

574 series testable, reduced pressure zone backflow preventer

© Copyright 2020 Caleffi

574 Series

Function



The backflow preventer can be used in all systems where there is danger of the potable water supply system being contaminated. It prevents an accidental reduction in the pressure in the distribution system from causing backflow from contaminated water in user installations. The valve is ICC-ES certified to ASSE 1013, CSA B64.4. It complies with codes IPC, IRC, NPC and UPC for use in accordance with the US and Canadian plumbing codes, and standard NSF/ANSI 372, low lead.

Product range



574 series	Testable reduced pressure zone backflow preventer
code 574004A.....	size ½" NPT female
code 574064A.....	size ½" press
code 574050A.....	size ¾" NPT female
code 574056A.....	size ¾" press
code 574006A.....	size 1" NPT female
code 574606A.....	size 1" press
code 574700A.....	size 1¼" NPT female
code 574706A.....	size 1¼" press

Technical specifications

Materials

Body:	DZR low-lead brass, EN 1982 CC768S
Cover:	DZR low-lead brass, EN 12165 CW724R
Check valves:	PSU-POM
Springs:	stainless steel
Diaphragms and seals:	peroxide-cured EPDM

Isolation ball valves, inlet and outlet

Body material:	C89833 low-lead bronze
Ball:	304 stainless steel
Handle and nut:	steel
Seat ring and packing gland:	PTFE
Gland nut:	brass
Stem:	low-lead brass

Performance

Suitable Fluids:	water
Max. working pressure:	150 psi (10 bar)
Max. working temperature:	150°F (65°C)
Pressure test ports:	¼" NPT upstream, intermediate, downstream
Connections:	½", ¾", 1" & 1¼" NPT female & press

Certifications

1. ASSE 1013/CSA B64.4, certified by ICC-ES, file PMG-1433.
2. Complies with NSF/ANSI 372, Drinking Water System Components-Lead Content Reduction of Lead in Drinking Water Act, California Health and Safety Code 116875 S.3874, Reduction of Lead in Drinking Water Act, as certified by ICC-ES, file PMG-1360.



SAFETY INSTRUCTION / CONSIGNE DE SÉCURITÉ

This safety alert symbol will be used in this manual to draw attention to safety related **instructions**. When used, the safety alert symbol means **ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED! FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A SAFETY HAZARD.**

Ce symbole d'avertissement servira dans ce manuel à attirer l'attention sur la sécurité concernant instructions. Lorsqu'il est utilisé, ce symbole signifie ATTENTION ! DEVENEZ ALERTE ! VOTRE SÉCURITÉ EST EN JEU ! NE PAS SUIVRE CES INSTRUCTIONS PEUT PROVOQUER UN RISQUE DE SECURITE.



WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

AVERTISSEMENT: Ce produit peut vous exposer à des produits chimiques comme le plomb, qui est connu dans l'État de Californie pour causer le cancer, dommages à la naissance ou autre. Pour plus d'informations rendez-vous www.P65Warnings.ca.gov.



WARNING: Caleffi shall not be liable for damages resulting from stress corrosion, misapplication or misuse of its products.

AVERTISSEMENT: Caleffi ne sera pas responsable des dommages résultant de la corrosion sous tension, d'une mauvaise application ou d'une mauvaise utilisation de ses produits.



CAUTION: All work must be performed by qualified personnel trained in the proper application, installation, and maintenance of systems in accordance with all applicable codes and ordinances.

ATTENTION: Tous les travaux doivent être effectués par du personnel qualifié formé à la bonne application, installation et maintenance des systèmes conformément aux codes et règlements locaux.



CAUTION: If the backflow preventer is not installed, commissioned and maintained properly, according to the instructions contained in this manual, it may not operate correctly and may endanger the user.

ATTENTION: Si Disconnecteur n'est pas installé, mis en service et entretenu correctement, selon les instructions contenues dans ce manuel, il peut ne pas fonctionner correctement et peut mettre en danger l'utilisateur.



CAUTION: Make sure that all the connecting pipework is water tight.

ATTENTION: S'assurer que tous les raccordements sont étanches.



