HYDRO-GUARD[®]

a **MUELLER** brand

AUTOMATED FLUSHING

Full-line Product Offering





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WHY FLUSH DISTRIBUTION LINES?

Proactive management of water age can enable a utility to reduce customer complaints; reduce operational expenses; and provide a higher quality of potable water to customers. To be successful in managing water age it is critical to turn water over at least every 72 hours. Where consumer demand is not able to achieve such an aggressive turn over, water utilities throughout North America and abroad have installed Hydro-Guard[®] Automatic Flushing Systems.

Every water distribution system has areas where the utility struggles to maintain adequate disinfectant (chlorine or chloramine) residuals. In addition to driving up water quality complaints, failure to maintain a minimum disinfectant residual in water lines can also result in violations of State and Federal standards.

Proactively maintaining water age through the installation of Hydro-Guard Automated Flushing solutions also allows a utility to control biofilm growth—furthering the utility's ability to manage Trihalomethanes (THM), Haloacetic acids (HAA5), and other Disinfectant Byproducts.

Another benefit of automating residual flushing programs is the ability to reduce operational costs associated with rolling trucks to conduct line maintenance flushing activities outside of planned flushing programs. By way of automatic and programmable flushing systems such as the Hydro-Guard line of products, the process of automatic flushing has proven to be a far more economical alternative to traditional flushing processes that have included the use of fire hydrants.

- Reduce Complaints
- Increase customer satisfaction
- Reduce costs associated with fielding and solving complaints
- Improve Compliance
- Monitor remotely
- Respond immediately to issues
- Improve consistency of water quality
- Improved management of DBP's (Disenfectant Byproducts) and compliance with USEPA DPB Stage 2
- Lower Operational Costs
- Conserve water
- Save time
- Reassign field crews
- Monitor remotely and interface with SCADA

MAINTAIN WATER QUALITY & CONSISTENCY...REDUCE COSTS...REDUCE COMPLAINTS

MANUAL FLUSHING		AUTOMATED FLUSHING
Requires planning		Programmable
Labor intensive and costly	VS	Low operational expense
Wastes water	¥ 3 .	Conserves Water
Interrupts traffic		Safe and less visible to public
Performed infrequently		Performed only as needed



HYDRO-GUARD SYSTEMS IMPROVES WATER QUALITY AND SAVES STAFF-HOURS FOR CENTRAL TEXAS VACATION COMMUNITY

The City of Horseshoe Bay, Texas installed ten (10) Hydro-Guard HG-1 automatic flushing units and seven (7) Safety Guard[®] sampling stations. According to Steve Hawley, Plant Operations Supervisor, "We've freed up staffhours and seen improvement in trouble areas. In some areas, a single HG-1 is saving us four to five hours of labor every week." To review the entire case study, please visit www.muellercompany.com/hydro-guard.

AUTOMATIC FLUSHING SYSTEM

Reduce water quality complaints

OVERVIEW

The Hydro-Guard product line revolutionized the water distribution industry in 1998. As a pioneer in automated programmable flushing, Hydro-Guard allows public and private water distribution utilities to maintain more consistency in the level of chlorine residual, especially at dead ends. The Hydro-Guard automatic flushing system utilizes a time-based schedule to flush when water usage is traditionally lower or when the residual level is at its lowest. In addition, Hydro-Guard automatic flushing systems are UL-listed and certified to NSF/ANSI 372.

TEMPORARY (PORTABLE)

PRODUCT SELECTION GUIDE

Hydro-Guard HG-6 automatic flushing system takes automatic and programmable flushing capabilities anywhere in the water distribution system where a fire hydrant is available. It's portable and adjustable so it can be connected to the hose nozzle of any brand of fire hydrant. It is the perfect solution for temporary or emergency flushing needs.

HG-6 TEMPORARY (PORTABLE) FLUSHING SYSTEM

PERMANENT

Hydro-Guard permanent flushing systems fully automate the process for flushing water distribution lines. The units can be designed to operate reliably in warm, moderately cold, and cold climates. Designed for use with an integrated multi-event programmer, Hydro-Guard systems can flush a water line multiple times per day, seven days per week, with flush durations ranging from one minute to four hours per program. Water can be discharged atmospherically or direct into a pond or storm sewer.





