

Klystron Bass Magnifier

OPERATING INSTRUCTIONS



ASHDOWN KLYSTRON BASS MAGNIFIER

OPERATING INSTRUCTIONS

IMPORTANT SAFETY INSTRUCTIONS

WARNING - When using electrical products, basic precautions should be followed, including the following:

1. Read all the instructions before using the product.
2. Do not use this product near water - for example, near a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool, or the like.
3. This product may cause permanent hearing loss. Do not operate for long periods of time at high volume level or at any level that is uncomfortable. If you experience any hearing loss or ringing in the ears, you should consult an audiologist.
4. The product should be located so that its location or position does not interfere with its proper ventilation.
5. The product should be located away from heat sources such as radiators, heat registers, or other products that produce heat.
6. The product should be connected to a power supply of the type described in the operating instructions or as marked on the product.
7. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time.
8. Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
9. The product should be serviced by qualified personnel when:
 - a. The power supply cord or the plug has been damaged; or
 - b. Objects have fallen, or liquid has been spilled into the product: or
 - c. The product has been exposed to rain or moisture: or
 - d. The product does not appear to operate normally or exhibits a marked change in performance: or
 - e. The product has been dropped, or the enclosure damaged.
10. Do not attempt to service the product. All servicing should be referred to qualified service personnel.
11. For continued protection against the risk of fire, replace fuses only with those of the same type and rating as indicated on the back of the product.

WARNINGS USED ON THE EQUIPMENT

WARNING - ATTENTION

THIS APPARATUS MUST BE EARTHED FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE AND RATING OF FUSE. UTILISER UNFUSIBLE DE RECHANGÉ MEME TYPE ET CALIBRE.

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



THE KLYSTRON BASS MAGNIFIER DESIGN PHILOSOPHY

This is a **NO COMPROMISE** design using the best parts available wherever possible.

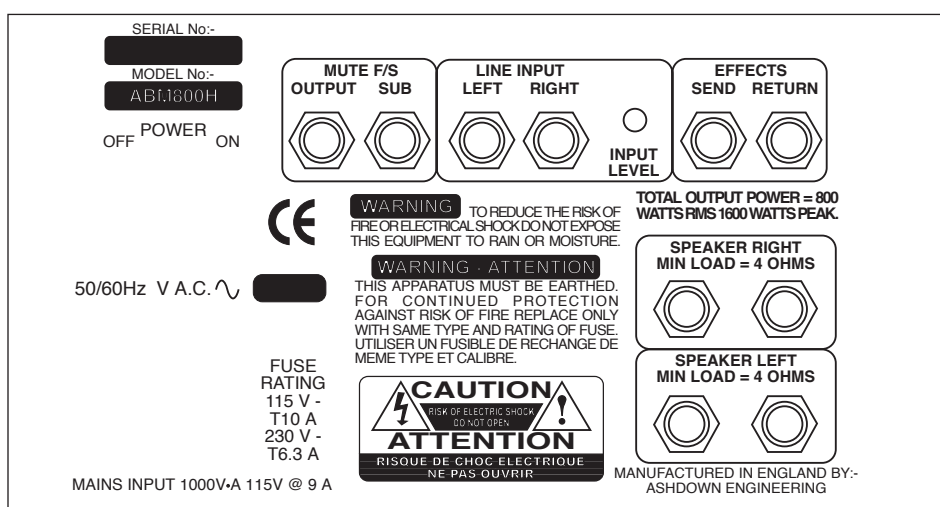
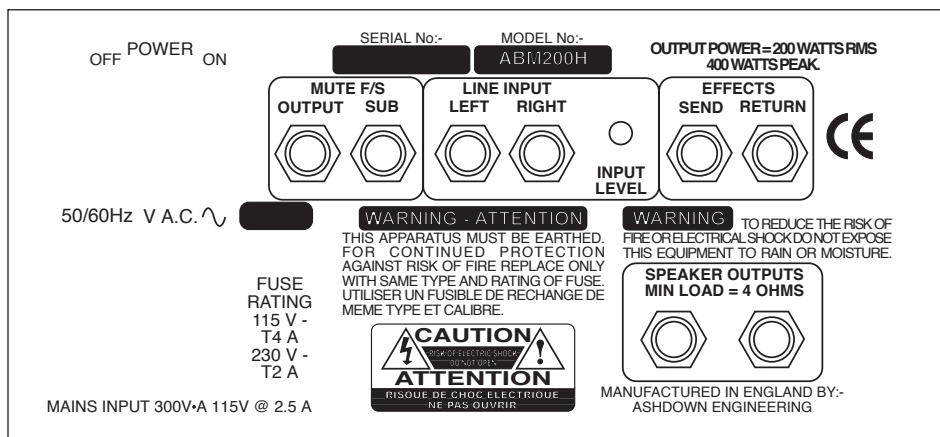
Some examples of this are as follows:-

