

# **II ATTACHMENT**

# **OPERATOR MANUAL**

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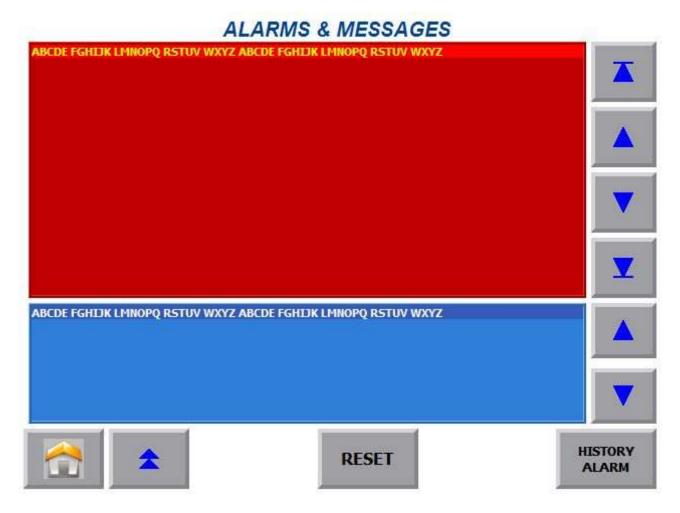
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### II.1 USING THE OPERATOR'S PANEL

#### 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

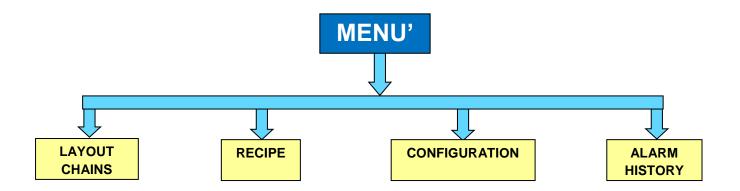
These are virtual buttons shown on the screen.

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.
<b>III</b>	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.
0.000	Editable variable.
0.000	Editable variable.
0000.00	Read-only variable.





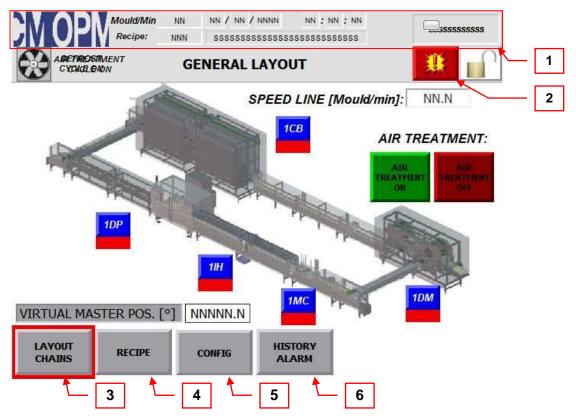
# II.1.3 Program Structure







### 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:

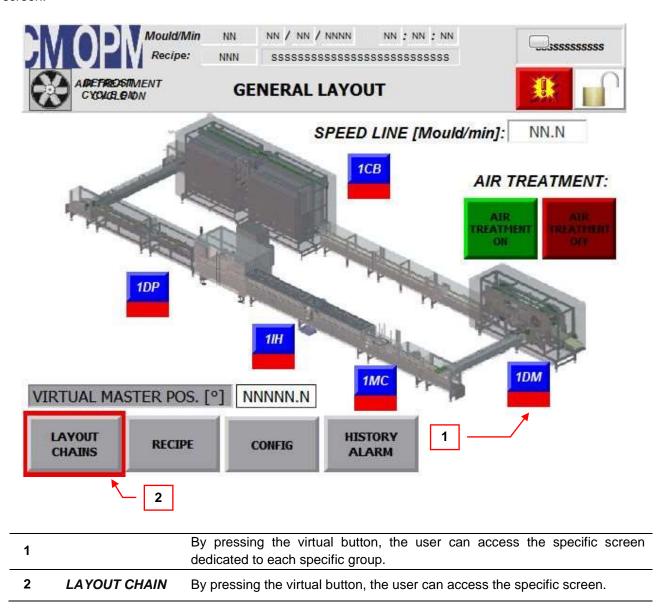
1		The date and time, as well as information regarding the format currently being processed.	
2		Alarm signal button.	
3	LAYOUT CHAINS		
4	RECIPE		
5	CONFIGURATION	- By pressing the virtual button, the user can access the specific screens.	
6	ALARM HISTORY		





