



REBEIRO's Vacuum Pressure Induction Casting Machine.

Model:- PEARL VPC.

MADE IN INDIA

User Manual

Version 2.40

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THOMSON EQUIPMENTS / REBEIRO CASTING

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INDEX

SR. NO.	PARTICULARS	PAGE NO.
1	INTRODUCTION	2
2	Preparation Before Installation of Casting	3, 4, 5
3	PRE-HEATING Operation in Manual Mode	6
4	Types of Casting	
	4.1 MANUAL MODE-Casting Process (Pre-Heating)	7
	4.2 AUTO MODE- DIRECT Vacuum Casting Process	7
	4.3 AUTO MODE- Interval Vacuum Casting Process	8
5	MODE of OPERATIONS	
	5.1 MANUAL MODE-Casting Process (Pre-Heating)	9, 10
	5.2 2 AUTO MODE- DIRECT Vacuum Casting Process	11, 12
	5.3 AUTO MODE- Interval Vacuum Casting Process	13, 14
6	Troubleshooting and ERROR Messages	15

1. INTRODUCTION

We introducing the Best Automatic VACUUM INDUCTION TURBO-PRESSURE CASTING MACHINE, which is available in Compact Design and gives more efficiency, smoothness and Filigree of Casting. These efficient machines are precisely manufactured, using best technology and superior components.

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2. Preparation Before Installation of Casting.

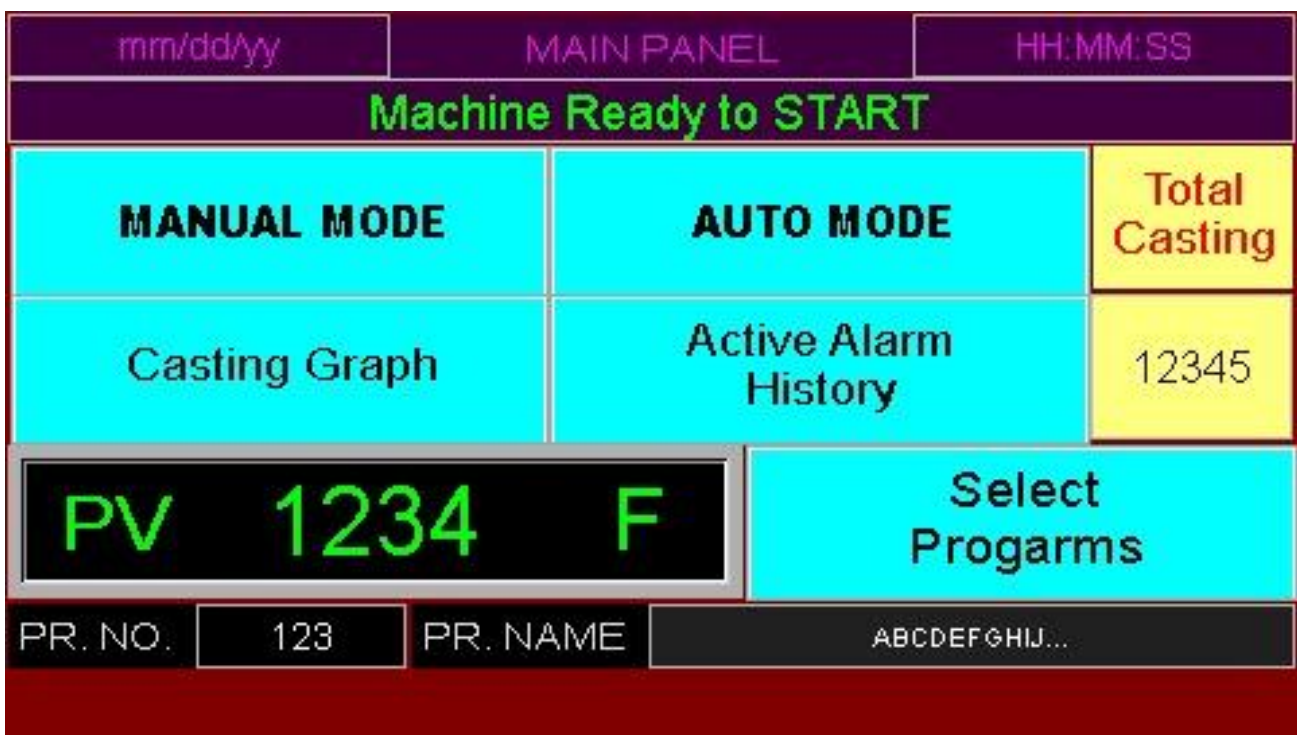
Open the Side Panel Doors of the Machine Before “POWER ON”.

- The Water Pressure should be 1.5 – 2 Bars.
- The Air Pressure should be 8 – 10 Bars.
- The Argon Gas Pressure should be 5 – 6 Bars.

Please check the Water Connections “Water In” and “Water Out”. And also Check the loose connections inside the Machine. (Make sure that there is no Loose Connection with WATER, AIR and GAS Connections.)

