

# Heye Smart Plant Concept

## Saving Weight – Saving Energy



# Facts about Heye International

500 Employees

120 Mio € Revenue

Inventor of NNPB process

2003 independent in Ardagh Group









# Agenda

A vertical list of five agenda items, each preceded by a red circle. The circles are connected by a thin grey line that starts from the top and ends with an arrowhead pointing down at the bottom item. The background of the slide features a thick red curved line at the top.

**Intro**

**Where are we going and what are the targets ?**

**Characteristics of a Smart Plant**

**Focus: Less energy – less weight**

**Summary**



# The IS Machine in 15 Years





# Features

- 100 % Sealed during operation.
- 100% Computer controlled. All functions fully automatic.
- Self monitoring, self adjusting, self correcting.
- Manning only for supervision and hard interference.
- One man for two or three machines.
- 99% production output.



# Information gathering set to create smart data

## Smart Data Collection



## Smart Machine Controls

## Smart Process Controls



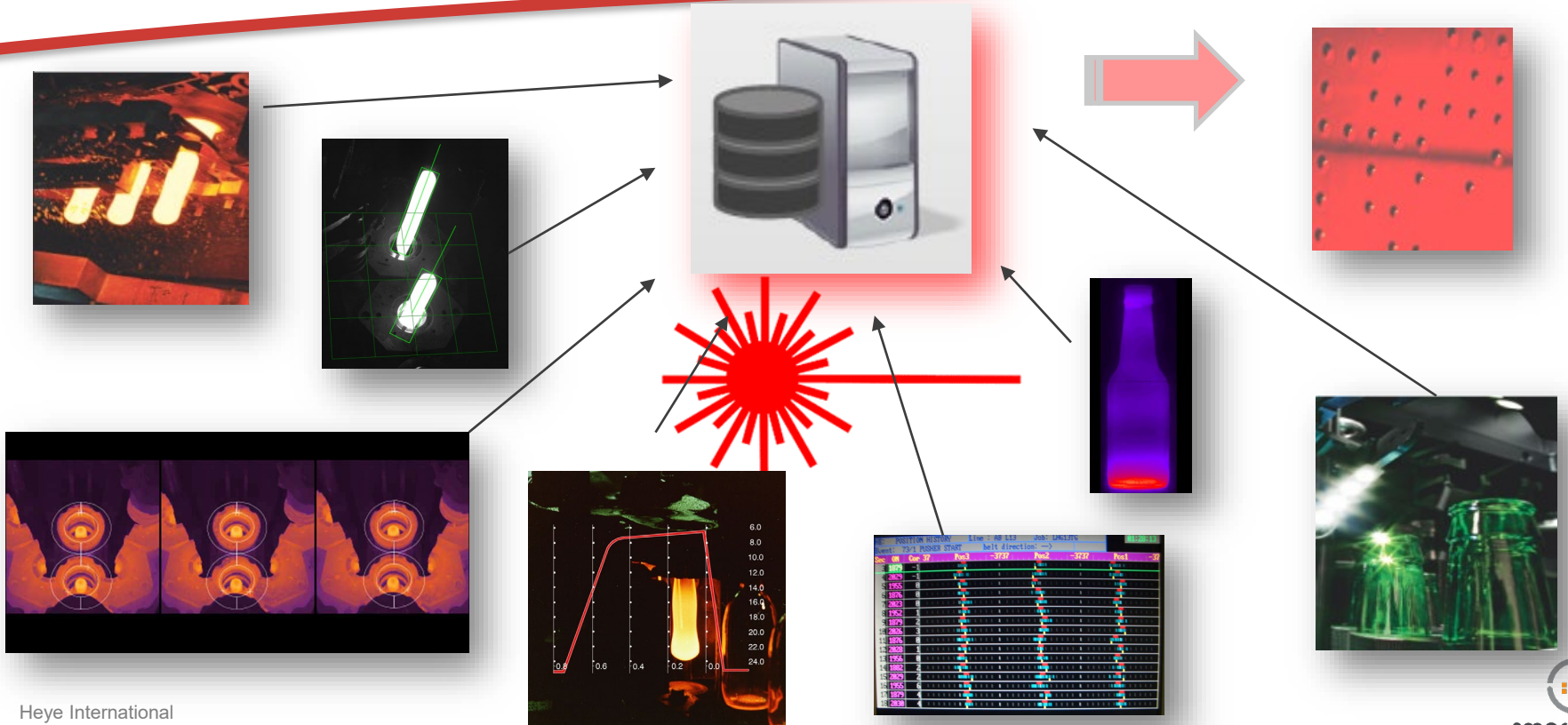
# All we need is DATA



- Every parameter a human being needs and uses to operate a machine has to be generated and used for setups.
- Even the parameter „Experience“ must be available to run a machine as good and even better than a man.
- Data collection and Data processing are key factors to be successful.



