II ATTACHMENT

OPERATOR MANUAL

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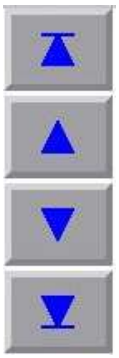
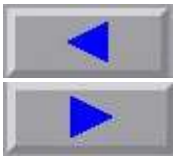
II.1 USING THE OPERATOR'S PANEL

II.1.1 Main Screen

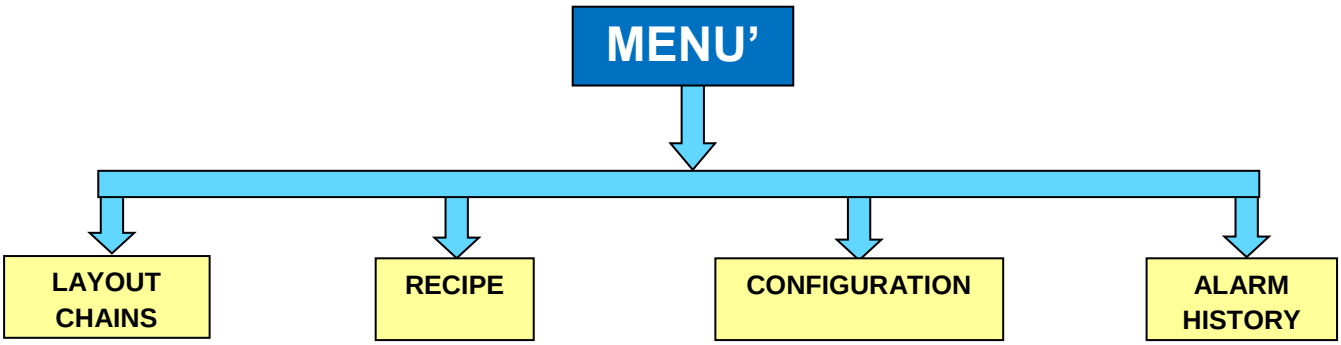
The graphical operator's interface is a tool that's widely used in the industrial sector for human-machine interfaces (HMI).
The line is equipped with a universal graphical "touch screen" operator's terminal for viewing the images, messages and parameters associated with the processing data.

II.1.2 Touch Screen Buttons

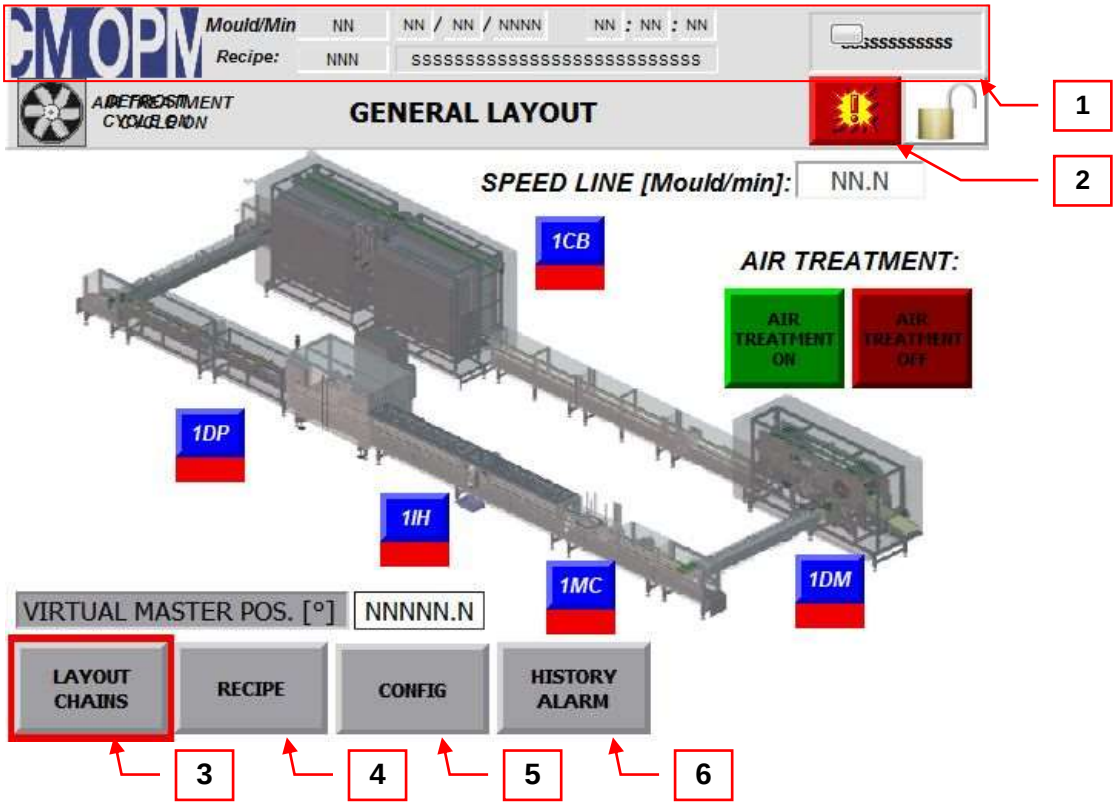
These are virtual buttons shown on the screen.

ICON	ICON DEFINITIONS
	Scroll buttons.
	When pressed, this icon allows the user to return to the main menu screen.
	When pressed, these icons allow the user to switch from one menu screen to the next.
	When pressed, this icon allows the user to call up the message summary screen from any of the operator interface screens.
	When pressed, this icon allows the user to return to the touch screen panel's main screen.
	When pressed, these buttons allow the user to change the interface language based on the flag selected.
	Editable variable.
	Read-only variable.

II.1.3 Program Structure



II.2 MAIN MENU

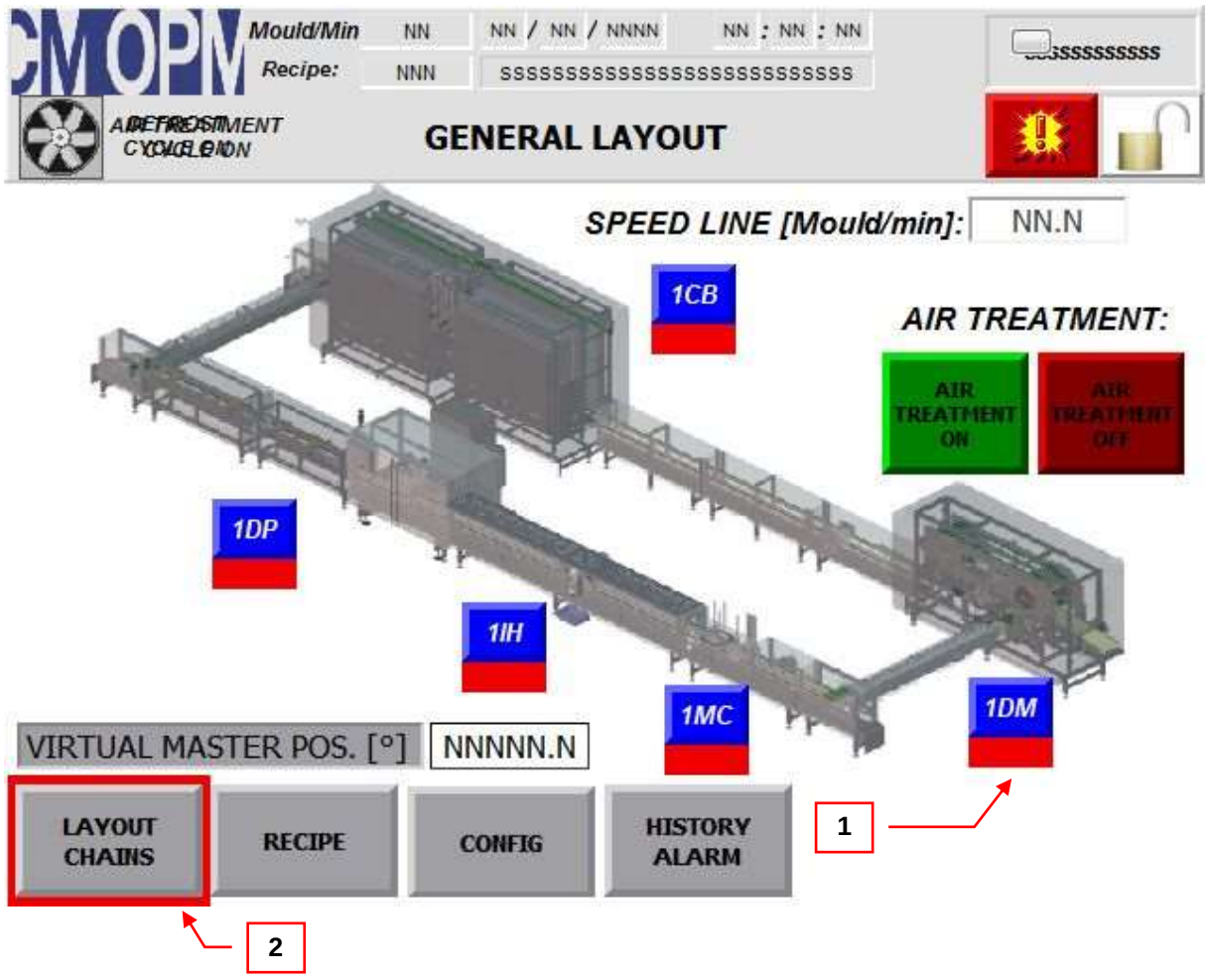


Using the virtual buttons on the main menu screen, the user can access the machine control sections, which, in addition to the information panel, also include all the screens for displaying the processing dates and formats, as well as a button that allows the user to access a screen that lists all the alarms.
This screen contains:

1		The date and time, as well as information regarding the format currently being processed.
2		Alarm signal button.
3	***LAYOUT CHAINS***	By pressing the virtual button, the user can access the specific screens.
4	***RECIPE***	
5	***CONFIGURATION***	
6	***ALARM HISTORY***	

