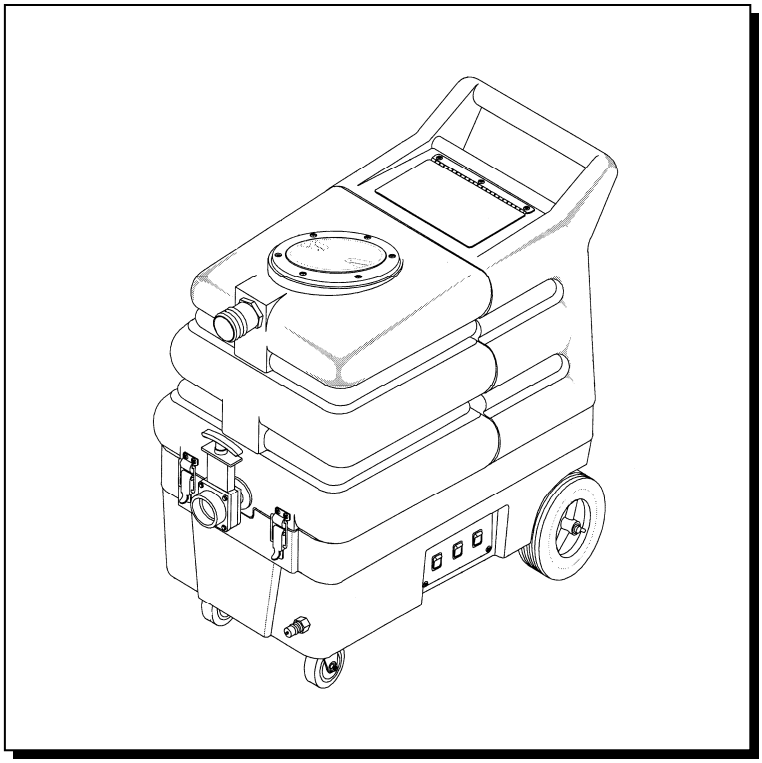
Comanche

PROCHEM
a Castle Rock Industries company

PORTABLE EXTRACTOR



Operating Instructions

MODELS: ***CM1***
10075270
CM2
10075290
CM2H
10075310

Read these instructions before using the machine

R

86038890 06/09/09

PRV NO. 98929

MACHINE DATA LOG/OVERVIEW

MODEL _____

DATE OF PURCHASE _____

SERIAL NUMBER _____

SALES REPRESENTATIVE # _____

DEALER NAME _____

OPERATIONS GUIDE NUMBER _____

PUBLISHED _____

YOUR DEALER

Name: _____

Address: _____

Phone Number: _____

TABLE OF CONTENTS

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 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 located inside the base, directly above the pump.

The SAFETY section contains important information regarding hazard or unsafe practices of the machine. Levels of hazards is 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.

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. If column has an asterisk (*), call manufacturer for serial number.
- **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.

IMPORTANT SAFETY INSTRUCTIONS

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

READ ALL INSTRUCTIONS BEFORE USING THIS MACHINE.

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

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

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

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 operate the machine with any openings blocked. Keep openings free of debris that may reduce airflow.

This machine **is not** suitable for picking up hazardous dust.

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.

During operation, attention shall be paid to other persons, especially children.

When leaving unattended, secure against unintentional movement.

The machine shall only be operated by instructed and authorized persons.

When leaving unattended, switch off or lock the main power switch to prevent unauthorized use.

Do not handle the plug or machine with wet hands.

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

Do not use with damaged cord or plug. Follow all instructions in this manual concerning grounding the machine.

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.

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

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

SAVE THESE INSTRUCTIONS

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. Use manufacturer approved replacement parts.

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.

