

# Gauge profile control system SmartLip with Single-, Dual- or Triple-Lip air ring

## Optimising film quality

SmartLip is an on-line system for continuous control of the gauge profile on blown film extrusion lines. By reducing gauge profile tolerances this system guarantees:

- the production of high-tech films
- highly improved quality
- considerable reduction of production costs

The SmartLip control system may be fitted not only to any new blown film extrusion line but is also an optimal solution when it comes to retrofitting older lines.



## Automatically controlled single-, dual- or triple-lip air ring

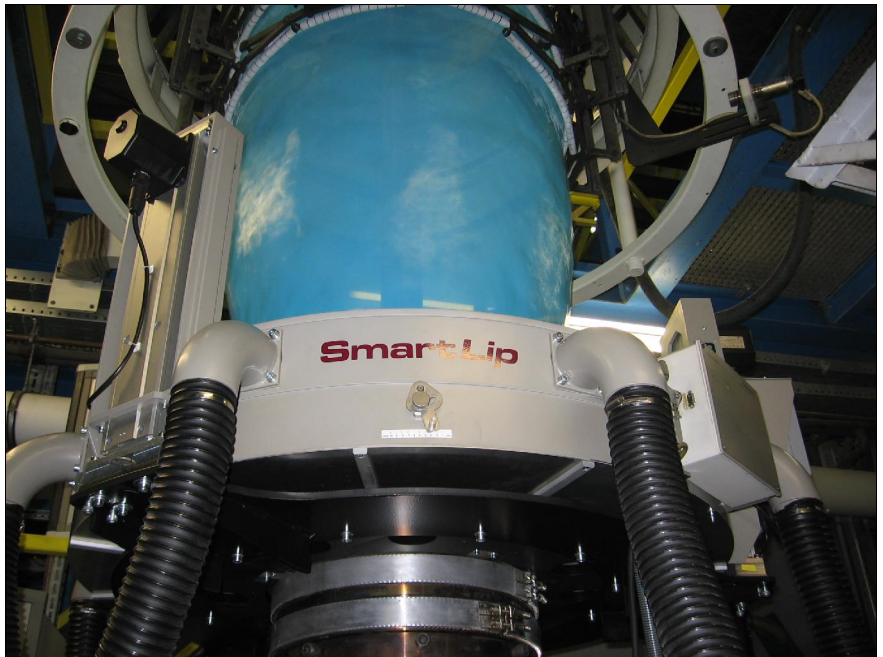
SmartLip uses an automatically controlled air ring equipped with adjustment units for redistribution of the cooling air gap. This allows thick spots and thin spots to be corrected by less or more cooling air respectively. A control step takes place each time a complete gauge profile has been measured.

## Variability

SmartLip is suitable for all popular film types and by simply exchanging lip adaptors even suitable for long and short stalk production.

## Increase of output by various cooling systems

In order to increase the output of a blown film extrusion line the SmartLip control system can be used with various one-storey air rings. Dual-lip air rings are state of the art on modern blown film extrusion lines nowadays. Triple-lip air rings as a high tech solution offer even more variability for the end-users to influence film properties and output of their extrusion line. Retrofitting older lines with such system require detailed assessment of limitations, where Octagon is a competent partner for.



## Better quality

- Reduced gauge profile tolerances by 50 - 70 % of outgoing values
- Improved film properties for the downstream confection
- Even film reel geometry
- Improved production plan
- Reduced customer complaints

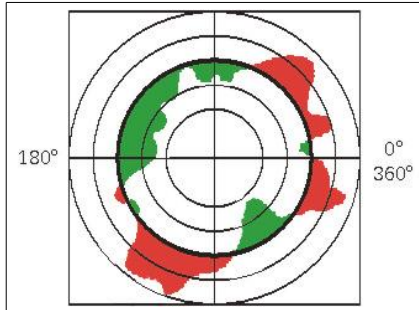
## Your advantages

- Savings in raw material by down-gauging
- Considerably less down-time of the downstream equipment
- Reduced start-up waste
- Fast return on investment
- Increase of output

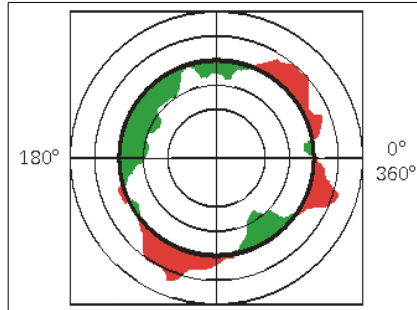
## Automation

- Safe production process
- Compensation of die centering inaccuracies makes post-centering unnecessary
- Simple to extend with other Octagon control systems
- Continuous correction of negative production parameters

