TEKLEEN®
AUTOMATIC SELF-CLEANING
WATER FILTERS

INSTALLATION
& OPERATION MANUAL

MINITWIST FILTER (MTF)

NSF
Certified to NSF/ANSI 61

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About The Installation & Operation Manual

Purpose of the Manual

Welcome to worry-free water filtration with your new Tekleen MTF Automatic Filter!

This guide is your go-to resource for keeping your filtration system running smoothly for years to come. Let's get started and ensure peak performance right from the beginning.

Scan the QR code to access the digital version of this manual at www.tekleen.com.

MINITWIST FILTER FILTER SERIES (MTF)

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This manual is intended as a general guide for the proper installation, operation, and maintenance of Tekleen filters. It may not address all specific system configurations or site conditions. Tekleen assumes no liability for improper installation or misuse of this equipment. All installation and service work should be performed by qualified personnel in accordance with local codes and safety regulations. Specifications and content in this manual are subject to change without notice. No part of this publication may be reproduced, stored, or transmitted in any form without prior written permission from Tekleen Automatic Filters, LLC.

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Checklist for Optimal Filter Performance

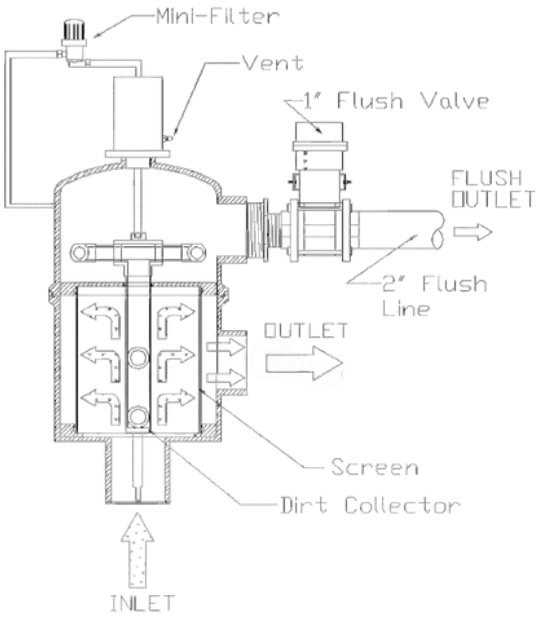
To ensure your MTF filter operates at peak efficiency, please verify the following:

- **Flush Line:**
  - Ensure there is no back pressure on the flush line.
  - Use the correct waste line size: a 2" waste line for a 1" valve.
  - Do not use rubber hosing or flexible tubing for the waste line; use rigid piping.
- **Differential Pressure (DP) Gauge**
  - Mount the DP gauge within 3 feet of the filter with supplied tubing for accurate readings. Longer tubing can lead to inaccurate readings.
- **Piston Water Supply (for models with pistons)**
  - Connect the water supply line to the fitting on the filter top section.
  - Install a 1/4" mini-filter in this line.
- **Piston Venting**
  - The fitting on the side of all pistons is for venting only.
  - Ensure it is open to atmospheric pressure.
- **Differential Pressure (DP) Gauge Mounting**
  - Apply nonconductive sealant to the contact points on the backside of the DP gauge to protect it from water. With sealant applied the gauge can be mounted right side up
  - With no sealant Mount the DP gauge with the blue fitting upside down to prevent short circuits in case of a water leak.
- **Outlet Valve (for Open Discharge)**
  - If the filter outlet discharges to a tank or open atmosphere, install a valve at the filter outlet.
  - This valve is necessary to maintain a minimum working pressure of 40 PSI during the cleaning cycle.
- **Flush Valve Wiring**
  - If the flush valve fails to open or close, verify that its connections to the controller are wired correctly (refer to the wiring diagram on page 20).
- **Surge Protection**
  - It is recommended that a surge protector be installed on the power line that feeds the electronic controller.

Important Note: Some advanced MTF models are designed without pistons. If your system doesn't have a piston, simply disregard any instructions that specifically mention piston operation.

For assistance with proper installation, please email digital photos and your contact information to info@tekleen.com prior to startup. For future reference, video tutorials are available at www.tekleen.com

SECTION I: GETTING TO KNOW YOUR MTF SERIES WATER FILTER



SECTION I

1.1 Introducing the MTF Series

Welcome to Smart Filtration Made Simple. Think of the MTF series as your reliable guardian against unwanted particles in your water. These are intelligent, automatic, self-cleaning water filters designed with a fine screen at their heart. The system is composed of three key components working seamlessly together:

- **The Robust Filter Body:** Housing the intricate fine screen that captures impurities.
- **The Efficient Flushing Valve:** Automatically expelling collected debris to keep the screen clean.
- **The Intelligent Electronic Controller:** The brain of the system, managing the self-cleaning process for optimal performance.

With your MTF filter, you can count on consistent, clean water flow with minimal effort. Let's dive into how it works and how to keep it running at its best!

1.2 How It Works: The Filtration Process

1. **Water In, Impurities Out:** Pressurized water flows into the filter and passes through a very fine stainless-steel screen. This screen acts like a net, trapping tiny contaminants as small as 2 microns – that's incredibly small! The clean, filtered water then continues its journey out of the filter.
2. **The Pressure Tells the Story:** Over time, as the screen catches these impurities, a slight difference in pressure builds up across the screen. Your filter's intelligent controller senses this change.

3. **Automatic Flush Activated:** Once the pressure difference reaches a 5 to 7 PSI differential the controller automatically opens the flush valve.
4. **Reverse Flow Power Wash:** Opening the flush valve creates a path to atmospheric pressure. This clever design causes some of the clean water to flow backward, right at the point where the screen is being suctioned. This reverse flow acts like a powerful mini jet, dislodging the trapped contaminants from the screen.
5. **Sweeping Away Debris:** The dirty water, carrying the dislodged particles, is then directed through special nozzles and a dirt collector mechanism, finally exiting through the open flush valve.
6. **The Rotating dirt collector:** In most models, the clean water flowing through a small hydraulic motor powers the axial rotation of the dirt collector. This rotating movement, combined with a slow linear advancement, ensures that the dirt collector effectively vacuums every inch of the screen surface
7. **Quick and Continuous Cleaning:** The entire self-cleaning cycle is incredibly fast, typically lasting just 4-6 seconds (even quicker at 2-4 seconds for piston-less models). The best part? This cleaning happens without interrupting the main flow of filtered water to your system!

