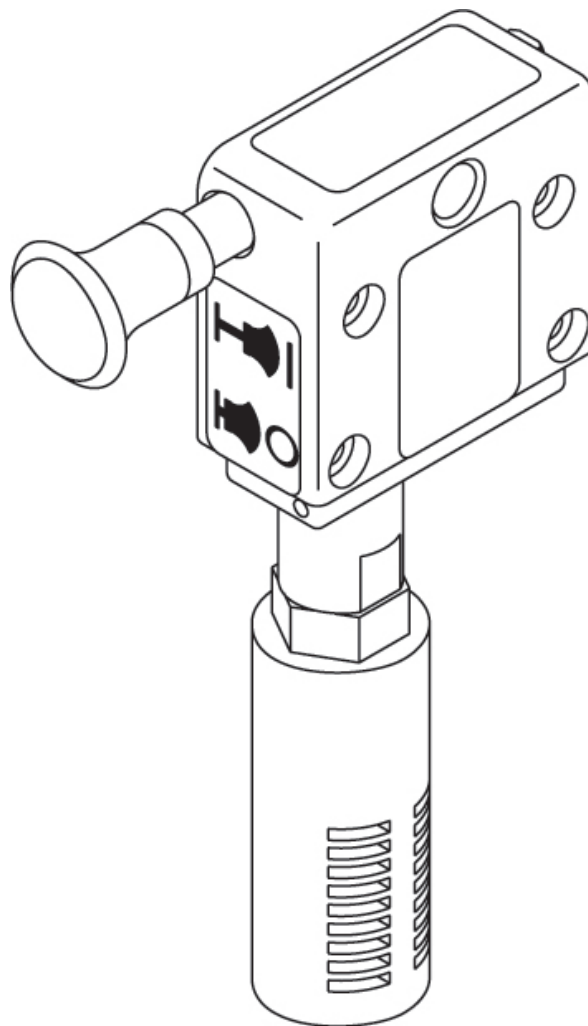


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# Venturi/Ejector Suction Module

## Service Manual



**Rx Only**

# User Responsibility

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This product performs as explained in this manual as long as the assembly, use, repair and maintenance are properly followed according to our instructions. Periodic review of this device is recommended. If any damage or defects are present, the product should not be used. This includes parts that may have been altered, contaminated, worn or missing. If any of the above are noted, immediate repair / replacement is required. In compliance with the Ohio Medical Warranty, repair of this device is not to be performed by anyone other than a qualified professional and done in strict accordance to the written instructions provided by Ohio Medical. If this device is subject to improper maintenance, repair, use and/or abuse leading to malfunction of the device, replacement is the sole responsibility of the user.

## Technical Competence

The procedures described in this service manual should be performed by competent individuals who have a general knowledge of and experience with devices of this nature. No repairs should ever be undertaken or attempted by anyone not having such qualifications.

Genuine replacement parts manufactured or sold by Ohio Medical must be used for all repairs.

**IMPORTANT: Read completely through each step in every procedure before starting the procedure; any exceptions may result in a failure to properly and safely complete the attempted procedure.**

## Abbreviations used in this manual

mmHg	Millimeters of mercury (mmHg x 0.133 = kPa)
kPa	Kilopascal (kPa x 7.50 = mmHg)
CW	Clockwise
CCW	Counterclockwise (Anti-Clockwise)
DISS	Diameter Index Safety System
FSD	Full Scale Deflection
O <sub>2</sub>	Oxygen
PTFE	Polytetrafluoroethylene
NPTF	National Pipe Thread Female (USA)
psi	Pounds Per Square Inch
LPM	Liters Per Minute
ISU	Intermittent Suction Unit
CVR	Continuous Vacuum Regulator
mm	Millimeters
oz	Ounces
°C	Degrees Celsius
°F	Degrees Fahrenheit
N-m	Newton Meter (N-m x .737 = ft-lb)
P/N	Part Number
ft-lb	Foot Pound Force (ft-lb x 1.356 = N-m)
psig	Pounds Per Square Inch Gauge
PTS	Push-To-Set™

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# 1/Precautions

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## 1.1 Definitions

**Note:** A Note provides additional information to clarify a point in the text.

**Important:** An Important statement is similar to a note but of greater emphasis.


**⚠ CAUTION:** A CAUTION statement is used when the possibility of damage to the equipment exists.

**⚠ WARNING:** A WARNING statement is used when the possibility of injury to the patient or the operator exists.

**⚠** Alerts you to a warning or caution in the text.

 = PULL knob out for | ON

 = PUSH knob in for O OFF

 = Supply gas inlet pressure

 = Do not use petroleum based lubricants

**VAC** = Vacuum

## 1.2 Warnings

This manual covers the operation of the Venturi/Ejector suction module only. Follow Vacuum regulator Pre-Use Checkout and Patient Set-Up procedures found in the vacuum regulator service manual.

After patient use, the Venturi/Ejector suction module may be contaminated. Handle in accordance with your hospital's infection control policy.

Clean and sterilize all suction equipment before shipment or service to ensure transportation personnel and/or service personnel are not exposed to any hazardous contamination.

**DO NOT** use this device in the presence of flammable anesthetics. Static charges may not dissipate and possible explosion hazard exists in the presence of these agents.

The Pre-Use Checkout Procedure (Section 3.3) must be performed before using this equipment on each patient. If the regulator fails any part of the Pre-Use Checkout Procedure, it must be removed from service and repaired by qualified service personnel.

The Venturi/Ejector suction module is only intended for use with medical air or oxygen. Do not use the Venturi/Ejector suction module with any other gases.

Do not allow oxygen or oxygen equipment to be exposed to fire, sparks, or electrical equipment which may provide a source of ignition. **DO NOT SMOKE IN THE AREA WHERE OXYGEN IS IN USE.**

After disassembly **always** perform the Service Checkout Procedure (Section 7).

## 1.3 Cautions

Do not use any Loctite® products to seal the fitting and adapter port threads (or products which contain methacrylate ester as an active ingredient). Loctite products may damage plastic components.

Only competent individuals trained in the repair of this equipment should attempt to service it.

To help prevent aspirate from entering the regulator, an overflow safety trap should be attached prior to its use. Aspirate in the regulator will impair the operation. The use of the overflow safety trap will help prevent this and extend the life of the suction equipment.

Use of lubricants, other than recommended, may degrade plastic or rubber components.

## 1.4 Intended Use

The Venturi/Ejector suction module is an accessory designed to generate a vacuum supply through the use of pressurized medical air or oxygen. The device is to be used with Ohio Medical vacuum regulators only.

