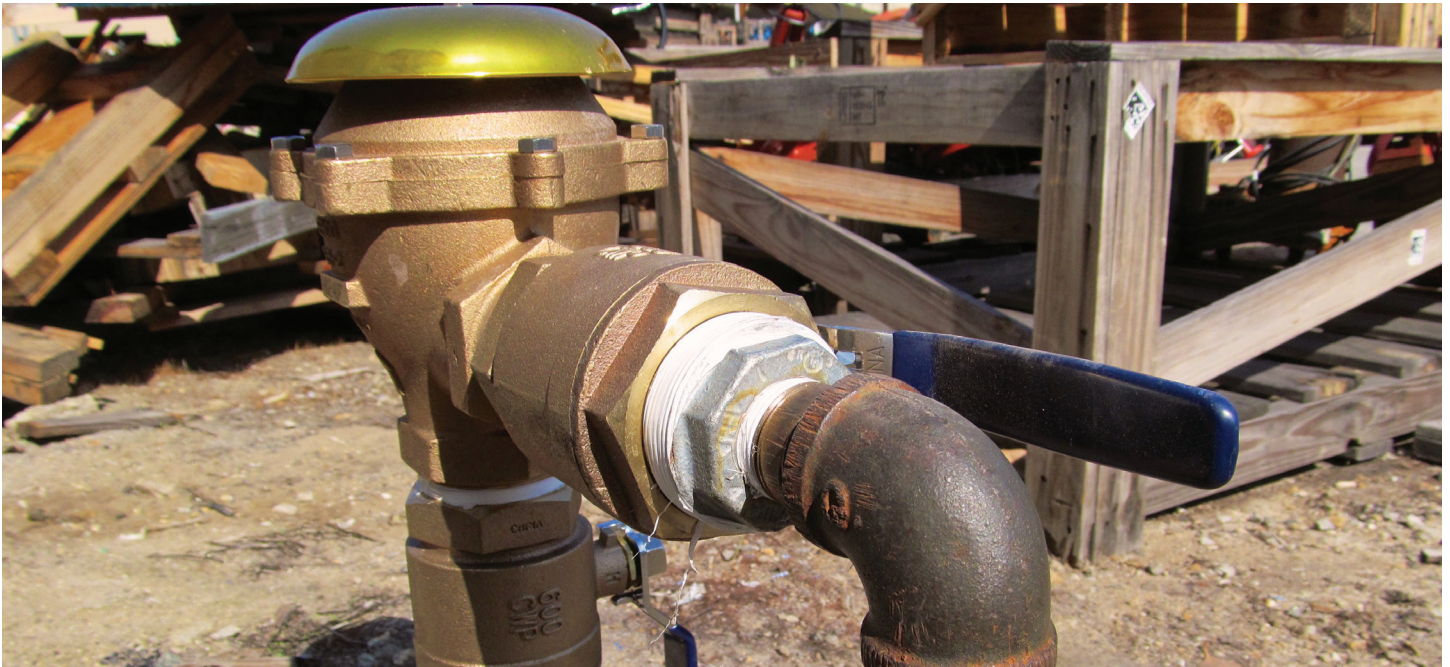


CROSSTALK

SUMMER 2015



Periodically, the USC Foundation receives an enquiry regarding the oversizing of backflow prevention assemblies in a system. Some think that installing a larger assembly into a system with smaller piping reduces the pressure loss across the assembly, but even though the assembly will continue to provide backflow protection in this type of installation the reasoning for the installation may not provide the desired results.

Oversizing a Backflow Prevention Assembly

The term “oversizing,” means using a backflow prevention assembly of a larger size than the piping leading into and away from the assembly. For example, a water system with a two-inch water line installs a four-inch assembly in the two-inch line.

The reason for installing an oversized assembly usually starts from the desire to provide more flow or pressure to the customer. The thought is that if a larger assembly is used, the assembly does not have to work as hard, therefore the pressure loss will be less.

Looking at the example of the four-inch double check valve assembly versus the two-inch double check valve assembly (A similar comparison can be done with other types of assemblies), the respective pressure loss versus flow rate curves of these assemblies may look something like those in the figure on page

six (flow characteristics of the two-inch assembly are shown in green and the four-inch assembly shown in blue).

Although the maximum allowable pressure loss of any sized double check valve assembly is 10 psi (Table 10-1, *Manual of Cross-Connection Control*,

continued on page 6

New Members

Below is a list of those who have become members of the USC Foundation since the last *Cross Talk*.

