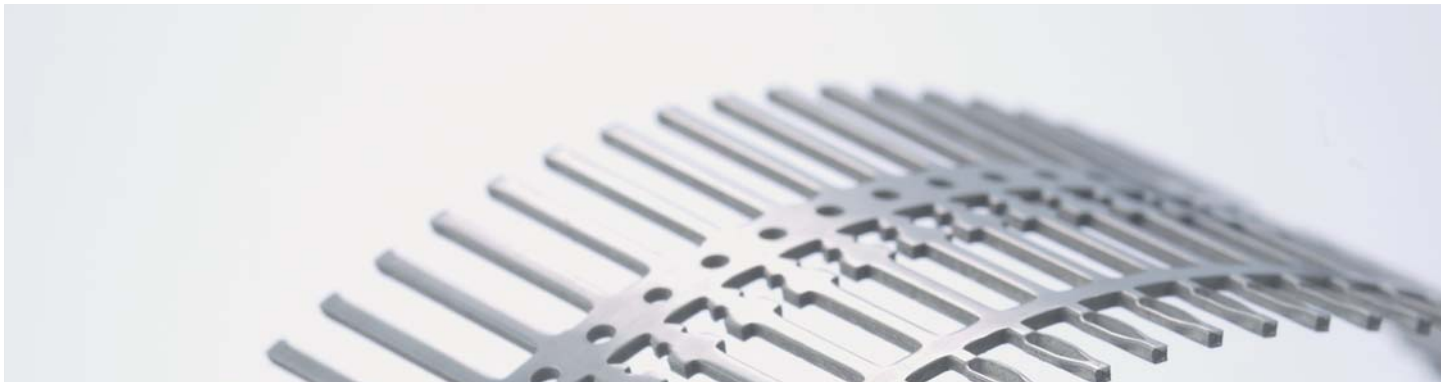
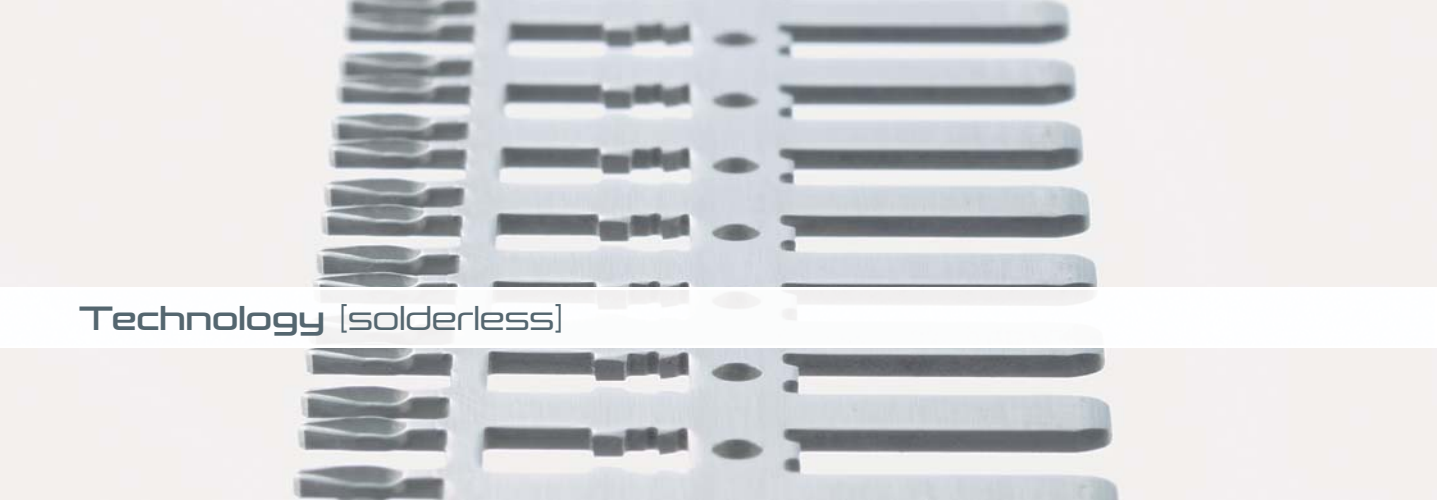
Lumberg

