

BEST D-VWIS PRIME

INSTRUCTIONS



- The manufacturer shall in no event be liable for any damage resulting from improper use, negligence to follow the warnings and cautions in the instructions manual or the labels on the machine, unskillfulness, use of non-original optional / consumable accessories / spare parts, non-authorized modification.
- The manufacturer shall in no event be liable for any consequential or indirect damages including, but not limited to, loss of production or loss of profit or damages due to machine downtime.
- Damages to the instrument and / or human bodies resulting from contacting with high temperature parts, and their consequential or indirect damages are not compensated by the manufacturer.
- Damages resulting from delay of reaction at emergency and mistaken operation are not compensated by the manufacturer.
- Damages from electrical noise, over voltage, or wiring error are not compensated by the manufacturer.
- Mold production results by the machine or by this manual are not compensated by the manufacturer.
- No part of this document may be copied or in any way reproduced without the expressed written consent of the manufacturer.

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1. SAFETY INSTRUCTION



WARNING

1. Do not look into the wax injection nozzle by bare eyes because unexpected discharge of molten wax from the nozzle may cause eye burn.

Be sure to always place a rubber mold or a pan in front of the wax injection nozzle to block molten wax flow so as to prevent accidental flow of molten wax into the eyes or over the skin. Because wax injected from the wax injection nozzle is heated above 70 degrees Celsius, the eyes or skin may be burnt.

If the eyes or skin was exposed to molten wax, flush and cool the eyes or skin with a large amount of cold water and get prompt medical attention.

2. Take care not to touch the START button (blue) of the control unit unnecessarily, because the machine starts its injection process automatically.

3. Do not place fingers on the moving parts such as platen, as this could result in injury. Fingers may be pinched between the platen and the bottom edge of cylinder base.

4. Do not place any object on the operation panel of the PRIME controller.

5. Turn off power when the operator leaves the PRIME unattended.

6. Reduce wax tank pressure of the wax tank as near as the atmospheric pressure (zero) when the operator leaves PRIME unattended, and do not apply pressure inside wax tank to prevent unintended injection of molten wax.

7. The machine must be properly grounded.



CAUTION

1. Some exterior metal parts (areas not coated with paint, such as nozzle, lid of wax tank) may become very hot.

When you need to touch those parts, wait until they become cool.

2. Turn the air regulator knob to 'zero' when the operator leaves machine for long time.

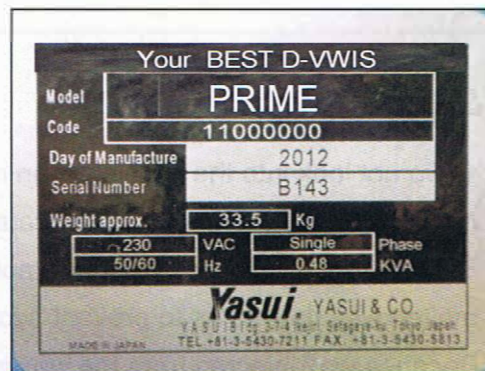
3. Rated fuse should be installed in place, so that damage to machine at unexpected short-circuit can be prevented.

4. At the time of cleaning or maintenance work, do not wipe surface of the warning labels stuck on the surface of machine.

2. INTRODUCTION

2-1. SPECIFICATION LABEL

1) The principal specifications label of this machine is affixed on the back panel of PRIME. Apply power specified voltage printed on the label. Should any voltage exceed beyond the specified voltage, the manufacturer is not responsible to guarantee performance of PRIME.



2) When ordering spare parts, specify the production serial number that is printed on that label. Other information on the label should be recommended to take note.

2-2. WORKING CONDITIONS

- 1) Use the machine at temperatures ranging 0-40 degrees Celsius and humidity under 70%.
- 2) Apply power voltage 230 V AC, 50/60 Hz, single phase only.
- 3) Do not use the machine under atmosphere with too much dust or with harmful gas.

2-3. INSTALLATION

- 1) It is very important to handle and install PRIME with enough attention to show the superior performance.
- 2) Please recognize PRIME works under precise pneumatic control by every 1kPa, which needs very careful installation.
- 3) Please begin installation from to check loose connection first, especially when it is transported by car.

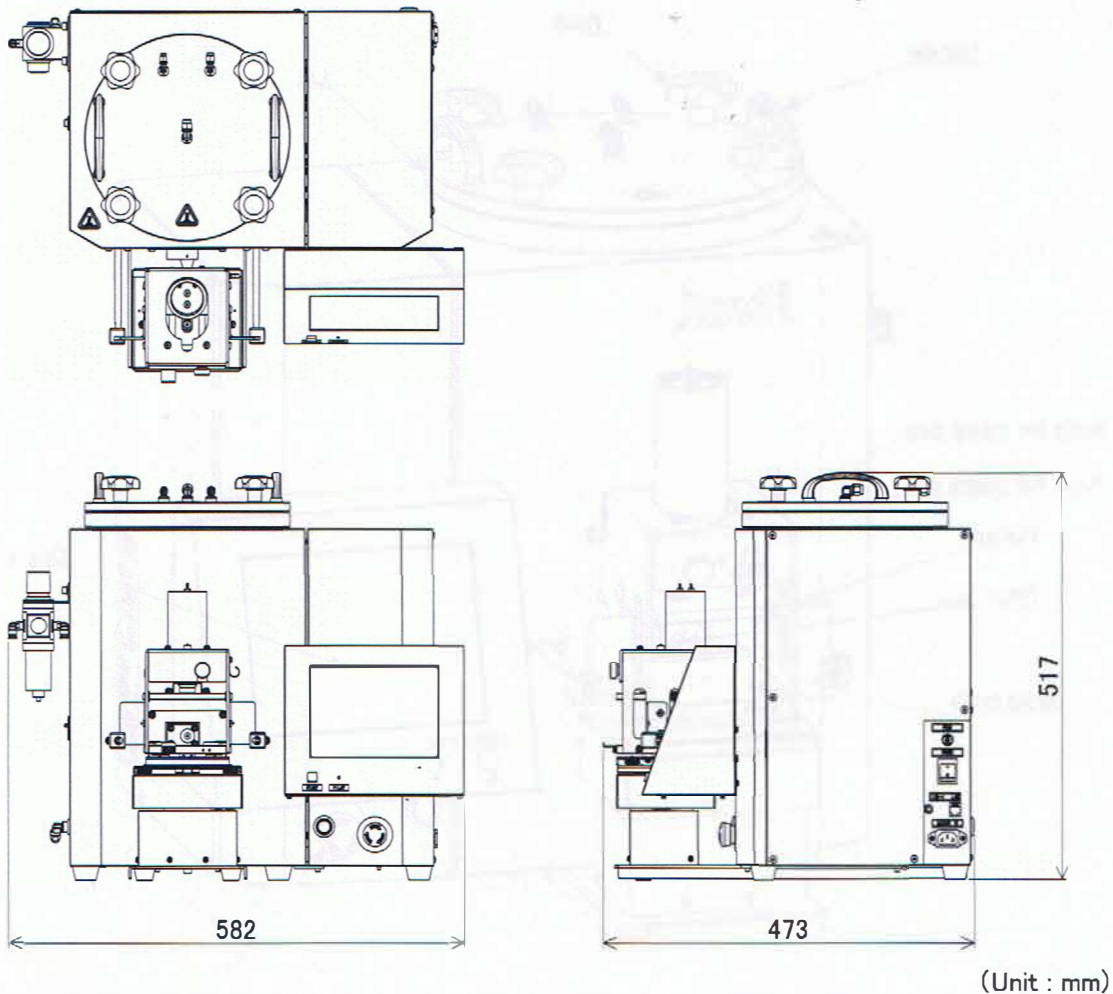
2-4. TRANSPORTATION

- 1) When you transport the machine, please put cushion material provided in the package with a double carton box.
- 2) Please do not turn upside down.
- 3) Hold the bottom of package with both hands by two people.
- 4) Do not expose the package to water.
- 5) Do not give vibration to the machine.
- 6) Keep away from flame.

