

# NAUTILUS

PORTABLE EXTRACTOR

# EXTREME



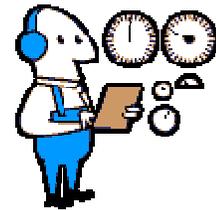
## Nautilus MXEAP Operating Manual



LMANN24 Revised: 02-16-2018

## TABLE OF CONTENTS

<u>TOPIC</u>	<u>PAGE #</u>
• Introduction	3
• Technical Specifications	4
• Optional Equipment	5
 <b><u>SECTION 1: Operational Safety</u></b>	
• Electrical Safety	6
• Mechanical Safety	7
 <b><u>SECTION 2: Operation Procedures</u></b>	
• Vacuum Connections	8
• Electrical Supply	9
• Vacuum Hose	10
• Foam Downer	11
• Pump-Out System	12
• Shutdown Procedures	13
• Accessory Storage	14
• Troubleshooting	15
• Wiring Diagrams	17
 <b><u>SECTION 3: Maintenance/ Technical</u></b>	
• Maintenance	20
• Drawings & Parts Lists	
○ Pump-Out Pump	25
○ Parts Pictures	26
○ Parts List	37
○ Hose List	40
• Warranty	41



# Introduction

Congratulations on your purchase of the Hydro-Force Nautilus Extreme MXEAPM. The Nautilus Extreme MXEAPM is designed to give truck mount-level performance in a portable machine that combines versatility with ease of transport. Years of experience, engineering, and planning have gone into the design and manufacturing of the Nautilus Extreme MXEAPM. We take a great deal of pride in the Nautilus Extreme MXEAPM; our goal is no less than your complete satisfaction.

**The Hydro-Force Nautilus Extreme MXEAPM is intended for commercial use only.**

This manual will provide users with the knowledge required to operate the Nautilus Extreme MXEAPM safely, to understand how to properly operate and maintain the machine, and to ensure that the equipment operates at its maximum performance level.



**All users must read and understand this manual completely before operating the machine.**

Always maintain this manual in legible condition adjacent to the Nautilus Extreme MXEAPM, or place in a secure location for future reference.

Any questions pertaining to the operating or servicing of this unit should be directed to your nearest Hydro-Force distributor.

This manual is written specifically for the Nautilus Extreme MXEAPM portable extractor units manufactured by:

Hydro-Force  
4282 South 590 West  
Salt Lake City, UT 84123  
801-268-2673  
801-268-3856 FAX

Information in this manual is subject to change without notice and does not represent a commitment on the part of Hydro-Force or its parent or affiliated companies.

# Technical Specifications

## Nautilus Extreme MXEAPM Extractor

Height: 42-1/4"

Length: 34-3/8"

Width: 23-3/8"

Weight: 119 lbs.

Solution Tank Capacity: 12 gallon

Recovery Tank Capacity: 12 gallon

Solution Pump: NONE

Vacuum Motors: Two AMETEK Lamb 8.4" diameter 2-Stage – tangential discharge  
Can be operated in series or parallel configuration

Pump-out Pump: Little Giant 120VAC 8-20 gpm  
(Optional) Maximum psi 11.4 – Maximum pumping height 26 ft.

Power Draw: Cord #1 – 14.28amp wide open / 7.98amp full load  
Cord #2 – 13.70amp wide open / 7.40amp full load  
(Add 5.00amps to Cord #2 for units with optional Pump-Out Pump)

## Standard Equipment

Vacuum Connection: 2" Barb or 2" Male Flash Cuff with 2" Male NPT

Accessory Mount Hardware: Four 1/4-20 x 5/8" SS Screws and Washers

Power Cords: 2 – 25' x 12gauge with male & female plug ends

Electrical: Dual Circuit Indicator

Two Internal Component Cooling Fans

## Optional Features:

Auto Pump-out System:

Pump-out Hose: 50' x 3/4" with male & female garden hose fittings

**Additional / Optional Equipment**

Hard Surface Wet Vac Tool

Flash Xtractor

Water Claw - Medium

Wand Glide – Delrin for AW29 Wand

Wand Glide – Teflon for AW29 Wand

18” Bottom Velcro Strap for Wand Holder

1-1/2” Vacuum Hose: (Sold per foot – No cuffs)

2” cuff for 1-1/2” Vac Hose:

1-1/2” cuff for 1-1/2” Vac Hose:

1-1/2” Hose Connector PVC:

Pump-out Hose:

Hydro Filter II:

Replacement Screen for Hydro-Filter II:

12/3 X 25’ Power Cord:

12/3 X 50’ GFCI Power Cord:

Belt Pack

AX10X

AC002

AC016

AW529D

AW529T

NM5841

AH36

AH46

AH42

AH74

AH65

AC10

AC10C

1696-6412

NM4407A

AX108



**AX108**

**AC10**



**AC10C**



**NM4407A**



1696-6412



**AC002**



**AC016**



**AX10X**

## Safety

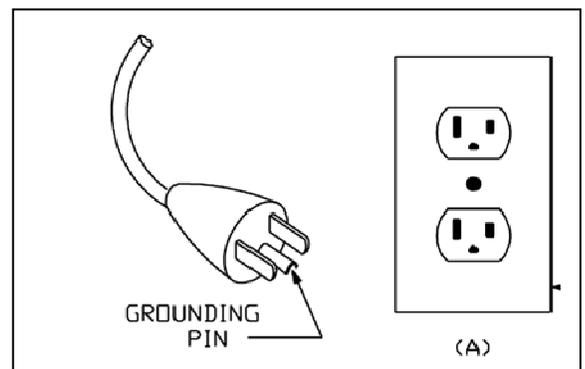
### **⚠️ WARNING**

This machine is an electrical appliance.

Care must be taken to reduce the risk of electrical shock.

**READ AND UNDERSTAND ALL INSTRUCTIONS BEFORE OPERATING THE MXEAPM.**

- To reduce the risk of property damage or injury, repairs to electrical systems should only be performed by experienced technicians. Contact your distributor for assistance. Unplug machine power cord from outlet before performing any repairs on the extractor.
- This machine shall be grounded while in use to protect the operator from electric shock. The machine is provided with a three-conductor cord and a three-contact grounding type attachment plug to fit the proper grounding type receptacle. The green (or green and yellow) conductor in the cord is the grounding wire. Never connect this wire to other than the grounding pin of the attachment plug.
- This machine is for use on a nominal 120-volt circuit and has a grounding plug that resembles the plug illustrated in the sketch to the right. Make sure that the machine is connected to an outlet having the same configuration as the plug. No plug adapter should be used with this machine.
- The power cords supplied with this machine are properly sized to handle the electrical load of this machine and properly grounded as described above. Any extension cords used with this machine must be similarly sized with an equal or greater load rating and grounded to assure safe operation. A properly sized or rated GFCI protected cord can be used for additional protection.
- The two power cords must be plugged into separate circuits during operation. The Dual Circuit Indicator will ensure that the two cords are operating on different circuits (see Page 9 for details.)



- Do not use the MXEAPM outdoors, in standing water or on wet surfaces. Do not store the MXEAPM in wet conditions. If extractor is leaking, unplug machine power cords from outlets before approaching or touching machine.
- Do not unplug power cord by pulling on the cord. Grasp the plug end when unplugging the cord. Do not pull the extractor by the cord. If cord or plug is damaged, do not use cord. Replace with new cord or repair as needed before use.
- Overloaded circuit may not always trip circuit breaker. Reduced voltage to a machine on an overloaded circuit will prevent components from operating properly.
- The MXEAPM must not be used to pick up flammable or combustible materials or used in areas where these materials may be present.

## **NOTICE**

- **If equipped with the Pump-Out, Nautilus Extreme MXEAPM must be protected from freezing. Freezing can cause serious damage to the pump-out pump and any other component containing water.**
- Use a Hydro-Filter II and clean the recovery tank daily to keep pump-out filter and pump from becoming clogged. Store the MXEAPM with the recovery tank lid open.
- Keep Vacuum Inlet Filter clean and check float for proper operation. Do not operate the MXEAPM without the Vacuum Inlet Filter in place. **Use defoamer to eliminate foam build-up during cleaning and prevent foam/moisture from entering vacuums.**

## **! WARNING**

**Use common sense to protect yourself and others while using this equipment.**

- Keep pets and children away from the machine when in use.
- Keep all body parts, hair, and loose clothing away from openings and moving parts. Always wear appropriate work clothing and safety equipment when operating unit.
- Use extra care when cleaning on stairs. Wet carpet on stairs can be slippery.
- Do not move the MXEAPM up or down stairs when tanks are full of water. Drain recovery tank and secure base latches before moving unit up or down stairs. Lift using only the machine handles designed & designated for moving and lifting.
- Water may be spilled, drip, or be exhausted from vacuums during operation. Place unit in area where water will not cause damage or use drop cloth to protect surfaces.

## Vacuum Connections

The MXEAPM has a unique vacuum system which allows you to connect your vacuums in either parallel or in series. Vacuum connections can be changed quickly, without tools. While there is debate on which vacuum alignment provides the best extraction, this much is true:

- **Two vacuums in series:** The vacuum lift is increased by 1.6 times the rating of a single vacuum, while the air flow stays the same as a single vacuum.
- **Two vacuums in parallel:** The vacuum air flow is increased by 2.0 times the rating of a single vacuum, while the lift stays the same.

Air flow is usually measured in cubic feet per minute, indicated as CFM. Lift is usually measured in inches of water column, indicated as “H<sub>2</sub>O or “WC.

### To connect vacuums in parallel:

1. Connect the discharge / exhaust hose from vacuum #1 to the exhaust pipe on machine base.
2. Place the rubber stopper into the vacuum inlet port of vacuum manifold number two.
3. Open vacuum gate valve and attach the Gatekeeper to prevent accidental valve closure.

When connected in parallel, both vacuums must be running during cleaning. Vacuums cannot be operated individually.

### To connect vacuums in series:

1. Connect the discharge / exhaust hose from vacuum #1 to the vacuum inlet port of vacuum manifold number two.
2. Place rubber stopper into the exhaust pipe on machine base.
3. Remove Gatekeeper and close vacuum gate valve.

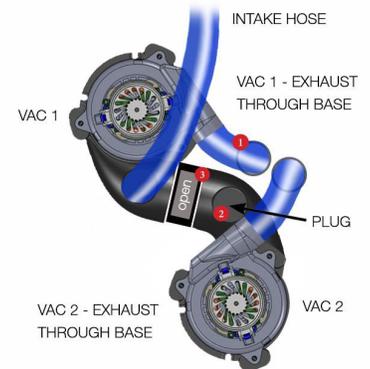
When connected in series vacuums can be operated individually if desired during cleaning.

**NOTICE** Always secure the Gate Valve Open with the Gatekeeper when connecting the vacuums in Parallel. Closing the Vacuum Gate Valve with the hoses connected in the Parallel configuration may cause damage to Vacuum #2.

GATEKEEPER

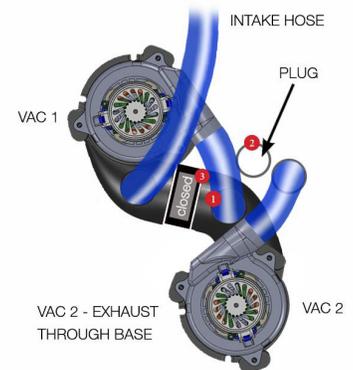


### PARALLEL



1. Connect Vac 1 exhaust hose to base exhaust port
2. Place plug into Vac 2 intake port
3. Open gate valve and secure gatekeeper

### SERIES



1. Connect Vac 1 exhaust hose to Vac 2 intake port
2. Place plug into base exhaust port
3. Close gate valve

# Operation Procedures

*Knowledge of the proper operation of the MXEAPM is required to ensure user safety and efficient performance of the extractor.*

## SET UP AND OPERATION

### 1. Electrical Cords:

Two 25' power cords are supplied with the Nautilus Extreme MXEAPM. Cord #1 powers vacuum #1 and Cord #2 powers vacuum #2 and the waste pump if so equipped. The amperage required by each cord requires that the two cords be plugged into separate circuits:

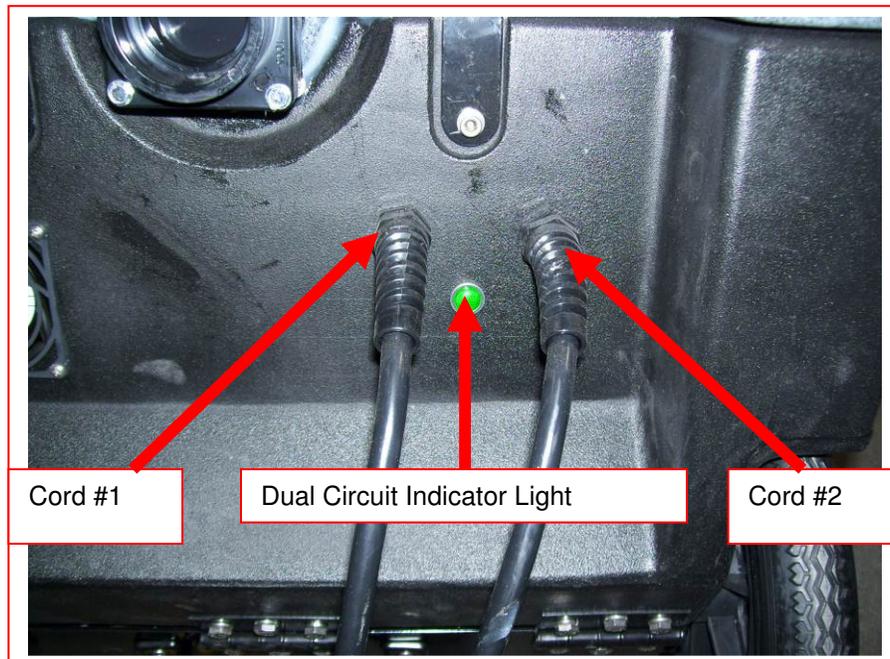
- Cord #1 (Left side) will supply power to vacuum #1.
- Cord #2 (Right side) will supply power to vacuum #2 and Pump-out Pump.

This machine is able to run when both cords are connected to separate 15amp circuits. If other electrical equipment is connected to the circuit during operation; 20amp circuits may be required. **20amp circuits are usually found in kitchens and bathrooms.** An overloaded circuit will not always trip the circuit breaker immediately, but may not provide sufficient voltage for proper operation and the breaker may trip eventually.

Plug the two power cords into two outlets from different circuits. If the Dual Circuit Indicator green light fails to light, you may be on the same circuit and may need to select a different plug for one of the cords. If the Dual Circuit Indicator green light comes on, you are plugged into two different circuits. Proceed with your set-up procedure.

**(Dual Circuit Indicator light may take up to 30 seconds to recognize the two circuits and turn ON.)**

If a circuit breaker trips or the pump circuit breaker trips during operation, reset the breakers and move the cord to another outlet as needed.



Power Cord – 1696-6412  
25' – 12 gauge M-F Plugs

## 2. Connection of Vacuum Hoses:

The vacuum connection port on the machine can be either a 2" hose barb or 2" male Flash Cuff. Both are included with your MXEAPM. The desired connector can be threaded into the vacuum port on the front of the machine.

A 2" female Flash Cuff 1-1/2" hose adapter is also included to connect 1-1/2" vacuum hose to the 2" male Flash Cuff on the machine.

A 2" hose cuff for 1-1/2" vacuum hose is included to connect a 1-1/2" vacuum hose to the 2" hose barb on the machine.

With the proper cuff attached to the Vacuum Hose, the vacuum hose is then connected to the vacuum connection port on the MXEAPM. The other end is connected to the cleaning tool.

When ready to begin cleaning, turn both vacuum switches to the ON position. If connected in series, the MXEAPM can be operated with only one vacuum. (See Vacuum Connection instructions on Page 8) In most situations you will turn both vacuum switches ON.