1.3 Where Can You Use Your MTF Filter?

Tekleen MTF water filters are versatile and highly effective at removing a wide range of unwanted materials from almost any water source. Think of them as the ideal solution for filtering out Silt, Scale, Sand, Rust, Dirt, or Organic material like algae.
This makes them perfect for a variety of applications, including:

- Cooling water systems
- Drinking water purification
- Protecting sensitive instruments and sensors
- Ensuring the longevity of pump seals
- Efficient irrigation systems
- And many other industrial, commercial, and irragation uses!

1.4 Smart compact Design That Makes a Difference

Your MTF filter boasts several intelligent design features that set it apart:

1. **No Re-Contamination:** Unlike some traditional sand media filters that can force dirty water back into the system during cleaning, your MTF filter ensures a clean output – it will either deliver filtered water or no water at all during the flush cycle.
2. **Tackling Organics:** A standout feature is its exceptional ability to remove organic materials like algae and other suspended particles, keeping your water truly clean.
3. **Easy Maintenance:** All internal components can be easily removed and disassembled from the filter body without needing to disrupt your plumbing. This makes maintenance straightforward.
4. **Water-**Wise Cleaning: Our innovative "Tekrinse" backwash cycle uses up to 90% less rinse water compared to many other filters on the market, saving you water and reducing waste.

SECTION II

2.1 Positioning and Orientation

Think about where your filtered wastewater will go and ensure you have enough space around the filter for easy access, especially if you ever need to remove the internal filter element (check the Filter Specifications Chart for recommended service area).

The beauty of your Tekleen filter is its flexibility! It can sit directly on its inlet and outlet pipes or be mounted on a stand if that works better for your setup. In fact, you can install it in any orientation – vertical, upside down, even sideways – it's designed to work in various positions. Just make sure to mount the electronic controller nearby for easy access and connection.

2.2 Plumbing Connections: Ensuring Smooth Flow

Getting the plumbing right is crucial for efficient operation. Here's what to keep in mind:

1. **Waste Line Size Matters:** The pipe carrying away the flushed wastewater must be at least one size larger in diameter than the flush valve itself (e.g., a 1" flush valve needs a 2" or larger waste pipe).
2. **Keep it Short and Straight:** The waste pipe should be as short as possible and ideally have no more than one bend (elbow). This minimizes any back pressure on the flush line.
3. **No Uphill Flow:** Avoid running the flush line uphill. This can interfere with the pressure difference needed for effective cleaning. If an uphill run is unavoidable, please reach out to our experts for guidance.
4. **Rigid Piping is Key:** The flush line must be made of rigid pipe. Flexible tubing or rubber hoses can collapse and restrict flow, reducing the filter's cleaning ability.
5. **Install an Inlet Valve:** A shut-off valve (block valve) should be installed at the filter's inlet. During the initial startup, open this valve very slowly to prevent a sudden surge of pressure when the pump starts. Once the pump is running smoothly, you can fully open the inlet valve. This simple step protects your filter from potential pressure shock.

2.3 Connecting the Brains and Monitoring Tools

Before you power up the electronic controller, let's connect all the necessary components: the controller itself, the Differential Pressure (DP) Gauge, and the electric ball valve (refer to the wiring diagram on page 20).
Here's a step-by-step guide:

1. **Electric Ball Valve Connection:** Connect the ball valve to the controller according to the wiring diagram on page 20. Once connected, briefly activate the manual start switch on the GB6 controller and visually confirm that the ball valve opens and closes correctly.
2. **Flushing Time: Finding the Sweet Spot:** The flush duration is typically preset to 4-6 seconds. Important:Increasing the flush time beyond this won't improve cleaning and can actually lead to unnecessary wear on the filter components.
3. **Pressure Difference Adjustment:** The differential pressure switch is usually preset to trigger cleaning at a 5 to 7 PSI difference. You can adjust this setting if needed (refer to your specific electronic controller manual for instructions).

2.4 Connecting the 1/4 Inch Tubing for the DP Gauge and Piston (if applicable):

Use the provided 1/4" inch diameter tubing for these connections:

1. **Low-Pressure Connection:** Attach one end of a tube to the "low" pressure ¼ " fitting located on the outlet flange of the filter. Connect the other end of this tube to the fitting on the DP switch labeled "low pressure."
2. **High-Pressure Connection:** Attach one end of another tube to the "high" pressure 1/4 " fitting on the inlet flangeof the filter. Connect the other end to the fitting on the DP switch marked "high pressure."
3. **Important Note:** Keep these tubing runs as short as possible, ideally no more than two feet and definitely not exceeding three feet. Longer tubing can cause a pressure drop, which might prevent the electronic controller from operating correctly.
4. **Piston Connection (if your model has one):** Attach one end of a tube to the fitting at the end of the piston. Connect the other end to the fitting on the top section of the filter. Crucially, install the provided mini-filter in this 1/4" line to prevent larger particles from clogging the piston mechanism. The fitting on the side of the piston is specifically for venting purposes and should remain open to the atmosphere (see figure on page 12).

SECTION III: GETTING STARTED AND UNDERSTANDING YOUR FILTER'S OPERATION

SECTION III

Alright, let's get your Tekleen MTF up and running smoothly! This section covers the initial startup and explains how the automatic cleaning cycle works its magic.

3.1 Initial Power-Up: Bringing Your Filter to Life

Starting your Tekleen MTF correctly is key to its longevity. Follow these simple steps:

1. **Partial Inlet Valve Opening:** During initial start-up, partially open the isolation valve at the filter inlet. This prevents a sudden surge of pressure when the pump is activated, which could damage the filter.
2. **Gradual Valve Opening:** Once the pump is running, slowly open the isolation valve fully.
3. **Pipeline Filling and Back** Pressure: When initially filling the main pipeline, there may not be sufficient back pressure downstream to allow the cleaning cycle to function correctly. **To address this:**
   - **Install a valve (gate, ball, or butterfly) at the filter outlet.**
   - **Partially close this outlet valve to maintain at least 40 PSI on the filter's inlet pressure gauge.**
   - **Once the system is fully pressurized, you can adjust the outlet valve, but ensure the inlet pressure remains above 40 PSI during cleaning cycles.**
4. **Flow Control (Optional):** In applications where the main flow is frequently interrupted and the pipeline drained, consider installing a flow control or pressure sustaining valve downstream. This will maintain back pressure for proper flushing during pipeline pressurization.
5. **Piston Movement Verification:** After the system is fully pressurized, manually activate the flush button on the electronic controller.
   - **Non-Metal Casting Pistons:** Visually inspect the piston movement to ensure it completes a full stroke. Use a flashlight by shining the light at the piston casing and watch the shadow of the seal move up to the top of the piston housing
   - **Metal Pistons:** Check the indicating pin by looking through the clear PVC cover to confirm full stroke movement.
6. **Flush Valve Check:** During the manual flush, verify that the flush valve opens completely there is an indictor on top the EBV.
7. **Air Purging: The initial cleaning cycle may expel air from the system. Repeat the cycle if necessary to ensure proper cleaning.**

