



**KIEFEL
TECHNOLOGIES**



A Member of Brückner Group

**MACHINES FOR
MEDICAL AND
PHARMACEUTICAL
PRODUCTS**

The right solution for every medical and pharmaceutical bag and speciality application



■ IV, nutrition and CAPD bag machines



■ Bioprocess bag machines



■ Blood bag and blood filter machines



■ Special application machines



■ Urine catheter and drainage bag machines



■ Ostomy pouch machines

As well as solutions for

- Automation, assembly and packaging
- Beverage bags

1945

Founding of the company

9.500

Machines and generators operating on all continents

700 MILLION

Blood bags and blood filters produced every year on Kiefel machines

300 MILLION

Ostomy pouches produced every year on Kiefel machines

5 BILLION

IV, nutrition and CAPD-bags produced every year on Kiefel machines

300 MILLION

Urine catheter products produced every year on Kiefel machines

40

Representatives worldwide



Kiefel machinery and devices for the medical and pharmaceutical sector

We move in a highly sensitive area with our production equipment for the medical and pharmaceutical industry. Kiefel is fully aware of this responsibility. This is why our teams operate with precision, reliability and efficiency – just like our customers.

This sector demands absolutely top performance, in terms of both people and technology. The machines and accessories supplied by Kiefel for the manufacture of speciality bags are the key for high-quality products.

Whether for PVC or non-PVC – our customers appreciate the innovative design, tailor made solutions as well as standard machinery, and extraordinary finishing precision of our production equipment.

We can also support in the product development, undertake PoC's or provide the qualification of our machines with documents and services as per customers requirements, from e.g. simple inspection certificates to complete IQ/OQ realization.

The Kiefel approach

A large store of know-how accumulated over 50 years and billions of medical and pharmaceutical products produced on our machines every year, let us develop innovative solutions. This is what allows us to support our partners best in their efforts to meet the current and future needs of the market in an optimum way.

Our customers all benefit from the Kiefel high quality standards, the extraordinary operating reliability and long life-time of our systems. The scope can also include a full record of all quality relevant parameters and 100% traceability for all relevant technical production data.

As a supplier of both, advanced technology and proven machine concepts, as well as having the competence and experience in Radio Frequency (RF) and Thermo-Contact (TC) welding technology since over 50 years, Kiefel provides the perfect solutions for the cost-effective manufacturing of high-quality products for the medical and pharmaceutical sector.

The superior level of efficiency and extraordinary reliability of our systems, as well as our innovative approach and flexibility create further added value for our customers – Driving your Performance.

