

How much power do I need for my speakers?

Often we get questions about the relation between the power marking on speakers and the power needed on amplifier. We will try to clarify this.

The best method when matching speakers to amplifiers, is to use the "RMS" power ratings instead of "Max/Peak" power ratings. It's important to note that most speaker manufactures publish two different power ratings:

1. Speaker RMS power rating

The "Nominal" or "RMS" rating is the amount of power that can be applied to the speaker under normal circumstances. One of the primary factors that determine the power rating of a speaker is the size of its voice coil. A speaker with a high power rating uses a large voice coil, allowing more heat to be dissipated and therefore allows more power to be applied to the speaker.

2. Speaker Max / Peak power rating

The second is the "Max" or "Peak" rating which is the maximum amount of power that can be applied for short periods of time without causing damage. If the peak power rating is exceeded for an extended period of time, there is danger of overheating and deforming the voice coil. Do not use this power rating for matching speakers to amplifiers.

3. Amplifier power

First of all notice this:

A 200 watt RMS power rating is how much power a speaker can *handle*, not how much it *requires*.

Even a 200 watt speaker can sound great with only 60 watts power applied. However, you'll have low SPL (sound pressure level) with this little power.

- As a basic rule the amplifier RMS power (@4 ohm) should not exceed the RMS power marking of the speaker. If they are the same it is good.

- As with all rules there are exceptions. You can of course use an amplifier with higher RMS power as long as you are aware of the risks with playing at high volume and avoid playing at a level where the sound becomes distorted; otherwise you will burn the speakers.

A speaker installed in the door side or in the rear shelf where the speakers are installed without a box, will sound bad long before it has reached its maximum power capacity. This kind of installation limits the sound level itself. A speaker installed in a stable baffle or box can play louder before the sound becomes bad.

- An amplifier with too low output power can also destroy a speaker! It may sound strange but with a low power amp. You may want to play louder than the amplifier can handle, this gives a distorted sound and distortion is an even better way to break a speaker.

As you can see, it's not easy to choose the right amplifier, but if you follow our instructions it should work well!

DLS Svenska AB

2009