Link to:
Tekleen MTF Filter – Operation

3.2 The Cleaning Cycle: How Your Filter Stays Efficient

For your Tekleen MTF to effectively clean itself, it needs the right operating conditions:

1. **Minimum Working Pressure: T**he filter requires a minimum pressure of 40 PSI at the inlet during the cleaning cycle to ensure thorough and efficient removal of contaminants.
2. **Pump Power is Key:** Maintaining this minimum working pressure during the cleaning cycle depends on having a pump with sufficient capacity. Choosing the right pump involves considering three main factors:
    a. **Required Working Pressure (40 PSI):** The minimum pressure needed for effective cleaning.
    b. **Process Flow:** The normal volume of water flowing through the filter when it's not cleaning.
3. **Flush Flow:** The volume of water used during a cleaning cycle. This rate is determined by the size of the flush valve.
4. **Calculating Total Flow:** To determine if your pump can handle the demands of your system, you need to calculate the total flow: Process Flow + Flush Flow=Total Flow
5. **Understanding Your Pump Curve:** Consult the performance curve provided by your pump manufacturer. This graph shows how the pump performs in terms of flow rate and pressure. Locate your calculated "Total Flow" on the pump curve. The corresponding point on the curve will tell you the pressure your pump will maintain at that flow rate. If this pressure is 40 PSI or greater, your pump meets the requirements for effective filter cleaning. (Figure)
6. R**eal-World Examples:**
    a. **Scenario 1:** Insufficient Pressure: Let's say your process flow is 190 gallons per minute (gpm) and your filter's flush flow is 40 gpm. The total flow would be 230 gpm. If you look at the example pump curve in Figure 3.2 and find that at 230 gpm the pressure drops below 40 PSI, then your pump is not sufficient for effective cleaning during the backwash cycle.
    b. **Scenario 2:** Sufficient Pressure: Now, imagine your process flow is 150 gpm and the flush flow is still 40 gpm. The total flow is 190 gpm. If the pump curve shows that at 190 gpm the pressure is above 40 PSI, then your pump will provide enough pressure for the filter to clean itself effectively.

By understanding these operational requirements, you can ensure your Tekleen MTF filter works efficiently and provides you with consistently clean water.

FLUSH VALVE SIZE		FLUSH FLOW	
inch	mm	gpm	m3/hr
1”	DN25	60-80	14-18
1.5”	DN40	120-160	27-36
2”	DN50	240-320	55-73

SECTION IV: KEEPING YOUR MTF FILTER RUNNING SMOOTHLY

Keeping your Tekleen MTF running smoothly is easy! This section outlines simple maintenance procedures to ensure optimal performance and extend the life of your filtration system.
Think of these steps as routine check-ups to keep your filter in top shape.

SECTION IV

4.1 Powering Down Safely: The Shutdown Sequence

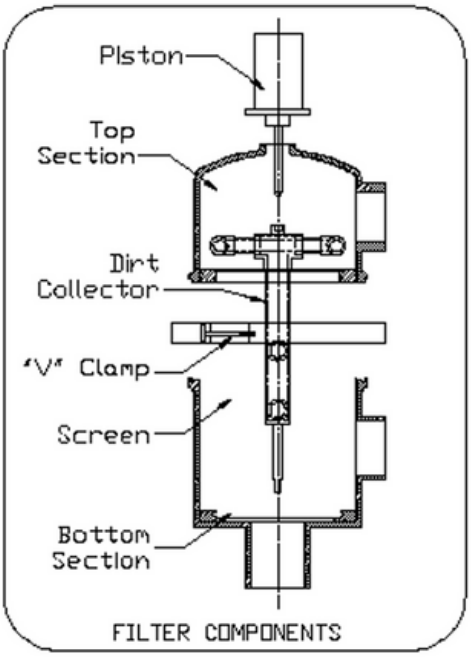
When it's time to shut down your filter for maintenance or any other reason, follow these steps to prevent any potential damage from reverse water flow:

1. **Open the Bypass:** If you have a bypass valve installed, open it. This allows water to flow through your system while the filter is offline.
2. **Close the outlet valve:** Completely close the outlet valve of the filter.
3. **Close the Inlet valve:** Completely close the inlet valve of the filter. Now your filter is isolated, and the main water flow is going through the bypass.
4. **Release the Pressure:** Carefully relieve any remaining pressure inside the filter housing by gently detaching one of the 1/4" plastic tubes from any of its fittings.

4.2 Routine (preventive maintenance) Check-Up: Keeping Things Clean

Just like any hardworking system, your Tekleen MTF benefits from regular inspection. We recommend a visual check of the following components every three months to ensure everything is in good working order:

1. **The Fine Screen:** Look for any signs of wear, tears, or excessive buildup.
2. **The Dirt Collector:** Ensure it's intact and the nozzles are clear.
3. **The Flush Valve:** Check for any leaks or signs of malfunction.
4. **The Piston (if applicable):** Inspect for smooth movement and any damage.
5. **The Differential Pressure (DP) Gauge:** Verify it's reading accurately.



How to Inspect Your MTF Filter:

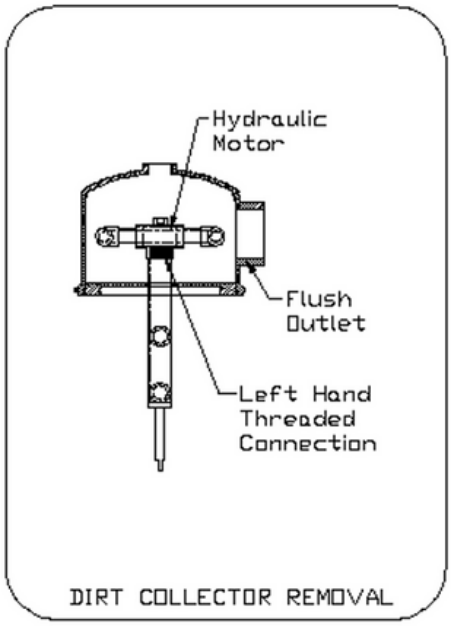
Before you begin, make sure to follow the shutdown procedures outlined in Section 4.1. Once the filter is safely shut down and depressurized:

1. **Power Off:** Switch the controller to the "Off" position and unplug it from the power source for safety.
2. **Disconnect the Valve:** Unplug the electrical connection to the flush valve from the controller.
3. **Detach the Tubing:** Disconnect all the 1/4" plastic tubes from the filter housing.
4. **Disconnect the Flush Line:** Unscrew and detach the flush line from the filter.
5. **Release the Clamp:** Locate the "V" clamp in the center of the filter housing and remove it.
6. **Lift the Top:** Carefully lift the top section of the filter straight up. This action will also lift the dirt collector out of the screen. Now you can visually inspect all the internal components.