# 2/Descriptions and Specifications

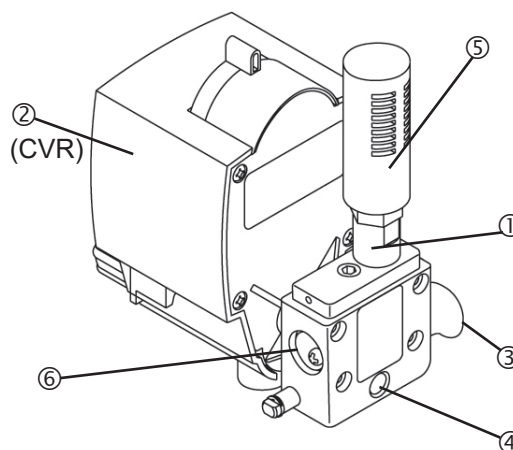
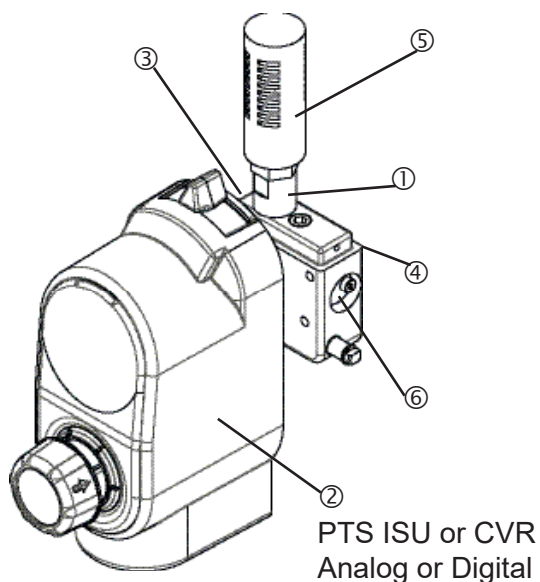
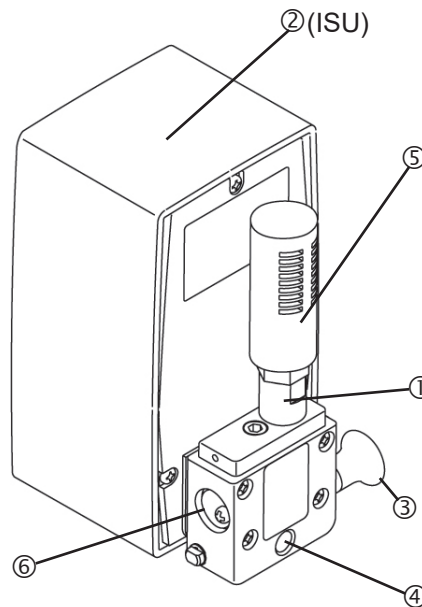
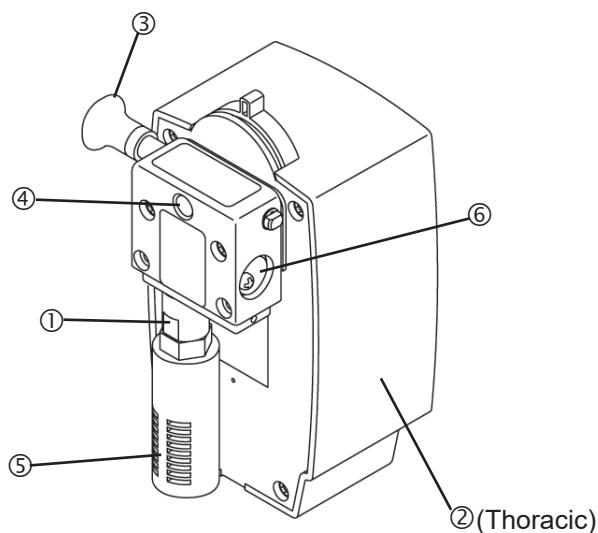
## 2.1 Description

### WARNING:

⚠ Do not use this device in the presence of flammable anesthetics. Static charges may not dissipate and possible explosion hazard exists in the presence of these agents.

### Venturi/Ejector suction module identification

- ① Venturi/Ejector manifold
- ② Vacuum regulator
- ③ Venturi/Ejector On/Off knob
- ④ Supply gas probe/adaptor port
- ⑤ Exhaust muffler
- ⑥ Positive pressure relief valve (recessed)



## 2/Description & Specifications

---

### 2.2 Specification

#### 2.2.1 Technical Specifications

Supply gas pressure:	45 to 80 psi (310 to 552 kPa) dynamic pressure
Gas Consumption Rate:	30 to 50 LPM
Minimum Flow Rate (without fittings at full increase) :	25 LPM - Thoracic 30 LPM - ISU and CVR 30 LPM - Stand alone
Suction range available:	500 mmHg (66.7 kPa) minimum
Weight: (Less fitting and not installed on vacuum regulator)	8.6 oz (240 grams)
Dimensions: (Less fitting and not installed on vacuum regulator)	Height: 5.9 in (150 mm) Width: 3.9 in (99 mm) Depth: 1.0 in (26 mm)

#### 2.2.2 Environmental Specifications

Operating Temperature Range:	40 to 120°F (4 to 49°C)
Storage Temperature Range:	0 to 160°F (-18 to 71°C)
Operating and Storage Relative Humidity:	5 to 95%

#### 2.2.3 Standards

ISO 10079-3 (section 5.1.2) states that “the usable volume of the collection container shall not be less than 500 mL.”

## 3.1 Equipment Set-Up

If the Venturi/Ejector suction module is purchased separately, apply a small amount of Loctite® Lox-8® paste or Teflon® (PTFE) pipe sealant tape to NPT threads of the adapter on the back of the unit. Tighten adapter securely to the vacuum regulator (minimum torque of 5.4 N-m). Ensure that the unit is vertical.

### WARNINGS

- ⚠ **Connect supply gas adapter to a 45 to 80 psi (310 to 552 kPa) medical air or oxygen supply source only to prevent patient or operator injury.**
- ⚠ **Never mix adapters of different gases or vacuum. Cross connection can result in serious patient injury or damage to equipment.**
- ⚠ **To prevent patient injury, do not block the positive pressure relief.**

### CAUTIONS

- ⚠ **Connect supply gas adapter to a 45 to 80 psi (310 to 552 kPa) medical air or oxygen supply source only to prevent equipment damage.**
- ⚠ **To prevent fluid from entering the regulator and Venturi/Ejector suction module, use an Ohio Medical overflow safety trap and high flow suction filter. Flooding may impair operation.**

