

Optimised driving system. Superior temperature control.

## Hot & Cold Tray Service Carts for Hospitals & Aged Care Facilities

**Versigen**  
FOODSERVICE EQUIPMENT

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# "CUSTOMER SATISFACTION"






Since the establishment of MYUNGSE CMK Co., Ltd. in 1994, it exclusively focused on the development of high-quality tray service carts. The innovative patient-meal distribution system is made possible by the accumulated expertise of Myungse CMK and will improve hospital services and patient satisfaction.

## BRAND VALUES

-  Incessant R&D with aggressive investment for successful long-term business
-  Provision of custom-made solutions
-  Practical and systematic product inspection
-  Systematic customer care through after-sales services
-  A first mover and a leader in Korea's domestic market
-  Increased exports based on overseas marketing

## MYUNGSE CMK STRENGTHS

-  **Safety**  
They can be safely used for a long time, thanks to their various safety devices and strong structure.
-  **Hygiene**  
They enable excellent temperature and hygiene control.
-  **Convenience**  
They can be conveniently used, thanks to electromotive operation and integrated control system.



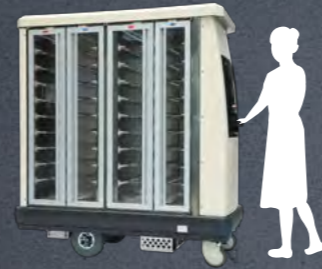
### General light driving

Even when the cart is full of meals, it runs smoothly with a soft press of the forward-reverse lever.



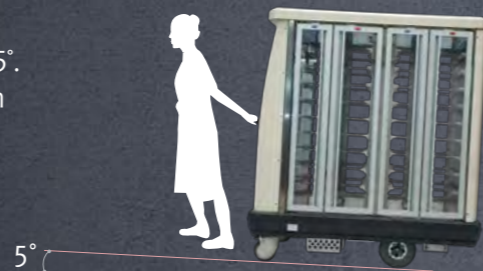
### Reverse run that takes nearby persons into consideration

It can run safely, thanks to its reverse-run alarm function. Its touchscreen display enables rear-side viewing.



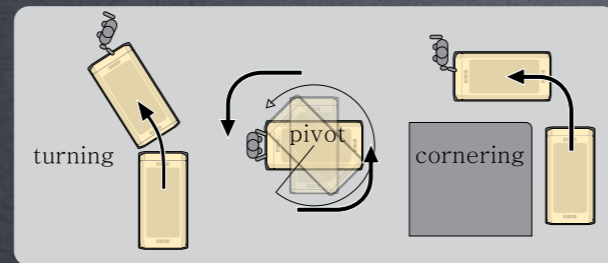
### Stable run on sloped floor

It can smoothly run on slopes with a maximum inclination of 5°. Its speed can be automatically maintained at a constant when it runs downslope.



### Easy turning

Its front casters, which rotate in several directions, enable easy turning.



### Safe battery charging

It is driven by battery. When the battery is fully charged, an automatic control system is actuated to prevent overcharging.  
\* Its charging time and operation time may vary depending on the service environments.



# Innovative electromotive driving system

It features maximized user convenience and satisfaction. It runs smoothly even when it is fully loaded.





# "EMOS COMPACT SERIES"



## Standard models

The EMOS Compact models feature hot/cold storage and electromotive operation systems to provide patients with fresh meals, thus improving user and patients satisfaction. EMOS Compact, the representative products of MYUNGSE CMK, have long been popular. The company continuously upgrades its EMOS Compact Series to improve user convenience.

New EMOS Compact carts are the current model with new functions added to the existing ones of the previous EMOS Compact. New EMOS Compact carts (HA) include sub-models such as EB (Basic) and EP (Prestige: always-on hot and cold).

