



OPERATORS MANUAL FOR Mi-T-M®
WTR SERIES
WATER RECYCLING TREATMENT SYSTEM



CAUTION

RISK OF INJURY!

READ MANUAL BEFORE OPERATING!

This manual is an important part of the water recycling treatment system and must remain with the unit when you sell it!

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WARNING

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

Wash your hands after handling this product.

WARNING

This product contains one or more chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

INTRODUCTION

Congratulations on the purchase of your new water recycling treatment system! You can be assured your water recycling treatment system was constructed and designed with quality and performance in mind. Each component has been rigorously tested to ensure the highest level of acceptance.

This operator's manual was compiled for your benefit. By reading and following the simple safety, installation, operation, maintenance and troubleshooting steps described in this manual, you will receive years of trouble free operation from your new water recycling treatment system. The contents of this manual are based on the latest product information available at the time of publication. The manufacturer reserves the right to make changes in price, color, materials, equipment, specifications or models at any time without notice.

! IMPORTANT !

These paragraphs are surrounded by a "SAFETY ALERT BOX". This box is used to designate and emphasize Safety Warnings that must be followed when operating this water recycling treatment system.

Accompanying the Safety Warnings are "signal words" which designate the degree or level of hazard seriousness. The "signal words" used in this manual are as follows:

DANGER: Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

WARNING: Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

CAUTION: Indicates a potentially hazardous situation which, if not avoided **MAY** result in minor or moderate injury.



The symbols set to the left of this paragraph are "Safety Alert Symbols". These symbols are used to call attention to items or procedures that could be dangerous to you or other persons using this equipment.



ALWAYS PROVIDE A COPY OF THIS MANUAL TO ANYONE USING THIS EQUIPMENT. READ ALL INSTRUCTIONS BEFORE OPERATING THIS WATER RECYCLING TREATMENT SYSTEM AND ESPECIALLY POINT OUT THE "SAFETY WARNINGS" TO PREVENT THE POSSIBILITY OF PERSONAL INJURY TO THE OPERATOR.

Once the unit has been removed from the crate, immediately write in the serial number of your unit in the space provided below.

SERIAL NUMBER _____

Inspect for signs of obvious or concealed freight damage. If damage does exist, file a claim with the transportation company immediately. Be sure that all damaged parts are replaced and that the mechanical and electrical problems are corrected prior to operation of the unit. If you require service, contact your customer service representative.

Please have the following items available for all Service calls:

1. Model Number
2. Serial Number
3. Date and Place of Purchase

CONTENTS OF WTR-SERIES WATER RECYCLING TREATMENT SYSTEM

Carefully unpack your new WTR-Series Water recycling treatment system. Check the contents against the packing list. Contact the freight line if a damage claim is required on any component. The following items are the basic equipment sent with your WTR-Series Water recycling treatment system.

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Water recycling treatment system Platform <ol style="list-style-type: none"> a. Filter Pump b. Inlet Flow Meter c. Cartridge Filter d. Polishing Filter e. Product Tank f. Transfer Pump g. Pressurized Water Storage Tank | <ol style="list-style-type: none"> 2. Three Unattached Floats for Sump Pit <ol style="list-style-type: none"> a. Blue: Protects sump pump low level. b. Red: To fill pit from the fresh water inlet. c. Green: High pit level discharge. 3. Water Test Kit 4. Manual and Parts List 5. pH Sensor Probe with PH Option 6. ORP Sensor Probe with ORP option 7. Ozone generator with ozone option |
|---|--|

SPECIFICATIONS


| SPECIFICATIONS | | | |
|-------------------------|--------------------------------|---------------------------|-----------------------|
| MODEL | WTR-10-0M10 | WTR-10-0M30 | WTR-10-0M30 (WX-0132) |
| MAX FLOW | 10 GPM | | |
| ELECTRICAL | 208-230V/ 1PHASE / 15 AMPS | 208-230V/ 3 PHASE/ 8 AMPS | 460V/ 3 PHASE/ 4 AMPS |
| FILTER PUMP | 1 HP | | |
| CARTRIDGE FILTER 1 | 30 MICRON, 100 SQUARE FEET | | |
| CARTRIDGE FILTER 2 | 5 MICRON, 100 SQUARE FEET | | |
| POLISHING FILTER | 110 LBS CARBON | | |
| TRANSFER PUMP | 1/2 HP | | |
| PRODUCT TANK | 80 GALLONS | | |
| PRESSURE TANK | 20 GALLONS | | |
| DIMENSIONS | 72"L X 48" W X 60" H | | |
| NET WEIGHT | 750 LBS | | |
| OPTIONS AND ACCESSORIES | | | |
| PH CONTROL (WX-0130) | <1 AMP. 48ML/MIN CHEMICAL PUMP | | |
| ORP CONTROL (WX-0131) | <1 AMP. 48ML/MIN CHEMICAL PUMP | | |
| OZONE (855-0046) | 12 WATTS, 6 GRAMS/DAY | | |



IMPORTANT SAFETY WARNINGS

READ ALL SAFETY WARNINGS BEFORE USING WATER RECYCLING TREATMENT SYSTEM







| HAZARD | POTENTIAL CONSEQUENCE | PREVENTION |
|---|---|---|
| <p data-bbox="180 233 545 296">RISK OF ELECTRIC SHOCK OR ELECTROCUTION</p>  | <p data-bbox="557 233 987 457">Serious injury or death could occur if the water recycling treatment system is not properly grounded. Your water recycling treatment system is powered by electricity and may cause electric shock or electrocution if not installed properly.</p> <p data-bbox="557 947 987 1045">Electrical shock may occur if water recycling treatment system is not operated properly.</p> <p data-bbox="557 1199 987 1297">Serious injury or death may occur if electrical repairs are attempted by unqualified persons.</p> | <p data-bbox="998 233 1546 331">Installation of this unit, including all electrical connections, must comply with all local, state and national codes.</p> <p data-bbox="998 352 1546 541">This product must be grounded. Connect to a GFCI circuit breaker when available. If the unit should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. Do not ground to a gas supply line.</p> <p data-bbox="998 562 1546 716">Improper connection of the equipment-grounding conductor can result in a risk of electrocution. Check with a qualified electrician or service personnel if you are in doubt as to whether the system is properly grounded.</p> <p data-bbox="998 737 1546 890">Always be certain the unit is receiving proper voltage (+/- 5% of the voltage listed on the nameplate). Before installing electrical connections, be certain the power switches are in the "OFF" position.</p> <p data-bbox="998 911 1546 940">Keep all connections dry and off the ground.</p> <p data-bbox="998 961 1546 1045">DO NOT allow metal components of the water recycling treatment system to come in contact with live electrical components.</p> <p data-bbox="998 1066 1546 1192">Never operate the water recycling treatment system with safety guards/covers removed or damaged. Ensure all electrical covers are securely in place when unit is operating.</p> <p data-bbox="998 1213 1546 1360">Any electrical wiring or repairs performed on this water recycling treatment system should be done by Authorized Service Personnel in accordance with National and Local electrical codes.</p> <p data-bbox="998 1381 1546 1730">Before opening any electrical enclosure, always shut off the water recycling treatment system and drain the water. Disconnect the water recycling treatment system from the power source. If the power disconnect is not in sight, lock it in the open position and tag it to prevent power usage. (Never assume the water recycling treatment system is safe to work on just because it is not operating, it could restart at any time! Always disconnect from the power source.)</p> |



IMPORTANT SAFETY WARNINGS

READ ALL SAFETY WARNINGS BEFORE USING WATER RECYCLING TREATMENT SYSTEM





| HAZARD | POTENTIAL CONSEQUENCE | PREVENTION |
|---|---|---|
| <p>RISK OF EXPLOSION OR FIRE</p>   | <p>Serious injury or death could occur from an explosion or fire caused by a system electric spark.</p> | <p>This unit must be placed in an area that is well ventilated, free of flammable vapors, combustible dust, gases or other combustible materials.</p> |
| <p>RISK OF BURSTING</p>  | <p>Serious injury or death could occur from bursting caused by excessive pressure in the system.</p> <p>Serious injury may occur if attempting to start the water recycling treatment system when the pump is frozen.</p> | <p>Do not mistreat the pressure gauges on the system. Pressure gauges will malfunction if they are subjected to excessive pressure, vibration, pulsation or temperature or if they are placed in an environment which causes corrosion of parts. Incorrect readings on a pressure gauge could mislead the operator and place him in a dangerous working condition.</p> <p>Do not use a booster pump or any type of additional pumping system. Pressurizing the suction of the pump may cause the pump body to explode.</p> <p>Do not use this water recycling treatment system to pump flammable material! An explosion could occur from a gas vapor buildup inside the system.</p> <p>In freezing temperatures, the unit must always be warm enough to ensure there is no ice formation in the pump. Do not start the water recycling treatment system if it has been in a freezing environment without first allowing the pump to thaw.</p> |
| <p>RISK OF BURNS</p>  | <p>Serious injury may occur from touching the electrical motor. This area can remain hot for some time after the water recycling treatment system is shutdown.</p> | <p>Never allow any part of your body to contact the electrical motor until cooled.</p> |