2-5. CONTROL

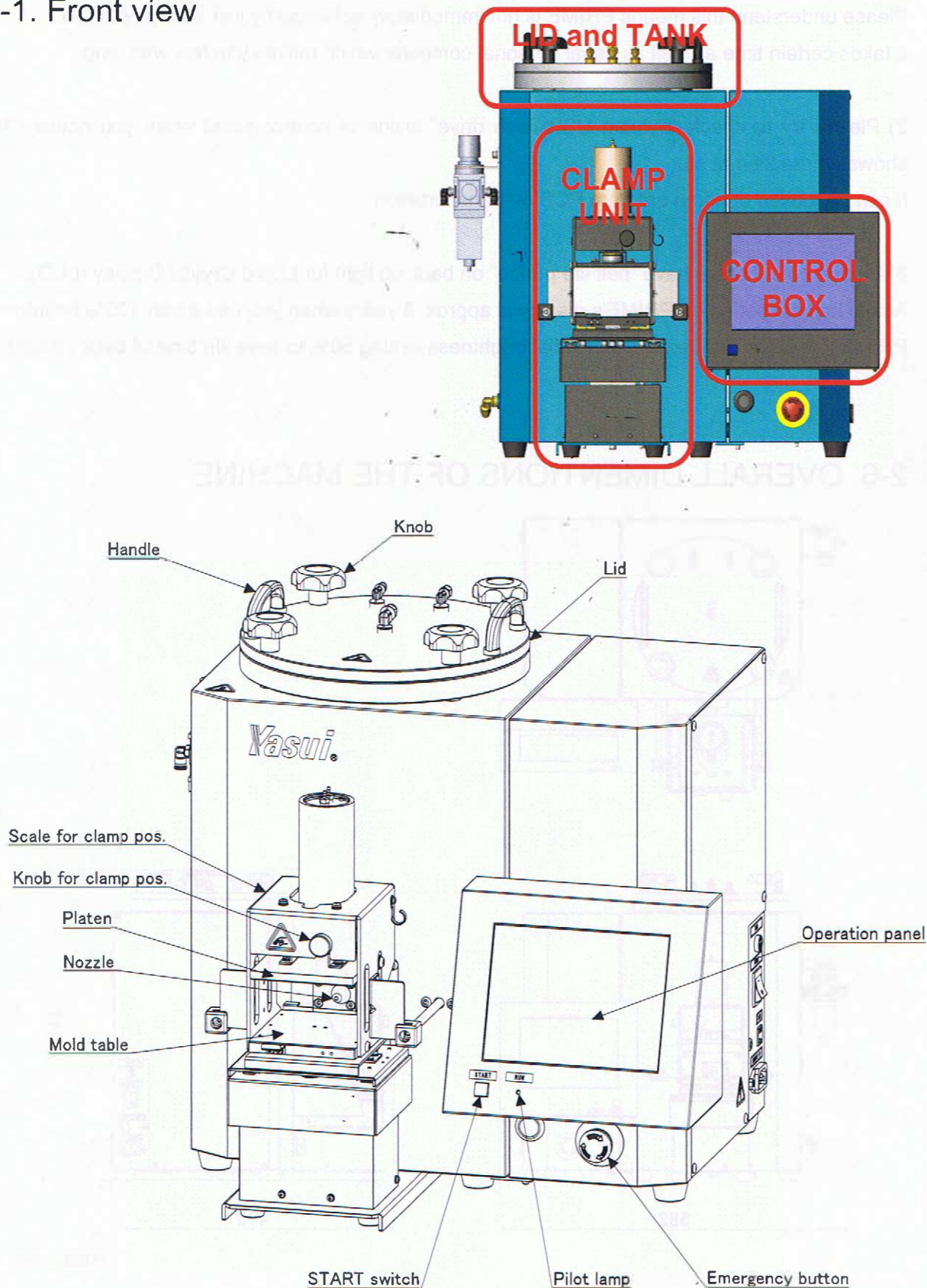
- 1) PRIME's operation panel is newly developed special PC which is genuine computer.
Please understand this means PRIME is not immediately activated by just after power ON.
It takes certain time as well as usual personal computer which makes you feel wait long.
- 2) Please try to check "System USB flash drive" inside of control panel when you notice PRIME shows no reaction at all.
It can be loosen or come out from PCB by transportation.
- 3) Please note that we have "half life period" on back up light for Liquid Crystal Display (LCD).
Actual half life period on PRIME's display is approx. 3 years when you use it with 100% brightness.
PRIME is always shipped out with initial brightness setting 50% to save life time of back up light.

