

CARVIN

HELPLINE

1-800-854-2235

7:30 To 5:00 Monday-Friday
Pacific Standard Time
USA

CARVIN

12340 World Trade Drive
San Diego, CA 92128

Record the serial number of your amplifier in the space provided below:

Serial No. _____ Invoice Date _____

RSP & R600

RED LINE SERIES

PROFESSIONAL BASS AMPLIFIERS



OWNER'S MANUAL

Manual No. 76-40000
Revision 1.0

Made in USA

CARVIN

12340 World Trade Drive
San Diego, CA 92128
(800)854-2235



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



ATTENTION: RISQUE DE CHOC ELECTRIQUE - NE PAS OUVRIR

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT OPEN CHASSIS; DO NOT DEFEAT OR REMOVE THE GROUND PIN OF THE POWER CORD; CONNECT ONLY TO A PROPERLY GROUNDED AC POWER OUTLET.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION: NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

EXPLANATION OF SYMBOLS: "DANGEROUS VOLTAGE" "DANGER HAUTE TENSION" "GEFAHRLICHE SPANNUNG" "IT IS NECESSARY FOR THE USER TO REFER TO THE INSTRUCTION MANUAL" "REFERREZ-VOUS AU MANUAL D'UTILISATION" "UNBEDINGT IN DER BETRIEBUNGSANLEITUNG NACHSCHLAGEN"

IMPORTANT! FOR YOUR PROTECTION, PLEASE READ THE FOLLOWING:

WATER AND MOISTURE: Appliance should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc). Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

POWER SOURCES: The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

GROUNDING OR POLARIZATION: Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

POWER CORD PROTECTION: Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

SERVICING: The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

FUSING: If your unit is equipped with a fuse receptacle, replace only with the same type fuse. Refer to replacement text on the unit for correct fuse type.

SAFETY INSTRUCTIONS (EUROPEAN)

NOTICE FOR CUSTOMERS IF YOUR UNIT IS EQUIPPED WITH A POWER CORD.

WARNING: THIS APPLIANCE MUST BE EARTHED.

The cores in the mains lead are coloured in accordance with the following code.

GREEN and YELLOW - Earth BLUE - Neutral BROWN - Live

The power cord is terminated in a CEE7/7 plug (Continental Europe). The green / yellow wire is connected directly to the unit's chassis. If you need to change the plug, and if you are qualified to do so, refer to the table below.

CONDUCTOR		WIRE COLOR	
		NORMAL	ALTERNATIVE
L	LIVE	BROWN	BLACK
N	NEUTRAL	BLUE	WHITE
E	EARTH	GREEN / YEL	GREEN

WARNING: If the ground is defeated, certain fault conditions in the unit or in the system to which it is connected can result in full line voltage between chassis and earth ground. Severe injury or death can then result if the chassis and the earth ground are touched simultaneously.

U.K. MAINS PLUG WARNING: A moulded mains plug that has been cut off from the cord is unsafe. Discard the mains plug at a suitable disposal facility. **NEVER UNDER ANY CIRCUMSTANCES SHOULD YOU INSERT A DAMAGED OR CUT MAINS PLUG INTO A 13 AMP POWER SOCKET.** Do not use the mains plug without the fuse cover in place. Replacement fuse covers can be obtained from your local retailer. Replacement fuses are 13 amp and **MUST** be ASTA approved to BS1362.

WARRANTY AND SERVICE INFORMATION

Call Toll-Free 800-854-2235 if you need help with your CARVIN product. If you need to return it for service, our service dept. will issue a Service Number so that we can expect your shipment. Write the Service Number on the carton and be sure to include a full description of every problem. Pack in its original carton using all its packing material. Return by UPS pre-paid. Units returned with physical damage, missing parts, or damage from improper service are not serviceable.

REPAIRS UNDER WARRANTY (1Year)

There is no charge for service under warranty. However, shipping is to be paid both ways by the customer.

REPAIRS OUT OF WARRANTY

After your warranty has expired, call us for the current flat rate charge which includes parts labor and testing to bring your unit up to factory specifications.

SERVICING IN YOUR AREA

You may select your own service center or have your own qualified technician work on the unit at your own expense. This will not void the warranty unless damage was done because of improper servicing. Under the ONE YEAR WARRANTY, Carvin will ship parts pre-paid to you or your technician providing that the defective part(s) are first returned for our inspection. If you do not have a qualified service person, we ask that you do not involve yourself in servicing the unit.

LIMITED WARRANTY

Your Carvin Professional Series Product is guaranteed against failure for ONE YEAR. Carvin will service the unit and supply all parts at no charge to the customer providing the unit is under warranty. CARVIN DOES NOT PAY FOR PARTS OR SERVICING OTHER THAN OUR OWN. This warranty is extended to the original purchaser only and is not transferable. THIS WARRANTY DOES NOT INCLUDE FAILURES CAUSED BY INCORRECT USE, INADEQUATE CARE OF THE UNIT, OR NATURAL DISASTERS. A COPY OF THE ORIGINAL INVOICE IS REQUIRED TO VERIFY YOUR WARRANTY. Carvin takes no responsibility for any horn driver or speaker damaged by this unit. This warranty is in lieu of all other warranties, expressed or implied. No representative or person is authorized to represent or assume for Carvin any liability in connection with the sale or servicing of Carvin products. No liability is assumed for damage due to accident, abuse, lack of reasonable care, loss of parts, or failure to follow Carvin's directions. CARVIN SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

In the interest of creating new products and improving existing ones, Carvin is continually researching the latest state of the art audio design methods, and modern packaging and production techniques. Thus, Carvin reserves the right to make changes in its products and specifications without notice or obligation.

CARVIN

12340 World Trade Drive
San Diego, CA 92128
800-854-2235 M-F 7:30 to 5:00

80-40628 R600 Driver & Output

PCB REF	DESCRIPTION	PART #
C134	Capacitor, Mylar, 0.22uF	46-22412
C135	Capacitor, Mylar, 0.22uF	46-22412
C136	Capacitor, Mylar, 0.047uF/400V	46-47342
C138	Capacitor, Mylar, 0.0033uF/100V	46-33212
C139	Capacitor, Electrolytic, 22uF, 160V	47-22016
C140	Capacitor, Electrolytic, 10uF, 50V	47-10051
C141	Capacitor, Mylar, 0.22uF	46-22412
C142	Capacitor, Mylar, .01uF, 100V	46-10312
C200	Capacitor, Electrolytic, 470uF, 25V	47-47125
C201	Capacitor, Electrolytic, 470uF, 25V	47-47125
C225	Capacitor, Electrolytic, 10uF, 50V	47-10051
C226	Capacitor, Ceramic, 56pF	45-56052
C227	Capacitor, Ceramic, 27pF	45-27052
C229	Capacitor, Electrolytic, 10uF, 50V	47-10051
C231	Capacitor, Ceramic, 120pF	45-12152
C234	Capacitor, Mylar, 0.22uF	46-22412
C235	Capacitor, Mylar, 0.22uF	46-22412
C236	Capacitor, Mylar, 0.047uF/400V	46-47342
C238	Capacitor, Mylar, 0.0033uF/100V	46-33212
C239	Capacitor, Electrolytic, 22uF, 160V	47-22016
C240	Capacitor, Electrolytic, 10uF, 50V	47-10051
C241	Capacitor, Mylar, 0.22uF	46-22412
C242	Capacitor, Mylar, .01uF, 100V	46-10312
D100	Diode, 1A, 1000V, 1N4007	61-10000
D101	Diode, 1A, 200V, 1N4003	61-40030
D102	Diode, 1A, 1000V, 1N4007	61-10000
D115	Diode, 1A, 200V, 1N4003	61-40030
D116	Diode, 1A, 200V, 1N4003	61-40030
D117	Diode, 1A, 200V, 1N4003	61-40030
D118	Diode, 1A, 200V, 1N4003	61-40030
D119	Diode, 1A, 200V, 1N4003	61-40030
D120	Diode, 1A, 200V, 1N4003	61-40030
D121	Diode, 1A, 200V, 1N4003	61-40030
D200	Diode, 1A, 1000V, 1N4007	61-10000
D201	Diode, 1A, 200V, 1N4003	61-40030
D202	Diode, 1A, 1000V, 1N4007	61-10000
D215	Diode, 1A, 200V, 1N4003	61-40030
D216	Diode, 1A, 200V, 1N4003	61-40030
D217	Diode, 1A, 200V, 1N4003	61-40030
D218	Diode, 1A, 200V, 1N4003	61-40030
D219	Diode, 1A, 200V, 1N4003	61-40030
D220	Diode, 1A, 200V, 1N4003	61-40030
D221	Diode, 1A, 200V, 1N4003	61-40030
P101	Pot, Vert Trimmer, 3KW, .25W	71-23110
P102	Pot, Vert Trimmer, 3KW, .25W	71-23110
P201	Pot, Vert Trimmer, 3KW, .25W	71-23110
P202	Pot, Vert Trimmer, 3KW, .25W	71-23110
Q100	Transistor, 2N5550	60-55500
Q101	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q102	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q103	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q104	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q105	Transistor, PNP, 3A, 100V, 40 W, TIP 32C	60-32000
Q106	Transistor, 2N5550	60-55500
Q107	Transistor, 2N5550	60-55500
Q114	Transistor, NPN, .5A, 300V, 1 W, MPSW42	60-00042
Q115	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q116	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q117	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q118	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q200	Transistor, 2N5550	60-55500
Q201	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q202	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q203	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q204	Transistor, MOSFET, N Ch, STW33N20	60-33420
Q205	Transistor, PNP, 3A, 100V, 40 W, TIP 32C	60-32000
Q206	Transistor, 2N5550	60-55500
Q207	Transistor, 2N5550	60-55500
Q214	Transistor, NPN, .5A, 300V, 1 W, MPSW42	60-00042
Q215	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q216	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q217	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
Q218	Transistor, PNP, .5A, 300V, 1 W, MPSW92	60-00092
R19	Resistor 1/4W, ±5%, 470K	50-47055
R20	Resistor 1/4W, ±5%, 24K	50-24045
R21	Resistor 1/4W, ±5%, 33K	50-33045
R22	Resistor 1/4W, ±5%, 4.7K	50-47035
R23	Resistor 1/4W, ±5%, 10K	50-10045
R24	Resistor 1/4W, ±5%, 47W	50-47015
R26	Resistor 1/4W, ±5%, 22W	50-22015
R100	Resistor 1/4W, ±5%, 150W	50-15025
R101	Resistor 1/4W, ±5%, 150W	50-15025
R102	Resistor 1/4W, ±5%, 150W	50-15025
R103	Resistor 1/4W, ±5%, 150W	50-15025
R104	Resistor 1/4W, ±5%, 47W	50-47015
R105	Resistor 1/4W, ±5%, 150W	50-15025
R106	Resistor 1/4W, ±5%, 150W	50-15025
R107	Resistor 3W, ±10%, 0.22W	54-02205
R115	Resistor 1/4W, ±5%, 150W	50-15025
R116	Resistor 1/4W, ±5%, 150W	50-15025
R117	Resistor 1/4W, ±5%, 150W	50-15025
R118	Resistor 1/4W, ±5%, 150W	50-15025
R119	Resistor 1/4W, ±5%, 47W	50-47015
R120	Resistor 1/4W, ±5%, 150W	50-15025
R121	Resistor 1/4W, ±5%, 100K	50-10055
R122	Resistor 1/4W, ±5%, 220W	50-22025
R123	Resistor 1/4W, ±5%, 2.2K	50-22035
R124	Resistor 1/4W, ±5%, 2.2K	50-22045
R125	Resistor 3W, ±10%, 0.22W	54-02205
R155	Resistor 1/4W, ±5%, 2.2K	50-22035
R156	Resistor 1/4W, ±5%, 4.7K	50-47035
R157	Resistor 1/4W, ±5%, 33K	50-33045

