NAUTILUS
PORTABLE EXTRACTOR

CERTIFIED PLATINUM

HYDRO-FORCE™
Innovating since 1974

Nautilus Operating Manual

Revised: 04-26-22

Hydro-Force Manufacturing | 4282 S. 590 W., SLC, UT 84123 | www.hydroforce.com | 800-637-3789

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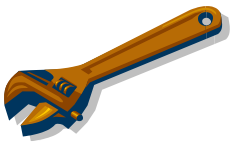


Introduction

Congratulations on your purchase of the Hydro-Force Nautilus. The Nautilus 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. We take a great deal of pride in the Nautilus; our goal is no less than your complete satisfaction.

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

This manual will provide users with the knowledge required to operate the Nautilus 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, 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 portable extractor units manufactured by:

Hydro-Force Manufacturing
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 High Pressure Extractor

Height: 42-1/4”
Length: 34-3/8”
Width: 23-3/8”
Weight: See Table
Solution Tank Capacity: 12 gallon
Recovery Tank Capacity: 12 gallon

Model No.	MX200M	MX200HM	MX3-200M	MX3-200HM
Weight (lbs)	112 lbs	116 lbs	119 lbs	123 lbs
Vacuum Motors 5.7” Ametek Lamb Mounted in Series	2 Stage	2 Stage	3 Stage	3 Stage
Vacuum Flow Rate (CFM)	97 CFM	97 CFM	99 CFM	99 CFM
Vacuum Lift (in H2O)	131 in H2O	131 in H2O	188 in H2O	188 in H2O
Solution Pump	100 psi 1.3 GPM	200 psi 2.0 GPM	200 psi 2.0 GPM	500 psi 2.5 GPM
Heater	-	1750 W	-	1750 W
Auto Fill / Pump Out (APO)	APO	-	-	-
Cord 1: Required Breaker 115VAC 60Hz	20 A	20 A	15 A	20 A
Cord 1: Components on Cord	Vac 1, Vac 2, Pump, Pump Out	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2
Cord 2: Required Breaker 115VAC 60Hz	-	20 A	20 A	20 A
Cord 2: Components on Cord	-	Pump, Heater	Pump	Heater, Pump

Technical Specifications Continued:

Model No.	MX500M	MX500HM	MX3-500M	MX3-500HM	MX1200M	MX3-1200M
Weight (lbs)	135 lbs	141 lbs	135 lbs.	141 lbs	157 lbs	160 lbs
Vacuum Motors 5.7" Ametek Lamb Mounted in Series	2 Stage	3 Stage	2 stage	3 Stage	2 Stage	3 Stage
Vacuum Flow Rate (CFM)	97 CFM	97 CFM	97 CFM	99 CFM	97 CFM	99 CFM
Vacuum Lift (in H2O)	131 in H2O	131 in H2O	131 inH2O	188 in H2O	131 in H2O	188 in H2O
Solution Pump	500 psi 2.5 GPM	500 psi 2.5 GPM	500 psi 2.5 GPM	500 psi 2.5 GPM	1200 psi 2.2 GPM	1200 psi 2.2 GPM
Heater	-	1750 W	-	1750 W	-	-
Auto Fill / Pump Out (APO)	-	-	-	-	APO	APO
Cord 1: Required Breaker 115VAC 60Hz	20 A	20 A	20 A	20 A	20 A	20 A
Cord 1: Components on Cord	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2
Cord 2: Required Breaker 115VAC 60Hz	15 A	20 A	15 A	20 A	20 A	20 A
Cord 2: Components on Cord	Pump	Pump, Heater	Pump	Pump, Heater	Pump, Pump Out	Pump, Pump Out

Technical Specifications Continued:

Model No.	MXE-200M	MXE-500M	MXE-500MAP	MXE-500MAPF
Weight (lbs)	119 lbs.	146 lbs.	146 lbs.	146 lbs.
2 Vacuum Motors 8.4" Ametek Lamb Mounted in Series	8.4" Extreme	8.4" Extreme	8.4" Extreme	8.4" Extreme
Vacuum Flow Rate (CFM)	142 CFM	142 CFM	142 CFM	142 CFM
Vacuum Lift (in H2O)	235 in H2O	235 in H2O	235 in H2O	235 in H2O
Solution Pump	100 psi 1.3 GPM	500 psi 2.5 GPM	500 psi 2.5 GPM	500 psi 2.5 GPM
Heater	-	-	-	-
Auto Fill / Pump Out (APO)	-	Optional	APO	APO
Cord 1: Required Breaker 115VAC 60Hz	20 A	20 A	20 A	20 A
Cord 1: Components on Cord	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2	Vac 1, Vac 2
Cord 2: Required Breaker 115VAC 60Hz	15 A	20 A	20 A	20 A
Cord 2: Components on Cord	Pump	Pump	Pump, Pump Out	Pump, Pump Out

Standard Equipment

Vacuum Connection:	**2" Barb or 2"Male Flash Cuff with 2" Male NPT**
Vacuum Hose:	**25' X 1-1/2" with 1-1/2" cuff & 2" cuff**
	2" Female Flash Cuff x 1-1/2" hose adapter
Carpet Wand:	**1-1/2" SS Dual Jet S-Bend Wand – AW29 (Optional)**

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

HP Solution Hose:	**25' x 1/4" with 1/4" male & female quick connects**
Pump Priming Hose:	**12" x 1/4" with 1/4" male quick connect**
Power Cords:	**2 – 25' x 12gauge with male & female plug ends**
Electrical:	**1750W Heater (Optional)**
	Dual Circuit Indicator
	5amp Pump Circuit Breaker
	Internal Component Cooling Fan

Optional Features:

Auto Fill System with chemical draw:

Metering Tip Kit:	**14 different tips for changing chemical dilution rate**
Water Supply Hose:	**50' x 3/8" with 1/4" female quick connect &**
	Female garden hose fitting

Auto Pump-out System:

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

Additional / Optional Equipment

Wand Glide – Delrin	1661-2311
Wand Glide – Teflon	1662-2312
18” Bottom Velcro Strap for Wand Holder	1653-2020
Hy-Dry Deluxe Upholstery Tool:	A96894
Gekko Handle Assembly:	1693-1267
Gekko 4” Tool Head:	1694-1268
SX-7 Tool Head:	1688-1777
Gekko Hand Tool:	1621-2045
1-1/2” Vacuum Hose:	1627-4680
2” cuff for 1-1/2” Vac Hose:	1655-0853
1-1/2” cuff for 1-1/2” Vac Hose:	A64334
1-1/2” Hose Connector PVC:	1685-0176
HP Solution Hose 1/4” X 25’ w/M-F Quick Connects	1625-2417
1/4” Male Quick Connect:	1626-0325
1/4” Female Quick Connect:	1625-0324
Pump-out Hose:	1625-2544
Hydro Filter II:	A97699
Replacement Screen for Hydro-Filter II:	1658-1670
Metering Tip Kit:	1666-2013
12/3 X 25’ Power Cord:	1696-6412
12/3 X 50’ GFCI Power Cord:	1690-1656
Belt Pack	1663-1525

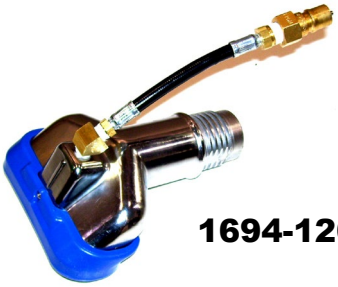
1663-1525

A96894

A97699

1688-1777

1693-1267



1694-1268

1690-1656

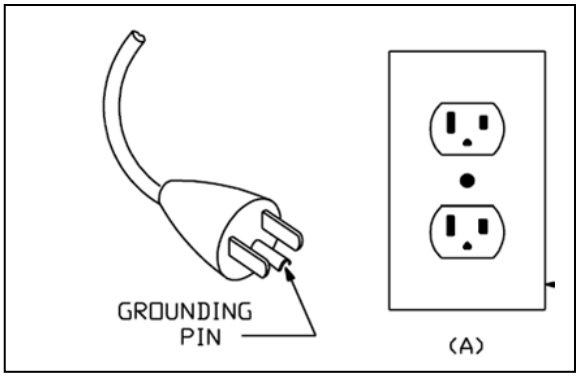
1621-2045

Section 1

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 NAUTILUS.

- 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 Nautilus outdoors, in standing water or on wet surfaces. Do not store the Nautilus 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.

NOTICE **This machine must be protected from conditions which may damage the pump, tank, hoses and other components.**

- **Freezing of water in this machine will cause serious damage**. The Nautilus, solution hoses, and tools must be protected from freezing temperature. Store, transport, and use this equipment only in temperatures well above freezing. (32ºF or 0ºC). If you suspect the Nautilus has been frozen, do not plug in or turn on machine until you are sure it has thawed completely.
- If the equipment cannot be stored or transported in a warm environment, it can be guarded from freezing by running an anti-freeze solution through the incoming water lines, chemical feed system, solution pump, solution lines, tools and pump-out pump. The machine is filled at the factory with anti-freeze to eliminate damage during shipment in cold weather.
    - The anti-freeze solution must be completely flushed from the machine before it is returned to service.
- The Nautilus must not be used to pick up flammable or combustible materials or used in areas where these materials may be present.
- Solvent-based or water-based solutions containing solvents may damage the pump, hoses, and other components. Do not assume chemical compatibility. Contact your distributor or Hydro-Force if you have questions regarding the compatibility of your chemicals with the machine.
- Do not clean with solutions that are at temperatures above 130ºF.
- Rinse the solution tank, chemical system, and pump with fresh water after each day's use.
- Do not allow pump to run dry. Always maintain adequate solution level to supply solution pump.
- HP hoses may rupture if worn or damaged. Do not use HP solution hoses if hose covering is cut, bulging, or otherwise damaged. Examine HP solution hoses daily and replace or repair hoses as needed.
- Use a Hydro-Filter II and clean the recovery tank daily to keep pump-out filter and pump from becoming clogged. Store the Nautilus with the recovery tank lid open.
- Keep Vacuum Inlet Filter clean and check float for proper operation. Do not operate the Nautilus 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.

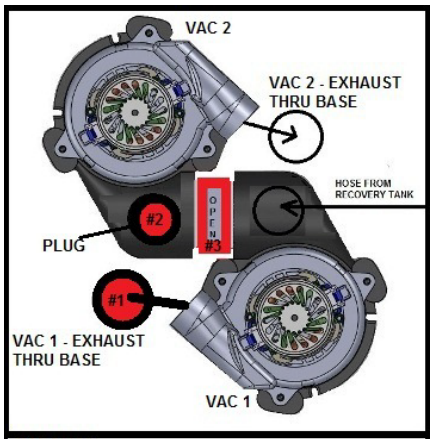
- Keep pets and children away from the machine when in use.
- Keep all body parts, hair, and loose clothing away from openings and moving parts. Always wear appropriate work clothing and safety equipment when operating unit.
- Use extra care when cleaning on stairs. Wet carpet on stairs can be slippery.
- Do not move the Nautilus up or down stairs when tanks are full of water. Drain solution and recovery tanks, 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 Nautilus has a unique vacuum system which allows you to connect your vacuums in either parallel or in series. Vacuum connections can be changed quickly, with only a screw driver. 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 says 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 "H2O or "WC.

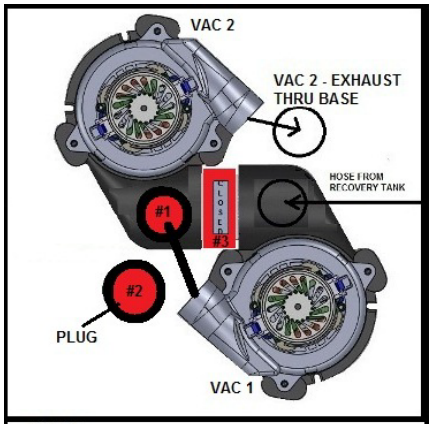


PARALLEL:
1.Connect Vac 1 Exhaust hose to Base Exhaust Port.
2. Place Plug in Vac 2 Intake Port.
3. Open Gate Valve & secure Gatekeeper

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.



SERIES:
1. Connect Vac 1 Exhaust hose to Vac 2 Intake Port.
2. Place Plug in Base Exhaust Port.
3. Close Gate Valve.

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.

Knowledge of the proper operation of the Nautilus 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. The amperage required by each cord requires that the two cords be plugged into separate circuits. See tables in Technical specifications and wiring diagrams for your particular model to determine the circuit breaker needs for each cord.

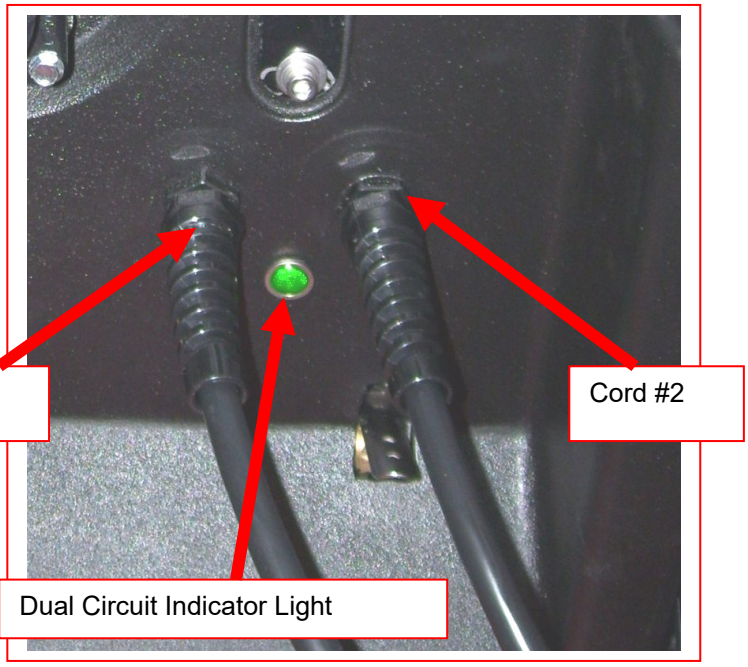
20amp circuits are usually found in kitchens and bathrooms. An overloaded circuit will not trip the circuit breaker immediately, but may not provide sufficient voltage for proper operation and the breaker will trip eventually.

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 30seconds 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.

NOTICE **When operating the Nautilus with the 1750W heater DO NOT turn the heater on until after the pump has been primed and solution hose and tool connected**

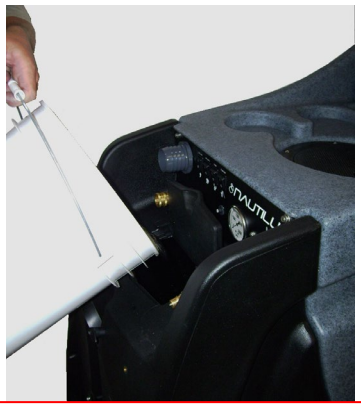


Power Cord – 1696-6412
25' – 12 gauge M-F Plugs

2A. Water Supply & Chemical Mixing– Manual Fill:

- Pour up to 12 gallons of hot water into the solution tank at the front of the machine. **The water temperature cannot exceed 130°F.**
- Measure and add the appropriate amount of the desired liquid chemical to the water in the solution tank. The amount of chemical will vary depending on the type of chemical used, the amount of water in the tank, and the material being cleaned; consult the chemical packaging for specific mixture ratios.
- Powdered chemicals should be dissolved in water before adding to the water in the solution tank.

NOTICE **DO NOT RUN OUT OF WATER WHILE USING THE MACHINE! Ensure that the tank contains enough water to complete each job. If the water level is low: stop cleaning, turn off the pump, and refill the tank. Running the pump dry will damage the pump and void the warranty.**



Pour appropriate amount of hot water into solution tank

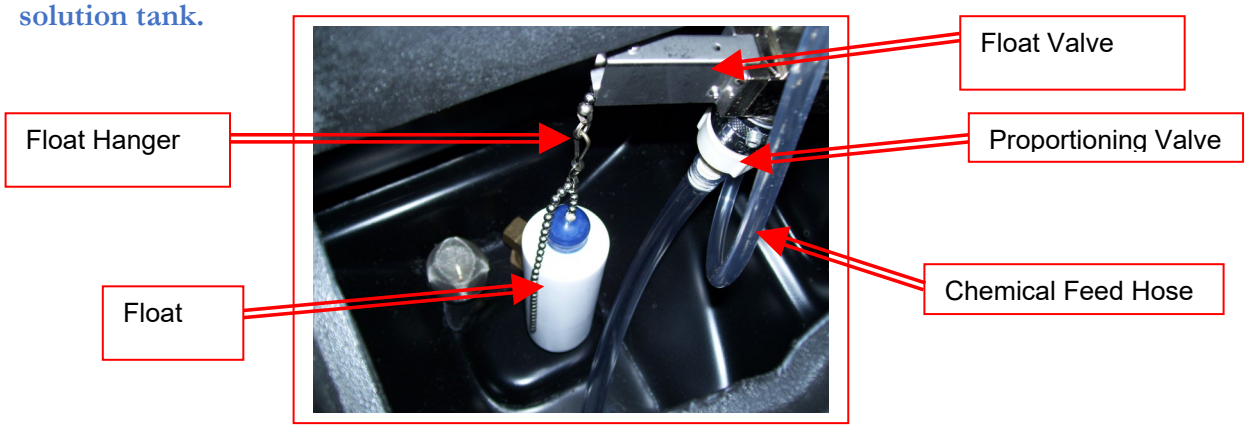
Add appropriate amount of chemical to water in solution tank

2B. Optional Auto-Fill System - Water Supply & Chemical Dilution:

- The chemical dilution rate is controlled by the metering tip, and the dilution rate can only be changed by changing the metering tip (See "How to Change the Metering Tip" on Page 11 for instructions.)

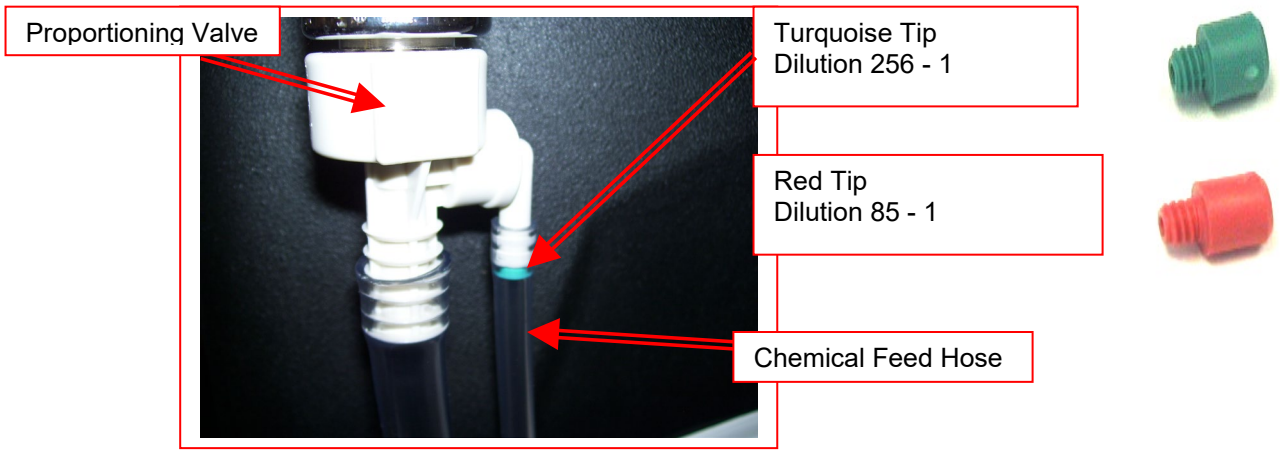
Chemical Feed Setup:

- Remove the chemical feed hose from the solution tank. Make sure float is attached to valve and hanging freely, above the bottom of the solution tank. Adjust float height to maintain adequate water level.
- Place the end of the chemical feed hose into a container of liquid chemical.
- If the tip is removed, and the proportioning system operated with no tip, the dilution rate will be 8:1 (the equivalent to adding 16-1/4oz of chemical to each gallon of water.)
- The recommended tip for use with the Nautilus is the turquoise tip with a dilution rate of 256:1. This means that for each gallon of water flowing into the machine, 1/2 ounce of chemical will be added.
- **If a fresh water rinse with no chemical is desired, simply leave the chemical feed hose inside the solution tank.**



How to Change the Metering Tip:

- Remove the chemical feed hose from the barb on the side of the proportioning valve.
- Unscrew and remove the old tip.
- Screw in the proper tip for your chemical tip and place the hose back on the barb



Metering Tip Kit (Hydro-Force Item# PDE001) contains 14 different colored metering tips, allowing dilution rates from 11:1 up to 427:1. Refer to the chart below to select the tip that meets the dilution rate for your chemical application.

- For example: if you require 1-1/2 ounces of chemical per gallon of water, change to the red metering tip with the dilution rate of 85:1.
- The dilution rates are based on chemicals with water-like viscosity. Thicker (more viscous) chemicals will dilute at a different rate.
- For powdered chemicals, a liquid concentrate must be made. Mix the concentrate according to the manufacturer's directions, and then select the appropriate metering tip.
- Contact your distributor or Hydro-Force if you have questions about your chemical.

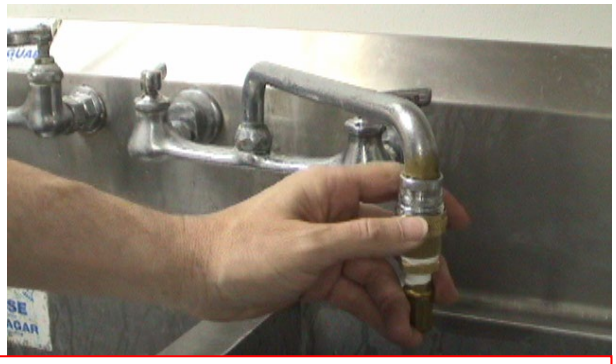
Metering Tip Application Chart:

Metering Tip Kit – PDE001

TIP COLOR	CHEMICAL DILUTION RATES OZ / GAL	(RATIO)
TAN	0.30	(427:1)
ORANGE	0.40	(320:1)
TURQUOISE	**0.50**	**(256:1)**
PINK	0.75	(170:1)
LIGHT BLUE	1.00	(128:1)
BROWN	1.12	(114:1)
RED	1.50	(85:1)
WHITE	1.75	(73:1)
GREEN	2.00	(64:1)
BLUE	2.50	(51:1)
YELLOW	3.75	(34:1)
BLACK	5.00	(26:1)
PURPLE	8.50	(15:1)
GRAY	11.50	(11:1)
NO TIP	16.25	(8:1)

Water Supply:

- Once the correct metering tip is in place:
  - Connect the Auto-Fill Water Supply Hose to the water inlet (the male quick-connect on the front of the machine.)
  - Connect the other end of the hose to a water faucet, and then turn on the water.
- Hot water can be used as long as the temperature does not exceed 130°F.
- Faucet adapter kits (Hydro-Force item #1658-1629 & 1665-0273) are available that allow connection to different types of faucets if needed.



Connect the Auto-Fill Water Supply Hose to a faucet and turn on the water

Connect the Auto-Fill Water Supply Hose to Solution Inlet (Male quick connect on the front of the machine.)

3/8" id X 25' with F Quick Connect & F Garden Hose Fitting

Chemical Feed Hose

To adjust the water level in the solution tank:

- Turn off the water supply.
- Adjust the length of the chain connecting the float bottle to the float valve. Unhook the float from the beaded chain on the valve. Unsnap the hook from the beaded chain on the float.
  - Move the bottle down to decrease the water level.
  - Move the bottle up to increase the water level.
- Snap the back onto the float chain & hook the float back onto the valve chain.
- Turn the water supply back on.

If the chemical is not drawing, or if the tank is not filling or is overflowing, refer to the trouble shooting guide, or contact your distributor for assistance.

Float Valve

Float Hanger Hook

Float Bottle

3. Priming the High-Pressure Pump:

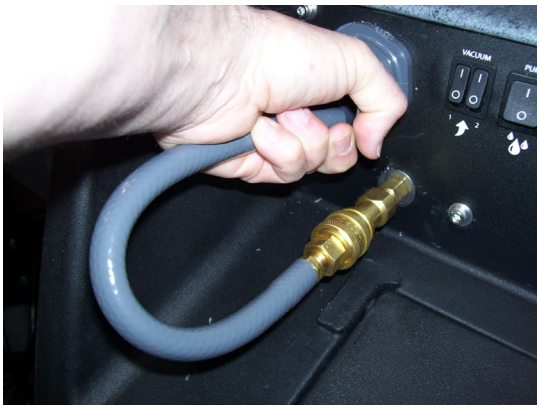
Once water is in the solution tank, the high pressure pump must be primed:

- There is a priming hose included with the machine. Connect the priming hose to the solution outlet – female quick connect on the front of the machine.
- Turn on both vacuums and the solution pump. Insert the end of the priming hose into the vacuum inlet port on the front of the machine and cup your hand around the hose to block off the vacuum inlet with your hand. The vacuum will pull solution through the pump and priming hose into the vacuum tank.
- Turn off the pump and vacuums. Disconnect the priming hose. You can now continue your set-up. As long as there is solution in the tank, the pump should remain primed.

If the pump still does not prime, or if flow is low or unsteady, check the hose from the solution tank to the pump (as well as the filter) for clogging, kinks, or restrictions. Clean or replace hose and/or filter and repeat the priming procedure.

If you are having trouble with the pump, refer to the trouble shooting guide or contact your distributor for advice or assistance.

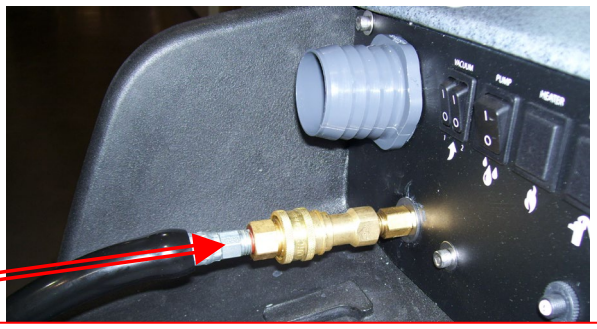
PUMP PRIMING HOSE
1605-4177



3. Connection of Solution Hose:

Connect the high pressure solution hose to the solution outlet (female quick connect on the front of the machine). Connect the other end of the hose to the male quick connect on the cleaning tool. When you are ready to start cleaning, turn the solution pump switch to the ON position. The pressure is preset, there is no pressure adjustment to be made.

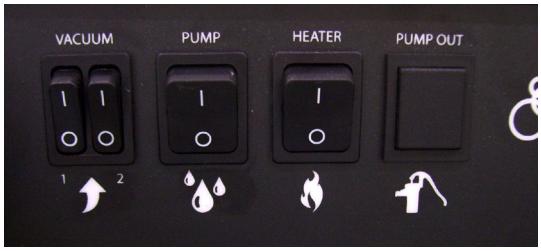
HP Solution Hose Assembly – 1625-2417
1/4" id X 25' with M-F Quick Connects



Connect the male end of the HP Solution Hose Assembly to the female solution outlet fitting on the machine. Connect the female end to the cleaning tool.

5. 1750W Heater Operation:

NOTICE **To prevent damage to the heater, the heater must have water in it before it is turned ON. Fill solution tank, prime the pump and connect solution hoses before turning heater ON.**



While the heater allows for maximum operating temperature of approximately 190ºF, the temperature of the cleaning water delivered to the tool is dependent on two factors:

- The starting temperature of the water: Starting with hotter water will require a smaller temperature increase from the heater to reach the maximum temperature.

NOTICE **The water temperature in the solution tank cannot exceed 130°F.**

- Flow rate: The lower the flow rate of the water through the heater, the more time the water will be inside the heater. The water will have more time to be heated and can reach a higher temperature. High water usage and flow rate will not allow the water enough time to be heated and the temperature of the water delivered to the tool will be much lower.
  The flow rate can be lowered by putting smaller jets in the cleaning tool and by reducing the amount of time the wand is sprayed. Taking additional drying stokes without spraying water between spraying strokes will help increase the potential temperature rise.

6. 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 Nautilus. 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 the 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 the 1-1/2" vacuum hose to the 2" hose barb on the machine.

Vacuum connection with standard barb and vinyl cuff

With the proper cuff attached to the 25' Vacuum Hose, the 25' vacuum hose is then connected to the vacuum connection port on the Nautilus. The other end with the 1-1/2" cuff is connected to the cleaning tool.

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

Vacuum connection with Flash Cuffs

7. 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 Nautilus. 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

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
1615-1639

8. Connection of Optional Pump-Out Hose:

If your machine has the Optional Auto Pump-Out System you may want to connect the 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.

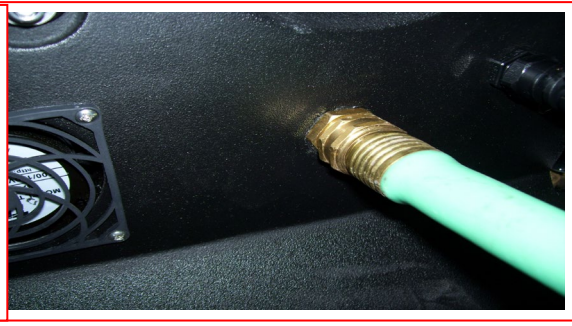
NOTICE

- **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 does not use a float switch and will run as soon as the Waste Pump switch is turned ON. It is made to run continuously while cleaning, as this type diaphragm pump can run dry without damage.**

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

Pump-out Filter

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 overfilling 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 switch while draining the tank.
  - Turn pump 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.

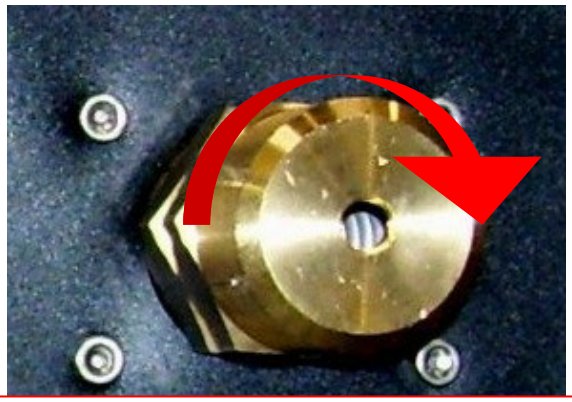
Draining the Recovery Tank

Float Shutoff Assembly

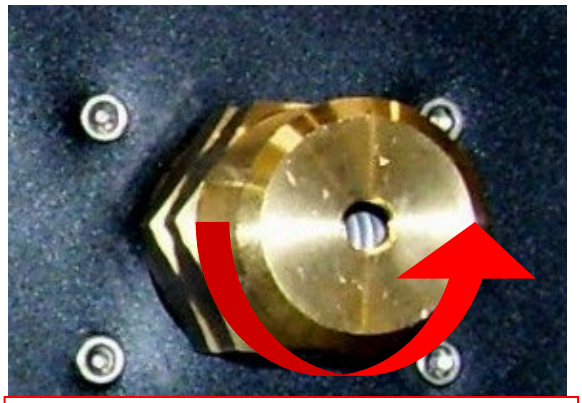
9. Pressure Adjustment:

To make it easier to check and adjust the pressure, the pressure gauge and the pressure regulator are mounted on the control panel on the front of the machine. When the high-pressure solution pump is on and primed, pressure will show on the gauge.

- To decrease the pressure, turn the brass knob on the pressure regulator to the left (counter-clockwise.)
- To increase the pressure, turn the brass knob on the pressure regulator to the right (clockwise.)
- To adjust pressure to your tool and surface requirements:
    - Check the pressure on the gauge.
    - Re-adjust as needed to set the machine at the desired pressure.
    - Choose the pressure setting that best meets your type of cleaning.



To increase the solution pressure, turn the regulator knob clockwise.



To decrease the solution pressure, turn the regulator knob counter-clockwise.

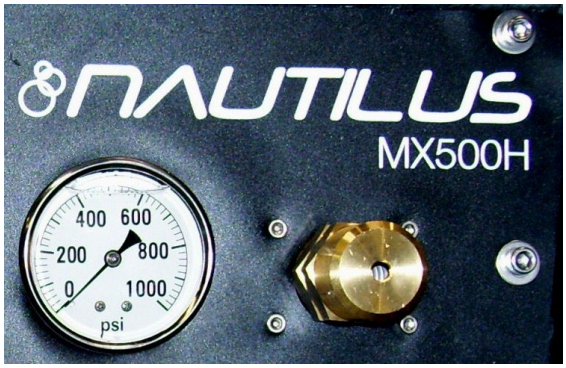
The maximum pressure setting is specified on machine; however, the highest pressure attained is dependent on the amount of water flow at the tool:

- Smaller jets and lower flow will allow for higher pressure at the tool.
- Larger jets and higher flow will lower the maximum pressure attained at the tool.

The desired setting will depend on the type of cleaning and tool used. For example:

- Carpet Cleaning with 2-jet 1683-0123 wand: 400psi
- Upholstery Cleaning with A96894 tool: 200psi

If adjusting or maintaining pressure becomes a problem, refer to the trouble shooting guide or contact your distributor for advice or assistance.



Pressure gauge & Regulator/Unloader

Shutdown Procedures:

- If using the optional auto-fill system, turn the water supply off before finishing each job. This will allow use of the water and chemical already in the tank, and will reduce the amount of excess water to be disposed of later.

- If using the 1750W heater, turn the heater off before finishing each job. This will allow the water to cool the heater as you finish the job.

- When finished cleaning, turn off all switches.

- If the optional auto-fill system was used and there is still water in the solution tank, push the float down to release the water inlet hose pressure before disconnecting the hose from the faucet. Disconnect the water inlet hose from the quick-connect on the front of the machine.

- Disconnect the solution hose and vacuum hose from the cleaning tool. Pull valve trigger to release pressure from the hose before disconnecting solution hose from cleaning tool.

- 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 (1668-0694)

- Disconnect the vacuum hose and solution hose from the machine.

- If water remains in the solution tank, use the vacuum hose and vacuum the excess water from the tank.

- If the optional auto-fill system was utilized, place the chemical feed hose back into the solution tank.

- If the optional Auto waste pump-out system was used:
    - Turn the waste pump switch "on" to pump out any remaining water from the recovery tank.
    - Turn switch off, remove the pump-out hose from the outlet fitting and replace the cap.
    - Roll up hose toward drain to remove remaining water from hose.
    - Connect ends of hose together to prevent dirty water from dripping from hose during transport.

- 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 filter screen. Replace shutoff assembly and tank lid.

- Drain any remaining water from the recovery tank and dispose in sanitary drain. Do not use the same bucket to drain the tank that you use to fill the tank.

- Roll up all hoses and cords. Collect and store extractor, all tools, and accessories.

Accessory Storage Options:

The Nautilus 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 Nautilus 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

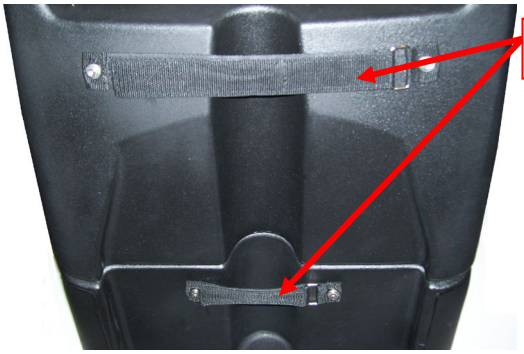
The back of the Nautilus has two sets of cord wraps to hold two 12/3 x 25' power cords.

