HYDRO-GUARD®

HG-8 Cold Climate Flushing System

⚠ WARNING:

Platform weight is approximately 60 lbs. Use proper lifting tools and techniques when loading and/or unloading device and lowering flushing components into housing to avoid accidental drops and subsequent damage to the device.

1. Each person involved in the assembly, installation and/or maintenance of the Hydro-Guard Automatic Flushing Device must read this manual carefully and follow all instructions prior to performing any installation or maintenance procedures involving the Unit.

2. Verify the drainage path prior to installation to ensure that pedestrian and vehicular hazards will not be created by the installation and use of the Hydro-Guard Automatic Flushing Device (In areas in which freezing may occur, special attention should be given to this procedure).

3. **Never** assemble, disassemble, or perform Hydro-Guard maintenance unless the influent supply valve has been closed, verified and secured, and internal piping pressure has been relieved.

4. Always use all necessary safety equipment and follow all recommended procedures when installing, operating and maintaining the Hydro-Guard Automatic Flushing Device.

5. Perform annual safety inspections and replace worn or defective parts.

6. Operate the Hydro-Guard Automatic Flushing Device only when fully installed and correctly assembled.

⚠ CAUTION:

The recommended optimal operating pressure for a Hydro-Guard® Automatic Flushing System is between 20psi and 120psi. In the event pressure may exceed 120psi it is recommended that a Pressure Regulating Valve be installed ahead of the Hydro-Guard flushing system.

Mueller Co.

Reliable Connections˙

Customer Service Center
Decatur, Illinois
800.423.1323
www.muellercompany.com/hydro-guard
moreinfo@muellercompany.com

HYDRO-GUARD® HG-8 Cold Climate Flushing System

GENERAL

Overview

The Hydro-Guard® HG-8 Cold Climate Unit, is the industry's only patented, Sub-Surface Discharge, programmable flushing apparatus. This Unit is suitable for year-round use in cold climates. This Automatic Flushing System has been designed, engineered, and manufactured to provide outstanding dependability and performance.

Please read and retain this manual for future reference, training, troubleshooting, and maintenance.

Site Evaluation

Each Hydro-Guard® Unit installation is unique and will require a minimum of advance planning. Prior to the installation of the device, the drainage patterns for the intended installation location should be reviewed. The drainage pattern must permit discharged water to flow away from the Hydro-Guard® Unit. Discharged water flushed from the Hydro-Guard® Unit must be routed away from the device. It is recommended that a 6" catch pipe (by others) be installed

inside of the HG-8's external cabinet. The catch pipe shall be mounted at least 3" under the discharge piping of the HG-8 (see Typical Installation illustration). The 6" pipe shall be installed a minimum of 24" below grade before a 90-degree bend or pipe size reduction. If desired, the 6" pipe can be reduced to a 3" or 4" pipe to continue the routing of the flow to a final discharge point. The recommended final discharge points may include a storm drain, drainage or retention pond, or a storm swale.

INSTALLATION

Hydro-Guard® HG-8 Cold Climate Flushing Unit

The Hydro-Guard® HG-8 Unit is housed in a Mueller® Thermal-Coil® Box that is approximately 21 inches in diameter. The bury depth will vary depending upon the depth of the utility's water lines. The box is constructed with low lead NTP male threads and is to be placed by the contractor at a location agreed upon by the end user. The box features coiled tubing that will route water from the water utility's potable water distribution line to the meter assembly, through the HG-8's flushing components, and discharge through a discharge service routed to an acceptable point of discharge (i.e., a storm sewer, swale, storm pond, etc.). The meter and flushing assembly can be raised for maintenance and repair and then lowered back down into the box below the frost line. A medium density foam insulation pad, freeze protection system, and composite lid help protect the flushing and meter assembly from freezing in the winter.

⚠ **WARNING: Proper lifting, loading/unloading tools and techniques must be followed when handling this device. Damage to working components can occur if dropped.**

TYPICAL INSTALLATION

Ground

Grade

Cast Iron Vault Lid

8-Tablet Dechlorination

Double Check Valve

1" Mueller Systems Meter Sold Separately

Programmer

Supply (By Others)