The full range

From standardized devices to customized machinery

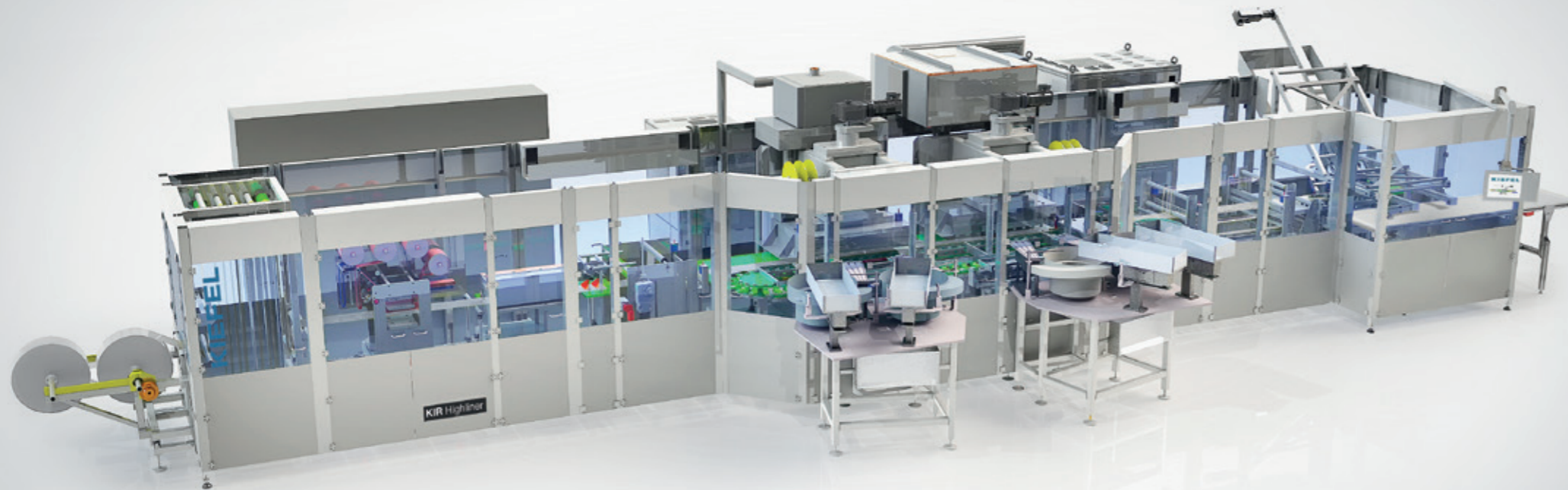


Your requirements set our solution. Whether small output capacities or large quantities, complex and new article designs or established products, fully-automated or semi-automatic production – Kiefel has the right solution for any need.

From our standard shuttle- and rotary tables as well as table top filling units, via the compact pouch making machines, to high output bag making lines and Form Fill Seal solutions, to bespoke machinery for our customers – Kiefel is the partner on your side.

Our goal is to consistently create even more added value and advantages for our customers. For this we continuously develop breakthrough technologies and sustainable solutions and integrate them into existing and new devices.





IV, nutrition and CAPD-Bag Machines

Kiefel machines are successfully used worldwide in the manufacture and filling of infusion bags for standard solutions, nutrition, oncology, as well as for CAPD products, whether as mono- or multi-chamber bags.

Our success is based on the use of proven concepts, patented technologies and customer-specific designs. Monitoring and testing equipment is deployed accordingly in order to fulfill our customers' demands for highest quality standards.

Cost, physical requirements, ecological aspects – many are the factors that play an important role where selection of the right film material is concerned. Whatever your final decision in this respect might be, Kiefel is the supplier of high-tech machines for the manufacturing of these products. Accordingly, we have the right welding technology suiting your material requirements.

Highlights

- Particle reducing technology and film edge adjustment
- Automatic or manual component feed
- Servomotor technology
- Barcode-based tool detection
- Splice detection
- Intelligent control system: vision system for auto-correct technology and part management
- Process monitoring
- Diagnosis system
- Innovative crossfield-welding technology *
- Film preforming process **
- Component preheating process **
- Cooling station **
- Various printing techniques (hot stamp, laser, thermo transfer, flexo printing)

* for RF welding technology, ** for TC welding technology

FFS – Form Fill Seal



Kiefel's expertise is perfectly combined in Form Fill Seal solutions, where bag making, bag filling and sealing is fully integrated within one unit. Whether tubes or ports, single- or multi-chamber bags – subject to

the selected material we unite TC- or RF-welding with high precision filling technology. Our FFS machines stand out due to their compact design, highest output and prime product quality.

Highlights

- Particle reducing technology and film edge adjustment
- Automatic or manual component feed
- Servomotor technology
- Barcode-based tool detection
- Splice detection
- Intelligent control system: vision system for auto-correct technology and bad part management
- Process monitoring
- Diagnosis system
- Innovative crossfield-welding technology *
- Film preforming process **
- Component preheating process **
- Cooling station **
- Various printing techniques (hot stamp, laser, thermo transfer, flexo printing)
- Headspace control
- Control of residual oxygen
- CIP/SIP

** for RF welding technology, ** for TC welding technology*





Filling Machines

Kiefel filling and sealing units are equipped with high quality mass flow-meters and can also be operated as stand-alone devices, whether as fully automated unit, or table top filling module. They stand out due to their compact design, high reliability and efficiency, and high-precision filling technology.

The compact table top filling module KMS is based on a high degree of standardization, which leads to short delivery times and low investment costs. Accordingly, the table top filling unit is also ideal for short production runs.

