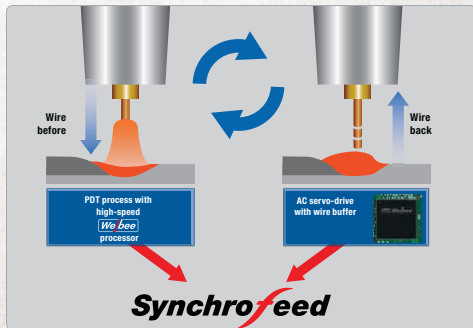


The servomotor-controlled short electric arc, for the best welding results

The SynchroFeed process

The well-known OTC AC servo-robot torch already enables high-precision wire feeding. The further development of this system to the SynchroFeed process, widens the working range of spatter-free welding from thinnest metal sheets to thick material thicknesses, and increases the profitability of the production through higher welding speed, increased melting performance and, at the same time, with drastically reduced heat input.



High-speed control of the arc through the OTC **Welbee** processor

Through the OTC Peak-Dip-Transfer (PDT) process, a controlled droplet transition in the short circuit phase is realized. The PDT process is a precisely controlled short arc, which is only possible, using the fast Welbee Processor.

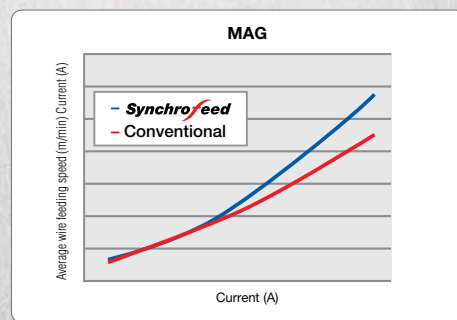
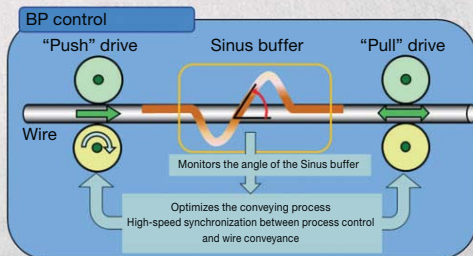
High precision Synchronization of welding current and wire feeding system

The servo-driven wire feeding system is harmonized with a cyclically retracting, controlled wire movement through the smart wire buffer, and is fully integrated into the PDT process.

Higher welding speed

Due to the highly dynamic SynchroFeed control process, a larger wire feed rate is possible. Consequently, the deposition rate is also increased in the area of the transition electric arc, and the welding speed can be significantly increased.

Principle of operation

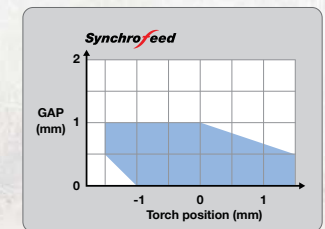
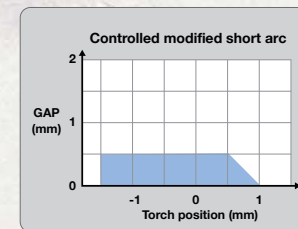
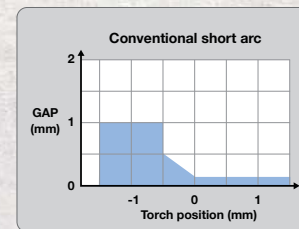


Extended parameter tolerance

The SynchroFeed process reacts significantly more tolerant to changes in the gap dimension, as well as the torch's positioning to the weld seam, than it does to other controlled short arc processes. Thus, welding errors can be drastically reduced, due to component tolerances.

Advantages

- Reduced spatters
- Minimal heat input
- Stable arc
- High welding speed
- Reduced seam width
- Increased material input
- Faster length control of the arc
- Spatterless arc start in under 100 ms



Minimal spatter formation

When compared to welds with different arcs, SynchroFeed proves to be the most spatter-free process.



Short arc



Regulated modified short arc



SynchroFeed

The complete welding system for automated processes

The OTC system combines the development of welding robots and new welding processes to a perfect synchronized total solution. The developed components are harmonised to each other and lead to optimal easy usability which makes the tuning of welding processes very easy.

SynchroFeed

Wire buffer L-11610:

The sine form buffer unit with encoder is used for the control of the wire amount and synchronizes the AC-Servo driver units.

Push feeder unit AFS-2301:

The AC Servo assist feeder in compact design is combined to one unit with the Pull torch and is suitable for the use on wire reels or wire drums.

Welding power source **Welbee** P 500 L:

Digital inverter welding power source with integrated Welbee processor. The unique Welbee processor, designed by OTC is based on trendsetting nano technology. Welbee realizes high quality welding due the precise control of current-/and voltage characteristic via ultra fast control circuits.



Roboter FD-B6:

Six axes hollow arm robot with integrated cabling for the minimisation of interference contour.

High power neck change welding torch AFPS-2503:

Torch with integrated shock sensor, AC Servo-power unit system as pull-unit: fully integrated in the sixth axis of the robot, compact design to reduce the disturb contours and highest operation comfort.

Robot Controller FD-11:

Compact modular Robot controller that can control up to 54 axes. The robot controller joints all components of the SynchroFeed system to one harmonized unit.

Wireless Teach Pendant (WITP): ☺

The Wireless Teach Pendant WITP realizes the programming of robot movements and welding parameters on up to 5 Systems. It provides the maximum liberty of action combined with the maximum ease of use.