



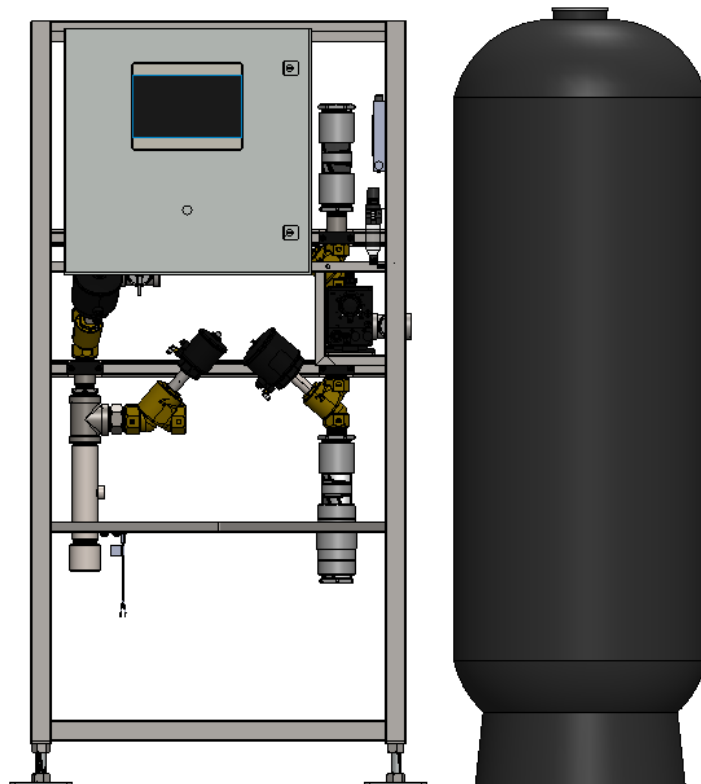
RECLAIM

W A T E R T R E A T M E N T S Y S T E M

Instruction Manual

V 3.0, 5-16-26

For Version 5 Models and Newer



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Introduction

1. Introduction

The manufacturer innovateIT Car Wash Equipment LLC is committed to the continuous improvement of its equipment construction quality and the safe operation of its equipment.

1.1 Warranty

This manual covers the installation, intended use, and maintenance of the Reclaim Water Treatment System. Misuse or improper operation of this device will void the manufacturer's warranty.

The Reclaim System is covered by a 1-year limited warranty from the date of shipment. This warranty shall be void and of no effect if:

1. Any installation defect that was apparent or ascertainable at the time of installation was completed but was not promptly reported to innovateIT Car Wash Equipment LLC.
2. Damage occurs due to the customer's failure to observe any instructions from innovateIT Car Wash Equipment or an authorized distributor and/or requirements of the manufacturer with respect to the product.
3. The breach results from misuse of the equipment as outlined in the instruction manual.

When purchasing through a distributor, please ask about their warranty coverage on the unit.

1.2 Safety Information

The instructions in this manual provide you with the information necessary to install and operate the Reclaim System. Before starting installation, the instruction manual should be carefully read and understood. This relates to all Reclaim System documents from innovateIT Car Wash Equipment.

The basic pre-requisite for safe working is compliance with all the safety and handling instructions stated in this manual. Furthermore, follow all local accident, hazard prevention regulations or general safety regulations when installing and operating the Reclaim System.

The equipment's operation, maintenance, and troubleshooting must only be carried out by trained personnel. Personnel be able to interpret a wiring diagram, use a multimeter to read AC and DC power, and apply Lock Out Tag Out (LOTO) safety procedures specific to the equipment.

Eye protection should be worn at all times when operating the Reclaim System, as the unit includes high pressure water lines and diluted hydrogen peroxide which is a strong oxidizer. Refer to the MSDS sheet specific to the oxidization chemical you are using.

Electrical installation must adhere to local codes and the National Electrical Code, ANSI/NFPA 70 for electrical wiring. To avoid electrical shock hazards, do not operate this device when controller enclosures are open and energized. Electrical power must be shut off and a lock-out procedure utilized to ensure all electrical power is disabled before performing maintenance to any portion of the system.

Plumbing installation must adhere to a local code and Uniform Plumbing Code (UPC), and plumbing connections and drains must adhere to local standards and facility codes.

Do not remove any Caution, Warning, or any other descriptive labels from the Reclaim System. Do not operate this device in an explosive environment or in the presence of flammable materials.

Movement or vibrations during shipment may cause connections to loosen. Check all connections before starting up a unit.

Do not operate this unit in an environment where water temperatures may be below 40°F.

This equipment is intended for installation in ordinary locations, by the National Electrical Code, ANSI/NFPA 70, where the ambient temperature does not exceed 104°F maximum.

innovateIT Car Wash Equipment LLC does not accept liability for accidents or damages due to negligence or disregard for the instructions in this manual. Also, the Company does not accept liability for damages due to improper use of the equipment.

This instruction manual should always be kept in a safe and easily accessible place near the equipment's site of installation and operation, and be available for the operator at the user site at any time.

If the manual is damaged, lost, or misplaced, you should immediately request a new copy from innovateIT Car Wash Equipment LLC.

1.2.1 Notifications & Symbols



DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTE

NOTE is used to address practices not related to physical injury.

System Overview

2. System Overview

Reclaim Water Treatment Systems are essential for significantly reducing municipal water consumption of a car wash. The systems use a submerged water pump to take waste water from a clarifying tank and perform a series of processes designed to reclaim water. The processes include:

1. Aeration of water
2. Chemical dosing
3. Mechanical filtering
4. Recirculation
5. Storage of treated reclaim water for reuse in the wash

These processes remove contaminants, oils, and chemicals from used water, making it safe for reuse in certain stages of the car wash process. This treatment is essential for maintaining high standards of wash quality and preventing damage to vehicles and wash equipment.

Reclaim water has a higher Total Dissolved Solids (TDS) than municipal water, so it is ideal for use early in the wash process and on areas of the car that are less sensitive to water spotting (underbody, wheel blasters and car sides below the windows).

By recycling water, the need for costly municipal water is minimized, leading to significant savings on water bills. Reclaim Systems automate the treatment process, reducing manual labor and simplifying the workflow. This efficiency is particularly relevant for high-volume operations where the cost of water can accumulate.

2.1 Features & Functions

innovateIT Car Wash Equipment LLC has developed a Reclaim System to provide high-quality reclaim water and reduce municipal water usage, minimizing operational costs.

The system features a Grundfos SEG Grinder Pump (located in the last sediment tank/clarifying tank), replacing the need for the daily cleaning of an inlet basket. The pump is mounted to a stand to reduce the possibility of ingesting non-floating materials (e.g. leaves and grass) that could damage the pump. It's used during both Reclaim and Recirculation modes, preventing any foreign objects from clogging the filters or lines. The pump is designed to handle "flushable materials", such as cloth, wood chips, paper, and plastic.

The pump's location in the tank protects it from dry running and eliminates pump cavitation from a long suction line. The single pump reduces energy consumption and doesn't require a foot valve to maintain its prime.

A micro bubbler aeration system (located in the second sediment tank) maintains water circulation, preventing stagnation when the wash is not running. The aeration system uses oxygen from compressed air to sanitize the water and remove odors, reducing chemical usage.

The system uses a high flow recirculation loop combined with the tank mounted micro-bubbler aeration system to maintain circulation of the water and prevent stagnation of the water when wash is not operating.

High-capacity multimedia filters remove over 99% of particles over 10 microns and neutrally buoyant particles that pass

through centrifugal separators, reducing clogged nozzles. A proprietary media blend and automatic flushing of the system reduce water usage.

The system also allows for direct integration to the point of usage (High Pressure Pump Station) without additional pumps or storage tanks.

The PLC controller features a user-friendly touchscreen HMI that provides feedback on system operation, giving the operator flexibility to optimize the system based on the water quality and wash volume.

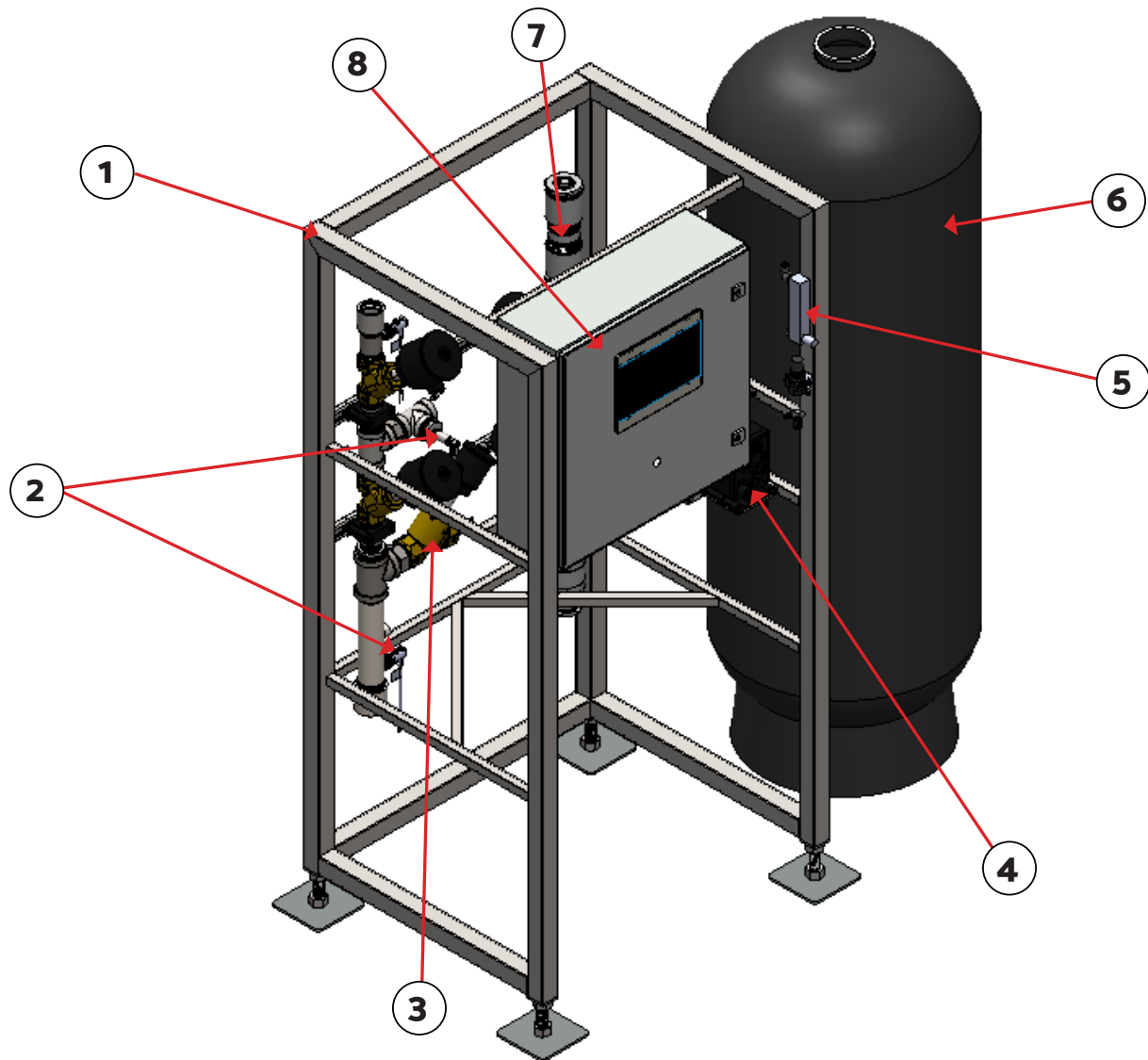


Fig. 2.1 - 1 - Reclaim System identification

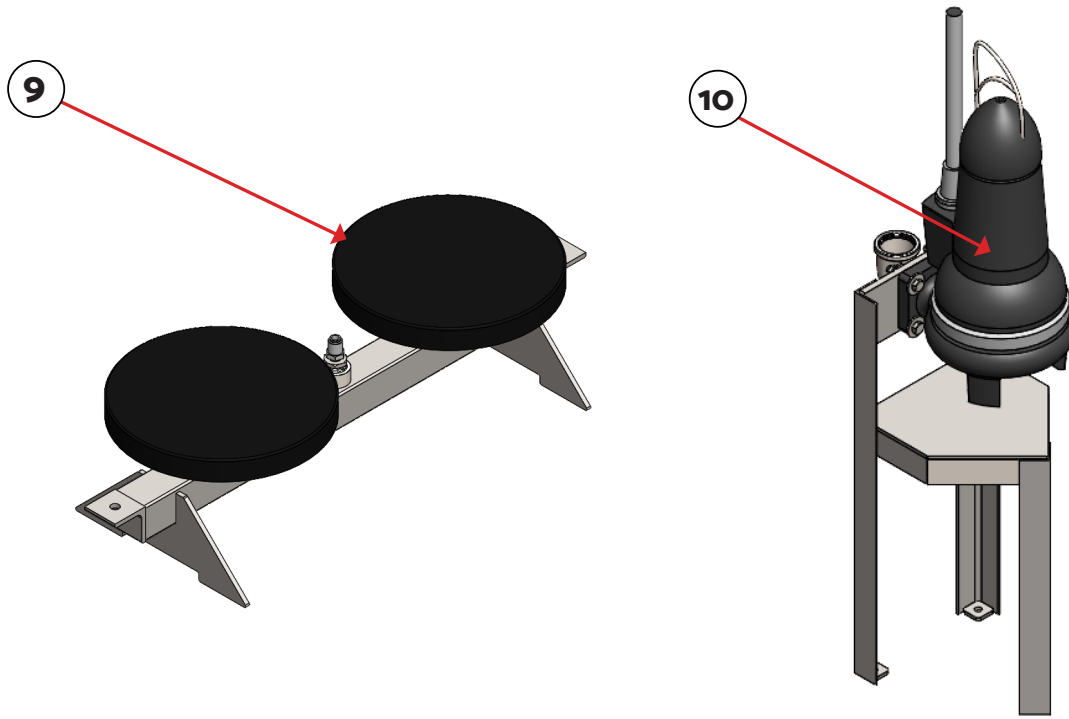


Fig. 2.1 - 1 - Reclaim System identification

Table 2.1 - 1 - RO System component features and functions

#	Component	Features/Functions
1	Stainless Steel Frame	- Stainless steel construction maximizes durability and equipment longevity
2	Process Sensors	- A variety of sensors including flow switches and pressure transducers are used to provide seamless operation and maximum process feedback
3	Process Valves	- Reliable angle valves for process automation
4	Grundfos Dosing Pump	- Injects chemical oxidizer into reclaim flow, increasing dissolved oxygen in the water, reducing odors - Operator adjustable dial for dosing
5	Air Flow Regulator	- Regulates air flow to the micro bubbler - The default setting is 2 CFM. This can be raised or lowered depending on the desire for dissolved oxygen.
6	Multimedia Filter	- High-capacity filter that removes over 99% of particles over 10 microns and neutrally buoyant particles that pass through centrifugal separators, reducing clogged nozzles

#	Component	Features/Functions
7	Flow Regulators	- The system features two flow regulators: one to regulate the flow of reclaim, and one to regulate the flow of municipal water during the Flush cycle
8	Electrical Enclosure	- Includes PLC, HMI, and mechanical disconnects from main power supply - Converts 480VAC 3PH power to 24 VDC power for the HMI, PLC, and air solenoids - Built-in HMI provides feedback on system operation - Allows for rapid troubleshooting and fine-tuning of system performance - PLC controller utilizes 'Flow on Demand' algorithm to match permeate production to the demand in the car wash
9	Micro Bubbler	- Increases dissolved oxygen levels in the water circulating in the underground tank system - Reduces chemical dosing required to treat reclaim water
10	Grundfos SEG Pump	- Prevents any foreign objects from clogging the filter or lines - Designed to handle "flushable materials" such as cloth, wood chips, paper, and plastic - Mounted to a stand to reduce the possibility of ingesting non-floating materials which could damage the pump - Replaces the need for a strainer basket, eliminating daily maintenance

2.2 System Operating Modes

The Reclaim System is designed with multiple operating modes to manage water recovery, filtration, and chemical treatment under varying wash conditions. Each mode directs system pumps, valves, and controls to perform specific functions within the reclaim process. Understanding these modes ensures proper operation, maximizes efficiency, and prevents unintended water loss or equipment wear.

The following descriptions outline the available operating modes and their intended functions.

Auto

The system is awaiting appropriate tunnel signals to enter **Recirculation** or **Filtration** mode.

When signals are not present, the system will rotate through the **Standby Cycle**. Refer to Section 4.7 for **Standby Cycle** details.

Manual

This mode allows the operator to override the Run state of machine into any available mode.

Filter

The process pump and valves will send pit water through the multimedia filter and to downstream wash processes.

Recirculation

Allows the total volume of pit water to be aerated via recirculation during washdown time. The process pump and valves will send pit water to a higher location in the gravity fed pit system. Typically, this is directed back to the conveyor pit and can be used for trench flushing or belt washing. The location of chase pipes is critical to available

end uses of this mode. Chase pipes must direct water to the location that will recirculate to the wash pits and not to the oil/sand separator/sewer.

Rest

The system will remain in a non-pumping part of the Standby Cycle. Timing of rest can be configured for pump savings, energy savings, or decreasing time to allow longer cycles in **Circulate** and **Filtration** modes.

Flush

The system uses the municipal water supply to feed clean water in backflush direction through the multimedia filter. This will lift the media, separate the dirt, and send the contaminants to oil/sand separator/sewer.

Odor Eliminator

The system temporarily increases the frequency of chemical dosing and duration of the Standby Filter Cycle time to allow an increase in chemical dosing for short-term odor control. The purpose of this is to “shock” the pit with an increase of treatment chemical.

- **Tank Feed:** Odor Eliminator will activate the next time **Filter Mode** is entered during a Standby Cycle.
- **Direct Feed:** Odor Eliminator will activate the next time **Recirculation Mode** is entered.
- For details on Tank Feed vs. Direct Feed configurations, see Section 3.1.

For reference, if the Odor Eliminator cycle is set at 100 pulses per minute and 10 minutes, approximately 27 oz of chemical will be dispensed.

2.3 System Specifications

Table 2.3 - 1 - Reclaim System specifications

	Standard Flow	High Flow
Reclaim Production (GPM)	25 GPM	50 GPM
Filtered Particle Size	<10 Micron	
Pump Size	5 HP	
Municipal Water Supply	1.5" FNPT	
SEG Grinder Pump Supply	2" FNPT	
Recirculation Outlet To Tunnel Pit	2" FNPT	
Sewer Outlet (as far to entrance as possible)	1.5" FNPT	
Reclaimed Supply to Applicators	1.5" FNPT	
Filter Inlet/Outlet	1.5" FNPT	
Minimum Water Temperature	40°F	
Minimum Water Supply Flow	30 GPM	60 GPM
Maximum Municipal Water Pressure	100 psi	

	Standard Flow		High Flow
Air Connection (Regulator)	1/4" Poly Tube Push Connect		
Air Connection (Flow Meter to Micro-Bubbler)	3/8" Air Line		
Air Supply (Clean, Dry Air)	4 SCFM @ 80-100 psi		
Voltage	480 VAC/3 PH (Optional 208 VAC)		
Max Current	7 A (480) 16 A (208)		
Dimensions (Main Frame)	40" w x 73" h x 34" d		
Dimensions (Filter)	24" w x 72" h	30" w x 72" h	

Installation

WARNING!

If equipment is stored in sub-freezing temperatures, be sure to bring equipment up to ambient temperature before starting installation

3. Installation

Installation of the Reclaim System must conform to local plumbing, electrical, and sanitation codes. The customer is responsible for obtaining all permits and ensuring the following conform to all state and local codes before installing the Reclaim System.

3.1 Feed Configuration Options - Tank Feed vs. Direct Feed

The Reclaim System supports two configurations for delivering filtered reclaim water to your wash process: Tank Feed and Direct Feed. Each configuration offers distinct operational characteristics and must be carefully selected based on site-specific requirements and equipment layout.

