

September 2013

HiPERFORM

Portfolio and Innovations

Content

- Heye Assortment Production
 - Each cut a different weight
- Heye Process Control
 - Press Duration under control
- High Speed Hot End Ware Handling
 - 700 BPM and more



Heye Assortment Production

Different Gob Weights & No Gob is Wasted

Section

1

2

3

4

5

6

7

8

9

10

425 g

380 g

380 g

380 g

380 g

380 g

380 g

380 g

380 g

380 g

425 g

425 g

425 g

425 g

425 g

380 g

380 g

380 g

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380 g

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380 g

380 g

400 g

400 g

425 g

425 g

380 g

380 g

380 g

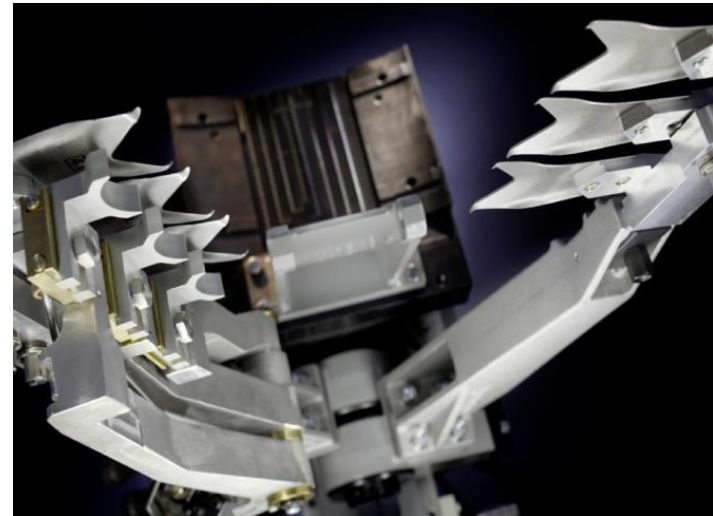
380 g

Assortment Production - Advantages

- More flexibility when a plant has different articles
- Higher capacity utilisation
- Less downtime to reconfigure IS-Machine
- Fewer machine-wide job changes
- Lower costs for moulds

Basic Components

- Servo drive control unit
- Servo plunger type 2329
- Servo dual motor shear
- Additional software module



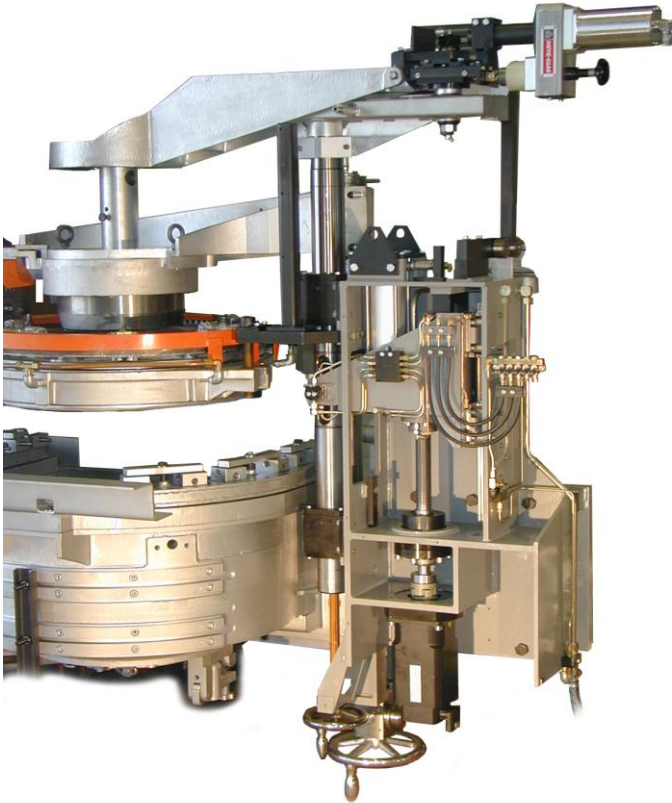
Benefits:

- Easy set-up and system communication structure
- Fewer spare parts (identical motors / controllers)

Servo Plunger Mechanism

Advantages

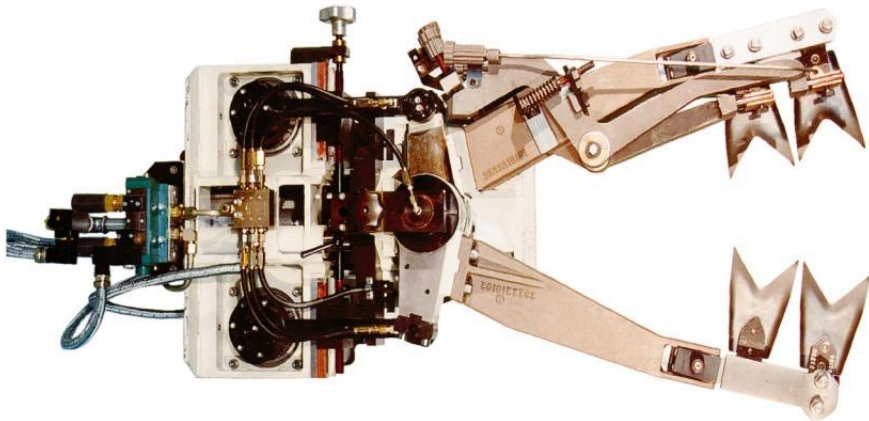
- Usable on all feeder sizes and -types
- Reselectable cam profiles
- Reselectable plunger stroke
- Start / stop position selectable
- Up to 250 cuts per minute
- Nearly maintenance free operation
- Reproducible motions
- Parameter setting via dialog



Servo Shear Mechanism

Advantages

- Single, double, triple and quad gob operation
- Long operation time of the shear blades
- Long operation time of the shear mechanism
- Preselect able motion profile
 - Preselect able motion time
 - Up to 250 cuts per minute
 - Maintenance free operation
 - Parameter setting via dialog



