

NEWPORT SERIES
Compact Mixing Console

Owner's Manual



NEWPORT SERIES

TABLE OF CONTENTS

Controls

Standard Input Channel	pgs. 2 & 3
Stereo Input Channel	pgs. 4 & 5
Submaster	pgs. 6 & 7
Master	pgs. 8 & 9

Connectors

Standard Input Channel	pg. 10
Stereo Input Channel	pg. 10
Submaster	pg. 11
Master	pg. 12

Power

pg. 13

Cables

pg. 14

Modifications

pg. 15

Specifications

pg. 16

Block Diagram

pg. 17

Warranty



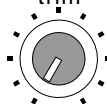
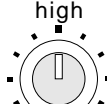
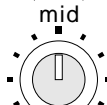
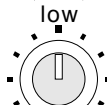












INTRODUCTION

The **BIAMP NEWPORT Series** mixing consoles provide professional features, solid reliability, and excellent sonic performance in two compact models. Available in 16 and 24 Input Channel configurations, each with an additional Stereo Input Channel, the NEWPORT Series mixing consoles are packed with enough features to handle virtually any application. NEWPORT 16+/344 and 24+/344 mixing consoles require approximately 5 square feet of table space, and front panel mounted connectors allow them to be placed flush against a wall. All models feature discrete transistor Mic/Line preamplifiers and use 5532 and TLO-72 op-amps throughout the signal path for extremely noise free, high-fidelity performance. All Submaster, Left & Right Main, Mono Main, and Auxiliary Send output circuits are balanced. A rugged assembly, utilizing individual circuit boards and an all metal chassis, provides long term reliability for either portable usage or fixed installations.

NEWPORT Series features include:

- 16 and 24 Input Channel models available
- Discrete transistor Mic/Line preamplifiers for superb sonic quality
- 3 band equalization on each Input Channel
- 4 Auxiliary Sends on each Input Channel, with internal jumpers for Pre/Post assignment (factory default: 2 Pre-Fader & 2 Post-Fader)
- Signal Present and Peak indicators on each Input Channel, for managing signal levels
- Additional Stereo Input Channel, for tape decks or other stereo line level devices
- 4 assignable Auxiliary Returns
- Balanced outputs on Submasters 1-4, Left & Right Mains, Mono Main, and Auxiliary Sends 1-4
- Patch Insert Points on all Input Channels, Submasters, and Mains, for insertion of external signal processing devices
- Separate Stereo Tape output on RCA connectors
- Solo switch on all Input Channels, Submasters, and Auxiliary Sends, for individual monitoring
- Headphone Output monitors Left & Right Mains, with automatic interruption by any Solo signals (includes: Level, Solo Level, and Solo indicator)
- 6 Level Meters, assignable to indicate levels at Submasters 1-4, Auxiliary Sends 1-4, Left & Right Mains, Mono Main, and Solo
- 48 Volt Phantom Power, with master switch and indicator, for condenser microphones and direct boxes
- 100mm professional Faders
- Convenient carrying handle, also may be used to prop mixer at an angle or to manage cables
- Rugged design, incorporating individual circuit boards and an all metal chassis

STANDARD INPUT CHANNEL CONTROLS

- (1)  +15
- (2)  -15
- (3)  trim
- (4)  high
- (5)  mid
- (6)  low
- (7)  aux 1
- (8)  aux 2
- (9)  aux 3
- (10)  aux 4
- (11)  pan
- (12)  L-R
- (13)  1
- (13)  2
- (13)  3
- (13)  4
- (14)  solo
- (15)  solo

(1) **+15 (Peak Indicator):** This red LED indicates signal level in the channel has reached +15dB (6dB below clipping). For best performance, adjust the Trim control (3) so the Peak Indicator flashes only on occasional peaks in signal level.

(2) **-15 (Signal Present Indicator):** This green LED indicates signal level in the channel is above -15dB (normal signal level). Once the Trim control (3) has been adjusted, this indicator will remain lit whenever signal is present in the channel.

(3) **Trim:** This control provides 40dB of gain adjustment to compensate for different input signal levels. For best performance, adjust this control so the Peak Indicator (1) flashes only on occasional peaks in signal level.

(4) **High:** This control adjusts the high frequency equalization (Treble) for the channel. High equalization is a shelving type filter, which provides +/-15dB of gain adjustment for frequencies above 10kHz. Equalization is used to compensate for tonal differences, which exist between various input signals.

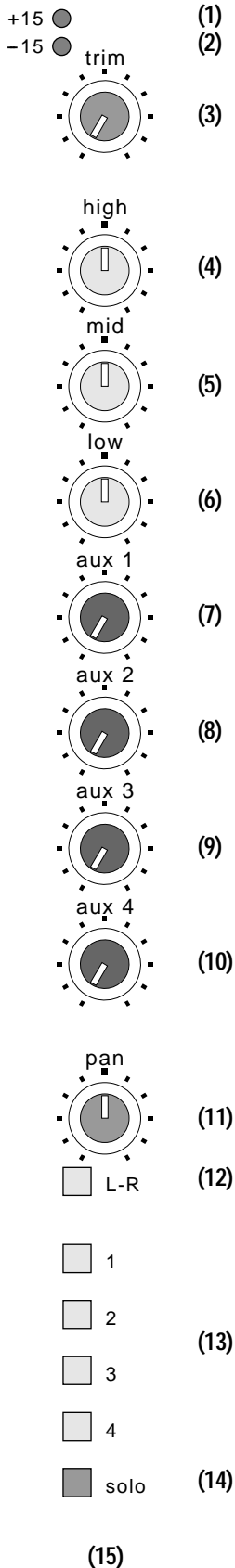
(5) **Mid:** This control adjusts the mid frequency equalization for the channel. Mid equalization is a peaking type filter, which provides +/-12dB of gain adjustment for frequencies centered around 2kHz. Equalization is used to compensate for tonal differences, which exist between various input signals.

(6) **Low:** This control adjusts the low frequency equalization (Bass) for the channel. Low equalization is a shelving type filter, which provides +/-15dB of gain adjustment for frequencies below 80Hz. Equalization is used to compensate for tonal differences, which exist between various input signals.

(7)(8) **Aux 1 & Aux 2 (Sends):** These controls adjust the level of post-fader channel signal sent to the Send 1 & Send 2 outputs (see Submaster Controls on page 6). Aux 1 & Aux 2 signals are affected by equalization (4)(5)(6) and the Fader (15). Post-fader sends are normally used to create separate output mixes for effects devices, tape decks, etc. (See Modifications on page 15.) For best performance, typical settings of these controls should center around the 11 o'clock position.

(9)(10) **Aux 3 & Aux 4 (Sends):** These controls adjust the level of pre-fader channel signal sent to the Send 3 & Send 4 outputs (see Submaster Controls on page 6). Aux 3 & Aux 4 signals are affected by equalization (4)(5)(6), but not by the Fader (15). Pre-fader sends are normally used to create separate output mixes for stage monitors, other sound systems, etc. (See Modifications on page 15.) For best performance, typical settings of these controls should center around the 11 o'clock position.

STANDARD INPUT CHANNEL CONTROLS



(11) Pan: This control determines the amount of channel signal received by the Left or Right Main, when selected with the Main Assign switch (12). With the Pan control fully counter-clockwise, only the Left Main receives channel signal. With the Pan control fully clockwise, only the Right Main receives channel signal. With the Pan control centered, the Left & Right Mains receive equal amounts of channel signal. When mixing for stereo, Pan determines the relative position of channel signal between the Left & Right Mains. However, the Mono Main output provides a sum of the Left & Right Main signals. Therefore, when mixing for mono and assigning channels directly to the Left & Right Mains...Pans may be centered to provide mono output from the Left & Right Mains as well...or...Pans may be set full-left and full-right to route related signals to the Left or Right Main Faders (functioning much like submasters)...or...Pans may be set to create a stereo mix in the Left & Right Mains (for recording) while the Mono Main continues to feed a mono sound system (live mix). (See Master Controls on page 9.)

