STANDARD TWIST & LOCK ACTIVATION
53001922 – Mop Bucket E Gap 2PK
53001923 – Spray Bottle E Gap 2PK
53001924 – Mop Bucket Air Gap 2PK
53001925 – Spray Bottle Air Gap 2PK

BOTTLE ACTIVATION
53001926 – Spray Bottle Air Gap 2PK
53001927 – Spray Bottle E Gap 2PK

LIQUID DILUTION SYSTEM (LDS)

Installation and Operation Manual
For Ecolab Representatives



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Preface

Specifications and parts are subject to change without notice.

This manual provides necessary installation instructions. Review this manual before operating your new Liquid Dilution System (LDS).

Best results will be obtained at minimum cost if your Liquid Dilution System (LDS) is operated with reasonable care, maintained regularly, and repaired with Ecolab supplied or equivalent parts.

Unboxing the Liquid Dilution System (LDS): Carefully check shipping carton for any signs of damage. Report damages to carrier immediately.

Help Us Protect the Environment: Please dispose of packaging materials and old Liquid Dilution System (LDS) components in an environmentally safe way according to local waste disposal regulations. Always remember to recycle when possible.

⚠WARNING

These installation, operation and servicing instructions are for use by qualified personnel only. The Liquid Dilution System (LDS) is intended to be installed by an experienced, qualified technician. The installation must be made in accordance with all applicable and local plumbing and electrical codes.

This manual has been written and illustrated to present the basic installation, operation, and servicing instructions of the Liquid Dilution System (LDS). This manual applies to current units. Future versions may have additional features.

Guidelines will be suggested about the preferred method of installation. However, the variety of equipment and the surrounding environment will dictate the actual installation of the Liquid Dilution System (LDS).

All safety instructions and important remarks must always be followed.

Safety Precautions

Qualified personnel installing, operating, and servicing this equipment must read, understand, and practice the following safety precautions:

Fire or Explosion Hazard

- DO NOT use or pickup flammable materials
- Only use Ecolab supplied cleaning products intended for this application
- DO NOT use near flammable liquids, vapors, or combustible dusts
- Keep Liquid Dilution System (LDS) away from heat, sparks, and open flame

Personal Protective Equipment (PPE) Statement

PPE is designed to protect the wearer's body from injury or infection. Hazards addressed by protective equipment include physical, electrical, heat, chemicals, biohazards, and airborne particulate matter.

Prior to Handling the Liquid Dilution System (LDS):

- Ensure this manual is read and understood in full
- Make sure all safety devices are in place and operate properly
- Wear appropriate personal protection equipment including safety goggles, gloves, nonslip shoes, etc.
- Place wet floor signs or other signage as needed

Important Remarks

The remarks **WARNING, CAUTION and NOTICE** have the following meanings in this manual.

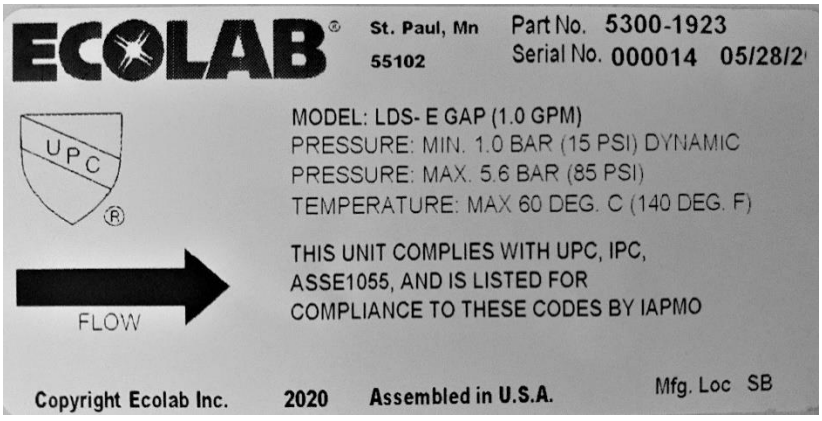
⚠ WARNING — This heading refers to a hazard or unsafe practice which can result in severe personal injury or death.

⚠ CAUTION — This heading refers to a hazard or unsafe practice which can result in personal injury, product, or property damage.

NOTICE — This heading is used when a piece of information needs to be highlighted or brought to attention.

Regulatory Labeling

The label shown below is located on the LDS cover and it contains important regulatory information. Please read it carefully. This label is considered a permanent part of the dispenser and should not be removed.



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1.0 Introduction

1.1 Principle of Operation

Ecolab's Liquid Dilution System (LDS) dispenses diluted cleaning and sanitizing solutions. With the provided design, dispensers can be installed individually or connected together to meet various needs.

The button-activated dispenser uses a manually operated water valve. When the button is pressed, water flows through a proportioner, which draws in concentrated product and mixes it with water. The ratio is determined by using an appropriate metering tip at the chemical inlet. When the button is pressed and twisted clockwise, the activation is continuous until the user turns the system off by twisting the button counter-clockwise.

The dispenser uses either an E Gap or Air Gap backflow, which separates the outlet of the potable water supply from any potential contaminations. An Air Gap must be used when required by plumbing codes. For all other accounts an E Gap is recommended.

NOTICE

The E Gap LDS dispenser has been certified to the ASSE 1055 backflow prevention standard. In some cases, the ASSE 1055 standard may not be recognized, and an Air Gap dispenser should be used. Check with local plumbing codes to determine which backflow prevention method is required. Separate part numbers exist for Air Gap and E Gap units. The Air Gap has been certified to an ANSI A112.1.3 standard. An Air Gap has an unobstructed, vertical distance through air that separates the outlet of the potable water supply from any potential contamination.

1.2 Key Features

This dispensing system does not require the use of tools after initial installation. The cover can be removed via a push button at the top of the dispenser. The valve and aspirator assembly may be removed and attached via a hinged latching system integrated into the backplate.

