



## Hotplate & Magnetic Stirrer

### Safe Hotplate & Magnetic Stirrer Proven durability and useful safety features

> **Variety of products optimized for purpose of use**

11 models available depending on the size and shape of the top plate, control method, and whether stirring is present.

> **Corrosion-resistant hotplates with white ceramic coating**

The white upper hotplate, which makes it easy to observe samples, is ceramic coated and has excellent corrosion resistance. (except for MS-MH)

> **Top plate with excellent heat transfer and durability**

Excellent durability and heat transfer ability as the heater is embedded in the top plate made of aluminum. (except for MS-MH)

> **Safety with spill-proof design**

Improved safety with structural design that prevents solution from flowing into the equipment.

> **Multiple overheating protection devices**

Equipment breakdown is prevented in advance with overheating prevention device for top plate, and main parts of the inside of the body, etc.

> **BLDC motor with excellent durability**

Excellent durability even for long-term use with BLDC motor. (except for T-series)

> **Maintains stirring ability even at high temperatures**

Using special permanent magnets that maintain strong magnetic force even at high temperatures. (except for T-Series)

> **Safety function of displaying top plate overheating**

A warning is displayed when the top plate is over 50°C even when the power is switched off. (except for MS-MH)



Digital feedback control. (left)  
Analog type scale control. (right)



Top plate with excellent heat transfer.



Top plate overheating indicator light.



## Stable & Powerful Magnetic Stirrer

### Stable Stirring with Differentiated Controllability

- > **Variety of products optimized for purpose of use**  
20 different models provided depending on the size and shape of the top plate, control method, and color, etc.
- > **BLDC motor with excellent durability**  
Excellent durability even during long-term repeated use with BLDC motor.
- > **Special magnet for maintaining stirring ability**  
Using a special permanent magnet to maintain powerful magnetic coupling.
- > **Safety with spill-proof design**  
Improved safety with structural design that prevents solution from flowing into the equipment.
- > **Slip prevention for glassware**  
Silicone top plate cover prevents accidents caused by slipping of glassware.
- > **Top plate cover for easy sample observation**  
White and black cover provided as standard makes it very convenient to observe changes according to the sample.
- > **Fast stirring speed control with real time response**  
Quick control of stirring speed (MS-B/T model) according to adjust with the of control knobs.
- > **Smooth and precise speed control**  
Smooth stirring control up to the settings values. Accurate feedback control. (MS-G/M model)

※ Some of the above contents are limited to specific models.



Silicone cover prevents slippage of glassware.



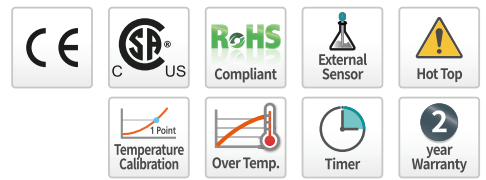
Easy to choose from various model configurations.



Selection of white or black cover according to sample.

# Hotplate & Magnetic Stirrer

## Digital type



## Precise control based on sample temperature

### Structural Functional Features

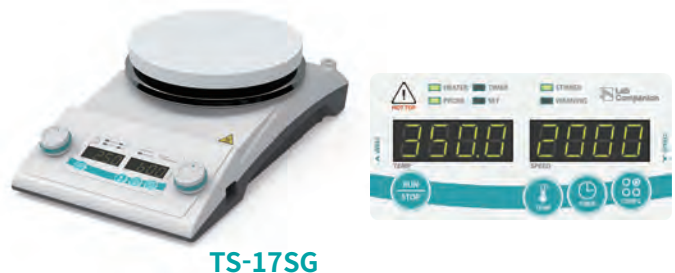
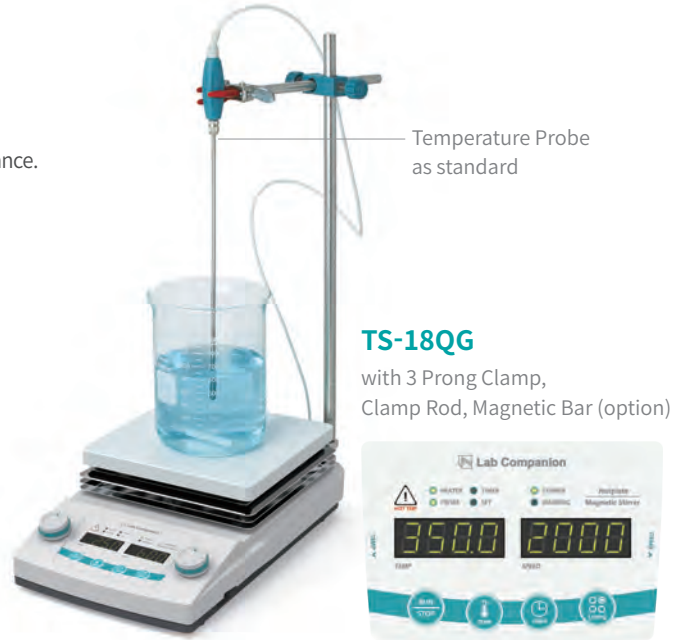
- Includes temperature probe (B class) as standard.
- Displays external temperature sensor errors.
- Top plate coated with white ceramic for excellent corrosion resistance.
- Excellent heat transfer and durability due to heater-integrated structure.
- Using special permanent magnets for maintaining stirring ability.