1" Male Thread Ends

Discharge (By Others)
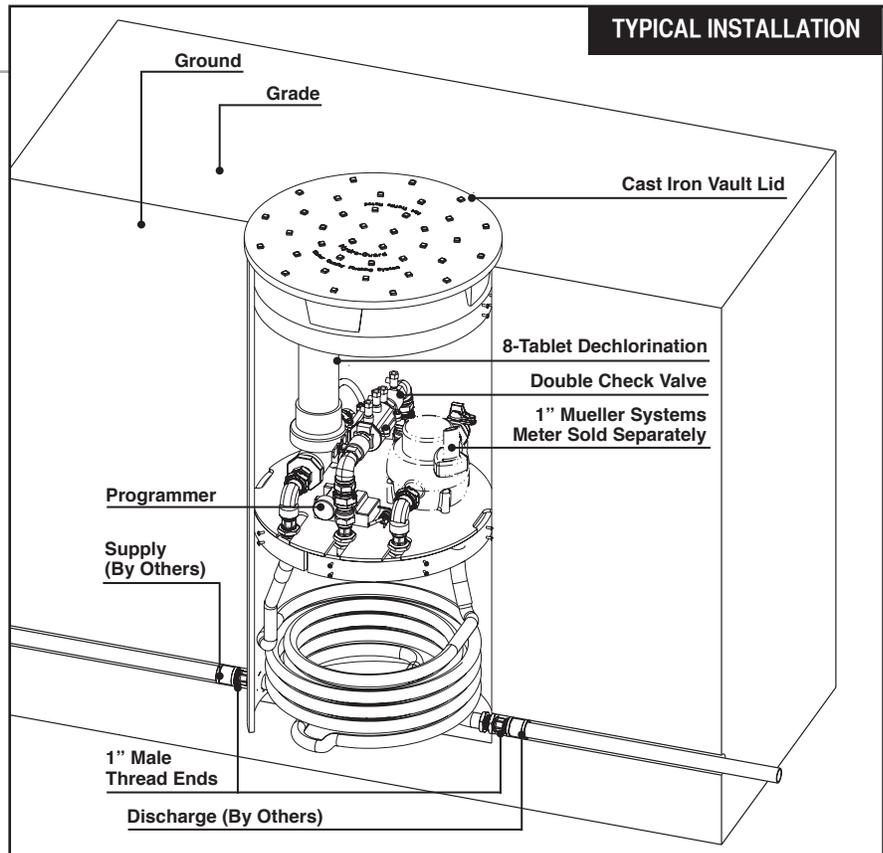
1. Remove the Hydro-Guard® Unit from its packaging and inspect for possible damage during shipping.

2. Turn off the service line feed.

3. Excavate a suitably sized ditch ensuring it is connected on one side to the utility's service line trench. Remove any debris that might create uneven pressure on

the Unit. Compact the bottom of the hole in order to minimize settling after installation. Place #57 stone. Then, place non-compacted clean bedding material within the bottom of the hole. Provide a bed of crushed gravel approximately 6 inches thick or place bricks or cement blocks below the pit to allow for drainage and provide support.

INSTALLATION – (continued)

4. Slowly lower the Hydro-Guard HG-8 Cold Climate Flushing System into place, pressing it firmly into the non-compacted bedding material within the bottom of the hole.

5. Bury the pit so the top edge is at ground level.

6. Install the top approximately 1$^1/_2$" below existing grade and ensure the meter lid is level with existing grade.

7. Place the pit in the excavated area and connect the inlet piping. Hand-tighten the fitting to the pit, then turn two full turns with a wrench. This will result in a leak-tight connection, without placing undue stress on the pit piping.

8. We recommend installing approximately 10 ft. of pipe to the outlet connection so the plumber that is completing the service installation does not have to disturb the connection to the pit and possibly overtightened the connection or otherwise affect the contractor's proper installation of the pit itself.

9. Backfill the hole around the flushing device with clean fill and/or #57 stone. Backfilling should be accomplished 12 inches at a time and hand-tamp each layer until the service grade is restored.

10. After installation is complete, sod the area around the Hydro-Guard® Unit or take other steps in order to prevent erosion.

11. Disinfect the Hydro-Guard® Automatic Flushing Device in accordance with the utility's policy. DO NOT exceed the dosage and contact times recommended by the American Water Works Association.

12. The Hydro-Guard® Automatic Flushing Device may now be programmed.

13. Once programming has been set, slowly lower the flushing/meter assembly into the lower part of the protective, below-grade, meter box. Insert the foam pad insulator and install cast iron meter lid.

⚠ **WARNING: We DO NOT recommend the following: 1) Dumping fill material on top of the pit; 2) Using machinery to compact backfill.**

PROGRAMMING HYDRO-GUARD® UNIT FOR OPERATION

HG-8 (Requires Handheld)
TBOS-II Programming Instructions

The TBOS-II handheld uses on screen prompts for intuitive programming. It will control current programming interface (T-2 – dark gray case), as well as the previous model of programming interface (T-1 modules programmed by the TBOS-US handheld).

