



REF HCS7001

# VACU-LINE SUCTION ASPIRATOR

## Instruction Manual



# INSTRUCTIONS FOR USE

## Receiving/Inspection

Remove the Vacu-line suction aspirator from packaging and inspect for damage. If there is any damage, DO NOT USE and contact your provider.

## Product Intended Use

The Medline Vacu-line Suction Aspirator is a portable, AC-powered device to be used on general patient population excluding neonatal due to pressure range, to supply a vacuum source adequate within the stated operating vacuum range, to aspirate fluids from respiratory airway. Intended use in home care or hospital environments.

## Read All Instructions Before Using

This manual instructs a professional to install and operate the Vacu-line Suction Aspirator. This is provided for your safety and to prevent damage to the Vacu-line Suction Aspirator. If you do not understand this manual, DO NOT USE the Vacu-line Suction Aspirator and contact your Provider.

## DANGER

### To reduce the risk of Electrocutation:

Always unplug the aspirator immediately after using.

**DO NOT** use while bathing.

**DO NOT** place or store aspirator where it can fall or be pulled into a tub or sink.

**DO NOT** place or drop into water or other liquid.

**DO NOT** reach for an aspirator that has fallen into water. Unplug immediately.

**DO NOT** attempt to repair aspirator. Any attempt could result in electrical shock.

**DO NOT** use near any type of flame or flammable/explosive substances.

**DO NOT** allow aspirator to exceed operating or storage temperature specifications.

Caution must be exercised when using this aspirator where oxygen is being administered.

The Vacu-line Suction Aspirator is not suitable for use in the presence of flammable anesthetic mixture with air, oxygen or nitrous oxide.

## WARNING

### To reduce risk of burns, electrocution, fire, or injury to persons:

The Vacu-line Suction Aspirator should never be left unattended when running.

Close supervision is necessary when the aspirator is used by, on or near children or patients with special needs.

Use the Vacu-line Suction Aspirator only for its "Intended Use" as described in this manual.

**DO NOT** use attachments not recommended by Medline Industries, LP

**DO NOT** use when sleepy or drowsy.

**DO NOT** use if the cord or plug is damaged.

**DO NOT** use if the aspirator has been dropped or damaged.

**DO NOT** cover air vents. Restriction of airflow will cause aspirator to overheat, causing the thermal reset to shut down the aspirator.

**DO NOT** drop or insert any object into any opening or hole. Keep the cord away from heated surfaces.

Use proper suction level on patient per facilities, healthcare professional and physicians guidance's.

Over suction and high vacuum suction can cause injury to the patient.

Incorrect use or failure to follow directions can cause pain and injury to the patient.

For use only by trained persons who have been adequately trained in suction procedures and in the use of aspirators.

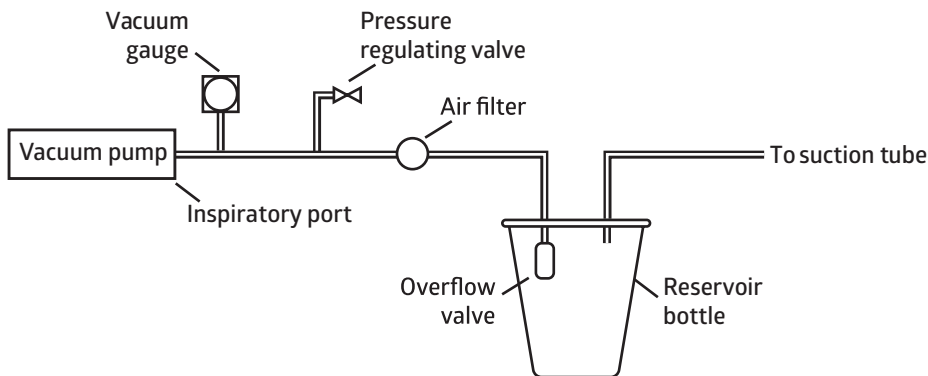
**DO NOT** use in MRI environment

The device is intended for both adult and pediatric patients. Not to be used on neonates.

