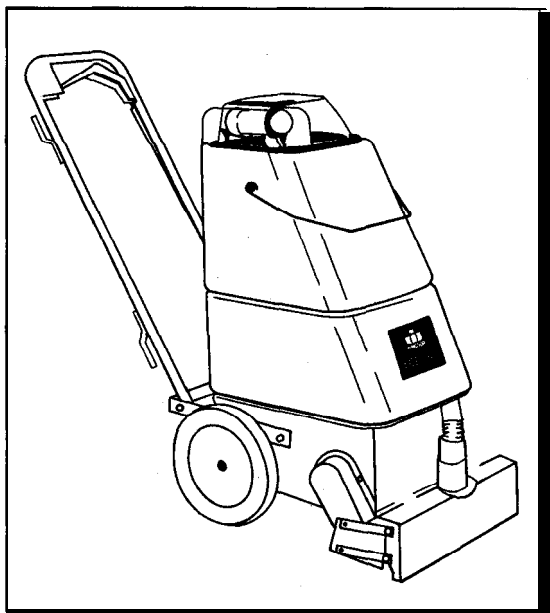


# **SPIRIT DUAL™**

**CARPET EXTRACTOR/HARD FLOOR**

Operating Instructions (GB/USA)



<b>MODELS:</b>	<b>VOLTAGE</b>	<b>COUNTRY</b>
SPD	120V	U.S.A.
SPD-J	100V	JAPAN

REV.



98353 4/17/98

**QUEST** ... for Continuous Improvement.  
Windsor's Quality Management System is Certified ISO 9001.



INDUSTRIES, INC., 1351 W. Stanford Ave., Englewood CO 80110 USA \*303-762-1800\*FAX 303-

# IMPORTANT SAFETY INSTRUCTIONS

When using an electrical appliance, basic precaution must always be followed, including the following:

## READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE.

This machine is for commercial use.



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

1. **Use** only as described in this manual. Use only manufacturer's recommended attachments.
2. **Use** indoors only. **Do not** use outdoors and do not expose to rain.
3. Machine can cause a fire when operating near flammable vapors or materials. **Do not** operate this machine near flammable fluids, dust or vapors.
4. **Do not** pick up flammable fluids, dust or vapors.
5. **Do not** vacuum anything that is burning or smoking, such as cigarettes, matches, or hot ashes.
6. **Do not** handle the plug or machine with wet hands.
7. **Do not** leave the machine unattended. Unplug machine from outlet when in use and ~~before~~ servicing.
8. **Do not** unplug machine by pulling on cord. To unplug, grasp the plug, not the cord.
9. **Do not** use with damaged cord or plug. Follow all instructions in this manual concerning grounding the machine.
10. If the machine is **not working properly**, has been dropped, damaged, left outdoors, or cropped into water, return it to an Authorized service center.
11. **Do not** pull or carry by cord, use cord as a handle, close a door on cord, or pull cord around sharp edges or corners.
12. **Do not** pull/run machine over cord. **Keep** cord away from heated surfaces.
13. **Do not** allow to be used as a toy. **Close attention** is necessary when used by or near children.
14. **Do not** operate machine with any openings blocked. Keep openings free of debris that may reduce airflow.
15. **Keep** hair, loose clothing, fingers, and all parts of the body away from openings and moving parts.
16. **Use** extra caution when cleaning on stairs.
17. **Do not** use machine as a step.
18. Connect to a **properly** grounded outlet. See Grounding Instructions.
19. **Maintenance and repairs must be done by qualified personnel.**
20. **“Warning of Potential Injury” . This product contains moving parts. To reduce the risk of injury unplug machine before servicing.**

**SAVE THESE INSTRUCTIONS**

**THIS PRODUCT IS FOR COMMERCIAL USE ONLY.**

**ELECTRICAL:**

In the USA this machine operates on a standard 15 amp 115 volt A.C. power circuit (120V nominal). Special voltage models are available for international applications. The amp, hertz and voltage are listed on the data label found on each machine. Using voltages above or below those indicated on the data label will cause serious damage to the motors.

**EXTENSION CORDS:**

If an extension cord is used, the wire size **must** be the same type and at least one size larger than the power cord on the machine. Do not use over 50 ft. (15m) of extension cord(s). The machine is equipped with a 50 ft. (15m) 14/3 SJTW/-A power cord.

**NOTE:**

If connected to a circuit protected by fuses, use time-delay fuses with this product.

**GROUNDING INSTRUCTIONS:**

This appliance must be grounded. If it should malfunction or break down, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and grounding plug. The plug must be inserted into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

This appliance is for use on a nominal 120-volt circuit, and has a grounded plug that looks like the plug in Fig. A. A temporary adaptor that looks like the adaptor in Fig. C may be used to connect this plug to a 2-pole receptacle as shown in Fig. B if a properly grounded outlet is not available. The temporary adaptor should be used only until a properly grounded outlet (Fig. A) can be installed by a qualified electrician. The green colored rigid ear, lug, or the like extending from the adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by a metal screw.

**WARNING:**

**Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.**

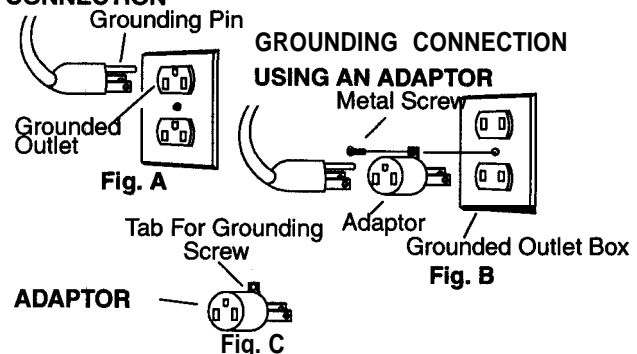
**INSTRUCTIONS VISANT LA MISE À LA TERRE**

Cet appareil doit être mis à la terre. En cas de défaillance ou de panne éventuelles, la mise à la terre fournit au courant un chemin de moindre résistance qui réduit le risque de choc électrique. Cet appareil est pourvu d'un cordon muni d'un conducteur de terre et d'une fiche avec broche de terre. La fiche doit être branchée dans une prise appropriée correctement installée et mise à la terre conformément aux règlements et ordonnances municipaux.

**ADVERTISSEMENT:**

**Un conducteur de terre mal raccordé peut entraîner un risque de choc électrique. Consulter un électricien ou un technicien d'entretien qualifié si vous n'êtes pas certain que la prise est correctement mise à la terre. Ne pas modifier la fiche fournie avec l'appareil - si elle ne peut être insérée dans la prise, faire installer une prise adéquate par un électricien qualifié.**

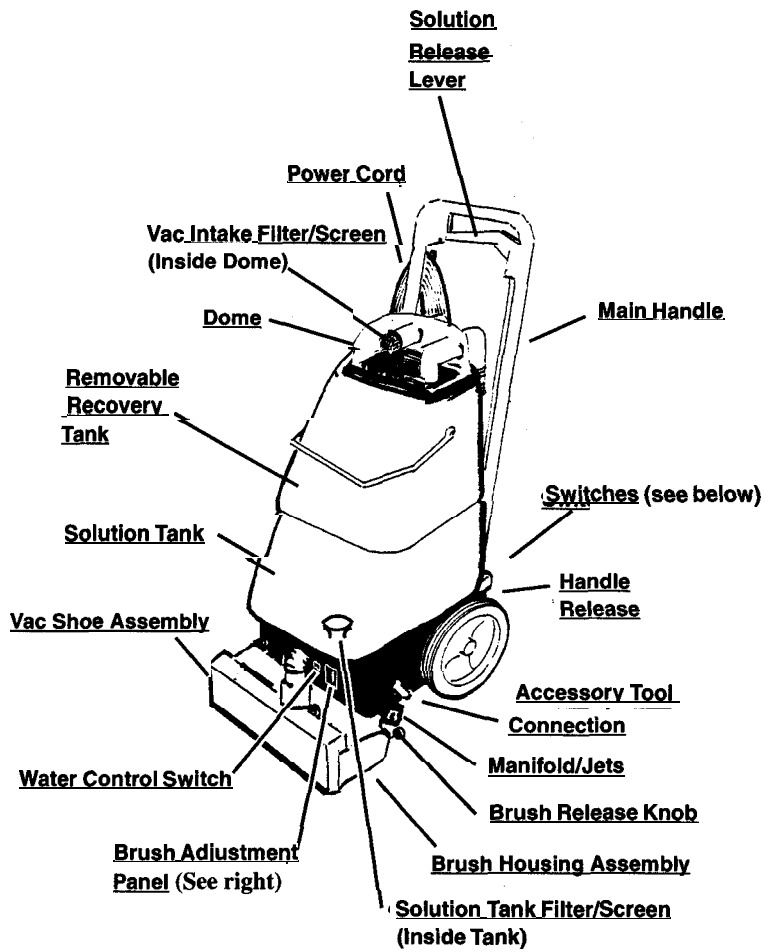
**PROPER GROUNDING CONNECTION**



**NOTE:** In Canada, the use of a temporary adaptor is not

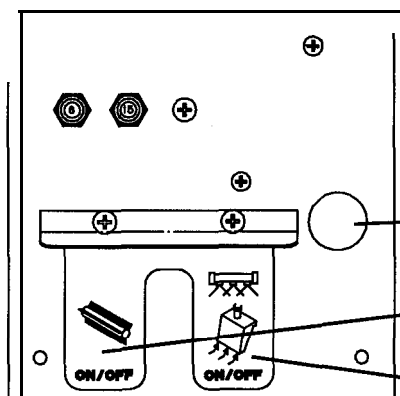
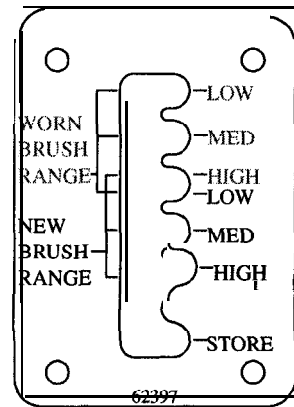
**NOTE:** Au Canada, l'utilisation d'un adaptateur temporaire n'est pas autorisée par le Code canadien de l'électricité.

