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**LIFECYCLE
SOLUTIONS**

A row of amber glass bottles, likely for beer, standing on a conveyor belt in a factory setting. The bottles are in focus, with a blurred background showing more bottles and industrial equipment.

One Step Closer
to Autonomous
Glassmaking

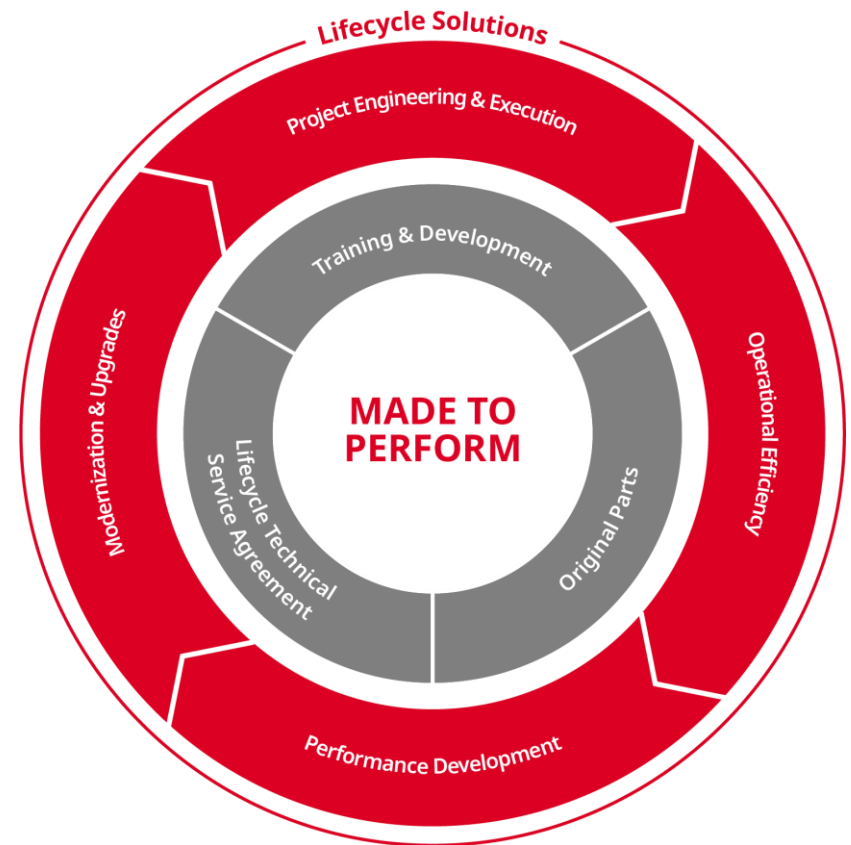
Our Lifecycle Philosophy

At Bucher Emhart Glass, we believe our role is about so much more than just cutting-edge technology. We believe in long-term partnerships. With our Lifecycle Solutions initiative, we want to make sure every customer gets the best from their investment by providing access to a full range of services, tools and resources when they need them most.

We proactively modernize production lines to ensure improvements to reliability, efficiency and ease of operation are constant, and our partners are never left behind.

That is why our products are designed with a retrofit and upgrade thought in mind.

LIFECYCLE SOLUTIONS



Forming Equipment	Page	Productivity	Ease of use	Autonomy	Production flexibility	Health & Safety	Data	Retrofit effort
								
		"Form more. Waste less"	"Make complexity simple"	"Set it. Trust it. Run it."	"Ready for every change, every time"	"Protect your workforce"	"Unlock the power behind your process"	"Future-proof your operations"
	SMARTFEEDER	✓		✓	✓			●○○
	570 Multi Drive Feeder	✓			✓			●○○
	Quick Change Orifice	✓	✓			✓		●○○
	575 Dual Drive Shear	✓			✓			●●○
	Bezier Delivery	✓			✓			●○○
	NIS	✓	✓		✓			
	AIS M	✓			✓			
	AIS QG 3"	✓			✓			
	Servo Twist AIS	✓	✓		✓			●●○
	AIS-M Blank Cooling Systems	✓			✓			●○○
	Roller Bearing Neckring	✓						●○○
	Blank Sider Barrier		✓			✓		●○○
	FlexLube 2		✓	✓			✓	●●○
	SEPL (NIS)	✓	✓		✓			●●○
	MCU / Utility Competence	✓	✓				✓	●●○
	SETO / SEI	✓	✓			✓		●○○
	VCD Tong Head	✓	✓		✓			●○○
	FlexStacker 2	✓	✓		✓			●●○

Automation & Data	Page	Productivity	Ease of use	Autonomy	Production flexibility	Health & Safety	Data	Retrofit effort
								
		"Form more. Waste less"	"Make complexity simple"	"Set it. Trust it. Run it."	"Ready for every change, every time"	"Protect your workforce"	"Unlock the power behind your process"	"Future-proof your operations"
	FlexIS 4	✓	✓			✓		●●●
	FlexFire 2	✓	✓		✓			●○○
	FlexIS Lineserver 3	✓					✓	●○○
	Control Center		✓				✓	●○○
	HEAT	✓	✓				✓	●○○
	ADI						✓	●○○
	GobRadar	✓		✓			✓	●○○
	PPC 2	✓	✓				✓	●○○
	FlexPressure System	✓						●●●
	SectionRadar	✓		✓		✓		●●○
	FlexRobot 2	✓	✓	✓				●●○
	Cooling Control	✓		✓				●○○
	Plunger Up Control	✓		✓				●○○
	Bottle Spacing Control	✓		✓				●○○
	Gob Control	✓	✓	✓				●○○
	ID Mark+	✓	✓				✓	●○○

Inspection Equipment	Page	Productivity	Ease of use	Autonomy	Production flexibility	Health & Safety	Data	Retrofit effort
								
		"Form more. Waste less"	"Make complexity simple"	"Set it. Trust it. Run it."	"Ready for every change, every time"	"Protect your workforce"	"Unlock the power behind your process"	"Future-proof your operations"
FleXinspect T		✓			✓			●●●
FleXinspect T180		✓			✓			●○○
FleXinspect M		✓			✓			●●●
FleXinspect B		✓		✓				●●○
FleXinspect C		✓		✓				●●○
Master Track		✓			✓		✓	●●●
ID Read			✓				✓	●●○
Vision Check		✓	✓					●●●
SmartInspect AI		✓	✓					●○○
High-Speed Squeezer Tester HST		✓				✓		●●●
Thread Inspection Device TID				✓	✓			●○○
Article Type Identifier ATI		✓		✓	✓			●●○
Container Separator CS2			✓		✓			●○○
High-speed Container Separator CS4			✓		✓			●○○
CSmulti			✓		✓			●○○
Container Alignment AL				✓	✓			●●○
Infeed Quality Monitor IQM		✓		✓				●●○
Wave Pusher WAP				✓	✓			●●○

01

Forming Equipment



SMARTFEEDER

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AUTONOMY

Full Gob Control

By having Feeder and shear parameters automatically adjusted via Gob Control Closed Loop to meet the gob forming needs.

Automated Gob Forming

Gob weight; Length and trajectory monitored and adjusted in real time section by section and cavity by cavity.

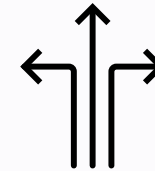


PRODUCTIVITY

Increased Stability

SMARTFEEDER, acting on the Feeder and Shear parameters keeps the gob forming allowing for increased process stability by:

- Compensating refractories wear
- Compensating glass homogeneity fluctuations
- Compensating gob elongation due to friction trough the delivery equipment
- Providing an enhanced gob loading



FLEXIBILITY

Faster Job Change

The gob control closed loop makes startup after job change faster and easier to perform.

Multi Gob Application

Multiple job can be run on the same line, weight variation up to 15% and gob length variation up to 10% can be set for multi article production or sampling.



UPGRADES: Limited to 90° shear Angle due to Multi Drive Feeder configuration.



570 Multi Drive Feeder

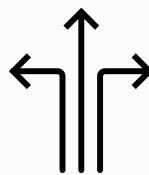
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PROCESS STABILITY

Enhanced Gob Forming

The 570 Multi Drive Servo Feeder Plunger provides for the possibility to move every single axis with a dedicated motion profile and stroke, allowing for an optimal gob shape definition by compensating the potential glass inhomogeneity in the refractory spout.



