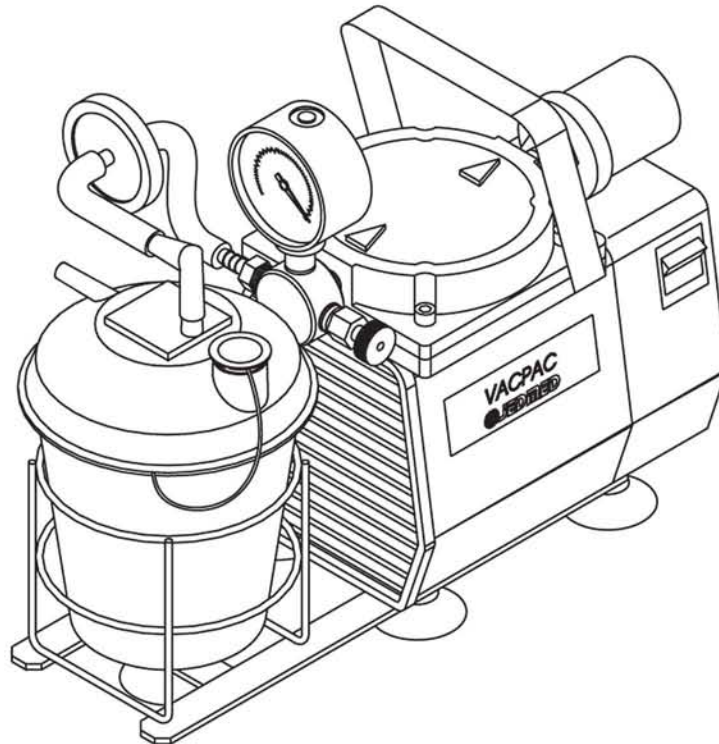


# MJ191 Suction Aspiration Pump

PORTABLE ASPIRATION SYSTEM  
All Versions

99-1500 VacPac, standard, 115V  
99-1505 VacPac, without regulator & gauge, 115V  
99-1510 VacPac, standard, 230V  
99-1515 VacPac, without regulator & gauge, 230V



*IMPORTANT: Read all operating instructions before assembling or using this device.*


**api**  
anthony products, inc.

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## ***Warnings, Cautions & Notes***

### **KEY:**

-  **WARNING:** "Warning" notes alert the user to the possibility of personal injury.
- ❖ **CAUTION:** "Caution" notes alert the user to the possibility of damage to the equipment.
- **NOTE:** "Notes" alert the user to pertinent facts and conditions.

### **List (Warnings & Cautions):**

-  **WARNING:** Possible explosion hazard if used in the presence of flammable anesthetics.
-  **WARNING:** Any filter that comes in contact with a liquid must be replaced immediately.
-  **WARNING:** To prevent explosion hazard: NEVER attempt to pump/aspirate combustible liquid or vapor of any sort with these units.
-  **WARNING:** The motor may be thermally protected and can automatically restart when the switch resets. ALWAYS DISCONNECT POWER SOURCE BEFORE SERVICING.
-  **WARNING:** As with any potentially infectious fluids, "Universal Precautions" incorporating personal protective equipment should be employed when handling/ disposing of these fluids.
- ❖ **CAUTION:**
  - NEVER lubricate any parts with oil, grease, or petroleum products.
  - Do NOT clean with acids, caustics, or chlorinated solvents.
  - Do NOT allow diaphragm to contact any hydrocarbon-based petroleum product.
- ❖ **CAUTION:** Burrs or nicks on the heads of the screws may cause damage to the inlet valve.
- ❖ **CAUTION:** Do NOT at anytime attempt to remove the connecting rod or completely disassemble the pump. This should only be done by a qualified service department.
- **NOTE:** Pump may not start-up when turned on if float balls in overflow valve have sealed off the vacuum tube. If pump will not start-up, make sure all float balls are in the lower (rest) position. Float balls may stick to a wet rubber seal even when trap bottle is empty.

