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Innovative induction pumps for conveying liquid metals and corrosive liquids

The induction pumps from Eutect GmbH are based on the principle of electromagnetic induction and are a low-maintenance and wear-free solution for the safe and efficient pumping of conductive liquids, such as liquid solder. The Eutect pumps are not only designed for electronics manufacturing. They can also be used for demanding applications in metallurgy, nuclear technology and the chemical industry.

Induction pumps work according to the principles of electrodynamics, specifically the theories of Faraday and Lorentz. Faraday's law of electromagnetic induction states that a change in magnetic flow in a conductor loop generates an electrical voltage. The Lorentz force then generates a movement in the conductive medium, whereby no moving mechanical parts are required. Rather, the induced electrical currents interact with the magnetic field, thus setting the liquid in motion. "This innovative technology has the potential to significantly increase the efficiency and lifespan of pumps. This applies in particular to the pumping of conductive, chemically reactive or extremely hot liquids," explains Lars Iwers, sales manager at Eutect GmbH. Eutect, a Swabian specialist in selective soldering automation, uses its own induction pumps in the field of mini-wave soldering for electronics manufacturing, but also offers modules to companies outside the industry.

A key advantage of Eutect induction pumps is their design. Since the pumps do not require any mechanical components, wear is minimized and the risk of leaks and mechanical abrasion is significantly reduced. Thanks to contactless power transmission, the pumps are ideal for liquids at extremely high temperatures and for media that are corrosive or chemically reactive. The reduced susceptibility to corrosion and abrasion makes the induction pumps particularly low-maintenance and durable.

"Our induction pumps are frequently used in the electronics industry to pump liquid solder. However, the technology also offers enormous potential for various other industries," Iwers continues. For example, the pump can be used in the field of metallurgy and liquid metals, as it is ideal for transporting liquid metal, such as molten aluminum or steel. Since the pump works without any moving parts that come into contact with the medium, it can be used reliably at high temperatures, similar to the selective soldering systems from Eutect GmbH. But induction pumps are also used in nuclear technology to transport liquid sodium or other metals that are used as coolants. The high conductivity of these metals ensures that electromagnetic pump technology is used efficiently and increases operational safety.

Furthermore, induction pumps can be used to easily convey corrosive electrolyte solutions in the chemical industry. Conventional pumps are often subject to high wear due to the aggressive medium, which is avoided with induction pumps due to the contactless pumping. In electroplating, electromagnetic pumps enable the reliable, efficient and wear-free circulation of conductive electrolyte solutions in galvanic processes. In addition, these pumps are used in high-performance cooling systems to circulate special electrically conductive coolants. The contactless power transmission allows for vibration-free pumping and ensures a homogeneous coolant distribution. In cutting-edge battery and fuel cell applications, induction pumps also provide a safe solution for circulating electrolytes in redox flow batteries or hydrogen production units.

Press release

About EUTECT

For over 25 years, soldering and joining systems have been developed, manufactured, installed, and programmed at EUTECT as well as at customers operating worldwide. The Swabian team of experts offers an extensive, constantly evolving module construction kit for process solutions in the field of soldering.

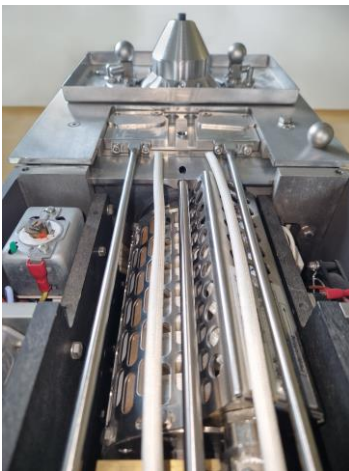
Process-related and commercially optimal modules for the task description will be selected from a wide variety of soldering-technology process modules and combined into proven stand-alone, revolving, or inline production designs for complete solutions.

The EUTECT module construction kit shows that a slim, individual solution comprising proven building blocks for a customer product's task description can often be achieved via individual modules or free combinations.

A technologically comprehensive, innovative EUTECT technical center is available for optimal solution through evaluation or the manufacture of A-B-C prototypes ready for serial production.

More information: www.eutect.de/en/

Pictures:



Picture captions:

Integrated induction pump from Eutect GmbH

Deeplinks:

<https://eutect.de/en/induction-pump/>

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