




Date 10-03-11
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Subject: **HDRL Housekeeping Operations**
Green Plan
 Environmental Janitorial / Chemical Guidelines

Approval: 
 CONFIDENTIAL

PURPOSE

Provide a Departmental Standard Operating Procedure, which insures consistent, environmentally responsible and sustainable housekeeping maintenance services.

The intent of this SOP is to minimize exposure of building occupants and cleaning personnel to potentially hazardous chemical, biological and particle contaminants which may adversely impact air quality, health, building finishes, facility systems or the environment. The intent is to balance each need with the cost/ quality of the SOP to provide a sustainable approach to housekeeping.

SCOPE

The scope of this document covers all normal housekeeping duties that are undertaken in the course of cleaning. Cleaning is the process of locating, identifying, containing, removing and properly disposing of an unwanted substance from a surface or environment. This SOP includes the following:

- 1) Entryway Systems Maintenance
- 2) Isolation and storage of cleaning chemicals
- 3) Dusting, dust mopping and vacuuming
- 4) Sustainable Cleaning Chemicals
- 5) Use of Concentrates from Dispensing Equipment
- 6) Carpet Maintenance Program
- 7) Consumables products
- 8) Durable Equipment- Green Seal

REQUIREMENTS

1. The *Assistant Director of HDRL/ Executive Housekeeper* is responsible to provide housekeeping services to all residence halls, which reduce overall risk and provide a safe and effective work environment, while minimizing environmental impact. The attached guidelines are provided to produce this result in the area of all housekeeping services including chemical usage.
2. All operations must meet local regulatory requirements.
3. Green housekeeping shall be used by all staff that participates in the cleaning of Residence Halls. This is to including vacuums with hepa filters, using steam cleaning equipment, chemical dispensing systems, carpet extraction, and kaivac equipment.
4. These green cleaning requirements will apply to all areas of the residence halls to include, common rooms, bed rooms, offices, work area, kitchen, hallways and training area.
5. Results of this program shall be documented by the Office of the Assistant Director and reviewed and updated on an annual basis. An annual report shall at a minimum include chemical use listing, safety/incident review, and performance/inspection documents.
6. Standards, product registrations, and housekeeping practices are constantly evolving. The *Assistant Director of HDRL/ Executive Housekeeper* will keep abreast of developments and strive for continuous improvement in performance and environmental achievement.

HDRL Housekeeping Green Plan

The purpose and intent of the Green Housekeeping Plan is to avoid exposure of building occupants and housekeeping personnel to potentially hazardous chemical, biological and particle contaminants which may adversely impact indoor air quality, health, building finishes and systems, and to minimize the impact of the building housekeeping program on the environment. Additionally, this Plan is intended to reduce the risk of both occupants and the housekeeping staff from injury and/or health problems. The promotion of high quality indoor environment will have positive beneficial effects on employee health and productivity, life-cycle building maintenance costs, and overall environment.

1) Entryway Systems Maintenance

Properly installed and maintained entryway systems will greatly reduce the amount of foreign matter tracked into the building, reduce the risk of slips/falls inside the building, and protect the building flooring systems from excessive wear and tear, thereby reducing interior maintenance requirements.

All entryways shall be protected with Anderson mats. At the main entrance double matting is utilized both inside and outside of the door/ passage way.

Mat systems and application shall be specified and applied year round. Additional matting will be applied in the winter when grit, salt, ice and water are prevalent, a dual (external/internal) mat system may be required to adequately protect the building, and to supplement the permanent system installed at the entryways.

The Assistant Director of HDRL/ Executive Housekeeper shall develop specifications and plans for selection and installation of the entryway systems and mats. HDRL housekeeping staff will be responsible for maintaining entryway systems and mats. A log shall be maintained on ATHOS to document that the systems have been effectively maintained. This duty list and system performance shall be reviewed at least annually by the Assistant Director of HDRL/ Executive Housekeeper. (*Refer to attachment one A*)

2) Dusting, dust mopping and vacuuming

Use only dusting tools that capture and remove the dust. Micro-fiber, lint-free dusting cloths or vacuums with onboard attachments are used in all areas. Windsor Sensors vacuums will be used in all areas. This vacuum cleaner meets the Carpet & Rug Institutes (C&RI) Green Label Program and is fitted with appropriate bags and HEPA filters.

It is required to use a folded cloth and use the refolding technique when full of soil.

Documentation shall be kept that details all daily dusting, damp mop and wet mopping procedures. (*Refer to attachment one B*)

Mirco-fiber flat mops will be used during the dust-mopping phase of all floor care.

3) Isolation and Storage of Cleaning Chemicals

Proper isolation, storage and handling of chemicals will reduce the risk of occupant exposure to potentially hazardous materials.

- All cleaning chemicals shall be stored in isolated areas of the building under lock and key.

- Hot and cold water supplies and sink drains plumbed for appropriate disposal of liquid wastes.
- All students will have access to a Living Group Closet with a limited cleaning inventory to assist with student clean up needs. *(Refer to attachment two)*

Only authorized personnel shall have access to the housekeeping chemical storage and mixing areas and stations.

The Campus Office along with the Assistant Director of HDRL/ Executive Housekeeper shall maintain building plan drawings indicating all areas where chemical storage and chemical dispensing systems are located in each building. Cleaning practices shall be reviewed annually to insure continued compliance as well as providing opportunities to incorporate improved tasks. *(Refer to attachment three)*

4) Sustainable Cleaning Chemicals

Housekeeping services includes floor care, restroom care, and general cleaning and deep cleaning. 'Sustainable Cleaning' encompasses more than the concept of minimizing exposure of personnel to potentially hazardous chemicals. To achieve leadership in environmental responsibility within housekeeping operations systems, the *Assistant Director of HDRL/ Executive Housekeeper* must consider the life cycle of the building materials and maintenance methods, and incorporate concepts of total cost of performance, safety in use and application, and overall environmental impact. All stages of sustainable building maintenance can be measured for environmental performance, including product selection, installation, operation, long-term maintenance, and eventual disposal.

Environmental and safety aspects of sustainable housekeeping operations are defined in this plan as follows:

- Residence Hall safety, health & environmental practices must be compliant with applicable local regulatory requirements.
- The Assistant Director of HDRL/ Executive Housekeeper shall develop and communicate proper disposal methods for all janitorial wastes, including floor care stripping wastes.
- All housekeeping staff shall be properly trained in the use, maintenance and disposal of cleaning chemicals, dispensing equipment, and packaging. Training records certifying each person's specific training dates shall be kept by the Assistant Director of HDRL/ Executive Housekeeper. *(Refer to attachment four)*
- - All housekeeping staff shall attend a minimum of twelve (12) hours of combined classroom and field training on green buildings and proper cleaning of a LEED certified facility
 - All personnel shall attend a minimum of thirty-six (36) additional hours of combined classroom and field training each calendar year. *(Refer to attachment four A and B)*
- Supplier's Material Safety Data Sheets and Technical Bulletins for all cleaning chemicals shall be provided by suppliers. The suppliers of cleaning products shall provide full disclosure of ingredients on Material Safety Data Sheets. Additionally, suppliers must provide training materials on the hazards and proper use of housekeeping chemicals for workers. *(Refer to attachment five)*

"Full Disclosure" for products which are not formulated with listed suspect carcinogens is defined as (i) disclosure of all ingredients (both hazardous and non-hazardous) that make up 1% or more of the undiluted product and (ii) use of concentration ranges for each of the disclosed ingredients. "Full Disclosure" for

products which are formulated with listed suspect carcinogens is defined as (i) disclosure of all ingredients (both hazardous and non-hazardous) that make up 0.1% or more of the undiluted product and (ii) use of concentration ranges for each of the disclosed ingredients. Suspect carcinogens are those which are listed on authoritative lists available for MSDS preparation: IARC, NTP, and California Proposition 65 lists. Concentration range definitions are available from the Canada WHMIS regulation.

The intent of the above disclosure requirement is to have a facility disclosure policy that is responsive to the needs of health and safety personnel. If, however, the above disclosure requirement is not met on the MSDS, then disclosure can be provided by suppliers through other means that are easily accessible to health and safety personnel.