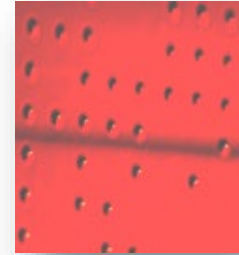
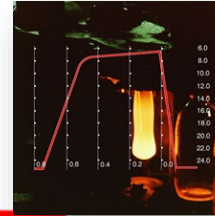
# First Step: A Powerful Data Base





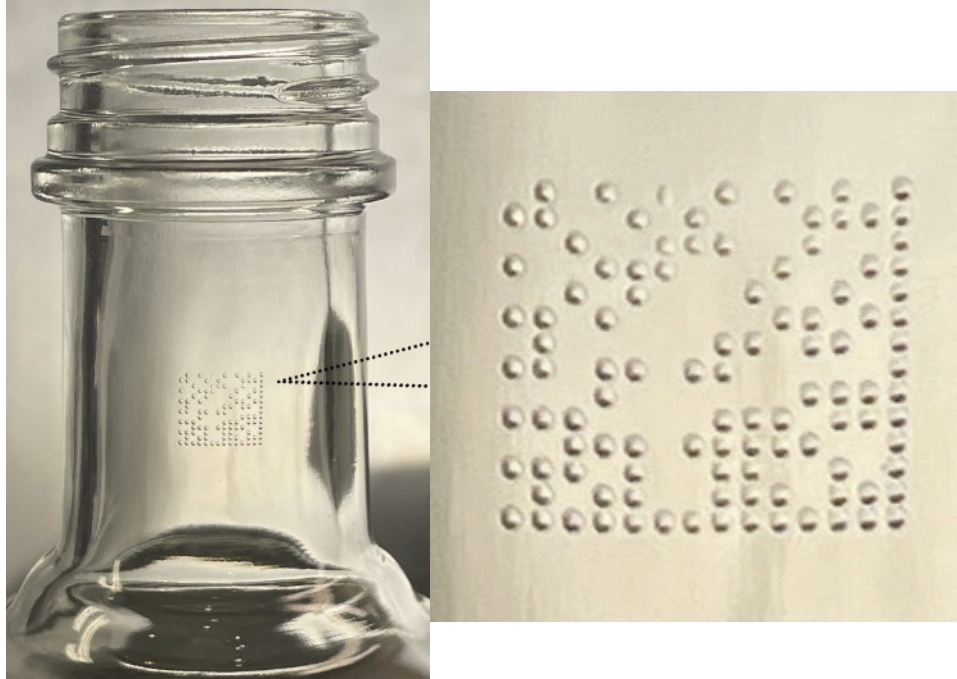
# Second step: A Fingerprint for each Bottle

- Assigning an individual ID to each bottle
- Correlating all data from the process to this ID
- Gives a full scope DataSet to each container
- Even Lab Data can be added.
- **The Result is a full set of Operation and Quality Data, individualized to a specific container and fully traceable.**





