



Medical Equipment Washer Operating Manual AQ-3500

Medical Equipment Washing & Decontamination Systems



Your Aqua Phase Includes the Following Options:

- | | |
|--|---|
| <input type="checkbox"/> Utility Wash Trays | <input type="checkbox"/> Digital Temp. Display |
| <input type="checkbox"/> Equipment Rack | <input type="checkbox"/> Lighted Wash Chamber |
| <input type="checkbox"/> Air Blow Dryer | <input type="checkbox"/> Muti Sized Wheel Rotator |
| <input type="checkbox"/> Fill and Drain Hoses | <input type="checkbox"/> 240 V 50 Hz |
| <input type="checkbox"/> Disinfectant Mixing Station | <input type="checkbox"/> Other _____ |

READ ALL MATERIAL PRIOR TO OPERATION



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Medical Equipment Washing & Decontamination Systems

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CAUTION & NOTICES

Medical Equipment Washing & Decontamination Systems

- DO:** Read this operations manual and follow all instructions.
- DO:** Call your dealer, sales representative, or the factory with any questions, need for more information, or to order supplies for your *Aqua Phase Washer*.
- DO:** Wear Personal Protective Clothing
- DO NOT:** Operate the machine without all the filter screens in place.
- DO NOT:** Climb into the Wash Chamber.
- DO NOT:** Wash any item with unsealed electrical components unless IP rated 65 or higher
- DO NOT:** Perform any type of service operation unless the machine is unplugged.
- DO NOT:** Use an extension cord between the wall outlet and the machine.
- DO NOT:** Try to modify the machine in any manner without factory approval.
- DO NOT:** Operate the machine in high foot traffic areas.
- DO NOT:** Use garden hoses for the fill and drain hoses.
- DO NOT:** Operate the machine unless you have been properly trained to run the machine.

Aqua Phase carries a complete line of supplies and parts and a variety of cleaning, rinse, and disinfectant solutions specifically formulated and chosen to work with your *Aqua Phase* System.

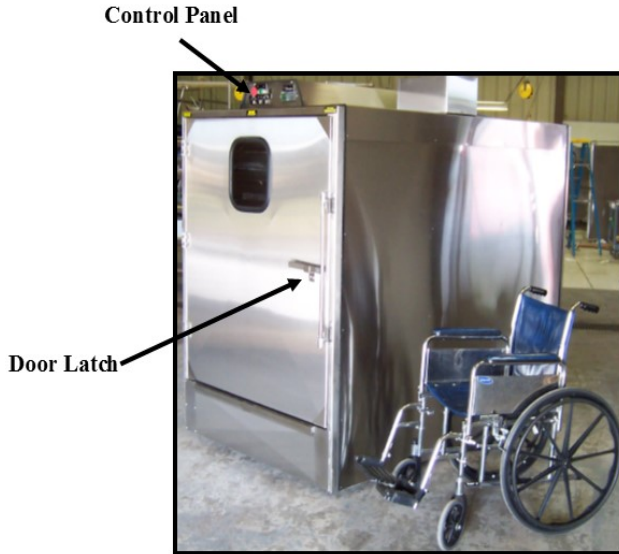
Order solutions, supplies, or parts by calling your dealer or *Aqua Phase* at 800-208-9274 or 715-463-5851.



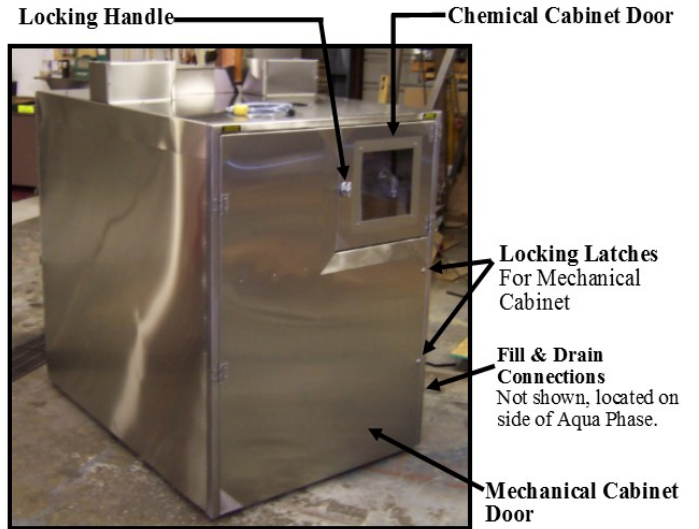
GENERAL INFORMATION

Medical Equipment Washing & Decontamination Systems

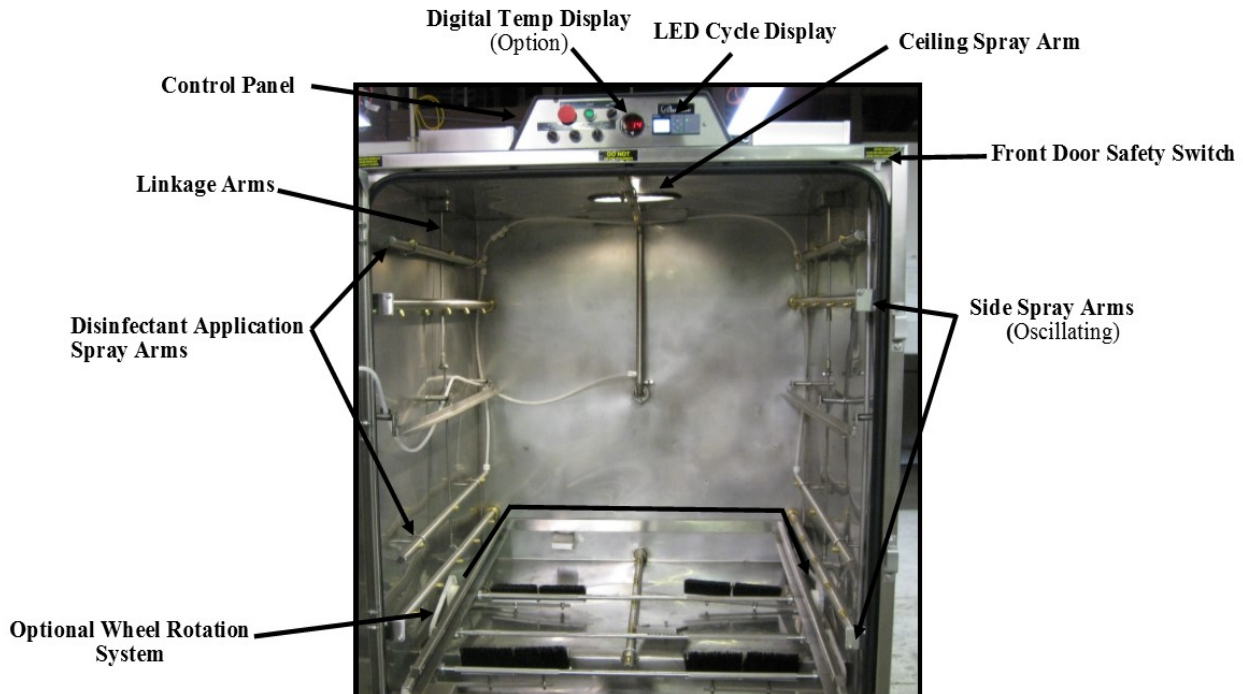
FRONT VIEW



REAR VIEW



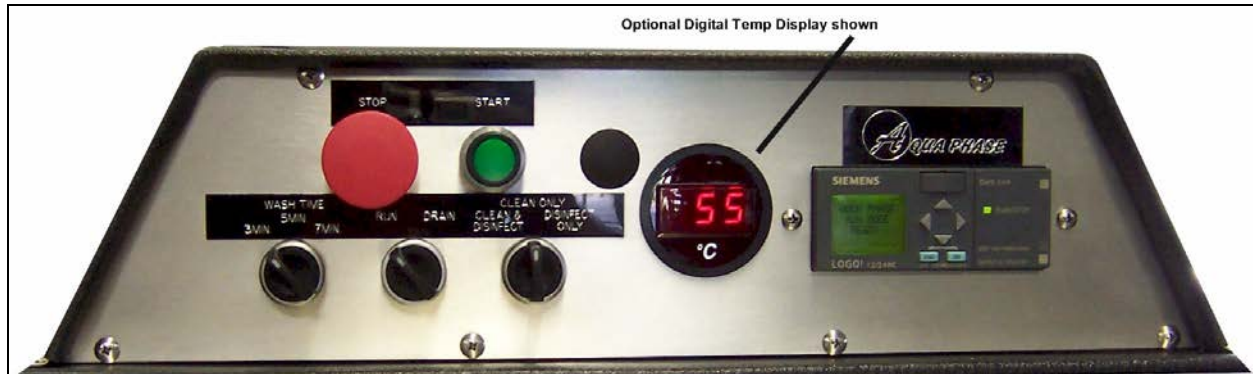
Inside Wash Chamber View





GENERAL INFORMATION CONTROL PANEL SWITCHES & FUNCTIONS

Medical Equipment Washing & Decontamination Systems



Switch	Options/Function
“STOP” Button	When pressed, will stop all Aqua Phase wash functions
“START” Button	Must be pressed to start any Aqua Phase wash function
WASH TIME Selector Switch	Allows you to select the length of wash: “3 MIN” = Three minute wash cycle “5 MIN” = Five minute wash cycle “7 MIN” = Seven minute wash cycle
“RUN/DRAIN” Selector Switch	“RUN”: Set to “RUN” to wash an item. “DRAIN”: Set to “DRAIN” to drain the water in the machine. The water should be drained when you are done washing for the day or if you relocate the machine. In order for the “DRAIN” function to work, the Wash Mode switch must be set to “CLEAN & DISINFECT” or “CLEAN ONLY”.
WASH MODE Selector Switch (Optional on AQ-1000 & AQ- 2000 Series)	“CLEAN & DISINFECT”: When this mode is selected, Aqua Phase will perform a complete wash and rinse for the time specified on the WASH TIME Selector Switch. It will then automatically apply disinfectant solution. “CLEAN ONLY”: When this mode is selected, Aqua Phase will perform a complete wash and rinse cycle for the length of time specified on the WASH TIME Selector Switch. It will not apply disinfectant. “DISINFECT ONLY”: When this mode is selected, Aqua Phase will apply disinfectant solution only. It will not wash or rinse.

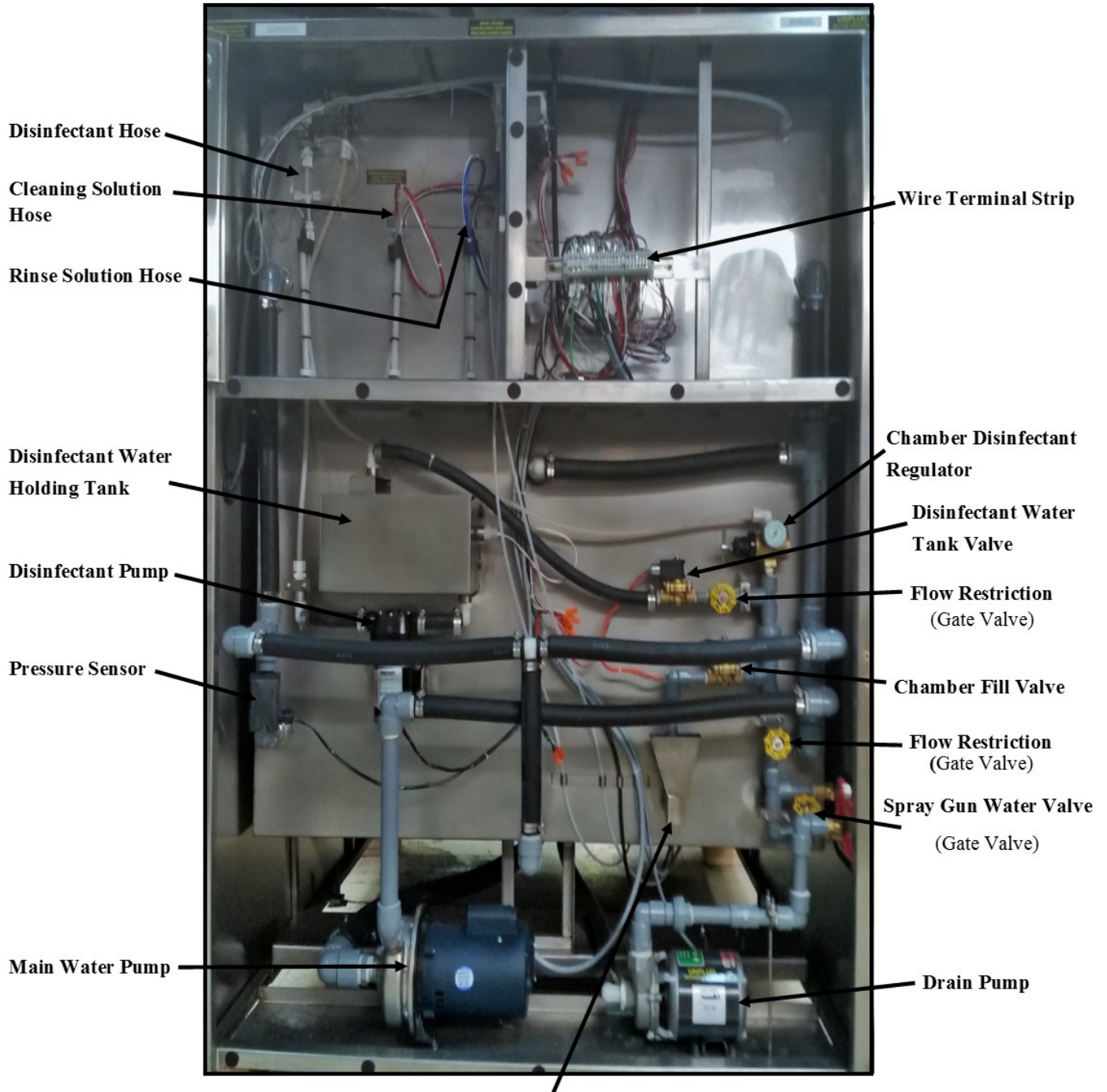


GENERAL INFORMATION

Mechanical Components

Medical Equipment Washing & Decontamination Systems

REAR VIEW



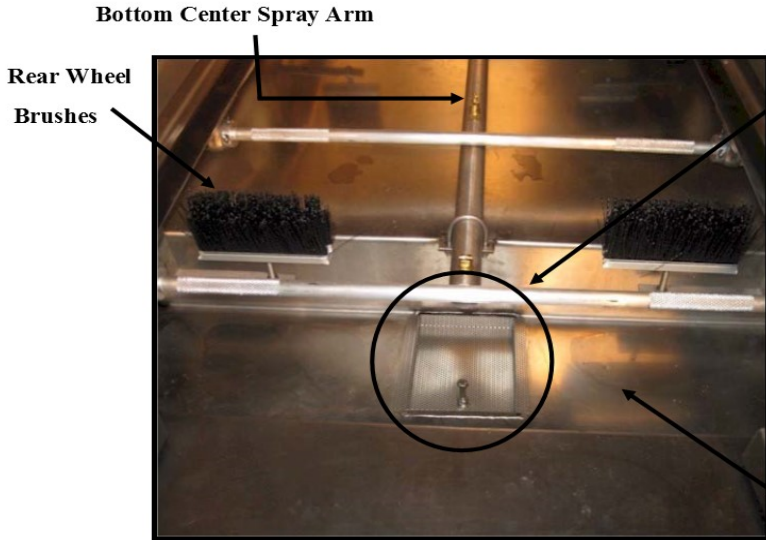


GENERAL INFORMATION

Filters and Screens

Medical Equipment Washing & Decontamination Systems

IT IS RECOMMENDED THAT YOU CHECK THE FILTERS DAILY FOR DEBRIS AND CLEAN THEM OFTEN.



Primary Filter Screen

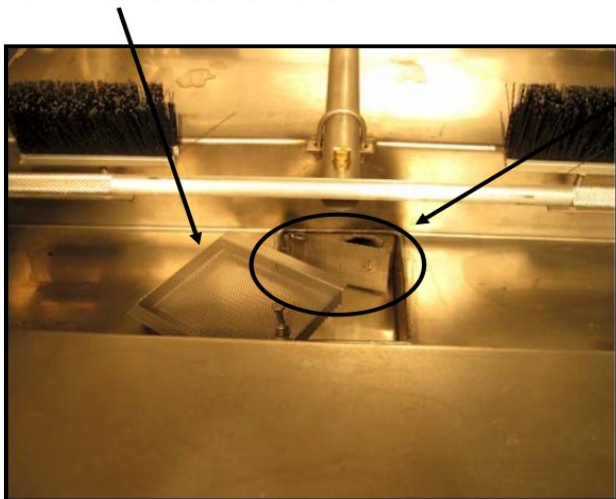
Located in the center of the water reservoir cover.

If this becomes clogged and prevents water from getting to the pump, the Aqua Phase will make a "Growling" noise in addition to low pressure in the spray system.

THIS SCREEN MUST BE IN PLACE AT ALL TIMES OR PUMP DAMAGE MAY OCCUR!

Picture of Aqua Phase Wash Chamber
Looking through the front door.

Primary Filter Screen (Removed)



Secondary Filter Screen

Located in the center of the water reservoir, under the Primary Filter Screen. Primary Filter Screen must be removed first in order to access the Secondary Filter Screen.

This screen is hinged. It can be flipped to the side for cleaning.

This screen serves as protection to the Main Water Pump.

THIS SCREEN MUST BE IN PLACE AT ALL TIMES OR PUMP DAMAGE MAY OCCUR!

Picture of Aqua Phase Wash Chamber.
Looking through the Front Door.

IF YOUR UNIT DOES NOT HAVE THE FILTER SCREENS SEATED PROPERLY, IN THEIR PLACE AT ALL TIMES, YOU CAN EXPECT THE SPRAY NOZZLES TO BECOME CLOGGED.



GENERAL INFORMATION RECOMMENDATIONS

Medical Equipment Washing & Decontamination Systems

Recommendations:

- Water Temperature: The Aqua Phase System will perform best with a hot water supply between 115°- 130°F (46°-55°C). If the supplied water temperature is below 105°F (40°C) water spotting or a film may occur on the equipment.
- Cleaning Solutions: Aqua Phase AQ-240 Cleaning Solution and Aqua Phase AQ-260 Rinse Agent are recommended for use in the unit.
- Disinfectants: Use a concentrated disinfectant with a dilution rate of 1 ounce per gallon (1:128). AQ-128 Neutral Disinfectant or AQ-130 Germicidal Disinfectant are recommended. Disinfectants with other dilution rates can be used, however, the dilution setting of the Aqua Phase unit must be modified. This is not difficult—see Technical Data Information Sheet for the Disinfectant Mixing Valve. Do NOT use Hydrogen Peroxide based disinfectants as these are damaging to the aluminum used on some medical equipment.
- Plumbing Connections: Use the hoses provided with Aqua Phase for the Fill and Drain connections rather than rigid piping. (See Fill and Drain Line Set up pages in this Operator Manual.) This will make access to the Chemical Cabinet and Mechanical Cabinet much easier if service is needed and will allow for periodic cleaning of the floor under the Aqua Phase unit.

Requirements:

- Electrical: Aqua Phase requires a 120 volt, 20 ampere electrical circuit. This circuit should be dedicated for Aqua Phase use only.
- Water Volume: Aqua Phase requires approximately 11.5 gallons of hot water per cycle. See "Aqua Phase Wash Sequence Description" for more details.
- Water Pressure: Aqua Phase requires a minimum of 35 PSI (Pounds per Square Inch) (2.42 Bar of water pressure).
- Cleaning Solutions: The use of Aqua Phase brand solutions is required for the Aqua Phase warranty to remain intact unless the use of other solutions have been approved, in advance, by the Aqua Phase factory. See Warranty Page for details.
- Plumbing Drain Hose: The discharge end of the Drain Hose must be secured at least 18" above floor level. (See Fill and Drain Line Set up pages in this Operator Manual).



BASIC SET-UP PROCEDURES

Medical Equipment Washing & Decontamination Systems

If Aqua Phase has been transported during freezing weather, allow the Aqua Phase to warm for 4-6 hours before running.

1. Read all Aqua Phase instructions and operations material
2. Remove Aqua Phase from pallet
3. Move Aqua Phase to location of operation. Ensure that Aqua Phase is level
4. Remove items packed inside the Wash Chamber for shipping (hoses, optional racks, trays, and chemical solutions will often be packed inside the Wash Chamber).
5. Connect the Fill Hose using supplied hose.
 - **DO NOT USE A GARDEN HOSE.**
 - Only use hoses rated for 150° F or higher for both fill and drain connections.
6. Connect the drain hose.
 - The **drain end of the hose MUST BE HIGHER than the drain hose connection on the washer.** See Fill and Drain Line page for information.
 - Drain hose must be securely fastened to the drain.
7. Once the Fill and Drain connections are secure, slowly turn on your hot water supply and inspect for loose connections.
8. For standard 120-volt operation, connect Aqua Phase to a standard 20 AMP electrical service
 - Press the reset button located on the Ground Fault Circuit Interrupter (GFCI) in the power cord.
 - **DO NOT** use a power extension cord between the wall outlet and the Aqua Phase
9. With Special Ordered **240-volt configuration, the end user must make the final connections and provide the appropriate cord plug with** Ground Fault Circuit Interrupter (GFCI) reset button.
 - Due to the variety of receptacle and connection types as well as local codes and regulations, all electrical connections should be performed by a qualified electrician in accordance with local codes and regulations.

Electrical connection J-box
inside Mechanical Cabinet



Electrical line inlet

(Continued next page)



BASIC SET-UP PROCEDURES (Continued)

Medical Equipment Washing & Decontamination Systems

Warning:

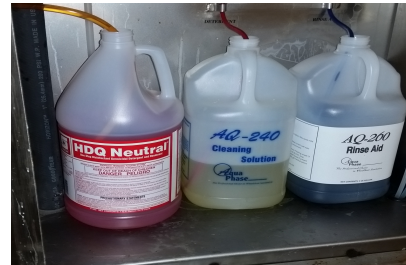
Wear Protective Clothing When Working With Any Chemicals.

Warning:

Consult the Material Safety Data Sheets located in the back of this manual and your company's hazardous substance policy before handling any chemicals.

Key to Aqua Phase chemical solution hoses:

- The **RED** or **YELLOW** hose is for **Detergent/** Cleaning Solution.
- The **BLUE** hose is for Rinse-Aid.
- The **CLEAR** hose is for Disinfectant, if installed.



1. Place Chemical Solutions in the Chemical Tray (located inside the Chemical Cabinet at the rear of the Aqua Phase) as the locations marked "**DETERGENT**" and "**RINSE-AID**".
2. Remove chemical bottle caps and place the appropriate colored hoses in bottle openings **RED** hose for Detergent/ **BLUE** hose for Rinse-Aid. **Do not dilute solutions.**
NOTE: If Disinfection Application System is installed, the disinfectant injection rate is preset at the factory for a dilution rate of 1 oz. per gallon of water. Contact the factory if adjustment of the injection rate is necessary.
3. On the control panel at the front of the machine:
 - Set the "WASH TIME" switch to "3 MIN".
 - Set the "RUN/DRAIN" switch to "RUN".
 - Set the wash mode switch to "CLEAN & DISINFECT" or "CLEAN ONLY" if **no** disinfectant application system is installed.
4. Close the front door.
5. Press the "**START**" button. The "**START**" button is located on the control panel at the front of the machine.
 - Allow **Aqua Phase** to run a two complete cycles before washing any items.

If **Aqua Phase** does not start, see the "**TROUBLESHOOTING: Will not start**" section of this manual or call the **Aqua Phase** factory for support.



Setup Information

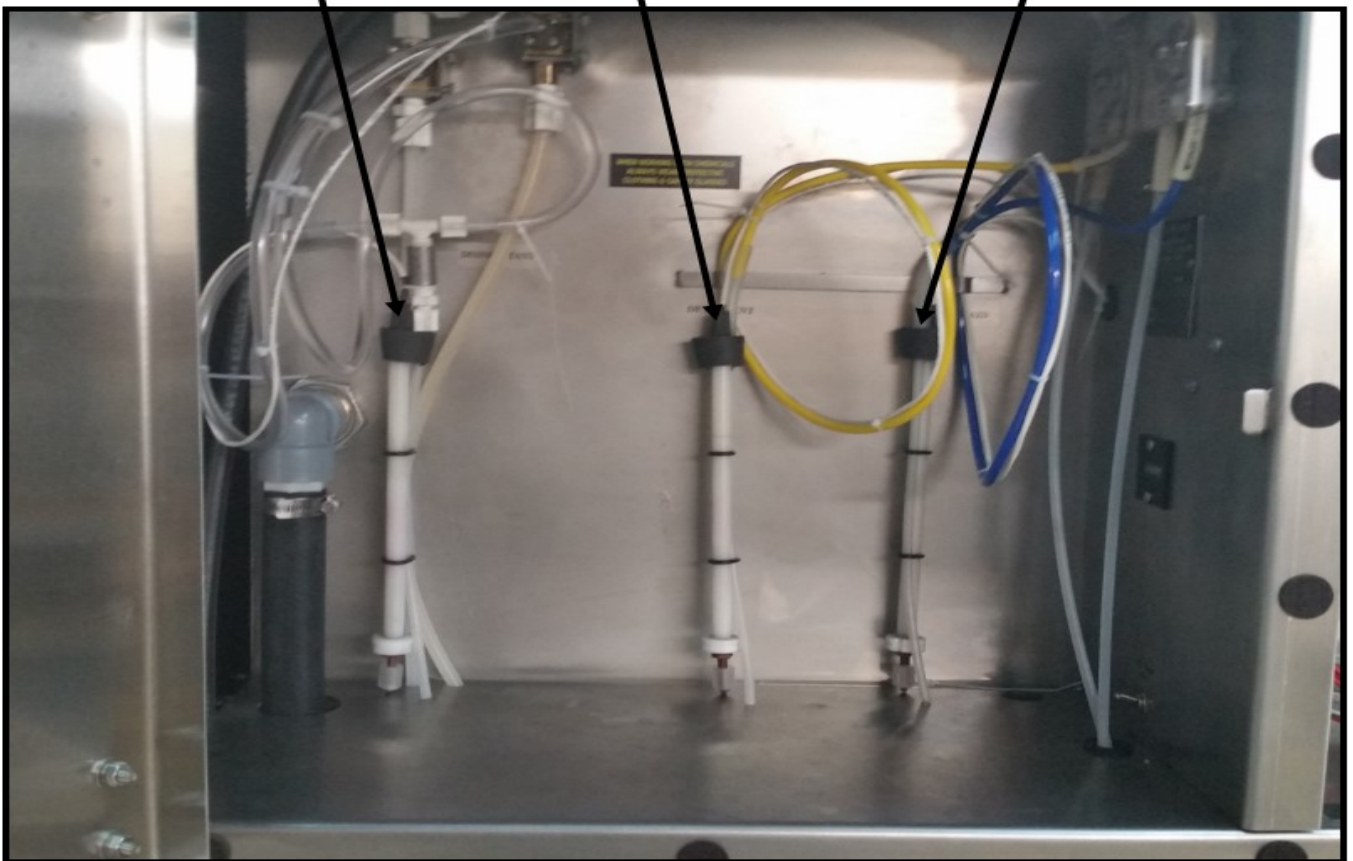
Looking into the Chemical Cabinet

Medical Equipment Washing & Decontamination Systems

**Disinfectant Level Control
& Suction Tube**

**Detergent Level Control
& Suction Tube**

**Rinse Level Control
& Suction Tube**



*Remove tie wraps to free Chemical Level Control Sensors then remove chemical bottle lids and insert Level Control Sensor and Suction Tube into Chemical bottle.

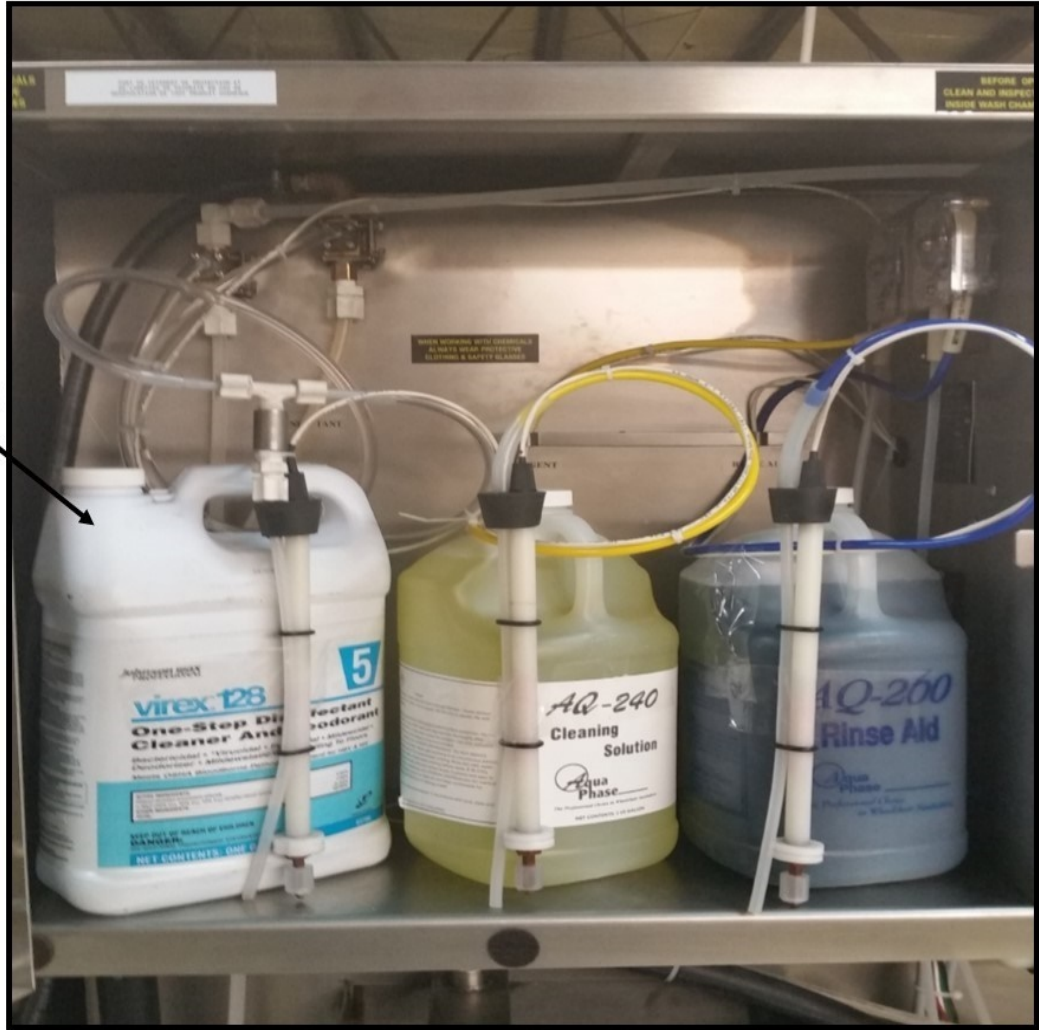


Setup Information

Looking into the Chemical Cabinet

Medical Equipment Washing & Decontamination Systems

(Disinfectant bottle may vary)



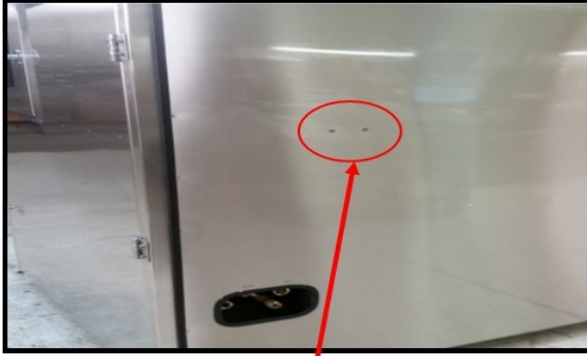
Remove bottle caps and insert Level Sensor/Suction Tube assembly into bottles.



