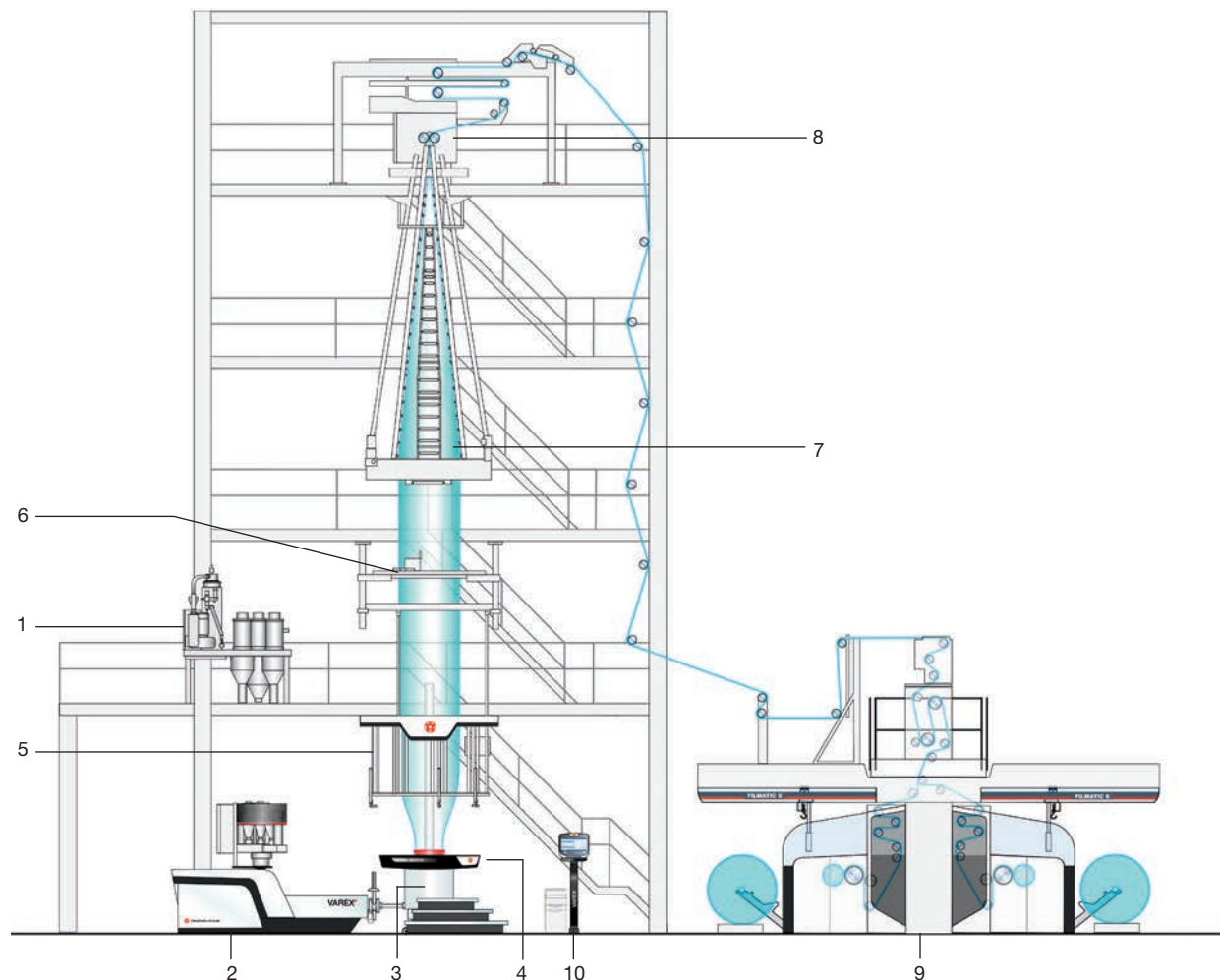


VAREX[®] – the universal high-output blown film line for demanding applications.



VAREX[™] offers you many advantages. 10 of them are listed here.