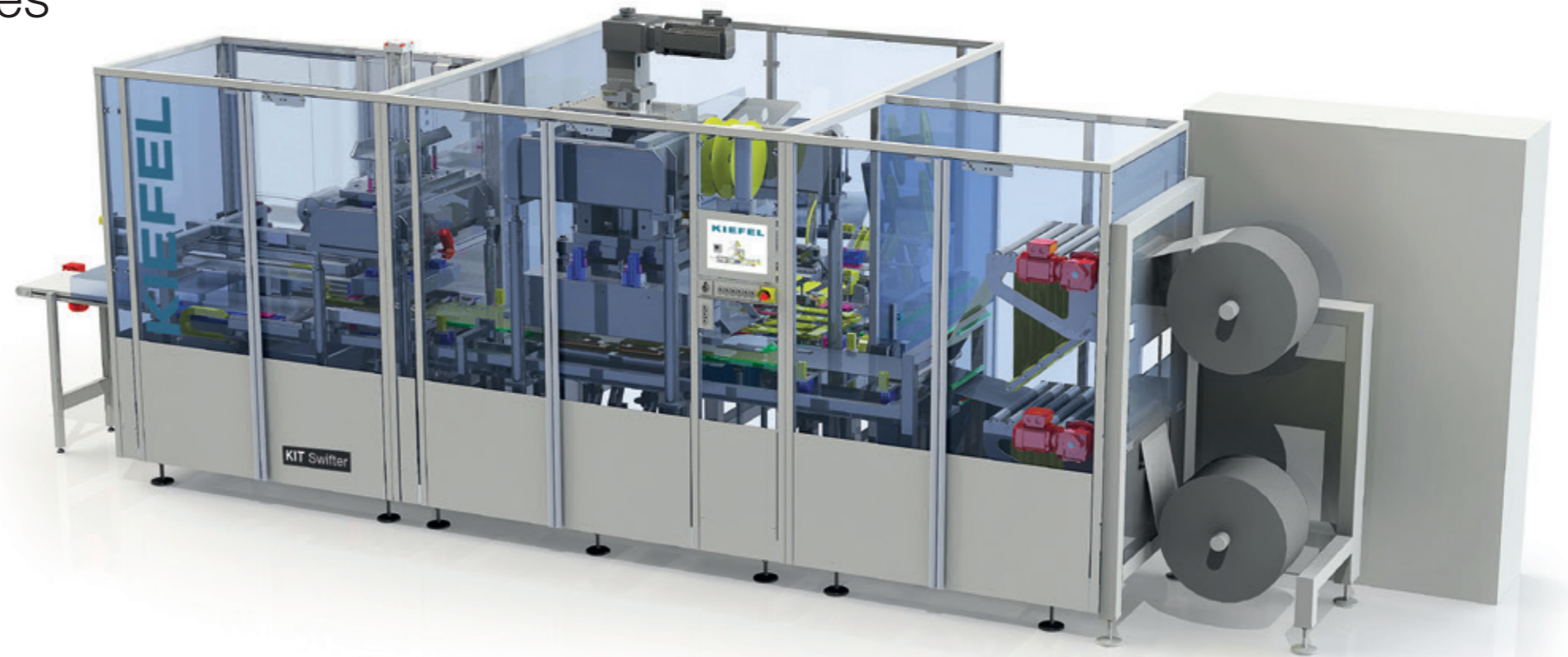
The KMS can also be used as a filling unit for CPD(A) and/or SAGM into pre-assembled blood bag sets.

Highlights

- Semi or fully automatic
- Automatic or manual component feed
- Headspace control
- Drop control
- Control of residual oxygen
- Automatic cap sealing
- Automatic CIP/SIP



Bioprocess Bag Machines



Whether you choose non-PVC (PE, PP) or EVA as bag material in the bioprocess sector, Kiefel offers you the optimal welding process, production technology and automation grade to produce high-

quality bags from 20ml 2D-bags to several thousand-liter 3D-bags. Depending on your needs, different types of components can be welded in between the material layers.

Highlights

- Particle reducing technology and film edge adjustment
- Automatic or manual component feed
- Servomotor technology
- Barcode-based tool detection
- Splice detection
- Intelligent control system: vision system for auto-correct technology and bad part management
- Innovative crossfield welding*
- Film preforming process**
- Component preheating process**
- Cooling station **
- Process monitoring
- Diagnosis system
- Various printing techniques (hot stamp, laser, thermo transfer, flexo printing)

* for RF welding technology, ** for TC welding technology

Blood Bag Machines



Special attention is paid to fulfilling and monitoring the highest quality criteria when producing blood bags. Kiefel is the market leader in the design and construction of machines used to manufacture blood bags and plasma bags – our machines are in use worldwide in the production of these sensitive articles.