HG-2 LOW PROFILE FLUSHING SYSTEM

HG-8 FLUSHING SYSTEM

INSTALLATION PARAMETERS	TEMPORARY			PERMANENT		
	HG-6	HG-1	HG-2*	HG-3	HG-4	HG-8
Climate	-	Warm	Warm	Cold	Cold	Warm or Cold
Discharge Type	On Ground	On Ground	Direct	On Ground	Direct	Direct
Backflow Prevention	Air Gap	Air Gap	Air Gap, Double Check, or RPZ	Air Gap	Air Gap	Double Check
Programming	Bui	lt-in (NODE) or Blueto	ooth		Bluetooth	<u>`</u>
Inlet size	2″			Cold 1″ Warm 2″		
Pipe Material	No Lead Brass	ass SCH 80 PVC or No Lead Brass		No Lead Brass		
Bury Depth	Hydrant Mount	0″-18″	18″	18″-72″	36″-108″	24″-108″
Enclosure Type	Unpainted, Red, Yellow, or Blue	Low Profile, Green	Low or High Profile, Green	Low Prof	ile, Green	Below Grade

* Available with either Air Gap, Double Check, or RPZ.

TEMPORARY (PORTABLE) FLUSHING STATIONS

The Hydro-Guard HG-6 Automatic Flushing System is portable and adjustable so it can be connected to the hose nozzle of any brand of hydrant. It is available with an optional integrated multi-event programmer or a Bluetooth multi-event programmer that can be used to program multiple Hydro-Guard flushing units. Either way, the HG-6 flushing unit can be programmed to flush a water line multiple times, several times a day, seven days per week. The flush durations can range from one minute to six hours per flushing event.

Constructed of heavy-gauge stainless steel for durability, the HG-6 is designed to be self-supporting. It features ports that direct discharged water equally in two directions, enhancing stability. The venting and the unit's splash plate help to minimize the potential for ground erosion around the bottom of the HG-6 unit and the hydrant from the discharged water.



To accommodate the variation in fire hydrant heights, the HG-6 unit features a unique adjustable slide panel and hydrant swivel connector. The slide panel allows for vertical adjustability to match with virtually every hydrant in a system, and to assure the unit can be firmly planted for maximum stability and prevent hydrant damage.

Since many communities require discharged water to be dechlorinated before it is released into the storm sewer system or surrounding environment, the HG-6 has a built-in dechlorination tablet chamber as a standard OEM-installed feature.

STANDARD FEATURES:

- Programming managed by Bluetooth multi-event remote programmer (Multi-event integrated programmer optional)
- 20 psi to 125 psi recommended operating pressure
- Easy access to programmer
- Adjustable mounting connection
- Durable, heavy-gauge stainless steel construction
- Self-supporting, free standing design
- 2" glass reinforced Nylon control valve
- Sampling Valve (operational with unit on or off)
- Splash plate for erosion control
- 2.5"NTP hydrant swivel adapter
- 8-tablet dechlorination dispenser
- Security kit
- Air Gap to prevent backflow of water into water main



PERMANENT FLUSHING STATIONS

WARM CLIMATE SYSTEMS

HG-1 - Designed for use with an integrated multi-event (node) or Bluetooth programmer, the HG-1 can be programmed to flush a water line multiple times per day, seven days per week, with flush durations ranging from one minute to four hours per program.

HG-2 - A low profile flushing system whose discharge water is directed to the storm sewer system or a retention facility, rather than onto the ground. It is available with an air gap, or a choice of an optional double check valve or reduced pressure zone (RPZ) backflow preventer to prevent discharged water from being re-introduced back into the potable water main.

HG-8 - The unique design of the HG-8-WC uses the proven performance of the Mueller[®] meter vault to protect the internal flushing components of the device from freeze damage. In this design, the 2" piping and valve is connected to the utility's water service line by way of a camlock system that allows for simple removal should maintenance be required. At ground level, only the lockable composite lid is visible.

