



ALP Co., Ltd.
TOKYO JAPAN

Microcomputer Control **AUTOCLAVE**

MC series

40~127°C, 20~82L..... **MC-23,30&40** models

Max.150°C, 45L **MC-3032L** model

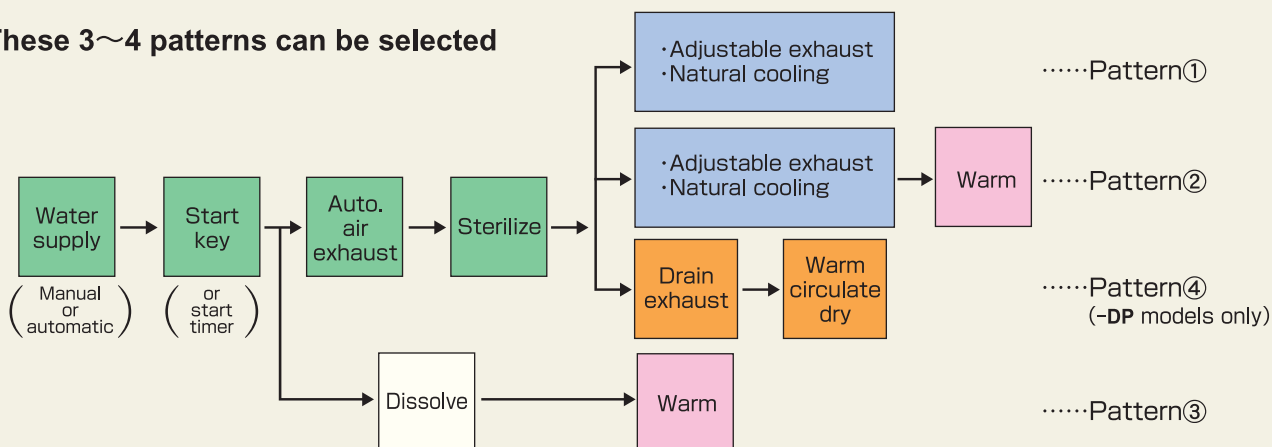
with drying **MC-DP** models



Warming system after sterilization (all models)
Automatic water supply ~ Pre-heat system (option)
Rapid cooling system after sterilization (option)
Warm air circulating drying (–**DP** models)

Microcomputer Control, Graphic Disp

These 3~4 patterns can be selected



Above mentioned 3 or 4 process patterns can be selected by the touch-key. On each pattern, you can set the sterilizing or drying temperature/time.

These set-data keep being memorized even if the electricity source should be cut. So, on daily operation, you only push the start-key.

On the panel, the present selected pattern and operating process are clearly indicated. The end of operation is announced by electronic sound.

Main Ability

●Sterilization Temperature : 40~127°C (MC-23, 30, 40 models)



40~150°C (MC-3032L)

Time : 1~10hrs.00min. & continuous

●Warming Temperature : 40~60°C (50°C at shipping)

●Drying Temperature : 60~180°C

Time : 1~99hrs.00min. & continuous

| Model | MC-23 | MC-23DP | MC-30S | MC-30SDP | MC-30L | MC-30LDP | M |
|------------|--|-------------------------------------|---|-------------------------------------|---|-------------------------------------|--------|
| Use | Sterilization・Warming | Sterilization Circulating Drying | Sterilization・Warming | Sterilization Circulating Drying | Sterilization・Warming | Sterilization Circulating Drying | Ste |
| Chamber | 23φ×46cm depth (20L) | | 30φ×45cm depth (32L) | | 30φ×64cm depth (45L) | | |
| Ability | Usable max. 127℃・0.16MPa | | | | | | |
| Elec. | 1.5KW | | 2.0KW | | | | |
| Appearance | <div></div> <div>MC-23</div> <div>Height of upper surface : 76cm -DP : not provided with exhaust tank</div> | | <div></div> <div>MC-30S</div> <div>Height of upper surface : 76cm -DP : not provided with exhaust tank</div> | | <div></div> <div>MC-30L</div> <div>Height of upper surface : 84cm -DP : not provided with exhaust tank</div> | | |
| | Basket | 21φ×40cm×1pc. | Option | 27φ×40cm×1pc. | Option | 27φ×30cm×2pcs. | Option |

lay, Warming System, Warm Air Circulation

Graphic Display

The current process is indicated clearly.
At setting, the set process is illuminated ON~OFF.