80-40628 R600 Driver & Output

PCB REF	DESCRIPTION	PART #
R158	Resistor 1/4W, ±5%, 220W	50-22025
R159	Resistor 1/4W, ±5%, 100K	50-10055
R160	Resistor 1/4W, ±5%, 2.2K	50-22035
R161	Resistor 1/4W, ±5%, 4.7K	50-47035
R162	Resistor 1/4W, ±5%, 2.2K	50-22035
R163	Resistor 1/4W, ±5%, 10K	50-10045
R164	Resistor 1/4W, ±5%, 4.7K	50-47035
R165	Resistor 1/4W, ±5%, 2.2K	50-22035
R166	Resistor 1/4W, ±5%, 470W	50-47025
R167	Resistor 1/4W, ±5%, 470W	50-47025
R168	Resistor 1/4W, ±5%, 2.2K	50-22035
R169	Resistor 1/4W, ±5%, 1K	50-10035
R170	Resistor 1/4W, ±5%, K	50-10035
R171	Resistor 1/4W, ±5%, 2.2K	50-22035
R172	Resistor 1/4W, ±5%, 33K	50-33045
R173	Resistor 1/4W, ±5%, 1K	50-10035
R174	Resistor 1/4W, ±5%, 1K	50-10035
R175	Resistor, 5W, ±10%, 5KW	55-50030
R176	Resistor, 5W, ±10%, 5KW	55-50030
R177	Resistor 1/4W, ±5%, 47K	50-47045
R178	Resistor 1/4W, ±5%, 47K	50-47045
R179	Resistor 1/4W, ±5%, 100K	50-10055
R180	Resistor 1/4W, ±5%, 100K	50-10055
R181	Resistor 2W, ±10%, 1.5K	54-15030
R182	Resistor 1/4W, ±5%, 2.2K	50-22045
R183	Resistor 1/4W, ±5%, 2.2K	50-22035
R184	Resistor 1/2W, ±5%, 2.2K	52-22045
R185	Resistor 1/4W, ±5%, 2.2K	50-68045
R186	Resistor 1/4W, ±5%, 220K	50-22055
R187	Resistor 1/4W, ±5%, 470K	50-47055
R188	Resistor 1/4W, ±5%, 47K	50-47045
R189	Resistor 1/4W, ±5%, 100K	50-10055
R190	Resistor 1/4W, ±5%, 68K	50-47045
R191	Resistor 1/4W, ±5%, 47K	50-47045
R192	Resistor 1/4W, ±5%, 220K	50-22055
R193	Resistor 1/4W, ±5%, 220K	50-22055
R194	Resistor 1/4W, ±5%, 100K	50-10055
R195	Resistor 1/4W, ±5%, 4.7K	50-47035
R196	Resistor 1/4W, ±5%, 4.7K	50-47035
R197	Resistor 1/4W, ±5%, 470K	50-47055
R200	Resistor 1/4W, ±5%, 150W	50-15025
R201	Resistor 1/4W, ±5%, 150W	50-15025
R202	Resistor 1/4W, ±5%, 150W	50-15025
R203	Resistor 1/4W, ±5%, 150W	50-15025
R204	Resistor 1/4W, ±5%, 47W	50-47015
R205	Resistor 1/4W, ±5%, 150W	50-15025
R206	Resistor 1/4W, ±5%, 220W	50-22025
R207	Resistor 3W, ±10%, 0.22W	54-02205
R215	Resistor 1/4W, ±5%, 150W	50-15025
R216	Resistor 1/4W, ±5%, 150W	50-15025
R217	Resistor 1/4W, ±5%, 150W	50-15025
R218	Resistor 1/4W, ±5%, 150W	50-15025
R219	Resistor 1/4W, ±5%, 47W	50-47015
R220	Resistor 1/4W, ±5%, 100K	50-10055
R221	Resistor 1/4W, ±5%, 100K	50-10055
R222	Resistor 1/4W, ±5%, 220W	50-22025
R223	Resistor 1/4W, ±5%, 2.2K	50-22035
R224	Resistor 1/4W, ±5%, 2.2K	50-22045
R225	Resistor 3W, ±10%, 0.22W	54-02205
R255	Resistor 1/4W, ±5%, 2.2K	50-22035
R256	Resistor 1/4W, ±5%, 4.7K	50-47035
R257	Resistor 1/4W, ±5%, 33K	50-33045
R258	Resistor 1/4W, ±5%, 220W	50-22025
R259	Resistor 1/4W, ±5%, 100K	50-10055
R260	Resistor 1/4W, ±5%, 2.2K	50-22035
R261	Resistor 1/4W, ±5%, 4.7K	50-47035
R262	Resistor 1/4W, ±5%, 2.2K	50-22035
R263	Resistor 1/4W, ±5%, 10K	50-10045
R264	Resistor 1/4W, ±5%, 4.7K	50-47035
R265	Resistor 1/4W, ±5%, 2.2K	50-22035
R266	Resistor 1/4W, ±5%, 470W	50-47025
R267	Resistor 1/4W, ±5%, 470W	50-47025
R268	Resistor 1/4W, ±5%, 2.2K	50-22035
R269	Resistor 1/4W, ±5%, 1K	50-10035
R270	Resistor 1/4W, ±5%, K	50-10035
R271	Resistor 1/4W, ±5%, 2.2K	50-22035
R272	Resistor 1/4W, ±5%, 33K	50-33045
R273	Resistor 1/4W, ±5%, 1K	50-10035
R274	Resistor 1/4W, ±5%, 1K	50-10035
R275	Resistor, 5W, ±10%, 5KW	55-50030
R276	Resistor, 5W, ±10%, 5KW	55-50030
R277	Resistor 1/4W, ±5%, 47K	50-47045
R278	Resistor 1/4W, ±5%, 47K	50-47045
R279	Resistor 1/4W, ±5%, 100K	50-10055
R280	Resistor 1/4W, ±5%, 100K	50-10055
R281	Resistor 2W, ±10%, 1.5K	54-15030
R282	Resistor 1/4W, ±5%, 2.2K	50-22035
R283	Resistor 1/4W, ±5%, 2.2K	50-22035
R284	Resistor 1/2W, ±5%, 2.2K	52-22045
R285	Resistor 1/4W, ±5%, 68K	50-68045
R286	Resistor 1/4W, ±5%, 220K	50-22055
R287	Resistor 1/4W, ±5%, 470K	50-47055
R288	Resistor 1/4W, ±5%, 47K	50-47045
R289	Resistor 1/4W, ±5%, 100K	50-10055
R290	Resistor 1/4W, ±5%, 150W	50-15025
R291	Resistor 1/4W, ±5%, 47K	50-47045
R292	Resistor 1/4W, ±5%, 220K	50-22055
R293	Resistor 1/4W, ±5%, 220K	50-22055
R294	Resistor 1/4W, ±5%, 100K	50-10055
R295	Resistor 1/4W, ±5%, 4.7K	50-47035
R296	Resistor 1/4W, ±5%, 4.7K	50-47035
Z100	Zener Diode, 16V ±5%, 1N4745A	61-47450
Z200	Zener Diode, 16V ±5%, 1N4745A	61-47450

FOR THE NEW OWNER

Congratulations on your purchase of Carvin's Red Line Series bass amplifier. The Red Line Series of products represent Carvin's commitment to producing the state of the art in professional bass technology. All Red Line amplifiers offer a hybrid tube pre-amp which gives the player a choice of a clean or vintage sound at the turn of a knob. The light-weight and compact design is complemented by heavy duty construction perfectly suited for the rigors of road use.

If you would like to comment on features or performance of your new amplifier, please feel free to contact us. Comments from our customers have helped us improve and further develop our products.

Please, send in the warranty card. Although it is not absolutely necessary to ensure warranty protection, it will allow us to better know how you are using our equipment while keeping a ready reference for our files. Sending in the warranty card also helps us to mail out literature and information that may be of interest to you as a professional musician. Let us know where you are so we can keep in touch!

In this manual there are plenty of diagrams and descriptions to aid you in understanding your new Red Line bass amplifier. So, with this manual in hand you hold the key to proper operation of your amp, and to achieve truly professional results.

May you enjoy many years of enjoyment, success, and fun with your CARVIN Red Line Series amplifier!

RECEIVING INSPECTION

INSPECT YOUR AMPLIFIER FOR ANY DAMAGE which may have occurred during shipment. If any damage is found, notify the shipping company and call CARVIN immediately.

SAVE THE CARTON & ALL PACKING MATERIALS. In the event you have to reship the amplifier, always use the original carton and packing material. This will provide the best possible protection during shipment. Neither CARVIN nor the shipping company are liable for damage caused by improper packing.

SAVE YOUR INVOICE. It will be required for warranty service. Immediately check your invoice against the items received.

SHIPMENT SHORTAGE. If items are missing, it may be that they were shipped separately. Please allow several days for the balance of your order to arrive before inquiring. If you determine (after allowing an appropriate amount of time) you have not received all the items you ordered, please call CARVIN.

Carvin's USA toll free number: 800-854-2235

TABLE OF CONTENTS

FOR THE NEW OWNER	i
RECEIVING INSPECTION	i
TABLE OF CONTENTS	1
QUICK SET UP	1
FRONT PANEL FEATURES	3
RED LINE DETAILS	5
REAR PANEL FEATURES	9
R600 BI-AMP HOOK UP	11
RSP BI-AMP HOOK UP	12
EFFECTS HOOK UP	13
STEREO HOOK UP	14
AMP PATCH HOOK UP	14
POWER AMP PROTECTION	15
RED LINE TECHNICAL SPECIFICATIONS	15
RED LINE MAINTENANCE	16
RED LINE PARTS LIST	16
CIRCUIT CARD SUB ASSEMBLIES	17
WARRANTY INFORMATION	20

QUICK SET UP

If you are like most new owners, you're probably in a hurry to check out your new amp. Before you plug in at least look at this section, to avoid injury to yourself or damage to your amp or speakers.

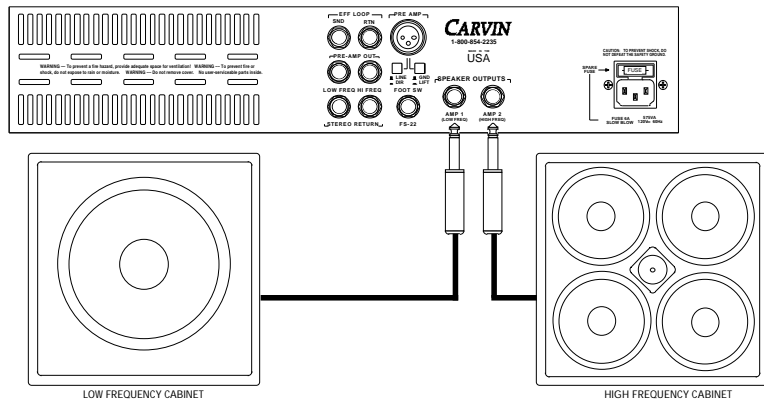
CONNECTING AC POWER

Use only a grounded (3 prong) power outlet to avoid shock hazard.

CONNECTING SPEAKERS

BI-AMP MODE:

To operate in bi-amp mode, connect a low frequency speaker cabinet to the **AMP 1 (LOW FREQ)** jack, and a high frequency speaker cabinet to the **AMP 2 (HIGH FREQ)** jack.