FLEXIBILITY

Modular Design

The modular design increases flexibility. Same components are used from single to quad gob allowing for quicker cavity conversion and spare parts optimization. As a standard only available for 90° LH & RH shear angles.



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UPGRADES: Limited to 90° shear Angle due to Multi Drive Feeder configuration.

Quick Change Orifice

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HEALTH & SAFETY

Enhanced Safety

keeping the operator far from the glass stream reduces the risks related to the orifice ring replacement procedure.

After preparing of the new refractory orifice the critical exchange is done pushing a button on the remote control.



EASE OF USE

Easier Orifice Ring Exchange

Operation can be done by one operator only and does not need experienced operators.

Faster Orifice Exchange

Operation results easier and faster, tube mechanism remains in the operating height resulting in a faster orifice ring exchange.



PRODUCTIVITY

Reduced Downtime

Orifice ring replacement can be done in half of the time needed by a conventional procedure.

Increased Productivity

Being easier and faster to perform, orifice rings can be replaced when needed instead of when strictly necessary providing enhanced process stability.



UPGRADES: Limited to 90° shear Angle due to Multi Drive Feeder configuration.



575 Dual Drive Shear

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PROCESS STABILITY

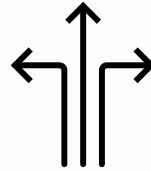
Enhanced Gob Loading

The independent linear motors allow for an optimal cut quality, minimizing the blade-to-glass contact time.

The independent shear arms motion results in enhanced gob shaping minimizing the drop guide disturbance.

Optimized Gob Cut

The two linear motors operation allows for a better gob cut control at cut rates up to 220 CPM reducing gob tilting and gob shape deformation.



FLEXIBILITY

Modularity

Each blade tension and drop guide unit is built in a modular gearbox that is configurable by combining gearboxes and spacers to suit the desired Center distance.

Standardization

575 shear mechanism can be installed on all existing spout casings.

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Forming Equipment - Gob forming

Bezier Delivery



PROCESS STABILITY

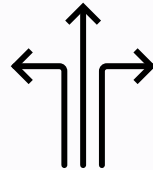
Enhanced Gob Loading

Advanced Bezier-profile deflectors minimize and balance radial forces during gob transfer, resulting in increased loading stability and consistent gob speed.

Reduced Gob Deformation

The optimized transition from troughs to deflectors reduces mechanical stress on the gob, providing:

- Lower impact forces
- Superior gob quality and shape control
- Longer coating lifetime and reduced maintenance requirements



FLEXIBILITY

Fast Cavity Conversions

With the universal trough brackets and the Bezier suspension design, the double gob setup is a subset of the Triple gob allowing for spare parts optimization.

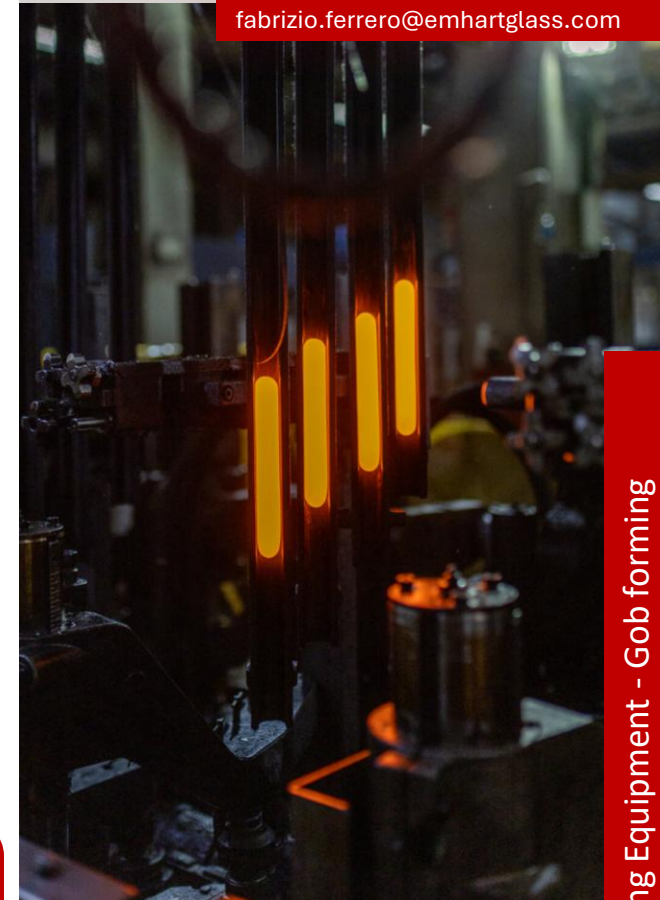
Cavity conversions results faster and easier to approach.



UPGRADES: Conversions from CC delivery to Bezier are made by replacing the suspension forks and the delivery equipment. Conversions from Suspended to Bezier Delivery need the replacement of the full delivery system including top beam

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PRODUCTIVITY

The Outperformer

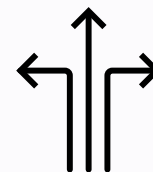
With the center distances of 5" TG and 95mm QG together with the conversion features DG<->TG<->QG make the NIS the most flexible high throughput machine available today.



EASE OF USE

Programmable

Servo-driven technology allows the NIS machine to achieve superior performance compared to conventional IS machines, providing precise motion control, consistent repeatability, and reduced setup times with enhanced accuracy.



FLEXIBILITY

Compatible

The platform is ready to accept all available end to end process products and for future autonomy solutions.

With its easily accessible clean design architecture and modular construction, the NIS is the ideal forming machine for high-volume but also ideal for fast and efficient job changes.

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Under development

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PRODUCTIVITY

The Outperformer

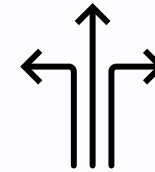
The NIS II features the new Servo Electric Plunger (SEPL), delivering precise, repeatable plunger motion. Integrated position feedback and automatic calibration eliminate manual plunger height adjustments, improving setup efficiency and process consistency.



EASE OF USE

Full Servo. Full Control.

Servo-driven technology allows the NIS II machine to achieve superior performance compared to conventional IS machines, providing precise motion control, consistent repeatability, and reduced setup times with enhanced accuracy.



FLEXIBILITY

Compatible

The platform is ready to accept all available end to end process products and for future autonomy solutions.

With its easily accessible clean design architecture and modular construction, the NIS II is the ideal forming machine for high-volume but also ideal for fast and efficient job changes.





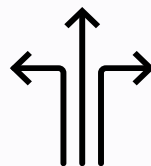
PRODUCTIVITY

Enhanced Blank Cooling

Blank side cooling control per semi-cavity with independent valves mounted on the M-Bracket is available for all the processes and cooling technologies.

Enhanced Performances

AIS M is equipped with Servo Invert, Servo Take Out (standard) and Servo Baffle and Servo Blow head (options) allowing for increased process stability and faster and optimized setup.



FLEXIBILITY

IS Molds Reusability

Easier transition from IS technology with the possibility of reusing the existing molds via Traveling Radial Cooling.

Extended Ware Range

SG (parallel or angular opening on Blow side), DG 6 ¼, TG 4 ¼; QG 3".





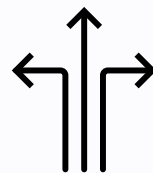
PROCESS STABILITY

Blank Side Cooling control

The optimized Blank Mold modular support has enhanced air channels providing for balanced air flow between the cavities.

Enhanced Performances

AIS Quad is equipped with Servo Invert, Servo Take Out, Servo Baffle and Servo Blow head allowing for small ware production, increased process stability and faster and optimized setup.