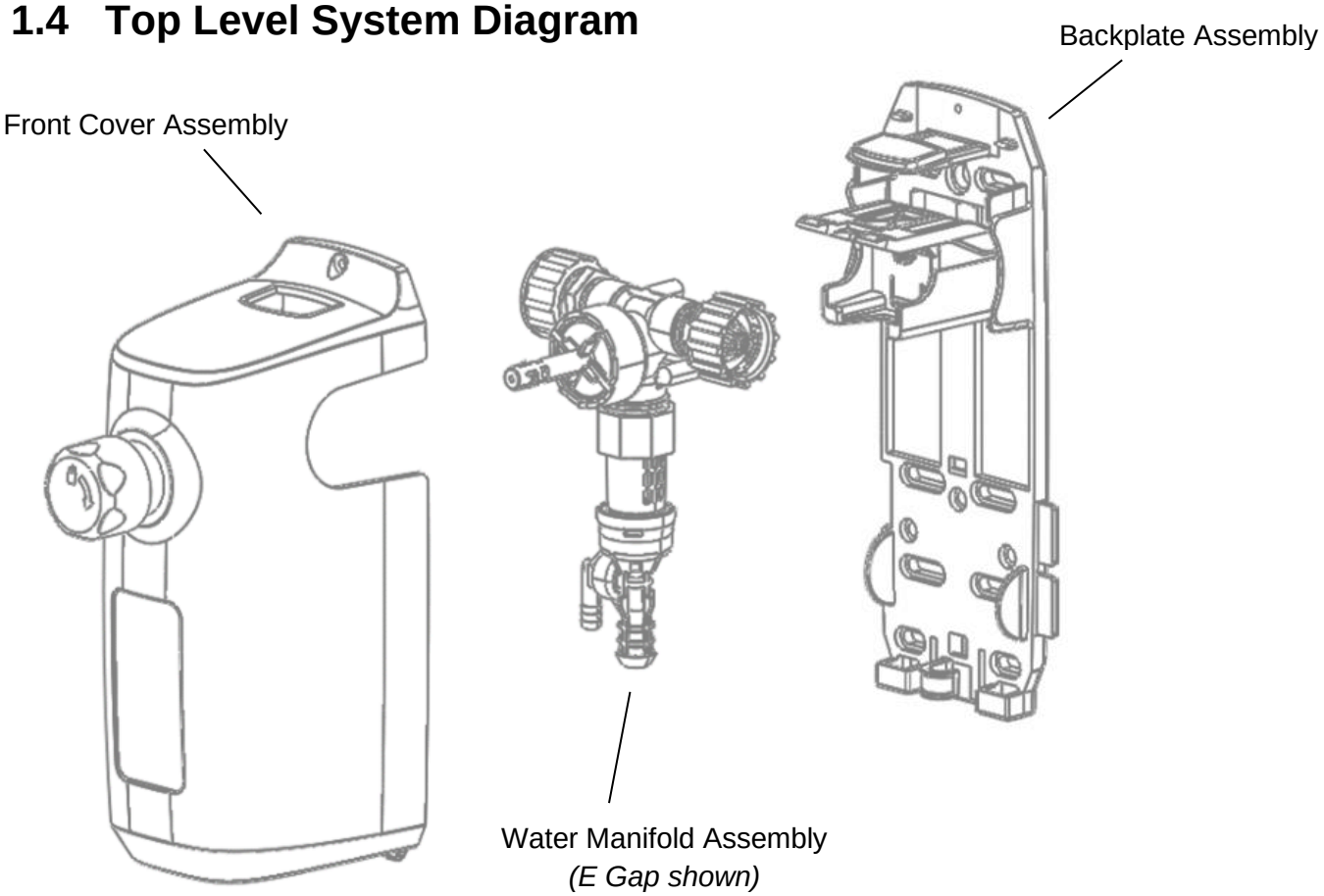
NOTICE

Verify the valve is properly seated into the backplate and the valve latch is secured after installation or service.

1.3 List of Main Components

- Housing
    - Backplate assembly
        - Backplate
        - Valve latch
    - Front cover assembly
        - Front cover
        - Button front
        - Button back
- Water Manifold Assembly
    - Water Valve with fittings
    - Air Gap / E Gap aspirator
    - 90-degree chemical inlet barb

1.4 Top Level System Diagram



2.0 Specifications

The specifications below provide information regarding the Liquid Dilution System (LDS).

2.1 Dimensions & Weight

Height: 253 mm / 9.96 in
Width: 90 mm / 3.54 in
Depth: 178 mm / 7.00 in (when button is not pressed)
Depth: 162 mm / 6.38 in (when button is pressed)
Weight: 591 grams / 1.30 lbs

2.2 Requirements

The following section provides the required items for mounting and plumbing the Liquid Dilution System (LDS).

2.2.1 Mounting

Tools Required

- Level
- Marking pencil
- Channel-lock pliers
- Electric or cordless drill
- Drill Bit: ¼ in. masonry bit
- Flat head or 5/16” nut driver – extended bit
- Phillips screwdriver ⊕ (optional cover screw)

2.2.2 Plumbing

Dispenser is pre-configured with a ¾” female GHT swivel connection on the right side of the dispenser. The ¾” female GHT swivel can be removed and swapped with the ¾ male GHT adapter & cap on the left side of the dispenser. These fittings are designed for an oring seal against the water valve and no thread tape is required. Avoid over-tightening these fittings – they are designed to be hand tightened plus ¼ turn.

The ¾” female GHT swivel can also be removed and replaced with any 3/8” male NPT fitting with thread tape for alternate water connections.

A plumbed, dedicated line is preferred for installation. When a dedicated line is not available, installation shall ensure that no cross-connections between hot and cold water are created, and that atmospheric vacuum breakers are not negatively affected by being under pressure for over 12 continuous hours.

A water source with the following static pressure is required:

Minimum: 20 PSI (15 PSI Dynamic)
Maximum: 85 PSI

Maximum temperature of water source should not exceed 140°F (or 60°C) for floor care. Maximum temperature of water source should not exceed 110°F (or 43°C) for spray bottles.

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

3.0 Installation

3.1 Pre-planning

Prior to installing a Liquid Dilution System (LDS), select a wall location for the unit that is near a water supply and not in the path of other work routines. Ideally, the bottom of the dispenser should be approximately 4 – 4-1/2 feet (120 – 140 cm) from the floor.

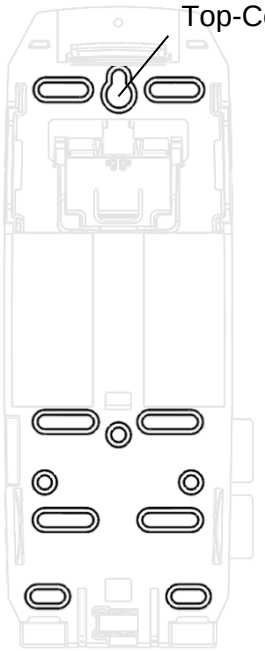
Devices shall be installed in a vertical orientation.

Be sure to have all the required equipment on hand (Section 2.2.1) prior to mounting this unit onto the wall.

Installation Considerations: Additional features may be mounted to the bottom of the dispenser after being mounted onto the wall. Consider providing enough space for additional features roughly half the height of the dispensing unit itself.