CIRCUIT CARD SUB ASSEMBLIES

80-40624 Red Line Master PCB

PCB REF	DESCRIPTION	PART #
QC208	Quick Connect, .250, Vert	06-40050
QC209	Quick Connect, .250, Vert	06-40050
QC210	Quick Connect, .250, Vert	06-40050
R1	Resistor 1/4W, ±5%, 10K	50-10045
R2	Resistor 1/4W, ±5%, 1M	50-10065
R3	Resistor 1/4W, ±5%, 100K	50-10055
R4	Resistor 1/4W, ±5%, 10K	50-10045
R5	Resistor 1/4W, ±5%, 10K	50-10045
R6	Resistor 1/4W, ±5%, 10K	50-10045
R7	Resistor 1/4W, ±5%, 180K	50-18055
R8	Resistor 1/4W, ±5%, 47K	50-47045
R9	Resistor 1/4W, ±5%, 3.3K	51-33045
R10	Resistor 1/4W, ±5%, 470W	50-47025
R11	Resistor 1/4W, ±5%, 22K	50-22045
R12	Resistor 1/4W, ±5%, 560W	50-56025
R13	Resistor 1/4W, ±5%, 100K	50-10055
R14	Resistor 1/4W, ±5%, 2.2M	50-22055
R15	Resistor 1/4W, ±5%, 220W	50-22025
R16	Resistor 1/4W, ±5%, 220K	50-22055
R17	Resistor 1/4W, ±5%, 33K	50-33045
R18	Resistor 1/4W, ±5%, 56K	50-56045
R19	Resistor 1/4W, ±5%, 56K	50-56045
R20	Resistor 1/4W, ±5%, 10K	50-10045
R21	Resistor 1/4W, ±5%, 47K	50-47045
R22	Resistor 1/4W, ±5%, 47K	50-47045
R23	Resistor 1/4W, ±5%, 100K	50-10055
R24	Resistor 1/4W, ±5%, 47K	50-47045
R25	Resistor 1/4W, ±5%, 22K	50-22055
R26	Resistor 1/4W, ±5%, 39K	50-39045
R27	Resistor 1/4W, ±5%, 47W	50-47015
R28	Resistor 1/4W, ±5%, 150W	50-15025
R29	Resistor 1/4W, ±5%, 150W	50-15025
R30	Resistor 1/4W, ±5%, 560W	50-56025
R31	Resistor 1/4W, ±5%, 1M	50-10065
R32	Resistor 1/4W, ±5%, 2.7K	50-27035
R33	Resistor 1/4W, ±5%, 2.2K	50-22035
R34	Resistor 1/4W, ±5%, 56K	50-56045
R35	Resistor 1/4W, ±5%, 56K	50-56045
R36	Resistor 1/4W, ±5%, 4.7K	50-47035
R37	Resistor 1/4W, ±5%, 1K	50-10035
R38	Resistor 1/4W, ±5%, 1K	50-10035
R39	Resistor 1/4W, ±5%, 56K	50-56045
R40	Resistor 1/4W, ±5%, 39K	50-39045
R41	Resistor 1/4W, ±5%, 33K	51-33045
R42	Resistor 1/4W, ±5%, 10K	50-10045
R43	Resistor 1/4W, ±5%, 5.6K	50-56035
R44	Resistor 1/4W, ±5%, 10K	50-10045
R45	Resistor 1/4W, ±5%, 1M	50-10065
R46	Resistor 1/4W, ±5%, 10K	50-10045
R47	Resistor 1/4W, ±5%, 47K	50-47045
R48	Resistor 1/4W, ±5%, 3.3K	51-33045
R49	Resistor 1/4W, ±5%, 12K	50-12045
R50	Resistor 1/4W, ±5%, 3.3K	51-33045
R51	Resistor 1/4W, ±5%, 15K	50-15045
R52	Resistor 1/4W, ±5%, 47K	50-47045
R53	Resistor 1/4W, ±5%, 15K	50-15045
R54	Resistor 1/4W, ±5%, 15K	50-15045
R55	Resistor 1/4W, ±5%, 10K	50-10045
R56	Resistor 1/4W, ±5%, 10K	50-10045
R57	Resistor 1/4W, ±5%, 2.2K	50-22035
R58	Resistor 1/4W, ±5%, 2.2K	50-22035
R59	Resistor 1/4W, ±5%, 100W	50-10025
R60	Resistor 1/4W, ±5%, 10K	50-10045
R61	Resistor 1/4W, ±5%, 33K	50-33045
R62	Resistor 1/4W, ±5%, 10K	50-10045
R63	Resistor 1/4W, ±5%, 33K	50-33045
R64	Resistor 1/4W, ±5%, 1M	50-10065
R65	Resistor 1/4W, ±5%, 1M	50-10065
R66	Resistor 1/4W, ±5%, 15K	50-15045
R67	Resistor 1/4W, ±5%, 33K	50-33045
R68	Resistor 1/4W, ±5%, 10K	50-10045
R69	Resistor 1/4W, ±5%, 2.4K	50-24035
R70	Resistor 1/4W, ±5%, 220K	50-22055
R71	Resistor 1/4W, ±5%, 1.8K	50-18035
R72	Resistor 1/4W, ±5%, 220K	50-22055
R73	Resistor 1/4W, ±5%, 1.8K	50-18035
R74	Resistor 1/4W, ±5%, 300K	50-30055
R75	Resistor 1/4W, ±5%, 2K	50-20035
R76	Resistor 1/4W, ±5%, 220K	50-22055
R77	Resistor 1/4W, ±5%, 2.4K	50-24035
R78	Resistor 1/4W, ±5%, 220K	50-22055
R79	Resistor 1/4W, ±5%, 2K	50-20035
R80	Resistor 1/4W, ±5%, 360K	50-36055
R81	Resistor 1/4W, ±5%, 2.2K	50-22035
R82	Resistor 1/4W, ±5%, 360K	50-36055
R83	Resistor 1/4W, ±5%, 2.2K	50-22035
R84	Resistor 1/4W, ±5%, 220K	50-22055
R85	Resistor 1/4W, ±5%, 2.2K	50-22035
R86	Resistor 1/4W, ±5%, 150K	50-15055
R87	Resistor 1/4W, ±5%, 10K	50-10045
R88	Resistor 1/4W, ±5%, 22K	50-22045
R89	Resistor 1/4W, ±5%, 39K	50-39045
R90	Resistor 1/4W, ±5%, 1M	50-10065
R91	Resistor 1/4W, ±5%, 1M	50-10065
R92	Resistor 1/4W, ±5%, 39K	50-39045
R93	Resistor 1/4W, ±5%, 39K	50-39045
R94	Resistor 1/4W, ±5%, 47W	50-47015
R95	Resistor 1/4W, ±5%, 220W	50-22025
R96	Resistor 1/4W, ±5%, 1K	50-10035
R97	Resistor 1/4W, ±5%, 100W	50-10025
R98	Resistor 1/4W, ±5%, 150K	50-15055
R99	Resistor 1/4W, ±5%, 10K	50-10045
R100	Resistor 1/4W, ±5%, 47K	50-47045
R101	Resistor 1/4W, ±5%, 47K	50-47045

80-40624 Red Line Master

PCB REF	DESCRIPTION	PART #
R102	Resistor 1/4W, ±5%, 47K	50-47045
R103	Resistor 1/4W, ±5%, 10K	50-10045
R104	Resistor 1/4W, ±5%, 1K	50-10035
R105	Resistor 1/4W, ±5%, 560W	50-56025
R106	Resistor 1/4W, ±5%, 47K	50-47045
R107	Resistor 1/4W, ±5%, 0W	50-00035
R108	Resistor 1/4W, ±5%, 18K	50-18045
R109	Resistor 1/4W, ±5%, 10K	50-10045
R110	Resistor 1/4W, ±5%, 4.7K	50-47035
R111	Resistor 1/4W, ±5%, 4.7K	50-47035
R112	Resistor 1/4W, ±5%, 18K	50-18045
R113	Resistor 1/4W, ±5%, 18K	50-18045
R114	Resistor 1/4W, ±5%, 27K	50-27045
R115	Resistor 1/4W, ±5%, 18K	50-18045
R116	Resistor 1/4W, ±5%, 10W	50-10015
R117	Resistor 1/4W, ±5%, 10K	50-10045
R118	Resistor 1/4W, ±5%, 10K	50-10045
R119	Resistor 1/4W, ±5%, 10K	50-10045
R120	Resistor 1/4W, ±5%, 10K	50-10045
R121	Resistor 1/4W, ±5%, 100W	50-10025
R122	Resistor 1/4W, ±5%, 100W	50-10025
R123	Resistor 1/4W, ±5%, 10K	50-10045
R124	Resistor 1/4W, ±5%, 100W	50-10025
R125	Resistor 1/4W, ±5%, 100W	50-10025
R126	Resistor 1/4W, ±5%, 10K	50-10045
R130	Resistor 1/4W, ±5%, 0W	50-00035
R131	Resistor 1/4W, ±5%, 10K	50-10045
R132	Resistor 1/4W, ±5%, 10K	50-10045
R133	Resistor 1/4W, ±5%, 1K	50-10035
R134	Resistor 1/4W, ±5%, 1K	50-10035
R135	Resistor 1/4W, ±5%, 10W	50-10015
R136	Resistor 1/4W, ±5%, 100W	50-10025
R137	Resistor 1/4W, ±5%, 10W	50-10015
R138	Resistor 1/4W, ±5%, 10W	50-10015
R139	Resistor 1/4W, ±5%, 10W	50-10015
R140	Resistor 1/4W, ±5%, 1K	50-10035
R144	Resistor 1/4W, ±5%, 22K	50-22045
R146	Resistor 1/4W, ±5%, 10K	50-10045
R154	Resistor 1/4W, ±5%, 47K	50-47045
R155	Resistor 1/4W, ±5%, 10K	50-10045
R200	Resistor 1/4W, ±5%, 0.56W	50-05605
R201	Resistor 1/4W, ±5%, 0.56W	50-05605
R202	Resistor 1/4W, ±5%, 47K	50-47045
R203	Resistor 1/4W, ±5%, 1K	50-10035
R204	Resistor 1/4W, ±5%, 1K	50-10035
R205	Resistor 2W, 150W	54-15025
R207	Resistor 10W, 100W	56-10020
R208	Resistor 1/4W, ±5%, 47K	50-47045
R211	Resistor 1/4W, ±5%, 470K	50-47055
R212	Resistor 1/4W, ±5%, 1M	50-10065
R213	Resistor 1/4W, ±5%, 33K	50-33045
R214	Resistor 1/4W, ±5%, 47K	50-47045
R215	Resistor 1/4W, ±5%, 470K	50-47055
R216	Resistor 1/4W, ±5%, 1M	50-10065
R217	Resistor 1/4W, ±5%, 47K	50-47045
R218	Resistor 1/4W, ±5%, 5.6K	50-56035
R301	Resistor 1/4W, ±5%, 100W	50-10025
R302	Resistor 1/4W, ±5%, 100W	50-10025
R303	Resistor 1/4W, ±5%, 2.2K	50-22035
R304	Resistor 1/4W, ±5%, 100W	50-10025
R305	Resistor 1/4W, ±5%, 100K	50-10055
R306	Resistor 1/4W, ±5%, 100W	50-10025
R307	Resistor 1/4W, ±5%, 680W	50-68025
R308	Resistor 1/4W, ±5%, 680W	50-68025
R309	Resistor 1/4W, ±5%, 2.2K	50-22035
R310	Resistor 5W, ±5%, 15W	55-15005
R311	Resistor 5W, ±5%, 22W	55-22026
R312	Resistor 5W, ±5%, 15W	55-15005
R313	Resistor 5W, ±5%, 22W	55-22026
S1	Switch, DPDT, Push	25-02201
S2	Switch, DPDT, Push	25-02201
S3	Switch, DPDT, Push	25-02201
S4	Switch, DPDT, Push	25-02201
S5	Switch, DPDT, Push	25-02201
S6	Switch, DPDT, Push	25-02201
S7	Switch, DPDT, Push	25-02201
U1	IC, Dynamic Range Processor	60-21200
U2	IC, MC14049 Hex Inv	60-40490
V1	Socket, Tube, 9 pin	23-91632
VR201	Regulator, Voltage, +15, 2A	60-78150
VR202	Regulator, Voltage, -15, 2A	60-79150

