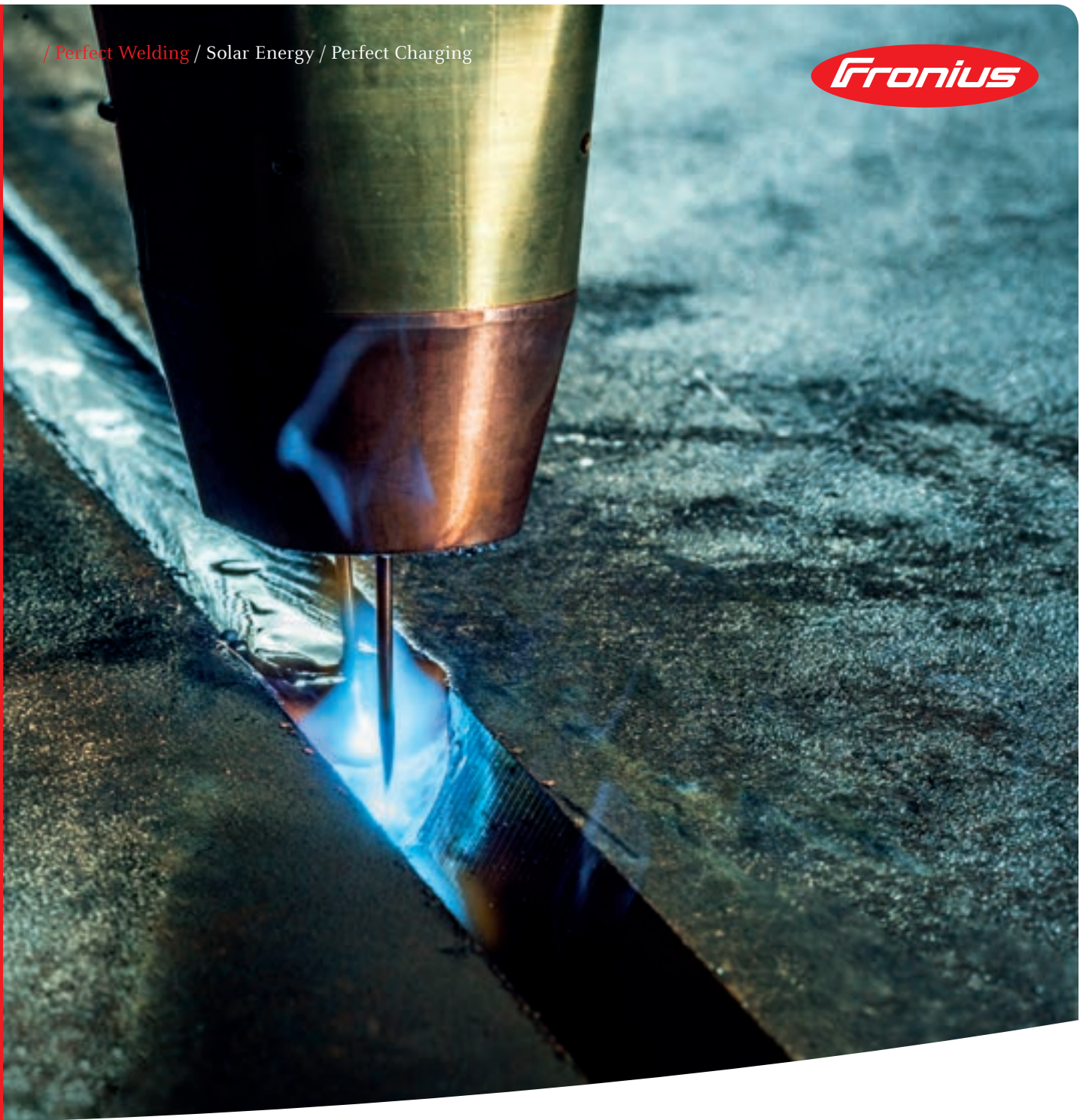


/ Perfect Welding / Solar Energy / Perfect Charging



TPS/i TWIN Push

THE ULTIMATE IN TANDEM WELDING

SINGLE-V BUTT WELD 15 mm SINGLE PASS WELDING WITH DEPOSITION RATE OF 20 KG PER HOUR.