Timed Free Steaming

This reliable automatic air exhaust system guarantees always sure sterilization under pure steam exposure.

Adjustable Auto. Exhaust

After sterilization process, steam is slowly released or cooled by the key set especially for liquid bottles.

Warming & Dissolving of Culture Medium

Warming after sterilization and dissolving of culture medium.

Start -Timer by Calendar

You can set operation start by month, day, hour and minute.
For example if you set on Friday evening, operation will start before you arrive at your office on Monday morning and you can quickly take out the objects at your work-start.

Soft and Safe Lid System

The lid can be opened and closed softly with your one hand, yet securely due to the one handle (**MC-23 & 30** models), four handles (**MC-3032L**) or six handles (**MC-40** models), the sub-rings and the self-closing silicon rubber gasket.

The lid is lightened by being pressed, keeping enough strength with reasonable reinforcement. The up-opening system occupies minimum space.

The shape of the handle and the low whole height (76 ~99 cm to the upper surface) are elaborately considered for your easy use.

Exhaust Drain Receiver Tank

MC-23 & 30 models.....The exhaust drain receiver tank is set in the box of the front side, and the drain valve is located beside the exhaust drain tank. So your maintenance is easy front work.

MC-40 & 3032 models.....The stainless flexible drain hose is set on the back side, and the drain knob is set on the upper surface. So you can pour out the drain water at one touch of the drain knob.

Conformity to EMC regulation

| MC-40/-40L | MC-40DP/-40LDP | MC-3032L |
|--|-------------------------------------|---|
| Sterilization·Warming | Sterilization Circulating Drying | Sterilization·Warming |
| 40φ×65/83cm depth (82/105L) | | 30φ×64cm depth (45L) |
| | | Usable max. 150℃ · 0.38MPa |
| 4.0 / 4.4KW | | 3.0KW |
|  <p>MC-40 MC-40DP</p> <p>Height of upper surface : 81/99cm</p> | |  <p>MC-3032L</p> <p>Height of upper surface : 81cm</p> |
| φ×30/40cm×2pcs. | Option | Option |

Stainless Drain Hose (-DP models)

On the back side, stainless steel flexible hose is connected for steam exhaust and safe drain of hot water. Its open end is leaded horizontally to drain facilities (drain pipe or pit in the floor) as fig 1. In case of no drain facilities, it can be leaded to a receiver tank by hanging on the hook as fig. 2.



fig 1.



fig 2.

ng Drying, Automatic Water Supply

Warm Air Circulating Drying through Micro-Filter (-DP models)

In order to dry the sterilized wet objects leaving the lid close, clean air is poured into the chamber through micro-filter by air pump, heated by drying heater, and exhausts out together with inner humidity. So, objects can be dried cleanly, and you can use them soon after take out.

The operation is full automatic from the sterilization-start to the drying-end.



●Option Automatic Water Supply System

Instead of troublesome check and manual supply of water at every operation-start, proper quantity of water is automatically supplied through piping from container of distilled or de-ionised water, or soft city water tap.

Even when the chamber is empty of water for cleaning or inspection of its bottom and the start-key is pushed, the heater is operated only after water is supplied to the proper level.

Especially on pattern ④ , you can get great labor-saving if this supply system will be adopted, because you need not supply water from the first.

Lid Safety Cover (-40 & -3032 models)

For avoiding your miss-touch on the hot lid in operation, lid safety cover made of heat resistant resin is provided for **MC-40&3032** models. You can use this autoclave surely.

Pre-heat System

In order to complete required sterilization in shorter time, this pre-heat system keeps always the chamber at 60℃ and shorten much the time from steriization-start to arrival at the set-temperature.

Safety

• Prevention of water lack

In case of water lack, the sensitive thermostat mounted on the surface of heater cuts off the electrical source, and informs you by the error indication and electronic continuous sound. And even after the chamber cooled, the heater does not operate untill you reset.

• Highly reliable chamber and lid

Shiny polished SUS-304 stainless steel chamber and pressed lid with reasonable reinforcements, and passed through water pressure test (0.36MPa——**MC-23, 30 & 40** models, and 0.82MPa——**MC-3032L**twice as high pressure as safety valve pour-out).

• Safety valve & Safety switch

In case of abnormal pressure rise, the pressure safety valve with enough inner diameter and stainless spring, operates surely at 0.18MPa (**MC-23, 30 & 40** models) or 0.41MPa (**MC-3032L**). And the pressure saftey switch cuts off heater operation.

