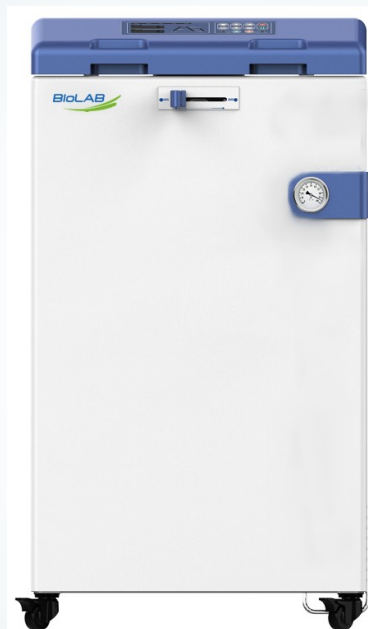




# Operation Manual



BAVT 400-C  
Series

## Vertical Autoclave

Thank you for Choosing Biolab products. Please read the “Operating Instructions” and “Warranty” before operating this unit to assure proper operation.

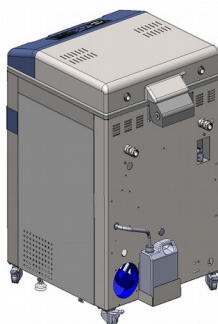
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# 01 Notices

1. Connect the power, turn on the switch on the left side, the machine will do the self checking, all the lights will be blinking for 3 times. If the lid is not closed, the down screen will show “LID” to indicate closing lid. If the lid is closed well, the screen will show “ST-BY” to indicate it is standby condition.
2. Check whether the sealing rings are sticky: If so, separate them so as not to affect the sealing. Hang the external cooling water tank rack on the rear vertical plate stud and place the 2L waste water tank in the rack, then put the exhaust silica gel tube into the 2L waste water tank



(Fig 1)

3. Check the front water tank, (Figure 2), keep the water level in the LOW position, if the water is over LOW level, pour it out, If the water is not poured out in time, it will come out from the back.



(Fig 2)

Pour water into the chamber manually, observe the water level from the water plate hole, make sure you can see the water, but the water is lower than the water plate.

4. Load in the articles to be sterilized, put it in the stainless basket, then put the basket on the water plate.

5. Close the lid, press the lid slightly by one hand, move the handle from right to left by the other hand. After it is locked, the system will send out indicating sound, and the LOCKED light on operation board will be on, which means the lid is closed well. The “ST-BY” light will be blinking, means the machine is under stand-by condition.

6. Selecting the sterilizing program: Press the “UP” and “DOWN” button to choose the sterilizing program. The screen will show the U01 to U04, this is the set programs. If you want to sterilize under those programs. You just need to press the start for 3 seconds to start. If you want to create the new programs, you can press “SET/ENT” button to enter into the setting menu, press the “UP” and “DOWN” to set the temperature, then press the “NEXT” to enter into time setting. Then pressure “SET/ENT” again to save the new program, the new programs will be U08 to U20.

7. U01-U07 can not be deleted, but can be crated and saved as new programs, below is the detailed specification of U01-U07.

U01:Solid    U02: Solid with drying    U03:Liquid with warming

U04:Liquid    U05: Waste    U06:Agar melting    U07:Self defined

- There are 5 levels of exhaust, level 0 is no exhaust, normally for liquid mode, level 5 is full exhaust.

#### ● U01—Solid

1. Sterilizing flow: Heating — Sterilizing — Steam exhaust — release of cooling lock
2. Applicaton: Solid sterilizing
3. Press DATA button, the digital displayer A and B will display the detailed parameters once by four screens:

Screen 1

TEMP

°C

MON

HOR

TIME

MIN

U01

DAY

Screen 2

TEMP

°C

134.0

MON

HOR

TIME

MIN

4

DA

Y

Screen 3

TEMP

°C

4

MON

HOR

TIME

R

EHT

MIN

DAY

Screen 4

TEMP

°C

96.0

MON

HOR

TIME

MIN

OPEN

DAY

U01 default parameters and the parameters scope of its newly created program

Name	No.	Default Parameter	Parameters Range of New Program
Sterilizing Temperature	①	134 °C	105°C~138°C
Sterilizing Time	②	4minutes	1~6000minutes
Exhaust Level( EHT )	③	4	0~5 Level
Lid Open Temp. ( OPEN )	④	96°C	40°C~99°C