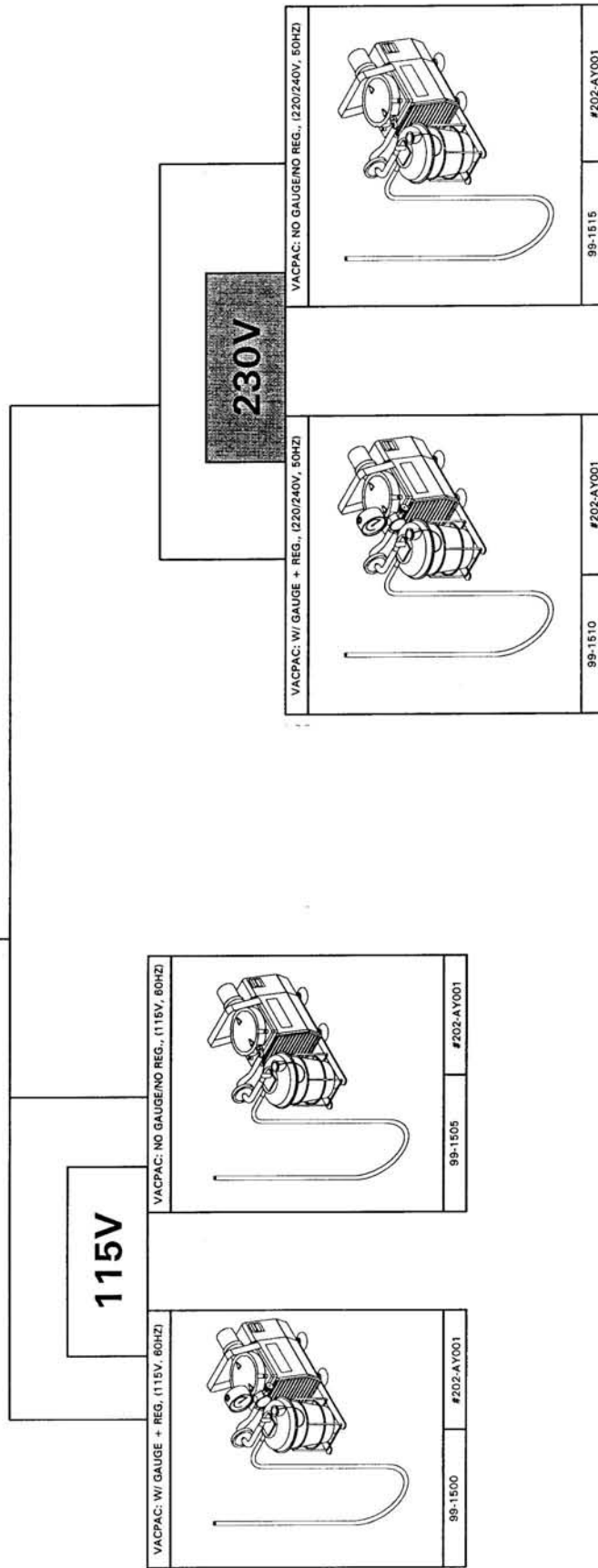
## ***Description***

The Anthony Products VacPac is a self-contained, general purpose portable aspiration system for use in a hospital or a doctor's office. The powerful and highly reliable diaphragm pump will draw a vacuum to 23.5" Hg.

The 115V version is wired standard with a hospital grade plug and an integral double-pole/single-throw power switch. The standard VacPac comes with a liquid-filled (anti-vibration) vacuum gauge and regulator package. The more economical version can be ordered without these features (see Matrix).

A plastic trap canister is provided for easy disposal of potentially infectious fluids. If desired, a large capacity reusable glass trap bottle is also an available option

The Anthony Products VacPac is a precision manufactured system. With reasonable care, the VACPAC will provide many years of quality service.



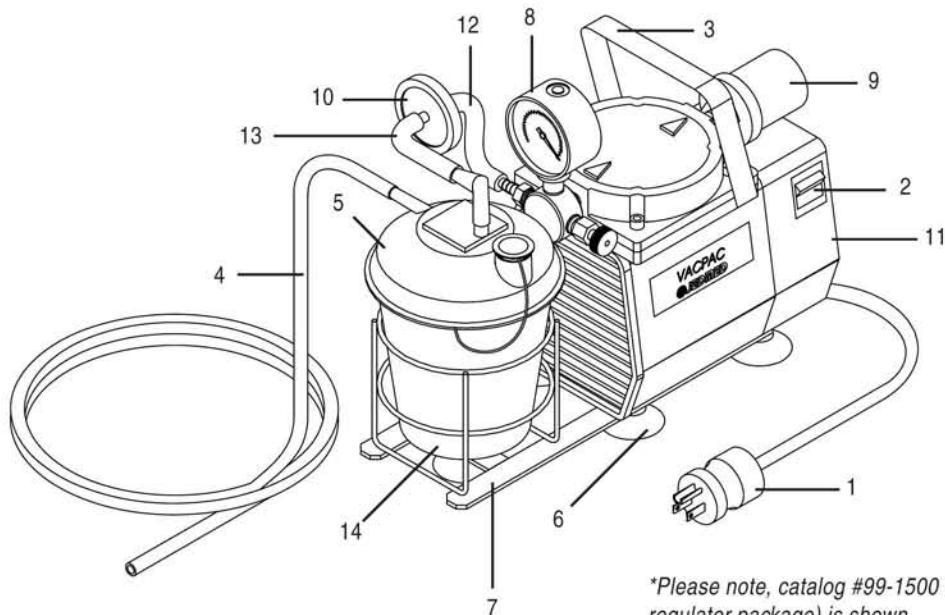
**api**  
anthony products, inc.  
7740 Records Street • Indianapolis, IN 46226  
317-545-6196 • 800-428-1610 • Fax: 317-543-3288  
[www.anthonypproducts.com](http://www.anthonypproducts.com)

