

# Homecare Suction Unit

Portable • Battery Operated

# User's Manual























**CAUTION:** Federal (USA) law restricts this device to sale by or on the order of a physician.

Manufactured for: **Dynarex Corporation** 11 Dynarex Drive Middletown, NY 10941 USA · www.dynarex.com Made in China

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### **TECHNICAL SPECIFICATIONS**

| Dimensions                     | Length: 8.3" (210 mm)                                   |  |
|--------------------------------|---|--|
|                                | Width: 7.5" (190 mm)                                    |  |
|                                | Height: 7.7" (195 mm)                                   |  |
| Weight                         | 4.63 lb. (2.1 kg)                                       |  |
| Maximum Vacuum                 | 600±20 mmHg   |  |
| Flow Range (Free Air Flow)     | 22±10% LPM  |  |
| Sound Level (at 1m,300mmHg)    | 60±3 dBA  |  |
| Electrical Requirements        | DC 12V, 3A max (+/-8%)                                  |  |
| Power Consumption              | 52 W  |  |
| Power Input                    | AC 100-240V, 50-60 Hz, 0.45A                            |  |
| Power Output                   | DC12V / 55W max   |  |
| Battery Type                   | Lithium Ion   |  |
| Bacteria Filter Port Size      | 0.45 microns  |  |
| Canister Capacity              | 800 cc  |  |
| Operation Temperature          | 32°F-104°F (0°C-40°C)                                   |  |
| Operating Humidity             | 0-95% RH  |  |
| Operating Atmospheric Pressure | 10.2-15.4 psi (70-106 kPa)                              |  |
| Storage Temperature            | -14°F-158°F (10°C-70°C)                                 |  |
| Storage Humidity               | 0-95%   |  |
| Storage Atmospheric Pressure   | 7.3-15.4 psi (50-106 kPa)                               |  |
| Equipment Classifications      | With respect to protection from electric shock Class II |  |
| Mode of Operation              | Intermittent operation 30 minutes ON, 30 minutes OFF    |  |

**NOTE**: This equipment is not suitable for use in the presence of a flammable anesthetic mixture with air or nitrous oxide.

# **SYMBOL DESCRIPTIONS**

| DATEX               | Not made with natural rubber latex  |
|---------------------|---|
| ОЕНР                | Does not contain Phthalates (DEHP)  |
| 7                   | Keep dry  |
| *                   | Keep away from sunlight  Note: This symbol can also mean "Keep away from heat," as referenced in ISO 7000:1989. |
| 0°C 104°F           | Temperature limit   |
| 0%                  | Humidity limitation   |
| ≤2000m              | Maximum altitude  |
| []i                 | Consult instructions for use  |
| Ţ                   | Warnings/Caution/Attention  |
| <b>†</b>            | Type B applied part   |
|                     | Class II equipment  |
| IPXO                | Ingress protection  |
| R <sub>X</sub> Only | Prescription use only   |
| ***                 | Manufacturer  |
| SN                  | Serial number   |
| Ţ                   | Fragile, handle with care   |
| <u> </u>            | Тор   |

### WARNINGS/CAUTIONS

### **READ ALL INSTRUCTIONS BEFORE**

**USING.** Use this product only for its intended use as described in this User's Manual.

### **A DANGER**

To reduce the risk of electrocution:

- Do not allow this product to become immersed in water.
- 2. Do not use this product while bathing.
- 3. Do not place or store this product where it can fall or be pulled into a tub or sink.
- 4. Do not place in or drop into water or other liquid.
- 5. Do not reach for any product that has fallen into water. Unplug immediately.

### **⚠ WARNING**

To reduce the risk of burns, electrocution, fire, or injury:

- 1. Use this product only for its intended use as described in this User's Manual.
- Close supervision is necessary when this product is used by, on, or near children or individuals who are weak, debilitated, or incapacitated.

