

Operation:

Fromatic® Model 80DW check valves are designed to prevent backflow, minimizing hydraulic shocks and give years of trouble-free operation without maintenance when installed properly and sized to the pumping application with regards to flow and maximum system pressures. The valve is designed to be installed vertically only.

Construction:

The Fromatic® Model 80DW check valve body has been constructed to handle the rated system flow and pressures as stated on valve body, and in addition, support the weight of the submersible pump, pipe and the water in the riser pipe. The valve has been clearly marked on the outside valve body with Model numbers, Serial # and Date of manufacturing. Keep this information in a safe place for future references and warranty questions. The Model 80DW "Deep Well" valves have been uniquely designed to absorb some of the hydraulic water shocks associated with well water pumping when the check valve is properly installed and the installation instructions are followed below.

IMPORTANT INSTALLATION INSTRUCTIONS

It is very important to install a check valve properly to help insure a trouble-free water system. **If the installation instructions are not followed or the valve is disassembled, warranty or any warranty claims will be void.** On the back of this page is a diagram of a typical submersible valve installation (Fig. 1).

- A. **Pipe Flow Velocities:** Fromatic® Model 80DW is designed for both low and high flow conditions. For best service life, a normal flow velocity range is 3 to 10 feet per second.
- B. **System pressure:** It is important to take the total system hydraulics into the calculation and not only the pump's well setting when selecting valve type and model. In general, Fromatic® Model 80DW valve bodies are pressure rated 4,300 psi and can be installed to a max depth of 3,300 feet of static water column pressure. This means that a valve can be set at a well depth of 3,300 feet. To elevate and reduce the hydraulic shocks in the riser pipe, it is recommended that a check valve be installed every 600 feet in the riser pipe. *See Recommend Check Valve Installation chart on next page.*
- C. **Prior to installing check valve:** Make sure that the inside threads and flow areas of the check valve are free from defects and that the valve's spring-loaded poppet mechanism is operating freely. **Inspect and remove any foreign material (IE. PIPE DOPE) from inside valve body and valve seat.**
- D. Install check valve vertically with arrow pointed up in direction of liquid flow.
- E. In submersible pump applications, the first check valve should be installed directly on the discharge head of the pump or maximum one pipe length (20 feet) above pump.
- F. If the pump has a built-in check valve, the next check valve should be installed no more than 25 feet above the lowest pumping level in the well

| Submersible pump setting in well | Recommended Check Valve Installation: |
|--|--|
| 600 feet or less | One check valve on pump discharge and one on surface of well. |
| 600 feet to 1,200 feet | One check valve on pump discharge and additional check valves installed at maximum 600 ft. intervals and one at the surface of well. |
| 1,200 feet to 3,300 feet For deeper settings contact factory | One check valve on pump discharge and additional check valves installed at maximum 600 ft. intervals and one at the surface of well. |

Water Hammer

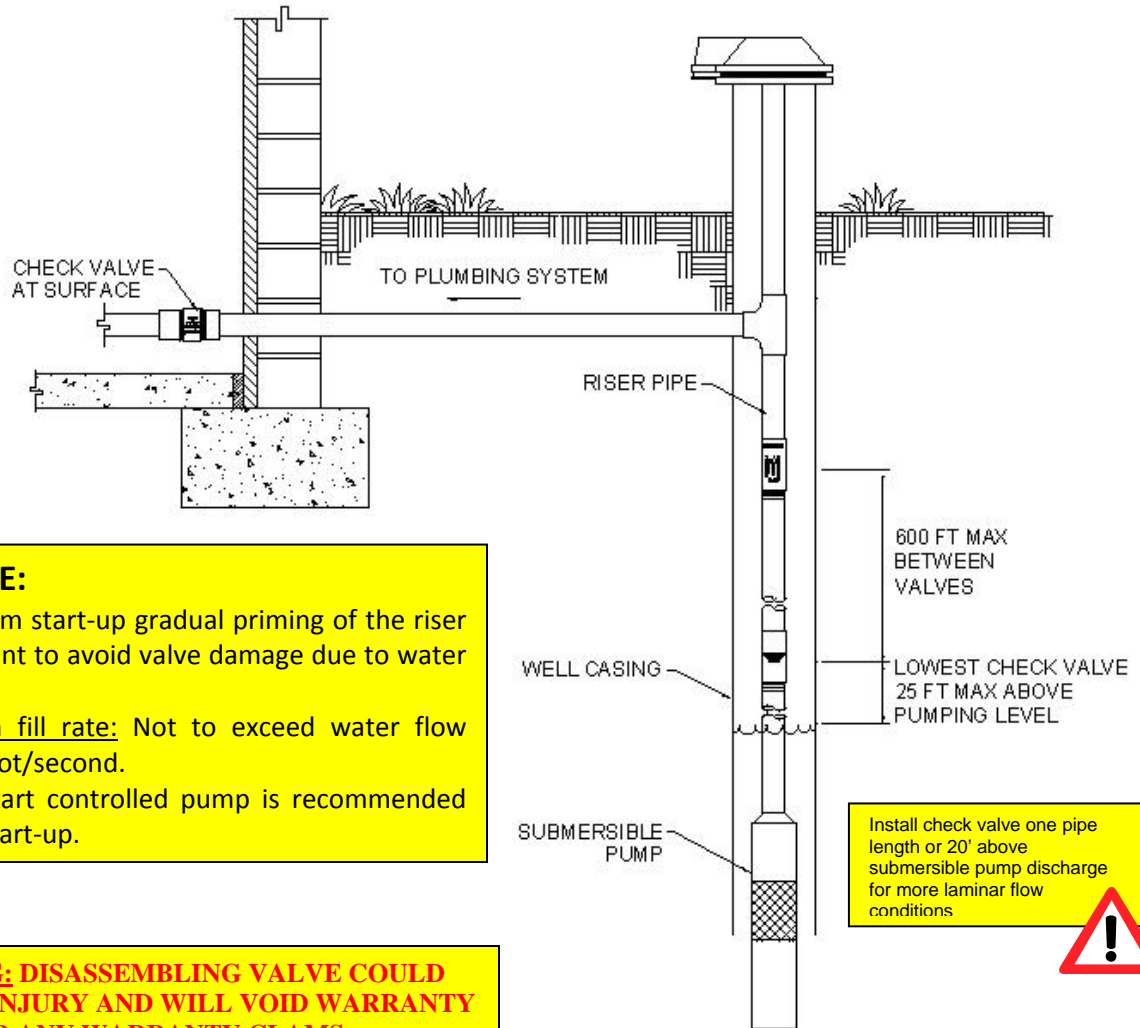
Water pumped and flowing through a piping system has a certain amount of energy (weight x velocity). If the pumping is stopped, the water continues to move and its remaining energy must be absorbed in some way. This absorption of energy can sometimes create undesirable noise and/or damage. This is called water hammer.