Carpet Wand Storage

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

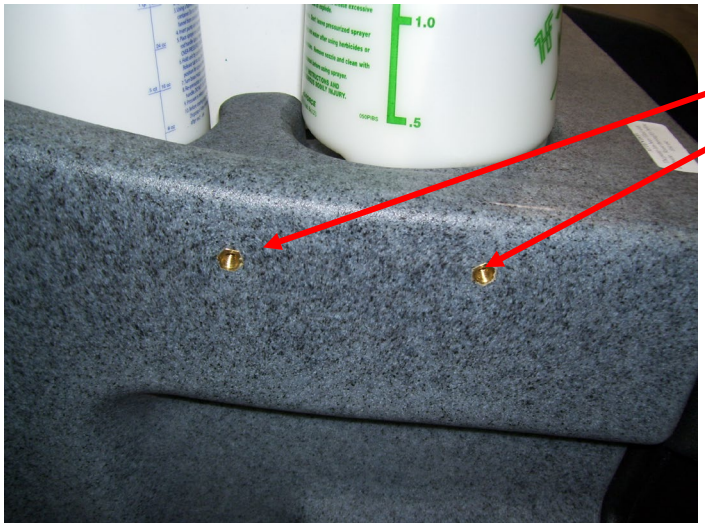
Other Tool & Hose Storage

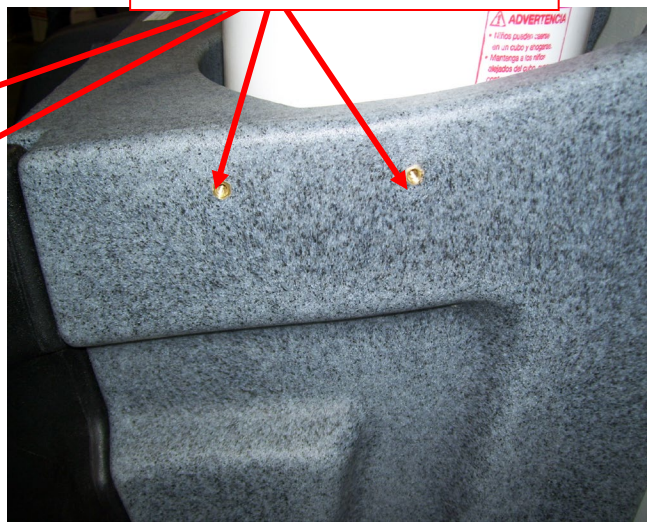
Each side of the Nautilus has a set of molded in threaded inserts to which holders can be attached to hold other accessories or supplies making it much easier to move around. Four 1/4-20 x 5/8" mounting screws & washers included.



Wand Holder Straps

Molded in Threaded Inserts for Side Mount Holders





Troubleshooting

Troubleshooting – Nautilus

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 *
Solution Pump not running	Building circuit breaker tripped.	Reset breakers or move cords to other outlets
	Pump circuit breaker tripped	Reset breaker – Check available circuit power & pump
	Faulty power cord	Replace cord (1696-6412)
	Faulty switches or internal wiring	Check wiring & test switches - Repair as needed *
	Pump motor breaker tripped	Push in reset button on pump motor &/or external breaker
	Pump motor faulty	Replace pump motor (see model for correct motor)
	Pump seized - trips breaker	Repair or replace pump head & bearing - Check motor and/or replace complete pump & motor assy.
Low Solution Pressure and/or Pulsation	Jets too large for pressure desired	Check jets size & flow rates use smaller jets or lower pressure
	Jets worn allowing too much flow	Replace jets
	Solution inlet filter plugged	Clean or replace filter
	Hose from solution tank restricted	Repair or replace hose
	Pump intake hose or fittings leaking	Repair or replace hose. Tighten clamps or replace fittings
	Pressure regulator sticking	Lube o-rings on regulator piston – PAGE 33
	Pressure regulator faulty	Repair or replace pressure regulator (1688-0282)
	Filter screen or jets plugged on tool	Clean out filter or jets
	Solution tank empty	Add water to tank - Check & repair auto fill assembly
	Pump not primed	Perform pump priming procedure
	Pump faulty	Repair or replace pump
	Tool valve faulty	Repair or replace valve
	Quick connects or hoses restricted	Clean out or replace quick connects and/or hoses
Can't connect solution hose to machine	Pressure in lines	Release pressure
	Quick connects faulty	Replace quick connects
	Wrong style/size quick connects	Replace quick connects to match connects on machine
	* **⚠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.	

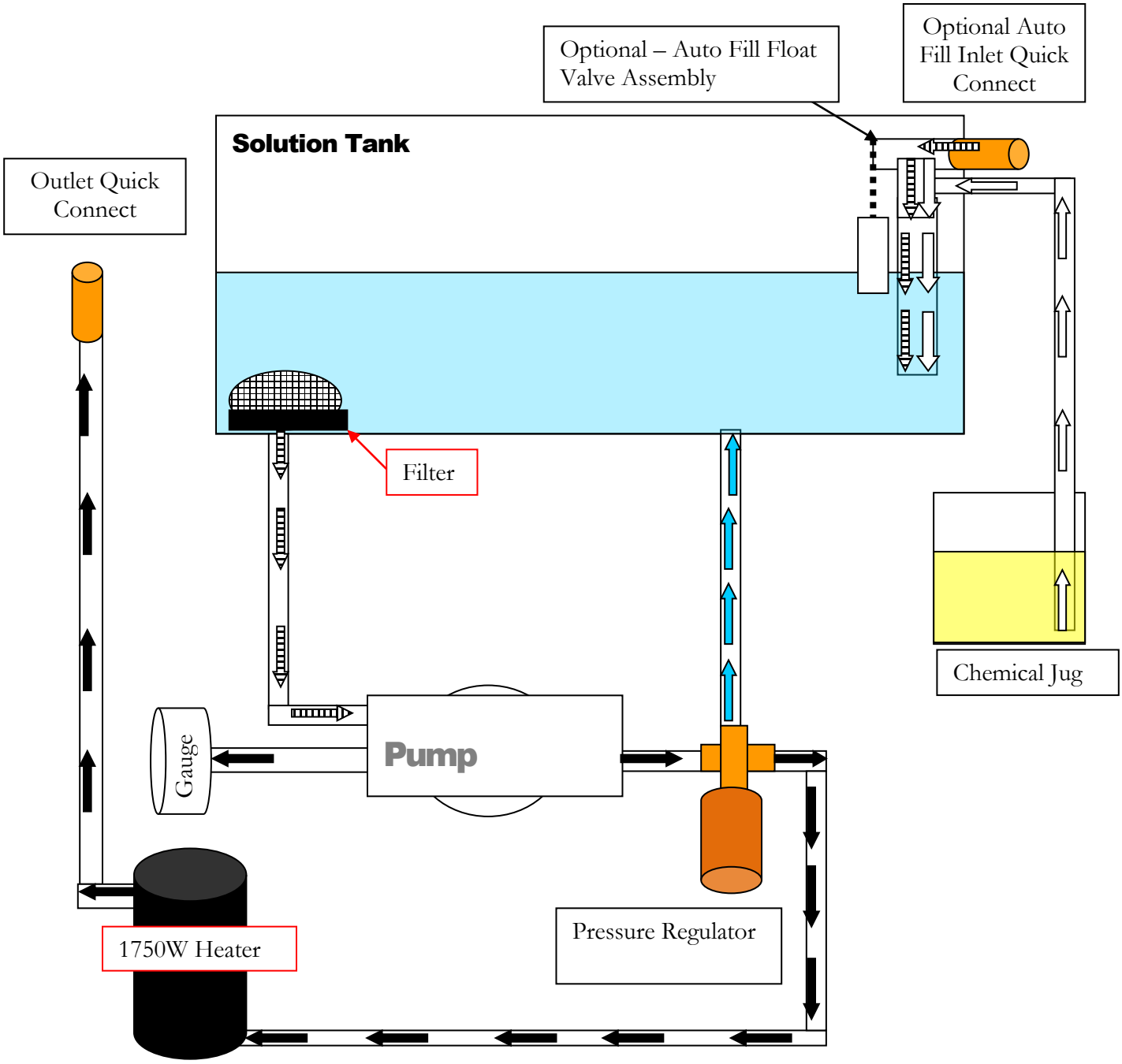
Problem	Cause	Solution
Dual Circuit Indicator Not Lighted	Cords on the same circuit	Move one cord to outlet on different circuit
	No voltage from one/ both outlets	Check circuit breakers – Reset breakers or move cords
	Light Bad	Replace Light
	Dual Circuit Indicator Bad	Replace indicator
	One/Both Outlets 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 switch - Repair as needed *
	Pump-out pump faulty	Replace pump-out pump
	Pump-out filter clogged	Clean pump-out filter - Keep recovery tank clean – Use Hydro-Filter
	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 faulty	Replace vacuum motor (see model)
Loss of Vacuum	Vacuum motor faulty	Replace vacuum motor (see model)
	Vacuum motor gasket damaged	Replace gasket
	Recovery tank lid gasket damaged	Replace gasket
	Drain valve open	Close valve
	Drain valve leaking	Repair or replace drain valve
	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
	Recovery tank damaged	Replace recovery tank
Chemical not feeding	Solution tank not filling	Check & repair auto fill assembly
	Chemical hose restricted	Un-kink, shorten, clean out or replace hose
	Filter screen plugged	Clean or replace filter
	Low Incoming Water Pressure	Move bottle & shorten chemical hose to improve draw – Find other water source.
	Wrong size metering tip	Change metering tip
	Chemical proportioner faulty	Replace chemical proportioner
	Check valve in filter faulty	Replace filter

* **⚠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.

Problem	Cause	Solution
Tool won't spray - low or uneven spray	Jets clogged	Clean out or replace jets
	Inline filter clogged	Clean out or replace filter
	Jets worn	Replace jets
	Jets not aligned properly	Re-align jets
	Tool valve faulty	Repair or replace valve
	Quick connects or hoses restricted	Clean out or replace quick connects and/or hoses
Solution Tank not filling	Water source turned off	Turn on faucet or find other water source
	Float not on valve arm	Reconnect float to valve arm - Adjust to proper height/level
	Float valve faulty	Repair or replace float valve
	Water hose restricted	Un-kink, clean out or replace hose
	Water Pressure too high	Use pressure regulator on auto-fill hose
	Quick connects faulty	Clean out or replace quick connects
Solution tank overflowing	Float too heavy/ Filled with water	Replace float
	Float & chain tangled	Make sure float chain free & hanging properly
	Float too high	Adjust chain to set float at proper level
	Water Pressure too high	Use pressure regulator on auto-fill hose
	Float valve faulty	Repair or replace float valve
Chemical Jug Filling with water - Overflowing	Foot valve in Filter stuck	Clean out foot valve and filter
	Foot valve in Filter faulty	Replace foot valve and filter
Water Not Getting Hot	Faulty switches or internal wiring	Check wiring & test switches - Repair as needed *
	Temperature Switch faulty	Replace Temperature Switch On Heater
	Water Being used too fast	Re-jet wand – Slow the flow - Take extra drying strokes
	Heater switch is OFF	Turn Heater Switch ON.
	Heater Faulty	Replace Heater
	⚠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.	

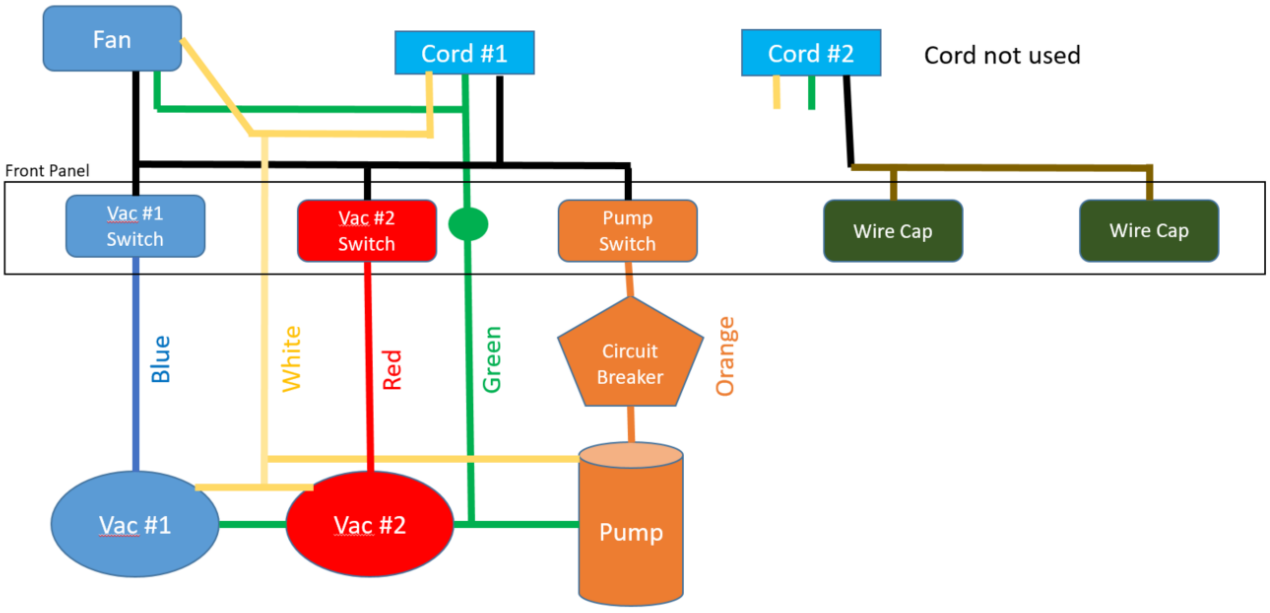
- Contact your distributor for additional troubleshooting assistance, to order parts, or for advice and assistance in performing necessary repairs.

Nautilus Solution Flow Path

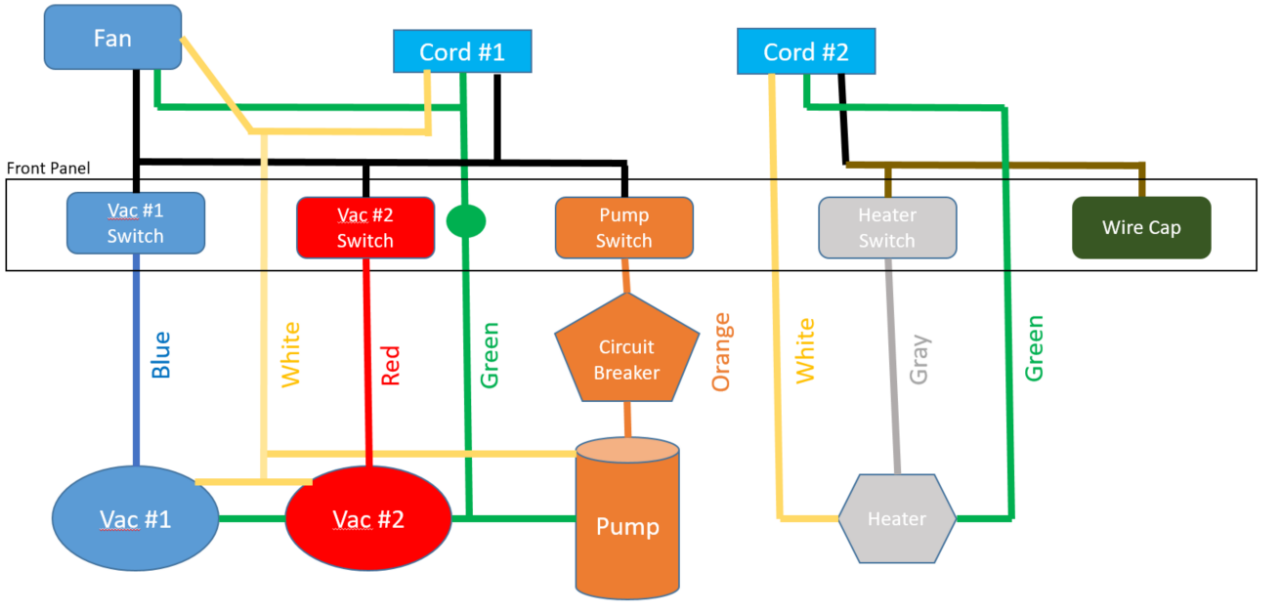


Denotes incoming water flow	Denotes Water flow in high pressure hose	Denotes by-pass water flow from pressure regulator	Denotes Chemical flow

