

Laney

CA SERIES

Power Amplifiers

OPERATING MANUAL

V1

INTRODUCTION

Congratulations on your decision to purchase a **Laney** amplifier.

Laney products are designed with ease of operation as a primary objective, however to ensure you derive the best from your new amplifier, it is important you take time to read this user manual and to familiarise yourself with the control functions and facilities available

BEFORE SWITCHING ON

After unpacking your amplifier check that it is factory fitted with a three pin 'grounded' (or earthed) plug. Before plugging into the power supply ensure you are connecting to a grounded earth outlet.

If you should wish to change the factory fitted plug yourself, ensure that the wiring convention applicable to the country where the amplifier is to be used is strictly conformed to. As an example in the United Kingdom the cable colour code for connections are as follows.

EARTH OR GROUND - GREEN/YELLOW
NEUTRAL - BLUE
LIVE - BROWN

This manual has been written for easy access of information. The front and rear panels of each unit are graphically illustrated, with each control and feature numbered. For a description of the function of each control feature, simply check the number with the explanations adjacent to each panel.

When you first receive your **Laney** CA amp, follow these simple procedures:

- (i) Ensure that the amplifier is set at the correct voltage for the country it is to be used in.
- (ii) Connect your instrument with a high quality shielded instrument cable. Use of cheap cables will compromise the sound of your instrument and your amplifier.

If there is a problem with your **Laney** CA amplifier

DON'T



DO



PHONE YOUR DEALER!

Care of your **Laney** amplifier will prolong it's life.....and yours!.

IMPORTANT SAFETY INSTRUCTIONS

WARNING: When using electric products, basic cautions should always be followed, including the following.

1. Read all safety and operating instructions before using this product
2. All safety and operating instructions should be retained for future reference
3. Obey all cautions in the Operating instructions and on the back of the unit
4. All operating instructions should be followed
5. This product should not be used near water, i.e. a bathtub, sink, swimming pool, wet basement, etc.
6. This product should be located so that its position does not interfere with its proper ventilation. It should not be placed flat against a wall or placed in a built up enclosure that will impede the flow of cooling air.
7. This product should not be placed near a source of heat such as stove, radiator, or another heat producing amplifier.
8. Connect only to a power supply of the type marked on the unit adjacent to the power supply cord.
9. Never break off the ground pin on a power supply cord.
10. Power supply cords should always be handled carefully. Never walk or place equipment on power supply cords. Periodically check cords for cuts or signs of stress, especially at the plug and the point where the chord exits the unit.
11. The power supply cord should be unplugged when the unit is to be unused for long periods of time.
12. If this product is to be mounted in an equipment rack, rear support should be provided.
13. Metal parts can be cleaned with a damp cloth. The vinyl covering used on some units can be cleaned with a damp cloth or ammonia based household cleaner if necessary. Disconnect the unit from the power supply before cleaning.
14. Care should be taken so that objects do not fall and liquids are not spilled into the unit through any ventilation holes or openings.
15. A qualified service technician should check the unit if:
 - The power cord has been damaged
 - Anything has fallen or spilled into the unit
 - The unit does not appear to operate correctly
 - The unit has been dropped or the enclosure damaged.
16. The user should not attempt to service the equipment. All service work is done by a qualified service technician.
17. Exposure to extremely high noise levels may cause a permanent hearing loss. Individuals vary considerably in susceptibility to noise induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. The U.S. Government's Occupational Safety and Health Administration (OSHA) has specified the following permissible noise level exposure.

Duration Per Day In Hours	Sound Level dBA, slow response
8	90
6	92
4	95
3	97
2	100
1 ½	102
1	105
½	110
¼ or less	115

According to OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Ear plugs or protectors in the ear canals or over the ears must be worn when operating this amplification system in order to prevent a permanent hearing loss if exposure exceeds the limits set forth above. To ensure against potentially dangerous exposure to high sound pressure levels it is recommended that all persons exposed to equipment capable of producing high sound pressure levels such as this amplification system be protected by hearing protectors while this unit is in operation.



Lightning Bolt Symbol:
This symbol is used to alert the user to the presence of dangerous voltages and the possible risk of electric shock.



Exclamation Mark Symbol:
This symbol is used to alert the user to make special note of important operating or maintenance instructions found in the reference manual.

Introduction

The CA range of amplifiers use a new power output topology. This enables a design which has all the high efficiency benefits of a class D type digital topology but without the usual drawbacks of poor distortion and difficult to control EMC problems. The CA design uses microprocessor-controlled high frequency switching of state of the art output power FETs.

Most switching amplifiers work at frequencies of around 200kHz. The CA runs at varying rates depending on the input signal from 600kHz to 1.2Mhz. This has many benefits both to efficiency and sonic performance.

The heart of the design uses thick film technology for high reliability and consistency. The power supply is a conventional massive oversized toroidal design avoiding the problems of instant transient power delivery and unreliability associated with many switch mode designs.

Due to the very high efficiency (typically 85-90%), noisy unreliable, fans are eliminated in favor of an aluminium chassis and side mounted heat-sink extrusions.