# CONTROLS

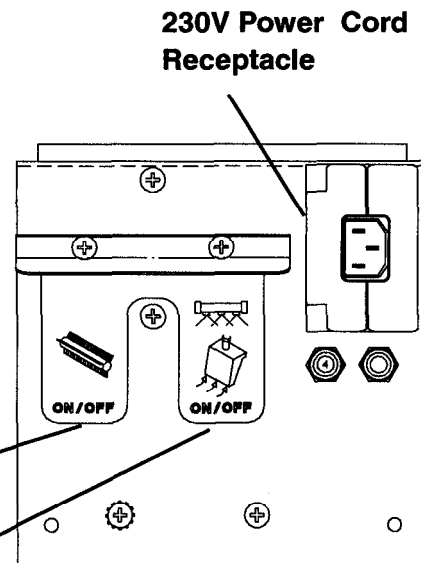


Adjust brush to proper cleaning position by using lever located on the front of the frame. Start at No. 1 "new brush" (black) position. If more carpet pile agitation is desired, lower brush setting one position at a time. (See fig. 1 below)

Fig. 1



115V Model Rear Panel



230V Model Rear Panel

## Preparing the SPIRIT DUAL:

### **For Hard Floor:**

1.) Install the optional kit : Vac Shoe Squeegee (p/n 02285). Raise the SPD vac shoe and place the squeegee assembly over the vac shoe intake. Center the squeegee on the vac shoe and secure by tightening the two retaining knobs.

**CAUTION: Make sure that the machine is unplugged, switches are turned off and both solution tanks are empty before beginning brush removal or replacement.**

2.) Now install the hard floor brush. Tilt the machine back far enough to grasp the brush. If the carpet brush is already installed, proceed with step 3 to remove it. If no brush is installed, proceed with step 4.

3.) To remove brush, pull the brush release knob back until the brush can be swung out from the housing and pull the brush off of the drive end.

4.) To replace, align the pulley drive pins on the knob driver in the housing with the slots in the brush and slide over the knob driver.

5.) Pull the brush release knob back, align the flat sides of the brush stub axle in the housing and swing the brush into place. Then release the knob, returning to the locked position. **Refer to page 17 for parts outlined in these steps.**

6.) Set the water control switch on the front of the machine to "LOW". **NOTE: If water does not spray after 5 seconds when the switch is in the "LOW" position it may be necessary to place it in the "HIGH" position to start the flow, then return it to the "LOW" position for hard floor use.**

### **For Carpet:**

1.) Remove squeegee from vac shoe by loosening the two retaining knobs.

2.) Install carpet brush as described above.

3.) Set the water control switch on the front of the machine to "HIGH".

## Filling Solution Tank:

1.) Set dome and recovery tank to the side.

2.) Use a clean bucket to fill the solution tank with hot water.

**CAUTION: Do not use water temperatures in excess of 140°F (60°C).**

**Water which is too hot may distort the polyethylene tanks.**

3.) If necessary add a cleaning concentrate for use in hot water extractors. Closely follow manufacturer's instructions found on container. Read ingredients listed on the container to ensure com-

**CAUTION: Use only the suitable chemicals listed below. Using incompatible chemicals will damage the machine. Damages of this type are not covered under warranty. Carefully read ingredients on manufacturer's label before using any product in this machine.**

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### **SUITABLE INCOMPATIBLE CHEMICALS**

Alkalis	Aldehydes
Clorox II Bleach*	Aromatic Hydrocarbons
Defoaming Agents	Butyls
Detergents	Carbon Tetrachloride
Hydroxides	<b>Clorox*</b>
Oxygen Bleaches	Chlorinated Bleaches
Soaps	Chlorinated Hydrocarbons
Sta-Puf Fabric Softener*	<b>D-Limonene</b>
Vinegar	<b>Lysol*</b>
White Monday Bleach*	Methyls (MEK)
	Perchloroethylene(perc)
	Phenols
	Trichlorethylene

\* Registered Trademark

4.) Place the recovery tank onto the solution tank.

5.) Set the dome in place on the recovery tank. Dome must be seated correctly to ensure proper vacuum seal.

## SPIRIT

1. Fill the solution tank.
2. Move machine to the cleaning area.
3. Lower the brush housing to the floor.
4. Adjust the brush to the desired height.
5. Plug machine into electrical outlet.
6. Release handle by pressing bar with foot.  
Push handle forward to lock.  
To release handle:
  - A. Press down with foot.
  - B. Pull back on handle.
7. Press Vac/Pump switch with foot to turn on.
8. Tilt the machine back on rear wheels until brush is off the floor. Press brush switch with foot to turn on.

**NOTE: Starting the machine with dry brush resting on floor may trip the brush motor circuit breaker.**

9. Squeeze the solution control lever to dispense cleaning solution.
10. Pull the machine backwards at a steady pace. Different carpet conditions will determine the speed required, approximately 25 to 30 feet per minute (8–9 m). Do not press down on the handle while cleaning, this will cause the brush housing to raise slightly and reduce efficiency.
11. Release the solution lever about 12" inches (15,0 cm) before the end of each pass to ensure all solution is picked up.
12. Allow each cleaning pass to overlap the previous pass about 2" inches
13. While cleaning check for foam build-up in recovery tank. When excessive foam begins to build up, add a defoaming compound to the recovery tank according to the instructions on the manufacturer's package. Foam build-up depends on the type of cleaning concentrate, and residue remaining carpet.

An overflow of foam from in the recovery tank into the vacuum intake can damage the vacuum-motor. Always be aware of the waste water level and foam in the recovery tank, especially when using an accessory tool. **BEFORE** foam or solution is pulled into vac intake empty the recovery tank.

Never put defoaming compound in the solution tank. Damage to pump will result.

**NOTE:**The vac motor is protected by a circuit breaker which will only trip under conditions of abuse, such as an overflow of foam into the dome. When an overflow does occur the vac motor must be allowed to dry thoroughly before continuing work.

1. Remove source of overflow.
2. Run motor to dry.

14. When solution tank empties the machine will start streaking and won't completely clean the floor. Turn both switches off, empty the recovery tank, and refill the solution tank. Use the clear drain hose on the rear of the solution tank as a sight gage to determine amount of fluid in tank.
15. Ventilate the room when cleaning has been completed. Keep all traffic off the floor until it is thoroughly dry.
16. When done cleaning for the day bring the machine to a utility sink and floor drain. Perform the daily /regular maintenance. Set the recovery tank aside so solution tank will dry.

When not using the machine put the brush in the storage position. (see daily maintenance on page 8) Leaving the brush on the floor for long periods of time may ruin it.

- 15.) Ventilate the room when cleaning has been completed. Keep all traffic off the floor until it is thoroughly dry.
- 16.) When done cleaning for the day bring the machine to a utility sink and floor drain. Perform the daily/regular maintenance. Set the recovery tank aside so solution tank will dry.

**CAUTION:**

**When not using the machine put the brush in the storage position.**

**(see daily maintenance on page 8)**

**Leaving the brush on the floor for long periods of time may ruin it.**

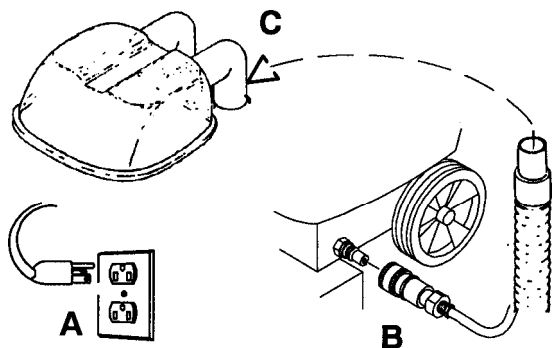
**To Use an Accessory Tool:**

- 1.) Turn the machine completely off and unplug it from electrical outlet.
- 2.) Connect the solution hose to the brass fitting on lower left side of machine.
- 3.) Connect the vac hose to the left side of the dome (side with white hose cuff).
- 4.) Fill the solution tank.
- 5.) Plug the machine in and turn on only the vac/pump switch. Also place the water control switch in the "HIGH" position.

**CAUTION:**

**Using accessory tool with brush switch on may damage floor.**

- 6.) Turn off the machine and unplug it from electrical outlet before disconnecting accessory tool.



**Approved Accessory Tools:**

- Standard Floor Wands (SFW, SW, or SW-PRO)
- Deluxe Hand Tool (DHT)
- Upholstery Hand Tool (UPH3)

**Floor Surface Inspection:**

Determine precisely what areas you are going to clean. Note the problem areas in the carpet or hard floor. Look for loose carpet, heavily damaged areas, discolored stains or grease spots that will require prespotting. Note the carpet or hard floor type. Check the availability of hot water, drains, and suitable electrical outlets. If the carpet is loose or worn or there is hard floor surface flaking, have it repaired **before** attempting to clean it.

**Plan Cleaning Route:**

Work from the most remote area towards the exit. Try not to travel over the cleaned areas when getting fresh water or dumping old. Furniture should be moved away from the walls before cleaning. If furniture is moved back in place before floor is completely dry, place plastic or foil protectors under the legs to prevent possible staining. When possible use a Windblower (WB3) and open all windows and doors to speed drying.

**General Cleaning Information:**

**Vacuum carpet or sweep hard floor first!** Always take the time to thoroughly vacuum carpet or sweep floor before using the extractor.

**On heavily soiled floors, or on areas of high foot traffic,** it may be necessary to use a prespray or traffic lane cleaner applied with a separate sprayer. Do not add presprays to the machine's solution tank. If a spotter is used, follow the manufacturer's instructions exactly as printed on the label. Spotter left on the floor may bleach or brown it permanently.

**Shag or deep pile carpets** may require several passes from different directions, but the operator must be careful not to over saturate the carpet. Make several passes without spray to extract as much moisture as possible.

