

# **Model 507 Powered Cell Stand Installation Guide**



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## SHOULD YOUR EQUIPMENT REQUIRE SERVICE

A. Contact the Customer Service Department (865-482-4411) or your local representative to discuss the problem. In many cases it will be possible to expedite servicing by localizing the problem.

B. If it is necessary to send any equipment back for service, we need the following information.

- |  |  |
|--|--|
| 1. Model number and serial number.                     | 5. Your telephone number and extension.  |
| 2. Your name (instrument user).                        | 6. Symptoms (in detail, including control settings).   |
| 3. Your address.                                       | 7. Your purchase order number for repair charges (does not apply to repairs in warranty).                            |
| 4. Address to which the instrument should be returned. | 8. Shipping instructions (if you wish to authorize shipment by any method other than normal surface transportation). |

C. U.S. CUSTOMERS — Ship the equipment being returned to:

Advanced Measurement Technology, Inc.	PHONE: 865-482-4411
801 S. Illinois Avenue	FAX: 865-483-2133
Oak Ridge, TN 37831	
ATTN: Customer Service	

D. CUSTOMERS OUTSIDE OF U.S.A. — To avoid delay in customs clearance of equipment being returned, please contact the factory or the nearest factory distributor for complete shipping information.

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# 1. Model 507 Powered Cell Stand Installation Guide.

The Model 507 is a power supply, control interface and a powered cell stand for a variety of our products.

This unit can interface the Model 303 or the Model 303A to a Model 263, 273 or 273A Potentiostat/Galvanostat with the connecting cables provided and relay DISPENSE, PURGE, and STIR signals from the potentiostat to the SMDE. When a different potentiostat is used, such as a VersaStat or a Model 173 or 362, the Model 507 supplies power to the 303 or 303A but does not provide these control signals.

The Model 507 can also be used as a stand to mount a cell, such as the RDE0018 Analytical Cell Kit, to a rod which threads into the lid of the Model 507. The combination of the Model 507 and the Model 305 stirrer allows for automated control of stirring your chemistry with any of our software packages.

The Model 507 also has a purge solenoid mounted on the back underside of the lid. This allows you to connect to your purging gas line to a cell such as the RDE0018 and control whether the gas is purging your chemistry or not. It can be controlled through our software or manually by depressing the PURGE pushbutton located on the front of the Model 507. This purge solenoid duplicates the function of the solenoid in the Model 303 or 303A.

The Model 507 also has I/O BNC's labeled BIT 0 IN, BIT 0 OUT, TRIG OUT and EXT TRIG for controlling your experiment with a Model 263, a 273 or a 273A.

For convenience, you may stack the Model 303 or 303A on top of the Model 507.

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## 1.1. Installation with Model 273, 273A or 263 to a 303 or 303A.

The following instructions show how to connect the Model 507 to a Model 263, 273 or 273A Potentiostat/Galvanostat and Model 303 or 303A SMDE. Refer to the diagrams.

1. Connect the 9-pin D-connector of one end of the round interface cable (part # C0357) to the AUXILIARY connector on the Model 263, 273 or 273A back panel. This connector provides the PURGE, STIR, and DISPENSE signals to the Model 303 or 303A via the Model 507.
2. Connect the 9-pin D-connector on the other end of the round interface cable to the matching connector on the front panel of the Model 507.
3. Connect one end of the ribbon cable (part # C0356) to the back panel of the Model 507 and the other end of the cable to the INPUT connector on the back of the Model 303A.
4. **Model 273 or 273A:** Connect the differential electrometer to the CELL INTERFACE connector on the back panel of the Model 273 or 273A. If you are using a Model 273A, use the separate electrometer interface cable (covered with black braid) provided. **Model 263:** Connect the cell cable to the front panel Cell Input connector.
5. Connect the leads of the electrometer or the cell cable to the Model 303 or 303A as follows:

**Model 273A:** Three cables are used to connect the electrometer to the Model 303A. These cables, colored red, black, and white, are included with both the Model 273A and Model 507. They are also separately available from PARC as part of the K0277 Microelectrode cable kit.

- (a) Connect the BNC connector on the black cable to the front panel WKG BNC on the electrometer. Connect the other end of the black cable to the WORK electrode jack on the Model 303 or 303A.
- (b) Connect the banana plug on the red cable from the K0277 Microelectrode cable kit to the front panel CNTR jack of the electrometer. Connect the other end of the red cable to the CNTR jack on the Model 303 or 303A.
- (c) Using the white cable from the K0277 Microelectrode cable kit, connect the REF jack of the electrometer to the REF jack of the Model 303 or 303A.