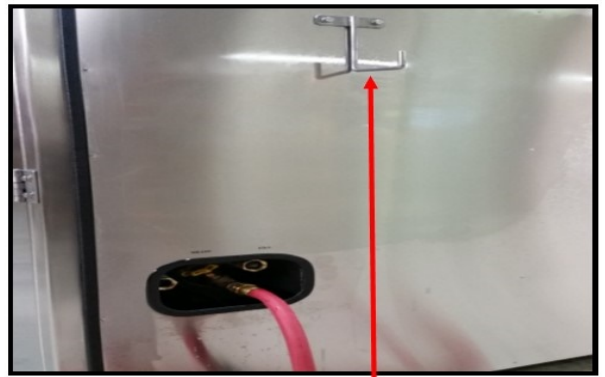
Setup Information

Exterior Spray Gun (Red Hose)

Medical Equipment Washing & Decontamination Systems



Step One: On Left Side locate the two mounting studs.

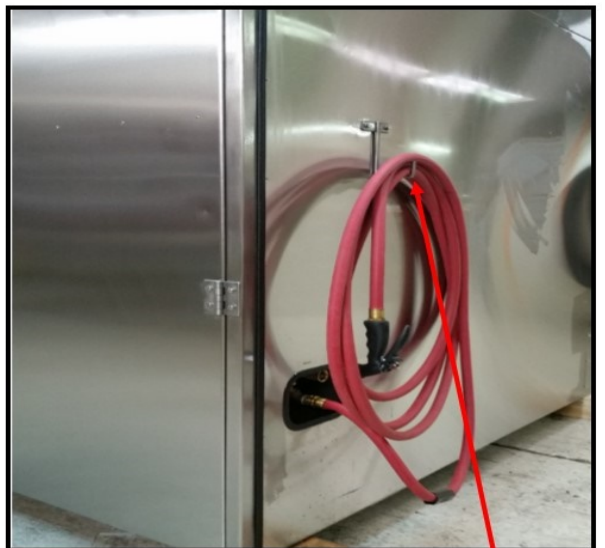


Step Two: Bolt hanger on to outside skin. (bolts provided)

Left Side - Fill and Drain Port



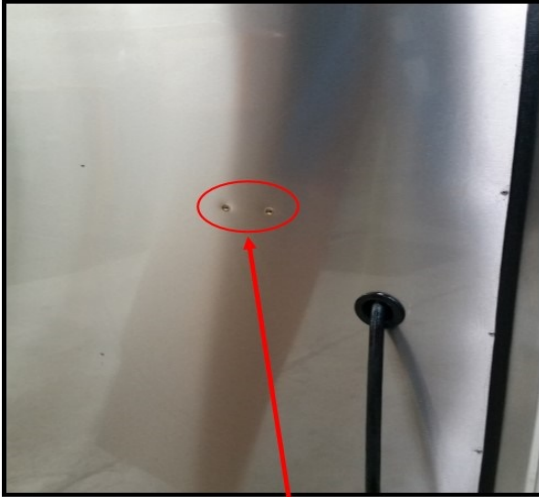
Step Three: Attach Red Spray Hose to this port.
Note: Drain Line and Fill Line are labeled.





Setup Information

*Exterior Disinfectant Spray Wand
(Black Hose)*



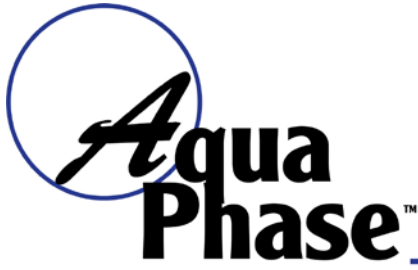
Step One: On Right Side, locate the two mounting studs.



Step Two: Bolt Hanger onto outside skin. (bolts provided)



Step Three: Hang Black Disinfectant Spray Hose



Setup Information

Level Probe Guard / Reservoir Bridges

Medical Equipment Washing & Decontamination Systems

Looking into Aqua Phase Wash Chamber



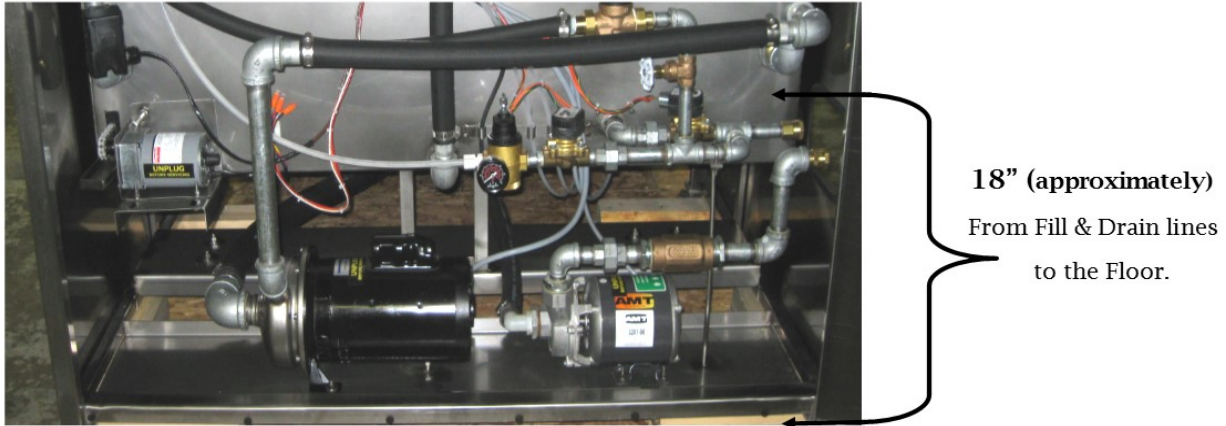
Level Probe Guard

Reservoir Bridges



FILL & DRAIN LINES

Medical Equipment Washing & Decontamination Systems



HOSES

A SET OF TWO (2) 10' LONG HOT-WATER RATED HOSES ARE INCLUDED WITH YOUR AQUA PHASE WASHER.

- The Aqua Phase Washer System has female, garden hose style connectors.
- One hose is for filling the washer (Fill Line) and is connected to your water supply .
- One hose is for draining the washer (Drain Line).

FILL LINE CONNECTION

- The Aqua Phase System is designed with a built-in Fill Line Air-Gap.
- See "Fill Line Options" diagram page for Water Supply options/methods.

DRAIN LINE CONNECTION

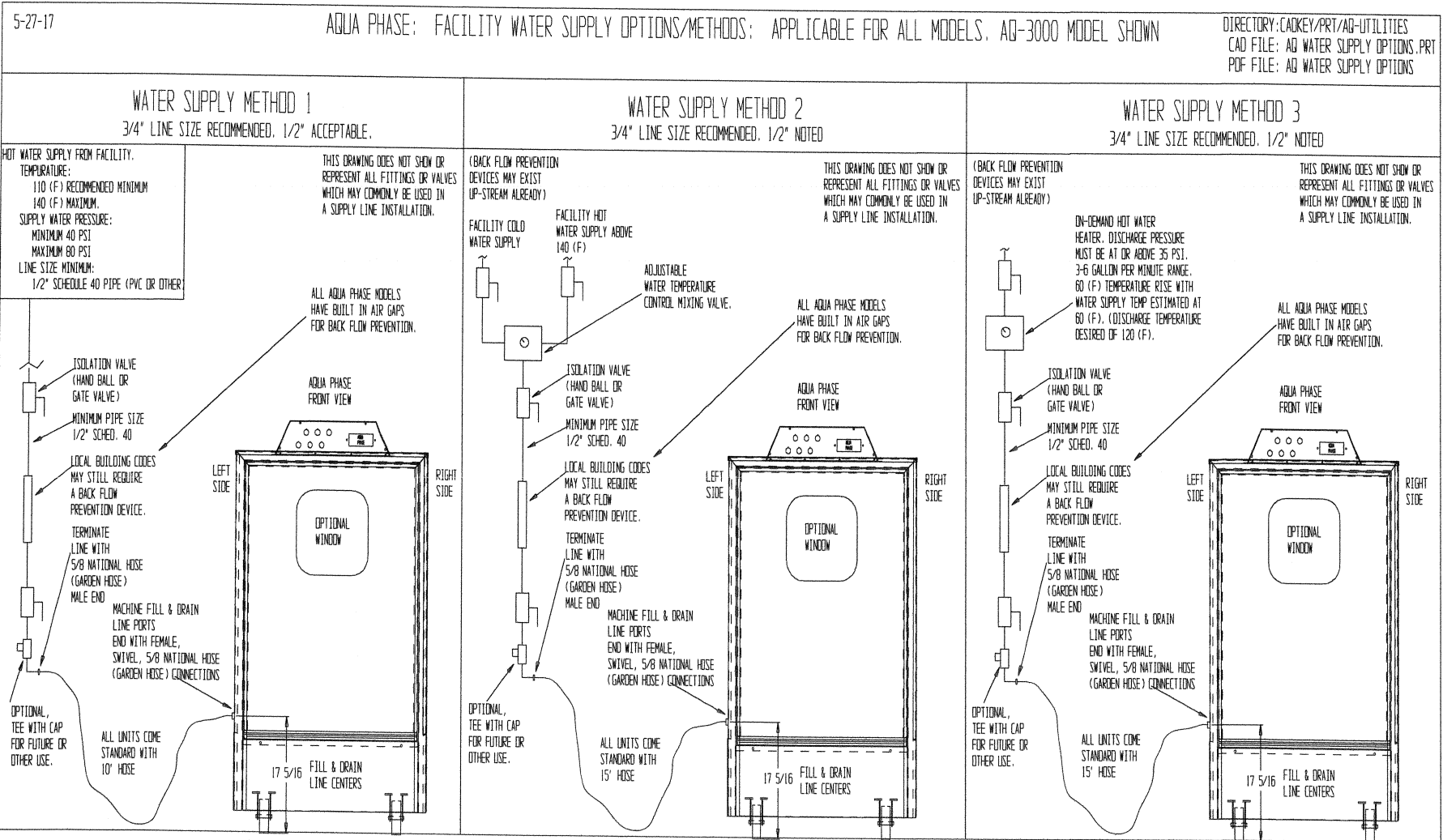
- The Aqua Phase System should be drained according to local plumbing codes.
 - **THE END OF THE DRAIN HOSE MUST BE HIGHER THAN THE DRAIN CONNECTION TO AQUA PHASE SYSTEM.**
 - If the Drain Hose is run directly to a floor drain, water will siphon out of the Aqua Phase during operation.
- Typically, the Drain Hose will run to a stand pipe or utility sink (similar to a home washing machine set-up). Use of standpipe is recommended. See "Drain Line Options" diagram page. Please check with your local building codes for stand-pipe requirements. A standpipe should be a minimum of 2" diameter with a minimum height of 32".
- The drain hose must be secured at the drain to prevent a whipping action.

PLEASE CALL CS WC/RJ CUG TECHNICAL SERVICE AT 1-800-208-9274 WITH ANY QUESTIONS



FILL LINE OPTIONS

Medical Equipment Washing & Decontamination Systems



Aqua Phase, A Division Mid-State Stainless Inc. • 330 W. Benson Ave. • PO Box 228 • Grantsburg, WI 54840 • USA
800-208-9274 • 715-463-5851 • FAX: 715-463-5853 • Email: aquaphase@medwashers.com • WEB: www.aqua-phase.com



DRAIN LINE OPTIONS

Medical Equipment Washing & Decontamination Systems

5-27-17

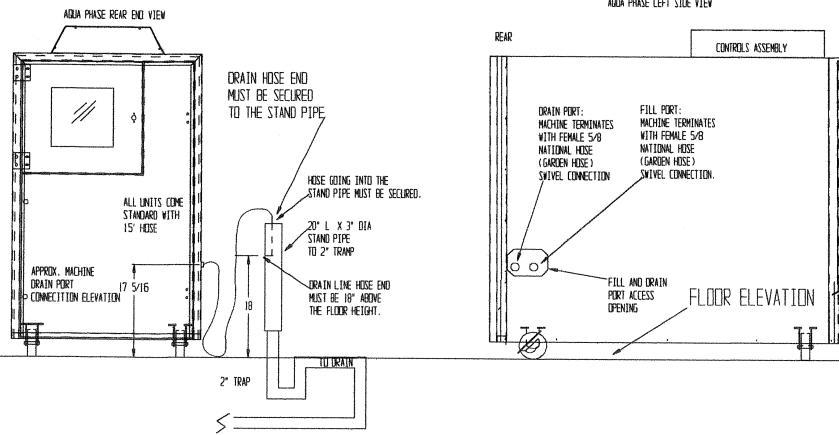
AQUA PHASE: FACILITY DRAIN SYSTEM OPTIONS/METHODS: APPLICABLE FOR ALL MODELS. AQ-3000 MODEL SHOWN

DIRECTORY: CADKEY/PRT/AQ-UTILITIES
 CAD FILE: AQ WATER SUPPLY OPTIONS.PRT
 PDF FILE: AQ-DRAIN SYSTEM OPTIONS

NOTES ABOUT AQUA PHASE DRAINING: ALL AQUA PHASE UNITS ARE A PUMP TO DRAIN SYSTEM. HOSE IS RECOMMENDED BETWEEN THE AQUA PHASE MACHINE AND THE RIGID DRAIN PIPING SYSTEM. THE DRAIN PUMP IS A CENTRIFUGAL, OPEN IMPELLER, TYPE. THE DRAIN DISCHARGE PRESSURE AT THE MACHINE IS 20-25 PSI. DRAIN HOSE ENDS MUST BE SECURED AS HOSE END MAY "WHIP" IF NOT SECURED. DRAIN RATE IS 3.5-7 GALLON PER MINUTE PENDING THE DRAIN LINE SIZE AND DISTANCE TO THE FINAL DRAIN LOCATION. 3/4" PIPE, SCHEDULE 40, PVC OR OTHER IS RECOMMENDED. AQUA PHASE IS STILL FUNCTIONAL WITH 1/2" BUT THE TIME TO DRAIN INCREASES.

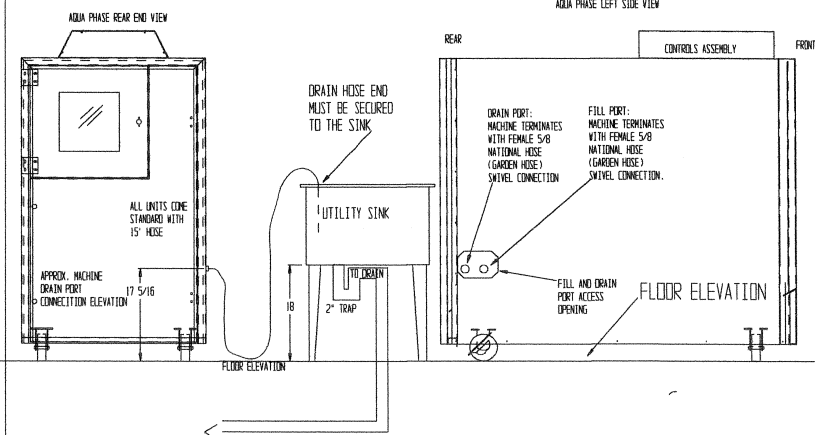
CHECK LOCAL CODES FOR APPROVAL AND ACCEPTABILITY.

DRAIN OPTION/METHOD 1



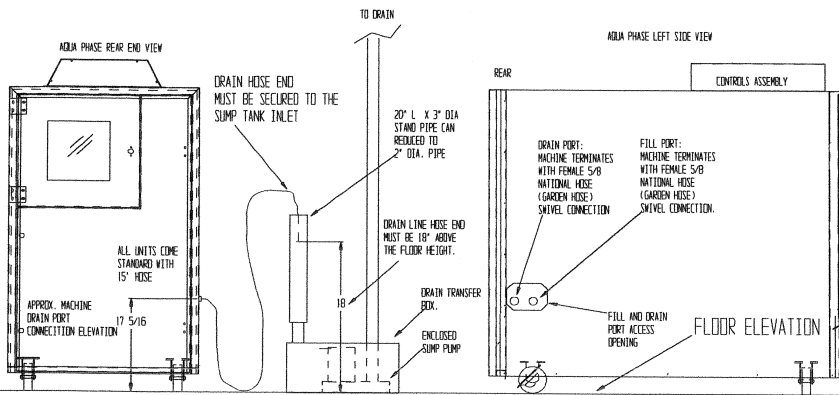
CHECK LOCAL CODES FOR APPROVAL AND ACCEPTABILITY.

DRAIN OPTION/METHOD 2



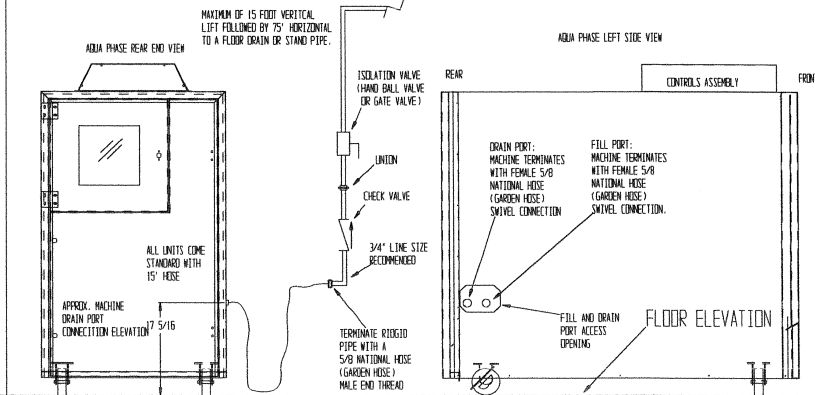
CHECK LOCAL CODES FOR APPROVAL AND ACCEPTABILITY.

DRAIN OPTION/METHOD 3



CHECK LOCAL CODES FOR APPROVAL AND ACCEPTABILITY.

DRAIN OPTION/METHOD 4





CONTROLLER INFORMATION



Message One

```

A Q U A   P H A S E
R U N   M O D E
Ready
  
```

Run mode selected.

- Doors closed.
- Ready to start.

Message Two

```

A Q U A   P H A S E
D R A I N   M O D E
Ready
  
```

Drain mode selected.

- Doors closed.
- Ready to start.

Message Three

```

A Q U A   P H A S E
W A S H   C Y C L E
Filling
  
```

Machine filling for wash cycle

- Run mode selected.
- Doors closed.
- "Start" button pushed.

Message Four

```

A Q U A   P H A S E
W A S H   C Y C L E
In Progress
  
```

Machine in Wash Cycle.

- Machine done filling for wash cycle.
- Detergent solution automatically injected.
- Wash cycle will run for time selected (3,5, or 7 minutes)

Message Five

```

A Q U A   P H A S E
D r a i n
In Progress
  
```

Machine done with wash cycle.

- Wash water is being drained **OR**
- Drain mode selected and "Start" button pushed.

Message Six

```

A Q U A   P H A S E
R I N S E   C Y C L E
Filling
  
```

Machine beginning Rinse cycle.

- Wash cycle complete
- Wash water drained
- Machine is filling with fresh water for Rinse cycle.

Message Seven

```

A Q U A   P H A S E
R I N S E   C Y C L E
In Progress
  
```

Machine in rinse cycle

- Machine done filling for rinse cycle.
- Rinse solution automatically injected. Rinse cycle approximately 1.5 minutes.

Message Eight

```

D I S I N F E C T A N T
A P P L I C A T I O N
In - Progress
  
```

Disinfectant Application cycle.

- Fresh water mixed with" disinfectant solution.
- Item in Wash Chamber sprayed" with solution.
- 30Clean & Disinfect Selected ""before wash cycle started.
- ""Wash & Rinse cycle done.
- 40Disinfect Only selected & ""Start" button pushed.

Message Nine

```

A Q U A   P H A S E
C y c l e
C o m p l e t e
O p e n   D o o r
  
```

Machine completed operation.

- Front door of Wash Chamber must be opened before next operation can begin.
- Item removed/loaded.
- Wash Chamber inspected for debris.
- Safety switches operational.

Message Ten

```

W A S H   S T O P P E D
* * * * *
C h e c k   L o w
L e v e l   S e n s o r
  
```

Check Low Level Float

- **After Wash Cycle, prior to draining of wash water.**
- Is float is free of debris?
- Is float is operating properly?
- **Call technical support if this does not solve problem**



OPERATING PROCEDURES & WASH SEQUENCE

Medical Equipment Washing & Decontamination Systems

OPERATING PROCEDURES

1. **Load the item** to be washed into wash chamber and close the front door.
For Aqua Phase units equipped with the Wheelchair Wheel Rotation System:
 - a. For washing wheelchairs - position the front, small diameter wheels into the Wheel Carriage loading rack, tip the wheelchair forward, and slide it into the wash chamber until the rear, large diameter wheels rest between the two drive bars closest to the door.
 - b. For washing items other than wheelchairs - it is recommended that you use the Equipment Rack for easy loading, positioning, and unloading.
2. **Select the "WASH TIME"** (3, 5, or 7 minutes) on the control panel. choose the length of wash time based on the condition of the item to be washed.
3. **Set the "RUN/DRAIN"** switch on the control panel to **"Run"**.
4. **Select the wash mode** ("Clean & Disinfect", "Clean Only," or "Disinfect Only") on the control panel if your Aqua Phase is equipped with the Disinfectant Application System.
5. Push the **"START"** button on the control panel.

WASH SEQUENCE

1. The current status of the Aqua Phase system ("Wash cycle", "Rinse cycle", "Cycle complete", etc.) will be shown on the LCD display of the control panel.
2. After pressing the **"START"** button, the computer will check to see if there is water in the water reservoir. If the reservoir is not full of water, **Aqua Phase** will automatically fill to the appropriate level. The reservoir holds approximately 5.5 gallons.
3. When the reservoir is full, the pump will start and begin the wash cycle, spraying the item being washed. AQ-240 Cleaning Solution is automatically injected shortly after the wash cycle begins.
4. The Aqua Phase will now be in the wash phase, and will continue for the wash time selected of 3, 5, or 7 minutes.
5. When the wash phase is complete, the dirty wash water will be pumped out of the Aqua Phase to the drain.
6. Aqua Phase will automatically refill to the appropriate level with fresh water.
7. After the reservoir is filled with water, the pump will start and the Aqua Phase will begin the rinse phase. The AQ-260 Rinse Agent is automatically injected shortly after the rinse phase begins. The rinse cycle will last for approximately 90 seconds.
8. If you have the Disinfectant Application System, the cycle will automatically begin if **CLEAN & DISINFECT** was selected.

TO DRAIN THE MACHINE MANUALLY

During normal automatic operation, the rinse water remains in the machine and will be the wash water for the next item placed in the chamber. If you choose, you may drain the rinse water prior to beginning the next wash cycle.

- Set the **"RUN/DRAIN"** switch to **"DRAIN"**.
- Push the **"START"** button. The machine will drain the water.
- Prior to beginning the next wash cycle, set the **"RUN/DRAIN"** switch to **"RUN"**.
- When the next wash cycle begins, the machine will automatically fill with fresh water.



DISINFECTANT APPLICATION SYSTEM

Medical Equipment Washing & Decontamination Systems

Follow all instructions provided by the manufacturer of the disinfectant solution that you choose to use including dwell time, application, removal, and proper handling of the disinfectant.

The Disinfectant Application System allows you to automatically apply a disinfectant solution. The disinfectant solution used with the Aqua Phase Disinfectant Application System and the proper use of that disinfectant solution is responsible for the level of disinfection results that achieved.

Disinfectant Solution:

- The Disinfectant Application System is preset at the factory to apply disinfectant at the rate of 1 ounce per gallon of water.
- *Aqua Phase* uses 100 to 110 ounces of water per disinfectant cycle.
- *Aqua Phase* can provide disinfectant solution products specifically formulated to work with the *Aqua Phase System*. Order your solutions by calling your dealer or **Aqua Phase** at 800-208-9274.

Disinfection Application System Operating Instructions:

- Be sure that you are using a 1-ounce per gallon disinfectant. If not, see the notes below.
- Place a one (1) gallon container of your disinfectant solution in the Chemical Tray (located inside the Chemical Cabinet at the rear of the Aqua Phase).
 - Insert the **CLEAR** hose into the disinfectant container.
 - Close the Chemical Cabinet door.
- At the front of the *Aqua Phase*, select the desired WASH MODE: Clean Only, Clean and Disinfect, or Disinfect Only.

Note:

If you choose to use a disinfectant that calls for a different dilution rate, *Aqua Phase* can be modified to accommodate that rate. For information on how to accomplish this modification, please call the factory for assistance or review the Disinfectant Mixing Valve "Dema" technical information included with this manual.



DAILY OPERATIONS

Medical Equipment Washing & Decontamination Systems

Start-up Procedures:

1. Check that the Aqua Phase Washer is connected to a water supply and that the water supply is turned on. Then confirm the Aqua Phase Fill and Drain Hose Connections are properly connected and secure.
2. Check the Primary Filter Screen inside of the Aqua Phase Reservoir to make sure you have a clean Primary Filter Screen. Make sure that the screen is put back in place properly.
3. Check the chemical supply levels, by looking in the Chemical Cabinet – located in the back, or side, of your Aqua Phase Washer.
4. Plug in the Aqua Phase and press the 'Reset' button located on the GFCI plug.

Operating Procedures

1. Load the item to be washed into the Wash Chamber, then close and latch the front door.
2. Set the 'Wash Time' (3, 5, or 7 minutes) selector switch, located on the Control Panel, to the desired wash time.
3. Set the 'Run/Drain' selector switch to 'Run'.
4. Select the Wash Mode ← Only if your Aqua Phase Washer is equipped with the Disinfectant Application System feature.
5. Push the green 'Start' button located on the Control Panel. Aqua Phase Washer will now fill with water & begin the cycle selected.
6. When cycle is complete, open door of washer.
***Caution when opening the door-steam will come out of the door. The door and the item washed may be hot to the touch right away.*
Optional Step: Place a drying mat on the floor by the Aqua Phase Washer Door to soak up water when you remove items from the washer.
7. Take the items out of the washer. On drying mat, tip the wheelchair on its handles to let the water on the seat run off.
8. Push the red 'Stop' button at any time during the cycles if problems arise.

Shut-Down Procedures:

1. When you are finished for the day, set the 'Run/Dry' selector switch to 'Drain'.
2. Press the green 'Start' button to completely drain the water out of the washer. Door has to be closed.
3. Open the door and clean the debris from the Primary Filter Screen – located just inside on the bottom of the Wash Chamber. Make sure the Filter Screen is put back in place properly.
4. Wipe clean the High Water Level Control (located inside, on the bottom of the Washer Chamber) clean.
5. Wipe the Low Water Level Control (located inside, on the bottom of the Wash Chamber) clean.
6. Turn off the water supply to the Aqua Phase Washer.
7. Un-plug the Aqua Phase Washer from the wall/power supply.
8. Open the front door of the Aqua Phase Washer if it will be a couple of days before next use.



DAILY OPERATIONS LOG

Medical Equipment Washing & Decontamination Systems

	DATE													
DAILY START-UP:														
Water Supply On														
Fill & Drain Hoses Secure														
Primary Filter Screen Clean														
Primary Filter Screen in Place														
Wipe Reservoir Area Floor Clean														
AQ-240 Cleaning Solution Level														
AQ-260 Rinse Solution Level														
Disinfectant Solution Level														
GFCI is Set														
"READY" message Displayed														
DAILY SHUT DOWN:														
Aqua Phase Unit Drained														
Primary Filter Screen Clean														
Primary Filter Screen in Place														
Wipe Reservoir Area Floor Clean														
High Level Control is Clean														
Low Level Control is Clean														
Run "Disinfectant Only" Cycle														
Check AQ-240 Cleaning Solution Level														
Check AQ-260 Rinse Solution Level														
Check Disinfectant Solution Level														
WEEKLY:														
Primary Filter Screen Clean														
Secondary Filter Screen Clean														
Wipe Reservoir Floor Clean														
Wipe High Water Level Control														
Wipe Low Water Level Control														
Check AQ-240 Cleaning Solution Level														
Check AQ-260 Rinse Solution Level														
Check Disinfectant Solution Level														
Cycle Counter Reading														



WEEKLY, MONTHLY & ANNUAL PROCEDURES

Medical Equipment Washing & Decontamination Systems

Weekly (or as needed):

WARNING--Wear Personal Protective Gear/Clothing when working with ANY chemicals.