(12) L-R (Main Assign Switch): When depressed, this switch routes post-fader channel signal directly to the Left & Right Mains (see Master Controls on page 9). The amount of channel signal received by the Left or Right Main is determined by the Pan control (11).

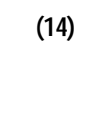
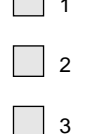
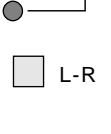
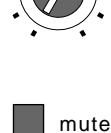
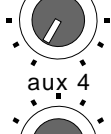
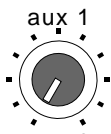
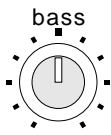
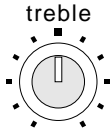
(13) 1, 2, 3, & 4 (Submaster Assign Switches): When depressed, these switches route post-fader channel signal to the respective submasters. Submaster Assign switches allow related signals, from various channels, to be routed to the same submaster for common control (i.e...vocals to Submaster #1, instruments to Submaster #2, etc.). Individual submaster signals may then be mixed, either in mono or in stereo, to the Left & Right Mains. (See Submaster Controls on page 7.) Submaster Assign signals are affected by equalization (4)(5)(6) and the Fader (15), but not by the Pan control (11).

(14) Solo: When depressed, this switch routes pre-fader channel signal to the Solo section for headphone monitoring (see Master Controls on page 8). Solo signal is affected by equalization (4)(5)(6), but not by the Assign switches (12)(13) or the Fader (15). Therefore, channel signal may be monitored even when the channel is unassigned or turned down.

(15) Fader (not shown): This 100mm slide control adjusts the level of channel signal sent to all selected submasters and Left & Right Mains, as well as to all post-fader aux sends. Fader settings will vary from channel to channel, depending upon the desired mix. However, for best performance, the higher Fader settings should center around the "0" mark (unity gain).

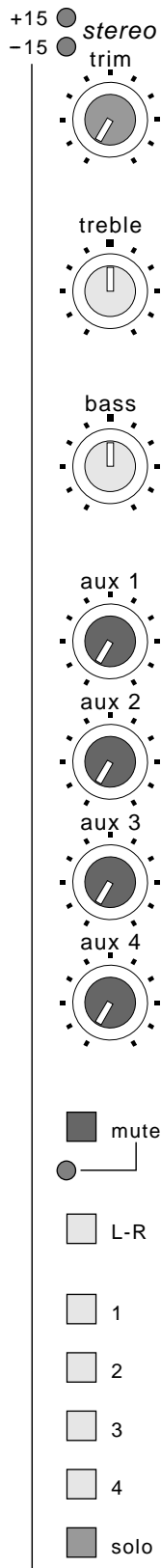
STEREO INPUT CHANNEL CONTROLS

+15 ● stereo
-15 ● trim



- (1) **+15 (Peak Indicator):** This red LED indicates signal level in the channel has reached +15dB (6dB below clipping). For best performance, adjust the Trim control (3) so the Peak Indicator flashes only on occasional peaks in signal level.
- (2) **-15 (Signal Present Indicator):** This green LED indicates signal level in the channel is above -15dB (normal signal level). Once the Trim control (3) has been adjusted, this indicator will remain lit whenever signal is present in the channel.
- (3) **Trim:** This control provides 25dB of gain adjustment to compensate for different input signal levels. For best performance, adjust this control so the Peak Indicator (1) flashes only on occasional peaks in signal level.
- (4) **Treble:** This control adjusts the high frequency equalization (Treble) for the channel, affecting the left & right signals equally. Treble is a shelving filter, which provides +/- 10dB of gain adjustment for frequencies above 10kHz. Equalization is used to compensate for tonal differences, which exist between various input signals.
- (5) **Bass:** This control adjusts the low frequency equalization (Bass) for the channel, affecting the left & right signals equally. Bass is a shelving filter, which provides +/- 10dB of gain adjustment for frequencies below 100Hz. Equalization is used to compensate for tonal differences, which exist between various input signals.
- (6)(7) **Aux 1 & Aux 2 (Sends):** These controls adjust the level of post-fader channel signal sent to the Send 1 & Send 2 outputs (see Submaster Controls on page 6). Aux 1 & Aux 2 signals are affected by equalization (4)(5) and by the Fader (14). Post-fader sends are normally used to create separate output mixes for effects devices, tape decks, etc. (See Modifications on page 15.) Aux 1 & Aux 2 are mono sums of the left & right stereo channel signals. For best performance, typical settings of these controls should center around the 11 o'clock position.
- (8)(9) **Aux 3 & Aux 4 (Sends):** These controls adjust the level of pre-fader channel signal sent to the Send 3 & Send 4 outputs (see Submaster Controls on page 6). Aux 3 & Aux 4 signals are affected by equalization (4)(5), but not by the Fader (14). Pre-fader sends are normally used to create separate output mixes for stage monitors, other sound systems, etc. (See Modifications on page 15.) Aux 3 & Aux 4 are mono sums of the left & right stereo channel signals. For best performance, typical settings of these controls should center around the 11 o'clock position.
- (10) **Mute**
- (11) **L-R**
- (12) **1, 2, 3, 4**
- (13) **solo**
- (14)



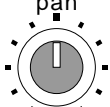

STEREO INPUT CHANNEL CONTROLS



- (1) **(10) Mute:** When depressed, this switch turns off channel signal sent to aux sends, submasters, and the Left & Right Mains. The adjacent red LED indicates when Mute is active. Mute does not affect Solo (13).
- (2)
- (3) **(11) L-R (Main Assign Switch):** When depressed, this switch routes post-fader channel signal directly to the Left & Right Mains. The Left Main receives left channel signal only. The Right Main receives right channel signal only. When mixing for stereo, this preserves the stereo nature of the channel signal. However, the Mono Main output provides a sum of the Left & Right Main signals. Therefore, when mixing for mono and assigning the stereo channel directly to the Left & Right Mains, left & right channel signals will automatically be summed together at the Mono Main output. (See Master Controls on page 9.)
- (4)
- (5) **(12) 1, 2, 3, & 4 (Submaster Assign Switches):** When depressed, these switches route a mono sum of the left & right post-fader channel signals to the respective submasters. Submaster Assign switches allow related signals, from various channels, to be routed to the same submaster for common control (i.e., vocals to Submaster #1, instruments to Submaster #2, etc.). Individual submaster signals may then be mixed, either in mono or in stereo, to the Left & Right Mains. (See Submaster Controls on page 7.)
- (6)
- (7) **(18) Solo:** When depressed, this switch routes pre-fader channel signal to the Solo section for headphone monitoring (see Master Controls on page 8). Solo signal is not affected by Mute (10), the Assign switches (11)(12), or the Fader (14). Therefore, channel signal may be monitored even when the channel is muted, unassigned, or turned down. Solo is a mono sum of the left & right channel signals.
- (8)
- (9) **(19) Fader (not shown):** This 100mm dual slide control adjusts the level of channel signal sent to all selected submasters and Left & Right Mains, as well as to all post-fader aux sends. The Fader affects left & right channel signals equally. Fader settings will vary from channel to channel, depending upon the desired mix. However, for best performance, the higher fader settings should center around the "0" mark (unity gain).
- (10)
- (11)
- (12)
- (13)

(14)

SUBMASTER CONTROLS

- | | | |
|---|------|--|
| <ul style="list-style-type: none"> <input type="radio"/> +12 <input type="radio"/> +9 <input type="radio"/> +6 <input type="radio"/> +3 <input type="radio"/> 0 <input type="radio"/> -6 <input type="radio"/> -15 | (1) | |
| <input type="checkbox"/> sub 1
<input type="checkbox"/> send 1 | (2) | |
| <div style="text-align: center;">send 1</div>  | (3) | |
| <input type="checkbox"/> solo | (4) | |
| <div style="text-align: center;">return 1</div>  | (5) | |
| <div style="text-align: center;">pan</div>  | (6) | |
| <input type="checkbox"/> L-R | (7) | |
| <input type="checkbox"/> 1 | (8) | |
| <input type="checkbox"/> 2 | (8) | |
| <div style="text-align: center;">pan</div>  | (9) | |
| <input type="checkbox"/> mute | (10) | |
| <input type="checkbox"/> L-R | (11) | |
| <input type="checkbox"/> solo | (12) | |
- (13)

(1) Meter: This seven-segment, peak reading LED meter displays signal level for the respective Submaster output or Send output, depending upon the position of the Meter Select switch (2). Meter readings of "0" indicate output levels of +4dBu. When the red "+12" indicator flashes, 11dB of headroom remains before clipping. Headroom is reduced by 6dB when outputs are used unbalanced. (See Submaster Connectors on page 11.)