Provide appropriate suction based on patient as not to result in injuries.

## Structural characteristics and working principle

The main structure of suction device includes vacuum pumps, vacuum gauge, pressure regulating valve, air filter, and the reservoir bottles. Below is the operation flow chart



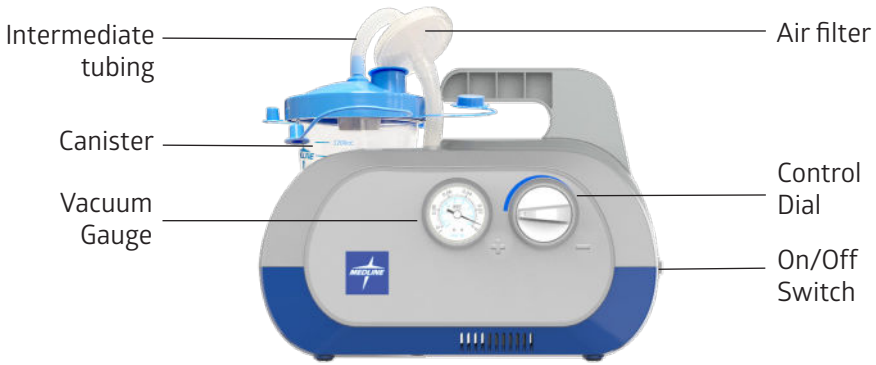
## Technical Specifications

1. Power: AC 120V, 60Hz	2. Input current: 1.5A
3. Vacuum Range: minimum vacuum range 21.15 ± 4.86 kPa to maximum vacuum range 82.84 ± 1.84 kPa	4. pressure adjustment range: 0.01MPa~Pressure Value Limit
5. Pumping rate: ≥14L/min	6. Fuse: AC250V, F2.0 AL, Ø5 X 20
7. Reservoir bottle: 850 mL, One Piece	8. Sound Level : 66.81 ± 1.37 dB in an open atmosphere and 68.42 ± 0.93 dB in a closed atmosphere

9. Vacuum gauge: 0-100KPa, 2.5 grade	10. Equipment Type: High vacuum/low
11. Working mode: <30 continuous minutes	12. Electrical requirements: is a class II, type BF
13. IP21: Degree of protection against ingress of solids and/or liquids	

## Standard operating conditions

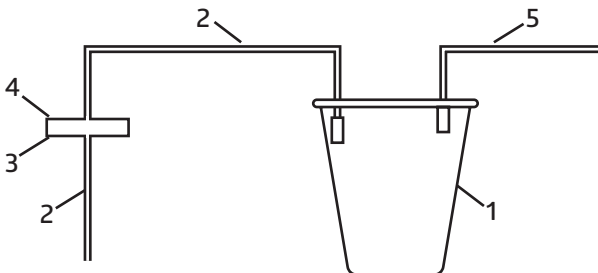
Temperature: +5°C~+40°C	Relative Humidity Range: ≤93%
Atmospheric pressure range: 500hPa-1060hPa	Transport and storage temperature range: -25°C~+70°C (-13°F~158°F)
<b>Note:</b> When the device is stored and transported in temperature below 5°C, the device should be placed in normal working temperature environment for more than 4 hours before use.	



## Tubing Connections

(Please refer to tubing connection diagram, and note suction tube is not connected)

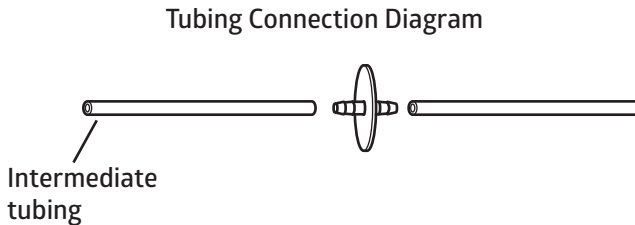
**Note:** Before installation, apply small amount of distilled water on the mouth section where cap is pressured into the bottle to improve compaction and increase the seal tightness.



