XPAR vision

heading for perfection

Gob Assist

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XPAR Vision - Philosophy

Provide to the container glass industry:

- solutions for **Continuous Improvement**
- of **Process** and **Product Quality**
- to **reduce losses** (cost) and **improve efficiency** (profit)
- by developing **innovative solutions** for the **Hot End**
- that's **where quality is made…!!!**
- for **customer's satisfaction**

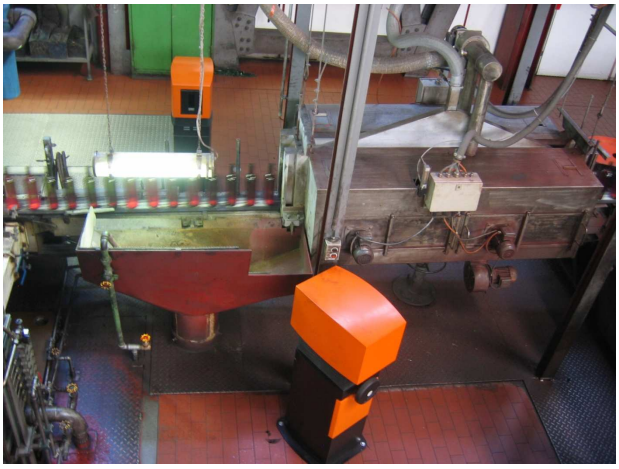
1999 XPAR Vision

2000 Hot End infrared camera systems GlassTech

2003 IR Gob Weight Control

2006 IR Dual Camera system

Real time process information
Hot End Inspection



XPAR Vision – heading for perfection

- Continuous developments to improve existing solutions
  - New & Improved Software Modules (v6)
- Bring new solutions to the Glass Industry:

new
nouveau
nuevo
neu

Gob Assist

Why the new Gob Assist?

- Can any one see by eye what happens exactly in 20ms?

Why Gob Assist?

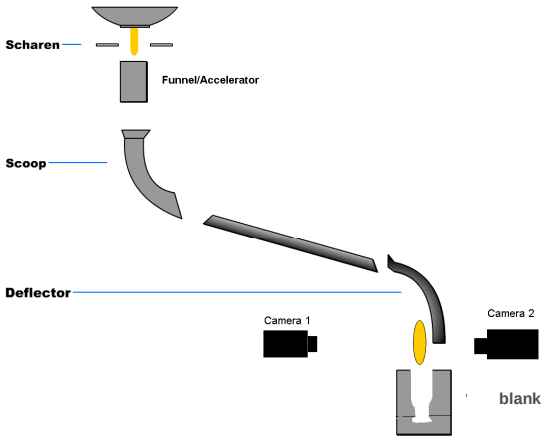
- Gob loading is an important process step
- 60%-80% (aspect) defects are related to Gob Loading
- No tools available, only years of experience (eye)
- Incomplete know-how loading process
- Much room to improve

What is Gob Assist?

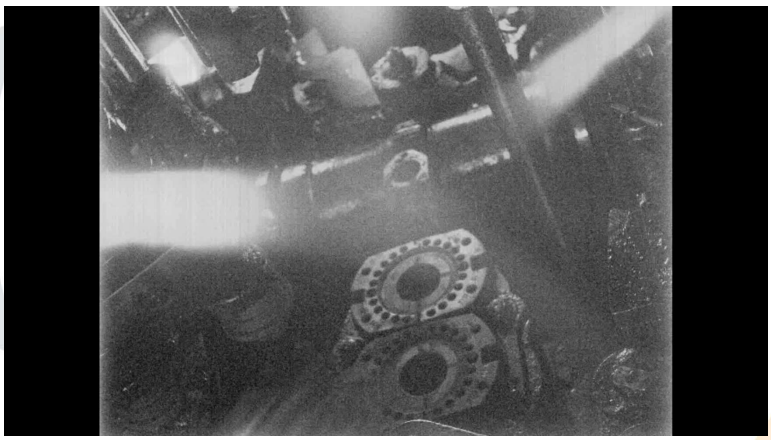
Design goal's:

