

## Innovative fastening solutions for multi-material assemblies

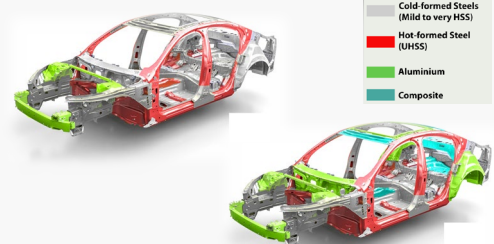
### Sustainable Choices

As Automotive OEMs reduce the environmental impact of their products and operations, electrification and light-weight vehicle design are critical to meeting their decarbonization goals and emissions legislation. **A light-weight vehicle emits less CO<sub>2</sub>, has a greater range per charge/tank and can downsize mass-related subsystems.**

Each material considered for parts of a vehicle's body & chassis has its unique advantages and disadvantages. Optimising weight, cost and performance is leading to the increasing use of aluminium and composite parts together with higher strength steels in the body-in-white. Depending on the specific weight-performance-cost trade-offs for each vehicle or platform, the use of light-weight materials can vary. Applications where the total cost-benefit-weight equation is the most favourable, like die-cast aluminium shock towers or composite trunk floors, are those where OEMs are introducing non-steel materials first.

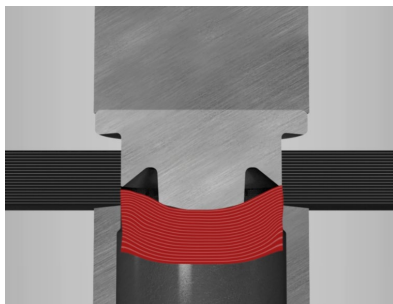
The ERWin® multi-material welding insert is compatible with existing body-shop welding equipment AND with all multi-material combinations, so enabling **all levels of light-weight material use** in body-in-white designs to **co-exist on the same assembly line**, without additional investment, from all-steel to advanced multi-material bodies.

**The simplicity, versatility and cost-effectiveness** of the ERWin® insert and its deployment allows OEMs to **go further with light-weighting** in their trade-offs, and **so accelerate the transition to carbon-neutral transportation.**

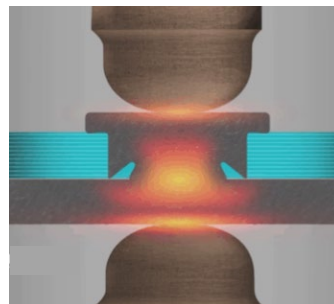


How ERWin® works

#### 1) In-process time Functionalisation : 2) Welding Assembly :

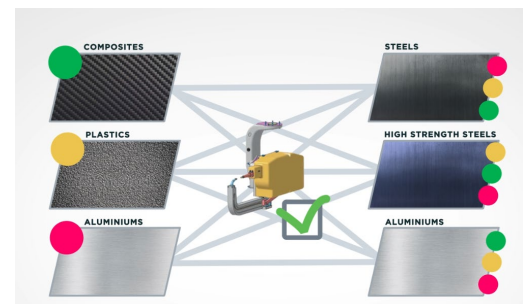


The light-weight component is pre-equipped with ERWin® via post operation crimping without pre-hole (above) or in-die/in-mould



The light-weight component is welded to steel component in the body shop using standard welding equipment

#### Material Combinations :



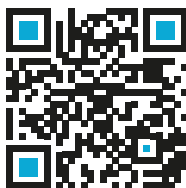
All material combinations are possible.  
Double or Triple (2 steel sheets) thickness and one-sided access are supported

### Advantages of the ERWin® solution:

- ✓ In process or in-process time functionalisation
- ✓ Compatible with standard body shop equipment
- ✓ Same assembly takt-time as spot welding
- ✓ Strength & repeatability of steel-steel spot welding
- ✓ One fastener solution for all multi-material assemblies
- ✓ No micro-cracks when assembling die cast aluminium: no part heat treatment needed + can position close to edge
- ✓ Patented shape ensures thermal protection of light-weight material, thickness tolerance compensation & repeatable welds
- ✓ Repair and end-of-life disassembly is supported



For more information,  
please view the video



Link: <https://videoerwin.gaming-engineering.com/>



[www.gaming-engineering.com](http://www.gaming-engineering.com)

### Getting started with ERWin®

Contact us at [contact@gaming-engineering.com](mailto:contact@gaming-engineering.com), to start evaluating ERWin® for your multi-material applications.



Multi-material assemblies



Fasteners for die casting



Fasteners for Composites



Fasteners for Plastics



Fasteners for Sheet Metal

**Innovative fastening solutions for efficient & sustainable design**