



# gako InvoMatic

User Manual



**gako**



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## 1. Performance and Main Features

The **gako InvoMatic** is an automated mixing system developed to produce highly homogeneous mixtures at controlled time and speed. It works in a 3-axis movement, combining the principles of the oloid and inversion mixing, creating a unique 3D-movement cycle, that allows a complete diffusive mix. Also, it is equipped with a digital system that allows the pharmacist to choose their mixing cycles according to their needs, creating multiple combinations to fit the formulation characteristics, achieving easy and efficient reproducibility.



## 2. Applications

The **gako InvoMatic** system is a cost-efficient, practical, and validated alternative to the traditional mixing techniques in the compounding pharmacy. It works on a diffusive mixing method, that consists of particles moving randomly inside of a vessel, under influence of gravity to impel the flow, causing the particles to roll to the opposite side of the vessel, therefore producing homogeneous mixtures. Extra tools such as porcelain or ceramic spheres (not included) can be added inside of the vessels during mixing, according to the properties of the substances being mixed, to avoid particle agglomeration and provide evenly distributed particles in the formulation. It can operate with a mixing speed from 0 to 100 RPM, and a mixing time from 0 to 99 minutes, creating multiple combinations to fit the formulation properties. The velcro attached to the mixing arm is capable of holding vessels from 30 mL to 1.000 mL (average). The vessels can be disposable, with no need for extra cleaning after the mixing process. The **gako InvoMatic** is suitable for the complete mix of solids, liquids, homeopathic preparations, and impregnation of globules and granules.



## 3. Technical Parameter

### 3.1 Specifications

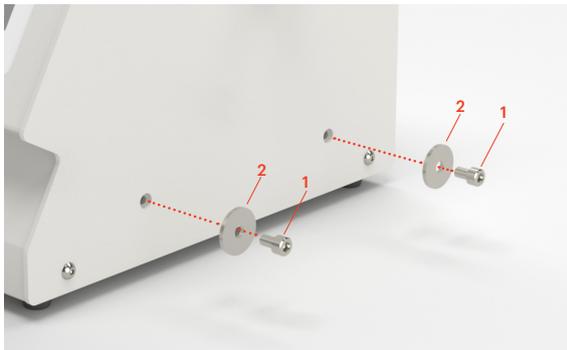
<b>Model</b>	gako InvoMatic
<b>Electrical requirements</b>	100 – 240V, 50 – 60Hz
<b>Noise level</b>	55 dB
<b>Weight (empty)</b>	10.0 kg

### 3.2 Operating Conditions

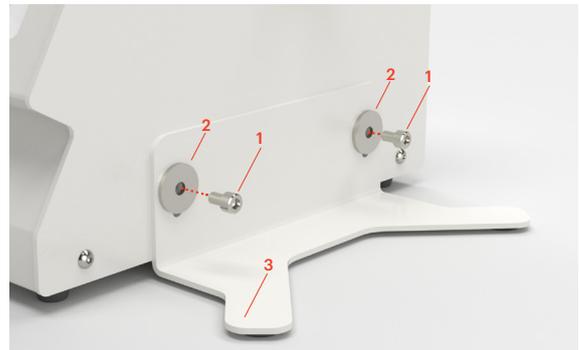
<b>Location</b>	Indoor use only
<b>Altitude</b>	Up to 10.000 ft (3.048 m)
<b>Ambient temperature</b>	32°F to 104°F (0°C to 40°C)
<b>Maximum relative humidity</b>	10% - 90% RH @ 32°F to 104°F (0°C to 40°C)
<b>Supply voltage fluctuation</b>	Up to 24V

## 4. Functions and Use

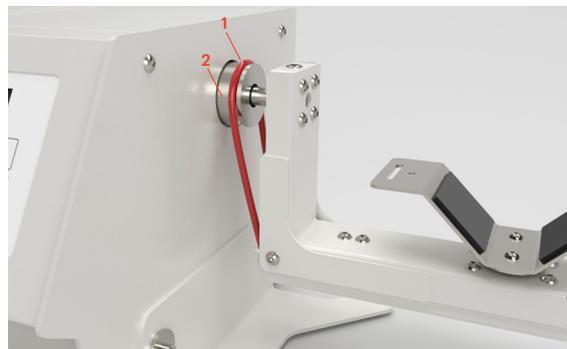
### 4.1 Assembling the inversion arm



- 1.**  
Remove the screws (1) and washers (2).