The TPS/i TWIN Push system enables tandem welding with the very best results: Two TPS/i high performance power sources form the basis for perfectly synchronized arcs that generate a common weld pool – ensuring the process is extremely stable.

A high deposition rate, high quality weld seams and high welding speeds are the result. The commercial benefits of the tandem welding process are particularly apparent when welding longer seams on thick sheets.

What's your
welding challenge?

Let's get connected.



TANDEM WELDING

THE BENEFITS

STABLE WELDING PROCESS



Special TWIN characteristics mean the two arcs are perfectly synchronized:

- / Reliable ignition
- / High process stability
- / Easier to set parameters

HIGH DEPOSITION RATE



Deposition rate can be seen either in the seam strength or a higher welding speed:

- / Up to 30 kg/h
- / Shorter welding times

HIGH WELDING SPEED



Result of deposition rate with simultaneously higher process stability:

- / Shorter welding times
- / Reduced heat input
- / Less rework due to reduced distortion

GOOD GAP- BRIDGING ABILITY



Bigger weld pool allows for the compensation of component tolerances:

- / Less time and effort spent on processing
- / Good welding results despite tolerances

SYSTEM DESIGN

TPS/i TWIN PUSH

The entire TPS/i TWIN Push system is characterized by perfectly matched components.

Two power sources and one welding torch – with two electrically isolated contact tips ('lead' and 'trail') – form the basis for the PMC TWIN tandem welding process. The torch service station and the exchange station perfectly complements the system: Service life of wear parts increases and torch body exchange proceed in no time at all – in turn saving time and money.



TWIN WF 30i Wirefeeder

/ Two wirefeeders in one housing allow a central media conduit and improve accessibility

2x TPS/i

- / Up to 2x 500 A with 100% duty cycle
- / Provides a reliable, seam tracking signal independent of the process to reduce the robot teaching effort and potential rework

TWIN Controller

- / Synchronizes the welding process
- / One central robot interface – available for all common welding robots



TWIN Welding Torch

OPTIMIZED COOLING DUE TO WATER-COOLED GAS NOZZLE AND WATER-COOLED NOZZLE FITTING

- / Increases service life of wear parts
- / Less cleaning required due to reduced spatter adhesion
- / Less downtime

COMPACT DESIGN

- / The compact size and fewer pinch points allow improved accessibility to parts

FASTER REPLACEMENT OF WEAR PARTS

- / Clamping lever attachment enables gas nozzle to be swapped quickly
- / Few tools needed

ADJUSTABLE CONTACT TIP ANGLE

- / It is easy to convert the nozzle fitting holder so that the contact tip angle can be adjusted to suit the application



TX/i Torch Body Exchange Station

AUTOMATIC TORCH BODY EXCHANGE

- / There is an increased need to switch from Twin to Single when accessibility is an issue
- / Automatic torch body swap (with newly fitted wear parts)



TSS/i Torch Service Station

EFFECTIVE TORCH BODY CLEANING

- / Varied cleaning options for constant weld seam quality
- / High pressure cleaning (16 bar) with parting agent for inside of gas nozzle
- / Regular cleaning also increases the service life of wear parts



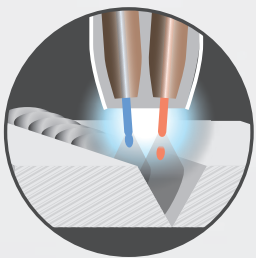
WELDING PROCESS

PMC TWIN

PMC TWIN is the new process for the TPS/i TWIN Push system. New functions, in combination with the arc length and penetration stabilizer, significantly improve process stability. Optimum synchronization of the lead and trail give the PMC TWIN process even greater stability.