4.3 Replacing the Dirt Collector (if needed)

Should the dirt collector ever need replacement, first follow the shutdown and disassembly steps in Sections 4.1 and 4.2. Then:

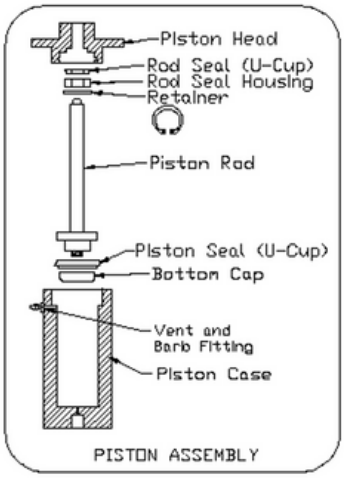
1. **Stabilize the Motor:** To prevent it from rotating, hold the hydraulic motor via the flush outlet you can put a small block of wood or a large screwdriver.
2. **Unscrew the Collector:** Twist the dirt collector in a clockwise direction (it has a left-hand thread, so clockwise loosens it).
3. **Remove the hydraulic Motor:** Carefully remove the hydraulic motor from the top section of the filter.
4. **Take Out the Old Collector:** The dirt collector can now be removed. To install a new one, simply reverse these steps, ensuring the left-hand thread is properly engaged.



4.4 Removing or Replacing the Piston (if applicable)

If your filter has a piston and it needs to be removed or replaced, follow these steps:

1. **Shutdown and Disassembly:** Complete steps 1-4 of the shutdown procedure in Section 4.1.
2. **Disconnect Tubing:** Detach the 1/4" tubing connected to the piston.
3. **Unscrew the Piston:** Use a wrench to unscrew the hex head of the piston from the top section of the filter. To reinstall, simply screw in the new piston and reconnect the tubing.



4.5 Annual Check-Up: Essential Part Inspection

To ensure optimal performance and longevity of your MTF filter, perform the following preventive maintenance tasks at the specified intervals:

6-Month Interval:

1. Inspect Fine Screen: Visually inspect the fine screen for any signs of damage, such as tears, holes, or excessive buildup. If any damage is found, replace the fine screen.
2. Check for Leaks: Inspect all connections, including pipes, fittings, and valves, for any signs of leaks. Tighten connections as needed.
3. Verify System Pressure: Ensure that the inlet pressure during normal operation and during the cleaning cycle is within the recommended range (refer to the filter specifications).
4. Replace the following parts: (MAINT-XXM (screen area)).
    - Upper/lower Screen O-ring
    - Cover seal
    - Piston repair kit

12-Month Interval:

1. Perform all tasks listed under the 6-Month Interval.
2. replace Cover Seal
3. replace upper and lower screen O-rings
4. Inspect Piston: Inspect the piston for smooth operation and any signs of damage or wear.
5. Inspect Dirt Collector Nozzles: Check the dirt collector nozzles for any blockages or damage. Clean or replace as needed.
6. Inspect Dirt Collector: Inspect the dirt collector for any damage or wear. Ensure it rotates freely.
7. Inspect Air/Water Connections: Inspect all air and water connections for leaks or damage.
8. Replace the following parts: (SPARES-XXM (screen area)))
    - Upper/lower O-ring x2
    - Cover seal
    - Piston repair kit
    - Upper Bearing
    - Lower Bearing
    - Piston Assembly

SECTION V: TROUBLESHOOTING MADE EASY

Encountering an issue with your Tekleen MTF? Don't worry, our troubleshooting guide is here to help you quickly identify and resolve common problems, keeping your water flowing clean.

Here are some common scenarios and how to get things back on track:

SECTION V

5.1 Problem: High Pressure Drop Across the Filter (Without Flushing)

This indicates that the filter screen is likely becoming clogged, but the automatic cleaning cycle isn't kicking in. Let's investigate:

1. Controller is not powered on: Simply turn the power switch on. You should see the controller activate.

2. Flush valve wiring is incorrect: Double-check the wiring diagram (page 20) and ensure the flush valve is connected to the controller exactly as shown.

3. Filter is installed backward: Verify the direction of water flow through the filter matches the markings on the unit. Incorrect installation will prevent proper filtration.

4. DP switch might be faulty: Check the set point on the Differential Pressure (DP) switch. Also, ensure the small 1/4" black tubing connected to it is less than 3 feet long and free from any kinks or obstructions. Finally, confirm that the DP switch tubing is connected to the correct inlet and outlet fittings on the filter.

5.2 Problem: Frequent or Continuous Flushing During Initial Pipeline Filling

This usually happens when the system hasn't fully pressurized yet or if there's a flow issue:

1. Insufficient downstream pressure for effective cleaning: Partially close the downstream main line valve until the pressure gauge at the filter inlet reads at least 40 PSI. This creates the necessary back pressure for proper flushing during the filling process.

2. High initial flow exceeding the DP switch's trigger point: Partially closing the downstream valve (as in the solution above) will also help regulate the initial flow rate and prevent premature triggering of the cleaning cycle.

3. Filter was shut down with a dirty screen, and contaminants to cake on:
You'll need to perform a "super flush":

1. Close the outlet valve completely.
2. Manually initiate a cleaning cycle using the controller.
3. Open the outlet valve and check the pressure difference (differential) across the filter.

If it hasn't returned to zero, repeat this "super flush" process.