### II.2.1 General layout

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

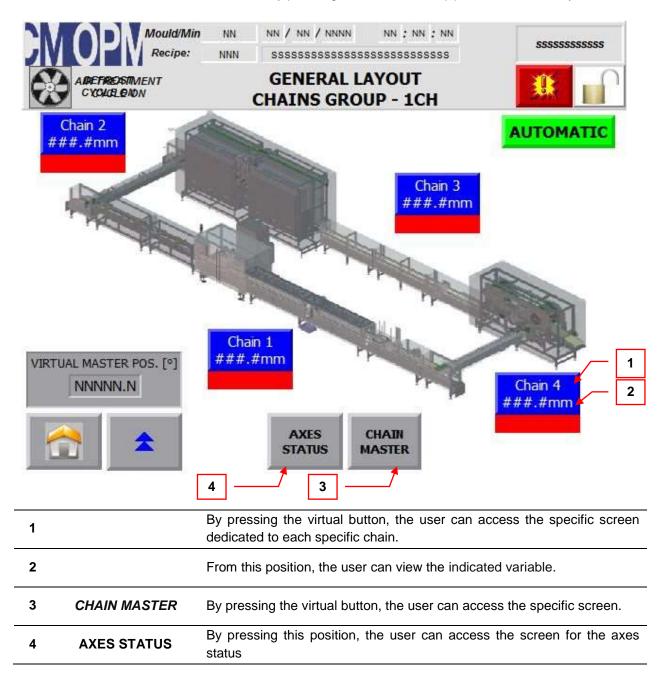






### II.2.2 Layout chain

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

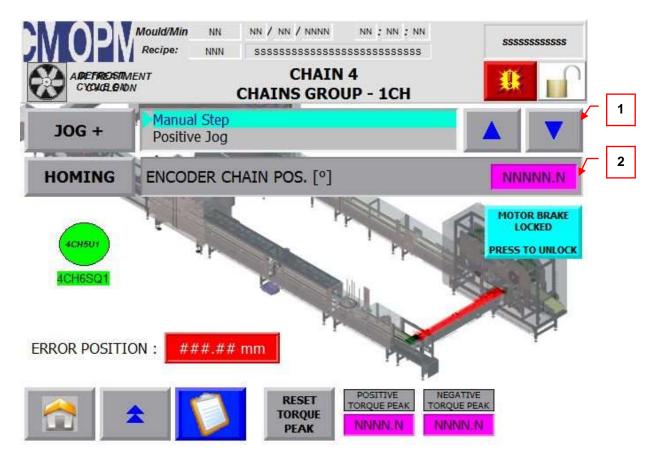






From the "layout chain" screen, the user can access the CHAIN screen by pressing the virtual button (1).

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



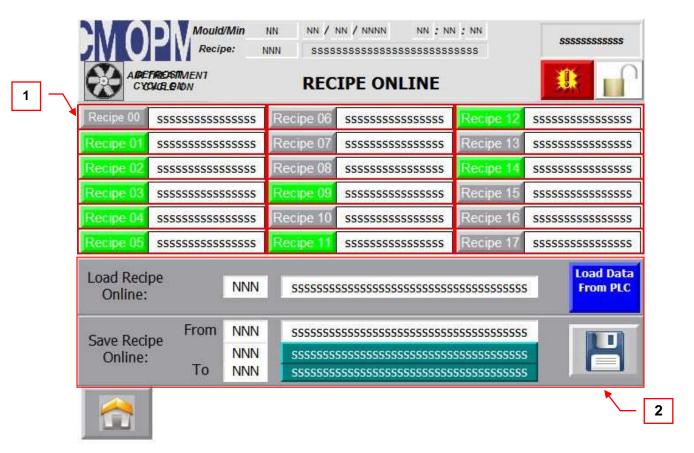
1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can view the indicated variable.





#### 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.

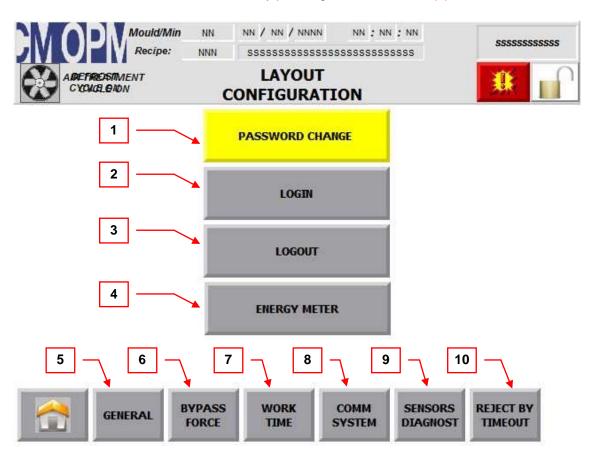






# II.2.4 Configuration

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.





