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BRASSMASTER PLUS+



Irrigation System Iron Remover Installation / Operation Manual



BrassMaster and BrassMaster Plus Technical Video Library:
<https://watercontrolinc.com/residential-technical-support/residential-technical-videos>
BrassMaster technical videos demonstrate how to set up or remove the control module.
Replacement control modules are available at <https://watercontrolinc.com/residential-technical-support/>

Overview

The TurfMaster irrigation iron filtration system has been designed to solve a common problem in turf irrigation systems. When iron is present in raw water supplies, it can cause destructive staining on concrete and other critical structures. Treating the supply of this water for iron can be problematic due to the high volume of water used in an irrigation cycle, combined with the difficulty of iron water treatment technology. The TurfMaster system overcomes both of these challenges with the following features:

1. Advanced controls allow customization to treat only irrigation zones with structures that could be affected by iron staining. This greatly minimizes the volume of water treatment needed, and allows for treatment focus on critical areas.
2. TurfMaster utilizes a unique iron filtration technology that does not require the injection of any chemicals, or require their use at all. The specialized media and system components rely on only water and line pressure to clean the advanced filtration media, providing an environmentally friendly and cost effective treatment solution.

Installation Instructions

1. Identify installation location and place unit(s).

TurfMaster piping should be located on the exclusive service line to the irrigation system (See Illustration 1). *IMPORTANT: there may not be any filters installed upstream of the TurfMaster system, or insufficient water pressure may affect operational performance.*

This system and installation must comply with federal, state, and local laws and regulations.

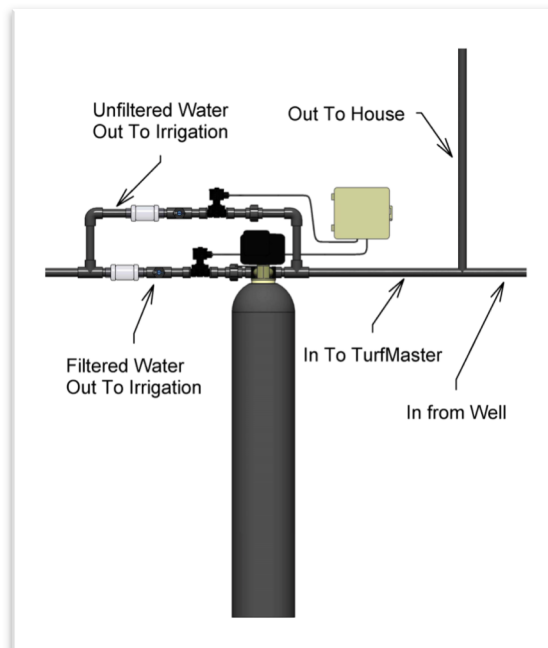


Illustration 1

2. **Fabricate system manifold:** The following components have been provided for the system manifold fabrication when the system includes the TM-KIT control package: bypass valve (s) with 1” socket adapters, valves with 1” socket adapters, 1” tees with sample ports, and 1” check valves. Following Illustration 2a piping diagram for single systems, or Illustration 2b for duplex systems, construct system manifold using appropriate schedule and size PVC pipe.

Note: Contractor must determine proper manifold and irrigation system pipe sizing! Under-sizing piping could result in low flow rates and high pressure losses. When necessary, use bushing adaptors to “upsized” from the 1” system component connections.

