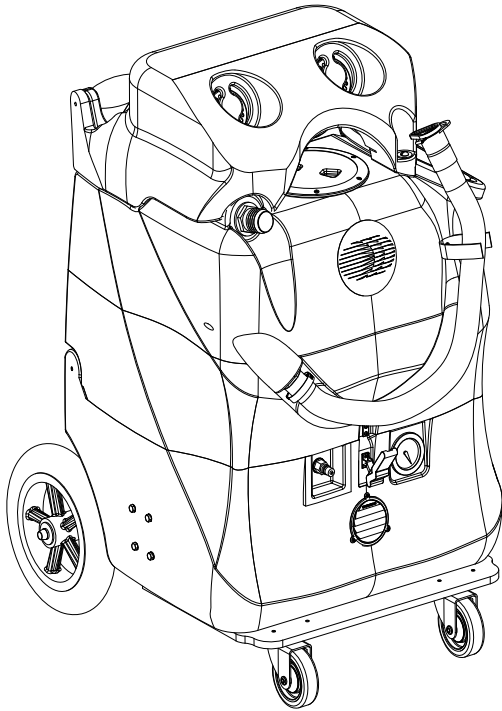




# SOLUS-310 EXTRACTOR 120V



## INFORMATION & OPERATING INSTRUCTIONS

**DO NOT OPERATE MACHINE UNTIL YOU HAVE READ  
ALL SECTIONS OF THIS INSTRUCTIONS**

**IMPROPER USE OF THE MACHINE WILL VOID THE WARRANTY**

1. Always use a defoamer when foaming occurs to prevent vacuum motor damage.
2. Keep machine from rain and snow, extremes in temperatures, and store in a heated location. Use the machine indoors. DO NOT let the machine freeze.
3. Do not let the pump run dry.
4. Use approved chemicals only. NO SOLVENTS.
5. Wear gloves or use rags when removing quick disconnects to prevent burns.
6. Never use water above 130 °F/54 °C in the solution tank.

# IMPORTANT SAFETY INSTRUCTIONS

This machine is only suitable for commercial use, for example in hotels, schools, hospitals, factories, shops and offices other than normal residential housekeeping purposes.

When using any electrical appliance, basic precautions should always be followed, including the following:

**NOTE:** Read all instructions before using this machine.

## **WARNING!**

**To reduce the risk of fire, electric shock, or injury:**

- Do not leave the machine unattended when it is plugged in. Unplug the unit from the outlet when not in use and before servicing.
- To avoid electric shock, do not expose to rain or snow. Store, and use, indoors.
- Do not allow to be used as a toy. Close attention is necessary when used near children.
- Use only as described in this manual. Use only the manufacturer's recommended attachments.
- Never add water over 130° F/54° C to the solution tank.
- Do not use with damaged cord or plug. If the machine is not working as it should, has been dropped, damaged, left outdoors or dropped into water, return it to a service center.
- Do not pull by the cord, use the cord as a handle, close a door on the cord, or pull the cord around sharp edges or corners. Do not run the machine over the cord. Keep the cord away from heated surfaces. To unplug, grasp the plug, not the cord.
- Do not handle the plug, the cord or the machine with wet hands.
- Extension cords must be 12/3 and no longer than 50 feet. Replace the cord or unplug immediately if the ground prong becomes damaged.
- Do not put any object into openings. Do not use with any opening blocked; keep free of dust, lint, hair, and anything that may reduce air flow.
- Keep loose clothing, hair, fingers, and all parts of body away from openings and moving parts.
- Do not pick up anything that is burning or smoking, such as cigarettes, matches, or hot ashes, or any health endangering dusts. Do not use to pick up flammable or combustible liquids such as gasoline or use in areas where they may be present.
- Turn off all controls before unplugging.
- Use extra care when cleaning on stairs.
- Connect to a properly grounded outlet only.
- Liquid ejected at the spray nozzle could be dangerous as a result of its temperature, pressure, or chemical content.

## **INSPECTION:**

Carefully unpack and inspect your SOLUS-310R for shipping damage. Each machine is tested and inspected before shipping. Any shipping damage incurred is the responsibility of the carrier. You should notify the carrier immediately if you notice damage to the box or to the machine or parts.