2-6. OVERALL DIMENTIONS OF THE MACHINE

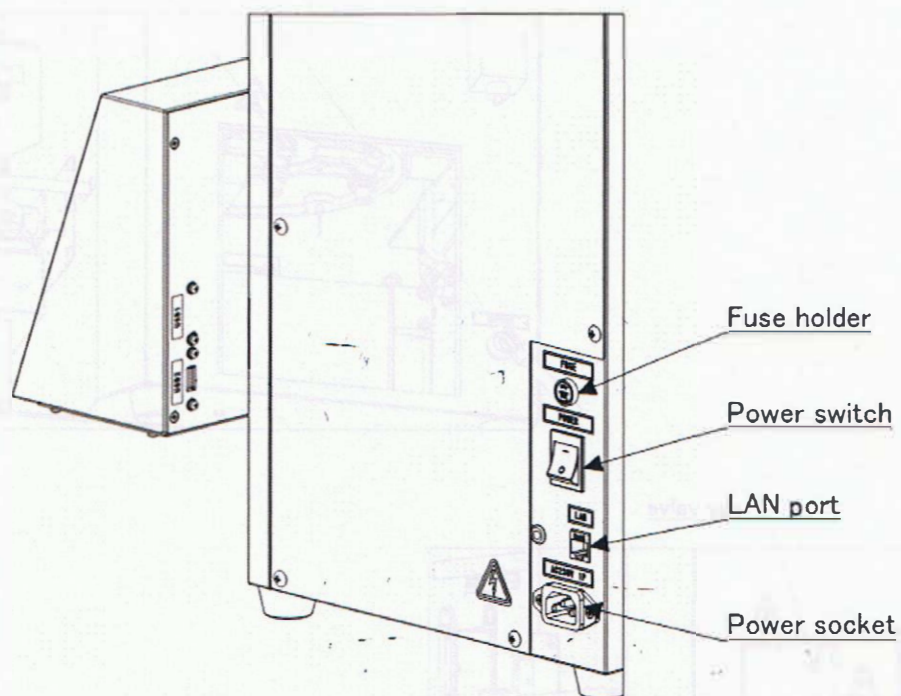


3. NOMENCLATURE

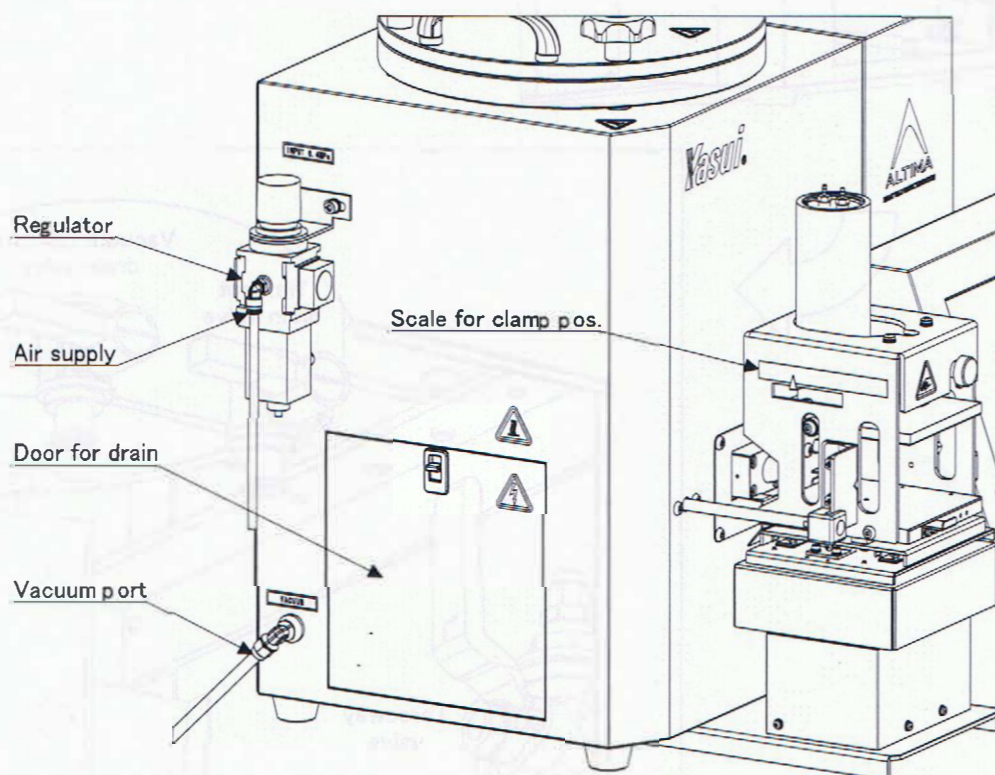
3-1. Front view

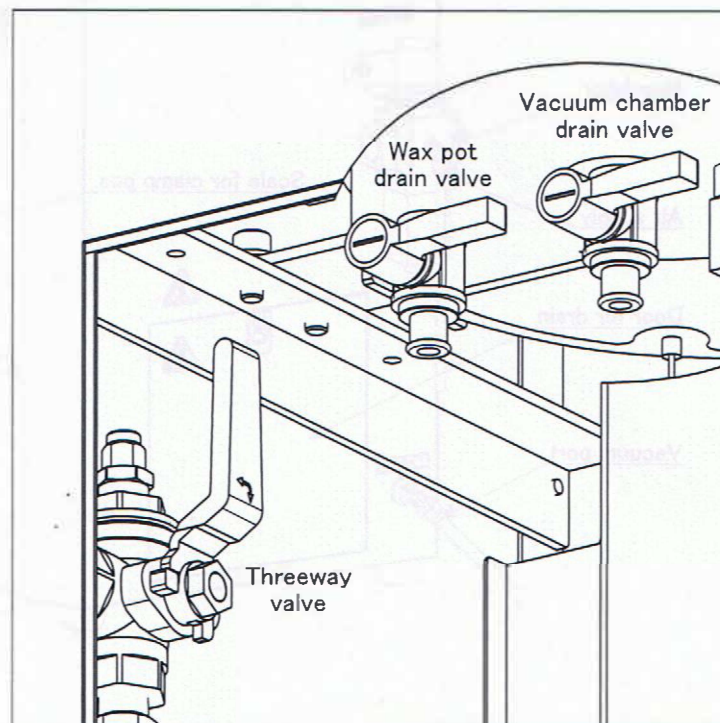
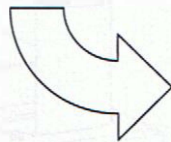
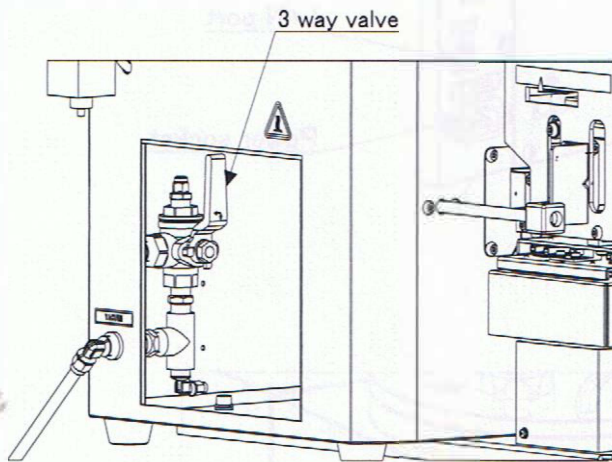
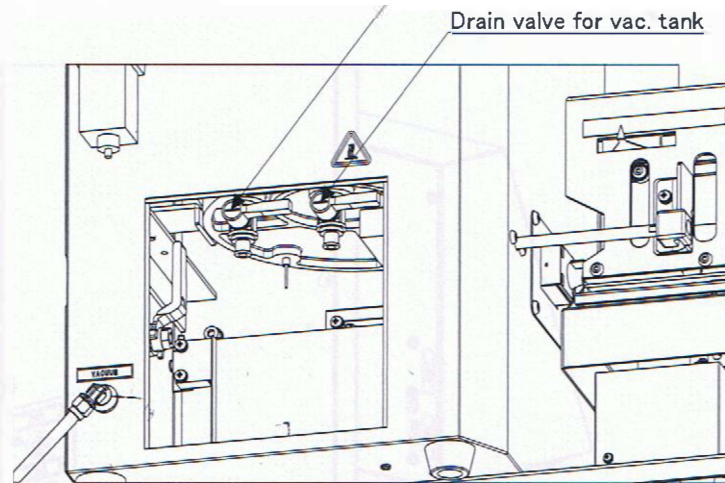


3-2. Right side view



3-3. Left side view





4. INSTALLATION

4-1. ACCESSORIES

- 1) Electric power cable
- 2) Plastic tube 6 mm dia. x 3m, Plastic tube 8mm dia. x 3m
- 3) Half union 8 mm dia. x 1/4"
- 4) 5A fuse
- 5) Adjustable acrylic jig
- 6) Allen keys 2.5mm / 3mm / 4mm
- 7) Filter regulator
- 8) Instruction manual, Quick manual
- 9) User sheet
- 10) Attention of registration

Please check those parts surely included in the box without any damages.

4-2. PLACE

- 1) Please do not hold weak part like knob on lid, Clamp unit, Control panel, Regulator and others when you take it out from the box or carry it on table.
- 2) Place the machine on a sturdy and stable bench.
- 3) Leave sufficient clearance around the machine so that daily work and maintenance should not be obstructed.
- 4) Place the machine in well-ventilated room.

4-3. CONNECTING POWER SUPPLY

Connect electric power source single phase 230VAC ($\pm 10\%$), 50/60 Hz, 0.48KVA.

Do not connect other power supply.



CAUTION

Be sure to connect to ground to prevent electrical hazard.

