



**SERIES 1840 R.O. DUAL DISPENSE
OR
BULK WATER DUAL DISPENSE
WATER VENDING MACHINES
OPERATOR'S & PARTS MANUAL**

DO NOT USE OR OPERATE THIS EQUIPMENT UNTIL THIS MANUAL
HAS BEEN READ AND THOROUGHLY UNDERSTOOD

PART NUMBER 62501040 Rev. G

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TO THE PURCHASER

This product is designed and manufactured to give years of dependable service when properly maintained and used for the purpose for which it was intended. Never allow anyone to operate this equipment until they fully understand the complete contents of this manual. For owners who do not operate this equipment, it is their responsibility to ensure that the operator has been properly instructed and is fully aware of the contents of this manual. The owner is also responsible to ensure that the operator is physically and mentally capable of operating this equipment. Information contained in this manual is important in the safe handling of this equipment, and also achieving an efficient operation. If there are any questions about information in this manual, it is important to contact your dealer for clarification.



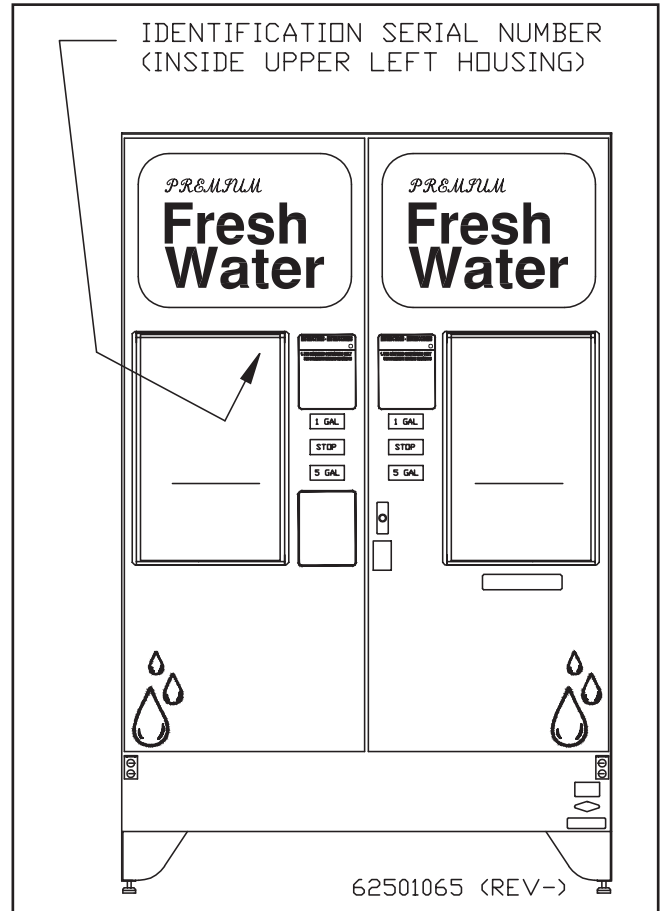
This is the safety alert symbol, it is used to alert the operator to instructions concerning the personal safety and risk factor of this equipment. Always observe and heed these very important instructions to promote a safe operation with good preventive maintenance habits.

Always obtain original equipment service parts from Coster Engineering. Never accept any type of substitute items, as this could affect the equipment performance.

A registration card is to be filled out by your dealer with your name and address and promptly returned to the factory. The form provides a ready reference to help in answering questions that you may have at a later date. You will need to furnish the same information to your dealer when obtaining service parts. This equipment is warranted as STATED ON REAR COVER OF THIS BOOK.

We urge you to make certain that your completed registration card has been sent in so that you will receive maximum service benefits. This form does not put you on any mailing list nor is the information on the card available to anyone else.

The location of the identification number plate on this equipment is as shown.



Please fill in the following information for your records:

DATE OF PURCHASE _____

OWNER'S NAME _____

DEALER'S NAME _____

IDENTIFICATION NUMBER _____

IMPORTANT: Never operate this machine until the user fully understands the complete contents of the owners instruction manual. For owners who do not operate this equipment, it is their responsibility that the user has been properly instructed and fully aware

of the manual contents. This is important in the safe handling and in obtaining an efficient operation of the machine.

Please retain this manual for future reference.

Please read this manual in its entirety before using this machine.

SERVICE INFORMATION

A label listing a local and/or toll free phone number for service or refund must be affixed to the unit. The label supplied by the owner/operator, must be in a location visible to customers; and comply with all federal, state and local regulations.

DISCLAIMER

The information contained in this document is subject to change without notice.

Coster Engineering shall not be liable for technical or editorial omissions made herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.

SAFETY



TAKE NOTE! THIS SAFETY ALERT SYMBOL FOUND THROUGHOUT THIS MANUAL IS USED TO CALL YOUR ATTENTION TO INSTRUCTIONS INVOLVING YOUR PERSONAL SAFETY AND THE SAFETY OF OTHERS. FAILURE TO FOLLOW THESE INSTRUCTIONS CAN RESULT IN INJURY OR DEATH.

This symbol means **ATTENTION: BECOME ALERT, YOUR SAFETY AND OTHERS IS INVOLVED.**

SAFETY SIGNAL WORDS

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations typically for machine components which, for functional purposes, cannot be guarded.

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.



WARNING: Read and understand operator's manual prior to making any repair, adjustments, or performing any maintenance on this machine.



WARNING: Use only sanitary FDA approved piping and filters in this machine. Failure to do so may result in illness, injury, or death to users of this machine.



WARNING: Install and operate this machine only in accordance with all applicable labeling, licensing, testing and inspection, installation, electrical, plumbing, health and safety, food water and vending machine codes.



WARNING: Flush system before use to remove all chemicals present.



WARNING: Never allow unauthorized or improperly supervised personnel to operate or service this machine. They must be responsible, properly trained and qualified.

The preservative, sodium bisulfite (SBS), is used to prevent microbiological growth during storage and shipment. Some individuals may experience a severe allergic reaction if machine is not flushed before start up.



WARNING: Unplug this machine prior to making any repairs. Failure to take proper precautions may result in electrical shock and death.



WARNING: Do not look directly into the ultraviolet light or eye damage may result. Always wear UV safety goggles and cover all exposed skin when securing UV bulb.



WARNING: Do not make any alteration or modification in the wiring or plumbing of this machine. Such alterations can result in damage to your machine, and/or cause injury, illness, or death to maintenance personnel, operators, and users of this machine.



WARNING: This machine must be connected to an inspected, approved, potable water system only containing 500 parts per million (PPM) of total dissolved solids (TDS) or less.

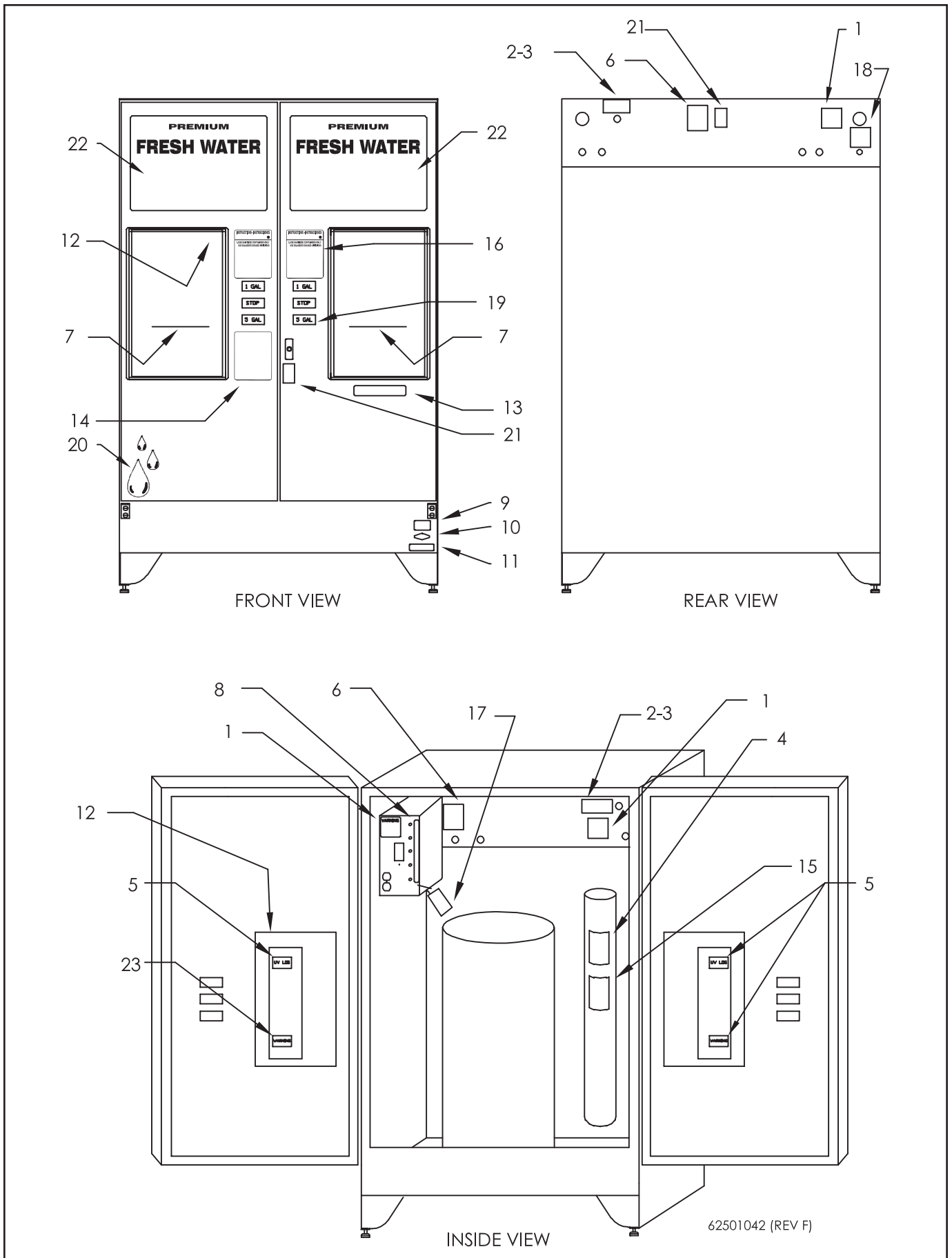
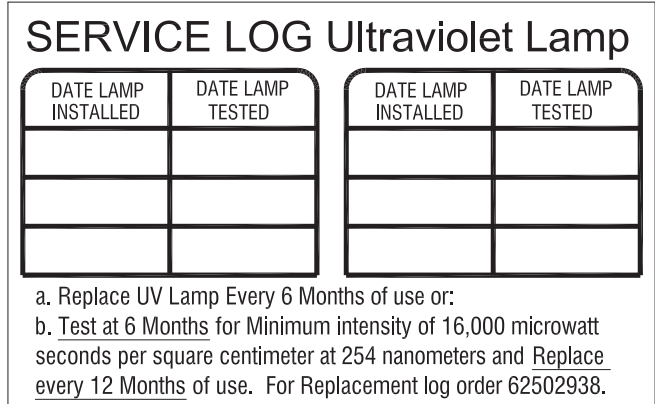


FIGURE 1

DECAL LOCATIONS



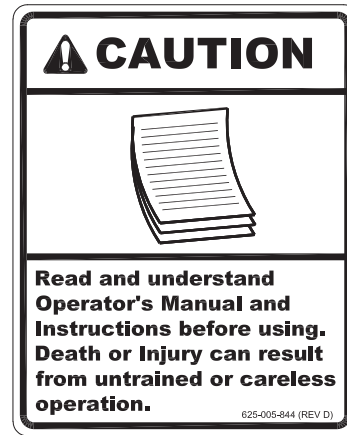
1. Decal 625-002-075 located on inside and on rear (Figure 1).



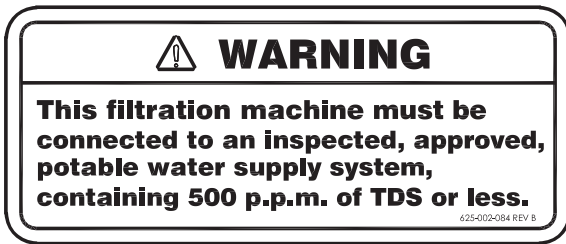
5. Decal 62502938 service log decal located by ultraviolet light (Figure 1).



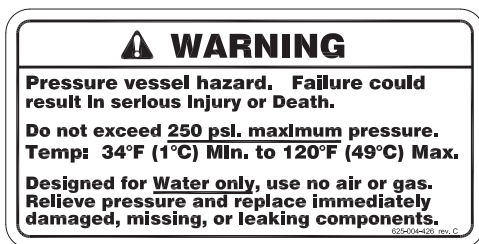
2. Decal 625-002-085 (Used on Internal RO units). Located inside and on rear. (Figure 1).



6. 625-005-844, Located on rear. (Figure 1)
7. 625-004-044 Decal, "Lower This Shelf" Located in dispenser housing. (Figure 1)
8. 62500950 Decal, Switch Function. (Figure 1)
9. 625-004-045 Decal, Water Quality-NAMA Located lower left on front door. (Figure 1)
10. 625-001-030 Decal, Coster Logo, (Figure 1)
11. 625-001-025 Decal, Coster Address, Located on lower right. (Figure 1)
12. 625-004-475 Decal, Serial Number Plate, Rear of unit. (Figure 1)
13. 625-004-471 Decal, Floride Information. (State of Mass.) (Figure 1)

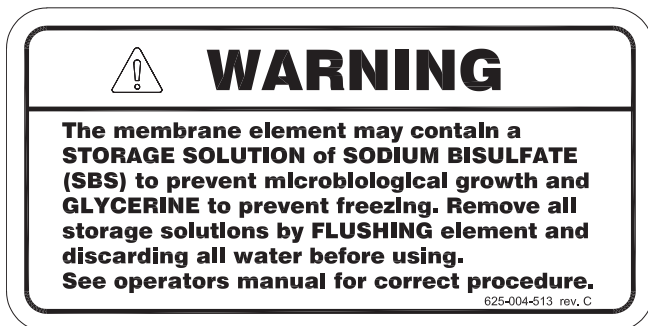
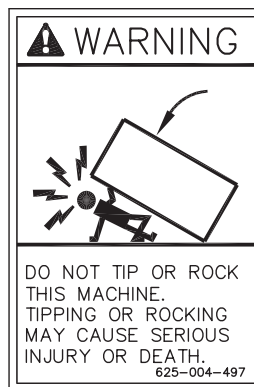


3. Decal 625-002-084 (Used on "BW" External RO units) Located on inside and on rear (Figure 1).



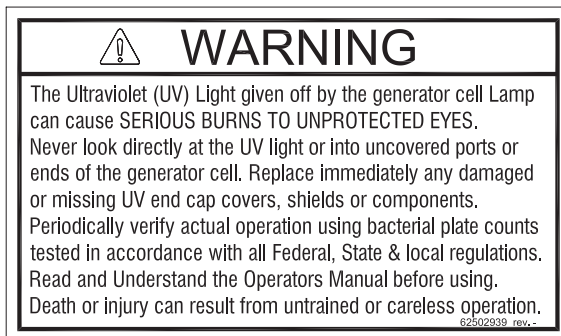
4. Decal 625-004-426 located on both sides of pressure vessel (Figure 1).

- 14a. 625-004-555 Decal, Filtered Water.
(For Filtered Bulk Water Units, Figure 1)
- 14b. 62501044 Decal, R.O. Description.
(For Reverse Osmosis Units Only, Figure 1)

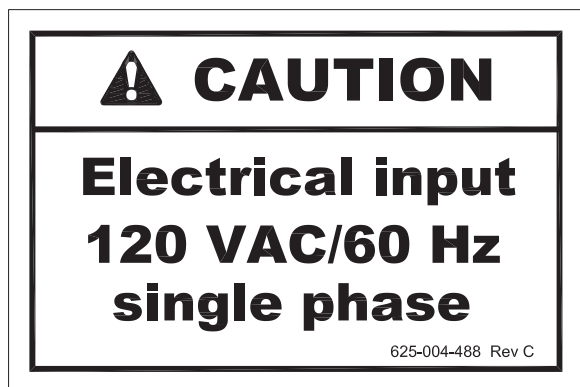


- 21. 625-004-497, Located on front and back (Figure 1)
- 22. 62501792, Decal, Premium Fresh Water, Solid Door.
62501043, Decal, Premium Fresh Water.

- 15. 625-004-513 Located inside cabinet.
(Figure 1)
- 16. 62501047 Decal, Operation Instructions Located on front of door. (Figure 1)
- 17. 625-004-512 Tag, Flush Warning. (See 625-004-513 for Text)
(For Reverse Osmosis Units Only, Figure 1)



- 23. 62502939 Decal U.V. Warning located on U.V. light (Figure 1)
- 24. 62500527, Decal, Pump Operating Pressure. (Not shown) Located on pressure pump motor



- 18. 625-004-488, Located on rear. (Figure 1)
- 19. 62500687, Button Tag Set, Gallons
62500688, Button Tag Set, Liters.
- 20. 62501061, Decal 3 Color Drops. (Figure 1)

SAFETY FEATURES

The vending machine provides the needed safety shut offs should certain conditions exist.

The machine will not dispense if:

- 1. The ultraviolet light is burned out.
- 2. The sump float switch on the cabinet floor has been activated as a result of a leak.

The machine will not charge (process water) if:

- 1. The feed pressure is less than 5 psi.
- 2. The sump float switch on the cabinet floor has been activated as a result of a leak.

The machine incorporates a ground fault circuit interrupter (GFCI) device, and a 5 amp fast blow fuse.

TECHNICAL SPECIFICATIONS

PRODUCTS

DRINKING WATER (REVERSE OSMOSIS)
 Meets or exceeds all federal, state and local drinking water regulations.

DIMENSIONS

Height74 Inches
 Depth.....26 Inches
 Width48 Inches

WEIGHT

Dry Shipping450 Lbs Bulk Water Units
 Dry Shipping605 Lbs Pressure Pump Units

OPERATING PRESSURE

Pressure Pump Units100-125 psi Maximum

PRODUCT WATER DISPENSING PRESSURE

Pressure 5-40 psi

PLUMBING CONNECTIONS

Feed.....1/2 Inch FNPT
 Drain.....1/2 Inch FNPT

ELECTRICAL

Electrical.....110 VAC 60HZ 15 A
 Grounded GFCI
 Circuit

CAPACITY		
	BW (Bulk Water) External R.O. Units	1840 Pressure Pump Units
Element	Ref. Optional R.O.	XLE 4 x 40
Operating Pressure (psi)	----	120
Product Flow (GPM)*	----	1
Product Flow (GPD)*	----	1500
Concentrate Flow (GPM)	----	1
% Recovery (Nominal)	----	50

*Approximate initial product flow based on properly pretreated feed water of 1000 ppm TDS. (As NaCl), 15°C (59F) and slit density less than 3. Production capacity may vary due to feed water temperature, pressure, quality and product back pressure.

GENERAL INFORMATION

The Coster Engineering Water Vending Machines are designed to supply a drinking (reverse osmosis) water from an approved potable water supply.

PURIFICATION PROCESS

The Coster Engineering Water Machines use a multiple step process for water purification and storage. These separate steps allow for consistent economical water treatment of drinking water.

NOTE 1: Bulk Water (BW) Units Only. Steps 1, 2, 3 and 4 are external to the cabinet on the BW dispenser. The BW model is designed to dispense water from an optional external Reverse Osmosis (R.O.) unit from Coster Engineering.

NOTE 2: When Reverse Osmosis (R.O.) water is dispensed, use process decal part number 62501044 on door front.

NOTE 3: When Filtered Water is dispensed, use only filtered drinking water decal part number 625-004-555 on door front.

IMPORTANT: If R.O. water is not dispensed from the BW unit; the R.O. process decal (#62501044 Item 14, Figure 1) MUST BE REMOVED from door front, and replaced with Filtered Drinking Water Decal (Part Number 625-004-555).

1. PARTICLE PREFILTRATION (R.O. Units)

The first step is a ten inch one (1) micron sediment cartridge filter composed of spun polypropylene. The particle filter removes any suspended particles that are greater than one micron in size, such as, silt, fine sand, and grit.

2. CARBON PREFILTRATION (R.O. Units)

The second step is a carbon briquette filter. This filter removes chlorine that would otherwise destroy the reverse osmosis membrane.

3. REVERSE OSMOSIS (R.O. Units)

Next, a reverse osmosis (RO) membrane removes up to 98% of the water's Total Dissolved Solids (TDS). Reverse osmosis is the process which produces the DRINKING WATER product available to the consumer.

The amount of DRINKING WATER produced by the machine will decrease if...

- A. The feed water temperature drops.
For every one degree centigrade drop in feed water temperature, R.O. product will fall 3 percent.
- B. The R.O. membrane becomes fouled.
In normal operation, minerals and biological materials may build up on the membrane. In most cases the membrane can be cleaned to increase its water production.
- C. The feed water TDS increases.
If the TDS of the feed water to the machine rises, production of water will decrease.

4. THE R.O. WATER STORAGE TANK

- A. Open Tank.

The Coster Engineering vending machines contain 65 gallons of storage in tanks which are specially constructed to store reverse osmosis processed water.

5. POST CARBON FILTRATION

Prior to ultraviolet sterilization and dispensing, a final carbon impregnated filter cartridge polishes the product water removing any remaining odors, tastes, or discolorization.

6. ULTRAVIOLET STERILIZATION

The final water treatment process is ultraviolet sterilization. While the product water is being dispensed, it passes through a chamber which irradiates the flow with ultraviolet light.

The Water Vending Machine will not dispense water if the UV bulb is burned out.

Water is flushed thru the UV light for approximately 2 seconds if the unit HAS NOT dispensed water for one hour. This reduces the peak temperature experienced after the unit has set idle for an extended time, such as the first vend in the morning.

CONSTRUCTION

The water vending machines have a sheet metal construction with a durable polyurethane epoxy finish. The dispenser housing and door fronts are made of stainless steel. This provides an easy to clean rust-free dispensing area and rust resistant front doors. The control system takes care of the charge, flush, volumetric dispensing and is equipped with several shut down conditions should any maintenance be required.

FEATURES

- Dual Dispenser. (Accommodates 1, 5 gallon bottles and 5 gallon insulated containers.)
- Automatic shut off on occurrence of an internal leak. (Charging and vending)
- Automatic shut off when the ultraviolet lamp fails.
- Shut down when feed pressure drops too low. (Pressure pump units only)
- Preset starting volumes, 1 & 5 gallons. (All volumes field adjustable) with stop button.
- Removable drain tank for ease of service.
- Adjustable legs.
- Small cabinet size.
- Ease of component access and repair.

OPTIONS

- Auxiliary water port - Mister System.
- Auxiliary water meter.
- Bottle Sensor

INSTALLATION AND SETUP

PRELIMINARY SITE INSPECTION

WATER SERVICE

The vending machine can only be connected to an approved potable water source that will provide a 4 GPM feed minimum, and 500 ppm TDS or less.

Obtain or measure the following parameters from the water source.

- TDS (See Measuring TDS)
- Chlorine (See Measuring Chlorine)
- Hardness
- Iron (Total)

NOTE: Values for hardness and iron can be obtained from your local municipality, sending a sample to Coster, or obtaining and testing your own sample. Should the hardness of the feed water source exceed 150 ppm, and/ or the iron level exceed .05 ppm, softener pretreatment will be required. Consult your local dealer or Coster Engineering for pretreatment recommendations.



WARNING: Chlorine can damage the reverse osmosis membrane. Feed water, Free chlorine must be 0 to 0.1 ppm maximum. Carbon filters must be replaced when the residual free chlorine approaches 0.1 ppm. Failure to maintain proper chlorine levels may void your warranty. If the chlorine level in the supply water is unusually high (greater than 1.0 ppm) additional pretreatment devices may be required. Consult your local dealer or Coster Engineering for pretreatment recommendations.

ELECTRICAL



WARNING: Verify grounding continuity before operation.

Connect only to a 15 AMP, 110 VAC, 60 HZ, properly grounded, GFCI protected outlet. If possible, connect unit to separate branch circuit with no other appliances or equipment on it.

PLUMBING

The vending machine should not exceed 100 feet from access to the nearest water source and drain connection.



WARNING: Use only sanitary approved FDA materials for plumbing connections.



CAUTION: Under no circumstances allow your machine to freeze. Freezing may cause permanent damage to your membranes and plumbing.

SET-UP

SERVICE CONNECTIONS

1. Water feed line - 1/2 inch FNPT connection (see figure 2).
2. Plumbing connections should be a minimum of 1/2 ID or 3/4 ID if distances greater than 50 feet are needed.
3. The feed pressure should not be less than 40 psi at the vending machine.
4. Drain line - 1/2 inch FNPT connection.

MACHINE SETUP

NOTE: Do Not plug machine in or apply power until all of the required installation procedures have been completed.

NOTE: Be sure that installation of this machine complies with all local electrical and plumbing codes and with all applicable federal, state, county and local standards for food and drinking water installations. The machine must be installed in a location free of dust and debris.