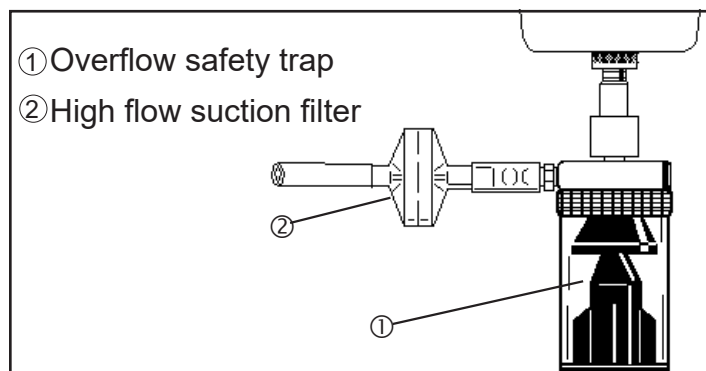
### High Flow Suction Filters

Hydrophilic:

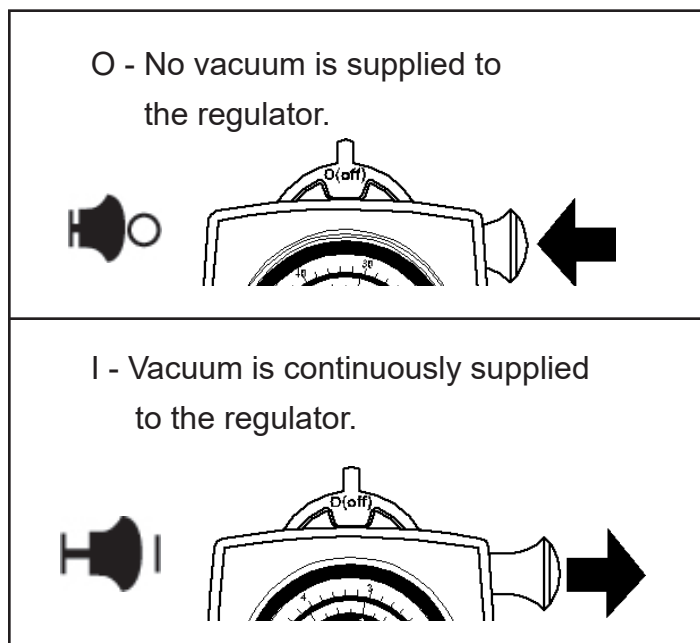
	Nipple
20 Pack	6730-0350-800
200 Pack	6730-0351-800

Hydrophobic:

	Nipple	Threaded
3 Pack	6700-0570-800	6700-0580-800
10 Pack	6700-0571-800	6700-0581-800
50 Pack	6700-0572-800	6700-0582-800



## 3.2 Mode Selection



## 3.3 Pre-Use Checkout Procedure

### WARNING

- ⚠ **Perform the Pre-Use Checkout Procedure before using on each patient. If there is any failure, remove from service and repair.**

1. Check that the positive pressure relief valve flips open easily. You may wish to use a flat head screwdriver, wooden toothpick or similar tool to access the relief valve flap, as long as the tool is not sharp enough to damage the flap.
2. Push the Venturi on/off knob to O (Off)
  - Turn the vacuum regulator to | (On).
  - Rotate the suction control knob one full turn clockwise (increasing).
  - Clamp the tubing to occlude the fitting port. The gauge needle should not move.
3. Turn the vacuum regulator to O (Off)
  - Pull the Venturi on/off knob to | (On).
  - Follow the Pre-Use Checkout Procedure given in the instructions for the vacuum regulator.



# 4/Cleaning and Sterilization

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## 4.1 Cleaning

### WARNING

- ⚠ **After patient use, regulators may be contaminated. Handle in accordance with your hospital's infection control policy.**

**Important:** Always follow your hospital's policy for oxygen compatible cleaning; some cleaners are highly combustible in the presence of oxygen.

### 4.1.1 Routine Exterior Cleaning

Routine cleaning of the Venturi/Ejector suction module is recommended as a standard procedure after each use. Wipe all exterior surfaces with a solution of water and mild detergent.

### 4.1.2 Internal Component Cleaning

The Venturi/Ejector suction module requires cleaning if it becomes flooded with patient fluid.

1. Refer to Section 6.2 Disassembly and Reassembly for disassembly instructions.
2. All plastic and elastomer components may be cleaned with a solution of warm water and mild detergent. Clean all metal components with alcohol.
3. Dry all components with a lint free cloth before assembly.
4. Replace the muffler. It cannot be cleaned.
5. Refer to Section 6.2 Disassembly/ Reassembly for reassembly instructions.

**Note:** Always refer to the cleaning instructions for the vacuum regulator model that you are using.

## 4.2 Sterilization

### WARNING

- ⚠ **Following sterilization with ethylene oxide, parts should be quarantined in a well ventilated area to allow dissipation of residual ethylene oxide gas absorbed by the material. Follow sterilizer manufacturer's recommendations for specific aeration periods required.**

### CAUTIONS

- ⚠ Do not steam autoclave or liquid sterilize the Venturi/Ejector suction module. Severe impairment to the operation of the Venturi/Ejector suction module will result. The only acceptable method of sterilization is with gas (ethylene oxide).
- ⚠ Sterilization with ethylene oxide mixtures may cause crazing (minute superficial cracking) of some plastic parts. Crazing will be more pronounced when mixtures containing Freon® are used.



**Note:** The Venturi/Ejector suction module should only be sterilized if it is contaminated or maintenance is to be performed. Sterilization is not recommended as a standard procedure after each use.

1. The Venturi/Ejector suction module should be sterilized with the gas supply valve in the | ON position.
2. The only acceptable method of sterilization is with ethylene oxide. Ethylene oxide mixtures can be used at temperatures of 125 to 135°F (52 to 57°C). If this temperature cannot be obtained, room temperature sterilization with 100% ethylene oxide can also be used.
3. Adequately aerate the Venturi/Ejector suction module prior to disassembly, shipment or use. Aerate parts prior to reassembly.
4. After each sterilization check the operation of the Venturi/Ejector suction module by performing the Pre-Use Checkout Procedure (Section 3.3).

Place the unit in the vertical position and connect to a dynamic gas supply of between 45 to 80 psi (310 to 552 kPa).



## 5.1 Troubleshooting

Problem	Possible Causes	Remedy
A. No gauge indication and no suction in any setting and no exhaust sound audible.	1. Venturi knob is in the O (Off) position 	1. Switch to   (On) 
	2. No supply gas	2. Correct supply problem
	3. Poor connection	3. Check all connections and seals
	4. Blocked probe/adaptor or outlet	4. Clean or replace probe/adaptor
	5. Inlet filter blocked	5. Replace inlet filter
B. No gauge indication and no suction but exhaust sound is audible	1. Vacuum regulator is off	1. Turn vacuum regulator on
	2. Positive pressure relief valve not sealing	2. Clean or replace valve
	3. Venturi to vacuum regulator connection poor	3. Check all connections and seals
	4. Problem with vacuum regulator	4. Refer to information on troubleshooting for the vacuum regulator
C. Reduced Pressure or flow	1. Venturi muffler is dirty or clogged	1. Replace muffler
	2. Venturi pump dirty or clogged	2. Clean or replace pump
	3. Positive pressure relief valve not properly seating	3. Check seating. Clean or replace valve if necessary

# 6/Disassembly and Reassembly

## 6.1 Service Tools and Equipment

### WARNING

- ⚠ **Never use any petroleum-based lubricants in an oxygen environment as these materials are highly combustible in the presence of oxygen. The only oxygen service lubricants recommended for this equipment are Sentinel® OPG or Ball Vac Kote®.**

### CAUTIONS

- ⚠ Use of lubrication other than recommended may degrade plastic or rubber components.
- ⚠ Do not use any Loctite® (or any product which contains methacrylate ester) on any part of the Venturi/Ejector suction module or connected fittings. Loctite may damage plastic components.