## **CLEANING SOLUTIONS:**

We recommend liquid cleaning chemicals, such as our Magic Fabric Cleaner. Powder chemicals may be used, but unless mixed very thoroughly they could cause a build-up in the pump, lines, heat exchanger and/or quick disconnects. Any problem caused by a chemical build-up is not covered by warranty. Use a neutral cleaner with a pH between 6 and 9 to avoid premature wear of the pump, seals, and/or other components. Damage caused by the use of strong chemicals is not covered by the warranty.

## **MAINTENANCE:**

For optimum performance flush the machine with clear water at the end of each working day. Once a month, minimum, run a flushing compound through the machine to break up any mineral or chemical build-up that may have formed. U.S. Products' "X-1500" is recommended. The vacuum motor, pump motor, and the pump do not require any scheduled maintenance; however, the motors may require replacement brushes after 1000 - 1500 hours, and the pump and bypass valve may require rebuild kits after 1000 - 1500 hours, typically (refer to machine part list for numbers). Clean the body with an all-purpose detergent, and protect it with an automobile interior polish. Lubricate the wheels, castors, and quick disconnects with an all purpose silicone spray.

## **PARTS AND SERVICE:**

Repairs, when required, should be performed by your authorized distributor who maintains an inventory of original replacement parts and accessories. Call the distributor from whom you purchased this machine if you need parts and service. Be sure to specify the machine model. Have your serial number handy.

**Serial Number:** \_\_\_\_\_

**Model:** SOLUS-310

**Purchase Date:** \_\_\_\_\_

**Write the name and phone number of your distributor:**

\_\_\_\_\_  
\_\_\_\_\_

*(and be sure to register your warranty: go on-line to [www.usproducts.com](http://www.usproducts.com))*

## KNOW YOUR MACHINE

**VACUUM LID** - This lid provides access into your recovery tank so that you can clean the tank. The lid must be closed before you try to clean..

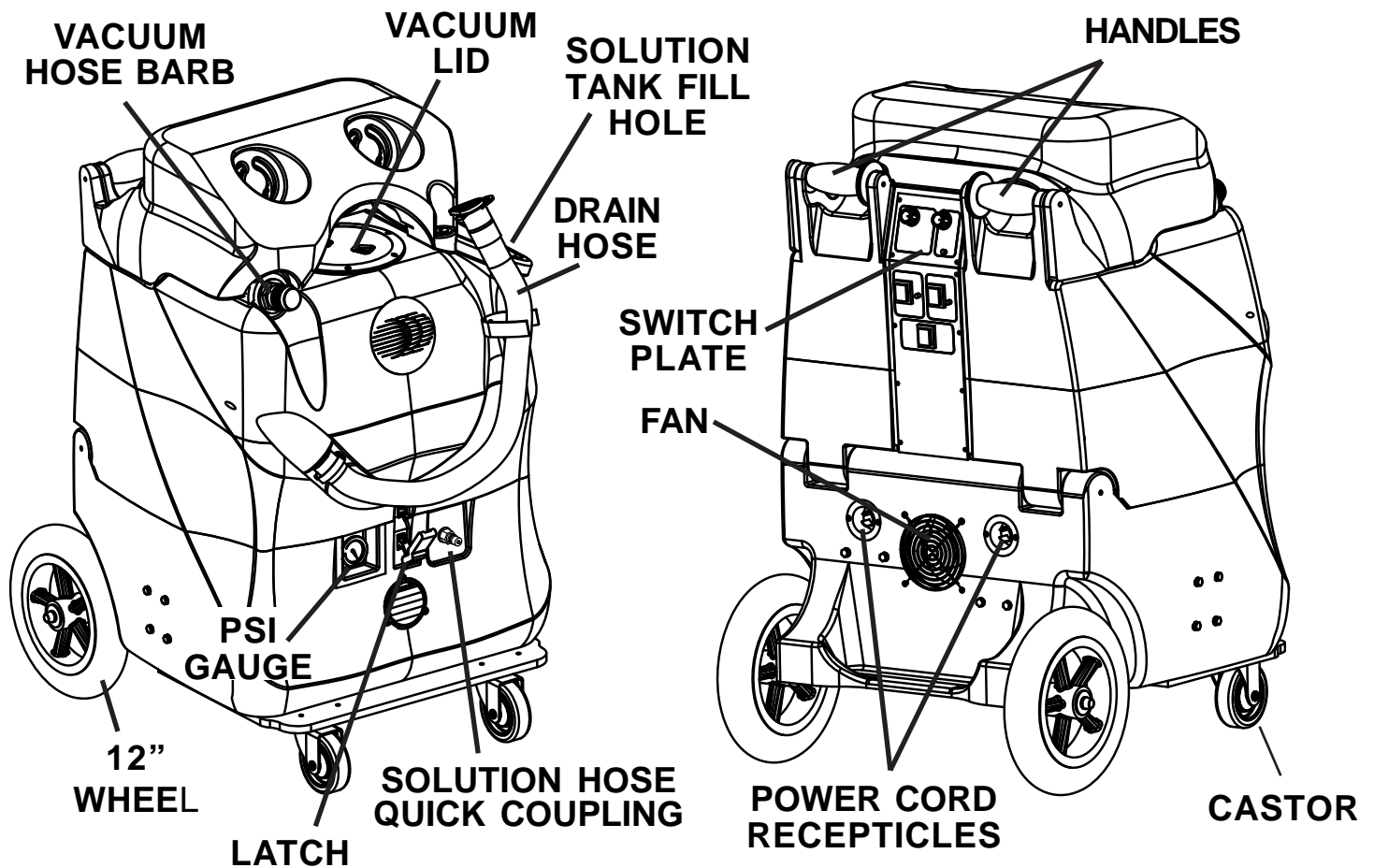
**SOLUTION TANK FILL HOLE** - This is where you fill the tank with water and cleaning solution.