II.2.1 General layout

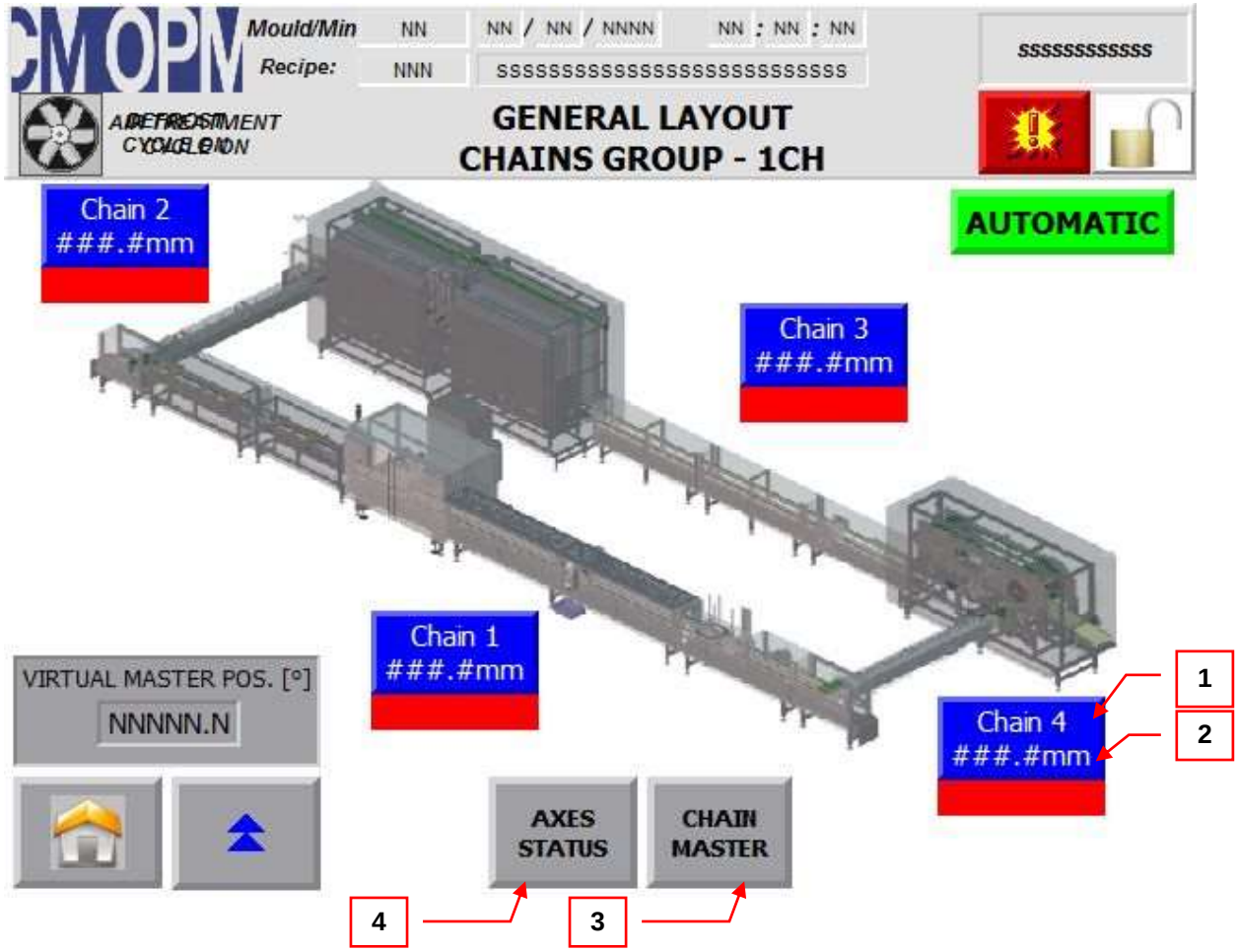
The GENERAL LAYOUT menu can be accessed by pressing the virtual button **(3)** on the "General Layout" screen.



1		By pressing the virtual button, the user can access the specific screen dedicated to each specific group.
2	***LAYOUT CHAIN***	By pressing the virtual button, the user can access the specific screen.

II.2.2 Layout chain

The LAYOUT CHAIN menu can be accessed by pressing the virtual button **(2)** on the "General layout" screen.



1		By pressing the virtual button, the user can access the specific screen dedicated to each specific chain.
2		From this position, the user can view the indicated variable.
3	***CHAIN MASTER***	By pressing the virtual button, the user can access the specific screen.
4	**AXES STATUS**	By pressing this position, the user can access the screen for the axes status

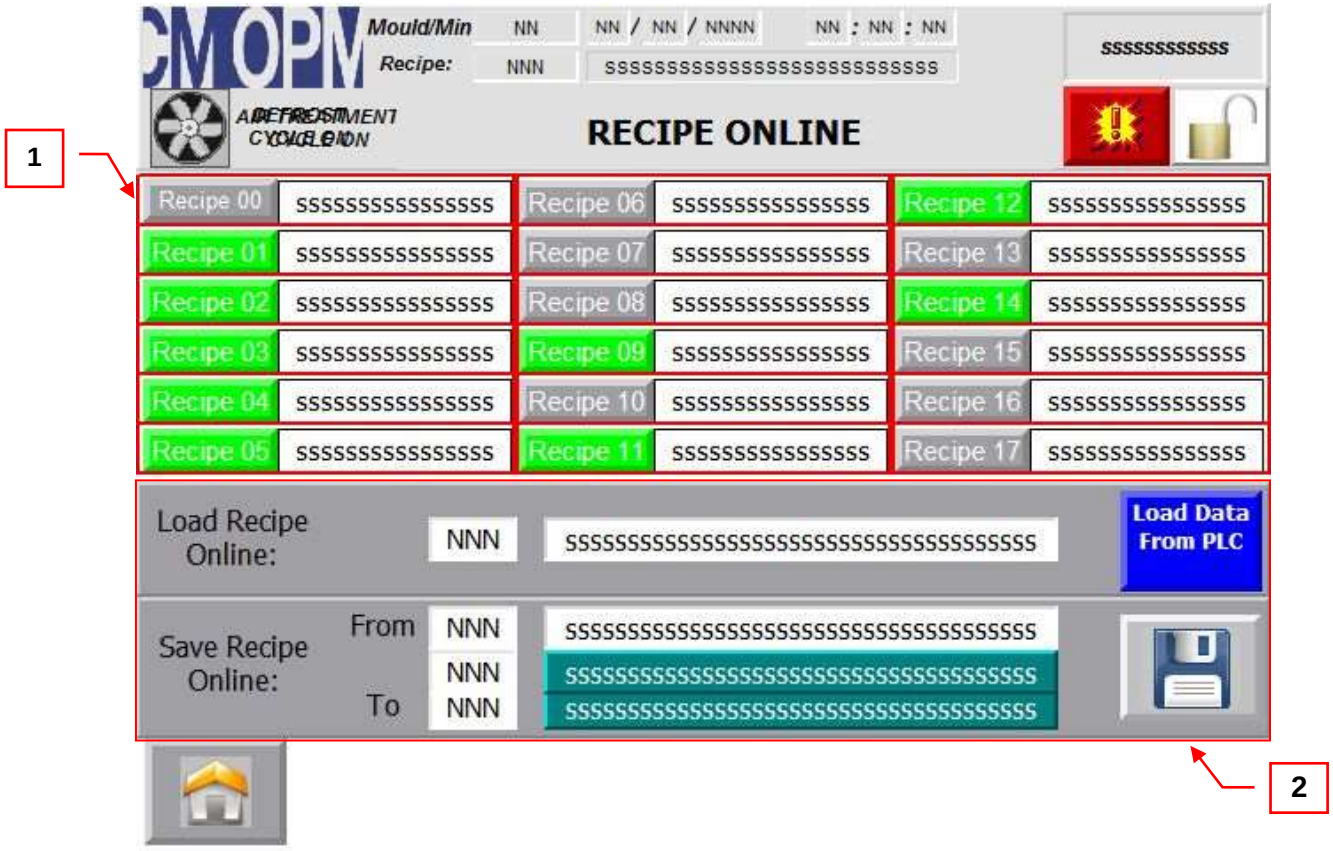
From the "layout chain" screen, the user can access the CHAIN screen by pressing the virtual button **(1)**.

The screen display is the same for the various chain conveyor units. The screen for **CHAIN 1** has been provided as an example.

1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can view the indicated variable.

II.2.3 Recipe

The RECIPE screen can be accessed by pressing the virtual button **(4)** on the "Main Menu" screen.



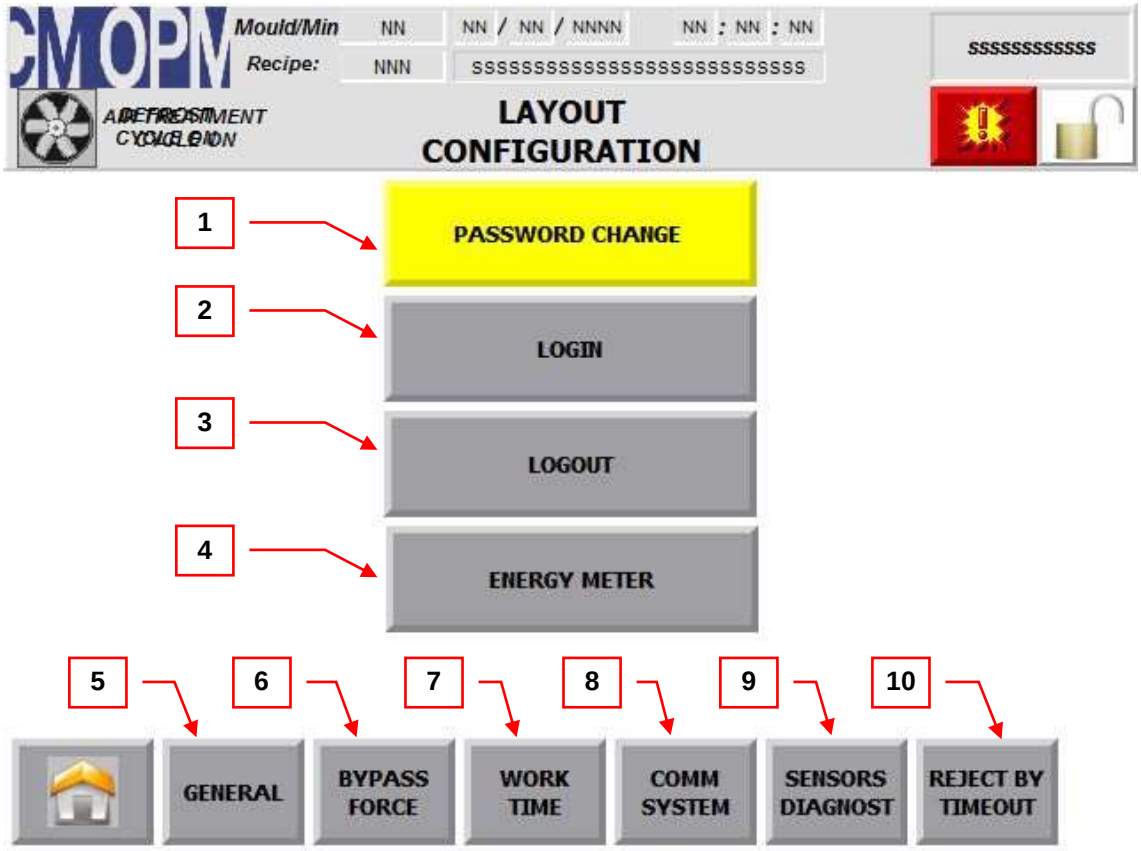
The machine's recipe management interface has been designed to allow for the recipes to be easily edited in online mode.
This allows users who are authorized to manage production recipes to edit and save any format other than that which is in progress without interrupting the automatic cycle.

1	From this position, the user can view the recipe currently in use.
2	From this position, the user can Save the recipe data and send them to the PLC, and Load the recipe date and send them to the PLC. These two options require additional confirmation, which the interface will display after the relative virtual button has been pressed..

The edit options require additional confirmation, which the interface will display after the relative virtual button has been pressed.

II.2.4 Configuration

The CONFIGURATION menu can be accessed by pressing the virtual button **(5)** on the "Main Menu" screen.