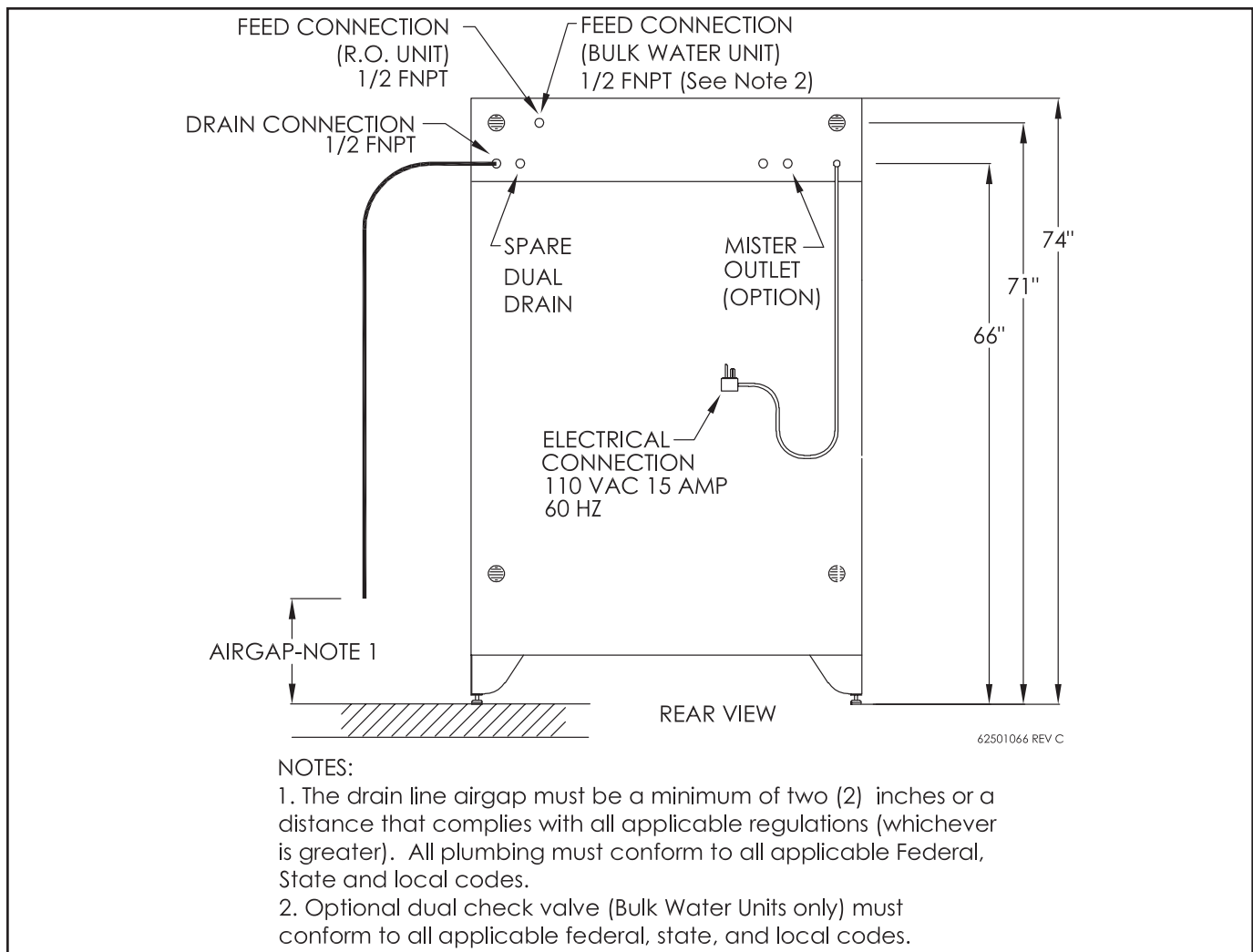
2. Place machine on floor, adjust legs (hand adjustable) to prevent rocking.
3. Connect plumbing inlet and outlet lines. Use guidelines specified in: "Service Connection," Figure 2.
4. Check all fittings for tightness.

NOTE: This will prevent water leakage caused by loosening of fittings during shipment.

1. Move the vending machine to desired setup location. Cut the banding and remove cardboard shell; inspect the machine for any damages that may have occurred in transit.

5. Install carbon and sediment filters (See Filter Maintenance Section).

SERVICE CONNECTIONS



NOTES:

1. The drain line airgap must be a minimum of two (2) inches or a distance that complies with all applicable regulations (whichever is greater). All plumbing must conform to all applicable Federal, State and local codes.
2. Optional dual check valve (Bulk Water Units only) must conform to all applicable federal, state, and local codes.

The rear view of the water vending machine showing the service connections.

FIGURE 2

FLUSHING / CHARGING (R.O. Units Only)

FLUSHING R.O. MEMBRANE (Internal R.O. Units)



WARNING: Your reverse osmosis element will contain a storage solution made up of Sodium Bisulfite (SBS). Some individuals may experience allergic reactions to SBS. Please make sure the system is flushed thoroughly. The element may also contain a propylene glycol solution to prevent freezing in winter months.

Refer to Figure 3.

1. Turn flush toggle switch, Item 1, to OFF.
2. Turn pressure pump toggle switch, Item 2, to OFF.
3. Open (counter clockwise) the pressure regulating valve, Item 7.
NOTE: Be careful not to turn the valve handle too far or the handle will come off.
4. Open feed shut off valve, located in upper rear corner, Item 4.
5. Plug in machine and allow filter 5 and 6 to fill with water.
6. Turn on pressure pump toggle switch, Item 2. (Leave flush toggle, Item 1, Off.)
7. Run for 5 minutes at low pressure (approximately 50 psi) then increase valve, (Item 7) to 120 psi on gauge, (Item 8).
8. After a period of 30 minutes, take a sample of product water from the drain bucket on door. Smell the water to see if any odors may be present. Continue to flush until the water is free of odor.

IMPORTANT: Take a sample of water from sample cock (No. 9) during this time. Test it for chlorine. (See Measuring Chlorine Section). Do this during the first five (5) minutes of operation. Free chlorine must be 0 to 0.1 ppm maximum.

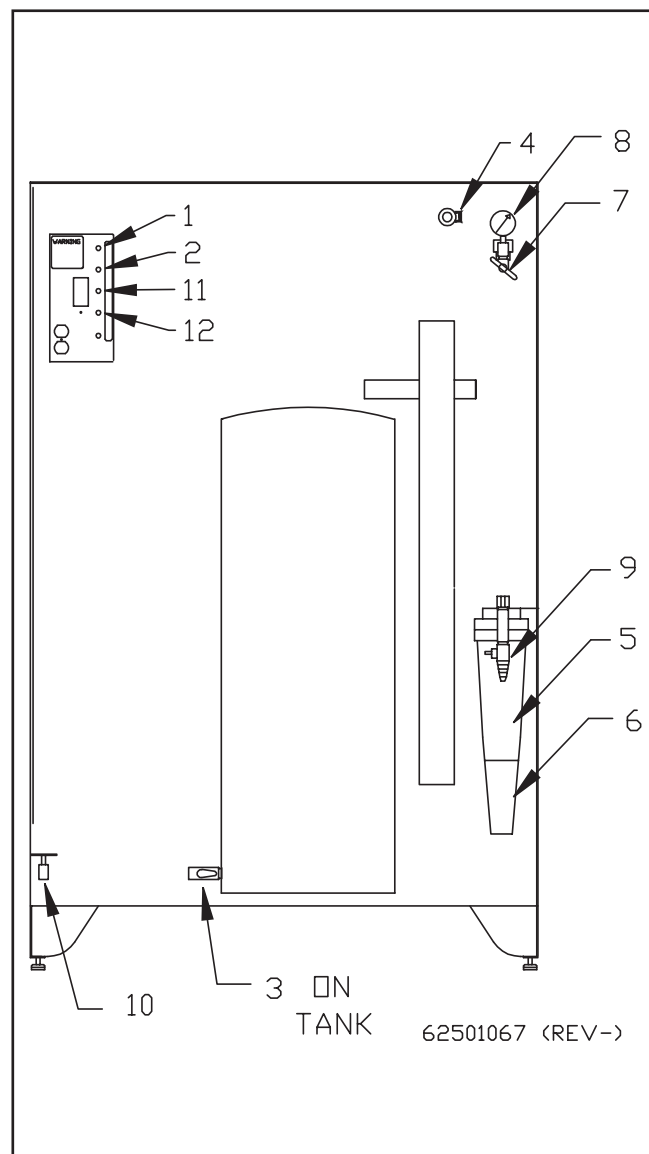


FIGURE 3

**SYSTEM CHARGING
(Internal R.O. Units)**

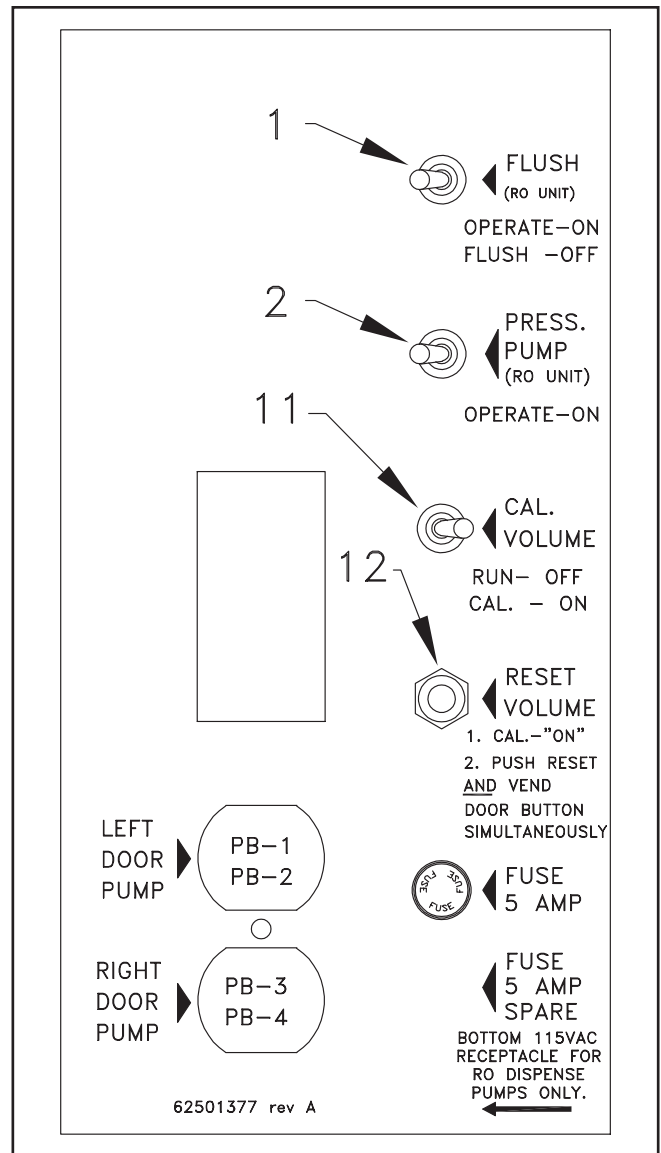
Refer to Figure 3 and 3A.

1. Open water storage tank valves, Item 3. (Fig. 3)
2. Turn flush toggle switch, Item 1, to On. (Operate Position).
3. Turn press pump switch, Item 2, to On. (Operate Position).
4. Turn CAL switch, Item 11, to OFF. (Run).
5. After the pressure pump has started, test the emergency shut off level switch, Item 10, located in sump of machine (Fig. 3).

Lift up float by hand; machine should shut down. If machine is still running, float is defective and must be replaced. Release float to continue charge cycle.

NOTE: Unit has a built in time delay on.

6. After 10 minutes, push the selector switch on front door of both sides.
7. Let machine charge for approximately 5 minutes then empty tank. Alternate between sides.
8. Triple rinse storage tank by repeating Step 6 three times.
9. Machine is now ready for customer use.



**Electrical Box Switches
Figure 3A**

CALIBRATION

(Refer to Figure 3A in Flushing Section for All Electrical Box Buttons)

IMPORTANT: Vending in the “calibration” mode (Switch 11 “On”, figure 3A.) will cause the existing volume calibration of that button to be changed. All button volumes should be verified during set-up.

The top button on both sides is nominally set at 1 gallon. The middle button acts as a stop button. The bottom button is nominally set at 5 gallons as shipped from factory.

IMPORTANT: All factory calibrated volumes are nominal only. They must be verified on site when the unit is put into service. Use the calibration procedure to adjust volumes as required.

If possible do **not** set the volumes to over fill the bottles. Over filling every bottle contributes to a wet floor in front of the unit. The overfilled wet bottles drip on the floor as they are removed from the dispenser housing.

NOTE: The unit is equipped with a stop button that will allow people to top off their bottles if required.

TO CALIBRATE A DESIRED VOLUME:

1. Toggle “Cal Volume” switch (Item 11) on electrical box to “On” position.
2. Press and hold the black “Reset Volume” button (Item 12) and simultaneously push the desired selection button on door front to reset the respective internal counter. Release both buttons.
3. Position empty container of the correct desired volume under spout.
4. Press and hold individual selection button, on front of door, until container holds the desired volume of water. (**Note: The selection button can be pressed and released as many times as it takes to fill the container, but once a container is over filled, the container must be emptied, and then steps 2, 3 and 4 repeated.**)
5. Repeat steps 2, 3, and 4 for the other button selections.
6. Return internal “Cal. Volume” toggle switch (Item 11) to “RUN” (Off) position. 7. Verify all calibrated volumes by filling a container for each selection button.

TO INCREASE THE VOLUME OF A CALIBRATED SELECTION (COIN AND NON COIN UNITS):

1. Leave partially filled container under spout.
2. Toggle “Cal Volume” switch (Item 11) to Cal. “ON” position.
3. Press and hold individual selection button until container holds desired amount of water.
4. Return internal calibration toggle switch to “RUN” (Off) position.
5. Verify correct volumes by filling a container for each selection button.

TO DECREASE VOLUME:

Once a container is overfilled, the calibration process must be restarted from the beginning. (See "To calibrate to a desired volume").

TO CONVERT A SINGLE BUTTON TO "HOLD TO VEND". (WATER STOPS WHEN BUTTON IS RELEASED.)

1. Toggle "Cal Volume" internal switch "Cal" (On) position.
2. **Press and hold** the selection button on door and the "Reset Volume" button to reset the internal counter. Release both buttons.
3. Quickly press and release the desired door selection button, to dispense a small amount of water.
4. Turn off power to machine.
IMPORTANT: Selection buttons on door must not be pushed before power is turned off.
5. Toggle "Cal Volume" internal switch (Item 11) to "RUN" (Off) position.
6. Turn on power and verify "HOLD TO VEND" button operation. **NOTE: If button does not properly function "Hold to Vend" repeat steps 1 through 5.**

TO RETURN CALIBRATION TO PRESET NOMINAL 1 AND 5 GALLONS:

1. Toggle "Cal Volume" internal switch (Item 11) to "CAL" (On) position.
2. Press and hold the black "Reset Volume" button (Item 12) and simultaneously push all selection buttons one at a time to reset the respective internal counters. Release black "Reset Volume" button last.
3. Turn off power to machine.
IMPORTANT: Selection buttons must not be pushed before power is turned off.

4. Toggle "Cal Volume" internal switch (Item 11) to "RUN" ("Off") position.
5. Return power to unit.
6. Verify all calibrated volumes by filling a container for each selection button.

MAINTENANCE

General maintenance depends upon the feed water quality and use of the machine. To build a proper maintenance schedule, a log sheet, as shown in the rear of this manual, should be prepared for each machine. The log sheet will contain information about feedwater and drinking water. Periodic analysis of water quality and system parameters, will help track the performance of the machine and indicate if any replacement parts are needed. Additionally, the log sheet will track replacement dates of any components, system repairs, or comments concerning operation.

The following schedule is a “Rule-of-Thumb” guide to performing general maintenance and service on the water vending machines. For additional maintenance information addressed in the schedule below, please refer to the appropriate sections in the manual.

TESTING GROUND FAULT CIRCUIT INTERRUPTER (GFCI) DUPLEX RECEPTACLE

Push in black test button. Red reset button will pop out and machine power is shut OFF. Push red reset button firmly in to latch and reset power.

If GFCI fails to pop out or reset properly, **DO NOT USE**. Call a qualified electrician.

MAINTENANCE SCHEDULE

Daily

- Clean and disinfect the customer contact surfaces.
- Clean exterior of cabinet.
- Check the machine for good working order.

Weekly Or Bimonthly

- Clean and disinfect the drain tank (See Cleaning-Sterilization Section).

- Measure and record the TDS of the feed and drinking water (See Measuring TDS Section).
- When any of the above TDs readings are out of specification, perform required service to bring them back to normal. (See Reverse Osmosis Maintenance Section).
- Test and record the chlorine level after the precarbon filter. Use the test cock on filters to collect sample. The carbon filter must be replaced when the residual free chlorine approaches 0.1 ppm maximum. Free chlorine will destroy the membrane (See Filter Maintenance and Measuring Chlorine Section).
- Check filters, replace if dirty.
- Log pressure gauge readings.
- Check softener salt tank level (where applicable).
- Test ground fault interrupter duplex receptacles and power cord GFCI.

90 Days

- Replace the precarbon filter.
 - Replace the postcarbon filter.
 - Replace the sediment filter.
 - Coliform test.
- NOTE: Must conform to all state and local regulations**

6 Months

- Test UV bulb intensity or replace bulb.
- Check Quartz Sleeve and clean if necessary.

Yearly

- Replace UV bulb
- Clean UV Quartz Sleeve

Periodic (As Required)

- Sterilization as required.
- Reverse osmosis membrane replacement for cleaning. When drinking water TDS rises to more than 10% of the feed water TDS (See measuring TDS).

NOTE: Must conform to all state and local regulations.



CAUTION: Your actual maintenance schedule may vary according to water quality, machine usage, and must conform to all state and local requirements. Please adjust the maintenance schedule to best suit your needs. However, for any filter replacement please do not exceed the maximum period of time or volume of water recommended for their respective replacement.

FILTER MAINTENANCE

NOTE: Coster Engineering recommends frequent replacement of the prefilters in order to minimize any possible fouling of the reverse osmosis element. It is Coster Engineering's belief that such replacements will save you money in membrane replacement in the long run.

General

The following points should be observed when changing filters.

1. Filter housings are to be screwed on only hand tight.
- 2: Relieve line pressure before attempting to unscrew filter housing.
3. Unscrew filter cartridge housing (counter clockwise) by hand.
4. Discard old filter.
5. Clean filter housing and rinse with clean water.

NOTE: If the interior of the filter housing gets slimy, a cleaning and disinfection will be required. (See Sterilization Section).

6. Insert new cartridge.

Make sure cartridge filter is lined up on top and bottom posts before screwing cartridge housing tight.

7. Replace cartridge housing.

Check to make sure O-ring is clean, properly seated and lubricated before assembling filter housing. Tighten hand tight, check for leaks.

NOTE: Use only food grade grease for lubrication.

Sediment Filter

This filter catches any of the sediment in the feed water. It should be inspected and changed according to the maintenance schedule. The frequency of changes can be adjusted according to the appearance of the interior of the sediment filter.

Pre-Carbon Filter (Feed Filter) (CBC Carbon Briquette)

This filter removes chlorine before the feed water is fed to the membrane. With sediment filter installed always flush a new filter using sample port until water runs clear with no visible trace of carbon fines.

NOTE: Chlorine will attack the membrane, destroying the membrane and it's ability to reject contaminants. Carbon filters must be replaced when the residual free chlorine approaches 0.1 ppm maximum. Test for free chlorine using 'low range' 0-.7 mg/1 test kit instructions, if available. If feed chlorine levels are unusually high (greater than 1.0 ppm) additional carbon pretreatment devices may be required.

**Post Carbon Filter
(Product Water)**

The post carbon filter is for the removal of any remaining tastes and odors from the dispensed water. This also must be changed according to the maintenance schedule.

NOTE: Position a large open container under the 10” postcarbon filter on door when changing. This will reduce time spent cleaning up drain down water spillage on floor.

FILTER CHANGE SCHEDULE			
	<u>Check/ Test</u>	<u>Replacement</u>	<u>Max Time</u>
Pre Carbon	1-2 weeks	As required/ 1500 gal.	90 days
Sediment	1-2 weeks	As required	90 days
Post Carbon	-----	3000 gal.	90 days
Storage Tank Air Filter (Open Tank Only)	1-2 weeks	-----	12 months

R.O. MAINTENANCE

Reverse Osmosis Membrane Performance

R.O. membranes may get fouled depending on feed water conditions. The sooner a fouled membrane is cleaned, the better the chances of returning it to its original performance characteristics. Completing the following steps in accordance with the maintenance schedule will help indicate when cleaning is necessary.

1. Vend one (1) gallon of drinking (reverse osmosis) water. Discard
2. Vend another gallon of drinking (reverse osmosis) water.
3. Take a TDS reading with your TDS meter. (See measuring TDS).

NOTE: Make sure readings have been temperature compensated.

4. Collect a sample of the feed water through the sample port located directly after pre-filters.

NOTE: If the machine is not charging, then vend two (2) gallons of water. This will start the charging cycle and enable you to collect a feed sample.

5. Take a TDS reading:
6. Calculate rejection of the minerals with the following formula:

$\text{Rejection \%} = \frac{\text{TDS (Feed Water)} - \text{TDS (Product Water)}}{\text{TDS (Feed Water)}} \times 100$

7. Compare current rejection reading with the first entry on the log sheet.
 - If the vending machine is running on unsoftened water, then a 10% drop in rejection can be tolerated before cleaning.
 - If the vending machine is running on softened water, then a 15% drop in rejection can be tolerated before cleaning.

NOTE: If any valves have been adjusted or membranes cleaned since installation, then the rejection comparisons must be made with the TDS values obtained after these adjustments.

UV LIGHT MAINTENANCE



WARNING: Ultraviolet light given off by the UV lamp can cause serious burns to unprotected eyes. Never operate ultra violet unit with the end cap covers removed and never look directly into the cell's ports while the unit is in operation.



WARNING: When testing UV intensity, always wear UV safety goggles (available from Coster Engineering). Exposure may result in irreversible eye damage.



WARNING: Cover all exposed skin surfaces or skin damage may result. Perform test during closed or quiet times. Keep all unprotected persons away from direct view of the UV lamp.



IMPORTANT: A dirty quartz sleeve will reduce UV light transmission to the water and reduce disinfection performance of the UV light. When feeding a UV light with water containing higher mineral content than RO water, such as alkaline water, the Quartz Sleeve coating buildup is accelerated and requires more frequent cleaning. Initially, check sleeve monthly or bimonthly and adjust cleaning procedure to suit the type of water that you are vending. Refer to vending machine operators manual and UV light manufacturer operators manual quartz sleeve cleaning instructions.

TESTING LAMP INTENSITY/REPLACEMENT

Option 1. Replace UV Lamp every 6 months of use.

Option 2. Test at 6 months and replace every 12 months of use. A minimum intensity level of 16,000 UWs/cm² at 254 nm wave length shall be maintained for the life of the lamp.

Readings are obtained with a commercially available portable UV intensity meter. Consult Coster Engineering for recommended meter type. Follow all instructions and safety procedures included with meter.

An LED monitor located on the side of the UV assembly will indicate whether the UV bulb is lit. If this monitor light is not on, it will prevent the machine from dispensing water.

If the LED monitor goes out, shut off water supply to sterilizer immediately and disconnect power supply. Replace UV lamp with a new one by following installation directions. Regularly inspect the unit to ensure that the monitor light is still glowing.

QUARTZ JACKET CLEANING/ REPLACEMENT

1. Disconnect power to vending machine.
2. Shut off the water supply.
3. Remove UV chamber from mounting clamps.
4. Disconnect the lamp connector at the end of the UV chamber and remove lamp from chamber.
5. Remove Quartz Sleeve as follows:
 - a. Unscrew retaining nuts, remove floating spring, and carefully slide sleeve out of UV chamber.
 - b. Clean sleeve with vinegar or some other mild acidic solution, then rinse with water.
 - c. Clean and lubricate O-rings with food grade lubricant or replace with new O-rings.
6. Reinstall Quartz Sleeve in UV chamber as follows. **NOTE:** Be sure no marks or fingerprints are on sleeve or lamp.
 - a. Position sleeve in chamber allowing sleeve to protrude an equal distance at both ends of chamber.
 - b. Slide O-rings onto each end of sleeve.
 - c. Reinstall retaining nuts and floating spring.



IMPORTANT: Glass Quartz Sleeve is fragile, hand tighten nuts only.

7. Install UV lamp, lamp connector, and secure UV chamber in mounting clamps.
8. Test the unit by plugging it into the electrical outlet. The indicator light on the side of the housing should glow steadily within a few seconds. If the light does not come on or continue to glow steadily, check lamp electrical connection. Replace lamp if necessary
9. Turn on water supply and check all connections for leaks. Allow the water to run for a few minutes to clear out any air or dust that may be in the cell.

CLEANING - STERILIZATION **CUSTOMER CONTACT SURFACES**

Cleaning and disinfecting of the customer contact surfaces must conform to state and local codes. However, it is recommended that daily cleaning and disinfecting of the customer contact surfaces be performed.

The customer contact surfaces of the machine are the dispenser housing and nozzle. The following steps outline their cleaning and disinfection procedure.

1. Wash off any dirt or debris in or around the dispenser housing and dispensing nozzle with a mild detergent solution. Rinse with clean water.
2. Spray a chlorine based disinfecting solution at 100 ppm onto the dispenser housing and nozzle. Allow to air dry.

NOTE: Prepare 100 ppm chlorine based cleaning solution as follows:

- Mix one (1) Tablespoon standard household bleach containing 5.25% sodium hypochlorite with one (1) gallon clean R.O. water (or other low TDS water).

