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INSTRUCTION  
MANUAL

# KLEENRITE

**MODEL  
214HX**

UPHOLSTERY  
AND  
DRAPERY  
CLEANING  
SYSTEM

This manual provides information which is proprietary to KleenRite and is made available to you for the use and maintenance of KleenRite products. Any use, reproduction, or dissemination of this information for any other purpose is prohibited without written permission from KleenRite.

**IMPORTANT**  
Prior to using your machine for the first time read all information about **SAFETY PRECAUTIONS** and **WARNINGS**, as well as the procedures contained in this manual.

**KleenRite**

1122 Maple St., Madera, Ca. 93637  
Ph 209-673-5700

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Serial Number

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Date of Purchase

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## INTRODUCTION

Congratulations on your purchase of the KleenRite Model 214HX machine and accessories. They represent the state of the art in upholstery and drapery cleaning equipment. This manual has been written

and illustrated to familiarize you with the layout, operation, and maintenance of the machine, and provide an introductory approach to upholstery and drapery cleaning.

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## SAFETY PRECAUTIONS

### WARNING

SPECIFIC PRECAUTIONS AND PROCEDURES PERTAINING TO THE SAFE OPERATION OF THIS EQUIPMENT ARE CONTAINED IN THIS MANUAL. IT IS REC-

COMMENDED THAT YOU READ THE ENTIRE MANUAL FOR COMPLETE SETUP AND OPERATIONAL PROCEDURES.

**DO NOT** Heat Odorless Mineral Spirits in High 208 Degree Heat Range.

**DO NOT** Use Chlorinated Solvents.

**DO NOT** Use any OMS other than those recommended in this Manual.

**DO NOT** Store at Freezing Temperature with water in system.

**DO NOT** Plug both Power Cords into ONE Household Electrical Circuit.

**DO NOT** Plug Cords into Ungrounded Adapter.

**DO NOT** Mix OMS and Water.

**DO NOT** Fill with Dirty Solution.

**DO NOT** Dry Vacuum.

**DO NOT** Run Pump Dry.

**DO NOT** Pull machine with hoses.

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## RECEIVING THE SHIPMENT

Your new KleenRite system has been packaged to ensure its safe and sound arrival at your location. Accidents do happen, however, and people make mistakes.

It is your responsibility to check the system and report any damage or shortage you may find.

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A standard system should be packaged in 2 boxes and include the following items:

### BOX 1

- Machine
- Recirculating Hose
- Power Cords 2 (1 with 240 Volt Machine)
- Manual

### BOX 2

- Drapery Tool Option (boxed)
- Upholstery Tool Option (boxed)
- Vacuum Lid (boxed)
- Solution Lid (boxed)
- Exhaust Hose
- Vacuum Hose

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Accessories ordered with a machine system may or may not be packed within these two boxes. Check your packing list carefully, making sure you have received your entire order.

Damage or shortage that may occur during shipment must be reported to the carrier upon arrival and to:

**KleenRite**  
1122 Maple St.  
Madera, Ca. 93637  
209-673-5700

Reports must be received within 3 working days or the claims will not be honored.

It is recommended that the packaging material be retained and used again should it become necessary to ship your machine to another location.

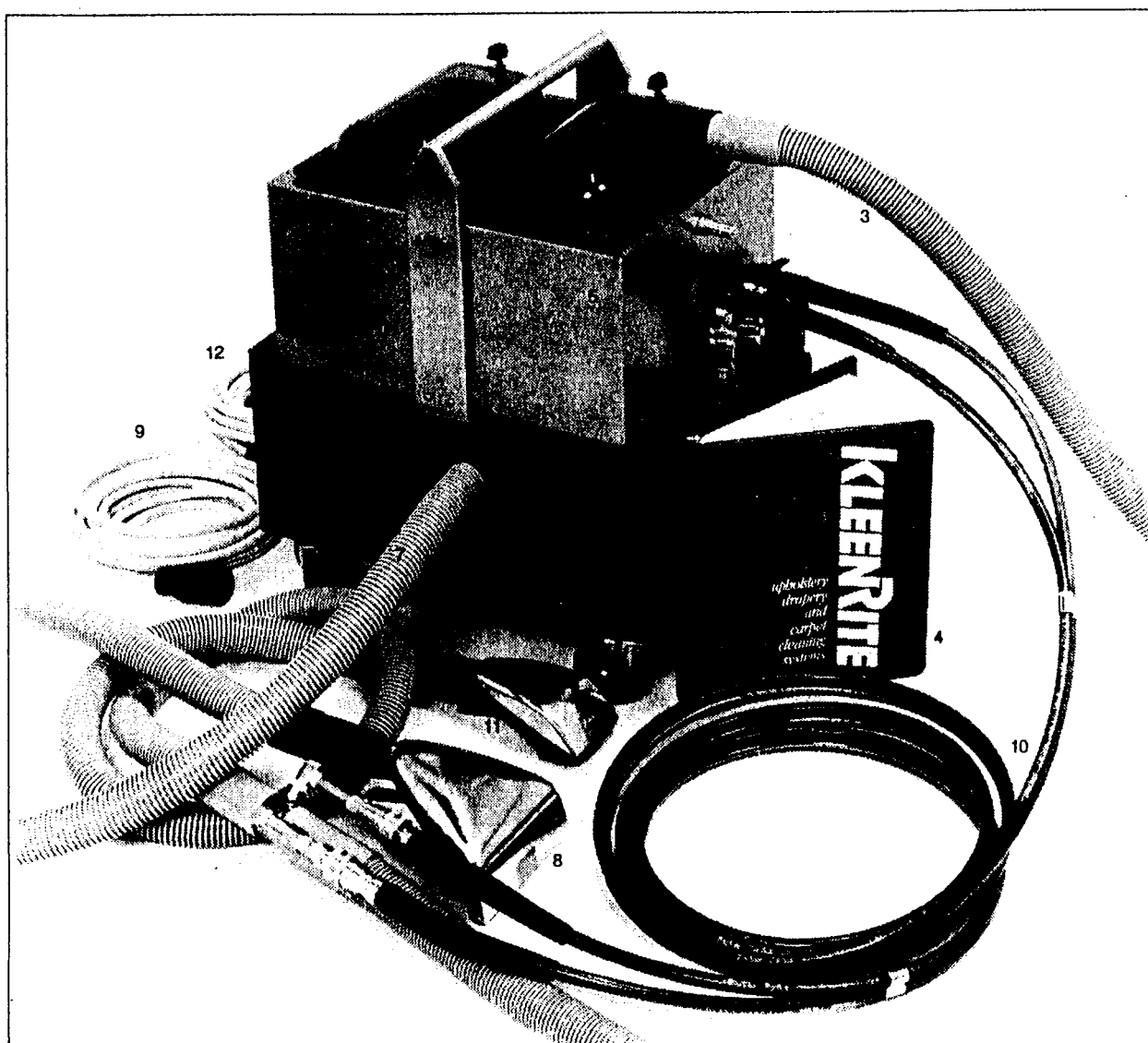
## EQUIPMENT IDENTIFICATION

Familiarize yourself with all the components, controls and indicators of your system. The more you know about your

system the more productive and trouble free it will be.

The MACHINE (Fig. 3-1) is pictured showing its accessories attached and identified.

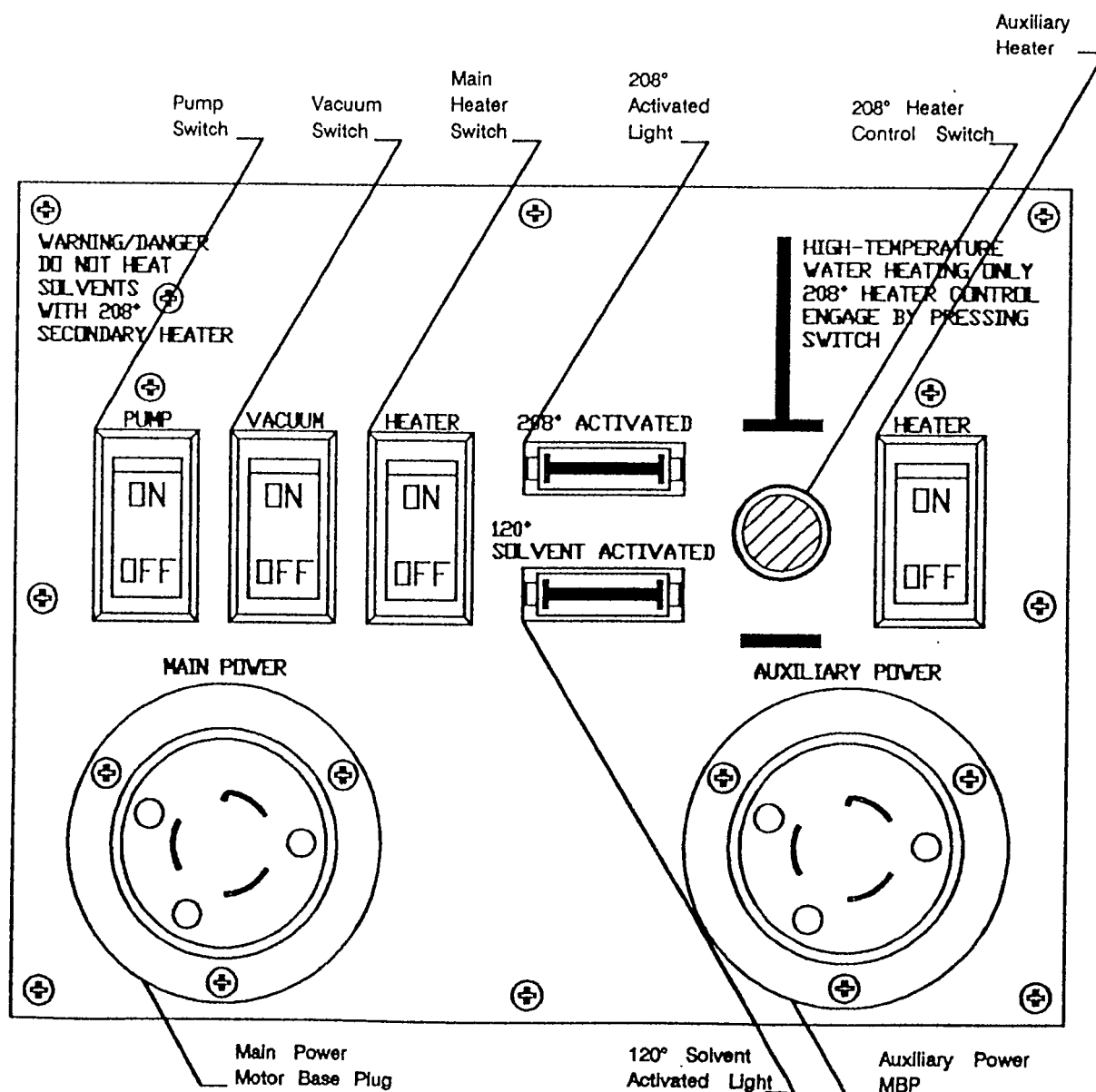
- |                  |                 |                        |  |
|------------------|-----------------|------------------------|--|
| 1. Solution Tank | 5. Vacuum Tank  | 9. Main Power Cord     | 12. Auxiliary Power Cord<br>(Ex. 240V & Mod 212) |
| 2. Solution Lid  | 6. Vacuum Lid   | 10. Recirculating Hose | 13. Empty Out Nozzle                             |
| 3. Vacuum Hose   | 7. Exhaust Hose | 11. Upholstery Tool    |  |
| 4. Manual        | 8. Drapery Tool |                        |  |