The amplifier has the unique ability to look like a near perfect "audio modulated" power supply. This gives big advantages when driving difficult loads where impedance's vary over the frequency spectrum the CA amplifier is unaffected and drives the loads much more perfectly giving a dramatically improved performance to many speaker systems.

The amplifiers also contain microprocessor controlled soft clipping and user switchable limiter* circuitry.

*(Factory fitted option only together with VCA control - Part Number LMT3000)

Speakon(TM) connectors are used for the outputs and a combination of electronically balanced XLR/Jack inputs. The input gain is internally selectable by jumper links from +4dBu to 0dbu or to 26dB gain. (See later for description) There are also input level controls on the fascia panel to attenuate down from the preset levels with associated five band LED level displays.

The rear panel features bridge /mono mode switching and a signal earth lift.

The amplifier avoids the use of conventional unreliable fuses and uses automatically resetting devices for the internal electronics and a front panel mounted manual re-settable overload cutout.

Protection circuitry covers over and under voltage operation, short /open circuit load conditions, DC Voltage and excessive input signals.

Soft start circuitry is included to reduce switch on surges from the mains power. Automatic output muting is included to avoid extraneous noise appearing at the speakers at turn on and turn off from the amplifier or other units in the sound system.

Much work has been carried out to ensure EMC compliance is well within European and US standards for present and future standards.

Three models are currently available:

CA600
CA1500
CA3000

Applications include, use as recording studio monitor and stereo broadcast amplifier, Professional PA amplifier, and Esoteric hi-fi amplifier etc.

To gain maximum benefit from your amplifier please read and understand the instructions in this handbook. The amplifiers have been created to meet any condition you may use them for. Enjoy.

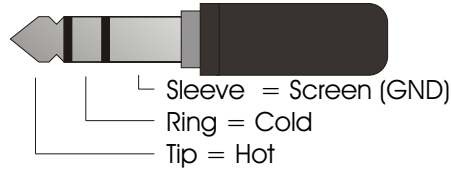
Input Wiring

The CA amplifier is factory set to +4dB input sensitivity, and internally selectable to either 0dB, +4dB or 26dB system. Setting the input sensitivity requires the removal of the top cover. If in any doubt, consult a qualified service engineer. For details on changing sensitivity setting see page 13

The 1/4" Jack and 3pin XLR inputs are wired in parallel,



- Pin1. Ground
- Pin2. Hot
- Pin3. Col



Tips.

1. For all input wiring use good quality shielded wire only. Cables with foil wrap shield or a high density braid are superior. Cables with stranded spiral shield, although flexible, will break down over time and cause noise problems.
2. Try to avoid unbalanced lines with professional equipment. If you have no choice, keep the cables as short as possible.
3. To minimise hum and crosstalk, avoid running low level input, high level output and AC power feeds in the same path. Try to run differing signal paths at 90 degrees to each other. If you must use a common path for all cables, use a star-quad cable for the low level signals.
4. When changing input connectors or wiring, Always turn the amplifier volume controls all the way down(anti-clockwise)
5. When changing output connectors, always turn the amplifier volume levels fully down, and preferably, switch off mains supply.

Output Wiring

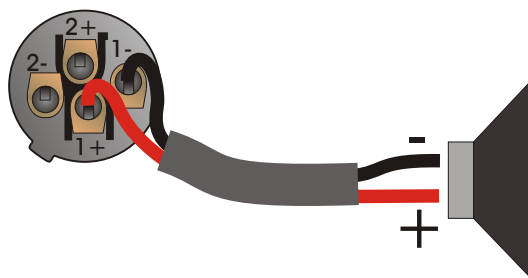
1. To maintain good bass response, Always use the lowest DC resistance cable you can afford which will terminate safely in your connector
- 2 To prevent short circuits, Always wrap or otherwise insulate exposed loudspeaker cable connectors.
3. Do not use connectors that could accidentally tie conductors together. Eg. Standard 1/4" jacks.
4. Never use connectors that could accidentally be plugged into an AC power outlet.
5. Avoid connectors with low current carrying capacity, such as XLRs
6. Never use the 2+,2- pins on the output speakon(tm) unless you specifically need them. Eg for biamping.

What gauge speaker wire should I use in my system? For the best speaker damping and least amount of power loss you will want to use the heaviest gauge that is practical. The length of the speaker wire should be considered when considering wire gauge. The shorter the run, the smaller gauge you can use with minimum power and damping factor loss. The longer the run, the heavier gauge you will need to minimise power and damping factor loss. You will also want to consider the size of power amplifier you are using. The larger the amplifier, the heavier gauge you will want to use. For general use consider 2mm² or above.