- Low environmental impact cleaning products shall be used in accordance with the Green Seal GS-37 or Green Seal GS-40 standard and/or nationally recognized green certification (such as listed in LEED for Existing Buildings: Operations and Maintenance, EQ 3.4-3.6). (Refer to attachment six)
- We only use a green seal certified hand soaps and sanitizer
 - Qualifying products can be found through Green Seal GS-41 or Environmental Choices CCD-104
- Documentation shall be kept that details all cleaning chemicals used or stored on the premises (stored products include those that are no longer used, but still in the building). Attachments to the documentation shall include manufacturer's Material Safety Data Sheets and Technical Bulletins. In locations where Green Seal is a nationally recognized standard, the log shall identify:
 - An MSDS and/or label from the manufacturer specifying that the product meet the VOC content level for the appropriate product category as found in the California Code of Regulations.
 - A copy of the Green Seal Certification.
 - If the product has not been certified by Green Seal, the manufacturer will provide test data documenting that the product meets each of the environmental health & safety criteria set forth in Green Seal Standard GS-37 / GS-40 (or other certifying body as listed in LEED for Existing Buildings: Operations and Maintenance, EQ 3.4-3.6).
- We will only use chemical concentrates dispensed from closed dilution systems.
- Selection of flooring used in the facility, whether a new installation or replacement, shall consider all potential environmental impacts over the full life of the floor system, including raw material extraction and use, installation practices, maintenance requirements, overall useful life, hygiene, appearance and safety attributes, and eventual disposal
- Resilient tile and hard flooring coating systems, including floor finishes and restoration products shall be slip-resistant (as defined by ASTM Std D-2047) and shall be highly durable in order to maintain an acceptable level of protection and gloss for a minimum of one (1) year before stripping/removal and recoating is necessary.
- A written floor maintenance plan and log will be kept which details the number of coats of floor finish being applied as the base coat and top coats, along with relevant maintenance/restoration practices and the dates of these activities. The duration between stripping and recoat cycles shall be documented. (Refer to attachment seven)

5) Use of Concentrates from Dispensing Equipment

Use of chemical concentrates has several positive environmental benefits:

1. Significantly lower transportation costs between manufacturer and end-user.
2. Significantly lower use of packaging materials.
3. Lower real chemical use to obtain same performance.
4. Potentially lower exposure of maintenance personnel to hazardous chemicals.

Chemical concentrates may present higher hazards upon exposure. Proper containment, storage and dispensing are critical to avoid employee exposures. Exposure to hazardous chemicals is minimized by using closed dispensing systems. Concentrates sold for manual dilution in buckets or bottles can actually increase the risk of employee exposure.

Chemical concentrates dispensed from closed dilution systems shall be used preferentially to open dilution systems or non-concentrated products. Housekeeping Operations is currently using Ecolab ultra concentrate dispensing systems. Chemicals and their use shall comply with all directives shown in section 3.

If equipment is used to control the dilution of concentrated cleaning chemicals then documentation shall be kept which includes the equipment manufacturer's technical information, as well as the date of installation, maintenance and repairs. The log shall also contain the desired dilution rates for each cleaning product and a plan for maintaining the desired dilutions on an annual basis. (Refer to attachment eight)

Housekeeping staff shall be properly trained in the use, maintenance and disposal of cleaning chemicals, dispensing equipment, and packaging.

6) Carpet Maintenance

Low environmental impact housekeeping equipment includes the use of durable carpet care equipment, such as upright, backpack and wide area vacuums equipped with power-heads and capable of capturing 99% of particulates 0.6 microns in size. Carpet extraction equipment shall be capable of removing sufficient moisture such that carpets can dry in less than 24 hours. Carpet care equipment shall be electric and shall have a maximum sound level less than 70dBA. (Refer to attachment nine A)

Wherever possible, a dry encapsulation method shall be used to reduce chemical use and drying time.

Documentation will be kept which details the relevant maintenance/restoration practices and the dates of these activities. The duration between extraction cycles shall be documented. (Refer to attachment nine B)

Documentation will be maintained which lists all carpet care equipment including vacuums (e.g. upright, backpack, wide area and wet/dry) and equipment used for maintaining resilient and hard floors (e.g. buffers, burnishers, and auto-scrubbers). Documentation will be kept on each piece of equipment identifying performance capabilities. (Refer to attachment nine C)

7) Consumables

Low environmental impact housekeeping supplies will include the use of disposable paper (toilet tissue and paper towels) utilizing 100% recycled content and a minimum of 30% post-consumer recycled content, AND which are manufactured without the additional use of elemental chlorine or chlorine compounds (Processed Chlorine Free). Plastic trash can and other liners will utilize a minimum of 10% post-consumer recycled content

- Use U.S. EPA Comprehensive Guidelines for Janitorial Paper and Plastic Trash Can liners

- Certified products found under GS-09, GS-01 and Environmental Choice CCD-82 and CCD-86
- Additional qualifying paper products will be derived from rapidly renewable resources or made from tree-free fibers.

Purchasing records manufacturer's technical bulletins for paper and plastic lines, which indicates grade, total recycled content, post-consumer recycled content and bleaching processes (if applicable) shall be provided. (Refer to attachment 10)

7) Durable Equipment

- A log shall be kept for all powered janitorial equipment. The log should identify the date of purchase and all repair and maintenance activities. Equipment shall meet these requirements:
 - Vacuum cleaners shall be certified by the Carpet and Rug Institute (CRI) "Green Label" testing program for vacuums. Housekeeping Operations is currently using Windsor Sensor vacuums that meet this criteria.
 - Carpet extraction equipment used for deep restorative deep cleaning must be certified by the CRI "Seal of Approval" program for deep-cleaning extractors. Housekeeping Operations is currently using CFR PRO 500, ECO 500 that meet this criteria.
 - Powered maintenance equipment should be equipped with vacuums, guards and/or other devices for capturing fine particulates, and shall operate with a sound level less than 70dBA.
 - Steam equipment will be used in for deep cleaning of restroom, cleaning and sanitizing of furniture and project related functions with limited use of chemicals.
 - Where appropriate, active micro fiber technology shall be used to reduce cleaning chemical consumptions and prolong life of disposable scrubbing pads.
 - Powered equipment shall be ergonomically designed to minimize vibration, noise and user fatigue.
 - Equipment shall have rubber bumpers to reduce potential damage to building surfaces.

QC

Ultra Concentrate Dispensing System

Installation and Operation Manual



QC Satellite Mop:

- QC Satellite AG Mop
9202-2032
- QC Satellite Mop
9202-2034

QC Central Supply:

- QC Central Supply AG
9202-2028
- QC Central Supply
9202-2030

QC Satellite Spray Bottle:

- QC Satellite AG Spray Bottle
9202-2031
- QC Satellite Spray Bottle
9202-2033

*** Retain this manual as an installation, operation and servicing reference.**

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1.0 Preface

This manual has been written to represent the basic installation and operation characteristics of the QC dispensers. *This manual applies, in its entirety, to current units.*

Guidelines will be suggested as to the preferred method of installation; however, customer requirements, facility layouts and local and state plumbing codes will dictate variations in the final installation.

1.1 System Features

- Product selector valves for spray bottle and mop bucket filling.
- Push button filling with “push and turn” mop bucket locking feature for mop bucket filling.
- Simple three screw cabinet mounting.
- Two backflow prevention options available (Airgap and 1052).
- Separate spray bottle and mop bucket fill rates (1 gpm and 3.5 gpm).
- Use of metering tips to select dilution rates.
- Easy product concentrate cartridge docking.
- Built-in product cartridge dip tubes.
- Color-coded trilingual labeling, usage icons, consistent product colors and numbering.
- Locking product concentrate door.
- Low foaming spray bottle fill tube.
- Small light weight product cartridges.

CAUTION: These operation and servicing instructions are for use by qualified personnel only. The installation must be made in accordance with local and state plumbing codes. Backflow prevention has been provided. For further information contact Professional Products Customer Service at 1-800-332-6522.

2.0 Introduction

The QC Ultra Concentrate dilution systems are designed to provide a safe and easy method for dispensing use-solutions of cleaning, disinfecting, floor care and odor control housekeeping products.

This manual applies to all three of the available equipment options; The four product central supply (spray bottle/mop bucket fill) and the spray bottle only or mop bucket only two product satellite dispensers.

NOTE: Although auto scrubbers can be filled through the mop bucket tube, selected dilution rates may greatly affect product consumption rates.