1. Inspect the front door gasket for wear or damage. Replace if necessary.
2. Check the Spray Nozzles & Level Sensors (located inside the Wash Chamber) for clogging. Clean if necessary.
3. Check that the Drain Trough Hinged Reservoir Screen is clean & in place. This is located at the bottom, inside front of the Wash Chamber.
4. Check the Power Cord for any wear or damage. Test and reset the GFCI in the Aqua Phase Power Cord. *(If the Power Cord appears to be damaged in any way, do not operate the Aqua Phase.)*
5. Use de-liming agent to reduce scale build-up if needed. Contact Aqua Phase to order **AQ-725 De-liming Solution**.

Monthly:

WARNING--Wear Personal Protective Gear/Clothing when working with ANY chemicals.

1. Perform the de-liming process using the Aqua Phase, **AQ-725 De-liming Solution**. The instructions are in the Aqua Phase manual, and printed on the AQ-725 De-liming Solution bottle.
2. If included in the water supply line to your Aqua Phase, change the Filter Element that is inside the Water Filter Housing.
3. For Infection Control reasons, if possible change/switch the manufacture, brand, or type of concentrated disinfectant that you are using to Aqua Phase every 30-days.

Semi-Annual:

WARNING--Wear Personal Protective Gear/ Clothing when working with ANY chemicals.

1. Confirm the Disinfectant Concentrate Solution suction rate. *(This should be 3/4 to 1 ounce of Disinfectant Concentrate Solution suctioned into the Aqua Phase per 'Disinfectant Only' cycle performed.)*
2. Inspect, check and adjust the Drive Chains of the Wheelchair Wheel Rotation System *(option)*.
3. Inspect, check and change (as needed) the Wheel Cleaning Brushes of the Wheel Rotation System.
4. Inspect and replace if needed, the Primary Filter Screen.

Annual:

Complete the Annual Aqua Phase Re-Validation Check Report. (The Check List/Report is available from Aqua Phase upon request). Re-Validation is completed for you as part of an Aqua Phase Service Agreement.



Medical Equipment Washing & Decontamination Systems

PERIODIC OPERATIONS LOG

	DATE												
MONTHLY:													
Test Ground Fault Circuit Interrupter													
Inspect Door Gasket													
Inspect Spray Nozzels for Cloggs													
Run Deliming Process													
6-MONTH INTERVAL													
Inspect Chamber Disinfectant Nozzle Spray													
Inspect / Adjust Drive System Chains													
Inspect Spray Arm Timing													
Validate Disinfectant Consumption													
12-MONTH INTERVAL													
Replace Detergent Pump Hose													
Replace Rinse Pump Hose													
Inspect Pressure Regulator													



DE-LIMING INSTRUCTIONS

Medical Equipment Washing & Decontamination Systems

WARNING: WEAR PERSONAL PROTECTIVE GEAR/ CLOTHING WHEN WORKING WITH ANY CHEMICALS.

Consult the Material Safety Data Sheets & your company's Hazardous Substance Policy before handling any chemicals.

Read all instructions before proceeding.

The following detailed instructions are for "De-liming" your Aqua Phase Washer if it becomes necessary.

Call the factory with any questions regarding these instructions.

For your convenience, order **AQ-725 De-liming Solution** directly from Aqua Phase by calling 800-208-9274.

As with any cleaning operation using water, it is recommended that soft water be used.

Hard water contains a relatively high level of lime, calcium, and iron. Hard water will affect cleaning performance the same as it does your home laundry. After an extended period, the inside stainless steel walls of Aqua Phase may accumulate a white deposit.

If the build-up is extensive, we recommend the use of the **AQ-725 De-liming Solution**. A deliming solution purchased from a local hardware store such as "CLR" will help, but not as effective as the industrial grade Aqua Phase AQ-725 Deliming Solution.

We have specifically formulated the AQ-725 De-liming Solution to be used weekly, or as needed, to keep your Aqua Phase free from mineral build-up. The easy ready-to-use quart bottles are pre-measured for the proper dilution rate for a single application. Packaged with 12 quarts per case, a routine schedule for deliming your Aqua Phase can be easily maintained.

DANGER: Causes eye and skin burns. Harmful if swallowed. Contains Hydroxyacetic and Phosphoric Acids.

FIRST AID: In case of eye contact, immediately flush with running water for at least 15 minutes and obtain medical aid. For skin contact, flush with running water. If swallowed, do not induce vomiting. Drink large amounts of water and call physician immediately.

MIX ONLY WITH WATER - DO NOT USE ON ALUMINUM

FOR INDUSTRIAL USE ONLY

KEEP OUT OF THE REACH OF CHILDREN

*****Continued on next page*****



DE-LIMING INSTRUCTIONS (continued)

Medical Equipment Washing & Decontamination Systems

DO NOT CLIMB INTO THE WASH CHAMBER

1. Carefully read and follow the notices and instruction labels of the de-liming solution you will be using.
 2. Drain Aqua Phase.
 3. Remove the Rinse and Detergent hoses from the cleaning solution bottles inside the Mechanical Cabinet at the rear of the machine.
 4. Set the 'RUN/DRAIN' switch to "RUN".
 5. Set the mode switch to "CLEAN".
 6. Set the wash cycle time to "7 minutes" or the longest time cycle available.
 7. Press the "START" button and allow Aqua Phase to fill.
 8. As soon as Aqua Phase starts to spray water, press the "STOP" button.
 - At this point, the Aqua Phase water reservoir will be full. The Aqua Phase reservoir holds 5.5 gallons of water.
 9. Open the front door and pour the proper amount of de-liming solution directly into the water that is in the reservoir of the machine.
 - **BE CERTAIN** to add the proper amount of de-liming solution according to the dilution rate recommended by the manufacturer of the deliming solution concentrate you are using (the *Aqua Phase* reservoir holds 5.5 gallons of water).
 10. Close the front door and press the "START" button.
 - *Allow Aqua Phase to run for no longer than 4 minutes.*
 - Press the "STOP" button.
 11. Wait approximately 5 minutes.
 - Set the wash cycle time to "7 minutes" or to the longest time cycle available.
 - Press the "START" button, and allow *Aqua Phase* to run a complete cycle.
- NOTE:** Aqua Phase may not stop draining during Step 11 above.

Continued on next page



DE-LIMING INSTRUCTIONS (continued)

Medical Equipment Washing & Decontamination Systems

11. (continued)

The de-liming solution will normally create foam inside the Wash Chamber. The foam may affect certain sensors that control the filling and draining of water.

If Aqua Phase does not stop draining after a few minutes, perform the following:

- a) Press the "STOP" button and wait a few minutes until the foam dissipates.
- b) Press the "START" button and allow Aqua Phase to do a complete cycle.
- c) Repeat the preceding Steps a) and b) until Aqua Phase starts draining normally.
- d) Return to Step 11 above.

12. Press the "START" button and allow Aqua Phase to run another complete cycle.

13. Examine and clean the Reservoir Filter Screens.

- Repeat steps 10 – 13 until the filter(s) collect minimal debris.
- You may select "**3 minutes**" or the shortest time cycle available when repeating Steps 10 – 13.

14. Examine and clean the reservoir filter located inside the wash chamber reservoir.

15. Drain Aqua Phase.

16. Disconnect Aqua Phase from power source.

17. Shut-off the water supply to Aqua Phase.

18. **CHECK FOR DEBRIS IN THE SPRAY NOZZLES**

If your unit does not have the reservoir filter screens seated properly in place at all times, expect most of the spray nozzles to become clogged during the de-liming of the *Aqua Phase*. After completing the de-liming processes above, check the spray nozzles to make certain they are not clogged.



AQUA PHASE MEDICAL EQUIPMENT WASHER LIMITED WARRANTY

Medical Equipment Washing & Decontamination Systems

Aqua Phase washers are warranted by Mid-State Stainless, Inc. (MSSI) to the original user against defects and workmanship or material under normal use:

- (a) for one year on component parts.
- (b) for five years on the stainless steel wash chamber.
- (c) 90-days on labor for any of the above.

This limited warranty ensues on the day of purchase.

This warranty is valid only if Aqua Phase AQ-240 detergent and AQ-260 rinse-aid are used in the Aqua Phase washer. The use of cleaning and rinse agents other than those listed above without express written consent from Aqua Phase/Mid-State Stainless, Inc. shall void this warranty immediately.

If the Buyer notifies Mid-State of a warranty claim during the appropriate warranty period and the Buyer affords Mid-State a reasonable opportunity to inspect the product, and if the product is in fact found to be defective by reason of latent or inherent defect in material or workmanship and returned to an authorized service location, as Mid-State designates, shipping costs prepaid, then Mid-State will, at Mid-State's election, either repair such product or replace the product F.O.B. Factory. No product shall be returned without Mid-State's prior consent in writing.

Limitation of Liability: Disclaimer of Implied Warranties. The Buyer's sole and exclusive remedy on account of the furnishing of products or services by Mid-State shall be to secure the repair or replacement of the defective products from Mid-State on the terms and subject to the conditions specified above. Mid-State shall have no responsibility for any failure of the products or of related equipment or any loss, damage or injury resulting from: (a) the improper design, manufacture, maintenance or operation of any equipment into which the products are incorporated or in connection with which the products are used; or (b) the use of the products for other than their intended purpose; or use or operation outside the specified environmental conditions; or (c) the failure of the Buyer or any other party to maintain the products properly; or (d) any failure resulting from causes external to the products after delivery; or (e) any failure resulting from modifications to the products other than modifications made by Mid-State. Mid-State shall not in any event be liable for any costs incurred by Buyer, including, without limitation, the cost of any labor expended on any product.

MID-STATE MAKES NO WARRANTIES, OTHER THAN THE LIMITED WARRANTY SPECIFIED ABOVE, OR REPRESENTATIONS, EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCT OR ANY SERVICE, ADVICE, OR CONSULTATION, IF ANY, FURNISHED TO THE BUYER OR ANY OTHER PARTY BY MID-STATE OR ITS REPRESENTATIVE. MID-STATE SPECIFICALLY DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE REMEDIES SET FORTH ABOVE ARE THE ONLY REMEDIES AVAILABLE TO ANY PERSON FOR BREACH OF ANY COVENANT, DUTY OR OBLIGATION ON THE PART OF MID-STATE HEREUNDER. MID-STATE SHALL NOT BE LIABLE FOR ANY LOSS, PERSONAL INJURY OR PROPERTY DAMAGE DIRECTLY OR INDIRECTLY ARISING FROM THE USE OF SUCH PRODUCT, ADVICE OR SERVICE, OR FOR INCIDENTAL, CONSEQUENTIAL OR PUNITIVE DAMAGES OF ANY DESCRIPTION, WHETHER ANY SUCH CLAIM BE BASED UPON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHER TORT, OR OTHERWISE.



TROUBLESHOOTING GUIDE

Medical Equipment Washing & Decontamination Systems

Note:

This Guide may help you isolate a problem and, as a result, eliminate the need to contact technical support, allowing continued productivity.

Prior to attempting any suggested servicing procedures, **UNPLUG Aqua Phase from the power source.**

Problem Description	Page
Aqua Phase Will Not Start.....	29
Aqua Phase Will Not Fill With Water.....	30
Aqua Phase Will Not Stop Draining / Draining Takes Too Long	31
Aqua Phase Will Not Stop Filling / Error Message: Fill Time Expired	32
Items Washed Have Water Spots or Cloudy Film	33
Items Not Cleaned Properly	34
Growling Noise Pump / Low Spray Volume	35
Low Pressure Indicator Light / Message Always On	36
Using Too Much Cleaning Solution or Rinse Agent	37

For additional information, contact *Aqua Phase*.



AQUA PHASE WILL NOT START

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

1. NO MESSAGE ON LCD DISPLAY SCREEN.

- Aqua Phase not plugged in
- GFCI not reset in power cord
- Circuit breaker tripped
- Blown fuse in Aqua Phase Control Panel Assembly

2. GFCI WILL NOT RESET.

- Circuit breaker tripped.
- Power outage to the area of the building.
- Defective GFCI
- Short in Aqua Phase system and GFCI doing its job.

3. 1 & 2 ARE OK

Then check:

- Front door open
- Front door out of adjustment/not contacting Front Door Safety Switch
- Blown fuse in Control Panel Assembly
- Defective Front Door Safety Switch
- Defective Start Button



AQUA PHASE WILL NOT FILL WITH WATER

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

1. **NO POWER TO THE AQUA PHASE**
 - Connect Aqua Phase to a standard 20 AMP electrical
 - Press the reset button located on GFCI on the Aqua Phase power cord
2. **WATER SUPPLY IS NOT TURNED ON**
 - Be certain the fill and drain connections are secure
 - Slowly turn on the water supply
3. **KINK IN THE WATER HOSE**
 - Inspect water supply hose to ensure there are no sharp bends in the hose
4. **FILL-LINE FILTER SCREEN/WASHER PLUGGED**
 - Turn off water supply. Disconnect Fill hose from "Fill" line connection at the Aqua Phase.
 - Inspect fill-line filter screen/washer. If plugged, contact Aqua Phase for a replacement. You may temporarily replace the fill-line filter screen/washer with a standard hose washer. However, long-term operation without this filter screen may damage the Fill valve.
5. **DEFECTIVE HIGH-LEVEL WATER CONTROL FLOAT SWITCH**
 - Unplug the Aqua Phase from the power supply
 - Call Aqua Phase factory for assistance
6. **WATER SUPPLY PRESSURE IS TOO LOW**
 - Turn-off water supply
 - Disconnect water supply hose from Aqua Phase
 - Determine if the water supply is adequate. Position end of hose in large bucket over drain and turn-on your water supply. If water fills a one-gallon pail in 20 seconds, the water supply is adequate. Reconnect hose to Aqua Phase and turn-on water supply.
7. **FILL VALVE SOLENOID IS DAMAGED OR HAS DEBRIS IN IT**
 - See "Valve Inspection Procedures" in the this Aqua Phase Operating Manual
 - Remove Fill hose from "Fill" line connection at the Aqua Phase. Check that the filter scree/washer is in in place, intact, and not plugged.
 - If problem persists, call the Aqua Phase factory



AQUA PHASE WILL NOT STOP DRAINING/DRAINING TAKES TOO LONG

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

1. **NO POWER TO THE AQUA PHASE**
 - Connect Aqua Phase to a standard 20 AMP electrical
 - Press the reset button located on GFCI on the Aqua Phase power cord
2. **WATER SUPPLY IS NOT TURNED ON**
 - Be certain the fill and drain connections are secure
 - Slowly turn on the water supply
3. **KINK IN THE WATER HOSE**
 - Inspect water supply hose to ensure there are no sharp bends in the hose
4. **FILL-LINE FILTER SCREEN/WASHER PLUGGED**
 - Turn off water supply. Disconnect Fill hose from “Fill” line connection at the Aqua Phase.
 - Inspect fill-line filter screen/washer. If plugged, contact Aqua Phase for a replacement. You may temporarily replace the fill-line filter screen/washer with a standard hose washer. However, long-term operation without this filter screen may damage the Fill valve.
5. **DEFECTIVE HIGH-LEVEL WATER CONTROL FLOAT SWITCH**
 - Unplug the Aqua Phase from the power supply
 - Call Aqua Phase factory for assistance
6. **WATER SUPPLY PRESSURE IS TOO LOW**
 - Turn-off water supply
 - Disconnect water supply hose from Aqua Phase
 - Determine if the water supply is adequate. Position end of hose in large bucket over drain and turn-on your water supply. If water fills a one-gallon pail in 20 seconds, the water supply is adequate. Reconnect hose to Aqua Phase and turn-on water supply.
7. **FILL VALVE SOLENOID IS DAMAGED OR HAS DEBRIS IN IT**
 - See “Valve Inspection Procedures” in the this Aqua Phase Operating Manual
 - Remove Fill hose from “Fill” line connection at the Aqua Phase. Check that the filter screen/washer is in in place, intact, and not plugged.
 - If problem persists, call the Aqua Phase factory



AQUA PHASE WILL NOT STOP FILLING/ERROR MESSAGE: Fill Time Expired

Medical Equipment Washing & Decontamination Systems

Immediately:

- Press the “STOP” button.
- Shut off the water supply.

Possible Causes/Solutions:

- 1. DOOR NOT PROPERLY CLOSED.**
- 2. FRONT DOOR GASKET DAMAGED OR WORN.**
 - Inspect Front Door Gasket for wear or damage.
 - Replace if necessary—you may order replacement parts by calling your dealer or the factory.
- 3. EXCESS BUILD-UP OF HARD WATER DEPOSITS ON HIGH-LEVEL FLOAT SWITCH**
 - Unplug the Aqua Phase from the power supply.
 - Locate the High-Level Float Switch in the Water Reservoir, inside the Wash Chamber.

***Inspect High-Level Float Switch to ensure that it is free of debris and moves freely.*
- 4. DAMAGED OR DEFECTIVE HIGH-LEVEL FLOAT SWITCH**
 - Unplug the Aqua Phase from the power supply.
 - Inspect the High-Level Float Switch for damage, such as a cracked fitting or binding.
 - Replace if damaged—you may order replacement parts by calling your dealer or the factory.
 - Drain Hose end is submerged in water. (Water is syphoning back into the Aqua Phase).
- 5. FILL VALVE HAS DEBRIS STUCK IN IT.**
 - See “Valve Inspection Procedure”.
 - Remove the Fill Hose from the fill line connection at the Aqua Phase. Check that the filter screen/washer is in place and intact.
 - If problem remains, call the factory for assistance.



ITEMS WASHED HAVE WATER SPOTS OR CLOUDY FILM

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

1. WATER TEMPERATURE BELOW 105°F:

- Check the temperature of the water reaching the Aqua Phase.
- Drain the Aqua Phase.
- Press the “START” button. Allow the Aqua Phase to fill.
- As soon as Aqua Phase begins to pump, press the “STOP” button.
- Open the front door, place a thermometer in the Water Reservoir to check the water temperature. Water temperature should be between 105°-130°.
- AQ-260 Rinse-Aid Solution requires a water temperature at or above 105°

2. THE WATER SUPPLY TO THE AQUA PHASE IS “HARD” WATER.

- The AQ-240 Cleaning Solution, in conjunction with the spray nozzles are in effect cleaning the water and taking the hard water particles out of suspension.
- A Water Fill Assembly (5-10 Micron Cartridge) from Aqua Phase factory, installed at the Fill Line may correct this depending on the water contaminants.
- It may be correctable, pending the pH of the water, and the totally dissolved solids of the water to alter the injection rate of the AQ-240 Cleaning Solution to reduce the amount of solids being taken out of suspension.

3. RINSE-AID SOLUTION CONTAINER EMPTY

- Check the level of rinse-aid solution, refill if necessary. The chemical solutions are located inside the Mechanical Cabinet at the rear of the Aqua Phase.

4. RINSE CHEMICAL INJECTOR HOSE OR FITTINGS ARE WORN.

- Inspect chemical hoses for cracks and inspect chemical hose fittings for cracks or if loose.
- Replace if damaged—you may order replacement parts by calling your dealer or Aqua Phase.

NOTES:

- The solution injection rates are preset at the factory for the worst possible water condition expected to be found.
- If spotting or clouding is present only on the first item washed, it is possible that you will need to run a “warm-up cycle” with Aqua Phase. Run a “3-minute” wash cycle with the Wash Chamber empty to allow the Wash Chamber to be warmed-up prior to commencing normal washing operations.
- If problem persists, call the factory for assistance.



ITEMS NOT CLEANED PROPERLY

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

1. ARE YOU USING AQUA PHASE DETERGENT & RINSE SOLUTIONS?

Aqua Phase chemicals are specifically designed for use in the Aqua Phase systems. They are formulated to clean equipment virtually spot-free and speed drying time. *You may order cleaning chemicals by calling your dealer or the factory.*

2. DETERGENT SOLUTION CONTAINER IS EMPTY.

- Check the level of detergent and refill if necessary.
The chemical solutions are located inside the Chemical Cabinet.

.. FILTER SCREEN(S) NOT CLEAN.

- Clean Primary Filter Screen (Primary Filter Screen is located in the bottom of the Water Reservoir located inside the Wash Chamber).

.. SPRAY NOZZLES CLOGGED

- Virtually inspect spray nozzles for debris.
- For spray nozzles that are clogged, note the position of the spray nozzle's relative spray angles.

5. CHEMICAL PUMP HOSES ARE WORN.

6. LONGER WASH CYCLE REQUIRED.

- Set the wash cycle time to "7 MINUTES" or to the longest time cycle available.
- Press the "Start" button, and allow Aqua Phase to run a complete cycle.

7. WATER TEMPERATURE TOO LOW.

- Check the temperature of the water reaching the Aqua Phase.
- Drain the Aqua Phase.
- Press the "START" button. Allow the Aqua Phase to fill.
- As soon as Aqua Phase begins to pump, press the "STOP" button.
- Open the front door, place a thermometer in the water reservoir to check the water temperature. The recommended water temperature is 115-140°. (105° is functional).



Medical Equipment Washing & Decontamination Systems

"GROWLING" NOISE (pump cavitation) LOW SPRAY VOLUME

Possible Causes/Solutions:

The "growling" noise is caused by air getting into the pump impeller. Growling noise is normally heard at the end of the drain cycle. If you hear it continually, you have may one of the following problems.

1. MACHINE NOT IN LEVEL OPERATING POSITION

- Ensure that the Aqua Phase unit is level

2. PRIMARY OR SECONDARY FILTER SCREEN(S) NOT CLEAN

- Clean Filter Screen(s) located in the bottom of the wash reservoir inside the Wash Chamber

3. HIGH-LEVEL FLOAT SWITCH COVERED WITH DEBRIS

- Unplug the Aqua Phase from the power supply
- Locate the High-level float switch in the Water Reservoir inside the Wash Chamber.
- Inspect for debris covering the probe
- Remove debris, if present

4. PUMP IMPELLER CLOGGED WITH DEBRIS

- See "Pump Impeller Inspection Procedures" in this Aqua Phase Operating Manual. It is recommended that you contact the factory before you attempt to clear debris from the pump impeller.

5. CHEMICAL INJECTOR HOSE OR FITINGS ARE CRACKED OR LOOSE

- Inspect Chemical Hoses and fittings for cracks and if loose.
- Replace if damaged. You may order replacement parts by calling your dealer or the factory

6. CHEMICAL PUMP HOSE CRACKED

- Inspect hoses located inside the chemical pumps for cracks.
- Replace if damaged. *You may order replacement parts by calling your dealer or the factory*

7. FOAM IN WATER RESERVOIR AREA

- Caused by something on the item washed or by the use of a foaming detergent or rinse-aid. Foam may affect certain sensors that control the filling and draining of water.
 - Press the "**Stop**" button and wait a few minutes until the foam dissipates.
 - Remove the hose from all cleaning supply bottles in the Aqua Phase Chemical Cabinet.
 - Press "**Start**" Button and allow the Aqua Phase to do a complete cycle.
 - Repeat these steps until Aqua Phase starts draining normally.



LOW PRESSURE INDICATOR LIGHT/MESSAGE ALWAYS ON

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

The “Low Pressure” indicator light is to inform you that your Aqua Phase may not be spraying an adequate amount of water to achieve proper cleaning.

1. FILTER SCREEN(S) NOT CLEAN

- Clean filter screen(s)
- Clean Primary Filter Screen (Primary Filter Screen is located in the bottom of the water reservoir, located inside of the Wash Chamber).
- See also Making “Growling” Noise

2. DEFECTIVE PRESSURE SENSOR.

- Replace—you may order replacement parts by calling your dealer or the factory.

3. PUMP IMPELLER CLOGGED WITH DEBRIS

- See “**Pump Impeller Inspection Procedures**” located in the **Servicing Procedures Guide** section of this Aqua Phase Operating Manual. It is recommended that you contact the factory before servicing the pump impeller.



USING TOO MUCH AQ-240 CLEANING SOLUTION OR AQ-260 RINSE AGENT

Medical Equipment Washing & Decontamination Systems

Possible Causes/Solutions:

1. CHEMICAL PUMP HOSE WORN.

- Inspect hoses located inside the chemical pumps for cracks
- Replace if damaged—you may order replacement parts by calling your dealer or the factory.

2. CHEMICAL PUMP ROLLER ASSEMBLY IS WORN.

- Inspect chemical pump hose roller and determine if chemical pump hose is being fully pinched. If not, replace both the chemical hose and the roller assembly.



TECHNICAL DATA CONTROL PANEL CONTROLS & ELECTRICAL LAYOUT

Medical Equipment Washing & Decontamination Systems



Front View of Control Panel

MALE / FEMALE WIRE CONNECTORS
TO REMOTE DEVICES

Wash Cycle Counter

Depending on your year and model, it may be located in the Chemical Cabinet, under the Chemical Pumps.

Drive Motor Capacitor

FUSES: 120V Operation

- FU-1: FRN-R-20
- FU-2: FNQ-R-5
- FU-3: GMD-2.5
- FU-4: GMD-1.5
- FU-5: GMD-1.5
- FU-6: GMD-1.5
- FU-7: FNQ-R-8

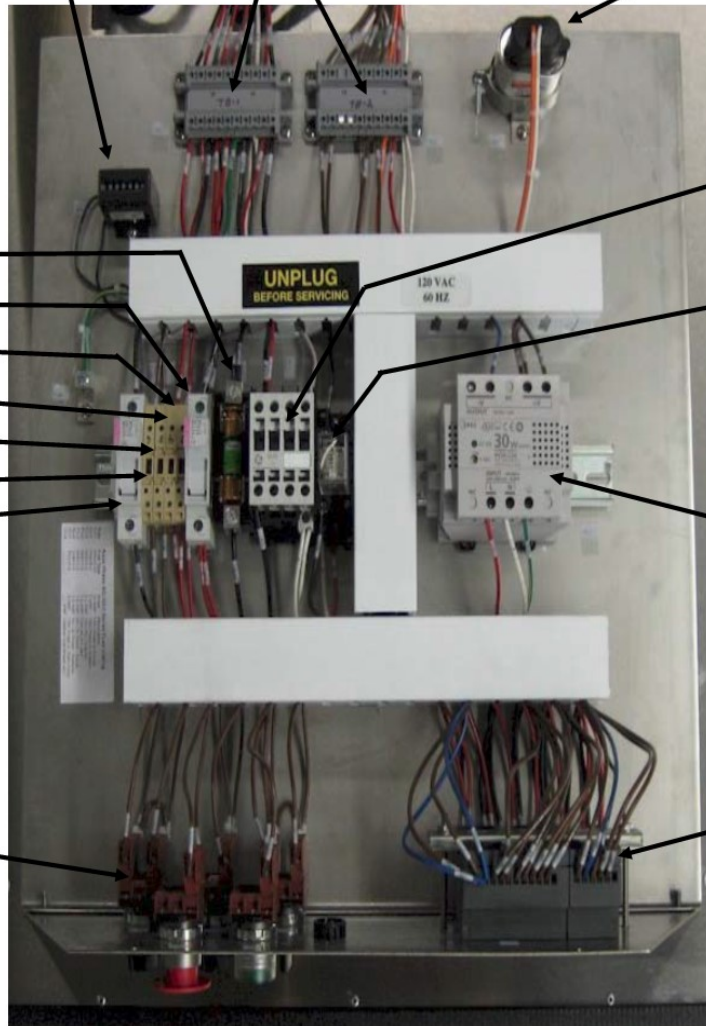
Chamber Pump
Motor Contractor

Drain Pump
Motor Relay

Power Supply
30 Watt, 24V DC

Control Switches

PLC



Top View of Control Panel, after cover has been removed.



TECHNICAL DATA FUSES

Medical Equipment Washing & Decontamination Systems

The critical electrical devices on *Aqua Phase* are protected by fuses from electrical anomalies. Without a properly fused electrical system, there would be risks to the critical (expensive) electrical devices and to a person operating the device.

IF YOU SUSPECT A FUSE MAY BE BLOWN, UNPLUG THE MACHINE BEFORE INVESTIGATING.

Seven fuses and a GFCI are located on *Aqua Phase*:

Name	Fuse Type	Purpose	Location
FU-1	RFK 20A (FRN-R-20)	Pump Motor - Main Power	Control Panel
FU-2	CC 5A (FNQ-R-5)	Electronics System	Control Panel
FU-3	GMD 2.5A (GMD-2.5A)	PLC Outputs	Control Panel
FU-4	GMD 1.5A (GMD-1.5A)	Drive Motor	Control Panel
FU-5	GMD 1.5A (GMD-1.5A)	Safety Switches & Probes	Control Panel
FU-6	GMD 1.5A (GMD-1.5A)	PLC Inputs (Switches)	Control Panel
FU-7	CC 8A (FNQ-R-8)	Drain Pump	Control Panel
FU-8	-	Optional (Lite, Blower, etc)	Control Panel
GFCI	GFCI	Ground Fault Protector	Power Cord

Effects of a blown fuse(s):

Name	Status	Condition
FU-1	If Blown	No power to Main Pump, no water spraying in Wash Chamber.
FU-2	If Blown	System will be dead.
FU-3	If Blown	No activity from pressing "START" button.
FU-4	If Blown	System will pump, but no sweeping spray action will be heard.
FU-5	If Blown	No activity from pressing "START" button.
FU-6	If Blown	No activity from pressing "START" button.
FU-7	If Blown	No Power to drain pump. Machine will not drain.
GFCI	If Tripped	System will be dead. No power to any devices.