(2) Sub 1-4/Aux 1-4 (Meter Select Switch): When released, this switch routes the respective Submaster output signal to the Meter. When this switch is depressed, the respective Send output signal is routed to the Meter. (See Submaster Connectors on page 11.)

(3) Send 1-4: This control adjusts the overall level of signals sent from the respective channel aux sends to the associated Send output (see Submaster Connectors on page 11). Send also affects signal sent to the Meter Select switch (2) and Solo (4). For best performance, typical settings of these controls should center around the 2 o'clock position.

(4) Solo: When depressed, this switch routes the respective Send output signal to the Solo section for headphone monitoring (see Master Controls on page 8). Solo signal is affected by the Send control (3).




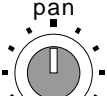
(5) Return 1-4: This control adjusts the level of signal sent from the respective Return input (see Submaster Connectors on page 11) to the submasters and Left & Right Mains, which have been selected with the Assign switches (7)(8). Return is for auxiliary line level signals, such as effects, tape decks, other mixers, etc.

(6) Pan: This control determines the amount of Return signal received by the Left or Right Main, when selected with the Main Assign switch (7). The application of these controls is the same as on the Standard Input Channels (see Standard Input Channel Controls on page 3).

(7) L-R (Main Assign Switch): When depressed, this switch routes the Return signal directly to the Left & Right Mains (see Master Controls on page 9). The amount of signal received by the Left or Right Main is determined by the Pan control (6).

(8) 1 & 2 (3 & 4) (Submaster Assign Switches): When depressed, these switches route the Return signal to the respective submasters. Returns 1 & 2 are assignable to Submasters 1 & 2. Returns 3 & 4 are assignable to Submasters 3 & 4. Submaster Assign signals are not affected by the Pan control (6). The application of these controls is the same as on the Standard Input Channels (see Standard Input Channel Controls on page 3).

SUBMASTER CONTROLS

<ul style="list-style-type: none"> <input type="radio"/> +12 <input type="radio"/> +9 <input type="radio"/> +6 <input type="radio"/> +3 <input type="radio"/> 0 <input type="radio"/> -6 <input type="radio"/> -15 	(1)
<input type="checkbox"/> sub 1 <input type="checkbox"/> send 1	(2)
send 1 	(3)
<input type="checkbox"/> solo	(4)
return 1 	(5)
pan 	(6)
<input type="checkbox"/> L-R	(7)
<input type="checkbox"/> 1	(8)
<input type="checkbox"/> 2	(8)
pan 	(9)
<input type="checkbox"/> mute	(10)
<input type="checkbox"/> L-R	(11)
<input type="checkbox"/> solo	(12)

(13)

(9) Pan: This control determines the amount of submaster signal received by the Left or Right Main, when selected with the Main Assign switch (11). The application of these controls is the same as on the Standard Input Channels (see Standard Input Channels on page 3).

(10) Mute: When depressed, this switch turns off submaster signal sent to the respective Submaster output, the Left & Right Mains, and the Meter Select switch (2). The adjacent red LED indicates when Mute is active. Mute does not affect Solo (12) or the submaster Patch (see Submaster Connectors on page 11).

(11) L-R (Main Assign Switch): When depressed, this switch routes post-fader signal from the respective submaster to the Left & Right Mains (see Master Controls on page 9). The amount of submaster signal received by the Left or Right Main is determined by the Pan control (9). *NOTE:* An input channel or return signal may be assigned (in mono) to a submaster, which in turn may be assigned (in stereo) to the Left & Right Mains. *CAUTION:* If an input channel or return signal is assigned to a main output, *both directly and through a submaster*, an increase in level will occur.

(12) Solo: When depressed, this switch routes post-fader submaster signal to the Solo section for headphone monitoring (see Master Controls on page 8). Solo signal is affected by the Fader (13), but not by Mute (10) or the Main Assign switch (11). Therefore, submaster signal may be monitored even when the submaster is muted or unassigned, but not when the Fader is turned down.

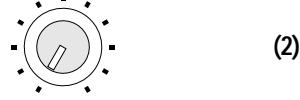
(13) Fader (not shown): This 100mm slide control adjusts the level of submaster signal sent to the respective Submaster output, the Left & Right Mains, the Meter Select switch (2), and Solo (12). Fader settings will vary from submaster to submaster, depending upon the desired mix. However, for best performance, higher Fader settings should center around the "0" mark (unity gain).

MASTER CONTROLS

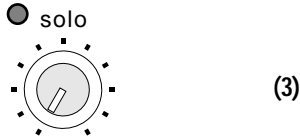


(1) **Headphone Output:** This 3-conductor 1/4" phone jack is for monitoring Left & Right Main and Solo signals. The Headphone output is designed for use with 600 ohm headphones. However, by using a special "Patch" cable, it may instead be used to feed a stereo sound system for control room monitoring (see Cables on page 14).

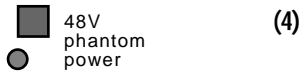
headphones



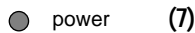
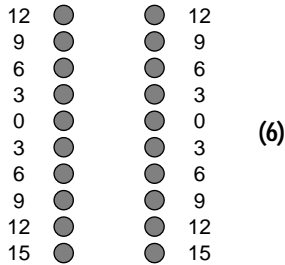
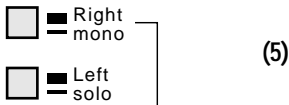
(2) **Headphones:** This control adjusts the overall level of signal sent to the Headphone Output. Headphones signal is normally stereo signal from the Left & Right Main outputs (see Master Connectors on page 12). However, it is automatically interrupted by mono signal from any Solo switches, which are engaged. Headphones signal level is also affected by the Left & Right Main Faders (8) and Solo (3).



(3) **Solo:** This control adjusts the level of Solo signal sent to the Headphones. Solo signal is a sum of all signals from channel, submaster, and send output Solo switches, which are engaged. The Solo control is used to compensate for differences in level between the various Solo signals, and the Left & Right Main signals, in the headphones. The adjacent red LED indicates when any Solo switches are engaged. The Solo control does not affect Solo metering. Therefore, channel Solo switches, and the Meter Select switches (5), may be used to provide direct metering of individual channel signals.



