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Care & Empower **Products**

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Care

Care is what keeps your machines running; original parts, service and repair. It makes sense when you need a part for your Emhart machine, you choose a part from Emhart. And our service repair teams know the equipment better than anyone.

- Project Management
- 24/7 Emergency Assistance
- Repairs
- Original Parts
- Equipment Remote Service
- Maintenance Support
- On-Site Service
- Automation Maintenance

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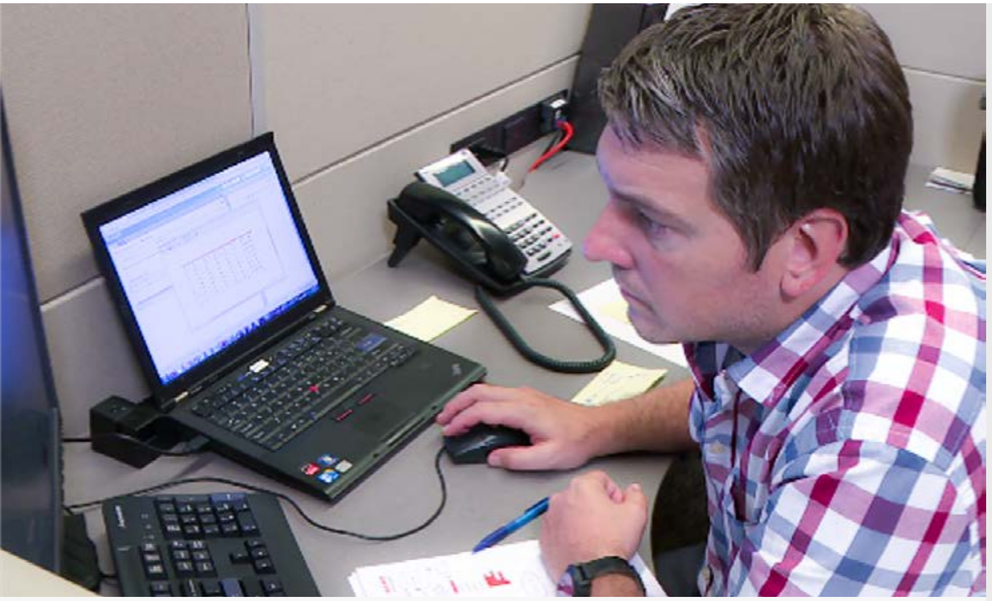

Project Management

Our standard Bucher Emhart Glass project management offer assists our sales organization and customers for machine projects. Our project managers follow the machine projects from specification to glass production. We also support Brownfield and Greenfield projects.

◄ Back to Care Overview

Key targets / benefits

- Successful machine projects
- Successful Brownfield projects
- Successful Greenfield projects

Included tasks & resources

Machine Projects:

- Technical detail required for the new machines
- Specifications required for installation
- Utility requirements
- Line lay-out consultation (Inspection)
- On-site installation and start-up assistance
- Remote installation assistance and remote start-up assistance (if travel on-site is restricted due to the Covid-19 pandemic)
- Production support
- Up to glass production

Brownfield Projects:

- Within the existing factory boundary
- Full scope of the project is dependent on the individual requirements for the specific production footprint
- Full project service or specific parts relating to the IS machines and/or the inspection machines

Greenfield Projects:

- Bucher Emhart Glass can consult customers if interested in establishing a new greenfield facility
- With deep industry understanding & well established glass capability network
- Detailed responsibilities to be discussed with the customer

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Original Parts

High precision requirements can only be met with the best components. When extreme heat and relentless mechanical stress have worn any part of the machine, make sure to replace them only with Emhart Original Parts. Using incorrect parts potentially have devastating effects on production, such as:

- Cause expensive damage to a machine
- Negatively affect glass container quality
- Risk for worker health & safety

That's why we only recommend Original Parts for your forming and inspection machines.

◄ Back to Care Overview

Key targets / benefits

Emhart Glass Quality Manufacturing

- Maintain high equipment standards in the long run
- Benefit from Emhart continuous improvement & latest design updates

Guarantee from the Original Supplier

- Emhart Original Parts are the only replacement parts manufactured, tested and approved by Emhart and designed to the exact specifications of each Emhart machine

Parts programs can be designed to meet your unique needs

- A true one stop shopping solution
- Reduced complexity – everything comes from a single source

S-class parts

- Ensure highest productivity through shortest delivery times
- Currently, Emhart has >5'000 different items on stock ready for delivery (Forming & Inspection)
- All customers can benefit from the service (see TNB 183)
- Reliable and very short delivery time
- Additional benefit: reduce stock levels and fixed capital

Included tasks & resources

Original Parts for Forming Machines ("Hot End")

Most comprehensive parts portfolio in the industry:

- Covering 100 years of glass making history
- Fulfilling special customer demands
- Continuous and sustainable improvements
- OEM independent parts

Bucher Emhart Glass Forming spare parts portfolio:

- Total number of items maintained: ~ 140.000
- Active items ready to quote today: ~ 8.000
- S-Class items available from stock: ~ 3.400

All required part categories can be provided:

- Accessories
- Wear Parts
- Repaired Parts
- Kits and Tools

Original Parts for Inspection Machines ("Cold End")

Innovative technologies and quality assurance solutions.

Upgrading of installed Inspection Systems.

Tooling for Veritas and FleXinspect.

Resolving holistic and precise inspection problems.

Bucher Emhart Glass Inspection spare parts portfolio:

- Total number of items maintained: ~ 120.000
- Active items ready to quote today: ~ 7.000
- S-Class items available from stock: ~ 1000

All required part categories can be provided:

- Tooling
- Wear Parts
- Repaired Parts
- Kits and Tools

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24/7 Emergency Assistance

For production critical emergencies, 24/7 emergency assistance offers phone assistance by experienced service engineers around the clock. If necessary, we can arrange remote support or dispatch a service engineer for urgent on-site service.

◄ Back to Care Overview

Key targets / benefits

- Technical service support 24 hours a day, 365 days a year to support our customers production operations
- Phone support by experienced service engineers
- Follow-up with urgent remote service or on-site service

Included tasks & resources

For forming and inspection equipment:

+41 41 749 41 41 (worldwide)
+1 860 298 73 91 (USA & Americas)

The 24 Hours Emergency Number provides emergency assistance in English. You are first asked if it is a Hot End or Cold End issue and a brief description of the problem. Then you are connected to an experienced service engineer for phone assistance. In case the issue requires remote service or an on-site service trip, one of our service coordinators is going to schedule a remote or on-site service intervention with you.

For Symplex inspection equipment:

+49 89 55 27 98 77 (worldwide)

The 24 Hours Emergency Number provides emergency assistance in English and German. You are connected to an experienced service engineer for phone assistance and – if required – remote support.

In case the issue requires remote service or an on-site service trip, one of our service coordinators is going to schedule a remote or on-site service intervention with you.

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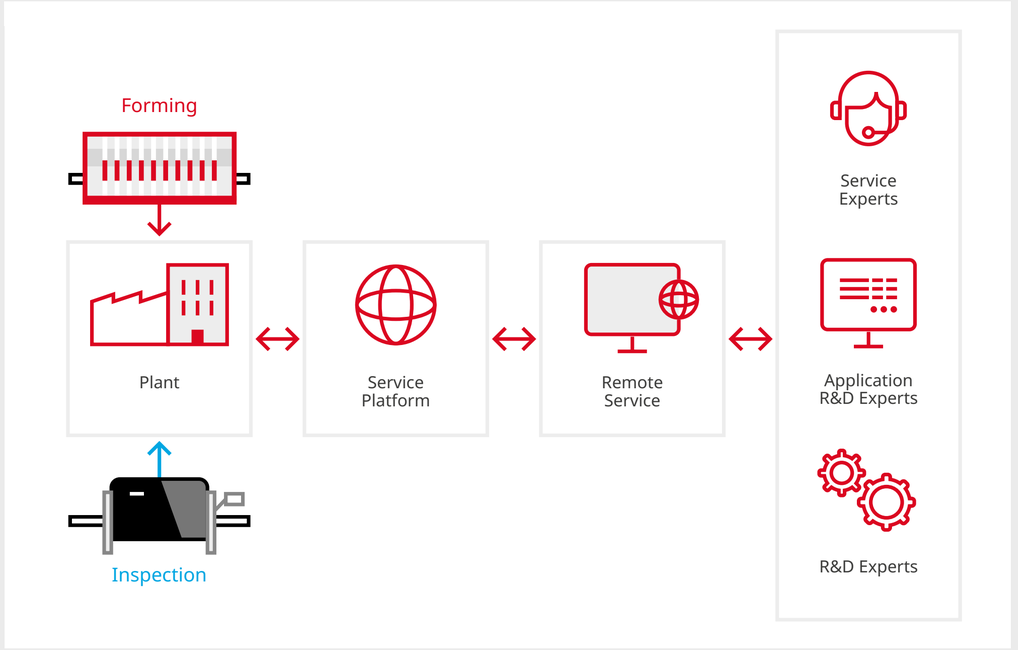

Equipment Remote Service

Experienced FlexIS, FleXinspect and Symplex Remote Service experts can readily access our customers equipment via secure internet to assist with equipment operation, troubleshooting and maintenance. This service can reduce operating costs, downtime and lost production by supplying immediate assistance and problem resolution.

FleXinspect and Symplex Remote Service

FlexIS Remote Service

◄ Back to Care Overview

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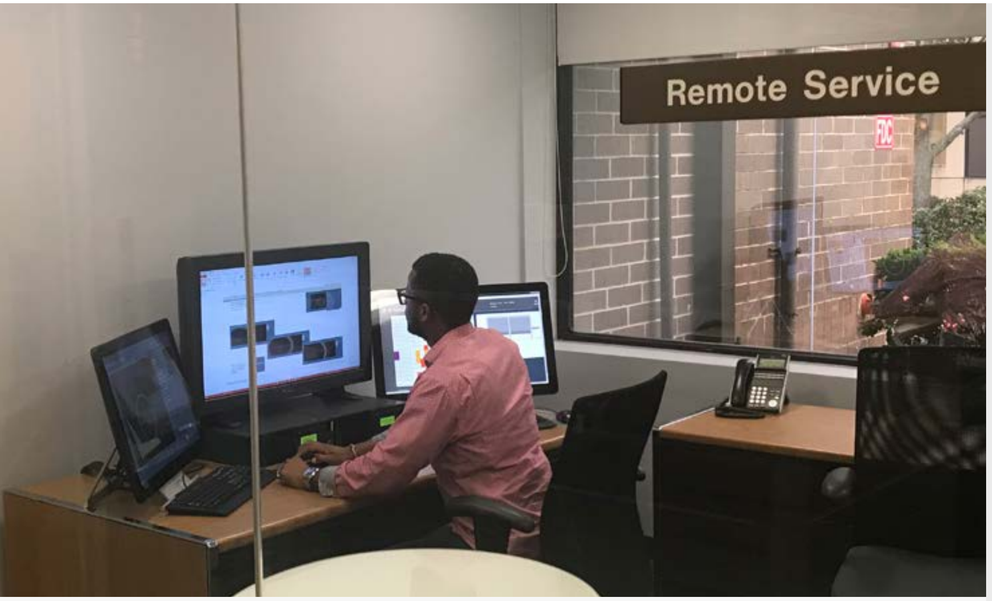

FleXinspect & Symplex Remote Service

FleXinspect and Symplex Remote Service experts can readily access our customers equipment via secure internet to assist with equipment operation, troubleshooting and maintenance. This service can reduce operating costs, downtime and lost production by supplying immediate assistance and problem resolution.

◄ Back to Equipment Remote Service

Key targets / benefits

Helps you to master your powerful FleXinspect or Symplex equipment.

An expert with extensive experience in machine operation, trouble shooting and maintenance stands virtually at your side for in-depth diagnosis, resolving issues and remote supervision.

In many cases time consuming and costly dispatching of a service engineer can be avoided.

Pre-requisites

FleXinspect Remote Service:

- FleXinspect system connected to a FlexIS-3 controls system equipped with mGuard firewall and Internet access
- Remote access for stand-alone FleXinspect systems require the FleXinspect systems to be equipped with Internet access via a secure plant VPN

Symplex Remote Service:

- Internet access via a secure plant VPN

Included tasks & resources

FleXinspect Remote Service

- Online equipment analysis and diagnosis through remote access and over the phone
- Access to interdisciplinary knowledge pool of connected experts
- Remote assistance about configuration settings, job parameters, required parts
- Complete safety & security concept
  - Secure connection (VPN) & Access Management
  - Automatic remote link connection check
  - Notification in case of connection problems
- Reports about all Remote Service activities

FleXinspect Remote Service is available during US office hours.

Contract customers can call our dedicated Remote Service phone number:

+1 860 298 7389 (Americas) Mo – Fr, 8am – 5pm, US Eastern Time (EDT)

Non contract customers, please contact our Regional Service Management at our Steinhausen, St. Petersburg or Johor Bahru offices or your local Bucher Emhart Glass representative.

Symplex Remote Service

- Online equipment analysis and diagnosis through remote access and over the phone
- Access to interdisciplinary knowledge pool of connected experts
- Remote assistance about configuration settings, job parameters, required parts
- Safety & security concept
  - Secure connection (VPN)
- Reports about all Remote Service activities

Symplex Remote Service is available during European office hours.

Customers can call the dedicated Symplex service number +49 89 55 27 98 77 (worldwide), or contact our Regional Service Management at our Steinhausen office or your local Bucher Emhart Glass representative.

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FlexIS Remote Service

Experienced FlexIS Remote Service experts can readily access our customers equipment via secure internet to assist with equipment operation, troubleshooting and maintenance. This service can reduce operating costs, downtime and lost production by supplying immediate assistance and problem resolution.

◄ Back to Equipment Remote Service

Key targets / benefits

Helps you to master your powerful FlexIS controls.

An expert with extensive experience in machine operation, trouble shooting and maintenance stands virtually at your side for in-depth diagnosis, resolving issues and remote supervision.

In many cases time consuming and costly dispatching of a service engineer can be avoided.

Pre-requisites

- FlexIS controls equipped with mGuard firewall
- Internet access

Included tasks & resources

- Online equipment analysis and diagnosis through remote access and over the phone
- Access to interdisciplinary knowledge pool of connected experts
- Remote assistance about configuration settings, job parameters, required parts
- Complete safety & security concept
  - Secure connection (VPN) & Access Management
  - Automatic remote link connection check
  - Notification in case of connection problems
- Reports about all Remote Service activities

FlexIS Remote Service is available during European and US office hours.

Contract customers can call our dedicated FlexIS Remote Service phone numbers:

+41 41 749 41 40 (Europe) Mo – Fr, 8am – 5pm, Central European Time (CET)

+1 860 298 7389 (Americas) Mo – Fr, 8am – 5pm, US Eastern Time (EDT)

Non contract customers, please contact our Regional Service Management at our Savona, St. Petersburg or Johor Bahru offices or your local Bucher Emhart Glass representative.

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On-site Service

Our global and multilingual team of over 60 professional service engineers offer the specialized skills for forming and inspection equipment to assist our customers and resolve problems.

Key targets / benefits

Professional technical assistance by qualified service engineers for all current and legacy Bucher Emhart Glass forming and inspection equipment.

Included tasks & resources

A global and multilingual team of over 60 professional service engineers.

Highly skilled mechanical, controls and inspection service engineers:

- For all our current and legacy forming and inspection equipment as well as automation products

Advanced equipment and process trouble shooting.

Advice on parameter setups, perform software upgrades.

Assistance with repairs.

Please contact your local Bucher Emhart Glass representative or our regional service management in Savona, IT, Steinhausen, CH, St Petersburg, FL/US and Johor Bahru, Malaysia for on-site support.

◄ Back to Care Overview

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Repairs

Bucher Emhart Glass offers customers the service of repairing select high value items.

Key targets / benefits

For customers, this means they can save money and resources by repairing a used item instead of having to buy new.

Pre-requisites

Item on the list of “Individual repairs” and item not older than 8 years.

Included tasks & resources

Individual Repairs

- A returned item will be inspected regarding viability / cost-effectiveness of a repair
- If repairing the item seems feasible at reasonable cost, a cost estimate for repair will be submitted to customers.
- Upon order, the repair will be executed and the repaired item will be returned to the customer.
- The received item and the respective serial number are followed up through the repair process to ensure that the very same but renewed/repaired item is returned to the customer.
- If it turns out, that the returned item cannot be repaired, the item can be scrapped at the site of inspection.

Deliverables

Repaired item.

◄ Back to Care Overview

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Maintenance Support

Maintenance Support for forming equipment is taking care of two major elements in a glass plant: The Equipment Condition and the Maintenance Operations. For inspection equipment Emhart offers full Technical Service Agreements.

Maintenance Support
- Forming

Maintenance Support
- Forming

Maintenance Support
- Inspection

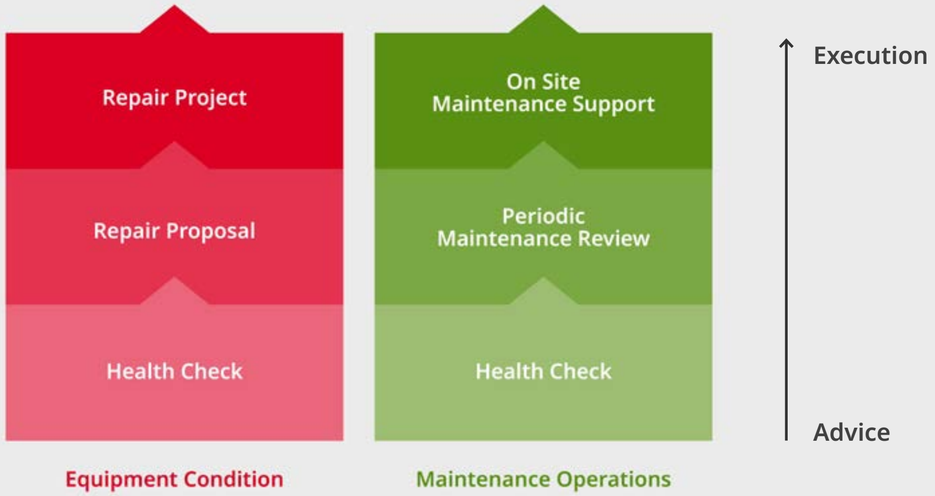
Technical Service Agreement

◄ Back to Care Overview

BUCHER emhart glass

Maintenance Support – Forming

Maintenance Support for forming equipment is taking care of two major elements in a glass plant: The Equipment Condition and the Maintenance Operations. BEG experts can give advice in both areas. BEG has specialized personnel to execute equipment repairs and maintenance, if required.



Equipment Condition	Maintenance Operations
Health Check	Health Check
Repair Proposal	Periodic Maintenance Review
Health Check & Repair Proposal Light	On-Site Maintenance Support
Repair Project	

◄ Back to Maintenance Support

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Equipment Condition

Health Check

In-depth on-site audit of a forming line to get detailed overview about equipment technical condition.

Key targets / benefits

Customer gets detailed report with pictures which explain condition of installed equipment from feeder to stacker, shortcomings and recommendations.

Included tasks & resources

1 mechanical service engineer and 1 production specialist for 2 days in plant to audit the line.

Deliverables

Health Check Report

◄ Back to Maintenance Support - Forming Overview

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Equipment Condition

Repair Proposal

In-depth on-site audit of a forming line to get detailed overview about equipment technical condition (Health Check).

Customized and prioritized scope of work and associated budget for key identified maintenance areas identified by BEG experts.

◄ Back to Maintenance Support - Forming Overview

Key targets / benefits

Customer gets detailed report with pictures which explain condition of installed equipment from feeder to stacker, shortcomings and recommendations (Health Check).

Customer gets a customized repair proposal (quotation) including required parts and service.

Included tasks & resources

Health Check: 1 mechanical service engineer and 1 production specialist for 2 days in plant to audit the line.

1 maintenance expert to prepare the proposal.

Deliverables

Health Check Report (Health Check).

Quotation.

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Equipment Condition

Health Check & Repair Proposal Light

In-depth on-site audit for a forming machine or specific equipment to get detailed overview about specific equipment technical condition. Recommended repair kits and parts.

Key targets / benefits

Customer gets detailed report with pictures which explain condition of specific installed equipment, shortcomings and recommendations. In addition, customer gets a report with recommended repair kits and parts.

Included tasks & resources

1 mechanical service engineer for 1 day in plant to audit the machine/equipment.

1 maintenance expert to prepare the proposal.

Deliverables

Health Check Report and report with recommended kits and parts.

◄ Back to Maintenance Support - Forming Overview

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Equipment Condition

Repair and Upgrade Project

Professional repair and upgrade of the equipment with original parts and qualified service engineers, including Project Management.

Key targets / benefits

Repair projects are complex but can save a lot of capital. Some repairs might not be viable and sub system upgrades might be more appropriate.

Our knowledgeable personnel consults with each customer regarding their options.

Pre-requisites

Repair Proposal or Health Check & Repair Proposal “light”.

Included tasks & resources

There are two distinctive approaches for repairs:

- On-site repairs, where an experienced crew performs the agreed repair in the plant. As the equipment does not have to leave its position, the de-installing and re-installing of the equipment is not required and the shortest possible downtime is achieved.
- Off-site repairs, in cases where the equipment must change its position and/or in cases the repair is combined with a major upgrade. Repair/upgrade services are furnished in the workshop of one of our repair partners, preferably at Ergon Meccanica in Dego, Italy.

◄ Back to Maintenance Support - Forming Overview

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Maintenance Operation

Health Check

Analysis of current Hot End maintenance operations versus Bucher Emhart Glass maintenance guidelines & recommendations including detailed audit report.

Key targets / benefits

Gap analysis of current Hot End maintenance operations versus Bucher Emhart Glass maintenance guidelines & recommendations.

Professional analysis based on global glass industry know-how.

Included tasks & resources

In-depth on-site audit performed by experienced BEG Mechanical Service Engineer and Production Specialist, 5 days in plant.

1 management review on day 5

Gap analysis / report including:

- Gap analysis / report on key maintenance routines based on BEG maintenance manuals
- Quality of current maintenance procedures
- Spare parts requirements
- Workshop operations
- Downtime measurement
- Personnel level and skills

Deliverables

Detailed audit and gap analysis report.

◄ Back to Maintenance Support - Forming Overview

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Maintenance Operation

Periodic Maintenance Review

Assisting customer in closing the gaps identified in the Health Check with an iterative maintenance model including quarterly visits by experienced Bucher Emhart Glass Service Engineer & Production Specialist over a 12 month period.

◄ Back to Maintenance Support - Forming Overview

Key targets / benefits

Assisting customer in closing the gaps identified in the Health Check.

Formal maintenance operations effectiveness review mechanism.

Pre-requisites

Health Check

Included tasks & resources

3 follow-up plant management review sessions with BEG Service Engineer, Production Specialist and BEG management representative, 2 days in plant per session.

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Maintenance Operation

On-Site Maintenance Support

Assisting customer in closing the gaps identified in the Health Check with an iterative maintenance model including quarterly visits by experienced Bucher Emhart Glass Service Engineer & Production Specialist over a 12 month period (Periodic Maintenance Review). In addition, Bucher Emhart Glass provides a full time Maintenance Service Engineer in the customer plant for the 12 month period.

◄ Back to Maintenance Support - Forming Overview

Key targets / benefits

Periodic Maintenance Review

- Assisting customer in closing the gaps identified in the Health Check
- Formal maintenance operations effectiveness review mechanism

In addition to the Periodic Maintenance Review:

- Empowering plant maintenance staff
- Introducing BEG equipment maintenance guidelines based on BEG maintenance recommendations
- Providing maintenance on-the-job knowledge transfer for plant maintenance staff

Pre-requisites

Health Check.

Included tasks & resources

Periodic Maintenance Review:

- 3 follow-up plant management review sessions with BEG Service Engineer, Production Specialist and BEG management representative, 2 days in plant per session, plus:

In addition to the Periodic Maintenance Review:

- Full time BEG Maintenance Service Engineer in customer plant (normal week, dayshift operations)

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Maintenance Support - Inspection

Technical Service Agreement (TSA)

The Technical Service Agreement (TSA) is a complete maintenance package for all our inline and lab inspection equipment. It includes periodic health check, preventive maintenance as well as minor repairs and refresh training.

◄ Back to Maintenance Support

Key targets / benefits

- Inspection equipment maintained as per BEG maintenance guidelines
- Periodic refresh training
- Optimum equipment performance

Included tasks & resources

Twice a year: health check, cleaning, adjustments, repairs, recommended parts:

- Performed by a BEG Inspection Service Engineer
- Required time per visit for one Inline / Statistical Equipment:
  - First year: 1 day, Second year: ½ day

Deliverables

Detailed report about equipment status and training performed.

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Automation Maintenance

(under preparation)

Automation Maintenance ensures that installed Solution Packages (sensors, closed loops, FlexRobot) are working properly.

The Basic package includes remote installation of new software versions and remote support by Bucher Emhart Glass Automation Specialists.

The Professional package ensures optimal operating conditions and well trained staff. It adds a yearly on-site visit by a Bucher Emhart Glass Automation Specialist for health checks, software upgrades and refresh training.

Automation Maintenance is available for the following Solution Packages:

- Gob weight control with Gob Radar
- Blank Temperature control with TCS
- Blank and Plunger Temperature with TCS
- Blank Temperature control with Blank Radar
- Blank and Plunger Temperature with Blank Radar
- Gob weight with PPC
- Gob weight und Plunger up with PPC
- Bottle spacing with FlexRadar
- Bottle spacing and Gob weight with FlexRadar
- FlexRobot

Pre-requisites

Installation of Solution Packages (Sensor and Closed Loops)

Installation of FlexRobot

Overview Basic / Professional

◄ Back to Care Overview

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Automation Maintenance

Comparison table

		Automation Maintenance – Basic	Automation Maintenance – Professional
Key targets / benefits	Up-to-date Solution Packages	x	x
	Properly working Solution Packages	x	x
	Optimal operation condition of Solution Packages with full potential available		x
	Yearly checked Solution Packages		x
	Yearly re-trained personnel		x
Included tasks & resources	On-demand remote support by a Bucher Emhart Glass Automation Specialist, Mo - Fr, 8am - 5pm, Central European Time (CET)	x	x
	Remote software upgrades for Solution Packages (when required, where possible)	x	x
	One yearly on-site visit by an Automation Specialist: • Health check" in plant for the installed Solution Packages • On-site installation of new software versions for sensors and closed loops and FlexRobot • Customized refresh training in plant		x

Periodic preventive maintenance of the sensors and FlexRobot as per Bucher Emhart Glass maintenance guidelines is not included in the scope and needs to be performed by plant personnel.

◄ Back to Automation Maintenance Overview

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Empower

Empower is our support network. They say that knowledge is power – we are here to empower you in the use of your technology.

Production Support

- New Machine Installations
- Mold & Cavity Design
- Enhanced Performance
- Trials

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Production Support:

New Machine Installations

For a smooth start-up under glass, our production specialists support the start-up of your new forming machines and assist you with their expertise to introduce new processes and technologies successfully.

Dedicated production support and training packages are available for:

- Start-up of IS machines installed
- Narrow Neck Press and Blow
- Press and Blow
- Small ware production
- Introduction of Emhart technology
- End to End technology

◄ Back to Empower Overview

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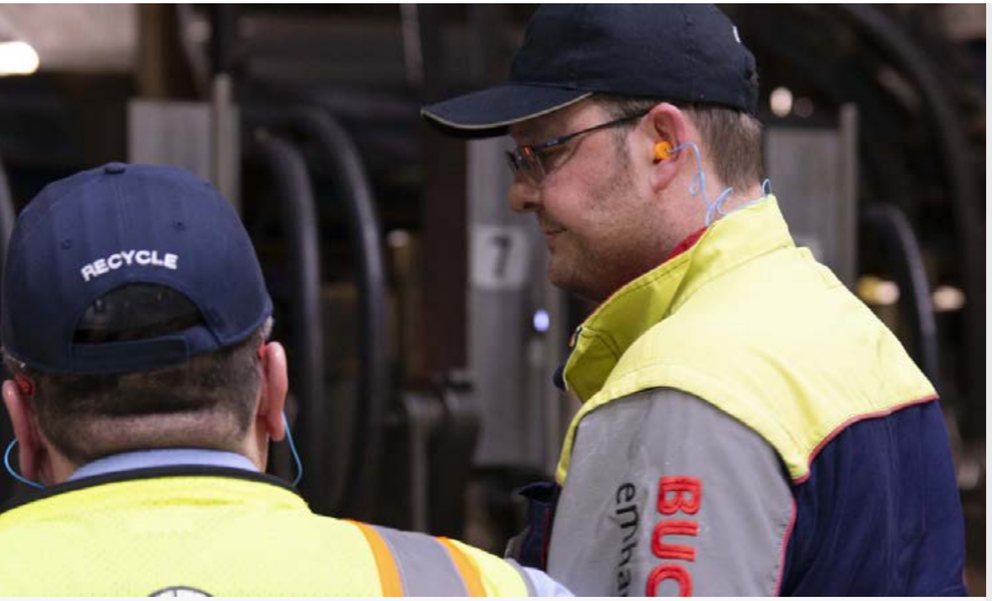

New Machine Installations

Start-up of IS machines installed

A Bucher Emhart Glass Production Specialist supports the start-up of a new forming machine on-site at customer plant.

Key targets / benefits

Successful start-up of the new forming machine under glass.

Pre-requisites

Machine project

Included tasks & resources

- One Production Specialist per two forming machines
- Length of time on site depends on installation requirements
- Two Production Specialists required based on number of machines or time on site

◄ Back to New Machine Installations Overview

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New Machine Installations

Narrow Neck Press and Blow

Bucher Emhart Glass supports the start-up of a new forming machine running NNPB with an NNPB training & support package.

Key targets / benefits

Successful start-up of new forming machine under glass:

- Introduction of NNPB
- Stability of NNPB post start-up
- PPC commissioning to production standards
- PPC operational training
- Mold Design to EMHART standards
- Operating standards for NNPB
- Mold Design training

Pre-requisites

Machine project

Included tasks & resources

- One Production Specialist per two forming machines
- Length of time on site depends on installation requirements
- 2 Production Specialists required based on number of machines or time on site
- Mold Design package
- Mold Design training

◄ Back to New Machine Installations Overview

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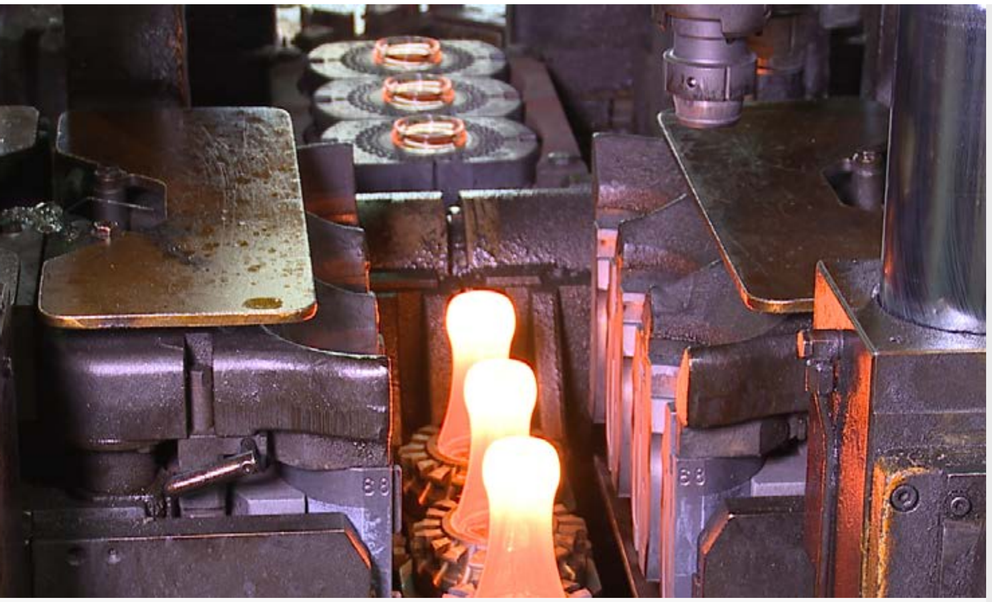

New Machine Installations

Press and Blow

Bucher Emhart Glass supports the start-up of a new forming machine running PB with a PB training and support package.

Key targets / benefits

Successful start-up of new forming machine under glass:

- Introduction of Press & Blow
- Stability of PB post start-up
- Mold Design to EMHART standards
- Operating standards for PB
- Mold Design training

Pre-requisites

Machine project.

Included tasks & resources

- One Production Specialist
- Length of time on site depends on installation requirements
- Mold Design package
- Mold Design training

◄ Back to New Machine Installations Overview

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New Machine Installations

Small ware production

Bucher Emhart Glass supports the start-up of a new machine running Small Ware with a Small Ware support package.

Key targets / benefits

Successful start-up of new forming machine under glass:

- Specialized Small Ware production techniques and job setup
- Job setup to run small ware production
- NNPB/BB/PB
- Stability of production
- GMP Pharma/Cosmetics

Pre-requisites

Machine project.

Included tasks & resources

- One Production Specialist
- Length of time on site depends on installation requirements

◄ Back to New Machine Installations Overview

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New Machine Installations

Introduction of Emhart technology

Bucher Emhart Glass supports the introduction of EMHART technology with a customized training and support package.

Key targets / benefits

Familiarize customer with EMHART technology:

- Customer converting to BEG or new to the Glass Container Industry
- Training requirements
- Machine services required
- Planned process - BB/NNPB/PB
- Production support going forward
- Mold Design

Successful start-up of new forming machine under glass.

Pre-requisites

Machine project.

Included tasks & resources

Depending on the assessment of the requirements of the new customer requirements:

- Initial assessment to confirm

Possible scope:

- Controls and Mechanical training
- Production training
- Windsor high level training (Operational training)
- 3rd party engineering design
- Mold Design support
- Mold Design training
- Production Specialist on-site for 3 months
- Mechanical Service Engineer on-site for 3 months
- Control Service Engineer on-site for 3 months

◄ Back to New Machine Installations Overview

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New Machine Installations

End to End technology

Bucher Emhart Glass supports the introduction of End to End technology with a customized training and support package.

Key targets / benefits

Familiarize customer with Emhart technology:

- E2E technology at the Hot End
- Blank Radar or Flex Radar or Swab Robot or all E2E sensors
- Training on new technology
- E2E Production Specialist
- Production Specialist linked to production

Successful start-up of new forming machine under glass.

Pre-requisites

Machine project.

Included tasks & resources

Customized training & support package, including:

- E2E training
- E2E Production Specialist
- Production Specialist

Duration depends on End to End technology installed; typically 2 – 4 weeks.

◄ Back to New Machine Installations Overview

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Production Support:

Enhanced Performance

The global experience of our production specialists is available to improve the performance of your installed equipment.

The Gap Analysis shows the potentials for performance improvement. Our production and maintenance specialists perform a customized operational audit on-site and benchmark to international and Bucher Emhart Glass standards. The Gap Analyisis includes a maintenance review.

Based on the Gap Analysis, several customized performance improvement support and training packages are available:

- **Gap Analysis**
- **Forming support for a short period**
- **Medium term production support**
- **Production support for performance guarantees**
- **Long term production support**
- **Production support for installed footprint**
- **Customer developed production support**

◀ Back to Empower Overview

Enhanced Performance

Gap Analysis

Bucher Emhart Glass specialists perform a customized operational audit on-site and benchmark to international and Bucher Emhart Glass standards.

Key targets / benefits

Professional analysis based on global glass industry know-how.

Outside view.

Benchmark to international standards:

- Gap analysis (study) against good manufacturing practices - Includes maintenance review
- All production areas plus mold shop, supporting functions, etc.
- Plan / recommendation including roadmap, man hours, service products, parts etc.

Pre-requisites

Production lines with BEG forming equipment.

Included tasks & resources

In-depth customized on-site operational audit performed by experienced BEG personnel.

Typically 4 specialists, 5 days in plant:

- Senior Operations Director
- Operations Specialist
- Maintenance Specialist
- Mechanical Service Engineer

Areas covered:

- Forming
- Machine maintenance & operations
- Engineering
- Glass conditioning
- Mold design & mold repair
- Batch & furnace
- Inspection losses / Inspection equipment
- Workforce capabilities
- SOP’s

Deliverables

- Detailed gap analysis / report on key production, maintenance and training areas

◄ Back to Enhanced Performance Overview

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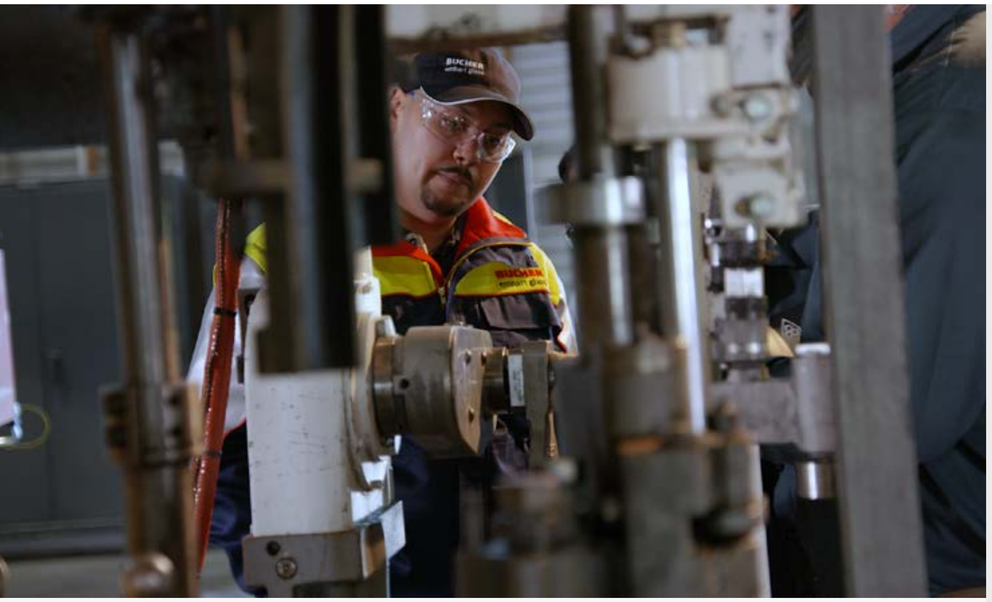

Enhanced Performance

Forming support for a short period

A Bucher Emhart Glass Production Specialist provides production support on site.

Key targets / benefits

Production support on site based on request from customer.

Pre-requisites

Production lines with BEG forming equipment.

Included tasks & resources

One Production Specialist.

Length of time on site depends on customer.

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Enhanced Performance

Production support for performance guarantees

Bucher Emhart Glass supports the customer to achieve the production guarantee targets.

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Key targets / benefits

Production guarantees linked to the installation of new machines or technology.

Pre-requisites

Production guarantee agreement.

Included tasks & resources

Period could be hours/weeks/months.

- One Lead Production Specialist
- One Support Production Specialist
- One Mechanical Service Engineer
- One Controls Service Engineer
- Mold Design

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Enhanced Performance

Production support for installed footprint

Bucher Emhart Glass supports the customer with a customized training and support package to improve production performance by improving reliability of the installed footprint.

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Key targets / benefits

- Focus on improving production performance through reliability of footprint installed
- Increase efficiency and containers packed
- Provide training to improve skills based on customer skills base
- Introduction of EMHART standards
- Introduction of E2E to improve performance

Pre-requisites

Gap analysis.

Included tasks & resources

One Lead Production Specialist:

- Including e-mail and phone support

Where required the following support:

- Mechanical Service Engineer and/or Controls Service Engineer
- Mold Design
- Equipment training - Mechanical & Controls
- PPC training
- Closed Loop training

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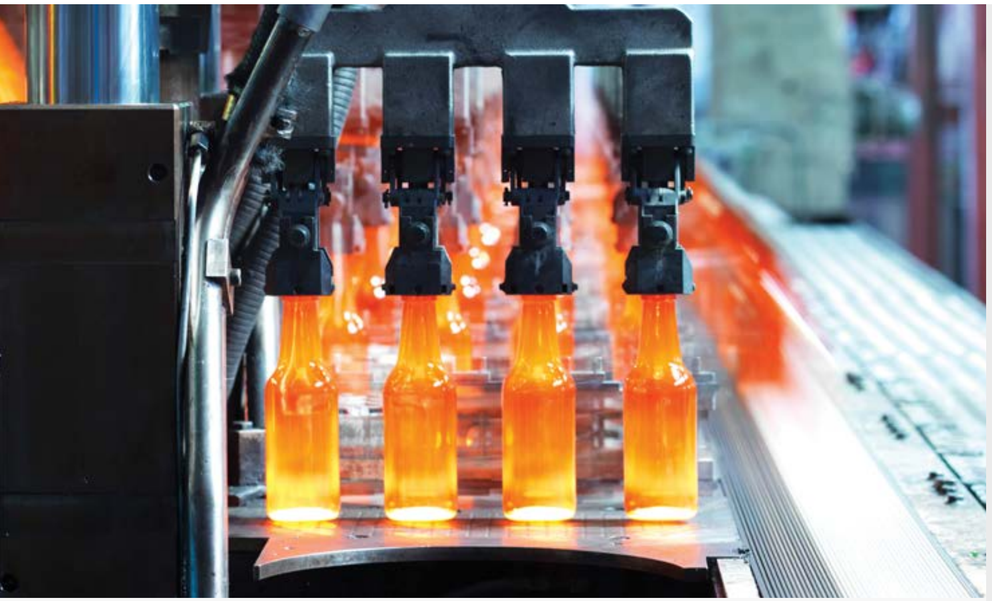

Enhanced Performance

Medium term production support

Bucher Emhart Glass supports the customer with a customized training and support package for 6 months based on the results of the Gap analysis.

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Key targets / benefits

- Improved performance (efficiency, pack to melt, ….)
- Minimize secondary process costs (rework)
- Customer satisfaction (customer of customer)
- Reduced down time
- Cultural change from reactive to proactive
- Availability to extend mold gear life
- Engaged workforce (skilled people)
- Introduction of E2E to improve performance

Pre-requisites

Gap analysis

Included tasks & resources

6 month support package based on the audit (Gap analysis).

Overall project managed by Senior Operations Director:

- 3 x 1 week on site

Project Leader is a Senior Production Specialist:

- Production support, identified focus
- 3 x 2 weeks on site
- E-mail and phone support

Training identified to uplift skills - Mechanical, Controls, Production.

Windsor high level training (Operational Training).

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Enhanced Performance

Long term production support

Bucher Emhart Glass supports the customer with a performance based customized training and support package for 12 months based on the results of the Gap analysis.

Key targets / benefits

- Improved performance (efficiency, pack to melt, ...)
- Minimize secondary process costs (rework)
- Customer satisfaction (customer of customer)
- Reduced down time
- Cultural change from reactive to proactive
- Availability to extend mold gear life
- Engaged workforce (skilled people)
- Introduction of E2E to improve performance

Performance based model.

Pre-requisites

Gap analysis.

Included tasks & resources

12 month support package based on the audit (Gap analysis).

Overall project managed by Senior Operations Director:

- 6 x 1 week on site

Project Leader is a Senior Production Specialist:

- Production support, identified focus
- 6 x 2 weeks on site
- E-mail and phone support

Training identified to uplift skills - Mechanical, Controls, Production.

Windsor high level training (Operational Training).

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Enhanced Performance

Customer developed production support

Bucher Emhart Glass supports the customer with a training and support package based on the individual customer needs.

Key targets / benefits

As per customer needs.

Possible targets may include:

- PTM improvement
- Lower costs (maintenance, manufacturing, OPEX - parts)
- Controlled outages (planned downtime)
- Introduction of SOP's
- Introduction of maintenance culture
- Sustainable performance

Pre-requisites

Customers who have been through a Medium term production support or Long term production support package.

Included tasks & resources

Individual training & support package to be defined with Customer, Sales, Senior Operations Director and Lead Production Specialist.

Possible areas include:

- Forming
- Machine maintenance & operations
- Engineering
- Glass conditioning
- Mold design & mold repair
- Batch & furnace
- Inspection losses / Inspection equipment
- Workforce capabilities

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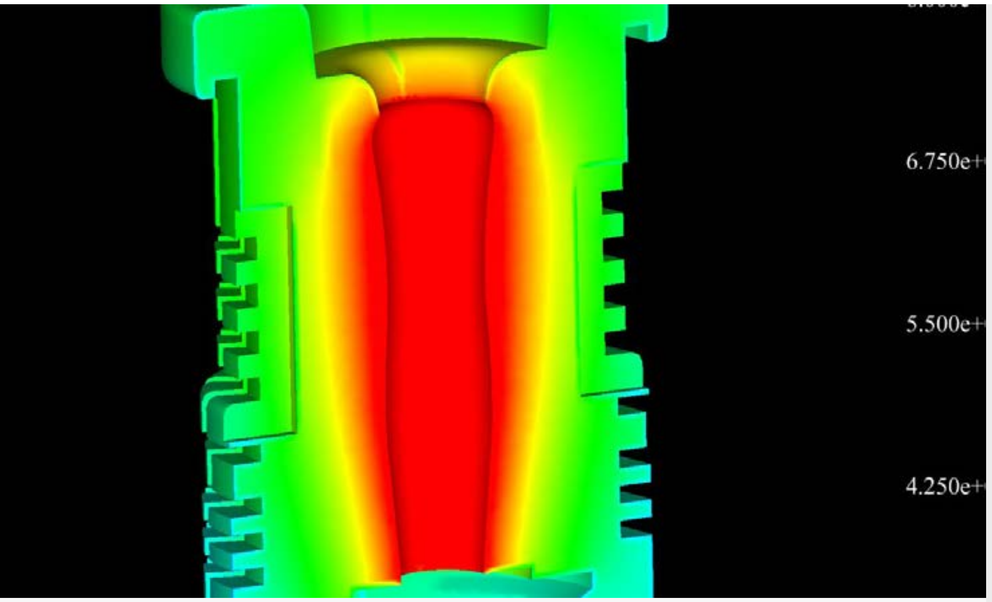

Mold & Cavity Design

Bucher Emhart Glass supports the customer with mold & cavity modeling studies and on-site production assistance to optimize current and new glass container production.

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Key targets / benefits

New mold design developments for new machine types.

New mold design developments for new containers / NNPB introduction.

Trouble shooting and optimization for existing containers:

- Reducing defects
- Improving quality
- Increasing performance: PTM %, cycle rates (bpm)

Pre-requisites

Information about container, production and equipment as per “Information Input Form”.

Deliverables

Depending on the mold & cavity design package:

- Table with optimal mold design setup
- Report about glass thickness distribution
- Mold equipment drawing set in pdf format, and in 3D format (step or iges) on request
- Blank or Blow mold cooling analysis report

Included tasks & resources

	Mold design support elements					
Mold & cavity design package	3D container development	Parison / forming simulation	Blank gear drawings	Blow gear drawings	Blank cooling simulation	Blow cooling simulation
1. Mold design development for NEW machine TYPE	x	x	x	x		
2. New container / NNPB introduction	x	x	x	x		
3. Existing container: troubleshooting						
3a. Full set troubleshooting	x	x	x	x	x	x
3b. Blank side cooling improvement			x		x	
3c. Blow side cooling improvement				x		x

Mold and cavity design services are performed by highly qualified and experienced specialists.
It is recommended a Bucher Emhart Glass production specialist provides production assistance on-site.

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Trials

Bucher Emhart Glass supports you with glass production trials at our own research center.

Key targets / benefits

With a trial at our facility you benefit from uninterrupted and unlimited plant time, no disruption of your own production time, know how transfer from Bucher Emhart Glass and the opportunity to experience new forming, inspection and End to End technology.

- Speed trials
- Bottle design
- Bottle sampling
- Machine performance trials
- Configuration change
- Future machine evaluation
- Cooling
- Small lot sizes
- Comparative trials

Pre-requisites

Flint glass.

Included tasks & resources

Operations at Emhart Glass Research Center in Windsor, CT, USA:

- Forming, Inspection and End to End technology as required for the specific trial
- Operators and Production Specialist

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