The following items should be on hand during any service procedure.

- Open and adjustable wrenches (spanners)
- Torque wrench
- Screwdrivers
- Wooden toothpick (to remove O-rings)
- Oxygen service lubricants:
  - Sentinel® OPG (Ohio Medical P/N 6700-0067-200) or Ball Vac-Kote® (Ohio Medical P/N 6700-0092-200)
- Oxygen service pipe thread sealant:
  - Lox-8® paste (Ohio Medical P/N 6700-0069-200) or Teflon® (PTFE) Pipe sealant tape
- Pressure gauge: 100 psi accuracy +/- 1% of full scale deflection accuracy
- High Vacuum Calibration gauge, 760 mmHg (101.3 kPa) accuracy +/- 1% of full scale deflection (Ohio Medical P/N 6700-0352-800)
- Water Manometer or calibrated pressure gauge, 0-70 cm H<sub>2</sub>O (+/- 1 cm H<sub>2</sub>O)
- Supply gas valve (Ohio Medical P/N 0207-6023-300)
- 50 LPM Flowmeter (Ohio Medical P/N 6700-0355-800)
- Bubble leak tester
- 1/4" NPT Pipe Plug (Ohio Medical P/N 6600-0617-400)

## 6.2 Disassembly and Reassembly

See Section 9.1 Illustrated Parts of this manual for exploded part views.

### WARNINGS

- ⚠ **If the unit is repaired or disassembled in any manner, the Service Checkout Procedure (Section 7) must be performed before returning the equipment to service.**
- ⚠ **To ensure service personnel are not exposed to hazardous contamination, clean and disinfect all suction equipment before disassembly.**
- ⚠ **Prior to any servicing, disconnect the Venturi/Ejector suction module from the gas supply.**

**Note:** On some units the Venturi/Ejector suction module On/Off knob may need to be removed to access the cover screws of the vacuum regulator. Refer to Section 6.2.3 Gas Supply Switch/Valve Spool - Disassembly.

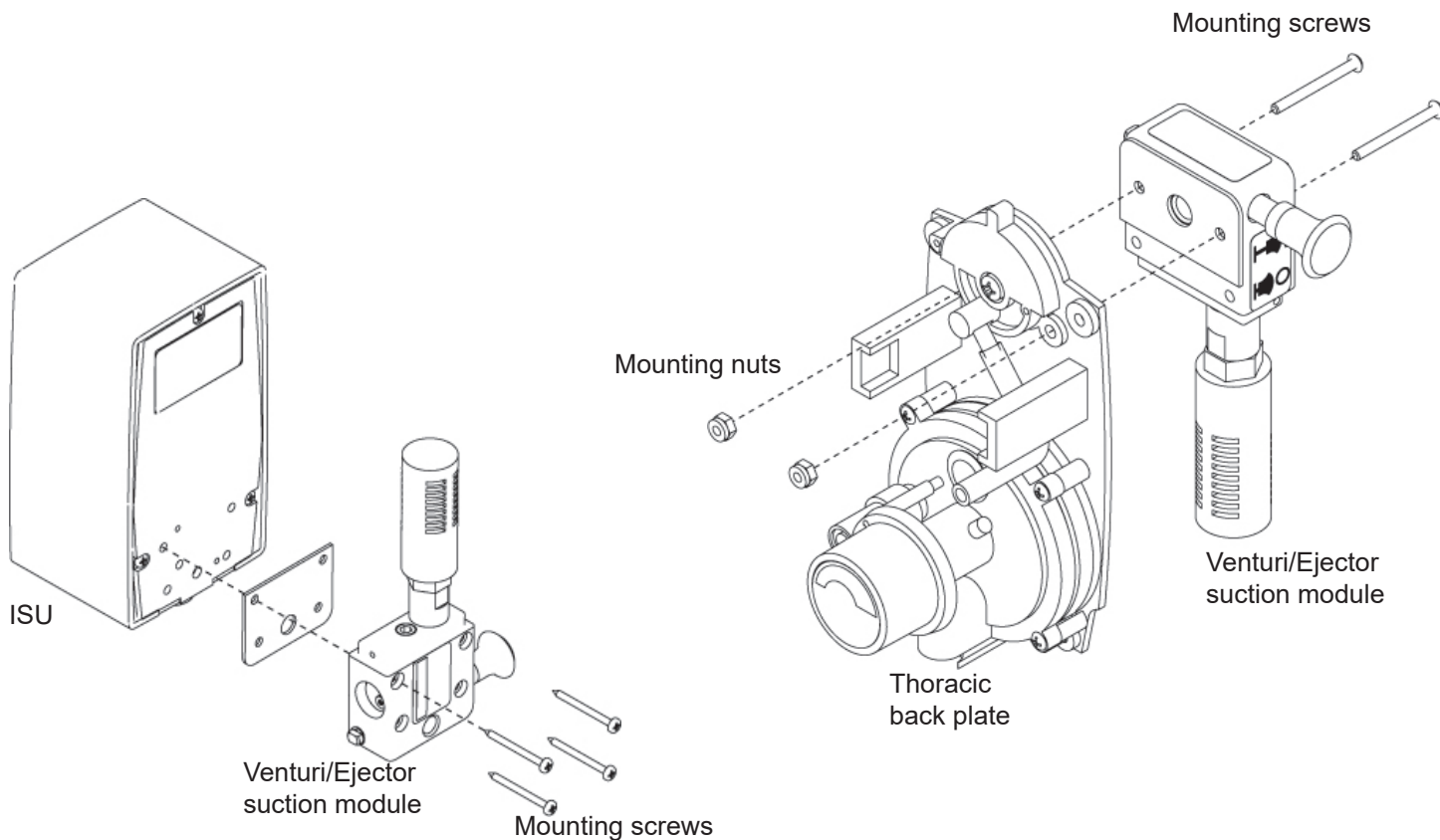
### 6.2.1 Venturi/Ejector Suction Module - Disassembly from Vacuum Regulator

#### 6.2.1.1 CVR or Accessory Mounted

1. Remove the Venturi/Ejector suction module from the gas supply.
2. Hold the vacuum regulator in place. With a wrench unscrew the 1/8" x 1/8" male adapter (and Venturi/Ejector suction module) from the vacuum regulator.
3. With a wrench remove the 1/8" x 1/8" male adapter from the Venturi/Ejector suction module.