\$39.95 Backflow Valve Testing	H B Bradshaw Construction
Alex Berukoff	Hydro Backflow Solutions
Allen Smith	Jim Jenkins
Anthony Giddens	Justin Johnson
Aqua Backflow and Chlorination	Kenneth Keesler
Barry Pollock	Kevin Bridgewater
Cal Valve Backflow Prevention & Valve Co.	Plumbing Authority Proserve Mechanical
Chris Duncan	Quail Valley
Cimino Backflow Testing & Inspection	Water District Rogue Valley
Columbia County Water Utility	Backflow Service Roy Kyser
Diego Del Real	Sprague
Embassy Landscape Management	Mechanical, LLC. Tom Safreed Vista Plumbing

What's Included with a Foundation Membership



Membership Discounts

25% off Manual Orders

20% off Training Courses

Seminars/Webinars/Training Tools are also discounted

Other Benefits

Free copy of the *Manual of Cross-Connection Control*, each time a new edition is published

E-mail notification every time the electronic copy of the *USC List of Approved Backflow Prevention Assemblies* is updated

Updates to the *USC List of Approved Backflow Prevention Assemblies* mailed quarterly

Special Notice mailed as published

New Cross Talk mailed quarterly

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2016

One Day Update SEMINARS

As this year draws to a close, the USC Foundation has announced its upcoming 2016 *One Day Update Seminar* schedule. The seminars offer backflow prevention assembly testers and cross-connection control program specialists an opportunity to be refreshed on current field test procedures and cross-connection control topics. All seminars, unless otherwise noted, are also made available via the Internet as live webinars, allowing attendees to participate from the comfort of their office or home.

The 2016 schedule will include new topics like, conducting cross-connection control surveys and a *hands-on* field test procedure refresher.

All attendees are eligible for continuing education units (CEU's). Most seminars include six contact hours (0.6 CEU's). The June 7th and June 9th seminar dates are shorter sessions and therefore include three contact hours (0.3 CEU's). For those participating via the webinar each person viewing the webinar must register. Only register attendees will receive CEU certificates. For those attending any six-hour seminar in-person, lunch is included.

Remember, USC Foundation members receive a 20% discount on one day update seminars.

Hand-On Field Test Procedures, January 19

The hands-on seminar is ideal for those familiar with field-testing backflow preventers, but may need some review or to become familiar with changes in the Tenth Edition of the Manual of Cross-Connection Control. Discussions will include the differences between the Ninth and Tenth Edition field test procedures and diagnosis of scenarios that may be causing a backflow preventer to fail during the field test procedure. Attendees will have the opportunity to put into practice what they learn. Several backflow preventers will be set up for attendees to use. USC Foundation staff will be on hand to setup different scenarios, to guide attendees and answer any questions regarding the field test procedures found in the Tenth Edition.

**Because of the hands-on portion of this seminar, it will NOT be offered as a webinar.*



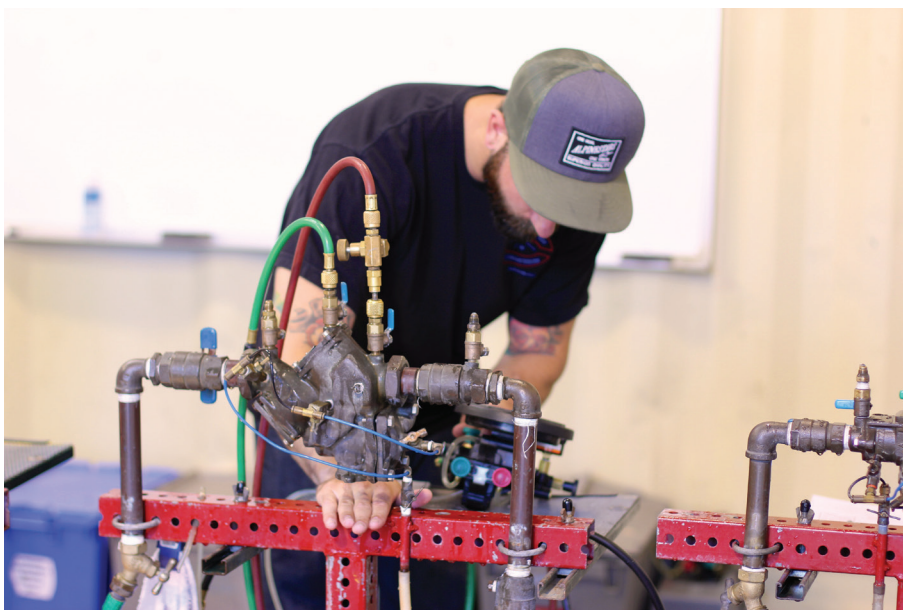
Advanced Field Test Procedures, January 21

For experienced backflow prevention assembly field testers that want to advance their skills by learning about multiple failure modes of backflow preventers. Attendees will learn how to correctly diagnose assemblies that are experiencing multiple simultaneous failures.

continued on page 6

Where did the **3.0 PSID Buffer Recommendation Go?**

It has been almost six years since the *Manual of Cross-Connection Control, Tenth Edition* was published, however the USC Foundation still receives questions regarding why certain changes were made between the Ninth and Tenth Editions. One of the more common questions has to do with the elimination of the 3.0 PSID buffer recommendation for the reduced pressure principle backflow prevention assembly (RP).