Assortment Production about 20 systems sold to date

Verallia

- Germany
- France
- Chile
- Brazil

SGD

- France

OA0 Krasnoe Echo

- Russia

Bormioli Rocco

- Italy

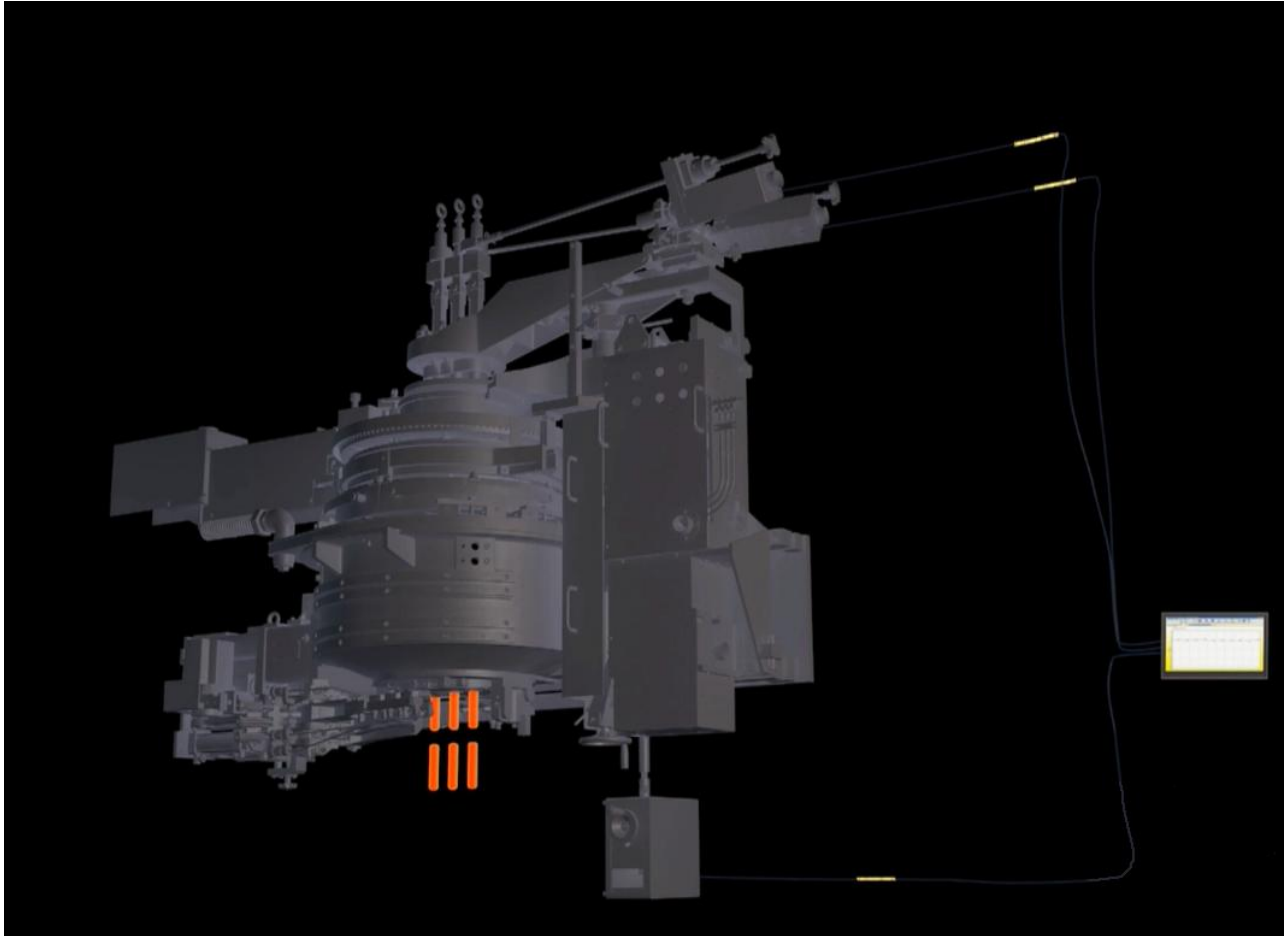
Anadolu Cam (Sisecam)

