12 BAND RANGE

O P E R A T I N G

I N S T R U C T I O N S

AH1000-12

RAH1000-12

AH500-12

RAH500-12

AH300-12

RAH300-12

GP12X

1215

122H

1210H

TRACE ELLIOT

C O N T E N T S

SAFETY INSTRUCTIONS

Warning

For continued protection against the risk of fire, replace fuses only with fuses of the same type and rating.
To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
In the event of a suspected malfunction, always refer this equipment to a qualified service engineer.
This apparatus must be earthed. The wires in this mains are coloured in accordance with the following code:-

***Green& Yellow* - Earth** ***Blue* - Neutral** ***Brown* - Live**

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:-
The wire which is coloured Green & Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or coloured green or Green and Yellow.
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Red.
If A 13 amp (BS1363) plug is used a 13 amp fuse must be fitted, or if any other type of plug is used a 15 amp fuse must be fitted either in the plug or adaptor or at the distribution board.

EMC Warning

It is inherent in the design of a loudspeaker and in the design of guitar pickups that they should emit or be affected by electro magnetic fields. Trace Elliot loudspeaker enclosures should not be used less than 2 metres away from equipment which is likely to be affected by electro magnetic interference.
Likewise, guitars fitted with electro magnetic pickups should not be used less than 2 metres away from any source of electro magnetic emissions such as loudspeakers.
Emissions from loudspeakers are dependent on the frequency characteristic of the drive unit.
Levels were measured direct from the drivers of 30 dBuV.
These levels are reduced to a safe level at a distance of 1.27 metres from the drivers.

CE

Directives applied	LVD 73 / 23 EEC
	EMC 89 / 336 EEC
Harmonised Standard	BS EN60065 1994 CENELEC HD195.S6
Generic Standards	BS EN55013 1990
	BS EN50082 Part One 1992
	BS EN61000-3-2

Please ensure that you read the SAFETY INSTRUCTIONS in these operating instructions prior to connecting the unit to the mains supply.

The GP12 pre-amplifier forms the front end in a new generation of Trace Elliot Bass amplification. These operating instructions cover all products in the range and these are as follows:

AH300-12 Amplifier Head - 300 Watts
RAH300-12 Rack Mount Amplifier Head - 300 Watts
1215 Combo Amplifier - 1 x 15" 300 Watts
112H Combo Amplifier - 2 x 10" with Horn 300 Watts
1210H Combo Amplifier - 4 x 10" with Horn 300 Watts
AH500-12 Amplifier Head - 500 Watts
RAH500-12 Rack Mount Amplifier Head - 500 Watts
GP12X - Rack Mount Pre-Amp
AH1000-12 Amplifier Head - 1000 Watts
RAH1000-12 Rack Mount Amplifier Head - 1000 Watts

GENERAL INFORMATION

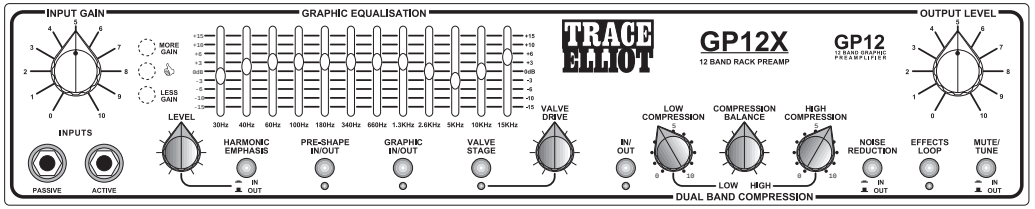
The top of this range is the AH1000, this amplifier is a 1000 watts RMS unit that can be operated in the following modes:

As a 1000 Watt Mono unit, as a 500 Watts per channel stereo unit, as a 500 Watts per channel Bi-Amped unit or as a full Stereo Bi-Amped set up with 500 Watts of Low Pass Mono bottom end and 250 Watts per side High Pass Stereo top end. All this is selected with a very simple switching arrangement and without the requirement for any additional external power amplifiers.

To accompany the AH1000 a Stereo Bi-Amp cabinet is available, the 'BFC' for use exclusively with this amplifier head to provide the simplest full Bi-Amped Stereo bass rig there has ever been in the history of amplification. To make full use of the AH1000 in stereo mode there are both Full Range Stereo and High Pass Stereo effects loops provided that can be operated in Series or Parallel with the amplifier. For the first time ever in a Trace Elliot amplifier these are fully switchable both via the front panel, remotely with the 5 way foot switch or by MIDI.

The five way foot switch unit is provided with the GP12X & the AH1000 for switching Pre-Shape, Graphic, Valve Stage, Dual Band Compressor and the Effects Loop. This is available as an optional extra for the remainder of the range.

These Facilities can also be switched via MIDI on the GP12X & the AH1000 so that selecting a program on your effects or MIDI controller unit can automatically set up any combination of these 5 functions.



The Front Panel is fully lit over its entire surface using the latest in Electroluminescent technology. This is a purely practical application of illumination to enable the setting of every control to be clearly seen in even the darkest environment.

The Electroluminescent front panel has a dimming control to allow the user to set its brightness to his own particular liking. The dimming is adjusted with a slider on either the front or rear panel of the unit depending on the model.

SWITCHING

All switching in the GP12 pre-amp is done using FET's for completely silent operation.
When a section is switched out it is completely bypassed so as not to affect or degrade the signal integrity of the rest of the pre-amp.

FRONT PANEL LAYOUT

The basic layout of INPUT GAIN control and INPUT jack sockets on the left, OUTPUT LEVEL control on the right and the Graphic plus all the other facilities spanning between these two will feel familiar to existing Trace users. The main difference between this and any other Trace Elliot bass amplifier is that there is a lot more on offer between those two familiar controls.

INPUTS

There are two Instrument Inputs, one optimised for PASSIVE instruments with a high input impedance and high sensitivity and the other optimised for ACTIVE instruments with a much lower impedance and greater headroom.

The PASSIVE input is high impedance and sensitivity. This is designed to match the output from instruments that have no internal pre-amp or battery. These instruments usually have a single volume control and a single tone control. It is best to keep the volume control on the instrument well advanced, as turning this back usually also reduces the upper frequencies available from the pick-ups.

The PASSIVE input is also suitable for Piezo pick-ups or for use with active instruments that provide only a very low output signal.

The ACTIVE input, is for use with instruments that have a pre-amp powered by a battery built into the bass. The output from these instruments is low impedance and of a much higher signal level than from a passive bass. The ACTIVE input is designed to cope with these higher level signals.

INPUT GAIN

The level of the instrument signal through the amplifier is adjusted using the INPUT GAIN control. This has level indication using 3 LED's. The first marked 'More Gain' indicating that more level through the amplifier is required for optimum performance from the unit. The second has a 'Thumbs Up' symbol indicating that the INPUT GAIN control is set correctly and a third marked 'Less Gain' indicates that clipping or distortion is occurring at some point throughout the amplifier.

The circuit for these LED's monitors a number of strategic points throughout the amplifier and is thus a good indication when unwanted clipping is occurring.

To get the best results from your amplifier it is important to understand fully the correct use of the INPUT GAIN control. The optimum setting is achieved when the INPUT GAIN control is as high as possible without lighting the red LESS GAIN LED.

The OUTPUT LEVEL control should be used to make any changes to the overall amplifier volume whilst the INPUT GAIN control is left set at its optimum position to suit your instrument.

To set these two controls correctly use the following procedure:-

First turn the OUTPUT LEVEL control to zero.
Plug your bass into the appropriate ACTIVE or PASSIVE input.
Turn all volume controls on your bass up full.
Gradually turn up the INPUT GAIN control while playing your bass as hard as you are likely to during your performance.
When the red LESS GAIN LED lights up reduce the INPUT GAIN slightly until this LED goes out.
Now turn up the OUTPUT LEVEL to give the desired volume.

N.B. For most instruments the INPUT GAIN control will end up being set between 6 and 9 on the scale.

If the GRAPHIC EQUALISATION is altered it may be necessary to re-adjust the INPUT GAIN control. All circuits in the pre-amp are designed to work at their optimum when the INPUT GAIN is correctly set.

HARMONIC EMPHASIS

HARMONIC EMPHASIS is a NEW addition within this amplifier and consists of a circuit that takes the bass signal and emphasises certain harmonics within it to produce a bright zingy top end. It is not an EQ circuit, for it actually synthesises new harmonics that it adds to the original sound. The best way to describe this is that it is similar to the top end zing you get from a new set of strings.

This has a LEVEL control and can be switched in or out with the front panel switch.

Use this in moderation, as you will find that it adds a lot of bright harmonics to the sound. If you are using an active instrument you may find that this will also emphasise any hiss produced by the active electronics in the bass. You can easily confirm this extra hiss is coming from the active instrument by unplugging it from the input. If the hiss goes away then it is coming from the bass itself.

PRE-SHAPE

This is the classic Trace Elliot 'Mid Pre-Shape' that that everybody knows. This can be switched in or out with the front panel switch, with the 5 way foot switch or via MIDI (on the AH1000 and GP12X only). It has an Orange LED below the switch to indicate when it is on. This colour of LED is duplicated on the 5 way foot switch unit.

The PRE-SHAPE is like a pre-set graphic equaliser that you can switch in or out to modify the sound of the bass. The PRE-SHAPE provides a mid cut plus a top and bottom end boost and when switched in provides extra punch to your sound.

GRAPHIC EQUALISATION

This is the familiar Trace Elliot 12 Band Graphic Equaliser that has been updated for this range of amplifiers and plays somewhat of a lesser role within these units. It still has the versatility of EQ that it has always provided but is now just one of a number of facilities to allow you to create your own unique bass tone.

The GRAPHIC EQUALISER section operates by boosting or cutting the level of signal at various frequency points throughout the frequency range. With the sliders set on 0dB (in their centre 'click' position) no alteration is made to the signal. Moving any one of the sliders up will increase or 'boost' the signal at the frequency marked below the slider. Moving the slider down will decrease or 'cut' the signal at that frequency.

The GRAPHIC EQUALISATION can be switched in or out with the front panel switch, with the 5 way foot switch or via MIDI (on the AH1000 and GP12X only). It has a Green LED below the switch to indicate when it is on. This colour of LED is duplicated on the 5 way foot switch unit.

A carefully designed GRAPHIC EQUALISER is a very flexible way of varying the sound of a bass guitar and if properly used will provide an extremely powerful method of tone shaping for your instrument.

Because of the flexibility and massive BOOST and CUT potential of this particular GRAPHIC it is important to know how to get the best from it.

