 a,b	TV0030	K8-265-C4
D108 a,b	TV0030	K8-265-C4
D109 a,b	TB0132	1S2472
D110 a,b	TB0132	1S2472
D111 a,b	TB0109	WZ-150
D112	TB0132	1S2472
D113	TB0132	1S2472
D114		None
D115	TB0018	1K-100PM
D116	TB002	1M4002
D117	TB0002	1M4002
D118	TB0002	1M4002
D119	TB0109	WZ-150
D120	TB0132	1S2472
D121	TB0132	1S2472

**FD5115-1**

SYMBOL NO.	Parts No.	Description & Specification
LY101	AY0047	BR2210024P
VR134 a,b	RT0010	47K2 (8)

**FD5115-1**



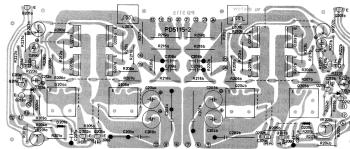
FD5115-2 Resistor

Symbol No.	Part No.	Description & Specification
R201 a,b	R20468	680Ω
R202 a,b	R20474	220Ω
R203 a,b	R25049	56Ω ±5% 1/3W F.P.C
R204 a,b	R25049	56Ω ±5% 1/3W F.P.C
R205 a,b	R25059	470Ω ±5% 1W F.P.O
R206 a,b	R20117	100Ω ±5% 1W F.P.O
R207 a,b	R20117	100Ω ±5% 1W F.P.O
R208 a,b	R25051	100Ω ±5% 1/2W F.P.C
R209 a,b	R25051	100Ω ±5% 1/2W F.P.C
R210 a,b	R25051	100Ω ±5% 1/2W F.P.C
R211 a,b	R25051	100Ω ±5% 1/2W F.P.C
R212 a,b	R20600	0.22Ω ±10% 5W x 2
R213 a,b	R20600	0.22Ω ±10% 5W x 2
R214	None	
R215	None	
R216 a,b	R20119	10Ω ±5% 2W F.P.O
R217 a,b	R20117	10Ω ±5% 1W F.P.M
R218 a,b	R25004	100Ω ±5% 2W F.P.M
R219 a,b	R25007	100Ω ±5% 2W F.P.O
R220 a,b	R20448	33KΩ
R221 a,b	R2556	1.2KΩ ±5% 1/2W C
R222 a,b	R25072	" F.P.C
R223 a,b	R20608	12KΩ ±5% 1/2W C
R224 a,b	R22608	12KΩ ±5% 1/2W C
R225 a,b	R22616	27KΩ ±5% 1/2W C
R226 a,b	R22592	2.7KΩ ±5% 1/2W C
R227 a,b	R22610	15KΩ ±5% 1/2W C
C201 a,b	C20631	0.68μF ±10% 100V MM
	C20633	4.7μF ±10% 100V MM
	C20635	2400pF ±5% 125V P
	C20631	0.68μF ±10% 100V MM
C202 a,b	C20603	4.7μF ±10% 100V MM
	C20195	2400pF ±5% 125V P
C203 a,b	C21781	100μF 100V E
C204 a,b	C21781	100μF 100V E
C205 a,b	C20114	22pF 500V NC
C206 a,b	C20613	0.1μF ±10% 100V MM
	C20692	"
C207 a,b	C20679	470pF ±5% 500V P
	C20612	0.15μF ±10% 100V MM
	C20685	"
C208 a,b	C20692	0.15μF ±10% 100V MM
	C20613	0.15μF ±10% 100V MM
	C20688	"
C209 a,b	C20692	"
	C21718	22μF 16V E
C210 a,b	C20126	330pF 500V C
C211 a,b	C21776	4.7μF 100V E
C212 a,b	C20126	330pF 500V C
C213 a,b	C20126	330pF 500V C

**FD5115-2 Transistor Diode**

Symbol No.	Parts No.	Description & Specification
Q201 a,b	TR0198	2SC1815 Y
Q202 a,b	TR0236	2SC2279 0.Y
Q203 a,b	TR0237	2SA949 0.Y
Q204 a,b	TR0209	2SC2238 0.Y
Q205 a,b	TR0240	2SA968 0.Y
Q206 a,b	TR0293	2SC1581
Q207 a,b	TR0294	2SA1106
Q208 a,b	TR0295	2SC1581
Q209 a,b	TR0294	2SA1106
Q210 a,b	TR5094	2SC2240 BL
Q211 a,b	TR5005	2SA970 BL
Q212 a,b	TR5004	2SC1240 BL
D201 a,b	TR0000	879-34
D202 a,b	TD0060	M2-061
VR201 a,b	RT0007	4700 (5)
VR202 a,b	RT0012	3.3K3 (5)
L201 a,b	LA1020	Coil 1020

