Operations Manual

ClearLine orbital shaker

Index:

I. General Information

NOTE : Before operating the shaker, please take a few minutes to familiarize yourself with the contents of this manual.

Thank you for purchasing the ClearLine orbital shaker. This operations manual contains instructions for the care of this Instrument. In order to use the instrument properly, please read this manual carefully before operation. Please keep it available for future use.

Prior to the initial operation:
Please check the Instrument and the accessories against the packing list when you first open the shipping carton.   If you find there is damage, a discrepancy, or missing items, please contact your supplier immediately.

II-1. Introduction

The ClearLine orbital shaker is designed for many applications used in general research laboratories. The Microprocessor's constant monitoring system ensures accurate shaking speed.   The beltless drive system minimizes noise and vibration while increasing the life span of the unit.   Optional accessories are available for compatibility with a wide variety of laboratory vessels, including flasks, tubes, dishes and trays.

II-2. Installation

- Choose a location that is free from rapidly changing temperature conditions (away from a heating or cooling vent).

- To assure proper ventilation, allow a minimum of 2 inches (5 cm) of the clearance between the rear and side of the unit and the adjacent wall.

- Always ensure that the machine is installed on a level surface.

- Before plugging the machine into the outlet, ensure that the electrical specifications (listed on the serial number label on the rear side of the unit) matches the electrical specifications of your outlet.

- Always

     - Avoid a direct ray and light.
     - Avoid high humidity and dust air.
     - Avoid cool areas (below 5℃).

II-3. Specification

1) Dimension (External) :

    28(W) X 42.7(D) X 9(H) cm / 11(W) x 16.8(D) x 3.5(H)

   Dimensions (Platform):

    30(W) x 33(D) cm   /   12(W) x 13(D) in.

2) Speed range :   30 - 300 RPM

3) Shaking Orbit: 19mm (3/4")

4) Timer :   Digital - 1 min. to 47hr 59min. (1 min. increments)

5) Motor :   Brushless DC   - Beltless

6) Weight: 25 lbs / 11.5 kg

7) Electrical: 120V or 230V, 50-60Hz / 200W

II-4. Features

1) Constant Monitoring System (CMS) ensures precise control over speed

2) Extremely compact

3) MAGic Rack platform available as optional accessory.

4) Blushless DC motor and beltless drive system minimizes noise and vibration.

5) Touch creen control panel displays speed and time .

6) Wide variety of optional accessories available for most common laboratory vessels

III-1. Operation

**Ver: BMK 3.2S**

Loading...
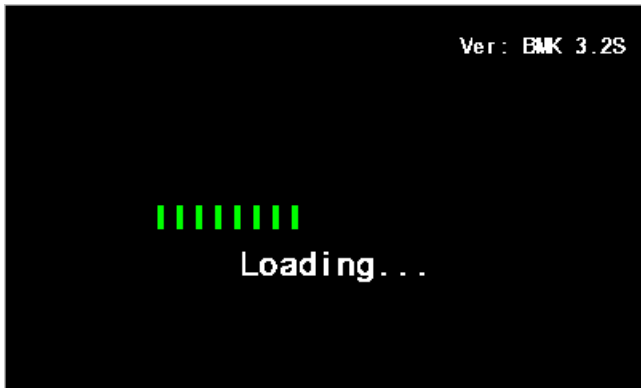
▶Booting

Press the power switch into the ON position, the display illuminates and the booting screen is displayed for 2 seconds before showing the "Basic View" screen.

NOTE: If the shaker has been powered off before the completion of a run, the unit will automatically power on to the previous settings.
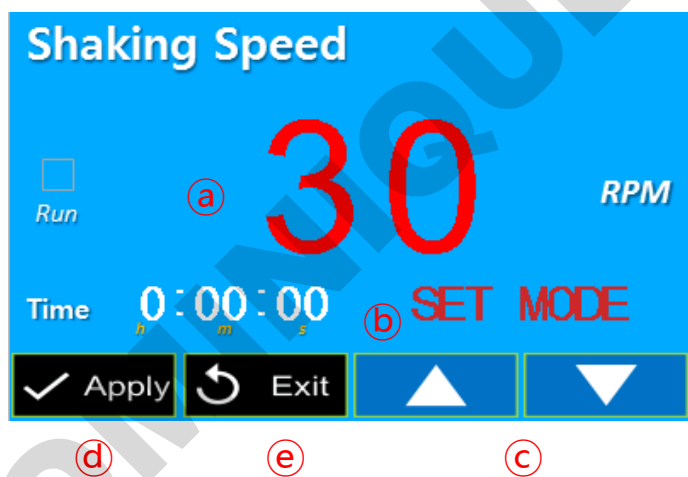
3.1.1 Basic View Screen

▶ Basic View Screen

ⓐ RUN LED: indicates if the shaker is running.

