RM-S1
Sink Guide
Operating/Bio-Med
Manual

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SECTION 1 - INTRODUCTION

RM-S1 Sink

The RM-S1 Sink is specifically engineered to assist, but not to replace manual cleaning for your flexible and rigid scope applications. Stainless steel construction equates too long-term reliability and durability.

The RM-S1 Sink is equipped with two individual 5-micron water filters, one for each of the Hot and Cold water supply feeds, to insure clean filtered water with every use. The RM-S1 Sink is equipped with remote sink drain valve, overflow protection, and a calibrated dispensing system for the pH neutral base Enzymatic Detergent solutions. Additional feature includes a storage space.

The RM-S1 Sink employs a higher level of elevation than most, for improved ergonomics, lessening stress to the lower back and legs and potentially lowering operator fatigue. Additionally, four (4) push button controls **(*Power, Detergent, Purge, Rinse*)**, for a more user-friendly operation.

When utilizing the features of the RM-S1 Sink, the facility will benefit by reducing department labor time and operational costs. The RM-S1 Sink is highly engineered, meeting all safety parameters ensuring the highest level in user safety, while protecting your medical instrumentation.

The RM-S1 Sink is fully tested in order to maintain the utmost quality in workmanship.

The sink capacity is 7 gallons when filled to the stamped water line, located on the inside rear sink basin wall.

The sink is equipped with an internal Purge Pump System has an output flow rate of 400mL to 500mL per 10 seconds or 2.4L's (2.53Qt.'s) to 3L's (3.17Qt.'s) per minute thru a scope when connected to the sink with 3 to 5 channel adapters and a working pressure range of 10 to 15psi. This pressure range is ideal for using RM Medical Designs Enzymatic Detergent product line, that has a pH neutral base.

Using this Manual

- This manual describes the RM-S1 Sink, all of its features, setup, operation, maintenance, and troubleshooting procedures. If adhered to appropriately, will keep the RM-S1 Sink in good operating condition.
- Throughout the manual are notes, service notes, cautions, and warnings that will provide important additional information. An example of each illustrated below.

	**NOTE:**	**A note refers to relevant information not covered in the main body of the text.**
	**SERVICE:**	**A service note refers to operations or repairs only a trained service technician may perform.**
	**CAUTION:**	**A caution describes actions and conditions that may cause damage to or destruction of the equipment.**
	**WARNING:**	**A warning describes actions and conditions that may cause severe personal injury or death to the operator or patient.**
	**ELECTRIC:**	**An electric symbol means that there is an electric current that if tampered with could potentially cause severe personal injury and/or death to the operator.**

Safety

This section outlines general safety guidelines for proper operation and service of the sink. Failure to follow these guidelines may result in severe injury or death to the patient and/or operator. Read and understand all operating and service procedures before attempting to operate the sink.

Intended Use

Never use the sink for any purpose other than the manufacturer's specific intended use. Only properly trained individuals may operate and/or service the sink.

	**WARNING:**	**Only use the sink for its intended use. Failure to do so could result in damage of the sink.** **Do not use or attach an eye wash station to the sink.**

Operator Safety

Always wear appropriate personal protective equipment when handling endoscopes or disinfectant solutions. These would include new dry protective gloves, eye wear, face mask or shield, protective clothing and any other facility mandated protective safety items. Doing so will assist in reducing possible biological contamination and/or chemical burns.

Never use or fill the sink with Hot Water Exceeding 120°F (48.89°C) or higher it could result in burns as well as damaging the scope and/or the sink internal components.

For disinfectant handling guidelines, refer to the American National Standard recommended practice titled "*Safe Use and Handling of Glutaraldehyde -based Products in Health Care Facilities*" (AAMI/FDS ST58, 1996-03-26). The document is available from the Association for the Advancement of Medical Instrumentation.

Guidelines

Guidelines are established to ensure patient and operator safety, as well as, to maintain reliable sink operation.

Installation and Maintenance

Proper maintenance will ensure effective pre-cleaning and prolong the life of the sink.

The sink is factory-set to pump the facility recommended chosen RM Medical Designs Enzymatic Detergent product line, that has a pH neutral base, for proper dilution with 7 gallons of water.

Both 5-micron water inlet filters (#*SK-WHFL*) are required to be changed every 90 days, to ensure reduced sediment from including the sinks internal purging system, and/or including scope channels. The filters may need to be replaced sooner, if the facilities exciting plumbing system is of comprised condition, such as the use of "old-style" galvanized water plumbing pipes, old hot water heater(s) that have reached its useful life span, high mineral content (calcium, lime, iron, etc.) city or well water supply also known as "hard water". Use of a water softener maybe required to help eliminate a "hard water" condition.

When wiping down the exterior of the sink, use a lint free clean cloth with a (1:10) mixture of one part recommended RM Medical Designs 10% Bleach (10% Sodium Hypochlorite) (#*90114*), to 9 parts clean water, with minimum surface contact time of three (3) minutes to help create a germ, bacteria, fungi, and/or viruses free disinfected environment. When completed, wipe down the sink with a dry lint free clean cloth until the surface is dry. The use of other types of disinfectants can be used as long as they do not leave a residue behind and that it does not harm the stainless-steel surfaces.

Enzymatic Detergent Solution

RM Medical Designs recommends its Enzymatic Detergent product line, that has a pH neutral base.

	**CAUTION: Never use household detergent or other cleaners in the sink.**
	**WARNING: Only use approved pH neutral base enzymatic detergent in this unit. Failure to do so could possibly result in damage to the unit.**

Endoscope Pre-cleaning Testing

Follow the endoscope manufacturer instructions and established professional guidelines to properly pre-clean the endoscope.

- Endoscope with elevator wire channels may require additional manual cleaning and disinfection steps.
- Leak test endoscopes prior to pre-cleaning, cleaning, and disinfection procedures.

Cleaning Guidelines Sources

Always follow established professional guidelines while cleaning and disinfecting endoscopes.

The following organizations have published recommended guidelines.

American Society for Gastrointestinal Endoscopy
3300 Woodcreek Dr.
Downers Grove, IL 60515
Website : asge.org

Association of Operating Room Nurses
2170 South Parker Rd., Suite 400
Denver, CO 80231-5711
Website : aorn.org

Association for Professionals in Infection Control and Epidemiology, Inc.
1400 Crystal Dr., Suite 900
Arlington, VA 22202
Website : apic.org

British Society of Gastroenterology
3 St. Andrews Place
Regents Park, London NWI 4LB
Website : bsg.org.uk

Canadian Society of Gastroenterology Nurses & Associates
P.O. Box 366
36 Adelaide Street East
Toronto, Ontario M5C 2J5
Website : csgna.com

Society of Gastroenterology
Nurses and Associates
330 N Wabash Ave., Suite 2000
Chicago, IL 60611-4267
Website : sgna.org

SECTION 2 - INSTALLATION

General

Before removing the protective packaging material, move the sink to the installation location. If this is not possible, open the packaging and check the sink for any shipping damages. Once you have removed the shipping materials, either roll the sink on its wheels or use a hand truck or moving dolly to bring the sink to the installation location.
When installing, make sure the sink is installed on a level surface, if it is not, contact RM Medical Designs to have a certified technician adjust the sink level. **SINK LEVELING IS NOT END USER ADJUSTABLE**.

