



Choosing the Right Magnetic Stirrer for Your Lab

A Magnetic Stirrer Purchasing Guide



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Mixing is an integral part of various laboratory tasks. With there being so many different lab stirrer types and specifications available in the market, deciding on the most suitable one to get for your qualitative or quantitative research laboratory can be overwhelming. Depending on the volume and viscosity of your samples, you can either get magnetic or overhead stirrers.

Whether for use in chemistry, biology, or microbiology applications, magnetic stirrers are designed to offer low-noise, better efficiency, lesser instances of external parts breaking or wearing out, and are preferred over overhead stirrers. This type of stirrer operates with magnetic bars that work best with commonly used glass containers for various chemical reactions. A magnetic stirrer may also come with a hot plate for simultaneous stirring and heating of samples.

Getting a magnetic stirrer compatible with your specific applications will ensure optimal solution mixing. Considering the number of magnetic stirrer models to choose from, it is essential to take some time and effort to filter out what is best for your experiments. To make things easier and for you to not feel too overwhelmed with options available, Sciologex has prepared this simple guide with key points to take into account before purchasing the ideal magnetic stirrer for your laboratory.

What does your application require?

- *Liquid Volume and Liquid Viscosity*

If you are working with relatively small experiments and sample volumes, [magnetic stirrers](#) are the recommended option. As an initial step, be sure to check the maximum capacity of the unit you are buying. Most compact magnetic stirrer models have a 3 liter capacity, with at least a 1 liter allocation for surfactant solutions and a 250ml allocation for an emulsion. Some may also offer a 10L max stirring capacity like the [SCIOLOGEX SCI550-S LED Digital 7x7 Hotplate Stirrer](#), a 20L stirring capacity like the [SCIOLOGEX SCI340-Pro Circular-top LCD Digital Hotplate Stirrer](#).

If you are dealing with larger sample volumes, more viscous liquids, or thicker suspensions, you may need mechanical stirring to get the job done, opting for [overhead stirrers](#) is recommended.

- *Temperature Requirements and Frequency of Use*

Before buying a magnetic stirrer, go through your laboratory's daily procedures and requirements. Do your experiments deal with heated solutions? If you rarely heat and stir samples, you can consider procuring a simple magnetic stirrer and a separate hot plate.

On the other hand, for labs that frequently heat and stir samples, you can look for magnetic hotplate-stirrers instead. Take note of how hot your solutions should be and the power needed to achieve your required temperature. Hot plates consisting of a metal plate or a ceramic plate can heat up between 662°F (350°C) and (932°F) 500°C.

If evenly heating liquids is necessary, go for hotplate stirrers that allow for the usage of heating blocks. You may also want to shop for models with a brushless stirrer motor as this can provide stirring consistency and longevity.

Other features to consider when buying a magnetic hotplate stirrer include the heat output of the hotplate, minimum and maximum heating temperature, and minimum and maximum adjustable temperature.

Available hotplate/stirrers from Sciologex are classified as either one of the three classes below. To learn more about the classes below, click [here](#).

- Class A: High temperature > 500C
- Class B: Temperature > 300C
- Class C: Temperature > 200C

- *RPM Requirements*

Heating your liquids at constant rotations per minute is crucial. Minimum speed for most magnetic hotplate stirrer models is around 1000rpm while powerful models have a maximum speed of up to 2000rpm like the [SCIOLOGEX SCI-Stir Magnetic Stirrer](#). Units with RPM between 1000-15000 should be fine for most laboratories. For hotplate/stirrers that can offer 0-1500rpm or 100-1500rpm, be sure to browse SCIOLOGEX's [analog](#) and [digital](#) hotplate stirrers.

- *Type of Experiment*

For experiments where you need to attentively monitor pH levels of buffered systems, check out magnetic hotplate stirrers that can connect with pH probes. You can also get units

Models with free software for control and data logging are also available such as the [SCILOGEX SCI340-ProT Circular-top LCD Digital Hotplate Stirrer](#). Some may allow saving of stirring and heating functions like the [SCILOGEX SCI340-Pro Circular-top LCD Digital Hotplate Stirrer](#).

For applications that call for very precise temperatures or minimum variation in temperatures, you might want to shop for heating blocks or water baths instead of hotplates or hotplate stirrers.

