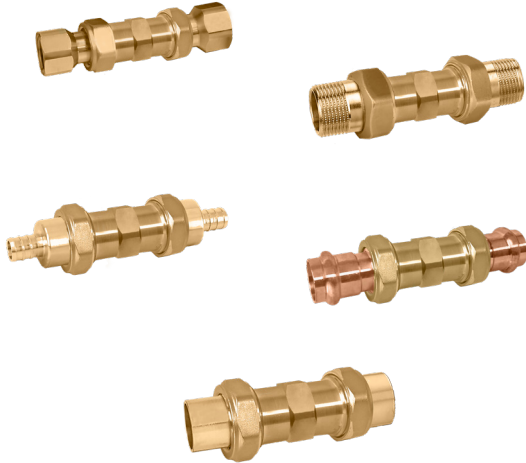


FlowShield™ DuC

Dual check backflow preventer

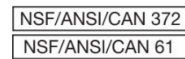
3048 series



Function

Low lead dual check valve backflow preventer is designed for residential domestic water supply lines or commercial low-hazard backflow applications. It prevents reverse flow of unsafe water into main system water supply. This can occur due to pressure changes in the distribution network that can cause water flow in reverse, or backwards. The two inline serviceable check valves prevent any contact between the two systems, closing automatically when backflow conditions occur.

The Caleffi 3048 series FlowShield™ DuC is certified to ASSE 1024 and CSA 64.5 by ICC-ES. It also complies with NSF/ANSI/CAN 61 (180°F/82°C Commercial Hot) and complies with NSF/ANSI/CAN 372, low lead, and codes IPC, IRC and UPC for use in accordance with the US and Canadian plumbing codes, as certified by ICC-ES.



Product range

3048 series Dual check backflow preventer.....sizes 1/2", 3/4", 1" NPT male, NPT female, sweat, press, PEX crimp or PEX expansion union connections

Technical specifications

Materials

Body, retaining ring and lock nut: DZR low-lead brass CW724R-M
 Check valve: EPDM, PPO
 Spring: stainless steel
 O-rings: peroxide-cured EPDM

Performance

Max. working pressure: 160 psi (11 bar)
 Operating temperature range: 32 to 180°F (0 to 82°C)

Medium

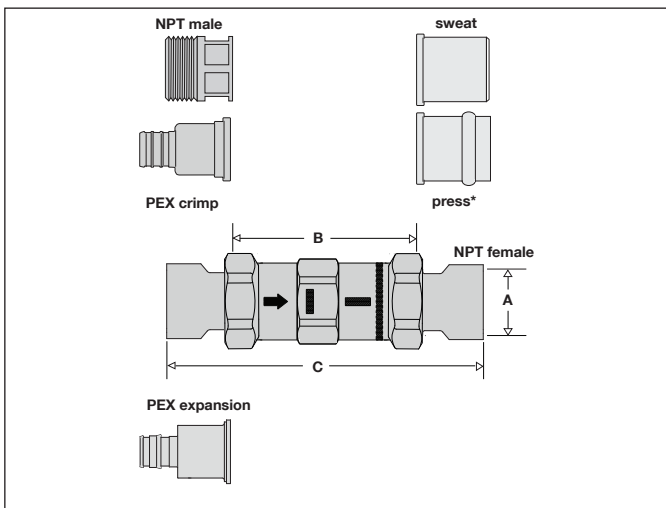
Flow rate: water
 see graph

Connections:

Main inlet/outlet: 1/2", 3/4", 1" NPT male, sweat, press, PEX crimp (ASTM F1807) or PEX expansion (ASTM F1960) union; 1/2" and 3/4" NPT female union

The backflow preventer is certified to ASSE 1024 and CSA 64.5, and complies with NSF/ANSI/CAN 372, low lead laws, and NSF/ANSI/CAN 61 (180°F/82°C Commercial Hot) as certified by ICC-ES file PMG-1720. It meets codes IPC, IRC and UPC for use in accordance with the US and Canadian plumbing codes.