**Rinse carpet after cleaning** so that sticky soap build-up will not cause carpet to quickly become soiled again. Go back over carpet using only clean warm water in solution tank.

# WARNING OF POTENTIAL INJURY:

This product contains moving parts.

To reduce the risk of injury; unplug the machine before servicing.

Maintenance and repairs must be done by qualified personnel ONLY.

### CAUTION:

Using non-Windsor parts to repair this machine will void the 6-3-1 warranty. Warranty information is located on the back of this manual.

### Suggested Service Parts List

DESCRIPTION	PART NUMBER
<u>Belt</u>	<u>11031</u>
<u>Brush Bearing</u>	<u>09019</u>
<u>115V Cord Assembly (USA/Japan)</u>	<u>23572</u>
<u>230V Cord Assembly (Europe)</u>	<u>23178</u>
<u>Dome Assembly</u>	<u>28034</u>
<u>Dome Gasket</u>	<u>35060</u>
<u>Hose Cuff, Short Blue</u>	<u>27508</u>
<u>Hose Cuff, Longer Blue</u>	<u>27354</u>
<u>Hose Cuff, White</u>	<u>27079</u>
<u>Jet Assembly</u>	<u>44055</u>
<u>Jet</u>	<u>44061</u>
<u>Jet Seal</u>	<u>44051</u>
<u>Jet Body w/Seal</u>	<u>44052</u>
<u>Manifold Assembly (No Jets)</u>	<u>54094</u>
<u>Pump Service Kit</u>	<u>47176</u>
<u>Screen/Filter, Dome</u>	<u>34140</u>
<u>Screen/Filter, Solution Tank</u>	<u>73250</u>
<u>Solution Release Cable</u>	<u>27665</u>
<u>Solution Release Lever</u>	<u>51200</u>
<u>115V Switch</u>	<u>72074</u>
<u>230V Switch</u>	<u>72121</u>
<u>Valve</u>	<u>84134</u>

### Daily Maintenance:

These procedures are followed at the end of each work period to extend the life of the machine.

- 1.) Empty unused cleaning solution by disconnecting clear hose on back of machine and pouring into floor drain.
  - 2.) Inspect and clean solution filter screen inside tank and vac intake screen inside dome.
  - 3.) Flush the system. Fill solution tank with 1 or 2 gallons (4 – 8 liters) of clean hot water. With machine over floor drain turn on vac/pump switch until solution tank is empty.
  - 4.) Inspect spray pattern of jets. Remove jets and rinse if clogged.
  - 5.) After each use, rinse recovery tank with fresh water. Periodically inspect the recovery tank and decontaminate if necessary, using a Hospital Grade Virucide or a I-I 0 bleach to water solution. Waste water should be disposed of properly.
  - 6.) Remove any lint or debris from brush.
  - 7.) Inspect power cord. Remember, this cord will lay on a damp surface.
- Warning:**  
**IMMEDIATELY REPLACE WORN OR FRAYED POWER CORDS.**
- 8.) Inspect hoses. Worn or cracked hoses may cause loss of vac pressure.
  - 9.) Place the brush in the storage position. Press back slightly on the main handle, and place the brush adjustment lever in the “STORE” position.

**For infrequent use or long periods of storage,** flush the system with a neutralizing solution of 1 quart (1 liter) white vinegar mixed with 2 gallons (8 liters) hot water. Flush the system with clean hot water after neutralizing.



### **Periodic Maintenance:**

These procedures are performed by a trained service technician. The regularity of these procedures may depend on the machine's use.

- 1.) Flush the system with a special solution to reduce scaling (alkaline build-up).  
  
Use acetic acid (white vinegar) or an anti-browning solution. Mix one quart acetic acid with 2 gallons (1:8 liters) of hot water in the solution tank (if an anti-browning solution is used follow manufacturer's instructions). Turn on the vac/pump switch and allow the machine to run over a floor drain until the solution tank is empty (approximately once a month).
- 2.) Inspect hoses and cords, replace as needed.
- 3.) Inspect filter screens, clean or replace as needed.
- 4.) Inspect spray pattern of jets, replace or clean as needed.
- 5.) Check the tension of the solution valve cable, tighten if necessary.
- 6.) Inspect the vac motor, remove any lint build-up at cooling intake, service carbon vac motor brushes (Approximately every 750 operation hours).
- 7.) With the machine running, the brush should rotate freely without rattling or grinding. Replace bearings if necessary.

### **CAUTION:**

**Do not allow this machine to remain in a vehicle or area where the temperature will be below 40°F (4°C). Allowing this machine to freeze will cause damage not covered by the 6-3-1 warranty.**

### **CAUTION:**

**Protect this machine from freezing if it becomes necessary to store it at temperatures below 40°F (4°C).**

Use a methyl hydrate window washer type anti-freeze; mix a gallon or two (4-8 liters) of anti-freeze solution, following the manufacturer's instructions. Add the anti-freeze solution to the solution tank. With the hoses in place run the machine until the anti-freeze begins spraying out (don't empty solution tank). Vacuum out the remaining anti-freeze solution in the solution tank. Disconnect the hoses and empty the recovery bucket. Always allow the unit to return to room temperature before filling with hot water or operating.

### **CAUTION:**

**Do not use Ethylene Glycol or any cooling system anti-freezes.**

## Troubleshooting Chart

Condition	Corrective Action
<b><u>No Power To Machine:</u></b>	
Dead electrical circuit breaker in fuse box	Check building circuit breaker.
Faulty power cord	Replace
Power switch failure	Test switch for continuity/Replace if necessary.
Faulty circuit breaker	Test circuit breaker for continuity/Replace if necessary.
Internal wiring problem	With the machine unplugged, check for, and correct, any loose wire connections inside the machine at the switches and terminal block.
<b><u>Electrical Shock:</u></b>	
Equipment not grounding	Follow grounding instructions exactly.
Receptacle not grounded	Have an electrician inspect the building's wiring.
Internal electrical problem	Ensure that the machine's wiring matches the appropriate wiring diagram. Check for and correct any loose wire connections. Replace any wires or components which are short circuiting.
<b><u>Nuisance Tripping of Circuit Breaker:</u></b>	
Brush "buried" More than 3/8" (1 cm)	Brush is adjusted too low, adjust position using the adjustment control at the front of machine. Best cleaning results are achieved with a minimal brush/surface contact of less than 3/8" (1cm).
Dry brush	Turn brush motor and pump switches on with machine tilted rearward (brush off floor). Lower machine back to carpet slowly.
Faulty circuit breaker	Test circuit breaker for continuity/Replace if necessary.
Mechanical problem	Higher amp draws may indicate a mechanical problem. Find parts which are not moving freely and repair or replace.
<b><u>Vacuum Motor Speed Varies or Doesn't Run:</u></b>	
Worn motor brushes	Replace
Motor worn out	Replace
Faulty switch	Replace
Faulty circuit breaker	Replace
Internal wiring problem	Check for and correct any loose wire connections,
<b><u>Loss Of Vacuum:</u></b>	
Loose vac dome	Center dome over tank.
Crack in dome or poor joint	Replace or repair using acrylic plastic cement only.
Loose cuffs on vacuum hose	Tighten cuffs (turn counter clockwise).
Damaged Dome Gasket	Replace gasket.
Lint or dirt clogging vacuum intake screen	With power off clean vac intake screen found in dome.
Accessory tool clogged	Clean out tool, ensure free airflow.
Vac hose damaged	Replace
Internal electrical problem	Have a trained service technician inspect and repair the machine.

## Troubleshooting Chart

<b>Condition</b>	<b>Corrective Action</b>
<p><b><u>Accessory Tool Fitting Difficult to Connect:</u></b> Corrosion on fitting</p>	<p>Clean with steel wool.</p> <p>Remove and soak in acetic acid (white vinegar).</p> <p>Lubricate lightly with silicone base lubricant.</p>
<p><b><u>Floor Not Getting Clean:</u></b> Severe soil conditions</p>	<p>Make several passes at right angles to each other.</p> <p>Use a prespray.</p>
<p><b><u>Floor Too Wet:</u></b> Worn spray jet(s)</p>	<p>Replace spray jets which are producing more than a fine mist.</p>
<p><b><u>Floor Not Getting Wet:</u></b> Solution filter screen clogged</p> <p>Spray jet(s) clogged</p>	<p>Clean solution filter screen located inside lower tank near the front.</p> <p>Clean or replace jets.</p> <p><b>Do not use a wire to clean jet.</b></p> <p>Damaged jets will cause over-saturation.</p>
<p>Pump not running</p>	<p>Check for and correct any loose wires</p>
<p>Faulty pump</p>	<p>Repair or replace</p>
<p>Solution valve adjustment</p>	<p>Adjust solution valve cable until valve operates when handle is pulled.</p>
<p><b><u>Brush Not Turning:</u></b> Belt broken</p>	<p>Remove belt cover on right side of machine. Inspect belt. Replace if necessary.</p>
<p>Faulty switch</p>	<p>Replace.</p>
<p>Faulty circuit breaker</p>	<p>Replace.</p>
<p>Faulty brush motor</p>	<p>If the belt, circuit breaker, and switch have been tested and found to be in good working order, the brush motor may need to be replaced.</p>
<p><b><u>Worn Bearings:</u></b> Squeeling or grinding sound in brush housing</p>	<p>Replace bearings.</p>

# Servicing the Vac Motor

To access the vac motor first remove the solution tank. There are (2) screws which attach the vac motor mounting bracket to the chassis. Loosen the clamp to remove the hose. To replace the motor assembly it will be necessary to remove the (3) screws which attach the motor to the vac motor mounting bracket.

See page 18 for the complete vac motor and mounting equipment parts list.

**END CAP**

Carbon Brushes	
14680	100V
14445	115V
14441	240V

**WARNING:**  
The green ground wire must attach the motor to the power cord for safe operation. See wiring diagram.

**Important:**  
These brushes wear quicker as the length shortens due to increased heat. Spring inside brush housing will damage motor if brushes are allowed to wear away completely.

