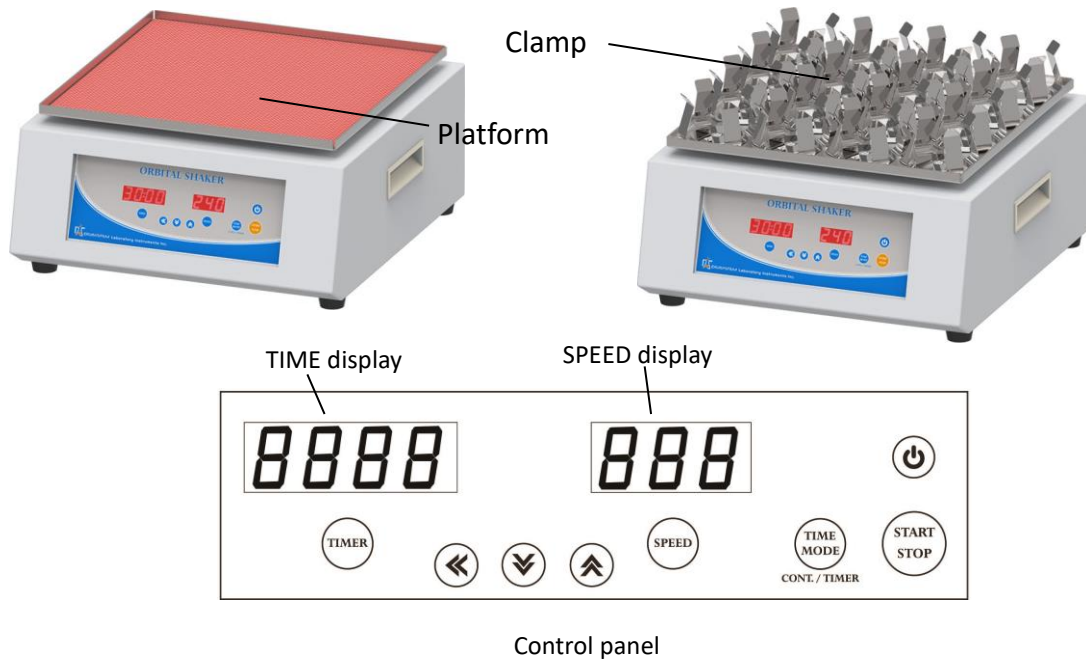










# INSTRUCTION MANUAL FOR ORBITAL SHAKER OS-D SERIES




## Warnings:


- \* Do not remove the machine during operation.
- \* Do not disassemble the rotator by yourself. In the event of a malfunction, the rotator should be repaired by a qualified technician. Before repairing, turn off the power.



## Steps:

1. Place the orbital shaker on a flat and stable bench top or ground. Plug the digital rotator into a properly grounded outlet which corresponds with the electrical requirements on the label back on machine.
2. Place and fix the specimen on the Platform or clamps. Press  key to be power on. First, the SPEED and TIME display will show the speed and time value that you set last time. If the previous timed mode setting is Cont. mode (Continuous mode), you will see 'cont' on TIME display.
3. Setting time: Press the  key to select the time mode (Timed mode or Continuous mode).
  - 3.1 If the continuous mode is selected, the TIME display will show 'cont'.
  - 3.2 If the timer mode is selected, the previous setting value will show on the TIME display.
    - 3.2.1 Press  key, and the digits on the TIME display is flashing. (Time display is Hour: Minute; for the last one minute, it will display the remaining seconds)
    - 3.2.2 Press  key to select the digit.
    - 3.2.3 Press  key or  key to adjust the value.
    - 3.2.4 Press  key or any other keys to save the time value.
4. Setting speed:
  - 4.1 Press  key, and the digits on the SPEED display is flashing.

4.2 Press  key to select the digit.

4.3 Press  key or  key to adjust the value.

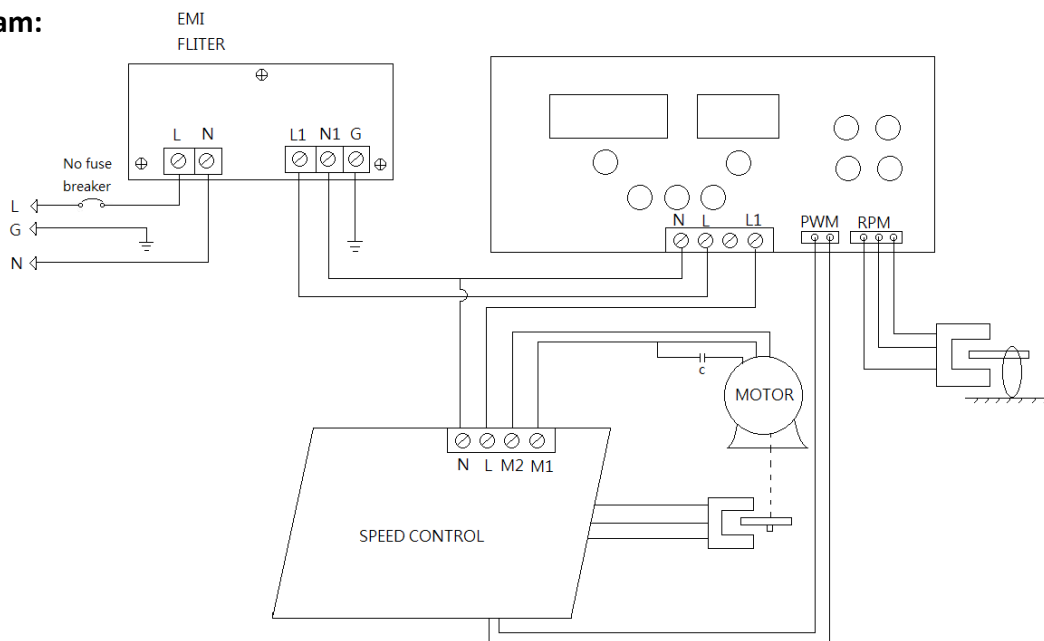
4.4 Press  key or any other keys to save the speed value.

5. Press  key to start the machine. During the operation, you can press  key to stop the machine anytime.

### Maintenance and care:

Keep the machine clean all the time, so no routine maintenance is required. Cleaning can be done with a damp cloth. Avoid the use of solvents as they may damage the machine housing.

### Circuit Diagram:



### Troubleshooting Guide

**Caution:** Always disconnect the power cord before troubleshooting.

Trouble	Cause	Remedy
Instrument inoperative	Power cord not connected to outlet.	Plug in the power cord.
	Dead power output.	Change to different output.
	Fuse blown.	Change a new fuse.
	Defective electronic component.	Contact your distributor for repair.
Error message: run	Before the motor stops completely, press	Re-star the centrifuge, after the motor stops
Platform doesn't rotate	Power is not on.	Press POWER key.
	Start/Stop key is not pressed.	Press the Start/Stop key.
Platform doesn't rotate (Error message: Er-P)	Belt is broken or worn-out.	Contact your distributor for repair.
	PC board is broken.	Contact your distributor for repair.
	Motor is broken.	Contact your distributor for repair.
Platform keep rotating when time is up	PC board is broken.	Contact your distributor for repair.
Speed is abnormal	PC board is broken.	Contact your distributor for repair.
No signal on LED DISPLAY	PC board is broken.	Contact your distributor for repair.