Tank Feed (Recommended Configuration)

In a tank feed configuration, filtered reclaim water is routed to a gravity-fed holding tank upstream of the high-pressure pump stand. This tank must be open to atmosphere and equipped with an adequately sized overflow capable of handling the reclaim system's maximum output flow rate. Overflow should return to the reclaim pit system for recirculation.

Advantages of Tank Feed:

- Continuous off-hours filtration: Allows the Reclaim System to periodically run filtration cycles even when the wash is not active, maintaining optimal water quality and chemical dosing.
- No synchronization required with high-pressure pump: Filtered water is always available, eliminating any risk of pump starvation or priming delays.
- Simplified electrical integration: Only a single dry-contact run signal (typically conveyor/belt) is required from the tunnel controller.

Direct Feed

In this configuration, filtered reclaim water is plumbed directly to the inlet of the high-pressure pump, typically via a T-fitting and check valve to allow municipal water backup. The Reclaim System will only run filtration when reclaim water is being actively requested by the high-pressure pump.

Considerations for Direct Feed:

- No off-hours filtration: May lead to water quality or odor issues during morning startup.
- Requires precise timing: Two dry-contact signals from the tunnel controller are needed — one to initiate recirculation (prime the system), and one to trigger filtration when high pressure is required.
- Risk of delay or starvation: If signals or timing are not correctly configured, high-pressure pump performance may be affected.

Recommendation:

It is recommended to use the tank feed configuration wherever possible. This setup ensures stable system performance, continuous water quality management, and simplified integration. Direct feed may be used in specialized scenarios (e.g., dual-pump stands or space-constrained layouts) but requires additional electrical and hydraulic considerations.

3.2 Installation Preparation - System

1. Review **Appendix 1** for the typical backroom configuration and placement of the Reclaim System.
1. Locate where the equipment will be installed with your installer. The Reclaim System should be located 4-6 inches from the back wall.
2. Use 200 psi hose (Eaton BOSFLEX or equivalent) and heavy-duty stainless steel hose clamps on every connection to ensure reliable operation.
3. Use 100 psi pneumatic air lines for air connections and any maintenance related replacements.
4. Lines should be positioned to minimize bends, and lines from tanks should hang in a manner to minimize loading on the stainless fittings.
5. If needed, install additional clamps or hose supports to the Reclaim System frame to reduce movement of hoses during operation.
6. All water drains and overflow lines must drain to the floor drain.
7. The filter flush line must drain to the oil separator tank, and the plumbing must be able to flow up to 30 GPM for Standard Flow units and 60 GPM for High Flow units.
8. The recirculation line should be directed to flow into the pit before returning to the first waste water tank.
9. Ensure the wash supply tank is equipped with overflow to sewer in the event of excess reclaim production.

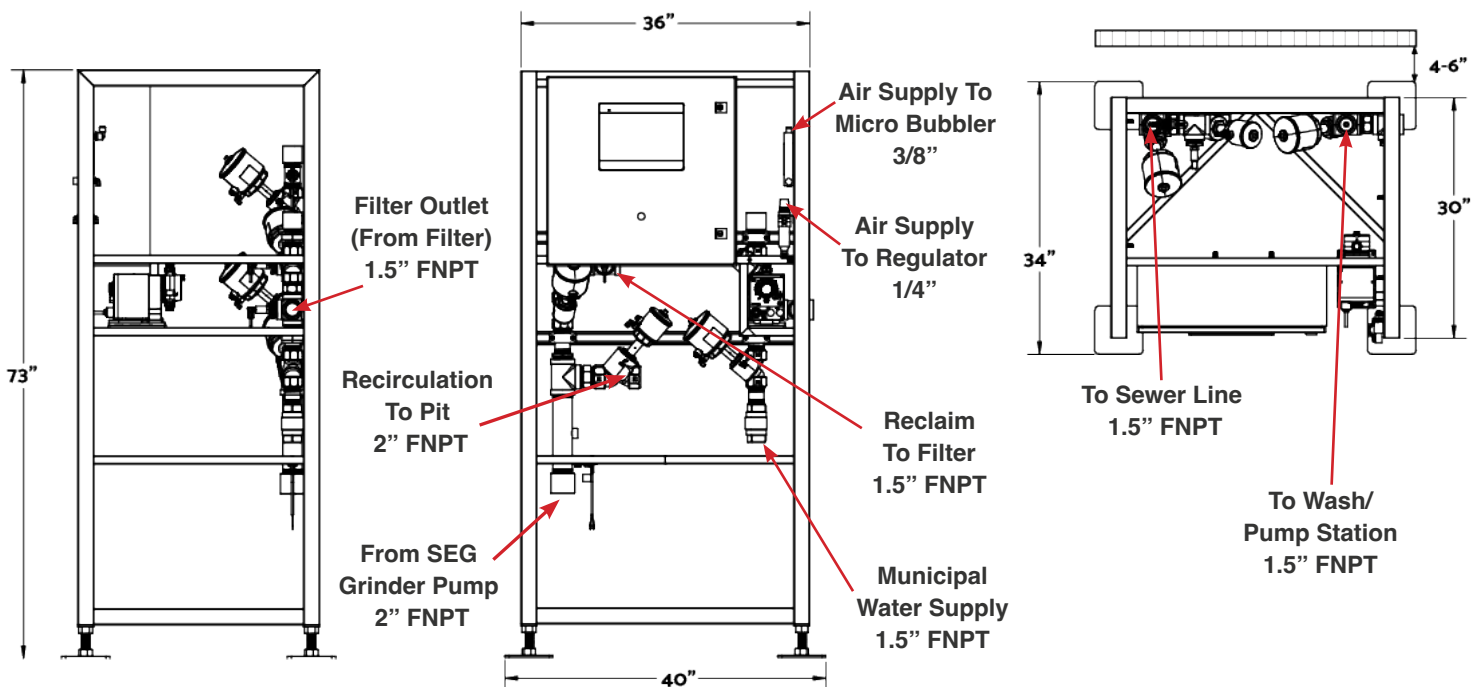


Fig. 3.2 - 1 - Reclaim System frame dimensions and connections

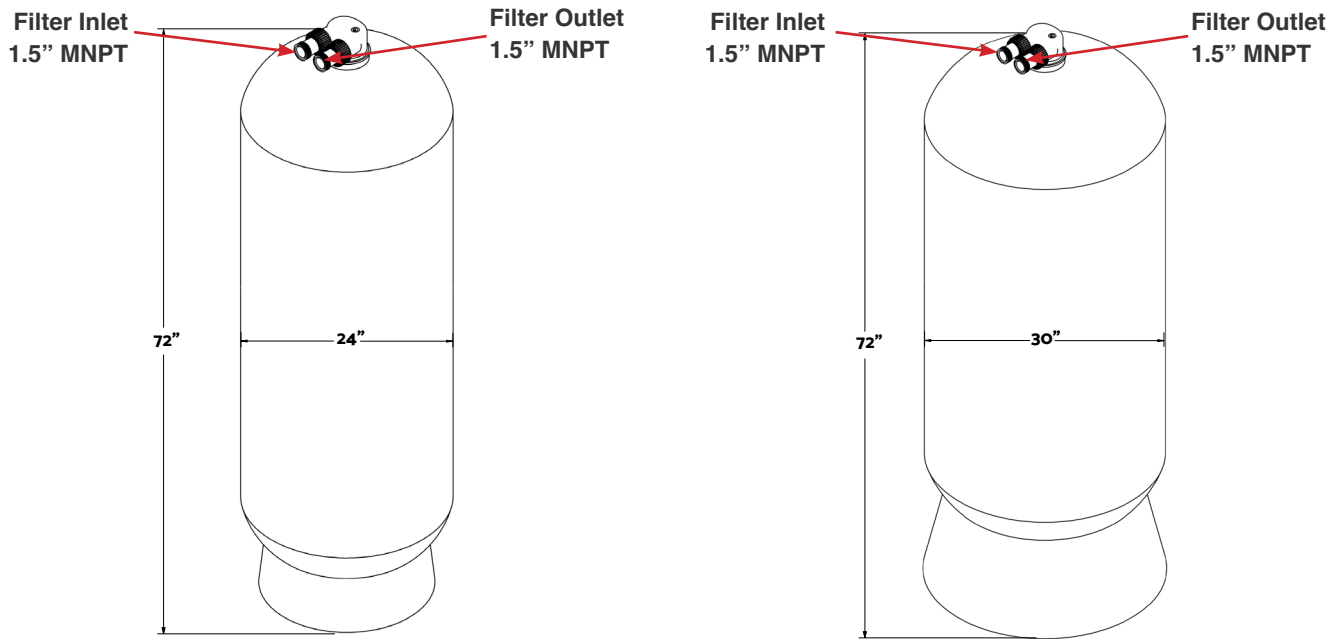


Fig. 3.2 - 2 - Standard Flow (left) and High Flow (right) Reclaim System filter dimensions and connections

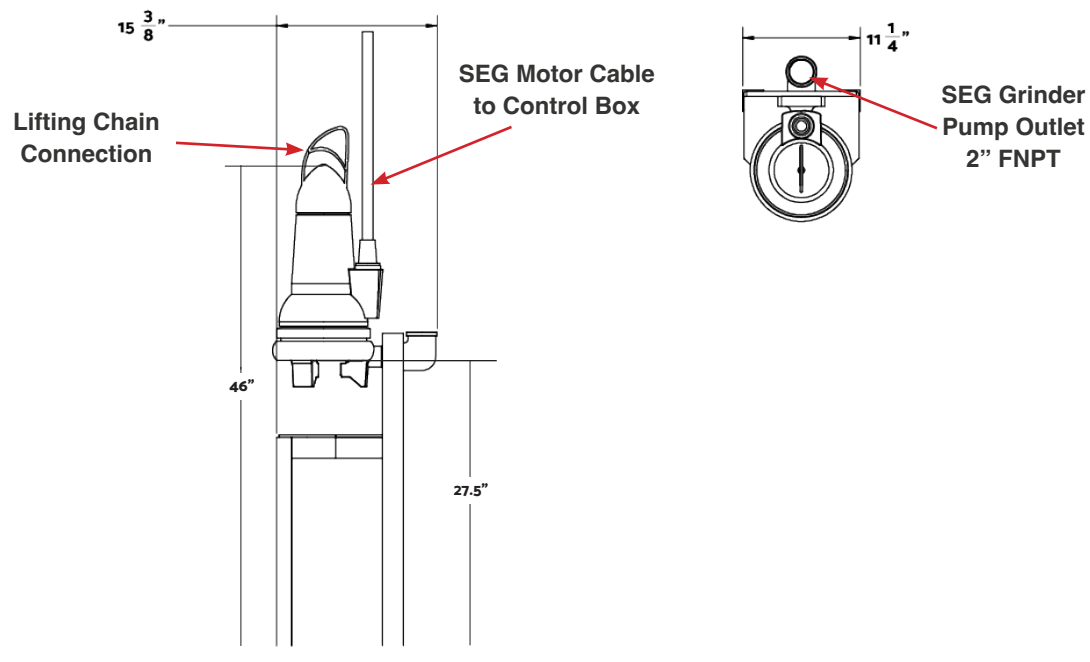


Fig. 3.2 - 3 - Grundfos SEG Pump dimensions and connections

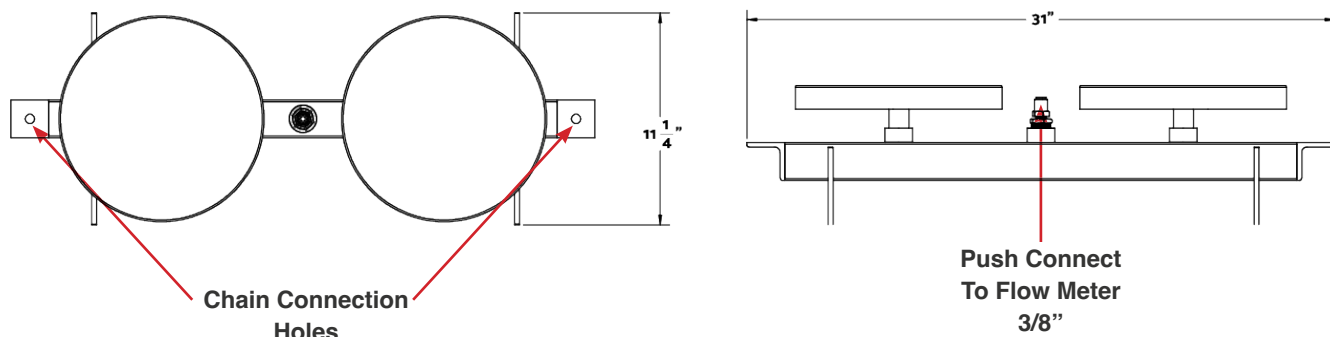


Fig. 3.2 - 4 - Micro bubbler dimensions and connections

3.2.1 - Installation Preparation - In Ground Settling Tanks

NOTE

The drain line to sewer should ensure a minimum water level of 48" is maintained.
It is recommended to use a minimum of (3) 2,000 gallon settling tanks with internal baffle walls (Fig. 3.2.1-1).

Proper construction and layout of the in-ground settling tanks are critical to overall Reclaim System performance. Improper tank layout can result in poor water quality, excessive solids carryover, and premature equipment wear.

Sediment Tank 1 (Mud Tank)

Sediment Tank 1 is designed to capture the majority of heavy solids entering the reclaim system. This tank will accumulate mud, sand, and debris. Tanks must allow sufficient time for solids to settle before water flows to the next chamber. Routine pump-out is required to maintain system performance. Refer to Section 5.1 for the recommended service schedule.

Municipal (City) Water Line Elevation

The municipal water inlet must not be installed higher than the upturn of the previous baffle wall. If installed too high, water may bypass the separation chambers, reducing sediment settling effectiveness and allowing solids to enter the Reclaim System. Water must follow the intended baffle path through each tank chamber.

Minimum Operating Water Level

The drain line to sewer must be configured to maintain a minimum water level of 48" in the tank system.

Maintaining proper water level:

- Ensures the SEG Pump remains submerged
- Prevents pump cavitation
- Supports proper settling and aeration

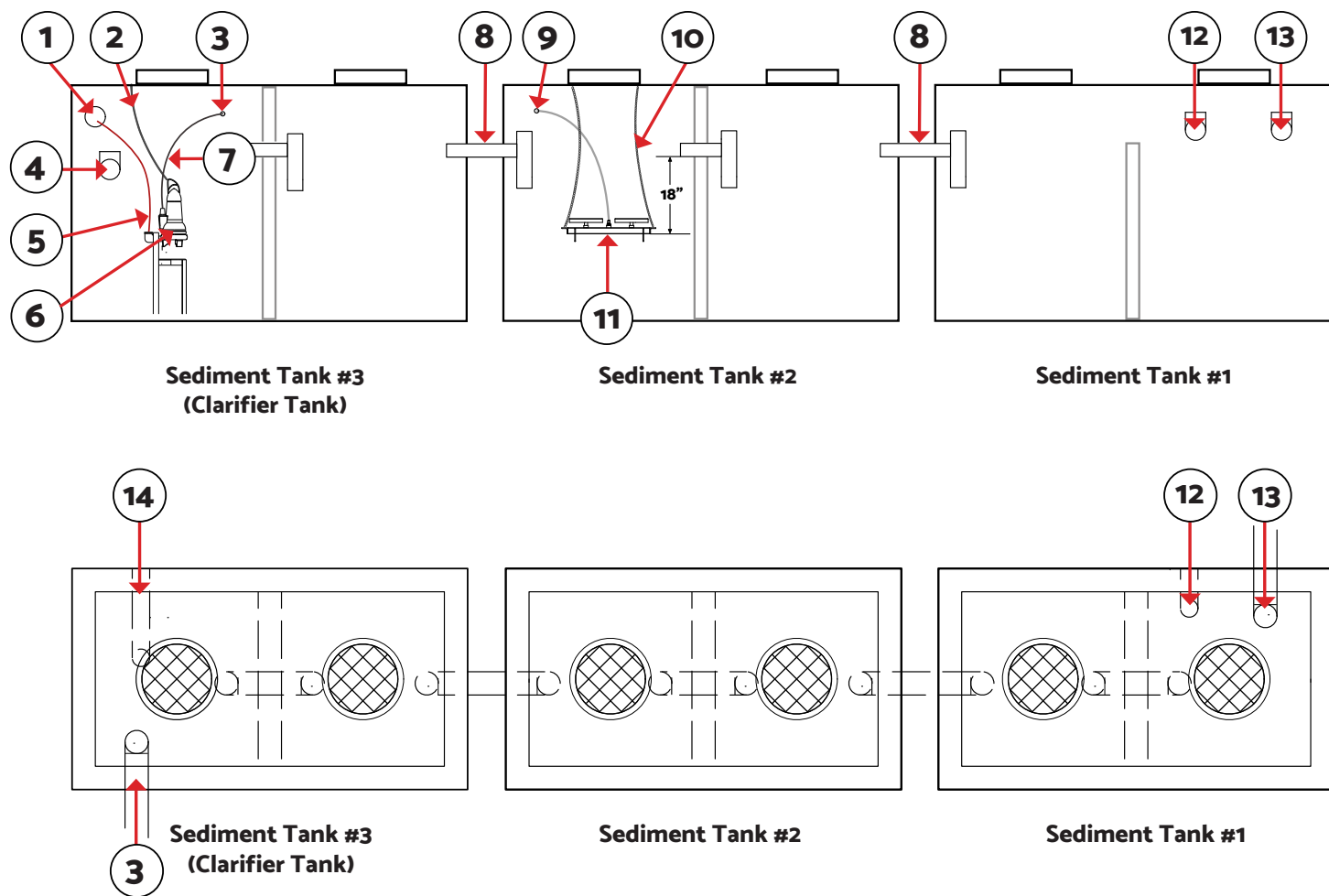


Fig. 3.2.1 - 1 - Three sediment tank configuration

Table 3.2.1 - 1 - Three sediment tank components

#	Component	#	Component
1	6" Chase Pipe to Clarifier Tank for Pump Line	8	6" Pipe
2	Grundfos SEG Grinder Pump Chain/Cable Support	9	2" Chase to Sediment Tank 2 for 3/8" Air Line to Micro Bubbler
3	2" Electrical Chase to Clarifier Tank for Motor Cable	10	Chain/Cable Support
4	6" Drain Pipe to Oil/Water Separator	11	Micro Bubbler (1-5 SCFM)
5	2" 200 psi Hose to Reclaim Skid Location	12	6" Drain Pipe to Sediment Tank 1 (optional)
6	Grundfos SEG Grinder Pump	13	8" Drain Pipe to Sediment Tank 1
7	Grundfos Motor Cable		

3.3 Mechanical Installation

3.3.1 SEG Grinder Pump Installation

The SEG Grinder Pump should be installed in the clarifying tank (Fig. 3.2 - 5). The grinder pump is responsible for transferring water from the final reclaim pit to the filtration system, while breaking down debris to protect downstream components and maintain system performance.

⚠ WARNING!

Failure to properly secure the SEG Pump using the lifting chain connection may result in the pump tipping or shifting during operation, leading to equipment damage and potential system failure.

1. Attach 2" hose (#9 in Fig. 3.2.1 - 1) to the outlet of the SEG base using a 2" NPT hose barb (Fig. 3.3.1 - 1).
2. Lower SEG into last division of the settling tanks with the provided lifting chain.
3. Connect the top of the chain to a location that is convenient for movement/removal of the pump.
4. Connect the 2" hose to the '**From SEG Grinder Pump**' connection (Fig. 3.3 - 1).

