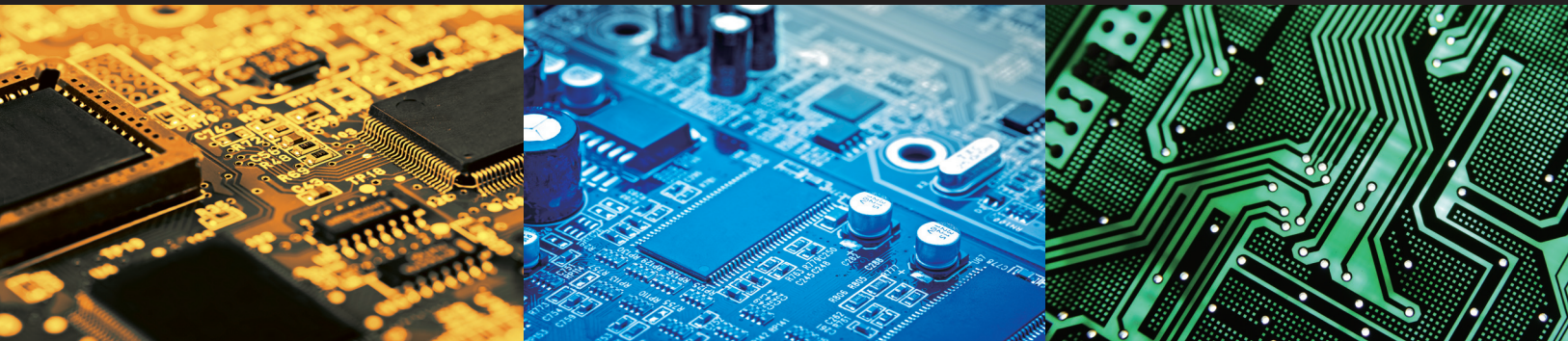


# Imagine the Best Performance

## KSM's Product Brochure 2018



HS04-3000



HS03-2000



HS07-1500



HS-17



KSM-500



Eco  
Nitrogen Generator



**KSM CO., LTD.**  
Korea Soldering Machinery





# About **KSM**

Based on its extensive experience and new technologies, KSM is a leading manufacturer and supplier of automatic soldering machines and nitrogen generators. In 2010, KSM established its Plant Division, supplying its products to domestic and overseas customers in the fields of conveyors, painting equipment, coating equipment, and industrial machinery with top notch technology and the highest quality. The company consistently strives to develop new technologies.

KSM promises that it will continuously exert its best efforts in research and development and quality value creation, and that it will accomplish its mission and role by providing the best service to ensure customer satisfaction.

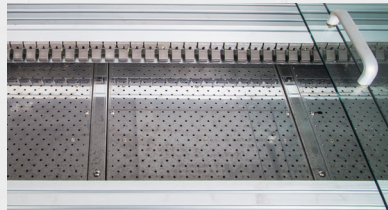
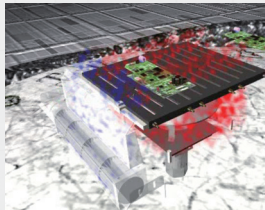




# Special Technology

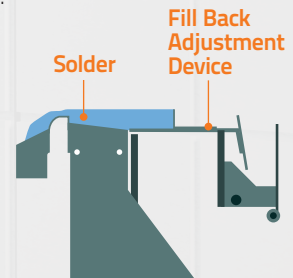
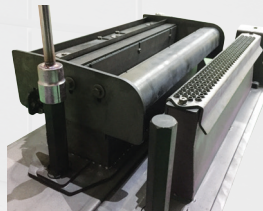
## Preheating Zone

- Optimum preheating system applicable to lead-free systems (IR heating device + forced air convection and heating devices)
- Minimizes the temperature difference between the PCB surface and component.
- Reduces solder balls generated during soldering by maximizing flux vaporization by hot air circulation.
- The preheating zone length of 1,630mm ensures sufficient preheating for mass-production (conveyor speed of 3.0m/min).
- Air curtain installed between the flux bath and preheating zone (preventing the occurrence of fire due to flux).