# Data Matrix Code Reader

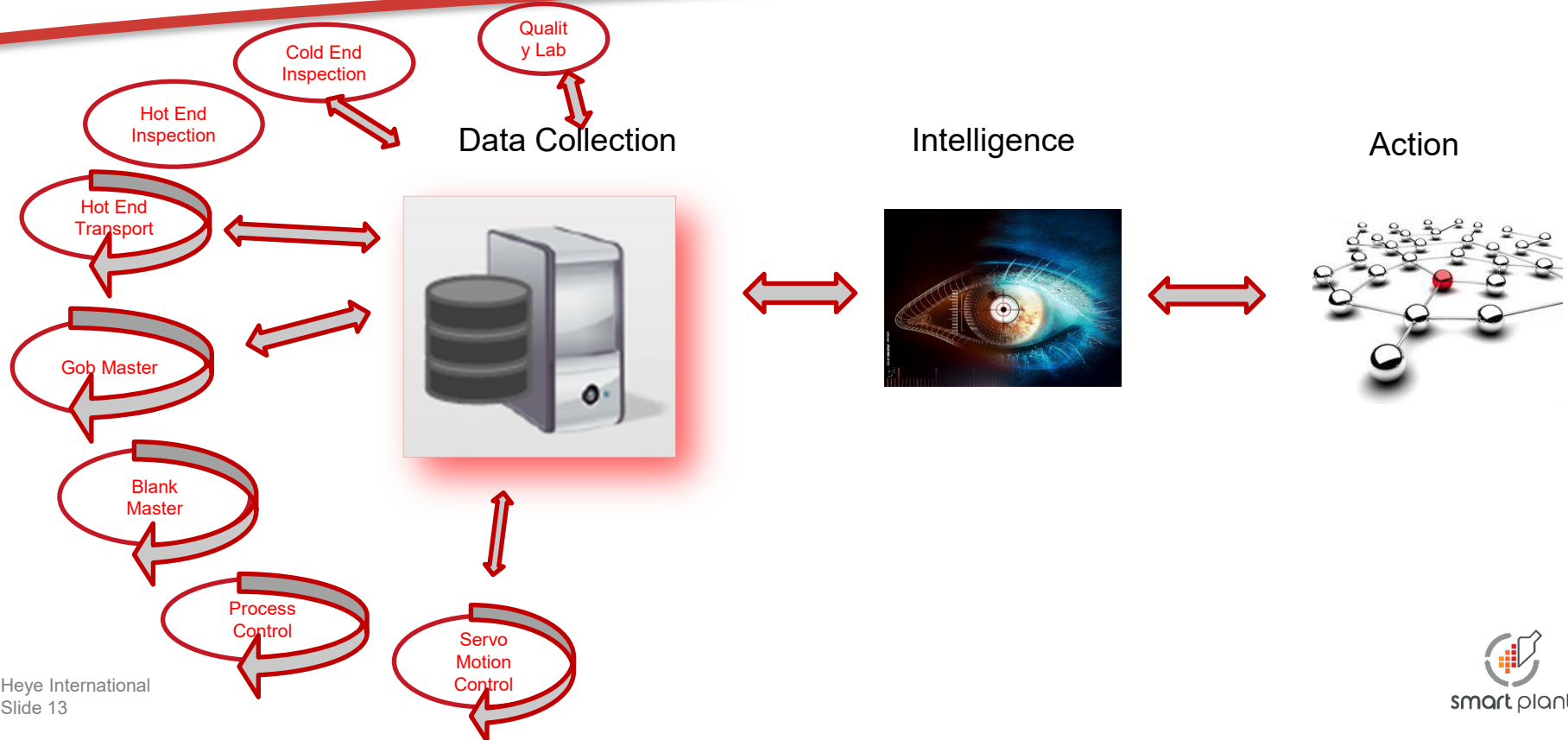








# The track of the fully automatic process





# Information gathering set to control smartdata

**Smart Data Collection**

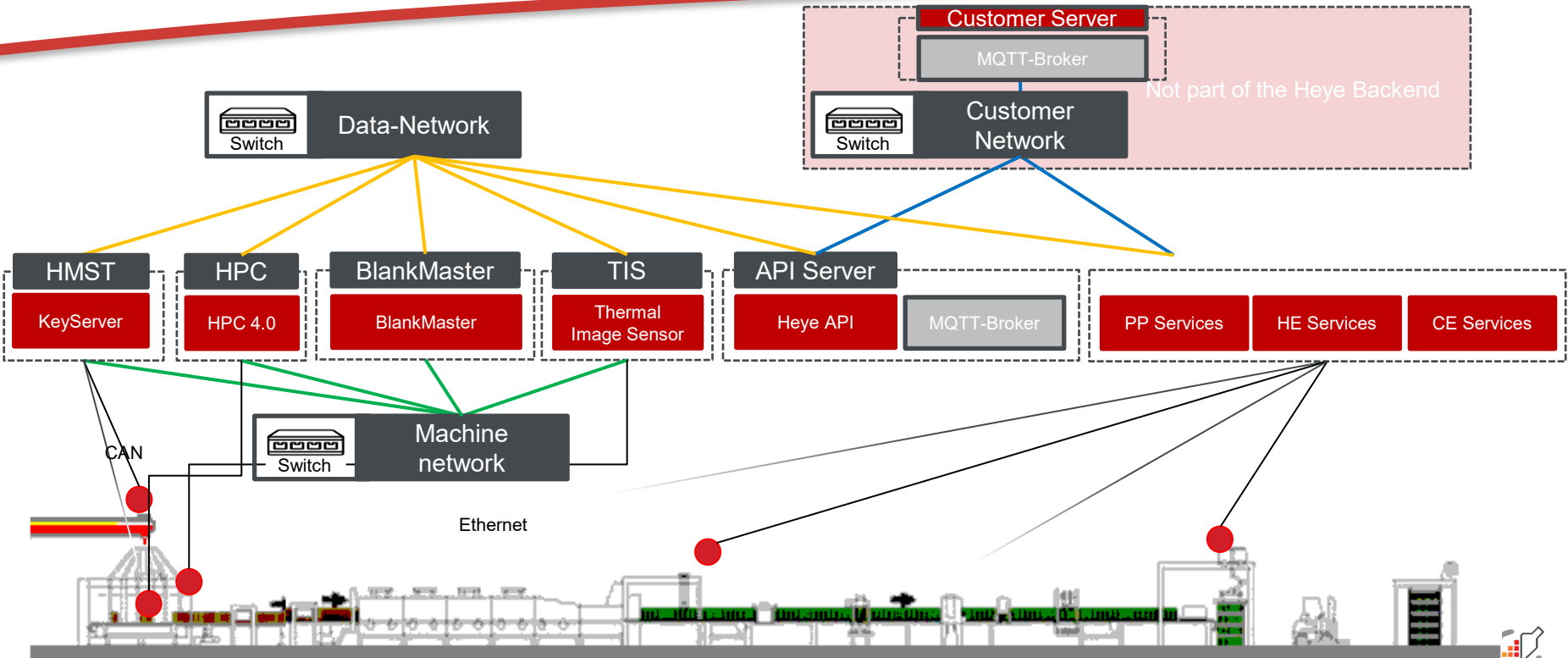