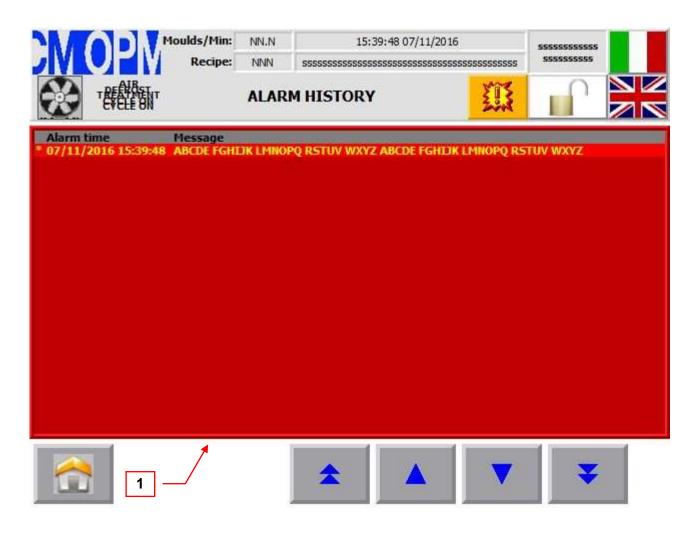
# II.2.5 Alarm History

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 the following screen.



is displayed, the user can press this button to access  $% \left( x\right) =\left( x\right) +\left( x\right) +\left($ 



1

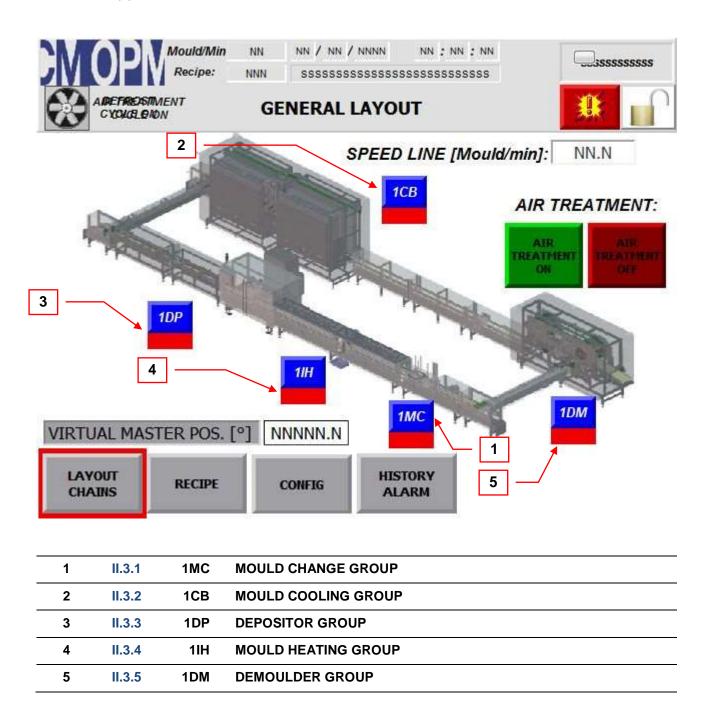
This section contains the interface for displaying the system's alarms list.





### **II.3 GROUPS LAYOUT**

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



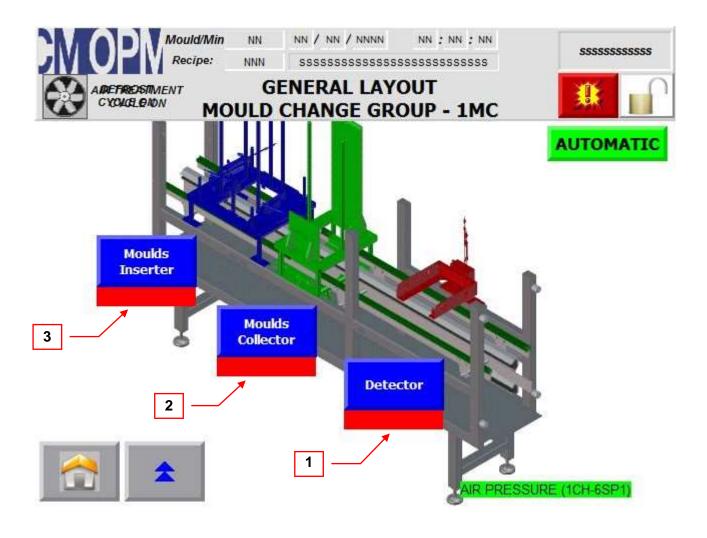




# II.3.1 MOULD CHANGE GROUP (1MC)

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.

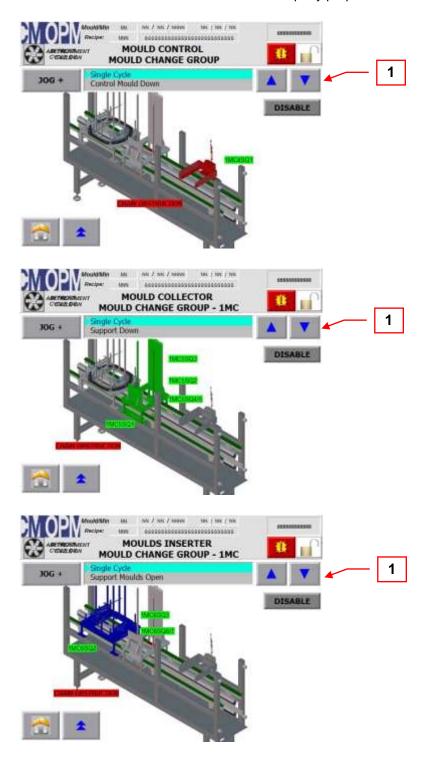
3 MOULDS INSERTOR





The display is the same for the **MOULD CHANGE GROUP** screens.