Firstly a few things not to do and the reasons why:

Do not boost or cut all frequency bands as this will have the same effect as increasing or decreasing the overall volume level without affecting the tonal characteristic of the sound.
Do not use excessive bottom (30 to 40Hz) boost on the graphic unless your speakers can handle it. Very few speaker systems are capable of handling frequencies as low as 30 and 40Hz with any degree of efficiency.

N.B. Boosting at 30Hz for instance will not add to the perceived amount of bottom end in the sound, it will only make your speakers flap to no useful effect. In fact boosting at 100Hz or 180Hz will have the apparent effect of adding far more bottom end than boosting at 30, 40 or even 60Hz.

Do not use excessive top (10 to 15kHz) boost, this will add mostly hiss to the sound as there is very little signal output at this frequency from a bass.

The 30Hz slider has been provided to allow precise tailoring at very low frequencies. This slider should be used to CUT (not Boost) the 30Hz to a level that allows the speaker system to work at its maximum efficiency.

Useful Observations

The fundamental frequency range of a regular, four string bass guitar is from 41.2Hz (bottom E string) to around 392Hz (two octaves up on the G string) - not a very wide range. Obviously a lot of harmonics are produced when playing and these can extend up to 5kHz and more.

The attack portion of the note also produces other high frequencies when the string is first struck. This attack can be emphasised by boosting the top end. However because of the fairly small range of frequencies from a bass, by top end we mean between 2.6kHz and 5kHz. You will find that by boosting at 5kHz the attack will be emphasised whereas by boosting at 1.3 and 2.6kHz you will bring out the harmonics in the note.

Above this frequency range you will find it is better not to boost the signal as this will mainly emphasise any hiss present. This hiss will not be masked by the bass signal when playing due to the very small amount of bass guitar frequency content at 10 to 15kHz.

Use the 30Hz and 40Hz sliders sparingly unless you have a massive stack of speakers available, and the power amplifiers to drive them. You will find that rolling off the bottom end by using these two sliders will allow you to play at a far greater volume level without the speakers complaining.

Try to keep the graphic sliders balanced around 0dB and in a smooth flowing curve from one slider to the next, and remember that after adjusting the graphic you may need to re-set the INPUT GAIN.

VALVE STAGE

This has been moved from the front end where it resided in previous Trace Elliot amplifiers and placed in a position of prime importance within the EQ section. It has now become a very versatile tool in its own right. It is a two-stage (double triode) valve section with the ability to be overdriven if desired.

The Valve Stage has a single level control marked 'VALVE DRIVE' that provides a wide range of bass enhancement. Set between minimum and 12 o'clock it provides classic bass 'warmth' along with top end 'sparkle' both of which come from the valves natural ability to add a small amount of second degree harmonics. Set between 12 o'clock and full it overdrives providing a degree of grunge to the sound typical of hard worked valve amplifiers. For Rock players this control is probably all you need. Turn everything else off and turn the volume up (with maybe a bit of compression).

The Valve stage is placed after the Graphic so that altering the graphic will also alter the distortion that the valve stage produces. The maximum amount of overdrive obviously depends on the INPUT GAIN setting, and with this set to its optimum level the VALVE DRIVE control has been tailored to give a generous degree of grunge when set on full without degenerating into a fuzz box. If you want more distortion then try increasing the INPUT GAIN slightly but do not go too far as this may introduce clipping in other parts of the pre-amp that will add third harmonic distortion that is not as nice as the distortion from the VALVE.

The Valve Stage can be switched in or out with the front panel switch, with the 5 way foot switch or via MIDI (on the AH1000 and GP12X only). It has a Red LED below the switch to indicate when it is on. This colour of LED is duplicated on the 5 way foot switch unit.

COMPRESSION

The compression used in this range of amplifiers is Dual Band Compression, where the bass signal is split into its High Pass and Low Pass signals. Each is then compressed individually with attack and decay characteristics optimised to suit each part of the frequency spectrum. The signal is finally re-combined into a full range bass signal once again after compression has been applied.

This works far better than a single full range compressor for a bass guitar signal. The reason for this is simply that any kind of FULL RANGE compression used on bass is always an unacceptable compromise. If set to suit low frequencies it cannot act fast enough to catch the attack transients, and if the compressor is set fast enough to catch these transients then it distorts the low frequencies. If you have used any kind of full range compression then you will know what we mean.

Control is provided over the degree of LOW COMPRESSION and HIGH COMPRESSION individually and the eventual mix of these two is controlled by the COMPRESSION BALANCE control giving further EQ possibilities (as described below).

This circuit has been improved over that used in previous Trace Elliot products and full bypass switching has been added.

The entire compression circuit can be switched in or out with the front panel switch, with the 5 way foot switch or via MIDI (on the AH1000 and GP12X only). It has a Blue LED below the switch to indicate when it is on. This colour of LED is duplicated on the foot switch unit.

Low Compression

Applying compression to the LOW PASS portion of the signal gives a fat bottom end to the sound without losing the upper frequency attack characteristics of the note. It is somewhat of a less processed sounding effect than full range compression but works extremely well in smoothing out bass signal peaks allowing a far greater volume of amplification to be used without the risk of speakers complaining.

You will also find that a degree of LOW compression will add definition to your playing, bringing out notes within a run without loss of the upper dynamics.

As the LOW COMPRESSION control is advanced and compression is applied to the signal the overall level of volume is compensated for. If this were not done then adding compression would have the effect of reducing the volume of the sound as the available dynamics are reduced.

With the INPUT GAIN control correctly set, switching in the compression will cause no apparent change in volume. If the INPUT GAIN is set too low then switching in the compression will cause an increase in volume. The opposite will be true if the INPUT GAIN is set too high.

High Compression

The HIGH COMPRESSION should be used with care as it is directly affecting the attack portion of the bass sound. This can be used to good effect but moderation should always be exercised when applying high compression.

As the HIGH COMPRESSION control is advanced and compression is applied to the signal the overall level of volume is compensated for. If this were not done then adding compression would have the effect of reducing the volume of the sound as the available dynamics are reduced.

However in the case of the HIGH COMPRESSION this means that additional gain is added at high frequencies. The more the compression control is advanced the more additional gain. If you are adding top boost or harmonic emphasis along with HIGH COMPRESSION to an active instrument this will considerably increase the level of HISS that is present when the bass is not being played.

HIGH COMPRESSION is directly affecting the attack portion of the sound and can therefore be used to vary the type of attack and the level of the attack transient within the bass guitar sound.

Compression Balance

The COMPRESSION BALANCE control adjusts the balance between the HIGH PASS and LOW PASS portions of the bass sound after compression has been added. This can be used as an additional EQ control affecting the sound only when the compression is switched in. Turning this control to the right increases the top end and decreases the bottom end within the sound, while turning it to the left increases the bottom end and decreases the top end.

The two compression circuits can be set individually to produce some useful sounds. With LOW COMPRESSION set to about 5 to tighten up the bottom end of the sound, the HIGH COMPRESSION can be varied in conjunction with the COMPRESSION BALANCE control to produce a variety of different attacks to the note to suit many different playing styles.

NOISE REDUCTION

Noise Reduction has been re-introduced into this amplifier range. This used to be a feature of the Mk 5 & Series 6 range of products some years ago and has been brought back at the request of many customers.

It is not just to kill any noise the amplifier may produce but is also very useful when using some active basses where the electronics of the pre-amp in the bass produces a fair bit of hiss along with the signal. It is also useful for killing buzz and noises picked up by the instrument from lighting etc.

This is a 'very kind' type of noise reduction as it fades down the upper frequencies gradually as the signal dies down and thus is very unobtrusive in use, unlike a noise gate that cuts the signal off completely once it gets below a certain level.

It has a very fast attack so it will not cut off the transient at the start of a note either.

It works so well that it can be left switched in all the time with the only apparent effect being one of less noise when you stop playing or pause between notes.

This can be switched in or out with the front panel switch. When switched out it is completely bypassed.

EFFECTS LOOPS *(AH300-12, RAH300-12, 1215, 122H & 1210H)*

The effects loop provided on the above units comprises of a SEND socket, a RETURN socket and a RETURN LEVEL control. A brief description is provided here. A full description is provided in the REAR PANEL FACILITIES section, later in these instructions.

The entire loop can be switched in or out with the front panel switch or the 5 way foot switch. It has a Yellow LED below the switch to indicate when it is on. This colour of LED is duplicated on the foot switch unit.

The Effects Loop has a MODE switch on the back panel for selecting the loop to be either in Series or in Parallel with the Pre-Amp. The Serial mode is automatically disabled if nothing is plugged into the effects send, This prevents the loop being switched in and the amplifier going dead because no signal is being returned.

The Effects Return can also be used as external signal input, with its own level control. Signals plugged into this socket can be switched on or off by activating the Effects Loop.

EFFECTS LOOPS *(AH500-12, RAH500-12, AH1000-12, RAH1000-12 & GP12X)*

There are two effects loops provided on the above units, both of which have STEREO RETURNS and RETURN LEVEL controls. A brief description is provided here. A full description is provided in the REAR PANEL FACILITIES section, later in these instructions.

The loops are configured as two independent EFFECTS SENDS, one being FULL RANGE and the other HIGH PASS. The HIGH PASS signal is provided from the compressors high pass output and can consequently have compression added prior to going to the effects unit, thus preventing transient overloads of external effects units.

There are also two independent Stereo EFFECTS RETURNS, each with its own level control. Either Send signal can be returned into either Stereo Return and the entire loop can be switched in or out with the front panel switch, with the 5 way foot switch or via MIDI (AH1000 & GP12X only). It has a Yellow LED below the switch to indicate when it is on. This colour of LED is duplicated on the foot switch unit.

The Effects Loop has a MODE switch on the back panel for selecting the loop to be either in Series or in Parallel with the Pre-Amp. The Serial mode is automatically disabled if nothing is plugged into the effects send, This prevents the loop being switched in and the amplifier going dead because no signal is being returned.

The two Stereo Effects Returns can also be used as external stereo signal inputs, each with its own level control. Signals plugged into these sockets can be switched on or off by activating the Effects Loop.

MUTE/TUNE

The front panel Mute/Tune switch provides a Mute facility that can be used to silence all outputs from the amplifier except that from the TUNER output socket. This enables silent tuning to be carried out whilst the amplifier speaker outputs, the DI's the Effects Sends and the Line Outputs are all muted. Once in tune the amplifier can be un-muted and playing resumed. This switch can also be used as a STANDBY switch for silencing the amplifier during pauses in its use.

To enable muting to be carried out remotely a MUTE jack socket is provided on the back panel for connecting a momentary ‘Make’ footswitch that can be operated whilst tuning.

To make use of this facility plug the output from the TUNER socket on the rear of the unit into the INSTRUMENT input on your tuner.