80-40628 R600 Driver & Output

PCB REF	DESCRIPTION	PART #
A7	5532 Op Amp	60-55320
A8	4558 Op Amp	60-45580
A9	4558 Op Amp	60-45580
A10	4558 Op Amp	60-45580
A11	4558 Op Amp	60-45580
A12	4558 Op Amp	60-45580
BIAS ADJ	Header, 4 Pin, .100, Straight	23-10004
C18	Capacitor, Electrolytic, 470uF, 25V	47-47125
C19	Capacitor, Electrolytic, 470uF, 25V	47-47125
C22	Capacitor, Electrolytic 47uF, 63V	47-47061
C100	Capacitor, Electrolytic, 470uF, 25V	47-47125
C101	Capacitor, Electrolytic, 470uF, 25V	47-47125
C125	Capacitor, Electrolytic, 10uF, 50V	47-10051
C126	Capacitor, Ceramic, 56pF	45-56052
C127	Capacitor, Ceramic, 27pF	45-27052
C129	Capacitor, Electrolytic, 10uF, 50V	47-10051
C131	Capacitor, Ceramic, 120pF	45-12152

CIRCUIT CARD SUB ASSEMBLIES

80-40624 Red Line Master PCB

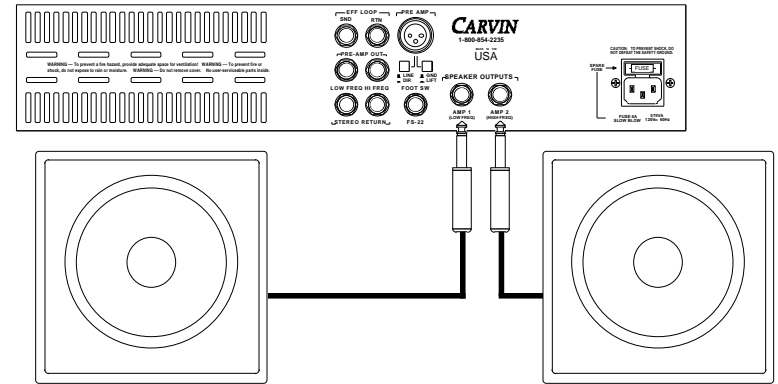
PCB REF	DESCRIPTION	PART #
A1	4558 Op Amp	60-45580
A2	4558 Op Amp	60-45580
A3	4558 Op Amp	60-45580
A4	4558 Op Amp	60-45580
A5	4558 Op Amp	60-45580
A6	4558 Op Amp	60-45580
A7	4558 Op Amp	60-45580
A8	4558 Op Amp	60-45580
A9	4558 Op Amp	60-45580
A10	4558 Op Amp	60-45580
A11	4558 Op Amp	60-45580
A12	4558 Op Amp	60-45580
A13	4558 Op Amp	60-45580
A14	5532 Op Amp	60-55320
C1	Capacitor, Poly 0.0068µF 100V	46-68212
C2	Capacitor, Ceramic, 120pF	45-12152
C3	Capacitor, Ceramic, 120pF	45-12152
C4	Capacitor, Mylar, 0.22µF	46-22412
C5	Capacitor, Electrolytic, 10µF, 50V	47-10051
C6	Capacitor, Electrolytic, 10µF, 50V	47-10051
C7	Capacitor, Ceramic, 39pF	45-39052
C8	Capacitor, Electrolytic, 10µF, 50V	47-10051
C9	Capacitor, Electrolytic, 10µF, 50V	47-10051
C10	Capacitor, Electrolytic, 10µF, 50V	47-10051
C11	Capacitor, Ceramic, 680pF	45-68152
C13	Capacitor, Ceramic, 39pF	45-39052
C14	Capacitor, Electrolytic, 10µF, 50V	47-10051
C15	Capacitor, Poly 0.0022µF 100V	46-22212
C16	Capacitor, Tant, 10µF, 6.3V	48-10060
C17	Capacitor, Tant, 10µF, 6.3V	48-10060
C18	Capacitor, Ceramic, 39pF	45-39052
C19	Capacitor, Poly 0.0033µF 100V	46-33312
C20	Capacitor, Mylar, 0.22µF	46-22412
C21	Capacitor, Poly, .001µF, 100V	46-10212
C22	Capacitor, Ceramic, 560pF	45-56152
C23	Capacitor, Electrolytic, 10µF, 50V	47-10051
C24	Capacitor, Poly 0.0022µF 100V	46-22212
C25	Capacitor, Poly 0.022µF 100V	46-22312
C26	Capacitor, Electrolytic, 10µF, 50V	47-10051
C27	Capacitor, Ceramic, 39pF	45-39052
C28	Capacitor, Poly 0.022µF 100V	46-22312
C29	Capacitor, Poly 0.022µF 100V	46-22312
C30	Capacitor, Electrolytic, 10µF, 50V	47-10051
C31	Capacitor, Mylar, 0.22µF	46-22412
C33	Capacitor, Poly 0.01µF 100V	46-10312
C34	Capacitor, Poly 0.01µF 100V	46-10312
C35	Capacitor, Poly 0.047µF 100V	46-47312
C36	Capacitor, Electrolytic, 10µF, 50V	47-10051
C37	Capacitor, Tant, 1µF, 35V	48-01031
C38	Capacitor, Poly 0.022µF 100V	46-22312
C39	Capacitor, Tant, 1µF, 35V	48-01031
C40	Capacitor, Poly 0.01µF 100V	46-10312
C41	Capacitor, Mylar, 0.22µF	46-22412
C42	Capacitor, Poly 0.01µF 100V	46-10312
C43	Capacitor, Poly 0.1µF 100V	46-10412
C44	Capacitor, Poly 0.0068µF 100V	46-68212
C45	Capacitor, Poly 0.0068µF 100V	46-68312
C46	Capacitor, Mylar, 0.0033µF 100V	46-33212
C47	Capacitor, Poly 0.0033µF 100V	46-33312
C48	Capacitor, Poly 0.0022µF 100V	46-22212
C49	Capacitor, Poly 0.022µF 100V	46-22312
C50	Capacitor, Poly, .001µF, 100V	46-10212
C51	Capacitor, Poly 0.01µF 100V	46-10312
C52	Capacitor, Ceramic, 680pF	45-68152
C53	Capacitor, Poly 0.0068µF 100V	46-68212
C54	Capacitor, Ceramic, 560pF	45-56152
C55	Capacitor, Ceramic, 39pF	45-39052
C56	Capacitor, Electrolytic, 10µF, 50V	47-10051
C57	Capacitor, Poly 0.01µF 100V	46-10312
C58	Capacitor, Poly 0.01µF 100V	46-10312
C59	Capacitor, Electrolytic, 10µF, 50V	47-10051
C60	Capacitor, Poly 0.0022µF 100V	46-22212
C61	Capacitor, Tant, 10µF, 6.3V	48-10060
C62	Capacitor, Poly 0.1µF 100V	46-10412
C63	Capacitor, Tant, 1µF, 35V	48-01031
C64	Capacitor, Ceramic, 39pF	45-39052
C66	Capacitor, Electrolytic, 10µF, 50V	47-10051
C67	Capacitor, Poly 0.022µF 100V	46-22312
C68	Capacitor, Poly 0.022µF 100V	46-22312
C69	Capacitor, Mylar, .001µF, 100V	46-10212
C70	Capacitor, Ceramic, 680pF	45-68152
C72	Capacitor, Ceramic, 56pF	45-56052
C75	Capacitor, Ceramic, 120pF	45-12152
C76	Capacitor, Ceramic, 120pF	45-12152
C77	Capacitor, Ceramic, 1µF	45-12152
C78	Capacitor, Ceramic, 39pF	45-10511
C79	Capacitor, Ceramic, 1µF	45-12152
C80	Capacitor, Electrolytic, 470µF, 16V	47-47116
C81	Capacitor, Electrolytic, 10µF, 50V	47-10051
C82	Capacitor, Electrolytic, 470µF, 16V	47-47116
C201	Capacitor, Electrolytic, 470µF, 25V	47-47125
C202	Capacitor, Electrolytic, 470µF, 25V	47-47125
C207	Capacitor, Electrolytic, 470µF, 25V	47-47125
C208	Capacitor, Electrolytic, 220µF, 50V	47-22151
C209	Capacitor, Electrolytic, 220µF, 50V	47-22151
C210	Capacitor, Electrolytic, 220µF, 50V	47-22151
C211	Capacitor, Electrolytic, 10µF, 50V	47-10051
C212	Capacitor, Poly 0.022µF 100V	46-22312
C213	Capacitor, Electrolytic, 220µF, 50V	47-22151
C214	Capacitor, Poly 0.022µF 100V	46-22312
C215	Capacitor, Electrolytic, 220µF, 50V	47-22151
C216	Capacitor, Electrolytic, 10µF, 50V	47-10051

80-40624 Red Line Master PCB

PCB REF	DESCRIPTION	PART #
C217	Capacitor, Electrolytic, 10µF, 50V	47-10051
C218	Capacitor, Electrolytic, 10µF, 50V	47-10051
C219	Capacitor, Electrolytic, 470µF, 16V	47-47116
C220	Capacitor, Electrolytic, 10,000µF, 80V	42-10381
C221	Capacitor, Electrolytic, 10,000µF, 80V	42-10381
C222	Capacitor, Electrolytic, 220µF, 50V	47-22151
C301	Capacitor, Electrolytic, 10µF, 50V	47-10051
C302	Capacitor, Electrolytic, 10µF, 50V	47-10051
C303	Capacitor, Electrolytic, 10µF, 50V	47-10051
C304	Capacitor, Electrolytic, 10µF, 50V	47-10051
C305	Capacitor, Poly 0.068µF 100V	46-68312
C306	Capacitor, Poly 0.068µF 100V	46-68312
C307	Capacitor, Electrolytic, 10µF, 50V	47-10051
D1	LED, Small Red	60-75320
D2	LED, Small Green	60-75330
D3	LED, Small Yellow	60-75340
D4	LED, Small Red	60-75320
D5	LED, Small Red	60-75320
D6	LED, Small Red	60-75320
D7	Diode, 1N914	61-19140
D8	Diode, 1N914	61-19140
D201	Diode, 1A, 200V, 1N4003	61-40030
D202	Diode, 1A, 200V, 1N4003	61-40030
D203	Diode, 1A, 200V, 1N4003	61-40030
D204	Diode, 1A, 200V, 1N4003	61-40030
D205	Diode, 1A, 200V, 1N4003	61-40030
D206	Diode, 1A, 200V, 1N4003	61-40030
D207	Diode, 1A, 200V, 1N4003	61-40030
D208	Diode, 1A, 200V, 1N4003	61-40030
D209	Diode, 1A, 200V, 1N4003	61-40030
D210	Diode, 1A, 200V, 1N4003	61-40030
D211	Diode, 1A, 200V, 1N4003	61-40030
H1	Conn. Header, 8 Pin, .100, Straight	23-11008
H2	Conn. Header, 4 Pin, .100, Straight	23-11004
H3	Conn. Header, 8 Pin, .100, Straight	23-11008
H4	Conn. Header, 2 Pin, .100, Straight	23-11004
H201	Conn. Header, 8 Pin, .100, Straight	23-11008
H202	Conn. Header, 4 Pin, .100, Straight	23-11004
H203	Conn. Header, 4 Pin, .100, Straight	23-11004
H204	Conn. Header, 2 Pin, .100, Straight	23-11002
H205	Conn. Header, 4 Pin, .100, Straight	23-11004
H206	Conn. Header, 4 Pin, .100, Straight	23-11004
H301	Conn. Header, 8 Pin, .100, Straight	23-11008
H303	Conn. Header, 8 Pin, .100, Straight	23-11008
J1	Jack, 1/4" 3P Plastic, 24mm	21-06453
J2	Jack, 1/4" 3P Plastic, 24mm	21-06453
J3	Jack, 1/4" 7P Plastic, 24mm	21-06457
J4	Jack, 1/4" 3P Plastic, 24mm	21-06453
J5	Jack, 1/4" 3P Plastic, 24mm	21-06453
J6	Jack, 1/4" 3P Plastic, 24mm	21-06453
J7	Jack, 1/4" 3P Plastic, 24mm	21-06453
J8	Jack, 1/4" 3P Plastic, 24mm	21-06453
J9	Jack, 1/4" 3P Plastic, 24mm	21-06453
J10	XLR, Male, Vert	21-00306
J11	Jack, 1/4" 7P Plastic, 24mm	21-06457
J12	Jack, 1/4" 3P Plastic, 24mm	21-06453
J13	Jack, 1/4" 3P Plastic, 24mm	21-06453
L301	Inductor, 2.5µH, 26 Turns of 15AWG, .31" i.d.	15-00165
L302	Inductor, 2.5µH, 26 Turns of 15AWG, .31" i.d.	15-00165
P1	Pot, 9 "D-P", 35F B50K-C	71-09052
P2	Pot, 9 "D-P", 35F B50K	71-09053
P3	Pot, 9 "D-P", 35F B50K-C	71-09052
P4	Pot, 9 "D-P", 35F B50K-C	71-09052
P5	Pot, 14 "D-P", 35F 15C50Kx2	71-13071
P6	Pot, 9 "D-P", 35F B50K-C	71-09052
P7	Pot, 9 "D-P", 35F B50K	71-09053
P8	Pot, 9 "D-P", 35F B50K	71-09053
P9	Pot, 9 "D-P", 35F B50K	71-09053
P10	Pot, 14 "D-P", 35F 15C50Kx2	71-13071
P11	Pot, 9 "D-P", 35F B50K	71-09053
P12	Pot, 9 "D-P", 35F B50K	71-09053
P13	Pot, 9 "D-P", 35F B50K	71-09053
P14	Fader, 30, B10K-CC	71-10332
P15	Fader, 30, B10K-CC	71-10332
P16	Fader, 30, B10K-CC	71-10332
P17	Fader, 30, B10K-CC	71-10332
P18	Fader, 30, B10K-CC	71-10332
P19	Fader, 30, B10K-CC	71-10332
P20	Fader, 30, B10K-CC	71-10332
P21	Fader, 30, B10K-CC	71-10332
P22	Fader, 30, B10K-CC	71-10332
P23	Pot, Trimmer, 20K	71-22012
Q1	Transistor, 2N5550	60-55500
Q2	J175, JFET, P-Channel	60-17500
Q3	J175, JFET, P-Channel	60-17500
Q4	J175, JFET, P-Channel	60-17500
Q5	J175, JFET, P-Channel	60-17500
Q6	Transistor, Darlington, NPN, 0.5A, 30V	60-00014
Q200	Transistor, Darlington, NPN, 0.5A, 30V	60-00014
QC201	Quick Connect, .250, Vert	06-40050
QC202	Quick Connect, .250, Vert	06-40050
QC203	Quick Connect, .250, Vert	06-40050
QC204	Quick Connect, .250, Vert	06-40050
QC205	Quick Connect, .250, Vert	06-40050
QC206	Quick Connect, .250, Vert	06-40050
QC207	Quick Connect, .250, Vert	06-40050

