

POWERTONE - USER MANUAL

FRONT PANEL FUNCTIONS

[1] INPUTS :

HIGH - Input for standard-level instruments, e.g. guitars with passive pickups.

LOW - Input for high-level instruments, e.g. guitars with high-output passive or active pickups.

Both inputs may be used for connecting two instruments simultaneously.

[2] BASS, MID & TREBLE : Classic passive tone controls that regulate low, mid and high frequencies respectively, of the Clean channel.

[3] VOLUME : Controls the volume level of the Clean channel.

[4] GAIN : This 'Dual-Gain' is a very powerful feature combining Drive and Gain-Boost in one knob. This has been achieved by controlling the amount of amplification in the Post-EQ Overdrive channel preamp in two stages simultaneously. Cleaner sound is achieved at lower settings (3 to 5), at middle settings (5 to 10) medium overdrive occurs which will produce more sustain and distortion. At high settings (15-30) mega overdrive occurs, adding a lot of sustain and compression. Accurate pre and post shaping circuitry prevent the low-end from getting muddy even at the highest settings.

[5] VOLUME : Controls the volume level of the Gain channel.

[6] ULTRA-GAIN : This channel has an additional (fifth) gain stage and therefore delivers extra sustain and compression. Distorted sound is achieved at lower settings (3 to 6), at higher settings (6 to 15) heavy overdrive occurs which will produce a more powerful distortion. At high settings (15-30) ultra overdrive occurs, adding tons of power, sustain and compression.

[7] VOLUME : Controls the volume level of the Ultra-Gain channel.

NOTE: High gain settings may cause squealing and/or excessive hum and noise, due to microphonic guitar pick-ups and insufficient screening of circuitry.

[8] PRESENCE : Controls the amount of boost in the upper mid frequency range of the Gain/Ultra-Gain channel.

[9] BASS, MID & TREBLE : Classic post-distortion passive tone controls that regulate low, mid and high frequencies respectively, of the Gain/Ultra-Gain channel. In this channel the tone control circuit is located behind the overdrive stage, therefore equalising the overdrive tone which results in better control over the harmonics at high gain settings and a powerful overdrive sound.

[10] RHYTHM VOLUME : When activated (see Footswitch), this control functions as a master volume and can be preset at a lower (rhythm) volume.

NOTE: If the Footswitch is not connected, the RHM VOLUME is active.

[11] REV/FX MIX CONTROL : Controls the amount of the Spring Reverb or Effects signal (see rear panel [5]) mixed with the original dry signal.

[13] DAMPING SWITCH : Switches speaker damping from High to Low. In High (normal) position the power amp damps the speaker which results in a more controlled sound. In Low position the power amp's damping of the speaker's cone-movement is minimal, which results in a more open sound.

[13] STANDBY SWITCH : Allows the amp to be placed in standby or active mode. In standby mode the tubes remain hot, but the amplifier is not operational.

[14] POWER SWITCH : Turns AC power On and Off. When the switch is Off the amplifier is completely shut down. When switching the amplifier On, allow the tubes to get hot before switching to the active mode [13].

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REAR PANEL FUNCTIONS

[1] A.C. POWER :

INPUT - Power cord input. The amp is equipped with a worldwide power supply. It is possible to rewire for selecting one of two voltages, 115 or 230 inside the amp. Either of these voltages will work worldwide with minor power differences. The amp will work on either 50 or 60 hertz. After rewiring MAKE SURE FUSES ARE REPLACED WITH PRINTED RATINGS ON REAR OF AMP.

FUSE - Both fuse and spare fuse are located within the cap of the fuseholder. Fuse sled can be removed with a screwdriver. If the fuse should fail, IT MUST BE REPLACED WITH THE SAME TYPE AND VALUE IN ORDER TO AVOID DAMAGE TO THE AMP AND TO PREVENT VOIDING THE WARRANTY.

If the amp repeatedly blows fuses, check for a bad power tube. If tube-failure is not the cause, the amp should be taken to a qualified service center for repair.

WARNING: ONLY A QUALIFIED TECHNICIAN SHOULD ATTEMPT AN INPUT VOLTAGE CHANGE. PERSONEL INJURY OR EQUIPMENT DAMAGE MAY OCCUR IF DONE INCORRECTLY.

WARNING: THE FUSE SHOULD ONLY BE REPLACED WHEN THE POWER CORD HAS BEEN DISCONNECTED FROM ITS POWER SOURCE.