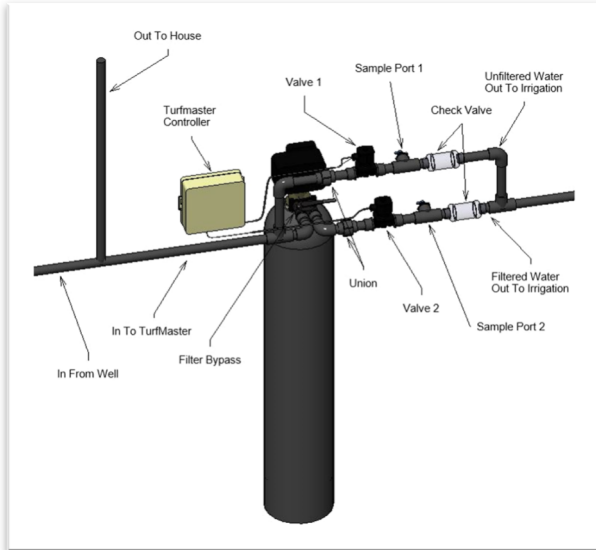


Illustration 2a—Piping diagram for single systems

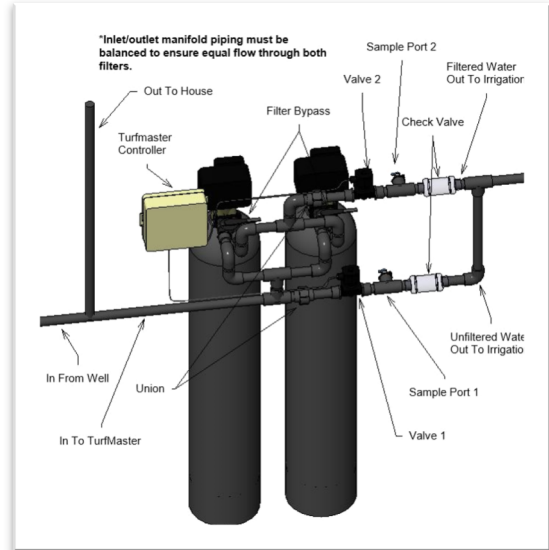


Illustration 2b—Piping diagram for duplex systems

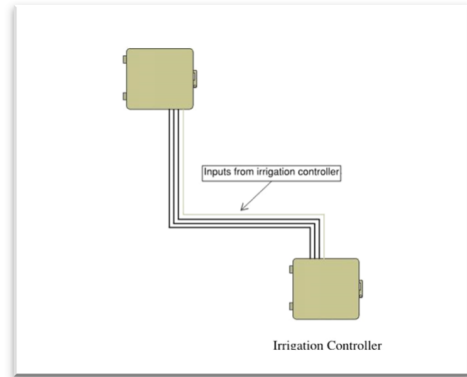
3. **Connect drain line(s) to unit(s).** Remove barbed drain line fitting(s) from parts bag. Apply Teflon thread seal tape to threads and turn into the female threaded opening on the back side of control valve(s) and run to a nearby drain (individual drain lines must be run for duplex units, and these lines must not be tied together).

IMPORTANT: It is highly recommended that a hose clamp be used to secure tubing to drain fitting to ensure tubing from being removed during elevated pressure situations.

Be sure not to submerge drain line ends into drain, as a 1 ½” minimum air gap must be maintained to prevent potential backflow hazard. Firmly secure at drain, while maintaining a minimum 1 ½” air gap.

4. **Connect control valve(s) to electrical power source.** Connect power cord(s) to a separate 120V, 15 amp ground fault interrupt (GFI) outlet.

- Mount and wire TurfMaster Control Panel.**
 The TurfMaster control panel should be mounted nearby the filtration system and secured to a solid surface. Access to a 120v, 15 amp ground fault (GFI) power source should be within 5 feet of mounting area. Connect wall transformer to TurfMaster control panel (see Illustration 3). Connect low voltage wiring to valves on system manifold (see Illustration 4). Connect low voltage from central irrigation controller (see Illustration 5). Connect power cord to power source.