Fuses listed above with the exception of the "GFCI" are located behind the control panel face. To access fuses on the control panel:

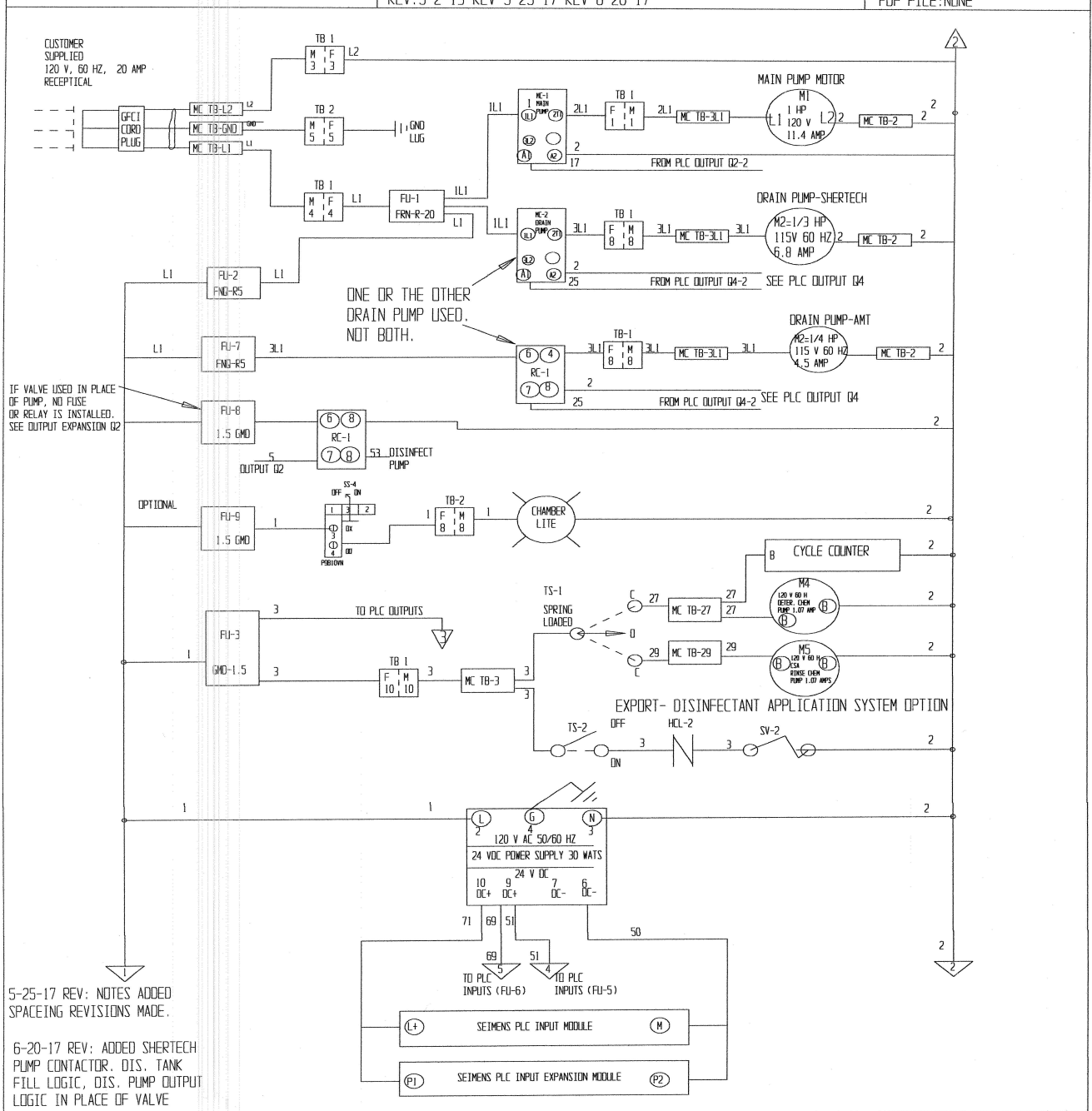
1. Remove the fasteners on the left and right of the control panel cover.
2. You need to **remove only the top two** screws on the control panel face.



TECHNICAL DATA WIRE DIAGRAMS

Medical Equipment Washing & Decontamination Systems

MODEL	AQUA PHASE	Software	Codkey 97	OPTIONS SHOWN	OPTIONS SHOWN/SPECIAL
DATE	4-2013	Directory	AQ-CONTROLS & WIRING	DISINFECTANT APP. SYSTEM	120 VOLT 60 HZ SYSTEM
PAGE	1 OF 3	Levels	1	WHEEL ROTATION SYSTEM	
FILE	AQ-3500 WIRE DIAGRAM 120V	Controller	LOGO 12/24RC & DMB 24R	LIGHT WASH CHAMBER	VERSION 8 HARDWARE
		REV:5-2-13	REV 5-25-17	REV 6-20-17	PDF FILE: NONE

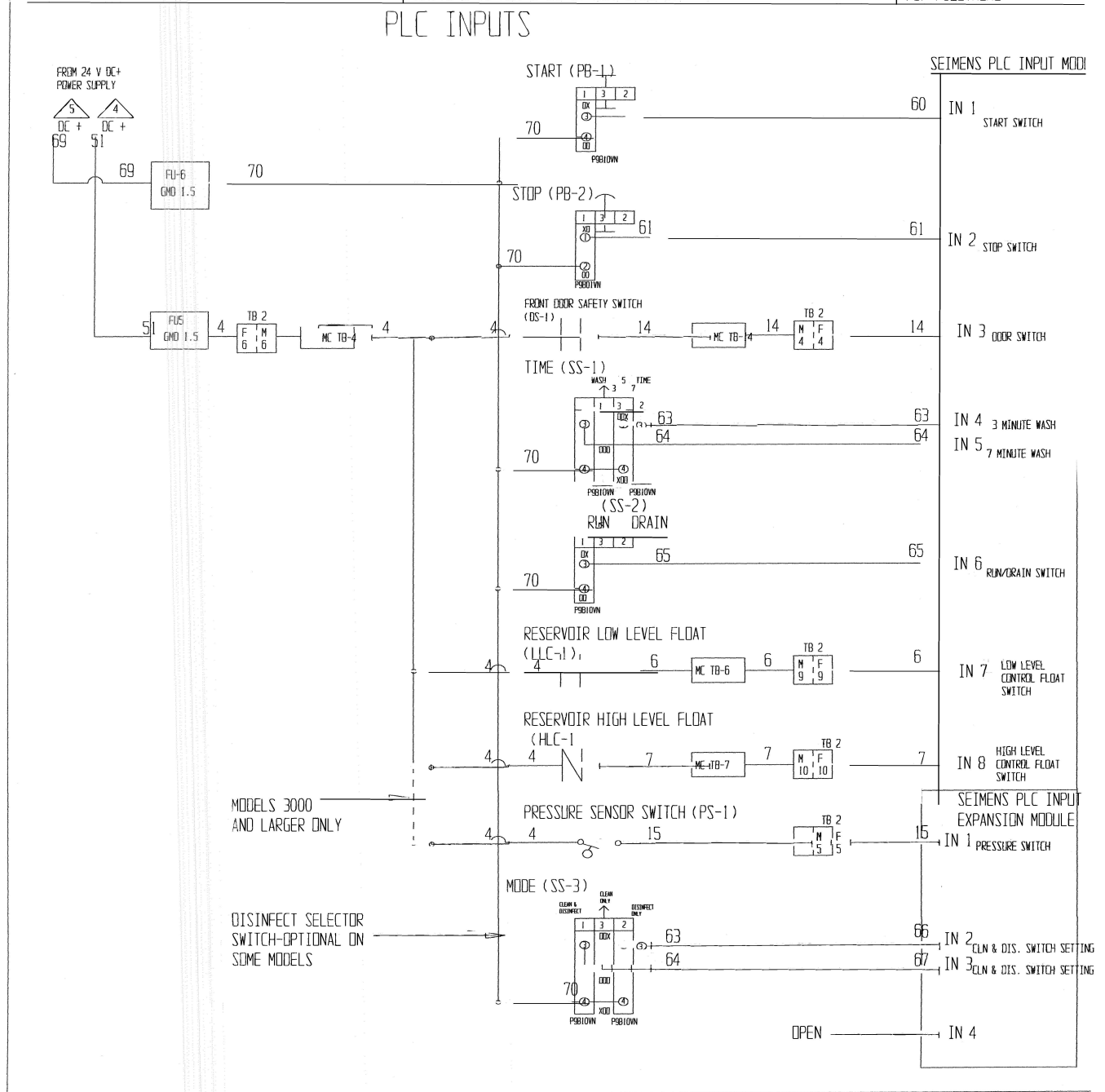




TECHNICAL DATA WIRE DIAGRAMS

Medical Equipment Washing & Decontamination Systems

MODEL	AQUA PHASE	Software	Cadke 97	OPTIONS SHOWN	OPTIONS SHOWN/SPECIAL
DATE	4-2013	Director	AQ-CONTROLS & WIRING	DISINFECTANT APP. SYSTEM	120 VOLT 60 HZ SYSTEM
PAGE	2 OF 3	Levels	1	WHEEL ROTATION SYSTEM	
FILE	AQ-3500 WIREGRAM 120V	Controller	LOGO 12/24RC & DMB 24R	LIGHT WASH CHAMBER	VERSION 8 HARDWARE
			REV:5-2-13 REV 5-25-17 REV 6-20-17		PDF FILE:NONE

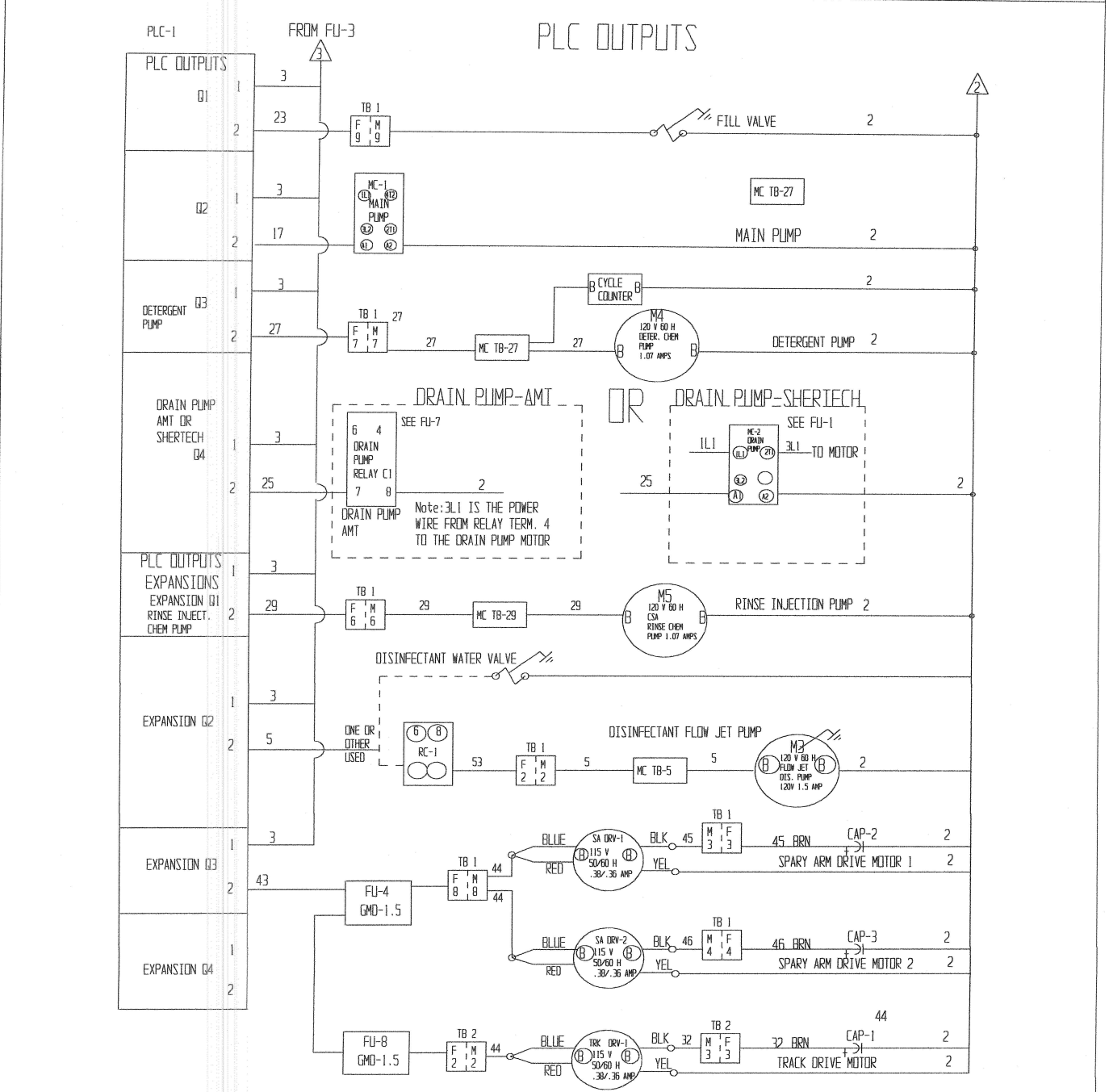




TECHNICAL DATA WIRE DIAGRAMS

Medical Equipment Washing & Decontamination Systems

MODEL	AQUA PHASE	Software	Cadkey 97	OPTIONS SHOWN	OPTIONS SHOWN/SPECIAL
DATE	4-2013	Directory	AQ-CONTROLS & WIRING	DISINFECTANT APP. SYSTEM	120 VOLT 60 HZ SYSTEM
PAGE	3 OF 3	Levels	1	WHEEL ROTATION SYSTEM	
FILE	AQ-3500 WIRE DIAGRAM 120V	Controller	LOGO 12/24RC & DMB 24R	LIGHT WASH CHAMBER	VERSION 8 HARDWARE
		REV:5-2-13	REV 5-25-17 REV 6-20-17		PDF FILE:NONE





DOMESTIC PARTS LISTING

Medical Equipment Washing & Decontamination Systems

Qty	Item	Description	UM	STATUS	YEAR	Notes - Where Used	List Price	Group
CHEMICAL INJECTOR PUMPS								Chem Pump
2	225-35718	CHEM PUMP & MOTOR-BETA-115V,50/60HZ	Each	Not-Std		Chem pump - Beta brand (green covers).	\$ 389.00	Chem Pumps
2	225-53967	CHEM PUMP FRONT COVER: HSG,3 O	Each	Not-Std		Chem pump - Beta brand (green covers).	\$ 52.00	Chem Pumps
2	225-22028	CHEM PUMP HOSE - YELLOW	Each	Std		Hose inside chemical pumps	\$ 19.89	Chem Pumps
2	225-3518M	CHEM PUMP MOTOR ONLY	Each	Not-Std		Motor only for Beta pump head	\$ 149.00	Chem Pumps
2	225-38850	CHEM PUMP REAR COVER: HSG ASSY	Each	Not-Std		Chem pump - Beta brand (green covers).	\$ 54.00	Chem Pumps
2	225-51189	CHEM PUMP ROLLER ASSEMBLY	Each	Not-Std		Chem pump - Beta brand (green covers).	\$ 54.00	Chem Pumps
2	255-810-105-405	CHEM PUMP-ANKO 58 RPM	Each	Std	5/1/2017	AQ Units After 5-1-2017 (clear covers)	\$ 174.00	Chem Pumps
2	225-908-108	CHEM PUMP-ANKO HIGH RPM (108) (white pump head)	Each	Not-Std		Chemical Pump - Anko (white-semi clear)	\$ 219.00	Chem Pumps
2	225-900-1014058	CHEM PUMP-ANKO STD (58RPM) (white pump head)	Each	Not-Std		Chemical Pump - Anko (white-semi clear)	\$ 249.00	Chem Pumps
1	XMB-68-015	DETERGENT SUCTION HOSE-RED	Each	Std	5/1/2017	2017-Replaced with Yellow Hose-1/4" poly	\$ 5.65	Chem Pumps
1	XMB-68-005	RINSE SUCTION HOSE-BLUE	Each	Std		1/4" poly	\$ 5.65	Chem Pumps
DISINFECTANT APPLICATION SYSTEM-Standard and Optional								Dis. Sy
4	153-09PMN-BB	ADP CHR M EL 1/4POLY X 1/4MNPT	Each	Std or Option		Disinfectant Chemical Line to Bottom Corner SA	\$ 12.20	Dis. Sys
1	151-50775K175	ADP POL BULKHEAD 3/8 POLY	Each	Std or Option		Disinfect line through chamber wall	\$ 19.50	Dis. Sys
1	151-5532K155	ADP POL EL 3/8POLY X 1/4FNPT	Each	Std or Option		Discharge end of Dema Injector Valve	\$ 6.25	Dis. Sys
1	151-5532K644	ADP POL EL 3/8POLY X 3/8MNPT	Each	Std or Option		Disinfect Ceiling Arm	\$ 6.25	Dis. Sys
4	151-5532K422	ADP POL STRT 1/4POLY X 1/4MNPT	Each	Std or Option		Disinfect Ceiling Arm & rod style level probe	\$ 5.25	Dis. Sys
4	151-5532K422	ADP POL STRT 1/4POLY X 1/4MNPT	Each	Std or Option		Disinfectant Ceiling Arm-Data Collection Sys.	\$ 5.25	Dis. Sys
1	151-5533K988	ADP POL STRT 3/8POLY X 1/4FNPT	Each	Std or Option	Pre-2004	Discharge end of Dema Injector Valve	\$ 6.25	Dis. Sys
1	151-5532K488	ADP POL STRT 3/8POLY X 1/4MNPT	Each	Std or Option		Inlet end of Dema Injection Valve	\$ 6.25	Dis. Sys
1	151-5532K444	ADP POL STRT 3/8POLY X 3/8MNPT	Each	Std or Option		Discharge end of Pressure Regulator	\$ 5.25	Dis. Sys
1	138-24.11MP	DEMA FOOT STRAINER	Each	Std		Disinfectant Chemical Tubing Hose Strainer	\$ 3.85	Dis. Sys
1	138-202CT	DEMA VALVE INJECTOR 1/4" THREAD	Each	Std		Disinfectant Chemical Injector - 1/4"	\$ 149.00	Dis. Sys
4 to 8'	138-100.12	DEMA VINYL TUBING	Lin. Ft.	Std		Disinfectant Chemical Suction Tubing	\$ 11.95	Dis. Sys
1	133-N18013208	PRESSURE GAUGE 0-60R 1/4NPT 2	Each	Std		Disinfectant Line Pressure Gauge	\$ 44.80	Dis. Sys
1	133-R43301NNLA	REGULATOR 3/8 NORGREN	Each	Std		Disinfectant Line Volume Regulator - 3/8"	\$ 219.00	Dis. Sys
TRACK AND TRACE (SYSTEM VALIDATION OPTION)								Elec-Data Tracker
1	134-4RC67	FLOW SWITCH VALVE 3/4NPT	Each	Option		Data Collections System	\$ 729.00	Elec-Data Tracker
1	275-PRINT-UPGRD	PRINTER-OMNI PRINT	Each	Option		Data Collections System	\$ 519.00	Elec-Data Tracker
1	275-PRINT PAPER	PRINTER-OMNI PRINT-PAPER	Each	Option		Data Collections System	\$ 6.25	Elec-Data Tracker
1	275-PRINT CONN	PRINTER-OMNI PRINT-PRINTER CABLE	Each	Option		Data Collections System	\$ 42.00	Elec-Data Tracker
1	275-7675K5	PROXIMITY SENSOR 12MM	Each	Option		Data Collections System	\$ 459.00	Elec-Data Tracker
1	255-M90-19-B1A	UNITRONICS CNTRLR M90-19-B1A	Each	Option		Data Collections System	\$ 749.00	Elec-Data Tracker
1	255-M91-2-UN2	UNITRONICS CONTROLLER	Each	Option		Data Collections System	\$ 1,125.00	Elec-Data Tracker
1	255-EX-A1	UNITRONICS EXPANSION ADAPTER	Each	Option		Data Collections System	\$ 145.00	Elec-Data Tracker
1	255-I/O-D18-R04	UNITRONICS EXPANSION MODULE	Each	Option		Data Collections System	\$ 389.00	Elec-Data Tracker



DOMESTIC PARTS LISTING

(continued)

Medical Equipment Washing & Decontamination Systems

CONTROL PANEL ASSEMBLY COMPONENTS (2004 forward)								Elec-Device
1 to 3	277-3M533	CAPCITOR MOUNTING KIT	Each	Std		Electrical Components	\$ 16.50	Elec-Devices
1 to 3	277-97-F5705BK	CAPCITOR, RUN 5MFD 370 V	Each	Std		Electrical Components	\$ 24.50	Elec-Devices
1	277-P9B01VN	CONTACT BLOCK GE 1 NC-STOP BTN	Each	Std		Electrical Components	\$ 29.00	Elec-Devices
1	277-P9B10VN	CONTACT BLOCK GE 1 NO - 3POS	Each	Std		Electrical Components	\$ 29.00	Elec-Devices
1	277-CL00A310TJ	MOTOR CONTACTOR GE 3HP/230	Each	Std		Electrical Components	\$ 359.00	Elec-Devices
4	277-BA9242	PILOT LIGHT- BULB 24 V	Each	Not-Std		Electrical Components - Pilot Light Bulb	\$ 19.50	Elec-Devices
4	Specify Color	PILOT LIGHT-LENS	Each	Not-Std				Elec-Devices
1	256-21MD000BA5	PLC-SIEMENS LOGO CONTROLLER	Each	Std		Version 8	\$ 369.00	Elec-Devices
1	256-51HE000BA0	PLC-SIEMENS LOGO EXPANSION MODULE	Each	Std		Version 8	\$ 198.00	Elec-Devices
1	278-P55R-C24	POWER SUPPLY 30 WATT 24VDC	Each	Std		Electrical Components	\$ 185.00	Elec-Devices
2	277-P9MSMDON	SWITCH GE 2 POS BLK KNOB	Each	Std		Run/Drain & Lighted Wash Chamber Switch	\$ 49.00	Elec-Devices
2	277-P9MSMZON	SWITCH GE 3 POS BLK KNOB	Each	Std		Wash Time & Wash Mode Switch	\$ 59.00	Elec-Devices
1	277-P9MPLVGD	SWITCH GE START BUTTON - GREEN	Each	Std		Green Start Button	\$ 39.00	Elec-Devices
1	277-P9MEM4RN	SWITCH GE STOP BUTTON 40MM RED	Each	Std		Red Stop Button on Control Panel	\$ 59.00	Elec-Devices
4	238-9080GR6	TERM BLK W/C - LARGE BLOCK	Each	Std		Electrical Components	\$ 9.75	Elec-Devices
8	238-9080GM6	TERM BLK W/C - SMALL BLOCK	Each	Std		Electrical Components	\$ 9.25	Elec-Devices
CONTROL-FUSES								Elec-Fuse
3 to 5	237-GMD 1.5A	FUSE 1.5 AMP GLASS TUBE	Each	Std		SA Drv Mtr, C-Pumps Inputs, Switches, Floats	\$ 7.65	Elec-Fuses
1	237-FRN-R-2	FUSE 2 AMP FRN CARTDGE	Each	Std		Control circuit-Drain Pump	\$ 30.92	Elec-Fuses
1 to 3	237-6F057	FUSE 2 AMP GLASS TUBE	Each	Std		Chemical Pump Fuse	\$ 7.65	Elec-Fuses
1	237-GMA 2.5	FUSE 2.5 AMP GLASS TUBE	Each	Std		PLC Outputs	\$ 7.65	Elec-Fuses
1 or 2	237-FRN-R-20	FUSE 20 AMP FRN CRTDGE (RFK)	Each	Std		Pump Motors & Main System Fuse	\$ 30.92	Elec-Fuses
1	237-FNQR-5	FUSE 5 AMP CC MINI CRTDGE (kl-d-5)	Each	Std or Option		Transf (240v) Elect Sys (110v)-Drain pump	\$ 34.48	Elec-Fuses
1	237-FRQR-8	FUSE 8 AMP CC MINI CRTDGE (kl-d-8)	Each	Std		Drain pump	\$ 34.50	Elec-Fuses
GFCI								Elec-GFC
1	234-54830R	GFCI-120V, 20 AMP NO POWER CORD	Each	Std			\$ 119.00	Elec-GFCI
1	234-2000-0050	GFCI-120V, 20 AMP WITH POWER CORD	Assembly	Std			\$ 269.00	Elec-GFCI
1	234-7228K13	GFCI-230V, 20 AMP WITH CORD	Assembly	Std or Option		Ground Fault Circuit Interrupter	\$ 279.00	Elec-GFCI
1	234-7228K13	GFCI-230V, 20 AMP NO POWER CORD	Each	Std or Option			\$ 185.00	Elec-GFCI
CONTROL PANEL ASSEMBLY COMPONENTS (PRE 2004)								Elec-pre-200
1	M3-3K FULL	CONTROL ASSEMBLY-2017 MODICON REPLACED	EA	Std		Siemens Control Assembly Replaces Modicon	\$ 2,840.00	Elec-pre-2004
1	235-SL1-D	FRONT DOOR LIMIT SWITCH-HONEYWELL	Each	Not-Std	Pre-2004	Mounted in wash chamber	\$ 269.00	Elec-pre-2004
2	M321-201	LEVEL PROBE ASSM - ROD STYLE	Each	Not-Std	Pre-2004	Sump high & low probes - Metal Rod Style	\$ 54.00	Elec-pre-2004
2	277-0900	LEVEL PROBE SENSOR POD ORANGE	EA	Not-Std	Pre-2004	Sensor Pod for Rod Style Level Probes	\$ 153.80	Elec-pre-2004
1	254-110CPU31101	MODICON PLC	EA	Not-Std	Pre-2004	Computer (old style)	\$ 950.00	Elec-pre-2004
4	277-BA9S130	PILOT LIGHT- BULB 130 V	Each	Not-Std	Pre-2004	Electrical Components - Pilot Light Bulb	\$ 11.50	Elec-pre-2004



DOMESTIC PARTS LISTING

(continued)

Medical Equipment Washing & Decontamination Systems

CONTROLS- SWITCHES, SENSORS, LEVEL CONTROLS								Elec-Switche
1	217-40445	AIR BLOWER-TIMER DIGITAL AUTO OFF	Each	Option			\$ 119.00	Elec-Switches
1 or 2	235-2XC13	FLOAT SWITCH - HORIZONTL LEVEL	Each	Std		Water Level High Float - Plastic Float Style	\$ 38.50	Elec-Switches
1	235-B11-204	LIMIT SWITCH-FR/DR 80-348 XTRN	Each	Std		Front door -white switch (lever type)	\$ 17.55	Elec-Switches
1	136-41535K91	PRESSURE SWITCH 1/4NPT 5-65PSI	Each	Std		Low Pressure Cntrl Switch (Get 1/4x2 Nipple)	\$ 118.40	Elec-Switches
1	235-SS208CBG	TOGGLE SWITCH ON/OFF (DIS TANK)	Each	Std		Units With Disinfectant Water Holding Tank	\$ 19.50	Elec-Switches
1	235-GSW-13	TOGGLE SWITCH 3POS CHEM PUMP	Each	Std		Chemical Pump Primer Switch	\$ 29.50	Elec-Switches
FILTERS & SCREENS								Filter
1	141-FGSH	FILTER BOWEL GASKET 1-1/4 & 1-1/2	Each	Not-std	Pre-2004	Gasket for Filter Cover Bowl	\$ 4.50	Filters
1	141-15839-75	FILTER CART HOUSING 1/2" NPT (CART 10 MIC FILTS)	Each	Option		Without Plumbing Fittings	\$ 184.00	Filters
1	141-EPM-10	FILTER CART-10 MICRONS	Each	Option			\$ 19.50	Filters
1	141-FCBH	FILTER COVER BOWL ONLY 1-1/4&1-1/2	Each	Not-std	Pre-2004	Filter Cover Bowl Only (clear/yellow tint)	\$ 24.50	Filters
1	141-FS40H	FILTER SCREEN, 1-1/4", 40 MESH TUBE SCREEN	Each	Not-std	Pre-2004	Filter Mesh Screen in Cover Bowl	\$ 10.95	Filters
1	141-FS80H	FILTER SCREEN, 1-1/4", 80 MESH TUBE SCREEN	Each	Not-std	Pre-2004	Filter Mesh Screen in Cover Bowl	\$ 10.95	Filters
1	170-10373	FILTER SCREEN, FILL PORT 1	Each	Std		Filter Screen located inside Fill Line Hose (washer	\$ 2.39	Filters
1	141-FTBH	FILTER T-BODY, 1-1/4	Each	Not-std	Pre-2004	Filter body only	\$ 38.00	Filters
1	M321-110-030	RESERVOIR FILTER SCREEN-3K RECT	Each	Not-std		SS, 2" Wide X 9" Long	\$ 48.50	Filters
1	M3-30-300	RESERVOIR FILTER SCREEN-3K SQUARE	Each	Std		SS, Approx. 4" x 4" Square	\$ 119.00	Filters
1	AQ-170	WATER FILTRATION ASSM 1/2 NPT	Assembly	Option		Housing W/Plumping & 2 10 mic carts	\$ 359.00	Filters
GASKETS								Gaskets-Seal
1	M35-75-001	FRONT DOOR GASKET 3.5K	Each	Std		192	\$ 129.00	Gaskets-Seals
1 or 2	XM321-75-085	FRONT DOOR WINDOW GASKET	Each	Std		Front Window Gasket	\$ 54.00	Gaskets-Seals
TUBING, HOSES, FITTINGS (AND ACCESSORIES)								Hose-Fittin
	151-5532K444	ADP POL STRT 3/8POLY X 3/8MNPT	Each	Std or Option			\$ 5.25	Hose-Fitting
	151-5532K822	ADP POL TEE 1/4POLY X 1/4MNPT	Each	Std or Option		Chem hose connect at reservoir	\$ 7.25	Hose-Fitting
	170-HPD-6 41662	HOSE 1 BLACK	Lin. Ft.	Std		Spray arm distrib., Drain pump suction	\$ 8.35	Hose-Fitting
	170-HPD-9 61662	HOSE 1-1/2 BLACK	Lin. Ft.	Std		Main pump suction	\$ 14.45	Hose-Fitting
	170-102-1000	HOSE 3/4 BLACK	Lin. Ft.	Not-Std		Drain pump suction	\$ 5.58	Hose-Fitting
	176-689-4618	HOSE BARB STRGHT 1-1/2 X 1-1/2" MNPT	Each	Std		Main pump suction & Reservoir dischrg	\$ 7.06	Hose-Fitting
	176-5372K333	HOSE BARB 90 EL 3/4 X 3/4 MNPT	Each	Not-Std		Plastic Hose Barb Connectors	\$ 6.35	Hose-Fitting
	176-5372K336	HOSE BARB 90 EL 1 X 1-1/4 MNPT	Each	Std		AMT drain pump suction & Reservoir dischrg.	\$ 8.64	Hose-Fitting
	176-5372K135	HOSE BARB STRGHT 1" X 1" MNPT	Each	Std		Spray arm distribution	\$ 7.06	Hose-Fitting
	176-5372K132	HOSE BARB STRGHT 3/4 X 1/2 MNPT	Each	Not-Std		Plastic Hose Barb Connectors	\$ 4.35	Hose-Fitting
	176-5372K133	HOSE BARB STRGHT 3/4 X 3/4 MNPT	Each	Not-Std		Plastic Hose Barb Connectors	\$ 4.35	Hose-Fitting
	175-5413K54	HOSE CLAMP 1 SS #16 1-1.5 DIA	Each	Std		Spray arm distribution & AMT pump suction	\$ 4.85	Hose-Fitting
	175-5413K57	HOSE CLAMP 1-1/2 SS #28	Each	Std		Main pump suction	\$ 6.71	Hose-Fitting
	175-5413K52	HOSE CLAMP 3/4 SS #10	Each	Not-Std		Drain pump suction	\$ 4.50	Hose-Fitting
	170-70815T43	HOSE CONNECT 1/2 GARDEN FEMALE	Each	Std		Fill and Drain connections	\$ 17.87	Hose-Fitting