#### 6.2.1.2 ISU or Thoracic

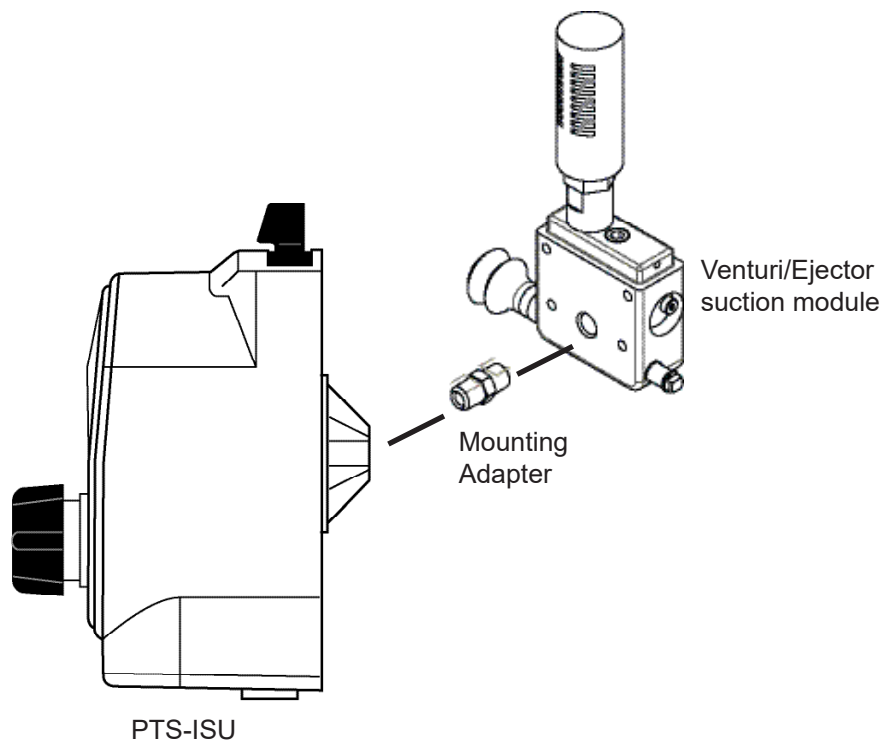
1. Remove the Venturi/Ejector suction module from the gas supply.
2. Remove the mounting screws (2 for Thoracic mount- it may be necessary to remove the regulator cover to access the internal mounting nuts; 4 for ISU mount- see Figure 6-2).
3. Pull the Venturi/Ejector suction module and gasket from the vacuum regulator.
4. Replace gasket if required.



**Figure 6.2**  
Venturi/Ejector suction module mounting

### 6.2.1.3 PTS-ISU or PTS-CVR

1. Remove the Venturi/Ejector suction module from the gas supply.
2. Unscrew the Venturi/Ejector from the mounting adapter on the vacuum regulator (see Figure 6.2A).
3. Unscrew the mounting adapter from the vacuum regulator.



**Figure 6.2A**  
Venturi/Ejector suction module mounting

# 6/Disassembly and Reassembly

## 6.2.2 Venturi/Ejector Suction Module - Disassembly/Reassembly

### 6.2.2.1 CVR or Accessory Mounted

1. Apply a small amount of Lox-8® paste or Teflon® (PTFE) pipe sealant tape to both pipe threads of the 1/8" x 1/8" adapter.
2. Tighten adapter securely to the Venturi/Ejector suction module vacuum port (minimum torque of 4 ft-lb).
3. Tighten adapter securely to the vacuum regulator (minimum torque of 4 ft-lb).
4. Continue tightening to align the Venturi/Ejector suction module vertically with the vacuum regulator.

### 6.2.2.2 ISU or Thoracic

1. Lightly lubricate both sides of the gasket using one of the oxygen service lubricants listed above.
2. Align the holes on the gasket with the holes on the Venturi/Ejector suction module manifold.
3. Install the mounting screws and tighten (on the Thoracic regulator you may need to hold the two nuts while tightening these screws - see Figure 6-2).

## 6.2.3 Gas Supply Switch/Valve Spool - Disassembly

1. Remove the Venturi/Ejector suction module from the gas supply.
2. Remove the retaining ring from the end of the valve assembly.
3. Pull the valve out from the knob side. All O-rings for the valve are now accessible for inspection and replacement.

## 6.2.4 Gas Supply Switch/Valve Spool - Reassembly

1. Lubricate the O-rings with a small amount of one of the oxygen service lubricants listed above.
2. Slide the valve assembly into the manifold from the same side as the On/Off label.
3. Install the retaining ring.
4. Perform the Service Checkout Procedure (Section 7).

## 6.2.5 Muffler - Disassembly

1. Remove the Venturi/Ejector suction module from the gas supply.
2. With a wrench, hold the interface adapter in place while using another wrench to remove the muffler.

## 6.2.6 Muffler - Reassembly

1. Screw the muffler into the interface adapter.
2. Perform Service Checkout Procedure (Section 7) to ensure adequate flow.

## 6.2.7 Venturi Pump - Disassembly

1. With a wrench, remove the interface adapter.
2. Remove the Venturi/Ejector suction module pump. All O-rings for the pump and adapter are now accessible for inspection and replacement.

## 6.2.8 Venturi Pump - Reassembly

1. Lubricate the O-rings with a small amount of one of the oxygen service lubricants listed above.
2. Place the Venturi/Ejector suction module pump into the interface adapter (see Figure 6-3 for orientation) and tighten the interface adapter with Venturi/Ejector suction module pump into the manifold.
3. Perform Service Checkout Procedure (Section 7) to ensure adequate flow.

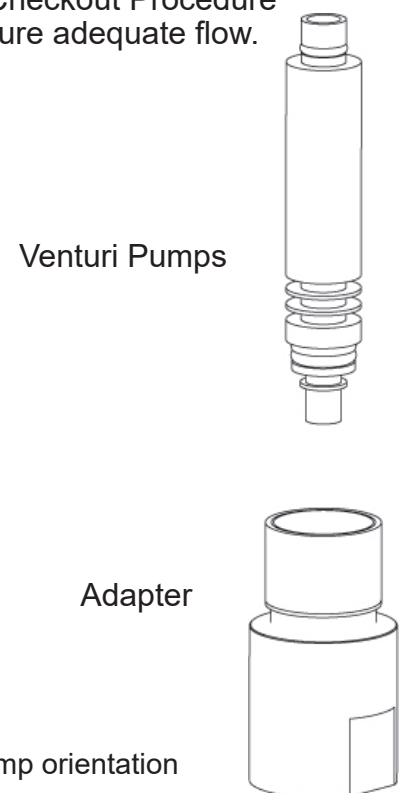


Figure 6-3  
Adapter and pump orientation

## 6.2.9 Relief Valve - Disassembly

1. Remove the Venturi/Ejector suction module from the gas supply.
2. Remove the screw holding the rubber valve.
3. Remove the valve from the recess and replace if required.