PRIME can be suffered very serious problems on its control system by static electricity from sliding part of cylinders, thus PRIME has a structure which leads static electricity and other signals which attack PRIME control.

Please be sure to connect ground on PRIME for this purpose also.

The cable must go into ground at the end actually outside of your building

4-4. CONNECTING AIR SUPPLY

* Compressor is not included in PRIME.

Connect air supply with cleaned and no moisture.

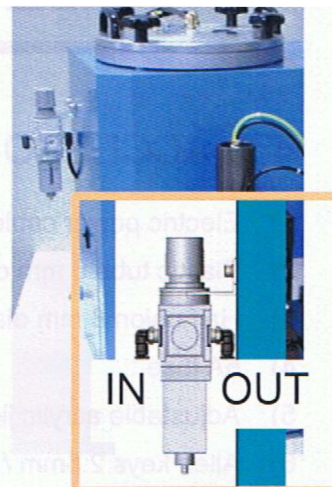
Automatic drain filtration system is strongly recommended.

(Minimum 0.4 MPa is required)

Fix included filter regulator (#7 in the list above) on the left side panel of PRIME.

Connect black plastic tube from the pane correctly into female fitting on the regulator as well as air supply to input port on it.

* Output pressure should be 0.35MPa



4-5. CONNECTING VACUUM PUMP

Connect vacuum pump.

* Vacuum pump is not included in PRIME. Please order separately.

Please select vacuum pump with pumping speed over 20 liter per minute, max. vacuum level over 9.3Pa if you purchase it in local market.



IMPORTANT

Please read the instruction manual of the pump before connecting ALTIMA.

4-6. WAX FILLING



IMPORTANT

The wax charged into wax pot must be always clean.

Please dissolve wax well in pan or pot and remove dirt or dust using filter paper or cloth.

Check the power is not ON. Check no pressure supplied to wax pot if power is ON.

Then remove lid by loosening 4 lock nuts (knobs) on lid.



CAUTION

Please be careful not to charge too hot wax into wax tank.

Temperature sensor sometimes can be defective by hot temperature.



CAUTION

Please be careful not to give any damage to fixing bolt on the pot by lifting up straight.

Please charge filtered wax into wax tank outside of pots.

** The maximum wax to be filled into wax tank is up to 35mm from upper end of the tank.

Too much wax filling causes wax clogging inside of tubes on lid.

MACHINE MENU

Please set up those things as follows at MACHINE MENU on Desk Top window.

* CALIBRATION

* LEAK TEST



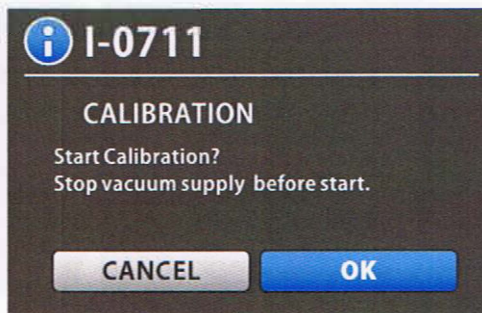
4-7. CALIBRATION (Zero adjustment of pressure sensor)

Only at very beginning after installation, you have to calibrate machine once.

1) Tap this **CALIBRATION** button from MACHINE MENU on desk top window.

The pop up window below will be shown.

* You can refer about the detail of MACHINE MENU at Chapter 8-6-9



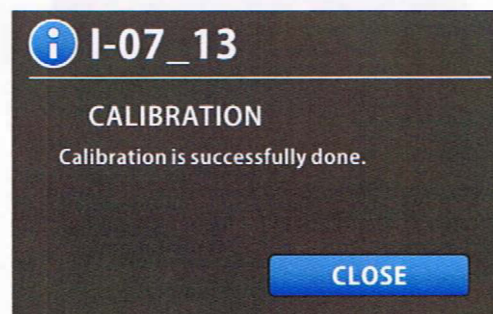
2) Tap OK **OK** button to start CALIBRATION and wait for seconds.

* please follow the message and stop vacuum pump.

3) Pop up window will be shown after calibration done.

Tap OK **OK** button to finish CALIBRATION

Tap OK **CLOSE** button to go back to desk top window.



4-8. LEAK TEST

This is to detect leakage on every part of pneumatic tubing including vacuum line.

Tap LEAK TEST button as shown above.

Take notes of the result. Strongly recommended to test 3 times.

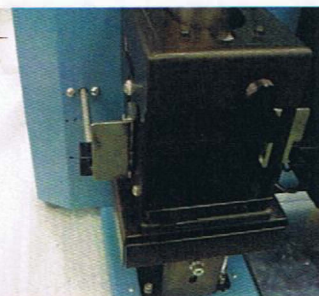
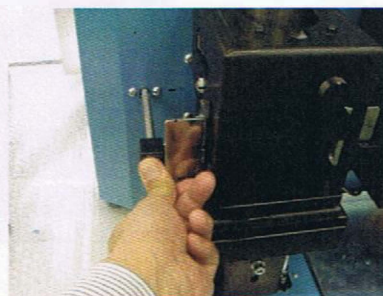
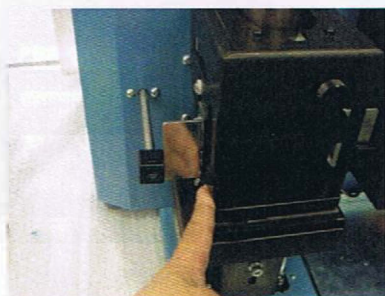


CAUTION

Clamp unit will hit ALTIMA's nozzle when LEAK TEST button is tapped.

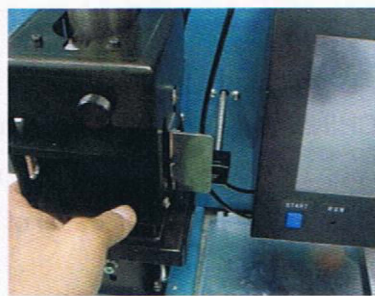
You have to prevent damage on nozzle following the instruction as follows;

Push clamp unit to right end.



Push traction block,

to release bracket



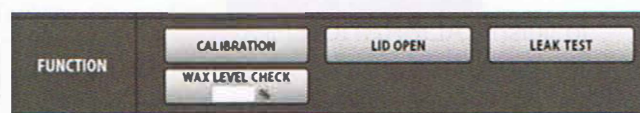
Push clamp unit to opposite end.

Release bracket as well.



Tap LEAK TEST button as mentioned above

MACHINE MENU





CAUTION

Please be careful not to give any damage to fixing bolt on the pot by lifting up straight.

Please charge filtered wax into wax tank outside of pots.

** The maximum wax to be filled into wax tank is up to 35mm from upper end of the tank.

Too much wax filling causes wax clogging inside of tubes on lid.

MACHINE MENU

Please set up those things as follows at MACHINE MENU on Desk Top window.

* CALIBRATION

* LEAK TEST



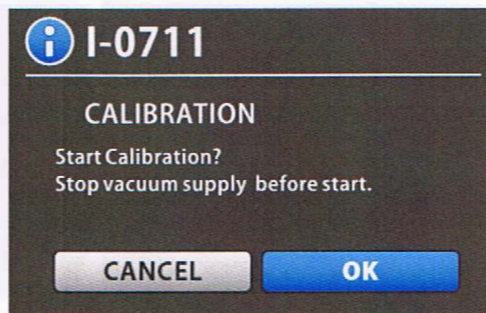
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The pop up window below will be shown.