- 3. Never operate this product if:
  - a. It has a damaged power cord or plug
  - b. It is not working properly
  - c. It has been dropped or damaged
  - d. It has been dropped into water
- Keep the power cord away from heated surfaces.
- 5. Do not operate this product while drowsy or not fully alert.

NOTE: This unit is factory equipped with an internal rechargeable battery and all information regarding battery operation in this User's Manual is applicable

### **⚠ DANGER**

This unit is a vacuum suction device designed for the collection of nonflammable fluid materials in medical applications only. Improper use during medical applications can cause injury or death. For all medical applications:

- All suctioning should be done in strict accordance with appropriate procedures that have been established by a licensed medical authority.
- All attachments or accessories should be checked prior to use to ensure proper fit.

### INTRODUCTION

This unit is a compact medical suctioning device that has been designed for reliable, portable operation. Because of its small size, light weight, and DC operation, the unit is ideal for providing suction in the home, or in transport with an optional DC cord (not included). In addition, this model has an internal rechargeable battery, and can be operated anywhere.

This unit can only be operated with an 800 mL canister. Following the recommended operating and maintenance procedures outlined in this User's Manual will maximize the life of this product.

### INTENDED USE STATEMENT

This device is to be used to remove fluids from a patient's airway or respiratory system. The device creates a negative pressure (vacuum) that draws fluids through disposable tubing that is connected to a canister. The fluids are trapped in the canister for proper disposal. This device is to be used by order of a physician only.

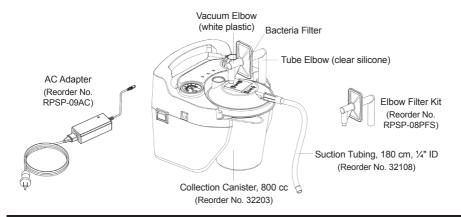
### INTERNATIONAL TRAVEL

The unit is equipped with a switch mode power supply allowing operation on any AC voltage (100-240 VAC, 50/60 Hz). However, the correct power cord must be used to connect to adaptable wall power.

**NOTE:** Check the power cord for adaptability before using.

### **ACCESSORIES/REPLACEMENT PARTS**

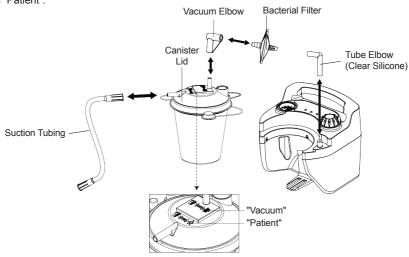
### THESE ITEMS CAN BE PURCHASED SEPARATELY.



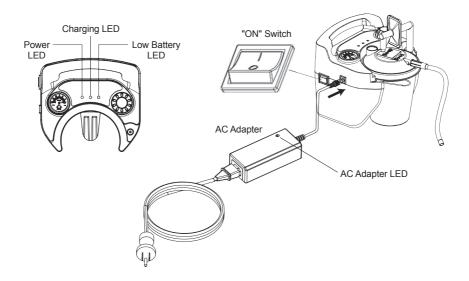
### **SET UP**

- Connect the long end of the Tube Elbow to the suction machine. Then connect the shorter end of the Tube Elbow to the white side of the Bacteria Filter.
- 2. Connect the transparent side of the Bacteria Filter to the Vacuum Elbow.
- 3. Connect the Vacuum Elbow to the top of the Canister Lid where it says "Vacuum."
- Connect the Suction Tubing to the Canister Lid at the Patient Port where it says "Patient".

- Important: Make sure that all connections are secure and without leakage before use.
- Always inspect suction tubing and collection canister for leakage, cracks, etc., before each use.
- Verify that the unit is set at the desired suction level before beginning patient suction.



### **OPERATION**



# AC POWER SOURCE INSTRUCTIONS

**IMPORTANT:** Before connecting the unit to the AC adapter, make sure that the power switch located on the side of the unit is in the "OFF" position.

Plug the small connector of the AC adapter into the DC power input located on the side of the unit. Plug the AC end into a grounded wall-outlet power source.