[2] CHANNELS SWITCH : Selects the Clean, the Gain and the Ultra-Gain channel if the Footswitch is not connected.

[3] FOOTSWITCH CONNECTOR : Provides an input for the FOOTSWITCH and automatically disconnects the Channels Switch [2].

THE FS-5 FOOTSWITCH

The Footswitch (included) is equipped with five switches:

- three CHANNEL switches for selecting the Clean channel, the Gain channel or the Ultra-Gain channel (red LED indicators).
- a SOLO/RHYTHM switch for activating (green LED on) or bypassing the RHYTHM VOLUME control [11].
- a REV/FX switch for switching the Parallel Effects Loop on/off (yellow LED). Thus functioning as a Reverb on/off switch or, if an effects unit is plugged in to this loop, as an Effects on/off switch [5].

[4] PARALLEL EFFECTS LOOP SEND (TO FX) : This jack provides a buffered mono output from the preamp and can be used in conjunction with the RETURN (FROM FX) [5] jack as a patch point for external effects units. (see CONNECTION DIAGRAM page.)

[5] PARALLEL EFFECTS LOOP RETURN (FROM FX) : This jack disconnects the internal spring reverb and inputs external (effects) signal via the REV/FX MIX control at the front panel directly to the power amp where it is mixed with the original dry signal from the preamp. IF THIS LOOP IS USED, DIRECT SIGNAL MUST BE TAKEN OFF THE EFFECTS UNITS SIGNAL FOR EXAMPLE WITH ITS DRY/WET MIX CONTROL.

[6] SERIAL EFFECTS LOOP SEND (TO FX) : This jack provides a buffered mono output from the preamp and can be used in conjunction with the RETURN (FROM FX) [7] jack as a patch point for external effects units. (see CONNECTION DIAGRAM page.)

[7] SERIAL EFFECTS LOOP RETURN (FROM FX) : This jack inputs external (direct+effects) signal directly to the power amp and automatically disconnects the preamp.

NOTE: The EFFECT LOOPS operate on a -10dBV SIGNAL LEVEL which guarantees compatibility with both instrument-level effects like floor-pedals and guitar-processors, as well as line-level effects like professional 19 inch rack mount devices.

NOTE: If the connecting of an effects unit to the POWERTONE causes hum, a ground-loop may be the reason for it. This ground-loop may be eliminated by isolating or disconnecting the effects units earth from the mains sockets earth.

[8] SPEAKER OUTPUT JACKS : Provided for connection of speaker(s) or speaker cabinet(s) with a minimum total impedance of 4, 8 or 16 ohms.

[9] RECORDING OUTPUT : This jack provides a mono output from the power amp and includes Reverb and External Effects signals. The signal is derived from the speaker output and filtered by a special Speaker Simulating Filter which simulates the sound coming from the speaker. Now the signal can be fed directly to a recording or sound reinforcement mixer while the amp will sound as if it is miked.

POWER TUBE OPTIONS

Due to special bias control circuitry, the POWERSTONE is able to accept almost any type of power tube, for example: EL34, 6CA7, 6L6, 6550, KT66, KT77, KT88, KT90, KT100.

Also, the POWERSTONE is provided with two separate bias control trimmers (on the PC board), one for the inner two power tubes and one for the outer two power tubes, thus enabling the use of mixed sets of power tubes (two + two). So for example the two outer tubes may be EL34's while the two inner tubes are 6L6's or 6550's.

Each type of power tube has its own distinctive sound character, therefore changing to a different type (or mix of types) of power tubes also changes your amp's overall sound.

REPLACING TUBES

- SAFETY FIRST: DISCONNECT THE POWER CORD FROM ITS POWER SOURCE AND LET HOT TUBES COOL.
- CHECK THE 'TUBE LOCATION DIAGRAM' ON THE CHASSIS FOR THE CORRECT TYPE NUMBERS AND LOCATIONS.
- REPLACE TUBES ONLY WITH ORIGINAL KOCH HIGH QUALITY TUBES. (IF OTHER TUBES ARE USED THE WARRANTY OBLIGATION EXPIRES)
- BEFORE REPLACING THE POWER TUBES, REMOVE THE CE SAFETY CAP FIRST.
- AFTER REPLACING THE POWER TUBES, PUT THE CE SAFETY CAP BACK IN PLACE.