A number of the most representative screens are described below for exemplary purposes.



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

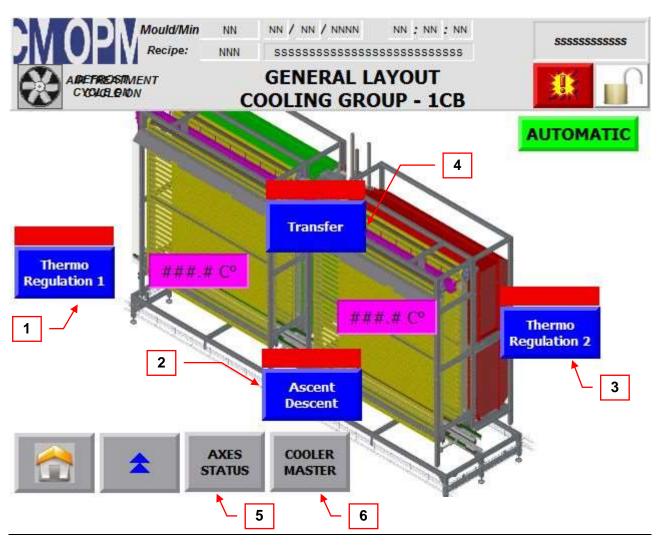




# II.3.2 COOLING GROUP (1CB)

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.



screen.

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

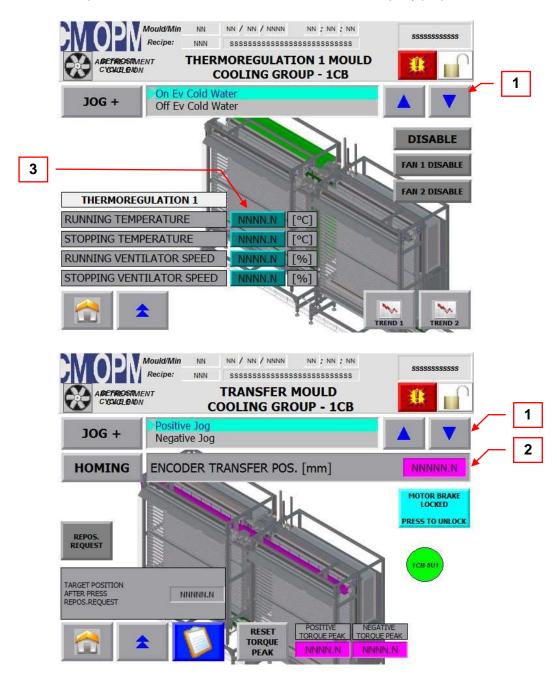
- 1 THERMOREGULATION 1
- 2 ASCENT/DESCENT
- 3 THERMOREGULATION 2
- 4 TRANSFER
- 5 AXES STATUS
- **6 COOLER MASTER**





The display is the same for all the **COOLING GROUP** screens.

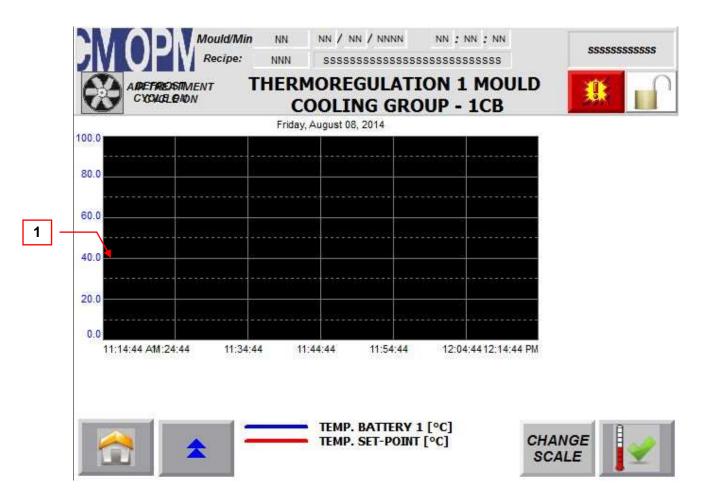
A number of the most representative screens are described below for exemplary purposes.



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.