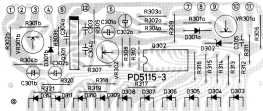
**FD5115-2**



**FD-5115-3 Resistor**

Symbol No.	Parts No.	Description & Specification
R301 a,b	RD0451	18KΩ
R302 a,b	RD0464	1.5KΩ
R303 a,b	RD0456	6.8KΩ
R304 a,b	RD0456	6.8KΩ
R305	RS5056	180Ω ±5% 1W F.P.O
R306	RS5059	470Ω ±5% 1W F.P.O
R307	RD0470	470Ω
R308	RD0470	470Ω
R309	RD0470	12KΩ
R310	RD0455	8.2KΩ
R311	RD0452	15KΩ
R312	RD0462	2.2KΩ
R313	RD0462	2.2KΩ
R314	RD0462	2.2KΩ
R315	RD0462	2.2KΩ
R316	RD0462	2.2KΩ
R317	RD0462	2.2KΩ
R318	RD0462	2.2KΩ
R319	RD0462	2.2KΩ
R320	RD0462	2.2KΩ
R321	RD0462	2.2KΩ
C301 a,b	CE9956	2.2μF 50V B.P
C302 a,b	CE9956	2.2μF 50V B.P
C303	CK0139	0.1μF 25V C
C304 a,b	CQ0027	0.0045μF 10V HT
C305	CE0158	0.047μF 50V C
C306	CE1729	22μF 25V E
Q301	TC0101	TA7138P
Q302	TC0102	TA7612AP
D301 a,b	TD0018	1KΩ 1/8WPH
D302	TD0063	MS-130
D303	TD0134	TLR205
D304	TD0134	TLR205
D305	TD0134	TLR205
D306	TD0134	TLR205
D307	TD0134	TLR205
D308	TD0134	TLR205
D309	TD0134	TLR205
D310	TD0134	TLR205
D311	TD0134	TLR205
D312	TD0134	TLR205
D313	TD0134	TLR205
VR301 a,b	TD0063	22KΩ (B)
VR302	RT0008	1KΩ (D)

**FD5115-3**



FD-3115-4 Resistor

Symbol No.	Parts No.	Description & Specification
R401	R22592	2.7K $\Omega$ $\pm$ 5% 1/2W C
R402	1 R23059	4.7K $\Omega$ $\pm$ 5% 1W F,P,O
R403	R20458	4.7K $\Omega$
R404		Bome
R405	R20453	1.2K $\Omega$
R406	R20470	470 $\Omega$
R407	R20470	470 $\Omega$
R408	R20456	6.8K $\Omega$
R409	R20452	1.5K $\Omega$
R410	R20462	2.2K $\Omega$
R411	R20462	2.2K $\Omega$
R412	R20462	2.2K $\Omega$
R413	R20462	2.2K $\Omega$
R414	R20462	2.2K $\Omega$
R415	R20462	2.2K $\Omega$
R416	R20462	2.2K $\Omega$
R417	R20462	2.2K $\Omega$
R418	R20462	2.2K $\Omega$
R419	R20462	2.2K $\Omega$

FD-3115-4 Capacitor

Symbol No.	Parts No.	Description & Specification
C401	CE1743	100 $\mu$ F 350V E
C402	CE1732	100 $\mu$ F 250V E
C403	CE1732	100 $\mu$ F 250V E
C404	CK0158	0.047 $\mu$ F 50V C
C405	CK0158	0.047 $\mu$ F 50V C

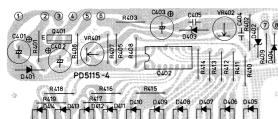
FD-3115-4 Transistor, Diode

Symbol No.	Parts No.	Description & Specification
Q401	TR3012	2S8880
Q402	TC0102	TA7612AP
D401	TD0065	MZ-192
D402	TD0043	MZ-130
D403	TD0060	MZ-084
D404	TD0002	1N4002
D405	TD0134	1L8205
D406	TD0134	1L8205
D407	TD0134	1L8205
D408	TD0134	1L8205
D409	TD0134	1L8205
D410	TD0134	1L8205
D411	TD0134	1L8205
D412	TD0134	1L8205
D413	TD0134	1L8206
D414	TD0134	1L8205

PD-5115-4

Symbol No.	Parts No.	Description & Specification
VR401	RT0008	1KΩ (B)
VR402	RT0025	4.7KΩ (B)

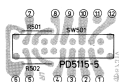
PD5115-4



PD-5115-5

Symbol No.	Parts No.	Description & Specification
R501	RD0442	100KΩ
R502	RD0463	1.8KΩ
SW501	SL5014	SLR323 NS