Vacuum Hose Connection with Flash Cuffs



Vacuum Hose Connection with standard barb and vinyl cuff

### 3. Optional Foam Downer:

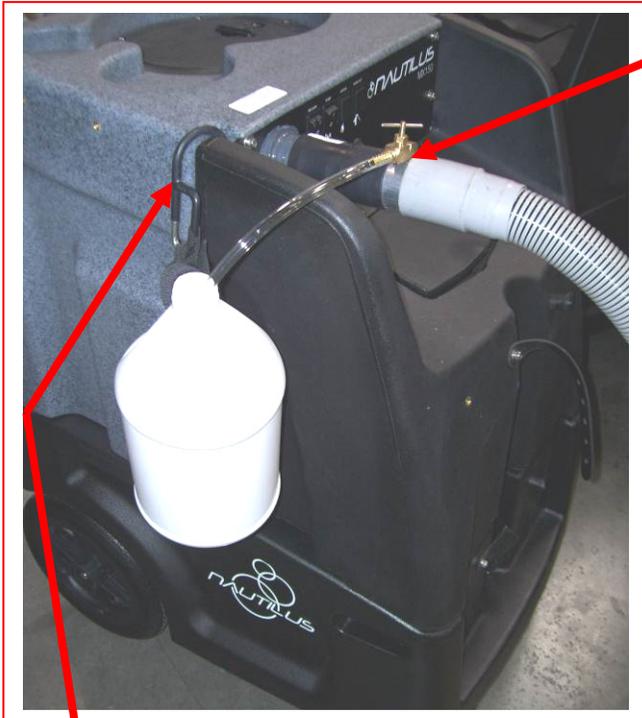
A key problem with portable extractors is that they have small tanks where foam dissipates slowly. If you have had issues with foam or are anticipating foaming problems, you will want to use a Foam Downer.

Foam can be drawn into the vacuums before the vacuum shutoff closes. Foam and water blowing out the vacuum makes a big mess, can decrease vacuum lift and damage the vacuum motors.

The Foam Downer kills foam as waste water enters the machine. Place a container of liquid defoamer on the top of your MXEAPM. The vacuum air flow siphons the liquid defoamer through Foam Downer into the vacuum tank, breaking down the foam before it can cause any damage or make a mess.

- Mounts and is ready to use in seconds
- Uses defoamer very economically
- NO LABOR is involved to spray or spread defoamer – it’s all automatic
- Keeps silicone defoamers off the floor where they can cause resoiling problems

The Foam Downer is an attachment that allows the vacuum to draw a small amount of defoamer in a constant slow flow into the waste tank of the Nautilus. We recommend using a diluted defoaming solution of four ounces of defoamer to one gallon of water (1-32). Place the draw tube into the gallon of diluted defoamer and open the needle valve one half turn as your starting point. If this is not sufficient to break down the foam you can open the valve more or add more defoamer to the water to make a stronger solution. With the valve open one half turn it will take approximately one half hour to drain the gallon of diluted defoaming solution.



FOAM  
DOWNER

AH17



FOAM DOWNER cannot be used with 2” Male Flash Cuff connector on machine. Remove 2” Male Flash Cuff and install 2” hose barb as needed.



HOSE HOOK  
AH95



#### 4. Connection of Pump-Out Hose:

The pump-out hose is a 50' section of 3/4" garden hose. (Use of smaller diameter hose may reduce flow.)

- Remove the cap from the pump-out outlet fitting on the back of the machine.
- Connect the pump-out hose to the outlet fitting.
- Place the other end of the hose in a commode or drain connected to the sanitary sewer system.
- Secure hose end to prevent movement during pumping.

### NOTICE

- Use defoamer to prevent foam build-up in recovery tank during cleaning and to keep foam/moisture from entering vacuums.
- Use Hydro Filter II inline filter to trap and remove debris from the waste water before it enters the recovery tank. Excess debris in recovery tank may clog Pump-Out filter. Clean Filter as needed during use.
- Do not turn the Waste Pump switch ON unless pump-out hose is connected and has been routed to a proper drain.
- The Waste Pump uses a float switch and does not start pumping until the water level in the tank is high enough to lift the float switch. The pump will turn ON & OFF during normal operation. Pump will be damaged if allowed to run dry.

When ready to begin cleaning, turn the Waste Pump switch to the ON position.



Connect the Female Garden Hose Fitting end of the Pump-out Hose to the outlet fitting on the back of the recovery tank. Place the other end of the pump-out hose in a sanitary drain.



If not using the waste pump-out, the pump-out hose does not need to be connected. When the recovery tank fills during cleaning, the float assembly in the vacuum inlet filter will rise and will automatically shut off the vacuum air flow to prevent the recovery tank from overflowing and waste water from getting into the vacuums. When this occurs:

- Immediately shut off the vacuum switches.
- Drain the recovery tank.
  - Turn off the pump-out switch while draining the tank.
  - Turn pump-out switch back upon resumption of cleaning.
- Close the drain valve and turn the vacuum switches back on when ready to resume cleaning.

If the pump-out or vacuum shutoff is not working properly, refer to the trouble shooting guide or contact your distributor for advice or assistance.



Float Shutoff Assembly



Draining the Recovery Tank

## Shutdown Procedures:

- When finished cleaning, turn off all switches.
- If a Hydro Filter II inline filter was used, disconnect the Hydro-Filter II from the vacuum hoses and clean the filter as needed. Replacement filter screens are available (AC10C.)
- Disconnect the vacuum hose from the machine.
- Disconnect the power cords from the outlets and from the machine.
- Remove the float shutoff assembly from the recovery tank and clean vacuum shutoff filter as needed.
- Clean Pump-Out Pump and Float Switch. Replace shutoff assembly and tank lid.
- Drain any remaining water from the recovery tank and dispose in sanitary drain.
- Roll up all hoses and cords. Collect and store extractor, all tools, and accessories.



## Storage Options:

The MXEAPM is designed to make it easier for the operator to transport the machine and the most common cleaning accessories.

### Bucket & Sprayer Storage

The top of the MXEAPM is sized and recessed to hold a five gallon bucket or two one-gallon chemical bottles as well as two 2QT sprayers.

### Power Cord Storage

The back of the MXEAPM has two sets of cord wraps to hold two 12/3 x 50' power cords.

### Carpet Wand Storage

The front of the MXEAPM is designed to hold a S-Bend Carpet wand and has two straps to hold it securely. Optional strap for larger wands available

### Other Tool & Hose Storage

Each side of the MXEAPM has a set of molded in threaded inserts to which holders can be attached to hold other accessories or supplies making it much easier to move around. Four 1/4-20 x 5/8" mounting screws & washers included.



Wand Holder Straps

Molded in Threaded Inserts for Side Mount Holders



# Troubleshooting MXEAPM

## Troubleshooting – Nautilus Extreme

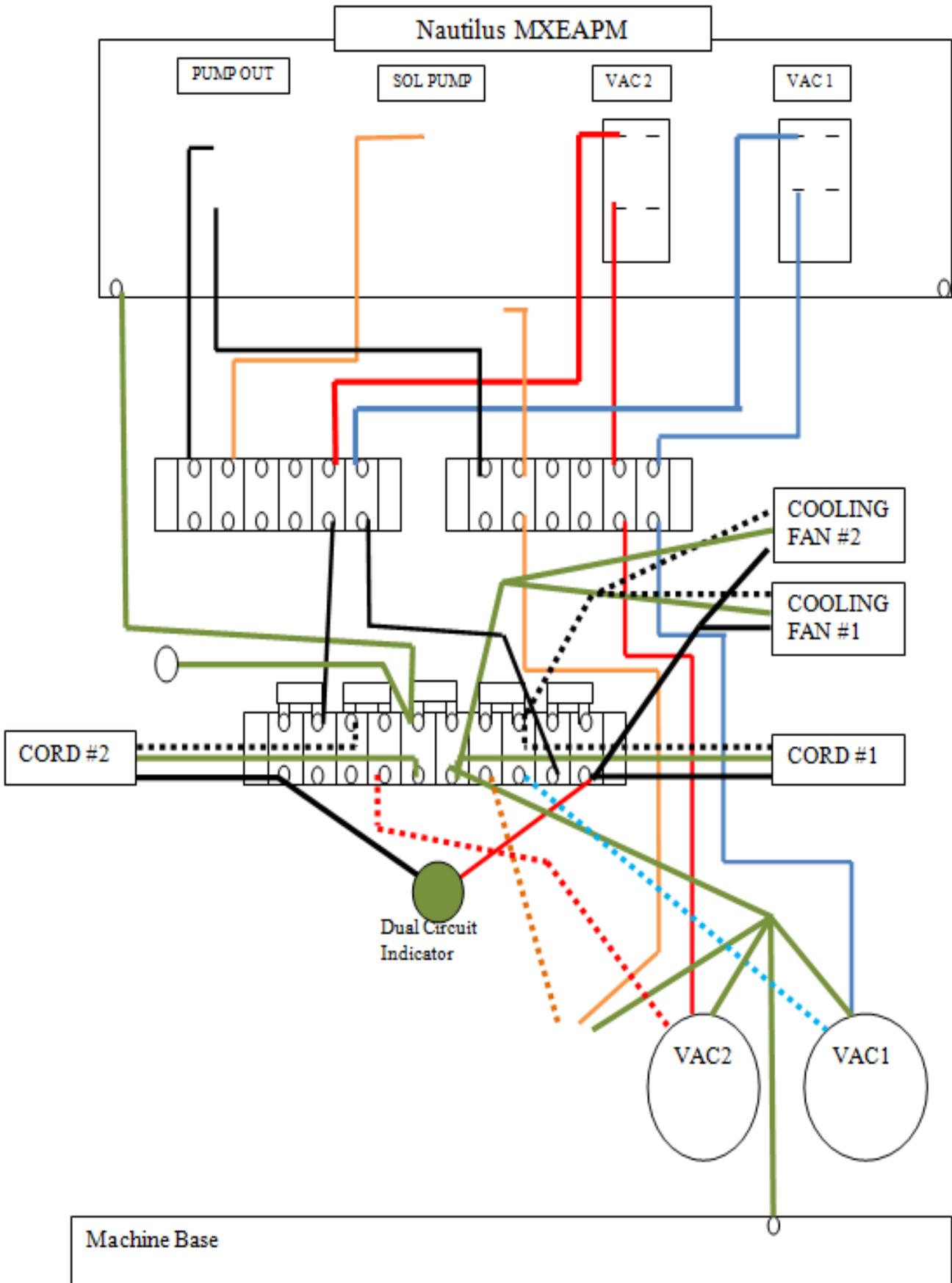
Problem	Cause	Solution
Machine not turning on - No power	Building circuit breaker tripped.	Reset breakers or move cords to other outlets
	Faulty power cord	Replace cord (1696-6412)
	Faulty switches or internal wiring	Check wiring & test switches - Repair as needed *
Dual Circuit Indicator Not Lighted	Cords on the same circuit	Move one cord to outlet on different circuit
	No voltage from one/ both outlets	Check circuit breakers – Reset breakers or move cords
	Light Bad	Replace Light
	Dual Circuit Indicator Bad	Replace indicator
	One/Both Outlets Wired wrong	If hot & neutral sides switched on outlet, machine will work, but light will not turn ON.
Pump-out not working	Building circuit breaker tripped.	Reset breakers or move cords to other outlets
	Faulty power cord	Replace cord (1696-6412)
	Faulty switches or internal wiring	Check wiring & test switches - Repair as needed * (NM5714)
	Pump-out pump faulty	Replace pump-out pump – NM5053
	Pump-out float switch faulty	Replace Float Switch
	Float Switch movement restricted	Clean debris off of Float Switch or adjust float
	Discharge hose restricted	Un-kink, clean out or replace hose
	Pump-out pump clogged	Remove and clean out pump
Vacuum Motor not running	Building circuit breaker tripped.	Reset breakers or move cords to other outlets
	Faulty power cord	Replace cord (1696-6412)
	Faulty switches or internal wiring	Check wiring & test switches - Repair as needed *
	Vacuum motor overheated	Unplug machine and allow vacuum motor to cool down
	Vacuum motor faulty	Replace vacuum motor (AV20)
Loss of Vacuum	Vacuum motor faulty	Replace vacuum motor (AV20)
	Vacuum motor gasket damaged	Replace gasket (PA010A)
	Recovery tank lid gasket damaged	Replace lid or gasket (1650-5695 or 1663-5397)
	Drain valve open	Close valve
	Drain valve leaking	Repair or replace drain valve (PEA11)
	Vacuum motor hoses loose / leaking	Reconnect or replace vacuum motor hoses
	Vacuum Valve in wrong Position	Check Vacuum Gate Valve Position. – PAGE 8
	Vacuums not connected properly	See vacuum connection instructions – PAGE 8
	Vacuum hose or tool clogged	Clean out vacuum hoses and tool
	Vacuum hoses or cuffs leaking	Replace vacuum hoses, cuffs & connectors as needed
	Recovery tank full	Drain tank
	Float shutoff filter clogged	Clean float shutoff filter
	Float stuck in float shutoff	Repair or replace float shutoff
	Pump-out Pump faulty	Repair or replace pump out pump NM5053
Recovery tank damaged	Replace recovery tank	

## **WARNING**

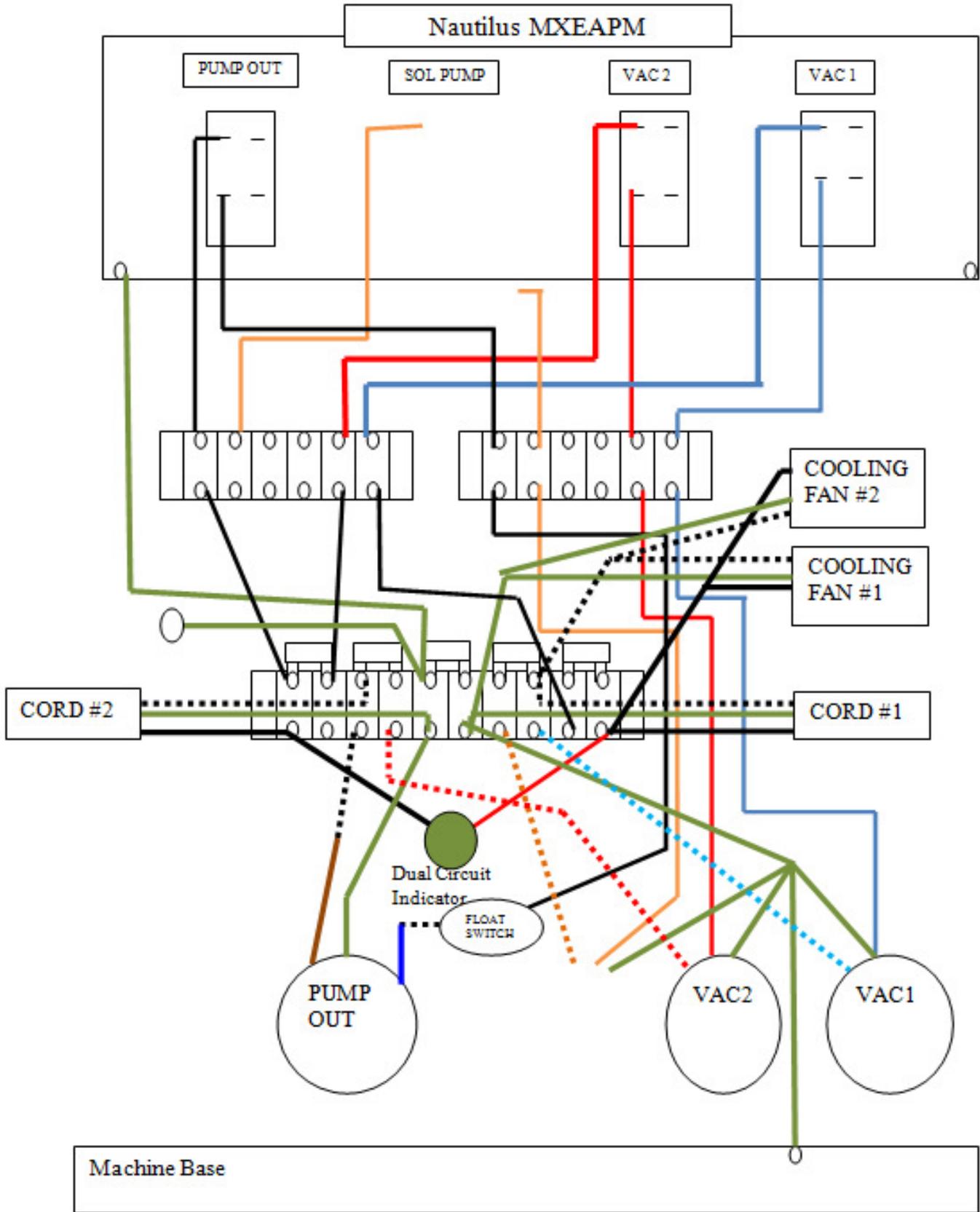
\* To reduce the risk of fire, electrical shock or injury repairs to wiring should only be performed by experienced service technicians. If you are not experienced in checking electrical wiring, contact your nearest authorized service center to perform tests and repairs to wiring and switches.

