

VC Wrapper Screens and Recipe Setup

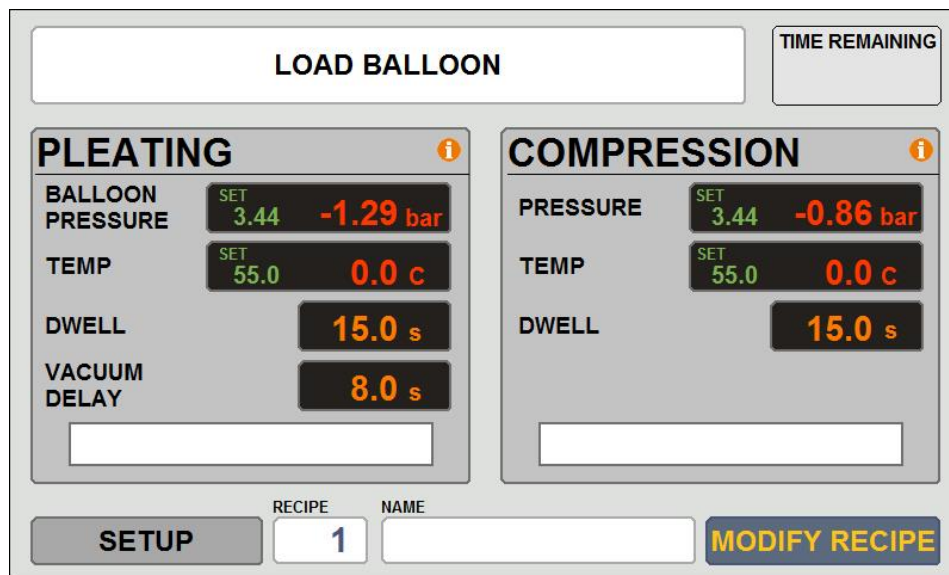


Blockwise Engineering LLC
www.blockwise.com

Blockwise's pneumatically actuated full-recipe controlled balloon wrapping machine, the **model VC wrapping machine**, includes a touchscreen Human-Machine Interface (HMI) that is used to program and operate the machine. This document briefly describes how the touchscreen is used to program, calibrate and operate the machine.



RUN SCREEN – This is the main screen for recipe progress. It displays balloon pressure, station temperatures, pleating and compression dwell times, and compression station pressure, along with recipe name and number. A message box across the top informs and instructs the user about progress and next steps. A countdown timer is also provided.



This screenshot shows recipe number 1, which in this case is left unnamed. The setpoints for balloon pressure and compression station actuation pressure are both 3.44 bar, the setpoints for pleating and compression station temperature are both 55°C, and the dwell times for pleating and compression are both 15 s. Vacuum will begin 8 seconds after the start of pleating.



MODIFY RECIPE SCREEN – Displays and allows changes to the currently-selected recipe.

NAME
RECIPE

PLEAT SETTINGS i

BALLOON PRESSURE <input type="text" value="3.44 bar"/>	PLEAT DWELL <input type="text" value="15.0 s"/>
PLEAT TEMP <input type="text" value="55.0 C"/>	VACUUM DELAY <input type="text" value="8.0 s"/>

COMPRESSION SETTINGS i

COMP PRESS <input type="text" value="3.44 bar"/>	COMP DWELL <input type="text" value="15.0 s"/>
COMP TEMP <input type="text" value="55.0 C"/>	

SETUP SCREEN – Machine-wide settings are displayed and changed here. This screen also handles Pressure Calibration and the Error Log.

Recipe Trigger: The instant at which the balloon inflates as part of a recipe

Not At Temp: Allows recipes to execute when stations are more than 5°C outside setpoint

Buzzer: Audible beep to prompt each stage of a full recipe cycle

Security: Password protection for Operator lockout of machine settings

Cycle Count: Full recipe cycles since last reset

Units: Switch between metric and imperial

Errors/Clear Logs: Shows registered errors, allows them to be cleared

Pressure Cal: Calibrate pressure sensors for balloon inflation and compression actuation

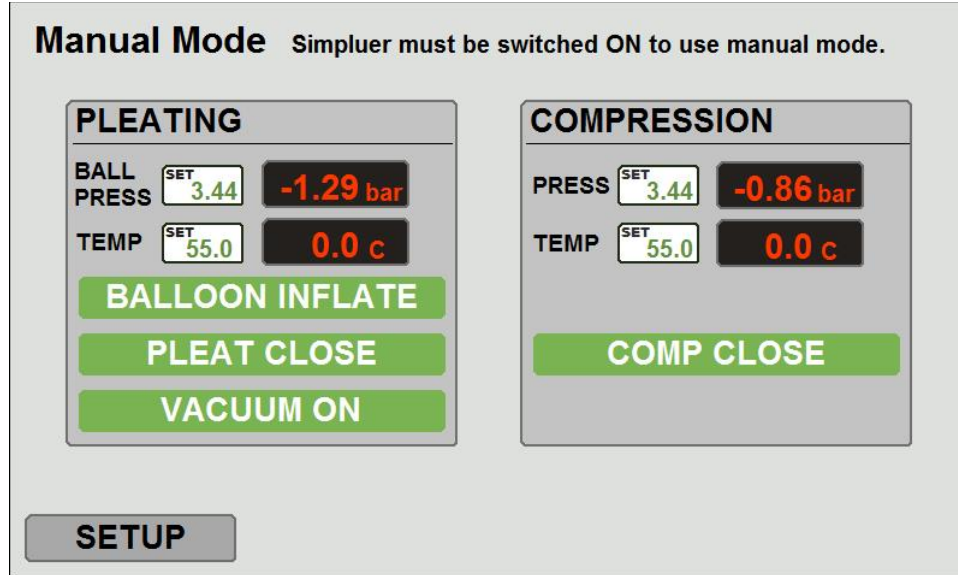
<p>RECIPE TRIGGER i</p> <p>START BUTTON <input type="radio"/></p> <p>SIMPLUER SWITCH <input checked="" type="radio"/></p>	<p>SECURITY i</p> <p>USER ACCESS: UNRESTRICTED</p> <p style="text-align: center; margin-top: 10px;"><input type="button" value="CHANGE PASS"/></p>	<p>UNITS</p> <p>TEMP <input type="text" value="C"/></p> <p>PRESS <input type="text" value="bar"/></p>
<p>NOT AT TEMP i</p> <p>ENABLE OPERATION <input type="radio"/></p> <p>DISABLE OPERATION <input checked="" type="radio"/></p>	<p>CYCLE COUNT</p> <p style="text-align: center; font-size: 24px;">0</p> <p style="text-align: center;"><input type="button" value="RESET"/></p>	<p style="text-align: center; margin-top: 10px;"><input type="button" value="ERRORS"/></p> <p style="text-align: center;"><input type="button" value="PRESSURE CAL"/></p> <p style="text-align: center;"><input type="button" value="CLEAR LOGS"/></p>
<p>BUZZER i</p> <p>ENABLED <input type="radio"/></p> <p>DISABLED <input checked="" type="radio"/></p>	<p><input type="button" value="RUN RECIPE"/> <input type="button" value="MANUAL MODE"/></p>	
		<p>HMI v1.9 MCU v0.0</p>

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MANUAL MODE SCREEN – Allows all machine functions to be commanded manually (instead of executing a recipe sequence), with the exception of dwell times.



In this screen the operator can enter setpoints for balloon pressure, compression actuation pressure, pleating and compression station temperatures, and toggle vacuum, balloon inflation, and pleating and compression station actuation.