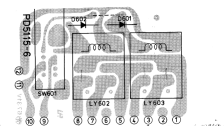
PD5115-5



PD-5115-6

Symbol No.	Parts No.	Description & Specification
D601	TD0002	IN4002
D602	TD0002	IN4002
LY602	AY0001	HAT2B-CH
LY603	AY0001	HAT2B-CH
SW601	SS5023	SS8062078

PD5115-6





PD-5115-7

Symbol No.	Parts No.	Description & Specification
S4701	SL5014	SLA523 NS

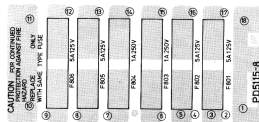
PD5115-7



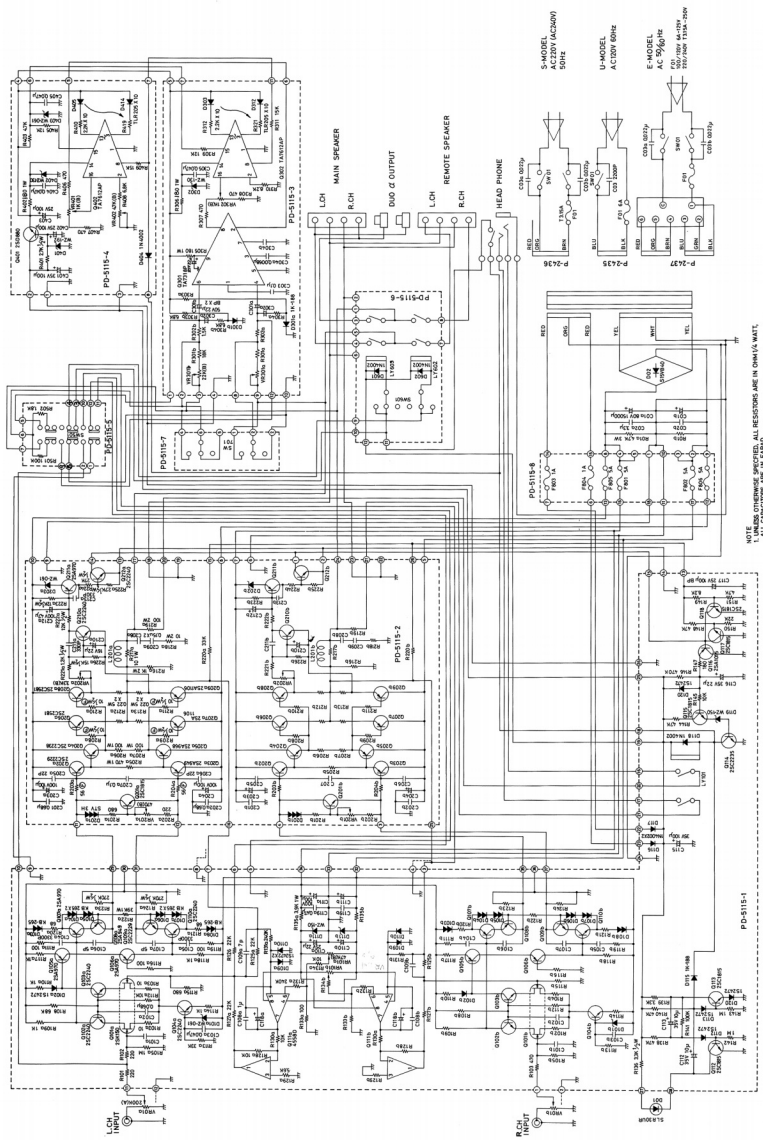
PD-5115-8

Symbol No.	Parts No.	Description & Specification
F801	! BF0119	E MF60NR-5A
F802	! BF0214	S 5x20 5AT
F803	! BF0082	U ULCS-MF61HL 5A
F806		
F803	! BF0113	E MF60NR-1A
F804	! BF0208	S 5x20 1AT
	! BF0075	U ULCS-MF61H-1A
P.B Fuse Holder	! AH0003	E S-N5051
	! AH0004	S S-N5053
	! AH003	U S-N5053

PD5115-8







**M-120A**

NOTE: ALL COMPONENTS SPECIFIED IN ALL SECTIONS ARE IN OHMS UNLESS NOTED.  
 ALL CONNECTIONS ARE IN P.A.M.S. UNLESS INDICATED OTHERWISE.  
 ALL COMPONENTS AND PARTS MUST BE IDENTIFIED BY THE MARKING SPECIFIED IN THIS DRAWING.  
 ALL COMPONENTS MUST BE IDENTIFIED BY THE MARKING SPECIFIED IN THIS DRAWING.  
 THE CIRCUIT OR SPECIFICATION.

**LUX CORPORATION, JAPAN**  
1-1, 1-CHOME, SHINJYUJI-KUJIBANCHI, TOYOKAWA-KU,  
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