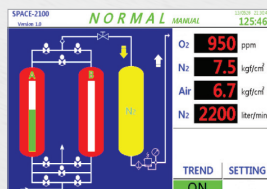
## Primary and Secondary Nozzles

- Adjusts the spacing between the primary and secondary nozzles up to at least 45mm.
- Maintains outstanding lead wettability by maintaining appropriate temperature.
- Minimizes non-soldering by applying the primary chip nozzle.
- The secondary nozzle can freely adjust the fill back point.

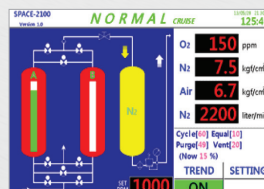


## Nitrogen Generator (PSA)

- PSAs equipped with the Eco Control function automatically adjust the N<sub>2</sub> flow rate when increasing or reducing the use of nitrogen by interlocking.
- Supplies nitrogen directly at site by on-site supply method.
- Allows unmanned operation by simple manipulation and the simple system configuration ensures less failure and easy maintenance.
- Ensures semi-permanent use with normal air compressor service.



Cruise Function



Eco Function (Cruise)

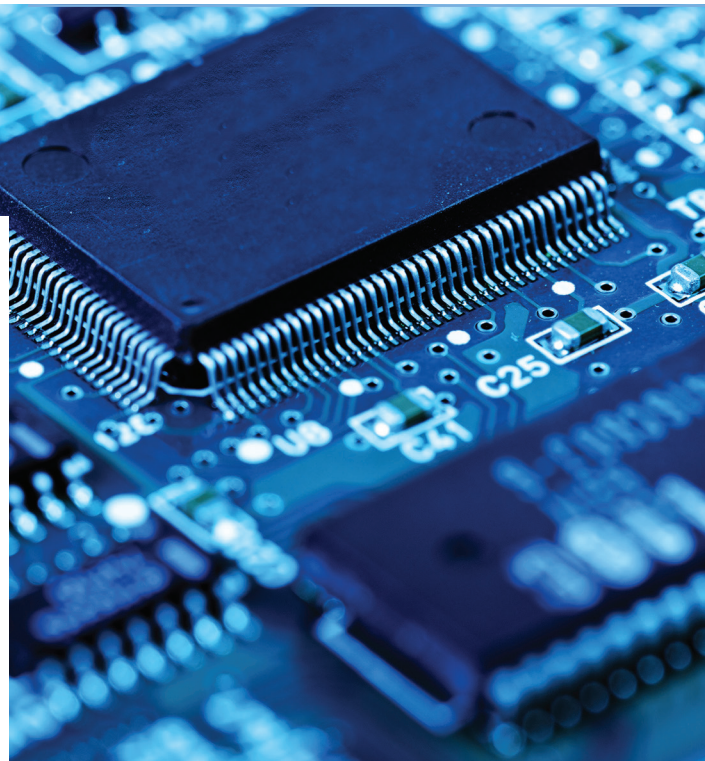




# HS04-3000 Series

## Lead-free Soldering

- Primary chocolate nozzle with embossed structure (4 row multi nozzle construction)
- Allows easy control of the dip time of the secondary free fill back system during mass-production process.
- Hot air circulation of 4 preheating zones
- Auto Conveyor Angle System (2~5 angles)
- One touch primary and secondary nozzles

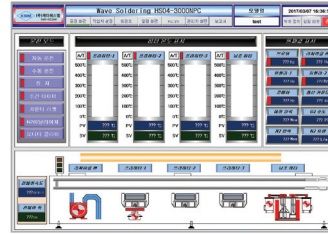




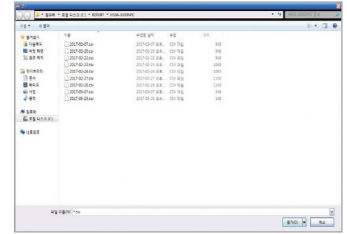
# HS04-3000NPC

## PC Soldering Type

- System designed and manufactured to be optimized for lead-free environment
- Equipped with Windows XP based operation program of convenient use



