

Model 305 STIRRER OPERATING INSTRUCTIONS **Part Number 215391-C**

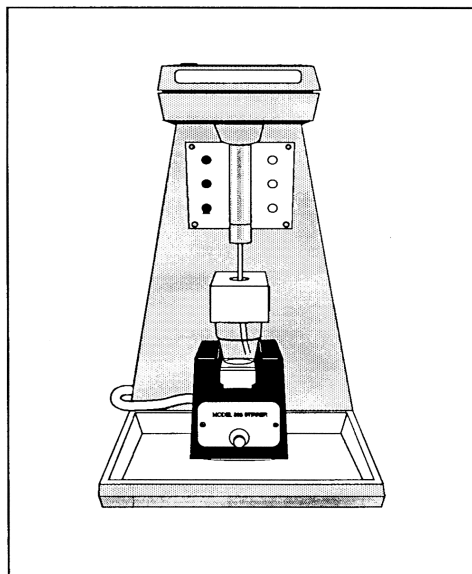


Fig. 1. Model 303A with Model 305 Stirrer.

SAFETY NOTICE: As defined in IEC Publication 348 ("Safety Requirements for Electronic Measuring Apparatus"), the Model 305 is Class III Apparatus, that is, it is apparatus in which protection against electric shock relies on the voltage in the apparatus being too low to be dangerous (Model 305 operates from -15 V provided by the Model 303/303A).

DESCRIPTION: The Model 305 Stirrer is specifically designed for use in conjunction with the Model 303/303A Static Mercury Drop electrode. The stirrer features an electronically generated rotating magnetic field (there are no moving parts) together with dual-speed operation in each of two control modes for maximum flexibility and utility. Operation is straightforward. A stirrer bar is placed in the cell, which is then secured in the usual manner. Then the stirrer is slid beneath the cell. The free end of the Model 305 cable connects to the STIRRER ACCESSORY connector on the back of the Model 303/303A. Stirring takes place as determined by the setting of the Model 305 Control switch and by the state of the other system instrumentation.

The Model 305 Control switch has five positions, OFF, MANUAL SLOW, MANUAL FAST, AUTO SLOW, and AUTO FAST. In the OFF position, the stirrer cannot be activated. In the MANUAL positions, it is continuously activated, the only requirement being that the Model 303/303A be powered. The SLOW and FAST stirrer rates are nominally 400 rpm and 700 rpm respectively, independent of the mode (MANUAL or AUTO). In the two AUTO positions, the stirrer is activated on sensing a STIR command from a controller (Model 254/254A, Model 384/384A/384B). When a logic 0 is present at pin 1 of the Model 303/303A Stirrer Accessory connector, the Model 305 Stirrer will be inhibited. When a logic 1 is present, the model 305 is activated. The timing of the control logic will depend on the user's operation of the Controller, as described in the instruction manuals for each.

The Model 305 uses solid-state circuitry for cool reliable operation. An oscillator develops an ac signal that is then divided down to provide coil-drive signals of the proper frequency. Transistor coil-drive circuits power the individual coils to produce the rotating magnetic field. Special logic circuits monitor the level on pin 3 of the Interface Connector and switch the oscillator on or off to provide the auto-mode control.

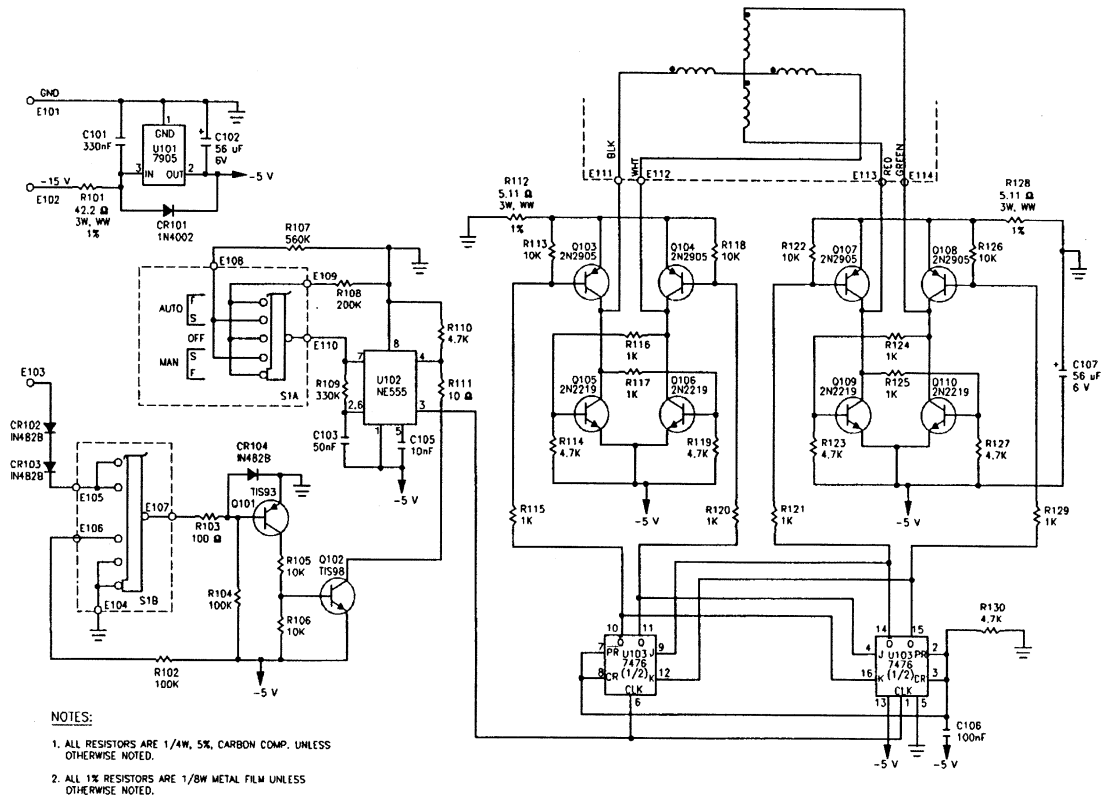


Fig. 2. Model 305 Stirrer Board Schematic 12773-SD-C.

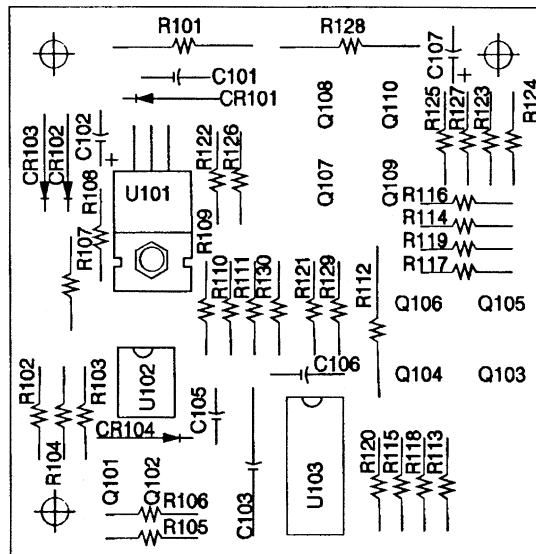


Fig. 3. Model 305 Stirrer Board Parts Layout.

Princeton Applied Research

P.O. Box 2565 • Princeton, NJ 08543-2565 • (609) 530-1000 • TELEX 843409 • FAX: (609) 883-7259