3.2 Detailed System Diagrams

3.2.1 Mounting Hole Locations

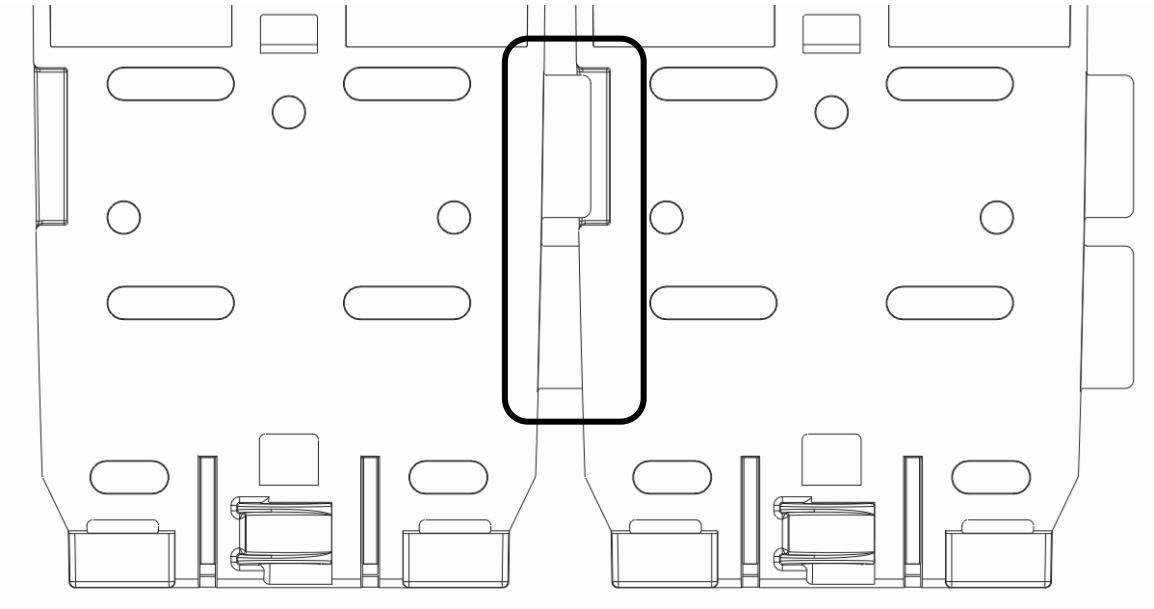


The hole pattern design of the LDS backplate is meant to provide opportunities to mount the LDS dispenser with flexibility provided the multiple hole and slot pattern pairs.

Use at least three mounting screws to fully secure the Liquid Dilution System (LDS) to the wall.

3.2.2 Mounting Multiple Liquid Dilution System (LDS) Units Together

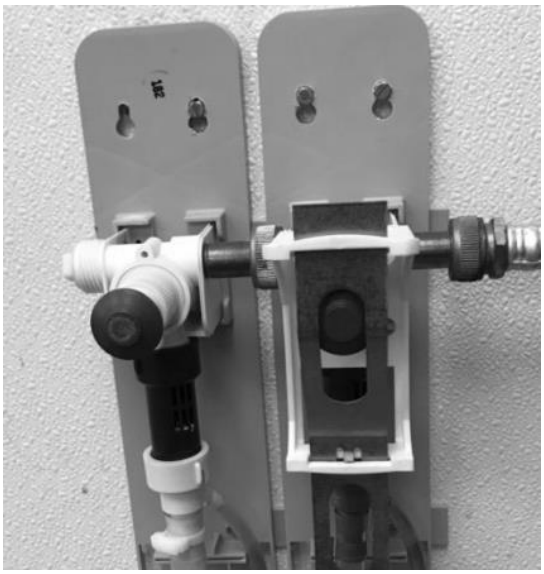
To mount multiple Liquid Dilution System (LDS) dispenser together, utilize the two notches on the bottom right of the backplate and the corresponding cavities on the bottom left of the backplate to ensure alignment with one another. As seen in the image below, the top notch should be visible with the bottom notch hidden underneath the surface of the backplate.

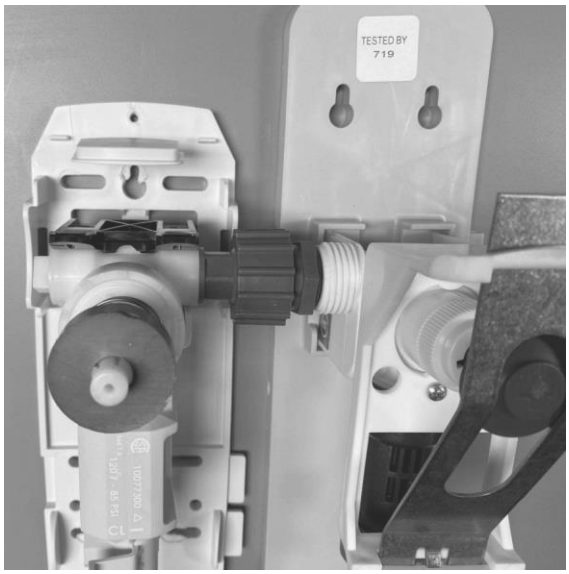


To allow for slight changes in distance between the dispensers when mounting multiple dispensers with one another, utilize the slot features that exist on both the top and bottom of the backplate for and mount the screws in a location within the slot to allow for sliding movement left or right.

3.2.3 Mounting to Previous Ecolab Dispensing Solutions

The Liquid Dilution System (LDS) is also capable of being mounted to other previous Ecolab dispensing solutions. The following example shows mounting the Liquid Dilution System (LDS) to an Ultra1.





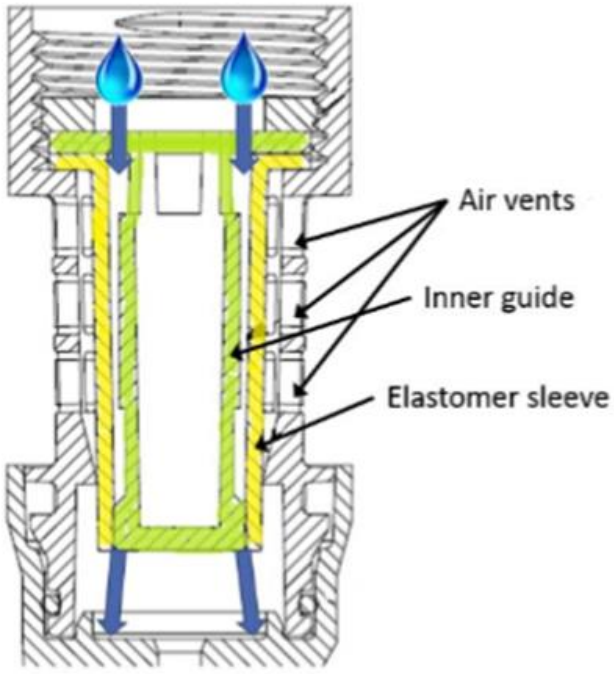
The image above on the left shows two Ultra1 dispensers attached to one another. The image above on the right shows the Ultra1 attached to the Liquid Dilution System (LDS). Due to differences between the dispensers, there is not enough room to simply remove the plug from the Ultra1 and insert the garden hose inlet of the Liquid Dilution System

(LDS). The steps below explain how to mount these two dispensers without the need for any additional plumbing features.

1. Remove the White Plug from the Ultra1 valve
2. Remove the Grey Hose Cap from the Liquid Dilution System (LDS) valve
3. Remove the Grey Male Hose Adapter from the Liquid Dilution System (LDS) valve
4. Insert the Grey Male Hose Adapter into the now open Ultra1 valve
5. Insert the White Plug into the Liquid Dilution System (LDS) valve where the Grey Male Hose Adapter was removed
6. Connect the Grey Male Hose Adapter on the Ultra1 to the GHT Female Hose Fitting on the Liquid Dilution System (LDS) to connect the two dispensers

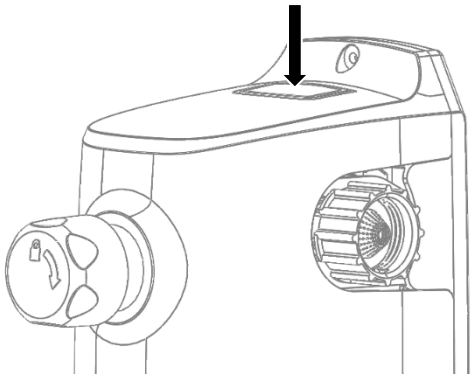
3.2.4 Hydro Aspirator E Gap Assembly

The E Gap backflow prevention device is known as an elastomeric gap. The principle of operation is the same as the FlexGap. When water flows through the device, the elastomer sleeve expands and seals the air vents. When water is not flowing, the air vents are open.