passion for connections



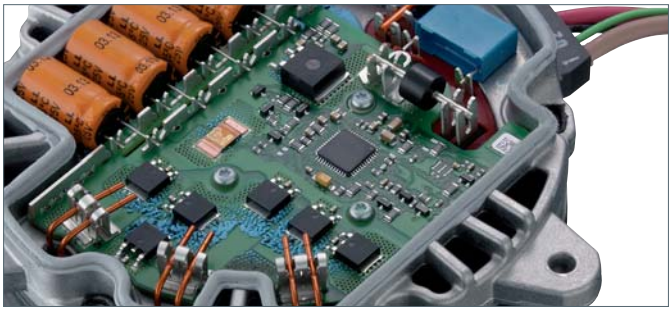
Press-fit Technology



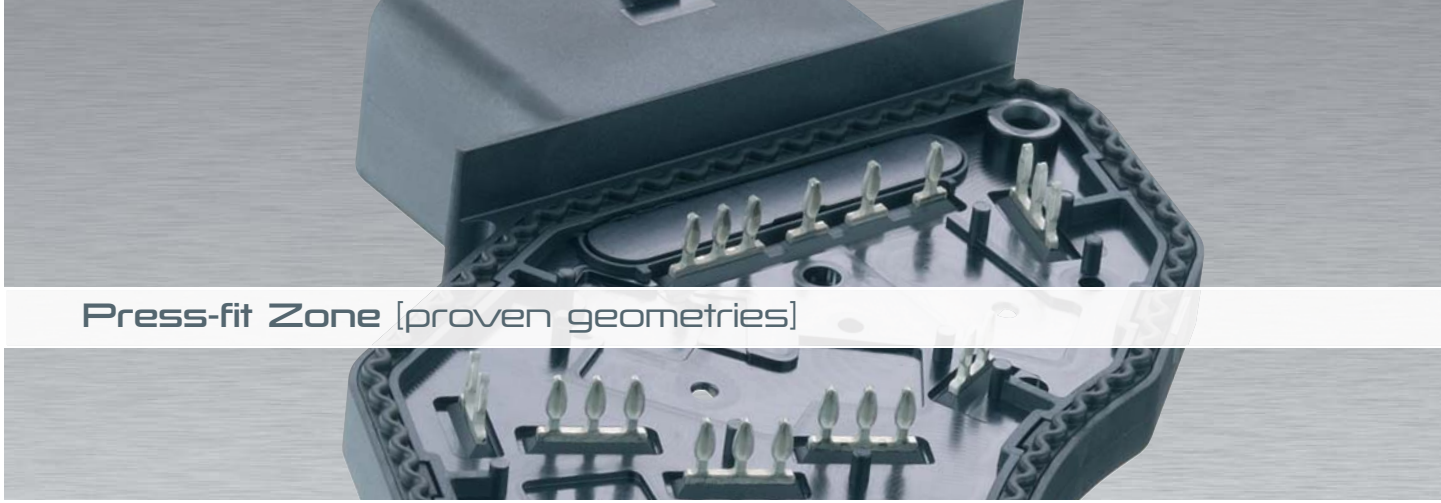
Technology [solderless]

While sub-assemblies and installation spaces for automotive applications are becoming smaller, the demands on connectors and packing densities are becoming bigger.

'Solderless' is the word which is electrifying connector technology for the automotive supply industry. Within 10 years from now, press-fitting is to replace soldering as the main technology. Nowadays, most components are soldered onto the printed circuit board in an elaborate process. Press-fitting, on the other hand, creates a solderless mechanical-electrical connection.