- Turkey
- Ukraine

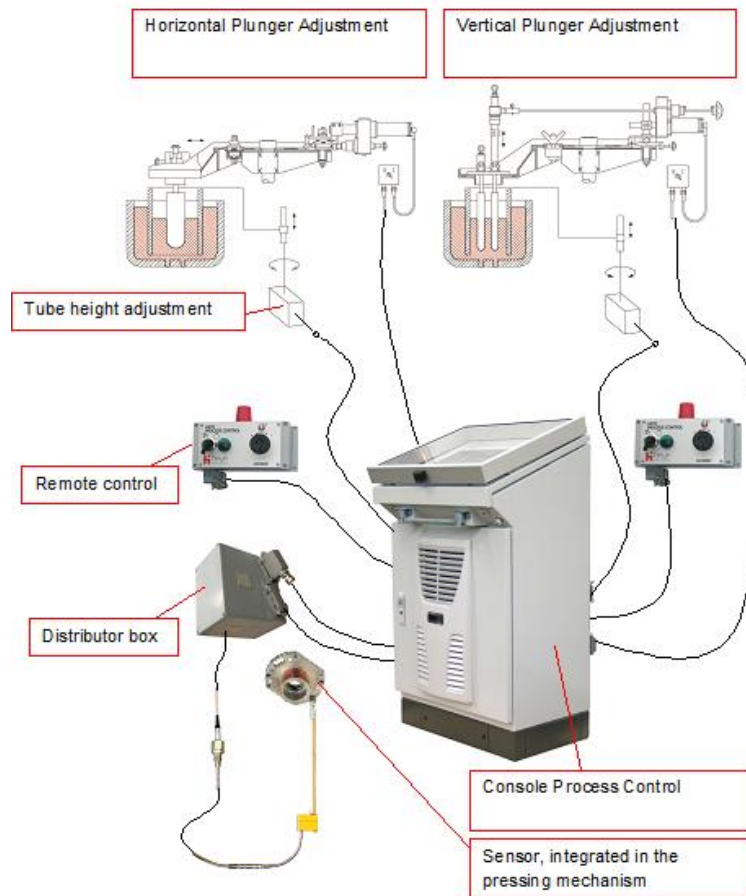
Glaswerk Ernstthal

- Germany

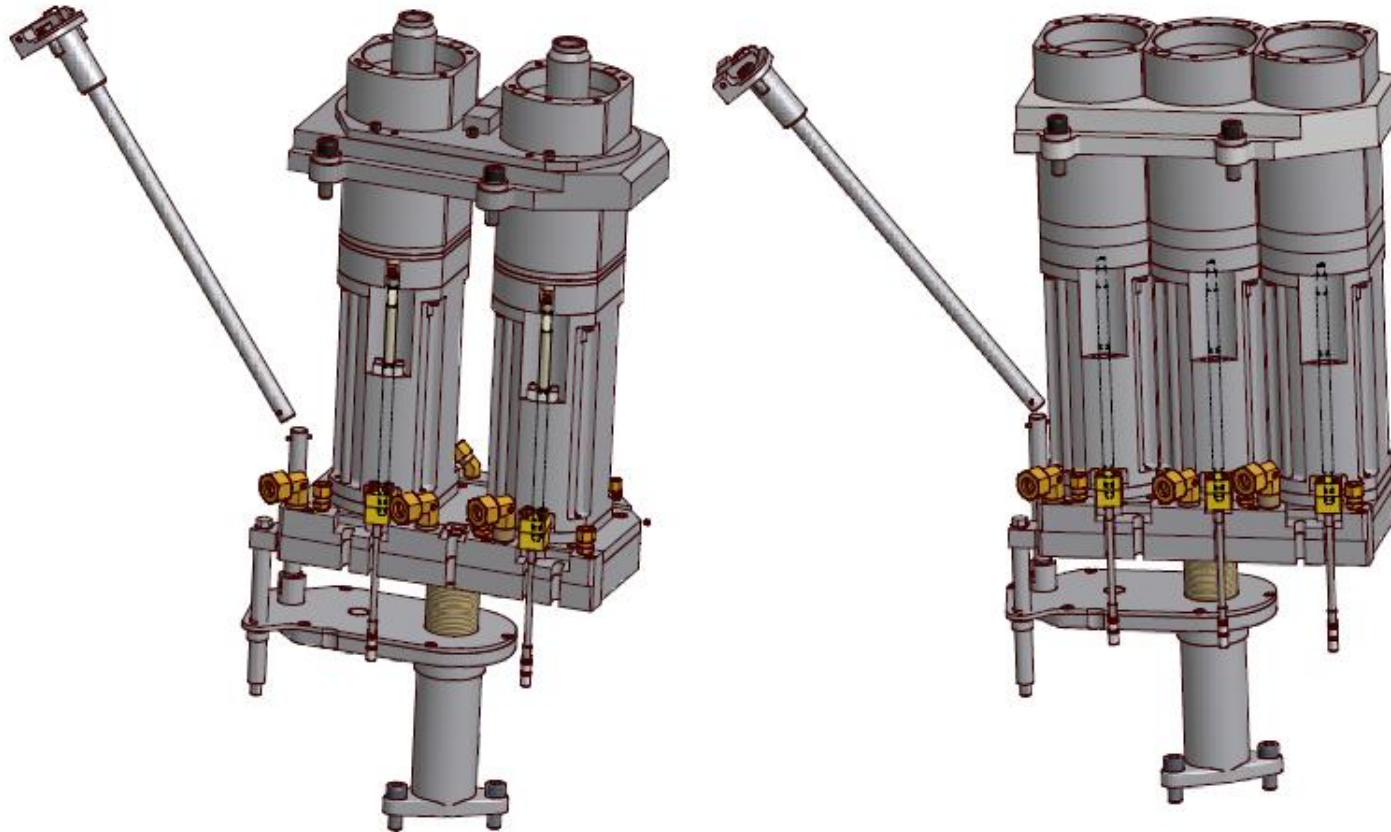
Heye Process Control



Process Control Components



Plunger cylinder DG / TG



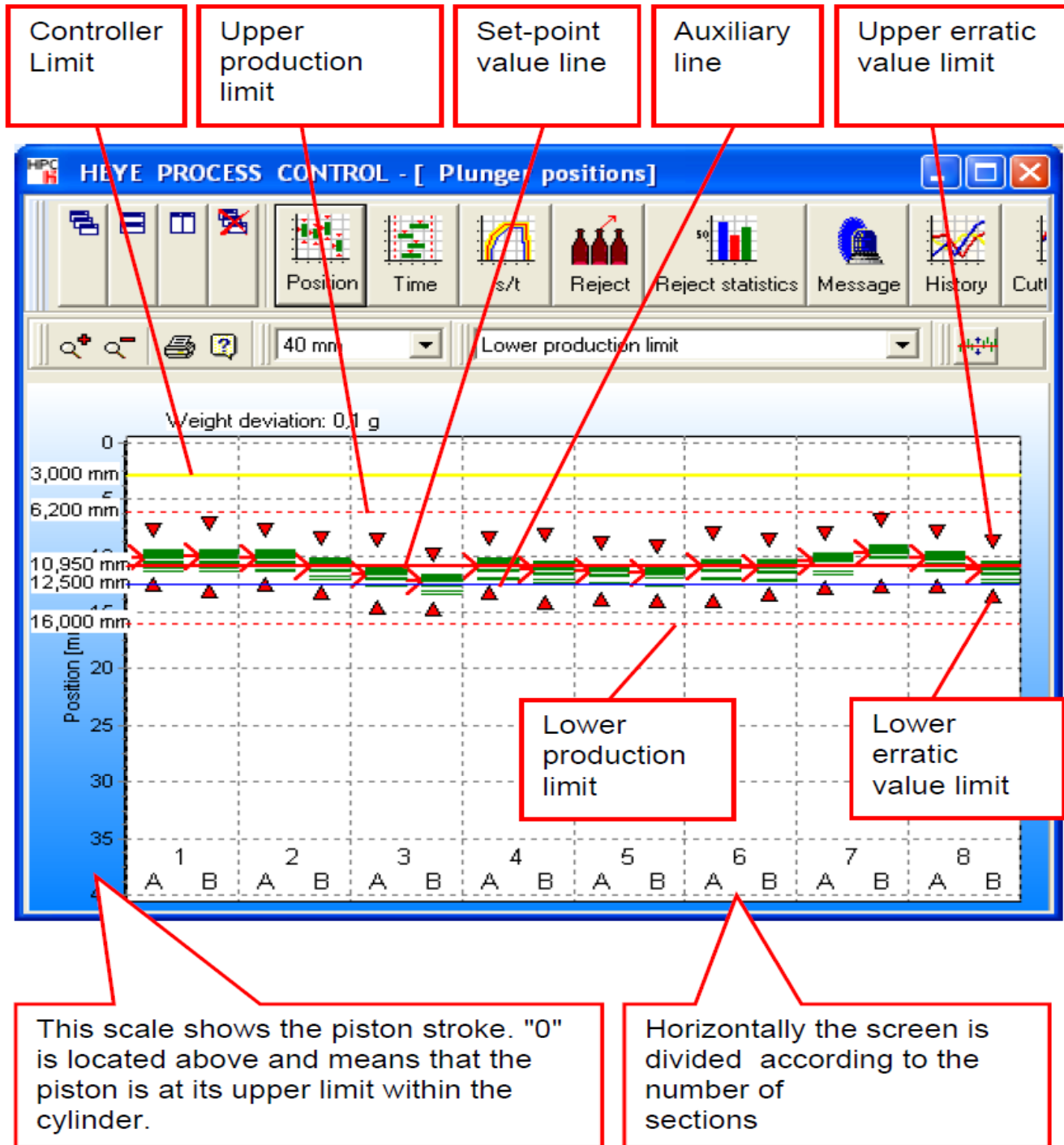
Principles of Operation

- The components exchange information
- The control creates new and easy-to-interpret information (diagram and data)
- If required the system communicates with the machine control (for example to reject parisons which are outside acceptable parameters)
- The operator gets information about the past and the current situation

