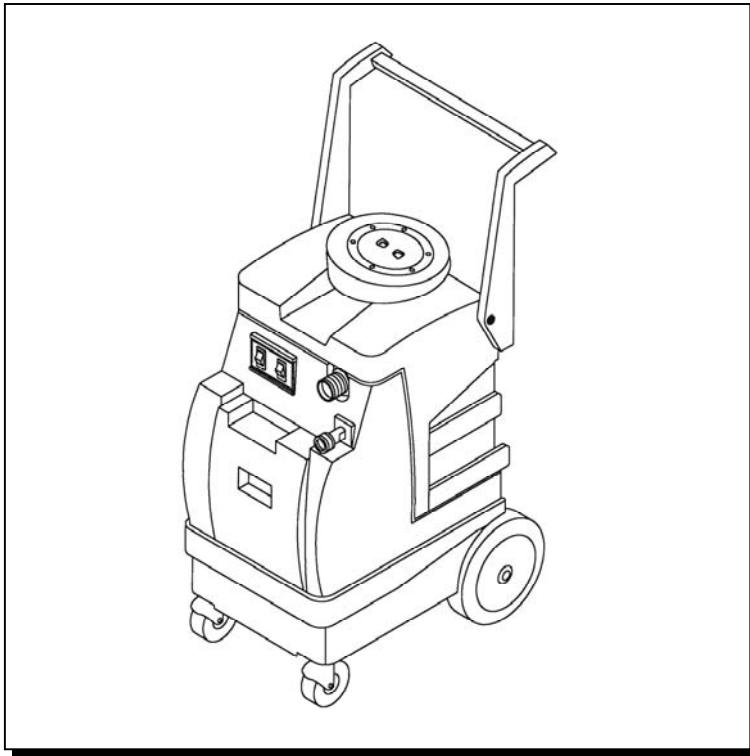


ENSIGN™



CARPET EXTRACTOR



Operating Instructions (ENG)

MODEL: E50
10070090

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

Read these instructions before operating the machine



86038250 02/12/07

PRV NO. 98635

MACHINE DATA LOG/OVERVIEW

MODEL	_____
DATE OF PURCHASE	_____
SERIAL NUMBER	_____
SALES REPRESENTATIVE #	_____
DEALER NAME	_____
OPERATIONS GUIDE NUMBER	_____
PUBLISHED	_____

YOUR DEALER	
Name:	_____
Address:	_____
Phone Number:	_____

OVERVIEW

The Ensign is an electric powered carpet extractor intended for commercial use. This appliance applies a cleaning solution to the carpet and then vacuums the soiled water back into the recovery tank.

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HOW TO USE THIS MANUAL

This manual contains the following sections:

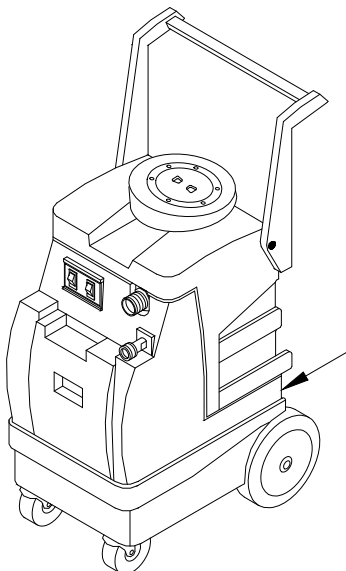
- HOW TO USE THIS MANUAL
- SAFETY
- OPERATIONS
- MAINTENANCE
- PARTS LIST

The HOW TO USE THIS MANUAL section will tell you how to find important information for ordering correct repair parts.

Parts may be ordered from authorized Windsor dealers. When placing an order for parts, the machine model and machine serial number are important. Refer to the MACHINE DATA box which is filled out during the installation of your machine. The MACHINE DATA box is located on the inside of the front cover of this manual.

MODEL _____
DATE OF PURCHASE _____
SERIAL NUMBER _____
SALES REPRESENTATIVE # _____
DEALER NAME _____
OPERATIONS GUIDE NUMBER _____
PUBLISHED _____

The model and serial number of your machine is on the front of the Access Panel.



The SAFETY section contains important information regarding hazard or unsafe practices of the machine. Levels of hazards are identified that could result in product or personal injury, or severe injury resulting in death.

The OPERATIONS section is to familiarize the operator with the operation and function of the machine.

The MAINTENANCE section contains preventive maintenance to keep the machine and its components in good working condition. They are listed in this general order:

- Maintenance
- Lubrication
- Vacuum Motor Replacement
- Solution Pump Replacement
- Troubleshooting

The PARTS LIST section contains assembled parts illustrations and corresponding parts list. The parts lists include a number of columns of information:

- **REF** – column refers to the reference number on the parts illustration.
- **PART NO.** – column lists the part number for the part.
- **PRV NO.** – reference number.
- **QTY** – column lists the quantity of the part used in that area of the machine.
- **DESCRIPTION** – column is a brief description of the part.
- **SERIAL NO. FROM** – column indicates the first machine the part number is applicable to. When the machine design has changed, this column will indicate serial number of applicable machine. The main illustration shows the most current design of the machine. The boxed illustrations show older designs.
- **NOTES** – column for information not noted by the other columns.

NOTE: If a service or option kit is installed on your machine, be sure to keep the KIT INSTRUCTIONS which came with the kit. It contains replacement parts numbers needed for ordering future parts.

NOTE: The number on the lower left corner of the front cover is the part number for this manual.

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:

Connect to a **properly grounded outlet**. See Grounding Instructions.

Do not leave the machine unattended. Unplug machine from outlet when not in use and before maintenance or service.

Use only indoors. Do not use outdoors or expose to rain.

Do not allow machine to be used as a toy. **Close attention** is necessary when used by or near children.

Use only as described in this manual. Use only manufacturer's recommended components and attachments.

Do not use damaged electrical cord or plug. Follow all instructions in this manual concerning grounding the machine. If the machine is **not working properly**, has been dropped, damaged, left outdoors, or dropped into water, return it to an authorized service center.

Do not pull or carry machine by electrical cord, use as a handle, close a door on cord, or pull cord around sharp edges or corners.

Do not run machine over cord. **Keep** cord away from heated surfaces.

Do not unplug machine by pulling on cord. To unplug, grasp the electrical plug, not the electrical cord.

Do not handle the electrical plug or machine with wet hands.

Do not operate the machine with any openings blocked. Keep openings free of debris that may reduce airflow.

This machine is intended for cleaning carpet only.

Do not vacuum anything that is burning or smoking, such as cigarettes, matches, or hot ashes.