- To **find** the optimal loading of the gob
- To **maintain** the optimal loading of the gob
- To **retrieve** the optimal loading after (equipment) change
- To **retrieve** the optimal loading after a Job Change
- To **improve** the gob loading process

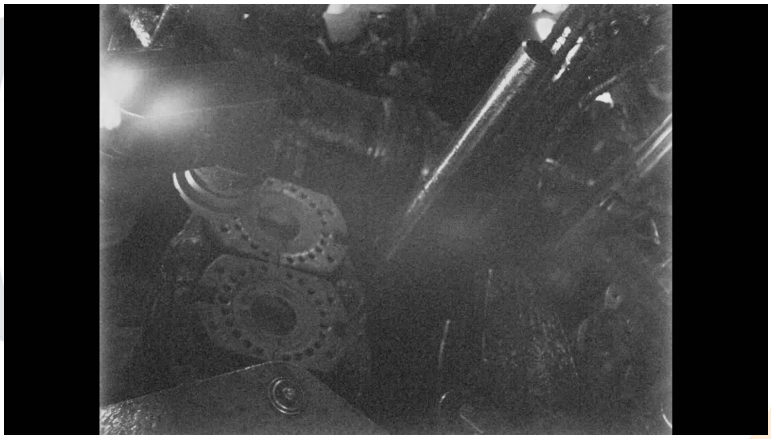
Principle of the Gob Assist



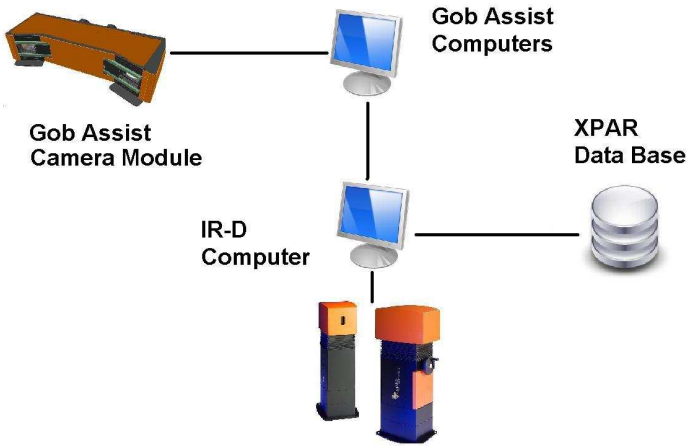
Example Camera 1:



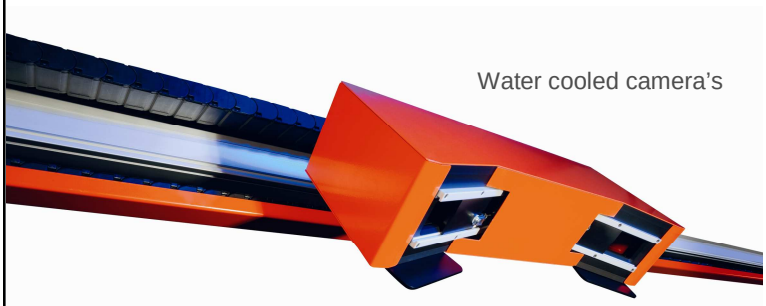
Example Camera 2:



The Gob Assist system



The Gob Assist Camera Module

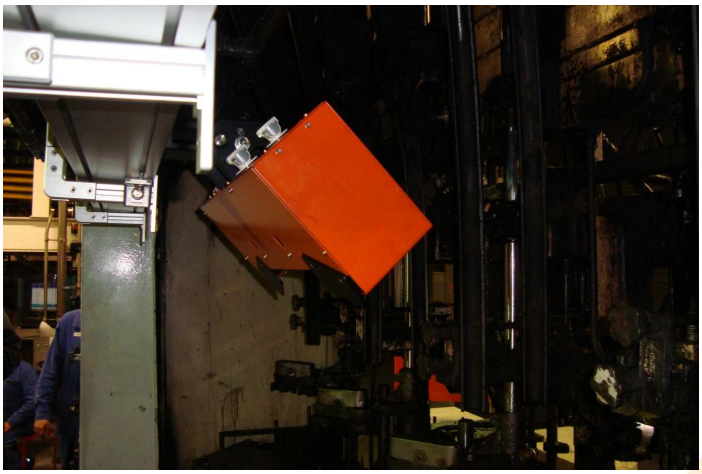


Water cooled camera's

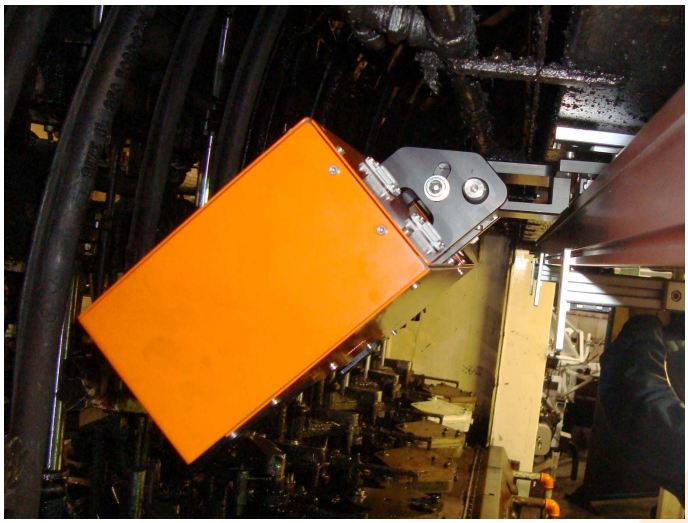
Protective slides

Disposable glasses

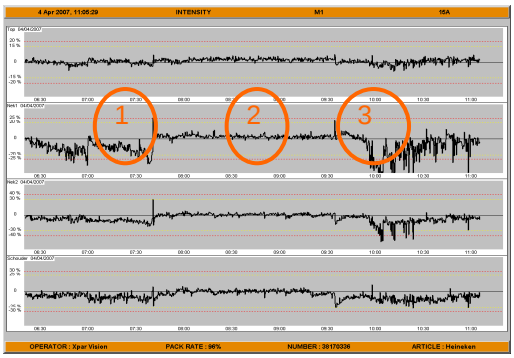
The Gob Assist System



The Gob Assist System

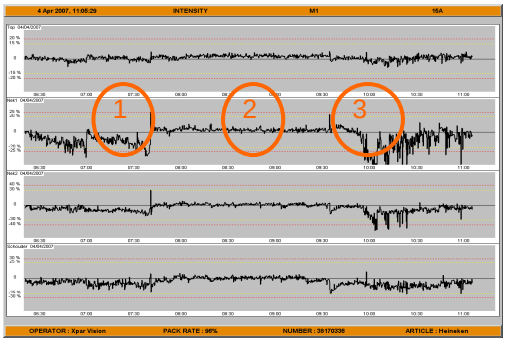


Gob Assist & XPAR IR-D



- 1 = deflector adjusted
- 2 = stable / optimal loading
- 3 = adjusted deflector

Gob Assist & XPAR IR-D



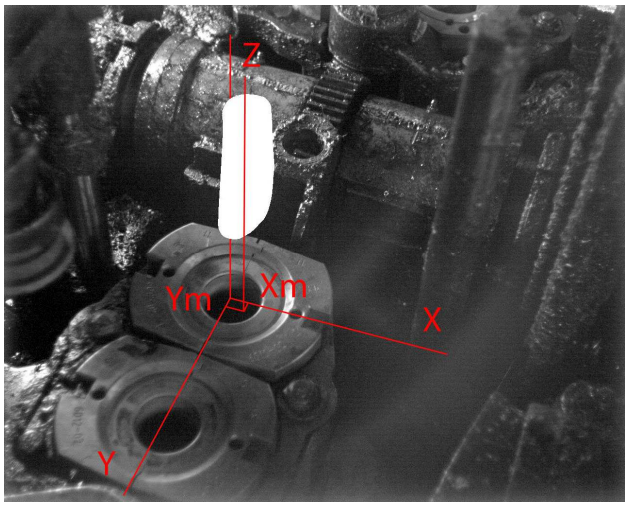
- No direct information about the Gob Loading
- Adjusting time can be long
- No product dependent optimal preset possible (Material change & Job Change)