Full automatic system realizes lead-free production

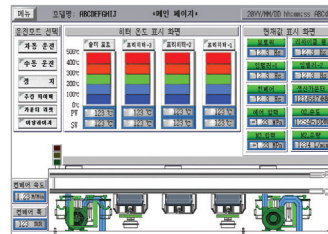


Saves data once per 5 minutes each day for 24 hours (Possible to confirm the data by clicking the date file)

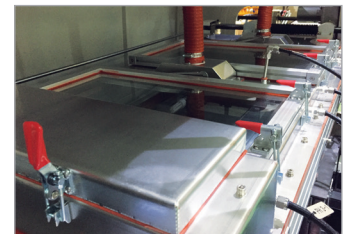
# HS04-3000NTS

## Touch Screen Soldering Type

- Lead-free Wave Soldering of PLC Control Type
- Increases job efficiency and productivity by manufacturing machines that focus on user convenience.
- Ensures soldering of the highest quality for any types of PCBs.



Allows convenient operation with a touch screen that is set by clicking once.



Optimized to the best quality by injecting nitrogen into the desired position.

# HS04-3000

## Manual Soldering Type

- Applicable mainly to PCBs with mixed chips and discrete components
- Increases job efficiency and productivity by reflecting devices consisting of special mechanisms for user convenience.
- Convenience and safe manipulation



Simple manipulation allowing an entire view of the control system at a glance (Analog type error monitor)



Stable electric circuit configuration (Consisting of overload prevention circuit breaker)

Model	HS04-3000NPC	HS04-3000NTS	HS04-3000
Type	PC	Touch Screen	Manual
Performance	PLC	PLC	-
Dimension (L x W x H)	3,700mm x 1,480mm x 1,540mm	3,700mm x 1,480mm x 1,540mm	3,700mm x 1,480mm x 1,540mm
Weight (kg)	1,780	1,780	1,780
Board Size (mm)	50 ~ 350 (460mm Option)	50 ~ 350 (460mm Option)	50 ~ 350 (460mm Option)
Lead Length (mm)	10	10	10
Conveyor Speed (mm/min)	50 ~ 2,900	50 ~ 2,900	50 ~ 2,900
Solder Storage (kg)	400 (Lead Free)	400 (Lead Free)	400 (Lead Free)
Rail Slide (inch)	2 ~ 5	2 ~ 5	2 ~ 5
Air Pressure (kg/cm <sup>2</sup> )	5	5	5
Power	3Ø 220V or 3Ø 380V 35kW	3Ø 220V or 3Ø 380V 35kW	3Ø 220V or 3Ø 380V 40kW
Pre-heater (kW)	18	18	14
Solder Heater (kW)	14.4	14.4	14.4

### Performance

- **PC and PLC Control:** Solder pot temperature, preheater temperature, conveyor speed and width adjustment, rail angle, and one-click weekly timer
- **Alarm Monitor System:** Emergency Stop, Conveyor Speed Error, Temperature and Thermal Sensor Errors
- **Mechanism:** Automatic Conveyor Rail Angle Adjustment, Automatic Pot In/Out Control, Automatic Conveyor Width Adjustment, Recirculation (N<sub>2</sub> Circulation Device), Oxygen Analyzer

### Options

- Insert Conveyor (3m) ▪ Auto Solder Feeder ▪ Spray Fluxer (1 nozzle) ▪ Spray Fluxer (7 nozzle) ▪ Out Mesh Conveyor ▪ Airconditioner Cooling System



# HS03-2000

## Wave Soldering System



# HS07-1500

## Mini Soldering Machine



### Features

- Automatic lead-free soldering machine
- Compact structure realizing lead-free soldering
- Non-soldering minimized by using a fool-proof method and easy and convenient manipulation
- Non-soldering minimized by applying a Turbulent Wave Nozzle
- Structures allowing self alignment and triple holding of hangers

### Features

- Designed to suit small quantity batch production
- Compact structure allowing convenient installation
- Economical power consumption by controlling the PCB preheating time
- Highest reliability realized in soldering process by applying the 3P system
- Dip Time Control (3 ~ 4 secs): By conveyor speed

