



## **user instructions**

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### **ROTATOR**

#### **MODEL: 099A CR4012 & CR4024& CR4024CE**

The Glas-Col laboratory rotator is a small bench top rotator designed to hold various types of laboratory glassware. The rotator has variable speed drive and is adjustable from 0 to 83 revolutions per minute. A closely balanced load will produce the most uniform rotation. There are several different types of heads and holders available for a variety of laboratory glassware.

### **Rotator Set Up**

Unpack the rotator and set it on the bench where desired. Suction cup rubber feet hold the rotator securely in place. The cord-attached controller can be positioned next to the rotator on the bench top or away from the rotator if the unit is to be used in an enclosure such as a fume hood.

Plug the power cord from the controller into a grounded 120-volt (240 volts for CR4024) outlet. The power switch, fuse and speed dial are all located on the front of the controller.

The rotator is furnished with a test tube holder for thirty small test tubes 10 to 18mm in diameter and up to 125mm long. An exclusive feature of the test tube holder is a slip clutch drive, which permits insertion or removal of tubes without turning off power or reducing rotator speed.

### **Attaching Clips to Disk**

The friction drive test tube head is shipped without clips attached to the disk to allow the user to attach whichever clip size is needed for the application. To attach the clips to the disk, see Figure 1. By using a nut-driver or wrench to hold the nut on the backside of the disk, the screw can be tightened to achieve proper tension to securely hold the test tube. When using the small clips, tighten the screw to achieve a distance of 1/8", see Figure 2. This tension will accept a tube from 10mm to 18mm in diameter..

## **Attaching Disk to Rotator**

Loosen the knobs on each side of the rotator and position the motor housing so the motor shaft is pointing upward. Retighten knobs.

Slide the aluminum disk over the drive bar and align pin into small hole in disk. Slide the nylon spacer over the aluminum drive bar, then flat washer and then tri-pointed knob. Tighten knob so there is no back and forth movement of the nylon spacer.

Loosen the knob on each side of the rotator and tilt the housing to the desired angle for rotating the tubes and then retighten both knobs.

## **Placing Tubes in Clips**

Tubes can be inserted or removed by one of two methods. Tubes can be slid radially from the side of the clip. This method is preferable because the tube is less likely to break. As the diameter of the tube increases, inserting them using this method requires a bit more effort. It may be necessary to loosen the screw slightly to allow the larger tubes to slide through easier yet maintain proper tension to hold the tube in place. Tubes can also be inserted from the top, and removed in the same way. EXERCISE CAUTION WITH ALL GLASSWARE WHEN INSERTING INTO THE CLIPS.

## **Operating the Unit**

Make sure all of the glassware is secure and will clear the work bench before turning the speed control to the desired setting. Flip the switch to the ON position with the motor speed control set to the lowest possible setting. Observe the rotator make one revolution at a very slow speed. Once satisfied that the vessels clear the work bench and any other adjacent obstructions, set the motor speed to the desired setting.

## **Maintenance**

Every six months, periodic checking of the motor brushes is recommended especially if unit is used in an elevated temperature environment such as an incubator. Most motor failure can be attributed to brush wear. To check the brushes, unplug the unit and remove the back cover of the motor housing. The brush holders are located at the end of the motor. These are the two black plastic circular areas, 180 degrees apart. The caps covering each brush holder have a slot in them to allow access to the brush by unscrewing them. Check one side at a time.

The brush can now be removed by turning the motor on its side to allow the brush to fall out of the holder. A spring used to hold the brush in will fall out first. Check the brush size. Lengths of 3/16" or less should be replaced with new ones.

To replace the brushes, simply slide the new brush into the holder, curved surface first. Replace the spring and compress it by replacing cap and tightening it back into holder.

The rack should be protected from spills, mechanical damage and corrosive atmospheres so far as possible. Any spills should be cleaned quickly and any damage should be repaired immediately

## **Agency Approvals**

The products defined in the document are CE marked and conform to the following standards:

- EMC: EC Directive 89/336/EEC  
EN55011 class B also referred to as CISPR 11 class B  
EN50082-1
- Safety: Safety Directive 73/23/EEC  
EN601010-1: 1993 safety requirements for electrical equipment for  
measurement, control and laboratory use-General requirements.

## **Specifications:**

Ambient Temperature:  $77^{\circ}\text{F}/25^{\circ}\text{C} \pm 5^{\circ}\text{C}$

Operating Environment: 0 to 90% relative humidity  
 $32$  to  $100^{\circ}\text{F}/0$  to  $37^{\circ}\text{C}$

## **Limited Warranty**

Glas-Col warrants products of its manufacture to be free from defects in material and workmanship for **one year** and agrees to repair or replace without charge any products found defective upon examination at the factory. With proper care and operation, Glas-Col products will give long and efficient service. Chemical spillage, overloading and general misuse will greatly reduce the service life. Glas-Col is not responsible for damage to apparatus due to improper installation or through attempts to operate the apparatus beyond its rated capacity, intentional or otherwise.

## **Limitations of Warranties**

APART FROM SUCH WRITTEN STATEMENT OF WARRANTY, THERE ARE NO WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY, WHICH EXTEND BEYOND THE DESCRIPTION OF THE PRODUCTS ON THE FACE HEREOF.

Glas-Col products are intended only for legal and legitimate purposes in commercial laboratory and industrial settings.

Glas-Col reserves the right to make product refinements without prior notice.