



## Easy switching between hard & soft arc in the AC/TIG range

### Lichtbogenarten MultiVario Arc



AG TIG

**AC TIG:** Aluminum is usually welded with alternating current (AC). The oxide layer is destroyed by the liberating energy (cleaning effect), and in the subsequent minus phase, the uncovered grand material can be melted.



AC DC TIG

**AC/DC TIG:** The Hybrid-Pulse mode is a combination of AC-Pulse and DC-Pulse. With this method, it is possible to weld thicker aluminum materials with high-efficiency. The advantages: deep penetration without pre-heating, substantial increase in the lifetime of the electrode, more precise modelling of the seam surface (by using cold wire).



DG TIG

**DC TIG:** steel, stainless steel, copper, copper alloys, titanium and others are welded with direct current (DC). The welding zone and the arc are protected by separately supplied argon shielding gas.



STANDARD

**STANDARD:** Rectangular pulse shape in which the peak value of both polarities is the same. Welding operations can be performed in a wide range of sheet thicknesses. Since a stable welding result can be achieved over the entire current bandwidth, this is the most commonly used wave form.



SOFT

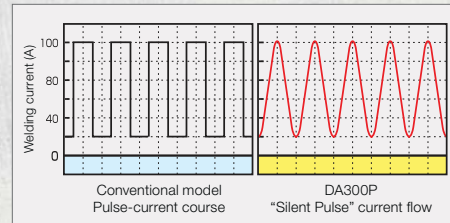
**SOFT:** Sinusoidal pulse shape in which the peak of both polarities is the same. This produces a soft arc. This is particularly suitable for thin sheets and butt splices. The arc noise is the quietest. The maximum welding current is 200 A.



HARD

**HARD:** Rectangular pulse shape in which the peak of the polarities is different. Through the concentrated arc of the DC/TIG welding, the insertion depth is increased. This makes this mode particularly suitable for fillet welds or the first layer weld in multi-layer welding. Among the three modes, the electrode wear is the lowest, while the arc noise is the loudest.

### MultiVario Arc



#### Safe arc start

The arc start is guaranteed by an optimized start current control and a powerful HF igniter.

- Safe arc start, even when using longer hose packs
- Avoidance of ignition problems with multi-layer welding

#### "Silent Pulse" function

Sinusoidal current course ensures controlled heat input and drastically reduces the noise level.

The variable alternating current frequency can be used to create a different weld penetration. The weld penetration is narrower and deeper when the alternating current frequency is increased.

### Advantages

- Deep weld penetration without preheating
- More precise formation of the weld seam scaling (with cold wire)
- Particularly suitable for thin sheets and butt splices
- Highly efficient for thicker aluminum materials
- Safe and stable arc start
- Low noise due to sinusoidal current flow and controlled heat input

The Welding current remains constant, even when the AC frequency changes.

Ratio between AC frequency and weld penetration

Frequency	50 Hz	100 Hz	200 Hz
Grinding pattern			
	Wider weld penetration	Narrow weld penetration (the penetration depth is constant)	

Welding current 200 A, Speed 40 cm/min, sheet thickness 6 mm