#### ● U02—Solid

1. Sterilizing flow: Heating — Sterilizing — Steam exhaust — release of cooling lock
2. Applicaton: Solid sterilizing
3. Press DATA button, the digital displayer A and B will display the detailed

parameters once by four screens:

Screen 1

TEMP °C  
MON  
HOR

TIME

U02

MIN  
DAY

Screen 2

TEMP °C  
MON  
HOR

121.0

TIME

20

MIN  
DAY

Screen 3

TEMP °C  
MON  
HOR

4

TIME  
R

EHT

MIN  
DAY

Screen 4

TEMP °C  
MON  
HOR

96.0

TIME

OPEN

MIN  
DAY

U02 default parameters and the parameters scope of its newly created program

Name	No.	Default Parameter	Parameters Range of New Program
Sterilizing Temperature	①	121 °C	105°C~138°C
Sterilizing Time	②	20 minutes	1~6000 minutes
Exhaust Level( EHT )	③	4	0~5 Level
Lid Open Temp. ( OPEN )		96°C	40°C~99°C

## ● U03—Liquid with warming

1. Sterilizing flow: heating — sterilizing — steam exhaust — warming — release of cooling lock
2. Application: Liquid sterilization, automatic warming after sterilization( Agarose medium )

3. Press DATA button, the digital displayer A and B will display the detailed parameters once by five screens

Screen 1

TEMP

°C

MON

HOR

TIME

U03

MIN

DAY

Screen 2

TEMP

°C

121.0

MON

HOR

TIME

20

MIN

DAY

Screen 3

TEMP

°C

50.0

MON

HOR

TIME

600

MIN

DAY

Screen 4

TEMP

°C

0

MON

HOR

TIME

EHT

MIN

DAY

Screen 5

TEMP

°C

79.0

MON

HOR

TIME

OPEN

MIN

DAY

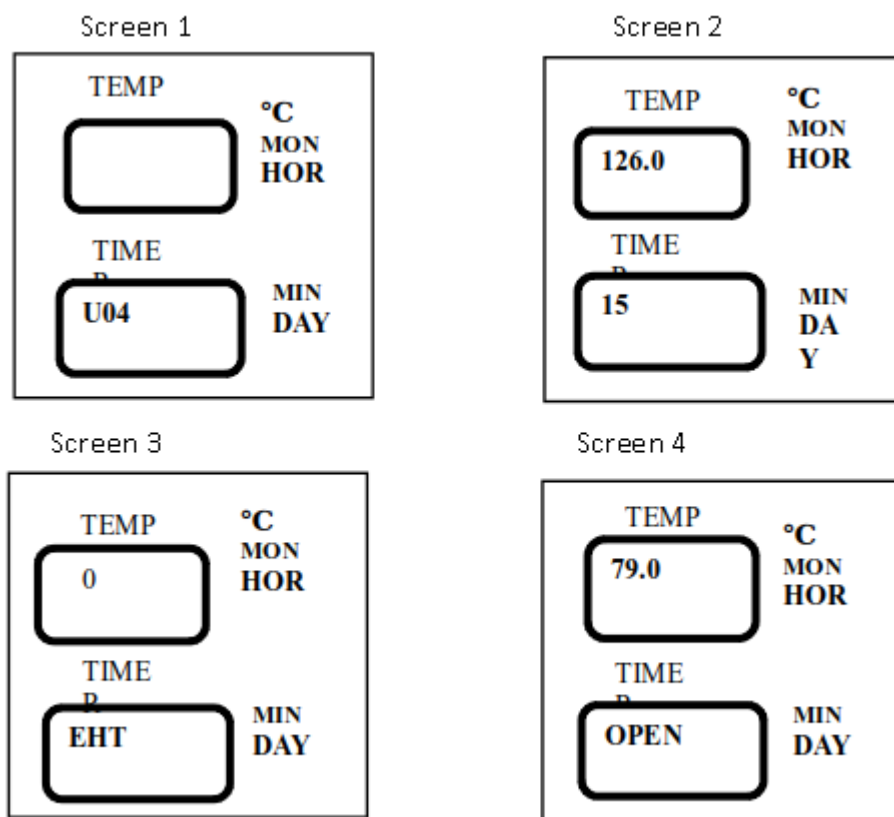
U03 default parameters and the parameters scope of its newly created program