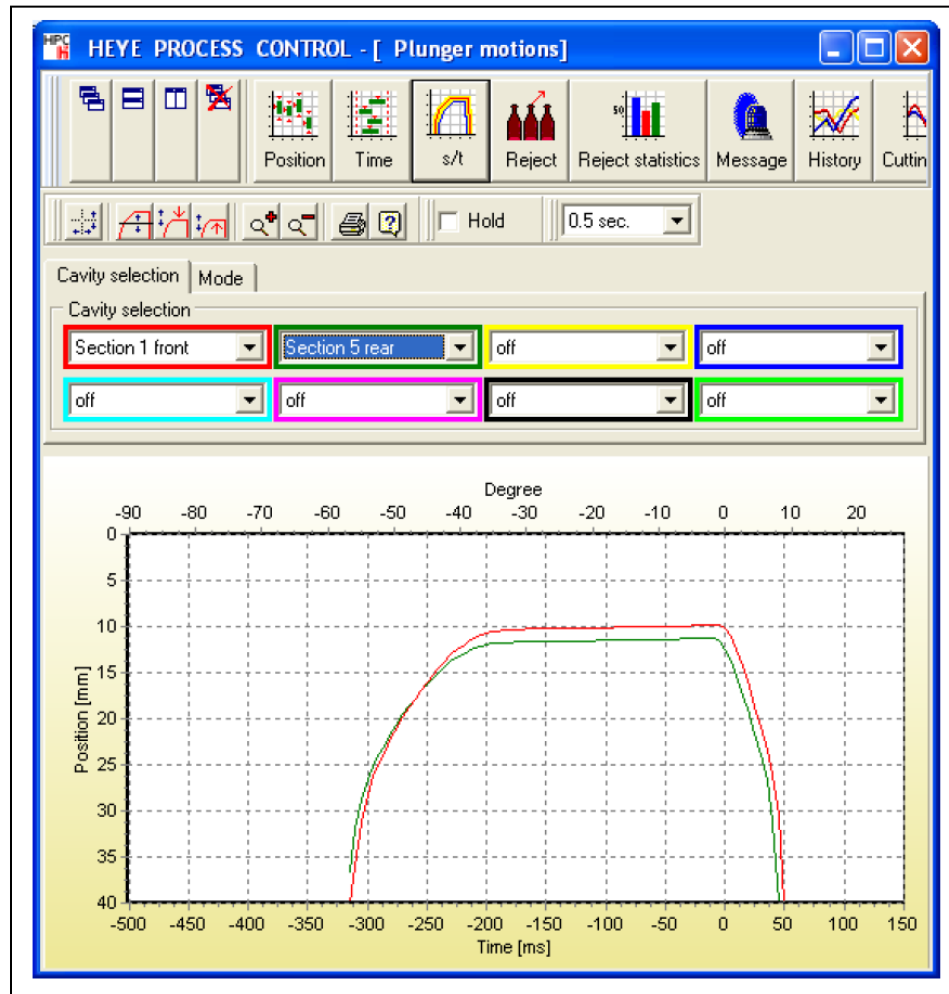
Advantages of the Heye Process Control

- Transparency in the production process
- Allows preventive maintenance
- Convenient operation and display of the production data

