# Do you need a proper shaker for your test? Lab Companion gives you a guide.



















Shakers and Incubated Shaker are used for efficient performance in applications like cell culture and chemical reactions. We provide models of various sizes, refrigeration, heating, and open type, so users can choose one according to their requirement but it might make them confused due to a lot of cases.

Let's see how to choose a suitable shaker for your experiment.

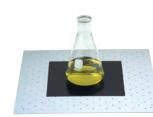
#### 1. Sample container

Choose the sample container first according to its sample characteristic. In case using standard flask and tubes, tube holder and clamp available to attach on the orbital shaker can be used generally. But microplate or funnel flask needs the specific shaker designed for using them. For non-standard containers, they can be installed on the flexible accessories such as spring wire rack or lab sticker, so consider to select that shaker offering these kinds of accessories and having the low RPM.



< Accessories for standard containers >

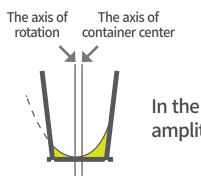




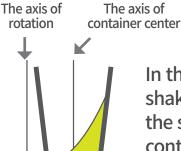
< Accessories for non-standard containers >

# 2. Amplitude size

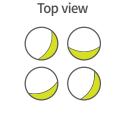
Amplitude size is one of the important parameters when choosing a shaker. Especially for cell culturing, an air circulating on the growth medium is affected directly by the amplitude size. 25.4mm amplitude size is enough for a general experiment but the bigger size is better when the capacity is over 2L or the sample of cell culturing is sensitive. While for the small containers like microcentrifuge tube and microplate, the smaller amplitude size is recommended.



In the case of using a suitable amplitude, available shaking uniformly.



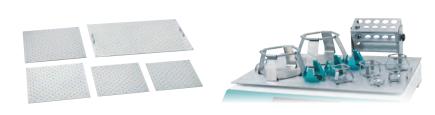
In the case of using a big amplitude, shaking is not good because of the sample leans to the wall of the container.



In the case of using a small amplitude, a reproducibility is poor because of the liquid is out of phase.

#### 3. Available to install various containers

Choose a shaker offering a flexible accessory like Universal platform when need to install various containers at once.



< Universal Platform >

## 4. Shaking Speed

The user sets a shaking speed depends on the sample characteristic. In case the user needs a stackable shaker to cover a lot of samples at once, the available shaking speed can be effected according to the loaded sample weight.



Shaking is well in proper shaking speed.



No shaking in slow shaking speed.



In fast shaking speed, the liquid spills over, or is smeared to the lid leads to occur an error.

## 5. Temperature

In case a test requires keeping a stable temperature, choose the shaker having a heating or refrigeration system. For example, thermophilic needs 80°C temperature, and protein expression needs 4°C cold storage.



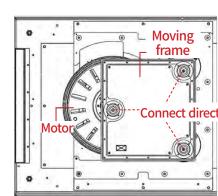
The discovery of heat-resistant bacteria living in a Yellow Stone National Park above 80°C improves PCR technology, which is the basis for biotechnology



Rocker is used in 4°C cold storage for protein expression.

## 6. Weight

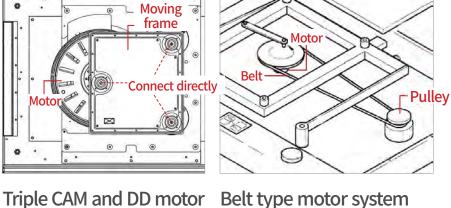
Shaker's weight is determined according to a shaking speed range and amplitude size to prevent rocking it while shaking or reciprocating motion. And in case the sample is heavy, a motor that can shake a heavyweight in the stable is one of the parameters to be considered.



system that can shake

stably a heavyweight

mixing.



that uses for a lightweight

mixing.

When needs to shake a lot of samples at once, a stackable type or a mass shaking floor type is suitable. Mass shaking requires enough foot space, so select an appropriate model depends on the width of an installation place.

7. Number of samples and an installation place





< Stackable type and mass shaking floor type suitable for loading a lot of samples at once >