Contact your distributor for additional troubleshooting assistance, to order parts, or for advice and assistance in performing necessary repairs.

Without Optional Pump-Out

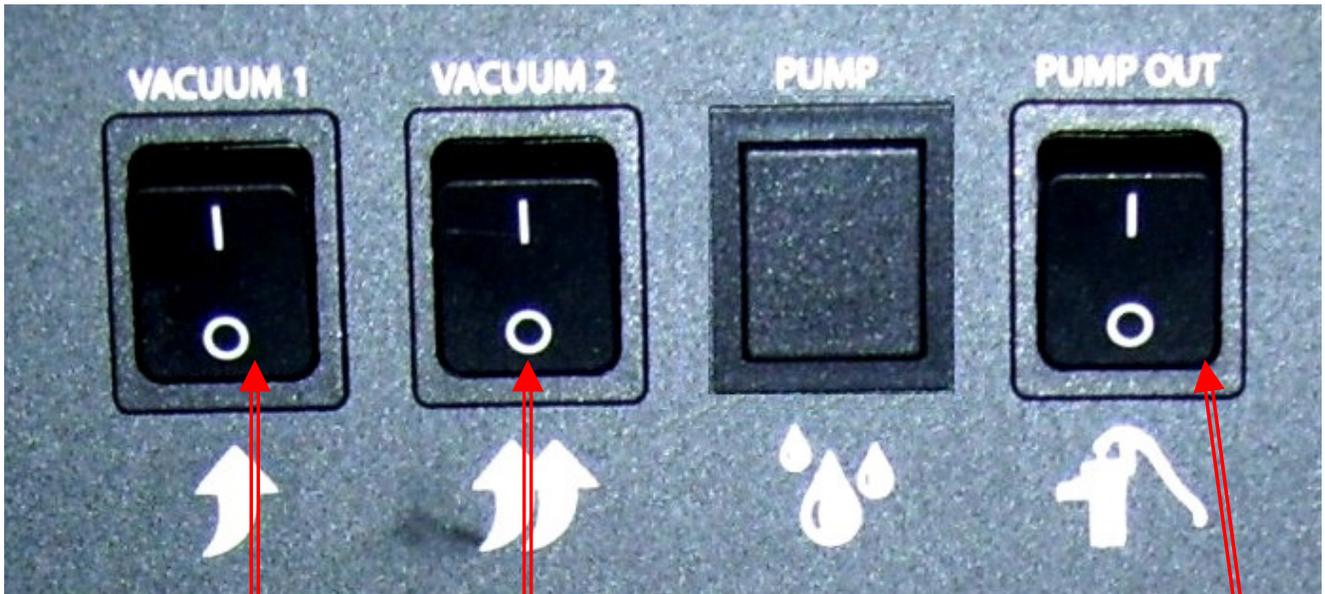


With Optional Pump-Out



# NAUTILUS EXTREME MXEAPM SWITCH PANEL:

(Shown with optional Pump-Out)



## **Vacuum #1 – Power from Cord #1.**

When the switch is turned to the ON position power is supplied to the vacuum motor. (2-Stage Vacuum)

## **Vacuum #2 – Power from Cord #2.**

When the switch is turned to the ON position power is supplied to the vacuum motor. (2-Stage Vacuum)

## **Cooling Fan – Power from Cord #1.**

The cooling fan is not controlled by any switch.

As soon as Cord #1 is plugged in the cooling fan will turn on to exhaust air from the base.

## **OPTIONAL - Waste Pump Switch Power from Cord #2.**

### **NOTICE**

Do not turn Waste Pump Switch ON unless a hose is connected to the Pump-out Outlet port.

If the Float switch is down the pump will not turn on when the switch is turned on. When the water level gets high enough the Float switch will turn the waste pump on and off again when the level drops.

## Maintenance

*Proper maintenance is required to keep the MXEAPM operating properly, prevent downtime and to extend the life of your equipment.*

### **⚠️ WARNING**

*This machine is an electrical appliance. Care must be taken to reduce the risk of electrical shock.*

### **⚠️ WARNING**

Disconnect electrical power before performing any service or maintenance inside machine base or before testing or repairing switches or power cords. Failure to do so may result in severe personal injury or death.

OPERATION	INTERVAL	Page #
CLEAN VACUUM SHUTOFF ASSEMBLY SCREEN	Daily – After Each Job	21
CLEAN HYDRO-FILTER II	Daily – After Each Job	21
RINSE OUT RECOVERY TANK	Daily	22
CLEAN WASTE PUMP-OUT PUMP	Daily	22
CLEAN DRAIN VALVE	As needed	23
STORAGE PREP – FREEZE PROTECTION	As needed	24

## CLEAN VACUUM SHUTOFF ASSEMBLY SCREEN:

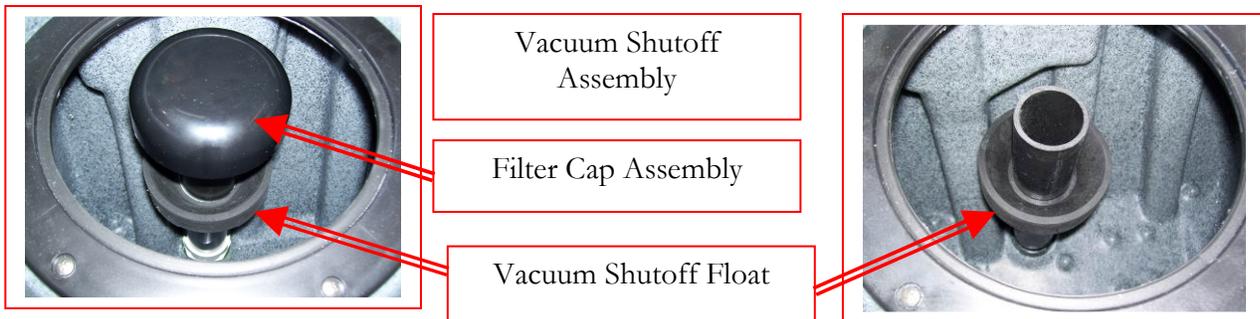
Inside the recovery tank, on top of the stand pipe, is the Vacuum Shutoff Assembly. It functions to prevent debris and water from being sucked into the vacuum motors. Operating the MXEAPM without the Vacuum Shutoff Assembly or with a poorly maintained assembly will greatly decrease the life of the vacuum motors and will void the warranty.

If debris builds up on this filter, it will reduce the vacuum air flow and may cause a significant decrease in the rate of water recovery. If debris prevents the float from moving or seating against the Filter Cap Assembly, it may not stop the airflow when the tank fill with water, and the water will be sucked into the vacuums and blown out the exhaust.

**Use defoamer to prevent foam or moisture from entering vacuums (See Page 15).**

To clean:

- **Do not pull up on top of cap.** Carefully pull up from the bottom of filter cap assembly to pull the assembly off of the stand pipe. Then pull float off of riser pipe.
- Pull fibers and lint off and rinse filter cap assembly and float with clean water.
- Place the float back on the riser pipe then push the filter cap assembly back onto the stand pipe and replace the recovery tank lid.



## CLEAN THE HYDRO-FILTER II: (If so equipped)

When used with the MXEAPM, build-up of debris in the filter screen of the optional Hydro-Filter II will reduce the vacuum air flow and may cause a significant decrease in water recovery. A torn filter screen will allow debris past the filter and into the recovery tank. This debris can clog the Waste Pump and the Vacuum Shutoff Assembly. **The Hydro-Filter II must be examined and cleaned regularly to keep the MXEAPM functioning properly:**

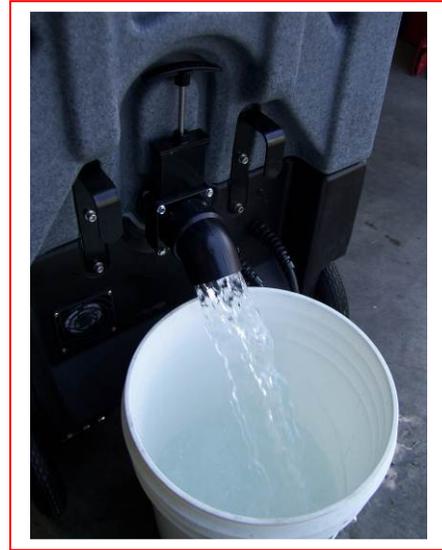
- Grasp and turn the lid counterclockwise to open the Hydro-Filter II lid.
- Remove the filter screen. Examine the screen and clean or replace as needed.
- Rinse the body of the Hydro-Filter II with clean water.
- Examine the o-ring lid seal and replace as needed.
- Re-install the new or cleaned screen.
- Screw the lid back onto the body and turn clockwise to tighten.



## RINSE OUT RECOVERY TANK:

Build-up of fine silt, sand and other debris in the recovery tank can damage the Drain Valve (and Waste Pump if so equipped). Hair and fibers in the recovery tank can clog the vacuum filter (and Pump-out filter if so equipped). Clean out the tank on a regular basis to extend the life of these components and to keep the tank and machine smelling better.

- Remove the recovery tank lid and open the drain valve.
- Place a bucket under the drain valve.
- Use a hose to rinse the dirt and debris out of the recovery tank.
- Close the drain valve and spray the tank with a deodorizer or disinfectant.
- Proceed to Waste Pump Cleaning and replace the recovery tank lid.
- Dispose of the dirty water and debris.



## CLEAN WASTE PUMP-OUT PUMP: (if so equipped)

Build-up of fine silt inside the optional Waste Pump can clog the pump even if the pump is not used, so this maintenance procedure should be performed regardless of whether the Waste Pump has been used.

- After cleaning out the recovery tank, remove the cap and connect the Pump-Out hose to the Waste Pump outlet fitting on the back of the machine; run the hose to a drain.
- Open the drain valve and use a hose to rinse off the Pump-Out pump and Float Switch.
- Close the drain valve and fill the recovery tank approximately 1/2 full with clean water.
- With Cord #2 plugged in, turn the Waste Pump switch to the ON position. Lift up and hold the float switch to activate the pump.
- Let the pump run until it pumps the level down to the point below close to the bottom of the pump.
- Unplug the cord and turn the Waste Pump switch OFF.
- Open the drain valve and drain out the remaining water.
- Close the drain valve, replace the recovery tank lid, and dispose of the dirty water and debris.



# CLEAN RECOVERY TANK DRAIN

Debris and sand accumulation in the drain valve can damage the valve or prevent it from closing completely. This will result in dirty water leaking from the valve. Use of the Hydro-Filter and regular cleaning of the recovery tank will help prevent this, but occasionally the drain valve will require cleaning or replacement.

**⚠ WARNING** Unplug both power cords and drain the recovery tank before attempting to service the drain valve.

- Unscrew the nuts and remove the four bolts holding the valve assembly to the flange attached to the recovery tank. Unless the flange is damaged, it does not have to be removed from the tank, even when replacing the drain valve.
- Separate the valve body, outlet adapter and gaskets from the flange.



Remove four bolts holding valve assembly to flange fitting



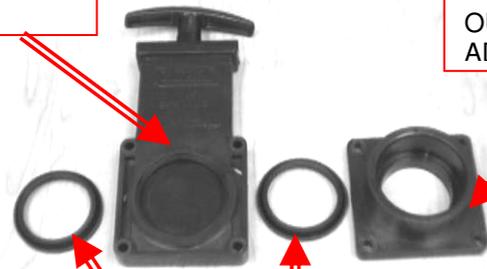
FLANGE FITTING

Unless damaged or leaking between tank and flange, the flange fitting does not have to be removed



DRAIN VALVE – PEA11

VALVE BODY



OUTLET ADAPTER

GASKET – NM3019

- Examine the valve body for wear. Check the valve slide for deep scratches. Deep scratches will allow water to flow past gaskets and leak from valve. Replace valve if needed.
- Examine the gaskets and replace if cut, torn or deformed.
- Raised, rounded side of gasket goes toward valve slide. Larger flat sides seat on ring on flange and outlet adapter. Sand and debris will collect in the bottom of the valve body and prevent the slide from going down and seating properly.
- Clean debris out as needed so slide can move to bottom.
- Rinse valve body and reassemble valve body, gaskets and outlet adapter, and place assembly back onto flange fitting.
- Replace four bolts and tighten evenly to secure assembly to flange. Do not over-tighten bolts.



Clean debris from slot in bottom of valve body. Valve slide must be able to slide to bottom.

## **Storage Prep and Freeze Protection Procedures:**

If equipped with the Pump-Out, Nautilus Extreme MXEAPM must be protected from freezing. Freezing can cause serious damage to the pump-out pump and any other component containing water. If the MXEAPM is transported or stored in freezing temperatures, the following procedures should be performed.

ALSO, if the MXEAPM is stored for an extended period of time, the following procedure should be performed to prevent the pump seals from drying out.

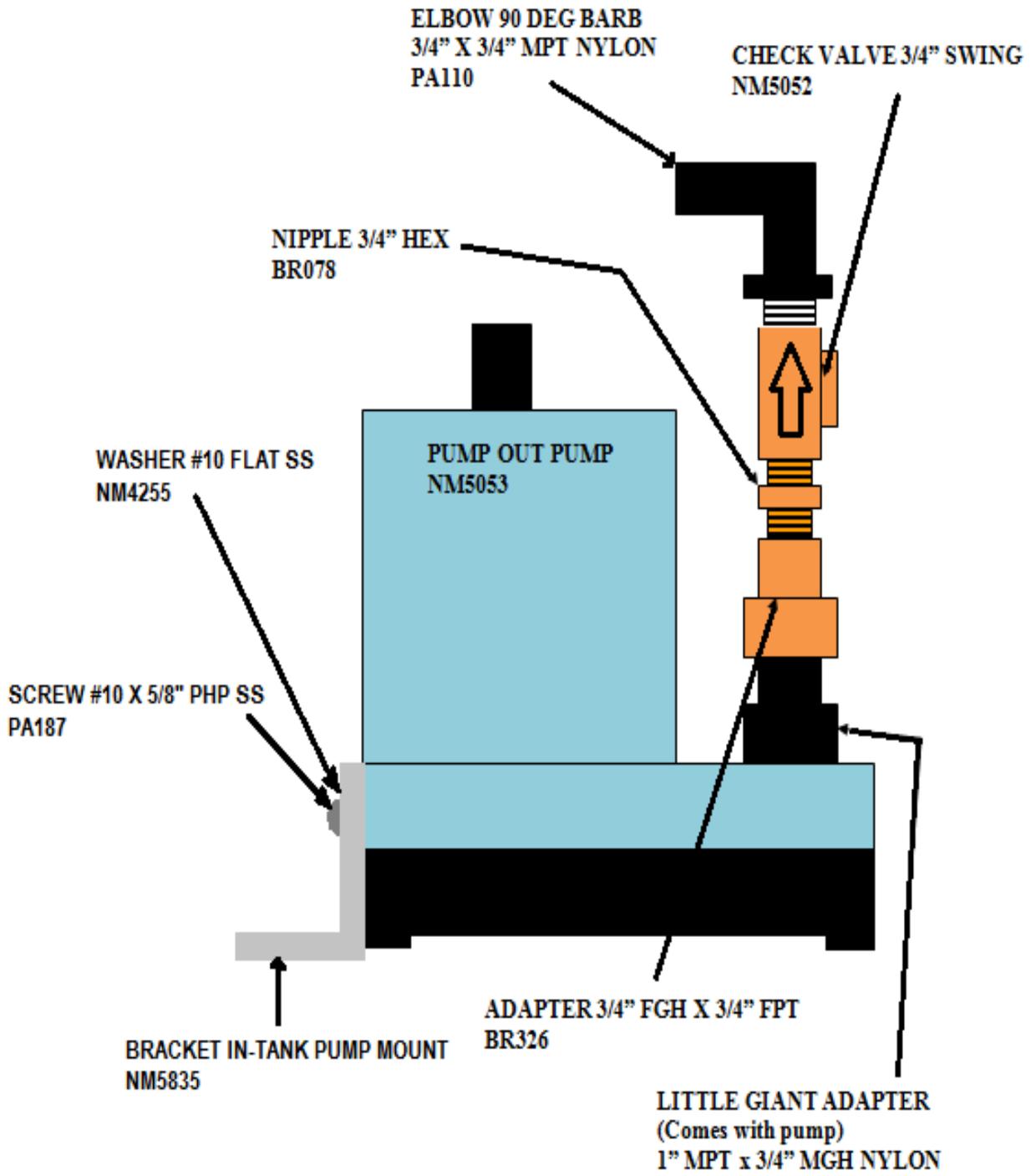
1. In a separate container mix 1/2 gallon of water with 1/2 gallon of automotive radiator Ethylene Glycol anti-freeze. (Propylene glycol can be used as a non-toxic alternative anti-freeze.). Mix well and pour into the recovery tank.
2. Remove the cap from the waste-pump out outlet fitting on the back of the machine. Connect a hose to a drain or hold a bucket up to the fitting to catch the pump-out flow. Remove the lid from the recovery tank. Turn the Waste Pump switch to the ON position and lift the float switch up to engage the pump-out. Lower the float switch and turn off the Waste Pump Switch as soon as you see anti-freeze flowing from the outlet fitting or hose.
3. Drain the remaining anti-freeze solution from the recovery tank and the machine is ready for storage.

