Diffusion Welding

Joints as if from one cast

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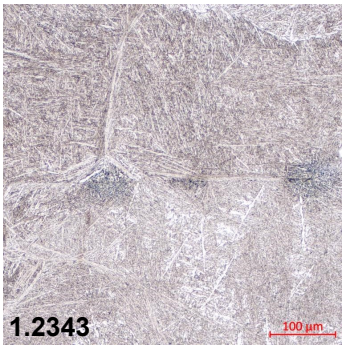
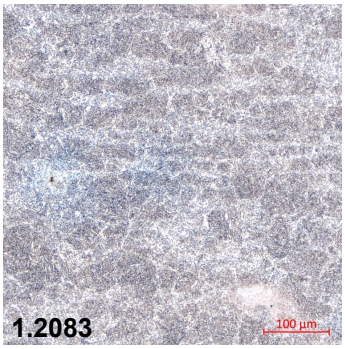
perfecting materials


Aluminium cooling plate





Diffusion welding is a metallurgical joining process that does not require the use of any filler material. The welded joint is visually undetectable, even when polished. The welded joints have comparable properties to the base material.

The areas of application for this manufacturing technology are manifold, including:

- temperature-controlled injection moulds and hot runner manifolds
- temperature-controlled die-casting moulds
- cooling plates for semiconductor technology
- plate heat exchangers for power electronics

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Pressure, Temperature and Know-how

Joints for the highest requirements

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Competence:

Specialised applications also require special component properties, which can often only be guaranteed with special technologies. Listemann offers the universally applicable joining technology diffusion welding as a service. This enables joints to be produced that are comparable to the properties of the base material in terms of strength, corrosion resistance and machinability.

Customer benefit:

- Metallurgical and thus highly durable and temperature-resistant joints.
- Low-porosity and low-distortion joints.
- High polishability of the components, as no joining zone is visible. Therefore also suitable for plastic injection moulding of transparent parts.
- No oxidation of the components, as the process takes place in a high vacuum.
- Various material combinations of different materials possible.

Properties:

The components to be joined are pressed together under high vacuum, at high temperatures, with high load. This results in a material exchange in the solid state and thus in a high-strength welded joint. In most cases, no filler material is used, which is why no joint zone is visible.

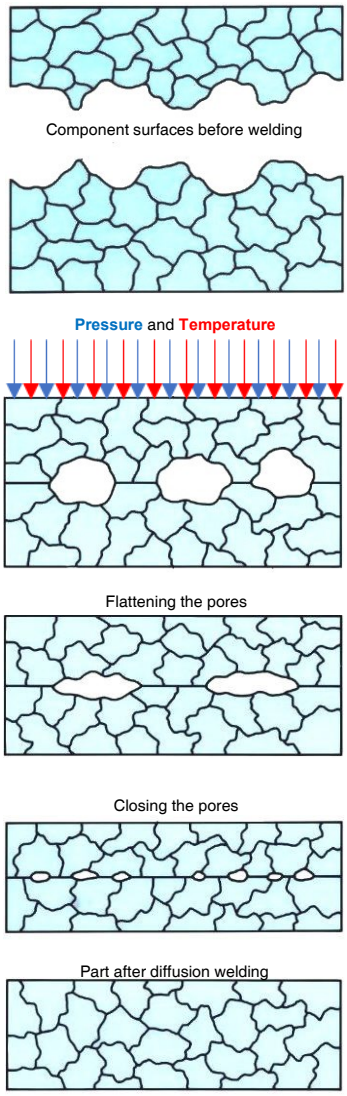
Diffusion welding can be used for joining materials of the same type (steels, aluminium, copper, titanium and nickel alloys) as well as for material combinations.

Applications:

Tool and mould making, food and pharmaceutical industry, mechanical engineering, semiconductor technology.

Our Service:

- Consultation on the selection of materials and the structural design
- Performing test welds
- Diffusion welding of serial parts
- Heat treatment of welded components according to customer specifications



Whether electronic chip or power plant: Listemann offers material innovation for product and production in the fields of aerospace, energy and environmental technology, mechanical engineering as well as tool and mould making. Other demanding industries such as semiconductor or medical technology also benefit from our range of products. Our thermal processing technologies enable components to be manufactured more efficiently and their service life to be extended. In this way, we secure competitive advantages for our customers.

ISO 9001 BUREAU VERITAS Certification

VDWF Die Werkzeugmacher

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