(4) **48V Phantom Power:** When depressed, this switch supplies +48 volts DC to both pins 2 & 3 of the channel Mic input jacks (see Standard Input Channel Connectors on page 10). Phantom Power allows operation of condenser microphones and active direct boxes, which require power from the mixing console. Normal dynamic microphones will not be affected by the Phantom Power voltage. Phantom Power does not appear at the Line input jacks. The adjacent yellow LED indicates when Phantom Power is on. *CAUTION: To avoid possible damage to the sound system, always turn levels down before switching Phantom Power or making connections to the mixing console.*



L R mono

(8)

MASTER CONTROLS



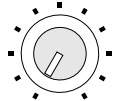
(1)

headphones

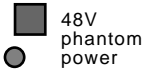


(2)

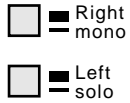
● solo



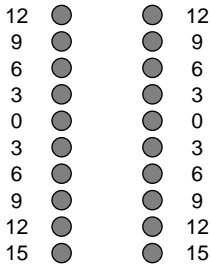
(3)



(4)



(5)



(6)

● power

(7)

L R mono

(8)

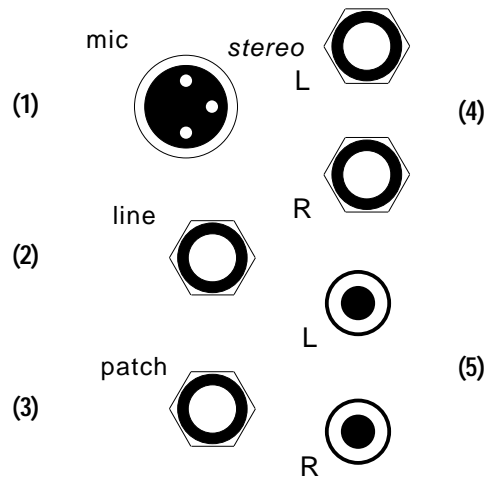
(5) **Left/Solo & Right/Mono (Meter Select Switches):** When released, each switch routes the respective Left or Right Main output signal to that Meter. When the associated switches are depressed, Solo signal is routed to the left Meter and Mono Main output signal is routed to the right Meter. (See Master Connectors on page 12.)

(6) **Meters:** These ten-segment, peak reading LED meters display signal level for the Left & Right Main outputs or Solo & the Mono Main output, depending upon the position of the Meter Select switches (5). Meter readings of "0" indicate output levels of +4dBu. When the red "+12" indicator flashes, 11dB of headroom remains before clipping. Headroom is reduced by 6dB when outputs are used unbalanced. (See Master Connectors on page 12.)

(7) **Power:** This green LED indicates when power is applied to the mixing console (see Power on page 13).

(8) **Left, Right, & Mono Main Faders (not shown):** These 100mm slide controls adjust the level of signal sent to the respective Main outputs, as well as to the Meter Select switches (5). The Left & Right Main Faders also affect signal levels at the Mono Main and Left & Right Tape outputs. The Mono Main signal is a sum of the Left & Right Main signals. (See Master Connectors on page 12.)

INPUT CHANNEL CONNECTORS



STANDARD INPUT CHANNEL

(1) Mic: These 3-pin XLR jacks are for connection of signals, from low-impedance microphones and direct boxes, to the respective channel inputs. Mic inputs provide a balanced transformerless input wired to DIN standard, with pin 2 high (+), pin 3 low (-), and pin 1 common (ground) (see Cables on page 14). Phantom Power voltage may be sent to the Mic input jacks, to allow operation of condenser microphones and active direct boxes (see Master Controls on page 8). *CAUTION:* To avoid possible damage to the sound system, *always turn levels down before switching Phantom Power or making connections to the mixer.*

(2) Line: These 3-conductor 1/4" phone jacks are for connection of signals, from line level devices, to the respective channel inputs. Line level devices include effects units, tape decks, wireless microphones, synthesizers, drum machines, other mixers, etc. Line input jacks provide for proper connection of either balanced (3-conductor) or unbalanced (2-conductor) signals, with Tip high (+), Ring low (-), and Sleeve common (ground) (see Cables on page 14).

(3) Patch: These 3-conductor 1/4" phone jacks are post-EQ/pre-fader insert points, for connection of outboard signal processing devices to the respective channels. Patch jacks are wired with Tip send (output), Ring return (input), and Sleeve common (ground). Special "Patch" cables are required, which allow signal to leave the channel, be processed, and then return to the channel. Patch jacks also may be used as pre-fader direct outputs to feed other devices, such as multi-track tape recorders. To accomplish this, without interrupting the

channel signal, connect to Patch with Tip & Ring high (+) and Sleeve common (ground). A standard 2-conductor 1/4" phone cable may be used to extract signal from Patch, however, this will interrupt the channel signal before it reaches the Fader. (See Cables on page 14.) Patch signals are not affected by the Faders (see Standard Input Channel Controls on page 3).

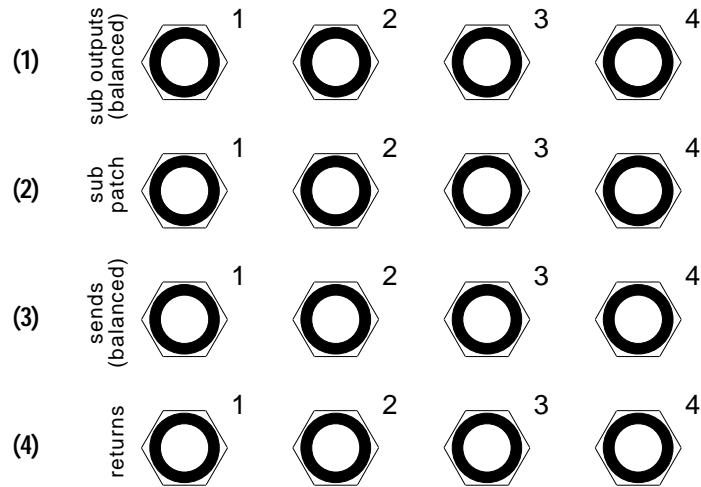
STEREO INPUT CHANNEL

(4) L & R (1/4" Phone Inputs): These 3-conductor 1/4" phone jacks are for connection of stereo signals, from line level devices, to the stereo channel inputs. Line level devices include effects units, tape decks, synthesizers, drum machines, other mixers, etc. This pair of Input jacks provides for proper connection of either balanced (3-conductor) or unbalanced (2-conductor) signals, with Tip high (+) and Ring low (-), and Sleeve common (ground) (see Cables on page 14).

(5) L & R (RCA Phono Inputs): These 2-conductor RCA phono jacks are for connection of stereo signals, from line level devices, to the stereo channel inputs. Line level devices include effects units, tape decks, synthesizers, drum machines, other mixers, etc. This pair of Input jacks provides for proper connection of either balanced (3-conductor) or unbalanced (2-conductor) signals, with Tip high (+) and Sleeve low (-). *NOTE:* When connecting balanced signals, *use only the high (+) and low (-) conductors.* If connection of the common (ground) is necessary, due to increased noise, connect to chassis.

CAUTION: To avoid increased distortion, do not attempt to utilize both pairs of input jacks simultaneously. Only one stereo input signal should be connected at any time.

SUBMASTER CONNECTORS



(1) Sub Outputs 1-4 (balanced): These 3-conductor 1/4" Phone jacks are for connection of the respective submaster output signals to the inputs of sound system amplifiers, multi-track tape recorders, effects devices, etc. Sub Outputs provide proper connection for either balanced (3-conductor) or unbalanced (2-conductor) signals, with Tip high (+), Ring low (-), and Sleeve common (ground) (see Cables on page 14). Each Sub Output contains only the channel and return signals, which have been assigned to that submaster, as well as any signal processing applied at the respective Sub Patch jack (2). The function of these outputs is determined by how signals are assigned to them (see Standard Input Channel Controls on page 3). Submaster Output signals are affected by the respective Mute and Fader functions (see Submaster Controls on page 7).

(2) Sub 1-4 Patch: These 3-conductor 1/4" phone jacks are pre-fader insert points, for connection of outboard signal processing devices to the respective submasters. Sub Patch jacks are wired with Tip send (output), Ring return (input), and Sleeve common (ground). Special "Patch" cables are required, which allow signal to leave the submaster, be processed, and then return to the submaster. Sub Patch jacks also may be used as pre-fader outputs. To accomplish this, without interrupting the submaster signal, connect to Sub Patch with Tip & Ring high (+) and Sleeve common (ground). A standard

2-conductor 1/4" phone cable may be used to extract signal from Sub Patch, however, this will interrupt the submaster signal before it reaches the Fader. (See Cables on page 14.) Sub Patch signals are not affected by Mute or the Faders (see Submaster Controls on page 7).