Model	HS03-2000	HS07-1500
Dimension (L x W x H)	3,000mm x 1,300mm x 1,580mm	2,035mm x 1,400mm x 1,550mm
Weight (kg)	1,500	900
Board Size (mm)	50 ~ 350 (460mm Option)	50 ~ 350 (460mm Option)
Lead Length (mm)	10	10
Conveyor Speed (mm/min)	0.3 ~ 2.0	0.3 ~ 1.4
Solder Storage (kg)	400	200
Rail Slide (inch)	2 ~ 5	2 ~ 5
Air Pressure (kg/cm <sup>2</sup> )	5	5
Power	3Ø 220V or 3Ø 380V 50/60Hz	3Ø 220V or 3Ø 380V 50/60Hz
Pre-heater (kW)	12	6
Solder Heater (kW)	14.4	9.6

#### Performance

- **PC and PLC Control:** Adjust solder pot temperature, preheater temperature, conveyor speed and width, rail angle, and one-click weekly timer
- **Alarm Monitor System:** Emergency Stop, Conveyor Speed Error, Temperature and Thermal Sensor Errors
- **Mechanism:** Automatic Conveyor Rail Angle Adjustment, Automatic Pot In/Out Control, Automatic Conveyor Width Adjustment, Recirculation (N<sub>2</sub> Circulation Device), Oxygen Analyzer

#### Options

- Insert Conveyor (3m) ▪ Auto Solder Feeder ▪ Spray Fluxer (1 nozzle) ▪ Spray Fluxer (7 nozzle) ▪ Out Mesh Conveyor ▪ Airconditioner Cooling System



# HS-17

## Selective Soldering



### Features

- Replaceable standard and custom made nozzles of various types as well as jigs available to meet the diversification of PCBs
- Equipped with an Infrared sensor to adjust the impeller speed according to the lead height
- Provides stable quality with the Cartesian robot helping soldering performed at a constant position
- Two axes robot installed at required position to apply flux
- Stable control of preheating by the IR heater

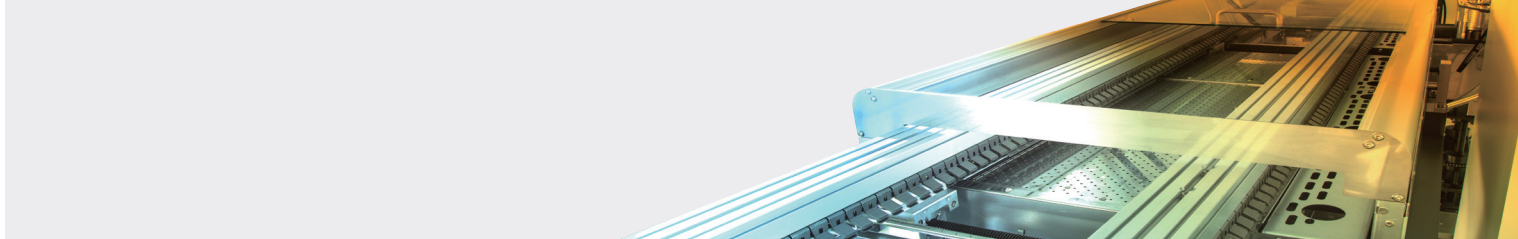
Model	HS-17L	HS-17M
Type	Selective	Selective
Performance	PC	PC
Dimension (L x W x H)	3,000mm x 1,350mm x 1,500m	3,000mm x 1,300mm x 1,500mm
Weight (kg)	1,200	1,000
Board Size (mm)	100 ~ 500	100 ~ 300
Lead Length (mm)	5	5
Conveyor Speed (mm/min)	5 ~ 2,9	5 ~ 2,9
Solder Storage (kg)	250	80
Air Pressure (kg/cm <sup>2</sup> )	5	5
Power	3Ø 220V or 3Ø 380V	3Ø 220V or 3Ø 380V
Pre-heater (kW)	5	5
Solder Heater (kW)	10	8