IMPORTANT SAFETY WARNINGS



READ ALL SAFETY WARNINGS BEFORE USING WATER RECYCLING TREATMENT SYSTEM

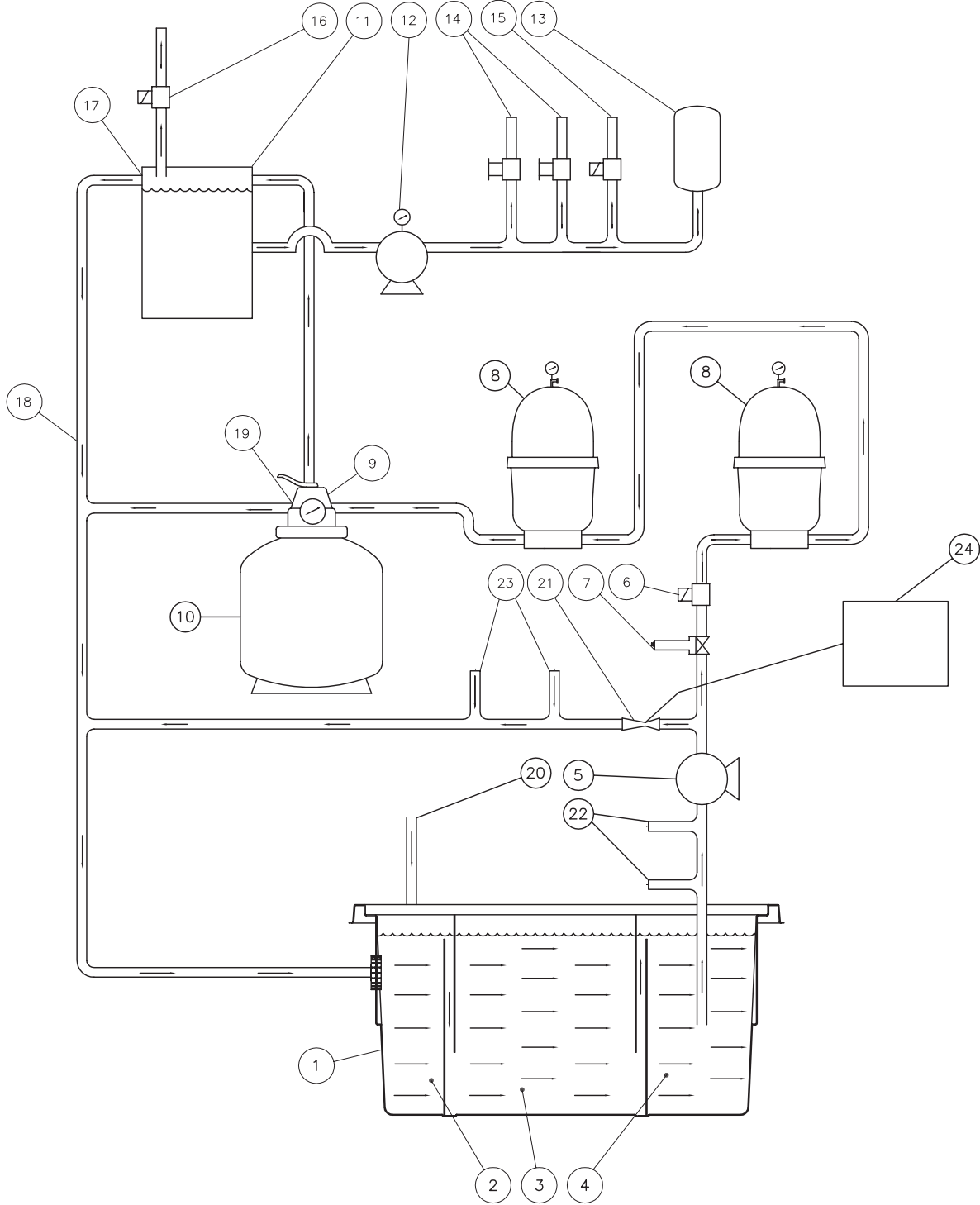
| HAZARD | POTENTIAL CONSEQUENCE | PREVENTION |
|--|--|--|
| <p>RISK FROM MOVING PARTS</p>  | <p>Serious injury may occur to the operator from moving parts on the water recycling treatment system.</p> | <p>Do not operate the unit without all protective covers in place.</p> <p>Follow the maintenance instructions specified in the manual.</p> |
| <p>RISK OF BODILY INJURY</p>  | <p>Injury may occur from the water recycling treatment system.</p> <p>Injury may occur from chemicals contacting the skin.</p> | <p>DO NOT DRINK THE WATER IN THE WATER RECYCLING TREATMENT SYSTEM!! This is non-potable water and is not suitable for consumption.</p> <p>DO NOT allow children to operate this unit.</p> <p>DO NOT overreach or stand on unstable support.</p> <p>Wet surfaces can be slippery, wear protective foot gear and keep good footing and balance at all times.</p> <p>Know how to stop the water recycling treatment system. Be thoroughly familiar with controls.</p> <p>Before servicing, ALWAYS shut off the water recycling treatment system.</p> <p>Never use any solvents or highly corrosive detergents or acid type cleaners with this water recycling treatment system.</p> <p>Keep all chemicals out of the reach of children!</p> <p>Consult Material Safety Data Sheets for safe handling of chemicals used with your system, especially oxidizers and acids.</p> |



!SAVE THESE INSTRUCTIONS!



FLOW CHART



— = DIRECTION OF WATER FLOW

FLOW DIAGRAM FOR THE WTR-SYSTEM

Water used from washing or other processes (20) is collected in a below ground **Pit System (1)**. A well designed pit system allows solids and oils to separate out of the system and will consist of a **Wash Water Collection Pit (2)**, **Settling Chamber (3)**, and **Sump Chamber (4)**. At the end of the pit system, the **Filter Pump (5)** draws the water up and pumps into the water treatment system. Water first goes through the **Inlet Flow Valve (6)** and **Flow Meter (7)**. These are used in conjunction to set the proper flow rate into the filters. The water then flows into the first and second **Cartridge Filters (8)**. The combination of cartridge filters will remove any solid particles down to 5 micron in size. After the cartridge filters, the water goes into the 7-way **Filter Valve (9)** and into the **Polishing Filter (10)** containing activated carbon. The carbon removes dissolved solids, organics, and metals from the system while also eliminating odors.