COLD CLIMATE SYSTEMS

HG-3 - Developed for use in moderate to severe cold weather climates, the HG-3 unit can be operated all year in all weather conditions. All of the unit's mechanical components are located below frost depth, yet are easily assessed using the patented Hydro-Guard Cam-Lock[™] Release System. In addition, the battery and programming interface are accessible from the top of the device.

HG-4 - The HG-4 directs discharged water to a storm sewer or a retention pond. Above ground, the low profile HG-4 unit appears identical to other utility boxes and can be locked for security. The unique self-cleaning feature of the HG-4 prevents it from freezing, even in the harshest of conditions.

HG-8 - The HG-8 uses the field-proven design of the Mueller Thermal-coil Meter Box. In this design, all components are mounted on a movable platform and connected to inlet and outlet piping. This arrangement allows the platform to be raised to the surface easily, then lowered for normal service. At the surface, the HG-8 installation is only evidenced by its composite lid flush at ground level.

HYDRO-GUARD S.M.A.R.T. FLUSH MANAGEMENT

The S.M.A.R.T. System monitors water quality conditions anywhere in the distribution system, but it is ideal for the most remote or troublesome points in the distribution network. Its advanced technology allows it to monitor conditions, and react to them when necessary, to mitigate a condition that is outside of the utility's acceptable range for chlorine (Total, Free or Combined), temperature, pH, turbidity, flow or pressure.

The S.M.A.R.T. System captures water quality condition data and transmits it back to operators and managers in near-time so that distribution line maintenance decisions can be made more effectively and efficiently. Data transfers, often by way of cellular networks, can be monitored and managed in the Hydro-Guard User Interface or in SCADA (The S.M.A.R.T. System is SCADA compatible, using ModBus-TCP protocol).



SAMPLING STATIONS & ENCLOSURES

SAMPLING STATIONS

The Hydro-Guard Water Quality Sample Stations allow water utility personnel to collect samples that are a true representation of the water quality being supplied by the utility versus the taking samples from a potentially contaminated source—the piping of a home or commercial property where the utility has no control over the maintenance of the water lines inside of the structure.

The dedicated sample station can be located in the utility Right of Way (ROW), thus allowing 24/7 access to the sample site—no longer requiring scheduling; no more missed appointments, a reduction of lost crew time; and a safer environment for employees and customers (no additional Protective Equipment required).

Designed for easy access and dependability, the Hydro-Guard Sample Station is ideal for water quality collection personnel who must access sample points when conditions or emergencies warrant...not when the property owner can allow them access.

Whether collecting residual level, Bac-T, or Disinfectant Byproduct (DBP) samples, the Hydro-Guard Sample Station is protected against the contaminant build-up within the device's piping and valves. It is uniquely protected against freezing temperatures, thus allowing for year-round sampling. And, the device is protected against unauthorized access by way of a unique locking system.

When monitoring water line pressure conditions is critical, the Hydro-Guard Sample Station can be equipped with a Mueller's advanced pressure monitoring system for remote monitoring of water pressure and notification of transient activity. The installation is easy and the height of the sample station allows for a better quality connection to the cellular network in the installation area.

ENCLOSURES

Enclosures are ideal for housing equipment that needs protection from vandalism or the environment. Engineered for extended life and performance, these enclosures are impact and UV-resistant, affordable, and lockable solutions for a wide range of utility applications.

STANDARD FEATURES:

- Plastic enclosures are UV and impact resistant polyethylene
- Metal enclosures are high-strength aluminum, painted with Mueller hydrant-quality paint
- Below-grade base for stability
- Locking covers
- Side and top accessibility
- Corrosion resistant
- 1-year limited warranty



ABOVE GROUND SAMPLING STATION IN HIGH DENSITY COMPOSITE ENCLOSURE



HYDRO-GUARD ENCLOSURES ABOVE GROUND SAMPLING STATION IN STAINLESS STEEL ENCLOSURE, WITH OPTIONAL PRESSURE MONITORING SYSTEM