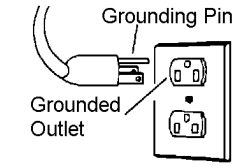


Fig. A

GROUNDING CONNECTION USING AN ADAPTOR

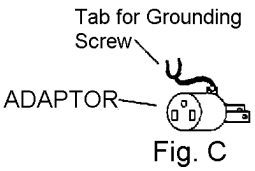


Fig. C

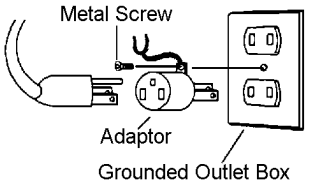


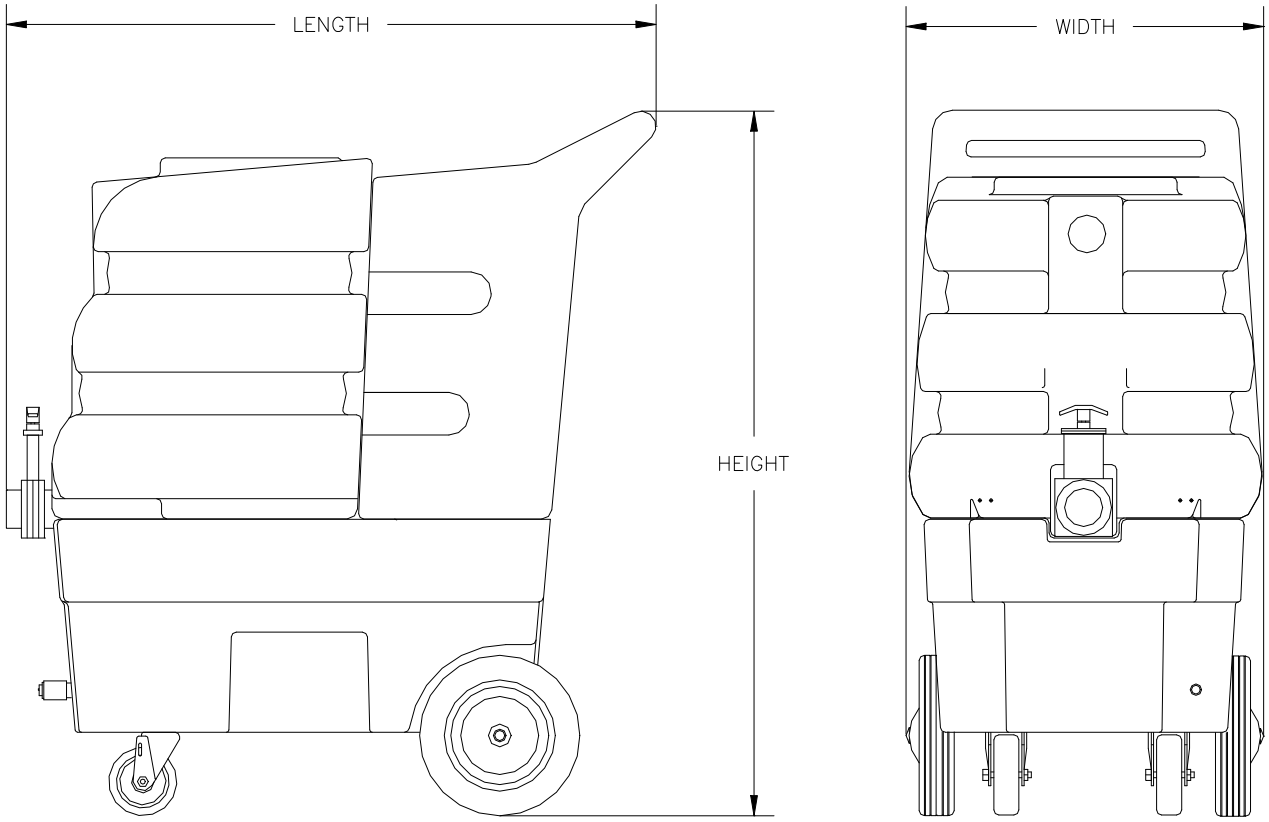
Fig. B

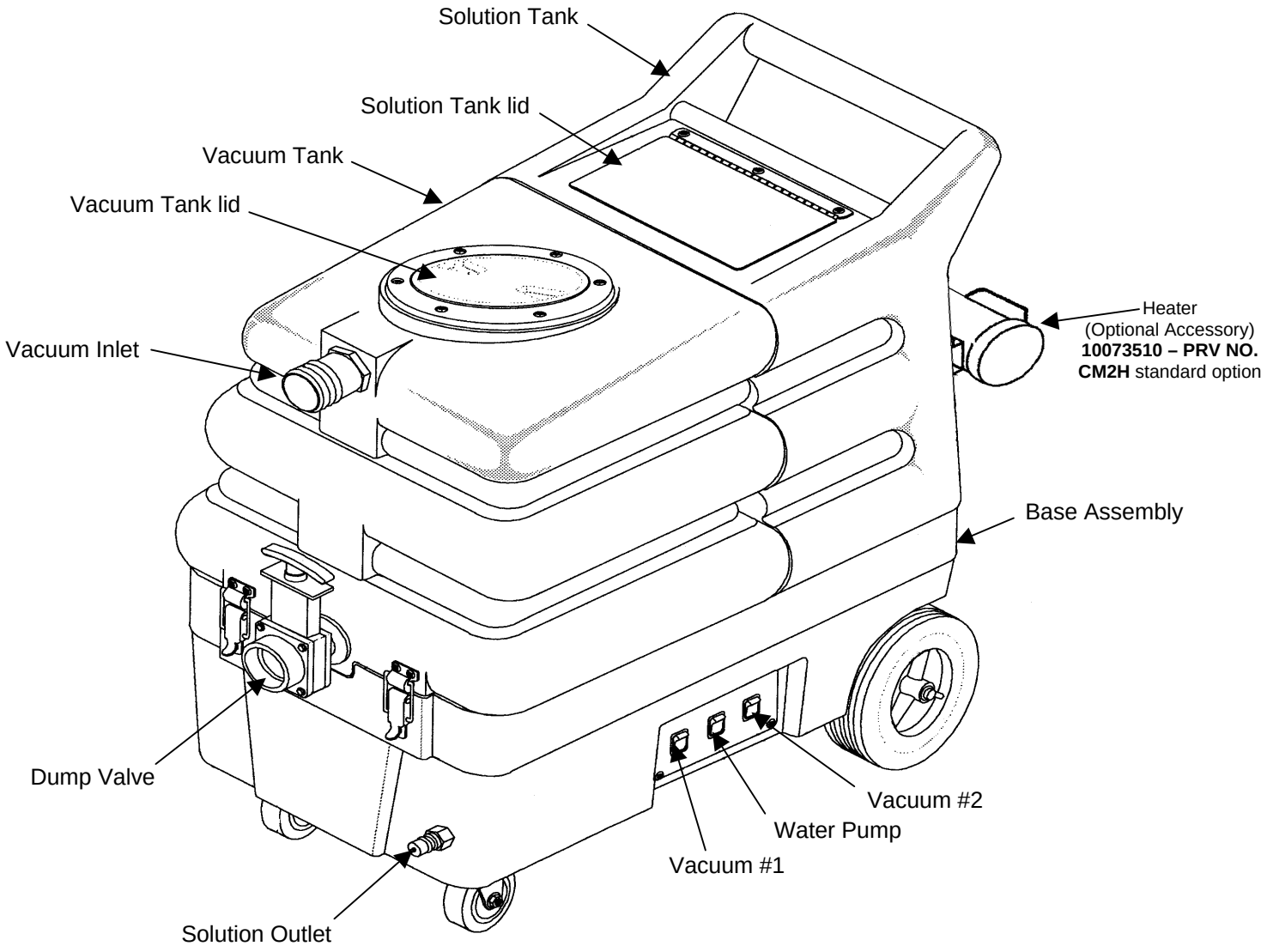
Note: Adaptors are not allowed in Canada.

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	DIMENSION/CAPACITY
Electrical	115V 60HZ
Electric Vacuum Motor	DUAL 2 STAGE
Solution Pump	100PSI
Solution Capacity	10 gal. (38L)
Recovery Capacity	10 gal. (38L)
Dimensions – Weight (Empty)	81 lbs. (37kgs)
Dimensions - Length	31 in. (78.7cm)
Dimensions - Height	35.5 in. (90.2cm)
Dimensions - Width	17 in. (43.2cm)
Power Cable	25 ft. (7.6M)




Solution Tank
Solution Tank lid
Vacuum Tank
Vacuum Tank lid
Vacuum Inlet
Heater
(Optional Accessory)
10073510 – PRV NO. CM2H standard option
Base Assembly
Dump Valve
Vacuum #2
Water Pump
Vacuum #1
Solution Outlet

MACHINE OPERATIONS

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 and push onto the connection on the chassis. To avoid leaks, check to be that a positive connection was made.
5. Pour clean, hot water into the solution tank. **To avoid possible tank distortion, water temperature must not exceed 140 F (60C).**
6. Add a non-foaming cleaning solution concentrate, for use in hot water extractors at the proportions noted on the container (See list below), into solution tank.
7. Turn pump and vacuum switch(s) to the on position.
8. Start cleaning.