Gob Assist Measurements:

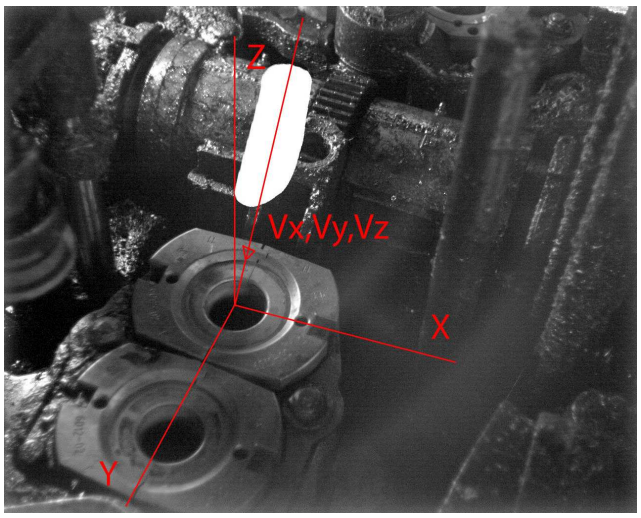
Parameters:

- Position into the blank mould
- Speed
- Length
- Shape
- Diameter
- Orientation
- Time of Arrival (T.O.A.)

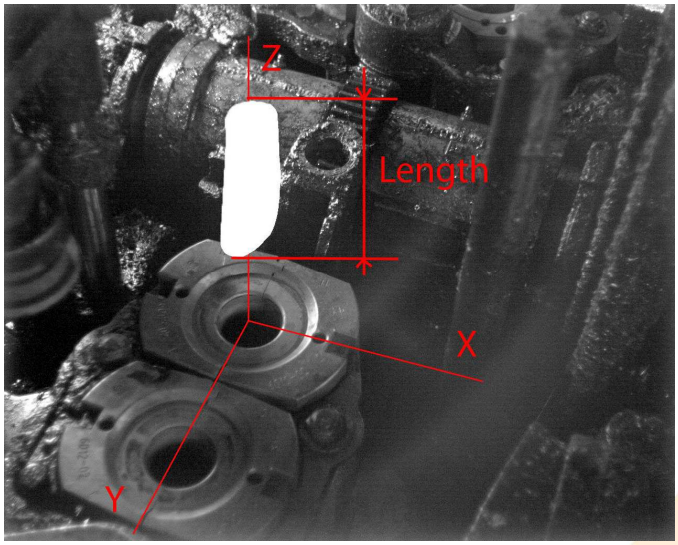
Gob position definition



Gob speed & orientation definition



Gob length 3D



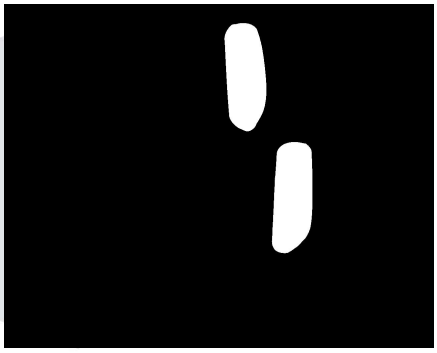
Example test results Gob Assist

Ardagh Glass
Dongen, The Netherlands