1. Precisely metered resin feed for consistent product quality
2. Extruders designed for excellent melt quality
3. Die for perfect layer thickness distribution and short changeovers
4. High-output air ring for high output rates
5. Film sizing cage for bubble stability
6. High-precision thickness gauge and control for minimum gauge tolerances
7. Long bubble collapsing frame for good film flatness
8. Oscillating haul-off for optimum film roll quality
9. Large winder portfolio for all applications
10. Comfortable, intuitive operation through integration of automation modules



VAREX^W – the standard in blown film extrusion.

VAREX^W – the customized blown film line for your specific needs.

Today's packaging solutions need to meet the most versatile requirements and can therefore be best produced on customized equipment. A wealth of knowledge gathered over decades of experience as well as continuous developments and improvements make the VAREX^W top of its class. The VAREX^W developments encompass all system components, driven by the goal to perfect film quality and optimized productivity, flexibility, ergonomics and sustainability.

The results are reduced resin usage, shorter start-up and changeover times as well as reduced scrap. In other words, opting for a VAREX^W means opting for increased productivity and sustainability.



From the resin to the melt – with the focus always on perfect film quality.

Extensively tested and field proven. Always new ideas to improve the plasticizing process.

The high precision of VAREX™ starts with the feeding of resins and additives. Depending on product requirements, discontinuous and continuous dosing and gravimetric systems are available.

The grooved feed bush section of the extruder features external temperature control to ensure perfect thermal conditions at all times.

W&H extruders are designed for universal use and have been proven in thousands of applications.





High-performance, flow-optimized barrier screws give maximum flexibility for processing different materials – a major advantage, especially when producing multi-layer barrier film and other demanding resin combinations.

High-tech engineering solutions are the result of consistent development and improvement and will set new standards in terms of efficiency, ergonomics and operating safety.

It's your choice. The correct die for any product.

A comprehensive selection of dies ensures that you will get the proper die for your requirements.

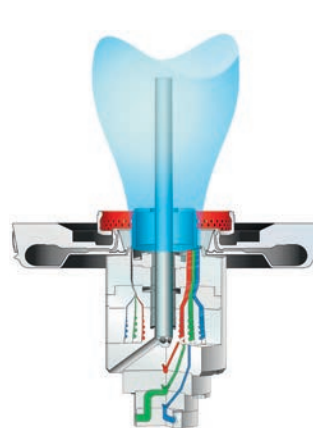
Because of its compact design, the MAXICONE C has been extensively proven in the field for 3-layer film production. The ability to process layer ratios of 1:6:1 and even more sophisticated film structures offers highest flexibility with product specifications.

Polyolefin based 5-layer film is ideally produced with the innovative MAXICONE P die. Five layer film production generates additional potential resin cost savings through downgauging as well as through the use of less expensive materials.

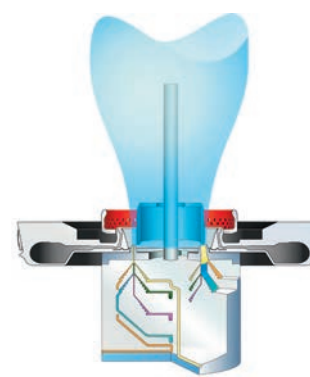
For up to 11-layer applications, W&H offers a broad range of customized MAXICONE dies designed to meet specific requirements and product specifications.

The patented conical melt distribution system allows for an extremely compact design of the unit, reducing loss of pressure to the very minimum, which, in turn, results in high output and optimum film thickness tolerances.

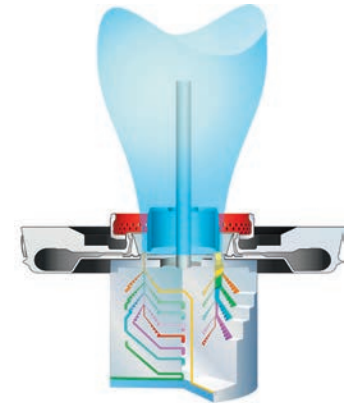
Short flow paths and less resin in the die prevent the degradation of critical raw materials and permit faster product changeovers.