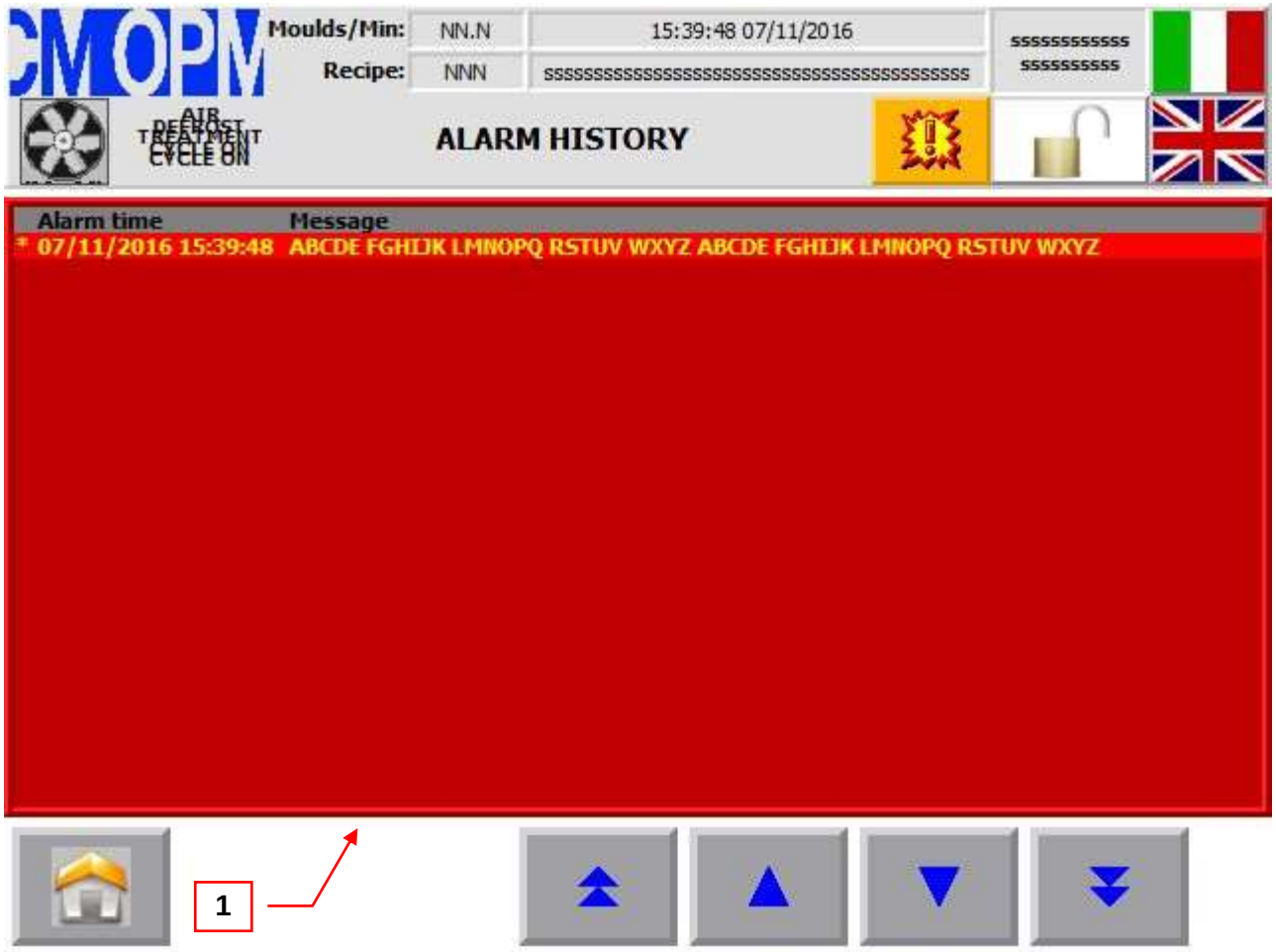


1	***PASSWORD CHANGE***	By pressing the virtual button, the user can access the specific function.
2	***LOGIN***	By pressing the virtual button, the user can access the specific screen.
3	***LOGOUT***	By pressing the virtual button, the user can access the specific function.
4	***ENERGY METER***	By pressing the virtual button, the user can access the specific function.
5	***GENERAL***	By pressing the virtual button, the user can access the specific screen.
6	***BYPASS FORCE***	By pressing the virtual button, the user can access the specific screen.
7	***WORK TIME***	By pressing the virtual button, the user can access the specific function.
8	***COMM SYSTEM***	By pressing the virtual button, the user can access the specific function.
9	***SENSOR DIAGNOSTIC***	By pressing the virtual button, the user can access the specific function.
10	***REJECT BY TIMEOUT***	By pressing the virtual button, the user can access the specific function.

II.2.5 Alarm History

The ALARM HISTORY screen can be accessed by pressing the virtual button **(6)** on the "Main Menu" screen.

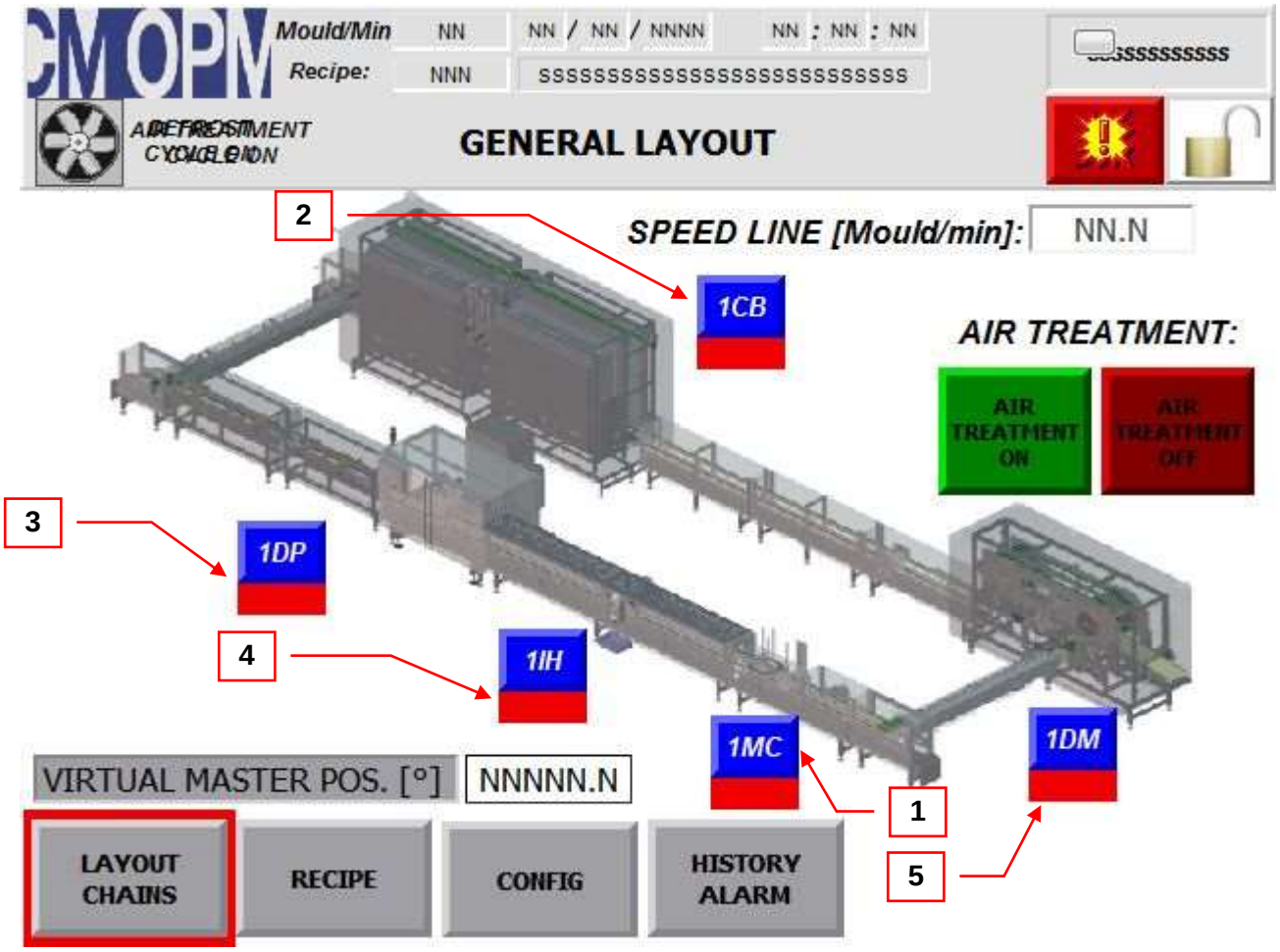
From any screen in which the virtual button  is displayed, the user can press this button to access the following screen.



1	This section contains the interface for displaying the system's alarms list.

II.3 GROUPS LAYOUT

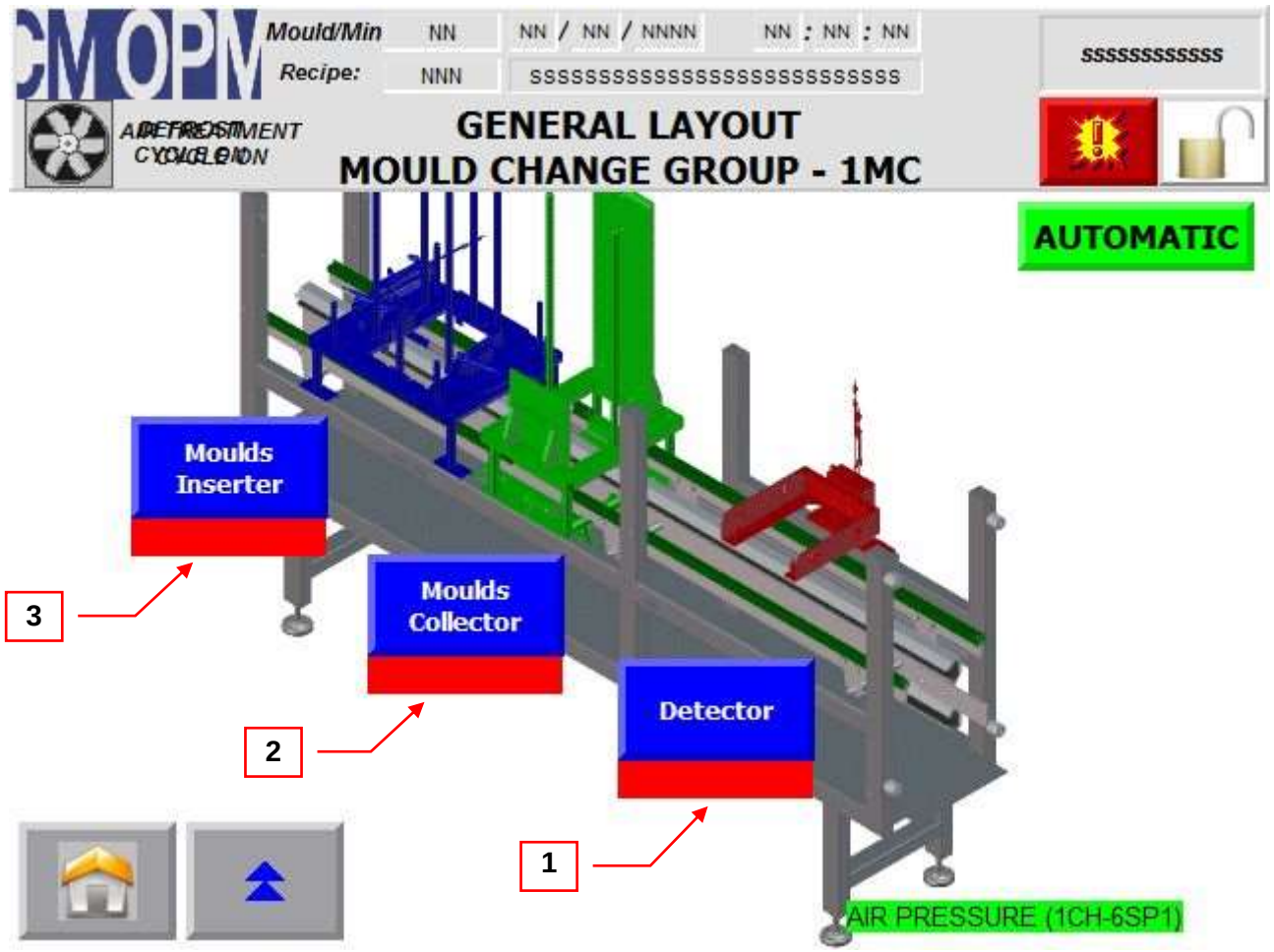
From the " General layout " menu, the user can access the specific unit overview screens by pressing the virtual button **(1)**.