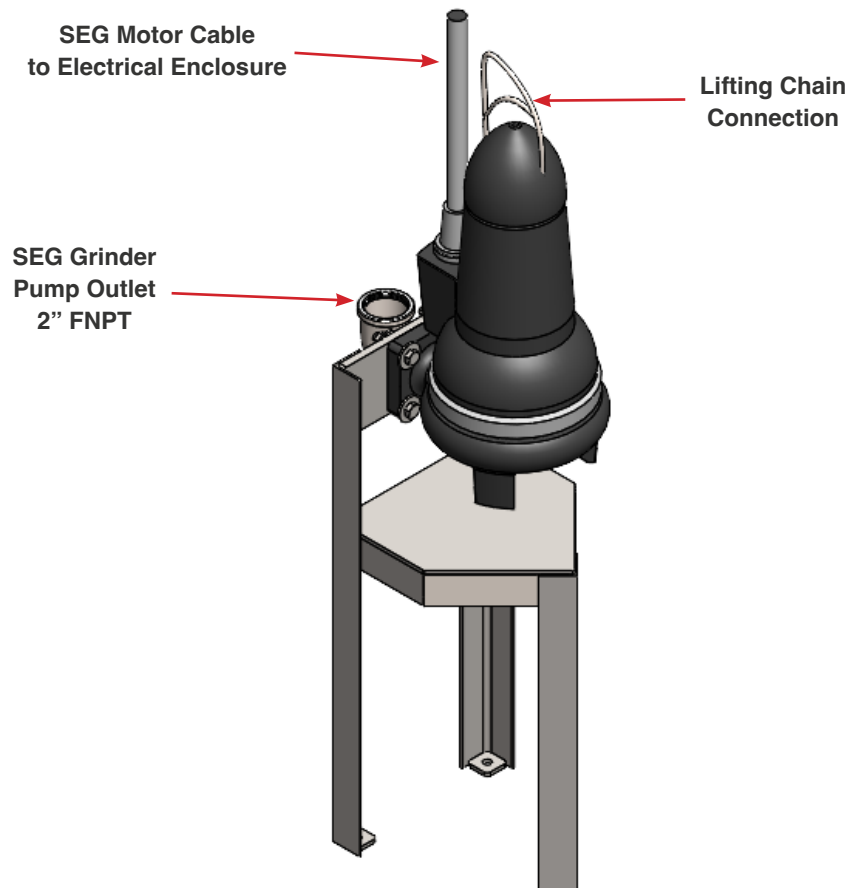


Fig. 3.3.1 - 1 - Grundfos SEG Grinder Pump connection locations

5. Route the SEG Pump motor cable to the control enclosure as shown in Fig. 3.3.1 - 2. Terminate wires per Table 3.3.1 - 1 (following page).

6. A low water float switch is strongly recommended to prevent the SEG Pump from running dry. Route the float switch leads through the same electrical chase as the SEG Pump motor cable.
7. Terminate one conductor at Terminal 1000 (Low Water Input) and the other conductor at 101 (24VDC +), as shown in Fig. 3.3.1 - 2 and listed in Table 3.3.1 - 2.

⚠ WARNING!

Electrical installation to be performed by a qualified electrician.

Follow all local codes.

NOTE

If terminating the SEG Pump motor cable into a junction box prior to landing in the control enclosure, ensure all wire numbers and colors are matched exactly as shown in the Electrical Schematic.

Failure to match wiring may result in improper motor operation or damage.

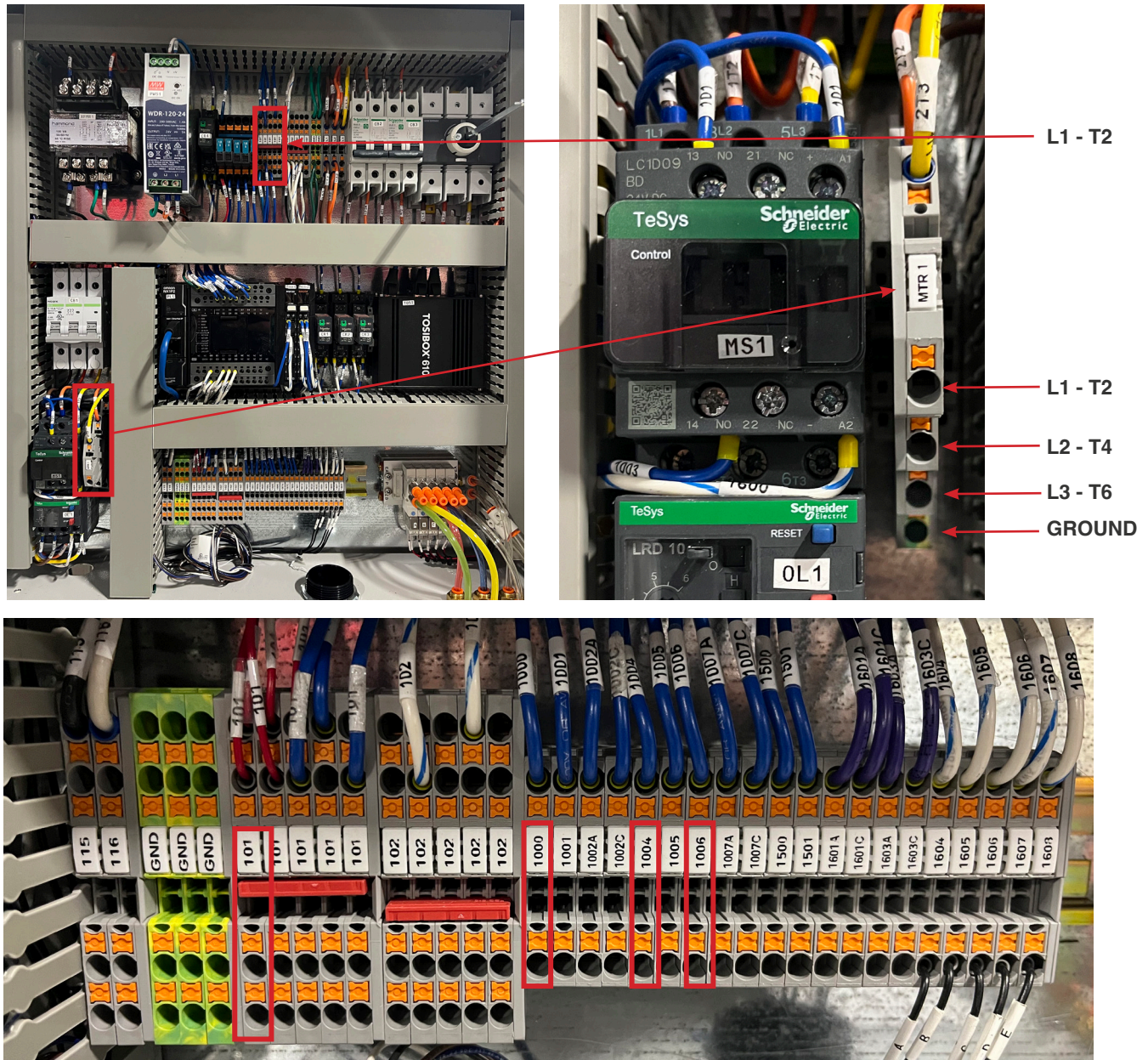


Fig. 3.3.1 - 2 - SEG motor cable and float connections

Table 3.3.1 - 1 - SEG Motor Wiring Cable

Enclosure Terminal	Connection
TS-MTR 1 - Terminal 2	Grundfos CABLE WIRE #1
TS-MTR 1 - Terminal 4	Grundfos CABLE WIRE #2
TS-MTR 1 - Terminal 6	Grundfos CABLE WIRE #3
1004	Grundfos CABLE WIRE #4 (High Temp Moisture Sensor Cutoff)
101	Grundfos CABLE WIRE #5 (24 VDC)
1006	Grundfos CABLE WIRE #6 (SEG Motor Temp OK)

Table 3.3.1 - 2 - Low Water Float Switch

Enclosure Terminal	Connection
101	Reclaim Tank – Low Water Float 24VDC (+) Supply
1000	Reclaim Tank – Low Water Float Signal (Input)

3.3.2 Micro Bubbler Installation

The micro bubbler introduces air bubbles into the water to promote oxygenation and reduce odor. It should be suspended approximately 18” below the water surface and at least 18” above the pit floor. This placement ensures optimal aeration without disturbing settled solids at the bottom of the tank.

The micro bubbler may also be suspended using the chain or rope if your settling tanks go long periods between cleanings. It is recommended to suspend the bubbler while the tank is empty to verify that it sits level while suspended.

1. Attach chain, or rope, to the holes on each end of the bubbler frame (Fig. 3.3.2 - 1, following page).
2. Attach 3/8” polytube to the push connect between the two bubbler discs installed in the tank so it can be routed properly (Fig. 3.2 - 4).
3. Using the chain or rope attached to the bubbler frame, lower the bubbler into the second-to-last section of the settling tanks. The bubbler frame should be suspended approximately 18” below the surface level of the water line and at least 18” from the bottom of the tank.
4. Route the 3/8” polytube to the outlet of the airflow meter on the front of the Reclaim System’s main frame (Fig. 3.2 - 1, ‘**Air Supply To Regulator,**’). The flow meter should be set to roughly 2 CFM.

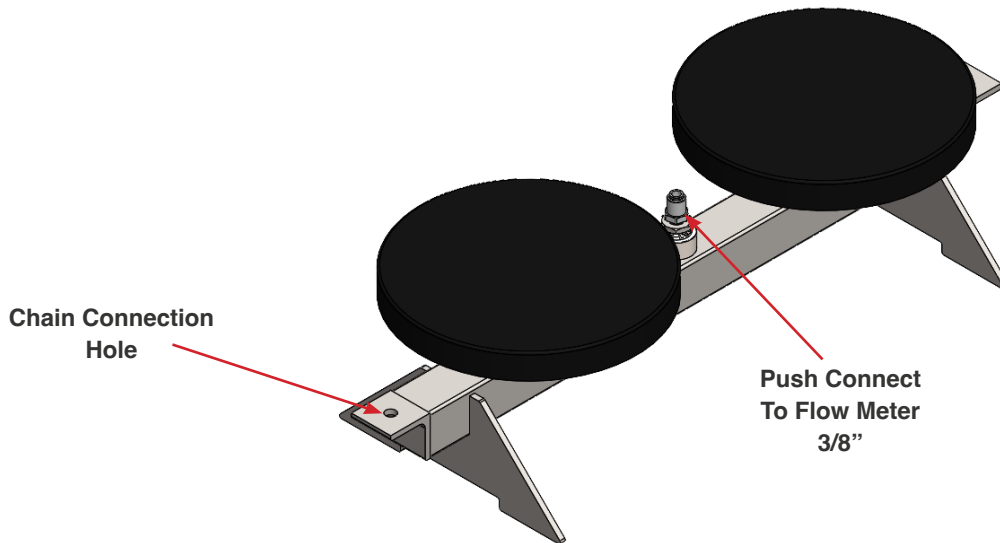


Fig. 3.3.2 - 1 - Micro bubbler connection locations

3.3.3 Installing Air Supply

1. Install an air supply to the 1/4" push connector air regulator. Verify air supply can supply 4 CFM at 80-100 psi, and adjust the air regulator to 80-100 psi (Fig. 3.3.3 - 1).

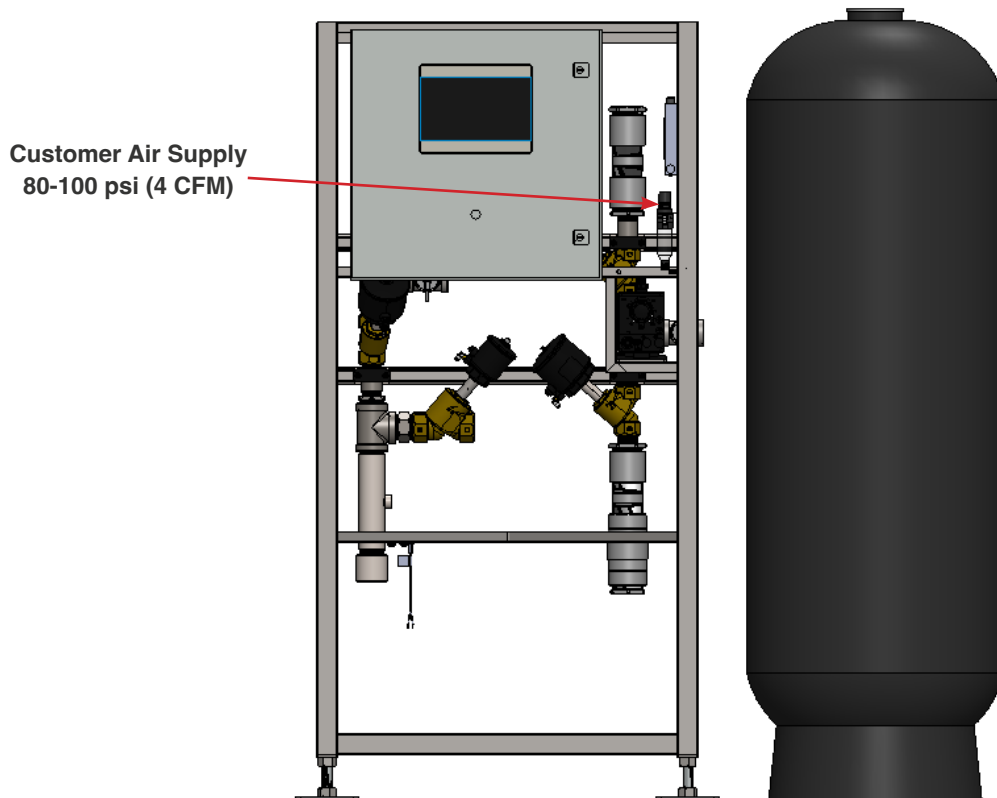


Fig. 3.3.3 - 1 - Air regulator supply line connection

3.3.4 Installing Water And Drain Lines

NOTE

Recirculated reclaim water should be routed to the entrance of the tunnel or the highest elevation point in the drain system to prevent tire shine runoff from entering the Reclaim System.

The main frame containing the control box and valve manifolds should be located as close to the settling tanks as possible to reduce the amount of plumbing needed.

1. Connect a 1.5" municipal water feed line to the **Municipal Water Supply** connection (Fig. 3.3.4 - 1). There is a check valve to ensure that no reclaim water can get into the municipal feed in the event of serious filter failure.
 - It is recommended to ensure your municipal supply line ball valve is accessible before installing the Reclaim System.
2. Connect a 1.5" line to the **To Wash/Pump Stand/Storage Tank** connection (Fig. 3.3.4 - 1) to feed your reclaim storage or pump stand.
 - **Tank Feed:** The connection will be to the gravity fed storage tank supplying the high-pressure pump. Refer to Section 3.2 for tank requirements.
 - **Direct Feed:** The connection will be directly to the inlet of the high-pressure pump.
3. Connect a 1.5" line to the **To Sewer Line** connection (Fig. 3.3.4 - 1).
 - It is important that this water is removed from your reclaim water loop because it contains everything the filters have pulled from your reclaim water. Introducing this water back into the loop concentrates the water with the removed particles and rapidly increases the pressure drop across the filters.
4. Connect a 2" line to the **Recirculation To Pit** connection.

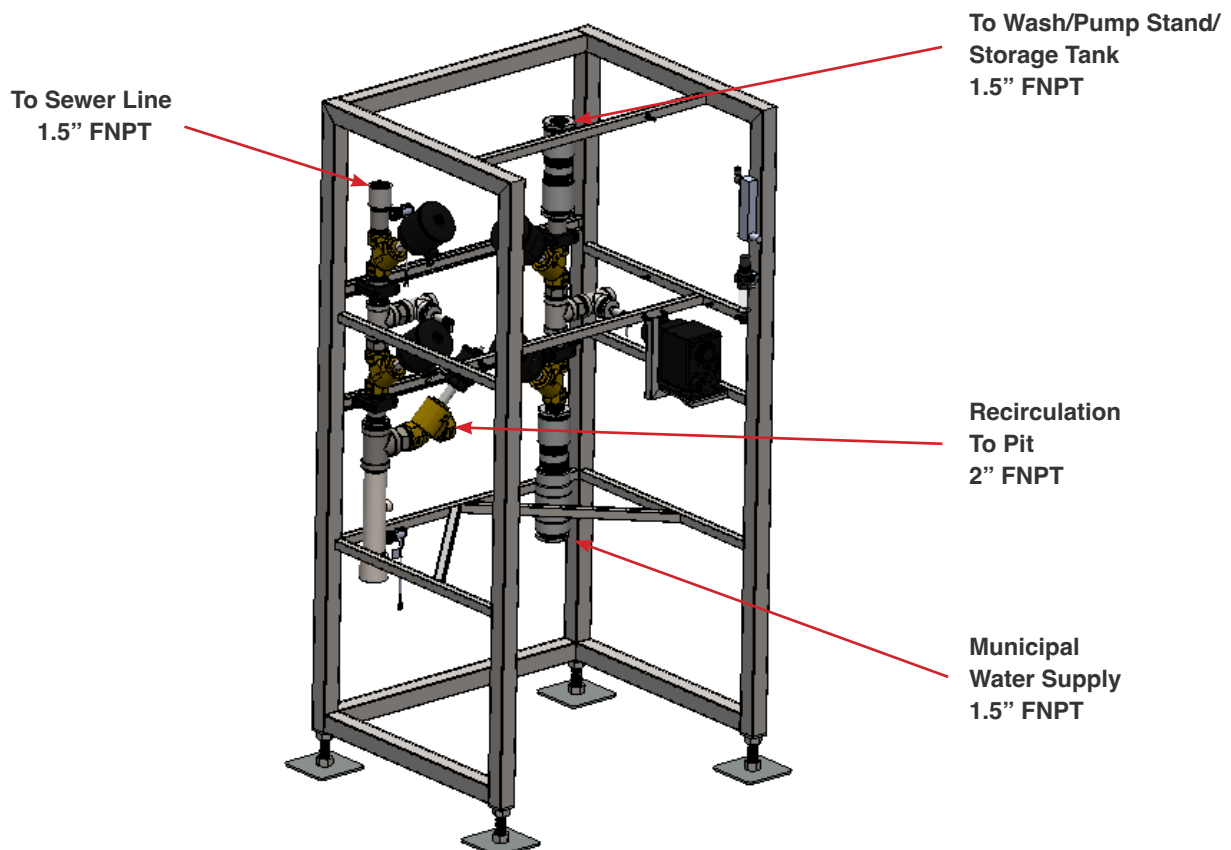


Fig. 3.3.4 - 1 - Reclaim System main frame connection locations

3.3.5 Filling Multimedia Filters

NOTE

Store media in a dry location prior to installation. Wet media poses a significant challenge in the filter filling process.
Filters should not be filled until the Reclaim System is to be used (within ~48 hours).
Water will stagnate if left too long.

NOTE

If the multimedia filters are filled prior to startup and freezing conditions are possible, freeze protection must be provided.
If heat is not available or startup will be delayed, use an approved freeze protection solution
(such as RV antifreeze) to protect the filter laterals.

1. Place the filter in the desired location(s). It is recommended that the filter be placed to the right of the main frame when facing the system to simplify plumbing connections.
2. Remove filter head.
3. Place duct tape or similar over filter output tube.
4. Fill filter approximately 30% (18”) with fresh water.
5. Using the supplied funnel, CAREFULLY fill the filter with media in the order listed in Table 3.3.5 - 1 below and as depicted in Fig. 3.3.5 - 1 (following page).
6. Remove tape from filter output tube.
7. Fill remaining filter volume with fresh water.
8. ** FOR 30 FILTER ONLY** If the filter is supplied with an adapter flange, attach the adapter flange to the top of the filter housing using the supplied hardware.
9. Install Clack D1403 cross flow head (Fig. 3.3.5 - 2)
10. Install Clack V4430 quick connect adapters.

