

KIEFEL Extrusion GmbH on Track to Success

KIEFEL Extrusion GmbH has been enjoying wide-reaching success with steadily increasing revenues over the last three years. While an atmosphere of receding orders and revenue losses continues to plague the industry as a whole, this provider of blown film extrusion systems based in Worms, Germany, is racking up record numbers. The latest development at KIEFEL proves that a medium-sized company in Germany can still find the path to success even in difficult times.

Manager Edgar Gandelheidt proudly reports that KIEFEL Extrusion has been able to increase their revenues by 50 percent over 2001 levels. That was the year the company launched their new KIRION® machine generation. These modular systems offer a comprehensive system solution to any challenge and are sold throughout the entire world.

The product spectrum at KIEFEL ranges from single-layer systems to complex 9-layer systems for handling film. These systems make it possible to manufacture different types of plastics such as PE, PP, EVOH, PA, PS, EVA, and PET -- for simple T-shirt bags, trash bags, flexible films or high-quality technical and demanding 5, 7, or 9-layer films for packaging foodstuffs or

medication. These films have a wide range of use in several different industries and applications.

The automation engineering is founded in a system solution developed jointly with B&R. With the B&R product lines, KIEFEL logically transforms the way that modules are thought of. The complete software sup-





Edgar Gandelheidt, CEO of Kiefel Extrusion GmbH, next to the central operating console KIRION® C.

port afforded by Automation Studio results in a central service interface that makes it possible to perform optimal remote system diagnostics directly in Worms.

Thanks to the KIRION® C automation technology integrated in each system, KIEFEL is able to guarantee optimal and reproducible film quality together with the shortest possible changeover times. KIRION® C unifies different components such as gravimetric dosing or profile control into a complete system. For profile control, KIEFEL offers different methods: a nozzle tempered in segments or a regulated cooling ring.

New Technology Bringing Success

Another recent development is an integrated device in the multifunction KIRION® W-M that flawlessly handles cutting and initial foil winding as well as automated winding shaft and roll handling equipment.

The decisive innovation in the patented PERFECT CUT cutting system is in how the blades are guided. Unlike other cutting systems on the market, the blades come from outside in a notch on the winding drum instead of from the drum itself. A decisive factor for the functionality of the PERFECT CUT system is the motion control used, which is able to dynamically “shoot” the blade into the notch of the cylinder. The acceleration phases to sync up to the circumferential velocity of


the cylinder are extremely short. The highest demands are placed on the precision with which the blade is synchronized to the rotating cylinder. The ACOPOS servo drive with an implemented cam profile functionality calculates the necessary target position for the blade to the position of the winding cylinder in real time.

Another advantage of the PERFECT CUT system is the slightly slanted gap. Since this doesn't run horizontally over the cylinder, there are no leading edges. This eliminates one of the most frequent causes of marking on the foil as well as disturbances during the winding process. The precisely wound foil can really be used down to the very last meter. All blades are located outside of the cylinder and can be reached much more easily. This makes maintaining the blade system much easier than ever before.

Focus on Usability

One of the most important considerations when developing the new winding shaft and roll handling system was user friendliness. When switching rolls, all of the procedures for taking off and moving the old winding shaft and setting up the new winder are now fully automatic. This complete automation makes the work sequences performed at the last station of the KIRION® extrusion system that much more efficient.

KIEFEL was able to implement the new KIRION® generation of blown tubing film systems using control engineering provided by B&R. Edgar Gandelheidt:

“Modularizing the mechanics, controller hardware, and software is a prerequisite of our flexible system concept. Without a reliable provider of total automation technology solutions and their proven components, the precise timing requirements could never have been adhered to.” 

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