

Rockers – DGRL, DGRM, DSRL & DSRM series

OPERATING MANUAL



DGRL-01-01



DGRM-01-02



BEFORE USE:

Please read the following instructions:



Read the Manual first before operating the instrument



For indoor use only



Ambient temperature range +5°C to +40°C



Use in a well-ventilated area.



Relative humidity not exceeding 80%



Mains supply fluctuation not exceeding 10%

Warning



ALL UNITS MUST BE GROUNDED

Check the line supply is sufficient to meet the power requirement of the unit!

Warranty

Dynalab Corp. provides a 90 day warranty for the units in this series.

This warranty does NOT apply if damage is caused by fire, accident, misuse, neglect, incorrect adjustment or repair, damage caused by incorrect installation, adaptation, modification, fitting of non-approved parts or repair by unauthorized personnel. When returned the defective products, customers should be responsible for the shipping and insurance costs

LIMITATION OF LIABILITY

NOTWITHSTANDING ANY OTHER PROVISIONS HEREIN, UNDER NO CIRCUMSTANCES IS EITHER PARTY LIABLE FOR ANY CONSEQUENTIAL, SPECIAL, INCIDENTAL, INDIRECT, MULTIPLE, ADMINISTRATIVE, OR PUNITIVE DAMAGES, OR ANY DAMAGE OF AN INDIRECT OR CONSEQUENTIAL NATURE ARISING OUT OF OR RELATED TO ITS PERFORMANCE, WHETHER BASED UPON BREACH OF AGREEMENT, WARRANTY, OR NEGLIGENCE AND WHETHER GROUNDED IN TORT, CONTRACT, CIVIL LAW, OR OTHER THEORIES OF LIABILITY, INCLUDING STRICT LIABILITY, EVEN IF ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES. THE COMPANY'S TOTAL LIABILITY INCLUDING, BUT NOT LIMITED TO, LIABILITY FOR INDEMNITY, DEFENSE, AND HOLD HARMLESS OBLIGATIONS IS LIMITED TO NO MORE THAN THE AMOUNT PAID TO THE COMPANY UNDER THE CUSTOMER'S ORDER AND THE CUSTOMER AGREES TO INDEMNIFY THE COMPANY FOR ANY EXCESS AMOUNTS. TO THE EXTENT THAT THIS LIMITATION OF LIABILITY CONFLICTS WITH ANY OTHER PROVISION(S) OF THIS AGREEMENT, SUCH PROVISION(S) WILL BE REGARDED AS AMENDED TO WHATEVER EXTENT REQUIRED TO MAKE SUCH PROVISION(S) CONSISTENT WITH THIS PROVISION

Overview

Rockers – The platform on the mixers move in non-horizontal direction as the motor rotated, i.e. the rocking movement. There are two types of rockers provided: 1, the gyration type and the wave type. With tilted angle in one end, the gyration mixers gyrate in three-dimension. This mixing action is suitable for full flashing some floated object by liquid, such as staining and de-staining gels and low foaming mixing purpose. The wave type is based on see-saw action to create wave-like mixing of the liquid and suitable for Petri-dish and culture fl

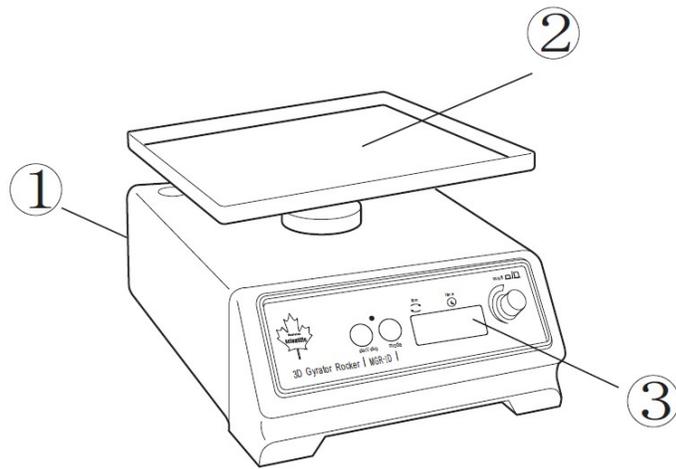


Figure 4: Overview of the mini scale 3D gyrotor rocker (RCK-31). ① Electrical socket; ② Slip-proof platform; ③ LED display on Digital front panel

