Scientific Instruments

Model # VWK-2
INSTRUCTION MANUAL

Ver. Jan. 2018

ALA Scientific Instruments Inc.
60 Marine Street
Farmingdale, NY 11735
Tel. # 631.393.6401
Fax: # 631.393.6407
E-mail: support@alascience.com
www.alascience.com

Table of Contents: Page

IMPORTANT NOTE: BEFORE BEGINNING ANY WORK WITH THE VACUUM WASTE KIT, PLEASE READ THE ENTIRE MANUAL. FAILURE TO FOLLOW THE WARNINGS BELOW MAY RESULT IN DAMAGE TO THE INSTRUMENT OR INJURY TO PERSONNEL.

Safety Information

1) The VWK-2 requires connection to mains power. Incorrect usage or carelessness may result in electrocution. Do not operate when immersed or if cables are damaged. Do not operate if pump is wet.
2) Only trained scientific personnel who are familiar with laboratory instruments should use this product.
3) If liquids spill on any part of the instrument, shut the instrument off and wipe up the liquids before turning it on again.
4) Do not position the Vacuum Waste Kit where someone might trip over the cords or tubing.
5) The VWK-2 is not approved for clinical applications. ALA Scientific Instruments discourages any such use and accepts no liability for such use. NO FILTERING IS PROVIDED TO CONTAIN PATHOGENS.
6) Follow GLP when disposing on fluids collected.
7) Be sure to read this entire manual and familiarize yourself with this instrument before operating it.

Shipping contents

The VWK-2 shipment should include the following items:

a) Instruction manual (1)
b) Stand with pump
c) Pump transformer (220V to 110v) (when applicable)
d) 2L polypropylene Heavy Duty Vacuum Bottle with cap.
e) PVC tubing and connectors for all connections to operate VWK-2.

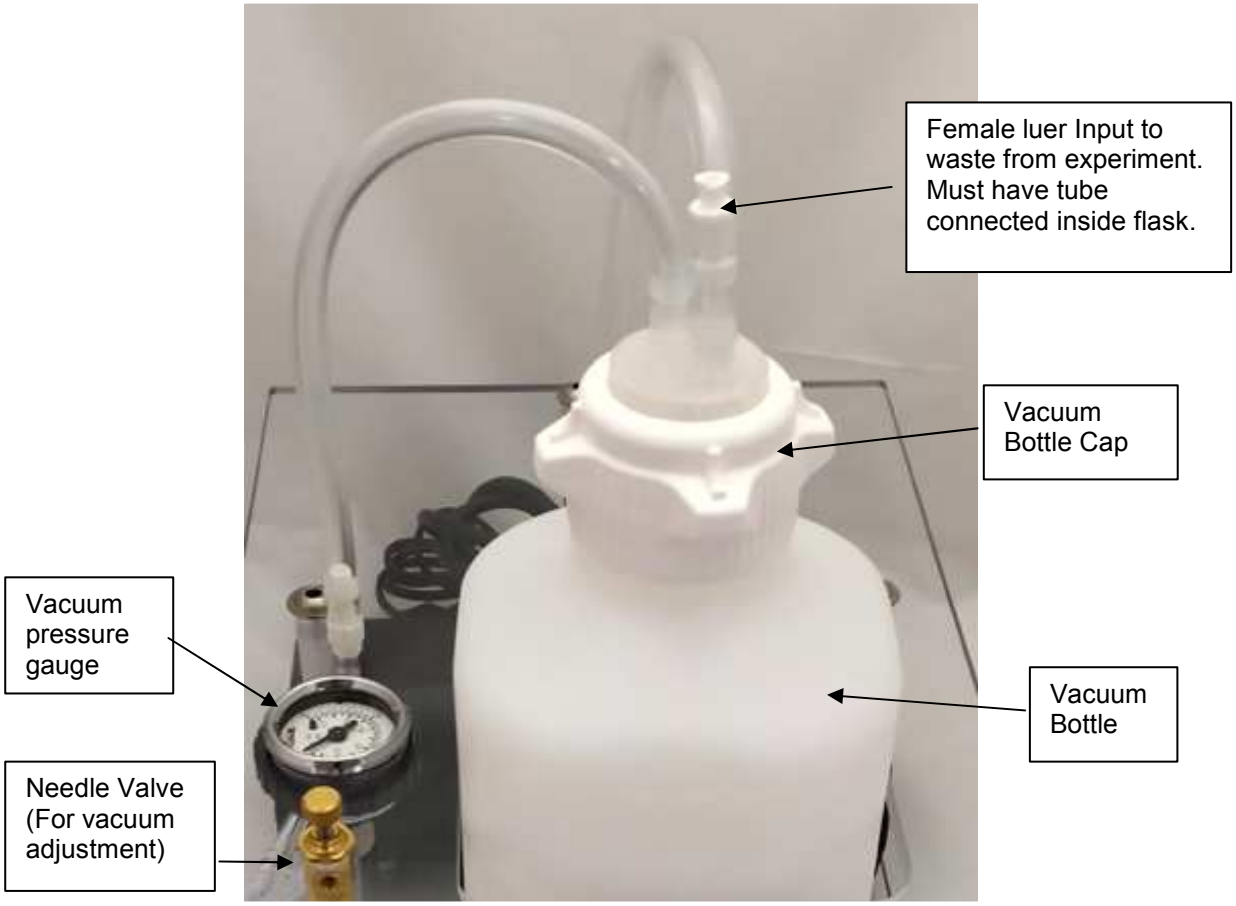
Please open the box and inspect contents immediately upon receipt. If any components appear damaged or missing, please contact ALA Scientific Instruments or your local distributor. Any claims for damage must be brought within three days of receipt.