This machine is not suitable for picking up health endangering dust.

Turn off all controls before unplugging.

Machine can cause a fire when operating near flammable vapors or materials. Do not operate this machine near flammable fluids, dust or vapors.

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

Maintenance and repairs must be done by qualified personnel.

If foam or liquid comes out of machine, switch off immediately.

SAVE THESE INSTRUCTIONS

HAZARD INTENSITY LEVEL

The following symbols are used throughout this guide as indicated in their descriptions:

HAZARD INTENSITY LEVEL

There are three levels of hazard intensity identified by signal words -**WARNING** and **CAUTION** and **FOR SAFETY**. The level of hazard intensity is determined by the following definitions:

⚠ WARNING

WARNING - Hazards or unsafe practices which COULD result in severe personal injury or death.

⚠ CAUTION

CAUTION - Hazards or unsafe practices which could result in minor personal injury or product or property damage.

FOR SAFETY: To identify actions which must be followed for safe operation of equipment.

Report machine damage or faulty operation immediately. Do not use the machine if it is not in proper operating condition. Following is information that signals some potentially dangerous conditions to the operator or the equipment. Read this information carefully. Know when these conditions can exist. Locate all safety devices on the machine. Please take the necessary steps to train the machine operating personnel.

FOR SAFETY:

DO NOT OPERATE MACHINE:

Unless Trained and Authorized.

Unless Operation Guide is Read and understood.

In Flammable or Explosive areas.

In areas with possible falling objects.

WHEN SERVICING MACHINE:

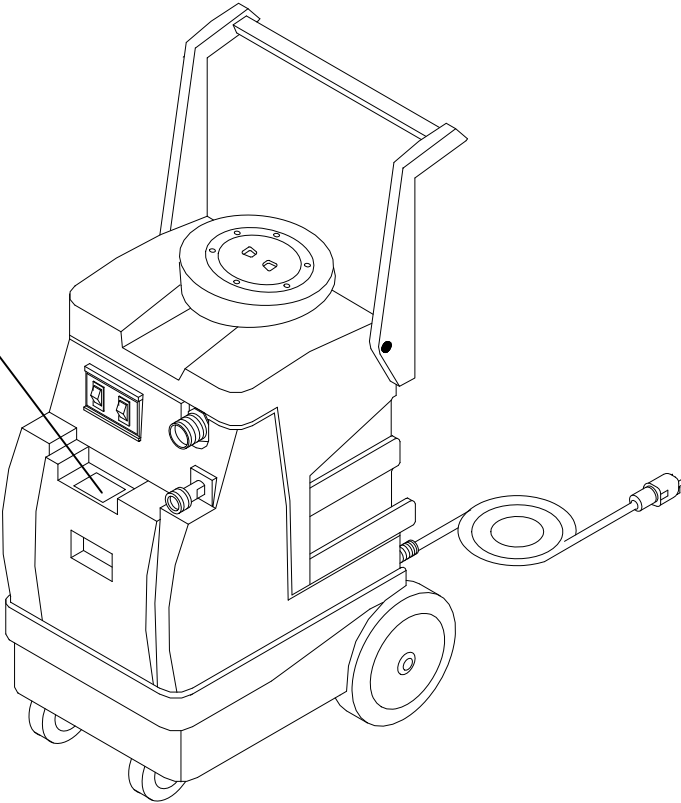
Avoid moving parts. Do not wear loose clothing; jackets, shirts, or sleeves when working on the machine.

SAFETY LABEL LOCATION

NOTE: These drawings indicate the location of safety labels on the machine. If at any time the labels become illegible, promptly replace them.



LABEL WARNING
86242230
PRV NO. 500009



GROUNDING INSTRUCTIONS

THIS PRODUCT IS FOR COMMERCIAL USE ONLY.

ELECTRICAL:

In the USA this machine operates on a standard 15 amp 115V, 60 hz, A.C. power circuit. 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.

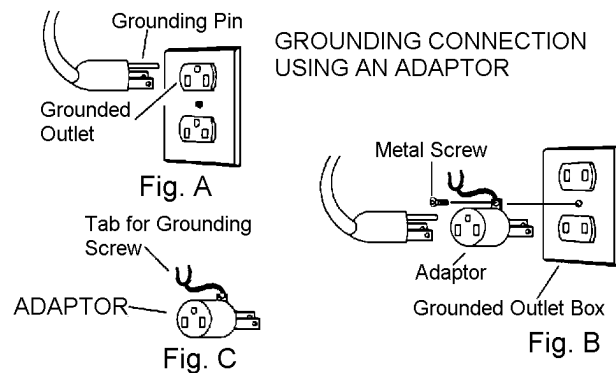
EXTENSION CORDS:

If an extension cord is used, the wire size must be at least one size larger than the power cord on the machine, and must be limited to 50 feet (15.5m) in length.

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 wire 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.

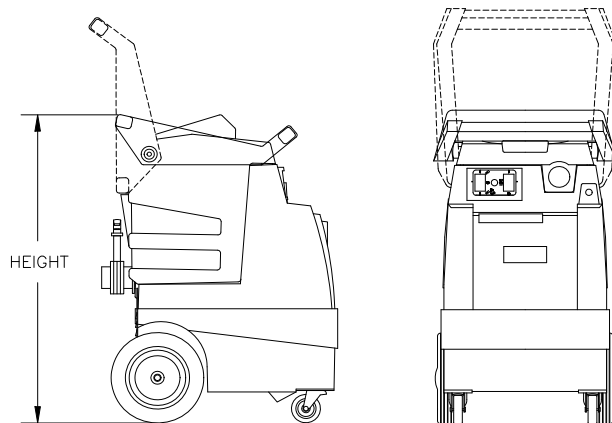
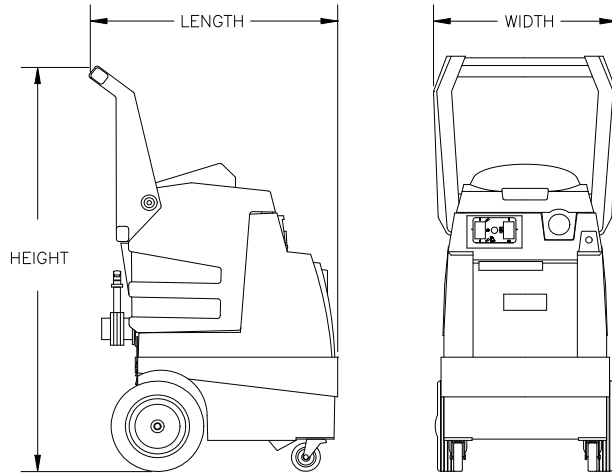


Note: Adaptors are not allowed in Canada.