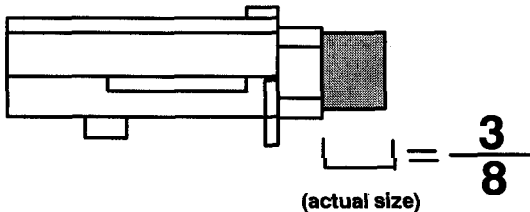
**Wire Terminal**

**Note:**  
Place stop in groove.

If armature commutator is not concentric, extremely pitted, or grooved the motor will need to be replaced or sent to a qualified service center to restore vac performance.

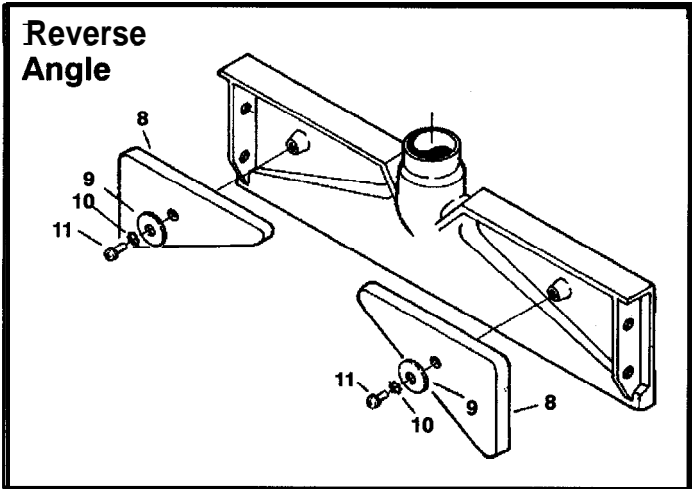
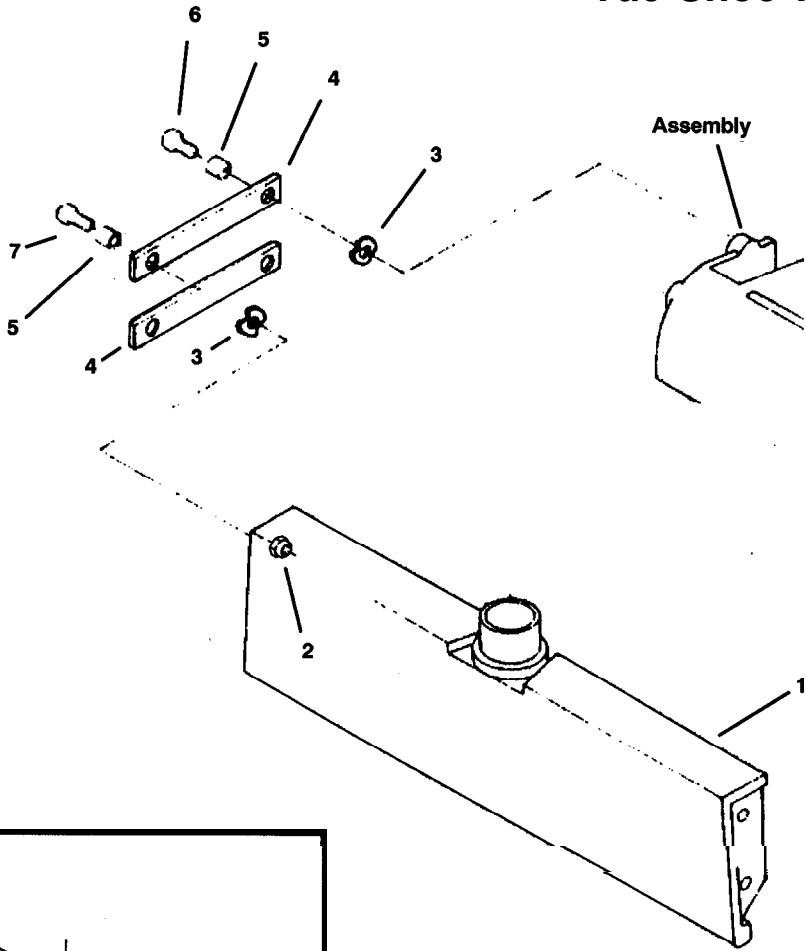
**Wire Terminal**

**Note:**  
When replacing carbon vac motor brushes loosen wire terminal **BEFORE** removing screws on bracket.



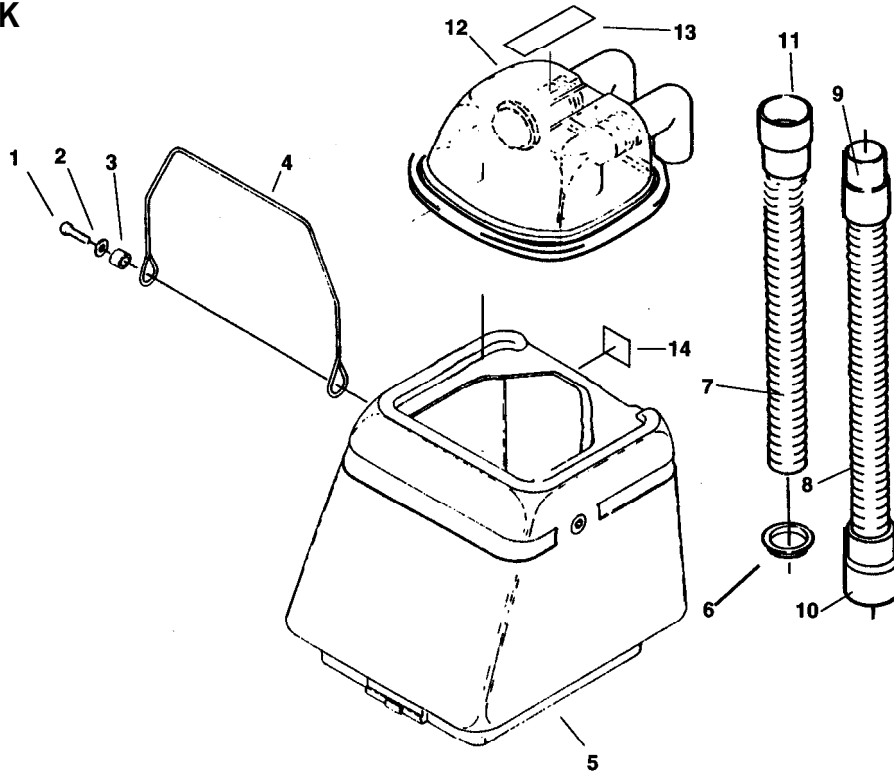
Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" long.

# Vac Shoe Assembly



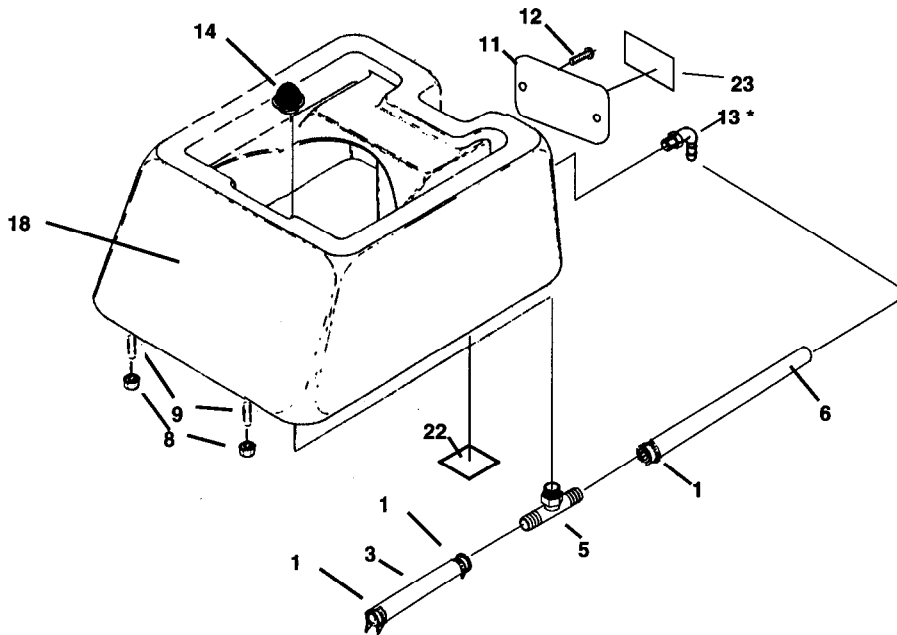
Ref	Qty.	Part No.	Description	Serial No.		Notes:
				From	To	
1		85028	Vac Shoe			
2		57047	Nut, 1/4-20 Nylock			
3		87074	Washer, 3/8 ID x .010 Wave			
4		05016	Arm, Vac Shoe Parallel			
5		73181	Spacer, .259 ID x .38 x .25			
6		70190	Scr, 1/4-20 x 1/2 BHCS			
7		70057	Scr, 1/4-20 x 1.0 PHMS			
8		89061	Weight, Vac shoe			
9		87008	Washer, 1/4 ID x 1 1/4 OD			
10		87016	Washer, #10 star			
11		70088	Scr, 10-32 x 1/2 PHMS			

## RECOVERY TANK



Each tank has a filter screen which protects the machine's internal parts from damage. Ensure that these screens are in place and clean before operating the machine.