NOTE

Damage to the distributor will occur if filled too quickly

Product	Order	Standard Flow	High Flow
Anthracite	5	234 lbs	364 lbs
Sand	4	300 lbs	500 lbs
Garnet #50	3	150 lbs	250 lbs
Garnet #12	2	100 lbs	150 lbs
Gravel	1	150 lbs	250 lbs

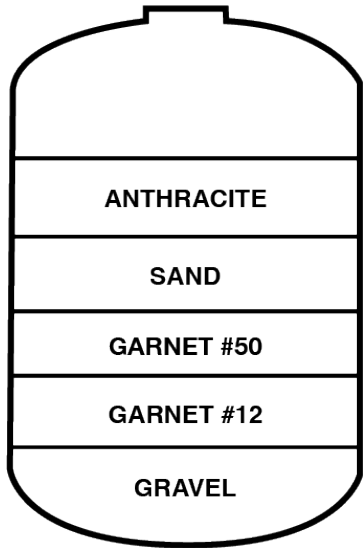


Figure 3.3.5 - 1 - Multimedia Filter filling order



Fig. 3.3.5 - 2 - Clack D1403 cross flow head (left) and Clack V4430 quick connect adapters (right)

3.3.6 Plumbing Multimedia Filters

1. Plumb the unfiltered water from the **To Filter Inlet** connection to the **DOWNFLOW INLET** side of the filter (Fig. 3.3.6 - 1, following page).
 - **DOWNFLOW INLET** is indicated on the top of the Clack head (Fig. 3.3.5 - 2).
2. Plumb the **From Filter Outlet** connection to the **UPFLOW INLET** side of the filter head.
 - **UPFLOW INLET** is indicated on the top of the Clack head (Fig. 3.3.5 - 2).

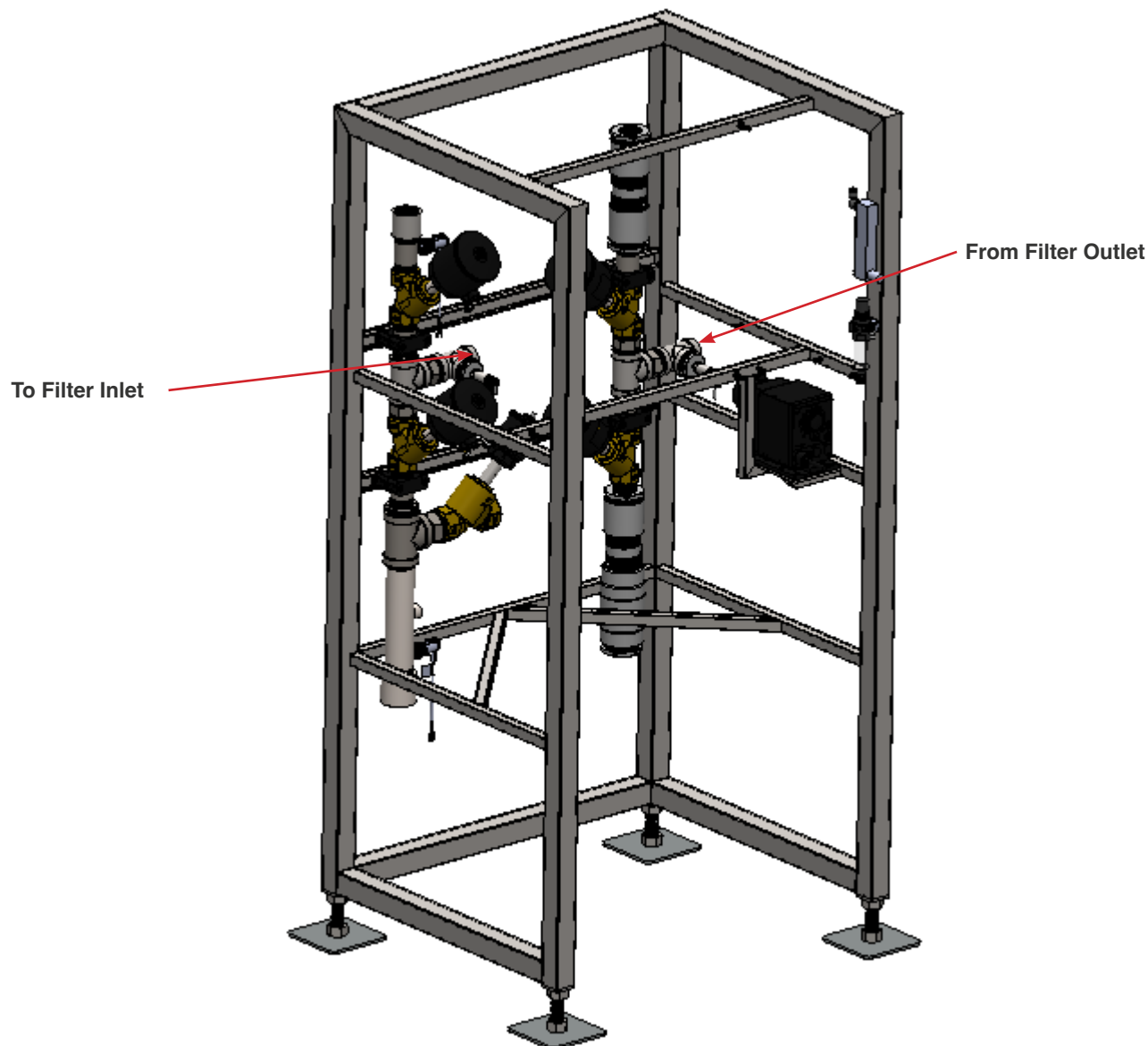


Fig. 3.3.6 - 1 - Main skid multimedia filter plumbing connections

3.4 Electrical Installation

⚠ WARNING!

Electrical installation to be performed by a qualified electrician.
Follow all local codes.

The electrical schematics and connection points in the controller are designated in **Appendix 4**. The Main Control Disconnect (**DS1**) is used to disconnect all power to the unit. All penetrations should be made through the bottom of the enclosure.

NOTE

Each electrical enclosure has a serial number located inside the controller on the lower left side of the enclosure door. This number should be referenced when requesting support on the Reclaim System, as this number links to both the controller software and hardware.

⚠ WARNING!

The Main Disconnect power must be turned off at the disconnect switch on the front of the enclosure before opening the Reclaim System controller for maintenance.

1. Locate customer network interface (Fig. 3.3 - 1) and connect RJ-45 network cable. This will provide innovateIT Car Wash equipment with VPN remote access to the system.
2. Locate power supply knockout location (lower left). Drill and install a cable gland for 480VAC 3PH power supply.
3. Make electrical connections as listed in the Tables 3.4 - 1 to 3.4 - 4.



Fig. 3.4 - 1 - Customer network interface and power supply knockout locations

Table 3.4 - 1 - Produce filtered water from tunnel controller

Enclosure Terminal	Connection
1002A	Tunnel controller common relay
1002C	Tunnel controller normally open relay

Table 3.4 - 2 - System Health Status

Enclosure Terminal	Connection
1603A	Fault
1603C	Fault Common

Table 3.4 - 3 - System Prime command from tunnel controller (Direct Feed only)

Enclosure Terminal	Connection
1007A	Tunnel controller common relay
1007C	Tunnel controller normally open relay



Fig. 3.4 - 2 - Electrical enclosure connections

Startup & Operation

4. Startup & Operation

⚠ WARNING!

Check and verify the tightness of all power distribution lines (screw terminals) before the startup process.

NOTE

Ensure all steps and precautions in Section 3 have been completed before starting up the Reclaim System.

4.1 Turning On Power Supply

1. Turn on the utility power from the wash to the Reclaim System.
2. Open electrical enclosure and turn on all breakers. Ensure all 4 thermal fuses are pressed in.
3. Close electrical enclosure.
4. Turn **480VAC Main Disconnect** switch on the front of the electrical enclosure to the **ON** position.
5. Wait for the HMI Overview Screen to appear. Verify the date and time displayed on the HMI are correct. If not, refer to Section 6.1 to reset the clock.

4.2 Verifying Valve Operation & Tunnel Signals

1. Navigate to the **Maintenance** screen.
2. Press **SYSTEM AUTO** to deselect, then press **SYSTEM MANUAL** (Fig. 4.2 - 1). From the drop-down menu, select **MANUAL OVERRIDE**.

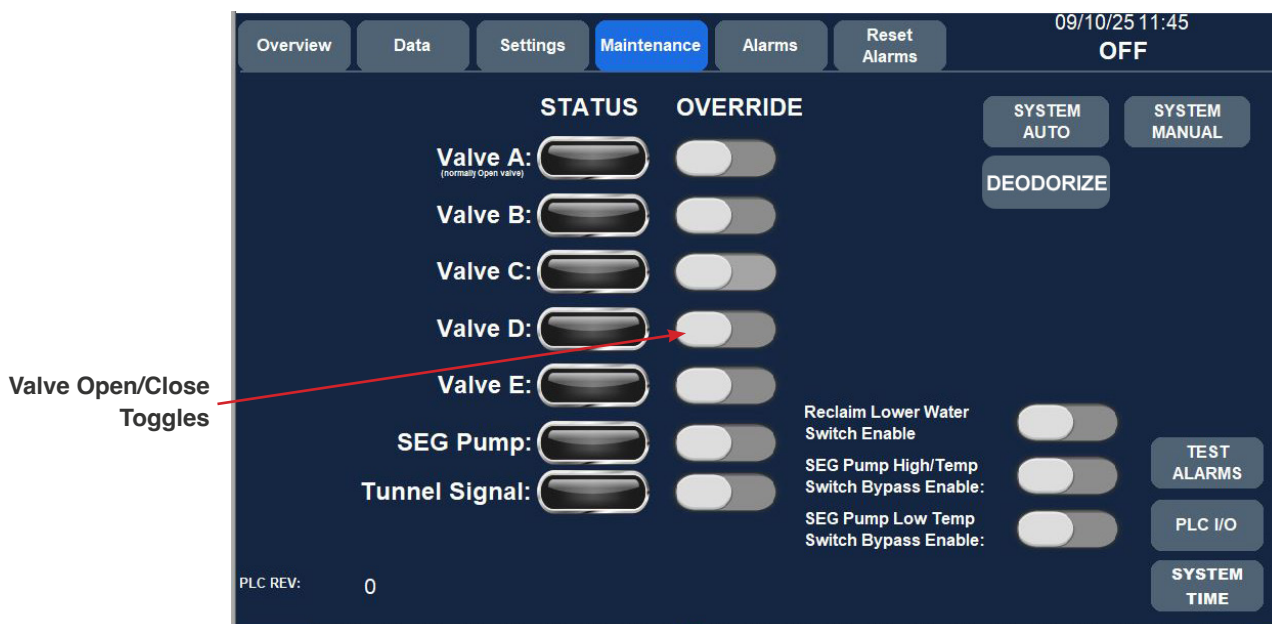


Fig 4.2 - 1 - HMI Maintenance screen and button locations

3. Manually turn **Valves A, B, C, D, and E** on and off by pressing the corresponding toggles to confirm the operation of each (Fig. 4.2 - 1). Valve locations are shown in Fig. 4.2 - 2.

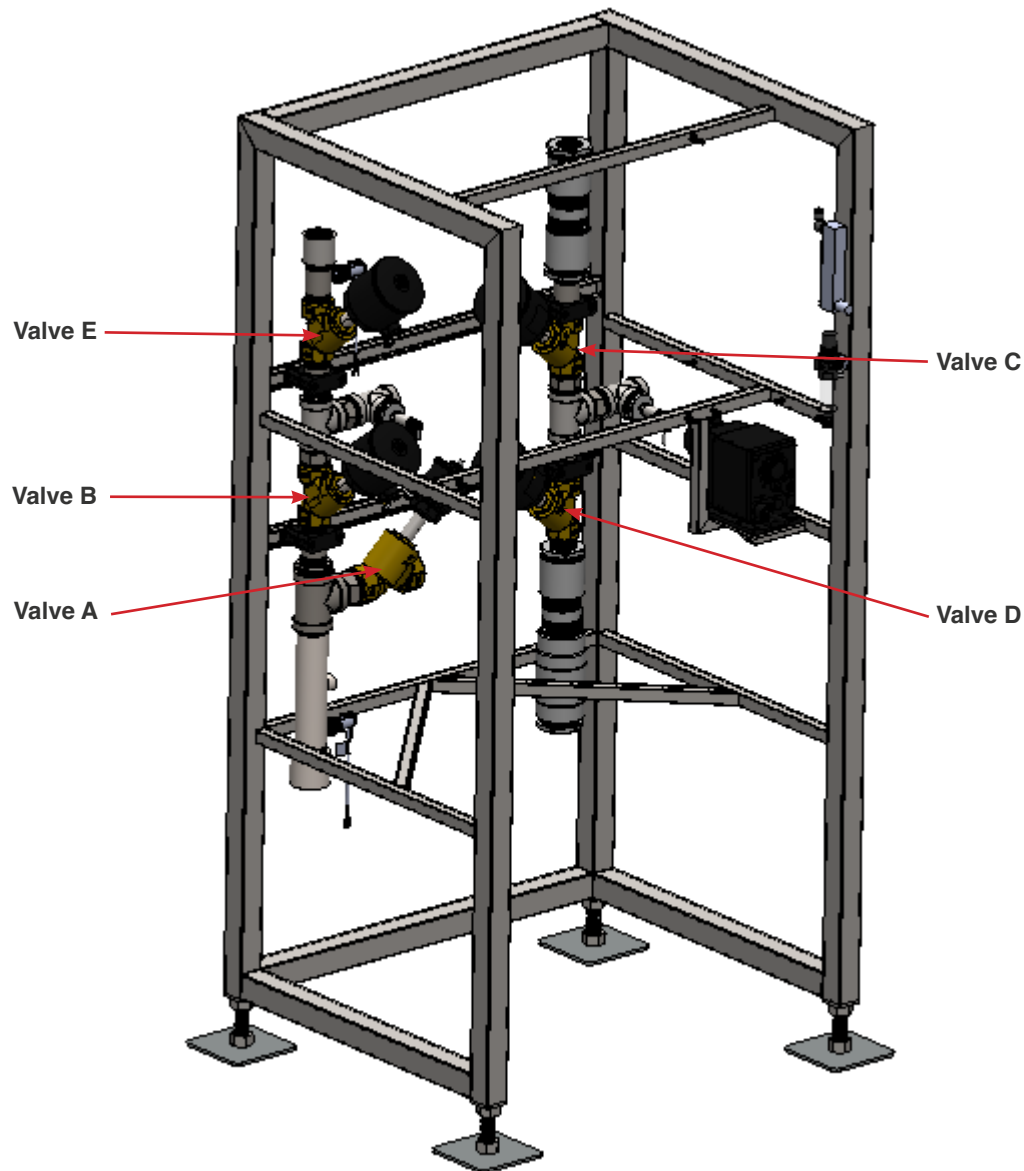


Fig 4.2 - 2 - Valve locations

4. Verify that all valves are in their normal state (all closed except Valve A).
 - Open is shown by a red indicator present in the site glass.
5. Press the **SEG PUMP** button and ensure the pump turns on (Fig. 4.2 - 1) and that water is flowing to the designated recirculation location (e.g. tunnel pit).
6. Toggle tunnel signal from the controller and verify you have a tunnel signal via the status indicator on the HMI (Fig. 4.2 - 1).

4.3 Turning on Water Supply and Filling Tanks

NOTE

Tanks must be filled under a low-pressure condition. Confirm outdoor tanks are full of water.

1. From the **Maintenance** screen, press the **SYSTEM MANUAL** button. From the drop-down menu, press the **MANUAL OVERRIDE** button.
2. Partially open your municipal water supply line ball valve to allow water to flow into the system.
3. From the **Maintenance** screen, open Valves D and E by pressing the toggles (Fig. 4.2 - 1).
4. Fill the tanks until you confirm the system has discharged into the sewer.
5. Close Valve D, followed by Valve E.
6. Wait 4 hours. This process holds pressure in the system. The captured pressure in the tanks will allow them to saturate more rapidly.
7. Fully open municipal water supply line ball valve.
8. Initiate a manual flush.
 - Navigate to the **Overview** screen and select **SYSTEM MANUAL** (Fig. 4.3 - 1).
 - Select **MANUAL FLUSH**
9. Allow the system to backflush for 45 minutes-1 hour, or until you have clear, clean, particulate free discharge.

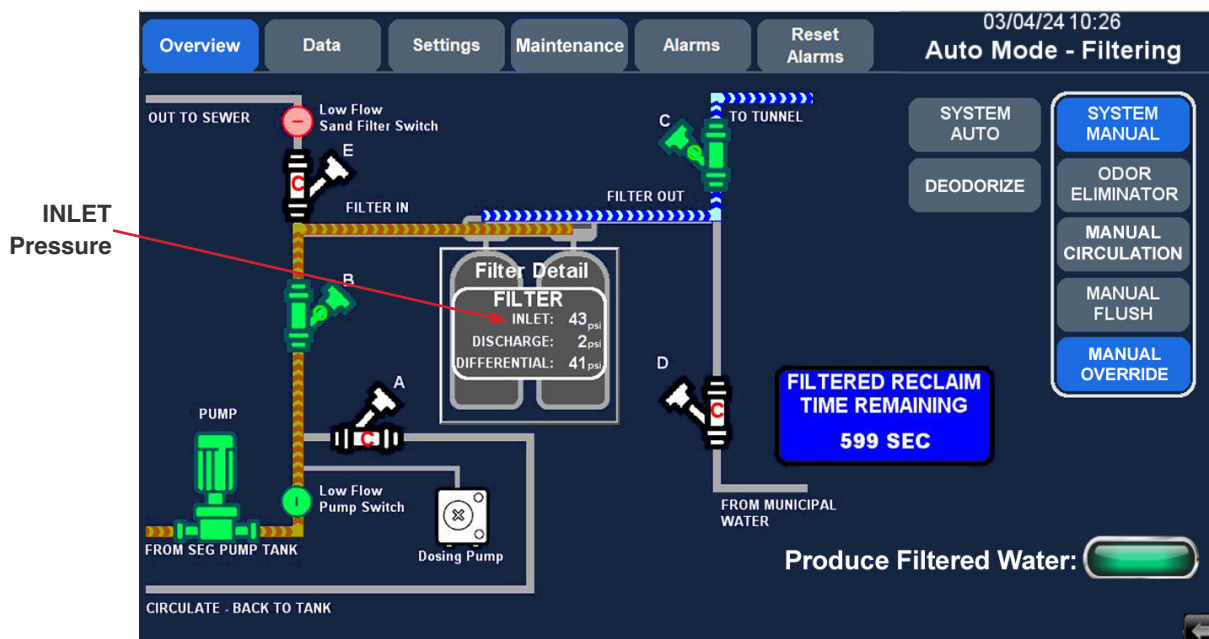


Fig 4.3 - 1 - HMI Overview screen

4.4 Verifying SEG Pump Operation

1. Navigate to the **Overview** screen and press **SYSTEM MANUAL** (Fig 4.3 - 1).
2. Press **MANUAL CIRCULATION** (Fig. 4.3 - 1). Manual circulation allows air to be purged from the line and ensure discharge.
3. Press **MANUAL FILTERING** (Fig. 4.3 -1).

4. Check the **INLET** pressure during this process (Fig 4.3 - 1). If the **INLET** pressure is low (10-15 psi), switch the phasing on the SEG Pump motor, then re-initiate manual filtering and check the **INLET** pressure again.
 - To phase the SEG Pump motor, switch two leads from the motor starter that supplies electrical power to the SEG Pump.
5. **INLET** pressure should be approximately 40-50 psi.

4.5 Starting And Deaerating The Dosing Pump

1. Set the capacity adjustment knob to 100%.
2. Open the deaeration valve by approximately half a turn (Fig. 4.1.5 -1, following page).
3. Press the [100 %] key (Fig. 4.1.5 - 1) and hold it down until liquid flows out of the deaeration hose continuously and without any bubbles.
4. Close the deaeration valve. The pump is now deaerated.

Selecting Operating Mode

The Grundfos DDE dosing pump operates in either External Pulse Mode or Manual Mode.

External Pulse Mode (Normal Operation)

In this mode, the pump receives a signal from the Reclaim System PLC and doses automatically based on configured settings.

Use External Pulse Mode during normal system operation. The Manual Operation indicator should be OFF (Fig. 4.5 - 1, following page).

Indicator Status:

- Flashing – Standby mode (ready)
- Solid Green – Dosing/Operating. Refer to Section 4.7 for configuring doses per minute.

Manual Mode (Service Only)

In this mode, the pump doses continuously at the rate set by the capacity adjustment knob.