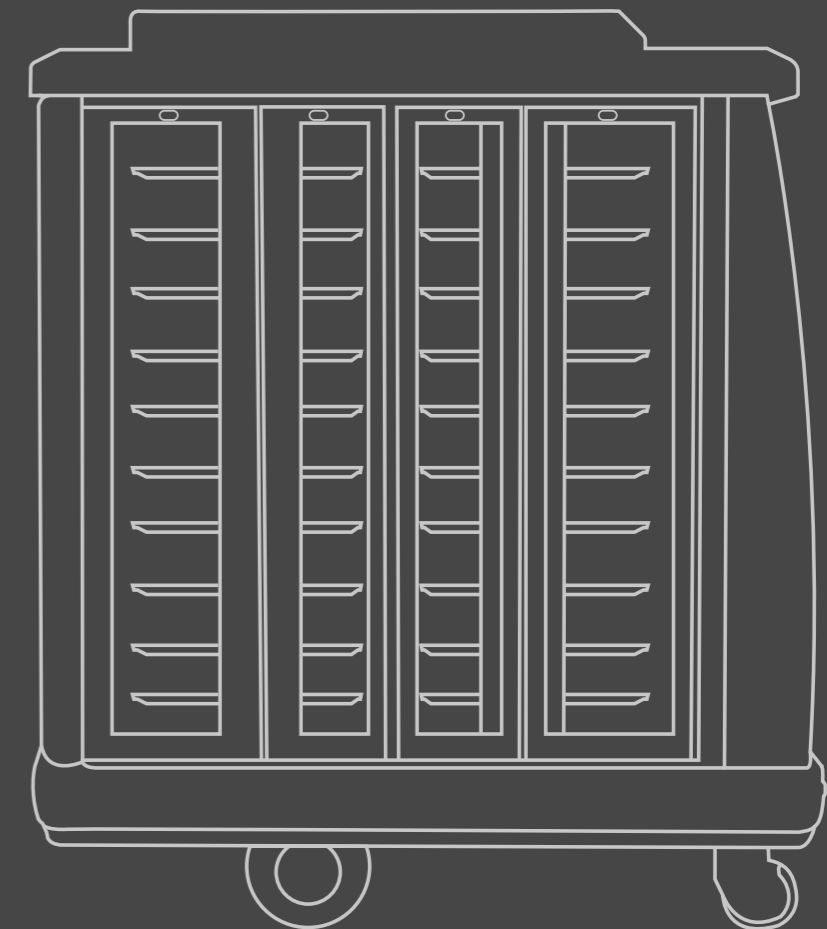
\* Exporting model for Emos Compact uses the tray model HA-T509.

## EMOS Compact Series

EMOS Compact Basic (EB) .....

EMOS Compact Prestige (EP) .....

EMOS Compact Original .....



# NEW EMOS COMPACT BASIC

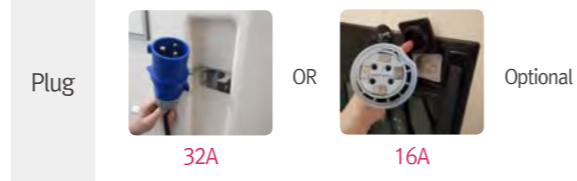


### Chamber temperature array

General type (T470)	C - H - C - H
Export type (T509)	H - C - C - H

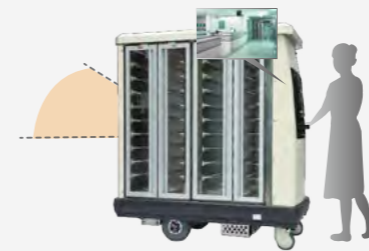
### Precautions

Power Wiring/Individual circuit breaker 30A, Industrial plug 32A



## Features of EMOS Compact Basic and Prestige and Change-up

### Product safety



#### Front and rear cameras with black box function (optional)

The cameras prevent collision by providing a view of the front blind spot, and enable recording that can be used as evidence in case a collision occurs.



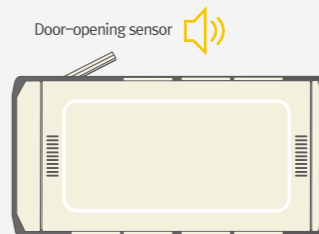
#### Ultrasonic collision-prevention sensor (optional)

Ultrasonic impact sensors prevent damage to the product from collisions with obstacles.



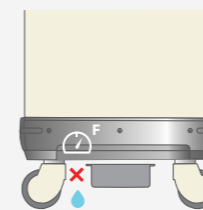
#### Motor reducer suspension

Absorbing impact to prevent damage to the reducer.



#### Door-opening sensor (optional), Door-locking

When the sensor detects an open door while the cart is running, the cart will automatically stop to prevent running while the door is open. Patient meals are protected from unauthorized persons.



#### Full water-level detection sensor

If the water level of the condensate tray approaches the full level, it is notified to the user in order to prevent condensate overflow.



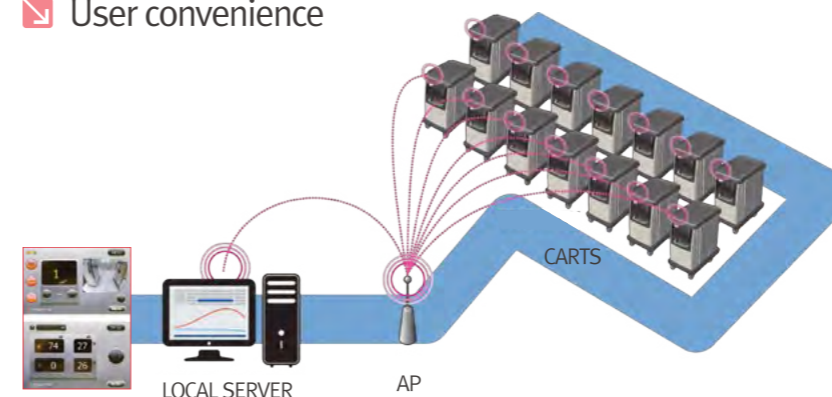
#### Integrated touchscreen control panel



#### USB for temperature data backup

Data of temperature changes in the chamber can be saved through a USB. Managing the temperature change is to follow the HACCP standards.