Machine and Accessories Figure 3-1

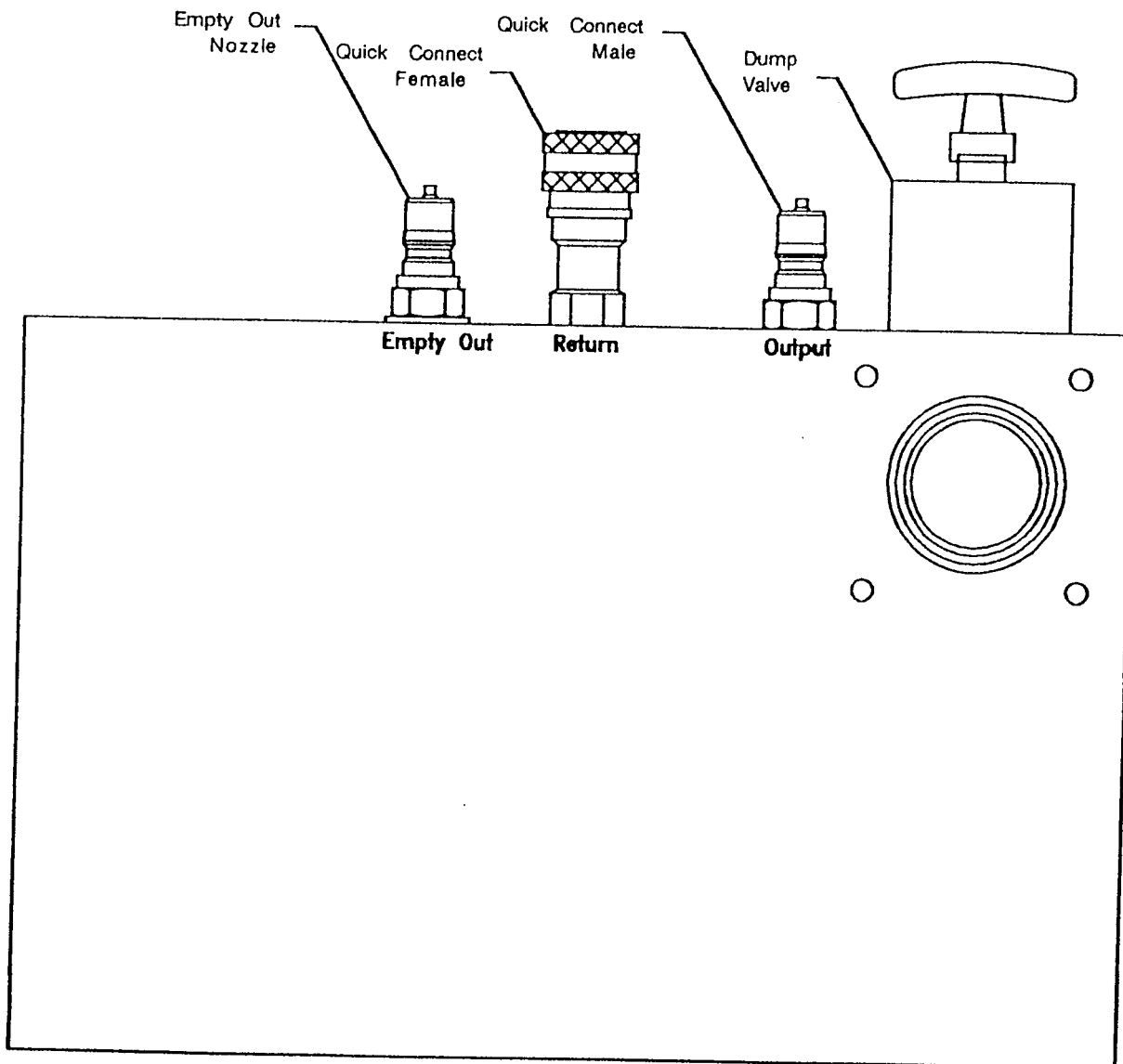
# ELECTRICAL CONTROL

PANEL IDENTIFICATION.



Electrical Control Figure 3-2

# FLUID CONTROL AND HOOK-UP



Fluid Control Figure 3-3



## SETUP

Setting up the KleenRite system is an easy procedure if you follow a few basic rules. The first few times you use your machine it

is advisable to review the information contained in the following chapter.

### FOR THOSE WHO CANNOT WAIT HERE IS A STEP BY STEP QUICK START.

- STEP 1** You have probably removed the system from its box without instruction. Now it is time to see if any items are missing or any damage occurred during shipping. For further explanation see Chapter 2.
- STEP 2** Hook up system cords and hoses including tool to be used. See Fig. 3-1
- STEP 3** Fill solution tank with proper solution. Refer to Chapter 4.
- STEP 4** Turn on pump. Check flow. Refer to Chapter 6.
- STEP 5** Turn on heat. Select heat range. Refer to Chapter 6.
- STEP 6** Proceed to clean.
- STEP 7** Empty vacuum tank each time you fill the solution tank.
- STEP 8** When done cleaning, flush tool by vacuuming clean solution through it, drain solution tank, and empty vacuum tank. Remember a clean machine cleans.

## ELECTRICAL HOOK-UP

Attach the power cord(s) to the machine by plugging the twist-lock end of the cord into the motor base plug on the machine. Twist clockwise to make electrical connection.

### Single Cord Machines (240v):

The total power consumed is determined by the number of heaters energized. If the household circuit does not have ample power to run both heaters it may be necessary to operate with only one of the two heaters energized. If this becomes a chronic situation, it may be necessary to reconfigure the heater to lower amperage.

### Two Cord Machines (120v):

The main power cord is always necessary to run the machine. The auxiliary power cord is optional and is used to deliver optimum heating capability. Because of the power consumption of the machine, it is necessary to plug the cords into separate circuits of household power.

If the main circuit trips the household circuit, check for other appliances or lights on that circuit. It may be necessary to turn off the main heater and run only the pump and vacuum on the main circuit and the auxiliary heater on the auxiliary circuit.

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## HOSE AND TOOL HOOK-UP

Connect the recirculating hose to the machine. Be certain to use the end with 90 degree elbows at the machine. Secure the female quick-connect on the solution hose to the male quick-connect (OUTPUT) on the machine. Do so by pulling collar of the female back and pushing the two together until collar slides forward and locks. Repeat the procedure with the return hose.

Attach the tool (drapery or upholstery) to the loose end of the hose in a similar manner. The male and female convention of the recirculating system is such that proper solution flow will be maintained dur-

ing cleaning. During servicing of your system be certain to maintain this convention.

With the vacuum lid latched in place, slip the vacuum hose cuffs on both the vacuum lid and vacuum injection pipe (VIP) at the end of the tool.

The exhaust hose **MUST** be used when dry cleaning to exhaust fumes from the room. It may also be used to exhaust high humidity during wet cleaning for operator comfort. Attach the cuff end to the blower exhaust port and place the other end out a window or door. Additional length may be coupled to the hose if necessary.

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## SOLUTION MIXING AND FILLING

The proper use of chemicals will assure the safe, profitable and optimum performance of Kleenrite equipment. Remember, if you put clean solution in you will get clean out. After careful evaluation of the fabric to be

cleaned, choose the proper chemical and carefully mix according to the manufacturer's directions. Fill the 3 gallon solution tank with an appropriate amount of solution and secure the lid to the tank for both safety from spilling and heat retention.

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## EMPTYING MACHINE

The solution tank may be emptied in two ways:

First, disconnect the tool from the vacuum hose and vacuum remaining solution out of solution tank. This is the fastest and most common method especially when removing excess water from the machine.

Second, by using the male empty out you may pump the remaining Dry Cleaning solution into a container for future use. You may also rinse out the vacuum tank with the hose and solution.

The vacuum tank is emptied by placing a bucket under the dump valve and pulling

the handle up. Sediment in the bottom of the tank may be rinsed out with the solution hose and empty-out or with a garden hose. If particles fill the seals of the valve, turn the vacuum on and slowly close the valve a few times to suck them out. This same proce-

dure will remove any solution remaining in the empty-out valve and prevent dripping. When emptied, wipe both tanks dry and clean. Remember, a well maintained machine will provide many years of profitable service.

The "120° SOLVENT ACTIVATED" light will go out and the "208° ACTIVATED" light will come on. Note: It is only necessary to use the auxiliary power cord if the auxiliary

heater is to be in use, either by itself or with the main power heater. It is always necessary to use the main power cord.

## VACUUM

Turn the "VACUUM" switch on when ready to clean.

## SHUTDOWN & FLUSHING

Proper shutdown of the system will assure its reliability and readiness for the next job. Consideration of the next job if known may determine the procedure you use for shutdown. REMEMBER water freezes. Do not leave a machine or tool with water based solution in it exposed to the cold where it can freeze.

Three situations may occur:

1. Wet cleaning going to wet cleaning. Upon completion of wet cleaning:

- Vacuum clean water through the tool to rinse chemical and lint from inside of the tool and hoses.
- Remove the tool from the system.
- Empty the vacuum tank.
- Plug "EMPTY OUT" nozzle into solution hose and rinse vacuum tank using the pump.
- Drain remaining solution from solution tank either by pumping it out the "EMPTY OUT" nozzle or by vacuuming it out.
- Clean and wipe dry both tanks to avoid chemical buildup.

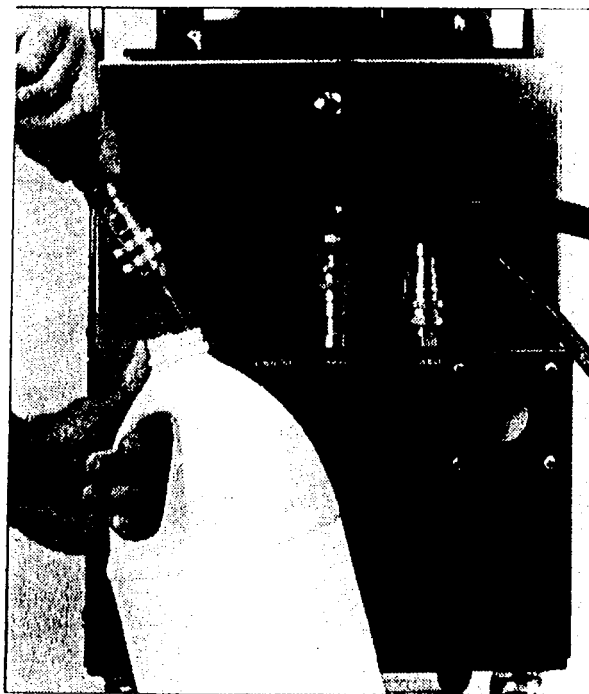
2. Dry cleaning going to dry cleaning. Upon completion of dry cleaning:

- Remove tool from system.
- Empty the vacuum tank. Recovered solvent can be reused, see "reclaiming solvent" below. Rinse and clean tank.

- Pump remaining solution from the solution tank back into supply container. See Fig 6-2. Clean and dry solution tank.

