A Geno Technology, Inc. (USA) brand name

Vertical Rotating Mixer

Cat. No. BT936

1-800-628-7730 ♦ 1-314-991-6034 ♦ info@BTLabSystems.com

Thanks for choosing the Vertical Rotating Mixer. This operation manual describes function and operation of the instrument. To use properly, please read this manual carefully before operating the instrument.

IMPORTANT SAFETY INFORMATION

Users should understand how to use the instrument properly before operating it.

The operation, maintenance and repair of the instrument should comply with the basic guidelines and warning below. Ignoring these instructions will affect the life of the Instrument and safety precautions.

- The instrument should only be used with the original power adapter
- These units are designed for laboratory use by persons knowledgeable in safe laboratory practices.
- The operator should never open or repair the instrument. Opening or repairing the instrument will void the guarantee and can cause accidents.
- The power plug should safeguard against an electric shock. The 3-pin plug supplied with the instrument should be matched with a suitable grounded socket.
- The instrument should be used in an area with low temperature, little dust, no water, no sunshine or hard light and with good air circulation. Do not use where there is corrosive gas or a strong magnetic field. Keep far away from central heating, camp stove and other hot sources. Do not put the instrument in a wet and dusty area. The vent on the instrument is designed for aeration. Do not wall up or cover the vent.
- Power off when not in use. If the instrument will not be used for a long period, unplug, and cover with a piece of cloth to protect it from dust.
- In case of the following, unplug the instrument at once and contact BT Lab Systems.
    - The instrument encounters liquid
    - The instrument gets soaked or burned
    - The instrument emits an abnormal sound or smell
    - The instrument is dropped or the outer shell damaged
    - The instrument functions abnormally.

MAINTENANCE

The instrument and the accessories should be cleaned with a cloth dampened by alcohol.
If there are smudges on the instrument, clean it with a dry cloth.

INTRODUCTION

The Vertical Rotating Mixer is used to provide efficient and gentle mixing, keeping the biological samples in suspension. It is suitable for preventing blood coagulation, latex diagnosis, immunoprecipitation, and other similar applications. It can be used in the laboratory for a wide range of tubes (1.5ml to 50ml).

KEY FEATURES

- Exquisite appearance and sturdy construction; Special machine foot adsorption desktop, super stable and shockproof.
- Stepper motor with stable performance, high power torque, low noise, stable low speed, strong high speed, and long service life.
- The three-inch color screen hologram displays all the parameters, graphical displays the current running attitude mode of the test tube and sounds an alarm after the end of the operation.
- Built-in M1~M10 kinds of mixing mode, one key to call, convenient and fast, to meet more experimental needs.
- Built-in loops programmable, can achieve circulation between modes, can achieve unattended switching mode operation.
- The test tube module is easy to assemble and equipped with fixed screws, which is more reliable and durable. Multiple combinations of modules, compatible with 1.5-50ml test tubes to meet more experimental requirements.