Information Display



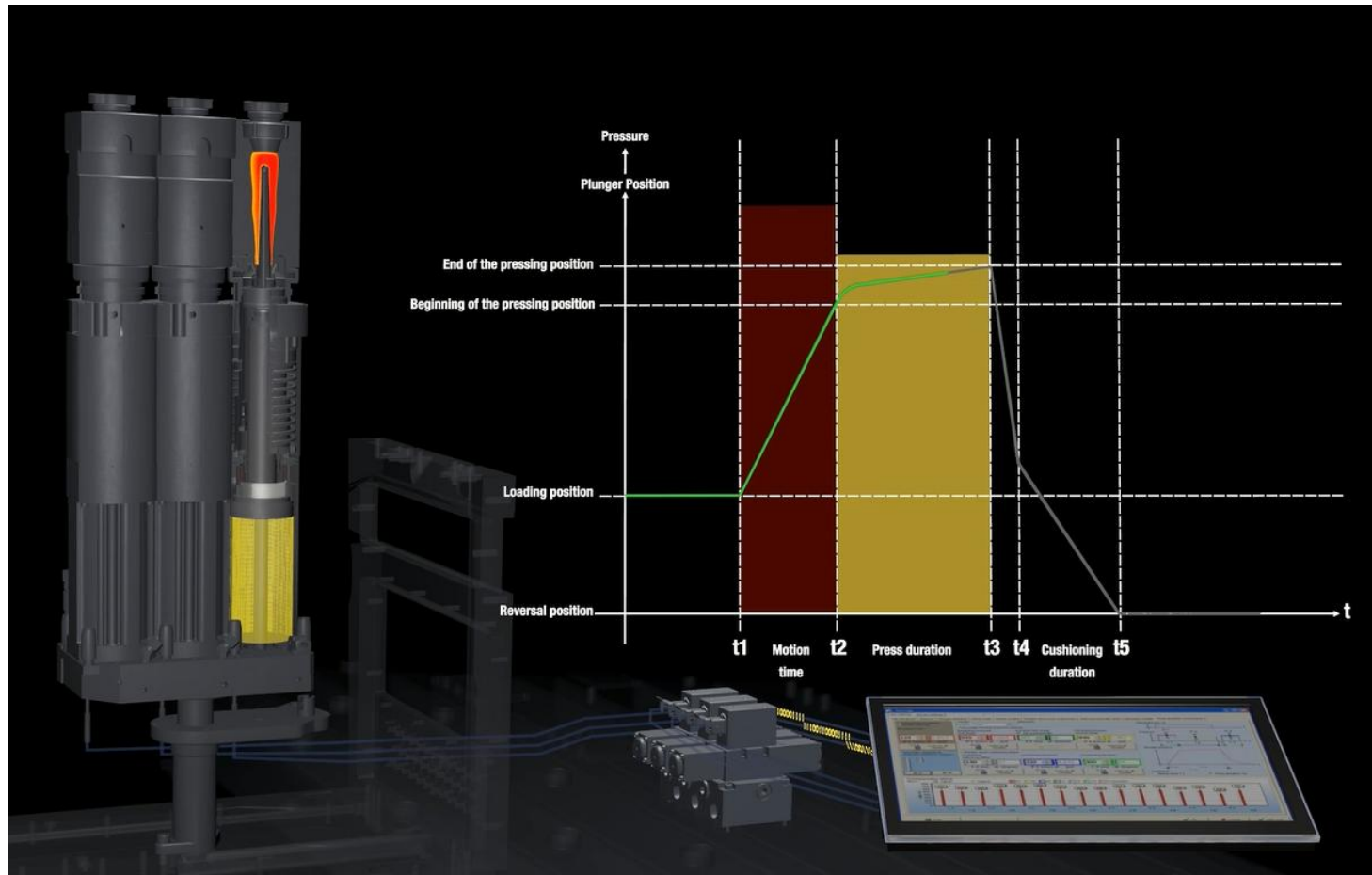
Ability to Compare Different Sections



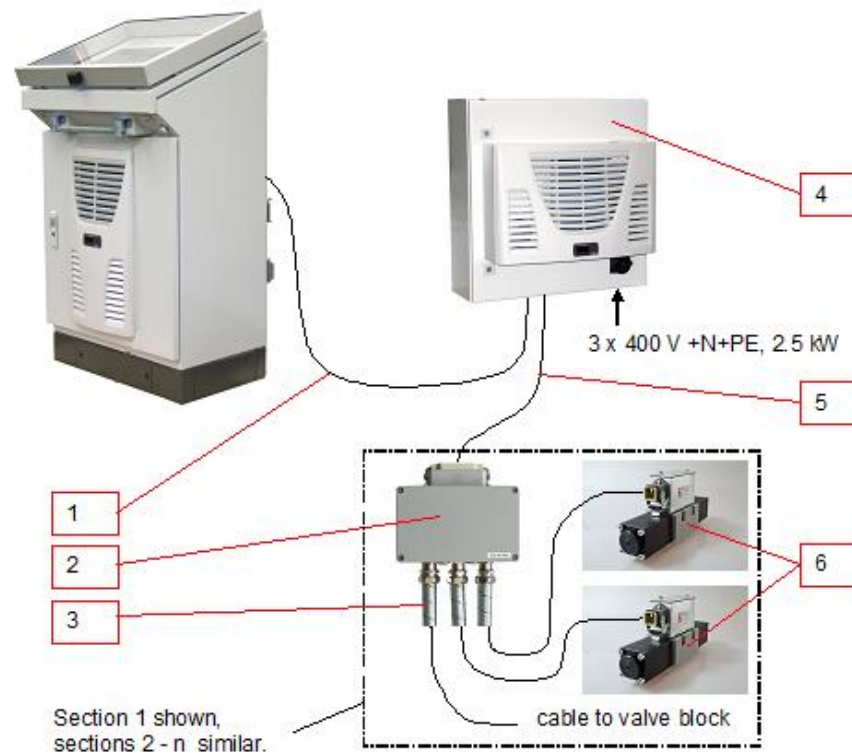
New Option

- What is the new option for our Process Control?
- **Press Duration Control**
- The change from the past is the ability to regulate more than just the working air for the plunger mechanism during the pressing process
- In the past the system worked with a constant stable pressure; today it's possible to control time and pressure

Press Duration Control



Components of the Press Duration Control

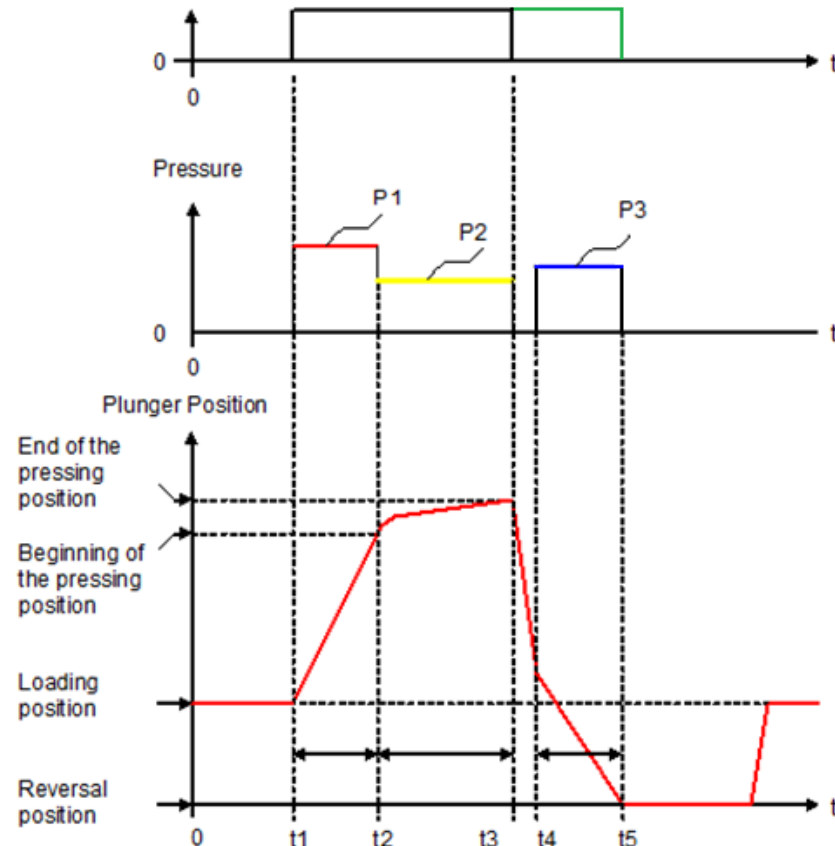


1. CAN-Network cable
2. Junction box (shown for DG)
3. Valve block cable
4. Cabinet Servo Valve Control
5. Cable valve control to junction box
6. Proportional Valve (one per cavity)

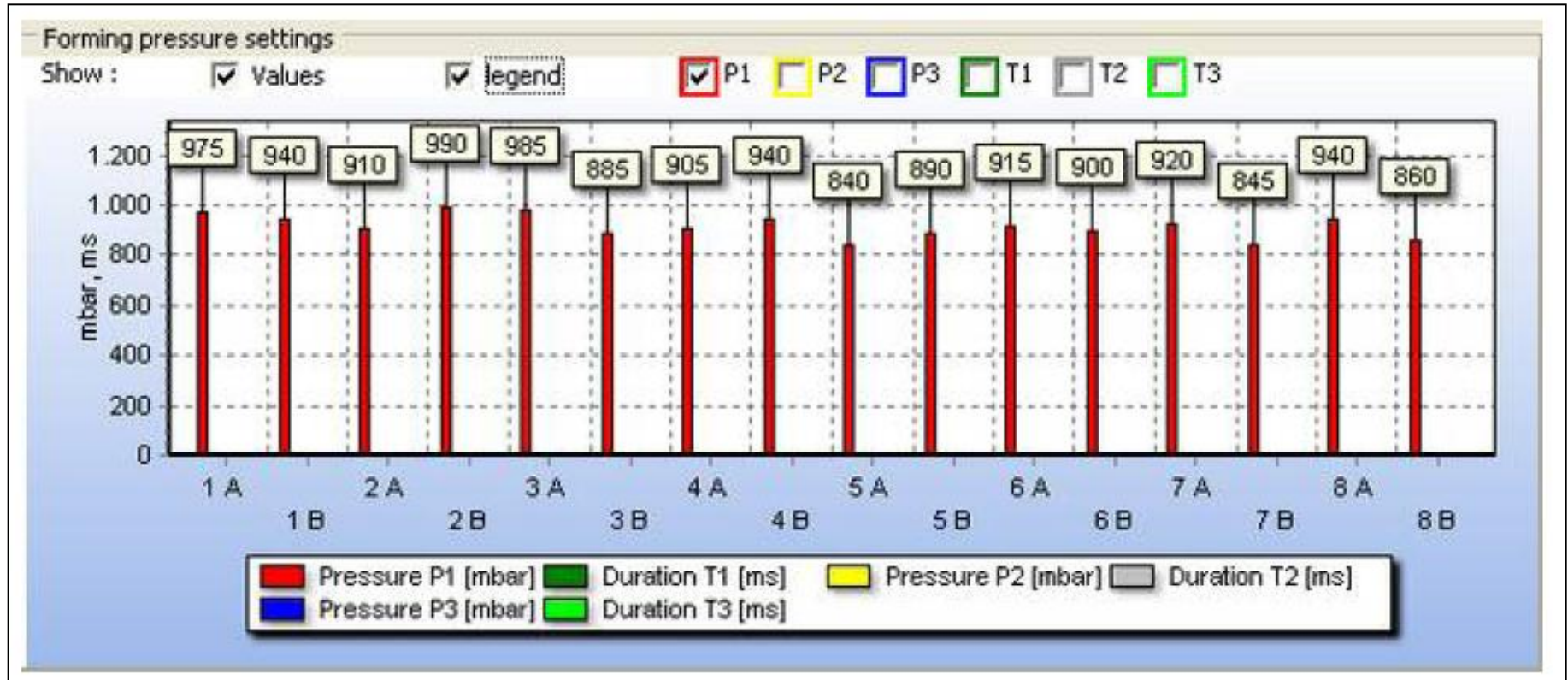
Definition of the Process

Forming Pressure Settings

- The Process Control System automatically calculates and enters the duration stage t_1 to t_2 from the signal “plunger up” and from the press duration set-point value