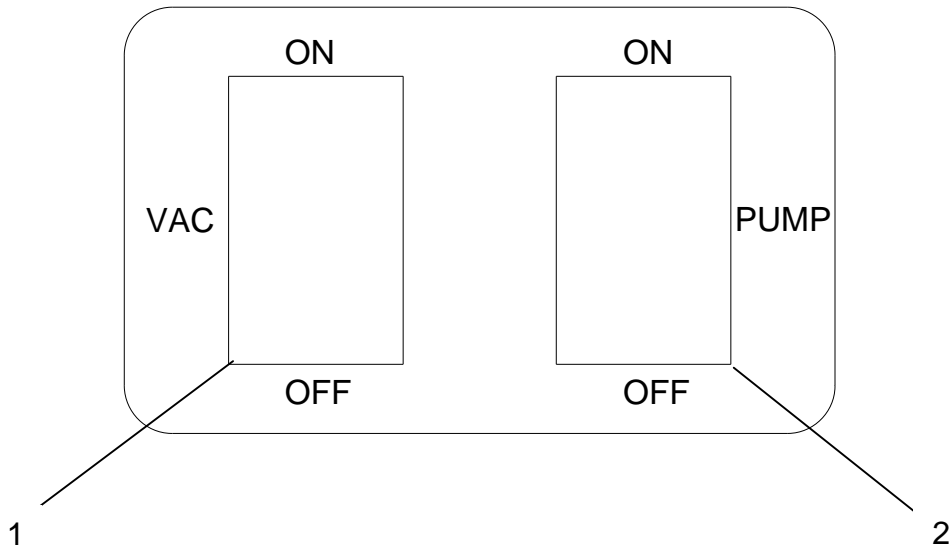
Improper connection of the equipment-grounding conductor can result in a risk of electric shock. Check with a qualified electrician or service person if you are in doubt as to whether the outlet is properly grounded. Do not modify the plug provided with the appliance - if it will not fit the outlet,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

TECHNICAL SPECIFICATIONS

ITEM	MEASURE
Electrical	115 Volt, 60hz
Vacuum Motor	Single 3 stage
Solution Pump	50 psi
Solution Capacity	7 gal (26 L)
Recovery Capacity	6 gal (22 L)
Weight - Empty	50 lbs (110 kg)
Weight -Full Solution	105 lbs (230 kg)
Height	35 inches (88.90 cm)
Height – (Handle Folded Down)	28.5 inches (72.39 cm)
Length	25 inches (63.50 cm)
Width	15.5 inches (39.37 cm)
Power Cord	22 feet (6.71 m)



CONTROLS



-
1. Vacuum Switch
 2. Pump Switch

GENERAL INFORMATION

As the carpet is being cleaned, check to see if there is foam building up in the recovery bucket. Add a little defoaming compound to the recovery tank but never to the solution tank.

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

For hose fitting lubrication, use a light silicone lubricant which will not damage o-rings.

PROTECT THIS MACHINE FROM FREEZING.

PRE-RUN INSPECTION

1. Check all fittings and connectors for proper assembly.
2. Check all hoses for leaks. Repair or replace any damaged hoses.
3. Check power cord(s) for any damage. If damaged, replace.

EQUIPMENT SET-UP

1. Plug power cord from machine into properly grounded wall outlet.
2. Turn vacuum motor switch on and off to make sure there is electrical power at machine.
3. Connect vac hose to machine. Slide the swivel cuff over the outlet on the tank.
4. Connect the hose to your machine and wand. Pull back the knurled collar on the quick disconnect coupler (located on the solution tank) and push into the connection.

To avoid leaks, check to be sure that a positive connection was made.

5. Using a clean container, fill the solution tank with clean hot water. Mix in a non-foaming cleaning concentrate for use in hot water extraction machines, following the manufacture's instructions printed on container.

NOTE: When using a powder cleaner, pre-mix with hot water in a clean container before adding to the solution tank.

6. Turn pump and vacuum switch(s) to the on position.
7. Start cleaning.

EMPTYING AND CLEANING

⚠ WARNING: Always use defoamer if foaming occurs. Foam will suspend large particles that may damage vacuum(s) as well as allow liquid into the vacuum motor(s) without activating the float shutoff.

1. Before proceeding, make certain that the nozzle is functioning properly.
 - a. To check, hold the wand about one foot above the surface to be cleaned and open the wand valve. A full spray should be observed from the nozzle.
 - b. If the nozzle is not showing a full spray pattern, adjust nozzle for proper pattern, clean, or replace nozzle.
2. Normally, chemical is applied on the push stroke of the wand when cleaning. Vacuuming is done on the pull stroke. For heavily soiled carpets the wand may be used in a scrubbing manner, applying chemical in both the push and pull stroke.
3. When cleaning, keep the working opening (wand mouth) flat on the surface being cleaned. Keep the wand moving when the valve is open.
4. The shutoff float inside the vacuum tank will impede the vacuum flow when the vacuum tank is full. When this occurs, empty the vacuum tank by opening the dump valve and dispose of the waste in a proper manner.
5. Once the vacuum tank has been emptied, you may once again proceed with cleaning

MAINTENANCE

DAILY MAINTENANCE



WARNING:

Unplug power cord(s) before servicing or making any repairs.

1. Flush the entire system, including floor tool, hand tool, etc., with 1 to 3 gallons of clean, hot water.
2. Vacuum out the solution tank.
3. Rinse tank with fresh water. Periodically inspect the recovery tank and decontaminate if necessary, using a Hospital Grade Virucide or a 1-10 bleach to water solution. Wastewater should be disposed of properly.
4. Occasionally check filter screen at the bottom of the solution tank and rinse clean with hot water if necessary.
5. Inspect hoses for wear. Frayed or cracked hoses should be replaced to avoid vacuum or solution pressure loss.
6. Inspect power cord for wear or damage. This cable will lie on wet carpet. To prevent electrical shock replace cords that are frayed or have cracked insulation immediately.
7. Clean all dirt and obstructions from drain valve and gaskets to prevent possible leakage and premature wear.
8. Run clean water through solution pump when work is complete.
9. Empty both tanks and rinse, run vacuum (s) for at least one minute to dry motor(s).
10. Store with access covers removed to allow tanks to dry.



WARNING:

DO NOT attempt to repair hose! Repairing high-

pressure hoses may result in severe burns and serious injury.