**Smart Machine Controls**



**Smart Process Controls**

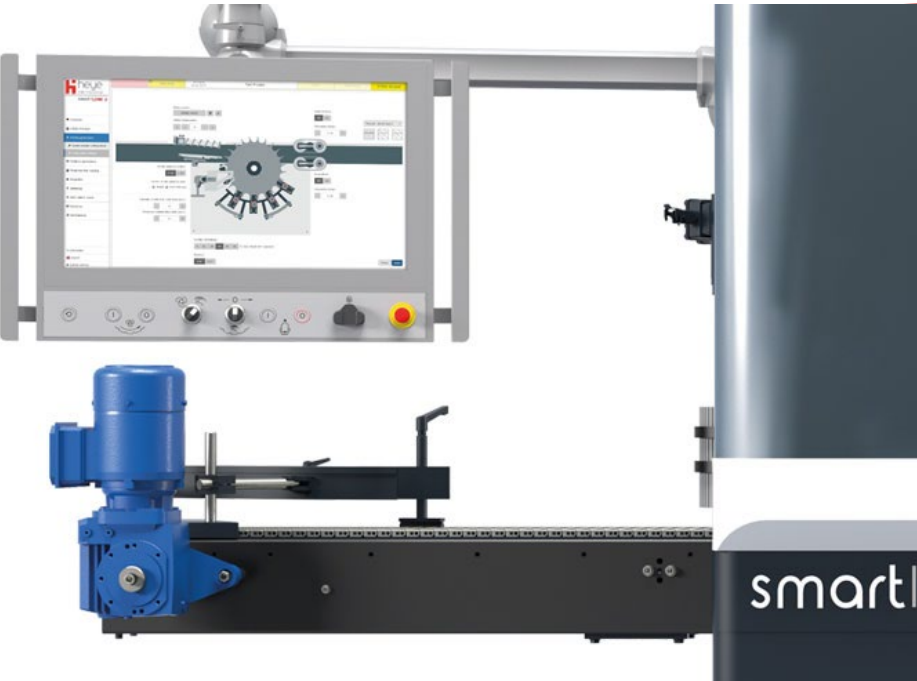


# Overview Heye Backend





# Smartline 2 Smartplant interface



## Overview

- Article manager
- Article parameters
- Machine parameters
- Mould number reading
- Inspection
- Sampling
- Warn/alarm levels