- Gold plated jack sockets for reliability and long life.
- Full Metal XLR sockets for strength and their positive latching facility.
- All MOSFET output devices for reliability and superior bass power.
- Doubling up of the reservoir capacitors for the output stage providing double the available 'Punch' or instantaneous transient power (very important for bass).
- Doubling up of the cooling fans for reliability and reduced fan noise (2 fans can run at half the speed to provide the same cooling capacity and as a consequence generate only half the noise of one fan running at twice the speed).
- Speed controlled fan drive circuit. Again this reduces the amount of fan noise as the fans run slow when the unit is cool and increase in speed with output power demands.
- Powerful TOROIDAL mains transformer. This is more expensive than a laminated stack transformer but has better regulation i.e. provides more power on demand without sagging out and also has a minimal external magnetic field which means that single coil pick up basses are less likely to pick up mains hum from the amplifier.
- FET input circuit to the preamp for 'Warmth' even when using the CLEAN input mix setting.
- D.C. heaters for the TUBE section for low noise operation.
- Switch on delay for silent power up.
- Thermal trip for output protection.
- Relay switched speaker output lines for silent power down.
- Sub Bass output and Sub Harmonics facility for really serious bottom end.
- Plywood Cabinets and Head Sleeves, screwed (not pinned).
- Metal Corners and bar handles.
- Acoustically transparent Custom Grill Cloth.
- Air Sealed speaker cabinet back plates.
- 16swg (1.5mm) zinc coated heavy duty metalwork.

Everything possible has been done to make this a reliable, top of the range, minimum service, high quality, long lasting powerful bass amplifier.

We know you will appreciate the effort that has been put into the design and manufacture of this unit and you will be rewarded in your choice of bass amplifier by long life and reliability.

REAR PANEL FACILITIES



STEREO LINE INPUT

The rear panel has Stereo Line Input sockets with a level control for connection of other Stereo signal sources into the system. This can be used for plugging a CD, Tape or Mini Disc player into the amplifier for practising or rehearsing with.

EFFECTS SEND/RETURN

A serial effects loop is provided at a level of 0dB. The Effects Send and Return sockets for this are on the rear panel of the unit.

The EFFECTS SEND socket can also be used as a Line Out socket if required. The signal path through the preamp is only broken when a jack plug is inserted into the EFFECTS RETURN socket.

FOOTSWITCH SOCKETS

Two jack sockets marked OUTPUT and SUB are provided for the connection of foot switches to operate the Output Muting and Sub Harmonics facilities. These operate as follows:

The OUTPUT footswitch operates in the same way as the PUSH TO MUTE button on the front panel (see relevant section) and mutes the output when closed.

the SUB footswitch mutes the SUB HARMONICS when closed.

SPEAKER OUTPUT

The Speaker Output sockets are also situated on the rear panel of the unit.



The lightning flash with the arrow head symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within this product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying this product.

GROUNDING INSTRUCTIONS

This product must be grounded (earthed). If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a supply cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with the local codes and ordinances.

DANGER - Improper connection of the equipment grounding conductor can result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet fitted.

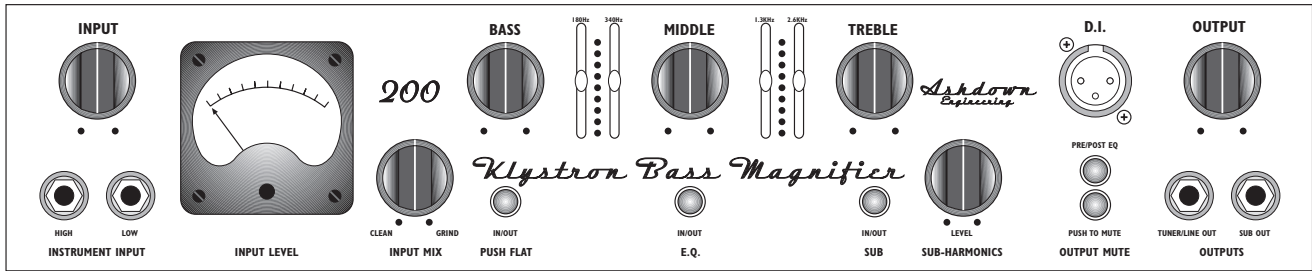
The wires in this mains cord are coloured in accordance with the following code:

Green & Yellow - Earth Blue - Neutral Brown - Live

CE mark for European Harmonised Standards

The CE mark which is attached to these products means it conforms to EMC Directive (89/69/EEC), CE mark Directive (93/68/EEC) and Low Voltage Directive (72/23/EEC).

FRONT PANEL FACILITIES



INPUTS

There are two choices of instrument input, these are marked HIGH and LOW. The HIGH input is high sensitivity and also high impedance to suit the output from PASSIVE basses. The LOW input is low sensitivity and lower impedance to suit the output from ACTIVE basses.