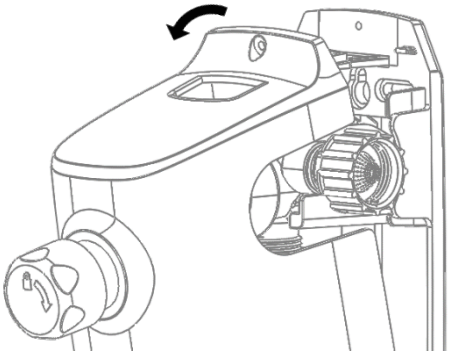


3.3 Detailed Installation Instructions

1. To remove the cover, begin by pushing down on the tab at the top of the dispenser assembly.



2. While the button is depressed, pull the front cover away from the backplate and lift to remove completely from the hinged tabs on the bottom of the backplate.



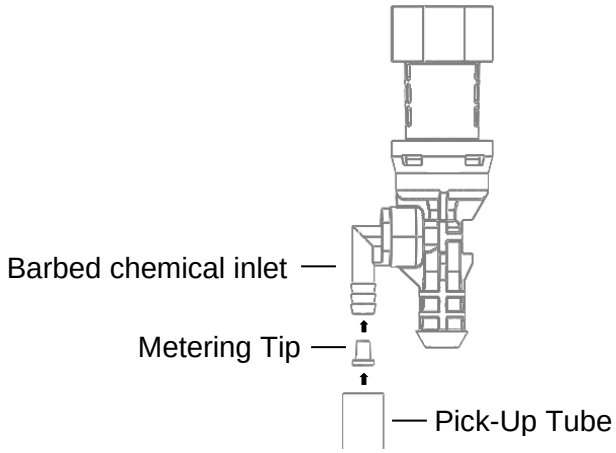
3. Attach the dispenser unit to the wall:

NOTICE Ensure the backplate is mounted completely on a flat surface of a wall without noticeable protrusions or raised surfaces that would cause the backplate to flex when fully mounted. This can lead to the cover not properly fitting on the backplate.

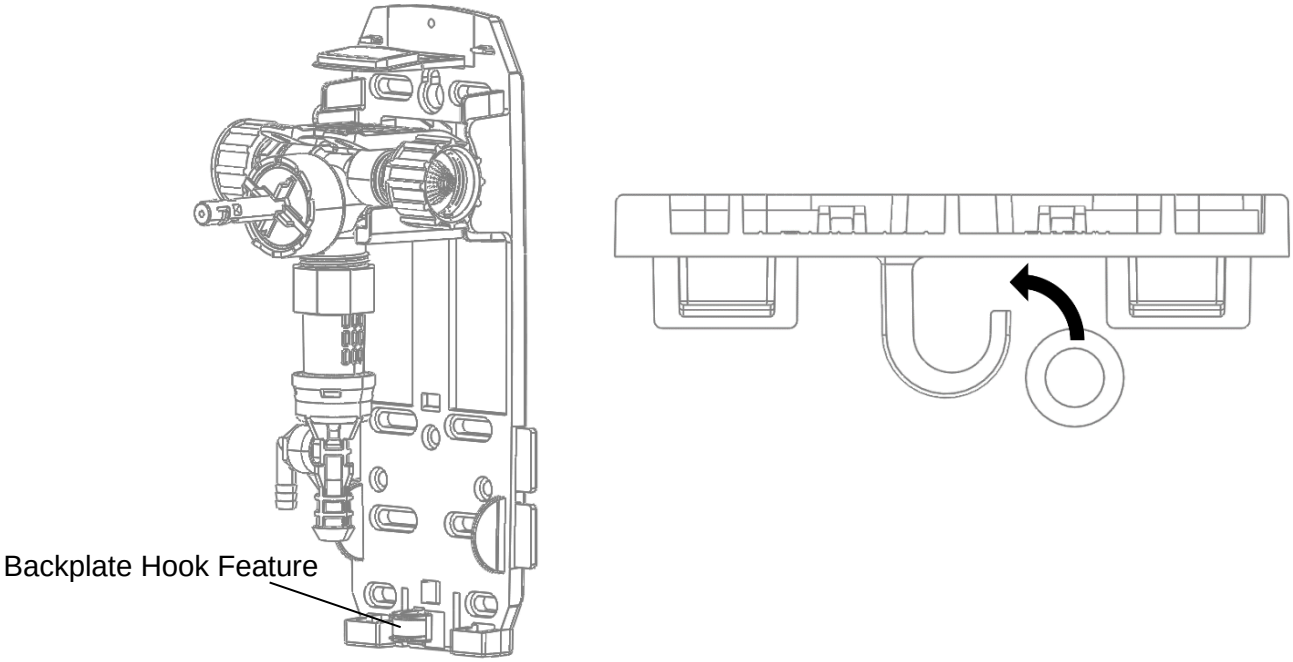
   a. Place the backplate on the wall, hold a level to the bottom and mark screw hole locations, starting with the top-center hole (see section 3.2.1)
   b. Drill appropriately sized holes and insert plastic anchors
   c. Partially mount a wall screw to the top-center hole, far enough for the screw to retain itself on the wall
   d. Place the top-center hole of the dispenser unit onto the partially mounted screw
   e. While holding the unit level, tighten down on the top-center screw until the unit is appropriately attached to the wall

f. Mount the remaining screws in available dispenser hole locations to fully mount the dispenser into place

4. Select the appropriate metering tip color based on your target concentration. Install the metering tip into the barbed chemical inlet fitting. The pickup tube should come from the concentrate bag or bottle that will be dispensed through the system.

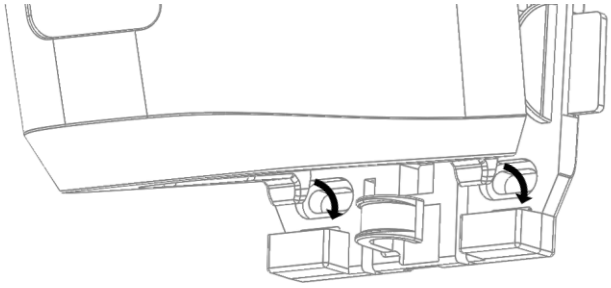


5. Route the product inlet tube:
   a. Attach the product inlet tube onto chemical inlet barb.
   b. Route the product inlet tube through the hook at the bottom of the dispenser by pushing the tube in through the side opening of the hook feature.

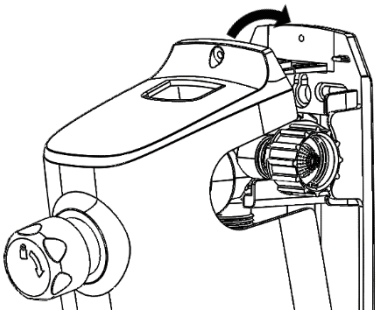


NOTICE Before moving to next step, ensure that the black valve latch above water manifold is fully in the secured and latched position.