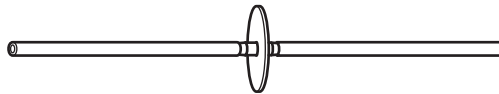
- 1) Reservoir bottle
- 2) Suction soft tube
- 3) Air filter

- 4) Blue mark
- 5) Suction catheter

## Tubing Connection Diagram



### Accessories (1)



### Tubing Connection Diagram (1)

## Operating instructions











**CAUTION** Inspect the Vacu-line Suction Aspirator for visual damage, **DO NOT USE** if damaged.





**WARNING:** Set vacuum pressure in accordance with instructions provided by your healthcare professional or physician. Never exceed their maximum pressure guidelines. Failure to follow the instructions and guidance of your healthcare professional could cause bodily injury.

1. Place Vacu-line Suction Aspirator near electrical outlet on a table, floor or other horizontal, smooth, hard surface. Allow a minimum of 4 in. (10 cm) clearance on all sides to ensure adequate airflow for cooling of Aspirator.
2. Press down on Aspirator to make sure the feet are secure.
3. Be sure the On/Off Switch is in the "OFF" position.
4. Be sure the Inline Hydrophobic Filter is properly connected to the vacuum port on the Suction Canister lid. The Inline Hydrophobic Filter prevents liquid from entering the vacuum pump. **CAUTION DO NOT** run the Vacu-line Suction Aspirator without Inline Hydrophobic Filter. This will void the warranty.
5. Plug the Aspirator into electrical outlet.
6. Turn the On/Off Switch to the "ON" position.
7. Occlude the patient connection on the Suction Canister and adjust the Vacuum Control Dial to the maximum vacuum.
  - To INCREASE vacuum turn the dial COUNTERCLOCKWISE.

- To DECREASE vacuum turn the dial CLOCKWISE
  - Gauge should read greater than 562.55 in mmHg
8. Occlude the patient connection on the Suction Canister and adjust the Vacuum Control Dial to the desired vacuum.
    - To INCREASE vacuum turn the dial COUNTERCLOCKWISE.
    - To DECREASE vacuum turn the dial CLOCKWISE.
    - Vacuum adjustment coincides with the vacuum gauge.
    - Vacuum settings should be set by following the instructions provided by healthcare professionals or physicians.
  9. Connect one end of the Patient Suction Tubing to the port on the Canister marked Patient Tubing.
  10. Connect the other end of the Patient Suction Tubing to the suction catheter and begin procedure as instructed by Provider.
  11. When procedure is completed, press the On/Off Switch to the "OFF" position. DO NOT overfill the canister.
  12. Dispose of the suction canister as follows: Remove the canister from its bracket and dispose as described by your Healthcare Professional or Healthcare Facility protocol.
  13. Replace Suction Canister and reconnect all suctioning tubing. **CAUTION: Canister is for single patient use only.**

## Safety symbols and their meanings used on this device

Symbol	Meaning	Symbol	Meaning
~	Alternating Current		Caution: Consult instructions for warnings and safety precautions
	Class II device		Type BF applied part
0	OFF		ON
IP21	IP rating 21: Degree of protection against ingress of solids and/or liquids		Follow instructions for use
	MR unsafe – This device may pose hazards in a MRI environment		Manufacturing Date
	Serial Number		Manufacture
	Components in this product not made with natural rubber latex.		Consult Operating Instructions

	DO NOT disassemble		Model Number
	Temperature Limit: 5°C~40°C		Relative Humidity Range: ≤93%
<b>Rx</b>	This device is prescription use only		

## CLEANING/MAINTENANCE

**WARNING – Turn off Vacu-line Suction Aspirator off and disconnect from any external power source before cleaning**

**WARNING - Fluids collected in the collection jar after suctioning should be disposed of according to the healthcare professional or institution's instructions.**