OUTPUT LEVEL

The OUTPUT LEVEL control is used to set the stage volume of the amplifier. Use this control to adjust for increases or decreases in your playing volume and not the INPUT GAIN control, this should always be left set to the optimum for your instrument

This completes the description of the front panel facilities.

REAR PANEL FACILITIES

MAINS INLET, POWER SWITCH & FUSE

Please ensure that you read the SAFETY INSTRUCTIONS in these operating instructions prior to connecting the unit to the mains supply.

All models in this range have a fused mains inlet and power switch on the back panel.

The voltage the unit is intended to be operated with is marked on the rear panel above the mains inlet. Make sure the supply you are connecting the amplifier to is the same as that marked above this socket.

Once the correct supply voltage has been connected the unit may be switched on with the POWER switch.

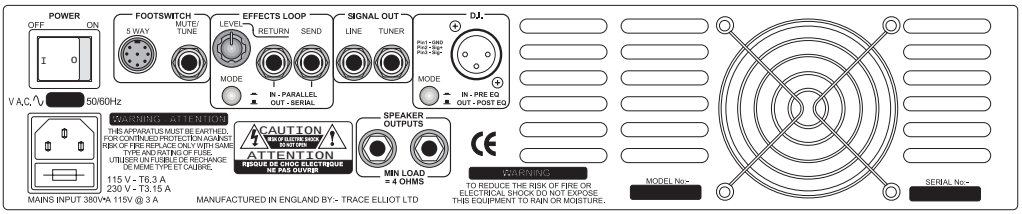
Mains Fuse

In the event of having to replace the MAINS FUSE always use the same type and rating as marked on the unit's back panel adjacent to the fuse holder. Ensure that you are fitting the correct fuse for the voltage in your country.

If after replacement the mains fuse should blow a second time, immediatly refer the unit to a TRACE ELLIOT approved service engineer for checking.

Never fit a higher fuse than that indicated on the rear panel as this will not only invalidate your guarantee but is also very likely to cause extensive damage to the amplifier in the event of a fault.

REAR PANEL FACILITIES (AH300-12, RAH300-12, 1215, 122H & 1210H)



FOOTSWITCH SOCKETS

There are two footswitch sockets on the rear panel, an 8 way DIN socket and a jack socket.

The 8 way DIN socket is for connection of the 5 way footswitch unit (available as an optional extra). Once connected to the amplifier the 5 way footswitch gives instant foot control

over the following: PRE-SHAPE, GRAPHIC, VALVE STAGE, COMPRESSION & EFFECTS LOOP. This works in conjunction with the front panel push buttons meaning either these or the footswitch unit can control all of the above functions. LED indication of the current status is provided on the front panel and the footswitch simultaneously.

To ensure that the footswitch and the amplifier indication is synchronised it is important that the footswitch is plugged into the amplifier prior to turning on the mains POWER switch.

The Jack socket is for connection of a footswitch to operate the MUTE/TUNE facility. With a momentary make switch the amplifier will be muted whilst the footswitch is held down. With a push to make/push to break type switch the amplifier will alternately be muted and un-muted with subsequent presses of the switch.

This switch operates in parallel with the front panel switch meaning either one or the other can be used. If the front panel switch is 'IN' (the amplifier muted) then the external footswitch will have no effect until this switch is released.

EFFECTS LOOP

The effects loop comprises of a SEND jack socket, a RETURN jack socket, a RETURN LEVEL control and a MODE switch.

The entire loop can be switched in or out with the front panel switch or the 5 way foot switch. It has a Yellow LED below the switch to indicate when it is on. This colour of LED is duplicated on the foot switch unit.

The SEND socket is for connecting to the INPUT of your effects unit. This is a full range signal output level to suit the input of rack effects units. Use the input level control on your effects unit to precisely adjust for the optimum input level.

The RETURN socket is for connecting the output from your effects unit back into the pre-amp. This has its own level control to adjust for either:
The overall level through the pre-amp in SERIES MODE
The balance of effect versus dry sound in PARALLEL MODE.

The Effects Loop MODE switch is for selecting the loop to be either in SERIES or in PARALLEL with the Pre-Amp. The Serial mode is automatically disabled if nothing is plugged into the effects send, This helps prevent the loop being switched in and the amplifier going dead because no signal is being returned.

SERIES MODE means that the signal path through the pre-amp is broken at the effects loop, with the entire pre-amp signal going out to the effects unit and subsequently being returned to the pre-amp via the RETURN socket. The EFFECTS RETURN LEVEL control thus adjusts the overall level of signal through the pre-amp.

PARALLEL MODE means that the DRY signal bypasses the effects loop so as not to be degraded by the external effects unit. The RETURN socket then receives only the effected signal back into the pre-amp, and this is mixed with the DRY signal using the EFFECTS RETURN LEVEL control.

The Effects Return can also be used as external signal input, with its own level control. Signals plugged into this socket can be switched on or off by activating the EFFECTS LOOP.

SIGNAL OUTPUTS

Line Output

The LINE output is for connection to external power amplifiers and speakers to allow you to build a larger more powerful system. This output is situated after the OUTPUT LEVEL control to allow the entire connected system to be turned up and down with a single control.

If you require a line output that is not affected by the OUTPUT LEVEL control you may use the EFFECTS SEND jack socket, although this will obviously not include the effects loop.

Tuner Output

The TUNER OUTPUT is for connection to the INPUT on your tuner. This output provides a constant level signal from the pre-amp to drive an external tuner. This is the only signal that remains active when the MUTE facility is operated. This allows silent tuning to be carried out by MUTING the amplifier, tuning up and un-muting the amplifier once again to resume playing.

DI SOCKET

The DI or DIRECT INJECT socket is a balanced, low impedance XLR output intended for connection into the Microphone Input on one channel of a mixing desk.

This is to carry the signal to the P.A. system for larger gigs. It is balanced and low impedance to ensure that no noise is added to the signal on the way to the mixer.
The level of this signal has been set to be similar to that from a microphone so that it will work without overloading the input on a desk that has no input Pad switch.

The signal connections are as follows: Pin 1 = Ground, Pin 2 = Signal +, Pin 3 = Signal -.

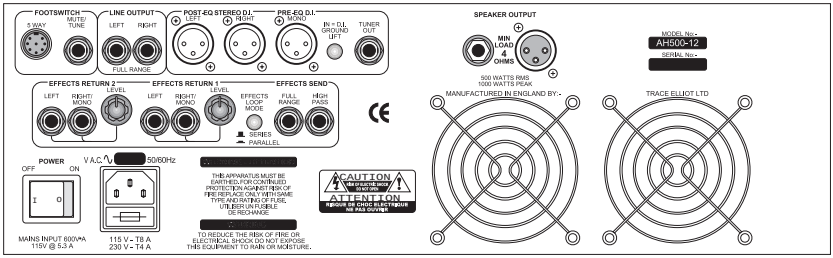
The DI signal can be switched to be PRE or POST EQ. PRE EQ is before any of the amplifiers facilities or EQ but after the INPUT GAIN control. POST EQ is after all internal facilities and includes the external effects loop.

SPEAKER OUTPUTS

There are two speaker output jack sockets provided, allowing two speaker cabinets to be connected to the amplifier. The combined impedance of these speaker cabinets must not be less than 4 Ohms. Two 8 Ohm cabinets is the ideal load for these amplifiers.

If you are using one 4 Ohm cabinet, then no further speakers can be connected to the amplifier or the combined impedance will fall below 4 Ohms. If this occurs you will just be wasting power in heat generated by the output stage and no more volume will be available than with the single 4 Ohm cabinet.

REAR PANEL FACILITIES (AH500-12 & RAH500-12)



FOOTSWITCH SOCKETS

There are two footswitch sockets on the rear panel, an 8 way DIN socket and a jack socket.

The 8 way DIN socket is for connection of the 5 way footswitch unit (available as an optional extra). Once connected to the amplifier the 5 way footswitch gives instant foot control over the following: PRE-SHAPE, GRAPHIC, VALVE STAGE, COMPRESSION & EFFECTS LOOP. This works in conjunction with the front panel push buttons meaning either these or the footswitch unit can control all of the above functions. LED indication of the current status is provided on the front panel and the footswitch simultaneously.

To ensure that the footswitch and the amplifier indication is synchronised it is important that the footswitch is plugged into the amplifier prior to turning on the mains POWER switch.

The Jack socket is for connection of a footswitch to operate the MUTE/TUNE facility. With a momentary make switch the amplifier will be muted whilst the footswitch is held down. With a push to make/push to break type switch the amplifier will be alternately muted and un-muted with subsequent presses of the switch.

This switch operates in parallel with the front panel switch meaning either one or the other can be used. If the front panel switch is 'IN' (the amplifier muted) then the external footswitch will have no effect until this switch is released.

LINE OUTPUTS

The LINE outputs are for connection to external power amplifiers and speakers to allow you to build a larger more powerful system. These outputs are situated after the OUTPUT LEVEL control to allow the entire connected system to be turned up and down with a single control.

There are two LINE OUTPUT sockets provided because this amplifier has stereo capabilities with its stereo effects loops. However to use the amplifier as a full stereo unit an additional power amplifier and speaker is required. This should be driven from the LINE OUT LEFT as the RIGHT channel drives the internal 500 Watt power amplifier.

If you require a line output that is not affected by the OUTPUT LEVEL control you may use the EFFECTS SEND FULL RANGE jack socket, although this will obviously not include the effects loop.

DI SOCKETS

The DI or DIRECT INJECT sockets are balanced, low impedance XLR outputs intended for connection into the Microphone Inputs of a mixing desk.

These are to carry the signal to the P.A. system for larger gigs. All three are balanced and low impedance to ensure that no noise is added to the signal on the way to the mixer.
The level of these signals has been set to be similar to that from a microphone so that they will work without overloading the inputs on a desk that has no input Pad switches.

The signal connections are as follows: Pin 1 = Ground, Pin 2 = Signal +, Pin 3 = Signal -.

Three of these sockets are provided to give direct access to the PRE EQ signal and the STEREO POST EQ signals simultaneously. PRE EQ is before any of the amplifiers facilities or EQ but after the INPUT GAIN control. POST EQ is after all internal facilities and includes the external stereo effects loop.

There is a GROUND LIFT switch provided to allow the ground connection between the amplifier and the mixing desk to be broken in the event of hum loops being formed between separately grounded equipment.

TUNER OUT

The TUNER OUTPUT is for connection to the INPUT on your tuner. This output provides a constant level signal from the pre-amp to drive an external tuner. This is the only signal that remains active when the MUTE facility is operated and allows silent tuning to be carried out by MUTING the amplifier, tuning up and subsequently un-muting the amplifier once again to resume playing.