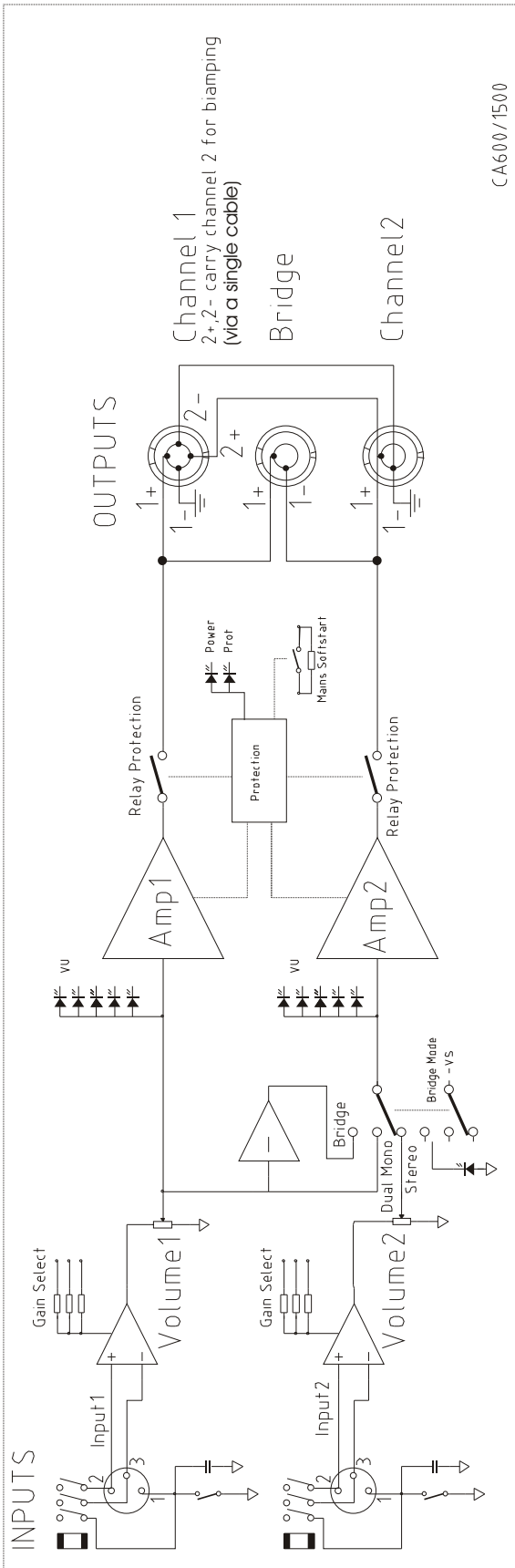
Can I run one channel of my CA Amplifier at a different impedance than the other channel?

Yes. All CA amplifiers can be treated as if they are two separate "mono" amplifiers (One channel completely independent of the other) For example: A CA1500 can function with a single 8 ohm speaker on channel one and two 8 ohm speakers on channel two.

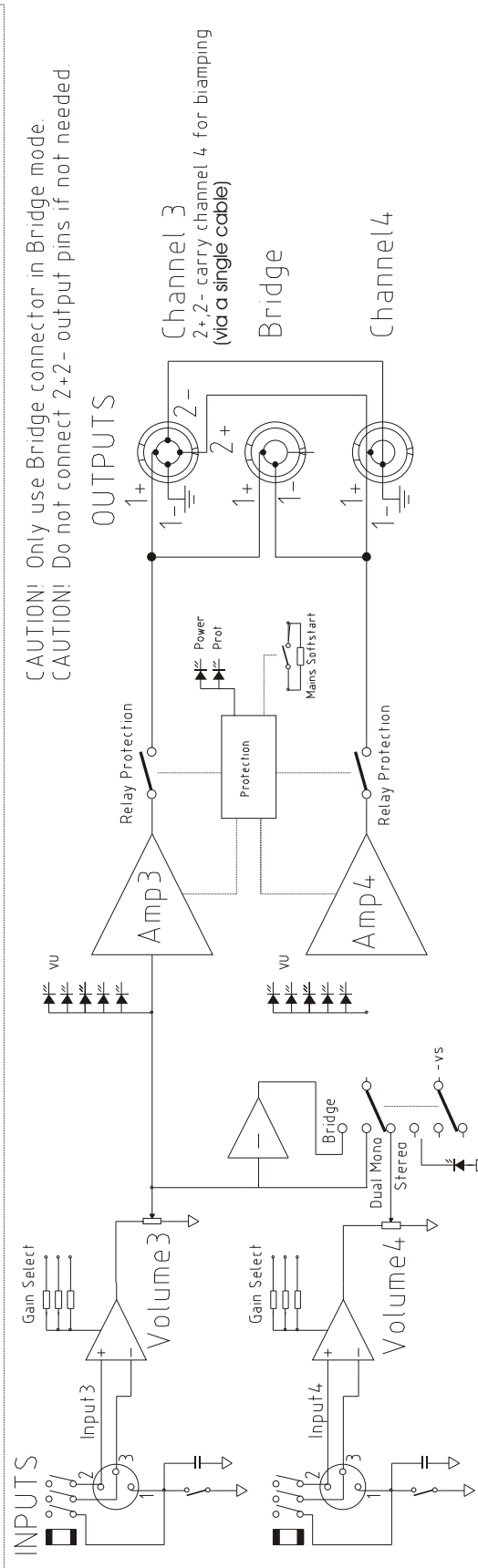
- **Pin configuration.** Wiring a standard Neutrik NL4 Speakon™ For normal operation.