System Overall Wiring Scheme

TurfMaster Control Panel Schematic

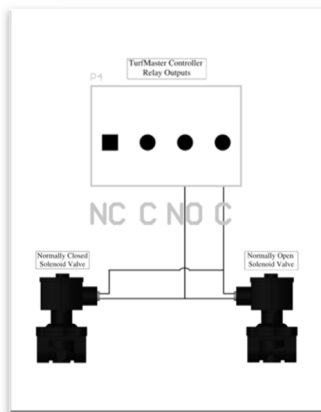
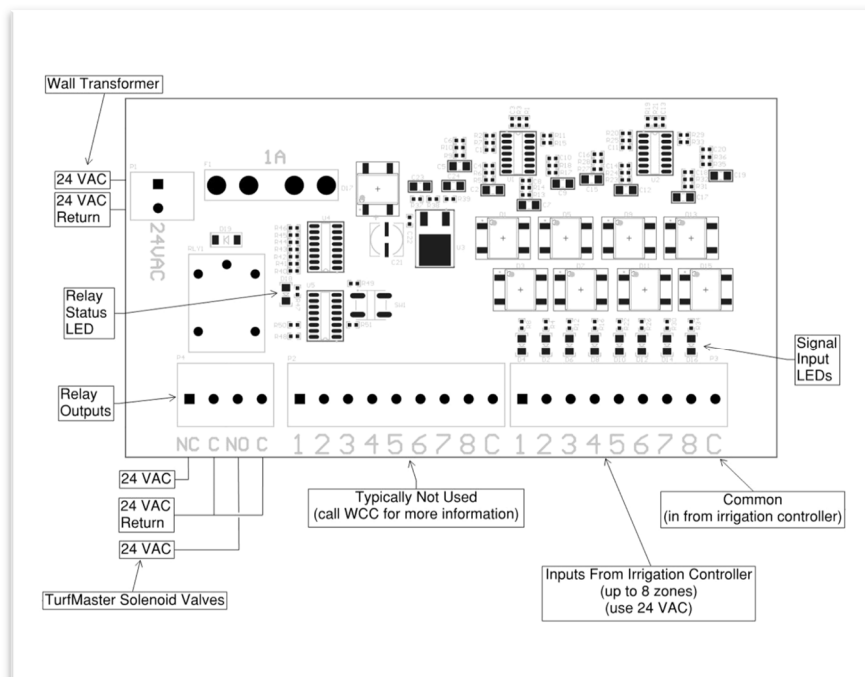


Illustration 3

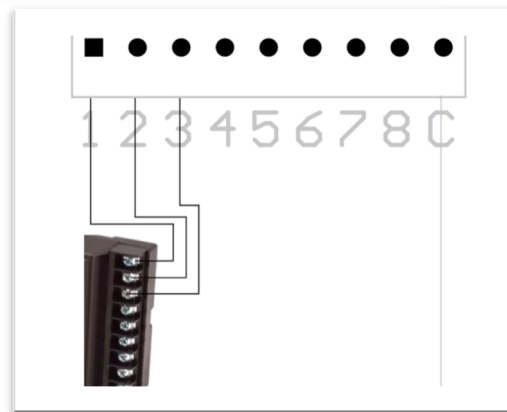


Illustration 4

Proceed to start-up procedure.

Start-up Procedure

Turn bypass valve on unit(s) (located above water piping connections) to “bypass” position and open water supply feeding irrigation system.

(See Illustration 6 for control keypad).

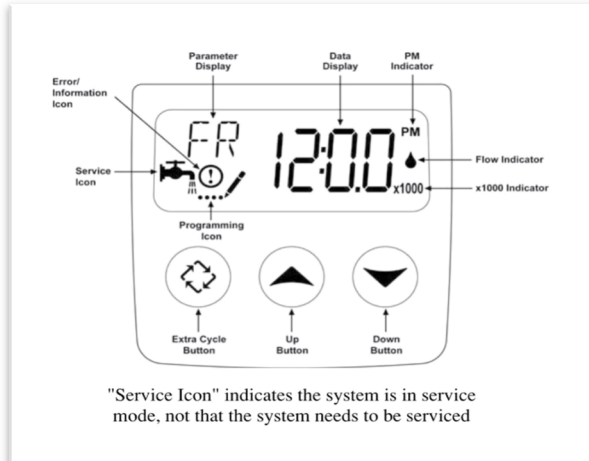


Illustration 5

- While in service, the Data Display alternates between time of day, volume remaining or days to regeneration.
- The Flow Indicator flashes when outlet flow is detected.
- The Faucet Icon flashes if a regeneration cycle has been queued.