Introduction

The vacuum waste kit, VWK-2, is designed to assist in the removal of fluid from cell preparations. It provides approximately -0.27-0.3 Bar of suction and can trap nearly 2L of fluid.
The suction can be adjusted to accommodate different volume rates flowing into a preparation.

The VWK-2 serves as an ideal suction source for jobs involving small cell chambers.

VWK-2 Setup



To prepare the VWK-2 for use, perform the following steps:

- Screw the vacuum bottle cap on the bottle
- Connect the two pvc tubes from the cap to the luer connectors on the stand.
- The female luer on the cap is where the waste line from your preparation will connect (See Figure above).

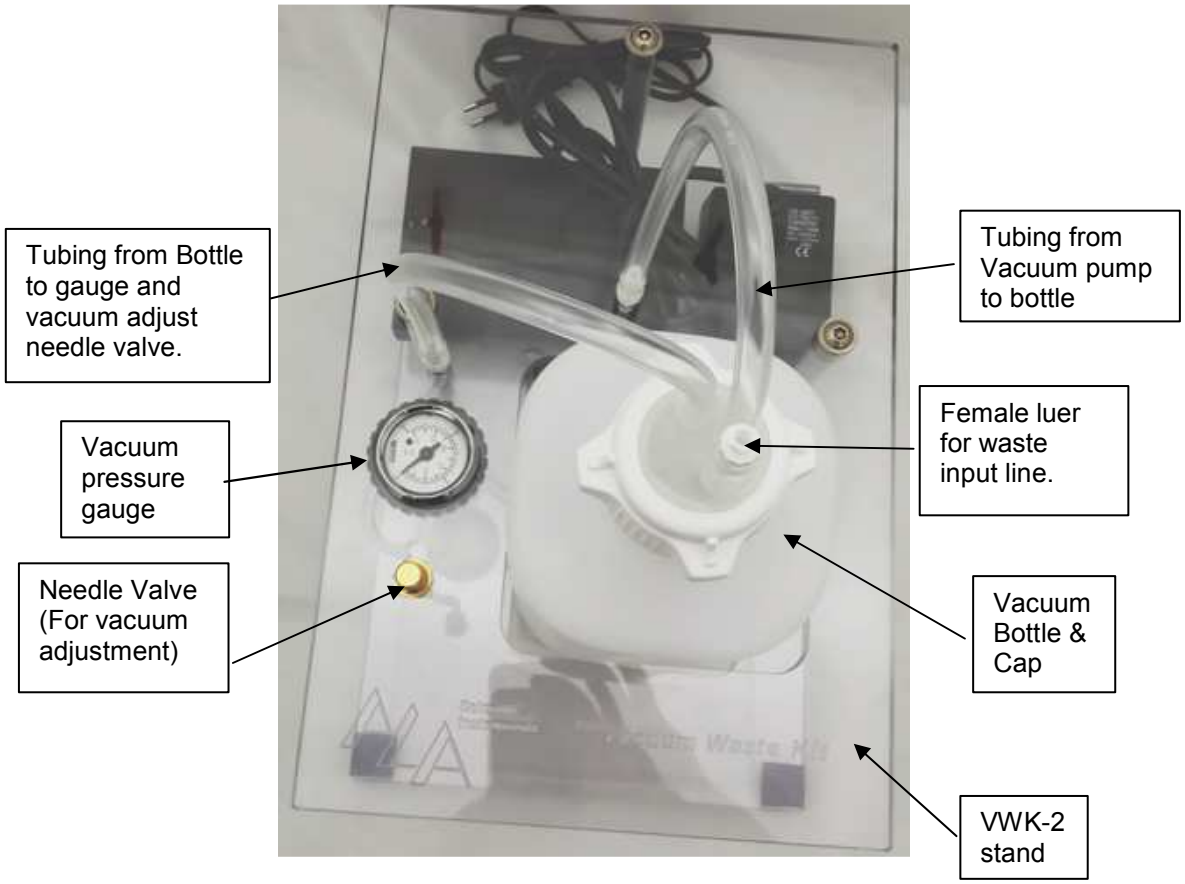
  The most important thing is that the connection from your prep (waste fluid line) be connected to the one port on the cap that has a tube connected to it inside the bottle. It is very important the waste enter the bottle through this tube. Without a tube, the entering fluid can aerosolize and be aspirated by the pump causing contamination of the pump. The other two ports for the pump and the gauge do not need, and should never have a tube attached inside the flask.