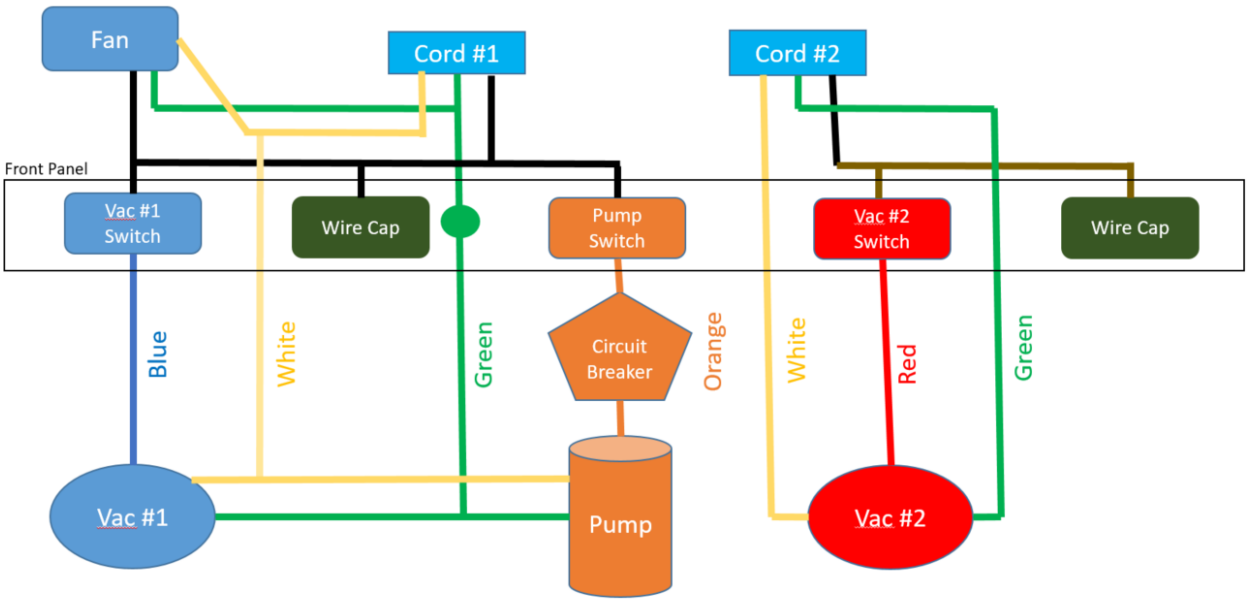
Nautilus MX200M Wiring



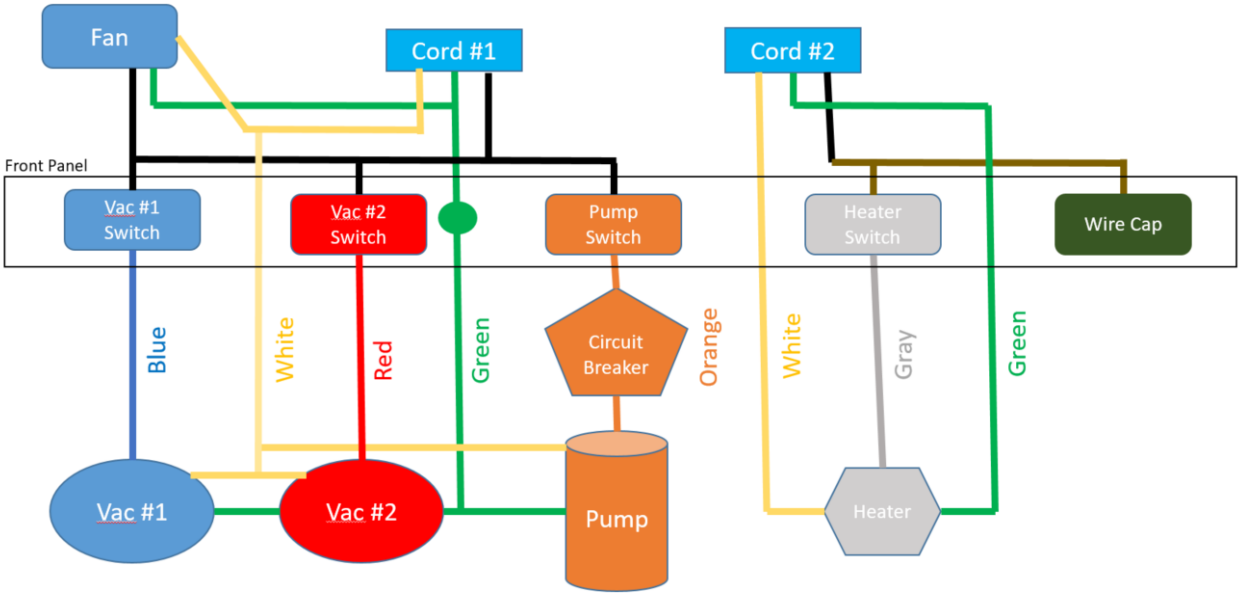
Nautilus MX200HM Wiring



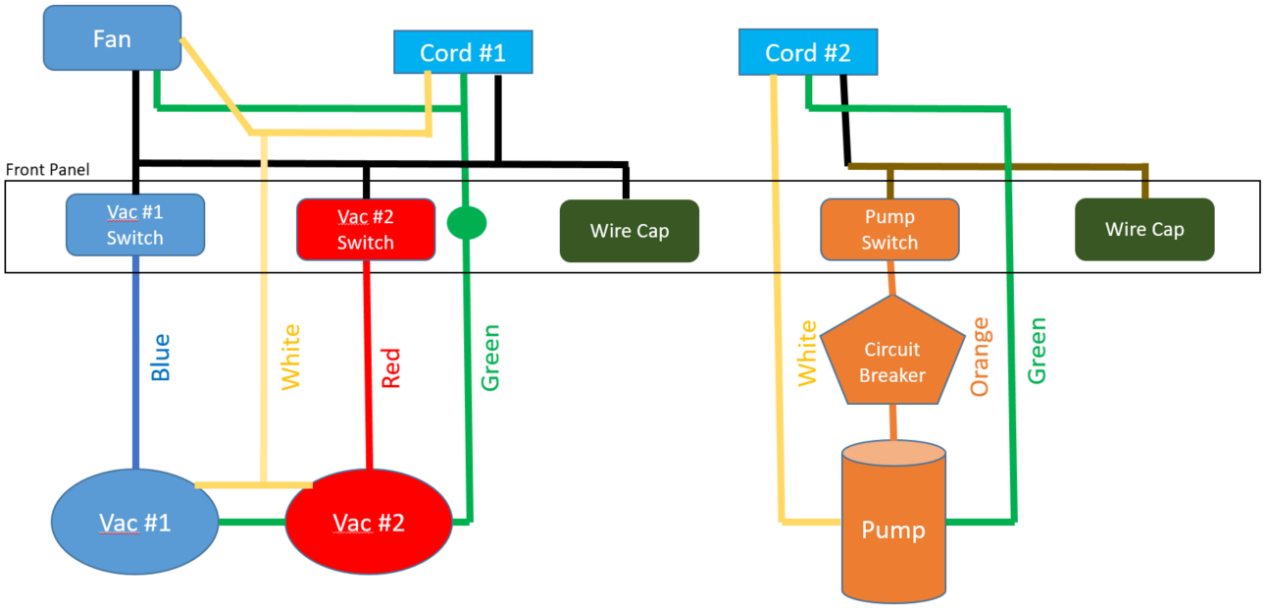
Nautilus MX3-200M Wiring



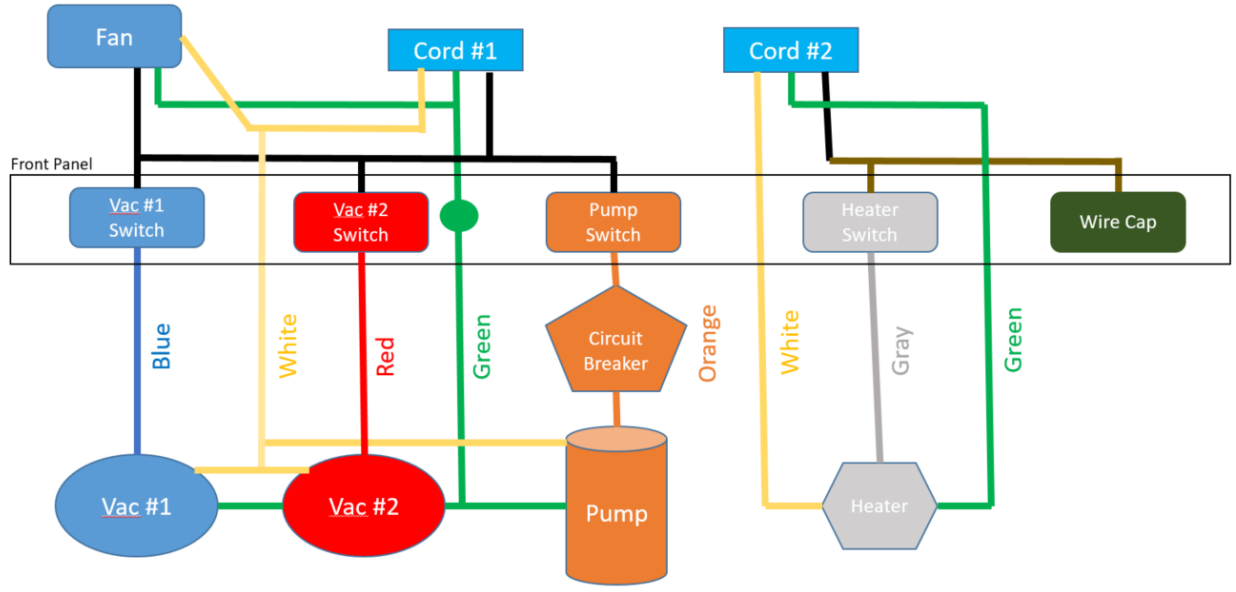
Nautilus MX3-200HM Wiring



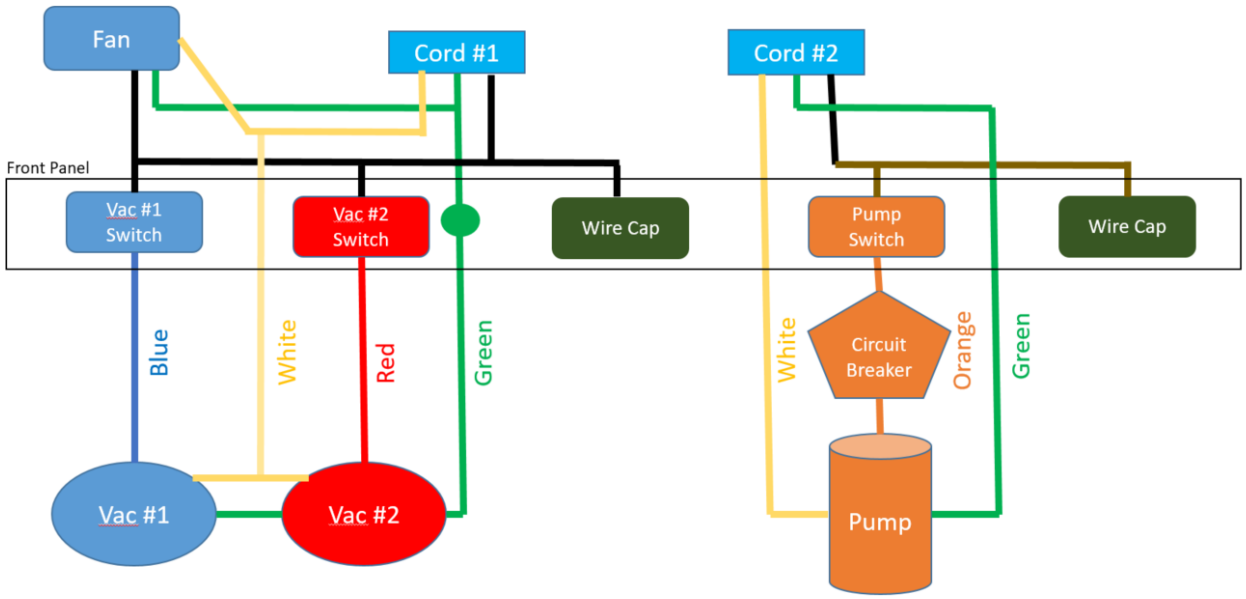
Nautilus MX500M Wiring



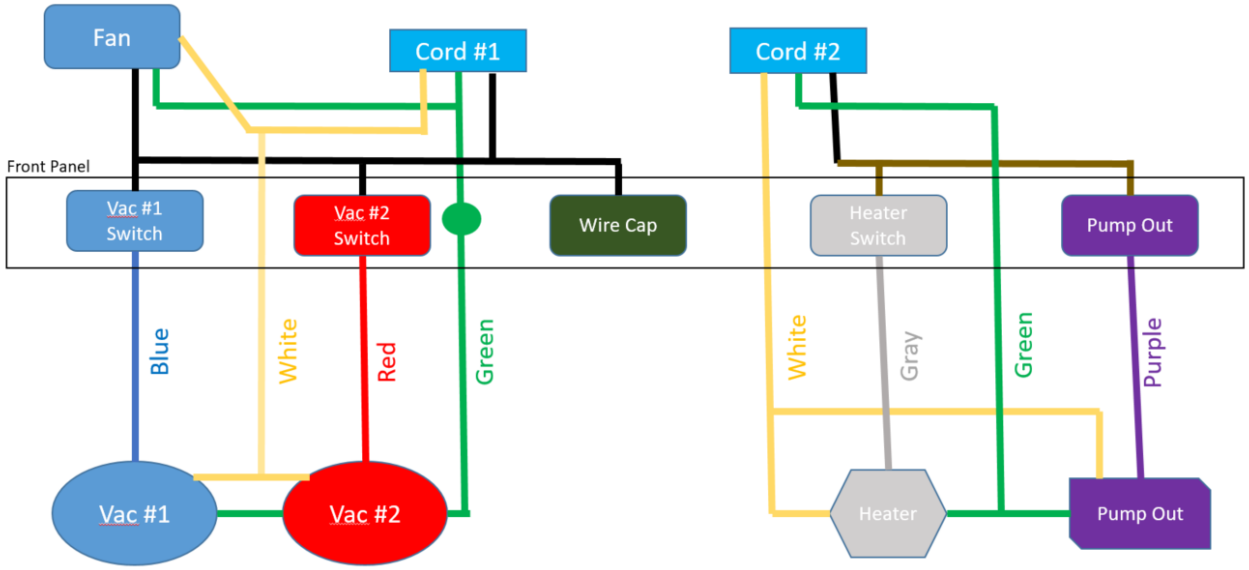
Nautilus MX-500HM Wiring



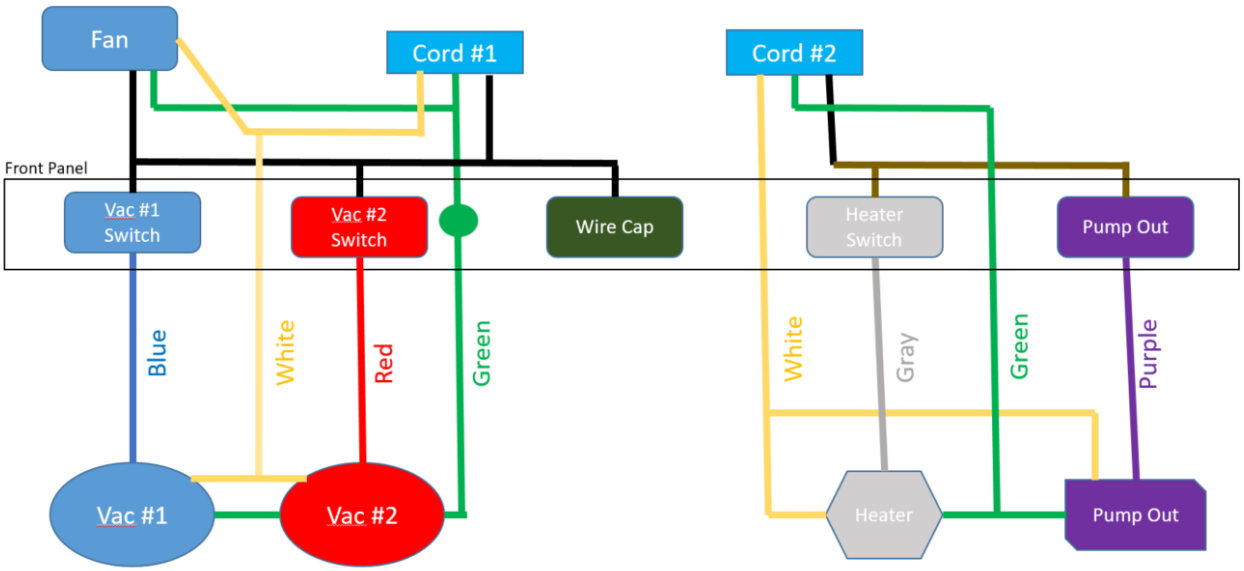
Nautilus MX3-500M Wiring



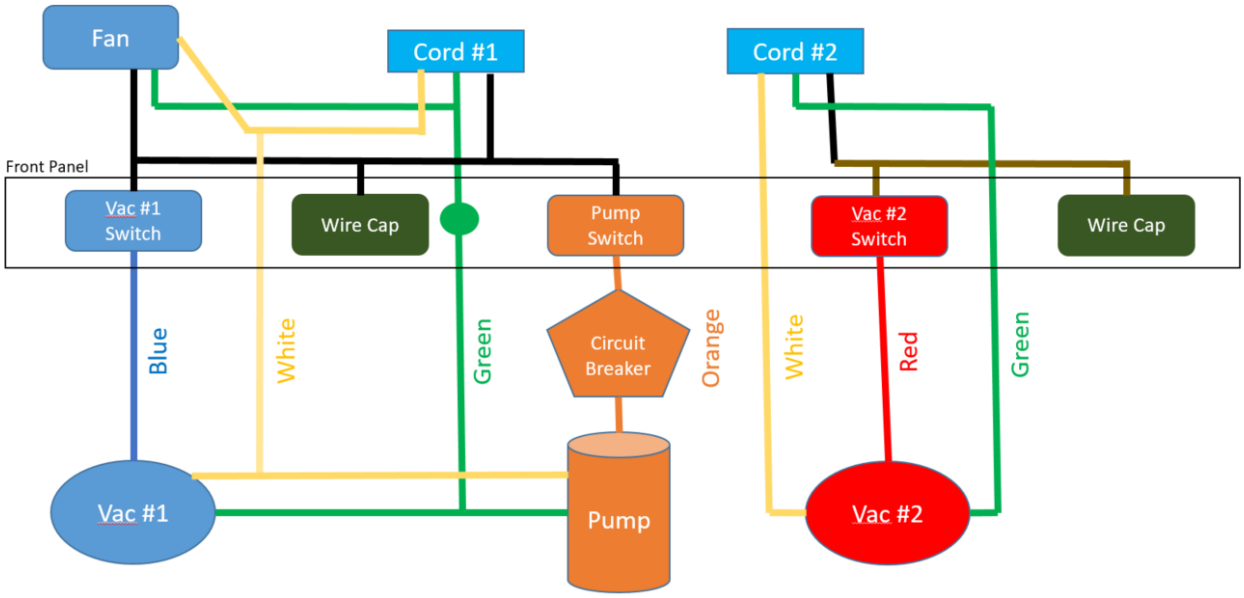
Nautilus MX1200M Wiring



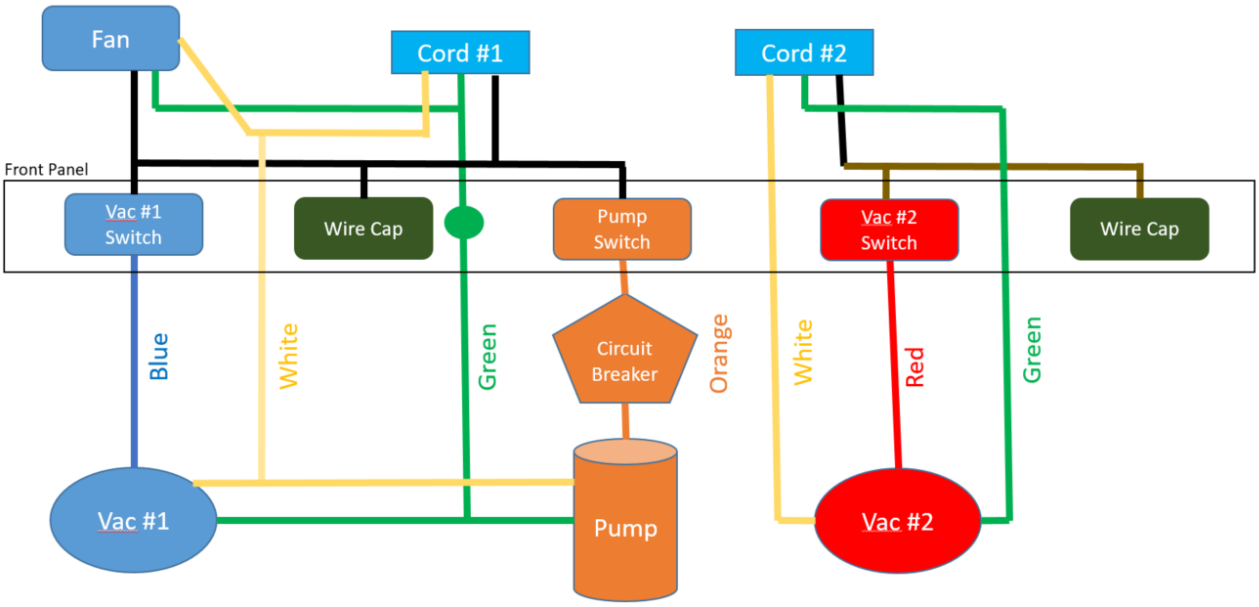
Nautilus MX3-1200M Wiring



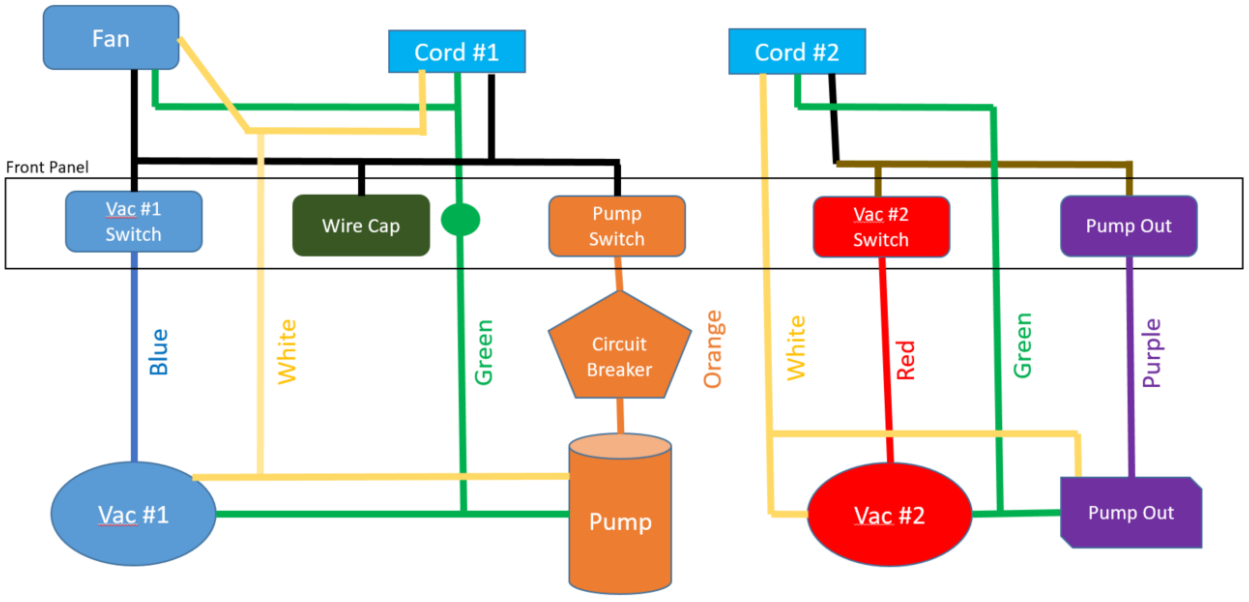
Nautilus MXE-200M Wiring



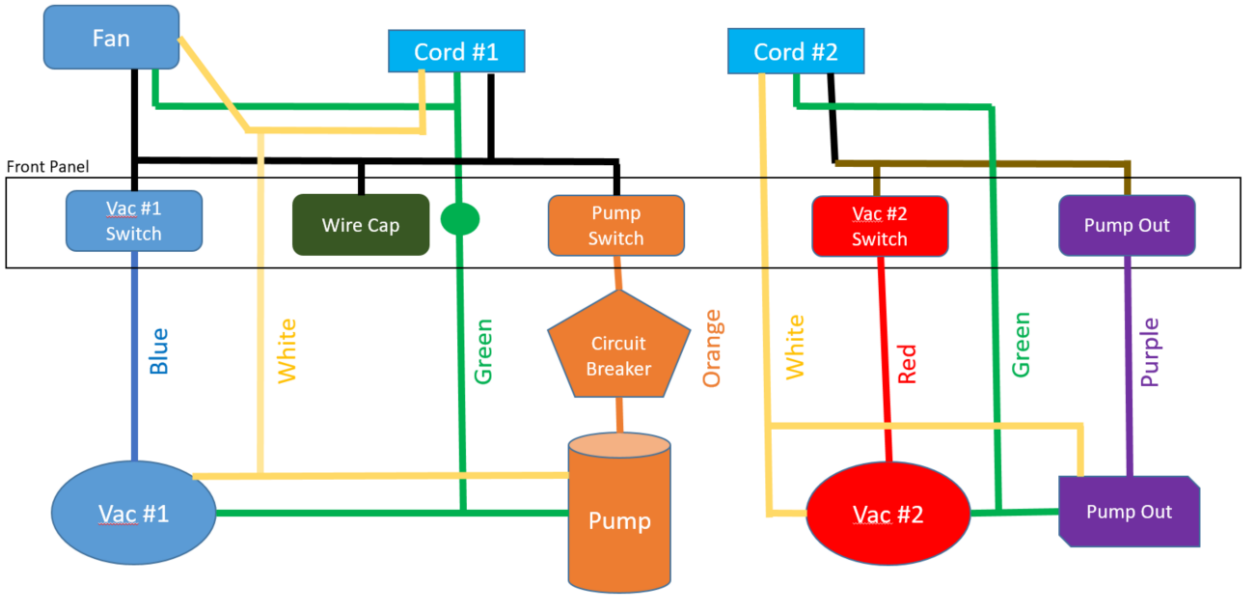
Nautilus MXE-500M Wiring



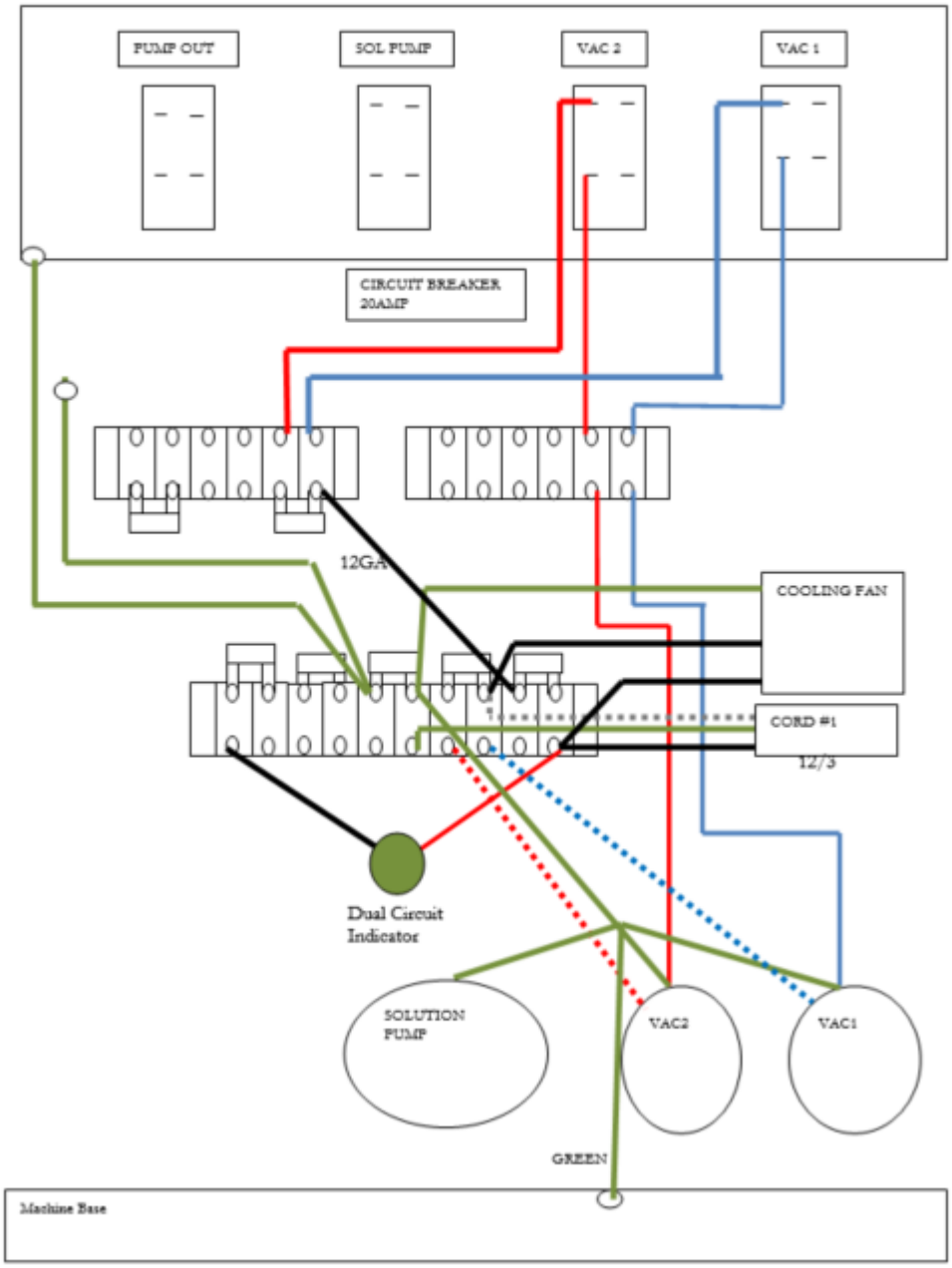
Nautilus MXE-500MAP Wiring



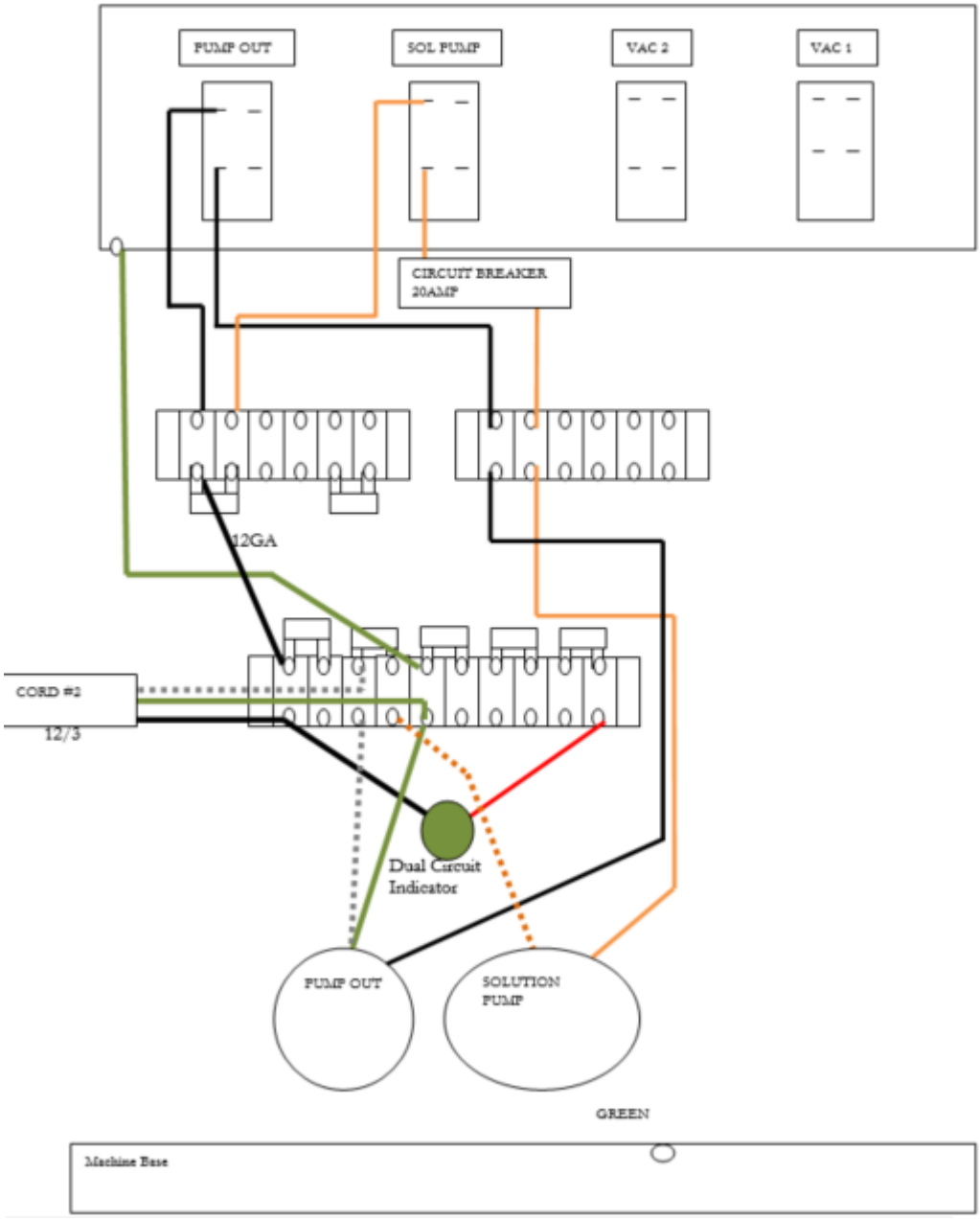
Nautilus MXE-500MAPF Wiring



MX1200
Wiring Diagram – Cord #1

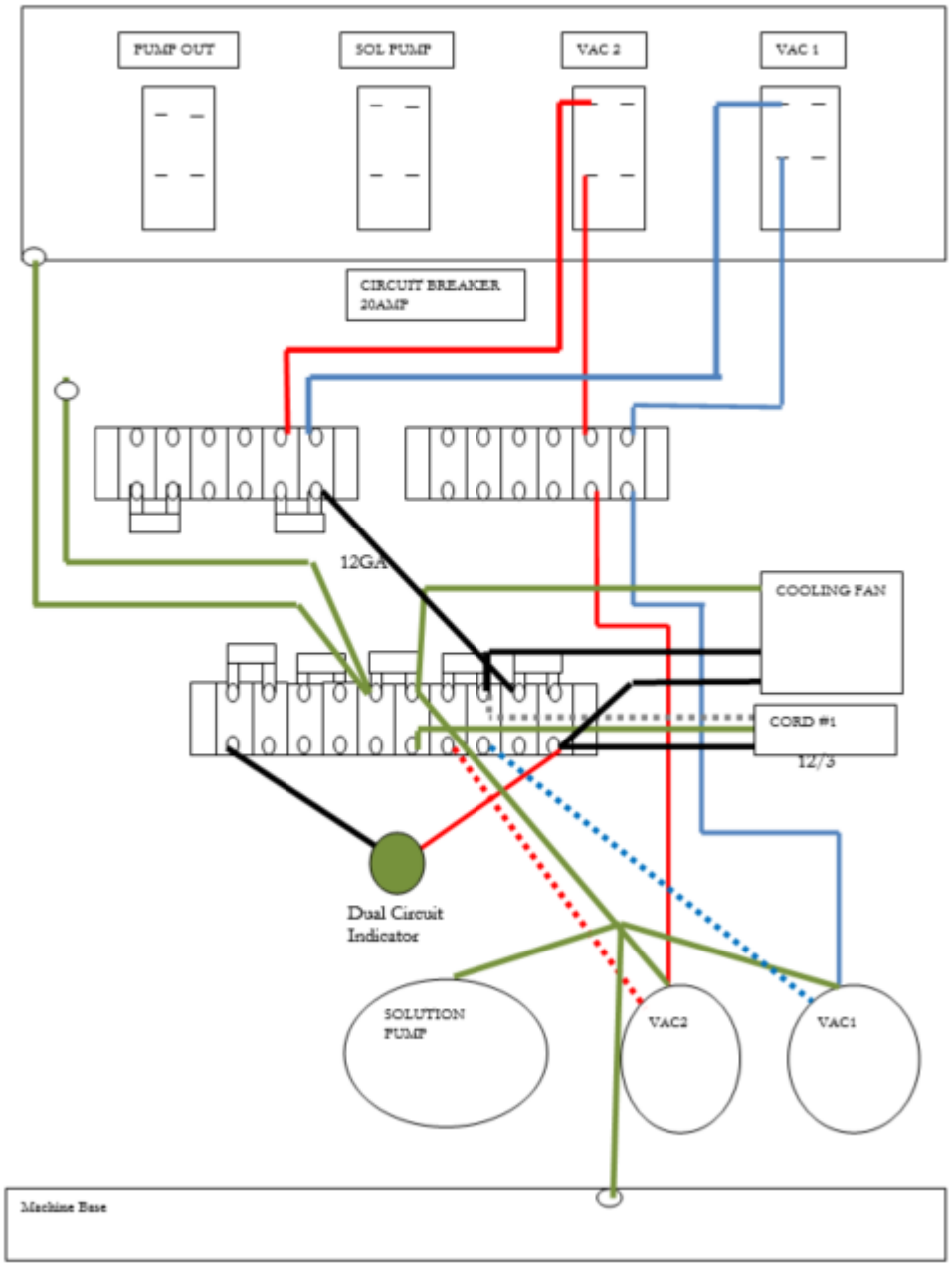