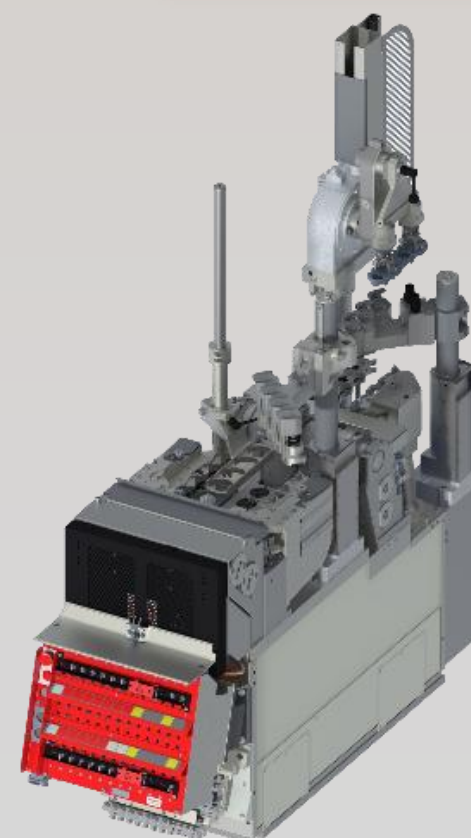
FLEXIBILITY

IS Molds Reusability

Easier transition from IS technology with the possibility of reusing the existing molds.

Small Ware Production

In its QG3" version, AIS M is extending its flexibility covering extra small ware productions. (Via Traveling Radial Cooling and Servo Electric Twist mechanisms).



Servo Twists AIS



PRODUCTIVITY

Increased Stability

Servo controlled motion is unaffected by ambient conditions. Increased straight stroke (80mm for both Baffle and Blow head) allows for increased production range.

Smooth Motion

Precise consistent motion for all mechanisms, unaffected by human interaction.

Enhanced Efficiency

Reduce compressed air consumption resulting in less noise and energy saving.



EASE OF USE

Easier and Faster Setup

Servo Baffle and Servo Blow head working parameters are stored in the job file and are resumed at the job change avoiding manual intervention on speed control.

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Forming Equipment - Container forming

AIS-M Blank Mold Cooling Systems

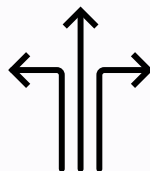


PRODUCTIVITY

Enhanced cooling performance

AIS-M Vertiflow Blank, Invertiflow, and Traveling radial cooling, provide for state-of-the-art 360° cooling with improved air flow and individual cavity control for all the cooling option

- VF Blank is ideal for B&B and WMPB
- IVF Blank is ideal for NNPB
- TRC Blank is the solution to reuse existing IS mold in AIS platform



FLEXIBILITY

Flexible Production

The extended cooling option choices allows for using the ideal cooling tailored on the container to be produced.

Mold Transition from IS

With the Traveling Radial Cooling Blank, every IS mold can be reused on AIS-M production without any need of mold alteration.

Allowing for a smooth transition from IS to AIS machines.

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Forming Equipment - Container forming

Roller Bearing Neck Ring



EASE OF USE

Self Centering

Neck ring mechanism is self centering between the inner sides of the bracket.

Improved Serviceability

The split gear design and the bracket independent caps simplify the mechanism maintenance and the original parts handling.



PRODUCTIVITY

Enhanced Performance

The two roller bearings ensure a smooth motion during the parison transfer from Blank to Blow side, reducing friction and dynamic loads.

Smooth Motion

Well balanced and smooth neck ring arm open and close motion.

Enhanced Sealing

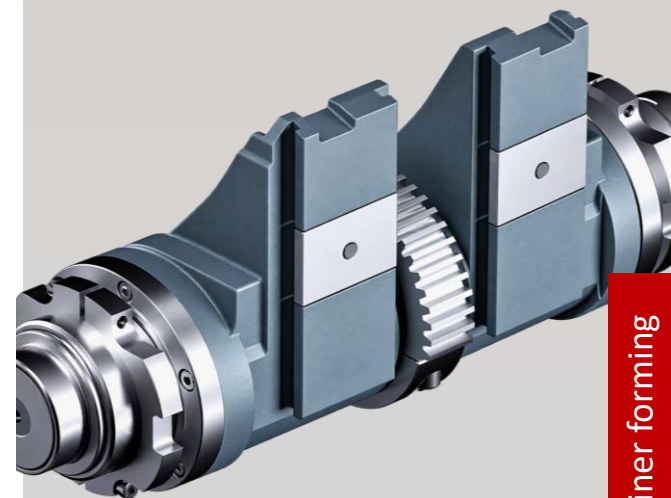
Well balanced and smooth neck ring arm open and close motion, with reduced leakages and consequently air consumption.



UPGRADES: Roller Bearing Neck Ring mechanism can be upgraded on all the Bucher Emhart Glass IS and AIS machines by installing the conversion kit (blow mold bracket caps + valve block arrangement)

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Blank Side Barrier



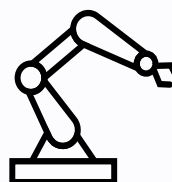
HEALTH & SAFETY

Enhanced Safety

The Blank side Barrier is designed to prevent unintended access to the blank side of the forming sections when they are running in automatic mode and to provide additional safety measures during blank manual swab operations.

Smooth Operations

The latest Blank Side Barrier design is mounting enhanced pneumatics and cylinders, granting smooth up/down movements and safe operations.



AUTONOMY

Equipment Integration

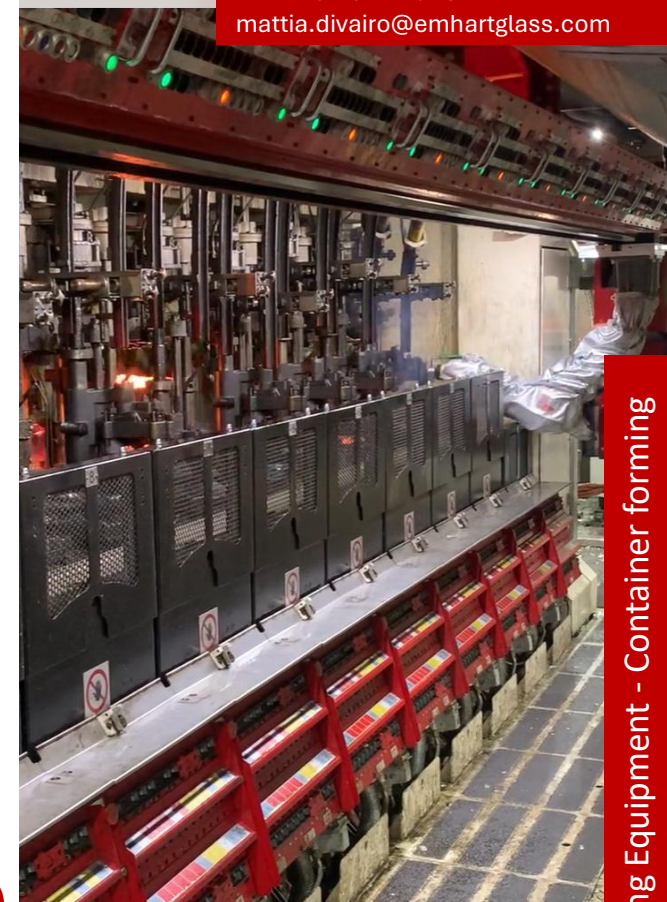
The Blank Side Barrier is designed to work with all the sensors/automation products in BEG portfolio that can be installed on the Blank Side, aiming to autonomous machines.



UPGRADES: Blank Side Barrier can be upgraded on all the Bucher Emhart Glass IS/AIS and NIS machines. Audit on site is normally recommended for old machines.

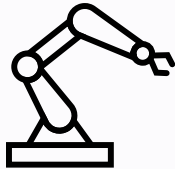
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Forming Equipment - Container forming

Under development



AUTONOMY

Fully Integrated

and controlled by our FlexIS 3 (UC2).

Monitored lubrication cycles and centralized warnings and alarms.

Protection of the equipment (Gob forming, Container forming and Ware handling).

Automatic oil tank refill option prepared.



EASE OF USE

Job Dependent

lubrication cycle intervals.

Customizable to the requirements from 5 zones to a maximum of 12 zones per line.

Simple and safe installation thanks to clearly defined interfaces and supplied cables.

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PRODUCTIVITY

Higher Pack to Melt Ratio

due to the very precise position control. Enables the quality monitoring of the parison forming process and the unprecedented close loop plunger process control.

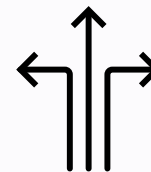
Increased plunger cooling capacity thanks to the improved air routing.



EASE OF USE

Programmable

The Servo-driven technology achieves superior performance, providing precise motion control, consistent repeatability, and reduced setup times with enhanced accuracy.