NOTE: Stronger more concentrated solutions of chlorine may cause rusting and damage to stainless steel and other components.

PLUMBING

This procedure should be used if a bacterial contamination is suspected in the machine. Bacteria may grow in the machine if it is taken out of service and stored. This growth can sometimes occur in a one to two week period depending upon the conditions. No matter the cause, if you suspect bacterial contamination of a vending machine, this contamination should be eliminated through the following sanitization procedure.

1. The following materials will be needed for the disinfection of the plumbing system.
 - Two (2) 5 gallon pails.
 - 6 to 9 pints of 3% hydrogen peroxide.
2. Obtain potable drinking water in two (2) five gallon pails.
3. Add 3 pints of a 3% hydrogen peroxide solution to the water in each pail.
4. Discard all filters.
5. Disconnect water inlet on rear of unit.
6. Fill all plumbing, filter housings and UV light with disinfection solution by use of gravity or a portable feed pump.
7. Allow the sterilization solution to set for 3 to 12 hours. The longer the time, the greater the killing effectiveness of the sterilization solution.
8. Flush all sterilization solution from machine by reconnecting inlet and holding vend button.

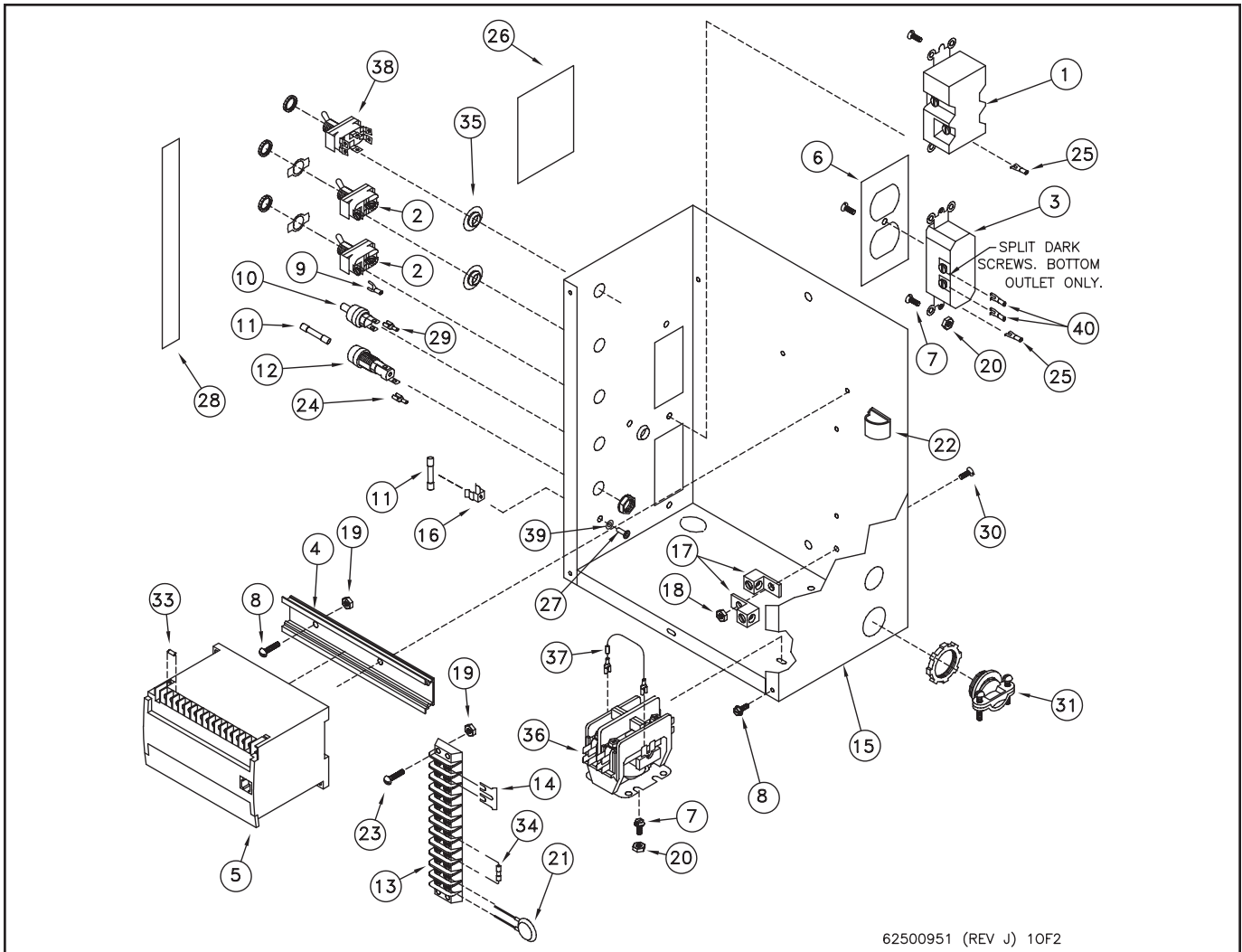


CAUTION: Run sufficient water to ensure total flushing of unit.

9. Install new filters.

ELECTRICAL SECTION

ELECTRICAL BOX COMPONENT LOCATION



62500951 (REV J) 10F2

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	625-004-068	Receptical, 125 15 AMP	1	20	951-001-001	Nut-Hex #6-32	1
2	625-001-232	Switch, Toggle Single Pole 20A	1	21	39207032	Varistor, Surge Absorber 6500A	1
3	625-004-252	Receptical, 15 AMP 110 BRN GRD	1	22	62500156	Clamp, 3/4 Self Adhesive	1
4	625-900-334	Bin Rail, Electrical Box	1	23	950-004-086	SCR-PAN HD #8-32 X 5/8	2
5	62500923	PLC, 10/8 IO W/Dual Program	1	24	62500631	Terminal, 3/16 F Sdrl 22/18	2
6	625-004-253	Receptacle, Metal Cover	1	25	62502962	Terminal, Spade #10	2
7	950-004-024	Mach-SCR #6-32 x 3/8 SL PAN HD	1	26	625-002-075	Decal, Warning Electric	1
8	950-005-006	S-Tap SCR #8-36 x 3/8 SHW HD	6	27	954-002-010	Rivet 1/8 X 1/8 SS	1
9	625-001-261	Spade, #6 18-22AWG	3	28	62500950	Decal, Switch Function	1
10	625-002-685	Switch, Push Button	1	29	62500702	Sod Term .25F 22-18 AWG	2
11	62500634	Fuse, 5A 3AG 250V Fast Acting	2	30	950-003-071	Bolt Crg. #10-24 X 1/2 SS	1
12	39207034	Fuse Holder, 3AG 1/4" Q-Conn.	1	31	625-001-312	Fitting, Elect. Romex 3/4	1
13	625-001-265	Term Block, 12 Pole, High Barrir	1	32	625-001-469	Tywarp, 1/16-5/8 X5L	5
14	625-004-051	Jumper, Snap Off Strip Style	2	33	62501684	Transorb, 200V BIDIR 1500W	1
15	625-900-336	Weldment, Electrical Box	1	34	62501400	PLC Fuse, 1 AMP W/Leads	1
16	62500635	Fuse, Metal Clip 3AG	1	35	625-004-189	Plug, BPF-1/2 BLK Plastic	2
17	625-001-266	Term Block, GND LUG AL 4-14 Wire	2	36	62500549	Relay, Contactor 2 Pole 30/40A (RO Units)	1
18	951-001-002	Nut-Hex #10-24	1	37	62501402	Assy, Transorb 200V BIDIR (RO Units)	1
19	951-001-012	Nut-Hex #8-32	4	38	62501531	Switch, DPDT Toggle (RO Units)	1

**TESTING GROUND FAULT CIRCUIT
INTERRUPTER (GFCI) DUPLEX
RECEPTACLE**

Push in black test button. Red reset button will pop out and machine power is shut OFF. Push red reset button firmly in to latch and reset power.

If GFCI fails to pop out or reset properly, **DO NOT USE**. Call a qualified electrician.

**ELECTRICAL CONTROL FEATURE
OVERVIEW**

I. Charging cycle (processing water to fill the storage tank): Controlled by internal tank float. (NOTE: R.O. Units Only.)

Step 1. One (1) minute pre-flush with pressure pump off. During this time, product (processed) water is diverted into the drain tank.

Step 2. Pressure pump starts. The pump will not start during a vend, but will wait for the vend to be completed. When the pump is running, water can be vended or dispensed normally and the pressure pump will continue to run.

Step 3. One (1) minute post-flush with pressure pump off. During this time, product (processed) water is diverted into the drain tank. Storage tank is now full and charging cycle is finished.

II. Dispensing Cycle

Before water can be vended or dispensed, the following indicators must be in operation:

1. Cabinet "Sump" leak level
2. "UV #1 On (for PB1, PB2, left side)
3. "UV #2 On (for PB3, PB4, right side)

III. Drain Tank

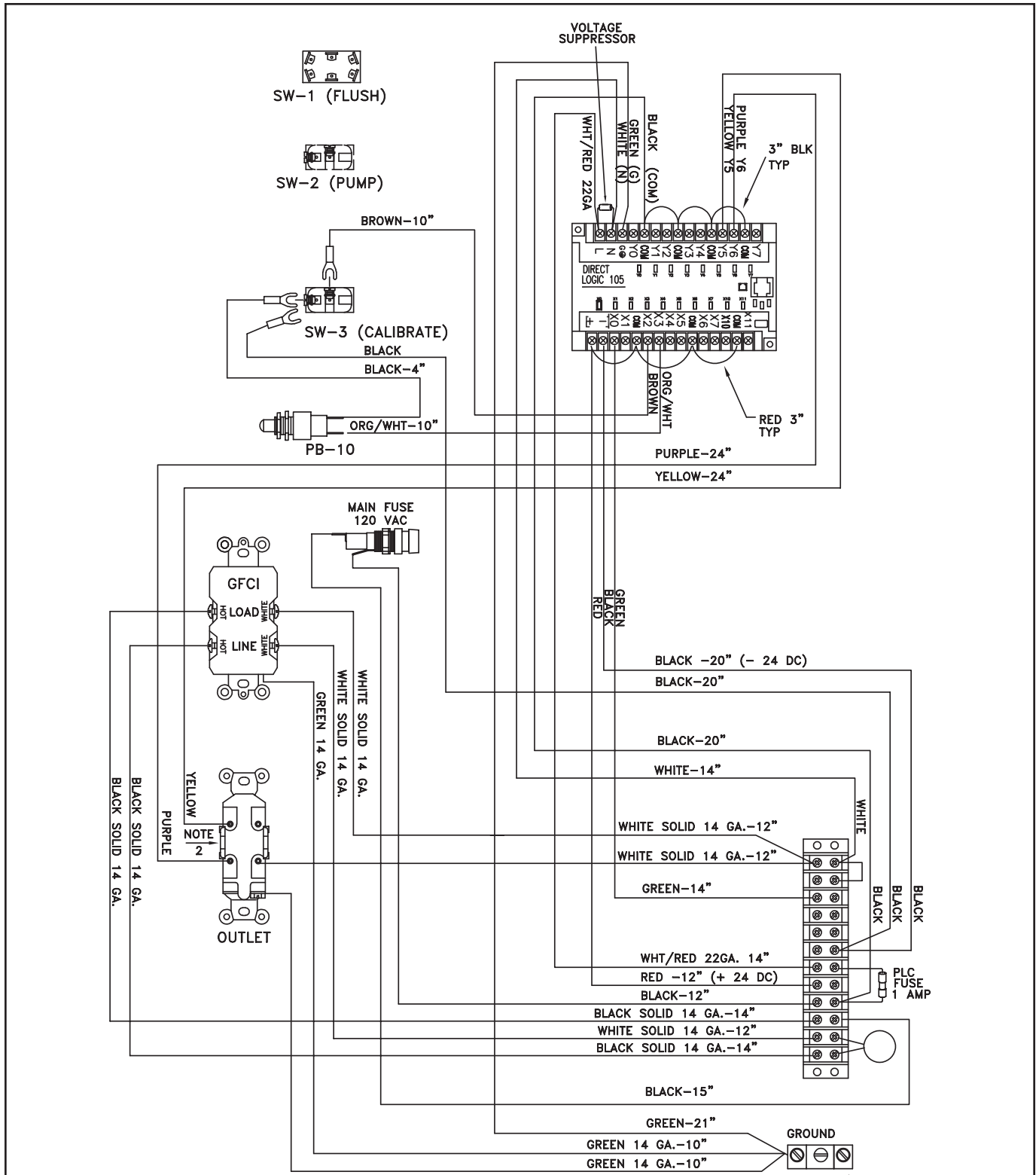
A single float in the drain tank must be in the "up" position for (3) seconds (continuous) to turn the drain pump on. When the float is down for 4 seconds (continuous), the pump will turn off.

IV. UV Temperature Flush

Water is flushed through the UV light for approximately (2) seconds if the unit **HAS NOT** dispensed water for one hour. This reduces the peak temperature experienced after the unit has set idle for an extended time, such as the first vend in the morning.

The upper drain tank float stops the dispensing function. This feature does not allow the drain tank to over-flow or excessive water being wasted if buttons are pushed while no bottle is in dispenser.

WIRING DIAGRAM ELECTRICAL BOX (ALL UNITS)

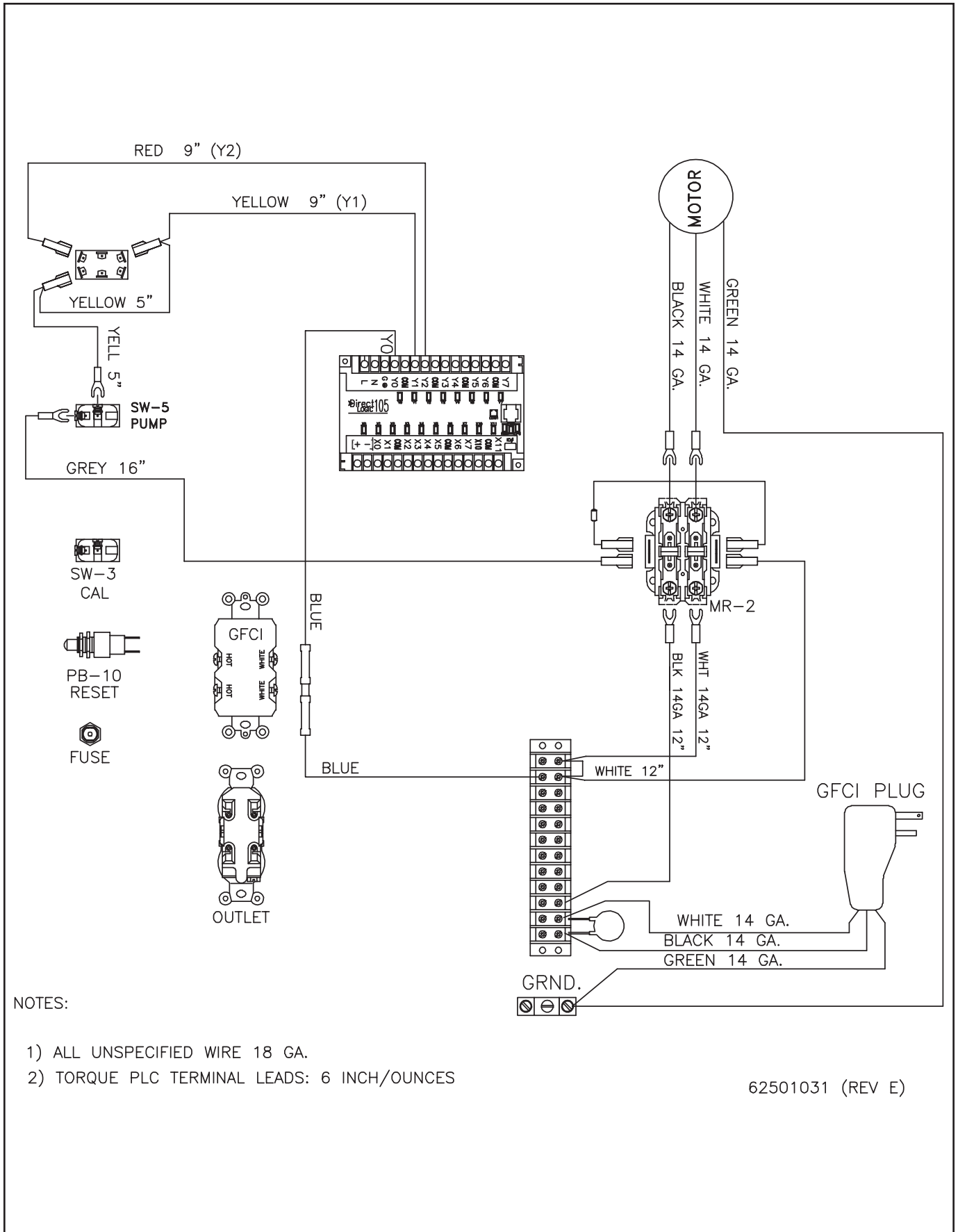


NOTES:

- 1) ALL UNSPECIFIED WIRE 18 GA.
- 2) SPLIT CIRCUIT, BLACK (POWER) SIDE ONLY.
TOP/BOTTOM OUTLET SWITCHED
- 3) TORQUE PLC TERMINALS(5) TO 6 INCH/OUNCES
- 4) CUT LEADS OF FUSE(34) & TRANSORB(33) TO 1/2 INCH ±1/8
- 5) RIGHT GROUND LUG RESERVED FOR MAIN POWER CORD GROUND ONLY

NOTE 5

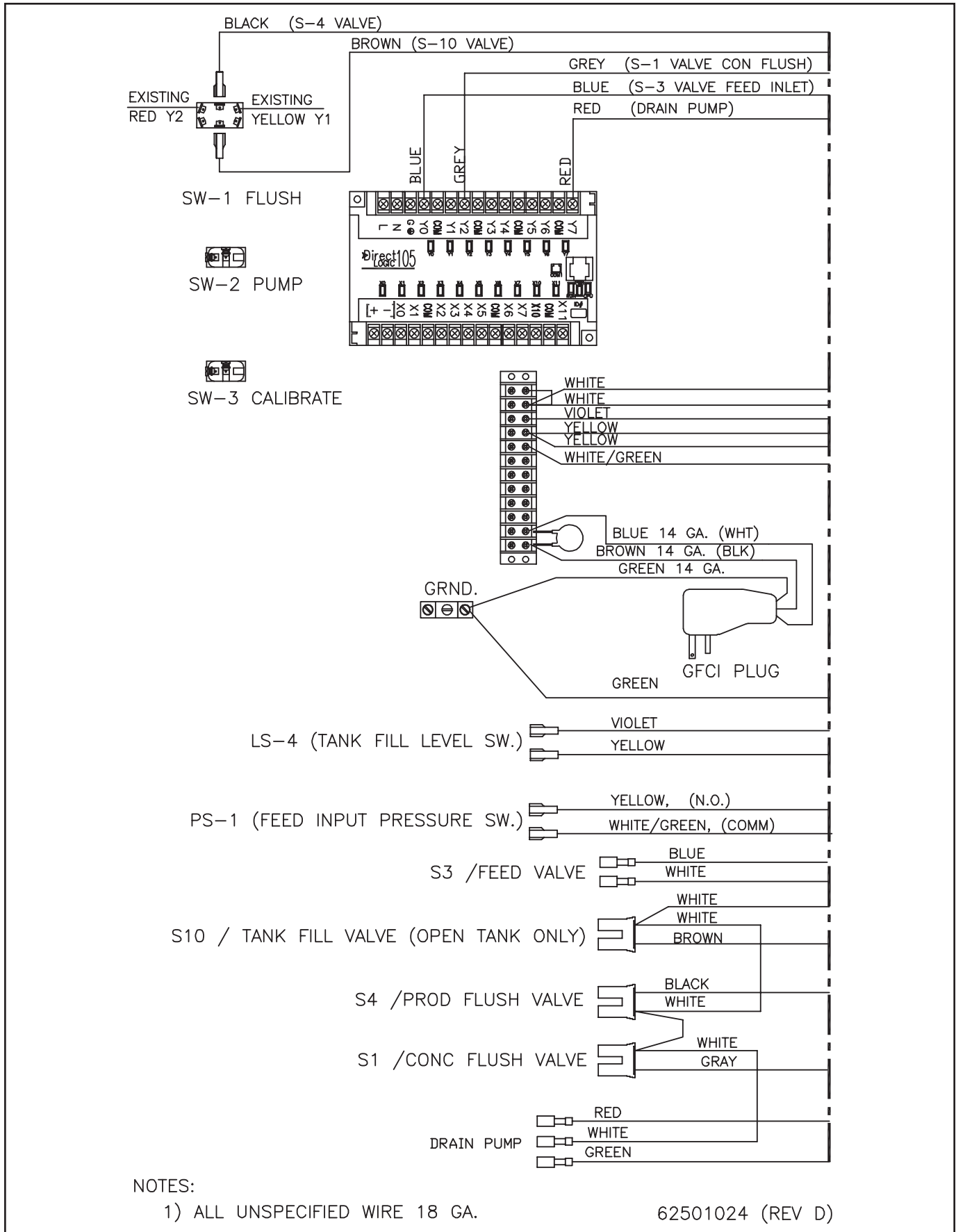
WIRING DIAGRAM PRESSURE PUMP MODE (R.O. UNITS ONLY)



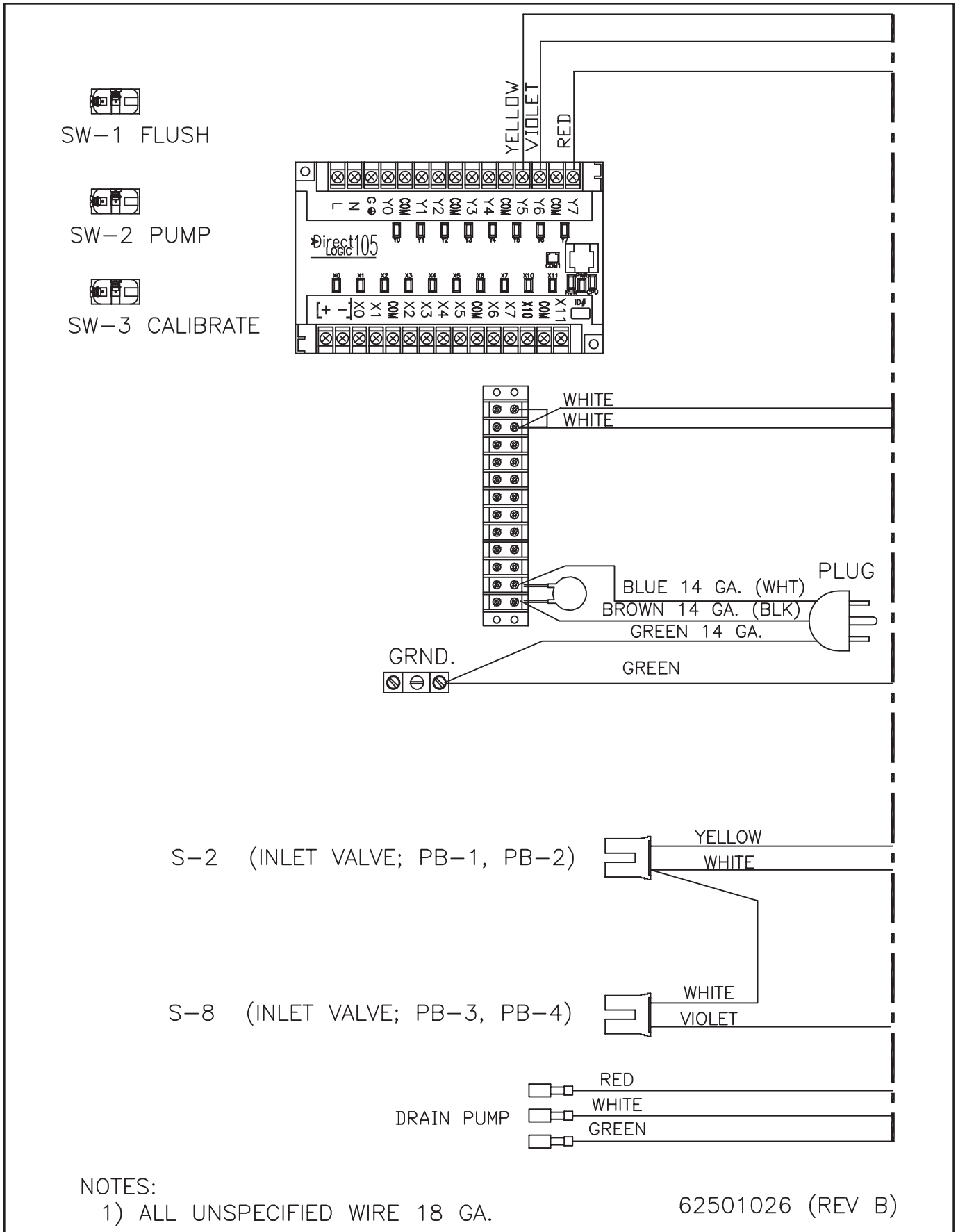
NOTES:

- 1) ALL UNSPECIFIED WIRE 18 GA.
- 2) TORQUE PLC TERMINAL LEADS: 6 INCH/OUNCES

WIRING DIAGRAM 120 VAC HARNESS (R.O. UNITS ONLY)



WIRING DIAGRAM 120 VAC HARNESS (BULK WATER (BW) UNITS ONLY)