ⓑ Time setting: Indicates the set or remaining time.
(To adjust, TOUCH the time value)

ⓒ RPM setting: Displays the set or current RPM
(To set the desired shaking speed, TOUCH the RPM value)
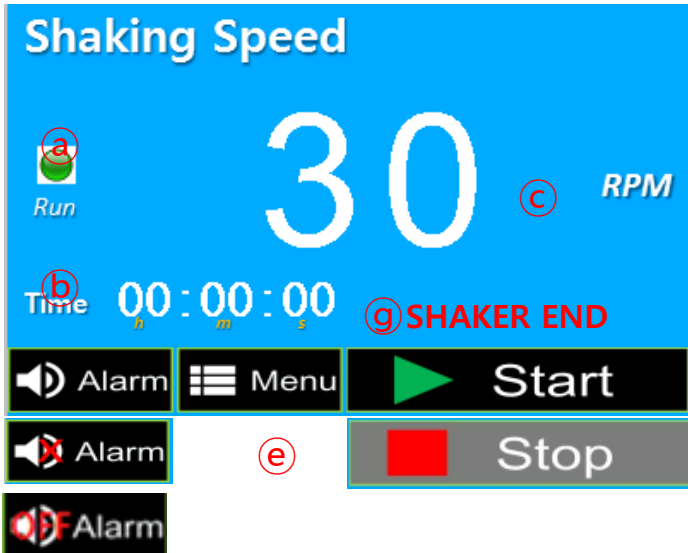
ⓓ **Alarm mute**: TOUCH 🔊 Alarm to toggle the alarm on or mute. The audible alarm can be temporarily deactivated for 10minutes by TOUCHING the key 🔊 Alarm when audible alarm is ringing. It gives 10minutes delay in audible alarm and the icon is displayed as 🔇 Alarm in the mute mode. After 10minutes delay, if alarm event continue, audible alarm is reactivated.
*Even If alarm event is removed, the icon 🔇 Alarm keep displaying. To change the icon to 🔊 Alarm, just touch the icon once.

Alarm off : The alarm can be off when touch 🔊 Alarm for 3~5 seconds in both 'ADVANCED View" and 'BASIC View'. To turn the alarm back, touch 🔇F Alarm once.

ⓔ Menu: TOUCH to activate the main menu

ⓕ Shaker Start/Stop Button
TOUCH to start or to stop the shaker.

ⓖ Shaker end: Indicates that the setting time has expired and the shaker stops running

Shaking Speed
ⓐ Run
30 ⓒ RPM
ⓑ Time 00:00:00 ⓖ SHAKER END
🔊 Alarm | ☰ Menu | ▶ Start
ⓓ 🔇 Alarm | ⓔ | ▮ Stop ⓕ
🔇F Alarm

▷RPM setting change

ⓐ TOUCH the RPM value, The numbers become red

ⓑ "SET MODE" is displayed (flashes)

ⓒ Input the desired value by pressing UP(▲)/DOWN(▼) buttons
NOTE: Press and hold the buttons to increase or decrease the value quickly.

ⓓ Apply: To store the newly set value TOUCH ✓ Apply
(Or wait 5 seconds for the value to store automatically)

ⓔ Exit: If you press ↺ Exit after changing any values, the values are not saved and the screen returns to the previous screen

Shaking Speed
Run
ⓐ 30 RPM
Time 0:00:00 ⓑ SET MODE
✓ Apply | ↺ Exit | ▲ | ▼
ⓓ | ⓔ | ⓒ

▷Time setting change

ⓐ TOUCH the time value, The numbers become red

ⓑ "SET MODE" is displayed (flashes)

ⓒ Input the desired value by pressing UP(▲)/DOWN(▼) buttons
NOTE: Press and hold the buttons to increase or decrease the value quickly.