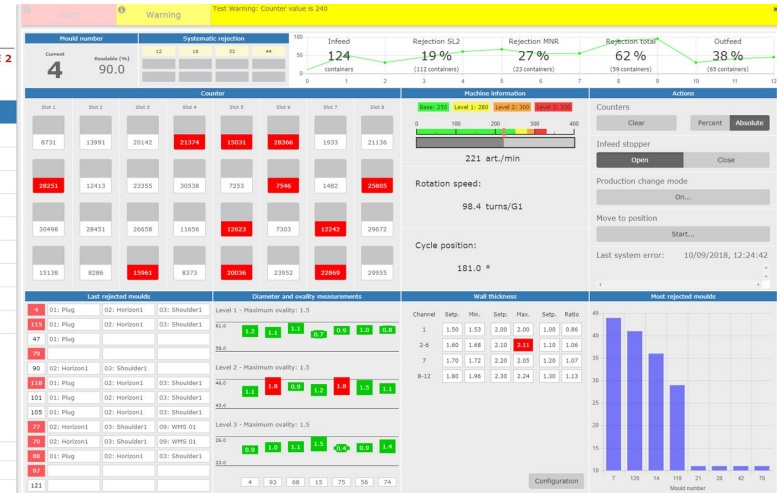
## Statistics

## Maintenance

Connected

english

System setting





# Smartline 2 and Evolution Inspection Line





# Information gathering set to proceed smart

**Smart Data Collection**

**Smart Machine Controls**

**Smart Process Controls**





**HiPERFORM** solution set

Less weight

Less energy



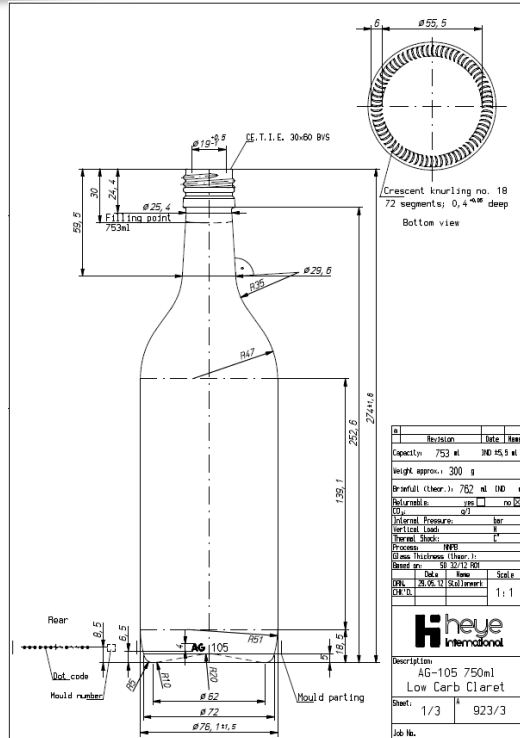


# Weight Reduction Long Neck Beer 355 ml





# 750ml Low Carb Claret



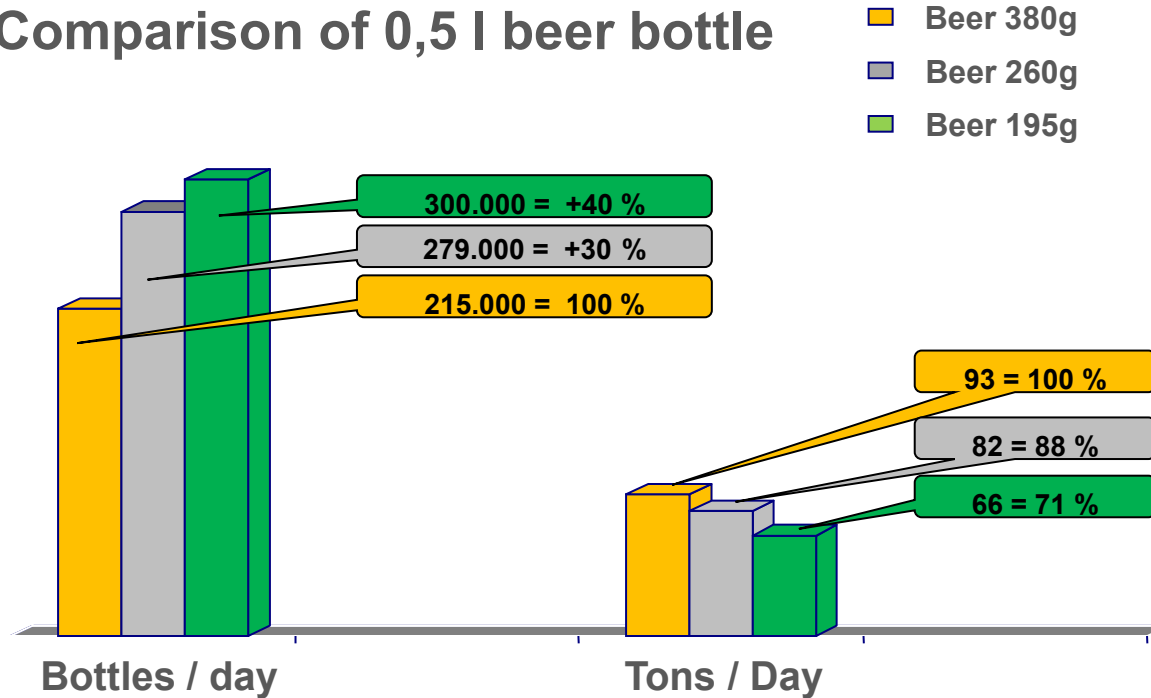
Original Weight: 440g

Reduced Weight: 300g



# Higher speed & output per ton

## Comparison of 0,5 l beer bottle

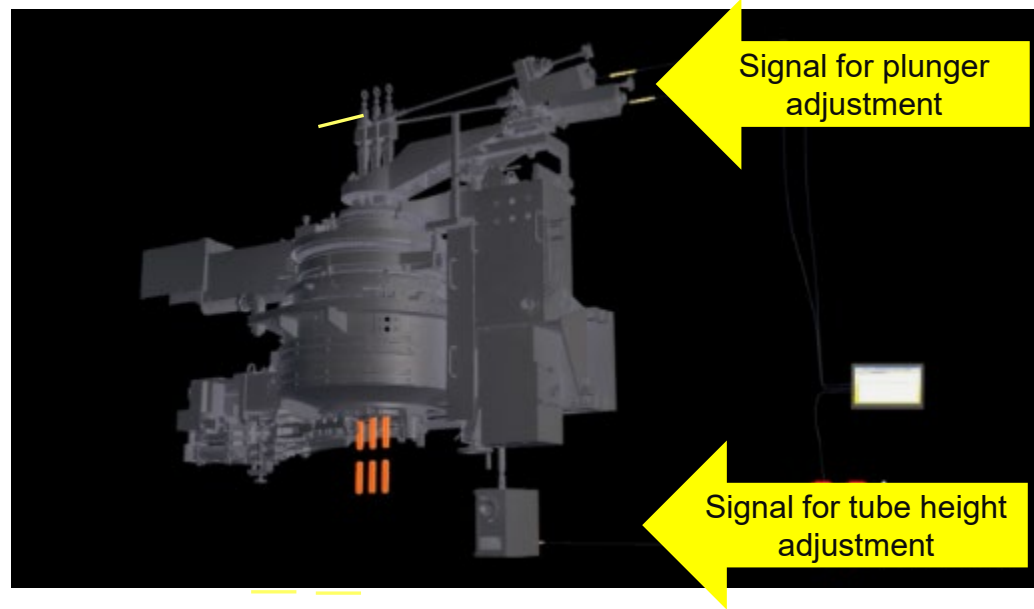


Production on a 10 section IS-Machine



# Heye Process Control – Industry Benchmark

Heye Process Control and Servo Feeder for **constant** gob weight.





# Heye Automatic Press Duration Control



A critical success factor on the blank side is the press duration.

The automatic Press Duration Control as option to the Heye Process Control guarantees a constant press duration, resulting in a **constant glass distribution**.



# Recommended by Global Brand Owners

- Critical defects are avoided, the wall thickness is stable.
- More than 1100 units are in operation up to now.