**Note:** Early production runs of the Model 273A have internal wiring that requires the Model 303 or 303A to be grounded to the GND jack on the electrometer. These early versions are identified by serial numbers 3101 through 6107. If you are using one of these early versions, make up a grounding cable as follows. Take a cable of sufficient length with a banana plug on one end and cut off the connector or clip at the other end. Strip the insulation back at least 1/2 in. (13 mm) at the cut end. Loosen one of the screws securing

the metal plate covering the back of the Model 303 or 303A, wrap the bare wire around the screw, and tighten it. To make a neater installation, you can solder a spade lug to the end of the wire. Then, plug the banana plug into the GND connector on the electrometer.

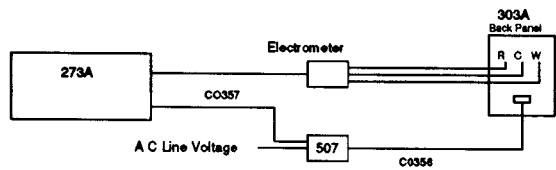
**Model 273:** The Model 273 differential electrometer has flying (hardwired) leads for the COUNTER and WORKING electrode connections, and a pin jack for the REF electrode connection.

- (a) Connect the REF jack on the electrometer to the REF electrode jack on the Model 303 or 303A.
- (b) Connect the COUNTER lead from the electrometer to the CNTR jack on the Model 303 or 303A.
- (c) Connect the WORKING lead from the electrometer to the WKG jack on the Model 303 or 303A.

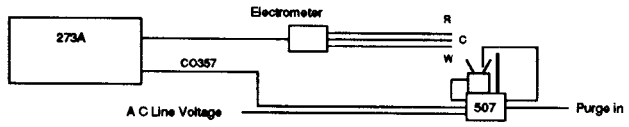
Further details of Model 273 electrometer operation are given in the *Model 273 Potentiostat/Galvanostat Instruction Manual, 217207-A-MNL*.

**Model 263:** The Model 263 cell cable has flying (hardwired) leads for the COUNTER and WORKING electrode connections, and a pin jack for the REF electrode connection.

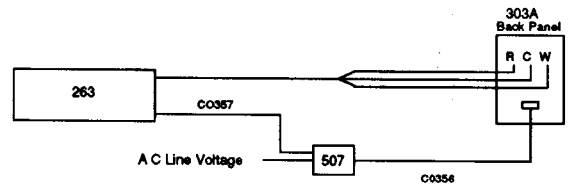
- (a) Connect the green cable to the WORK electrode jack on the Model 303 or 303A.
- (b) Connect the red cable to the CNTR jack on the Model 303 or 303A.
- (c) Using the white cable connect the REF jack of the electrometer to the REF jack of the Model 303 or 303A.



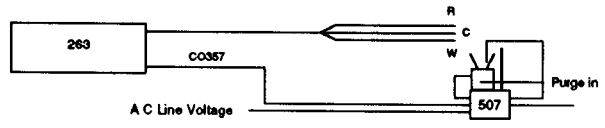
- 273A configuration with 507 & 303A
- Purge, Dispense and stir controlled via software



- 273A configuration with 507
- Purge and stir controlled via software



- 263 configuration with 507 & 303A
- Purge, Dispense and stir controlled via software