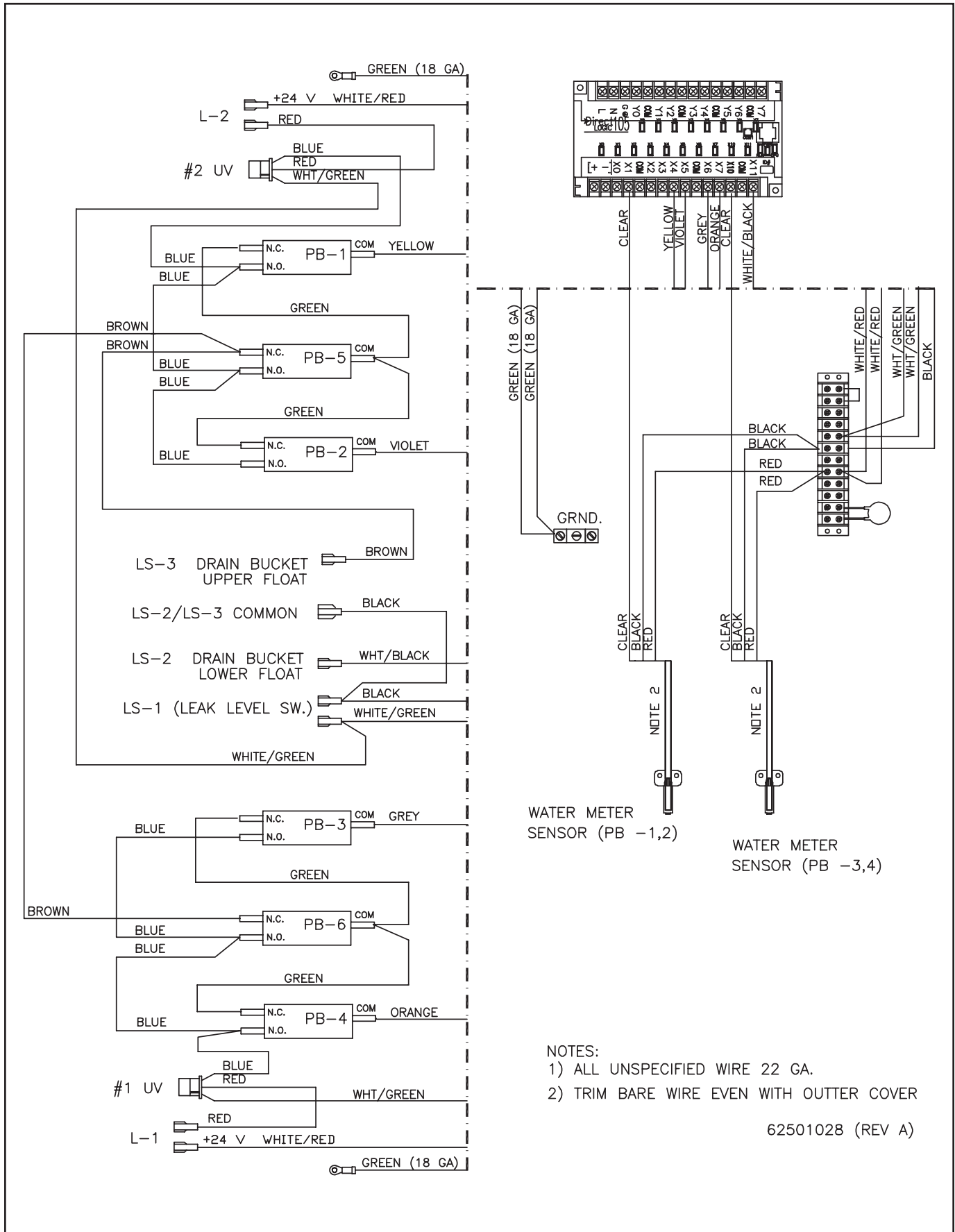


NOTES:

1) ALL UNSPECIFIED WIRE 18 GA.

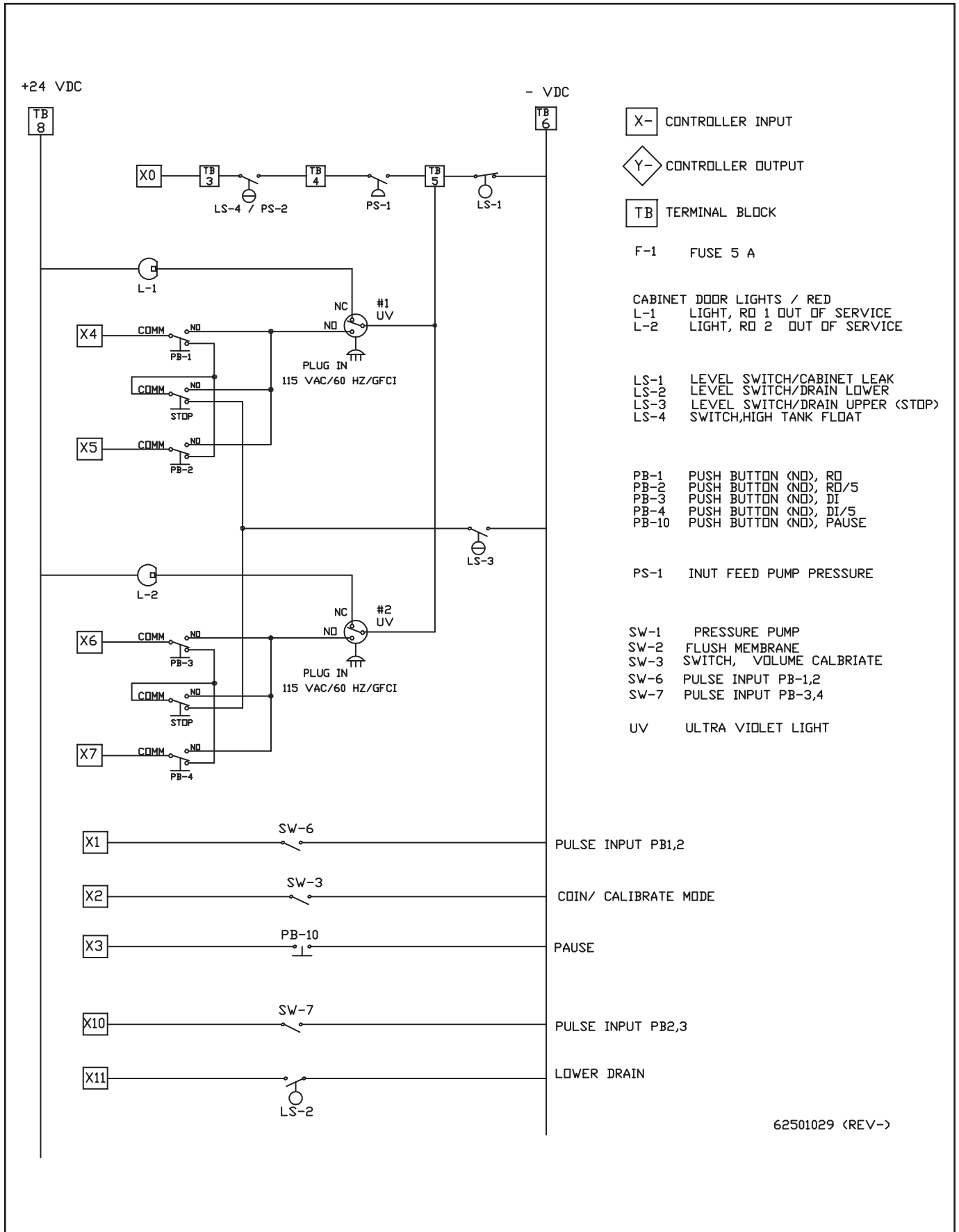
62501026 (REV B)

WIRING DIAGRAM 24 V VEND HARNESS (ALL UNITS)



NOTES:
 1) ALL UNSPECIFIED WIRE 22 GA.
 2) TRIM BARE WIRE EVEN WITH OUTER COVER

LOGIC DISPENSE (ALL UNITS)



SOLENOID VALVES

FEED SOLENOID VALVE

1. The solenoid valve will be inoperative if the coil is defective or if no power is reaching the valve. Fix or replace as required.
2. The valve seat should be inspected and cleaned during conditions that are preventing a positive seal when off.
3. Any dripping fittings should be immediately tightened to avoid a potentially serious leak.

PLASTIC DISPENSER SOLENOID VALVE

1. The dispenser solenoid valve contains no field replacement internal components.
2. The solenoid valve inlet screen protects it from particles. This screen can be cleaned by flushing with clean water.
3. The solenoid valve will be inoperative if the coil is defective or if no power is reaching the valve.
4. Any dripping fittings should be immediately tightened to avoid a potentially serious leak.

MEASURING TDS

Complete the following steps when taking a TDS reading.

1. Rinse a cup with drinking or purified water.
2. Rinse your TDS meter probe with drinking or purified water. Shake off excess water.
3. Fill cup with sample water.

NOTE: In order to sample the feed water, the machine must be in a charging cycle. Vending two gallons from the dispenser will pace the machine in a charging mode and allow sampling to be completed.

NOTE: When testing drinking or purified water, vend one gallon prior to taking samples.

4. Insert thermometer probe into sample. Take the temperature reading in degrees celsius.
5. Push the temperature button on the TDS meter.
6. Adjust the temperature in the display to that of the thermometer by turning the temperature compensation knob.
7. Push the conductivity button on the meter, the TDS level will be displayed.

MEASURING CHLORINE



WARNING: Chlorine can damage the reverse osmosis membrane. Feed water, free chlorine must be 0 to 0.1 ppm maximum. Carbon filters must be replaced when the residual free chlorine approaches 0.1 ppm. Failure to maintain proper chlorine levels may void your warranty. If the chlorine level in the supply water is unusually high (greater than 1.0 ppm) additional pretreatment devices may be required.

1. Test Strips Packet #625-005-983.

Package of 50 strips that are dipped in sample. Follow instructions included with packet. Range 0.0-5.0 ppm free chlorine.

2. Hach Test Kit #625-002-070



WARNING: Chlorine Test Kit #625-002-070. The chemicals in this kit may be hazardous to the health and safety of the user if inappropriately handled. Please read all warnings before performing the tests and use appropriate safety equipment.

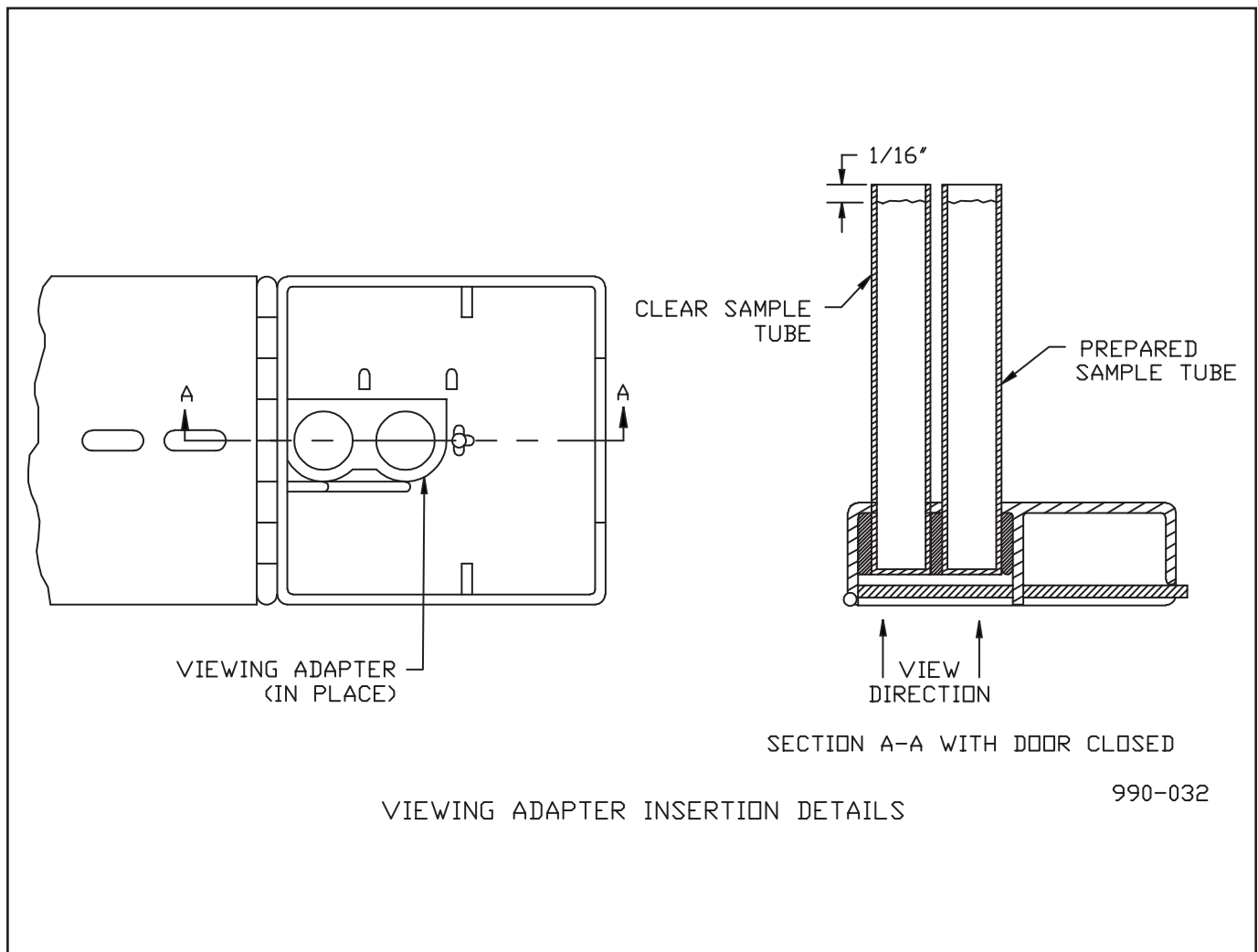
IMPORTANT:

- Use free chlorine (low range) test instructions 0-0.7 mg/L included with kit.
- To insure accurate results, read carefully before proceeding.
- The free chlorine concentration must be read within one minute of adding the DPD Free Chlorine Reagent.

NOTE: In order to sample the feed water, the machine must be in a charging cycle. Vending two (2) gallons from the dispenser will place the machine in a charging cycle and allow sampling to be completed.

1. Rinse the square mixing bottle thoroughly with the water to be tested. Fill the bottle to the 25-ml mark with the sample.
2. Use the clippers to open one DPD Free Chlorine Reagent Powder Pillow. Add the contents of the pillow to the mixing bottle. Swirl bottle to mix. The powder does not have to dissolve completely to obtain accurate results.
3. Fill one viewing tube within 1/16 inch of the top with the prepared sample. Stopper the tube carefully to exclude air bubbles.

4. Place the lengthwise viewing adapter in the color comparator as shown in Figure 7.
5. Insert the tube of prepared sample into the comparator opening labeled Prepared Sample Position in Figure 7.
6. Fill the other viewing tube with an untreated water sample. Stopper the tube to exclude air bubbles. Insert this tube into the comparator opening labeled Clear Sample Position in Figure 7.
7. Hold the comparator up to a light source such as a window, the sky or a lamp and view through the openings in front. Rotate the disc to obtain a color match.
8. Read the chlorine concentration from the scale window within one minute of the addition of the powder. Divide the value by 5 to obtain the mg/L free chlorine.



VIEWING ADAPTER INSERTION DETAILS
FIGURE 7

CLEANING - SANITIZATION

CUSTOMER CONTACT SURFACES

Cleaning and disinfecting of the customer contact surfaces must conform to state and local codes. However, it is recommended that daily cleaning and disinfecting of the customer contact surfaces be performed.

The customer contact surfaces of the Water Vending Machines are the dispensing chamber and nozzle. The following steps outline their cleaning and disinfection procedure.

1. Wash off any dirt or debris in or around the dispensing chamber and dispensing nozzle with a mild detergent solution. Rinse with clean water.
2. Spray a chlorine based disinfecting solution at 100 ppm into the dispensing chamber and nozzle. Allow to air dry.

NOTE: Prepare 100 PPM chlorine based cleaning solution as follows:

- Mix one (1) gallon of clean RO water with one (1) tablespoon of standard household bleach containing 5.25 % sodium hypochlorite.

NOTE: Stronger more concentrated solutions of chlorine may cause rusting and damage to stainless steel and other components.

DRAIN TANK

The drain tank can get bacterial growth within a few days. Therefore, a regular cleaning procedure should be completed.


1. Remove drain tank from bracket.

2. Wash, rinse and disinfect internal surfaces using cleaning solutions above. Reinstall drain tank.
3. Fill drain tank with a gallon of clean R.O. water to verify prime of drain pump, and proper operation of float switches.

PLUMBING

This procedure should be used if a bacterial contamination is suspected in the vending machine. This contamination may occur when poorly treated water containing a high coliform count is fed into the machine. Although bacteria should not pass through the membrane, bacteria colonies may start to grow on the membrane surface coating it with a slimy film. Bacteria may also grow in the machine if it is taken out of service and stored without sodium metabisulfite membrane preservative. This growth can sometimes occur in a one to two week period depending upon the conditions. No matter the cause, if you suspect bacterial contamination of a vending machine, this contamination should be eliminated through the following sanitization procedure.

NOTE: Ideally, the membrane should be cleaned before sanitization. All membranes that have been in use for any period of time will have some degree of fouling. This may mask any attempts for complete sanitization.

 **WARNING: The temperature of your hydrogen peroxide sanitization solution should not exceed 75° Fahrenheit (24° Centigrade) or damage to the membrane may occur.**

- **Use only drinking (reverse osmosis) water to mix the .2% (by volume) sterilization solution.**
- **The maximum concentration of hydrogen peroxide (H₂O₂) that should come in contact with a R.O. membrane is .25% (by volume).**
- **If a R.O. membrane has been in operation for several months, it should be cleaned with an acid and/or alkaline cleaner before the sterilization procedures are completed.**

EQUIPMENT

The following materials will be needed for the disinfection of the vending plumbing system.

- Two (2) 5 gallon pails.
- 6 to 9 pints of 3% hydrogen peroxide.

MIXING INSTRUCTIONS

Vend 4.5 gallons of reverse osmosis water into two five gallon pails.

Add 3 pints of a 3% hydrogen peroxide solution to the water in each pail.

IMPORTANT: Always allow sanitizing solution to remain a minimum of 2 hours to 12 hours. The longer your exposure, the greater your killing time.

A. All Units - Before Next Sanitation Step

1. Empty storage tank.
2. Remove power (unplug unit).
3. Remove and discard ALL sediment and carbon filters.
4. Clean filter housings. Fill with sanitizing solution and replace on unit.

NOTE: Do not install new filters at this point.

5. Clean and sanitize drain tank.

B. Storage Tank

- a. Clean any debris from inside of tank.
- b. Wash and rinse internal tank with a chlorine based disinfectant solution at 100 ppm. Drain chlorine base solution completely.
- c. Fill tanks with chlorine or hydrogen peroxide sanitizing solution.
- d. Pump disinfectant solution through system by pushing vend buttons on both doors.
- e. Allow solution to set in system for 2 to 12 hours. The longer your exposure time the greater the killing effectiveness.
- f. Pump out all disinfectant solution from tank by holding vend button.
- g. Install new post carbon filter.

Let machine charge approximately 5 minutes then empty tank. Alternate between left and right door selection buttons.

Triple rinse tank by repeating above step 3 times.

C. Pump/Membrane Cleaning

- a. Disconnect the feed and drain (discharge) lines from the outside rear of machine.
- b. Attach a 1/2 inch diameter plastic hose extension (approximately 3') to the feed (inlet) and discharge (drain) ports on rear outside of machine, place the ends of these two hoses in the 5 gallon sanitizing solution. You will be recirculating the solution to your 5 gallon container.

- c. Unhook spade electrical terminals at low pressure input switch located at upper right rear corner of machine. Connect with jumper the terminals together.

NOTE:

1. **This will temporarily bypass low pressure switch and allow pressure pump to run. Do not allow the 24 V terminals to contact metal cabinet or components.**
 2. **A separate pump (similar to the dispenser pump) may be used in place of the pressure pump to circulate the cleaning solution.**
- d. Plug in machine and turn on pressure pump switch.

NOTE: Do not allow pressure pump to run dry. If pump does not prime in 15 - 20 seconds, shut off power. Recheck all hoses, 5 gallon sterilization solution and then retry pressure pump switch.

Recirculate this solution through the reverse osmosis membrane for 15 - 20 minutes.

IMPORTANT: Recirculate at low pressure 50 psi or less.

- e. Remove electrical power (unplug machine).
 - f. Allow this sanitizing solution to set for 2 to 12 hours of time. The longer your exposure time the greater the killing effectiveness of the solution.
 - g. Discard all sanitizing solution in storage tank and filter housings.
 - h. Install new sediment and carbon filters.
- D. Test Unit. Repeat Sanitization Procedure if required.**

TROUBLE SHOOTING

The trouble shooting section is divided into two sections. The first is a general guide to some of the more common problems in the machine and how to fix them.

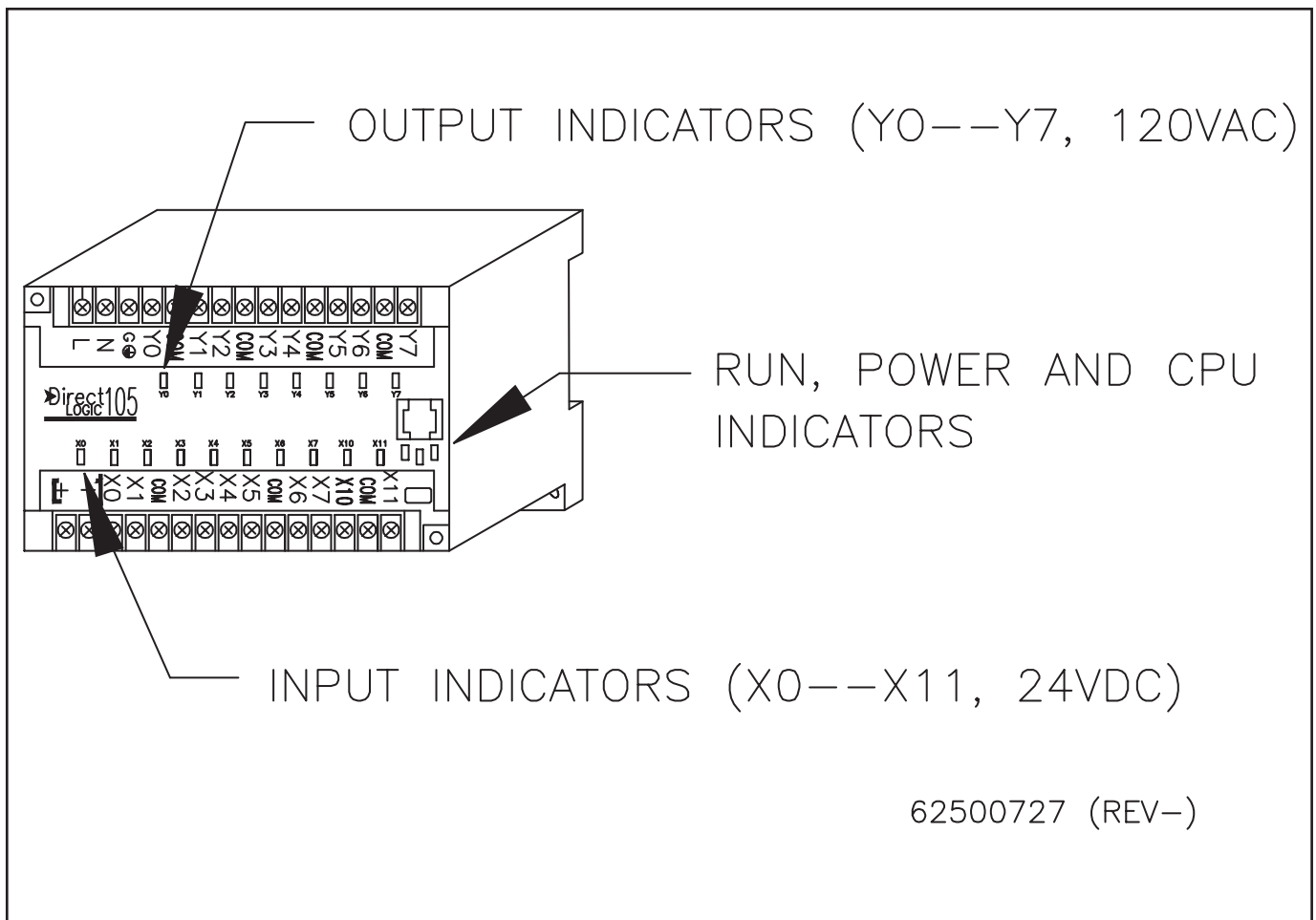
The second section explains the function of the PLC input/output lights, and should only be used if the previous guides have failed.

GENERAL TROUBLE SHOOTING

PROBLEM	CAUSE	CORRECTION
1. Machine will not charge or Pressure pump will not start (R.O. units only) NOTE: A. PLC Indicator Light XO Input, and YI Output (Fig. 8) must be ON for pressure pump to start.	Pressure pump switch on the electrical box in off position.	Turn on switch.
	Water in sump of machine.	Drain water.
	Feed line shut off valve closed.	Open valve.
	Supply pressure too low.	Check that all supply valves are open, and no obstructions in line.
	Inlet solenoid valve closed.	Disassemble and clean and/or check for power to coil (see electrical sect.).
	Main 5 amp Fuse blown	Replace fuse, check for shorted voltage suppressor (Refer to wiring diagram page 28.) Check for loose wires.
	Low input voltage.	Check external supply circuit.
	Faulty relay MR-2.	Replace, check polarity of receptacle (see electrical sect.).
	Defective inlet pressure switch.	Replace.
Defective tank press/level switch.	Replace.	