Overpressed Finish



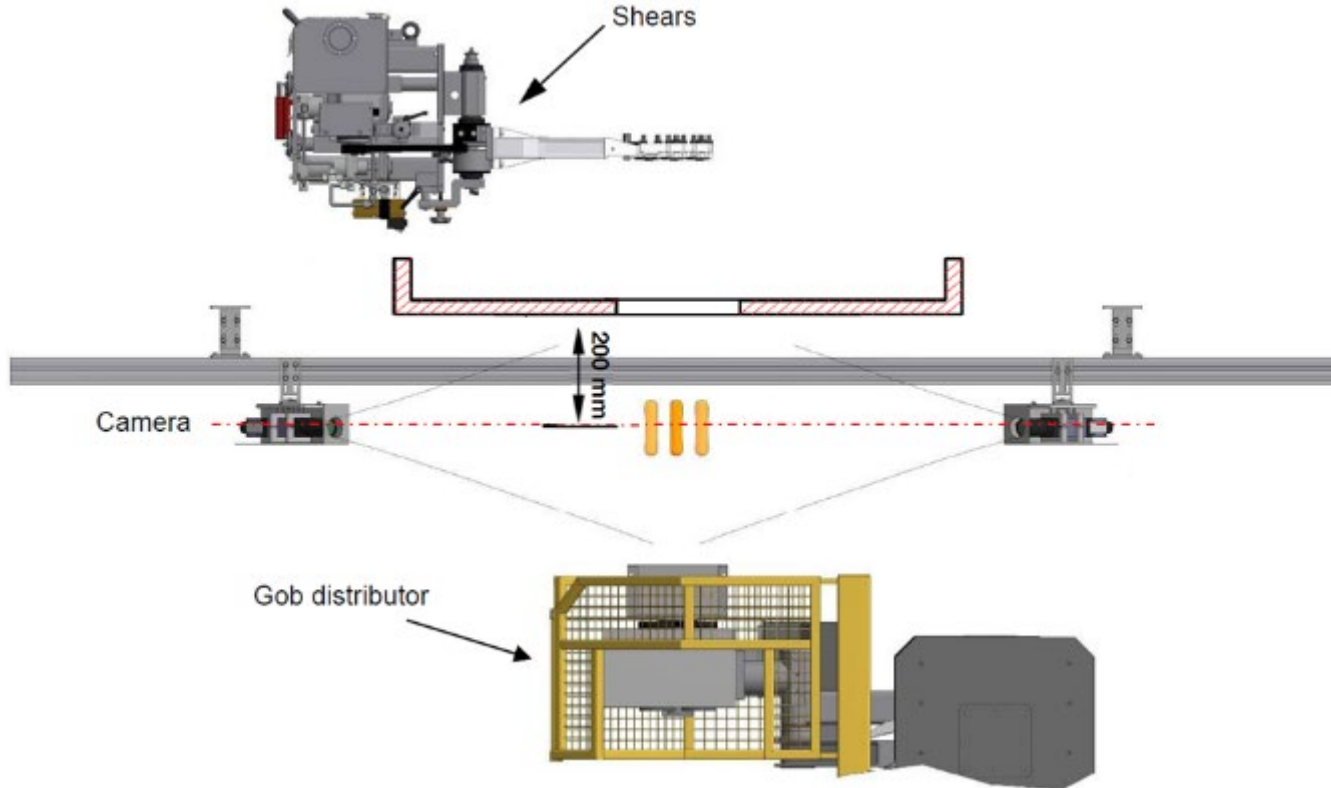
Unstable Wall Thickness



Unfilled Finish

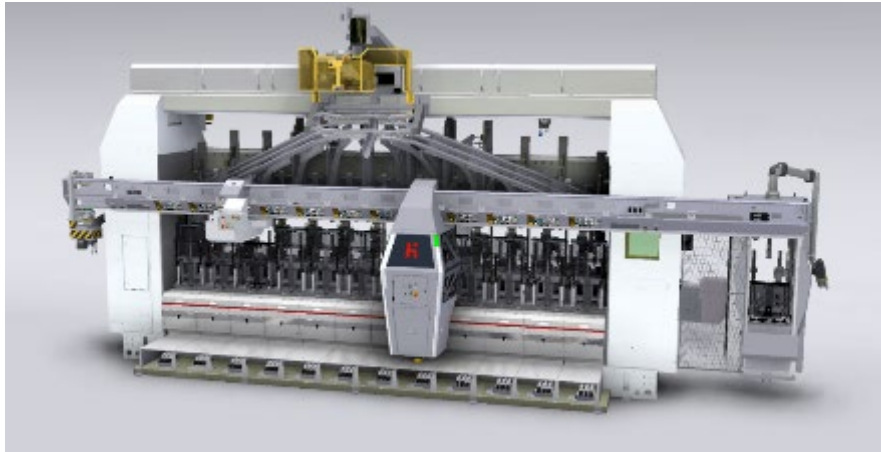


# GobMaster: Cameras for Weight and Shape





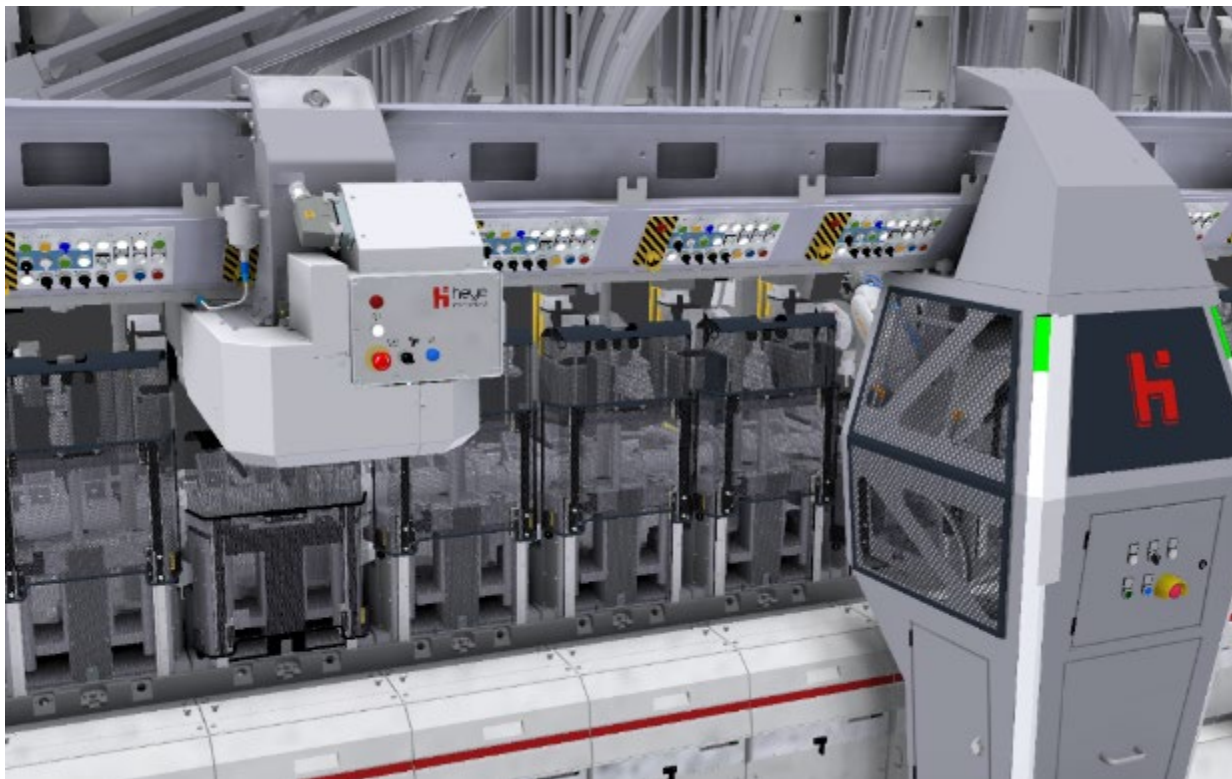
# Heye Swabbing Robot



- Up to 2% improved pack-to-melt
- No rejects from swabbing
- No section stop necessary
- 75% savings on lubrication
- High safety for operators
- Stable volume, thickness and location of swabbing agent



# Heye BlankMaster





# Blank Master Functionality



- Monitoring the gob delivery and temperatures on the blank side in IS-Machines.
- A sensor box contains two measuring systems which record measuring values.



