HYDRO-GUARD®

a MUELLER brand

600 SERIES ALL CLIMATE TEMPORARY/ PORTABLE FLUSHING UNIT WITH NODE OR BLUETOOTH PROGRAMMING

Suggested Specifications

AUTOMATIC WATER DISTRIBUTION FLUSHING EQUIPMENT

APPROVED PROGRAMMING – SELECT ONE:

☐ Built-in NODE Controller

☐ Bluetooth Controller

1. GENERAL DESCRIPTION

1.1 The equipment furnished under this Section shall be automatic water distribution flushing equipment designed to be utilized in a temporary manner for the flushing of potable water distribution lines from a fire hydrant.

1.2 The primary purpose of this equipment shall be to automatically flush the desired amounts of water from water distribution system for the purpose of improving and/or maintaining water quality.

2. PERFORMANCE

2.1 This equipment shall be connected to a water distribution line as required by the plans or standard installation detail. The self-contained unit is designed for automatic flushing of the water distribution line through the opening of a control valve that is an integral part of the unit.

2.2 This equipment shall be capable of being programmed to activate by a built-in (NODE) programmer capable of up to 12 flush times daily on the days desired in 1 minute to 6 hours increments (on a continually rotating 7-day cycle or on an interval between every 1 to 30 days); or a Bluetooth programmer capable of 24 flush times with duration intervals of 1 minute to 24 hours per event.

2.3 All programming shall be accomplished by means of a built-in integrated programmer powered by a single 9-volt alkaline battery with the option to utilize a secondary 9-volt alkaline battery for extended operational life; or a Bluetooth programmer powered by a single 9-volt alkaline battery.

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3. ACCEPTABLE MANUFACTURERS

3.1 Automatic, hydrant-based, water distribution flushing equipment to be supplied under this specification shall be **Hydro-Guard®** as manufactured by Mueller.

4. AUTOMATIC WATER DISTRIBUTION FLUSHING SYSTEM COMPONENTS

The automatic water distribution flushing system is comprised of the self-contained automatic flushing unit with dechlorination capabilities.

4.1 A self-supportive design that can support its own weight (devices that hang from the hydrant will not be accepted as an "as equal").

4.2 Provide an integrated erosion controlling splash plate.

4.3 Provide an integrated height adjustment (minimum of 4 inches upward of center and 4 inches downward of center).

4.4 Either an integrated programmer ◻ Built-in (NODE) with a single 9-volt alkaline battery (with the option to utilize a secondary 9-volt alkaline battery for extended operational life) power source; or ◻ Bluetooth Programmer with a single 9-volt alkaline battery.

5. AUTOMATIC FLUSHING UNIT

The automatic flushing unit shall be a single unit consisting of the major components described below:

5.1 **Integral Piping and Control Valve** – The piping and control valve components shall include the following:

5.1.1 The unit's internal control valve shall be capable of being activated by a single 9-volt alkaline battery with the option to utilize a secondary 9-volt alkaline battery for extended operational life or a Bluetooth equipped smart phone (Android or iOS).

5.1.2 The control valve shall be a globe valve type design capable of passing sand and other debris up to $^{5}/_{8}$" in diameter without obstructing the valve's throat.

5.1.3 The unit's standard internal and external piping shall be brass.

5.1.4 The unit's internal piping and control valve shall have an operational rating of 200 psi (where consistent pressures range above 110 psi it is recommended that a Pressure Reducing Valve be utilized ahead of the automatic flushing system for the protection of the device and its critical components).

5.1.5 Internal piping and control valve shall be capable of being removed from the housing by means of a threaded coupling allowing for quick disassembly, permitting easy maintenance and repairs.

5.1.6 The control valve shall be constructed of a non-corrosive glass-reinforced nylon, or equal, and shall be fitted with stainless-steel hardware. The valve shall be of the type that can be easily rebuilt.

5.1.7 The unit shall be supplied with a standard 2" male swivel NPT water supply adaptor connection. An optional custom lock, capable of securing the swivel and adapter connection to the hydrant must be available.

5.2 **Housing**

5.2.1 The self-contained unit shall be supplied with an above-grade vented cabinet to provide stability and ground erosion protection.

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5.2.2 The cabinet shall be constructed of high grade stainless-steel. Mueller-hydrant quality paint shall be offered as an optional upgrade. If painted, the supplier must use utilize, at a minimum, a two-step paint process for protection against corrosion. The paint quality must meet or exceed the hydrant paint standards of Mueller.