DOMESTIC PARTS LIST

(continued)

Medical Equipment Washing & Decontamination Systems

	170-10031840	HOSE FILL OR DRAIN 10-FOOT LONG	Each	Std		Vulcanize hose ends 180 degree rating.	\$ 58.50	Hose-Fitting
	170-82215778	HOSE-WASHER-DRAIN LINE	Each	Std			\$ 2.19	Hose-Fitting
	1110-GNEK	NIPPLE 1/4 X 2 GALVANIZED	Each	Std & Option		For Pressure Switch	\$ 4.23	Hose-Fitting
	172-1B02507	POLY TUBE 1/4 BLUE (SOFT)	Lin. Ft.	Std		Chemical Rinse Suction Hose	\$ 1.06	Hose-Fitting
	172-0140	POLY TUBE 1/4 NATURAL (SEMI RIDGID)	Lin. Ft.	Std		Chemical Injection Hose - Into Wash Chamber	\$ 1.06	Hose-Fitting
	172-1B02505	POLY TUBE 1/4 RED (SOFT)	Lin. Ft.	Std	Pre6-2017	Was Detergent Suction Hose-Use Yellow	\$ 1.06	Hose-Fitting
	172-1B02508	POLY TUBE 1/4 YELLOW (SOFT)	Lin. Ft.	Std		Chemical Detergent Suction Hose	\$ 1.06	Hose-Fitting
	172-0340	POLY TUBE 3/8 NATURAL (SEMI RIDGID)	Lin. Ft.	Std		In Wash Chamber & from Dema device.	\$ 1.85	Hose-Fitting
	MISC							Mis
1	AQ-195	AQ OPERATIONS MANUAL	Each	Std		AQ-4000 Operations Manual - Printed & Bound	\$ 35.00	Misc
4	321-5908K18	FRONT WHEELCARRIAGE BEARING-SS	Each	Option		Select PVC or SS Bearing for replacement	\$ 92.00	Misc
1	340-6X10-1/8	GLASS - LIGHTED CHAMBER WINDOW	Each	Std		Lighted Wash Chamber Replacement Window	\$ 84.00	Misc
1	340-12X12X.030	GLASS-FRONT DOOR WINDOW	Each	Std		Safety Glass Replacement Window	\$ 109.00	Misc
1	291-LAM 100ARS	LITE BULB - FOR CHAMBER FIXTURE	Each	Option		Rough Service Bulb -Lighted Chamber Opt.	\$ 8.66	Misc
	NOZZLES							Nozzle
7	161-NBC1565	NOZZLE 1/4 1.5 GPM 60D FULL CONE	Each	Std		Ceiling (5) & Door Spray Arm (if installed-2)	\$ 29.00	Nozzles
16	161-NBF1565	NOZZLE 1/4 1.5 GPM 65D FLAT FAN	Each	Std		Side Wall Spray Arms	\$ 14.25	Nozzles
4	161-NBS.20120	NOZZLE 1/4 2.0GPM 120D SPIRAL JET	Each	Std		Bottom Center Spray Arm	\$ 24.00	Nozzles
5	161-NBF2080	NOZZLE 1/4 2.0GPM 90D FLAT FAN	Each	Std		2ND From door, end of Bottom Center Arm	\$ 14.25	Nozzles
12	161-NAF05120	NOZZLE 1/8 5 GPM 120D HOL. CONE DIS. 8YS.	Each	Std		Disinfectant Spray Arms	\$ 21.95	Nozzles
	PUMPS & MOTORS							Pump & Motor
2	217-1XJX9	AIR BLOWER MOTOR 115V 4 SPD	Each	Option		Large AQ units up to 4K	\$ 985.00	Pump & Motors
1	217-4C445	AIR BLOWER MOTOR 495 CFM	Each	Option		Small AQ Units up to 37K	\$ 519.00	Pump & Motors
1		DRAIN PUMP & MOTOR ASSEM. 1.3 HP	Assembly	Std or Option		Sheritech pump and motor assembled	\$ 1,495.00	Pump & Motors
1	228-3201-96	DRAIN- PUMP & MOTOR-AMT-ALUM. CAST	Assembly	Std		Cast Alum. Pump head 1-1/4 x 1-1/4	\$ 329.00	Pump & Motors
0	228-3WY24	DRAIN- PUMP & MOTOR-DAYTON (Red or Black)	Assembly	Not-Std		Canned Pump-Discontinued-See AMT	\$ 685.00	Pump & Motors
1	220-D-HL-8050	DRAIN PUMP-MOTOR ONLY 1/3 HP	Each	Std or Option		For Sheritech pump head	\$ 595.00	Pump & Motors
1	SHECOMBB1X	DRAIN PUMP-PUMP HEAD ONLY 1/3 HP-BRONZE	Each	Std or Option		Sheritech pump head with seal	\$ 1,029.00	Pump & Motors
1 TO 3	211-4Z062	GEAR MOTOR 14 RPM AC - 4K SA	Each	Std or Option		Spray Arm and/or Track Drive Motor	\$ 398.00	Pump & Motors
1	EBCDU200/1NB	PUMP - PUMP HEAD ONLY- KIT, 1.5 HP 120/1	Each	Std or Option		Option. Standard=3k, 3.5K, 3.7K & 8K units		Pump & Motors
1	EBCDU200/5NB	PUMP - PUMP HEAD ONLY- KIT, 2 HP 230V 50HZ	Each			50 Hertz systems only	\$ 929.00	Pump & Motors
1	228-EBACDU200/115D1C	PUMP & MOTOR ASSEMBLY 1.5 HP EBARA	Assembly	Std or Option		Option. Standard=3k, 3.7k & 8K units	\$ 1,429.00	Pump & Motors
1		PUMP & MOTOR ASSEMBLY 2HP EBARA 230V 50Hz	Assembly	Std		50 Hertz systems only	\$ 1,985.00	Pump & Motors
1	227-4100-512	PUMP FLOJET 115V/3C -4K DIS	Each	Std or Option		Pump for Disinfectant Application System	\$ 445.00	Pump & Motors
1	227-20381-006	PUMP FLOJET KIT 3/4HB QUADPORT	Each	Std or Option		Adaptor kit for Disinfectant Pump	\$ 29.00	Pump & Motors



DOMESTIC PARTS LIST

(continued)

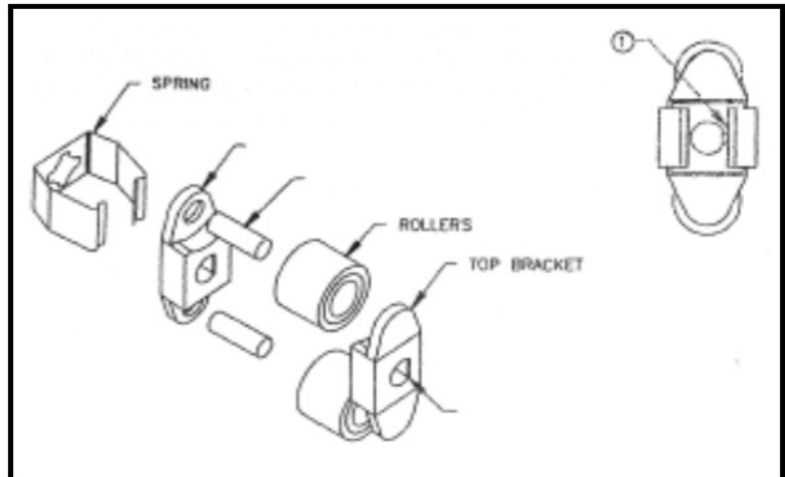
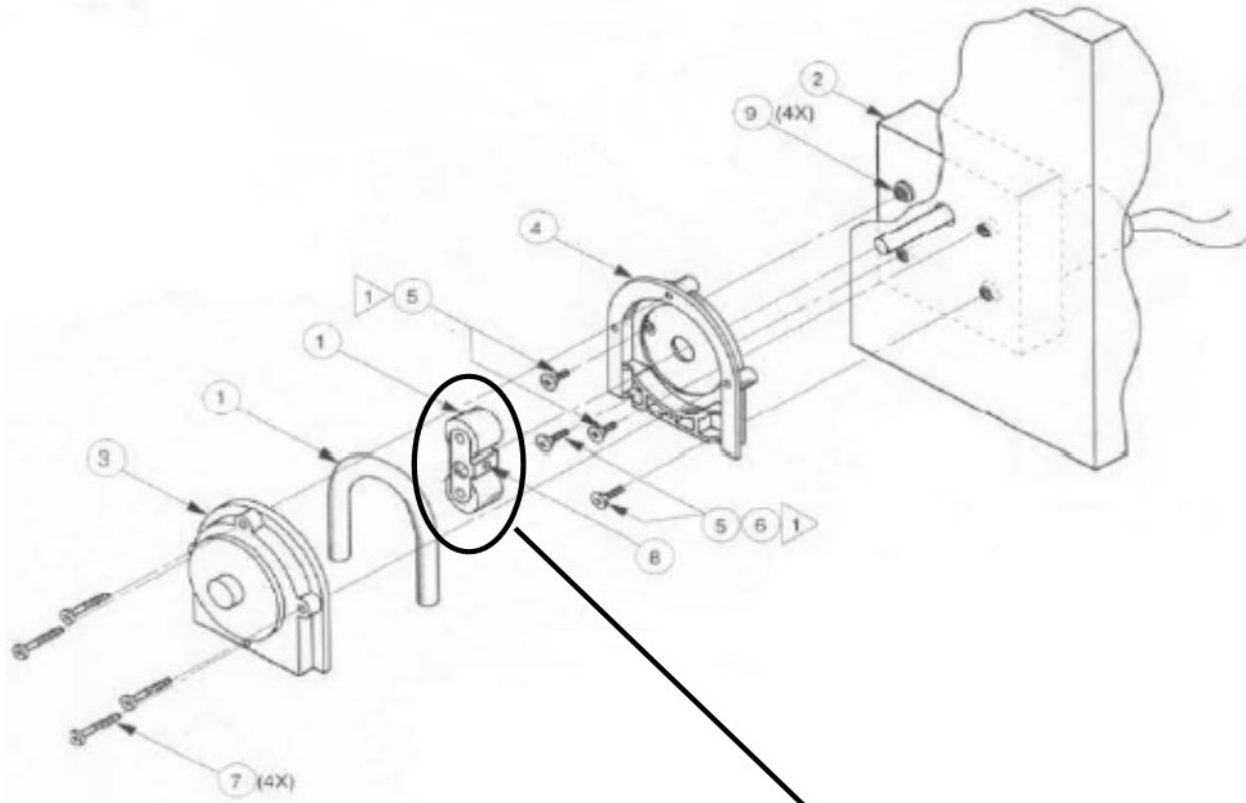
Medical Equipment Washing & Decontamination Systems

1	227-20403-020	PUMP FLOWJET CHECK VALVE ASSM KIT	Each	Std or Option		\$ 98.00	Pump & Motors
1	227-20403-040	PUMP FLOWJET DIAPHRAGM KIT	Each	Std or Option		\$ 58.00	Pump & Motors
1		PUMP IMPELLER ONLY 1.5 HP EBARA CDU 120/1	Each	Std or Option	Option. Standard=3k, 3.7k & 8k units		Pump & Motors
1	EB251450793	PUMP IMPELLER ONLY 2 HP EBARA CDU 200/5NB	Each	Std	50 Hertz systems only	\$ 349.00	Pump & Motors
1	EB8625001	PUMP MECH SEAL	Assembly	Std	Internal Pump Mechanical Seal	\$ 54.00	Pump & Motors
1	220-FM2-HL-6050	PUMP MOTOR ONLY - 2HP	Each	Std	50 Hertz systems only	\$ 1,095.00	Pump & Motors
1		PUMP MOTOR ONLY 1.5 HP 120V 60HZ 56J-FRAME	Each	Std or Option	Upgrades, 3K, 3.7K & 8k Models	\$ 1,429.00	Pump & Motors
1	222-340280085	PUMP MOUNTING FEET	Each	Std	All Ebara Pumps	\$ 105.00	Pump & Motors
1	222-EB165X3	PUMP O-RING EBARA CDU70/5NB-2H	Each	Std	All Ebara Pumps	\$ 59.50	Pump & Motors
SPRAY ARMS (See Nozzles Also)							
6 TO 10	M3-300-001	CLEVIS JOINT BUSHING	Each	Std	In Spray Arms at Clevis Joints	\$ 4.65	Spray Arms
2	M3-41	LINKAGE ARM LONG ASSEM 3K	Assembly	Std or Option	Linkage from spray arm to spray arm.	\$ 138.00	Spray Arms
2	M3-43	LINKAGE ARM SHORT ASSEM 3K	Assembly	Std	Linkage arm from track sprocket to long link arm	\$ 104.00	Spray Arms
4	317-9452K44	O-RING BUNA DASH 325 B/HD O/S	Each	Std	Bulkhead-exterior o-ring	\$ 1.64	Spray Arms
2	331-9744K19	SA DRV MTR LINKAGE BELLOWS	Each	Std	Black Funnel Gasket for Linkage Arm/MSA Motor	\$ 44.00	Spray Arms
1 TO 4	M3-35-035	SPRAY ARM BEARING SUPPORT BRKT	Assembly	Option	FOR OLDER AQ UNITS	\$ 62.00	Spray Arms
1 TO 3	M4-830-060K	SPRAY ARM DRV MTR CAM	Each	Std	Piece on Drive Motor to Linkage Arms	\$ 54.00	Spray Arms
THERMOMETERS							
1	316-38675K13	THERMOMETER °C CONTROL PANEL	Each	Option	International, option	\$ 405.00	Temp
1	316-3946K125	THERMOMETER RND DIAL 3" 1/2NPT	Each	Option	Fill Line Thermometer - Optional	\$ 154.00	Temp
TRACK							
4	321-6389K552	BEARING SLEEVE,FLNGD,NYLON,5/8	EA	Option	Track drive bar (2) & Door handle (2)	\$ 5.81	Track Sys.
2	M35-55	BRUSH ASSEMBLY FRONT 6" - EACH	Assembly-Each	Option	For AQ-3500 models	\$ 48.00	Track Sys.
2	M32-56	BRUSH ASSEMBLY REAR 6" - EACH	Assembly-Each	Option	Track, requires two	\$ 48.00	Track Sys.
1	M3-159	CHAIN OPENING SEAL	Each	Option		\$ 42.00	Track Sys.
	324-FGSATL3500	CHAIN-DELTRIN-35 PITCH	Lin. Ft	Option		\$ 32.00	Track Sys.
1	324-35PC CL	CHAIN-SS CONNECTING LINK-35 PITCH	Each	Option	Track drive chain - SS links	\$ 15.36	Track Sys.
	324-FT35PC	CHAIN-SS LINK-35 PITCH	Lin. Ft.	Option		\$ 59.00	Track Sys.
6	322-6436K136	COLLAR-ALUM SET 5/8 BORE 2PC	Each	Option	Track drive bars set collars (4)	\$ 21.75	Track Sys.
1	323-35BF101/2	DRIVE MOTOR SPROCKET 10 TOOTH FORGED 1/2"	Each	Option	Track drive motor sprocket (1)	\$ 42.50	Track Sys.
2	321-11951-SS	DRIVE ROD END JOINT-SS	Each	Option	Screws into Track Sprocket-Large 40 Tooth	\$ 22.50	Track Sys.
4	321-1F636	PILLOW BLOCK BEARING 5/8 W SS HOUSING	Each	Option	Under side of Track Frame	\$ 58.00	Track Sys.
1	M3-49-200	TRACK CHAIN-LEFT PLAST 31-5/8	Assembly	Option	Plastic chain on left side	\$ 89.00	Track Sys.
1	M35-49-220	TRACK CHAIN-MOTOR SS 54-11/16	Assembly	Option	Plastic/SS chain from drive motor to large sprock	\$ 312.00	Track Sys.
1	M3-49-210	TRACK CHAIN-RIGHT PLAS 25-5/8	Assembly	Option	Plastic chain on right side	\$ 75.00	Track Sys.
3	98355A160	TRACK COTTER PIN-1/8 X 2-1/4 STAINLESS	Each	Option	Small sprocket pins	\$ 2.19	Track Sys.
2	5M125-0	TRACK COTTER PIN-3/16 X 3 STAINLESS	Each	Option	Large sprocket pins	\$ 3.95	Track Sys.
3	M35-49.065	TRACK DRIVE BAR SHAFT-35K	Each	Option	Drive bars for wheel rotation (3)	\$ 129.00	Track Sys.
2	M3-49-110	TRACK SPROCKET-LARGE 40 TOOTH 5/8" BORE	Each	Option	Large sprockets on ends of front drive bar (2)	\$ 159.00	Track Sys.
3	M3-49-105	TRACK SPROCKET-SMALL 14 TOOTH 5/8 BORE	Each	Option	Small sprockets on ends of drive bars (3)	\$ 64.00	Track Sys.
VALVES (SOLENOID & MISC)							
1	137-125	GATE VALVE-1/2"- FNPT-BRASS	Each	Std & Option	Gate Valve - Full Port - Brass	\$ 18.50	Valves
1 TO 3	131-08F22	SOLENOID VALVE-1/2"-PARKER 60/60HZ	Complete	Std	Fill, Drain, & Disinfect Sys.Opt. (black coil)	\$ 189.00	Valves



TECHNICAL DATA TYPICAL CHEMICAL PUMP ASSEMBLY

Medical Equipment Washing & Decontamination Systems





TECHNICAL DATA VALVE INSPECTION PROCEDURES

Medical Equipment Washing & Decontamination Systems

Valve inspection can be performed while the valve is still piped in line.

The Valves to be inspected may be:

- Fill Line Valve
- Disinfectant Line Valve (*Option*)
- Drain Valve (pre-2005)
- Main Chamber Valve (Pre-2005).

1. Unplug the Aqua Phase from the power Supply
2. Turn off the water supply to the Aqua Phase
3. Loosen the Fill Line connection (to release water pressure).
4. Remove the Retainer clip or Cap
5. Remove the Data Label Plate if an Asco Valve.
6. Lift the Unit Solenoid (electrical coil) up, off the Plunger Tube Assembly (*Do not miss place the spring or tension clip on the Plunger Tube assembly*).
7. Remove the bolts connecting the valve Cover/Solenoid Base to the valve Body.
8. Separate the valve Cover/Solenoid Base AND the Diaphragm from the valve Body. (*Be not to miss place the springs between the Cover/Solenoid Base and the Diaphragm*). Pay attention to the location of the valve Body Gasket/O-ring.
9. Look at/into the valve Body for and dirt or debris, and remove if any exists.
10. Carefully, separate the Diaphragm for the Cover/Solenoid Base.
11. Inspect the Diaphragm for any damage or wear such as cracking, blisters, or warps. The Diaphragm should have the same pliability/flexibility across its surface.
12. Locate the Bleed Hole (1/2" Valves) in the Diaphragm and make certain it is not plugged or clogged with debris or hard water particles.
13. Check that the Core Spring and Core Assembly moves freely inside the Cover/Solenoid base.

If you find there are issues with items 11, 12, or 13 above, a valve rebuild kit may need to be ordered and installed.

When reassembling the valve:

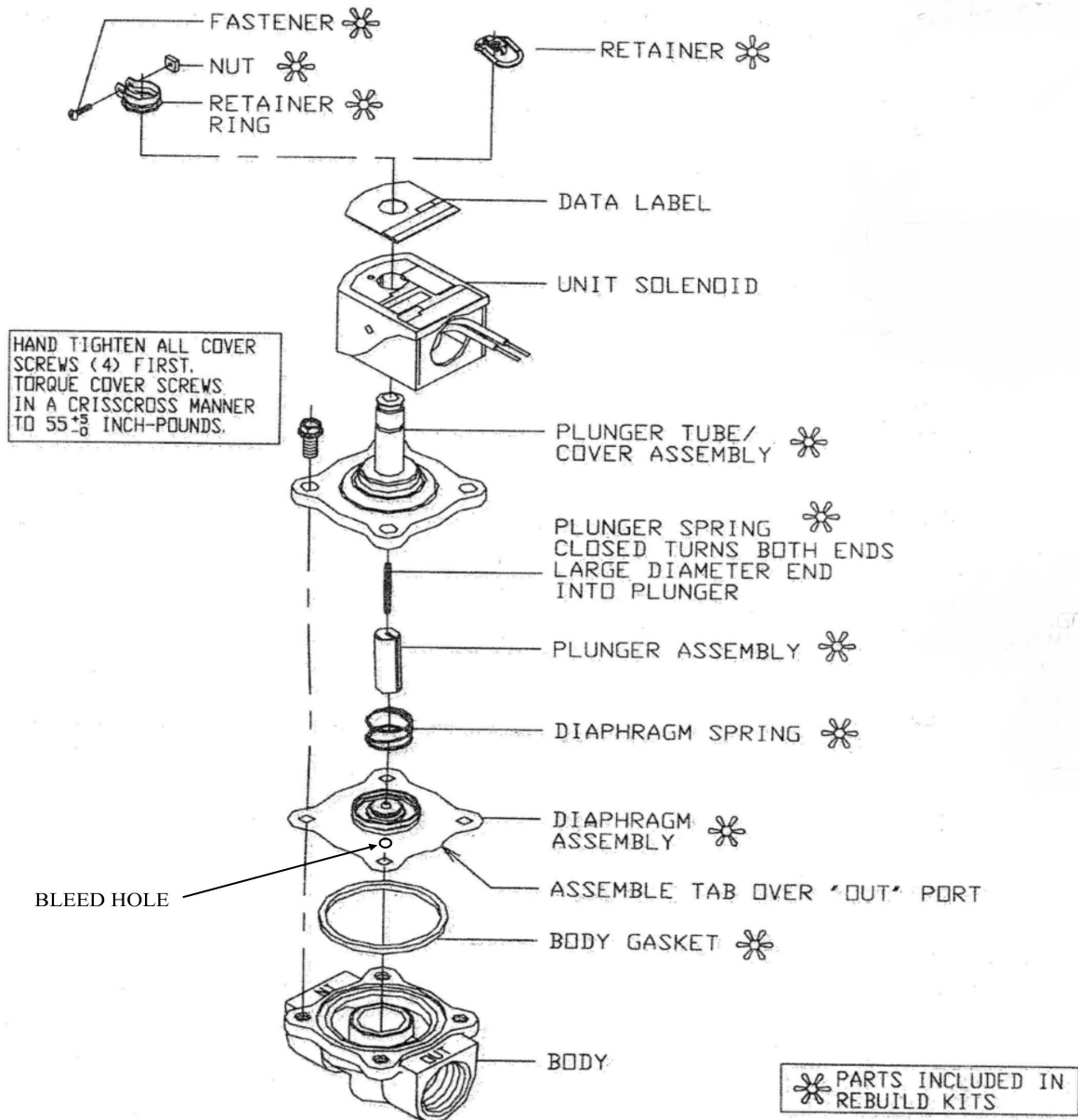
- IT IS CRITICAL TO VALVE OPERATIONS THAT THE BLEED HOLE be towards the "OUT" stamped into the valve Body (*the Bleed Hole will be at about 45 degree from the "OUT" stamp*).
- IT IS CRITICAL TO VALVE OPERATIONS THAT BOTH THE Core Spring and Diaphragm Spring exist and are in position.



TECHNICAL DATA 1/2" VALVE (FILL & DISINFECT)

Medical Equipment Washing & Decontamination Systems

NORMALLY CLOSED
SERIES 22, WATTAGES A, B & 1
3/8", 1/2" & 3/4" NPT
BRASS-STAINLESS STEEL



DEMA SINGLE-STAGE INJECTOR MODELS 200-3C, 200C, 201C, 202C, 203C, 204C, 206C, 208C, 2012C

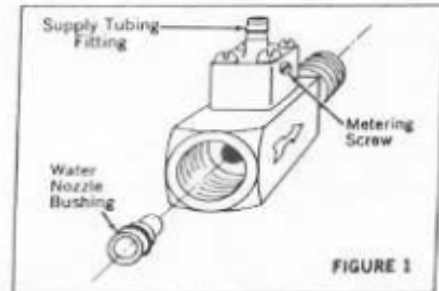
INSTALLATION INSTRUCTIONS

1. PARTS

- A. Injector.
- B. Drum protector disc.
- C. Three brass nozzle bushings.
- D. Plastic Tubing 8' long with foot strainer.
- E. Backup washer (Models 204C & smaller).

2. INSTALLATION

- A. **Selecting the nozzle bushing:**
Find the appropriate APPLICATION under Section 4 and use the tables to select one of the three bushings supplied. Push the bushing into the injector inlet, small end first, as far as it will go. See Fig. 1.
- B. **Back up washer:**
In some applications a flexible hose and shut off gun are used downstream from the injector. When the gun is shut off a momentary back flow can develop and push out the nozzle bushing. To prevent this, place the plastic backup washer behind the nozzle before screwing the injector onto the inlet pipe.
- C. **Placement in the water line:**
The injector may be installed in a horizontal or vertical line and with the knob in any position below, above, or to the side. Water flow must be in the direction of the arrow on the injector body. If the injector pipe size is different from the line size, use pipe bushings or reducers as required. (Injector selection is based on flow, not line size.)
- D. **Connection to chemical supply:**
Drop the end of the tubing with the strainer into the fluid product container. Cut the tubing to any convenient length and slip the open end over the injector fitting. The container may be more than 8 feet below the injector (extra tubing required) but injection capacity will be less. Do not place the container above the injector unless the injector is under pressure when not in use. This will prevent free siphoning. The metal drum protector disc may be used to cover the container opening and to hold the tubing in place. Twist the disc at the slit for easy application.



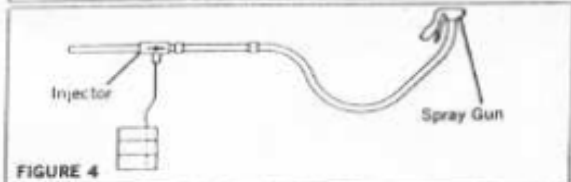
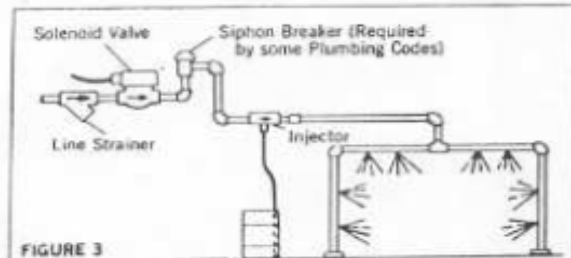
3. CHEMICAL FEED ADJUSTMENT

See FIG. 1 for the location of the metering screw in the knob. The knob may be re-oriented for better accessibility by removing the 4 machine screws and turning it to the new position. Turn the metering screw to the left to increase the injection rate. Five turns provide the maximums shown in Table 1. These figures are with 8 feet of suction tubing, a lift of 4 feet from the fluid container to the injector, and for a maximum water temperature of 140°F. Injectors will operate at reduced injection rates up to 200°F or a lift up to 25 feet. If the chemical is viscous (above 75 cps) the maximum injection rates of injectors up to Model 204C can be as much as doubled by using 3/8" ID tubing. (Dema part 100-12L.) Use a 1" piece of regular tubing over the inlet barb as a bushing. Optional "T" type metering knob (see parts list on back page). Screw pre-selected metering tip (fixed orifice) into inlet barb before attaching plastic tubing.

4. APPLICATIONS

SPRAYING SYSTEM AT LINE PRESSURE FIGURES 3 AND 4.