1	II.3.1	1MC	MOULD CHANGE GROUP
2	II.3.2	1CB	MOULD COOLING GROUP
3	II.3.3	1DP	DEPOSITOR GROUP
4	II.3.4	1IH	MOULD HEATING GROUP
5	II.3.5	1DM	DEMOULDER GROUP

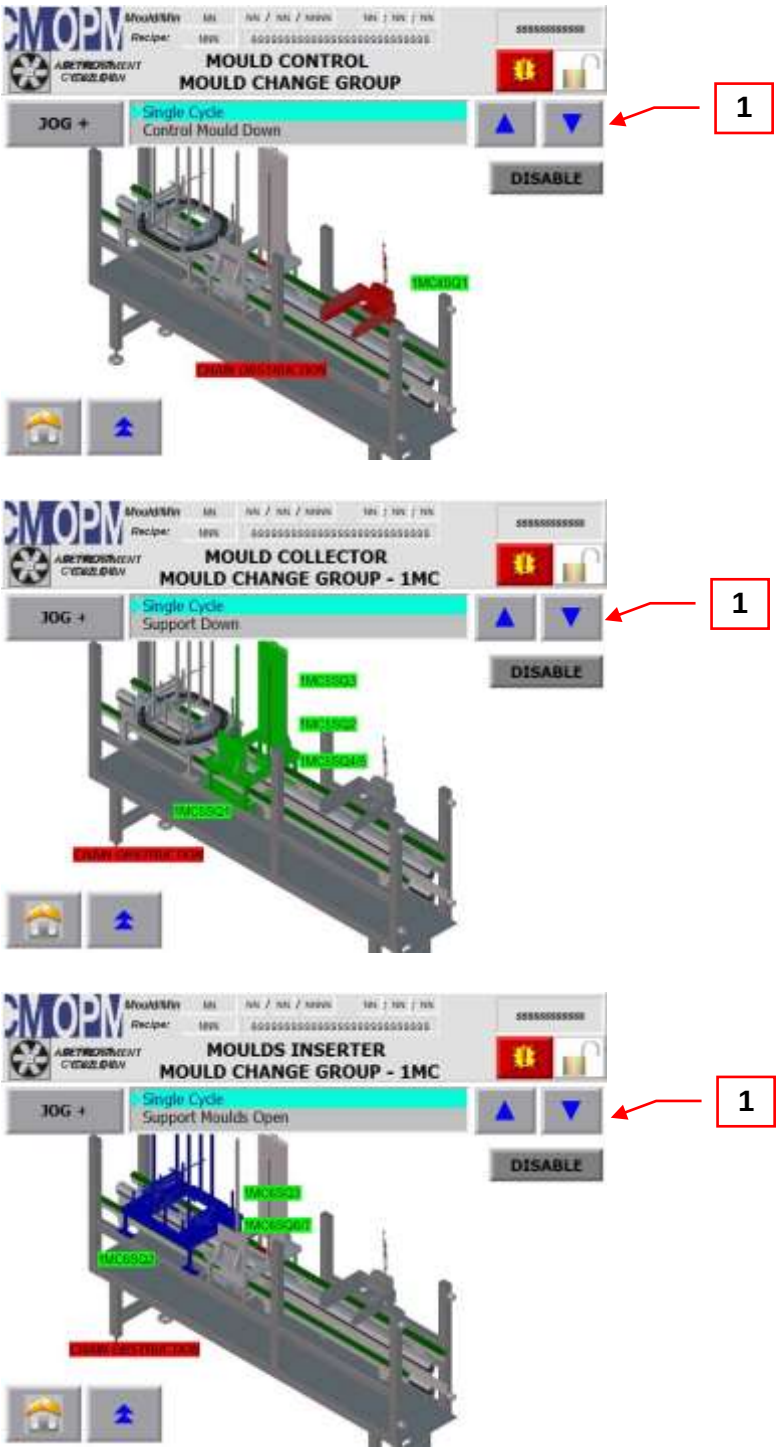
II.3.1 MOULD CHANGE GROUP (**1MC**)

From the "General layout" menu, the user can access the MOULD CHANGE GROUP menu by pressing the virtual button **(1MC)**.
By pressing the virtual button the user can access the specific screens for the devices installed within the group.



1	**DETECTOR**	
2	**MOULDS COLLECTOR**	By pressing the virtual button, the user can access the specific screen.
3	**MOULDS INSERTOR**	

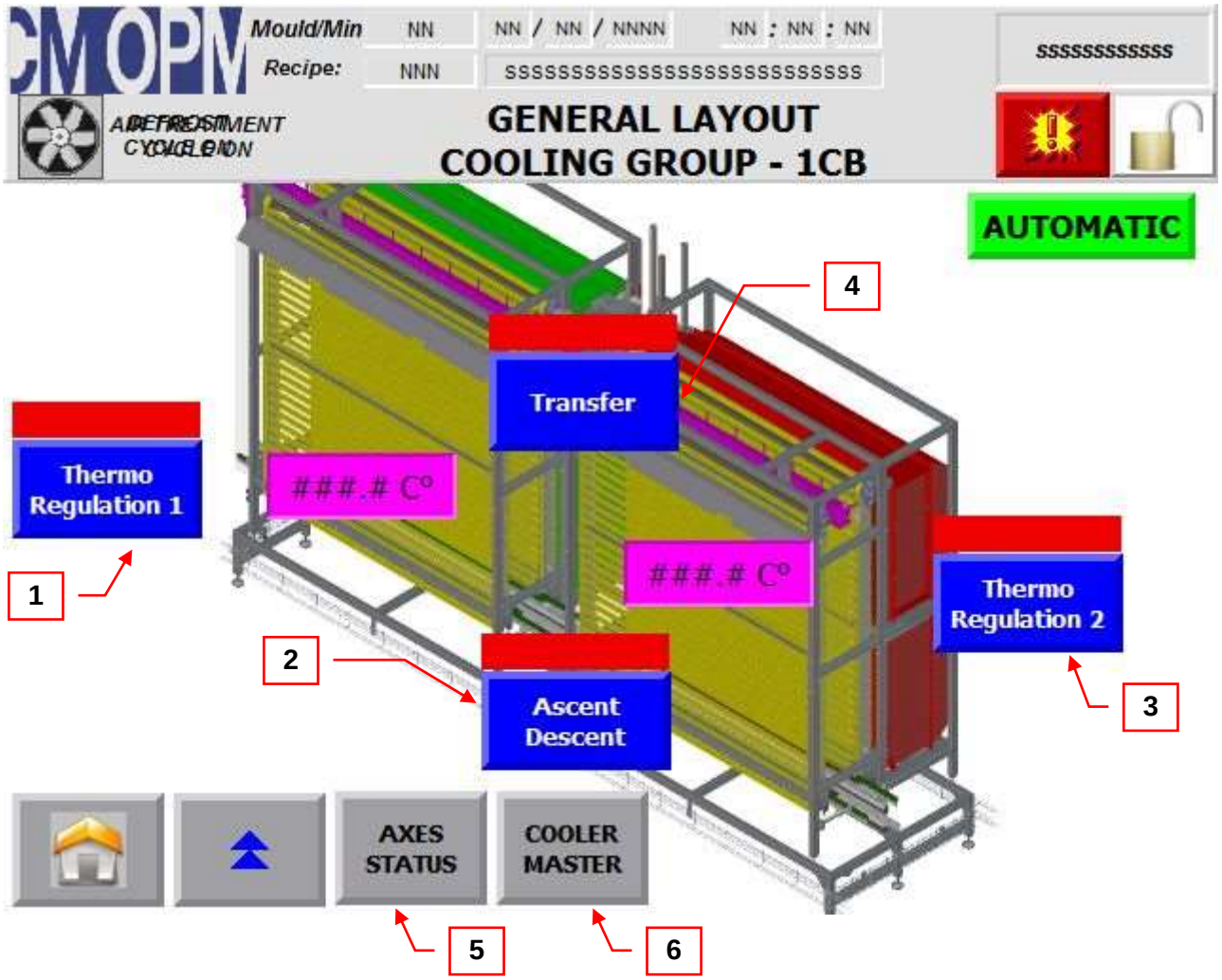
The display is the same for the **MOULD CHANGE GROUP** screens.
A number of the most representative screens are described below for exemplary purposes.



1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.

II.3.2 COOLING GROUP (**1CB**)

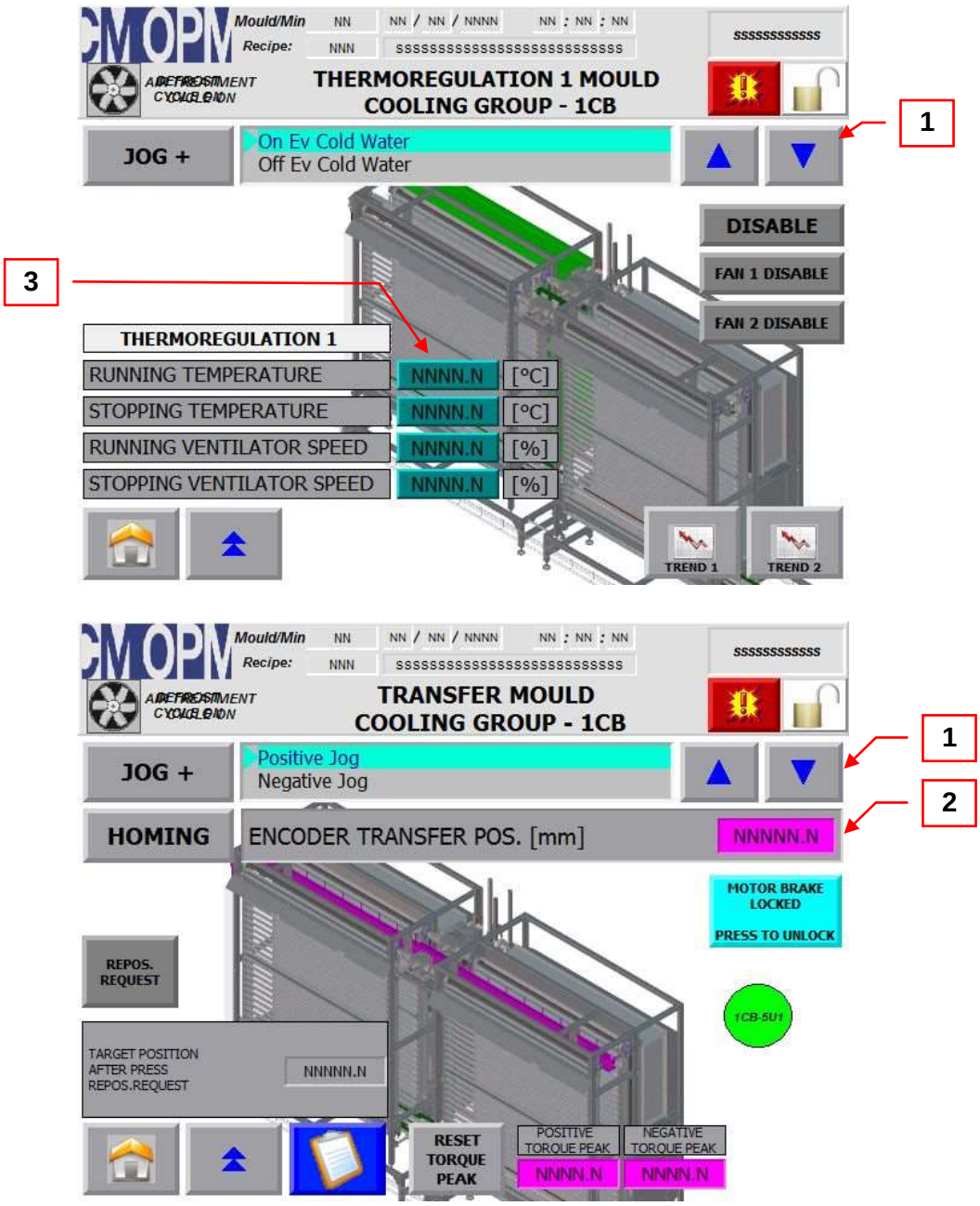
From the " General layout " menu, the user can access the COOLING GROUP menu by pressing the virtual button **(1CB)**.
By pressing the virtual button the user can access the specific screens for the devices installed within the group.