Flush the TurfMaster system: (On duplex systems, this process should be done individually on each control unit.) Press and hold the “Extra Cycle” button for 5 seconds.

1. The control panel will begin to flash “BW - - - -” indicating it is entering “Backwash” mode. After about 30 seconds, “- - - -” will be replaced with a counting down clock. Slowly open the bypass valve on the back of the unit. Water will begin to run to the drain, flushing the system. Allow this water to run for about 5 minutes, and then press the “extra cycle” button, briefly this time.
2. The control panel will begin to flash “BD” - - - - “ indicating it is entering “Brine Draw” mode. After about 30 seconds, “- - - -” will be replaced with a counting down clock and water will run to the drain, again flushing the system. Allow this water to run for about 5 minutes, and then press the “Extra Cycle” button briefly again.
3. The control panel will flash “- - - -” indicating it is returning to service mode. After about 1 minute, the control panel will indicate between the current time of day setting, and the factory pre-set regeneration override period of 2 days. The unit is now back in service and ready for flow.

Test for flow accuracy: *This is an important step to insure that unit is working properly. Improper flow may affect the capacity of the system to effectively filter water in critical landscape areas.* Per piping Illustration 2a or 2b (page 3) sample ports have been provided to insure accurate flow characteristics. Slowly open these sample ports while indexing master irrigation controller through its zone settings. Verify flow as follows:

1. **For those zones where filtration is desired:** Sample port 1: should be non-pressurized.
Sample port 2: should indicate pressure.
2. **For those zones where no filtration is desired:** Sample port 1: should indicate pressure.
Sample port 2: should be non-pressurized.

Set Current time of day: (See Illustration 7) Press and hold either the Up or Down buttons on control(s) until the programming icon replaces the service icon and the display reads TD. Adjust the time with the Up and Down buttons. When the desired time is set, press the Extra Cycle button to return to normal operation. If no buttons are pressed the unit will return to normal operation after five seconds.



Illustration 7

User Programming: (See Illustration 8) Press and hold the up and down arrow buttons for five seconds while in service until the programming icon replaces the service icon and the display reads DO.



Illustration 8

Set days override: (See Illustration 9) *It is critical to synchronize this setting with the setting on your irrigation controller.* When programming your irrigation controller and establishing the times and days for irrigation cycles to operate, you must choose a consistent interval setting (ie; every day, every 2 days, every 3 days, etc). The days override setting should be synchronized to match those days (intervals) so regeneration takes place following each cycle of irrigation. When complete, press the “Extra Cycle” button, and the control will indicate RT 2:00, indicating the mode for regeneration time of day setting.



Illustration 9

Set regeneration time of day: Choose a time of day that will be followed by at least a 2 hour window where the irrigation system is sure to be in standby mode. This time should also be different from regeneration periods for any other water treatment equipment (i.e., water softener) to insure adequate pressure is available during its entire regeneration cycle (approximately 2 hours). Enter this time (AM or PM) by pressing the up and down arrows to select.

IMPORTANT NOTE: WHEN SETTING UP DUPLEX SYSTEMS, THEY MUST NOT REGENERATE DURING THE SAME WINDOW OF TIME. IT IS CRITICAL THAT THESE TIMES ARE SET AT LEAST 2 HOURS APART FROM EACH OTHER, AND DURING A 2-4 HOUR PERIOD WHERE THE IRRIGATION SYSTEM WILL REMAIN IN STANDBY.

Control programming is now complete. Press the “Extra Cycle” button, and the control will save the settings, exit from user programming mode, and resume normal operation.

Service

It is recommended to clean the injector, screen and inlet check valve annually to ensure proper system operation.

