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## Learn How To Weld or the Top 10 Welding Mistakes

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Welding is a complex subject, and this article is far from being comprehensive on any aspect of it. However, one thing that it attempts to cover is a few absolutely necessary requirements and a number of basic beginner mistakes that one can easily avoid.

As a quick introduction, the most frequently used and easiest-accessible welding processes are arc welding/gas welding (including tig welding and mig welding).

Arc welding describes welding processes that use a welding power supply to create an electric arc between an electrode and the base material to melt the metals at the welding point. They can use either direct (DC) or alternating (AC) current, and consumable or non-consumable electrodes. The welding region is sometimes protected by a kind of inert or semi-inert gas, known as a shielding gas, and/or filler material. Arc welding is widely used because of its low capital and running costs.

MIG (Metal Inert Gas) and TIG (gas tungsten arc) welding are kinds of gas metal arc welding. During MIG and TIG welding, continuous and consumable wire electrodes and a shielding gas are fed through a welding gun. Constant voltage, direct current power source are usually used with MIG and TIG welding, but alternating current sources can also be used. Originally used for welding aluminiums, gas metal arc welding was also soon applied to steels because it allowed to reduce welding time substantially.

Some advantages of MIG welding are that it is easier to learn, longer welds can be made without the need to stop and restart, and little post weld cleaning is necessary. The downsides are an oxidized weld deposit, unstable arc, and weld porosity. Advantages of TIG welding are that it allows welds of higher quality, with or without filling metal, good control of heat, and low distortion. Some of the issues with TIG welding are a somewhat erratic (wandering) arc, a high electrode consumption, and a certain porosity of the weld.

Some of the most basic and frequent mistakes in (mainly MIG, since it is the most relevant for most readers) welding, from our experience and after extensive research, are the following:

- 1) Not cleaning the parts and weld surfaces properly. As most experienced welders say, this is a very frequent beginner mistake. Any paint, dirt, and similar materials can lead to problems and a bad weld as a result.
- 2) Using the wrong kind of gas for gas welding. Many people will opt for cheap gas, which is however sometimes not a good idea. While simple CO2 is cheap, a mixed gas will often produce better results while MIG welding.
- 3) Wrong polarity. This can produce a bad-looking weld bead.
- 4) Wrong contact tip sizes.
- 5) Inadequate travel speed, i.e. going too fast or too slow.
- 6) Insufficient shielding - e.g. not blocking the wind while welding.
- 7) Welding too cool on a massive piece of material, which results in a lack of fusion.
- 8) Underbuying, i.e. picking a too small welding machine for the material thickness required.
- 9) Not maintaining the wire feeder's wear components, like liners, contact tips, and other parts.



10) Mismatched filler material, i.e. not having the right tensile strength.

For an in-depth description of these and numerous other welding mistakes, as well as many advanced MIG and TIG welding tips and tricks, check out <http://www.weldingsecretbook.com/>

Please refer to <http://www.weldingsecretbook.com/> for much more extensive welding information.

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