Features
- 1 to 24 possible flushing events daily, or on selected days weekly, 365-day calendar
- Flush duration 1 minute to 12 hours (1 minute increments)
- Preprogram and store up to 3 different schedules
- Rechargeable battery (low battery indicator shows both handheld and controller battery conditions) with recharging adaptor (9-volt lithium battery can be used in the built-in programming interface)

NOTE: In that the handheld was designed by its manufacturer to program irrigation systems, many displays use irrigation terminology. In the following instructions, in such cases the equivalent flushing terminology is shown in parentheses.

⚠ **CAUTION: Leaving the infra-red connector connected to the built-in programming interface can significantly reduce the battery life of the 9-volt batteries in the programming interface and the rechargeable battery in the TBOS-II handheld.**

TBOS-II Handheld Keys

HOME – press three seconds to turn handheld on.
ABC – press to choose from three available programs (to store a program when preprogramming, or uploading a program to controller).
LEFT and **RIGHT ARROWS** – move curser left or right, also go back or forward one screen.

ON and **OFF**/**+** and **–** /**UP** and **DOWN ARROWS** – Used to set flushing events on or off, move selector up and down on screen, or increase or decrease duration and other values.
OK – press to make selection final.

TBOS-II Handheld Home Screen Menu

1. **TBOS infra-red** – accessible only when connected to programming interface via the IR cable: select to connect handheld to programming interface via infrared cable and access programs on it, or to transfer programs from handheld to programming interface.

2. **Templates (TBOS-II)** – select to program handheld without connecting to programming interface.

3. **Settings** – select to access and set time, date, and various other available user settings.

First Time Use

1. Press **HOME** key for three seconds to turn on handheld.

2. Press **RIGHT ARROW** key or the **OK** key to access "Settings"

3. Use **DOWN ARROW** to select and set the following:
   a) Date and Time
   b) Contrast of the screen
   c) Name of the handheld controller (can be assigned to a specific operator)
   d) Language (English, French, Spanish, Italian, Dutch, Portuguese, Turkish, etc.)

Programming Flushing Schedule

There are two ways to proceed:
- select "**TBOS-II infra-red**" if IR cable is connected to a TBOS-II programming interface to access, change or load programs there, or
- select "**Templates (TBOS-II)**" to create or change programs stored on the handheld to load onto a programming interface at a later time (IR cable not used).

NOTE: The home screen for "TBOS-II infra-red" shows battery condition for programming interface and ON/OFF state of any current operation in progress.

1. Press **HOME** key for three seconds to turn handheld on.

2. Press **RIGHT ARROW** key or the **OK** key to access "**Settings**".

3. Use **DOWN ARROW** to select "**Templates**" and press **OK**.

4. Use **DOWN ARROW** to select "**Programs**" and press **OK.**

5. Use **DOWN ARROW** to select "**Watering Days**" (Days to Flush) and press **OK**.

6. Use **UP/DOWN ARROWS** to select one of the following:
   a) **Custom Cycle (Week)**: use **RIGHT/LEFT ARROWS** to move to days of the week, use **ON/OFF** keys to highlight days on which to flush, then press **OK** to confirm days when selections are complete.

b) **Even Days**: to Flush on even dates, press **OK** to set.

c) **Odd Days**: to Flush on odd dates including 31st, press **OK** to set.

d) **Odd Days 31**: to Flush on odd dated except 31st, press **OK** to set.

e) **Cyclical**: to Flush every "X" days, set "X" using **ON/OFF** keys (X=1 to 31), press **OK** to set; then set start date "dd/mm/yyyy" using **ON/OFF** keys, press **OK** to set.

7. Use **LEFT ARROW** to navigate back to the program "**Settings**" menu.

8. Select "**Start times**", press **OK** to set.

9. Use **ABC** to select program to be set up.
   a) Set hours and minutes for each start time (up to 8 per program) using **ON/OFF** keys, press **OK** to set each (hours are indicated using 24 hour clock). [When exiting this screen, start times will automatically sort into chronological order.]

10. Use **LEFT ARROW** to navigate back to the program "**Settings**" menu.
   a) Use **DOWN ARROW** to select "**Valve Run Times**" (Flush Duration), press **OK** to set.
   NOTE: Although six valves may be shown on screen, only Valve 1 is used to manage the Hydro-Guard® unit.
   b) Use **ON/OFF** keys to select program A, B and/or C (one or more can be assigned).
   c) Then use **ON/OFF** keys to set Flush duration (hours and/or minutes) for program just set, use **LEFT/RIGHT ARROW** keys to move between hours and minutes and **+** and **−** keys to set times (1 minute to 12 hours), press **OK** to set.