* You can refer about the detail of MACHINE MENU at Chapter 8-6-9



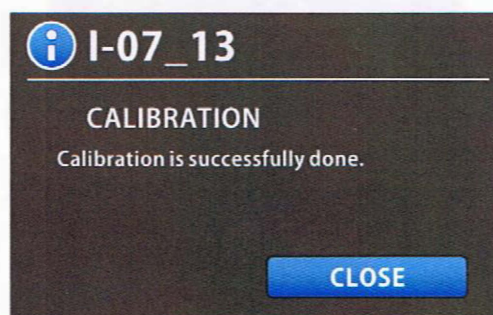
2) Tap OK **OK** button to start CALIBRATION and wait for seconds.

* please follow the message and stop vacuum pump.

3) Pop up window will be shown after calibration done.

Tap OK **OK** button to finish CALIBRATION

Tap OK **CLOSE** button to go back to desk top window.



4-9. Z axis adjustment

1) PRIME has a new function on z axis adjustment by manual.
You don't need to have a lot of acrylic jigs anymore for adjusting height by this.

2) Put rubber with jig onto the stage of clamp unit.

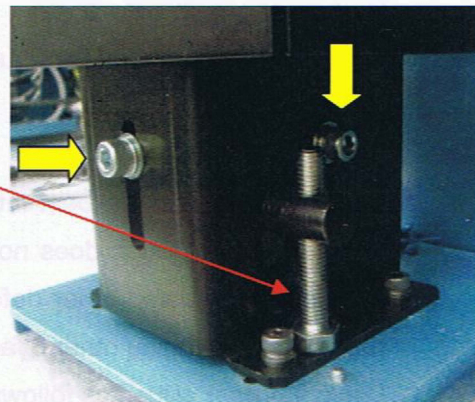
3) Please check the height of nozzle and sprue is in same level from the side.

Please adjust the height if not same as mentioned as follows;

* Loosen two screw bolts which fix clamp unit.

* Adjust height by this screw bolt.

* Fix two screw bolts again.



CAUTION

Please do not touch anything around rubber.
Pay attention of hot wax.

5. CONCEPT OF PRIME SYSTEM.

5-1. WHAT IS CODE SYSTEM with preset parameter?

Preset parameter is 10 fixed numbers 0 to 10 which we provided for 8 parameters on wax shooting PRESS1, 2, TIME, CLAMP, HOLD, FORWARD, VAC AND INJ.

You can select shooting parameter by the combination of 8 code numbers for the purpose by 2 steps as follows;

- 1) Find IDEAL AREA
- 2) Find the best intersection from 1).

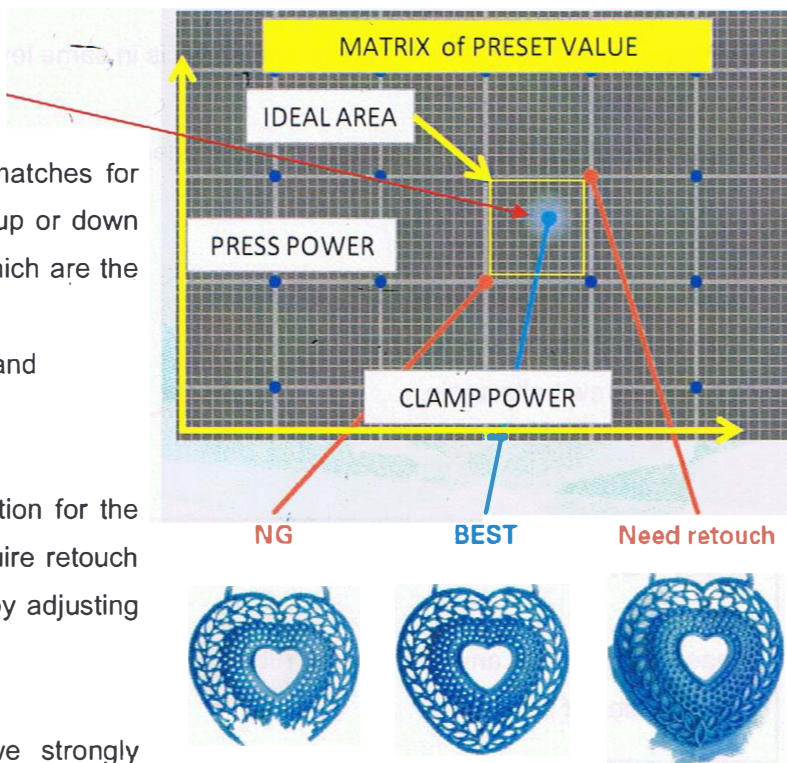
You can find a target area which matches for good wax shooting result by going up or down the pressure for clamp and press which are the keys among parameters

You can reach the area very quickly and instinctively step by step.

Then you will find the best intersection for the best wax result which does not require retouch by fins, bubbles and other defects by adjusting parameters including other 6 factors.

Factory preset values as follows.

You can edit as you like and we strongly recommend you to have unified contents on all of PRIMES in your factory.



FACTORY PRESET PARAMETERS

	Primary injection pressure PRESS1	Secondary injection pressure PRESS2	Delay time for PRESS2 TIME	Mold clamp pressure CLAMP	Holding mold after PRESS HOLD	Mold forward pressure Forward	Vacuum time VAC	Injection time INJ
		PRESS 2	TIME	CLAMP	HOLD	FORWARD	VAC	INJ
0	30 kPa	60 kPa	0.0 s	60 kPa	0 s	50 kPa	0.0 s	0.5 s
1	40 kPa	70 kPa	0.1 s	70 kPa	1 s	60 kPa	0.5 s	1.0 s
2	50 kPa	80 kPa	0.2 s	80 kPa	2 s	70 kPa	1.0 s	1.5 s
3	60 kPa	90 kPa	0.3 s	90 kPa	3 s	80 kPa	1.5 s	2.0 s
4	70 kPa	100 kPa	0.4 s	100 kPa	4 s	90 kPa	2.0 s	2.5 s
5	80 kPa	110 kPa	0.5 s	120 kPa	5 s	100 kPa	3.0 s	3.0 s
6	90 kPa	120 kPa	0.6 s	140 kPa	8 s	110 kPa	4.0 s	5.0 s
7	100 kPa	130 kPa	0.7 s	160 kPa	10 s	120 kPa	5.0 s	10.0 s
8	110 kPa	140 kPa	0.8 s	180 kPa	20 s	130 kPa	10.0 s	30.0 s
9	120 kPa	150 kPa	0.9 s	200 kPa	30 s	140 kPa	30.0 s	60.0 s

5-2. MEMORY FUNCTION

You can memorize the best parameter you've found as mentioned on previous page.

8 digits preset code for guide line, adjusting it for the best intersection plus this MEMORY function give you the best performance.

For example : CODE 46557538 and each values as follows;

PRESS1	70 kPa
PRESS2	120 kPa
TIME	0.5 sec.
CLAMP	120 kPa
HOLD	10 sec.
FORWARD	100 kPa
VAC	1.5 sec.
INJ	30 sec.

—CODE with 8 preset parameters combination



You have a choice to increase Preset No. 6 to 7 on PRESS2 to have higher pressure 130kPa from 120kPa when you have incomplete filling on wax.

And suppose the best intersection found finally is 138kPa after adjustment for the rubber.



MEMORY function is used when you want to save it in PRIME system.

The details of this function will be described at Chapter 7-5.