PROBLEM	CAUSE	CORRECTION
2. Pressure pump cycling rapidly on and off.	Supply pressure too low/supply line overloaded. Low supply voltage	Increase the I.D. of supply line. Shorten distance to supply hookup. Decrease loading of supply line (i.e. remove other electrical devices).
3. Pressure pump noisy. (R.O. Units Only)	Pre-carbon or sediment filter dirty. Drawing air in through loose fittings.	Replace. Tighten.
4. Drain pump won't start or stop.	Defective drain tank level switch. Dirt in pump check valve.	Check and replace if necessary (see electrical section). Remove pump head and clean or replace.
5. Drinking water TDS too high.	Membrane fouled. TDS of feed water increased.	Clean membrane (see R.O. element section). Consult factory.
6. Chlorine detected after precarbon filter.	Pre-carbon filter exhausted.	Replace carbon filter (see filter section).
7. Dispenser nozzle leak.	Dirt or worn seal in solenoid valve.	Clean or replace seal in solenoid valve (see solenoid valve section).
8. Water will not dispense. NOTE: A. PLC Indicator Lights Y5 or Y6 (Fig. 8) must be On to dispense.	Dispenser solenoid valves. Pressure storage tank shut off valve. System not charged. UV light bulb burnt out. Dispenser Pump (open tank units only).	Check power to valve and/or disassemble and clean (see solenoid section). Open valve. Charge system. Replace bulb (see UV light section). Check plug in or replace.

PROBLEM	CAUSE	CORRECTION
9. UV light will not light.	Defective UV lamp or Ballast. Slow unit.	Replace. Wait 3-5 minutes.
10. Low UV output reading.	Old or defective lamp. Dirty lamp or quartz.	Replace. Remove and clean carefully.
11. Excessive system operating pressure.	Pressure regulating valve closed too far. Obstruction in concentrate drain line.	Open pressure regulating valve. Clean lines.
12. Long vend volume/or short vend volume.	Defective water meter or volume in-correctly set.	Recalibrate volume sensor. Replace water meter or sensor. Check for needle rotation while vending. Rotation should be smooth and continuous.
13. Slow vends.	Low line pressure (BW units) or plugged line.	Increase feed line size. Clean lines.
14. Multiple electrical problems on a NEW machine.	Low voltage or switched polarity. Check voltage and polarity.	Call electrician to correct problem.
15. "Out of Service" light is on.	Defective UV. No water in storage tank. Water flooding bottom of machine.	Replace UV or ballast. Refer to #1. Remove water and fix leaks.
16. Stop button will not stop water flow.	Defective valve (bulk water units only). Defective wiring.	Replace valve. Check wiring. NOTE: Stop button will light PLC Input Lights X4 and X5 (or X6 and X7; Fig 8) simultaneously when pushed.



62500727 (REV-)

PLC INDICATOR LIGHTS (Advanced Trouble Shooting) (Figure 8)

The PLC is the heart of the control system, and each input and output has a corresponding LED which is lit when the input or output is energized. The following table lists each LED, a short description of its function and how it relates to other functions in the machine. In general, if an output is lit, but the corresponding component

is not working, a wire or component failure has probably occurred. If an input should be lit, but isn't, it can probably be traced to a failed component or wire. Use the wiring diagrams in electrical section to help trace specific component or wiring problems. In rare instances, the PCB controller or PLC may have failed.

INDICATOR	DESCRIPTION	FUNCTION
Run	Run mode	Should always be on when power is on. If not; replace PLC.
PWR	Power	Should always be on when unit is plugged in. If not; check for blown PLC 1 amp fuse (Refer to electrical box component location, page 21).
CPU	CPU fault	If lit; cycle power to unit. (Off for at least 5 seconds) If still lit; replace PLC. NOTE: thoroughly test all functions of machine after a CPU fault is cleared.

PLC INDICATOR LIGHTS (Advanced Trouble Shooting) (Figure 8)

INDICATOR (INPUTS)	DESCRIPTION	FUNCTION
X0	Call for Water (R.O. Units Only)	The charging (tank filling) process should begin with Y0, then Y1 energizing.
X1	Water Meter #1	This LED should flash rapidly while water is vending, if not then adjust water meter sensor, check wiring, or replace sensor.
X2	Run/Calibrate Switch	LED should be lit when "Cal Volume" switch is in "On" position.
X3	Reset Volume	Push Button (on electrical box) is used to reset volumetric counters in "Cal" mode.
X4	PB-1	Should be lit when left door top selection button is pressed.
X5	PB-2	Should be lit when left door bottom selection button is pressed.
X6	PB-3	Should be lit when right door top selection button is pressed.
X7	PB-4	Should be lit when right door bottom selection button is pressed.
X8	-----	N/A
X9	-----	N/A
X10	Water Meter #2	This LED should flash rapidly while water is vending. (Measure right door volumes.)
X11	Drain Tank Float	Should light when the drain tank level goes above lower float switch.

INDICATOR (OUTPUTS)	DESCRIPTION	FUNCTION
Y0	Feed Inlet Valve (RO Units Only)	When lit, feed valve should be open.
Y1	Pressur Pump/Prod. Flush Valve (RO Units Only)	When lit, motor contactor/pressure pump should be energized, and product flush valves (S4 & S10) should be directing water to storage tank.
Y2	Conc. Flush Valve (RO Units Only)	When lit, concentrate flush valve (S-1) should be open. (charging post flush sequence).
Y5	PB1, PB2, (Solenoid Valve or Dispense Pump)	When lit, dispense pump #1 on (or bulk water valve S-2 should be open) in response to either the first or second selection button (PB-1 or PB-2) being pressed.
Y6	PB3, PB4 (Solenoid Inlet Valve or Dispense Pump)	When lit, dispense pump #2 on (or bulk water valve S-2 should be open) in response to either the third or fourth selection button (PB-3 or PB-4) being pressed.
Y7	Drain Pump	When lit, drain pump should be energized.

SERVICE PARTS

It is the policy of Coster Engineering to constantly improve its products whenever it is practical to do so.

Coster Engineering must therefore reserve the right to redesign or change its equipment or component parts thereof without incurring the obligation to install or furnish such changes on equipment previously delivered.

INSTRUCTIONS FOR ORDERING PARTS

1. The reference numbers in the illustrations correspond to the numbers shown in the "Reference Number" column in the parts listing. The quantity in the "number required" column is the number of parts used in the accompanying illustration. The term "A/R" for number required indicates "as required" where the quantity may vary. Order all parts by their part number and description.
2. Always mention the identification number of the code and serial numbers found on the name plate of the unit on which the part is to be used. Much delay and confusion can be avoided when correct numbers are specified on parts order and correspondence.
3. Owner, order all parts through your local dealer.
4. Dealers must indicate how to ship; whether by truck, rail freight, express, or parcel post.
5. Collect phone calls are not accepted.
6. Address all orders for parts as follows:

COSTER ENGINEERING
58766 240th St.
P.O. BOX 3407
MANKATO, MN 56002-3407
PH (507) 625-6621
FAX (507) 625-9124

INSTRUCTIONS FOR RETURNING PARTS FOR ADJUSTMENT

1. To assure prompt handling of claims, your dealers should follow standard claim and forward claim procedures within thirty (30) days, of any part failure or malfunction believed to be a warranty claim.
2. No returned part will be accepted unless they are transportation prepaid and accompanied by the packing list, copy of the returned goods authorization form, or the packing list copy of the warranty claim form.
3. Parts returned should have a tag attached with sender's name and address clearly printed.

DISCLAIMER

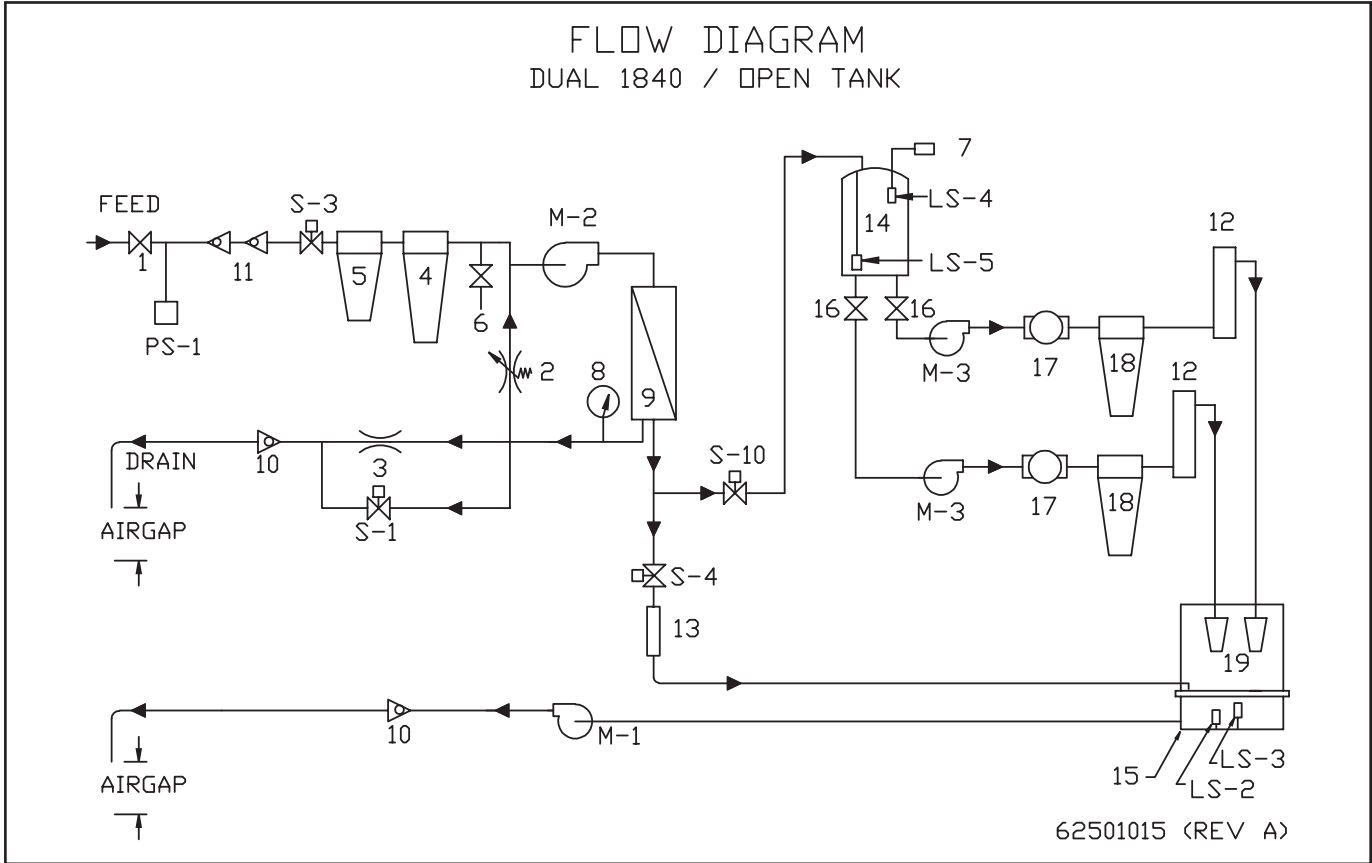
This supplement contains additional information that is specific to units. It is used in conjunction with the basic machine operator's manual which includes safety and operational information.

Retain all manuals for future reference. Read all and understand all manuals in their entirety before operation or service.

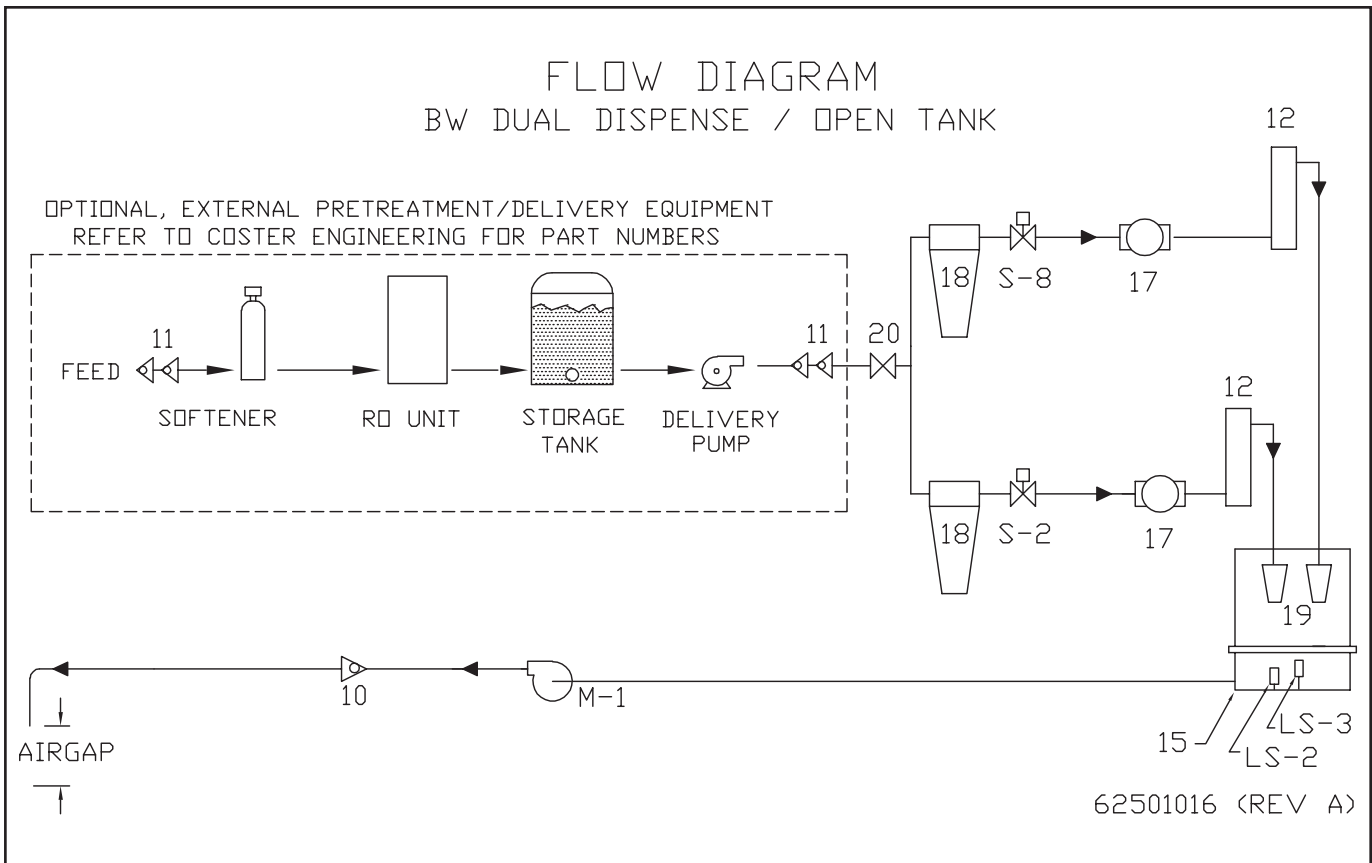
The information contained in this manual is subject to change without notice.

Coster Engineering shall not be liable for technical or editorial omissions made herein; nor for incidental or consequential damages resulting from the furnishing, performance, or use of this material.

DUAL 1840 R.O. UNIT

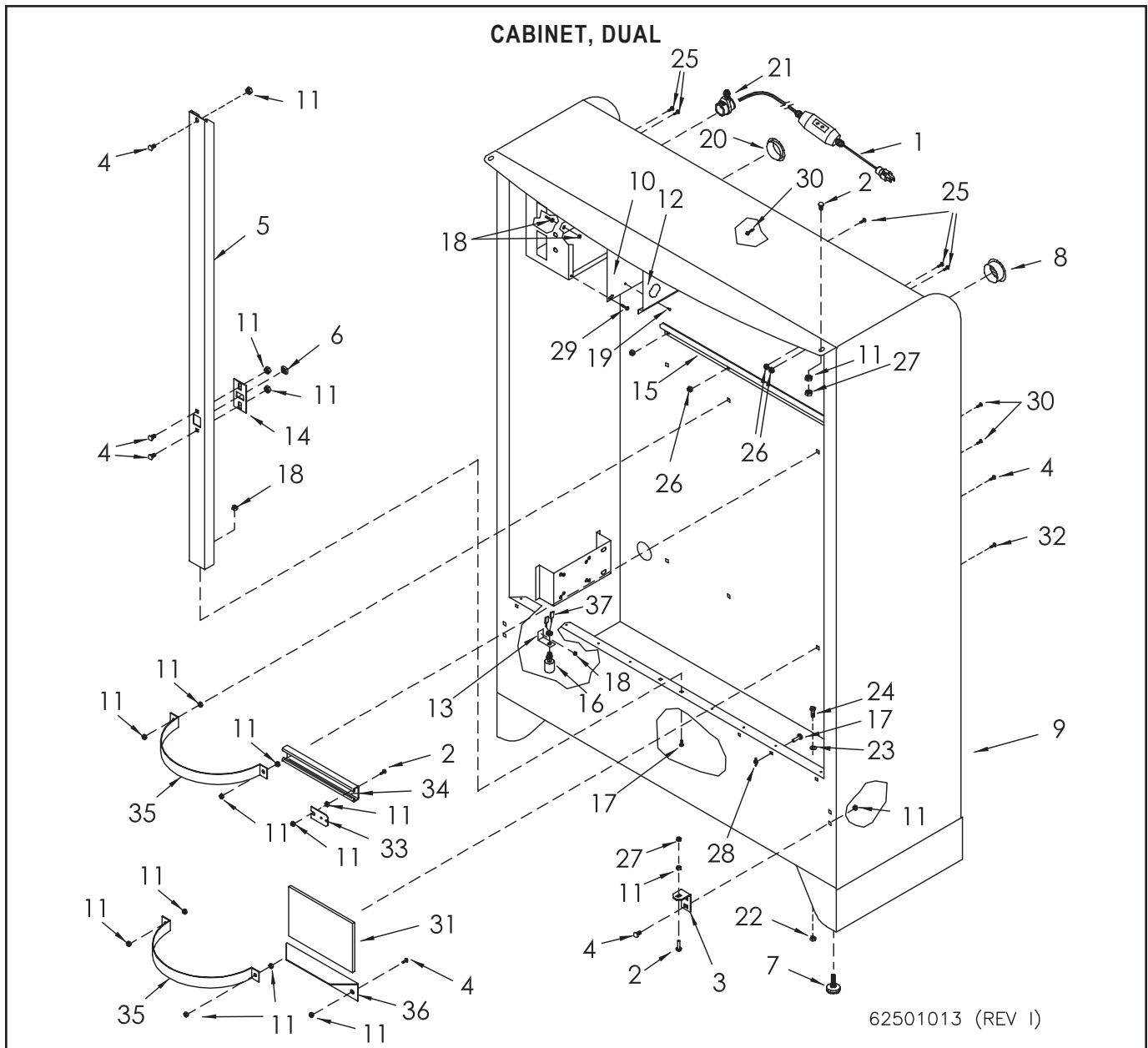


DUAL BULK WATER (BW) UNIT



REF. NO.	PART NUMBER	DESCRIPTION	REF. NO.	PART NUMBER	DESCRIPTION
1	62502596	Ball Valve 1/2" FNPT Lead Free	18	62501813	10" Filter Housing 1/2" Port
2	62502632	Needle Valve 1/4 M x 3/8 Comp Lead Free		625-001-560	10" Filter Housing 3/8" Port
3	625-004-270	Office Plate #55 (Pump w/STD 4" Element)	19	62501818	Nozzle, Stainless Steel 1/2"
	62501142	Office Plate #75 (Pump W/XLE 4" Element)		62501815	Screen, Stainless Steel Nozzle
4	625-004-588	Filter Housing #20	19	62501871	Nozzle, Stainless Steel 3/8 (Old Style)
	*625-005-822	Filter Cartridge, Carbon 20"	20	62501652	Valve, Ball PVC 1/2"
5	625-001-560	Filter Housing #10	LS-2	*625-001-325	Level, Float Switch NC
	*625-002-392	Filter Cartridge, Sediment 1 Micron 10"	LS-3	625-001-325	Level, Float Switch NC
6	625-004-206	Drain Valve, PVC 1/4	LS-4	625-001-325	Level, Float Switch NC
7	62502174	Filter, Tank Breather	LS-5	625-001-325	Level, Float Switch NC
8	62502622	Gauge 0-300 PSI Liquid Filled LF	M1	**62501748	Drain Pump With Motor
9	62501560	4" RO Vessel W/Membrane (R.O Units)	M2	62500484	Motor, 1/2 HP (1840 Series, V-Band Mount)
9	62501113	Membrane, XLE 4040		*62502600	Pump, Procon 240 GPH Lead Free
10	62501963	Check Valve, 3/8 Poly	M3	*625-004-385	Dispenser Pump With Motor
11	62502594	Check Valve, Double Lead Free	PS-1	62502593	Pressure Switch 1/4 MNPT 5 PSI
12	62500859	UV Light 5 GPM R-Can (120 VAC 50/60 HZ)	S-1	62502626	Solenoid Valve 3/8" NC LF
	*62500854	Bulb, UV R-Can	S-2	**62501392	Solenoid Valve 1/2 NC W/Flow Control
13	625-004-287	Air Gap	S-3	*62502626	Solenoid Valve LF 3/8 FNPT
14	62500982	Tank 45 Gallon	S-4	**625-004-383	Solenoid Valve 1/4 NC Plastic
15	625-001-121	Drain Tank		625-001-717	Nut 1/4" Jayco
16	62501652	Ball Valve PVC, 1/2	S-8	62501392	1/2" Solenoid w/Flow Control
17	62500658	Water Meter Plastic (Gal.) - Machined (Gallon)	S-10	*625-004-383	Solenoid Valve 1/4 NC Plastic
	62500790	Water Meter Plastic (m ³) - Machined (Metric Optional)			
	*62500661	Sensor Assembly w/Cord			

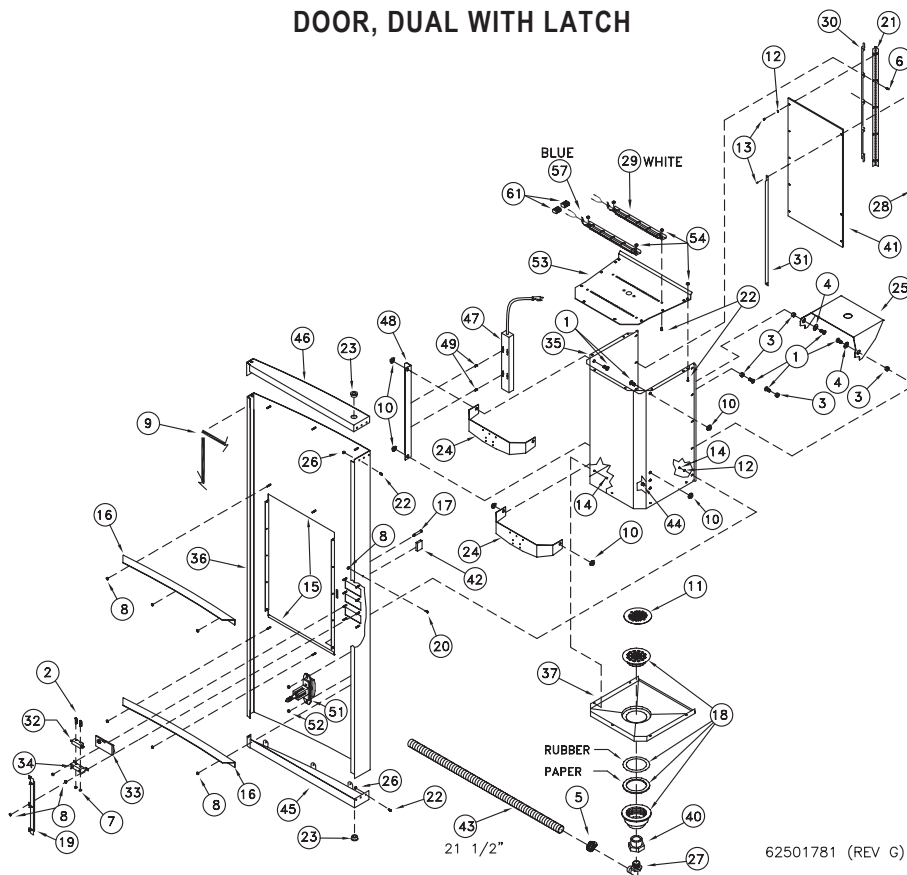
* Recommended Spare Parts ** Additional Recommended Spare Parts



REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62502175	Cord, Power, GFCI Inline	1	20	625-004-325	Plug, 1 1/8 Plastic	3
2	950-003-039	Bolt-Cge, 5/16-18 x 1 SHT SH	4	21	62500498	Strain Relief	1
3	62500996	Brk, Door Hinge	2	22	061910	Nut 3/8-16 SS	2
4	950-003-002	Bolt-Cge 5/16-18 x 1/2	7	23	625-001-509	O-Ring	2
5	62501005	Channel Door	1	24	031-09103	HHCS 3/8 x 3/4 SS	2
6	625-001-075	Vending Part, Nut 1/2-13	1	25	950-003-071	Bolt-Cge, #10 x 1/2 SS	14
7	625-001-950	Leg, 3/8-16 Rubber Leveler	4	26	951-002-012	Nut, #10-24	14
8	625-001-965	Vent, 2" Dia Aluminun Louvered	4	27	951-005-064	Nut-LK, 5/16-18 2-Way	4
9	62500954	Cabinet, Weldment-painted	1	28	060245	Wing Nut 1/4 -20	1
10	625-900-333	Cover, Electrical Box	1	29	950-005-006	S-Tap #8 -32 x 3/8 SHW HD	4
11	951-002-002	Nut, 5/16-18 Whiz	11	30	060905	S-Tap #10-24 x 1/2 SHW HD	4
12	625-900-774	Brk, Literature	1	31	62500979	Panel, Insulation (RO Units)	4
13	62501006	Brk, Level Switch	1	32	030-12046	Bolt-Cge 5/16-18 x 2 Full Thred (RO Units)	4
14	62501008	Brk, T-Nut	1	33	62500970	Brk, Tank Solenoid (RO Units)	1
15	62501007	Brk, Cable Run	1	34	62500966	Channel Unistrut (RO Units)	1
16	625-001-325	Level Switch, N/C Float & Stem	1	35	62500965	Strap, Tank (RO Units)	2
17	950-003-036	Bolt-Cge, 1/4-20 x 3/4	2	36	62500967	Brk, Vessel, Support (RO Units)	1
18	951-002-001	Nut-FL WZLK 1/4-20	4	37	62500691	Terminal, 1/4m	2
19	954-002-010	Rivet-Pop 1/8 x 1/8 Stain OEDH	4				

* Recommended Spare Parts ** Additional Recommended Spare Parts

DOOR, DUAL WITH LATCH

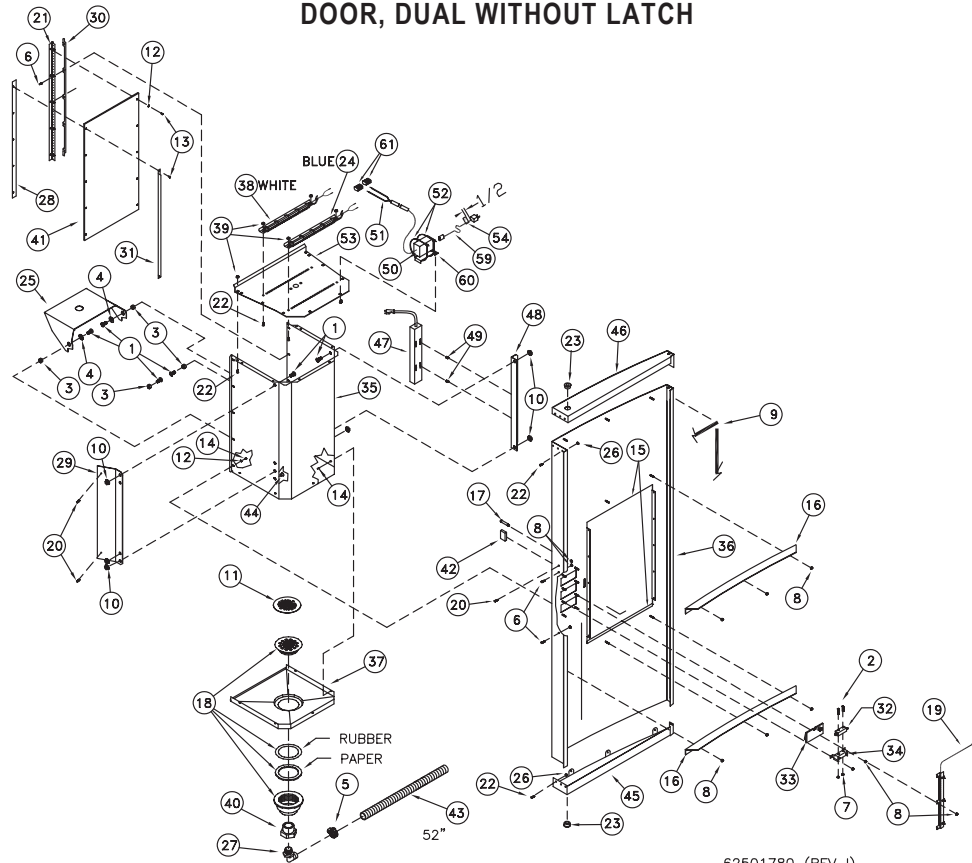


62501781 (REV G)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	950-011-063	SHCS 3/8-16x3/4 Stainless Steel	6	32	62500615	Switch, SPST, Cherry Micro	3
2	700-10904	MCH-SCR #6-32x1 SI Pan HD	6	33	62500617	Switch, RECT. Push Button	3
3	061910	Hex Nut 3/8-16 NC SS	4	34	62500618	BRK., Rect. Button MNT	4
4	061916	3/8 Flat Washer SS	2	35	62500740	Dispenser, SS Rear, Flare Side	1
5	601638	Clamp, 1 1/2 Hose	1	36	62501783	Skin, Door With Latch Solid	1
6	950-004-061	Ms.#8-32 X 1/2 PH TR HD STNLS	5	37	62500743	Drain Pan, Flare Side	1
7	951-001-001	Nut-Hex #6-32	6	38	N/A	N/A	N/A
8	951-001-012	Nut-Hex #8-32	23	39	N/A	N/A	N/A
9	921-001-082	Weather Seal, 1/2 X 1/4	9	40	62500983	FTG, RB 2" SL X 1" TH SCH 40	1
10	951-002-003	Nut-LK Hex 3/8-16	6	41	62500750	Door, Flare Side Disp. House	1
11	62500976	Drain Cover	1	42	62500753	Fastener, Magnetic Catch, Snap In	1
12	952-004-068	Washer,#10 18-8SS .203x.44x.04	10	43	62501002	Hose, 1" ID PVC	1.8
13	954-002-013	Rivt Pop 3/16x1/4 CLSD End SL	9	44	62500922	Plug, 3/8 Locking Hole, BLK PLAS	2
14	954-002-010	Rivet-Pop 1/8x1/8 Stain DEDH	10	45	62501341	Cap, SS Bolted End RH	1
15	625-001-032	Decal, Chrome Edge Trim	2.2	46	62501342	Cap, SS Bolted End LH	1
16	62500973	BRK Sign Holder	2	47	62500978	Outlet, Power Strip 8 Ft Cord	1
17	62500980	Light, Red 24V	1	48	62500974	BRK, Power Strip	1
18	625-001-741	Drain PVC Shower Stall	1	49	392-010-019	S-Tap #6-20 x 3/8 Pan HD	2
19	62502153	Sec, LED Selection Button Light	1	50	62502147	Power Supply LED	1
20	950-005-006	S-Tap SCR #8-32 X 3/8 HWHD	1	51	625-005-166	T-Handle Flush Mount	1
21	625-004-538	Hinge, SS Spring Loaded	1	52	951-002-001	Nut-FL WZLK 1/4-20	2
22	950-003-071	Bolt CRG, 10-24x1/2 SS	24	53	62502491	Bracket, Dispense Top 200W LED	1
23	62500347	Vent, 7/8 Dia. Plastic	2	54	951-002-012	Nut, Whiz Lock 10-24	14
24	62500997	Bracket, Uv Light	2	55	N/A	N/A	N/A
25	625-900-303	Shelf, Dispenser	1	56	N/A	N/A	N/A
26	951-001-002	Nut, Hex 10-24 SS	10	57	62502154	Sec, LED Dispense Light Blue	1
27	62500433	Ftg 1" Npt X 1" Barb	1	58	N/A	N/A	N/A
28	62500751	Handle, Door, For MAG. Catch	1	59	N/A	N/A	N/A
29	62502152	SEC, LED Dispense Light White	1	60	N/A	N/A	N/A
30	62501386	Spacer, Door Spring	1	61	62502986	Connector, Lever Nut	2
31	62500459	Bracket Splash Guard	1				

* Recommended Spare Parts ** Additional Recommended Spare Parts

DOOR, DUAL WITHOUT LATCH

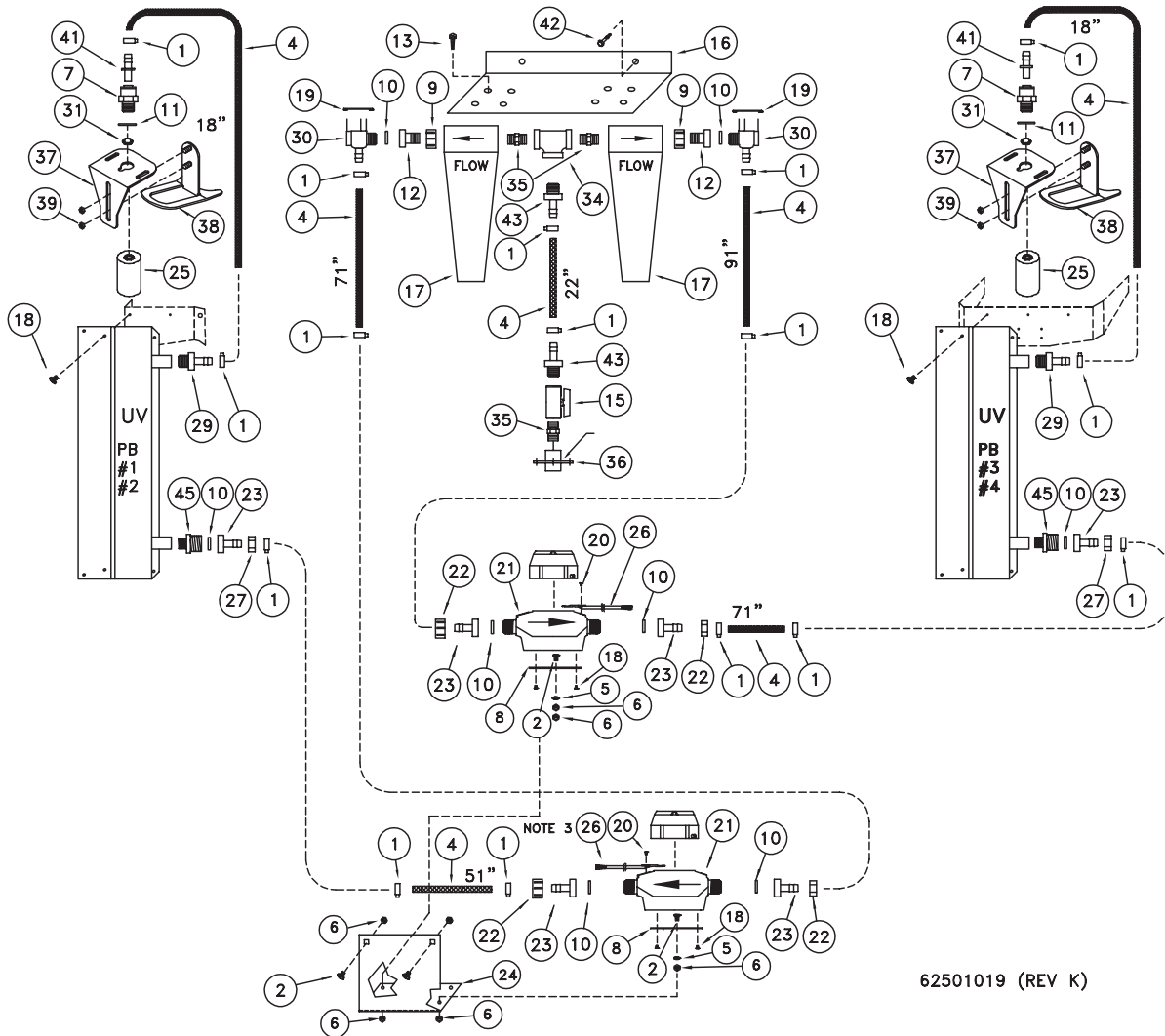


62501780 (REV I)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	950-011-063	Socket Head Cap Screw 3/8-16 x 3/4 SS	6	32	62500615	Switch, SPST, Cherry Micro	3
2	700-10904	Machine Screw #6-32 x 1 SI Pan HD	6	33	62500617	Switch, Rect. Push Button	3
3	061910	Hex Nut 3/8-16 NC SS	4	34	62500618	Bracket, RECT. Button MNT	4
4	061916	3/8 Flat Washer SS	2	35	62500740	Dispenser, SS Rear, Flare Side	1
5	601638	Clamp, 1 1/2 Hose	1	36	62501782	Skin, Door W/O Latch Solid	1
6	950-004-061	Machine Screw,#8-32 X 1/2 PH TR HD SS	7	37	62500743	Drain Pan, Flare Side	1
7	951-001-001	Nut-Hex #6-32	6	38	62502152	Sec, LED Dispense Light White	1
8	951-001-012	Nut-Hex #8-32	23	39	951-002-012	Nut, Whiz Lock #10-24	14
9	921-001-082	Weather Strip, 1/2 X 1/4	9	40	62500983	Fitting, RB 2" SL x 1" TH Sch 40	1
10	951-002-003	Nut-Lock Hex 3/8-16	6	41	62500750	Door, Flare Side Disp. House	1
11	62500976	Drain Cover	1	42	62500753	Fastener, Magnetic Catch, Snap In	1
12	952-004-068	Washer, #10 18-8SS .203x.44x.04	10	43	62501002	Hose, 1" ID PVC	4.4
13	954-002-013	Rivt Pop 3/16 x 1/4 CLSD End SL	9	44	62500922	Plug, 3/8 Locking Hole, BLK PLAS	2
14	954-002-010	Rivet-Pop 1/8 x 1/8 Stain DEDH	10	45	62501341	Cap, SS Bolted End RH	1
15	625-001-032	Decal, Chrome Edge Trim	2.2	46	62501342	Cap, SS Bolted End LH	1
16	62500973	Bracket Sign Holder	2	47	62500977	Outlet, Power Strip 2 1/2	1
17	62500980	Light, Red 24V	1	48	62500974	Bracket, Power Strip	1
18	625-001-741	Drain PVC Shower Stall	1	49	392-010-019	S-Tap #6-20 x 3/8 Pan HD	2
19	62502153	Sec, LED Select Button	1	50	62502950	Power Supply, LED	1
20	950-005-006	S-Tap #8-32 X 3/8 SH WHD	3	51	62502151	Cable, Power Supply Pigtail	1
21	625-004-538	Hinge, SS Spring Loaded	1	52	367-001-011	Wire Tie 14 1/2"	2
22	950-003-071	Bolt CRG, 10-24 x 1/2 SS	24	53	62502491	Bracket, Dispense Top 200W LED	1
23	62500347	Vent, 7/8 DIA. Plastic	2	54	62502931	Label, LED Cord	1
24	62502154	Sec, LED Dispense Light Blue	1	55	N/A	N/A	N/A
25	625-900-303	Shelf, Dispenser	1	56	N/A	N/A	N/A
26	951-001-002	Nut Hex, 10-24 SS	10	57	N/A	N/A	N/A
27	62500433	FTG 1" NPT X 1" Barb	1	58	N/A	N/A	N/A
28	62500751	Handle, Door, For MAG. Catch	1	59	62502949	Power Cord 6 Foot	1
29	62501284	Bracket, UV Light	1	60	62502951	Bracket, Power Supply	1
30	62501386	Spacer, Door Spring	1	61	62502986	Connector, Lever Nut	2
31	62500459	Bracket, Splash Guard	1				

* Recommended Spare Parts ** Additional Recommended Spare Parts

PLUMBING, BULK WATER (B.W.) ONLY

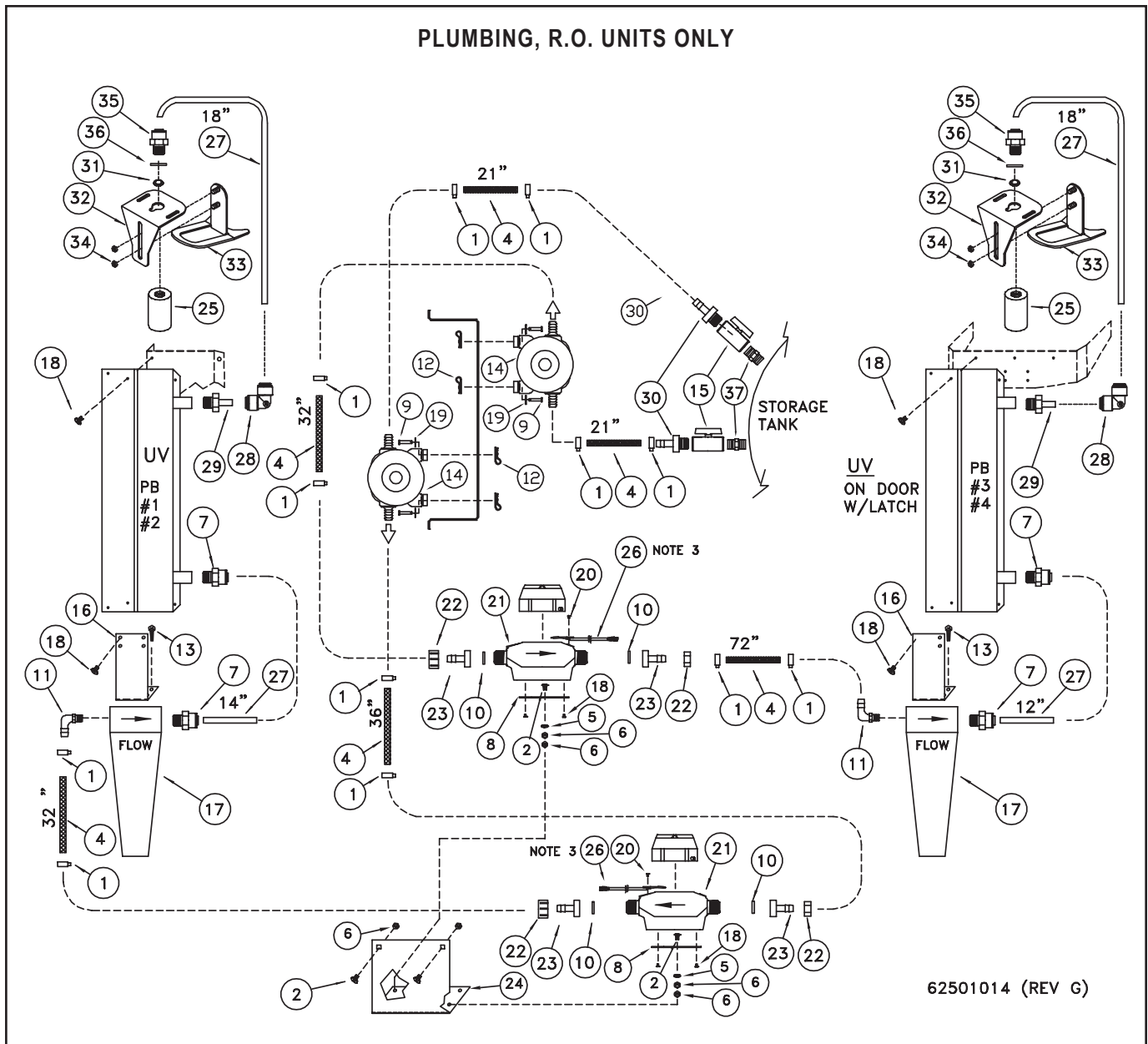


62501019 (REV K)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	625-002-881	Hose Clamp .76 x .89 SS	16	23	62500423	Barb-Swivel, 1/2H	6
2	950-003-065	Bolt CGE 1/4-20 x 5/8	4	24	62500968	Bracket, Water Meter	1
3	N/A	N/A	N/A	25	62501818	Nozzle Assy W/Screen 1/2"	2
4	625-001-929	Hose, 1/2 Dia Braided	28.5	26	62500661	Assy, Water Meter Sensor	2
5	033-12007	Washer, SAE Flat 5/16 PL	2	27	62500443	Nylon Nut, 3/4 GHT	2
6	951-002-001	Nut, Whiz Lock 1/4 -20	6	28	N/A	N/A	N/A
7	625-001-672	Fitting, 1/2 MNPT X 1/2 Tube	2	29	62500416	Fitting, Nylon ST 3/8MPT x 1/2 Barb	2
8	62500657	Bracket, Water Meter	2	30	62501392	Valve, Solenoid S-30N 5 GPM	2
9	62501459	Nylon Nut 3/4 GHT, W/Clamp	2	31	62501815	Screen, (1/2 Nozzle)	2
10	625-004-467	Washer, GHT WHT. Rubber	8	32	N/A	N/A	N/A
11	39212011	Seal Ring 1/2	2	33	N/A	N/A	N/A
12	62501814	Fitting, Nylon ST Swivel, 1/2 MPT	2	34	62501300	Fitting, Nylon Tee 1/2 x 1/2 x 1/2	1
13	950-005-020	MS, #10-16 x 3/4 Hex Self Tap	8	35	62501169	Fitting, Nylon 1/2 x 1/2 Nipple	3
14	N/A	N/A	N/A	36	62502608	Fitting, SS Bulkhead 1/2	1
15	62501652	Valve, PVC 1/2 Ball	1	37	62501122	Bracket, Upper Guide	2
16	62501817	Bracket, Filter	1	38	62501121	Bracket, Lower Guide	2
17	62501813	Filter HSG 10 X 1/2 Port W/PR	2	39	061605	Nut, 1/4-20 SS Nylon Lock	4
18	950-005-027	S-Tap Screw #8-18 x 3/8 HD AB	12	40	N/A	N/A	N/A
19	62500675	Surge Suppressor	2	41	62500522	Fitting, Stem x Barb, 1/2 x 1/2	2
20	392-010-019	S-Tap Screw #6-20 x 3/8 PH HD	4	42	060905	S-Tap #10-24 x 1/2 SHW-HD	2
21	62500658	Water Meter, Gallon (Standard)	2	43	62500417	Fitting, Nylon 1/2 Hose X 1/2m	2
21	62500790	Water Meter, Metric (Optional)	2	44	N/A	N/A	N/A
22	625-002-955	Fitting, Swivel Nut BLK 3/4 FPS	4	45	62501793	Fitting, Nylon 3/8MNPT x 3/4 GHT	2