**WARNING - Each set of accessories should only be used by a single patient.**

### **Inline Hydrophobic Filter:**

This filter cannot be cleaned. If it becomes contaminated or clogged, it must be replaced. Change filter if collection jar over flow occurs or if filter appears wet. To replace Inline Hydrophobic Filter:

1. Disconnect filter assembly from Suction Canister and remove Suction Canister from the Aspirator.
2. Remove filter assembly from the Aspirator.
3. Dispose of filter.
4. Install new filter and reconnect tubing and elbow. Tubing is single patient use only. DO NOT clean.

### **Cleaning for Exterior Components:**

1. Disconnect the Aspirator from power source and other connections before cleaning.
2. Do not clean machine with powder-type cleaning agents or soap. Do not clean machine in water.
3. Wipe the suction unit housing with an alcohol-based disinfectant wipe.
4. Thoroughly clean the suction unit housing.
5. Visually inspect the suction unit housing for residual soil. In the event that residual soil is visible, repeat cleaning steps 3, 4 and 5.
6. Wipe dry with a clean cloth or paper towel.
7. Store the Aspirator in a clean area free from grease, oil, and other sources of contamination.

## Changing Fuse

Fuse is located in the bottom of base

1. Shut off the aspirator and unplug the unit.
2. Use flat or cross screwdriver, turn counter-clockwise to open the base to replace.

## Electromagnetic Compatibility (EMC)

The Vacu-line Suction Aspirator is intended for use in the electromagnetic environment specified below. The customer or the user of the Vacu-line Suction Aspirator should assure that it is used in such an environment.

**WARNING:** Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

**WARNING:** Use of accessories, transducers and cables other than those specified or provided by the manufacturer of this equipment could result in increased electromagnetic emissions or decreased electromagnetic immunity of this equipment and result in improper operation.

**WARNING:** Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the ME equipment, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

Manufacture's declaration - electromagnetic emission	
Emissions test	Compliance
RF emissions CISPR 11	Group 1
RF emissions CISPR 11	Class B
Harmonic emissions IEC 61000-3-2	Class A
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Complies

Manufacture's declaration - electromagnetic immunity		
Immunity test	IEC 60601 test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines	± 2 kV for power supply lines
Surge IEC 61000-4-5	± 0.5kV, ± 1 kV line(s) to lines	± 0.5kV, ± 1 kV line(s) to lines

Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°  0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0°  0 % UT; 250/300 cycles	0 % UT; 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°  0 % UT; 1 cycle and 70 % UT; 25/30 cycles Single phase: at 0°  0 % UT; 250/300 cycles
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m
NOTE: UT is the a.c. mains voltage prior to application of the test level.		

<b>Manufacture's declaration - electromagnetic immunity</b>		
Immunity test	IEC 60601 test level	Compliance level
Conducted RF IEC 61000-4-6	3 V 0.15 MHz to 80 MHz 6 V in ISM and amateur bands between 0.15 MHz and 80 MHz	3 V 0.15 MHz to 80 MHz 6 V in ISM and amateur bands between 0.15 MHz and 80 MHz
Radiated RF IEC 61000-4-3	10V/m 80 MHz to 2.7 GHz	10V/m

<b>Manufacture's declaration - IMMUNITY to proximity fields from RF wireless communications equipment</b>					
Immunity test	IEC60601 test level				Compliance level
	Test frequency	Modulation	Maximum power	Immunity level	
Radiated RF IEC 61000-4-3	385 MHz	**Pulse Modulation: 18Hz	1.8W	27 V/m	27 V/m
	450 MHz	*FM+ 5Hz deviation: 1kHz sine	2 W	28 V/m	28 V/m
	710 MHz 745 MHz 780 MHz	**Pulse Modulation: 217Hz	0.2 W	9 V/m	9 V/m