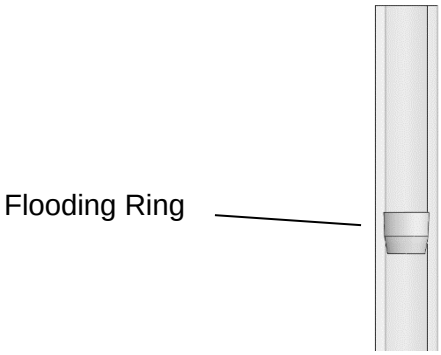
6. Attach the cover to the dispenser unit:
    a. With the top of the cover tipped away from the wall, place the bottom tabs of the cover into the two slots located at the bottom of the mounted backplate.



    b. Make sure the button is in the unlocked position with the lock symbol on the top of the button.
    c. Push the cover towards the backplate using the bottom tabs as a hinge until the cover is fully seated into place.



7. Route and cut the outlet tubing to the desired length
    a. **NOTICE** Outlet tubing includes a flooding ring – this is required for proper operation. It is designed to flood the outlet tube to allow the aspirator to pull vacuum. The Mop Bucket E Gap LDS must have a yellow flooding ring and the Spray Bottle E Gap LDS must have a grey flooding ring. The flooding ring should be approximately 2.5” from the dispenser outlet. Flooding rings can be ordered as replacement parts – see section 8.1.



3.3.1 Optional Cover Retention Screw

1. Option 1 – Cover screw accessory
    a. Order LDS cover screw accessory – M4x12 plastic thread forming screw (see section 3.1)
    b. Secure screw using Phillips screw driver
    c. No pilot hole is required
2. Option 2 – Mounting screw
    a. Drill a pilot hole through the detent feature of the at the top of the cover
    b. Drive a mounting screw through the piloted hole and into the wall to add as secondary retention between the front cover and the backplate
    c. Wall anchor or pilot hole in the wall may be required depending on the substrate

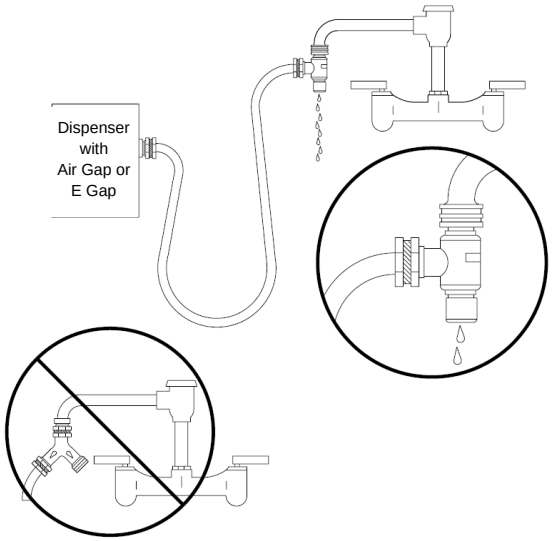
3.3.2 Inlet Plumbing / Tubing / Water Supply

A plumbed, dedicated line is preferred for installation. When a dedicated line is not available, installation shall ensure that no cross-connections between hot and cold water are created, and that atmospheric vacuum breakers are not negatively affected by being under pressure for over 12 continuous hours.

NOTICE The Liquid Dilution System (LDS) should be installed on its own water supply. If this cannot be accommodated, reference the image below.

NOTICE Prior to following steps, ensure that the strainer washer on the inside of the inlet valve is fully seated to the inside of the garden hose connector.

1. Attach the water supply hose to the water supply.
    a. Route the water supply hose through the proper channels if needed.
2. Attach the water supply hose to the dispenser's water inlet.
3. Turn on the water to check for leaks.



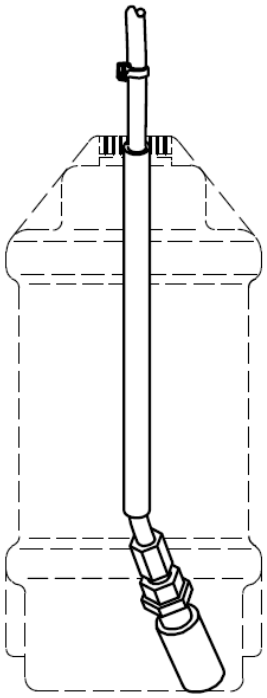
4.0 Start-up Procedure

4.1 Concentrated Product Installation

4.1.1 Product Loading

1. Place bag into product holder
2. Screw fitment into bag by inserting probe and then turning cap clockwise until tight
3. Route pick-up tube to the Liquid Dilution System (LDS); see section 3.3

   Note: Tubing should be routed so that it hangs as close as possible to the wall. If possible, route the tubing behind water supply hose or secure tubing to wall with screw mount tie wraps.



4.2 Priming the Liquid Dilution System (LDS)

To prime the Liquid Dilution System (LDS), follow the steps below:

1. Ensure the product line is connected on one end to the chemistry, and on the other end into the dispenser's chemical inlet elbow
   a. At this point, the line should be empty, filled with air and without color
2. Ensure the water line is turned on and water can run through the system.
3. Press the button on the front of the dispenser, allowing water to run through the system.
   a. As water is running through the system, it is pulling the product from its origin through the tube

b. As the water runs, the user may be able to see the chemistry fill the pick-up tube

4. Once the dispenser is consistently dispensing product and proper solution is dispensed, turn off the Liquid Dilution System (LDS).

4.3 Adjustments / Calibration

Concentration Testing is to be completed once the Liquid Dilution System (LDS) is fully mounted and ready for standard operation. The following sections will outline the equipment and steps in order to properly check for the desired concentration output of the Liquid Dilution System (LDS).

4.3.1 Parts Needed

- 9200-2023 Clean Clic Connector Assembly, 4mm
- 9229-2754 PVC Tubing, ¼ I.D. X 8 feet
- 9248-0078 Bottle with Graduated Printing
- A bucket or container that will hold at least 1 gallon.

4.3.2 Concentration Measurement Procedure (2L Bag)

1. Place 18” of the PVC tubing onto the barb of the connector.
2. Place the connector into the bag of Oasis Pro product you want to check or set up.
3. Place the end of the PVC tubing into the graduated bottle.
4. Squeeze the bag of product until a greater amount of product than you need to make a gallon of diluted product is in the graduated bottle.
5. Remove the connector from the bag.
6. Remove the PVC tube from the connector.
7. Place the PVC tube on the dispenser’s aspirator connector probe that you want to check, so that it slides over the two orings on the probe.
8. Place a bucket or container under the outlet tube of the aspirator being checked.
9. Place the PVC tube into the graduated bottle of product. Push button to prime the dispenser.
10. Empty the bucket after priming.
11. Read the graduations on the bottle and record the amount of product.
12. Push the button again and fill the bucket to make one gallon.
13. Stop and record the amount of product removed from the bottle.
14. This is your dilution rate in ounces per gallon. Example: If it pulled 6 ounces of product out of the graduated bottle while making a gallon, the dilution rate is 6 oz/gal.
15. Repeat this procedure for the other products.