**VACUUM HOSE BARB** - This is where you connect your vacuum hose to the machine. A tight connection is necessary to prevent a vacuum leak which would reduce the amount of suction.

**DRAIN HOSE** - This is how you empty the dirty water from your recovery tank. Place the hose over a drain, and open the cap. When cleaning out the tank at the end of a job, simply place this hose into a drain and use clean water to rinse out the dirt and debris from the tank. **NOTE:** be sure to close the cap tightly before using the machine again.

**HANDLES** - The handles are used to move the machine. These handles allow you to tilt the machine back onto it's 12" wheels for easy maneuvering, and/or for moving on stairways.

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**SWITCH PLATE** - The switches are located on the rear of the machine, out of the way of water

**FAN** - Removes warm air from the component compartment.

**PSI GAUGE** - indicates the pump pressure. Look at the pressure while you spray.

**LATCH** - The latch holds together the tank and the base compartment.

**SOLUTION HOSE QUICK COUPLING**- This is where you connect the solution line that runs from the machine to the carpet wand or hand tool.

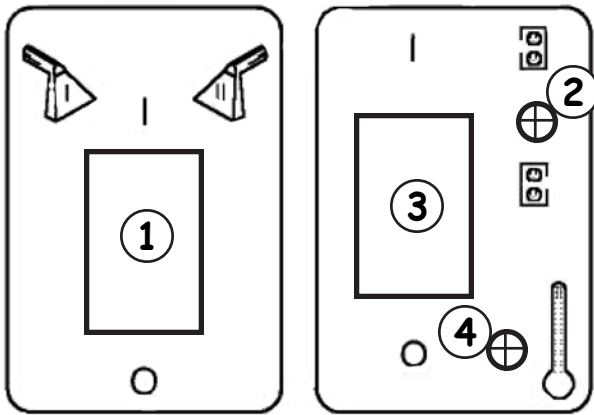
**POWER CORD RECEPTICLES** - The receptacles are where the two power cords connect to the machine.

**CASTOR** - Swivel castor provides easy maneuverability.

**WHEEL** - The rear wheels are 12 inches in diameter to provide superior ease of transportation and stair climbing.

# SWITCH PLATE

U.S. PRODUCTS



## VACUUM SWITCH (1):

This switch will illuminate when the vacuum motors are on. The vacuum motors run off of cord #1

## CIRCUIT LOCATOR (2):

When this light is on, it indicates that cord #2 (Identified by the red "H" on the back of the extractor.) is on a separate line from cord #1. Cord #2 supplies voltage to the heater allowing it to heat to the temperature range indicated by the Heat Control dial (5) on the switch plate.

## BYPASS SWITCH (3):

The bypass switch will illuminate when it is activated and will completely bypass the circuit locator system. Use the system only when the circuit locator light will not turn on and you know each cord is on a separate circuit.

## HEAT MODE LIGHT (4):

This light will only illuminate when the heater is heating and will turn off when it reaches operating temperature. During normal operation, the "MODE" light will be on most of the time.

## CARPET UPHOLSTERY SWITCH (5):

This rocker switch activates a solenoid valve - when it is turned to Upholstery - that allows most of the pump pressure to recirculate back to the Holding tank. This allows you to clean delicate material at low psi (about 75 psi). When the switch is set to Carpet, the pump operates without the solenoid and provides about 300 psi to the cleaning tool. The pump runs off of cord #1. The pump spraying pressure will be observable at the pressure gauge. This switch does not light up.