ⓓ Apply: To store the newly set value TOUCH ✓ Apply
(Or wait 5 seconds for the value to store automatically)

ⓔ Exit: If you press ↺ Exit after changing any values, the values are not saved and the screen returns to the previous screen

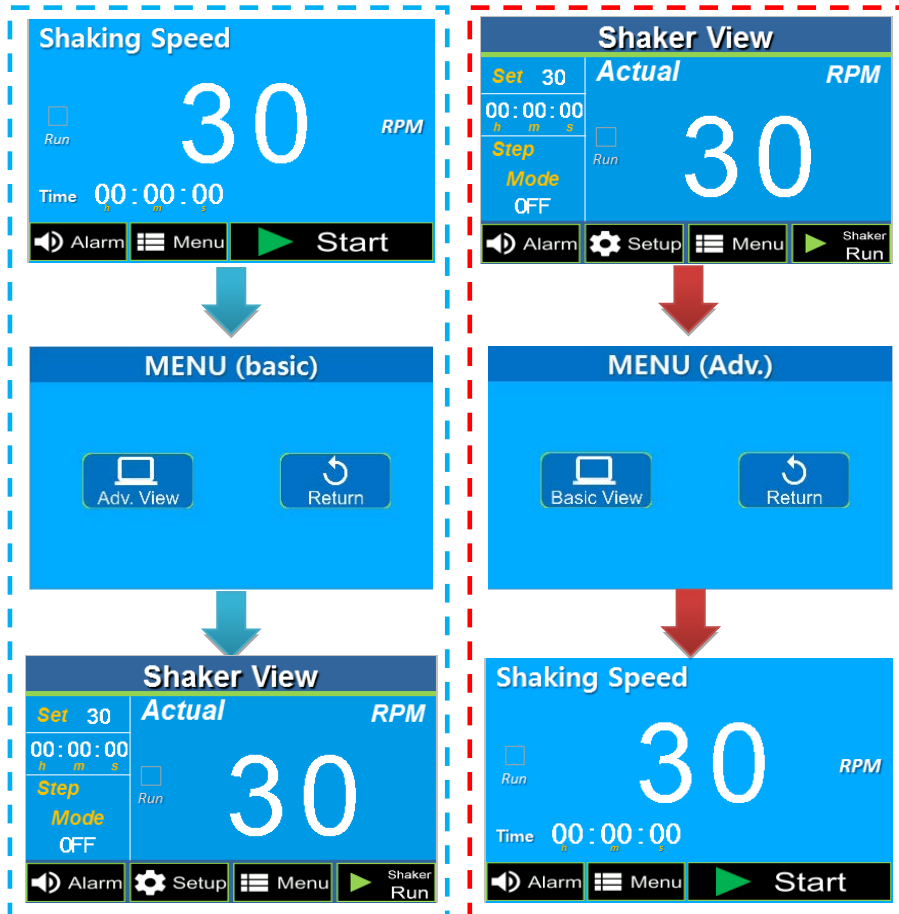NOTE: The time cannot be adjusted during a run. To change the time during a run, you must TOUCH ▮ Stop Change the time value and press ✓ Apply and ▶ Start

Shaking Speed
Run
30 RPM
Time ⓐ0:00:00 ⓑ SET MODE
✓ Apply | ↺ Exit | ▲ | ▼
ⓓ | ⓔ | ⓒ

BASIC to ADVANCED **ADVANCED to BASIC**

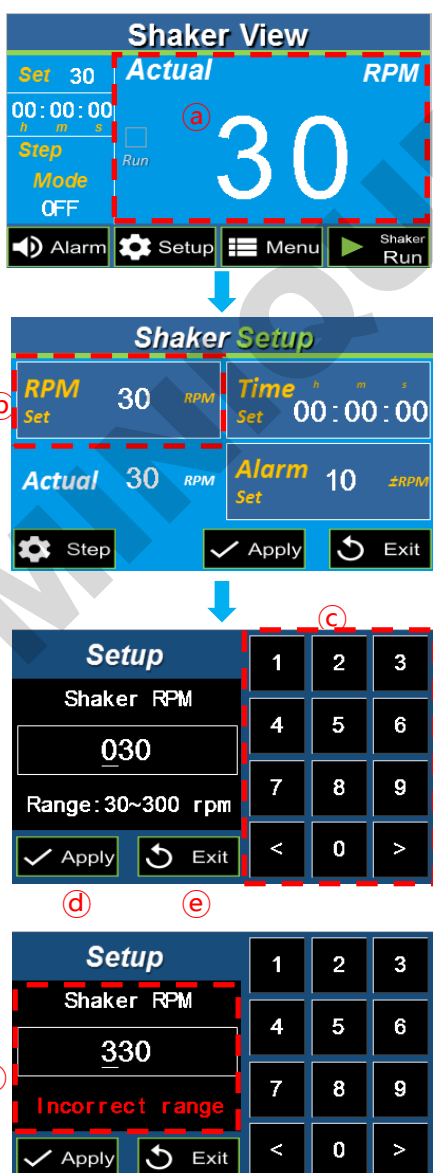## 3.1.2. Advanced View Screen

▶ **Advanced Mode**

To switch from the standard BASIC view
To the ADVANCED view,
TOUCH "MENU" and choose ADVANCED View.