Overview of Pressure Data



Summary - Advantages

Product aspect

- Stable and consistent glass distribution
- Higher strength & less weight

Information aspect

- Real-time data and data archive
- Possibility for preventive maintenance
- Fine tuning of production process to gain maximum efficiency
- Fast and efficient job changes without long trial & error phase

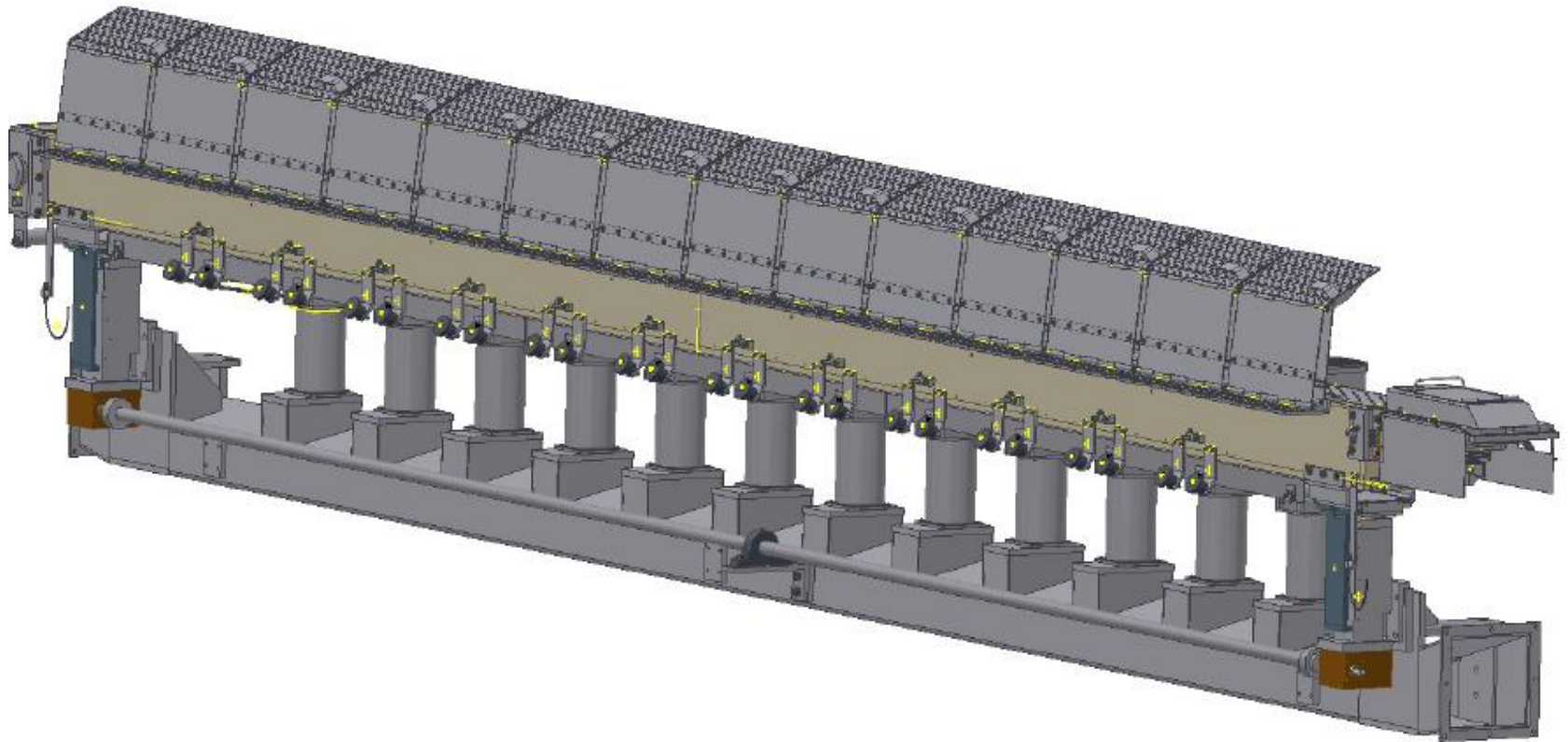
Press Duration Control

about 50 systems sold to date

- Anadolu Cam
- Ardagh Glass
- Bangkok Glass
- Cattorini
- O-I
- Duran Glass
- HNG
- Rigolleau
- Sivesa (Heineken)
- Vidrala
- Vitro
- Thüringer Behälterglas

Hot End Ware Handling at **Hi**SPEED

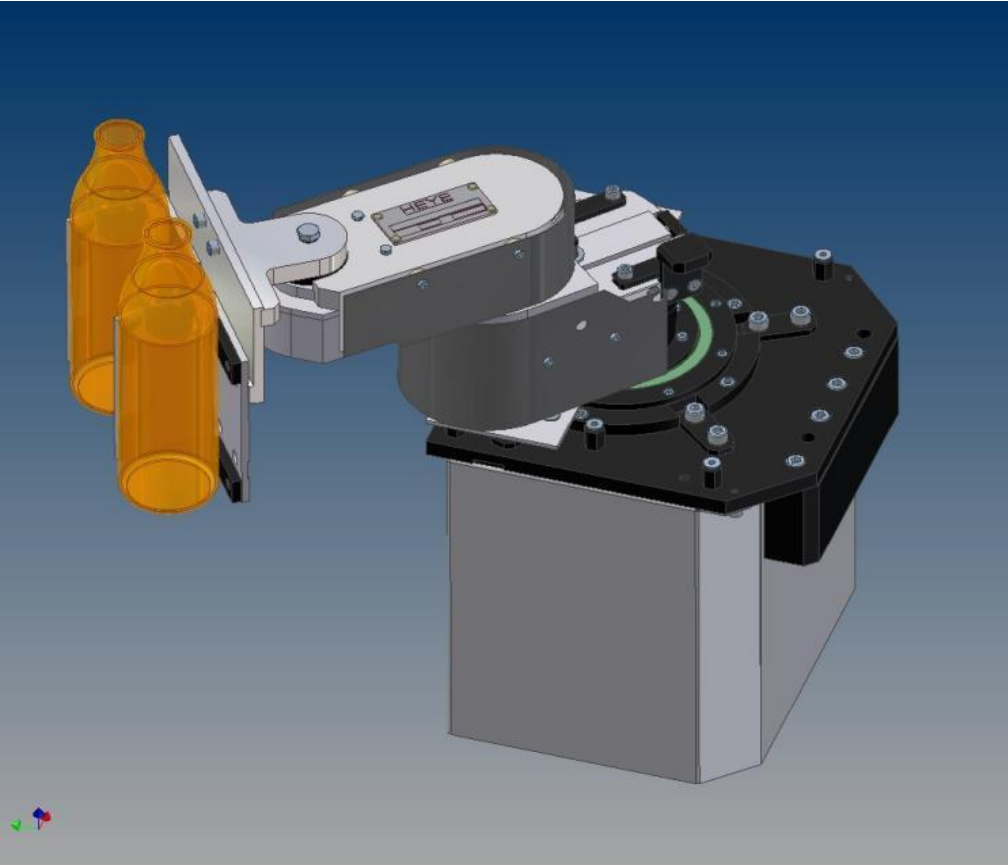
Machine conveyor with axial dead plate cooling