- 2.**  
Fit the stabilizer (3), push it down (3), and fit washers (2) and screws (1).



- 3.**  
To fit the inversion arm, place the orange belt (1) over the pulley (2).



- 4.**  
Keep tension on the orange belt (1) and push the arm downwards onto the driveshaft (2).



- 5.**  
Tighten the screw with the tool supplied. Ensure the screw (3) is on the flat portion of the driveshaft.



## 4.2 Setting Speed



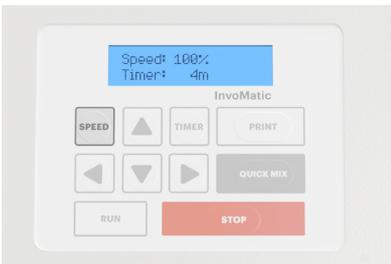
1. Connect power supply cord on appropriate outlet.



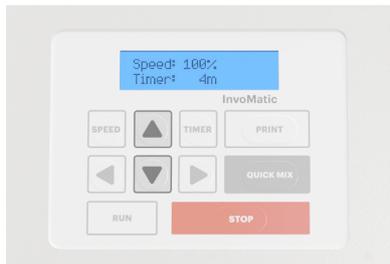
2. Turn the power switch located on the rear of the device to the "ON" position.



3. Press the "STOP" button twice.



4. Press the "SPEED" button, the display will flash.



5. Adjust the speed by using the "UP" ▲ and "DOWN" ▼ buttons.



6. Once the desired speed is set, press the "SPEED" button again to set. This will stop the display flashing.

## 4.3 Setting Timer



1. Press the "STOP" button twice.



2. Press the "TIMER" button, the display will flash.



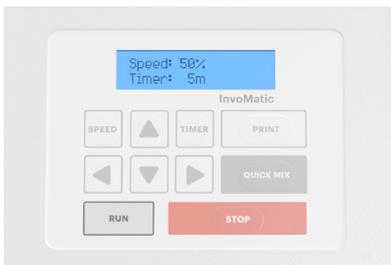
3. Adjust the timer by using the "UP" ▲ and "DOWN" ▼ buttons.



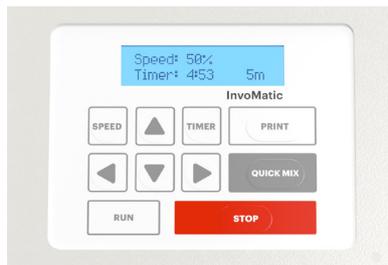
4. Once the desired time is set, press the "TIMER" button again to set. This will stop the display flashing.



#### 4.4 Running Mixer



1. After setting the desired speed and time, press the **"RUN"** button. The mixer will begin to rotate.

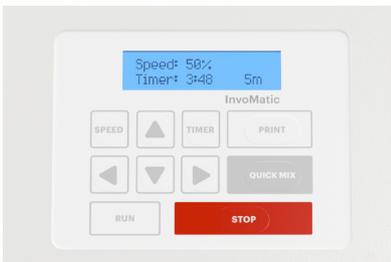


2. The display will show the speed, time remaining, and original time setting.



3. When the time has elapsed, the mixer will stop and a buzzer will sound.

#### 4.5 Stopping/Pausing Mixer



1. Press the **"STOP"** button to pause the mixing cycle.



2. To resume mixing, press the **"RUN"** button.



3. To stop the mixer and reset the timer to the original setting, wait until the rotation stops, and press the **"STOP"** button a second time.

#### 4.6 Quick Mix



1. With the mixer in a stationary position, press the **"QUICK MIX"** button.



2. The mixer will run for 4 minutes, at 100% speed.



## 4.7 Printing



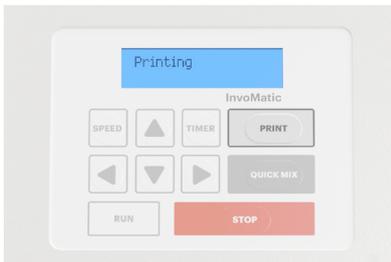
1. The **gako InvoMatic** is equipped with a Serial RS232 port, suitable for different models of thermal printers.