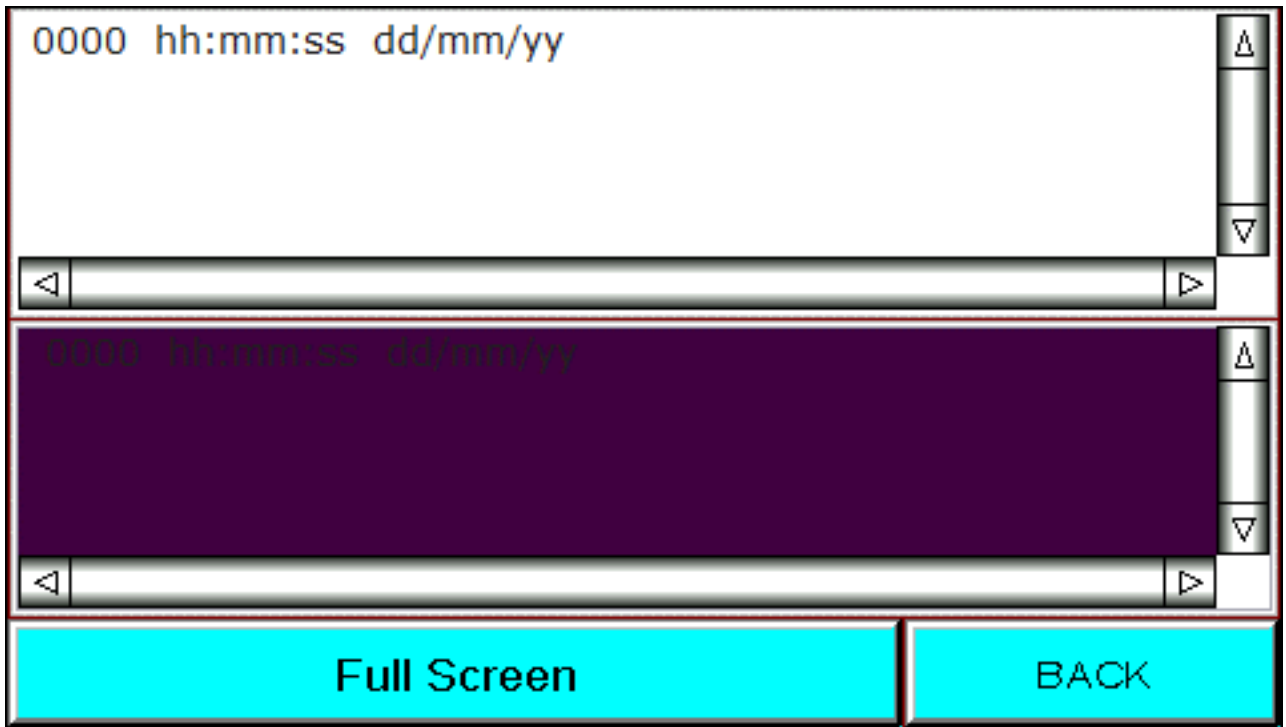
Switch ON the Water Pump and Check the Water Leakages Inside the Machine. And Make sure that there is no Water leakages inside. And also check with ‘AIR’ and ‘ARGON GAS’.

- Now ‘SWITCH ON’ the Machine, and Make sure that the VACCUM PUMP direction.
- If Everything is ‘OK’ without “ERROR’s” Go to “**MAIN PANEL**” on Touch Screen.



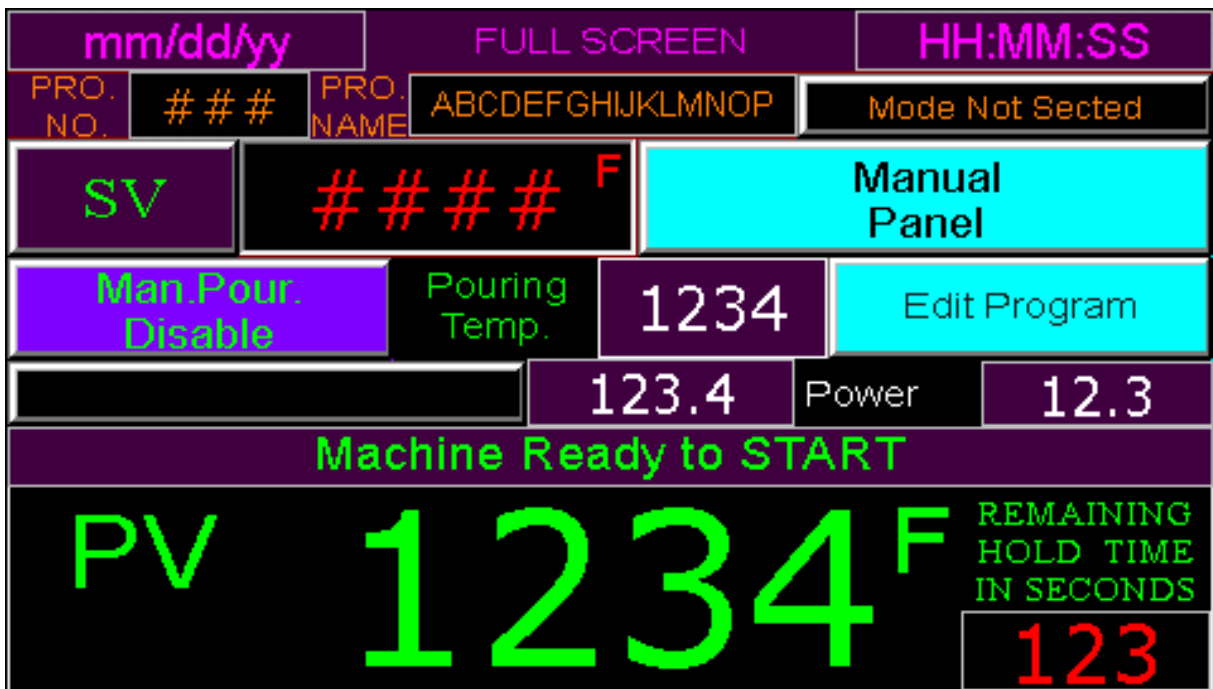
- Go to “**ACTIVE ALARM HISTORY**” and Make sure that “**Water Fail**”, “**Air Fail**” and “**Gas Fail**” is not Active.

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- Go to “FULL SCREEN” and see the Message Bar above Temperature Display. Make sure that the Message should be “Machine Ready to START” or “Set the Flask Chamber in Position”.

If the message is “Set the Flask Chamber in Position”, once you set the flask chamber in Casting Position the Message will change into “Machine Ready to START”.