Name	No.	Default Parameter	Parameters Range of New Program
Sterilizing Temperature	①	121°C	105°C~138°C
Sterilizing Time	②	20min	1~6000min
Warming Temperature	③	50 °C	45°C~60°C
Warming Time	④	600min	1~9999min
Exhaust Level( EHT )	⑤	0	0~5Level
Lid Open Temp. ( OPEN )	⑥	79°C	40°C~80°C

Note: The lid open temperature, max exhaust temperature and set boiling point is related with the local altitude. For solid and agar mode, the max lid open temp. should be 1°C lower than the local boiling point. For liquid and waste mode, the max lid open temp. should be 20°C lower than the local boiling point, the max exhaust temp. is 4°C over than the local boiling point. In the liquid mode, you can set a safe lid open temperature, so as not to get hurt by hot liquid and steam.

### ● U04—Liquid

1. Sterilizing flow: Heating — Sterilizing — Steam exhaust — release of cooling lock
2. Application: Liquid, no warming after sterilizing( Such as water, solvent, reagent and liquid medicine, etc )
3. Press DATA button, the digital displayer A and B will display the detailed parameters once by four screens



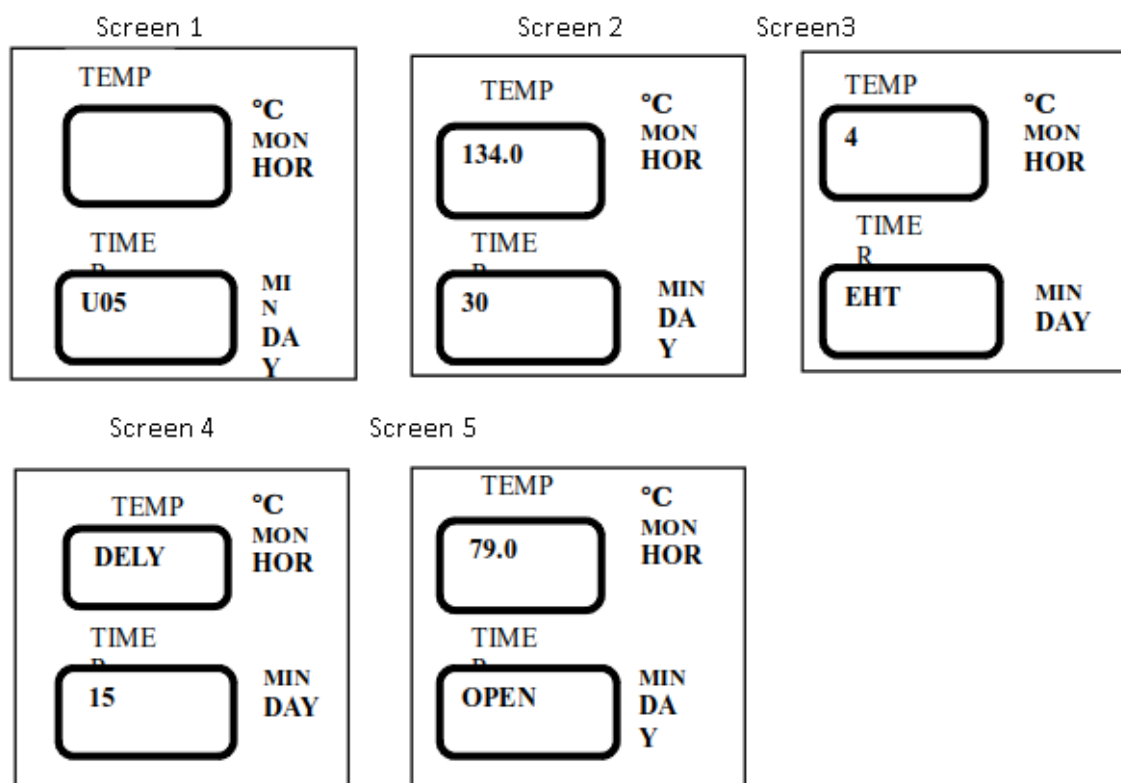
U04 default parameters and the parameters scope of its newly created program



Name	No.	Default Parameter	Parameters Range of New Program
Sterilizing Temperature	①	126 °C	105°C~138°C
Sterilizing Time	②	15min	1~6000min
Exhaust Level( EHT )	③	0Level	0~5Level
Lid Open Temp. ( OPEN )	④	79°C	40°C~80°C

