

By Gary M. Strunak, Tomlinson Industries

POU Faucet Selections

Faucets for point-of-use (POU) water treatment systems must combine an attractive, contemporary appearance with materials that ensure safety and purity.

POU faucets and systems are becoming increasingly important to help meet consumer demands for safe, high-quality drinking water. It is estimated that by 2020 almost every household will have a POU or point-of-entry (POE) water treatment system.

Lead Concerns

Unsafe levels of lead in drinking water are an old and on-going issue. This can occur as a result of old fixtures that have lead solder as well as from lead pipes. Unsafe lead levels have been found in older drinking water systems. The U.S. Environmental Protection Agency (EPA) recommends that lead levels in drinking water be less than 15 parts per billion.

Another area of concern is public schools. Even though the EPA does not yet require it, some school systems have initiated plans to replace their old drinking fountains with newer models. Test results in schools showed that many

of their bubbler fountains had unsafe levels of lead in the drinking water.

Lead-free faucets are the answer to lead problems occurring in older drinking water equipment and systems in restaurants, hotels, parks, schools and many other applications.

Amendments to the Federal Safe Drinking Water Act had required faucets and

other endpoint plumbing devices to comply with the lead requirements of ANSI/NSF Standard 61, Section 9, by Aug. 6, 1998. Products covered under the scope of ANSI/NSF Standard 61, Section 9, include drinking fountains, water coolers, hot water dispensers, glass fillers, kitchen and lavatory faucets as well as residential refrigerator ice makers.

ANSI is the American National Standards Institute. This private, non-profit organization has established procedures and policies to help develop voluntary consensus standards. Water treatment dealers should educate consumers on the importance of lead-free certified faucets for their POU systems.

Faucet Options

Faucets for POU, reverse osmosis (RO) and other water treatment systems are available in either an air-gap or non air-gap version. These faucets are constructed of stainless steel and are lead-free. Both can be NSF listed to ANSI/NSF Standard 61-1999a. The air-gap style provides protection from back-siphonage and commonly offers barbed wastewater connections for 1/4-inch tubing in and 3/8-inch tubing out. Back-siphonage is the flowing back of used, contaminated or polluted water from a plumbing fixture or vessel into a water supply pipe due to a negative pressure (vacuum) in the pipe.

A variety of color options for the POU faucets is available from vendors including polished and stainless steel, polished brass, black and white to help the consumer enhance any decor. An

ergonomic handle can be used to activate the faucet with a light touch for either intermittent or constant flow. A gooseneck swivels and features a stream straightener and protective tip. These faucet types should have a maximum temperature rating of 212° F and a maximum pressure rating of 120 psi/8 BAR to efficiently dispense the treated water.

The faucets used on the indoor and outdoor drinking water fountains can be either the "bubbler" style or the "projector head." The bubbler incorporates the activator button right into the faucet, which controls the flow. Some bubblers are adjustable to control flow rates and can handle a maximum pressure of 120 psi/8 BAR and a maximum temperature rating of 212° F. The projector head allows for the activator button to be located away from where the water is being dispensed. This is quite common where the button is placed on the side of a cooler or fountain for easy reach. The projector head simply provides the flow characteristics for drinking. An interesting option available with the projector head is a "set screw" that allows for protection from vandals. This especially is popular on outdoor fountains. Bubblers and projector heads should be lead-free and NSF certified to ANSI Standard 61.

Fountain glass fillers feature lead-free brass construction with a chrome plated finish and a lever actuated flow. The unique internal design provides a smooth flow through a wide range of pressures without the need for a flow-control design. The fountain glass fillers have a 3/8-inch NPS connection and are available with a 5-inch, 8-inch or long-reach spout. Dispensing styles can include push down, push back or cup trip. Another option is a vertical mount glass filler. Fountain glass fillers should have a maximum pressure rating of 120 psi/8 BAR.

Other point-of-use water systems use plastic cooler faucets. These faucets should be made of FDA-grade polypropylene and be lead free. These materials do not distort or affect the taste of the water being dispensed. The faucets should be NSF listed and many are available in a variety of colors. Optional handles including a "cup trip" style for one-hand dispensing and a "safety handle" design to help prevent



Point-of-use products are becoming more common in households across the nation. Dealers should educate and aid the consumer through the POU and faucet selections available.



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accidental dispensing are additional choices to enhance the unit. These faucets should have a pressure rating of 20 psi/1.33 BAR, a maximum temperature of 170° F (77° C) and a flow rate of 3.21 oz/sec; 1.51 gal/min; 5.71 L/min.

Another application for point-of-use faucets is hot water dispensing units, coffee brewers and coffee urns where water lines are plumbed directly into the unit. These faucets are dispensing very hot water—up to boiling—and are made of chromed brass. Both gravity and high-pressure faucets are available. Faucets should be NSF listed and can be supplied with safety-style handles to prevent accidental dispensing. Some high-pressure faucets come standard with a safety-clip and aerator for a smooth, controlled flow. When required, a spout extension can be installed on the metal faucets to ensure even more control over the dispensing of such hot liquids.

The key to faucet selection is safety. It is recommended to avoid the inexpensive, leaded brass styles for any RO or “bubbler” style applications. The NSF certification ensures that the design and materials used provide for a safe

product. Beyond that, the rest of the considerations revolve around aesthetics such as which style and color look best for a given product or specific location.

In the not-too-distant future, all consumers will demand purified and/or filtered water. How and where that water is treated will be the consumer’s choice. Consumers already are choosing to install POU systems and POE whole house systems to obtain high-quality, good tasting water. With the threat of contamination of large municipal water treatment plants, POU/POE water treatment/filtering systems will be considered as a means to ensure safe and pure drinking water within homes. WQP

About the Author

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TECH WORKSHOP

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far lower than the amount required to oxidize bacteria or VOCs or for C/I applications.

- **C/I ozone equipment is large;** construction materials are built for extreme ozone resistance; contact time is longer; the ozone residual is far greater; safety precautions and equipment are extensive; and the initial and maintenance costs are high.
- **Domestic ozone equipment is small;** built of standard materials found commonly in home water treatment equipment; has short or no contact time; extremely low or no residual; requires virtually no safety precautions are required since the ozonators are low production; and produces either no or low residual.

The rule of thumb for sizing is

- **Iron, sulfur, manganese oxidization** = 0.5 grams/hr (500 ppm) per 5 gpm and 5 ppm iron, sulfur and manganese.

Next month The O-Zone will feature Ozone Use With Well Water.



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- **Killing bacteria (100 cfu) = 1 gr/L gpm** (no other ozone demand can be present).

Which Parts Typically Are Used in an Ozone System?

The parts needed to complete an ozone system will depend on the application. The list of applications is quite extensive, so we will choose the domestic well water application as this example.

Once the ozonator has been selected you must then select the

- type of ozone injector (ozone pump or venturi),
- air dryer (depends on the hours of water usage),
- contact tank,
- automatic ozone unit actuation switch and
- filtration equipment.

The above items will be discussed in detail in the next article, “Well, Ozone Again,” featured in the December issue. WQP