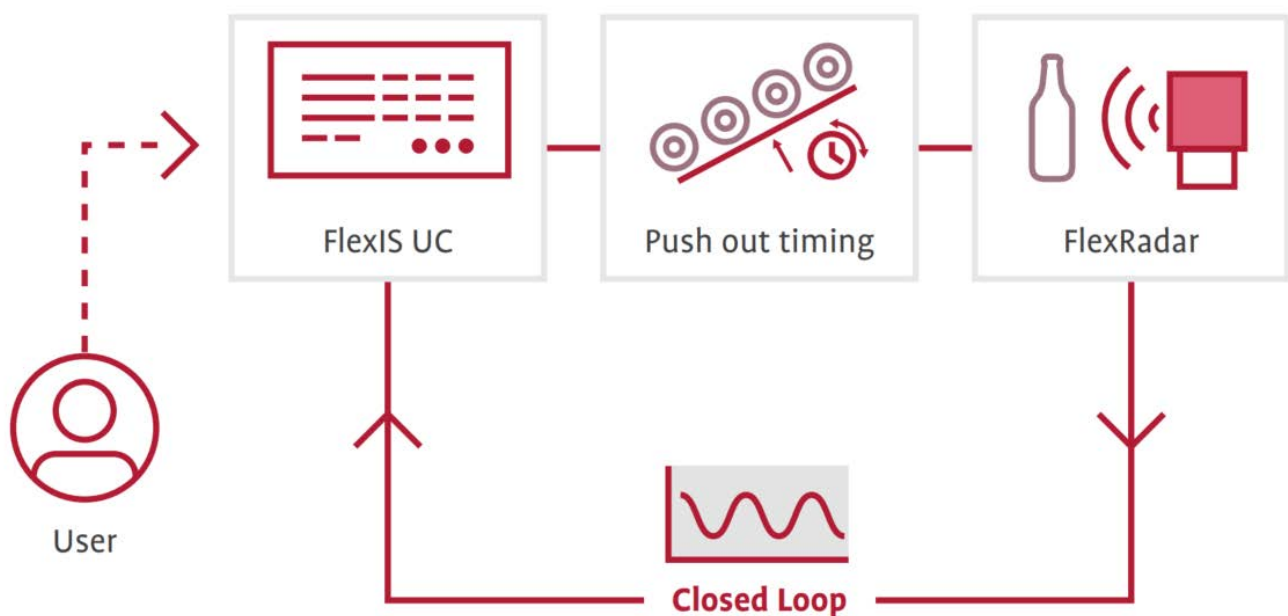# Technical News Bulletin

Steinhausen, April 2020

FlexIS Bottle Spacing Control

– Automatically adjusts the ware spacing on the conveyor
– FlexIS Bottle Spacing Control is fully integrated into FlexIS controls
– Optimal addition to FlexIS remote service

Introduction

FlexIS Bottle Spacing Control is a closed loop available in the FlexIS Timing using information from the FlexRadar forming process monitor system. For each bottle, a deviation value to the ideal position on the conveyor axis is transmitted and used to adjust the Pushout timings.

The closed loop averages the position deviations for each section and calculates a correction for the Pushout and related events, so that the bottles maintain equally distributed on the conveyor axis.

Setting Description

FlexIS Bottle Spacing Control is fully integrated into the FlexIS controls (FlexIS 1, 2 and 3). The user can see the actual average deviation value for each section on the Pusher user interface. The user can also switch the closed loop on or off with a button on the same page.

FlexPusher user interface page with FlexIS Bottle Spacing Control (UC 1): Coloured status indication, measured deviation values for each section, corrected Pushout On angles and *Auto Spacing On/Off* button.

