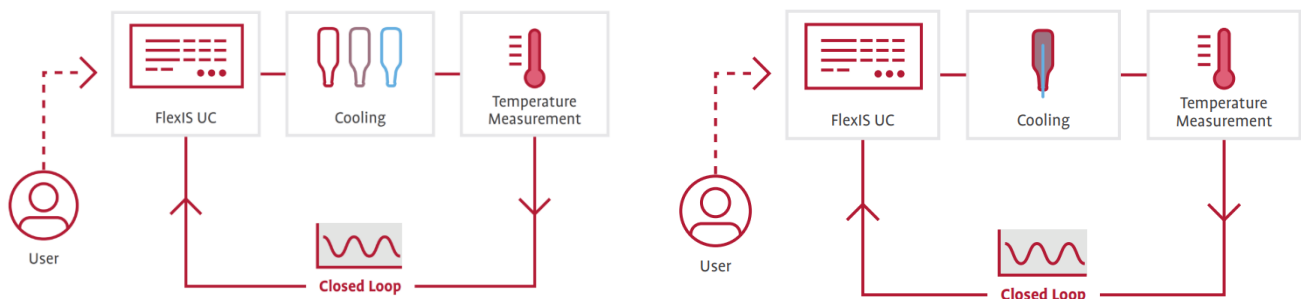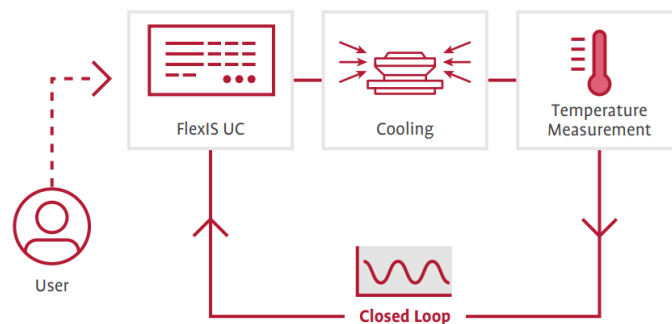# Technical News Bulletin

Cham, September 2024

Blank temperatures

Plunger temperatures

Neckring temperatures

FlexIS Cooling Control

- Automatically adjusts cooling to keep important temperatures on the desired level
- Maintains temperatures for the blank molds, plungers and neckrings
- Available for different machine types, FlexIS controls generations and measurement systems

Introduction

FlexIS Cooling Control is a bundle of closed loops keeping important temperatures on the desired level. All of these closed loops adjust the related cooling in the forming machine. They use information from a temperature measurement system like the TCS (Temperature Control System) or the BlankRadar, compare the measured values with the setpoints defined by the operator and calculate the necessary correction.
Blank Cooling Control, Plunger Cooling control and **Neckring Cooling Control (new 2024)** are now bundled into one product.

FlexIS Cooling Control

System Description

FlexIS Cooling Control consists of several closed loops taking care of important temperatures of the forming machine:

Blank Cooling Control: Adjusts the cooling of the blank mold halves so that the desired temperatures are maintained. Depending on machine type and configuration, up to 72 mold halves are monitored and adjusted.

Plunger Cooling Control: Adjusts the cooling of the plungers so that the desired plunger temperatures are maintained. Depending on machine type and configuration, up to 48 plungers are permanently monitored and adjusted.

Neckring Cooling Control: Adjusts the cooling of the neckring halves (right/left) and keeps the neckrings on the desired temperature. This latest addition is available with FlexIS 2 and 3, but not with FlexIS 1.

All of these closed loops are fully integrated in the FlexIS control system. This means that all related settings can be done on the standard user interface, the settings like setpoints and adjustment limits are stored with the job/article data and the related alarms are displayed on the FlexIS alarm page.

Settings (all per closed loop)
- Automode on / off
- Setpoint value for temperature
- Upper and lower limits for the cooling adjustment