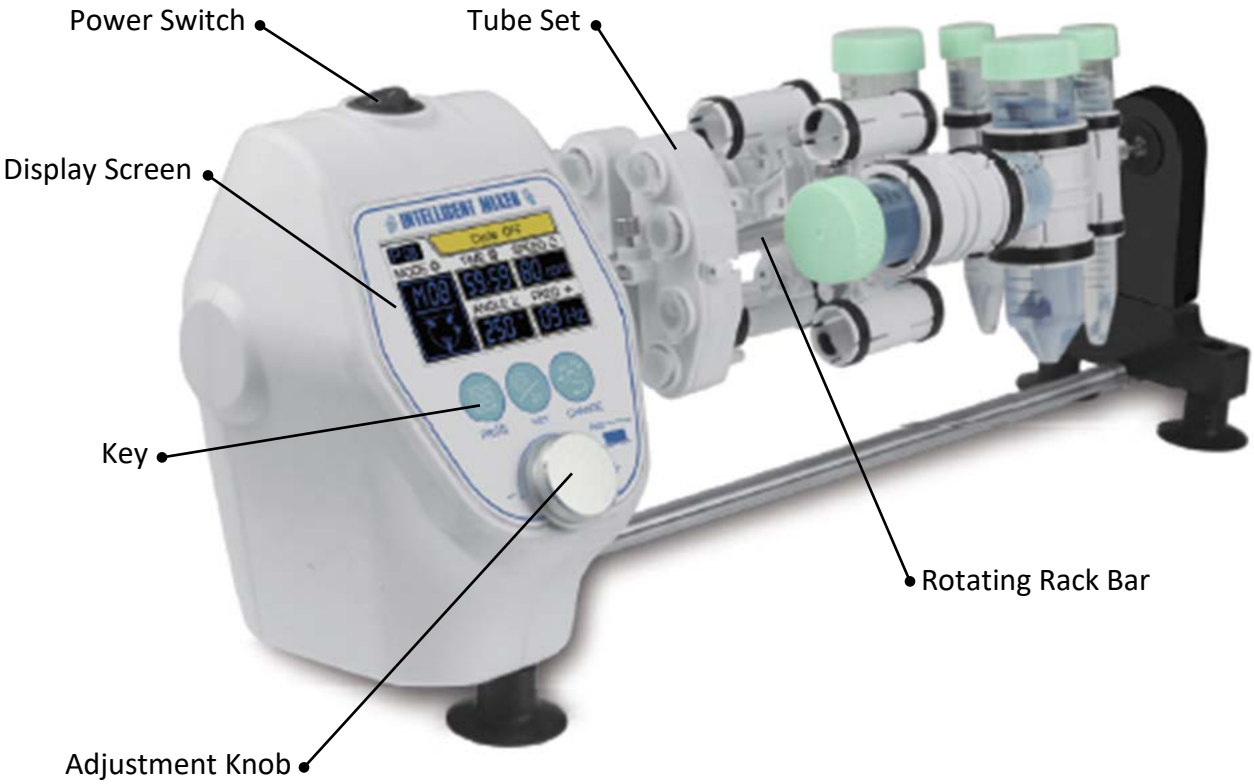
TECHNICAL SPECIFICATIONS

Model	BT936
Speed Range	1~80rpm
Time Range	1s~99min59s
Operating environment temperature	+2~50˚C
Relative Humidity	No more than 80%
Adapter Input	AC 90~230V, 50/60Hz
Adapter Output	DC 24V, 2A
Power	48w
Dimension (W x D x H)	462 x 150 x 180mm
Net Weight	2.1kg

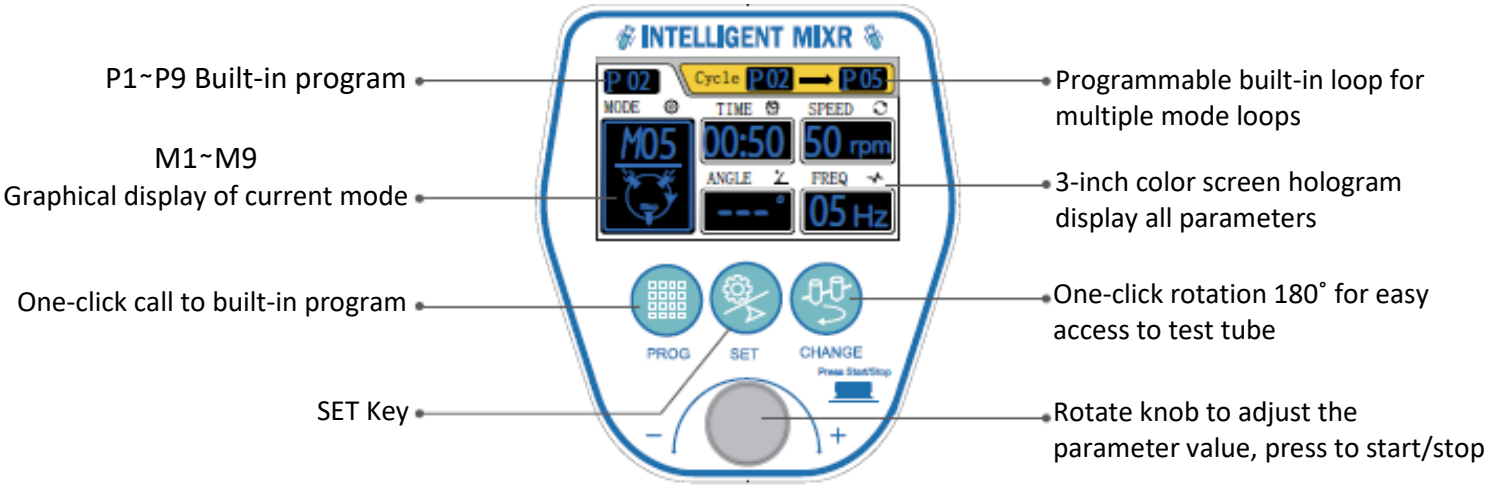
OVERVIEW

This section mainly describes the instrument's mechanical structure, the keyboard, and functions of each key. Please learn this chapter well before the Vertical Rotating Mixer is operated for the first time.