### User convenience



#### Touch-screen Wi-Fi control panel (optional)

The centralized control panel provides user convenience. Temperature setting, patient meal information, automotive operation, time schedule, etc. can be collectively or individually controlled by a remote PC via Wi-Fi communications.



# NEW EMOS COMPACT PRESTIGE



### Chamber temperature array

General type (T470)	
Export type (T509)	

### Precautions

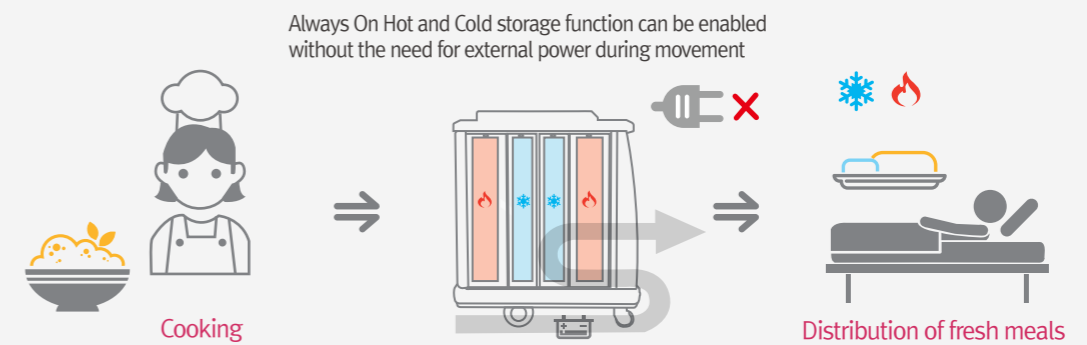
Power	Wiring/Individual circuit breaker 30A, Industrial socket 32A
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### Additional functions of EMOS Compact Prestige

- Its high-capacity Li-ion battery and high-efficiency hot/cold storage system enables constant hot/cold storage function during movement. As such, it can provide patients with hot/cold fresh meals at optimum temperature.

Always on hot and cold storage function can be enabled during movement.



### Inverter function included

In case battery is discharged from DC power, it can be switched to AC power for using hot/cold and electromotive drive functions.

- Power** : Available on wiring/individual circuit breaker 30A and industrial outlet 32A or 16A (1720 power cord). For installing lithium-ion battery it is essential to use power with wiring/individual circuit breaker 30A and industrial plug 32A.



30A plug (Back-side)



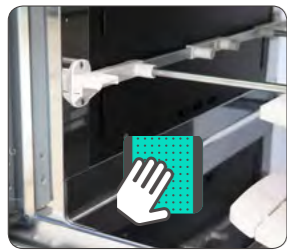
16A plug (Front-side)

Common Features of New EMOS Compact Carts

☑ User convenience



Easy operation of forward/reverse lever



Rounded inside corners that facilitate cleaning  
Preventing dirt accumulation or germ growth at corners.



Manual switching lever on the control panel  
Enabling driving for narrow space or when the battery is discharged.



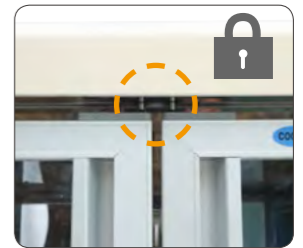
“HACCP standards meeting product”



Touch Screen and front camera  
Viewing the front blind spot on the touchscreen display.



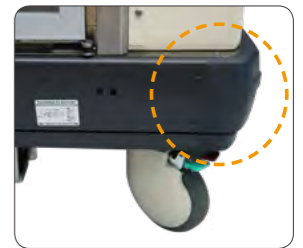
One-touch door lock system (optional)  
Patient meals are protected from unauthorized persons.



Emergency stop button and front touch sensor  
In case of an emergency, the operator can stop the cart with the emergency stop button. Touching the front touch sensor lowers the speed when the user requires.



Urethane bumper  
It absorbs external impact for protecting the body of the cart.



Wheel arrangement for safe driving



☑ Product safety





# EMOS COMPACT ORIGINAL



### Chamber temperature array

General type (T470)	C - H - C - H
Export type (T509)	H - C - C - H

### Precautions

Power	Wiring/Individual circuit breaker 30A, Industrial socket 32A		
Plug	 32A	OR	 16A Optional



Front-side of new model

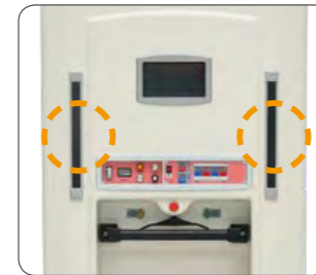
Back-side of new model

Front-side of old model

### Features of EMOS Compact Original



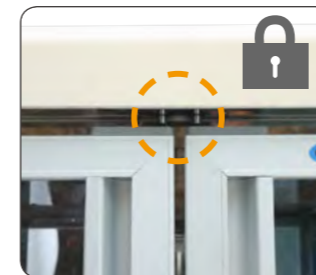
Monitor and front camera (optional)  
Showing rear-vision.



