user instructions

711 HULMAN STREET
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VARIABLE SPEED STIR TESTER

Models:

099D HST230N	5amps,240V	50/60Hz	099D HST30N	5amps,120V	50/60Hz
099D HST23005	3amps,240V	50/60Hz	099D HST3005	5amps,120V	50/60Hz
099D HST23010	5amps,240V	50/60Hz	099D HST3010	5amps,120V	50/60Hz
099D HST23020	3amps,240V	50/60Hz	099D HST3020	5amps,120V	50/60Hz

Locate and identify parts shipped with the stirrer drive:

Motor speed control	Motor	90 degree lab clamp
Chuck/arbor assembly	Allen wrench	Propeller

Mount the motor on a ring stand or vertical lattice rod with the clamp provided.

Install the chuck assembly to the motor shaft using the allen wrench provided. Be sure you tighten the set screw on the flat spot on the motor shaft. Insert the metal stirring shaft in the chuck and tighten by hand.

Connect the motor cord to the control. This plug is polarized so that it can only be plugged in one way. Make sure the forward/reverse switch is in the center OFF position and the motor speed knob is turned fully counter clockwise. Plug the power cord into a properly grounded and polarized receptacle. Select the desired direction with the forward/reverse switch. Turn the motor speed knob clockwise to set the motor speed.

The display indicated speed (RPM) or torque in (oz. in.) and can be selected by the switch under the display. The info below is rated in lb.in. To convert multiply lb.in times 16 for oz.in rating conversion.

099D HST30N & HST230N	2500 RPM Max.	6.3 lb/in of torque max.
099D HST3005 & HST23005	500 RPM Max.	43 lb/in of torque max.
099D HST3010 & HST23010	250 RPM Max.	83 lb/in of torque max.
099D HST3020 & HST23020	125 RPM Max.	165 lb/in of torque max.

For best stability allow 15 minutes or so warm up time before using the system (motor does not need to run at this time).

The motor is a totally enclosed, ball bearing, reversible, permanent magnet type.

Always use proper safety equipment when stirring, for example, gloves, glasses, etc. Read and follow instructions that are supplied with your stirrer.

When reversing the motor direction, let the motor stop before changing direction.

The controller is protected against overloads with a circuit breaker. If the circuit breaker trips, an overload condition might have occurred.

Your stirrer drive requires very little maintenance. Keep it clean and avoid spills. Inspect the motor brushes occasionally (with the power cord disconnected) to make sure they haven't worn excessively. Do not use if electrical cords are worn or frayed. If you find it necessary to send it to the factory for repair, call for a return goods authorization number.

Output signals for recorders, etc. are available via the 4-pin socket on the rear of the controller with the following connections:

Pin #1 = -Common
Pin #2 = +Torque (1mV/oz.in.)
Pin #3 = +Speed (1mV/RPM)
Pin #4 = -Common

To utilize these outputs, purchase a mating cable and plug part number 099D A052060. Connect cable too high-impedance (1 meg ohm or more) of the external device which must be isolated from earth ground. Make sure that these inputs are uncommitted to ground, floating, and can sustain common mode voltage of 1500V above ground. Remove any connections grounding either input.

Warning: These connections are not isolated from AC line and are at a potential of 60-120 volts above ground. Do not touch or ground any of the four signal leads (Pins 1-4). A protective 1/16 amp fuse in series with the common terminals is provided in fuseholder on rear of the controller, but damage may result if a ground occurs. Replace only with a 1/16 amp fuse of the same type and rating.

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, overheating, 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. Normally expendable parts are not covered by this warranty.

LIMITATION OF WARRANTIES

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

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

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

Returns:

Call or fax Customer Service for a Return Goods Authorization (RGA) number before returning a Glas-Col product.

Reference the RGA number on the shipping box and on a written description of the problem.

A **20%** restock charge of the net price is charged for current style standard products returned to stock.

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