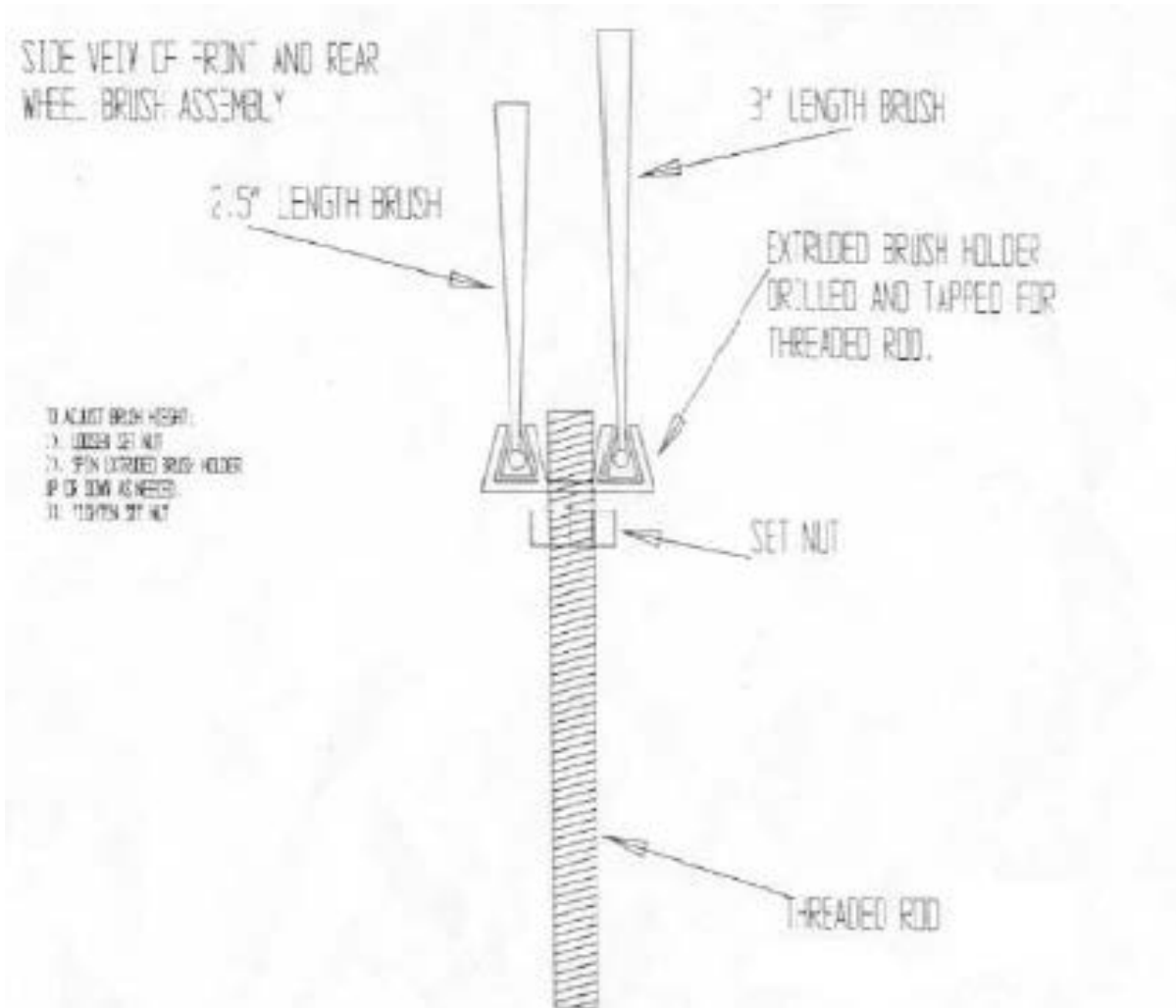
Select the nozzle bushing to match your total spray nozzle flow and pressure as shown in Table 1 on page two. Spray nozzle catalog flow ratings are the most convenient method of determining water flow. Once an injector has been matched to a spray nozzle system, it will continue to function regardless of fluctuations in line pressure, as the water flow will also fluctuate in proportion. Therefore, if your line pressure is unknown, it is permissible to use spray nozzle ratings at any pressure for the purpose of selecting an injector. Flow ratings at 40 psi are the basis of the spray nozzle numbering system and are therefore most frequently used. If there are lengthy piping, hose, or other restrictions between the injector and nozzles, these pressure losses must be added to the rated pressure before entering Table 1 (see Table 12).





TECHNICAL DATA WHEEL BRUSH ADJUSTMENT

Medical Equipment Washing & Decontamination Systems



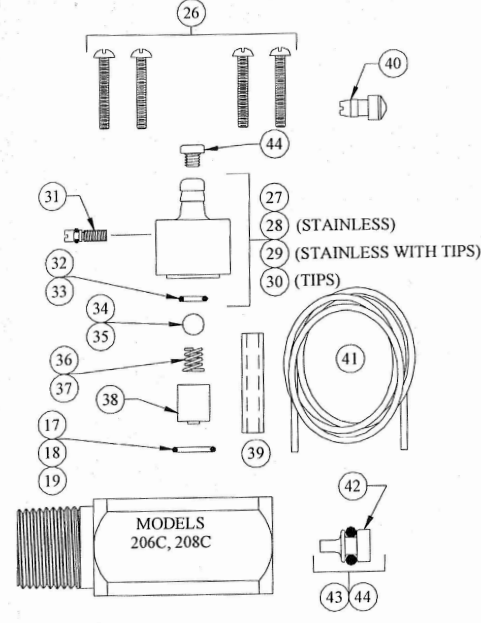
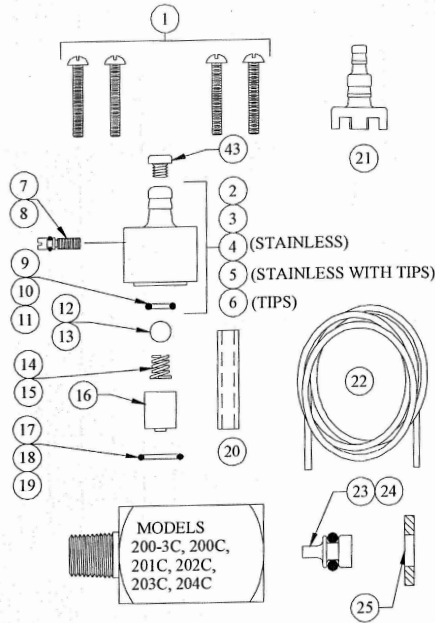


TECHNICAL DATA

SINGLE-STAGE INJECTOR

MODELS: 200-3C, 200C, 201C, 202C, 203C, 204C, 206C, 208C

Medical Equipment Washing & Decontamination Systems



NO.	PART NO.	DESCRIPTION
1	24-33	Screw #8-32 x 7/8" Lg. (4-Reqd.)
2	24-32	Metering Knob Assy.
3	24-32PS	Metering Knob Assy. (-P Injectors)
4	24-32S	Metering Knob Assy. (Stainless)
5	24-32ST	Metering Knob Assy. (Stainless w/Tips)
6	24-32T	Metering Knob Assy. (Tips)
7	100-24	Metering Screw
8	100-24PS	Metering Screw (-P Injectors)
9	24-25	Check Valve O-Ring (EP)
10	24-25S	Check Valve O-Ring (Silicone)
11	24-25V	Check Valve O-Ring (Viton)
12	24-24P	Check Valve Ball (Teflon)
13	24-24S	Check Valve Ball (Stainless)
14	24-23	Check Valve Spring (Stainless)
15	24-23-2	Check Valve Spring (Hastelloy)
16	24-34-	Check Valve Core (Specify Model No.)
17	25-29	Metering Knob O-Ring (EP)
18	25-29S	Metering Knob O-Ring (Silicone)
19	25-29V	Metering Knob O-Ring (Viton)
20	61-107-2	Ceramic Weight for 1/4" ID Tubing for 200-3C Thru 204C
21	24-11MP	Foot Strainer
22	100-12	Vinyl Tubing (3/8" OD x 8' Lg.)
23	24-8-	Water Nozzle & O-Ring Assy. (Brass) Add Num. Stamped on Nozzle
24	24-8S-	Water Nozzle & O-Ring Assy. (Stainless) Add Num. Stamped on Nozzle

NO.	PART NO.	DESCRIPTION
25	24-31	Back-Up Washer (Specify Model No.)
26	23-7	Screw (1" Lg.) (4 Reqd.)
27	23-32	Metering Knob Assy.
28	23-32S	Metering Knob Assy. (Stainless)
29	23-32ST	Metering Knob Assy. (Stainless w/Tips)
30	23-32T	Metering Knob Assy. (Tips)
31	23-24	Metering Screw
32	23-11	Check Valve O-Ring (EP)
33	23-11V	Check Valve O-Ring (Viton)
34	23-10	Check Valve Ball (Stainless)
35	23-10P	Check Valve Ball (Teflon)
36	23-9	Check Valve Spring (Stainless)
37	23-9-2	Check Valve Spring (Hastelloy)
38	23-34-	Check Valve Core (Specify Model No.)
39	61-107	Ceramic Weight for 3/8" ID Tubing for 206C Thru 208C
40	24-11L	Foot Strainer
41	100-12L	Vinyl Tubing (1/2" OD x 8' Lg.)
42	23-8-	Water Nozzle & O-Ring Assy. (Brass) Add Num. Stamped on Nozzle

ACCESSORIES

NO.	PART NO.	DESCRIPTION
43	100-15-	Metering Tip (Specify Color)
	100-15K	Metering Tip Kit
44	61-9	Metering Tip (Specify Color)
	61-9K	Metering Tip Kit



TECHNICAL DATA PUMP IMPELLER INSPECTION PROCEDURES

Medical Equipment Washing & Decontamination Systems

WARNING

Unplug the machine from the power supply before performing any service procedures.

It is recommended that you contact the Aqua Phase factory at 800-208-9274 before attempting to clear debris from the pump impeller. Removing debris from the pump impeller requires disassembly of the pump.

1. Unplug the Aqua Phase from the power supply.
2. Disconnect the electrical wires at the pump.
3. Disconnect the hose going to the inlet of the pump.
4. Disconnect the hose or piping from the pump outlet.
5. Remove the pump mounting bolts from the underside of the machine.
6. The pump is composed of two components: the pump head and the pump motor.
 - a. You do **not** need to remove the pump head from the pump motor.
 - b. You do need to take the pump head apart.
7. Remove the bolts holding the pump head together.
8. You may need to tap (hit) the pump head assembly to free the two halves.
9. Inspect the pump impeller.
 - a. Check the impeller housing and the inlet elbow for any obstructions.
 - b. Remove debris if necessary.
10. Inspect the pump seal/gasket.
 - a. Replace if damaged.
 - b. If your pump has an "O-Ring" seal, you may order a replacement from the factory.
11. Reassemble and reinstall the pump.

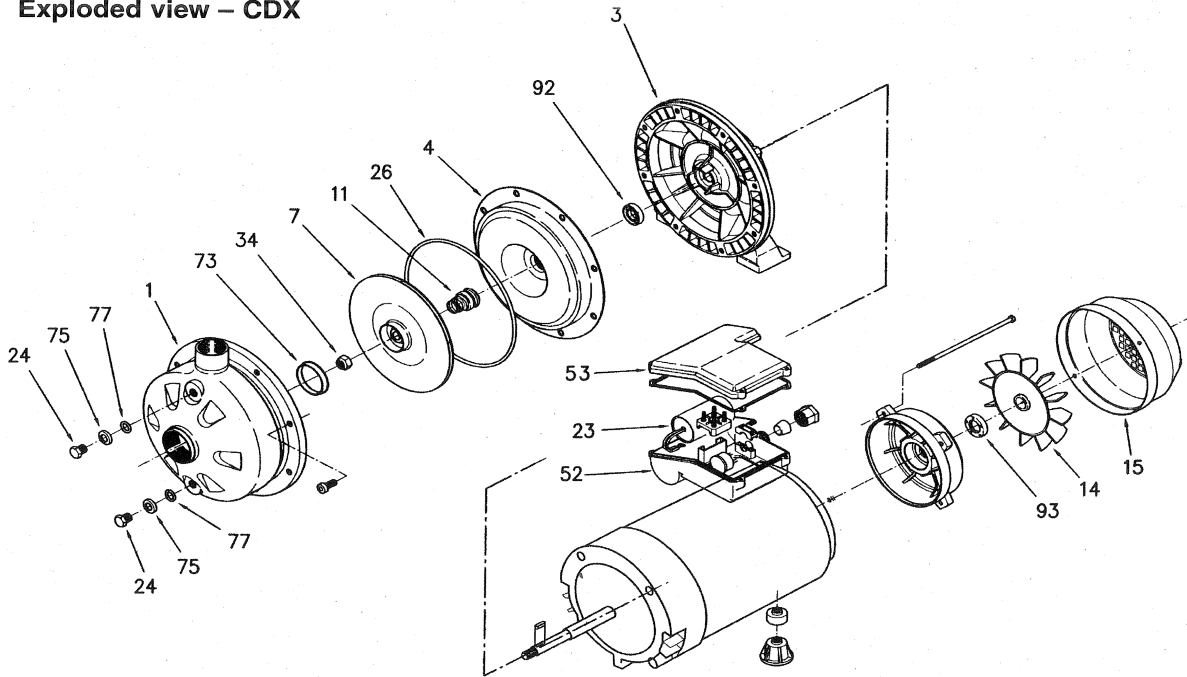


TECHNICAL DATA MAIN SYSTEM PUMP

Medical Equipment Washing & Decontamination Systems

Model CDU, CDX, 2CDU, 2CDX EBARA End Suction Centrifugal / Two-stage Centrifugal
Instructions and Operation

Exploded view – CDX



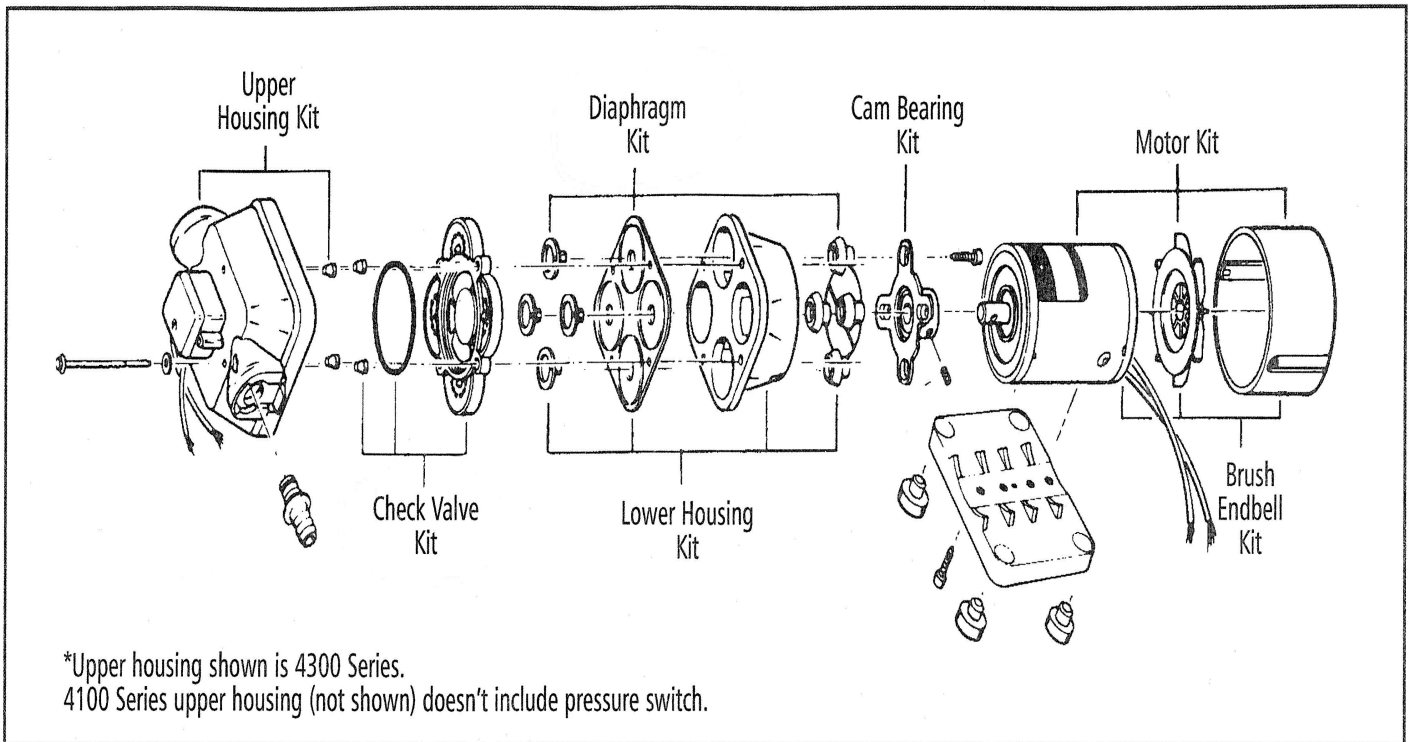
Location No.	Part Name	Material	No. for 1 Unit
001	Casing	304 Stainless	1
003	Motor bracket	Cast Aluminum	1
004	Casing cover	304 Stainless	1
007	Impeller	304 Stainless	1
011	Mechanical seal	Carbon/Ceramic	1
014	Fan	Polypropolene	1
015	Fan Cover	Steel	1
023	Capacitor	Single Phase only	1
024	Priming/Drain plug	303 Stainless	2
026	O-Ring	NBR	1
032	Key	304 Stainless	1
034	Impeller nut	304 Stainless	1
052	Terminal box	Plastic	1
053	Terminal cover	Plastic	1
073	Casing ring	NBR	1
075	Washer	304 Stainless	2
077	O-ring	NBR	2
092	Lip seal	-	1
093	Lip seal	-	1

 EBARA International Corporation
Standard Pump Division



TECHNICAL DATA Flojet Disinfectant Pump

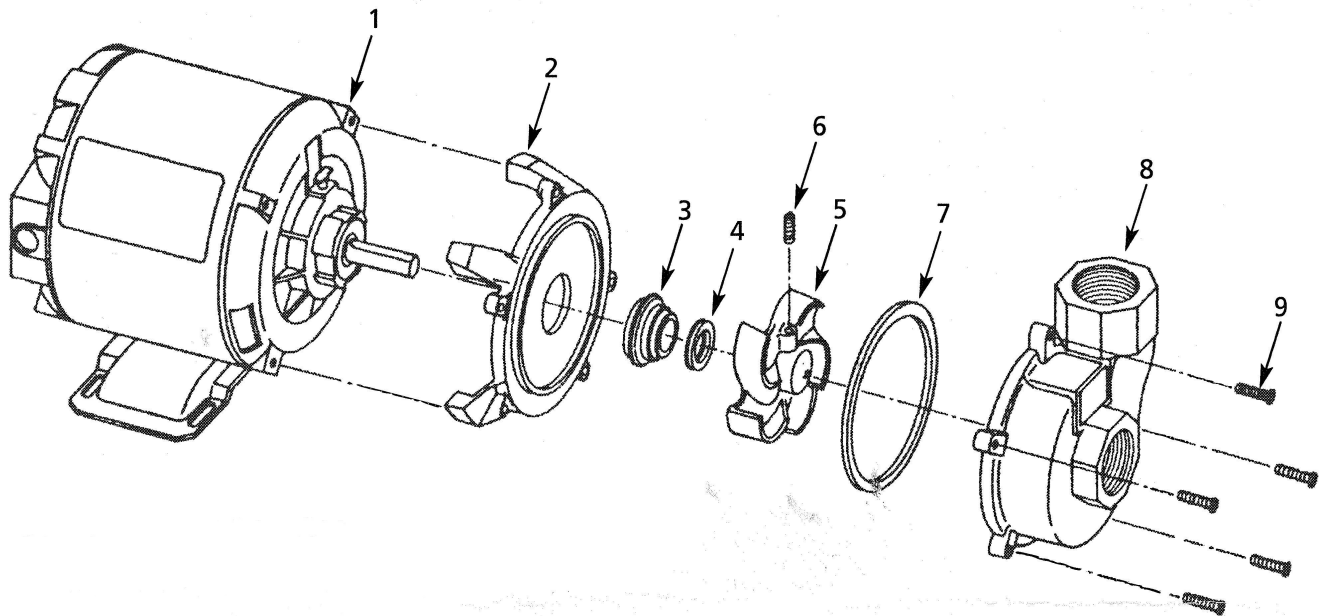
Medical Equipment Washing & Decontamination Systems





TECHNICAL DATA Drain Pump - AMT

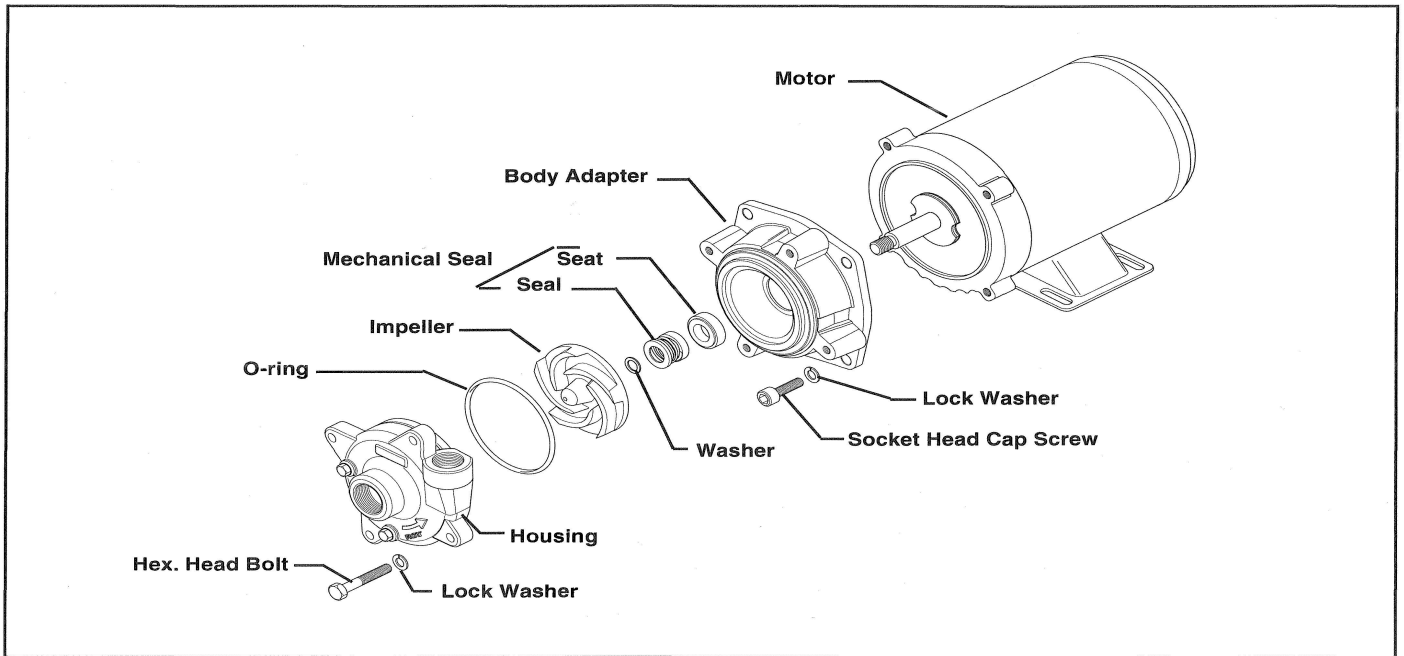
Medical Equipment Washing & Decontamination Systems





TECHNICAL DATA DRAIN PUMP - Shertech

Medical Equipment Washing & Decontamination Systems





AQUA PHASE CHEMICALS & DESCRIPTIONS

Medical Equipment Washing & Decontamination Systems

AQ-240 Cleaning Solution

4 gallons/case

The Cleaning Solution was developed and formulated by Aqua Phase, specifically for use in the Aqua Phase systems. The AQ-240 is an industrial grade cleaner, with an elevated pH, to breakdown the fluids, proteins, and carbohydrate commonly found on medical equipment. In conjunction with the AQ-240 breakdown processes, and the spray impact from the Aqua Phase system, an excellent job is done in the removal of the gross soil contaminants. We can't put on the bottle, but we can prove the effectiveness of an Aqua Phase system with the use of AQ-240 against CDIF as proven by an independent, third party, testing laboratory.

AQ-260 Rinse Aid Solution

4 gallons/ case

The Rinse Aid Solution was developed and formulated by Aqua Phase, specifically for use in the Aqua Phase Systems. The Aqua Phase AQ-260 was one of the first rinse-agents ever developed to activate at 105° (F). When activated, the AQ-260 reduces the surface tension of any residual water droplets on your medical equipment which eliminates water spots. The reduced surface tension of the water also aids in the process of flash evaporation resulting in air drying of equipment surfaces in 2-3 minutes.

AQ-280 Rust Inhibitor Rinse Solution

4 gallons / case

The Rust Inhibitor can be used periodically, or all the time in place of the AQ-240 Rinse Aid Solution. AQ-280 is a reformulation of a fluid used by US Steel Mills that protected raw steel after it came out of the forges to prevent oxidation (rusting) of the unprotected metal surfaces. The reformulation allows for a micro thin coating to the surfaces, without a cloudy, or grease film residue being left on medical equipment. The AQ-280 inhibits the oxidation process on existing equipment, and provides a protection to surface of uncoated metals that the original equipment manufacturer may not have provided.

AQ-725 De-liming Solution

12 quarts / case

When hard water is supplied to the Aqua Phase system, the periodic use of the AQ-725 is a great preventative maintenance measure. The AQ-725 is an industrial grade solution, similar to those used to clean the drum of a cement mixing truck. The AQ-725 breaks down the deposits that may build up on the Aqua Phase chamber walls due to the hard water that is supplied to the Aqua Phase system. It is easy-to-use, pre-measured, can be used weekly, or as needed, and the instructions are printed on the quart bottle.

AQ-128 HDQ Neutral Disinfectant

4 gallons / case

The HDQ Neutral is quart based disinfectant suitable for the disinfection of hard, non-porous environmental surfaces. Use of the AQ-128 in Aqua Phase does not require a post rinse like some disinfectants. A review of the bottle labeling is required for a complete listing of organisms that HDQ Neutral is effective against. A few included are: MRSA, VRE, HBV, HCV, HIV, and certain virucidal and fungicidal claims. HDQ has a 1 ounce per gallon dilution rate.

AQ-130 Germicidal PD-128 Disinfectant

4 gallons /case

The Spartan Chemical, PD-128 has claims of a Tuberculocidal grade/type of disinfectant. Use of the AQ-130 (Spartan PD-128) does not require a post rinse, has a dilution rate of 1 ounce per gallon, and a kill claim against HIV of 1 minute contact time. Other claims include: fungicidal, staphylocidal, pseudomonacidal, and virucidal.

PRE-MEASURED - EASY & READY TO GO!

AQUA PHASE SOLUTIONS ARE PLACED IN THE CHEMICAL CABINET OF YOUR AQUA PHASE UNIT



AQ-240 Cleaning Solution Safety Data Sheet

Medical Equipment Washing & Decontamination Systems



NATIONAL PURITY, LLC.
6840 SHINGLE CREEK PKWY, STE 23
BROOKLYN CENTER, MN 55430
(612) 672-0022

SAFETY DATA SHEET

1. Product and Company Identification

Product Name	AQUAPHASE AQ-240 CLEANING SOLUTION
Product Number	P678
Product Type	Mixture
Product Use	Detergent designed specifically for use in the Aquaphase Wheelchair Washing Machine.
Manufacturer/Supplier	National Purity, LLC. 6840 Shingle Creek Parkway, Suite #23 Brooklyn Center, MN 55430
Company Contact	612-672-0022
Emergency Telephone Number	1-800-255-3924

2. Hazards Identification

GHS Classification in accordance with 29 CFR 1910 OSHA HCS

- Acute toxicity, Oral (Category 3) H301
- Skin corrosion/irritation, (Category 1B) H314
- Eye damage/irritation, (Category 1) H318
- Acute toxicity, inhalation (Category 4) H332
- Acute aquatic toxicity, (Acute 2) H401
- Chronic aquatic toxicity, (Chronic 3) H412

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard Statements

- H301 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage
- H332 Harmful if inhaled.
- H401 Toxic to aquatic life
- H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention

- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P260 Do not breath mist, vapors, or spray.
- P264 Wash hand and exposed skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well ventilated area.
- P273 Avoid release to the environment.



AQ-240 Cleaning Solution Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



NATIONAL PURITY, LLC.
6840 SHINGLE CREED PKWY, STE 23
BROOKLYN CENTER, MN 55430
(612) 672-6022

Response

P301+P310+P330

IF SWALLOWED, immediately call a POISON CENTER/doctor. DO NOT INDUCE VOMITING. Rinse mouth with water. Never give anything to an unconscious person.

P303+P361+P353+P363

IF ON SKIN, Immediately take off all contaminated clothing. Rinse skin with water or shower if appropriate. Wash contaminated clothing before reuse.

P305+P351+P338

IF IN EYES, rinse cautiously for several minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

P310

Immediately call a POISON CENTER/doctor for medical assistance.

P304+P340+P312

IF INHALED: remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if feeling unwell.

Storage/Disposal

P405

Store locked up.

P501

Dispose of contents/container in accordance with local, state and federal regulations.

3. Composition/Information on Ingredients

The criteria for listing components in this section are: Ingredients that meet the criteria for carcinogenic, toxic to reproduction, or specific target organ toxicity and components otherwise considered hazardous according to OSHA which exceed the cut off limits for SDS specified by the criteria for mixtures are listed. Non hazardous components are not listed. This is not a composition disclosure. Exact percentages are considered proprietary and a trade secret.

Hazardous Components	CAS#	Classification	%
Potassium hydroxide	1310-58-3	H301, H314, H318, H402, H412	10-20%
Sodium silicate	1344-09-8	H302, H315, H320, H333, H402, H412	10-15%
Sodium gluconate	527-07-1	H316, H320	2-8%

4. First Aid Measures

Description of First Aid Procedures

General Advise

Consult a physician. Show this SDS to the doctor.

In Case of Eye Contact

Flush with cool running water for 15 minutes. Remove contact lenses if possible. Get immediate medical attention.

In Case of Skin Contact If Ingested

Flush with cool water. If irritation occurs, get medical attention. Rinse mouth with water. **Do not induce vomiting.** Obtain medical attention. Never give anything by mouth to an unconscious person.

If Inhaled

Move person to fresh air. If breathing difficulty persists, consult a physician. Symptoms may be delayed.

Notes to Physician

General advice

Seek medical attention if feeling unwell. Show the SDS to the physician in attendance.

5. Fire-fighting Measures

Flammable properties

Not flammable

Extinguishing media

Use materials designed for source of fire. Treat as an alkaline material.

Protection of firefighters

Firefighters should wear protective clothing including self contained breathing apparatus.

Hazardous combustion products

May include and not limited to oxides of carbon, and nitrogen, and sulfur.

Unusual Fire, Explosion hazards

Containers may melt or rupture from heat of fire. May form combustible mixtures with air when heated..

6. Accidental Release Measures

Personal precautions

Keep unnecessary personal away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled containers unless wearing protective Clothing.



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BROOKLYN CENTER, MN 55430
(612) 672-0022

**Methods for containment
Methods for cleaning up**

Stop leak if you can do so without risk. Prevent entry into waterways, sewers. Before attempting clean up, refer to hazard data given above. Small spills may be mopped up and rinsed. Large spills may be absorbed with non reactive absorbent and placed in suitable , covered, labeled containers. Rinse area with water. Never return spill to original container for reuse.