MX1200
Wiring Diagram – Cord #2

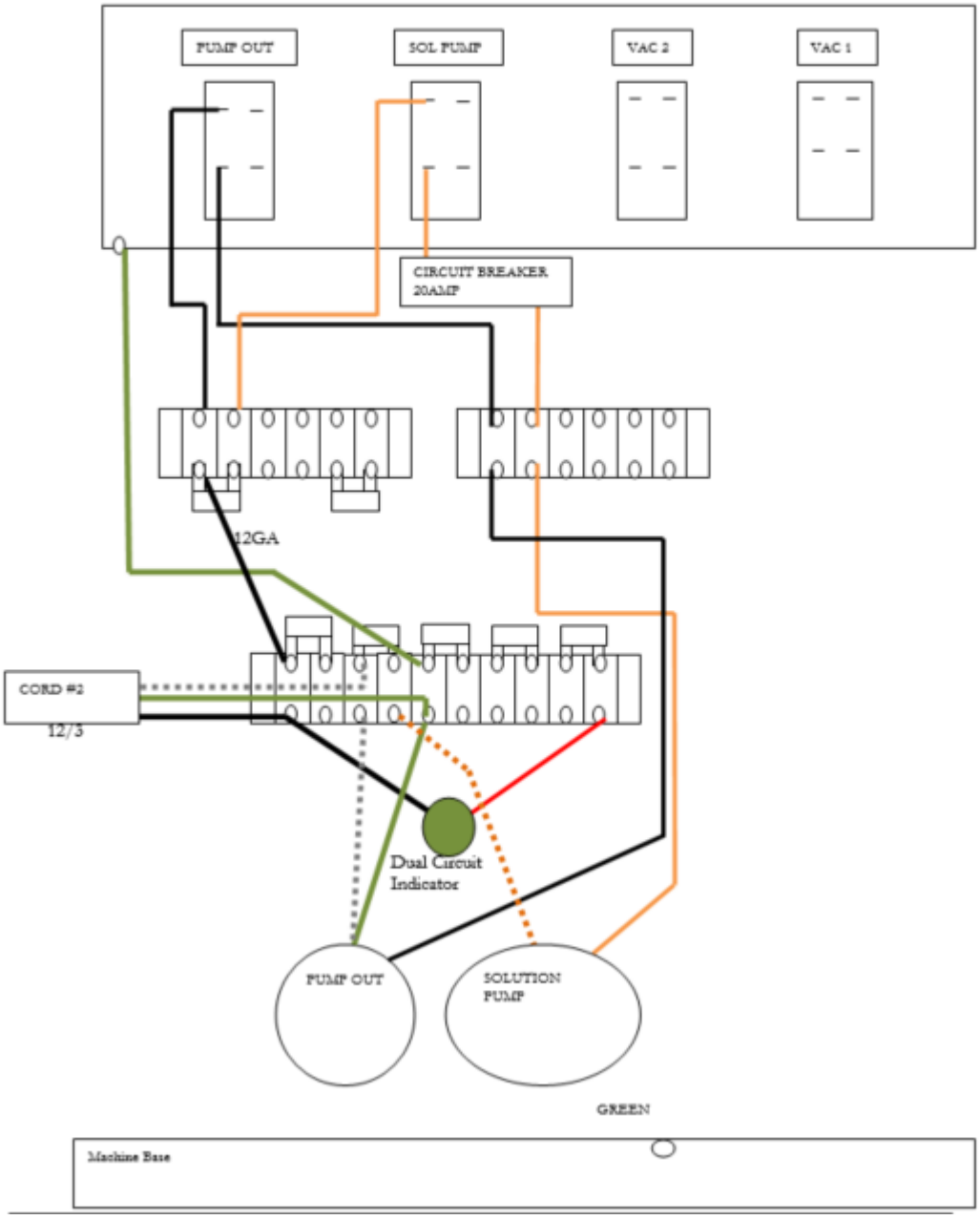


MX3-1200

Wiring Diagram – Cord #1

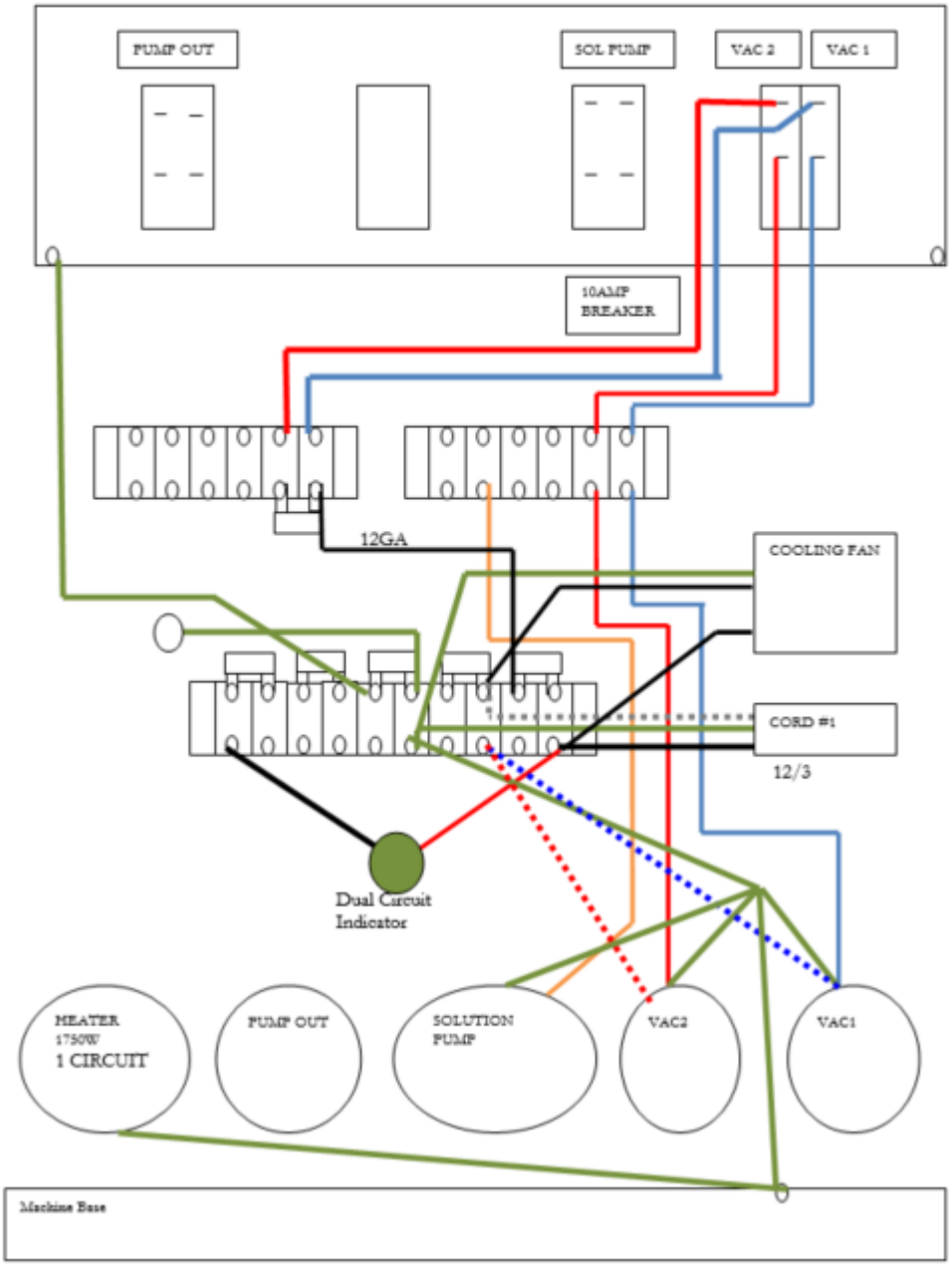


MX3-1200
Wiring Diagram – Cord #2

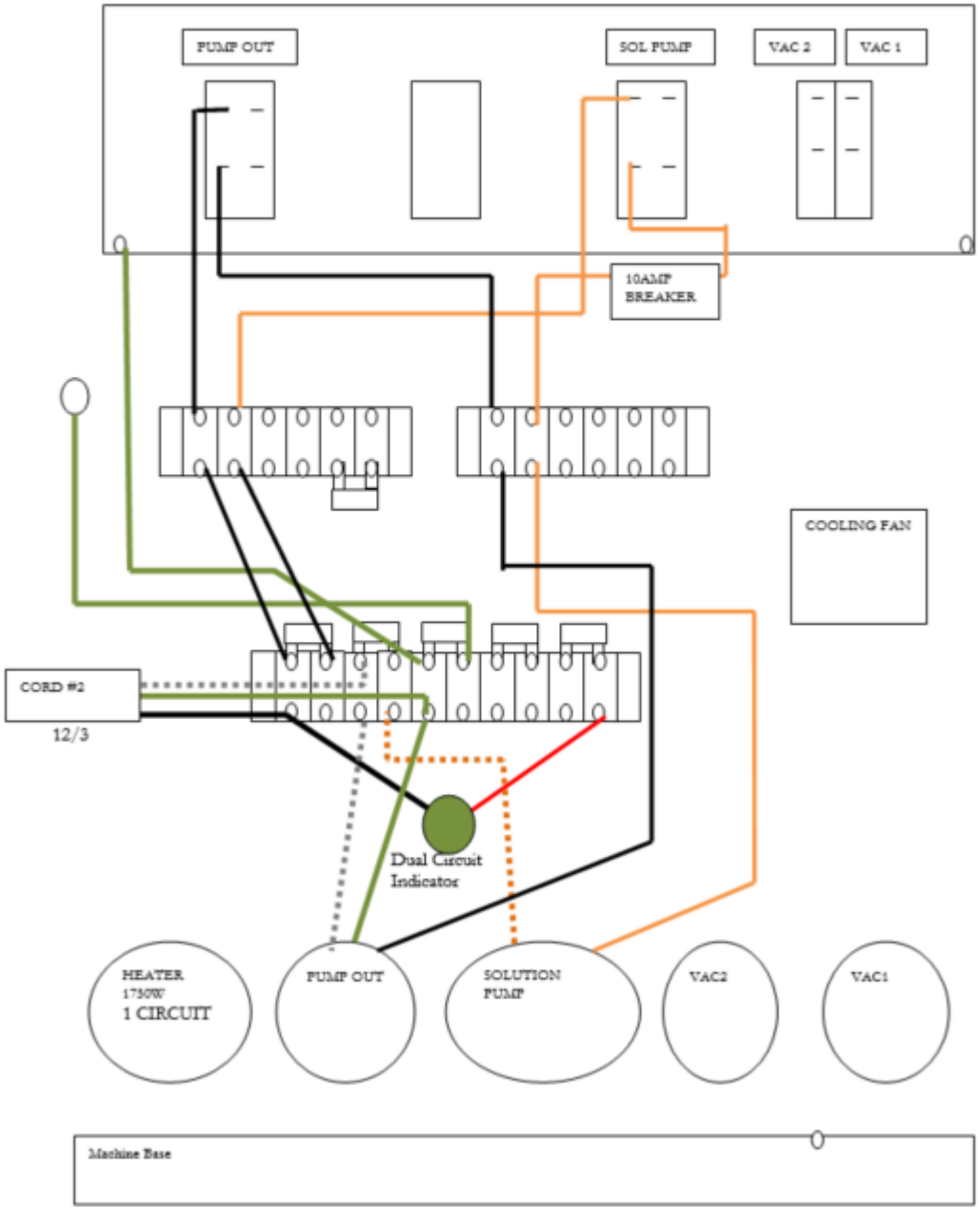


MX500

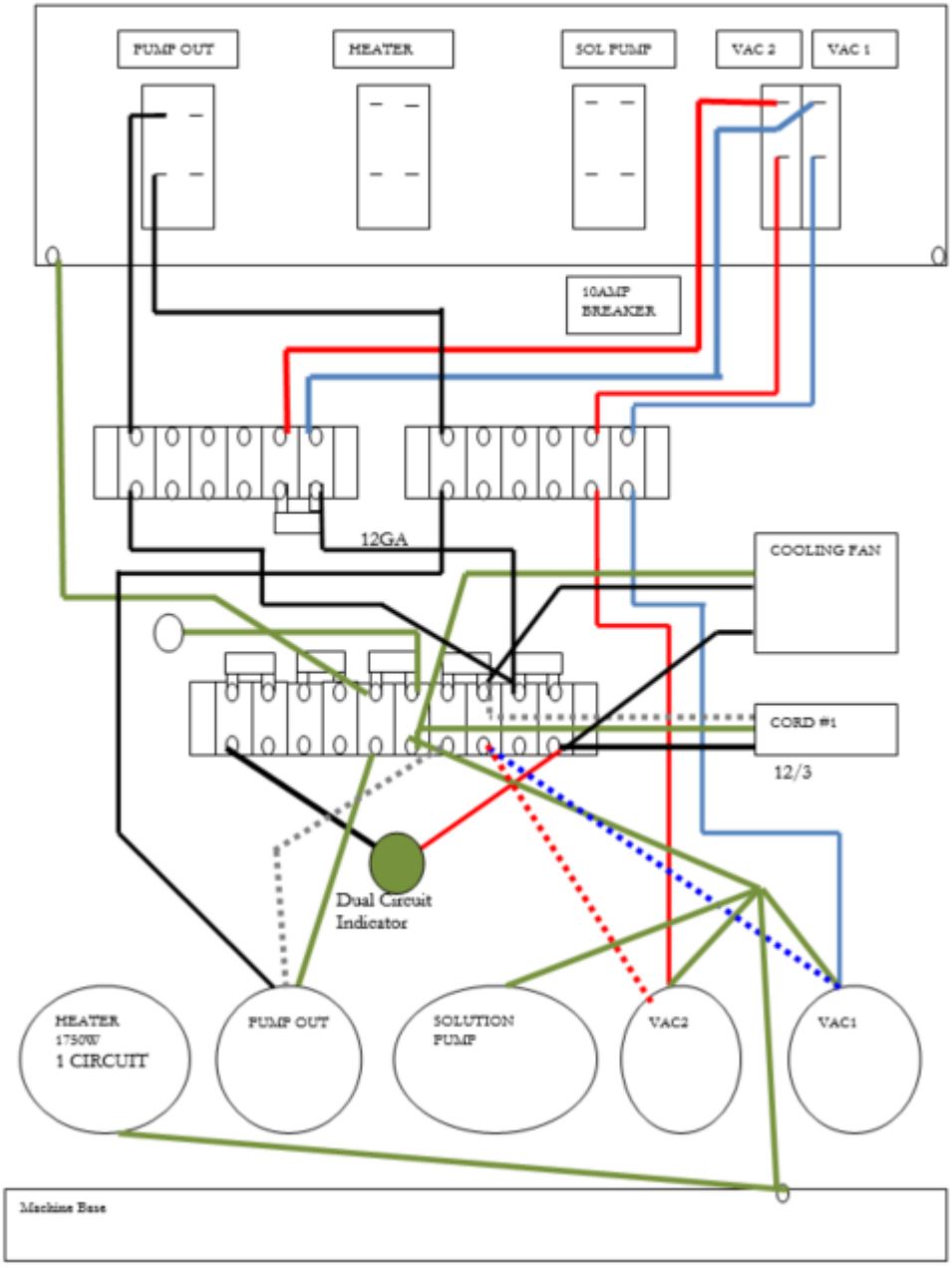
Wiring Diagram – Cord #1



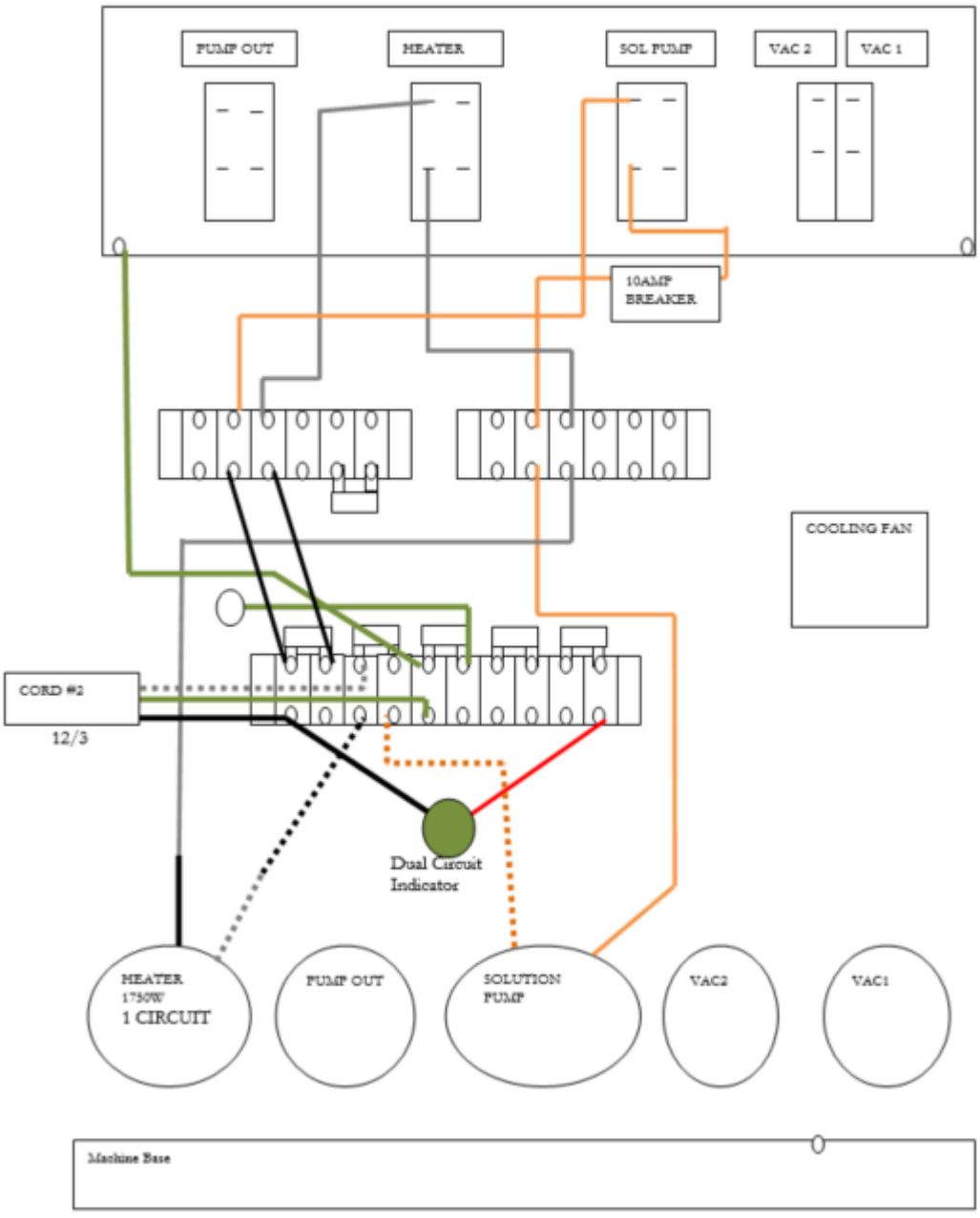
MX500
Wiring Diagram – Cord #2



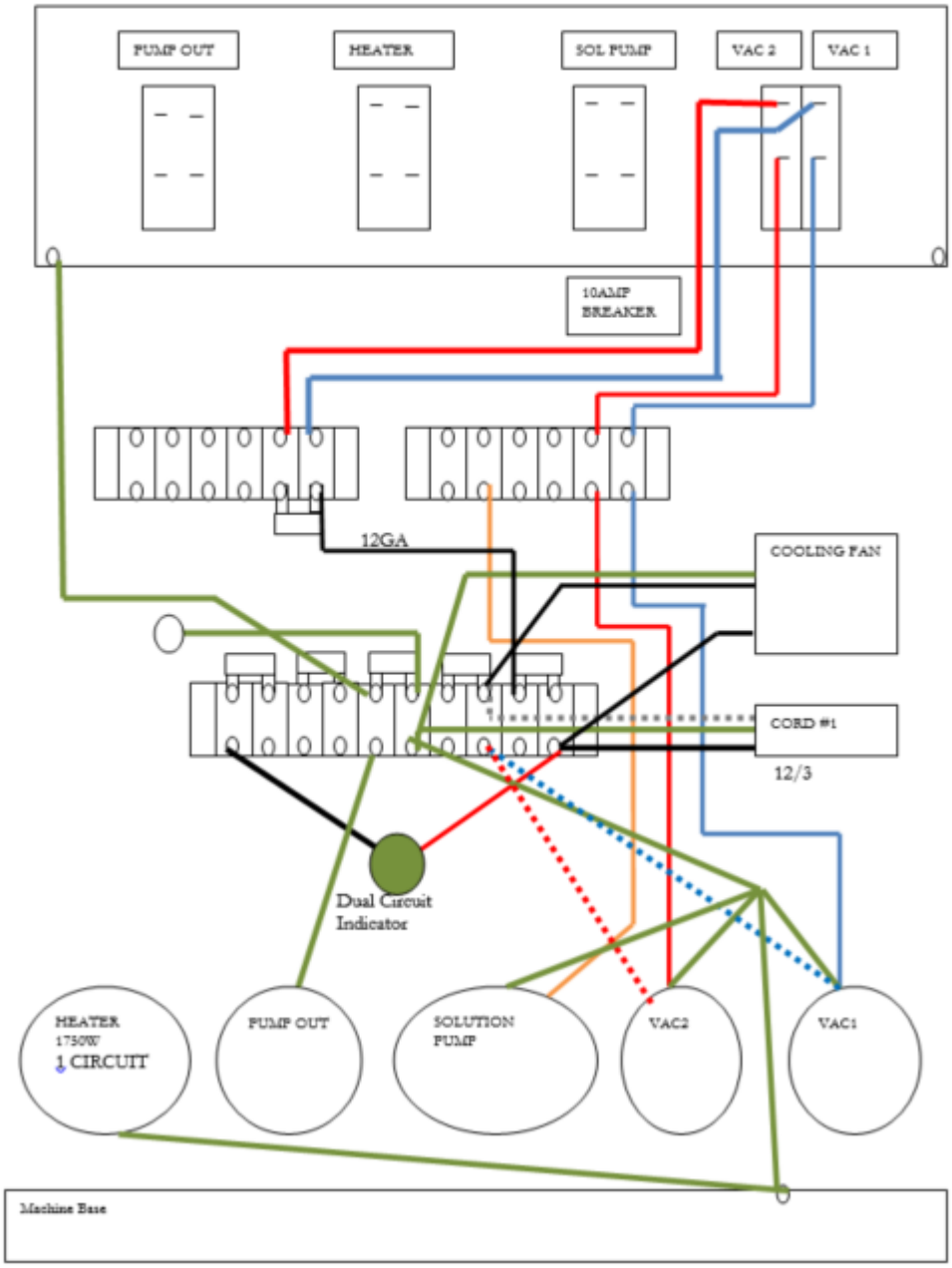
MX500H
Wiring Diagram – Cord #1



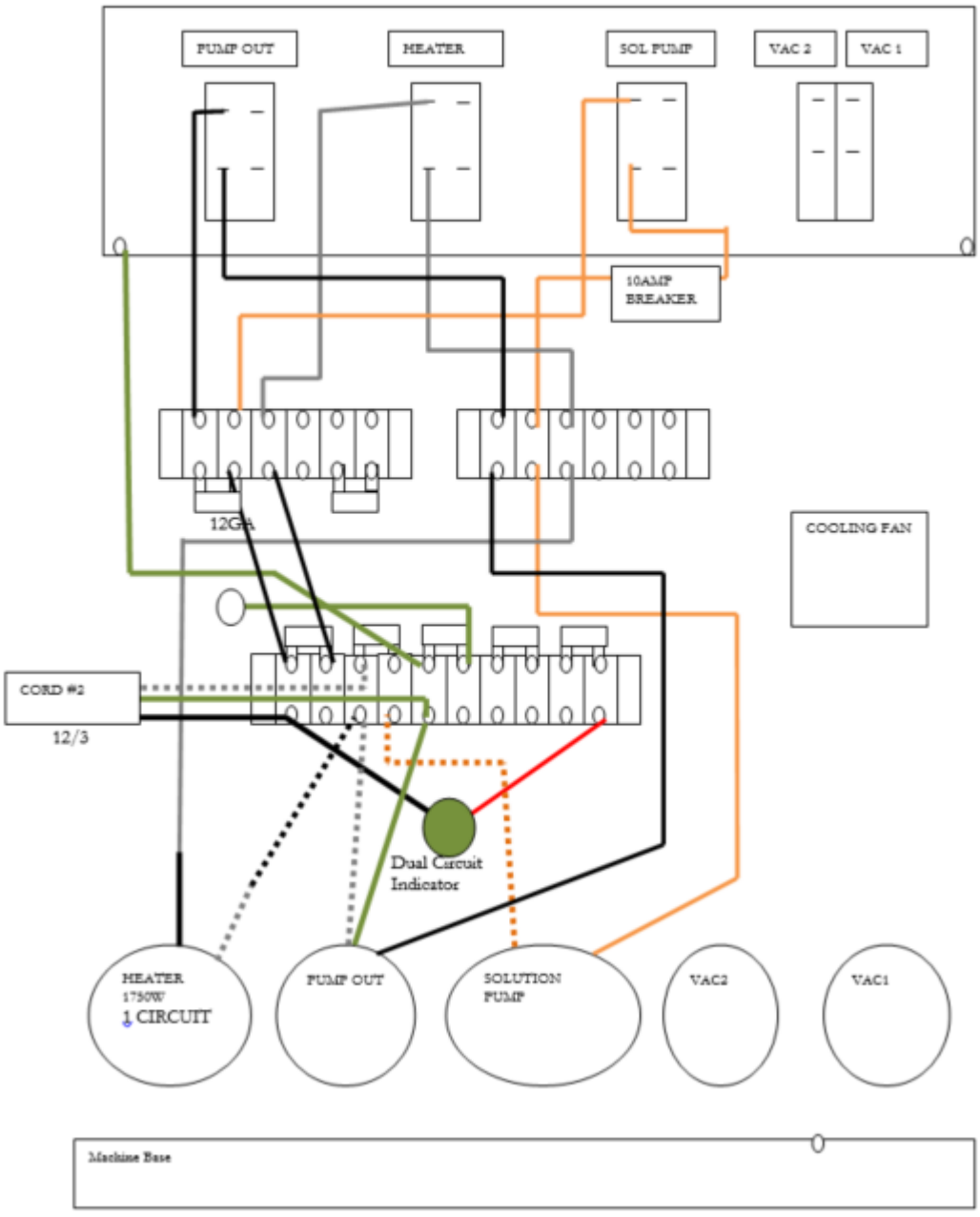
MX500H
Wiring Diagram – Cord #2



MX3-500
Wiring Diagram – Cord #1

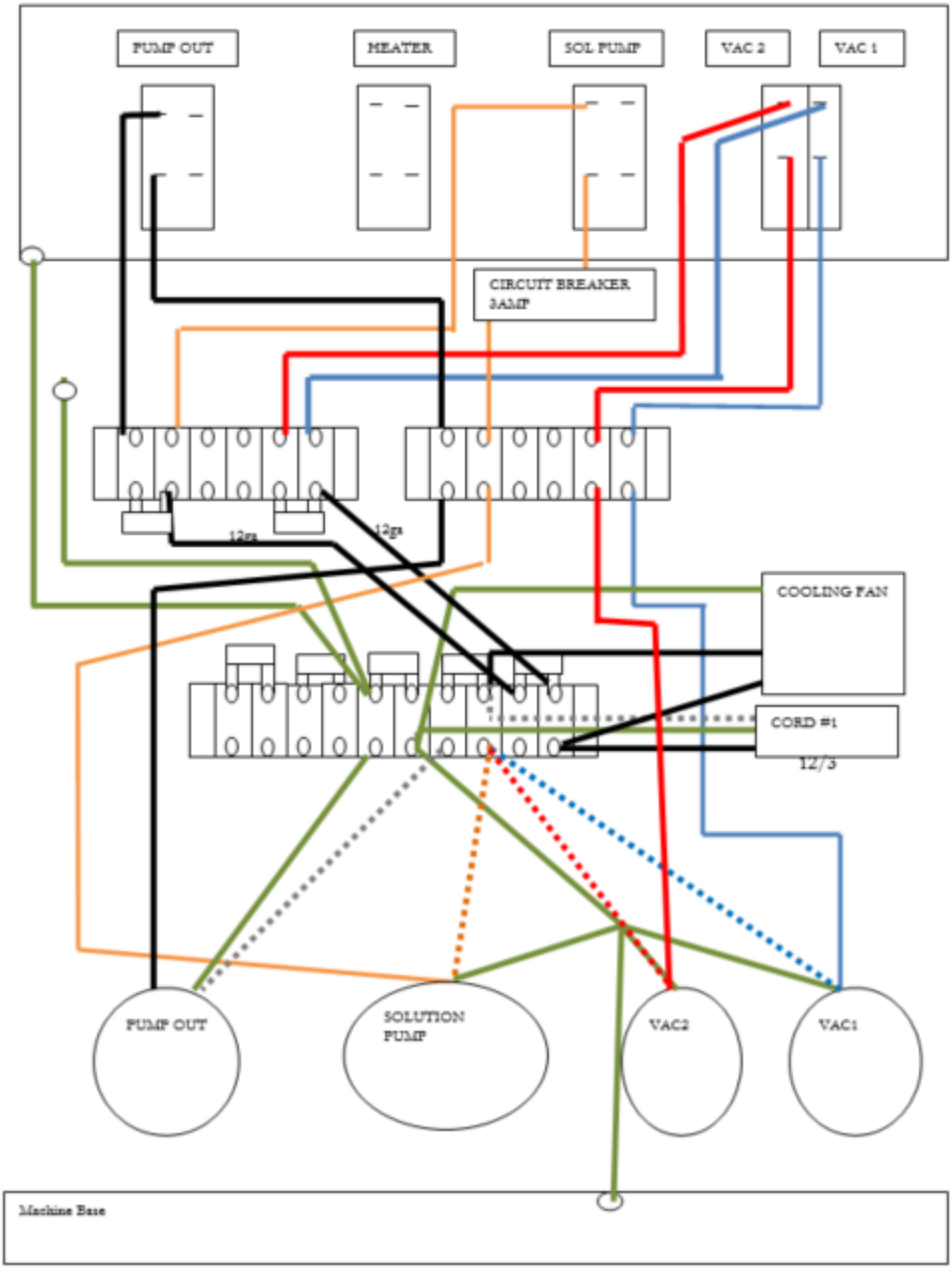


MX3-500
Wiring Diagram – Cord #2



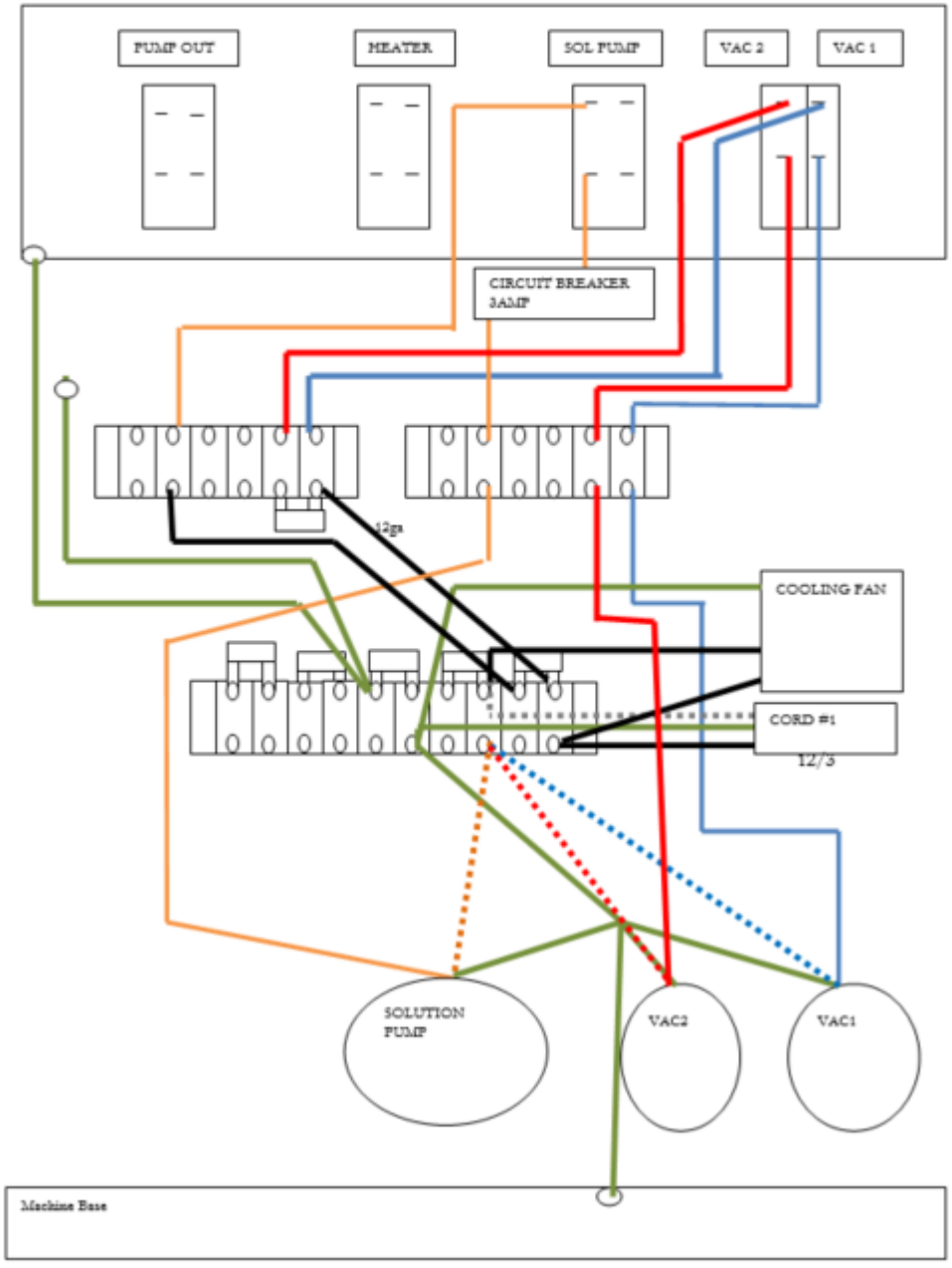
MX200

Wiring Diagram – Cord #1 (No Heater)



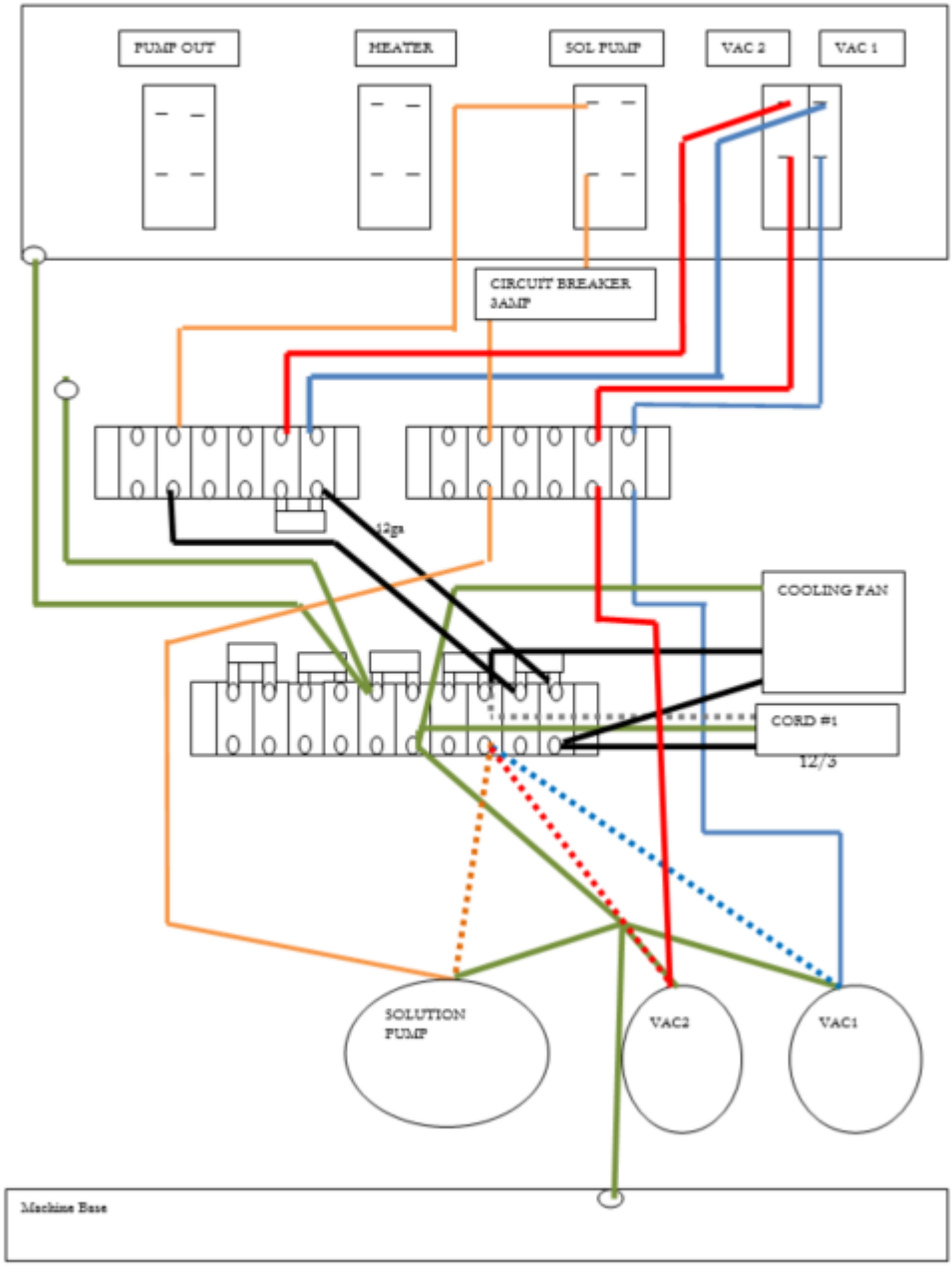
MX200

Wiring Diagram – Cord #1 (With Heater)

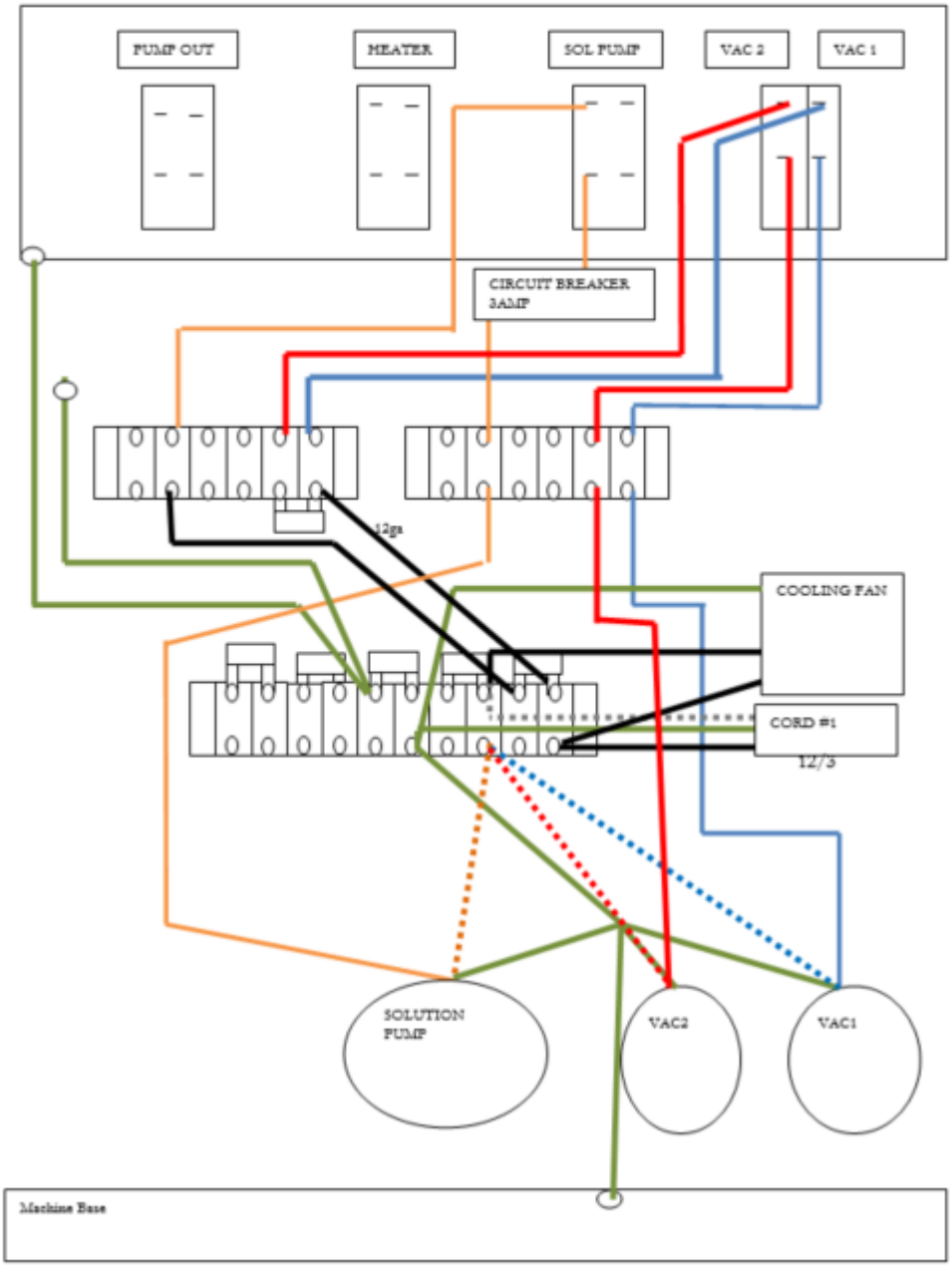


MX200

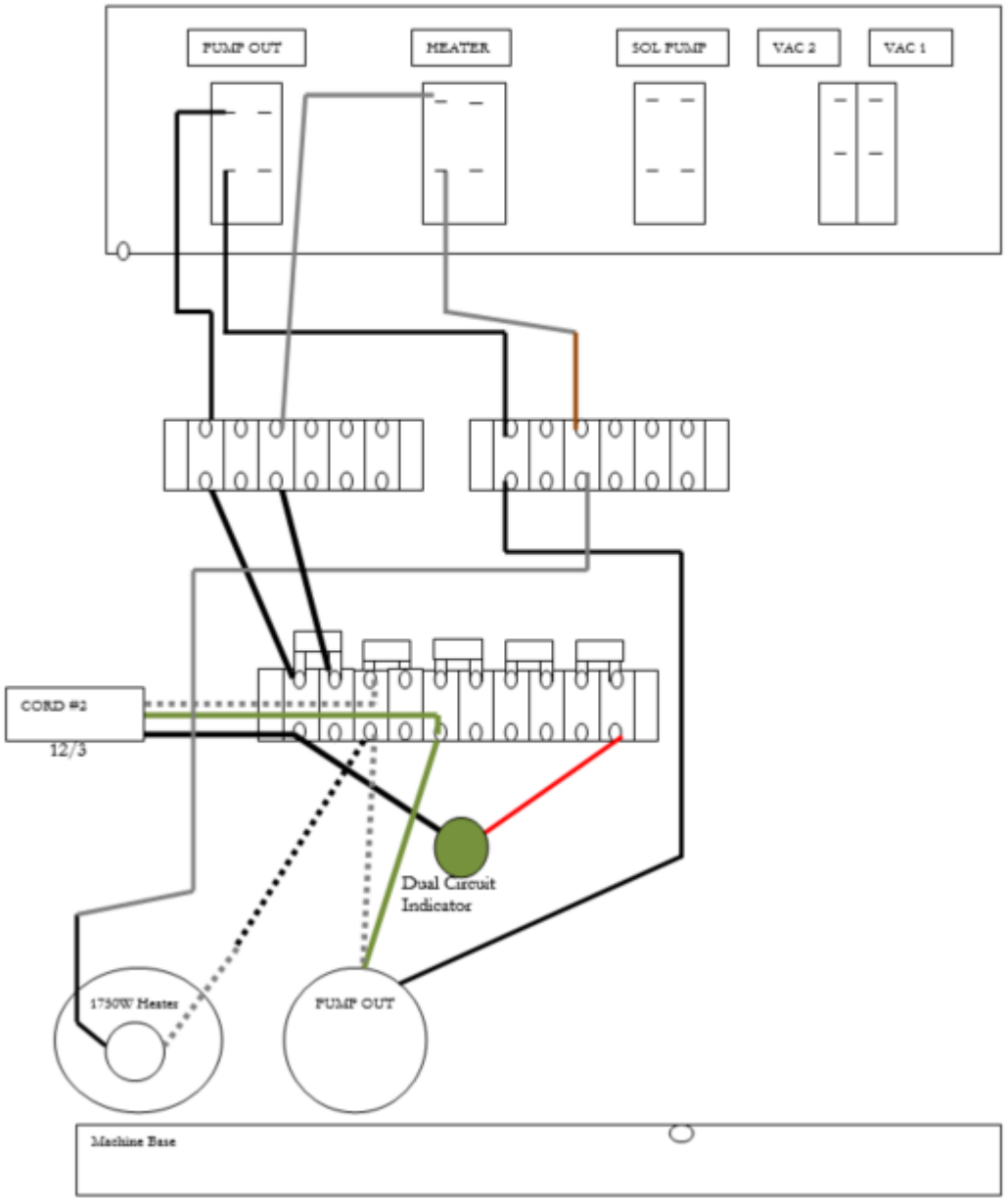
Wiring Diagram – Cord #1 (With Heater)



