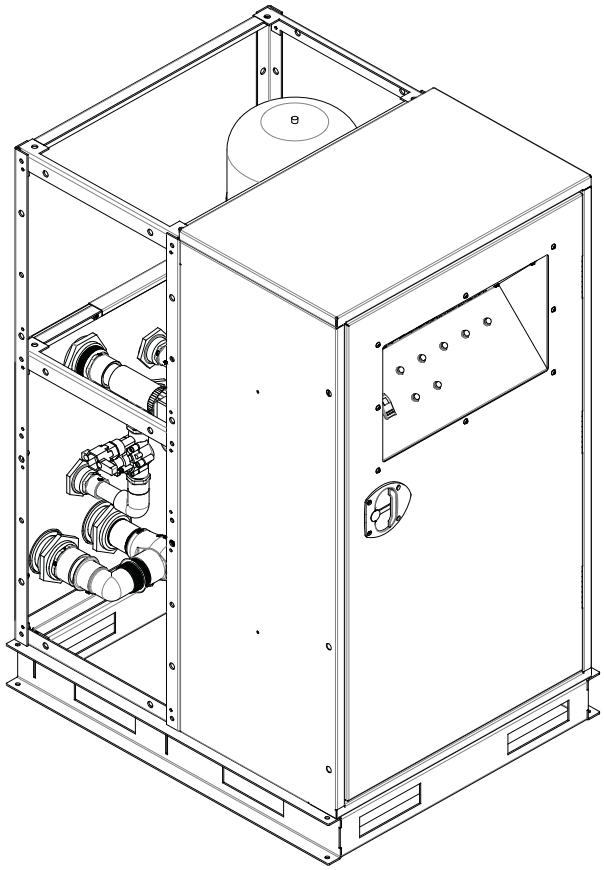
REC3-30

Operator Manual

Water Management Pump System

MODELS: **REC3-30**
1.103-511.0

REC-ZCF3-30A
1.103-513.0



For the Dealer nearest you, consult our web page at www.wmaze.com

9.807-993.0-E 06/11/24

Machine Data Label

Model: _____

Date of Purchase: _____

Serial Number: _____

Dealer: _____

Address: _____

Phone Number: _____

Sales Representative: _____

How To Use This Manual

This manual contains the following sections:

- How to Use This Manual
- Safety
- Operations
- Maintenance
- Parts List

The HOW TO USE THIS MANUAL section will tell you how to find important information for ordering correct repair parts.

Parts may be ordered from authorized dealers. When placing an order for parts, the machine model and machine serial number are important. Refer to the MACHINE DATA box which is filled out during the installation of your machine. The MACHINE DATA box is located on the inside of the front cover of this manual.

Model: _____

Date of Purchase: _____

Serial Number: _____

Dealer: _____

Address: _____

Phone Number: _____

Sales Representative: _____

The model and serial number of your machine are located on the back of the machine.

The SAFETY section contains important information regarding hazardous or unsafe practices of the machine. Levels of hazards are identified that could result in product damage, personal injury, or severe injury resulting in death.

The OPERATIONS section is to familiarize the operator with the operation and function of the machine.

The MAINTENANCE section contains preventive maintenance to keep the machine and its components in good working condition. They are listed in this general order:

- Digital Timer Instructions
- Hot Weather
- Environmental
- Maintenance Instructions
- Daily Schedule
- Weekly Schedule
- Pump Maintenance
- Troubleshooting

The PARTS LIST section contains assembled parts illustrations and corresponding parts list. The parts lists include a number of columns of information:

- **REF –** column refers to the reference number on the parts illustration.
- **PART NO.** – column lists the part number for the part.
- **QTY** – column lists the quantity of the part used in that area of the machine.
- **DESCRIPTION** – column is a brief description of the part.
- **NOTES** – column for information not noted by the other columns.

NOTE: If a service or option kit is installed on your machine, be sure to keep the KIT INSTRUCTIONS which came with the kit. It contains replacement parts numbers needed for ordering future parts.

NOTE: The manual part number is located on the lower right corner of the front cover.

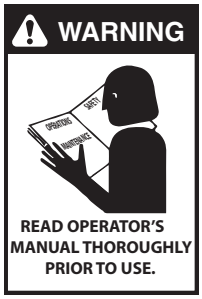
Introduction & Safety Information

Your owner's manual has been prepared to provide you with a simple and understandable guide, for equipment operation and maintenance, based on the latest product information available at the time of printing.To keep your machine in top running condition follow the specific maintenance and troubleshooting procedures given in this manual.
NOTE: *Water Maze* reserves the right to make changes at any time without incurring any obligations.

Owner/User Responsibility:

The owner and/or user must have an understanding of the manufacturer's operating instructions and warnings before using this equipment. Warning information should be emphasized and understood. If the operator is not fluent in English, the manufacturer's instructions and warnings shall be read to and discussed with the operator in the operator's native language by the purchaser/owner, making sure that the operator comprehends its contents.
Owner and/or user must study and maintain for future reference the manufacturers' instructions.
SAVE THESE INSTRUCTIONS
This manual should be considered a permanent part of the machine and should remain with it if machine is resold.
When ordering parts, please specify model and serial number. Use only identical replacement parts.
This machine is to be used only by trained operators.

General Safety Information



WARNING: When using this machine basic precautions should always be followed, including the following:

AVERTISSEMENT: En utilisant cette machine, des précautions de base devraient toujours être observées, y compris ce qui suit:

1. Read all the instructions before using the product.
2. To reduce the risk of injury, close supervision is necessary when a product is used near children.
3. Know how to stop the product and bleed pressures quickly. Be thoroughly familiar with the controls.
4. Stay alert – watch what you are doing.
5. Do not operate the product when fatigued or under the influence of alcohol or drugs.
6. Keep operating area clear of all persons.
7. Do not overreach or stand on unstable support.
8. Keep good footing and balance at all times. Follow the maintenance instructions specified in the manual.
9. Know the system application, limitations, and potential hazards.

WARNING: This machine must be wired to the correct voltage. Refer to the information located on the serial plate.

AVERTISSEMENT: Raccorder le système au réseau électrique en respectant la tension. Se référer aux informations qui se trouvent sur la plaque signalétique.

WARNING: All wiring must be performed by a qualified electrician.

AVERTISSEMENT: Tout le câblage doit être effectué par un électricien qualifié.

WARNING: Risk of Electric Shock

AVERTISSEMENT: Risque de choc électrique

DANGER: 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 machine is properly grounded. All electrical lines must be installed by qualified personnel only. Do not use any type of adapter with this product.

DANGER : Une mauvaise connexion du conducteur de terre de l'équipement peut entraîner un risque d'électrocution. Vérifier auprès d'un électricien qualifié ou du personnel d'entretien si vous avez des doutes quant à savoir si la sortie est correctement mise à la masse. Toutes les lignes électriques doivent être installées par du personnel qualifié uniquement. NE JAMAIS utiliser un adaptateur avec ce produit.

GROUNDING INSTRUCTIONS

This machine must be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal located on the product in compliance with National Electrical Codes (NEC).

GROUND FAULT CIRCUIT INTERRUPTER PROTECTION

To comply with the National Electrical Code (NFPA 70) and to provide additional protection from the risk of electric shock, this machine should only be connected to a circuit protected by a ground fault circuit interrupter (GFCI).

POWER SUPPLY

This machine is supplied standard as a 230V 1-phase system. There are components within the control system that operate at 24VAC and 115VAC. The feed wiring is designed to accept incoming power of 230V with ground ***plus neutral*** to operate 115VAC equipment with code compliance.

Alternate voltages and 3-phase powered machines are available. Contact Water Maze Sales for information on available alternates.

WARNING: Do not use near concentrations of flammable or explosive fluids such as gasoline, fuel oil, kerosene, solvents, etc. Do not use in explosive atmospheres. Liquids compatible with component materials should only be used. Failure to follow this warning can result in personal injury and/or property damage.

AVERTISSEMENT: Ne pas utiliser près de concentrations de liquides inflammables ou explosifs tels que l'essence, le mazout, le kérosène, les solvants, etc. Ne pas utiliser dans des atmosphères explosives. Seuls des liquides compatibles aux matériaux des composantes devraient être utilisés. Le non-respect de cet avertissement peut mener à des lésions corporelles et/ou des dommages à la propriété.

10. The main power must be brought from the circuit breaker and wired into the electrical box on the REC3-30. This power supply must be run through conduit in compliance with local and national electrical codes. A power disconnect should be located near the machine for maintenance and emergency purposes.
11. Protect all electrical cords from sharp objects, hot surfaces, oil, sunlight, and chemicals. Avoid kinking the cords.

WARNING: If any cords or electrical wires appear to be frayed, damaged, or in poor condition, proceed with caution and immediately take steps to have the cords repaired or replaced.

AVERTISSEMENT: Si un cordon ou des fils électriques semblent effilochés, endommagés ou en mauvais état, agir avec prudence et prendre immédiatement des mesures afin que les cordons soient réparés ou remplacés.

12. Never make adjustments on the machine while it is in operation, except for those prescribed in this manual.
13. Follow the maintenance instructions specified in this manual.
14. Before servicing the machine, refer to all the SDS's on the material identified in the waste stream. You must comply with all warnings and wear all protective clothing as stated on the SDS's.

15. Inlet water temperature must not exceed 95°F.
16. The best insurance against an accident is precaution and knowledge of the equipment.
17. Water Maze is not liable for modifications or use of components not purchased from Water Maze.
18. Personal Safety:

a. Wear safety glasses and other applicable protective clothing at all times when working on this machine.

NOTE: Refer to item #14.

b. Keep your work area clean, uncluttered and properly lighted

c. Replace all unused tools and equipment.

d. Keep visitors at a safe distance from work area.

19. Before servicing any component, disconnect power and depressurize the system. Drain system if necessary.
20. Periodically inspect pump and system components.Perform routine maintenance as required.
21. Do not touch an operating motor. Modern motors are designed to operate at high temperatures.
22. Do not touch any electrical component with wet hands, when standing on a wet or damp surface, or in water.
23. The pump motors are equipped with a thermal protector. Tripping is an indication of motor overloading as a result of operating at excessively highor low voltage, inadequate wiring, incorrect motor connections, or a defective motor or pump.

WARNING: Protect machine from freezing.

AVERTISSEMENT: Protéger la machine contre le gel.

24. Do not spray water directly at machine.

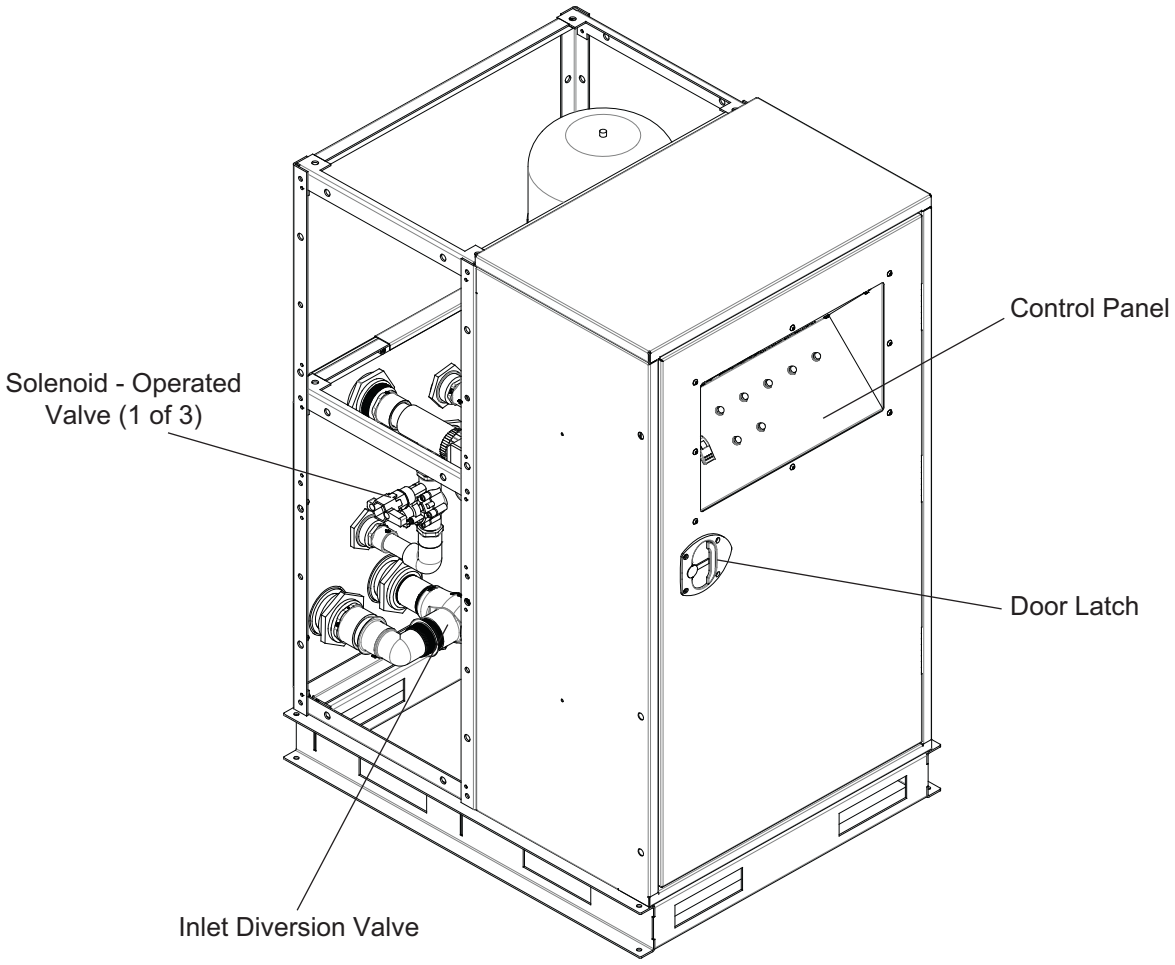
WARNING: This system contains moving parts in the control center and in the pump. Follow safe practices when performing maintenance and when troubleshooting. Disconnect the power before servicing this machine. If the power disconnect is out of sight, lock it in the open position and tag it to prevent unexpected application of power.

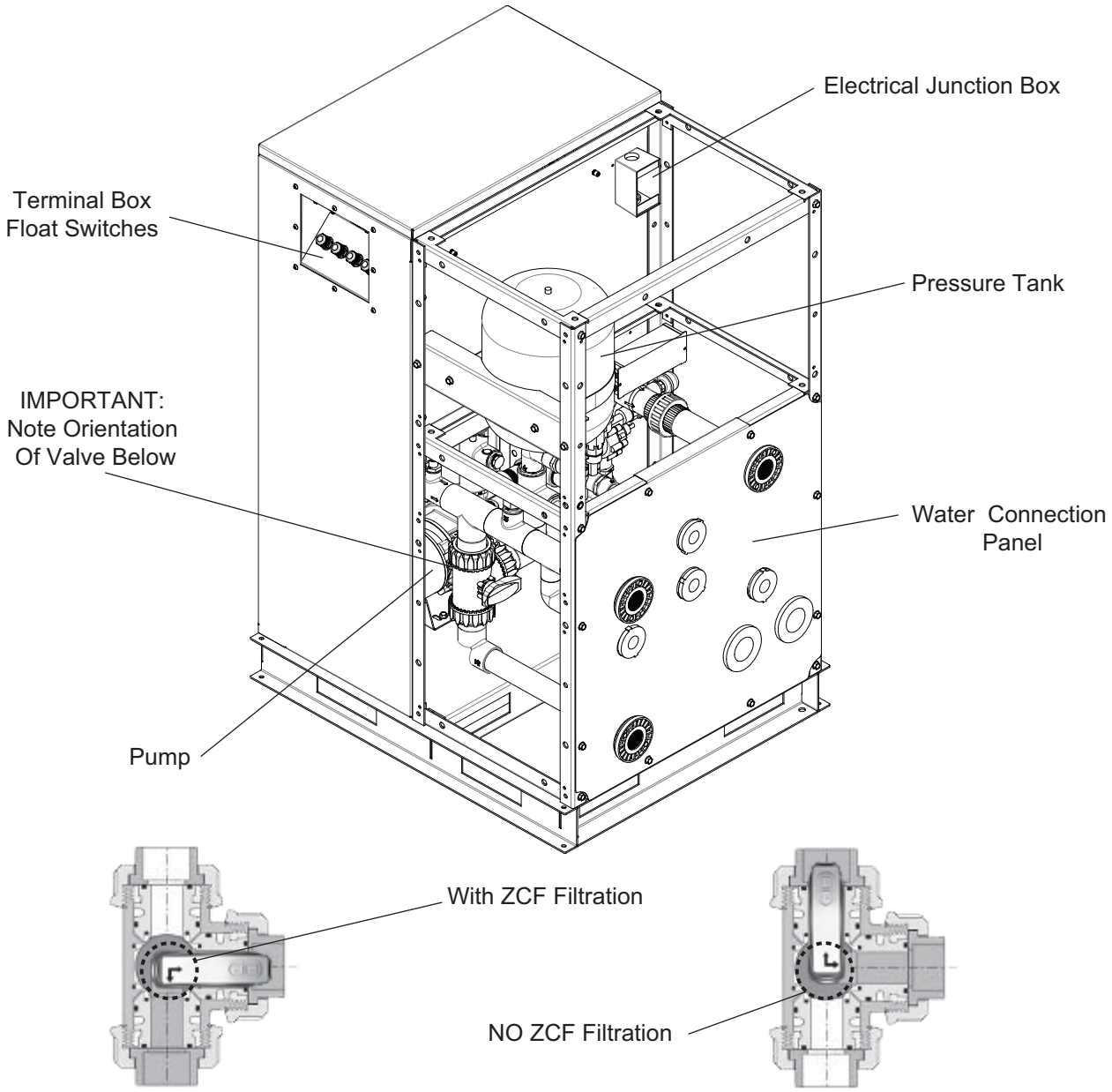
AVERTISSEMENT: Ce système contient des pièces mobiles dans le centre de contrôle. Suivre les pratiques de sécurité au moment d'effectuer des opérations d'entretien et lors de la correction des erreurs. Débrancher l'alimentation avant d'effectuer des opérations d'entretien sur cette machine. Si le point de débranchement n'est pas visible, le mettre en position de circuit ouvert et bien l'identifier afin de prévenir une mise sous tension imprévue.

WARNING: Make sure to take precautions when performing maintenance on the pump in the catch basin. Turn off the power to the pump and make sure electrical cords are well maintained

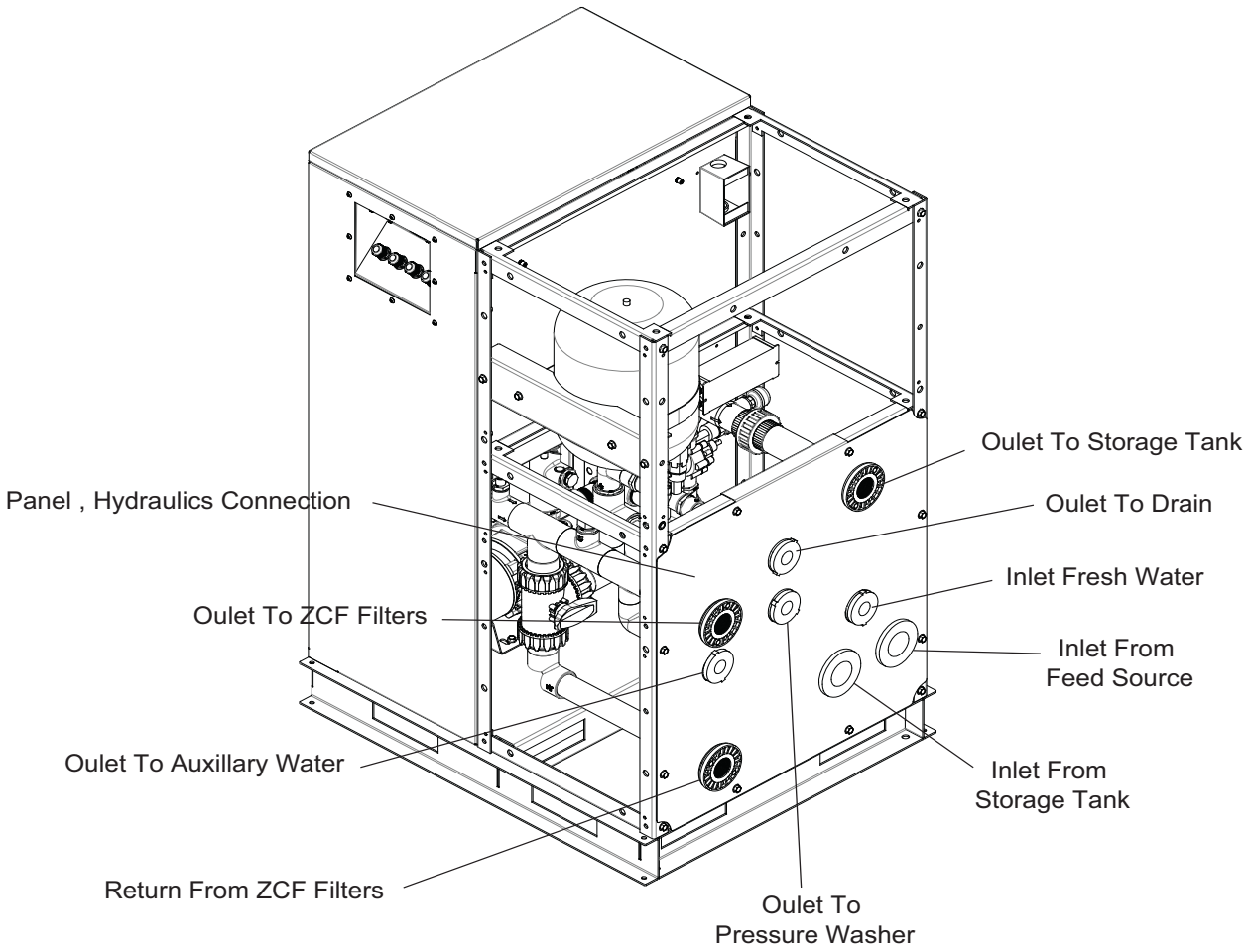
AVERTISSEMENT: S'assurer de prendre les précautions nécessaires au moment d'effectuer des opérations d'entretien sur la pompe dans le bassin collecteur. Mettre la pompe hors tension et s'assurer que les cordons électriques sont bien entretenus.

Component Identification

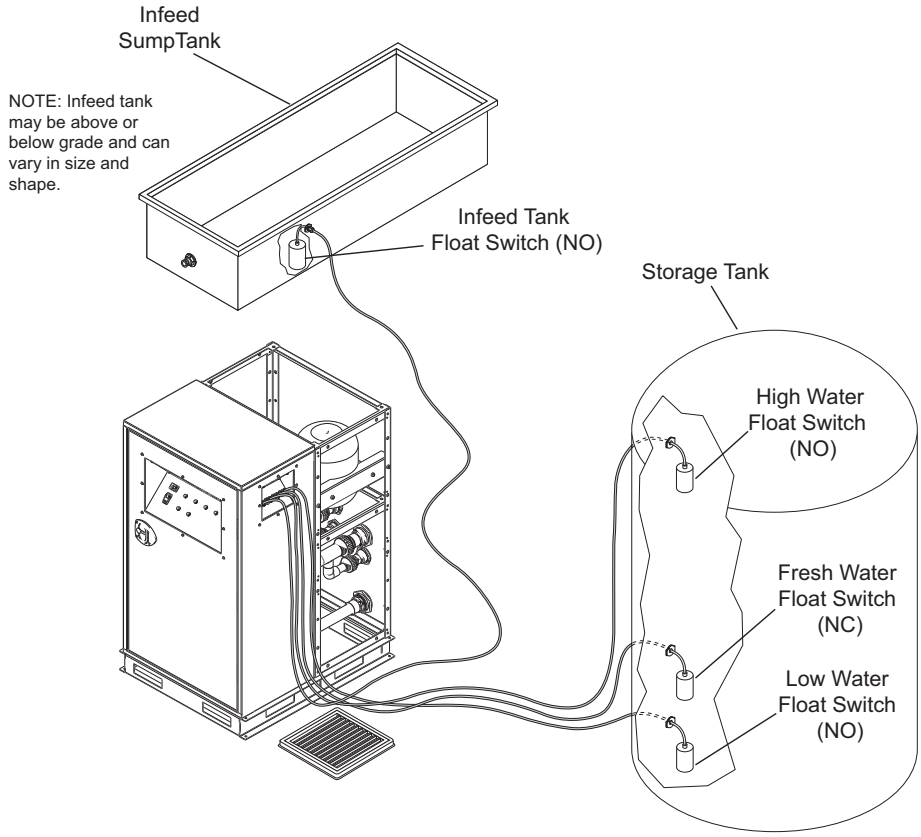



Electrical Junction Box
Terminal Box
Float Switches
Pressure Tank
IMPORTANT:
Note Orientation
Of Valve Below
Water Connection
Panel
Pump
With ZCF Filtration
NO ZCF Filtration

1.103-513.0 REC/ZCF Piping Connection



Connection Diagram



FLOAT SWITCH NAME, LOC.	PRIMARY FUNCTION	OPERATING LOGIC	INSTALLATION GUIDELINES
LS-1 N.O. Infeed Tank Transfer Float Switch	Signals REC3-30 control module to move water from infeed tank when float is in the UP (contacts closed) position	Float switch signal is relayed by Smart Relay to energize pilot solenoid valves DVS-1, DVS-2 to open water path from infeed tank to pump suction through 2" 3-way hydraulic diversion valve AND to energize open VS-1 1" solenoid-operated valve allowing processed water to flow to storage tank.	Float switch installation level should be positioned so that contacts open when water level is at a safe level above pump suction port to prevent sucking air and losing prime.
LS-4 N.O. Storage Tank Low Water Float Switch	Signals REC3-30 control module to enable pump operation when float is in the UP (contacts closed) position	Float switch signal is relayed by Smart Relay to disable pump from attempting to move water from storage tank to any water use	Float switch installation level should be positioned so that contacts open in the DOWN position when water is at a safe level above pump suction port to prevent sucking air and losing prime.
NOTE:	When BOTH the infeed tank float switch and the storage tank float switch are in the DOWN (contacts open) position, pump is prevented from running. Pump will resume operation if either float switch senses sufficient water level to return to the UP position		
LS-2 N.O. Storage Tank High Water Float Switch	Signals REC3-30 control module to discharge excess water from storage tank if overfilled by external water introduced into the system	Float switch signal is relayed by Smart Relay to energize open VS-2 1" solenoid-operated valve allowing water from storage tank to be pumped to an external disposal location.	Float switch installation level should be positioned so that contacts close (discharge) at approximately 90-95% full and open at (no discharge) at approximately 85-90% full
LS-3 N.C. Storage Tank Fresh Water Refill Float Switch	Signals REC3-30 control module to add outside water to storage tank when float is in the DOWN (contacts closed) position	Float switch signal is relayed by Smart Relay to energize open VS-3 1" solenoid-operated valve allowing water from an external source to refill storage tank to a minimum recommended operating level	Float switch installation level should be positioned so that contacts close (refill) at approximately 50% full and open at approximately 60% full
NOTE:	A full infeed tank pump-down cycle always takes priority over other functions. If system calls for infeed during recirculation, system switches from drawing water from storage tank to drawing water from infeedtank . When infeed tank level reaches low level switch point, system switches back to drawing water from storage tank.		

REC3-30 Water Management Unit:

The REC3-30 water management unit should be installed as a recycler to transport water between a water treatment system and local storage tank. The REC3-30 unit can then be used to circulate and refresh stored water. An optional Ozone generator can be added to further sanitize and de-odor the water. The REC3-30 unit can also maintain water levels in the local storage tank, to prevent overflows and draining. Auxiliary parts are also available for hose and pressure washers. The REC3-30 should be installed as a component of a system that incorporates multiple water treatment technologies.

IMPORTANT: Proper feed water quality to the REC3-30 is important to ensure maximum operating performance and to prevent downtime due to equipment malfunction or damage. Equipment damage or loss of performance is not

Pre-Treatment Upstream of The Inlet of The REC3-30 Must Prevent The Following:

1. 1. Heavy or settleable solids (dirt, silt, sand, etc.). Typical treatments include gravity settling and centrifugal separation.
2. Floating debris (fibers, plastic, paper, cigarette butts, etc.)
3. Free oils, grease or fats (typically floating).

Consult a Water Maze representative prior to combining the REC3-30 with other pre-treating and post treating equipment.

TCLP Testing:

TCLP is one of the Federal EPA test methods that are used to characterize waste as either hazardous or non-hazardous for the purpose of disposal. TCLP is an acronym for Toxicity Characteristic Leaching Procedure. A TCLP test may be required prior to disposal of your solid waste. Consult a Water Maze representative for details.

Site Preparation:

The installation site surface should be of compacted materials, such as concrete, asphalt or pavement and capable of supporting the REC3-30 treatment system.

Installation & Start Up Instructions

The following instructions will provide adequate information to fully install your Water Maze Recycling System. Please follow these instructions step by step to ensure proper installation.

WARNING: A backflow preventer must be provided when connecting to a potable water supply to prevent back-siphonage into the water supply.

AVERTISSEMENT: Un disconnecteur doit être fourni lorsque le dispositif doit être connecté à une source d'eau potable pour empêcher un siphonnement dans l'approvisionnement en eau.

Equipment and Supplies Needed for Installation

Aside from having a general assembly of tools on hand, you will need to supply a few additional items to complete the installation of your system.

- Forklift
- Tape Measure
- Level
- PVC pipe cutting and beveling tools
- PVC pipe cleaner, cement, primer

Equipment Installation

The model REC3-30 water treatment system must be installed on a level surface.

- If surface is not level, shimming may be required.

Installation Checklist

❑ Are all piping and electrical float switches connected as shown on the Float piping and Connection Diagrams.

❑ Are floats connected as shown on the Junction Box wiring Diagram

❑ Is the voltage correct?

START-UP

1. 1.Make sure that all equipment is level.
2. Install float switches in infeed/sump tank and storage tank according to the Float Connection Diagram, included in this manual.
3. Connect piping according to Piping Connection Diagram, included with this manual.
4. Connect electrical power to electrical box: When connecting to the power supply, follow all electrical and safety codes as well as the most recent

National Electric Code (NEC) and Occupational Safety and Health Act (OSHA). Ground system before connecting to the power supply.

WARNING: All wiring must be performed by a qualified electrician.

AVERTISSEMENT: Tout le câblage doit être effectué par un électricien qualifié.

5. Use included Digital Timer Instructions, to set SmartRelay time clock and circulation/ozonating times.
6. Remove cap from the port on pump discharge. Fill the pump case with water. Replace cap and secure.
7. Fill infeed/sump tank with water and ensure storage tank's water level is above the "Low Water Float Switch".
8. Fill clean water storage tank to the lower level of the high-water float switch.
9. Fill all inlet lines (two inlets from storage tank onright side and one from infeed source on left side) with water.
10. Open any valves between REC3-30 module and storage tank, infeed /sump tank, drain, and fresh water source.

    Adjust SV-1 and SV-2 solenoid valves to wide open using the throttling valves.

    Adjust SV-3 solenoid valve (excess water discharge) to approximately 1/3 open using the
11. To start pump and place into automatic operation, press top part of on/off switch. If pump fails to prime at first try, it is safe to repeat this operation. Pump may take longer to prime when drawing from a tank or sump with water level below grade.

Utility Usage

Electrical: 230 Volts, 1 PH
Amps: 12 amps

Operating Environment

The REC3-30 is designed to work in a wide variety of operating conditions. In normal operating environments, the system should perform as specified. In extremely hot or cold environments certain precautions need to be taken.

Operating Conditions

Air Temperature Range 40° - 120°F

Cold Weather

Protect the REC3-30 from damage that can occur when freezing water expands. Freezing water may cause pipes to burst.

Drain all pipes if a prolonged hard freeze is expected. Make sure all valves are open so water can completely drain from the system.

Cold Climate Conditions

In locations where freezing temperatures will be experienced on a regular basis or where very cold temperatures will be incurred, the water treatment system should be drained when the outside ambient temperature drops below freezing and/or the water system (REC3-30) should be housed in a heated structure. The warranty on the water treatment system does not cover damage due to freezing conditions.

Pressure Tank Operation

WARNING: Adding excessive pressure to the pressure tank can cause rupture or explosion. Follow operating instructions to insure safety and to prevent damage to water pump.

Proper pressure tank setting and operation is critical to proper and safe operation of the pump. Do not increase the pressure tank air pre-charge higher than 25-psi. This is calibrated to a pump start pressure of 30-psi.

Check tank pressure every six months with a high-quality digital or radial pressure gauge.

Check tank pre-charge air pressure ONLY with the system depressurized. A slight reduction in air pressure (2-4-psi) is normal over one year's time. Replace tank if pressure has dropped to less than 15-psi over one year's time.
Replace tank immediately if external corrosion becomes apparent. Compressed air and/or water may escape or blow out through a damaged tank wall.

System Operating Pressures Are As Follows:

Pressure tank air pre-charge - 25-psi
Pump start pressure - 30-psi
Pump stop pressure - 50-55-psi
Pump typical operating pressure - 40-45-psi
Pump shut down safety pressure - 5-psi

NOTE: Pressure switch turns pump on when pressure drops to 30-psi. Flow switch turns pump off when flow demand drops below 3-gpm.

If discharge pressure drops below 5-psi for 3 or more seconds, pump will shut down and register a fault condition - red blinking light.

Centrifugal Pump

Your centrifugal pump is been quality-built and engineered to give you efficient, dependable service. The advanced design uses a single speed motor which reduces operation and maintenance to simple, common-sense procedures.

Pump Operation

WARNING: Do not touch pump, pump motor, water or discharge piping when the pump is connected to electrical power. Do not handle a pump or pump motor with wet hands or when standing on a wet or damp surface or in water. Never touch a pump or discharge piping when a unit is operating or fails to operate. Always disconnect the pump cord (power) before handling.

AVERTISSEMENT: Ne pas toucher les pompes, les moteurs de pompe, les canalisations d'eau ou les tuyaux de refoulement lorsque les pompes sont connectées au réseau électrique. Ne pas manipuler une pompe ou un moteur de pompe avec les mains mouillées ou lorsque vous vous tenez sur une surface mouillée ou humide, ou encore dans l'eau. Ne jamais toucher une pompe ou la tuyauterie de sortie pendant qu'une machine est en marche ou ne fonctionne pas correctement. Toujours débrancher le cordon de la pompe (alimentation) avant la manutention

1. The shaft seal depends on water for lubrication.Do not operate the pump unless there is water. Dry running (pump not pumping water) will cause seal-damage and eventual pump failure. Dry-run damage is not covered by warranty
2. The pump motor is equipped with an automatic reset thermal protector switch.This means if the temperature in the motor should rise to an unsafe level, the thermal protector will cut off power to prevent damage to the motor. When the motor has cooled sufficiently, the thermal protector will reset automatically and restart the motor. If the thermal protector trips repeatedly the pump should be removed and checked for the cause of the difficulty. Low voltage, long extension cords, clogged impeller, very low head or lift, etc., could cause cycling. Cycling of the thermal protector will cause eventual motor burnout.

Pump Operating Logic

Pump operation is activated by any system flow demand, e.g.

1. Flow to pressure washer or other cleaning operation through pressure washer outlet or utility outlet.
2. Recirculation of storage tank water
3. Backwash of ZCF filters (if so equipped)
4. Discharge of excess water from storage tank

Pump controls are designed to maintain a higher average operating pressure and to minimize on/off cycling for improved motor life.

NOTE: Tank water level float switches **DO NOT** control pump start operation. Float switches can stop the pump to prevent it from operating without water.

AUTOMATIC OPERATION PUMP CYCLING
Low pressure start, low flow stop

1. When system is fully pressurized, the hydro-pneumatic tank can deliver approximately 1.5 gallons of water without pump operation. As flow demand continues, system pressure drops.
2. When system pressure drops to 30-psi, pressure switch PS-1 signals pump to start. Pump will continue to run as long as there is a flow demand of at least 3-gpm. *Pump discharge pressure can vary between 35-psi to 55-psi depending on actual water demand.*

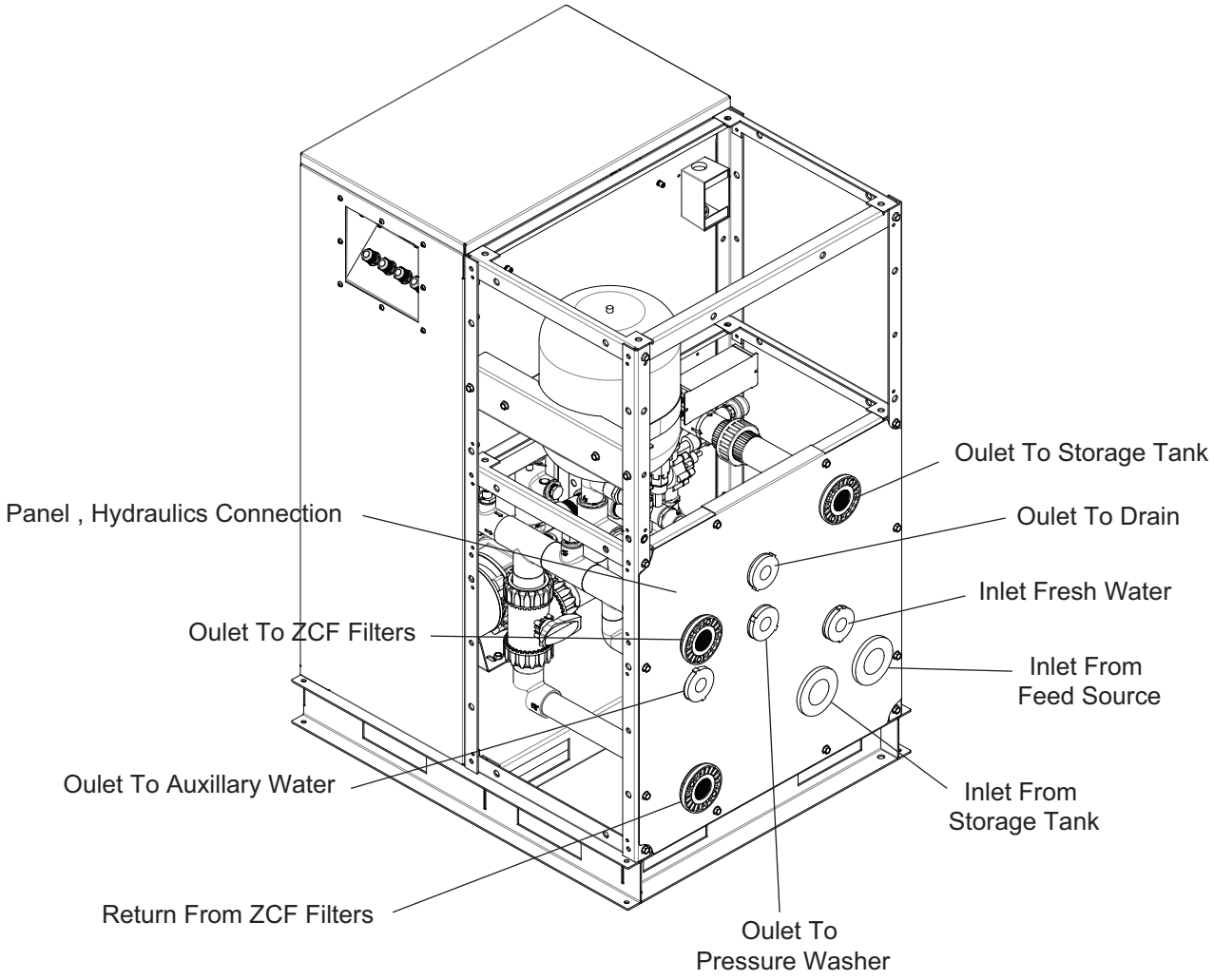
3. When flow demand drops below 3-gpm for longer than 3-seconds, flow switch FS-1 signals pump to stop. System pressure should be >50-psi. Pump will start and stop automatically when operating within these normal set points.

FAILURE SAFETY SHUT DOWN 4. If any situation occurs that causes system pressure to drop below 10-psi for longer than 3-seconds, pressure switch PS-2 signals pump to shut down and NOT restart. Pump fault red indicator light will flash. If a pump fault occurs, on/off switch must be cycled to the OFF position, then ON to restart.

NOTE: if the cause of the fault condition has not been corrected, the pump will attempt to start and will shut down again.

WARNING: Repeatedly attempting to restart the pump without correcting the cause of shut down can cause damage to the pump or other system components and is not covered by the warranty. **Consult trouble-shooting guide in this manual to assist in resolving pump fault issues.**

Rear Piping Connection Panel



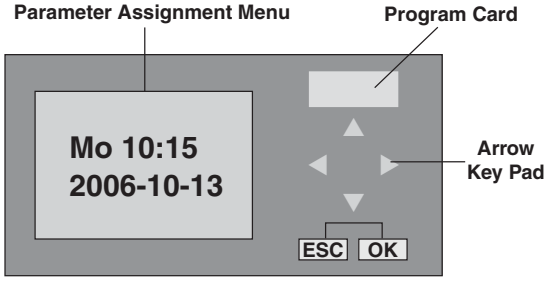
Digital Timer Instructions

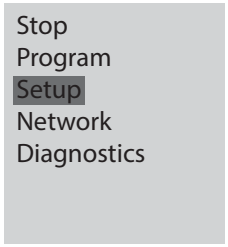
Parameter Settings

The following are instructions on how to set the parameters on the digital timer in Programming Mode. To define these settings please follow the steps below.

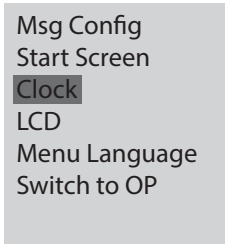
Setting the Clock:

1. Press the ESC key located next to the display window and under the arrow key pad to access the Parameter Assignment Menu.

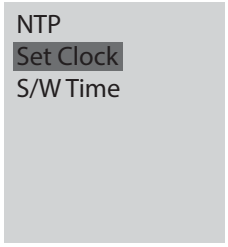




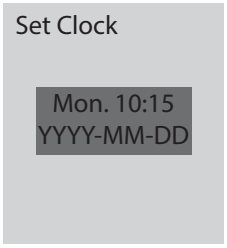
2.Using the up/down arrow keys s or t, move the cursor to highlight ‘Setup’ and press OK to accept.



3.Move the cursor to highlight ‘Clock’ and press OK to accept.



4.Move the cursor to highlight ‘Set Clock’ and press OK to accept.



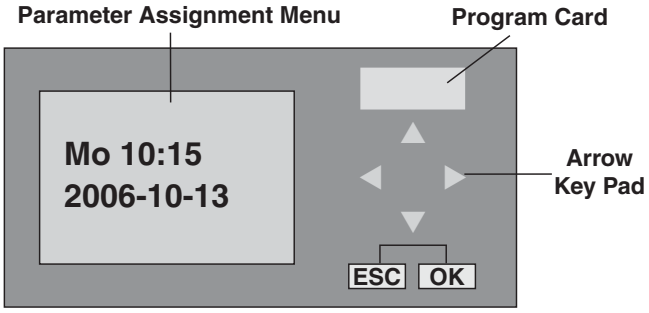
NOTE: When setting time on clock, use only military time.