NOTE: ALWAYS HAVE THE AMP REBIASED AFTER REPLACING THE POWER TUBES. BIASING INSTRUCTIONS CAN BE FOUND INSIDE THE AMP.

REBIASING THE AMP IS NOT NECESSARY ONLY IF KOCH POWER TUBES ARE USED WITH THE SAME TYPE AND BIAS-CLASS NUMBER.

Preamp and Power tubes wear out and have to be changed from time to time to maintain the amps best performance. Tubes behave like strings, they lose highs, lows and dynamics and after a period of time they have to be changed. Exactly when is hard to say but this is an indication: if you play almost every day change tubes each year, if you play once or twice a week change tubes every 2-3 years.

Tubes rarely fail. If they are bad, these might be the symptoms:

PREAMP TUBES (ECC83/12AX7A, 7025/12AX7WA):

- Microphonic whistling or squealing on one or both channels.
- No or low amp volume on one or both channels.
- Excessive noise on one or both channels.

POWER TUBES:

- Loud crackling that is not affected by front panel controls.
- Intermittent or regular blowing fuses.
- Weird amp 'distorting'.
- Hum.

Changing a tube is a simple and quick fix for most problems in your amp.

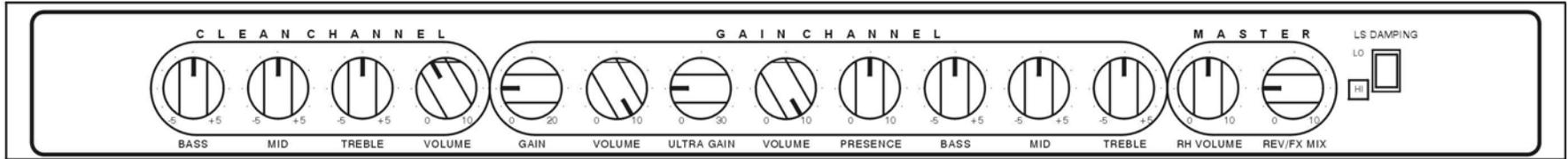
In case of failure, just one or more POWER TUBES can be replaced without rebiasing only if KOCH tubes with the SAME TYPE AND BIAS-CLASS NUMBER are used.

If power tubes with a different or unknown bias-class number are used for replacement, BOTH TUBES (the two inner or the two outer tubes) have to be replaced and the amp has to be REBIASED.

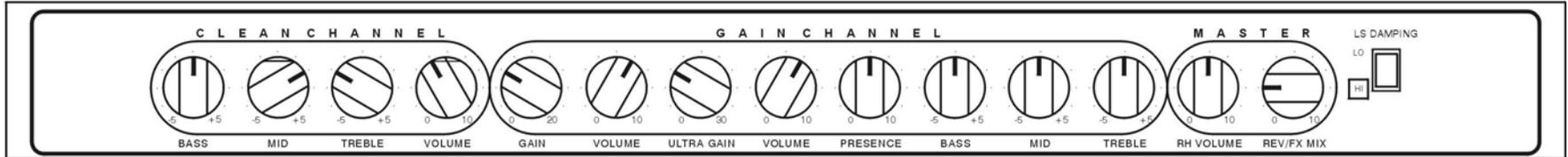
Please always use four or two + two (see above) matched replacement power tubes to obtain the amps best performance.