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ANY UNAUTHORIZED REPRODUCTION OR USE IS STRICTLY  
--CONFIDENTIAL & PROPRIETARY--

MATERIAL		TITLE		MATRIX: VACPAC	
FINISH		DRAWING NO. 202-MX001		REV.	
		SHEET SIZE 11 X 17 (B)			
		DATE 10-02-97			
		DRAWN BY R. C. RAPP			
		APPROVED BY			
		SCALE			
		DIMENSIONS			
		<input type="checkbox"/> MM		<input type="checkbox"/> IN	
		SHEET 1		1	



## PARTS IDENTIFICATION



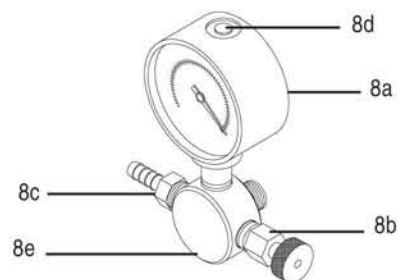
1. Power cord/plug (hospital grade)  
(115V version only)
2. Power switch (DPST)
3. Handle
4. Patient suction tubing (optional)
5. Suction canister and lid (w/internal  
hydrophobic filter)
6. Rubber feet (5 feet)
7. Bottle holder
8. Regulator/gauge cluster\*
  - a. Vacuum gauge\*
  - b. Vacuum regulator\*
  - c. 3/16" hose barb\*
  - d. Vacuum gauge vent and vent pin\*
  - e. Manifold\*
9. Muffler
10. Bacteria filter
11. Pump
12. Clear tubing (to pump)
13. Clear tubing (to trap bottle)
14. Canister centering block (not shown)

### OPTIONAL

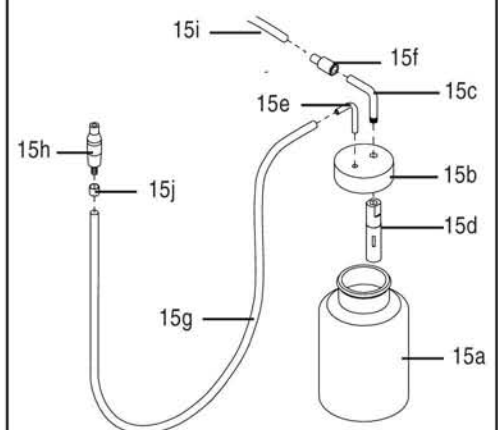
15. Glass trap bottle system
  - a. Glass trap bottle
  - b. Rubber lid
  - c. Elbow tube
  - d. Overflow valve
  - e. Patient tube
  - f. Quick-release connector
  - g. Suction tubing
  - h. Suction tip
  - i. Clear tubing (to pump)
  - j. Suction tubing collar

*\*Please note, catalog #99-1500 VacPac (with regulator package) is shown.  
Also note, catalog #99-1505 & #99-1515 (VacPac without regulator package), the items 8a - 8e are replaced by one 90° elbow to connect pump to suction line.*

#### #8 Regulator/Gauge Cluster\*



#### #15 Reusable Glass Trap Bottle Option



*\* Not included on #99-1505 or #99-1515*

## OPERATING INSTRUCTIONS

**⚠ WARNING:** As with any potentially infectious fluids, "Universal Precautions" incorporating personal protective equipment should be employed when handling/disposing of these fluids.

**⚠ WARNING:** Possible explosion hazard if used in the presence of flammable anesthetics.

Power Cord/Plug: Used to supply a.c. power to pump (hospital-grade on 115V version only).

Power Switch: Used to turn pump ON or OFF. Double-pole/single-throw (DPST).

Handle: Used for convenient one-handed relocation of pump.

Trap Canister: 800cc disposable plastic canister and lid, single use.

Can be used in conjunction with Isolyser® Liquid Treatment System.

Can be disposed of in most landfills. Refer to Isolyser® instruction Sheet.

Incorporates a hydrophobic filter that prevents liquids from passing through on output port. If this filter gets wet, it closes its porosity down so it will no longer pass air. If this occurs, pump may just "hum" (not start) due to loading.

Canister/Bottle Holder: Vinyl-coated wireform basket used to secure trap canister/bottle in place. May be removed by unscrewing rubber feet on bottom of pump.

Muffler: Exhausts air from vacuum pump. Internal baffle reduces exhaust noise.

\*Vacuum Gauge: When suction tip is sealed off, gauge reads maximum vacuum available from system.

\*Vacuum Regulator: Thumbscrew adjustment (multi-turn) varies maximum vacuum delivered to suction tip. Regulator utilizes a spring-loaded check ball for reliable bleeder-type vacuum regulation. Full clockwise adjustment delivers maximum vacuum.

Bacteria Filter: Used to help in the prevention of bacteria contamination. Refer to pump maintenance for replacement procedures. This filter is hydrophobic which means it will not allow moisture to pass through it.