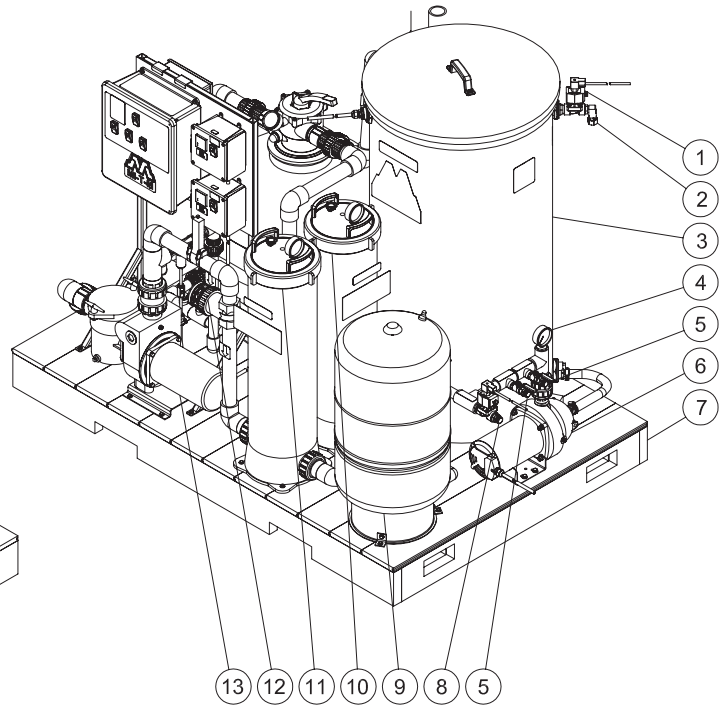
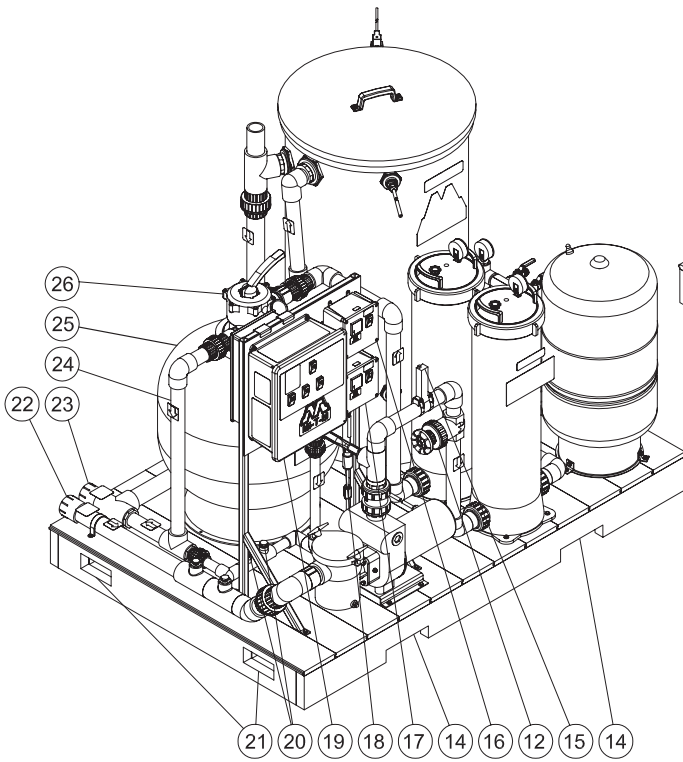
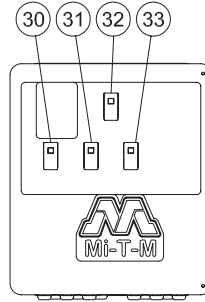
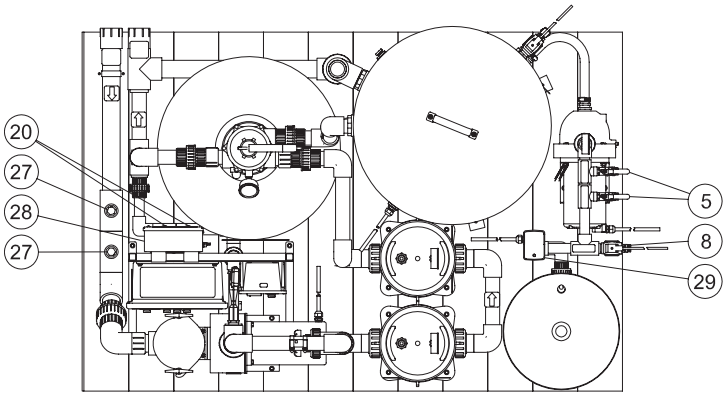
After the filtration process, the water is delivered to the **Product Tank (11)**. The **Transfer Pump (12)** pulls water from the **Product Tank (11)** and fills the **Pressure Tank (13)** and manifold with pressurized water. The two **Water Outlet Valves (14)** deliver pressurized treated water on demand for pressure washers, rinsing with a garden hose, or other processes. In order to recirculate the filtered water, when the water in **Product Tank (11)** reaches the **Product Tank Overflow (17)** it drains back to the pit via the **Recirculation Line (18)**.

In order to keep water within the system flowing at all times, part of the water stream is split after the **Filter Pump (5)** and sent back to the **Pit System (1)**. The water is sent through a **Venturi Injector (21)** where air or ozone via the optional **Ozone Generator (24)** is pulled into the water. The air and ozone help eliminate odors in the **Pit System (1)**. If ORP or PH control is needed, **Probes (22)** are placed on the inlet of the **Filter Pump (5)** to monitor the PH and ORP. **Chemical Injection Ports (23)** are located in the by-pass line where ORP and PH chemical is added automatically and delivered to the **Pit System (1)**.

As part of the scheduled maintenance, the **Polishing Filter (10)** will need to be back-washed periodically. With the 7-way **Filter Valve (9)** in the back-wash position, water passes backwards through the filter into the **Back Wash Port (19)** and back to the **Pit System (1)** via the **Recirculation Line (18)**.

Floats in the **Pit System (1)** automatically control the **Fresh Water Make-up Solenoid (16)** to add fresh water to the **Product Tank (11)** and the **Rain Water Overflow Solenoid (15)** to discharge extra water from the system as needed.

WTR FEATURES



| ITEM | DESCRIPTION |
|-------------|--|
| 1. | FRESHWATER SOLENOID |
| 2. | FRESHWATER HOOK-UP |
| 3. | PRODUCT TANK |
| 4. | TRANSFER PUMP PRESSURE GAUGE |
| 5. | WATER OUTLET VALVE |
| 6. | TRANSFER PUMP |
| 7. | PALLET |
| 8. | RAIN WATER OVERFLOW SOLENOID |
| 9. | PRESSURE TANK |
| 10. | 5 MICRON FILTER |
| 11. | 30 MICRON FILTER |
| 12. | INLET CONTROL VALVE |
| 13. | FILTER PUMP |
| 14. | SIDE FORK LIFT HOLES |
| 15. | FLOW METER |
| 16. | PH CONTROL BOX (OPTIONAL) |
| 17. | ORP CONTROL BOX (OPTIONAL) |
| 18. | VENTURI INJECTOR |
| 19. | CONTROL BOX |
| 20. | CHEMICAL INJECTION LOCATION (OPTIONAL) |
| 21. | END FORK LIFT HOLES |
| 22. | INLET PLUMBING |
| 23. | RECIRCULATION LINE |
| 24. | BACKWASH LINE |
| 25. | POLISHING FILTER |
| 26. | 7-WAY DIAL VALVE |
| 27. | PH AND ORP PROBE LOCATION (OPTIONAL) |
| 28. | OZONE GENERATOR (OPTIONAL) |
| 29. | PRESSURE SWITCH |
| 30. | FILTER PUMP SWITCH |
| 31. | TRANSFER PUMP SWITCH |
| 32. | MASTER SWITCH |
| 33. | AUXILIARY SYSTEM SWITCH |

INSTALLATION

NOTE: *Proper Attire is essential to your safety. It is advised to utilize whatever means necessary to protect eyes, ears, and skin.*

1. A Collection Pit System must already be an established structure before installing the WTR-Series water recycling treatment system. A well designed pit system is critical to the proper operation of the recycle system and its' design will depend on the application.

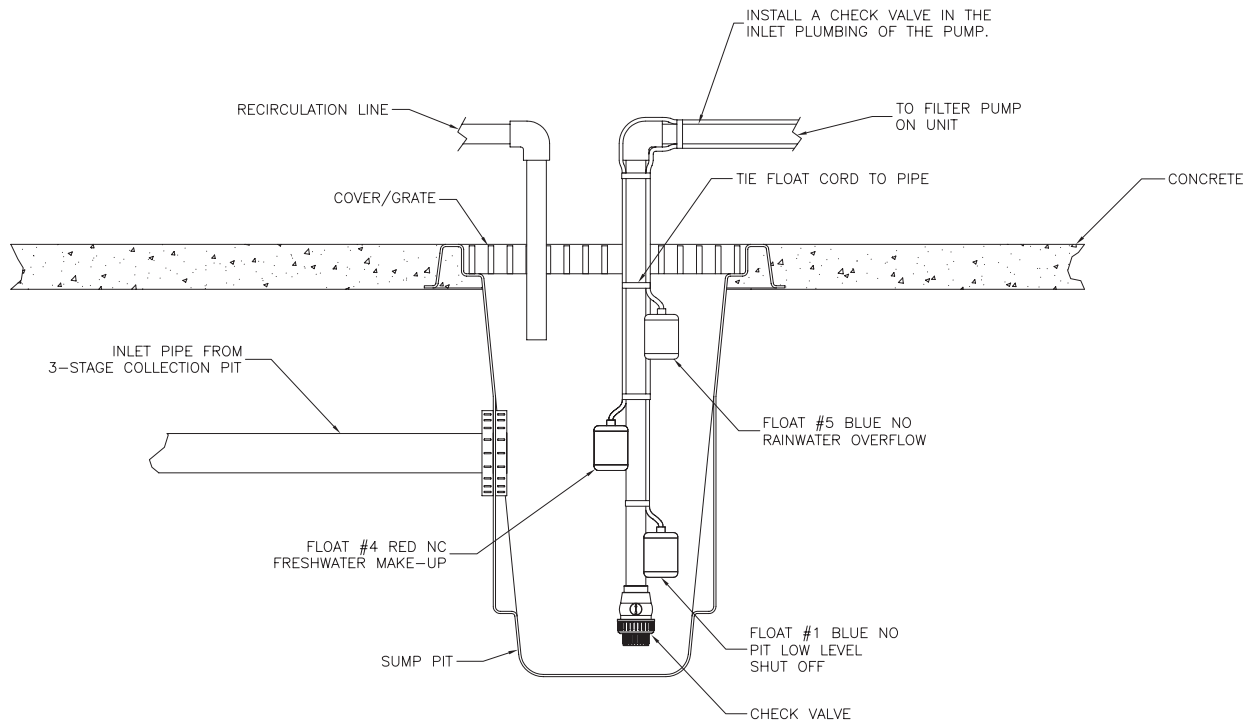
Application: (If installing the proper pit is not possible, consult factory or dealer for above ground settling and retention tank set-ups that will work with the system.) Below are rules that should be followed under most circumstances. Every wash or water treatment system is different so the guidelines below may be altered depending on the application. Consult dealer or factory with questions.