* Recommended Spare Parts ** Additional Recommended Spare Parts

PLUMBING, R.O. UNITS ONLY

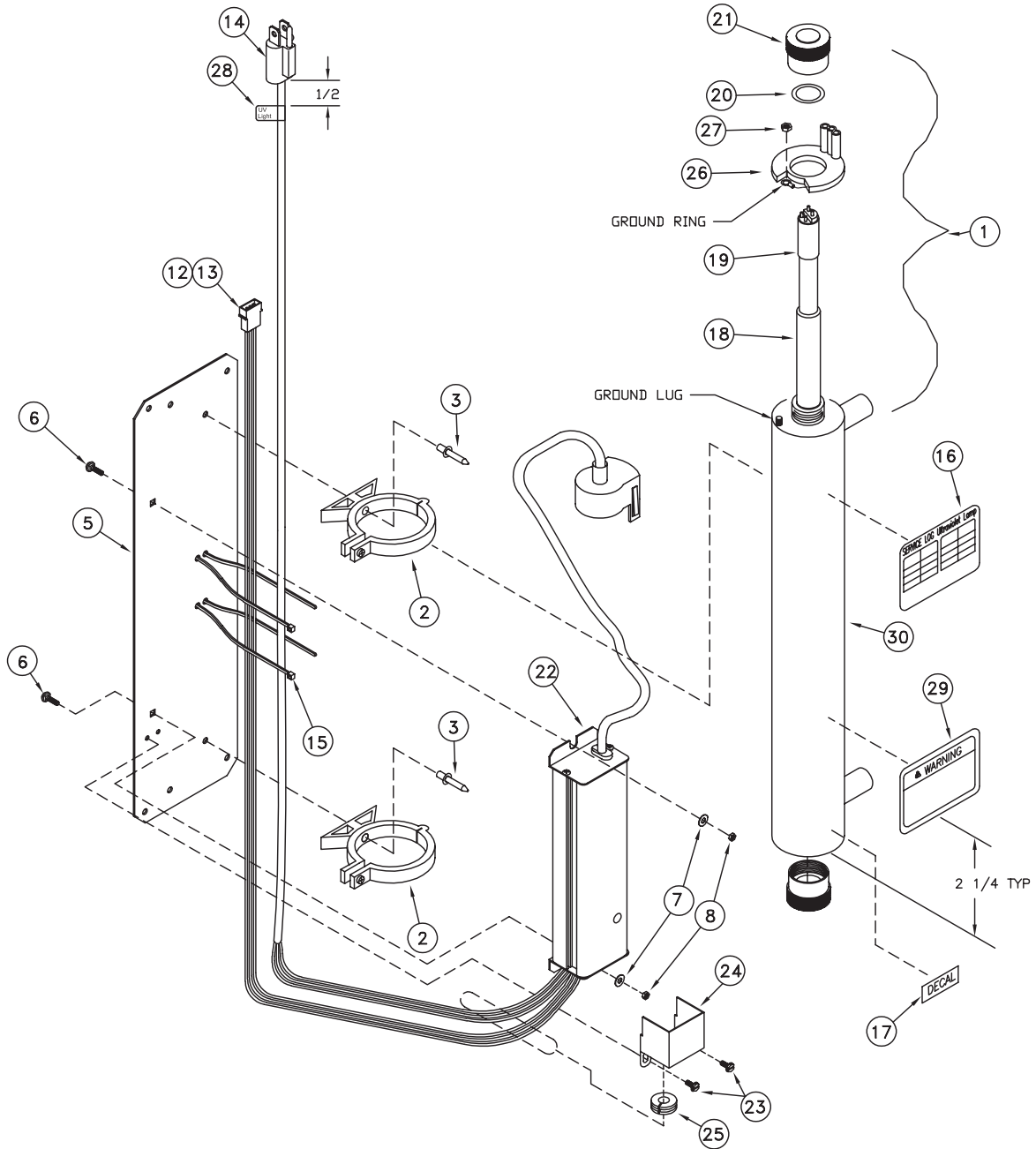


62501014 (REV G)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	625-002-881	Hose Clamp, .76 x .89 SS	12	20	392-010-019	S-Tap SCR #6-20 x 3/8 PHPHHD	4
2	950-003-065	Bolt Cge 1/4-20 x 5/8 Gr. 5	4	21	62500658	Water Meter, Gallon (Standard)	2
3	N/A	N/A	N/A	21	62500790	Water Meter, Metric (Optional)	2
4	625-001-929	Hose, 1/2 DIA Braided	17.9	22	625-002-955	Fitting, Swivel Nut BLK 3/4 FPS	4
5	033-12007	Washer, SAE Flat 5/16 PL	2	23	62500423	Barb-Swivel, 1/2H	4
6	951-002-001	Nut, Whiz Lock 1/4 -20	6	24	62500968	Bracket, Water Meter	1
7	625-005-976	Fitting, 3/8 MNPT x 1/2 Tube	4	25	62501818	Nozzle Assy W/Screen 1/2" SS	2
8	62500657	Bracket, Water Meter	2	26	62500661	Assy, Water Meter Sensor	2
9	953-002-036	Clevis Pin, 3/16 x 7/8	8	27	625-001-900	Tubing, PE 1/2 OD	5.2
10	625-004-467	Washer, GHT WHT. Rubber	4	28	62500524	Fitting, Elbow 1/2 T x 1/2 T	2
11	62500430	Fitting, Nylon EL 3/8 NPT x 1/2 H	2	29	62500731	Fitting, 1/2" Stem x 3/8 NPT	2
12	953-005-004	Cotter Pin	8	30	62500417	Fitting, Nylon 1/2 M x 1/2 H	2
13	950-005-020	MS, #10-16 x 3/4 Hex Self Tap	8	31	62501815	Screen, 1/2" Nozzle	2
14	625-004-385	Pump, Flojet 3.5 GPM	2	32	62501122	Bracket, Upper Guide	2
15	62501652	Valve, 1/2" PVC Ball	2	33	62501121	Bracket, Lower Guide	2
16	62500998	Bracket, Filter	2	34	061605	Nut 1/4-20 SS Nylon Lock	4
17	625-001-560	Filter HSG 10 WO/PR	2	35	625-001-672	Fitting, 1/2 M x 1/2 T 5G	2
18	950-005-027	S-Tap SCR #8-18 x 3/8 HD AB	20	36	39212011	Seal Ring 1/2	2
19	952-004-068	Washer-Flat #10 SS	8	37	62501169	Fitting, Nylon 1/2 M Nipple	2

* Recommended Spare Parts ** Additional Recommended Spare Parts

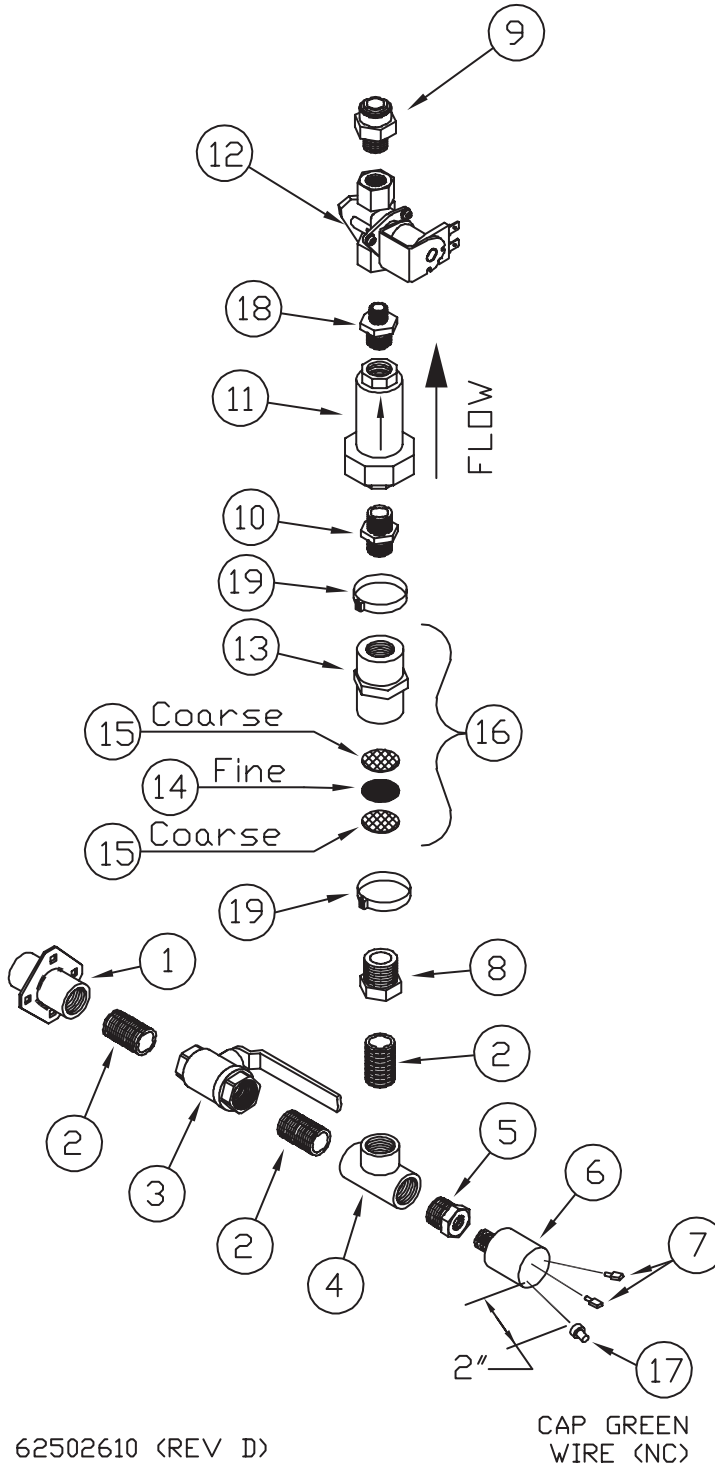
UV ASSEMBLY, R-CAN ICE (ICE BALLAST)



REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62502822	U.V. Assembly, (Includes Items 16, 17, 22, 29)	1	16	62502938	Decal, Service Log	1
2	-----	Clip Included W/Item 1	2	17	62500940	Decal, Bulb Replacement	1
3	954-002-003	Rivet-Pop 3/16 x 3/8 Stain OEDH	2	18	*62500855	Sleeve, Quartz UV QS-463	1
4	N/A	N/A	N/A	19	*62500854	Light, UV S463RL R-can	1
5	625-901-072	BRK 5 GPM Trojan MNT	1	20	62500853	O-Ring, 5 GPM UV OR-212	1
6	950-003-071	Bolt Cge #10-24 x 1/2 SS	2	21	62500857	Nut, UV AL Gland RN-001	1
7	952-004-062	Washer, 1/4 SS	2	22	**62500856	Ballast Electronic BA-ICE-VI	1
8	951-001-002	Nut-Hex #10-24 SS	2	23	061034	Self Tap Screw, 6-32 x 3/16	2
9	625-004-026	Wire, Blue #18 (16/30) UL-1007	2	24	62501719	Elec Cover, U.V. Light	1
10	625-004-172	Wire, Black #18 (16/30) UL-1007	2	25	62501720	Grommet, Rubber	1
11	625-004-028	Wire, Red 18 (16/30) UL-1007	2	26	-----	Connector Included with Item 1	1
12	62500641	Pin, 24-18 Awg Mate-N-Lok	3	27	-----	Ground Nut Included With Item 1	1
13	62500682	Housing, 3 Pin Mate-N-Lok	1	28	62502930	Label, U.V. Cord	1
14	62500690	Plug, W/18-3 SJT 110V 59" Cord	1	29	62502939	Decal, Warning	1
15	625-001-469	Tywrap, 1/6-5/8 Dia. 5 L	4	30	62503053	Canister, (Includes Items 16 & 29)	1

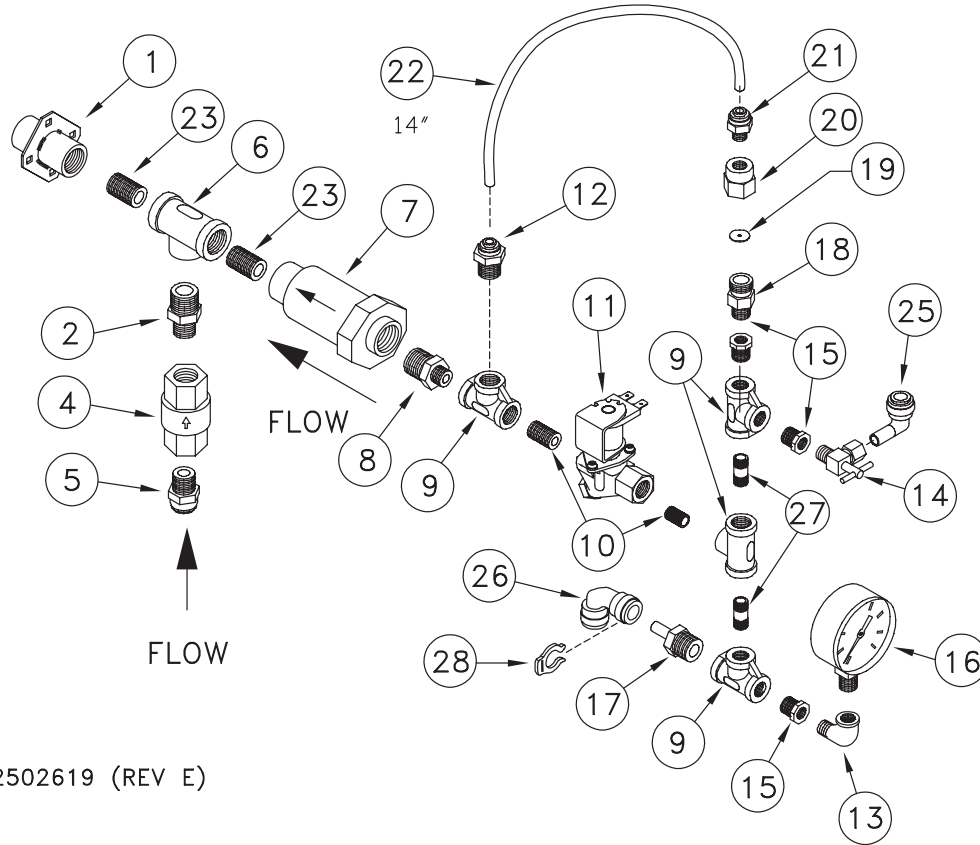
* Recommended Spare Parts ** Additional Recommended Spare Parts

INLET ASSEMBLY (R.O. UNITS ONLY)



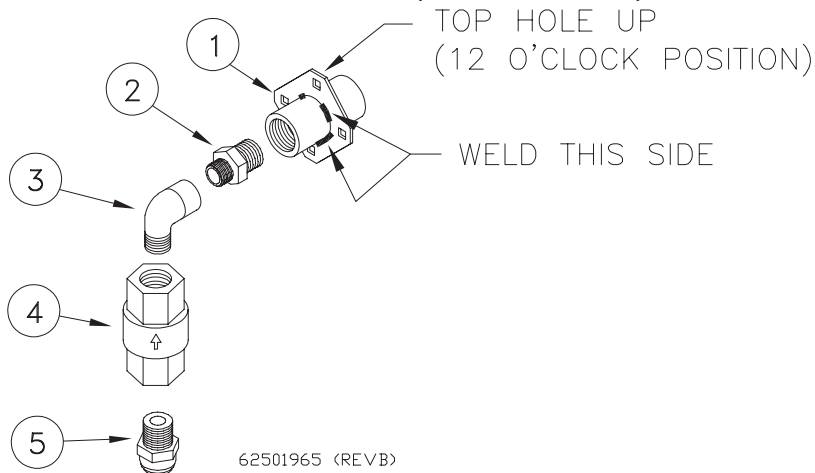
REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62502608	Weld, SS Bulkhead, 1/2 Flanged	1	11	62502594	Valve, LF Dbl Check 1/2"	1
2	62502603	Fitting, SS Close Nipple 1/2 MNPT	3	12	*62502626	Valve, 3/8 Solenoid 120 VAC LF	1
3	62502596	Valve, SS 2 Way Ball, 1/2 F	1	13	62502611	Fitting, Nylon Reduc Coup 3/4 x 1/2	1
4	62502606	Fitting, SS Tee 1/2 FNPT	1	14	62501752	Strainer, Fine 100 Mesh	1
5	62502716	Fitting, SS RB 1/2 x 1/4	1	15	62501753	Strainer, Coarse 20 Mesh	2
6	62502593	Press Switch, SPDT	1	16	62502612	Strainer Assembly, Inc 13 Thru 15	1
7	62500691	Terminal, Solderless 1/4 M	2	17	62500123	Term, Solderless Cap 22-16 Ga	1
8	62502602	Fitting, SS RB 3/4 x 1/2	1	18	62502620	Fitting, SS 1/2 x 3/8 Nipple	1
9	625-005-976	Fitting, JG 1/2 T x 3/8 M	1	19	62502873	Hose Clamp 1 7/16 Diameter	2
10	62502715	Fitting, SS Nipple 1/2 x 1/2	1				

PRESSURE MANIFOLD (R.O. UNITS ONLY)



62502619 (REV E)

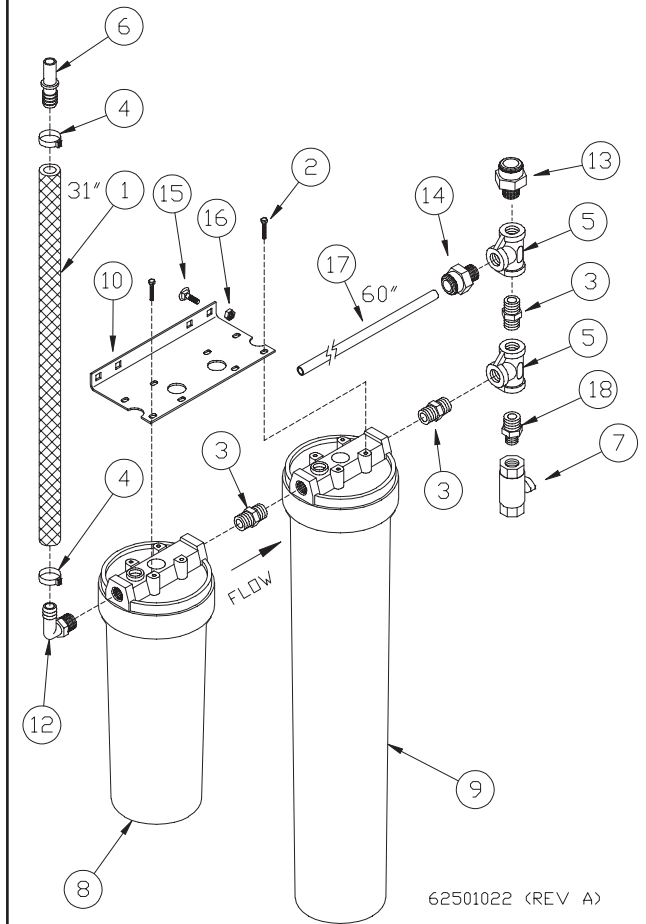
DRAIN MANIFOLD (BW UNITS ONLY)



62501965 (REV B)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62502608	Weld, SS Bulkhead 1/2"	1	15	62502633	Fitting, 3/8 x 1/4 SS RB	3
2	62501020	Fitting, Nylon 1/2 x 3/8 Nipple	1	16	62502622	Press Gauge 0-300 Liquid Filled	1
3	62501964	Fitting, Nylon 3/8 Elbow	1	17	62500731	Fitting, 1/2 Stem x 3/8 MNPT	1
4	62501963	Check Valve, 3/8 Poly	1	18	62502616	Body, SS 1/4 MNPT	1
5	625-005-949	Fitting Male Conn 3/8 T x 3/8 NPT Jg	1	19	625-004-270	Orifice Plate #55 (TW30 Mem)	1
6	62502606	Fitting, SS Tee 1/2 x 1/2 x 1/2	1	19	62501142	Orifice Plate #75 (XLE Mem)	1
7	62502594	Dual Check Valve, 1/2	1	20	62502617	Adapter, 1/4 NPT SS	1
8	62502620	Fitting, SS 1/2 x 3/8 Hex Nipple	1	21	625-004-944	Fitting, 1/4 M x 1/4 T JG	1
9	62500544	Fitting, SS 3/8 Tee FNPT	4	22	625-001-903	Tubeing, 1/4 PE	1.2
10	62502621	Fitting, SS 3/8 Close Nipple	2	23	62502603	Fitting, SS Nipple 1/2	2
11	62502626	Solenoid, LF Solenoid 3/8	1	25	62500496	Fitting, 3/8 Plug In Elbow, JG	1
12	625-005-940	Fitting, 3/8 M x 1/4 T JG	1	26	62500524	Fitting, 1/2 Union Elbow JG	1
13	62502669	Fitting, 1/4 Street Elbow SS	1	27	62502634	Fitting, SS Nipple 3/8 x 1 1/2	2
14	62502632	Valve, 1/4 x 3/8 T LF Brass	1	28	62501721	Clip, Lock 1/2	1

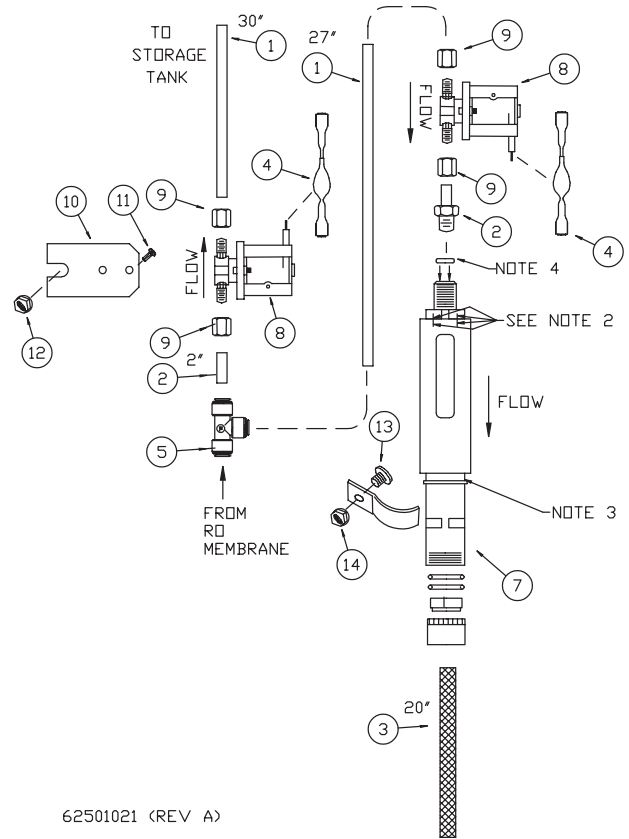
INLET ASSEMBLY (R.O. UNITS ONLY)



62501022 (REV A)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	625-001-929	Hose, PVC Braided 1/2 ID .85 OD	2.6
2	950-005-020	MS, #10-16 x 3/4 Hex Self Tap	8
3	625-005-935	FTG, Nylon 3/8 x 3/8 Nipple	3
4	625-002-881	Hose Clamp .76 - .89 Stepless	2
5	62500544	FTG, Tee, 3/8 FNPT, 304SS, 150lb.	2
6	62500522	FTG, 1/2 Stem x 1/2 Barb, QD	1
7	625-004-206	Valve 1/4 x 1/4 PVC	1
8	625-001-560	Filter Housing, Ametek Slim Line	1
9	625-004-588	Filter, #20 Slim Line Blue 3/8	1
10	625-900-803	BRK, Filter	1
11	N/A	N/A	N/A
12	62500430	FTG, Nylon EL 3/8 MPT x 1/2 Barb	1
13	625-005-976	FTG, 3/8 MPT x 1/2 Tube	1
14	625-005-949	FTG, 3/8 MPT x 3/8 Tube	1
15	950-003-065	Bolt-Cge, 1/4-20 x 5/8 G5	2
16	951-002-001	Nut-FL Wzlk 1/4-20	2
17	625-001-901	Tubing, PE 3/8 OD	5
18	625-002-957	FTG, Nylon 1/4 x 3/8 Nipple	1

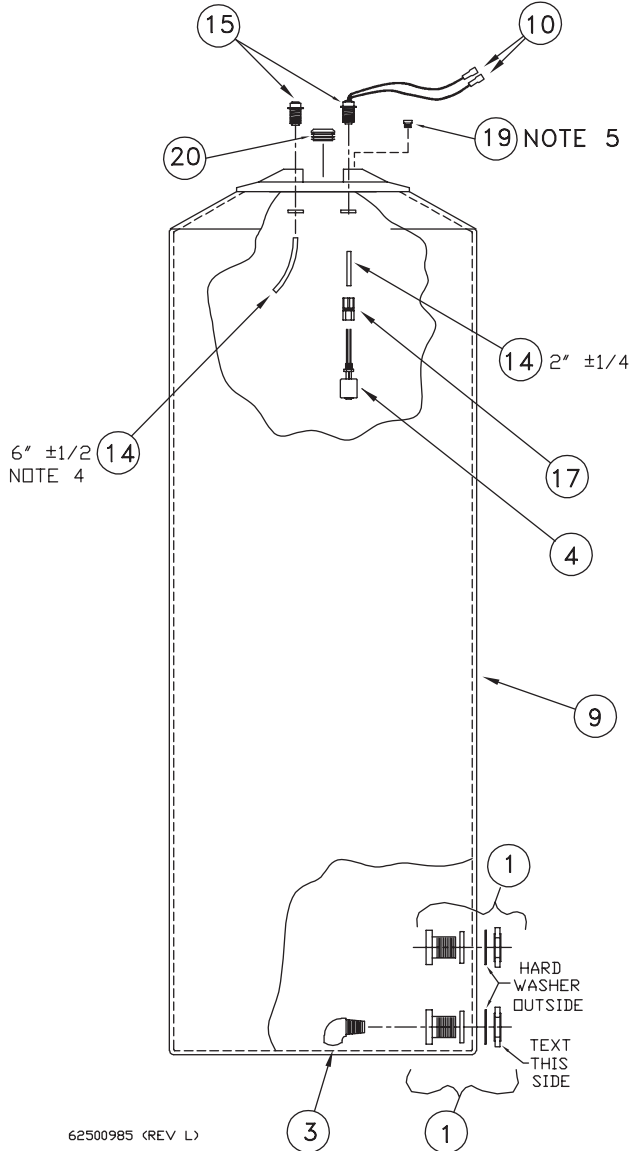
AIR GAP (R.O. UNITS ONLY)



62501021 (REV A)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	625-001-903	Tubing, 1/4 OD PE	4.8
2	62501530	FTG, 1/4 T x 1/4 MNPT Stem	1
3	625-001-920	Hose, 3/8 ID Braided	1.7
4	62500675	Surge Suppressor	2
5	625-004-942	FTG, 1/4 x 1/4 x 1/4 T Tee	1
6	N/A	N/A	N/A
7	625-004-287	FTG, Plastic Air Gap	1
8	625-004-383	Valve, Solenoid NC Plastic	2
9	625-001-717	FTG, 1/4 Ferrule	4
10	62500970	BRK, Solenoid	1
11	701-21000	S-Tap Scr 8-18 x 3/8 Pan HD	2
12	951-002-002	Nut, 5/16-18 Whiz	1
13	950-003-065	Cge Bolt, 1/4-20 x 5/8 G5	1
14	951-002-001	Nut, 1/4-20 Whiz Lock	1