CAUTION: When making the water connections, make sure that the backflow preventer connecting pipework is not mechanically over-stressed. Over time this could cause breakages, with consequent water losses which, in turn, could cause harm to property and/or people.

ATTENTION: Lorsque vous effectuez les raccordements d'eau, assurez-vous que la tuyauterie reliant disconnecteur n'est pas mécaniquement overstressed. Au fil du temps, ceci pourrait causer des ruptures, avec pour conséquence des pertes en eau qui, à leur tour, peuvent causer des dommages à la propriété et/ou les gens.



CAUTION: Water temperatures higher than 120°F can be dangerous. During the installation, commissioning and maintenance of the backflow preventer, take the necessary precautions to ensure that such temperatures do not endanger people.

ATTENTION: Les températures de l'eau supérieure à 100°F peut être dangereux. Au cours de l'installation, mise en service et l'entretien de la disconnecteur, prendre les précautions nécessaires afin de s'assurer que de telles températures ne compromettent pas les gens.



CAUTION: In the case of highly aggressive water, arrangements must be made to treat the water before it enters the backflow preventer, in accordance with current legislation. Otherwise the valve may be damaged and will not operate correctly.

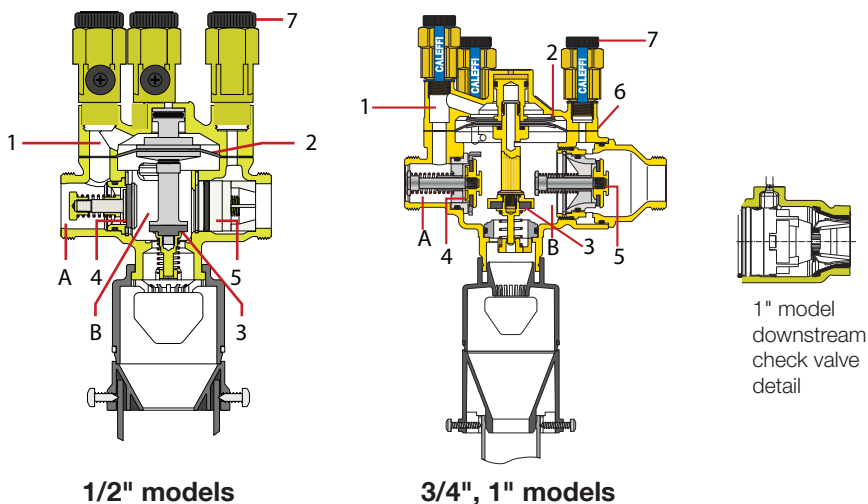
ATTENTION: Dans le cas de l'eau fortement agressive, des dispositions doivent être prises pour traiter l'eau avant qu'elle ne pénètre dans le disconnecteur, conformément à la législation actuelle. Sinon la soupape pourrait être endommagée et ne fonctionnent pas correctement.

LEAVE THIS MANUAL FOR THE USER
LAISSEZ CE MANUEL AVEC L'UTILISATEUR

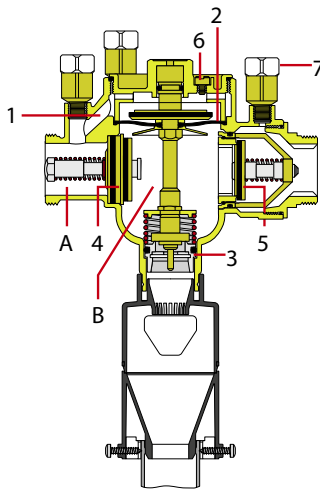
Principle of operation

The backflow preventer consists of two check valves (4) and (5), a chamber known as "reduced pressure area" (B) and of a discharge valve connected to the latter (3). The water entering the backflow preventer opens the upstream check valve (4) and at the same time through the channel (1) acts on the diaphragm (2) which closes the discharge valve (3) by means of the rod and then opens the downstream check valve (5). The pressure in the intermediate chamber under normal operating conditions is always less than the upstream pressure by at least 2 psi (140 mbar) as a result of a pre-calculated pressure loss on the first check valve. This difference in pressure Δp between the upstream (A) and intermediate (B) areas can be specified on a safety basis so that in the event of damage occurring, or a vacuum, the discharge valve is opened when the upstream pressure is still greater than the pressure in the intermediate area by at least 2 psi (140 mbar). In the event of damage to the diaphragm, the safety gasket under the thrust of the contrast spring (3) prevents the return of water upstream from the discharge since there is no more Δp equilibrium between the two areas.