NOTE: To return to the BASIC View, TOUCH
"MENU" and choose the BASIC View.

The ADVANCED View provides the user with access to the
STEP mode for linking consecutive mixing cycles.

▶ **Shaker setting (Advanced)**
▷ **RPM setting change**

ⓐ TOUCH the RPM Shaker value, the screen turns to
the Shaker setting screen
ⓑ TOUCH the "RPM Set" Value to adjust the set
speed.
ⓒ Input the desired value by using the key pads in
the setup screen
ⓓ Apply: When you press [✓ Apply], the changed
setting values are saved and the screen turns to
the previous screen
ⓔ Exit: If you press [↺ Exit] button, the changed
setting values are not saved and the screen turns
to the previous screen
ⓕ The RPM setting range is 30~300rpm
When entering a value out of this range and
pressing [✓ Apply], the message
"Incorrect range" is displayed.

Shaker View

Set 30   *Actual*   RPM
00:00:00
  h m s
Step   ⓐ
Mode   30
OFF   Run

🔊 Alarm ⚙ Setup ☰ Menu ▶ Shaker Run

Shaker Setup

RPM 30 RPM   Time   h m s
Set   Set 00:00:00 ⓑ

Actual 30 RPM   Alarm 10 ±RPM
                   Set

⚙ Step   ✓ Apply   ↺ Exit

Setup   ⓒ
Shaker Timer   1 2 3
                      4 5 6
00:00:00   7 8 9
Format=99h59m59s   < 0 >

✓ Apply   ↺ Exit
  ⓓ   ⓔ

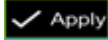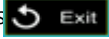▶ **Shaker setting (Advanced)**
  Adjusting the Shaking Time
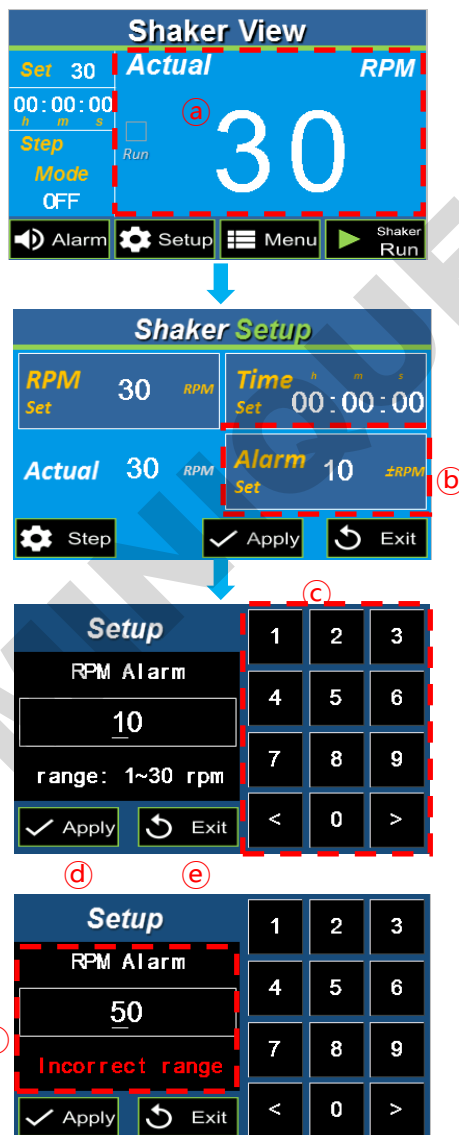
ⓐ TOUCH the TIME value, the screen turns to the Shaker setting screen

ⓑ TOUCH the "Time Set" Value to adjust the set shaking time.