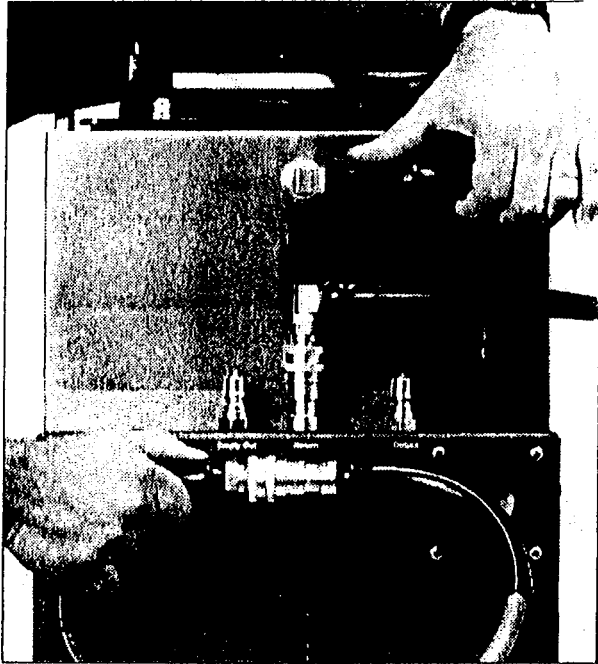
3. Dry to Wet or Wet to Dry:

Switching from wet to dry or dry to wet cleaning solutions may cause a gel to form in the pump and hoses if precaution is not taken.



Drain Figure 6-2

Seldom are the tools changed from one solution to the other, so remove the tool from the system and proceed as follows.



Flush Figure 6-3

- Empty all solution from solution tank and wipe dry.
- Fill solution tank with new fluid.

**REMEMBER:** "Oil and water do not mix!"

- Remove the red hose from the output of the machine and attach it to the male quick disconnect on the side of the vacuum tank.

- Plug the two loose ends of the red and blue hose that are away from the machine into each other.
- Secure the vacuum lid in place and plug the vacuum inlet on the lid with your hand.
- Turn on the vacuum for 45 seconds. The setup just described is illustrated in Fig. 6-3.
- Remove the red hose from the side of the vacuum tank and attach it to the output on the machine.
- Disconnect red and blue hose from one another and plug the far end of the red hose onto the male quick disconnect on the side of the vacuum tank.
- Turn the vacuum and pump on for 10 seconds.
- Remove the red hose from the side of the vacuum tank, attach cleaning tool and proceed to clean.

#### **RECLAIMING SOLVENT**

dry cleaning solution may be reclaimed for reuse a second time. Care must be taken to settle and filter all foreign material that is suspended in it.

Allow used cleaning solvent that is removed from waste tank to settle over night in a covered container. This will allow solids to fall to the bottom. Without stirring up sediment from bottom, carefully pour solution through fine cloth or a paint filter.

## MAINTENANCE

Proper care and maintenance of your **KleenRite** equipment will mean years of trouble free and profitable service. Being

familiar with your equipment and having the right tools to service it will save you time and money.

### DAILY CARE

Each time you use your equipment certain precautions should be taken to maintain its performance.

- 1. Fill the solution tank with only clean solution. DO NOT use a dirty waste bucket that could introduce lint or sand into the solution tank.
- 2. Use the system for wet extraction only. DO NOT dry vacuum. This can cause lint to plug the vacuum tank filter or lodge in the fans of the vacuum blower.
- 3. Use only fully dissolved cleaning solution. DO NOT mix powder directly in the solution tank. Granular material can move through the system and clog the tool filter or jet.
- 4. Rinse the tool and hoses with clear water at the end of a job. DO NOT store equipment with high concentrations of chemical or fiber impacted in them. After any job where large amounts of animal hair or loose fiber are encountered, remove the tool lid and check for buildup of material. Note: It is recommended that a small amount of anti-seize compound or grease be applied to the end of the lid screws when reassembling. This will prevent corrosion of the threads.
- 5. Check and clean the tool filter regularly. DO NOT allow chemical or local water content to build and clog the filter. Soaking over night in mild acid (vinegar) will clean most filters. A spare filter is recommended.

### QUARTERLY CARE

If properly maintained your **KleenRite** equipment will need little repair. On a quarterly basis it is recommended that the doors be removed and the hoses and electrical components be carefully inspected. If leaks, irregularities or corrosion are observed they should be cleaned, tightened or replaced.

Pump and blower motors have sealed bearings which do not need lubrication, however, they do wear. Excessive noise, leaking or high amperage draw indicates a worn motor.

Cleaning and lubricating the latches, casters, and quick-connects with light spray will increase their life.

## UPHOLSTERY CLEANING INSTRUCTIONS

The following section is presented to provide KleenRite users a basic understanding of cleaning procedures. It is not totally complete or all encompassing. For total problem free upholstery cleaning, inquire

about the KleenRite upholstery cleaning school. If the following procedures and techniques are closely followed, you will be able to clean virtually any upholstery fabric with excellent results.

### 1. PRE-INSPECTION

Carefully inspect item to be cleaned for worn threads, fraying, rips, animal damage, color loss due to wear or sunlight, etc. Always inspect cushions for shrinkage and

buttons for rust, due to previous improper cleaning. Note all such pre-existing conditions on your work order, and have customer acknowledge these with his signature.

### 2. PRE-TEST

Pre-testing is the most important step of all and thus should never be neglected.

During this step you will test to determine the type of fabric (this test is optional) and whether or not the fabric is color-fast. These two tests will aid you in choosing the best cleaning process for the fabric.

To determine the type of fabric, several threads need to be removed from an inconspicuous area of the item to be cleaned. Perhaps these threads can be taken from the skirt, underneath, or from inside a cushion. The fabric can then be identified by igniting these threads and comparing the smell, burning characteristics, and residue, with the FABRIC BURNING TEST CHART (Fig. 8-1).

Color-fastness is tested on an area that would not be noticeable should color bleeding occur. An ideal location is the zipper area of a cushion. Spray a KleenRite Equipment approved Upholstery Prespray full strength on both the outside and inside of the cushion. After five minutes, rub a white towel over the area and look for color

on the towel. The colors most likely to bleed are red, blue, green, and black. If there is no color transfer on the towel the fabric can be wet cleaned. Proceed to Step #3.

If there is significant color transfer on the towel, or obvious color run on the fabric, color-fastness should be tested with a cleaning procedure called Dry-Wet-Dry. First, heavily spray an inconspicuous area to be test cleaned with heated KleenRite Equipment approved Dry Cleaning Solution. This solution should be heated by setting a sprayer in a bucket of hot water (120-140 degrees F). Immediately clean area with wet cleaning technique (see Step 4-A). The area just cleaned should be lightly sprayed again with Dry Cleaning Solution, which should be lightly rubbed in with finger tips, and then vacuum extracted well. Again check for color transfer on a towel. If there is little transfer and no color run, fabric should be cleaned with the Dry-Wet-Dry cleaning method. Proceed to Step #3.

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### 3. SET-UP

For the professional on location touch, lay out a clean drop cloth or indoor/outdoor carpet as protection in your work area.

Upholstery, equipment and chemicals should be kept on this protective cover.

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### 4. CLEANING TECHNIQUES

#### *A. Wet Cleaning*

The vast majority of fabrics you will encounter may be cleaned with water based (Wet) cleaning solutions. Such fabrics include Herculon, Nylon, Cotton/Rayon, Cotton Velvets, etc. Do not attempt to Wet clean a Crushed Velvet fabric, unless the customer has been made aware that Wet cleaning will remove the crushed effect.

Prepare cleaning solution using a Kleen-Rite Equipment approved Upholstery Cleaning Concentrate as the bottle instructs. Upholstery prespray should also be used, particularly on heavily soiled areas, to greatly speed up cleaning and aid the operator to get better results. Prespray should be heated in a bucket of hot water for greatest efficiency.

To avoid rusty buttons, simply prespray the buttons with a KleenRite Equipment approved Dry Cleaning Solution before cleaning or applying prespray.

During the entire Wet cleaning process remember the following guidelines. The hotter the cleaning solution, the better, faster and safer the cleaning. Over wetting must always be avoided. The faster a fabric can dry the better the results, thus sometimes drying fans may be used. Drying fans should be directed to blow across the fabric surface, never directly into the fabric. (See Fig. 9-1).

After you finish cleaning loose cushions, they should be allowed to dry by standing on end and leaning against each other. A clean white piece of paper inserted

between them will insure no color transfer. (See Fig. 9-1).

If the fabric being Wet cleaned is a velvet, the material must be finished with a Kleen-Rite Velvet Brush. The nap is first lightly brushed in one direction and then lightly and uniformly brushed in a perpendicular direction. Velvet fabric brushed in this manner will dry with a soft texture. (See Fig. 9-2).

#### *B. Dry-Wet-Dry Cleaning*

Fabrics which can not be Wet cleaned can usually be cleaned using the Dry-Wet-Dry technique. Dry-Wet-Dry gives you the safety of Dry cleaning with the extra cleaning power of Wet cleaning. Fabrics which are suited to this technique include Haitian Cotton, some bright floral prints, and others on which pretesting with Dry-Wet-Dry indicated little color transfer and no color run. This technique is identical to Wet cleaning with the following exceptions.

Before pre-spraying or Wet cleaning the operator must heavily spray heated Kleen-Rite Dry approved Cleaning Solution on the fabric. This is done on just a small area at a time, such as one side of a cushion. This establishes a moisture barrier which does not allow the next step, Wet cleaning, to penetrate below the surface. The Wet cleaning is then followed by an extraction only pass, then a light spray of heated Dry Cleaning Solution, which is immediately vacuum extracted. This last step removes excess moisture from the fabric. It is important that the fabric not be overly wet during



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the Wet phase and should be dried rapidly with fans.

### *C. Dry Cleaning*

Virtually any fabric which can not be safely cleaned by the two aforementioned methods can be cleaned with the Dry cleaning technique. Remember, while Dry cleaning results are good, on badly soiled fabrics Wet cleaning is always far superior - if it can be done safely. When Dry cleaning, it is recommended that an exhaust hose be

attached to the machine and all exhaust be ventilated outdoors. In areas where fresh air ventilation is poor, it is recommended that an air mover be placed at an open door or window to circulate fresh air. It is recommended that only a KleenRite Equipment approved Dry Cleaning Solution be used because of its lack of toxicity when compared to chlorinated solvents. It is only when a water based solution is used that no respirator is required. No smoking should be allowed on the job.

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## **5. UPHOLSTERY TOOL TECHNIQUES**

Hold the upholstery tool firmly where the vacuum cuff joins the tool. Use two fingers to activate the solution valve. Make sure the knuckles of the two trigger fingers touch the fabric during cleaning. This will keep the head of the tool flat on the fabric, thereby making a good seal and preventing over-wetting or overspray.

Do not apply any downward pressure on the tool. You should be able to move the tool back and forth with a minimum amount of effort. The faster you move the tool the better it cleans and the easier and more productive it becomes. Be sure to overlap cleaning strokes to avoid streaks.

Where fabric is lightly soiled, use one long quick cleaning pass and one vacuum pass with the solution off. For heavily soiled areas and the removal of spots, use the tool with short back-and-forth strokes of approximately 4 to 6 inches until the desired results are achieved. Then make one vacuum pass with the solution off. (See Fig. 9-3)

When cleaning welts on a cushion, center the head of the tool over the welt. Apply enough pressure to flatten the fabric under the head. (See Fig. 9-4) Go back and forth using very fast, short 4 to 6 inch strokes in one area until the first 4 to 6 inches of the welt is cleaned. Then make one slow vacuum pass over the material on each side of the welt. Repeat the above procedure until the entire welt has been cleaned. To be certain that all excess moisture has been removed from the welt, take a white towel and squeeze the moisture into the towel. (See Fig. 9-5)

After cleaning an upholstery skirt, lightly stretch fabric out and down so that it will hang properly when dry.

Where fabric is heavily impregnated with soil, apply a KleenRite Equipment approved Upholstery Prespray as the bottle instructions. Then use the above cleaning techniques to remove the prespray and soil.