- a. Light Washing: Under 300 Gallons Per Day (GPD). Washing off light equipment: cars, golf carts, lawn mowers, parts, etc. Low dirt and oil load. 2x2 pit- 75 gallons.
 - b. Light to Medium washing: 300-600 GPD. Washing off cars, golf carts, lawn mowers, parts, trucks. Low dirt and oil load. 3x3 pit- 200 gallons.
 - c. Medium to heavy washing: 600-1500 GPD: Washing off cars, golf carts, lawn mowers, parts, trucks, small excavating equipment, tractors. Medium dirt and oil load. 3x9 pit- 600 gallons. 3x9 pits come in various baffle designs that should be selected based on the application.
 - d. Heavy washing: 1500GPD+: washing off cars, golf carts, lawn mowers, parts, trucks, small and larger excavating equipment, tractors, dozers, skid loaders, etc. Use a combination of pits to be able to hold about half of the water used in a day, and designed to catch the most amount of solids and oils before the treatment system. For heavy mud applications with track equipment or similar, large concrete, drive in pits are recommended for catching and disposing of mud that accumulates over time. Combine with flocculent or coagulant and settling tanks to eliminate the most mud before it reaches the WTR-10.
2. Place the water recycling treatment system platform on a hard, level surface in an area free of flammable vapors, combustible dust, gases and other combustible materials. The unit should be placed no more than 15 feet higher or 50 feet horizontal from where the filter pump will pull from..
 3. Set the unit so you have access to all four sides.
 4. Do not place unit in an area:
 - a. with insufficient ventilation.
 - b. where environmental hazards (i.e. rain and snow) can come in contact with the water recycling treatment system.
 - c. where the unit may freeze.
 5. The water recycling treatment system is shipped with some union connections loosened to protect the unit from shipping damage. Tighten all union connections at this time.
 6. Use schedule 80 PVC slip connections.
 - a. Install plumbing from the Sump Pit to the **Filter Pump Inlet** using minimum connection sizes of 2".
 - b. Install a check valve in the **Sump Pit**.
 - c. Install plumbing from Outlet Return To Pit to the Wash Water Catch Pit using a minimum pipe size of 2".

INSTALLATION

7. Install the three floats in the **Sump Pit**. Allow a 2" tether and enough room for them to move freely without interfering with the plumbing.
 - a. Float #1 Blue: Pit low level shut-off. Attach this float 10" above the inlet.
 - b. Float #4 Red: Fresh water makeup. Height of this float must be adjusted to the individual pit system.
 - c. Float #5 Blue: Rain water overflow. Height of this float must be adjusted to the individual pit system.

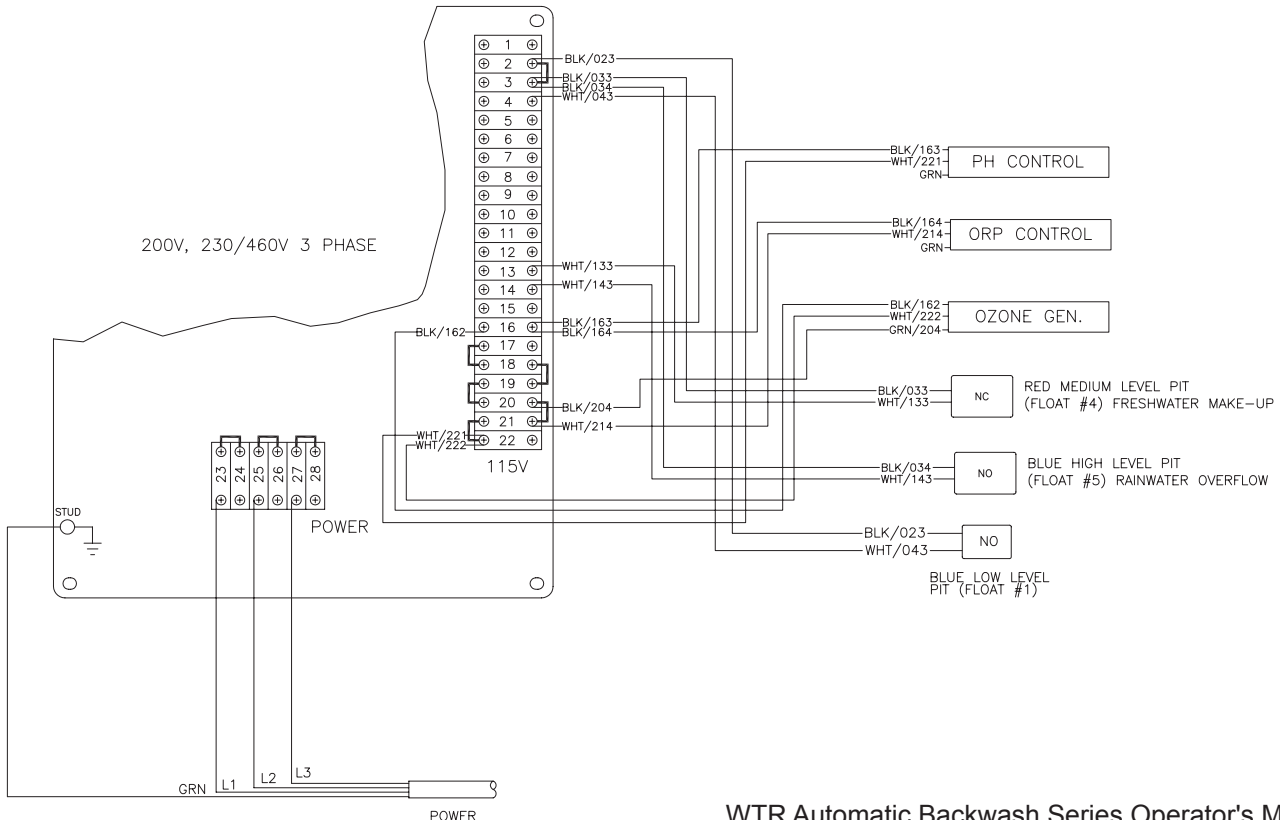
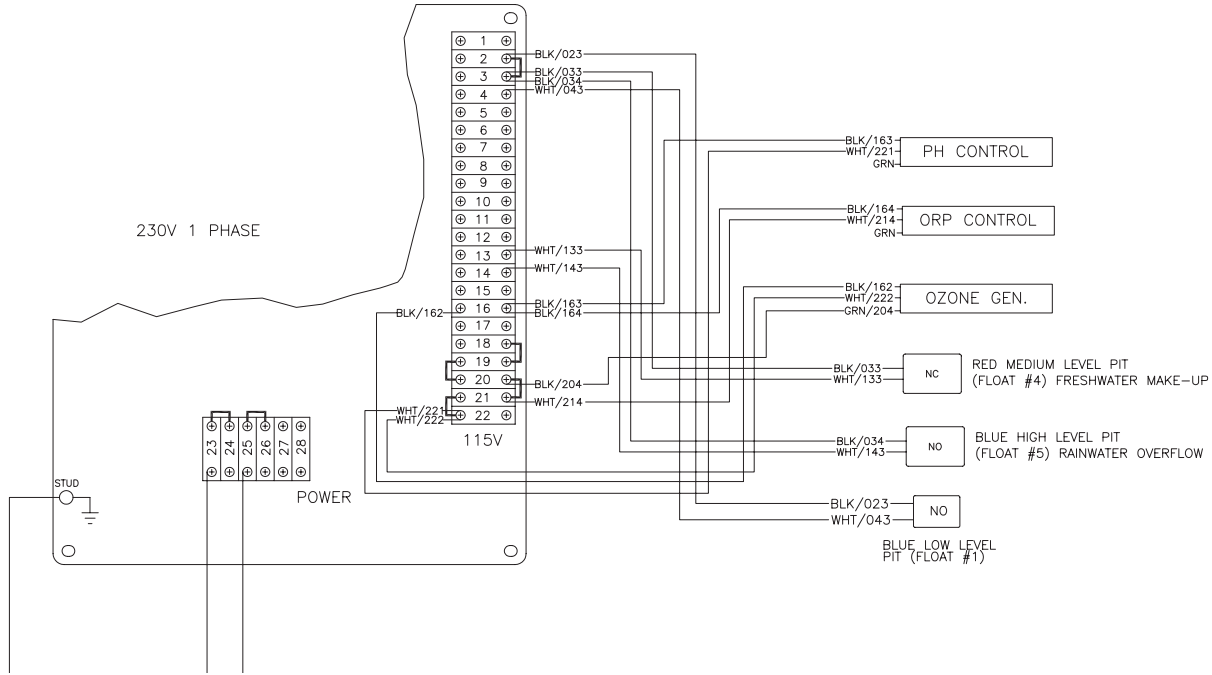
NOTE: The above information is for reference only. Professional installers or architects may use this guideline to meet specific site requirements.