SAMPLE SETTINGS

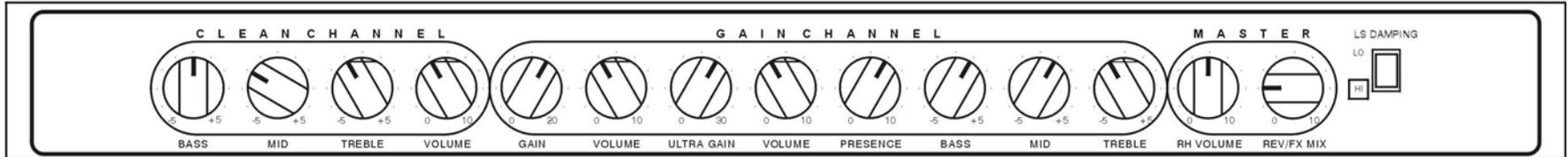
CLEAN
 ULTRA CLEAN
GAIN
 COMPRESSED CLEAN-1
ULTRA-GAIN
 COMPRESSED CLEAN-2



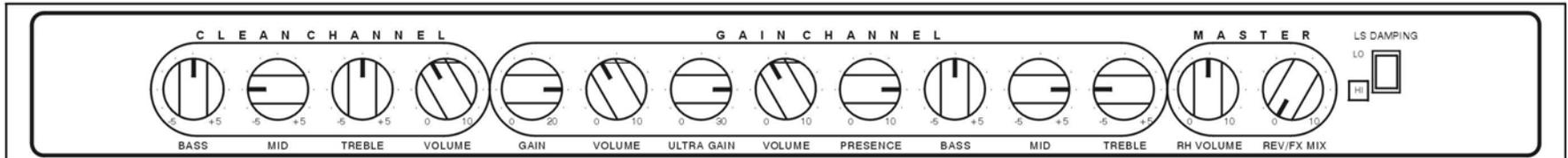
CLEAN
 FULL RHYTHM
GAIN
 GRUNGE-1
ULTRA-GAIN
 GRUNGE-2



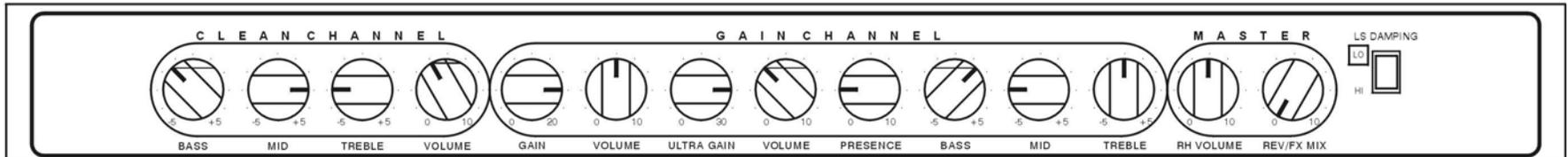
CLEAN
 OPEN CHORDS
GAIN
 HARD-ROCK RHYTHM
ULTRA-GAIN
 HARD-ROCK LEAD



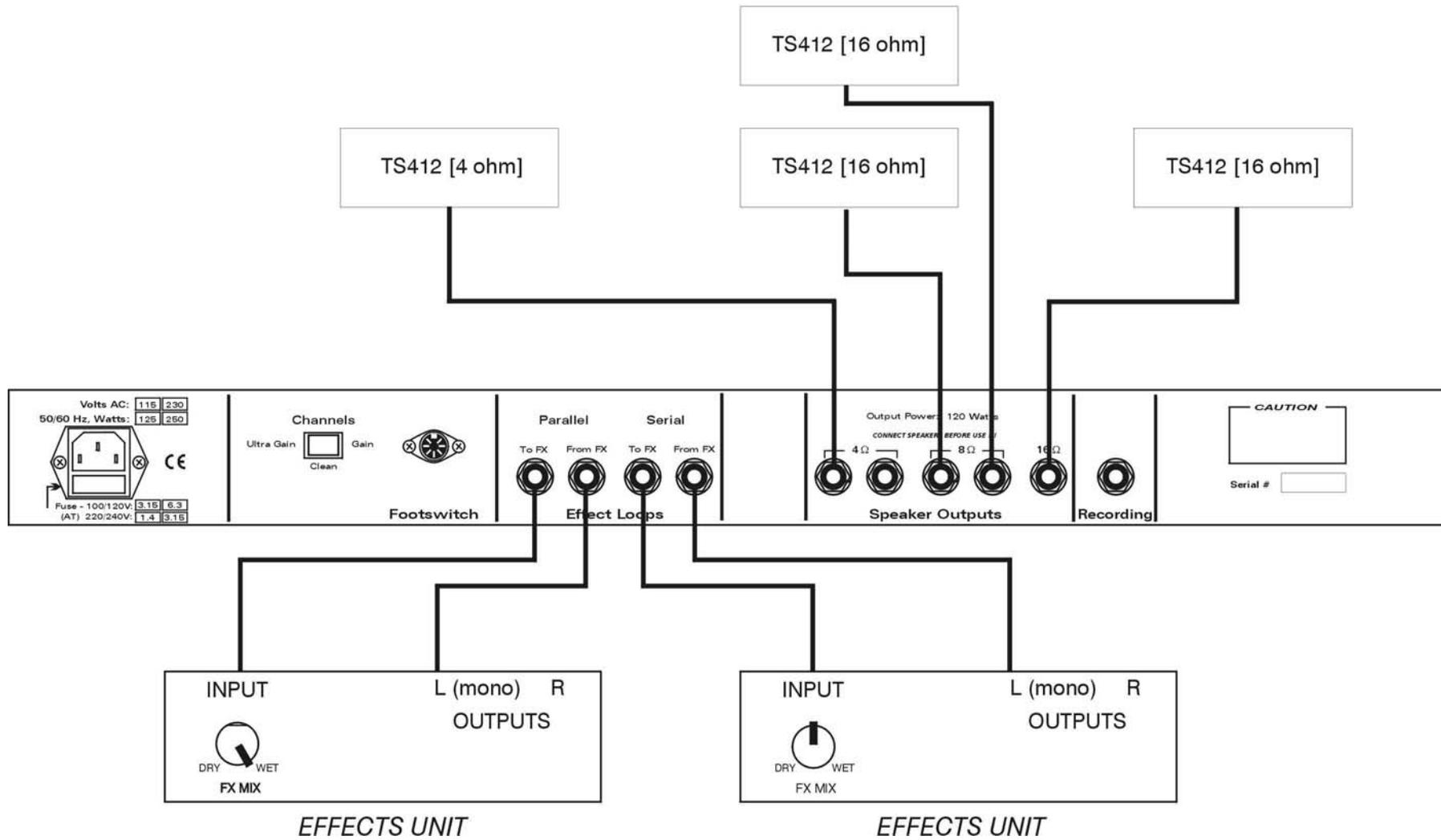
CLEAN
 OPEN CHORDS
GAIN
 METAL RHYTHM
ULTRA-GAIN
 METAL LEAD



CLEAN
 BLUES/JAZZ
GAIN
 TRASH LEAD
ULTRA-GAIN
 TRASH RHYTHM

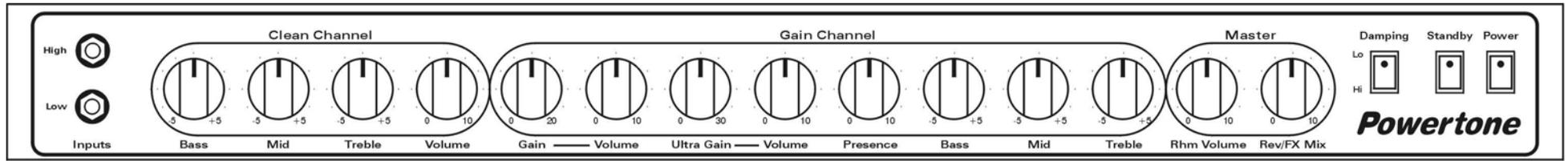


CONNECTION DIAGRAM