ⓒ Input the desired value by using the key pads in the setup screen

ⓓ Apply: When you press ✓ Apply , the changed setting values are saved and the screen turns to the previous screen

ⓔ Exit: If you press ↺ Exit button, the changed setting values are not saved and the screen

---

Shaker View

Set 30   *Actual*   RPM
00:00:00
  h m s
Step   ⓐ
Mode   30
OFF   Run

🔊 Alarm ⚙ Setup ☰ Menu ▶ Shaker Run

Shaker Setup

RPM 30 RPM   Time   h m s
Set   Set 00:00:00

Actual 30 RPM   Alarm 10 ±RPM
                   Set   ⓑ

⚙ Step   ✓ Apply   ↺ Exit

Setup   ⓒ
RPM Alarm   1 2 3
                      4 5 6
10   7 8 9
range: 1~30 rpm   < 0 >

✓ Apply   ↺ Exit
  ⓓ   ⓔ

Setup
RPM Alarm   1 2 3
                      4 5 6
50   7 8 9
ⓕ
Incorrect range   < 0 >

✓ Apply   ↺ Exit

▶ **Shaker setting (Advanced ONLY)**
▷ **Alarm setting change**

The alarm value is the difference between the set speed and the measured (displayed) speed. If the difference exceeds this value (once the temperature has been reached) the alarm will trigger.

ⓐ TOUCH the RPM Shaker value, the screen turns to the Shaker setting screen

ⓑ TOUCH the "Alarm Set" Value to set the timer

ⓒ Input the desired value by using the key pads in the setup screen

ⓓ Apply: When you press ✓ Apply , the changed setting values are saved and the screen turns to the previous screen

ⓔ Exit: If you press ↺ Exit button, the changed setting values are not saved and the screen turns to the previous screen

ⓕ The RPM setting range is 1~30rpm

When selecting the value out of this range and pressing ✓ Apply , the message "Incorrect range" is displayed.
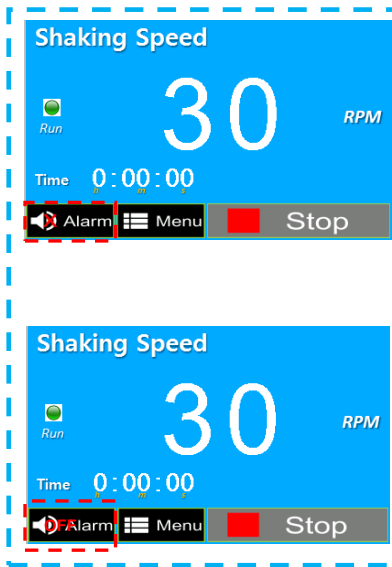
BASIC View   **ADVANCED View**
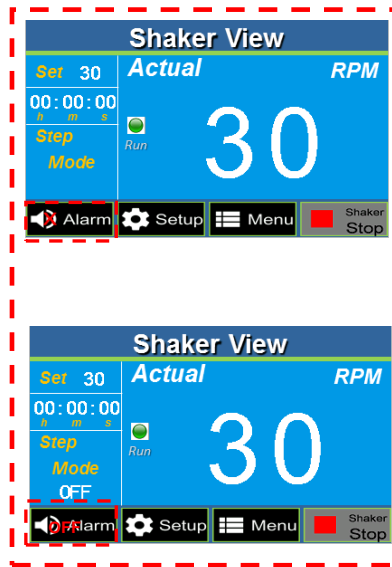
▷ **Alarm Mute**

The audible alarm can temporarily deactivated by TOUCHING the key 🔊 Alarm when the audible alarm is active (beeping). This silences/mutes the alarm for 10 minutes. and the icon is displayed as 🔊 Alarm. Following the 10 minute mute, if alarm event continues, audible alarm is unmuted.

To unmute the alarm, TOUCH the 🔊 Alarm key to toggle to the unmuted setting, 🔊 Alarm.

▷ **Alarm Disabled**

The alarm can be disabled by TOUCHING and holding the 🔊 Alarm key for 3~5 seconds. To reactivate the alarm setting, TOUCH the 🔊 Alarm once.

3.1.3. Shaker Step Setting

▷RPM, time setting

ⓐ TOUCH the RPM Shaker value to enter the shaker setup screen.

ⓑ Select ⚙ Step, the screen moves to the shaker step & setup screen

ⓒ You can select/link up to 4 desired shaking speeds.

   Choose each of the 4 desired speeds by pressing on the speed value.

   (If less than 4 linked speeds are desires,

   leave the time and speed values as "0" to skip.)