 **WARNING RISK OF ELECTROCUTION! TO REDUCE THE RISK OF ELECTROCUTION, KEEP ALL CONNECTIONS DRY AND OFF THE GROUND.**

INSTALLATION

8. A qualified electrician must hook up the electrical system.
 - a. Verify the electrical supply at the power source is off.
 - b. Be certain all switches on the **Control Panel** are in the "OFF" position.
 - c. Run water tight conduit or cord from the **Sump Pit Floats** to the **Control Panel**.
 - d. Run water tight conduit from the local disconnect to the **Control Panel**.
 - e. The electrician will need to drill holes in the **Control Panel** for the conduit and/or cord(s).
 - f. Make connections to the terminal strips as shown.



FIELD WIRING DIAGRAM WTR-10-0M10 040116

NOTE: If the unit was ordered with the ORP/PH/ or Ozone options, these will be wired in from the factory. If these options are going to be added at a later time, see diagrams to wire them in properly.

9. Make the following hose connections:

- a. From a pressurized water supply to the **Fresh Water Makeup**.
- b. From the **Outlet to Pressure Washer** to the pressure washer.
- c. From the **Rain Water Overflow** to a storage tank for further processing or disposal. **DO NOT SEND THIS WATER BACK TO THE WASH WATER CATCH PIT!**

NOTE: In most cases, you must have a permit to legally dispose discharged water.

10. Installing PH/ORP/Ozone in the field.

1. If the unit is ordered in from the factory with these options, the PH, ORP, and Ozone has been installed and wired into the unit and is ready for preparation. If not follow the guidelines below for installing these options in the field.
2. PH and ORP:
 - a. Remove the plug on the inlet side of the filter pump. Install the ½ aluminum strain relief that comes with the options.
 - b. Install the silicon plug into the strain relief to seal the line until ready for probe installation. Follow probe installation instructions found in the preparation section of the manual.
 - c. Mount control box into the holes provided on the control panel bracket.
 - d. Wire power cord inside main control box using the wiring diagram below.
 - e. Remove the plug on the outlet side of the filter pump, just past the mazzei injector. Replace with the 1/2 hose adapter.
 - f. Run the chemical hose provided from the outlet of the chemical pump and attach to the hose adapter.
 - g. With the other length of chemical hose and strainer, drop into the chemical bucket that will be used to adjust the PH or ORP.
 - h. Follow calibration and set-point instructions outlined in the preparation part of the manual.
3. Ozone:
 - a. Hang ozone generator from the back of the control panel bracket using brackets included with the assembly.
 - b. Attach provided blue hose from mazzei ball valve to the bottom outlet barb on the generator.
 - c. Wire the power cord into the main control box at the terminals shown in the field wire diagram.
 - d. Follow directions in the operation part of the manual and the manual included with the ozone generator.

STOP

TO ENSURE YOUR WATER RECYCLE TREATMENT SYSTEM OPERATES SAFELY AND EFFICIENTLY,
COMPLETE THE PRE-OPERATION CHECKLIST BEFORE PROCEEDING.

PRE-OPERATION CHECKLIST

| Before proceeding, answer all the questions on this checklist. | YES | NO |
|--|-----|----|
| CODES: | | |
| 1. <u>Does the electrical wiring meet all codes?</u> _____ | | |
| 2. Does plumbing meet all codes? | | |
| LOCATION: | | |
| 1. Is the unit located on a hard level surface free of flammable vapors, <u>combustible dust, gases or other combustible materials?</u> _____ | | |
| 2. Is the unit located in a large ventilated area? | | |
| ELECTRICAL: | | |
| 1. Is the unit properly grounded? | | |
| 2. Does the power supply, voltage and amperage match the data plate? | | |
| PLUMBING: | | |
| 1. <u>Is the plumbing sized correctly?</u> _____ | | |
| 2. <u>Is the check valve installed before the Sump Pump?</u> _____ | | |
| 3. <u>Are all plumbing connections secured?</u> _____ | | |
| 4. Are all hose connections secured? | | |
| GENERAL: | | |
| 1. <u>Have all operators using this unit read and understood this entire manual?</u> _____ | | |
| 2. Has the unit been installed by qualified service people who followed the instructions listed in this manual? | | |

NOTE: IF "NO" WAS MARKED TO ANY OF THESE QUESTIONS, CORRECT THE SITUATION BEFORE OPERATING.

PREPARATION

PRESTART PROCEDURES:

1. Position the valves on the WTR water recycling treatment system in the "Start-up Mode".
-Water Inlet Flow Control Valve: Turn valve one rotation short of completely closed.
 2. Be certain all hoses are securely connected.
 3. Be certain the incoming air tube to the **Ozone Generator** is not obstructed.
 4. Be certain all switches on the **Control Panel** are in the "OFF" position.
 5. Turn on the power supply. The **Power Indicator Light** should glow.
-

START-UP:

1. Ensure water supply to the **Fresh Water Makeup** is turned on and pit is filled with water. If the pit is not full, water will fill the **Product Tank** and overflow through the **Overflow Drain** and back to the **Sump Pit**.
2. To prime the **Filter Pump**, remove the lid over the **Basket Strainer** and fill the **Basket Strainer** and the plumbing from **Sump Pit** to the **Filter Pump** with water, then replace the lid.
3. Turn on the Filter Pump Switch and water will begin flowing into the system as air is purged from the lines.
4. Water will begin by-passing through the mazzi, pulling in air and flowing back to the pit system.
5. Increase the flow by adjusting the Water Inlet Control Valve to between 10-20GPM by using the flowmeter and reading from the top of the float.
6. Purge air from the cartridge filters by opening the relief valve on the top of the filter until water begins coming out of the filter.
7. Water will begin filling the Polishing Filter and Product Tank. As the Product Tank fills, it will eventually reach the overflow port and begin recirculation back to the pit system. If the water in the product tank continues to rise and reaches the filter pump shut-off float, then the inlet flow rate needs to be lowered.
8. When the water in the Product Tank has reached the overflow port, open the Pressure Washer Outlet Valve until water exits in order to prime the Transfer Pump.
9. Turn on the Transfer Pump Switch and allow the Pressure Tank to fill. The Transfer Pump will run until the pressure in the line reaches 50 PSI. The system is ready to feed a pressure washer or garden hose with recycled water.

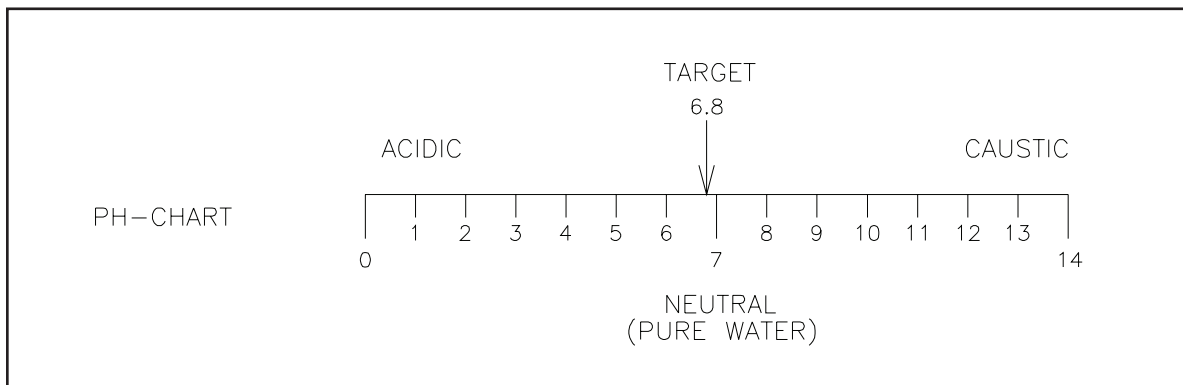
PREPARATION

pH AND ORP CONTROL SYSTEM (IF INCLUDED):

Proper pH and ORP levels must be maintained in the pit to prevent growth of bacteria, algae, odors, etc. Water must be chemically balanced to effectively recycle.

