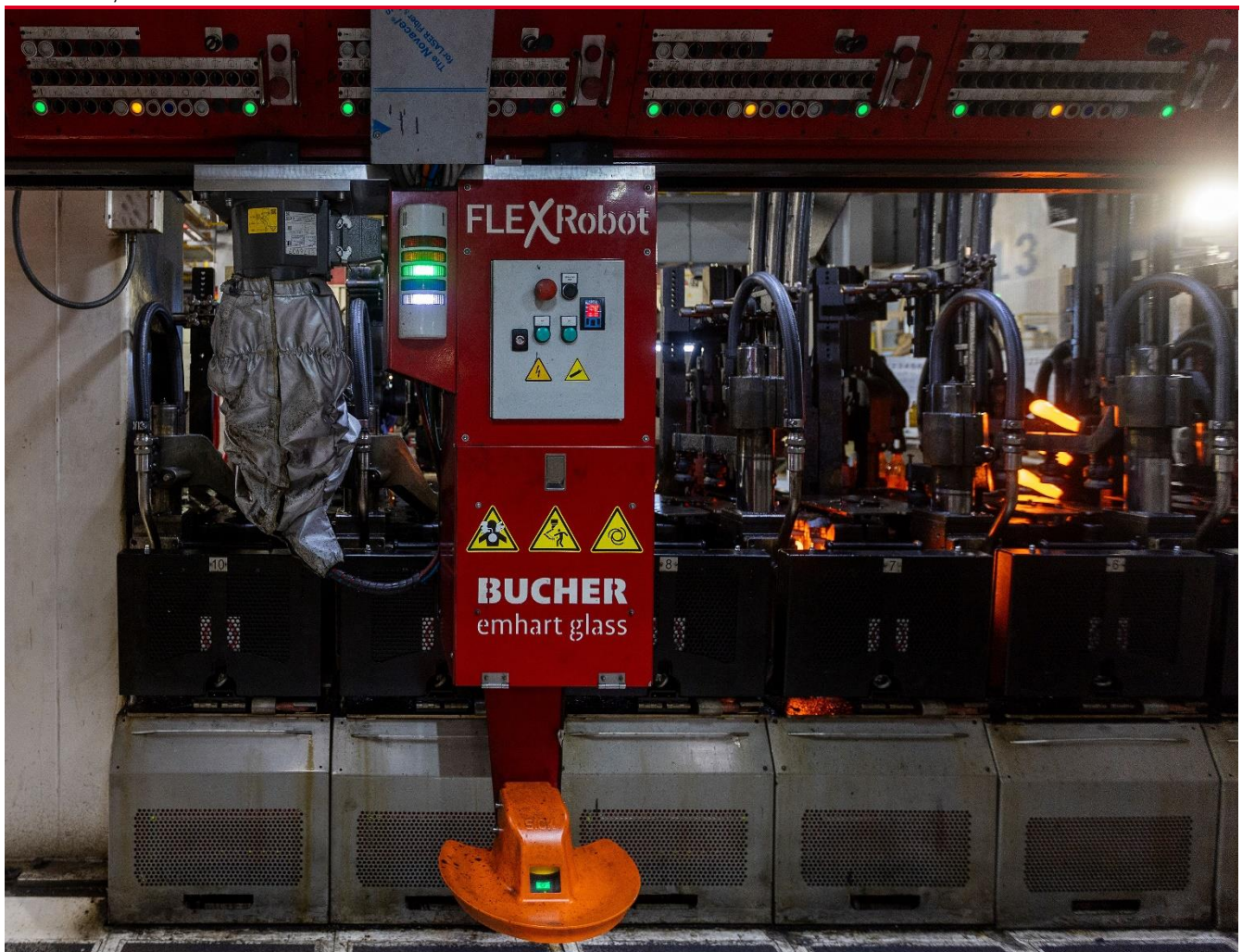


Technical News Bulletin

Sundsvall, October 2024



FLEXRobot
BLANKSIDE

- No need for manual swabbing
- Smart spraying on the fly with blank molds closed
- Neck ring spraying without contamination of the plunger
- Increased container production output
- Reduced risk of potential accident

Introduction

The FlexRobot Blankside is the Bucher Emhart Glass solution to eliminate manual swabbing of blank molds and neck rings. Fully integrated into the Bucher Emhart Glass IS, AIS, and NIS machines, the FlexRobot Blankside is mounted on the blank side panel and incorporated into the FlexIS control. All control hardware and the user interface fit into one single control cabinet for easy installation.

Only one FlexRobot Blankside is required for a tandem machine.

The integrated FlexRobot systems for blank and blowside are part of Bucher Emhart Glass strategy to provide automation solutions for increased safety and profitability.

Main advantages

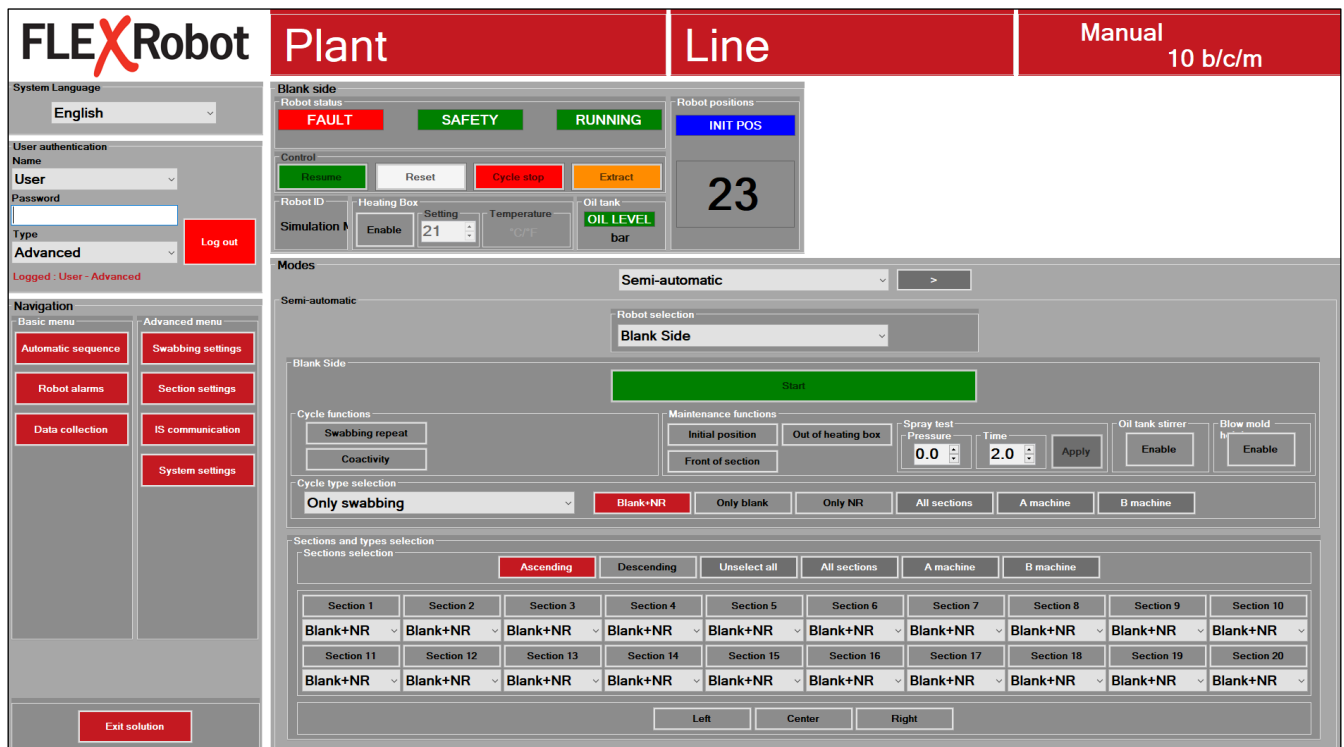
- Consistent swabbing
A robot is perfect for repetitive tasks like swabbing molds. It is precise, consistent, repetitive, and fast, enhancing the container forming process control.
- Smart spraying
The FlexRobot Blankside sprays on the fly with blank molds closed. The amount of lube sprayed is precisely controlled in relation to the position of the spraying tool in the blank mold. The neck ring is sprayed in the alternate cycle without contamination of the plunger.
- Less swabbing compound consumption
Smart spraying reduces the usage of lubricant by 75%.
- Increase the container production output
The FlexRobot Blankside swabs the blank molds on the fly, with less rejects, thus increasing the output from the machine.
- Increase mold lifetime
The lubricant is sprayed inside closed molds without contact between the spray nozzles and the mold surface, reducing wear on the molds.
- Gain time for production fine tuning
The FlexRobot Blankside frees up time for the operator that can be allocated for the process sensor systems to fine tune the container production to achieve a higher output from the machine.
- Reduced potential risk of accidents
The FlexRobot Blankside reduces the operator interaction with the machine.

- **Eliminate strain injuries**
During an 8-hour shift on a 36-cavity machine, an operator performs over 1700 swab movements and lifts the arm to activate the manual swab cycle more than 550 times. Using a FlexRobot Blankside eliminates strain injuries caused by repetitive manual swabbing.
- **Cleaner machine**
The small amount of lubricant applied into closed molds drastically reduces the contamination of the machine.
- **Less environmental impact**
The small amount of lubricant reduces the amount of smoke during swabbing.
- **Connection to the Bucher Emhart Glass Advanced Data Interface**
Single point of access for all your data and increased IT security.
- **Automatic signal exchange between FlexIS control and FlexRobot Control**
The signal exchange, facilitated by an interface controller, eliminates the need to enter settings manually, reducing the risk of collisions due to incorrect settings. (The interface controller is compatible only with FlexIS 3 and will be available first quarter of 2025).



Human Machine Interface (HMI)

Two high-resolution displays combined with smart design of the menus shows more information for a better overview of the system status.



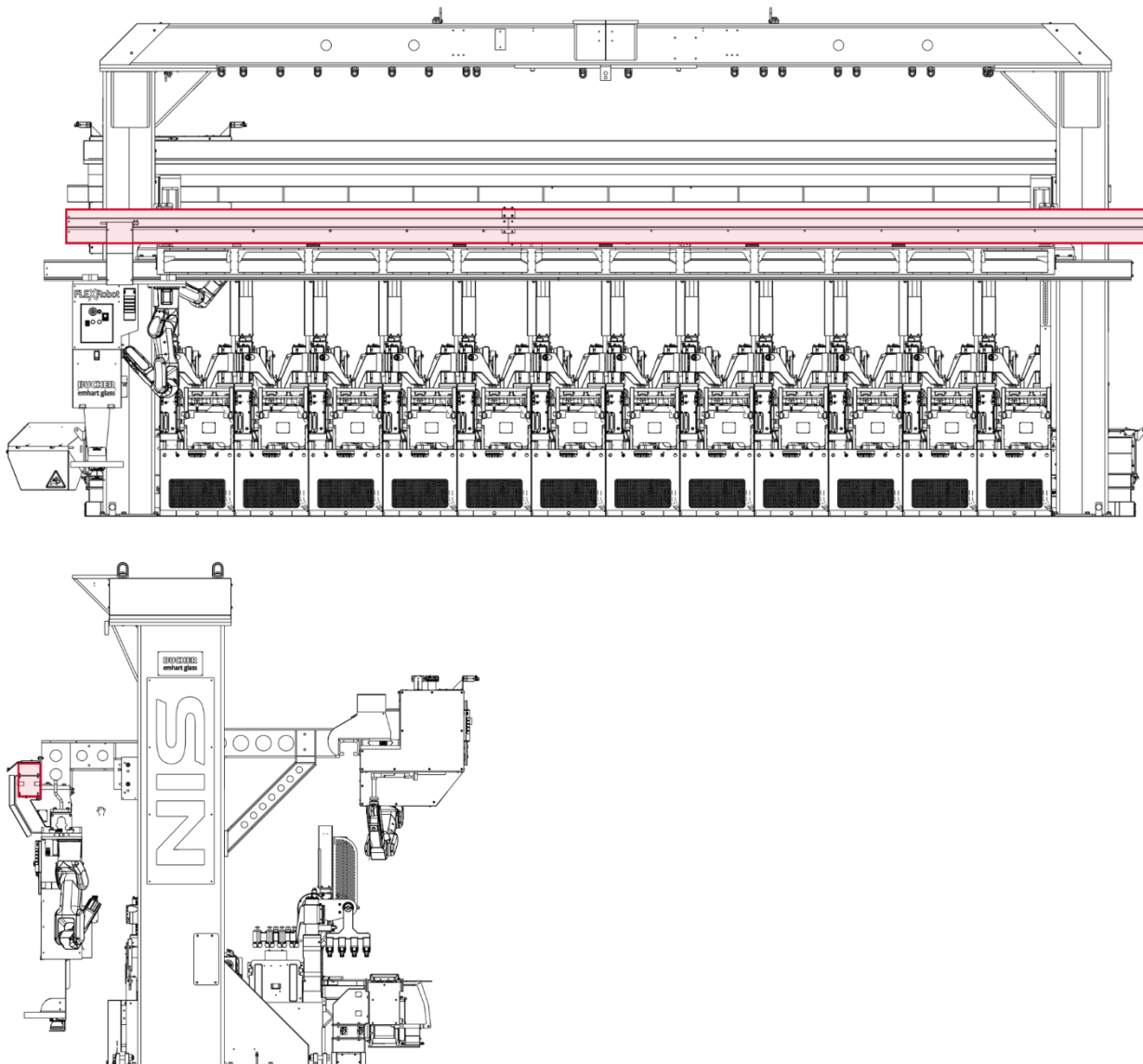
The main display is integrated in the FlexRobot cabinet.