FULL RANGE MODE:

If only one speaker is being used (or multiple full range speakers) connect it to the **AMP 1** or the **AMP 2** phone jacks. The internal crossover should be set to the **FULL RANGE** mode, since it will not be used in this application.



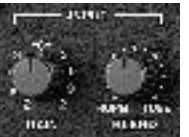
INPUT CONNECTIONS:

Inputs are provided for both passive and active basses. Instruments with internal pre-amps should be connected to the **ACTIVE** input jack. Connect your instrument to the input of the amplifier with a high quality shielded guitar cable.



SETTING GAIN:

The **GAIN** knob should be adjusted so that the **CLIP** indicator LED rarely flashes when playing. It is ok for the **CLIP** LED to occasionally softly illuminate with the dynamics of your playing. But if the LED gets bright or stays on while you are playing, reduce the **GAIN** setting. The **BLEND** control sets the mix of the hybrid tube pre-amp.



SETTING THE CROSSOVER FREQUENCY:

When operating the amp in a bi-amp configuration the **BI-AMP / FULL RANGE** selector switch must be set to the out position to engage the internal crossover. The crossover frequency can now be set by rotating the **FREQ** adjust knob.

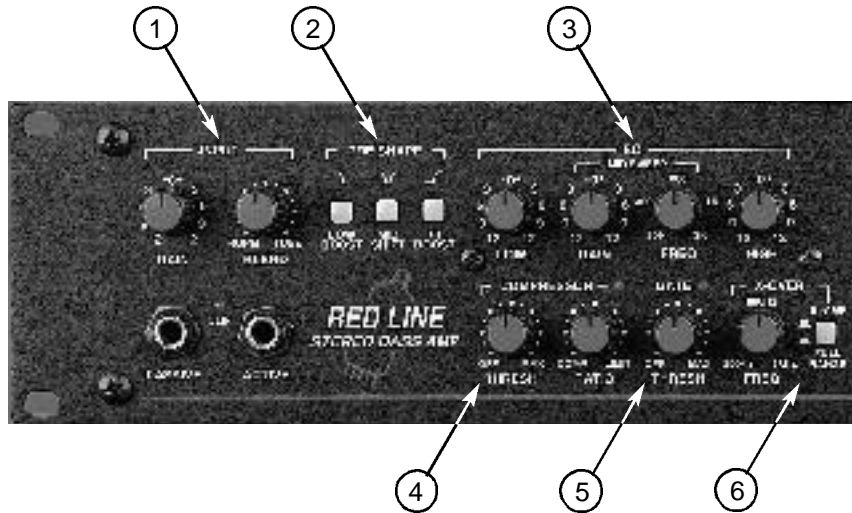


SETTING THE POWER AMP LEVELS:

The individual **POWER AMP CONTROL** knobs set the output level of the internal stereo power amps. When bi-amping these controls are used to balance the volume levels of the low frequency and high frequency speaker cabinets. The **POWER AMP CONTROL** knobs should be used to set the relative levels of the two power amps. For overall volume changes use the **VOLUME** knob.



FRONT PANEL FEATURES



1. INPUT GROUP

Two 1/4" phone jacks are provided to accommodate both **PASSIVE** and **ACTIVE** instruments. The **GAIN** knob is used to set the input level, and the **BLEND** knob controls how much signal is mixed through the vacuum tube. The red **CLIP** LED indicates when the input is close to clipping.

2. PRE SHAPE EQ.

Three bands of user selectable voicing allow quick and easy tonal changes and provide a good starting point when setting up the eq..

3. MAIN EQ.

HIGH and **LOW** shelving Eq., plus a parametric style Mid provides maximum tone control.

4. COMPRESSOR

Studio quality compressor / limiter with adjustable **THRESHOLD** and **RATIO** controls and a LED to indicate when compression is taking place.

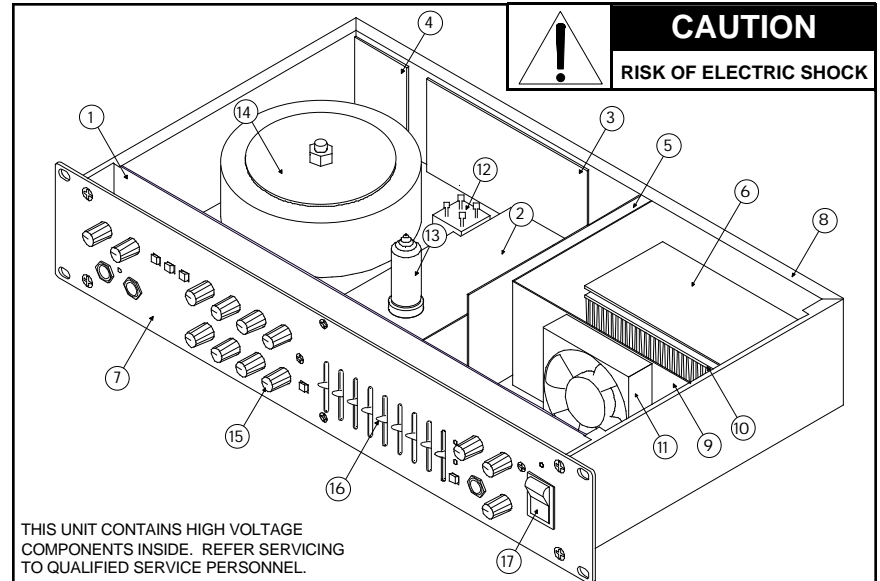
5. NOISE GATE

Integrated noise gate with input sensing and output gating, and gated indicator LED.

MAINTENANCE

Carvin's Red Line Series amplifiers have been designed to require very little user maintenance. However, use caution to avoid spilling liquids or allowing any other foreign matter inside the unit. The internal 12AX7A vacuum tube requires no routine maintenance and should last for many years. To replace a bad tube disconnect the AC power cord from the electrical outlet and remove the top cover. Remove the bad tube by gently wiggling it side to side while pulling up until it comes free. Now insert a known good tube into the socket and reinstall the top cover. The 12AX7A is a very popular tube in guitar amplifiers which any local music store should be able to supply. Equivalent replacements for this tube are: 12AX7, 7025, and ECC83.

REPLACEMENT PARTS GUIDE



THIS UNIT CONTAINS HIGH VOLTAGE COMPONENTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

REF	DESCRIPTION	PART #	QTY
1	Circuit Card Assy. (Front Card)	80-40624-1	1
2	Circuit Card Assy. (Tube Card)	80-40624-2	1
3	Circuit Card Assy. (Rear Connect Card)	80-40624-3	1
4	Circuit Card Assy. (A.C. Card)	80-40624-4	1
5	Circuit Card Assy. (Driver Card)	80-40628-1	1
6	Circuit Card Assy. (Output Card)	80-40628-2	1
7	Front Panel	10-40001	1
8	Chassis	10-40009	1
9	Bracket, Fan	10-10017	1
10	Heatsink, custom, natural aluminum finish	12-00504	1
11	Fan, DC 24V	70-02407	1
12	Bridge Rectifier, 35A	60-35040	1
13	Tube, 12AX7A Dual Triode	65-00127	1
14	Transformer, Power, Toroid	See Chart	1
15	Control Knob (Red)	07-18012	1
16	EQ. Fader Cap	07-70184	1
17	Switch, Power	25-31350	1
18	Cover, Chassis (Not shown)	10-06005	1
19	Foot, .875x.3125 (Not shown)	03-19682	4
20	Power Cord, AC, 16AWG (Not shown)	05-01604	1

Fuse/Transformer Selector Chart

Model	Line	Fuse Value	Transformer P/N
RSP	120 VAC	1/4A, 250V, Slow Blow	15-01000
RSP	240 VAC	1/8A, 250V, Slow Blow	15-01000
R600	120 VAC	6A, 250V, Slow Blow	15-06122
R600	240 VAC	3A, 250V, Slow Blow	15-06241

POWER AMP PROTECTION

The R600 contains circuitry to provide a complete level of protection to its internal power amplifiers. The amp will go into an auto diagnostic mode every time it is switched on. At turn on the fan will run at a high speed and the speaker output jacks will be muted while the protection circuitry checks the amplifier for possible fault conditions. Then if there are no short circuits on the speaker outputs and the amp is not overheated, the amplifier will be turned on. If the output load draws excessive current, such as when a speaker cable short circuits, the amp detects this danger and mutes the shorted channel. The channel will remain muted until the power to the amplifier is turned off. Replace the bad cable and re-apply power to the amplifier. The amp may also go into protection if severe environmental or abusive loading conditions cause it to overheat. In this case turning the amplifier off and then on again will not reset the mute. The amp will have to cool off first. Leave the amp on so that the internal fan will help to cool the unit more quickly. Once the amplifier has cooled down it will turn itself back on. If the amplifier goes into and out of protection every few minutes then the problem is most likely overheating. If this occurs check for adequate ventilation and relocate the amplifier if necessary.