INPUT CONTROL

The INPUT control sets the signal level through the preamp in conjunction with the INPUT LEVEL VU Meter. This is adjusted to give a reading of 0VU on the meter for average playing dynamics with occasional peaks into the red region.

INPUT MIX CONTROL

This routes the signal either through a clean Solid State amplification section or through a Dual Triode Valve/Tube amplification section to add either tonal character i.e. warmth or depending on how far the control is advanced a degree of Tube distortion.

A Mix of these two amplification sections can be achieved with this control.

N.B. The degree of tube distortion with this control turned fully clock wise will also depend on the setting of the INPUT control.

PUSH FLAT

With this button in its OUT position a fixed E.Q. is superimposed on the preamp to give a bright but punchy character to the sound. Pushing this button IN returns the preamp to a Flat frequency response.

E.Q. IN/OUT

This button switches the Equalisation section IN or OUT i.e. the Bass, Middle and Treble controls and the two sets of sliders placed between these controls.

EQUALISATION

This consists of BASS, MIDDLE and TREBLE controls with two sliders placed between each control. This can be used in a number of ways:

Firstly as a very simple Bass, Middle and Treble tone control section as found on older traditional amplifiers. This is done by leaving the two sets of sliders interposed between these controls set in their centre positions and using only the BASS, MIDDLE and TREBLE controls to alter the overall tone.

Secondly, If more control is required then the sliders can also be used to tailor the E.Q. in the regions between the main tone controls.

This provides a very versatile Equalisation section, it is simple to understand and operate, yet provides a wide degree of variation. It retains the simplicity of a three control tone section but provides the flexibility of a graphic equaliser.

SUB HARMONICS

This section consists of an IN/OUT switch and a LEVEL control. When switched IN, Sub Harmonics an octave below the notes being played are produced. The level of these Sub Harmonics relative to the straight bass sound can be adjusted using the LEVEL control.

This is very effective in thickening the sound and you will find in use that only a small degree of this lower octave is required to really fill out the sound and provide a character to the sound that is not possible by any other means.

The degree of Sub Harmonics is also dependant on the setting of the BASS control.

This facility is also footswitchable via a socket on the back panel. Footswitch not included.

DIRECT INJECT (D.I.)

A balanced D.I. is provided on a rugged metal latching XLR socket. This has a push button placed below it that allows the user to choose either a Pre E.Q./Pre Sub signal or a Post E.Q. Post Sub and effects signal.

The output signal from this XLR socket is set to a level and impedance suitable for connecting directly into the Microphone input of a mixing desk for either Direct Injection into the PA system or for recording.

PUSH TO MUTE

When pushed IN this button mutes the output from the preamp to the power amp, mutes the output from the D.I. socket and mutes the output from the Sub Out socket as well. This leaves the output from the TUNER/LINE socket still available to allow muted tuning.

i.e. pressing this button mutes all sound from the amplifier and allows a tuner connected to the TUNER/LINE socket to operate for silent tuning. Release the button and you are back in action again.

TUNER/LINE OUT

This output socket provides a line level signal that can be used either for a permanent connection to a tuner or a line output to slave up to other power amplifiers.

Please note that if this socket is used as a slave output to other power amplifiers that the MUTE button will not mute the signal to the external power amplifiers.

This facility is also footswitchable via a socket on the back panel. Footswitch not included.

SUB OUT

This output socket provides a Low Pass filtered output for connection to the ASHDOWN 400 Watt 1 x 15" powered sub unit for additional extra low bottom end. This may also be used to drive other power amplifiers to provide additional low bottom end to the system. The Low Pass filter is fixed at 160Hz.

N.B. The ASHDOWN 400 Watt powered sub unit can also be used with other systems as it has its own active Low Pass Filter already built in.

OUTPUT LEVEL

The OUTPUT control adjusts the overall level of the amplifier. Adjust this for your preferred overall stage playing volume.

SPECIFICATIONS

PREAMPLIFIER

Inputs

High Input	Impedance - 3.9M Ohms	Input Range 150mV to 20V p-p
Low Input	Impedance - 10K Ohms	Input Range 300mV to 40V p-p
Stereo Line Inputs	Impedance - 22K Ohms	Input Level 0dBu Nominal
Effects Return	Impedance - 22K Ohms	Input Level 0dBu Nominal

Outputs

Tuner Output	Impedance - 22K Ohms	Level 0dBu Nominal
Sub Output	Impedance - 22K Ohms	Level 0dBu Nominal
Effects Send	Impedance - 22K Ohms	Level -20dBu Nominal
Speaker Outputs	Minimum Impedance - 4 Ohms	
DI Output	600 Ohms balanced	

Frequency Response -3dB at 17Hz and 30kHz

EQ +/- 15dB