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

1

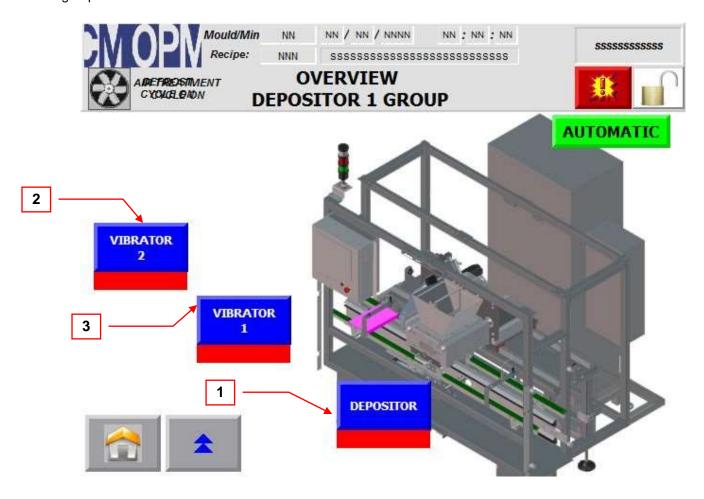




# II.3.3 DEPOSITOR GROUP (1DP)

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
- 2 VIBRATOR 1

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

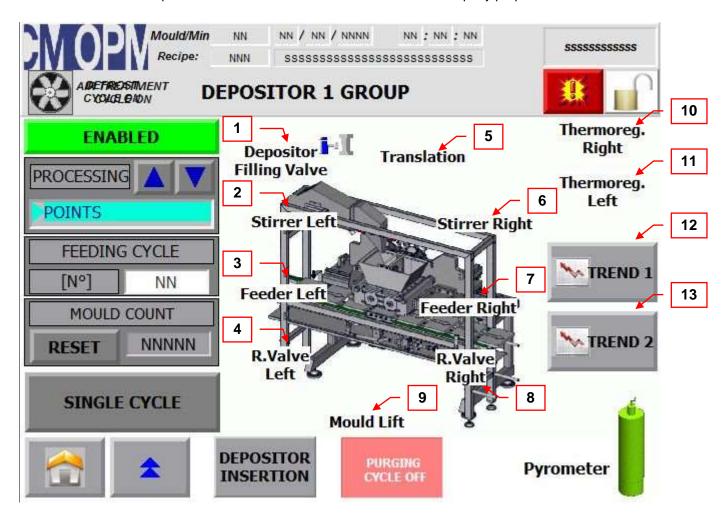
3 VIBRATOR 2





The display is the same for all the **DEPOSITOR GROUP** screens.

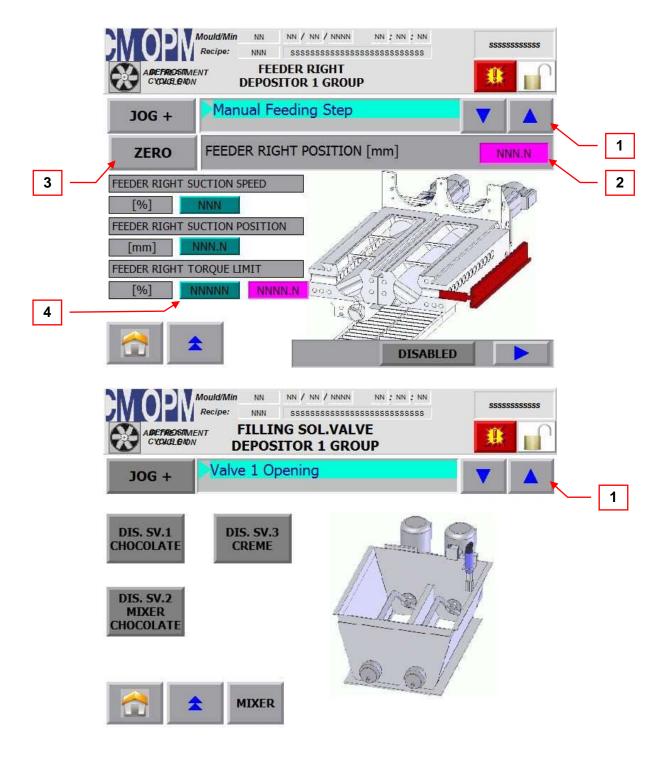
A number of the most representative screens are described below for exemplary purposes.