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- Now Goto **“Edit Program”** the <<**PROGRAM EDITOR**>> will display.

mm/dd/yy	PROGRAM EDITOR				HH:MM:SS
PROG.No.:	1234		PROG.Name:	ABCDEFGHIJ...	
PARAMETER	SET VALUE			Pressure Delay time	
MIXING TEMP.	1234 °C		1	12	
POURING HOLD TIME	12	12	Sec.	Hold Ti.Vac. Disable	
POURING TEMP.	1234 °C			Manual Panel	Main Menu
Pressure Hold time	12	12	123 123		
Opening Hold time	123		123		Save Load Program
Mixing Tmp. Ti.	12.3	12	12		
Auto Interval	Full Screen				FACTORY SETTINGS

ENTER the Program Parameters with PROG.NO. and PROG. Name. in the Yellow and Red Boxes.

Make sure that you Entered Program is Correct.

- Now Touch <<**Save / Load Program**>> The Program will Save and will Loading for Process.

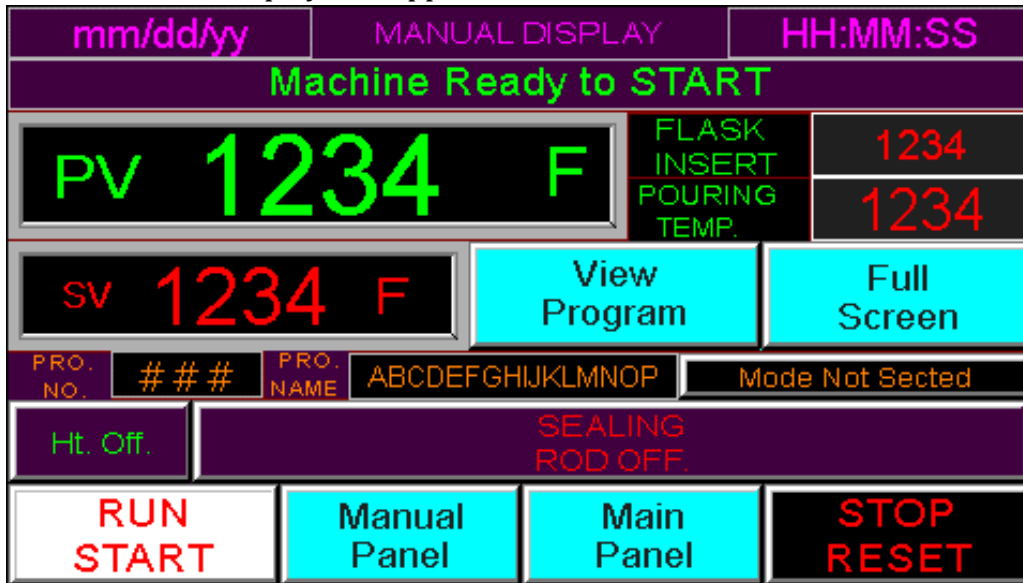
Pl. Note: Please Make sure that the SAVE / LOAD PROGRAM is Pressed.

Go to <<**Full Screen**>> the Program No. and Program Name will be displayed.

3. PRE-HEATING Operation in Manual Mode:

- Now Select <<MODE>> by the TOGGLE Switch on the Control Panel "MANUAL".

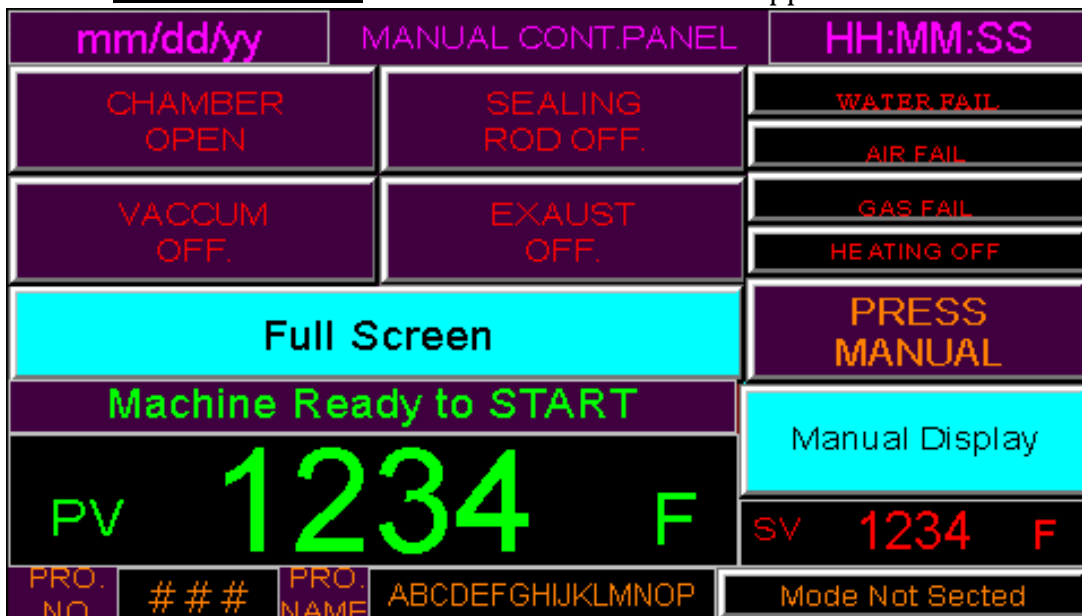
The Manual Display will Appear.



Please NOTE : Make Sure That the CRUCIBLE, STOPPER ROD and THERMOCOUPLE. And there is no LEAKAGES in WATER line and WORK COIL.

- Close the "Chamber Cap" and "set the Flask Chamber" in Casting Position and Press the <<START>> Button (which is on the Control Panel).

The **HEATING will ON** and Manual Cont. Panel will appear.