FLEXIBILITY

Identical

Quick change of plunger mechanism used for all center distance configurations QG, TG and DG.

Reduced Complexity

The effective plunger design enables a greatly simplified IS Section design without pneumatic lines and valves.

Set up and adjustment of loading position by the click of a button.



MCU / Utility Competence

Under development



PROCESS STABILITY

Reducing Variations

By ensuring the correct utility process variables, forming process disturbance variables can be eliminated, thus reducing variations and article defects.



EASE OF USE

Job Depended

Pressure, settings and limits.

Quality Control

for IAT / FAT and long-term Process capability. Potential to reduce energy consumption and fulfilment of ISO 50'001.



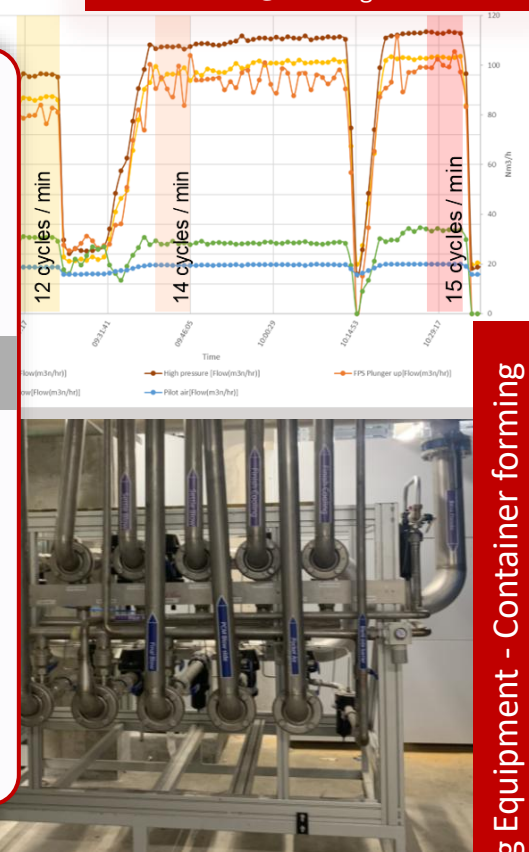
DATA / TRACEABILITY

Monitoring

of all relevant utility process parameters, early detection of deviations and changes.

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SETO / SEI



EASE OF USE

Easier and Faster Setup

Servo Electric Invert and Servo Electric Take out working parameters are stored in the job file and are resumed at the job change avoiding manual intervention on speed control.

Integrated Safety

Reduced operator's interaction with the machine result in a safer working environment (enables manual mode).



PRODUCTIVITY

Increased Stability

Servo controlled motion is unaffected by ambient conditions. Programmable speed profiles to optimize the parison transfer (SEI) and the glass bottle take-out time sequence.

Smooth Motion

Precise consistent motion for all mechanisms, unaffected by human interaction.

Enhanced Efficiency

Reduce compressed air consumption resulting in less noise and energy saving.

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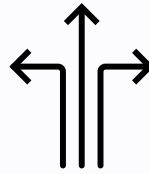
VCD Tong Head



PRODUCTIVITY

Reducing the Center Distance

using a Variable Center Distance (VCD) Tong Head can be game changer. This technology effectively reduces spacing between bottles during the take-out sequence, leading to decreased belt advance and less ware handling losses.



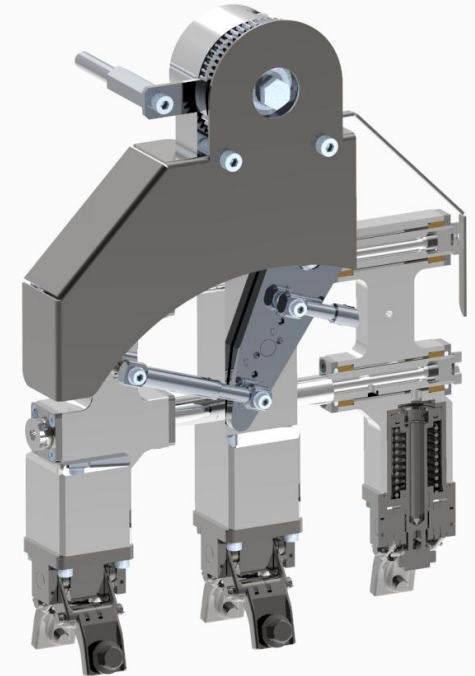
FLEXIBILITY

Modular Design

enables 3 respectively 4 pre-defined bottle spacing configurations in function of the article diameter and the potential to reduce the spacings.

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FLEXStacker 2



EASE OF USE

Seamless Setup & Job Changes

with fully integrated UI and controls into the FlexIS.

Intuitive Operation

by having the same operation philosophy as the FlexStacker 1.



PRODUCTIVITY

Improved Stacking Stability

with new enhanced and robust mechanics.

Compatible with Wide Lehrs

by allowing the use of up to 5.2m long airless pushbars with its standard 4-point liftframe.

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02

Automation & Data



EASE OF USE

Integrated

user interfaces for FlexLube2 and FlexStacker2. Settings stored in the job file.

Data Shared

between Hot End systems facilitates an improved user experience.

Remote Connection

possible to all Bucher Emhart Glass Hot End systems for diagnosis, maintenance and trouble shooting.



PRODUCTIVITY

Proven Technology

with more than 2000 systems in operation world-wide.

One Controls Platform

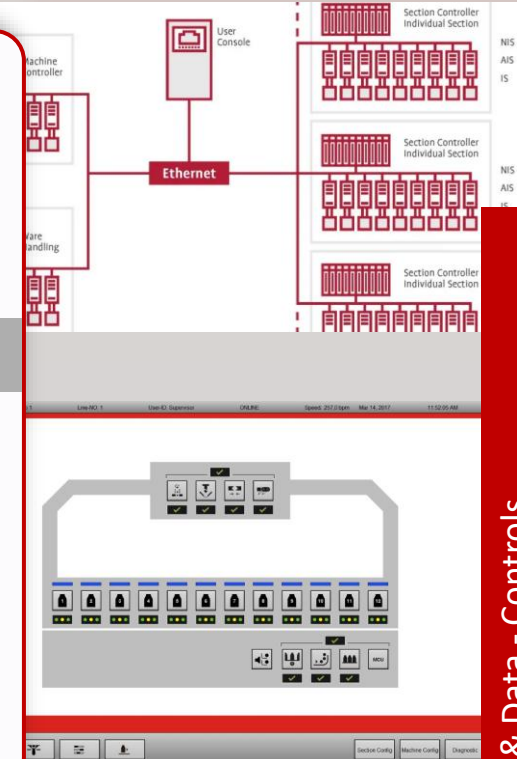
which operates all mechanisms from feeder to stacker.



HEALTH AND SAFETY

Simple and Safe

interaction between man-machine with manual mode and safe limited speed on Invert and Takeout mechanisms.



[illegible]

user interfaces in UC2 offering firing order export and import.

Run the application standalone to prepare any firing order.

The best firing order is automatically selected with dynamic search.



Select any belt advance that you wish and use it seamlessly in FlexIS.

Deactivate any section from the machine and remove them from the gob delivery.



by generating a firing order without these sections. No gob will be lost.

If more glass pull is needed, then use FlexFire2 in combination with FlexIS to cut more gobs than are being delivered.

FLEXIS Line server 3

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DATA

Store Backups

of articles and jobs from all FlexIS UC's in the plant.



PRODUCTIVITY

Offline Job Preparation

enables more efficient job changes.

Production Supervision

of the current job from client.