- 263 configuration with 507
- Purge and stir controlled via software

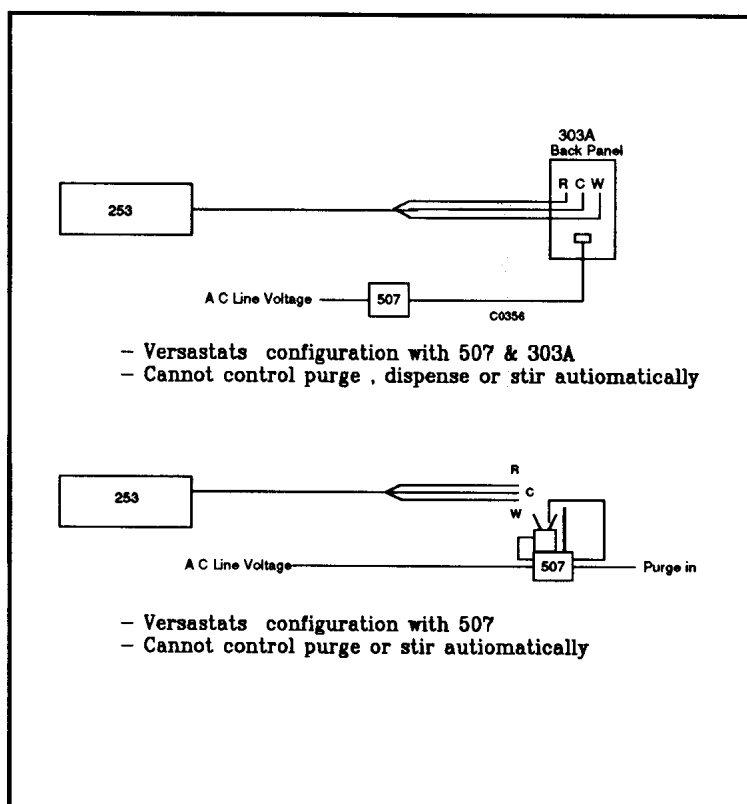


## 1.2. Installation with Other Potentiostats to 303 or 303A.

The following instructions show how to connect the Model 507 to a Model 303 or 303A Static Mercury Drop Electrode if you are using a potentiostat/galvanostat other than the Model 263, 273 or 273A. The VersaStat and the Models 173 and 362 potentiostat do not have the capability of controlling the PURGE, STIR, and DISPENSE signals to the Model 303 or 303A via the Model 507.

If you are using a VersaStat, Model 173, or Model 362 refer to the diagram below.

1. Make the cell connections from the potentiostat to the rear panel of the Model 303 or 303A. Refer to the instruction manual for the potentiostat you are using.





## 2. Line Voltage Selection.

Before connecting the power cord of any component of your system to the ac power source, consult the appropriate manuals to make sure each component is configured for the voltage of the available ac supply.

**Caution:** Your equipment can be destroyed if it is not set to the proper power line voltage! Checking Line Voltage Setting.

To confirm that the Model 507 is set for the correct line voltage: Look through the clear plastic cover just to the right of the ac power connector, located on the left side of the rear panel (Figure 4-1). Behind the plastic cover is the power line fuse and, below it, a small printed circuit board. The line voltage for which the instrument is set is printed on the PC board in a position that is visible through the plastic cover.

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### 2.1. Setting Up for a Different Line Voltage.

The Model 507 has a Corcom Power Entry Module that allows the instrument to be configured for any one of four different line voltages. The voltage selections available are 100, 120, 220, and 240 volts. The allowable range for each selection is 10%.

The Corcom assembly is located on the lower left side of the rear panel. It contains the power connector, line fuse, and a removable printed-circuit card used for selecting input voltage. The voltage-selection card is just below the fuse, behind the clear plastic cover plate. To set the instrument for a different line voltage:

1. Disconnect the power cord from the Model 507 and slide the clear plastic cover on the Corcom module all the way to the left. You should remove the power line fuse before you remove the voltage-selection card. To do this, pull the FUSE PULL lever out and to the left. This will dislodge one end of the fuse.
2. Grasp the free end of the fuse and pull it out of the fuse holder. The voltage-selection card is visible directly below the fuse holder. Use pliers to pull the card loose from its seating and slide it out.
3. Turn the card so the nominal line voltage you wish to use appears on top, facing you. Then, keeping it oriented the same way, carefully press the card back into its slot until it is seated. The line voltage you have selected should be visible on the card after it is seated.
4. Press the fuse back into the fuse holder and slide the plastic cover all the way to the right and connect the power cord to the Model 507.

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## 2.2. Replacing the Fuse.

The power line fuse should be a slow-blow fuse (LittelfuseR 3AG or equivalent) rated at either 2A (selected line voltage 100 or 120) or 1 A (selected line voltage 220 or 240). Do not use a makeshift fuse or short circuit the fuse holder.

To replace the fuse disconnect the power cord from the Model 507 and slide the clear plastic cover on the Corcom module all the way to the left. Pull the FUSE PULL lever out and to the left. This will dislodge one end of the fuse. Grasp the free end of the fuse and pull it out of the fuse holder and press the replacement fuse into the fuse holder. Slide the plastic cover all the way to the right and connect the power cord to the Model 507.