300 Series Sleeve Valve
Bidding Specifications

General Description
The 300 Series Sleeve valve is a hydraulically actuated sleeve-type valve controlled by an electric solenoid. A rubber sleeve that is actuated by hydraulic pressure controls the flow of water through the valve. Its lightweight design and low friction loss characteristics reduce the size and on-going electrical costs associated with most booster-pump stations.

Operation
The valve is either in the fully opened or closed (shut-off) position when operated electrically. When the 3-way manual selector is pointed to the "AUTO" position then the electric solenoid is used to automatically open and close the valve. A 3-way electric solenoid must be energized to open the valve and de-energized to close the valve. Pointing the manual selector handle to "OPEN" or "CLOSE" will override the "AUTO" control. The manual selector can be used to hold the valve partly open by pointing the selector handle midway between "OPEN" and "CLOSE".

Performance
The 300 series valve shall have an operating range of 10-200 psi depending upon the selected internal rubber sleeve diaphragm. This series is only available in electric-solenoid operation. The valve series shall have a flow rate of 100-800 GPM with minimal friction losses. For the largest nozzle size of the M-160 sprinkler series, friction loss shall be less than 1.5 psi at 310 GPM.

The 300 series incorporates a 24 VAC Normally Open 3-Way solenoid with the following power requirements;

- Power Requirements: 2.9 watts
- In-rush Current: .46 amps or 460 mA
- Holding Current: .24 amps or 250 mA.

Materials
The 300 Series Sleeve valve is a normally closed position valve that may be electrically energized to be opened or manually opened. The valve size is only available in 3" size with the following inlet/outlet configurations:

- 3" Wafer connection with four (4 Qty) threaded bolts,
- 3" Female internal NPT threaded inlet and outlet,
- 3" Victaulic connection.

Note the "wafer-style" model has an aluminum cage while the NPT and Victaulic models have a cast iron cage.

All 300 series shall be actuated via a 24 VAC electric solenoid that is a fully encapsulated plastic part with EPDM seals.

The 300 series valve shall be constructed of various materials as noted in the table below:

Item	300 Series 3" Valve
Jacket	Anodized Aluminum
Cage	Aluminum or epoxy coated cast iron
Sleeve Diaphragm	Polyisoprene (natural rubber and chemical resistant)
Center Bolt	Stainless Steel
Center Barrier	UHMW (Plastic)
External tubing	Nylon

Installation

The 300 Series valve can be installed in either a horizontal, below grade or vertical, above grade position. A typical installation involves the "Wafer" or flange-compatible model that allows for easier servicing when installed in a horizontal position below grade in a valve box. In a vertical orientation or valve-under-head applications, a threaded inlet and outlet model may be used.

Four (4 qty) 5/8" diameter by 11" long bolts with nuts and washers come standard with the Wafer valve style model that are sufficiently long enough to couple an inlet and outlet loose ring flange and "O" rings that come pre-installed.

In a horizontal installation, orient the valve so the tubing, manual selector and solenoid are easily accessible. The valve along with a quick coupler and/or an isolation valve can be located in a separate or elongated valve box per the installation details. The valve should be supported with a CMU block or some other support as indicated on the installation details. Provide at least 3' of excess control wire spooled neatly adjacent to the valve box so the valve can be completely removed from the valve box and serviced on grade if required without having to cut and splice the control wire. The finished installation shall be level and parallel to the top of the valve box.

In a vertical orientation, the external tubing and solenoid shall be facing outward where they can be serviced if needed. A user may decide to enclose the valve assembly in a small cage for additional protection against vandals depending on the location and exposure to the general public.

The 300 Series valve shall be sold and distributed by Underhill International Corp. of Lake Forest, CA.