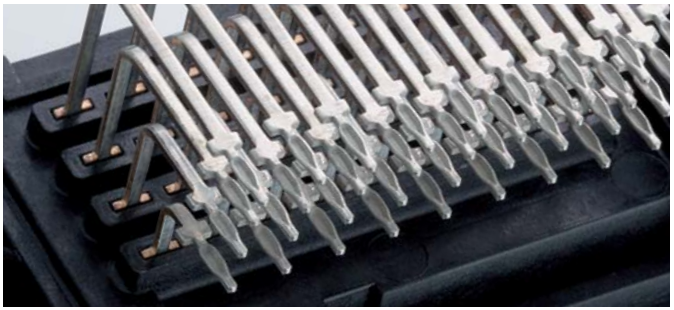
A connector's multiple press-fit pins are inserted into the metallized perforations of a printed circuit board. Since the pin's diagonal is larger than the PCB's perforation, press-fitting the pin defines the respective deformation. The PCB's plated-through hole creates a positive, sealed electrical connection of superior dependability and durability.

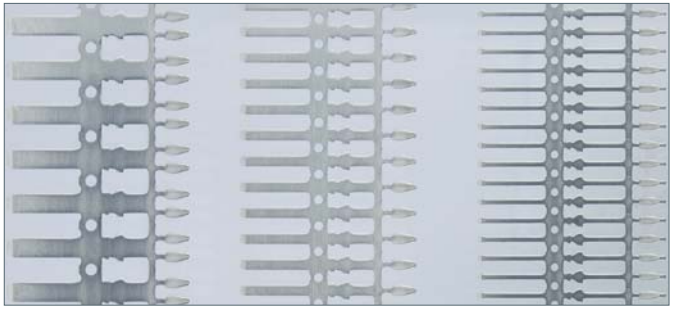


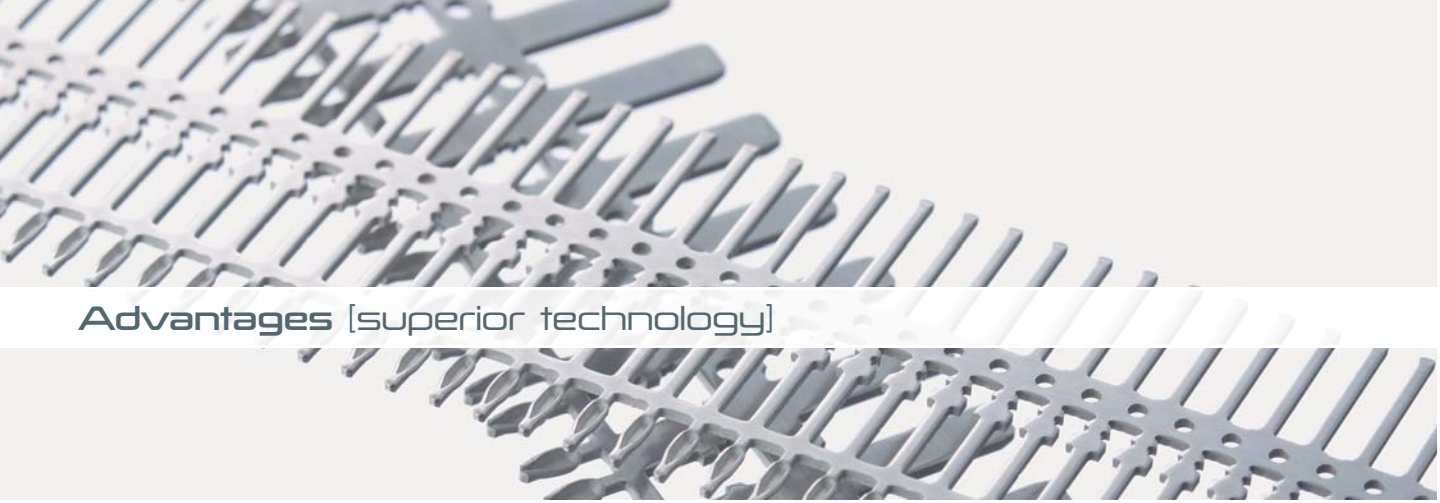
Press-fit Zone [proven geometries]

Our press-fit contacts with standard well-proven pin geometries create a highly reliable connection during press-fitting with the PCB's plated-through hole – as defined in the IEC 60352-5 standard – which produces a large contact surface with manifold micro cold weldings. This gas-tight, non-aging connection excludes corrosion and guarantees a stable operation.