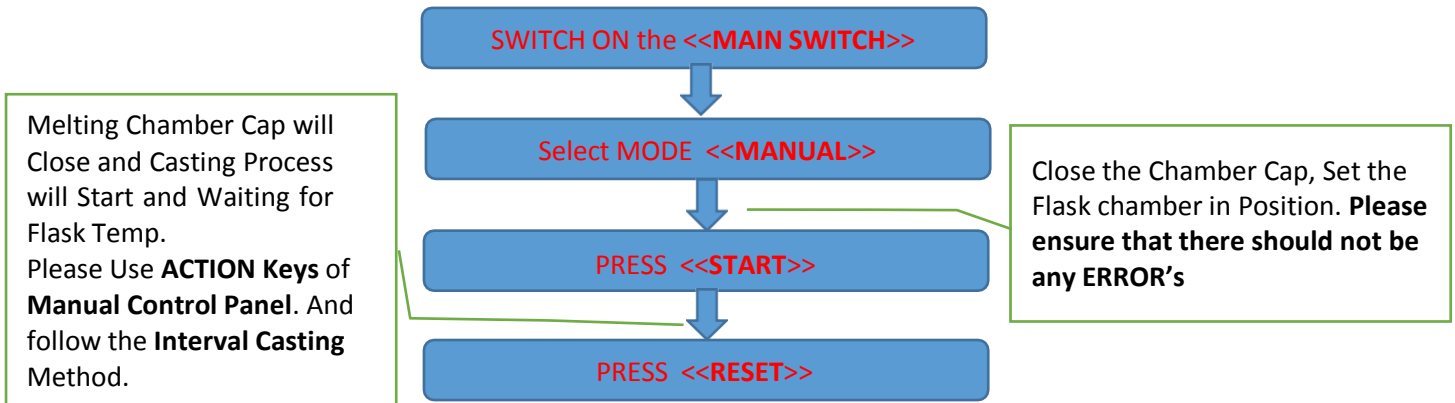
And Heat the Crucible upto **200°C** or upto **900°C**, and PRESS <<RESET>> Button on the Control Panel.

Now your Machine is Ready for CASTING.

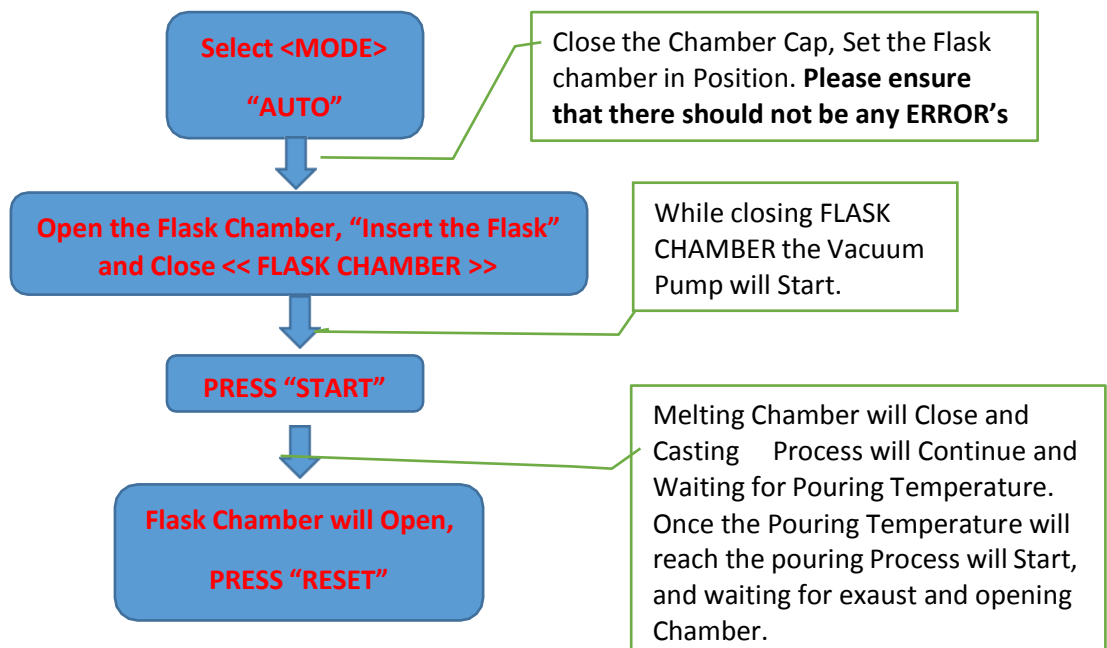
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4. Types of Casting:

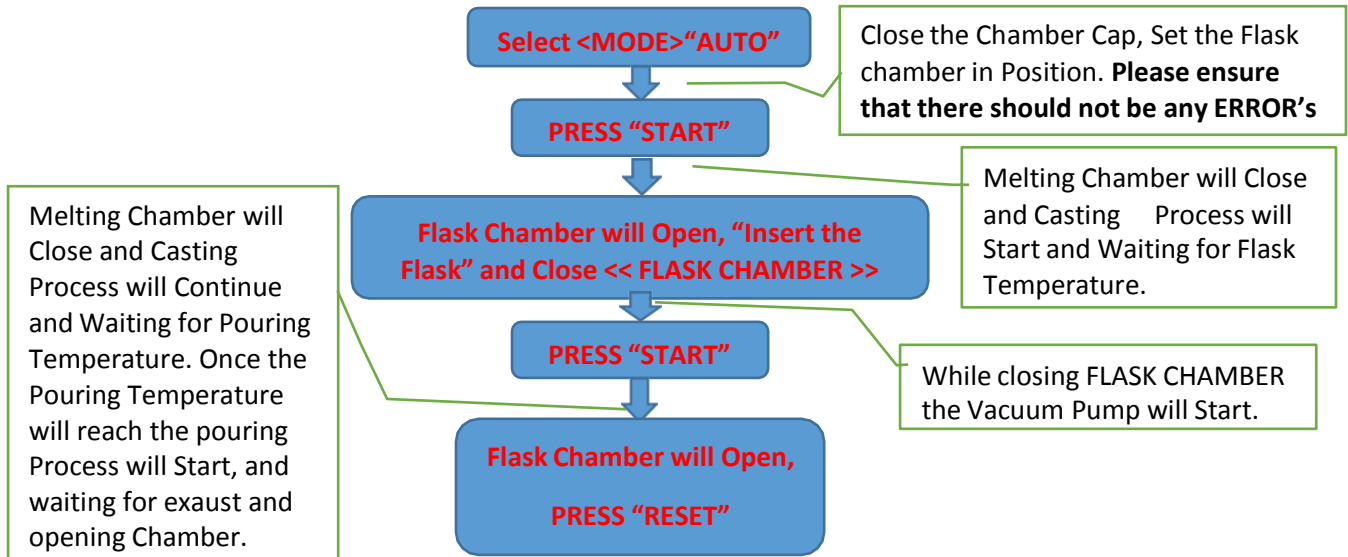
4.1 MANUAL MODE-Casting Process (Pre-Heating)