PERIODIC MAINTENANCE

1. Twice a month, flush a white vinegar solution (One quart vinegar to two gallons of water) or anti-browning solution (mixed as directed) through the extractor, turning pump switch on/off several times, flush with clean water. This will prevent build-up of alkaline residue in the system.
2. Check hoses for wear, blockages, or damage. Frayed or cracked hoses should be repaired or replaced to eliminate vacuum or solution pressure.
3. Check all handles, switches, knobs, electrical cables and connections on your machine for damage. If the cable insulation is broken or frayed, repair or replace it immediately. Don't take chances with electrical fire or shock.
4. Clean out solution tank. Remove and clean solution screen.
5. Clean outside of all tanks and check for damage.

MONTHLY MAINTENANCE

1. Check all bearings for noise and wear.
2. Check all gaskets for wear and leakage.
3. Check pump pressure; observe spray pattern and check gauge if necessary.
4. Check overall performance of machine.

SEMI-ANNUALLY

1. Check vacuum motor brushes.

LUBRICATION

For hose fitting lubrication, use a light silicone lubricant which will not damage o-rings.

STORAGE

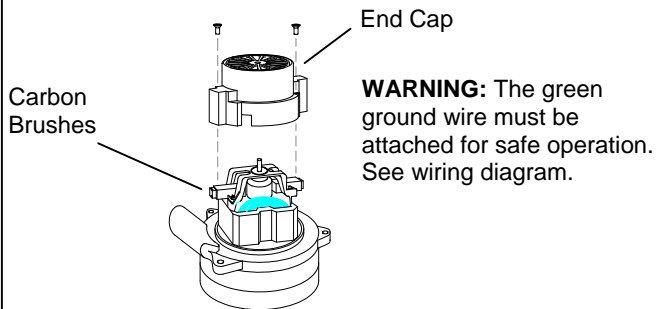
Thoroughly clean machine if it is to be stored. Protect this machine from freezing while in storage.

! WARNING: Only qualified maintenance personnel are to perform the following repairs.

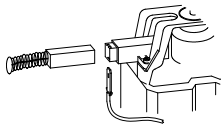
VACUUM MOTOR REPLACEMENT

1. Turn off all switches and unplug machine.
2. Remove recovery tank.
3. Locate the vacuum motor wires and disconnect at the connector.
4. Remove the vacuum motor.
5. Reverse process to install vacuum motor.

Vacuum Motor Carbon Brushes Replacement (Windsor)

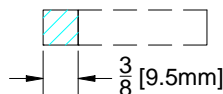


If armature commutator is grooved, extremely pitted or not concentric, the motor will need to be replaced or sent to a qualified service center.



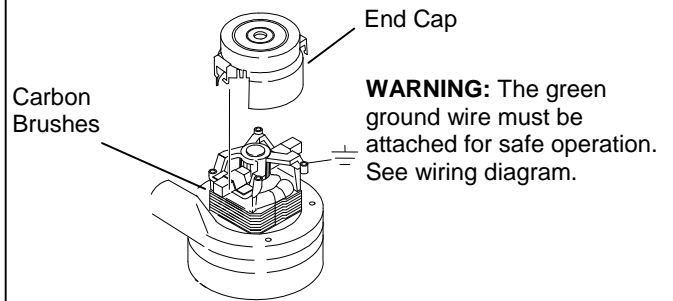
Important:

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.

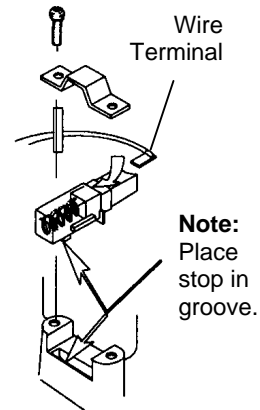


Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" (9.5mm) long.

Vacuum Motor Carbon Brushes Replacement (Ametek)

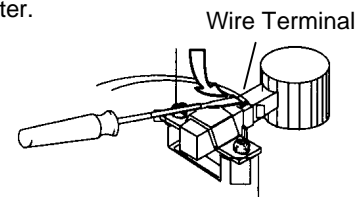


Note: When replacing carbon brushes loosen wire terminal **BEFORE** removing screws on bracket.



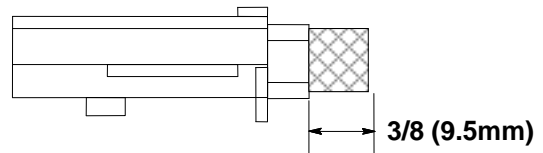
Note: Place stop in groove.

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



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.



Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" (9.5mm) long.

MAINTENANCE

! WARNING: Only qualified maintenance personnel are to perform the following repairs.

SOLUTION PUMP REPLACEMENT

1. Turn off all switches and unplug the machine.
2. Remove recovery tank.
3. Remove solution hoses from fittings in pump.
4. Remove the screws that fasten the pump to the frame.
5. Reverse process to install pump.

PUMP (86251160 PRV NO. 65233) REPLACEMENT KIT

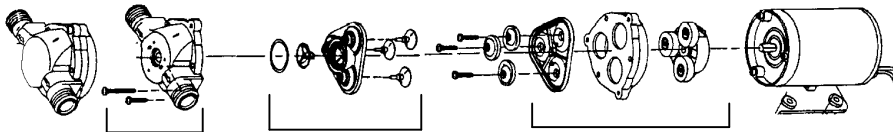
Pump Head
86017350
PRV NO. 65235



Valve Asm
86017370
PRV NO. 84191

Diaphragm
86017390
PRV NO. 29263

PUMP (86201410 PRV NO. 250-63) REPLACEMENT KIT



Pump Head
86251050
PRV NO. 65188

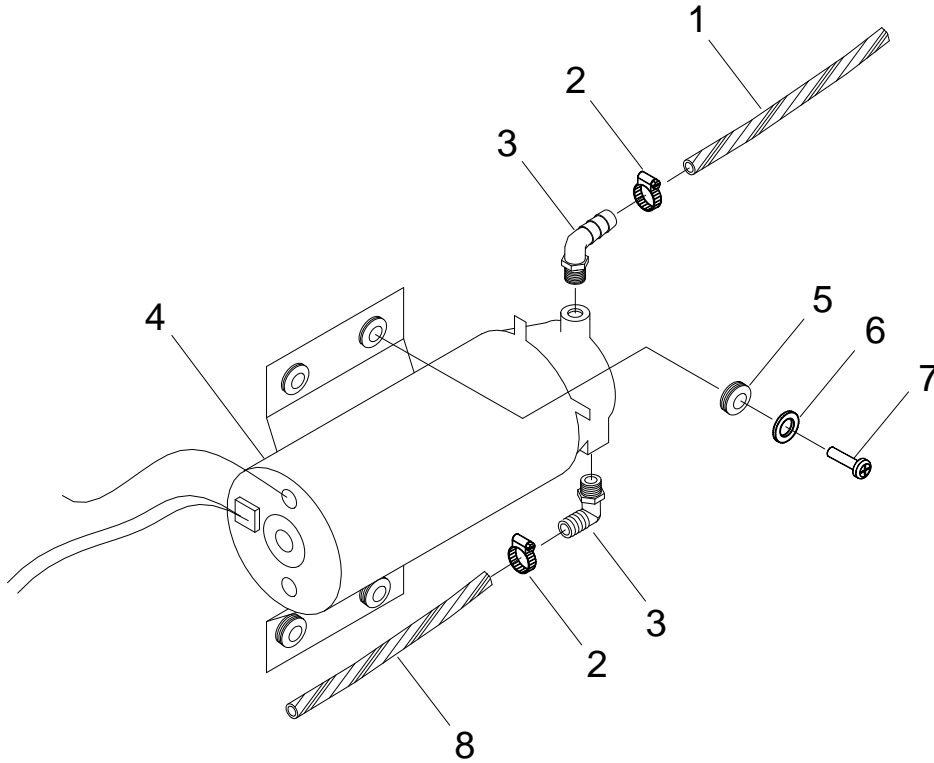
Valve Asm
86258840
PRV NO. 84162

Diaphragm
86255110
PRV NO. 29207

TROUBLESHOOTING

PROBLEM	CAUSE	SOLUTION
Loss of Power	Dead electrical circuit	Check building circuit breaker or fuse box.
	Faulty power cord	Replace
Electrical shock	Equipment not grounding	Follow grounding instructions exactly
	Receptacle not grounded	Contact an electrician to check building's wiring
	Internal wiring problem	Have a trained service technician check machine's wiring
Vac motor speed varies or doesn't run	Worn motor brushes	Replace
	Motor worn out	Replace
	Faulty switch	Replace
Loss of vacuum	Loose vacuum dome	Center and seal dome over tank
	Crack in dome of poor joint	Replace or repair using acrylic plastic cement only
	Lint or dirt clogging vacuum screen	With power off clean screen
	Loose cuffs on vacuum hose	Tighten cuffs turning counterclockwise
	Vac motor seals leaking	Replace
	Floor tool vac chamber clogged	Wash out with hose. Pick lint out with a wire
	Vac motor, hose, or dome gasket	Replace
Pump runs no solution	Pump inlet screen plugged	Clean inlet screen
	Pump air locked	Press trigger to open valve on cleaning wand to relieve air
	Internal or external solution line damaged and leaking	Replace
Pump runs, loss of pressure	Internal pump components wearing out	Replace, see pump kit components (pg 4-3)
	Check valves in pump head for particles or cuts in seals	Take piston from BPR and lubricate with Superlube. If problem still exists change BPR kit
Pump will not run	Unit not plugged in	Connect unit to 3 prong grounded outlet
	Loose wiring	See dealer
Solution hose fitting hard to connect	Corrosion on fittings.	Clean with steel wool. Soak in acetic acid (white vinegar). Lubricate lightly with silicone base lubricant.
Carpet not getting clean	Severe soil conditions	Make several passes at right angles to each other. Use a pre-spray.
Carpet too wet	Over saturation	Adjust solution pressure to lower settings. Make several passes without spray
Carpet browning	Leaving carpet too wet	Check for loss of vac pressure
	Too much chemical	Check label for correct solution concentration
	Light carpet with no brown prevention	Go over carpet with browning prevent only
Solution not flowing properly	Solution hose connection	Check for positive connection
	Faulty pump	Repair or replace
	Faulty floor tool valve	Repair or replace
	Faulty pump switch	Repair

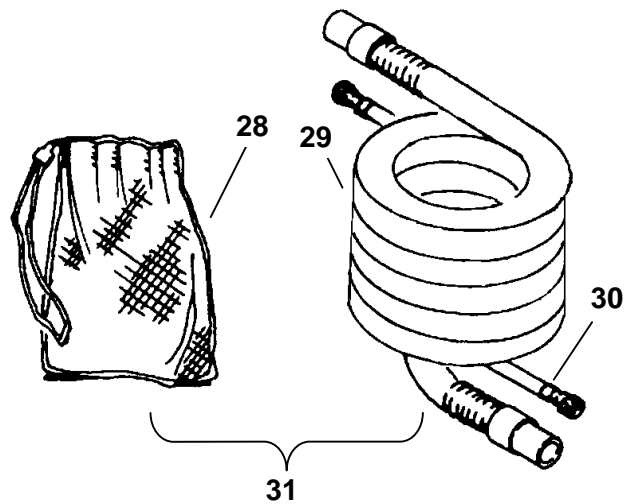
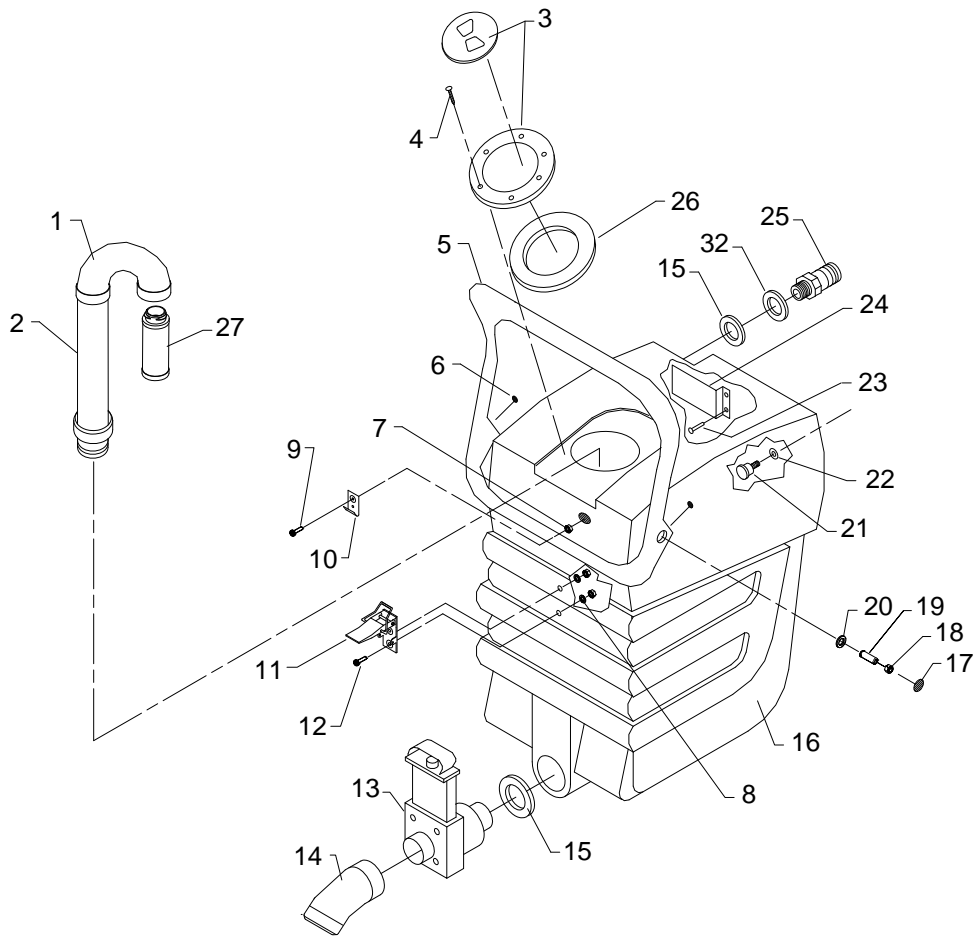
PUMP GROUP



PUMP GROUP

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86280840	39049	1	HOSE, 3/8" RUBBER X 11'		
2	86233150	20042	2	CLAMP, 3/8 HOSE (D-SLOT)		
3	86001550	40043	2	HOSEBARB, 3/8 MPT X 3/8 90°		
4	86018050	65216	1	PUMP ASM, 115V 3ST SENSEI		
5	86199960	110-22	4	GROMMET 6 GAL. PORT		
6	86010630	87013	2	WASHER, 1/4 ID X 5/8 OD SS		
7	86273830	70020	2	SCR, 1/4-20 X 1/2 HHCS SS NP		
8	86281250	39311	1	HOSE, 3/8ID SGLBRD RBR X 14"		

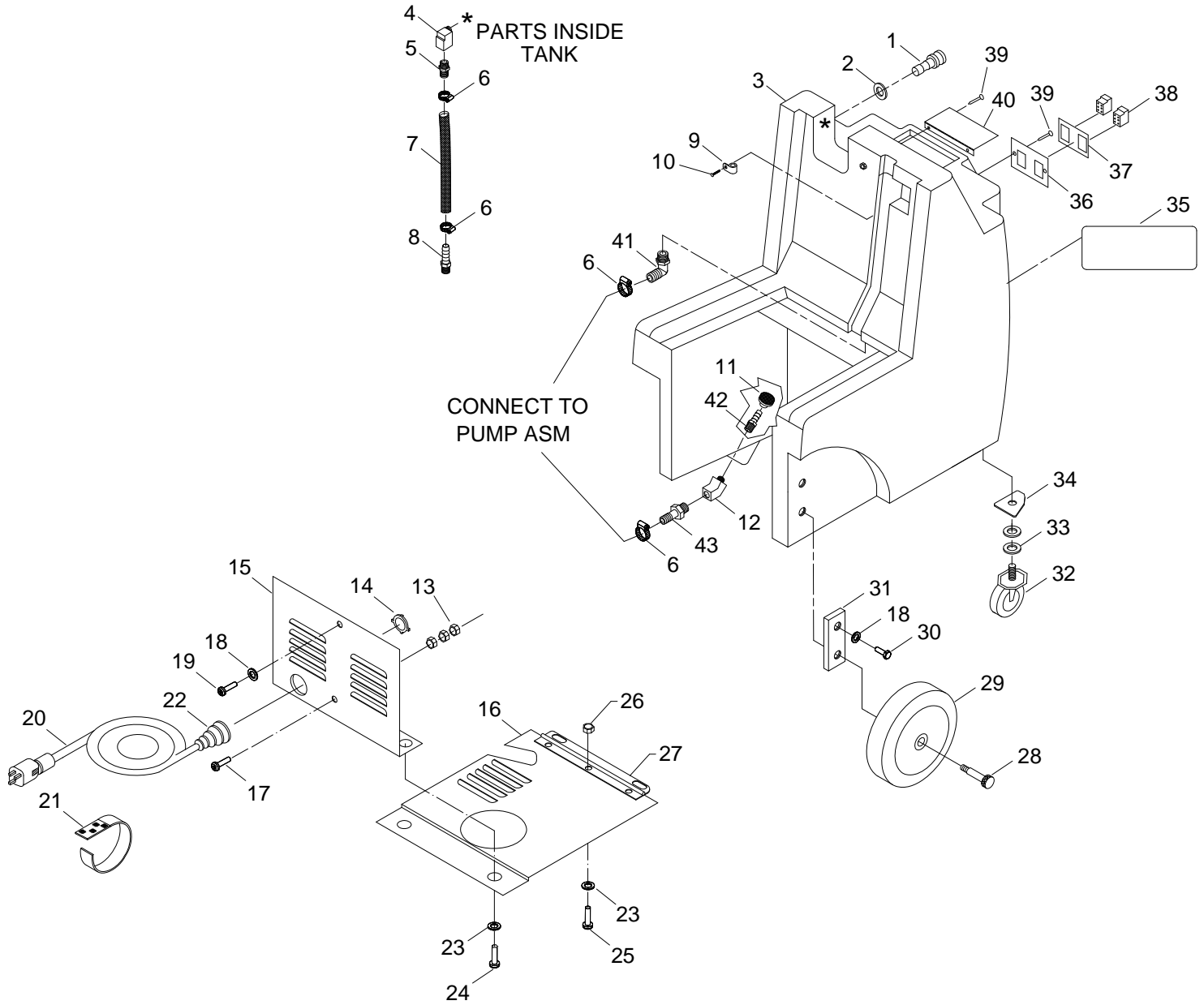
RECOVERY TANK GROUP



RECOVERY TANK GROUP

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86227230	04094	1	ADPTR, 1.5FS X 1.5FS PVC "U"		
2	86033210	34408	1	FLOAT SHUT-OFF TUBE W/ADPTR		
3	86002620	260-64A	1	ACCESS COVER CLEAR 6" W/ RIM		
4	86275800	70546	6	SCR, 8 X 3/4 PFHT/S BLK ZINC		
5	86033350	38299	1	HANDLE, DK GRY		
6	86199330	110-14B	2	CAP PLUG 5/8"		
7	86005720	57106	3	NUT, 8-32 W/STAR WASHER PLTD		
8	86279290	87131	2	WASHER, #10 FLAT W/NEOPRENE		
9	86273930	70051	1	SCR, 8-32 X 1/2 PPHMS NP		
10	86201620	140-03A	1	STRIKE FOR 140-03		
11	86200710	140-03	1	LATCH DRAW PULL 6 GAL.		
12	86006490	70013	2	SCR, 8-32 X 3/4 PPHMS SS		
13	86161460	15-808123	1	DUMP VALVE, 2"		
14	86161470	11-800444	1	ELBOW, 2" 45D PVC SCH40		
15	86237770	35256	2	GASKET, DUMP VALVE		
16	86033460	75338	1	TANK, RECOVERY DK GRY		
17	86199320	110-14A	3	CAP PLUG 1"		
18	86005680	57047	2	NUT, 1/4-20 HEX NYLOCK		
19	86006850	70393	2	SET SCR, 1/4-20 X 1.25L		
20	86010630	87013	2	WASHER, 1/4 ID X 5/8 OD SS		
21	86000510	140-12	1	KNOB 1/4-20 X 3/4 S/S CUPPOINT		
22	86202240	390-24	1	WASHER 1/4 X 5/8 BONDED NEOPRN		
23	86201290	280-02	2	RIVIT AL. 3/16 X 1/2 CLOSED		
24	86090750	065-40	1	BAFFLE		
25	86200290	260-33	1	HOSEBARB, 1.5 MPT X 1.5		
26	86004000	35255	1	GASKET, TANK LID		
27	86003680	34380	1	FLOAT, SHUT OFF		
28	86001750	14182	1	HOSE BAG 24"X 36"		
29	86202030	150-49	1	VAC HOSE W/CUFF 16-1/2 X 1" DIA		
30	86200310	39573	1	HOSE ASM, 3/8 LP SLTN 16.5FT		
31	86284200	47355	1	KIT, HOSE ASM W/BAG ENSIGN		
32	86090320	87257	1	WASHER, HOSEBARB		

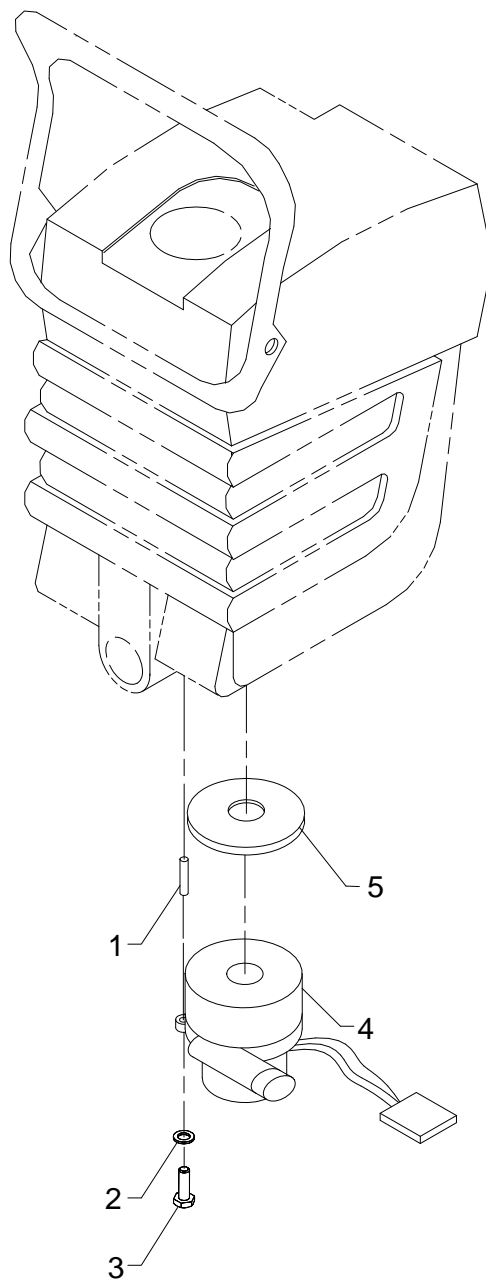
SOLUTION TANK GROUP



SOLUTION TANK GROUP

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86005580	56012	1	NIPPLE, 1/4FPT QD		
2	86090230	87015	1	WASHER, 9/16 ID X 1.06 OD SS		
3	86014060	86014060	1	TANK, SOLUTION SENSEI BLK		
4	86199640	030-16	1	ELBOW, 1/4 NPT STREET LONG 90D		
5	86197550	40014	1	HOSEBARB, 1/4MPT X 3/8 BRASS DL		
6	86233150	20042	4	CLAMP, 3/8 HOSE (D-SLOT)		
7	86281250	39311	1	HOSE, 3/8 RUBBER X 14"		
8	86240490	40094	1	HOSEBARB, 1/4NPT X 3/8 NYLON		
9	86233170	20054	1	CLAMP, 3/8 NYLON UL/CSA		
10	86201290	280-02	1	RIVET AL. 3/16 X 1/2 CLOSED		
11	86201590	290-08	1	SOL SCREEN (ACORN) W. RUB BASE		
12	86180240	11-800341	1	ELBOW, ST 3/8 45 DEG BR	1000168323	WAS 31021
13	86005710	57105	3	NUT, 1/4-20 HEX W/ STAR WASHER		
14	86005670	57040	1	NUT, 1/2 NPT CONDUIT		
15	86090670	065-39A	1	ACCESS PLATE NO HEAT		
16	86090990	61366	1	PLATE, ACCESS		
17	86273810	70018	1	SCR, 1/4-20 X 1 HHCS SS		
18	86010630	87013	3	WASHER, 1/4 ID X 5/8 OD SS		
19	86273780	70015	1	SCR, 1/4-20 X 3/4 HHCS SS NP		
20	86199540	060-04A	1	CORD ASM, 14/3 SJT X 25' BLK		
21	86202160	320-05	1	VELCRO STRAP		
22	86256180	73195	1	STRAIN RELIEF, 3/4 NPT		
23	86010650	87018	4	WASHER, #10 X 9/16 OD		
24	86273930	70051	2	SCR, 8-32 X 1/2 PPHMS NP		
25	86006520	70052	2	SCR, 8-32 X 3/8 PPHMS SS		
26	86270920	57049	3	NUT, 6-32 HEX NYLOCK SS		
27	86200030	41394	1	HINGE, ACCESS PLATE		
28	86278340	70721	2	SHOULDER BOLT, 1/2 OD X 2.25 L		
29	86202260	040-08	2	WHEEL 8" GRY CENTERED HUB		
30	86273830	70020	2	SCR, 1/4-20 X 1/2 HHCS SS NP		
31	86091090	065-41	2	WHEEL BRACKET		
32	86199460	040-12	2	CASTER 2 1/2" THR'D 3/8-16		
33	86010720	87086	4	WASHER, M10 X 30 PLTD		
34	86091100	065-41A	2	WHEEL SUPPORT PLATE		
35	86200690	500379	1	LABEL, ENSIGN		
36	86091140	335-08	1	SWITCH PLATE		
37	86200550	170-22B	1	LABEL W/O HEAT		
38	86256960	72142	2	SWITCH, SPST 15A EURO ROCKER		
39	86274510	70219	5	SCR, #6 X 1/2 SHT MTL BLK		
40	86201460	065-03F	1	SOLUTION COVER		
41	86240500	40095	1	HOSEBARB, 1/4NPT X 3/8 NYL 90D		
42	86240430	40083	1	HOSEBARB, 3/8 MPT X 3/8 NYLON	1000168323	
43	86197510	40010	1	HOSEBARB, 3/8 MPT X 3/8 BR DL	1000168323	