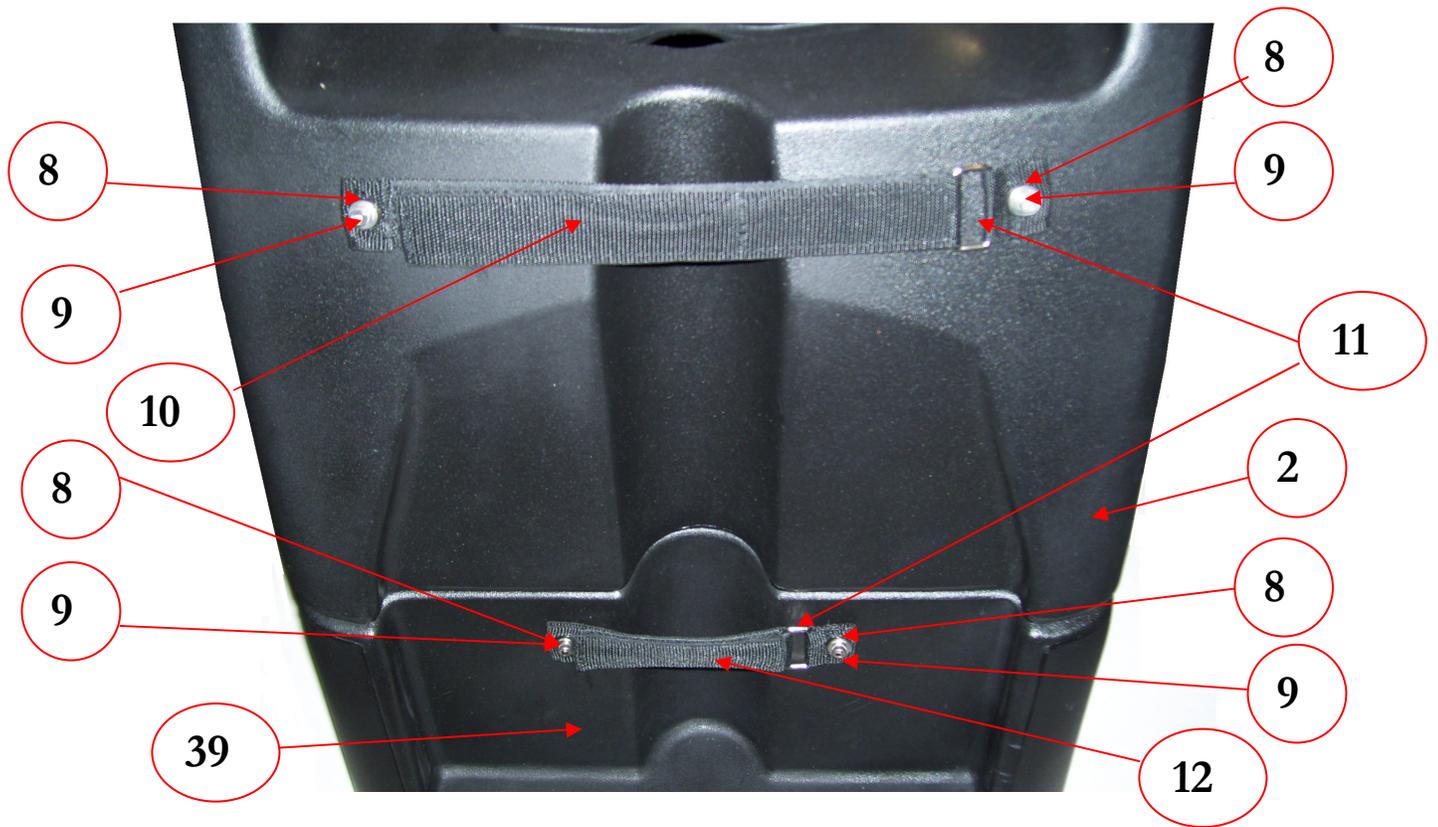
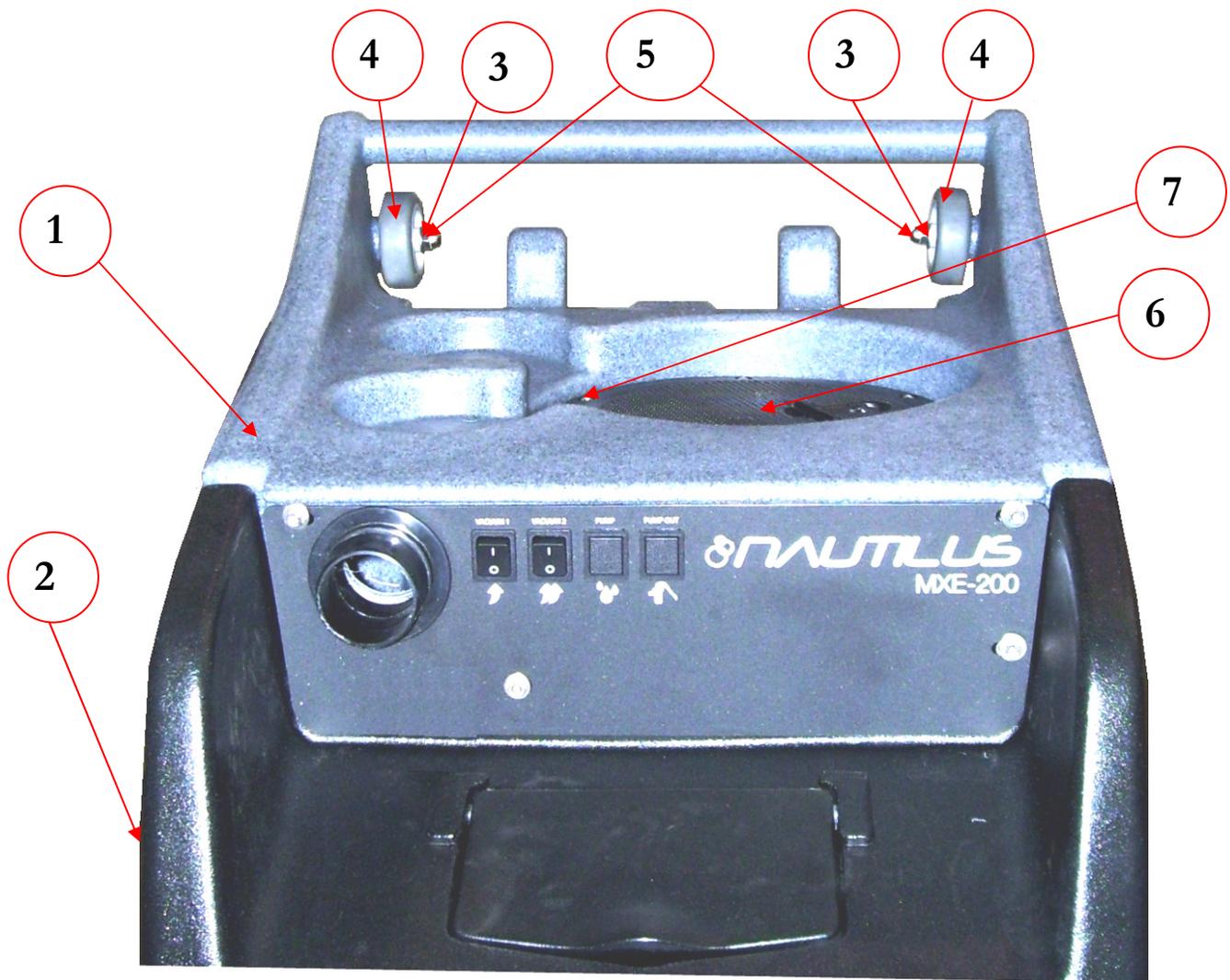
## **RETURNING THE MXEAPM TO SERVICE AFTER STORAGE OR FREEZE PROTECTION:**

To return the MXEAPM to service, the anti-freeze should be flushed from the machine. Flush the anti-freeze out of the machine by repeating the procedures above using fresh water in place of anti-freeze.

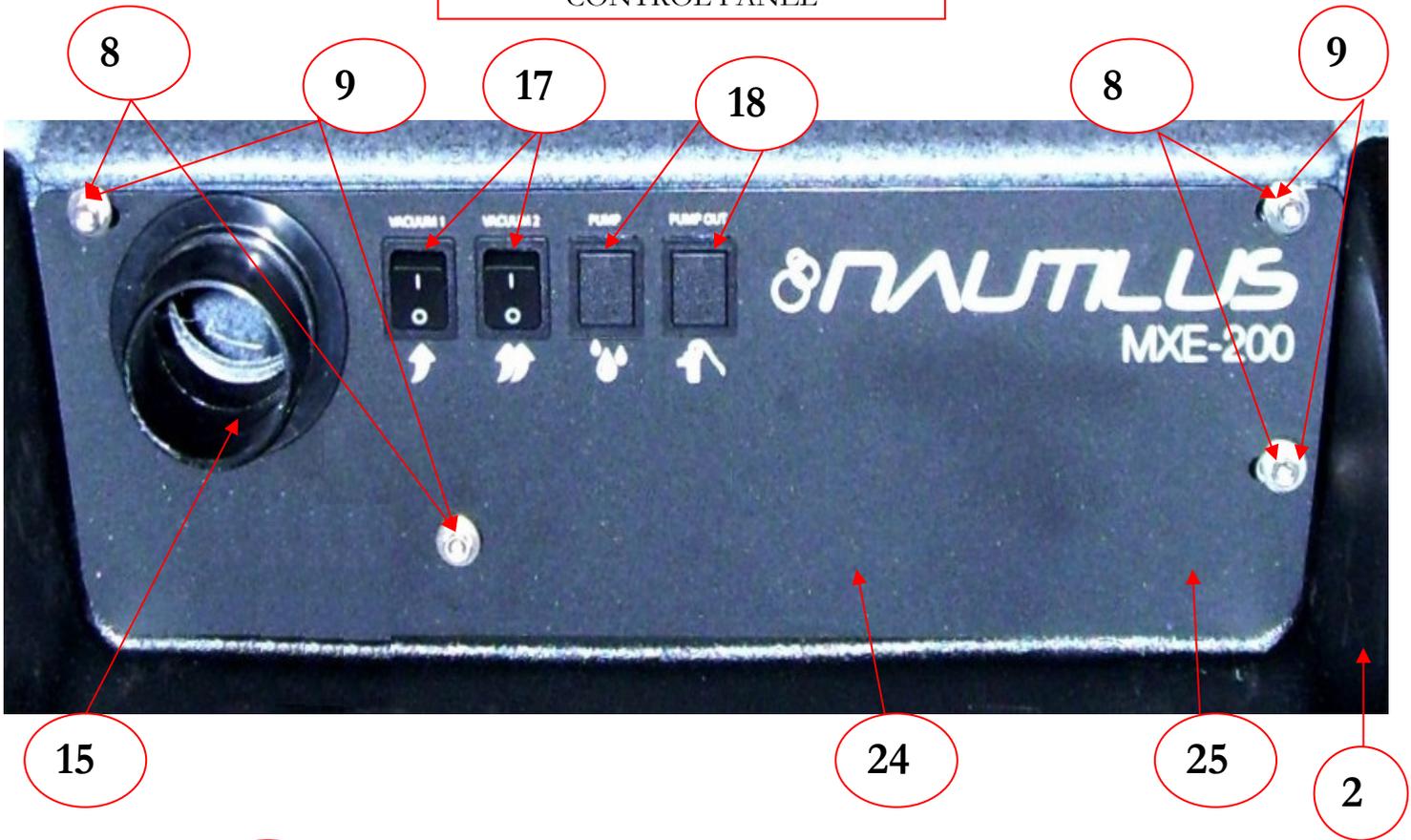
When using a non-toxic anti-freeze solution the MXEAPM does not need to be flushed before returning to service.