Transmitting Time, Date and Programs to Programming Interface, Clearing/Checking Programs, Manual Start

Connect handheld to programming interface using IR cable.

1. To transmit: from home screen, use **DOWN ARROW** to select "**TBOS-II infrared**" and press **OK**. TBOS-II handheld will receive data (settings) from built-in programming interface.

2. Once data receipt is complete press **RIGHT ARROW** to move to "**Settings**" menu.

3. From "**TBOS-II infra-red**" settings screen select "**Transmit**" and press **OK** again. When program to be transmitted appears, press **OK** to confirm.

4. To clear programs A, B, or C: from "**TBOS-II infra-red**" welcome screen, use **DOWN ARROW** to select "**Clear Programs**" and press **OK**, then select type of program to clear and follow prompts.

5. To check programs A, B, or C: from "**TBOS-II infra-red**" welcome screen, use **DOWN ARROW** to select "**Programs**" and press **OK**, then select what is to be checked and follow prompts.

Manual Flushing

Using TBOS-II handheld on the T-2 built-in programming interface (dark gray in color).

NOTE: Manual start cannot be initiated if there is no program in the programming interface.

1. To start manual flushing from "**TBOS-II infra-red**" welcome screen.
   a) Use **DOWN ARROW** to select "**Manual Watering**" (Manual Flush) and press **OK**,
   b) Select "**Start Valve**" (Open Control Valve) then using **ON/OFF** keys select "**Valve 1**" and press **OK**,
   c) Use **ON/OFF** keys to set the manual Flush Time (1 minute to 12 hours) and press **OK** to confirm. Flushing will start after a four (4) second delay.

Stop Manual Flush Sequence

1. Reconnect IR cable to built-in interface, then hold down **HOME** key on handheld.

2. Use **RIGHT ARROW** to select "TBOS-II infra-red" menu and select "**Manual Watering**."

3. Select "**Cancel Irrigation**" to cease the manual flush sequence.

Communication Failure:
Possible Causes /Solutions

1. The built-in programming interface's battery is low or out of power or the rechargeable battery in the Handheld Programmer is low or out of power; replace battery in interface and keep rechargeable battery fully charged.

2) There might be a problem with a connection or solenoid. Perform an electrical system check of wiring and solenoid.

NOTE: The built-in interface's internal memory lasts only 3 minutes. Any time the battery within the Programming interface fully discharges, it is necessary to plug the Handheld Programmer directly into the interface and reprogram the Unit. While repeating the programming steps is only a minor inconvenience, a proactive approach to battery maintenance will serve to alleviate the frequency with which these steps must be completed.

For all other programming questions, please refer to the Hydro-Guard® Programming Guide. If the information you require is not available therein, please contact Hydro-Guard® Customer Service at 877.864.8500.

HG-8 Built-In: (Integrated)
NODE Programming Instructions

Batteries

The NODE uses standard 9-volt alkaline batteries to operate the control valve and program the controller. The controller can operate with one or two batteries installed.

Under normal conditions, expected life is 1 year for a single battery and two years when using two.

Battery Installation

1. Unscrew rear body of the NODE to gain access to battery compartment.

2. Insert battery/batteries into battery tray and connect the battery connector to controller.

3. Make sure no water is inside battery compartment.

4. Screw the NODE rear body back onto front half.

NOTE: Make sure that seal marker on rear half of the NODE lines up with front half, ensuring a proper seal is created. Also, The NODE has non-volatile memory, which allows battery replacement without losing program information.

Idle Mode – Waking Up

Normally the NODE display shows time and day, day of week, and battery life indicator. During a short period of inactivity the display will shut off to retain battery power Pressing any key will wake up the NODE to the Idle Mode.

Run Mode

When controller is operating a program, items shown on display will include station number (always "1"), program letter (A, B, or C), remaining runtime, and a blinking Rotor icon.

Programming

The NODE has the capability to hold 3 programs (A, B, C) and 4 start times per program. When programming, flashing portion of display can be changed by pressing **+** or **–** keys. To change something not flashing, press **LEFT** or **RIGHT ARROWS** until desired item is flashing.

Setting Date/Time

1. Press **RETURN/ENTER** key until **CLOCK** icon is displayed.

2. All 4 digits will be displayed representing the year. Use **+** or **–** keys to change year. Press **RIGHT ARROW** key to proceed to setting month.