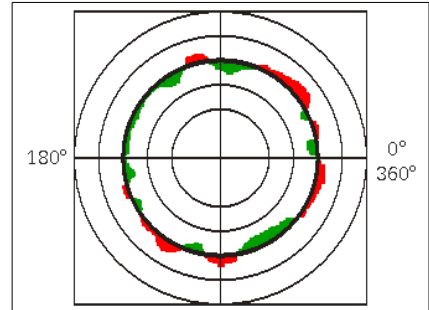
# Octagon gauge profile controls: for improved profitability and best quality



Outgoing profile tolerance 10 %



First correction after 3 min.: tol. 7,4%



Fourth correction after 14 min.: tol. 3,6%

## What can be achieved?

Experience shows improvements by 50 - 70 %. This is confirmed in the above example where LDPE film with a nominal gauge of 70  $\mu\text{m}$  is being produced. Controlled by SmartLip, the outgoing profile tolerance of 10 % was reduced to 3,6 % equivalent to an improvement of 64%.

The following table illustrates the control steps and corresponding improvements:

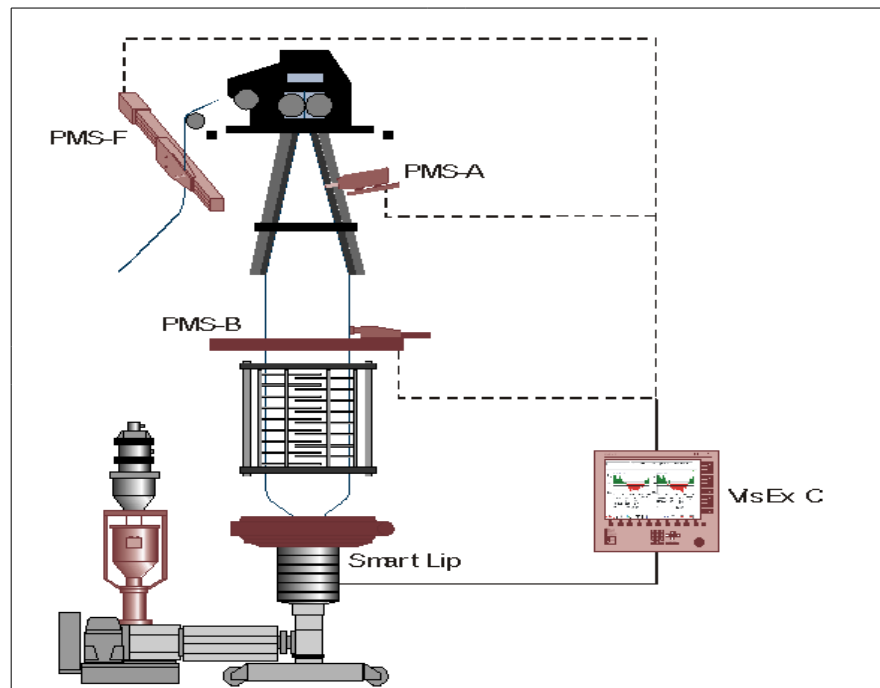
	Prod.-time	Tol.
Outgoing profile:		10,0 %
1 <sup>st</sup> control step	3 min	7,4 %
2 <sup>nd</sup> control step	7 min.	4,8 %
3 <sup>rd</sup> control step	10 min.	4,6 %
4 <sup>th</sup> control step	14 min.	3,6 %

## Overall view of system and extent of delivery

- Automatically controlled single-, dual- oder triple-lip air ring SmartLip
- Capacitive measuring system PMS
- Process controller ScenEx with visualisation VisEx
- Web speed probe (option)

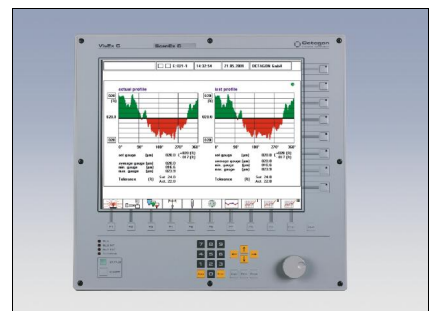
## 3 capacitive gauge profile measurements are available:

- Oscillating sensor PMS-B for measurement on the film bubble
- Stationary sensor PMS-A for measurement in the collapsing frame
- Stationary sensor PMS-F for measurement of lay-flat film



## Process control and visualisation

Operation and visualisation of the control system is done over the process controller VisEx V. A LCD display is provided for the display of polar and cartesian charts of the gauge profile.



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