1	DEPOSITOR FILLING VALVE	
2	STIRRER LEFT	
3	FEEDER LEFT	-
4	R. VALVE LEFT	-
5	TRANSLATION	-
6	STIRRER RIGHT	
7	FEEDER RIGHT	- By pressing the virtual button, the user can access the specific
8	R. VALVE RIGHT	- screen.
9	MOULD LIFT	-
10	THERMOREG. RIGHT	-
11	THERMOREG. LEFT	-
12	TREND 1	-
13	TREND 2	-



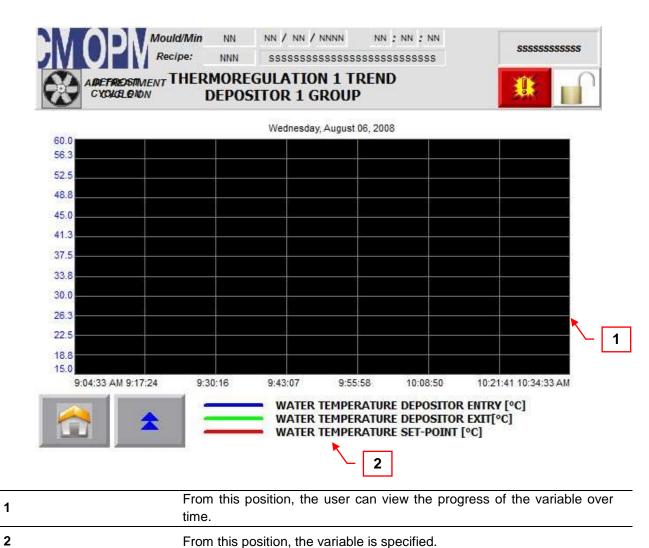




1	By pressing the up and down buttons, the user can select the movement to be performed in Jog mode.
2	From this position, the user can view the indicated variable.
3	By pressing this button, the user can reset the indicated axis.
4	From this position, the user can set the indicated variable.







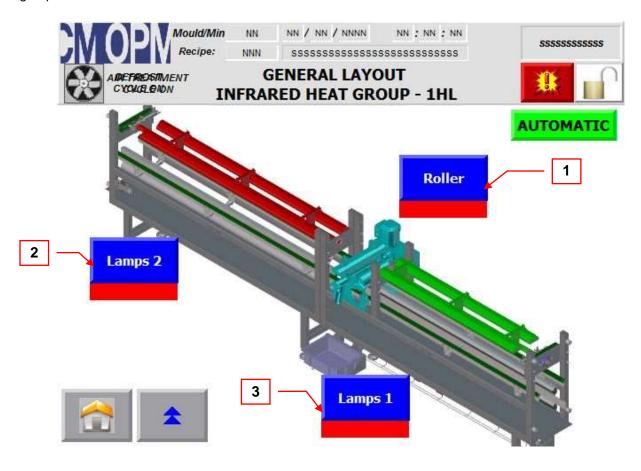




# II.3.4 MOULD HEATING (1HE)

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.



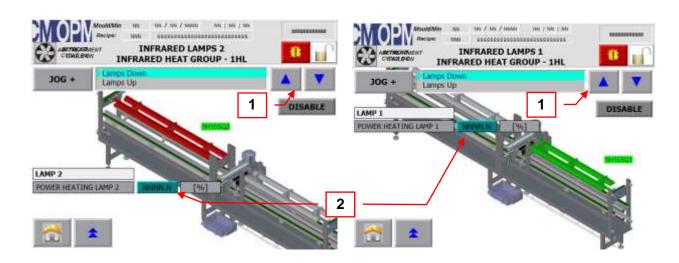
1	ROLLER	
2	LAMPS 2	By pressing the virtual button, the user can access the specific screen.
3	LAMPS 1	<del>-</del>

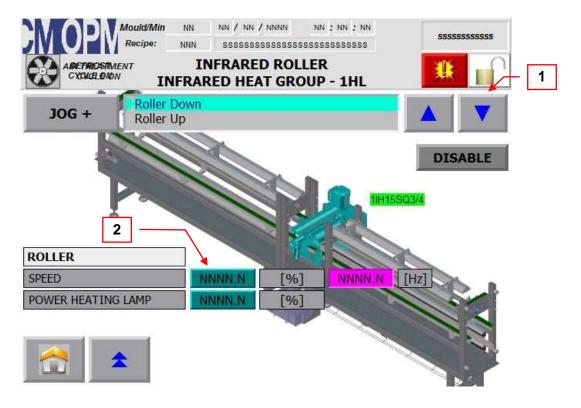




The display is the same for all the **MOULD HEATING GROUP** screens.

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.

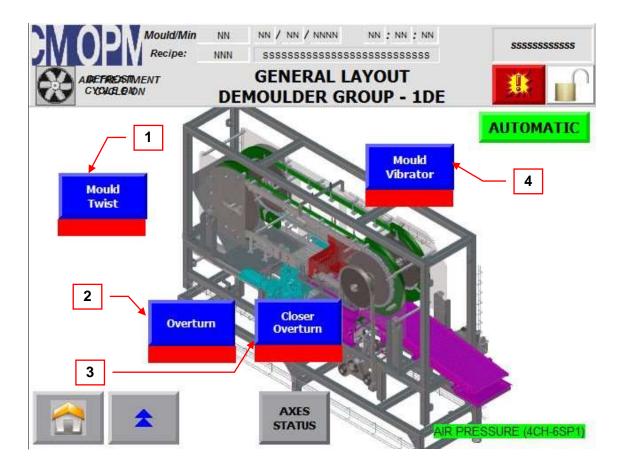




# II.3.5 DEMOULDER GROUP (1DE)

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.



