

The perfect duet: TPS/i TWIN push tandem welding

Fronius' high performance TPS/i TWIN push tandem welding system enables significantly higher deposition rates and welding speeds, while it reduces the amount of pre-fabrication and rework required.

Fronius is now offering its tandem welding process on the TPS/i welding platform. The TPS/i TWIN Push high performance welding system is not only more compact, easier to use, and network-capable, it also integrates enhancements to the welding process. For users this means higher deposition rates, higher welding speeds and increased efficiency

in production due to the reduced need for pre-fabrication and rework.

High performance welding is characterised by a high deposition rate that permits a high weld seam volume or high welding speeds. This is particularly relevant when joining high-volume components or long seams for construction machinery, commercial vehicles as well as automotive

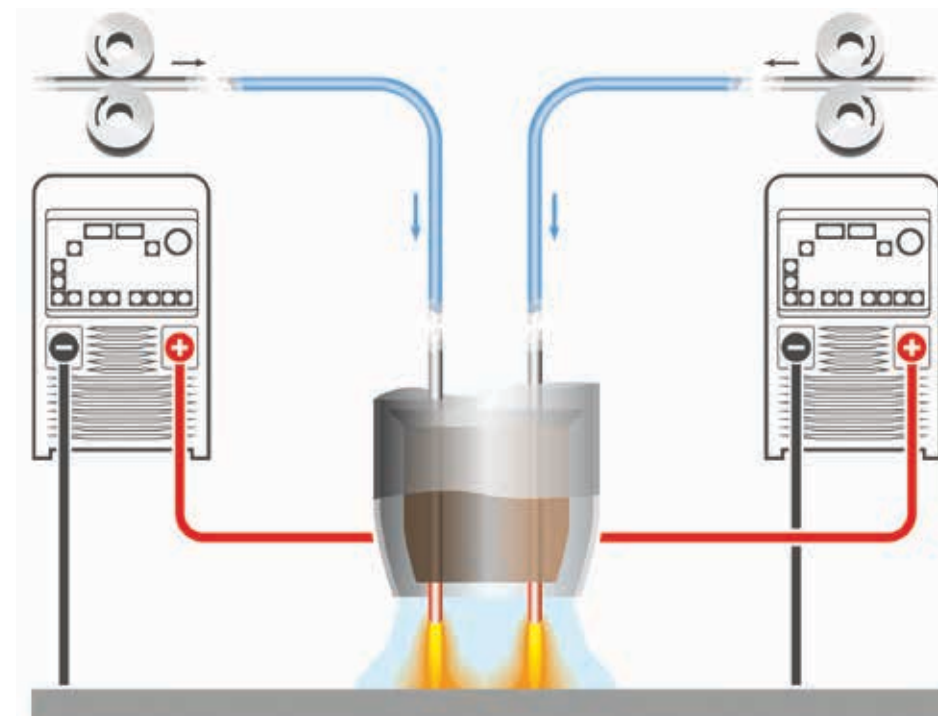
parts and in shipbuilding. The high processing power of the TPS/i further improves the synchronised TWIN Push tandem process: the process is even more stable and reliable; and the enhanced gap-bridging ability saves the user time at the component preparation stage. The amount of rework can also be reduced, since precise control of the welding process enables controlled droplet detachment and low heat input into the component, permitting low-spatter results with minimal distortion.

Fronius offers new process and control options with the TPS/i TWIN Push: PMC (Pulse Multi Control) TWIN features a short, focused pulsed arc that enables improved penetration and a higher welding speed. The PulseSync option allows the user to select widely varying travel speeds for the two wire electrodes. This gives the user greater flexibility to adjust the welding parameters to the component and maximise welding speeds. The power source will automatically correct all relevant power source parameters, such as the ignition properties, the point of droplet detachment, and the pulse ratio.

New control mechanisms assist the welder in other ways too – the arc length stabiliser and the penetration stabiliser increase process stability and make it easier to configure parameters. Where the position of the interface varies, possibly due to component distortion or imprecise clamping, automatic seam tracking assists: during welding the welding system transmits a seam tracking signal to the robot so it can make corrections as required.

The TWIN process is based on tandem welding and features two wire electrodes that are fed into a welding torch with a single gas nozzle, while remaining electrically isolated from one another. As a result, the arcs can be controlled independently and, despite differing outputs, can be precisely synchronised and coordinated. In addition to two TPS/i power sources, the TWIN Push system requires a TWIN Controller. The controller synchronises the welding process and acts as an interface that is compatible with all makes of welding robot. The compact wirefeeder, cooling system, hosepack and TWIN welding torch complete the welding system.

The cooling system for the torch has been improved, extending the service life



The TPS/i TWIN Push welding system consists of two powerful TPS/i welding systems, the TWIN Controller, a compact wirefeeder, a cooling system, hosepacks and the TWIN welding torch.

of wearing parts. Alongside this, Fronius has developed the Robacta TSS/i Torch-ServiceStation: This welding torch cleaning system combines a number of cleaning methods, including high pressure cleaning,

brush cleaning and magnetic cleaning, as well as cleaning by means of a cutter. The professional torch cleaning device lowers overall system costs by extending the service life of wearing parts.

The efficiency of the welding system can be further increased by using the TX TWIN welding torch change station: This console allows for automatic switching between TWIN and single torch bodies. This means the same system can be used to weld areas that are particularly difficult to access with the more compact single torch body. The robot automatically changes the torch body – allowing for unmanned shifts.

Fronius' Perfect Welding business unit is an innovation leader in arc and resistance spot welding and a global market leader for robot-assisted welding. As a systems provider, the Fronius Welding Automation division also implements customised automated complete welding solutions for the construction of containers or offshore cladding, for example. The range is rounded off by power sources for manual applications, welding accessories and a broad spectrum of services.

With more than 1 000 sales partners worldwide, Fronius Perfect Welding has excellent customer proximity.

Fronius products are available in South Africa through the Bolt and Engineering Distributors Group (BED).



The tandem high performance welding process ensures that high-volume components and long seams are joined efficiently. The two wire electrodes are isolated from each other, allowing the arcs to be controlled individually.



Above: Precise control of the welding process enables controlled droplet detachment and low heat input into the component, permitting low-spatter results with minimal distortion.

Left: The process is particularly suitable for joining high-volume components or long seams for construction machinery, commercial vehicles as well as automotive parts and in shipbuilding.



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