2. Set up the printer according to the manufacturer's instructions.

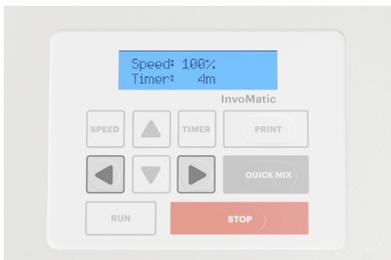


3. After finishing the mixing cycle, allow the mixer to be stationary for a minimum of 1 second.



4. Press the **"PRINT"** button.  
The display will show "Printing".

## 4.8 Setting Time & Date



1. With the mixer in the stationary position, press and hold the **"LEFT"** ◀ and **"RIGHT"** ▶ buttons.



2. Use the **"UP"** ▲ and **"DOWN"** ▼ buttons to set the date and time.



3. To move to the next value, use the **"LEFT"** ◀ and **"RIGHT"** ▶ buttons.



4. To store the date and time, press the **"STOP"** button and a buzzer will sound.



## 4.9 Mixing volumes



1. The velcro can hold vessels from 30 mL up to 1.000 mL.



2. Do not fill the vessel with more than **70%** of the total capacity, to allow space for the content to move during mixing.



## 5. Attention

- Read the user manual carefully before operating the device.
- Only operate **gako InvoMatic** with a designated AC power outlet.
- Place the power cord out of the way of the inversion arm to avoid a trip hazard.
- Keep hair tight and avoid loose clothing when operating the device.
- Place **gako InvoMatic** on a flat surface, allowing 10 cm of clearance on all sides of it.
- Don't operate the device with a wet or damp hand, or on wet or damp surfaces.
- To avoid injury, keep hands and other body parts away from the inversion arm during mixing.
- Don't change the mixing vessel without switching "**OFF**" the power button.
- Don't place any parts of **gako InvoMatic** into a dishwasher or autoclave.
- When moving the device, make sure the power switch is turned "**OFF**" and the power cord disconnected from the power supply.

## 6. Maintenance

### 6.1 Cleaning

- The **gako InvoMatic** can be cleaned with a damp cloth and normal household cleaners.
- Never submerge the device.

### 6.2 Troubleshooting

The troubleshooting section of this manual covers basic troubleshooting for common issues with the **gako InvoMatic**. If the following troubleshooting guide does not resolve the problem, contact your local supplier for further assistance.

Problem	Possible Solution
The arm is making noise when rotating	Some noise is permissible, different conditions will cause some different noises to happen. Stop rotation, turn the power switch " <b>OFF</b> ", and check if the arm is attached correctly.
The arm is not rotating	Turn the power switch " <b>OFF</b> ", and remove any obstructions from the arm. Check if the screw is tight using the tool provided. Check if the screw is located on the flat portion of the shaft.
The arm rotates but the vessel is not rotating	Check if the orange drive belt is engaged correctly.
The arm is not rotating and there is a loud noise	Turn the power switch " <b>OFF</b> ", and remove any obstructions from the arm. Check if the content of the vessel is not too heavy, as this will cause the arm to stop.
The screen light is on, but not responding	Turn the power switch " <b>OFF</b> " and unplug the device from the power source. Plug the power source back and turn the power switch " <b>ON</b> ".
The device has stopped but I can't set the Timer or Speed	Press the " <b>STOP</b> " button twice to allow setting.



### 6.3 Warranty

This device is under warranty and free from defects in materials and workmanship, under normal use and service, for 24 months from the date of invoice (excluding consumable accessories). The warranty is extended only to the original purchaser. Warranty is not valid on a device that has been damaged by improper installation, improper connections, misuse, accident, or abnormal conditions of operation. If the warranty has been expired, Gako will still be responsible for repair with relative charges. **For claims under the warranty please contact your local supplier.**

## 7. Transportation and Storage

The **gako InvoMatic** weighs approximately 10 kg and should only be stored on flat, leveled surfaces capable of supporting the weight of the device. Transporting the device should avoid collision.

**NOTE: Do not store the device in wet or extremely damp locations.**



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