

WiseMix™
Homogenizer
(HG15A, HG15D)

User's Manual
(Ver. 1.0.0)

DAIHAN Scientific, Co., Ltd.

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Introduction

Thank you for purchase of DAIHAN WiseMix™ Homogenizer, HG 15-series. WiseMix™ Homogenizer HG 15-series are high performance Homogenizing systems. HG 15A and HG 15D have many superior features as follows;

- High Speed / High Quality / Low Noise : Max 27,000 rpm
- Wide ranges of volumes and Possible to work with various samples.
- Dispersing Tool made of PTFE and stainless steel casing facilitates cleaning and sterilization
- Intelligent feedback controlled system by microprocessor (HG 15D).
- Digital LCD to monitor the status of stirrer (HG 15D).
- Multi-functional Jog Shuttle switch adopted (HG 15D).
- Over-Load protection function.

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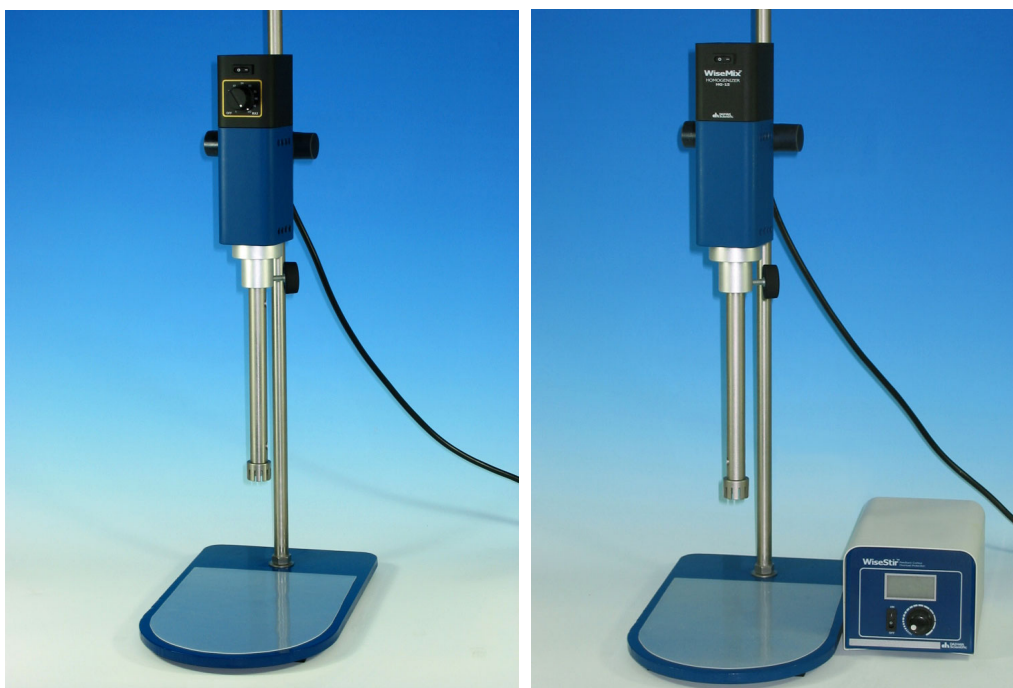
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Appearance

DAIHAN WiseMix™ Homogenizer HG 15-series includes two models for its wide range of application. The appearances of WiseMix™ Homogenizer HG 15-series are shown in <Fig. 1>. Fig 1-(a) is appearance of HG 15A, Fig 1-(b) is appearance of HG 15D.



(a) HG15A

(b) HG15D

<Fig. 1> Appearance of WiseMix™ Homogenizer HG 15-series

Classification by appearance

Fig 1-(a) : Direct Controller

Fig 1-(b) : Remote Controller (Digital Feedback Control)

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Operations

A. Operations of Remote Digital Controller (for HG 15D)



<Fig. 2> The Controller Panel of HG 15D

1. **Power on:** If you turn on the power switch ⑤, the electrical power is applied to the unit and it goes into the pause mode.
2. **Starting Homogenizer :** After power turns on, you can see the set RPM ① is 0 or non-zero on the LCD panel.
 - A. If the set RPM ① is 0, you can adjust the set RPM by turning Jog shuttle ⑥. In this case, the unit immediately begins to operate at the set RPM without click the jog shuttle. User can check the stirring speed of dispersing tool through measured RPM value shown in ③, and the power of motor operating currently through ④.
 - B. If the set RPM is non-zero, it means someone has saved a RPM value previously. You can use the saved RPM by click the jog shuttle switch ⑥. If you would like to change the saved value, you can modify the RPM value by turning jog shuttle switch ⑥ and then click it. After clicking jog shuttle, the unit begins to operate at the newly set RPM.

3. **RPM Adjustment:** When you turn the jog shuttle for adjustment of RPM, the set RPM is changed first, and then the measured RPM goes tracks the set RPM. It shows that WiseMix™ Homogenizer HG15D is feedback-controlled by embedded digital controller.
4. **Pause Mode :** By simply clicking the jog shuttle while the machine is operating, the machine goes into the Pause mode and stops operating temporarily. If you click again the jog shuttle in this Pause mode, the unit restarts to operate immediately.
5. **Storage of the Current Set RPM:** You could save current RPM during operation by push the jog shuttle switch ⑥ in a second. HG 15D holds the saved set value while its turn off, so you can reuse it for the future use.
6. **Power off:** For the safe use of homogenizer, you had better turn off the power switch after going into the pause mode by clicking the jog shuttle.