ⓓ Once a RPM step is selected, use the keypad in the setup screen

   to select the desired RPM value

ⓔ Apply: When you press ✓ Apply, the changed setting values are saved

   and the screen turns to the previous screen

ⓕ Exit: If you press ↻ Exit button, the changed setting values are not saved

   and the screen turns to the previous screen

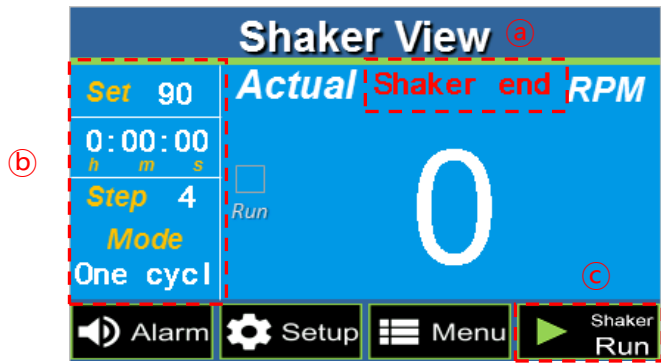ⓖ Once the desired RPM speeds have been chosen,

   adjust the time values by following the same steps.

ⓗ There are 3 modes available for Step Operation :

   "One cycle", "Repeat Cycle", "Step off"

   NOTE: Repeat cycle will result in continue repeating of all programmed steps
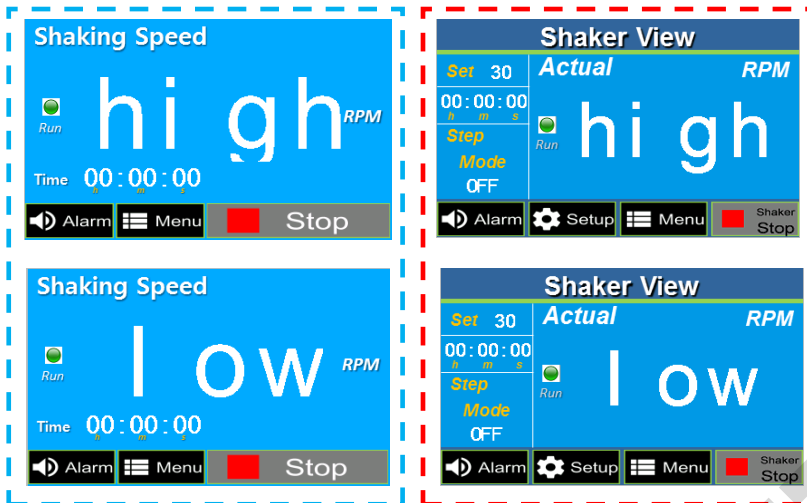
▶ Step Cycle Ending Screen

ⓐ When the time for each step has expired, the "Shaker End" message is displayed

ⓑ "Set" displays the setting value of 1st step
(Default value is displayed when Step Off)
Time is displayed as 0

ⓒ [Shaker Run] is displayed as the instrument can be restarted at any time.

3.1.4. Warning Messages

BASIC View   **ADVANCED View**

▷ Shaker Alarm

The message "low" or "high" is displayed on the display when the measured value is deviating from the set value.

The message is only displayed when the difference exceeds the user programed value for the alarm

NOTE: The message is cleared when the equipment maintains the values for 1 minute following the activation of the alarm.

III-2. Platform Installation

The ClearLine orbital shaker includes a flat non-slip platform for low speed operation with many common vessels, including trays and dishes. For installation of any of the optional platform the user must:

1.) Unscrew the four metal, platform screws from the corners of the internal platform and remove the green rubber mat.
2.) Clean any dirt or debris from the metal base-platform and apply the desired optional platform so that the four corner holes are aligned.
3.) Screw in the four plastic, platform screws tightly by hand.

III-3. Maintenance:

The platform of the ClearLine orbital shaker should be cleaned regularly with a soft cloth dampened with water or alcohol. (Always ensure that the machine has been powered down prior to cleaning.

In the event of a spillage: Power down the unit, remove the platform and dry the internal chamber with a soft cloth.   DO NOT attempt to operate the unit until the spillage had been properly dried.

IV-1. Service and Contact

Service on the shaker should only be performed by qualified service personnel. To request service or technical support, please contact Dominique Dutscher.

Ph: +33 3 88 59 33 90
Em: info@dutscher.com
Web: www.dutscher.com

Adress : 2C, rue de Bruxelles
67170 BERNOLSHEIM - FRANCE