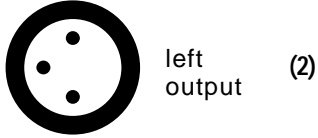
(3) Sends 1-4 (balanced): These 3-conductor 1/4" phone jacks are for connection of the respective Send output signals to the inputs of effects devices, tape decks, stage monitors, other sound systems, etc. Sends 1-4 provide proper connection for either balanced (3-conductor) or unbalanced (2-conductor) signals, with Tip high (+), Ring low (-), and Sleeve common (ground) (see Cables on page 14). Each Send output contains only signals from the respective channel aux sends. Send output signals are affected by the respective Send controls (see Submaster Controls on page 6).

(4) Returns 1-4: These 2-conductor 1/4" phone connectors are for connection of unbalanced signals, from line level devices, to the respective Return inputs. Line level devices include effects units, tape decks, wireless microphones, synthesizers, drum machines, other mixers, etc. Return inputs are wired with Tip high (+) and Sleeve common (ground). Return signal is affected by the respective Return controls (see Submaster Controls on page 6).

MASTER CONNECTORS



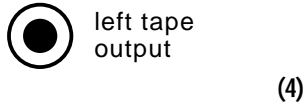
mono output (1)



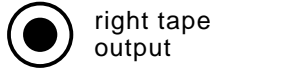
left output (2)



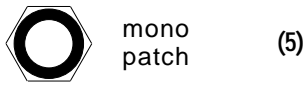
right output (3)



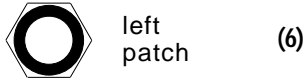
left tape output (4)



right tape output (4)



mono patch (5)



left patch (6)



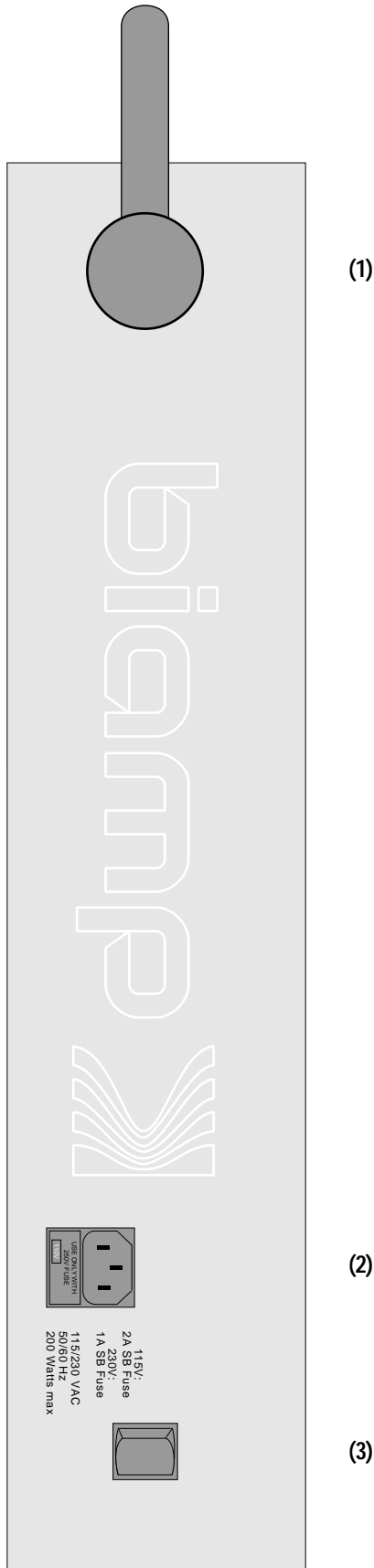
right patch (7)

(1)(2)(3) Mono, Left, & Right Outputs: These 3-conductor XLR jacks are for connection of the respective Main output signals to the inputs of sound system amplifiers, tape recorders, etc. Main Outputs are electronically balanced and are wired to DIN standard, with pin 2 high (+), pin 3 low (-), and pin 1 common (ground) (see Cables on page 14). For unbalanced use, wire cables with pin 2 high (+) and both pins 3 & 1 common (ground). The Left & Right Main Outputs contain only the channel, submaster, and return signals, which have been assigned to them, as well as any signal processing applied at the respective Main Patch jacks (6)(7). The Mono Main Output contains a sum of all Left & Right Main Output signals, as well as any signal processing applied at the respective Main Patch jack (5). Typically, the Left & Right Main Outputs are used for stereo applications (recording), and the Mono Main Output is used for mono applications (live sound reinforcement). However, the function of these outputs is determined by how signals are assigned to them (see Standard Input Channel Controls on page 3). Main Output signals are affected by the Faders (see Master Controls on page 9).

(4) Left & Right Tape Outputs: These 2-conductor RCA phono jacks provide unbalanced post-fader output signals from the respective Left & Right Mains, and are wired with Tip high (+) and Sleeve common (ground). Left & Right Tape Output signals have a nominal level of -10dB, suitable for cassette decks and other consumer equipment.

(5)(6)(7) Mono, Left, & Right Patch (Main Patch): These 3-conductor 1/4" phone jacks are pre-fader insert points, for connection of outboard signal processing to the respective Main Outputs. Main Patch jacks are wired with Tip send (output), Ring return (input), and Sleeve common (ground). Special "Patch" cables are required, which allow signal to leave the respective main, be processed, and then return to that main. Main Patch jacks also may be used as pre-fader outputs. To accomplish this, without interrupting the main signal, connect to a Main Patch with Tip & Ring high (+) and Sleeve common (ground). A standard 2-conductor 1/4" phone cable may be used to extract signal from a Main Patch, however, this will interrupt the main signal before it reaches the Fader. (See Cables on page 14.) Main Patch signals are not affected by the Faders (see Master Controls on page 9).

POWER

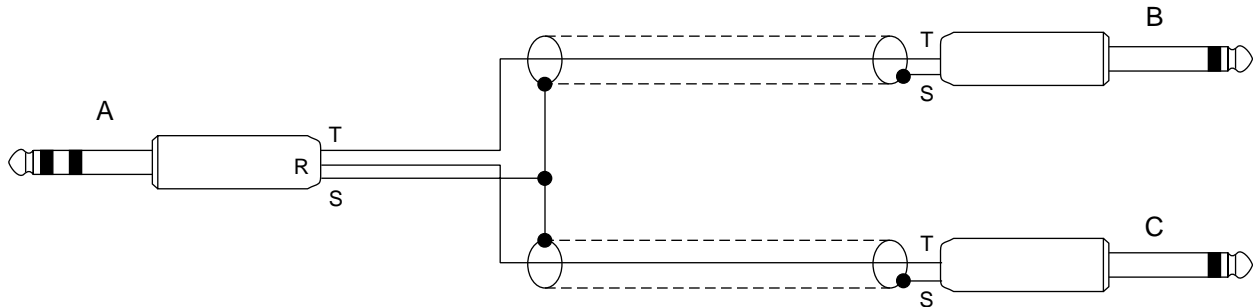


(1) Handle: This carrying handle is designed to provide portability. However, while the mixing console is in use, the handle may be positioned underneath as a prop or it may be positioned above the connector panel to help manage cables. To adjust the handle, first loosen the knobs on each side, re-position the handle, and tighten the knobs.

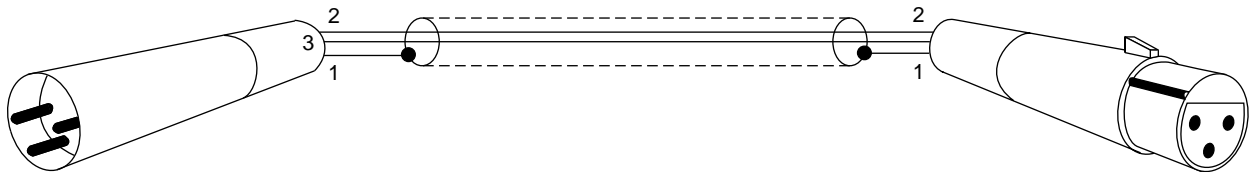
(2) AC Power Entrance: This receptacle accepts the detachable AC Power Cord. The AC Power Cord is for connection to three-prong grounded AC outlets. *CAUTION: Do not remove or defeat the ground prong on the AC Power Cord, as this constitutes a shock hazard.* The Fuse Clip may be removed by first detaching the AC Power Cord, then prying the Fuse Clip out from above, using a flat-blade screwdriver in the notch provided. The Fuse Clip contains both the standard fuse and an alternate fuse. The standard fuse is held in the clip, and becomes the actual AC fuse when the Fuse Clip is installed. Replace the standard fuse only with the same value and type (2A SB for 110 VAC operation or 1A SB for 240 VAC operation). The alternate fuse, held in a drawer inside the Fuse Clip, is provided only for use at the alternate operational voltage setting. If it is necessary to change the operational voltage, first slide the voltage selector out of the left side of the Fuse Clip. Turn the voltage selector over, and slide it back into the Fuse Clip, making sure the desired voltage selection is visible through the voltage window. Then change the standard fuse value (2A SB for "110V" or 1A SB for "240V"), before re-installing the Fuse Clip.