\*Manifold: Hollow chamber required in order to add vacuum gauge and regulator to basic pump.

\*Vacuum Gauge Vent Pin: Occasionally due to atmospheric pressure, temperature or even shipping, the vacuum gauge can self-induce a vacuum. The gauge can be reset to zero by briefly removing the vent pin on top. Any excess liquid glycerin can be wiped away with a paper towel after reinserting the vent pin.

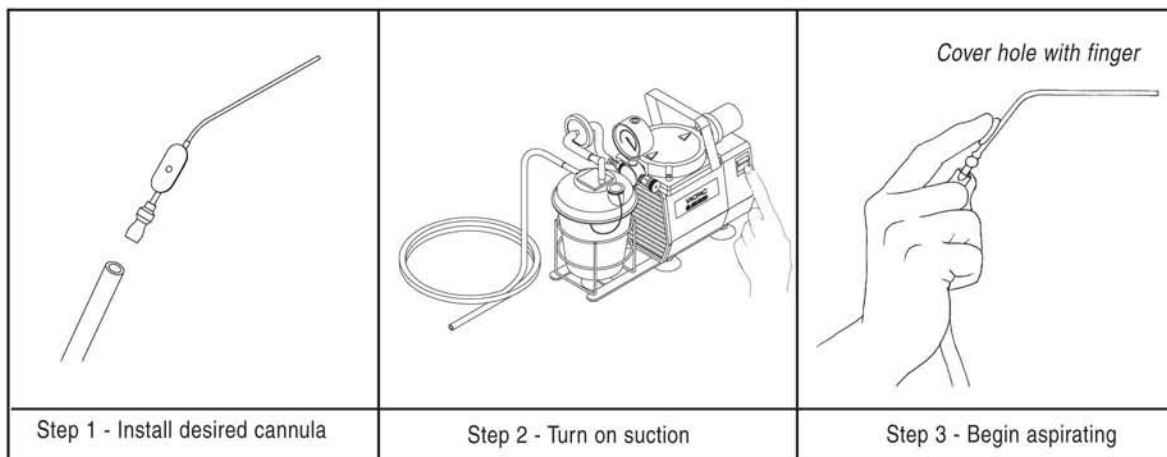
*\* Not included with catalog #99-1505 & #99-1515 (VacPac without regulator & gauge)*

## OPERATING INSTRUCTIONS (CONTINUED)

Rubber Suction Feet: Keeps vibration noise and movement to a minimum.

### OPERATION

- Turn power switch OFF.
- Plug unit into appropriate, grounded, a.c. power receptacle. Observe correct line voltage
- Turn power switch ON.
- Close off suction tubing completely with finger.
- Adjust regulator\* to set maximum vacuum to desired level on gauge\*.
- Using various suction tubes, aspirate field in normal fashion.



### GLASS TRAP BOTTLE OPTION

An overflow valve inside the trap bottle protects against accidentally over-filling the bottle and drawing fluids inside the pump.

- **NOTE:** Pump may not start-up when turned on if float balls in overflow valve have sealed off the vacuum tube. If pump will not start-up, make sure all float balls are in the lower (rest) position. Float balls may stick to a wet rubber seal even when trap bottle is empty.

\* Not included on: #99-1505 or #99-1515



## PUMP MAINTENANCE

### BACTERIA FILTER PROTECTION

For increased prevention of bacteria contamination, your equipment has been fitted with a bacteria protection filter.

#### Suction:

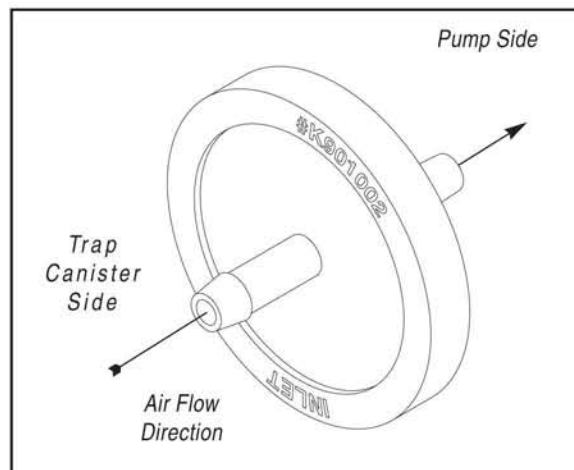
Catalog #	-	K901002
Pore Size	-	1.0 Micron
Filter Media	-	PTFE
Diameter	-	50 mm
Connectors	-	1/4" Hose Barb
Type	-	Hydrophobic

Anthony Products recommends that a filter be changed at least twice a year, although, certain factors can cause the life of a filter to vary considerably. These factors include:

- 1) Operating conditions (cleanliness)
- 2) Length of use (how often)
- 3) Level of vacuum
- 4) Flow rate

Filters should be checked every 3 months for the following:

- 1) Variation in flow rate (decreased flow)
- 2) Color variation (accumulation of particles)
- 3) Liquid surge (suction overflow)



**⚠ WARNING:** Any filter that has come in contact with a liquid must be replaced immediately.

#### Filter Wetting

A filter can become "wetted out" if the filter media comes in contact with alcohol or any other solvent. "Wetting" causes the filter to lose its hydrophobic (water-shedding) characteristics. This causes the filter to now allow liquids to pass which is a potential source of contamination. **SHOULD A FILTER BECOME "WETTED OUT" THE FILTER MUST BE REPLACED IMMEDIATELY.**

#### Filter Installation (See Figure 1)

Remove old filter from tubing by gently pulling tubing off the hose barbs. **Filter orientation is important; filter inlet is on stamped side.** This should face toward trap canister. Install by firmly pushing tubing over hose barbs.

## ***PUMP MAINTENANCE INSTRUCTIONS (CONTINUED)***

Do NOT allow liquids to be drawn through pump unit as pump may suffer permanent damage.

**⚠ WARNING:** To prevent explosion hazard: NEVER attempt to pump combustible liquids or vapors of any sort with these units.

❖ **CAUTION:** NEVER lubricate any parts with oil, grease, or petroleum products. Do NOT clean with acids, caustics, or chlorinated solvents. Do NOT allow diaphragm to contact any hydrocarbon-based petroleum product.

**⚠ WARNING:** The motor may be thermally protected and can automatically restart when the switch resets. ALWAYS DISCONNECT POWER SOURCE BEFORE SERVICING.

### FILTERS/GASKETS

To clean or replace the filters and/or rubber gasket, remove the five screws in the top of the unit. Remove top plate to access filters and gasket. Remove filters and blow them out with compressed air. Gasket may be cleaned with water. Replace filters observing correct position and replace gasket. Note the gasket and top plate will fit in only one position.

### DIAPHRAGM

To replace the diaphragm, remove the socket head cap screws from the head of the pump. The diaphragm is held in place by two Phillips head screws. Remove screws, retainer plate and diaphragm. Diaphragm will fit in any position on the connecting rod. Replace plate and two Phillips head screws. Torque to 30 inch-pounds.

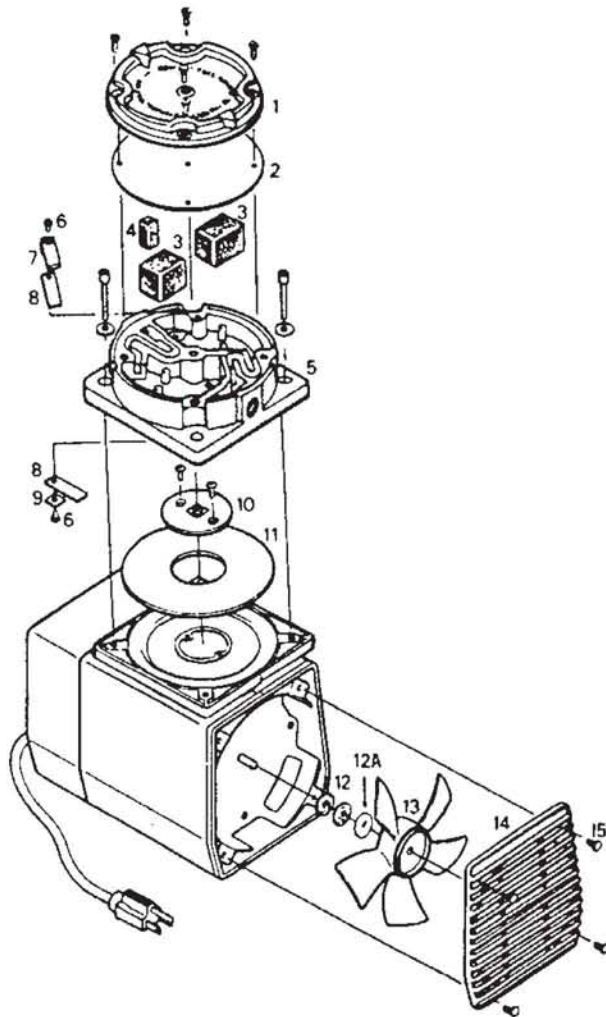
❖ **CAUTION:** Burrs or nicks on the heads of the screws may cause damage to the inlet valve.

### INLET/OUTLET VALVES

To replace the inlet and outlet valve, remove the slotted machine screw that holds each valve in place. The stainless steel inlet and outlet valves are interchangeable. Clean with water. When replacing outlet valve, place new valve in location and note retaining bar near machine screw hole. Retaining bar holds valve in position. When replacing the inlet valve, note the valve holder is marked with an "X" in one corner. The "X" should be in the lower right-hand corner toward the inlet of the air chamber. Replace head and tighten socket head cap screws. Torque to 90 - 100 inch-pounds.

❖ **CAUTION:** Do NOT at anytime attempt to remove the connecting rod or completely disassemble the pump. This should only be done by a qualified service department.

