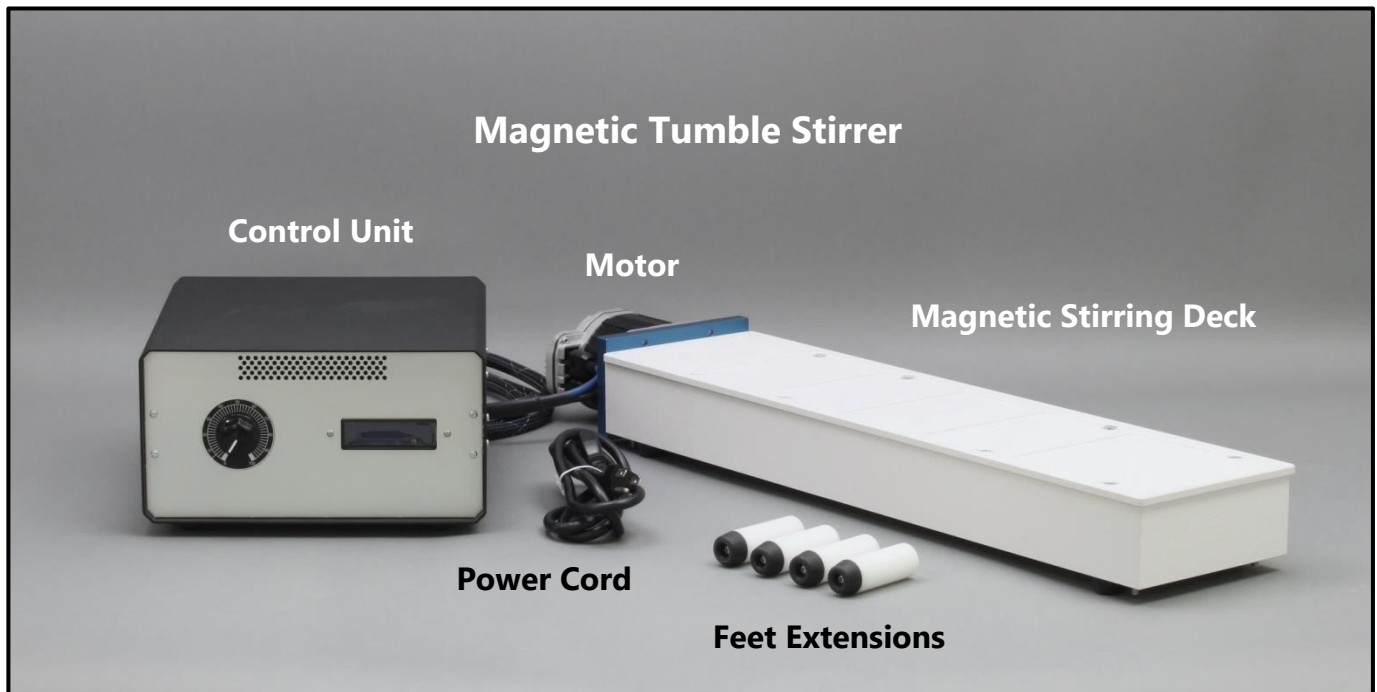


**OPERATION MANUAL FOR
ALLIGATOR MAGNETIC TUMBLE STIRRER*
Custom VP 710E5X
*US Patent # 6,176,609**



WARNING!!!!

- Be advised that the Magnetic Tumble Stirrer has very strong magnetic fields coming from a 48 MGO Neodymium Iron Boron drive magnet.
- **People with pacemakers should not get closer than 24 inches.**
- Remove all magnetic influenced tools and objects from the immediate area to prevent them from being pulled onto the magnet or from striking anyone as the objects are pulled towards the magnet.
- Keep credit cards, watches and other magnetic sensitive items at least 24 inches from the Magnetic Tumble Stirrer's magnetic fields.
- Do not operate the Magnetic Tumble Stirrer in the close proximity to large pieces of aluminum or ferromagnetic material. For more information see TUMBLE STIRRER INSTALLATION section.

TUMBLE STIRRER INSTALLATION

Caution

Operating the Tumble Stirrer in close proximity of ferromagnetic, aluminum materials, or both, is not recommended.

We recommend that the Magnetic Tumble Stirrer be installed as far away from ferromagnetic material as possible. The closer and larger the magnetic material is to the Magnetic Tumble Stirrer, the greater the torque that is required and the slower the maximum speed will be.