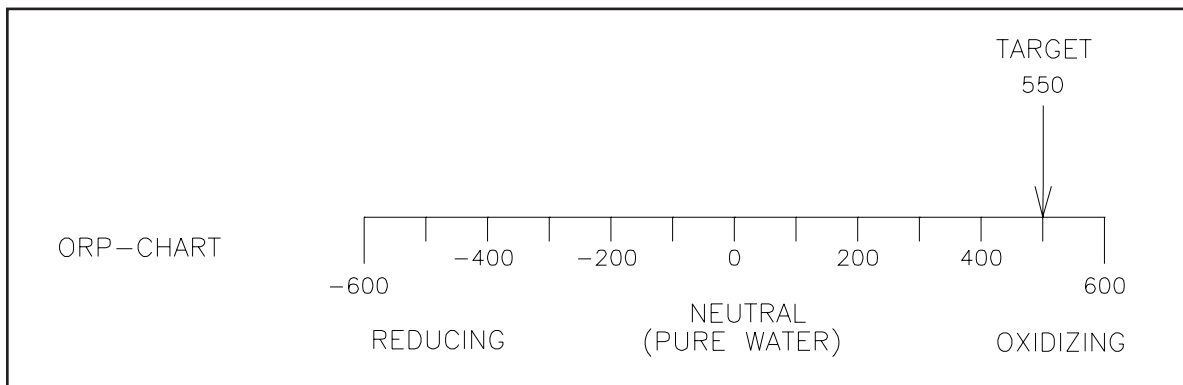
As water enters the system it moves past the **pH and ORP Sensors**. The **Sensor Probes** analyze the pH and ORP levels in the water.

- a. **pH Sensor Probe.** This probe analyzes the pH (acidity & alkalinity) in the water. If the water is too acidic (low pH) the acid will breakdown the iron present in the water to a liquid form, thus causing rusty looking water in the system. If the water is too alkaline (high pH) the bacteria killing potential of the ORP agent will be drastically lowered.



WLP-0008-112098-JJ

- b. **ORP Sensor Probe.** This probe analyzes the Oxidation Reduction Potential (ORP). This reading states amount of bacteria killing agent in the water.



WLP-0009-112098-JJ

The probes analyze the pH and ORP levels of the water and display the readings on the digital **pH and ORP Meters**.

PREPARATION

INSTALLATION OF pH AND ORP PROBES:

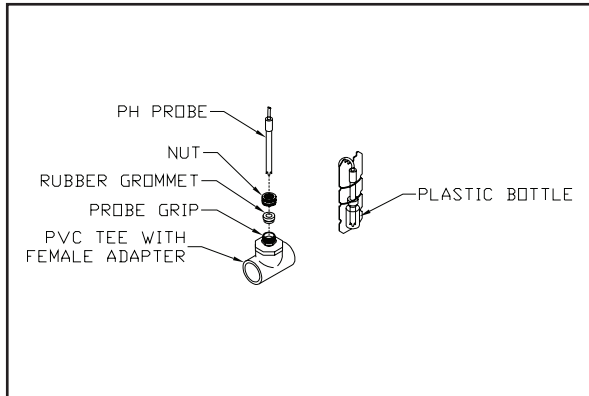
⚠ CAUTION: RISK OF PROBE DAMAGE!

DO NOT ALLOW PROBES TO BE EXPOSED TO AIR. ONCE PROBES ARE IN PLACE, TURN WATER ON IMMEDIATELY.

HANDLE PROBES CAREFULLY AS THEY ARE MADE OF GLASS.

DO NOT ALLOW PROBES TO BE EXPOSED TO FREEZING ENVIRONMENTS. KEEP THE ORIGINAL CONTAINERS IN WHICH THE PROBES WERE SHIPPED. THEY WILL BE NEEDED FOR PROBE STORAGE DURING WINTERIZING.

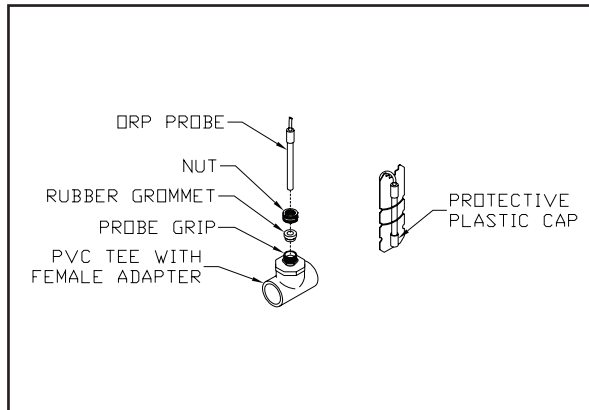
pH SENSOR PROBE



WLP-0006-110298-JJ

1. Turn off the Filter Pump Switch and ensure no water is being discharged.
2. Locate the probe grips at the sensor probes and unscrew the nut from one of the grips.
3. Remove one of the probes (pH or ORP) from its storage container. (Be certain to save the container for probe storage during winterizing.)
4. Carefully slide the probe grip nut over the glass probe.
5. Gently push the probe through the probe grip approximately 2 inches and tighten the nut onto the probe grip.
6. Repeat process for the remaining probe.
7. Turn on the Filter Pump Switch, and the pH/ORP Meters Switch.

ORP SENSOR PROBE



WLP-0007-112098-JJ

THE PROBES CANNOT BE ALLOWED TO DRY OUT.

PREPARATION

SETTING THE pH AND ORP METER:

Note: For new units, pH and ORP meters have already been set and calibrated. Filter pump and auxillary switch must remain on through process.

OPERATION:

KEYPAD OPERATION

1. "SEL" key; changes upper display to the first programming menu, advances the display through the menu and sets the programmed information into memory.
2. "∧" up arrow key, increases value displayed in the green (lower) display.
3. "∨" down arrow key, decreases value displayed in the green (lower) display.
4. Press and hold "SEL" key for approximately 3 seconds and "HYS" will appear in the upper display. Hold the "SEL" key for approximately 6 seconds and P-n1 will appear.

PROGRAMMING

1. How to change the set point:

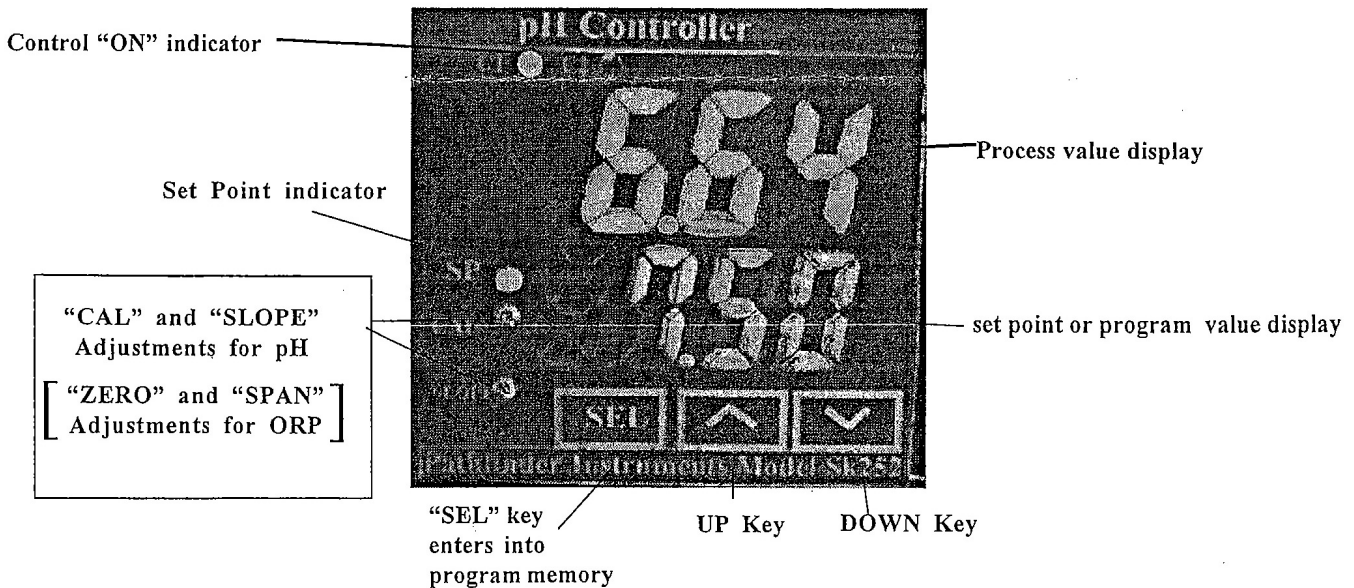
Press and hold the "∧" up or "∨" down arrow until the correct number appears, the new set point will be active after 5 seconds.