EFFECTS SECTION

There are two effects loops provided on the AH500, both of which have stereo returns and RETURN LEVEL controls.

The loops are configured as two independent EFFECTS SENDS, one being FULL RANGE and the other HIGH PASS. The HIGH PASS signal is provided from the compressors high pass output and can consequently have compression added prior to going to the effects unit, thus preventing transient overloads of external effects units.
There are also two independent Stereo EFFECTS RETURNS, each with its own level control. Either Send signal can be returned into either Stereo Return.

The Effects Loop MODE switch is for selecting the loop to be either in SERIES or in PARALLEL with the Pre-Amp. The Serial mode is automatically disabled if nothing is plugged into the effects send, This helps prevents the loop being switched in and the amplifier going dead because no signal is being returned.

The entire EFFECTS LOOP can be switched in or out with the front panel switch or the 5 way foot switch. It has a Yellow LED below the switch to indicate when it is on. This colour of LED is duplicated on the foot switch unit.

The SEND sockets are for connecting to the INPUT of your effects unit. The signal level of these outputs has been adjusted to suit the input of rack effects units. Use the input level control on your effects unit to precisely adjust for the optimum input level.

The RETURN sockets are for connecting the outputs from your effects unit back into the pre-amp. Use just the RIGHT socket for returning MONO effects signals or both sockets for stereo signals. These have their own RETURN level controls to adjust for either:
The overall level through the pre-amp in SERIES MODE
The balance of effect versus dry sound in PARALLEL MODE.

SERIES MODE means that the signal path through the pre-amp is broken at the effects loop, with the entire pre-amp signal going out to the effects unit and subsequently being returned to the pre-amp via the RETURN socket. The EFFECTS RETURN LEVEL control thus adjusts the overall level of signal through the pre-amp.
Always use the FULL RANGE EFFECTS SEND signal if you are using SERIES MODE. Using the HIGH PASS signal would cause the bottom end from your sound to go missing.

PARALLEL MODE means that the DRY signal bypasses the effects loop so as not to be degraded by the external effects unit. The RETURN socket then receives only the effected signal back into the pre-amp, this is then mixed with the DRY signal using the EFFECTS RETURN LEVEL control. Either the FULL RANGE or the HIGH PASS SEND signals can be used with PARALLEL MODE.

The HIGH PASS signal works well with effects on bass because the bottom end in the sound is left unaffected and only the top end has the effects added. The MODE switch must be set to PARALLEL for this to operate correctly.

All sorts of combinations and configurations can be achieved using these two effects sends and two sets of stereo returns.

The two STEREO EFFECTS RETURNS can also be used as external stereo signal inputs, each with its own level control. Signals plugged into these sockets can be switched on or off by activating the Effects Loop.

SPEAKER OUTPUTS

There are two speaker outputs provided one on a jack socket and one on an XLR, allowing two speaker cabinets to be connected to the amplifier. We recommend using the XLR as this can carry higher currents than the jack socket.

The combined impedance of the speaker cabinets used must not be less than 4 Ohms. Two 8 Ohm cabinets is the ideal load for these amplifiers.

If you are using one 4 Ohm cabinet, then no further speakers can be connected to the amplifier or the combined impedance will fall below 4 Ohms. If this occurs you will just be wasting power in heat generated by the output stage and no more volume will be available than with the single 4 Ohm cabinet.

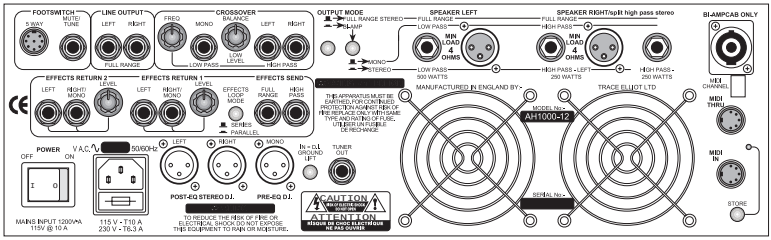
FAN COOLING

Two 80mm fans are provided on the back panel for cooling the 500 Watt output stage. These fans are stationary until the amplifier heats up to a critical temperature, they then automatically switch on to cool the output stage, turning off once again when the lower temperature threshold has been reached. This is to keep the amplifier silent for studio or practice use with the fans only operating as and when they need to.

The output stages are also thermally protected in the event of over temperature.

Do not block the free air flow to the fans or any of the ventilation slots on the units case as this will cause early thermal failure of the unit.

REAR PANEL FACILITIES (AH1000-12 & RAH1000-12)



The back panel on the AH1000 is almost as busy as the front panel providing as it should every possible option that the discerning player could require.

Starting at the top left hand corner and working along the top row of facilities, we have:

FOOTSWITCH SOCKETS

There are two footswitch sockets on the rear panel, an 8 way DIN socket and a jack socket.

The 8 way DIN socket is for connection of the 5 way footswitch unit. Once connected to the amplifier the 5 way footswitch gives instant foot control over the following: PRE-SHAPE, GRAPHIC, VALVE STAGE, COMPRESSION & EFFECTS LOOP. This works in conjunction with the front panel push buttons meaning either these or the footswitch unit can control all of the above functions. LED indication of the current status is provided on the front panel and the footswitch simultaneously.

To ensure that the footswitch and the amplifier indication is synchronised it is important that the footswitch is plugged into the amplifier prior to turning on the mains POWER switch.

The Jack socket is for connection of a footswitch to operate the MUTE/TUNE facility. With a momentary make switch the amplifier will be muted whilst the footswitch is held down. With a push to make/push to break type switch the amplifier will be alternately muted and un-muted with subsequent presses of the switch.

This switch operates in parallel with the front panel switch meaning either one or the other can be used. If the front panel switch is 'IN' (the amplifier muted) then the external footswitch will have no effect until this switch is released.

LINE OUTPUTS

These are Stereo Master LINE OUTPUTS, LEFT and RIGHT and provide an external output for the Full Range Stereo signal from the amplifier for driving external power amplifiers and speakers to allow you to build a larger more powerful system if required.

These outputs are situated after the OUTPUT LEVEL control to allow the entire connected system to be turned up and down with a single control.

CROSSOVER

This is the CROSSOVER for the MONO or STEREO BI-AMP facility provided on the AH1000. The FREQ control sets the frequency of the crossover point and is variable from 150Hz to 650Hz. BALANCE sets a balance between the high and low frequency speakers making up the Bi-Amp system. More correctly this controls the level of the bottom end speaker output. This BALANCE control affects only the internal power amplifier balance and not the signals from the MONO, LEFT & RIGHT line output sockets

The three jack sockets in this section, MONO, LEFT & RIGHT are Line Outputs for the three Stereo Bi-Amp signals for extending the system with external power amplifiers and speakers if required.

The crossover used in the AH1000 is a full stereo high and low pass electronic crossover but because low bass is omni-directional we are able to combine the two low pass signals without losing any of the stereo imaging information. This makes it possible to provide a full stereo bi-amp system using just three power amplifiers. One for the combined low pass signals and one each for the high pass left and right stereo signals.

OUTPUT MODE

These two switches set the operating mode of the amplifiers output stages.
The left-hand switch selects between FULL RANGE STEREO or BI-AMP Mode.

In FULL RANGE STEREO Mode the amplifier will only become a stereo unit if stereo effects are used, otherwise both the Speaker Left and Speaker Right output provide the same signal at 500 Watts RMS each.

In BI-AMP Mode the second switch comes into play to select either MONO or STEREO Bi-Amp conditions.

In MONO BI-AMP Mode the Left speaker output provides 500 Watts RMS Low Pass and the Right speaker output provides 500 Watts RMS High Pass.

In STEREO BI-AMP Mode the Left speaker output provides 500 Watts RMS Low Pass and the Right power amplifier splits into two 250 Watt power amplifiers to supply the Left and Right High Pass Stereo outputs.

SPEAKER OUTPUTS

The speaker outputs are provided on both jack and XLR sockets for the Full Range Stereo 500 Watt Left and Right outputs, and jack only for the High Pass Right stereo Bi-Amp output.

The Mode switch and Speaker Outputs are clearly marked as to their operation in the three output modes of the amplifier.

There is a further speaker output provided with the SPEAKON connector on the extreme right side of the amplifier. This is for use only with the special Stereo Bi-Amp cabinet (called the BFC) that has been designed to operate exclusively with the AH1000 to provide a full stereo bi-amp speaker configuration in one cabinet with the only interconnection required being this one SPEAKON socket.

This special cabinet can operate in FULL RANGE MONO, or FULL RANGE STEREO, in BI-AMP MONO or BI-AMP STEREO merely by using the OUTPUT MODE switches on the AH1000.

This has reduced what used to be a nightmare of interconnections using external power amplifiers and probably four cabinets to a single amplifier head (the AH1000) with a single connection (1 x SPEAKON) to a single cabinet (the BFC).

EFFECTS SECTION

There are two effects loops provided on the AH1000, both of which have stereo returns and RETURN LEVEL controls.

The loops are configured as two independent EFFECTS SENDS, one being FULL RANGE and the other HIGH PASS. The HIGH PASS signal is provided from the compressors high pass output and can consequently have compression added prior to going to the effects unit, thus preventing transient overloads of external effects units.

There are also two independent Stereo EFFECTS RETURNS, each with its own level control. Either Send signal can be returned into either Stereo Return.

The Effects Loop MODE switch is for selecting the loop to be either in SERIES or in PARALLEL with the Pre-Amp. The Serial mode is automatically disabled if nothing is plugged into the effects send, This helps prevents the loop being switched in and the amplifier going dead because no signal is being returned.

The entire loop can be switched in or out with the front panel switch, the 5 way footswitch or via MIDI. There is a Yellow LED below the EFFECTS LOOP switch to indicate when it is on. This colour of LED is duplicated on the footswitch unit.

The SEND sockets are for connecting to the INPUT of your effects unit. The signal level of these outputs has been adjusted to suit the input of rack effects units. Use the input level control on your effects unit to precisely adjust for the optimum input level.

The RETURN sockets are for connecting the outputs from your effects unit back into the pre-amp. Use just the RIGHT socket for returning MONO effects signals or both sockets for stereo signals. These have their own RETURN level controls to adjust for either:

The overall level through the pre-amp in SERIES MODE

The balance of effect versus dry sound in PARALLEL MODE.

SERIES MODE means that the signal path through the pre-amp is broken at the effects loop, with the entire pre-amp signal going out to the effects unit and subsequently being returned to the pre-amp via the RETURN socket. The EFFECTS RETURN LEVEL control thus adjusts the overall level of signal through the pre-amp.

Always use the FULL RANGE EFFECTS SEND signal if you are using SERIES MODE. Using the HIGH PASS signal would cause the bottom end from your sound to go missing.