## DRAPERY CLEANING INSTRUCTIONS

The following section is presented to provide KleenRite users a basic understanding of cleaning procedures. It is not totally complete or all encompassing. For total problem-free drapery cleaning, inquire

about the KleenRite drapery cleaning school. If the following procedures and techniques are closely followed, you will be able to clean virtually any drapery fabric with excellent results.

### 1. PRE-INSPECTION

Carefully inspect draperies to be cleaned for any sunlight damage, animal damage, water stains, tears, fraying (from rubbing against ceiling), and for brittle sun-rotted fibers. Also measure the distance from the bottom of the drape to the floor. While the KleenRite System will not shrink fabrics

when properly used, it is possible that the draperies were previously shrunk from improper cleaning. Since you do not want to be blamed for these pre-existing conditions, note them on your work order and have the customer acknowledge these with his signature.

### 2. PRE-TEST

Pre-testing is the most important step of all and should never be neglected. During this step you will test to determine the type of fabric (this test is optional), whether or not the fabric is color-fast, and whether the fabric should be Wet or Dry cleaned. These tests will aid the operator in choosing best cleaning process for the fabric.

One advantage of the non-chlorinated KleenRite Equipment approved Drapery Cleaning Solution is that this Dry cleaning solution can be used on all drapery fabrics. Chlorinated solvents cannot be used on fiberglass fabrics or rubber and latex backed drapes. Most drapery fabrics should be cleaned with KleenRite Equipment approved Drapery Cleaning Solution. However, some fabrics, due to their construction, will not shrink and they can be Wet cleaned. Any time you can clean with water you will dramatically cut your chemical costs. Fabrics which can be Wet cleaned include fiberglass drapes, fiberglass sheers, and rubber and latex backed drapes. The Wet cleaning solution for

drapes is the same as is used for upholstery...KleenRite Equipment approved Upholstery Cleaning Concentrate. When Wet cleaning sheers, always be careful not to get the other drapes wet, to avoid shrinkage and water marks.

To determine the type of fabric, several threads need to be removed from an inconspicuous area of the drape. The fabric can then be identified by igniting these threads and comparing the smell, burning characteristics and residue with the Fabric Burn-Test Chart. (See Chart Page 8-1).

Color-fastness is tested on an area which would not be noticeable should color bleeding occur. This test is done by spraying KleenRite Equipment approved Drapery Cleaning Solution on the fabric and then blotting the area with a white towel, watching for color on the towel. Since the brightest colors are most likely to lose color, these must be tested. If there is no color transfer on the towel, the fabric can be Dry cleaned.

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### 3. SET-UP

For the professional touch, lay out a clean drop cloth or indoor/outdoor carpet as protection in your work area. Draperies, equipment and chemicals should be kept on this protective cover. Protect nearby wooden furniture, etc., against accidental overspray by moving it or covering it with a drop cloth. When Dry Cleaning, it is recommended that an exhaust hose be attached to the machine and all exhaust be ventilated outdoors. (See Fig. 10-1) In areas where fresh air ventilation is poor, place an air mover at an open door or window to circulate fresh air. It is recommended that only KleenRite Equipment approved Drapery Cleaning Solution be used because of

its lack of toxicity as compared to chlorinated solvents. At present, no known hazards have been associated with the use of OMS without a respirator. In exercising due caution, however, a respirator may be used. No smoking should be permitted on the job.

While the upper part of a drapery may be cleaned from a ladder, many experienced operators prefer to set up a single scaffolding arrangement for cleaning the upper third of a drapery. This is easily accomplished by setting up two strong step ladders with a sturdy plank across them.

### 4. CLEANING TECHNIQUES

The cleaning techniques for draperies are identical whether you are Dry Cleaning or Wet Cleaning. The type of cleaning you will use on a fabric is determined in Step # 2.

Fill the solution tank with appropriate amount of cleaning solution.

Begin by dusting the top and the pleats of the drapes with a medium bristle brush or lint roller before applying Drapery Cleaning Solution.

Grasp the KleenRite Drapery Cleaning Tool where the vacuum hose cuff joins the tool. Use two fingers to activate the solution valve. This will allow you to keep a firm, yet relaxed grip on the tool. (See Fig. 10-2)

Drapes are cleaned from the top down. It is advisable to pay special attention to the first panel, especially if it is often handled to open and close the drape or to open a sliding door. This first panel should be cleaned on the back if necessary.

Remove the standard insert from the drapery tool, exposing the pleat insert, and hold

the drapery tool directly above the pleat sew. Turn the solution on and gently press the tool onto the pleat. Make one pass up toward the top of the drape followed by one extraction pass down. (See Fig. 10-3).

Repeat this same method from the sewn pleat area down the drape for about six inches. Clean all pleats first by this method.

With the standard insert attached, clean the balance of the drape by opening the fabric with one hand and drawing the drapery tool down the drape with the solution on. Make as many passes as necessary (one is usually all that is needed) followed by one vacuum pass. Be sure to overlap slightly to avoid leaving uncleaned areas.

On some fabrics you may note a blotchiness due to evaporation or difference in solvent penetration. This condition is normal and will dry out beautifully. Do not waste solvent in an effort to get uniform darkness. When on a ladder or scaffold, having completed the header on one

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panel, proceed to clean down the rest of the panel as far as possible so that the balance can be reached comfortably from the floor.

When cleaning the bottom six inches of the drape, it is easier to hold the tool on its side and pull the drape past it. (See Fig. 10-4).

When a drape is excessively dirty in any given area, hold the drape taut, using one hand. Take the KleenRite Tool and move it up and down in vigorous, short strokes of approximately four to six inches, with the solution valve open, until the area is cleaned. This method gives better agitation and therefore better cleaning.

To treat an area which does not readily respond to normal cleaning, apply a light application of KleenRite Equipment approved Drapery Spotter. Agitate gently with fingertips, soft brush, or clean rag or towel. Then use the same method described in the previous paragraph. Repeat until area is clean or no longer responds to cleaning.

Lined drapes or very soiled drapes should be cleaned on both sides. An additional charge should be made for this. To clean the lining on the back of a drape, unpin half the drape and turn it back over the other half of the drape so the lining on the back of the drape faces you. Clamp the top of the drape to the drapery rod with a spring clamp (such as a welding clamp) and clean as normal. Then reverse the procedure to

clean the back side of the other half of the drape. (See Fig. 10-5)

Very loosely-woven drapes can be cleaned easily by clamping an inexpensive plastic drop cloth on the back side of the drape. The vacuum from the tool will draw the plastic up to the fabric and you can proceed to clean as normal. Sheer drapes should be cleaned in the same manner as loose weave drapes except that they should be sprayed with the drapery cleaning solution first, then extracted, or cleaned. This process will eliminate any tendency of solution to run, which can cause streaking.

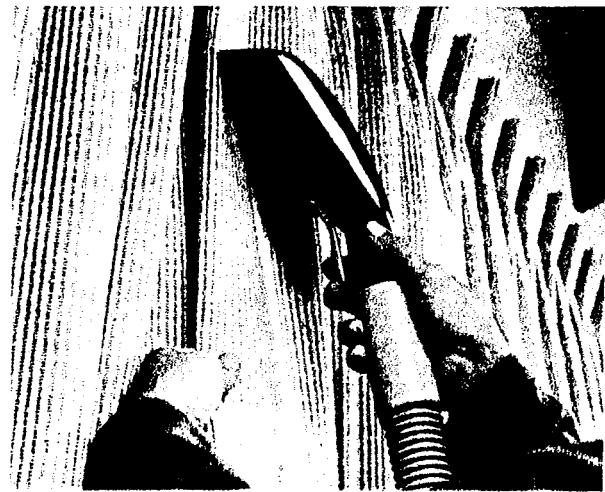
Immediately after cleaning each panel, draw the pleat down between the thumb and index finger to set pleat. For sharp pleat appearance, close the drapes and reopen with about two inches between pleats and let dry. Treat draperies which are wrinkled with KleenRite Equipment approved Drapery Wrinkle Remover.

#### OBSERVE NORMAL SAFETY PRECAUTIONS

- Always work with adequate ventilation.
- Exhaust drapery cleaning fumes to the outside.
- Do not clean drapes near an open flame.
- Do not smoke while cleaning drapes.



Exhaust Ventilated Outdoors Figure 10-1



Drapery Tool Grip Figure 10-2



Drapery Pleat Cleaning Figure 10-3



Drapery Bottom Cleaning Figure 10-4



Lined Drapery Cleaning Procedure Figure 10-5

## TROUBLE SHOOTING

FAULT	POSSIBLE CAUSE	REMEDY
Machine does not operate	No electrical supply Cords not properly connected	Check household power circuits Plug cords into grounded three wire circuit
Tool does not spray	Filter clogged in tool or hose Jet clogged Lint in quick connects	Remove and clean filter Remove and blow jet clean. Do not use metal object to scrape Remove and check quick connects
Pump not pumping	Pump lost prime	Stop and restart pump or disconnect tool and plug red hose into quick disconnect on side of vacuum tank. Turn pump and vacuum on at the same time until pump is primed.
Heat exchanger not heating	System not in full use Electronic control failure	Remember the heat exchanger heats only the fluid that passes through it. Not the solution sitting in the solution tank. Isolate component that is failing. Use wiring diagram and meter to trace fault. Consult factory for assistance
Vacuum weak	Loose or distorted vacuum lid gasket Tool clogged with lint	Replace gasket Remove tool lid and clear lint from tool head
Boiling or popping noise	Solution boiling in heat exchanger	Turn pump on prior to heater. Most common at high altitude.
Electrical failure while working	Failure of household circuit	Use 20 amp 120 volt or 10/13 amp 220 volt circuit if possible or only auxiliary heater, pump and blower.

## SPECIFICATIONS MODEL 214HX

SIZE	19"L x 13"W x 23"H				
WEIGHT	Machine	47 lbs.			
SHIPPING WEIGHT	Machine boxed	59 lbs.			
SHIPPING WEIGHT	Accessories boxed	48 lbs.			
ELECTRICAL (120 volts)					
PUMP	1.18 amps at 40 psi Output 1.5 gpm*				
BLOWER	9.0 amps at 1 1/2" orifice Vacuum 91.3 inches water lift Air flow 104 cfm				
HEATER	10.4 amps	11.5 ohms	1250 watts black wires	pin	
	14.6 amps	8.2 ohms	1750 watts white wires	socket	
ELECTRICAL (240 volts)					
PUMP	.59 amps at 40 psi Out put 1.5 gpm*				
BLOWER	4.4 amps at 1 1/2" orifice Vacuum 87.5 inches water lift Air flow 108 cfm				
HEATER	4.17 amps	57.6 ohms	1000 watts black wire	pin	
	7.29 amps	32.9 ohms	1750 watts white wire	socket	
See "Appendix F" for optional heaters available					
FLUID FLOWS	*Output from machine using recirculating hose and male empty out 1.5 GPM Output from Recirculating 3" Upholstery Tool 1.0 spray jet 20 oz./min. Output from Recirculating Drapery Tool .50 spray jets 24 oz./min. Return to machine from 3" tool VIP using male empty out 22 oz./Min Return to machine from drapery tool VIP using male empty out 23 oz./min.				