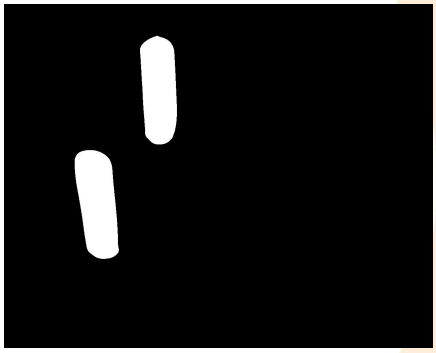
10 section, double gob
156 gram jar

Test: Section 7

Example image of the gobs



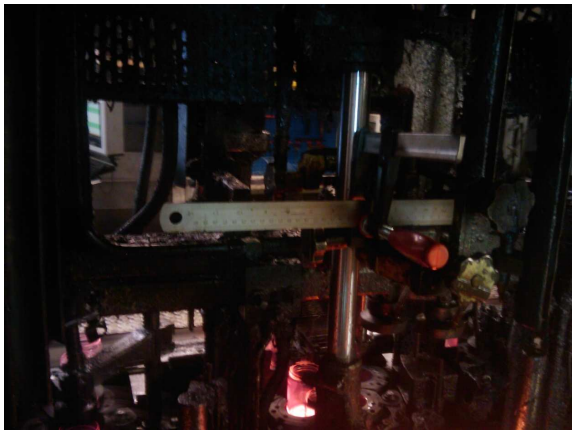
Left camera



Right camera

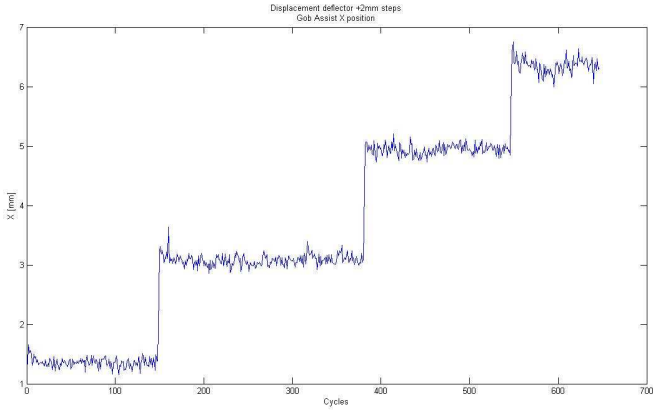
Test results Gob Assist

Change the position of the deflector in a “controlled” way



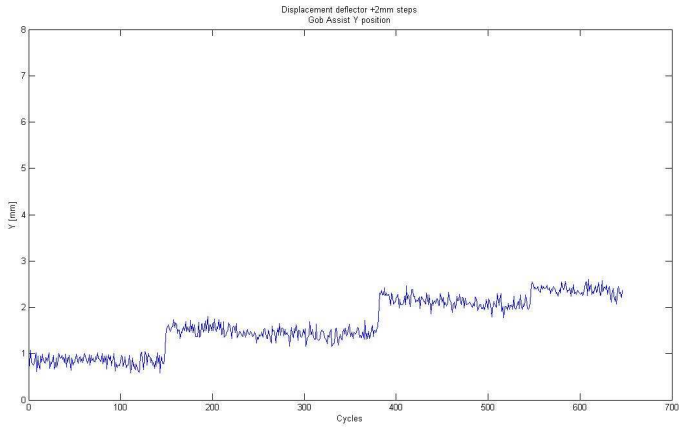
Deflector adjustment X direction +2 mm steps