- Performance**
- **PC and PLC Control:** Adjust solder pot temperature, preheater temperature, conveyor speed and width, rail angle, and one-click weekly timer
  - **Alarm Monitor System:** Emergency Stop, Conveyor Speed Error, Temperature and Thermal Sensor Errors

- Options**
- Insert Conveyor (3m) ▪ Auto Solder Feeder ▪ Out Mesh Conveyor ▪ Airconditioner Cooling System



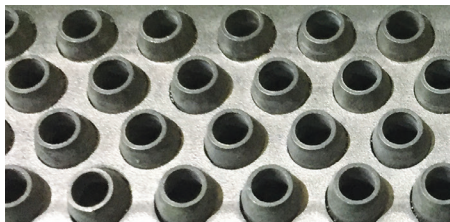


## Lead-free Soldering

# Special Features

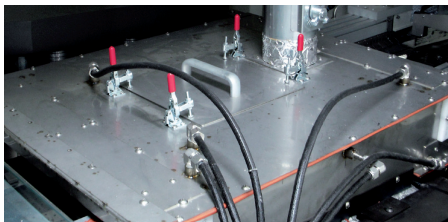
### Chocolate Nozzle (Embossed Structure)

Primary dip time maximized with a 4 row multi-nozzle structure. In particular, the embossed structure allows less hole clogging and helps remove flux gas during soldering.



### Local Nitrogen Cover System

Keeps nitrogen contained in a special area during soldering to ensure outstanding wettability of soldering.



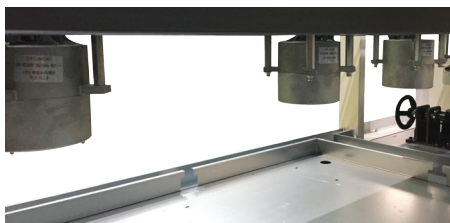
### IR (Infrared) Heater + Convective Hot Air Heating System

Realizes optimum conditions by having 85% of the set temperature transferred to the PCB in the high temperature preheating zone required for lead-free soldering.



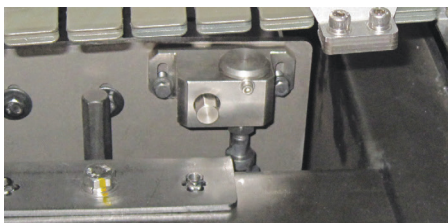
### Hot Air Circulation Preheating

The four zone hot air circulation heating system allows the set temperature to be transferred constantly for stable quality.



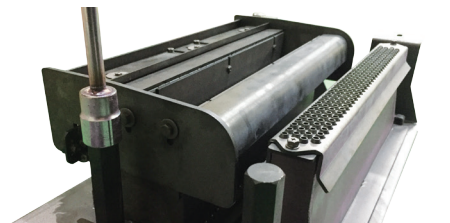
### Fill Back System

Adjusts the secondary dip time freely. It can adjust the dip time easily and quickly during mass-production.



### One Touch Primary and Secondary Nozzle Systems

Reduces maintenance time by reducing the time required to remove and install the nozzles when cleaning them.



### Double Check System for Overheating Prevention

After checking the preheater and lead bath heater with the temperature controller, checks them once more for safety.