The automated serial production of press-fit contacts vouches for a steady, high quality.







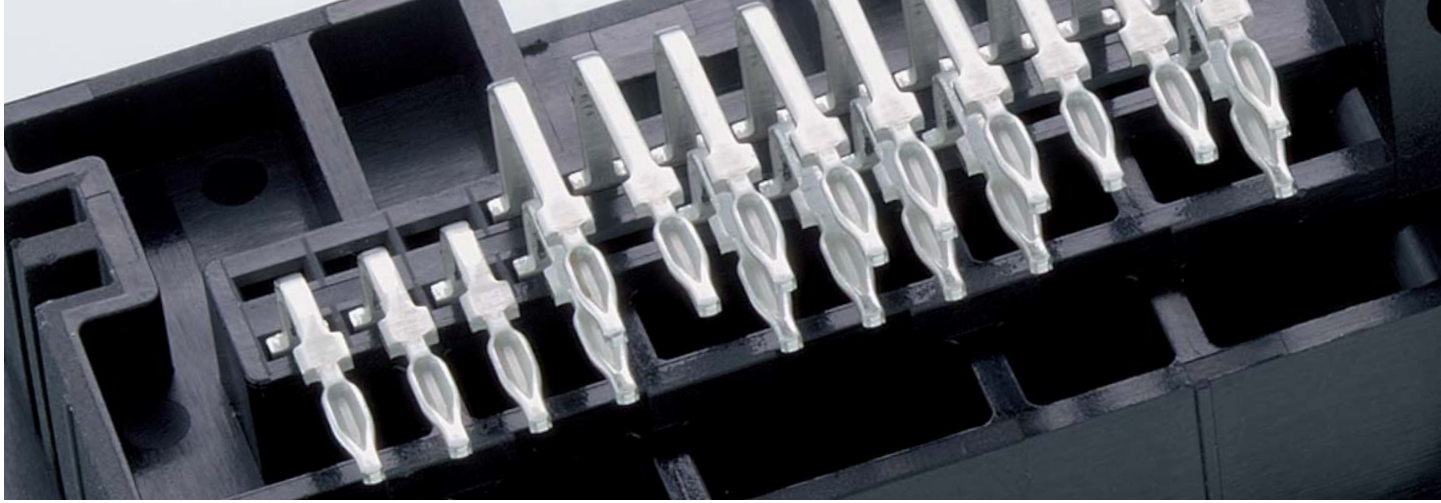
Advantages [superior technology]

Thanks to its many advantages press-fit technology for connections between electrical contacts and plated-through printed circuit boards has proven itself many times for automotive applications. This technology has evolved over 40 years, much to its current advantage: a recognised, very robust, highly configurable and space-saving – as well as solderless – connection.

Advantages of press-fitting compared to soldering

Functional

- Simple, automated processing
- Durable mechanical PCB/connector connection
- Extremely robust connection facilitates stacking of circuit boards e.g. for signal and high performance PCBs
- Proven technology with effective process monitoring during production and processing
- High packing densities create space-saving solutions
- New design opportunities for your automotive application
- Processing multilayers of 1.6 mm ± 10 % thickness



Qualitative

- Maximum dependability (0-ppm target)
- Clearly superior shock and vibration-resistance of the connection
- Gas-tight connection to eliminate corrosion
- Temperature-resistant between -40 °C and +150 °C for FR4 PCBs with a chemical tin surface; higher application temperatures upon request
- Non-aging connection
- No temperature-related stress of the PCB and adjacent components from soldering
- No cold soldering joints or short-circuiting due to solder straps
- OEM-accepted, compatible with various in-house standards of OEMs