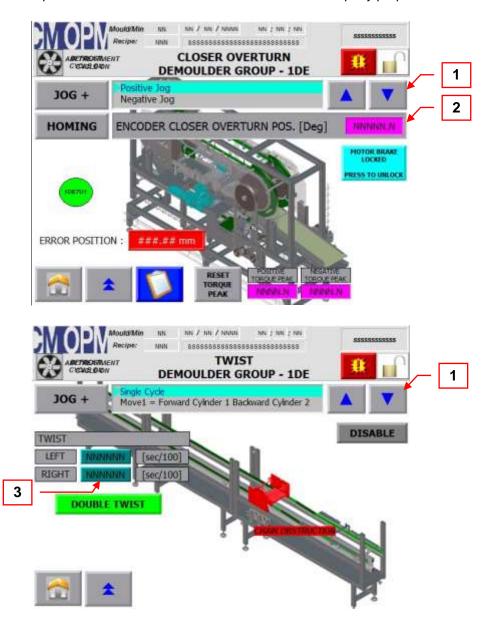
1	MOULD TWIST	
2	OVERTURN	
3	CLOSER OVERTURN	- By pressing the virtual button, the user can access the specific screen.
4	MOULD VIBRATOR	-





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



#### **ATTENTION**

Every level 3 message requires the intervention of maintenance personnel.



#### **WARNING**

In the event that an error and a level 2 message should persist even after having made various attempts to resolve the issue, the operator must request the intervention of a specialized technician.