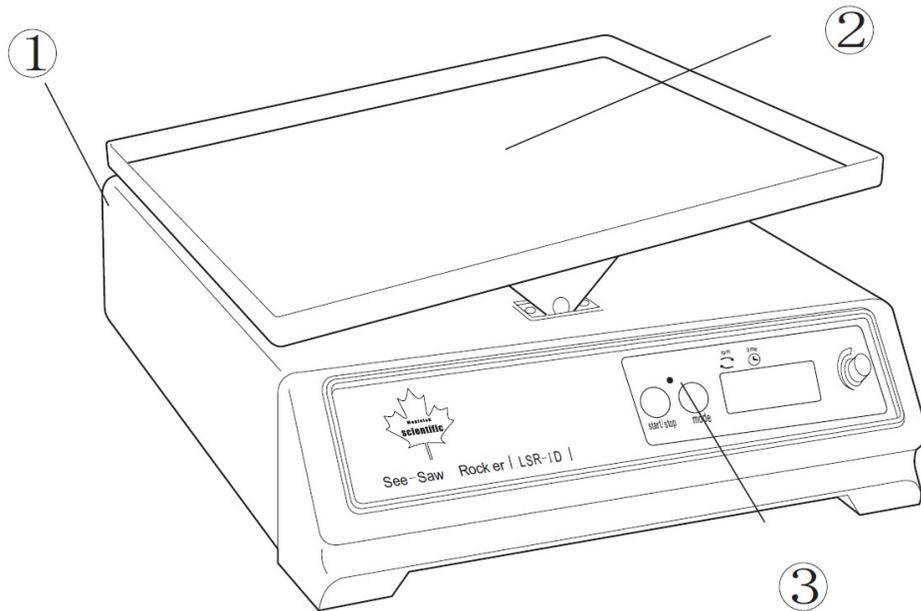


Figure 5: Overview of the lab scale see-saw rocker (RCK-21). ① Electrical socket; ② Slip-proof platform; ③ Digital front panel

Operation

Always install the carrier or platform before turning on the machine. All platforms or carriers are shipped in pre-installed status. For safety reason, please check all the locking screw and tighten again if necessary. The locking screws might be loosened during transportation!

Place the machines on the flat and steady surface and keep away from other objects for safe operation.

Check the electrical safety status and the power switch must be in “OFF” position before plug into the power outlet. The machines come with IEC electrical socket and double fuses for safety operation.

For the 3D Gyrator Rockers, adjust the tilted angle before loading the samples. Set the speed to the minimum rpm. And examine the nut underneath the center cylinder shaft turning front, then stop the machines and tilt the platform to desired angle.

Figure 13: Overview of head box .

Load the samples first before turning on the machine. Be aware of loading sample evenly and never overload the samples.

Always start with low speed and gradually adjust the speed, especially for the analog model.

There are two different types of control in most of the mixers: digital and analog. Both control modes can adjust the speed and timer of the mixers.

1. Digital Control of Speed and Timers

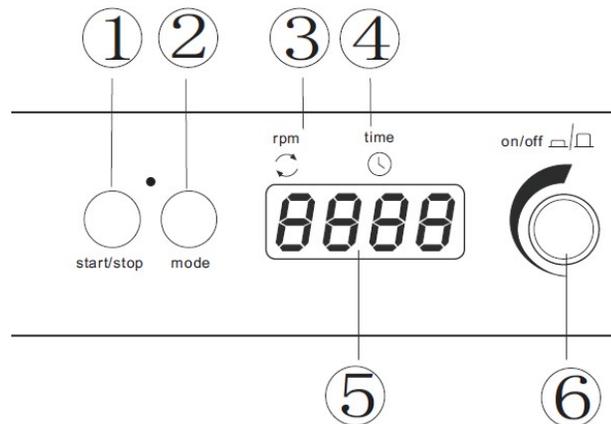


Figure 14: Overview of the front panel of the digital control mode. ①Start/stop button; ②Mode button; ③Indicator beneath “rpm”; ④ Indicator beneath “time”

There are two buttons and one knob on the digital panel: The **knob** is the main switch for turning on the machine and adjusting the speed and timer; the **mode** button has the

selection function to either adjust the timer or the speed; the **start/stop** button is used to start or stop the mixing process. The panel has LED numeric display and red indicators. When starting the mixers, the red indicator between the **start/stop** and **mode** buttons illuminate, and when pressing the **mode** button, the red indicators underneath the **rpm** and **minute** alternatively illuminate to show the status of display.