**Pump-Out Pump  
PARTS ASSEMBLY**

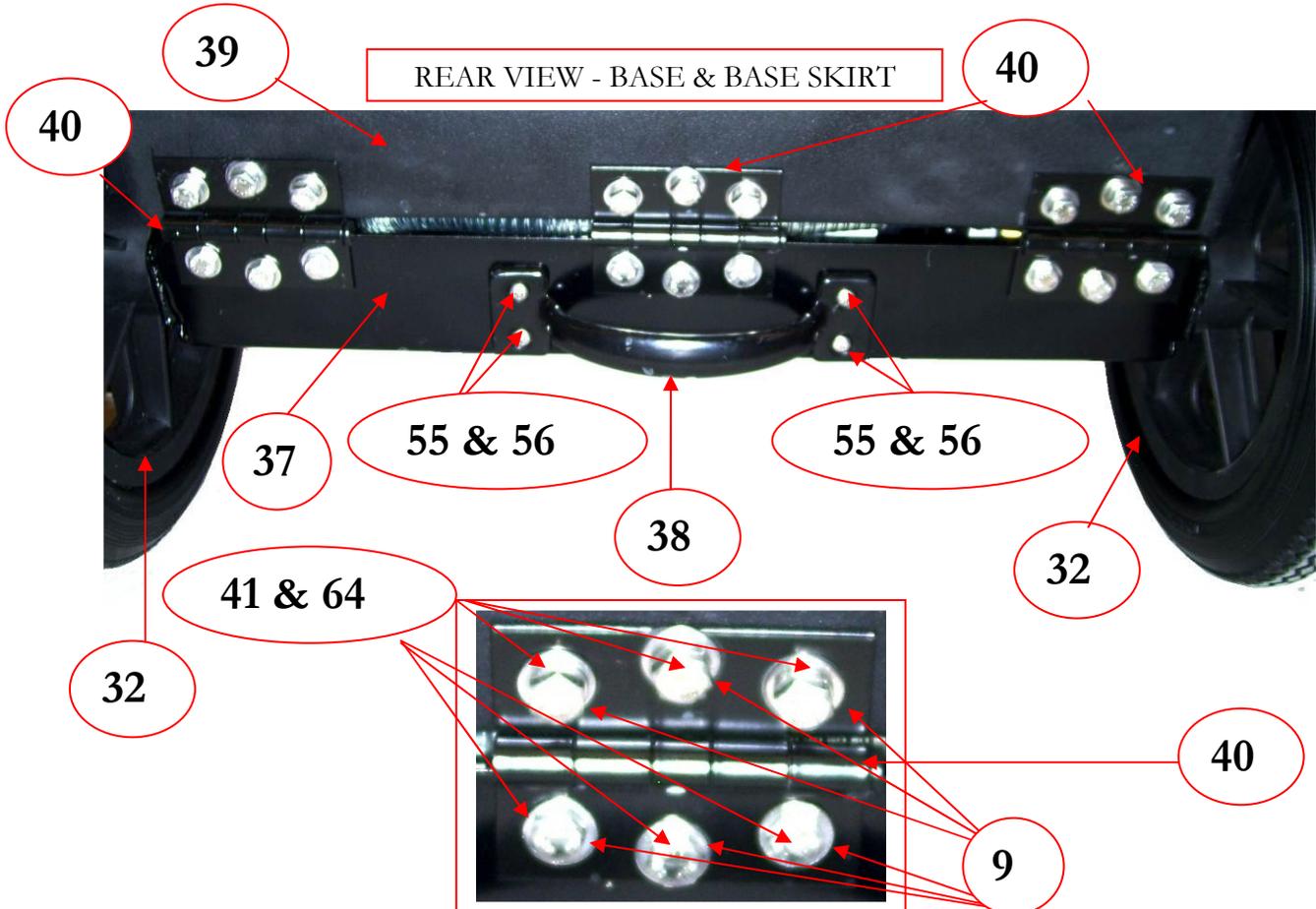




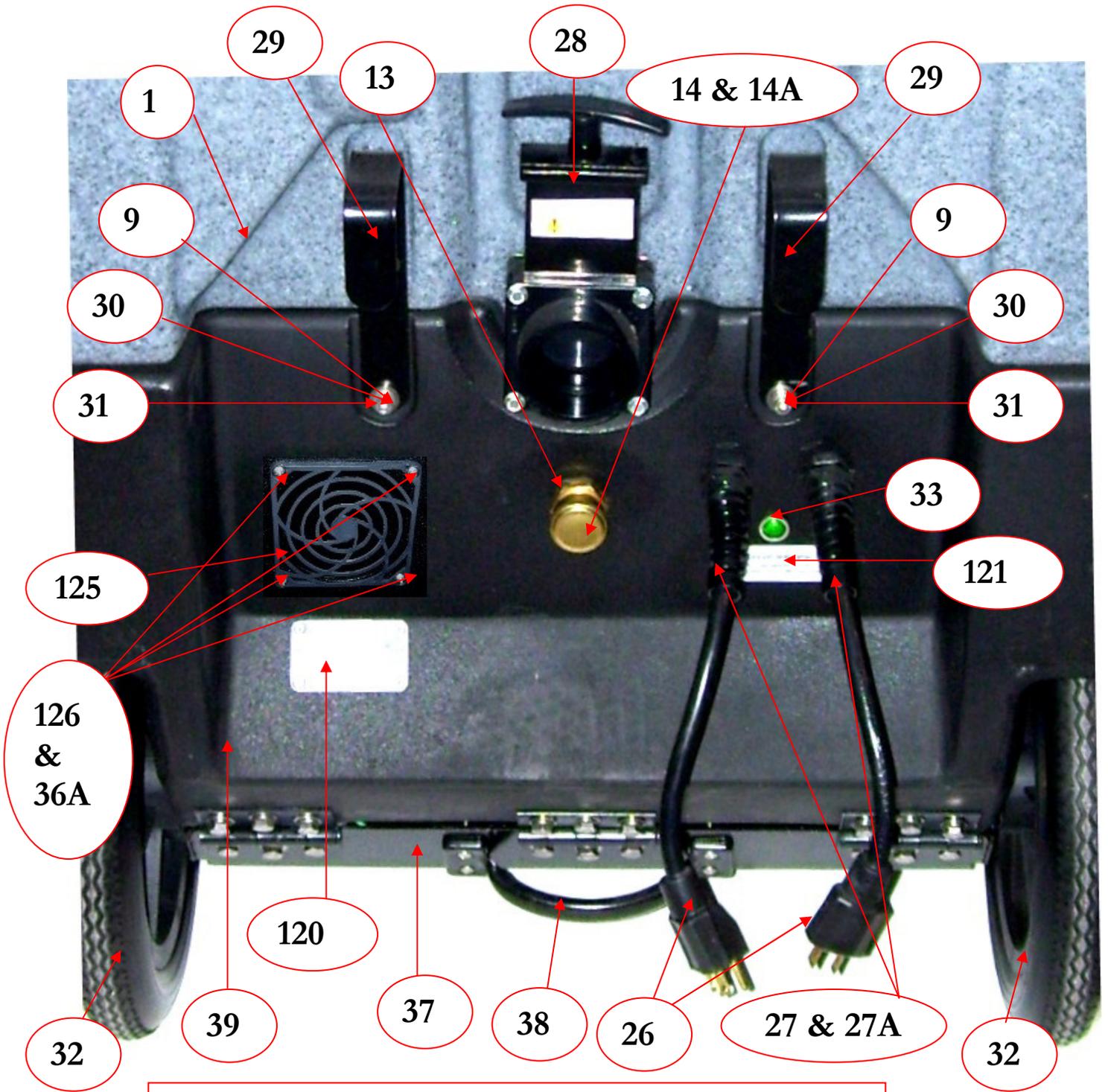
CONTROL PANEL



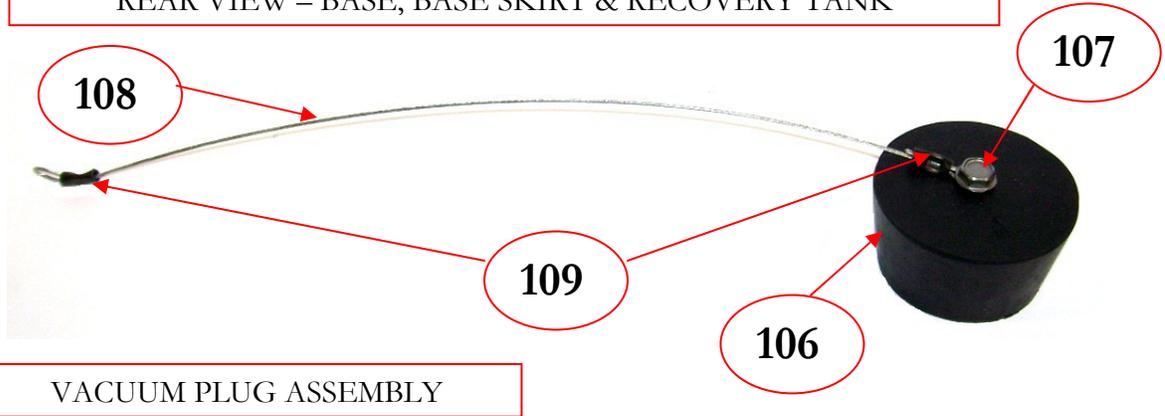
REAR VIEW - BASE & BASE SKIRT



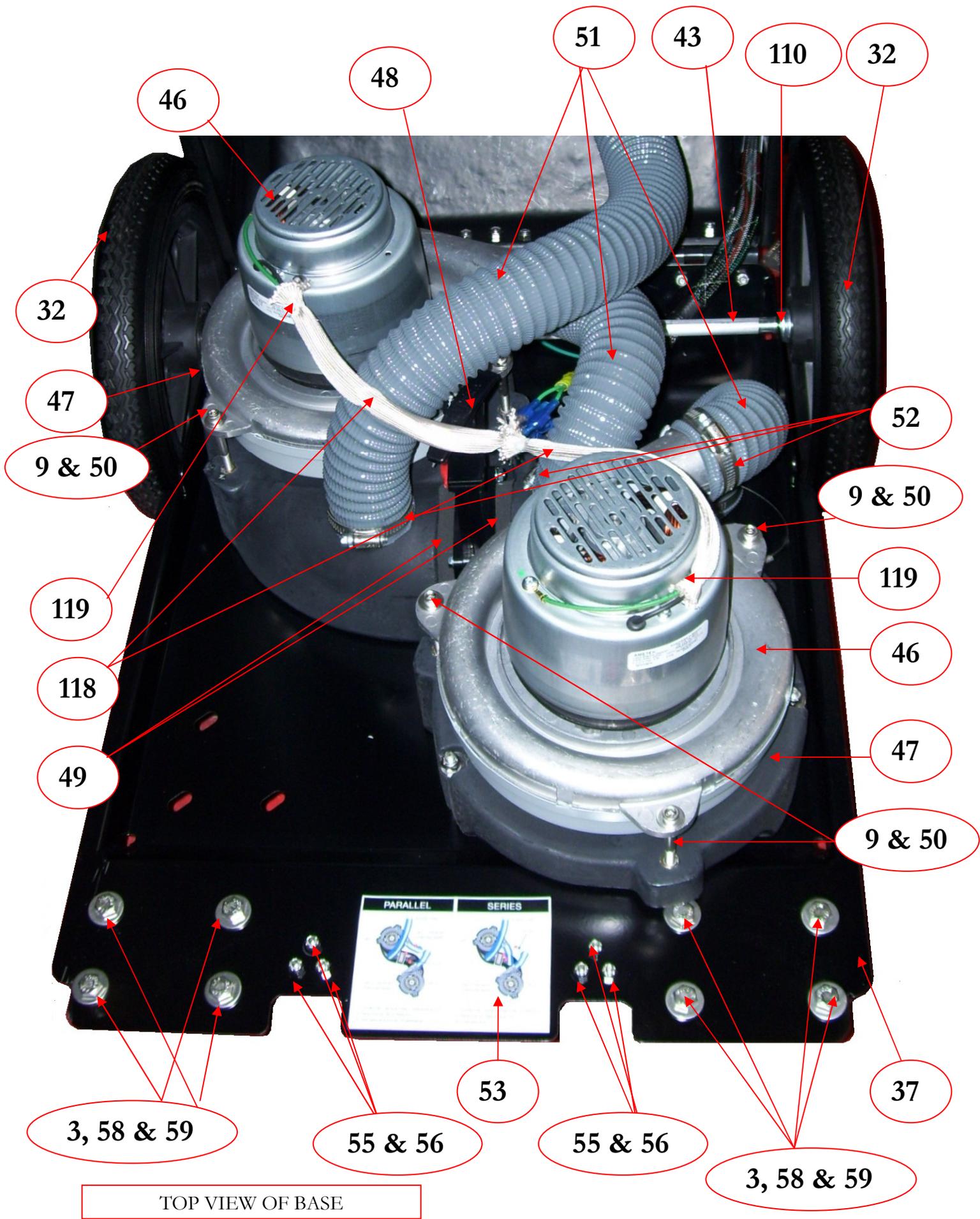
HINGE SCREWS