● U05—Waste

1. Sterilizing flow: Heating — Sterilizing — Steam exhaust — release of cooling lock
2. Application: waste, waste can be solid or liquid or both
3. Press DATA button, the digital displayer A and B will display the detailed parameters once by five screens



U05 default parameters and the parameters scope of its newly created program

Name	No.	Default Parameter	Parameters Range of New Program
Sterilizing Temperature	①	134 °C	105°C~138°C
Sterilizing Time	②	30min	1~6000min
Exhaust Level( EHT )	③	5Level	0~5Level
Delay Time( DELY )	④	15min	1~15min
Lid Open Temp. ( OPEN )	⑤	79°C	40°C~99°C

Note: Delay Time( DELY ): is delay time for cold air purging before sterilization, in order to make a pure steam environment. But if the delay time is too long, may cause lack of water during the sterilization.

#### ● U06—Agar

1. Sterilizing flow: heating — melting — warming — release of cooling lock
2. Application: Agar melting and warming
3. Press DATA button, the digital displayer A and B will display the detailed parameters once by four screens

Screen 1

TEMP	°C
<input type="text"/>	MON
	HOR
TIME	MIN
<input type="text"/>	DAY
U06	

Screen 2

TEMP	°C
<input type="text"/>	MON
100.0	HOR
TIME	MIN
<input type="text"/>	DAY
10	

Screen 3

TEMP	°C
<input type="text"/>	MON
50.0	HOR
TIME	MIN
<input type="text"/>	DAY
600	

Screen 4

TEMP	°C
<input type="text"/>	MON
5	HOR
TIME	MIN
<input type="text"/>	DAY
EHT	

Screen 5

TEMP	°C
<input type="text"/>	MON
96.0	HOR
TIME	MIN
<input type="text"/>	DAY
OPEN	

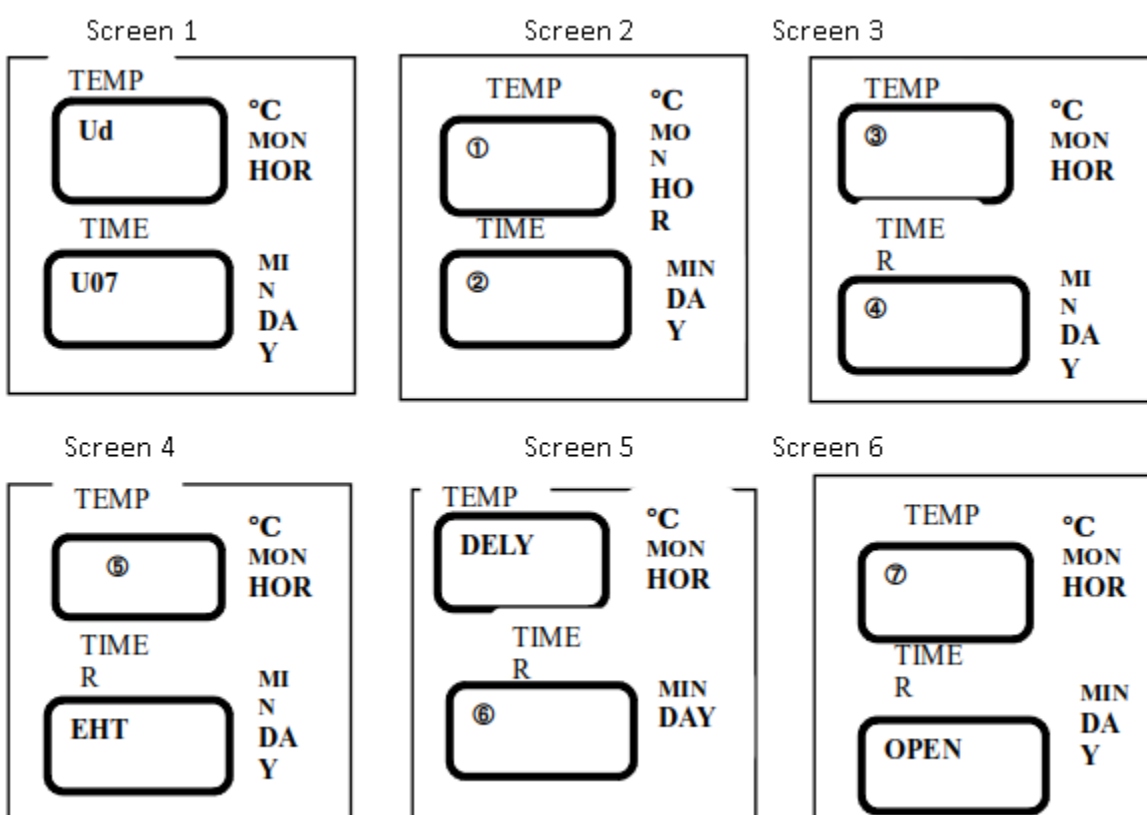
U06 default parameters and the parameters scope of its newly created program