B. Operations of Direct Controller (for HG15A)



<Fig-3 HG15A Analogue Controller>

1. **Check (NOTICE) :** You must check that the Knob's location ① is "0" before turning on the Power Switch ②. If the unit is powered on with non-zero value of the knob, dispersing tool could have fatal damage.

2. **Power on:** If you turn on the power switch ②, the electrical power is applied to the unit. Turn the knob ① to the right slowly, then unit immediately begins to operate at the set RPM

3. **RPM Adjustment :** If you turn the Knob clockwise, RPM goes up. And if you turn the knob counterclockwise, RPM goes down.

4. **Power Off:** For the safe use of homogenizer, turn off the power switch after turning the Knob to "Zero" position.

C. Self-Protect Functions

When the homogenizer goes into an abnormal operating condition such as homogenizing sample of higher viscosity than permitted or being prohibited by unexpected obstacles in the vessel, the machine stops stirring the dispersing tool in order to protect the motor and dispersing tool. (HG15D/HG15A)

When the homogenizer is stopped because of over-load due to high viscosity of sample, please stop operation. In such a case, it is recommend to use other model for higher viscosity or to change Dispersing Tool.

Accessories

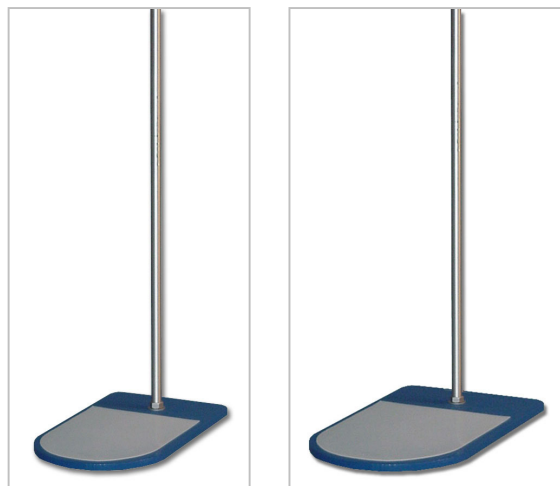
Clamp



<Fig-4 clamp>

Catalog No	Descriptions
DH.CV502010	BH100 , Clamp for Stirrer or Homogenizer

Stand



(a)

(b)

<Fig 5> Stand

Catalog No	Descriptions
(a) DH.CV501510 ST110	Standard Plate Stand, Ø16 x h800 mm Rod, 20 x 35 cm Plate
(b) DH.CV501515 ST120	Wide Plate Stand, Ø23 x h1000 mm Rod, 30 x 40 cm Plate

Dispersing Tool



(a) HT1018

(b) HT1025

<Fig 6> Dispersing Tool

Specifications of Dispersing Tools

	HT1018	HT1025
Working Range (ml)	10 ~ 1,000	50 ~ 2,500
Stator Dia (mm)	18	25
Rotator Dia (mm)	12.7	17
Bearing Material	PTFE	PTFE
Suitable for Solvent	Yes	Yes
Temperature Range (°C)	180	180
Sterilized Method	All methods	All methods
Suspensions (μm)	10 ~ 50	15 ~ 50
Emulsions (μm)	1 ~ 10	1 ~ 10

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Safety Instructions



Please confirm that the proper power is supplied (AC 230V , 50/60Hz , Single phase)

You have to use the machine at indoor environment, to preserve temperature between 5°C and 40°C.

Use applied liquid with proper viscosity. If you use HG 15 series for homogenizing sample of higher viscosity in long time, it could be a cause of trouble.

Use proper dispersing tools for applied sample. If you use improper dispersing tool for homogenizing sample of high viscosity, it could be a cause of trouble.

You have to pay attention not to be stained with acid or basic material.

When you turn off or turn on the power switch of homogenizer, pay attention not to touch on the rotator of dispensing tool, please.

Don't touch dispersing tool during operation of homogenizer.

Please don't operate the homogenizer over 10 minutes in order to prevent the unit from damages caused by long time operation.

Specifications

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	HG15A	HG15D
Motor Rating (Input/Output)	500 / 350	
Working Range(ml)	1 ~ 2,500	
Speed(rpm)	2,000 ~ 27,000	
Speed Adjustment	Stepless	50 rpm / step
Speed Control	Analog Phase Control	Digital Feedback Control
Usable Tool	HT1018 or HT1025	
Dimension (W X D X H mm)	60 X 70 X 230	
Weight (Kg)	2.5	
Power	AC 220-230V / 50-60Hz	

CERTIFICATION

of

Quality Tested by Manufacturer and Free Warranty up to 1 Year

For DAIHAN Laboratory Equipment

Limited Warranty

1. This instrument has gone through our testing process about all functions before shipment.
2. This instrument is warranted for one year from purchasing date.
3. A breakdown caused by customer's misuse or natural disaster is excepted from this warranty.

Item	Wisemix™ Homogenizer
Model No.	
Serial No.	
Date	
Customer	

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