**KLEENRITE 214HX**  
**120V ( 240V )**





# KLEENRITE 214 / 120 V

Part No.	Description	Quantity	Part No.	Description	Quantity
B-08	6-32 X 3/16 PHXSS	6	G-21	SEAL, DUMP VALVE	2
B-09	6-32 X 1/4 PHXSS	4	K-09	CORD 25' 12/3 SJT UG/TWIS	2
B-09.1	6-32 X 3/8 PHXSS	4	K-13.1	LIGHT, GREEN	1
B-10	6-32 X 1/2 PHXSS	2	K-13.5	LIGHT, RED	1
B-14	NUT 6-32 HEX SS	4	K-16	RECEPTACLE, MBP 20 AMP	2
B-16.1	8-32 X 1/4 PHXSS	8	K-20.5	SWITCH, SPST MOM. PUSH	1
B-17	8-32 3/8 FHXSS 100 DEG.	4	K-21	SWITCH, SPST	2
B-21	10-32 X 5/16 PHXSS	34	K-21.3	SWITCH, DPST	2
B-22	10-32 X 7/16 PHXSS	5	K-24.65	THERMOSENOR 20" 200/500	1
B-24	10-32 X 3/4 PHXSS	1	K-26.5	THERMOSTAT, 240 DPST	1
B-26	10-32 X 1 1/4 PHXSS	4	L-28.11	ADAPTER, PUMP OB	1
B-28	NUT 10-32 HEX SS	12	L-29.1	"O" RING PUMP HEAD OB	1
B-28.1	NUT 10-32 PEM	6	L-29.2	IMPELLER, PUMP OB	1
B-29	WASHER # 10 LOCK	4	L-32	SCREW, PUMP OB HEAD	6
B-29.1	WASHER, # 10 SS	4	L-33	SCREW, PUMP OBT ADAPTER	2
B-31.5	1/4-20 X 1/2 HEX CP	16	L-34	SLINGER, PUMP OB	1
B-33.3	1/4-20 X 2 1/2 HEX CP	3	L-64	CONTROL, HEATER 200TRIACK	1
B-40.38	WASHER, PAINT CUTTING SWCH	1	L-77.1	SEAL, OB CARBON FACE	1
B-45	NUT, 9/16-18 JAM NUT	3	L-77.2	SEAL, OB CERAMIC	1
C-01.25	BUSHING, HOLDER EMPTY-OUT	1	M-0210KR	DOOR, 214 SCR NOHO CHAR KR	11
C-02.1	CASTER 3"	4	M-0215KR	DOOR, 200 SER BLOW CHAR KR	11
C-03.2	CLAMP, HOSE 2" # 24	2	M-0230	ENCLOSURE, HEAT EXCHANGER	1
C-03.3	CLAMP, HOSE 2 1/4 # 32	1	M-0250	HANDLE, ASSY 200 SERIES	1
C-05.08	FILTER, "Y"	1	M-0280	BRIDGE, HTR MOUNT	1
C-06	GASKET, BLOWER/ARLON 1/4"	1	M-0287	PLATE, SWTCH BACKER 214	1
C-07.5	GASKET, 200 SER. LIDS	2	M-0408KR	COVER, MACH. BOTTOM KR	1
C-11.55	KNOB, LID	4	M-0569	ROD, LID LATCH 200 SER	4
C-16.79	SILICONE HEAT SINK COMP.	* .30	M-0572	SUPPORT, CONN 500 SER	2
C-21.5	SPRING, LID LATCH	4	M-31.15	STAND-OFF, 5.7 2STG 200	3
C-22.5	TAPE, FOAM	* 2.2FT	N-74	TAPE, 1 1/2" BLUE	4.5FT
D-02	BUSHING 1/4 X 1/8 NPT BR	1	R-002.5	LID, SOL 200 AS MOLDED	1
D-07.01	COUP 1/4 NPT X -4 SAE	1	R-003.5	LID, VAC 200 AS MOLDED	1
D-16	90 ST ELBOW 1/8 NPT	1	SC-05.04	FILTER, SOLUTION TANK	1
D-17	90 ST ELBOW 1/4" NPT	1	SC-16.67	SCREEN, FILTER CUP	1
D-18	90 ELBOW 1/4MPT x 1/4 MPT	1	SE-02.1/18	HOSE, 1/4NPT X -4SAE 18	1
D-20.02	ELBOW 90 1/4FPT X -6 SAE	2	SE-05.16	HOSE, R/B 15' NO/QC	1
D-20.03	ELBOW 90 3/8NPT X -6 SAE	1	SE-05.18	HOSE, R/B 15' W/QC ELBOW	1
D-21.6	TEE, 1/4NPT X -6SAE X 1/8	1	SE-06.9/16	HOSE, 1/4NPT X -6SAE 16	1
D-42	NIPPLE, 1/4" NPT CLOSE SS	1	SE-06.9/4	HOSE, 3/8NPT X -6SAE 4	1
D-43.5	NIPPLE, 1/4 NPTx1 1/2 SS	1	SE-06.9/8	HOSE, -6SAE X -6SAE 8	1
D-72.3	RESTRICTOR, 1/4 HOSE BEND	4	SE-10.001	HOSE, VAC 1 1/4X15 W/CUFF	1
E-14	CUFF, 1 1/2SLIP 1 1/4HOSE	2	SE-10.1	HOSE, CLEAR 1 1/2"X4.5"	1
F-09	Q/C 1/4" PLUG BR SHUT OFF	5	SE-10.3/25	HOSE, EXH 1 3/8"X25' GRAY	1
F-11	Q/C 1/4" SOC BR SHUT OFF	3	SE-10/15	HOSE, VAC 1 1/4 GRAY 15	1
G-19	VALVE, DUMP	1	SE-14.8	CUFF, EXHAUST CONNECTION	1

# KLEENRITE 214 / 120 V

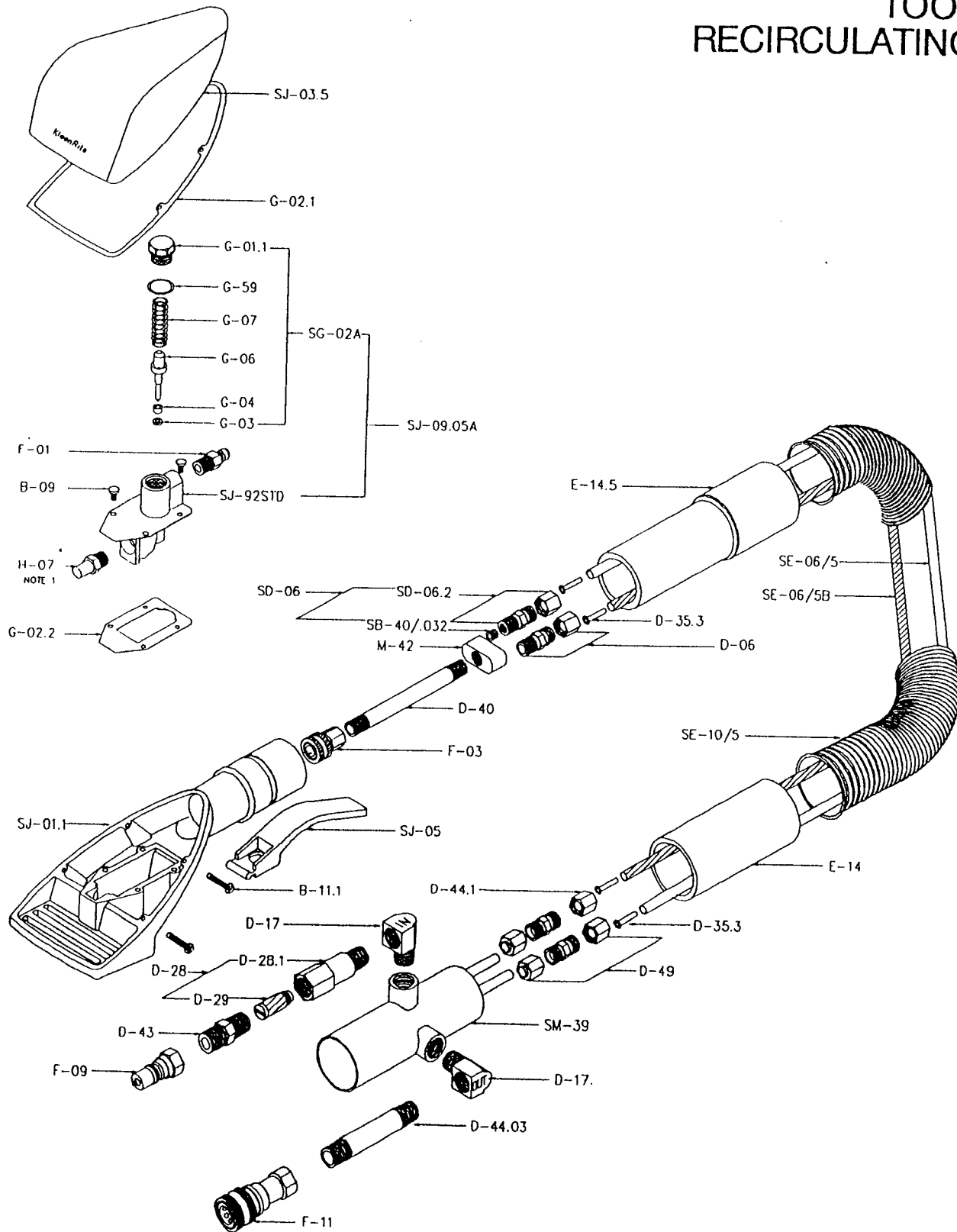
Part No.	Description	Quantity	Part No.	Description	Quantity
SF-09	NOZZEL, EMPTY OUT MALE	1	SL-77	SEAL, PUMP OB CARB & CERA	1
SG-001	ADAPTER, DUMP VALVE W/NUT	1	SM-0204KR	CASE, 200 CHAR KR W/PEM	†1
SG-002	SPIGOT, DUMP VALVE	1	SM-0225A	TANK, 214 FAB W/STUDS	1
SJ-12.5	PUMP HEAD,SS MACHINED	1	SM-0230	ENCLOSURE,HTR 200 W/PEM	1
SK-13.05	HTR,CART 1250/1750 120CMP	1	SM-0235	ENCLOSURE,THERM END W/PEM	1
SK-55A	HARNESS, 214 PANEL 2 MBP	‡1	SM-0240	ENCLOSURE,HTR END W/PEM	1
SK-56A	HARNESS, HEATER 214/500	‡1	SM-0248	BRACKET, L-64 200/500/PEM	1
SL-005	BLOWER,2STG 120V 5.7 COMP	1	SM-0261.6KR	PANEL, SWITCH 214 KR 2MBP	1
SL-005.5	BLOWER,2STG 120 5.7W/PLUG	1	SM-0261.6KR3	PANEL,214 2MBP 120/240 KR	1
SL-01	PUMP, OBT 120V SS HEAD	1	SM-0265.5	EXCHANGER,HEAT MACHINED	1
SL-01.5	PUMP, OBT 120V LESS HEAD	1	SR-002.5	LID,SOL 200 SER INJ MOLD	1
SL-15	KIT, PUMP SEAL & ADPT OBT	1	SR-003.5	LID, VACUUM 214 INJ. MOLD	1
SL-30	MOTOR, OBT 120V W/WIRE	1	SR-08	INSULATION, HTR 200/500	1
SL-64	CONTROL ASSY. 200/500 HTR	1			