## PUMP PARTS DIAGRAM

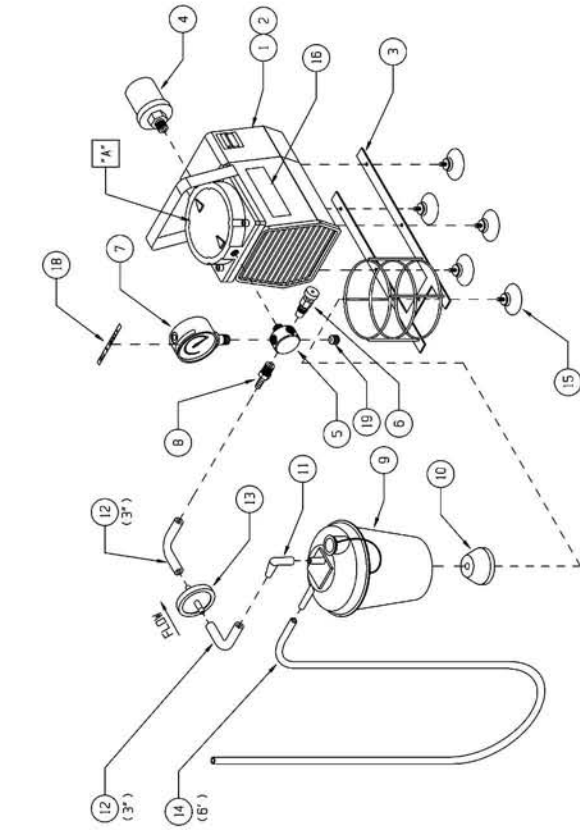


Ref. No.	Description	Part Qty.	DOA
1	Cover	1	AF808
2	Head Gasket	1	AF820
3	Filter Muffler Element	2	AG998A
4	Filter Element	1	AF857A
5	Head	1	AF804
6	Valve Screw	2	BB317
7	Valve Retainer	1	AF865
8	Leaf Valve	2	AF817
9	Valve Retainer	1	AF819
10	Retainer Plate	1	AF809A
11	Diaphragm	1	P=AF818A
12	Felt Spacer	3	AA929
12A	Spacer	1	AG970
13	Fan	1	AF533
14	Grille	1	AF807
15	Rivet	4	AE946



# 99-1500/99-1510 (VACPAC WITH REGULATOR AND GAUGE ASSEMBLY):

## ASSEMBLED UNIT:

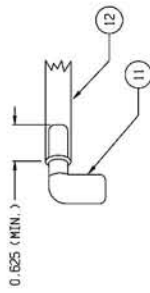


### ASSEMBLY & INSTALLATION INSTRUCTIONS:

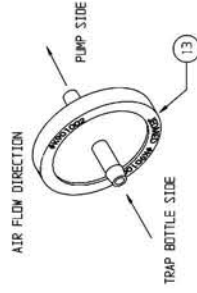
1. REMOVE PUMP HEAD BOLTS (4 ALLEN HEADS) AND ROTATE HEAD "A" AND HANDLE 180°. REINSTALL AS SHOWN AND TIGHTEN SECURELY.
2. INSTALL MANIFOLD INTO FRONT (INLET) PORT OF PUMP.
3. NOTE ORIENTATION OF HOLES (0°, 90°, 180° AND 270° WITH RESPECT TO HORIZON).
4. INSTALL STRAIGHT HOSE BARB, GAUGE, PRESSURE REGULATOR AND PIPE PLUG INTO MANIFOLD. NOTE THAT THE REGULATOR IS ON THE SWITCH SIDE OF THE PUMP.
5. INSTALL MUFFLER INTO REAR (OUTLET) PORT OF PUMP.
6. ASSEMBLE PUMP BOTTLE HOLDER AND ALIGNMENT CONE USING RUBBER FEET.
7. INSTALL TUBING INTO EACH SIDE OF FILTER AND CONNECT THE PUMP SIDE TO THE STRAIGHT HOSE BARB. NOTE AIR FLOW DIRECTION.
8. INSTALL ELBOW TO THE TRAP BOTTLE SIDE OF THE FILTER TUBING.
9. INSTALL SMOKE TUBING TO TRAP CANISTER SIDE PORT AND PLACE CANISTER INTO BOTTLE HOLDER.
10. CONNECT ELBOW TO TOP PORT OF CANISTER.
11. APPLY LABELS TO PUMP ASSEMBLY.