## 6.2.10 Relief Valve - Reassembly

1. Place the valve in the recess and align the screw hole.
2. Tighten the retaining shoulder screw into manifold.
3. Perform Service Checkout Procedure (Section 7) to ensure adequate flow.

## 6.2.11 Inlet Filter Removal

1. Remove the Venturi/Ejector suction module from the gas supply.
2. Remove the inlet adapter from the manifold.
3. Remove the inlet filter.

**Important:** It is recommended that the filter be replaced if it is removed from the manifold.

## 6.2.12 Inlet Filter Replacement

1. Making sure you install the filter straight in the hole, place a new inlet filter in the manifold inlet port. A 5/32" diameter or smaller dowel (cleaned and suitable for low pressure oxygen service) may be used to push squarely on the center of the new filter.

### WARNING

- ⚠ **If the Venturi/Ejector suction module is repaired or disassembled in any manner, the Service Checkout Procedure (Section 7) must be performed before using the equipment on the patient.**


**Important:** This entire procedure must be performed in numerical order.

In addition to performing the Service Checkout Procedure found in the Venturi/Ejector suction module service manual, refer to the information provided with the vacuum regulator. Perform the Service Checkout Procedure found in the vacuum regulator's service manual as recommended.

## 7.1 Set-Up


1. Verify that there is between 45 and 80 psi (310 and 552 kPa) supply gas.
2. Install a valve between the gas supply and Venturi/Ejector suction module inlet port.

## 7.2 Flow Test

1. Fully open supply gas valve.
2. Connect the patient port of the vacuum regulator (or vacuum port of the Venturi/Ejector suction module for accessory) to a flowmeter with tubing.
3. Pull the Venturi/Ejector suction module to | (On). 
4. Turn the mode selector on the vacuum regulator to | (ON) or | (CONT).
5. Turn the suction control on the vacuum regulator to full increase.
6. Verify that the flow rate is at least (see table below):

Configuration	Flow (LPM)
Thoracic	25*
ISU and CVR	30*
Stand Alone	30*

\*Flow without fittings and adapters. Common fittings and adapters may reduce flow by approximately 1 LPM.

7. Push the Venturi/Ejector suction module to O (Off). 
8. Disconnect the flowmeter.

## 7.3 Vacuum Level Test

1. Connect the patient port of the vacuum regulator (or vacuum port of the Venturi/Ejector suction module for accessory) to the high calibration gauge with tubing.
2. Turn the Venturi/Ejector suction module to | (On). Ensure regulator is at it's maximum setting.
3. Verify that you receive at least (see table below):

Configuration	Static Pressure
Thoracic and Low CVR	Maximum range of vacuum regulator
Standard/High CVR and ISU	500 mmHg (66.7 kPa)
Stand Alone	500 mmHg (66.7 kPa)

## 7/Service Checkout Procedure

4. Push the Venturi/Ejector suction module knob to O (Off).
5. Disconnect the calibration gauge.

### 7.4 Leak Test - Internal

1. Push the Venturi/Ejector suction module knob to O (Off).
2. Connect the patient port of the vacuum regulator to port 'A' of the bubble leak tester with tubing. Allow port 'B' of the bubble leak tester to be open to air.
3. No bubbles should appear in the next ten seconds.