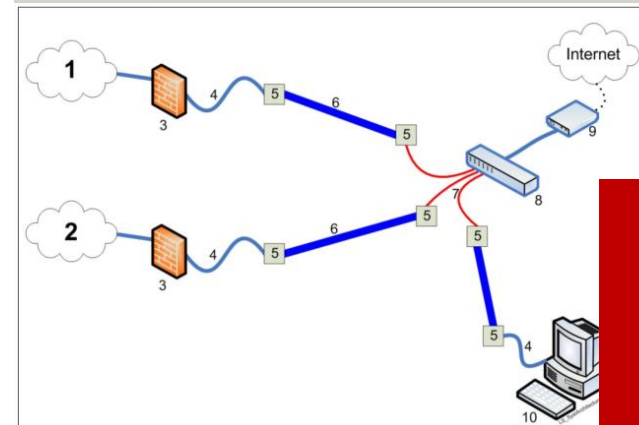


Figure 1: System architecture: example for 2 production lines

- | | |
|---|--------------------------------------|
| 1. Production line 1 network | 6. Installation cable (RJ45) |
| 2. Production line 2 network | 7. Patch cable (red connector, RJ45) |
| 3. Firewall FlexIS machine controller cabinet | 8. Layer-3 switch |
| 4. Blue patch cable (RJ45) | 9. Remote access device |
| 5. Connection | 10. Line Server computer |

Control Center



EASE OF USE

A Unique Point for all Applications

the control center provides applications that can be selected based on the objectives and capability of the plant.



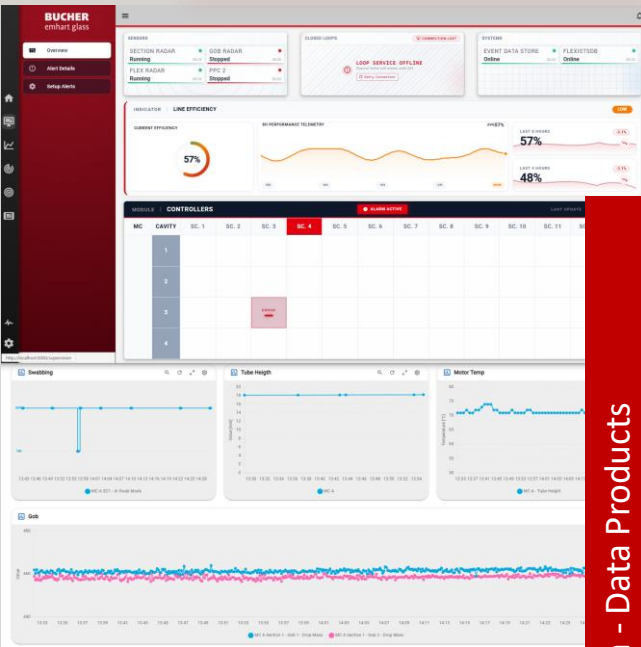
DATA

E2E

the control center sit at the hearth of the End to End by providing applications that leverage the data collected on the line from hot end to cold end to advice our customer on process related topics.

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DATA

E2E

application provides real time data, visualizations and analysis from the Cold End to the Hot End.

Data

like counters and percentages is supplemented by the underlying results from the inspections including trends and pictures.



EASE OF USE

Web Based User Interface

with self-explanatory screens provides instant insight into production performance.

Defect Advisory Tool

supports finding the remedy to production issues.



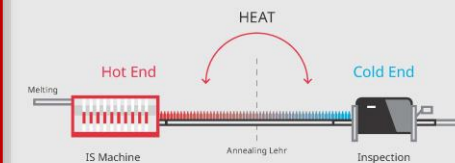
PRODUCTIVITY

Monitoring Losses

in real time improves the understanding of critical issues in the production process and drives collaboration between hot end and cold end.

Quicker Feedback

and informed action improve the forming process and pack to melt.



Advanced Data Interface



DATA

Access through REST API

a simple and standardized way to retrieve all Bucher Emhart Glass relevant data for further usage.

Data Analysis

by having access to all process data to provide a perfect foundation for data analysis.



TRACEABILITY

Trace

all data related to a produced container. Everything from the cutting operation until the inspection can be retrieved with the ADI provided the necessary equipment are available.

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Advanced Data Interface



Correlated data



Increased IT Security



Single point of access to ALL your data



AUTONOMY

Weight Stability

by closed loop control directly after gob is cut.

Provide Gob Measurements for the SMARTFEEDER

through Bucher Emhart Glass FlexTernal protocol.



PRODUCTIVITY

Faster Job Change

by stabilizing weight before loading into the machine. Multi gob production.

Compatible with any Container Forming Process

through weight and gob measurements captured immediately after gob cut.



DATA

First Data Source for each Gob

attached to the bottle ID and retrieved with the ADI.





DATA

Traceability

of weight, press curves and reject parameters.

Data extraction

possible via well known IT standards (REST API, JSON).



EASE OF USE

Modern user interface

build on the FlexIS UC2 architecture which provides the operator the same look and feel as when operating the machine.

Additional visualization clients

enables the use of a wireless tablet to access the UI in all areas around the machine.



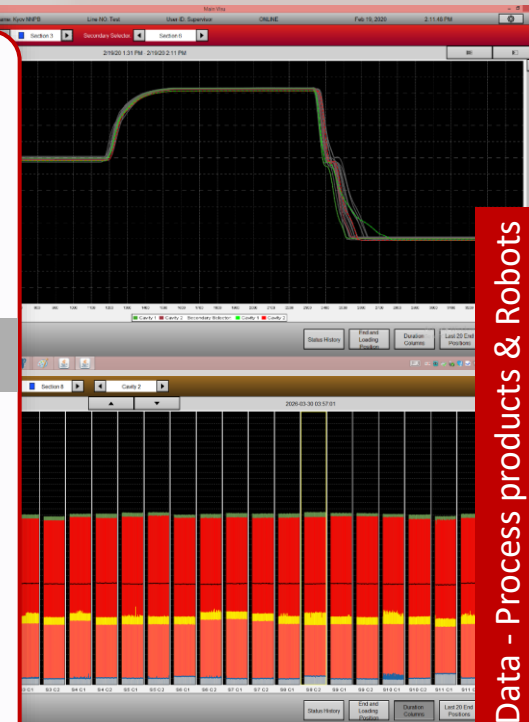
PRODUCTIVITY

Automatic rejection

of containers produced outside of limits in all forming processes.

Weight control

stabilizes the forming process in NNPB/PB.



FLEXPressure System



PRODUCTIVITY

Maximum Performance

enabled by custom-developed software designed exclusively for the machine's intended function.

Superior Accuracy

driven by the precise tuning of electronics and mechanics, ensuring stable pressure control, low oscillation, and fast, reliable transitions between pressure levels.



PRODUCTIVITY

Robust and Reliable

thanks to a durable drive system with direct-operated proportional solenoids for consistent performance.

Protected Valve Operation

with an optional external exhaust valve that helps keep dirt and contaminants away from the main valve.

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SECTION **R**adar

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AUTONOMY

Free-up Staff Time

by having automatic Temperature measurements every cycle without moving parts and low maintenance.

Increase Section Uptime

by reacting before a jam occurs.



PROCESS STABILITY

Stabilize the Process

by having consistent blank mold temperature throughout the day.

Detect Recurring Problem Areas

by having access to historic jam data per section.



HEALTH & SAFETY

Facilitate Jam Prevention

by measuring some of the key gob loading parameters that correlate with a high jam-up probability.

Reduced Human Interaction

on the forming machine.



Ready for all **AIS** & **NIS**. Compatibility with **IS** under development.

FLEXRobot 2

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EASE OF USE

One Interface

for forming and swabbing operations, enabling operators to work entirely within FlexIS for simpler operation, lower training effort, and complete process visibility.

One Platform

for control, diagnostics, and data, with FlexRobot 2 control fully integrated into FlexIS.



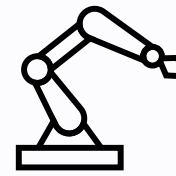
PRODUCTIVITY

Improved Synchronization

between swabbing and forming enables more consistent process execution and increased production stability, while integrated data supports continuous improvement and informed decision-making.

Centralized Configuration

manages swabbing and forming settings in a single environment while capturing swabbing data within the FlexIS ecosystem.



AUTONOMY

Less Manual Intervention

through automated swabbing, reducing operator exposure to repetitive and undesirable tasks.

Advanced Sensor System

enables FlexRobot 2 to operate autonomously while maintaining a safe and collaborative workspace.



Cooling Control



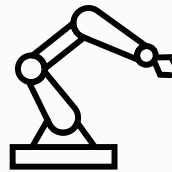
PRODUCTIVITY

Higher quality

from the production line by removing thermal variation on blanks, plungers and neckrings.

Improved Start-ups

after job changes as the system automatically stabilizes the operating temperature of the mold equipment.