Front touch sensor (optional)  
Reducing the speed in emergency.



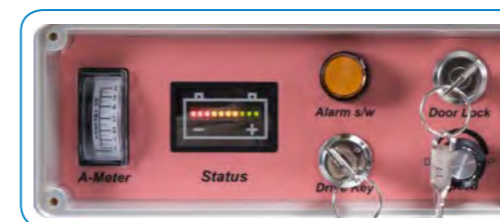
Back-driving alarm (optional)  
Helping safe driving with the alarm sounding.



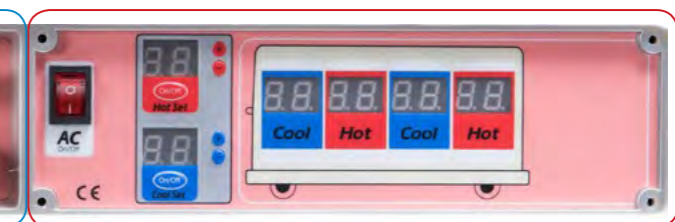
Door-locking system (optional)  
Patient meals are protected from unauthorized persons.

### Convenient centralized control panel

The key is to protect the device safely from the third party.



Electromotion control part



Hot/Cold storage control part



**NEW EMOS Compact EB & EP**



Model code	Length (mm)	Width (mm)	Height (mm)	Trays	Columns, Rows	Power consumption (kw)	Weight (kg)	Power supply
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**EMOS Compact Basic(EB)**

HA-HC44EB	1630	770	1882	44	4,11	3.5	340	1P+E, 220V, 50/60HZ
HA-HC40EB	1630	770	1762	40	4,10	3.5	320	
HA-HC36EB	1630	770	1642	36	4,9	3.3	300	
HA-HC32EB	1630	770	1522	32	4,8	3.1	280	
HA-HC20EB	1070	770	1762	20	2,10	2.0	190	
HA-HC18EB	1070	770	1642	18	2,9	2.0	180	

**EMOS Compact Prestige(EP)**

HA-HC44EP	1630	770	1963	44	4,11	4.2	360	1P+E, 220V, 50/60HZ
HA-HC40EP	1630	770	1843	40	4,10	4.2	340	
HA-HC36EP	1630	770	1723	36	4,9	4.0	320	
HA-HC32EP	1630	770	1603	32	4,8	3.8	300	

**Trays**

HA-T470	470	330	17	For domestic models	Colors: Camel, Pink, Green
HA-T509	509	330	17	For overseas models	Colors: Camel, Pink, Blue

The external dimensions and specifications are subject to changes for product improvement.

**EMOS Compact Original**



Model code	Length (mm)	Width (mm)	Height (mm)	Trays	Columns, Rows	Power consumption (kw)	Weight (kg)	Power supply
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HA-HC60E	2176	770	1762	60	6,10	4.0	430	3P+E, 380V, 50/60HZ
HA-HC54E	2176	770	1642	54	6,9	3.7	410	
HA-HC48E	2176	770	1522	48	6,8	3.4	390	
HA-HC40E	1526	770	1762	40	4,10	2.7	320	
HA-HC36E	1526	770	1642	36	4,9	2.5	300	1P+E, 220V, 50/60HZ
HA-HC32E	1526	770	1522	32	4,8	2.3	280	
HA-HC36	1526	770	1642	36	4,9	2.5	260	
HA-HC32	1526	770	1522	32	4,8	2.3	240	
HA-HC20	970	770	1762	20	2,10	1.8	180	
HA-HC18	970	770	1642	18	2,9	1.7	170	

**Trays**

HA-T470	470	330	17	For domestic models	Colors: Camel, Pink, Green
HA-T509	509	330	17	For overseas models	Colors: Camel, Pink, Blue

The external dimensions and specifications are subject to changes for product improvement.