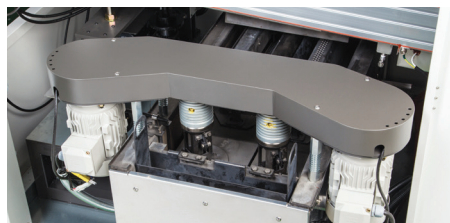
### Hanger Cleaning System

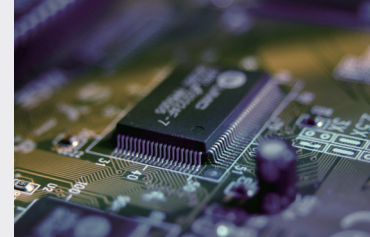
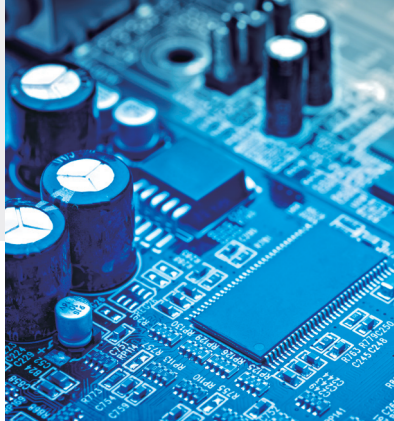
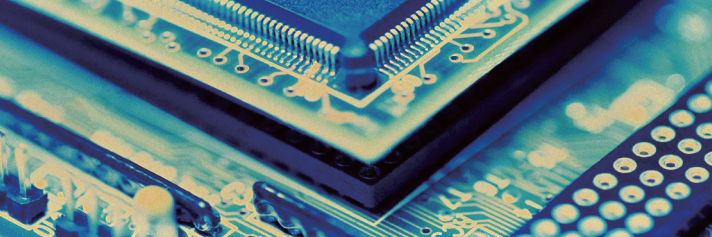
Removes the flux and lead dross attached to the hanger, using a cleaning agent, for smooth PCB transfer.



### Slag Recovery System

Moves the dross in the pot to the collecting container to separate the lead and dross. This ensures an outstanding cost saving effect.





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### Slide Curtain System

Prevents the inflow of oxygen in a different manner from the fixed curtain inside.



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### Impeller System

Designed to be smoothly removed or installed to help increase productivity by saving the maintenance time of the machine.



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### Analyzer System (Oxygen Measurement Device)

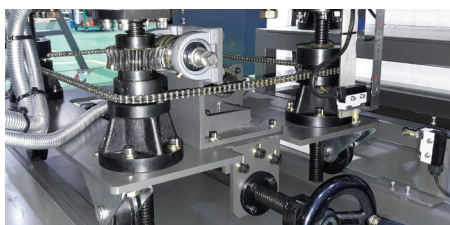
Displays the real time measurement values of oxygen concentration inside the solder.



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### Lead Bath In/Out and Up/Down Adjustment System

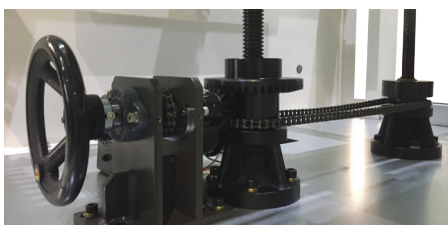
When performing lead bath maintenance and cleaning, helps the maintenance to be performed smoothly by controlling it with the Auto button and a manual handle.



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### Entry Conveyor Angle Adjustment System

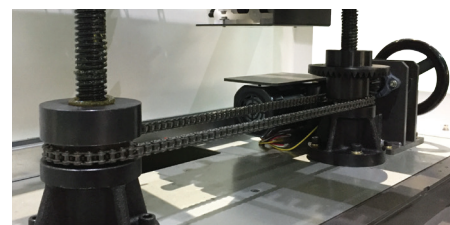
Designed to allow the entry angle to be adjusted with the Auto button and manual handle. (When adjusting the angle, the entry angle also changes.)



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### Exit Conveyor Angle Adjustment System

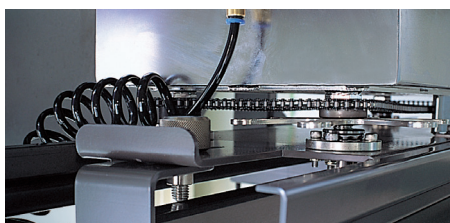
Designed to allow the exit angle to be adjusted with the Auto button and manual handle. (When adjusting the angle, the exit angle changes likewise.)



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### Flux Tank Height Adjustment System

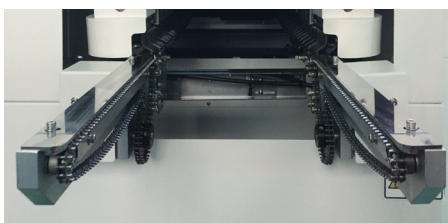
Equipped with a hexagon handle, allows the flux tank height to be adjusted easily without using jigs. Its drawer type structure allows for easy manipulation and cleaning.