### Use Convenience Features

- Precise temperature/stirring control with PID feedback control.
- Temperature control mode selection function. (Optimal/Fast/Slow/User/Point)
- Includes temperature auto-tuning and calibration functions.
- Count-down timer provided. (up to 99 hours and 59 minutes)
- Clamp Rod (option) can be added to the main body fix other experiment equipment.
- Convenient experiment observation with removable transparent shield. (option)

### Outstanding Safety

- Spill-proof design minimizes inflow solution into device.
- Safety ensured by BLDC motor that does not generate sparks.
- Preventing equipment failure with multiple over temperature prevention devices.
- Warning displayed when top plate is 50°C or more.
- Prevents sample run-off thanks to smooth stirring start.
- The heating bath (option) is combined with the top plate to ensure safety. (except TS-QG)



## Specification

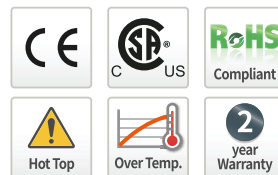
Model		TS-14SG	TS-17SG	TS-18QG
Heating	Temperature range (°C / °F)	Top plate, Max, 350 / 662	Top plate, Max, 350 / 662	Top plate, Max, 350 / 662
	Control mode	PID Feedback (optimal, fast, slow)	PID Feedback (optimal, fast, slow)	PID Feedback (optimal, fast, slow)
	Display resolution (°C / °F)	0.1 / 32.18	0.1 / 32.18	0.1 / 32.18
Stirring	Speed range (rpm)	30 to 2000	30 to 2000	30 to 2000
	Capacity (H <sub>2</sub> O, L)	20	20	20
	Magnetic bar, Max. (L x Ø, mm / inch)	40 x 8 / 0.31 x 1.57	40 x 8 / 0.31 x 1.57	40 x 8 / 0.31 x 1.57
Material	Top plate	White ceramic coated aluminum alloy	White ceramic coated aluminum alloy	White ceramic coated aluminum alloy
	Body	Powder coated aluminum alloy	Powder coated aluminum alloy	Powder coated aluminum alloy
	Motor type	BLDC (Brushless Direct Current)	BLDC (Brushless Direct Current)	BLDC (Brushless Direct Current)
	Temperature probe	PT 100 (B class, Max. 250°C ,482°F)	PT 100 (B class, Max. 250°C ,482°F)	PT 100 (B class, Max. 250°C ,482°F)
Dimensions	Top plate (Ø or W x D, mm / inch)	140 / 5.51	170 / 6.69	180 x 180 / 7.08 x 7.08
	Exterior (W x D x H, mm / inch)	161 x 290 x 100 / 6.34 x 11.42 x 3.94	191 x 330 x 101 / 7.52 x 12.99 x 3.98	209 x 326 x 102 / 8.22 x 12.83 x 4.0
	Net weight (kg / lbs)	2.8 / 6.17	3.5 / 7.71	3.8 / 8.36
Timer (Heating and/or Stirring)		Max. 99 hrs 59 min.	Max. 99 hrs 59 min.	Max. 99 hrs 59 min.
Electrical requirements (230V, 50/60Hz, A)		3.0	4.0	4.0
Cat. No.		<b>AAH34445K</b>	<b>AAH34475K</b>	<b>AAH34485K</b>
Electrical requirements (120V/60Hz, A)		5.0	6.7	6.7
Cat. No.		<b>AAH34443U</b>	<b>AAH34473U</b>	<b>AAH34483U</b>

※ Except TS-18QG CSA certification ※ Except TS-17SG, 18QG RoHS certification.