Decades of experience and expertise leaves us well-placed to tackle any challenges that our customers in the sector might set us. Kiefel's innovative solutions provide customers the right level of automation to meet their needs, and thus optimize their efficiency.

Highlights

- Particle reducing technology and film edge adjustment
- Automatic or manual component feed
- Servomotor technology
- Barcode based tool detection
- Splice detection
- Intelligent control system: vision system for auto-correct technology and bad part management
- Process-monitoring
- Diagnosis system
- Various printing techniques (laser, thermo transfer)
- Innovative crossfield-welding technology
- Inline leak testing



Blood Filter Machines

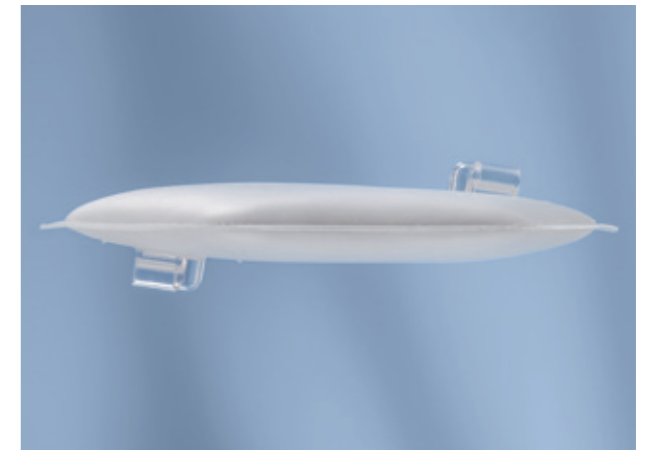


Highlights

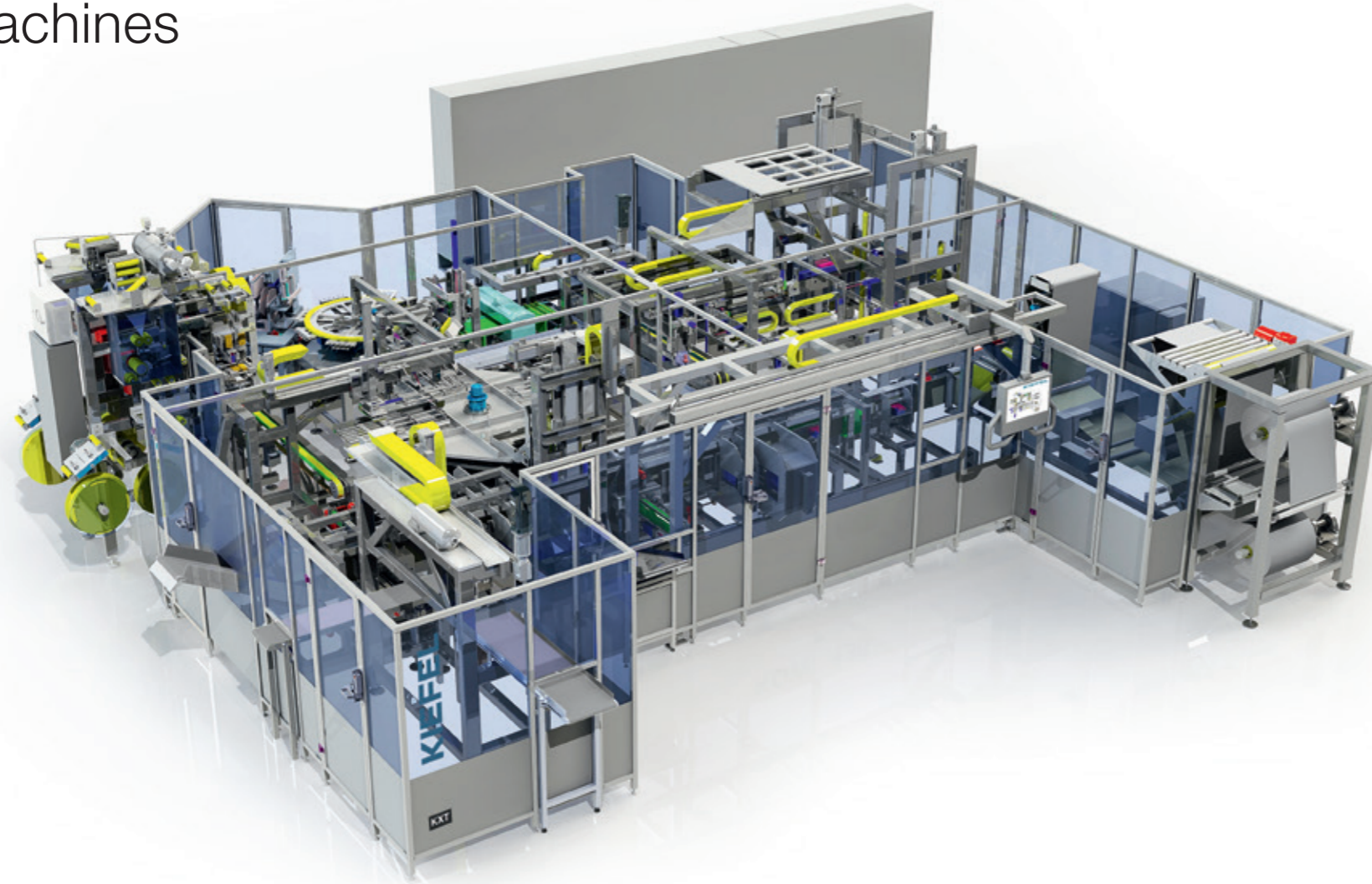
- Particle reducing technology
- Automatic or manual component feed
- Servomotor technology
- Barcode based tool detection
- Weld thickness measurement
- Intelligent control system: vision system for auto-correct technology and bad part management
- Process-monitoring
- Diagnosis system

