

SPECIFICATIONS

MIXER SPECIFICATIONS

Mic inputs	- Balanced or unbalanced 3k3 - 5mV
Line inputs	- Unbalanced >22k - 200mV
Line output	- Unbalanced <10k - 775mV (0dB)
Headroom	- +22dB. PPI's active @ +19dB
Bass	- +/- 15dB @ 50Hz, shelved
Mid	- +/- 8dB @ 880Hz
Treble	- +/- 15dB @ 12kHz, shelved
DSP	- 24 Bit with Variable delay

PA AMPLIFIER POWER AMP SPECIFICATIONS

Power Output R.M.S. @ 1KHz into 4 OHMS.	- (70 % into 8 ohms) - As stated on amplifier.
Frequency Response	- 20Hz - 25kHz +/-0.5dB
T.H.D.@ rated power	- Less than 0.02% @ 1 kHz
Signal to noise ratio	- Better than 100 dB
Channel Separation	- Better than 60 dB
Short circuit protection	- On all stereo models
D/C Protection	- Active @ +/-32V
Clip Limiter (ACL)	- Active @ clip, any load
Input Sensitivity	- 775 mV / 0dBu
Input Impedance	- 10k or 10k + 10k (stereo)
Damping Factor	- Better than 400
Slew Rate	- 40V/uS
Mains Input Power	- 230V +/-10%, 50-60Hz

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USER GUIDE



P. A. AMPLIFIERS
(all models since Jan 2006)

MAINS LEAD

A mains lead is supplied with a fused moulded plug for immediate use.
Connections are as follows:- Brown = Live, Blue = Neutral, Green / Yellow = Earth.
Under no circumstances operate without a mains earth. Supply voltage is 230 V +/-10% 50-60Hz.

MAINS INLET

A standard I.E.C. mains inlet is fitted to all models. The inlet draw contains an inline fuse and a spare.
Only use the correct mains voltage and fuse rating as printed on the amplifier by the mains inlet.
The mains lead connects between the inlet and a mains outlet.

CONNECTIONS

If you are not technical we suggest you purchase pre made leads for all your amplifier connections.
Microphone leads must be screened and can be either balanced (stereo 6.35mm jack) or unbalanced (mono 6.35mm jack), alternatively an XLR plug can be used balanced or unbalanced (see chart below for connection details).
Auxiliary inputs are at line level (0dB/0.775mV). Auxiliary inputs are used for Tape, CD, Mini disk, etc.
Input leads must be screened and connections will be either 6.3mm jack or RCA phono plugs, subject to the amplifier model.
Speaker connections mostly use Speakon plugs but on some lower power amplifiers a 6.35mm mono jack is fitted.
Speaker leads do not require screening but should use twin insulated conductors with an overall protective covering.
Use 0.75mm or 1.0mm cable.
Check your amplifier and speaker socket type and keep leads as short as possible to minimise cable losses.

VENTILATION

If your amplifier is fan cooled ensure that the air inlet and exit vents are never restricted. Restricted airflow can result in an automatic switch off in some models as the internal temperature becomes too high. Do not install your amplifier in a non ventilated cupboard. Fan cooled amplifiers are fitted with a proportional speed fan, ie the speed of the fan will increase in proportion to the audio demand. Convection cooled amplifiers must have air circulation round the heatsink. Do not obstruct air vents. Internal heatsink temperatures can reach 70 - 90 degrees centigrade under heavy duty use.

SWITCH ON/OFF

Power on status is indicated by a green L.E.D. Some models also have a mains neon indicator within the mains switch.
Ensure all leads are connected and volume controls are turned down **before** switching on or off.

INPUT LEVELS

Inputs can be overdriven by excessively high signals causing distortion and possible loudspeakers damage. Red L.E.D.s called peak programme indicators (P.P.I.s) are fitted to most amplifiers, these light to indicate an overdriven condition. If overdriving occurs corrective action must be taken by either selecting a lower sensitivity input (if available), or lower the channel gain and then increase the master volume control to retain the required output level. If neither of these options are possible, then the input signal level must be reduced at the signal source. Avoid PPI illumination which occurs at -3dB below maximum headroom.

TONE CONTROLS

When setting up for the first time place all the tone controls to the flat, mid way position, (usually 12 o'clock). Set the volume to approximately three quarters of the desired level and adjust the tone controls for the best sound. Increase the volume to the required operating level and make any minor adjustments to the tone settings as necessary. Since room acoustics differ and their characteristics change as they become crowded it is sensible to check tone settings frequently. Tone control adjustment is best observed from **in front** of the speakers.