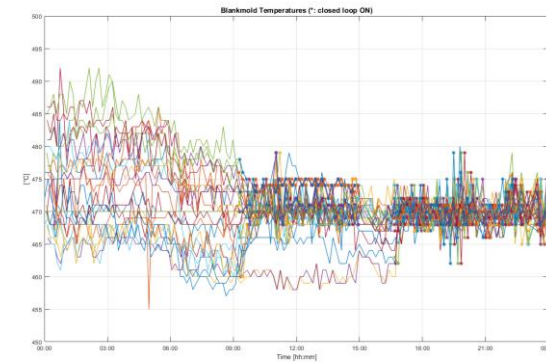
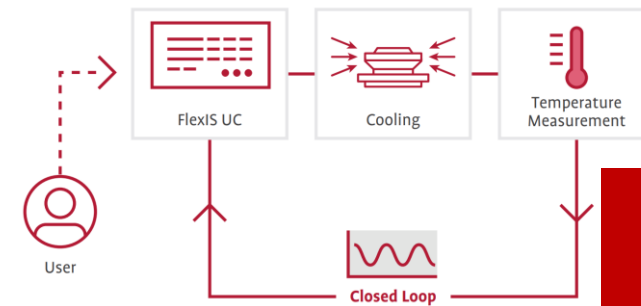
AUTONOMY

Less Human Interaction

on the forming machine due to automatic regulation.

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Plunger Up Control



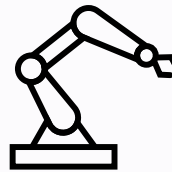
PRODUCTIVITY

Higher Quality

containers by eliminating variation in dwell time across all cavities and time.

Quicker Start-ups

after job changes as the system automatically adjusts the plunger motion.



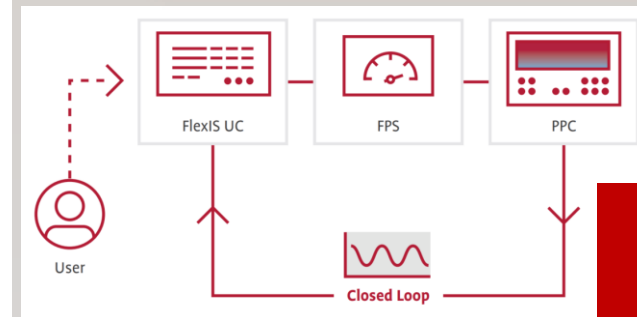
AUTONOMY

Less Human Interaction

on the forming machine due to automatic regulation.

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Bottle Spacing Control



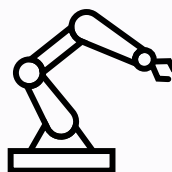
PRODUCTIVITY

Improved Ware Distribution

on the belt by automatic adjustment of pusher parameters.

Quicker Start-ups

after job changes as the system automatically adjusts the pushout timing and related parameters.



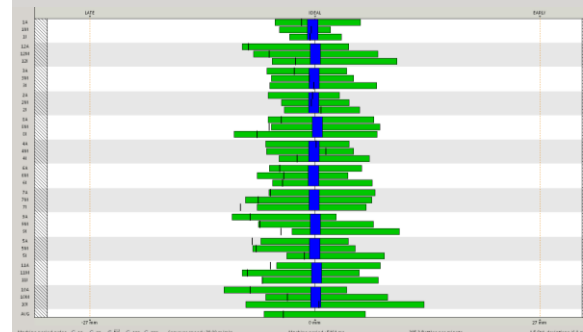
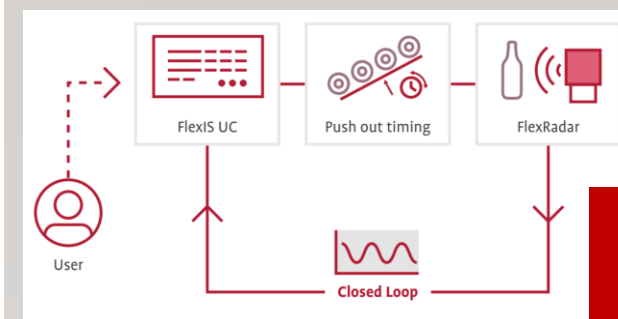
AUTONOMY

Less Human Interaction

on the forming machine due to automatic adjustment.

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Gob Control

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PRODUCTIVITY

Higher output

by eliminating variation in gob weight and length for single and multi weight production.

Quicker Start-ups

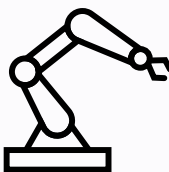
after job changes as the system automatically adjusts the feeder parameters to achieve the desired gob weight and length pattern.



EASE OF USE

Process Related Setup

with setting the target weight and length pattern instead of dozens of feeder and shear parameters.



AUTONOMY

Less Human Interaction

on the forming machine due to automatic adjustment and regulation.



Section	1	2	3	4	5	6	7	8	9	10
Gob Number	1	2	3	4	5	6	7	8	9	10
Weight Setpoint [g]	290.0	290.0	290.0	290.0	290.0	290.0	290.0	290.0	290.0	290.0
Weight Average [g]	291.0	291.5	291.5	290.8	291.1	291.1	291.0	291.0	291.0	291.0
308.0										
Weight [g]										
287.0										



Requires GobRadar. Compatible with single drive feeder and shear.

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DATA

Global Traceability,

data-driven analysis, and closed loop control between the hot end and the cold end.

Data Matrix Code for Machine Readability

enable complete production records for each individual container to be stored and retrieved from a database.



EASE OF USE

Simplified Maintenance and Serviceability

reduce downtime and make routine tasks faster and easier, helping maximize system performance and lifetime.

Optimized Cabinet Design

improves equipment accessibility and environmental protection while the new laser system eliminates the need for an articulated arm.



PRODUCTIVITY

Higher Output

enabled by intelligent mold reject management and simplified re-sorting of quarantined products.

Permanent Marking

of production time, section, and cavity information directly at the hot end.

Intelligent mold reject and complete production records requires **ID READ**



03

Inspection Equipment

FLEXINSPECT T

GENERATION III

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EASE OF USE

Servo Motion

All motions are precisely controlled with servo motors to provide reliable accurate and repeatable movements to ensure the best container handling.

Robust Mechanical Design

The rugged design of the FlexInspect T enables high-speed operation without compromising the integrity of the inspection devices.



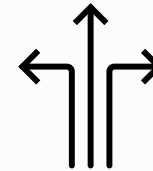
PROCESS STABILITY

Mold Cavity Correlation

By correlating the inspection results with the cavity information problematic sections and hardware can be quickly identified and corrected.

Matrix Code Correlation

Assigning inspection results to the containers unique ID #, provides quality information in addition to the forming conditions for each container (E2E).



FLEXIBILITY

Configurable Inspection

The modular design of the FlexInspect inspection options allow machines to be customized for optimal inspection performance.

Machine Link

Working as the "Master" machine the Flex T communicates with multiple machines on a line sharing information about the product quality and machine operational status.





EASE OF USE

Servo Motion

All motions are precisely controlled with servo motors to provide reliable accurate and repeatable movements to ensure the best container handling.

Robust Mechanical Design

The rugged design of the FlexInspect T enables high-speed operation without compromising the integrity of the inspection devices.



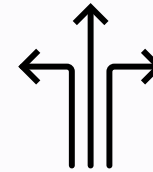
PROCESS STABILITY

Mold Cavity Correlation

Correlating the inspection results with the cavity information, problematic sections and hardware can be quickly identified and corrected.

Matrix Code Correlation

Assigning inspection results to the containers unique ID #, provides quality information in addition to the forming conditions for each container (E2E).



FLEXIBILITY

Unique Layout "Footprint"

The design of the T180 allows for drop-in replacement of FP machines without conveying configuration modifications, while providing all required inspections.

Seamless Integration

The Flex T180 emulates the FP communication protocol, exporting valuable statistical data to existing plant information systems (PIC / EASIER).



FLEXINSPECT M

GENERATION III

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EASE OF USE

Servo Motion

All motions are precisely controlled with servo motors to provide reliable accurate and repeatable movements to ensure the best container handling.

Robust Mechanical Design

The rugged design of the FleXinspect M enables high-speed operation without compromising the integrity of the inspection devices.