4.3.3 Concentration Measurement Procedure (2.5 gal.)

1. Pour a greater amount of product then you need to make a gallon of diluted product in the graduated bottle.
2. Place the foot valve on the 2.5 gal. pickup probe in the graduated bottle.
3. Prime the pickup line by activating the dispenser until all the air is removed from the line.
4. Place a bucket or container under the outlet tube of the aspirator being checked.
5. Record the initial amount of product in the graduated container.

6. Activate the dispenser and fill the bucket to make one gallon.
7. Stop and record the amount of product removed from the bottle.
8. This is your dilution rate in ounces per gallon.
    a. **Example: If it pulled 6 ounces of product out of the graduated bottle while making a gallon, the dilution rate is 6 oz./gal.**
9. Repeat this procedure for the other products.

5.0 Standard Operation

5.1 System Modes and Operation

The Liquid Dilution System (LDS) has two primary operation modes, which are described in the following sections.

5.2 Interaction Points

5.2.1 End-User Interaction Points

For an end-user, there are two primary interaction points for dispenser activation, using either the twist and lock button or the bottle activator.

The primary interaction point of the twist and lock dispenser version is the activation button, which is included in the cover assembly. The button may be manually pressed for a given amount of time to dispense product, or pushed and rotated clock-wise to be locked in the ON position. To unlock the dispenser, the button must be rotated counter clock-wise and it will then stop dispensing.

The interaction points of the bottle activation dispenser version are the front activation button and the bottle activator, both included in the front cover assembly. The button can be manually pressed for a given amount of time to dispense product. The bottle activator can be manually pressed from the bottom opening of the Liquid Dilution System (LDS) using an appropriate spray bottle to dispense product into a spray bottle. This housing version does not have the capability of locking the dispenser on.

5.2.2 Ecolab Representative Interaction Points

For an Ecolab representative, the button tab on the top of the dispenser may be used to remove the cover assembly from the rest of the dispenser, allowing access to the internal assembly of the Liquid Dilution System (LDS).

An optional screw at the top of the cover may be present and will need to be removed prior removing the cover from the backplate.

5.3 Use Scenarios

- ☐ High Flow: Large volume fills such as multi-compartment sinks or mop buckets
  - Use Mop Bucket dispenser
- ☐ High Flow or Low Flow: Medium volume fills such as pails.
  - Use Mop Bucket or Spray Bottle dispenser depending on customer needs
- ☐ Low Flow: Small volume fills such as spray bottles
  - Use Spray Bottle dispenser
  - If account fills many spray bottles per day and has requested the bottle activation feature, order the Bottle-Activated Spray Bottle dispenser

- ☐ Low Concentration Target: The Mop Bucket dispensers mix in more water with the concentrated solution. If you cannot achieve the proper concentration with a Spray Bottle dispenser, a Mop Bucket dispenser can be used to achieve a lower dilution rate. Note: The higher flow rate can cause challenges with filling small volumes, so verify it is acceptable with the customer.

- ☐ Increased Foam: Use Air Gap dispenser
  - If the customer has requested an increased foam profile, an air gap dispenser can be used. Due to the nature of the Air Gap, it will produce more foam than the E Gap.

- ☐ Low Pressure: Use Spray Bottle dispenser
  - If no vacuum is created and the account has low water pressure, please try using a Spray Bottle dispenser. The Spray Bottle dispenser requires less water to operate.

6.0 Troubleshooting

6.1 Table of Symptom, Cause, Action

Symptom	Action
No Product Dispensing	☐ Check product container. If empty, replace with new product ☐ Ensure end of pick-up tube is fully submerged in product container ☐ Check for plugged metering tips ☐ Check pick-up tubing to ensure it is filled with product ☐ Check for water leaks between dispensers ☐ Check for water leaks within dispenser ☐ Check to ensure water pressure is adequate to draw concentrate ☐ Check that chemical inlet elbow is snug and creating a seal ☐ Check that outlet tubing contains a flooding ring
Water leaking from dispenser	☐ Check for water leaks between dispensers ☐ Check for water leaks within dispenser ☐ Check E Gap/Air Gap alignment ☐ Check for backpressure due to crimped, running up-hill, or plugging in discharge tube (Air Gap) ☐ Check (if Air Gap) has scale buildup. If buildup is present, remove scaling without altering nozzle surface
Dispenses product when not activated	☐ Turn water OFF from main water supply valve ☐ Check for cover being properly attached/aligned ☐ Check for valve/aspirator properly secured in backplate ☐ Carefully remove water valve cover by twisting counter clockwise at the base of the water valve cover. Check for particulate in the water valve preventing a proper seal.
No water to dispenser	☐ Check to ensure main water supply valve is turned ON ☐ Check water supply connection ☐ Check water hook-up to dispenser. If leaking, tighten connection ☐ Check any in-line filters for build up
Product concentration too high	☐ Wrong metering tip. Change to a smaller orifice tip ☐ Metering tip is loose. Remove and install new tip
Product concentration too low	☐ Wrong metering tip. Change to a larger orifice tip ☐ Plugged metering tip. Change tip ☐ Low water pressure. Increase the wall pressure or move dispenser to accommodate ☐ Aspirator plugged. Replace aspirator ☐ Pickup tube leaks. Replace tubing and/or check valve

NOTICE Always wear proper PPE when working with dispenser and chemistry.

6.2 Contact Information for Assistance

If no resolution from troubleshooting has been found, call technical service or customer service at **1-800-35-CLEAN.**

7.0 Maintaining and Servicing

7.1 Service Access

To access the inside of the Liquid Dilution System (LDS) in order to perform services (such as maintenance), the button tab on the top of the dispenser may be used to remove the cover assembly from the rest of the dispenser, allowing access to the internal assembly of the Liquid Dilution System (LDS).

An optional screw at the top of the cover may be present and will need to be removed prior removing the cover from the wall.

7.2 Preventative Maintenance

IMPORTANT: It is critical to follow preventative maintenance procedure on the dispenser. Proper maintenance and inspection of dispensing equipment will ensure proper operation and dilution concentrations and extend the life of the dispenser.

7.3 Dispenser Inspections

- ☐ Visual inspection of exterior of dispenser including mounting stability
- ☐ Visual inspection of interior plumbing components by removing front cover assembly and checking plumbing interactions
- ☐ Visual inspection of interior assembly components by removing front cover and inspecting the following:
    - Manifold/Aspirator assembly properly seated into housing
    - Black valve retention clip completely in closed position
    - Chemical inlet elbow o-ring for wear or damage
- ☐ Check for leaking
    - Remove front cover assembly
    - Ensure water is turned on at the source
    - Inspect plumbing fittings for leaks or drips
    - Run the dispenser and inspect the following:
        - Both sides of water manifold
        - Connection from manifold to aspirator
    - Fix as necessary by tightening or replacing fittings/tubing
- ☐ Check concentrated product delivery
    - Remove front cover assembly
    - Ensure water is turned on at the source
    - Verify chemical inlet elbow is properly seated
    - Inspect the connection at source of concentration
    - Inspect tubing for deformations such as sharp bends or kinks that restrict flow
    - Run the dispenser and inspect the following:
        - Connection from the concentrate source to the tubing

        - Connection from tubing to aspirator elbow inlet
        - Connection from elbow inlet to aspirator body
    - Fix necessary by tightening or replacing tubing/connections