FEEDBACK

Acoustic feedback will occur if the microphone gain is too high and the microphone picks up too much sound from the loudspeakers. Loudspeakers can be easily damaged if feedback is allowed to continue and all precautions should be taken to prevent feedback. Ensure microphones are used as far away and if possible **behind** loudspeaker positions. Reducing tone control or graphic equaliser boost at the feedback frequency will enable higher volumes to be used without feedback.

LIMITERS

McGregor PA amplifiers are all fitted with clip limiters to protect speakers and reduce clipping distortion. It is advisable to keep the limiter engaged at all times. Limiters can be internally disabled but this is not recommended. LED's marked A.C.L. (Active Clip Limiter) illuminate when the operator is driving the amplifier passed the clip point. The LED illuminating indicates the limiter circuit is taking corrective action by reducing the amplifier input gain. Not all amplifiers are fitted with limiter LED indicators.

REMOTE VOLUME CONTROL

Some specialist install amplifiers are fitted with remote volume control facilities. The back panel shows all the connection information required to connect the 100K Lin control potentiometer required for this facility. A fire alarm music mute is also possible on this socket. Contact your supplier for remote volume control panels or additional advice if required.

SPEAKERS

Always use speakers with a high enough power rating for your amplifier. Full power is achieved into a 4 ohm speaker load. **DO NOT** load the amplifier with less than 4 ohms. Two 8 ohm speakers connected in parallel constitute a 4 ohm load. An 8 ohm load will only produce about 70 percent of the maximum amplifier power. If in doubt consult your dealer for advice regarding correct speaker rating and impedance matching.

AUXILIARY SEND & RETURN SOCKETS

Auxiliary send and return sockets enable an external effects unit or sound processor to be incorporated into the signal path. If auxiliary push switches or auxiliary level controls are fitted to the amplifier then they must be pressed in / turned up on the relevant channel to drive the external effect. McGregor P.A. amplifiers always use a mono aux send but the return is usually stereo.

FOOTSWITCH (F/S) SOCKET

This will only be found on McGregor amplifiers fitted with an internal effect. A footswitch plugged into this socket will enable the effect to be remotely muted by footswitch operation. Footswitch pedals, which are optional extras, can be latching (most popular) or non latching types.

SLAVE / LINE OUT SOCKET

This socket enables a line level output signal (0dB/0.775mV) to be taken from the amplifier to drive an additional power amplifier. This socket is connected before the master volume control so all tone controls remain effective. A mono socket is used on a mono amplifier and a stereo socket would be used on a stereo amplifier.

DIGITAL EFFECTS PROCESSOR

Some PA amplifiers are fitted with a DSP (digital effects processor). These 24 bit processors are used to introduce a preset effect into a microphone channel eg reverb, delay, spring line, etc.
The selected effect can be altered by adjusting the delay control.
The delay control is equivalent to ten preset effects with different decay times.
The level control enables effect mixing with the original sound and must be turned up to hear the effect.
The 6.35mm jack socket marked F/S is for a remote footswitch if required.
McGregor PA amplifiers are presently fitted with four or twelve, variable delay, user selectable effects.
Selection for the four effect option is via the four permutations of two push switches.
The twelve effect option selects effects by up/down push switches, which if held down will advance/retreat effect selection through the available effects. Visual indication of the selected effect is by six dual coloured LEDs (red/green).
The mic signal must be routed to the DSP on the active channel. This is achieved by pressing the switch marked Rev or on some models turn up the pre set control marked Rev.

DIGITAL DELAY (PA250/100 models only)

Press the switch marked Rev on the selected channel. Adjust the level control for the amount of delay sound you require.
Set the repeat control for the desired repeats and adjust the delay control for the duration between repeats.
The F/S socket is for a remote footswitch.

A small pause is normal upon switch on before the delay can be used because the memory has to reset before use.

INPUT CONNECTORS

All the input plugs listed require soldering. Alternatively pre assembled leads are available from your dealer.

CONNECTOR TYPE	GROUND (screen)	HOT (+)	NEGATIVE (-)
Mono jack plug	Sleeve	Tip	N/A
Stereo jack plug	Sleeve	Tip	Ring
XLR input unbalanced	Pin 1 & pin 3 linked	Pin 2	N/A
XLR input balanced	Pin 1	Pin 2	Pin 3
XLR output (link)	Pin 1	Pin 2	Pin 3

OUTPUT CONNECTORS

Speakon plugs are designed to be inserted and twisted clockwise to lock and ensure a good connection. Four pole speakons have four terminals, two pole speakons have two terminals. Consult your dealer if you are not familiar with these connectors.

CONNECTOR TYPE	GROUND (-)	HOT (+)
Mono jack plug	Sleeve	Tip
Speakon	-1	+1
Speakon (100v line)	-2	+2

Your amplifier has been thoroughly tested before leaving the factory, however if after following the above instructions your amplifier fails to function correctly then please contact your local dealer. All servicing must only be carried out by a qualified audio engineer.