

PRESS RELEASE

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Infusion Bags – Precision Manufacturing, every Second

In hospitals and doctors' offices of all kinds, wherever you go in the world, you find them: infusion bags. The market for medical products continues to grow. According to the trade group Spectaris, German medical technology is increasingly sought after internationally. In 2015, German producers of medical technology posted sales of roughly 27 billion euros, Five percent of the sector's total output came from products for transfusion and infusion.

Depending on the supplier and application, infusion bags are made of various synthetics such as polypropylene, EVA, or PVC, often in multiple layers. The popularity of the infusion bag among doctors and nursing staff is easy to explain: handling is simple; infusion bags collapse completely when empty; the drip chamber cannot run dry; and no venting is required. They can also be quickly adapted to pressurised infusion.

Customised production

The infusion bag has made itself indispensable in medical care. But what are the key factors in producing and filling the bags?

Fabricating the infusion bag from a tubular film, filling and sealing it call for the highest standards in precision, reproducibility, and speed. Series KFFS machines from Kiefel GmbH in Freilassing produce and fill as many as 6,000 infusion bags per hour. In the KFFS line, a single machine with various work stations takes care of producing, filling, and sealing the bags. The first step consists of creating the bag from a continuous tube of single- or multi-layer synthetic, and sealing it by means of thermal-contact welding. In this process, the film is heated to its melting point and then crimped into the proper shape. Virtually no limits are imposed on the seam's configurations – regardless of whether the bag has one chamber or several. This process is always employed wherever automated production of absolutely leakproof containers for liquids or gasses is concerned.

Kiefel fine-tunes production parameters and customised assembly with each client. In this way, infusion bags with infusion ports, injection ports, and transfer cannulae are washed or evacuated with nitrogen. Labelling and printing of the finished product is also part of the process.

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Bag contents must always be of high quality. The Kiefel system precludes the risks and dangers of contamination during filling. The machine welds the bag, port, and periphery in a single enclosure. A transport system tensions the film during the entire process so that weld-quality and production-speed are always in sync. Immediately after the welding process, the machine separates the individual bags and delivers them to the filling unit.

Bag capacities between 40- and 6,000 ml are entirely feasible. The fully-automated unit fills the infusion bags in seconds. Highly-accurate mass flow meters, fill-level monitoring, measurement of residual oxygen content, and the automatic closure of the infusion bag provide for short production times with continuous quality control.

It goes without saying that Cleaning in Place (CIP) and Sterilisation in Place (SIP) are available for the entire system.

In addition to the fully-automated, integrated welding- and filling systems, the company also offers self-contained filling- or welding units. The advantages of the integrated solution: compact design, precise bag-assembly through thermal-contact welding, as well as extremely precise filling technology.



Image: Thermal-contact Form-Fill-Seal-Machine KFFS 122 for the Production of Infusion Bags



Image: Multi-chamber Infusion Bags

Fact Box

The medical-technology market in numbers

Germany exports about 68 percent of the medical-technology products that it produces, of which roughly 40 percent go to the EU. Even so, North America and Asia are increasingly attractive markets for the German medical-technology industry, each with roughly 18 percent market share. The trend is on the rise most notably in Asia. Growth in many emerging countries, which are investing in their health-care systems, also contributes to the positive sales figures. In 2015, German companies in this sector had combined sales of 27 billion euros. As a result, Germany is the largest medical-technology market and supplier in Europe.

Source: Spectaris

Fact Box

At one glance

Kiefel: Welding and Filling Machines

| | Output/h | Size | Configuration | Technology |
|---|----------------------|-------------|----------------|-------------------------|
| KFFS 121 - 124 Kiefel Form-Fill-Seal | up to 6,000 articles | 50-6,000 ml | 1-4-up tooling | thermal-contact-welding |
| KBM 101 - 104 Kiefel Bag Maker | up to 6,000 articles | 50-6,000 ml | 1-4-up tooling | thermal-contact-welding |

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Kiefel GmbH develops and produces high quality machines for manufacturing plastic films. Our customers include well-known manufacturers from the automotive, medical engineering, refrigerator and packaging industries.

We employ around 480 people at our headquarters in Freilassing. Kiefel is globally present thanks to our own sales and service branches in the USA, France, the Netherlands, Russia, China, Brazil, Indonesia and India, as well as our sales partners in more than 60 countries. Kiefel also owns the automotive specialist SWA based in the Czech Republic, the Dutch thermoforming toolmaker Bosch Sprang, and the Austrian Mould & Matic Solutions, supplier of tools and automation solutions.

Kiefel GmbH is a member of the Brückner group based in Siegsdorf, a global leader in constructing machines and system for the plastic and packaging industry with around 2,300 employees. Further company areas: Brückner Maschinenbau is a global market leader in film stretching technology, Brückner Servtec provides a wide range of services for film stretching lines, PackSys Global supplies special machines for the packaging industry.

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