



## Water Service

Common types of water are deionized, demineralized, distilled, and potable. Deionized water is water that has most of its mineralized ions removed. Demineralized water has its mineral impurities removed. Distilled water is purified through distillation, a process that exploits the volatility of liquids using evaporation and condensation to separate components. In the case of potable water, impurities in the water that have higher boiling points than water are removed. Potable water is commonly known as drinking water. Potable water has been filtered and purified to meet local standards and is generally free from harmful bacteria.

## NSF/ANSI 61 and 372

NSF/ANSI has two standards, NSF 61 and NSF 372, which define requirements for the water quality and lead content for potable water equipment. NSF/ANSI 61 is a standard which ensures that the product meets the requirements to manufacture, sell or distribute water in North America. To make the products safe for water distribution there must be protective barrier material, joining, and sealing materials. These materials will ensure that the water remains free from any contaminants that may be present on or in the metal, paint, gaskets, lubricants, etc. NSF/ANSI 372 is the standard which established the set procedure for limiting the amount of lead in water

## Water Purification

Deionized, demineralized and distilled water are very similar types of purified water, however the process in which each is purified is different. Deionization and demineralization remove the contaminants from the water, but distillation will remove the water from the contaminants. Deionization and demineralization are purified through ion exchange (IX). IX is the separation of ions from water which is done using an insoluble solid (IX resin) and the water solution. For the removal of cations (positively charged ions), Sodium is typically founded on the resin surface and for anions (negatively charged ions) Chloride is used. The positively charged unwanted cations are exchanged with the positively charged ions on the resin surface and negatively charged unwanted anions are exchanged with the negatively charged ions on the resin surface. Distilled water is purified through distillation, a separation process in which a liquid is heated to boiling. Its vapors then rise in the distillation column and enter a condenser. The condenser has cold water flowing on the outside of the distillation column with the heated vapor inside and allows the vapor to condense into the liquid phase. Purified water will then be running out of the condenser, leaving the contaminants at the heat source.

## Cleaning and Lubrication

The NS ball valve and butterfly valve series is free from lubrication.



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## Standard Material

Please consult A-T Controls for material selection for your water application. These parameters are guidelines, and customers are responsible for material of construction and preparation of the valves for service being compatible with their water application:

Deionized, distilled, and demineralized water can react and cause leaching from materials of construction. Filled PTFE is not recommended because of this in these applications. Standard valve assemblies/materials of construction can be used on water service if NSF/ANSI 61 and NSF/ANSI 372 is not specified or required.

### Deionized/Distilled/Demineralized Water:

**Auxiliary Stem Seal:** PTFE, TFM™-1600, FKM

**Body:** 316SST

**Seats:** PTFE, TFM™-1600

**Trim:** 316SST

**Potable Water:** Only NSF 61 and NSF 372 approved valves shall be used.

## NS Series Valve Packages (Non-potable Water Packages also Available)

**Series NS20** – Sizes ¼" - 3", 2-piece design, 1000 psi WOG. Conforms to NSF/ANSI 61 and NSF/ANSI 372.

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**Series NS22** – Sizes ¼" - 3", 2-piece design, 1000 psi WOG. Conforms to NSF/ANSI 61 and NSF/ANSI 372.

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**Series NS55** – Sizes ¼" - 4", ISO 5211 mounting, Threaded, Socket Weld or Butt Weld three piece design, 1000/800 WOG (by size) . Conforms to NSF/ANSI 61 and NSF/ANSI 372.

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**Series NS90-F1** – Sizes ½" - 1", 1-1/2" - 4", ANSI Class 150, ISO 5211 Mounting. Conforms to NSF/ANSI 61 and NSF/ANSI 372.

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**Series NSD9-F1** – Sizes ½" - 1", 1-1/2" - 6", 150# and 300# ANSI, Full Port Design, ISO5211 Actuator Mounting Pad, Anti-Static Device, Traceable Valve. Conforms to NSF/ANSI 61 and NSF/ANSI 372.

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**Series NSD9-F3** – Sizes ½" - 1", 1-1/2" - 6", 150# and 300# ANSI, Full Port Design, ISO5211 Actuator Mounting Pad, Anti-Static Device, Traceable Valve. Conforms to NSF/ANSI 61 and NSF/ANSI 372.

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**Series NS Butterfly Valves** – Sizes 2" – 24", Class 150 lug or wafer style. Conforms to NSF/ANSI 61 and NSF/ANSI 372\*.

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\*NS Butterfly valves with EPDM seats and stainless steel disc or nylon coated ductile iron disc are suitable for potable water service.