

PSTproducts GmbH

PSTproducts GmbH provides EMPT systems since 2003 and is recognized as the market leader for industrial solutions and manufacturing cells. It focuses on the automotive, packaging, E-mobility and lightweight sectors and has a lot of patents and innovations.

All machines and systems are designed and manufactured in Germany.

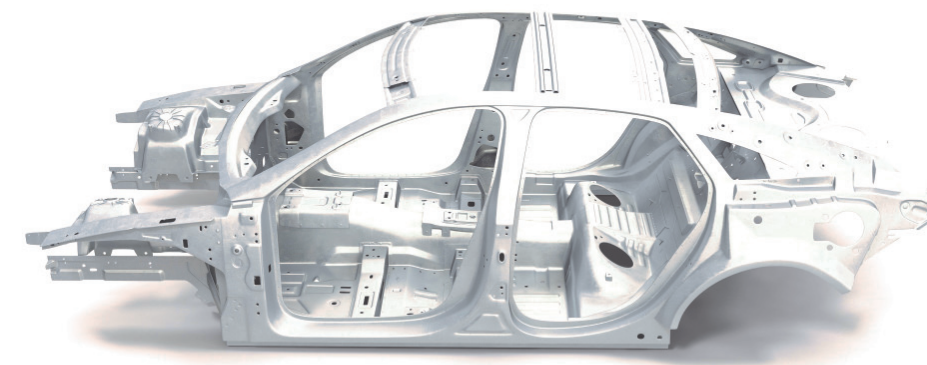
The Working Principle

The electromagnetic pulse technology (EMPT) is based on the physical law of the Lorentz force, which is generated, if a varying magnetic field induces counter flowing eddy currents in nearby electrically conducting materials, so that these materials are repelled from each other.

In optimized machines, these forces can be used to accelerate work pieces to a speed of up to 600m/s. The electro-magnetic forces can be used for welding, crimping, forming, cutting and compressing of technical products with the highest quality demands.

Our Portfolio

- Design and manufacture of industrial solutions
- Turn - key systems world wide
- Consulting and engineering services
- Finite element analysis (FEA)
- Parameter development studies
- Bespoke prototyping
- Customer specific automatization
- Active sales and customer service



EMPT in practice: Sheet metal processing of structural components

Lightweight metal structures are key elements in automotive and aircraft industry which represents a competitive advantage regarding resource efficiency and energy saving potential. Therefore manufacturer and engineers are faced to new challenges: On one hand side the design needs to become lighter, but at the same time no drawbacks will be accepted regarding the required specification at decreasing production costs and increasing efficiency in serial production.

PSTproducts has accepted this challenge and offers a cutting edge solution for high quality joining and forming applications of sheet metals and structural components by its electromagnetic pulse technology (EMPT). The EMPT system is especially made for automated industrial serial production at its highest quality.

EMPT provides significant benefits in the sheet metal processing and structural components:

Design	Material combinations with dissimilar metals
No side effects	No heat input, no mechanical contact, no contamination
Short processing time	Very fast cycle times perfect for industrial high volume production
High flexibility	Easy and versatile automatization
Quality	High process stability and reproducibility
Cost	Low total cost of ownership (TCO) "plug & produce" systems

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Bildquellen: PSTproducts, fotolia



Frame assemblies and braces

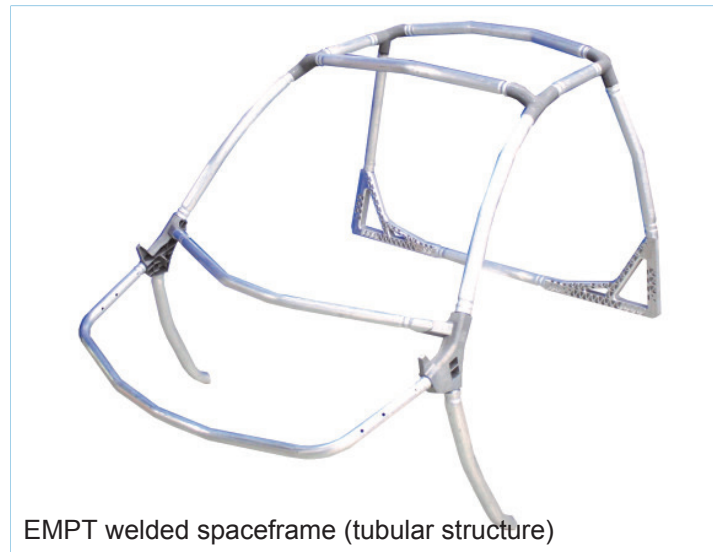


EMPT welded spaceframe
Aluminum - Steel, Aluminum - Aluminum welds

Reduction of weight and material thickness with increased strength of assemblies

Benefits:

- High specific load capacity
- Crimping and welding of hybrid lightweight construction materials and special alloys
- Robust bracket joints for attachments
- Weld seams of up to 2.0 m length within 20 μ s process time



EMPT welded spaceframe (tubular structure)

Sheet metal profiles

The EMPT offers unique advantages for both the sheet metal welding and the sheet metal forming.