DATE	REV	ECD#/DESCRIPTION	DR	AP
03-06-95	A	ECD# 00003	RAH	RCE
11-04-97	B	ALL VERSIONS ON ONE PAGE	MTG	RCE
	C	ECD# 00009	MTG	

### TUBING DETAIL:

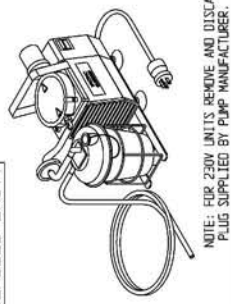


### SUCTION FILTER:



# 99-1505/99-1515 (VACPAC WITHOUT REGULATOR AND GAUGE ASSEMBLY):

## ASSEMBLED UNIT:



### ASSEMBLY & INSTALLATION INSTRUCTIONS:

1. REMOVE PUMP HEAD BOLTS (4 ALLEN HEADS) AND ROTATE HEAD "A" AND HANDLE 180°. REINSTALL AS SHOWN AND TIGHTEN SECURELY.
2. INSTALL 90° HOSE BARB INTO FRONT (INLET) PORT OF PUMP.
3. NOTE ORIENTATION OF HOSE BARB.
4. INSTALL MUFFLER INTO REAR (OUTLET) PORT OF PUMP.
5. ASSEMBLE PUMP BOTTLE HOLDER AND ALIGNMENT CONE USING RUBBER FEET.
6. INSTALL TUBING INTO EACH SIDE OF FILTER AND CONNECT THE PUMP SIDE TO THE 90° HOSE BARB. NOTE AIR FLOW DIRECTION.
7. INSTALL ELBOW TO THE TRAP BOTTLE SIDE OF THE FILTER TUBING.
8. INSTALL SMOKE TUBING TO TRAP CANISTER SIDE PORT AND PLACE CANISTER INTO BOTTLE HOLDER.
9. CONNECT ELBOW TO TOP PORT OF CANISTER.
10. APPLY LABEL TO PUMP ASSEMBLY.

ITEM NO.	QTY.	DESCRIPTION	PART NO.	UNIT	PRICE	ORDER
1	1	PIPE PLUG, 1/4" NPT, 1/4" OD, 1/2" L	K136031			
2	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, 90°	K136032			
3	1	RUBBER FEET	K503013			
4	1	ALIGNMENT CONE	K503012			
5	1	TUBING, 1/2" ID, 1/4" OD, 1/4" L	K503016			
6	1	ELBOW, 90°	K503017			
7	1	TRAP CANISTER V.L.D.	K300146			
8	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			
9	1	GAUGE	K136010			
10	1	REGULATOR	K300094			
11	1	MANIFOLD	K136023			
12	1	BOTTLE HOLDER (VIBROSHOCK)	K300046			
13	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
14	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
15	1	ALIGNMENT CONE	K503012			
16	1	TRAP CANISTER V.L.D.	K300146			
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124	1	TRAP CANISTER V.L.D.	K300146			
125	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			
126	1	GAUGE	K136010			
127	1	REGULATOR	K300094			
128	1	MANIFOLD	K136023			
129	1	BOTTLE HOLDER (VIBROSHOCK)	K300046			
130	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
131	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
132	1	ALIGNMENT CONE	K503012			
133	1	TRAP CANISTER V.L.D.	K300146			
134	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			
135	1	GAUGE	K136010			
136	1	REGULATOR	K300094			
137	1	MANIFOLD	K136023			
138	1	BOTTLE HOLDER (VIBROSHOCK)	K300046			
139	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
140	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
141	1	ALIGNMENT CONE	K503012			
142	1	TRAP CANISTER V.L.D.	K300146			
143	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			
144	1	GAUGE	K136010			
145	1	REGULATOR	K300094			
146	1	MANIFOLD	K136023			
147	1	BOTTLE HOLDER (VIBROSHOCK)	K300046			
148	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
149	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
150	1	ALIGNMENT CONE	K503012			
151	1	TRAP CANISTER V.L.D.	K300146			
152	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			
153	1	GAUGE	K136010			
154	1	REGULATOR	K300094			
155	1	MANIFOLD	K136023			
156	1	BOTTLE HOLDER (VIBROSHOCK)	K300046			
157	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
158	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
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160	1	TRAP CANISTER V.L.D.	K300146			
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166	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
167	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
168	1	ALIGNMENT CONE	K503012			
169	1	TRAP CANISTER V.L.D.	K300146			
170	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			
171	1	GAUGE	K136010			
172	1	REGULATOR	K300094			
173	1	MANIFOLD	K136023			
174	1	BOTTLE HOLDER (VIBROSHOCK)	K300046			
175	1	PUMP, 230V, 50% (1/2" ID, 1/4" L)	K503017			
176	1	PUMP, 115V, 50% (1/2" ID, 1/4" L)	K503011			
177	1	ALIGNMENT CONE	K503012			
178	1	TRAP CANISTER V.L.D.	K300146			
179	1	FITTING, 1/4" NPT TO 1/4" ODE BARB, STRAIGHT	K503017			



## ***REPLACEMENT PARTS***

PART NAME	CATALOG #
Replacement canisters with lids, pk/10	PU800B
Patient hose, 10ft. Large	R-400ST
Microbiological filter (external)	MJ190F
Pump tubing, 1/2" OD, clear (canister to pump)	RM-MJ190-TUBING
Isolyser® LTS 1200, case/96 tubes	99-3500

## ***SPECIFICATIONS***

### Physical (overall):

Dimensions

- 13.500 x 5.000 x 11.250" (L x W x H) including gauges
- 13.500 x 5.000 x 10.500" (L x W x H) without gauges

Weight

- 16.75 lbs.
- 16.25 lbs. (without gauges)

### Suction Pump:

Make

- Gast

Model

- DOL-101-AA (115V)

Volts

- 115 VAC

Amps

- 4.2A typical/5.5 locked rotor

or

DOA-P136-BN (230V)

Freq.