⚠ WARNING

To prevent possible disease hazard, before attempting to clean bodily fluids spills, you must kill any viruses, germs or bacteria present in the bodily fluid.

SUITABLE CHEMICALS	INCOMPATIBLE CHEMICALS
Alkalis	Aldehydes
Clorox II Bleach*	Aromatic Hydrocarbons
Defoaming Agents	Butyls
Detergents	Carbon Tetrachloride
Hydroxides	Clorox*
Oxygen Bleaches	Chlorinated Bleaches
Soaps	Chlorinated Hydrocarbons
Sta-Puf Fabric	D-Limonene
Softener*	Lysol*
Vinegar	Methyls (MEK)
	Perchlorethylene (perc)
	Phenols
	Trichlorethylene

*Registered Trademark

CLEANING & EMPTYING TANKS

⚠ WARNING

Always use defoamer if foaming occurs. Foam will suspend large particles which may damage vacuum as well as allow liquid into the vacuum motor 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 while vacuuming is done on the ***pull*** stroke. For heavily soiled carpets the hand tool may be used in the scrubbing manner, applying chemical in both the push and pull stroke. **ALWAYS FINISH UP AN AREA WITH A VACUUM 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 recovery tank will impede the vacuum flow when the tank is full. When this occurs, empty the recovery tank. Do this by opening the dump valve located at the front of the machine. **NOTE:** *Dispose of waste in a proper manner which would not violate any Local, State or Federal law.*
5. Once the recovery tank has been emptied, you may once again proceed with cleaning

⚠ CAUTION

Operating Vacuum after shutoff has activated could draw water directly into the vac motor. This will cause damage to the motor, therefore voiding your warranty.

⚠ CAUTION

ALWAYS TEST CARPET FOR COLOR FASTNESS IN AN INCONSPICUOUS PLACE. Also, to avoid prolonged drying times, do not spray too much solution in any one area.

⚠ WARNING

Before making any adjustments or performing any maintenance to your machine, disconnect the power cord from the electrical source.

SHUT DOWN AND STORAGE

1. Turn Switch OFF. Empty recovery tank completely and rinse several times to remove any dirt or debris that may be left behind.
2. Drain any unused cleaning solution from solution tank and rinse with clean water to remove any suds left behind by the cleaning chemicals.
   NOTE: *Dispose of waste in a proper manner which would not violate any Local, State or Federal law*
3. Run a small amount of clean water through pump if chemicals were used. This will help insure the life of your pump.
4. Check the spray jet on the cleaning tool for full spray pattern and inspect vac head for any obstructions.
5. Remove as much moisture from system before storing in cold climates. Excess water may freeze during storage and crack internal components, causing damage to the unit.

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.

PERIODIC MAINTENANCE

1. Twice a month, flush a white vinegar solution (one quart vinegar to two gallons water) or anti-browning solution (mixed as directed) through the extractor. This will prevent build-up of alkaline residue in the system.

2. If spray jet becomes clogged, remove the spray tip, wash it thoroughly, and blow dry. **NOTE**: **DO NOT USE PINS, WIRE, ETC. TO CLEAN NOZZLE AS THIS COULD DESTROY THE SPRAY PATTERN.**

3. Apply silicone lubricant to solution nipple.

4. Periodically inspect all hoses, electrical cable and connections on your machine. Frayed or cracked hoses should be repaired or replaced to eliminate vacuum or solution pressure loss. If the cable insulation on the power cord is broken or frayed, repair or replace immediately. Don't take chances with electrical fire or shock.

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.