Manual Mode should be used only for:

- Priming or deaeration
- Service and troubleshooting

To toggle Manual Mode, press and hold the manual operation button for 5 seconds. The Manual Operation indicator will illuminate when active.

Indicator Status:

- Illuminated – Manual operation is active; the pump doses at the rate set by the capacity adjustment knob
- Toggle Operation – Press and hold the manual operation button for 5 seconds to switch manual mode on or off

NOTE

After priming or service, return the pump to External Pulse Mode before placing the Reclaim System into AUTO.

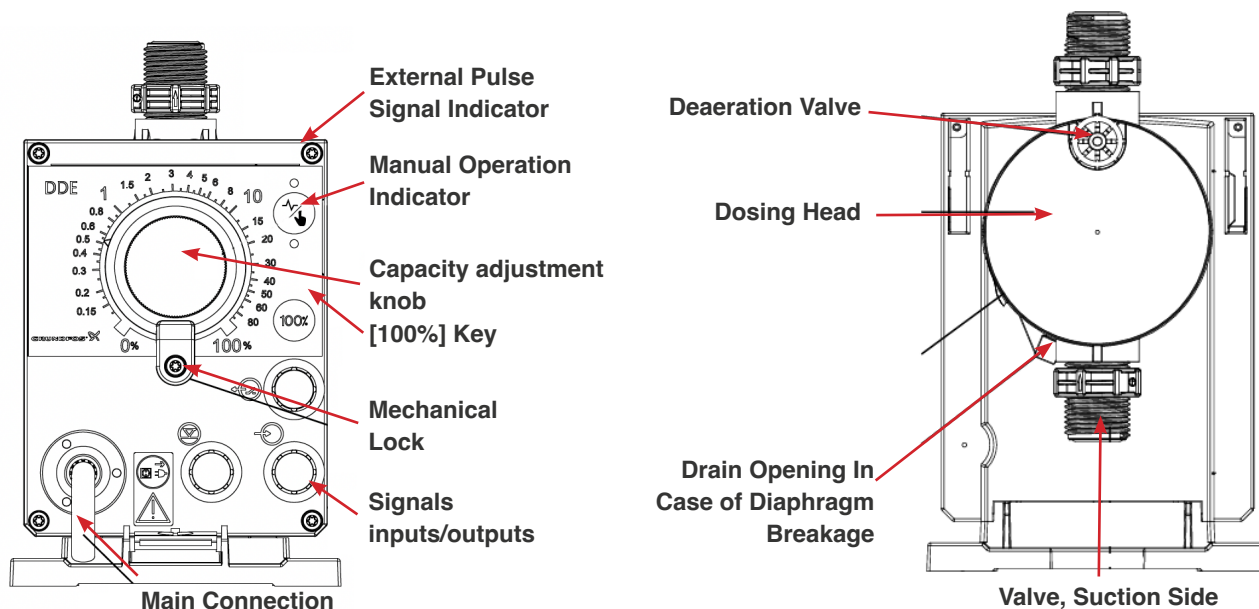


Fig. 4.5 - 1 - DDE Dosing pump components

4.6 Flush Settings

The Reclaim System comes preloaded with default settings values. There are a number of optional flush settings that can be set from the **FLUSH SETUP WIZARD**. The adjustable settings will vary based on whether your Reclaim System is filling a tank or direct feeding a high-pressure pump, and your preferred flush settings. The process for making your selections is outlined below.

NOTE

When choosing time of day to flush, total available site water flow needs to be considered.

1. Navigate to **Settings** screen and press **FLUSH SETUP WIZARD** (Fig. 4.6 - 1, following page).
2. Set your preferred duration of flush. Duration of the Flush cycle may need to be adjusted depending on season, water quality, and the amount of debris in the tank.
3. Select whether your system is **TANK FEED** or **DIRECT FEED**.
 - a. **TANK FEED** > Select when you want the system to run a flush cycle.
 - i. **DIFFERENTIAL PRESSURE** > Set the differential pressure of the filters at which you want the system to run a flush cycle.
 - Select whether you want the flush cycle to run **IMMEDIATELY** or at a **SPECIFIC TIME**.
 - **IMMEDIATELY** > The flush cycle will run as soon as the differential pressure of the filters is met.
 - **SPECIFIC TIME** > The flush cycle will run at the specified time of day after the differential pressure has been met.
 - ii. **EVERYDAY** > Set the time of day when you want the system to run a flush cycle based on a 24-hour clock.
 - b. **DIRECT FEED** > Enter how long your high-pressure pump runs per car.
 - Next, select when you want the system to run a flush cycle.
 - i. **DIFFERENTIAL PRESSURE** > Set the differential pressure of the filters at which you want the system to initiate a flush cycle.
 - Select whether you want the flush cycle to occur **IMMEDIATELY** or at a **SPECIFIC TIME**.

- **IMMEDIATELY** > The flush cycle will run as soon as the differential pressure of the filters is met.
 - **SPECIFIC TIME** > The flush cycle will run at the specified time of day after the differential pressure has been met.
 - Set the time of day when you want the system to run a flush cycle based on a 24 hour clock
 - Set the maximum number of days to allow between flush cycles.
- ii. **EVERYDAY** > Set the time of day at which you want the system to run a flush cycle based on a 24-hour clock.



Fig. 4.6 - 1 - HMI Settings screen and FLUSH SETUP WIZARD button



Fig. 4.6 - 2 - FLUSH SETUP WIZARD screen

4.7 System Settings

1. Navigate to the Settings screen and adjust the following settings as needed.
 - a. **Standby Cycle** – Occurs when there is no tunnel signal. The cycle is a loop of functions that will run when no tunnel signal is present (Fig 4.7 - 1). The cycle depends on the operating mode selected.

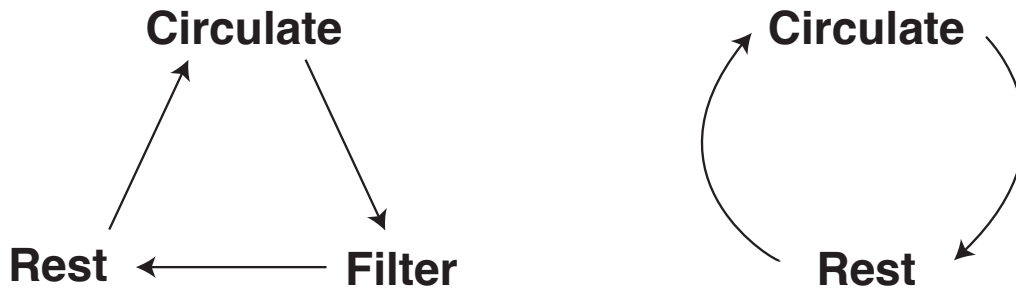


Fig. 4.7 - 1 - Standby Cycle function loop in Tank Feed (left) and Direct Feed (right) operating modes

- b. **Doses Per Minute** – Chemical doses per minute when the system is filtering or recirculating. Chemical will be injected in listed doses per minute when in designated operating state. The amount of chemical required is dependent on multiple factors, including water quality, water circulation, geographic location, and time of year.
- c. **Deodorizer** – Temporarily injects a controlled overdose of chemical in order to shock the system and neutralize issues commonly associated with reclaim water, such as odor.
 - **Cycle Length** - The length of time the chemical will be injected once the Deodorizer is selected.
 - **Doses Per Minute** - Number of additional chemical doses per minute of the Deodorizer cycle.

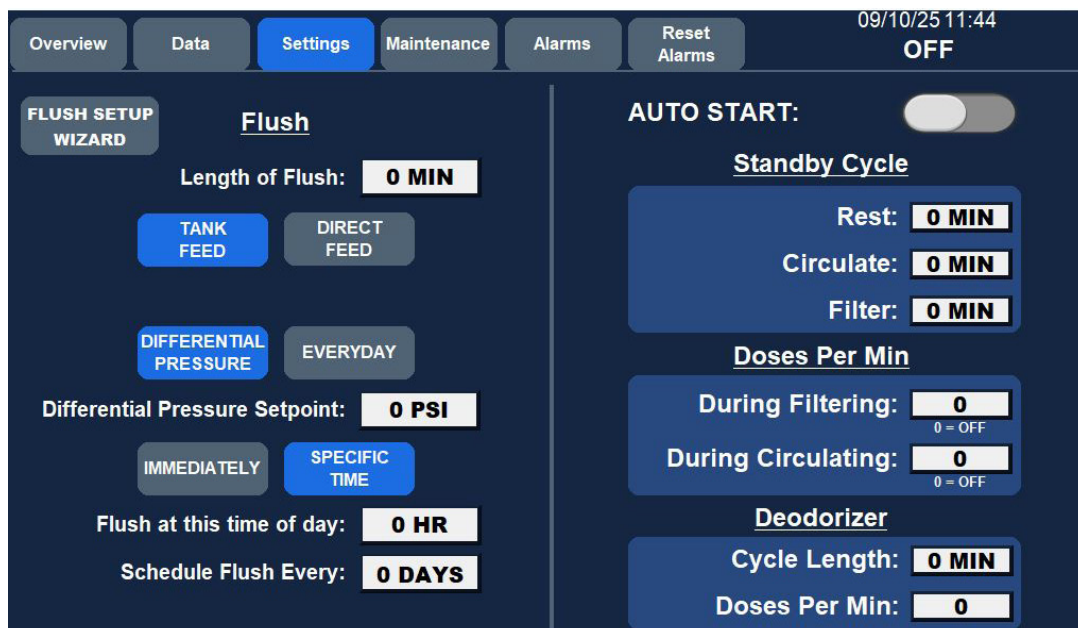


Fig. 4.7 - 2 - HMI Settings screen

Reclaim Lower Water Switch Enable

If a low water float switch is installed (see Section 3.3.1), this setting must be ENABLED.

To verify:

1. Navigate to the Maintenance screen.
2. Select the Reclaim Lower Water Switch Enable toggle (Fig. 4.7 - 3).

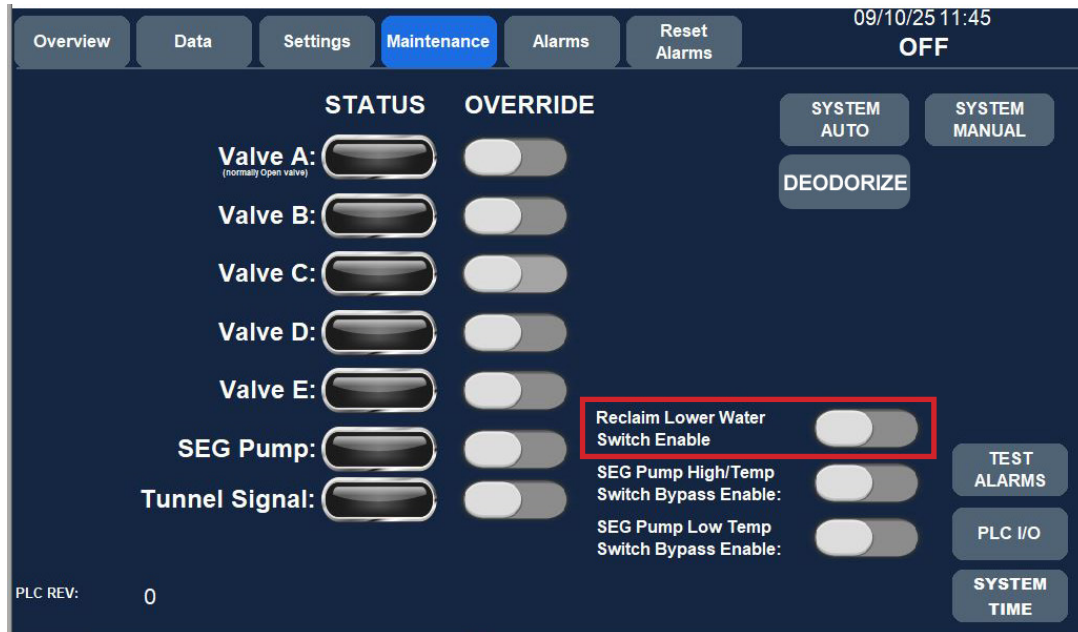


Fig. 4.7 - 3 - Reclaim Lower Water Switch Enable

This setting allows the system to monitor the float and protect the SEG Pump from running dry.

4.8 Starting The System

1. Once you have entered your preferred settings, navigate to the Overview screen (Fig. 4.8 - 1, following page).
2. Press the **SYSTEM AUTO** button to start the system.
3. Verify controller signals and operation.

Direct Feed Only – Verifying Digital Inputs

If the system is configured for Direct Feed, confirm that the required tunnel signals are active.

1. Navigate to the Maintenance screen.
2. Select the PLC I/O button (Fig. 4.8 - 2, following page).
3. Verify that digital inputs **Produce Reclaim Cmd (DIO2)** and **Direct Feed Cmd (DIO7)** are illuminated when the corresponding tunnel signals are active (Fig. 4.8 - 3, following page).
4. These inputs must be provided by the tunnel controller. If DIO2 and DIO7 are not illuminated when expected, verify tunnel controller wiring and configuration.

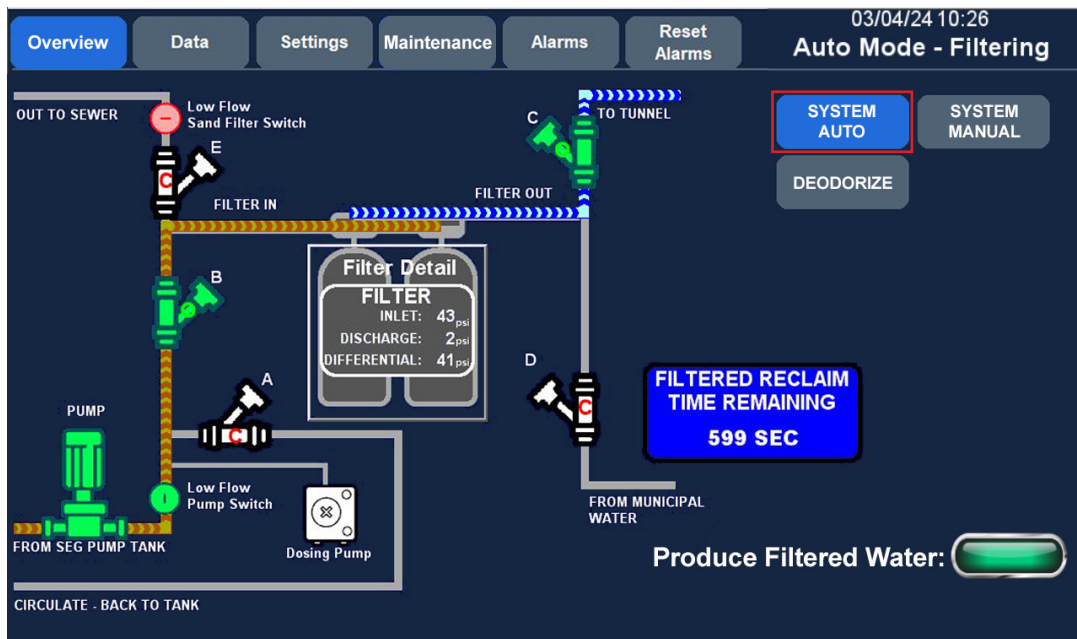


Fig. 4.8 - 1 - HMI Overview screen - Tank Feed

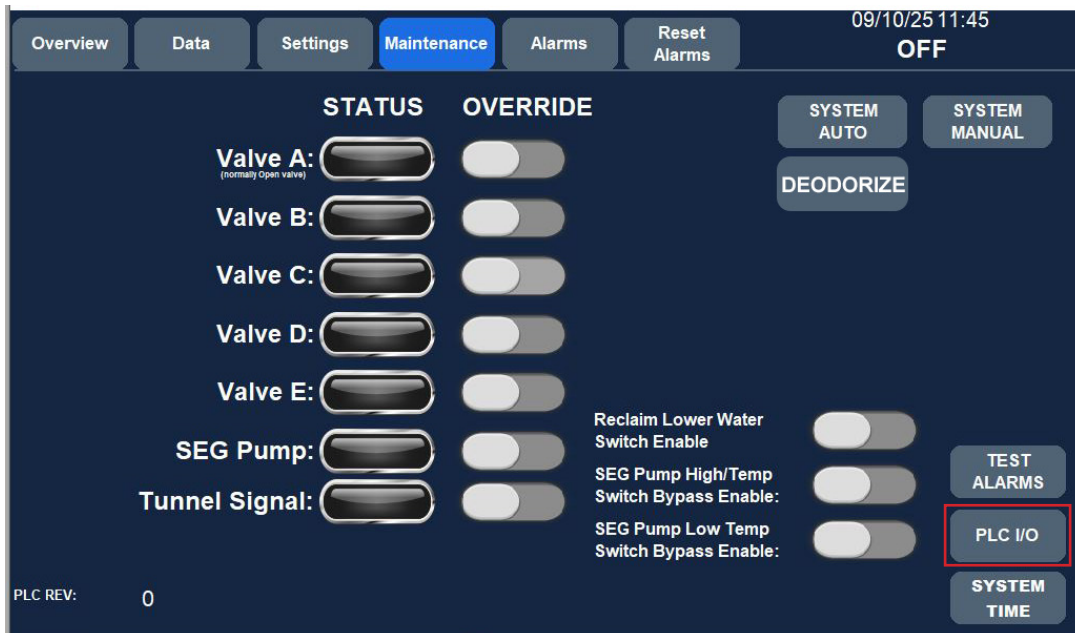


Fig. 4.8 - 2 - HMI Maintenance screen

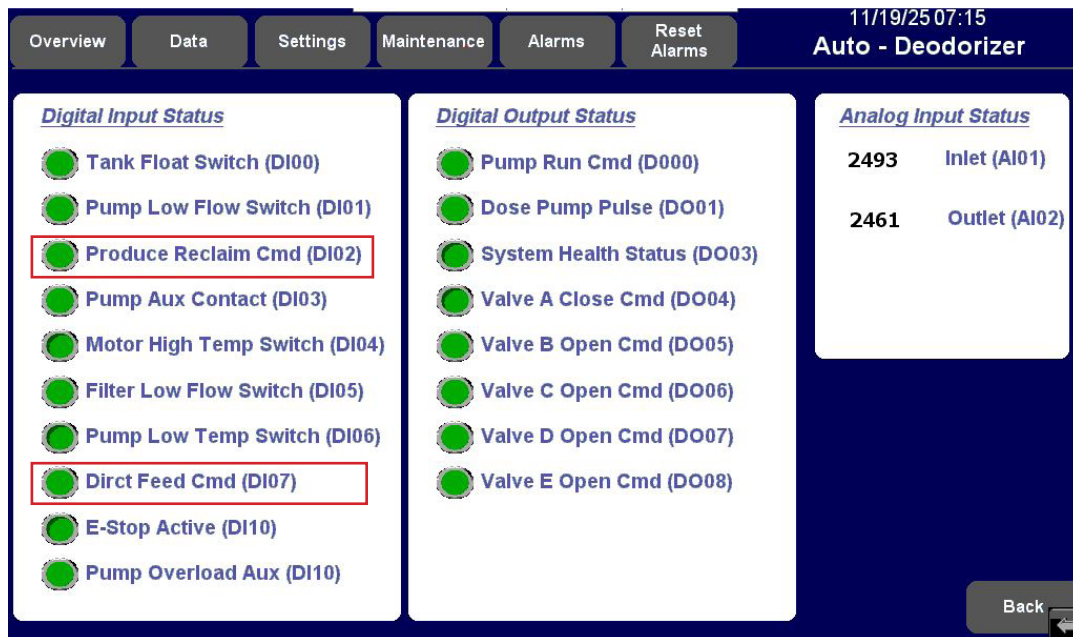


Fig. 4.8 - 3 - HMI PLC I/O screen

Service & Maintenance

5. Service & Maintenance

NOTE

Turn off the Reclaim System completely before starting mud removal. It is recommended to keep the system off for at least 8 least hours before re-starting to allow tanks to refill and dirt to settle. Ensure the Clarifier Tank is filled after pumping the tank before re-starting the system.