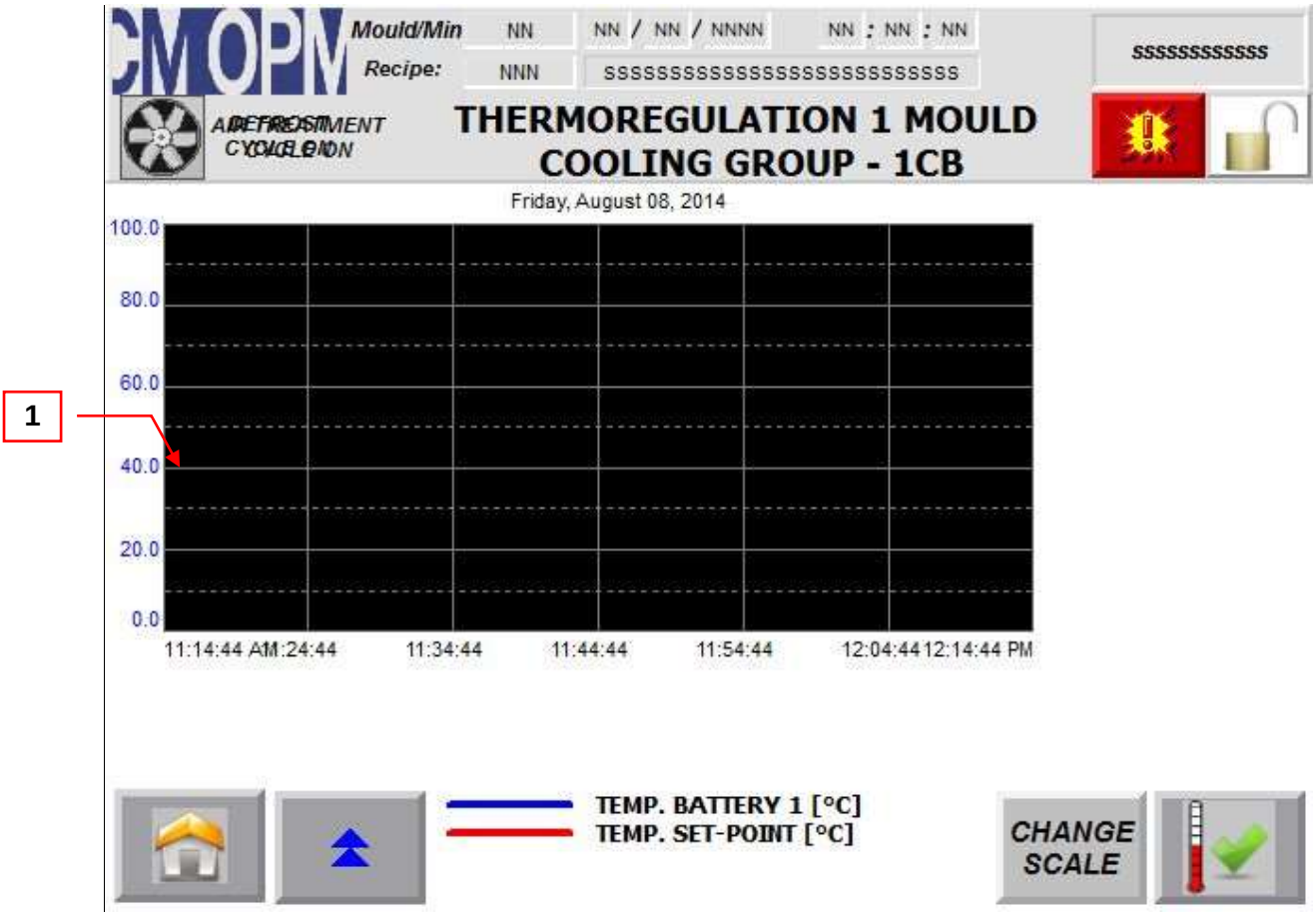
1	**THERMOREGULATION 1**
2	**ASCENT/DESCENT**
3	**THERMOREGULATION 2**
4	**TRANSFER**
5	**AXES STATUS**
6	**COOLER MASTER**

By pressing the virtual button, the user can access the specific screen.

The display is the same for all the **COOLING GROUP** screens.
A number of the most representative screens are described below for exemplary purposes.



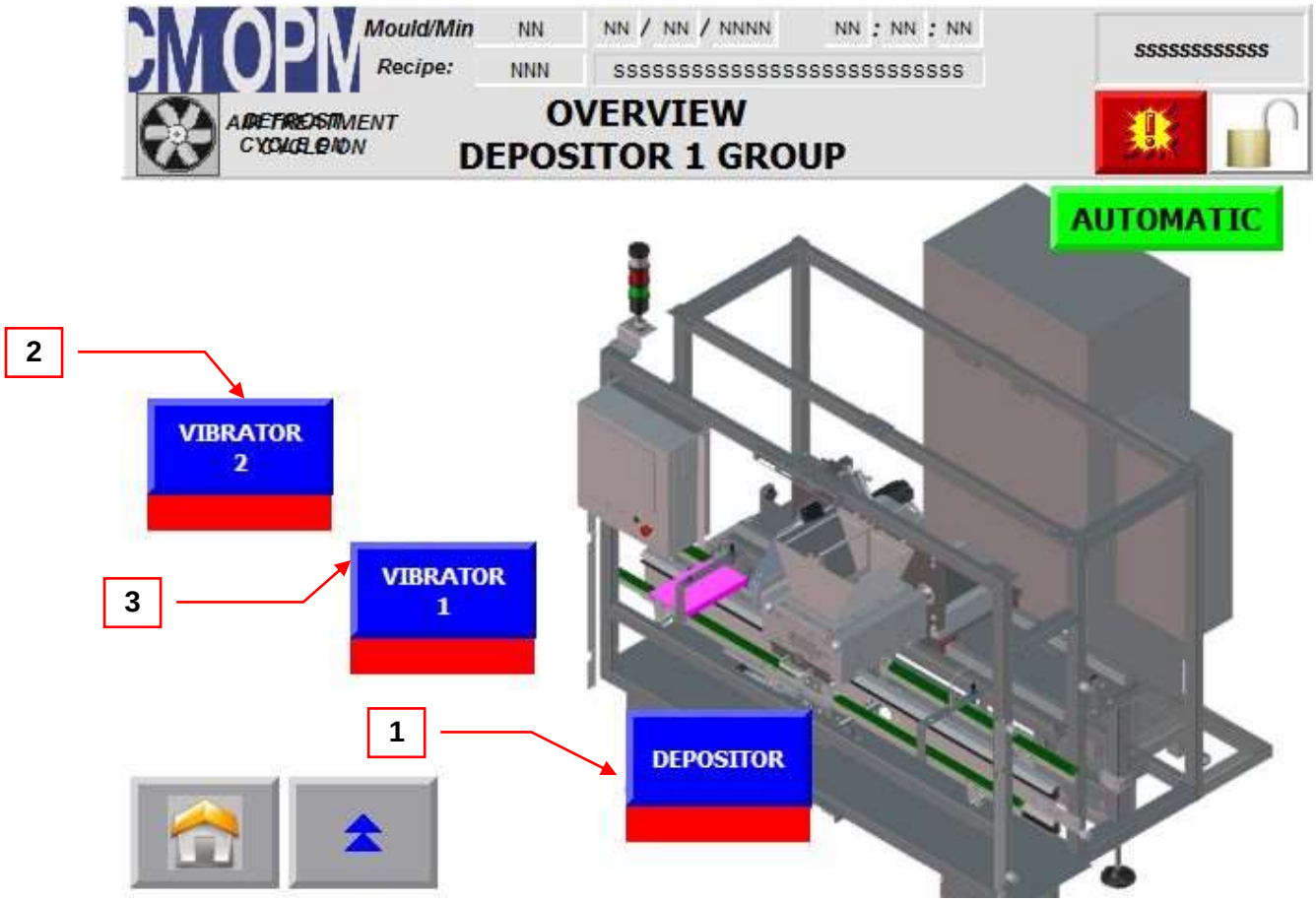
1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can view the indicated variable.
3	From this position, the user can set the indicated variable.



1	From this position, the user can view the progress of the variable over time.

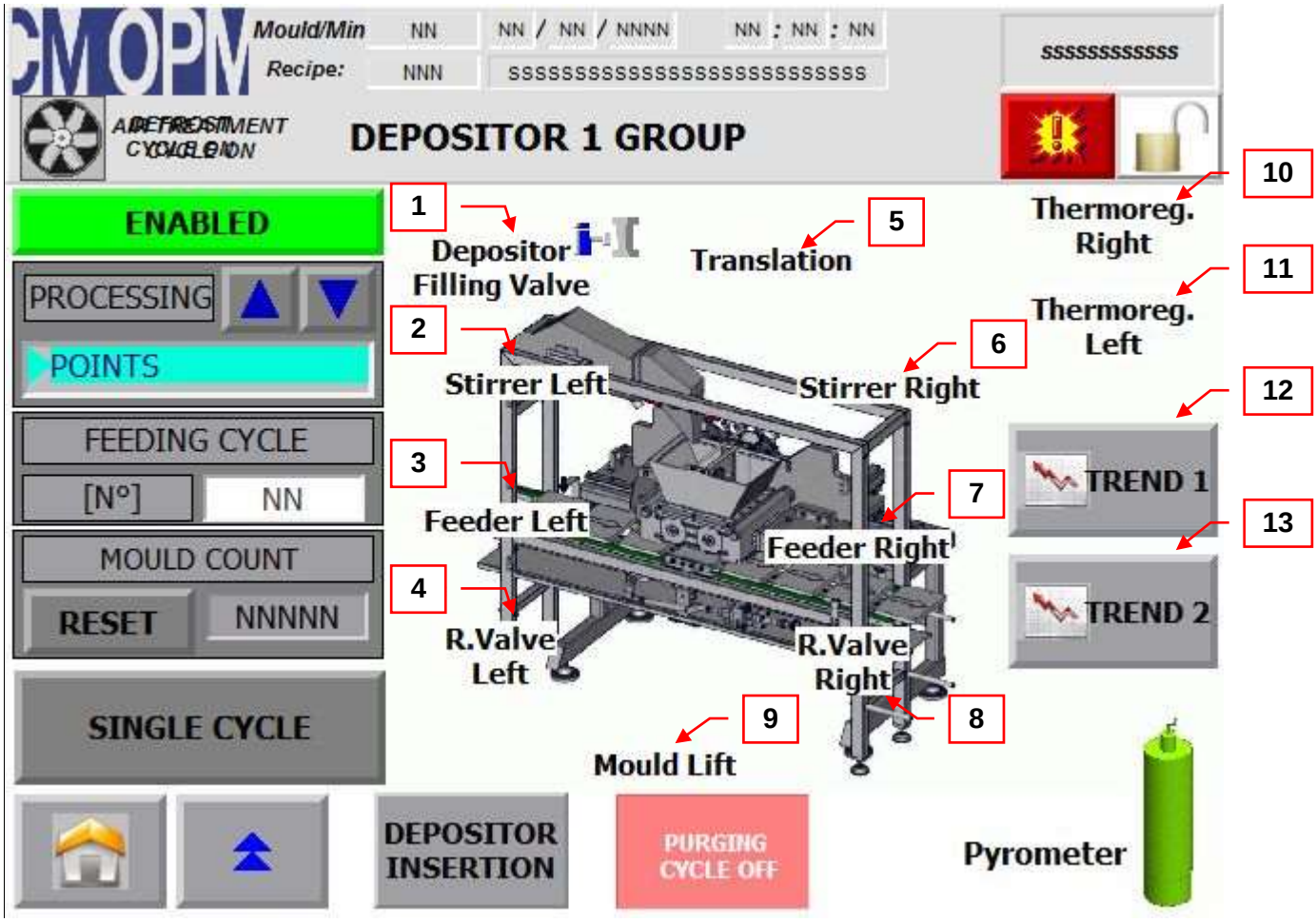
II.3.3 DEPOSITOR GROUP (**1DP**)

From the "General layout" menu, the user can access the DEPOSITOR GROUP menu by pressing the virtual button **(1DP)**.
By pressing the virtual button the user can access the specific screens for the devices installed within the group.