Economical

- Quick processing due to mechanical insertion
- Reduced production costs (no wave soldering or selective soldering)
- Cost-effective mounting of PCBs – even double-sided

Ecological

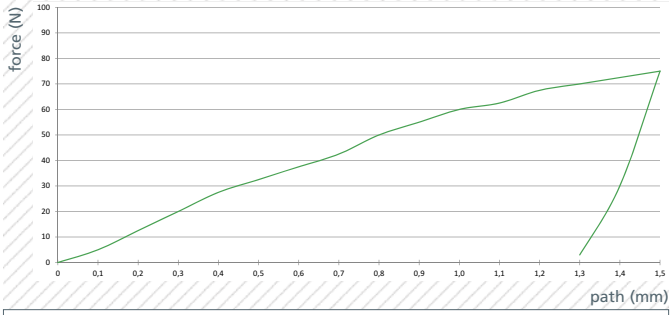
- IMDS, RoHS and WEEE-compliant
- No soldering fumes, no residual soldering flux on the circuit board
- No pollutive washing of the PCB

Lumberg Press-fit Technology [custom-designed connector systems]

We stand for quality connectors and technically advanced solution competency. Especially for metal-plastic composite sub-assemblies we design and produce solutions to your specifications. The tools and machines required for this are manufactured in-house.

transversal section EPZ

longitudinal section EPZ

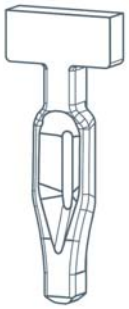


force path diagram

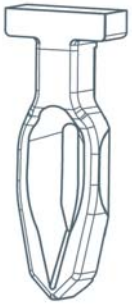
Press-fit Technology

- Solderless
- Proven geometries
- Free configuration optional
- Shock and vibration-resistant

7200



7201



	7200 (0.6)	7201 (0.8)
SPECIFIC DATA PRESS-FIT (ZONE)		
Material	CuSn, alternativly CuCrAgFeTiSi	CuSn, alternativly CuCrAgFeTiSi
Surface	pre-nickel and tin-plated	pre-nickel and tin-plated
Material thickness	0.6 mm	0.8 mm
Press-in zone length	4.7 mm	4.7 mm
Construction contact side	geometric and service according to customer requirements	geometric and service according to customer requirements
SPECIFIC DATA PC-BOARD		
Material	FR4[1] min. T_g (DSC)=150 °C	FR4[1] min. T_g (DSC)=150 °C
Surface	chem. tin-plated	chem. tin-plated
Thickness	1.6 mm ± 10 %	1.6 mm ± 10 %
Type	multilayer[2]	multilayer[2]
Hole diameter		
without Cu plating	Ø 1.15 ± 0.025 mm	Ø 1.6 ± 0.025 mm
with Cu plating and finishing	Ø 1.05 ± 0.05 mm	Ø 1.49 ± 0.05 mm
Copper coating thickness hole	30–50 µm	30–50 µm
MECHANICAL DATA[3]		
Press-in force	75 ± 20 N	70 ± 20 N
Extraction force	80 ± 20 N	70 ± 20 N
FURTHER SPECIFICATIONS		
approved acc. to internal test specification (on request) subject to automotive requirements on the basis of IEC 60352-5		

[1] acc. to IPC-4101 C

[2] acc. to IPC-A600H Class 3, IPC-6011 Class 3, IPC-6012 C Class 3, IPC-TM-650 and Perfag 2F/3D

[3] at room temperature 23 ± 5 °C, hole Ø 1.05 mm (EPZ 0.6) and Ø 1.49 mm (EPZ 0.8), for use in combination with other FR-base materials and PC-board layouts the declared values values in the data sheet can be deviate.

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