4.2 AUTO MODE- DIRECT Vacuum Casting Process

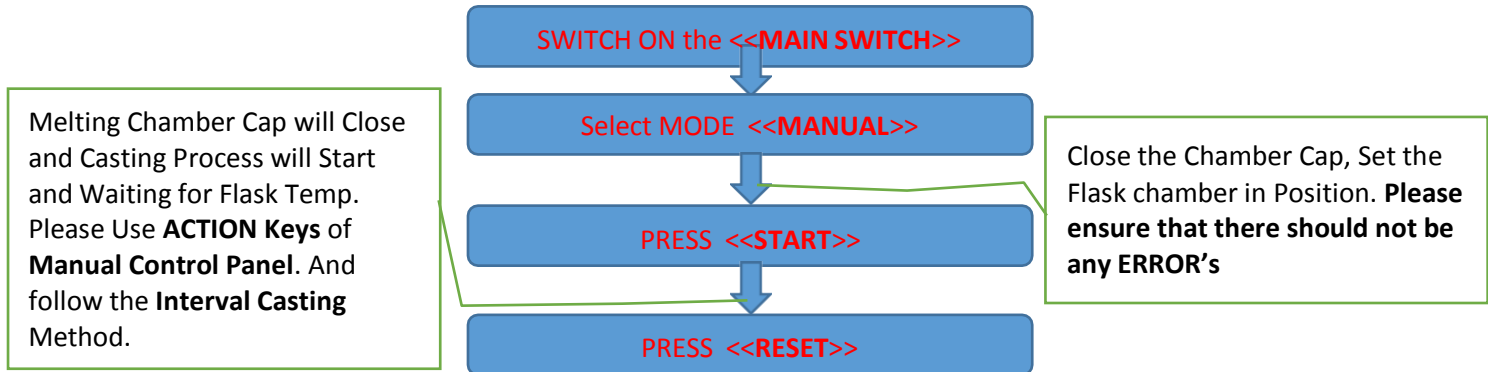


4.3 AUTO MODE- Interval Vacuum Casting Process

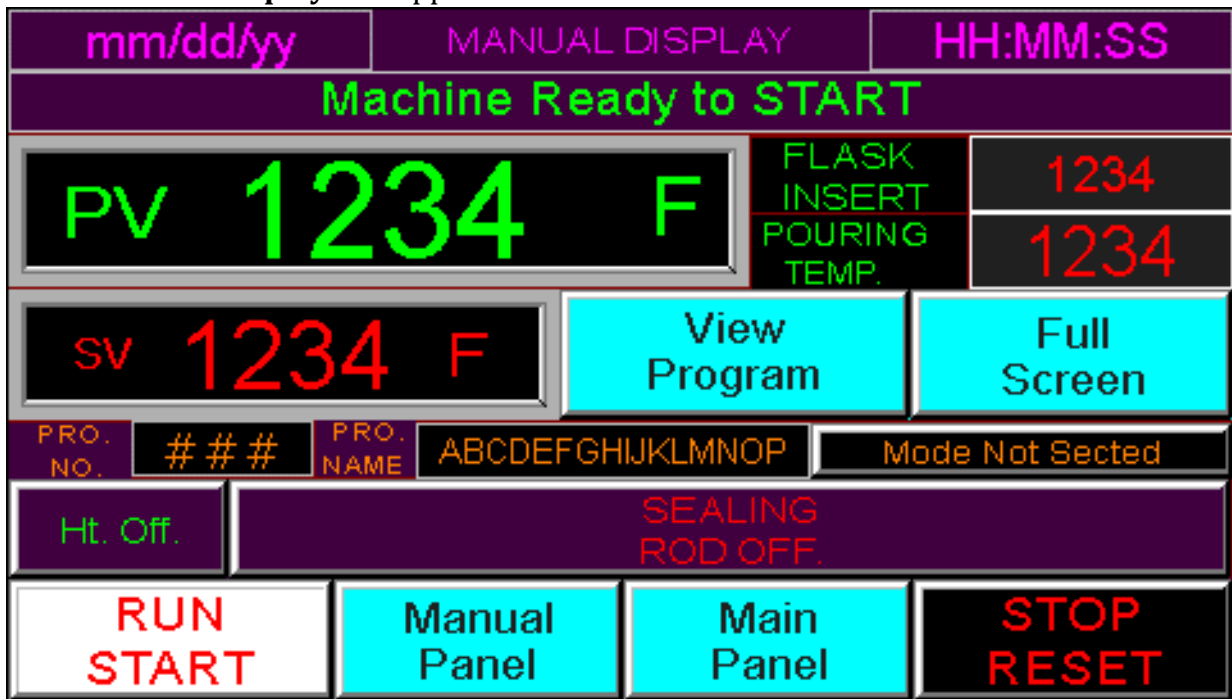


5. MODE of OPERATIONS

5.1 MANUAL MODE-Casting Process (Pre-Heating)



- Switch on the <<MAIN SWITCH>>.
- Make Sure that the Crucible and Stopper Rod and Thermocouple Placed inside the Melting Chamber, and there is NO ERROR's on the TOUCH SCREEN Panel.
- Now Select <<MODE>> by the TOGGLE Switch on the Control Panel “**MANUAL**”.
- The **Manual Display** will Appear.



