

Portable Generator

Many customers use their equipment in combination with portable generators. It should be noted that the power being generated by some of these portable generators is not always suitable to use with electronic equipment.

This is because the generators may be producing power outside of the acceptable Total Harmonic Distortion (THD) limits. The acceptable limit for Total Harmonic Distortion when using power tools with electronic components should be less than 6% as specified in IEEE Standard 519-2014.

In order to avoid any potential damage to electronics, we recommend that all portable generators have a maximum Total Harmonic Distortion (THD) of less than 6 %.

It should also be noted that all countries should comply with these requirements.

Information about the THD can be found in the specifications from your generator manufacturer.

If the information is not available from the manufacturer or the reseller does not know the information, then most likely the generator does not fulfill the requirements.

For more in-depth information on Total Harmonic Distortion (THD) please click the following link for an easy to understand explanation (<https://generatorbible.com/blog/what-is-thd/>) or IEEE Standard 519-2014.

The Nominal output capacity of the portable generator must also be taken into consideration when selecting a suitable generator.

How Much Output Does the Generator Need to Have?

The generator should always have a nominal power output which is at least double the nominal power requirement of the equipment being used.

Automatic welding machine 3450W

Handheld heat gun 1600W

Total power requirement for both 5050W

Recommended Generator Nominal power output
10'000W or 10KVA

Other important points to always remember are that the power cables and connections should be of a good quality and the minimum power cable sizing should always also be observed.

In summary, the following points should be good quality and the minimum cable size should be evaluated.

Important factors

- Less than 6% Total harmonic distortion (THD)
- Generator should produce a minimum of 2× the nominal power output required by the equipment being used.
- All power cables and connectors should be of good quality and meet the requirements for minimum cross-section depending upon length of cable
- Generators and extension cords should always be attached using the earth/ground connection (Earth/Ground connection must be maintained)