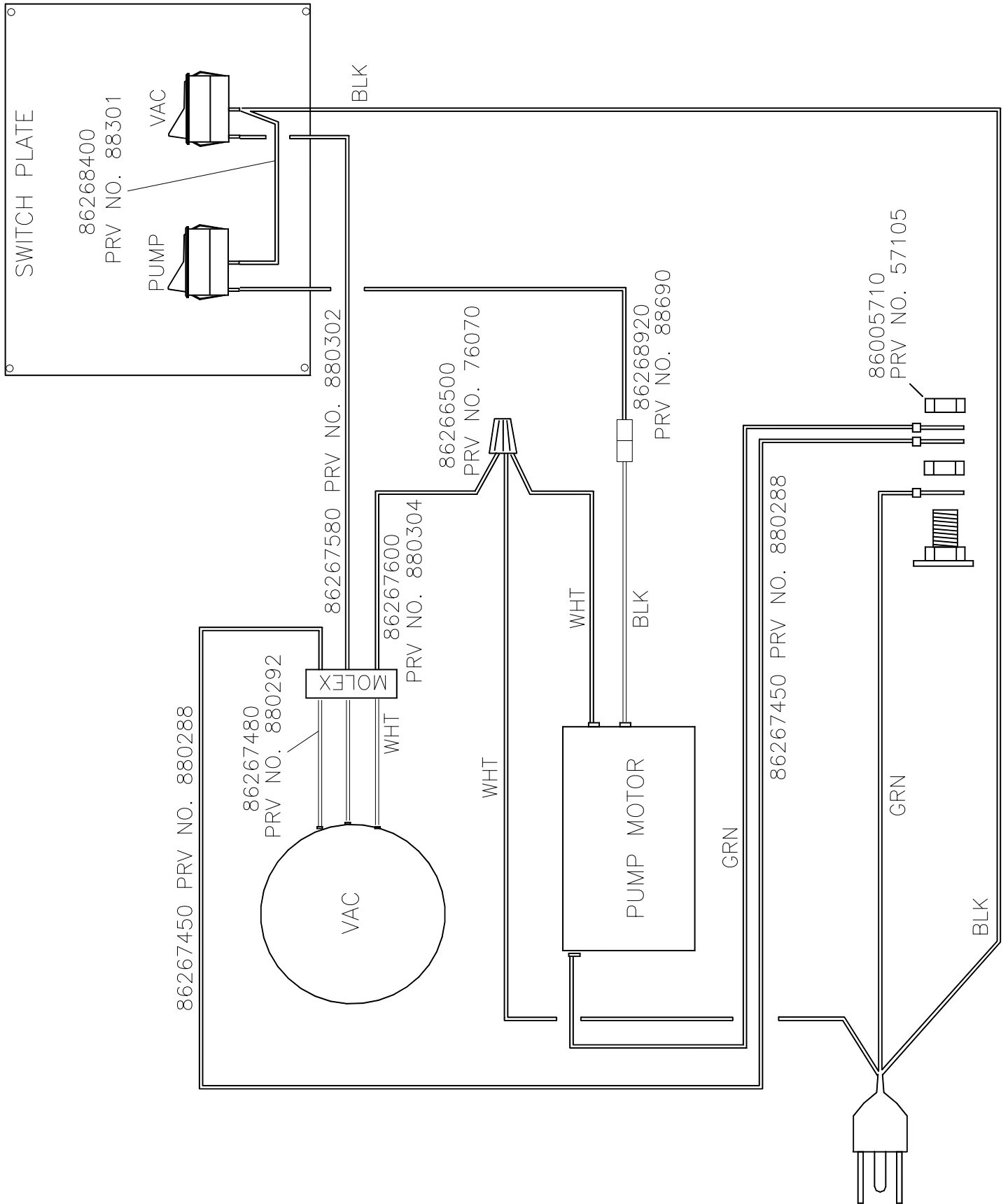
VACUUM MOTOR GROUP



VACUUM MOTOR GROUP

REF	PART NO.	PRV NO.	QTY	DESCRIPTION	SERIAL NO. FROM	NOTES:
1	86201950	065-24E	3	VAC SPACER 3 1/8		
2	86010630	87013	3	WASHER, 1/4 ID X 5/8 OD SS		
3	86273970	70062	3	SCR, 1/4-20 X 4 HHCS GR5 PLTD		
4	86258420	53130	1	VAC MOTOR, 120V 5.7 3ST W/O TB	*	
-	86135320	140687	-	BRUSH SET, 120V VAC WINDSOR	*	SERVICE ONLY
-	86135300	140676	-	BRUSH SET, 120V 3ST VAC AMETEK		SERVICE ONLY
5	86003720	35011	1	GASKET, 3/8T 5.7 VAC FAN SEAL		

WIRING DIAGRAM



SUGGESTED SPARE PARTS

PART NO.	PRV NO.	DESCRIPTION	SERIAL NO. FROM	NOTES:
86003680	34380	FLOAT SHUT OFF		
86002620	260-64A	ACCESS COVER CLEAR 6" W/RIM		
86161470	11-800444	ELBOW, 1.5 FS X FS 45D PVC		
86256960	72142	SWITCH SPST 15A EURO ROCKER		
86202160	320-05	VELCRO STRAPS		
86003720	35011	GASKET, 3/8T 5.7 VAC FAN SEAL		
86200510	140-12	KNOB 1/4-20 X 3/4 S/S CUPPOINT		
86135320	140687	BRUSH SET, 120V VAC WINDSOR	*	
86135300	140676	BRUSH SET, 120V 3ST VAC AMETEK		

NOTES