- Plug power connector to mains. Vacuum pump is 110V AC unit. A step down transformer is mounted on the VWK-2 stand for countries where mains power is 220V AC.

NOTE ON CONNECTIONS: Only tighten luer connections finger tight, never over-tighten or use tools, seal damage may occur.

VWK-2 Components

Pneumatic Connections



Electrical parts

Instructions for use during Experiments

The ideal location for the VWK is on the floor near the work area. Tubes and lines should be kept as short as possible. Place the stand so the gauge and adjustment needle valve are easily accessible. Always run the system upright. Be sure that you can see the storage bottle so that you will see it filing up. Empty the bottle when necessary (follow emptying procedure).

Using the VWK in an experiment is very simple. Switch on the power of the pump and let it reach final pressure. This may take 2-5 minutes. Be sure all connections are tight. Keep an eye on the bottle to be sure it does not over fill. Observe that the pump does not draw any liquid by checking to be sure that no liquid is dripping from it. Should you observe dripping or water spraying from the pump, un-plug the unit immediately and seek service.

The VWK-2 comes from the factory set to pull maximum vacuum (~ -.35 bar/-5psi) at sea level.

The gauge will read the vacuum pressure in the bottle. To reduce the amount of vacuum, open (turn counter clockwise) the needle valve until desired value is reached.

If you need to increase the amount of vacuum introduced into the bottle, close (turn clockwise) the needle valve until desired value is reached.

Allow the system to stabilize after an adjustment before using in a live prep.

Electrical Noise:

In sensitive recordings there is the possibility of electrical noise. Since the pump runs on AC power 50-60 Hz noise or a harmonic is possible. If this should occur, try to re-position the VWK farther from the recording area. Should the waste line act as an antenna conducting noise to the recording site a drip chamber or filter can be utilized in the fluid pathway to break the fluid circuit. Alternatively, we recommend placing a short stainless steel tube of about 5cm in length in the suction line, and then grounding that tube to the earth ground.

Emptying Vacuum Bottle

When the vacuum bottle needs to be emptied:

- Turn OFF power to the vacuum pump.
- Disconnect the two luer connections on the stand.
- Disconnect the waste input line from the prep and clamp it to avoid leakage.
- Lift vacuum bottle out of the stand and carry to disposal area.
- Put on safety gear if needed (ie. eye protection, gloves).
- Unscrew the cap from the bottle and carefully remove cap avoiding any splashing.
- Empty contents of bottle into an approved disposal system. Do not pour down the sink unless authorized to.
- Rinse bottle if necessary and wipe down.
- Replace cap on bottle and return to VWK-2 stand.
- Connect luer fittings.
- Connect waste line to cap.
- Unit is ready to be used.

Note: Follow GLP when performing disposal of fluids.

Maintenance and Troubleshooting

The VWK-2 is a very simple device and does not need any maintenance other than the normal course of keeping it clean (wipe off dust and dirt with damp cloth) and empty the waste bottle when necessary. (You may want to bleach the waste bottle from time to time, but do not add bleach and then use it in the system with the pump on. This can damage the pump.

If insufficient suction is observed, please check the system for leaks.
If flow volume is insufficient, use a larger bore waste line, (supplied 3mm ID) to decrease resistance to flow.

If you have any problems with the VWK-2, please contact ALA Scientific Instruments (if bought within North America) or your local distributor.

Contact ALA Scientific Instruments by email at support@alascience.com

Warranty

ALA Scientific Instruments agrees to warranty this product for a period of one year from the date of delivery against any and all manufacturer's defects in material and/or workmanship. Remedy will consist of repair or replacement at ALA's discretion. Please report any problems promptly so as not to jeopardize warranty coverage. ALA Scientific Instruments does not assume any liability based on the use of this product, whether correct or incorrect, except as specified under law. Warranty rights may vary from state to state, country to country.

ALA Scientific Instruments will not warranty any of the plastic connectors, tubing, bottle or any other wetted parts..

If the product does need repair, it must be returned to the factory freight prepaid (freight sent collect will be refused) and in clean condition. If returned parts have been in contact with any liquid substance, documentation of substances used must be provided to ALA. Ask ALA for a Hazardous Materials Disclosure Form before returning.

This product is intended for use in biological experiments only.

THIS EQUIPMENT IS NOT INTENDED OR APPROVED FOR CLINICAL USE.