5.3 Problem: Frequent Flushing During Normal Operation

If your filter is cleaning itself more often than expected during regular use, here's what could be happening:

1. **The water source is very heavily contaminated:** The screen mesh might be too fine for the amount of particulate in your water. Contact Tekleen support at +1.310.839.2828 or info@tekleen.com for assistance.
2. **Insufficient inlet pressure for effective cleaning:** Verify that the inlet pressure to the filter remains at least 40 PSI during the cleaning cycle. If it drops below this, try partially closing the outlet valve to increase the inlet pressure.
3. **The screen might be partially clogged:** Perform a "super flush" as described in section 5.2 to try and dislodge any stubborn buildup on the screen.
4. **The dirt collector might be stuck:** Power down and open the filter (following the maintenance steps in Section 4). Manually check if the dirt collector rotates freely. If it's jammed, carefully try to remove any obstruction. If it's damaged, you'll need to replace it (see Section 4.3).

5.4 Problem: The Screen Isn't Cleaning Properly

If you notice debris still on the screen after a cleaning cycle, consider these possibilities:

1. **The flush cycle duration is too short:** Access the controller panel and increase the duration of the flush cycle. A slightly longer flush can often improve cleaning effectiveness.
2. **The filter was shut down dirty with caked-on debris:** Perform a "super flush" as described in section 5.2 to try and break down and remove the hardened contaminants from the screen. You might need to repeat this process a few times.
3. **Back pressure in the flush line:** Ensure that the flush line diameter is at least one inch larger than the flush valve outlet (refer back to Section 2.2 for proper plumbing guidelines). Restrictions or undersized piping can create back pressure, hindering proper flushing. Also, ensure the flush line is not running uphill without our consultation.
4. **The piston (if applicable) isn't working correctly:** Inspect the piston components for any damage or obstructions. Verify that the piston rod moves freely during a cleaning cycle. Also, double-check that the inlet pressure to the filter is at least 40 PSI during the flush. Insufficient pressure can prevent the piston from operating effectively. Refer to Section 4.4 for piston inspection and potential replacement procedures.

MTF Filter Servicing Troubleshooting

If you've tried these troubleshooting steps and are still experiencing issues, don't hesitate to reach out to our dedicated technical support team at +1.310.839.2828 or info@tekleen.com for assistance.

We're here to help you keep your Tekleen MTF performing at its best!

Notes:

Tekleen Maintenance Plans

Genuine parts are in stock and ready to ship. Keep your filters running reliably and extend system life with a maintenance plan tailored to your operation.

6-Month Visual Inspection

Scheduled visual checks are essential for maintaining your filter's performance and extending its operational life. Conduct a thorough visual inspection of your system, checking for leaks around seals and connections, signs of corrosion or component wear, and proper differential pressure readings.

This simple measure helps identify potential issues early, reducing the risk of unexpected downtime and ensuring your Tekleen filter continues to deliver reliably clean water filtration for years to come.

12-Month Maintenance Kit

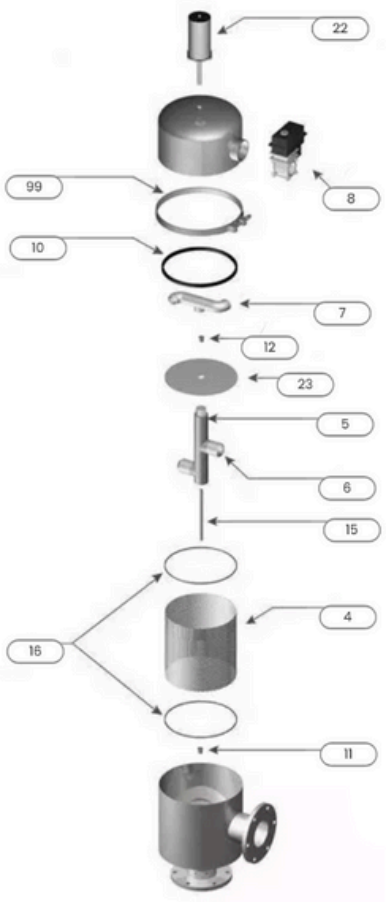
Complete annual maintenance solution:

- A 6-month visual Inspection
- DP Switch
- Piston Assembly
- Upper Bearing
- Lower Bearing
- Collector Fins (quantity varies by filter model)

SECTION VI

6.1 Recommended Spare Parts

Spare Parts



1. Filter Housing
2. Cover
3. Course Screen
4. Fine Screen
5. Dirt Collector
6. Dirt Collector Nozzle
7. Hydraulic Motor
8. Flush Valve Assembly
9. Rinse Controller (Hydraulic) (N.S)
10. Cover Seal
11. Upper Bearing
12. Lower Bearing
13. Screen Bar
15. Collector Pin
16. Upper/Lower O-Ring
18. Mini-Filter (optional) (N.S)
20. Cover Nut / Cover Washer
21. Bushing Assembly / Male Bearing
22. Hydraulic Piston (Short / Long)
24. Cover Bolts
25. Set of Fittings
29. Piston Repair Kit (N.S)
30. Screen Installer / Remover
34. Diff. Press. Switch (N.S)

Tekleen MTF Filter – Spare Part

Need Replacement Parts?

To keep your Tekleen MTF filter running at peak performance, we recommend keeping key spare parts on hand. From O-rings to controller boards, having replacements readily available helps minimize downtime and ensures smooth operation. View the full spare parts list or order directly by scanning the QR code or visiting the link.

APPENDICES AND WARRANTY

Let's explore some advanced setup options and get a deeper understanding of specific Tekleen MTF features! This section provides insights into specialized installations, alternative flushing methods, considerations for atmospheric discharge, and details about the piston and piston-less designs.

Appendix I: Special Installation Considerations

Automatic Bypass System

1. In situations where continuous water flow is crucial, even during filter maintenance, we recommend installing a bypass system.

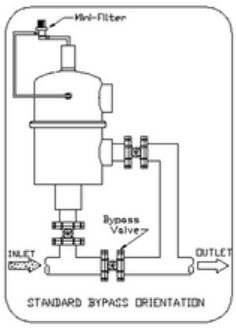
Filter Bypass Configuration

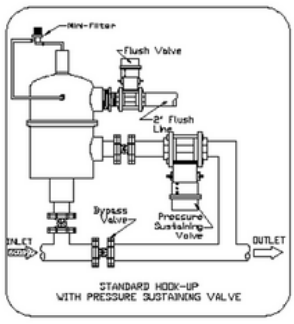
1. Creating a bypass is straightforward, especially for online filter models. This involves installing isolation valves on both the inlet and outlet, along with a bypass line equipped with another isolation valve (see diagram).
2. For automated bypass operation, the bypass valves can be fitted with actuators and wired to the controller (refer to the controller manual for wiring instructions).