From time-to-time, your iron filter's air injection screen can become plugged with lint and debris. This results in poor filter regeneration, which (in-turn) can lead to poor filtration performance. Another infrequent issue can be the malfunction of the water inlet check valve, due to fowling with dirt and debris.

Cleaning and unplugging a dirty air injector or an inlet check valve is an easy process. For a detailed instructional video, please visit: <https://watercontrolinc.com/residential-technical-videos/>

Maintenance / Warranty Information

Minimum maintenance requirements:

Given the critical nature of the iron filtration process in protecting assets from destructive iron staining, we recommend the following minimum maintenance schedule. Failure to perform this maintenance could result in performance failures.

Monthly during irrigation season:

1. Perform flow accuracy test as outlined on page 4.

Annually or before each seasonal activation:

1. Perform flow accuracy test as outlined on page 4.
2. Perform inspection and cleaning process on all solenoid valves on manifold. Visit www.watercontrolinc.com technical video library for details on the cleaning process.

TurfMaster Winterization Procedure:

The TurfMaster irrigation iron filtration system should always be kept from freezing conditions. Before closing off water supply for irrigation system winterization, it is important to "clean" the TurfMaster filter media of residual iron. This can be done by completing a manual regeneration cycle immediately before closing off supply water. Referring to Illustration 6, press and hold the "Extra Cycle" button for 5 seconds. When the panel begins to flash "BW---" the unit has entered a regeneration cycle. When this cycle is complete, and the unit indicates "service" on the display, the media will have been cleaned and is ready to standby for a prolonged period of time.



Nearly all serviceable parts lie within the removable/replaceable APM module. This eliminates costly and time consuming field repairs.



All BrassMaster and BrassMaster Plus water softeners / filters feature the Assured Performance Modular (APM) design. If you experience a failure of any valve component, the brass module can be easily removed and replaced. Reference the BrassMaster and BrassMaster Plus Technical Video Library on our website (link is provided below) for detailed steps on how to remove the module. The required (downloadable) form to have your module replaced is also located at this site.

Please contact your dealer or Water Control Corporation for module support.

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Official Warranty

Water Control Corporation

BrassMaster Plus Series Water Softeners / Filters

Limited Warranty

Water Control Corporation warrants the control valve to be free of manufacturers defects for a period of 5 (five) years from the date of installation, and the fiberglass reinforced mineral tank, and plastic brine tank, to be free from leaking due to manufacturers defects for a period of 5 (five) years. We will, at our discretion, repair or replace defective products. This warranty does not include any costs associated with removal of defective products, or installation of replacement products. All replacement parts will be provided FOB Ramsey, MN. This warranty is transferable.

DISCLAIMER OF IMPLIED WARRANTIES

Water Control Corporation makes no warranties except those expressly stated in this document. To the extent permitted by the laws of the applicable state, **ALL WARRANTIES CONTAINED IN THIS DOCUMENT ARE EXPRESSLY IN LIEU OF, AND WATER CONTROL CORPORATION EXPRESSLY DISCLAIMS, ANY AND ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

WHAT IS NOT COVERED BY THESE WARRANTIES

1. Conditions and damages resulting from any of the following:
 - Wear caused by unfavorable water conditions
 - Improper installation, delivery, or maintenance
 - Any repair, modification, alteration, or adjustment not authorized by the manufacturer or an authorized servicer
 - Misuse, abuse, accidents, or unreasonable use
 - Improper setting of any control
 - Incorrect electric current, voltage, or supply
2. Warranties are void if the original serial numbers have been removed, altered, or cannot be readily determined.
3. The cost of service or service call to:
 - Correct installation errors
 - Instruct the user on proper use of the product
 - Transport the product to the servicer
4. Any costs associated with removal of defective products, or installation of replacement products.
5. Consequential, special, or incidental damages sustained by any person as a result of the breach of these warranties. Some states do not allow the exclusion or limitation of consequential or incidental damages, so the above exclusion may not apply to you.

