

Pulse MIG Technology

Definition – A non-contact welding transfer method in which a high frequency pulse pushes the molten metal droplet across the arc into the puddle. The current rises to a peak when the droplet is formed, then cuts off and back on again with each pulse. The result is **lower heat input**. For example, 230 amp at the pulse peak with 50 amp running continuously in the background might only produce a pulsed power source reading of 140 amp.

Explanation - Pulse MIG welding is a smart process to allow more than just Short-arc and Spray Transfer modes. Normal MIG welding is just constant-voltage Direct Current short-arc with no feedback.

In its simplest form, Pulse basically runs the wire in spray transfer mode, but uses short pulses to keep the average current low. It allows what would normally be globular transfer to act like short-arc. **The result would be clean spray transfer welds with much lower heat input.**

Now, it is even more advanced. **It completely controls the timing of the short arc and the current, managing the heat input in the weld. This can be useful on alloys that cannot tolerate high heat damage to their metallurgical properties. MIG brazing and aluminum welding are applications for which it is used.**

Page 2: Advantages

Advantages over Short Arc, Globular, or Spray Transfer

- Extends the low and high welding range for each size of wire
- Produces an excellent weld surface finish and cosmetic appearance somewhat comparable to TIG with few irregularities on aluminum and stainless steel
- Produces less spatter and fumes
- Reduces heat and causes less distortion (important when welding AHSS, stainless steel, and aluminum which has a lower melting point)
- Eliminates “cold lapping” (incomplete fusion due to comparatively low energy output) when welding aluminum

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