**Accessories** Page 140 Temperature Probe, Heating Bath, Clamp Rod, Clamp, Transparent Shield

# Hotplate & Magnetic Stirrer

## Analog type



## Easy to use with excellent durability

### Structural Functional Features

- Three models provided according to the size and shape of hot plate.
- Top plate coated with white ceramic for excellent corrosion resistance.
- Excellent heat transfer and durability due to heater-integrated structure.
- Using special permanent magnets for maintaining stirring ability.

### Use Convenience Features

- Easy adjustment of heating rate and stirring speed with individual control knobs.
- Maintains a constant stirring speed even when sample viscosity changes.
- Rapid stirring and stop function according to the user's needs.
- Clamp Rod (option) can be added to the main body to fix other experiment equipment.
- Convenient experiment observation with removable transparent shield. (option)

### Outstanding Safety

- Spill-proof design minimizes inflow solution into device.
- Safety ensured by BLDC motor that does not generate sparks.
- Preventing equipment failure with multiple over temperature prevention devices.
- Warning displayed when top plate is 50°C or more.
- Prevents sample run-off thanks to smooth stirring start.
- The heating bath (option) is combined with the top plate to ensure safety. (except TM-QG)



**TM-14SG**

with Heating Bath, Clamp Holder, 3 Prong Clamp, Clamp Rod (option)



**TM-18QG**



## Specification

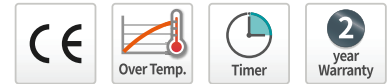
Model		TM-14SG	TM-17SG	TM-18QG
Heating	Temperature range (°C / °F)	Top plate, Max, 350 / 662	Top plate, Max, 350 / 662	Top plate, Max, 350 / 662
	Control mode	Scale	Scale	Scale
	Heating rate	0 ~ 100% by 1%	0 ~ 100% by 1%	0 ~ 100% by 1%
Stirring	Speed range (rpm)	Max. 2000	Max. 2000	Max. 2000
	Capacity (L / cu ft, H <sub>2</sub> O)	20 / 0.71	20 / 0.71	20 / 0.71
	Magnetic bar , Max. (L x Ø, mm / inch)	40 x 8 / 0.31 x 1.57	40 x 8 / 0.31 x 1.57	40 x 8 / 0.31 x 1.57
Material	Top plate	White ceramic coated aluminum alloy	White ceramic coated aluminum alloy	White ceramic coated aluminum alloy
	Body	Powder coated aluminum alloy	Powder coated aluminum alloy	Powder coated aluminum alloy
	Motor type	BLDC (Brushless Direct Current)	BLDC (Brushless Direct Current)	BLDC (Brushless Direct Current)
Dimensions	Top plate (Ø or W x D, mm / inch)	140 / 5.51	170 / 6.69	180 x 180 / 7.08 x 7.08
	Exterior (W x D x H, mm / inch)	161 x 290 x 100 / 6.34 x 11.42 x 3.94	191 x 330 x 101 / 7.52 x 12.99 x 3.98	209 x 326 x 102 / 8.22 x 12.83 x 4.0
	Net weight (kg / lbs)	2.8 / 6.17	3.5 / 7.72	3.8 / 8.37
Body Shape		Straight body		
Electrical requirements (230V, 50/60Hz, A)		3.0		
Cat. No.		AAH34245K	AAH34275K	AAH34285K
Electrical requirements (120V, 60Hz, A)		5.0		
Cat. No.		AAH34243U	AAH34273U	AAH34283U

※ Except TM-18QG CSA certification ※Only TM-14SG RoHS certification.

Accessories [Page 140](#) Heating Bath, Clamp Rod, Clamp, Transparent Shield



# Hotplate & Magnetic Stirrer Multi type



## Differentiated multi-stirrer with temperature control

### Structural Functional Features

- Integrated design with top plate and heater for fast heat transfer and excellent durability.
- Using special permanent magnets for maintaining stirring ability.
- Control by All/Column/Row/Point with four stirring control methods and timer function.

### Use Convenience Features

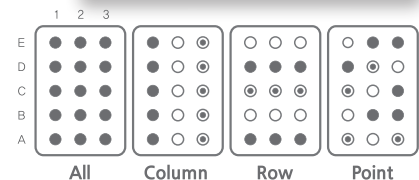
- Separate heater knobs and operation LED display.
- Maintains accurate speed with feedback control even when sample viscosity and amount change.
- Count-down timer provided. (up to 99 hours and 59 minutes)
- Rapid stirring and stop function according to the user's needs.
- VFD display with excellent visual perception.