3. All 4 digits will be displayed with two digits on left flashing representing the **MONTH**. Use **+** or **–** key to change month. Press **RIGHT ARROW** key to proceed to setting **DAY**.

4. Only two digits on right will be flashing, representing the **DAY**. Press **+** or **–** key to change day. Press **RIGHT ARROW** key to proceed to changing **TIME**.

5. The **AM/PM/24** time setting is shown flashing. Press **+** or **–** key to change to AM, PM, or 24-hour time. Press **RIGHT ARROW** key to proceed to setting the **HOUR**.

6. All 4 numbers are shown with two numbers on the left flashing, representing the **HOUR**. Press **+** or **–** key to change the hour. Press **RIGHT ARROW** key to proceed to setting **MINUTES**.

7. All 4 numbers are shown with two numbers on right flashing, representing **MINUTES**. Press **+** or **–** key to change minutes. (Pressing **RIGHT ARROW** key will return to **YEAR** setting at step #2.)

8. Press **RETURN/ENTER** key to proceed to next programming function, or allow controller to return to idle mode.

Setting Flush Sequence Start Times

1. Press **RETURN/ENTER** key until **CLOCK** icon is displayed.

2. The **START TIME** will be displayed flashing, along with the program letter (A, B, or C) and start time number (1, 2, 3, or 4) in the upper left. Up to 4 different start times can be set for each program.

3. Use **+** or **–** key to change **START TIME** for program displayed. Each press of key will change start time in 15-minute increments.

4. Press **RIGHT ARROW** key to add an additional **START TIME** to program displayed. The start time number is shown in upper left corner of display.

5. Press **PRG** key to add **START TIME** to a different program.

6. Press **RETURN/ENTER** key to proceed to next programming function, or allow controller to return to idle mode.

Setting Flush Duration Times

1. Press **RETURN/ENTER** key until **HOURGLASS** icon is displayed. **RUN TIME** will be displayed flashing. Also shown is program letter (A, B, or C) and active station number (always #1– all other stations not used) on lower left side of display.

2. Press **+** or **–** key to change station **RUN TIME** from 1 minute to 6 hours.

3. Press **PRG** key to add a **RUN TIME** to another program.

4. Press **RETURN/ENTER** key to proceed to next programming function, or allow controller to return to idle mode.

Setting Flushing Days

1. Press **RETURN/ENTER** key until **CALENDAR** icon is displayed. The program letter (A, B, or C) will be displayed. Arrows point at specific days of week in which flushing will occur.

2. Press **LEFT or RIGHT ARROW** to scroll though days.

3. Press **+** key to activate that day for program displayed, or **–** key to cancel watering for that day. The arrow will show on flushing days for active program.

4. Press **PRG** key to set days to flush for a different program, if desired.

5. Press **RETURN/ENTER** key to proceed to next programming function, or allow controller to return to idle mode.

Manual Flushing

Manual flushing allows user to test the Hydro-Guard® unit or a program for a specified run time.

Make sure controller is in Idle Mode.

1. Press and hold **RIGHT ARROW** until **HAND** icon is displayed. The station number (always #1) will be displayed in lower left side of display along with **RUN TIME**.

2. Use the **LEFT or RIGHT ARROW** to select #1 station if not already displayed, and **+** or **–** key to set manual flushing time.

3. To manually activate a program, press **PRG** key. Program letter (A, B, or C) will show on screen. If a different program is needed, press **PRG** key until desired program is displayed.

4. To stop **MANUAL FLUSHING** cycle press **–** key until time is reduced to zero.

5. Press **RETURN/ENTER** key to proceed to next programming function, or allow controller to return to idle mode.

NOTE:
– Pressing + or – key when running in MANUAL FLUSH mode will modify FLUSH TIME for that station.

– Pressing the button when a station is running in manual watering will stop irrigation on the current station and advance to the next station.

– Pressing the button when a station is running in manual watering will stop the irrigation on the current station and revert to the previous station.

Turn System Off

To turn off controller, press **RETURN/ENTER** key button until icon resembling water spray and **OFF** is displayed on screen. To return controller to auto programming mode, press **RETURN/ENTER** key. The controller will immediately return to auto programming mode and will display time and battery life indicator.