**NOTE:** The power supply may become warm to the touch during charging or running of the unit. This is normal.

### POWER INDICATOR LIGHTS

### POWER INDICATOR (LEFT LED)

**Green:** When external power is supplied to the unit from an AC power source, the power light will be illuminated green.

**Yellow:** When internal power is supplied to the unit from an internal rechargeable battery, the power light will be illuminated yellow.

#### CHARGING INDICATOR (CENTER LED)

Yellow: When the battery is being charged, the Center LED will be illuminated yellow. At the same time, the light on the AC adapter will be illuminated red. When the battery is fully charged, the AC adapter's light will turn from red to green.

#### LOW BATTERY INDICATOR (RIGHT LED)

Flashing Red: When the battery is low, the Low Battery light will flash red and an audio alarm will sound. Seek another power source and charge the battery as soon as possible.

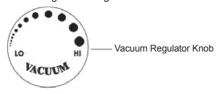
### **BATTERY**

### **BATTERY OPERATION**

- To ensure proper operation from internal battery, fully charge the battery for 1-1.5 hours (depending on the depth of discharge) as explained in the Battery Charging section.
- To operate the unit from an internal rechargeable battery, ensure that no external power sources are plugged into the DC power input on the side of the unit.
- Once the power source is selected, simply turn the unit to the "ON" position using the power switch located on the side of the unit. The power indicator light (displayed on the top of the unit) will indicate which power source is being used by staying continuously lit when external power is connected.
- 2. Adjust the vacuum level by turning the Vacuum Regulator Knob located on the top of the unit (clockwise to increase vacuum and counter-clockwise to decrease vacuum). The desired level of vacuum can be set by using the gauge located on the top of the unit near the handle. To accurately read the gauge, block the patient-end of the suction tubing with your finger, or use the port cap to seal off the canister, and allow the gauge to reach a stable vacuum reading.

**NOTE:** The Regulator Knob adjusts from 50 mmHG to 600 mmHg. Do not adjust the knob beyond 600 mmHg.

⚠ **WARNING:** Tightening the knob above 600 mmHg will damage the valve.



- 3. Connect the suction tubing to the catheter or Yankauer and begin suctioning the patient.
- 4. When the fluids in the canister reach the maximum safe capacity of 800 cc, the float shut-off valve will automatically stop the vacuum to prevent fluid overflow from passing into the Suction Unit.

- 5. Push the power switch to the "OFF" position ("O") to shut off the suction motor.
- After the motor stops completely, empty the canister or replace it with a new canister (See page 4 for accessory/replacement parts.)

⚠ **CAUTION:** When automatic float shutoff is activated, the contents of the canister should be emptied. Further suctioning could cause damage to the vacuum pump.

⚠ CAUTION: In the event that fluid backs up into the Suction Unit, servicing must be performed by the equipment provider — otherwise, the Suction Unit may become damaged.

**NOTE:** Always transport this unit with the Vacuum Regulator Knob rotated fully clockwise to help protect the unit in the event that it is dropped or mishandled.

**NOTE:** If the Suction Unit is dropped or mishandled, you must re-check the gauge to confirm its accuracy.

### **BATTERY CHARGING**

The unit is equipped with a factory-installed rechargeable battery. The unit has a Low Battery Indicator and a Charging Indicator.

Connect the Suction Unit to the proper AC power source using the AC adapter power cord. The Power Indicator light will be illuminated green.

When the battery is charging, the Power Indicator light will be illuminated yellow. At the same time, the light on the AC adapter will be illuminated red. Verify that this illuminates when charging begins. When the battery is fully charged, the AC adaptor's light will turn from red to green.

### **NOTES**

 A discharged battery will require 1-1.5 hours of charging time (depending on depth of discharge) to reach full capacity.

