

Lorch MicorTwin

Classification

The MicorTwin is a synergic Pulse wave-form controlled process-control MSG welding version (ISO 857 process no. 13), particularly suitable for

- welding of Aluminium and CrNi-applications (thin- to medium-wall)
- welding of Steel applications with 92/8 gas (thin- to medium-wall)
- e.g. frames (bicycle), structures (tables, chairs, beds), housings in general

The U-I-controlled Pulse process alternates between a Peak and with a background arc phase without material transition during the background phase.

Advantages

- **Looks**
Pulsed arc welding with pronounced weld seam chevrons and a smooth weld surface between and on the chevrons, reminiscent in appearance to the TIG method.
- **Adjustable chevrons**
Settings from fine to coarse is possible
- **Automation/manual welding**
Great for either area of use
- **Any materials**
Steel, aluminium, CrNi
- **Suitable for any weld type, T-Fillets, Butt Welds, Lap Joints, Outside Corners etc**
- **Excellent weld pool control**
- **Energy work range from "cold" to "medium"**

Work Ranges

Material	Shielding gas [Ar/CO ₂]	Wire diameter [mm]
SG Fe	92/8, 82/18	0.9 - 1.2
CrNi 307	98/2	0.9 - 1.2
CrNi 308		
CrNi 316		
Al Mg	Ar	1.0 - 1.2
Al Si		

- The work ranges depend on the respective power of the welding unit.
- The work ranges are subject to continuous expansion and can be supplemented with a firmware update.

Notices

Setting

- Actual parameters (primary setting): Wire feed speed
- Proposed parameters (forecast values): Current, voltage, power
- Correction options: Arc length high-current phase (voltage), arc length low-current phase (wire), dynamic (weld chevrons/ MicorTWIN frequency)

Display values

- Target value **average wire feed speed** (guide parameters)
- Forecast current (arithmetic averages) for current [A], voltage [V], and power [kW]
- Recommended sheet thickness for the weld [mm]
- Actual values: Current [A], voltage [V], wire feed speed [m/min] and indicated electrical effective power [kW]
- Actual values (when welding) and hold values (after welding)

Notices for optimal results

- The stick-out should be kept short
- Energy introduction is reduced, leading to a flatter penetration profile
- Sensitive reaction to magnetism (Arc blow effect)
- Best, low-spatter results in the steel area are achieved at 92/8 gas
- If the arc is too long, it is better to increase the twin wire correction more than 100% than to reduce the voltage in the high current phase (voltage correction)

Availability

- The MicorTwin can be added as an upgrade to Lorch MicorMIG series devices from 2018 onwards when the pulse process is already installed.

Control Technology

MicorTWIN is a U-I-controlled Pulse process, which alternates between a Peak Pulse phase, which delivers virtually spatter free deposition and with a background arc phase without any material transition during the background phase. All other parameters that are required will be loaded from a synergic line database based on a selected material, wire, and gas combination and a specified wire feed speed. The process settings can be adjusted individually by the user within reasonable limits.

Example Applications

An attractive weld appearance is often valued highly when welding thin and medium sheets (1 mm – 8 mm) especially in locations where the weld will be seen. The TIG welding method was often used here in the past due to its ability of producing beautiful weld seams with an even pattern. MicorTwin is a viable and quicker alternative.

It makes the process simpler in many areas. For example, two lots of machines are no longer necessary, and highly specialised TIG welders can be relieved to take on other more demanding tasks that can only be solved using the TIG process. The perfect weld appearance can be produced easily and by replicated by any competent Mig/Mag welder.

Twice the welding speed is added to all of the advantages already mentioned!

This leads to beautiful weld seams at the highest speed.

The results speak a clear language: Comparison between the MicorTwin and TIG



MicorTwin stainless steel fillet weld 6 mm



Comparison: TIG with additional stainless steel fillet weld 6 mm

Any welding task needs the weld appearance to match.



Stainless steel fillet weld frequency 1 Hz



Stainless steel fillet weld frequency 3 Hz



Stainless steel fillet weld frequency 5 Hz

Perfect weld appearance thanks to smooth scaling.



Aluminium fillet weld

Typical application and parts:



Bicycle frames, aluminium, roundseams



Bicycle steel frame



Stainless steel thin sheet



Aluminium railing frame