RED LINE SPECIFICATIONS

Output Power 8W, 1kHz, < 0.5% THD 4W, 1kHz, < 0.5% THD	RSP N/A N/A	R600 200/200 Watts 300/300 Watts
Weight (Shipping)	12 lbs.	23 lbs.
Input Impedance (passive input) (active input)	1MW 200kW	
Pre-Shape EQ.	Low Boost: +6dB @ 80Hz Mid Shift: -7dB @ 400Hz & -12dB @ 125Hz Hi Boost: +7dB @ 6kHz	
Main EQ.	Low ±12dB @ 100Hz Mid Sweep ±12dB @ 150Hz-3kHz High ±12dB @ 5kHz	
Graphic EQ Freq.	50, 80, 125, 250, 500, 800, 1.3k, 2.6k, 5k	
Compressor	Variable Threshold Range (-10dB to -35dB) Variable Ratio Range (1.3 to 1) to (5 to 1)	
Noise Gate	Variable Threshold Range off to -30dB	
Crossover	12dB per Octave Sweepable 200Hz to 2kHz	
Dimensions	3 1/2" High x 19" Wide x 10" Deep	
Warranty	One year parts and labor	



6. ELECTRONIC CROSSOVER

Adjustable electronic crossover to select bi-amp crossover frequency. **BI-AMP / FULL RANGE** selector switch to set the amplifiers operating mode.

7. GRAPHIC EQ.

Nine bands of graphic equalization optimized for the bass guitar. The Eq. can be placed into or out of the circuit remotely with optional **FS22** footswitch, or with the front panel override switch. A yellow LED indicates the status of the of the graphic Eq., and a green LED indicates the status of the effects loop.

8. OUTPUT GROUP

The output group controls how your amp interfaces with other components and speakers. The **VOLUME** control sets the overall volume of the amp. The **POWER AMP CONTROL** knobs provide precise control over each individual amp and allows for balancing of the low and high cabinets when biamping. A front panel mounted phones jack is provided for practicing or as a convenient place to hook up a tuner.

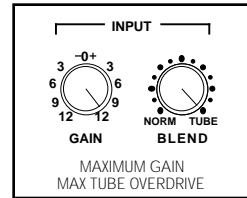
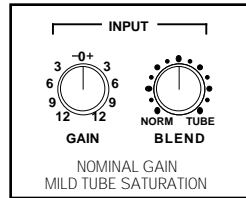
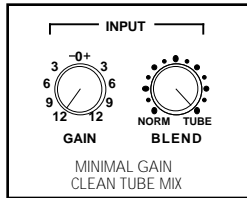
9. POWER

ON / OFF switch and power indicator LED. Push this switch to the up position to turn the amplifier on. If the power indicator LED is on but no sound is coming out of the speakers, the amp may have gone into one of its protection modes. To reset the amp turn the power off and allow it a few minutes to cool down then turn the amp back on. If the problem persists check for a bad speaker cable or damaged speaker.

RED LINE DETAILS

1. INPUT GROUP

Two 1/4" phone jacks are available for connecting all **ACTIVE** and **PASSIVE** bass guitars to Carvin's Red Line Series amps. The **PASSIVE** input is to be used with bass guitars with standard high impedance pickups. This is a high impedance input, and offers 12db more gain than the **ACTIVE** input jack. The **ACTIVE** input is to be used with instruments that contain on board pre amps. The **CLIP LED** indicates when the front end of the amplifier is clipping. The **CLIP** indicator LED starts to illuminate 3dB before clipping and can be a useful reference for setting the input **GAIN** of the amplifier. It is ok for the **CLIP** indicator to occasionally lightly flash while playing, but it should not get bright or stay on for extended periods of time. The **GAIN** control knob sets the input gain of the amplifier. This knob is used in conjunction with the tube **BLEND** knob to set the amount of soft tube overdrive available from the tube pre amp. It is perfectly normal for the **GAIN** knob to be set at the full counter clockwise position (-12 dB). The **BLEND** knob is used to select how much signal to mix through the tube, and how much to send around the tube. When this control is set fully clockwise all of the instruments signal is being sent through the vacuum tube. The amount of tube saturation can be adjusted with the **GAIN** control. Full clockwise on the **GAIN** control is maximum saturation.



Note: It is important to remember that the blend control simply mixes tube saturation with the normal input signal. This control does not effect the intensity of the tube saturation. To increase the intensity of the overdrive bring up the gain control knob.

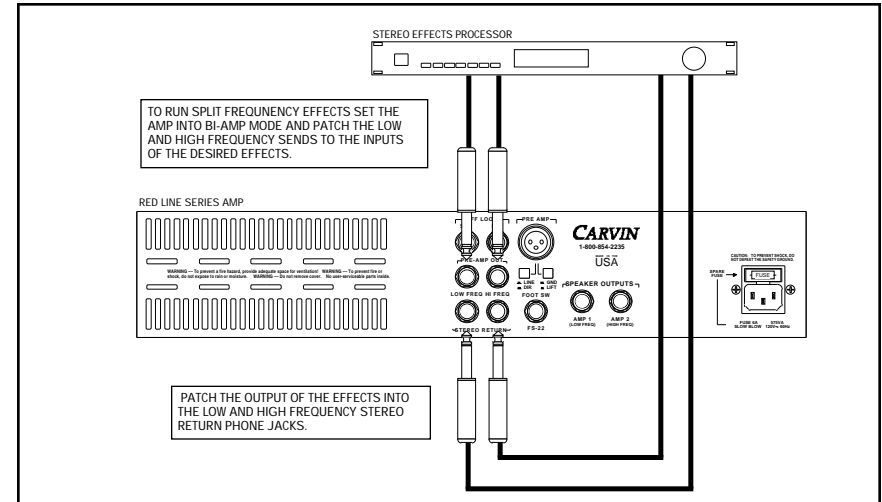
2. PRE SHAPE EQ.

The **PRE SHAPE** eq is useful for dialing up a certain sound quickly and easily. The **LOW BOOST** switch provides a 6dB boost at just under 100Hz. This is useful for adding some heft to the bottom end without bringing up the lower midrange. The **MID SHIFT** switch offers two different scooped mid selections. In the out position the amp has a 7dB cut at 400Hz. Depressing this button lowers the cut frequency to 125Hz and increases the amplitude of the cut to -12dB. The **HI BOOST** switch offers a 6dB boost at 6Khz. This can provide good high frequency compensation when using only 15" or 18" speakers.



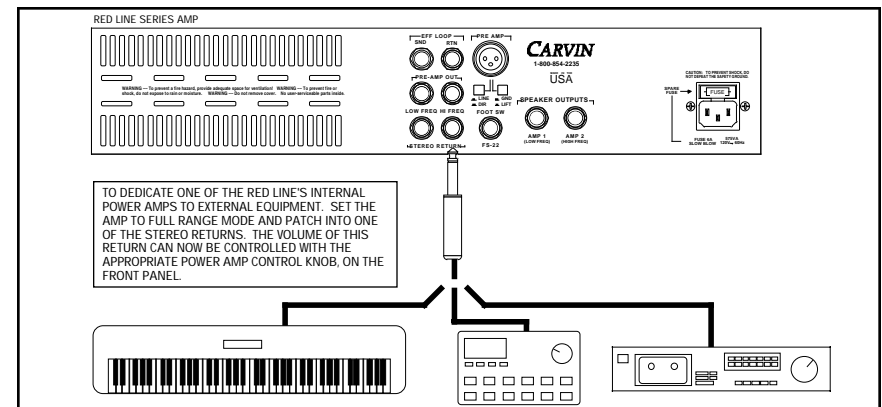
RED LINE STEREO HOOK UP

Stereo effects can be processed by connecting the **PRE-AMP OUT** 1/4" phone jacks to the inputs of a stereo effects processor, and connecting the outputs of the effects unit to the two **STEREO RETURN** jacks. If the amp is set to bi-amp mode the **PRE-AMP OUT** jacks will be frequency selective, making it possible to place an effect in only the highs or lows. To place an effect in only the high frequencies, patch the **HI FREQ PRE-AMP OUT** jack to the input of the effects unit, and connect the **HI FREQ STEREO RETURN** to the output of the effects unit.



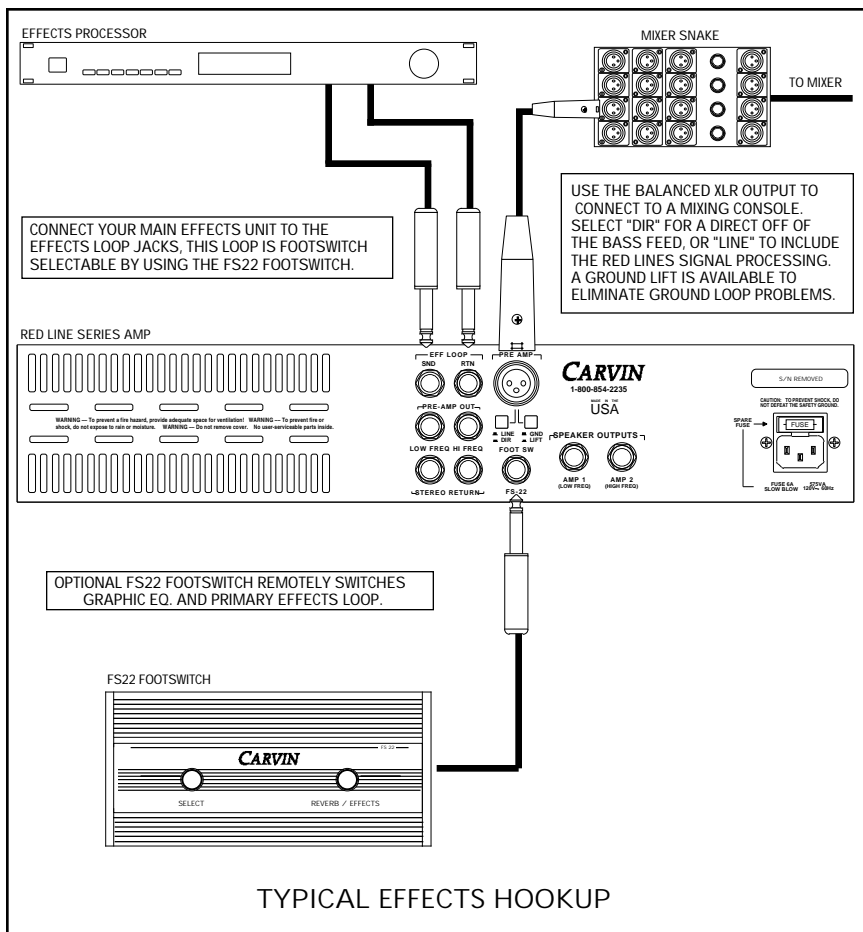
RED LINE AMP PATCH HOOK UP

The R600 bass amp contains a stereo power amplifier. This makes it possible to utilize one of the internal amps to power external equipment. To do this the amp must be set to full range mode since the bass guitar will be using only one of the power amps. Now an external piece of gear (drum machine, tape deck, etc.) can be patched into one of the **STEREO RETURNS**. The **POWER AMP CONTROL** knobs on the front panel will control the volumes of the patched equipment and the bass guitar.



