

# tips Amplifiers

**It's worth knowing a little about how amplifiers work to appreciate what to look for when you're buying one. Thankfully, this can be explained in a sentence or two if you ignore the deep technicalities.**

Source components such as CD players and tuners only produce low voltage, low current signals. These aren't powerful enough to energise loudspeakers. An amplifier simply takes those fragile signals and boosts them by mixing them with electricity drawn from the household mains before sending them on to the loudspeakers.

What we've just described is effectively a power amplifier such as you'd find in any two-box, pre/power amplifier combination. On its own it is, of course, next to useless: it offers no control over how much amplification is being applied, nor any means of easily switching from one source to another. What's needed is the second half of the pre/power duo, the pre-amplifier. This provides a volume control and switching circuits to allow you to select the source you wish to hear. Some pre-amps also include tone controls for boosting the treble and bass frequencies, and separate circuits to allow for tape recording.

So, that's the basics of pre/power amplifiers. If you put the pre and power sections into a single case you produce the generally more affordable integrated amplifier. Now, with the boring stuff out of the way, let's look at things that really matter when you're choosing an amplifier.

Whether you're buying an entry-level integrated or a cost-no-object pre/power combination, don't be fooled into thinking that bigger is better. A 100 Watt amplifier isn't twice as good as a 50 Watt model. Nor is it twice as powerful. Amplifier power ratings are, if you'll pardon us being mathematical, logarithmic. So, to obtain double the power of a 50 Watt amplifier you actually need to buy a 500 Watt design.

Regardless of that, amplifier power alone doesn't indicate how loudly your system will play: you have to factor in loudspeaker sensitivity. A 10 Watt amp driving high efficiency loudspeakers can produce higher sound levels than a 100 Watt amp driving insensitive speakers (because they require large dollops of power just to get them moving). Power also has nothing to do with quality. You'll have far more fun with a musically persuasive 30 Watt amp than you will with some raucous 300 Watt monster that has all the subtlety of a knee in the groin.

Tone controls and gadgets still feature on many mainstream amplifiers even though audiophile amplifier designers stopped fitting them long ago. The thinking behind the minimalist approach is that every item in the audio path worsens the sound; by leaving out anything that's not essential you get closer to the original signal. To strike a happy medium, most manufacturers who still fit tone controls nowadays also fit a switch to bypass them.

Since Compact Disc established itself as the primary source for hi-fi fans, many manufacturers have started producing line-level-only amplifiers. (Line-level is just a techie term referring to the voltage outputs of tuners, tape decks and CD players.) These have no inputs for record decks. If you're a serious vinyl fan you need to be careful nowadays to choose an amplifier equipped with high quality phono input. Designing and implementing a worthwhile phono stage is harder than making a line-level input that sounds good. If perchance your amplifier has a phono input but you don't have a record deck, don't think you can hi-jack it for use with a line-level device. Plug a CD player, for example, into a phono input and you'll do some expensive damage to your amplifier.