NOTE: **A minimum of two people (capable of lifting 90 lbs or more each) with proper back support is recommended when lifting or moving the sink.**

Sink Specifications

Overall Sink Dimensions : 51" Height x 32" Width x 26" Depth (inches)
129.54 Height x 81.28 Width x 66.04 Depth (centimeters)

Sink Basin Size : 23" Length x 16" Width x 8" Deep (inches)
58.42 Length x 40.64 Width x 20.32 Deep (centimeters)

Overall Sink Weight : 170lbs. (77.11kg)

Electrical Requirements : 100-125VAC, 10A, 50/60Hz, Single Phase, GFI receptacle

Sink Basin Capacity : 7 gallons (26.5 liters)

Purge Pump Flow Range : 400mL to 500mL per 10 seconds or 2.4L's (2.53Qt.'s) to 3L's (3.17Qt.'s) per minute, when connected to a scope that has a 3 to 5 channels connected.

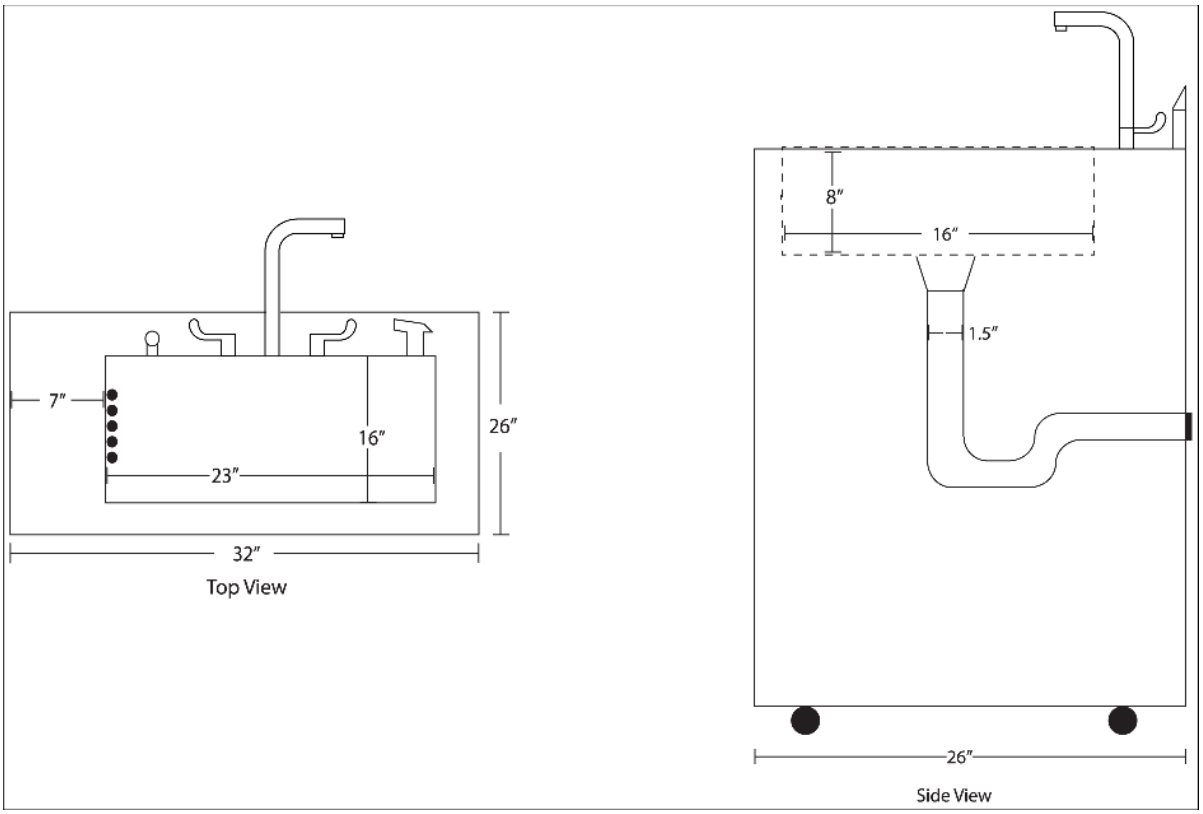
Purge Pump Operating Pressure Range : Working pressure range of 10 to 15psi with a maximum safety cutoff pressure up to 60psi., when connected to 3 to 5 scope channels.

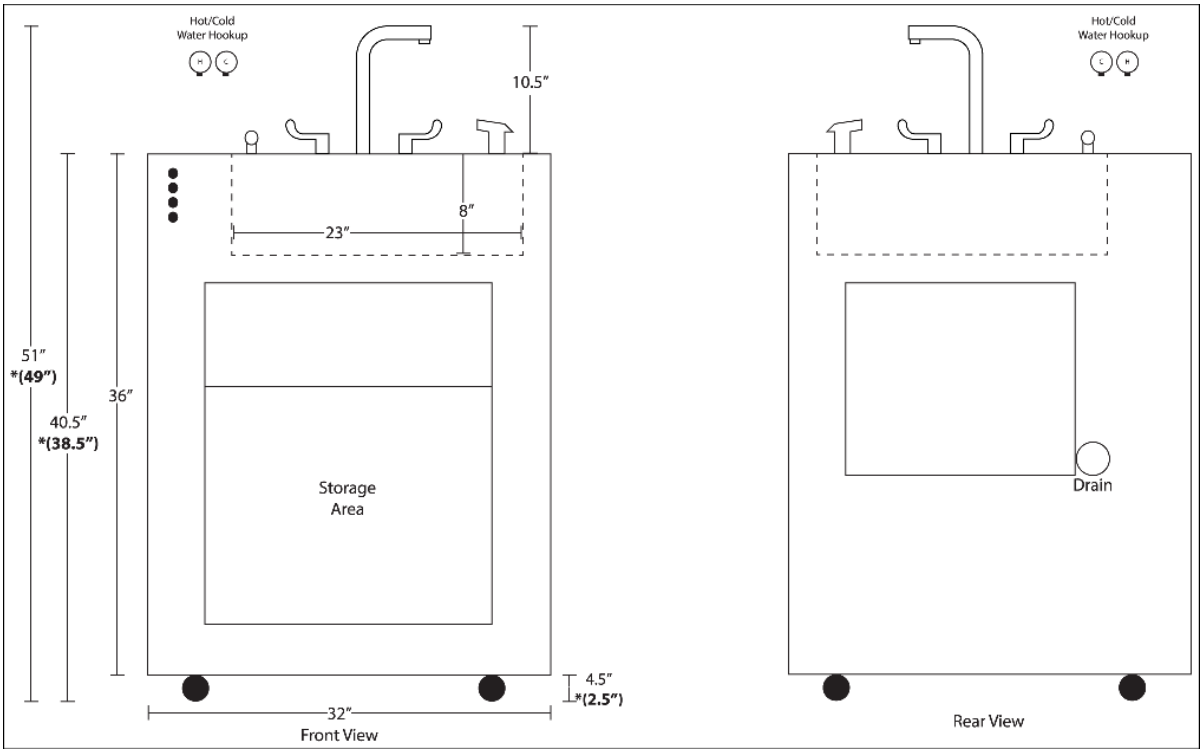
Recommended Operating Temperature Range : 50ºF to 120ºF (10ºC to 48.89 ºC)