CAUTION

The result will be erased if you turn OFF the machine before saving as MEMORY.

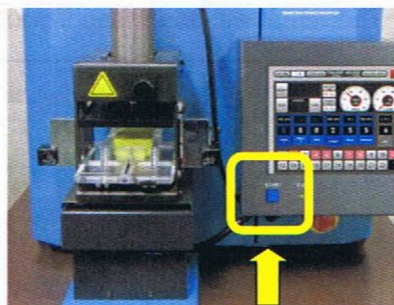
6. OPERATION

6-1. SHOOTING PROCEDURE

- 1) Turn power switch ON.
- 2) Enter Preset CODE 8 digits on this window and check each recipe is correct.
- 3) Check temperature, pressure and vacuum.
- 4) Put rubber with acrylic jig on clamp table.
- 5) Push START button to start sequence.
- 6) Take rubber out of clamp unit.



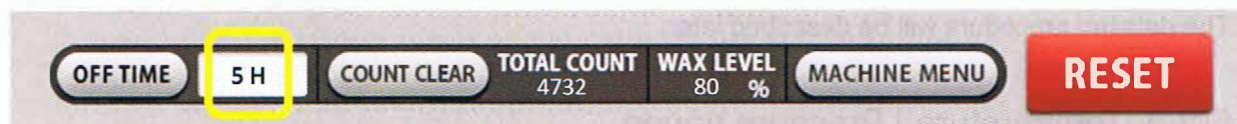
Push START button.



6-2. DISPLAY



6-2-1. Upper part

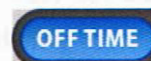


1) OFF TIME

Timer set button for suspend operation.

Tap set box marked as above to call keyboard, enter value from time to stop operation until time to reboot operation.

You can start timer by tapping this button which will turn its color to blue.



* It takes long time to reach setting temperature again after rebooting.

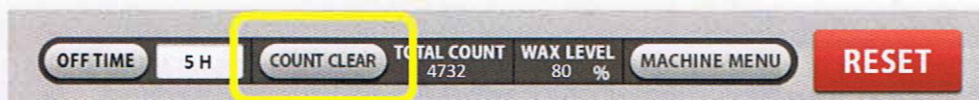
We do not recommend you to set long time just before operation.

2) COUNT CLEAR

You can reset counters by pushing COUNT CLEAR button.

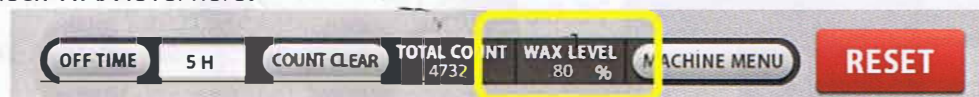
Need to keep pushing it down for a few seconds.

PRIME has total life counter in MACHINE MENU which cannot be reset.



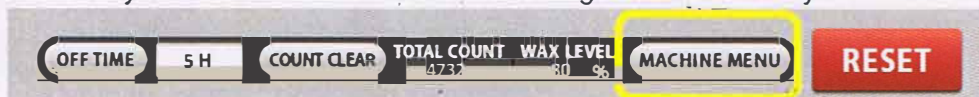
3) WAX LEVEL

You can check WAX level here.



4) MACHINE MENU

This is a short cut key to check machine or for some configuration as already described.



5) RESET

You can suspend operation by this button. System returns to status before START button pushed.



6-2-2. RECIPE / MEMORY box

1) You can call a recipe by entering preset code 8 digits here.

Tap this area to activate keyboard.



2) You can register or call memory here at this MEMORY box.

The detailed procedure will be described later.

6-2-3. Temperature / Pressure gauge

1) Temperature settings can be done here.

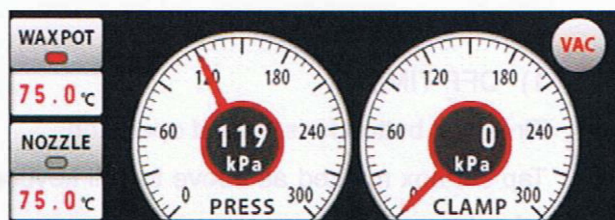
Tap temperature box to activate keyboard.

Edit the value using it.

2) Pressure for Wax tank and clamp is indicated

here. You can switch clamp pressure gauge to

vacuum gauge by tapping  button.



6-2-4. PRESET area

You can check and edit PRESET number and actual value at this area.

Preset value	70kPa	120kPa	0.5 s	120kPa	10 s	100kPa	1.5 s	30 s
Preset No.	4	6	5	5	7	5	3	8
	PRESS 1	PRESS 2	TIME	CLAMP	HOLD	FORWARD	VAC	INJ

Preset values as follows;

You can edit them when you want to improve shooting result.

FACTORY PRESET PARAMETERS

		Primary injection pressure	Secondary injection pressure	Delay time for PRESS2	Mold clamp pressure	Holding mold after PRESS	Mold forward pressure	Vacuum time	Injection time
		PRESS1	PRESS2	TIME	CLAMP	HOLD	Forward	VAC	INJ
		PRESS 1	PRESS 2	TIME	CLAMP	HOLD	FORWARD	VAC	INJ
Preset No.	0	30 kPa	60 kPa	0.0 s	60 kPa	0 s	50 kPa	0.0 s	0.5 s
	1	40 kPa	70 kPa	0.1 s	70 kPa	1 s	60 kPa	0.5 s	1.0 s
	2	50 kPa	80 kPa	0.2 s	80 kPa	2 s	70 kPa	1.0 s	1.5 s
	3	60 kPa	90 kPa	0.3 s	90 kPa	3 s	80 kPa	1.5 s	2.0 s
	4	70 kPa	100 kPa	0.4 s	100 kPa	4 s	90 kPa	2.0 s	2.5 s
	5	80 kPa	110 kPa	0.5 s	120 kPa	5 s	100 kPa	3.0 s	3.0 s
	6	90 kPa	120 kPa	0.6 s	140 kPa	8 s	110 kPa	4.0 s	5.0 s
	7	100 kPa	130 kPa	0.7 s	160 kPa	10 s	120 kPa	5.0 s	10.0 s
	8	110 kPa	140 kPa	0.8 s	180 kPa	20 s	130 kPa	10.0 s	30.0 s
	9	120 kPa	150 kPa	0.9 s	200 kPa	30 s	140 kPa	30.0 s	60.0 s

6-2-5. TODAY button area

You can register 22 TODAY recipe at this area.

The button with pink color is occupied now.

1	2	3	4	5	6	7	8	9	10	11	12
13	14	15	16	17	18	19	20	21	22	COUNT	0

7. OPERATION IN DETAIL

7-1. Descriptions of each recipe parameter

Primary injection pressure	Secondary injection pressure	Delay time for PRESS2	Mold clamp pressure	Holding mold after PRESS	Mold forward pressure	Vacuum time	Injection time
PRESS1	PRESS2	TIME	CLAMP	HOLD	Forward	VAC	INJ
PRESS 1	PRESS 2	TIME	CLAMP	HOLD	FORWARD	VAC	INJ

- 1) PRESS 1: Primary injection pressure setting after VAC: Range 10-250 kPa
- 2) PRESS 2: Secondary injection pressure: Range 10-250 kPa
- 3) P-TIME: Timer setting after PRESS1 to reduce fins and shrinkage by increasing or decreasing pressure: Range 10-60 sec

Set **TIME** "0" when you don't use PRESS2. The values of both PRESS and TIME will not be shown and PRESS1 will be only active.