## PUMP ON/OFF SWITCH (6):

This switch turns the pump on and off. It will light up when it is turned on.

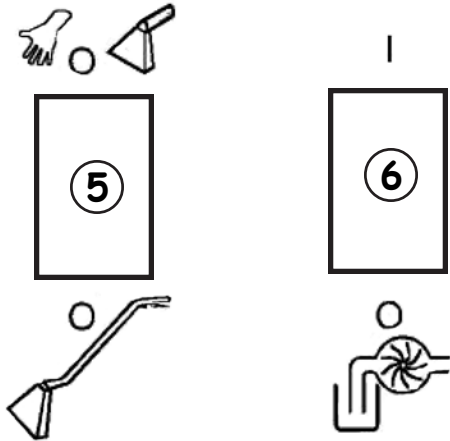


FIGURE #1

**CAUTION:** WHEN THE BYPASS SWITCH IS ON, THE CIRCUIT BREAKER CAN TRIP IF BOTH CORDS ARE ON THE SAME CIRCUIT AND THE BYPASS SWITCH IS TURNED ON.

**NEVER LET YOUR MACHINE OR YOUR WAND FREEZE**

## SET-UP:

1. Fill the holding tank with clear water and prespray with the detergent of your choice (we recommend a CRI approved chemical). Mix well. Although this machine is designed to supply instant hot water, the addition of warm water to the holding tank would increase heater efficiency. Never use water above 130° F/54° C in the solution tank.
2. Turn off all the switches. Plug in cord #1. (This cord runs the pump and vacuum).
3. Attach the priming hose to the machine and place the open end into the tank (see Figure 2 on previous page).
4. Turn on the pump (turn pump pressure dial all the way clockwise) and let it run until the pump is fully primed (approximately 30 seconds to 1 minute). Once the pump is primed, turn off the pump and disconnect the priming hose. Attach the cleaning hose and tool.

### IF YOU WANT HEATED SOLUTION:

5. Plug in the the heater cord (identified by "H" on the back of the machine). **NOTE:** If the green circuit indicator light does not illuminate when the heater cord is plugged in, then both cords are on the same circuit. Try other outlets until the light comes on. See Bypass Switch section (below) if you are unable to get a green light.
6. Turn on the pump and spray through your tool a few times to fill the lines with solution. Begin cleaning.
7. Refill and empty the tanks as necessary.
8. When finished with the job, vacuum all unused solution into the recovery tank, and dump the tank. Clean the tanks and filters. Clean the tool and hoses. Store the machine in a heated location.

### **ELECTRIC CIRCUIT LOCATOR:**

This unique, patented "smart system," operated by a solid state circuit, will inform the operator when the two cords are plugged into separate lines by illuminating the green, indicator light. This helps prevent tripping circuit breakers.

### **BYPASS SWITCH:**

The bypass switch (#6) completely bypasses the circuit locator system. Use this feature when you cannot get the green Locator light (#5) to come on and you believe that the two cords are on separate circuits.

**CAUTION: If the bypass switch is on when the two cords are plugged into the same circuit, the breaker may trip.**

### **AUTO VACUUM SHUTOFF:**

When the recovery tank is full, the float system will shut off the vacuum motor to prevent the machine from overflowing. The float may not work in foam. Always use a defoamer to prevent overflow. Once the vacuum motor shuts off, the vac switch (#7) must be turned off, the recovery tank emptied, and then the vacuum switch turned back on (up position) to get the vacuum motor started again.

**CAUTION: Always make sure the float is clean and travels freely before turning on the machine. A float that is stuck will cause the vacuum motor to suck in water, resulting in vac motor damage.**

### **PUMP PRESSURE:**

Make sure the cleaning tool is spraying when adjusting the pressure, otherwise the pressure reading will be inaccurate.