Please NOTE : Make Sure That the **CRUCIBLE, STOPPER ROD and THERMOCOUPLE.**
And there is no **LEAKAGES** in **WATER** line and **WORK COIL.**

- Close the “Chamber Cap” and “set the Flask Chamber” in Casting Position and Press the <<START>> Button (which is on the Control Panel).

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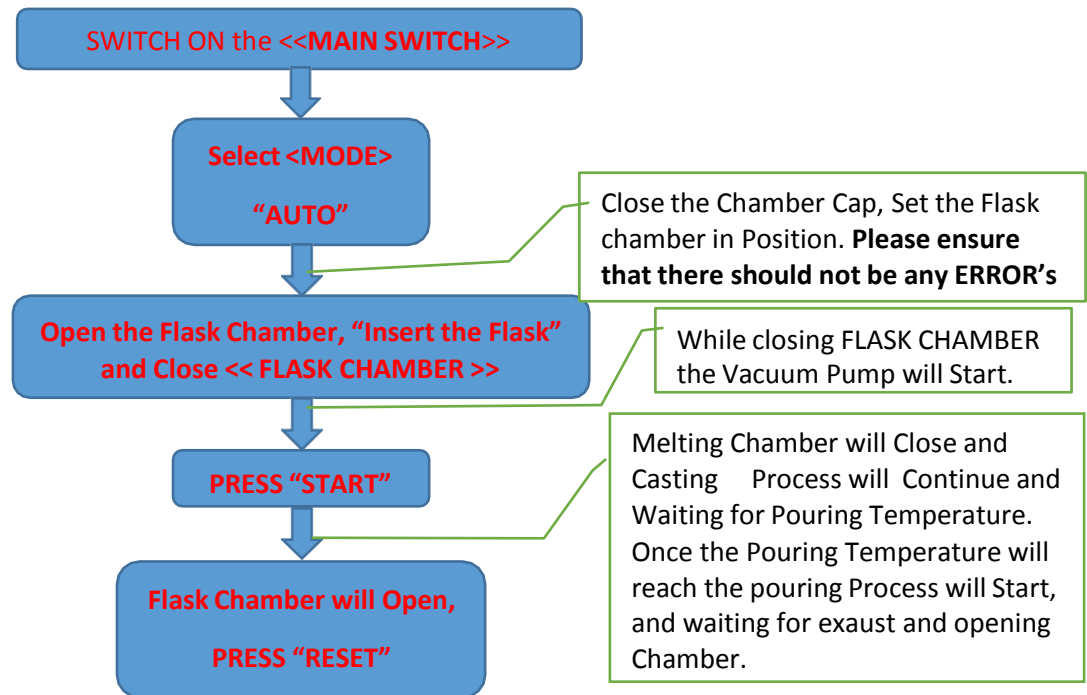
The HEATING will ON and Manual Cont. Panel will appear.

mm/dd/yy		MANUAL CONT.PANEL		HH:MM:SS	
CHAMBER OPEN		SEALING ROD OFF.		WATER FAIL	
VACCUM OFF.		EXHAUST OFF.		AIR FAIL	
				GAS FAIL	
				HEATING OFF	
Full Screen				PRESS MANUAL	
Machine Ready to START				Manual Display	
PV		1234		F	
SV		1234		F	
PRO. NO.	###	PRO. NAME	ABCDEFGHIJKLMN	Mode Not Sected	

- The Melting Chamber Cap will Close and Heating will Start and Waiting for Flask Temperature.
- Now Use the ACTION Key's << CHAMBER>> Key will close the Melting Chamber and wait for Flask Temperature.
(on this particular Stage Sealing Rod will not Operated)
- As soon as Flask Temperature Reached Open the Chamber by using <<CHAMBER>> Key and Flask Chamber will Open.
- Now insert the Flask and PRESS <<VACCUM>> Button and Vacuum will Start.
- Now set the Flask Chamber in Position and PRESS <<START>> and the Process will Continue.
- On this particular stage the <<SEALING ROD>> Action Key will work and use the Key on Desire Pouring Temperature.
- Now use <<EXHAUST>> and Open the <<CHAMBER>> and PRESS <<RESET>>.

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5.2_AUTO MODE- DIRECT Vacuum Casting Process



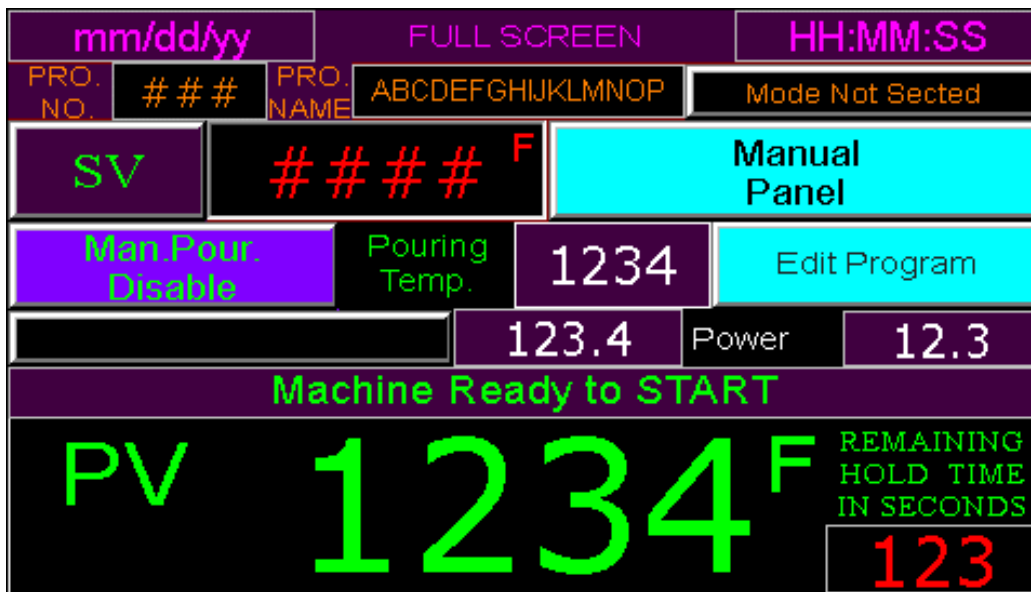
- Switch on the <<MAIN SWITCH>>.
- Make Sure that the Crucible and Stopper Rod and Thermocouple Placed inside the Melting Chamber, and there is NO ERROR's on the TOUCH SCREEN Panel.
- Now Select <<MODE>> by the **TOGGLE Switch** on the Control Panel "AUTO".
- The **AUTO DISPLAY** will appear.