## SOLUTION TANK





# RECOVERY & TANK ASSEMBLY Parts List

## RECOVERY TANK PARTS LIST:

Ref	Part No.	Qty	Description	Serial No.		Notes:
				From	To	
1	70194		Scr, 1/4-20 x 5/8 BHCS			
2	87013		Washer, 1/4 Flat			
3	73280		Spacer, 1/4 ID x 3/8 Nylon			
4	38088		Handle, Recovery Tank			
5	75078		Tank, Recovery			
6	14042		Bushing, 1.63 ID Snap			
7	39343		Hose, 1.5 x 34" Vac			
8	39411		Hose, 1.5 x 52" Vac			
9	27079		Cuff, White 1.5 Hose			
10	27508		Cuff, Short Blue Hose			
11	27354		Hose cuff, blue			
12	28033		Dome Asm			
13	50775		Label, Warning Explosion Vert			
14	50776		Label, Warning For Safety			

## SOLUTION TANK PARTS LIST:

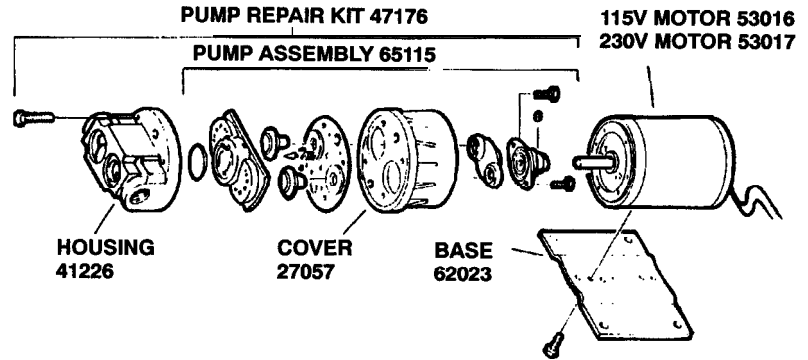
Ref	Part No.	Qty	Description	Serial No.		Notes:
				From	To	
1	20042		Clamp, Hose			
2	-		Open			
3	39241		Hose, 1/2 Wire Bound x 10"			
4	-		Open			
5	40068		Hosebarb, 3/8 NPT X 1/2 Tee	602449		
6	39278		Hose, 1/2" ID x .09 W			
7	-		Open			
8	57105		Nut, 1/4-20 w/Star Washer			
9	70251		Set Scr, 1/4-20 x 1.0			
10	-		Open			
11	67272		Retainer, Hose			
12	70189		Scr, 1/4-20 x 5/16 PHMS			
13	40027		Hosebarb, 90x 3/8 MPT x 1/2			
14	73864		Strainer, 3/8 NPT 60 Mesh	602449		
15	-		Open			
16	-		Open			
17	-		Open			
18	75249		Tank, SPR Solution115V/110V	602449		
19	-		Open			
20	-		Open			
21	-		Open			
22	50710		Label, 115V Wiring			
23	50630		Label, Warning			

# Pump...Manifold...Valve

## Spray Jets

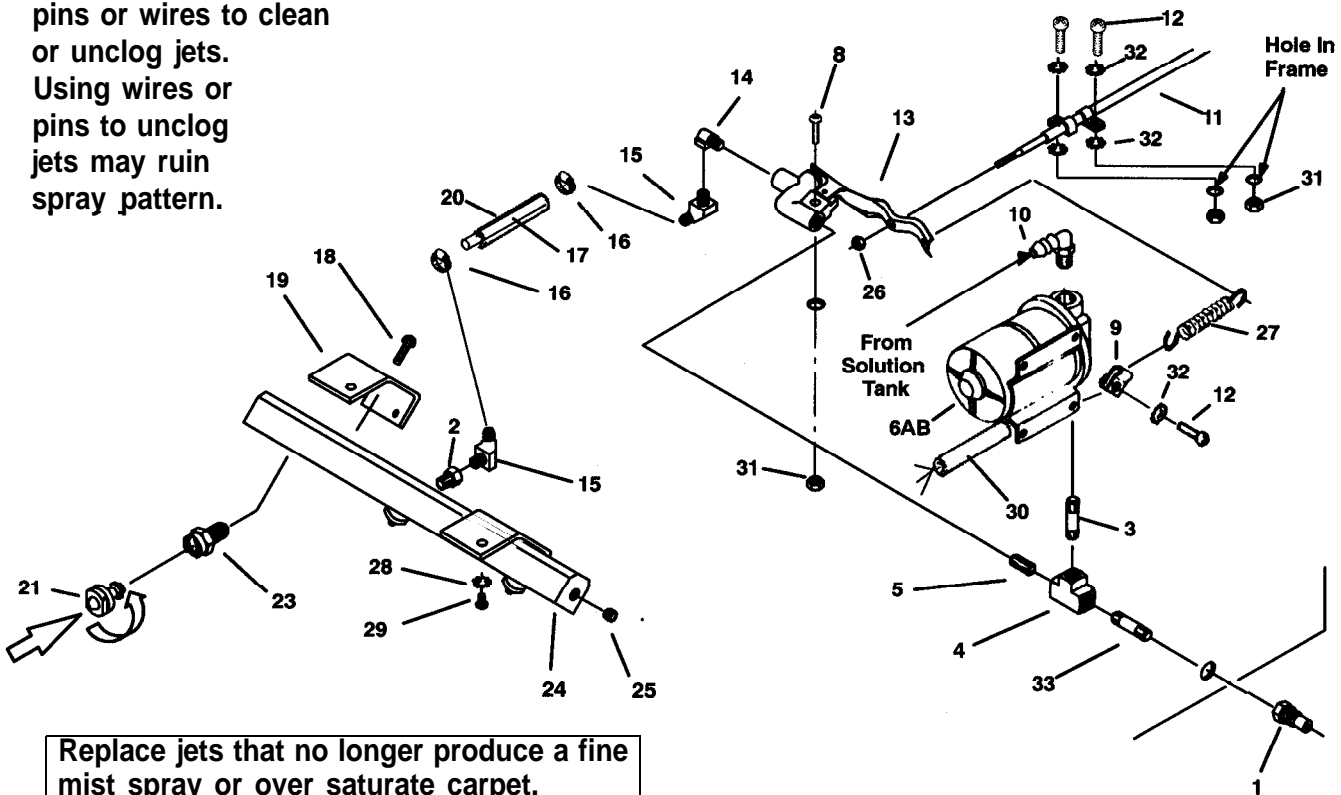
The Machine is equipped with quick change jet nozzles which are easy to clean or replace.

- 1.) With tanks empty, tilt machine back.
- 2.) Press in and turn nozzle 90° to remove.
- 3.) When putting nozzles back into manifold ensure slot in tip runs parallel to manifold.



Rinse in hot water or use compressed air to clean. Nozzles can also be soaked in an acetic acid solution (white vinegar).

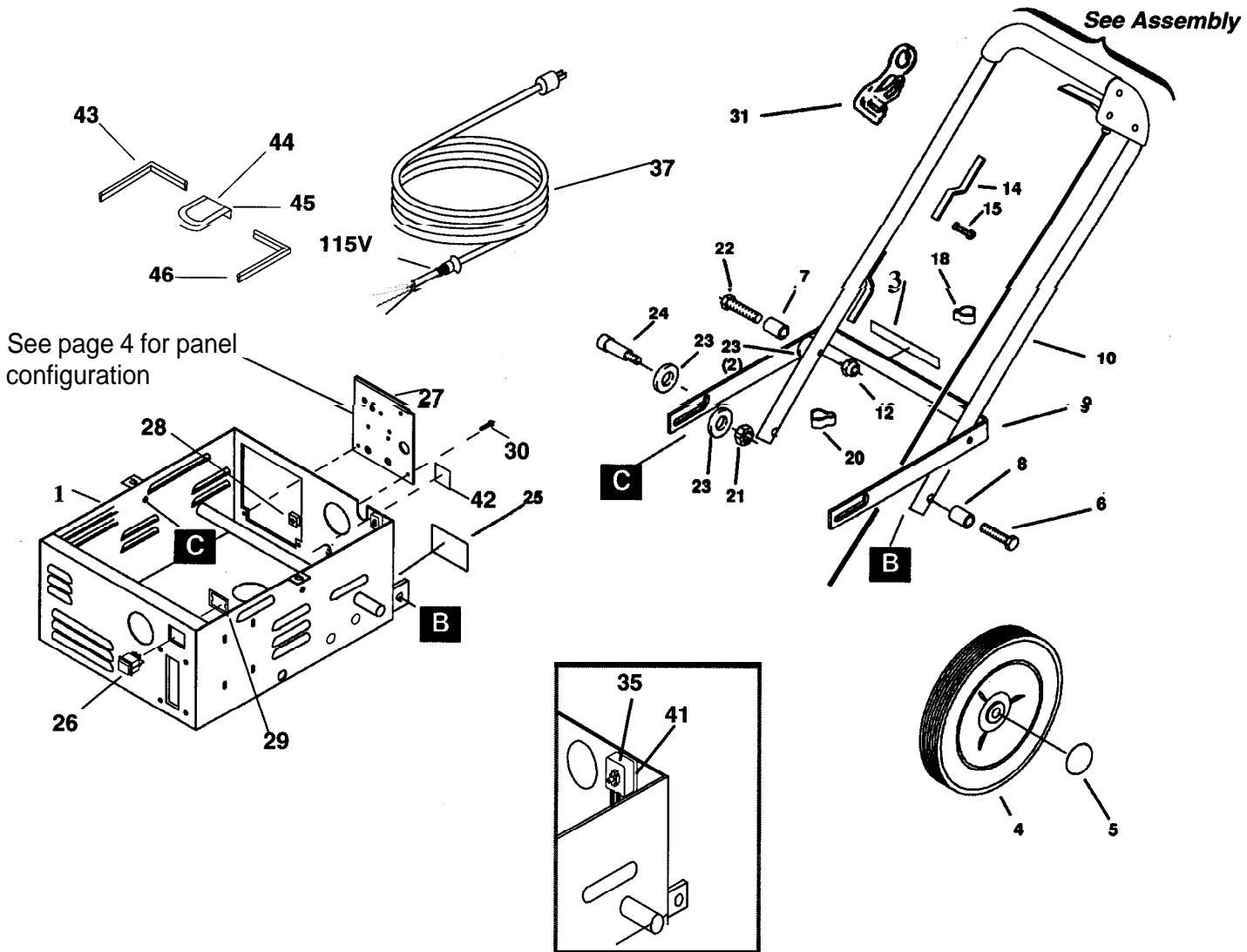
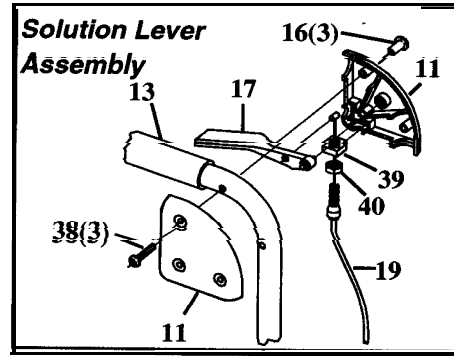
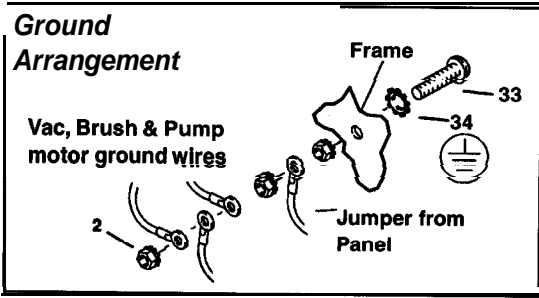
**CAUTION:** Do not use pins or wires to clean or unclog jets. Using wires or pins to unclog jets may ruin spray pattern.