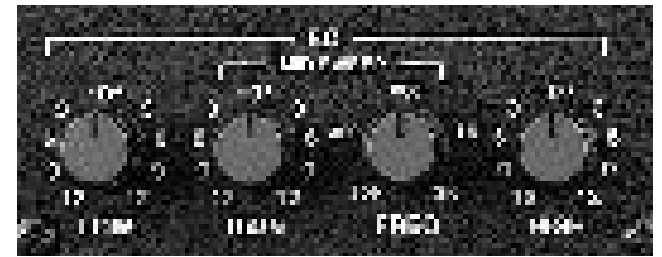
EFFECTS HOOK UP

The Red Line Series bass amplifiers offer a lot of flexibility when connecting to external signal processing or recording gear. The main effects loop "EFF LOOP" offers a footswitch selectable loop which lies directly after the main eq. and just before the graphic eq.. To use this loop connect the send "SND" 1/4" phone jack to the input jack of the effects unit, and connect the return "RTN" 1/4" phone jack to the output jack of the effects unit. The FS22 footswitch should be connected to the jack on the back panel marked "FOOT SW". The FS22 will allow you to remotely engage and disengage the nine band graphic eq. and the effects loop. Note: the FS22 is not required to use the graphic eq. or the effects loop. The "PRE AMP" out XLR jack offers a balanced signal feed to send to recording or sound reinforcement equipment. This feed can be selected pre or post eq and compression. Press the LINE / DIR switch to the in position for a direct feed from the instrument. Set the LINE / DIR to the out position to include the Red Line's signal processing. A ground lift switch is provided to break the ground on the XLR output in order to tame problem ground loop situations. Press the GND / LIFT switch to the in position to lift the ground on this output.



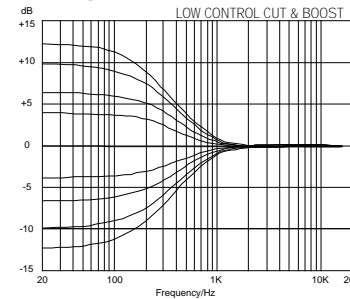
3. MAIN EQ.

The main Eq. consists of a low shelving control, a sweep midrange control and a high shelving control. The **LOW** control provides the overall shaping of the low frequencies,



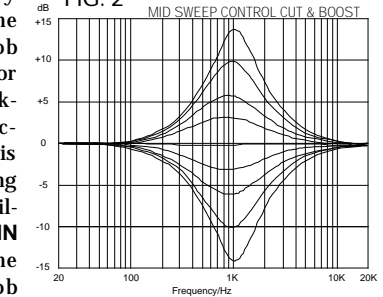
as shown in FIG. 1. The action of this control has been carefully matched to the response of the bass guitar, and provides the player with powerful control over the frequency range

FIG. 1



most critical to the sound of the instrument. The **MID SWEEP** controls perform as a semiparametric eq. over the mid frequency range. The **GAIN** knob provides a boosting or cutting action at a relatively narrow band of frequencies. When the **GAIN** knob of the **MID SWEEP** control is set to "0" the mid sweep will have no effect. To boost or cut a specific frequency

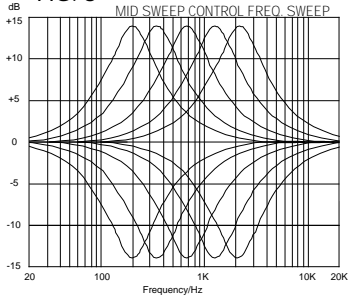
FIG. 2



rotate the **GAIN** knob clockwise or counter clockwise respectively, as shown in FIG. 2. The **FREQ** control knob is used to select the center frequency where the boosting or cutting will occur. The best way to become familiar with the **MID SWEEP** control is to set the **GAIN** knob at either full cut or full boost and rotate the

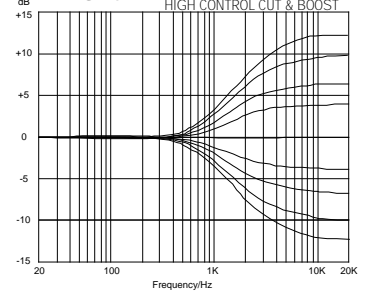
FREQ knob over its range of frequencies, see FIG. 3. Listen to the results and experiment with different levels of cut and boost. The **MID SWEEP** eq. is a powerful sound shaping tool which usually requires some practice to get the best results. The **HIGH** control knob is designed to cut or boost the high frequencies of the bass guitar. The response of this control is shown in FIG. 4. Boosting with this control is useful for bringing up the very highest harmonics of the bass,

FIG. 3



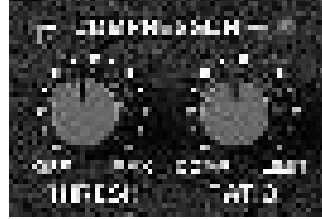
which is especially useful when slapping or popping. Note: boosting the high frequencies can result in increased white noise (hiss), especially when using speakers that include tweeters. The Red Line Series bass amplifiers contain a very powerful eq. section, so it is important to remember that too much or improper equalization can give the bass an unnatural or even an unpleasant sound. Experimentation is the key to finding how each control affects the overall sound. With a little practice you should have no problem finding the sound you are looking for.

FIG. 4



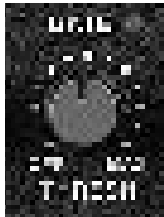
4. COMPRESSOR

The **COMPRESSOR** of the Red Line Series amps incorporates separate **THRESHOLD** and **RATIO** controls. This two knob compressor is more flexible and precise than a single control unit. The user can dial up the exact amount of compression desired and at what level they want the compression to begin. The **THRESHOLD** control knob sets the point where the compressor kicks in. In the **OFF** position the compressor is not engaged and has no effect on the sound. Rotating this control in the clockwise direction lowers the level of where the compressor turns on. The compressor indicator LED shows when this threshold is obtained, thus showing when the compressor is on. The **RATIO** knob is used to set the amount of compression once the threshold has been reached. When this knob is swept all the way counter clockwise the unit is set for a mild compression, as the knob is rotated clockwise the compression ratio increases. The range of available compression ratios is 1.3 to 1 in the full counter clockwise position to 5 to 1 in the full clockwise position. The compressor is interactive with the input **GAIN** knob and the volume knobs on the bass guitar itself. Lowering the volume feeding the compressor will reduce the amount of compression and raising it will result in more compression.



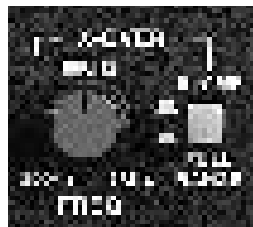
5. NOISE GATE

The integrated noise gate mutes the output of the amplifier when there is no input signal present. To use the **GATE** connect an instrument to the input of the amp and set the input gain level. Now, with the strings muted raise the **THRESHOLD** control knob until the noise from the instrument is gated off and the red indicator LED illuminates. When the bass is played the **GATE** will instantaneously turn off and let the signal through. The integrated noise gate senses for the gate trigger directly after the input **GAIN** control and gates the signal right before the **VOLUME** control. This ensures that any noise generated in the EQ sections, or in external effects connected to the **EFF LOOP** will also be gated.



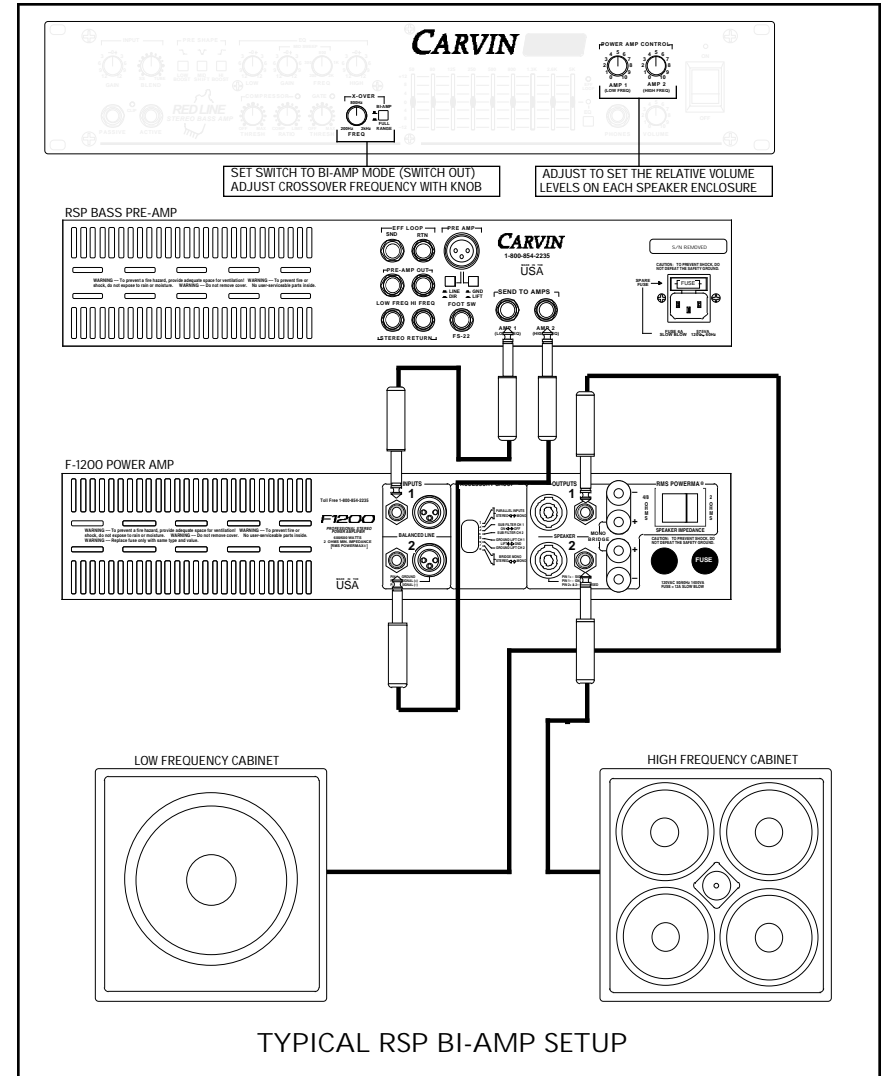
6. CROSSOVER

The internal **X-OVER** is used to set the amp for a bi-amped configuration. When the **BI-AMP / FULL RANGE** selector switch is in the out position the amp is in bi-amp mode. To select the crossover frequency rotate the **FREQ** control knob until the desired frequency is obtained. A bi-amped system allows the user greater control over the high and low frequencies of their stage rig. This allows speakers designed for specific frequencies to be utilized to their fullest potential. Also, the use of separate power amplifiers for each frequency range increases the efficiency of the acoustic output, yielding greater volume levels. See the set up diagrams for more information on how to hook up a bi-amp rig.



