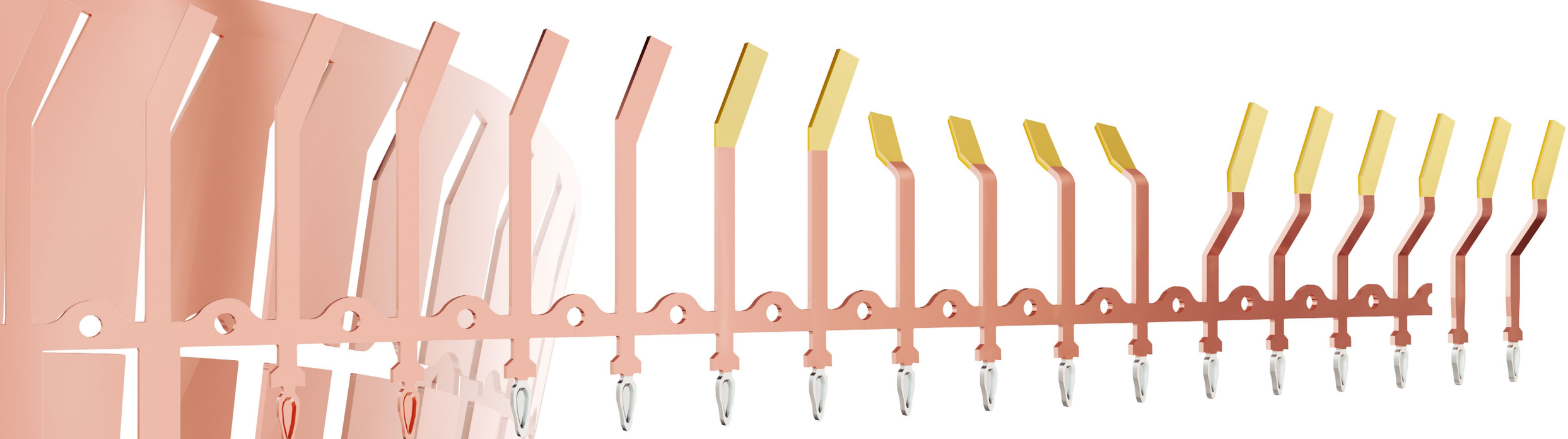
DIEHL
Metall



PROTOTYPING

FROM PROTOTYPE MANUFACTURING TO SERIES PRODUCTION READINESS

DIEHL
Metal Applications



IN-HOUSE PROTOTYPING

Diehl Metal Applications (DMA) provides a comprehensive technology portfolio with press-fit zones. We offer products and services directly from one source. We produce both innovative piece parts as well as custom-made complete solutions, from initial prototypes to start of series production.

As a system supplier, we provide expertise in all steps of the value chain, simplify procurement processes and save time by reducing administrative effort.

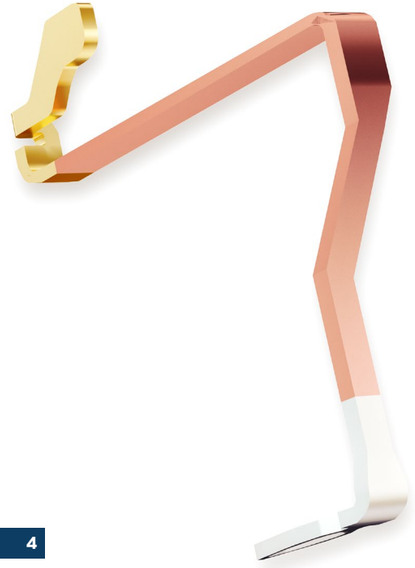
We have in-house prototyping capacities using a multitude of existing tools. Prior to series production, it is thereby possible to produce sample parts with press-fit zones under near-series conditions and to align them to the special requirements of our customers.

During the product development stage, we specify the important influencing parameters, such as prematerial, press-fit zone geometry and surface finishing, and subsequently monitor these in series production. We provide advice and support to our customers at every stage of the project.

In our test laboratory, we can check and validate the important characteristic values according to DIN EN 60352-5. To do this, a range of testing and measuring equipment is available. The use of test or series printed circuit boards for determining and adjusting press-fit-zone parameters is possible.

FROM PROTOTYPE TO PRE-PRODUCTION

In all phases of product development, professional contact partners are available. We offer a high manufacturing depth by using existing tools for stamping, embossing press-fit zones, separating, bending as well as (selective) plating.



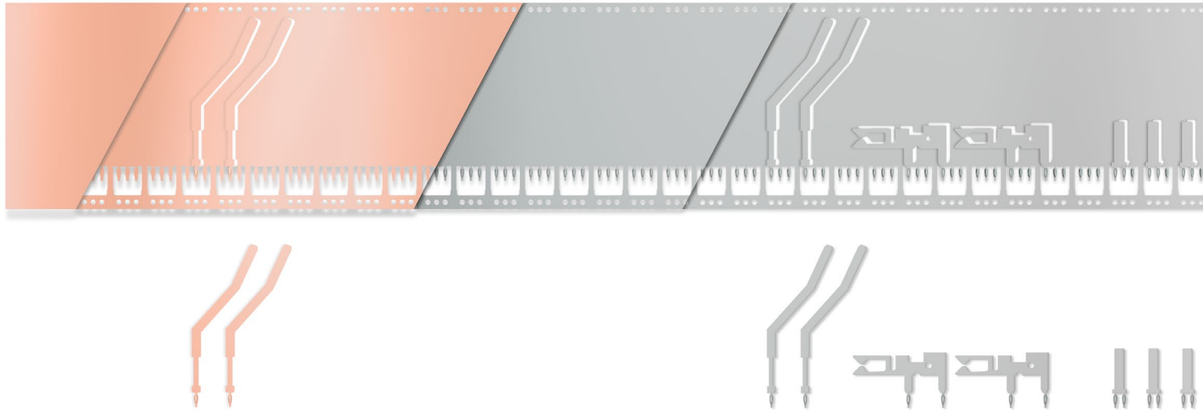


MANUFACTURING & DESIGN

For prototyping components with or without press-fit zones, tools are available for single stroke as well as for stamping machines.

