Boekel Scientific

Boekel Aspirator Pump

Model 177001

Operating Instructions

N2400183 Rev. 2 1/05

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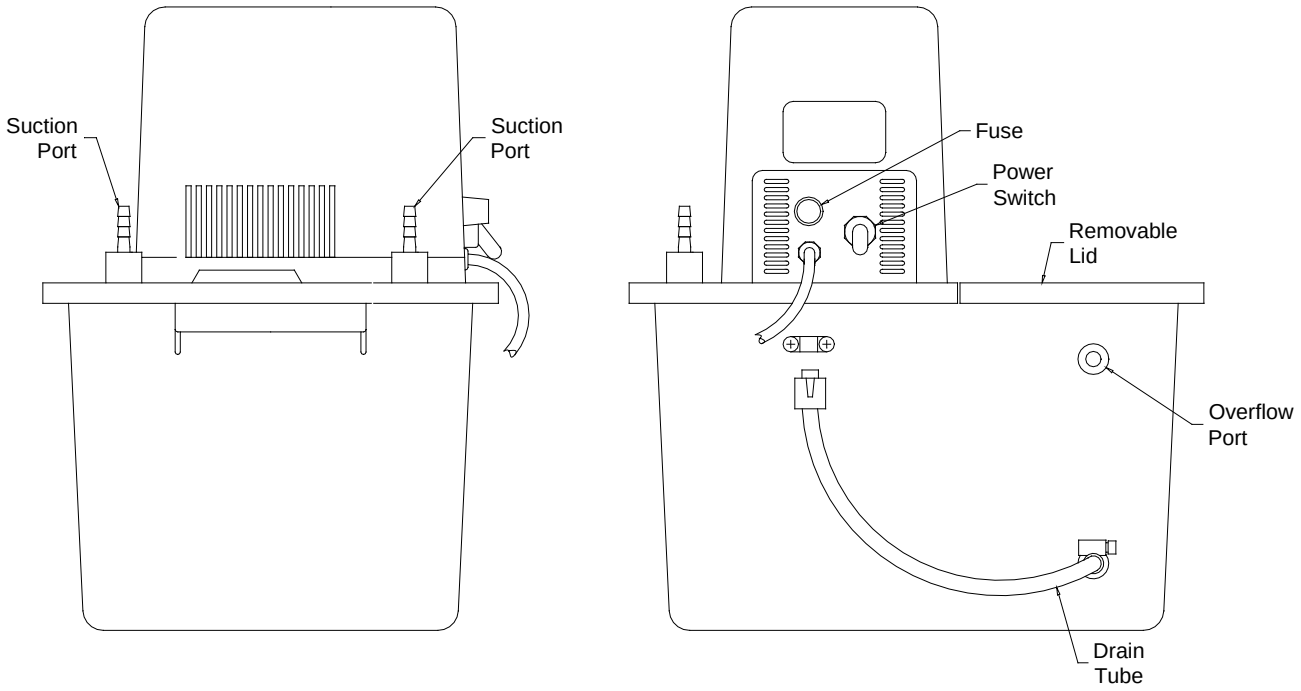
Figure 1

Aspirator Pump



1. Safety

Always observe the following safety precautions :

- Use only as specified by the operating instructions or the intrinsic protection may be impaired. After transport or storage in humid conditions, dry out the unit before connecting it to the supply voltage. During drying out the intrinsic protection may be impaired.
- Connect only to a power supply that provides a safety ground terminal.
- Before moving, disconnect at the power supply socket.
- Ensure that the power switch is easily accessible during use.
- Do not block or restrict ventilation slots.
- If liquid is spilled inside the motor housing, disconnect it from the power supply and have it checked by a competent person.
- It is the user's responsibility to carry out the appropriate decontamination if hazardous material is spilled on or inside the equipment.

2. Product Information

The Boekel Aspirator Pump is used to aspirate corrosive volatile solvents without the need for cold or chemical traps. The pump is ideal for use with rotary evaporators, gel dryers, and distillation or filtration apparatus. The Aspirator Pump has a ten liter water reservoir and a powerful built in circulating pump/motor. The unit comes with two ports with each port capable of a maximum free air displacement of 14 liters per minute (0.5 cfm) or a maximum vacuum of 29" of mercury at zero flow at each suction port.