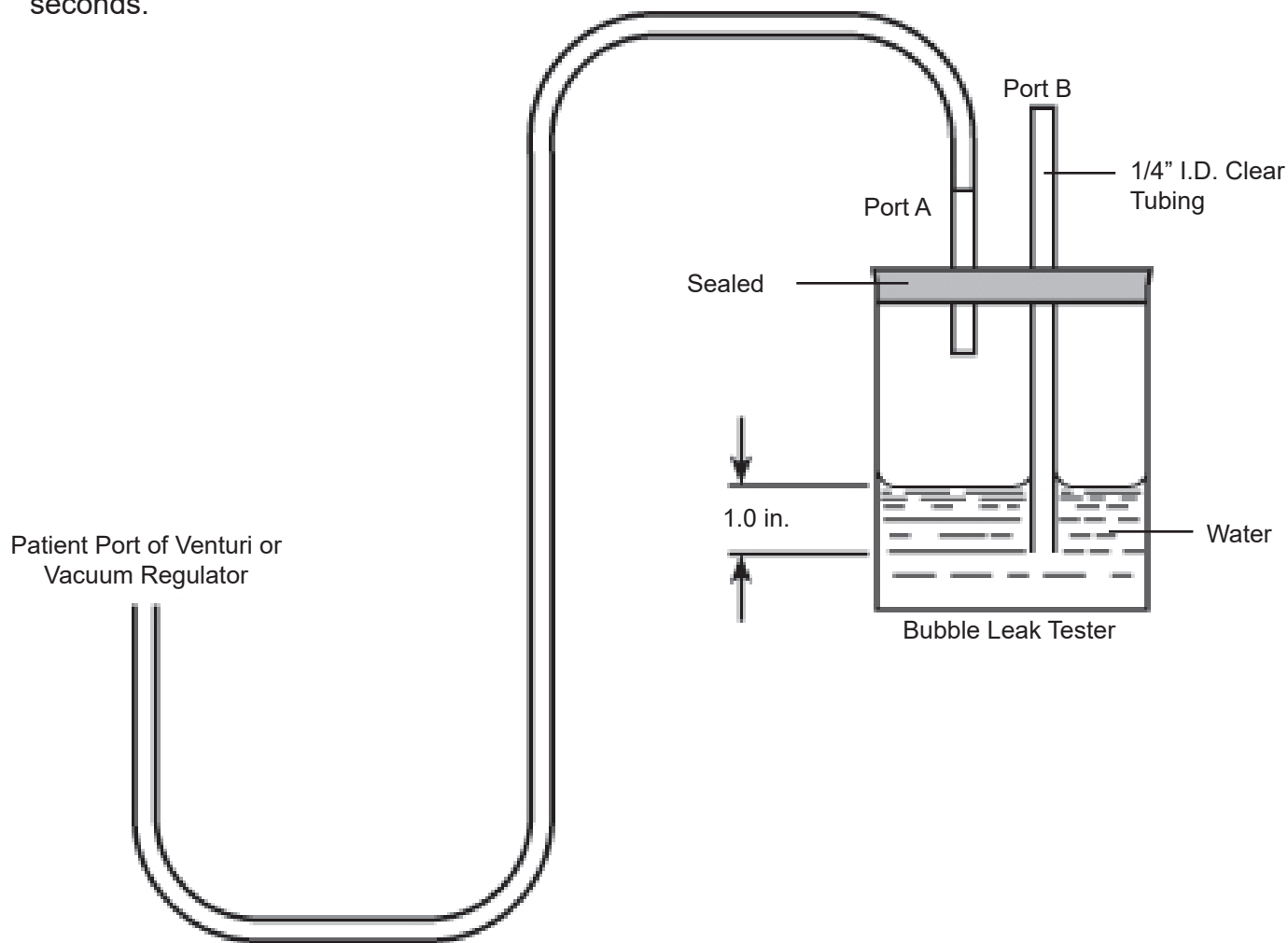


Figure 7-1  
Bubble Leak Test

Bubble Leak Test - Internal

## 7.5 Leak Test - External Supply

1. Ensure supply gas valve is closed.
2. Securely attach the leak test pressure gauge (100 psi) between supply gas valve and Venturi/Ejector suction module inlet. Ensure the gas supply valve and leak test pressure gauge connections are leak free. An O<sub>2</sub> compatible soap or leak detection solution can be used to detect leaks at pipe connections.
3. With the Venturi/Ejector suction module still in the O (Off) position, fully open the supply gas valve. The leak test pressure gauge should show the supply pressure.
4. Close the gas supply valve and immediately read the leak test pressure gauge.
5. Observe that the leak test pressure gauge does not drop more than 5 psig in 5 minutes.
6. Remove the leak test gauge and reconnect the supply gas valve to the Venturi/Ejector suction module inlet port.

## 7.6 Positive Pressure Relief Test

1. Connect the pressure gauge (0-70 cmH<sub>2</sub>O) to the patient port of the vacuum regulator (or vacuum port of the Venturi/Ejector suction module for accessory).
2. Remove the muffler from the Venturi/Ejector suction module exhaust port. Make sure to leave the interface adapter.
3. Apply a small amount of Loctite-8 paste or Teflon (PTFE) pipe sealant to the 1/4" NPT pipe plug and tighten the plug into the end of the interface adapter.
4. Open the supply gas valve.
5. Push the Venturi/Ejector suction module knob to | (On).
6. The pressure at the patient port should not exceed 1 kPa.
7. Remove the plug adapter and reinstall the muffler.



# 8/Maintenance

## 8.1 General Maintenance of Suction Equipment

### WARNINGS

- ⚠ **The Pre-Use Checkout Procedure (Section 3.3) must be performed before using this equipment on each patient. If the unit fails any part of the Pre-Use Checkout Procedure, it must be removed from service and repaired by qualified service personnel.**
- ⚠ **To ensure service personnel are not exposed to hazardous contamination, clean and disinfect all suction equipment before disassembly.**

Protection of the Venturi/Ejector suction module device is as important as maintenance of the suction equipment. The use of collection bottles with shut-off valves, overflow safety trap assemblies and disposable suction filters will protect the regulator and Venturi/Ejector suction module device.

Routine maintenance and inspection are important to the performance of the Venturi/Ejector suction equipment. The following is a recommended list for care of Venturi/Ejector suction module equipment after each patient use:

1. Wipe all exterior surfaces with a solution of water and mild detergent.
2. Perform a careful visual inspection.
3. Check that the high flow disposable suction filter is clean and in good condition.
4. Check the floats in the overflow safety trap and collection bottle for correct operation.
5. Perform the Pre-Use Checkout Procedure (Section 3.3).

## 8.2 Recommended Maintenance

In addition to the Pre-Use Checkout Procedure (Section 3.3), the following periodic maintenance should be performed, as appropriate for each facility.

Item	Comments
Perform Section 7 Service Checkout Procedure	If the product does not pass refer to Troubleshooting (Section 5). Repair as necessary.
Inspect Components <ul style="list-style-type: none"><li>• O-rings</li><li>• Mounting Gasket</li><li>• Positive pressure relief valve</li><li>• Inlet Filter</li><li>• Muffler</li></ul>	Replace as necessary to minimize in-use failures.

## 8.3 Repair Policy

### WARNING

- ⚠ **Clean and sterilize all multiple use suction equipment before shipment to ensure transportation personnel and/or service personnel are not exposed to any hazardous contamination.**

### CAUTIONS

- ⚠ Do not steam autoclave or liquid sterilize the Venturi/Ejector suction module. Severe impairment to the operation of the Venturi/Ejector suction module will result. The only acceptable method of sterilization is with gas (ethylene oxide).
- ⚠ Only competent individuals trained in the repair of this equipment should attempt to service it.

Do not use malfunctioning equipment. Make all necessary repairs. Have the equipment repaired by qualified service personnel or by Ohio Medical. Parts listed in this service manual may be repaired or replaced by a competent, trained person who has experience in repairing devices of this nature. After repair, perform the Service Checkout Procedure (Section 7) to ensure that the Venturi/Ejector suction module is functioning properly, and complies with the manufacturer's published specifications.