NODE Quick Check

This circuit diagnostic procedure can quickly identify "shorts" commonly caused by faulty solenoids or when bare common wire touches a bare station control wire. To initiate **NODE Quick Check** procedure:

1. From Idle Mode, press and hold **+, –, LEFT ARROW**, and **RIGHT ARROW** keys.

2. Display will show all segments. Release keys.

3. Press **+** key to initiate **NODE Quick Check** test.

4. Controller will then activate flushing unit for 1 second to verify operation.

HYDRO-GUARD® HG-8 Cold Climate Flushing System

HG-8 DISASSEMBLY AND REASSEMBLY INSTRUCTIONS

TOOLS NEEDED: Philips screwdriver, flat-head screwdriver, HG-20087 T-handle wrench

Although the Hydro-Guard® HG-8 Cold Climate Sub-Surface Unit was delivered completely assembled, it may be necessary and/or desirable to disassemble portions of the Unit, or the Unit in its entirety, in order to allow for required service and maintenance. If disassembly is necessary, please follow the directions below. Always close the curb stop before working on the unit.

Disassembly

1. Shut off water supply to the unit and remove the green housing cover.

2. Remove the composite or cast iron lid of HG-8 protective ground sleeve.

3. Remove foam insulation pad.

4. Using the lifting holes and/or lifting strap in the steel platform, raise the flushing system meter assembly to top of meter box and lock into place.

5. Modular design of valve and double check valve allow for service to be completed without removal of the devices' bodies from the piping assembly.

Electrical System Check

1. Pull internals of HG-8 to top of PVC in-ground protective housing and lock into place.

2. Unscrew solenoid from valve– be careful to not drop the solenoid plunger and spring into in-ground housing.

3. Using the TBOS-II handheld, connect the infrared connector of the handheld to the antenna on the controller interface mounted inside of the device. Using the programming keys of the handheld run a 2 minute manual flush sequence.

NOTE: Plunger inside solenoid should be down when running and up when off.

4. To prevent the loss of the solenoid plunger and spring, place an object or have a finger over the plunger of the solenoid. Allow the plunger enough space to kick out of the solenoid body into the object or finger hovering over it.

5. If test is successful, return the flush/meter assembly to its operating position below grade.

6. Return insulation pad and cast iron meter lid to their proper positions.

If everything checks out, the electrical system is in working order.

Valve Disassembly and Check

1. Remove six (6) bolts from top cover.

2. Slowly pull cover off the valve.

3. Remove rubber diaphragm and inspect for holes or worn areas.

4. Be certain to avoid contacting the EPDM rubber diaphragm with pipe putty. Pipe putty can cause the rubber to thin out and leak.

5. Remove the valve screen plug on the lower half of the valve body. Be careful not to exert too much force when pulling plug out.

6. Check for debris in the valve screen on the inlet side with the lower half of the valve body by removing the valve screen plug.

7. Return valve plug to its proper location when debris screen is cleared.

8. Replace the top cover back onto the diaphragm – make sure to line up the openings in both.

9. Match up the top cover of the valve with the bottom portion. The arrows have to align on both portions.

10. Replace the bolts and tighten down.

⚠ **WARNING: Avoid overuse of pipe sealant and never allow sealant to come into contact with EPDM rubber diaphram.**

Reassembly

1. If any disassembly has been conducted of the control valve and/or double check valve, verify that all bolts are properly tightened. Check assemblies for leakage prior to lowering flushing/metering assembly back into position below grade.

2. Using lifting holes and/or lifting strap on steel plate, lower flushing/metering assembly below grade by slowly lowering the steel mounting plate to the lower part of the in-ground protective housing (DO NOT apply excessive force to assembly).

3. Turn water supply to the unit on. Using the TBOS-II handheld controller, run a two minute manual flushing procedure to confirm all components are operational.

4. Return insulation pad and cast iron lid to their proper location.

TROUBLESHOOTING THE PROGRAMMER

PROBLEM	CAUSE	SOLUTION
Controller does not flush as desired	Water at main water supply is shut off	Check main supply valve
	Battery dead	Replace battery
	Controller set to OFF	Set controller to desired program
	Controller improperly programmed	Check program and clock settings
Blank display	Battery dead	Replace battery
Water does not turn off	Overlapping programming	Review all programming and edit any program that is in conflict with desired off schedule
		Clear all programming in memory and reset
	Programmer not communicating	Check programming
		Run Manual On/Off with solenoid removed from valve (hold finger or object over solenoid plunger to prevent plunger from dislodging from solenoid body
		Check wiring for damage and connectors to ensure proper connection (red to red & black to black)

TROUBLESHOOTING THE UNIT

If your Hydro-Guard® Unit does not activate:

Possible Causes

• Water pressure off or low.
• Batteries weak or dead.
• Connection loss from controller to solenoid.
• Solenoid not working properly.
• Obstruction in flow of water.