NOTE: For the 3/4" to 1 1/4" models, to ensure correct operation the air must be released in the upper part of the diaphragm by means of the relief screw (6).



These codes include factory assembled inlet and outlet isolation/shut-off ball valves, not pictured. Item 7 for 1/2" and 3/4" size is black in color. For 1" and 1 1/4" these are white.



1 1/4" model

Installation

The installation of backflow preventer should only be carried out by qualified personnel in accordance with applicable codes and regulations.

The backflow preventer includes an upstream and downstream shut-off valve.

Install the unit in an accessible area which is not susceptible to accidental flooding. The equipment is to be installed horizontally only. The air gap, must be connected in accordance with local codes. See page 9 and 10 for discharge extension pipe size and type, sourced separately.

Before installing the backflow preventer the pipe should be cleaned with a high-capacity water jet.

In order to protect the public supply system the backflow preventer is installed after the water meter and, to protect supplies for sanitary purposes in the internal system, it is installed where contamination can take place, eg: centralized heating systems, garden watering systems etc.

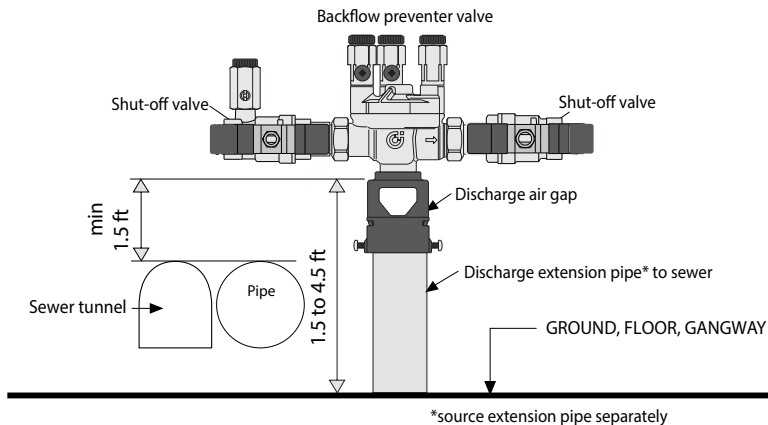
Scan to view



574 Backflow Preventer

Installation Tip

Installation diagram

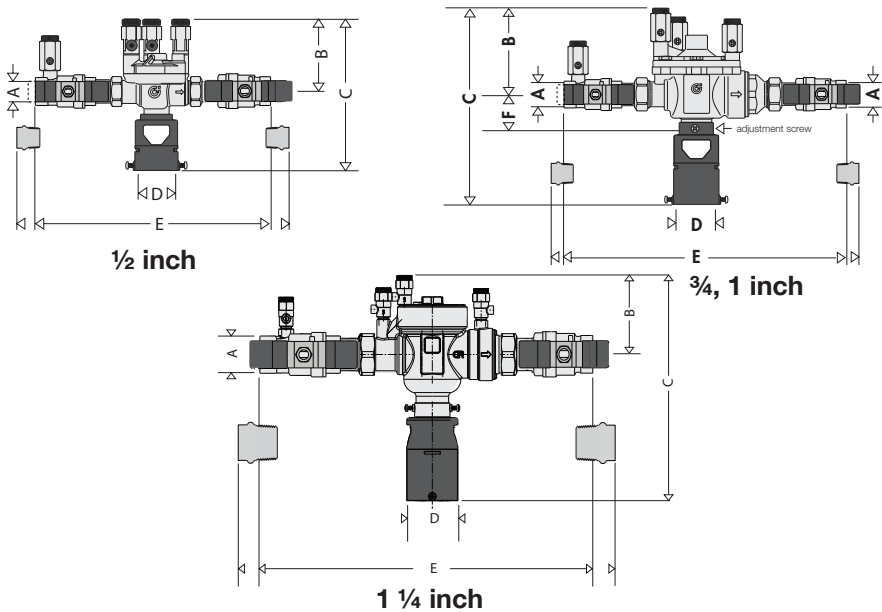


Maintenance

Since the backflow preventer valve is used to ensure the safety of domestic water supplies it must be inspected per local codes. The first sign that the equipment is not functioning properly, generally associated with the presence of sand or other impurities is indicated by a permanent leakage through the discharge. This loss is just an initial warning sign and does not completely jeopardize the safety of the check mechanism but means that the unit should be dismantled and the equipment should be cleaned. A rapid inspection method, which should take less than 15 minutes is described in the table below.