(5) Power Switch: This switch turns the mixing console on. If the Power indicator on the front panel does not light and the mixing console does not pass signal properly, turn the mixing console off, disconnect AC power, and check/replace the AC fuse. If the AC fuse is intact, then check the power connections (and possibly another AC outlet). If the problem still exists, the mixing console may need service.

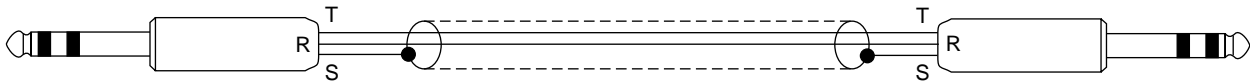
CABLES



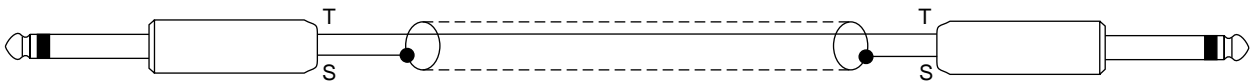
Patch Cable: This type of cable uses a Tip/Ring/Sleeve 1/4" phone connector on one end and Tip/Sleeve 1/4" phone (or RCA phono) connectors on the other two ends. It is wired with Tip A to Tip B, Ring A to Tip C, and Sleeve A to Sleeve B & C (ground). When connected to a Patch jack, Tip B is the send (output) and Tip C is the return (input) of the channel. When used to provide a stereo line output from the Headphone jack, Tip B is the Left output and Tip C is the Right output.



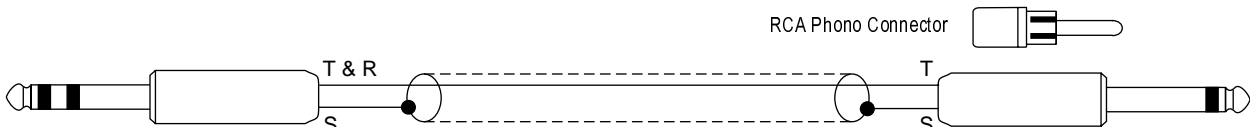
Balanced XLR Cable: This type of cable uses a male XLR connector on one end and a female XLR connector on the other end. It is wired with Pin 2 to Pin 2 (+), Pin 3 to Pin 3 (-), and Pin 1 to Pin 1 (ground). Use these cables when connecting *balanced* signals at the channel Mic inputs or the Main outputs. When making unbalanced connections to the Main outputs, wire cables with Pin 2 (+) and both Pins 3 & 1 (ground). For proper connection to outboard equipment, it may be necessary to use a Tip/Ring/Sleeve 1/4" phone connector on one end of the cable, wired with Pin 2 to Tip (+), Pin 3 to Ring (-), and Pin 1 to Sleeve (ground). For *unbalanced* outputs, use a Tip/Sleeve connector wired with Pin 2 to Tip (+) and both Pins 3 & 1 to Sleeve (ground).



Balanced 1/4" Phone Cable: This type of cable uses Tip/Ring/Sleeve connectors on each end and is wired with Tip to Tip (+), Ring to Ring (-), and Sleeve to Sleeve (ground). Use these cables when connecting *balanced* signals at channel Line inputs or Submaster & Send outputs. For proper connection to outboard equipment, it may be necessary to use an XLR connector on one end of the cable, wired with Tip to Pin 2 (+), Ring to Pin 3 (-), and Sleeve to Pin 1 (ground).



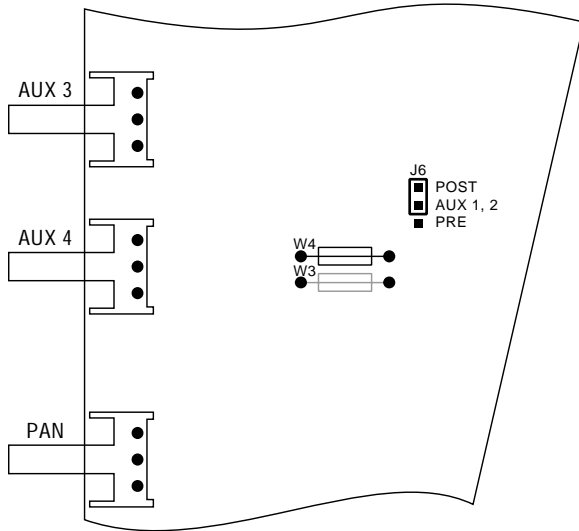
Unbalanced 1/4" Phone Cable: This type of cable uses Tip/Sleeve connectors on each end and is wired with Tip to Tip (+) and Sleeve to Sleeve (ground). Use these cables when connecting *unbalanced* signals at channel Line inputs, Submaster & Send outputs, or Return inputs. This type of cable also may be used to extract signal from any Patch jack, however, *this will interrupt signal before it reaches the fader*. For proper connection to outboard equipment, it may be necessary to use an RCA phono connector on one end of the cable (wiring is the same). RCA phono connectors may be used at both ends of this type of cable, for connection of *unbalanced* signals at the stereo channel inputs and the Left & Right Tape Outputs.



Tip/Ring/Sleeve to Tip/Sleeve 1/4" Phone Cable: This type of cable uses a Tip/Ring/Sleeve 1/4" phone connector on one end and a Tip/Sleeve 1/4" phone connector on the other end. It is wired with Tip & Ring to Tip (+) and Sleeve to Sleeve (ground). Use this cable to extract signal from any Patch jack, *without interrupting signal*. This allows Patch jacks to be used as pre-fader direct outputs. For proper connection to outboard equipment, it may be necessary to use an RCA phono connector on one end of the cable.

MODIFICATIONS

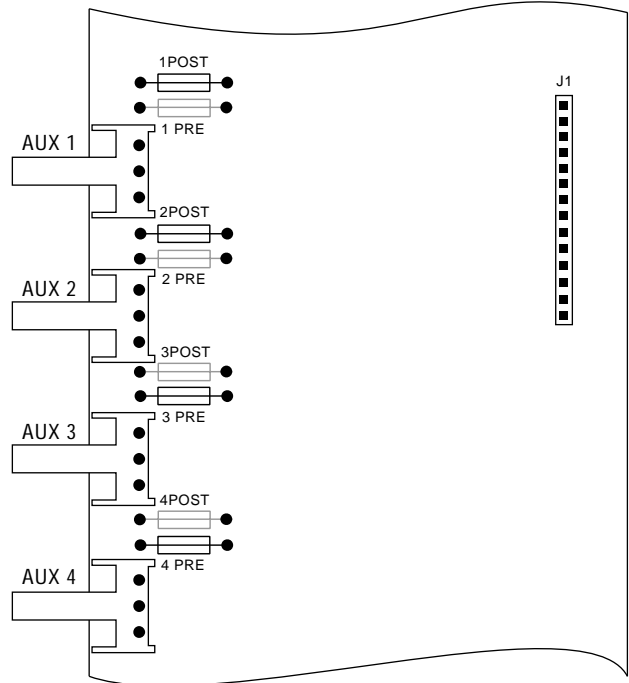
Diagram A



Standard Input Channel

Aux Sends (Post-Fader or Pre-Fader): Aux Sends 1 & 2 are factory set for post-fader operation. Aux Sends 3 & 4 are factory set for pre-fader operation. These sends may be modified in pairs, *not individually*, on the standard input channels. (See NOTE below.) **Aux 1 & 2 to Pre-Fader:** On the standard input channel circuit boards, behind the Aux 4 level control, there is a movable jumper strap labelled "J6" (see Diagram A). Using a pair of needle-nose pliers, remove jumper strap "J6" from the "POST" position (center and top pins) and reinstall the jumper strap at the "PRE" position (center and bottom pins). This modification changes both Aux 1 and Aux 2 from Post-Fader operation to Pre-Fader operation. **Aux 3 & 4 to Post-Fader:** On the standard input channel circuit boards, behind the Aux 4 level control, there is a soldered jumper (0 ohm resistor) labelled "W4" (see Diagram A). Using a lower wattage (35W) soldering iron, remove the jumper from the "W4" position and reinstall the jumper at the "W3" position (directly below). This modification changes both Aux 3 and Aux 4 from Pre-Fader operation to Post-Fader operation.