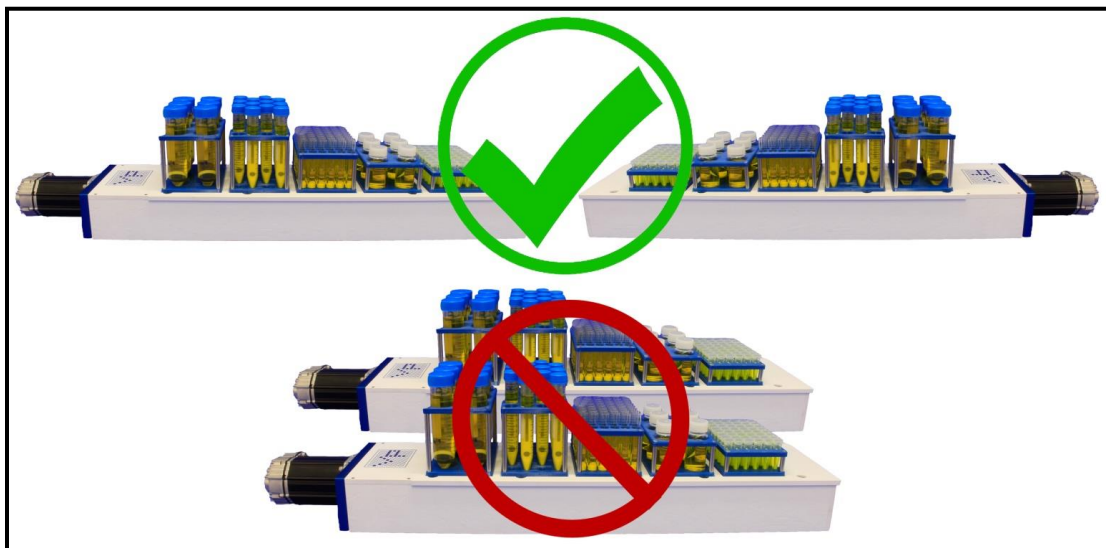
Large and/or thick aluminum objects should also be avoided. Although aluminum is not magnetic it will cause a drag on the magnetic field due to eddy currents being formed when magnetic flux lines pass through it. The eddy current effect will also cause the aluminum to heat up. A large mass of aluminum will cause a significant drag and result in undue strain on the motor. This strain could damage the motor. This is not covered under V&P Scientific, Inc.'s warranty for this product.

If installing on a metallic table or in a laboratory hood with a metallic base, use the feet extensions to raise/elevate the tumble stirrer away from the metallic base.

If installing away from ferromagnetic materials is unavoidable, test run parameters before operating instrument without supervision for long periods. The Tumble Stirrer will turn itself off when temperature of the motor exceeds its safety limit. If this happens, turn off power supply and allow motor to cool before re-starting. Modify operating parameters to prevent over-heating. Repeated over-heating could reduce product longevity.

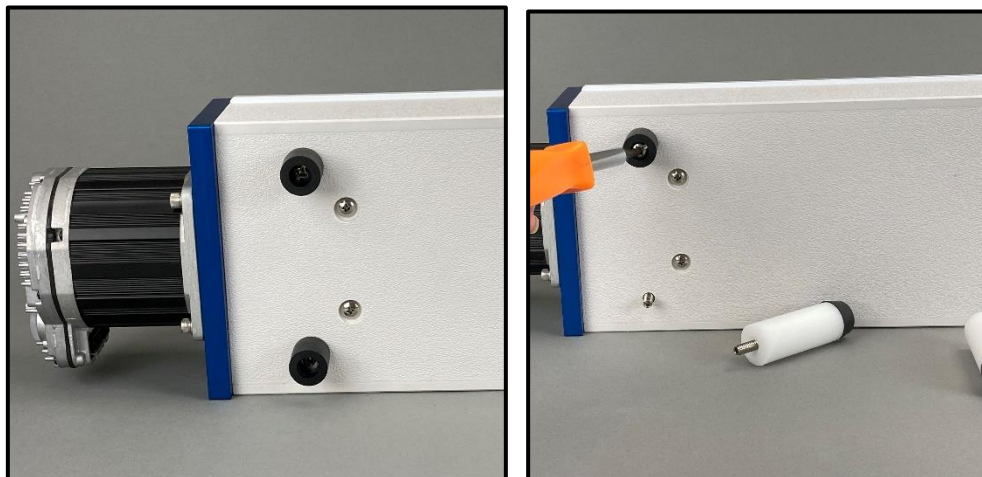
Multiple Unit Set-up:

When running two tumble stirrer units, position them end to end and not side by side to minimize the magnetic interaction between the stirrers. If positioned side by side, make sure they are more than 1 foot apart from one another.