	Jobname: EGRC-Job	Line-NO: 64	User-ID: Supervisor	ONLINE	Speed: 120.0 bpm	Jun 25, 2018	10:29:31 AM

Pusher Data

Section	1	2	3	4	5	6	7	8	9	10
Pushout On ["]	350.0	348.8	356.6	351.2	355.0	355.0	353.0	353.0	353.0	353.0
Pocket Air On [" rel]	-75.0	-75.0	-75.0	-75.0	-75.1	-75.1	-75.1	-75.1	-75.1	-75.1
Pocket Air Off [arc]	94.5	94.5	94.5	94.5	94.8	94.8	94.8	94.8	94.8	94.8
Speed Ratio [%]	80	75	90	80	90	90	90	90	90	90
Gap [mm]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Capture duration [" rel]	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
Min. arm angle [arc]										
Arm angle out [arc]	175.0	175.0	175.0	175.0	165.0	165.0	165.0	165.0	165.0	165.0
Extend ON [" rel]	-88.4	-84.5	-82.4	-88.4	-130.0	-130.0	-130.0	-130.0	-130.0	-130.0
Extend OFF [" rel]	-1.0	-1.0	-1.0	-1.0	-20.0	-20.0	-20.0	-20.0	-20.0	-20.0
Arm hard stop [arc]	21.0	22.0	18.0	18.0	13.0	13.0	18.0	18.0	18.0	18.0
Finger hard stop [arc]	14.0	10.0	6.0	13.0	8.0	8.0	9.0	9.0	9.0	9.0
Offset ["]	0.00	348.00	67.00	56.00	n/a	n/a	n/a	n/a	n/a	0.00
Sweep angle [arc]	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0	60.0
Linear Begin [arc]	90.0	90.0	90.0	90.0	80.0	80.0	80.0	80.0	80.0	80.0
Linear End [arc]	120.0	120.0	120.0	120.0	110.0	110.0	110.0	110.0	110.0	110.0
Return dur. [" rel]	50.0	60.0	60.0	60.0	40.0	40.0	40.0	40.0	40.0	40.0
Actual Deviation ["]	0.00	0.02	-0.04	-0.06	---	---	---	---	---	---

Alarms: 0

Bar Chart | Pusher | Section Offsets | HEWR | Closed Loop Adjustment

FlexPusher user interface page with FlexIS Bottle Spacing Control (UC 2): Coloured status indication, measured deviation values for each section, corrected Pushout On angles.

Settings

- FlexIS Bottle Spacing Control on / off
- Limits for the correction of the Pushout On angle are calculated automatically out of the relevant timing settings of the FlexIS.

Feedback to the user

- Actual (measured) deviation values – per section
- Corrected Pushout On angles – per section
- Corrected Pushout On angle reached a limit (status) – per section
- FlexIS Bottle Spacing Control on / off (status) – common for all sections

Remote Access Extension

Due to the communication with the FlexIS, the FlexRadar gets accessible through the FlexIS remote access system.

Specification

FlexIS Bottle Spacing Control includes:

- 601-20001-6   Software License FlexIS Bottle Spacing Control
- 601-217-4   Communication Kit for FlexRadar (specify cable length to FlexIS MC cabinet)
- 1 day   Service engineer for installation
- 1 day   Production specialist for commissioning and on site training

Availability / Application

FlexIS Bottle Spacing Control is very beneficial for all types of production.

Installation Requirements

FlexIS Bottle Spacing Control can be ordered for any forming machine having:

- ✓ FlexIS 1 Timing Control - Software Version 1.07.03.033 or higher
- ✓ FlexPusher
- ✓ FlexRadar
- ✓ Basic Closed Loop Equipment (TNB248)

Documentation

H11105BEN is the English manual of FlexIS Bottle Spacing Control with UC 1.

H11107_EN is the English manual of FlexIS Bottle Spacing Control with UC 2.

Features	Benefits

Automatically adjusts Pushout On angles (and related events like Pocket Air etc.) for each section	• Keeps equally distributed container spacing
	  - prevents interference on conveyor
	  - prevents jams at ware transfer
	  - maintains 'hitting the gap' constantly
	
	Machine reaches steady state production faster after job change

FlexIS Bottle Spacing Control is fully integrated into the FlexIS controls	Reduced complexity / better ease of use
FlexRadar remote access through the FlexIS remote access system	Optimal addition to FlexIS remote service. Experts can support remotely auditing real time FlexRadar and Bottle Spacing closed loop