- *Other items to evaluate*

- ☐ Working Temperature - if you have a humid lab environment or if you will be mixing high temperature materials, think of the maximum allowed working temperature and humidity of the magnetic stirrer unit you are buying.
- ☐ Environmental Conditions - if you will be using the magnetic stirrer under a potentially hazardous environment, in the field where it may be subjected to weather, or be frequently in contact with chemicals or washed with water, you should shop for a unit featuring a chemically resistant plate.
- ☐ Surface Dimension - the size of beakers you can use will always depend on the surface dimension of your magnetic stirrer unit.
- ☐ Size of Magnet to Use - working with beakers in different sizes would require differently sized magnetic bars as well. The size of the magnetic bar to use is usually 0.5-1.0cm smaller than the diameter of your beaker.
- ☐ Safety Features - built in safety features may increase the price of a unit but is an important factor to assess before making a purchasing decision. Some units may come with over temperature controls that turn off a hotplate if an over temperature situation occurs or may show a hot warning sign if temperature is above 50C like the [SCILOGEX SCI280-Pro Circular-top LED Digital Hotplate Stirrer](#).

What are the different types of magnetic stirrers to consider?

Below are the common magnetic stirrer types and their brief descriptions. Review your applications and identify which one would work better with your application:

- *Analog Hotplate/Stirrers*

Most analog hotplate stirrers feature electronic speed control for constant speed even during changes in sample load. Analog hotplate-stirrers usually have low heat temperature stability. If you are looking for a cost-effective and durable [Analog Hotplate-Stirrer](#) with high magnetic adhesion, you can check out the [SCILOGEX SCI340-HS Circular-top Analog Hotplate Stirrer](#).

If you only require an [Analog Stirrer](#), you may want to look at the [SCILOGEX SCI-Spin Stirrer](#) which features automatic reverse rotation for ideal stirring, the [SCILOGEX SCI-PB Circular-top Analog Magnetic Stirrer](#) which comes with an ABS plate, or the [SCILOGEX SCI7-S 7x7 Analog Magnetic Stirrer](#) which comes with a ceramic-glass plate.

- *Digital Hotplate/Stirrers*

Digital hotplate stirrers either have LCD or LED displays that show rotation speed and temperature, offering easy adjustment until appropriate target values are reached. These digital units also feature an electronic speed control that ensures constant speed maintenance.

Looking for Digital Hotplate/Stirrers? Consider getting the CE Marked and cTUVus approved [SCILOGEX SCI550-Pro 7x7 LCD Digital Hotplate Stirrer](#), [SCILOGEX SCI340-Pro Circular-top LCD Digital Hotplate Stirrer](#), or [SCILOGEX SCI280-Pro Circular-top LED Digital Hotplate Stirrers](#).

Interested only in [Digital Hotplates](#)? Check out the [SCILOGEX SCI550-H LED Digital 7x7 Hotplate](#) with a ceramic-glass hotplate and an ambient temperature of 550C.

- *Multi-position Hotplate/Stirrers*

This type can heat and/or stir multiple beakers or flasks at the same time on the platform. By simultaneously heating and stirring a number of solutions on one model, reaction conditions are set to be consistent throughout all individual samples.

Need chemical-resistant [multi-position hotplate/stirrers](#) with long life brushless motors? If you have lesser solutions to work with, you can go for the SCIOLOGEX [SCI-S10 10-Place Analog Magnetic Stirrer](#) that can provide consistent sample conditions across 10 solutions.

- *Cell Culture Stirrers*

Cell culture stirrers are specifically designed for careful mixing of cell suspensions, microcarrier cultures, and culture broths. Offering gentle stirring that prevents cell shearing, cell culture stirrers promote higher cell yields. These also provide low heat output to safeguard sensitive cell or tissue cultures and are suitable for use in incubators and cold rooms.

For optimal suspension cell culture, opt for units with various program modes, slow acceleration and deceleration, with timer functions and easy to read displays.

When it comes to value and performance, you can always rely on Scilogex. All Scilogex digital hotplates/hotplate-stirrers come with a FREE PT1000 sensor to accurately measure and control a medium's temperature. Models incorporating brushless DC motors ideal for long term stirring and longevity including the [SCIOLOGEX SCI340-HS](#), [SCIOLOGEX SCI340-Pro](#), [SCIOLOGEX SCI340-ProT](#), and [SCIOLOGEX SCI550-Pro](#) are available as well.

Meet the requirements for all your areas of research with our large inventory of innovative lab equipment including magnetic hotplate/stirrers, spin bars, stands, reaction blocks, [hotplate stirrer accessories](#), and a range of lab supplies. With lab products manufactured in an ISO9001 facility, available warranty options, and dedicated lab experts for pre-purchase support and product recommendations, Scilogex guarantees quality and excellence.



If you require product assistance or have any product inquiries,
feel free to contact us at 877-724-5643 or email us at info@scilogex.com today!

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