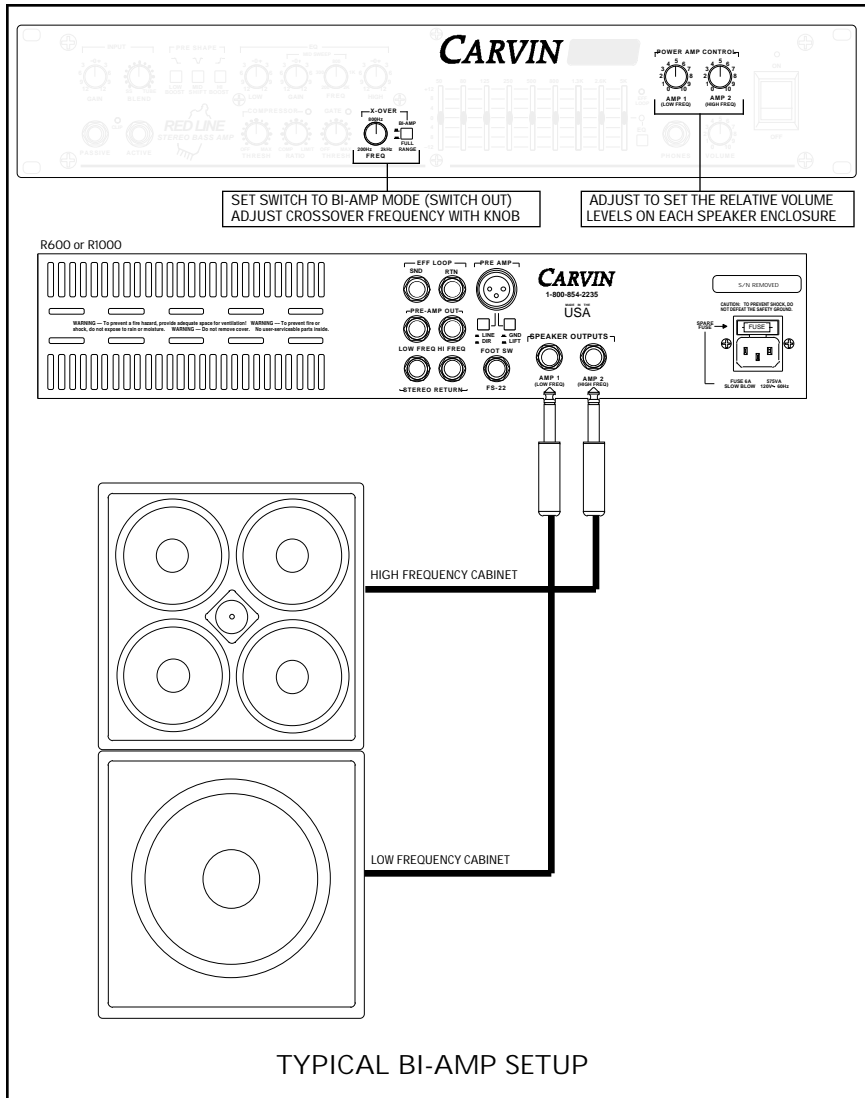
RSP BI-AMP HOOK UP

The RSP bass pre-amp must be connected to a separate stereo power amplifier in order to run a bi-amp configuration. The **AMP 1 (LOW FREQ)** and **AMP 2 (HIGH FREQ)** 1/4" phone jacks should be connected to channels one and two of a stereo power amp. The stereo power amplifier will then be connected to the low freq. and high freq. speaker cabinets respectively. The crossover selector switch must be set to the **BI-AMP (out)** position in order to engage the internal electronic crossover. The crossover frequency is set by rotating the **X-OVER** knob on the front panel. The mix of the low and high frequency volume levels are set with the **AMP 1** and **AMP 2 POWER AMP CONTROL** knobs. The power amplifiers individual volume controls can now be used to set to the maximum output level desired.



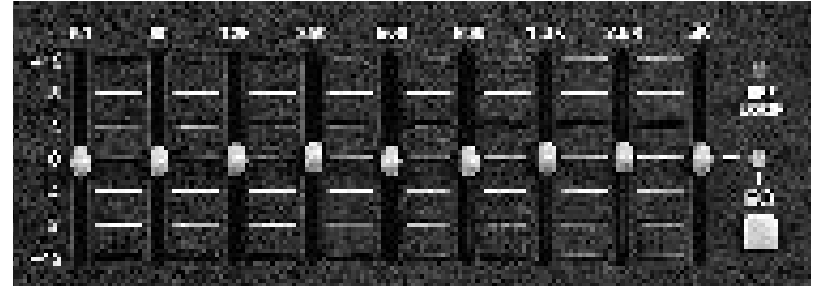
R600 BI-AMP HOOK UP

The R600 bass amp contains two separate (stereo) power amplifiers. This makes it possible to run a full Bi-amped rig directly off of your bass amp. The **AMP 1 (LOW FREQ)** 1/4" phone jack should be connected to a low frequency speaker cabinet, usually a 15" or 18" speaker. The **AMP 2 (HIGH FREQ)** 1/4" phone jack will be connected to a set of high frequency drivers, often a 4x10 box with a tweeter. The crossover selector switch must be set to the **BI-AMP** (out) position in order to engage the internal electronic crossover. The crossover frequency is set by rotating the **X-OVER** knob on the front panel. The mix of the low and high frequency volume levels are set with the **AMP 1** and **AMP 2 POWER AMP CONTROL** knobs.



7. GRAPHIC EQ.

The nine band graphic eq. has been designed with the center frequencies most requested by professional bass players. The eq. can be used to fine tune the tonal content of the amps output. Since the graphic eq. is controllable with either the optional **FS22**



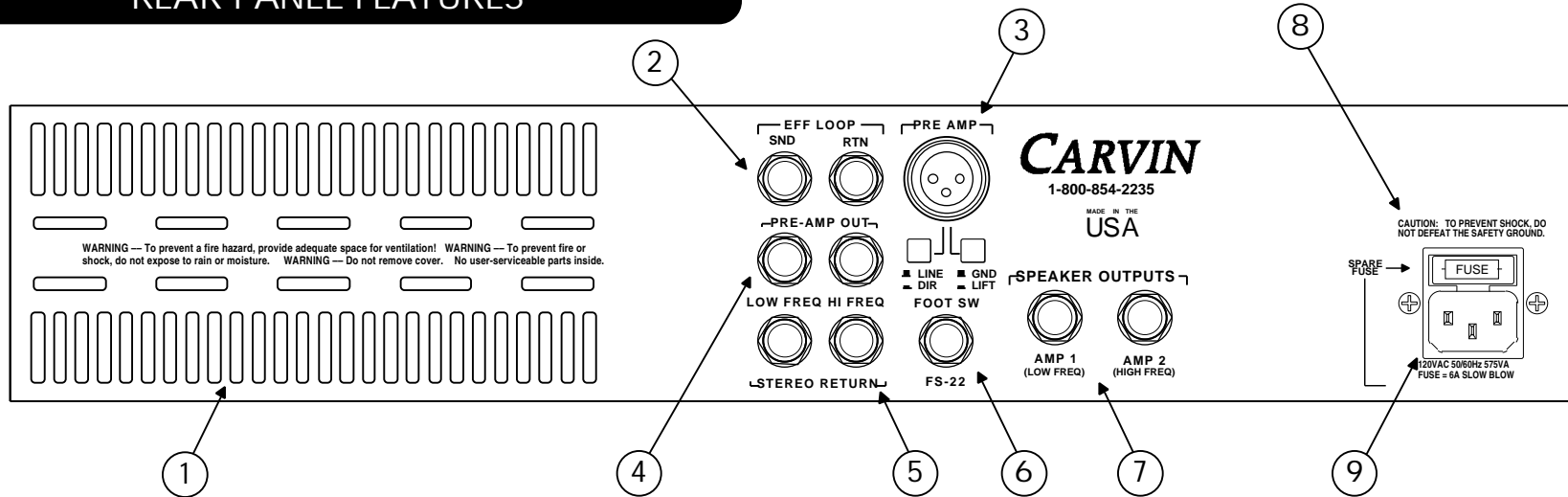
footswitch or the **EQ** switch on the front panel, it can be used to develop a second sound from the amp. Musicians that play more than one bass on stage will find this useful to get the sounds they desire out of each of their instruments. The footswitch selectable graphic eq. can also be useful during passages of a song when the bass needs to punch through the mix. A yellow LED indicator located along side of the eq. signifies when the graphic eq. is in the circuit. A green effect loop LED labeled **EFF LOOP** indicates when the effects loop is turned on. Note: the **EQ** switch on the front panel overrides the **SELECT** switch on the footswitch. So when the graphic eq. is off on the front panel it can not be turned on with the footswitch.

8. OUTPUT GROUP

The output group determines how the Red Line amplifier interfaces with other gear and speakers. The **VOLUME** control sets the overall volume level of the amp, use this control to set the amplifier to the desired listening volume. The **POWER AMP CONTROL** knobs deliver precision control over the individual amps. These are used to balance the low and high cabinets when biamping. To set the balance in a bi-amped rig bring up the **AMP 1 (LOW FREQ)** knob until the desired volume level is reached. Now bring up the **AMP 2 (HIGH FREQ)** knob until the desired balance between the lows and highs is met. If the volume control is at its maximum position and more volume is needed, increase both **POWER AMP CONTROL** knobs by the same amount, so that the mix is unchanged. The **POWER AMP CONTROL** knobs can also be used to set the level of two full range speakers. So one speaker can be used as a monitor for the guitar player or drummer and the other speaker as the main bass cabinet. A front panel mounted **PHONES** jack is provided for practicing or as a place to hook up a tuner. Use high quality headphones with an impedance greater than 100W when connecting to this jack. The phones jack does not interrupt the amplifiers output, so a tuner can be left plugged into this jack while playing. Note: When using a Tip / Ring (mono) cable to attach gear such as a tuner to the phones jack insert the cable to the first click of the jack.



REAR PANEL FEATURES



1. COOLING VENTS

These vents are for cooling the internal power amplifiers. Provide a minimum of 3" of clearance for adequate ventilation. Blocking the air flow through these vents will cause the amp to thermally protect and turn off. If this happens, turn the power off and allow the amp a few minutes to cool down. Clear the obstruction and reapply the power.

2. EFFECTS LOOP

The **EFF LOOP** send and return jacks are used to connect external effects into the Red Line's signal chain. The loop is located after the main eq. and compressor, and before the graphic eq and noise gate. To use the effects loop, connect the "SND" jack to the input of the effects unit and connect the "RTN" jack to the output of the effects unit. The effects loop can be turned on and off by using the **FS22** footswitch. When the footswitch is not connected the loop will default to the on position. The status of the effects loop is indicated on the front panel by a green LED marked "EFF LOOP".

3. PRE AMP OUT XLR

The **PRE AMP** out XLR is a balanced output that can be configured in a number of different ways. The **LINE / DIR** switch is used to select a pre or post pre amp feed. In the "LINE" position the feed is post the pre-amp section of the Red Line amp, and contains all of the signal processing and effects that are being used. The "DIR" position is a direct feed off of the bass guitar and is similar to using a D.I. box. A ground lift switch is also available on the pre-amp out XLR jack. Set this switch for the lowest noise when using this output. When the **GND / LIFT** switch is depressed the signal ground is lifted from this jack thus eliminating any ground loops between the Red Line amp and the gear it is feeding.

4. HI FREQ AND LOW FREQ PRE AMP OUT JACKS

The split frequency output 1/4" phone jacks add a lot of interconnection flexibility to the Red Line bass amp. These jacks can be used to drive additional power amplifiers or to drive stereo, or frequency selective effects. When the amp is operating in Bi-amp mode the **LOW FREQ** jack contains only the low frequency material, and the **HI FREQ** jack contains only the high frequency material, as determined by the **X-OVER FREQ** selector knob on the front panel. When the amp is operating in full range mode, both output jacks contain the same full range signal.

5. STEREO RETURN JACKS

The **STEREO RETURN** jacks are to be used as stereo effects return locations or as amp patch jacks. These jacks can be used to patch external gear to the internal power amps of the Red Line amps. These jacks can also be utilized in conjunction with the pre-amp out jacks as a full stereo effects loop.

6. FOOTSWITCH

Connect the optional **FS22** footswitch here to remotely control the nine band graphic eq and the effects loop. The first button on the **FS22** marked **SELECT** turns the graphic eq on and off, and the second button marked **REVERB / EFFECTS** turns the effects loop on and off.

7. SPEAKER OUTPUTS (EXCEPT RSP)

The R600 amp contains two 1/4" phone jack speaker output connectors. The **AMP 1 (LOW FREQ)** jack corresponds to the **AMP 1 (LOW FREQ)** knob on the front panel, and the **AMP 2 (HIGH FREQ)** jack corresponds to the **AMP 2 (HIGH FREQ)** knob on the front panel. Multiple speakers can be attached to each of the speaker output jacks, so long as the total impedance is not below 4W. In the Red Line RSP model these jacks are used as power amp feeds.

8. AC LINE FUSE

The line fuse is located inside the AC receptacle socket. The fuse can be replaced by removing the AC line cord and wedging a slot head screwdriver under the top to pull out the fuse holder. All Red Line amps are shipped with a spare fuse located inside of the fuse holder cap. Always replace the fuse with a fuse of the same value. For more information refer to the fuse replacement information in the parts list of this manual.

9. AC LINE CORD

All Red Line Series bass amplifiers are supplied with detachable three conductor line cords. Never defeat the grounding pin of the AC line cord as it is there for your own protection. If you must plug into a two prong outlet use a quality 3 to 2 prong grounded adapter.