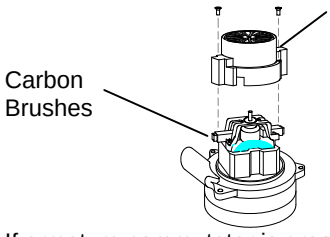
SOLUTION PUMP REPLACEMENT

1. Turn off all switches and unplug the machine.
2. Unlatch the recovery tank from the base.
3. Tip recovery/solution tank to gain access to the base of machine.
4. Remove solution hoses from fittings on pump. Disconnect wires.
5. Remove the screws that fasten the pump to the base.
6. Reverse process to install new replacement pump.

VACUUM MOTOR REPLACEMENT

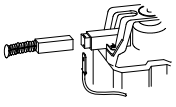
1. Turn off all switches and unplug machine.
2. Unlatch the recovery tank from the base.
3. Tip recovery/solution tank to expose vacuum (s).
4. Locate the proper vacuum motor wires and disconnect.
5. Unfasten screws holding vacuum to plate.
6. Remove the vacuum motor.
7. Reverse process to install vacuum motor replacement.

Vacuum Motor Carbon Brushes Replacement (Windsor)

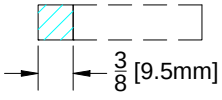


WARNING: The green ground wire must be attached for safe operation. See wiring diagram.

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

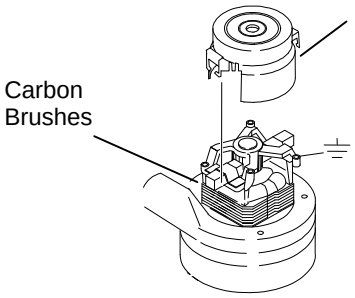


Important:
These brushes wear quicker as the length shortens due to increased heat. Spring inside brush housing will damage motor if brushes are allowed to wear away completely.



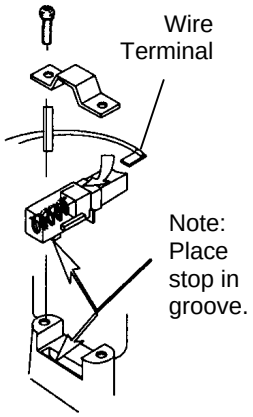
Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" (9.5mm) long.

Vacuum Motor Carbon Brushes Replacement (Ametek)

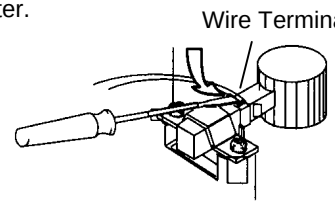


WARNING: The green ground wire must be attached for safe operation. See wiring diagram.

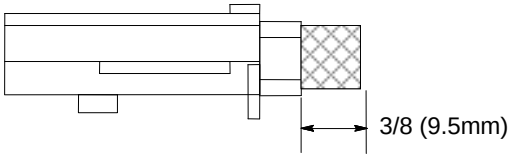
Note: When replacing carbon brushes loosen wire terminal BEFORE removing screws on bracket.



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

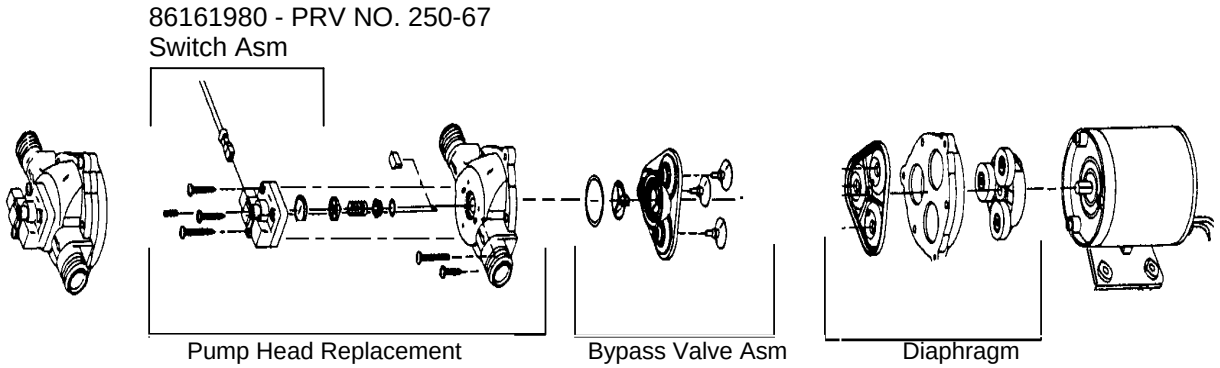


Important:
These brushes wear quicker as the length shortens due to increased heat. Spring inside brush housing will damage motor if brushes are allowed to wear away completely.