#### 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.





2 VALUE OUT OF RANGE (DEVICE)  Check that the parameters are properly set  Check the causes for delay and the correct motor operation in manual mode/Jog  LOSS ETHERNET COMMUNICATION  COMMUNICATION WITH PLC  COMMUNICATION FAULT (DEVICE - Check the network connections to the nodes placed along the system  COMMUNICATION FAULT (DEVICE - Check the network connections to the nodes placed along the system  Check the network connections to the nodes placed along the system  Check the network connections to the nodes placed along the system  Check the rerror code on the display and see the Instruction manual  DEVICE REPOSITIONING  The device isn't in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the electric diagram  HIGH/LOW TEMPERATURE WATER (ZONE)  THERMAL PROTECTION (DEVICE - CODE)  THERMAL PROTECTION (DEVICE - CODE)  DEVICE/FUNCTION DISABLED FROM HMI  DEVICE/FUNCTION DISABLED FROM HMI  Check the tripped thermal protection in the electric cabinet see also the diagram  Check the tripped thermal protection in the electric cabinet see also the diagram  Check the nature of the failure by also reading the error code on the drive display  DEVICE FAULT/FAILURE  Check the nature of the failure  DEVICE FAULT/FAILURE  Check the nature of the fault  Check the nature of the fault  Check the tripped thermal protection in the electric cabinet see also the diagram  Check the nature of the failure by also reading the error code on the drive display  Check the nature of the fault  POWER SUPPLY FAULT (DEVICE - CODE)  Check the tripped thermal protection in the electric cabinet see also the diagram  Check the nature of the failure by also reading the error code on the drive display  Check the nature of the fault  Check the nature of the fault	LEVEL	MESSAGE DESCRIPTION	REMEDY
2 TIMEOUT DEVICE  Check the causes for delay and the correct motor operation in manual mode/Jog  COMMUNICATION WITH PLC  COMMUNICATION WITH PLC  COMMUNICATION FAULT (DEVICE - CODE)  DEVICE REPOSITIONING  The device in in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the device for the failure by also reading the error code on the display and see the Instruction manual  The device in in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the electric diagram  The device in in its start position when the cycle is activated check the pripring connections between the thermoregulation system and the device (check zone)  The device in in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the electric diagram  The device in in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the electric diagram  The device in in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the electric diagram  The device in in its start position when the cycle is activated check the tripped thermal protection in the electric cabinet see also the electric diagram  Check from the HMI page if the device is disabled check the nature of the failure by also reading the error code on the drive display.  Check the nature of the failure by also reading the error code on the drive display check the nature of the failure by also reading the error code on the drive display.  LACK OF AIR (ZONE - CODE - GODE)  ACRUE FAULT (PEVICE - CODE)  THERMAL SENSOR (DEVICE - CODE)  CIRCUIT BREAKER (DEVICE - CODE)  CIRCUIT BREAKER (DEVICE - CODE)  THERMAL SENSOR (DEVICE - CODE)  CIRCUIT BREAKER (DEVICE - CODE)  CIRCUIT BREAKER (DEVICE - CODE)  THERMAL SENSOR (DEVICE - CODE)  CIRCUIT BREAKER (DEVICE - CODE)  CIRCUIT BREAKER (DEVICE - CODE)			
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DEVICE PROSITIONING The device isn't in its start position when the cycle is activated Check the tripped thermal protection in the electric cabinet see also the electric cliagram  HIGH/LOW TEMPERATURE WATER Check the piping connections between the thermoregulation system and the device (check zone)  THERMAL PROTECTION (DEVICE - CODE)  DEVICE/FUNCTION DISABLED FROM HMI ERROR CAM CALCULATION (DEVICE - CODE)  DEVICE/FUNCTION DISABLED FROM HMI ERROR CAM CALCULATION (DEVICE - CODE)  DEVICE FAULT/FAILURE DEVICE FAULT/FAILURE Check the nature of the failure by also reading the error code on the drive display  EXTRAMIAN LEVEL (DEVICE - CODE) EXTRAMIAN LEVEL (DEVICE - CODE - CODE) EXTRAMIAN LEVEL (DEVICE - CODE - CODE) EXTRAMIAN LEVEL (DEVICE - CODE - CODE) CODE)  LACK OF AIR (ZONE - CODE - GROUP)  LACK OF AIR (ZONE - CODE - GROUP)  CIRCUIT BREAKER (DEVICE - CODE)  INVERTER FAULT (DEVICE - CODE)  THERMAL SENSOR (DEVICE - CODE)  CHeck the nature of the failure by also reading the error code on the drive display  THERMAL SENSOR (DEVICE - CODE)  Check the tripped thermal protection in the electric cabinet see also the electric cliagram  Check the return of the failure by also reading the error code on the drive display  THERMAL SENSOR (DEVICE - CODE)  THERMAL SENSOR (DEVICE - CODE)  Check the tripped thermal protection in the electric cabinet see also the electric cliagram  Check the nature of the failure by also reading the error code on the drive display  THERMAL SENSOR (DEVICE - CODE)  Check the tripped thermal protection in the electric cabinet see also the electric cliagram  Check the nature of the failure by also reading the error code on the drive display  Check the nature of the failure by also reading the error code on the drive display  Check the nature of the failure by also reading the error code on the drive display  Check the tripped thermal protection in the electric cabinet see also the electric cliagram  Check the tripped thermal protection in the electric cabinet see also the electric diagram  Check the t	3	COMMUNICATION WITH PLC	system
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EXTRAMIN LEVEL (DEVICE - CODE - CODE - ZONE)	2	POWER SUPPLY FAULT (DEVICE - CODE)	Check that the device is correctly powered
ZONE	2	,	that no mechanical causes or obstructions are present
2 CODE)  3 LACK OF AIR (ZONE -CODE - GROUP)  3 CIRCUIT BREAKER (DEVICE - CODE)  3 INVERTER FAULT (DEVICE - CODE)  4 Check the tripped thermal protection in the electric cabinet see also the electric diagram  5 Check the nature of the failure by also reading the error code on the drive display  6 Check the tripped thermal protection in the electric cabinet see also the diagram  7 Check the nature of the failure by also reading the error code on the drive display  8 THERMAL SENSOR (DEVICE - CODE)  9 Check the tripped thermal protection in the electric cabinet see also the diagram  1 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the electric diagram  2 Check the tripped thermal protection in the electric cabinet see also the electric diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagram  2 Check the tripped thermal protection in the electric cabinet see also the diagra	2	· ·	Operate to bring the level back to optimal conditions - Check that no mechanical causes or obstructions are present
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1 ACTIVE  (DEVICE) WAITING FOR OPERATOR VALIDATION  Perform the suggested operation  Perform the suggested operation  Perform the suggested operation  Perform the suggested operation  Check that there is no ongoing maintenance and/or cleaning works and reactivate the automatic process through operator interface  PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)  FUNCTION NOT ENABLE FOR PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)  PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)  PARAMETER LIMIT (PLC_PARAMETER - DEVICE - CODE)	2	DEVICE DISABLED FROM HMI	Check from the HMI page if the device is disabled
Perform the suggested operation  Check that there is no ongoing maintenance and/or cleaning works and reactivate the automatic process through operator interface  PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)  FUNCTION NOT ENABLE FOR PARAMETER OUT OF RANGE (PLC_PARAMETER OUT OF RANGE (PLC_PARAMETER OUT OF RANGE (PLC_PARAMETER - DEVICE - CODE)  PARAMETER LIMIT (PLC_PARAMETER - DEVICE - CODE)  PARAMETER LIMIT (PLC_PARAMETER - DEVICE - CODE)  FILLING NOT ENABLE FOR HIGH TANK  Reduce the water temperature se point	1	, ,	Perform the suggested operation
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2   Radiica tha Water temperatiire se point	2		Check that the parameters are properly set
<u> </u>	2		Reduce the water temperature se point





2	PLC BATTERY LOW	Replace the battery
	-	Make sure that no maintenance and/or cleaning operations are
2	EMERGENCY PRESSED (ZONE - CODE)	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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