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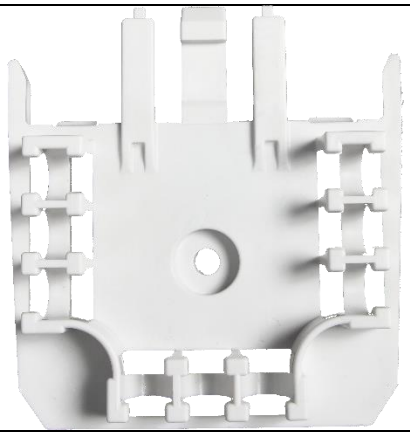
8.0 Parts

LDS Core SKU List

P/N	Description	Image
53001922	LDS Mop Bucket, High Flow (3.5 GPM), E-Gap 2PK	
53001923	LDS Spray Bottle, Low Flow (1.0 GPM), E-Gap 2PK	
53001924	LDS Mop Bucket, High Flow (3.5 GPM), Air Gap 2PK	

53001925	LDS Spray Bottle, Low Flow (1.0 GPM), Air Gap 2PK	
53001926	LDS Bottle Activated Spray Bottle, Low Flow (1.0 GPM), Air Gap 2PK	
53001927	LDS Bottle Activated Spray Bottle, Low Flow (1.0 GPM), E-Gap 2PK	

LDS Accessory List

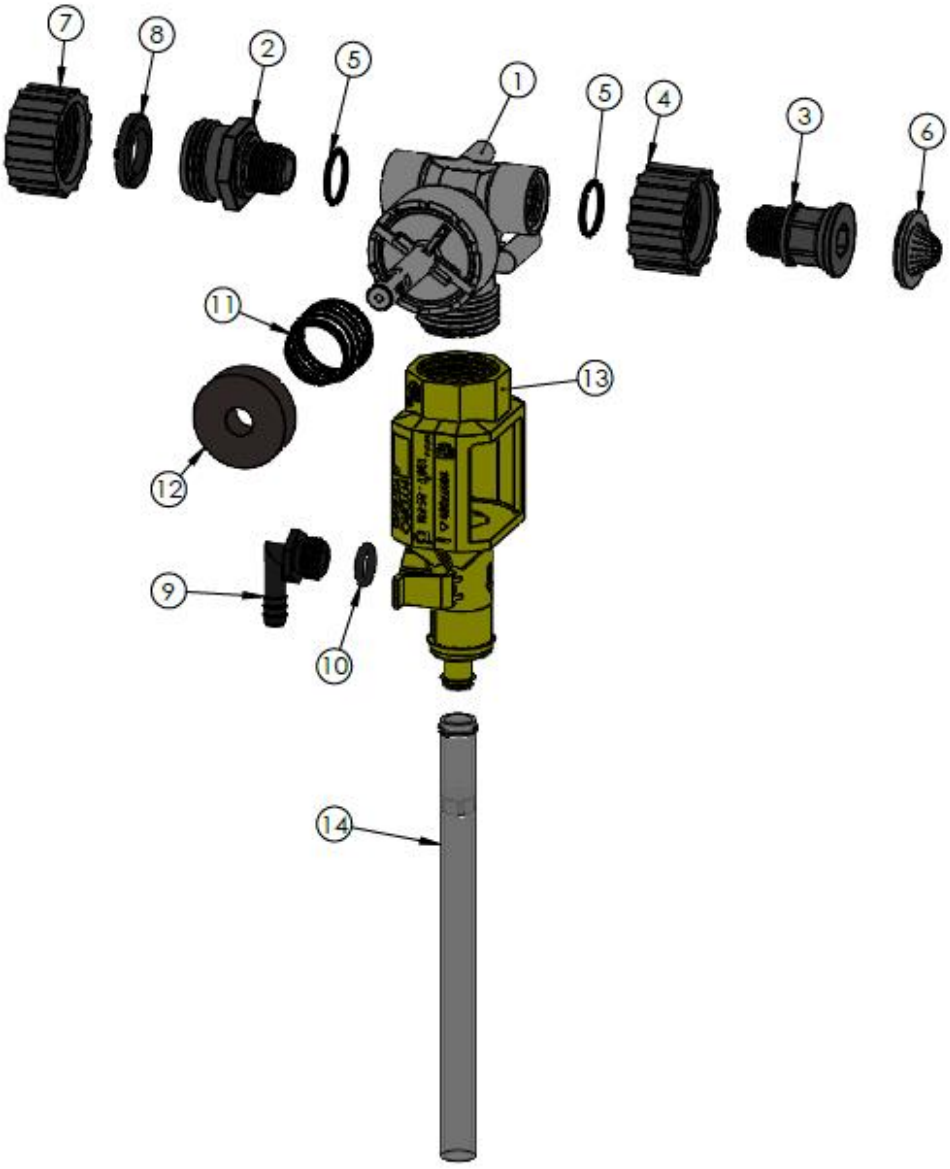
P/N	Description	Image
50001151	M4x12 LDS Cover Screw	
53002752	LDS 6ft Mop Bucket E-Gap Tubing Assembly	
53001058	LDS Tube Holder	
92152980	Oasis Pro Select4/Ultra1 White Drip Tray	
92151313	OP 2x2L Product Holder, White	
58016293	Flex Tubing 1x.125x6ft PVC – Air Gap Tubing	
53002037	LDS Connected Module	

LDS Spare Part List

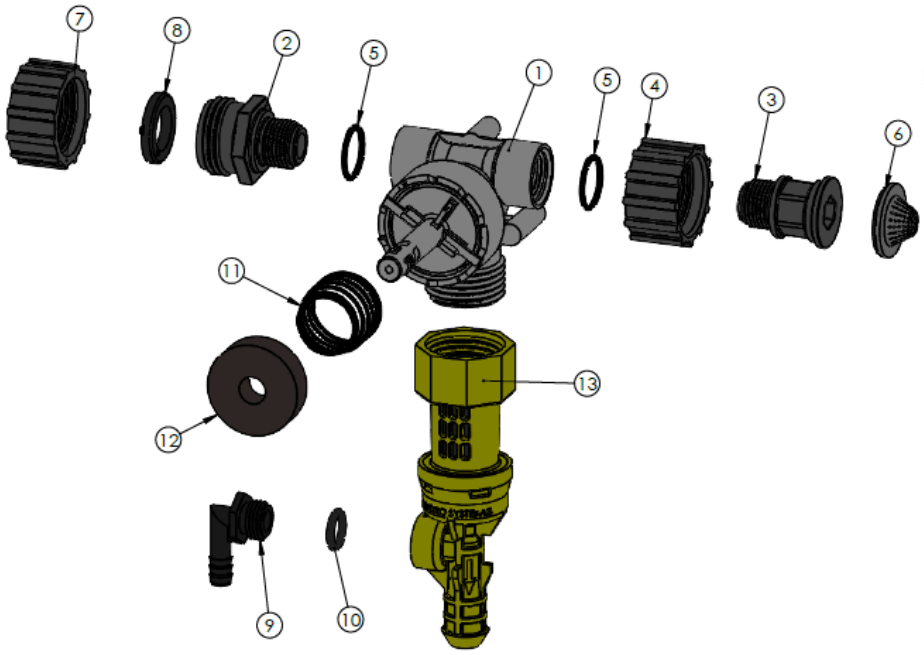
P/N	Description	Image
53002746	LDS Replacement Spray Bottle E-Gap Aspirator	
53002747	LDS Replacement Mop Bucket E-Gap Aspirator	
53002748	LDS Replacement Spray Bottle Air Gap Aspirator	
53002749	LDS Replacement Mop Bucket Air Gap Aspirator	
53002752	LDS Mop Bucket E-Gap 6ft Tubing Assembly	
53002753	LDS Replacement Barb Elbow AFLAS O-Ring	
53002855	LDS Replacement Bladder E-Gap Kit	
53002856	LDS Replacement Nozzle Air Gap Spray Bottle	
53002857	LDS Replacement Nozzle E-Gap Spray Bottle	
53002858	LDS Water Valve Repair Kit	
53002859	LDS Replacement Water Valve	