PARALLEL MODE means that the DRY signal bypasses the effects loop so as not to be degraded by the external effects unit. The RETURN socket then receives only the effected signal back into the pre-amp, this is then mixed with the DRY signal using the EFFECTS RETURN LEVEL control. Either the FULL RANGE or the HIGH PASS SEND signals can be used with PARALLEL MODE.

The HIGH PASS signal works well with effects on bass because the bottom end in the sound is left unaffected and only the top end has the effects added. The MODE switch must be set to PARALLEL for this to operate correctly. This can provide a huge sound when used with the

amplifier in STEREO, either Full Range or Bi-Amp.

All sorts of combinations and configurations can be achieved using these two effects sends and two sets of stereo returns.

The two STEREO EFFECTS RETURNS can also be used as external stereo signal inputs, each with its own level control. Signals plugged into these sockets can be switched on or off by activating the Effects Loop.

DI SOCKETS

The DI or DIRECT INJECT sockets are balanced, low impedance XLR outputs intended for connection into the Microphone Inputs of a mixing desk.

These are to carry the signal to the P.A. system for larger gigs. All three are balanced and low impedance to ensure that no noise is added to the signal on the way to the mixer.

The level of these signals has been set to be similar to that from a microphone so that they will work without overloading the inputs on a desk that has no input Pad switches.

The signal connections are as follows: Pin 1 = Ground, Pin 2 = Signal +, Pin 3 = Signal -.

Three of these DI sockets are provided to give direct access to the PRE EQ signal and the STEREO POST EQ signals simultaneously. PRE EQ is before any of the amplifier facilities or EQ but after the INPUT GAIN control. POST EQ is after all internal facilities and includes the external stereo effects loop.

There is a GROUND LIFT switch provided to allow the ground connection between the amplifier and the mixing desk to be broken in the event of hum loops being formed between separately grounded equipment.

TUNER OUT

The TUNER OUTPUT is for connection to the INPUT on your tuner. This output provides a constant level signal from the pre-amp to drive an external tuner. This is the only signal that remains active when the MUTE facility is operated and allows silent tuning to be carried out by MUTING the amplifier, tuning up and subsequently un-muting the amplifier once again to resume playing.

COOLING

Two fans are provided on the back panel for cooling one of the 500 Watt output stages. There are a further two fans inside the unit for cooling the other 500 Watt output stage.

All of these fans are stationary until the amplifier heats up to a critical temperature, they then automatically switch on to cool the output stages, turning off once again when the lower temperature threshold has been reached. This is to keep the amplifier silent for studio or practice use with the fans only operating only as and when they need to. The two inside fans operate independently of the rear two.

The output stages are also thermally protected in the event of over temperature.

MIDI CONTROL

Beside the two fans is the MIDI control section of the amplifier. This has a MIDI IN socket, a MIDI THRU socket, a STORE push switch, a MIDI channel select switch and an LED to indicate when a Program Change is received or the program is stored.

The MIDI board in the AH1000 receives MIDI Program Change messages and uses these to set the AH1000 to pre-determined user definable settings.

This is very simple to use, just connect your effects MIDI OUT to the MIDI IN socket on the AH1000. Set the AH1000 MIDI channel (factory set to channel 1) to the same as your effects unit. Select a program on the effects unit. Select the functions you want switched in or out on the AH1000 and press STORE (hold this until the STORE LED stays lit). The program number is stored along with the AH1000 settings and the next time you select that program on your effects unit your chosen AH1000 settings will automatically be recalled.

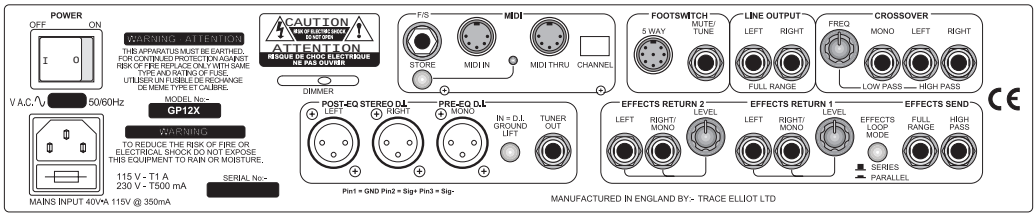
This procedure can be repeated for all 128 Program Change numbers.

Setting the MIDI channel

There is a small 4 way switch for selecting which MIDI channel the MIDI board will respond to from 1 - 16. This is factory set to channel 1. Other channels can be selected by setting each of the switches as follows:-

	Switch Position			
MIDI Channel	1	2	3	4
1	off	off	off	off
2	on	off	off	off
3	off	on	off	off
4	on	on	off	off
5	off	off	on	off
6	on	off	on	off
7	off	on	on	off
8	on	on	on	off
9	off	off	off	on
10	on	off	off	on
11	off	on	off	on
12	on	on	off	on
13	off	off	on	on
14	on	off	on	on
15	off	on	on	on
16	on	on	on	on

REAR PANEL FACILITIES (GP12X)



Starting at the top left hand corner and working along the top row of facilities, we have:

MIDI CONTROL

The MIDI control section of the GP12X has a MIDI IN socket, a MIDI THRU socket, a STORE push switch, a STORE footswitch socket, a MIDI channel select switch and an LED to indicate when a Program Change is received or the program is stored.

The MIDI board in the GP12X receives MIDI Program Change messages and uses these to set the GP12X to pre-determined user definable settings.

This is very simple to use, just connect your effects MIDI OUT to the MIDI IN socket on the GP12X. Set the GP12X MIDI channel (factory set to channel 1) to the same as your effects unit. Select a program on the effects unit. Select the functions you want switched in or out on the GP12X and press STORE (hold this until the STORE LED stays lit) or use an external momentary 'Make' STORE footswitch. The program number is stored along with the GP12X settings and the next time you select that program on your effects unit your chosen GP12X settings will automatically be recalled.

This procedure can be repeated for all 128 Program Change numbers.

Setting the MIDI channel

See the AH1000 MIDI CONTROL instructions on page 23.

FOOTSWITCH SOCKETS

There are two footswitch sockets on the rear panel, an 8 way DIN socket and a jack socket.

The 8 way DIN socket is for connection of the 5 way footswitch unit. Once connected to the amplifier the 5 way footswitch gives instant foot control over the following: PRE-SHAPE, GRAPHIC, VALVE STAGE, COMPRESSION & EFFECTS LOOP. This works in conjunction with the front panel push buttons meaning either these or the footswitch unit can control all of the above functions. LED indication of the current status is provided on the front panel and the footswitch simultaneously.

To ensure that the footswitch and the GP12X indication is synchronised it is important that the footswitch is plugged into the GP12X prior to turning on the mains POWER switch.

The Jack socket is for connection of a footswitch to operate the MUTE/TUNE facility. With a momentary make switch the GP12X will be muted whilst the footswitch is held down. With a push to make/push to break type switch the GP12X will be alternately muted and un-muted with subsequent presses of the switch.

This switch operates in parallel with the front panel switch meaning either one or the other can be used. If the front panel switch is 'IN' (the pre-amp muted) then the external footswitch will have no effect until this switch is released.

LINE OUTPUTS

These are Stereo Master LINE OUTPUTS, LEFT and RIGHT and provide an external output for the Full Range Stereo signal from the amplifier for driving external power amplifiers and speakers.

These outputs are situated after the OUTPUT LEVEL control to allow the entire connected system to be turned up and down with a single control.

CROSSOVER

This is the CROSSOVER for the MONO or STEREO BI-AMP facility provided on the GP12X. The FREQ control sets the frequency of the crossover point and is variable from 150Hz to 650Hz. The three jack sockets in this section, MONO, LEFT & RIGHT are Line Outputs for the three Stereo Bi-Amp signals for connecting the pre-amp to external power amplifiers.

The crossover used in the GP12X is a full stereo high and low pass electronic crossover but because low bass is omni-directional we are able to combine the two low pass signals without losing any of the stereo imaging information. This makes it possible to provide a full stereo bi-amp system using just three power amplifiers. One for the combined low pass signals and one each for the high pass left and right stereo signals.

For Bi-amp MONO use the LOW PASS MONO and the HIGH PASS RIGHT line outputs.

DI SOCKETS

The DI or DIRECT INJECT sockets are balanced, low impedance XLR outputs intended for connection into the Microphone Inputs of a mixing desk.

These are to carry the signal to the P.A. system for larger gigs. All three are balanced and low impedance to ensure that no noise is added to the signal on the way to the mixer.

The level of these signals has been set to be similar to that from a microphone so that they will work without overloading the inputs on a desk that has no input Pad switches.

The signal connections are as follows: Pin 1 = Ground, Pin 2 = Signal +, Pin 3 = Signal -.

Three of these DI sockets are provided to give direct access to the PRE EQ signal and the STEREO POST EQ signals simultaneously. PRE EQ is before any of the pre-amp facilities or EQ but after the INPUT GAIN control. POST EQ is after all internal facilities and includes the external stereo effects loop.

There is a GROUND LIFT switch provided to allow the ground connection between the amplifier and the mixing desk to be broken in the event of hum loops being formed between separately grounded equipment.

TUNER OUT

The TUNER OUTPUT is for connection to the INPUT on your tuner. This output provides a constant level signal from the pre-amp to drive an external tuner. This is the only signal that remains active when the MUTE facility is operated and allows silent tuning to be carried out by

MUTING the amplifier, tuning up and subsequently un-muting the amplifier once again to resume playing.

EFFECTS SECTION

There are two effects loops provided on the GP12X, both of which have stereo returns and RETURN LEVEL controls.

The loops are configured as two independent EFFECTS SENDS, one being FULL RANGE and the other HIGH PASS. The HIGH PASS signal is provided from the compressors high pass output and can consequently have compression added prior to going to the effects unit, thus preventing transient overloads of external effects units.

There are also two independent Stereo EFFECTS RETURNS, each with its own level control. Either Send signal can be returned into either Stereo Return.

The Effects Loop MODE switch is for selecting the loop to be either in SERIES or in PARALLEL with the Pre-Amp. The Serial mode is automatically disabled if nothing is plugged into the effects send, This helps prevents the loop being switched in and the amplifier going dead because no signal is being returned.

The entire loop can be switched in or out with the front panel switch, the 5 way footswitch or via MIDI. There is a Yellow LED below the EFFECTS LOOP switch to indicate when it is on. This colour of LED is duplicated on the footswitch unit.

The SEND sockets are for connecting to the INPUT of your effects unit. The signal level of these outputs has been adjusted to suit the input of rack effects units. Use the input level control on your effects unit to precisely adjust for the optimum input level.