System Diagram

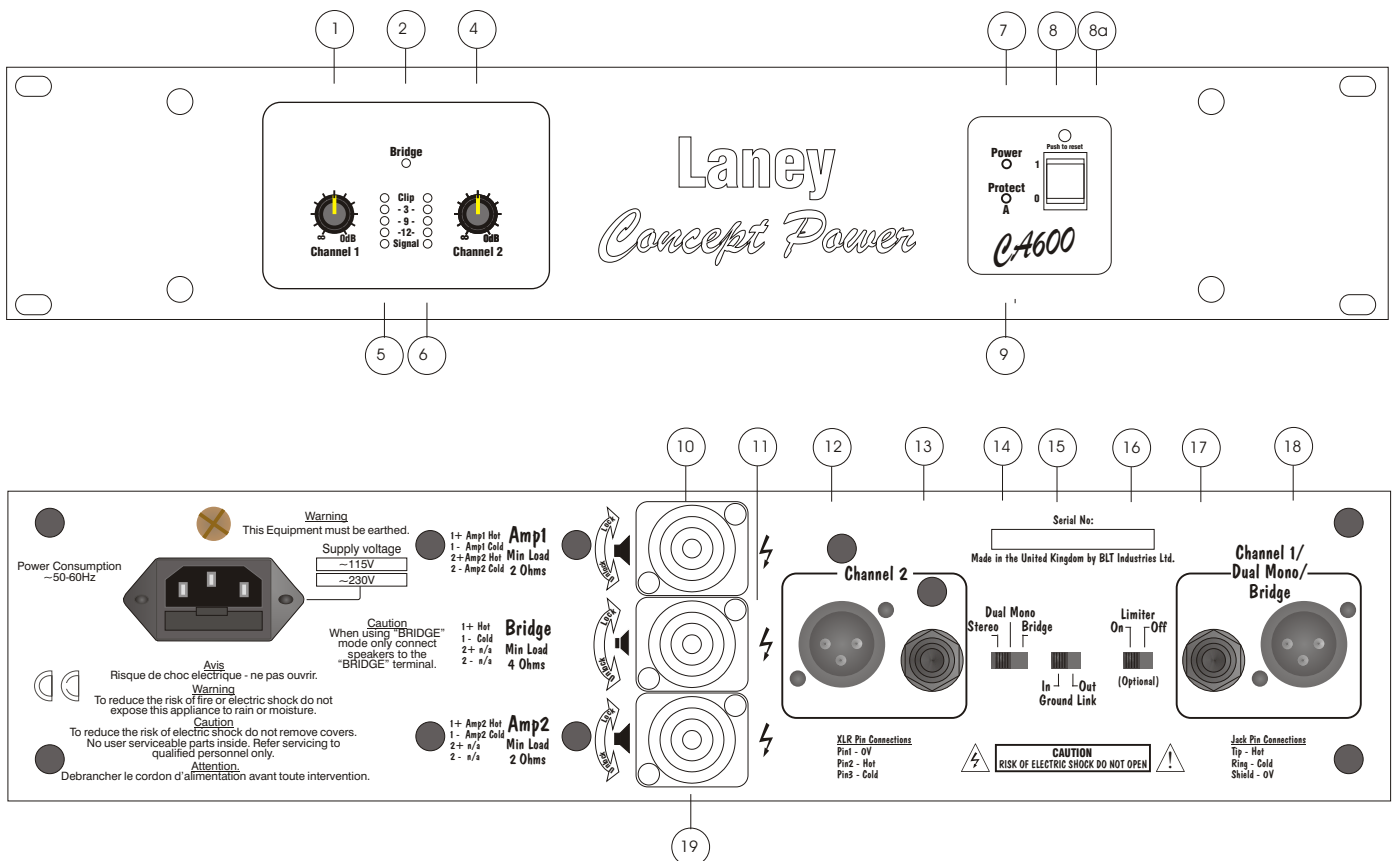


CAUTION! Only use Bridge connector in Bridge mode.
 CAUTION! Do not connect 2+2- output pins if not needed.



explanation of terms

CA600/CA1500

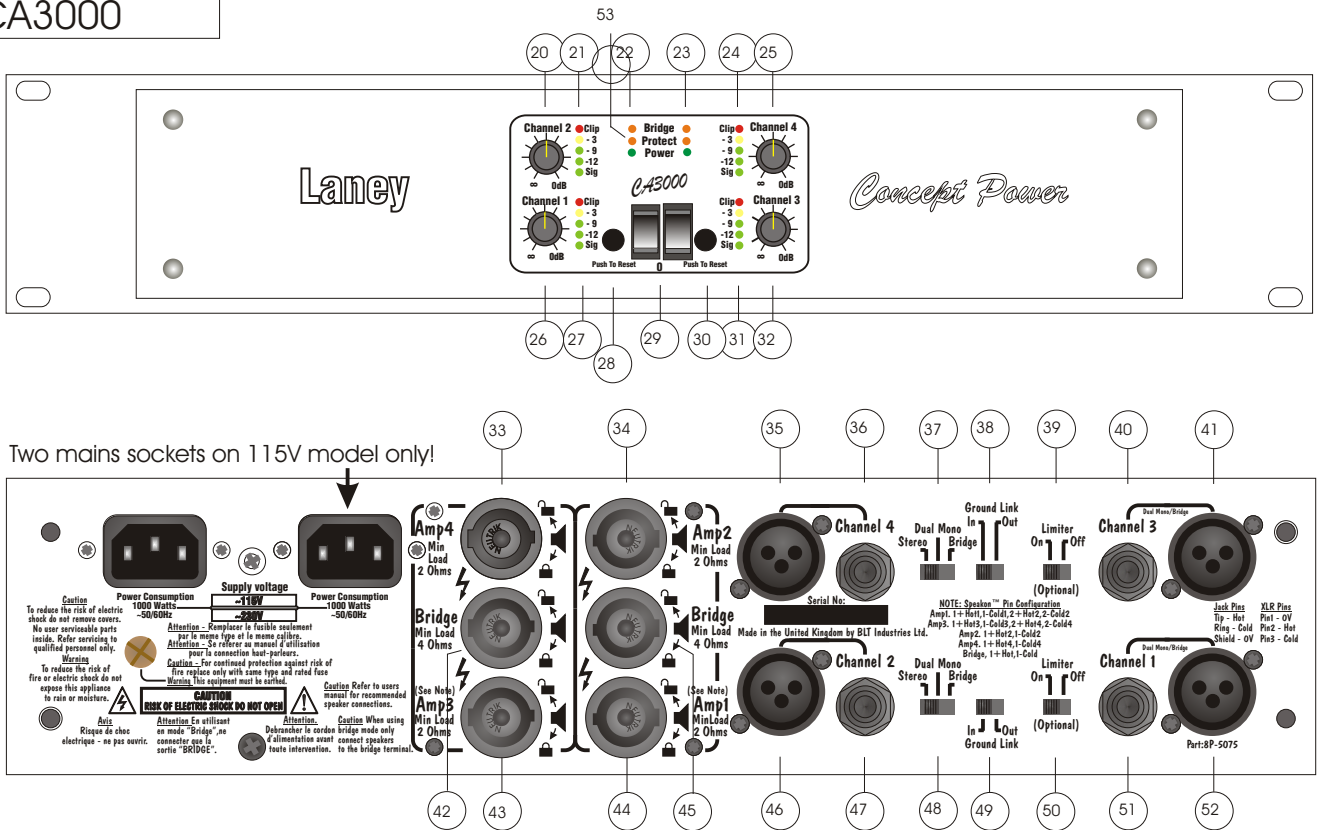


- ① Channel 1 input gain: Sets the level of the input signal to channel 1. The visual LED's give the user an indication of the signal level running through the pre amplifier. The levels should be set as to minimize the level of clipping. When the red LED is lit the signal is approaching clipping and some degree of sound degradation may occur if the signal is clipped continuously.
- ② Bridge indicator: This LED indicates that the amplifier is running in bridged mode (14) When running in bridged mode channel 1's level control acts as the master level control.
- ④ Channel 2 input gain: Sets the level of the input signal to channel 1. The visual LED's give the user an indication of the signal level running through the pre amplifier. The levels should be set as to minimise the level of clipping. When the red LED is lit the signal is approaching clipping and some degree of sound degradation may occur if the signal is clipped continuously.
- ⑤ Input level indicator channel 1: Indicates the level of signal running through channel 1
- ⑥ Input level indicator channel 2: Indicates the level of signal running through channel 2

- 7 Power LED: Indicates the unit is powered up.
- 8 Reset Button: Should the unit be connected in error and experience a continuous overload situation such as connecting the unit to an incorrect supply voltage or should the amplifier experience a catastrophic component failure then the reset button will trip. This will cause the unit to completely shut down and all power to the amplifier will be removed. Once the unit has tripped the reset button needs to be pushed in. If the unit fails to reset itself immediately then the amplifier should be looked at by a qualified technician. Consult your dealer.
- 8a Power Switch: Disable mains power to the unit.
- 9 Protect: This LED indicates that the output section of the CA amplifier has been run into extreme conditions such as too low an impedance at too high a level for too long a period. In the situation that Protection is engaged the output section is automatically disconnected from the speakers and then shut down. All the other functions of the amplifier continue to function as normal but the amplifier will produce no sound. To reactivate the amplifier it must be switched off, left for a few seconds and switched back on again, via the main power switch (8a).
- 10 Speakon Connector amp 1: Used to connect an external speaker cabinet. The signal present at this connection is dependent on the mode of operation of the power amp (14). In Stereo mode input signals from channel 1 and Channel 2 are present at this socket. In Dual Mono mode only signals from Channel 1 are present. In Bridge mode this connector should not be used. Minimum impedance 2 Ohms.
- 11 Speakon Connector Bridge: Used to connect an external speaker cabinet when running the power amplifier section in Bridged Mode (14). In Bridge mode only signals from Channel 1 are present. Minimum impedance 4 Ohms.
- 12 XLR Input Channel 2: An XLR input option is provided for Channel 2 here. Pin connections for the XLR connection are Pin 1 0V, Pin 2 Hot and Pin 3 Cold.
- 13 Jack Socket Channel 2: A jack-input option is provided for Channel 2 here
- 14 Power amp mode switch: This switch selects the mode of operation of the CA power amplifier section. Three modes of operation are available Stereo, Dual Mono and Bridge. In Stereo mode the two onboard power amplifiers run independently supplying 300 watts (CA600) 750 watts RMS (CA1500) of each channel input to each of the two output connections (10,19). In Dual Mono mode the signal present at Channel 1 input is sent to both amp 1 output (10) and amp 2 output (19). In Dual Mono mode channel 2 is not active. The final mode of the power amplifier is Bridge mode. In Bridge mode each individual power amplifier section is summed together producing maximum output. In Bridge mode Channel 1 acts as the master channel. Please note when selecting Bridge Mode the minimum impedance is 4 Ohms.
- 15 Ground Link Switch: This switched is used to reduce unwanted interference such as multiple earth loops etc and does so by isolating the grounds of the input sockets only.
- 16 Limiter: Activates the onboard (Optional factory fitted) Limiter which prevents the output section being driven into clipping allowing the amplifier to be run at maximum output without experiencing unwanted distortion.
- 17 Jack Socket Channel 1: A jack-input option is provided for Channel 2 here. When the power amplifier section is running in either Dual Mono or Bridge mode, channel 1 acts as the master input channel.
- 18 XLR Input Channel 1: An XLR input option is provided for Channel 2 here. Pin connections for the XLR connection are Pin 1 0V, Pin 2 Hot and Pin 3 Cold. When the power amplifier section is running in either Dual Mono or Bridge mode, channel 1 acts as the master input channel.
- 19 Speakon Connector amp 2: Used to connect an external speaker cabinet. The signal present at this connection is dependent on the mode of operation of the power amp (14). In Stereo mode input signals from channel 1 and Channel 2 are present at this socket. In Dual Mono mode only signals from Channel 1 are present. In Bridge mode this connector should not be used. Minimum impedance 2 Ohms.