Try this Correction

• Check if curb stop is open.
• Change batteries.
• Check connections for corrosion, breaks, or lack of connection.

• Run a manual flush an dconfirm the solenoid plunger is kicking out and pulling back in by listening for a click.
• Check to make sure the flow control knob is open on the valve OR Check the pipes for obstructions OR Check the valve.

The Hydro-Guard® Unit will not shut off:

Possible Causes

• The solenoid is stuck in the open position or debris is interferring with the plunger.
• Batteries weak or dead.

• Connection loss from battery box to solenoid.
• The solenoid is loose or there is debris in the adapter.
• There is a hole in or debris around the diaphragm.

Try this Correction

• Run a manual flush for 1 minute.
• Change batteries.
• Check connections for corrosion, breaks, or lack of connection.
• Check the adapters and solenoid for debris – Run the electrical systems check.
• Refer to valve troubleshooting for possible corrective measures.

HYDRO-GUARD® HG-8 Cold Climate Flushing System

HYDRO-GUARD® FEATURES, UPGRADES AND SAMPLE COLLECTION

The following is a brief overview and introduction to Hydro-Guard® Options.

Integrated Sample Station

The HG-8 Cold Climate Sub-Surface Discharge Unit, features a Sample Port quick connect that allows the end user to collect a sample from the HG-8 installation site. To collect a sample from the sample quick connect the HG-S116 Portable Sample Valve will be required. (Recommendation: one HG-S116 per every five HG-8 units) You may wish to run a brief manual-mode flush prior to the collection in order to ensure water indicative of the main-line water quality is being sampled. Generally a two-minute flush is sufficient. Track your residual levels and alter flushing frequency and/or duration in order to maximize water conservation.

Dechlorination

The Hydro-Guard® HG-8 is equipped with a dechlorination system. Dechlorination takes place as a portion of the discharged water passes through a housing containing either sodium sulfite or ascorbic acid tablets. This action creates a concentrated dechlorination solution that then mixes with the non-directly treated portion of the discharge to effectively dechlorinate the entire discharge volume.

S.M.A.R.T. Monitoring and Flush Management

The Hydro-Guard HG-8 can be upgraded to include a S.M.A.R.T. controller and a variety of water quality sensors. The S.M.A.R.T. equipped HG-8 will allow a utility to remotely monitor, in real-time, the water quality at a specific flush point and automatically initiate a flush event when water quality conditions warrant.

The Hydro-Guard® S.M.A.R.T. flushing system:

• Monitors chlorine levels (total or free).

• Flushes distribution line when residual disinfectant drops below acceptable levels.

• Monitoring of pH, flow, temperature or turbidity available.

• Two-way real-time communication via cellular, wifi, ethernet or BlueTooth®.

BATTERY REPLACEMENT

1. Remove composite or cast iron lid and insulation pad.

2. Using the lifting holes and/or lifting strap in the steel mounting platform, raise the internals of the HG-8 to the surface.

3. HG-8 Removable (T2) Programming:

Unscrew the grey cap off the watertight housing of the integrated T-2 programming interface. Pull the battery box out of the watertight housing. Replace 9-volt battery with a 9-volt lithium battery.

HG-8 Built-In (NODE) Programming:

Unscrew cap from bottom of NODE programmer housing. Insert two 9-volt alkaline batteries. Tighten cap completely to ensure a water tight fit.

4. Place the battery back into the watertight integrated T-2 programming interface making certain to tighten the screw-on lid until snug.

5. Return the internals of the HG-8 to its proper location.

6. Return the insulation pad and cast iron lid to their proper locations.
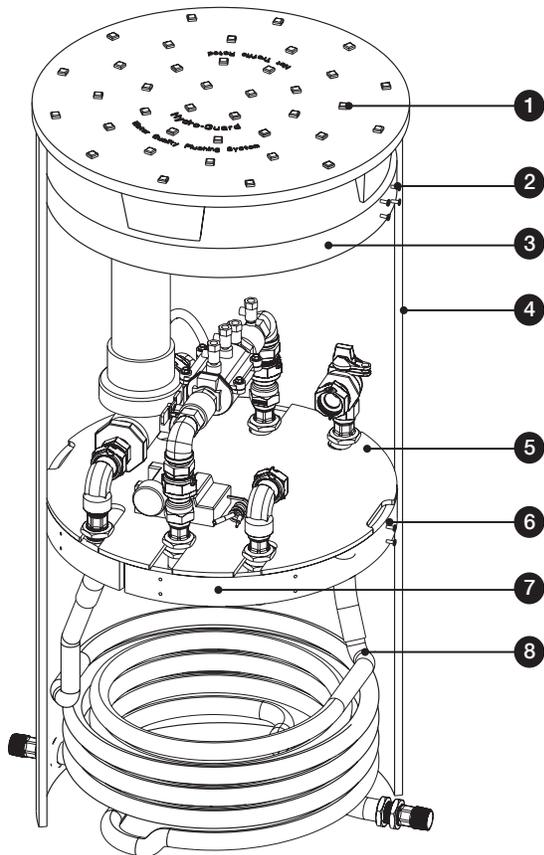
REPLACEMENT PARTS