Dimensions



Code	A	B	C	Wt. (lb/kg)
NPT female threaded connections				
304843A	1/2"	2 13/16"	5 1/4"	1.2/0.5
304853A	3/4"	2 13/16"	5 1/2"	1.6/0.7
NPT male threaded connections				
304840A	1/2"	2 13/16"	5 5/16"	1.0/0.4
304850A	3/4"	2 13/16"	5 1/8"	1.2/0.5
304860A	1"	2 13/16"	5 13/16"	1.6/0.7
Sweat connections				
304849A	1/2"	2 13/16"	4 9/16"	1.2/0.5
304859A	3/4"	2 13/16"	5 1/16"	1.6/0.7
304869A	1"	2 13/16"	5 13/16"	1.6/0.7

Code	A	B	C	Wt. (lb/kg)
Press connections*				
304846A	1/2"	2 13/16"	5 3/16"	1.0/0.4
304856A	3/4"	2 13/16"	5 15/16"	1.2/0.5
304866A	1"	2 13/16"	5 7/8"	1.4/0.6
PEX crimp connections				
304847A	1/2"	2 13/16"	6 7/16"	1.0/0.4
304857A	3/4"	2 13/16"	6 7/16"	1.2/0.5
304867A	1"	2 13/16"	6 5/8"	1.4/0.6
PEX expansion connections				
304848A	1/2"	2 13/16"	7 1/16"	1.0/0.4
304858A	3/4"	2 13/16"	7 1/16"	1.2/0.5
304868A	1"	2 13/16"	7 1/16"	1.4/0.6

*Lay length for press: 3 1/2 inch, 3 3/8 inch, 3 7/8 inch

Backflow

Water flowing in the distribution piping of potable water mains systems can become polluted with undesirable and hazardous substances caused by contaminated fluid return coming back from systems directly connected to the mains supply. This condition termed "backflow" occurs when:

- the pressure in the main water supply is lower than the pressure in the downstream system (back syphon), such as residential domestic water, hydronic or irrigation systems. This occurs when pipes break or when demand is very heavy by other systems connected to the same supply network;
- the pressure in the downstream system rises (back pressure) due, for example, a missing or malfunctioning expansion tank. Protection can be provided by installing a backflow preventer at the inlet from the mains supply or in the internal distribution system. This will prevent contaminated water from flowing back into potable systems.

Operating principle

Dual check backflow preventers have two independently operated spring-loaded check valves in series, within a solid body. In a back-pressure condition, the increase in pressure will force the checks to close tighter. If the second check is not working, the first check can act as a backup to stop the backpressure from going through the device. In a backsiphonage condition, a lower pressure condition is present at the inlet, and the loading of the checks will cause the checks to close.

Installation:

The Caleffi 3048 series FlowShield DuC dual check backflow preventer is typically installed downstream of a water meter. A pressure reducing valve (if required) may be installed on either side of the dual check backflow preventer, all subject to local codes and standards.

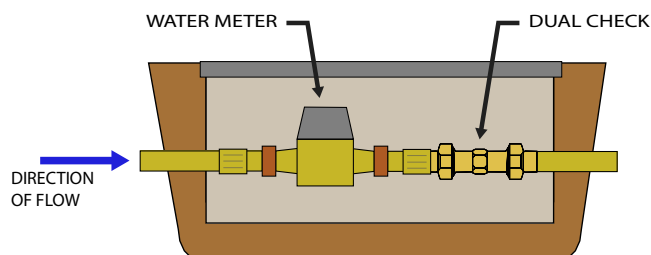
The dual check backflow preventer can be installed in either a horizontal or vertical pipe; the checks are spring loaded and will function independent of orientation. Verify that the flow direction matches the flow indication arrow on the dual check backflow preventer.

If installing models with sweat tailpiece connectors, always sweat the connectors in place then install the 3048 union body. Attempting to sweat the fittings with the body in place may damage the check valves.

For serviceability, always install the 3048 in an accessible location and protect the 3048 from potential freezing conditions. Installing isolation valves is highly recommended to permit disassembly for servicing.

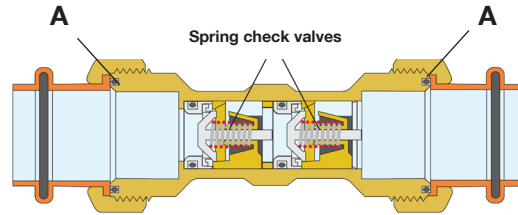
When installing the dual check backflow preventer, make sure not to over-tighten the connections. Over time, a material stress failure can occur with subsequent water leakage causing damage.