Environmental precautions

Keep out of waterways. Dispose of contents/containers in accordance with local, state, and federal regulations.

7. Handling and Storage

Precautions for Safe Handling

Use good industrial hygiene practices when handling this material. Avoid contact with skin and eyes. Avoid inhalation of mists or vapors. Wash contaminated clothing before reuse.

Conditions for Safe Storage

Keep container closed when not in use. Keep out of reach of children. Store in cool, well ventilated, dry place, locked up.

8. Exposure Controls and Personal Protection

Exposure Limits

Ingredients

Potassium hydroxide
Sodium silicate
Sodium gluconate

CAS#

1310-58-3
1344-09-8
527-07-1

OSHA PEL

Not available
Not available
Not available

ACGIH TLV

2mg/m³ TLV
Not available
5 mg/m³ TLV

Engineering controls

Local exhaust ventilation recommended.

Personal protective equipment

Eye/Face protection

Wear safety glasses with side shields if splash conditions exist. Have eye wash water and shower facilities available in work area.

Hand protection

Wear safety gloves.

Skin and body

As required by employer code.

Respiratory protection

Use a NIOSH approved respirator when exposure guidelines are exceeded.

General hygiene considerations

Handle in accordance with good industrial hygiene practices. Do not eat or drink when using product. Wash hands well before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance/form

Clear liquid

Color

Amber

Odor

Odorless

Odor threshold

Not established

pH

14 (concentrate)

Melting/freezing point

Not established

Initial Boiling point

≈212° F. (100° C.)

Flash point

None

Evaporation rate

Not established

Flammability

Not flammable

Upper/lower flammability or

Not applicable

Explosive limits

Vapor pressure

Not established

Vapor density

Not established

Specific gravity/density

1.344

Vapor density

Not established

Solubility in water

Complete

VOC

< 1.0%

% Volatile

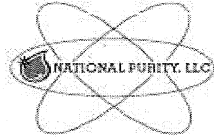
Approx. 77%

Other Safety Information



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10. Stability and Reactivity

Reactivity	No data available
Chemical Stability	Stable under normal storage conditions.
Hazardous reactions	None known.
Conditions to avoid	Do not mix with other chemicals. Keep away from sources of heat.
Incompatible materials	Strong acids, alkalis, strong oxidizing agents. Contact with metals like Aluminum, tin, and zinc liberates hydrogen gas. Can react vigorously with halogens.
Hazardous decomposition products	May include but not limited to oxides of carbon, and nitrogen.
Hazardous polymerization	Will not occur.

11. Toxicological Information

Ingredients	LC50
Potassium hydroxide	Not available
Sodium silicate	Not available
Sodium gluconate	
Ingredients	LD50
Potassium hydroxide	Not available
Sodium silicate	1500-3200 mg/kg (Oral-rats)
Sodium gluconate	> 2000 mg/kg (Oral-rat)
Effects of acute exposure	
Eye	Will cause severe eye damage.
Skin	Will cause severe skin burns.
Ingestion	Harmful if swallowed. May cause corrosive damage to mouth, throat and stomach.
Inhalation	May cause irritation of nose and throat.
Sensitization	No data available.
Chronic effects of short and long Term exposure	Prolonged exposure to skin may cause drying, defatting and irritation.
Carcinogenicity	Does not contain ingredients considered carcinogenic by NTP, IARC, or OSHA.
Mutagenicity	No data available.
Reproductive effects	No data available.
Teratogenicity	No data available.

12. Ecological Information

Eco-toxicity	Ecological effects for this product have not been analyzed. However, if spilled this product and any contaminated soil may be toxic to aquatic life and have long lasting effects.
Environmental effects	No data available.
Aquatic toxicity	The high pH of this product is acutely harmful to aquatic life.
Potassium hydroxide	No data available
Sodium silicate	LC50 Daphnia magna: 246 mg/l 96 hours LC50 Fish (Gambusia affinis): 2320 mg/l 96 hours LC50 Fish: > 1000 mg/l 96 hour (predicted) LC50 Daphnia magna: > 1000 mg/l 96 hour (Predicted)
Sodium gluconate	No data available.
Persistence and Degradability	No data available.
Bioaccumulation/accumulation	No data available.
Partition coefficient	No data available.
Mobility in environmental media	No data available.
Chemical fate information	No data available.
Other adverse effects	No data available.



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13. Disposal Considerations

Waste codes	Not Available
Disposal instructions	Dispose in accordance with local, state, and federal regulations.
Wastes from residues/unused product	Containerize. Rinse area with water. Keep out of storm sewer/waterways.
Contaminated packaging	Dispose in accordance with all applicable regulations.

14. Transport Information

Basic shipping requirements:	
Proper shipping name	Corrosive liquid, n.o.s. (Contains potassium hydroxide, sodium silicate), 8, UN1760, PG II
Hazard class	Corrosive liquid, 8
UN number	UN1760
Packing group	PG II
Special provisions	Not applicable

15. Regulatory Information

U.S federal regulations	This product has been classified in accordance with the Occupational Safety and Health Administration hazard criteria and the SDS contains all of the information required by OSHA. HCS 2012	
TSCA	All ingredients are listed on the Toxic Substances Control Act or are exempt from listing.	
Cercla SuperFund 40CFR117.302 Potassium hydroxide	This product contains a material with a Reportable Quantity (RQ) RQ= 25,000 Lbs.	
SARA Title III Section 311&312 SARA Title III Section 313	Immediate (Acute) Health Hazard Product does not contain substances on the list of Toxic Chemicals per 40CFR372:	
States Right to Know	Reportable chemicals: Potassium hydroxide,	
California Proposition 65	This product does not contain chemicals known to the state of California to cause cancer.	
Inventory Status	Inventory Name	On Inventory (Yes/No)*
Countries		
U.S.	CIL	Yes
Canada	DSL	Yes

- A "Yes" indicates that all of the components of this product comply with the inventory requirements administered by the governing country(s) listed.



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16. Other Information

HMIS RATING HMIS Legend

Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	3
Flammability	0
Reactivity	1
Personal Protection	B

Disclaimer

To the best of our knowledge, the information included herein is accurate. However, neither the above named supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Issue date
Supersedes date
Reason for update
Expiration date

March 5, 2015
Previous issues
Conform to GHS OSHA HCS 2012
March 5, 2018



AQ-260 Rinse Solution Safety Data Sheets

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SAFETY DATA SHEET

1. Product and Company Identification

Product Name	AQ-260 AQUAPHASE RINSE AGENT
Product Number	P153
Product Type	Mixture
Product Use	Commercial dishwashing additive for preventing spots on dinnerware.
Manufacturer/Supplier	National Purity, LLC. 6840 Shingle Creek Parkway, Suite #23 Brooklyn Center, MN 55430
Company Contact	612-672-0022
Emergency Telephone Number	1-800-255-3924

2. Hazards Identification

GHS Classification in accordance with 29 CFR 1910 OSHA HCS

Acute toxicity, Oral (Category 5) H303,
Eye damage/irritation, (Category 2B) H320
Skin corrosion/irritation (Category 3) H316
Acute aquatic toxicity, (Category 2) H401

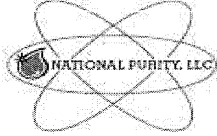
GHS Label elements, including precautionary statements

Pictogram	None required
Signal word	Warning
Hazard Statements	
H303	May be harmful if swallowed .
H320	Causes eye irritation.
H316	May cause mild skin irritation
H401	Toxic to aquatic life.
Precautionary Statements	
Prevention	
P264	Wash and rinse hands thoroughly. Avoid hand contact with eyes while washing hands.
P273	Avoid release to the environment.
Response	
P312	IF SWALLOWED, call a POISON CENTER/doctor if feeling unwell.
P332+P313	If skin irritation occurs, get medical attention.
P305+P351+P337+P313	IF IN EYES, rinse cautiously for several minutes. Remove contact lenses if present. Continue rinsing. If eye irritation persists, Get medical advice and attention.
Storage/Disposal	
P501	Dispose of contents/container in accordance with local/regional/federal regulations.



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NATIONAL PURITY, LLC.
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(612) 672-0022

3. Composition/Information on Ingredients

The criteria for listing components in this section are: Ingredients that meet the criteria for carcinogenic, toxic to reproduction, or specific target organ toxicity and components otherwise considered hazardous according to OSHA which exceed the cut off limits for SDS specified by the criteria for mixtures are listed. Non hazardous components are not listed. This is not a composition disclosure. Exact percentages are considered proprietary and a trade secret.

Hazardous Components	CAS#	Classification	%
Alcohols, C8-C10, ethoxylated propoxylated	68603-25-8	H303, H320	20-40%
Sodium alkylnaphthalene sulfonate	Proprietary	H303, H316, H320, H401	1-5%

4. First Aid Measures

Description of First Aid Procedures

General Advice	Consult a physician. Show this SDS to the doctor.
In Case of Eye Contact	Flush with cool running water for 15 minutes. Remove contact lenses if present. If irritation occurs, get medical attention.
In Case of Skin Contact	Flush with cool water. If irritation occurs, get medical attention.
If Ingested	Rinse mouth with water. Do not induce vomiting. Obtain medical attention if feeling unwell.
If Inhaled	Move person to fresh air. If breathing difficulty occurs, consult a physician.
Notes to Physician	Symptoms may be delayed.
General advice	Seek medical attention if feeling unwell. Show the SDS to the physician in attendance.

5. Fire-fighting Measures

Flammable properties	Not flammable below boiling points
Extinguishing media	Water spray or fog, carbon dioxide, foam or dry chemicals.
Protection of firefighters	Firefighters should wear protective clothing including self contained breathing apparatus
Hazardous combustion products	May include and not limited to oxides of carbon.
Unusual Fire, Explosion hazards	Evacuate the area promptly. Cool containers exposed to heat. Containers may melt or rupture from heat of fire.

6. Accidental Release Measures

Personal precautions	Keep unnecessary personal away. Do not touch or walk through spilled material. Avoid contact with skin, eyes and clothing.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers. Eliminate all ignition sources (no smoking, sparks, or flames) in area.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills, may be absorbed with non reactive absorbent and placed in suitable container for disposal. Large spills, dike area to prevent from spreading. Absorb with non reactive absorbent and place in suitable, covered, and labeled container. Rinse area with water. Never return spill to original container.
Environmental precautions	Avoid spills. Keep out of waterways.

7. Handling and Storage

Precautions for Safe Handling	Use good industrial hygiene practices when handling this material. Use in well ventilated area. Do not breath vapors or spray. Avoid prolonged or repeated contact with skin. Avoid release to the environment.
Conditions for Safe Storage	Keep container closed when not in use. Store at temperatures below 120° F. (50° C.)



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8. Exposure Controls and Personal Protection

Exposure Limits	CAS#	OSHA PEL	ACGIH TLV
Ingredients			
Alcohols, C8-C10, ethoxylated propoxylated	68603-25-8	Not available	Not available
Sodium alkylphenylene sulfonate	Proprietary	Not available	Not available
Engineering controls	General ventilation normally adequate.		
Personal protective equipment			
Eye/Face protection	None usually required under normal use conditions. Wear safety glasses with side shields when splash conditions exist.		
Hand protection	None usually required.		
Skin and body	Generally not required.		
Respiratory protection	Generally not required.		
General hygiene considerations	Handle in accordance with good industrial hygiene practices.		

9. Physical and Chemical Properties

Information on basic physical and chemical properties	
Appearance/form	Clear liquid
Color	Blue
Odor	Mild odor
Odor threshold	Not established
pH	3.0-3.2 (Concentrate)
Melting/freezing point	Not established
Initial Boiling point	Not established
Flash point	> 200° F. (93° C.)
Evaporation rate	< 1 (butyl acetate = 1)
Flammability	Not flammable
Upper/lower flammability or Explosive limits	Not applicable
Vapor pressure	Not established
Vapor density	Not established
Specific gravity/density	1.045
Solubility in water	Complete
VOC	< 1%
% Volatile	Approx. 77%
Other Safety Information	

10. Stability and Reactivity

Reactivity	Not reactive under normal use and storage.
Chemical Stability	Stable under normal storage conditions.
Hazardous reactions	None known.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Strong acids, strong oxidizing agents.
Hazardous decomposition products	May include but not limited to oxides of carbon.
Hazardous polymerization	Will not occur.



AQ-260 Rinse Solution Safety Data Sheet

Medical Equipment Washing & Decontamination Systems



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11. Toxicological Information

Ingredients
Alcohols, C8-C10, ethoxylated propoxylated
Sodium alkynaphthalene sulfonate

LC50
Not available
Not available

Ingredients
Alcohols, C8-C10, ethoxylated propoxylated
Sodium alkynaphthalene sulfonate

LD50
Not available
Not available

Effects of Acute Exposure-

Eye

Skin

Ingestion

Inhalation

Sensitization

Chronic effects of short and long

Term exposure

Carcinogenicity

Causes eye irritation.

May cause mild skin irritation.

May be harmful if swallowed. May cause irritation of gastrointestinal tract.

No data available

Not known to be a sensitizer.

Prolonged exposure to skin may cause drying, defatting and irritation.

Intentionally added ingredients are not considered carcinogenic by NTP, IARC or OSHA. Product may contain trace amounts (< 0.0003%) of ethylene oxide (CAS#75-21-8) a suspected human carcinogen and (<0.0006%) of propylene oxide (CAS#75-56-9) which is anticipated to be a human carcinogen.

Mutagenicity:

Reproductive effects:

Teratogenicity:

No data available.

No data available.

No data available.

12. Ecological Information

Eco-toxicity

Ecological effects for this product have not been analyzed. However, if spilled this products ingredients are harmful to aquatic life.

Environmental effects:

No data available.

Aquatic toxicity:

Although no data is available, the ingredients of this products are expected to be moderately toxic to aquatic life.

Persistence and Degradability:

No data available.

Bioaccumulation/accumulation:

No data available.

Partition coefficient:

No data available.

Mobility in environmental media:

No data available.

Chemical fate information:

No data available.

Other adverse effects:

No data available.

13. Disposal Considerations

Waste codes

Not Available

Disposal instructions

Dispose in accordance with local, state, and federal regulations.

Wastes from residues/unused product

Containerize. Rinse area with water. Keep out of storm sewer/waterways.

Contaminated packaging

Dispose in accordance with all applicable regulations.

14. Transport Information

Basic shipping requirements:

Not DOT regulated



AQ-260 Rinse Solution Safety Data Sheets

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15. Regulatory Information

U.S federal regulations	This product has been classified in accordance with the Occupational Safety and Health Administration hazard criteria and the SDS contains all of the information required by OSHA. HCS 2012.	
TSCA	All ingredients are listed on the Toxic Substances Control Act or are exempt from listing.	
SARA Title III Section 311&312 SARA Title III Section 313	Immediate (Acute) Health Hazard. This product does not contain any chemical components with known CAS#'s that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.	
California Proposition 65	This product does contain chemicals known to the state of California to cause cancer. Product may contain trace amounts (< 0.0003%) of ethylene oxide (CAS#75-21-8) a suspected human carcinogen and (<0.0006%) of propylene oxide (CAS#75-56-9) which is anticipated to be a human carcinogen.	
States Right To Know Components	Reportable chemicals: None known.	
Inventory Status	Inventory Name	On Inventory (Yes/No)*
Countries		
U.S.	CIL	Yes
Canada	DSL	Yes
<ul style="list-style-type: none"> A "Yes" indicates that all of the components of this product comply with the inventory requirements administered by the governing country(s) listed. 		

16. Other Information

HMIS RATING

HMIS Legend

Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	1
Flammability	0
Reactivity	0
Personal Protection	0

Disclaimer

To the best of our knowledge, the information included herein is accurate. However, neither the above named supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Issue date
Supersedes date
Reason for update
Expiration date

March 5, 2015
Previous issues
Conform to GHS OSHA HCS 2012
March 5, 2018



AQ-280 Rust Inhibitor Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



NATIONAL PURITY, LLC.
6840 SHINGLE CREEK PKWY, STE 23
BROOKLYN CENTER, MN 55430
(612) 672-0022

SAFETY DATA SHEET

1. Product and Company Identification

Product Name	AQUAPHASE AQ-280 RUST INHIBITOR
Product Number	P082
Product Type	Mixture
Product Use	Underbody rust inhibitor for vehicles.
Manufacturer/Supplier	National Purity, LLC. 6840 Shingle Creek Parkway, Suite #23 Brooklyn Center, MN 55430
Company Contact	612-672-0022
Emergency Telephone Number	1-800-255-3924

2. Hazards Identification

GHS Classification in accordance with 29 CFR 1910 OSHA HCS

Flammable liquid, (Category 3) H226
Acute toxicity, Oral (Category 5) H303
Skin corrosion/irritation, (Category 1) H314,
Serious eye damage/eye irritation, (Category 1) H318
Specific organ toxicity (Category 1), H370

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard Statements

H226 Flammable liquid and vapor.
H303 May be harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H370 Risk of serious damage to the lungs by inhalation.

Precautionary Statements

Prevention
P210 Keep away from heat, hot surfaces, sparks, open flames, ignition sources. No smoking.
P233 Keep container tightly closed.
P243 Take action to prevent static discharges.
P261 Avoid breathing mists, vapors, or spray.
P264 Wash hands and exposed skin thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well ventilated area.

Response

P370+P378 In case of fire, use procedures appropriate for the primary source of fire.
P303+P361+P353+P363 IF ON SKIN, immediately take off all contaminated clothing. Rinse skin with water or shower if appropriate. Wash contaminated clothing before reuse.



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P301++P330+P331
P305+P351+P338

P310
P304+P340
P310
P308+P311

Storage/Disposal
P403+P233+P235
P405
P501

IF SWALLOWED: Rinse mouth. DO NOT INDUCE VOMITING.
IF IN EYES, rinse cautiously for several minutes. Remove contact lenses if present. Continue rinsing.
Immediately call a POISON CENTER/doctor.
IF INHALED: remove person to fresh air and keep comfortable for breathing.
Immediately call a POISON CENTER/doctor.
If exposed or concerned about inhalation, call a POISON CENTER/doctor.

Store in a well ventilated place. Keep cool. Keep container tightly closed.
Store locked up.
Dispose of contents/container in accordance with local, state and federal regulations.

3. Composition/Information on Ingredients

The criteria for listing components in this section are: Ingredients that meet the criteria for carcinogenic, toxic to reproduction, or specific target organ toxicity and components otherwise considered hazardous according to OSHA which exceed the cut off limits for SDS specified by the criteria for mixtures are listed. Non hazardous components are not listed. This is not a composition disclosure. Exact percentages are considered proprietary and a trade secret.

Hazardous Components	CAS#	Classification	%
1-Propanamine, 3-(isodecyloxy)-, acetate	28701-67-9	H302, H314, H370	20-30%
Ethylene glycol monobutyl ether	111-76-2	H227, H316, H320	1-10%
Isopropyl alcohol	67-63-0	H225, H319, H336	1-10%

4. First Aid Measures

Description of First Aid Procedures

General Advise	Consult a physician. Show this SDS to the doctor.
In Case of Eye Contact	Flush with cool running water for 15 minutes. Remove contact lenses if possible. Get immediate medical attention.
In Case of Skin Contact	Flush with cool water. If irritation occurs, get medical attention.
If Ingested	Rinse mouth. Do not induce vomiting. Obtain immediate medical attention. Never give anything by mouth to an unconscious person.
If Inhaled	Move person to fresh air. If breathing difficulty persists, consult a physician.
Notes to Physician	Symptoms may be delayed.
General advice	Seek medical attention if feeling unwell. Show the SDS to the physician in attendance.

5. Fire-fighting Measures

Flammable properties	Flammable.
Extinguishing media	Carbon dioxide, dry chemical, dry sand or limestone powder.
Protection of firefighters	Firefighters should wear protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and not limited to oxides of carbon. Ammonia gas may be liberated at high temperatures. May generate toxic nitrogen oxide gases. Burning produces noxious and toxic fumes. Downwind personnel should be evacuated.
Unusual Fire, Explosion hazards	Containers may melt or rupture from heat of fire.
Further information	Do not allow run off from fire fighting to enter drains or water ways. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.



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Medical Equipment Washing & Decontamination Systems



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6. Accidental Release Measures

Personal precautions	Keep unnecessary personal away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled containers unless wearing protective Clothing.
Methods for containment	Prevent entry into waterways, sewers.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be mopped up placed in a container for disposal. Large spills: dike with suitable material and prevent discharge into waterways. Spill may be absorbed with non reactive material and placed in a suitable container for disposal. Residues can be rinsed with water and placed in suitable container for disposal. Dispose of contents/containers in accordance with local, state, and federal regulations.

7. Handling and Storage

Precautions for Safe Handling	Use good industrial hygiene practices when handling this material. Wash contaminated clothing before reuse.
Conditions for Safe Storage	Keep container closed when not in use. Keep away from heat or sources of ignition.. Store in cool dry place.

8. Exposure Controls and Personal Protection

Exposure Limits	CAS#	OSHA PEL	ACGIH TLV
Ingredients			
1-Propanamine, 3-(isodecyloxy)-,acetate	28701-67-9	Not available	Not available
Ethylene glycol monobutyl ether	111-76-2	Not available	Not available
Isopropyl alcohol	67-63-0	400 ppm TWA, 980 mg/m ³ PEL	Not available

Engineering controls	Provide exhaust ventilation adequate to ensure concentrations are kept below exposure limits.
Personal protective equipment	
Eye/Face protection	Wear goggles or safety glasses with side shields if splash conditions exist.
Hand protection	Wear rubber or neoprene safety gloves.
Skin and body	As required by employer code.
Respiratory protection	Use a NIOSH approved respirator when exposure guidelines are exceeded.
General hygiene considerations	Handle in accordance with good industrial hygiene practices. Do not eat or drink when using product. Wash hands well before breaks and immediately after handling the product.

9. Physical and Chemical Properties

Information on basic physical and chemical properties	
Appearance/form	Clear liquid
Color	Amber
Odor	Solvent/alcohol
Odor threshold	Not established
pH	6.2-6.6 (concentrate)
Melting/freezing point	Not established
Initial Boiling point	>212° F. (100° C.)
Flash point	130° F. (54° C.) Estimated.
Evaporation rate	Not established
Flammability	Flammable liquid and vapors
Upper/lower flammability or	Not established
Explosive limits	Not established

6/1/2015

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AQ-280 Rust Inhibitor Safety Data Sheet

Medical Equipment Washing & Decontamination Systems



NATIONAL PURITY, LLC.
6840 SHINGLE CREED PKWY, STE 23
BROOKLYN CENTER, MN 55430
(612) 672-0022

Vapor pressure	Not established
Vapor density	Not established
Specific gravity/density	0.87-0.88
Vapor density	Not established
Solubility in water	Complete
VOC	< 20.0%
% Volatile	≈ 75%

Other Safety Information

10. Stability and Reactivity

Reactivity	
Chemical Stability	Stable under normal storage conditions.
Hazardous reactions	
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Strong acids, strong oxidizing agents and amines.
Hazardous decomposition products	May include but not limited to oxides of carbon, phosphorous, and nitrogen. Nitric acid and ammonia.
Hazardous polymerization	Will not occur.

11. Toxicological Information

Ingredients	LC50
1-Propanamine, 3-(isodecyloxy)-,acetate	Not available.
Ethylene glycol monobutyl ether	Not available.
Isopropyl alcohol	16000 ppm (inhalation rat- 8 hours)
Ingredients	LD50
1-Propanamine, 3-(isodecyloxy)-,acetate	1,200 mg/kg (Oral-rat)
Ethylene glycol monobutyl ether	Not available.
Isopropyl alcohol	5,045 mg/kg (Oral-rat), 12,800 mg/kg (Dermal-rabbit)
Effects of acute exposure	
Eye	Will cause serious eye damage.
Skin	Will cause severe skin burns.
Ingestion	May be harmful if swallowed. May cause irritation to mouth, throat and stomach.
Inhalation	Risk of serious damage to the lungs.
Sensitization	Not known.
Chronic effects of short and long Term exposure	Prolonged exposure to skin may cause drying, defatting and irritation.
Carcinogenicity	Does not contain ingredients considered carcinogenic by NTP, IARC, or OSHA.
Mutagenicity	No data available.
Reproductive effects	No data available.
Teratogenicity	No data available.

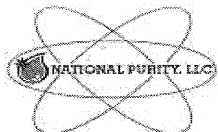
12. Ecological Information

Eco-toxicity	Ecological effects for this product have not been analyzed.
Aquatic toxicity	
1-Propanamine, 3-(isodecyloxy)-, acetate	No data available
Ethylene glycol monbutyl ether	No data available.
Isopropyl alcohol	LC50 Fathead minnow: 9,640 mg/l 24 hours EC50 Daphnia magna (water flea) 5,102 mg/l 24 hours EC50 Algae : > 1000 mg/l 24 hours



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Environmental effects	No data available.
Persistence and Degradability	No data available.
Bioaccumulation/accumulation	No data available.
Partition coefficient	No data available.
Mobility in environmental media	No data available.
Chemical fate information	No data available.
Other adverse effects	No data available.

13. Disposal Considerations

Waste codes	Not Available
Disposal instructions	Dispose in accordance with local, state, and federal regulations.
Wastes from residues/unused product	Containerize. Rinse area with water. Keep out of storm sewer/waterways.
Contaminated packaging	Dispose in accordance with all applicable regulations.

14. Transport Information

Basic shipping requirements:	
Proper shipping name	Flammable liquid, corrosive, n.o.s.(contains isopropyl alcohol, ethylene glycol monobutyl ether, 1-Propanamine, 3-[isodecyloxy]-, acetate), 3, UN2924, PG II
Hazard class	3
UN number	UN2924
Packing group	PG II
Packaging exceptions	None
Special provisions	

15. Regulatory Information

U.S federal regulations	This product has been classified in accordance with the Occupational Safety and Health Administration hazard criteria and the SDS contains all of the information required by OSHA. HCS 2012
TSCA	All ingredients are listed on the Toxic Substances Control Act.
Cercla SuperFund 40CFR117.302	This product does contain a material with a Reportable Quantity (RQ): Ethylene glycol monobutyl ether RQ = 5000 Lbs.
SARA Title III Section 311&312	Immediate (Acute) Health Hazard: 1-Propanamine, 3-(isodecyloxy)-,acetate CAS#28701-67-9 Ethylene glycol monobutyl ether CAS#111-76-2 Isopropyl alcohol CAS#67-63-0
SARA Title III Section 313	Product does contain substances on the list of Toxic Chemicals per 40CFR372: Ethylene glycol monobutyl ether CAS#111-76-2 Isopropyl alcohol CAS#67-63-0
CA Proposition 65	This product does contain chemicals known to the State of California to cause cancer, or reproductive effects: Trace amounts of Nickel.
States Right to Know	Reportable chemicals: Isopropyl alcohol



AQ-280 Rust Inhibitor Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



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Inventory Status

Countries
U.S.
Canada

Inventory Name

CIL
DSL

On Inventory (Yes/No)*

Yes
Yes

- A "Yes" indicates that all of the components of this product comply with the inventory requirements administered by the governing country(s) listed.

16. Other Information

HMIS RATING

HMIS Legend

Severe 4
Serious 3
Moderate 2
Slight 1
Minimal 0

Health 3
Flammability 2
Reactivity 0
Personal Protection B

Disclaimer

To the best of our knowledge, the information included herein is accurate. However, neither the above named supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Issue date

June 1, 2015

Supersedes date

Previous issues

Reason for update

Conform to GHS OSHA HCS 2012

Expiration date

June 1, 2018



AQ-725 De-Liming Solution Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



NATIONAL PURITY, LLC.
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BROOKLYN CENTER, MN 55430
(612) 672-0022

SAFETY DATA SHEET

1. Product and Company Identification

Product Name	AQ-725 AQUAPHASE DE-LIMING SOLUTION
Product Number	515
Product Type	Mixture
Product Use	Descaling of mineral deposits on hard surfaces
Manufacturer/Supplier	National Purity, LLC. 6840 Shingle Creek Parkway, Suite #23 Brooklyn Center, MN 55430
Company Contact	612-672-0022
Emergency Telephone Number	1-800-255-3924

2. Hazards Identification

GHS Classification in accordance with 29 CFR 1910 OSHA HCS

- Acute toxicity, Oral (Category 1) H300,
- Acute toxicity, Inhalation (Category 4) H332
- Skin corrosion/irritation, (Category 1) H314
- Eye irritation, (Category 1) H318
- Specific target organ toxicity (Category 1) H370
- Chronic aquatic toxicity, (Category 1) H410

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard Statements

- | | |
|------|--|
| H300 | Fatal if swallowed. May cause corrosive damage to mouth, throat, or stomach. |
| H314 | Causes severe skin burns and eye damage. Corrosive to the eyes leading to blindness |
| H332 | Harmful if inhaled. |
| H370 | Inhalation can cause irritation or corrosion to upper respiratory tract, including nose, mouth, and throat. Ingestion can cause corrosive burns to mouth, throat, and stomach. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Precautionary Statements

Prevention

- | | |
|------|--|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P264 | Wash hands thoroughly after handling. |
| P270 | Do not eat, drink or smoke when using this product. |
| P260 | Do not breath fumes, mists, vapors or spray. |
| P284 | In case of inadequate ventilation, use NIOSH approved respirator. |
| P273 | Avoid release to the environment. |

Response

- | | |
|---------------------|--|
| P303+P361+P353+P363 | IF ON SKIN (or hair), immediately take off all contaminated clothing and rinse skin with copious amounts of water. Shower if facilities are readily available. |
| P310 | Wash all contaminated clothing before reuse.
Immediately call a POISON CENTER/doctor and seek medical attention. - |



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P301+P312+P330

IF SWALLOWED, immediately call a POISON CENTER/doctor. DO NOT INDUCE VOMITING. Rinse mouth with water.

P305+P351+P337+P310

IF IN EYES, rinse cautiously for several minutes. Remove contact lenses if present. Continue rinsing. Immediately call a POISON CENTER/doctor and get medical attention.