Robot status FAULT SAFETY RUNNING Activ Alarm Label Oil tank OIL LEVEL bar Robot positions INIT POS 23	Next automatic cycle 14:37:01 Waiting for startup	Critical data event
	Current cycle Cycle Mod Cycle Type Coactivity ON/OFF	Machine speed Line Manual 10 b/c/m

The remote display, located near the forming machine, allows operators to easily monitor the status of the FlexRobot when working around the forming machine.

Integration

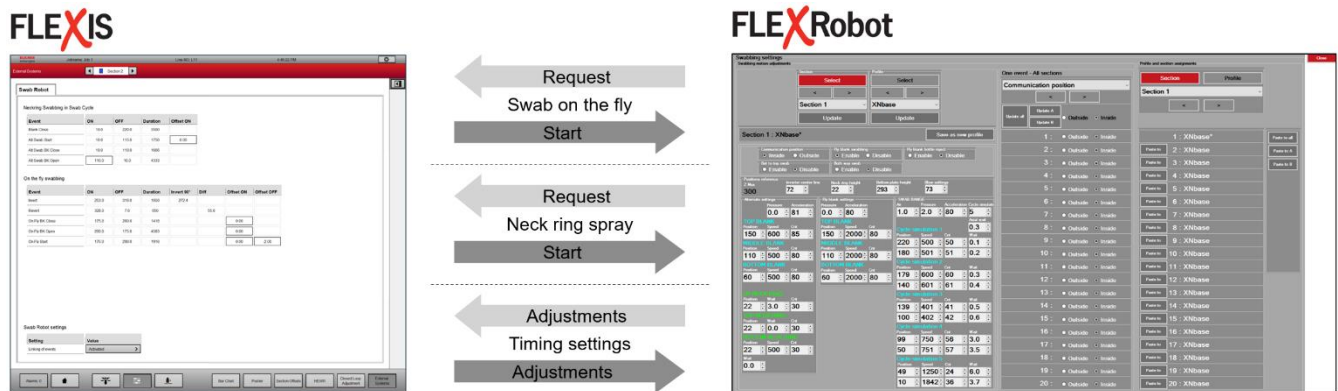
The FlexRobot Blankside is available for both new and existing forming machines. As a part of Bucher Emhart Glass complete machine system, it operates seamlessly with the blank side lifting device, blank side sensor measurement systems and blank side barrier. The energy chain is integrated on top of the blank side panel for easier installation but can also be positioned outside the forming machine if there are clearance problems with the gob distributor platform. (Contact Bucher Emhart Glass for installation clearance requirements).



The red area shows the location of the energy chain above the FlexRobot Blankside guide rail.

Data Interface

The FlexRobot Blankside maintains constant communication with the FlexIS control system, allowing remote support, data collection, and signal exchange. The signal exchange, facilitated by an interface controller, eliminates the need to enter settings manually, reducing the risk of collisions due to incorrect settings. The interface controller is compatible only with FlexIS 3 and will be available first quarter of 2025.



System Components

The FlexRobot Blankside system consists of:

- 607-12-1
 - FlexRobot 607-107-00
 - Spraying tool 607-106-00
 - Energy chain 607-108-00
 - Energy chain support 607-109-00
 - Interface kit 607-111-00
 - I/O module 607-110-00
 - Cable overview 607-126-00
 - Electrical diagram single machine 607-131-00
 - Electrical diagram tandem machine 607-133-00
 - IS/AIS layout 200-1973-00
 - NIS layout 400-5377-00
 - Safety sensors 200-1971-00
 - Spare parts 607-98-00

Installation Requirements

- Forming machine requirements
 - The FlexRobot Blankside is only available for Bucher Emhart Glass IS, AIS, or NIS forming machines.
- FlexIS control requirements:
 - The FlexRobot Blankside with interface controller is only available with FlexIS 3.
 - The FlexRobot Blankside without interface controller is also available for FlexIS 1 and 2.
- UPS system requirements:
 - The FlexRobot Blankside must be wired to the UPS system before the startup.
- Utilities:
 - Power supply
 - 200 to 230 VAC
 - 50 to 60 Hz
 - Power consumption maximum
 - 1,61 kVA.
 - Power consumption standby
 - 1,15 kVA
 - Compressed air
 - 5 bar
 - 1000 l/min.
- Operating temperature
 - 0 to 45°C

Features / Benefits

Features

Consistent swabbing

Smart spraying

Removes manual labor

Data extraction

Benefits

Tighter process control

Increased container production output

Precise control of the spraying on the fly in closed molds.

The neck ring is sprayed without contamination of the plunger.

Up to 75% reduction in lubricant usage.

Reduced potential risk of accidents

Elimination of strain injuries

Free up operator time for production fine-tuning and maintenance.

Production data available for correlation and analysis

Bucher Emhart Glass supplies glass forming machines with integrated FlexRobot Blankside and FlexRobot Blowside.