Do Not Exceed a Maximum Operating Temperature : 120ºF (48.89 ºC)

Recommended Facility Water Pressure Range : 30 to 60 psi (206.85kPa to 413.69kPa)

Recommended Water Feed Supply Valves : Use standard shut off valves with ¾" MGHT (male garden hose thread) connectors.


7″
16″
23″
26″
32″
Top View
8″
16″
1.5″
26″
Side View


Hot/Cold
Water Hookup
10.5″
8″
23″
51″
*(49″)
40.5″
*(38.5″)
36″
Storage
Area
4.5″
*(2.5″)
32″
Front View
Hot/Cold
Water Hookup
Drain
Rear View

Electrical Supply

ELECTRIC: Never touch any of the electrical components with wet or damp hands, could result in a potential electric shock or death.

Domestic sinks are supplied with a standard grounding plug that must be connected only to a standard 110-125VAC GFI outlet. International sinks are supplied with a standard grounding European plug that connects to 220-240VAC outlets.

RM Medical Designs, LLC. sink must be plugged into :

- A fused branched circuit.
- Dedicated 100-125VAC, 10A, 50/60Hz, Single Phase, GFI receptacle.
- Unit runs on a safe low voltage 12VDC system with built in supplemental protector and fuse protection.
- The GFI receptacle should be within 3 feet of sink installation location.

Water Feed Supply

- Dedicated hot and cold-water supply lines provided by the facility with shut-off valves having standard ¾" MGHT (male garden hose thread) hose connections on the valves.
- Water feed valves should be within 3 feet of sink installation location and connected to the sink with the supplied 6-foot hoses. If a different hose length is required, contact RM Medical Designs for alternate.
- Water pressure should be between 30 to 60 psi.
- Use a hot water supply with a maximum temperature of **120°F (48.89°C)**.
- Connect the supply hoses from the incoming water shut-off supply valves to the sink filter system. Turn on valves and check for leaks.
- **Facility is responsible to follow all local codes**, if applicable, regarding the use of non-atmospheric vacuum breakers, backflow preventers, or any other local requirements.

NOTE: The filter is provided with the inlet on the left rear inside of the sink. When facing rear of sink. Drain is on the right rear of the sink, when facing rear of sink.

CAUTION: Never use or fill the sink with Hot Water Exceeding 120°F (48.89°C), it could result in burns, as well as, damage to the scope and sink internal componentry.

System Waste Drain Requirements

- The primary sink drain, that is located on the back of the unit, is a standard 1 ½" FNPT threaded fitting. Due to the sink using a standard gravity flow drain system, RM Medical Designs recommends using a vertical 2" id stand pipe that has a 14" to 16" maximum height.
- Using either of the included straight or elbow hose barbed fittings, depending on your requirements. Use Teflon sealing tape on the threads, thread the fitting into primary sink drain adapter fitting that is on the back of the sink. Do not over tighten. Also included are some additional hose barded elbow fittings. These fittings will allow you to adapt/configure the drain hose to meet the facility drain.
- Connect the supplied 1 ½" id hose to the hose barb fitting and secure with a clamp. Use heat resistance gloves when using a heat gun is advised. Use of a heat gun is advised to help soften the end of the hose to make it easier to slide over the fitting. Be careful as to not burn the hose. Also, use of a little soap on the plastic fitting's barbed ends will make it easier to slide the heated drain hose onto the fitting.
- When hose has cooled to room temperature, use the supplied hose clamps on the tubing/hose bard end. Tighten hose clamp down to help prevent leaks. Do not over tighten. Failure to let hose cool to room temperature before using a hose clamp, will cause damage to the hose and fitting.
- 2" id vertical stand pipe to be used for the waste drain hose will allow it to slip into.
- Consult your maintenance department for other sink waste drain choices.

Installation Verification Procedure

To be sure that the sink is ready to operate, perform a trial run with water and Enzymatic Detergent as outlined below. When this is complete the sink is ready for normal use.

CAUTION: Operating the sink without adapters hooked-up and sink not filled to proper level may result in water spraying outside of the unit.

1. If for any reason any issues occur during this process see **"Troubleshooting Section for the End User"**. **If not** functioning turn off power, unplug the unit, and call RM Medical Designs at (352)-600-9380 for further assistance.

2. Recommended to always wear new dry protective gloves, eye wear, face shield, protective clothing and any other facility mandated protective safety items.

3. Connect one end of the cold-water feed supply hose to the cold-water filter housing inlet. Connect the other end of this hose to the facilities cold-water shut-off supply valve.

4. Connect one end of the hot-water feed supply hose to the hot-water filter housing inlet. Connect the other end of this hose to the facilities hot-water shut-off supply valve.

5. Connect the waste drain hose to the sink and to the facilities drain pipe.

6. With the sink cabinet doors open, turn on the facilities water feed shut-off valves, and check for any leaks, fix if necessary. Slowly turn on the faucets to allow the trapped air to escape the system and to fill the water filter housings. When there is a constant flow of water from the faucet, take the spray-nozzle point it into the sink's basin press its lever to remove any air trapped in its line. Do this until there is a constant flow of water. Once there is a constant flow of water turn off the faucet.

7. Close the sink drain by pushing down on the remote drain knob, located on the upper left-hand corner on the sink. Turn on the faucets and fill the sink up with warm water, **Not with Hot Water Exceeding 120°F (48.89°C),** doing so could result in possibly causing burns and/or damaging the internal sink components. Fill the sink to the overflow drain port and check for leaks, if found fix. Pull up on the remote sink drain knob and drain the sink down to the **"Fill Line"**, located on the back inside wall of the sink basin and check for leaks, if found fix.

8. Remove the sink component shelf cover, located behind the sink cabinet doors.

9. Remove the cap and the foil seal from a bottle of the facilities chosen Enzymatic Detergent solution, place the sinks White Dispensing Gallon Hand Pump (*#13013*) into solution bottle, turn until tight.
10. Plug in the unit and press the **"Power"** button and verify red light turns on. If the light **does not** illuminate or the unit **does not** function, see "**Troubleshooting Section for the End User"**.