explanation of terms

CA3000



- 20 Channel 2 input gain: Sets the level of the input signal to channel 2. The visual LED's give the user an indication of the signal level running through the pre amplifier. The levels should be set as to minimize the level of clipping. When the red LED is lit the signal is approaching clipping and some degree of sound degradation may occur if the signal is clipped continuously.
- 21 Input level indicator channel 2: Indicates the level of signal running through channel 2
- 22 Bridge indicator: This LED indicates that the amplifier channels 1 & 2 are running in bridged mode (37) When running in bridged mode channel 1's level control acts as the master level control
- 23 Bridge indicator: This LED indicates that the amplifier channels 3 & 4 are running in bridged mode (37) When running in bridged mode channel 1's level control acts as the master level control
- 24 Input level indicator channel 4: Indicates the level of signal running through channel 4
- 25 Channel 4 input gain: Sets the level of the input signal to channel 4. The visual LED's give the user an indication of the signal level running through the pre amplifier. The levels should be set as to minimise the level of clipping. When the red LED is lit the signal is approaching clipping and some degree of sound degradation may occur if the signal is clipped continuously.
- 26 Channel 1 input gain: Sets the level of the input signal to channel 1. The visual LED's give the user an indication of the signal level running through the pre amplifier. The levels should be set as to minimise the level of clipping. When the red LED is lit the signal is approaching clipping and some degree of sound degradation may occur if the signal is clipped continuously.

- 27 Input level indicator channel 1: Indicates the level of signal running through channel 1
- 28 Reset Button AMP 1 (CH1 + CH2): Should the unit be connected in error and experience a continuous overload situation such as connecting the unit to an incorrect supply voltage or should the amplifier experience a catastrophic component failure then the reset button will trip. This will cause the unit to completely shut down and all power to the amplifier will be removed. Once the unit has tripped the reset button needs to be pushed in. If the unit fails to reset itself immediately then the amplifier should be looked at by a qualified technician. Consult your dealer.
- 29 Power switches: Used to switch each separate power amplifier unit on and off.
- 30 Reset Button AMP 1 (CH3 + CH4): Should the unit be connected in error and experience a continuous overload situation such as connecting the unit to an incorrect supply voltage or should the amplifier experience a catastrophic component failure then the reset button will trip. This will cause the unit to completely shut down and all power to the amplifier will be removed. Once the unit has tripped the reset button needs to be pushed in. If the unit fails to reset itself immediately then the amplifier should be looked at by a qualified technician. Consult your dealer.
- 31 Input level indicator channel 3: Indicates the level of signal running through channel 3
- 32 Channel 3 input gain: Sets the level of the input signal to channel 3. The visual LED's give the user an indication of the signal level running through the pre amplifier. The levels should be set as to minimise the level of clipping. When the red LED is lit the signal is approaching clipping and some degree of sound degradation may occur if the signal is clipped continuously.
- 33 Speakon Connector amp 4: Speakon connector for connecting external speaker. The signal present at this connector is determined by the power amp mode setting (37) for this power amplifier. In Stereo Mode the signal present is derived from Channel 4 input. In Dual Mono mode the signal present is derived from Channel 3 input. In Bridge Mode NO signal is present at this connector.
- 34 Speakon Connector amp 2: Speakon connector for connecting external speaker. The signal present at this connector is determined by the power amp mode setting (48) for this power amplifier. In Stereo Mode the signal present is derived from Channel 2 input. In Dual Mono mode the signal present is derived from Channel 1 input. In Bridge Mode NO signal is present at this connector.
- 35 XLR Input Channel 4: An XLR input option is provided for Channel 4 here. Pin connections for the XLR connection are Pin 1 0V, Pin 2 Hot and Pin 3 Cold.
- 36 Jack Socket Channel 4: A jack-input option is provided for Channel 4 here