The manufacturing of our press-fit zones in the prototype tool is comparable to series production.

Alternatively, laser or waterjet cutting technology may be used for customer-specific design of the part geometry.



LEAD TIMES & BATCH SIZES

The lead time depends on part complexity and order volume.

Typical batch sizes during laser or waterjet cutting and, if required, with press-fit zone: ≤ 1,000 pcs*.

Typical batch sizes as pre-stamped strip: ≥ 5,000 pcs.

*Deviating number of pieces in consultation (Project scope geometry)

3D-PRINT (IN-HOUSE)

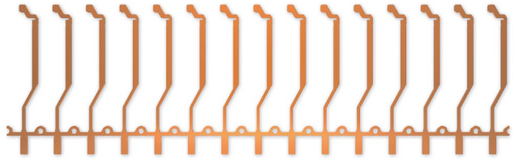
Procedure:	Fused Deposition Modeling (FDM)
Mode material:	ABSultra in 6 colors
Layer thickness:	0.25mm or 0.17mm (0.01 in. or 0.007 in.)
Build size:	203 x 203 x 305mm (8 x 8 x 12 in.)
Advantage:	Direct modeling from 3D data record

OUR PORTFOLIO

LASER / WATERJET CUTTING

Custom-made contact design with support of certified partners and excellent expertise:

- Standard: CuSn6, CuNiSi alloys
- Endless, as strip or as piece part
- High precision & filigree contours

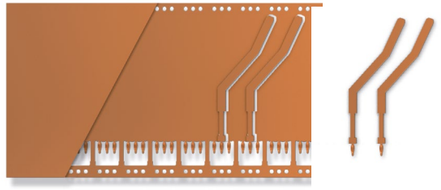


Laser-cut contact strip made

PRE-STAMPING REEL / STAMPING

Press-fit zones and, if required, the connector, welding or IDC geometries are pre-stamped on strip material under close-to-series production conditions on modern stamping machines

- Small series from 5,000 pcs.
- In-house tool design
- High-performance machinery
- Piece part production or in series
- production-line cutting surface

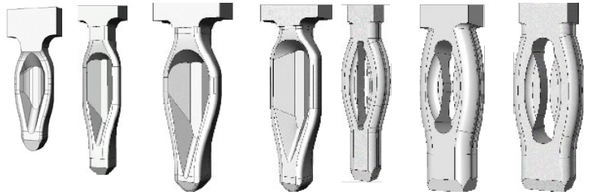


Unplated strip material CuSn6 becomes pre-stamped strip with press-fit zone

PRESS-FIT ZONES

In-house production of press-fit geometry:

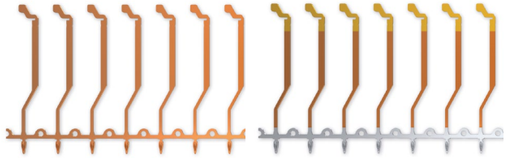
- innovative solderless connection technology
- internal press-fit zone know-how depending application or field of use
- Implementation as pre-stamped strip with series tools
- Alternative implementation using close-to-series tools



PLATING TECHNOLOGY

In-house state-of-the-art electroplating facilities as a basis for customized solutions and close-to-series finishing:

- Reel-to-reel plating (from 5,000 pcs.)
- Piece part plating
- Strip plating
- Plating in sample plating baths with series portfolio
- Entire surface or selective plating

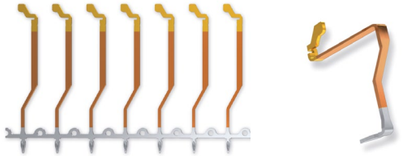


Selectively plated laser strip

SEPARATING / BENDING

Bringing parts into form:

- Separating from endless strip material or from a piece of strip
- One or multiple bendings on piece parts possible

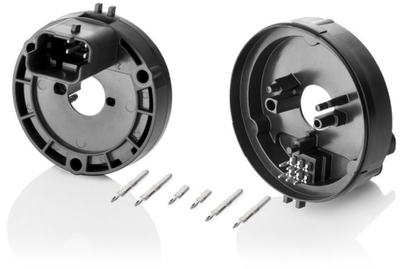


Bent four times at 90°

METAL-PLASTIC COMPOUND SYSTEMS

Overmolding of samples inhouse:

- Sample toolmaking in DMA rack
- Tool design as 3D model
- Moldflow® analyses
- Vertical molding, rotary table vertical molding and horizontal machines with closing forces of 40 to 200 tons are available
- Use of plastics such as PA, PBT, PPS, PEI or similar



LED housing with overmolded press-fit zone contacts



WE GET METAL
INTO SHAPE

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