# Pump...Manifold...Valve

Ref	Qty.	Part No.	Description	Serial No.		Notes:
				From	To	
1		56012	Nipple, 1/4 FPT Qck Disconn.			
2		04008	Adaptor, 1/4 MPT x 1/4 FPT			
3		56023	Nipple, 1/4 MPT x 1.5			
4		78156	Tee, 1/4 FPT			
5		56014	Nipple, 1/4 Close			
6		65154	Pump, 115V 50 PSI			
7			OPEN			
8		70253	Screw, 0-32 x 1.25 PHMS			
9		57081	Nut, 10-32 Captive J			
10		40033	Hosebarb, 1/4 MPT x 3/8 90°			
11		27665	Cable, Solution SPD			
12		70088	Scr, 10-32 x 1/2 PHMS			
13		84134	Valve, Solution			
14		31016	Elbow, 1/4 NPT Street			
15		40038	Hosebarb, 45 deg 1/4MPT x 3/8			
16		20042	Clamp, Hose			
17		39452	Hose, 3/8 x 6" Nylobraid			
18		70114	Scr, #10 x 3/4 Polyfast			
19		14523	Bracket, Manifold			
20		39330	Hose, 3/4 vinyl x 5-1/2"			
		44061	Jet, 11003 Mini-Quick			
		44052	Jet Body w/Seal, Mini-Quick			
24		54094	Manifold			
25		66095	Plug, 1/8 MPT			
26		57018	Nut, 10-24 nylock			
27		73426	Spring, 2.5 x .43 x .047 Ext			
28		87025	Washer, 1/4 Star			
29		70085	Scr, 1/4-20 x 1/2 PHMS			
		39364	Hose, 1/2 ID Clear x 10"			
31		57104	Nut, 10-32 w/Star Washer			
32		87016	Washer, #10 Star			
33		56048	Nipple, 1/4 x 1.75			





**HANDLE...CHASSIS...S**      **Parts**      **List**

Ref	Part No.	Qty	Description	Serial No.		Notes:
				From	To	
1	34288		Frame, Main Chassis			
2	57104		Nut, 10-32 w/Star Washer			
3	Open					
4	89114		Wheel, 10"	602252		
5	41236		Hub Cap, 5/8" Shaft			
6	70249		Scr, 1/4-20 x 1.25 HHMS			
7	73636		Spacer, 5/16 x 1.2"			
8	73596		Spacer, 5/16 x 1"			
9	51193		Linkage, Handle Adjustment			
10	38269		Handle, SPD II			
11	41302		Housing, Solution Lever			
12	57047		Nut, 1/4-20 Nylock			
13	36123		Grip, 9.5" Handle			
14	41144		Hook, Cord			
15	70361		Scr, 10-32 X 1/2 PHTR			
16	57238		Nut, 10-24 Joint Connector			
17	51251		Lever, Solution			
18	27561		Clip, Solution Cable			
19	27699		Cable,.06X41.3.0707. SS			
20	27371		Clip, Power Cord			
21	57113		Nut, 5/16- 18 Nylock			
22	70105		Scr, 1/4-20 x 1.75 HHMS			
23	87030		Washer, 3/8 Nylon Flat			
24	70272		Scr, 3/8 x 3/8 5/16- 18 SHSB			
25	50498		Label, 15 Amp Time Delay Fuse			
26	72147		Switch, 250V 16(4) rckr SPST			
27	62322		Panel, Electrical Panel 115V			
28	57028		Nut, 10-24 Tinnerman			
29	27376		Clip, Switch retainer			
30	70406		Scr, #10 x 1/2 sht metal blk			
31	73169		Strain Relief			
32	50638		Label, Handle Adjust			
33	70066		Scr, 10-32 x 3/4 PHMS			
34	87016		Washer, #10 Ext. Star			
35	27711		Control Asm, 115V SPD (pump)			
36	70434		Scr, 6-32 x 3/8 PHTF			
37	23572		Cord Asm, 115V SJTWI-A 50			
38	70537		Scr, 10-24 truss head pltd			
39	57234		Nut, 3/8- 16 square			
40	57138		Nut, 5/16- 18 jam pltd			
41	99817		Tape, 1/32 x 1.0 25A			
42	50182		Label, ETL approval			
43	35229		Gasket, Right Frame Top			
44	62755		Plate, Tray Top			
45	35198		Gasket, 8" Clamp Seal			
46	35228		Gasket, Left Frame Top			



## **Belt Replacement**

Periodically check the drive belt for wear. Replace worn or frayed belts before they break, when possible.

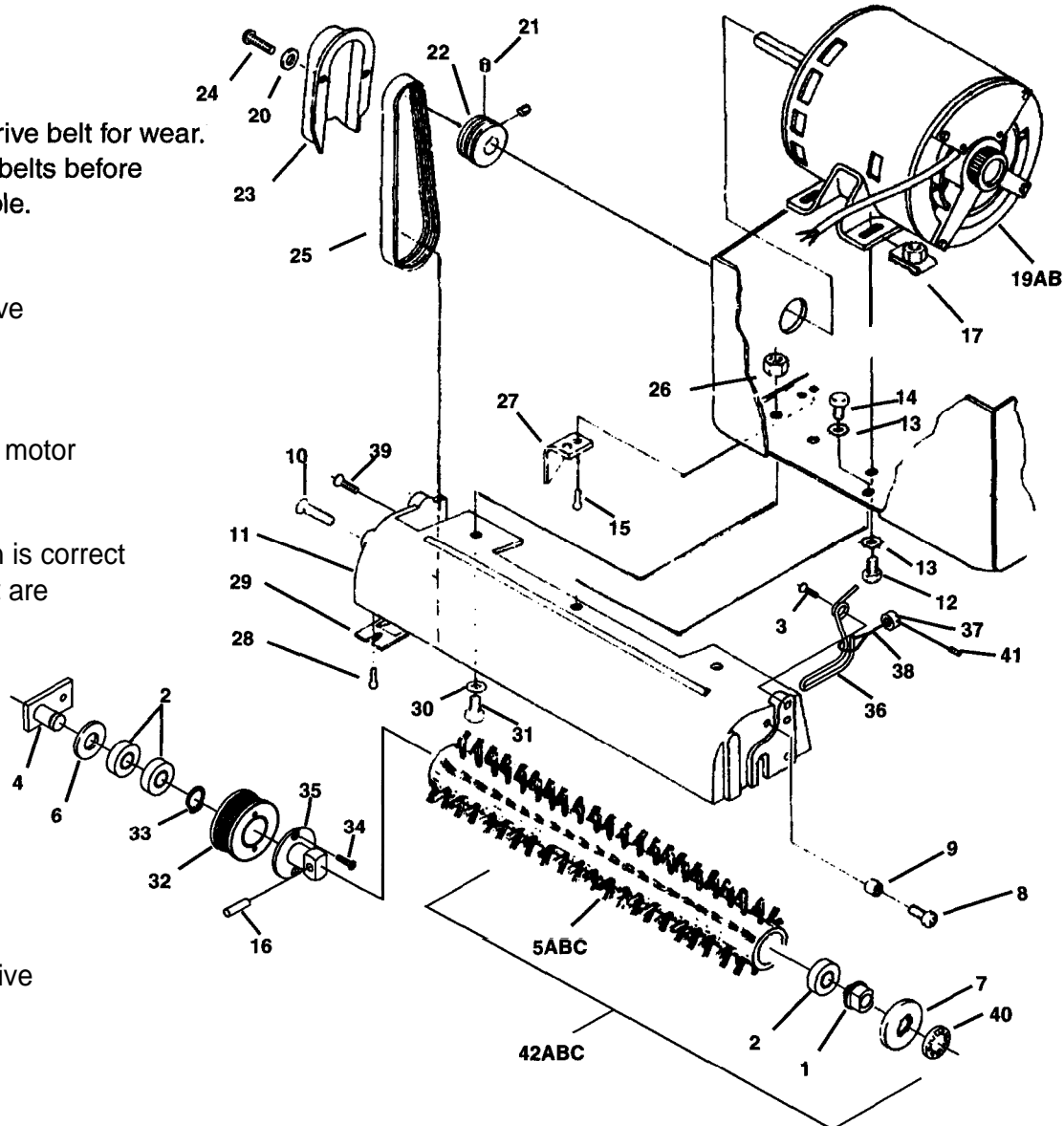
To access the belt remove the belt cover.

To replace the belt it is necessary to loosen the motor and remove the brush.

The "preset" belt tension is correct when the motor and belt are securely back in place.

Check pulley alignment and correct if necessary. The brush pulley and motor pulley can be aligned using a straight edge.

Ensure that both protective covers are back in place before operating the machine.