Kiefel offers, with this innovative machine concept, an optimized way to meet the needs of the global market. In close cooperation with our customers we develop state-of-the-art machines, designed for the manufacture of blood filters.

Thanks to our many years of experience in the medical industry and the area of welding technology, as well as by applying the latest techniques and developments in this field, blood filters can be tightly weld-sealed in an integrated process.



Urine bag and urine catheter product machines



Kiefel's solution allows the production of complex final products that require e.g. various component feeding systems and simultaneous packaging of special catheters and insachets.

All functions of the machine are controlled and monitored, which ensures a high production rate and the highest possible product quality.

Highlights

- Particle reducing technology
- Automatic or manual component feed
- Servomotor technology
- Barcode-based tool detection
- Splice detection
- Intelligent control system: vision system for auto-correct technology and bad part management
- Process monitoring
- Diagnosis system
- Various printing techniques (hot stamp, laser, thermo transfer, flexo printing)



Ostomy Pouch Machines

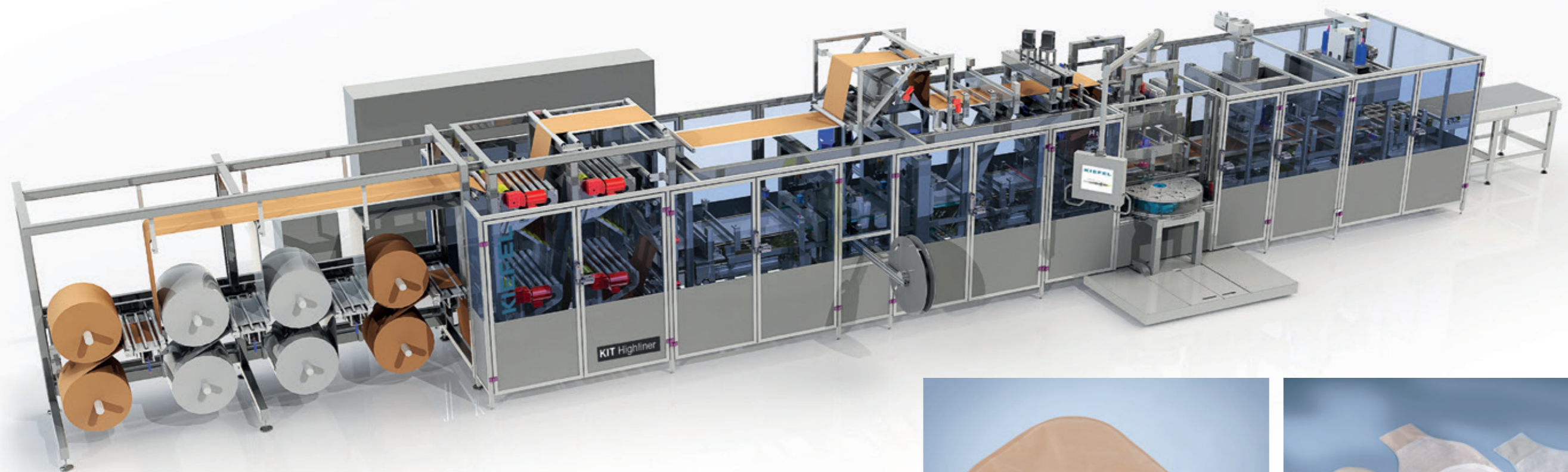
Colostomy-, ileostomy- and urostomy-pouches are nowadays made of extremely thin materials.