Typical dual check backflow preventer pit installation:



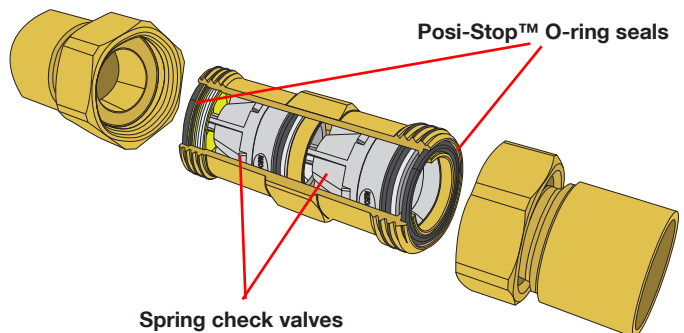
Construction details

The dual check backflow preventer 3048 series FlowShield DuC includes two spring check valves as noted and Posi-Stop™ union seals (A) on both ports.

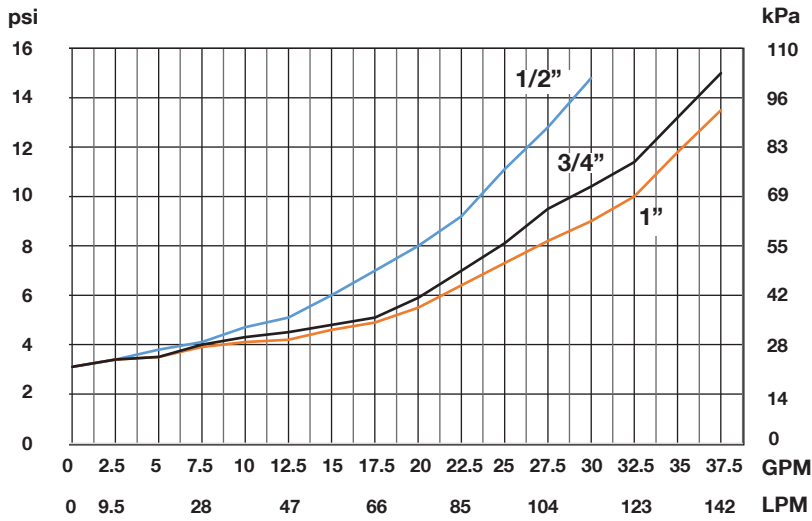


The dual check backflow preventer may be used, where permitted by current local legislation, as an alternative to other styles of backflow preventers.