MX200H
Wiring Diagram – Cord #1

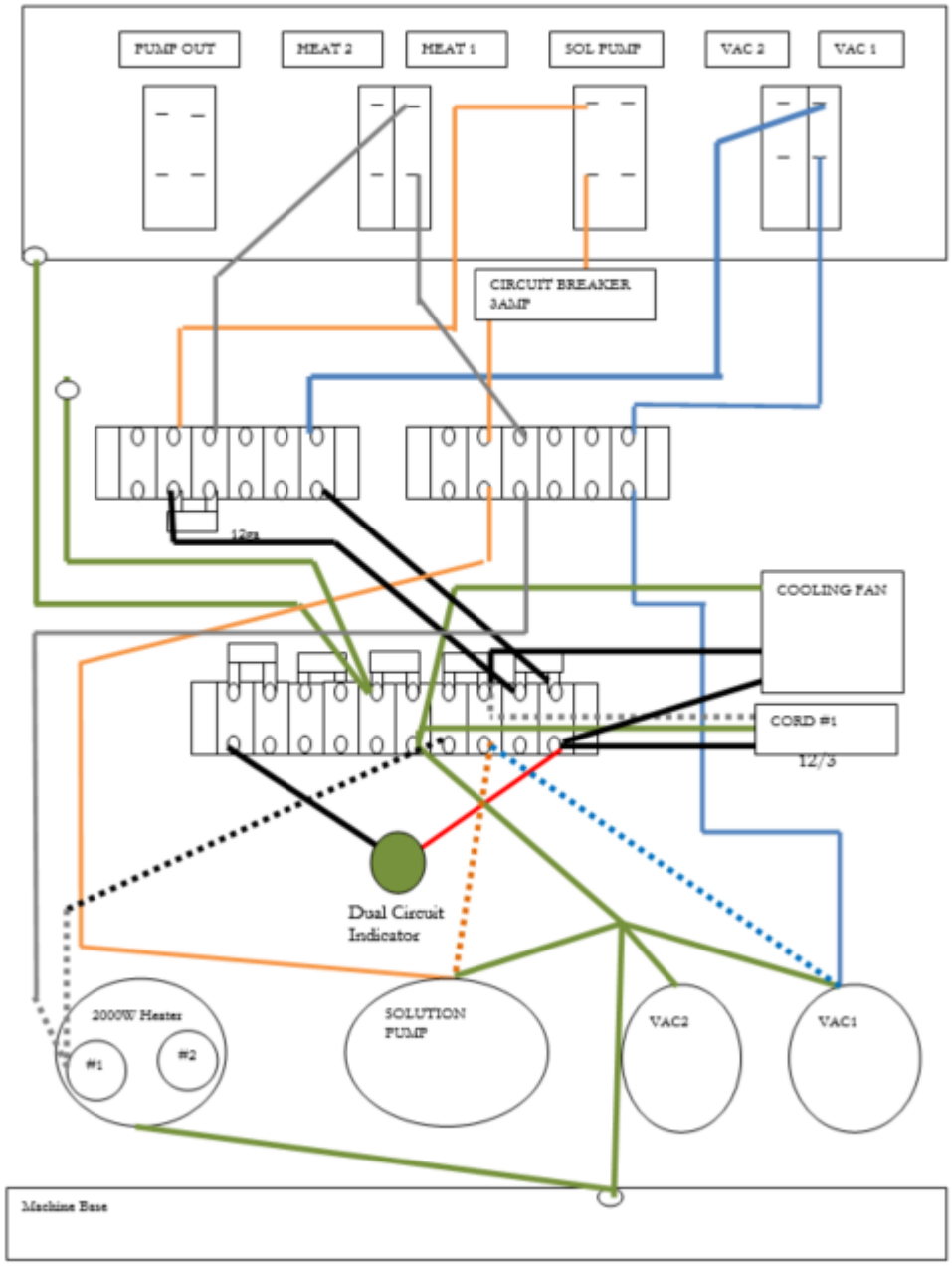


MX200H
Wiring Diagram – Cord #2

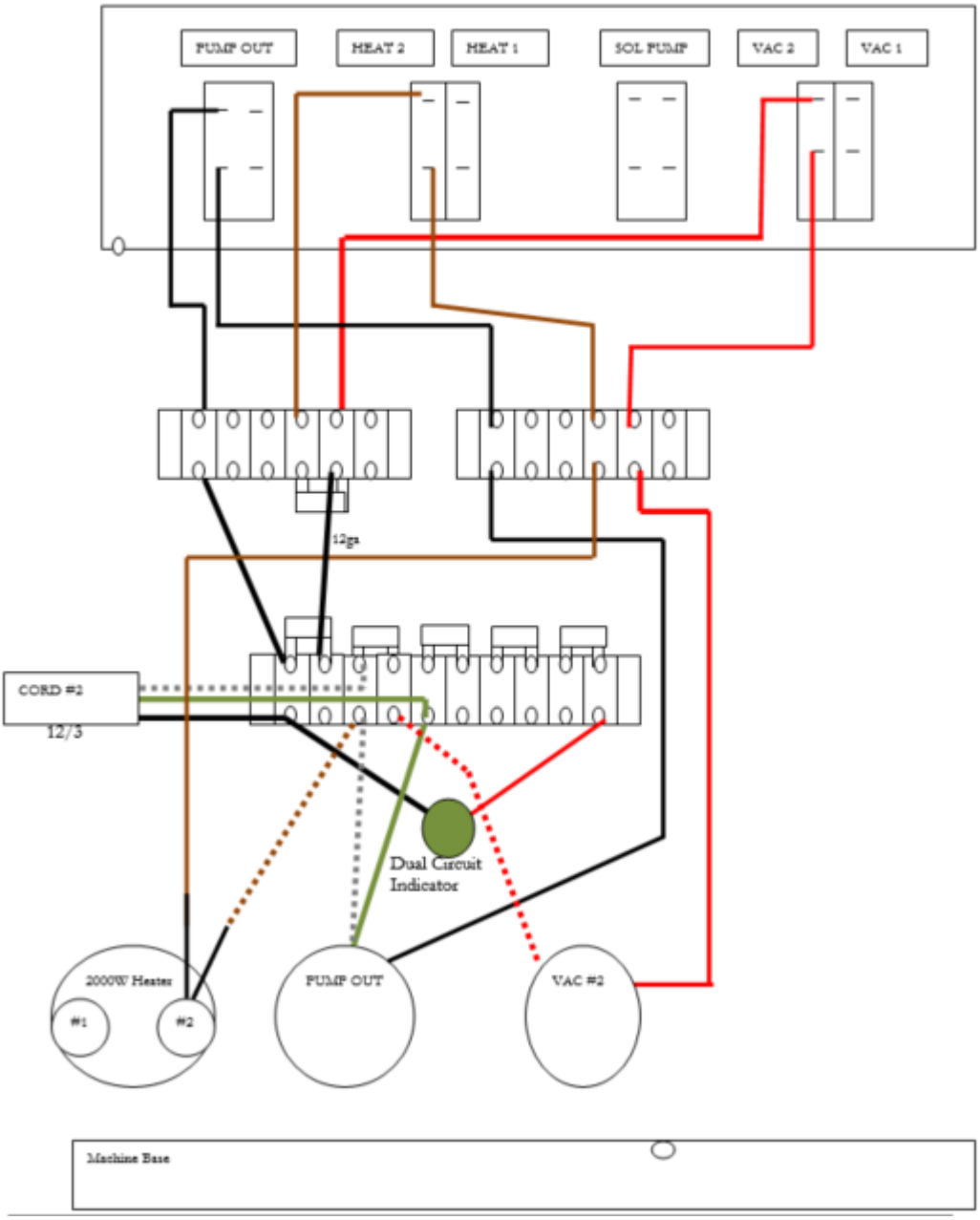


MX3-200

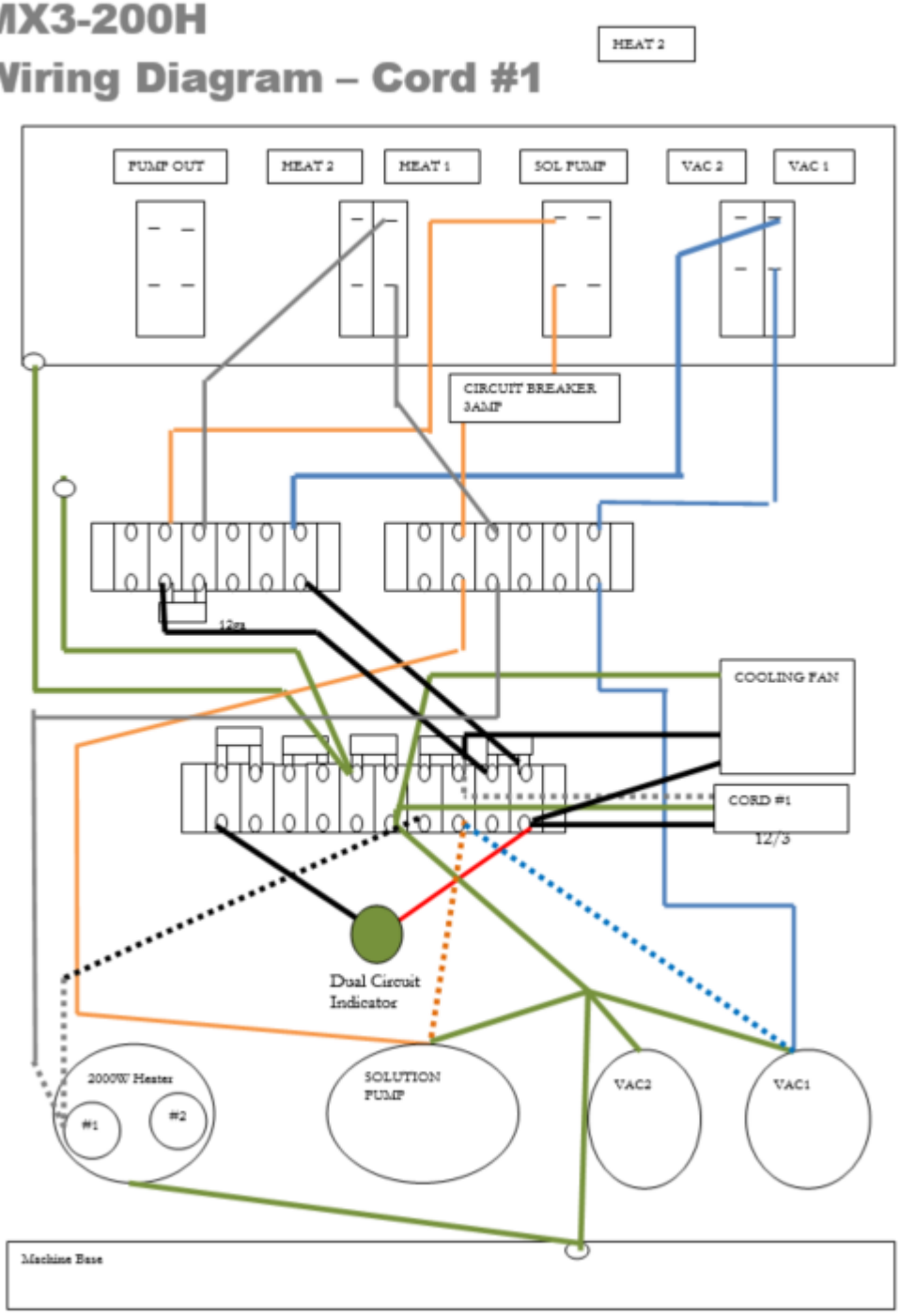
Wiring Diagram – Cord #1



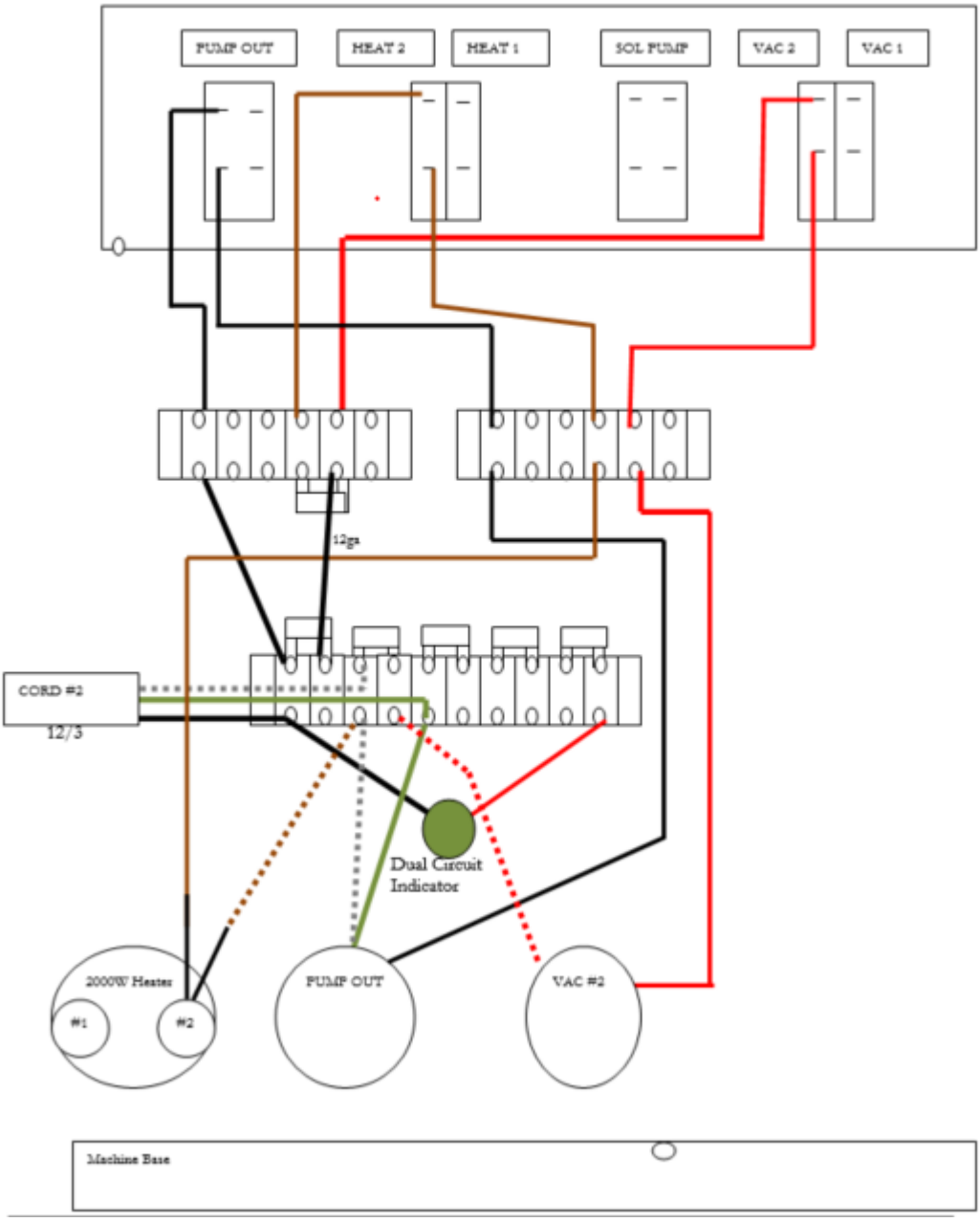
MX3-200
Wiring Diagram – Cord #2



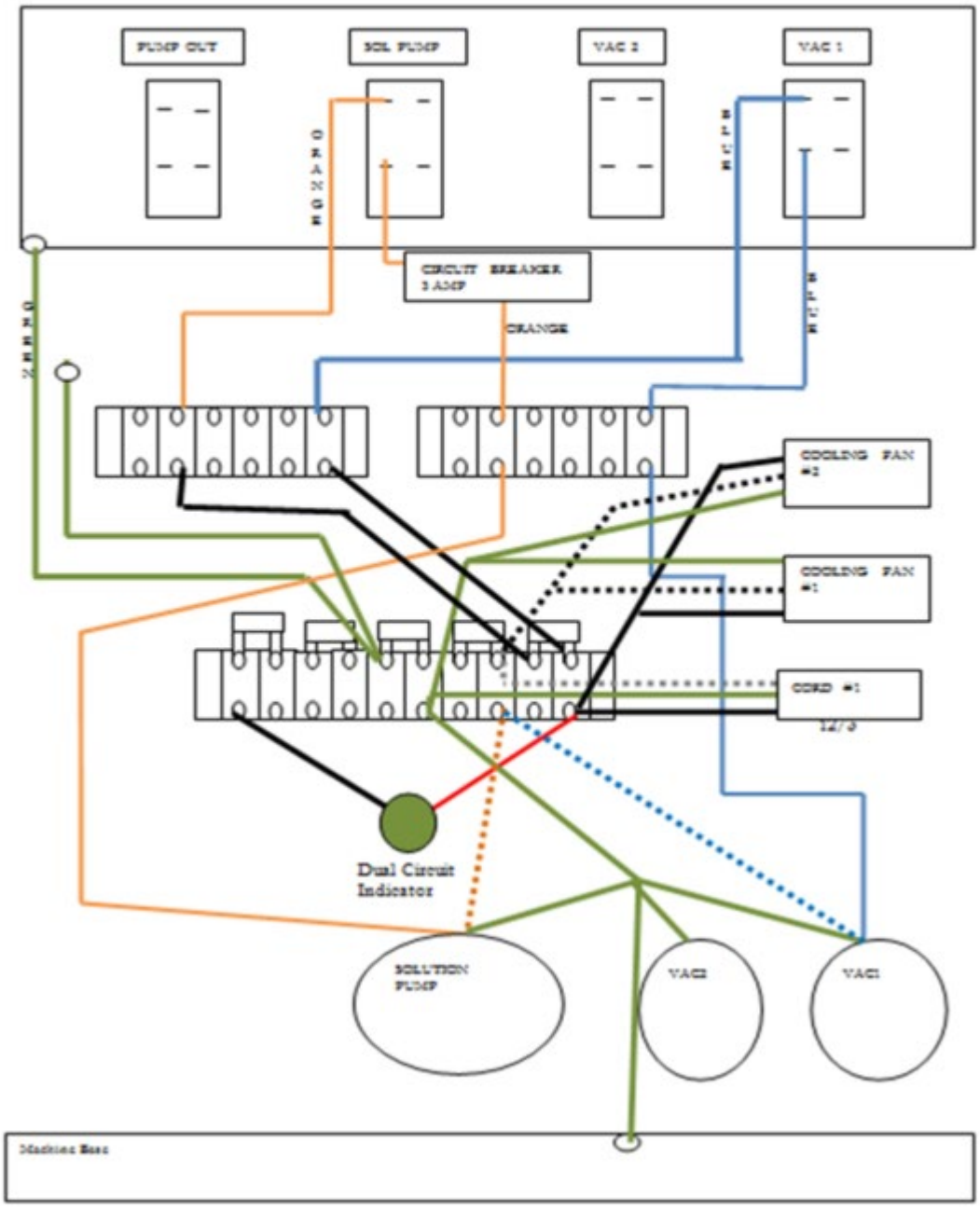
MX3-200H
Wiring Diagram – Cord #1



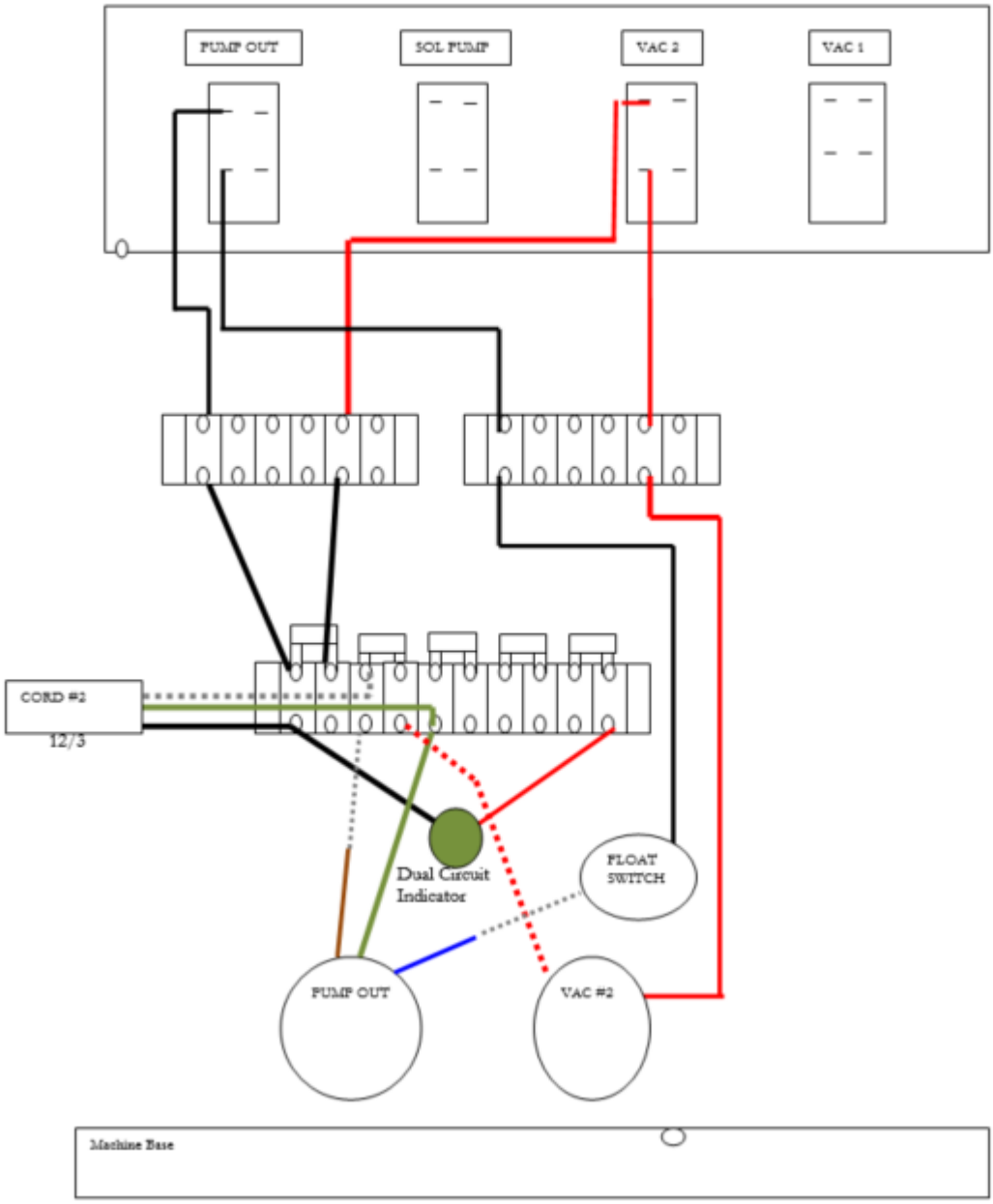
MX3-200H
Wiring Diagram – Cord #2



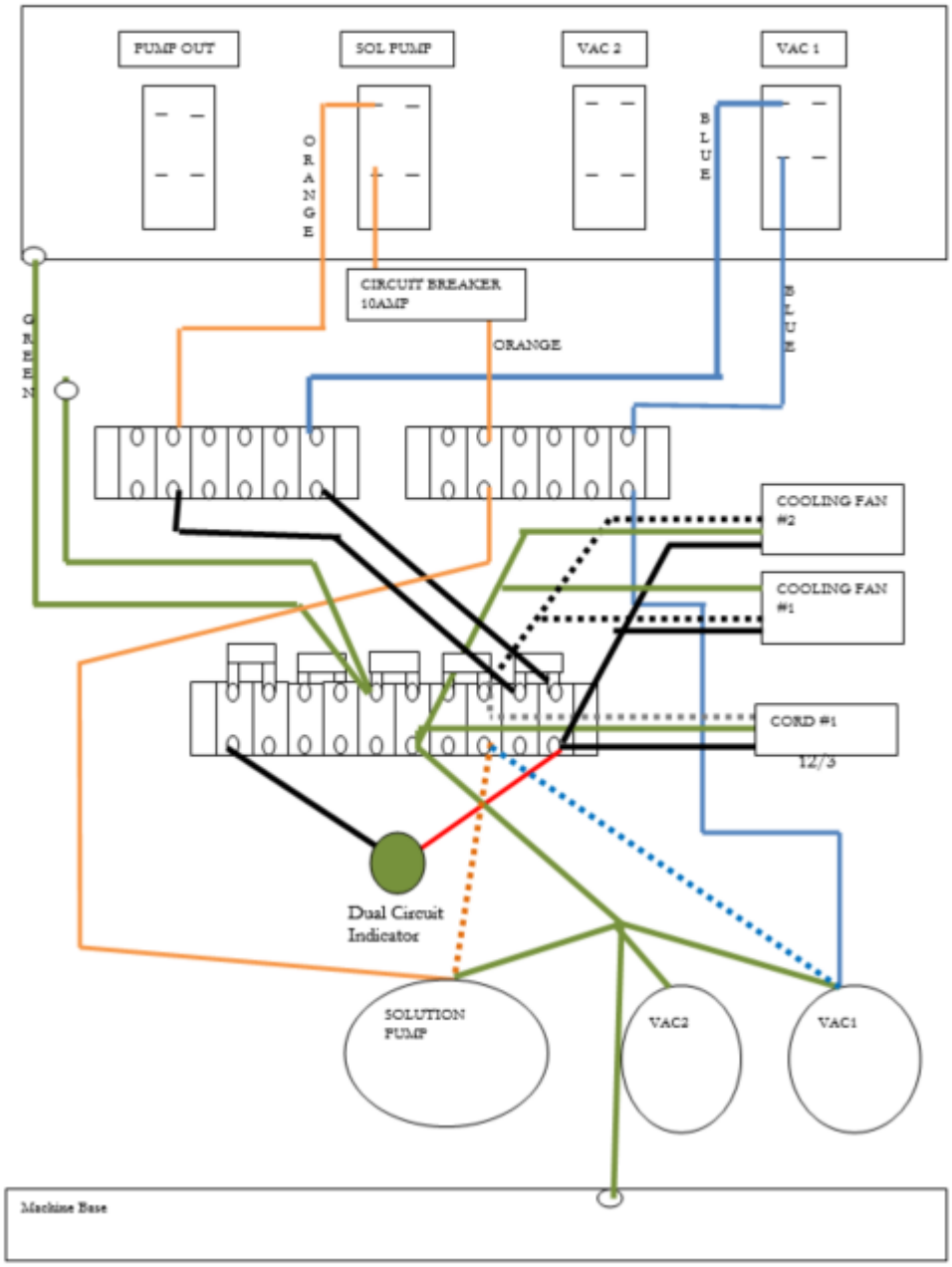
Nautilus MXE-200
Wiring Diagram – Cord #1



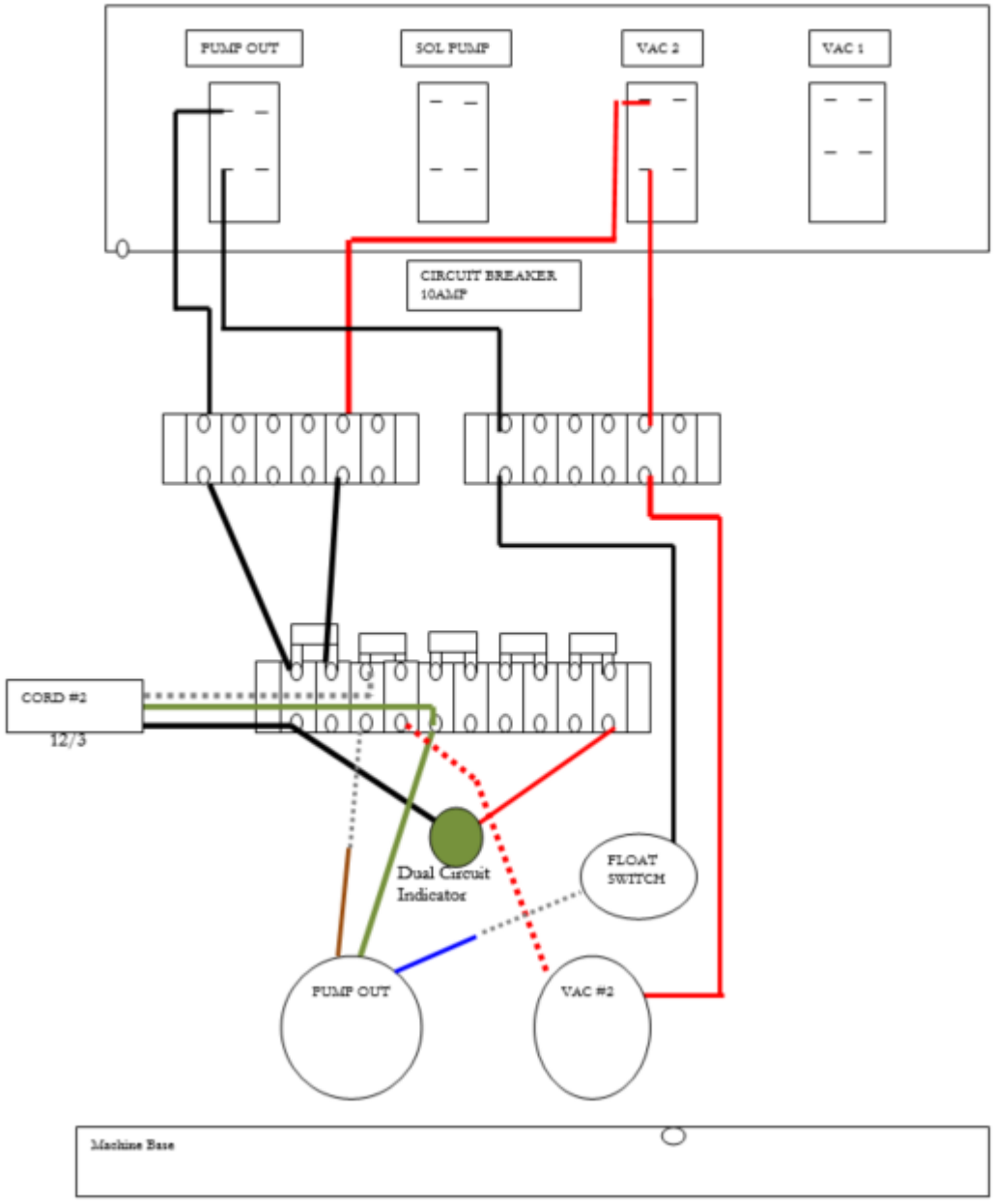
Nautilus MXE-200
Wiring Diagram – Cord #2

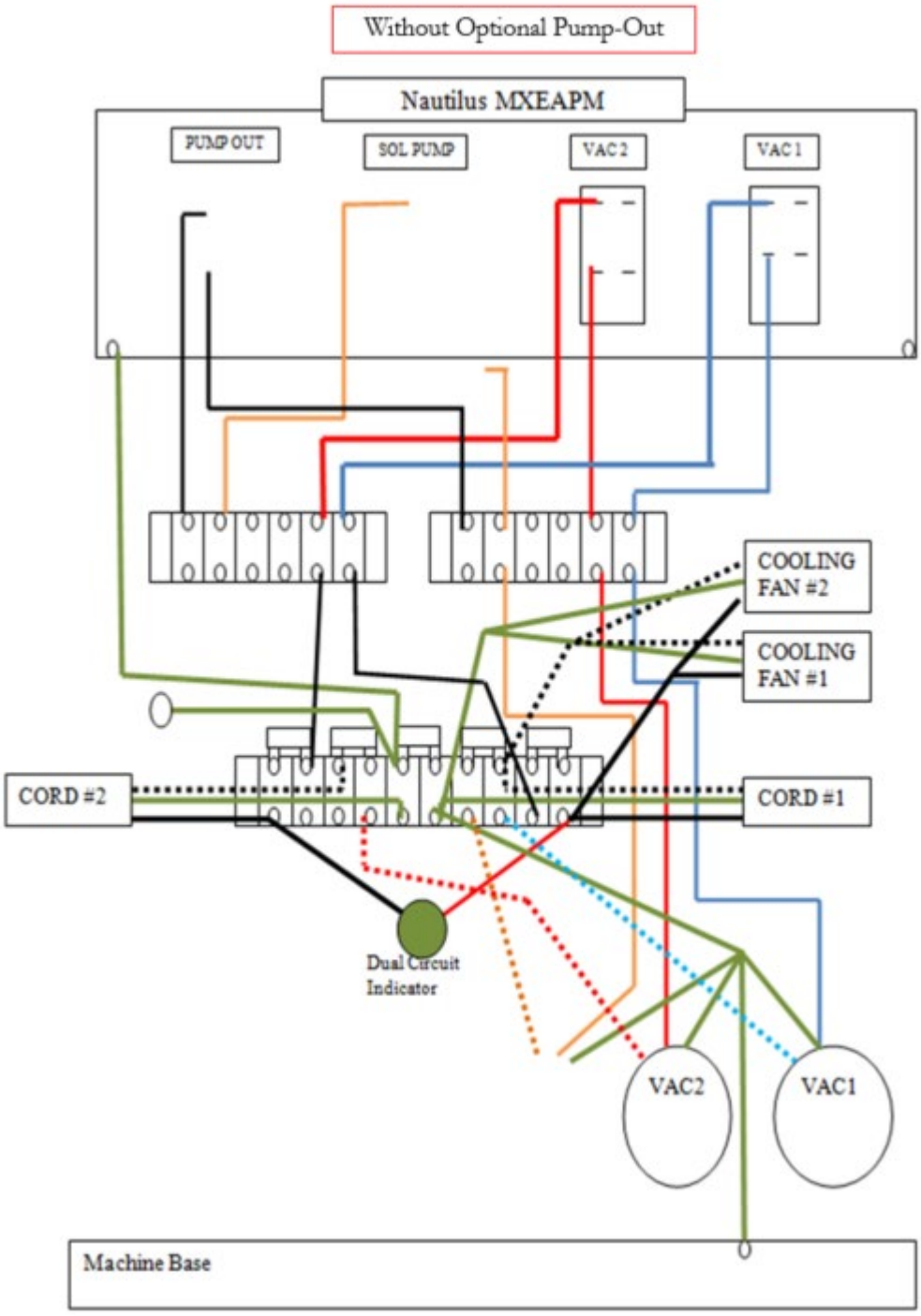


Nautilus Extreme MXE-500
Wiring Diagram – Cord #1

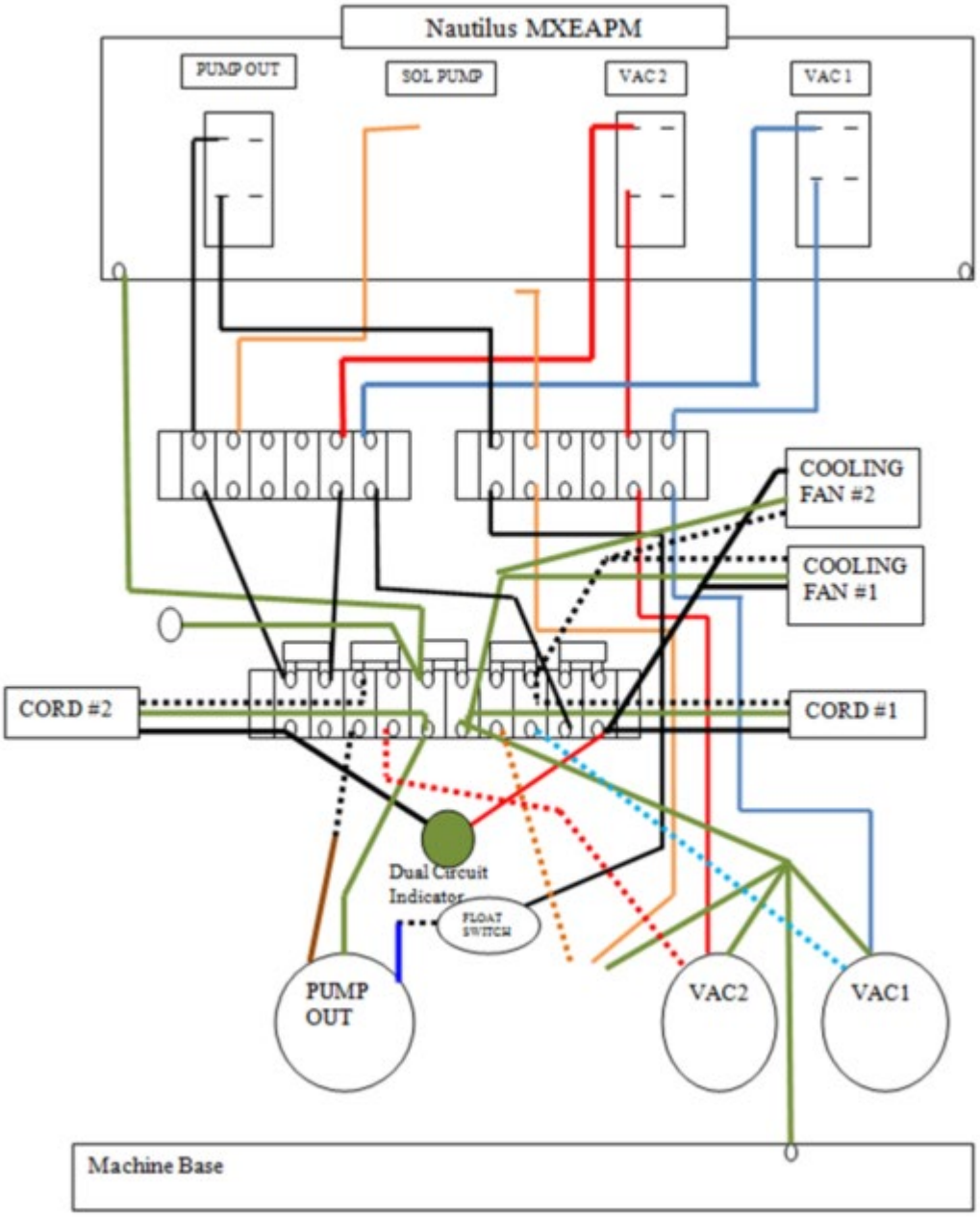


Nautilus Extreme MXE-500
Wiring Diagram – Cord #2



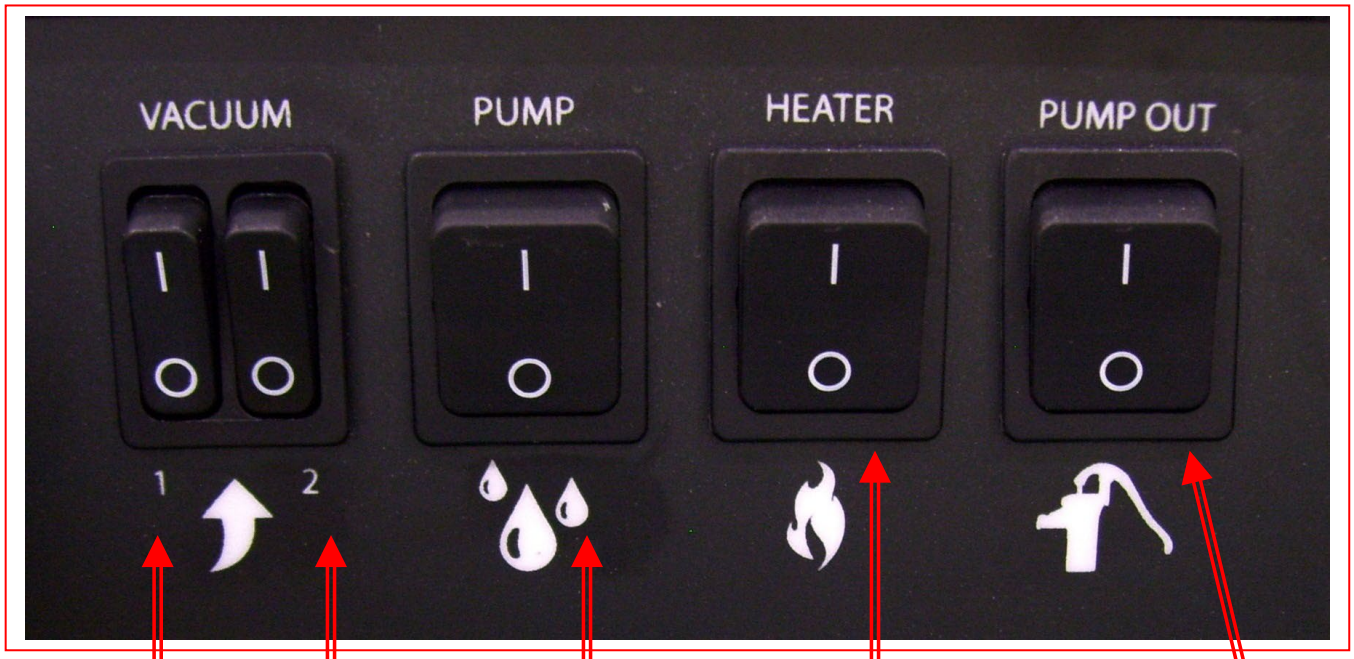

Without Optional Pump-Out
Nautilus MXEAPM
PUMP OUT
SOL PUMP
VAC 2
VAC 1
COOLING FAN #2
COOLING FAN #1
CORD #2
CORD #1
Dual Circuit Indicator
VAC2
VAC1
Machine Base

With Optional Pump-Out



NAUTILUS SWITCH PANEL:

(Shown with optional Pump-Out Switch)



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 #1.
When the switch is turned to the ON position power is supplied to the vacuum motor. (2-Stage Vacuum)

Solution Pump Switch – Power from Cord #2.
When the switch is turned to the ON position power is supplied to the solution pump motor. When not using solution (Extracting Only) do not turn this switch ON.

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.

Heater – Power from Cord #2.
When the switch is turned to the ON position power is supplied to the 1750W heating element, if so equipped.

OPTIONAL - Waste Pump Switch Power from Cord #1.

NOTICE Do not turn Waste Pump Switch ON unless a hose is connected to the Pump-out Outlet port.
For pump protection there is a pressure switch which will turn the waste pump off if the pressure in the discharge line gets too high, as it would if the pump was turned on while the outlet cap was still in place.

Section 3

Maintenance

Proper maintenance is required to keep the Nautilus 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.**

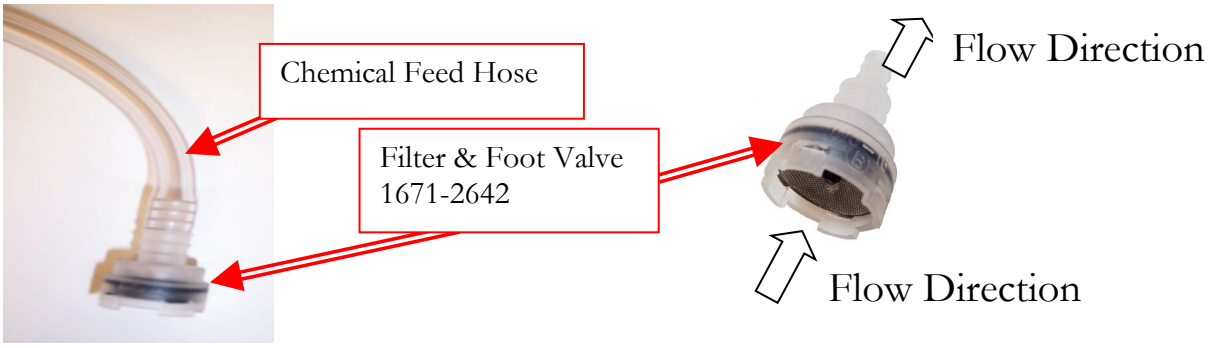
CLEAN CHEMICAL FEED FILTER & FOOT VALVE: (If so equipped)

Part of the optional Auto Fill & Chemical Feed system, the Filter & Foot Valve is on the end of the chemical feed hose that is placed in the chemical jug as part of the chemical feed system. Regularly examine the filter and clean as needed.

To test the Foot Valve:

- Remove the Filter & Foot Valve from the end of the chemical feed hose and rinse in fresh water.
- Blow through the valve from the filter side of the barb.
    - If the Foot Valve is functioning, air should move freely from the filter side, but will not flow from the barb side of the filter.
    - If valve is not functional, clean or replace as needed.

Heavy chemical build-up can be removed with a mild acid rinse and/or the use of a brush and compressed air.



CLEAN VACUUM SHUTOFF ASSEMBLY SCREEN:

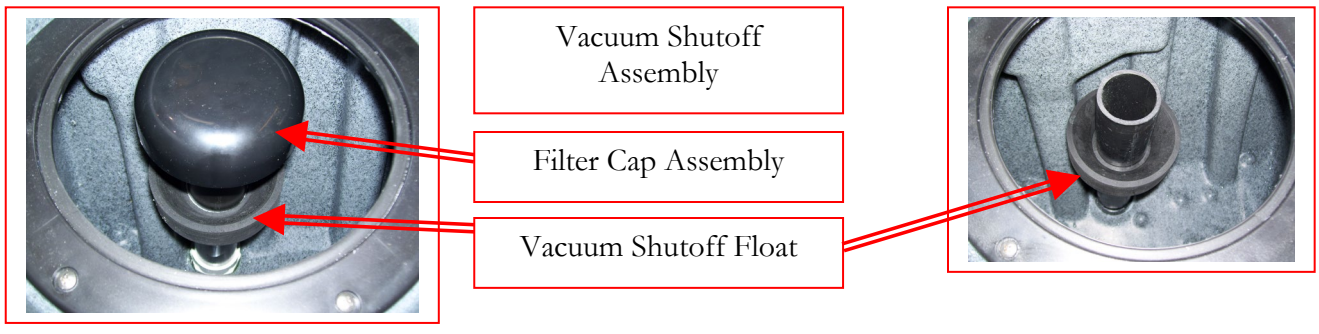
Inside the recovery tank, on top of the stand pipe, is the Vacuum Shutoff Assembly. It functions to prevent debris and water from being sucked into the vacuum motors. Operating the Nautilus without the Vacuum Shutoff Assembly or with a poorly maintained assembly will greatly decrease the life of the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

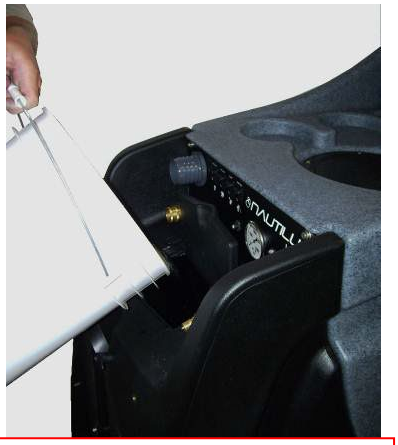
- Remove the recovery tank lid and open the drain valve.
- Place a bucket under the drain valve.
- Use a hose to rinse the dirt and debris out of the recovery tank.
- Close the drain valve and spray the tank with a deodorizer or disinfectant.
- Proceed to Waste Pump Cleaning and replace the recovery 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.
  - Remove the waste pump filter screen by turning it counterclockwise. Remove the filter screen. Examine the screen and clean or replace as needed.
- Re-install the filter screen. Thread the filter loosely on to the nipple – Leave slightly loose to keep it easier to remove for future cleaning.
- Use a hose to fill the recovery tank approximately 1/2 full with clean water.
- With Cord #1 plugged in, turn the Waste Pump switch to the ON position.
- Let the pump run until it pumps the level down to the point below the pump intake filter.
- 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.