11. To prime the Enzymatic Detergent system, press the **"Detergent"** button, if the green light **does not** illuminate or you **do not** hear the detergent pump running, see "**Troubleshooting Section for the End User"**. With the detergent pump running, slowly press the manual bottle pump dispensing nozzle until the inlet opaque hose is fully primed with no visible air bubbles in the hose and it is dispensing into the sink basin. Repeat this step until all of the air is out of the hose and there is a constant flow out of the detergent port, located in the sink basin. If **still not** functioning see **"Troubleshooting Section for the End User"**.

12. While wearing gloves, attach all of the scope adapters, hold together all of the scope connecter adapters with the adapter ends facing the bottom of the sink.

13. Press the **"Purge"** button, if the green light **does not** illuminate or you do not hear the main pump running, see **"Troubleshooting Section for the End User"**. Slowly lift the adapters, with the ends pointing down, above the water line to visually verify flow output of each individual adapter, then let adapters rest at the bottom of the sink basin.

14. Once the purge cycle is completed drain the sink, by pulling up on the remote drain knob and let sink empty out. When empted rinse the sink basin thoroughly out with the spray nozzle.

15. Refill the sink with warm water to recommended fill line. Press the **"Rinse"** button, if the green light **does not** illuminate or you **do not** see any flow, see "**Troubleshooting Section for the End User"**. Slowly lift the adapters with the ends pointing down, above the water line to visually verify flow out of each individual adapter

16. Once the rinse cycle has completed, partially drain the sink to the **"Fill Line"**, by pulling up on the remote drain knob.

17. **Next you MUST follow the "End of Day" section of this manual, Steps 3 all the way to Step 11.**

SERVICE: If the sink cannot be verified, contact RM Medical Designs, LLC. at (352) 600-9380.

SECTION 3 - WATER FILTER SERVICE

1. Recommended to always wear new dry protective gloves, eye wear, face shield, protective clothing and any other facility mandated protective safety items.

2. Turn off the sink power by pressing the **"Power"** button.

3. Fully open the two front sink cabinet doors. Loosen the three Phillips screws on the shelf cover, you do not need to fully remove them. Place your hands on the outer edges of the cover and lift up enough to clear the screws and slightly pull the cover away to clear them. Once clear, allow the cover to drop and rotate down and forwards, while this is happening gently pull the cover towards you and remove it. Place it out of the way.

4. Place a towel under each water filter housing and turn off the water feed valves, when done turn on the hot and cold faucet handles to relieve the pressure. When the pressure is relieved close the faucet handles.

5. Placed the filter wrench onto the filter housing and turn it to the left, this will be losing up the housing. When loose remove the wrench. Place one hand at the bottom of the filter housing for support, with the other hand continue to remove it. Be careful it is filled with water and a filter, when free, slowly and carefully let it down, water may spill out. Pour out the water and filter into the sink basin, if necessary, rinse/wipe and/or clean out filter housing to remove any/all residue. Do this to the other filter housing as well. When filter have drained, discard them.

6. Remove dirty gloves and put on new dry gloves. Remove the plastic film from the new filters and place one into each of the filter housings. Remove the wet towels from under the sink and replace with dry towels. Reinstall the filter housings you are going to place one hand under the housing and some upward pressure on it, turn it to the right to screw it back on. When it is snug, you will put the wrench back on and turn it a little more, to make it tight. Do this to both of them. Do not over tighten them.

7. Slowly turn on the water valves and check for leaks.

8. Slowly turn on the faucet hot and cold handles to get all of the air out of the system. Run the water for a few minutes to flush out the system. Check for leaks. Dry the inside of the cabinet and remove the towels.

9. Reinstall the self-cover by placing your hands on the cover ends and feed the cover over the shelf in a twist-turning motion, opposite of the removal way. Rest the front cover edge on to the three screws, now take your hand reach underneath the shelf to the back side and lift up the back edge of the cover until it rests on the shelf. Tighten the front three screws and closed the front doors.

SECTION 4 - OPERATOR CONTROLS

Indicator Panel

Power Button		Power Red LED
Detergent Button		Detergent Green LED
Purge Button		Purge Green LED
Rinse Button		Rinse Green LED

When the **"Power Button"** has been depressed, the **"Power Red LED"** will be illuminated; this will indicate that the sink is on. Pressing it again will cause the sink and LED to turn off.

Pressing of the **"Detergent Button"** one time will cause the **"Detergent Green LED"** to illuminate and begin dispensing the Enzymatic Detergent into the sink. When it has completed its timed cycle the LED and the dispensing pump will turn off.

Pressing of the **"Purge Button"** one time will cause the **"Purge Green LED"** to illuminate and begin pumping the water and Enzymatic Detergent solution thru the bulkhead fittings. When it has completed its timed cycle the LED and the purge pump will turn off.

Pressing of the **"Rinse Button"** one time will cause the **"Rinse Green LED"** to illuminate and begin the "Rinsing Cycle" of flowing fresh clean filtered water thru the bulkhead fittings. When it has completed its timed cycle the LED and the rinse solenoid will turn off.

SECTION 5 - OPERATION

General

This section explains the startup and shut down procedures of the RM-S1 Sink.

Pre-Cleaning Procedure

1. Recommend to always wear new dry protective gloves, eye wear, face mask or shield, protective clothing and any other facility mandated protective safety items.

2. Visually verify that there is enough Enzymatic Detergent left in the bottle for use. If empty then replace with a new bottle. Remove the cap and the foil seal from a bottle of the Enzymatic Detergent solution, place the sinks White Dispensing Gallon Hand Pump (*#13013*) into solution bottle, turn until tight. Re-prime the dispensing system to remove any air in the line. Close the sink drain by pushing down on the remote drain knob, located on the top left corner on the sink.

3. Fill sink to "**Fill Line**" (approximately 7gallon capacity) with clean warm water, **Not Hot Water Exceeding 120°F (48.89°C),** doing so it could result in possibly causing burns and/or damaging the scope and/or the sink internal components.

4. Perform a Leakage test (Follow scope manufacturer's proper leakage test procedure).
   If **passed**, continue with the rest of the steps.
   OR
   If **failed,** clean the scope according to manufacturer's procedure for a damaged scope.

5. Follow scope manufacturer's guidelines for proper scope pre-cleaning procedure, i.e. (channel brushing, exterior wiping, button removal, etc.).

6. Hook up the scope to the sink with the proper scope sink adapters making sure to use the proper adapter for each channel, (Water, Air, Biopsy, etc.). If any of the sink ports are left open, then install block-off adapter(s) in all open port(s).

7. With fresh new dry gloves on, press the **"Power"** button on the front left face of the sink. (If **"Power LED"** indicator is already on, skip this step.)

8. Press "**Detergent**" button one time, to dispense the pre-set proper amount of Enzymatic Detergent into the sink. The dispensing system will automatically shut off when complete, agitate the mixture evenly to help distribute Enzymatic Detergent. See "**Troubleshooting Section for the End User"** if no Enzymatic Detergent is dispensed.

9. Press the "**Purge**" button one time for purge cycle to begin. If **not** functioning, see "**Troubleshooting Section for the End User"**.

10. When completed, drain the RM-S1 Sink, by pulling up on the remote drain knob. Once empty, leave the drain open and press the "**Rinse**" button. While in the **"Rinse Cycle"**, spray the inside sink basin and exterior of scope with clean warm water via the attached spray nozzle. **Make sure that the water that is discharging from the scope is not spraying yourself or anyone else.** When **"Rinse**

Cycle" has finished remove scope. If **not** functioning, see "**Troubleshooting Section for the End User"**. If necessary, follow any additional pre-cleaning processes, refer to the scope manufactures guide lines. Now the scope is ready for final cleaning in an Automatic Endoscopic Reprocessor (AER).

End of Day Procedure

1. If for any reason any issues occur during this process see **"Troubleshooting Section for the End User"**. **If not fixed**, turn off power, unplug the unit, and call RM Medical Designs at (352)-600-9380 for further assistance.
2. Recommend to always wear new dry protective gloves, eye wear, face mask or shield, protective clothing and any other facility mandated protective safety items.
3. Make a cleaning solution using some enzymatic detergent and water mixture, wipe down the sink basin walls, brush the Purge Pump Pickup Screen, located in the lower inside left-hand corner of the sink basin, making sure there is no debris on the screen's surface. Brush around all sink wall adapter fittings, wipe the adapter tubing and brushing the adapter end fittings. Rinse everything clean with water to remove any soap residues.
4. Leaving sink adapters attached, **but, remove any and all block-off plug adapters**, close the drain by pushing down on the remote drain knob, located on the top left corner of the sink. Fill sink with clean warm water to the **"Fill Line"**, **Do Not used Hot Water Exceeding 120°F (48.89°C),** doing so could result in possibly causing burns and/or damage to the sink internal components.
5. Slowly pour in one recommended 16-ounce bottle of RM Medical Designs 10% Bleach (#*90114*) into the warm water. Carefully agitate the mixture evenly to help distribute. **BUT DO NOT SPLASH THIS MIXTURE**, press the "**Purge**" button. The use of this bleach and water mixture will result in achieving an **Intermediate-High Level Disinfection,** as per the Middlesex-London Health Unit's guidelines.
6. When **"Purge Cycle"** has completed, drain the sink by pulling up on the remote drain knob on the top left corner of the sink.
7. Utilizing the sink equipped spray nozzle, spray the sink basin and adapter fittings with warm water.
8. Refill the unit with clean warm water to the "**Fill Line**" and then press the "**Purge**" button.
9. When the **"Purge Cycle"** has completed, drain the sink. This secondary purge cycle with the new fresh water will help remove any of the leftover bleach water.
10. Press the "**Rinse**" button to thoroughly flush out all adapters. And utilizing the sink's equipped spray nozzle, spray the basin and adapter fittings with warm water.
11. When complete, wipe down the exterior of the sink, faucet assembly, and the equipped spray nozzle, **but not the sink basin**. Use a lint free clean cloth and a (1:10) mixture of one-part RM Medical Designs 10% Bleach (10% Sodium Hypochlorite) (#*90114*), to 9 parts clean water **only**, with minimum wet surface contact time of 3 minutes to help create a germ, bacteria, fungi, and/or virus free disinfected environment. When completed, wipe down the sink with a dry lint free clean cloth, until dry. For alternative choices for wiping down the exterior of the sink contract RM Medical Designs.
12. Press the **"Power"** button to turn off and verify **"Power LED"** is no longer illuminated. The RM-S1 is now ready for next day's procedures.

NOTE: **Following the cleaning procedure will ensure that the internal components & sink surfaces are clean and disinfected.**

WARNING: **ALL channels of the flexible endoscope, including any and all auxiliary channels where existing, MUST BE cleaned and HIGH LEVEL DISINFECTED or STERILIZED during EVERY Reprocessing Cycle. Otherwise, insufficient cleaning and disinfection or sterilization of the flexible endoscope may pose an infection-control risk to the patient and/or operator performing the next procedure.**

DO NOT coil the flexible endoscope too tightly in the sink, no less than 10 inches in diameter, this may compromise the scope's integrity.

If flexible endoscope is not immediately cleaned after each procedure, debris may solidify and will require additional soaking and cleaning time.

SECTION 6 - PREVENTATIVE MAINTENANCE FOR SERVICE TECHNICIAN

1. Recommend to always wear new dry protective gloves, eye wear, face mask or shield, protective clothing and any other facility mandated protective safety items.
2. Change both hot and cold-water inlet filters every 90 days. Turn off hot and cold-water supply valves, FIRST. **Always wear fresh new clean gloves when handling new filter cartridges.** Clean out any debris from the filter housing. Replace with new filters and reattach the housings.
3. Clean the purge pump inline strainer screen, located at the purge pump inlet.
4. Clean the purge pump pickup screen, located at the lower left-hand corner of the sink basin.
5. Inspect detergent dispensing solenoid, for proper output. Disassemble, clean and inspect/replace, if output is not flowing correctly. With use of a measuring cup to verify output. Place Enzymatic Detergent dispensing hose into the measuring cup, press **"Detergent"** button one time, measure the output making sure that it dispenses the proper amount of solution based on the RM Medical Designs Enzymatic Detergent product that is being used, for proper dilution for the sink capacity of 7 gallons of water at the fill mark. The output can be readjusted, if need be, see **"Calibration of the Sink Run Time Section for a Service Technician Only".**
6. Visually inspect system for any signs of leaks at all hoses, connections, fittings, pumps, filters, feed lines, and drain pipe. If worn or bad, replace.
7. Turn hot and cold-water feed valves on and check for leaks.
8. Fill the sink basin to the "Fill to Line".
9. Press the **"Purge"** button, slowly lift the adapters, with the ends pointing down, above the water line to visually verify flow output of each individual adapter, then let adapters rest at the bottom of the sink basin. If output is low not flowing correctly inspect or replace the pump. The purge run time can be readjusted, if need be, see **"Calibration of the Sink Run Time Section for a Service Technician Only".**
10. Press the **"Rinse"** button, slowly lift the adapters with the ends pointing down, above the water line to visually verify flow out of each individual adapter. If output is low or not flowing correctly, inspect the rinse water solenoid, for proper output. Disassemble, clean and inspect/replace. The run time can be readjusted, if need be, see **"Calibration of the Sink Run Time Section for a Service Technician Only".**
11. Upon completing preventative maintenance go through "**Installation Verification Procedures**" section to verify system integrity.

NOTE: **Check for lint/debris build up at the filter connections. Clean the filter connections before installing new filter.**

WARNING: **Always wear new clean gloves when handling the filter cartridge.**

SECTION 7 - TROUBLESHOOTING SECTION FOR THE END USER

	**NOTE: All LED lights, pumps, and solenoids are powered after the fuses.**
	**ELECTRIC: Never touch any of the electrical components with wet or damp hands, could potentially result in electric shock or death.**

General

This section contains basic troubleshooting for the end user procedures. Always refer to the safety section in the introduction section before attempting to service the RM-S1 Sink.

