



## **WELDING SOLUTIONS FOR GALVANIZED STEELS IN THE AUTOMOTIVE INDUSTRY**



- / High travel speeds of 40+ inches per minute using standard consumables
- / Minimum porosity, minimal spatter
- / System is reliable and user-friendly
- / Compatible with all robot manufacturers

# WELDING PROCESSES AND APPLICATION TECHNOLOGIES FOR GALVANIZED STEELS

/ In the automotive industry, welding galvanized steels presents unique challenges. Automobiles are expected to cost less, yet last longer - even in harsh weather and road conditions. Vehicle manufacturers are hard pressed to find welding solutions that allow them to meet these demands while still increasing profitability.

Fronius has developed a welding system that helps the automotive industry with the specific challenges of welding galvanized steels.

## TRAVEL SPEEDS

In the past, coated steels required slower travel speeds to burn through the coating and allow the vaporized zinc to escape the weld pool. Not anymore. The Fronius TPS/i system can achieve speeds of 40+ inches per minute without using expensive, specialized consumables or additional hardware. This allows for higher speeds using standard solid wires and shielding gases.

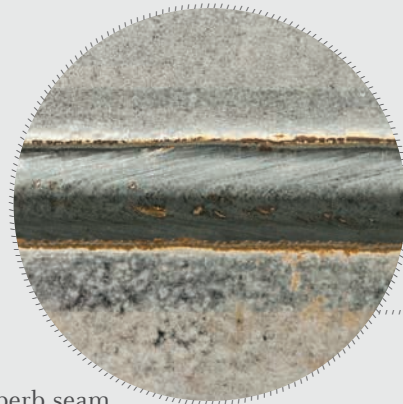
Fronius understands the pressures of automotive welding. Though the welding power supply is technologically advanced, we've simplified daily welding with a user-friendly interface, and specialized welding processes to meet the demands of welding zinc coated materials.

## SPECIALIZED PROCESSES

Not only have coated steels been slow to weld, but getting an acceptable weld has been difficult, Fronius has solved this as well with advanced welding processes that aid with spatter reduction, porosity reduction, and a uniform penetration profile.

Pulse Multi-Control (PMC) is our advanced process that builds on pulse GMAW, taking it further than ever before. The Fronius TPS/i uses high-speed data processing to create an adaptable arc to precisely assist droplet detachment. This precision is key to achieving the fast travel speeds, low heat input, and consistent penetration necessary in the automotive industry.

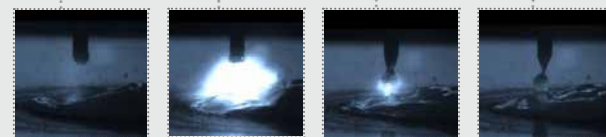
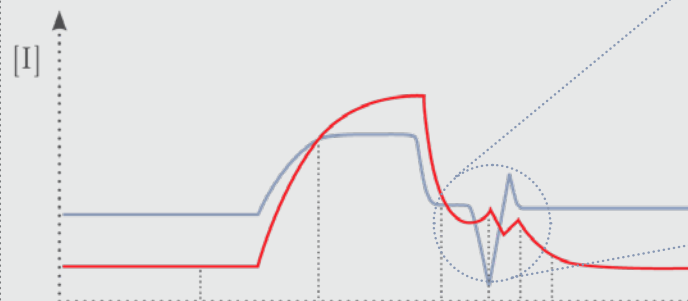
The Fronius TPS/i welding system is perfect for welding galvanized steels in the automotive industry. In addition to improvements in arc stability, travel speeds, and consistency, the system can be networked and monitored to fit your production needs.



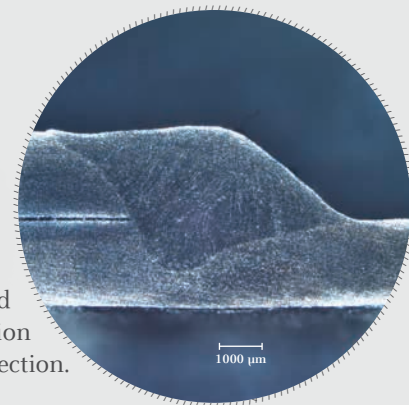
Superb seam appearance with minimal spatter on galvanized steel.