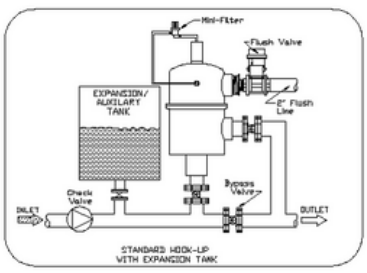
Appendix II: Alternative Flushing Methods

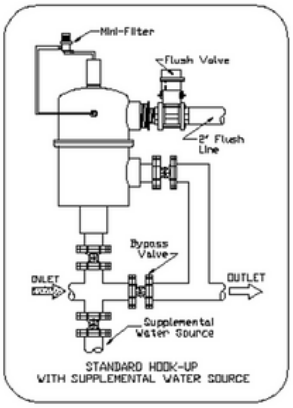
If your installation lacks sufficient pressure and/or flow for effective backwashing, several solutions are available:

1. **Pressure Sustaining Valve:** For low-flow installations with pressure exceeding 40 PSI, the simplest solution is to install an automatic pressure sustaining valve at the filter outlet. This valve will close during the filter's cleaning cycle, directing the full pump capacity to the backwash process.
2. **Expansion Tank:** An expansion tank installed directly upstream of the filter inlet can provide the necessary extra flow. The tank stores water at operating pressure, which is then used to supplement flow during the cleaning cycle.
3. **Supplemental Water Source:** An additional water source can be connected to the filter inlet. This source, controlled by an actuated valve, would activate during the cleaning cycle to provide the required supplemental flow (see the controller manual for wiring details).





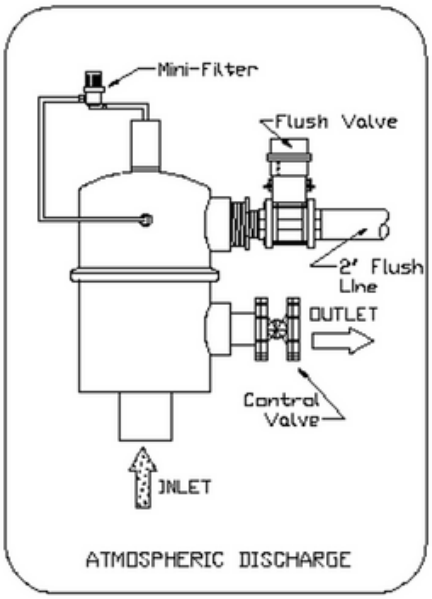




Appendix III: System with Discharge to Atmosphere

For systems where the filter discharges freely to the atmosphere, we recommend installing a control valve at the filter outlet. This valve serves two purposes:

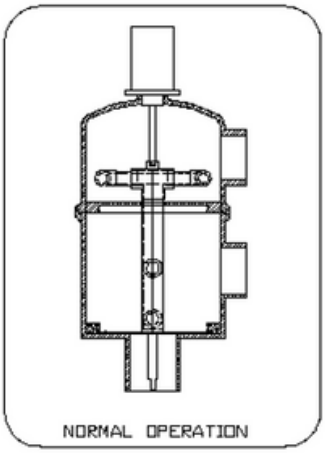
1. **Back Pressure:** It creates back pressure on the system by restricting flow across the filter.
2. **Pressure Regulation:** It can function as a pressure sustaining valve to ensure adequate pressure during backwash, especially when inlet pressure is insufficient.



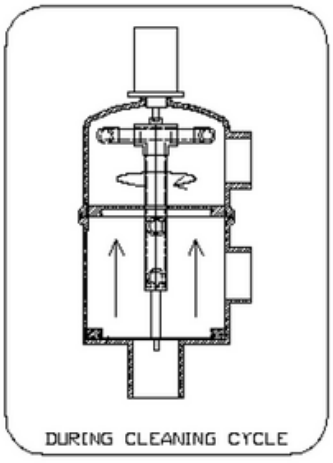
Appendix IV: Piston Operation

Larger filters use longer screens, necessitating a piston in the cleaning mechanism. The piston controls the linear movement of the dirt collector, enabling it to clean the entire screen surface in a spiral-downward motion.

At the end of the cleaning cycle, the flush valve closes, and normal filtration resumes. Simultaneously, the piston is pressurized, returning the dirt collector to its starting position for the next cleaning cycle.



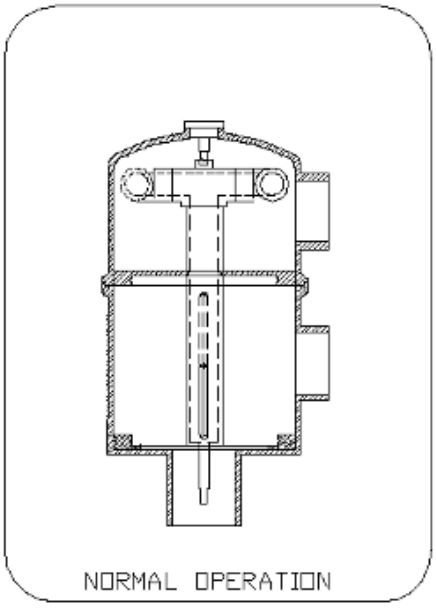
Initial Operation Note:
During initial system startup, the seals within the piston may not be fully seated. This can result in water leakage from the piston, which is normal. The PVC cover sleeve serves to protect the piston and contain any leakage, directing it to a single drain point. Over time, as the system operates, the piston seals will set, and the leakage should decrease or cease entirely. The cover sleeve can also be retracted to access the bolt holes and piston indicating pin. The piston should be installed with the indicating pin facing downwards.