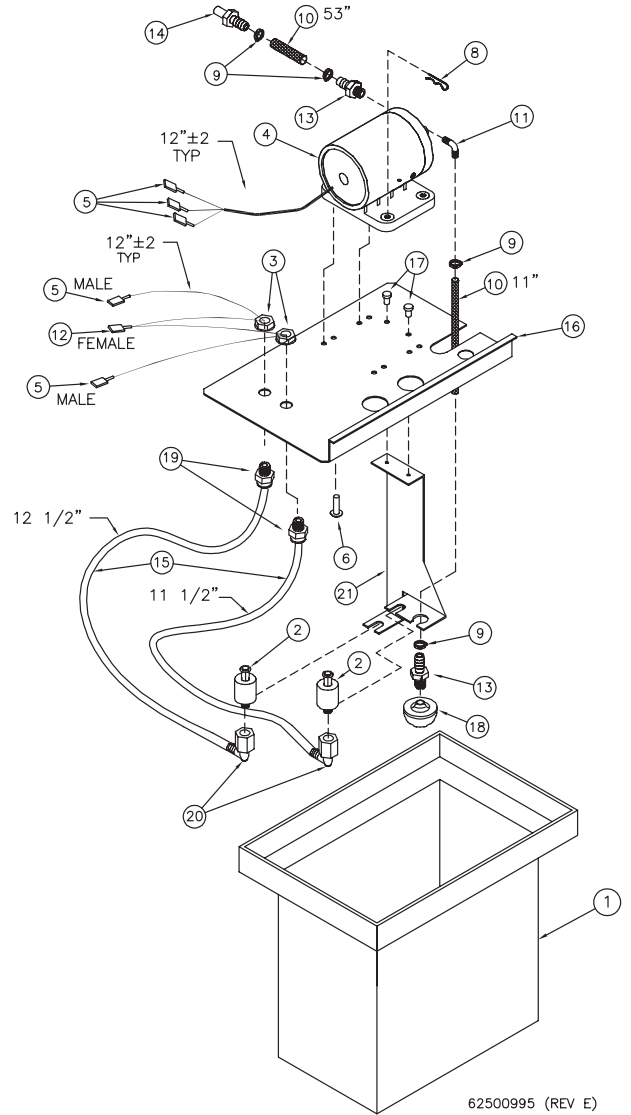
STORAGE TANK (R.O. UNITS ONLY)



62500985 (REV L)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62502749	Fitting, Bulkhead 1/2 x 1/2	3
2	N/A	N/A	N/A
3	62501655	Fitting, Nylon 1/2 Elbow	2
4	625-001-325	Float Switch	1
5	N/A	N/A	N/A
6	N/A	N/A	N/A
7	N/A	N/A	N/A
8	N/A	N/A	N/A
9	62500982	Tank, Drilled	1
10	62500691	Quick Slide, 1/4 M 18-22 AWG	2
11	N/A	N/A	N/A
12	N/A	N/A	N/A
13	N/A	N/A	N/A
14	625-001-903	Tubing, 1/4 PE	.7
15	62501722	Fitting, Bulkhead 1/4 T x 1/4 T	2
16	62501723	(Not Shown) Foam Tank Breather, Old Style	2
17	62501724	Fitting, 1/4 T x 1/8 FNPT	2
18	N/A	N/A	N/A
19	62502174	Filter, Tank Breather	1
20	62502858	Plug, Plastic 1 3/8 Diameter	1

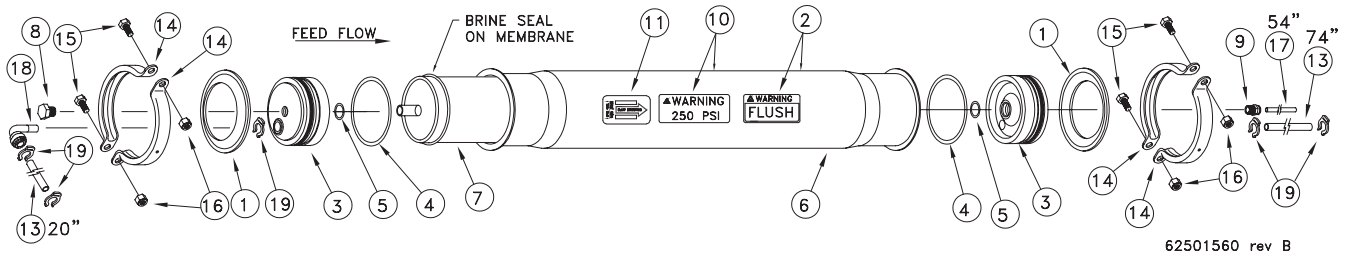
DRAIN TANK (ALL UNITS)



62500995 (REV E)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	625-001-121	Drain Tank	1
2	625-001-325	Level Switch	2
3	62502699	Fitting 1/4 NPT Nylon Nut	2
4	62501748	Drain Pump	1
5	62500691	Terminal 1/4M	5
6	953-002-050	Clevis Pin 3/16 x 1	4
7	N/A	N/A	N/A
8	953-005-004	Cotter Pin	4
9	625-002-876	Hose Clamp	4
10	625-001-920	Hose PVC Braided 3/8 ID	5.4
11	62500419	Fitting Nylon Elbow 3/8x3/8	1
12	62500702	Solderless terminal	1
13	62500413	Fitting Nylon 3/8x3/8n Barb	2
14	625-002-952	3/8 Stem x 3/8 Hose Barb	1
15	625-001-903	Tubing 1/4 PE	2
16	62500993	Brkt, Drain Tank	1
17	954-002-010	Rivet, 1/8x1/8 SS	2
18	62500984	Strainer	1
19	625-004-944	Fitting JG 1/4T x 1/4	2
20	62500992	Fitting Jayco 1/4T x 1/8 FNPT 90	2
21	62500994	Brkt, Drain Float	1

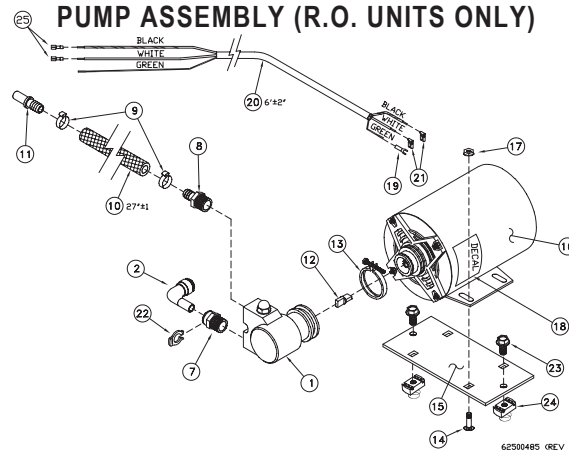
VESSEL ASSEMBLY (R.O. UNITS ONLY)



62501560 rev B

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62501497	Ring, End Cap Retainer	2	11	62501209	Decal, Brine Seal Flow Direct	1
2	625-004-513	Decal, SBS Flush	2	12	N/A	N/A	N/A
3	62501645	Assy, End Cap 4 W/John Guest	2	13	62501570	Tubing, 1/2 OD x 3/8 ID Poly.	7.9
4	625-001-506	O-Ring 342 Buna	2	14	62501496	Clamp, Formed Flange	4
5	625-001-502	O-Ring 116 Buna	2	15	031-09103	HHCS, 3/8-16 x 3/4 SS	4
6	62501493	Vessel, SS 4"(Includes (1) #10)	1	16	951-003-013	Lock Nut, 3/8-16 SS	4
7	62501113	Membrane, Filmtec XLE 4040	1	17	625-001-903	Tubing, PE 1/4 OD	4.5
8	625-003-230	FTG, PVC SCH 80 Plug 3/8	1	18	62500556	FTG 1/2", Plug-In Elbow QCK Disc	1
9	625-005-940	FTG, Conn 3/8 MPT x 1/4 T	1	19	62501721	Clip 1/2 Lock	5
10	625-004-426	Decal, Vessel Warning	1				

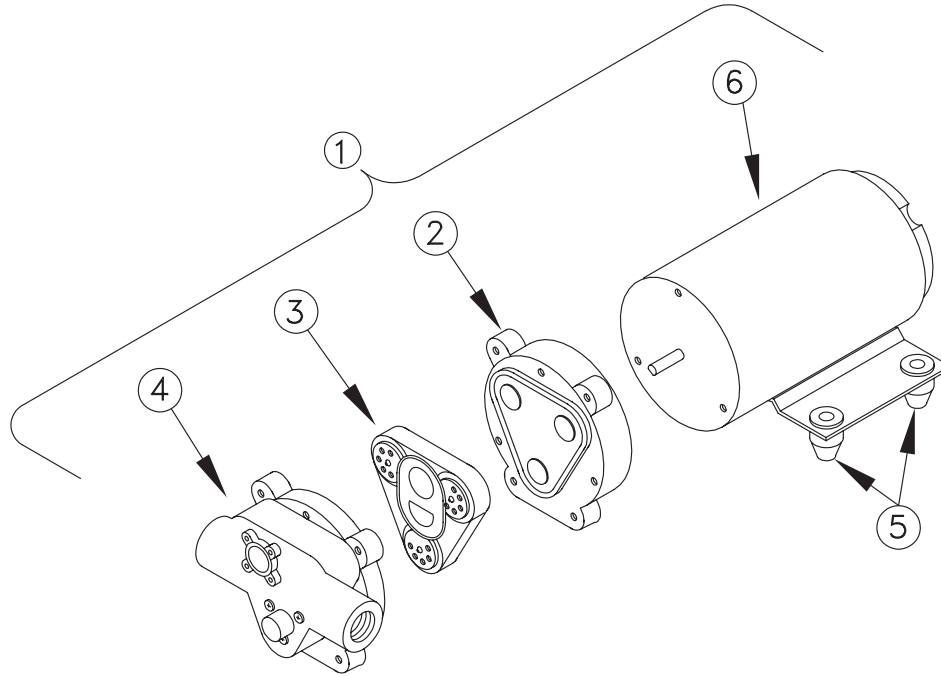
PUMP ASSEMBLY (R.O. UNITS ONLY)



62500485 (REV 10)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62502600	Pump, Procon 240 GPH Lead Free	1	14	030-16041	Bolt-Cge 5/16-18 x 3/4 G5	4
2	62500556	FTG, John Guest 1/2 Plug Elbow	1	15	625-900-504	BRKT, Motor MT.	1
3	N/A	N/A	N/A	16	62500484	Motor, 1/2 HP	1
4	N/A	N/A	N/A	17	951-002-002	Nut-FL Wzlk 5/16-18	4
5	N/A	N/A	N/A	18	62500527	Decal, Pump Oper. Press	1
6	N/A	N/A	N/A	19	62502962	Spade 16-14 Ga Insul #10 Stud	1
7	625-001-672	FTG, 1/2 T x 1/2 T John Guest	1	20	625-001-285	Wire #14/3 Type SJ	6'
8	62500417	FTG, Nylon ST 1/2 MPT x 1/2 Barb	1	21	62500553	Terminal Solderless 1/4 Flag	2
9	625-002-881	Hose Clamp .76 - .89 Stepless	2	22	62501721	Clip, Lock 1/2	2
10	625-001-929	Hose, PVC Braided 1/2 ID .85 OD	2.25	23	950-002-008	Bolt, 3/8-16 x 3/4	2
11	62500522	FTG, 1/2 Stem x 1/2 Barb	1	24	625-004-161	Nut, Uni Strut 3/8-16	2
12	62500488	Pump, Shaft Coupling #1143	1	25	625-002-276	Terminal, 1/4 F	2
13	625-001-585	Pump, Coupling, V-Band CLMP 1500	1				

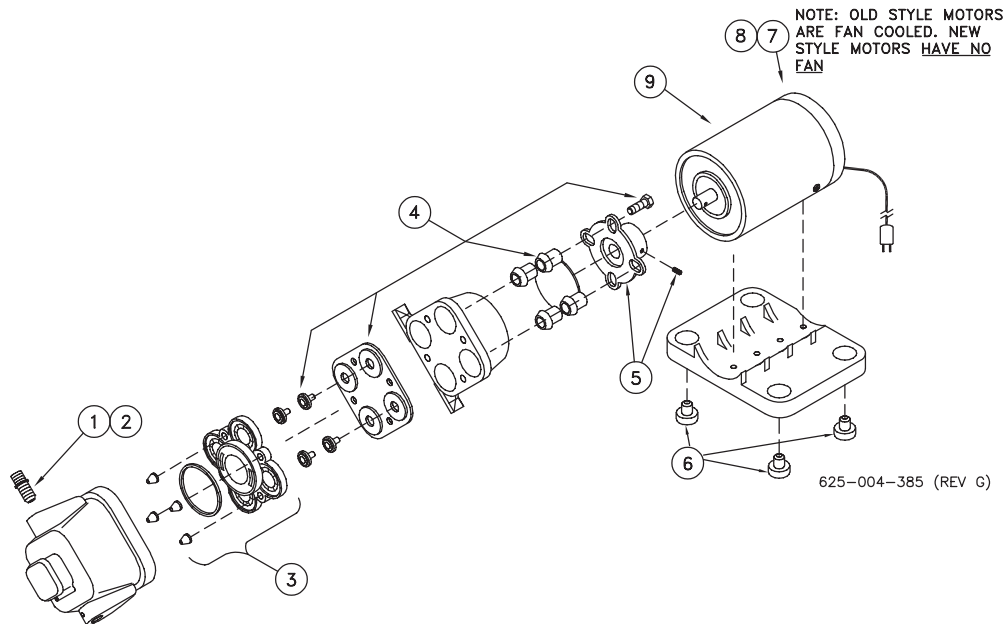
AQUATEC DRAIN PUMP



62501748 (REV C)

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62501748	Pump Assy	1	4	62501761	Kit Pump Housing 5884	1
2	62501763	Kit Lower Housing 5884	1	5	62501770	Grommet Isolator	4
3	62501762	Kit Check Valve 5884	1	6	62501850	Motor	1

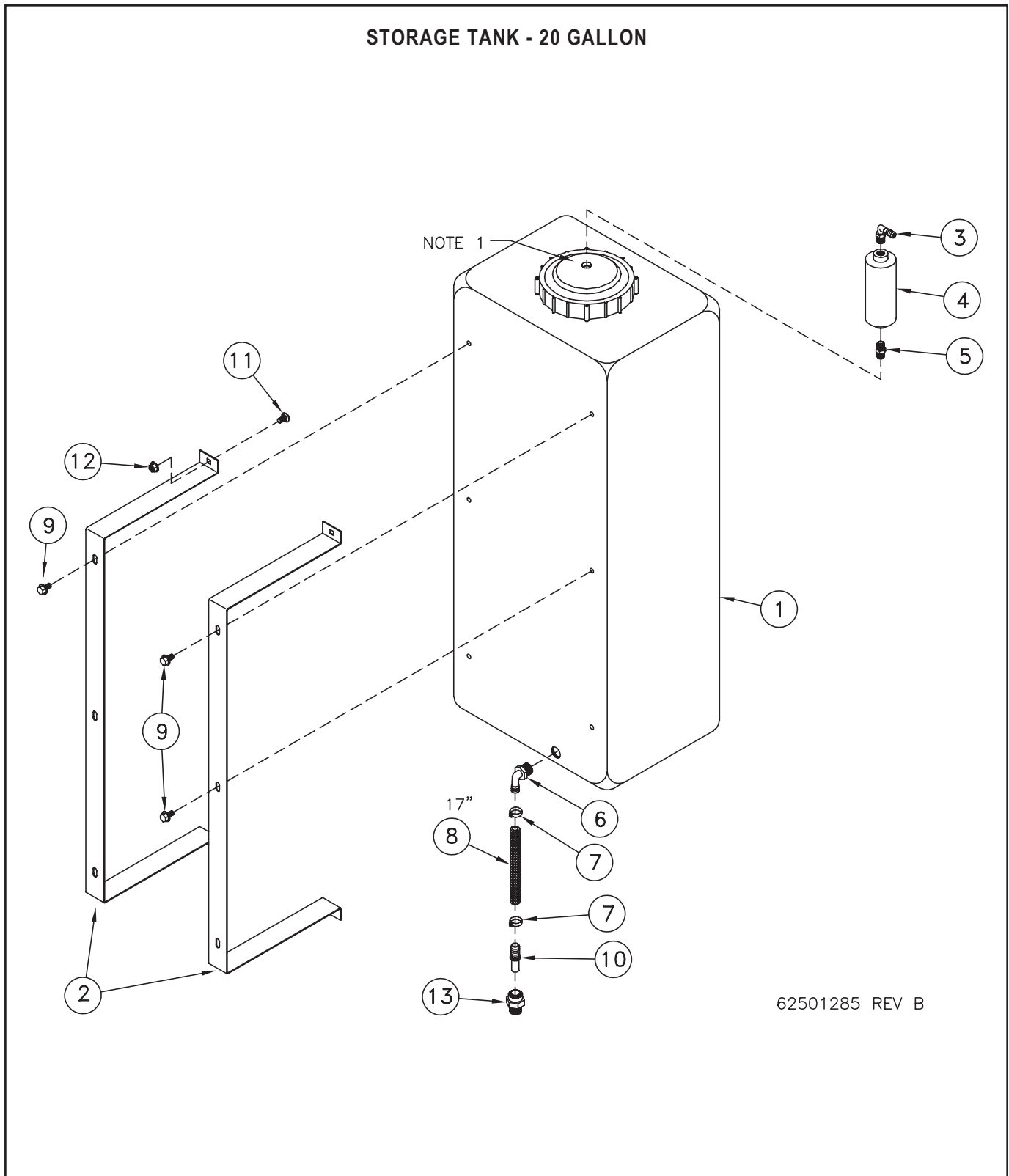
FLOJET DISPENSING PUMP REPAIR PARTS/REBUILD KITS



625-004-385 (REV G)

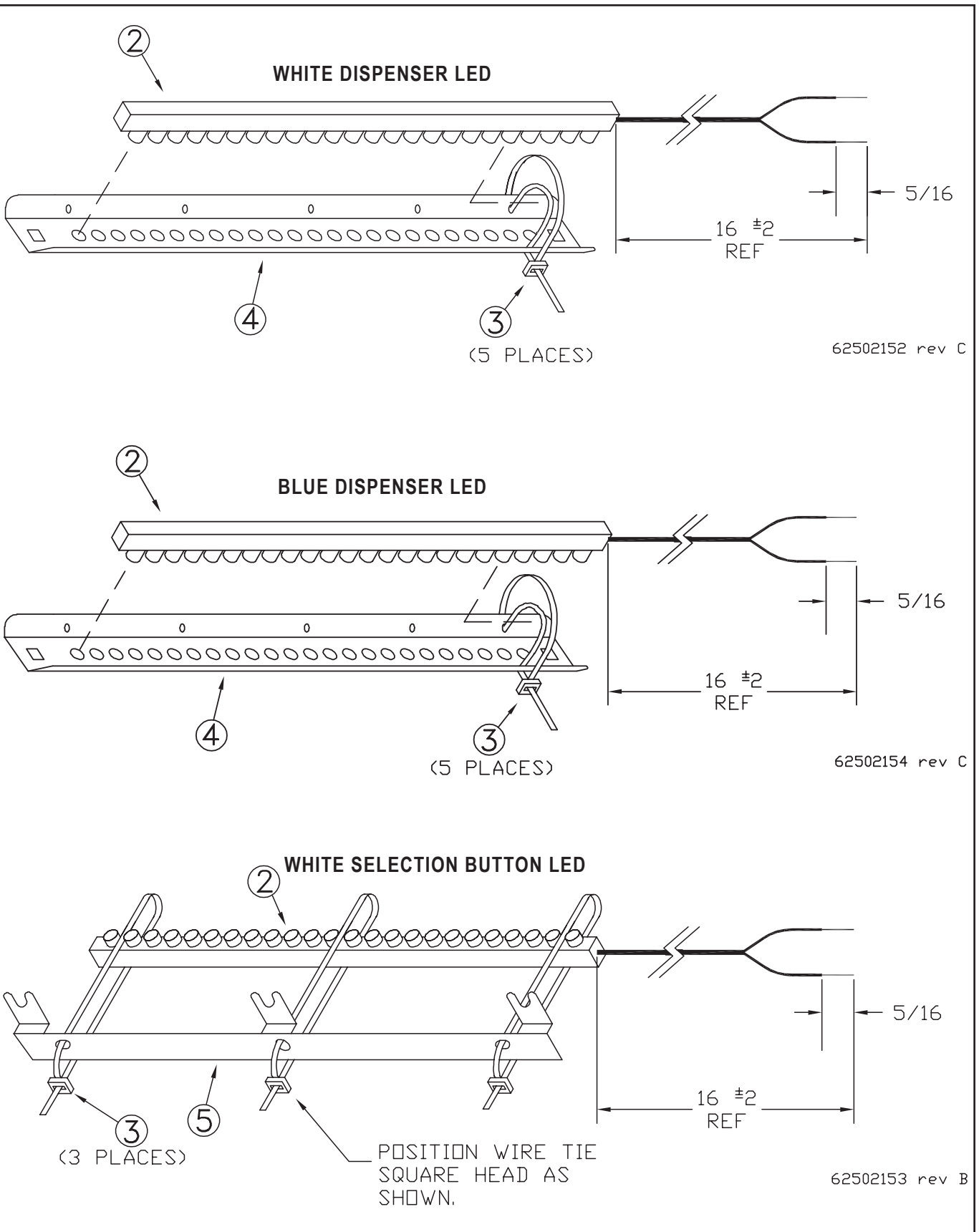
REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
-	625-004-385	Pump Assembly, Flojet 3.5 Gpm	1	6	62500801	Kit, Grommet (4)	1
1	62500454	Fittings, Standard 1/2	2	7	62502510	Kit, Brush New Style	1
2	62500508	Fittings, Optional 3/8	2	7	625-006-011	Kit, Brush (Old Style Cooled Motor)	1
3	62500456	Kit, Check Valve W/Orings & Ferrles	1	8	62502511	Kit, End Bell New Style	1
4	62500455	Kit, Diaphragm W/Piston & Screws	1	9	62502512	Motor, Replacement New Style	1
5	62500802	Kit, Cam Bearings W/Screw	1				

STORAGE TANK - 20 GALLON



62501285 REV B

REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	62501282	Tank, 20 Gal Poyethylene	1	8	625-001-929	Hose, PVC Braided 1/2 ID .85 OD	1.42
2	62501283	Strap, Tank Band	2	9	950-002-005	Bolt-HHFL Wzlk 5/16-18 x 5/8	6
3	62500429	FTG, Nylon EL 1/4 MPT x 3/8 Barb	1	10	62500522	FTG, 1/2 Stem x 1/2 Barb QD	1
4	625-002-394	Filter Cart 6" Sediment Disp	1	11	950-003-002	Bolt-Cge 5/16-18 x 1/2 Gr 5	4
5	625-002-957	Fitting, 1/4 x 3/8 Coupling, Nylon	1	12	951-002-002	Nut-FL Wzlk 5/16-18	4
6	62500421	FTG, Nylon EL 1/2 MPT x 1/2 Barb	1	13	625-001-672	FTG, 1/2 M x 1/2 T John Guest	1
7	625-002-881	Hose Clamp .76-.89 Stepless	2				



REF. NO.	PART NUMBER	DESCRIPTION	QTY.	REF. NO.	PART NUMBER	DESCRIPTION	QTY.
1	N/A	N/A	N/A	3	625-001-469	TS Wrap, Nylon	5
2	62502071	Blue LED Strip 9.5"	1	4	62502073	Bracket, Dispenser Light LED	1
	62502070	White LED Strip 9.5"	2	5	62502072	Bracket, Selection Button LED	1

* Recommended Spare Parts ** Additional Recommended Spare Parts

LOG SHEET

LOCATION:

DATE:					
TDS FEED (ppm)					
TDS R/O (ppm)					
SYSTEM PRESSURE					
TANK PRESSURE (Charged)					
WATER METER READING (Gal.)					
GALLONS VENDED					
UV INTENSITY					
CHLORINE LEVEL					

MACHINE MAINTENANCE (check when serviced)

DATE:					
UV LIGHT CHANGED					
PRE-CARBON FILTER					
SEDIMENT FILTER					
R.O. POST CARBON FILTER					
SALT TANK LEVEL (water softener pretreatment)					
CLEAN DRAIN SCREEN (1800 Series)					
DI TANK READING					
CLEAN & SANITIZE VENDING NOZZLE/DISPENSER HOUSING					
CHECK LEVEL SWITCH (safety float)					
CLEAN DRAIN TANK					
EXTERNAL: CARBON TANK CHANGED (Gal.)					
OPERATOR INITIALS					

COSTER ENGINEERING WARRANTY

The only warranty Coster Engineering gives is as follows:

Coster Engineering warrants each product it manufactures to be in accordance with our published specifications or those specifications agreed to by us in writing at time of sale. Our obligation and liability under this warranty is expressly limited to repairing or replacing, at our option, within one year from the date of shipment, to the original purchaser, any product not meeting the specification. **WE MAKE NO OTHER WARRANTY, EXPRESS OR IMPLIED AND MAKE NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE.** Our obligation under this warranty shall not include any costs or any liability for direct, indirect or consequential damage or delay. If requested by Coster Engineering, products or parts for which a warranty claim is made are to be returned freight prepaid to our factory. Any improper use, operation beyond rated capacity, substitution of parts not approved by Coster Engineering, or any alteration or repair by others in such manner as in our judgment affects the product materially and adversely shall void this warranty. **NO EMPLOYEE OR REPRESENTATIVE IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR GRANT ANY OTHER WARRANTY.**

Coster Engineering reserves the right to make improvement changes, alter features, specifications, options and standard equipment on any of our products without notice and incurrance of obligation on prior manufactured machines.

WARRANTY DOES NOT APPLY to depreciation, parts replacement, maintenance, damage and service necessitated by **NORMAL WEAR**, misuse, lack of proper maintenance, accident, negligence or failure to follow specified operational instructions. Products not covered include, but are not limited to: filters, lamps, reverse osmosis membranes, and deionization resin which normally require perodic replacement or regeneration.

Products not manufactured by Coster Engineering may or may not be covered under warranties supplied by the original manufacture and shall be subject to their warranty limitations.

Repair or replacement of a product does not extend the original warranty.

No reimbursement will be made for labor for repair of any kind without prior authorization from Coster Engineering.

A DELIVERY REPORT FORM must be completed and received by Coster Engineering to initiate the warranty coverage.

COSTER ENGINEERING
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