3. Assembly

3.1 Unpacking the Unit

Remove the packing materials carefully, and retain for future shipment or storage of the unit. Inspect for damage. Report all shipping damage to the carrier immediately. Shipping damage is covered by the carrier and repair/replacement for shipping damages must be coordinated through the carrier. Complete and return the Warranty Registration Card. Packages should contain:

Aspirator Pump	Vacuum Hose (2 pieces)
Overflow Hose	Y Fitting
Operating instructions	Warranty Card

3.2 Installation

Place the reservoir on a stable surface. Assure that the Drain Tube is secured in the clip to keep the Drain Tube upright. Attach the Overflow Hose to the overflow port on the reservoir. Fill the reservoir with water. The water level should be at the bottom of the overflow port. Place the pump/motor on the reservoir and use the Lid to cover the remaining opening on the reservoir.

4. Operation

4.1 Identification of Controls (See Figure 1)

The **Power Switch** controls power to the unit. Push toggle up to turn unit on and down to turn unit off.

The **Drain Tube** allows the water to be drained from the reservoir.

The **Overflow Port** is used to maintain the proper water level in the reservoir and is used as the water supply hose when a continuous flow of water is required.

4.2 Connecting to the Suction Ports

Connect one end of the vacuum hose to either suction port and the other end to your apparatus. The Y fitting can be used to connect both vacuum ports to a single port on your apparatus.

4.3 Operating the Unit

Position the power switch to the on position. The unit should begin producing a vacuum at each suction port. When the operation is finished, release the vacuum hose from the suction port and turn off the power switch to prevent reversing flow. If the optional Vacuum Regulator Gauge is used, this gauge should be turned off completely. If the unit is being used without a continuous flow of water, cool the internally circulating water by inserting ice or an immersion cooler through the opening at the top of the reservoir. Cooling the water will prevent the loss of suction force caused by a rise in the water temperature. When strong acids or organic solvents are used, a continuous flow of water must be used. A water supply of approximately 1 liter per minute should maintain the proper water level in the reservoir. Clean and empty the water in the tank regularly, since solvents build up on the sides of the tank and will interfere with the vacuum. The more corrosive the material being aspirated, the more frequent the need for changing the water.

5. Technical Specifications

This equipment is for indoor use and will meet its performance figures within the ambient temperature range of 10°C to 35°C, with maximum relative humidity of 80% non-condensing. Installation category II (transient voltages). Pollution degree 2 in accordance with IEC 664. For operation at altitudes of up to 6500 feet.

Maximum Vacuum	29 " of mercury
Maximum Suction Rate	14 liters per minute per port
Supply Ratings	Model 177001: 115 VAC, 2.7 A, 60 Hz
Power Rating	Model 177001: 310 W
Weight	6 Kg

6. Accessories

Model Number	Description
177010	Pump Dolly
177020	Vacuum Regulator Gauge

7. Fault Diagnosis

Symptom	Possible Cause	Action Required
Unit does not operate	a. Unit not switched on b. Unit not plugged into power supply c. Fuse blown d. Power supply failure	a. Switch on b. Plug in, switch on c. Replace fuse (see section 8.2) d. Check that other electrical appliances on the same circuit are working
Insufficient vacuum	a. Leak in system b. Unit is contaminated c. Float ball stuck in aspirator	a. Check all hoses and hose connections b. Thoroughly clean entire system c. Tap lightly on the aspirator or replace aspirator.

8. Maintenance and Service

All Boekel laboratory products are designed to comply with IEC1010-1. No routine maintenance is required.

8.1 Cleaning

Disengage power cord prior to cleaning. The aspirators should be rinsed with fresh water after each use. The exterior of the unit can be cleaned with a cloth dampened with water.

8.2 Replacement of Fuse (see figure 1)

To change the fuse:

Turn power switch to the off position. Disconnect the unit from the power supply. Turn the fuse carrier in a counter clockwise direction to loosen it. Remove the fuse from the fuse carrier. Check and replace with the correct fuse if necessary. The fuse should be ¼" x 1 ¼" Fast Blow, rated 5 AF, 250V. Push the fuse into the fuse carrier and then turn the fuse carrier in a clockwise direction to tighten. Reconnect unit to power supply. Replacement fuses (part number 902-0179) may be purchased from Boekel.

9. Warranty

When used in laboratory conditions and according to these operating instructions, Boekel warrants this product to be free of defective material and workmanship for a period of two years from the date of manufacture. The liability of Boekel for any defective equipment during the warranty period shall be limited to the repair of such equipment or replacement thereof without charge for parts or labor.

10. Service

It is required to obtain a Returned Material Authorization (RMA) number before any Boekel products are returned for any reason. A Decontamination Certificate must be completed, signed by the user, and returned to Boekel Scientific prior to receiving the RMA number. Please be sure to mark the outside of the returned goods package with this RMA number to ensure prompt handling.

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