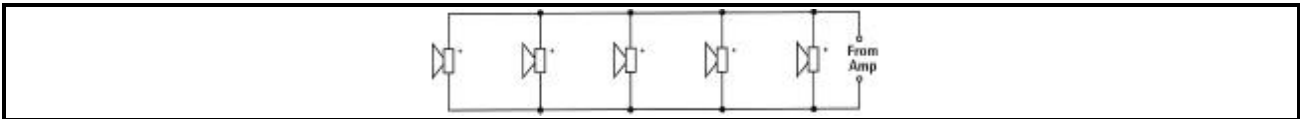


## Installing 100v line PA sound systems

- Please read this first
- Plan your loudspeaker layout and locations together with your cable routes
- Use cable with a minimum specification of 6a twin sheathed two core flex (02162) for the loudspeakers – this means that there is a blue and a brown wire inside a white outer (for instance) and it is at least the size of cable on your table lamp or TV etc.
- Install the loudspeaker cable – remember with 100v line PA sound systems all loudspeakers are connected in parallel – this means that the cable starts at the amplifier and goes to the first loudspeaker, from there to the second loudspeaker and from there to the third loudspeaker etc.



- Remember that the total wattage of all of your loudspeakers added together must NOT be higher than the rated wattage of your amplifier
- Prepare your loudspeakers for installation – each 100v line loudspeaker will have a number of wattage tapings – it is best to start off by using the middle wattage (ie: if you have 1, 2, 4, & 8 watts you could use the 4w tapping) – this allows you to increase or lower the volume of each loudspeaker later. Please be aware that some loudspeakers (especially ceiling types) are often supplied with this setting disconnected from the built in transformer on each loudspeaker – it is often left to the purchaser to fit or connect the tag to the transformer etc.
- On some loudspeakers you connect your cable to 'com' (or 'common') and to the chosen wattage connection and on others you connect a tag to the chosen wattage connection (or select via a switch) and connect your cable to the short fly leads
- All loudspeakers MUST be connected in the same phase – it is likely that your cable and your loudspeakers do not have the same coloured wires – choose an obvious convention such as brown cable to red on loudspeaker and blue cable to black (for instance) and stick to it throughout your installation
- Once you have installed and connected all of your loudspeakers and you are happy that there are no short circuits or other problems with the installation you can connect the other end of your cable to your amplifier
- Your amplifier will probably have both low impedance (8 ohm) and 100v line connections – you must NEVER use both at the same time
- Connect your wires to the 100v and 'com' (or on some amplifiers to the pair of terminals marked 100v line)
- Your amplifier should ideally sit on top of your CD player, cassette deck etc. so that there is adequate ventilation and airflow to keep the amplifier cool.
- Turn all volume controls to minimum and set all bass and treble controls to midway
- Connect your microphone to the amplifier and switch your amplifier on
- Turn your master volume to around midway and gradually turn the microphone volume (or input volume) up while speaking into the microphone
- Adjust to the volume level that is required

## PA sound systems - basic set-up rules

- Always turn on the power last - after you have connected up the whole sound system
- Always turn the power off first - before you strip down the sound system
- Microphones should always be connected to inputs marked 'mic' on amplifiers
- Radiomic systems usually have two outputs – the XLR output should preferably be connected to inputs marked 'mic' on amplifiers and the jack output should preferably be connected to inputs marked 'aux' or 'line' on amplifiers
- Remember - you must still project your voice when using any sort of microphone amplification system
- ALWAYS use the microphone from a position behind the loudspeakers
- CD players and cassette decks should always be connected to inputs marked 'aux', 'CD', 'cassette' or 'line' on amplifiers
- Commercial and industrial projection, horn & column type (100v line) loudspeakers should always be connected to the 100v line terminals on amplifiers
- Hifi, disco and similar cabinet type (8 ohm - low impedance) loudspeakers should always be connected to the 8-16 ohm terminals or connectors on amplifiers - NEVER connect these speakers to the 100v terminals on amplifiers
- NEVER use 100v line & 8 ohm speakers on the same sound system

## Inputs

Microphones should only be connected to inputs marked mic or microphone while line sources such as CD players, cassette deck and line outputs on radiomic receivers should only be connected to inputs marked aux, line, CD etc. As a rule of thumb a jack output on a radiomic receiver is line level and an XLR output is mic level

## Speaker Leads

Internal fuses will blow and the amplifier will be damaged if you use faulty speaker leads (or speakers). Always look after your interconnect cables - they are easily damaged - especially in a portable or mobile sound systems. The leads and any damage directly caused by using faulty leads is not covered by the Sound Services or manufacturers warranty unless the leads exhibit a manufacturing fault. Immediately STOP USING THE SYSTEM if you suspect that you have damaged the speaker leads or speakers in any way.

Maximum volume that a PA sound system is capable of producing before incurring equipment damage will be apparent by noticeable audio distortion - this may well occur when the volume control(s) are set well down from their maximum position! If you can hear distortion the sound system is being damaged! Turn the volume and the bass down! Never use more than two 8 ohm speakers with aerobics and other portable sound systems.

## Acoustic Feedback (Howl)

- To avoid acoustic feedback (howl) microphones must never be used in front of or otherwise near to any loudspeakers. Always ensure that the person wearing/using the microphone/radiomic does not go within 3m to 4m of the loudspeaker(s).
- Body worn (lapel) mics should be central on the body and around 20cm below the mouth (on a tie, for instance). Feedback is very likely with this sort of microphone – body worn microphones can only be used to reinforce the voice.
- Headworn microphones should always be protected by a foam windshield and be worn as near to the mouth as possible and well below the nose so that breath noises do not become a problem.
- Hand held microphones sound 'warmer' and exhibit less feedback if they are close to the mouth.
- Remember - you must still project your voice when using any sort of microphone system.
- Feedback is primarily caused by proximity of microphone(s) to loudspeaker(s), incorrect placement of loudspeakers, too much volume and/or incorrect tonal settings on the amplifier such as far too much bass.
- The microphone(s) must always be used from behind the loudspeakers.

## Other Considerations

- Please note that radiomic receivers can be effected by CD players & other RF sources - keep your radiomic receiver at least 300mm away from any CD player, ghetto blaster or music system.
- Please read all manufacturers instructions prior to using any equipment.
- For sports, aerobics, dance and other exercise based activities it is preferable to wear you radiomic transmitter belt pack in a custom pouch and belt such as the IMG or Strike belts.
- Induction loops for the hard of hearing must reach BS6083 Part 4 1981 and the requirements of the RNID.