CHARACTERISTICS

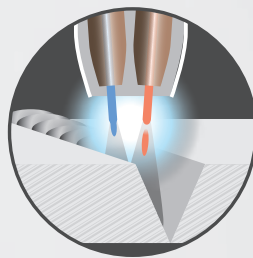
The PMC TWIN welding process features greater penetration, higher welding speed and low heat input. This allows the user to choose between three different characteristics in the area of the modified pulse and spray arc. Use of the universal characteristics is recommended for pulsed arcs.



PMC TWIN UNIVERSAL

PULSED ARC

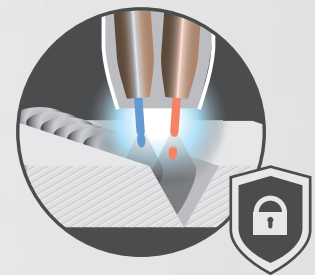
- / Shorter focused arc
- / Enables synchronized droplet detachment on lead and trail electrode
- / Enables high welding speeds



PMC TWIN PCS

SPRAY ARC

- / The lead produces penetration
- / The trail fills the seam with material
- / Enables deep penetration
- / Ideal for narrow gap applications



PMC TWIN MULTI ARC

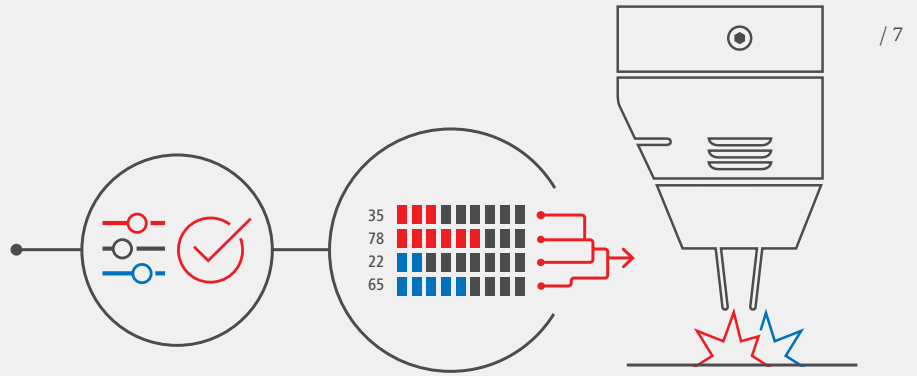
PULSED ARC

- / Optimized characteristics for welding with multiple welding systems in one welding cell
- / All properties of PMC TWIN Universal also available

ADVANTAGES

SYNERGIC TWIN

- / Automatic control of the TWIN parameters without additional settings
- / Larger process window
- / Easy commissioning and operation
- / Saves time and costs



INDEPENDENT WIRE FEED SPEEDS

The pulse ratio between the lead and trail electrode is automatically adapted to the selected arc power. This allows for a greater difference in the wire feed speeds of lead and trail, even for synchronized tandem processes.



- / Deep penetration
- / High welding speeds
- / Stabilized welding process

VARIABLE DROPLET DETACHMENT

The TWIN characteristics also determine the optimum points of droplet detachment between the lead and trail electrode. If necessary, this pulse shift can also be modified manually.