2. How to change the control action (Relay activates above or below the set point):

Hold the "SEL" key for approximately 6 seconds and "P-n1" will appear in the upper display, the control code will appear in the lower display, "0" or "1" will actuate below the set point, "2" or "3" will actuate above the set point. Press the "SEL" switch once, the value will flash, change the value with the "up" or "down" keys, and press the "SEL" key again to set it in memory. Holding the "SEL" key for approximately 2 seconds will return to normal operation.

3. How to program Hysteresis:

Hold the "SEL" key for approximately 3 seconds and "HYS" will appear in the upper display, the hysteresis amount will appear in the lower display, press the "SEL" key once and the amount will flash, change the amount to the desired value with the "up" or "down" keys, press "SEL" again to set it in memory. Holding the "SEL" key for approximately 2 seconds will return to normal operation.



Front Panel

PREPARATION

SETTING THE pH AND ORP METER:

CALIBRATION:

HOW TO CALIBRATE pH:

The front panel has two adjustments labeled "CAL" and "SLOPE", always adjust the CAL first.

1. Always make sure the pH probe is connected to the meter.
2. Place the probe in a #7 buffer solution. Adjust the "CAL" reading for a pH of 7.00.
Note: There is a limited shelf life on buffer solutions. Please make sure the buffer is active. In lieu of using buffer solutions, you may use part #RC-1003-0001, which is an electronic calibrator.
3. Remove and rinse the probe in tap water.
4. Place the probe in a #4 or #10 buffer, depending on the instrument usage (Acid or Base). Adjust the "SLOPE" to a reading of 4.0 or 10.0 pH.
5. Calibration complete.

HOW TO CALIBRATE THE ORP:

The front panel has two adjustments labeled "ZERO" and "SPAN", the ORP controller can be calibrated with a millivolt source substituted for a probe.

Short the input connector and adjust the ZERO adjustment for a reading of 0000. Apply +500 mV from an accurate millivolt source and adjust the SPAN adjustment for a reading of 0500.

To verify the accuracy of the ORP probe and ORP calibration, a kit is available from the manufacturer, it consists of enough materials to do 30 tests, it contains reagents, stirrers beakers and instructions.

FINAL pH AND ORP SYSTEM SETUP:

1. Place the hoses from the **pH and ORP Pumps** into the **Adjustment Chemicals**.
 - a. The recommended pH chemical for this system is aluminum sulfate.
 - b. The recommended ORP chemical for this system is Bleach.
2. Turn on the **pH and ORP Pump Switches**. Chemicals will be inserted into the water as necessary.

OPERATION

1. The water recycling treatment system is now ready to operate.
2. Ensure the switches on the **Control Panel** are in the following position:
Meter Switch
ON
Filter Pump *Transfer Pump* *Auxillary Systems*
ON **ON** **ON**
3. With the filter pump running, use the *Water Inlet Flow Control Valve* to make sure the flow is at a level so it does not over flow the holding tank. Somewhere between 10-20 GPM.
4. Monitor the system closely the first few days to ensure smooth operation.

MAINTENANCE

FILTERS:

Cartridge Filters: Inspect and clean as needed every couple months or when the filters become clogged. When the pressure gauge on the filter reads 30 PSI or higher it is time to clean or replace the filter. (New cartridges can be ordered through your local distributor. The 30 micron element is part number 19-0274 while the 5 micron element is part number 19-0282.)

1. Removing the Filter: Shut-off the filter pump. Unscrew the locking ring on top of the filter. Use a screw driver if needed and the handles to pry the filter lid off of the unit. Pull out filter.
2. Use a garden hose to clean the accumulated debris off of the filter and let it drain back into the pit system.
3. When the filter appears well cleaned place back into the housing. Inside of filter will need to slide onto the bottom protrusion of the filter housing in order to seal correctly. Make sure the O-ring is clean of debris and replace the lid and locking ring until tight.
4. Start back up filter pump. Pressure gauge should be back to normal (under 20 PSI). If pressure gauge still reads high it is time to replace the filter. Purge air from the filter by loosening the relief valve until water comes out whenever starting the filters back up.

NOTE: The back pressure caused from the polishing filter can also cause the cartridge filters to read a high pressure. Make sure the polishing filter is well maintained and reading under 20 PSI before replacing a cartridge filter due to a high pressure reading.

Polishing Filter: The polishing filter contains activated carbon media that will need to be back-washed once or twice a week. In addition the polishing filter should be back-washed whenever the pressure gauge reads 30 PSI or higher.

BACKWASHING THE POLISHING FILTER:

1. With the filter pump still on, dial the inlet flow meter down to below 10 GPM.
2. Shut-off the filter pump switch.
3. Turn the 7-way dial valve on top of the filter to the back wash setting.
4. Turn back on the filter pump switch. Water should be seen leaving the polishing filter back wash port.
5. Adjust flow as needed to keep as much of the carbon from washing out as possible. It is normal to get a few small pieces flushed out, but large amounts will result in a depletion of the media over time.
6. After about 3 to 5 minutes or when the water quality visibly clears up (matches incoming water), shut off the filter pump switch.
7. Switch back the 7-way dial valve on top of the filter to the normal operation setting.
8. Turn back on filter pump switch and adjust inlet control valve to 10-20GPM.
9. Verify pressure gauge on the polishing filter is now reading lower pressure.

REMOVING & REFILLING MEDIA FROM THE POLISHING FILTER:

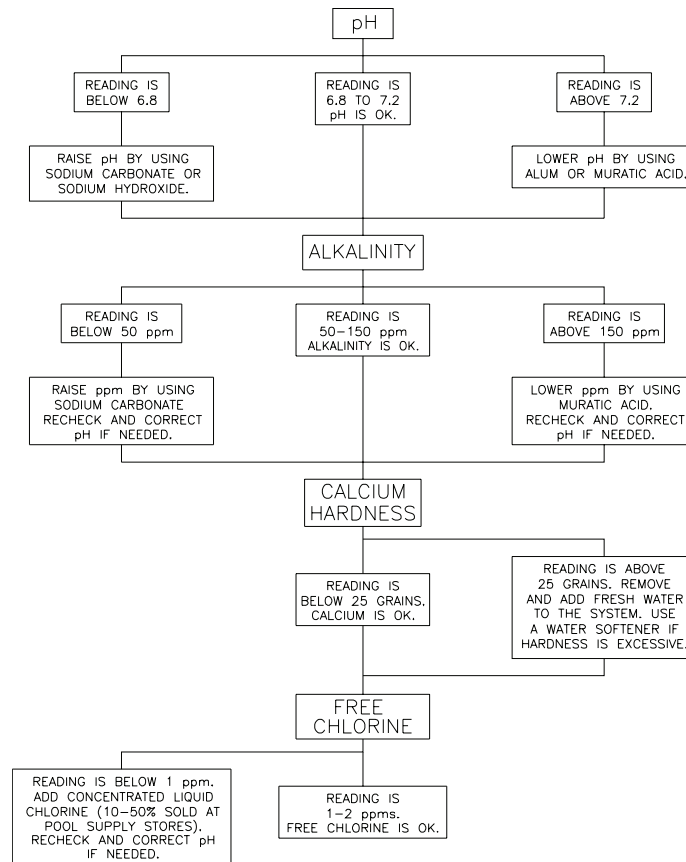
1. New carbon can be ordered from your local distributor under the 33-0302 part number. The filter requires 110 lbs. of carbon.
2. Be certain to wear proper attire such as goggles, gloves, coveralls, dust mask, etc. to protect eyes and skin.
3. Turn off the **Filter Pump Switch**.
4. Remove the top from the desired filter tank and drain water.
5. Use a vacuum to remove the media from the filter.
6. Ensure the lateral assembly remains centered and flush on the bottom of the tank and the layers are level when pouring media into the filter tank.
7. Reassemble the dispersing section of the filter tank and replace its lid.
8. Turn on the **Filter Pump Switch**. DO NOT backwash **Polishing Filter** until unit has been in operation for 24 hours.
9. Dispose of used media according to EPA standards.