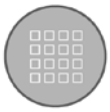
EQUIPMENT OVERVIEW



KEYBOARD AND DISPLAY PANEL



KEY FUNCTION



PROG

To set or select programs P1~P9

Controls  on the display screen

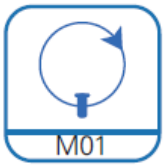
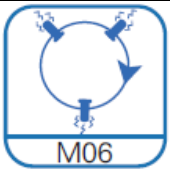
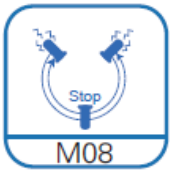
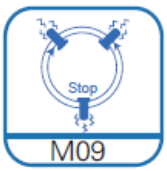
SET

To continue to the next parameter setting on the display screen
MODE>TIME>ANGLE>SPEED>FREQ
Use the knob to adjust the parameter values

CHANGE

Rotates the bar 180˚ without having to start/stop program cycle.
Convenient for test tube placement and easy access

MODES M1~M10

	Continuous clockwise rotation Rotation speed and running time are adjustable
	360˚ clockwise rotation Stops for 1.5 seconds at initial point Rotation speed and running time are adjustable
	180˚ clockwise rotation Stops for 2 seconds at initial point Rotation speed and running time are adjustable
	135˚ clockwise rotation, vibrates 2 seconds 225˚ clockwise rotation, stops for 2 seconds at initial point Frequency, rotation speed, and running time are adjustable
	135˚ clockwise rotation, vibrates 2 seconds 135˚ clockwise rotation, vibrates 2 seconds 90˚ clockwise rotation, stops for 2 seconds Frequency, rotation speed, and running time are adjustable
	135˚ clockwise rotation, vibrates 2 seconds 135˚ clockwise rotation, vibrates 2 seconds 90˚ clockwise rotation, vibrates 2 seconds Frequency, rotation speed, and running time are adjustable
	110˚ clockwise rotation, stops for 2 seconds 110˚ counterclockwise rotation, stops for 2 seconds 110˚ counterclockwise rotation, stops for 2 seconds 110˚ clockwise rotation, stops for 2 seconds at initial point Frequency, rotation speed, and running time are adjustable
	110˚ clockwise rotation, vibrates for 2 seconds 110˚ counterclockwise rotation, stops for 2 seconds at initial point 110˚ counterclockwise rotation, vibrates for 2 seconds 110˚ clockwise rotation, stops for 2 seconds at initial point Frequency, rotation speed, and running time are adjustable
	110˚ clockwise rotation, vibrates for 2 seconds 110˚ counterclockwise rotation, vibrates for 2 seconds 110˚ counterclockwise rotation, vibrates for 2 seconds 110˚ clockwise rotation, vibrates for 2 seconds Frequency, rotation speed, and running time are adjustable
	Clockwise and counterclockwise swinging Angle, rotation speed, and running time are adjustable

OPTIONAL ACCESSORIES

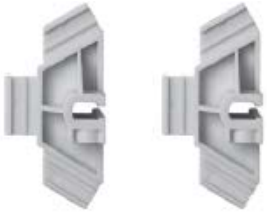
Different size tube holders and accessories can be combined to setup a more suitable module.