# "EMOS SERIES"



Electromotive drive model

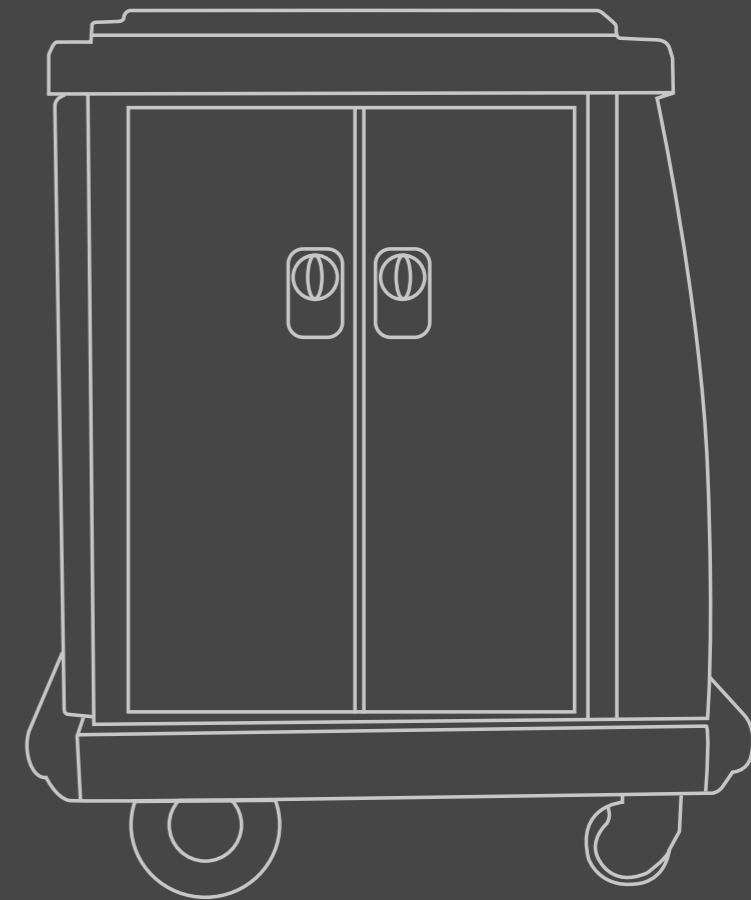
Manual drive model

## Superior temperature control

EMOS (emotion service) means that it provides a top-quality meal distribution system by addressing the emotions of patients and users. The EMOS series features hot/cold storage and electromotive driving for providing patients with fresh meals, thus improving user and patient satisfaction. Developed for the western food culture, the EMOS series is suitable for meals of western patients. According to cooking environments of the hospital, this model can be applied for various kinds of temperature management systems and it has high temperature controlling performance. Depending on the users' requirements, the added functions of EMOS Compact EB model are available as options.

## EMOS Series

- Electromotive drive model .....
- Manual drive model .....
- Cook-serve / Cook-chill .....





“HACCP standards meeting product”

Product safety



Touch screen and front camera  
Viewing the front blind spot on the touchscreen display.



One-touch door lock system  
Clicking a button on the touchscreen display can simultaneously lock all the doors. As the door lock can only be cleared by a password, patient meals can be protected from unauthorized persons.



Emergency stop button and front collision sensor  
In case of an emergency, the operator can stop the cart with the emergency stop button. In addition, the front collision sensor automatically stops the cart in case of a collision.



Urethane bumper  
Absorbing external impact.



Wheel arrangement for safe driving



Anti-static handle



Precision-cast hinges  
High-strength precision-cast hinges keep the doors stable.



Manual switching lever  
This lever enables to switch to manual drive at narrow spaces or while battery is discharging.



Condensate drain valve



Circuit-breaker



Safe pocket-type power cord holder

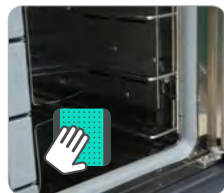


Common features of the EMOS series

☑ User convenience



Easy operation of forward/reverse driving lever



Rounded inside corners that facilitate cleaning

Preventing dirt accumulation or germ growth at corners.



Electromotive motor

The battery-powered motor enables easy control of the cart. Manual switching is possible.



USB for temperature data backup

Data of temperature changes in the chamber can be saved through a USB. Managing the temperature change is to follow the HACCP standards.

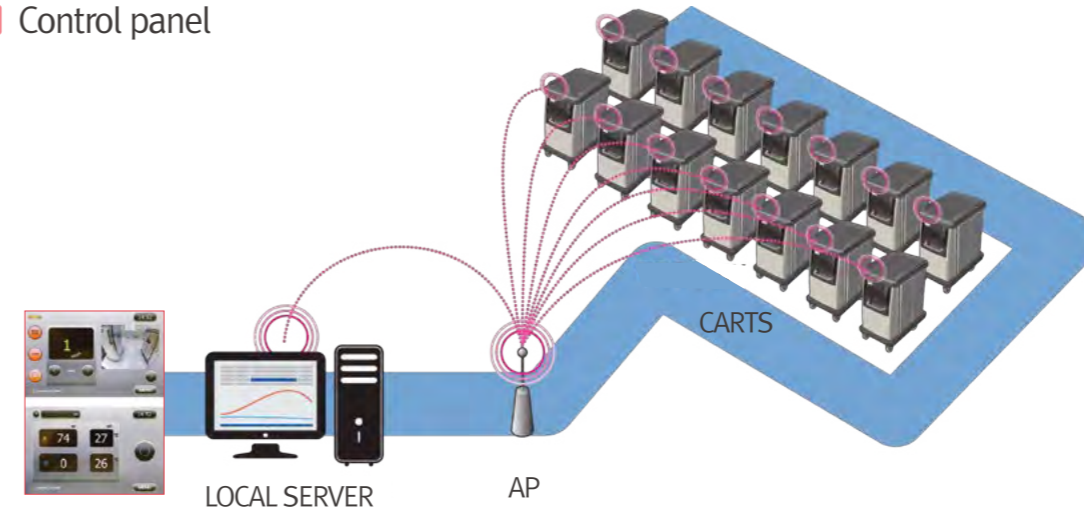


Wide tray holder

The wide tray holders minimize thermal interference between the hot and cold storage mechanisms.