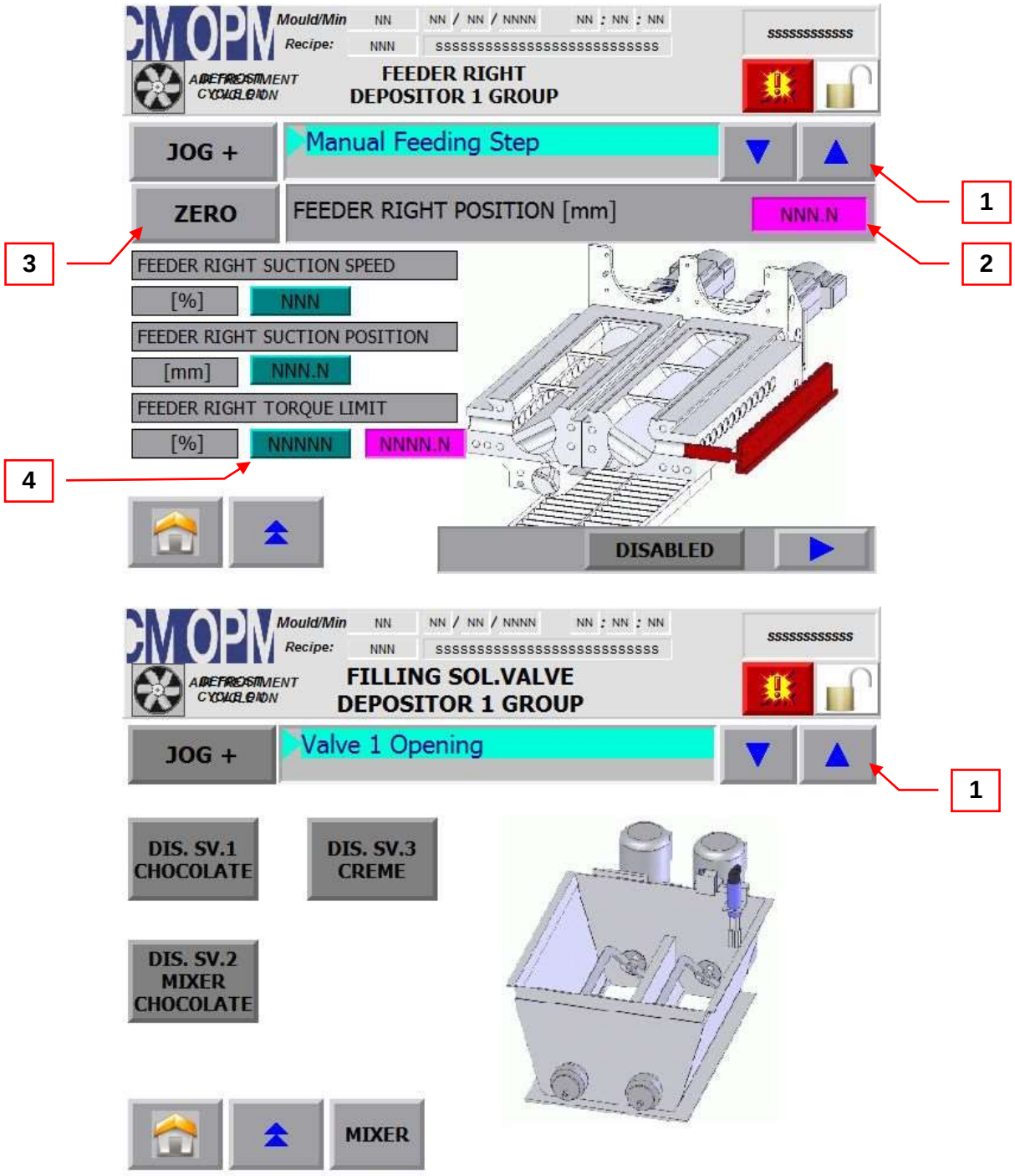
1	**DEPOSITOR**	By pressing the virtual button, the user can access the specific screen.
2	**VIBRATOR 1**	
3	**VIBRATOR 2**	

The display is the same for all the **DEPOSITOR GROUP** screens.
A number of the most representative screens are described below for exemplary purposes.

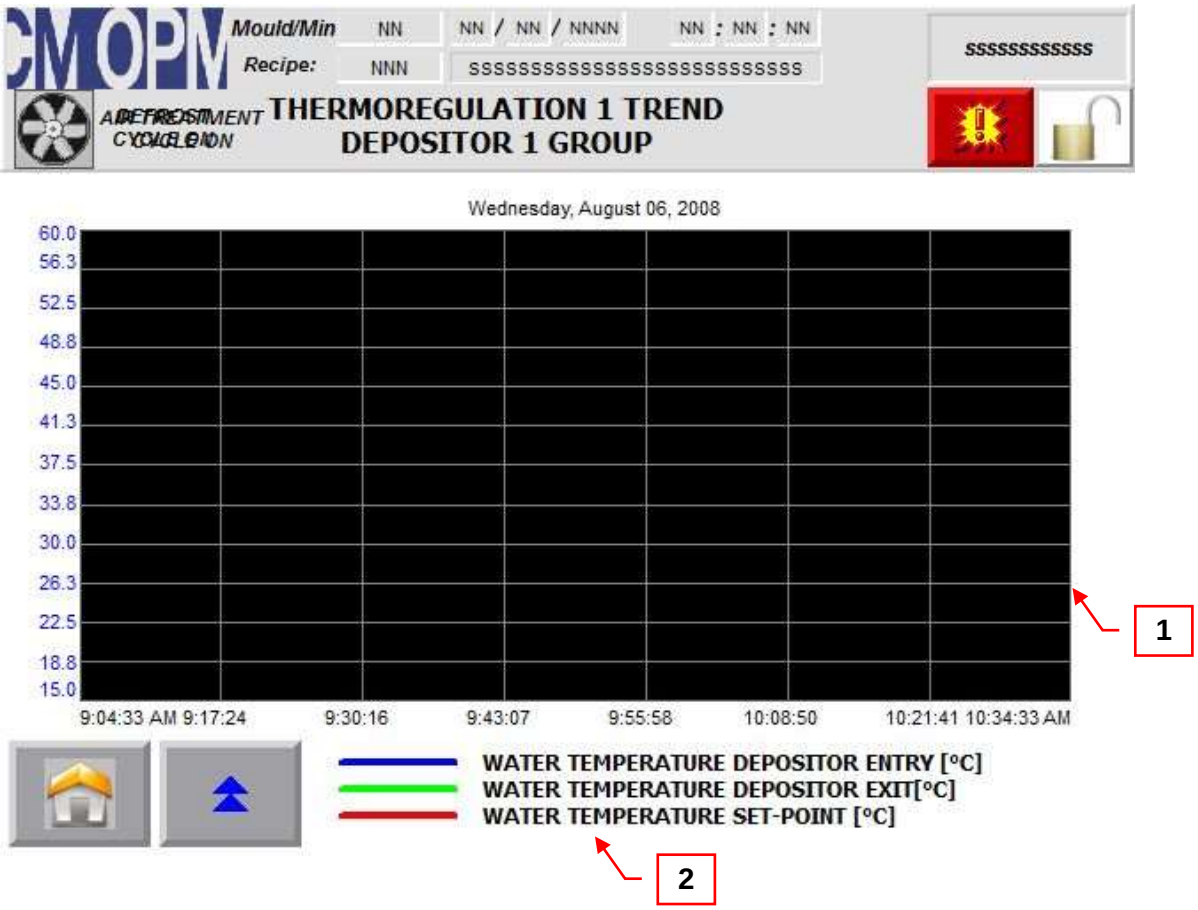


1	DEPOSITOR FILLING VALVE
2	STIRRER LEFT
3	FEEDER LEFT
4	R. VALVE LEFT
5	TRANSLATION
6	STIRRER RIGHT
7	FEEDER RIGHT
8	R. VALVE RIGHT
9	MOULD LIFT
10	THERMOREG. RIGHT
11	THERMOREG. LEFT
12	TREND 1
13	TREND 2

By pressing the virtual button, the user can access the specific screen.



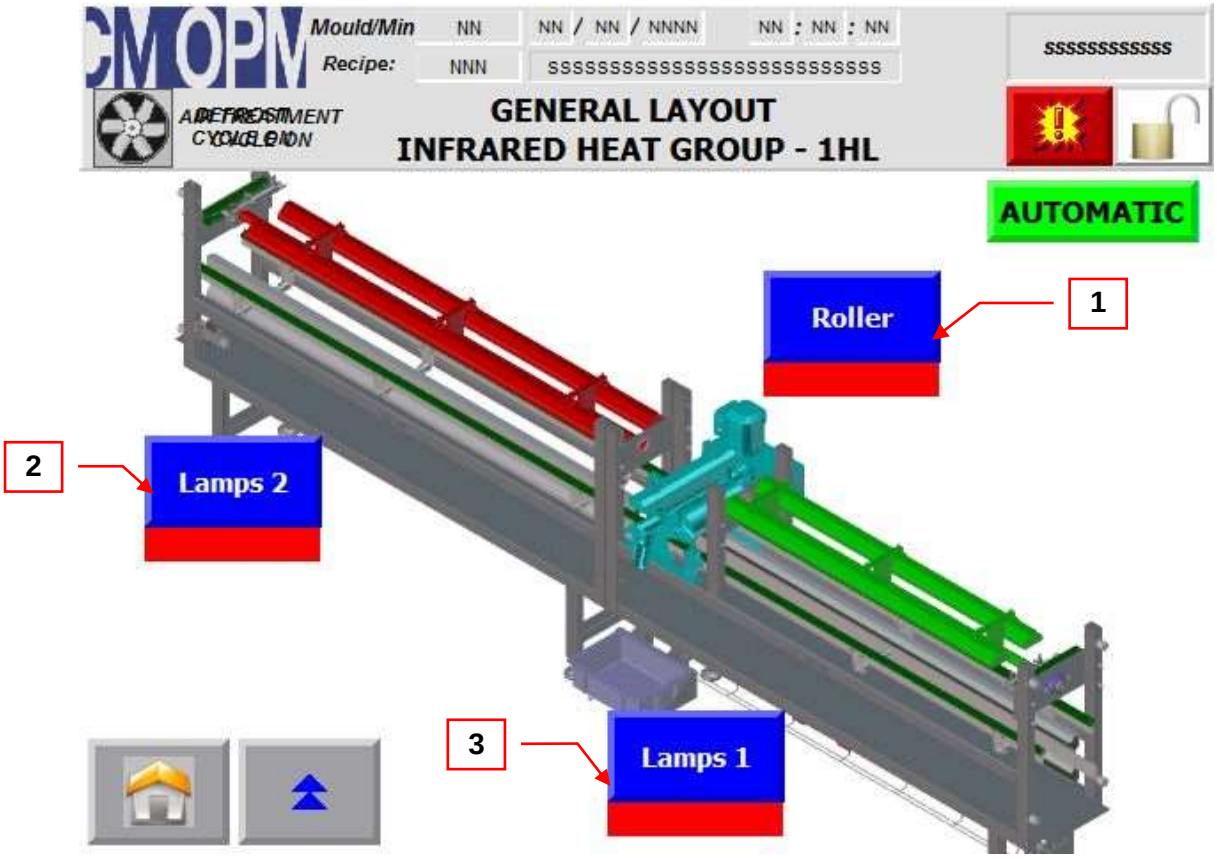
1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can view the indicated variable.
3	By pressing this button, the user can reset the indicated axis.
4	From this position, the user can set the indicated variable.