The RETURN sockets are for connecting the outputs from your effects unit back into the pre-amp. Use just the RIGHT socket for returning MONO effects signals or both sockets for stereo signals. These have their own RETURN level controls to adjust for either:

The overall level through the pre-amp in SERIES MODE

The balance of effect versus dry sound in PARALLEL MODE.

SERIES MODE means that the signal path through the pre-amp is broken at the effects loop, with the entire pre-amp signal going out to the effects unit and subsequently being returned to the pre-amp via the RETURN socket. The EFFECTS RETURN LEVEL control thus adjusts the overall level of signal through the pre-amp.

Always use the FULL RANGE EFFECTS SEND signal if you are using SERIES MODE. Using the HIGH PASS signal would cause the bottom end from your sound to go missing.

PARALLEL MODE means that the DRY signal bypasses the effects loop so as not to be degraded by the external effects unit. The RETURN socket then receives only the effected signal back into the pre-amp, this is then mixed with the DRY signal using the EFFECTS RETURN LEVEL control. Either the FULL RANGE or the HIGH PASS SEND signals can be used with PARALLEL MODE.

The HIGH PASS signal works well with effects on bass because the bottom end in the sound is left unaffected and only the top end has the effects added. The MODE switch must be set to PARALLEL for this to operate correctly. This can provide a huge sound when used with the pre-amp in STEREO, either Full Range or Bi-Amp.

All sorts of combinations and configurations can be achieved using these two effects sends and two sets of stereo returns.

The two STEREO EFFECTS RETURNS can also be used as external stereo signal inputs, each with its own level control. Signals plugged into these sockets can be switched on or off by activating the Effects Loop.

SPECIFICATIONS

INPUTS

Passive Instrument Input	Impedance 1MΩ Headroom 10v p-p	Sensitivity 100mV p-p
Active Instrument Input	Impedance 10kΩ Headroom 20v p-p	Sensitivity 200mV p-p
Effects Returns	Impedance 50kΩ	Nominal Level 0dBu

OUTPUTS

Line Outputs Full Range	Impedance 10kΩ	Nominal Level 0dBu
Line Outputs Crossover	Impedance 1kΩ	Nominal Level 0dBu
Tuner Output	Impedance 50kΩ	Nominal Level 0dBu
DI Outputs	600 Ohms Balanced	Nominal Level 200mV

EQ etc.

Graphic	+/- 15dB @ 12 centre Frequencies
Pre-Shape	+8dB @ 50Hz & 4k, -8dB @ 400Hz
Compression	Crossover at 250Hz Max Low Pass compression ratio = 15:1 Max High Pass compression ratio = 5:1
Valve	Double Triode. No EQ, Just gain
Crossover	Frequency variable between 150Hz & 650Hz
Effects Send High Pass	Crossover @ 250Hz
Noise Reduction	Progressive Low Pass Threshold down to 1.5k

SAFETY INSTRUCTIONS

Warning

For continued protection against the risk of fire, replace fuses only with fuses of the same type and rating.
To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
In the event of a suspected malfunction, always refer this equipment to a qualified service engineer.
This apparatus must be earthed. The wires in this mains are coloured in accordance with the following code:-

***Green& Yellow* - Earth** ***Blue* - Neutral** ***Brown* - Live**

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:-
The wire which is coloured Green & Yellow must be connected to the terminal in the plug which is marked with the letter E or by the earth symbol or coloured green or Green and Yellow.
The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black.
The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Red.
If A 13 amp (BS1363) plug is used a 13 amp fuse must be fitted, or if any other type of plug is used a 15 amp fuse must be fitted either in the plug or adaptor or at the distribution board.

EMC Warning

It is inherent in the design of a loudspeaker and in the design of guitar pickups that they should emit or be affected by electro magnetic fields. Trace Elliot loudspeaker enclosures should not be used less than 2 metres away from equipment which is likely to be affected by electro magnetic interference.
Likewise, guitars fitted with electro magnetic pickups should not be used less than 2 metres away from any source of electro magnetic emissions such as loudspeakers.
Emissions from loudspeakers are dependent on the frequency characteristic of the drive unit.
Levels were measured direct from the drivers of 30 dBuV.
These levels are reduced to a safe level at a distance of 1.27 metres from the drivers.

SICHERHEITS-ANWEISUNGEN

Warnung

Zum fortdauernden Schutz gegen Feuerrisiken die Sicherungen nur durch Sicherungen desselben Typs und derselben Nennleistung austauschen.
Um das Risiko von Feuer oder Elektroschock zu reduzieren, dieses Gerät keinem Regen und keiner Feuchtigkeit aussetzen.
Im Fall eines vermuteten Defekts muß dieses Gerät einem qualifizierten Service-Techniker übergeben werden.
Dieses Gerät muß geerdet werden. Die Drähte im Stromkabel wurden dem folgende Code nach koloriert:

***Grün & Gelb* - Erde** ***Blau* - Neutral** ***Braun* - Stromführend**

Da die Farben der Drähte dieses Geräts nicht notwendigerweise den Farbmarkierungen der Pole in Ihrem Stecker entsprechen, sollten Sie wie folgt vorgehen:
Der grün/gelbe Draht muß an den Pol im Stecker angeschlossen werden, der mit dem Buchstaben E oder dem Erde-Symbol oder der Farbe Grün oder Grün/Gelb markiert ist.
Der blaue Draht muß an den Pol angeschlossen werden, der mit dem Buchstaben N oder schwarz markiert ist.
Der braune Draht muß an den Pol angeschlossen werden, der mit dem Buchstaben L oder rot markiert ist.
Falls ein 13 amp (BS1363) Stecker benutzt wird, muß eine 13 amp Sicherung eingesetzt werden; und falls ein Stecker anderer Art benutzt wird, muß eine 15 amp Sicherung entweder im Stecker selbst oder an der Verteilertafel eingesetzt werden.

EMC Warnung

Es liegt im Design eines Lautsprechers und im Design von Gitarrenaufnehmern, daß sie elektromagnetische Felder abgeben oder von solchen beeinflußt werden. Trace Elliot Lautsprechergehäuse sollten daher nicht in unter 2 Metern Entfernung von Geräten benutzt werden, die durch elektromagnetische Störungen beeinflußt werden könnten.
Auch sollten Gitarren, die mit elektromagnetischen Aufnehmern ausgestattet sind, nicht in unter 2 Metern Entfernung von Quellen elektromagnetischer Emissionen, wie z.B. Lautsprechern, benutzt werden.
Die Lautsprecheremissionen sind von der Frequenzcharakteristik der Treiber-Einheit abhängig.
Die Werte wurden direkt von den Treibern von 30 dBuV gemessen.
Diese Werte reduzieren sich in einer Entfernung von 1,27 Metern von den Treibern auf ein sicheres Maß.

CONSIGNES DE SECURITE

Attention

Pour une protection continue contre les incendies, ne remplacez les fusibles que par des fusibles du mÍme type et du mÍme courant nominal.
Pour réduire le risque diincendie ou de décharge électrique, níexposez jamais cet équipement à la pluie ou à líhumidité.
Si vous soupÁonnez une défaiillance, faites toujours appel à un ingénieur qualifié.
Cet appareil doit Ítre mis à la masse. Les fils de cette conduite díamenée de secteur sont colorés selon le code suivant:

***Vert & Jaune* - Masse** ***Bleu* - Neutre** ***Marron* - Tension**

Etant donné que les couleurs des fils de la conduite díamenée de secteur de cet appareil risquent parfois de ne pas correspondre aux couleurs identifiant les bornes de votre fiche, procédez comme suit:
Le fil Vert & Jaune doit Ítre relié à la borne de la fiche marquée de la lettre E, du symbole de terre ou colorée en Vert et Jaune.
Le fil Bleu doit Ítre relié à la borne marquée de la lettre N ou colorée en Noir.
Le fil Marron doit Ítre relié à la borne marquée de la lettre L ou colorée en Rouge.
Si vous utilisez une fiche 13 amp (BS1363) vous devez utiliser un fusible 13 amp. Si vous utilisez un autre type de prise, installez un fusible 15 amp dans la prise, dans líadaptateur ou dans le tableau de distribution.

Compatibilité électromagnétique - avertissement

La conception d'un haut-parleur et des pickups de guitare est telle qu'ils sont affectés par des champs électromagnétiques ou en émettent les enceintes de haut-parleur Trace Elllot ne devraient pas être utilisées à moins de 2 mètres de l'équipement susceptible d'être affecté par les parasites électromagnétiques.
Les émissions en provenance de haut-parleurs dépendent de la caractéristique fréquentielle de l'émetteur piloté.
De même, les guitares équipées de pickups électromagnétiques ne devraient pas être utilisées à moins de 2 mètres de toute source d'émissions électromagnétiques telles que des haut-parleurs.
Les niveaux ont été mesurés directement à partir des drivers de 30 dBuV.
Ces niveaux sont réduites à un niveau sûr à une distance de 1,27 mètre des drivers.

INSTRUCCIONES DE SEGURIDAD

Advertencia

Para una protección continua contra el riesgo de incendio, reemplace siempre los fusibles con otros del mismo tipo y valor.
Para reducir el riesgo de incendio o descarga eléctrica, no exponga este equipo a la lluvia o a la humedad.
En caso de que sospeche que exista un desperfecto, refiera siempre este equipo a un ingeniero de servicio calificado.
Este aparato debe tener conexión a tierra. Los cables de esta toma se colorean según el código siguiente:-

***Verde & Amarillo* - Tierra** ***Azul* - Neutro** ***Marrón* - Vivo**

Como los colores de los cables de la toma principal de este aparato pueden no corresponder con los colores marcados que identifican los terminales en su enchufe, proceda como se indica a continuación:-
El cable verde y amarillo debe conectarse al terminal del enchufe marcado con la letra E, por el símbolo de tierra, o pintado de verde o verde y amarillo.
El cable azul debe conectarse al terminal marcado con la letra N o pintado de negro.
El cable pintado de marrón debe conectarse al terminal marcado con la letra L o pintado de Rojo.
Si se usa un enchufe de 13 amperios (BS 1363), se deberá poner un fusible de 13 amperios, o un fusible de 15 amperios si se usa cualquier otro tipo de enchufe, ya sea en el enchufe, en el adaptador o en la placa de distribución.

Advertencia EMC (de compatibilidad electromagnética)

Es inherente en el diseño de un altavoz y en el de las pastillas de guitarra que emitan o se vean afectados por campos electro magnéticos. Los recintos de los altavoces Trace Elliot no deberán usarse a menos de 2 metros de distancia de cualquier equipo que pueda ser afectado por interferencias electromagnéticas.
Asimismo, las guitarras que tienen pastillas electromagnéticas no deberán usarse a menos de 2 metros de distancia de ninguna fuente de emisiones electromagnéticas tales como los altavoces.
Las emisiones de los altavoces dependen de la característica de frecuencia del equipo de accionamiento.
Los niveles se midieron directamente desde unidades de accionamiento de 30 dBuV.
Estos niveles se reducen a un nivel seguro a una distancia de 1,27 metros desde las unidades de accionamiento.