MAXICONE C three-layer die



MAXICONE P for innovative 5-layer polyolefin films



Example of 9-layer barrier film production with MAXICONE dies

From the melt to the film roll – all from a single source.

Effective film cooling – a requirement for maximum productivity.

The innovative ARCTIS air ring concept features optimized air flows, resulting in maximum output and perfect film quality. Integrated air ring insulation guarantees consistent production conditions.

Perfect film guiding and narrow width tolerances are ensured through the film sizing cages VARIOCAGE and NOSTIC AIR CAGE. The special features of the VARIOCAGE include a robust design and low maintenance. The non-contact NOSTIC AIR CAGE is recommended for sticky films or films with sensitive surfaces.

The modularly designed MULTINIP oscillating haul-off systems are equipped with easy running carbon fiber rollers, two non-stick coated air turning bars and remote motorized adjustment of the collapsing frame.



From the melt to the film roll – all from a single source.



At any time highest winding quality – our winding portfolio

The FILMATIC winding portfolio is unique in the market. From surface winder to high-end winder with precise regulation of the winding process – W&H offers tailored solutions for every requirement.

FILMATIC [™] S – Technical Specifications	
Film widths	1300 – 3600 mm (51" – 142")
Film thickness	20 – 250 µm (0.8 – 9.8 mil)
Roll diameter	max. 1200/1500 mm (47/59")
Core i.d.	76 – 152 mm (3" – 6")
Speed	max. 300 m/min (984 ft/min)

FILMATIC [™] T – Technical Specifications	
Film widths	1300 – 3600 mm (51" – 142")
Film thickness	10 – 250 µm (0.4 – 9.8 mil)
Roll diameter	max. 864 mm (34.0")
Core i.d.	76 – 152 mm (3" – 6")
Speed	max. 250 m/min (820 ft/min)

FILMATIC [™] N – Technical Specifications	
Film widths	1300 – 3600 mm (51" – 142")
Film thickness	10 – 250 µm (0.4 – 9.8 mil)
Roll diameter	max. 1500 mm (59")
Core i.d.	76 – 203 mm (3" – 8")
Speed	max. 300 m/min (984 ft/min)

FILMATIC[®] S

Modular surface/center/gap winder with add-on capability for a broad application range

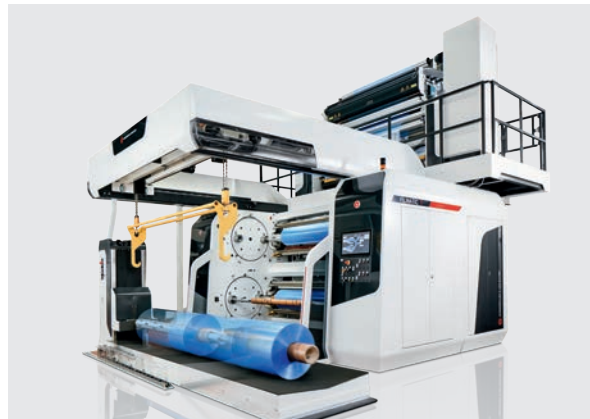


Configuration:

- Center drive
- Gap winding function
- Reverse winding capability
- Roll start without web tail foldback
- Right-angled cut with vacuum cut-over drum
- Tube cut blocking
- Back-to-back or face-to-face installation

FILMATIC[®] T

The innovative turret winder provides highest winding quality maintaining a small footprint

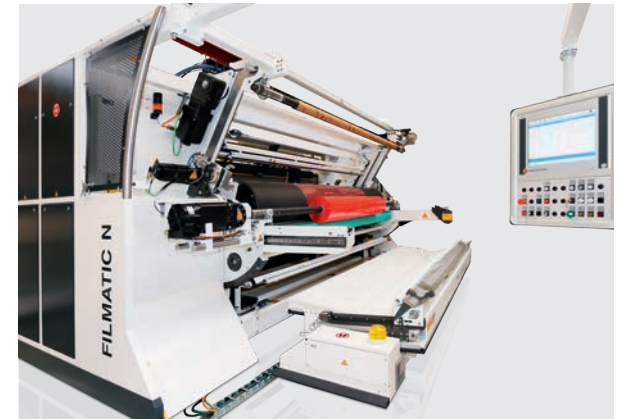


Configuration:

- Center drive
- Gap winding function
- Reverse winding capability
- Adhesive-free web transfer

FILMATIC N

Modular surface/center/gap winder for demanding applications, with optional automation levels



Configuration:

- Center drive from roll start
- Gap winding from roll start
- Reverse winding capability
- Roll start without web tail foldback
- Right-angled cut with vacuum cut-over drum
- Automatic core placement and set-up
- Automatic roll handling

Everything programmed by W&H – Automation makes the difference!

Automated processes for efficient production.

Integrating all line components into a central control system guarantees optimum performance and productivity as well as easy operation. The intuitive operator interface and comprehensive control functions set a new standard in regard to a clear arrangement of all elements and ergonomics.

The ability to precisely control film thickness is essential for perfect film quality. Controlling melt temperature minimizes film thickness tolerances and maximizes output. The result is reduced resin usage and consistent properties for downstream processing.

Ever decreasing order volumes call for efficient changeover processes. With EASY-CHANGE, the autopilot system for size changeovers, EASY-WIND, the winder process control unit for superior quality rolls, and PROFILE BOOSTER to accelerate and optimize line start-up after product change-overs, W&H has accommodated this trend for many years.

Additionally, the new TURBOCLEAN resin purging of several components simultaneously dramatically shortens changeovers and increases up-time. The automatic and efficient purging of materials can be carried out without interrupting the process thanks to the PURGE ASSIST module.

With W&H's modular system, countless solutions are possible.



PACKAGING 4.0 – Our response to a connected future

Intelligent, integrated and intuitive – this is our vision of the future of extrusion. A future that starts with today's machine standards.

From resins to final packaging solutions – our expertise in the entire value chain along with constant exchanges with customers place us in an ideal position to put the ideas behind PACKAGING 4.0 profitably into practice. We increase production performance and obtain highest, consistent quality of final packaging solutions with our intelligent technologies that are intuitive to handle and integrated deeply into the processes and components of our machines.

It's a simple fact that our machines are completely integrated into the customers' production workflow.

The Information-System-Production (ISP) measures, analyses and monitors all production and process parameters which are necessary for real-time measurement of productivity and product quality. The intuitive PROCONTROL TS operator panel creates transparency over the process – on the machine, in the office or on the way.

We create a smooth link between planning and control systems of our customers so that product and order planning is centralized. Collaborating intensively with customers, we develop ideas such as optimizing machines, increasing value added to the value chain or creating totally new business models for intelligent packing solutions.



Together we create the future of extrusion –
Welcome to PACKAGING 4.0.

Extrusion, Printing, Converting. Only the best quality.

Our comprehensive service offer ensures trouble free operation of your VAREX™ at all times. It includes expert advice on process application and technology as well as training and trouble shooting support by our in-house information and diagnostic center, a 24-hour hotline and efficient spare parts service.

Windmöller & Hölscher specializes in innovative engineering concepts for the manufacture and printing of flexible packaging, including paper,

plastic film and laminates. Our performance spectrum ranges from individual machines to the engineering, planning and delivery of complete turn-key factories.

Backed by sales subsidiaries and agencies on all five continents, Windmöller & Hölscher holds a leading position in the international marketplace and will continue to set standards world-wide with new and innovative technological highlights.

VAREX, FILMATIC, ISP, MAXICONE, MULTINIP, PROCONTROL and TURBOCLEAN are pending or registered trade marks of Windmöller & Hölscher KG registered in certain countries.

Stated information and pictures are for the sole purpose of general product description without specific guarantees. Binding information, especially relative to output and suitability of the product to specific applications can be made available solely in conjunction with specific inquiries.

Windmöller & Hölscher KG

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WINDMÖLLER & HÖLSCHER
PASSION FOR INNOVATION