• Safety of electricity

Saftey breaker cuts off the electricity source in case of short circuit, over current or even a slight electricity-leakage of the heater, etc.

● Stainless wire basket



for **MC-23** series
21φ×40cm
(21φ×20cm option)



for **MC-30** series
27φ×30cm
27φ×40cm
(27φ×20cm option)



for **MC-40** series
38φ×30cm
38φ×40cm
(38φ×20cm option)

● Basket with pan



21φ×40cm (for **MC-23**)
27φ×40cm
27φ×60cm (for **MC-30**)
37φ×40cm
37φ×60cm (for **MC-40**)

● Stainless bucket



21φ×21cm (for **MC-23**)
27φ×27cm (for **MC-30**)
36φ×30cm (for **MC-40**)



with plain lid
24φ×24cm (for **MC-30**)
33φ×27cm (for **MC-40**)

● Stainless dressing drum



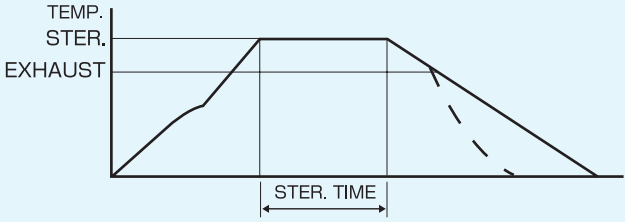
18φ×12cm (for **MC-23**)
27φ×18cm (for **MC-30**)
36φ×24cm (for **MC-40**)

OPERATION PATTERNS

The selected pattern and set-data are memorized even if the electricity should be cut.

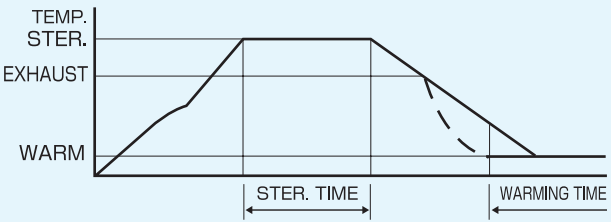
STERILIZATION OF SOLIDS / LIQUID

① Sterilization pattern
(adjustable exhaust or natural cooling)



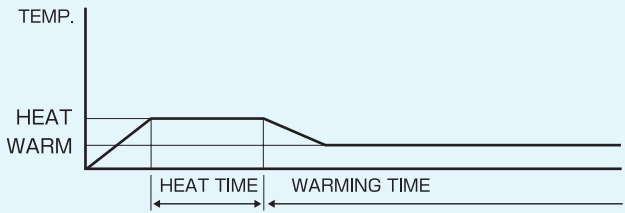
STERILIZATION OF AGAR WITH WARMING

② Sterilization · Warming pattern
(adjustable exhaust or natural cooling)



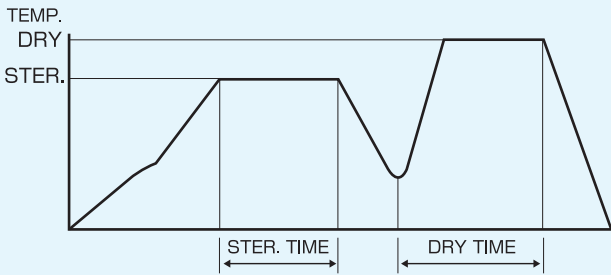
DISSOLVING OF AGAR (CULTURE MEDIUM)

③ Heating · Warming pattern



STERILIZATION OF SOLIDS / CLOTHS WITH DRYING

④ Sterilization · Drying pattern (—DP models)



OPERATION PANEL



- | | |
|-----------------------|------------------|
| ① PRESSURE GAUGE | ⑫ READY LED |
| ② TEMPERATURE DISPLAY | ⑬ HEAT LED |
| ③ TIME DISPLAY | ⑭ STERILIZE LED |
| ④ START KEY | ⑮ EXHAUST LED |
| ⑤ STOP KEY | ⑯ DRAIN LED |
| ⑥ PATTERN/ENTER KEY | ⑰ DRY LED |
| ⑦ TEMP/TIME KEY | ⑱ WARM LED |
| ⑧ CHANGE ▲ KEY | ⑲ COMPLETE LED |
| ⑨ CHANGE ▼ KEY | |
| ⑩ EXHAUST KEY | |
| ⑪ START TIMER KEY | |
| | PROCESS BAR LED |
| | ⑳ HEATING-1 |
| | ㉑ HEATING-2 |
| | ㉒ STERILIZATION |
| | ㉓ COOLING-1 |
| | ㉔ COOLING-2 |
| | ㉕ WARMING/DRYING |
| | ㉖ COOLING-3 |