The 3.0 PSID buffer recommendation was a part of the field test procedure for the RP in the Ninth Edition. To explain, the “buffer” is the difference in the reading of static pressure drop across the No. 1 check valve and the differential pressure at which the relief valve opens. For example, the first check reading on an RP is 5.7 PSID and the relief valve opens at 2.5 PSID; the buffer is the difference between the two readings, in this case 3.2 PSID. The buffer is there to minimize the nuisance cre-

ated by water discharging when there are line pressure fluctuations.

Many administrative authorities took the Ninth Edition recommendation and made it a requirement in order for an RP to pass the field test. Other agencies did not see it as a requirement and did not make the buffer recommendation a mandatory requirement.

Since the recommendation caused confusion the Manual Review Committee (MRC) decided to eliminate the buffer recommendation from the Tenth Edition’s RP field test procedure. It was decided that the buffer recommendation was not an indication of the RP’s ability to prevent backflow.

Although the 3.0 PSID buffer recommendation was eliminated from the field test procedure in the Tenth Edition it is still part of the Standard in Chapter 10 of the Tenth Edition. All RP’s must have a 3.0 PSID buffer in the laboratory and field evaluation phases of the

USC Foundation’s *Approval Program*.

For questions about the elimination of the buffer recommendation in the RP’s field test procedure or other field test procedure issues please contact the Foundation office. ■

The USC Foundation's membership program and its benefits have evolved over the years. It is through the membership program the Foundation has been able to maintain its leadership position in backflow prevention and cross-connection control. The Foundation strives to maximize the value of membership constantly by adding new benefits.

As of 2014 the Foundation has made *Special Notices* an exclusive benefit for members in their first year of publication. A *Special Notice* is a way the Foundation notifies its members of important information regarding backflow prevention assemblies. Members will receive all *Special Notices* via mail immediately upon release.



Last year the USC Foundation mailed out three *Special Notices* to its members. Special Notice 13-001 mailed in January and 14-001 mailed in February notified members of issues with Wilkins and Apollo/Conbraco backflow prevention assemblies respectively. Special Notice 14-002 was issued in September of last year clarifying model designations as indicated on the casting of some Wilkins assemblies

Members are free to pass on the notice within the member organization to coworkers. If members require additional copies of the

USC Foundation Membership Benefits

Special Notice please contact the Foundation office.

A *Special Notice* that is regarded as being critical to public health will be posted on the Foundation's website for the general public to view immediately. But, aside from that, all other *Special Notices* will remain available exclusively to USC Foundation members for a 12-month period before being posted on the Foundation website.

E-mail notification every time the USC *List of Approved Assemblies* is updated is a member-exclusive benefit. The USC List is updated several times a year and checking the list often enough to keep up-to-date with the latest changes may be cumbersome. Therefore, the notification is a convenient tool for Members.

Aside from adding *Special Notices* and USC List notification to the benefits of being a member, the Foundation continues to offer discounts to its members on Tenth Edition manuals, training courses and training tools purchases. In addition, all members continue to receive *Cross Talk* along with printed updates of the List on a quarterly basis.

Any members who may have a question about their membership or its benefits are encouraged to contact the Foundation office for more information. ■

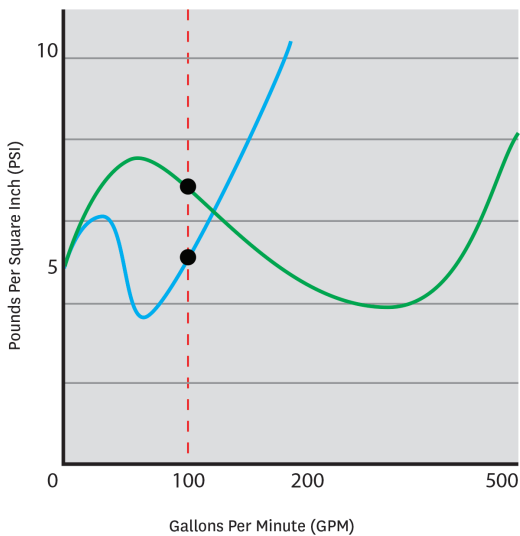
oversizing a backflow prevention assembly: continued

continued from page 1

Tenth Edition, p. 331), the flow characteristics (i.e., the shape of the curve) vary with the different models and sizes.

Flow Curve

2" DC (Blue) vs. 4" DC (Green)



For our example, the customer is designing their water use at a nominal flow rate of 100 gpm (gallons per minute). As shown in the figure, the pressure loss of the two-inch

assembly is two psi less than the four-inch assembly. The four-inch assembly only provides a lower pressure loss when the rate of flow exceeds the 160 gpm rated flow of the two-inch. Two-inch water meters typically have a safe maximum operating capacity of 160 gpm, so if flow rates greater than this are needed, then a larger service line and water meter should be used.