mm/dd/yy		AUTO DISPLAY		HH:MM:SS	
Machine Ready to START					
PRO. NO.	###	PRO. NAME	ABCDEFGHIJKLMN	Mode Not Sected	
PV	1234	F	FLASK INSERT	1234	
SV	1234	F	POURING TEMP.	1234	
			HOLD TIME	123	
View Program	Man.Pour. Disable			Full Screen	
RUN START	Indicator Panel	Main Panel	STOP RESET		

Please NOTE: Make Sure That the CRUCIBLE, STOPPER ROD and THERMOCOUPLE. And there is no LEAKAGES in WATER line and WORK COIL.

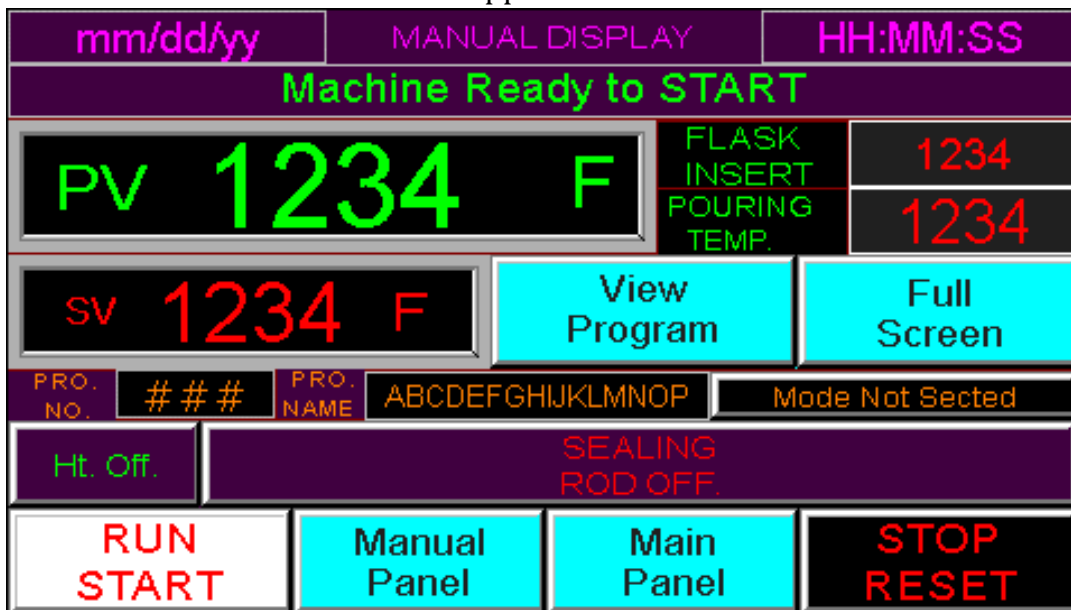
- Close the "Chamber Cap", Insert the Flask and "set the Flask Chamber" in Casting Position, the Vacuum Pump will Start.
- Now PRESS the <<START>> Button (which is on the Control Panel).

The PROCESS will ON and **FULL SCREEN** will appear.



And will continue the **AUTO DIRECT** Casting Process and message shows that Process in Progress. As soon as the temperature reached to the Mixing Temperature the message will shows that Waiting for Pouring temperature, the temperature reached desire temperature, the HOLD time will Start.