● Specification

Autoclave **MC** series

| Model | Sterilization only | MC-23 | MC-30S | MC-30L | MC-40 | MC-40L | MC-3032L |
|--|---|---|-------------------|--------------------|--|--------------------|----------------------------|
| | With warm air drying | MC-23DP | MC-30SDP | MC-30LDP | MC-40DP | MC-40LDP | — |
| Chamber (inner dia.×depth) Capacity | | 23φ×46cm 20L | 30φ×45cm 32L | 30φ×64cm 45L | 40φ×65cm 82L | 40φ×83cm 105L | 30φ×64cm 45L |
| Ability | Usable max. press. | 0.16MPa | | | | | 0.38MPa |
| | Usable max. temp. | 127℃ | | | | | 150℃ |
| | Sterilization | 40~127℃ | | | | | 40~150℃ |
| | Warming & dissolving | Warming : 40~60℃, Dissolving : 40~99℃ | | | | | |
| | Usable time | Sterilization, Dissolving : 0min.~10hrs.00min. and continuous, Warming : 0min~48hrs.00min | | | | | |
| Controller | | Microprocessor controller , graphic display Temperature…3digits, PID control Timer…2digits hours : 2digits minutes, down count (Temperature / Time integration system) | | | | | |
| Operation pattern | | ① : Heating→Sterilization→Exhaust(adjustable) ② : Heating→Sterilization→Exhaust(adjustable)→Warming ③ : Dissolving→Warming | | | | | } Full automatic operation |
| MC-DP models | Operation pattern with drying | ④ : Heating→Sterilization→Drain→Drying ⑤ : Only drying | | | | | |
| | Drying devices | Warm air circulating and discharge by electric heater and air pump through 0.2μm micro cartridge filter Temperature range : 60~180℃, Timer range : 0min.~99hrs.00min. and continuous | | | | | |
| Start timer | | Able to set operation-start by calendar…month, day, hour and minute. | | | | | |
| Air exhaust device | | Temperature sensing·time control & magnetic value (Timed free steaming system) | | | | | |
| Drain valve | | MC models : Manual valve beside the drain tank, MC-DP models : Automatic valve & manual valve | | | | | |
| Option | Auto. water supply | Automatic water supply system from soft water tap by level sensor & controller | | | | | |
| | Pre-heat system | To shorten the come-up time, setable at 55~60℃. Provided only with auto.water supply | | | | | |
| | Rapid cooling system | Chamber cooling system by 1~2 fans | | | | | |
| Safety | Safety devices | Over pressure safety switch, Over temperature detector, Water lack preventor, Sensor break indicator, Abnormal time indicator, Memory of power failure, Safety valve Breaker for slight leakage, over current & short circuit | | | | | |
| | Safety valve operation | 0.18MPa | | | | | 0.41MPa |
| | Water test pressure | 0.36MPa | | | | | 0.82MPa |
| Material | Chamber & lid | Stainless steel SUS304, shiny polished, Molded silicon rubber lid gasket (self-seal system) | | | | | |
| | Outer panel | Steel with baked enamel finish Caster (front two with stopper) | | | | | |
| Power requirement (50/60Hz) | | AC 110 / 120 / 220 / 230 /240V, 1 phase, 50/60Hz | | | | | |
| | | 1.5KW | 2.0KW | | 4.0KW | 4.4KW | 3.0KW |
| Outer size W×D×H | | 53×40×87cm | 60×40×87cm | 60×40×95cm | 78×57×91cm | 78×57×109cm | 62×48×91cm |
| Weight | | 26/33kg | 38/46kg | 42/50kg | 60/70kg | 80/92kg | 48kg |
| Accessories | Stainless wire basket (except MC-DP models) | 21φ×40cm 1 pc. | 27φ×40cm 1 pc. | 27φ×30cm 2 pcs. | 38φ×30cm 2 pcs. | 38φ×40cm 2 pcs. | Option |
| | Tank & hose | Exhaust drain receiver tank | | | Exhaust drain receiver tank Stainless flexible drain hose | | |
| | MC-DP models | Stainless flexible drain hose (Stainless wire basket : option) | | | | | |

●Please specify the voltage when you order. ●Specifications subject to change without notice for improvement.



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