The RM-S1 Sink is fully tested in order to maintain the utmost quality in workmanship. Sometimes in the field issues do arise that are beyond the in-house control of the manufacture, therefore this section should help to solve these issues.

Power

The Red Power LED **does not** illuminate after pressing **"Power"** button, check :

- Have facility maintenance department check the GFI outlet. Failed reset/replace.
- Have facility maintenance department check the circuit breaker. Failed reset/replace.
- Check supplemental protector on the back of sink, if failed **"press to reset"** button.

To see if the unit **does** function normally, press the **"Detergent"** button, listen for detergent pump running and look for flow into the sink basin. If there is flow, then the Red Power LED light is bad, call for the LED to be replaced.

If the Power LED still **does not** illuminate, and the unit still **does not** function, unplug the sink and discontinue use, call RM Medical Designs at (352)-600-9380 for a Service Technician.

Drain

If the sink does not drain or drains slow, contact facility maintenance department or a plumber for assistance.

Detergent

The Green Detergent LED light **does not** illuminate and the unit **does not** function, call RM Medical Designs at (352)-600-9380 for a Service Technician.

If the Green LED light **does not** illuminate and you hear the detergent pump running and you see detergent flowing in the sink basin, call for the Green LED to be replaced.

If the LED light **does** light and the unit **does not** function, call for a Service Technician.

If there is **no discharge** of Enzymatic Detergent solution into the sink and you **do hear** the detergent pump **running**, check :

- Cycle the main power button off/on, by pressing the main power button to turn the sink off and press again to turn it back on. This will reset the system.
- Visually check and verify that there is enough Enzymatic Detergent in the attached bottle.
- Check to make sure the hose is connected to the pump dispensing nozzle and to the solenoid valve, located on the back of the sink, if off, reconnect.
- Check fitting(s) and hose(s) for blockage, damage, or kinked hose(s). If found, clean or replace.
- Disconnect hose from dispensing nozzle, press down on nozzle to make sure nozzle **is** functioning. **If not**, replace nozzle with new one.
- Prime the Enzymatic Detergent system by pressing the "**Detergent**" button and with the detergent pump running, slowly press the manual pump dispensing nozzle, that is attached to the Enzymatic Detergent solution container, may need to repeat a few times until it is dispensing into the sink basin. Inlet prime can be verified by no visual air bubbles and/or the opaque Enzymatic Detergent hose is of a solid color. May need to be repeated until no air bubbles are in the hose. The hose will have a constant color when no air is present.

If the LED still **does not** light, and the unit still **does not** function, unplug the sink and discontinue use, call RM Medical Designs at (352)-600-9380 for a Service Technician.

Purge

The Green Purge LED light **does not** illuminate and the unit **does not** function, call RM Medical Designs at (352)-600-9380 for a Service Technician.

If the Green LED light **does not** light and the unit **does** function, call for the Purge LED to be replaced.

If the LED light **does** illuminate and the unit **does not** function, call for a Service Technician.

If flow through the scope **is slow or not** flowing and you **do hear** the purge pump running, when in the **"Purge Cycle",** check :

- Cycle the main power button off/on, by pressing the main power button to turn the sink off and press again to turn it back on. This will reset the system.
- Unhook the scope first.
- Check the purge pump pickup screen for debris, located on lower left corner on the inside wall of sink basin, when facing the sink. Remove the debris by using brush (#SK-TK724).
- Check fitting(s) and hose(s) for blockage, broken, damage, or kinked hose(s). If found, clean or replace.
- Reconnect the scope, restart the **"Purge Cycle"** and check for flow, through the scope. If **still not** functioning correctly, scope may have an internal blockage or it is damaged, fix or replace the scope.

If LED still **does not** illuminate, and the unit still **does not** function, unplug the sink and discontinue use, call RM Medical Designs at (352)-600-9380 for a Service Technician.

Rinse

The Green Rinse LED light **does not** illuminate and the unit **does not** function, call RM Medical Designs at (352)-600-9380 for a Service Technician.

If the Green LED light **does not** illuminate and the unit **does** function, call for the Rinse LED to be replaced.

If the LED light **does** illuminate and the unit **does not** function, call for a Service Technician.

If flow **is slow or not flowing**, when in the **"Rinse Cycle"** through the scope, check :

- Cycle the main power button off/on, by pressing the main power button to turn the sink off and press again to turn it back on. This will reset the system.
- Unhook the scope first.
- Check fitting(s) and hose(s) for blockage, broken, damaged or kinked hose(s). If found, clean or replace.
- Reconnect the scope and restart the **"Rinse Cycle"**, check for flow. If still **not** functioning correctly, scope may have an internal blockage or it is damaged, fix or replace the scope.

If there is any output flow thru the purge pump pickup screen, located on lower left corner on the inside wall of sink basin, when facing the sink, discontinue use, and call for a Service Technician.

If LED still **does not** illuminate, and the unit still **does not** function, unplug the sink and discontinue use, call RM Medical Designs at (352)-600-9380 for a Service Technician.

SECTION 8 - TROUBLESHOOTING SECTION FOR SERVICE TECHNICIAN

The RM-S1 Sink is fully tested in order to maintain the utmost quality in workmanship. Sometimes in the field issues do arise that are beyond the in-house control of the manufacture, therefore this section should help to solve these issues.

	**NOTE:** **All LED lights, pumps, and solenoids are powered after the fuses.**
	**ELECTRIC:** **Never touch any of the electrical components with wet or damp hands, could potentially result in electric shock or death.**

Power

The Red Power LED **does not** illuminate after pressing power button : ***(See note at top of this section.)***

- Check GFI outlet for voltage output, should between 100-125 VAC, with an AC volt meter.
- If **no** voltage is present, have the facility maintenance department check the circuit breaker. If failed reset/replace.
- If **no** voltage is present, have the facility maintenance department check the GFI outlet. If failed reset/replace.

To see if the unit **does** function normally, press the **"Detergent"** button and look for flow into the sink basin. If there **is** flow, then the Red Power LED (#*SK-R12V*), light **is** bad, replace.

If the unit still **does not** function :

- Check supplemental protector (#*SK-R709*) on the back of sink, if failed "**press to reset**" button.
- If it **will not** reset or continues to trip, disconnect power supply feed plug from the power supply, if it stops failing, replace power supply (#*SK-RGS160*).
- If it is still failing, unplug the power cord from the GFI outlet, remove the inside power input box, check the wiring for shorted/frayed wire(s) fix or replace faulty wire(s)/power cord. If not found replace supplemental protector (#*SK-R709*).
- Remove the shelf cover and check the 10 Amp (ATO/ATC) fuse, if damaged, replace.
- If fuse **is** good check for :
    - Loose, shorted, burnt, or damaged wire(s), Power Button (#*SK-K945*), Power Supply (#*SK-RGS160*), Power Connector (#*SK-RKPC*), or Power Distribution Block (#*SK-D425*) with DC volt meter for 12VDC output.
- If no output **is** detected then replace faulty component(s) and recheck for output.
- Replace shelf service cover.