5.Move the cursor to the value wanting to be changed using the left/right arrow keys ◀ or ▶, and change the value by using the up/down arrow keys s or t. When you are done setting the time and date press OK to accept your changes.

6. Press ESC three times to exit to the main menu.

Setting water circulation times and ozone treatment for machines with option:

1. Press the ESC key located next to the display window and under the arrow key pad to access the Menu.



2. Using the up/down arrow key ▲ or ▼, move thecursor to highlight ‘Program’ and press OK to con-firm.

Stop
Program
Setup
Network
Diagnostics

3. Using the up/down arrow key ▲ or ▼, move the cursor to highlight ‘Set Parameter’ and press OK to confirm.

Set Parameter
Prog Name

4. The display window will display the Timers. The display window shows RECIRC TIMER comes factory set at 14:00 and 16:00, so water will circulate or be treated with Ozone, between14:00 and 16:00 Monday thru Friday. Highlight the RECIRC TIMER to change and press OK. The RECIRC TIMER can be set for three time periods per day (two more time periods are available). Caution: the RECIRC TIMER is the only timer that should be adjusted.

PUMP DELAY
15 SEC COUNT
15 SEC PUMP
SHTDWN DELAY
FLT LAMP TRIG
RECIRC TIMER

5. Highlight the On1 field and press OK to edit the value.Use the left/right arrow keys ◄ or ►, move the cursor to the used the up/down arrow keys ▲ or ▼to change this value. Each timer has optional units of time in seconds (s), minutes (m), and hours(h). Change the unit of time using the arrow up/down keys ▲ or ▼. Once all values have been set press, OK to accept and ESC to return to the Timer selection menu.

RECIRC TIMER
D1= MTWTF
ON1=14:00
OFF1=16:00

Environmental

To reduce deterioration of equipment it is recommended that the REC3-30 Water Treatment System be protected from environmental elements such as rain, snow, hail, direct sunlight, as well as freezing temperatures.

Maintenance Instructions

Regular maintenance is important for your system to function consistently and properly. Maintenance frequency depends on many factors, such as usage, water quality, etc. On-site personnel should be trained and be aware of the maintenance that is required to meet these performance factors.We recommend the following:

Daily Schedule:

(Performed by customer personnel)

1. Become familiar with the control panel and make sure that the electrical switch is in the ON position. This will allow your system to operate automatically.
2. While operating the system, observe and repair any water leaks.
3. Respond to any pump failure fault indication.

Weekly Maintenance Schedule: (Performed by customer personnel)

1. Check pressure gauge inside of REC3-30 to ensure it is operating between pressures of 30 and 55 psi.
2. Check storage tank water quality.
3. Check pump for any function abnormalities, i.e.: noise changes, increased vibrating, or rattling.

Pump Maintenance

WARNING: Before attempting to service, disconnect power from unit. Do not handle the pump with wet hands or when standing on a wet or damp surface or in water. Failure to follow precautions can result in personal injury and /or property damage.

AVERTISSEMENT: Toujours débrancher l'alimentation avant d'effectuer des opérations d'entretien sur la machine. Ne pas manipuler la pompe avec les mains mouillées ou lorsque vous vous tenez sur une surface mouillée ou humide, ou encore dans l'eau. Le non-respect des précautions peut mener à des lésions corporelles et/ou des dommages à la propriété.

NOTE: Only qualified electricians or service personnel should attempt to repair this unit. Improper repair and/or assembly can cause an electrical shock hazard.

1. Bearings in this unit are pre-lubricated. No additional lubrication is necessary.
2. Periodically check and clean the upstream infeed tank/sump/pit of accumulated sludge, debris or floating oil and grease. Make sure that any pump suction protection screening is free from clogging. Failure to perform this maintenance can result in major system malfunction and/or damage.
3. Disassembly of the motor prior to expiration of the warranty will void the warranty. It may also cause internal leakage and damage to the unit. If repairs are required, return the pump to a local service station.
4. If the motor has been disassembled or the switch-chamber opened after the warranty expiration date, the O-rings and gaskets must be replaced. Care must be taken to assure that the seals, the switch cover and gaskets do not leak.
5. The pump should be checked for proper operation monthly by watching the operation of the pump pressure on/off cycling. If anything has changed since the pump was new, the pump should be examined, and repaired if necessary.

SYMPTOM	POSSIBLE CAUSES	SOLUTION(S)	ADDITIONAL INFO
PUMP WON'T START OR ATTEMPT TO START	Infeed tank/sump low water float switch AND storage tank low water float switch in the down position.	Refill tanks	Pump will not even attempt to start unless one of the two tanks has sufficient water to raise low water float switch
	Low voltage	Check voltage and restore proper power	
	No power	Restore power	
	Start switch in the OFF position	Reset switch to ON	
	Float switch(es) stuck in DOWN position	Free float switch(es)	
	Defective pump motor	Have pump serviced by trained technician	
	Defective float switch	1. Test switch contacts for proper open/close operation. Replace if necessary.	
PUMP STARTS BUT SHUTS DOWN QUICKLY	Pump has lost prime	Reprime through pump discharge priming port	
	Pump suction damaged, leaking air in	Repair any damage to pump suction piping	
	Inlet isolation valve(s) from infeed and/or storage tanks shut	Open valve to allow flow from tanks to pump inlet connections	

Troubleshooting

SYMPTOM	POSSIBLE CAUSES	SOLUTION(S)	ADDITIONAL INFO
PUMP WON'T START OR ATTEMPT TO START	Infeed tank/sump low water float switch AND storage tank low water float switch in the down position.	Refill tanks	Pump will not even attempt to start unless one of the two tanks has sufficient water to raise low water float switch
PUMP WON'T SHUT DOWN	Float switch(es) stuck in UP position	Free float switch(es)	
	Flow switch stuck in closed position	1. Clean or replace flow switch 2. Test switch contacts for proper open/close operation. Replace if necessary.	
	Flow demand	Check for flow demand throughout the piping delivery system	
	Defective float switch	1. Test switch contacts for proper open/close operation. Replace if necessary.	
PUMP RUNS BUT DELIVERS POOR PERFORMANCE	Pump suction piping/ strainer clogged with debris	1. Free restriction 2. Improve strainer protection	Pump suction should ALWAYS be equipped with an inlet strainer capable of protecting pump from clogging
	Pump impeller clogged with debris	1. Disassemble pump and clean any debris 2. Add pump suction screening protection if not present	Pump suction should ALWAYS be equipped with an inlet strainer capable of protecting pump from clogging
	Impeller worn	Disassemble pump and install rebuild kit	
PUMP RUNS BUT DELIVERS NO WATER	One of above pump problems AND flow switch contacts are fused closed	Test and/or replace flow switch	
PUMP CYCLES CONSTANTLY OR RAPIDLY	Small leak (i.e. less than 3-gpm) in downstream piping system	Identify leak and repair	
	Pressure tank air charge loss	Check pressure tank bladder integrity. Adjust pre-charge or replace tank if damaged.	When operating properly, pressure tank should be able to deliver at least 1-gallon between high-pressure shutoff and 30-psi

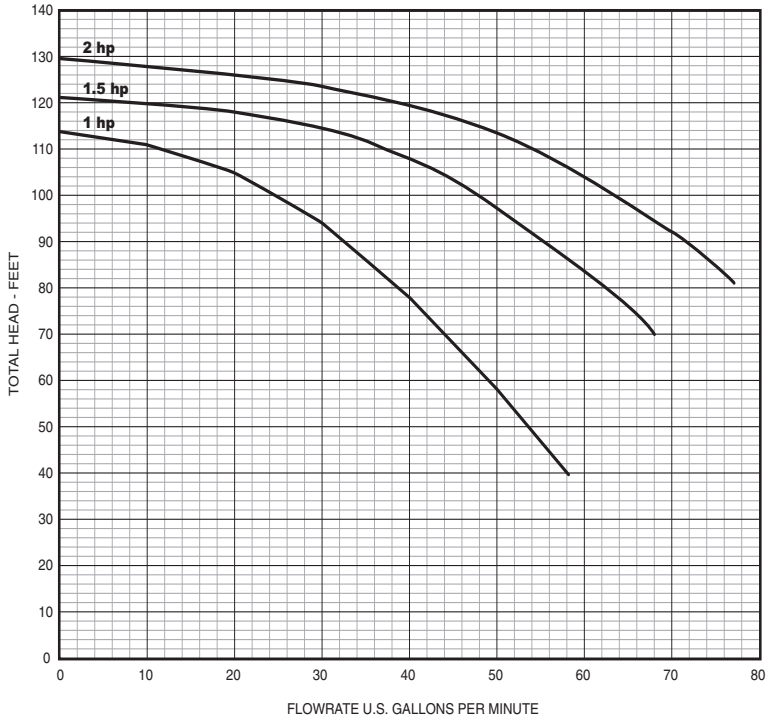
SYMPTOM	POSSIBLE CAUSES	SOLUTION(S)	ADDITIONAL INFO
PUMP MOTOR RUNS HOT AND/OR TRIPS OVERLOAD	Voltage too low	Check operating voltage and amperage while pump is operating	Decreasing operating voltage causes an increase in amperage draw.
	Motor power wiring loose	Check lead connections at junction boxes	
	Motor winding failure	Check winding integrity with megohmeter. Replace motor if failed.	
PUMP LEAKING	Seal wear failure	Have pump serviced, seal replacement	Good time to check impeller wear
	Seal rapid wear failure	Replace seal with silicone-carbide or tungsten-carbide seal	
	Excessive abrassive dirt entering pump	Improve upstream treatment to reduce soil carryover	
SOLENOID VALVES (SV-1, SV2, SV-3) LEAK OR PASS WATER WHEN DE-ENERGIZED	Debris in diaphragm valve seat	Remove diaphragm bonnet and clean	
	Debris in solenoid area	Remove solenoid and clean	
	Solenoid partially unthreaded	1. Thread solenoid all the way in 2. Check for missing/ damaged o-ring and replace if needed	unthreaded solenoid valve will leak water under pressure
	Bleeder valve open	Close bleeder valve by turning clockwise	Open bleeder valve will leak water under pressure
SOLENOID VALVES (SV-1, SV-2, SV-3) WON'T OPEN WHEN ENERGIZED	Debris in solenoid area	Remove solenoid and clean	
	Solenoid coil burned out	Test with ohmmeter and/ or replace and replace	Coil should read between 20 and 60-ohms resistance
	Wires disconnected	Check wiring and reconnect if necessary	
	Output voltage not being sent	Check for 24V output voltage when specific solenoid valve is on call to open	

SYMPTOM	POSSIBLE CAUSES	SOLUTION(S)	ADDITIONAL INFO
PILOT SOLENOID VALVES	Debris in diaphragm valve seat	Remove diaphragm bonnet and clean	
	Debris in solenoid area	Remove solenoid and clean	
	Solenoid partially unthreaded	1. Thread solenoid all the way in 2. Check for missing/ damaged o-ring and replace if needed	Unthreaded solenoid valve will leak water under pressure
	Bleeder valve open	Close bleeder valve by turning clockwise	Open bleeder valve will leak water under pressure
OZONE GENERATOR DOESN'T OPERATE	Timer program setting incorrect	Adjust timer program setting	
	Fuse blown	Check fuses in control panel and in ozone generator power supply	
	Ozone generator unplugged	Plug in	Ozone generator display will light only when powered up

The standard 1.5hp pump is capable of delivering up to 45-gpm @ +/-44-psi (depending on site piping and elevations. An optional 2hp pump is available to deliver up to 60-gpm @ +/-44-psi (depending on site piping and elevations.

Contact your Water Maze equipment supplier for application assistance and ancillary equipment selection.

1.5hp Pump Flows (instantaneous)	+/-GPM
Infeed to storage - NO ZCF filters **	up to 25
Infeed to storage through ZCF filters	up to 20
To pressure washers and auxiliary ##	up to 25
2hp Pump Flows (instantaneous)	+/-GPM
Infeed to storage - NO ZCF filters **	up to 30
Infeed to storage through ZCF filters	up to 25
To pressure washers and auxiliary ##	up to 30
NOTE: Caution to not exceed Infeed to Storage transfer flow rate by excessive outflow	
NOTE: to increase transfer flow rate from infeed to storage, std. 3/8 venturi nozzle must be replaced with 7/16 venturi nozzle.	



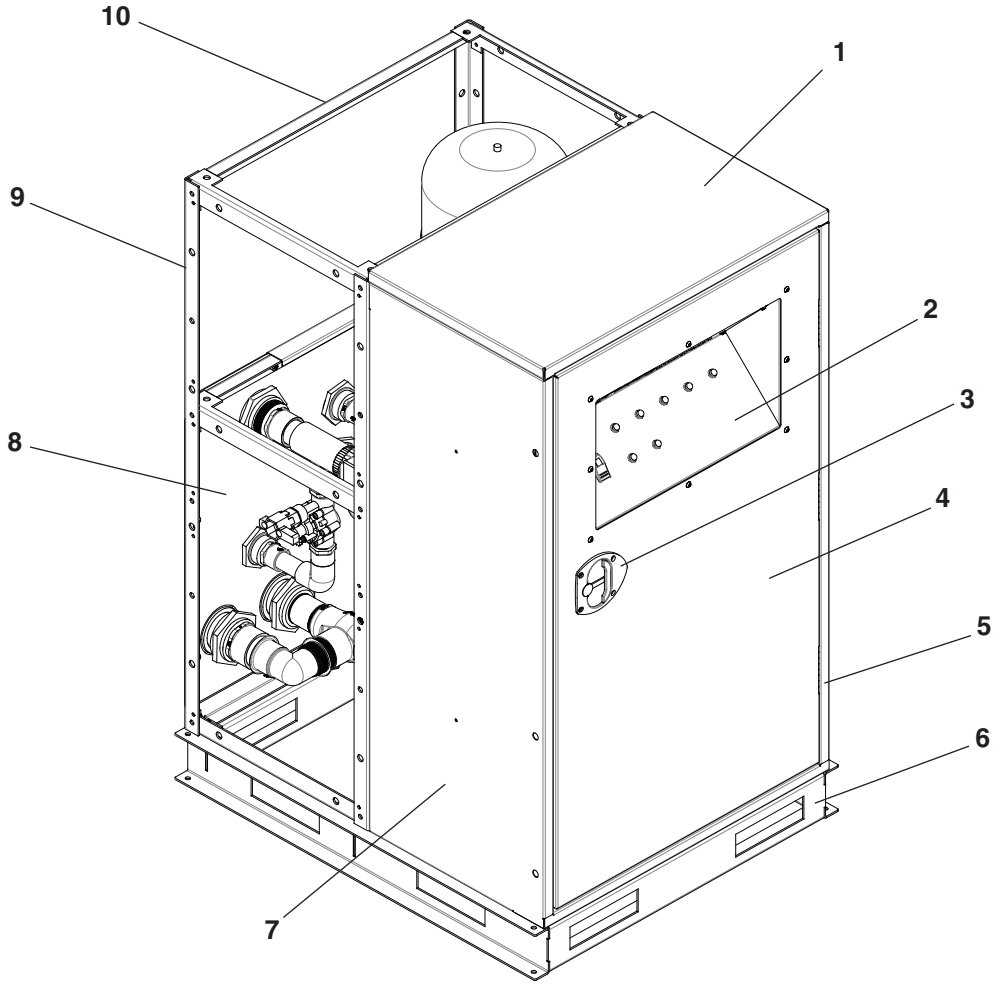
Parts

WATERMAZE REC3-30

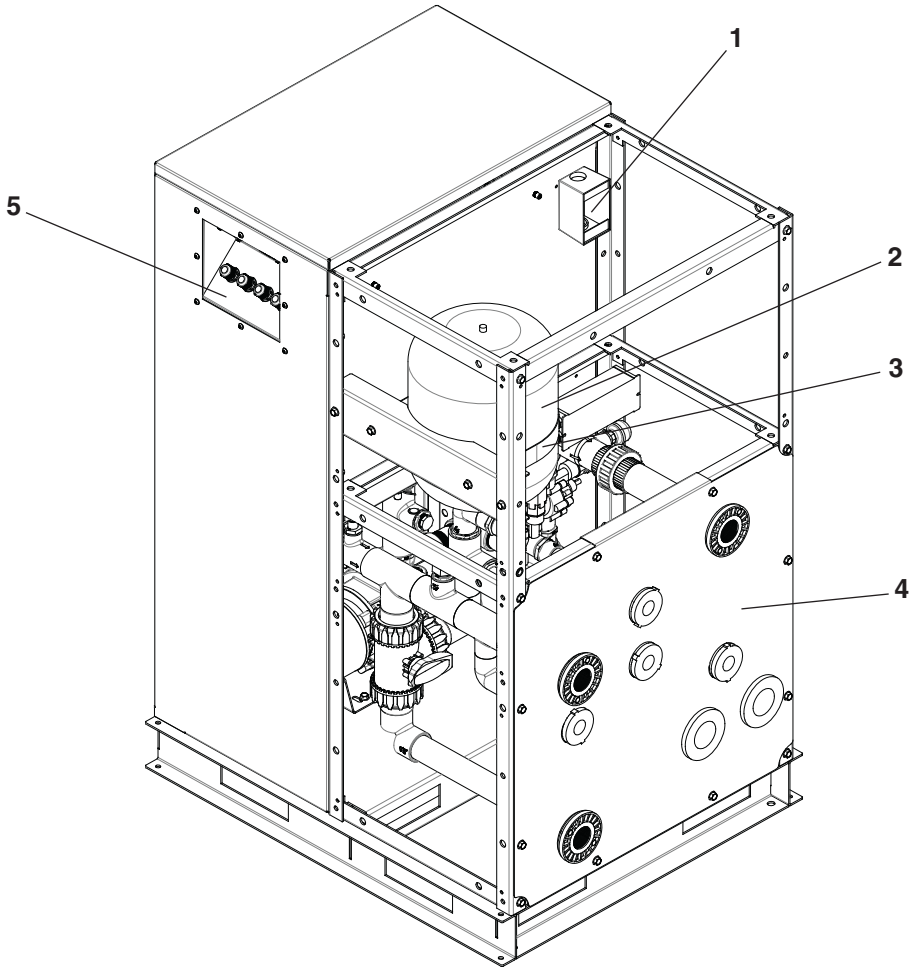
1.103-511.0
REC3-30

1.103-513.0
REC- ZCF3-30A

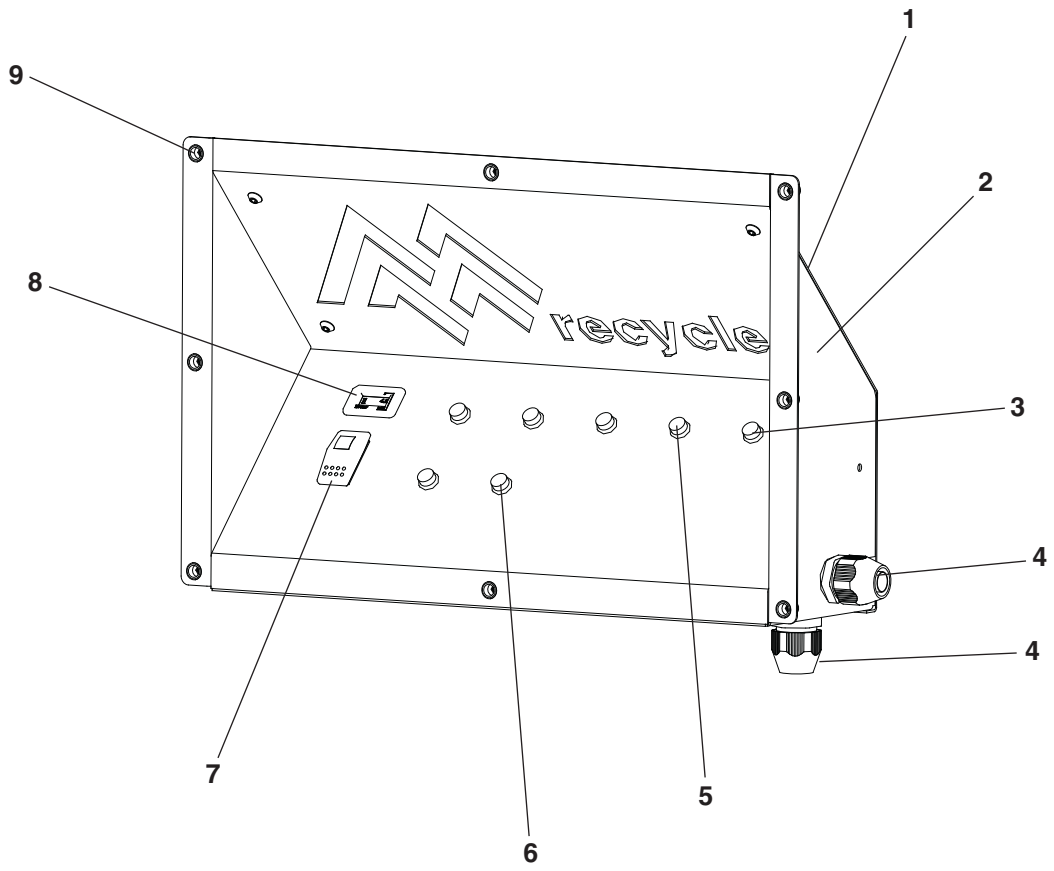
Cabinet Front



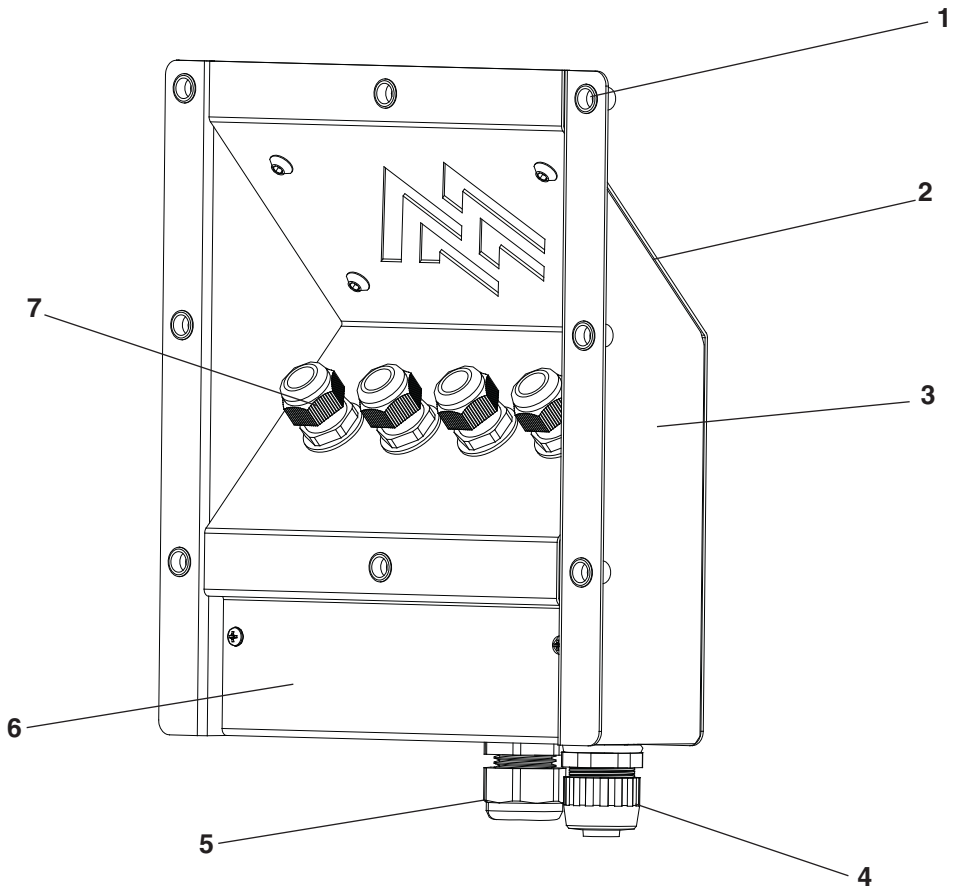
REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.928-503.0	1	PANEL TOP	
2	8.928-492.0	1	WLMT CONTROL PANEL	
3	8.751-128.0	1	HANDLE, LOCKING, VECTOR T HNDL	
4	8.928-497.0	1	ASSEMBLY DOOR	
5	8.928-502.0	1	PANEL RIGHT	
6	8.928-481.0	1	WLMT BASE PLATFORM REC3-30	
7	8.928-501.0	1	PANEL LEFT	
8	8.928-504.0	1	PANEL HYDRAULICS CONNECTION	
9	8.928-494.0	2	ASSEMBLY SIDE FRAME	
10	8.928-493.0	1	FRAME HORIZONTAL	



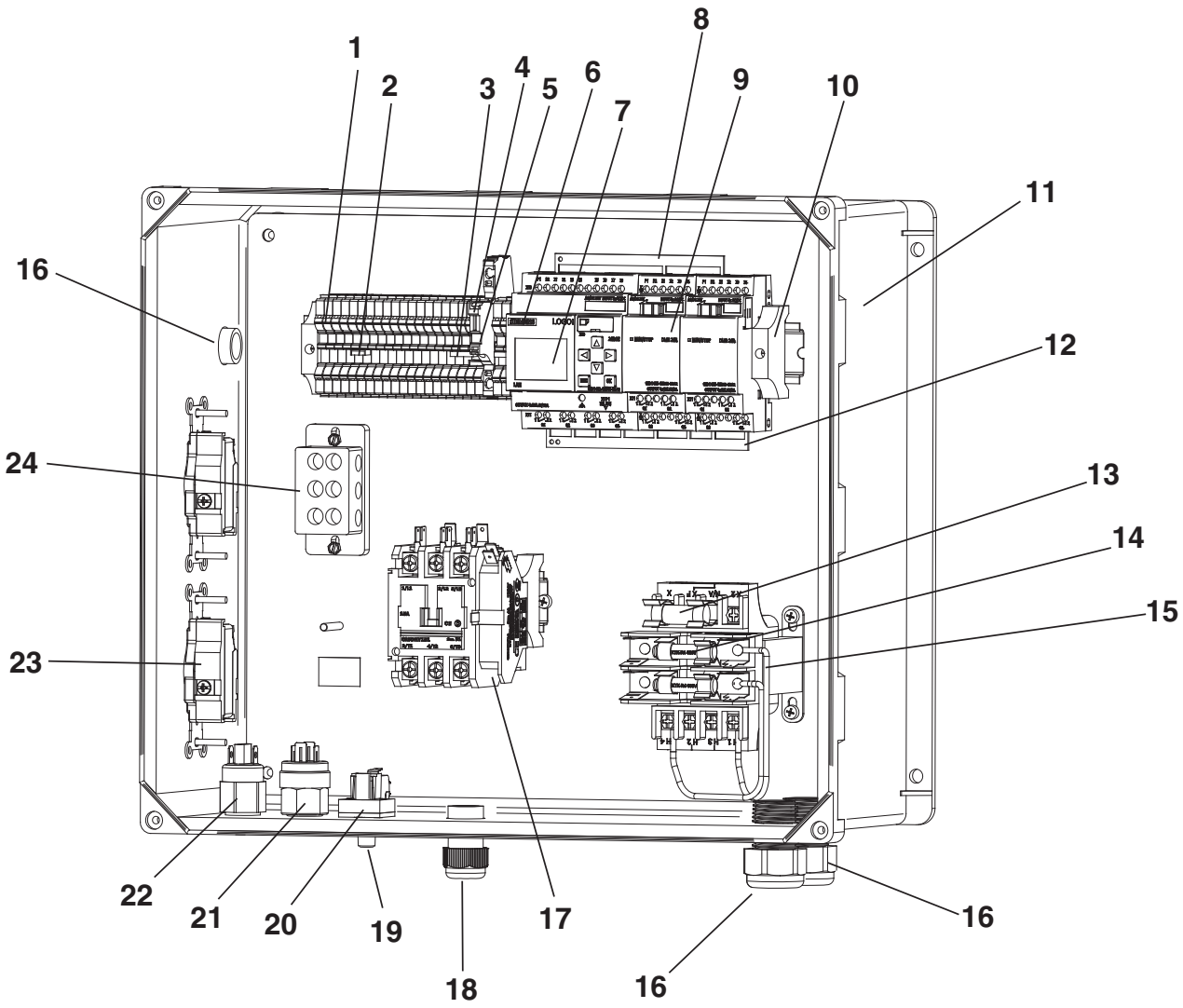
REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.716-321.0	1	BOX, JUNCTION 3 HOLE 1/2	
2	8.719-176.0	1	TANK,4.4GAL PREPRESURIZD,BLUE	
3	8.928-505.0	1	STRAP PRESSURE TANK	
4	8.928-504.0	1	PANEL PIPING CONNECTIONS	
5	8.925-394.0	1	TERMINAL BOX	



REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.928-489.0	1	COVER CONTROL PANEL	
2	8.928-492.0	1	CONTROL PANEL	
3	9.803-652.0	1	LIGHT, INDICATOR, GREEN 28V	
4	8.716-547.0	2	CONNECTOR, 1/2 L/T, STRAIGHT	
5	9.803-651.0	2	LIGHT, INDICATOR, RED, 28V	
6	9.803-650.0	4	LIGHT, INDICATOR, BLUE 28V	
7	8.716-037.0	1	SWITCH, ROCKER	
8	9.802-283.0	1	HOUR METER	
9	8.755-010.0	30	RIVNUT, RIB FLG HD, 1/4 -20	



REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.755-010.0	8	RIVNUT, RIB FLG HD, 1/4 -20	
2	8.928-487.0	1	COVER TERMINAL BOX	
3	8.925-394.0	1	TERMINAL BOX	
4	8.716-547.0	1	CONNECTOR, 1/2 L/T, STRAIGHT	
5	9.802-518.0	1	STRAIN RELIEF 3/4 NPT	
6	9.802-493.0	1	BLOCK, TERMINAL, 16 POLE	
7	9.802-514.0	4	STRAIN RELIEF 1/2 NPT	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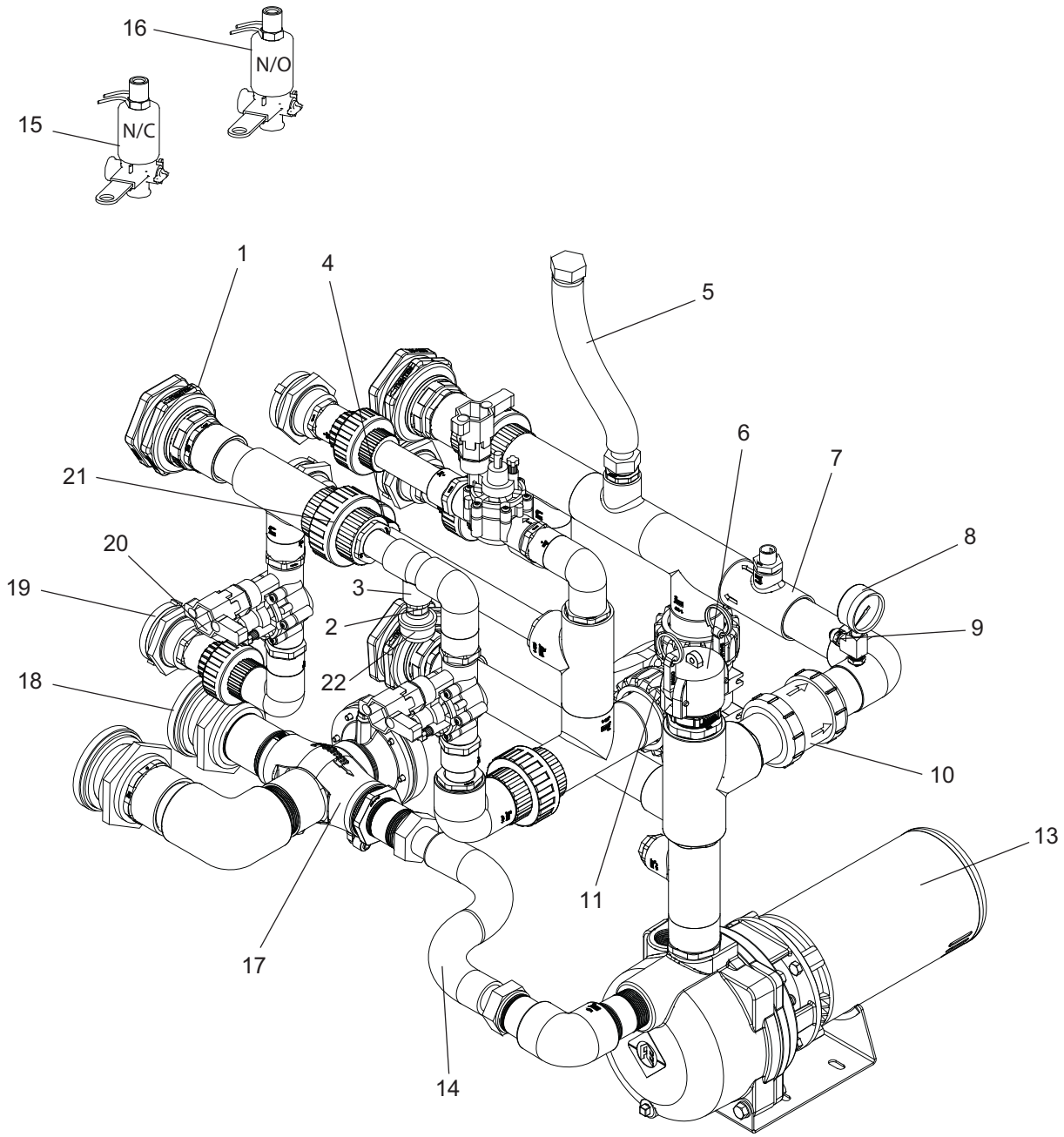
REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.749-976.0	23	TERMINAL BLOCK, FEED-THROUGH	
2	8.749-977.0	2	BAR, JUMPER, PHOENIX FBS 2-5GY GREY	
3	8.749-978.0	1	BAR, JUMPER, PHOENIX FBS 3-5RD RED	
4	8.757-110.0	1	BLOCK FUSE HOLDER DIN MNT	
5	8.757-111.0	1	FUSE 500MA GMA-500-R	
6	8.749-979.0	1	BAR, JUMPER, PHOENIX FBS 3-5BU BLUE	
7	8.756-361.0	1	RELAY, SMART, 24V, 8I/4O, FS	
8	8.921-222.0	1	Q BAR, DUAL EXPANSION TOP	
9	8.755-623.0	2	LOGO EXPANSION MODULE 4I/4O	
10	9.804-595.0	1	END BRACKET, ENTRELEC, 103-002-26	
11	8.716-281.0	1	BOX, PLASTIC,14 x 16 x 6.75 W/HINGED LID	
12	8.921-221.0	1	Q BAR, PLC WITH TWO EXPANSIONS	
13	8.716-199.0	1	FUSE, FNM-6.25	
14	8.716-180.0	2	FUSE, KTK-R4 600V MIDGET FUSE (4 AMP)	
15	8.716-883.0	1	TRANSFORMER,208/230/460V-24/115V,.050KVA	
16	8.716-547.0	3	CONNECTOR, 1/2 LT STRAIGHT	
17	8.724-267.0	1	CONTACTOR, DP C25DNY151TL, 15 AMP	
18	9.802-514.0	1	STRAIN RELIEF, LT STR 1/2 NPT	
19	8.757-116.0	3	CONNECTOR 1/4 TUBE X 1/8 FPTF	
20	8.757-128.0	1	SWITCH VACUUM 6 Hg	
21	8.756-767.0	1	SWITCH PRESSURE N/O 10 PSI	
22	8.757-127.0	1	SWITCH PRESSURE N/C 30 PSI	
23	8.757-123.0	2	RECEPTACLE SINGLE 120V 15A	
24	8.714-512.0	1	TERMINAL BLOCK-3 POSTION	


16
N/O
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N/C
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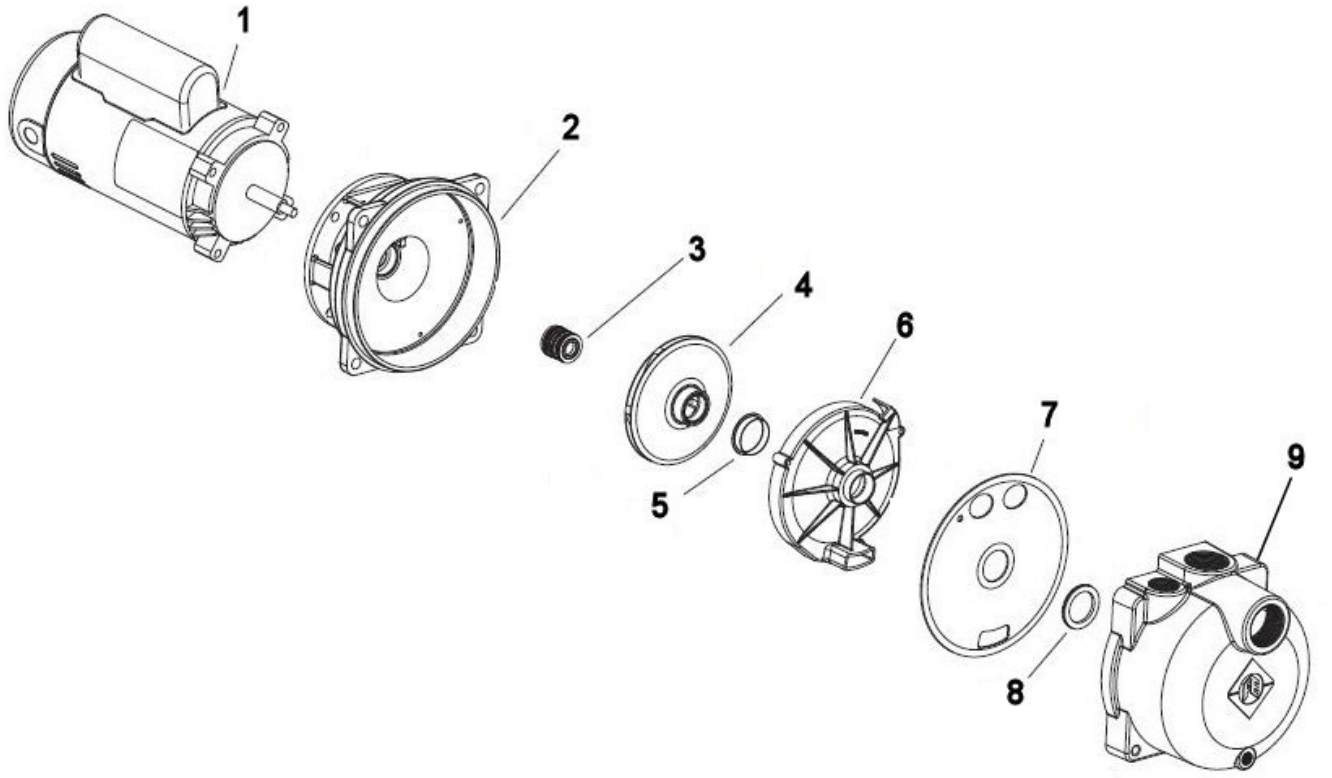
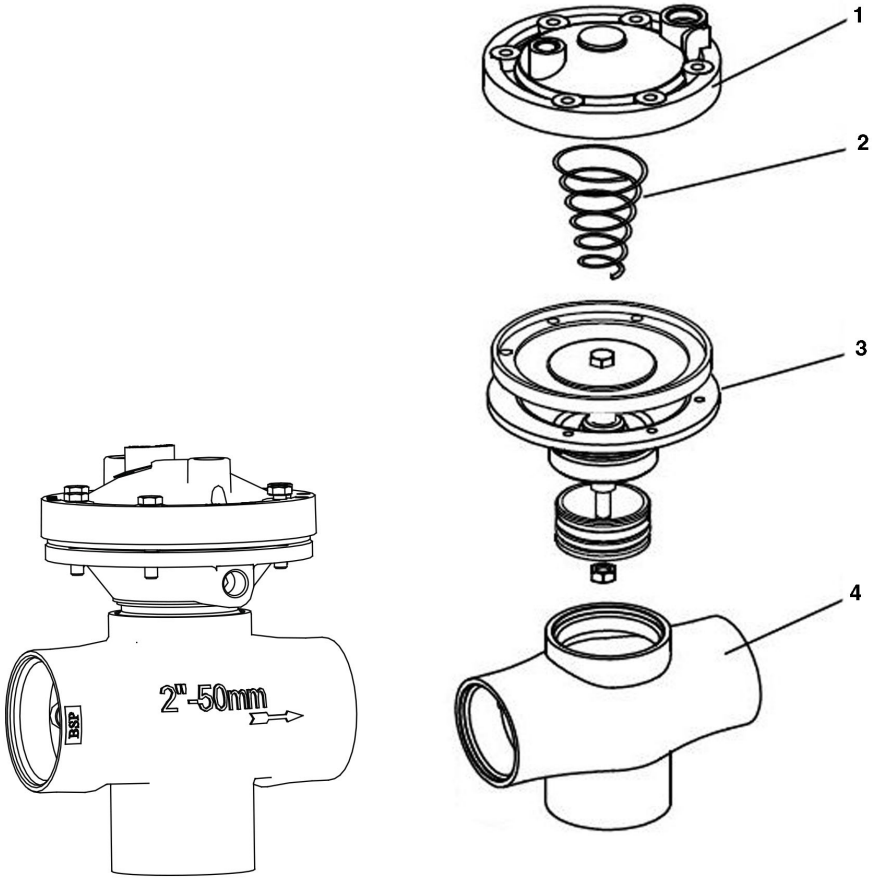
REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.706-490.0	4	BULKHEAD, 1-1/2 POLYPRO	
2	8.757-172.0	1	VALVE 1/2 MPT X 1/2 MPT CHECK KNYNAR	
3	8.757-140.0	1	TEE 1 X 3/4 VENTURI W/ 3/8 NOZZLE PVC 40	
4	8.756-761.0	1	CONNECTOR 1/4 TUBE X 1/8 MPTF	
5	8.757-117.0	1	CONNECTOR 3/4 X 12-8 FLEX SS	
6	8.757-369.0	1	COUPLING, 1-1/2 CAP CAM LEVER	
7	8.757-126.0	1	SWITCH 3/4 FLOW 1-1/2 TEE GRAY PVC	
8	8.712-154.0	1	GAUGE, PRESSURE 0-100 1/4 NPT	
9	8.706-858.0	1	TEE, 1/4 STREET BRASS	
10	8.757-131.0	1	VALVE SPRING CHECK 1-1/2 SOC X SOC PVC	
11	8.757-130.0	1	VALVE BALL 1-1/2 3-WAY PVC TU	
12	8.706-469.0	3	UNION,1 1/2' SLIP X SLIP,PVC 80	
13	8.757-122.0	1	PUMP 1-1/2 HP 115/230V 1PH FRANKLIN	
14	8.756-771.0	1	CONNECTOR 1-1-2 X 18 FLEX SS	
15	8.757-134.0	1	VALVE 3-WAY SOLENOID 24V N/C	
16	8.757-133.0	1	VALVE 3-WAY SOLENOID 24V N/O	
17	8.757-132.0	1	VALVE 2 DIVERSION	
18	8.706-479.0	2	BULKHEAD, 2' NPT, POLYPRO	
19	8.706-484.0	2	BULKHEAD, 1 , POLYPRO	
20	8.716-697.0	3	SOLENOID, WATER MAZE, PVC 24V P/N 100DVF	
21	8.706-597.0	5	UNION, 1 , S X S, PVC 80	
22	8.707-061.0	1	STRAINER, 1/2 BASKET	



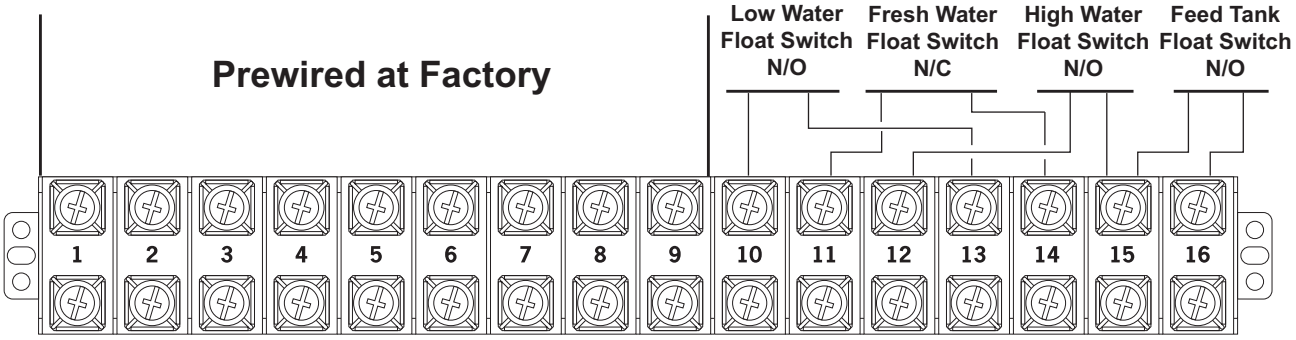
REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.757-601.0	1	MOTOR, 1.5 HP 1PH 230V FRANKLIN	
2	8.757-606.0	1	BRACKET, MOTOR	
3	8.757-600.0	1	SEAL, MECHANICAL	
4, 5, 6	8.757-599.0	1	KIT, IMPELLER / WEAR RING / DIFFUSER	
7, 8	8.757-598.0	1	KIT, DIAPHRAGM / GROMMET	
9	8.757-607.0	1	CASE, PUMP	

BRAND	MODEL NO.	SIZE INLET OUTLET	AMPS	VOLTS	PHASE	MAX GPM, PSI
FRANKLIN	FTB15CI	1-1/2 1-1/2	9	230	1	45 GPM X 44 PSI

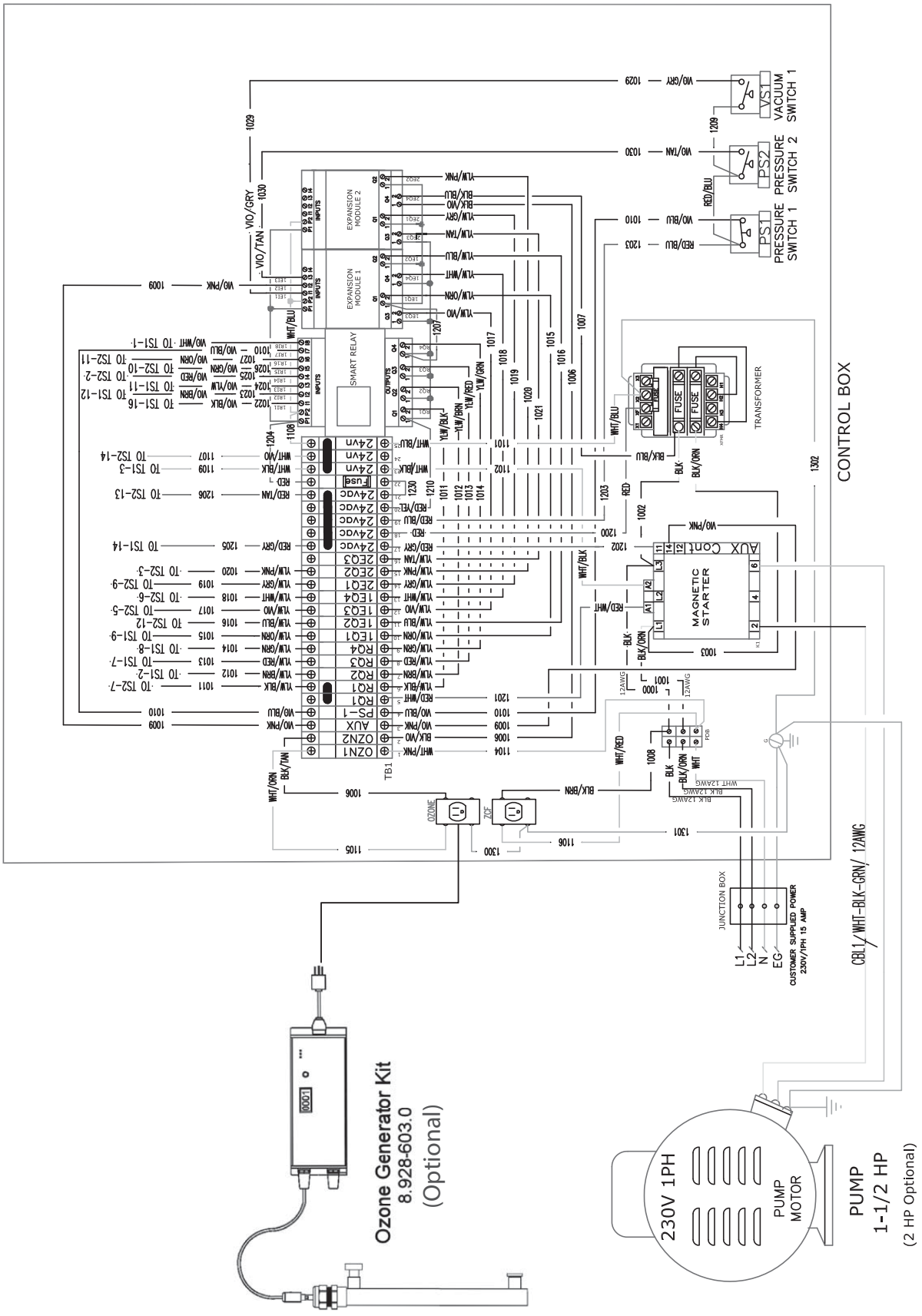


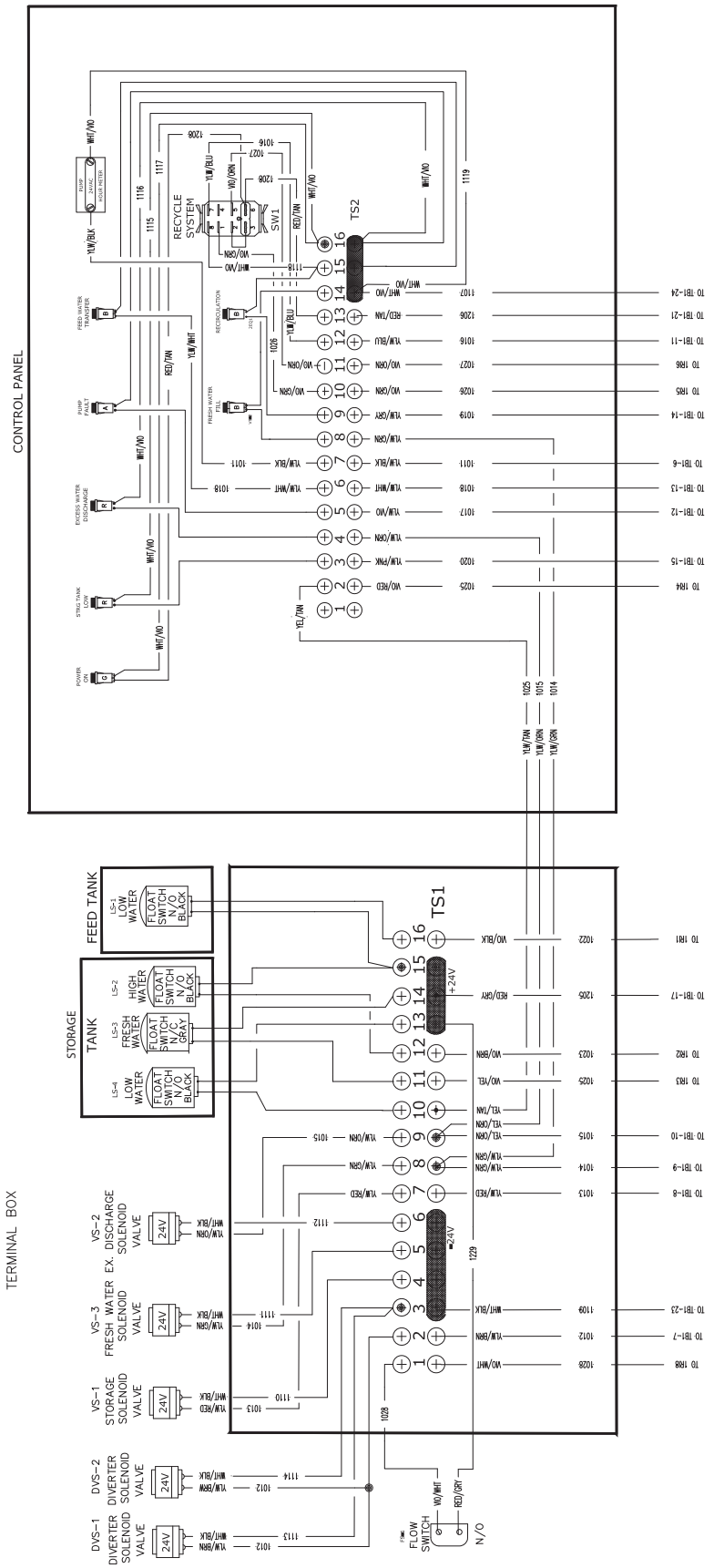
REF	PART NO.	QTY	DESCRIPTION	NOTES
1	8.757-602.0	1	BONNET, DOROT VALVE	
2	8.757-603.0	1	SPRING, DOROT VALVE	
3	8.757-604.0	1	KIT, DIAPHRAGM/ACTUATOR DOROT	
4	8.757-605.0	1	BODY, BRASS DOROT VALVE	

MODEL NO.	SIZE INLET OUTLET	MAX TEMPERATURE	MAX GPM, PSI
51	2 2	140F	50 GPM @ 150 PSI



Bottom prewired at factory


CONTROL BOX
VS1 VACUUM SWITCH 1
PS2 PRESSURE SWITCH 2
PS1 PRESSURE SWITCH 1
EXPANSION MODULE 2
EXPANSION MODULE 1
SMART RELAY
TRANSFORMER
MAGNETIC STARTER
AUX Cont.
JUNCTION BOX
L1
L2
N
EG
CUSTOMER SUPPLIED POWER 230V/1PH 15 AMP
CBL1/WHT-BLK-GRN/ 12AWG
Ozone Generator Kit
8.928-603.0
(Optional)
230V 1PH
PUMP MOTOR
PUMP
1-1/2 HP
(2 HP Optional)


CONTROL PANEL
TERMINAL BOX
RECYCLE SYSTEM
SW1
TS2
TS1
FEED WATER TRANSFER
RECIRCULATION
PUMP FAULT
FRESH WATER FILL
EXCESS WATER DISCHARGE
STRG TANK LOW
POWER ON
PUMP 24VAC HOUR METER
FEED TANK
LS-1 LOW WATER FLOAT SWITCH N/O BLACK
STORAGE TANK
LS-2 HIGH WATER FLOAT SWITCH N/O BLACK
LS-3 FRESH WATER FLOAT SWITCH N/C GREY
LS-4 LOW WATER FLOAT SWITCH N/O BLACK
VS-2 EX. DISCHARGE SOLENOID VALVE
VS-3 FRESH WATER SOLENOID VALVE
VS-1 STORAGE SOLENOID VALVE
DVS-2 DIVERTER SOLENOID VALVE
DVS-1 DIVERTER SOLENOID VALVE
24V
+24V
FLOW SWITCH
N/O
TO TB1-24
TO TB1-21
TO TB1-11
TO TR6
TO TR5
TO TB1-14
TO TB1-6
TO TB1-13
TO TB1-12
TO TR4
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TO TR1
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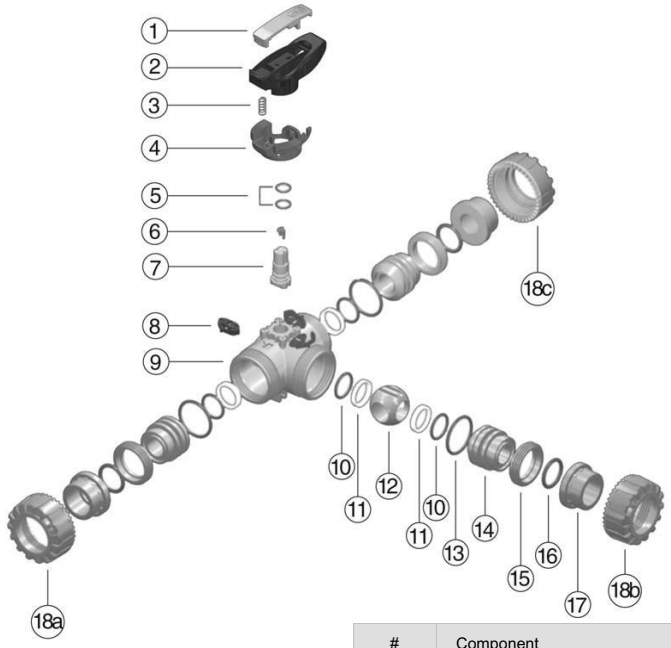
TO TB1-9
TO TB1-8
TO TB1-23
TO TB1-7
TO TR8

TKD Series 3-Way Ball Valves

Components



Optional Feature
Locking Handle Kit

#	Component	Material	Qty
1	insert	PVC	1
2	handle	HI-PVC	1
3	spring (SHKD)	Stainless Steel	1
4**	safety handle block (SHKD)	PP-GR	1
5*	stem o-rings	EPDM / FPM	2
6	position indicator	POM	1
7	stem	PVC / CPVC	1
8	Dual Block®	POM	3
9	body	PVC / CPVC	1
10*	support o-ring for ball seat	EPDM / FPM	4
11*	ball seat	PTFE	4
12	ball	PVC / CPVC	1
13	radial seal o-ring	EPDM / FPM	3
14	support for ball seat	PVC / CPVC	3
15	stop ring	PVC / CPVC	3
16*	socket seal o-ring	EPDM / FPM	3
17*	end connector	PVC / CPVC	3
18abc	union nuts	PVC / CPVC	3