MS-53MH

### Outstanding Safety

- The upper part of the top plate is composed of silicon pads, allowing for prevention of slippage of glassware and display of stirring point.
- Spill-proof design minimizes inflow solution into device.
- Safety ensured by BLDC motor that does not generate sparks.
- Safe by automatically shutting down the heater power when overheated.
- Prevents sample run-off thanks to smooth stirring start.



## Specification

Model		MS-33MH	MS-53MH
Heating	Temperature range (°C / °F) <sup>1)</sup>	Top plate, Max, 120 / 248	Top plate, Max, 120 / 248
	Control mode	Scale	Scale
	Heating Power (W)	600	1000
Stirring	Speed range (rpm)	30 to 2000	30 to 2000
	Capacity per point at 2,000rpm (H <sub>2</sub> O, mL / cu ft)	500 / 0.017	500 / 0.017
	Operating mode	4 (All, Column, Row, Point)	4 (All, Column, Row, Point)
	Position (Row x Column)	9 (3 x 3)	15 (5 x 3)
	Point distance (W x D, mm / inch)	117 x 90 / 4.61 x 3.54	117 x 90 / 4.61 x 3.54
	Magnetic bar , Max. (L x Ø, mm / inch)	30 x 8 / 1.18 x 0.31	30 x 8 / 1.18 x 0.31
	Load, Max (kg / lbs)	30 / 66.14	30 / 66.14
Material	Top plate	Aluminum	Aluminum
	Body	Powder coated steel	Powder coated steel
	Motor type	BLDC (Brushless Direct Current)	BLDC (Brushless Direct Current)
Dimensions	Top plate (W x D, mm / inch)	385 x 328 / 15.16 x 12.91	385 x 493 / 15.16 x 19.41
	Exterior (W x D x H, mm / inch)	395 x 450 x 104 / 15.55 x 71.72 x 4.09	395 x 614 x 104 / 15.55 x 24.17 x 4.09
	Net weight (kg / lbs)	10 / 22.05	15 / 33.06
Timer (Stirring)		Max. 99 hrs 59 min.	Max. 99 hrs 59 min.
Electrical requirements (230V, 50/60Hz, A)		4.1	5.8
Cat. No.		AAHK34015K	AAHK34025K
Electrical requirements (120V, 60Hz, A)		8.0	11.2
Cat. No.		AAHK34013U	AAHK34023U

1) This refers to the maximum temperature of the top plate. The temperature of the actual specimen may be reduced depending on the conditions of the experiment.

Accessories [Page 140](#) Magnetic Bar, Magnetic Retriever

# Hotplate Digital type



## Precise hotplate using digital method

### Structural Functional Features

- Three models provided according to the size and shape of hot plate.
- Top plate coated with white ceramic for excellent corrosion resistance.
- Excellent heat transfer and durability due to heater-integrated structure.
- Possible to set the upper and lower limit of temperature control range.

### Use Convenience Features

- Temperature control by adjustment of heating rate.
- Temperature control mode selection function. (Optimal/Fast/Slow/User/Point)
- Includes temperature auto-tuning and calibration functions.
- Count-down timer provided. (up to 99 hours and 59 minutes)
- Clamp Rod (option) can be added to the main body to fix other experiment equipment.
- Convenient experiment observation with removable transparent shield. (option)

### Outstanding Safety

- Spill-proof design minimizes inflow solution into device.
- Preventing equipment failure with multiple over temperature prevention devices.
- Separate buttons for safe operating.
- Warning displayed when top plate is 50°C or more.
- Malfunction prevented by controller lock function.
- The heating bath (option) is combined with the top plate to ensure safety. (except T-QG)



**T-14SG**

with Clamp Holder, 3 Prong Clamp, Clamp Rod (option)