The best method to maintain this system is to take a few minutes daily to review and record the operational data from the system and examine the unit for leaks or any indication of a mechanical or electrical fault.

If a change in performance or operation is observed, it is essential to take corrective action quickly to minimize the potential damage to the system.

There are elements of the system that will require normal maintenance actions. These items are listed in the following section.

5.1 Service Schedule

Table 5.1 - 1 - Service schedule

Check	Frequency	Process
Visual Inspection	Daily	• Check for leaks/dripping water from all system connections, manifolds, and pumps. • Verify there are no bad hoses (bend, kink, bad connections, or rips). • Check HMI for alarms. • Ensure there is adequate chemical.
Grundfos SEG Pump Inspection	Every 3,000 hours of operation or at least once a year	• Make sure the cable entry is watertight and that the cables are not sharply bent and/or pinched. • Check the impeller, pump housing, etc. for possible wear. • Check the shaft for noisy or heavy operation (turn the shaft by hand). • In case of frequent choke-ups, check the grinder system for wear. When worn, the edges of the grinding parts are round and worn.
		• Change the oil in the chamber as listed in Section 5.1.1.

Check	Frequency	Process
DDE Dosing Pump Inspection	1 x Week	Clean all pump surfaces with a dry and clean cloth.
	Every 3 Months	Check dosing head screws and tighten if necessary. Replace damaged screws immediately.
Pit	Monthly	- Measure remaining water on top of mud in first tank. - To maintain proper system performance, prevent significant sediment from moving beyond the first set of tanks by establishing a recurring pump-out schedule. For best results, drain and clean all tanks once per year.

5.1.1 SEG Pump Oil Change Procedure

⚠ WARNING!

When loosening the screws of the oil chamber, note that pressure may have built up in the chamber.
Do not remove the screws until pressure has been fully relieved.

1. Remove both oil screws to allow the oil to drain from the chamber.
2. Check the oil for water or impurities. If the shaft seal has been removed, the oil will give a good indication of the condition of the shaft seal.
 - If the oil is grayish white like milk or contains a large quantity of water, the shaft seal should be replaced as the primary part of the seal is worn. If the seal is still used, the motor will be damaged within a short time.

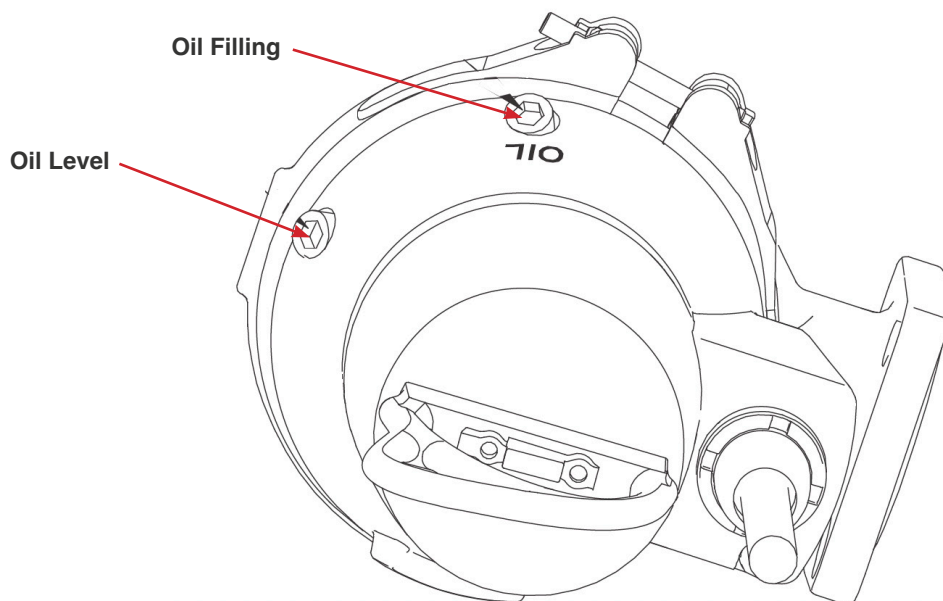


Fig. 5.1.1 - 1 - Changing SEG Pump oil

3. Place the pump in such a position that it is lying on the stator housing and the discharge flange and that the oil screws are pointing upwards and the Oil Filling screw is in the 12 o'clock position. (Fig. 5.1.1 - 1).
4. Fill oil into the oil chamber through the upper hole until it starts running out of the lower hole. The oil level is now correct.

5. Fit both oil screws using the packing material included in the kit.

Troubleshooting

6. Troubleshooting

For product support, contact support@innovateITcarwash.com, or call (518) 741-4200 (option 2).

Symptom/HMI Alarm	Potential Causes	Solution
STOP BUTTON PRESSED	ESTOP button depressed.	Release ESTOP.
FILTER OVER PRESSURE	- Inlet pressure transducer is over 75 psi. - Can be caused by high municipal water pressure or deadheading SEG Pump.	- Confirm air pressure is between 80-100 psi. - Confirm all ASCO valves are operating correctly, as indicated by red nipple visible on the head of the valve when in the open position. - Follow the instructions in section 4.2 to verify operation of all valves.
LOW FLOW DURING FLUSH	Low water flow during Flush cycle.	- Confirm air pressure is between 80-100 psi. - Confirm all ASCO valves are operating correctly, as indicated by red nipple visible on the head of the valve when in the open position. - Follow the instructions in section 4.2 to verify operation of all valves. - Ensure that your municipal water supply is open. - Verify that you have adequate flow through your municipal supply line, as specified in Section 2.2 - Table 2.2.1.
LOW FLOW SEG PUMP	- Broken or misreading flow switch - Low water level in reclaim tank. - Improper power supply to SEG Pump. - Pump malfunction. - Obstruction in plumbing.	- Confirm air pressure is between 80-100 psi. - Confirm all ASCO valves are operating correctly, as indicated by red nipple visible on the head of the valve when in the open position. - Follow the instructions in section 4.2 to verify operation of all valves. - Remove flow switch and check operation. - Confirm there are no restrictions down the line between the SEG Pump and the Reclaim System. - Navigate to the Maintenance screen on the HMI and press SYSTEM MANUAL > MANUAL OVERRIDE. Next, navigate to the Settings screen and open Valve B and force start the SEG Pump. - Navigate to the Overview screen and check the INLET pressure. Next, switch two leads from the motor starter that supplies electrical power to the SEG Pump. Check the INLET pressure again.

Symptom/HMI Alarm	Potential Causes	Solution
INLET/DIRTY PRESSURE TRANSDUCER OUT-OF-RANGE HIGH	- Sensor may be disconnected or broken. - Pressure too high in the system.	- Look for damage in the wiring on the Pressure Transducer. - Swap cable with another known working transducer. - Replace sensor as per the instructions in section 7.2. - Lower municipal water supply pressure.
INLET/DIRTY PRESSURE TRANSDUCER OUT-OF-RANGE LOW	- Sensor may be disconnected or broken. - Pressure too low in the system.	- Look for damage in the wiring on the Pressure Transducer. - Swap cable with another known working transducer. - Replace sensor as per the instructions in section 7.2. - Increase municipal water supply pressure.
OUTLET/CLEAN PRESSURE TRANSDUCER OUT-OF-RANGE HIGH	- Sensor may be disconnected or broken. - Pressure too high in the system.	- Look for damage in the wiring on the Pressure Transducer. - Swap cable with another known working transducer. - Replace sensor as per the instructions in section 7.2. - Lower municipal water supply pressure.
OUTLET/CLEAN PRESSURE TRANSDUCER OUT-OF-RANGE LOW	- Sensor may be disconnected or broken. - Pressure too low in the system.	- Look for damage in the wiring on the Pressure Transducer. - Swap cable with another known working transducer. - Replace sensor as per the instructions in section 7.2. - Increase municipal water supply pressure.
SEG PUMP LOW-TEMP SENSOR TRIPPED	SEG Pump thermal overload reached and pump is overheating.	- Verify there is water in the ground tank. - Verify wiring and ensure there is no damage to cables.
SEG PUMP CONTACTOR OFF	SEG Pump contact is off (MS1).	Turn MS1 contactor ON.
SEG PUMP OVERLOAD, NEEDS TO BE RESET IN CABINET	SEG Pump OL (OL1) is tripped.	- Reset overload inside electrical enclosure. - If alarm continues, confirm amperage dial is set correctly (6.0A).

Symptom/HMI Alarm	Potential Causes	Solution
FORCED AUTO SYSTEM FLUSH	System has not achieved differential pressure in the number of days specified on the Settings page, causing the system to force a Flush cycle.	This is an informational alarm. No action is needed.
SEG PUMP HIGH-TEMP/MOISTURE SENSOR TRIPPED	- SEG Pump High Thermal overload reached and pump is overheating. - Water/condensate has gotten into the electrical circuit.	- Verify there is water in the reclaim tank - If alarm does not reset, contact support.
RECLAIM TANK WATER LEVEL LOW	The water level in the reclaim tank is below the acceptable level.	Review all Reclaim System plumbing to ensure water is flowing into the reclaim tank and SEG Pump is fully submerged at all times.
	Reclaim tank low water float switch has failed.	Replace float switch.

6.1 Resetting HMI Clock

1. Navigate to the **Maintenance** screen.
2. Press the **SYSTEM TIME** button in the bottom right corner of the screen (Fig. 6.1 - 1)
3. Adjust the year, month, day, and time. **HOUR** is based on a 24-hour clock.



Fig. 6.1 - 1 - Resetting HMI clock

Spare Parts

7.1 Recommended Spare Parts

Below is a list of recommended spare parts that may require replacement during the course of system operation.

innovateIT Product Number	Description
RC-TRAN-AV300	Pressure Transducer
RC-FS-VK309	Flow Switch
RC-SLND-VLV-SY3120	Solenoid Valve

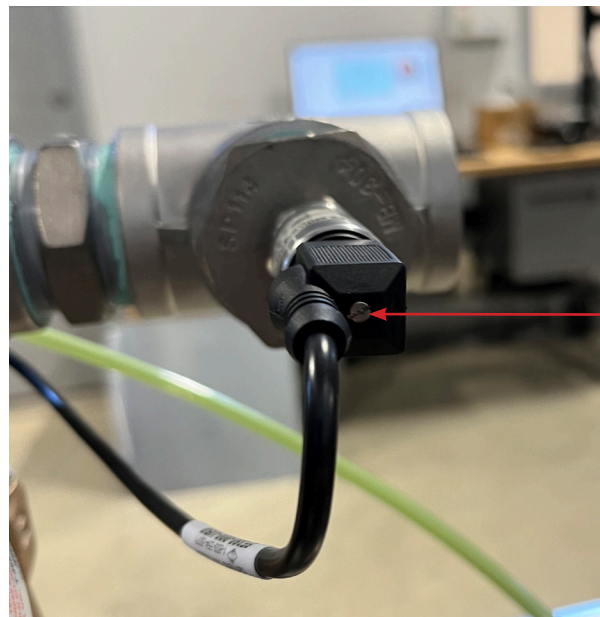
7.2 Spare Part Replacement

NOTE

Running the Reclaim System in **SYSTEM MANUAL** mode immediately after repair can introduce a large amount of air into the filter system. The system should be run in **SYSTEM AUTO** mode after repairs.

7.2.1 Replacing Pressure Transducer

1. Turn **480VAC Main Disconnect** switch on the front of the electrical enclosure to the **OFF** position.
2. Ensure supply water is turned off.
3. Remove the flathead screw from the back of the DIN cable connection on the sensor (Fig. 7.2 -1).



DIN Cable Connection
Flathead Screw

Fig. 7.2 - 1 - DIN cable connection screw

4. Unscrew the existing pressure transducer.
5. Apply stainless-rated Teflon thread tape to the new pressure transducer.
6. Install the new sensor.
7. Reconnect the DIN cable. The longest sensor pin on the pressure transducer lines up with the ground terminal



on the DIN cable connection (Fig. 7.2 - 2).

Fig. 7.2 - 2 - Pressure transducer (left) and DIN cable connection (right)

8. Turn **480VAC Main Disconnect** switch on the front of the electrical enclosure to the **ON** position.
9. Slowly open your water supply line to allow water to flow back into the system.
10. Navigate to the **Overview** screen on the HMI and press the SYSTEM AUTO button.
11. Ensure the pressure is reading correctly on the HMI once the system is in **Reclaim** mode.

7.2.2 Replacing Flow Switch

NOTE

Flow orientation is critical. Note the arrow on the back of the sensor for the direction of flow before installing the new sensor.

1. Turn **480VAC Main Disconnect** switch on the front of the electrical enclosure to the **OFF** position.
2. Ensure supply water is turned off.
3. Open the electrical enclosure.

4. Remove the existing flow switch wire connections on terminals 101 and 1005 (Fig. 7.2 - 3).

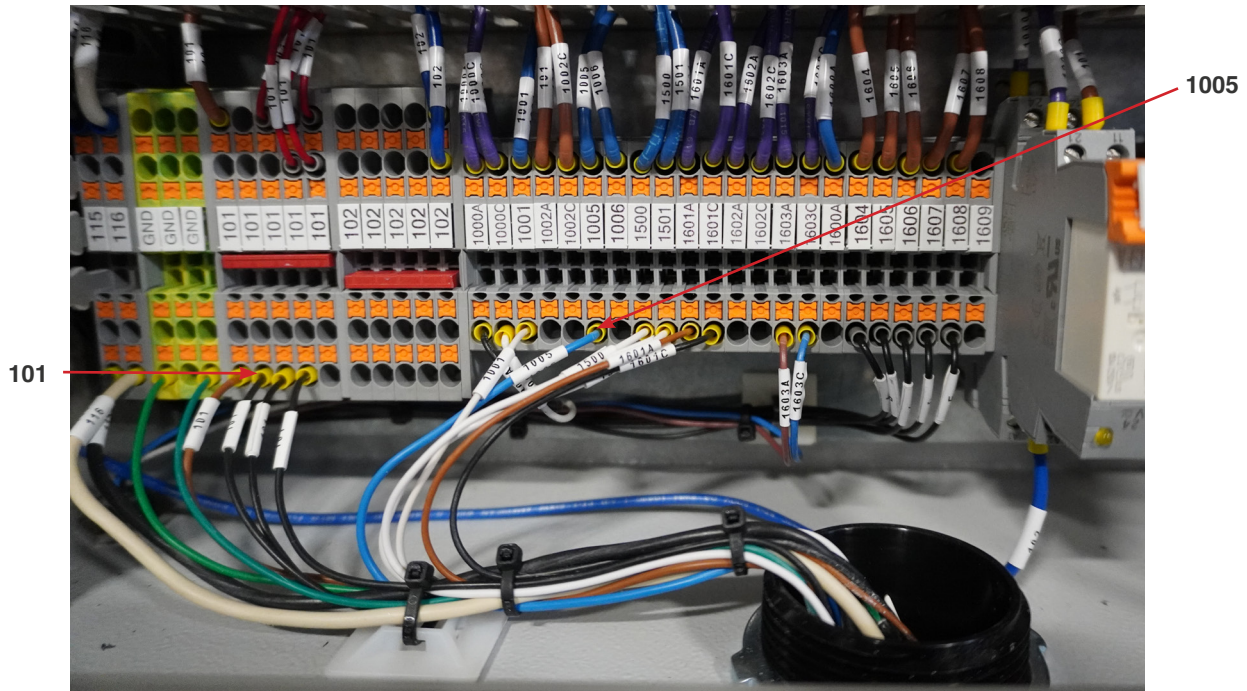


Fig. 7.2 - 3 - Flow switch wire connections

5. Remove the sensor from the pipe on the Reclaim System
6. Remove the sensor.
7. Cut the paddle of the new sensor to the length of the existing sensor (Fig. 7.2 - 4).
- 30mm cut length for 2" diameter pipe at **SEG** discharge.
 - 20mm cut length for 1.5" diameter pipe at **To Sewer** discharge.

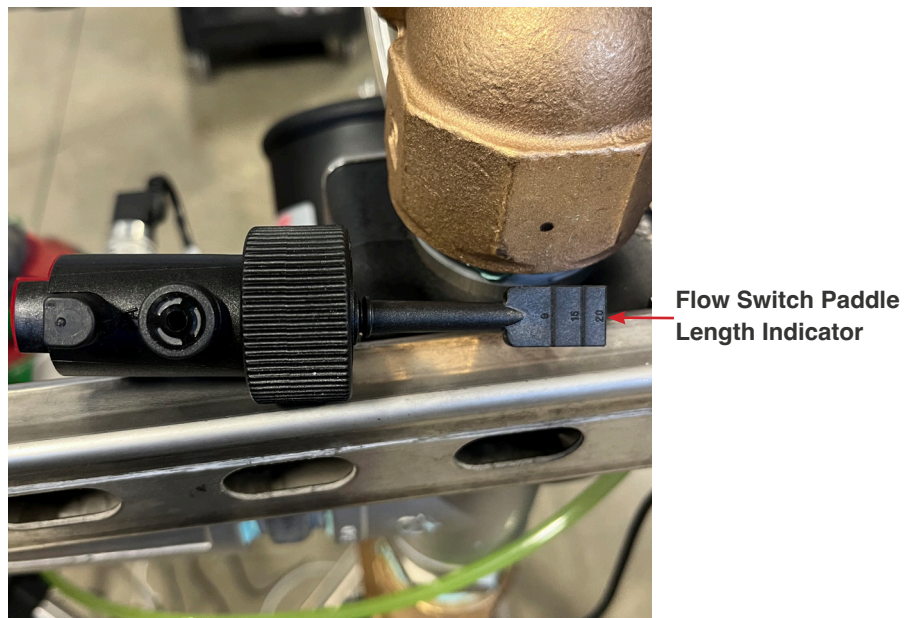


Fig. 7.2 - 4 - Flow switch and paddle length indicator

8. Ensure the provided o-ring is in place and install the new sensor by hand tightening.
9. Run wires into the electrical enclosure through the grommet on the bottom of the enclosure (Fig. 7.2 - 5).
10. Connect the wires to terminals 101 and 1005 (Fig. 7.2 - 3).

11. Turn **480VAC Main Disconnect** switch on the front of the electrical enclosure to the **ON** position.
12. Slowly open your water supply line to allow water to flow back into the system.
13. Navigate to the **Overview** screen on the HMI and press the SYSTEM AUTO button.
14. Ensure the pressure is reading correctly on the HMI once the system is in **Reclaim** mode.