### **BATTERY** (continued)

- To ensure an uninterrupted power supply to Suction Unit, DO NOT connect the AC adapter to an outlet that is controlled by a switch.
- Do not connect the DC power cord (not included) to an outlet that is not continuously powered.
- When the battery is fully charged, it will provide approximately 50 minutes of continuous suction at a zero-vacuum level (free flow).
- When the Suction Unit is not in use for an extended period of time, the battery must be recharged every month, even if it is in storage.
- 6. The internal rechargeable battery must be recycled according to local regulations.

⚠ CAUTION: Discharging the battery completely will shorten the life of the battery. Do not operate the Suction Unit for more than a few minutes if the Low Battery Indicator light is lit. Recharge as soon as possible.

# TESTING THE BATTERY QUALITY

If poor battery quality is suspected, charge the battery for at least 24 hours, and then perform the following test without connecting to external power:

- 1. Turn on the Suction Unit and allow it to operate continuously at 300 mmHg.
- If the "Low Battery" red light flashes within 20 minutes, the battery should be discarded and replaced.

### **CLEANING**

- With the power switch in the "OFF" position, disconnect the Suction Unit from all external power sources.
- Wipe the housing of the Suction Unit with a clean cloth and bacterialgermicidal disinfectant.

⚠ CAUTION: Do not submerge in water or liquid. This will result in damage to the Suction Unit.

⚠ DANGER: Electric shock hazard. Never attempt to open or remove housing of Suction Unit.

There are no user-serviceable internal components. If service is required, return unit to an authorized service center. Opening or tampering with the Suction Unit will void warranty.

### FILTER CHANGING

- Change Bacteria Filter if an overflow occurs, or every two months, whichever comes first.
- Remove Bacteria Filter by disconnecting it from the Suction Unit and Vacuum Elbow.
- Replace with a clean Bacteria Filter and remount to Suction Unit.

# **TROUBLESHOOTING**

| PROBLEM  | ACTION  |
|--|---|
| Unit does not turn on. (Green external power indicator should be illuminated when power is applied.)                 | <ol> <li>Check power sources and connections.</li> <li>Ensure wall outlet has power.</li> <li>Check to determine if battery is fully charged.</li> </ol>  |
| Suction Unit is on, but no vacuum pressure.  | <ol> <li>Check that all tubing is connected properly.</li> <li>Check tubing connections<br/>for breaks or leaks.</li> <li>Ensure that flow shut-off<br/>valve is not activated.</li> <li>Check for leaks or cracks<br/>in canister assembly.</li> </ol> |
| Low vacuum pressure.   | Use Vacuum Regulator Knob     to increase vacuum level.     Check system for leaks.   |
| Battery will not hold charge. (Charging Indicator should be illuminated if battery is connected during charge mode.) | <ol> <li>Verify that Charging Indicator light turns on.</li> <li>Check electrical connections<br/>during charging.</li> <li>Ensure that your wall outlet has power.</li> </ol>  |

### **LIMITED WARRANTY**

Your Dynarex Homecare Suction Unit is warrantied to be free of defects in materials and workmanship for three (3) years from original date of purchase, for use by the original purchaser. This item was built to exacting standards and carefully inspected prior to shipment. This Warranty is an expression of our confidence in the materials and workmanship of our products and our assurance to the consumer of dependable service.

The Warranty shall not apply under the following conditions:

- · Problems arising from normal wear
- Problems arising from failure to adhere to the product instructions
- Problems arising from misuse, negligence, accident or improper operation, maintenance or storage
- Problems arising from modifications or unauthorized repairs, parts or attachments
- Products where the serial number has been removed or defaced
- Problems with non-durable components, such as rubber accessories, casters, and grips, which are subject to normal wear and need periodic replacement

Dynarex shall not be liable for any consequential or incidental damages whatsoever. Dynarex shall repair or replace defective products at its option. The foregoing warranty is exclusive and in lieu of other express warranties, if any, including the implied warranties of merchantability and fitness of a particular purpose. The remedy for any violation of the implied warranty shall be limited to repair or replacement of the defective product pursuant to the terms contained herein.

If you have a question about your Dynarex device or this warranty, please contact an authorized Dynarex dealer.