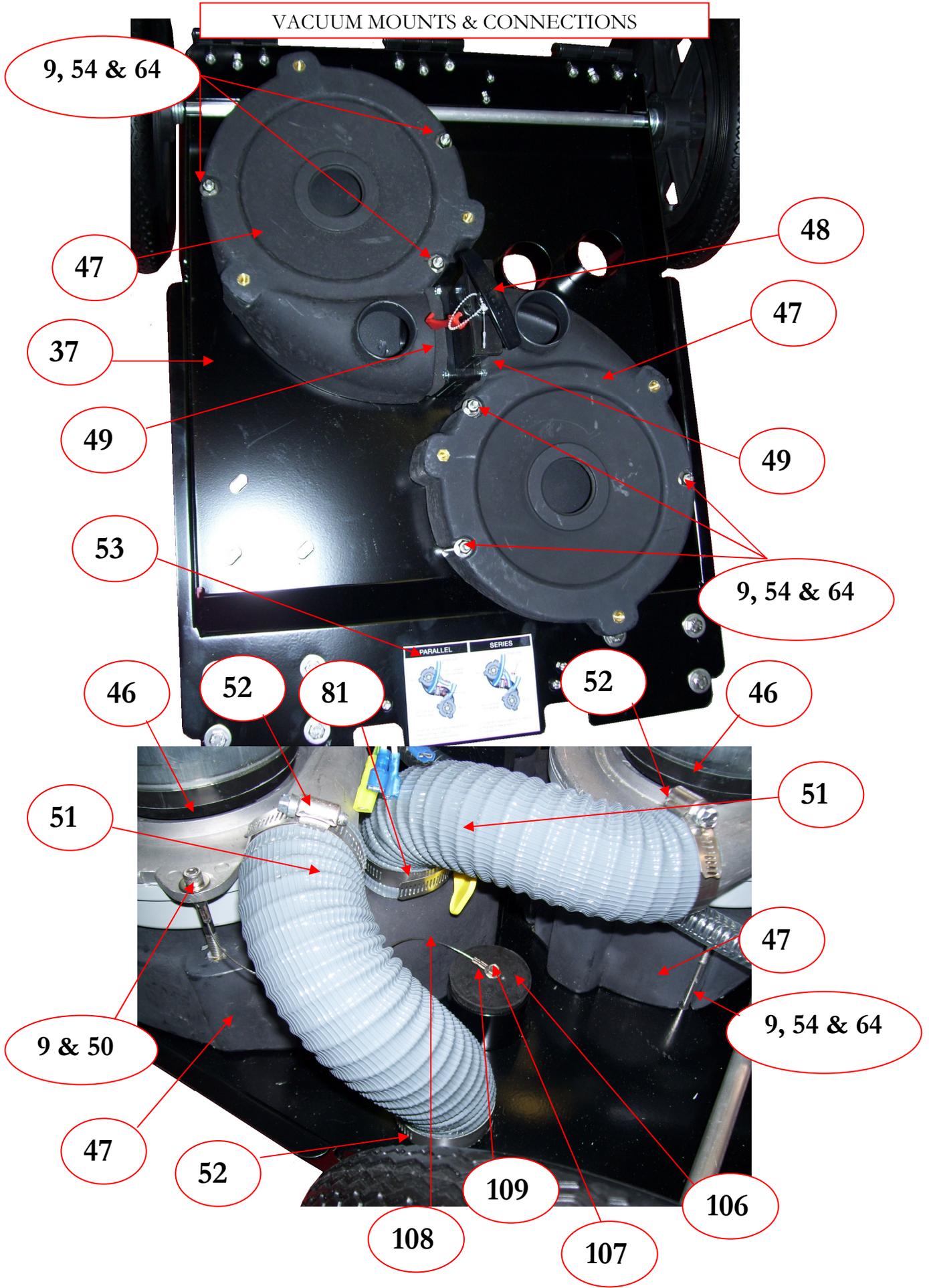
REAR VIEW – BASE, BASE SKIRT & RECOVERY TANK

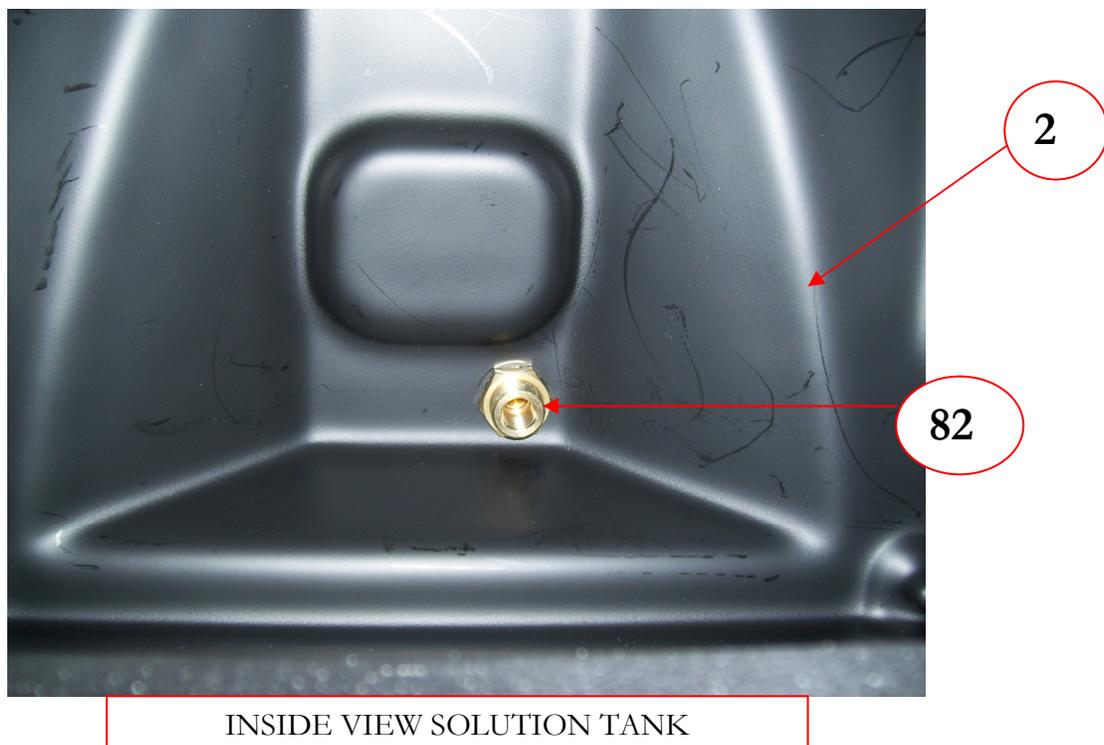
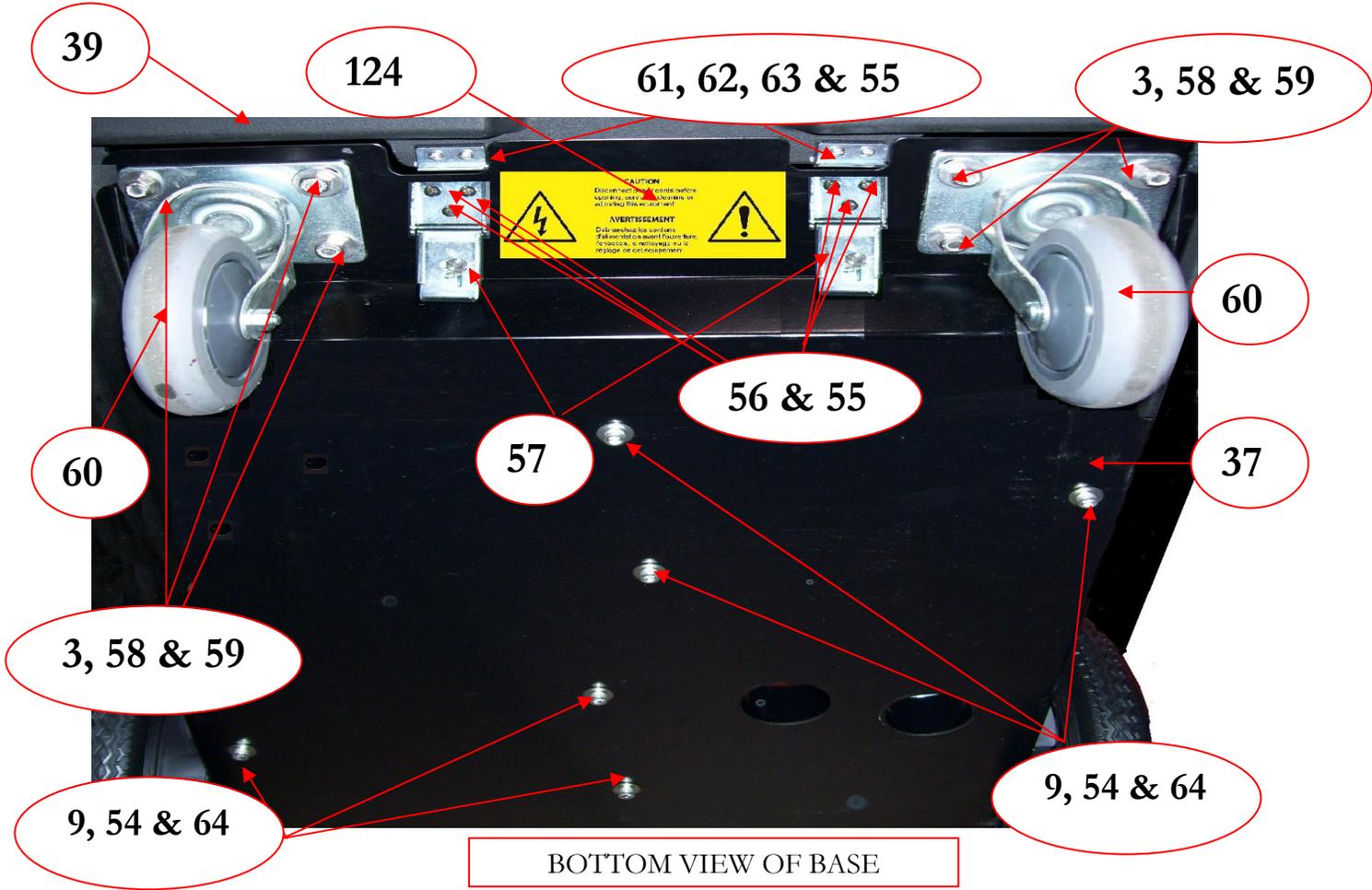


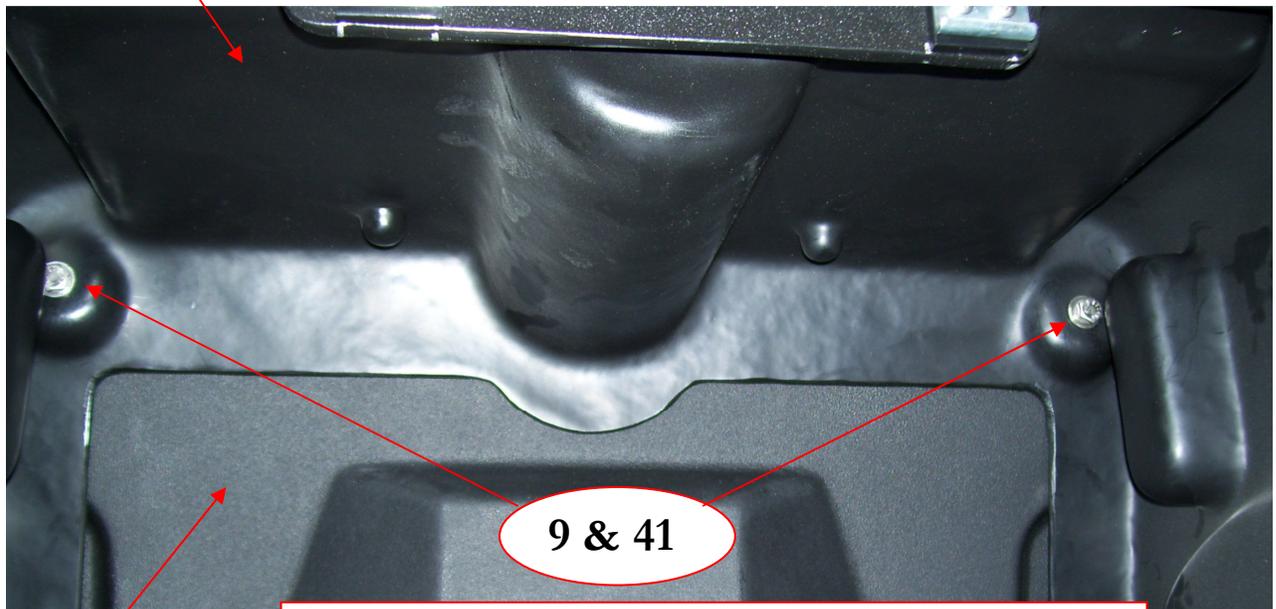
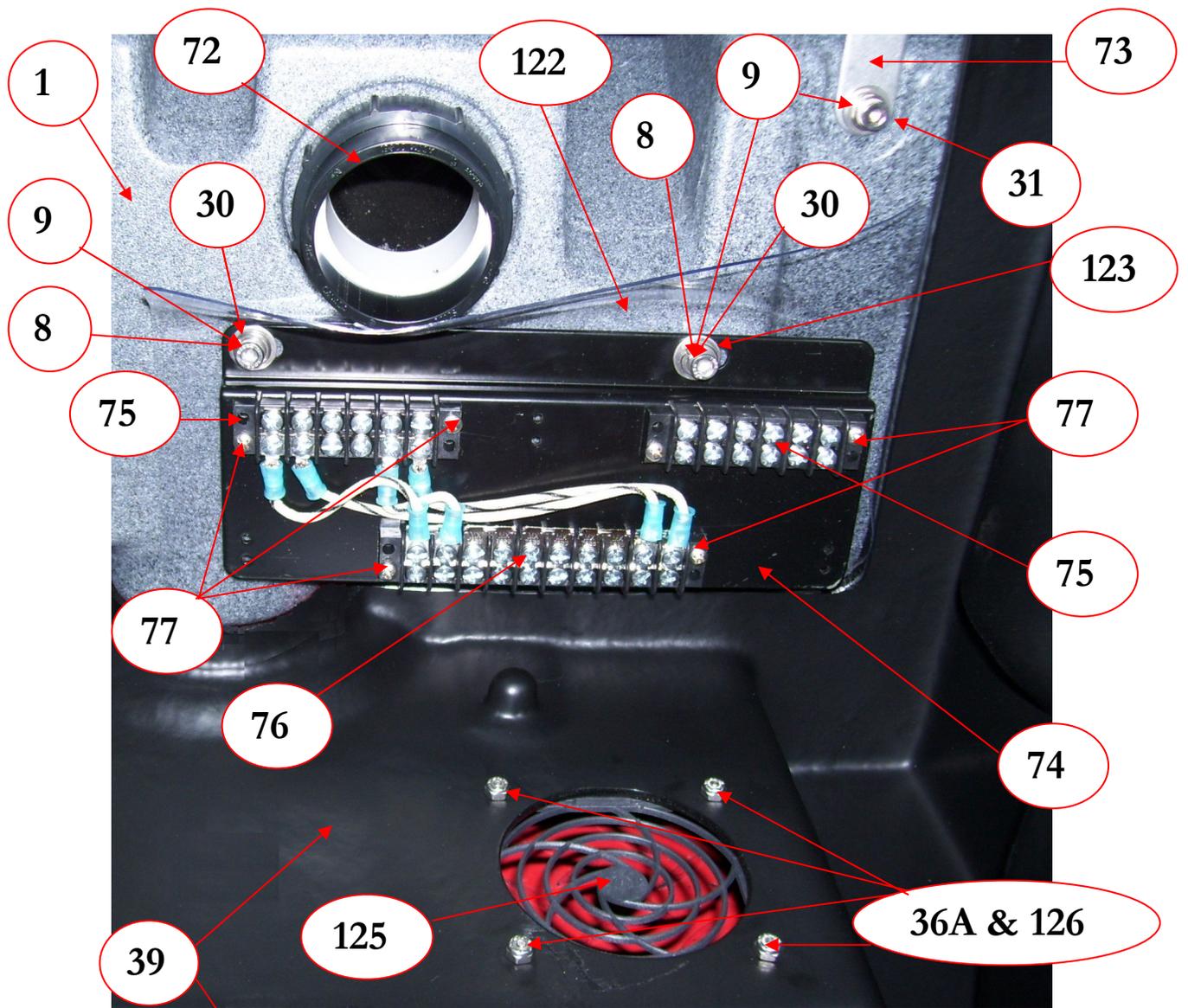
VACUUM PLUG ASSEMBLY