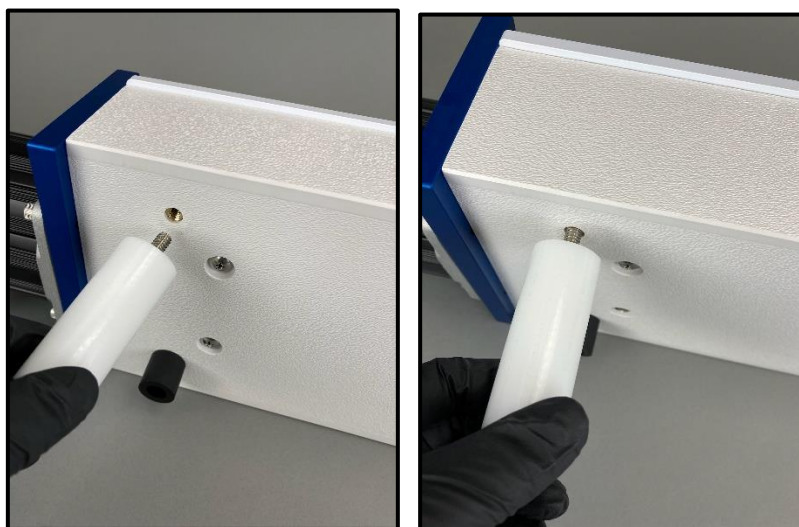


Feet Extension Installation/Removal:

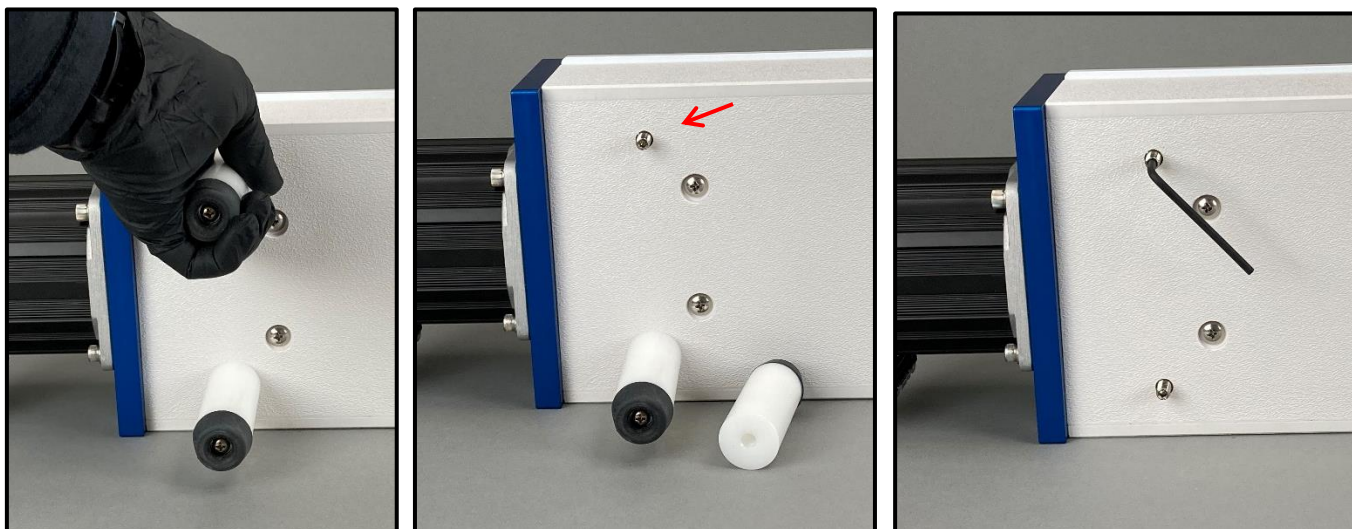
To change to the extensions with the rubber feet, start by removing the short ones. Turn the tumble stirrer unit on its side. Using a Philips head screwdriver remove the screw that holds the short rubber feet to the stirrer.



The extensions are shipped with set screws threaded into the ends without rubber feet. Simply screw the extensions into the holes from which the short rubber feet were removed.

