The BF200 Blown Film Gauge

SolveTech, Inc.
Agenda

• About SolveTech
• How It Works
• About the BF200
• See It Work
• Data Collection
• Summary
About SolveTech

• Founded in 1981 by Doug Lawrence
• Headquarters and Manufacturing in Wilmington, DE
• Focuses on capacitance gauging technology- On line and in the lab
• Very responsive to customers- attitude of service and providing value.
• Can custom engineer solutions
BF200 Location - After the Lay Flat
About the BF200

• Created with industrial durability to withstand harsh environments
• Highly accurate, repeatable and stable. - Best on the market in all of these categories
• Measures one spot along the edge and allows the film to rotate through.
• Tracks the die or haul off rotation to create a profile
BF200

- Automatically finds and tracks the edge of film
- Easily accommodates different bubble sizes
- Simply press a button to put the gauge on line
Our Technology

• Capacitance Thickness Gauging System
  • Measures material thickness using an electric field without contact

• Proprietary Technology with Market Leading Performance

• No Nuclear Radiation or X-Rays = No Regulatory Headaches

• Customizable to Material Needs

• Industrially Durable
  • 25+ year life!

• Refined over 34 years of constant development
How It Works

Measurement Footprint

Detects the edge of the film
The BF200 On Line Blown Film Gauging System

SolveTech, Inc.
www.gauging.com
info@gauging.com
Calibration and Recipes

• Each material will respond to the electric field differently
• Therefore, we need to calibrate for each formulation and create a recipe.
• Once a recipe is created, this calibration can be used again and again for a given material.
• 4 Methods:
  • Gauge by Weight- Most Accurate- Required for thin films
  • Calipers- Quick and fairly accurate
  • Reference Frame- For customers who run one material
  • Run in %Plus mode- See % variability without calibrating
Monitor Your Line Like Never Before

• Takes data every 2 or 3 degrees of rotation
• Creates detailed polar plot
• Much more frequent data than lab analysis alone
• See the profile relative to the die bolts
• Feed back control possible in certain situations
Benefits for a Blown Film Producer

• Allows for monitoring of the film during production
• Create roll reports to send to customers
• Use it to make adjustments to the extruder
  • The BF200 can overlay die bolt patterns so you can easily see where to make adjustments
  • Set up quickly
• Possible down gauging to save material
• Speed product change over
• Predict maintenance issues and cleaning
• Reduce scrap by finding defects quickly
• Provides traceability
What sets the BF200 Apart?

• Vs. On the Bubble
  • Much less capital cost- approximately 12% to 25% of the price
  • Much easier to retrofit and install
  • Easier to keep running and maintain.
  • Delivers an actual thickness, not just variability
  • No need for gravimetrics

• Vs Other After the Lay Flat Gauges
  • No nuclear source or X-rays = No regulatory headaches
  • Better accuracy-critical for thin films- (0.01 Mils)
  • Delivers an actual thickness, not just variability
  • Highly Durable- 120,000 run hours between failures on average (based on 5 million run hours)
  • Stable
  • Linear- Highly simplifies recipe count
Blown Film - Bubble Profile
Getting Profile and Overlaying Die Bolts

• The BF200 sits along the edge, and it gets a profile due to the rotation of the film
• Therefore either the die or the haul off need to be oscillating or rotating to produce a profile
• The rotation/oscillation is tracked and a die bolt layout can be created
Repeatability

• Shows good tracking of the film
• Shows that we are getting a reliable answer
Stability

- In the graph to the right, you can see a 1.12 mil film sitting in the gauge head.
- Over a period of ~4 hrs, the reading only varied +/- 0.01 mils.
- This stability is simply unmatched in the market!
Durable Under Tough Conditions

- The BF200 is designed to operate in the demanding conditions in a blown film plant
- The unit will re-zero itself every six minutes
- This will take into account any temperature and humidity changes or any dirt that gets into the unit
- 120,000 hours mean time between failures (based of 5 million operating hrs)
- Made of durable components
- Easy to operate

Operates even when dirty!
Data Collection

• Create Roll Reports
• Data can be easily exported to Excel or as a text file
• Autonaming and Autosaving features available
• Security features to protect the data and recipes
• Output to **OPC Server** available
System Overview
# Technical Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Technical Spec</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>0.01 mil (0.25 Micron)</td>
<td></td>
</tr>
<tr>
<td>Material Thickness</td>
<td>0.1 to 35 Mils (2.5 to 889 micron)</td>
<td></td>
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<tr>
<td>Range</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>110V 60Hz Standard/220V Available</td>
<td>All international frequencies and voltages available</td>
</tr>
<tr>
<td>Weight</td>
<td>25 lbs (11.4 kgs)</td>
<td>Slide and Head</td>
</tr>
<tr>
<td>Dimensions</td>
<td>37.5” Long, 9.5” Tall, 5.25” Wide (95.25 cm Long, 24.13 cm Tall, 13.3. cm Wide)</td>
<td>Slide and Head</td>
</tr>
<tr>
<td>Data Collection</td>
<td>Every two or three degrees of rotation</td>
<td>User Specified</td>
</tr>
<tr>
<td>Travel Distance of the Slide</td>
<td>24” (61 cm)</td>
<td>Other lengths available upon request</td>
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<tr>
<td>Linearity</td>
<td>+/- 0.1%</td>
<td></td>
</tr>
<tr>
<td>Stability</td>
<td>Stable year after year, no recalibration required</td>
<td>10 x better than any competitor</td>
</tr>
</tbody>
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Training and Support

• On site training from our representatives available
• Support and training available through GoToMeeting
• Units have no need for recalibration by the factory.
Summary

• The BF200 measures the thickness of blown film using our non-contact thickness gauging technology.
• Easy to use and cost effective
• Great for measuring thin films
• Great tool for quality control and production
• SolveTech will prove our technology to you through sample testing.

Send us samples today for a free analysis!