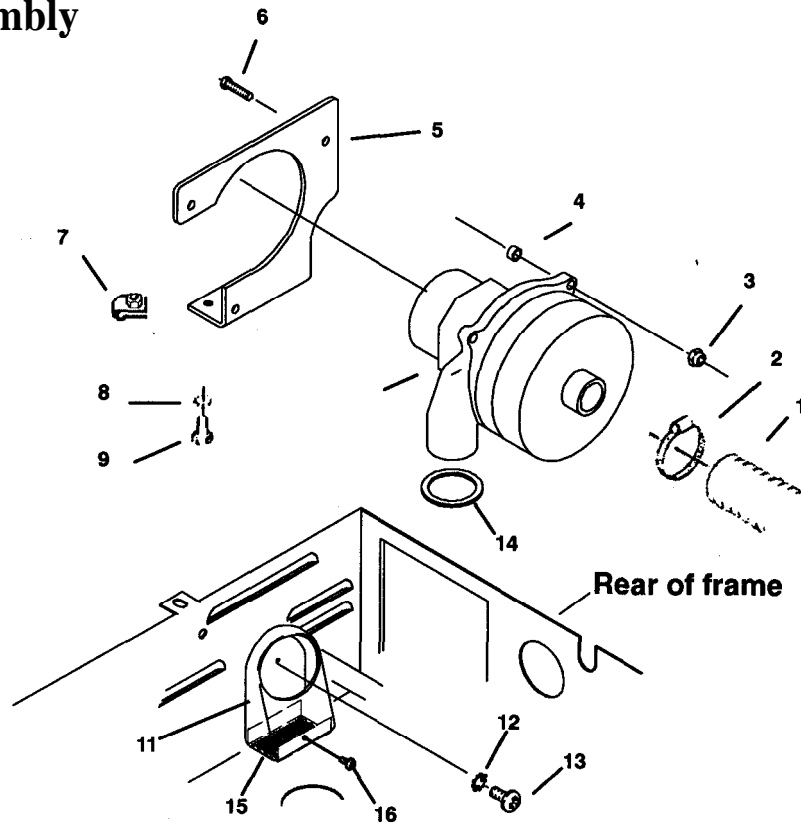




## BRUSH DRIVE ASSEMBLY Parts List

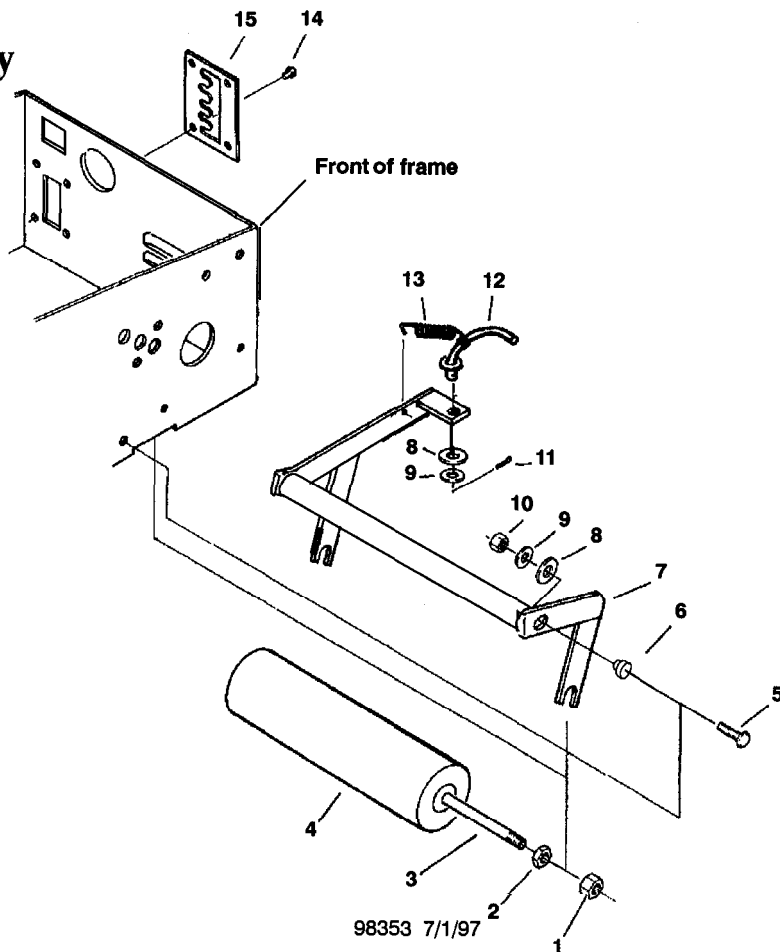
Ref	Part No.	Qty	Description	Serial No.		Notes:
				From	To	
1	03090		Axle, Brush Stub			
2	09019		Bearing, Brush			
3	70078		Shoulder bolt, 5/16 OD x 3/8 L			
4	03089		Axle, Pulley			
5A	140080		Brush, SPD Carpet			
5B	140081		Brush, SPD Hard Floor			
5C	140156		Brush, SPD Hard Floor (Grit)			
6	87146		Washer, 1/2 ID x 1.0 OD x .06 nyl			
7	36166		Guard, Thread			
8	70190		Scr, 1/4-20 x 1/2 BHCS			
9	73181		Spacer, .259 ID x .38 x .25			
10	70201		Scr, 1/4-20 x 3/4 FHMS			
11	41296		Housing, Brush			
12	70011		Scr, 1/4-20 x 5/8 HHCS			
13	87025		Washer, 1/4 Star			
14	70020		Scr, 1/4-20 x 1/2 HHCS			
15	67005		Rivet, 1/8 OD pop wht alum			
16	66094		Pin, Roll 1/4 OD x 1.375 L			
17	57123		Nut, 1/4-20 Captive			
19A	53093		Motor, 115V Brush			
19B	53173		Motor, 100V 1/3 HP W/O TO			
20	87018		Washer, #10 Flat			
21	70074		Scr, 10-32 x 1/4 KCP			
22	6407 1		Pulley, Motor			
23	36044		Guard, belt			
24	70363		Scr, 10-32 x 3/8 PHTR			
25	11031		Belt			
26	57047		Nut, 1/4-32 Nylock			
27	36050		Gusset, Belt Guard			
28	70434		Scr, 6-32 x 3/8 PPHTP			
29	36043		Guard, Brush Pulley			
30	87013		Washer, 1/4 ID x 5/8 OD			
31	70015		Scr, 1/4-20 x 3/4 HHCS			
32	64088		Pulley, 2 1/8 OD 7 groove			
33	67094		Ring, 1/2 ext. snap			
34	70497		Scr, 10-24 x 112 SHCS			
35	29157		Driver, Brush SPD			
36	73767		Spring, Brush retaining			
37	48063		Knob, Brush release			
38	27666		Cable, Brush release			
39	70562		Scr, 1/4-20 x 5/8 FHCS pltd.			
40	57016		Nut, 7/8 Dia pushlock			
41	70118		Set Screw, 8-32 x 5/16 KCP			
42A	140174		Brush Asm, SPD Carpet			
42B	140086		Brush Asm, Hard Floor			
42C	140157		Brush Asm, Hard Floor (Grit)			

# Vac Motor Assembly



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# Roller Assembly



## Vac Motor

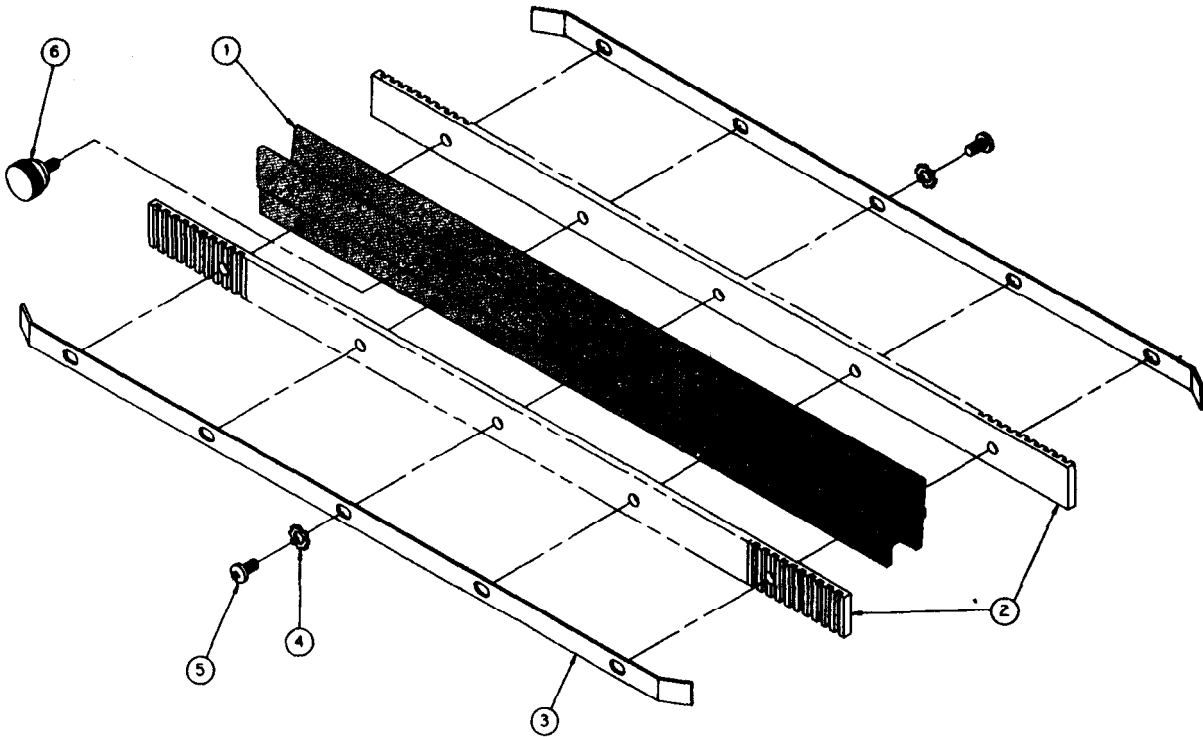
Ref	Qty	Part No.	Description	Serial No.		Notes:
				From	To	
1		39343	Hose, 1.5 x 34" Vac			
2		20063	Clamp, 1.75 Worm Gear			
3		57047	Nut, 1/4-20 Nylock			
4		73215	Spacer, 3/8 OD x 1/4			
5		14887	Bracket, Vac Motor Mounting			
6		70018	Scr, 1/4-20 x 1.00 HHCS			
7		57082	Nut, 1/4-20 Captive J			
8		87025	Washer, 1/4 Star			
9		70011	Scr, 1/4-20 x 5/8 HHCS			
10A		53134	Vac Motor, 115V 3 Stage TD TB			
10B		53183	Vac Motor, 100V 5.7 3 Stage TDTB			
11		29171	Duct, Vac Cooling Intake			
12		87018	Washer, #10 Flat			
13		70363	Scr, 10-32 x 3/8 PHTR			
14		35117	Gasket, Filter			
15		73768	Screen, Vac motor intake			
16		70198	Scr, #10 x 3/4 sht metal ss			