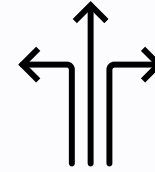
PROCESS STABILITY

Mold Cavity Correlation

By correlating the inspection results with the cavity information problematic sections and hardware can be quickly identified and corrected.

Matrix Code Correlation

Assigning inspection results to the containers unique ID #, provides quality information in addition to the forming conditions for each container (E2E).



FLEXIBILITY

Configurable Inspection

The modular design of the FleXinspect inspection options allow machines to be customized for optimal performance

Machine Link

Working as the “Master” machine the FleX T communicates with multiple machines on a line sharing information about the product quality and machine operational status.





EASE OF USE

Servo Motion

All motions are precisely controlled with servo motors to provide reliable accurate and repeatable movements to ensure the best container handling.

Robust Mechanical Design

The rugged design of the FlexInspect T enables high-speed operation without compromising the integrity of the inspection devices.



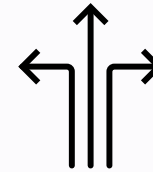
PROCESS STABILITY

Mold Cavity Correlation

By correlating the inspection results with the cavity information problematic sections and hardware can be quickly identified and corrected.

Matrix Code Correlation

Assigning inspection results to the containers unique ID #, provides quality information in addition to the forming conditions for each container (E2E).



FLEXIBILITY

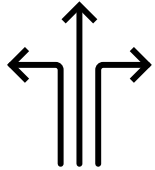
Configurable Inspection

The modular design of the FlexInspect inspection options allow machines to be customized for optimal inspection performance.

Machine Link

Working as the "Master" machine the Flex T communicates with multiple machines on a line sharing information about the product quality and machine operational status.





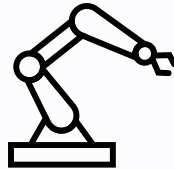
FLEXIBILITY

Sealed Dust Proof Optics

Protects the precision optics from contamination while eliminating the potential of mis-adjustment during maintenance.

Motorized Adjustments

Provides repeatable servo positioning for all optical and handling components that are recalled during job changes.



AUTONOMY

Mold Cavity Correlation

By correlating the inspection results with the cavity information problematic sections and hardware can be quickly identified and corrected.

AI Defect Classifier

Automatic image setup with Ai defect classification tools eliminates the need for skilled operators making fine adjustments.



PROCESS STABILITY

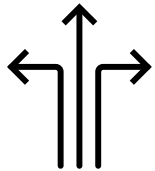
Repeatable Job Setup

Using predefined Ai defect classifiers and automatic image adjustment ensures all machines are setup and inspecting at the same level.

Increased Pack to Melt

Accurate reporting of the defects being produced facilitates the corrective actions needed to reduce ware losses.





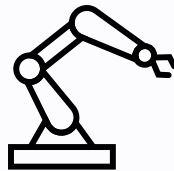
FLEXIBILITY

Sealed Dust Proof Optics

Protects the precision optics from contamination while eliminating the potential of mis-adjustment during maintenance.

Specialized Optical Path

Delivers uniformed images from all camera sets guaranteeing 360° of inspection coverage for all containers.



AUTONOMY

Self Adjusting Sidewall

Performs optical setups and applies defect classification tools ensuring the setups are accurate and consistent at the click of a button.

AI Defect Classifier

Automatic image setup with Ai defect classification tools eliminates the need for skilled operators making fine adjustments.



PROCESS STABILITY

Repeatable Job Setup

Using predefined Ai defect classifiers and automatic image adjustment ensures that all machines are setup and inspecting at the same level.

Increased Pack to Melt

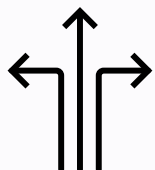
Accurate reporting of the defects being produced facilitates the corrective actions needed to reduce ware losses.



Master Track

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PM – Gustavo Sousa
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FLEXIBILITY

Machine Link

Using the power of connectivity, multiple machines on a line now operate as one sharing information about the product quality and machine status.

Space Savings

By design Master Track lines are shorter (<10 meter).



PRODUCTIVITY

Getting the Full Picture

By compiling all inspections results prior to the articles removal from the production line, ensures that no defect information goes undetected, and corrective actions can be taken.

Minimize Losses

Using the detailed quality information from all inspection devices, enables plants to react and correct process conditions faster.



TRACEABILITY

Traceability

Only with Master Track do you have a complete understanding of a container's quality level, versus its production parameters.





TRACEABILITY

The Solution

Real time code reader that provides all necessary data related to full origine of container. From leer to pallet .

First Tool to

easily identify containers in case of recall while providing a bridge between production and quality department



EASE OF USE

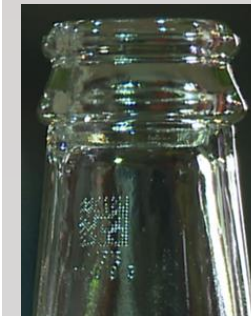
Dedicated App for any Mobile Device

Download the app and read data matrix codes printed on container.

Intelligent mold reject and complete production records requires  MARK+

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Vision Check

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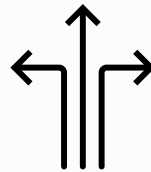
EASE OF USE

Fully Motorized Optics

position all inspection relevant components without the need of any manual adjustments .

Predefined ROI

based on matrix camera imaging allow simple inspection area placement.



FLEXIBILITY

Repeatability

of inspection setups through all production lines and the complete range of products.

Advanced Processing

of image data finds defects with highest reliability and reduces false rejects.



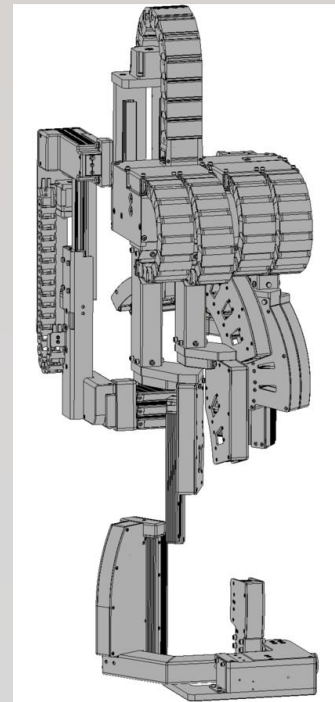
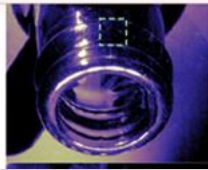
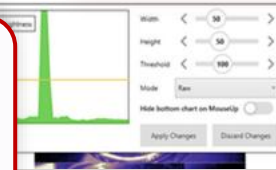
PRODUCTIVITY

Minimal Job Change Times

with all necessary job data stored and reactivated with just a few clicks.

Satellite Cameras

to close the gaps in inspection coverage and react to complicated container geometries.



SmartInspect AI



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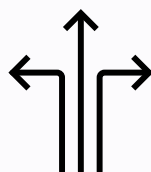
EASE OF USE

Simplified Setup

paired with reliable defect detection with just a few clicks and without specialized zones or sending samples for external training of AI.

Clear Structures

and minimal set of parameters with intuitive feedback allow precise settings even for unexperienced technicians.



FLEXIBILITY

AI Based Inspection

consists of predefined defects based on millions of trained data points.

Improved Classification

of rejection causes offers a clear view of process quality.



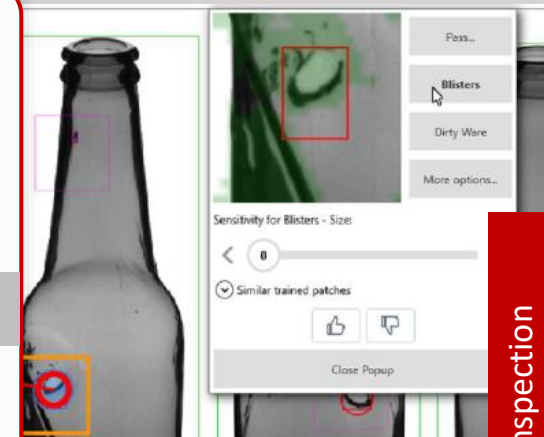
PRODUCTIVITY

Plant Wide Quality

with synchronization of job data and common defects catalogue shared between production lines.

Maximized Inspection Coverage

combined with minimized false rejects results in better quality and higher pack to melt.