BT936-A
50ml Tube Holder

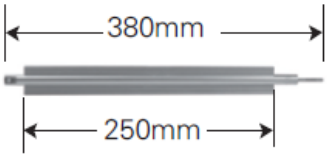
BT936-B
15ml Tube Holder

BT936-C
1.5/2ml Tube Holder

BT936-D
Tube Set Connector



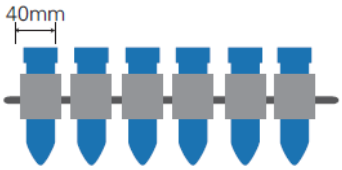
BT936-E
Rotating Rack Bar



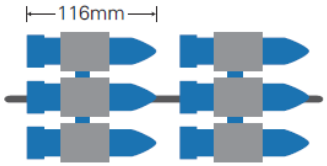
Detachable/ for fixed combination module commonly used

Module Combination Reference

Group A



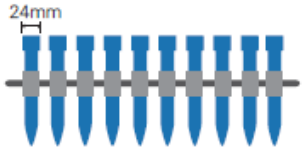
Max. 6x2 row/rack (50ml tube x 12)
Vertical Group



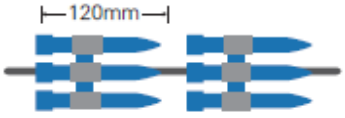
Max. 2x2 row/rack (50ml tube x 12)
Horizontal Group

BT936-A (3) + BT936-D (1) = 1 row set

Group B



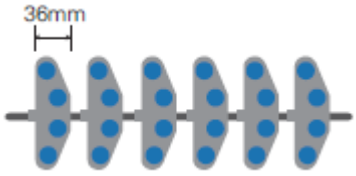
Max. 10x2 row/rack (15ml tube x 20)
Vertical Group



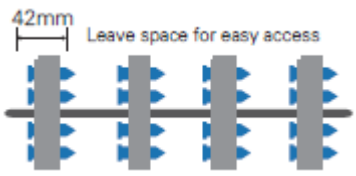
Max. 2x2 row/rack (15ml tube x 12)
Horizontal Group

BT936-B (3) + BT936-D (1) = 1 row set

Group C



Max. 6x2 row/rack (1.5/2ml tube x 48)
Vertical Group



Max. 4x2 row/rack (1.5/2ml tube x 32)
Horizontal Group

Mix for more combinations

OPERATION GUIDE

Program Setup

1. Turn on the unit using the power switch. Press the “PROG” key until the screen displays the program number that is to be setup.
2. Press the “SET” key to continue to the “MODE” section on the screen. Rotate the adjustment knob to select the preferred mode for the specific program number
   NOTE: Each mode has specific parameters that can have values adjusted. Refer to section *Modes M1~M10.*
3. Press the “SET” key to continue to the next section on the screen, using the knob to adjust the values.

   If the display screen shows  , this means the parameter setting is not available under the current selected mode.
4. Press the adjustment knob to start/stop the single program operation.

Multi-Program Cycle

To use multiple programs in one cycle, first set the parameter values for each program number.

NOTE: The cycle operates only in sequential order, so set the appropriate MODES for each program in the order in which they are to be performed.

For example:

Cycle P02~P05, will operate going in order starting from P02>P03>P04>P05.

1. After the programs have been set up, press both the “PROG” key and “CHANGE” key to switch the Cycle setting from off to on. Repeating this step will also switch the Cycle setting from on to OFF.
2. Use the “SET” key to navigate to the Cycle setting on the screen. Rotate the adjustment knob to select the preferred program number for the start of the cycle, then press the “SET” key to select the program number for the end of the cycle.
3. Press the adjustment knob to start/stop the operation.
4. The display screen interface 

will show the program that is currently in use. The unit will create a buzzing prompt when the cycle is complete.

WARRANTY

Our company guarantees that this unit is warranted against defective material and workmanship for a period of one year from the date of shipment. We will repair or replace the defective equipment returned during the warranty period free if the equipment has been used under normal laboratory conditions and in accordance with the instruction in this manual. The following defects are specifically excluded:

1. Damage caused by accident, misuse, or abuse
2. Damage caused by disaster
3. Repair or modification by anyone else without our authorization
4. Corrosion due to the use of improper solvent or sample
5. Defects caused by improper operation
6. Use of fittings or other spare parts supplied by different manufacturers

This warranty does not apply to platinum wire and all the accessories.

A return authorization must be obtained from us before returning any product for repair on a freight prepaid basis.

For any inquiry or request for repair service, please contact BT Lab Systems via the email below.

E-Mail: info@BTLabSystems.com

TECHNICAL SUPPORT

BT Lab Systems offers technical support for all its products. If you have any questions about the product's use or, operation, please contact BT Lab Systems at the following info.

E-Mail: info@BTLabSystems.com