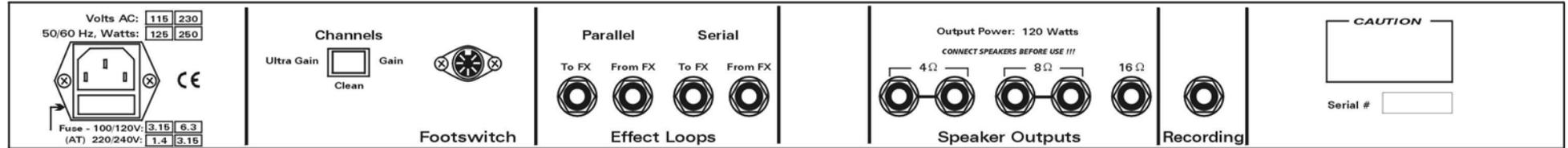


TECHNICAL SPECIFICATIONS

| | | |
|-------------------|--------------|---|
| INPUT IMPEDANCES | Input HIGH | 1 M ohms |
| | Input LOW | 136 K ohms |
| | From FX | 100 K ohms |
| OUTPUT IMPEDANCES | To FX | 1K ohms |
| SIGNAL LEVELS | Effect Loops | -10 dBV |
| TUBES | Preamp | 2x 12AX7A/ECC83 |
| | | 1x 12AX7WA/7025 |
| | Power amp | 1x 12AX7A/ECC83 EL34 / 6L6 / 6550 (see text) |
| OUTPUT POWER | | 120 Watts in 4, 8 and 16 ohms |
| MAINS | 230VAC, 50Hz | 250 Watts |
| | 115VAC, 60Hz | 250 Watts |



1 2 3 4 5 6 7 8 9 10 11 12 13 14



1 2 3 4 5 6 7 8 9