53002751	LDS Replacement Water Valve Diaphragm	
53002083	LDS Replacement Housing Assembly	
53002084	LDS Replacement Bottle Activated Housing Assembly	
92022072	LDS Low Flow Flooding Ring	
92022145	LDS High Flow Flooding Ring	

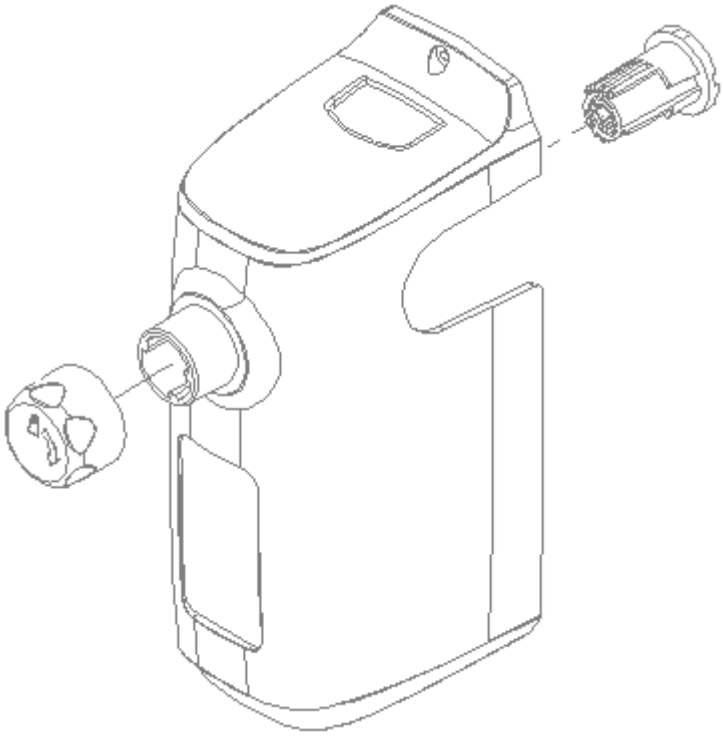
APPENDIX A: System Detailed Views



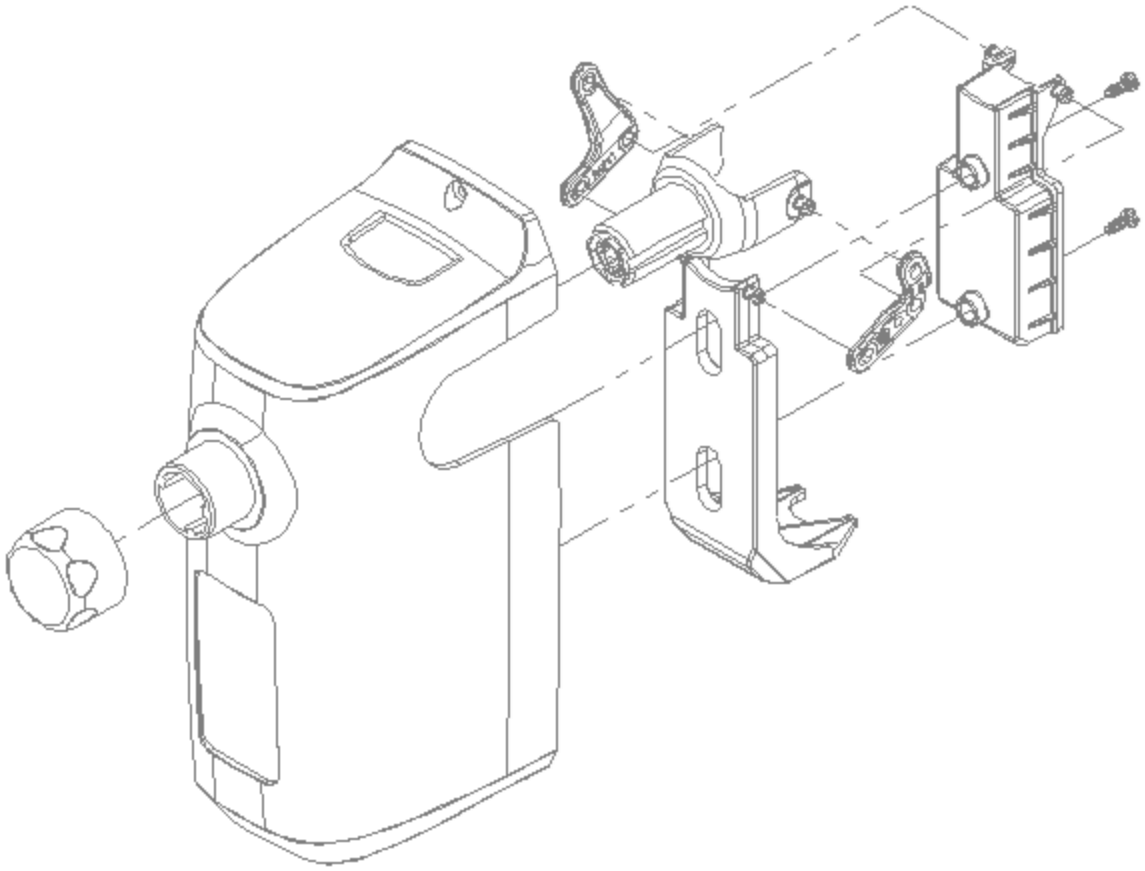
Hydro Air Gap Assembly



Hydro E Gap Assembly



LDS Twist and Lock Cover Assembly



LDS Bottle Activation Cover Assembly

STANDARD TWIST & LOCK ACTIVATION
53001922 – Mop Bucket E Gap 2PK
53001923 – Spray Bottle E Gap 2PK
53001924 – Mop Bucket Air Gap 2PK
53001925 – Spray Bottle Air Gap 2PK

BOTTLE ACTIVATION
53001926 – Spray Bottle Air Gap 2PK
53001927 – Spray Bottle E Gap 2PK

LIQUID DILUTION SYSTEM (LDS)

APPENDIX B: Contact Information

Manufacturer: Ecolab USA INC.
370 WABASHA STREET NORTH
ST PAUL, MN 55102 USA

Toll Free Phone: 1 (800) 35 – CLEAN
1 (800) 352 – 5326

Website: www.ecolab.com

This is the last page of the Liquid Dilution System (LDS) Manual.