In the event of dripping at the discharge it is recommended to create strong circulation flow for a few minutes by opening one or more taps. This is usually sufficient to flush out any sand or other impurities to restore normal operation.

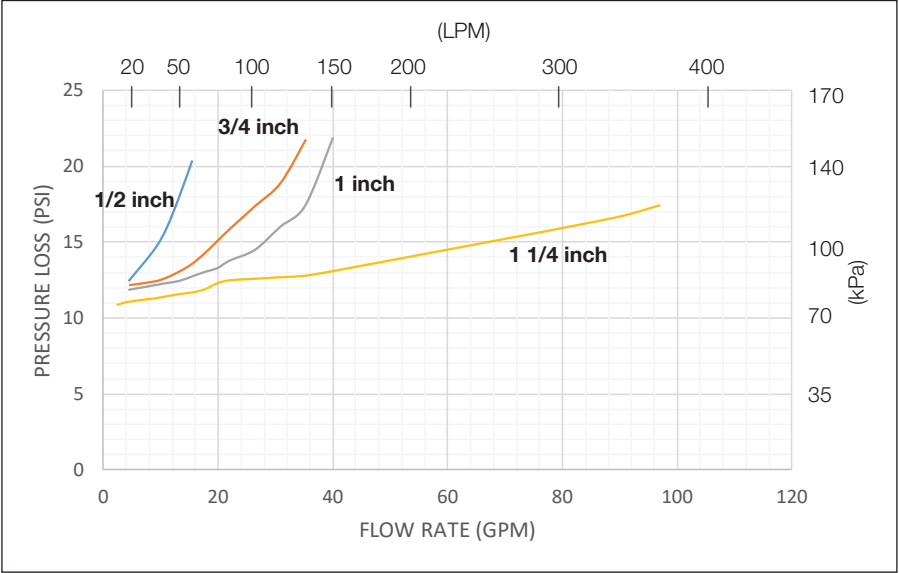
Dimensions



Code	A	B	C	D	E	Wt (lb)
574004A	1/2" FNPT	3 1/4"	6 1/4"	40 mm	9 3/4"	5.0
574064A	1/2" press*	3 1/4"	6 1/4"	40 mm	12 3/8"	5.1
574050A	3/4" FNPT	4"	10 1/2"	40-60 mm	13 1/4"	9.5
574056A	3/4" press*	4"	10 1/2"	40-60 mm	16 1/2"	9.6
574006A	1" FNPT	4"	10 1/2"	40-60 mm	14"	9.5
574606A	1" press*	4"	10 1/2"	40-60 mm	17 3/4"	9.6
574700A	1 1/4" FNPT	4"	11 1/2"	40-60 mm	16 1/2"	13
574706A	1 1/4" press*	4"	11 1/2"	40-60 mm	20 1/4"	13

*Lay length:
 1/2" press: 10 7/8"
 3/4" press: 14 1/2"
 1" press: 15 7/8"
 1 1/4" press: 18 1/4"

Hydraulic Characteristics

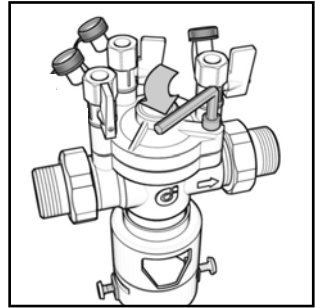


RAPID INSPECTION PROCEDURE

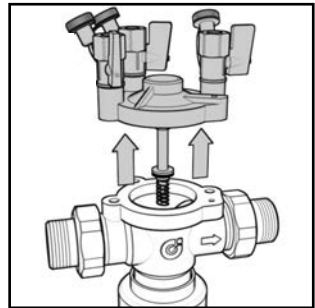
OPERATION	DEFECT DETECTED	CAUSE	REQUIRED ACTION
Close downstream shut-off valve	-Permanent leakage -No leakage	Upstream valve or discharge valve leaking	Dismantle and inspect
Close upstream shut-off valve and open upstream pressure control cock	-Discharge does not open. Leakage is minimal and lasts more than 1 minutes. -Discharge opens abruptly, emptying in less than 1 minute.	Discharge blocked	Dismantle and inspect
Open downstream shut-off valve	-Continuous discharge -No discharge	Downstream valve leaking	Dismantle and inspect. Put back into operation.

