

IMPROVE YOUR OUT-OF-POSITION WELDING

In an ideal world, everything you need to weld will be set up exactly like in the training centre where you learned – in the flat position, with easy access. Unfortunately, we don't live in an ideal world. Welding 'out of position' can present a huge challenge – even more so for inexperienced welders – but there are ways of overcoming the difficulties that arise. 'Out of position' welding usually refers to welding vertically or overhead. Gravity is your enemy when welding 'out of position', as the liquid weld pool has more of a tendency to sag or run. This makes it harder to create structurally sound and visually good welds. Below are some tips for approaching out-of-position welding :

Do you really need to weld out-of-position? – Carefully consider whether it is possible to manoeuvre the object into the flat position, whether by yourself or using the machinery you have on hand. This won't always be possible, but should be the first thing you consider. Remember, this isn't just about making things easier for yourself, if the part can be manipulated into the flat position you will be able to produce higher quality welds which should help justify the time and money it might take to do so. Positioning tables, jigs and clamps can help greatly here.

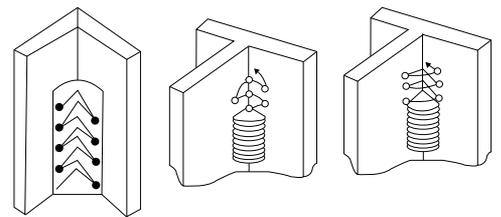
Use a welding process that produces slag – You may be tempted to turn down your wire feed speed while MIG welding in order to create a fairly decent looking weld. By making your weld with a lower

heat input it cools quicker and drips less. Unfortunately, unless for purely decorative means, the resulting welds will likely be unreliable due to lack of fusion or incomplete penetration. Instead, consider choosing a process that produces slag, such as Flux-Cored (FCAW) or Stick (MMA). The slag acts as a shelf to stop the puddle from spilling before it has cooled, giving it more time to solidify in-place.

Use a machine with pulse feature –

As pulsing alternates between high and low current, it will provide a better balance between penetration (during the higher amps) and permitting the puddle to solidify quickly (during low amps). This will also allow you to run a much higher wire speed or deposition rate. Just like using a process that produces slag, using pulse will allow you to deposit filler in a manner that can act as a dam and stop the molten puddle from spilling over before it cools. In MIG, look for machines with synergic waveforms, which often feature pulsing. In TIG, using a machine such as the **SifWeld TS200 AC/DC** – which includes adjustable FastPulse – you should be able to produce better out-of-position welds.

Weave – A good vertical weld requires use of a triangular weave pattern, which rises and falls to guide the pool and control reinforcement. By 'whipping' back across the deposited material, good penetration and heat-control can be achieved whilst building-up the bead to leave a consistent, visually-pleasing seam. Such weave patterns are as follows.



sif tips



Technical advice in the original SifTips style was started in 1932. 'Sifbronzing' is an almost universally recognised way of describing the low temperature bronze welding of sheet steel, cast iron and other metals. This explains why Sifbronze, the company which first developed and promoted the technique, is generally considered to be a supplier of high quality welding rods, wires, fluxes and equipment.

'Will the Welder' was a SifTips magazine that was produced in the early 1930s. The aim was to provide users with ideas and tips on how to get the most out of their welding equipment.

Sif is renowned for its UK manufacturing heritage as well as its complete range of quality welding consumables used globally for almost a century.

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