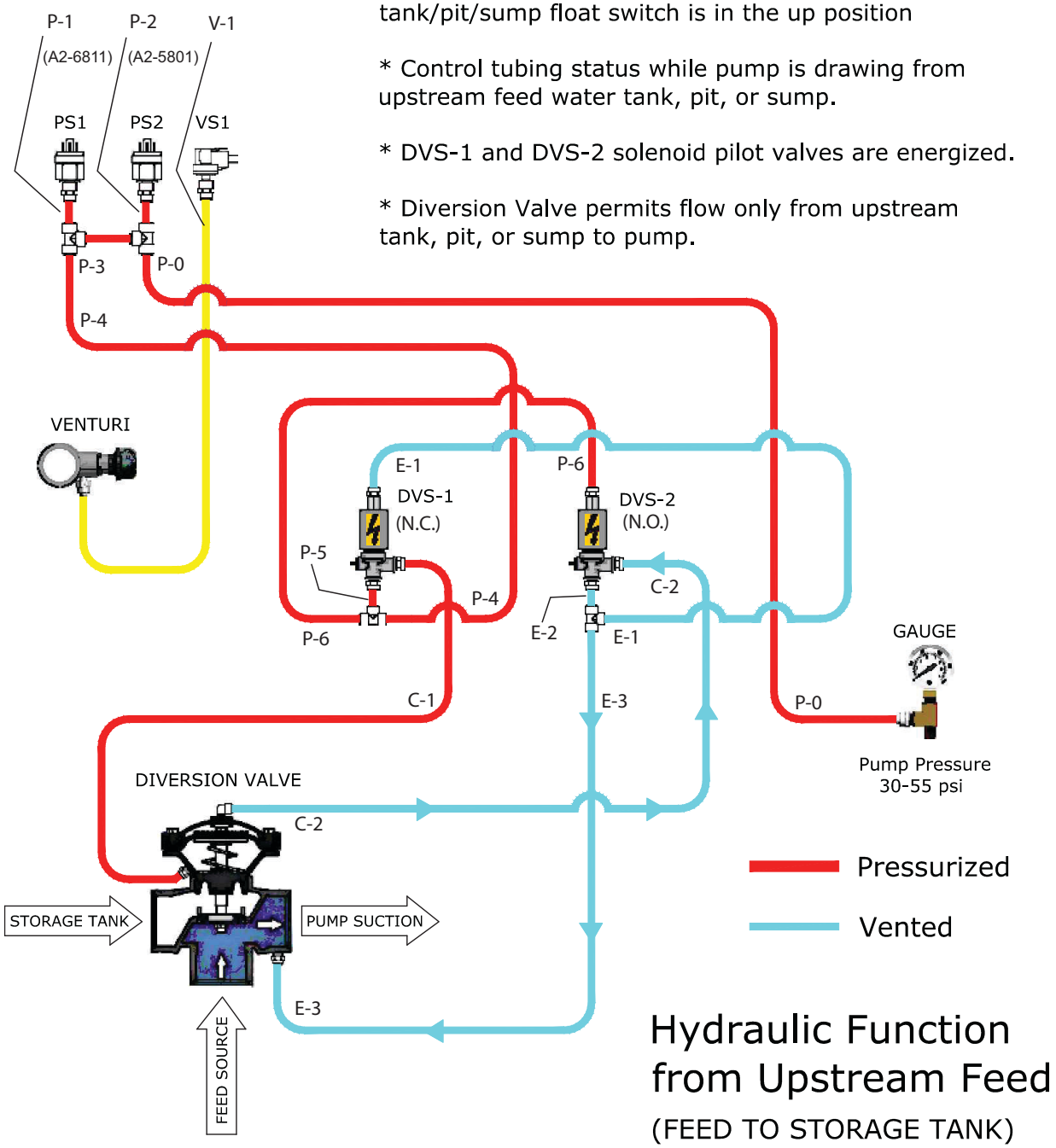
** Spare parts available.*
*** Optional feature*

* This function is initiated when upstream tank/pit/sump float switch is in the up position

* Control tubing status while pump is drawing from upstream feed water tank, pit, or sump.

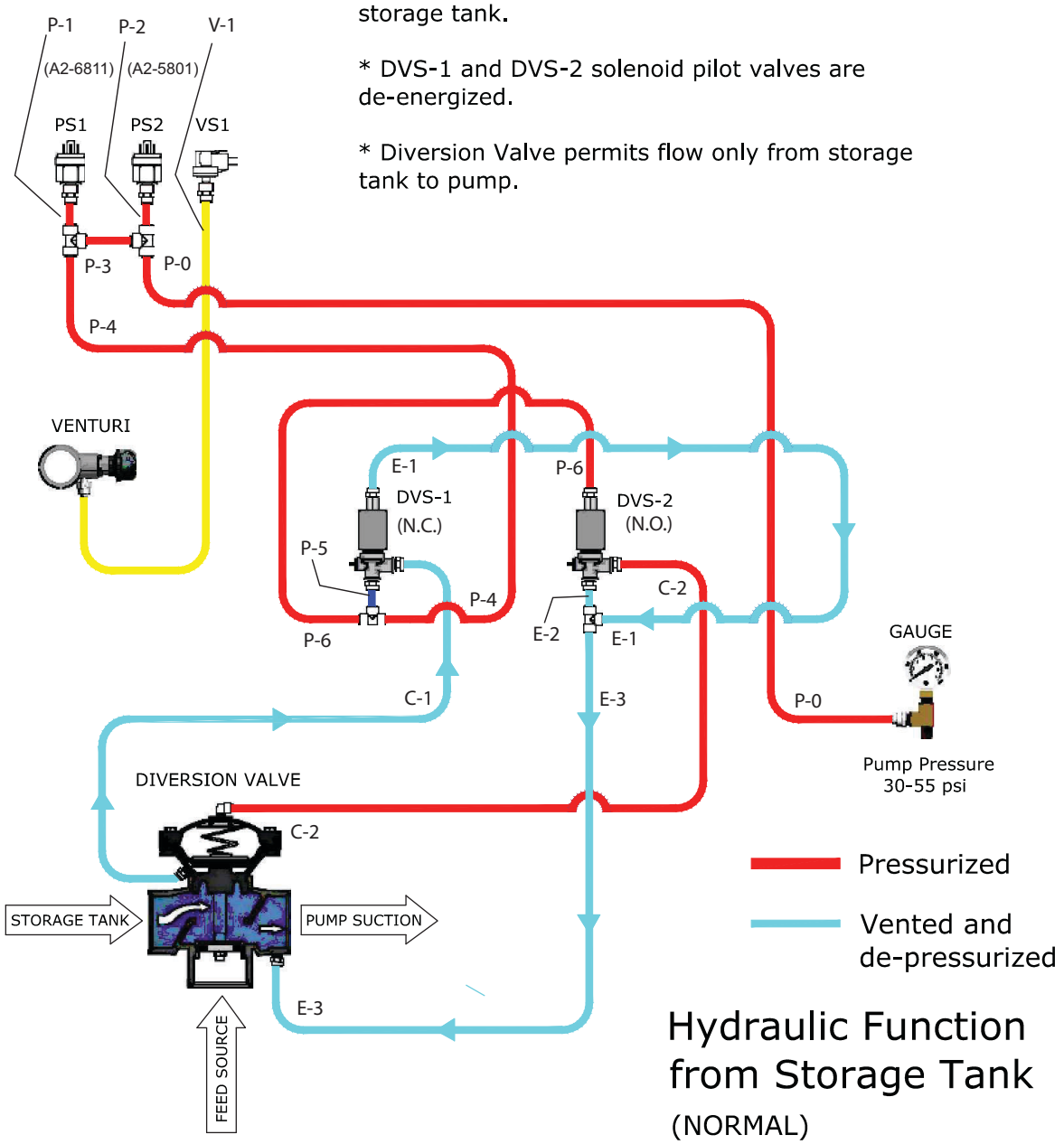
* DVS-1 and DVS-2 solenoid pilot valves are energized.

* Diversion Valve permits flow only from upstream tank, pit, or sump to pump.



Hydraulic Function from Upstream Feed

(FEED TO STORAGE TANK)


* Control tubing status while pump is drawing from storage tank.
* DVS-1 and DVS-2 solenoid pilot valves are de-energized.
* Diversion Valve permits flow only from storage tank to pump.
P-1
P-2
V-1
(A2-6811)
(A2-5801)
PS1
PS2
VS1
P-3
P-0
P-4
VENTURI
E-1
DVS-1
(N.C.)
P-5
P-6
P-4
P-6
DVS-2
(N.O.)
C-2
E-2
E-1
GAUGE
C-1
E-3
P-0
Pump Pressure
30-55 psi
DIVERSION VALVE
C-2
STORAGE TANK
PUMP SUCTION
E-3
FEED SOURCE
Pressurized
Vented and
de-pressurized
Hydraulic Function
from Storage Tank
(NORMAL)

WARRANTY

ACCESSORIES AND PARTS WARRANTY

LIMITED MINIMUM 90 DAY WARRANTY

We warrant to the original consumer that each new part and accessory sold by Watermaze will be free from manufacturing defects in materials or workmanship in normal service for the duration specified by the original component manufacturer with a 90 day minimum from date of purchase, provided it is installed properly and the equipment is maintained in accordance with Watermaze instructions and manuals. Components manufactured by Watermaze such as frames, and handles have a 2 year warranty from date of purchase.

Our obligation under this warranty is expressly limited as to the replacement or repair, at our option, at Watermaze, Aurora, Colorado 80019, or at a service facility designated by us, for such part or parts as inspection shall disclose to have been defective.

EXCLUSIONS:

This warranty does not apply to defects caused by casualty or unreasonable use, including faulty repairs by others and failure to provide reasonable and necessary maintenance.

LIMITATION OF LIABILITY

Watermaze's liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall Watermaze liability exceed the purchase price of the product in question. Watermaze makes every effort to ensure that all illustrations and specifications are correct, however, these do not imply a warranty that the product is merchantable or fit for a particular purpose, or that the product will actually conform to the illustra- tions and specifications. Our obligation under this warranty is expressly limited at our option to the replacement or repair at a service facility or factory designated by us, of such part or parts as inspection shall disclose to have been defective. **THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WRITTEN WARRANTY.** This warranty gives you specific legal rights and you may also have other rights which vary from state to state. Watermaze does not authorize any other party, including authorized Watermaze Distributors, to make any representation or promise on behalf of Watermaze, or to modify the terms, products conforms to local codes, While Watermaze attempts to assure that its products meet national codes, it cannot be respon- sible for how the customer chooses to use or install the product. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

TO OBTAIN WARRANTY SERVICE:

Purchaser must bring the accessory parts to an authorized Watermaze Distributor. For the distributor nearest you consult our web page: www.wmaze.com or write: Watermaze, 6398 N. Karcher Way, Aurora, CO 80019.

LIMITED NEW PRODUCT WARRANTY
WASH WATER / WATER TREATMENT SYSTEMS

WHAT THIS WARRANTY COVERS

All WATER MAZE water treatment systems are warranted by to the original purchaser to be free from defects in materials and workmanship under normal use, for the periods specified below. This Limited Warranty, subject to the exclusions shown below, is calculated from the date of the original purchase, and applies to the original components only. Any parts replaced under this warranty will assume the remainder of the part's warranty period. A 60 day grace period will be given for installation.

ONE YEAR PARTS AND 30 DAY LABOR WARRANTY:

All components excluding normal wear items as described below.

WARRANTY PROVIDED BY OTHER MANUFACTURERS:

Motors, which are warranted by their respective manufacturers, are serviced through these manufacturers' local authorized service centers. *WATER MAZE* cannot provide warranty on these items.

WHAT THIS WARRANTY DOES NOT COVER

This warranty does not cover the following items:

1. Normal wear items, such as seals, filters, gaskets, O-rings, packings, pistons, brushes, filtering media, ozone bulbs, sensors, UV scanners, oil-skimmer belt, impedance sensor. Minor leaks covered first time on original start-up only.
2. Damage or malfunctions resulting from accidents, abuse, modifications, alterations, incorrect installation, improper servicing, failure to follow manufacturer's maintenance instructions, or use of the equipment beyond its stated usage specifications as contained in the operator's manual.
3. Damage due to freezing, sludge build-up, chemical deterioration (oxidation, chloride or fluoride corrosion), and rust.
4. Damage to components from fluctuations in electrical or water supply.
5. Normal maintenance service, including adjustments.
6. Transportation to service center, field labor charges, or freight damage.
7. Consumables and water quality.

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

While not required for warranty service, we request that you register your *WATER MAZE* Product by returning the com- pleted registration card. In order to obtain warranty service on items warranted by *WATER MAZE*, you must return the product to your Authorized *WATER MAZE* Dealer, freight prepaid, with proof of purchase, within the applicable warranty period. If the product is permanently installed, you must notify your Authorized *WATER MAZE* Dealer of the defect. Your Authorized *WATER MAZE* Dealer will file a claim with *WATER MAZE*, who must subsequently verify the defect. In most cases, the part must be returned to *WATER MAZE* freight prepaid with the claim. For warranty service on components warranted by other manufacturers, your Authorized *WATER MAZE* Dealer can help you obtain warranty service through these manufacturers' local authorized service centers.

LIMITATION OF LIABILITY

WATER MAZE'S liability for special, incidental, or consequential damages is expressly disclaimed. In no event shall *WATER MAZE'S* liability exceed the purchase price of the product in question. *WATER MAZE* makes every effort to ensure that all illustrations and specifications are correct, however, these do not imply a warranty that the product is merchantable or fit for a particular purpose, or that the product will actually conform to the illustrations and specifications. Our obligation under this warranty is expressly limited at our option to the replacement or repair at a service facility or factory designated by us, of such part or parts as inspection shall disclose to have been defective. **THE WARRANTY CONTAINED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY WATER QUALITY, MERCHANTABLIITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY LIMITED TO THE DURATION OF THIS WARRANTY**. This warranty gives you specific legal rights and you may also have other rights which vary from state to state. *WATER MAZE* does not authorize any other party, including authorized *WATER MAZE* Distributors, to make any representation or promise on behalf of *WATER MAZE*, or to modify the terms, conditions, or limitations in any way. It is the buyer's responsibility to ensure that the installation and use of *WATER MAZE* products conforms to local codes. While *WATER MAZE* attempts to assure that its products meet national codes, it cannot be responsible for how the customer chooses to use or install the product. Some states do not allow limitations or exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

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