## TROUBLE SHOOTING:

<u>IF THIS OCCURS</u>	<u>CHECK THIS</u>
NO SPRAY	Solution tank is empty. Clogged spray tip. Pump not running or not primed. Valve on wand not operating.
PUMP DOES NOT RUN	Check the brushes in the pump motor. Replace if necessary. No power to pump. Test the Motor Speed Control Circuit Board and potentiometer.
LOW SUCTION	Debris is plugging cleaning tool or vacuum hose. Drain gate is not completely closed, or seals are damaged. Vacuum dome is not seated or is damaged.
NO SUCTION	No power to motor. Test the Electronic Float. Test the switch. Test the vacuum motor. Test the Vacuum Circuit Board.
LOW HEAT	Spraying too long. Try spraying for 12-15 seconds, or about three strokes. Heat exchanger needs to be flushed. Wrong tool being used. Too much water passing through. Longer hose or larger diameter hose, than standard.
NO HEAT	Heat is not turned on. Either the green light must be on or the bypass switch must be turned on. No power in the wall outlet - check to see if the breaker has tripped. No power to the bypass switch - check wiring for 'opens.' No power out of bypass switch, follow troubleshooting steps to isolate the problem. Call your distributor for additional help.

## SPECIFICATIONS:

**Rotomolded Body: Lifetime Warranty**

**Vacuum: Two 5.7", 2-stage**

**VAC Shutoff: Electronic**

**Pump: Positive displacement, fully adjustable 0-500 psi**

**Waterlift: 86" -- 200 CFM**

**Heat: up to 212° F**

**Heater: 2000 Watts**

**Wand: Stainless steel, double bend, twin tip**

**Weight: 115 lbs.**

**Dimensions: 24W x 28L x 41H (inches)**

# SOLUS-310 EXTRACTOR

## PART LIST

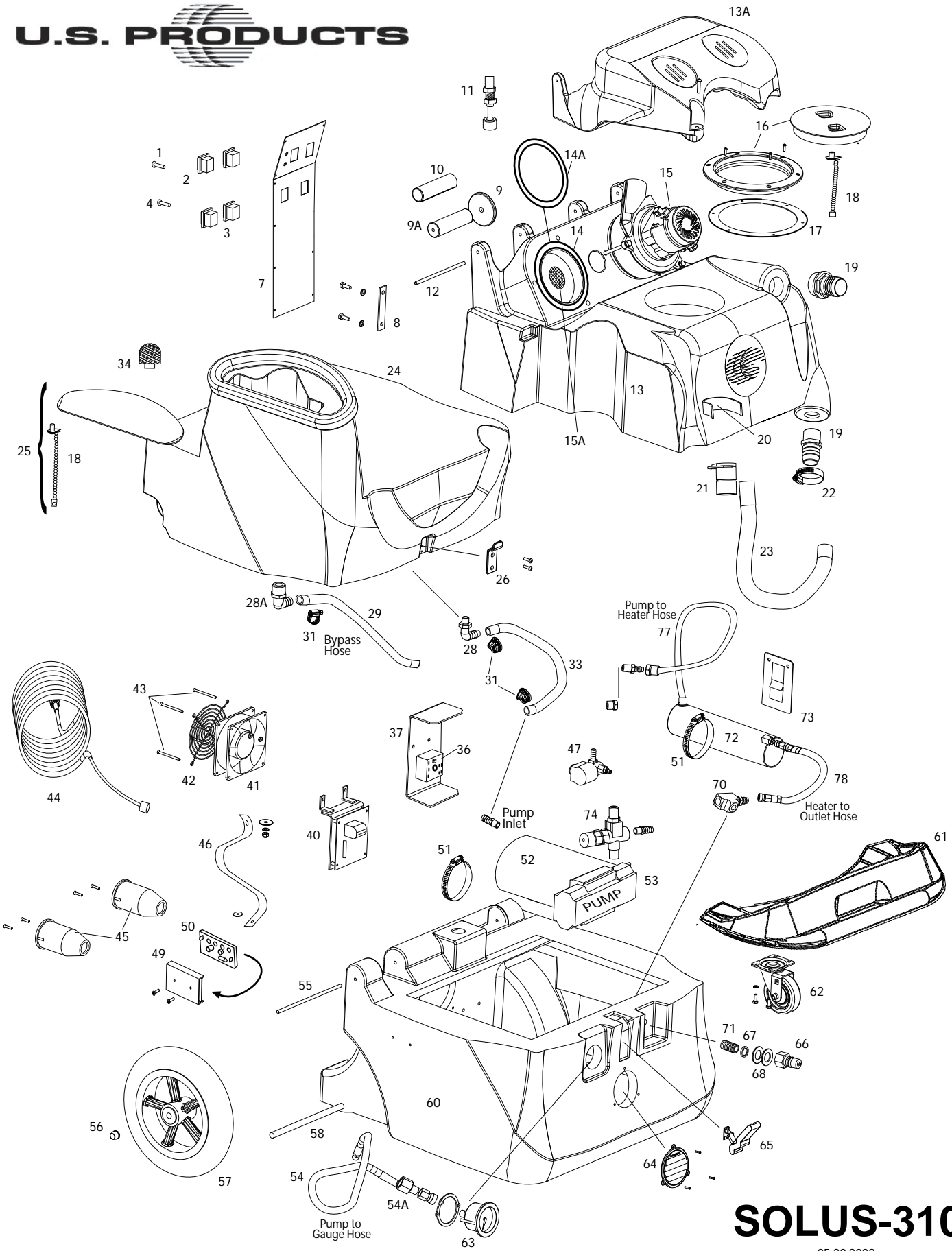
### 120V

<u>ITEM</u>	<u>PART No</u>	<u>DESCRIPTION</u>	<u>ITEM</u>	<u>PART No.</u>	<u>DESCRIPTION</u>
1	78	Light, green indicator	51	76A	Hose Clamp
2	FP312	Switch, SPDT	52	2060	Motor, AC, for pump
3	FP311A	Switch, SPST, with cover	53	FP_____	Pump complete, no mtr
4	78B	Light, red, indicator	54	FP542	Hose assembly, pump to gauge
7	2093C	Switch plate, Solus 310	54A	210	Snubber, pulsation dampening
