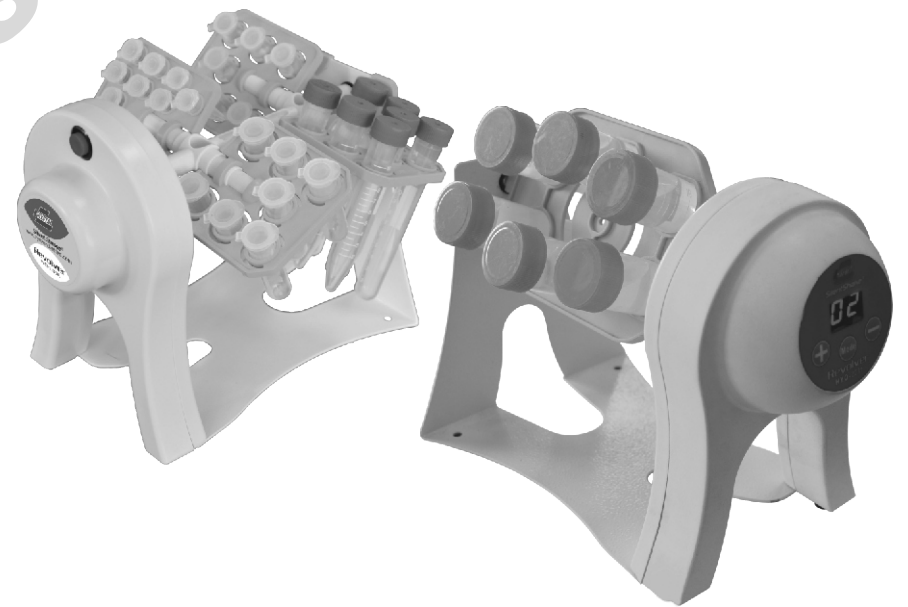


SilentShake®

Tube Revolver



Crystal Technology & Industries, Inc.

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Introduction

Thank you for choosing CTI's product. This product was designed to mix reagent, solution, and other chemical substances for use in the research, medical science, biological engineering, chemical science, and pharmaceuticals industries. The Crystal SilentShaker series Tube Revolver is simple in appearance, and is constructed through precise manufacturing and strict quality control for stable operation, precise control, and reliable quality.

Before you use the unit, please read this entire manual carefully to understand how to operate, and maintain. Your satisfaction with the unit will be increased if you take the time to read about its safety and operational notices.

Keep this manual on-hand so it can be used by all operators of the unit. Be sure all operators of the unit are given appropriate training before you put the unit in service.

Cautions for Usage

1. Be sure you follow any city, county, or other ordinances in your area regarding the use of this unit.
2. Use only approved accessories. Do not modify system components. Any alterations or modifications to your instrument may be dangerous and will void your warranty.
3. Do not modify the power cord provided with the unit. If the plug does not fit an outlet, have a proper outlet installed by a qualified electrician.
4. Please only use the enclosed power supply adaptor to supply the unit.
5. Place the unit on level and sturdy surface to avoid vibration and noise.
6. Do NOT top off tube to avoid splashing while stirring.
7. DO NOT clean the unit with corrosive or flammable liquid.
8. Keep the unit stable at work.
9. Do not mix the flammable or any hazardous liquids.

Receiving and Inspection

Your satisfaction and safety require a complete understanding of this unit, including its proper function and operational characteristics. Be sure operators are given adequate training before attempting to put the instrument in operation.

1.1 Inspection: Upon delivery please inspect the package for visible exterior damage, note and describe on the freight bill any damage found and enter your claim on the form supplied by the carrier.

1.2 Inspect for concealed loss or damage on the unit itself, If any, the carrier will arrange for official inspection to substantiate your claim. Save the shipping crate until you are sure the unit has been delivered in good condition.

1.3 Return Shipment: If for any reason you must return the unit, please contact your distributors customer service department.

1.4 Accessories: Make sure that all of the equipment indicated on the packing slip is included with the unit. Carefully check all packaging materials before discarding.

Disposal and Recycling Information



The symbol shown to the left indicates that this product shall not be treated as household waste. In line with EU Directive 2012/19/EU for waste electrical and electronic equipment (WEEE), this electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product by returning it to the point of sale or to your local municipal collection point for recycling.