1	From this position, the user can view the progress of the variable over time.
2	From this position, the variable is specified.

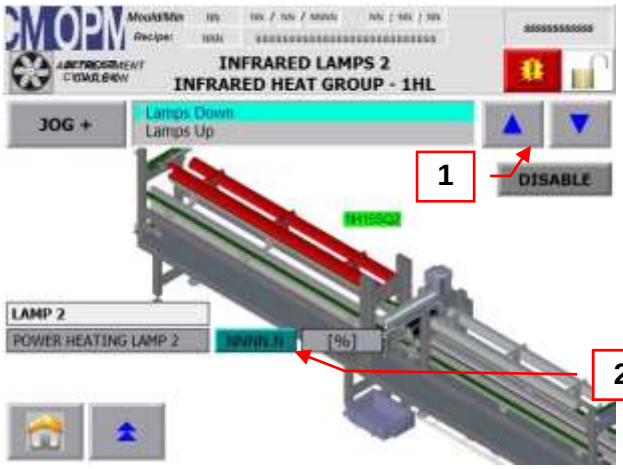
II.3.4 MOULD HEATING (**1HE**)

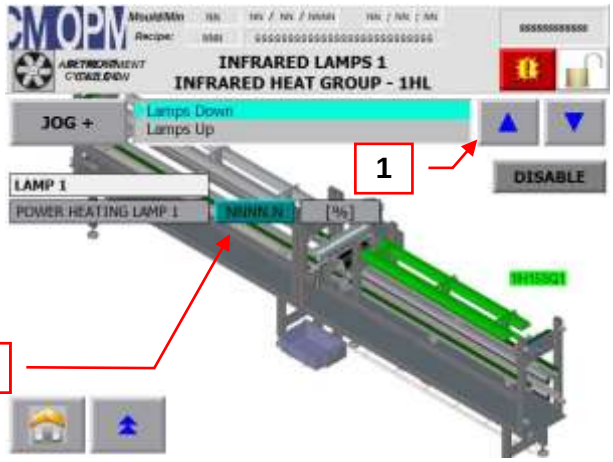
From the "General layout" menu, the user can access the MOULD HEATING GROUP menu by pressing the virtual button **(1HE)**.
By pressing the virtual button the user can access the specific screens for the devices installed within the group.

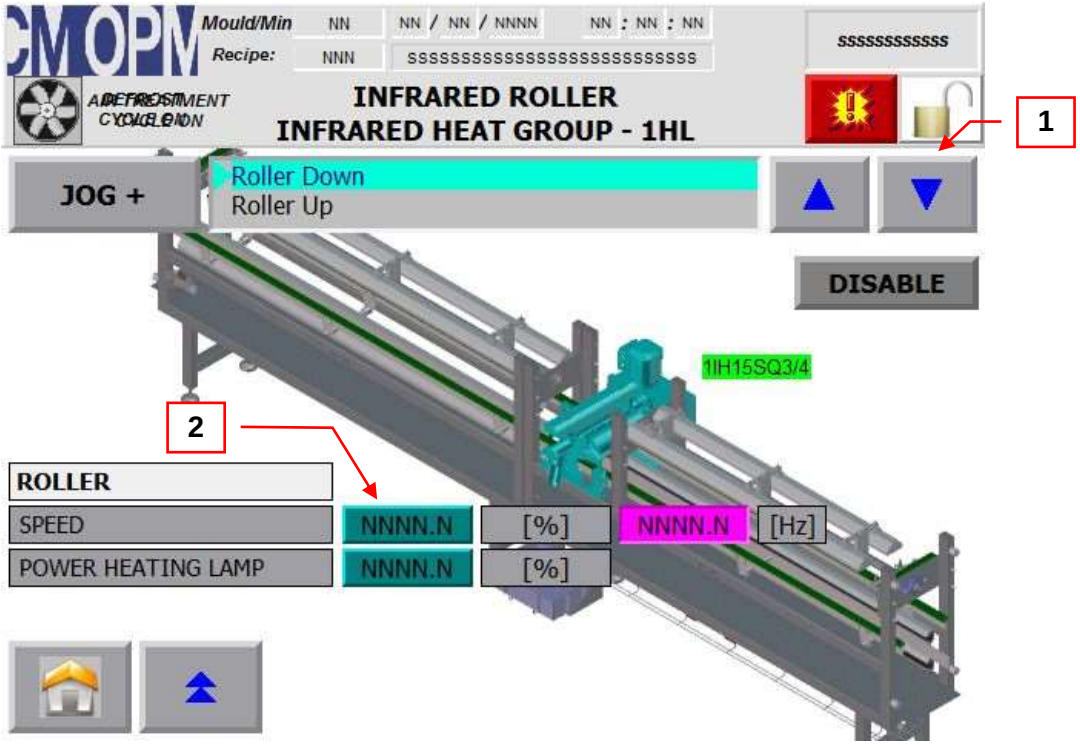


1	**ROLLER**	
2	**LAMPS 2**	By pressing the virtual button, the user can access the specific screen.
3	**LAMPS 1**	

The display is the same for all the **MOULD HEATING GROUP** screens.
A number of the most representative screens are described below for exemplary purposes.



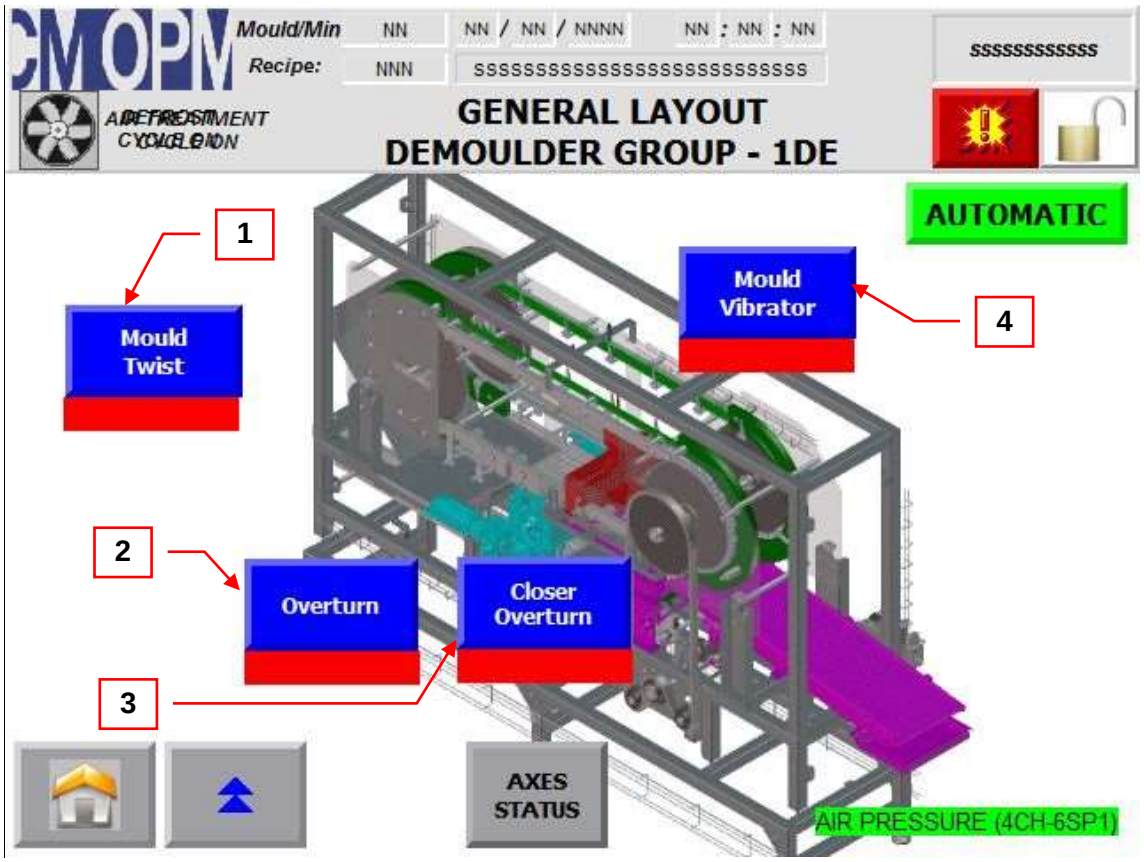




1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can set the indicated variable.

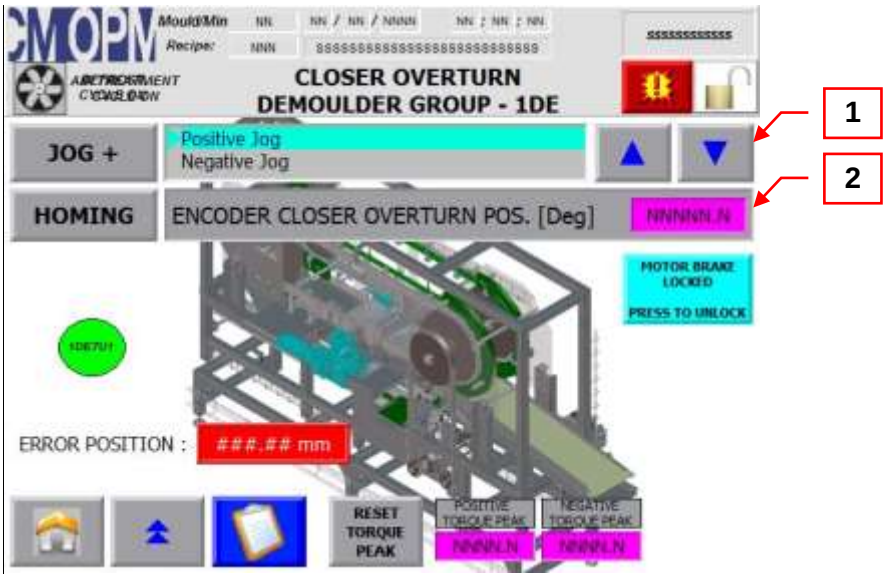
II.3.5 DEMOULDER GROUP (**1DE**)

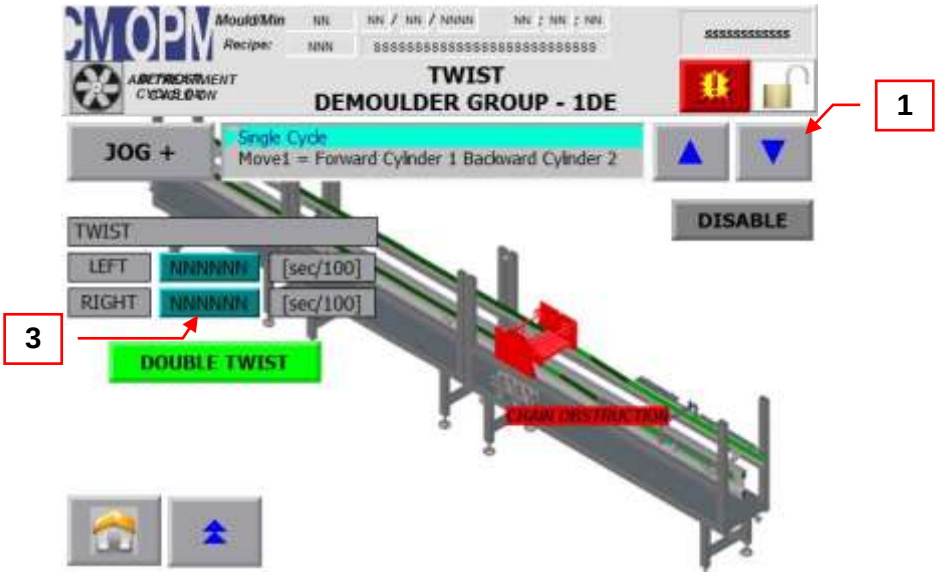
From the " General layout" menu, the user can access the DEMOULDER GROUP menu by pressing the virtual button **(1DE)**.
By pressing the virtual button the user can access the specific screens for the devices installed within the group.