1.1 Press the **knob** to turn on the unit. The LED display the number of last saved rpm and timer setting. And the indicator underneath the **rpm** illuminate, adjust the rpm by the knob to desired value. And move the illuminated indicator from underneath **rpm** to **minute** by pressing the **mode** button, the display will show the set timer and change to the desired timing value, and finally press the **start/stop** button to start the machine. If using the **knob** to turn off the machine, the set timer and speed will automatically be saved, and carry on the next time operation.

1.2 Adjust the timer: press **mode** button until the indicator underneath of **min** illuminate, turn the **knob** to desired count-down minute. To disable the timer, just turn the **knob** to ---, the unit will continuously operate until manually stopping the unit. When the timer reaches to zero, the unit stops and sounds an alert.

The default time unit is minute (displayed nnnn), but it can be changed to Hour: Minute (displayed H:nn) or Minute: Second (displayed nn:ss). To do so, turn off the machine completely with the main electrical switch, press the **knob** and **mode** button simultaneously, and turn the machine back on. The display will display **88:88** and then off. Turn the machine on using the **knob**, the display will show nn:ss (for minute: second) or H:nn (for hour : minute) or nn (for minute), and turn the **knob** to the desired unit and press the **knob** again to turn off the machine, the display will show OFF. When turning on the machine next time, the newly set unit will take effect.

1.3 The speed and timer can be adjusted during operation without stopping the machine. Suggest users to use lower speed to start the machine and adjust the speed to optimum mixing status slowly to avoid the spill or safety problems during the operation.

2. Analog Control of Speed and Timers

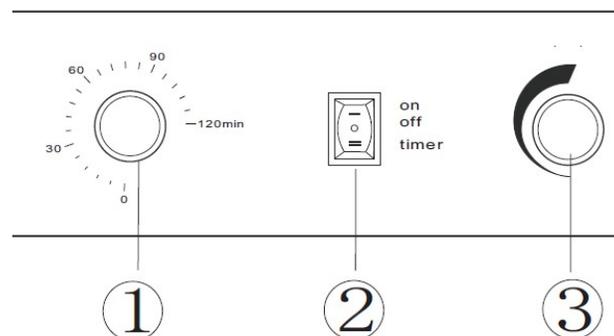
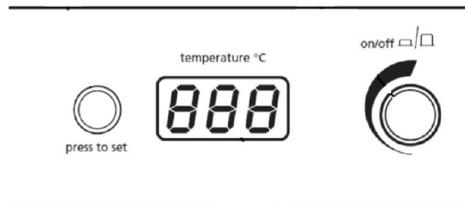


Figure 15: Overview of the front panel of the analog control mode. ①Timer knob; ②Main switch; ③Speed knob

There are two knobs and one main switch on the front panel of the analog types of the mixers. The main switch has three stages function: **ON, OFF and Timer**. For continuous operation, place the switch to the “**ON**” position, and turn the rpm knob (on the right hand side) to desired speed. When using timer, place the switch to “**Timer**” position, and adjust the speed using speed knob. **Before turning on the machine, please turn the speed knob all the way to the left hand side (minimum level)!** And adjust the speed gradually.

3. The temperature setting of the mixer incubator (*MI series)

The mixer incubators have two separate control panels: The bottom panel is for the control of speed and timing which is exactly the same setting procedures describe above; and the top control panel is for temperature control (see Figure 16). To set the temperature, hold the set button, and turn the knob to the desired temperature. After release the set button, the temperature setting takes in effect immediately. For CMI-100, the temperature can only be set from 5°C above room temperature to 60 °C maximum.



Maintenance and Service

This range of equipment only requires routine cleaning for the maintenance. Before cleaning, **Always unplug the equipment from the electrical outlet.** Use soft cloth with mild detergent to clean the surface of the equipment.

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