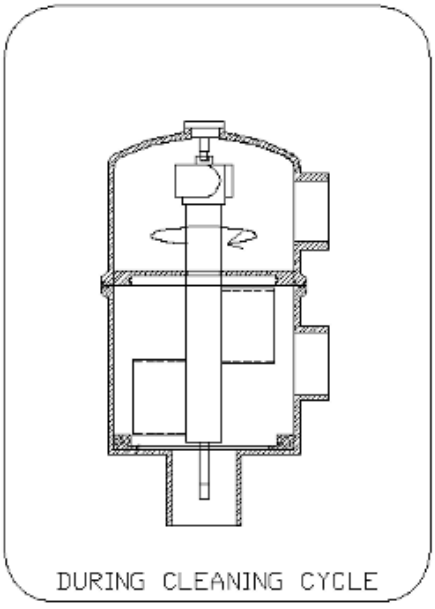


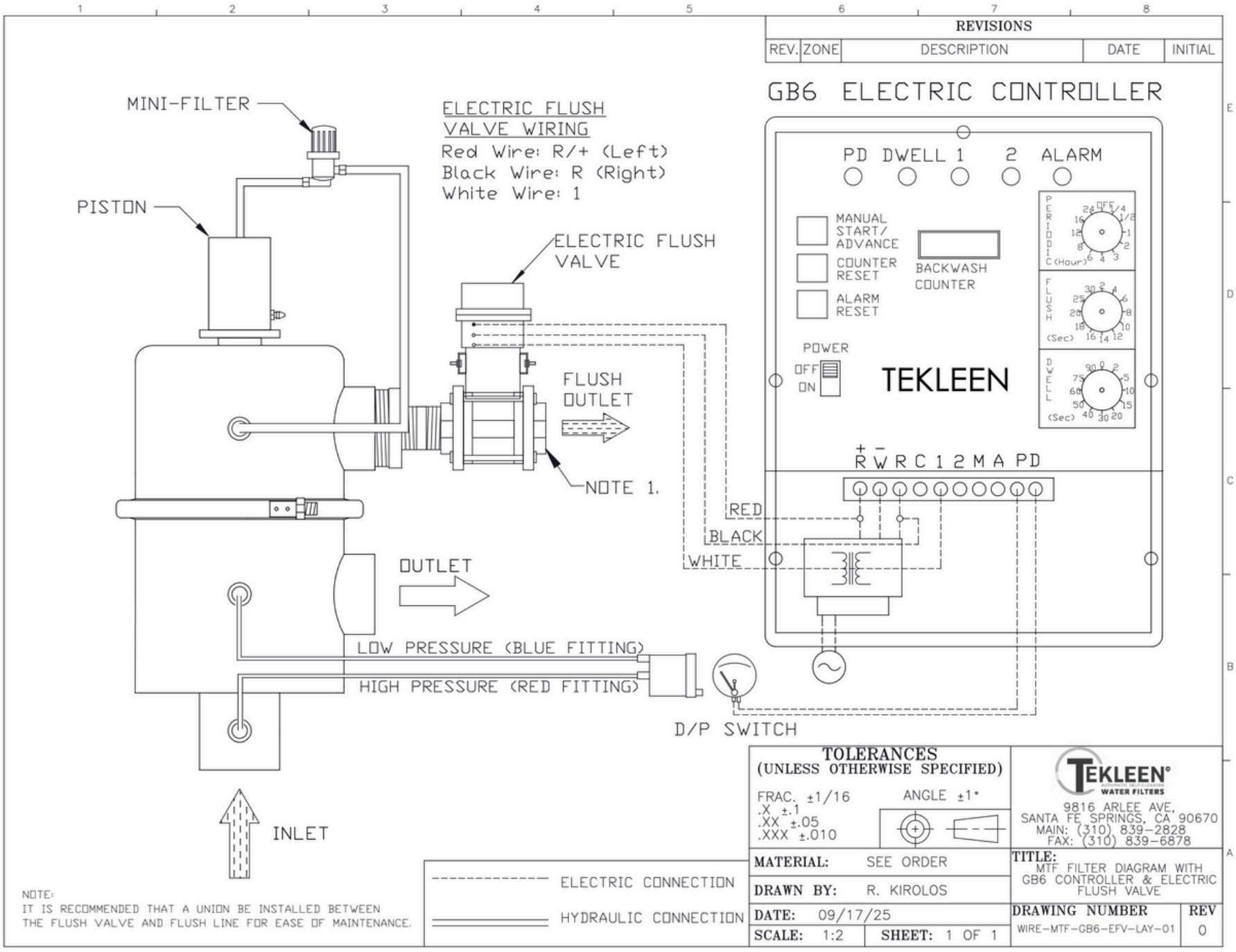
Note: Some MTF models may use a different piston design than the one illustrated.

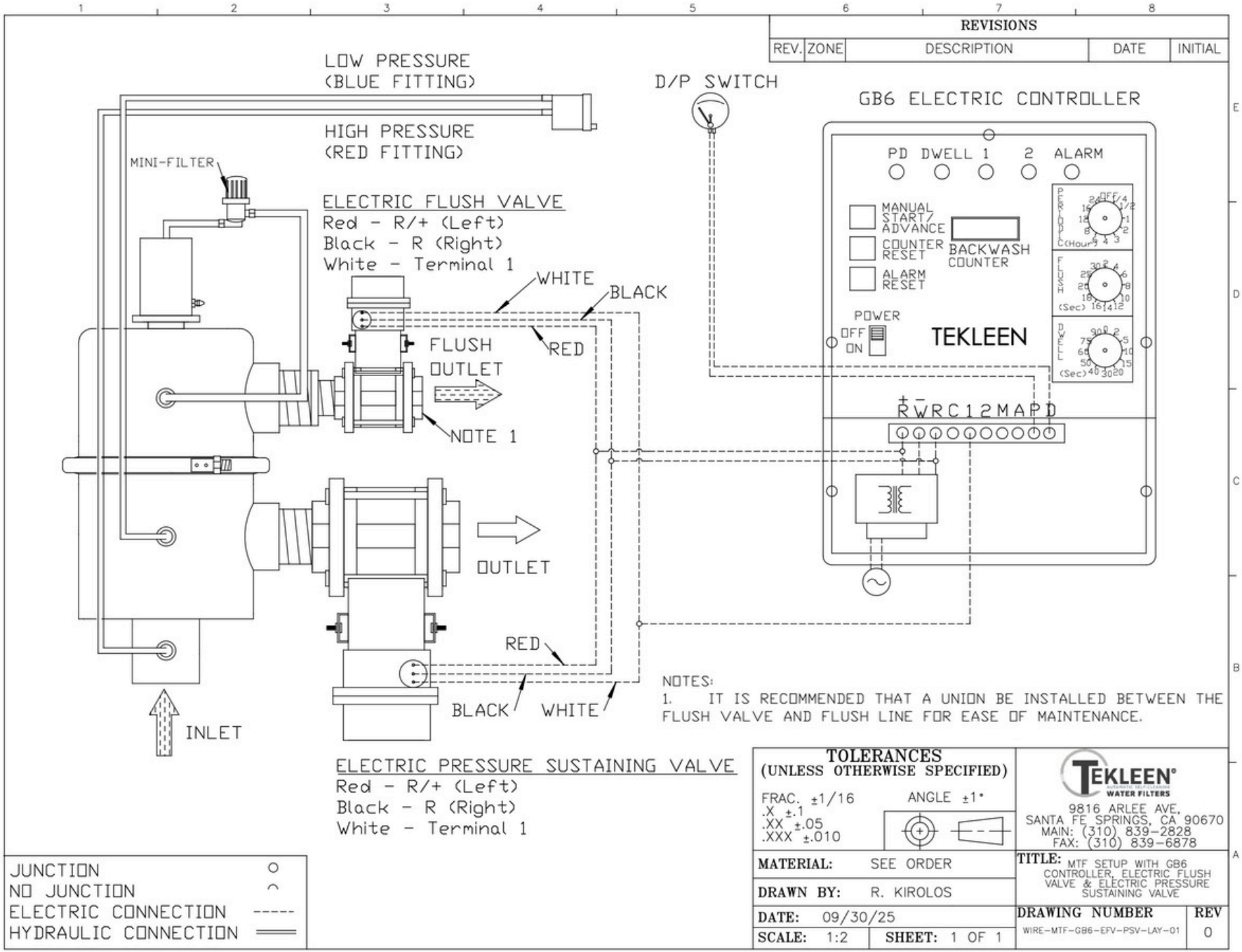
Appendix V: The Beauty of Simplicity - Piston-less Filter Designs