Speakons™

For amplifiers, the most popular termination device on professional products has been the dual banana. However, recent regulatory requirements in Europe have outlawed the use of the dual banana. It is possible that similar regulatory controls will appear worldwide over the next few years. One solution to this problem is to use the Neutrik Speakon™ connector. The major loudspeaker manufacturers have been using Speakon connectors for the input termination on their products for several years now, so you can be assured of the connector's reliability in the workplace. With Speakon (tm) connectors, you can plug straight from the amp to the speaker, and start making those great sounds right away. The Speakon connectors used on our amplifiers meet all known safety regulations. Once wired correctly, the connector cannot be plugged in backwards, causing the type of inverted polarity situations that are common with banana hookups. It will provide a safe, secure and reliable method of interfacing your amplifier to the load.

Speakon™ Trademark of Neutrik AG

37 Power amp mode switch: The CA3000 is a four channel power amplifier, Arranged as channels 1,2,3 and 4. These are configured as two totally separate stereo amplifiers. Channel 1 and 2 are treated as a pair, Channel 3 and 4 are treated as a pair. These channels can be used:-

(A) Stereo Mode. All channels run independently

(B) Dual Mono. One signal sent to both amps.

(C) Bridge. Channel 1 and 2 can be bridged together as can 3,4

(Cont)These modes are controlled via the mode selector switch on the rear panel. Channel 1 and 2 are controlled by (37) and channel 3 and 4 are controlled by (48)

Stereo Mode.	Each input is sent to its respective output.
Dual Mono.	Channel 1 input is routed to outputs 1 and 2 Channel 3 input is routed to outputs 3 and 4 Channels 2 and 4 inputs are not used.
Bridge.	Channel 1 input is routed to bridge connector (60) Channel 3 input is routed to bridge connector (70) Only the bridge terminals should be used in bridge mode

The NL4 Speakon (TM) output connectors have four pins, 1+,1-,2+,2-. In normal operation the 1+ pin carries the hot signal, 1- the cold signal. Channel 1 output also carries channel 2 output on 2+(hot),2-(cold)
Channel 3 output also carries channel 4 output on 2+(hot),2-(cold)

This is to aid the connection of biamped enclosures and the use of four core loudspeaker cable.

IMPORTANT! Take care not to use 2+,2- if they are not needed as some manufacturers actually join 1+ and 2+ together on their loudspeakers!

Typical wiring for Biamp use would be:

Channel 1 - Lo frequency (1+, 1- Channel 1 Speakon output)
Channel 2 - Hi frequency (1+, 1- Channel 2 speakon output)
Channel 1-2 Stereo mode

Typical wiring for Triamp use would be:

Channel 1+2 - Lo frequency (1+, 1- Bridge Speakon output)
Channel 3 - Mid frequency (1+, 1- Channel 3 speakon output)
Channel 4 - Hi frequency (1+,1- Channel 4 speakon output)
(Channel 3 and 4 could also be wired biamped as above using one four-pole connector on - channel 3 output.)
Channel 1/2 Bridge mode
Channel 3/4 Stereo mode.

38 Ground Link Switch: This switched is used to reduce unwanted interference such as multiple earth loops etc and does so by isolating the grounds of the input sockets only.

39 Limiter: (OPTIONAL) Activates the onboard Limiter which prevents the output section being driven into clipping allowing the amplifier to be run at maximum output without experiencing unwanted distortion.

40 Jack Socket Channel 1: A jack-input option is provided for Channel 1 here

41 XLR Input Channel 1: An XLR input option is provided for Channel 1 here. Pin connections for the XLR connection are Pin 1 0V, Pin 2 Hot and Pin 3 Cold.