MAINTENANCE

WATER TESTING:

Water chemical makeup should be tested on a weekly basis. With the **Filter Pump** operating, use a test strip, test the water in the **Sump Pit**. (Follow the directions given with your test strips.) Use the flow chart below to check and correct the following:

1. pH: Acidity and alkalinity in the water. Low pH (acidic) will cause rusty looking water.
2. Alkalinity: Dissolvable salts in the water. Too much alkaline causes cloudiness and reduces filter life.
3. Calcium Hardness: Calcium in the water. Too much calcium creates scale buildup in coils of hot water pressure washers.
4. *Free Chlorine: Chlorine which is not combined with dirt, oils, etc. Controls odor, bacteria and algae formation.
**If using chlorine as a water purifying agent.*



WLP-0015-112398-JJ

WINTERIZING:

If you must store your unit in an area where the temperature may fall below 32°F/0°C, you can protect your water recycling treatment system by draining all water from the system.

1. Turn all switches on the **Control Panel** to the OFF position and disconnect power to the **Control Panel**.
2. Open the check valve near the **Sump Pit** and drain the water transport line. Drain **Filter Pump**.
3. Open check valve at the inlet and drain the inlet line.
4. Remove drain plug from **Polishing Filter** and loosen the lid on each filter. Break the unions on each side.
5. Loosen unions and lid on **Cartridge Filter** to allow them to drain.
6. Remove the drain plug from the **Filter Pump**.
7. Remove the drain plug from the **Transfer Pump**.
8. Open **Outlet Valves** and union by pressure tank and let drain.
9. Remove the **pH and ORP Sensor Probes** and place them in their original containers filled with deionized water. Store at room temperature.
10. Store all chemicals at room temperature.

TROUBLESHOOTING

| SYMPTON | PROBABLY CAUSE | REMEDY |
|---|---|--|
| FILTER PUMP | | |
| Filter Pump will not run. | Floats are not adjusted correctly in the Sump Pit . | Readjust. |
| | Not enough water in the Sump Pit . | Add water to the Sump Pit . |
| | Float 1 is defective. | Replace. |
| | High Sump Pump Float in the Product Tank has flipped up. | Slow down flow with inlet Control Valve . Remove clogs from Recirculation Line . |
| | Circuit overload/breaker has tripped. | Reset breaker or replace fuse at power source. |
| | Motor overload. | Allow motor to cool. Motor will automatically restart when cool. |
| Filter Pump motor starts and stops frequently. | Motor is defective. | Replace pump. |
| | This is a common occurrence on initial start-up while pits are filling. | Allow pits to fill. |
| | Excessive water flow to reclaim unit. | Turn valve clockwise to reduce flow. |
| | Filter Pump impeller is clogged. | Disconnect power and unclog impeller. |
| | Motor overload. | Allow motor to cool. Motor will automatically restart when cool. |
| | Sump Pit is not large enough. | Expand size of pit. |
| Filter Pump runs, but there is little or no water discharge. | Strainer basket in Filter Pump is clogged. | Clean, repair or replace. |
| | Water level is below pump inlet. | Ensure Float 1 is not caught in plumbing. |
| | There is an air lock in the Filter Pump . | Manually fill the inlet pipe with water. |
| | Low voltage. | Ensure wire size is capable of handling the rated amperage of the unit. If wire size is correct, contact your distributor. |
| Filter Pump will not turn off. | Clogged impeller or worn pump parts. | Contact your distributor. |
| | Defective switch inside Float 1. | Replace |
| | Pump is air locked. | Cycle pump in one minute increments several times to clear air from pump. |
| ELECTRICAL | | |
| No power at Control Panel . | Power failure to Control Panel . | Check circuit breaker at power source or contact your local distributor. |
| Power Indicator Light is OFF. | Blown fuses inside Control Panel . | Check fuses, replace if necessary. If fuses are OK, contact your distributor. |
| SHAFT SEALS | | |
| Water is leaking at pumps. | Damaged stationary shaft seal. | Seal ran dry. Ensure seal chamber is filled with liquid. |
| Short seal life. | Unexpected temperature and chemical usage. | Replace with heavy duty seal. |

TROUBLESHOOTING

| SYMPTON | PROBABLY CAUSE | REMEDY |
|---|---|---|
| TRANSFER PUMP | | |
| Transfer Pump runs but there is low water discharge. | Water is being used elsewhere. | Reduce flow to other source or contact your local distributor. |
| | Low Transfer Pump Float is not functioning. | Check On/Off with voltmeter. Repair or replace. |
| | Plumbing is obstructed or too small. | Remove obstruction or use larger plumbing. |
| Transfer Pump cycles excessively. | Solenoid valve(s) is open or stuck open | Fix Solenoid valve(s) or reduce flow. |
| | Pump sucking air. | Eliminate leaks and tighten all connections on intake line. |
| | Bladder failure in Pressure Tank . | Replace Pressure Tank . |
| | Pressure switch malfunction. | Adjust pressure settings. |
| | Too low of pressure in the Pressure Tank . | Increase pressure. |
| Transfer Pump does not turn off | Wait 10 minutes when no water is being discharged. | Normal Operation. |
| | Pressure switch line is obstructed. | Disconnect line and remove obstruction. Replace. |
| | Pressure switch contacts are frozen. | Replace if necessary. |
| | Impeller is obstructed. | Contact your local distributor. |
| SOLENOIDS | | |
| Solenoid valve won't turn on | Low or no water pressure. | Turn off water, switch solenoids between valves. Turn on water. If problem is corrected, replace faulty solenoid. |
| | No electrical contact to solenoid | Contact your local distributor. |
| Solenoid valve leaks when turned off. | Solenoid is obstructed. | Turn off water, remove and clean solenoid |
| | Damaged solenoid. | Replace |
| | Solenoid o-ring is misaligned or damaged | Realign or replace. |
| | Diaphragm seat is dirty. | Clean or replace |
| | Diaphragm is damaged | Replace |
| ODOR | | |
| Excessive odor in water system | Not enough chemicals in the system to maintain water balance. | Add or adjust pH, ORP, or ozone options. |
| CHEMICALS | | |
| Excessive chemical usage. | pH and ORP Meters are calibrated incorrectly or faulty probes. | Recalibrate meters or change probes. |
| Low chemical usage (with possible odor.) | Chemical pumps are not working. | Replace chemical hose inside pump. Recalibrate pH and ORP Meters . |

TROUBLESHOOTING

| SYMPTON | PROBABLY CAUSE | REMEDY |
|--|---|--|
| WATER FLOW | | |
| Air shoots from Water Outlet.. | This is a common occurrence while pump is priming. | Air will stop shooting from the water outlet when pump is primed. |
| | Transfer Pump is sucking air at suction inlet. | Eliminate leaks or tighten connection. |
| Water will not turn off. | Solenoid failure. | Repair or replace. |
| No water to product tank. | Filter pump is off. | See trouble shooting instructions for Filter Pump |
| | Filters are clogged | Clean, replace, or Back-wash Filters. |
| pH / ORP METERS | | |
| pH Pump is not running when HIGH light on pH Meter is lit. | pH or ORP Meter reading is not numeric | Turn pH / ORP Meters Switch to "OFF" position for 5 seconds then turn "ON" again. |
| | Pump Shaft is stuck | Turn shaft of pump with fingers to loosen shaft |
| pH / ORP Meters will not turn on. | Auxiliary switch is in "OFF" position | Turn to "ON" position. |
| | Filter Pump is off. | See Filter Pump trouble shooting instructions |



STATEMENT OF WARRANTY

The manufacturer warrants all parts (except those referred to below) of your new WLP Water recycling Treatment system to be free from defects in materials and workmanship during the following periods:

For One (1) Year from the date of original purchase:

Defective parts not subject to normal wear and tear will be repaired or replaced at the manufacturer's option during the warranty period. In any event, reimbursement is limited to the purchase price paid.

EXCLUSIONS

1. The motor is covered under separate warranty by its respective manufacturer and is subject to the terms set forth therein.
2. Normal wear parts:

| | | |
|-----------------|----------|---------|
| Seals | Filters | Gaskets |
| O-rings | Packings | Brushes |
| Filtering Media | Sensors | |
3. Parts damaged due to:
 - normal wear, misapplication, modifications/alterations, abuse,
 - operation at other than recommended speeds, pressures or temperature,
 - the use of caustic liquids,
 - chloride corrosion or chemical deterioration,
 - fluctuations in electrical or water supply,
 - operating unit in an abrasive, corrosive or freezing environment.
4. Parts damaged by failure to follow recommended:
 - installation, operating and maintenance procedures.
5. This warranty does not cover the cost of:
 - normal maintenance or adjustments,
 - labor charges,
 - transportation charges to Service Center,
 - freight damage.
6. The use of other than genuine manufacturer parts will void warranty. Parts returned, prepaid to the manufacturer's factory or to an Authorized Service Center will be inspected and replaced free of charge if found to be defective and subject to warranty. There are no warranties which extend beyond the description of the face hereof. Under no circumstances shall the manufacturer bear any responsibility for loss of use of the unit, loss of time or rental, inconvenience, commercial loss or consequential damages.

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