Gob Assist X-position

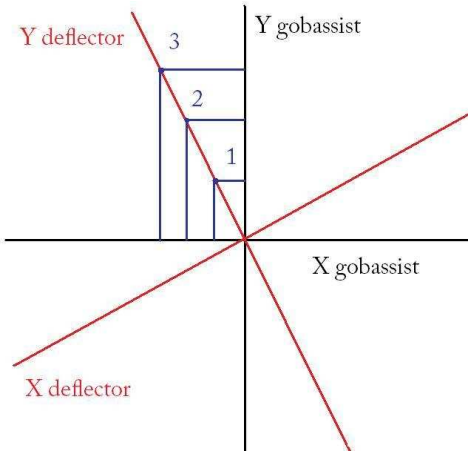


Deflector adjustment X direction +2 mm steps

Gob Assist Y-position

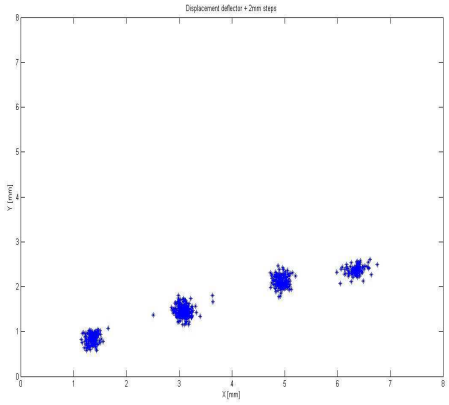


Why changes also the Y- value's ?



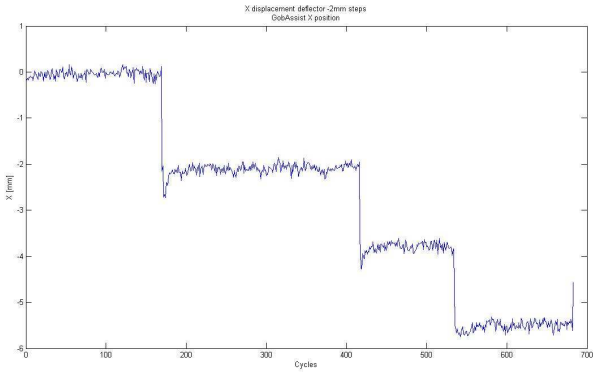
Deflector adjustment X direction +2 mm steps