8	4404C	Mating bar	55	801	Hinge pin
9	2105	Wheel, handle	56	27A	Axle Cap
9A	2106	Handle	57	2092	Wheel, 12"
10	1590	Grip, Handle	58	910	Axle,
11	FP478	Float assembly, electric, water level	60	FP_____	Base
12	801D	Hinge pin	61	FP_____	Castor Plate, BLack
13	FP_____	Tank, Vacuum	62	905	Castor, 4"
13A	FP_____	Cover, vacuum motors	63	951A	Gauge, Pump pressure, 300 PSI
14	2013A	Gasket, vacuum	64	928	Louver, 3", gray
14A	2013	Gasket, vacuum	65	908	Latch
15	408	Vacuum motor, 120V	66	45	Quick Disconnect, male. 1/4 p.t.
15A	1589	Screen, 1/8 S/S mesh, vac inlet	67	116	Bushing, fiber
16	2086	Lid & ring, vacuum	68	115	Washer, fiber
17	1074	Gasket, vacuum lid	70	168	"T" Brass
18	805	Chain, 8"	71	92A	Nipple, 1/4 p.t. S/S
19	907	Hose barb, 1-1/2"	72	FP_____	Heat Exchanger, complete
20	1130	Strap, Velcro, 9"	73	455	Mount bracket, heater
21	1060C	Cap, drain hose	74	945	Valve, bypass
22	156	Hose Clamp	77	1278A	Hose, heater inlet
23	1060B	Hose, drain	78	313	Hose, S/S, braided, heater outlet
24	FP_____	Tank, Holding			
25	FP545	Lid and chain, Holding Tank			
26	909A	Latch strike			
28	1113	Hose barb, 90°, 1/2" hose			
28A	1115	Hose barb, 90°, 3/8" hose			
29	925	Hose, 3/8" ID X 17", bypass hose			
31	166	Hose clamp			
33	946	Hose, 1/2" ID X 20", pump inlet hose			
34	207A	Filter, pump inlet			
36	See Miscellaneous **				
37	918	Heat Sink plate			
39	3000	Bracket, solenoid mounting			
40	FP225	Vacuum Motor Control PCB			
41	2014	Fan, 120V			
42	2015	Guard, fan			
43	2B1	Screw, 6-32 X 2-1/4"			
44	1057B	Power Cord, 12/3, 25 ft			
45	1062	Receptacle, AC power in			
46	1476	Strap, 17"			
47	2062	Solenoid, normally closed			
49	FP336	PCB mounting track, 4"			
50	923B	Dual Cord Sensor PCB			

### MISCELLANEOUS PARTS

**FP194E	Heat repair kit includes thermistor control, thermistor probe & cutout
950CP	Pump rebuild kit, valves and o-rings
250	Pump rebuild kit, piston and seals
FP_____	Pump & motor, complete, with bypass





## SOLUS-310

05.20.2008

# SOLUS-310

NOTES:



208-772-0573 · 800-257-7982 · FAX: 208-772-0577

Coeur d'Alene, Idaho

VISIT US AT: <http://www.usproducts.com>