FLUSH SOLUTION TANK AND PUMP:



Pour 2 or 3 gallons of clean water into Solution Tank

- Pour two or three gallons of clean water into the solution tank.
- With Cords #1 & #2 plugged in, connect the pump prime hose to the solution outlet female quick connect.
- Direct the end of the pump priming hose into the recovery tank vacuum barb.
- Turn one or both of the vacuums ON and turn the solution pump ON.
- Let the pump run until most of the water has been pumped out of the solution tank.

NOTICE **Do not let the pump run dry. Turn the pump OFF before the water gets to the bottom of the tank.**

- Turn the vacuums OFF and disconnect the prime hose.
- Place a bucket under the drain valve; open the drain valve to drain the water out of the recovery tank.
- Close the drain valve and dispose of the water.

If there is a heavy chemical build-up in the machine, hoses, or tools, a mild acid can be added to the rinse water in the previous procedure (REFER TO PHOTOS ON FOLLOWING PAGE.)

- After the pump has been primed, turn the solution pump switch OFF and turn the vacuums OFF.
- Remove the pump priming hose and connect the solution hose and tools.
  - Turn the solution pump ON and direct the tool spray into a bucket. Let the pump run until most of the water has been pumped out of the solution tank.

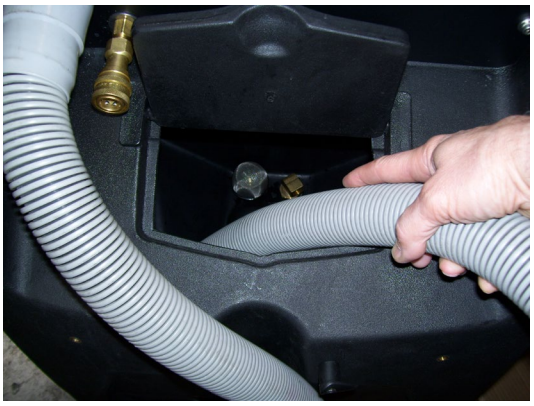
NOTICE **Do not let the pump run dry.**
Turn the pump OFF before the water gets to the bottom of the tank.

FLUSH SOLUTION TANK AND PUMP: (continued from previous page)

- Disconnect the solution hose and tool.
- Use the vacuum hose to vacuum the remaining acid solution out of the solution tank.
- Pour two or three gallons of clean water into the solution tank.
- Connect the pump priming hose to the solution outlet female quick connect.
- Direct the end of the prime hose into the recovery tank vacuum barb.
- Turn one or both of the vacuums ON and turn the solution pump ON. Let the pump run until most of the water has been pumped out of the solution tank.

NOTICE **Do not let the pump run dry. Turn the pump OFF before the water gets to the bottom of the tank.**

- Turn the vacuums OFF and disconnect the prime hose.
- Place a bucket under the drain valve and open the drain valve to drain the water out of the recovery tank.
- Close the drain valve and dispose of the water.



Vacuum acid solution out of Solution Tank

CLEAN PUMP INLET FILTER

A restricted Pump Inlet Filter can prevent the solution pump from providing adequate pressure for cleaning. A restriction or air leak on the pump inlet hose can also damage the solution pump check valves and plunger seals.

- To examine the filter, open the solution tank lid on the front of the machine. The filter is in the bottom of the solution tank.
- Grasp the filter cap and unscrew the filter from the brass nipple by turning counter-clockwise. Clean or replace the filter as needed (1641-1201).

Inside View: Nautilus Solution Tank

⚠WARNING **Before proceeding with this procedure, drain the solution tank & recovery tank. Make sure both power cords are disconnected.**

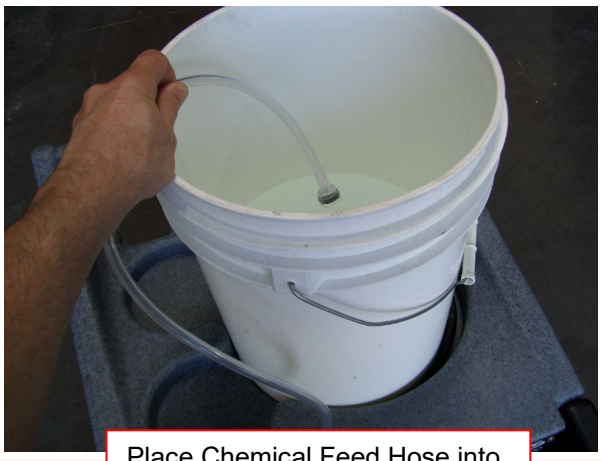
- To examine the pump inlet hose, release the latches on the front/bottom of the machine and tilt the tanks off of the base assembly.
- Examine the hose for kinks, clogs or holes and repair or replace the hose as needed. (Replacement Hose: 1643-2421 – sold per foot)
- Tilt the tanks back onto the base and secure the latches.

SOLUTION FILTER

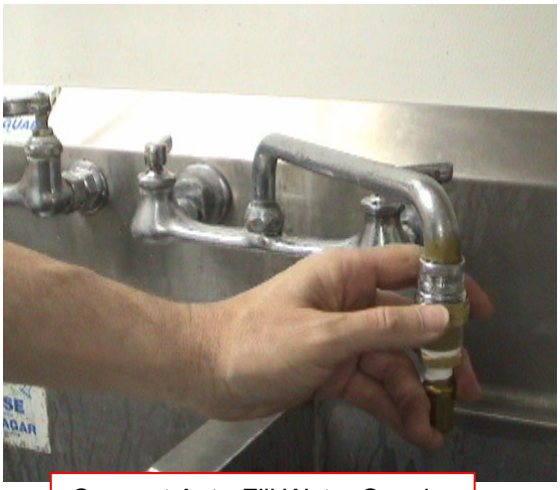
CHEMICAL SYSTEM: (If so equipped)

Chemical build-up in the optional Auto Fill chemical system can prevent the system from drawing chemical.

- Rinse the chemical system with fresh water (For heavy chemical build-up, a mild acid can be added to the rinse water.)
- Remove the chemical feed hose from the solution tank and place the end of the hose in a bucket of fresh water or mild acid solution.
- Connect the Auto-Fill Water Supply Hose to the water inlet (male quick connect) on the front of the machine.
- Connect the other end of the hose to a water faucet and turn on the water. Let the water flow into the tank until you are sure the rinse solution has been drawn through the proportioner and mixed with the incoming water. The metering tip can be removed from the proportioner to speed up the process.
- Once the rinse solution has been drawn through the proportioner, turn off the water faucet and disconnect the Auto-Fill Water Supply Hose.
- Plug in Cords, connect the vacuum hose to the vacuum barb, turn on one or both vacuums, and use the vacuum hose to remove the water from the solution tank.
- When the solution tank has been emptied, turn off the vacuums and unplug the power cord.
- Place a bucket under the drain valve and open the drain valve to drain the water from the recovery tank.
- Close the drain valve and dispose of the water.



Place Chemical Feed Hose into Rinse Solution



Connect Auto-Fill Water Supply Hose to machine and faucet

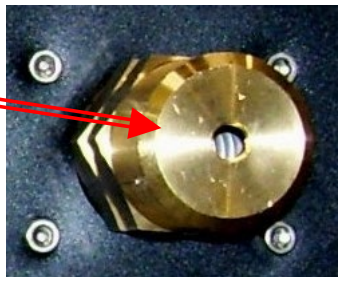
Vacuum water out of Solution Tank

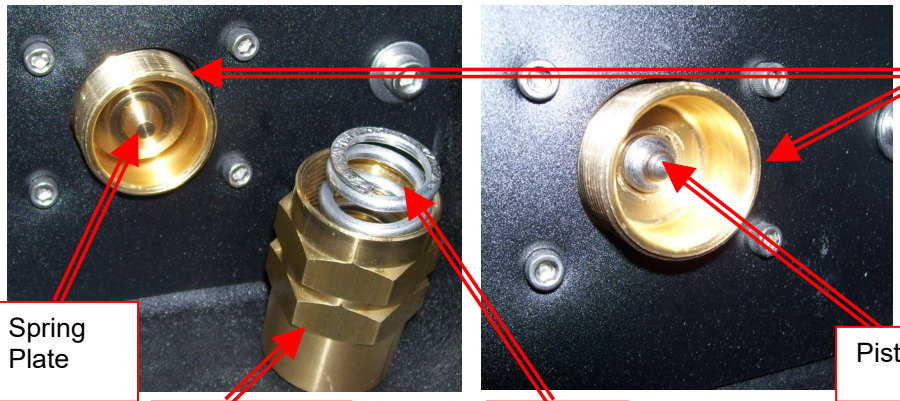
Drain water from Recovery Tank

LUBRICATE REGULATOR PISTON SEAL

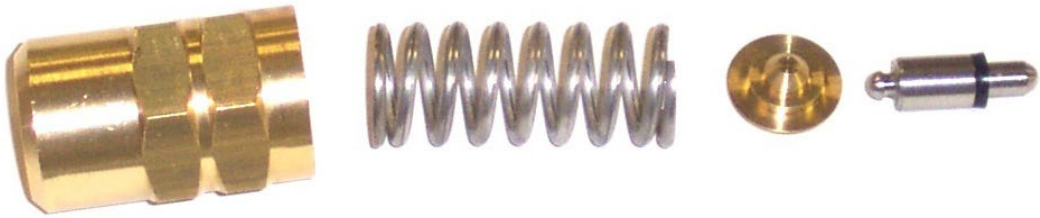
To maintain consistent adequate pressure delivery to the cleaning tool, the piston seal of the Nautilus pressure regulator must be lubricated regularly.

1. Release pressure from system before proceeding.
2. Remove Brass Knob from the regulator body.
3. Remove the Spring and Spring Plate from the Regulator Body.
4. Use needle nose pliers to pull the Piston from the Regulator Body.
5. Examine Piston and Seal. Replace as needed.





6. Use a synthetic grease with Teflon such as Ultra-Slick or Super-Lube to lubricate the seal on the regulator piston.
7. Place the piston back into the opening on the regulator body.
8. Place the Spring Plate on top of the piston. (Concave side toward piston.)
9. Place the spring back into the handle and thread the handle back onto the regulator body.



CLEAN RECOVERY TANK DRAIN

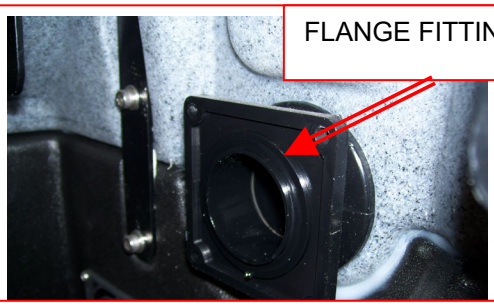
Debris and sand accumulation in the drain valve can damage the valve or prevent it from closing completely. This will result in dirty water leaking from the valve. Use of the Hydro-Filter and regular cleaning of the recovery tank will help prevent this, but occasionally the drain valve will require cleaning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

⚠WARNING

Unplug both cords and drain the recovery tank before attempting to service the drain valve.

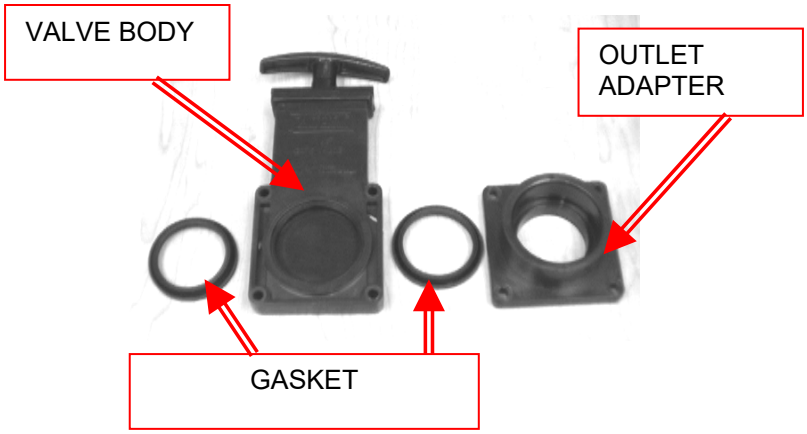
- Unscrew the nuts and remove the four bolts holding the valve assembly to the flange attached to the recovery tank. Unless the flange is damaged, it does not have to be removed from the tank, even when replacing the drain valve.
- Separate the valve body, outlet adapter and gaskets from the flange.

Remove four bolts holding valve assembly to flange fitting



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

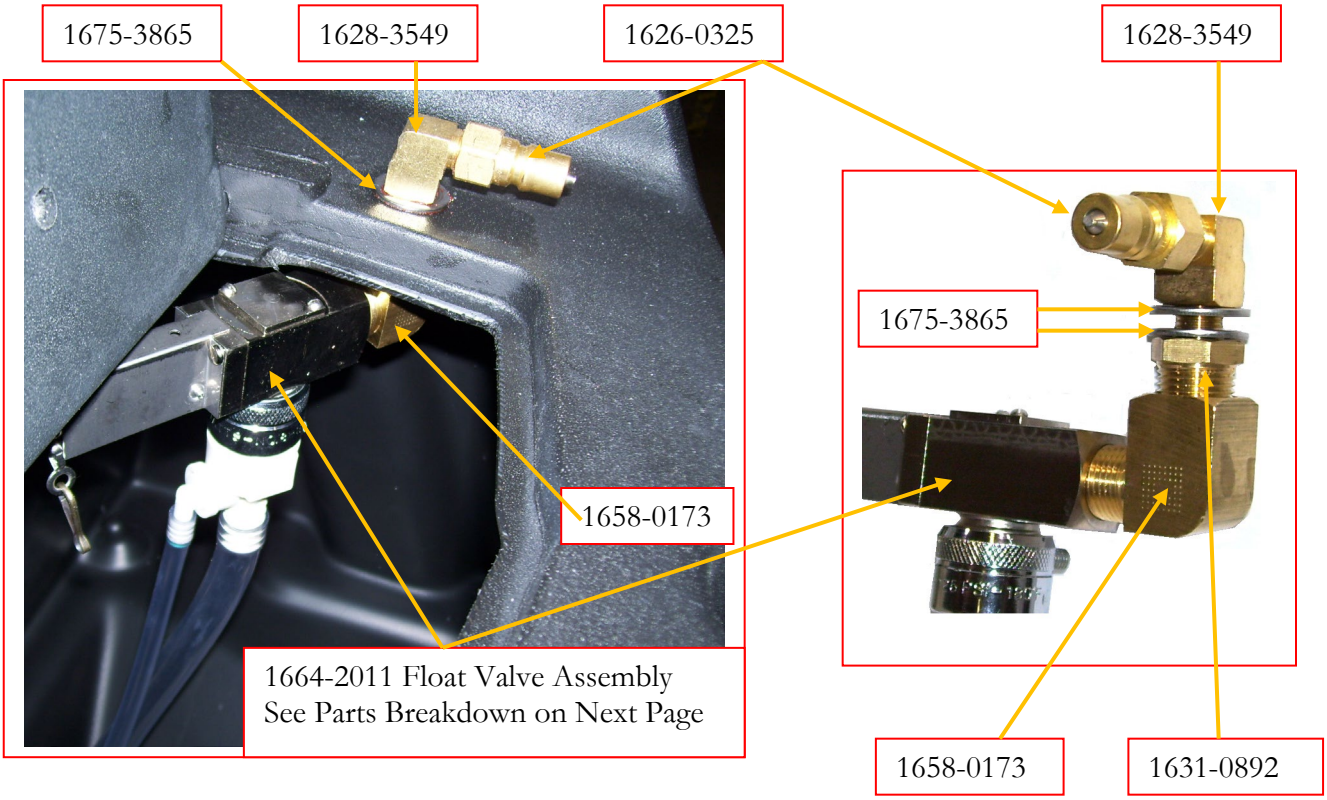
DRAIN VALVE



- 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.

OPTIONAL AUTO-FILL ASSEMBLY – M013



Storage Prep and Freeze Protection Procedures:

Your Nautilus must be protected from freezing. Freezing can cause serious damage to the pump, pump-out, auto-fill float valve, and any other component containing water. If the Nautilus is transported or stored in freezing temperatures, the following procedures should be performed.
ALSO, if the Nautilus 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 solution tank.
2. Connect the solution hose to the solution outlet (female quick connect).
3. **If not equipped with the optional Auto Fill System**, snap an open quick connect onto the other end of the hose and place the hose end back into the solution tank. Turn the pressure regulator knob counter-clockwise to lower the pressure to 100psi or lower.
   If equipped with the Auto Fill system, connect the opposite end of the HP solution hose to the Auto-Fill inlet (male quick connect.) Leave the chemical feed hose in the solution tank and ensure the check valve filter is submerged in the anti-freeze solution. To speed the process the metering tip can be removed. Turn the pressure regulator knob counter-clockwise to lower the pressure to 100psi or lower.

   NOTICE **Applying high pressure (over 100psi) to the Auto-Fill system will cause damage to the Float valve and chemical proportioning mechanism.**

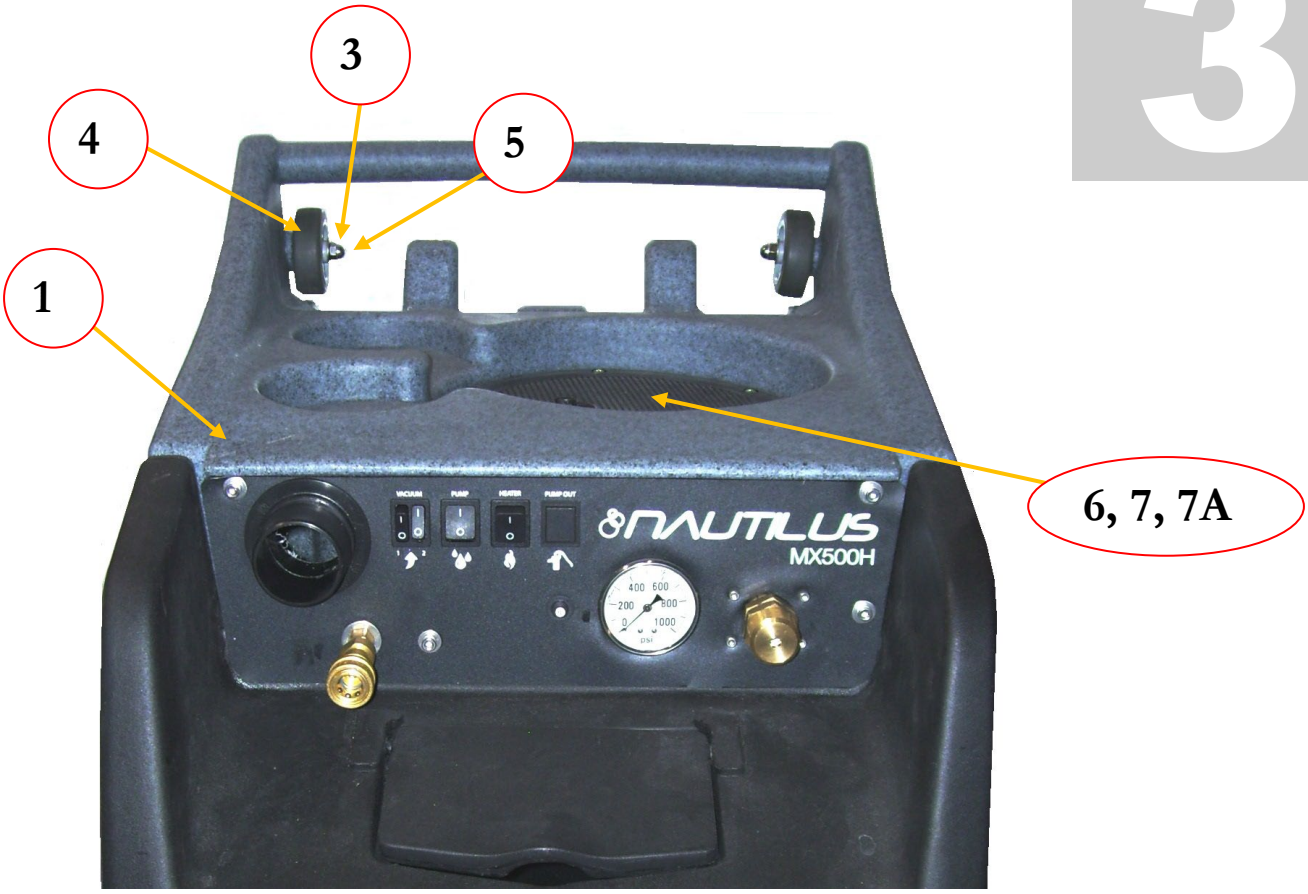
4. Turn the solution pump switch to the ON position and perform the pump priming procedure. Hold the priming valve open for a few extra seconds to be sure the anti-freeze has passed through the priming valve. When the pump is primed, allow the anti-freeze to circulate for 5-10 minutes. Mix and add more anti-freeze solution as needed. For machines with the optional Auto Fill System, make sure end of chemical feed hose stays submerged in the anti-freeze solution. This will assure that the anti-freeze will be drawn into the proportioning valve.
5. Connect any cleaning tools and solution hoses that will be stored with the Nautilus. Direct tool spray back into the solution tank or into a bucket. Repeat for all tools to be protected.
6. Turn the solution pump switch to the OFF position.
7. Use the vacuum hose to vacuum the remaining anti-freeze solution out of the solution tank and bucket.
8. If so equipped, 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 to engage the pump-out. Turn off the Waste Pump Switch as soon as you see anti-freeze flowing from the outlet fitting or hose.
9. Drain the remaining anti-freeze solution from the recovery tank and the machine is ready for storage.

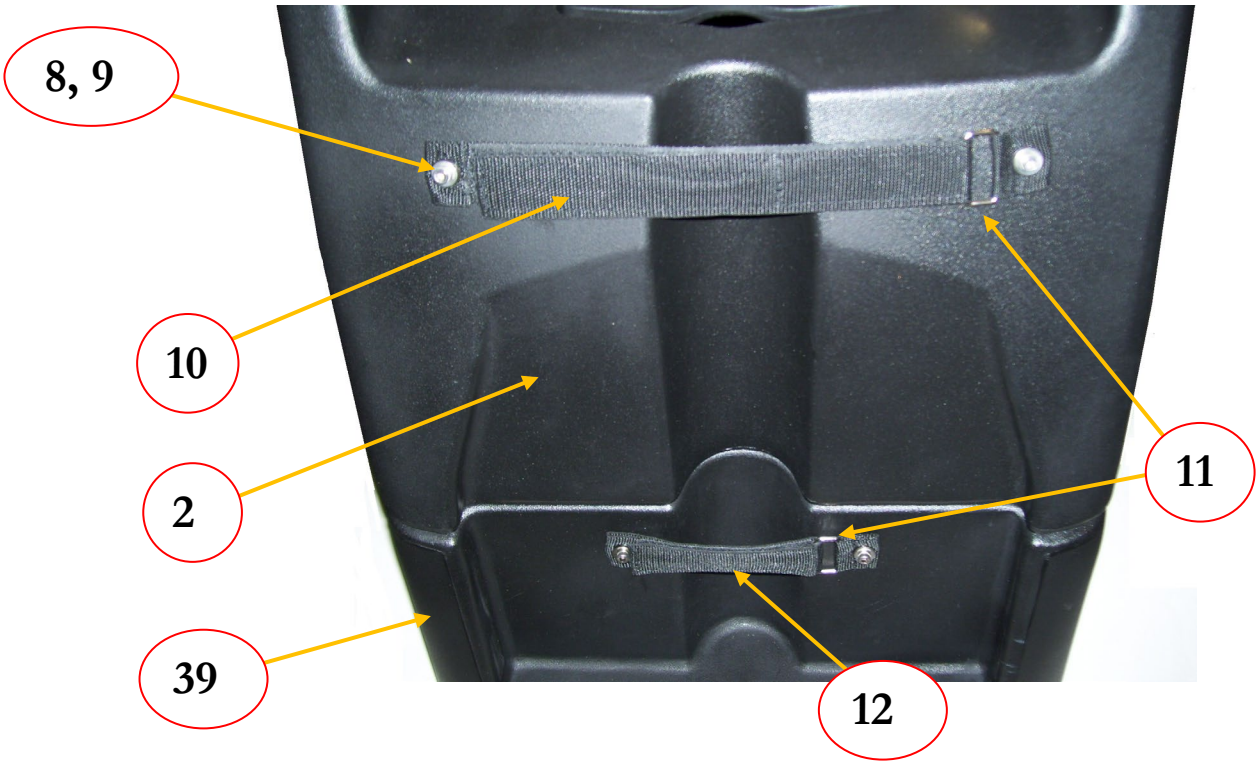
RETURNING THE NAUTILUS TO SERVICE AFTER STORAGE OR FREEZE PROTECTION:

To return the Nautilus to service, the anti-freeze must 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.