Gob Assist XY-plot

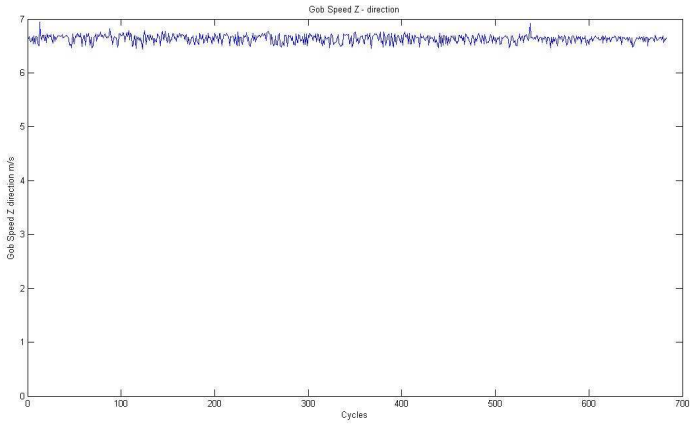


Deflector adjustment X direction -2 mm steps

Gob Assist X- positions

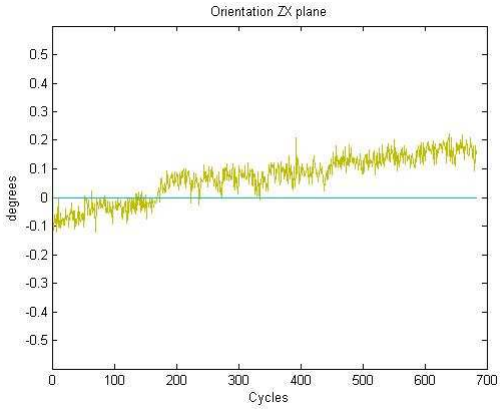


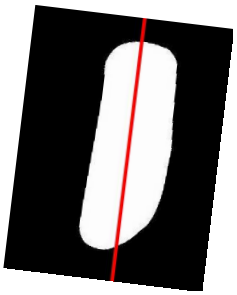
Gob Speed Z-direction



Zmean = 6.56 m/s Sigma = 0.05 m/s

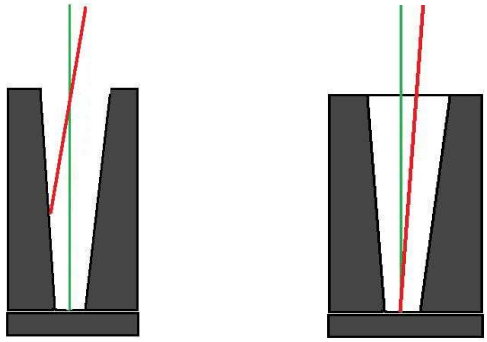
Gob orientation ZX plane





0.15 degree ~ 2.6 mm/m

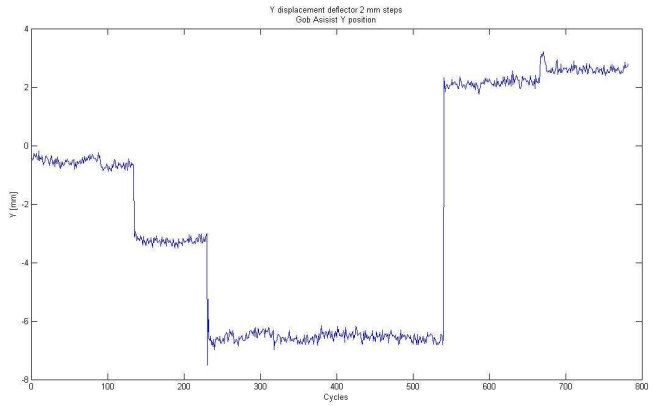
Gob orientation



Orientation influences the optimal position of the gob!

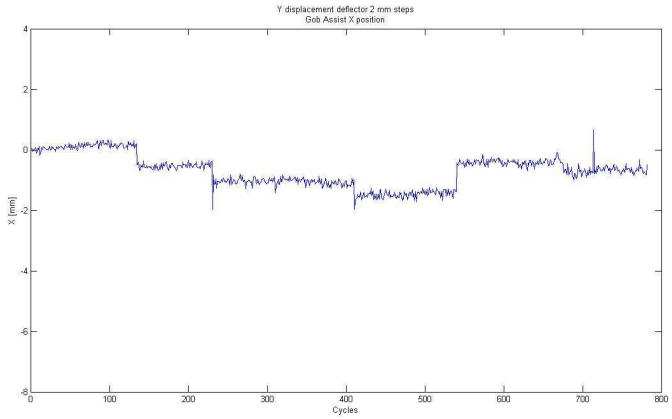
Deflector adjustment Y direction 2 mm steps

Gob Assist Y position



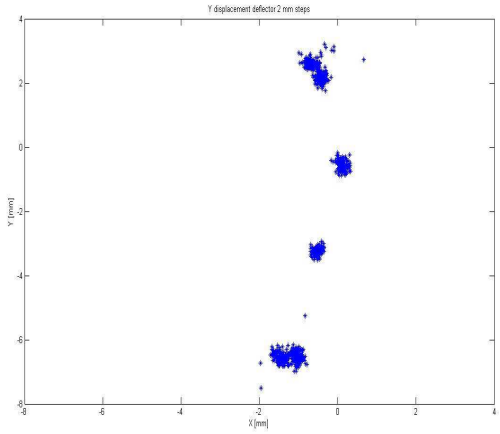
Deflector adjustment Y direction steps

Gob Assist X-position



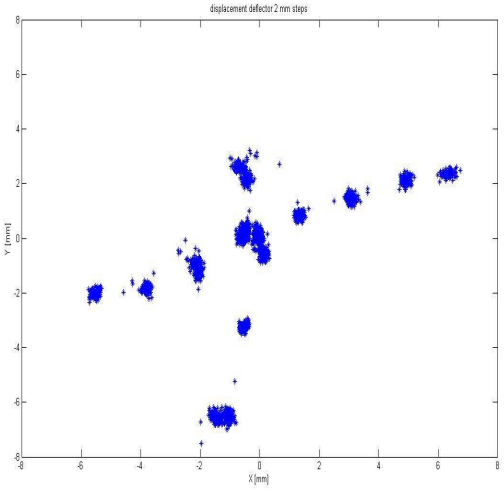
Deflector adjustment Y direction 2 mm steps