**Procedure for
examining
internal parts**

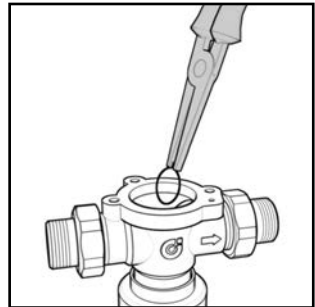
1. Release the pressure by unsewing the pressure test. Remove the cover bolts.



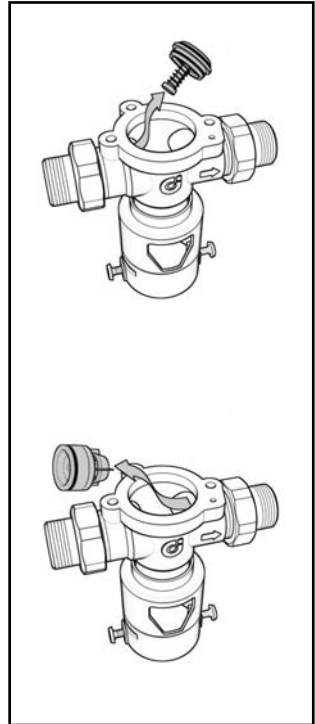
2. Pull out the core assembly and contrast spring.



3. Remove the split rings holding the check valves in place with a pair of long-nose pliers.

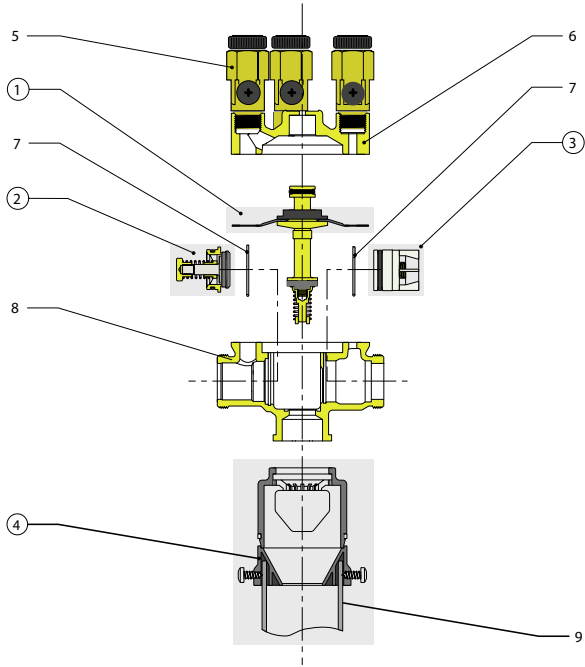


4. Remove the upstream and downstream check valves using a common pipe wrench or suitable size pliers.



5. After examination and after replacing any necessary components when reinstalling the check valves make sure the split rings are perfectly located in the seat.

574004A
574064A
(1/2")



1	Discharge assembly
2	Upstream check valve
3	Downstream check valve
4	Air gap
5	Pressure test port
6	Inspection cover
7	Seal ring
8	Body
9	Discharge pipe*

*1" PVC pipe, separately sourced.