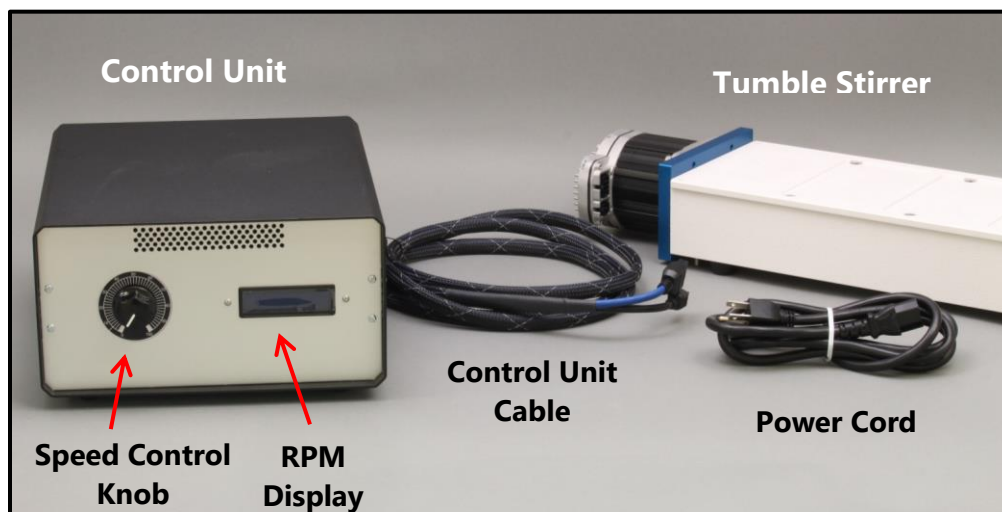


To change back to the short rubber feet, unscrew the extensions by hand. Note that sometimes the set screw will stay the hole in the stirrer instead of the extension. Remove the set screw from the stirrer with 1/8th Allen wrench and replace into the extension for safe keeping. Take care to not cross-thread the screw in the threads of the extension.

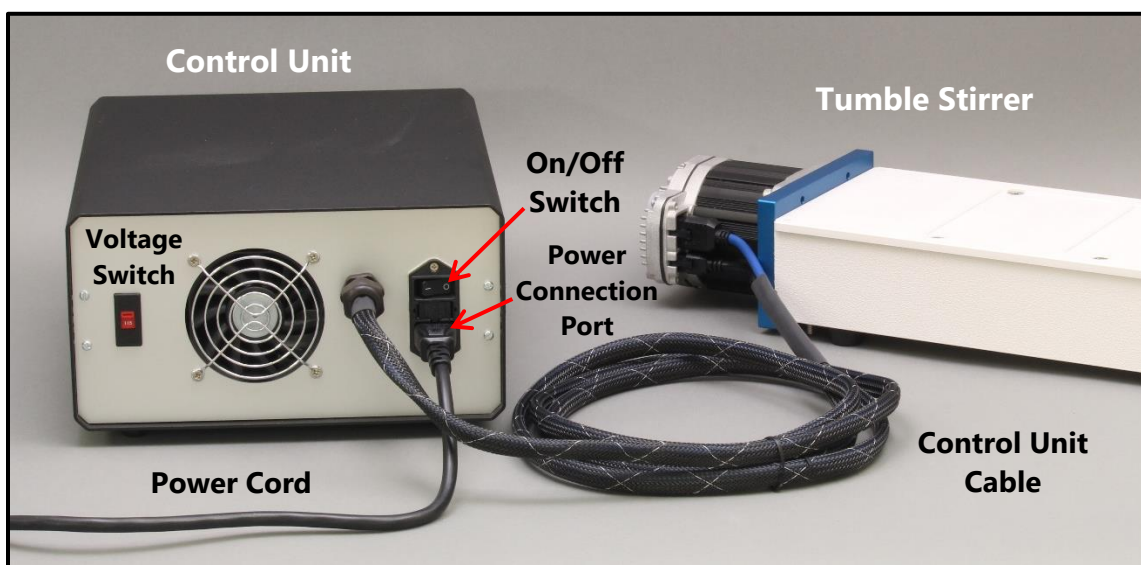
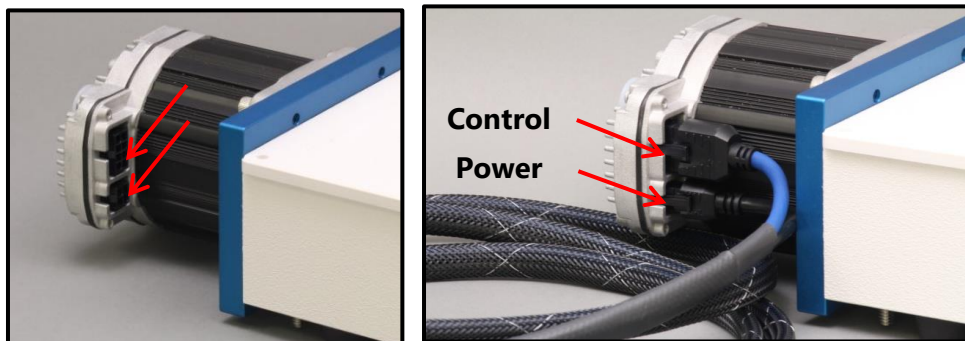