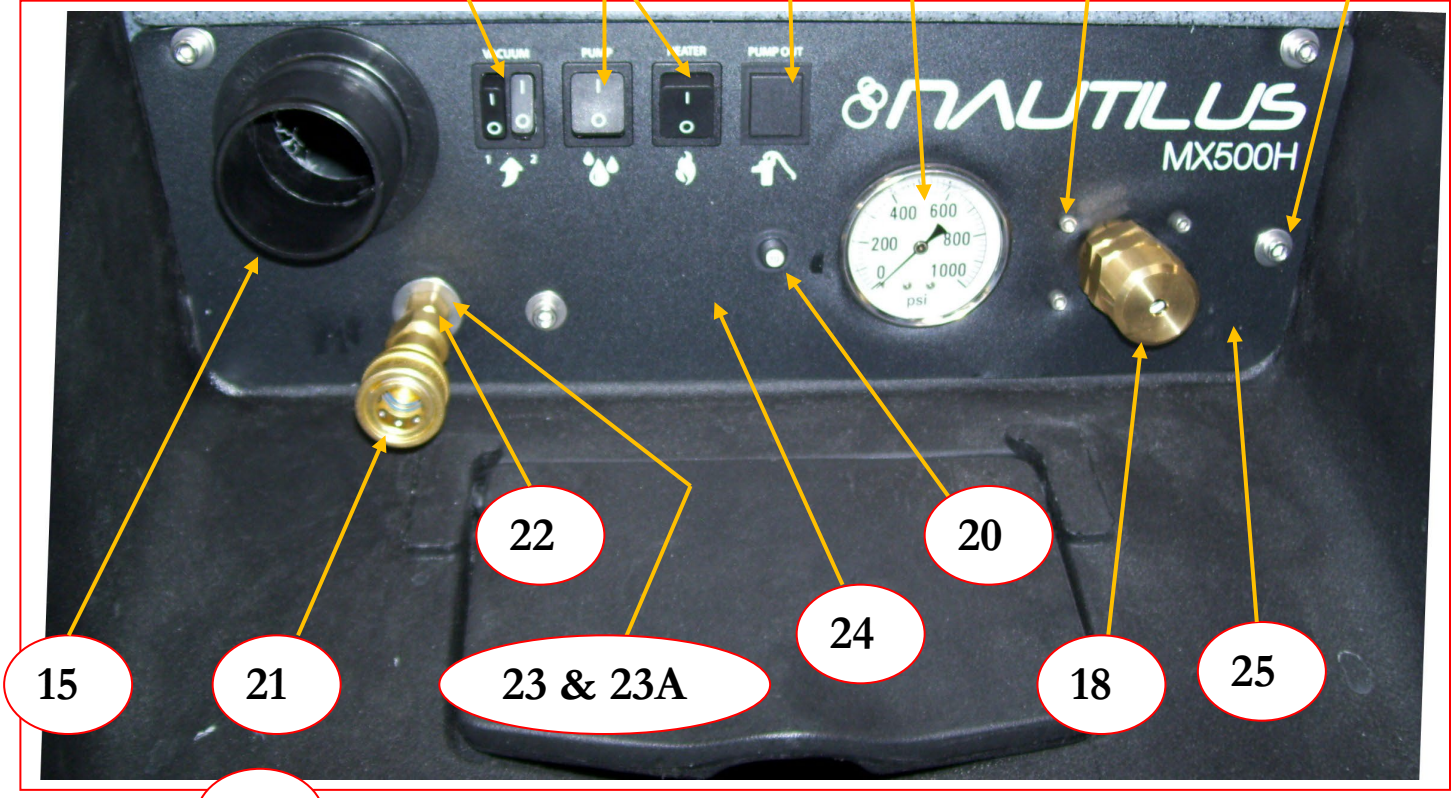
Parts

Section 3



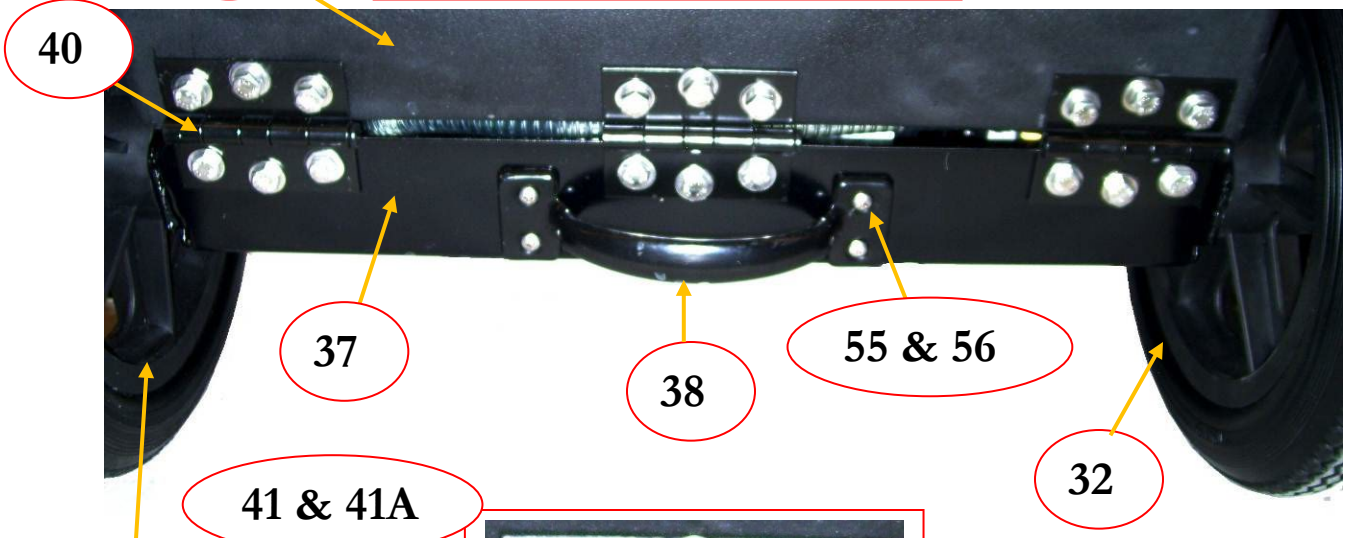


CONTROL PANEL



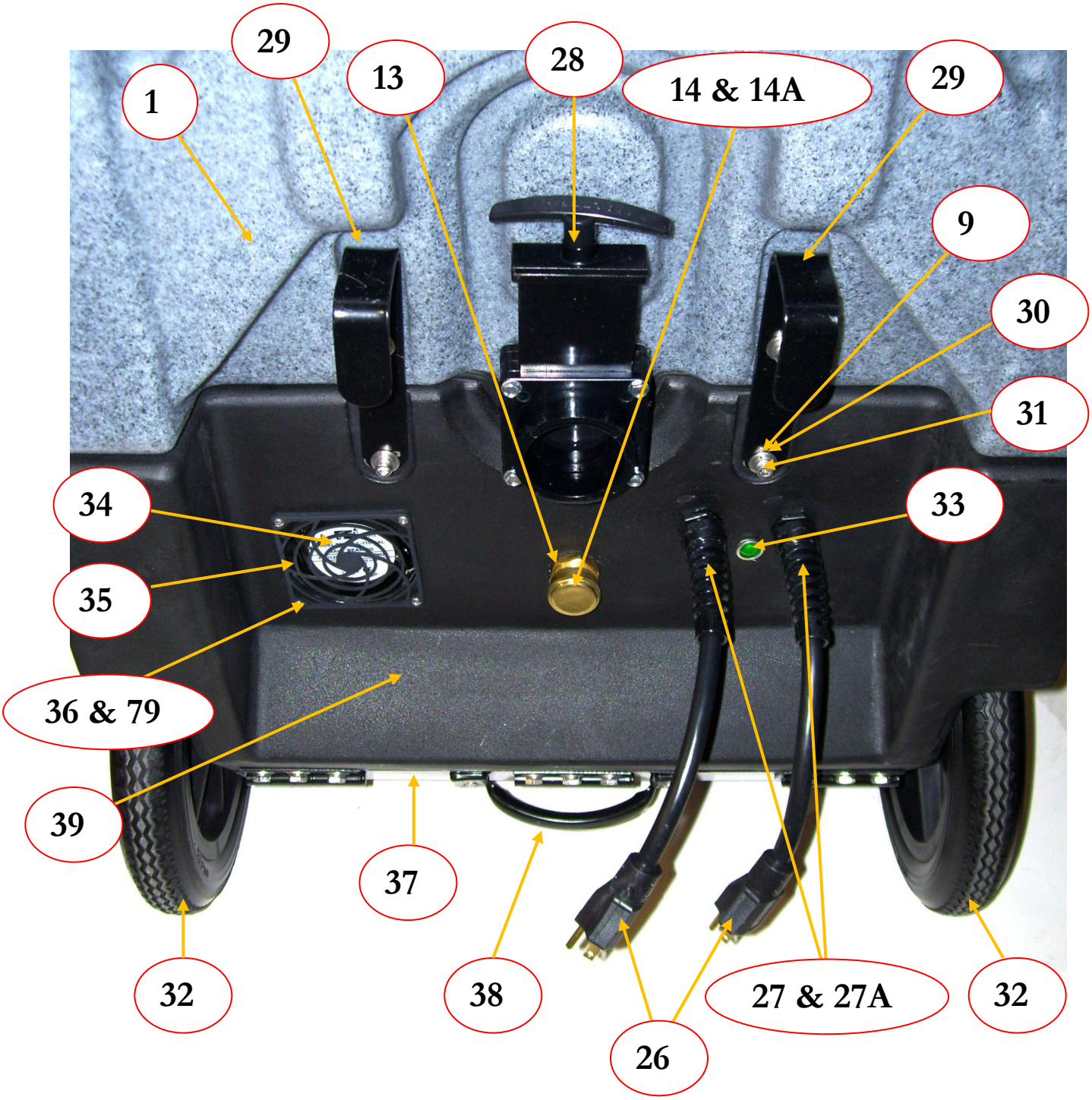
39

REAR VIEW - BASE & BASE SKIRT

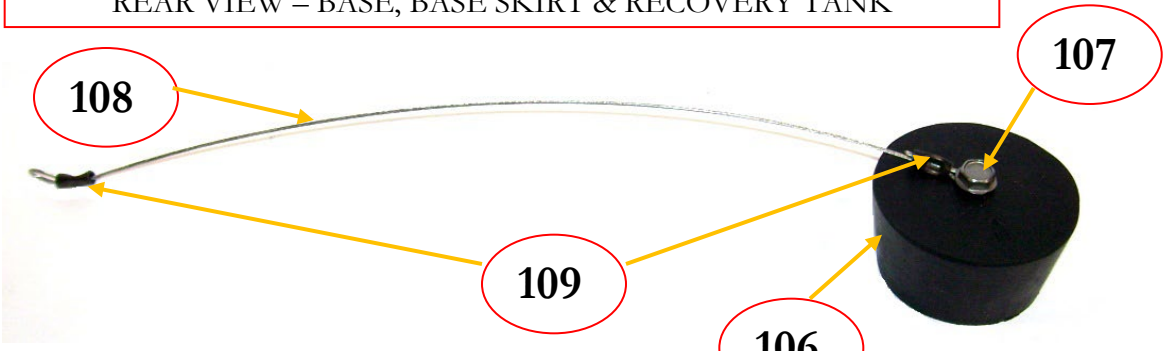


41 & 41A

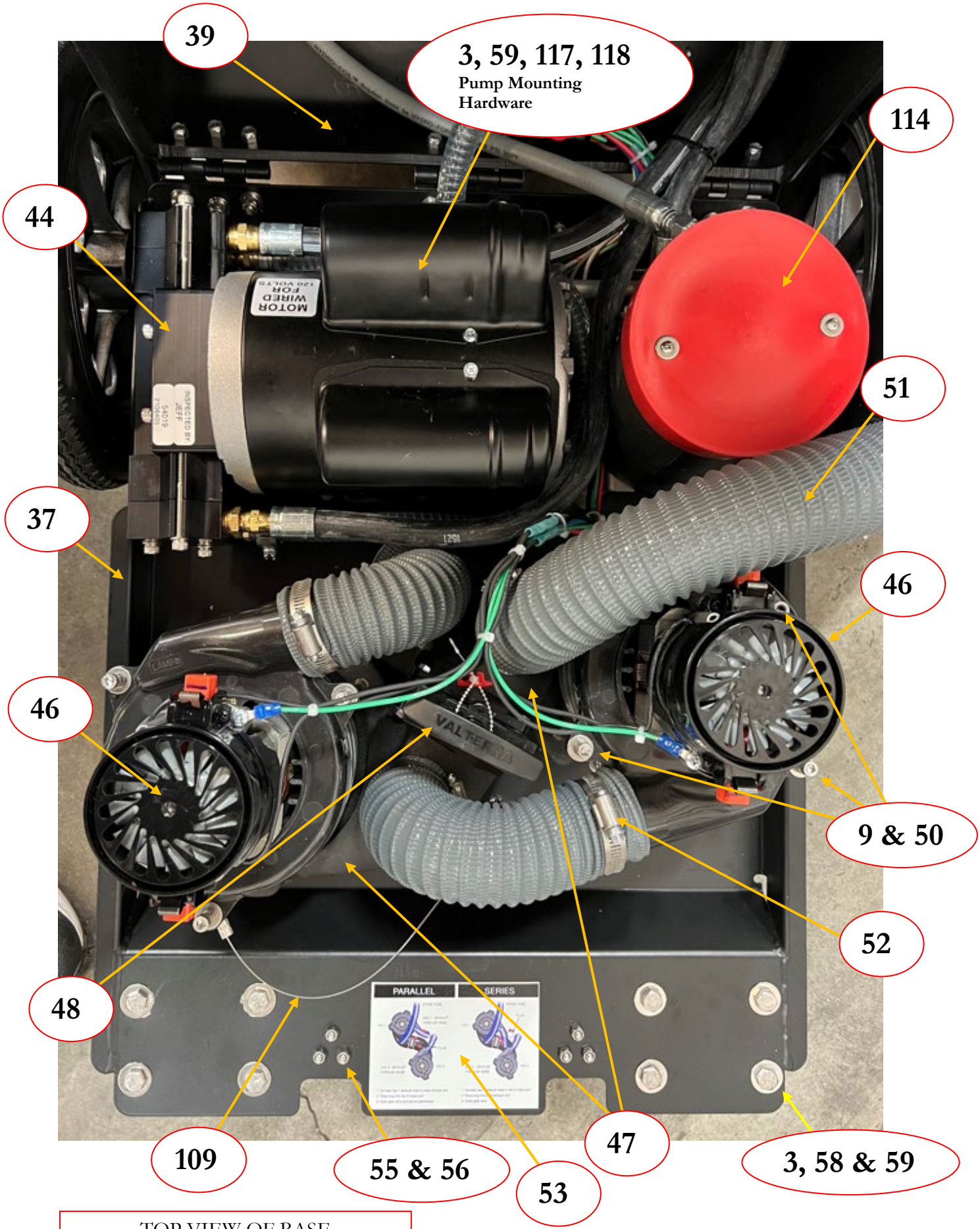
HINGE SCREWS



REAR VIEW – BASE, BASE SKIRT & RECOVERY TANK

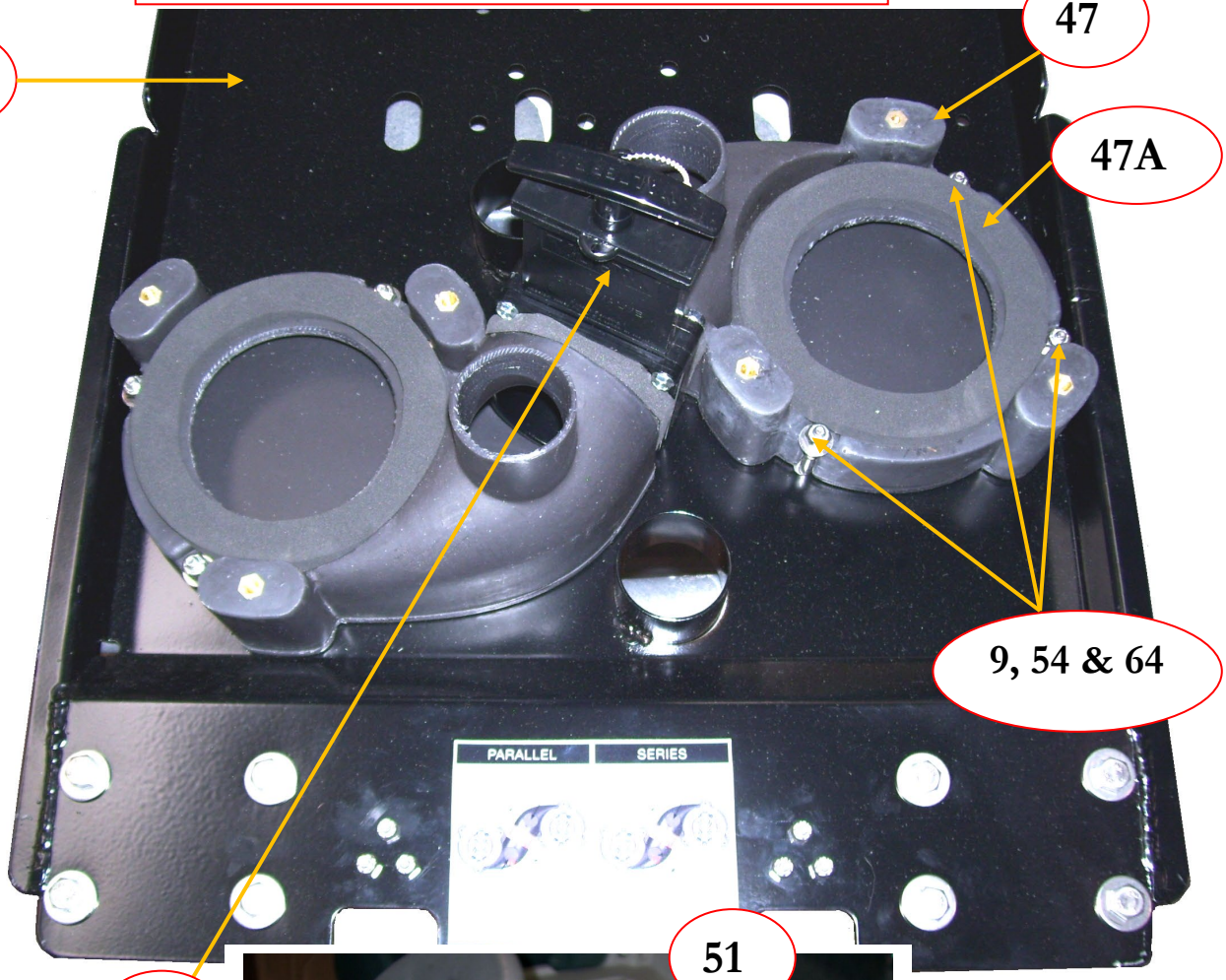


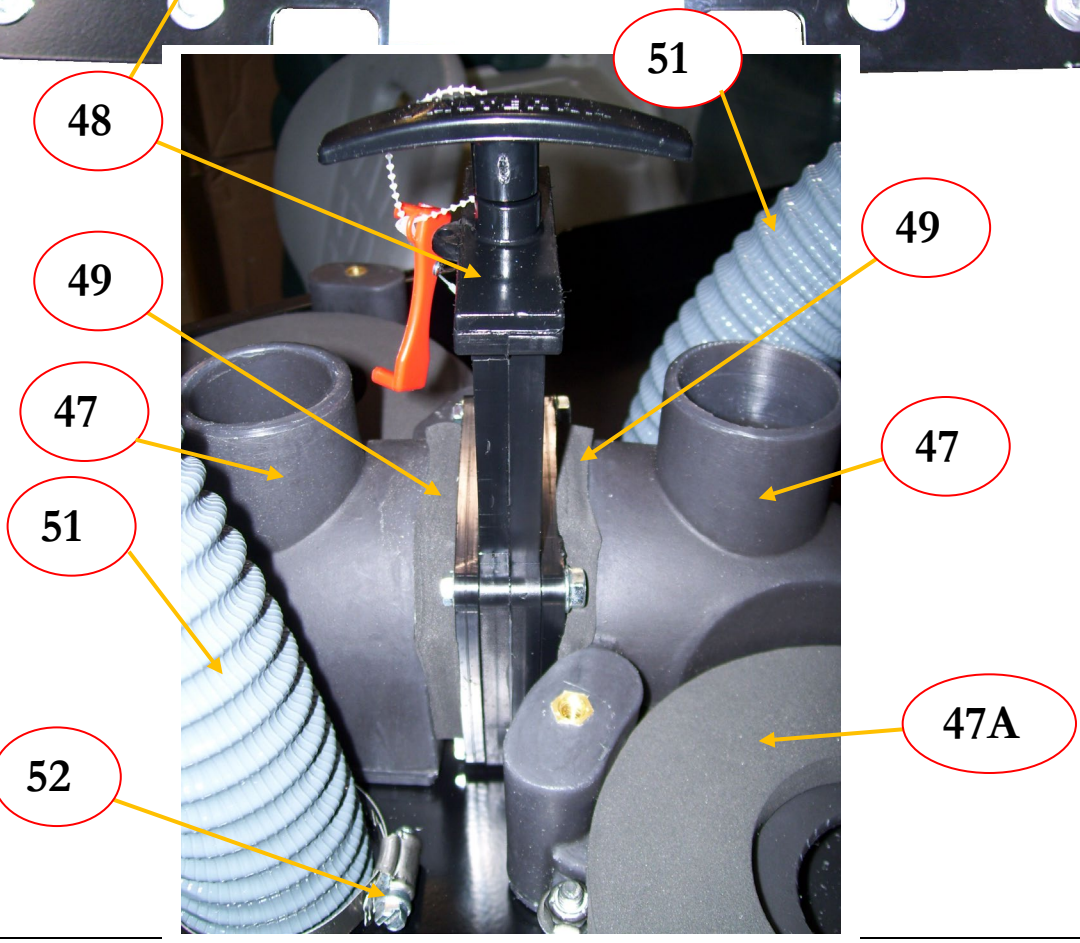
VACUUM PLUG ASSEMBLY

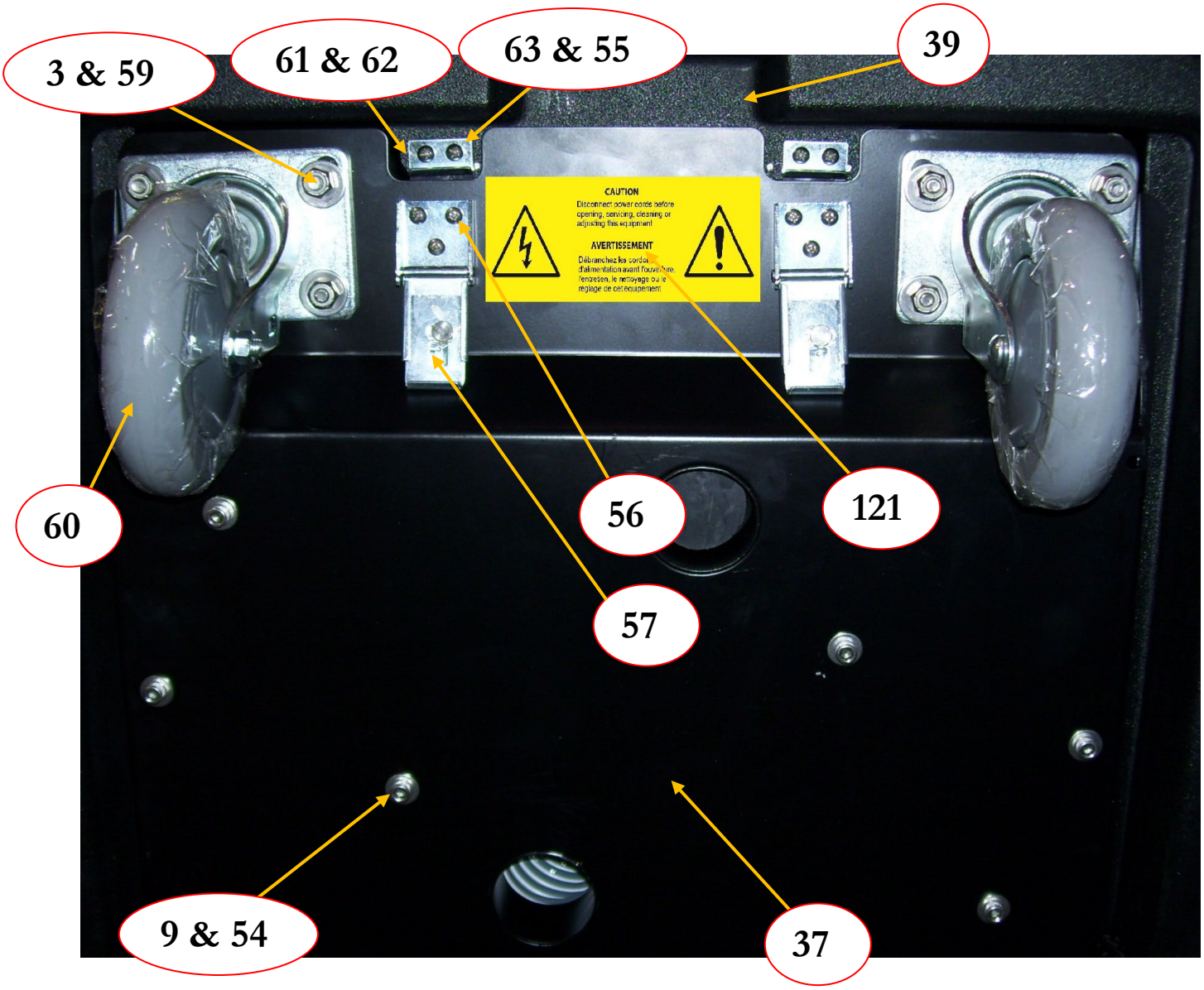


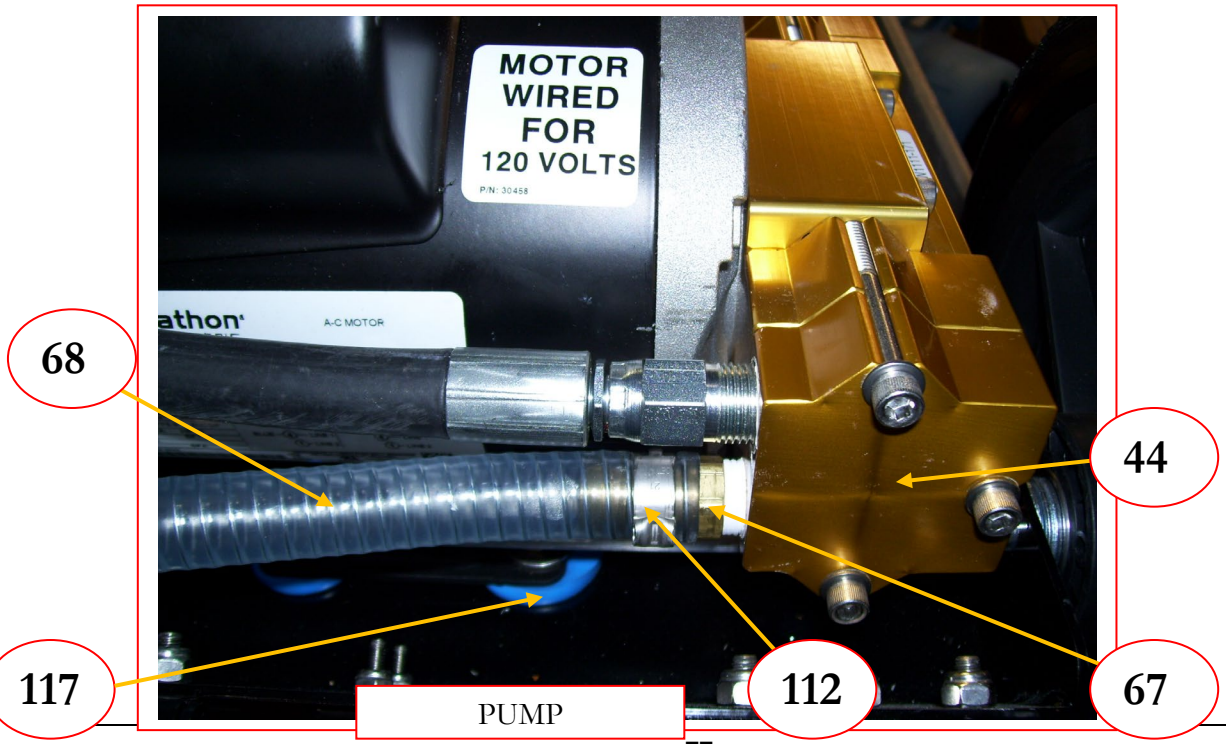
TOP VIEW OF BASE

VACUUM MOUNTS & CONNECTIONS

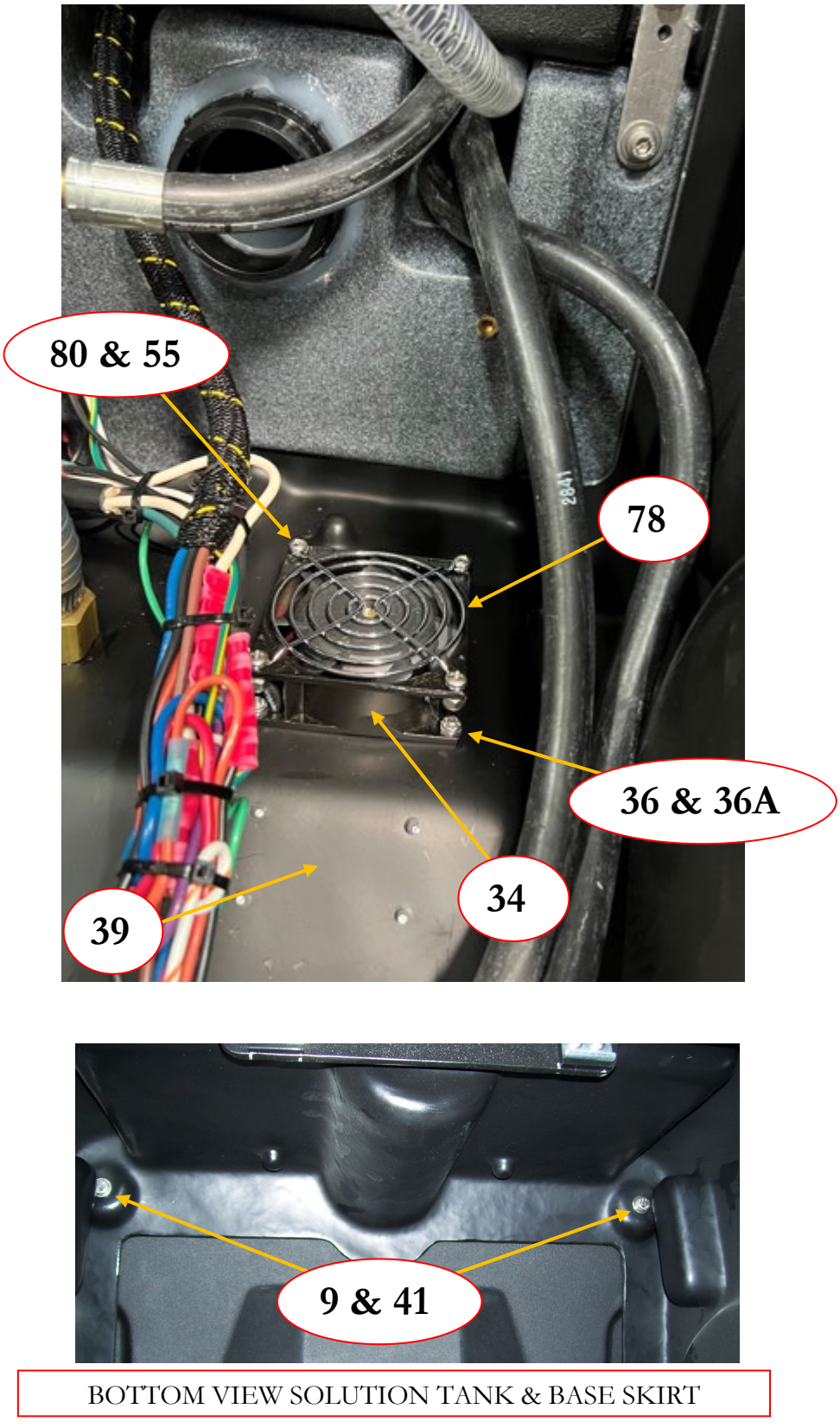




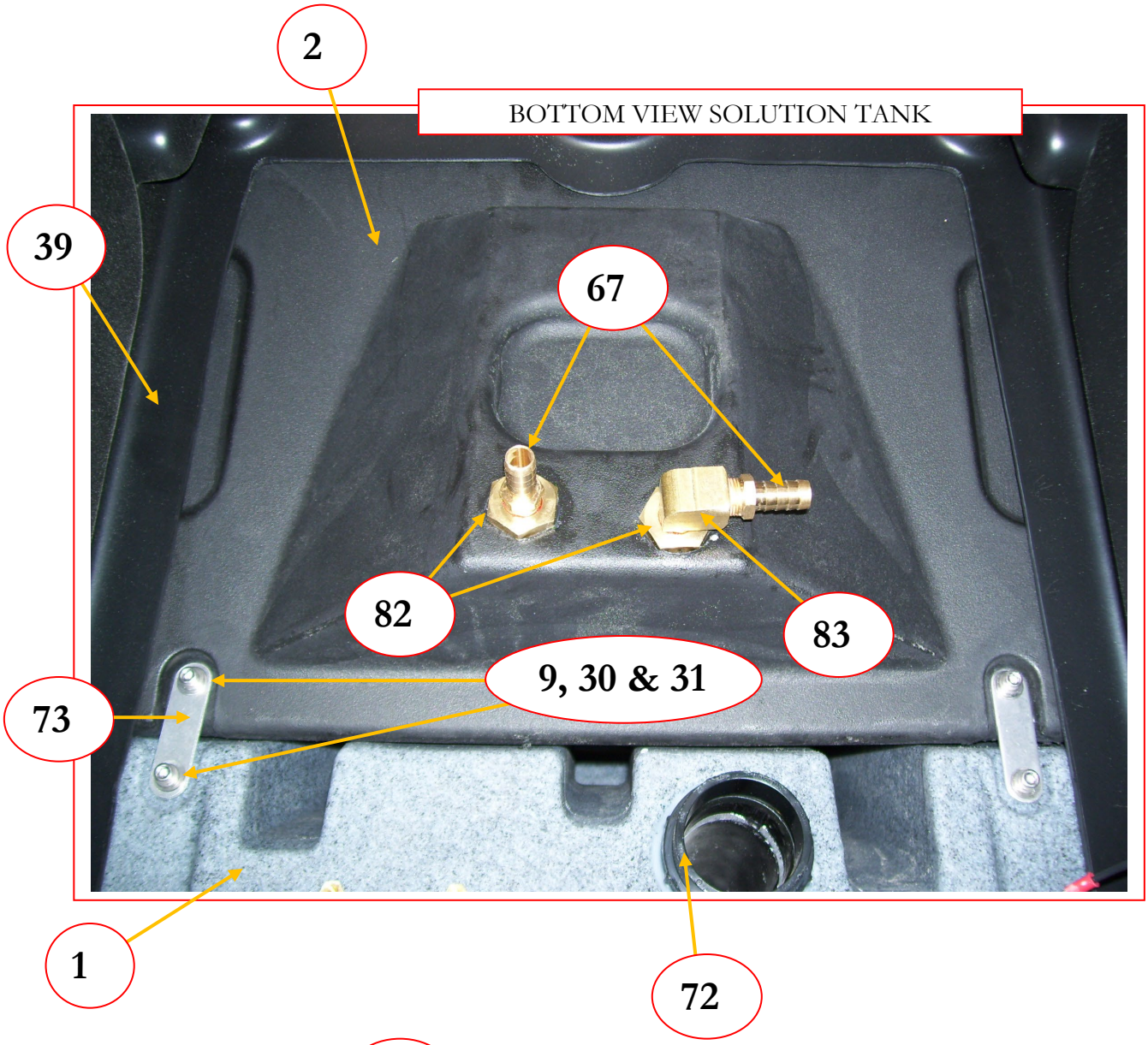

3 & 59
61 & 62
63 & 55
39
CAUTION
Disconnect power cords before opening, servicing, cleaning or adjusting this equipment
AVERTISSEMENT
60
56
121
57
9 & 54
37