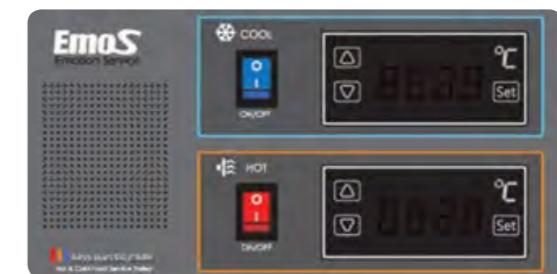
☑ Control panel



The wireless integrated control system (US Patent no.9,114,818 B2) connects with Wi-Fi to communicate with the carts.

Main functions are temperature control (hot/cold settings, timer and reservation), temperature data history management and patient meal information management.

Manual drive model



Manual) Individual control

Current temperature display and temperature setting functions can be controlled individually.



Manual) Centralized control

Current temperature display, temperature setting, schedule setting, etc. can be controlled collectively.



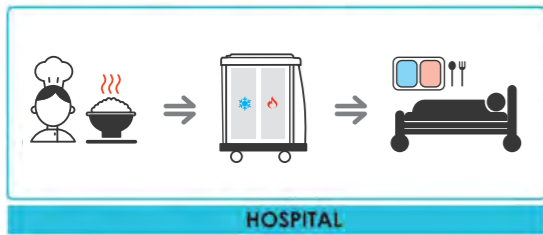
### Temperature control system

The EMOS series was designed to satisfy the various temperature control requirements of users. Cook-serve and cook-chill types are available for the typical temperature control system. In addition, convection and conduction modes are available for the heating system.

\* Temperature setting may vary depending on meals and cooking environments.

#### Cook-serve type

In this type, meals cooked in the hospital kitchen are moved to the cart preheated/chilled to the temperatures of 70°C and 5°C, respectively, for distribution.

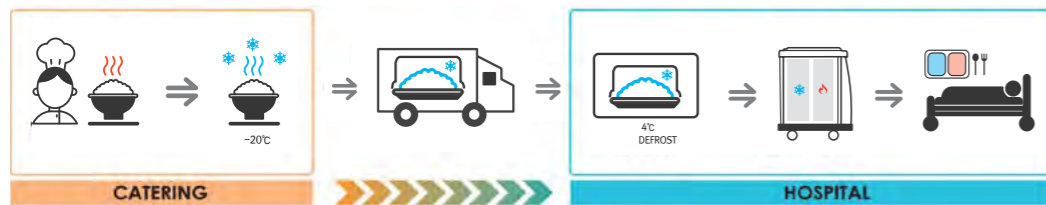


Recommended temperature setting :  
70°C for hot storage, 5°C for cold storage,  
and 20 minute for preheating/chilling time.

Before the cart is loaded with meals, it is preheated/chilled to the temperatures of 70°C and 5°C, respectively, for 20 minutes. This increases the efficiency of optimum-temperature meal distribution.

#### Cook-chill type

The temperature of the depths of frozen meals is first defrosted to 4°C, and then it is thawed again in the cart. The depths of stored hot meals should be 74°C. This is the temperature for protecting patient's meals according to the HACCP standards.



Recommended temperature setting :  
140°C for hot storage, 2°C for cold storage,  
and 1 hour for heating/chilling time.

The frozen meals supplied by a catering service company are first defrosted from -20°C to 4°C, moved to the hot-storage and cold-storage chambers, and heated/chilled to 140°C and 2°C, respectively, after an hour of operation. The final temperatures at the depths of the meals will be 74°C and 4°C, respectively, which are safe temperatures for hot/cold meals.

### Heating system

#### Convection mode



This is the most common mode for heating meals using a hot-air blower.

#### Conduction mode



In this mode, the meals contained in the trays are heated by the trays that are heated by the hot plates mounted on the tray holders. This mode can minimize thermal loss, as well as increase meal temperature to a desired level within a short time.

### Specifications of the EMOS series



Model code	Length (mm)	Width (mm)	Height (mm)	Trays	Columns, Rows	Inter-tray gap (mm)	Power consumption (kw)	Weight (kg)	Power supply
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#### Cook-serve type

EMOS-CS30E-80	1270	800	1778	30	2,15	80	3.9	370	1P+E, 220~240V, 50/60HZ  OR 3P+E, 220~240V, 50/60HZ
EMOS-CS30-80	1200	800	1679	30	2,15	80	3.9	290	
EMOS-CS24E-96	1270	800	1778	24	2,12	96	3.9	370	
EMOS-CS24-96	1200	800	1679	24	2,12	96	3.9	290	
EMOS-CS24E-80	1270	800	1538	24	2,12	80	3.9	320	
EMOS-CS24-80	1200	800	1439	24	2,12	80	3.9	240	
EMOS-CS20E-96	1270	800	1538	20	2,10	96	3.9	320	
EMOS-CS20-96	1200	800	1439	20	2,10	96	3.9	240	