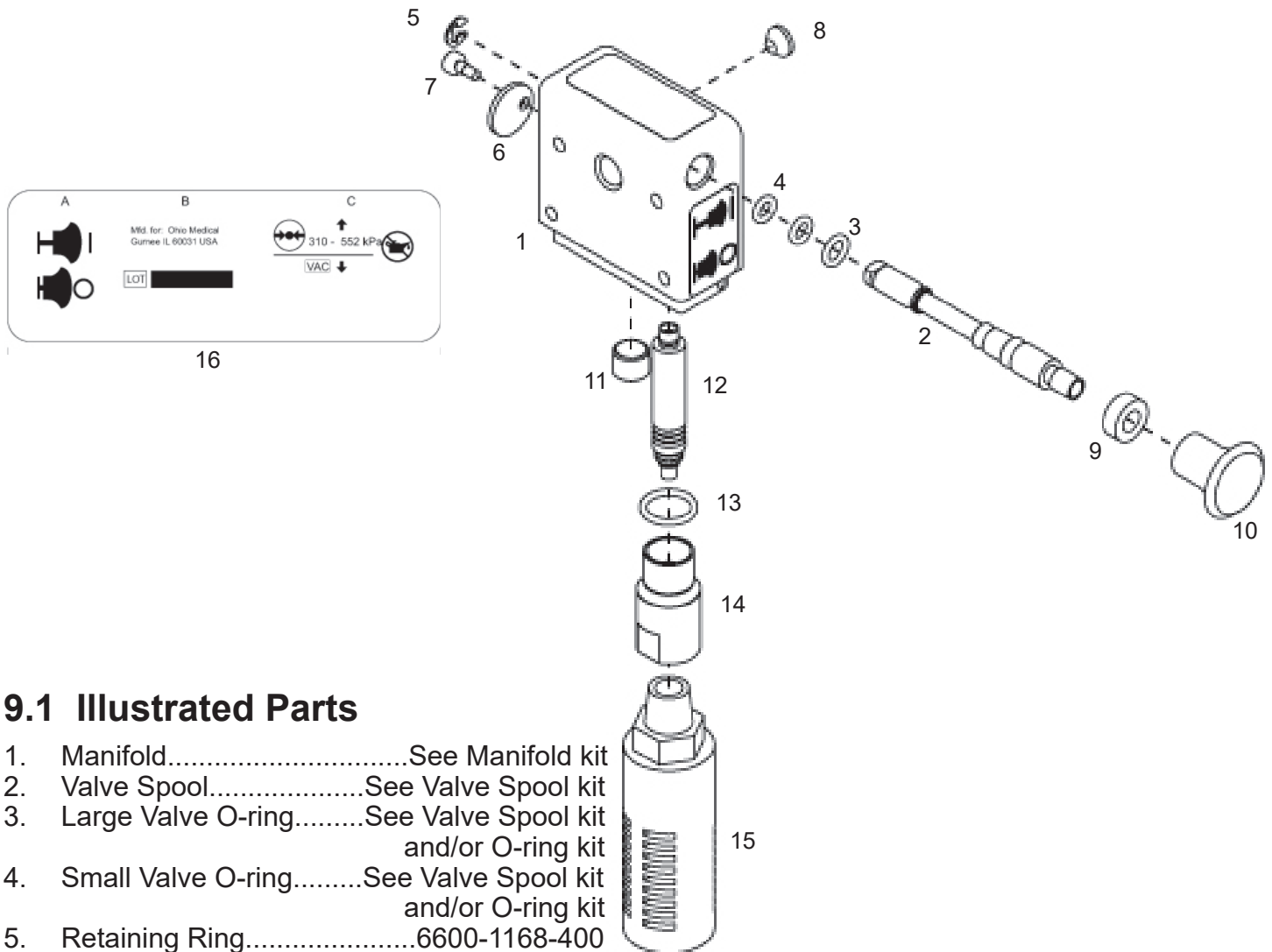
## 8.4 Technical Assistance

If technical assistance is required, contact your nearest Ohio Medical technical support representative.

## 8.5 Return Instructions

1. Call the nearest Ohio Medical representative for a returned goods authorization.
2. Clean and sterilize the Venturi/Ejector suction module.
3. Package the Venturi/Ejector suction module securely for protection, preferably in the original container.
4. Include a letter describing in detail any difficulties experienced with the Venturi/Ejector suction module. Include the person, title, and telephone number to contact for functional questions.
5. If the Venturi/Ejector suction module is less than one year old, include the warranty information that came with the device and a copy of the invoice.
6. Include a purchase order to cover repair of a unit not under warranty.
7. Ship the Venturi/Ejector suction module prepaid. Write your return address and billing address information on the package or letter that comes with the package.

# 9/Ordering Information



## 9.1 Illustrated Parts

- |     |                            |  |
|-----|----------------------------|--|
| 1.  | Manifold.....              | See Manifold kit                         |
| 2.  | Valve Spool.....           | See Valve Spool kit                      |
| 3.  | Large Valve O-ring.....    | See Valve Spool kit<br>and/or O-ring kit |
| 4.  | Small Valve O-ring.....    | See Valve Spool kit<br>and/or O-ring kit |
| 5.  | Retaining Ring.....        | 6600-1168-400                            |
| 6.  | Relief valve.....          | 6700-0311-500                            |
| 7.  | Relief valve Screw.....    | 6700-0220-400                            |
| 8.  | Inlet Filter.....          | 6700-0009-300                            |
| 9.  | Spacer.....                | See Valve Spool kit                      |
| 10. | Knob.....                  | See Valve Spool kit                      |
| 11. | Plug.....                  | 0413-3510-335                            |
| 12. | Venturi Pump (Qty: 2)..... | 6700-0664-850                            |
| 13. | Adapter O-ring.....        | See O-ring kit                           |
| 14. | Adapter.....               | 6700-0308-500                            |
| 15. | Muffler (Qty: 1).....      | 6700-0310-500                            |
|     | Muffler (Qty: 4).....      | 6700-0668-850                            |
| 16. | Label kit.....             | 6700-0672-850                            |

### Parts not shown

- |  |               |
|--|---------------|
| Mounting for CVR (1/8" x 1/8" NPT mounting adapter).....       | 6700-0561-800 |
| Mounting Gasket Thoracic .....                                 | 6700-0313-500 |
| Mounting Gasket ISU.....                                       | 6700-0312-500 |
| Mounting Screws Thoracic.....                                  | 6700-0219-400 |
| Mounting Screws ISU.....                                       | 6700-0153-400 |
| Mounting for PTS ISU or CVR (Nipple, 1/8 NPTM x 1/8 NPTM)..... | 6700-0561-800 |

## 9.2 Service Kits

- |  |               |
|--|---------------|
| Valve Spool kit.....   | 6700-0665-850 |
| (includes: spool, large valve O-ring, 2 small valve O-rings, retaining ring, knob, spacer; O-rings, knob & spacer installed) |               |
| O-ring kit.....  | 6700-0666-850 |
| (includes: large valve O-ring, 2 small valve O-rings, & adapter O-ring)  |               |
| Service Mounting Kit – Thoracic....  | 6700-0669-850 |
| (includes: Thoracic gasket, 2 mountings screws)  |               |
| Service Mounting Kit – ISU.....  | 6700-0670-850 |
| (includes: ISU gasket, 4 mounting screws)  |               |
| Manifold Kit.....  | 6700-0667-850 |
| (includes: label, manifold and inlet filter)   |               |

### 9.3 Installation Procedure for Adapters/Probes

#### CAUTION

- ⚠ Do not use any Loctite® products to seal the threads (or products which contain Methacrylate Ester as an active ingredient).

All adapters/probes and fittings should be sealed and installed properly to prevent leaks and to support the equipment when mounted. Both venturi ports are 1/8-27 NPTF tapered pipe threads. It is important to note that adapters/probes and fittings seal on the thread and may have threads exposed after they have been tightened properly.

Prior to installing the adapter/probe or fitting, seal the thread with Teflon (PTFE) tape or one of the following lubricants:

Dow Corning® 111  
(Ohio Medical P/N 6700-0074-200)

Ball Vac Kote® (37951M)  
(Ohio Medical P/N 6700-0092-200)

The torque range for installing adapters/probes and fittings is 4.0 ft-lb (5.4 N-m) minimum to 10.0 ft-lb (13.6 N-m) maximum.

Adapters/probes and fittings which are not keyed for specific orientation should be torqued to approximately 6.0 ft-lb (8.1 N-m).

Adapters/probes and fittings that are keyed to specific orientation must be torqued initially to 4.0 ft-lbs. Additional torque is applied only until orientation is correct.



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