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### Automatic PCB Width Setting

Allows PCB width by clicking once after setting the desired size before operation.



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### Chain Insert Conveyor

Installed by default when using external spray





# KSM-500

## Spray Fluxer



### Features

- Applies fixed quantity of high/low viscosity liquid at high speed
- Sprays and applies fine particles
- Simple system for equipment operation
- Minimizes equipment contamination
- Photo sensor detection allows precision control.
- Saves flux consumption by 70 ~ 80% compared to the foamed tube type.



Model	KSM-500
Input Pressure	0.5 Mpa (5.0kgf/cm <sup>2</sup> )
Power Supply Voltage	AC220V 60Hz
Power Consumption	3 Kw
PCB Transfer Speed	0.5 ~ 3.0 m/min
PCB Size	50 ~ 300mm (460mm: Selected)
Nozzle	7 Nozzle
Exhaust Opening	200 Ø
Spray Particle	80 µm
Dimension (L x W x H)	1,315mm x 1,000mm x 1,380mm
Weight	500 kg



# Nitrogen Generator

## Pressure Swing Adsorption

### Fixed Type



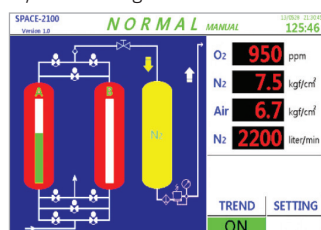
### Moving Type



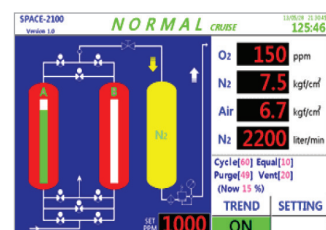
### Features

- Compact size design allows easy movement and space utilization.
- Allows free installation and movement by mounting standard casters on all models.
- Can be used indoors without problems owing to low operational noise.
- Operation and operation status can be easily managed and displayed by the display panel.
- Remote operation allows RS-485 communication.

For PSAs equipped with the Eco Control function, when increasing and decreasing the quantity of use, the flow rate is automatically controlled by interlocking.



**Cruise Function**  
Patent Registration: Nos. 10-1381899 and 1528328



**Eco Function (Cruise)**  
Energy Saving Function

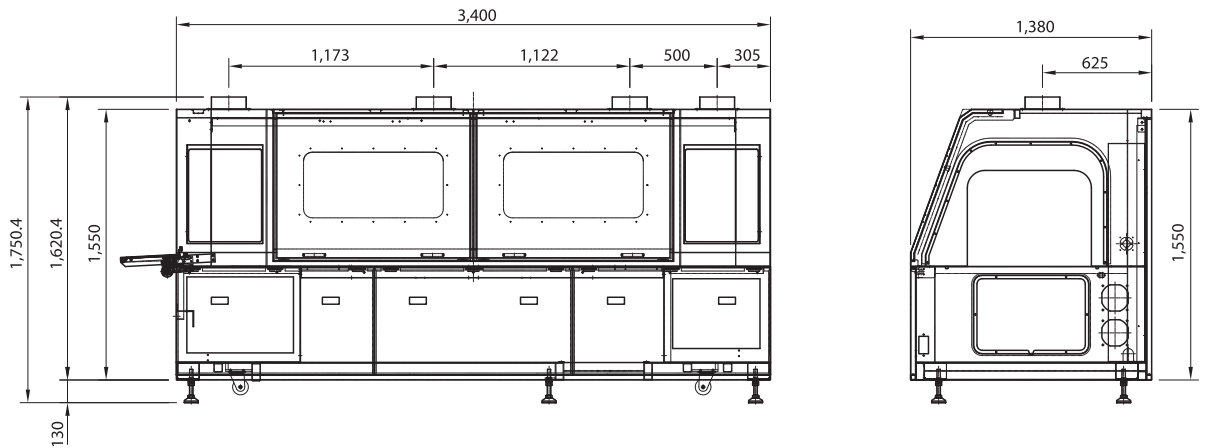
Type	Model	Capacity Nm <sup>3</sup> /Hr 99.99% (100ppm)	Capacity Nm <sup>3</sup> /Hr 99.99% (1000ppm)	Air Compressor (kW)	Weight (kg)	Dimension W x D x H (mm)
Moving	KSM-M6R	6	9	5.5	500	1,260 x 420 x 1,218
	KSM-M10R	10	15	7.5	600	1,508 x 420 x 1,358
	KSM-M12R	12	18	7.5	760	1,620 x 470 x 1,285
	KSM-M15R	15	22	11	820	1,860 x 520 x 1,425
	KSM-M18R	18	27	15	900	1,710 x 520 x 1,465
	KSM-M20R	20	30	15	950	1,710 x 520 x 1,565
	KSM-M25R	25	37.5	22	1,250	1,770 x 750 x 1,645
Cabinet	KSM-C30R	30	45	22	1,650	2,150 x 1,050 x 2,040
3 Tank Fixed	KSM-T30R	30	45	22	1,520	2,100 x 930 x 1,980
	KSM-T40R	40	60	22	1,830	1,450 x 1,680 x 2,400
	KSM-T50R	50	75	37	2,340	1,490 x 1,750 x 2,510
	KSM-T60R	60	90	37	2,610	1,620 x 1,850 x 2,550
	KSM-T80R	80	120	55	3,100	1,870 x 2,100 x 2,760
2 Tank Fixed	KSM-T100R	100	150	75	3,200	2,080 x 1,450 x 2,480