Drain

If the sink **does not** drain or drains **slow** :

- Check the P-trap for a clog or blockage, if found, remove blockage.
- If **not** found and is clear, contact facility maintenance department for further assistance.

Detergent

The Green Detergent LED light (#*SK-G12V*) **does not** illuminate, but the unit **does** function, replace light. ***(See note at the beginning of this section.)***

If the LED light **does** illuminate and the unit **does not** function and you **do not** hear the Detergent Pump (#*SK-PA2*) running, then replace pump.

If the LED light **does** illuminate and the unit **does not** function and you **do** hear the Detergent Pump running, then clean and/or replace Sink Detergent Solenoid Valve (#*SK-V825*), check tubing from the detergent bottle, check detergent bottle dispensing hand pump (#*13013*), re-prime the detergent tubing (see Section 2, Installation Verification, step 11).

If the LED light **does not** illuminate and there is **no flow** into sink basin and you **do not** hear the Detergent Pump running :

- Cycle the main power button off/on, by pressing the main power button to turn the sink off and press again to turn it back on. This will reset the system.
- Remove shelf cover and check the 3 Amp (ATO/ATC) fuse, if damaged replace.

If fuse is good check for:

- Loose, shorted, burnt, or damaged wire(s), Detergent Button (#*SK-K944*), Solenoid Valve (#*SK-V825*), Timer (#*SK-GH3D*), Detergent Pump (#*SK-PA2*), Power Distribution Block (#*SK-D425*), Relay (#*SK-D980*), with DC volt meter for 12VDC.
- If no output **is** detected, then replace any of the faulty component(s).

If there **is no discharge** of Enzymatic Detergent into the sink and you **do hear** the detergent pump running:

- Check fitting(s) and hose(s) for blockage, damage, or kinked hose(s). If found, clean or replace.
- Check to make sure the hose is connected to the pump dispensing nozzle and to the solenoid valve, if off, reconnect.
- Disconnect hose from dispensing nozzle, press down on nozzle to make sure nozzle is functioning. If not, replace nozzle.
- Check solenoid valve for blockage by disassembling valve, clean and inspect. If damaged, replace.
- Prime the Enzymatic Detergent system by pressing the "**Detergent**" button, with the detergent pump running **slowly press** the manual pump dispensing nozzle until it is dispensing into the sink basin. Inlet prime can be verified by no visual air bubbles in opaque Enzymatic Detergent hose. May need to be repeated until no air bubbles are in the hose. Replace shelf service cover.

Purge

The Green Purge LED light (#*SK-G12V*) **does not** illuminate, but the unit **does** function, replace light. ***(See note at top of this section.)***

If the LED light **does** illuminate and the unit **does not** function, replace Purge Pump (#*SK-P800*).

If the LED light **does not** illuminate and the unit **does not** function:

- Remove shelf cover and check the 5 Amp (ATO/ATC) fuse, if damaged, replace.

If fuse is good check for :

- Loose, shorted, burnt, or damaged wire(s), Purge Button (#*SK-K944*), Timer (#*SK-GH3D*), Purge Pump (#*SK-P800*), Power Distribution Block (#*SK-D425*), Relay (#*SK-D980*), with DC volt meter for 12VDC.
- If no output is detected, then replace any of the faulty component(s).

If flow **is slow or not flowing** and you **do hear** the main pump running :

- Check purge pump pickup screen for debris, located on lower left corner on the inside wall of sink basin, when facing the sink. Remove the debris by using brush (#*SK-TK724*).
- Unhook the scope.
- Check fitting(s) and hose(s) for blockage, damage, or kinked hose(s). If found, clean or replace.
- Check and clean inline purge pump strainer screen (#*SK-P170*).
- Check the sink purge pump check valve (#*SK-TK829*).
- Check the 5-port feed manifold (#*SK-C145*) for any type of blockage or debris, clean.
- Reconnect the scope and recheck for flow. If still not functioning correctly, scope may have an internal blockage or it is damaged, fix or replace the scope.

If flow **is still slow or not flowing correctly** replace Purge Pump (#*SK-P800*).

Replace shelf service cover.

Rinse

The Green Rinse LED light (#*SK-G12V*) **does not** illuminate, but the unit **does** function, replace light. ***(See note at top of this section.)***

If the LED light **does** illuminate and the unit **does not** function, clean or replace Rinse Solenoid (#*SK-V826*).

If the LED light **does not** illuminate and the unit **does not** function :

- Remove shelf service cover and check the 3 Amp (ATO/ATC) fuse, if damaged replace. If fuse is good check for :
- Loose, shorted, burnt, or damaged wire(s), Rinse Button (#*SK-K944*), Timer (#*SK-GH3D*), Sink Rinse Solenoid Valve (#*SK-V826*), Power Distribution Block (#*SK-D425*), Relay (#*SK-D980*), with DC volt meter for 12VDC.
- If no output is detected, then replace any of the faulty component(s).