Machine conveyor with axial dead plate cooling



Servo E-Pusher, type 2155

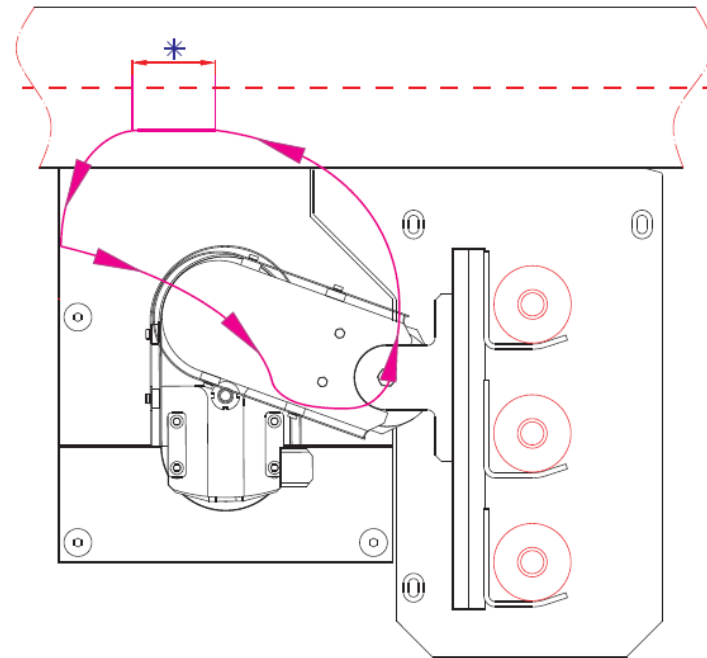


Advantages

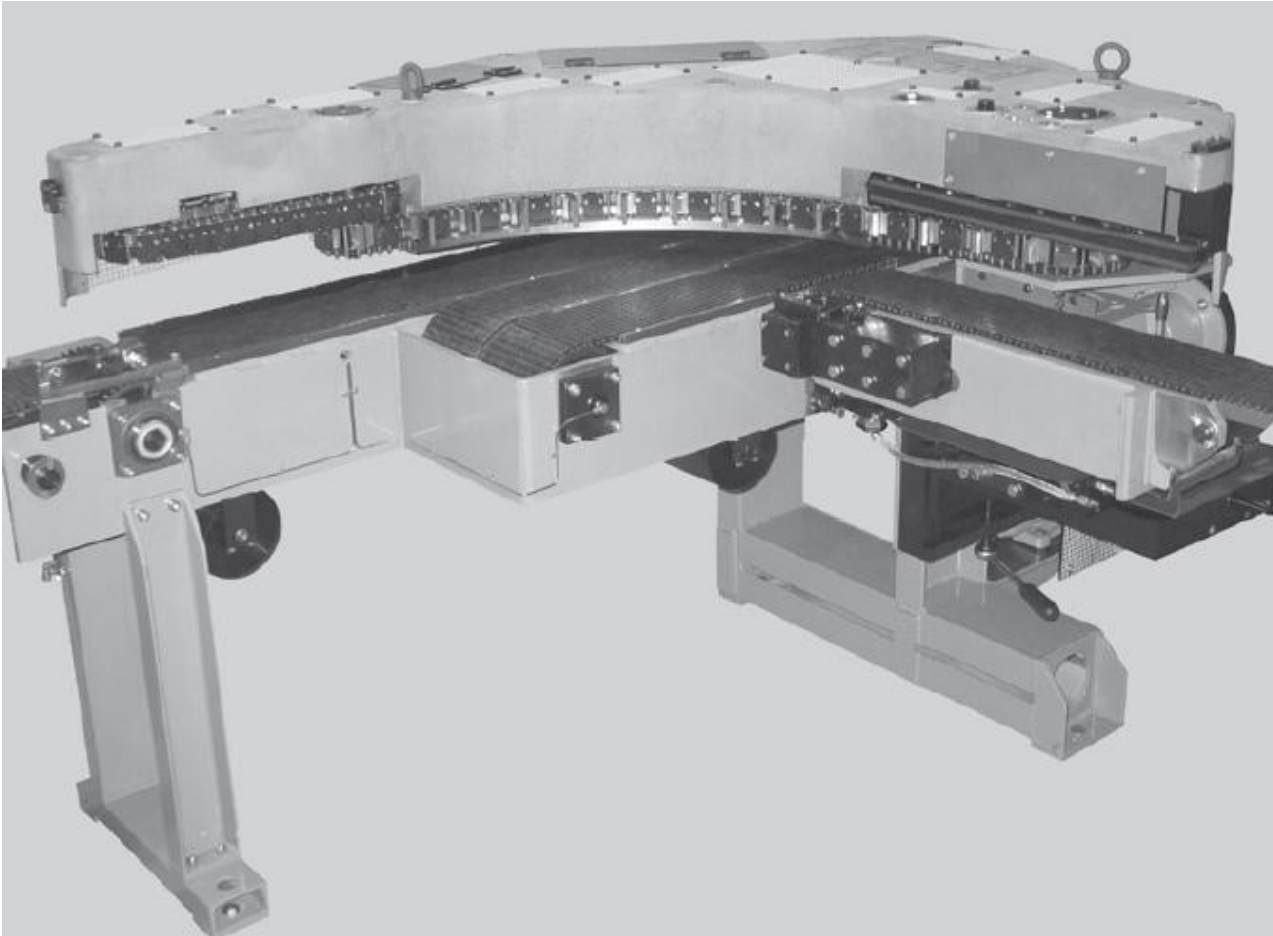
- Fully servo motor driven
- No compressed air
- Up to 80 m conveyor speed
- Reproducible motion profile
- Service reduced operation