In order to ensure maximum reliability and product quality, their production requires constant monitoring of the welding parameters.

Kiefel's range of machines, which runs from semi-automatic lines with manual feeding of components to fully automatic variants, are designed to provide customers an optimized solution for their particular needs. The modular design of these units also allows systems upgrading in later stages.

Highlights

- Particle reducing technology and film edge adjustment
- Automatic or manual component feed
- Wide product-range (e.g. open/closed pouches)
- 2 – 4 layer materials
- Barcode based tool detection
- User-friendly machine control system and display
- Splice detection
- Process monitoring
- Diagnosis system
- Intelligent control system: vision system for auto-correct technology and bad part management



Technology Center

The Kiefel Technology Center offers ideal conditions for R&D, new material tests and development of individual products and production ideas, or new applications are needed for a more beneficiary production method.

Kiefel is your partner to assist – e.g. for risk evaluations, printing tests, or production

of smaller capacities to carry out market acceptance studies or internal tests.

Furthermore, in our Innovation & Technology Center we continuously improve processes and techniques guaranteeing the leadership in innovation.

After Sales Service

The aim of the Kiefel customer service is to ensure that the very best practices apply throughout the service life of your Kiefel equipment. Our full commitment in this respect makes itself plain in the maximum availability and low depreciation of your machines.