Although the specifics may vary with each manufacturer; assemblies, in general, behave in the manner shown on these curves. At the lower flow rate the four-inch check valves may just be in the opening phase of the flow (signified by the rising slope in the flow curve), thus having a higher-pressure loss. In addition, should the check valves only open a small amount, there is a higher likelihood of high velocity erosion of the seats.

So, although oversizing an assembly may not affect the ability of the assembly to prevent backflow, it may not provide the performance benefit a user is looking for. ■

2016 one day update seminars: continued

continued from page 3

Los Angeles & California Codes and Regulations, February 25

This seminar is designed for those involved in cross-connection control in the State of California with additional details for those working in the Los Angeles area. Codes covering cross-connection control in the Los Angeles area will be discussed along with specific requirements in the State of California according to Title 17 and 22 of the California Code of Regulations.

Grey Water Systems & Recycled Water Shutdown Test, April 21

Water conservation is an important part of any water supplier's program. In many areas grey water systems are being put to use. More and more water agencies are allowing the use of grey water systems by their customers. This seminar will discuss the cross-connection issues associated with grey water systems. Recycled water systems will also be discussed and the fact that dual plumbed systems (those plumbed with potable drinking water along with recycled water) must be tested periodically to ensure that there are no cross-connections between the two systems. In addition, methods used to test the dual plumbed systems for cross-connections will also be discussed including the pressure test, shutdown test and dye test.

Different Facilities; Different Cross-Connections, June 7

Not all facilities are alike when it comes to possible cross-connections. Different facilities require different types of backflow protection. This seminar will take a look at a number of different types of facilities and the types of cross-connections that may be expected at these locations. Additionally, specific facilities are likely to contain specific types of equipment that may create or constitute cross-connections.

* 3-Hour Seminars. Attendees are eligible for 0.3 CEU's which is equivalent to 3 contact hours

USC Foundation Visits Events

The USC Foundation spent part of its Summer attending two local Southern California events.

In August, the Foundation participated in the Backflow Industry Product Fair put on by the Southern California chapter of the American Backflow Prevention Association. The Foundation welcomed fair attendees to its laboratory for a tour of its facilities. Foundation staff, at various stations, demonstrated the laboratory's ability to test assemblies.

And, last month the Foundation attended the Southern California Water Utilities Association's Annual Vendors Fair. Attending industry events is a great opportunity for the Foundation staff to meet many of its members and those interested in information about its upcoming training courses or one day update seminars. ■



How Equipment Creates Cross-Connections, June 9

Everyday equipment like boilers and carbonators may create cross-connections to the potable water lines. So, it is crucial that the Cross-Connection Control Specialist understand which equipment may create a cross-connection. Equipment found in hospitals, car washes, laboratories and many other facilities all have a risk of creating cross-connections. Understanding how these pieces of equipment work will help the Specialist be able to find, identify, isolate and provide protection against cross-connections.

** 3-Hour Seminars. Attendees are eligible for 0.3 CEU's which is equivalent to 3 contact hours.*

Cross-Connection Control Surveys, August 11

Attendees will review various types of facilities in order to determine which type of backflow protection, if any, is necessary for meter protection. The seminar will evaluate and determine the degree of hazard, if adequate backflow protection is present and, if not, what would be necessary to adequately protect against backflow.

Assembly Repair and Lead Free Issues, November 15

Attendees will learn about the general concepts of repair for backflow prevention assemblies. Although, it is impossible to go over every repair scenario with every type of backflow preventer the concepts discussed will help in identifying and resolving many of the issues. This seminar will also discuss the 2014 change in the EPA's definition of lead free. The issue of spare parts for both lead free and non-lead free assemblies will be covered. ■

Upcoming Training Courses

all course in Los Angeles, CA unless noted

Tester

11-15 January
9-13 May
11-15 July
3-7 October

Specialist

25-29 January
21-25 March
25-29 July

Seminars

19 January

Hand-On Field Test Procedures

21 January

Advanced Field Test Procedures

25 February

Los Angeles/California Codes and Regulations

21 April

Grey Water Systems

& Recycled Water Shutdown Test

7 June

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Different Cross-Connections

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Upcoming Events

Tennessee Chapter

ABPA Annual Conference

Memphis, TN

15-16 October 2015

AWWA California-Nevada Section

2015 Annual Fall Conference

Las Vegas, NV

26-29 October 2015

Florida Suncoast Chapter

ABPA Annual Conference

Tampa, FL

6 November 2015

Hawaii Chapter

ABPA Annual Conference

Honolulu, HI

2 December 2015

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