ID	PART #	DESCRIPTION
1	546787	Composite or Cast Iron Vault Lid
2	546799	HG-8 Plate Rest
3	546785	2" Foam Insulation Pad
4	790015	21" Ø Below-Grade Vault
5	HG-A102L	9-Volt Lithium Battery
6	546779	1" Valve & Meter Replacement Assembly
7	700014	Reinforcing Ring
8	546025	1" Coiled Tubing Assembly
9	HG-A119	320 Inline Dechlorination Assembly
10	HG-FP100	Thermal Control Valve
11	546138-100	1" Backflow Double Check Valve
12	014215 330N	1" Meter Coupling
13	024265 1 330N	1" Ball Angle Meter Valve
14	014210 1 330N	1" Meter Coupling
15	700507 Flow	U-Bar w/ Hole for FP
16	HG-FP100	Thermal Control Valve
17	5461219	Coated Steel Mounting Platform
18	700507	U-Bar
19	546596	Latching Solenoid
20	HG-FP108C	Molded Freeze Adapter / Gasket
21	HG-11010	1" Flow Control Valve
22	HG-V139	$^3/_8$" Poly Tubing
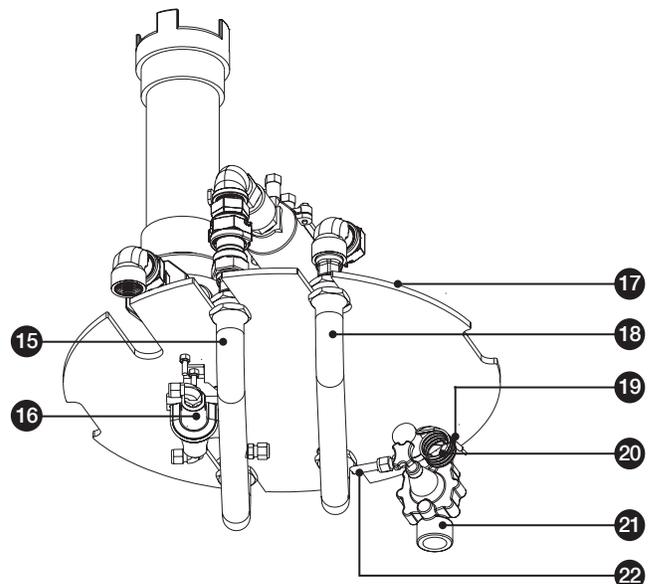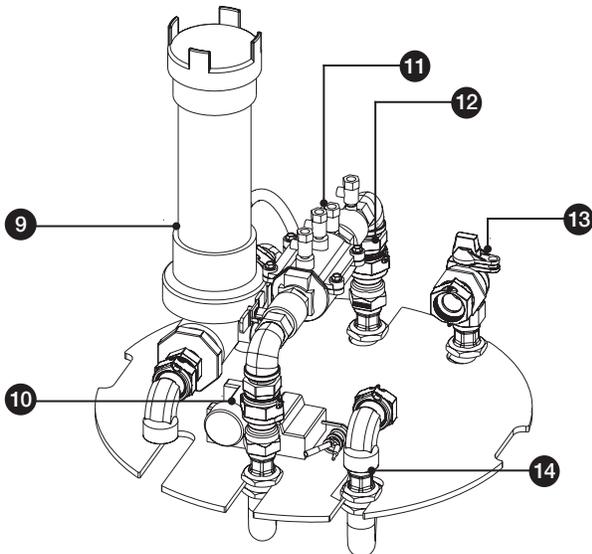
Mueller Co.

Reliable Connections®

Water (U.S.)
1.800.423.1323
www.muellercompany.com
moreinfo@muellercompany.com

International
1.423.490.9555
www.mueller-international.com
international@muellercompany.com

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