



IMPROVED CDC BACKPACK ASPIRATOR-- MODEL 1412

Instructions

Background information

The "CDC Backpack Aspirator" was originally developed by the U. S. Public Health Service to collect indoor-resting adult mosquitoes such as *Aedes aegypti*. It is suitable for agricultural entomologic studies as well. Fine mesh cups are available for the collection of very small specimens.

We have followed the basic CDC design but made several improvements including the use of an ultra-light backpack frame, a more rugged neoprene hose, and collection cups made of high density polypropylene and stainless steel screening. Other improvements include the incorporation of a state-of-the-art gel-cell battery and the inclusion of a recharging unit.

Operational Details

Operation is simple. Insert a collection cup with a slight twisting motion into the wand until it fits snugly. The blower is turned on with the switch located in the wand. After collections have been made, remember to close the collection cup before turning the blower off. If the unit is to be shipped, it is a good idea to remove the fuse (see below) so the suction motor cannot accidentally start and the battery go into a state of deep discharge.



Charging information

The unit comes supplied with a 12 VDC 17 AmpHr Gel-Cell battery. A new and fully-charged battery will provide power for ca. 2.5 hours of continuous use. The blower motor consumes about 5.1 amps per hour when running. As batteries age, you can expect some loss of capacity and run times will decline accordingly.

Various chargers are supplied with our aspirators depending on the commonly-available voltage in the area where they are to be used. Some chargers are switchable and can supply charging

voltages of 6 and 12 VDC; some units have variable charging rates (2 and 6 amps per hr) and some are fixed at a single rate (6 amps per hr). The chargers are manual chargers, meaning that they do not taper off the charging rate or shut off when the battery is fully charged. It is therefore important that the battery is not overcharged by prolonged charging periods.

With the manual charger that has been supplied with your aspirator, once the battery has become fully charged, continued charging will result in the hydrolysis of water. The resulting gases are explosive, so please note the following warning:

1. CHARGE YOUR BATTERY IN AN OPEN AREA WHERE ANY EXPLOSIVE GASSES THAT MAY BE PRODUCED CAN DISSIPATE WITHOUT CREATING AN EXPLOSIVE SITUATION and

2 DO NOT OVER CHARGE YOUR BATTERY.

Operational Details cont'd.

Calculating charging times

The hours you run your unit multiplied by the hourly consumption of electricity (5 amps/hr) is the amount of current you have taken out of the battery. A new and fully-discharged battery will have spent ca. 17 AmpHrs. Chargers put back electricity at a rate of about 90% of their rated capacity. So if your battery is down about 10 amps (e.g., after having been run for about 2 hrs), the charge time at a 2-amp/hr rate would be 10 amps divided by 2 amp/hr times 110% or about 5.5 or 6 hrs. If you received a charger that can put out 6 amps/hr, the time would be approximately 10 amps divided by 6 amps/hr times 110% or about 1.8 or 2 hrs.

Follow the instructions from the charger manufacture which were supplied with your unit for other details. Remember, your aspirator battery is a 12 VDC battery, and must be charged at that voltage, regardless of the charging rate you may use.

Fuse protection On the side of the metal housing there is located a fuse holder. Replacement fuses should be rated at 10 amps.

Spare parts Extra cups (specify fine or regular mesh), replacement parts, and batteries are available. If you have any questions, difficulties, or comments, please contact us via letter, telephone, fax, or e-mail.

Some Useful References

Clark, G. G., H. Seda, and D. J. Gubler. 1994. Use of the "CDC backpack aspirator" for surveillance of *Aedes aegypti* in San Juan, Puerto Rico. J. Am. Mosq. Control. Assoc. 10(1): 119-124.

Control of Dengue - Vector Topics # 2. Available from Vector Biology and Control Division, Bureau of Tropical Diseases, Center for Disease Control, DHHS, Atlanta, GA 30333.

Service, M. W. 1977. Mosquito Ecology- Field Sampling Methods. John Wiley and Sons. New York, New York.

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