- 42 Speakon Connector Bridge Speakon connector for connecting external speaker. The signal present at this connector is determined by the power amp mode setting (48) for this power amplifier. The Bridge speakon connector should only be used when the power amplifier mode switch (48) is set to Bridge. When in Bridge mode the signal present at the connector is derived from the input of Channel 3.
- 43 Speakon Connector Amp 3: Speakon connector for connecting external speaker. The signal present at this connector is determined by the power amp mode setting (38) for this power amplifier. In Stereo Mode the signal present is derived from Channel 3 input. In Dual Mono mode the signal present is derived from Channel 3 input, but whatever signal is present at (33) is also available at this speakon on the 2+/2- terminals of the NL4 connector. In Bridge Mode NO signal is present at this connector.
- 44 Speakon Connector Amp 1: Speakon connector for connecting external speaker. The signal present at this connector is determined by the power amp mode setting (48) for this power amplifier. In Stereo Mode the signal present is derived from Channel 1 input. In Dual Mono mode the signal present is derived from Channel 1 input, but whatever signal is present at (34) is also available at this speakon on the 2+/2- terminals of the NL4 connector. In Bridge Mode NO signal is present at this connector.
- 45 Speakon Connector Bridge: Speakon connector for connecting external speaker. The signal present at this connector is determined by the power amp mode setting (48) for this power amplifier. The Bridge speakon connector should only be used when the power amplifier mode switch (48) is set to Bridge. When in Bridge mode the signal present at the connector is derived from the input of Channel 1.
- 46 XLR Input Channel 2: An XLR input option is provided for Channel 2 here. Pin connections for the XLR connection are Pin 1 0V, Pin 2 Hot and Pin 3 Cold.
- 47 Jack Socket Channel 2: A jack-input option is provided for Channel 2 here.
- 48 Power amp mode switch: See (37) for explanation
- 49 Ground Link Switch: This switched is used to reduce unwanted interference such as multiple earth loops etc and does so by isolating the grounds of the input sockets only.
- 50 Limiter: (OPTIONAL) Activates the onboard Limiter which prevents the output section being driven into clipping allowing the amplifier to be run at maximum output without experiencing unwanted distortion.
- 51 Jack Socket Channel 1: A jack-input option is provided for Channel 1 here.
- XLR Input Channel 1: An XLR input option is provided for Channel 1 here. Pin connections for the XLR connection are Pin 1 0V, Pin 2 Hot and Pin 3 Cold.
- 53 Protect: This LED indicates that one or both output sections of the CA3000 amplifier have been run into extreme conditions such as to low an impedance at to high a level for to long a period. In the situation that Protection is engaged the output section is automatically disconnected from the speakers and then shut down. All the other functions of the amplifier continue to function as normal but the amplifier will produce no sound. To reactivate the amplifier it must be switched off, left for a few seconds and switched back on again, via the main power switch (29).

Specification

Model	Output Power per Channel @ 1%THD					Typical Total Power Consumption @ 1/3 rd power music 4 Ohms
	2 Ohms	4 Ohms	8 Ohms	Bridge 4 Ohms	Bridge 8 Ohms	
CA600	300W	200W	160W	600W	400W	220W
CA1500	750W	550W	350W	1500W	1000W	500W
CA3000	750W x4	550W x4	350W x4	1500W x2	1000W x2	1000W

In bridge mode the amplifiers will operate comfortably at 4 Ohms enabling very high output levels to be achieved. This together with very low output impedance gives exceptional power delivery into bass bin enclosures.

** (1/3rd power is based on worst case severely compressed dance music. 1/8th power is average for normal minimally compressed music material just clipping on peaks)*

Total Harmonic Distortion - All models typically less than 0.03% Across audio spectrum.

Intermodulation Distortion - All Models typically less than 0.03%

Input Sensitivity - User selectable, 0dB, +4dB and 26dB fixed.

Input Impedance - 15K ohms minimum

Damping Factor (8ohms) - Greater than 500 (minimum) with typical loudspeaker setups and cable.

Frequency Response - Flat across the entire audio spectrum (20Hz, 20Khz +/- 0.5dBu), -1dB down at 10Hz and 25KHz

Hum and Noise - Better than -95dB 'A' Weighted

Input Connectors - One 1/4inch Jack socket and one 3pin XLR per channel

Output Connectors - One Speakon(TM) per output, One speakon(TM) per Bridge output.

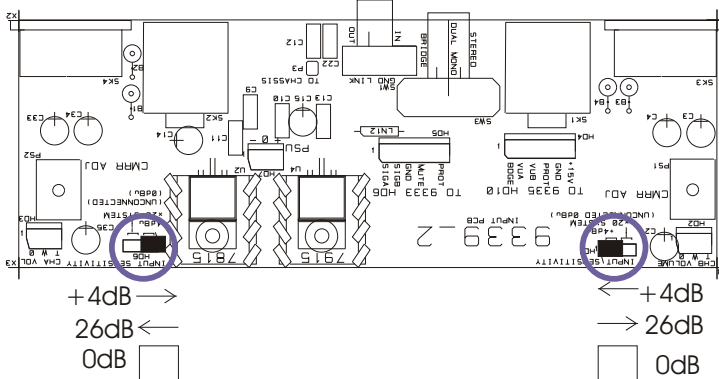
	Size(WxHxD) (mm)	Weight (Kg)
CA600	483x88x320	
CA1500	483x88x320	
CA3000	483x88x435	

Centre of gravity approx 160mm from front on all models.

Input Sensitivity

Before starting, Unplug all leads to the amplifier. Make sure mains supply is removed and switched off.

- Remove all screws from top cover, place to one side.
- Locate the input pcb that requires the gain changing. (Model shown pcb 9339, no VCA/limiter)
- Locate HD6 and HD1. Swap the jumper link as required.
- Refit cover.



Servicing

The CA series contains no user servicable parts.

Warning. Dangerous voltages may remain inside the unit for a short period after the amplifier has been turned off. Do not operate with the covers removed.

Refer servicing to factory or qualified service engineer.

In the unlikely event of service being required, The amplifier should *always* be shipped in its original protective carton.

Laney

BLT Industries Ltd.,
Newlyn Road,
Cradley Heath,
West Midlands.
B64 6BE.

Tel: (0044) (0)1384 633821
Fax: (0044) (0)1384 639186
[Http://www.laney.co.uk](http://www.laney.co.uk)

In the interest of continued product development BLT Industries Ltd. Reserves the right to amend product specification without prior notification.