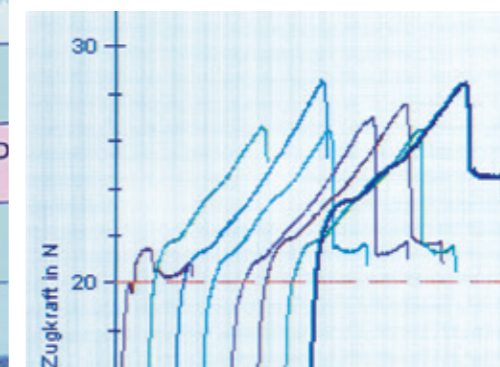
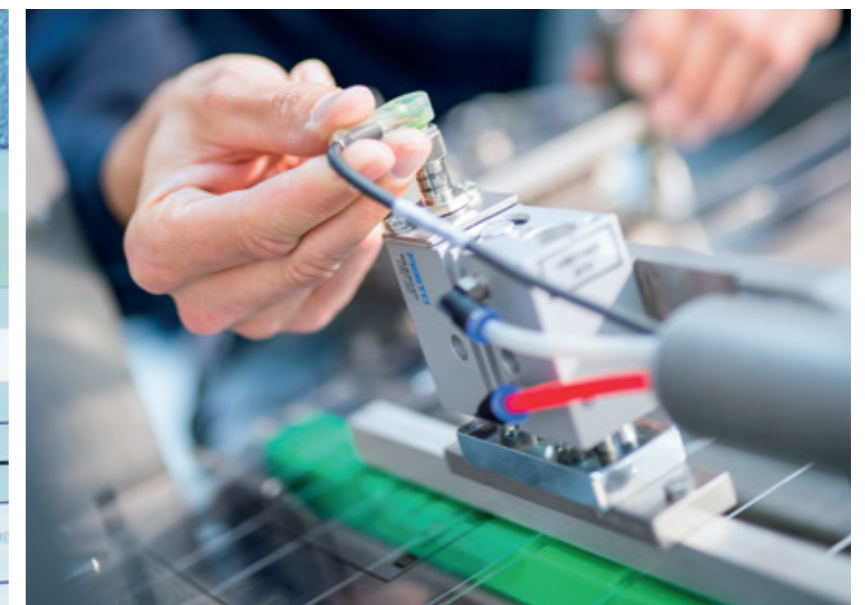
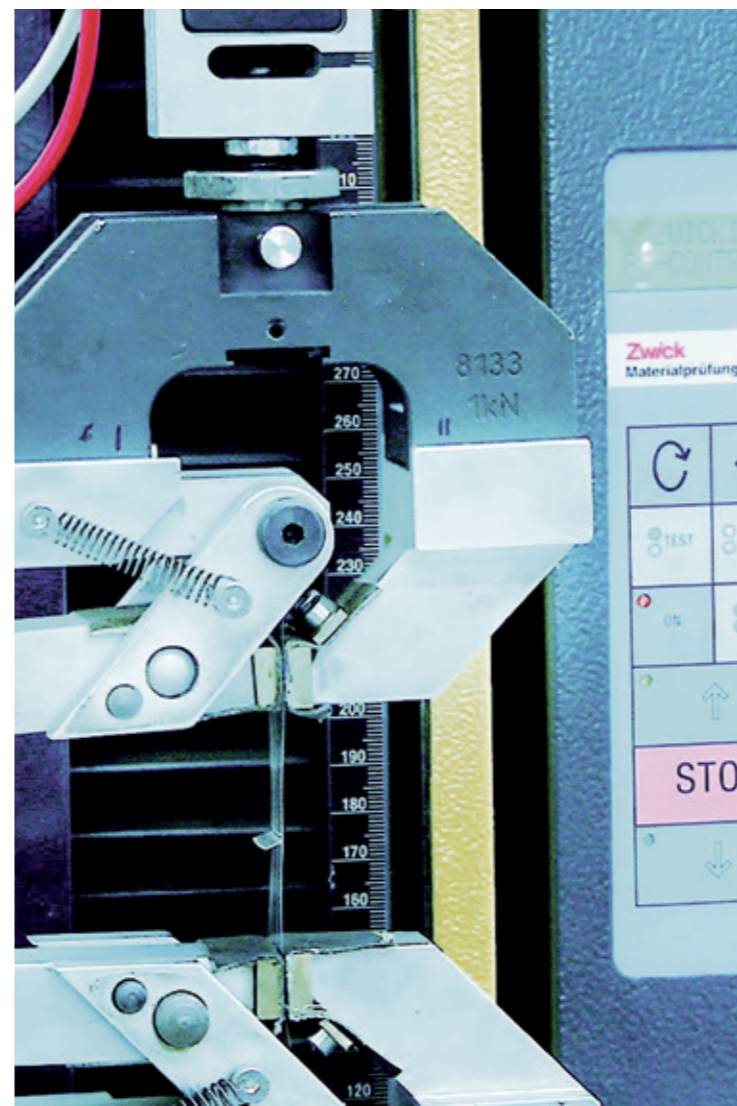
You can always count on us

- A global network of service engineers
- 24h Kiefel portal for parts, machine documentation and training material
- 24/7 on-call duty of a service expert

To ensure maximum performance

- Smooth initial startup of your system
- Production- and process support
- Training to the very latest technical standards
- Retrofits and upgrades

Our expert employees are at your disposal. The Kiefel team at your service.



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The KIEFEL GmbH is a world leader when it comes to the design and manufacture of machines used to process plastic film materials. The company offers core expertise in the fields of forming and joining technologies. As a supplier to reputable manufacturers in various sectors, Kiefel serves customers in the medical, refrigerator and packaging industries. The headquarters of Kiefel is in Freilassing/Germany. The company runs its own network of sales and service centers in the United States, France, the Netherlands, Russia, China and India, and is represented by sales partners in more than 60 countries worldwide. Together with the Dutch thermoforming toolmaker Kiefel Packaging B.V. and the Austrian tools and automation manufacturer KIEFEL Packaging GmbH, Kiefel is a supplier of turnkey solutions for the packaging industry. KIEFEL GmbH is a member of the Brückner Group, a worldwide leading supplier of plastics processing machinery.