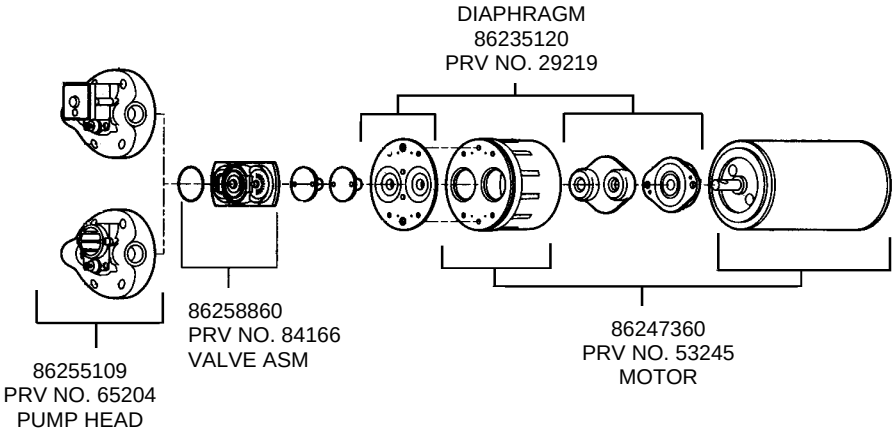


Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" (9.5mm) long.

PUMP REPLACEMENT PARTS FOR SHURFLO 100PSI (86201430 – PRV NO. 250-64A)



PUMP REPLACEMENT PARTS FOR FLOJET 100 PSI (86251110 – PRV NO. 65219)

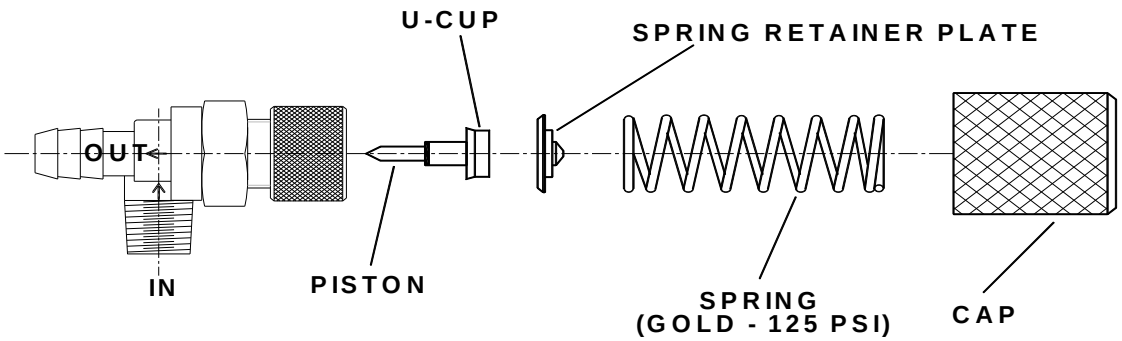


PRESSURE REGULATOR

For best results with the pressure regulator, we recommend that you clean and lubricate the piston and u-cup with Superlube lubricant monthly or when pressure drop seems excessive.

1. Turn unit off before lubricating.
2. Remove cap, spring and spring retainer plate.
3. With fingertips remove piston and u-cup.
4. Wipe piston and u-cup clean of any film or scale.
5. Lubricate the piston and u-cup with Superlube.
6. Reassemble regulator.
7. With pump ON, re-adjust pressure regulator for normal operation.

LUBRICATE U-CUP WITH SUPERLUBE MONTHLY.



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 BPR for particles or cuts in seals	Take piston from BPR and lubricate with Superlube. If problem still exists change BPR.
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	Check solution wand. 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