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# Commercial Restrooms

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# Product Application

## Why It Works: The W.D. Manor Dialysis Box Application

By Ashlei Williams

**W**.D. Manor Mechanical Contractors, Inc., specializes in health care construction. Recently, the company worked on a Greenfield hospital in the metropolitan area of Phoenix, Ariz., as the design/assist mechanical contractor.

W.D. Manor worked very closely with the mechanical engineer, construction manager, and owner's group, and offered its value engineering. It was decided that the company would provide an alternative method of installation for the dialysis boxes required on the project.

### Know the facts

By most local codes, each dialysis supply station must have a dedicated backflow prevention device (BFP) to protect the potable water. The conventional method of this installation requires multiple rooms or closets per floor dedicated to the BFP devices, including potable water supply(s) and sanitary drainage for those devices. From each BFP, a dedicated supply line is piped to the respec-



tive dialysis station(s). Some facilities require that the supply line is flushed for a period of time prior to usage, which can be considered a waste of water.

Some local codes only require one BFP device to branch off to numerous dialysis supply stations. This does protect the facility potable water. However, this design does not protect each patient. In theory, if a contaminant were to be introduced into this loop, each patient would be at risk of cross contamination.

### Not the norm

The W.D. Manor Dialysis Box (WDMDB) can be installed near any potable water source and sanitary drain, as it becomes the Dialysis Equipment plumbing point of connection. Many times, the design has the WDMDB installed near a potable water source, such as lavatory or

other plumbing fixtures in the associated room or nearby. This eliminates the need for excessive water distribution piping, or drainage piping, as well as coordination, labor, and material to install.

With the WDMDB, facilities are able to increase the respected real estate by gaining multiple rooms or closets per floor that would normally be shared by a bank of BFP devices. The devices typically must be accessible for annual testing. For the facilities requiring mandatory flushing of the supply lines, they eliminate 20-100 feet, or more, of standing water to just a few inches.

Other than the benefits of eliminating excess distribution piping, the additional cost of standard installation, and extra square footage gained, which would otherwise already be utilized, the largest benefit is the security of patient safety. Because of the risk of a contaminant being introduced into loops, W.D. Manor found it important to focus on preventing cross contamination with patients. Through that focus, the company developed the slogan, "Protect the Source...Protect the Patient."

### Beyond the slogan

Dorothy Thrasher, of Smith Group JJR, was the engineer of record for the first project where the WDMDB was installed.

"As a plumbing engineer and spec writer for many hospital organizations, I learned that the biggest fear for the owners is the infection. Infections in plumbing systems can be caused by water borne pathogens and cross contamination or cross connections in plumbing systems, especially water and medical gases," Thrasher said. "As we are dealing with individuals with very low immunity, in our case specifically dialysis patients, we are concerned with contamination. We went to the drawing boards with the contractor, W.D. Manor, and with their suggestions, [and] developed the design to satisfy the need in our health care project."

Thrasher was very important to the collaboration process of the project, and has remained loyal to W.D. Manor and the WDMDB ever since.

"Many hospitals now have dialyses in every patient room," Thrasher said. "The other dialysis boxes on the market do not have individual backflow preventers."

In addition to the first generation WDMDB, W.D. Manor has created second and third generations. Keeping the end user as the focus, the company now only offers the WDMDB in a lead free version. The product is in compliance with the Reduction of Lead in Drinking Water Act.

Thrasher said that continuing to specify the WDMDB for her projects has been beneficial.

"[There is] peace of mind that we are not getting into finger pointing law suits if there is an infection in [the] hospital," she said.

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Dialysis
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Thrasher added that the No. 1 benefit of installing the WDMDB is that she has happy clients. The third generation WDMDB is now available with an optional thermostatic mixing valve for those colder climates that need, but do not have, tempered water. In addition, W.D. Manor applied for a U.S. Patent, and received their patent in September 2014. The company is selling the WDMDB across the U.S., from California to New York.

Frequently Asked Questions

- Q: Aren't all dialysis machines internally protected from cross connection or backflow contamination?
A: No, there are some dialysis machines with the required "testable" backflow prevention assemblies and/or physical air gaps. However, that is not consistent throughout the industry due to age of the machine and different manufacturers.
Q: My units are testable. Do I still need the WDMDB?
A: Yes, even if you current machine is protected, it does not guarantee that the next week or next year the same unit will be used at that location. If you protect the water source, you eliminate the chance of cross contamination.
Q: How does the WDMDB increase patient safety?
A: Some local codes only require one individual backflow prevention device for multiple potable water outlets downstream of the device, which only protects the building from cross contamination rather than protecting one patient to the next patient. Our dialysis box utilizes a reduced pressure backflow preventer to protect each individual patient from cross contamination at the point of use.
Q: What are the cost savings?
A: With our dialysis box, any potable water source close to the point of connection can be used safely instead of having a remote location for the backflow prevention device(s). Our box saves you money on pricey coordination, installation time, and material expenses. Our dialysis box also eliminates the space requirements for excess piping and the need for a designated backflow room or closet, which in turn allows that space to be designated for other needs.
Q: Are the WDMDB wetted parts R.O. compatible?
A: No, most modern dialysis machines do not use R.O. water. Not only does the R.O. water attack copper and brass piping, the waste from an R.O. supplied machine may damage you sanitary waste systems.
Q: Are the WDMDB wetted parts lead free?
A: Yes, the shut-off valve, trap primer and backflow preventer and hose-connection are all lead free.