

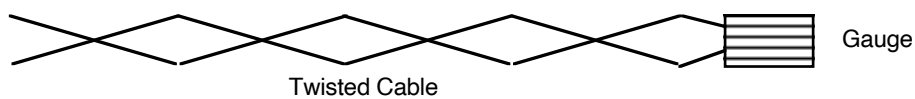
1. Minimising Mains Supply Pick-up

In some instances there may be 50 or 60Hz Mains Supply pick-up present in the output signal. In nearly every case this will be due to mains wiring coupling into the input wiring and is most noticeable when the gain is high and cable connections are either unscreened or untwisted or untidy.

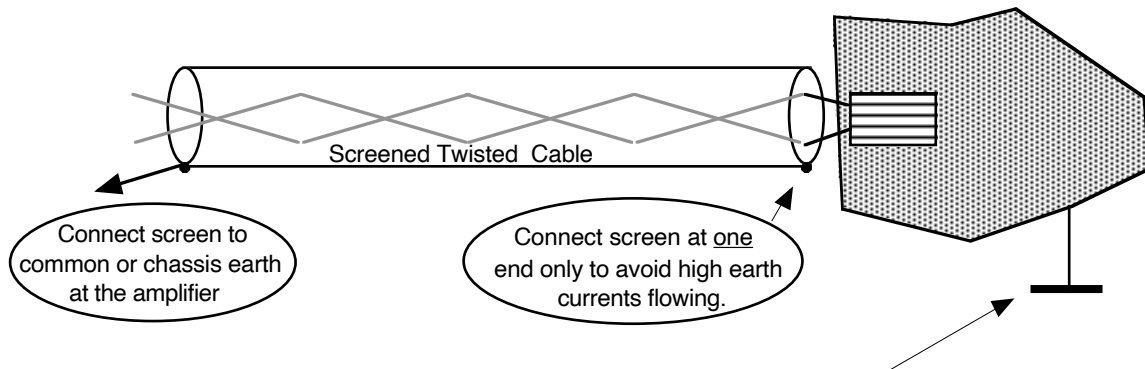
There are two ways that mains frequencies enter the input wiring:

2. Electrostatic Pickup

This is caused by mains frequencies capacitively coupling into the input wiring. Ensuring that the wires are twisted together means that the same pick-up will usually be coupled into both the P and the N inputs of the amplifier. In this instance the Common Mode Rejection of the amplifier will reduce the effect of the pick-up. In many instances this works so well that there is no need to shield the wiring by using a screened lead, especially if it is possible to run the twisted wiring on the surface of an earthed metal structure. Always remember to keep the input wiring away from any mains wiring.



If mains interference is high, or the gain of the amplifier is set to maximum and pick-up is an issue, it is recommended that a screened twisted cable is used which will reduce the pick-up into the cable and give less interference for the amplifier CMR to deal with.



If the gauge is fitted onto a metal structure, if possible ensure that the structure is **earthed** as otherwise it may couple mains frequencies into the gauge in an unbalanced manner.

3. Electromagnetic Pickup

This is caused by electromagnetic fields from motors, transformers or other inductive sources. It is important to note that in most instances, shielding will not stop electromagnetic pick-up and one must rely on twisting of cables, whilst remembering also to *carefully route* input wiring away from sources of electromagnetic interference. Avoid unscreened untwisted untidy loops in the wiring.