	810 MHz 870 MHz 930 MHz	**Pulse Modulation: 18Hz	2 W	28 V/m	28 V/m
	1720 MHz 1845 MHz 1970 MHz	**Pulse Modulation: 217Hz	2 W	28 V/m	28 V/m
	2450 MHz	**Pulse Modulation: 217Hz	2 W	28 V/m	28 V/m
	5240 MHz 5500 MHz 5785 MHz	**Pulse Modulation: 217Hz	0.2 W	9 V/m	9 V/m

**Note\*** - As an alternative to FM modulation, 50 % pulse modulation at 18 Hz may be used because while it does not represent actual modulation, it would be worst case.

**Note\*\*** - The carrier shall be modulated using a 50 % duty cycle square wave signal.

## TROUBLESHOOTING

Problem	Problem Cause	Remedy
Aspirator will not operate	<ol style="list-style-type: none"> <li>1. On/Off switch in "OFF" position</li> <li>2. Power Cord not connected properly</li> <li>3. Thermal limit exceeded</li> </ol>	<ol style="list-style-type: none"> <li>1. Push On/Off switch to "ON" position</li> <li>2. Check plug at outlet</li> <li>3. Shut Aspirator off, wait 15 minutes; be sure vents are clear</li> </ol>
NO vacuum on gauge/NO vacuum at Patient Connection Tubing	<ol style="list-style-type: none"> <li>1. Hydrophobic Filter not connected properly</li> <li>2. Suction Canister not connected or assembled properly</li> <li>3. Defective Suction Canister</li> <li>4. Defective Regulator</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm and tighten connections</li> <li>2. Confirm and tighten canister</li> <li>3. Replace Suction Canister</li> <li>4. Contact your Provider</li> </ol>
NO vacuum on gauge/vacuum at Patient Connection Tubing	<ol style="list-style-type: none"> <li>1. Defective vacuum gauge</li> </ol>	<ol style="list-style-type: none"> <li>1. Contact your Provider</li> </ol>
Vacuum on gauge/NO vacuum at Patient Suction Tubing	<ol style="list-style-type: none"> <li>1. Clogged Hydrophobic filter</li> <li>2. Canister overfilled</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace Hydrophobic filter</li> <li>2. Empty canister</li> </ol>
Unable to adjust vacuum	<ol style="list-style-type: none"> <li>1. Defective regulator</li> </ol>	<ol style="list-style-type: none"> <li>1. Contact your Provider</li> </ol>

## Limited warranty

The compressor portion of the VACU-LINE Suction Unit is warranted to be free from defective workmanship and materials for a period of two years from date of purchase and six months on accessories.

Any defective part(s) will be repaired or replaced at VACU-LINE option if the unit has not been tampered with or used improperly during that period. Make certain that any malfunction is not due to inadequate cleaning or failure to follow the instructions. If repair is necessary, please contact the medical equipment provider where you purchased it or VACU-LINE.

## **NOTE**

This warranty does not cover providing a loaner unit, compensating for costs incurred in rental while said unit is under repair, or costs for labor incurred in repairing or replacing defective part(s).

THERE IS NO OTHER EXPRESS WARRANTY. IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE DURATION OF THE EXPRESS LIMITED WARRANTY AND TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. THIS IS THE EXCLUSIVE REMEDY AND LIABILITY FOR CONSEQUENTIAL AND INCIDENTAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. SOME STATES (IN THE US) DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, OR THE LIMITATION OR EXCLUSION OF CONSEQUENTIAL OR INCIDENTAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state (in the US).

## **Manufacturer's Note**

Thank you for choosing a VACU-LINE Suction Unit. We would like you to be a satisfied customer. If you have any questions or comments, please send them to our address below.

For Service Call Your Authorized VACU-LINE Medical Provider: Medline Industries, LP  
**1-800-MEDLINE [www.medline.com](http://www.medline.com)**

**[www.medline.com](http://www.medline.com)**

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