## Roller Assembly

Ref	Qty	Part No.	Description	Serial No.		Notes:
				From	To	
1		57022	Nut, 3/8-16 lock			
2		57085	Nut, 3/8-16 hex jam			
3		03027	Axle, Roller			
4		67082	Roller			
5		70018	Scr, 1/4-20 x 1 HHMS			
6		73178	Spacer, Roller bracket			
7		140077	Bracket asm, SPD roller			
8		87030	Washer, 3/8 ID x 3/4 OD nylon			
9		87013	Washer, 1/4 ID x 5/8 OD			
10		57047	Nut, 1/4-20 lock			
11		66073	Pin, 1/1 x 3/4 cotter			
12		51247	Lever asm, Roller adjustment			
13		73040	Spring, Roller adjustment			
14		70363	Scr, 10-32 x 3/8 PHTF			
15		62397	Plate, Roller adjustment			

# SPIRIT DUAL Squeegee Assembly (p/n 02285)

Ref	Qty	Part No.	Description	Serial No.		Notes
				From	To	
1		73205	Shoe, SPD Squeegee			
2		14260	Squeegee Blade			
3		67084	Retainer, Squeegee Blade			
4		87016	Washer, #10 Ext Tooth Lock			
5		70088	Screw, 10-32 x 1/2" PHMS			
6		48022	Knob Assembly			

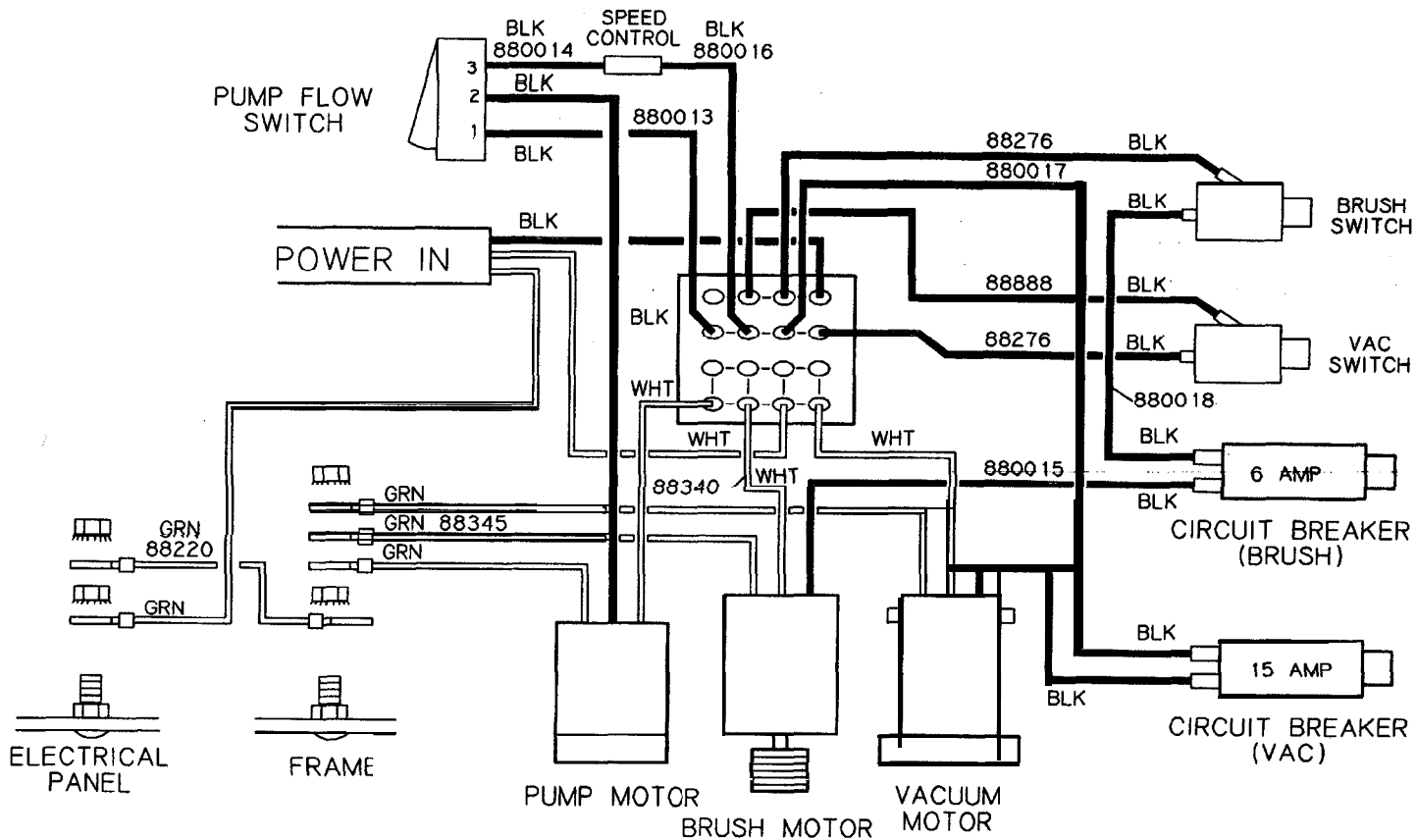


### To attach to the SPIRIT DUAL...

Raise the SPD vac shoe and install squeegee assembly over the vac shoe intake. Center the squeegee on the vac shoe and secure by tightening the two retaining knobs.



# 115V SPR WIRING DIAGRAM





## **LIMITED WARRANTY**

Windsor Industries, Inc. warrants new machines against defects in material and workmanship under normal use and service to the original purchaser. The warranty period is subject to the conditions stated below.

### **3 YEARS FOR PARTS AND 1 YEAR FOR SERVICE LABOR**

Exceptions: Rotationally molded polyethylene tanks carry a 6 **year** parts and 1 year service labor warranty. VERSAMATK models carry a 3 year warranty on brush motors, vacuum motors, and belts, and a 1 year service labor warranty. SENSOR™ models carry a 2 year warranty on vacuum motors and belts, and a 1 year service labor warranty. Extractor brush motors, pump motors, pc boards and electronics, **vac** motors (other than VERSAMATIC™ and SENSOR™), pumps, and FLEXSOL™ diaphragms, all RADIUS™, all **AXCESS™** and **TITAN™1** carry a 1 year parts and service labor warranty. Propane equipment has a 1 year parts and service warranty. The **Onan®** engines have a 3 year manufacturers' warranty. The **Honda®** engines have a 2 year manufacturers' warranty. The engine warranty is administered through the engine manufacturer and must be repaired at an authorized service center.

Normal wear items including, but not limited to, belts, brushes, capacitors, carbon brushes, casters, clutches, cords, filters, finishes, gaskets, hoses, light bulbs, rectifiers, switches, squeegees, bearings, pulleys, relays, **actuating** cables, tires and wheels will be warranted for manufacturing defects for 90 days from the purchase date.

The warranty commences on the purchase date by the original end user from an authorized Windsor Agent, subject to proof of purchase. The Machine Registration Card must be completed and returned immediately at the time of purchase. If proof of purchase cannot be identified, the warranty start date is 90 days after date of sale to an authorized Windsor distributor. Parts replaced or repaired under warranty are guaranteed for the remainder of the original warranty period.

### **90 DAY WARRANTY EXTENSION AVAILABLE**

Upon receipt of the Machine Registration Card, Windsor will extend the warranty period an additional 90 days from the purchase date. Does not include items warranted 90 days for manufacturing defects.

### **STATED WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED.**

Any statutory implied warranties, including any warranty of merchantability or fitness for a particular purpose, are expressly limited to the duration of this written warranty. Windsor will not be liable for any other damages, including but not limited to indirect or special consequential damages arising out of or in connection with the furnishing; performance, use or inability to use the machine. This remedy shall be the exclusive remedy of the buyer.

This warranty shall not apply to: 1. **damage** in transit; 2. **misuse** or abuse (including the use of incompatible or corrosive chemicals or overloading of capacity); 3. failure due to lack of proper maintenance and care (including cleaning); 4. **any** design alterations performed by an organization not authorized or specified by Windsor; 5. **batteries** and chargers. 6. high pressure washing. 7. **electrical** components exposed to moisture.

If difficulty develops during the warranty period, contact the authorized Windsor Agent from whom the product was purchased. Windsor, Inc. may elect to require the return of components to validate a claim. Any defective part to be returned must be shipped freight pre-paid to an authorized Windsor Distributor/Service Center or to the Windsor factory.

### **USE OF PARTS NOT APPROVED BY WINDSOR, INC. WILL VOID ALL WARRANTIES.**

This warranty is valid only for all products sold after July 1, 1995. A product sold before that date shall be covered by the limited Warranty in effect at the date of sale to the original purchaser.



**WINDSOR INDUSTRIES, INC., 1351 W. Stanford Ave., Englewood, CO 80110 USA**  
Phone: 303-762-1800 Fax: 303-762-0817 Internet: [www.windsorind.com](http://www.windsorind.com)