Some of our advanced MTF models are engineered without a piston. In these designs, a robust "buttress" is used in place of the piston. This clever configuration reduces the number of moving parts within the filter, offering a simple yet highly durable and reliable filtration solution. These piston-less filters still deliver the same exceptional self-cleaning performance, just with a slightly different internal mechanism.






REVISIONS
REV. ZONE DESCRIPTION DATE INITIAL
GB6 ELECTRIC CONTROLLER
MINI-FILTER
PISTON
ELECTRIC FLUSH VALVE WIRING
Red Wire: R/+ (Left)
Black Wire: R (Right)
White Wire: 1
ELECTRIC FLUSH VALVE
FLUSH OUTLET
NOTE 1.
OUTLET
INLET
LOW PRESSURE (BLUE FITTING)
HIGH PRESSURE (RED FITTING)
D/P SWITCH
RED
BLACK
WHITE
PD DWELL 1 2 ALARM
MANUAL START/ ADVANCE
COUNTER RESET
ALARM RESET
BACKWASH COUNTER
POWER OFF ON
TEKLEEN
+ − R W R C 1 2 M A PD
NOTE:
IT IS RECOMMENDED THAT A UNION BE INSTALLED BETWEEN THE FLUSH VALVE AND FLUSH LINE FOR EASE OF MAINTENANCE.
ELECTRIC CONNECTION
HYDRAULIC CONNECTION
TOLERANCES (UNLESS OTHERWISE SPECIFIED)
FRAC. ±1/16
.X ±.1
.XX ±.05
.XXX ±.010
ANGLE ±1°
MATERIAL: SEE ORDER
DRAWN BY: R. KIROLOS
DATE: 09/17/25
SCALE: 1:2 SHEET: 1 OF 1
TEKLEEN WATER FILTERS
9816 ARLEE AVE,
SANTA FE SPRINGS, CA 90670
MAIN: (310) 839-2828
FAX: (310) 839-6878
TITLE: MTF FILTER DIAGRAM WITH GB6 CONTROLLER & ELECTRIC FLUSH VALVE
DRAWING NUMBER WIRE-MTF-GB6-EFV-LAY-01
REV 0


REVISIONS
REV. ZONE DESCRIPTION DATE INITIAL
LOW PRESSURE
(BLUE FITTING)
HIGH PRESSURE
(RED FITTING)
MINI-FILTER
ELECTRIC FLUSH VALVE
Red - R/+ (Left)
Black - R (Right)
White - Terminal 1
WHITE
BLACK
RED
FLUSH
OUTLET
NOTE 1
OUTLET
RED
BLACK
WHITE
INLET
D/P SWITCH
GB6 ELECTRIC CONTROLLER
PD DWELL 1 2 ALARM
MANUAL START/ ADVANCE
COUNTER RESET
ALARM RESET
BACKWASH COUNTER
POWER
OFF
ON
TEKLEEN
RWRC12MAPD
NOTES:
1. IT IS RECOMMENDED THAT A UNION BE INSTALLED BETWEEN THE FLUSH VALVE AND FLUSH LINE FOR EASE OF MAINTENANCE.
ELECTRIC PRESSURE SUSTAINING VALVE
Red - R/+ (Left)
Black - R (Right)
White - Terminal 1
JUNCTION
NO JUNCTION
ELECTRIC CONNECTION
HYDRAULIC CONNECTION
TOLERANCES
(UNLESS OTHERWISE SPECIFIED)
FRAC. ±1/16
.X ±.1
.XX ±.05
.XXX ±.010
ANGLE ±1°
TEKLEEN WATER FILTERS
9816 ARLEE AVE,
SANTA FE SPRINGS, CA 90670
MAIN: (310) 839-2828
FAX: (310) 839-6878
MATERIAL: SEE ORDER
DRAWN BY: R. KIROLOS
DATE: 09/30/25
SCALE: 1:2
SHEET: 1 OF 1
TITLE: MTF SETUP WITH GB6 CONTROLLER, ELECTRIC FLUSH VALVE & ELECTRIC PRESSURE SUSTAINING VALVE
DRAWING NUMBER
WIRE-MTF-GB6-EFV-PSV-LAY-01
REV
0

Notes:

WARRANTY

Automatic Filters, LLC (Tekleen) warrants water filters and controllers to be free from defects in materials and workmanship for one year from purchase date.

What's Covered

1. Filter housing, screen, valves, fittings, and internal components
2. Electronic controller defects affecting operation

What's NOT Covered

1. Normal wear and tear
2. Improper installation, misuse, or neglect
3. Lack of maintenance
4. Chemical damage
5. Labor or shipping costs
6. Property damage or loss of use
7. Products not purchased from authorized dealers

Warranty Claims

1. Call +1.310.839.2828 or email info@tekleen.com
2. Provide proof of purchase
3. Describe the problem
4. Follow troubleshooting if required
5. Get RMA number if needed
6. Ship product at your expense
7. We repair/replace and ship back at our expense

This warranty replaces all other warranties. We reserve the right to repair or replace defective products at our discretion.

Automatic Filters, LLC
9816 Arlee Ave, Santa Fe Springs, CA 90670
T (310) 839 2828 • info@tekleen.com www.tekleen.com

Thank you for choosing Tekleen®
We appreciate your trust in our products and team.

We hope your automatic filter system runs smoothly and exceeds your expectations. If you have any questions or need support, don't hesitate to reach out, we're here to help.