

## ***Dr. Bob's Cell For Small-Scale Electrochemistry***

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### ***Product Description***

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Dr. Bob's Cell is a versatile electrochemical cell designed for a wide variety of applications. Enzyme and catalysis studies, development of electrochemical sensors, basic research into battery mechanisms, and determination of redox potentials of inorganic complexes represent a few of its many applications.

You can use Dr. Bob's Cell with both macro (1-3 mm diameter) electrodes and microelectrodes (10  $\mu\text{m}$ ). It can be used with electrolyte volumes as small as 2 ml and as large as 30 ml. The standard kit includes a unique cell stand that allows you to set-up and operate the cell without a cumbersome ring-stand.

Dr. Bob's Cell is equipped with 5 multi-purpose ports. In the normal cell configuration, these ports are used as follows:

- One central Ace-Thred port for a Working Electrode (ordered separately)
- One Ace-Thred port for a Luggin capillary/bridge tube for use with Gamry's SCE, Ag/AgCl, Ag/Ag<sup>+</sup> non-aqueous, and Hg/Hg<sub>2</sub>SO<sub>4</sub> reference electrodes (electrodes ordered separately)
- One Ace-Thred port for a glass frit isolated platinum wire counter electrode (a wire is supplied)
- One 1/20 ground glass port for inert gas purging/blanketing (an adapter is supplied)
- One 1/20 ground glass port usable for temperature sensing, reagent addition, gas venting, etc.

The cell includes a miniature Teflon coated magnetic stir bar for use with standard laboratory magnetic stirrers.

Because Dr. Bob's Cell uses standard joints and fittings, you can easily customize it for specific Applications. In addition, a cell with a water jacket is available if your experiments require controlled temperatures.



## *Specifications*

### **Dimensions**

Electrolyte Volume                      Between 2 ml and 30 ml  
 Size    Approximately 10 cm diameter by 30 cm high (including electrodes)

### **Working Electrode Port**

Type    #7 Ace-Thred  
 Electrode Diameter Supports         6.5 mm to 7.5 mm diameter electrode bodies  
 Electrode Length                         For work with small volumes, length must be at least 11 cm  
 Macro Electrodes                         glassy carbon, gold, and platinum (3 mm diameter)  
 Micro Electrodes                         10 µm gold and platinum electrodes and 11 µm glassy carbon

### **Reference Electrode Port**

Type    #7 Ace-Thred - includes a standard reference electrode bridge tube  
 Reference Electrode Diameter         9-11.5 mm (when used with the bridge tube)  
 Bridge tube termination in electrolyte   Unfired Vycor<sup>®</sup> disk, 3.5 mm diameter

### **Counter Electrode Port**

Type    #7 Ace-Thred – comes equipped with fritted glass isolation tube  
 Counter electrode                         0.41 mm diameter platinum wire, approx 150 mm long

### **Gas Flow Port**

Type    1/4" - equipped with three way gas flow adapter (purge, blanket, vent)

### **Spare Port**

Type    1/4" - supplied with several polyethylene stoppers

### **Chemical Compatibility**

Wetted Materials                         Pyrex<sup>®</sup>, PTFE, unfired Vycor<sup>®</sup>, ACE FETFE, Platinum, Polyethylene  
 Non-Wetted Materials                     Above, plus nylon

### *Parts List*

Quantity	P/N	Description	Quantity	P/N	Description
1	900-55	Manual, Dr. Bob's Cell	3	935-52	#7 Ace-Thred Bushing, Nylon
1	930-31	Dr. Bob's Cell, Standard	1	935-53	#11 Ace-Thred Bushing, Nylon
1	930-32	Dr. Bob's Cell Bridge Tube	1	935-54	Adapter, #7 Ace-Thred to 1/4" hose
1	930-33	Bubbler Adapter	150 mm	935-56	Platinum Wire, 0.4 mm dia
1	930-34	Bubbler	1	935-57	Support Stand for Dr. Bob's Cell
1	930-35	Fritted Counter Electrode Bridge Tube	5	935-59	Polyethylene Stoppers for 1/4" Joint
1	930-44	Reference Electrode Bridge Tube	1	935-65	Stir bar, 6.35 x 2 mm

### *Accessories Ordered Separately*

P/N	P/N
930-03   SCE Reference, 9 mm body with Vycor Tip	932-01   Disk electrode, 3 mm dia Glassy Carbon
930-15   Ag/AgCl Reference, 9 mm body with Vycor Tip	932-02   Disk electrode, 3 mm dia Gold
930-29   Hg/Hg <sub>2</sub> SO <sub>4</sub> Reference, 9 mm body with Vycor Tip	932-03   Disk electrode, 3 mm dia Platinum
930-59   Ag/Ag <sup>+</sup> Non-Aqueous Reference Electrode	932-09   Microdisk electrode, 11 µm dia, Glassy Carbon
930-37   Dr. Bob's Cell, Jacketed	932-10   Microdisk electrode, 10 µm dia, Gold
990-195   Solid Electrode Hand Polishing Kit	932-11   Microdisk electrode, 10 µm dia, Platinum

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