- 99.00% : N<sub>2</sub> Pressure 0.5 MPa 99.00% : N<sub>2</sub> Pressure 0.4 MPa
- The PSA is delivered with a gas concentration of less than 100ppm.

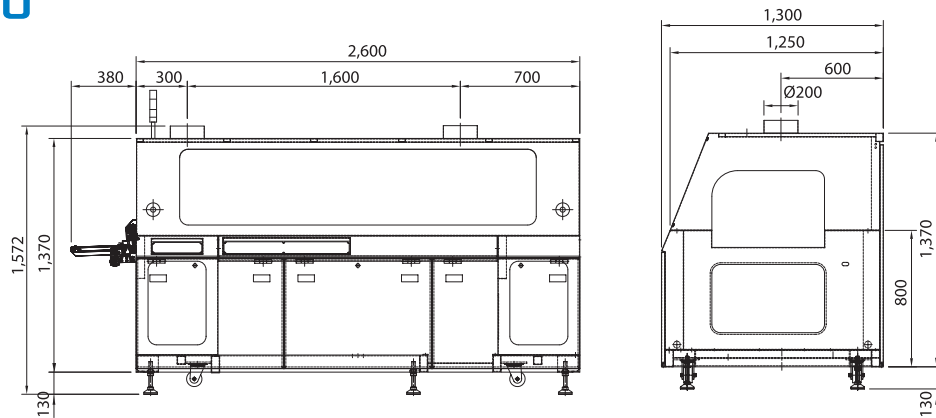


## Dimension

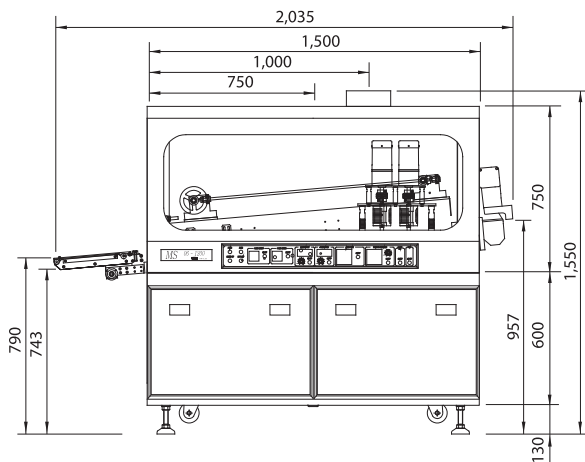
### HS04-3000 Series



### HS03-2000



### HS07-1500



**KSM CO., LTD.**  
Korea Soldering Machinery

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