Feedback to the user (all per closed loop)
- Actual (measured) temperature
- Status on / off of the Closed Loop
- Cooling duration (event OFF-ON)
- Status indication for 'Cooling duration reached a limit'
- Alarming (can be switched on or off) if the closed loop sees an anomaly
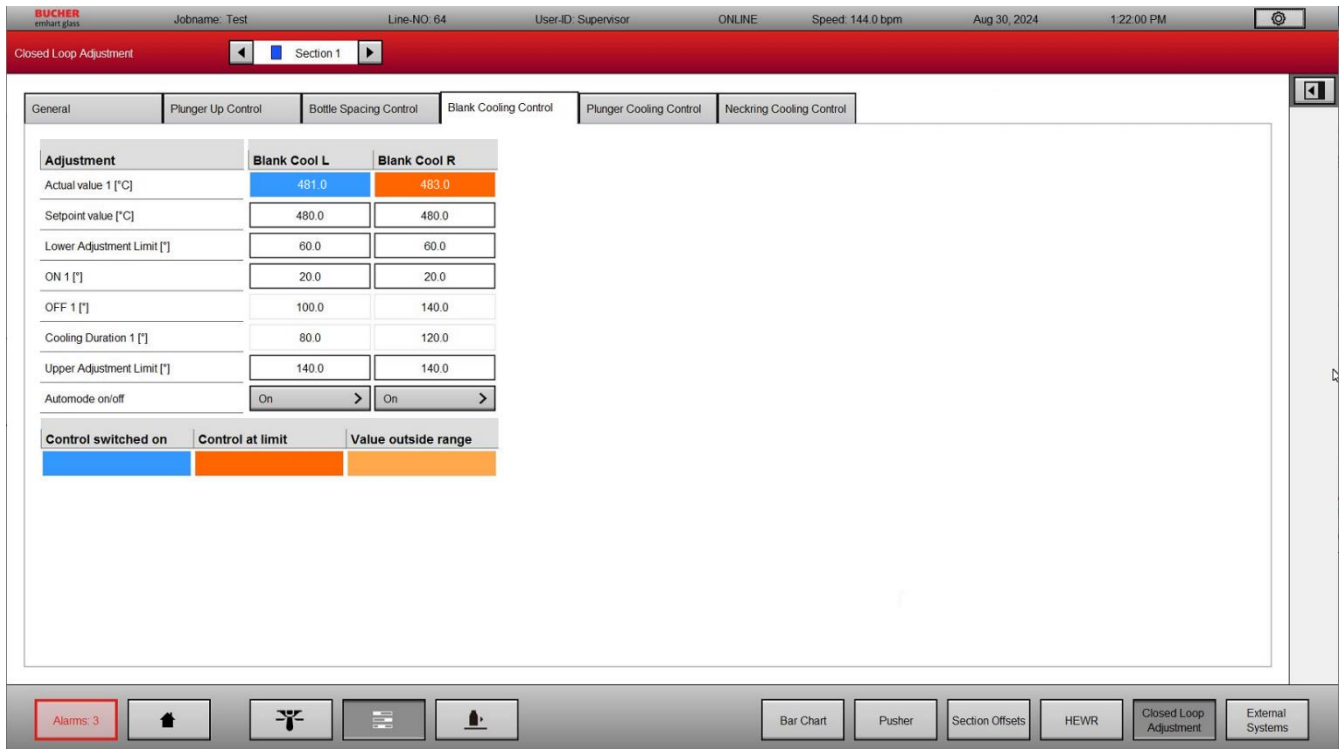
FlexIS user interface for the Blank Cooling Control: Setpoint values and measured values with colored status indication shown on the Closed Loop Adjustment page (sample values).

Application

The temperature of the blank molds is an important process parameter for all types of production. The temperature of the plungers is of particular interest in NNPB production and the neckring temperature is important for jar production. The closed loops within FlexIS Cooling Control are highly configurable and can be easily adapted to the specific production type.

Specification

FlexIS Cooling Control includes:

- 601-20001-18   Software License FlexIS Cooling Control
- 601-217-3   Communication Kit for TCS / BlankRadar (specify cable length to FlexIS MC cabinet)

Installation Requirements

FlexIS Cooling Control can be ordered for any forming machine having:

- ✓ FlexIS 2 or 3 Timing Control – Software Version 3.00-release-1301 or higher
- ✓ FlexIS 1 Timing Control - Software Version 1.07.03.033 or higher (only Blank Cooling and Plunger Cooling Control are supported by FlexIS 1)
- ✓ TCS Temperature Control System or BlankRadar
- ✓ Basic Closed Loop Equipment (TNB248)

| Features	Benefits
Automatically adjusts temperatures of mold halves, plungers and neckrings	Keeps process steady / less variation - over time - between sections/cavities - less stops Machine reaches steady state production faster after job change
Fully integrated into the FlexIS controls	Is part of the normal work flow for setup, job preparation and during production
TCS or BlankRadar remote access through the FlexIS remote access system	Optimal addition to FlexIS remote service. Experts can support remotely auditing real time TCS/BlankRadar and the Cooling closed loops

Blank Temperatures (* = Control On; setpoint=470°C)
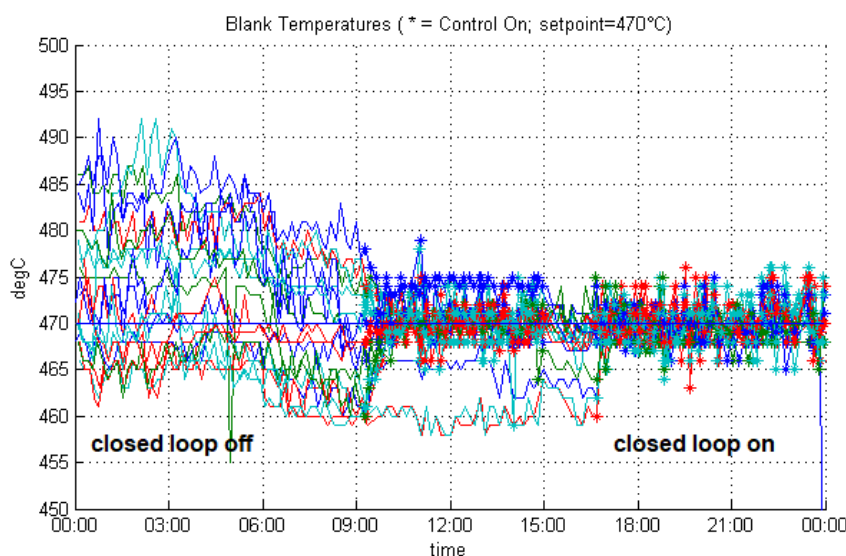
Comparison starting with Blank Cooling closed loops off on an AIS 12S TG machine and ending with all 72 mold half temperatures in a tight band (closed loops on).