#### Cook-chill type

EMOS-CC30E-80	1270	800	1778	30	2,15	80	8.7	370	3P+E, 220~240V, 50/60HZ
EMOS-CC30-80	1200	800	1679	30	2,15	80	8.7	290	
EMOS-CC24E-96	1270	800	1778	24	2,12	96	8.7	370	
EMOS-CC24-96	1200	800	1679	24	2,12	96	8.7	290	
EMOS-CC24E-80	1270	800	1538	24	2,12	80	6.9	320	
EMOS-CC24-80	1200	800	1439	24	2,12	80	6.9	240	
EMOS-CC20E-96	1270	800	1538	20	2,10	96	6.9	320	
EMOS-CC20-96	1200	800	1439	20	2,10	96	6.9	240	

#### Tray

EMOS-T575	575	324	13	Only for cook-serve type				Color: Ivory
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#### Small Tray

EMOS T530	530	324	13	Only for cook-serve type				Color: Ivory
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The external dimensions and specifications are subject to changes for product improvement.

### EMOS Hotline

For small- and medium-sized hospitals and sanatorium. Heating-only manual driving model.

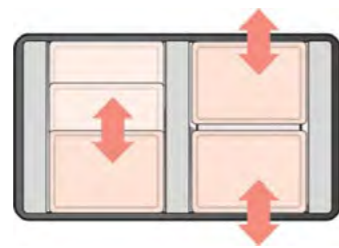


- 1 Enhancing insulation and minimizing heat loss.
- 2 Double-door structure and pass-type holder improve convenience of tray loading process and efficiency of interior structure that can have compact and simple exterior design.
- 3 Temperatures on different chambers can be set differently. Turning off a chamber's temperature control helps to minimize energy consumption.
- 4 Simple structure for easy cleaning.
- 5 All doors have antibacterial rubber packing installed to prevent the air from being leaked and to inhibit the spread of bacteria.
- 6 Round bumper can absorb shocks to protect the whole body of the cart.
- 7 Highly efficient two-way tray insertion and pass-type structure.

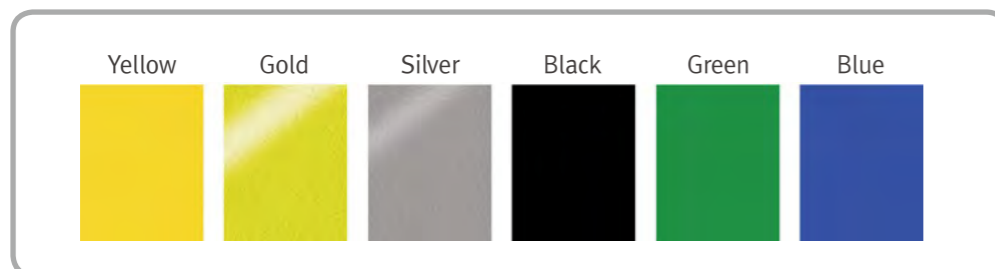


Model code	Length (mm)	Width (mm)	Height (mm)	Trays	Chambers	Weight (kg)	Power consumption (kw)	Power supply	Tray size (mm)
HA-SLIM-H48	1240	740	1610	48	3	180	2.0		
HA-SLIM-H44	1240	740	1510	44	3	160	1.8		
HA-SLIM-H40	1240	740	1410	40	2	140	1.8		
HA-SLIM-H36	1240	740	1310	36	2	130	1.8	AC 1P 220V+E 50/60Hz	390 x 300
HA-SLIM-H32	1240	740	1210	32	2	120	1.8		
HA-SLIM-H24	840	740	1610	24	2	95	1.8		
HA-SLIM-H20	760	740	1410	20	1	90	1.8		
HA-SLIM-H18	760	740	1310	18	1	80	1.8		

The external dimensions and specifications are subject to changes for product improvement.



#### Colour options



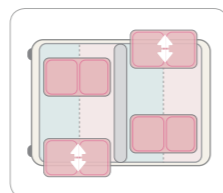


### Closed-type Return Cart

It provides space for returning trays after meals and keeps hospital wards pleasant.



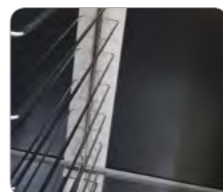
Magnet-type door-seal packing prevents food odor from being leaked out.



Pass-through stainless tray rails



The doors that can be opened to a maximum of 270°, thus enabling utilization of narrow spaces.



Wire rack for tray insertion

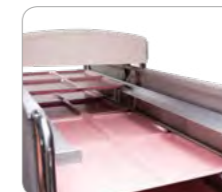


Model code	Length (mm)	Width (mm)	Height (mm)	Trays	Columns, Rows	Weight (kg)
HA-R40A	1240	760	1450	40	4,10	140
HA-R36A	1240	760	1350	36	4,9	130
HA-R32A	1240	760	1250	32	4,8	120
HA-R20A	750	760	1450	20	2,10	90

The external dimensions and specifications are subject to changes for product improvement.  
 ※ Applicable tray model for the return cart in the above is HA-T470. For different tray models, please contact us.