Gob Assist XY position

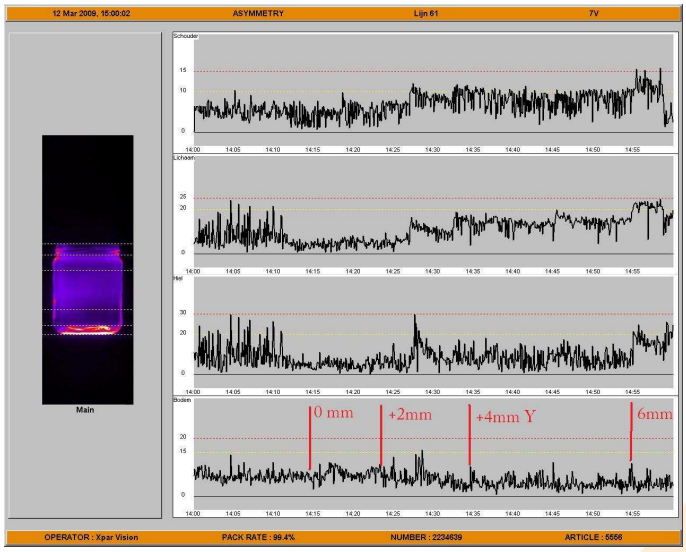


Deflector adjustment

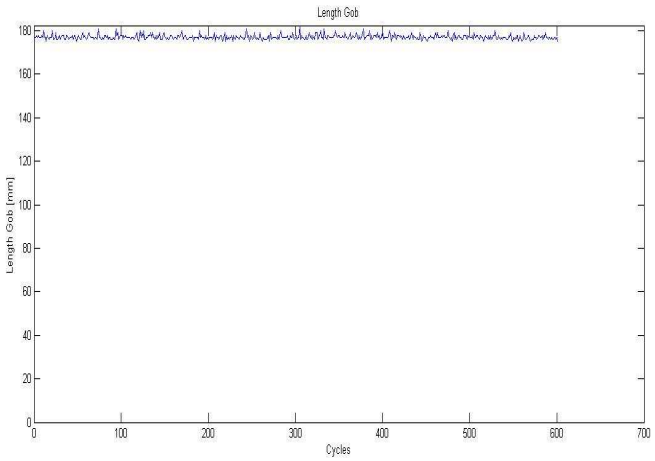
Gob Assist XY position



XPAR IR Data

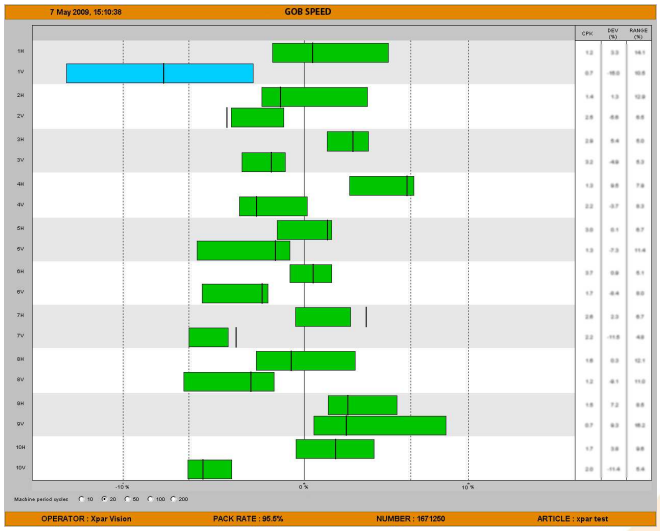


Gob length



Lmean = 177 mm Sigma = 1,10 mm

Speed Overview Gob Assist



Summery Gob Assist

- Now you have access to factual information on gob loading
- Easy finding, maintaining and retrieving optimal gob loading
  - → improve gob loading process
- Reduce defects due to loading
  - → improve product quality

Gob Assist: an indispensable tool for the container glass industry!

Thanks for listening!

Questions?