- 4) CLAMP 1: Clamp pressure setting after START switch pushed: Range 30-300 kPa
- 5) HOLD: Timer for clamping mold at forward position after shooting: Range 0-300 sec.

You can avoid shrinkage by no wax flowing out from gate of rubber mold by holding this position. You will also get stable wax weight by this.

Clamp action is held at forward position after finish of injection when you select PRESET number 0-7 (0-10 sec.)

Clamp action is held at forward position for half of set time, and goes back to original position to hold clamping for remaining half of the set time when you select PRESET number 8-9 (over 20 sec.)

- 6) FORWARD: Forward pressure of clamp unit: Range 035-250kPa

Try to find suitable value without leakage of wax and vacuum.

**** Sprue former: Strongly recommended to use this when rubber vulcanizing to get the best fitting with the nozzle of PRIME #20515000 Sprue former**



- 7) VAC: Vacuum timer: Range 0-100.0 sec.
- 8) INJ: Injection timer: Range 0-600 sec.

7-2. HOW TO CHANGE PRESET NUMBER

Ex: Change PRESS 1.

1) Tap Preset number located above PRESS1 button to call keyboard.

2) Change number 4 to 5 by tapping keyboard.



Key can be also used.

3) Tap OK button to close keyboard.
Pressure increases to 80kPa from 70.



* All other parameters can be changed as well.

7-3. ADJUSTING PRESET VALUES

As you see on the chart mentioned in previous page, preset values are roughly set by step of every 10kPa or 0.5 sec. and 1 sec.

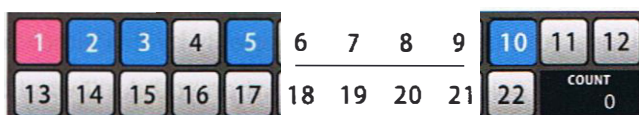
You can adjust those values with sensitive step of every 1kPa or 0.1 sec.

1) Tap value indication box which you want to edit.

2) Enter any number you like by keyboard and tap OK button.
The preset number which its value adjusted turns blue.



3) The result of this adjustment is overwritten on TODAY number 1 which already registered automatically at very beginning of operation.



7-4. TODAY FUNCTION

- You can save CODE or the best recipe which you've found for a design in TODAY function file temporarily. This makes wax shooting much faster with high quality results
- You don't have to pay attention on long 8 digits CODE but only TODAY number 1 to 22.
- PRIME assigns TODAY number '1' always when turned power ON.

- For example, you will have a display as shown on the right when you enter CODE 46557538 and tap OK button. This recipe has already stored in TODAY 1 automatically at this point.



- The recipe is always saved each time when you edit.

Even if you completely change recipe by reading MEMORY from library, TODAY 1 will be overwritten.

You can write this number '1' on rubber which is much easier than to write 8 digits. (* Each TODAY memory file already has factory preset value as on the right)



- When you want to have TODAY 2, tap button number 2.

Enter CODE or READ one of MEMORIES as well to register in TODAY memory 2.

** TODAY buttons will turn blue after actual shooting started. As you see above buttons, TODAY 1,2,3,5,10 is registered, blue buttons means already shot some.

TODAY 1 is registered and not used yet as you see the counter (next to button 22) is still showing '0'

** TODAY memory function is very simple and easy which does not require you any operation like tapping save button.

However you may lose your best recipe unexpectedly by this simple operation.

So please do not forget to select other number when you don't want to change the recipe.

** Recipes saved in each TODAY memory will be maintained after turning power OFF.

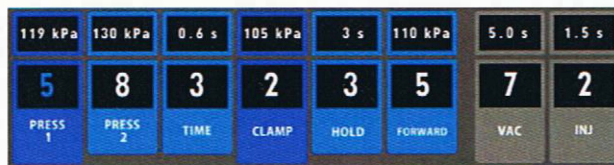
However this is just a temporary memory system which can be erased by some reasons.

We strongly recommend you to save as MEMORY or take notes on paper.

7-5. HOW TO USE MEMORIES

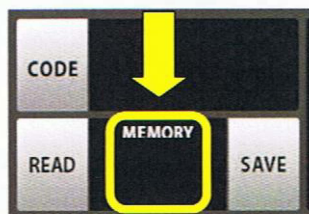
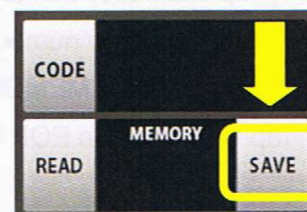
7-5-1. How to register memory

1) Call any recipe you want, edit if necessary.



2) Tap save button to register.

It is saved as a new registration when MEMORY box is blank



3) The recipe is registered with consecutive numbers provided automatically. (Max. capacity 9999) --

You have to manage contents of memory at your responsibility.

7-5-2. How to call registered memory

1) Tap MEMORY box to call keyboard.

2) Enter memory number you want and tap READ button.

* The number you enter will be shown with grey color when no recipe registered.



3) Each parameter value is shown.

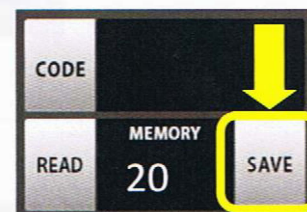


7-5-3. How to copy memory

1) Call a memory as the way mentioned above.

2) Tap MEMORY box to call keyboard.

3) Enter any number you want to have a copy, tap SAVE button to complete.

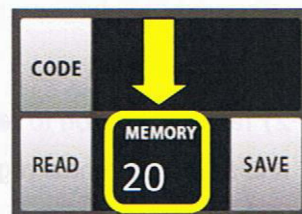


* When the number you select is already occupied, the recipe will be overwritten by new recipe. You can prevent unexpected overwrite by tapping READ button before SAVE button.

When the color of number is grey, not occupied yet, white is occupied.
Copy process is suspended by tapping READ button and you have to start copying from 1).

7-5-4. How to delete memory

- 1) Tap MEMORY box to call keyboard.
 - 2) Enter memory number you want to delete.
 - 3) Keep tapping MEMORY box for a few seconds to complete.
- Tap OK button on POP UP message to delete.



7-6. CUSTOMIZE PRESET VALUES

You can customize factory PRESET VALUES.

Tap MACHINE MENU button to tap **PRESET** button on the page.

You can customize values at PRESET VALUES page.

Please be careful that PRIME does not have a function to initialize preset values to factory setting.

Enter password after tapping this button to open next page.

PASS : YASUI_PRIME

Preset No.	Recipe					
	PRESS 1	PRESS 2	TIME	CLAMP	HOLD	FORWARD
0	30	60	0.0	60	0	50
1	40	70	0.1	70	1	60
2	50	80	0.2	80	2	70
3	60	90	0.3	90	3	80
4	70	100	0.4	100	4	90
5	80	110	0.5	120	5	100
6	90	120	0.5	140	8	110
7	100	130	0.6	160	10	120
8	11	140	0.7	180	20	130
9	120	150	0.9	200	30	140

8. MACHINE MENU

You can check machine information, counter, independent clamp action and other functions here.

8-1. VERSION/LIFE COUNT

Control software program version for PRIME is indicated here.

LIFE COUNT which is already mentioned before.



8-2. TEST button area

You can check each action of CLAMP, FORWARD and VACUUM.

8-3. FUNCTION area

CALIBRATION and LEAK TEST already mentioned.

Tap LID OPEN button when you want to release pressure in wax tank to open lid.

You can check latest wax level info by tapping this button.