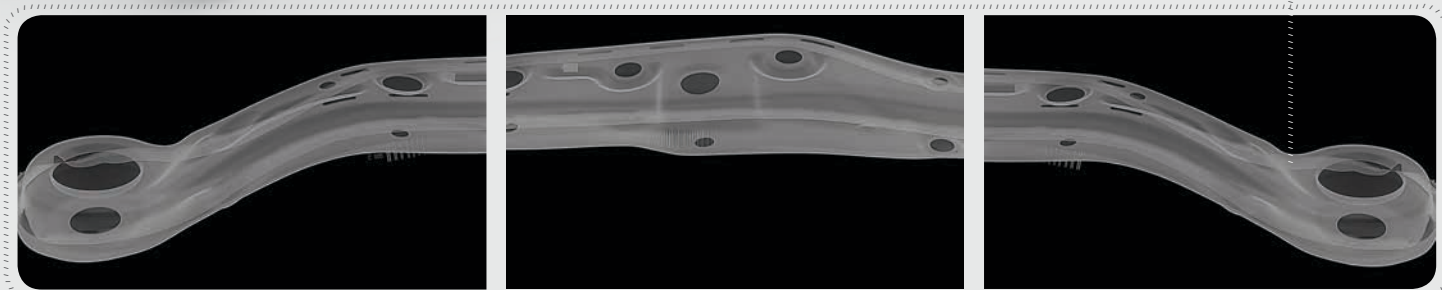
## Advanced GMAW processes for welding



PMC technology increases travel speed, penetration and arc

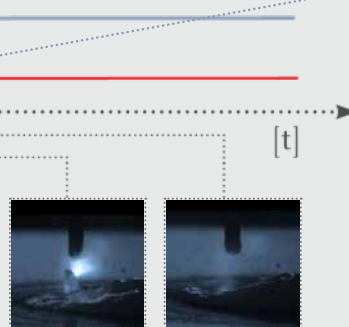


The exceptional weld profile and penetration are visible in cross-section.



Rear axle component X-ray displaying minimum porosity at high travel speed welding.

## galvanized steels.



stability.

## SOLUTION-BASED PROCESS:

PMC is packed with new features developed by Fronius to greatly increase travel speed, arc performance, and weld quality. This is done without the need of special consumables or additional hardware.

### Arc-Length Stabilizer

- / Auto-adjusts to changes in weld environment (sheet thickness and part variation)
- / Controlled adjustments keep arc length constant
- / No adjustments are necessary when weld joint changes (i.e. from butt joint to T joint)

### Penetration Stabilizer

- / Minimizes burn through and lack of fusion
- / Ultra fast regulation of wire feed speed to compensate for part deviation in the z axis of the tool
- / Maintains penetration even through changes in contact-tip-to-work-distance



# Robotic welding package for galvanized applications

Package	Description
Ready-to-weld TPS/i robotic package for galvanized steel applications	TPS 400i Power Source*, PMC software, dust filter, internal robotic interface, interconnecting cables, ground connections and wire feed system (including mounting, drive rolls, and quick connector), torch body, torch cable (built to robot length), torch mount, starter kit & tools.  *Other amperages are available
<b>Arc welding monitoring solution:</b>	
Weldcube	Each Weldcube will monitor up to 50 power sources, their weld performance and consumables use and can be linked with additional Weldcubes to expand the network. Ask your Fronius sales team how Weldcube can benefit your production.



## Technical Data TPS 400i

Mains voltage	3 x 460
Mains range	323 - 529 Vac
Fuse Protection	35A slow-blow
Mains tolerance	+/- 15%
MIG current range	3 - 400
MIG voltage range	14.2V – 34.0V
Duty cycle 104° F (40° C)*	400A @40%
	360A @ 60%
	320A @ 100%
Protection class	IP 23
Dimensions (L x W x H)*	27.8" x 11.8" x 20.1" 706mm x 300mm x 510mm
Weight*	77.6 lbs (35.2 kg)

\*These values reflect only the welding power supply

Learn more



[www.tps-i.com/en](http://www.tps-i.com/en)

/ Perfect Welding / Solar Energy / Perfect Charging

## 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 3,800 employees worldwide and 1,242 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.

Further information about all Fronius products and our global sales partners and representatives can be found at [www.fronius.com](http://www.fronius.com)

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