**3048 series FlowShield DuC
dual check backflow preventer section view:**



Hydraulic characteristics



3048 series	1/2 inch	3/4 inch	1 inch
Cv	8.0	9.5	10.5

Isolation ball valve

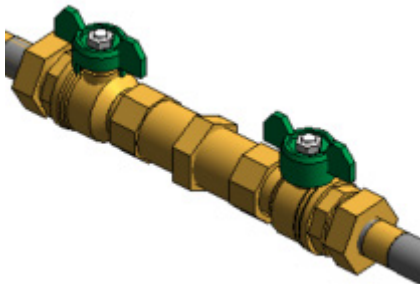


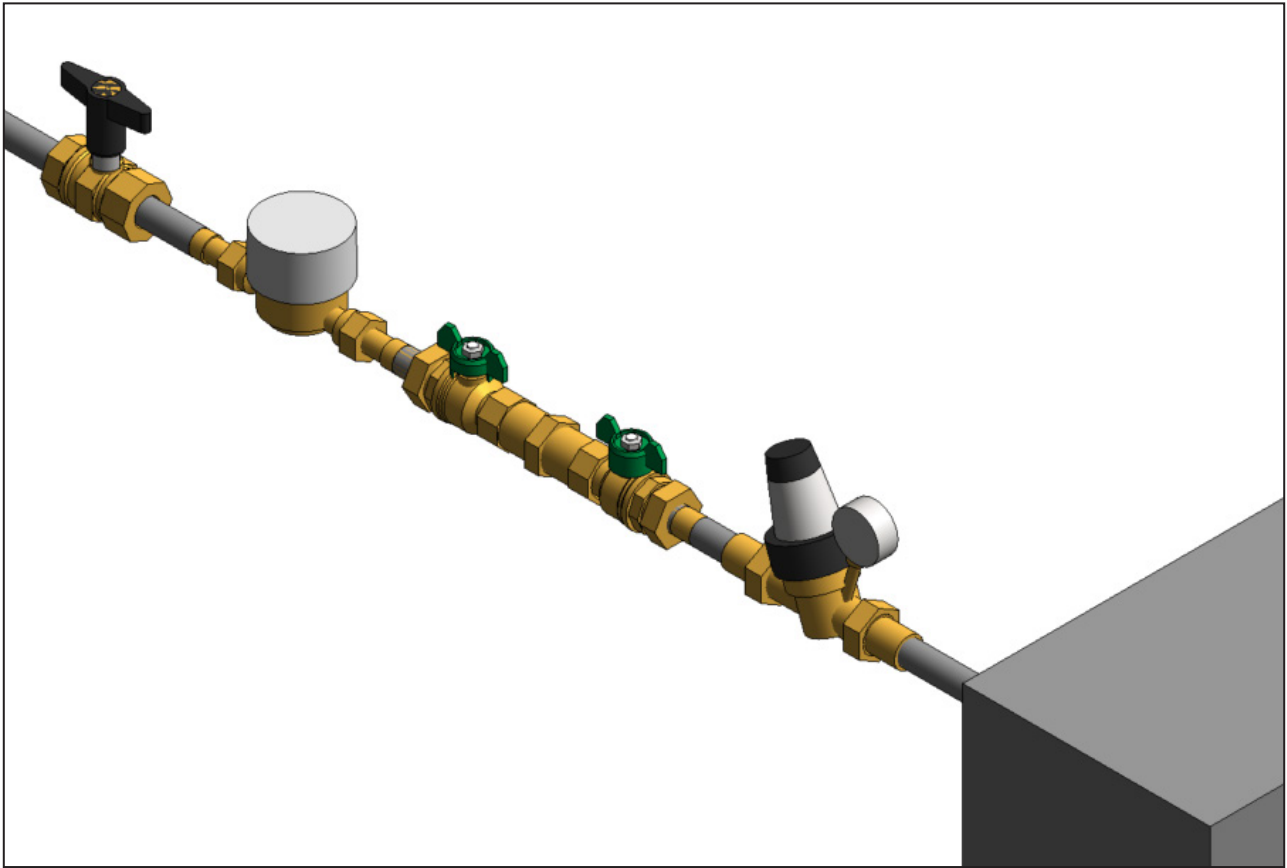
Low lead Male x Female union fits valves between body and tailpiece. See below.

Replacement fittings

Refer to current Caleffi Plumbing and Hydronics Catalog, fittings and miscellaneous components section for replacement tailpiece, union nut and washer parts.

290030.....isolation ball valve 1" M x 1" F union





Find us in
MasterSpec®
 a product of The American Institute of Architects



<https://get.caleffi.info/specpoint>

find BIM Revit files and system templates at
<https://bim.caleffi.com/en-us>

SPECIFICATION SUMMARIES

3048 series FlowShield™ DuC

Dual check backflow preventer. Connections ½", ¾", 1" NPT male, sweat, press, PEX crimp and PEX expansion union. PEX crimp fittings must comply with ASTM F 1807. PEX expansion fittings must comply with ASTM F 1960. DZR low-lead brass CW724R-M body retaining ring and lock nut drain (<0.25% lead content) as certified by ICC-ES file PMG-1720. Meets requirements of NSF/ANSI/CAN 372 and NSF/ANSI/CAN 61 (180°F/82°C Commercial Hot). Certified to ASSE 1024 and CSA 64.5 by ICC-ES. EPDM, PPO check valves. Stainless steel spring. Peroxide-cured EPDM o-ring seals. Water usage. Maximum working pressure 160 psi (11 bar). Working temperature range 32 to 180 degrees F (0 to 82 degrees C). Provide with optional inlet and outlet isolation ball valves, code 290030, separately sourced, field installed.

We reserve the right to make changes and improvements to the products and related data in this publication, at any time and without prior notice. The technical brochure on www.caleffi.com always has the most up-to-date version of the document, which should be used for technical verification.



Caleffi North America, Inc.
 3883 W. Milwaukee Road, Milwaukee, WI 53208
 Tel: 414-238-2360 · Fax: 414-238-2366
 Technical Support: 414-338-6338 / techsupport.us@caleffi.com
sales@caleffi.com · www.caleffi.com
 © Copyright 2023 Caleffi North America, Inc.