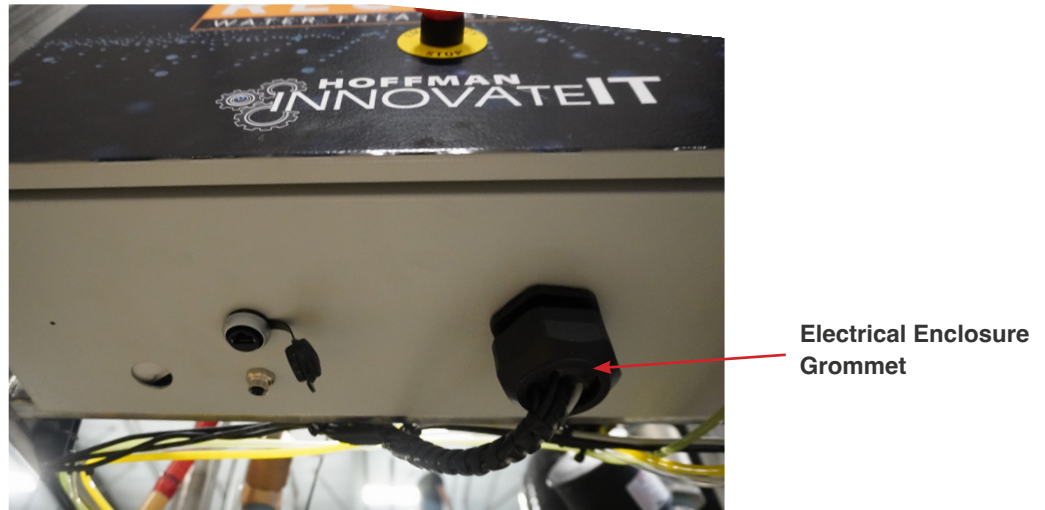
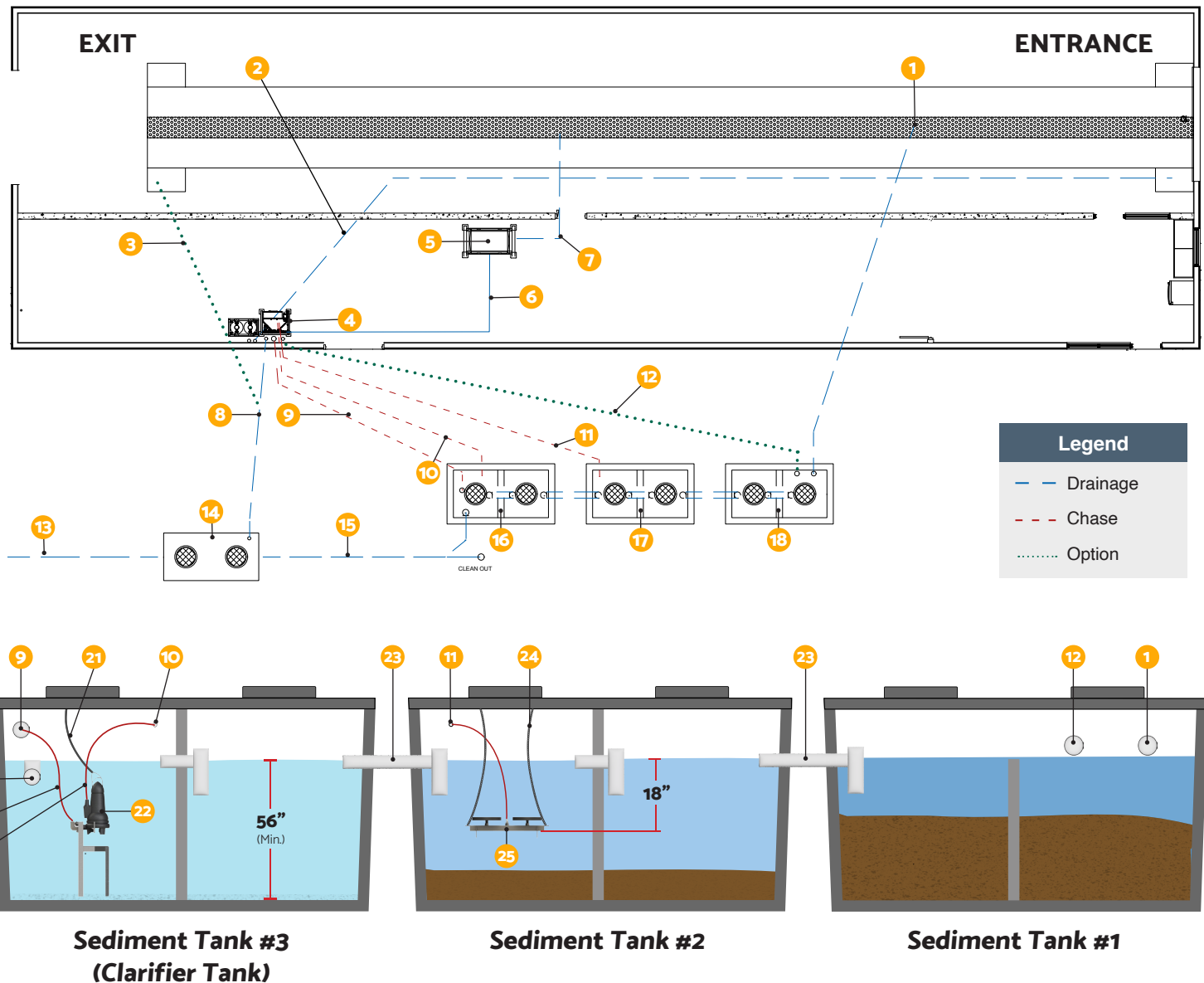


Fig. 7.2 - 5 - Electrical enclosure grommet location

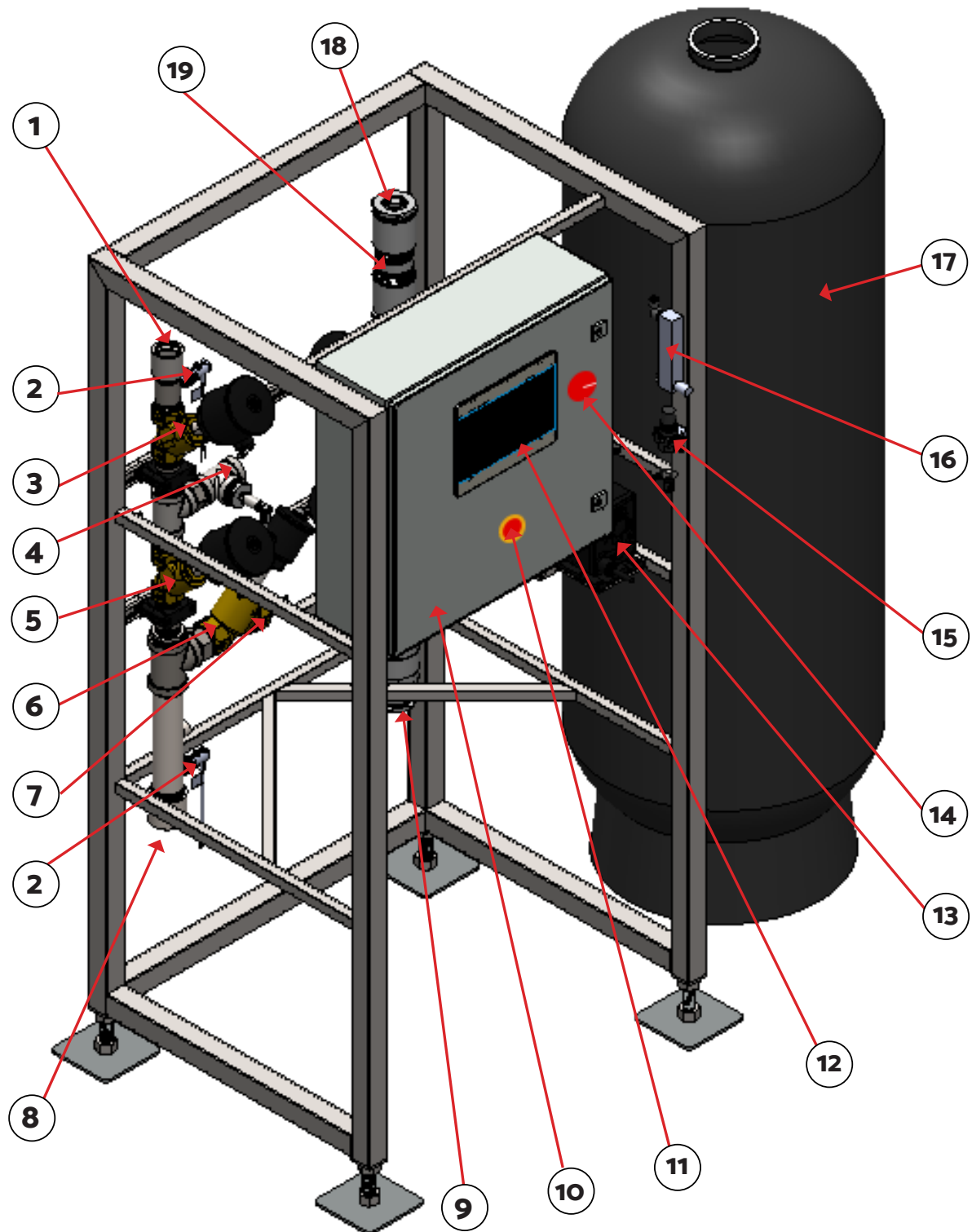
Appendix 1 - Reclaim Integration



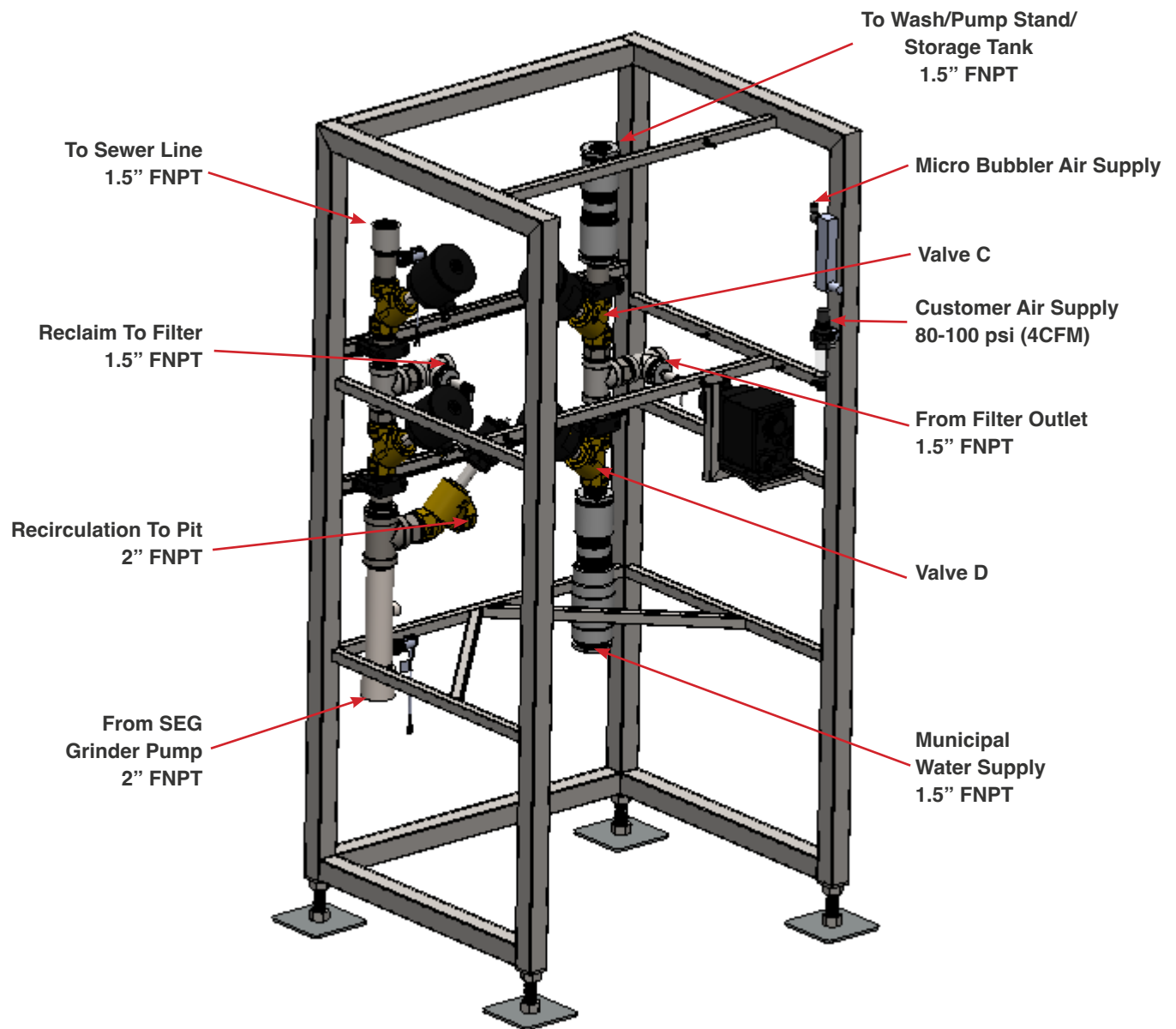
#	Component
1	8" Drain Pipe to Sediment Tank 1
2	4" Drain Pipe to Conveyor Trench for Reclaim Recirculation
3	OPTIONAL Drain Pipe for Tire Shine to Oil/Water Separator Tank
4	Reclaim System
5	High-Pressure Pump Stand
6	1.5" Reclaim Line to High Pressure Pump Stand
7	4" Overflow Drain Line to Conveyor Trench for HP Tank
8	4" Drain Pipe to Oil/Water Separator Tank for Backflush
9	6" Chase Pipe to Clarifier Tank for Pump Line
10	2" Electrical Chase to Clarifier Tank for Motor Cable
11	2" Chase to Sediment Tank 2 for 3/8" Air Line to Micro Bubbler
12	OPTIONAL 6" Drain Pipe to Sediment Tank 1 for Reclaim Recirculation
13	Drain Pipe to Sanitary Sewer

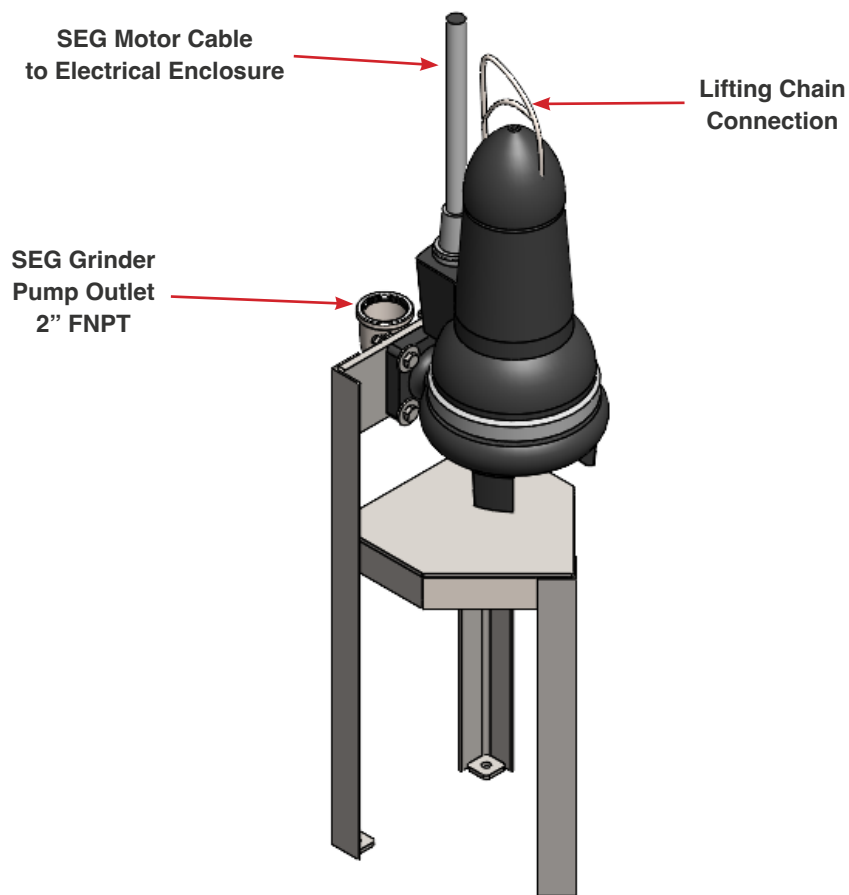
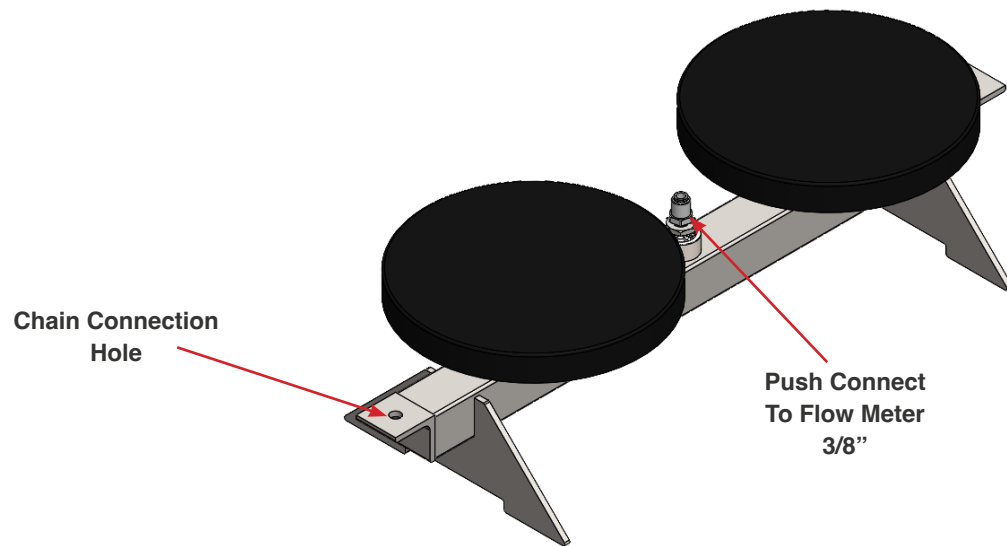
#	Component
14	Oil/Water Separator Tank
15	6" Drain Pipe to Oil/Water Separator
16	Sediment Tank 3 (Clarifier Tank)
17	Sediment Tank 2
18	Sediment Tank 1
19	2" 200 psi Hose to Reclaim Skid Location
20	Grundfos Motor Cable
21	Grinder Pump Chain/Cable Support
22	Grundfos SEG Grinder Pump
23	6" Pipe
24	Micro Bubbler Chain/Cable Support
25	Micro Bubbler (1-5 SCFM)

Appendix 2 - System Identification



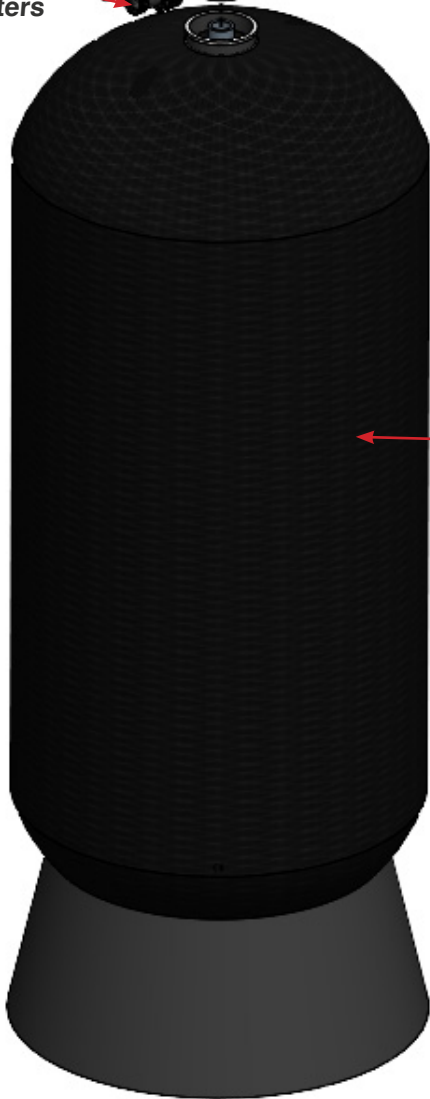
#	Component
1	To Sewer Line
2	Process Sensor
3	Valve E
4	Reclaim To Filter
5	Valve B
6	Valve A
7	Recirculation To Pit
8	SEG Tank Water
9	Municipal Water Supply
10	Electrical Enclosure
11	E-Stop Button
12	HMI
13	Dosing Pump
14	480VAC Main Disconnect
15	Main Air Regulator
16	Micro Bubbler Air Regulator
17	Multimedia Filter
18	To Wash/Pump Stand/Storage Tank
19	Flow Regulator