2.1 Principle of Operation

Individual cabinets are mounted to a wall using three anchors. A 6 foot water supply hose comes assembled to the cabinet for connection to a 30 psi minimum fresh water source. A variety of metering tips are provided to select the desired use-solution. The color-coded concentrate cartridges are loaded into the cabinet and clicked into place. With the desired product selected, spray bottles or mop buckets are filled by the push of a button.

IMPORTANT: The QC dispensing systems have been designed for use with the QC concentrate product cartridges only. No other products should be used. In addition, the metering tip charts presented in this manual are exclusive to the QC concentrates, the equipment and the method of aspiration. Any substitutions of any part of this “system” will affect your use-solution concentration.

3.0 Specifications

3.1 Four Product Central Supply Dimensions

- Height (H): 20.25” (50.6 cm)
- Width (W): 13” (32.5 cm)
- Depth (D): 8.5” (21.3 cm)
- Weight: 7.9 lbs. (3.580 kg)

3.2 Two Product Satellite Dimensions

- Height (H): 20.5” (51.3 cm)
- Width (W): 7” (17.5 cm)
- Depth (D): 8.5” (21.3 cm)
- Weight: 4.3 lbs (1.970 kg)

3.3 Water Supply Requirement

A cold water source with the following static pressure requirements:

Minimum: 30 PSI

Maximum: 85 PSI

Maximum temperature of water source should not exceed 140°F (60°C).

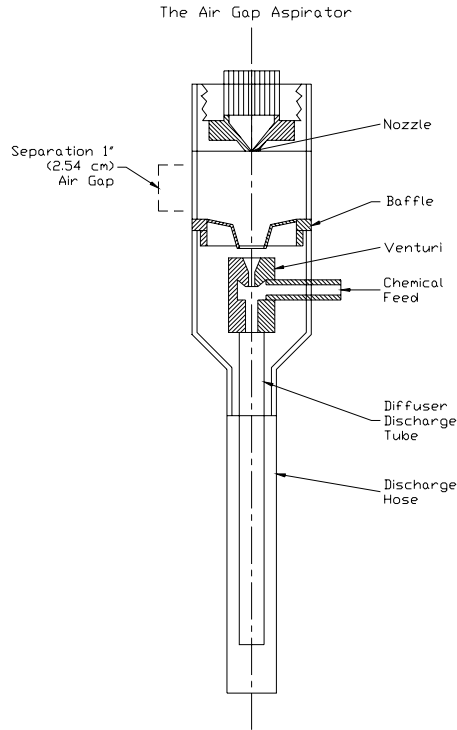
WARNING: Failure to prevent water temperature from exceeding maximum recommendation voids all warranties and may cause permanent damage to the dispensing unit.

NOTE: All AG (Air Gap) units must have a NSF approved hose for the water supply or another NSF approved connection. All non-air gap units can use the black rubber hose in conjunction with the ASSE 1052 backflow preventer at the water source.

3.4 Air Gap Aspirator Detail

Specifications: The Air Gap Aspirator is included in:

QC Central Supply AG Pkd	# 9202-2028
QC Satellite AG Btl Pkd	# 9202-2031
QC Satellite AG Mop Pkd	# 9202-2032



4.0 Installation Procedures

4.1 Central Supply and Satellite Units

The QC dispensers are designed to fit in most areas within a housekeeping closet. These cabinets are designed to be mounted on any vertical surface. Careful selection of the mounting surface and location from an available water source/drain are essential. The preferred location is within 4 – 6 feet of the water source so no additional supply hose is needed. It is also best to mount the cabinets over a sink or basin to contain any water spilling from the cabinet that can occur when using the air gap method of backflow prevention.

4.2 Central Supply and Satellite Cabinet Mounting Procedures

4.2.1 Removing the Top Cover

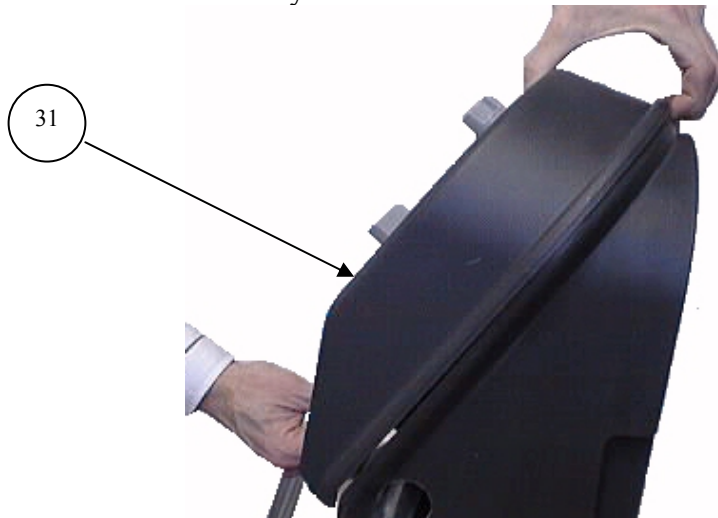
- Using the brass key, opening the bottom product storage door.
- Locate the top cover finger release tab. Using your thumb as a stop, gently pull the tab towards you with your index finger, releasing the cover.

IMPORTANT: Rotate the finger release tab gently. Should you break this tab off, the cover can be secured using a #4 screw. Fasten screw through cover hole and cabinet body.



Alternate screw hole position.

- Next, grasp and lift the top part of the cover up and over the top of the cabinet. The cover is now free from the cabinet body and can be removed.



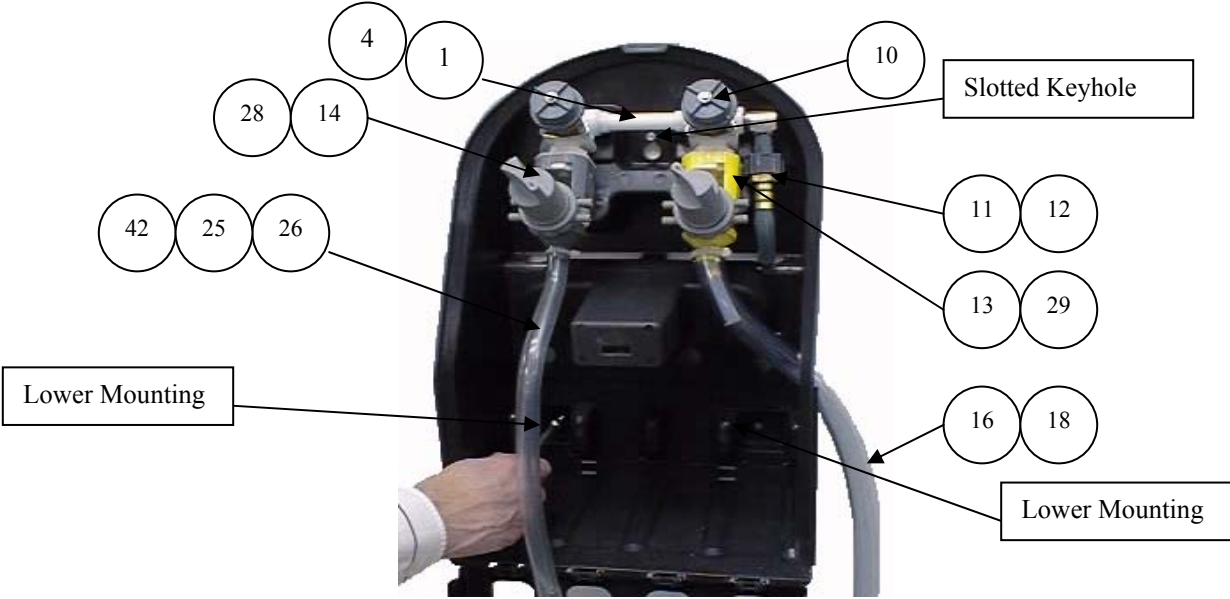
4.2.2 Mounting the Cabinet

- A slotted mounting keyhole is located just above the water valves on the back of the cabinet body (see picture/next page). This design allows you to position a single screw into the wall, then hang the cabinet; mark and drill the remaining lower two mounting holes.

- When mounting on sheet rock, the top mounting screw should be driven into a wall stud. When mounting on concrete block, you will notice that if you position the cabinet correctly, all 3 mounting holes will line up within the cement grout lines, making installation easier.
- If using the anchors provided for installation, a 1/4 inch (6 mm) drill bit should be used. Tap anchors into place.



- With the holes drilled you are now ready to mount the cabinet. Make sure the water supply hose is not kinking any of the product tubing.
- The water supply hose will need to be positioned between two of the cartridge docking manifolds as you place the cabinet onto the wall.



- Carefully fasten all three screws firmly in place.

IMPORTANT: Both of the lower mounting screws must be installed to insure product cartridge removal.



Use the hose clamp in your I&O manual bag to firmly attach the mop tube to the aspirator barb. First route the mop tube as shown through the hole in the cabinet wall. Push tube firmly onto the aspirator barb. Tighten the hose clamp securely around the tube just above the aspirator barb.

4.3 Selecting Desired Dilutions

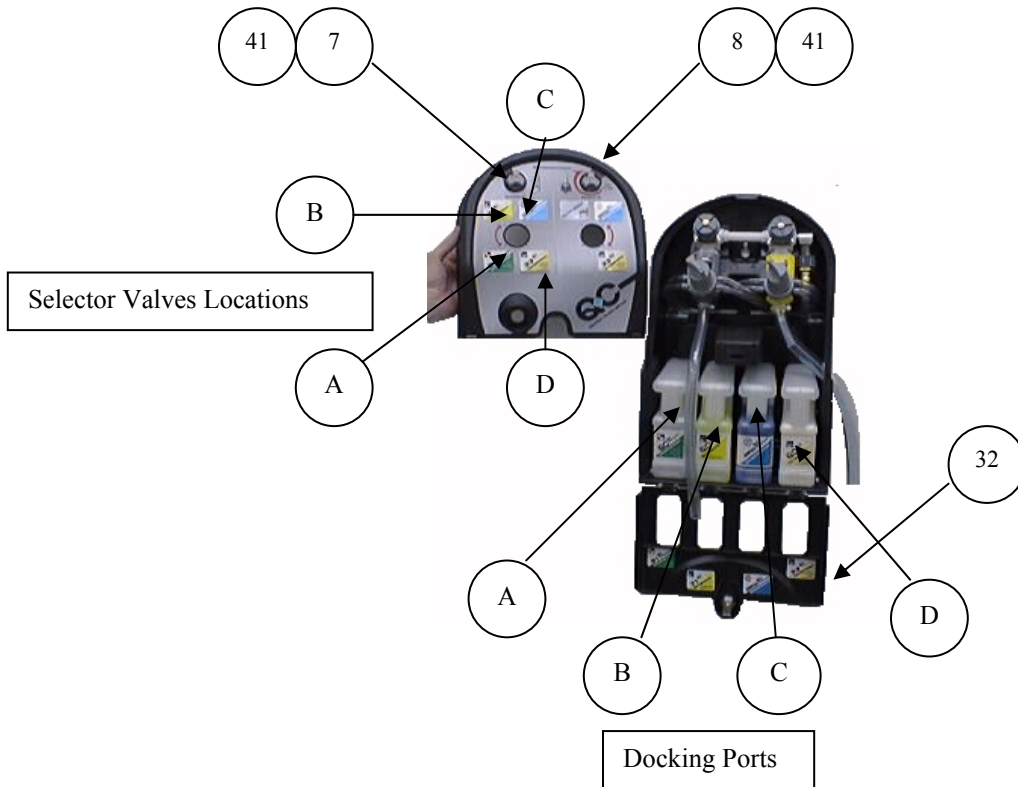
With the top cover removed, select individual metering tips as recommended in section (13) to achieve the desired use-solution in oz./gal. It is vital to understand that the dilutions for the QC system are different from any other system. Due to the variety of products and equipment used for QC, specific metering tips are required to achieve different dilutions for each product and for each method of aspiration (Airgap and Standard). Review the enclosed tip charts carefully to ensure your metering tip selection is correct for your target use-solution. To volumetrically check the dilution rates, refer to Section 4.4.

4.3.1 Central Supply

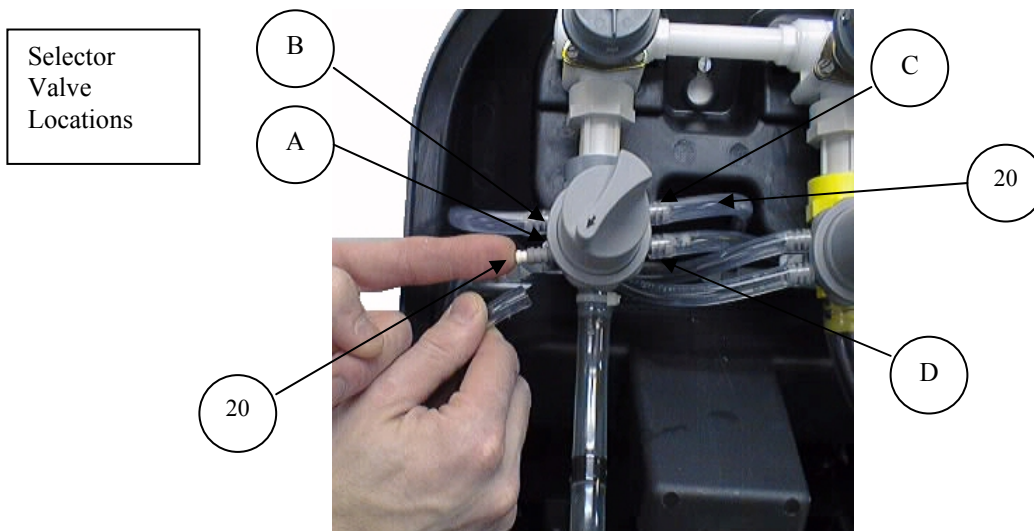
Exclusive to the four product central supply is the sequence of product cartridge docking ports and how they relate to the two selector valves (spray and mop).

As you face the front of the unit (as shown on next page), the product docking ports are identified from left to right (A through D). Each cartridge docking port has a docking manifold fitted with two tubes; one tube going to the left selector valve (spray) and the other tube going to the right selector valve (mop).

IMPORTANT: While the tubing has been routed at the manufacturer to speed installation, you should check to make sure all tubing positions are correct before inserting the metering tips.



To begin the set-up start by placing one of each of the four product cartridges into each docking port. Press firmly into place. Product docking port A corresponds to the lower left barb for both the spray (left) and mop (right) selector valves. Positions B, C and D then follow clockwise around the selector valve bars.

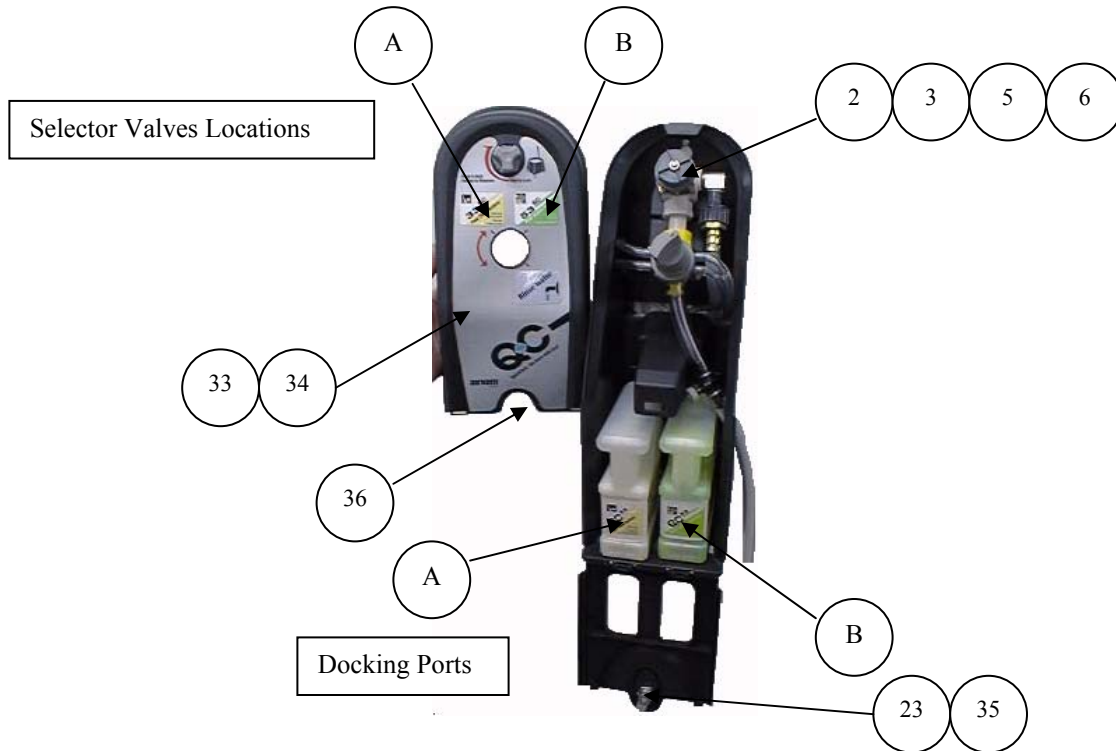


As shown above, with a tip selected, remove a tube one at a time, off the corresponding selector valve barb, insert the tip firmly into the barb and immediately replace the tubing onto the selector.

NOTE: You may desire to have rinse water as one of your mop bucket selector valve positions or you may not desire all four products as either a spray bottle or mop bucket fill. In these cases, you should plug the corresponding selector valve barb. This is accomplished by using a clear metering tip. Press firmly into place and replace the tubing.

4.3.2 Satellites (Spray and Mop)

Since there are only two product docking ports for the satellite cabinet, the metering tip set up procedure is simplified. The sequence of product cartridge docking ports are A (left) and B (right). These correspond to the top left and top right barbs on the selector valve. The lower two barbs may be used for either a clean water rinse or setting a different dilution rate for the same product.



IMPORTANT: While the tubing has been routed at the manufacturer to speed the installation time, you should check to make sure all tubing positions are correct before inserting the metering tips.

With a tip selected, remove each tube one at a time off the corresponding selector valve barb, insert the tip firmly into the barb and immediately replace the tubing onto the selector.

NOTE: For the mop bucket installation you may desire to have one of the selector valve positions be rinse water. Make sure this selector valve barb is plugged using a clear metering tip. Press firmly into place and replace the tubing. As a rule, all of the unused selector valve positions should have the barbs plugged using a clear metering tip. This will ensure no air enters to affect the dilution.

4.4 VOLUMETRIC CALIBRATION

4.4.1 Items Needed for Calibration

- Product concentrate in new 1.3 L bottle with gradations on back of bottle
- One gallon container
- Set of metering tips

4.4.2 Calibration Procedure

NOTE: Metering Tips are selected on the basis of:

- 1. Water Pressure**
- 2. Water Flow Rate**
- 3. Product Temperature (should be at room temperature, dilution rate will be too low if product is cold and too high if the product is warm).**

- 1) Install the metering tip closest to the target dilution rate as recommended in section (13).
- 2) Prime the pick-up line, using the product you are testing. (This is very important!)
- 3) Make note of where the product level is on the calibrated QC bottle.

Note: There is a series of 7 horizontal gradation lines on the side of the container facing out on the new 1.3 L QC bottle. These are to facilitate calibration of the closed QC system. The distance between these lines is equal to one ounce of product. The spacing between the gradations compensates for the shape of the bottle.

- 4) Dispense one gallon of use solution (**), aspirating the concentrate from the calibrated QC bottle. After one gallon has been dispensed, stop and note the difference in the amount of concentrate in the calibrated QC bottle. This difference is the amount of concentrate being used to make one gallon of use solution, or the measured dilution rate in ounces/gallon of concentrate.

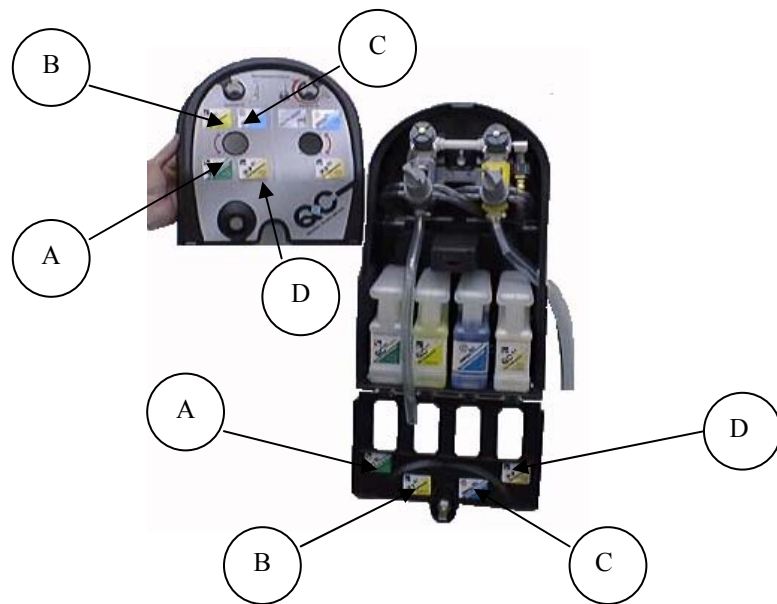
**For higher concentrations, a smaller end use container size may be needed. If you use a 32 ounce spray bottle, multiply your measured ounces by 4 to get ounces/gallon of concentrate.

- 5) Compare measured dilution rate versus target dilution rate. If measured dilution rate is too low, select next larger diameter metering tip. If measured dilution rate is too high, select next smaller diameter metering tip.
- 6) Repeat the volumetric check until the measured dilution rate is within 100-125% of target concentration.
- 7) Repeat as often as needed after initial set-up to ensure consistent product strength.

5.0 Labeling – Product Identification (ID)

Once the metering tips are in place, you will need to place an individual product ID label in the position which corresponds to the selector valve barb fitted with the appropriate metering tip. Press each label firmly into position.

Central Supply only: It is important to note that additional product ID labels are required to help insure correct loading of the product cartridges. These labels should be placed on the inside of the bottom product door in the positions identified (A through D). Again, these labels should read from left to right, with the far left product ID door label being the same label as that used for the lower left selector valve position (spray and mop). Check to make sure your bottom door labeling sequence from left to right is the same as how they appear on the top cover clockwise around each selector valve (Starting at the lower left position).



IMPORTANT: Proper positioning of the product ID labels in relation to the corresponding metering tips and product docking ports, is vital to ensure proper set up.

6.0 Water Hook-up/Backflow Prevention

These cabinets should be connected to a cold water source with a minimum static pressure of 30 psi. This connection can be achieved using two basic methods; hard plumbed to a separate line (or) attach onto a sink faucet. **Verify installation before attaching the 1052 backflow preventer. The female threads will permanently mount to the male threads.** Details for each installation are as follows:

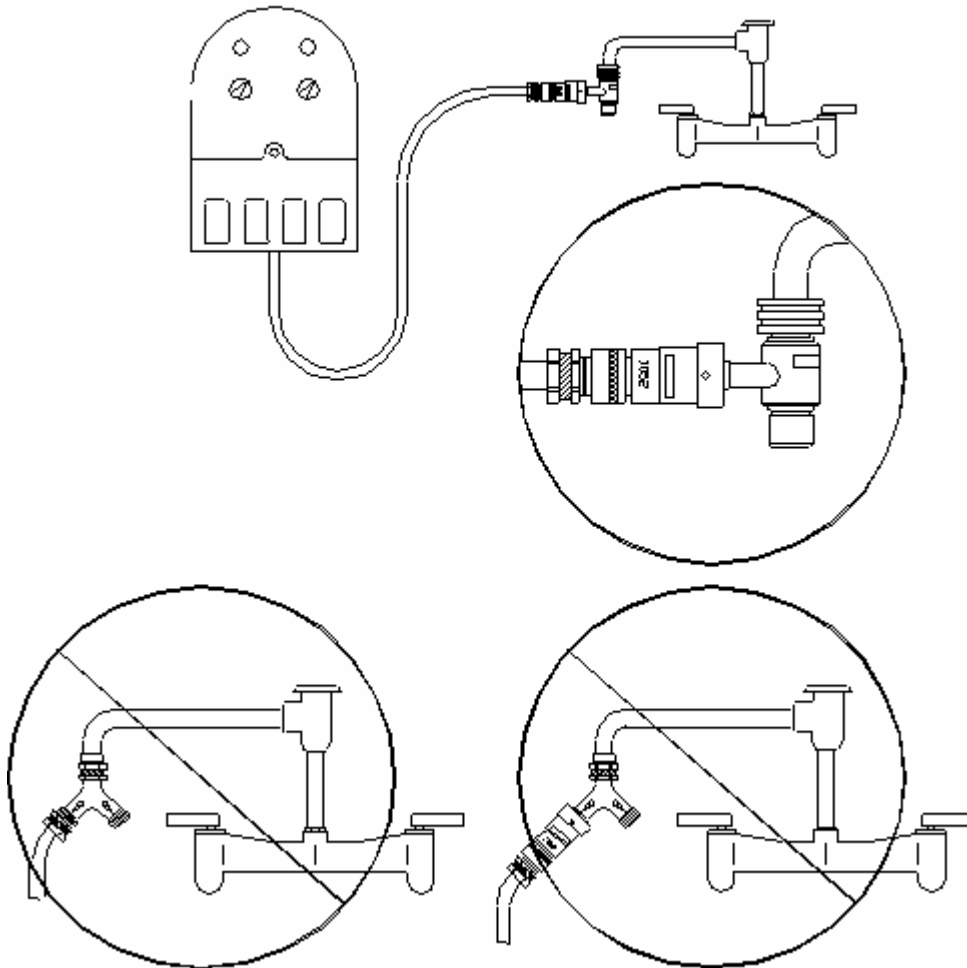
6.1 Hard Plumbed/Separate Water Line

This method may be required in some areas. Check with local and state plumbing codes to issue proper installation. This installation should only be done by a certified plumber. A backflow preventer compliant with local code should be secured to the NSF approved hose and then attached to the end of the plumbed water line. This line should have a water valve in-line before the backflow device to provide shut off.

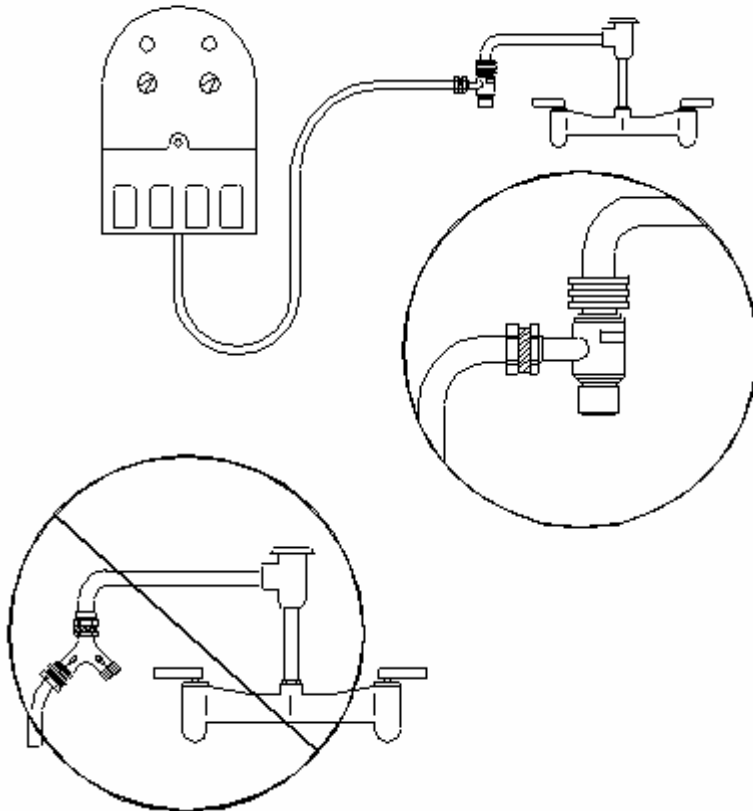
6.2 Faucets with an AVB/Standard Cabinet

Refer to the illustrations on the next 2 pages for proper set-up of airgap and standard aspirator cabinets:

QC Dispensers with standard aspirators:
9202-2030 QC Central Supply
9202-2033 QC Satellite Bottle Fill
9202-2034 QC Satellite Mop Fill



QC Dispensers with Air Gap Aspirators:
9202-2028 QC Central Supply AG
9202-2031 QC Satellite AG Bottle Fill
9202-2032 QC Satellite AG Mop Fill



NOTE: The side kick is attached to the janitor sink with a quick disconnect. When the system is not in use, it should be disconnected from the janitors sink faucet.

NOTE: When using the standard aspirator cabinet with a water source faucet that does not have an AVB, you will only need to use the provided 1052 backflow preventer attached to the NSF approved hose.

7.0 Priming the System

Before replacing the top cover you should turn on the water supply line to check for leaks and prime all product pick up tubes, checking for air bubbles, (indicates an air leak).

Using a bucket to catch the discharge, press each water valve. Continue holding the valve open until product fills the tube up to the selector valve. With this line primed, rotate the selector valve to the next position and repeat until all lines are primed.



NOTE: Product pick-up lines that have been plugged with a clear metering tip will not prime.

IMPORTANT: Large air bubbles in the product pick-up lines are an indication of a leak somewhere. You will need to trouble shoot that line and eliminate the leak to ensure an accurate dilution.

You are now ready to replace the top cover. First position the cover over the selector valve knob(s), then lift the top of the cover up and over the top latch. Rotate down, while making sure the cabinet body goes into the cover groove. Snap into place. Should the finger release tab not snap, you can secure the top cover to the body using a #4 screw. The system is now ready for operation.

8.0 Operating Procedures

8.1 Spray Bottle Filling

When filling spray bottles, select the empty spray bottle that is labeled with the product you intend to fill. Place spray bottle fill tube (shorter, smaller tube) into the empty bottle. Rotate the selector valve so the arrow is pointing to the desired product. Push the button that is directly above this selector valve to begin filling.

IMPORTANT: This equipment is fitted with a spray bottle fill tube that is intended to go to the bottom of the bottle to reduce foaming. Release the water valve button before any foam or product begins to exit the bottle. Slowly remove the bottle, allowing the product trapped in the tube to drain out completely.

8.2 Mop Bucket Filling

To fill a mop bucket, place the long tube into the bucket making sure the tube is not kinked or running horizontal at any point. Rotate the selector valve so the arrow is pointing to the desired product. Push the button that is directly above this selector valve to begin filling. This button can be locked on by rotating clockwise. When completed, return the tubing to its hook position on the side of the cabinet.

9.0 Periodic Maintenance

- Dispense some of each product to confirm the system is working.
- Remove top cover, and dispense some of each product checking to see that no significant air bubbles are present in the product pick-up lines. This would indicate the possibility of inaccurate dilutions being dispensed.
- Check to see that the right products are being used in the corresponding docking ports. These products should correlate to the individual product ID labels on the top cover.
- Wash all surfaces and docking components located in the lower part of the cabinet with clear water.
- Inspect all tubing for cracks, kinks and leaks and replace as necessary.
- Replace any damaged or discolored product I.D. labels.

10.0 TroubleShooting

Symptom	Action
No Product Dispensed/Air Bubbles in Product Feed Tube.	<ol style="list-style-type: none"> 1. Product cartridge is empty. Replace. 2. Low water pressure. Increase pressure to 30 psi minimum. 3. Clear metering tip with no hole is installed. Change tip. 4. Plugged metering tip. Clean or change the tip. 5. Check valve or O-ring in the docking manifold not sealing properly. Replace entire manifold. 6. Product cartridge not pressed firmly into place.
Air Gap Aspirator Leaks.	<ol style="list-style-type: none"> 1. Back pressure due to crimped tube or plugging in line. 2. Back pressure due to fill tube running parallel or up hill.
Product Concentrate Too High.	<ol style="list-style-type: none"> 1. Wrong metering tip. Change to a smaller orifice tip. 2. Metering tip is loose. Remove and install a new tip.
Product Concentration Too Low.	<ol style="list-style-type: none"> 1. Wrong metering tip. Change to a larger orifice tip. 2. Plugged metering tip. Change tip. 3. Low water pressure. Increase the pressure. 4. Aspirator plugged. Replace aspirator. 5. Pickup tube leaks. Replace tubing.

11.0 Replacement Parts

Replacement Parts List – (REF NO. Refer to photos throughout the manual)

REF NO.	PART NO.	DESCRIPTION
1	9202-2036	QC Central Supply AG Manifold Replacement Assembly
2	9202-2054	QC Satellite AG Mop Fill Manifold Replacement Assembly
3	9202-2055	QC Satellite AG Bottle Fill Manifold Replacement Assembly
4	9202-2056	QC Central Supply Manifold Replacement Assembly
5	9202-2057	QC Satellite Mop Fill Replacement Assembly
6	9202-2058	QC Satellite Bottle Fill Replacement Assembly
7	9202-2041	Push Button – Bottle Fill (NON-Locking)
8	9202-2042	Push Button – Mop Fill (Locking)
9	9202-2051	QC I&O Manual
10	8526-1790	Water Valve
11	8530-0168	Hose Filter Washer
12	8530-0838	Hose Filter Washer (70 Mesh)
13	9202-4454	Aspirator, 4 GPM, Yellow
14	9202-2066	Aspirator, 1 GPM, Gray
15	9202-2354	Mounting Clamp (Non-AG)
16	9202-2067	Mop Fill Hose Assembly (Non-AG)
17	9202-2053	Mop Hose Plastic Hanger
18	8501-6293	Mop Fill Hose (AG, 6 ft)
19	9202-2065	AG Mop Hose Plastic Hanger
20	8501-5378	Replacement Tubing, PVC .375 (Manifold to Selector) – order in feet
21	9202-2046	QC Metering Tip Assorted Bag
22	8524-0208	1052 Backflow Preventer
23	8702-0822	Lock, QC Dispenser (comes with 1 key)
24	8702-9047	Key, replacement, lock 176
25	9202-2064	Spray Bottle AG Fill Tube
26	9202-0001	Spray Bottle Fill Tube Assembly (Non-AG)
27	9202-2035	QC Bottle Clip (Product Manifold)
28	9202-2083	Air Gap Aspirator, Low Flow, Gray
29	9202-2084	Air Gap Aspirator, High Flow, Yellow
30	9202-2354	Clamp to attach air gap to Selector Valve
31	9202-2192	QC Central Supply Dispenser Cover With Nameplate
32	9202-2194	QC Central Supply Dispenser Door With Nameplate
33	9202-2195	QC Satellite Spray Bottle Dispenser Cover With Nameplate
34	9202-2196	QC Satellite Mop Dispenser Cover With Nameplate
35	9202-2197	QC Satellite Dispenser Door With Nameplate
36	8821-3384	#4 X3/8” Phillips Flat Head ScREW for Cover
37	8822-4183	#6 X 1 ¼” Phillips Pan Head Tap Screw (2 per)
38	8720-4509	O-ring .500 X .0625 Viton (Product Manifolds)*
39	9202-2070	Front Guide of Product Manifold*
40	9202-2043	Product Manifold*
Buy All * components to make product Manifold		
41	9202-2143	Button Cover

42	8524-4001	Fill Tube Vent
43	8730-1131	Hose Clamp 5/16 to 7/8 Stainless Steel
44	8730-1032	Hose Clamp 11/16 to 1-1/4 Stainless Steel
45	9202-2350	Clamp to attach aspirator to Selector Valve

12.0 Accessory Parts

Accessory Parts List

<u>PART NO.</u>	<u>DESCRIPTION</u>
9480-2188	Hose NSF (6 ft) (air gap units)
8578-3744	Garden Hose Quick Connect, Male, Brass
8578-3751	Garden Hose Quick Connect, Female, Brass
9201-8472	Sidekick & 1052 with thread kit
9201-8480	Sidekick with thread kit
8579-3032	Hose Y without Intragal Shutoffs
9200-2012	Black rubber hose (6 ft) non air gap units
9482-2186	Hose NSF (15 ft) air gap units (optional)
9200-2014	Black rubber hose (15 ft) non air gap units (optional)

Complete Replacement Units

<u>PART NO.</u>	<u>DESCRIPTION</u>
9202-2028	QC Central Supply AG Pkd
9202-2030	QC Central Supply Pkd
9202-2031	QC Satellite AG Spray Bottle Fill Pkd
9202-2032	QC Satellite AG Mop Fill Pkd
9202-2033	QC Satellite Spray Bottle Fill Pkd
9202-2034	QC Satellite Mop Fill Pkd

13.0 Metering Tip Guide

Standard Aspirator (Non-Air Gap) Metering Tip Chart For 1 gal./min. Flow (Spray bottle Fill)

QC												
Product	1/4	1/2	1	2	3	4	5	6	7	8	10	12
	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	Oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.
456/Omega	-	Pink	-	-	-	-	-	-	-	-	-	-
91	-	-	-	Purple	-	Yellow	Brown	Orange	-	Green	-	Tan
52	-	-	Pink	Purple	-	Yellow	Brown	Orange	-	-	-	-
51	-	Pink	Lt. Blue	Purple	Yellow	Brown	-	Orange	Green	Tan	-	-
53	-	-	Lt. Blue	Purple	Yellow	Brown	Orange	Green	-	Tan	Blue	White
33	-	-	Lt. Blue	Purple	Yellow	Brown	-	-	-	-	-	-
31	Purple	Yellow	Orange	-	-	-	-	-	-	-	-	-
71	-	-	Lt. Blue	Purple	Yellow	Brown	-	-	-	-	-	-
NA Bath			Purple	Yellow	Brown	Orange	Green	-	Tan	Blue		

Standard Aspirator (Non-Air Gap) Metering Tip Chart For 4 gal./min. Flow (Mop Bucket Fill)

QC												
Product	1/4	1/2	1	2	3	4	5	6	7	8	10	12
	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	Oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.
456/Omega	-	Lt. Blue	-	-	-	-	-	-	-	-	-	-
91	-	-	Brown	Green	Tan	White	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	Orange	Tan	Blue	White	-	-	-	-	-	-
53	-	-	Orange	Tan	Blue	White	-	-	-	-	-	-
33	-	-	Orange	Tan	White	Red	-	-	-	-	-	-
31	Green	Blue	Red	-	-	-	-	-	-	-	-	-
71	-	-	-	-	-	-	-	-	-	-	-	-
NA Bath			Green	Blue	white	Beige						

Air Gap Aspirator Metering Tip Chart For 1 gal./min. Flow (Spray Bottle Fill)

QC												
Product	1/4	1/2	1	2	3	4	5	6	7	8	10	12
	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	Oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.
456/Omega	-	Pink	-	-	-	-	-	-	-	-	-	-
91	-	-	-	Purple	-	Yellow	Brown	Orange	Green	-	Tan	Blue
52	-	-	Lt. Blue	Purple	Yellow	Brown	-	Orange	-	-	-	-
51	-	Pink	Lt. Blue	Purple	Yellow	Brown	Orange	Green	-	Tan	-	-
53	-	-	Lt. Blue	Purple	Yellow	Brown	Orange	Green	-	Tan	Blue	White
33	-	-	Lt. Blue	Purple	Yellow	Brown	-	-	-	-	-	-
31	Purple	Yellow	Orange	-	-	-	-	-	-	-	-	-
71	-	-	Lt. Blue	Purple	Yellow	Brown	-	-	-	-	-	-
NA Bath			Purple	Yellow	Brown	Orange	Green	-	Tan	Blue		

Air Gap Aspirator Metering Tip Chart For 4 gal./min. Flow (Mop Bucket Fill)

QC												
Product	1/4	1/2	1	2	3	4	5	6	7	8	10	12
	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	Oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.	oz./gal.
456/Omega	-	Purple	-	-	-	-	-	-	-	-	-	-
91	-	-	Orange	Green	Tan	Blue	-	-	-	-	-	-
52	-	-	-	-	-	-	-	-	-	-	-	-
51	-	-	Orange	Tan	Blue	White	-	-	-	-	-	-
53	-	-	Green	Blue	White	Black	-	-	-	-	-	-
33	-	-	Green	White	Black	No Tip	-	-	-	-	-	-
31	Tan	Red	No Tip	-	-	-	-	-	-	-	-	-
71	-	-	-	-	-	-	-	-	-	-	-	-
NA Bath			Green	Blue	white	Beige						

14.0 Installation Tools

- Channel-lock pliers
- Electric or cordless drill
- Drill bit
 - ¼ in. (6mm) masonry bit
- Standard screwdriver
- Utility knife
- Tape (optional)
- Hammer
- 5/16 in. (8 mm) Nut Driver (optional)

Take A Close Look At Our New Lotus® PRO

Nothing but clean, and nothing less than hours of sanitizing time.

Nothing left of dirt, grease, grime, stains, oil, odors and germs. And nothing doing when it comes to chemicals, residues or rinsing. Think nothing of cleaning and sanitizing any surface - glass, ceramics, fabrics, chrome, carpets, linoleum, upholstery, tile, wood, plastic, stone, mirrors, vinyl, leather and painted surfaces.



And you'll see nothing for hours.

**STABILIZATION
MODULE** **SERIES I**

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Nothing Stands In The Way Of Our Natural Cleaning & Sanitizing Ability.

Introducing the lotus® PRO Now With Stabilization Module Technology For Extended Sanitizing Power.

Take a look at our continuous flow, chemical-free cleaning work horse for use in large and hard to clean facilities. Universities, factories, hospitals, office buildings, hotels and retail stores all over North America have put us into their janitor closets and cleaning stations to clean, sanitize and deodorize with Aqueous Ozone instead of cleaning chemicals. Made from tap water and oxygen by lotus® PRO technology, Aqueous Ozone is a widely approved, proven and powerful alternative that eliminates rinsing and residues. It works hard as a natural all-purpose cleaning and sanitizing agent for hours, at which it turns back into water and oxygen. Leaving nothing behind except clean. Naturally.



"We use it for everything from scrubbing our floors to detailing Ferrari's. You really notice the difference when you're detailing the inside of a vehicle. It doesn't take your breath away like chemicals do. Your workers will love you for getting it."

Bob Beaumont - Formula One Foreman

Aqueous Ozone (AO): Nature's Oxy Cleaner

Made naturally by sunlight, Aqueous Ozone (AO) eliminates dirt and germs by oxidizing them the same way strong chemical cleaners do. The only difference is that AO turns back into oxygen and water when it's job is done, leaving nothing behind but clean.



STABILIZATION MODULE SERIES I

Now get hours of cleaning power with the New Stabilization Module. Turns ordinary tap water into a long-lasting, natural Oxy cleaner and sanitizer using patented Aqueous Ozone technology that keeps more ozone in solution for longer periods.

FEATURES	BENEFITS
No expensive toxic chemicals	Cut costs & liability with more cleaning power
Plug-and-play design	Installs and sets up in minutes
Regulatory approval by EPA, FDA, OSHA, UL, CSA	Meets highest safety and performance standards
Compact, lightweight, durable	Fits easily into small janitors closets
All-in-one cleaning, sanitizing & deodorizing	Eliminates multiple chemicals & guesswork
No mixing, no rinsing	Increased productivity with better results
Up to 5 gallons per minute flow rate	Quickly fill mop buckets, scrubbers & extractors
Stabilizer Included	Sanitize and cleans for up to 4 hours

Model Number

LQFC425K

Dimensions

17.5" X 14.5" X 7"

Flow

Continuous - 10 min. shut off safety feature

Rate

Up to 5 gals/min

All-in-Cost

As low as \$0.025/gal

Cartridge Life

Series I - 1,600 gals
Series II - 800 gals

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Meet the lotus® PRO Trigger Spray

Our handheld model, the lotus® PRO Trigger Spray (TS) model packs big chemical-free cleaning punch in its compact size with the same Aqueous Ozone as the larger, stationary lotus® PRO. A portable all-in-one chemical-free cleaning center, the lotus® PRO TS features a base with a removable, rechargeable shatter-proof spray bottle. Ideal for cleaning carts, cafeterias, washrooms, smaller retail, commercial and medical offices, and general house-keeping, the TS produces Aqueous Ozone that sanitizes, removes, stains, deodorizes and cleans for up to an hour. Works on virtually any surface, any kind of dirt or stain without rinsing or residues.



" We use it to clean everything in the entire building. As an elderly care facility, we need to be sure we're getting rid of dirt and germs without chemical irritants. That's why we like lotus PRO."

**Linda P. - Cleaning Specialist
Chartwell Seniors Housing REIT**

Here's To Your Health With lotus® PRO Aqueous Ozone:

Because it leaves no residues, powerful Aqueous Ozone is used to sanitize bottling lines, bottled water bottles, as well the water inside the bottles. Cheers to the natural cleaning power of lotus PRO.



carry caddy



base mount



wall mount



Get Started With PROscrub:

Years of soap & chemical use can leave behind hard to clean sludge, especially in bathrooms. To help you quickly clean when you switch to lotus PRO, use PROscrub just once, and you may never use it again.



FEATURES	BENEFITS
Chemical Free	Cut costs of buying, storing & mixing chemicals
All-in-one cleaning, sanitizing & stain removal	Eliminates multiple chemicals & guesswork
Regulatory approval by EPA, FDA, OSHA, CSA, UL	Meets highest safety & performance standards
Mounting systems standard	Attaches to walls, cleaning carts easily
Durable base with shatter-proof bottle	Long-lasing reliability & performance
No mixing, rinsing, fumes or toxins	Increased productivity, safety & greenability
Recharges Aqueous Ozone in about 2 minutes	On-demand power for any job, anywhere
Runs on cold tap water & 120 v power	No more trips to the cleaning closet for refills

Model Number

LSC225K

Dimensions

11"X9"X13"

Capacity

650 ml cold tap water

Cleaning time

Up to 1 hour

Power Usage

Standard 120 v

Cartridge Life

650 cycle - \$.03/cycle

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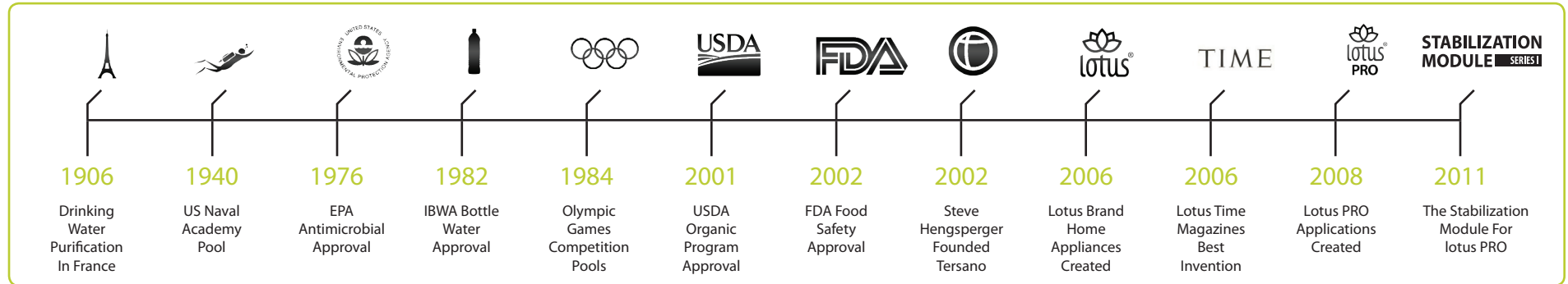
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Nothing Short Of Excellence For Over A Century.

Ozone has been in use commercially for over a century as a sanitizer and cleaner. Widely recognized for its power to kill germs without leaving residues, it was first used commercially in Nice, France in 1908 for drinking water purification. Since 1986 it has been used in all Olympic competition swimming pools. Today it is commonly used to keep seafood processing plants clean, and to clean and sanitize organic produce.

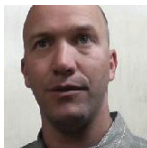


Nothing But Praise From Our Users.



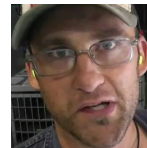
"As one of the only facilities in Canada certified to repair the 2012 Lexus LFA, the newest and most expensive car made by Lexus, we need every car and every square inch of our operation to be immaculate. That's why we use lotus PRO on everything from floors to Ferrari's."

Franco Gobbato, Owner & President Formula 1



"When you spend thousands of dollars a year on chemicals and some one comes along with a solution that takes away 80% of that cost, you don't have to be a rocket scientist to do the math... and our floors are cleaner with no rinsing."

Terry Line -Canadian Tire Corporation Fairview



"I like that it has no chemicals. I don't need any special safety equipment because I don't have to worry about spills. It does a great job without rinsing so it makes cleaning grime and oil off our plant floors faster."

Chris Shonbein, Jr. - Atlas Tube



"We're picky about keeping our fleet running top notch and take pride in the way each one of our rigs looks. We were spending way too much time and money keeping our tarps clean. Now our tarps look brand new with no expensive cleaning chemicals to buy or spill."

Keith Robinson - Robinson Transport, On

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