OPTIONS & ACCESSORIES:

- Colors for all plastic styles: blue, light green, dark green, and purple
- Colors for metal styles: blue, dark green, white, black, brown, and purple
- Hex and shoulder bolt lock key combo (key lock on aluminum)



BELOW GROUND SAMPLING STATION



HYDRO-GUARD ENCLOSURES

PERMANENT FLUSHING STATIONS











BLUETOOTH CONTROLLER

NODE RETROFIT KIT

HG-A103104 SECURITY KIT

ROCK ENCLOSURE

HG-123100 CONTROL VALVE

PROGRAMMING RETROFIT KITS

КІТ	DESCRIPTION
HG1-BL	For converting HG-1 units to Bluetooth style programming
HG2-BL	For converting HG-2 units to Bluetooth style programming
HG3-BL	For converting HG-3 units to Bluetooth style programming
HG4-BL	For converting HG-4 units to Bluetooth style programming
HG6-BL	For converting HG-6 units to Bluetooth style programming
HG8-BL	For converting HG-8 units to Bluetooth style programming
HG1-NODE	Retrofit kit for converting older HG-1 units to current IN style programming
HG2-NODE	Retrofit kit for converting older HG-2 units to current IN style programming
HG-S116B	Portable Sample Valve (Stainless Sample Tip)
HG2-SOL-LP	Replacement solenoid for HG-2-Low Profile
HG6-SOL	Replacement solenoid for HG-6 Hydrant Flushing System
HG6-NODE	Retrofit kit for converting older HG-6 units to current IN style programming

SECURITY KITS

КІТ	DESCRIPTION
HG-A2023 - Hex / Shoulder Bolt Key	For HG-1, HG-3, and all CHA style low profile enclosures
HG-A2006 - TD Key	For HG-2 and all DIV style enclosures
HG-15113 - P-Key	For all CHA high profile enclosures

ROCK ENCLOSURES

КІТ	DESCRIPTION
545781	To cover HG-2 / HG-4 low profile units
545782	To cover high profile CHA enclosures (i.e. HG-2 HPLG)

CONTROLLERS & VALVES

КІТ	DESCRIPTION
HG-123100	Replacement valve
HG-16035	Replacement valve diaphram
HG-BL	Bluetooth controller (only not a retrofit kit)

OUR PRODUCTS

Mueller has built its reputation on producing innovative water distribution products of superior quality – a reputation that is literally "on the line" every day throughout the world. Mueller products and those of its affiliates are used throughout the water system...from the source to the consumer. And we are committed to continuing research and development of new products and services to meet the growing needs of the water infrastructure industry. Mueller is the largest and only full-line supplier of potable water distribution products in North America and its markets continue to expand globally.

OUR PEOPLE

The capacity to deliver the widest array of products and stand behind those products to ensure your satisfaction is our strength. The success of Mueller is dependent upon the success of those who are involved, both inside and outside our company. Therefore, we feel our future is wholly dependent on long-term relationships with our employees, customers and suppliers. This is why we strive to be proactive and responsive to their needs, always looking for a "better way". It's an approach that has set us apart since 1857 and will assure our mutual achievement and prosperity in the future.



OTHER INNOVATIVE MUELLER PRODUCTS

REMOTE PRESSURE MONITORING

Pressure management in pipe networks are fundamental to providing safe drinking water. The loss of pressure can allow ground water to contaminate the distribution system. Fluctuations in pressure can affect the physical integrity of pipes. Surges in pressure have been known to create additional leaks, main breaks and/or dramatically reduce infrastructure life. Pressure management can also save money. Accurate pressure data allows system operators to reduce leakage volumes, energy costs, system maintenance costs, customer complaints, and water quality problems.

- Reduce unaccounted for (non-revenue) water (NRW)
- Identify potential infrastructure failures related to pressure fluctuations which can lead to significant repair costs.
- Improve pump management and reduce energy costs
- Improve public safety

For more information about us or to view our full line of water products, please visit www.muellerwp.com or call Hydro-Guard customer service at 1.800.423.1323.

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