

Presse Artikel

Kdesign GmbH, the specialist for blown-film processes

The company Kdesign has specialised in film cooling and film guiding for blown-film lines. Within the last nine years, they have developed new and innovative products for performance optimisation and quality improvement.

In autumn 2007 the company moved to the new premises in order to consolidate offices, installation, production and storage. The new building which stands for the previous development of the company provides the opportunity to expand and develop further products.



Gauge control system VARIOcool

One of the essential developments of Kdesign is the well-known gauge control system VARIOcool. This system is based on the alteration of the cooling air quantity and stands out due to its quick response time in all film applications, without applying any energy to the film. Due to its independence from the air ring, the system can be adapted to any existing air ring as well as combined with the diverse air rings of all blown-film line manufacturers. The system integrated into the air ring is also available as an alternative. The gauge control systems are in use worldwide on standard co-extrusion lines as well as on HD-PE long-neck lines with die sizes starting from 120mm, but also on agrofoil lines with die sizes of up to 2200mm.

Apart from the profile improvement the most impressive thing about the system is the user-friendly operation and minimal susceptibility to damage.

Furthermore, Kdesign has developed a system for the profile improvement via internal air. This system can be operated independently but also in combination with an external air control, thus representing the maximum in profile optimisation.

High-Tech air rings KARAT

The decisive factor for film quality and line performance of blown-film lines is the air ring. In many cases it is the main performance limiting plant component. For this reason Kdesign has developed its high-performance air ring KARAT which is demonstrating its performance on over 400 lines.

The development of the KARAT air ring is based on substantial fluidic studies and tests under real conditions, in collaboration with the customers. An absolute uniform air distribution inside the air ring at low pressure drop is the basic requirement for optimal performance and quality, and so is the stabilisation of the bubble at simultaneous cooling by high air volume. The air rings are designed for customer-specific applications and formats. KARAT high-performance air rings are available for stationary and rotating dies with sizes from 60mm to 2200mm. Retrofit rings for existing lines have reached performance increases from 15 up to 65% and simultaneous improvement of the thickness profile.



Air ring KARAT for die 2000mm with motor-driven lip adjustment and gauge control system VARIOcool (picture 2)

Film calibration CENTRO

Another main factor for the quality of the finished product during the extrusion process is the calibration. It is the first line component the product reaches with after leaving the plasticizing section.

The calibration combined with the air distribution control determines the final dimensions of the film and thus its dimensional stability.

The solidification point of the melt, that is the frost line, should be placed directly before the inlet into the calibration. As a matter of fact, the melt is not frozen solid in the calibration zone and therefore the Teflon-coated segments leave their marks on the film. This disadvantage is completely eliminated by the new CENTRO calibration with its low-friction, smooth-running rollers. These rollers are available with silicone or felt coating as well as in carbon fibre execution. A production without marks is therefore provided for.

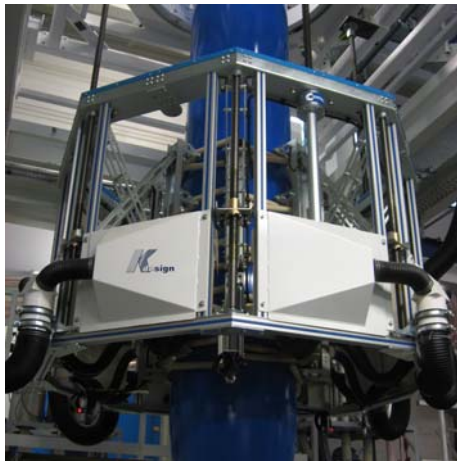
Both the pantographic calibration for highest demands and the economic swivel arm system are available in all standard sizes up to a bubble circumference of 6600 mm, as main calibration basket as well as additional support basket.

Newly-designed intelligent upgrades for the film calibration CENTRO are:

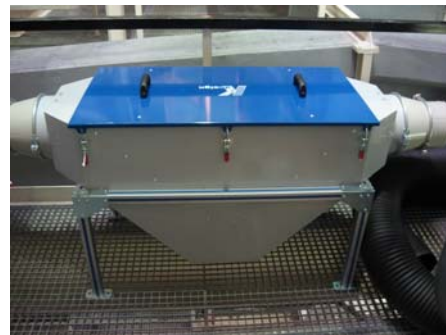
Monomer exhausting system CENTRO-ES for the pollution abatement of the line

The patented monomer exhausting system (CENTRO-ES) avoids a pollution caused by wax/monomer deposits on calibration system and downstream equipment. It exhausts the vapours escaping from the melt right above the frost line. Subsequently, the polluted air can be cleaned by means of a monomer filter. This filter can also be applied for the cleaning of the internal air of the bubble.

This novel system avoids downtime caused by pollution and improves both hygienic and working conditions of the production, apart from providing for a better appearance of the production facilities.



Film calibration CENTRO 2200 with integrated monomer exhausting system (picture 3)



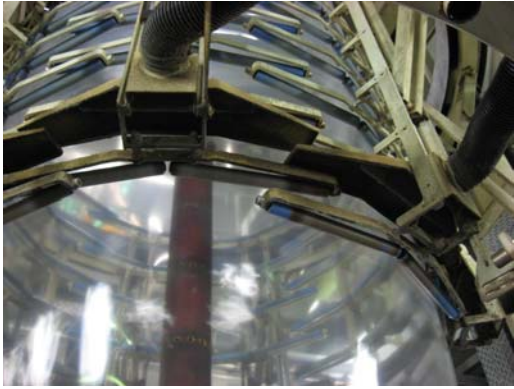
Monomer filter (picture 4)

Internal air control USBC

A further upgrade for the calibration is the internal air control. The bubble diameter is detected via ultrasonic sensors and kept constant by means of an air regulation damper. A fine adjustment of the film distance to the calibrating segments can still be done by the operator. This control is characterised by its precision and quick response time compared with control systems basing on the blower speed.

Retrofit equipment for existing lines

The products made by Kdesign can be retrofitted to the existing blown-film lines so increasing their performance in quality and productivity. These are profile optimisation by gauge control system VARIOcool, performance and profile optimisation by high-performance air ring KARAT, and width tolerance minimisation by non-contact bubble diameter control. Moreover, Kdesign has developed special conversion kits which can be adapted to any standard calibration system, consisting of special low-friction rollers and monomer exhausting systems.



W&H/Reinhold calibration with CENTRO conversion kit low-friction rollers and retrofit monomer exhausting system (picture 5)

The above mentioned products represent the basic product range of the company. However, Kdesign keeps developing new and innovative solutions to ensure competitiveness and business continuity for itself and its customers.

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