8-4. LANGUAGE/BRIGHTNESS

Language cannot be changed as of April, 2014

You can adjust brightness of LDC.

8-5. CLAMP SIZE

You can change Clamp unit size.

8-6. MEASUREMENT SYSTEM

You can change measurement system here.

PRESET button for page only for edit Preset value.

OK button for operation window.



9. AFTER FINISHING INJECTION WORK

9-1. REMOVE WAX from VAC tank

When you finish the day's job on PRIME, please drain wax from vacuum tank.

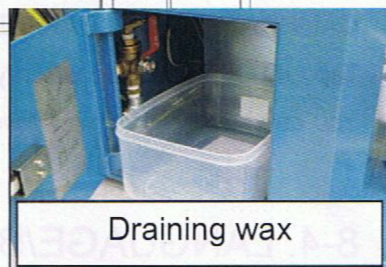
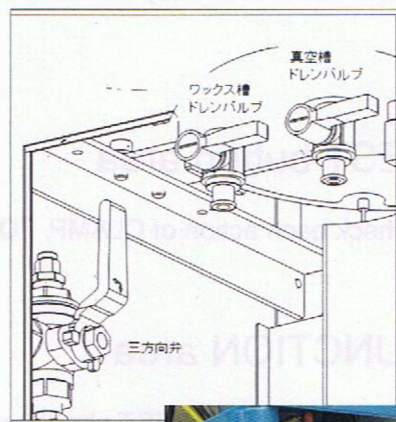
<How to drain wax from vacuum tank>



CAUTION

Please be careful handling this operation as wax is very hot.

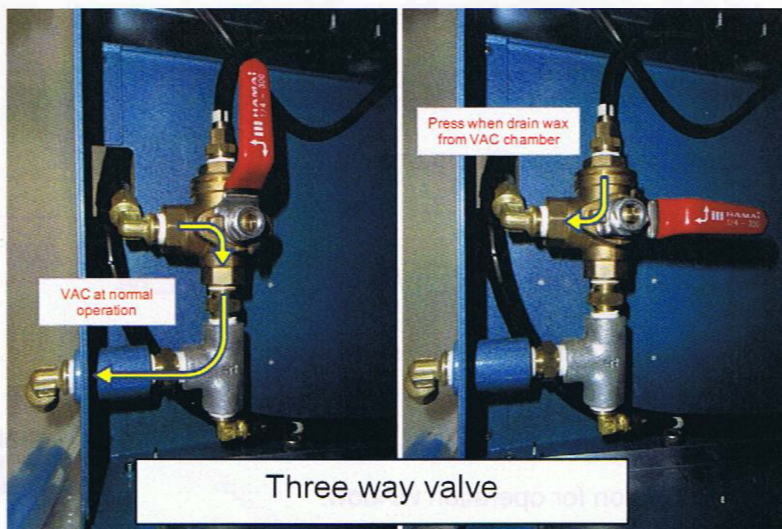
- 1) Turn vacuum pump power OFF.
- 2) Check if the lid is completely closed.
- 3) Put wax receiver anything like bowl or pan.
(the space 160mm width, 90mm height)
- 4) Open drain valve on vacuum tank on the right.
(Vertical position to open)
- 5) Close drain valve when finished.
(Horizontal position to close)



Draining wax

* You can be quicker to finish draining wax by providing pressure to vacuum tank.

- 6) Let three way valve in vertical position.
- 7) Set pressure approx. 10kPa at Preset window.
- 8) Open drain valve on vacuum tank on the right. (Vertical position to open)
- 9) Increase the pressure gradually at Preset window
- * Minimum pressure should be set to avoid splashing of drain wax.
- * Reduce pressure when finishing.
- 10) Set pressure 10kPa(psi) again after draining.
- 11) Close drain valve
(Horizontal position to close)



Three way valve

9-2. REMOVE WAX from WAX tank

When you want to use another kind of wax, please drain wax from wax tank as follows.

<How to drain wax from wax tank>



CAUTION

Please be careful with handling this operation as wax is very hot.

- 1) Please be sure that wax inside is dissolved enough.
- 2) Check if the lid is completely closed.
- 3) Set pressure approx. 10kPa at Preset window.
- 4) Put wax receiver anything like bowl or pan. (the space 160mm width, 90mm height)
- 5) Open drain valve on wax tank on the left. (Vertical position to open)
- 6) Increase the pressure gradually.
 - * Minimum pressure should be set to avoid splashing of drain wax.
 - * Reduce pressure when finishing.
- 7) Close drain valve (Horizontal position to close)

10. TROUBLE SHOOTINGS

10-1. ERROR MESSAGES

PRIME shows messages when something happen. You cannot operate PRIME while message is displayed. Injection will be suspended when error detected.

Injection will not be suspended when only warning is displayed.

	Level	Descriptions
E01	Error	Time out on PRESS1
		Loosen tubing, O-rings and sealing material. Solenoid valve defective
E02	Error	Time out on CLAMP release
		Solenoid for exhaust defective. Tubing for exhaust clogging
E03	Error	Time out on FORWARD release
		Solenoid for exhaust defective: Tubing for exhaust clogging
E04	Error	Vacuum condition is bad
		Check vacuum line and pump.
E05	Warn	Clamp size does not accord
		Check clamp size chosen at MACHINE menu
E06	Error	Control board is reset
		Check control board or replace
E07	Error	Failed to check wax level
E08	Error	Wax level is low
E09	Error	Heating defective on wax tank
E10	Error	Heating defective on nozzle

** When System USB1 is broken,
the message as below is kept indicated
until replaced.

** Contact distributor about errors
not mentioned above or not solved by this.



10-2. EMERGENCY STOP BUTTON

Please push Emergency stop button in front of PRIME, when you want to stop the function of heating and shooting.

The button will be fixed unless you release it by manual.

Nothing can be operated on this condition.



Pop up window when emergency

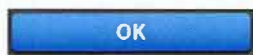


IMPORTANT

Please confirm safety very carefully before reset emergency.

1) Turn the emergency button on the arrow direction to unlock the knob.

2) Tap OK



button.



Emergency button

11. CONSUMPTIONS

PRIME has some consumption as follows;

1) LCD

It is possible to have some small defective like dot omission or spotting sometimes happens from the very beginning or in a few years.

Please note those defective are completely exempt as well known as common sense among general industry market.

2) Solenoid valves

The purpose of wax flow control in high temperature is very hard for general industrial solenoid valves. So this is also consumption not as like the one installed on previous model.

3) Thermistors

4) Rubber sealing materials

On wax pot and inside of valves.

5) DC power supply

Depending on the quality of electricity, it can be.

* Please ask your distributor for detailed information.

12. SPECIFICATION

Power supply:	AC230V, 50/60Hz, single phase
Power consumption:	0.48KVA (max)
Compressed air supply:	0.40- 0.70(MPa)
Temp. display range:	40-100°C
Temp. set range:	40-100°C
VAC time set range:	0-99.9 sec.
INJECTION time set range:	0-600 sec.
Wax capacity:	Approx. 3.5kg
Accuracy of nozzle temp.:	±0.2°C
Max. rubber mold size:	80(W)x100(d)x45(H)mm
PRESS 1:	10-250(kPa)
PRESS 2:	10-250(kPa)
TIME for PRESS2:	0-60 sec.
CLAMP pressure range:	30-300 (kPa)
FORWARD pressure range:	30-250(kPa)
HOLD time range:	0-300 sec
Program memory stored:	9999