VACUUM MOUNTS & CONNECTIONS







BOTTOM VIEW SOLUTION TANK & BASE SKIRT

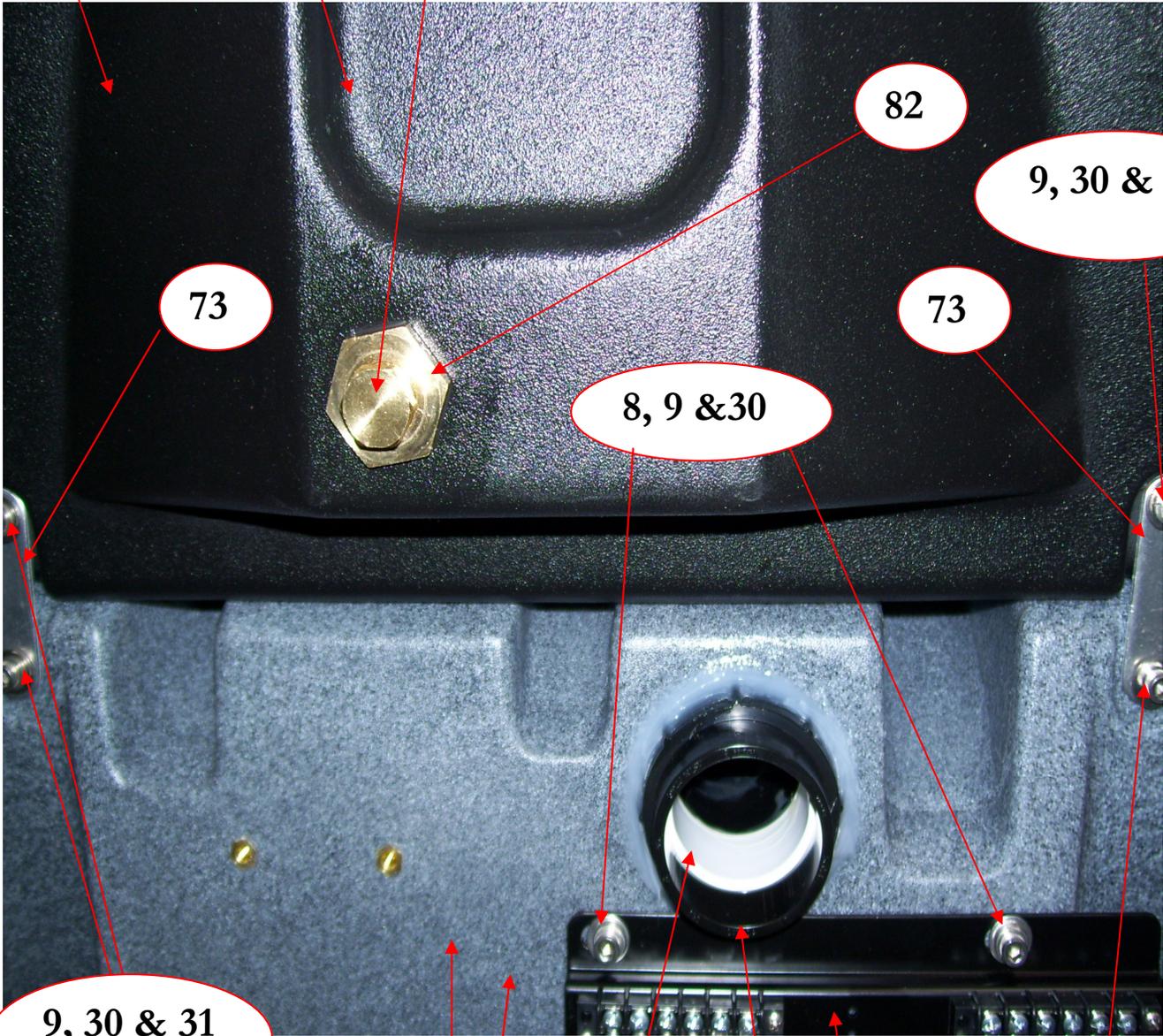
2

39

2

67

BOTTOM VIEW SOLUTION TANK



82

9, 30 & 31

73

73

8, 9 & 30

9, 30 & 31

1

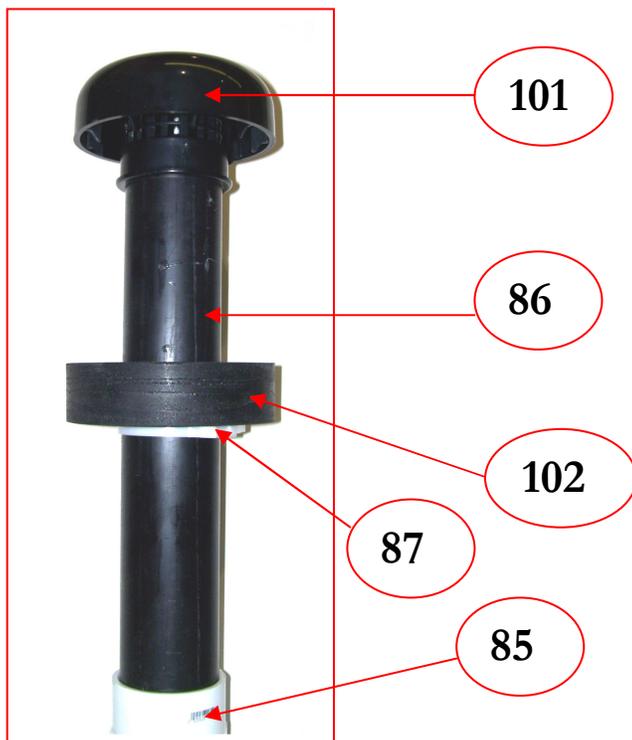
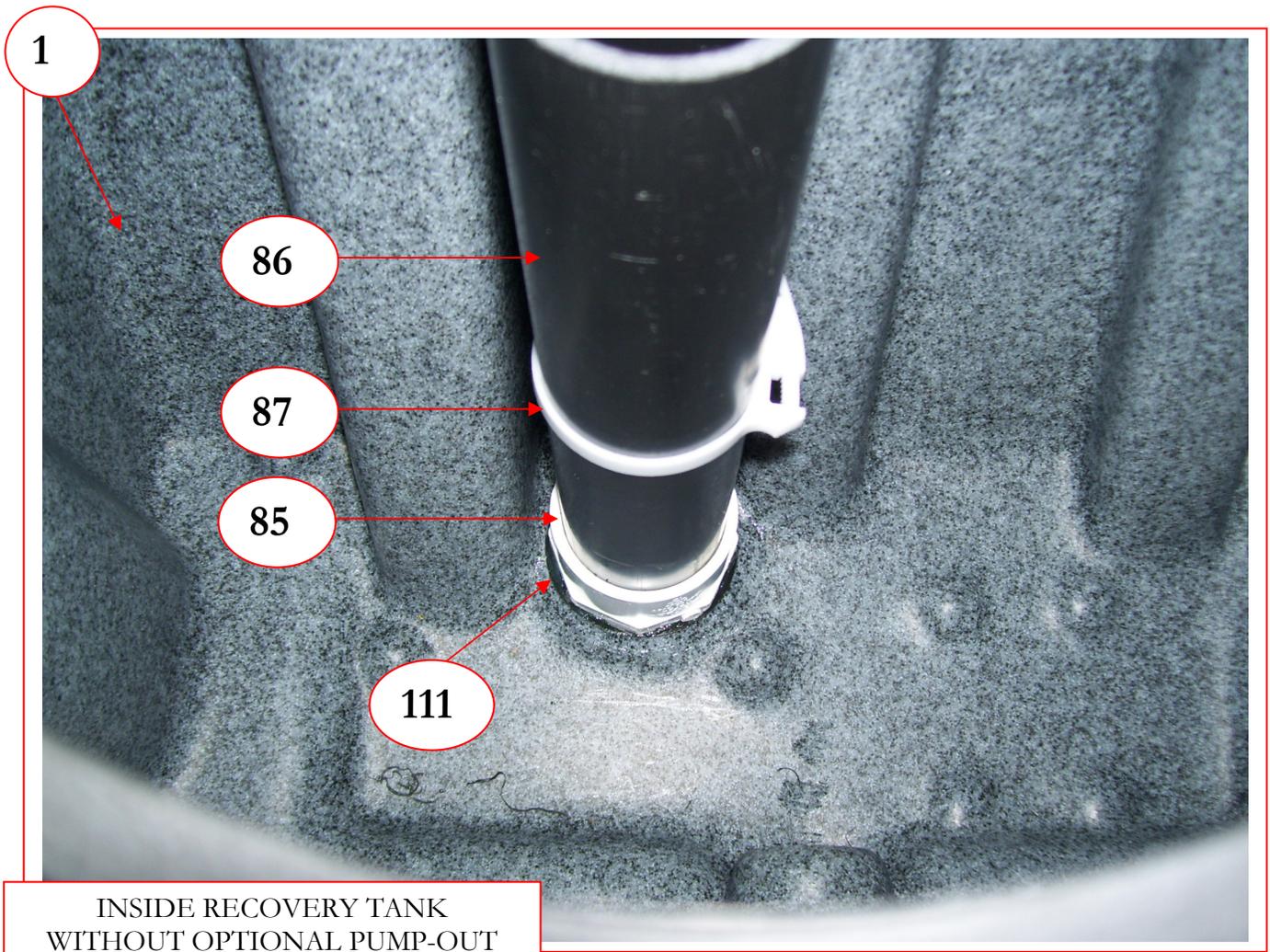
85

72

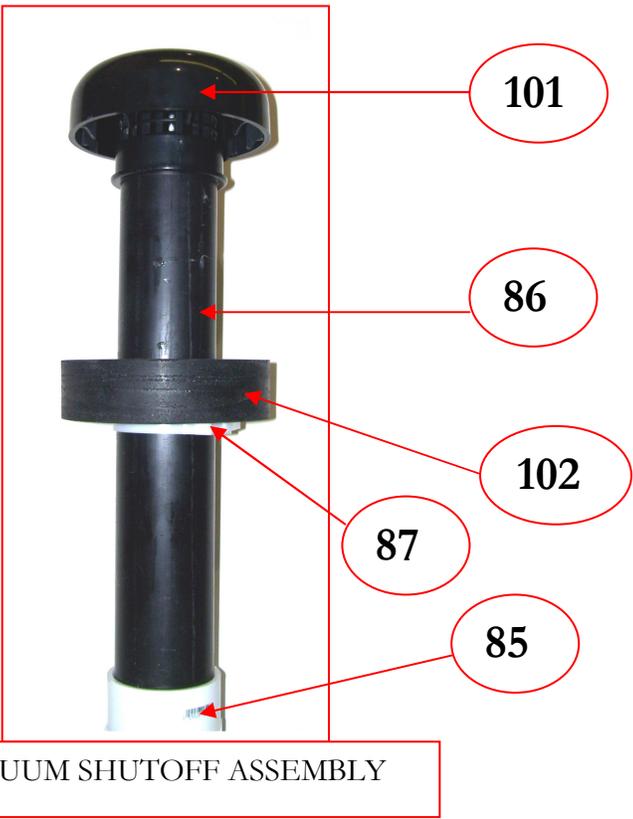
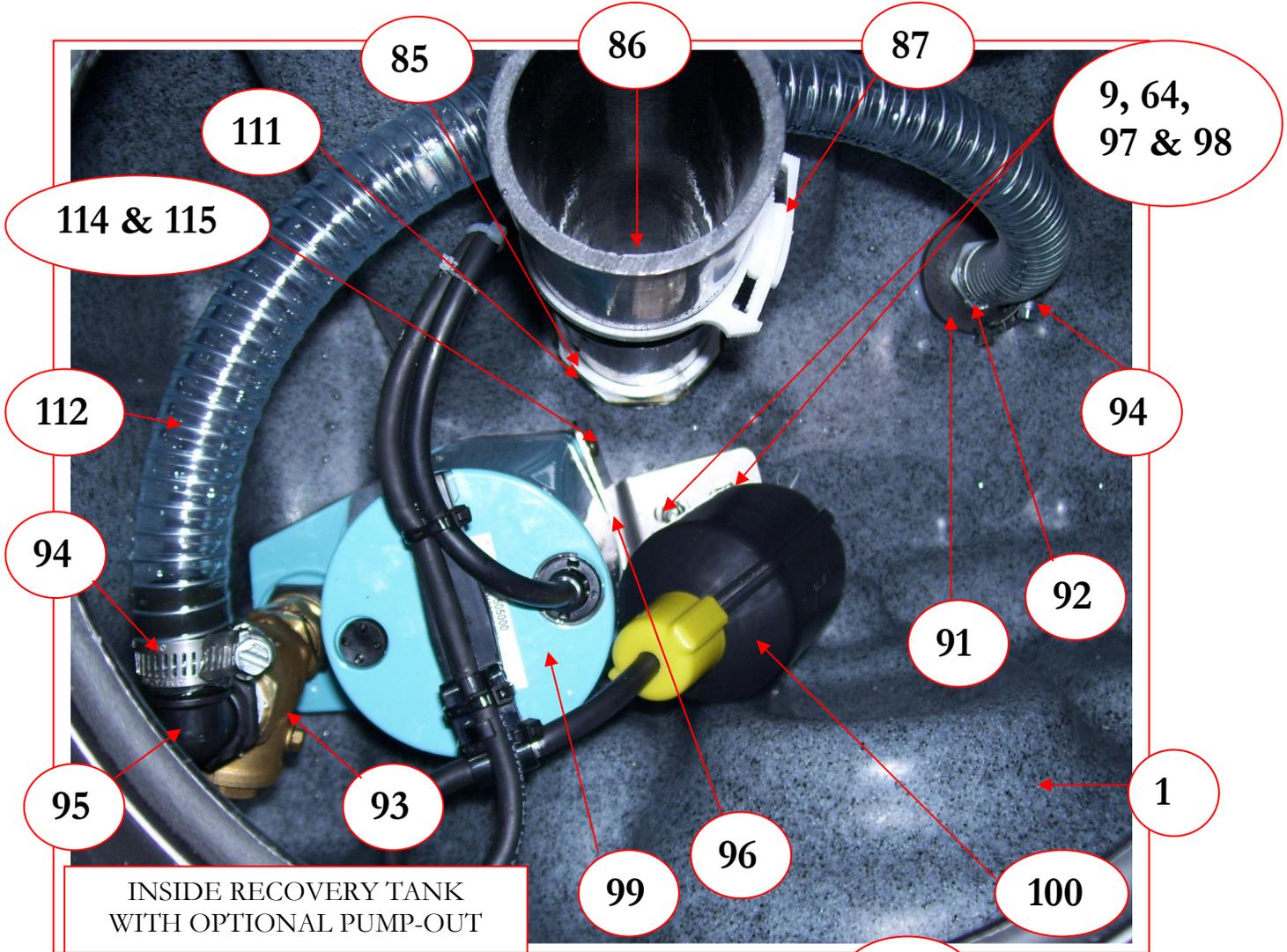
9, 30 & 31