1	**MOULD TWIST**	By pressing the virtual button, the user can access the specific screen.
2	**OVERTURN**	
3	**CLOSER OVERTURN**	
4	**MOULD VIBRATOR**	

The display is the same for all the **DEMOULDER GROUP** screens.
A number of the most representative screens are described below for exemplary purposes.





1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can view the indicated variable.
3	From this position, the user can set the indicated variable.

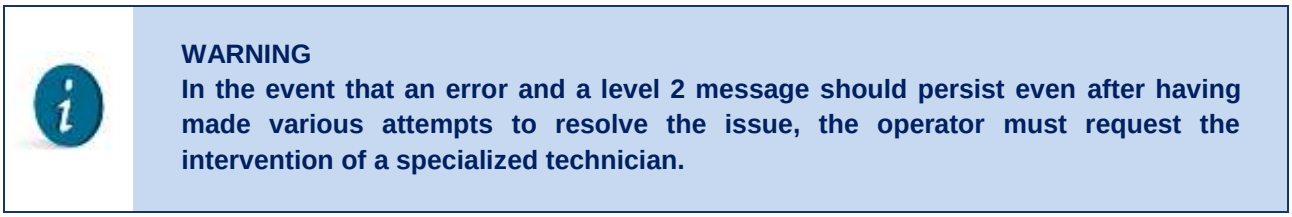
II.4 ALARMS

II.4.1 Troubleshooting

Messages - Problems
The routine diagnostics procedures and signals are managed by suitable programs and are brought to the operator's attention via the lines on the main control panel's display.

The messages can be of three different levels:

Level 1: informative messages that do not require the operator's intervention.
Level 2: malfunction messages for which the operator's intervention is required
Level 3: malfunction messages for which the intervention of a specialized technician is required



II.4.2 Alarms signals

For the list and descriptions of the alarm messages, please refer to the general moulding line manual.
Level 1 messages can regard:

- the verification that there are no physical obstacles impeding the machine's proper functionality;
- the display or monitoring of information regarding the status of the machine or a specific device.

Level 2 alarms

Level 2 messages can regard:

- the signalling and verification of the machine's emergency status;
- the verification of the cause and actual blockage conditions in relation to the flow of materials and products;
- a prompt to execute an indicated command;
- the verification of the parameters in relation to the selected production type;
- the execution of a material and product refill operation required for the machine's functionality.

Level 3 alarms

Level 3 messages can regard:

- the execution of a calibration operation to be performed for the indicated device,
- the signalling and verification of a mechanical malfunction or anomaly in relation to a specific device;
- the signalling and verification of an electrical malfunction or anomaly in relation to a specific device;
- the signalling and verification of a pneumatic malfunction or anomaly in relation to a specific device;

the indication of the charge status of the PLC's buffer battery, if present.

The interface will display the messages. Below find a list of messages that may be present or that can lead to the description given, associated to the machine or a machine typically present in the assemblies of which the machine is a part.
The general level of intervention and a typical solution is associated to the former, which can provide a preliminary indication regarding the malfunction.

LEVEL	MESSAGE DESCRIPTION	REMEDY
2	VALUE OUT OF RANGE (DEVICE)	Check that the parameters are properly set
2	TIMEOUT DEVICE	Check the causes for delay and the correct motor operation in manual mode/Jog
3	LOSS ETHERNET COMMUNICATION	Check the network connections to the nodes placed along the system
3	COMMUNICATION WITH PLC	Check the network connections to the nodes placed along the system
2	COMMUNICATION FAULT (DEVICE - CODE)	Check the error code on the display and see the Instruction manual
3	DEVICE REPOSITIONING	The device isn't in its start position when the cycle is activated
2	(DEVICE) NOT READY	Check the tripped thermal protection in the electric cabinet see also the electric diagram
3	HIGH/LOW TEMPERATURE WATER (ZONE)	Check the piping connections between the thermoregulation system and the device (check zone)
3	THERMAL PROTECTION (DEVICE - CODE)	Check the tripped thermal protection in the electric cabinet see also the diagram
1	DEVICE/FUNCTION DISABLED FROM HMI	Check from the HMI page if the device is disabled
3	ERROR CAM CALCULATION (DEVICE - CODE)	Check the nature of the failure by also reading the error code on the drive display
2	DEVICE FAULT/FAILURE	Check the nature of the fault
2	POWER SUPPLY FAULT (DEVICE - CODE)	Check that the device is correctly powered
2	EXTRAMAX LEVEL (DEVICE - CODE - ZONE)	Operate to bring the level back to optimal conditions - Check that no mechanical causes or obstructions are present
2	EXTRAMIN LEVEL (DEVICE - CODE - ZONE)	Operate to bring the level back to optimal conditions - Check that no mechanical causes or obstructions are present
2	MIN LEVEL LUBRICATION OIL (DEVICE - CODE)	Operate to bring the tank level back to optimal conditions
3	LACK OF AIR (ZONE -CODE - GROUP)	Check for the presence of air and verify the position of the switch
3	CIRCUIT BREAKER (DEVICE - CODE)	Check the tripped thermal protection in the electric cabinet see also the electric diagram
3	INVERTER FAULT (DEVICE - CODE)	Check the nature of the failure by also reading the error code on the drive display
3	THERMAL SENSOR (DEVICE - CODE)	Check the tripped thermal protection in the electric cabinet see also the diagram
2	(DEVICE) NOT IN PHASE (CODE)	Check the device position
2	DEVICE DISABLED FROM HMI	Check from the HMI page if the device is disabled
1	PROCEDURE/FUNCTION (DEVICE) ACTIVE	Perform the suggested operation
1	(DEVICE) WAITING FOR OPERATOR VALIDATION	Perform the suggested operation
2	EMERGENCY PRESSED ON CABINET (ZONE - CODE)	Check that there is no ongoing maintenance and/or cleaning works and reactivate the automatic process through operator interface
2	PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)	Check that the parameters are properly set
2	FUNCTION NOT ENABLE FOR PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)	Check that the parameters are properly set
2	PARAMETER LIMIT (PLC_PARAMETER - DEVICE - CODE)	Check that the parameters are properly set
2	FILLING NOT ENABLE FOR HIGH TANK TEMPERATURE	Reduce the water temperature se point

2	PLC BATTERY LOW	Replace the battery
2	EMERGENCY PRESSED (ZONE - CODE)	Make sure that no maintenance and/or cleaning operations are in progress and reset the emergency by turning and disengaging the mushroom-head button
2	INCOMING MOULDS TOO HOT/TOO COLD	Check that the parameters are properly set on conditioning units
3	COOLER CHILLING GROUP AIR HIGH TEMPERATURE (CODE)	Check the nature of the failure by also reading the error code on the drive display
3	COOLER CHILLING GROUP AIR LOW TEMPERATURE (CODE)	Check the nature of the failure by also reading the error code on the drive display
3	ROTATION FAILURE (DEVICE - CODE)	Check the causes for failure and the correct motor operation in manual mode/Jog
3	FAILURE PROTECTION - GUARD (DEVICE - CODE)	The relevant electrically interlocked protection must be closed properly
3	DEVICE LOSS OF ZERO POSITION (CODE)	Calibrate the equipment: make sure you are authorized to access the procedures, reposition the axis at the zero sign, press the emergency button, and press the reset button on the operator's interface
3	DEVICE REPOSITIONING ERROR (CODE)	Calibrate the equipment: make sure you are authorized to access the procedures, reposition the axis at the zero sign, press the emergency button, and press the reset button on the operator's interface
2	DEVICE TORQUE LIMIT (CODE)	Make sure that there are no mechanical impediments. Check the device's proper functionality - Check that the parameters are properly set
2	EMERGENCY ROPE PRESSED (ZONE)	Make sure that no maintenance and/or cleaning operations are in progress and reset the emergency by turning and disengaging the emergency rope
3	LOSS OF 24Vdc POWER SUPPLY	Check the tripped thermal protection in the electric cabinet see also the electric diagram
2	DEVICE PROT. GUARDS AND EMERGENCY SERIES (CODE)	Reset the emergency circuit by pressing the "Reset" button
3	AIR PRESSURE FAULT (CODE)	Check for the presence of air and verify the position of the switch
1	MAXIMUM LEVEL MOULDS COLLECTOR (CODE)	Empty the mould storage unit - check the sensor if necessary
1	MINIMUM LEVEL MOULDS INSERTER (CODE)	Operate to bring the insertion storage unit back to optimal conditions - check the sensor if necessary
2	JOG NOT INSERTED (ZONE - DEVICE)	Check the JOG connection
1	MOULDS COLLECTOR NOT FREE SPACE	Empty the mould storage unit - verify proper positioning of moulds
2	LACK OF SAFETY MOULD (DEVICE - CODE)	Verify proper positioning of safety mould
3	DEVICE BRAKE FAILURE (CODE)	Set the equipment to manual mode, raise it and release the brake; then restore the normal operating conditions
2	TIMEOUT EXCEDEED COMMUNICATION (DEVICE - FUNCTION)	Check the causes of the delay
2	SAFETY CONTROL DOORS (ZONE - DEVICE - CODE)	Close the photocell's covered doors
3	DEVICE DRIVE FAULT (CODE)	Verify the nature of the malfunction, also referring to the error code shown on the display
1	BELT WAITING FOR OPERATOR VALIDATION	Perform the suggested operation

2	BELT SLAVE FORWARD REFER TO MASTER	Verify proper positioning
2	BELT SLAVE BACKWARD REFER TO MASTER	Verify proper positioning
2	DEVICE NOT IN CORRECT POSITION (CODE)	Verify proper positioning
2	BELT TRACKING (TYPE OF BELT - ZONE - CODE)	Verify the proper functionality and positioning of the belt
2	BELT IS LOOSING TRACK (TYPE OF BELT - ZONE - CODE)	Verify the proper functionality and positioning of the belt
2	VIRTUAL MASTER ERROR CAM HOOKING	Verify the nature of the malfunction, also referring to the error code shown on the display
1	HIGH TEMPERATURE WATER EXIT TANK	Check the connections between the thermostat system's pipes and the depositor
1	LOW TEMPERATURE WATER EXIT TANK	Check the connections between the thermostat system's pipes and the depositor
1	FILLING NOT ENABLE FOR HIGH TANK TEMPERATURE	Check to make sure that the set parameters are correct

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