SIKKERHETSANVISNINGER

Advarsel!

For å hindre fare for brann må du alltid skifte en røket sikring ut med en av samme type og størrelse.
For å redusere faren for brann eller støt må høyttaleren ikke utsettes for regn eller fuktighet.
Hvis du har den minste mistanke om feil må høyttaleren repareres av en kvalifisert tekniker.
Høyttaleren må jordes. Ledningene har følgende fargekode:

Grønn og gul - jord **Blå - nøytral** **Brun - strømførende.**

Hvis fargekoden ikke stemmer overens med støpselets fargekoder, går du frem slik:
Den grønne og gule ledningen må kobles til støpselets terminal merket E eller med jord–symbolet, eller farget grønn og gul.Den blå ledningen må kobles til terminalen merket N eller farget sort.Den brune ledningen må kobles til terminalen merket L eller farget rød.Høyttaleren må kobles til en 16 ampere krets.

Advarsel – elektromagnetisk forenlighet

Alle høyttalere og pick–up'er til gitarer gir nødvendigvis fra seg eller påvirkes av elektromagnetiske felter. Trace Elliot–høyttalerkabinetter må ikke brukes mindre enn 2 m fra utstyr som trolig kan påvirkes av elektromagnetisk støy.
Gitarer med elektromagnetisk pick–up må likeledes ikke brukes mindre enn 2 m fra en elektromagnetisk kilde, som f.eks. høyttalere.Utstrålingen fra en høyttaler avhenger av frekvenskarakteristikken til driver–enheten.Nivåene ble målt direkte fra utganger på 30 dBuV.
Disse nivåene faller til et trygt nivå i en avstand av 1,27 m fra utgangene.

VEILIGHEIDSVOORSCHRIFTEN

Waarschuwing

Voor bestendige bescherming tegen het gevaar van brand dienen zekeringen alleen vervangen te worden met zekeringen van hetzelfde type en van dezelfde waarde.
Om het risico van brand of elektrische schok te verminderen, wordt aanbevolen dat de uitrusting niet wordt blootgesteld aan regen of vocht.
In het geval van een verdacht defect dient altijd de hulp ingeroepen te worden van een bevoegde onderhoudsmonteur.
Deze apparatuur moet geaard worden. De draden in deze netspanning zijn gekleurd in overeenstemming met de volgende code:

Groen & Geel - Aardverbinding **Blauw - Neutraal** **Brown - Stroomvoerend**

Daar de kleuren van de draden in de netspanning niet overeenkomen met de gekleurde markeringen van de klemmen in uw stekker, dient u als volgt te werk te gaan:
De Groen & Geel gekleurde draad dient verbonden te worden met de klem in de stekker die gemarkeerd is met de letter E of met het aardesymbool of groen of Groen en Geel gekleurd is.
De Blauwe draad dient verbonden te worden met de klem die gemarkeerd is met de letter N of zwart gekleurd is.
De Bruine Draad dient verbonden te worden met de klem die met de letter L gemarkeerd of Rood gekleurd is.
Wanneer 13 amp. (BS1363) stekker gebruikt wordt dient een 13 amp. zekering aangebracht te worden, wanneer een ander type stekker wordt gebruikt dient een 15 amp. zekering aangebracht te worden in de stekker of adapter of in de verdeelkast.

EMC (Electromagnetic compatibility) [bestendigheid tegen elektromagnetische storingen]
Waarschuwing

Het is inherent in het ontwerp van een luidspreker en in het ontwerp van guitaar tastelementen dat zij elektromagnetische velden emitteren of er door beïnvloed worden. Trace Elliot luidspreker omkastingen dienen niet gebruikt te worden op een afstand van minder dan 2 meter van de uitrusting, daar deze beïnvloed zouden kunnen worden door elektromagnetische storing.
Evenzo dienen guitaren uitgerust met elektromagnetische tastelementen niet gebruikt te worden op een afstand van minder dan 2 meter van een bron van elektromagnetische emissies, zoals luidsprekers.
Emissies van luidsprekers zijn afhankelijk van de frequentie die kenmerkend is voor de aandrijfinrichting.
Niveaus van 30 dBuV werden rechtstreeks van de aandrijvers gemeten. Deze niveaus zijn verminderd tot een veilig niveau op een afstand van 1.27m van de aandrijvers.

SÄKERHETSFÖRESKRIFTER

Varning

För oavbrutet skydd mot brandrisk, byta ut säkringar endast med samma typ av säkring och styrka.
För att minska risken för brand eller elektriska stötar, utsätt inte utrustningen för regn eller fukt.
I händelse av en oförutsedd felaktig funktion så vänd er alltid en behörig serviceingenjör.
Denna apparat måste vara jordad. Ledningarna i stickproppen har färger enligt följande kod:

Grön och gul - Jordning **Blå - Neutral** **Brun - Spänningsförande**

Eftersom färgerna i apparatens sladd kanske inte överensstämmer med färgmarkeringarna som identifierar terminalerna i stickproppen, gör enligt följande:
Den ledning som är grön och gul måste anslutas till den terminal i stickproppen som markeras med bokstaven E eller genom jordsymbolen eller grön och gul färg.
Den ledning som är blå måste anslutas till den terminal som är markerad med bokstaven N eller svart färg.
Den ledning som är brun måste anslutas till den terminal som är markerad med bokstaven L eller röd färg.
Om en A 13 amp (BS1363) stickpropp används måste en 13 amp säkring användas eller om någon annan sorts stickpropp används måste en 15 amp säkring användas i stickproppen eller i en förgreningspropp eller i fördelningstavla.

Emissionsströmsvarning

Det är ingår i konstruktionen på högtalare och gitarrers pick-uper att de skall påverkas av elektromagnetiska fält. Trace Elliots högtalarlådor skall inte användas närmare än 2 meter från utrustning som kan påverkas av elektromagnetiska störningar.
Gitarrer som har elektromagnetiska pick-uper monterade skall heller inte användas mindre än två meter bort från någon källa med elektromagnetisk emission, som t ex högtalare.
Emissionen från högtalare beror på drivenhetens frekensfunktion.
Nivåer uppmätta direkt från drivenheten var på 30 dBuV.
Dessa nivåer reduceras till en säker nivå på ett avstånd av 1,27 meter från drivenheterna.

TURVAOHJEET

Varoitus

Palovaaran välttämiseksi käytä aina samantyyppisiä ja -tehoisia sulakkeita.
Vähentääkseksi tulipalo- ja sähköiskuvaaraa pidä tämä laite poissa sateesta äläkä altista sitä kosteudelle.
Jos epäilet laitteen toimivan virheellisesti, ota aina yhteys ammattitaitoiseen huoltohenkilöön.
Tämä laite täytyy maattaa. Tämän laitteen johdot on koodattu seuraavasti:

Vihreä & keltainen - maa **Sininen - neutraali** **Ruskea - jännitteinen**

Koska tämän laitteen verkkojohdon värit saattavat erota liittimen värimerkinnöistä, toimi seuraavasti:
Vihreä & keltainen johto täytyy yhdistää pistokkeen liittimeen, joka on merkattu E:llä tai maattosymbolilla tai joka on väriltään vihreä tai vihreä ja keltainen.
Sininen johto täytyy yhdistää liittimeen, joka on merkattu N-kirjaimella tai joka on väriltään musta.
Ruskea johto täytyy yhdistää liittimeen, joka on merkattu L-kirjaimella tai joka on punainen.
Käytettäessä 13 ampeerin (BS1363) pistoketta täytyy siihen laittaa 13 ampeerin sulake. Jonkin muun tyyppistä pistoketta käytettäessä täytyy 15 ampeerin sulake laittaa joko pistokkeeseen, adapteriin tai jakelutauluun.

Sähkömagneettista virtaa koskeva varoitus

Kaiuttimien ja kitaran mikrofonin suunnitteluun kuuluu lunnostaan se, että niiden tulee säteillä sähkömagneettista kenttää tai tämän tulee vaikuttaa niihin. Trace Elliot -kaiuttimia ei saisi käyttää 2 metriä lähempänä sellaisia laitteita joihin sähkömagneettinen kenttä vaikuttaa häiritsevästi.
Myöskään kitaroita, joissa on sähkömagneettiset mikrofonit ei saisi käyttää 2 metriä lähempänä mitään sähkömagneettista lähdettä, kuten kaiutinta.
Kaiuttimien päästöjen voimakkuudet ovat riippuvaisia teholähteen taajuudesta.
Voimakkuustasot mitattiin suoraan 30 dBuV:n lähteestä.
Nämä tasot laskevat turvalliselle tasolle oltaessa 1, 27 metrin etäisyydellä teholähteestä.

INSTRUÇÕES DE SEGURANÇA

Aviso

Para protecção contînua contra o risco de fogo, substitua os fusíveis só com fusíveis do mesmo tipo e taxação.
Para reduzir o risco de fogo ou de choque elèctrico, não exponha este equipamaento a chuva ou humidade.
No caso de suspeita de mau funcionamento, consulte sempre um mecânico de serviço devidamente qualificado.
Este aparelho deve ser ligado à terra. Os fios neste sector são coloridos em conformidade com o seguinte código:-

Verde e Amarelo - Terra **Azul - Neutro** **Castanho - Vivo**

No caso das cores dos fios no cabo deste aparelho não corresponderem com as marcações em cor que identificam os terminais na ficha proceda como se segue:-
O fio Verde e Amarelo deve ser ligado ao terminal na ficha marcado com a letra E ou pelo simbolo à terra ou com a cor verde ou Verde e Amarela.
O fio Azul deve ser ligado ao terminal marcado com a letra N ou com a cor Preta.
O fio castanho deve ser ligado ao terminal marcado com a letra L ou com a cor Vermelha.
Se for usada uma ficha de 13 amp (BS1363) deve ser montado um fusível de 13 amp, se for usada qualquer outro tipo de ficha tem de ser montado um fusível de 15 amp ou na ficha, ou no adaptador ou no quadro de distribuição.

Aviso CEM

É inerente ao design de alto-falantes e ao design de reprodutores de guitarras que devem emitir ou ser afectados por campos electromagnéticos. As coberturas dos alto-falantas Trace Elliot não devem ser usadas a menos de 2 metros do equipamento que pode ser afectado pela interferíncia electromagnética.
Igualmente, as guitarras equipadas com reprodutores electromagnéticos não devem ser usadas a menos de 2 metros da fonte de emissões electromagnéticas tais como alto-falantes.
As emissões dos alto-falantes dependem da característica de frequíncia da unidade accionadora.
Os níveis foram medidos directamente de accionadores de 30 dBuV.
Estes níveis são reduzidos para um nível seguro a uma distância de 1,27m dos accionadores.