Benefits:

- Dissimilar metals can be joined
- High strength joints
- Unique formability for progressive designs:
 - i. e. V-shaped edges
- Easy processing



Aluminum crashbox
(bumper beam segment with welded crashbox)

Structure designs

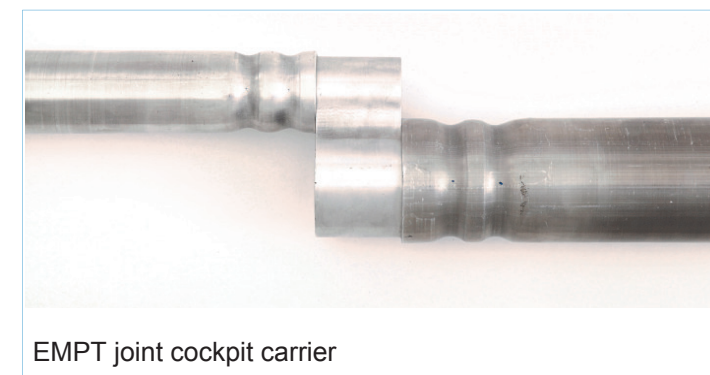
Workpieces and assemblies can be produced either with EMPT processes alone or in combination with other forming and joining processes.

Benefits:

- Resistant against shock loads
- Flexible shaping possibilities
- Realisation of weight reduction
- Production of semi-finished components for further processing



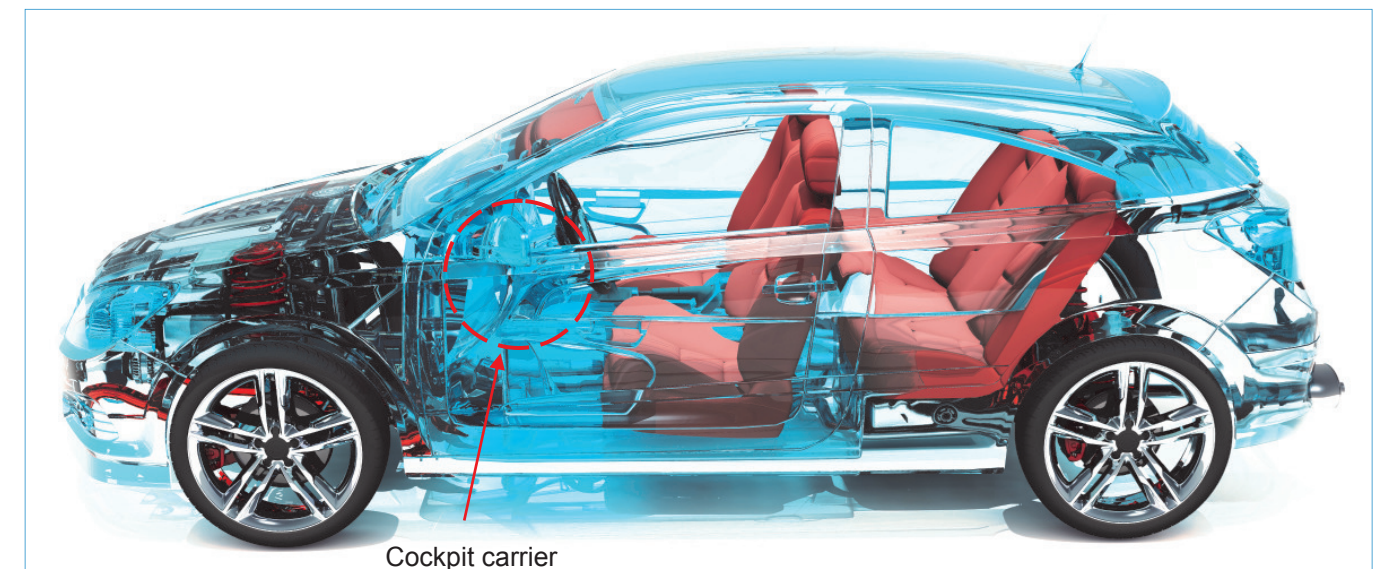
Sheet metal weld of aluminum and steel
500 mm weld length



EMPT joint cockpit carrier



EMPT joint cockpit carrier



Cockpit carrier