Connection of Power and Control Cables:

Organize the tumble stirrer, control box, cables and power cords so they are configured as shown in the following photo:



Attach the Control Unit Cable (thick black cable with two plugs) to the Tumble Stirrer using the two connection ports found on the side of the motor. The smaller plug goes into the bottom port, while the large plug with blue cable into the top one. Each plug has a release tab the needs to be on the outside when plugged in. Attach the Power Cord to the Power Connection Port on the back of the Control Unit (see the photos below).



Voltage Switch:

The Voltage Switch is set at factory to voltage requested by customer when ordered. The Control Unit will be marked with that voltage. And the Voltage Switch will show that voltage as well. ***If the wrong voltage is used, the resulting damage to the Control Unit is not covered under the Stirrer warranty.***



If voltage Switch is changed by customer and the wrong voltage is used, the resulting damage to the Control Unit is not covered under the Stirrer warranty.

TUMBLE STIRRER OPERATION

The optimal operating speed of the Tumble Stirrer is dependent upon the particular application in use and needs to be empirically determined. Factors to consider in determining optimal stir speed are the application, fragility of the objects being stirred, size, shape, composition of the test tube, vial, bottle or microplate well (glass, polypropylene or polystyrene), depth of the microplate wells, volume and viscosity of the liquid, and the type of magnetic stir element (bar, disc, custom shape) used.

In general, stirring microbial cultures works best at low speeds. Stirring to resolubilize extracts, or to stir in deep well microplates, requires high speed. The Tumble Stirrer is well suited for either of these types of applications since it can function at minimum and high RPM. Again the speed of stirring needs to be determined empirically for the application.

Most tumble stirring applications require a stir speed between 300 – 500 RPM. The VP 710E5 series is capable of a maximum stirring speed of 1000 RPM.

The Stirrer Control Unit has an ON/OFF Power Switch and a Speed Control Knob. The Stirrer Speed is manually controlled by Speed Control Knob. The speed of stirring can also be pre-set and the power turned on and off.

PRODUCT MAINTENANCE

GENERAL PRODUCT CARE

- When not in use, turn the power switch off.
- Do not place the control unit in chambers with high humidity or temperatures above 40°C.
- The deck of the Tumble Stirrer is made of ABS. To clean the deck use a mild detergent followed by wiping dry.
- The motor of the VP 710E5 series Tumble Stirrers is a powerful servo motor. This motor is designed for high torque and long-term stirring applications.

If technical assistance is required, contact V&P Scientific, Inc. at 858-455-0643 or sales@vp-sci.com

ADDITIONAL TUMBLE STIRRER SPECIFICATIONS

Equipment Rating	120V~, 230V~, 5A, 50/60 Hz
Not to be used with power above this rating	
Ambient Environment:	Indoor use
Safety Approval:	CE Compliant

SAFETY PRECAUTIONS

The use of Magnetic Tumble Stirrer, like that of all utilization of concentrated power, is potentially hazardous. The degree of hazard can be greatly reduced by proper design, selection, installation, and use, but all hazards cannot be completely eliminated. V&P Scientific assumes no liability for the customer's failure to comply with safety requirements and practices.

WARRANTY

V&P Scientific, Inc. warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for one year. This warranty begins from the date of delivery by V&P Scientific.

In the event this product fails under normal laboratory conditions within the specified period of time because of a defect in material or workmanship, V&P Scientific will, at its option, repair or replace the product. Damage to the product caused by user negligence is not covered.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Please contact V&P Scientific at the above address for return authorization and shipping instructions.

This warranty is made in lieu of other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose. V&P Scientific shall not be liable for loss or damages arising from the use of these products nor for consequential damages of any kind.