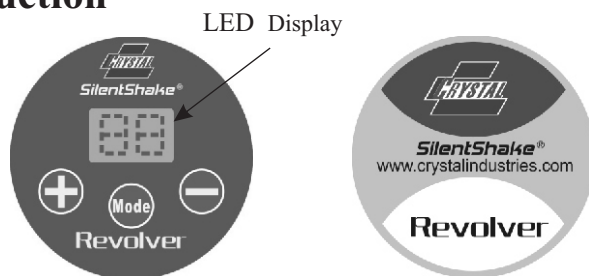
Features

- Assortment of rotisseries included
- Selection of reciprocating or rotating operation mode
- Stepless speed regulation
- LED indication of speed
- Manual rotating direction change

Specifications

Product Name	Tube Revolver with Fixed Speed					Tube Revolver with Variable Speed and Digital Display				
Model	TR-01A (HYQ-1130A)	Power Supply	110V, 60Hz	Plug	US	TR-02UA (HYQ-1131A)	Power Supply	100~240V 50/60Hz	Plug	US
	TR-01E (HYQ-2230E)				Eur.					E-EN-AU
	TR-01EN (HYQ-2230EN)		220V, 50Hz		UK	TR-02UW (HYQ-2231W)				
	TR-01AU (HYQ-2230AU)		AU							
	TR-01SA (HYQ-2230SA)		SA		TR-02USA (HYQ-2231SA)	SA				
Rotation Speed	22rpm					10-40rpm				
Capacity	84x0.5ml/0.8ml tubes, 60x1.5ml/2.0ml tubes, 28x5ml/7ml tubes,28x10ml/15ml tubes, 6x50ml tubes									
Ambient Temp.	4℃~60℃									
Speed Control	Fixed					Keystroke				
W×D×H	22.5×14.8×19.5cm					26×14.8×19.5cm				
Normal-reverse Rotation	Available					Unavailable				
Operation Mode	Rotating					Rotating / Reciprocating				
Indication	NA					LED				
Power	4W					10W				
Weight	≤0.8kg					≤1kg				
Certifications	CE, RoHS, WEEE					CE, RoHS, WEEE, CSA				

Panel Instruction



1. “+” Speed-up
2. “-” Slow down
3. “Mode” Selection of operation mode
4. LED To show the settings and working status

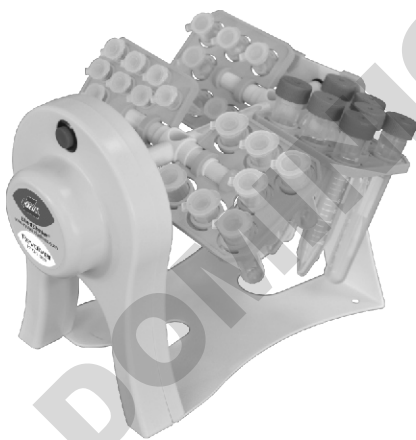
Operation Instruction

● Tube Revolver with Fixed Speed

1. Make sure the environment and power supply are correct, connect the power plug to the outlet, and install the rotisserie axle.
2. Mount the tube rack on the rotisserie axle.
3. Place the O rings into the groove on the rotisserie axle.
4. Load the tubes onto the tube rack, and make sure they match perfectly.
5. Turn on the power switch.

Note: * You can reverse rotation by pushing the rotisserie to the opposite direction.

**50ml tube rack could be installed with or without the rotisserie axle.



● Tube Revolver with Variable Speed and Digital Display

1. Install the rotisserie with reference to “6. Rotisserie Installation”.
2. Mount the corresponding tube on the rotisserie.
3. Turn the power switch to “on”.
4. Switch the operation mode between “rotating” and “reciprocating” by pressing “Mode” button.

5. Set the speed by pressing “+” “-” button when it is on “rotating” mode.

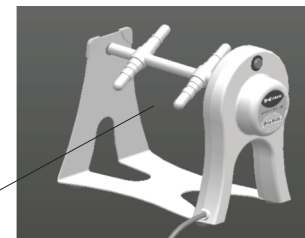
Note: * 50ml tube rack could be installed with or without the rotisserie axle.

**LED shows “000” on “reciprocating” mode; LED shows the last speed setting value when it is on “rotating” mode.



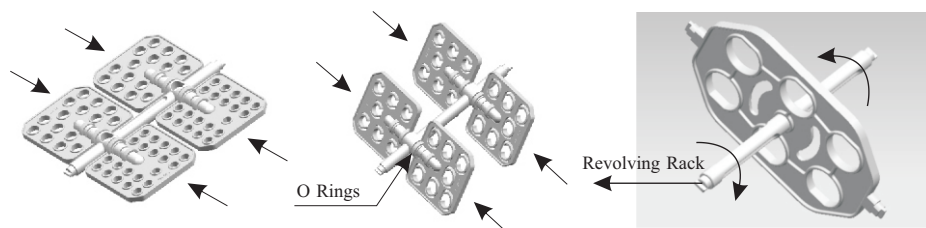
Rotisserie Installation

1. Hold the tube revolver housing firmly, insert one end of the rotisserie axle into the slot, turn it until it clicks into place, and insert the other.
2. Mount the desired tube rack.



Rotisserie axle

3. Place the O rings into the groove on the rotisserie axle.

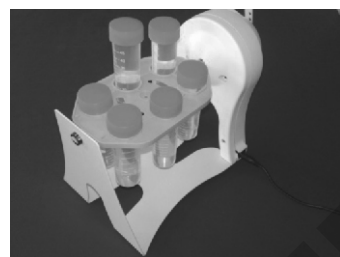


4. Load the tubes onto the tube rack.



Please follow the notes below for ensuring long-term usage:

1. Place the tubes steady in working condition.
2. To ensure Tube Revolver with Variable Speed and Digital Display optimal performance, please reduce the load or keep the load balanced if there is any noise.



Cleaning

For safe use, please clean the tube revolver as follows:

- Unplug the power cord before cleaning
- Clean the unit by a soft damp cloth or a mild non-corrosive ($\text{pH} \leq 8$) detergent
- Do not spray the unit
- Be sure that the unit is completely dry before operation.
- Please wear gloves when cleaning

Trouble Shooting

Error	Cause	Solution
Unit does not start	Power connection is off	Turn on the power switch or connect the power cord to the mains socket
	Rotisserie Installation Error	Reinsert rotisserie into the cross recess
	Fuse Open	Change Fuse

Packing List

NO.	Description	Model	Qty	Remark
1	Machine		1	
2	Operator's Manual		1	
3	Rotisserie for 10ml/15ml tubes	TRA01(HYQF-8)	2	For rotisserie axle
4	Rotisserie for 5ml/7ml tubes	TRA02(HYQF-9)	2	
5	Rotisserie for 1.5ml/2ml tubes	TRA03(HYQF-10)	2	
6	Rotisserie for 0.5ml/0.8ml tubes	TRA04(HYQF-11)	2	
7	Rotisserie axle		1	
8	Rotisserie for 50ml tubes	TRA05(HYQF-12)	1	For revolving rack
9	Revolving Rack			
10	Power adaptor	24V,1A	1	For Tube Revolver with Variable Speed and Digital Display
11	O Ring		10	

WARRANTY CARD

Save this card carefully please. When you need service, contact the service company with card & invoice.

Warranty Card

User Name		Telephone	
Address			
Zip Code		E-mail	
Product Name		Model	
Serial number		Purchase Date	

- Warranty Scope:
1. Warranty period is 24 Months from purchase date.
- Warranty is not valid under the following circumstances:
1. Warranty term is expired.
2. Damage due to improper use, maintenance or handling.
3. Unmatched serial numbers, or modification of serial numbers.

Customer service hotline: 972-934-2525
User: the above information should be completed by the seller.

Maintenance records

The following should be completed by maintenance staff.

First	Name of service		Maintenance date	
	Address		Telephone	
	Maintenance sheet number		Maintenance staff signature	
Second	Name of service		Maintenance date	
	Address		Telephone	
	Maintenance sheet number		Maintenance staff signature	
Third	Name of service		Maintenance date	
	Address		Telephone	
	Maintenance sheet number		Maintenance staff signature	