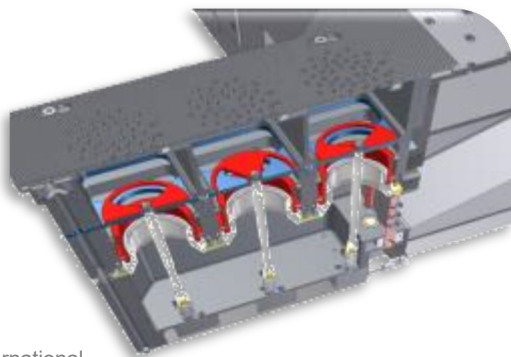


# Integration into the Heye Speedline for Blank Side Dead Plate Cooling Control



## Constant cooling for dead plate

- Stable bottle shape
- Less bottom problems

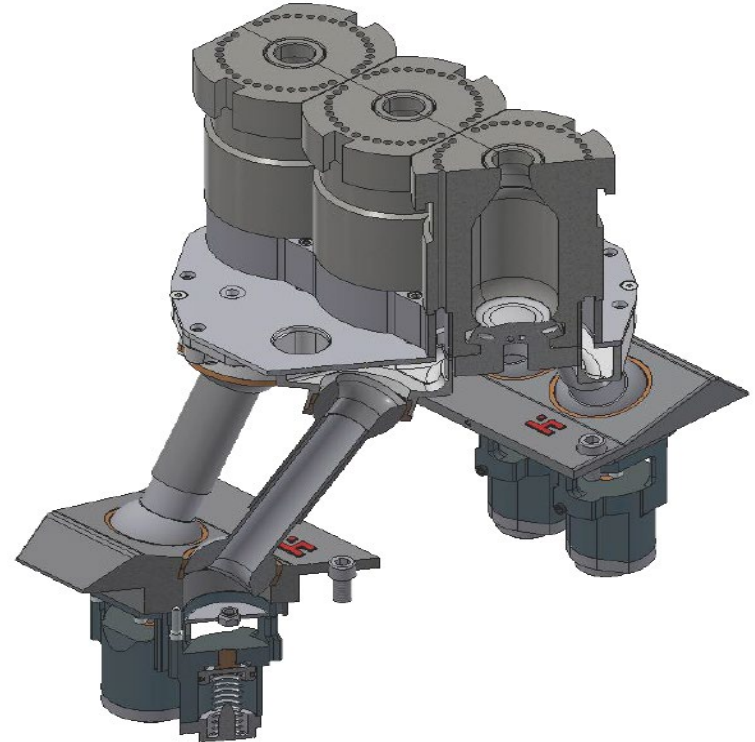




# Integration into the Heye SpeedLine for Blow Side cooling Control

## Data processing

- Connection to the E-Timer of the IS machine (FMT) for optional „Closed Loop“ regulation of cooling parameters of the blank side





# Belt Speed & Ware Spacing Control

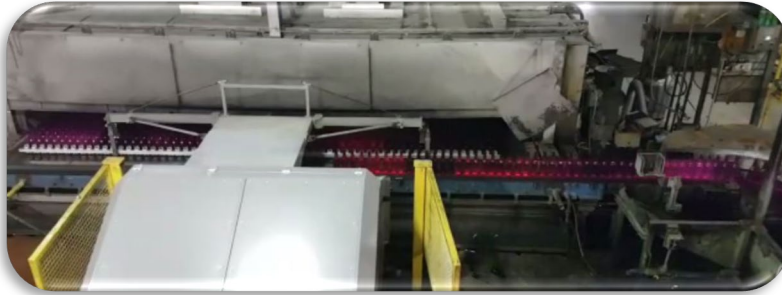
**Prio 1: Precise and fast Ware Transfer as result of constant belt speed and ware spacing**

**=> Improve Hot End Yield**





# The perfect Transport





# Latest installations

- Furnace capacity: 450 Tons
- 3 units HEYE IS machines 16 sections TG 41/4 for NNPB process
- All machines equipped with swabbing robot
- Speed is > than 720 BPM per line
- SMARTLINE Inspection Machines
- HEINEKEN beer factory NNPB installed on the same location
- NNPB know-how and technology 4.0 delivered by HEYE





THANK YOU VERY MUCH!