Name	No.	Default Parameter	Parameters Range of New Program
Melting Temperature	①	100 °C	60°C~100°C
Melting Time	②	10min	1~6000min
Warming Temperature	③	50°C	45°C~60°C
Warming Time	④	600min	1~9999min
Exhaust Level( EHT )	⑤	5Level	0~5Level
Lid Open Temp. ( OPEN )	⑥	96°C	40°C~99°C

Note: To make sure safety, the lid can be open only when the temperature is lower than the set OPEN temperature. If the machine is added with load thermometer, the lid can be open only when both the chamber temperature and thermometer temperature are lower than the OPEN temperature.

● U07—Self defined

1. Sterilizing flow: water adding→heating→sterilizing→exhaust→warming ( if have )→complete
2. Application: According to the need of customer
3. Press DATA button, the digital displayer A and B will display the detailed parameters once by eight screens



U07 default parameters and the parameters scope of its newly created program

Name	No.	Default Parameter	Parameters Range of New Program	Note
Sterilizing Temperature	①	Last cycle	105°C~138°C	
Sterilizing Time	②	Last cycle	1~6000min	
Warming Temp.	③	Last cycle	45°C~60°C	
Warming Time	④	Last cycle	0, 1~9999min	0 means no warming
Exhaust Level( EHT )	⑤	Last cycle	0~5Level	
Delay Time( DELY )	⑥	Last cycle	1~15min	
Lid Open Temp.( OPEN )	⑦	Last cycle	40°C~99°C	

**Note:** To make sure safety, the lid can be open only when the temperature is lower than the set OPEN temperature. If the machine is added with load thermometer, the lid can be open only when both the chamber temperature and thermometer temperature are lower than the OPEN temperature.

Do not press STOP randomly during the process. Do not open chamber or water tank drainage valve during process.

During the process, observe the temperature and pressure is matched or not.

● Temperature& Pressure table:( below 300 meters )

Temperature( °C )	105	115	121	127	135
Pressure( Mpa ) )	0.02	0.07	0.11	0.15	0.21

8. After the sterilization, the system will send out 5 long sound, and the “COMP” light will be blinking to indicate the finish of the sterilization.

9. Open the lid, and take out the articles. Please take out the articles in time, if it is inside for a long time, the lid may not be opened. If the lid can not be opened, press and hold the STOP button for long time then open the lid.

10. After the one day work, please turn out the power, and suggest to drain the chamber water and water in the front water tank.

**Below is the Note number:**

**N01: Indicate to change the water in the chamber**

**N02: Indicate that the chamber temperature is higher than the boiling point, suggest to restart when the temperature is cooling down**

**N03: Indicate to change the battery of the main board**

**N04: Indicate to restart the auto start up timer**

**N05: Indicate to do the safety valve test**

## 02 Maintenance Instruction

### 1. Weekly Care

2. The water in the tank should be at least changed once every week: Frequent change of water is helpful for preventing pipe clogging and fittings aging and improving the service life of instrument.

3. Use the clean cloth to clean the dirt on the water sensor inside the chamber and if the heater is not clean, please also clean it.

4. Put hot water of 60 to 80 degree (free of any detergents) into the tank, and then drain it. Clean the tank again if necessary.

### 5. Monthly Care:

6. Check the sealing ring to see if it is clean, if there is dirt, put some cleaning agent in and clean it with wet cloth. If the sterilizer will not be used for a long period of time or need to transport, the water in the water tank must be emptied.

7. Check the leakage protection switch, press the button with “T” mark to see if the switch will dump off.

8. Check the safety valve once a year.



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