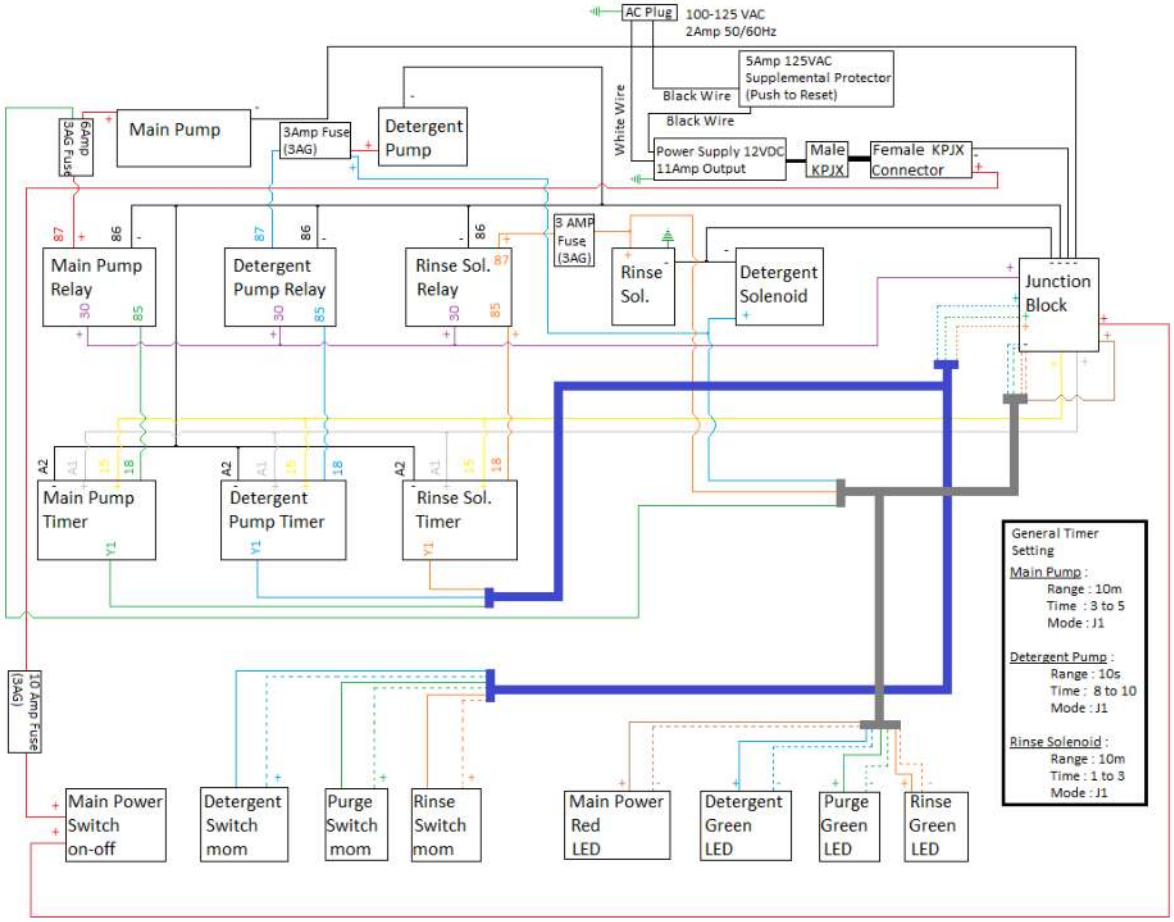
If flow is **slow or not** flowing :

- Unhook the scope first.
- Check fitting(s) and hose(s) for blockage, damage, or kinked hose(s). If found, clean or replace.
- Reconnect the scope and recheck for flow. If still **not** functioning correctly, scope may have an internal blockage or it is damaged, fix or replace the scope.
- Turn off water feed valve before checking solenoid valve for blockage by disassembling valve, clean and inspect. If damaged, replace. Then turn water feed valve back on.
- Check 5 port feed manifold ***(#SK-C145)*** for any type of blockage or debris, clean/replace.
- Check for a blocked or clogged main cold water 5-micron filter (#*SK-WHFL*), replace if found. (Turn off water feed first.)

If there is any output flow thru the purge pump pickup screen, replace the Check Valve (#*SK-TK829*) and Purge Pump (#*SK-P800*).

Replace shelf service cover.

Wiring diagram



SECTION 9 - CALIBRATION OF THE SINK FOR SERVICE TECHNICIAN

NOTE: **All three timers are preset from the factory in the "Mode" range of "J1". Changing of this range will result in the timer failing. Do not change this setting.**

Enzymatic Detergent Dispensing System

1. Attach Enzymatic Detergent solution hose, from the sink to the manual gallon hand pump nozzle that is used on the Enzymatic Detergent solution bottle.

2. To prime the Enzymatic Detergent system, press the **"Detergent"** button, if the green light does not illuminate or you do not hear the detergent pump running, see Troubleshooting Section. With the detergent pump running slowly press the manual pump dispensing nozzle until inlet is fully primed and dispensing into the sink basin. Prime can be verified by no visual air bubbles in opaque Enzymatic Detergent hose.

3. Repeat, if air bubbles are still in the hose. If **still not** functioning, see Troubleshooting Section.

4. With use of a measuring cup to verify output. Place the Sink Detergent Dispensing Nozzle *(#SK-C230)* hose into a measuring cup, press **"Detergent"** button one time, measure the output. The output is factory set to dispense the proper amount of the facility chosen RM Medical Designs Enzymatic Detergent product line of solutions, for proper dilution for the sink capacity of 7 gallons of water at the fill mark. The output can be readjusted, if needed.

5. To adjust the flow output, remove the shelf service cover, locate the gray **"Det."** labeled timer, by turning the center adjusting "arrow" screw pointer labeled **"Time"** (in seconds), clockwise to increase the running time of the pump or counter clockwise to decrease its running time. The rotation of the screw is from 0 to 10, **DO NOT TURN IT PAST THESE NUMBERS OR THE TIMER WILL BECOME DAMAGED AND MUST BE REPLACED**. The top "arrow" screw pointer is the **"Range"** function, which is factory set to **"10s"** for seconds, this will make the each **"Time"** range numbers 1 second long, if needed to run longer than 10 seconds total, chanced it to **"100s"**. Doing this will make the each **"Time"** range numbers a multiply of 10, (0=0 seconds, 1=10 seconds, 2=20 seconds, and so on). Turn the **"Time"** screw slowly and in very small increments, retest. Do this until proper amount is dispensed into sink basin.

6. Replace shelf service cover.

Main Purge System

It is set from the factory to run for a minimum of 3 minutes for used with the RM Medical Designs Enzymatic Detergent product line. The setting can be readjusted to run longer time if needed.

To set the timer :

1. Remove shelf service cover, locate the gray **"Main Pump"** labeled timer, make sure the top **"Range"** "arrow" screw pointer is set to **"10m"** for minutes. And the middle **"Time"** is set to 3, for a three-minute run time.

2. To adjust the running time of the Main Pump, by turning the center adjusting "arrow" screw pointer labeled **"Time"** (in minutes), clockwise to increase the running time or counter clockwise to decrease its running time. The rotation of this screw is from 0 to 10, **DO NOT TURN IT PAST THESE NUMBERS OR THE TIMER WILL BECOME DAMAGED AND MUST BE REPLACED**. Do this until proper new run time is reached.

3. Replace shelf service cover.

Rinse System

It is set from the factory to run for 1 minute of clean filtered water for the proper flushing of the scope channels. The setting can be readjusted to run for a longer time, if needed.

To set the timer :

1. Remove shelf service cover, locate the gray **"Rinse"** labeled timer. Make sure the top **"Range"** "arrow" screw pointer is set to **"10m"** for minutes and the middle **"Time"** is set to 1, for a one-minute run time.

2. To adjust the length of time that the Rinse Solenoid is in use, turn the center adjusting "arrow" screw pointer labeled **"Time"** (in minutes), clockwise to increase the usage time of the rinse solenoid. The rotation of this screw is from 0 to 10, **DO NOT TURN IT PAST THESE NUMBERS OR THE TIMER WILL BECOME DAMAGED AND MUST BE REPLACED**. Do this until proper new time is reached.

3. Replace shelf service cover and tighten the screws.

Warranty period shall be one-year limited coverage of parts only, providing that Section: Installation and Maintenance; Section 3 – Water Filter Service; Section: End of Day Procedure have been followed. Failure to do proper required service and any user modifications to the sink will void any and all written and/or verbal warranties.

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