Diagram B



Stereo Input Channel

Aux Sends (Post-Fader or Pre-Fader): Aux Sends 1 & 2 are factory set for post-fader operation. Aux Sends 3 & 4 are factory set for pre-fader operation. These sends may be *individually* modified on the stereo input channel. (See NOTE below.) On the stereo input channel circuit boards, directly above each Aux Send level control, there are two jumper positions (see Diagram B). The top position is labelled "POST" (post-fader) and the bottom position is labelled "PRE" (pre-fader). Only one position is occupied with a jumper, and this position determines the assignment for the adjacent Aux Send. To modify any given Aux Send, remove the associated jumper from its present position and reinstall the jumper at the desired position, using a lower wattage (35W) soldering iron.

NOTE: Additional jumpers and wiring pads are provided on these circuit boards, which facilitate more complex modifications (i.e...accessing Aux Sends individually; sourcing channel Pre-EQ signal; etc.). Please contact Biamp Systems for technical assistance.

CAUTION: Modifications should be performed only by a qualified technician. To avoid damage, do not use excessive heat or solder. Restrict soldering to the rear side of the circuit boards. Some modifications may require removal of the individual channel circuit boards.

SPECIFICATIONS

MICROPHONE PREAMPLIFIERS:

Frequency Response (20Hz-20kHz @ +4dBu)	+0/-1dB
Total Harmonic Distortion (20Hz-20kHz @ +4dBu, 40dB gain)	<.02%
Intermodulation Distortion (SMPTE)	<.05%
Equivalent Input Noise (20Hz-20kHz, 150Ω termination)	-127dBu
Maximum Gain (Mic input)	48dB
Maximum Gain (Line input)	31dB
Trim Control Range	40dB
Input Impedance (Mic/balanced)	2kΩ
Input Impedance (Line/balanced)	10kΩ
Maximum Input (Mic)	+11dBu
Maximum Input (Line)	+26dBu
Phantom Power	+48 Volts DC

INPUT CHANNEL EQUALIZATION:

High EQ	+/-15dB @ 10kHz
Mid EQ	+/-12dB @ 2kHz
Low EQ	+/-15dB @ 80Hz

STEREO INPUT CHANNEL:

Frequency Response (20Hz-20kHz @ +4dBu)	+0/-1dB
Total Harmonic Distortion (20Hz-20kHz @ +4dBu, 10dB gain)	<.01%
Intermodulation Distortion (SMPTE)	<.01%
Input Impedance (Line/balanced)	20kΩ
Maximum Gain	30dB
Trim Control Range	25dB
Maximum Input	+21dBu
High EQ	+/-10dB @ 10kHz
Low EQ	+/-10dB @ 100Hz

MIXER SECTION:

Frequency Response (20Hz-20kHz @ +4dBu)	+0/-1dB
Total Harmonic Distortion (20Hz-20kHz @ +4dBu, unity gain)	<.02%
Intermodulation Distortion (SMPTE)	<.05%
Noise Floor (Submasters/Mains) (0Hz-30kHz @ unity gain)	-88dBu
Crosstalk (Channel-to-Channel @ 1kHz)	-77dB
Crosstalk (Channel-to-Channel @ 10kHz)	-77dB
Crosstalk (Submaster-to-Submaster @ 1kHz)	-77dB
Crosstalk (Submaster-to-Submaster @ 10kHz)	-58dB
Input Impedance (Returns/unbalanced)	10kΩ
Input Impedance (Patch/unbalanced)	3kΩ
Output Impedance (Sends, Submasters, & Mains/balanced)	100Ω
Output Impedance (Patch/unbalanced)	50Ω
Output Impedance (Tape/unbalanced)	600Ω
Maximum Output (Sends, Submasters, & Mains/balanced)	+27dBu
Maximum Output (Patch/unbalanced)	+21dBu
Maximum Output (Tape/unbalanced)	+13dBu
Maximum Output (Headphones/each side)	+18dBm
Minimum Load Impedance (Sends, Submasters, & Mains)	600Ω
Minimum Load Impedance (Patch)	2kΩ
Minimum Load Impedance (Tape)	2kΩ
Minimum Load Impedance (Headphones/each side)	600Ω

AC POWER REQUIREMENTS (115/230VAC @ 50/60Hz)