- 60Hz

230 VAC

Power

- 1/8hp

RPM

- 1575 rpm

Flow Rate

- 1.1 cfm @ 0 psi

Vacuum

- 23.5" Hg\*\* (600mm Hg\*\*) minimum guaranteed

Bearings

- Oilless

Power Switch

- Double-pole / single-throw (DPST)

Dimensions

- 7.750 x 5.000 x 8.000" (L x W x H)

Weight

- 14.5 lbs

### Trap Canister

- 800cc, disposable, plastic

### \*Vacuum Gauge:

Scale

- 0-30" Hg\*\*(0-100KPa)

Type

- Bourdon tube

Accuracy

- $\pm 1.5\%$  Full Scale

Fill liquid

- Glycerine and water

### \*Vacuum Regulator:

Type

- Spring-ball bleeder

## **OPTION**

### Trap Bottle:

Capacity

- 1000ml

Dimensions

- 4.250" x 7.000" (DIA x H)

Weight

- 1.5lbs (0.680 kg)

\* Not included on #99-1505 or 99-1515

\*\*Hg = elemental mercury

## UNCRATING PROCEDURES

❖ **CAUTION:** Remove the pump unit from the carton using the black handle.

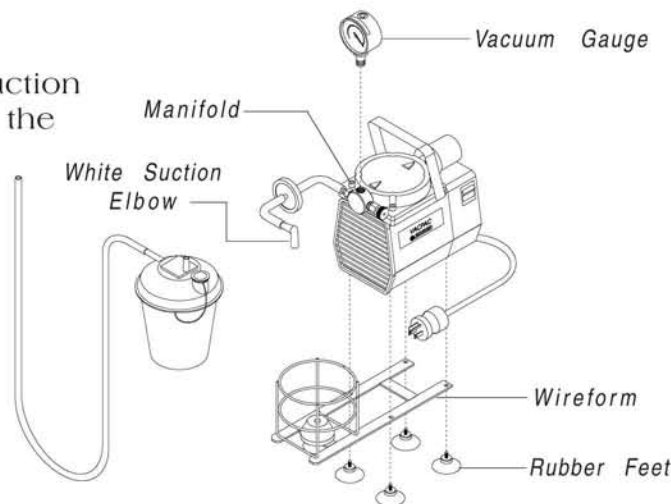
❖ **CAUTION:** Do not over tighten. Use care when starting threads to prevent coss-threading.

### Uncrating instructions for Cat. #99-1500 (115V) & #99-1510 (230V)

The vacuum gauge is not assembled to the manifold during shipping to prevent shipping damage. Remove the plug in the threaded hole in the manifold. Hold and support the manifold with one hand while threading the vacuum gauge in until it is just snug and the front of the gauge faces the suction canister.

Assemble the wireform holder to the pump unit with the four (4) threaded rubber feet. Hand tighten only.

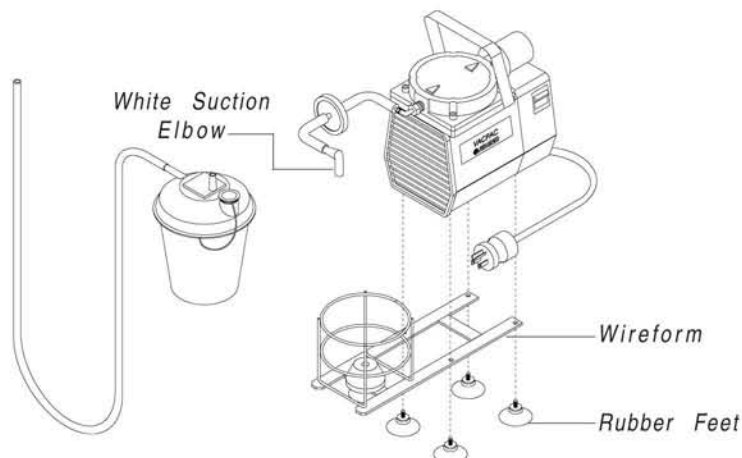
Attach the white suction elbow to the top of the suction canister.



### Uncrating instructions for Cat. #99-1505 (115V) & #99-1515 (230V)

Assemble the wireform holder to the pump unit with the four (4) threaded rubber feet. Hand tighten only.

Attach the white suction elbow to the top of the suction canister.



***NOTES***



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