Water hammer can destroy piping systems, valves and related equipment. Water hammer varies in intensity depending on the velocity with which the water is traveling when the pump shuts down. It is very important for the installer to realize water hammer potential, and they must take this into consideration when sizing the system and deciding what material the valves should be made from.

It has been proven that for every foot per second of velocity, 54 psi of backpressure is created. This means, in a 4" pipe, a flow of 360 gpm (or flow velocity of 9.2 ft/sec) could create a backpressure of almost 500 psi, in addition to the system pressure. This does not take in consideration the weight of the water column in the well. Fromatic valves are designed to help lessen the sometimes-damaging effects of water hammer on piping and related equipment.

IMPORTANT CHECK VALVE INSTALLATION INSTRUCTIONS

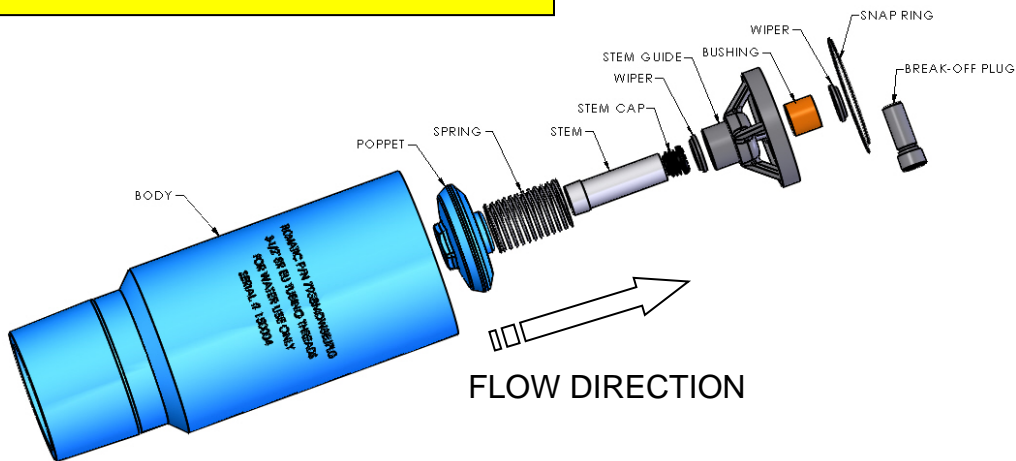
(Fig. 1)



NOTE:
On initial system start-up gradual priming of the riser pipe is important to avoid valve damage due to water shock.
Water Column fill rate: Not to exceed water flow velocity of 1 foot/second.
VFD or Soft Start controlled pump is recommended during initial start-up.

WARNING: DISASSEMBLING VALVE COULD RESULT IN INJURY AND WILL VOID WARRANTY OR ANY WARRANTY CLAIMS

Install check valve one pipe length or 20' above submersible pump discharge for more laminar flow conditions



PLEASE CONTACT FLOMATIC FOR ANY FURTHER INFORMATION

Limited One Year Warranty: Flomatic® valves are guaranteed against defects of material and workmanship when used for the services recommended. If, in any recommended service a defect develops due to material or workmanship, and the device is returned, freight prepaid, to Flomatic® Corporation within 12 months from date of purchase, it will be repaired or replaced free of charge. Flomatic® Corporation's liability shall be limited to our agreement to repair or replacement of valve only.

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