85 Watts max.

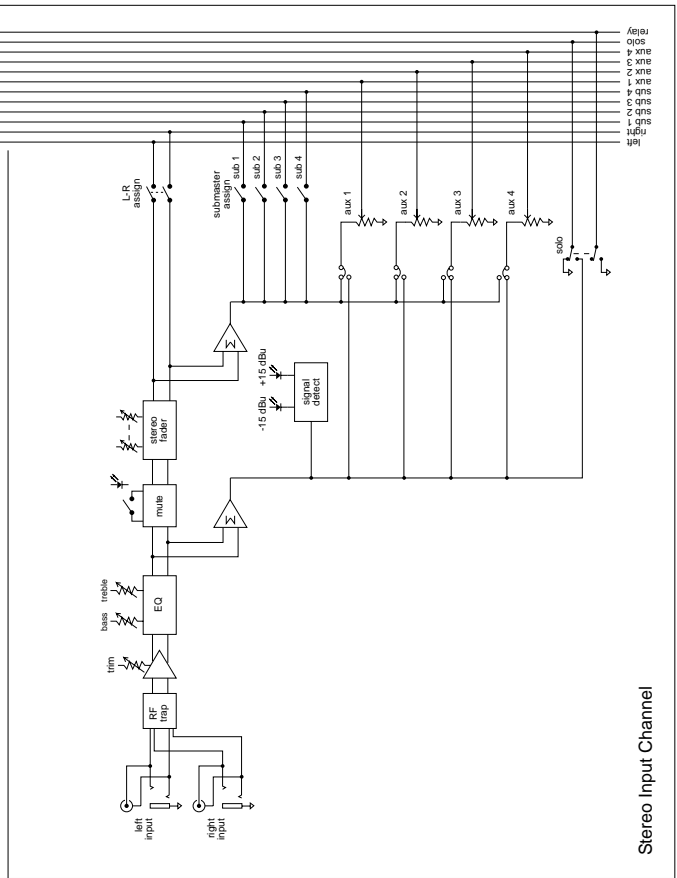
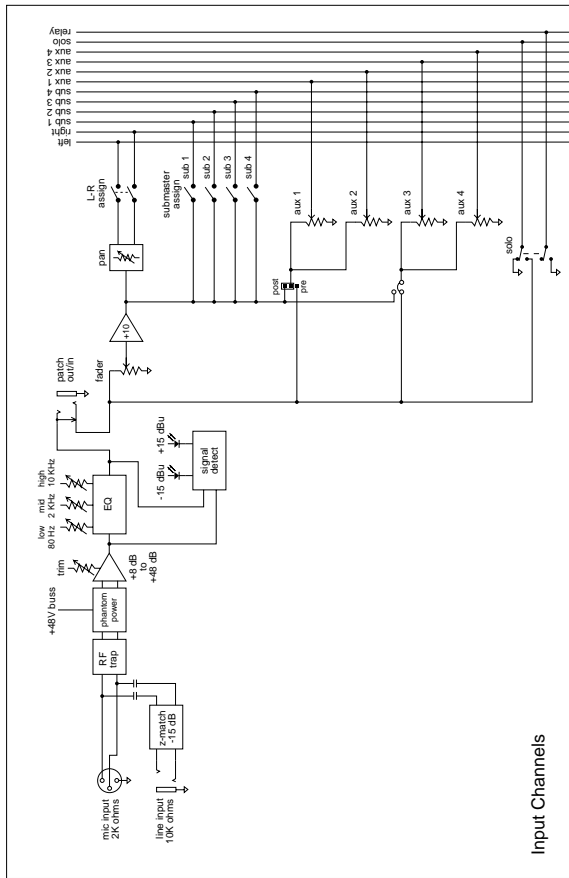
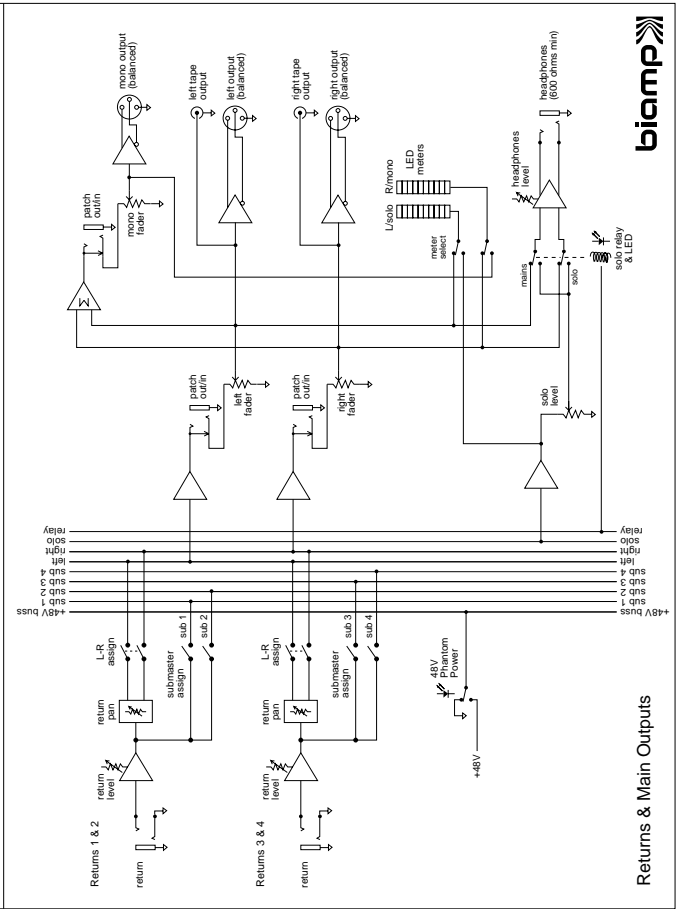
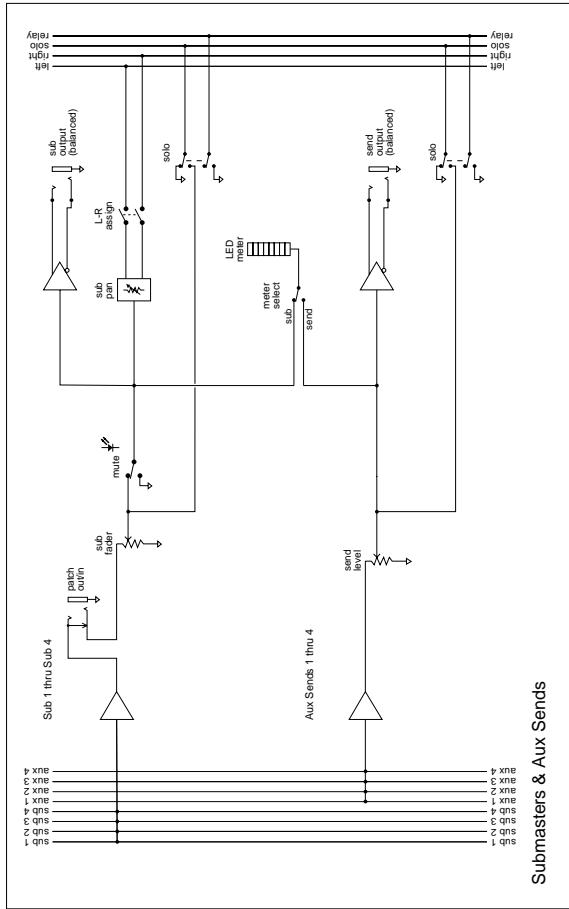
DIMENSIONS (HxWxD) (inches)

(16 Channel)	4.5 x 30.5 x 22.75
(24 Channel)	4.5 x 35 x 22.75

WEIGHT (lbs.)

(16 Channel)	38
(24 Channel)	45

NEWPORT BLOCK DIAGRAM



biamp

WARRANTY

BIAMP IS PLEASED TO EXTEND THE FOLLOWING 1-YEAR LIMITED WARRANTY TO THE ORIGINAL PURCHASER OF THE PROFESSIONAL SOUND EQUIPMENT DESCRIBED IN THIS OWNER'S MANUAL.

BIAMP Systems expressly warrants this product to be free from defects in material and workmanship for a period of 1 YEAR from the date of purchase as a new product from an authorized BIAMP dealer under the following conditions.

1. The Purchaser is responsible for completing and mailing to BIAMP, within 10 days of purchase, the attached warranty application.

2. In the event the warranted BIAMP product requires service during the warranty period, BIAMP will repair or replace, at its option, defective materials, provided you have identified yourself as the original purchaser of the product to any authorized BIAMP Service Center. Transportation and insurance charges to and from an authorized Service Center or the BIAMP factory for warranted products or components thereof to obtain repairs shall be the responsibility of the Purchaser.

3. This warranty will be VOIDED if the serial number has been removed or defaced; or if the product has been subjected to accidental damage, abuse, rental usage, alterations, or attempted repair by any person not authorized by BIAMP to make repairs; or if the product has been installed contrary to BIAMP's instructions.

4. The normal wear and tear of appearance items such as paint, knobs, handles, and covers is not covered under this warranty.

5. BIAMP SHALL NOT IN ANY EVENT BE LIABLE FOR SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING LOST PROFITS, LOSS OF USE, PROPERTY DAMAGE, INJURY TO GOODWILL, OR OTHER ECONOMIC LOSS OF ANY SORT. EXCEPT AS EXPRESSLY PROVIDED HEREIN, BIAMP DISCLAIMS ALL OTHER LIABILITY TO PURCHASER OR ANY OTHER PERSONS ARISING OUT OF USE OR PERFORMANCE OF THE PRODUCT, INCLUDING LIABILITY FOR NEGLIGENCE OR STRICT LIABILITY IN TORT.

6. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. BIAMP EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES SET FORTH HEREIN SHALL BE THE PURCHASER'S SOLE AND EXCLUSIVE REMEDIES WITH RESPECT TO ANY DEFECTIVE PRODUCT. THE AGENTS, EMPLOYEES, DISTRIBUTORS, AND DEALERS OF BIAMP ARE NOT AUTHORIZED TO MODIFY THIS WARRANTY OR TO MAKE ADDITIONAL WARRANTIES BINDING ON BIAMP. ACCORDINGLY, ADDITIONAL STATEMENTS SUCH AS DEALER ADVERTISEMENTS OR REPRESENTATIONS DO NOT CONSTITUTE WARRANTIES BY BIAMP.

7. No action for breach of this warranty may be commenced more than one year after the expiration of this warranty.

Thank you for purchasing BIAMP...
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