**T-18QG**



Stirrer & Mixer

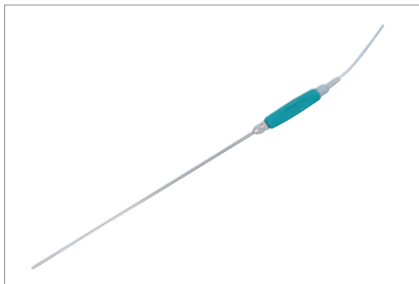
## Specification

Model		T-14SG	T-17SG	T-18QG
Heating	Temperature range (°C / °F)	Top plate, Max, 350 / 662	Top plate, Max, 350 / 662	Top plate, Max, 350 / 662
	Control mode	PID Feedback (optional, fast, slow)	PID Feedback (optional, fast, slow)	PID Feedback (optional, fast, slow)
	Display resolution (°C / °F)	0.1 / 32.18	0.1 / 32.18	0.1 / 32.18
Material	Top plate	White ceramic coated aluminum alloy	White ceramic coated aluminum alloy	White ceramic coated aluminum alloy
	Body	Powder coated aluminium alloy	Powder coated aluminium alloy	Powder coated aluminium alloy
Dimensions	Top plate (∅ or W x D, mm / inch)	140 / 5.51	170 / 6.69	180 x 180 / 7.09 x 7.09
	Exterior (W x D x H, mm / inch)	161 x 290 x 100 / 6.34 x 11.41 x 3.94	191 x 330 x 101 / 7.52 x 12.99 x 3.98	209 x 326 x 102 / 8.23 x 12.83 x 4.01
	Net weight (kg / lbs)	2.2 / 4.85	2.9 / 6.39	3.4 / 7.49
Timer		Max. 99 hrs 59 min.	Max. 99 hrs 59 min.	Max. 99 hrs 59 min.
Electrical requirements (230V, 50/60Hz, A)		3.0	4.0	4.0
Cat. No.		<b>AAH35045K</b>	<b>AAH35075K</b>	<b>AAH35085K</b>
Electrical requirements (120V, 60Hz, A)		5.0	6.7	6.7
Cat. No.		<b>AAH35043U</b>	<b>AAH35073U</b>	<b>AAH35083U</b>

※Except T-18QG CSA certification ※Only T-14SG RoHS certification

Accessories **Page 140** Heating Bath, Clamp Rod, Clamp, Transparent Shield

# Accessories for Hotplate & Magnetic Stirrer



## Temperature Probe, B Class

With external temperature sensor, it is possible to check and control the temperature of the sample when it is connected to the equipment. (TS model)



## Heating Bath

Top plate combines concave and convex structure, resulting in no slippage.



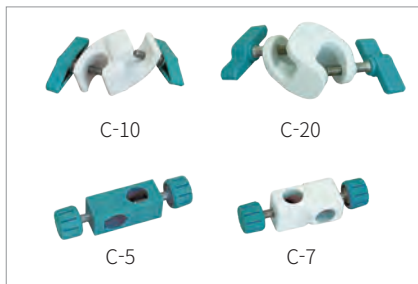
## Clamp Rod

Two pieces can be fixed on the left and right of the back of the main body.



## 3 Prong Clamp

Various types of instruments can be fixed.



## Clamp Holder

Clamp rod and clamp can be fixed.



## Transparent Shield

Safely observe experiments.

## Magnetic Bar [Page 142](#)

- Applied to a magnetic stirrer when stirring within the temperature range up to +280°C.
- Turbo type can be applied at high temperature of 400°C.



## Magnetic Retriever [Page 143](#)

- Used when taking out magnetic bar.
- Uses ALNICO V magnets and samarium cobalt magnets.



## Silicone Cover

내용필요함



Cat. No.	Description
AAA34501	Temperature Probe, B Class (Max. 250°C)
AAA34502	Temperature Probe, A Class (Max. 400°C)
00HPS0000012	Heating Bath (TS-14SG, TM-14SG, T-14SG)
00HPS0000015	Heating Bath (TS-17SG, TM-17SG, T-17SG)
00MTT0000132	Clamp Rod (Ø12, 400 mm)
BEA1000011	3 Prong Clamp (80 mm grip)
BEA1000012	3 Prong Clamp (60 mm grip)
BEA1000013	3 Prong Clamp (20 mm grip)
AAA37511	Clamp Holder (max. Ø27, C-20)
AAA37512	Clamp Holder (max. Ø17, C-10)
AAA37513	Clamp Holder (max. Ø12, C-7)
AAA37514	Clamp Holder (max. Ø12, C-5)
00HPS0000059	Transparent Shield (TS-14SG, TM-14SG, T-14SG)
00HPS0000039	Transparent Shield (TS-17SG, TM-17SG, T-17SG)
00HPS0000190	Silicone cover (TS-14SG, TM-14SG, T-14SG)