High-Speed Squeezer Tester

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EASE OF USE

Modern Electrical Design

The servo driven HST incorporates the latest in EtherCAT technology allowing seamless integration with Gen III inspection equipment.

Modular Design

The HST can be used stand-alone or integrated with a belt spacer and ware transporting device controlled from a common interface.



PROCESS STABILITY

Protection Device

The HST removes structurally weak containers from the line that could break and damage downstream equipment.

Quality Indicator

Monitoring losses from the HST helps identify process related quality issues that may cause breakage at the filling plants.



HEALTH & SAFETY

Safety Entrapment Tunnels

protect operators by preventing access to dangerous moving parts within the machine.

Fully Interlocked Guarding

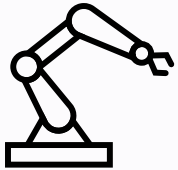
prevents machine operation when any of the safety covers or doors are not secured.



Thread Inspection Device

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AUTONOMY

AI Technology

delivers ease of setup resulting in reduced job change times without compromising critical defect detection.

Four Dedicated Cameras

guarantee 360 degree inspection coverage of the entire finish without contacting the container.



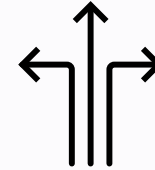
EASE OF USE

AI Based Inspection

visually inspects the difficult finish area (threads) of the container using Ai that could not be detected with conventional inspection devices.

Common Defect Database

providing consistent setups across multiple machines on the same IS line, multiple lines within a factory, and across multiple factories within a glass group.



FLEXIBILITY

FleXinspect Connectivity

minimizes footprint and complexity while improving the ease of use when integrated with other FleXinspect products.

Machine Link Compatible

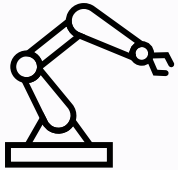
to exchanges key data and line flow information with other FleXinspect products.



Article Type Identifier

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AUTONOMY

High Resolution Line Scan Cameras

Provides non-contact container images used to determine the containers orientation or product type.

Optional Top-Down Camera

identifies container orientation by looking from above to identify unique features.



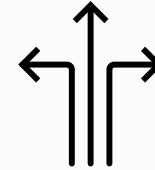
PRODUCTIVITY

Container Orientation

Accurate orientation is accomplished when combined with the “Container Aligner” (AL) which can position the container for optimized inspection coverage or alignment for final packaging.

Multi Article Sorting

When integrated with the “Wave pusher” (WAP) to identify and transfer containers standing upright from a main conveyor to an alternate conveyor.



FLEXIBILITY

FleXinspect Connectivity

Minimizes footprint and complexity while improving the ease of use when integrated with other FleXinspect products.

Machine Link Compatible

to exchange key data and line flow information with other FleXinspect products.



Container Separator 2

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PROCESS STABILITY

Servo Motor Control

Consistent speed regulation and reliable long life operation.

Two Side Grip Belts

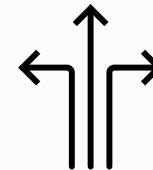
provide accurate spacing of containers using long life durable belts.



EASE OF USE

Universal Mounting

for easy installation directly to conveyor side plates.



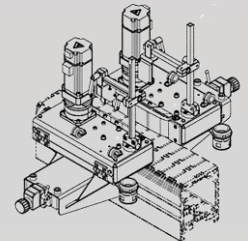
FLEXIBILITY

FleXinspect Connectivity

minimizes footprint and complexity while improving the ease of use when integrated with other FleXinspect products.

Machine Link Compatible

to exchange key data and line flow information with other FleXinspect products.



High-speed Container Separator 4

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PROCESS STABILITY

Servo Motor Control

provides consistent speed regulation and reliable long life operation.

Four Side Grip Belts (2-pairs)

Independent belt pairs ensure accurate spacing and improved container stability. First pair creates the needed spacing, while the second pair accelerate container back to conveying speed.



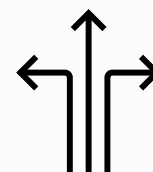
EASE OF USE

Hand Wheel Adjustments

enable fast and accurate setup with position indication for easy job changes.

Tracks (follow) Conveyor Speed

providing precise container spacing on variable speed lines.



FLEXIBILITY

FleXinspect Connectivity

minimizes footprint and complexity while improving the ease of use when integrated with other FleXinspect products.

Machine Link Compatible

to exchange key data and line flow information with other FleXinspect products.



Container Separator for Multi Article Production

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PROCESS STABILITY

Spaces Multiple Articles

The unique design of the CS Multi allows you to run and accurately space articles with diameter differences up to 30mm.

Four Side Grip Belts (2-pairs)

Independent belt pairs ensure accurate spacing and improved container stability. First pair creates the needed spacing, while the second pair accelerates container back to conveying speed.



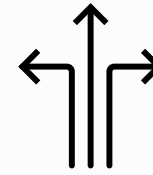
EASE OF USE

Hand Wheel Adjustments

provide fast and accurate setup with position indication for easy job changes.

Tracks Conveyor Speed

Precise container spacing on variable speed lines.



FLEXIBILITY

FleXinspect Connectivity

Minimizes footprint and complexity while improving the ease of use when integrated with other FleXinspect products.

Machine Link Compatible

Exchanges key data and line flow information with other FleXinspect products.



AL Container Alignment

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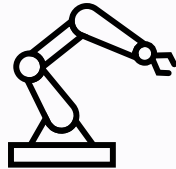
PROCESS STABILITY

Servo Motion Control

accurately rotates containers to any orientation for optimizing inspection coverage while improving line flow.

Durable Belts

Maintain positive grip on the container without reducing the belt life span.



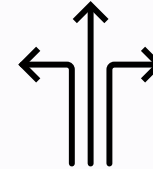
AUTONOMY

Alignment for Inspection

provides an automatic way to align the containers to improve the sidewall inspection for embossing.

Alignment for Packing

Flask containers and oval shapes can be aligned before packaging.



FLEXIBILITY

FleXinspect Connectivity

minimizes footprint and complexity while improving the ease of use when integrated with other FleXinspect products.

Machine Link Compatible

to exchange key data and line flow information with other FleXinspect products.



Infeed Quality Monitor

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SAFETY

Eliminate Nuisance Stops

by monitoring and removing down, damaged and incorrect wares from the production line.

Protect your Equipment

No down containers enter your inspection equipment to cause jams, contamination or damage to the precision optical elements.



AUTONOMY

24 x 7 Efficiency

The IQM device never quits protecting your equipment while maintaining a constant ware flow.

Set it and Forget it

By removing wares from the line that could stop or damage your machine, your resources are free to focus on more important issues.



PRODUCTIVITY

Reduce Downtime

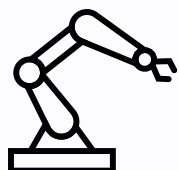
By removing problematic wares from the line, you eliminate unwanted stops that disrupt your production and reduce line flow efficiencies.



WAP Wave Pusher

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AUTONOMY

Container Selection

Automatically diverts containers to an alternate conveyor for statistical sampling, lane balancing, or sorting multi-article production.



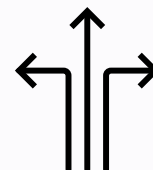
PROCESS STABILITY

Pneumatic Air Cylinder Control

provides smooth container movement with high reliability and extended life span.

Air Pressure Sensor

continuously monitors the incoming air pressure to validate operation.



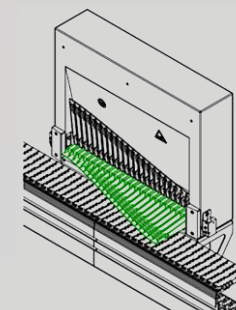
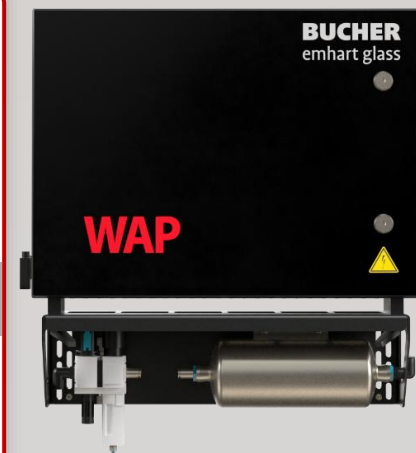
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