ISTRUZIONI PER LA SICUREZZA

Avvertenza

Per assicurarsi di essere sempre protetti contro il rischio di incendi, sostituire i fusibili soltanto con altri dello stesso tipo e potenza.
Non esporre l'attrezzatura alla pioggia o umidità per ridurre il rischio di incendi o shock elettrici.
Se si sospetta una malfunzione, consultare sempre un tecnico esperto in questo settore.
L'attrezzatura deve essere messa a terra. I fili sono stati colorati secondo il codice seguente:

Giallo e verde - Terra **Blu - Neutro** **Marrone - Sotto tensione**

Dato che i colori dei fili nel cavo elettrico del prodotto possono non corrispondere ai segni colorati che identificano i terminali della spina, procedere come segue:–

Il filo di color giallo e verde deve essere collegato al terminale nella spina marcata con la lettera E o con il simbolo terra, oppure di colore verde o verde e giallo.
Il filo di colore blu deve essere collegato al terminale che mostra la lettera N oppure di color nero.
Il filo di color marrone deve essere collegato al terminale che mostra la lettera L oppure di color rosso.
Con una una spina di 13 amp (BS1363), si deve usare un fusibile di 13 amp. Con qualsiasi altro tipo di spina inserire un fusibile di 15 amp nella spina, nell'adattatore o nel quadro di distribuzione.

Avvertenza EMC (per la compatibilità elettromagnetica)

Nel design di altoparlanti o di fonorivelatori di una chitarra, è inerente il fatto che raccoglieranno o saranno influenzati da campi elettromagnetici. Le custodie per altoparlanti Trace Elliott non dovrebbero essere poste lontano meno di 2 metri dall'attrezzatura che potrebbe risentire dell'interferenza elettromagnetica.
Allo stesso modo, non usare le chitarre con fonorivelatori elettromagnetici ad una lontananza inferiore a 2 metri da qualsiasi sorgente di emissioni elettromagnetiche come altoparlanti.
Le emissioni da altoparlanti dipendono dalla caratteristica di frequenza dell'unità di comando.
I livelli sono stati misurati direttamente da unità di comando di 30 dBuV; il livello sicuro è ad una distanza di 1,27 metri dalle unità.

SIKKERHEDSINSTRUKTIONER

Advarsel

For vedvarende beskyttelse imod risikoen for brand, må sikringerne kun udskiftes med sikringer af samme type og størrelse.
For at reducere risikoen for brand og elektrisk chok må dette udstyr ikke udsættes for regn eller fugt.
Hvis man har mistanke om, at der er en fejl i udstyret, skal man altid henvende sig til en faguddannet servicetekniker.
Dette apparat skal have jordforbindelse. Lederne i el–ledningen er farvet efter følgende kode:

Grøn og gul - Jord **Blå - Nulleder** **Brun - Spændingsførende**

Fordi ledernes farver i dette apparats el–ledning evt. ikke svarer til de farvede afmærkninger, der identificerer klemmerne i stikket, skal man gå frem på følgende måde:
Den leder, som er farvet grøn/gul, skal forbindes med klemmen i stikket, der er afmærket med bogstavet E eller med jordsymbolet eller som er grøn eller grøn/gul.
Den blå ledning skal forbindes med den klemme, der er afmærket med bogstavet N eller som er sort.
Den brune ledning skal forbindes med den klemme, der er afmærket med bogstavet L eller som er rød.
Hvis der anvendes et 13A (BS1363) stik, skal der monteres en 13A sikring. Hvis der anvendes en anden type stik, skal der sættes en 15A sikring i stikket eller snydeproppen eller på strømfordelingstavlen.

EMC advarsel

Højttalere og guitar–pickups er konstrueret således, at de udsender eller påvirkes af elektromagnetiske felter. Trace Elliot højttalerkabinetter må ikke placeres mindre end 2 meter fra udstyr, der sandsynligvis vil blive påvirket af elektromagnetiske forstyrrelser.
Ligeledes bør guitarer, som er udstyret med elektromagnetiske pickups, ikke anvendes mindre end 2 meter væk fra en kilde til elektromagnetiske emissioner som f.eks. højttalere.
Emissioner fra højttalere afhænger af drivaggregatets frekvens. Niveauer måles direkte fra drivaggregater på 30 dBuV.
Disse niveauer reduceres til et sikkert niveau i en afstand af 1,27 m fra drivaggregaterne.

ÖRYGGISRÁ-ÐSTAFANIR.

Aóvörun.

Viðvarandi vernd gegn eldhættu gerir nauðsynlegt að endurnýja öryggi einvörðungu með nákvæmlega samskonar öryggjum.
Til að draga úr eldhættu eða því að fá rafstraum ber að gæta þess að rigning eða komist ekki að tækinu.
Ef grunur leikur á bilun ber jafnan að leita til löggilts viðgerðarmanns.
Tækið verður að vera jarðtengt. Leiðslurnar í rafmagnið eru litaðar samkvæmt eftirfarandi kerfi:

Grænar og gular - jörð **Blaár - núll** **Brúnar - straumur**

Með því litirnir á leiðslum tækisins kunna að vera í ósamræmi við litamerkingar á innstungu yðar ber að fara pannig að:
Leiðsluna, sem er græn og gul, ber að tengja í innstungu par sem merkt er E eða jörð eða er græn og gul að lit.
Leiðsluna, sem er blá, ber að tengja í klemmuna par sem merkt er N eða sem er svört.
Leiðsluna, sem er brún, ber að tengja í klemmuna par sem merkt er L eða sem er rauð.
Ef A 13 amp. (BS1363) innstunga er notuð ber að hafa 13 amp. öryggi eða ef önnur innstungugerð er notuð ber að hafa 15 amp. öryggi annað hvort á innstungunni eða millistykkinu í töflunni.

EMC aóvörun.

það er föst regla við hönnun hátalara og gítargrípa að peir gefi frá sér eða verði fyrir áhrifum af rafsegulsviðm. Trace Elliot hátalarakerfi ætti ekki að nota í innan við 2 metra fjarlægð frá tækjum, sem kynnu að verða fyrir áhrifum rafsegultruflana.
Ekki ætti heldur að nota gítara með rafsegulgrípa í innan við 2 metra fjarlægð frá hverskyns rafsegulútsendingum eins og hátölurum.
Útsendingar frá hátölurum fara eftir tíðnieinkennum driftækisins.
Hávaðamörkin voru mæld beinlínis frá drifum 30 BuV.
Hægt er að lækka pau að öruggum mörkum í 1.27 metra fjarlægð frá drifunum.

ΟΔΗΓΙΕΣ ΑΣΦΑΛΕΙΑΣ

Προειδοποιη

Για συνεχη προστασία από τον κινδυνο φωτιάς, αβτικαταστήστε τις ασφάλειες μόνο με ασφάλειες του ίδιου τύπου και της ίδιας αναλογιας.

Για να μειωσετε τον κίνδυνο της φωτιάς ή την ηλεκτροπληξία, μην εκτίθετε τον εξοπλισμό στη βροχή ή οτην υγρασία.

Σε περίπτωση που υποψιάζεστε κάποια δυσλειτουρλία, πάντοτε να παραπέμπετε αυτή τη συσκευή σε καταρτισμένο μηχανικό σέρβις.

Η συσκευή αυτή πρέπει να διαθέτει γείωση. Τα σύρματα στην κεντρική παροχή ρεύματος ειναι έγχρωμα σύμφωνα με τον ακόλουθο κωδικό:

Πράσινο & Κιτρινο – Γείωση **Μπλέ – Ουδέτερο** **Καφέ – Ηλεκτροφόρο**

Μια και τα χρώματα στο σύρμα της κεντρικής παροχής αυτής της συσκευής μπορεί να μην αντιστοιχούν με τα έγχρωμα σημάδια που ταυτιζουν τους ακροδέκτες στην πρίζα σας, προχωρήστε ως εξής:–

Το σύρμα που έχει χρώμα Πράσινο & Κιτρινο πρέπει να σονδέεται με τον ακροδέκτη στην πρίζα που είναι σημειωμένος με το γράμμα Ε ή με το σύμβολο γείωσης ή με το πράσινο χρώμα ή με το Πράσινο & Κίτρινο.

Το αύρμα που έχει χρώμα Μπλε πρέπει να συνδέεται στον ακροδέκτη που είναι σημειωμένος με το γράμμα Ν ή το Μαύρο χρώμα.

Το σύρμα που έχει χρώμα Καφέ πρέπει να συνδέεται με τον ακροδέκτη που είναι σημειωμένος με το γράμμα L ή το Κόκκινο χπώμα.

Εάν ξρησιμοποιείται πρίζα Α 13 αμπέρ (BS1363) θα πρέπει να εφαρμόζεται ασφάλεια των 13 αμπέρ, ή εάν χρησιμοποιείται οποιοδήποτε άλλο είδος πρίζας θα πρέπει να εφαρμόζεται ασφάλεια των 15 αμπέρ είτε στην πρίζα ή στο μετασχηματιστή ή στον πίνακα διανομής.

Προειδιποιηση της ΕΜC

Ει΄ναι αναγκαίο όπως στο σχέδιο του μεγαφώνου και στο σχέδιο πικάπ κιθάρας πρέπει να εκπέμπουν ή να επηρεάζονται από τα ηλεκτρομαγνητικά πεδία. Τα εσώκλειστα μελαφώνου της TRACE ELLIOT να μην χρησιμοποιούνται λιγότερο απο 2 μέτρα μακριά από τη συσκευή που πιθανόν να επηρεάζονται από ηλεκτρομαγνητική παρέμβαση.

Επίσης, οι κιθάρες που εφαρμόζονται με ηλεκρρομαγνητικά πικάπς δεν πρέπει να χρησιμοποιούνται λιγότερο από 2 μέτρα απόσταση από πηγή ηλεκτρομαγνητικής εκπομπής, όπως τα μεγάφωνα.

Εκπομπές από μεγάφωνα εξαρτώνται από το χαρακτηριστικό της συχνότητας της συσκευής μετάδοσης κίνηνης.

Οι βαθμοί καταμετρήθηκαν απευθείας από το επιπεδο οδηγού των 30 dBuV.

Αυτα τά επίπεδα μειώνονται για ασφαλές επίπεδο σε ασφαλή βαθμό απόστασης 1,27 μέτρα από τους οδηγούς.