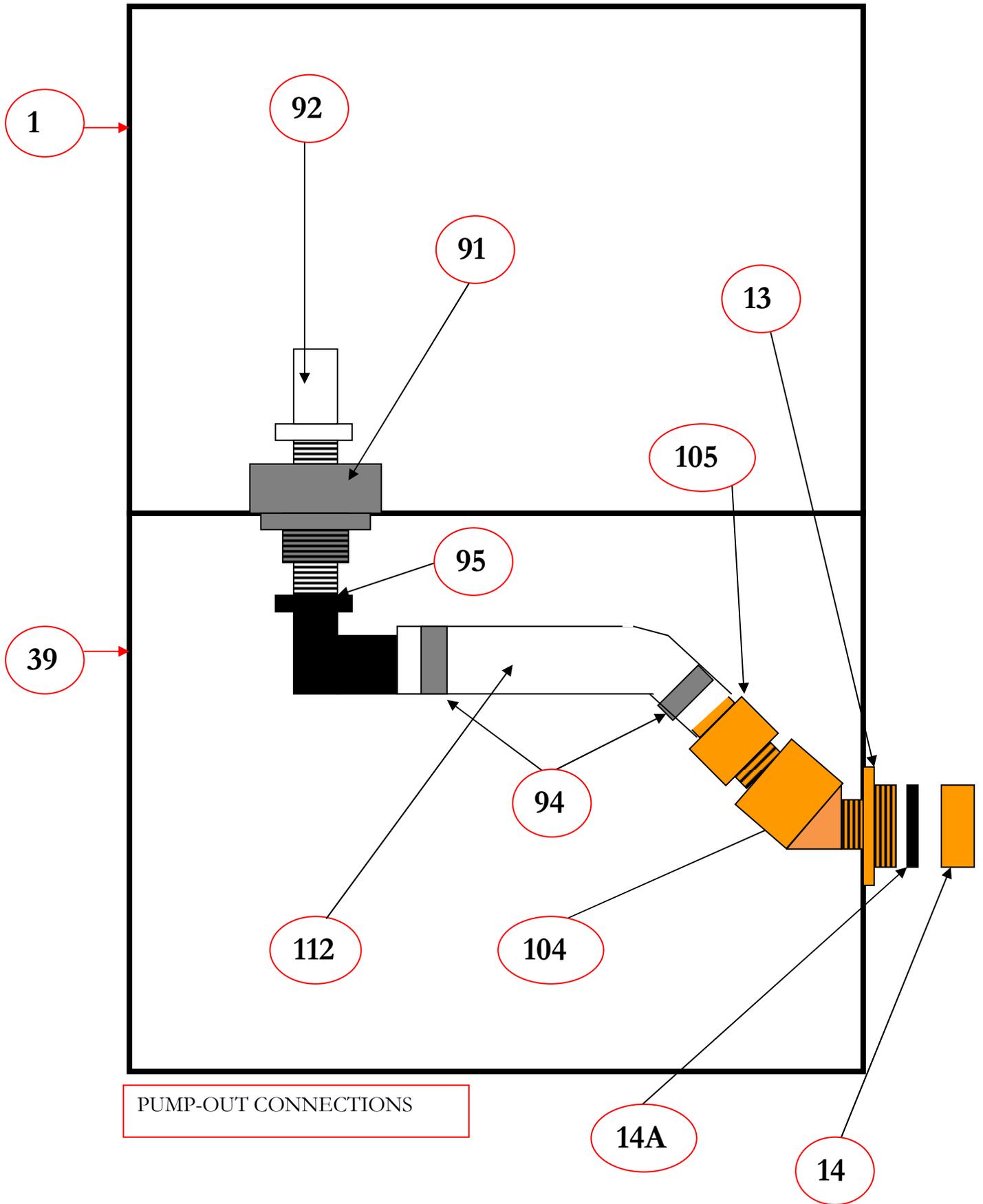
122

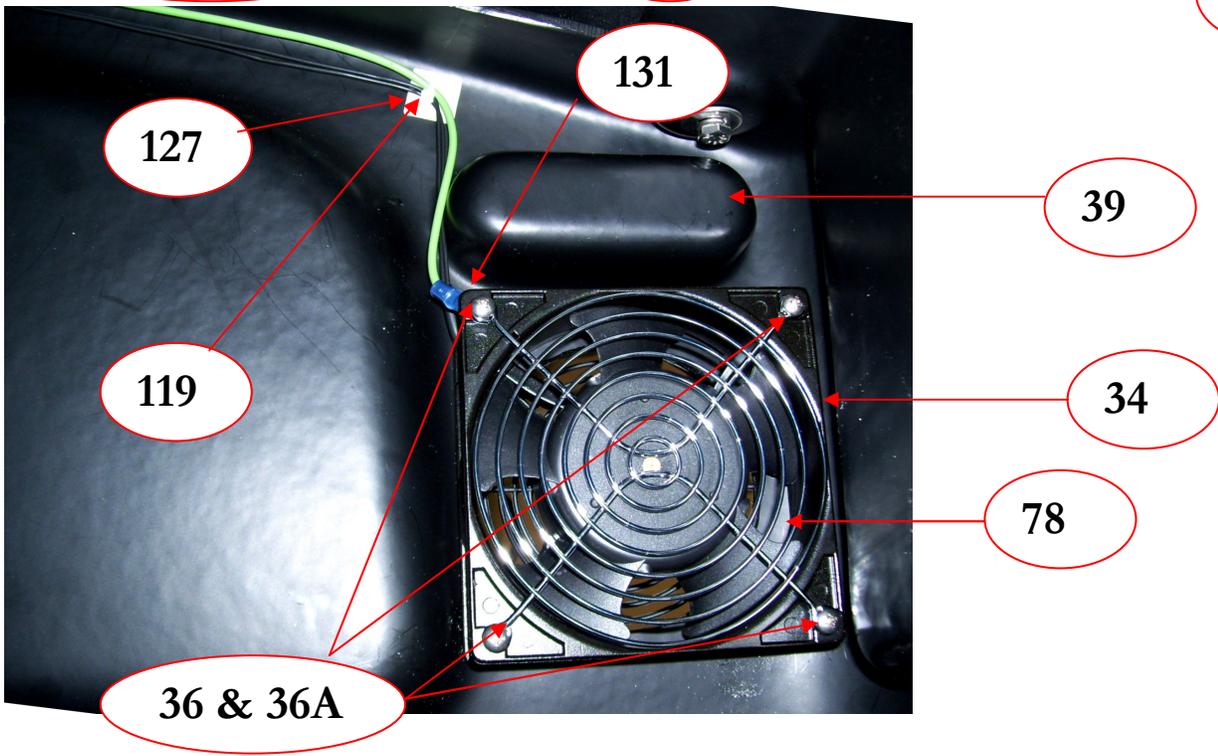
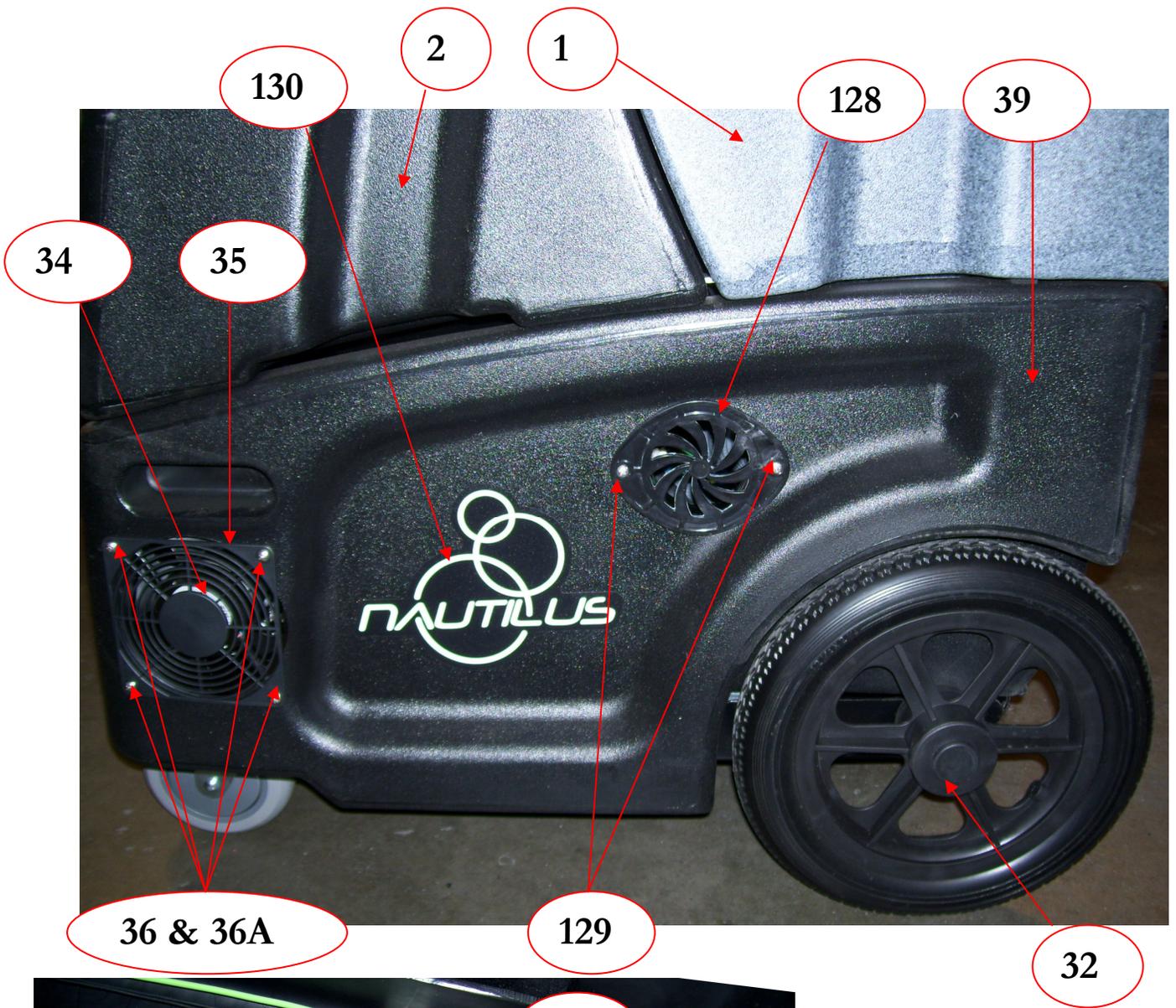
74



VACUUM SHUTOFF ASSEMBLY







KEY	PART #	DESCRIPTION	KEY	PART #	DESCRIPTION
1	NM5704	RECOVERY TANK	22		
2	NM5702	SOLUTION TANK	23		
3	PFA11	WASHER 5/16" FLAT SS	23A		
4	NM5724	WHEEL 2-1/2" GRAY	24	NM5708	CONTROL PANEL PLATE
5	NM5143	ACORN NUT CAP 5/16-18	25	NM5708C	MXEAPM PANEL DECAL
NS	NM5137	SCREW 5/16-18 X 2.75" HX SS	26	NM5009	CORD 12GA W/ PLUG (QTY 2)
6	1650-5695	LID ASSY WASTE TANK	27	NM5038	CORD STRAIN RELIEF (QTY 2)
7	PA187	SCREW #10 X 5/8" PH SS(QTY 6) (Attach lid to tank)	27A	NM5039	NUT CORD STRAIN RELIEF
NS	1663-5397	GASKET WASTE TANK DECK	28	PEA11	GATE VALVE 1-1/2" MPT
8	NM5028	SCREW 1/4-20 X 1/2" SOCHD SS	29	NM5759	CORD WRAP BRACKET (QTY 2)
9	NM5066	WASHER 1/4" FLAT SS	30	NM5014	WASHER 1/4" LOCK SS
10	NM5840	WAND HOLDER STRAP LONG TOP STRAP	31	NM4063	SCREW 1/4-20 X 3/4" SOCHD SS
11	NM5844	WAND HOLDER BUCKLE	32	NM5722	WHEEL 12" with HUB CAP
12	NM5842	WAND HOLDER STRAP SHORT BOTTOM STRAP	NS	NM5010	AXLE CAP – PUSH NUT (Secure wheel to axle)
13	BR319	ADAPTER 3/4" MPT X 3/4" MGH	33	NM4447	GREEN NEON LIGHT 120V
14	BR325	GARDEN HOSE CAP	34	NM6120	COOLING FAN – 120MM
14A	BR600	GARDEN HOSE WASHER	35	NM6122	PLASTIC FAN COVER – 120MM
NS	AH68	BARB 2" X 2" MPT PVC	36	NM6125	SCREW 6-32 X 2.50" PPH SS
15	AH224	FLASH CUFF 2" MALE - MPT	36A	NM4031	NUT 6-32 NYLOCK SS
NS	AH201	FLASH CUFF 2" FEMALE 1.5"	37	NM5710B	BASE PLATE - EXTREME
16			38	NA041	HANDLE
17	NM5714	ROCKER SWITCH DPST	39	NM5700	BASE SKIRT
18	NM5715	PANEL PLUG	40	NM5750	HINGE (QTY 3)
19	NM4472	HOSE CLAMP W/THUMB SCREW	41	NM5017	SCREW 1/4-20 X 3/4" HXHD SS
20			42	NM5947	SCREW 10-24 x 1/2" PPH SS(QTY 4)
21			42A	PHY094-034	NUT 10-24 NYLOCK SS(QTY 4)

KEY	PART #	DESCRIPTION	KEY	PART #	DESCRIPTION
43	NM5748	AXLE REAR WHEELS – 22.5”	68		
44			69		
45			70		
46	AV20	VACUUM MOTOR 8.4” 2-STAGE	71		
47	NM5699	VACUUM MANIFOLD 8.4”	72	NM5712	ADAPTER 2” FPT X SPG
			73	NM5027	BRACKET SOL/REC TANK
48	NM5728	GATE VALVE 2” W/ KEEPER	74	NM5738	BRACKET TERMINAL BLOCKS
49	NM5728A	GASKET VACUUM VALVE	75	NM5730	TERMINAL BLOCK 6 SPACE
50	NM5144	SCREW ¼-20 X 2.50” SOCHD SS (QTY 6)	76	NM5732	TERMINAL BLOCK 10 SPACE
51	NM5726	VACUUM HOSE 2” – PER INCH	77	NM5142	SCREW #6 X ½” PPH SS (QTY 6)
52	PA051	HOSE CLAMP 2-2.75”	78	NM6123	FAN GUARD – WIRE 120MM
53	NM5705X	DECAL VAC CONNECTION	79	NM5025	RIVET – VAC HOSE END
54	NM5141	SCREW ¼-20 X 3.25” SOCHD SS	80	NM5124	SCREW 8-32 X ½” PPH SS
55	NM5793	NUT 8-32 NYLOCK SS	81	NM4472	CLAMP W/ THUMB SCREW
56	NM5124	SCREW 8-32 X ½” PPH SS	82	NM5098	BULKHEAD FITTING 3/8”
57	NM5752C	LATCH - SLIDE(QTY 2)	83		
58	NM5120	SCREW 5/16-18 X 3/4” HXHD SS	84		
59	PFA10	NUT 5/16-18 NYLOCK SS	85	NM5727	ADAPTER 2”MPT X H PVC
60	NM5720	CASTER 5” (QTY 2)	86	PA029	PIPE 2” ABS (13.5”)
61	NM5752B	LATCH HOOK - KEEPER	87	NM5741E	CLAMP NYLON 2-2.5”
62	NM5752A	SPACER – LATCH HOOK	88		
63	NM5128	SCREW 8-32 X ¾” PPH SS(QTY 4)	89	NM5713	ADAPTER 2”FPT X HSLIP ABS
64	NM4261	NUT ¼-20 NYLOCK SS	90		
65			91	NM5742	BULKHEAD FITTING ¾” PVC
66	NM5058	SCREW ¼-20 X 2.25” HXHD SS	92	BR048P	BARB ¾” X ¾” MPT NYLON
67	BR222	PLUG ¼” MPT HEX BRASS	93	NM5052	CHECK VALVE 3/4”

KEY	PART #	DESCRIPTION	KEY	PART #	DESCRIPTION
94	PH09	HOSE CLAMP FOR 3/4" HOSE	119	NM5418	WIRE TIE 4"
95	PA110	ELBOW 90DEG 3/4" MPT & BARB	120		SERIAL NUMBER PLATE WITH FOUR RIVETS
96	NM5835	BRACKET APO PUMP MOUNT	121	NM5705B	DECAL DUAL CIRCUIT INDICATOR
97	NM5836	WASHER FLAT RUBBER 1/4"	122	NM5737	MOISTURE BARRIER
98	NM5790	SCREW 1/4-20 X 1.25" SOCHD SS	123	NM5433	1/4" INTERNAL STAR WASHER SS
99	NM5053	PUMP OUT PUMP	124	NM5705C	DECAL CSA WARNING
100	NM5749	FLOAT SWITCH	125	NM5756	PLASTIC FAN GUARD – 80MM
101	NM5735	FILTER CAP ASSEMBLY	126	NM4123	SCREW 6-32 X 1/2" PFH SS
102	NM5741F	FLOAT VACUUM SHUTOFF	127	NM6128	WIRE MOUNT BASE 3/4"
103	NM5051	STRAIN RELIEF WATER TIGHT	128	NM6126	OVAL VENT GRATE
104	BR278	ELBOW 45DEG 3/4" STREET	129	PA184	SCREW #8 X 3/8" SELF TAP PPH SS
105	BR049	BARB 3/4" X 3/4" FPT	130	NM5711	DECAL NAUTILUS SIDE (QTY 2)
106	PHY106-028	RUBBER VACUUM PLUG	131	NM5933	3/16" INT STAR WASHER SS Cooling Fan Ground
107	NM4263	SCREW TEK #10 X 5/8" SS	NS	NM5703	WIRING HARNESS - UPPER
108	NM4460	CABLE	NS	NM5701	WIRING HARNESS - LOWER
109	NM4462	SLEEVE #7 CABLE CLAMP			
110	NM5125	WASHER 1/2" FLAT ZINC PL	NS	NM5758	KIT DUAL CIRCUIT WIRING
111	NM5725	GASKET VACUUM RISER PIPE	NS	NM4087	SCREW 1/4-20 x 5/8" SOC BH SS
112	NM5093	HOSE 3/4" ID CLEAR COIL	NS	NM5434	#6 INTERNAL STAR WASHER SS Control Panel Ground lug
113	NM5031	SCREW 1/4-20 X 1" SOCHD SS	NS	PA010A	VACUUM GASKET (On bottom of vac motor AV20)
114	PA187	SCREW #10 X 5/8" PHP SS			
115	NM4255	WASHER #10 FLAT SS			
116	PH07	HOSE CLAMP FOR 1/2" HOSE			
117	NA2250	HOSE CLAMP FOR 3/8" HOSE			
118	NM5412	7/16" FIBREGLASS WIRE SLEEVE Sold per inch			

<b>DESCRIPTION</b>	<b>HOSE TYPE</b>	<b>LENGTH</b>	<b>NOTES</b>
VAC HOSE REC TANK TO MANIFOLD	2" VAC – NM5726 SOLD PER FT	29"	TANK END: 1 - NM5713 2 – NM5025 VAC END: HOSE CLAMP PA051
VAC HOSE VAC 1 TO MANIFOLD	2" VAC – NM5726 SOLD PER FT	9.5"	VAC END: HOSE CLAMP PA051 MANIFOLD END: HOSE CLAMP NM4472
VAC HOSE VAC 2 TO BASE	2" VAC – NM5726 SOLD PER FT	9.5"	BOTH ENDS: HOSE CLAMP PA051
DRAIN HOSE REC TANK TO PUMP-OUT OUTLET	3/4" CLEAR COIL NM5093 SOLD PER INCH	5-1/2"	BOTH ENDS: HOSE CLAMP PH09
DRAIN HOSE PUMP-OUT PUMP TO REC TANK OUTLET	3/4" CLEAR COIL NM5093 SOLD PER INCH	14-1/2"	BOTH ENDS: HOSE CLAMP PH09

# Limited Warranty



Your Nautilus Extreme MXEAPM is designed to give you years of reliable service. If a problem should arise use the troubleshooting section in the operation manual to diagnose and correct the problem if possible.

If you are unable to determine the cause or solution to the problem contact your distributor or Hydro-Force for assistance.

Hydro-Force warrants the roto-molded tanks and base of the Nautilus Extreme MXEAPM to be free from defects in material or workmanship for five years from the date of purchase. All other components of the Nautilus Extreme MXEAPM are warranted to be free of defects in material and workmanship for one year from the date of purchase.

During the warranty period, Hydro-Force will, at its option, repair or replace components which prove to be defective. This warranty does not provide for replacement of complete units due to defective components. Any costs for transportation or related service labor are not covered in this warranty. Replacement parts are warranted only for the remainder of the original warranty period.

This warranty shall not apply to defects resulting from improper operation, lack of maintenance, unauthorized modification, chemical incompatibility, misuse, abuse or exposure to freezing temperature conditions. It does not cover normal wear items such as o-rings, valve seals, pump seals, hoses, jets, cords, batteries, or other items which require replacement as a result of ordinary usage.

To obtain warranty service for the Nautilus Extreme MXEAPM, contact your distributor or Hydro-Force. If the extractor must be returned to Hydro-Force or an authorized service center, the purchaser shall prepay shipping charges for products returned for warranty service. No returned items will be accepted by Hydro-Force without prior authorization. All returns must have a return authorization number, issued by Hydro-Force, clearly marked on the exterior of the package.

Hydro-Force makes no other warranty either expressed or implied with respect to this product.

The remedies provided herein are the purchaser's sole and exclusive remedies. In no event shall Hydro-Force be liable for any direct, indirect, special, incidental or consequential damages.

This warranty gives you specific legal rights. You may also have other rights which vary from jurisdiction to jurisdiction.