Clack V4430
Quick Connect
Adapters

Clack D1403
Cross Flow Head

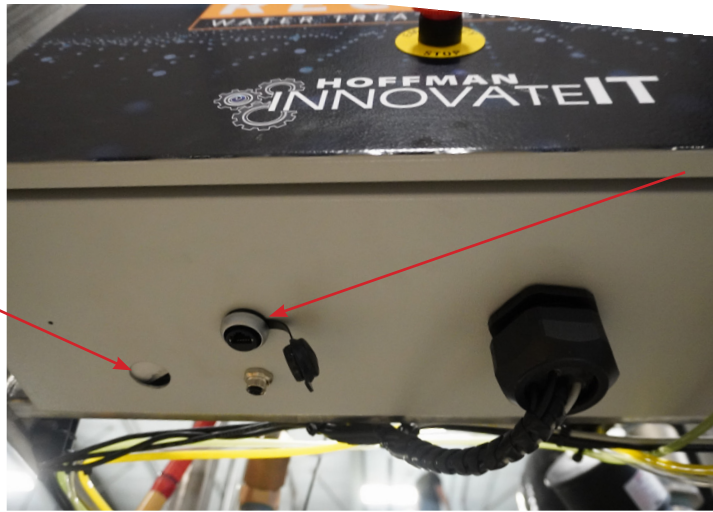


Multimedia
Filter

Multimedia Filter
Distributor



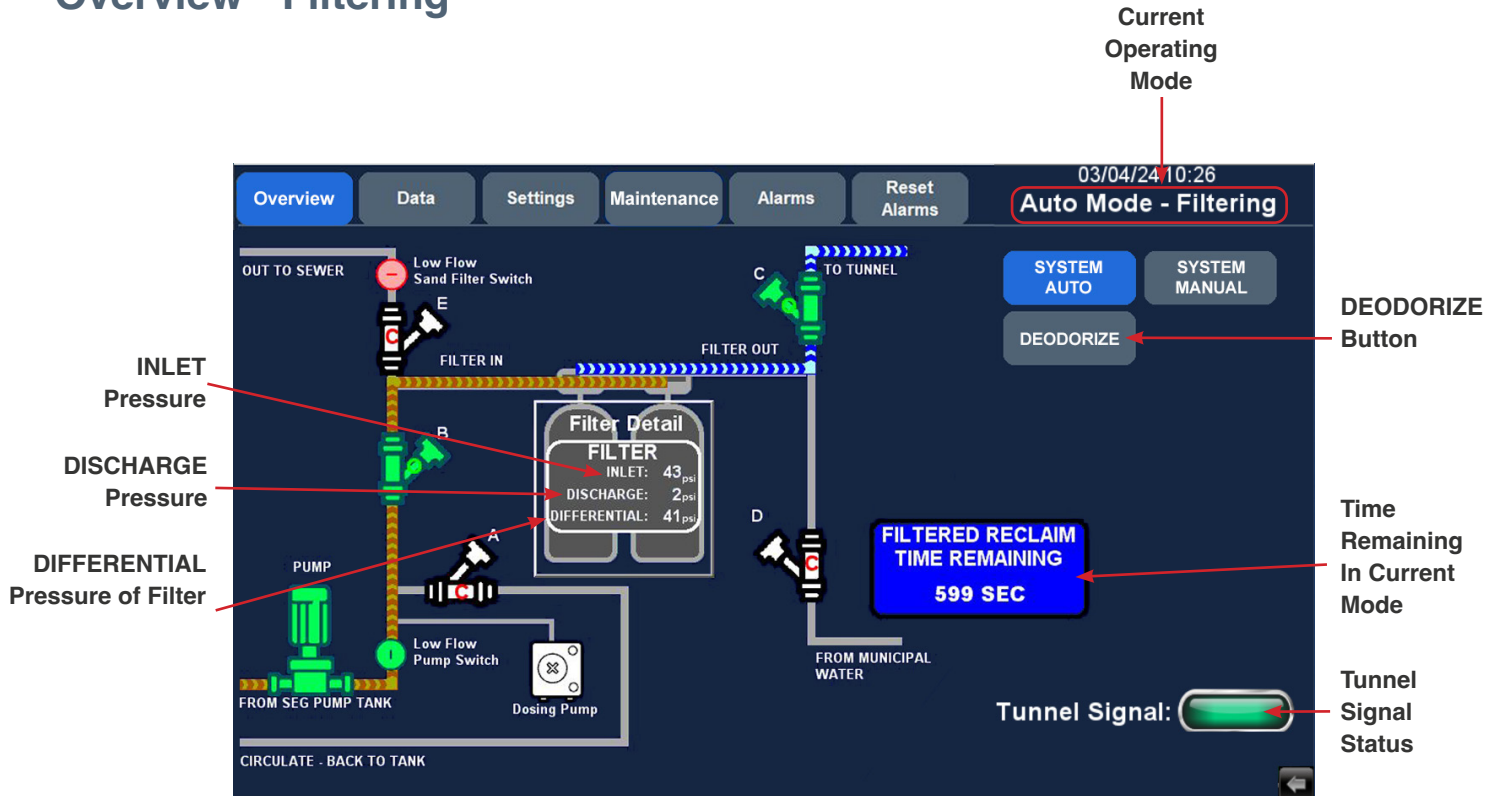
Power Supply
Knockout



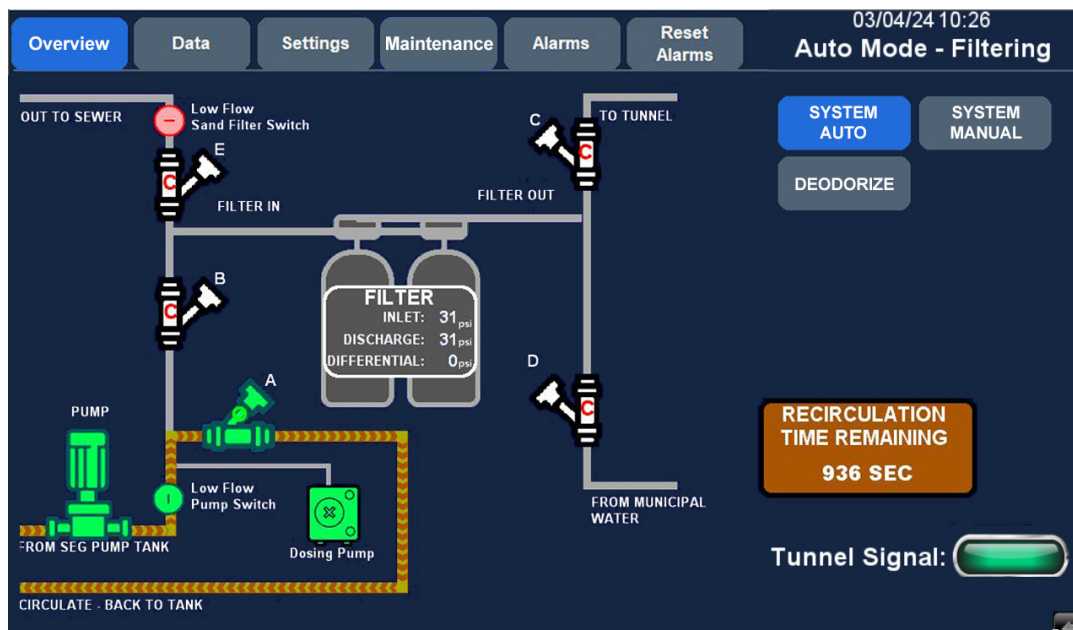
Customer
Network Interface
RJ-45 CAT5 Shielded

Appendix 3 - HMI Screens

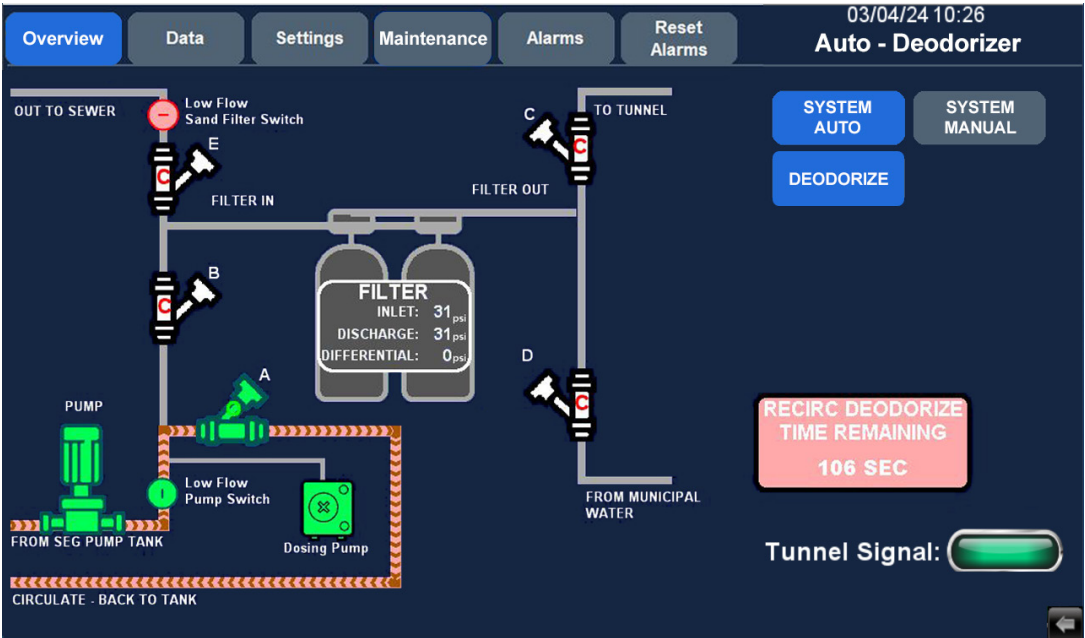
Overview - Filtering



Overview - CIRCULATING



Overview - DEODORIZER



Settings

FLUSH SETUP WIZARD Button

Flush

Length of Flush: **20 MIN**

TANK FEED **DIRECT FEED**

Pump Function Run Time: **30 SEC**

DIFFERENTIAL PRESSURE **EVERYDAY**

Flush at this time of day: **23 HR**

Standby Cycle

Filter: **2 MIN**

Circulate: **10 MIN**

Rest: **30 MIN**

Doses Per Min

During Filtering: **20**
0 = OFF

During Circulating: **5**
0 = OFF

Odor Eliminator

Cycle Length: **10 MIN**

Doses Per Min: **30**

Standby Cycle Settings

Chemical Dosing Settings

Odor Eliminator Settings

FLUSH WIZARD

Refer to Section 4.1.6 to configure Flush settings.

OverviewDataSettingsMaintenanceAlarmsReset Alarms

09/10/25 11:47
OFF

How long do you want the system to flush for?

0 MIN

Default Settings

How are you using the reclaim?
Are you filling a tank or direct feeding a pump?

TANK FEED

DIRECT FEED

Do you want the filter to flush based on differential pressure or every day at a specific time?

DIFFERENTIAL PRESSURE

EVERYDAY

What differential pressure do you want the system to flush at?

0 PSI

Flush immediately or at specific time after differential pressure has been reached?

IMMEDIATELY

SPECIFIC TIME

What time of day would you like to flush at?

0 HR

What is the maximum number of days togo between flushes?

0 DAYS

Back

Data

OverviewDataSettingsMaintenanceAlarmsReset Alarms

09/10/25 11:44
OFF

RUNTIME & CYCLE COUNT:

Valve A: 0

Valve B: 0

Valve C: 0

Valve D: 0

Valve E: 0

Tunnel Signal: 0

Pump Starts: 0

Doses Pump: 0

Odor elimin: 0

Pump Runtime: 0 HR

Recirculation: 0 HR

Reclaim: 0 HR

Flush: 0 HR

Flush History

History of the last 15 flushes

DATE	TIME	CARS	Gallons	Pre-Flush			Post-Flush		
				Inlet	Dis.	Dif	Inlet	Dis.	Dif
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0

Cars since last flush: 0

Gallons Reclaimed 0

High or Low Flow

LOW

Trend

Maintenance - Manual Override

OverviewDataSettingsMaintenanceAlarmsReset Alarms

03/27/24 10:11Manual - Override

STATUSOVERRIDE

Valve A:
(normally Open valve)

Valve B:

Valve C:

Valve D:

Valve E:

SEG Pump:

Tunnel Signal:

System Fault:

SYSTEM
AUTO

ODOR
ELIMINATOR

SYSTEM
MANUAL

MANUAL
FILTERING

MANUAL
CIRCULATION

MANUAL
FLUSH

MANUAL
OVERRIDE

Valve Open/
Close Toggle

SEG Pump
Button

Tunnel Signal
Indicator

PLC REV: 4.1
HMI REV: RC4.2

SERIAL: xxxx
SITE NAME: COHOES

SYSTEM
TIME

Alarms

MainDataSettingsMaintenanceAlarms

03/04/24 10:39Auto Mode - Circulating

Current Alarms

Alarm History

CURRENT:

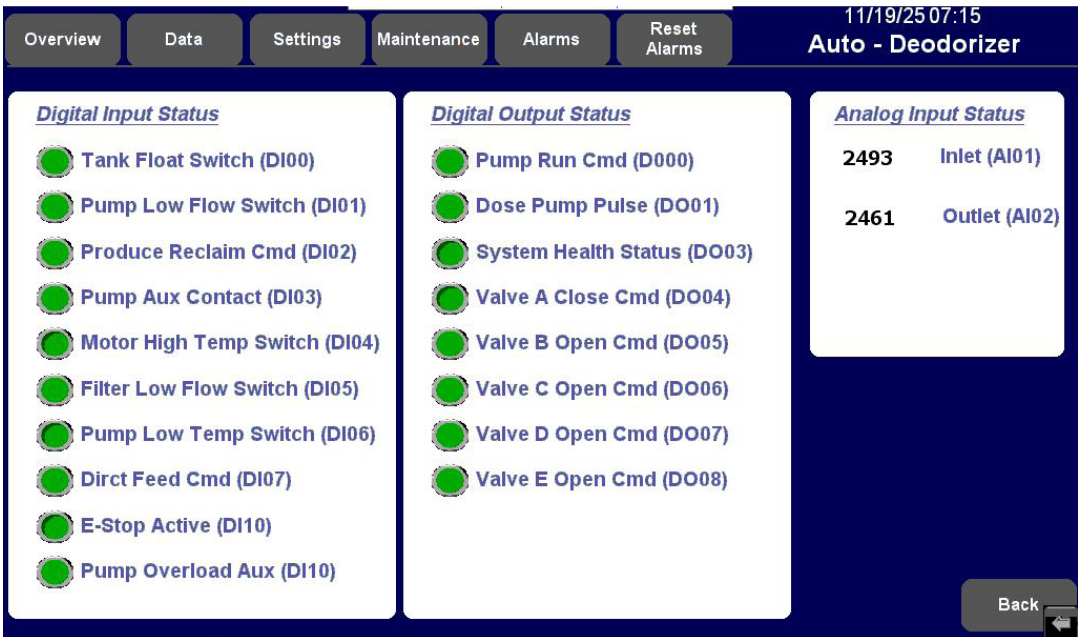
PAST:

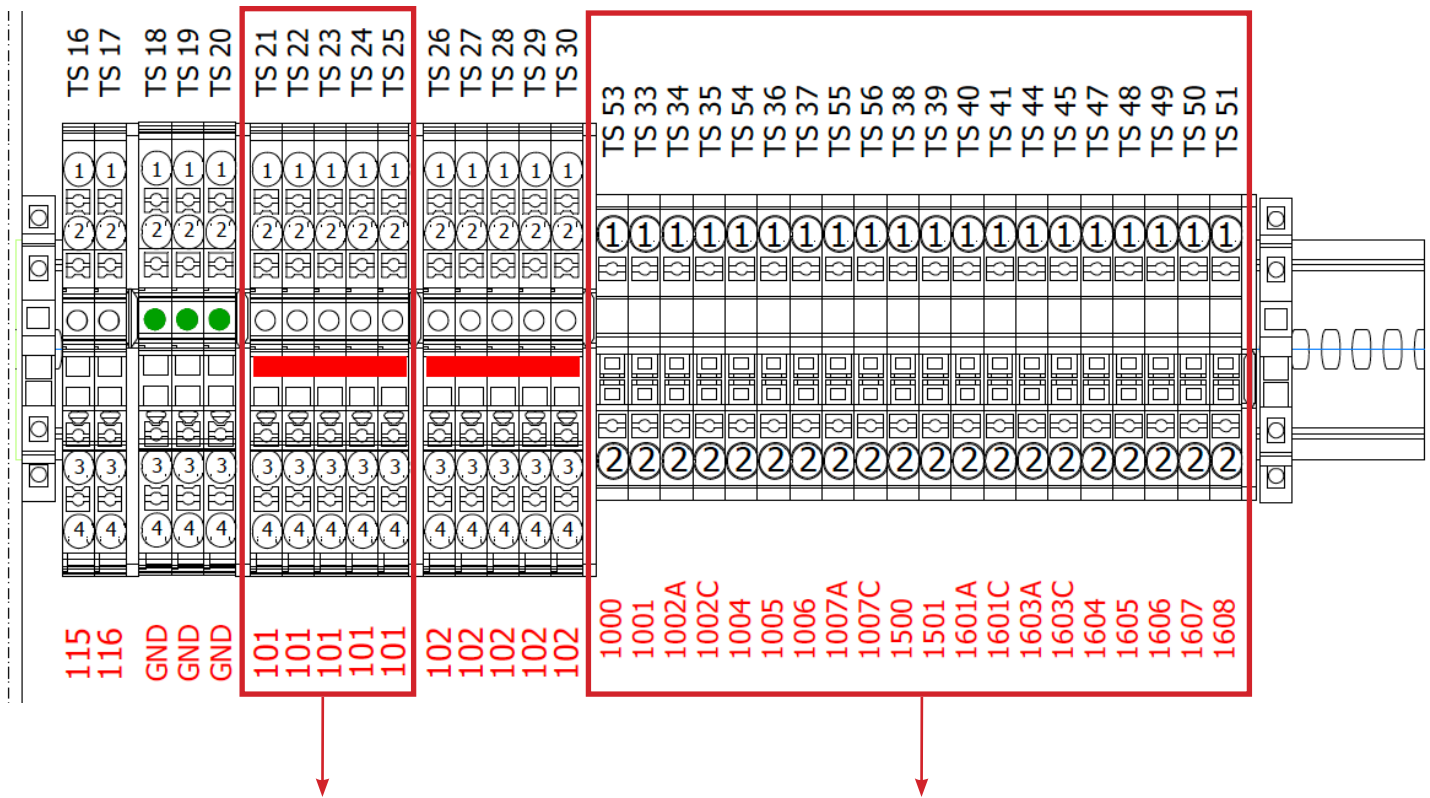
03/03/24	19:51:53	FILTER OVER PRESSURE
03/02/24	20:42:24	FILTER OVER PRESSURE
03/02/24	08:37:02	FILTER OVER PRESSURE
03/01/24	20:48:22	FILTER OVER PRESSURE
02/29/24	20:55:09	FILTER OVER PRESSURE
02/29/24	08:26:23	FILTER OVER PRESSURE
02/28/24	08:35:46	FILTER OVER PRESSURE
02/28/24	07:35:55	FILTER OVER PRESSURE
02/27/24	20:46:26	FILTER OVER PRESSURE
02/26/24	20:46:45	FILTER OVER PRESSURE
02/25/24	19:50:04	FILTER OVER PRESSURE
02/24/24	20:55:24	FILTER OVER PRESSURE
02/23/24	20:53:29	FILTER OVER PRESSURE
02/22/24	20:50:44	FILTER OVER PRESSURE

Test Alarms



PLC I/O





101 TERMINAL BLOCK CONNECTIONS

TS 21 T3	RECLAIM TANK LOW WATER LEVEL
TS 21 T4	SEG PUMP LOW FLOW INDICATION
TS 22 T4	
TS 23 T3	SOLENOID A (GREEN)
TS 23 T4	SOLENOID 0-B (YELLOW)
TS 24 T3	SOLENOID C (RED)
TS 24 T4	SOLENOID D (BLUE)
TS 25 T3	SOLENOID E (CLEAR)
TS 25 T4	

TERMINAL BLOCK CONNECTIONS

1000	RECLAIM TANK - LOW WATER FLOAT
1001	SEG PUMP - LOW FLOW
1002A	PRODUCE FILTERED WATER - DRY CONTACT
1002C	PRODUCE FILTERED WATER - DRY CONTACT
1004	SEG PUMP BRN #4
1005	
1006	SEG PUMP BRN #6
1007A	SYSTEM PRIME - DIRECT FEED ONLY - DRY CONTACT
1500	



Appendix 4

Electrical Schematics