P304+P340+P312

IF INHALED: remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if feeling unwell.

P308+P311+P321

If exposed or concerned, call a POISON CENTER/doctor. See supplemental First Aid instructions in section 4.

Storage/Disposal

P405

Store locked up.

P501

Dispose of contents/container in accordance with local/regional/federal regulations.

3. Composition/Information on Ingredients

The criteria for listing components in this section are: Ingredients that meet the criteria for carcinogenic, toxic to reproduction, or specific target organ toxicity and components otherwise considered hazardous according to OSHA which exceed the cut off limits for SDS specified by the criteria for mixtures are listed. Non hazardous components are not listed. This is not a composition disclosure. Exact percentages are considered proprietary and a trade secret.

Hazardous Components	CAS#	Classification	%
Phosphoric acid	7664-38-2	H300, H314, H318, H410	30-40%
Hydroxyacetic acid	79-14-1	H302, H314, H332	0-3%

4. First Aid Measures

Description of First Aid Procedures

General Advise

Consult a physician. Show this SDS to the doctor.

In Case of Eye Contact

Flush with cool running water for 15 minutes. Remove contact lenses if present. Get immediate medical attention.

In Case of Skin Contact

Wash with soap and water and rinse thoroughly with cool running water. Remove contaminated clothing. Get immediate medical attention.

If Ingested

Rinse mouth with water. **Do not induce vomiting.** Obtain immediate medical attention. Never give anything by mouth to an unconscious person.

If Inhaled

Move person to fresh air. Consult a physician if feeling unwell.

Notes to Physician

Symptoms may be delayed.

General advice

Seek medical attention if feeling unwell. Show the SDS to the physician in attendance.

5. Fire-fighting Measures

Flammable properties

Not flammable.

Extinguishing media

Use dry chemical, foam, carbon dioxide or water fog.

Protection of firefighters

Firefighters should wear protective clothing including self contained breathing apparatus.

Hazardous combustion products

May include and not limited to oxides of phosphorus, and carbon.

Unusual Fire, Explosion hazards

Containers may melt or rupture from heat of fire. May form combustible mixtures with air when heated.

6. Accidental Release Measures

Personal precautions

Keep unnecessary personal away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled containers unless wearing protective clothing.



AQ-725 De-Liming Solution Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



NATIONAL PURITY, LLC.
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**Methods for containment
Methods for cleaning up**

Stop leak if you can do so without risk. Prevent entry into waterways, sewers. Before attempting clean up, refer to hazard data given above. Large spills, dike area to prevent from spreading. Neutralize with alkaline material such as soda ash or lime. Absorb with non reactive absorbent and place in suitable, covered, and labeled container. Rinse area with water. Never return spill to original container.

Environmental precautions

Avoid spills. Keep out of waterways.

7. Handling and Storage

Precautions for Safe Handling

Use good industrial hygiene practices when handling this material. Avoid contact with eyes, skin and clothing. Wash contaminated clothing before reuse.

Conditions for Safe Storage

Keep container closed when not in use. Store in cool well ventilated area. Keep away from heat. Store locked up.

8. Exposure Controls and Personal Protection

Exposure Limits

Ingredients

Phosphoric acid
Hydroxyacetic acid

CAS#

7664-38-2
79-14-1

OSHA PEL

Not available
Not available

ACGIH TLV

Not available
Not available

Engineering controls

Local exhaust ventilation is recommended. Ventilation system should be designed according to approved engineering standards.

Personal protective equipment

Eye/Face protection

Wear chemical safety goggles or full face shield if splash conditions exist. Have suitable eye wash water available. Shower near by.

Hand protection

Wear impermeable gloves to prevent contact with skin.

Skin and body

Wear impervious protective clothing including boots, gloves, and face shield where splashing is possible. Have quick drench/shower facilities in work area.

Respiratory protection

Use a NIOSH approved respirator when exposure guidelines are exceeded.

General hygiene considerations

Handle in accordance with good industrial hygiene practices. Do not eat or drink when using product. Wash hands well before breaks and immediately after handling the product.

9. Physical and Chemical Properties

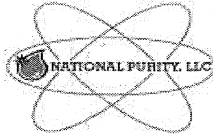
Information on basic physical and chemical properties

Appearance/form	Clear liquid
Color	Colorless
Odor	Odorless
Odor threshold	Not established
pH	1.7 (1% solution)
Melting/freezing point	Not established
Initial Boiling point	>212° F. (100° C.)
Flash point	Not established
Evaporation rate	Not established
Flammability	Not flammable
Upper/lower flammability or	Not applicable
Explosive limits	Not applicable
Vapor pressure	Not established
Vapor density	Not established
Specific gravity/density	Not established
Solubility in water	Complete



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VOC < 0.1%
% Volatile Approx. 60%
Other Safety Information

10. Stability and Reactivity

Reactivity	
Chemical Stability	Stable under normal conditions of storage, handling and use.
Hazardous reactions	Keep separate from organic materials. Avoid contact with alkaline materials and metals.
Conditions to avoid	High temperatures. Do not mix with other chemicals.
Incompatible materials	Strong alkalis, strong oxidizing agents, and reactive metals, such as aluminum, copper, brass,, bronze and mild steel.
Hazardous decomposition products	May include but not limited to oxides of carbon, phosphorous and phosphine from thermal decomposition. Hydrogen gas from reaction with metals.
Hazardous polymerization	Will not occur.

11. Toxicological Information

Ingredients	LC50
Phosphoric acid	1,689 mg/m ³ P ₂ O ₅
Hydroxyacetic acid	7.7 mg/L
Ingredients	LD50
Phosphoric acid	1,530 mg/kg (Oral-rat), > 1,260-3,160 mg/kg (Dermal-rabbit)
Hydroxyacetic acid	4240 mg/kg (oral-rat)
Eye	Causes severe eye damage. Corrosive to eyes leading to blindness
Skin	May cause severe skin burns.
Ingestion	Fatal if swallowed. May cause corrosive damage to mouth, throat and stomach.
Inhalation	Fatal if inhaled. Can cause pulmonary edema and chemical pneumonitis.
Sensitization	No data available.
Chronic effects of short and long Term exposure	Prolonged exposure to skin may cause drying, defatting and irritation and aggravate existing skin problems
Carcinogenicity	Does not contain ingredients considered carcinogenic by NTP, IARC, or OSHA.
Mutagenicity	No data available
Reproductive effects	No data available
Teratogenicity	No data available.

12. Ecological Information

Eco-toxicity	Ecological effects for this product have not been analyzed. However, if spilled this products ingredients are toxic to aquatic life and may have long lasting effects. EPA Ecological Toxicity rating: High.
Phosphoric acid	
Environmental effects	Phosphoric acid dissolves some soil materials (carbonates),
Aquatic toxicity	
Phosphoric acid	Dangerous to aquatic plants at high concentrations.
Persistence and Degradability	Under anaerobic conditions, microorganisms may degrade phosphoric acid to phosphine.
Bioaccumulation/accumulation	
Phosphoric acid	Inorganic phosphates have the potential to increase the growth of algae, whose eventual death will reduce the available oxygen for aquatic life.

5/9/2015

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AQ-725 De-Liming Solution Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



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Partition coefficient Not Available
Mobility in environmental media Not Available
Chemical fate information Not Available
Other adverse effects Not Available

13. Disposal Considerations

Waste codes Not Available
Disposal instructions Dispose in accordance with local, state, and federal regulations.
Wastes from residues/unused product Containerize. Rinse area with water. Keep out of storm sewer/waterways.
Contaminated packaging Dispose of container in accordance with federal, state, and local requirements.

14. Transport Information

Basic shipping requirements:
Proper shipping name: Corrosive liquids, acidic, inorganic, n.o.s. (contains phosphoric acid)
Hazard class 8
UN number 3264
Packing group III
Special provisions
Packaging exceptions 49CFR173.154 limited quantities

15. Regulatory Information

U.S federal regulations This product has been classified in accordance with the Occupational Safety and Health Administration hazard criteria and the SDS contains all of the information required by OSHA. HCS 2012

TSCA All ingredients are listed on the Toxic Substances Control Act.

CERCLA Super Fund 40CFR117.302 Product contains a material with a Reportable Quantity (RQ)
Phosphoric acid RQ = 5000 Lbs.

SARA Title III Section 311&312 Immediate (Acute) Health Hazard
Phosphoric acid

SARA Title III Section 313 No ingredients are subject to Section 313 Reporting Requirements.
Sulfuric acid which may be present at levels < 2% is reportable.

States Right to Know Reportable chemicals:
Sulfuric acid which may be present at trace amounts is reportable.

Warning This product contains a chemical known to the state of California to cause cancer, birth defects or reproductive effects:
Sulfuric acid present at < 2%.

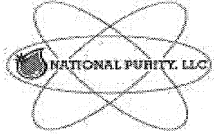
Inventory Status	Inventory Name	On Inventory (Yes/No)*
Countries	CIL	Yes
U.S.	DSL	Yes
Canada		

- A "Yes" indicates that all of the components of this product comply with the inventory requirements administered by the governing country(s) listed.



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Medical Equipment Washing & Decontamination Systems



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16. Other Information

HMIS RATING

HMIS Legend

Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	3
Flammability	0
Reactivity	0
Personal Protection	B

Disclaimer

To the best of our knowledge, the information included herein is accurate. However, neither the above named supplier nor any of its subsidiaries assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of the suitability of any material is the responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Issue date

Supersedes date

Reason for update

Expiration date

May 9, 2015

Previous issues

Conform to GHS OSHA HCS 2012

May 9, 2018



AQ-128 Neutral Disinfectant Spartan HDQ 1202 Safety Data Sheets

Medical Equipment Washing & Decontamination Systems



Safety Data Sheet Spartan Chemical Company, Inc.

Revision Date: 28-Apr-2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name: HDQ NEUTRAL
Product Number: 1202
Recommended Use: Disinfectant
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:

Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification

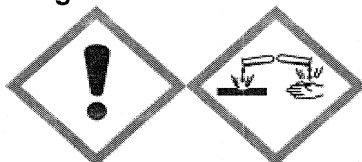
Acute Toxicity - Oral: Category 4
Skin Corrosion/Irritation: Category 1 Sub-category B
Serious Eye Damage/Eye Irritation: Category 1

GHS Label Elements

Signal Word:

Danger

Symbols:



Hazard Statements:

Harmful if swallowed.
Causes severe skin burns and serious eye damage.

Precautionary Statements:

Prevention:

Wash hands and any exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product
Do not breathe mist, vapors or spray.
Wear protective gloves. Wear eye / face protection. Wear protective clothing.

Response:

-Eyes

IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

-Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.

-Inhalation:

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

-Ingestion:

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

-Specific Treatment:

See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage:

Store locked up.

Disposal:

Dispose of contents and container in accordance with local, state and federal regulations.



AQ-128 Neutral Disinfectant Spartan HDQ 1202 Safety Data Sheets

Medical Equipment Washing & Decontamination Systems

1202 - HDQ NEUTRAL

Revision Date: 28-Apr-2015

Hazards Not Otherwise Classified: Not Applicable

Other Information:

- Corrosive.
- Inhalation of vapors or mist may cause respiratory irritation.
- Keep out of reach of children.
- NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

0.32918% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
water	7732-18-5	60-100
didecyldimethylammonium chloride	7173-51-5	3-7
alkyl dimethyl benzyl ammonium chloride	68424-85-1	1-5
ethanol	64-17-5	1-5
tetrasodium ethylenediaminetetraacetate	64-02-8	1-5
alcohol ethoxylate	68439-46-3	1-5

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Skin Contact: Take off immediately all contaminated clothing and shoes. Rinse with water or shower for at least 15 minutes. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Wash contaminated clothing before reuse.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Ingestion: Rinse mouth. Do NOT induce vomiting. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Never give anything by mouth to an unconscious person.

Note to Physicians: NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire

Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE



AQ-128 Neutral Disinfectant Spartan HDQ 1202 Safety Data Sheets

Medical Equipment Washing & Decontamination Systems

1202 - HDQ NEUTRAL

Revision Date: 28-Apr-2015

Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
ethanol 64-17-5	STEL: 1000 ppm	TWA: 1000 ppm TWA: 1900 mg/m ³ (vacated) TWA: 1000 ppm (vacated) TWA: 1900 mg/m ³	IDLH: 3300 ppm TWA: 1000 ppm TWA: 1900 mg/m ³

Engineering Controls: Provide good general ventilation. If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered. Eye wash stations and shower facilities should be readily accessible in areas where the product is handled.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles.

Skin and Body Protection: Wear rubber or other chemical-resistant gloves.

Respiratory Protection: Not required with expected use. If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling. See 29 CFR 1910.132-138 for further guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Red
Odor:	Mild Citrus fragrance
pH:	7.2-8.2
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	100 °C / 212 °F
Flash Point:	> 100 °C / > 212 °F
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.00
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity: This material is considered to be non-reactive under normal conditions of use.

Chemical Stability: Stable under normal conditions.

Possibility of Hazardous Reactions: Not expected to occur with normal handling and storage.

Conditions to Avoid: Extremes of temperature and direct sunlight.



AQ-128 Neutral Disinfectant Spartan HDQ 1202 Safety Data Sheets

Medical Equipment Washing & Decontamination Systems

1202 - HDQ NEUTRAL

Revision Date: 28-Apr-2015

Incompatible Materials: Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products: May include carbon monoxide, carbon dioxide (CO₂) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:
-Eye Contact: Pain, redness, swelling of the conjunctiva and tissue damage. Eye contact may cause permanent damage.
-Skin Contact: Pain, redness, blistering and possible chemical burn.
-Inhalation: Nasal discomfort and coughing. Irritation or damage to the mucus membranes of the respiratory tract.
-Ingestion: Damage or chemical burns to mouth, throat and stomach. Pain, nausea, vomiting and diarrhea.
Immediate, Delayed, Chronic Effects
Product Information: Data not available or insufficient for classification.
Chronic Toxicity: May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects. Contains a known or suspected reproductive toxin.
Target Organ Effects: Blood. Central nervous system. -Eyes. Liver. Reproductive System. Respiratory System. -Skin.
Numerical Measures of Toxicity
 The following acute toxicity estimates (ATE) are calculated based on the GHS document.
 ATE_{mix} (oral): 1016 mg/kg
 ATE_{mix} (dermal): 7198 mg/kg
 ATE_{mix} (inhalation-dust/mist): 5.9 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available
didecyldimethylammonium chloride 7173-51-5	= 84 mg/kg (Rat)	Not Available	Not Available
alkyl dimethyl benzyl ammonium chloride 68424-85-1	= 426 mg/kg (Rat)	Not Available	Not Available
ethanol 64-17-5	= 7060 mg/kg (Rat)	Not Available	= 124.7 mg/L (Rat) 4 h
tetrasodium ethylenediaminetetraacetate 64-02-8	= 10 g/kg (Rat)	Not Available	Not Available
alcohol ethoxylate 68439-46-3	= 1378 mg/kg (Rat)	> 2 g/kg (Rabbit)	Not Available

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
ethanol 64-17-5	Not Available	12.0 - 16.0: 96 h Oncorhynchus mykiss mL/L LC50 static 100: 96 h Pimephales promelas mg/L LC50 static 13400 - 15100: 96 h Pimephales promelas mg/L LC50 flow-through	Not Available	9268 - 14221: 48 h Daphnia magna mg/L LC50 10800: 24 h Daphnia magna mg/L EC50 2: 48 h Daphnia magna mg/L EC50 Static
tetrasodium ethylenediaminetetraacetate 64-02-8	1.01: 72 h Desmodesmus subspicatus mg/L EC50	41: 96 h Lepomis macrochirus mg/L LC50 static 59.8: 96 h Pimephales promelas mg/L LC50 static	Not Available	610: 24 h Daphnia magna mg/L EC50



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1202 - HDQ NEUTRAL

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Persistence and Degradability: No information available.
Bioaccumulation: No information available.
Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT:
UN/ID No: UN1903
Proper Shipping Name: Disinfectants, liquid corrosive, n.o.s., (contains didecyl dimethyl ammonium chloride, n-alkyl dimethyl benzyl ammonium chloride)
Hazard Class: 8
Packing Group: III
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.

15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)
 All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313
 This product does not contain listed substances above the "de minimus" level

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

California Proposition 65
 This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
ethanol - 64-17-5	Carcinogen Developmental
acetaldehyde - 75-07-0	Carcinogen

WARNING: This product contains a chemical known to the State of California to cause cancer.
 WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

EPA Pesticide Registration Number: 10324-155-5741

EPA Statement:
 This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label:
 Danger. Keep out of reach of children. Corrosive. Causes irreversible eye damage and skin burns. Harmful if swallowed, inhaled or absorbed through the skin. Avoid breathing spray mist. Do not get in eyes, on skin, or on clothing. Wear goggles or face shield, rubber gloves and protective clothing when handling. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and wash clothing before reuse.

16. OTHER INFORMATION



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1202 - HDQ NEUTRAL

Revision Date: 28-Apr-2015

NFPA
HMIS

Health Hazards: 3
Health Hazards: 3

Flammability: 0
Flammability: 0

Instability: 0
Physical Hazards: 0

Special: N/A

Revision Date:
Reasons for Revision:

28-Apr-2015
No information available.

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet



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Safety Data Sheet Spartan Chemical Company, Inc.

Revision Date: 28-Apr-2015

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name: PD-128
Product Number: 1016
Recommended Use: Disinfectant
Uses Advised Against: For Industrial and Institutional Use Only

Manufacturer/Supplier: Spartan Chemical Company, Inc.
1110 Spartan Drive
Maumee, Ohio 43537 USA
800-537-8990 (Business hours)
www.spartanchemical.com

24 Hour Emergency Phone Numbers:
Medical Emergency/Information: 888-314-6171
Transportation/Spill/Leak: CHEMTREC 800-424-9300

2. HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity - Inhalation (Dusts/Mists) Category 4
Skin Corrosion/Irritation: Category 1 Sub-category B
Serious Eye Damage/Eye Irritation: Category 1

GHS Label Elements

Signal Word:

Danger

Symbols:



Hazard Statements: Harmful if inhaled.
Causes severe skin burns and serious eye damage.

Precautionary Statements:

Prevention: Use only outdoors or in a well-ventilated area.
Do not breathe mist, vapors or spray.
Wash hands and any exposed skin thoroughly after handling.
Wear protective gloves. Wear eye / face protection. Wear protective clothing.
Response: **IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.**
-Eyes: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
-Skin: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
-Inhalation: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
-Ingestion: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
-Specific Treatment: See Safety Data Sheet Section 4: "FIRST AID MEASURES" for additional information.

Storage: Store locked up.
Disposal: Dispose of contents and container in accordance with local, state and federal regulations.



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Hazards Not Otherwise Classified: Not Applicable

Other Information:

- Corrosive.
- Harmful if swallowed
- Keep out of reach of children.

0.27369% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
water	7732-18-5	60-100
o-benzyl-p-chlorophenol	120-32-1	1-5
o-phenylphenol	90-43-7	1-5
ethylene glycol	107-21-1	1-5
sodium hydroxide	1310-73-2	1-5
sodium lauryl sulfate	151-21-3	1-5
isopropanol	67-63-0	1-5

Specific chemical identity and/or exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

-Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Skin Contact: Take off immediately all contaminated clothing and shoes. Rinse with water or shower for at least 15 minutes. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Wash contaminated clothing before reuse.

-Inhalation: Remove victim to fresh air and keep at rest in a position comfortable for breathing. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN.

-Ingestion: Rinse mouth. Do NOT induce vomiting. IMMEDIATELY CALL A POISON CENTER OR PHYSICIAN. Never give anything by mouth to an unconscious person.

Note to Physicians: NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsion may be needed.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: Product does not support combustion, Use extinguishing agent suitable for type of surrounding fire

Specific Hazards Arising from the Chemical: Dried product is capable of burning. Combustion products are toxic.

Hazardous Combustion Products: May include Carbon monoxide Carbon dioxide and other toxic gases or vapors.

Protective Equipment and Precautions for Firefighters: Wear MSHA/NIOSH approved self-contained breathing apparatus (SCBA) and full protective gear. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Environmental Precautions: Do not rinse spill onto the ground, into storm sewers or bodies of water.

Methods for Clean-Up: Prevent further leakage or spillage if safe to do so. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13).

7. HANDLING AND STORAGE



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Advice on Safe Handling: Handle in accordance with good industrial hygiene and safety practice. Wash thoroughly after handling.

Storage Conditions: Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Keep from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH
ethylene glycol 107-21-1	Ceiling: 100 mg/m ³ aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m ³	-
sodium hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³
isopropanol 67-63-0	STEL: 400 ppm TWA: 200 ppm	TWA: 400 ppm TWA: 980 mg/m ³ (vacated) TWA: 400 ppm (vacated) TWA: 980 mg/m ³ (vacated) STEL: 500 ppm (vacated) STEL: 1225 mg/m ³	IDLH: 2000 ppm TWA: 400 ppm TWA: 980 mg/m ³ STEL: 500 ppm STEL: 1225 mg/m ³

Engineering Controls: Provide good general ventilation. If work practices generate dust, fumes, gas, vapors or mists which expose workers to chemicals above the occupational exposure limits, local exhaust ventilation or other engineering controls should be considered. Eye wash stations and shower facilities should be readily accessible in areas where the product is handled.

Personal Protective Equipment

Eye/Face Protection: Wear splash goggles.

Skin and Body Protection: Wear rubber or other chemical-resistant gloves. (such as barrier laminate or butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton with thickness of ≥ 14 mils). Applicators and other handlers must wear coveralls over long-sleeved shirt and long pants, socks and chemical-resistant footwear.

Respiratory Protection: Not required with expected use. If occupational exposure limits are exceeded or respiratory irritation occurs, use of a NIOSH/MSHA approved respirator suitable for the use-conditions and chemicals in Section 3 should be considered.

General Hygiene Considerations: Wash hands and any exposed skin thoroughly after handling. See 29 CFR 1910.132-138 for further guidance.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance/Physical State:	Liquid
Color:	Amber
Odor:	Pleasant Floral fragrance
pH:	12.0-13.5
Melting Point / Freezing Point:	No information available.
Boiling Point / Boiling Range:	100 °C / 212 °F
Flash Point:	> 100 °C / > 212 °F ASTM D56
Evaporation Rate:	< 1 (Butyl acetate = 1)
Flammability (solid, gas)	No information available.
Upper Flammability Limit:	No information available.
Lower Flammability Limit:	No information available.
Vapor Pressure:	No information available.
Vapor Density:	No information available.
Specific Gravity:	1.05
Solubility(ies):	Soluble in water
Partition Coefficient:	No information available.
Autoignition Temperature:	No information available.
Decomposition Temperature:	No information available.
Viscosity:	No information available.

10. STABILITY AND REACTIVITY

Reactivity:	This material is considered to be non-reactive under normal conditions of use.
Chemical Stability:	Stable under normal conditions.
Possibility of Hazardous Reactions:	Not expected to occur with normal handling and storage.
Conditions to Avoid:	Extremes of temperature and direct sunlight.
Incompatible Materials:	Strong oxidizing agents. Strong acids.
Hazardous Decomposition Products:	May include carbon monoxide, carbon dioxide (CO2) and other toxic gases or vapors.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Eyes, Skin, Ingestion, Inhalation.
Symptoms of Exposure:	
-Eye Contact:	Pain, redness, swelling of the conjunctiva and tissue damage. Eye contact may cause permanent damage.
-Skin Contact:	Pain, redness, blistering and possible chemical burn.
-Inhalation:	Nasal discomfort and coughing. Irritation or damage to the mucus membranes of the respiratory tract.
-Ingestion:	Pain, nausea, vomiting and diarrhea. Damage or chemical burns to mouth, throat and stomach.
Immediate, Delayed, Chronic Effects	
Product Information:	Data not available or insufficient for classification.
Target Organ Effects:	Central nervous system. -Eyes. Respiratory System. -Skin.
Numerical Measures of Toxicity	
The following acute toxicity estimates (ATE) are calculated based on the GHS document.	
ATEmix (oral):	4163 mg/kg
ATEmix (dermal):	12291 mg/kg
ATEmix (inhalation-dust/mist):	4.7 mg/l

Component Acute Toxicity Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
water 7732-18-5	> 90 mL/kg (Rat)	Not Available	Not Available



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o-phenylphenol 90-43-7	= 1049 mg/kg (Rat)	> 2000 mg/kg (Rat)	> 0.949 mg/L (Rat) 1 h
ethylene glycol 107-21-1	= 4000 mg/kg (Rat)	= 9530 µL/kg (Rabbit)	Not Available
sodium hydroxide 1310-73-2	Not Available	= 1350 mg/kg (Rabbit)	Not Available
sodium lauryl sulfate 151-21-3	= 1288 mg/kg (Rat)	= 580 mg/kg (Rabbit)	> 3900 mg/m ³ (Rat) 1 h
isopropanol 67-63-0	= 4396 mg/kg (Rat)	= 12800 mg/kg (Rat) = 12870 mg/kg (Rabbit)	= 72.6 mg/L (Rat) 4 h

Carcinogenicity: No components present at 0.1% or greater are listed as to being carcinogens by ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/Aquatic Plants	Fish	Toxicity to Microorganisms	Crustacea
o-phenylphenol 90-43-7	0.85: 72 h <i>Desmodesmus subspicatus</i> mg/L EC50	3.4: 96 h <i>Pimephales promelas</i> mg/L LC50 flow-through 2.74: 96 h <i>Lepomis macrochirus</i> mg/L LC50 2.75: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 5.8: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	Not Available	1 - 2.5: 48 h <i>Daphnia magna</i> mg/L EC50 Static
ethylene glycol 107-21-1	6500 - 13000: 96 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50	41000: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 14 - 18: 96 h <i>Oncorhynchus mykiss</i> mL/L LC50 static 27540: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 40761: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static 40000 - 60000: 96 h <i>Pimephales promelas</i> mg/L LC50 static 16000: 96 h <i>Poecilia reticulata</i> mg/L LC50 static	Not Available	46300: 48 h <i>Daphnia magna</i> mg/L EC50
sodium hydroxide 1310-73-2	Not Available	45.4: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 static	Not Available	Not Available



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sodium lauryl sulfate 151-21-3	53: 72 h Desmodesmus subspicatus mg/L EC50 30 - 100: 96 h Desmodesmus subspicatus mg/L EC50 117: 96 h Pseudokirchneriella subcapitata mg/L EC50 3.59 - 15.6: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	8 - 12.5: 96 h Pimephales promelas mg/L LC50 static 15 - 18.9: 96 h Pimephales promelas mg/L LC50 static 22.1 - 22.8: 96 h Pimephales promelas mg/L LC50 static 4.3 - 8.5: 96 h Oncorhynchus mykiss mg/L LC50 static 4.62: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 4.2: 96 h Oncorhynchus mykiss mg/L LC50 7.97: 96 h Brachydanio rerio mg/L LC50 flow-through 9.9 - 20.1: 96 h Brachydanio rerio mg/L LC50 semi-static 4.06 - 5.75: 96 h Lepomis macrochirus mg/L LC50 static 4.2 - 4.8: 96 h Lepomis macrochirus mg/L LC50 flow-through 4.5: 96 h Lepomis macrochirus mg/L LC50 5.8 - 7.5: 96 h Pimephales promelas mg/L LC50 static 10.2 - 22.5: 96 h Pimephales promelas mg/L LC50 semi-static 6.2 - 9.6: 96 h Pimephales promelas mg/L LC50 13.5 - 18.3: 96 h Poecilia reticulata mg/L LC50 semi-static 10.8 - 16.6: 96 h Poecilia reticulata mg/L LC50 static 1.31: 96 h Cyprinus carpio mg/L LC50 semi-static	Not Available	1.8: 48 h Daphnia magna mg/L EC50
isopropanol 67-63-0	1000: 96 h Desmodesmus subspicatus mg/L EC50 1000: 72 h Desmodesmus subspicatus mg/L EC50	9640: 96 h Pimephales promelas mg/L LC50 flow-through 11130: 96 h Pimephales promelas mg/L LC50 static 1400000: 96 h Lepomis macrochirus µg/L LC50	Not Available	13299: 48 h Daphnia magna mg/L EC50

Persistence and Degradability: No information available.
Bioaccumulation: No information available.
Other Adverse Effects: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal of Wastes: Dispose of in accordance with federal, state and local regulations.
Contaminated Packaging: Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT:
UN/ID No: UN1760
Proper Shipping Name: Corrosive liquids, n.o.s., (contains sodium hydroxide)
Hazard Class: 8
Packing Group: II
Special Provisions: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Check with a trained hazardous materials transportation expert for information specific to your situation.



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15. REGULATORY INFORMATION

TSCA Status: (Toxic Substance Control Act Section 8(b) Inventory)

All chemical substances in this product are included on or exempted from listing on the TSCA Inventory of Chemical Substances.

SARA 313

This product contains the following listed substances:

o-phenylphenol

CAS No 90-43-7

ethylene glycol

CAS No 107-21-1

isopropanol

CAS No 67-63-0 only if manufactured by the strong acid process, no supplier notification

SARA 311/312 Hazard Categories

Acute Health Hazard:	Yes
Chronic Health Hazard:	No
Fire Hazard:	No
Sudden release of pressure hazard:	No
Reactive Hazard:	No

California Proposition 65

This product contains the following Proposition 65 chemicals

Chemical Name	California Proposition 65
o-phenylphenol - 90-43-7	Carcinogen
sulfuric acid - 7664-93-9	Carcinogen
formaldehyde - 50-00-0	Carcinogen
methanol - 67-56-1	Developmental

WARNING: This product contains a chemical known to the State of California to cause cancer.

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

EPA Pesticide Registration Number: 39967-89-5741

EPA Statement:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label:

Danger. Corrosive. Causes irreversible eye damage or skin burns. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or clothing. Avoid breathing spray mist.

16. OTHER INFORMATION

NFPA	Health Hazards: 3	Flammability: 1	Instability: 0	Special: N/A
HMIS	Health Hazards: 3	Flammability: 1	Physical Hazards: 0	

Revision Date: 28-Apr-2015
Reasons for Revision: No information available.

Disclaimer:

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet