

# Ninja Master 500 PSI

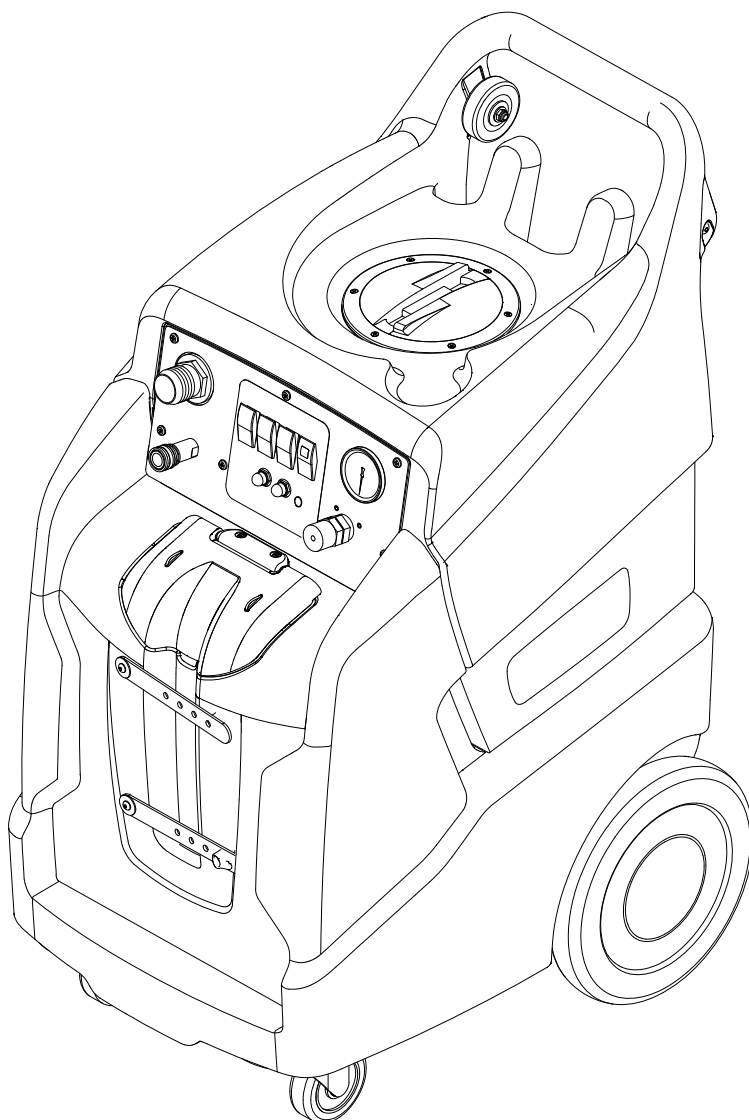
**PROCHEM**

Kärcher Group

**Extractor**

**Operating Instructions (ENG)**

**MODELS:** NMCU2250H  
10070770



From Serial Number (Ref No. 1\*)  
\* See Serial number page or  
call Manufacturer.



86399110-A 02/04/15

Model:	_____
Date of Purchase:	_____
Serial Number:	_____
Dealer:	_____
Address:	_____
Phone Number:	_____
Sales Representative:	_____

### Overview

The Ninja Master 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.

## Warranty Registration

Thank you for purchasing a Prochem Kärcher Group product. Warranty registration is quick and easy. Your registration will allow us to serve you better over the lifetime of the product.

To register your product go to :

<http://www.prochem.com/WarrantyRegistration.aspx>

For customer assistance:

1-800-444-7654

**PROCHEM**

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## How To Use This Manual

This manual contains the following sections:

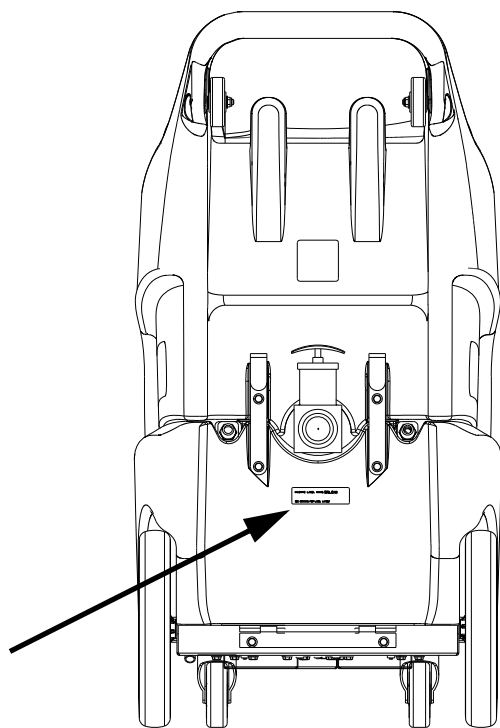
- How to Use This Manual
- Safety
- Operations
- Maintenance
- Suggested Spare Parts List

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:	_____
Dealer:	_____
Address:	_____
Phone Number:	_____
Sales Representative:	_____

The model and serial number of your machine is located on the back of the machine.



The SAFETY section contains important information regarding hazardous or unsafe practices of the machine. Levels of hazards are identified that could result in product damage, 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

*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 manual part number is located on the lower right corner of the front cover.*

# IMPORTANT SAFETY INSTRUCTIONS

**When using this machine, 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:

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.

## READ AND 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

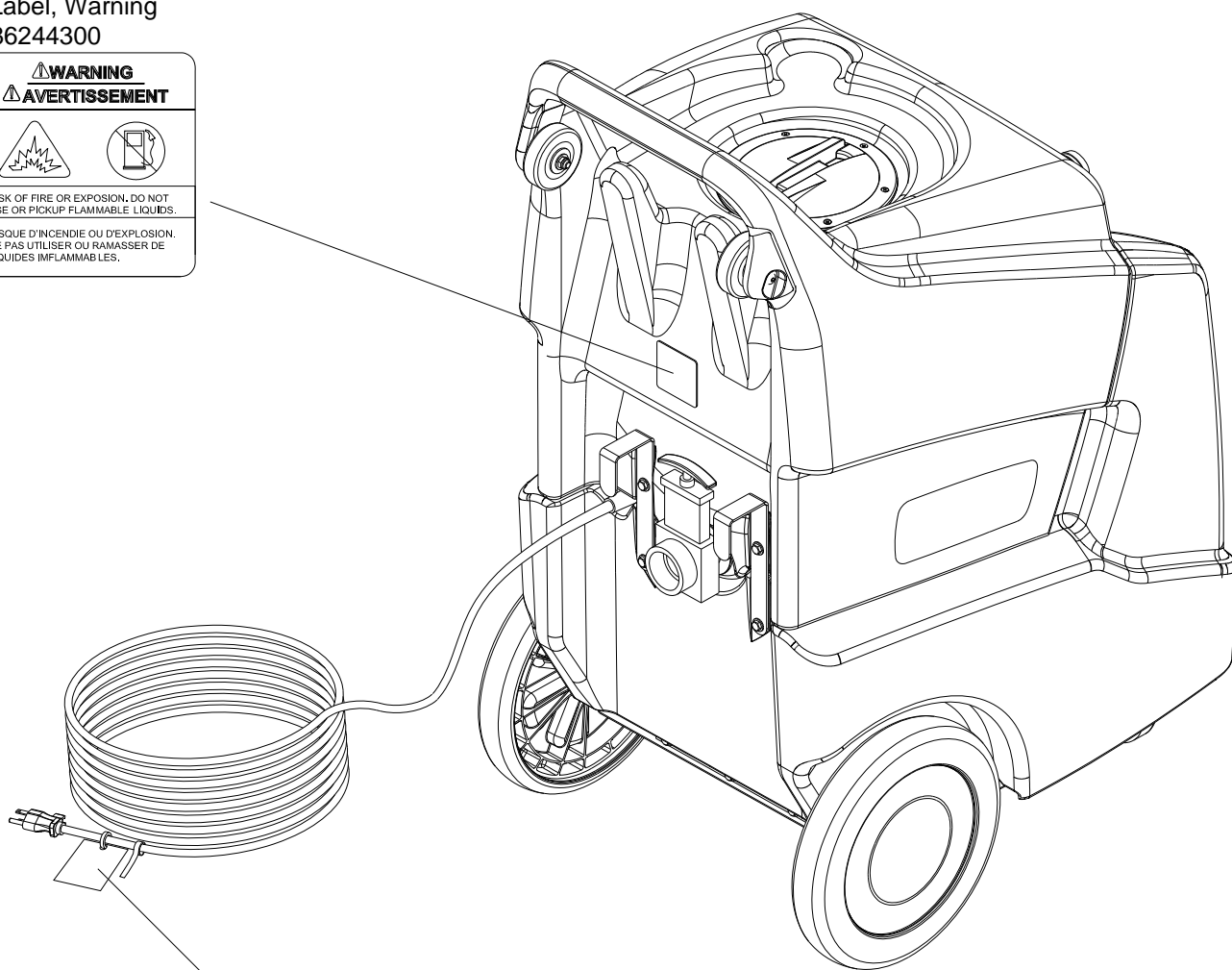
#### **WHEN SERVICING MACHINE:**

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

## Safety Labels

**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  
86244300



**WARNING!**  
FOR YOUR PROTECTION USE A  
GROUND FAULT CIRCUIT INTERRUPTER

**AVERTISSEMENT!**  
POUR VOTRE PROTECTION, UTILISEZ  
UN DISJONCTEUR DE FUITE À LA TERRE.

Label Circuit Interrupter  
86200570

## 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.

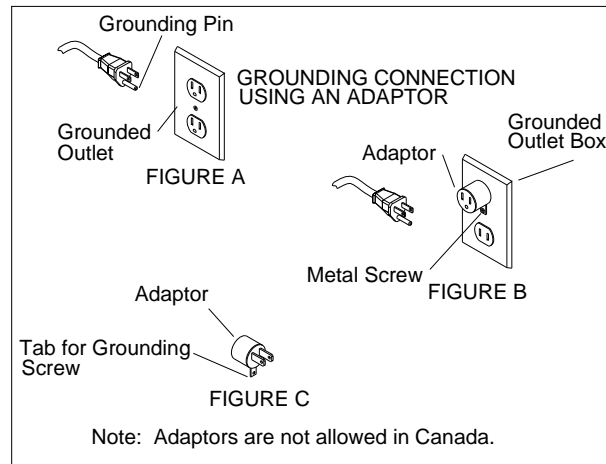
### EXTENSION CORDS:

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 adapter that looks like the adapter 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 adapter 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 adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.



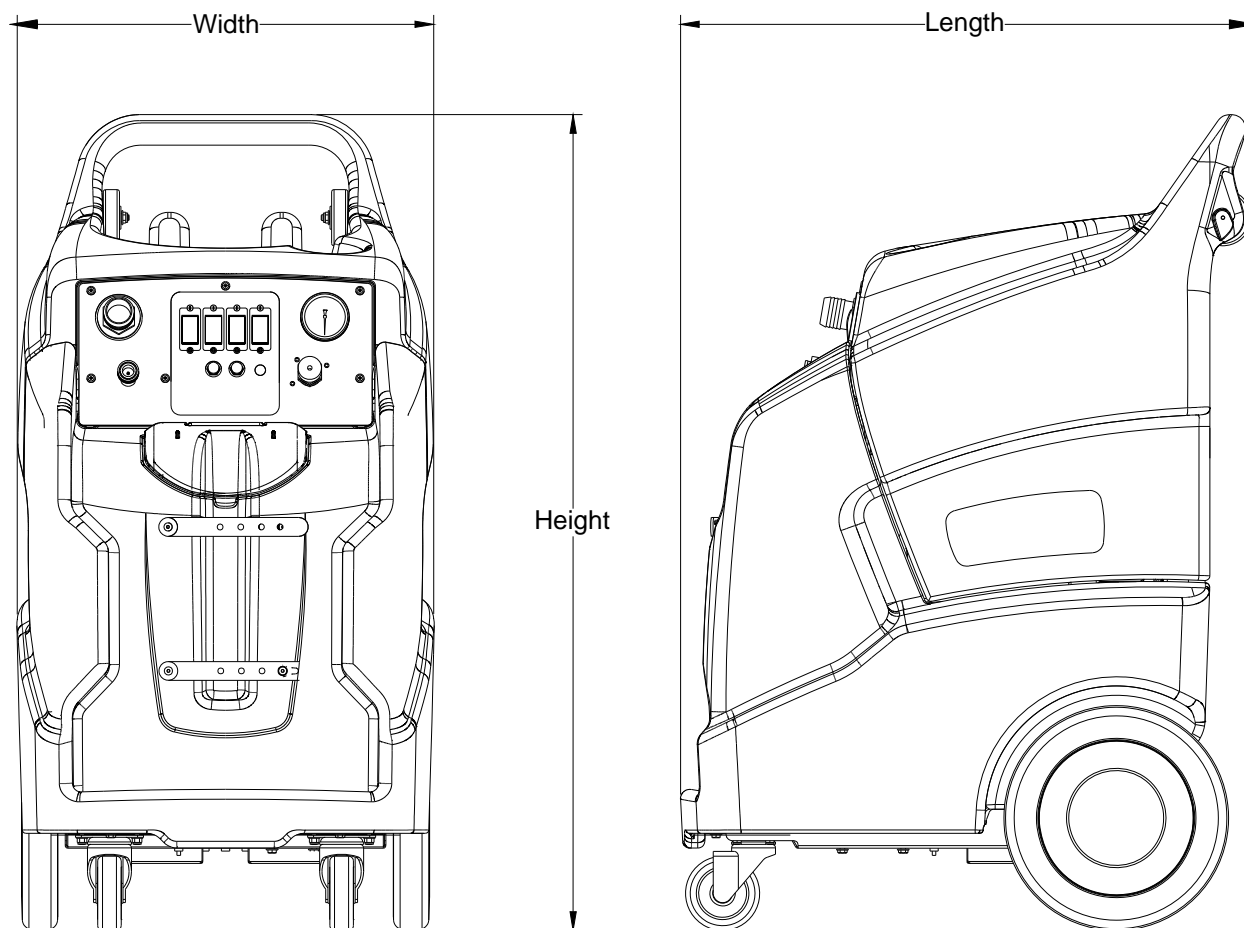
## ⚠ WARNING:

**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.**



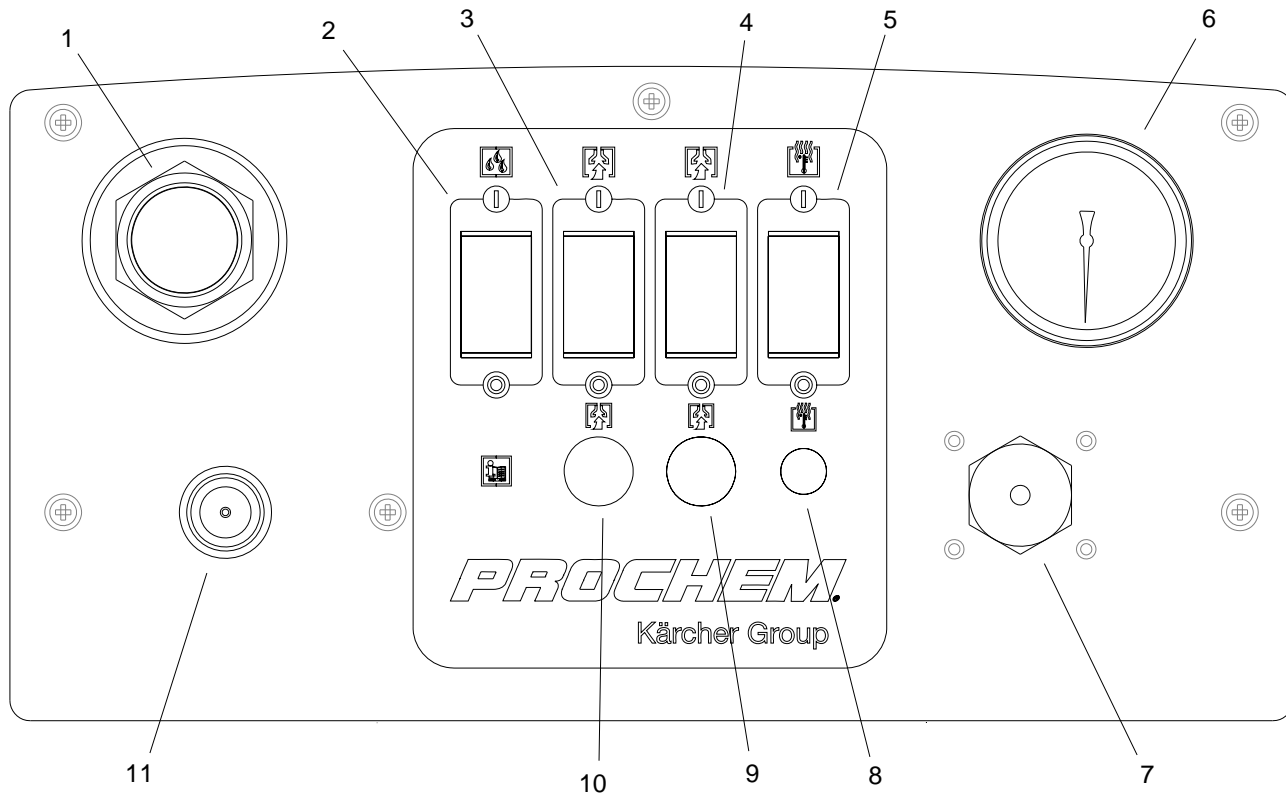
## Technical Specifications

MODEL	ITEM	MEASURE
ALL	Electrical	115 Volt, 60 hz, 15A
	Solution Pump	500 psi
	Solution Capacity	17 Gal
	Recovery Capacity	14 Gal
	Height	43 inches
	Length	32.5 inches
	Width	22.5 inches
10070770	Vacuum Motor	Dual 2 Stage
	Weight- Empty	139 lbs
	Weight-Full Solution	282 lbs
	Power cord	2 X 25 feet
	Heater	1850 watts



### **⚠ WARNING:**

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.



### Controls

- |  |   |
|--|---|
| 1. Vacuum Accessory Tool Hook-up                   | 7. Adjustable Pressure Relief Valve             |
| 2. Solution Pump Switch                            | 8. Heater Temperature Light (Units w/Heat Only) |
| 3. Vacuum 1 Switch                                 | 9. Breaker for Vacuum 2                         |
| 4. Vacuum 2 Switch                                 | 10. Breaker for Vacuum 1                        |
| 5. Heater Switch with On Light (Units w/Heat Only) | 11. Solution Accessory Tool Hook-up             |
| 6. Pressure Gauge                                  |   |

**⚠ WARNING:**

Care must be exercised in the use of all chemicals. Chemicals are poisonous and can pose a health risk. Read and follow manufacturers instructions regarding dangers and correct usages.

**⚠ CAUTION:**

The internal parts of the pump used in the machine are suitable for use with most carpet cleaning chemicals. But they are susceptible to chemical attack from some cleaning substances, such as hydrocarbon solvents and chlorinated bleaches. These non-compatible materials are not of the type used for carpet cleaning.

**Chemicals****Suitable Chemicals**

- Alkalis
- Detergents
- Hydroxides
- Soaps
- Vinegar

**Non-Compatible**

- Aldehydes
- Aromatics Hydrocarbons
- SP Butyls
- Carbon Tetrachloride
- Clorox\*
- Chlorinated Bleaches
- Chlorinated Hydrocarbons
- Lysol\*
- Methyl Ethel Ketone (MEK)
- Perchlorethylene (perc)
- Phenolics
- Trichlorethylene
- D-Limonene

\*Registered Trademark

Only use chemicals approved for use with this machine. Use of non-compatible chemicals may cause machine damage and will not be covered under the warranty. Carefully read ingredients on manufacturer's label before using any product in this machine.

**⚠ WARNING:**

**Do not let pump run dry.**

**⚠ WARNING:**

**Do not let pump run unattended.**

### 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. Using a clean container, fill the solution tank with clean hot water. Do not use water over 130°F. Mix in a non-foaming cleaning concentrate for use in hot water extraction machines, following the manufacturer's instructions printed on container.
4. Connect priming hose to solution fitting on machine. Turn on pump and run for 30 seconds or until a steady flow of water is coming out of priming hose. Turn off pump and disconnect priming hose.
5. Connect vacuum hose to machine. Slide the swivel cuff over the outlet on the tank.
6. 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.

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

7. Turn pump and vacuum switch(es) to the on position.

### Heater Operation

*NOTE: Units with Heat Only*

#### **WARNING:**

**The solution fittings on the machine will become extremely hot during operation. Allow sufficient time to cool, or run solution through the machine with the heater turned off before disconnecting or performing any maintenance on the heater.**

Plug the two power cords into separate grounded circuits. The heater draws 15 amps of current.

Turn the solution pump **ON**. Fully prime the solution system before turning heater on.

Turn the heater switch on. The red light on the heater switch will be on when the heater switch is on. The red heater temperature light will be on when the heater is active and will turn off when the heater reaches maximum temperature.

On initial start-up the heater will take a few minutes to reach operating temperature.

When turning the pump and heater **OFF**, make certain that you turn the heater off **FIRST**.

## 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. Prior to cleaning, 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

## Periodic Maintenance

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 machine. This will prevent build-up of alkaline residue in the system.

Periodically inspect all hoses, electrical cables and connections on your machine. Frayed or cracked hoses should be repaired or replaced to eliminate vacuum or solution pressure loss. The electrical cable must be well insulated and cable connector screw kept tight. If the cable insulation is broken or frayed, repair or replace immediately. Don't take chances with electrical fire or shock.

## Daily/Regular Maintenance

### **WARNING:**

**Before making any repairs or adjustments to the machine, disconnect the power cords from the electrical source.**

1. Empty unused cleaning solution from the solution tank.
2. Inspect and clean filter screen in solution tank.
3. Flush pumping system with 1 to 2 gallons of clean water.
4. After each use, rinse tank with fresh water. Periodically inspect the recovery tank and decontaminate if necessary, using a Hospital Grade Virucide or a 10-1 bleach to water solution. Waste water should be disposed of properly.

**Do not allow machine to freeze.**

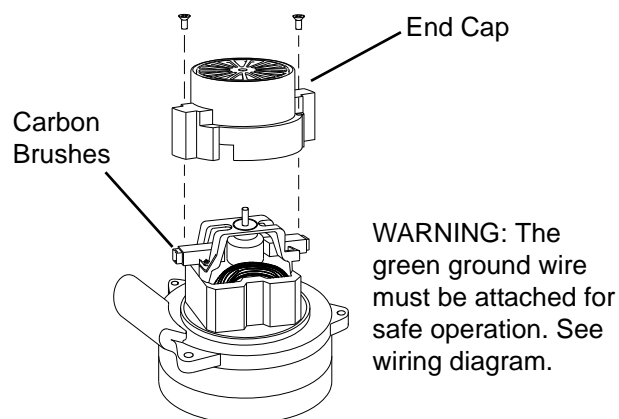
SERVICE SCHEDULE	DAILY	WEEKLY	QUARTERLY
Check machine for cord damage	*		
Check recovery dome and gasket for damage and cleanliness	*		
Check hoses for wear, blockages, or damage	*		
Check handles, switches, and knobs for damage	*		
Run one gallon of water through solution system	*		
Clean out recovery tank and check float valve to make sure it moves freely	*		
Clean out solution tank and remove and clean vacuum intake screen	*		
Clean outside of all tanks and check for damage	*		
Run vacuum motor for at least one minute to allow motor to dry	*		
Store with dome off tank to allow the tank to dry	*		
Check all gaskets for wear and leakage		*	
Check pump pressure; observe spray pattern and check with gauge if necessary		*	
Check and clean solution screen		*	
Check cables for fraying		*	
Check overall performance of machine		*	
Check vacuum motor carbon brushes			*

**⚠ WARNING:**

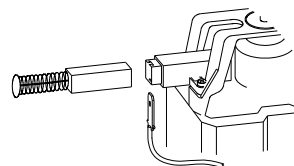
Only qualified maintenance personnel are to perform the following repairs.

**Vacuum Motor Replacement**

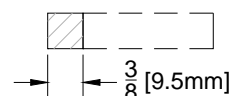
1. Turn off all switches and unplug machine.
2. Remove hardware under front of machine to access component compartment.
3. Remove vacuum motor cover and disconnect motor wires.
4. Remove the vacuum motor.
5. Reverse process to install vacuum motor.

**Vacuum Motor Carbon Brushes Replacement**

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.



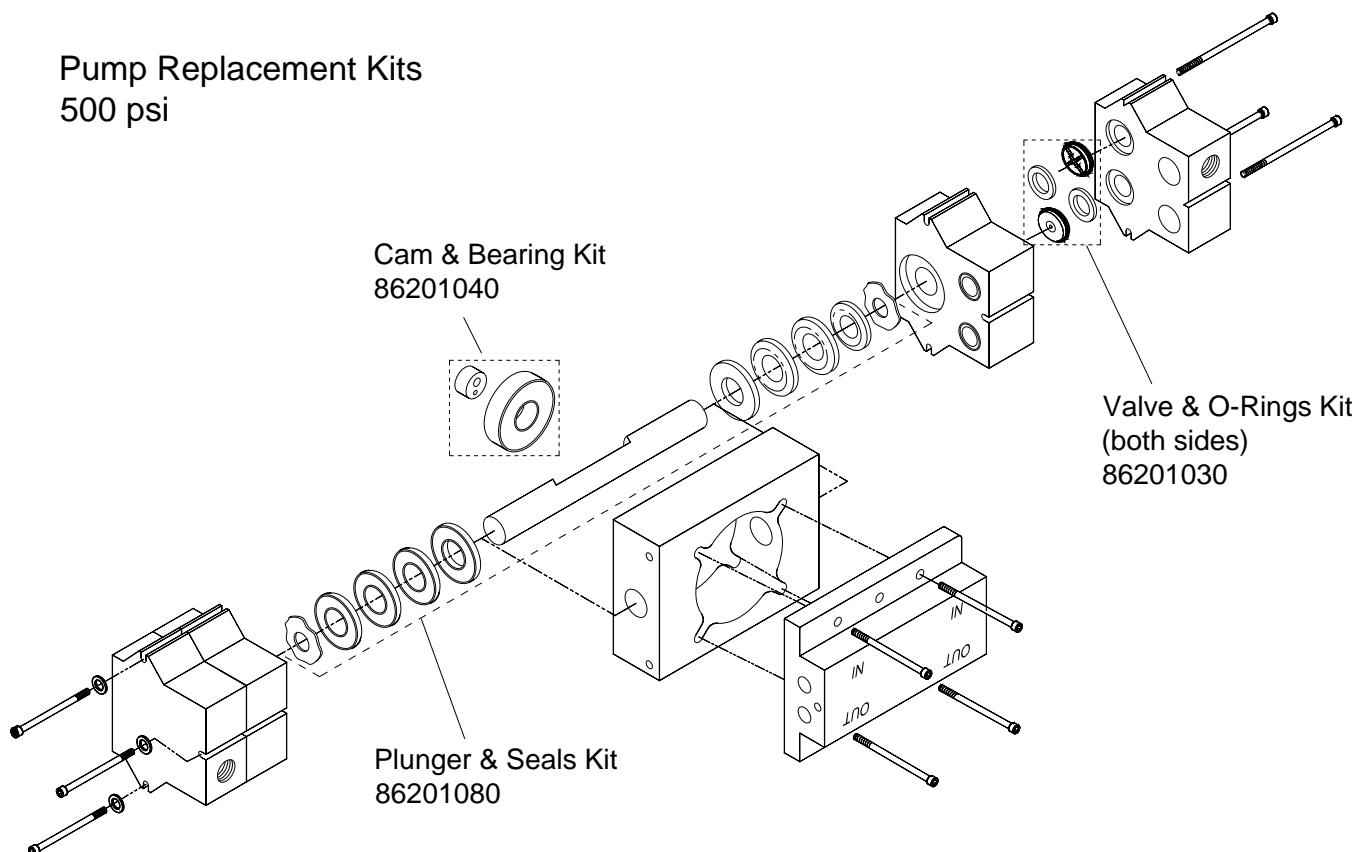
Periodically check the length of the carbon brushes. Replace both carbon brushes when either is less than 3/8" (9.5mm) long.

## Solution Pump Replacement

### **⚠ WARNING:**

Only qualified maintenance personnel are to perform the following repairs.

Pump Replacement Kits  
500 psi





**⚠ WARNING:**

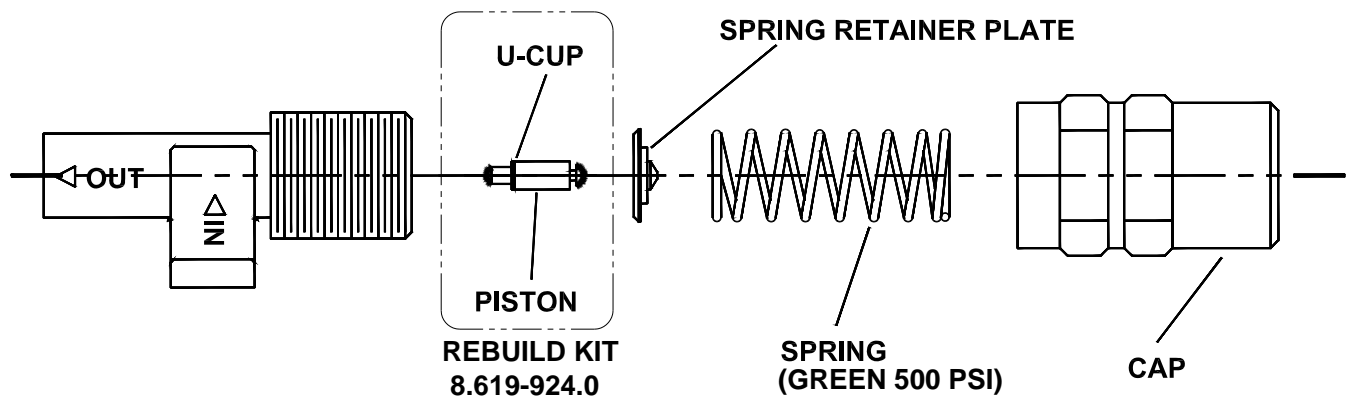
Only qualified maintenance personnel are to perform the following repairs.

**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.**



## Troubleshooting

PROBLEM	CAUSE	SOLUTION
Loss of Power	Unit not plugged in	Connect unit to 3 prong grounded outlet.
	Dead electrical circuit	Check building circuit breaker or fuse box.
	Faulty power cord	Replace
Electrical shock	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	Vacuum circuit breaker tripped	Reset Breaker
	Faulty vacuum motor	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
	Vacuum hose damaged	Replace
	Recovery tank full / Float ball stuck in the up position	Turn off power, drain recovery tank.
Pump runs no solution	Pump inlet screen plugged	Clean inlet screen
	Pump not primed	Prime pump with priming hose
	Internal or external solution line damaged and leaking	Replace
Pump runs, loss of pressure	Internal pump components wearing out	Replace, see pump kit components
	Check valves in pump head for particles or cuts in seals	Take piston from BPR and lubricate with Super-lube. If problem still exists change BPR kit
Pump will not run	Faulty switch	Replace
	Loose wiring	Repair or replace
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
Solution not flowing properly	Solution hose connection	Check for positive connection
	Faulty pump	Repair or replace
	Faulty floor tool valve / Nozzle	Repair or replace
	Faulty pump switch	Repair