5.2.3 The unit's above-grade components shall be constructed of a non-corrosive maintenance-free material and shall be painted red or yellow (custom paint color optional with approval) if requested by the client. If painted, the paint shall be specifically designed for direct exposure to the sun and weather and have a minimum life expectancy of 15 years.

5.2.4 The housing must be a self-supportive design that can support its own weight (devices that are unsupported and utilize the fire hydrant nozzle for support will not be accepted as an "as equal").

5.2.5 The housing must provide an integrated erosion controlling splash plate that is bolted to the housing body and secured by way of unique security bolts for the protection of the device.

5.2.6 The housing shall provide an integrated height adjustment (minimum of 4 inches upward of center and 4-inches downward of center) so that the device can be easily attached to a standard fire hydrant.

5.2.7 The housing and external connection piping shall be constructed of no-lead brass, be at least two (2) inches in diameter, and shall feature an anodized aluminum or brass swivel connection adaptor.

5.2.8 All mounting brackets and hardware shall be stainless-steel.

5.2.9 The device must include both a dechlorination system and sampling port as standard equipment. Both must be integrated into the cabinet of the device. Exterior or "add on" optional equipment will not be accepted.

5.3 **System Sampling (Required)** – The sampling system shall include the following features:

5.3.1 The sampling system shall be constructed of polyethylene or other material with equal or greater resistance to bacterial regrowth and be connected with brass fittings.

5.3.2 The sampling system shall be designed in such a way to reduce the potential for sampling system contamination by allowing access and inspection of the internal piping compartment and components without disassembly or depressurization of the sampling system.

5.3.3 Connection to the unit's sampling system shall be by means of a No-Lead Brass Ball valve located at the top of the device for ease of access. The unit's sampling connection shall be housed in a secure weather-tight area to minimize contamination of the sampling connection.

5.4 **Electrical/Electronic System**– The Electrical/Electronic System shall include the following features and capabilities:

5.4.1 Be capable of storing instructions via an integrated programmer and capable of operating the unit's internal control valve using a single 9-volt alkaline battery with the option to utilize a secondary 9-volt alkaline battery for extended operational life or a Bluetooth-equipped smart phone.

5.4.2 The Bluetooth-equipped device must be powered by a single 9-volt Alkaline battery that can power up to 5,000 on/off events over the life of the battery.

5.4.3 The Bluetooth-equipped device must allow for up to 24 flush events daily with durations of one minute to 24 hours.

5.4.4 The Bluetooth controller interface shall be capable of being managed from a maximum distance of 25 feet (line of sight/no obstructions) by way of a standard Android or iOS smart phone.

5.4.5 The Bluetooth controller interface module must be password protected to prevent unauthorized operation.

5.4.6 Offer 12 flushing program events per day.

5.4.7 Be leap-year compatible, automatically accounting for February 29th every four years.

5.4.8 Incorporate LCD readout of clock and programming functions.

5.4.9 Offer manual on and off functions.

5.4.10 Offer a percentage increase/decrease option that will allow the end user to make monthly adjustments by increasing or decreasing the flush durations by a percentage without the need to reset flush duration times.

5.4.11 Be secured and water-resistant.

5.4.12 Have heavy-duty power cable.

5.4.13 Use an integrated 9-volt or greater latching solenoid to operate the control valve that directly turns into a 2-inch control valve without the need for a secondary adaptor.

5.5 **Winterization** - It is not recommended that this device be utilized in freezing weather conditions.

5.6 **Dechlorination System (Optional depending on local ordinance)**

5.6.1 A tablet feeder designed to accommodate 2 $^{5}/_{8^{th}}$ inch sodium sulfite or ascorbic acid tablets shall be installed on the unit.

5.6.2 A portion of the water being flushed shall be directed through the tablet feeder in the creation of a concentrated solution of the dechlorinating agent.

5.6.3 The directly treated, concentrated solution shall be introduced to the non-directly treated discharge on the device's splash plate resulting in a homogenous mixture effectively treating the entire discharge.

5.7 **Execution**

5.7.1 Prior to the installation, the drainage patterns for the intended installation location shall be viewed to ensure that any discharged water will not create hazardous conditions for pedestrian or vehicular traffic. The selected location's drainage pattern shall also permit discharged water to flow away from the automatic flushing valve or be absorbed by the surrounding soil as to prevent pooling.

5.7.2 Remove debris that might create uneven pressure on the unit from under the self-supporting footer of the device. Compact the ground under the device in order to minimize settling after installation.

5.7.3 The area around the automatic flushing valve shall be prepared in order to prevent erosion.

5.7.4 The automatic flushing valve shall be disinfected in accordance with ADH and AWWA standards.

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