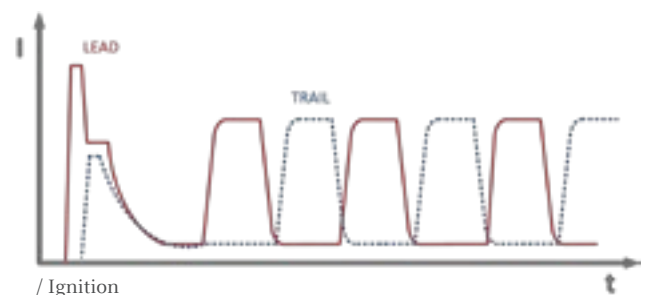
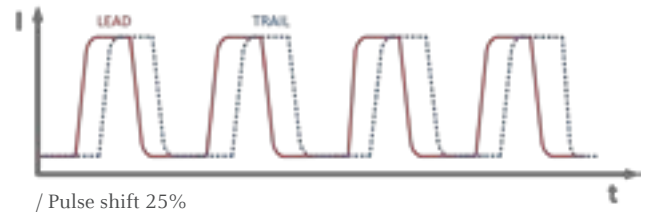
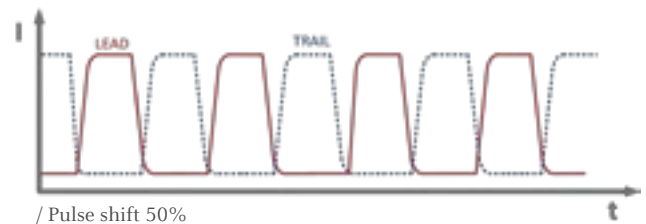
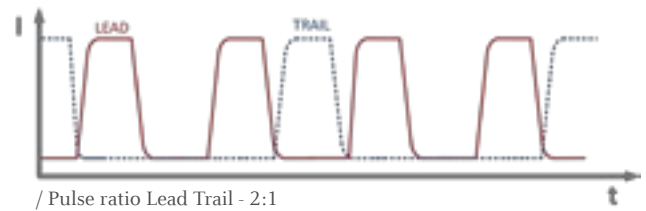
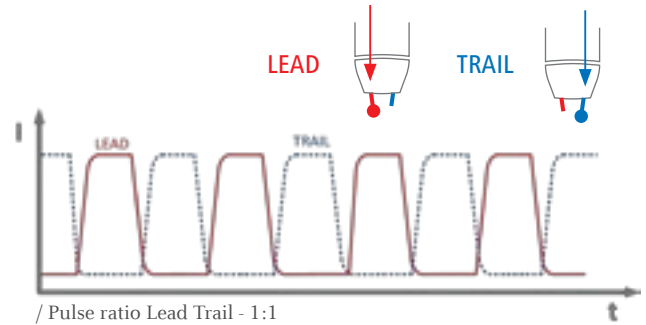
- / Lower interference between the arcs
- / Reduced arc blow
- / High welding speeds
- / Improved quality and appearance of the weld seam
- / Stable welding process

SYNCHRONIZED IGNITION

Ignition of the trail arc is synchronized and happens with a slight delay to the lead arc: This prevents the two arcs deflecting one another, ensuring optimum welding start.



- / Reduces the number of failed ignitions
- / Improves the seam appearance
- / Reproducible ignition





TPS/i TWIN Push
PMC TWIN

COMPARISON – WELDING A FILLET WELD

The advantages of the new PMC TWIN process based on TPS/i compared to a conventional PULSE TWIN process based on TPS.

Position: PB

Shielding gas: Ar +18% CO₂

Filler metal: ER70S-6 Ø 1.2 mm

PENETRATION



PMC TWIN

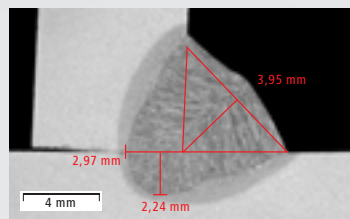
+34%

PULSE TWIN

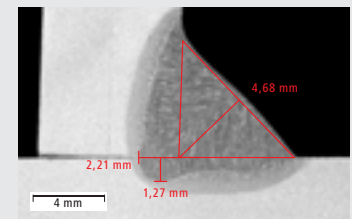


0 1 2 3 4 mm

PMC TWIN



PULSE TWIN



WELDING SPEED



PMC TWIN

+23%

PULSE TWIN



0 30 60 90 120 150 180 210 240 cm/min

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THREE BUSINESS UNITS, ONE GOAL: TO SET THE STANDARD THROUGH TECHNOLOGICAL ADVANCEMENT.

What began in 1945 as a one-man operation now sets technological standards in the fields of welding technology, photovoltaics and battery charging. Today, the company has around 4,760 employees worldwide and 1,253 patents for product development show the innovative spirit within the company. Sustainable development means for us to implement environmentally relevant and social aspects equally with economic factors. Our goal has remained constant throughout: to be the innovation leader.

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