Servo E-Pusher, type 2155

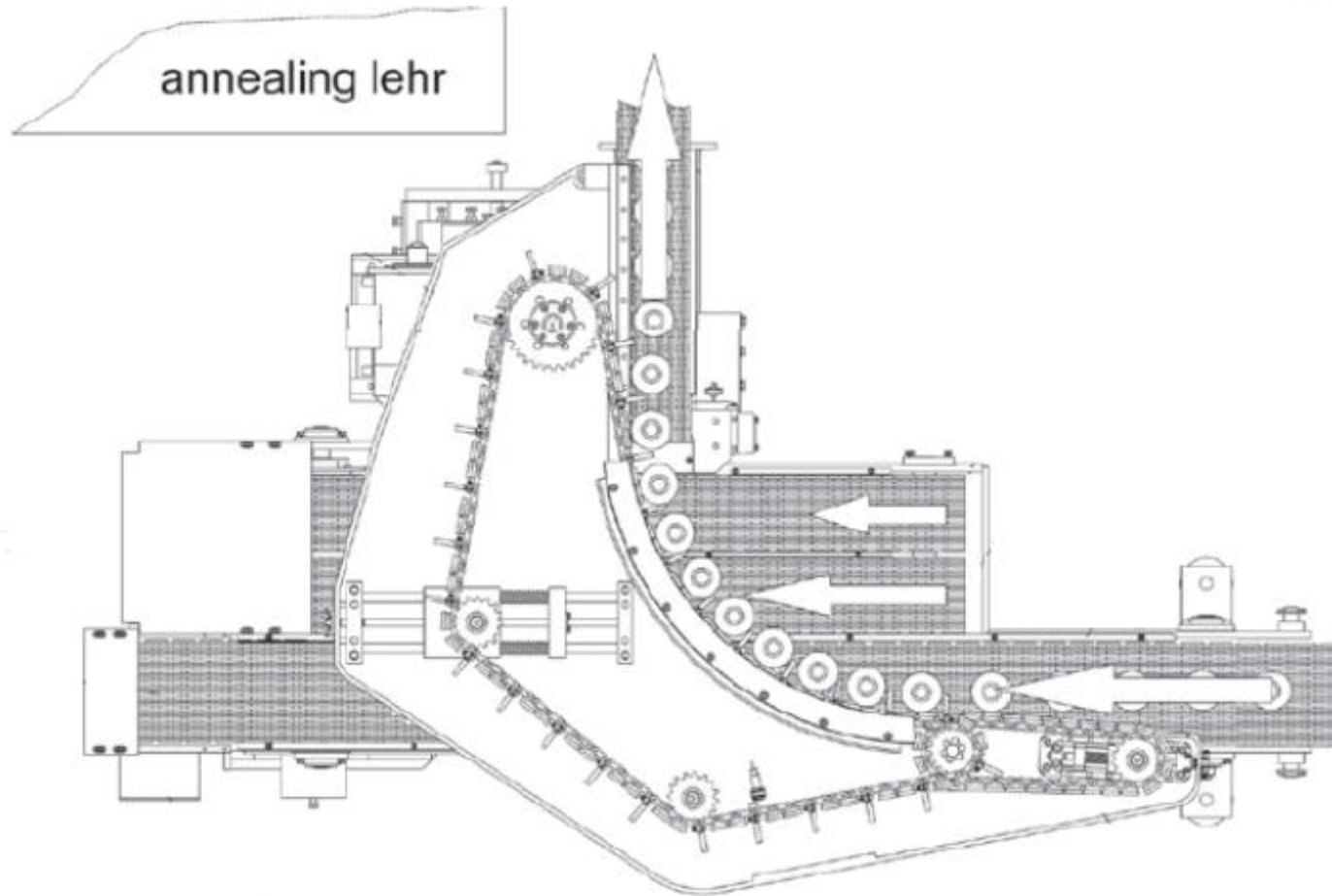
Motion Profile of the Pusher



Heye Ware Transfer up to 800 bpm



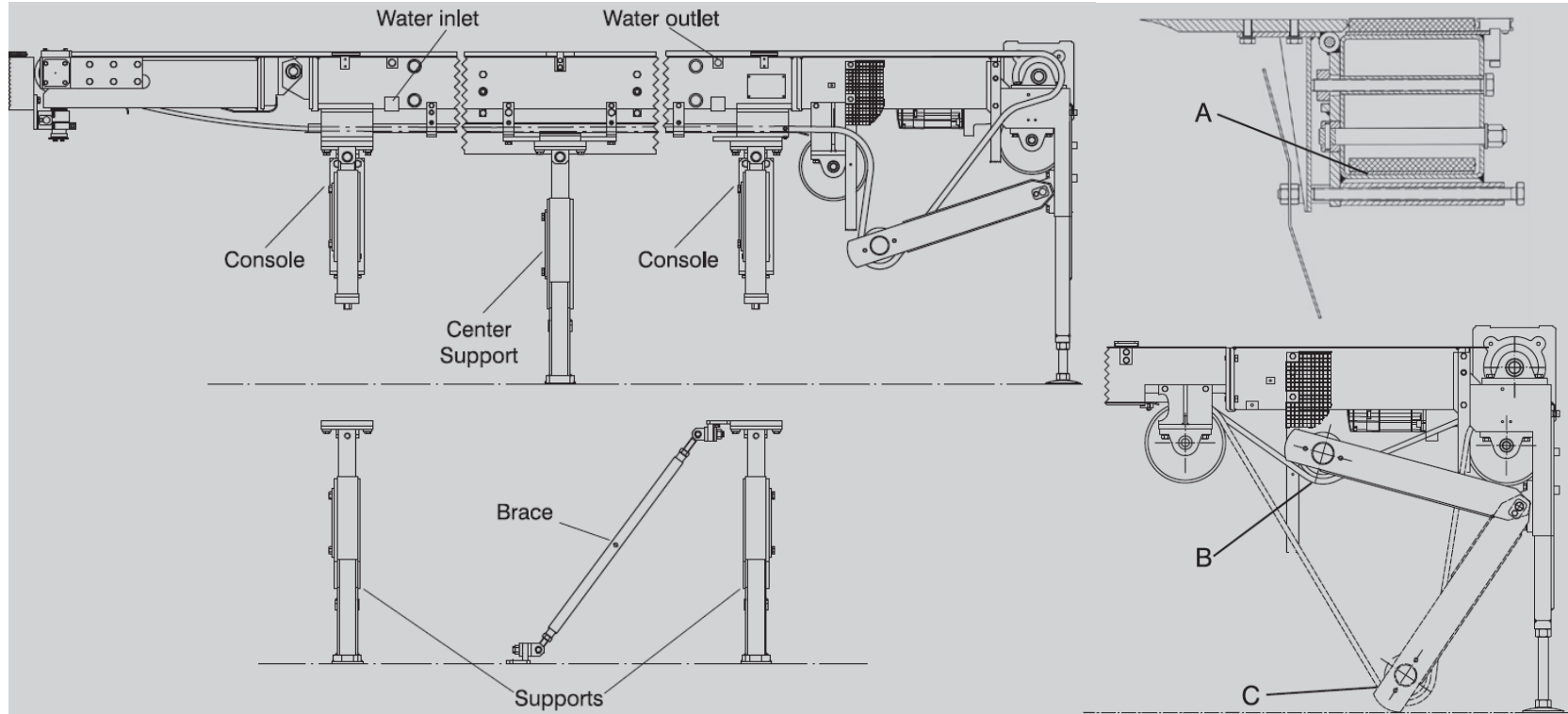
Different Chains with different Speed



Servo Lehr Loader 4206 (3 Axis)



Cross Conveyor 4217/ 4216





THANK YOU VERY MUCH!