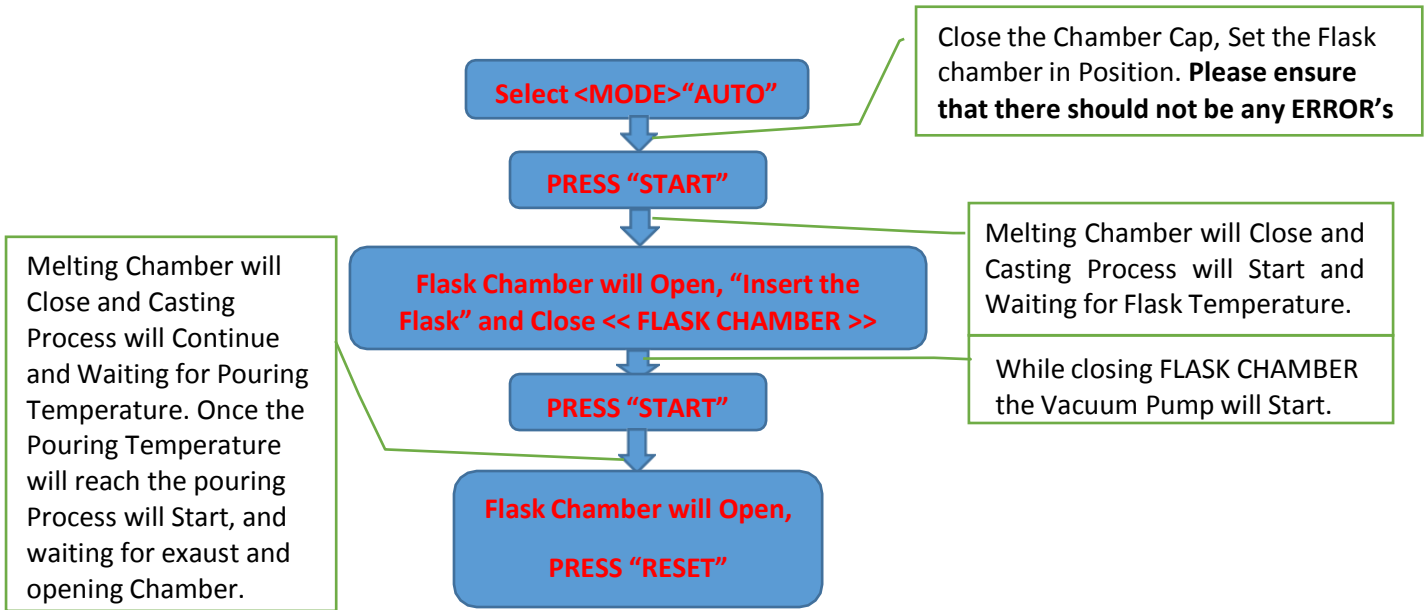
- And the **POURING** Process will Start and Waiting for **EXAUST** and Opening Chamber. The **MANUAL DISPLAY** Screen will appear.



- Now Take out the Residues by using **SEALING ROD** key and **PRESS <<RESET>>**, and Take out the Flask.

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5.3 AUTO MODE- Interval Vacuum Casting Process



- Switch on the <<MAIN SWITCH>>.
- Make Sure that the Crucible and Stopper Rod and Thermocouple Placed inside the Melting Chamber, and there is NO ERROR's on the TOUCH SCREEN Panel.
- Now Select <<MODE>> by the **TOGGLE Switch** on the Control Panel "AUTO".
- The **AUTO DISPLAY** will appear.

mm/dd/yy		AUTO DISPLAY		HH:MM:SS	
Machine Ready to START					
PRO. NO.	###	PRO. NAME	ABCDEFGHIJKLMN	Mode Not Sected	
PV	1234	F	FLASK INSERT	1234	
SV	1234	F	POURING TEMP.	1234	
			HOLD TIME	123	
View Program		Man.Pour. Disable		Full Screen	
RUN START	Indicator Panel	Main Panel	STOP RESET		

Please NOTE: Make Sure That the **CRUCIBLE, STOPPER ROD and THERMOCOUPLE.**
And there is no LEAKAGES in WATER line and WORK COIL.

- Close the "Chamber Cap" and "set the Flask Chamber" in Casting Position.
- Now PRESS the <<START>> Button (which is on the Control Panel).

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The **PROCESS** will **ON** and **FULL SCREEN** will appear.

mm/dd/yy		FULL SCREEN		HH:MM:SS	
PRO. NO.	###	PRO. NAME	ABCDEFGHIJKLMN	Mode Not Sected	
SV	#### F		Manual Panel		
Man Pour Disable	Pouring Temp.	1234	Edit Program		
		123.4	Power	12.3	
Machine Ready to START					
PV	1234 F			REMAINING HOLD TIME IN SECONDS	
				123	

And will continue the **AUTO INTERVAL** Casting Process and message shows that **Waiting for Flask Temperature**. As soon as the temperature reached to the Flask Temperature the Flask Chamber will open and the message will shows that **Insert Flask and PRESS START**. Now Insert the Flask and PRESS <<START>>, and message will shows that **PROCESS in Progress**.

- As soon as reached the Mixing temperature the message will shows that **Waiting for Pouring Temperature**, and the temperature reached desire temperature, the HOLD time will Start.
- And the **POURING** Process will Start and message will shows that the **POURING Process in Progress** and **Waiting for EXHAUST and Opening Chamber**.

The **MANUAL DISPLAY** Screen will appear.

mm/dd/yy		MANUAL DISPLAY		HH:MM:SS	
Machine Ready to START					
PV	1234 F			FLASK INSERT POURING TEMP.	1234
					1234
SV	1234 F		View Program	Full Screen	
PRO. NO.	###	PRO. NAME	ABCDEFGHIJKLMN	Mode Not Sected	
Ht. Off.	SEALING ROD OFF.				
RUN START	Manual Panel	Main Panel	STOP RESET		

Now Take out the Residues by using **SEALING ROD** key and PRESS <<RESET>>, and Take out the Flask.

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6. Troubleshooting and ERROR Messages

- Check Water, Air, Gas & Interlocks.
- Water Fail
Note: Please Check the Water Pump, Water Filter and Water inlet. If it is not Solve Please call for Support.
- Air Fail
Note: Please check AIR Inlet Pressure, it should be Min. 6 Bars and Max. 10 Bars (86 PSI-140 PSI)
- Gas Fail
Note: Please check ARGON GAS Inlet Pressure, it should be Min. 3 Bars and Max. 6 Bars (45 PSI-86 PSI)
- Inter-Locks are Open
Note: Please check Door Locks.
- Over Water Temperature.
Note: Please check Chiller Water Temperature it should be maintain around 22° to 30° C.
- Chamber Cap not in Position
Note: Please close the Melting Chamber Cap.
- Flask Chamber not in Position
Note: Please set the Flask Chamber in Casting Position.
- Flask Lift and Flask Chamber not in Position
Note: Please check the Flask Chamber SENSOR and Flask Chamber Positioning SENSOR.
- Sealing Rod not in Position
Note: Please check the position of Sealing Rod or Reset the machine.
- Vacuum not Stated
Note: Please check Vacuum Pump.
- Mode Not Selected
Note: Please Select the MODE, AUTO / MANUAL.

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