\* Items not shown

‡ Fig. 13-8 Wire Diagram

† Part may vary depending on color

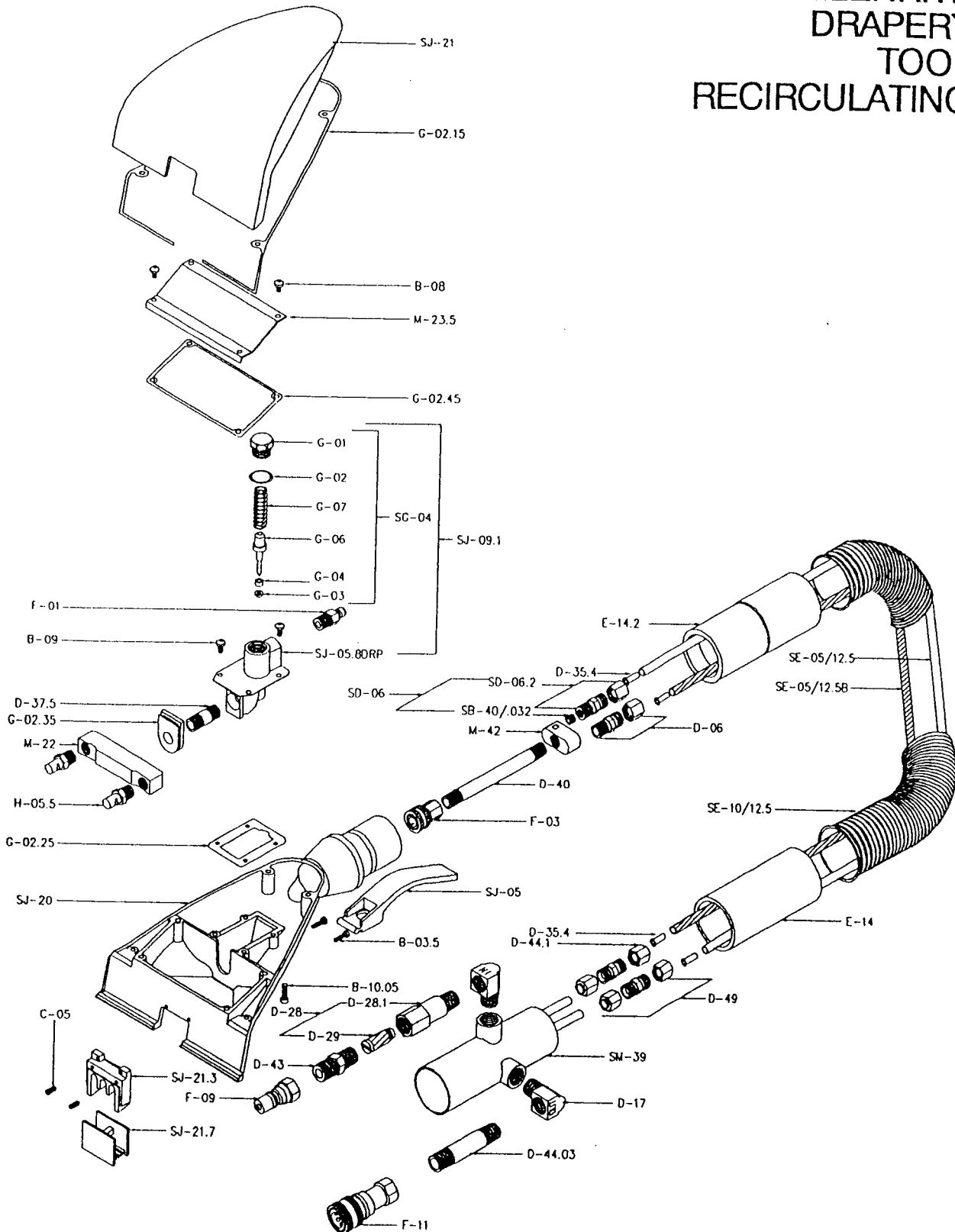
# KLEENRITE 3" UPHOLSTERY TOOL RECIRCULATING



# KLEENRITE 3" UPHOLSTERY TOOL RECIRCULATING

Part No.	Description	Quantity	Part No.	Description	Quantity
B-09	6-32 X 1/4 PHXSS	4	G-04	SLEEVE, BRASS, TOOL VALVE	1
B-11.1	6-32 X 3/4 PHILISTER XSS	4	G-06	STEM, VITON, TOOL VALVE	1
D-06	COUP 1/8NPTX1/4COMP INTER	1	G-07	SPRING, LP 3" TOOL VALVE	1
D-17	90 ST ELBOW 1/4" NPT	2	G-59	O-RING, 3" TOOL VALVE CAP	1
D-28	FILTER INLINE 100 MESH	1	H-07	JET, 1.0 FLOOD SS	1
D-35.3	INSERT, 1/4" TEFLON TUBE	4	M-42	"Y" BLOCK	1
D-40	NIPPLE, 1/8 x 4 BRASS	1	SB-40/.032	1/4-28 SS SET SCREW # 67	1
D-43	NIPPLE, 1/4 HEX BRASS	1	SD-06	1/4 COMPRES FIT W/# 67 ORF	1
D-44.03	NIPPLE, 1/4 X 2.5 BRASS	1	SD-06.2	1/4 COMP FIT TAP 1/4-28	1
D-49	UNION, 1/4 x 1/4 COMP INT	2	SE-06/5	TUBE, 1/4" TEFLON 5'WHITE	1
E-14	CUFF, 1 1/2SLIP 1 1/4HOSE	1	SE-06/5B	TUBE, 1/4" TEFLON 5'BLACK	1
E-14.5	CUFF, SWIVEL 3" UPH	1	SE-10/5	HOSE,VAC 1 1/4"GRAY 5'	1
F-01	Q/C 1/8" PLUG BR ST TH	1	SG-02A	STEM ASM VIT SS CAP ORING	1
F-03	Q/C 1/8 SOC BR ST TH	1	SJ-01.1	NOZZEL,3"UPH-DRL/TAP/POWD	1
F-09	Q/C 1/4" PLUG BR SHUT OFF	1	SJ-03.5	COVER,3" TOOL STAMPED KR	1
F-11	Q/C 1/4" SOC BR SHUT OFF	1	SJ-05	TRIGGER,CHROMED-COMplete	1
G-01.1	CAP, S/S, TOOL VALVE	1	SJ-09.05A	VALVE,3" VIT STD NY SSCAP	1
G-02.1	GASKET, LID 3" TOOL	1	SJ-92STD	VALVE, 3" NY MACHINED STD	1
G-02.2	GASKET, VALVE 3" TOOL	1	SM-39	VP,RECIR. (POLISHED)	1
G-03	O-RING, VITON, TOOL VALVE	1			

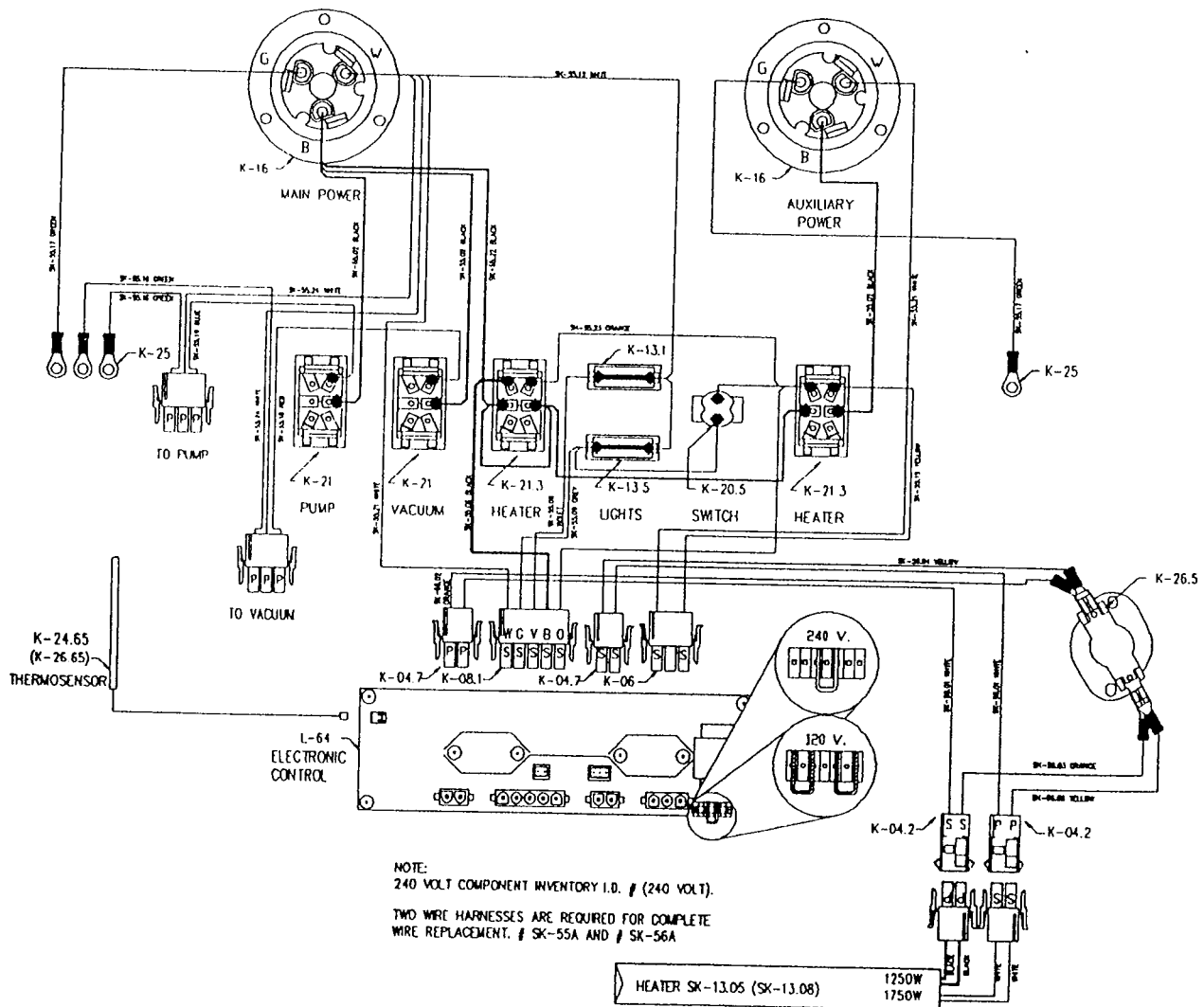
# KLEENRITE DRAPERY TOOL RECIRCULATING



# KLEENRITE DRAPERY TOOL RECIRCULATING

Part No.	Description	Quantity	Part No.	Description	Quantity
B-03.5	4-40 X 7/16 PHXSS	2	G-02.45	GASKET, MANIFOLD COVER	1
B-08	6-32 X 3/16 PHXSS	4	G-03	O-RING, VITON, TOOL VALVE	1
B-09	6-32 X 1/4 PHXSS	4	G-04	SLEEVE, BRASS, TOOL VALVE	1
B-10.05	6-32 X 1/2 PHILISTER XSS	4	G-06	STEM, VITON, TOOL VALVE	1
C-05	BALL, DETENT, S/S	2	G-07	SPRING, LP 3" TOOL VALVE	1
D-06	COUP 1/8NPTX1/4COMP INTER	1	H-05.5	JET, .50 FLOOD BRASS	2
D-17	90 ST ELBOW 1/4" NPT	2	M-22	MANIFOLD, DRAPERY-SPRAY	1
D-28	FILTER INLINE 100 MESH	1	M-23.5	PLATE, MANIFOLD COVER	1
D-35.4	INSERT, 1/4" NYLON TUBE	4	M-42	"Y" BLOCK	1
D-37.5	NIPPLE, 1/8 X 1 NPT	1	SB-40/.032	1/4-28 SS SET SCREW # 67	1
D-40	NIPPLE, 1/8 x 4 BRASS	1	SD-06	1/4 COMPRES FIT W/# 67 ORF	1
D-43	NIPPLE, 1/4 HEX BRASS	1	SD-06.2	1/4 COMP FIT TAP 1/4-28	1
D-44.03	NIPPLE, 1/4 X 2.5 BRASS	1	SE-05/12.5	TUBE, 1/4" NYLON 12.5'NAT	1
D-49	UNION, 1/4 x 1/4 COMP INT	2	SE-05/12.5B	TUBE, 1/4" NYLON 12.5'BLK	1
E-14	CUFF, 1 1/2SLIP 1 1/4HOSE	1	SE-10/12.5	HOSE, VAC 1 1/4 GRAY 12.5	1
E-14.2	CUFF, SWIVEL DRAPERY TOOL	1	SG-04	STEM ASM VITON W/BRASS CP	1
F-01	Q/C 1/8" PLUG BR ST TH	1	SJ-05	TRIGGER,CHROMED-COMPLETE	1
F-03	Q/C 1/8 SOC BR ST TH	1	SJ-05.8DRP	VALVE, DRAPERY MACH. DRP	1
F-09	Q/C 1/4" PLUG BR SHUT OFF	1	SJ-09.1	VALVE, DRAPERY VIT COMP.	1
F-11	Q/C 1/4" SOC BR SHUT OFF	1	SJ-20	NOZZLE, DRAPERY W/SWIVEL	1
G-01	CAP, BRASS	1	SJ-21	COVER, DRAPERY TOOL	1
G-02	GASKET, COPPER TOOL VALVE	1	SJ-21.3	INSERT, PLEAT DRAPERY	1
G-02.15	GASKET, LID DRAPERY TOOL	1	SJ-21.7	INSERT, STANDARD DRAPERY	1
G-02.25	GASKET, DRAPERY VALVE	1	SM-39	VIP,RECIR. (POLISHED)	1
G-02.35	GASKET, SPRAY CHAMBER	1			

# 214 /120-240 VOLT WIRING DIAGRAM



AMBIENT TEMPERATURES AND CORRESPONDING  
RESISTANCE VALUES OF THE THERMOSENSOR

DEGREES C	DEGREES F	OHMS
0	32	820
10	50	899
20	68	962
30	86	1039
40	104	1118
50	122	1202
60	140	1288
70	158	1379
80	176	1472
90	194	1569
100	212	1670
110	230	1774



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## HEATER REPLACEMENT 200 / 500 SERIES

### TOOLS NECESSARY

1. Screwdriver (Straight Blade)
2. Screwdriver (# 2 Phillips)
3. 5/16" Open End Wrench
4. Hammer
5. Steel Rod, 12 to 16" Long

### STEP BY STEP REMOVAL OF HEATER

Refer to illustration for part identification.

Before starting, be certain machine is unplugged and drained of all fluids.

1. Remove 8, 10-32 x 5/16" screws (B-21) from doors and remove both doors from machine.
2. Loosen 2, 6-32 nuts (B-14) under thermostat (K-26.5) flange. Use 5/16" wrench and turn clockwise to loosen.
3. Loosen 2, 6-32 x 1/2" machine screws (B-10) that holds thermostat to heat exchanger end (M-0235), allowing the thermostat to hang free.
4. Unplug heater wires (K-04.7) from the electronic control. Squeeze "ears" on sides of plug to unlock and pull out.
5. Remove 2, 6-32 x 3/16" screws (B-08) from protective bridge (M-0280) and remove bridge.
6. With steel rod and hammer, drive heater cartridge from heat exchanger (SM-025.5).

### REPLACEMENT OF HEATER

1. Apply heat sink paste to surface of new heater. Cover completely and evenly.
2. Insert heater into heat exchanger. Be careful not to damage or cut wires with anything used to push or drive cartridge.
3. Reinstall protective bridge with 2 screws.
4. Reinstall thermostat. Mount tightly to the surface of the heat exchanger. Do not crush its sensing surface. ( See Appendix E THERMOSTAT REPLACEMENT )
5. Plug heater into control. Pin and socket combinations prohibit incorrect connection.

### SEE APPENDIX G FOR TEST PROCEDURE

6. Replace both doors.

# PUMP REPAIR

## SL-01 / SL-02

### 200 SERIES

#### TOOLS NECESSARY

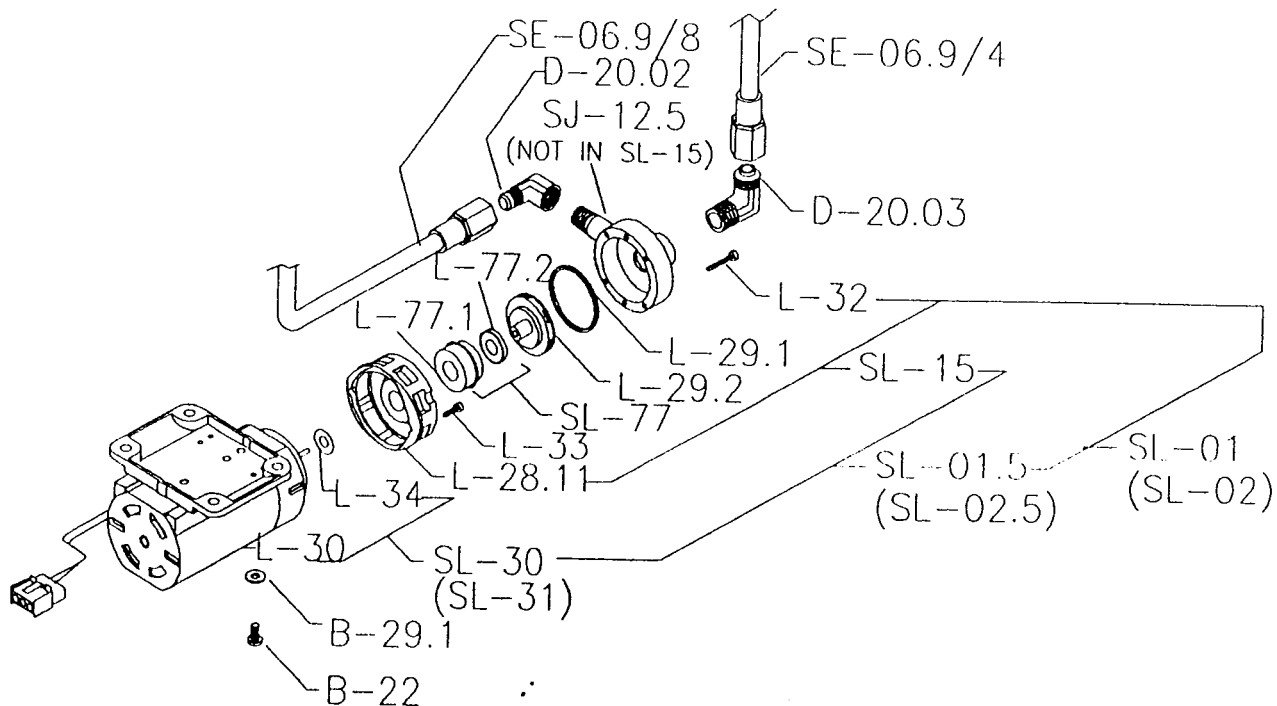
1. Screwdriver (# 2 Phillips)
2. 13/16 Open End or Adjustable Wrench
3. Pliers or Second Adjustable Wrench

#### STEP BY STEP REMOVAL OF PUMP

Refer to Figure 13-1 for part identification.

Before starting be certain machine is unplugged and drained of all fluids.

1. Remove 8, 10-32 x 5/16" screws (B-21) from doors and remove both doors from machine.
2. Turn machine upside down. Handle may be removed.
3. Remove 4, 10-32 x 5/16" screws (B-21) from access door (M-0408KR) and remove door.
4. Unplug Pump (SL-01){SL-02} (Blue and White Wire) at support (M-0572) by squeezing ears and pulling out. Then remove plug (K-05) from support. It is necessary to squeeze taps on plug to push it backwards and out of the hole.
5. While holding elbow (D-20.03) on intake end of pump with wrench loosen nut on end of SE-06.9/8 hose. In similar manner loosen nut end of SE-06.9/8 hose from elbow (D-20.02) at discharge side of pump.
6. Remove 4, 10-32 x 7/16" screws (B-22) from base plate of pump
7. Remove pump from machine.



Pump Assembly D-1

drawing ( ) parenthesis are for 240V machines

## REPLACEMENT OF PUMP

1. With fittings in same alignment replace pump by reversing the steps of removal. **DO NOT** apply force on plastic parts of the pump when tightening tube fittings. Hold and support the fitting with plier or wrench.

## INSTALLATION OF PUMP ADAPTER AND IMPELLER

1. Remove 6, 7/8" plastic screws (L-32) from stainless steel pump head (SJ-12.5)
2. Remove pump head (SJ-12.5) and "O"-ring (L-29.1)
3. Insert small screwdriver in rear of motor to block cooling fan from turning and hand turn impeller clockwise to remove. This is a left hand thread.
4. Remove the two 1/2" plastic screws (L-33) holding adapter to motor and remove adapter.

## REASSEMBLE IN REVERSE ORDER

When starting screws turn counter clockwise to find thread already cut in plastic. **Do Not** over tighten. Align "O"ring on adapter and hold in place with pump head. Tighten screws evenly so pump head does not tip as tightened.

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# THERMOSTAT REPLACEMENT

## TOOLS NECESSARY

1. Screwdriver (# 2 Phillips)
2. Screwdriver (Straight Blade)
3. 5/16" Open End Wrench

## STEP-BY-STEP REMOVAL OF THERMOSTAT

Refer to Figure 13-1 (200 Series) or Figure 15-1 (500 Series) for part identification.

Before starting be certain machine is unplugged and drained of all fluids.

1. Remove four (4) 10-32 x 5/16" screws (B-21) from the door with exhaust hole and remove door from machine.
2. Remove wires from thermostat (K-23.2 or K-26.5).
3. Loosen 6-32 nuts (B-14) under thermostat (K-23.2 or K-26.5) flange. Use 5/16" wrench and turn clockwise to loosen.
4. Remove 6-32 x 1/2" machine screw (B-10) that holds thermostat to heat exchanger end (SM-0235), removing the thermostat.

## REPLACEMENT OF THERMOSTAT

**CAUTION** The sensing surface of the thermostat can be damaged if over-tightened to the heat exchanger surface.

1. Remove screws from old thermostat and install in new thermostat, making sure one nut is on each side of the flange.
2. Hold the thermostat in place on heat exchanger end and install screws firmly.
3. While holding thermostat firmly against heat exchanger end, back inner nuts out to touch flange, then tighten outer nut down to secure thermostat in place.
4. Re-attach wires. On K-26.5 yellow wires connect through lower terminals, numbers 4 and 5. Orange wires connect on the upper terminals, numbers 1 and 3. On K-23.2 screw red wire to terminal number 1 and the violet wire to terminal number 2.

## SEE APPENDIX G FOR TEST PROCEDURE

5. Replace door.

# HEATER SPECIFICATION

K-12.2	HEATER, CART. 750 WATTS 6.25 AMP OPTIONAL 12-120 VOLT	2.0 OHM	120 VOLTS 750 WATTS	BLACK WIRE	PIN
K-12.3	HEATER, CART. 1000 WATTS 8.33 AMP OPTIONAL 212-120 VOLT	4.0 OHM	120 VOLTS 1000 WATTS	BLACK WIRE	PIN
K-12.4	HEATER, CART. 1000 WATTS 4.17 AMP STANDARD 212-240 VOLT	57.6 OHM	240 VOLTS 1000 WATTS	BLACK WIRE	PIN
K-12.6	HEATER, CART. 1250 WATTS 10.4 AMP STANDARD 212-120 VOLT	11.5 OHM	120 VOLTS 1250 WATTS	BLACK WIRE	PIN
K-13.04	HEATER, CART. 750/1750 WATTS 6.25 AMP 14.6 AMP STANDARD 320/330 HX 120 VOLT	19.2 OHM 8.2 OHM	120 VOLTS 750 WATTS 1750 WATTS	BLACK WIRE WHITE WIRE	PIN SOCKET
K-13.05	HEATER, CART. 1250/1750 WATTS 10.4 AMP 14.6 AMP STANDARD 214-120 VOLT	11.5 OHM 8.2 OHM	120 VOLTS 1250 WATTS 1750 WATTS	BLACK WIRE WHITE WIRE	PIN SOCKET
K-13.08	HEATER, CART. 1000/1750 WATTS 4.17 AMP 7.29 AMP STANDARD 214-240 VOLT (2 CORDS)	57.6 OHM 32.9 OHM	240 VOLTS 1000 WATTS 1750 WATTS	BLACK WIRE WHITE WIRE	PIN PIN SOCKET
K-13.09	HEATER, CART. 250/750/1500 WATTS 6.26 AMP 3.13 AMP 1.04 AMP EUROPEAN STANDARD 214-240 VOLT (1 CORD)	38.5 OHM 76.6 OHM 230.7 OHM	240 VOLTS 1500 WATTS 750 WATTS 250 WATTS COMMON	BLACK WIRE RED WIRE VIOLET WIRE WHITE WIRE	PIN SOCKET SOCKET PIN
K-13.09	HEATER, CART. 250/1000/1250 WATTS 5.21 AMP 4.17 AMP 1.04 AMP AUSTRALIA STANDARD 214-240 VOLT (1 CORD)	23.0 OHM 57.6 OHM 230.7 OHM	240 VOLTS 1250 WATTS 1000 WATTS 250 WATTS COMMON	BLACK WIRE YELLOW WIRE BLUE WIRE WHITE WIRE	PIN SOCKET SOCKET PIN

# TEST PROCEDURE HEATER CIRCUIT

## TOOLS NECESSARY

1. Screwdriver (# 2 Phillips)
2. Volt Ohm Meter

**NOTE:** The heat exchanger of the KleenRite machine is located outside the solution tank and after the pump. Because of this the solution in the tank will not rise in temperature unless the system is fully operational and in the recirculating mode.

To confirm heater malfunction remove the door opposite the blower exhaust and, using a clamp on amp meter, test the current on each circuit of the heater. See Appendix F, HEATER SPECIFICATIONS for proper readings. Run test with cold machine to assure control is calling for heat. If no current draw is present follow these tests carefully.

**Step by Step Power OFF Test for Heater** Refer to illustration (Fig. 13-1) for part identification and wire diagram (Fig 13-8) for test location. Before starting be certain machine is unplugged and drained of all fluids.

1. Remove 8, 10-32 x 5/16" screws (B-21) from doors (M-0210KR, M-0215KR) and remove both doors from machine.
2. Turn machine upside down. You may want to remove the handle.
3. Remove 4, 10-32 x 5/16" screws (B-21) from access door (M-0408KR) and remove door.

## POWER OFF TEST

1. Set meter for continuity test.
2. Test continuity through "Heater" switch. Test with switch in "On" position and test both poles. If no continuity, replace switch.
3. Attach meter probes to terminals of thermostat (K-26.5). There are two switches inside thermostat and they are across from one another on the same level as each other. There should be continuity through both sets of contacts. See Appendix E, THERMOSTAT REPLACEMENT for instructions.
4. Set meter on ohms. Unplug heater from control(plugs K-04.2, K-04.7) and test circuit resistance. See Appendix F, HEATER SPECIFICATIONS for proper ohms reading. If heater is open, replace. See Appendix C, HEATER REPLACEMENT for instructions

**If Fault is not found with Power OFF test it may be necessary to run Power ON test. A basic knowledge of electricity and extreme care must be taken to proceed with this test.**

**Step by Step Power ON Test for Heater** Refer to illustration (Fig. 13-1) for part identification and wire diagram (Fig 13-9) for test location. Before starting, be certain machine is unplugged and drained of all fluids.

1. Remove 8, 10-32 x 5/16" screws (B-21) from doors (M-0210KR, M-0215KR) and remove both doors from machine.

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## 3" UPHOLSTERY TOOL RECIRCULATING SERVICE

### TOOLS NECESSARY

1. Screwdriver (# 2 Phillips)
2. Screwdriver (Straight Blade)
3. Combination Wrench Set (7/16, 1/2, 9/16, 5/8, 11/16, 3/4) or 2 Adjustable Wrenches
4. 1/8" Allen (Hex) Wrench, Vise (Optional)

### REGULAR SERVICE

Refer to Figure 13-4, 3" UPHOLSTERY TOOL RECIRCULATING for part identification.

1. The In-line Filter (D-29) must be cleaned on a regular bases. It is located inside the In-line Filter Body (D-28.1) on the VIP (SM-39) between the male Quick Connect (F-09) and the Elbow (D-17) marked "IN". To remove the filter use two wrenches or a vise and wrench to unscrew Nipple (D-43) from the Fiter Body (D-28.1). Note hex on D-43 is not on D-41. With screwdriver pointed straight up insert it into the filter body and unscrew the filter. By holding the unit in this manner the filter as well as any contamination will fall out of the solution line. While still holding tool in upright position pull trigger to release vacuum and allow fluid to flow from filter body thus flushing contamination from tool. If particles get past the filter they will clog the spray jet or back pressure orifice.

2. Internal vacuum clogging may occur when loose fiber fabric or areas of animal hair are cleaned. It is necessary to check the VIP (SM-39) and remove fibers with a hooked wire. The lid (SJ-03.5) must be removed to check and clean the inside of the tool head. When removing the screws (B-11.1) use # 2 phillips screwdriver to avoid stripping screw head. The application of anti-seize or grease to the thread before reassembly will prolong thead life.

3. Hose fatigue near fitting is a common cause of leaks. By pulling the tool cuff back from the VIP the black and white teflon tubes (SE-06/5B, SE-06/5) may be inspected. If the tubes are bent or deformed it may be time to repair them. With a new nut (D-44.1) the tube may be removed, cut back one inch and reinstalled. The same inspection should be preformed at the head end by removing the cover, releasing the Quick Connect (F-03) and unscrewing the vacuum hose from the cuff.

4. Leaking from the spray jet is caused by a worn valve stem and replacement is necessary. Remove the Lid (SJ-03.5) to expose the valve (SJ-05.8STD). With a 5/8" wrench remove the Cap (G-01) and valve assembly parts (G-02, G-07, G-06, G-04, G-03). It may necessary to remove the valve from the tool to push the O-Ring from the valve. Be certain to replace the parts in the proper order. See Fig. 13-4 3" UPHOLSTERY TOOL RECIRCULATING.

5. Lack of recirculation is caused by a clogged back pressure orifice (SB-40/67) located inside the SD-06 fitting. Remove the Lid (SJ-02.5) and disconnect the Quick Connect (F-03). Pull the VIP (SM-39) from the Cuff (E-14) and slide the hoses out of the Vacuum Hose (SE-10/5). Locate the "Y" Block (M-42).

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# DRAPERY TOOL RECIRCULATING SERVICE

## TOOLS NECESSARY

1. Screwdriver (# 2 Phillips)
2. Screwdriver (Straight Blade)
3. Combination Wrench Set (7/16, 1/2, 9/16, 5/8, 11/16, 3/4) Or 2 Adjustable Wrenches
4. 1/8" Allen (Hex) Wrench Vise (Optional)

## REGULAR SERVICE

Refer to Figure 13-6 DRAPERY TOOL RECIRCULATING for part identification.

1. The In-line Filter (D-29) must be cleaned on a regular bases. It is located inside the In-line Filter Body (D-28.1) on the VIP (SM-39) between the male Quick Connect (F-09) and the Elbow (D-17) marked "IN". To remove the filter use two wrenches or a vise and wrench to unscrew Nipple (D-43) from the Filter Body (D-28.1). Note hex on D-43 is not on D-41. With screwdriver pointed straight up insert it into the filter body and unscrew the filter. By holding the unit in the manner the filter as well as any contamination will fall out of the solution line. If particles get past the filter they will clog the spray jet or back pressure orifice.
2. Internal vacuum clogging may occur when cleaning loose fiber fabric or areas of animal hair. It is necessary to check the VIP (SM-39) and remove fibers with a hooked wire. The lid (SJ-21) must be removed to check and clean the inside of the tool head. When removing the screws (B-10.05 & B-03.5) use # 2 phillips screwdriver to avoid stripping screw head. The application of anti-seize or grease to the thread before reassembly will prolong thread life.
3. Hose fatigue near fittings is a common cause of leaks. By pulling the tool cuff back from the VIP the black and white teflon tubes (SE-05/12.5, SE-05/12.5B) may be inspected. If the tubes are bent or deformed It may be time to repair them. With a new nut (D-44.1) the tube may be removed, cut back one inch and reinstalled. The same inspection should be performed at the head end by removing the cover, releasing the Quick Connect (F-03) and unscrewing the vacuum hose from the cuff.
4. Leaking from the spray jet is caused by a worn valve stem and replacement is necessary. Remove the Lid (SJ-21) to expose the valve (SJ-05.8DRPSTD). With a 5/8" wrench remove the Cap (G-01) and valve assembly parts (G-02, G-07, G-06, G-04, G-03). it may be necessary to remove the valve from the tool to push the O-Ring from the valve. Be certain to replace the parts in the proper order. See Fig. 13-6.
5. Lack of recirculation is caused by a clogged back pressure orifice (SB-40/67) located inside the SD-06 fitting. Remove the Lid (SJ-21) and disconnect the Quick Connect (F-03). Pull the VIP (SM-39) from the Cuff (E-14) and slide the hoses out of the Vacuum Hose (SE-10/5). Locate the "Y" Block (M-42)



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## AUTOMATIC FLUSH VALVE

### RUN POSITION

PURPOSE: Allows machine to operate in normal manner.

### DRAIN POSITION

PURPOSE: To empty last of cleaning fluid from solution tank.

PROCEDURE: With vacuum on (and vacuum lid intake plugged or solution lid on vacuum tank) turn flush valve to "DRAIN" position.

RESULT: Procedure will drain fluid from solution tank at a rate of 2 cups every 15 Sec.

### FLUSH POSITION

PURPOSE: To purge the heat exchanger, pump, and recirculating hose of previous fluid.

PROCEDURE: With the red and blue recirculating hose attached to the machine and its loose ends plugged into each other turn vacuum on (with vacuum lid intake plugged or solution lid on vacuum tank) turn flush valve to "FLUSH" position.

RESULT: Fluid will be cleared from all plumbing in about 30 Sec.

### TOOL CHANGE

PURPOSE: To switch a recirculating tool from OMS to water or water to OMS.

PROCEDURE: After machine has been drained and hoses flushed attach tool to red and blue recirculating hose. Fill solution tank with new cleaning fluid, and with valve in "FLUSH" position turn on vacuum and pump. In 30 to 40 Sec. turn valve to "RUN" and proceed to work.

RESULT: Unwanted fluid which was in the tool will flow through the tool to the vacuum tank minimizing contamination of the new cleaning solution.