### Open-type Return Cart

It provides space for returning trays after meals and keeps hospital wards pleasant.



Easy returning of trays and tableware after meals



Smooth turning and easy mobility



High spatial utilization as it can hold trays that are stacked in a small space



Waterproof curtains that can resist food infiltration and cover trays and tablewares

#### Composition

- Rotary wheel-type bumper
- Convenient round-shaped handle corner
- Wide rails with high spatial efficiency
- Closed-type curtain (optional)

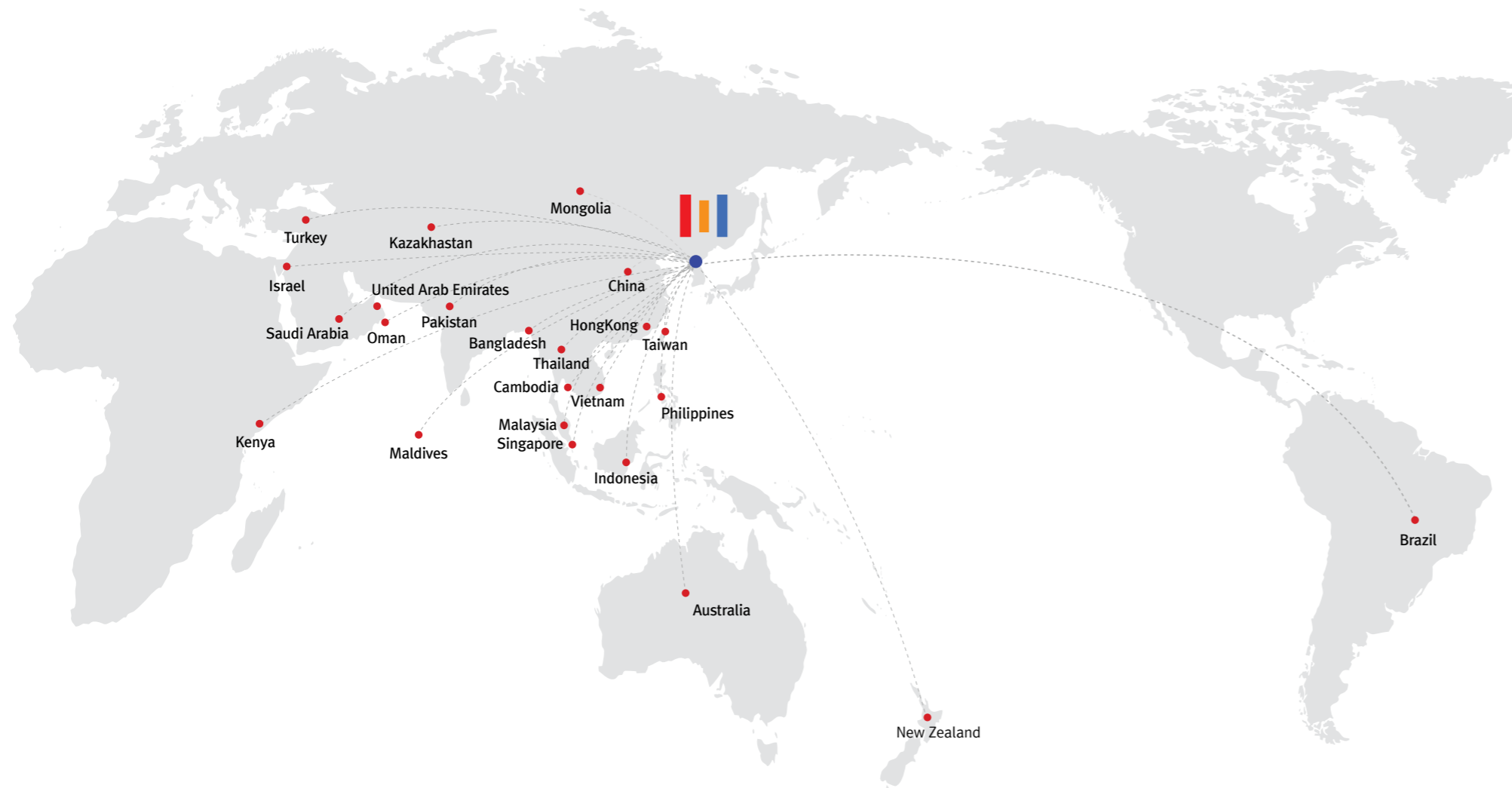


Model code	Length (mm)	Width (mm)	Height (mm)	Trays	Columns, Rows	Weight (kg)
HA-R40	1522	598	1574	40	4,10	45
HA-R36	1522	598	1464	36	4,9	43
HA-R32	1522	598	1354	32	4,8	41
HA-R24	1192	598	1354	24	3,8	35

The external dimensions and specifications are subject to changes for product improvement.  
 ※ Applicable tray model for the return cart in the above is HA-T470. For different tray models, please contact us.



# GLOBAL MYUNGSE CMK



## Company locations



Headquarter in Busan



Branch in Seoul