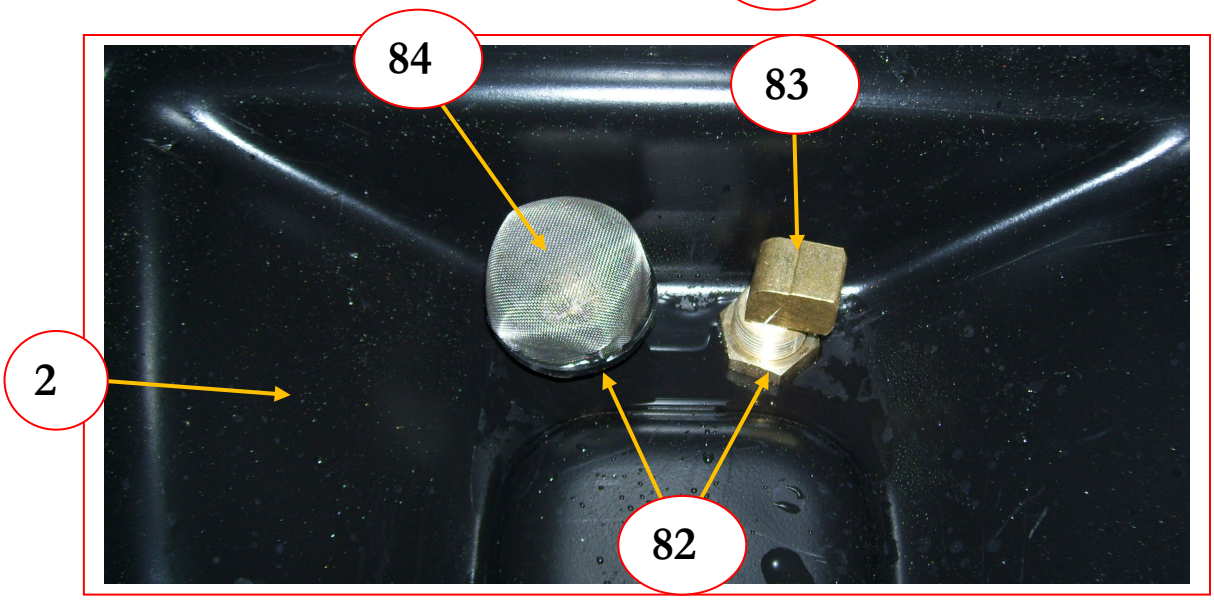

MOTOR WIRED FOR 120 VOLTS
A-C MOTOR
68
44
117
112
67

PUMP



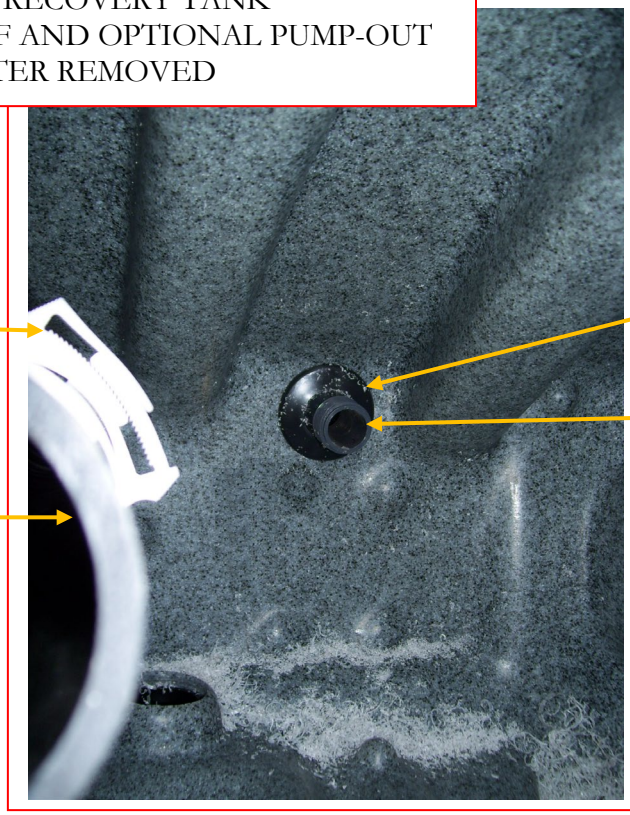
BOTTOM VIEW SOLUTION TANK & BASE SKIRT

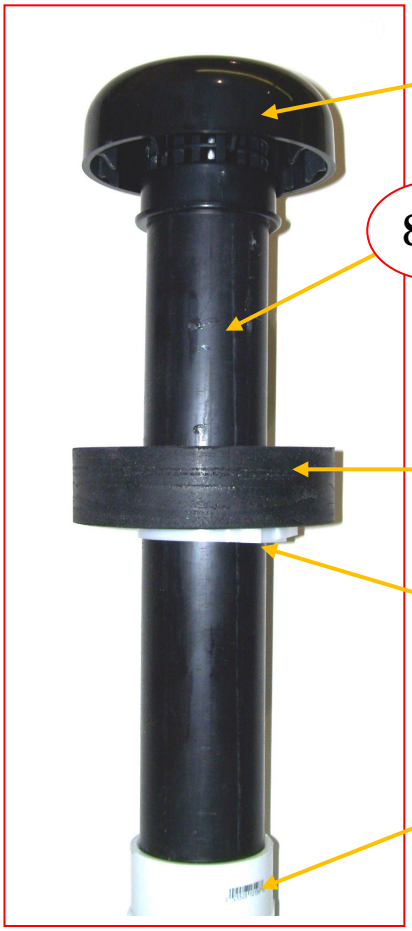




INSIDE SOLUTION TANK

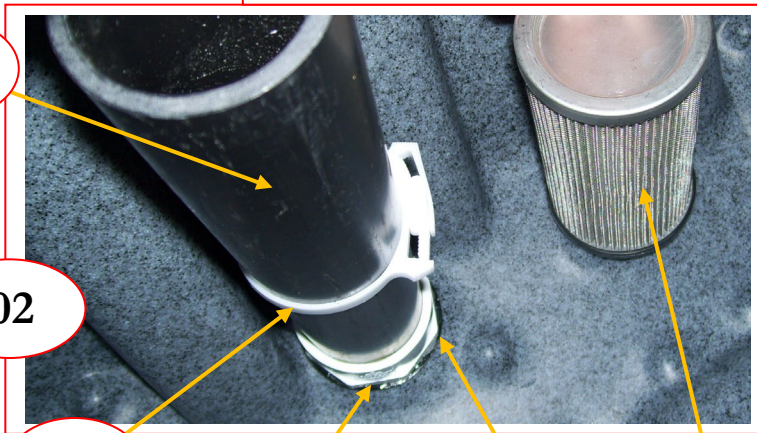
INSIDE RECOVERY TANK
VACUUM SHUTOFF AND OPTIONAL PUMP-OUT
FILTER REMOVED



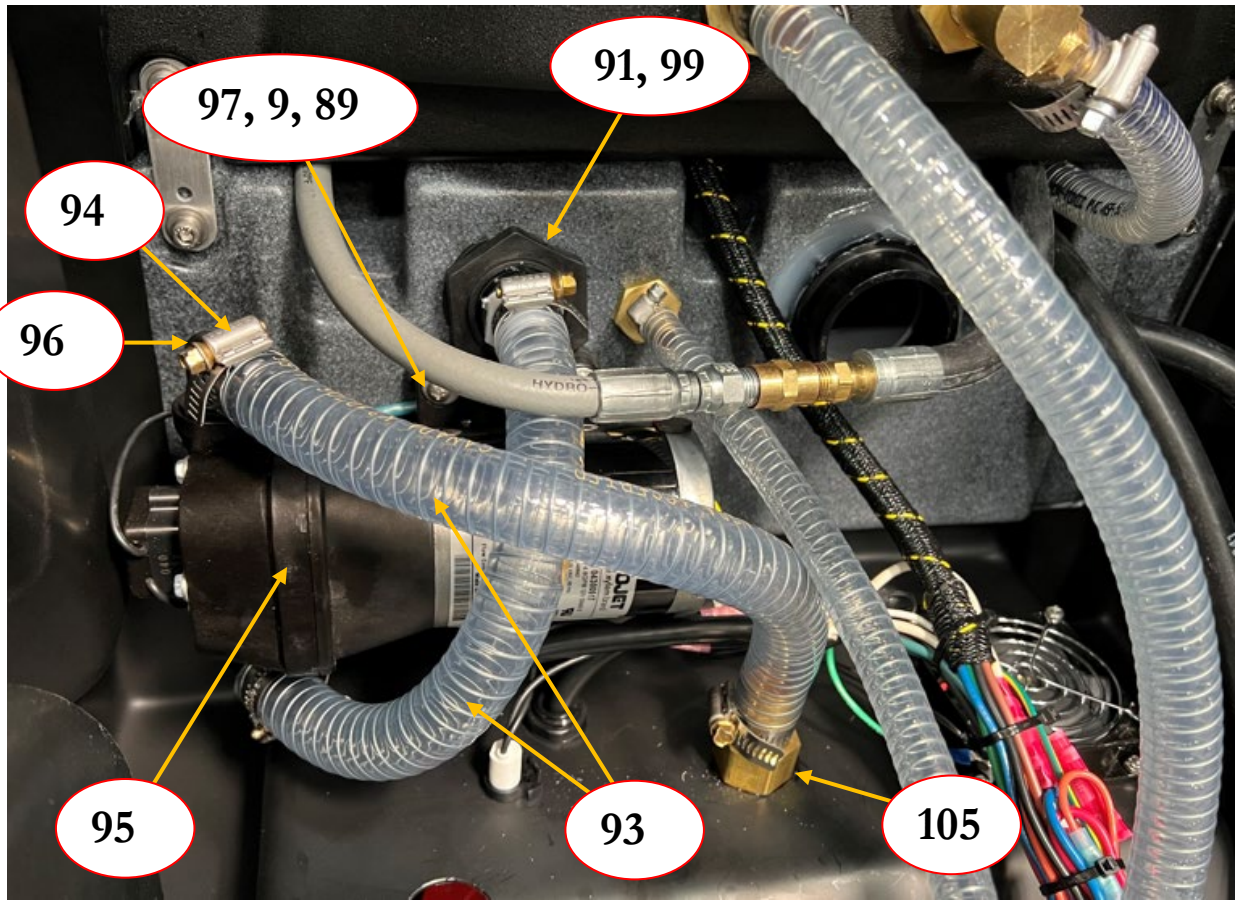


VACUUM SHUTOFF ASSEMBLY

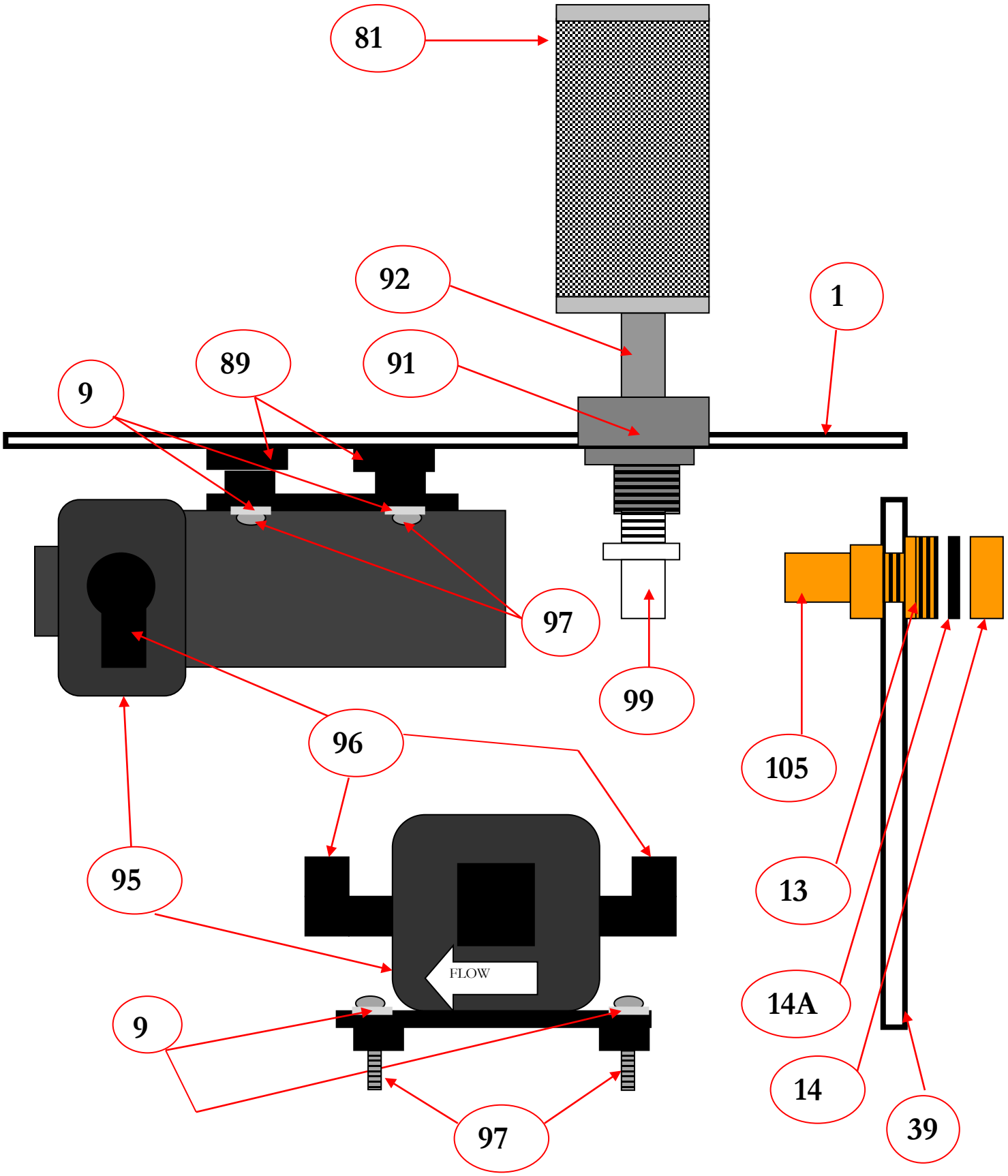
INSIDE RECOVERY TANK
WITH OPTIONAL PUMP-OUT
FILTER IN PLACE



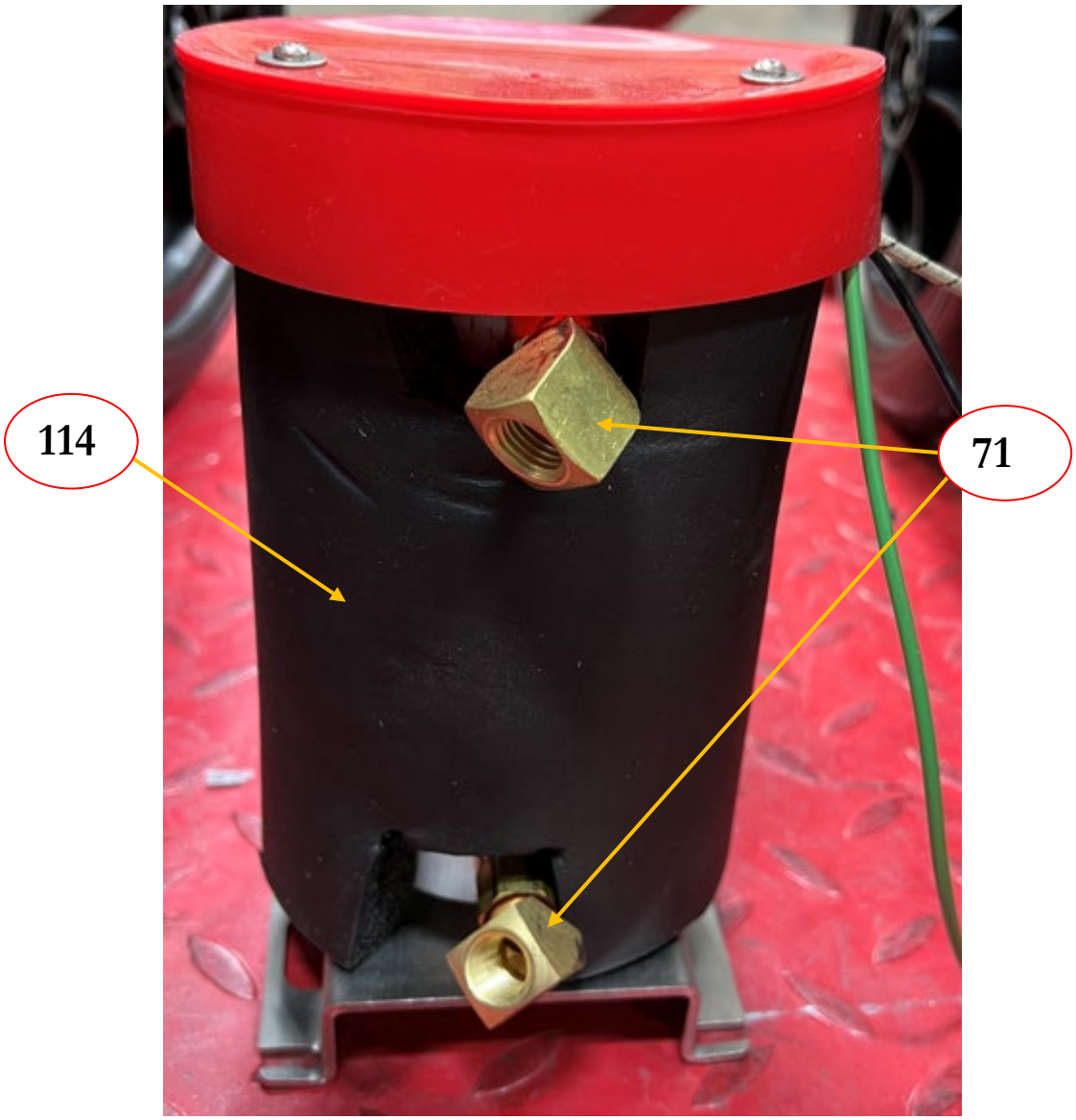
OPTIONAL - PUMP-OUT CONNECTIONS

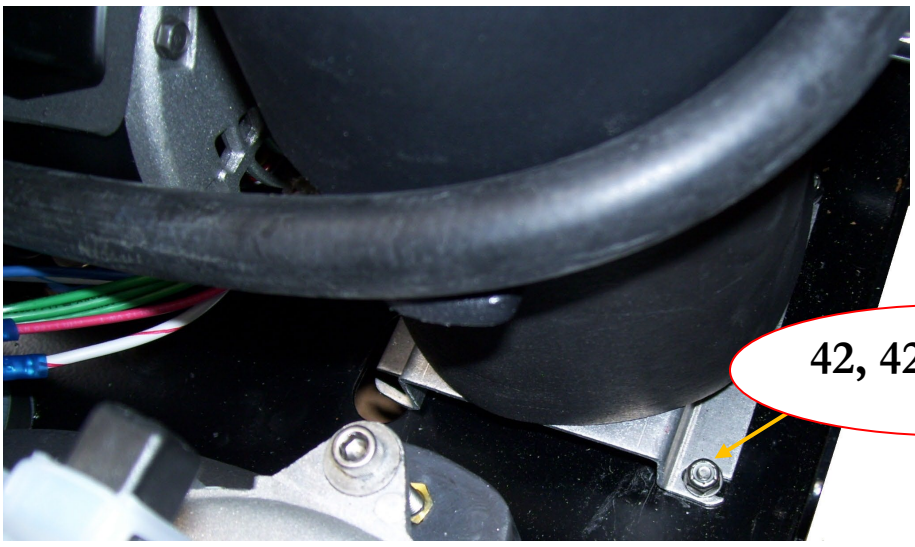


OPTIONAL PUMP-OUT PARTS

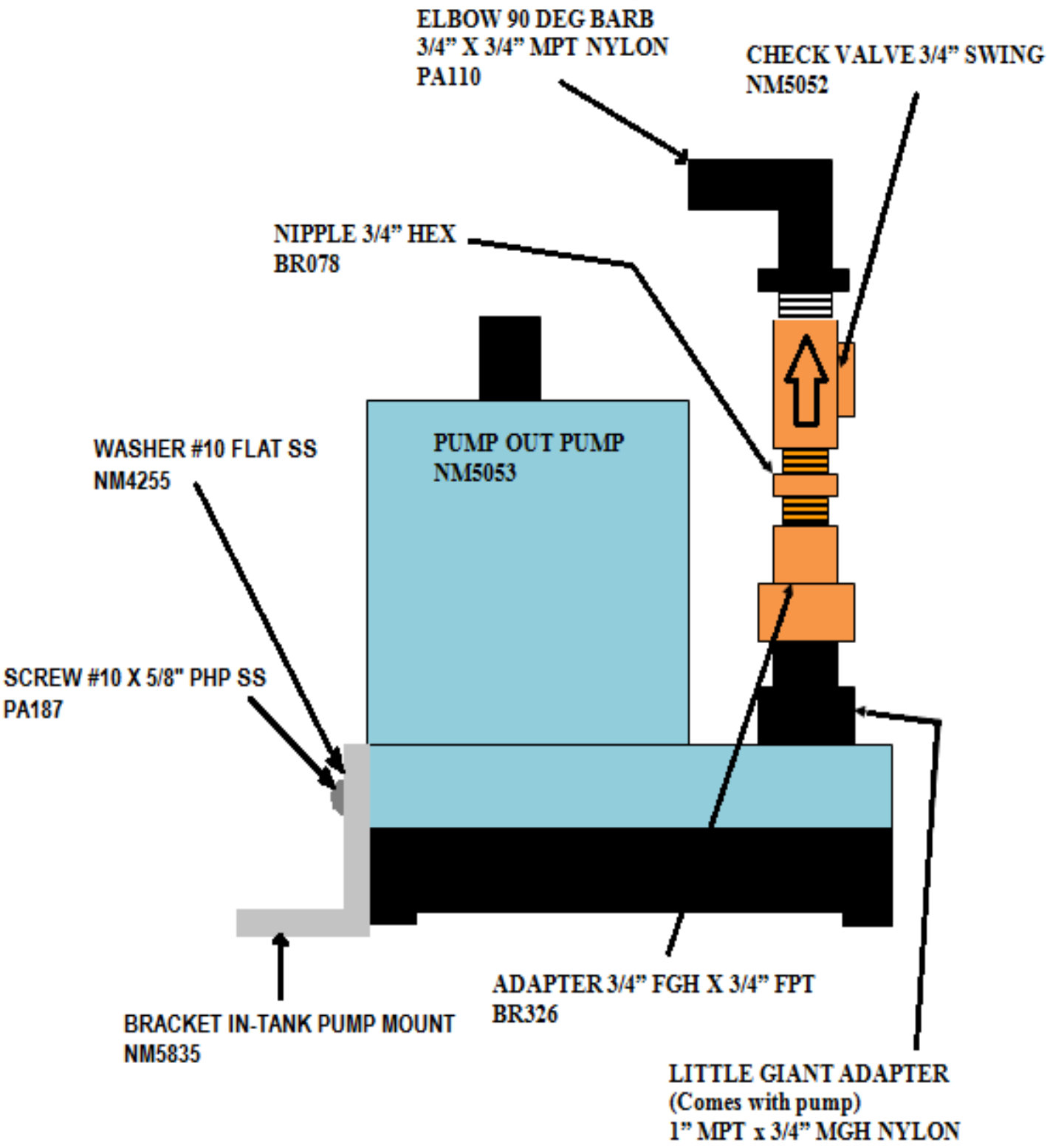


HEATER PARTS

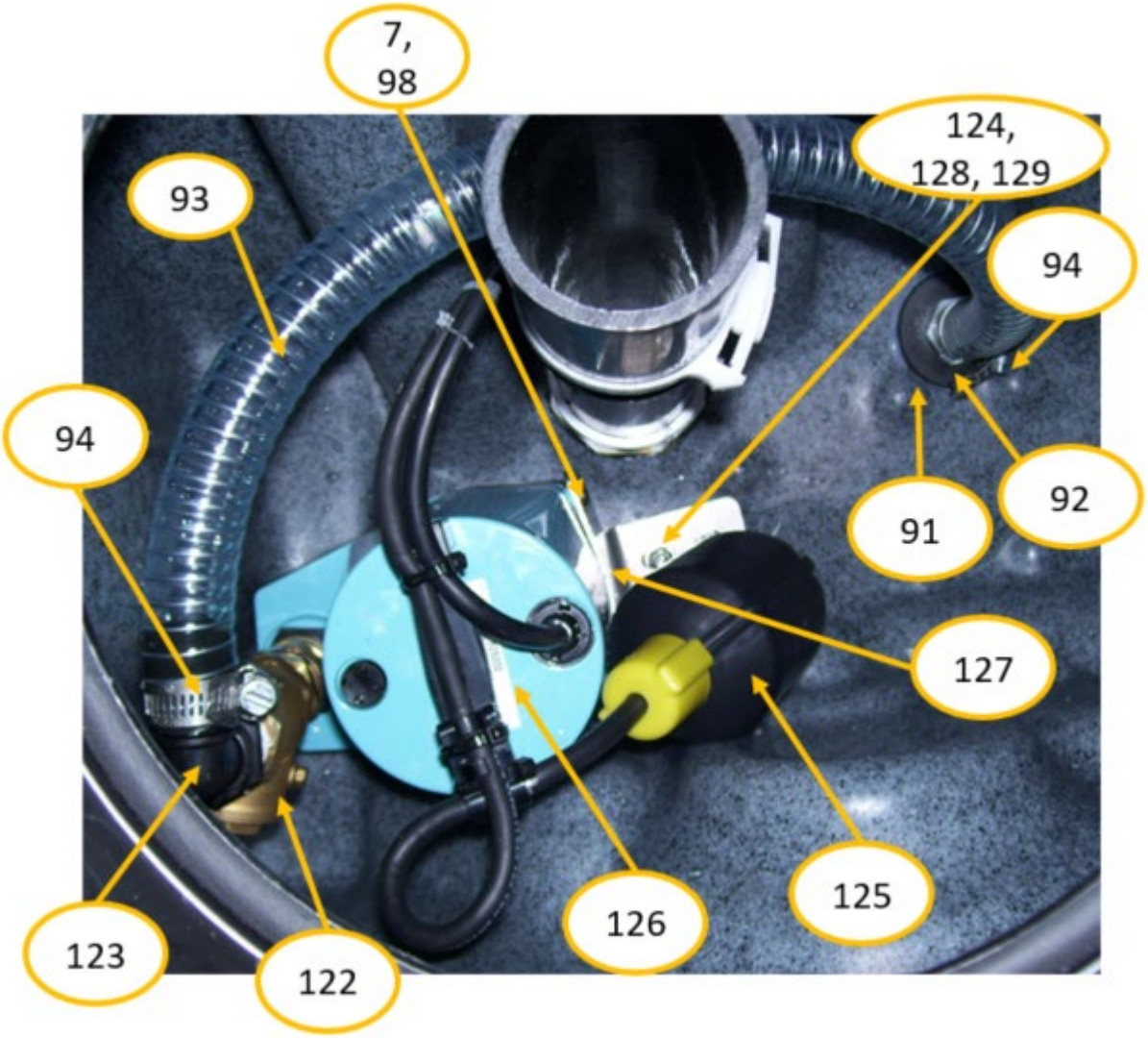




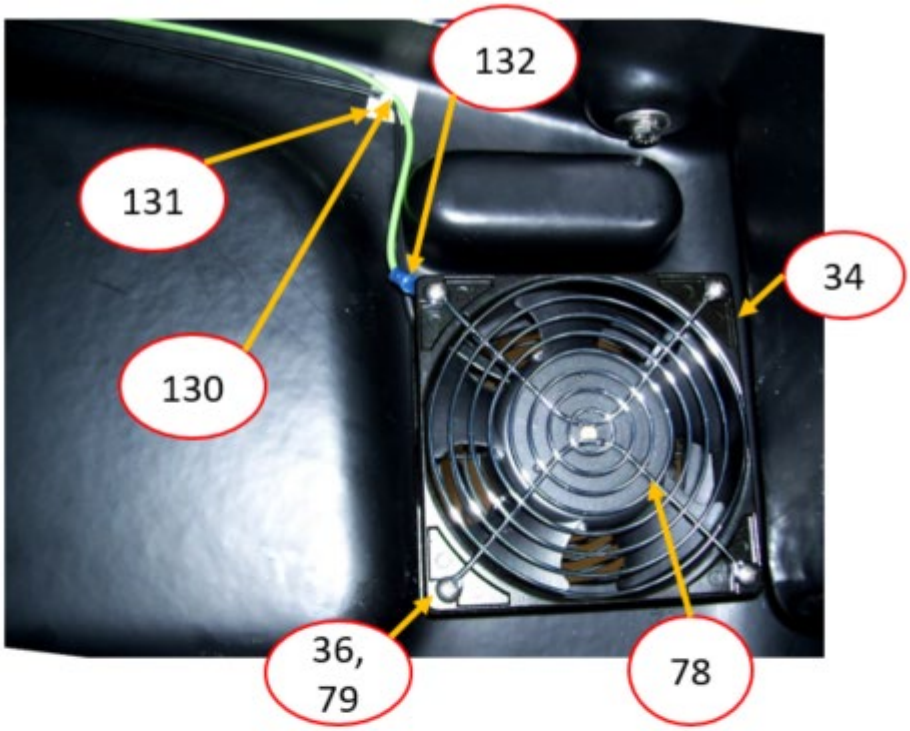
Pump-Out Pump
PARTS ASSEMBLY

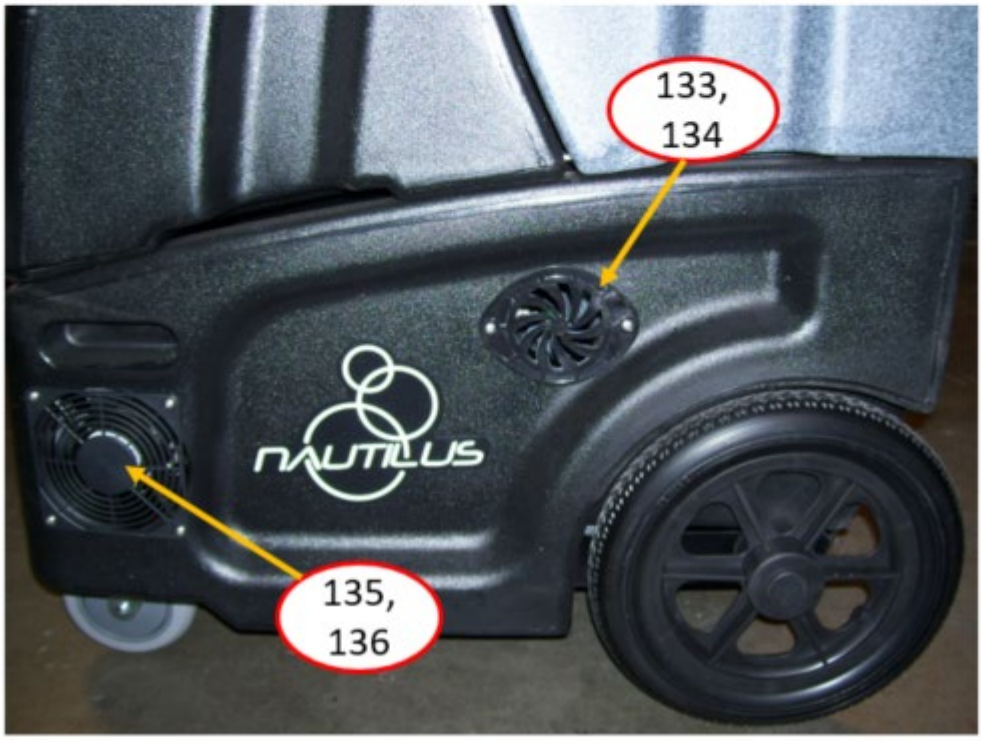


Internal Pump Out

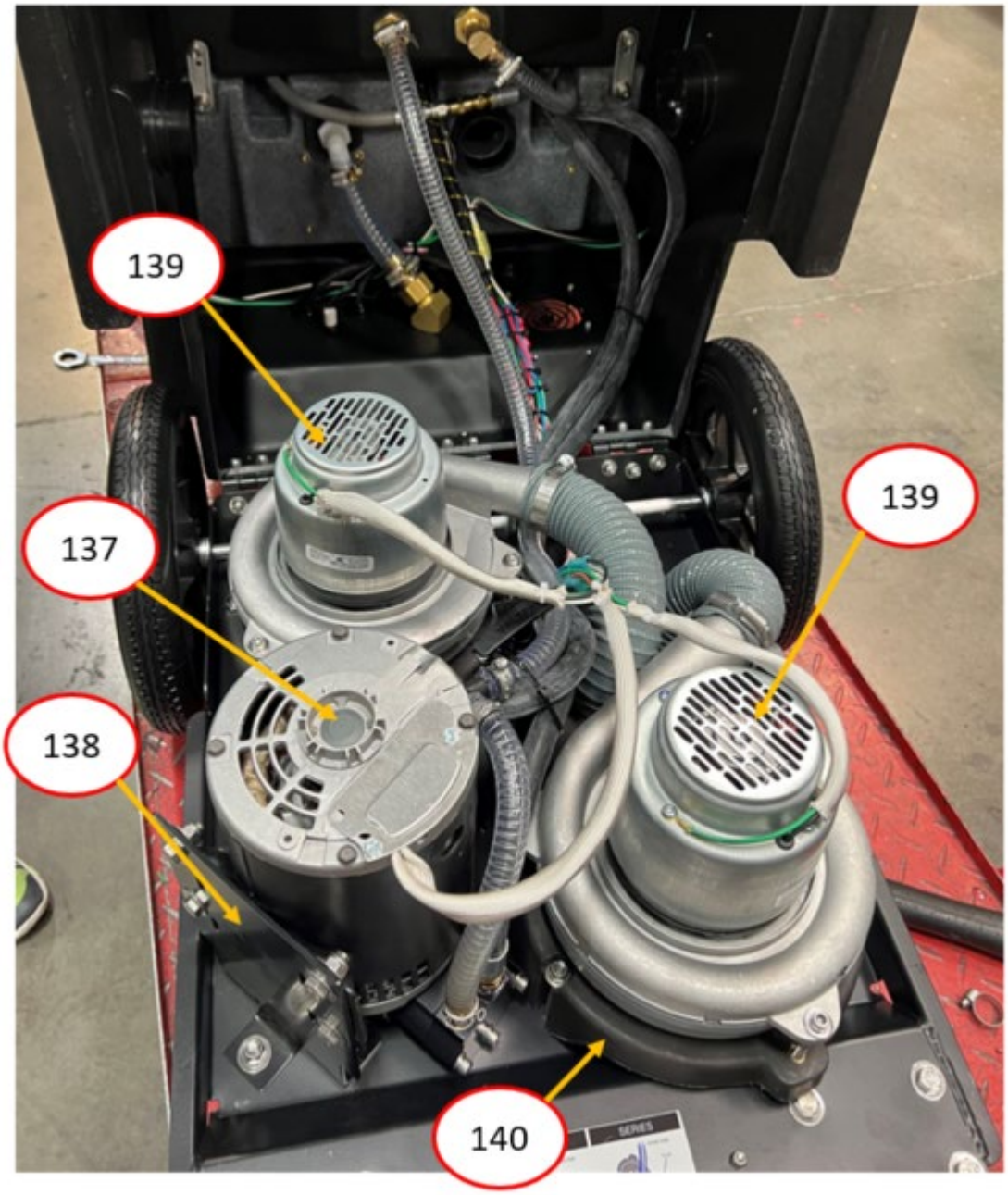


Extreme Vacuum Base Fans





Extreme Vacuum Motors and 500 PSI Pump



	PART #	DESCRIPTION		KEY	PART #	DESCRIPTION
1	1671-3568	RECOVERY TANK		19A	1603-2017	NUT 8-32 NYLOCK SS (QTY 4)
2	1671-3568	SOLUTION TANK		20	1613-1942	CIRCUIT BREAKER 10AMP
3	1605-2313	WASHER 5/16" FLAT SS		21	1613-1942	QUICK CONNECT FEMALE ¼"
4	1651-2511	WHEEL 2-1/2" GRAY		22	1641-1415	ADAPTER ¼" M-F
5	1696-2805	ACORN NUT CAP 5/16-18		23	1675-3864	WASHER ½" FLAT SS (BEHIND CONTROL PANEL)
NS	1655-3861	SCREW 5/16-18 X 2.75" HX SS		23A	1675-3865	WASHER ½" FLAT SS WITH NEOPRENE BACKING
6	2626-2081	LID ASSY WASTE TANK		24	1660-2916	CONTROL PANEL PLATE
7	A94223	SCREW #10 X 5/8" PH SS(QTY 6)		25	NM5708A	DECAL SWITCH PLATE MX200
NS	1663-5397	GASKET WASTE TANK DECK			NM5708B	DECAL SWITCH PLATE MX200H
8	1690-2708	SCREW ¼-20 X1/2" SOCHD SS			NM5708C	DECAL SWITCH PLATE MX3-200
9	1639-2831	WASHER ¼" FLAT SS			NM5708D	DECAL SWITCH PLATE MX3-200H
10	1653-2020	WAND HOLDER STRAP LONG TOP STRAP			NM5708E	DECAL SWITCH PLATE MXE-200
11	1655-2022	WAND HOLDER BUCKLE			1677-3766	DECAL SWITCH PLATE MX3-1200
12	1654-2021	WAND HOLDER STRAP SHORT BOTTOM STRAP			NM5744B	DECAL SWITCH PLATE MX3-500H
13	1657-2822	ADAPTER ¾" MPT X ¾" MGH			NM5745A	DECAL SWITCH PLATE MX500
14	1664-1805	GARDEN HOSE CAP			1601-2712	DECAL SWITCH PLATE MX500H
14A	1669-1824	GARDEN HOSE WASHER			NM5745C	DECAL SWITCH PLATE MX3-200
NS	1611-0494	BARB 2" X 2" MPT PVC			NM5745D	DECAL SWITCH PLATE MXE-500
15	1665-2810	FLASH CUFF 2" MALE - MPT		26	1662-2514	CORD 12GA W/ PLUG (QTY 2)
NS	1642-0085	FLASH CUFF 2" FEMALE 1.5"		27	1609-2025	CORD STRAIN RELIEF (QTY 2)
16	1658-2025	ROCKER SWITCH DPST (QTY 4)		27A	1697-1032	NUT CORD STRAIN RELIEF
17	1606-2630	PRESSURE GAUGE 1000PSI		28	1617-1314	GATE VALVE 1-1/2" MPT
18	1600-2533	PRESSURE REGULATOR 500PSI		29	1661-2917	CORD WRAP BRACKET (QTY 2)
19	1697-2907	SCREW 8-32 X1" SOHD SS(QTY 4)		30	1696-2603	WASHER ¼" LOCK SS

KEY	PART #	DESCRIPTION		KEY	PART #	DESCRIPTION
31	1636-2828	SCREW ¼-20 X ¾" SOCHD SS		64	1699-2404	NUT ¼-20 NYLOCK SS
32	1607-2732	WHEEL 12" with HUB CAP		65	1635-0884	NIPPLE 3/8" X ¼"
NS	1692-2609	AXLE CAP – PUSH NUT		66	1698-0094	STREET TEE 3/8"
33	1643-2027	GREEN NEON LIGHT 120V		67	1638-1408	BARB ½" X 3/8" MPT
34	1631-2732	COOLING FAN		68	1643-2421	HOSE ½" ID CLEAR COIL
35	1634-2735	PLASTIC FAN COVER		69	1642-2420	HOSE 3/8" ID CLEAR COIL
36	1699-2909	SCREW 6-32 X ¾" PPH SS(QTY 4)		70	1604-0990	BARB 3/8" X ¼" MPT
37	1670-3668	BASE PLATE ASSEMBLY Comes with Lift Handle & Hinges		71	1623-0676	ELBOW 45DEG ¼" STREET
38	1696-2817	HANDLE		NS	1653-0382	ELBOW 90DEG ¼" STREET
39	1678-3363	BASE SKIRT		72	1638-2018	ADAPTER 2" FPT X SPG
40	1673-3863	HINGE (QTY 3)		73	1616-2430	BRACKET SOL/REC TANK
41	1697-2604	SCREW ¼-20 X ¾" HXHD SS		78	1633-2734	FAN GUARD – WIRE FORMED
41A	1699-2404	NUT ¼-20 NYLOCK		79	1695-2309	NUT 6-32 NYLOCK SS
42	1609-2114	SCREW 10-24 x ½"PPH SS		80	1690-2809	SCREW 8-32 X ½" PPH SS
52	1602-2218	HOSE CLAMP 2-2.75"		81	1677-2511	FILTER SS - ¾" FPT
53	1676-3462	DECAL VAC CONNECTION		82	1645-1914	BULKHEAD FITTING 3/8"
54	1652-3868	SCREW ¼-20 X 2.00" SOCHD SS		83	1650-0074	ELBOW 90DEG 3/8" STREET
55	1603-2017	NUT 8-32 NYLOCK SS		84	1641-1201	ACORN STRAINER ¾" FPT
56	1690-2809	SCREW 8-32 X ½" PPH SS		85	1600-2735	ADAPTER 2"MPT X H PVC
57	1676-3866	LATCH - SLIDE		86	1619-4591	PIPE 2" ABS (13.5")
58	1699-2707	SCREW 5/16-18 X 3/4" HXHD SS		87	1644-2199	CLAMP NYLON 2-2.5"
59	1604-2311	NUT 5/16-18 NYLOCK SS		88	1653-3566	HOSE CLAMP W/THUMB SCREW
60	1623-1680	CASTER 5"		89	1640-3560	GROMMET 3/8"
61	1627-2534	LATCH HOOK - KEEPER		91	1696-2906	BULKHEAD FITTING ¾" PVC
62	1611-2219	SPACER – LATCH HOOK		92	1601-2736	NIPPLE ¾" X 2" PVC
63	1650-3866	SCREW 8-32 X ¾" PPH SS		93	1644-2422	HOSE ¾" ID CLEAR COIL

KEY	PART #	DESCRIPTION		KEY	PART #	DESCRIPTION
94	1609-2316	HOSE CLAMP		122	1653-2929	CHECK VALVE ¾" PVC
95	1675-1671	PUMP-OUT PUMP		123	1632-1008	ELBOW 90 DEG ¾" MPT & BARB
96	1677-2131	ELBOW 90 ¾" BARB QUAD FTTG		124	1639-2831	WASHER ¼" FLAT SS
97	1603-2118	SCREW 10-24 X 1.25" PPH SS		125	1690-2912	FLOAT SWITCH
98	1698-2403	WASHER #10 FLAT SS		126	57360	PUMP OUT, PUMP (INTERNAL)
99	1652-2930	BARB ¾" X ¾" MPT NYLON		127	1611-2132	BRACKET APO PUMP MOUNT
100	1640-2125	ROCKER SWITCH DUAL SPST		128	1658-2328	WASHER FLAT RUBBER ¼"
101	1674-2025	FILTER CAP ASSEMBLY		129	1602-2016	SCREW ¼-20 X 1.25 SHCS SS
102	1625-2734	FLOAT VACUUM SHUTOFF		130	1673-2341	WIRE TIE 4"
103	1600-2127	STRAIN RELIEF WATER TIGHT		131	2692-2346	WIRE MOUNT BASE ¾"
104	1649-2023	SWITCH PANEL PLUG		132	1607-2112	3/16" INT STAR WASHER SS FAN GROUND WIRE CONNECT
105	1657-2721	BARB ¾" X ¾" FPT		133	1686-3767	COOLING FAN 120MM
106	1681-2808	RUBBER VACUUM PLUG		134	1688-3769	PLASTIC FAN COVER 120MM
107	1690-2506	SCREW TEK #10 X 5/8" SS		135	1682-3864	OVAL VENT GRATE
108	1690-2607	CABLE		136	1609-2215	SCREW #8-32 X 3/8" SELF TAP PPH SS
109	1690-2607	SLEEVE #7 CABLE CLAMP		137	1679-3933	500PSI PUMP WITH MOTOR
110	1680-0070	NIPPLE ¼" HEX		138	1683-3067	PUMP MOUNT BRACKET
111	1689-0992	BARB ½" X ¼" MPT		139	1608-2517	VACUUM MOTOR 2-STAGE 8.4"
112	1606-2820	HOSE CLAMP		140	1677-3362	VACUUM MANIFOLD 8.4" VAC
114	2672-0274	HEATER 1750W				
115	1691-2800	WASHER ½" FLAT ZINC PL				
116	1671-2628	GASKET VACUUM RISER PIPE				
117	1695-2905	ISOLATOR – PUMP MOUNT				
118	1604-2018	SCREW 5/16-18 X 1" HXHD SS				
120	1660-3666	1/4" INTERNAL STAR WASHER SS				
121	1679-3465	DECAL CSA WARNING				

NS	1675-3966	WASHER 5/16" FLAT FENDER				
NS	1603-2120	RIVET – VAC HOSE END				
NS	1639-2019	ADAPTER 2"FPT X HSLIP ABS				
NS	1610-2218	SPACER UNLOADER MOUNT				
NS	2664-2001	UNIVERSAL WIRING HARNESS				
NS	1677-3463	DECAL POWER PRIME VALVE				
NS	1678-3464	DECAL DUAL CIRCUIT LIGHT				
NS	NM5711	DECAL NAUTILUS SIDE				
NS	1604-4176	KIT DUAL CIRCUIT WIRING				
NS	1693-2408	SCREW 1/4-20 x 5/8" SOC BH SS				
NS	1661-3667	#6 INTERNAL STAR WASHER SS CONTROL PANEL GROUND LUG				
NS	1662-3860	SERIAL NUMBER PLATE WITH FOUR RIVETS				

Replacement Hoses and Tubing

High pressure hoses can be purchased through PumpTec Inc, or your distributors can contact the HydroForce factory. Please be prepared to describe the tube length and the fittings on each end of the tubing when seeking a replacement high pressure hose.

Low pressure hoses (clear) can be obtained through your distributor. Please be ready to describe the length and ID of the hose that you need to replace.

Information that will help determine the proper replacements for hoses will be:

- The model of the portable you have.
- The length and type (high or low pressure) hose. Determined from the end of the fittings on each end of the hose.
- Pictures and clear descriptions.

Section 4

Limited Warranty

Your Nautilus 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 to be free from defects in material or workmanship for five years from the date of purchase.
All other components of the Nautilus 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, 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.