Spare parts

Ref #	574004A 574064A	Backflow code #
1	59978	Spare part code #
2	59977	
3	59979	
4	59980	

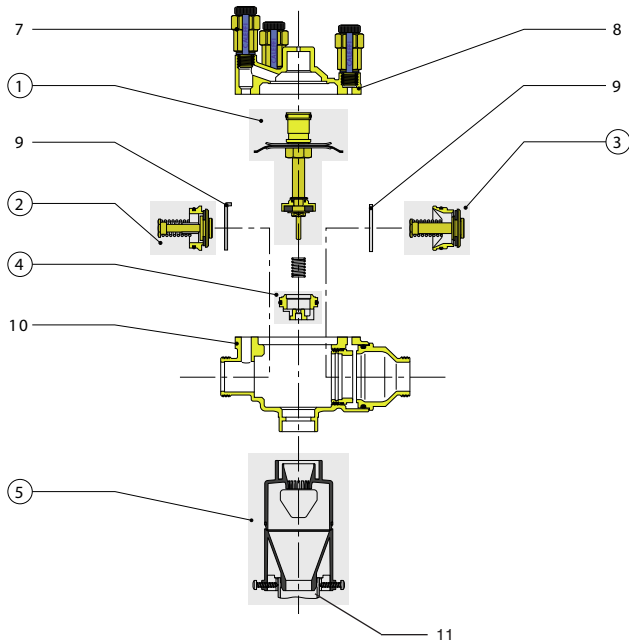
Replacement inlet and outlet ball valves, and for press model, press fittings, union nuts and gaskets, are not shown above and not available from Caleffi. Source replacements from any supply house.

Inspection equipment

Equipment for annual inspection includes:

- upstream pressure gauge
- downstream pressure gauge
- differential pressure gauge
- flexible hoses and fittings

574050A
574056A
(3/4")
574006A
574606A
(1")



1	Discharge assembly
2	Upstream check valve
3	Downstream check valve
4	Discharge valve seat
5	Air gap
6	Deflector (n/a for $1\frac{1}{2}$")
7	Pressure test port
8	Inspection Cover
9	Split ring
10	Body
11	Discharge pipe*

*2" PVC, separately sourced.

Spare parts

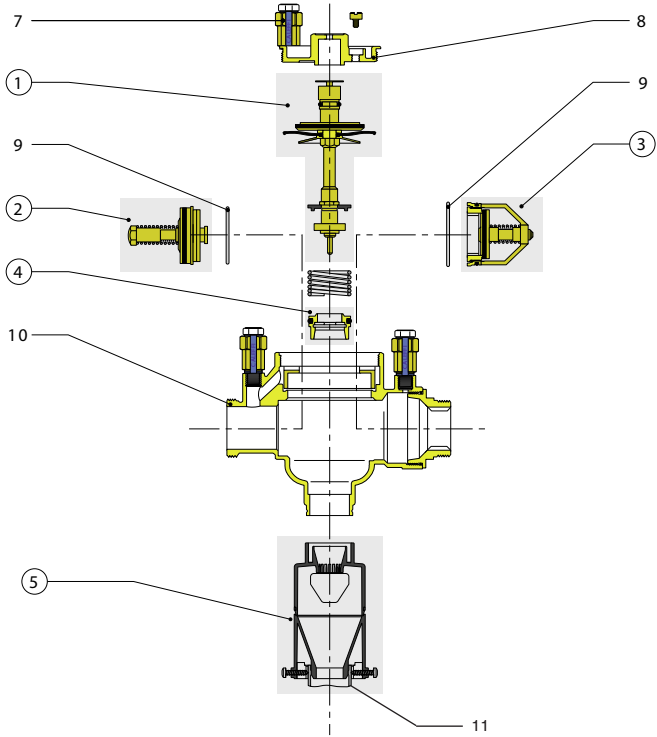
Ref #	574050A 574056A 574006A* 574606A*	574700A 574706A (see page 12)	Back-flow code #
1	59471	59457	Spare part code #
2	59469 H0008485*	59455	
3	59470 H0008021*	59456	
4	59472	59458	
5	39623	39623	

Replacement inlet and outlet ball valves, and for press model, press fittings, union nuts and gaskets, are not shown above and not available from Caleffi. Source replacements from any supply house.

Inspection equipment

- Equipment for annual inspection includes:
- upstream pressure gauge
 - downstream pressure gauge
 - differential pressure gauge
 - flexible hoses and fittings

574700A
574706A
(1 1/4")



Caleffi North America, Inc.
3883 West Milwaukee Road
Milwaukee, WI 53208
T: 414.238.2360 F: 414.238.2366