Installation, Maintenance and Repair Manual

007-SS Silver Stallion

Lead Free
AS/NZS 2845.1 WMK25866

Double Check Valve (DCV) Backflow Preventer
Flange DN65-150mm (2 ½" – 6")

⚠ WARNING

THINK SAFETY FIRST

Read this manual BEFORE using this equipment.

Failure to read and follow all safety and operation information can result in death, serious personal injury, property damage, or equipment damage.

Keep this manual for future reference.

⚠ WARNING

Local building or plumbing codes may require modifications to the information provided. You are required to consult the local building and plumbing codes prior to installation. If this information is not consistent with local building or plumbing codes, the local codes should be followed.

⚠ WARNING

The device should be installed by authorised personnel only, subject to local regulatory authority requirements, the National Construction Code Volume Three-Plumbing Code of Australia, AS/NZS 3500 and applicable reference standards.

This product must be tested at initial installation, after maintenance and at a frequency of at least once per year according to AS/NZS 2845.3 and local regulatory authority requirements.

Corrosive water conditions and/or unauthorized adjustments or repair could render the product ineffective for the service intended. Regular checking and cleaning of the product's internal components helps assure maximum life and proper product function.

The device should be installed with adequate clearance and easy accessibility for testing and maintenance, and must be protected from submerging and freezing.

For Australia and New Zealand, line strainers should be installed between the upstream shutoff valve and the inlet of the backflow preventer. The strainer should not be fitted in fire systems which have infrequent use.

Fittings such as end connectors intended to join alternative pipe systems made from other materials (such as plastics) shall also conform to the relevant dimensional and performance requirements of the appropriate Australian, New Zealand, or joint Australian/New Zealand Standard for the alternative pipe system.

NOTICE

The information contained herein is not intended to replace the full product installation and safety information available or the experience of a trained product installer. You are required to thoroughly read all installation instructions and product safety information before beginning the installation of this product.

DN65-150 DCV

Overview

The Silver Stallion 007-SS Double Check Valves (DCV) are designed to prevent the reverse flow of polluted water from entering the potable water supply. These models can be applied, where approved by the local authority, for cross connection control in Medium and Low Hazard installations. For technical assistance, contact your local Watts representative.

Features

- **Safer Water:** Lead-free materials (NCC Vol 3)
- **Easy Two Person Install:** Short lay length and lightweight construction
- **Easy servicing:** No special tools, large access cover, easy to remove checks with serviceable parts
- **Low Head Loss:** Patented Dual Action™ check valves provide reliable sealing and high flow.
- **Built to last:** PREN18 Stainless Steel, PN16 rating and extra strength flanges
- Available in DN65-150 RPZ, DCV and DDC versions

Technical Specification

- Connection Standard: AS2129 Table D or E Flange DN65-150
- Operating Temperature Range: 0.5 -60°C
- Maximum Working Pressure: 1600 kPa
- Working Medium: Non-corrosive liquids

⚠ WARNING

Device must not be operated outside of the specified limits above to prevent malfunction or damage.

Installation Guide

General

- The backflow assembly must always be installed by a certified installer according to local standards and regulations.
- The assembly needs to be easily accessible to facilitate inspection, testing and servicing. Ensure that isolation handles and test cocks are easily accessible.
- Always flush pipes before connecting the device and do not apply heat to the device during installation.
- The device should be protected from water hammer and from excessive back pressure caused by thermal expansion or other sources.
- The device should be fitted with a line strainer except when the device is used in a fire system which has infrequent use.
- Two or more backflow assemblies may be installed in parallel to serve higher flow rate demands, or to provide redundancy where continuous water supply is essential during device shutdown.

Location

- The device must not be located in a corrosive environment and be protected against freezing or submerging.
- The device must not be buried in the ground. If installed in a cabinet or pit, sufficient drainage must be fitted.
- Install the device as close as practicable to the point of connection and downstream of any water meter.

Annual Inspection

Annual inspection of all water system safety and control valves is required. Regular inspection, testing, and cleaning ensures proper product function and maximum life of the device. Figure 1 shows the primary components in the DCV device.

- Testing for proper operation of the device should be made periodically in compliance with AS/NZS 2845.3 and/or local codes, but at least once a year or more often, depending upon system conditions.
- Inspect the device for signs of leaking or corrosion.
- Close the isolation valves and remove the strainer filter, clean and replace. Check the isolation valves remain operational and recommence supply following the Start Up procedure.
- Refer to the Check Valve or Relief Valve Servicing Procedures if required.

Start Up Procedure

⚠ WARNING

Ensure the device is protected from shock or water hammer during start up and operation.

1. Ensure all three test cocks are closed by turning the ball valve handle to the closed position.
2. The downstream shutoff should be closed. Open the upstream shutoff slowly and fill the valve. When the valve is filled, open the downstream shutoff slowly and fill the water supply system. This is necessary to avoid water hammer or shock damage.
3. Vent air from the device by briefly opening each of the three test cocks. Check the device and connections for leaks. Tighten joints, clean or replace seals if necessary.

Maintenance Instructions

Follow the following steps to inspect and service the check valves, referring to components in Figure 1. No special tools are required to disassemble and service the valve.

1. Notify any occupants of the temporary shut-off to water supply. Close the inlet and outlet isolation valves.

⚠ WARNING

The valve is still under pressure. When opening test cocks, a small amount of water will be released. Take precautions to ensure discharging water does not damage the surrounding area/equipment or create an unsafe condition.

2. Relieve internal pressure from the valve by slowly opening all three test cocks by turning the ball valve handle to the closed position.
3. Loosen all six bolts on the access port cover plate using a 15/16 socket wrench.
4. Remove bolts and tapered washers and store in a safe place. If lost, tapered bolts must be replaced with the specified tapered bolts and washers and cannot be substituted with standard bolts.
5. Remove access port cover plate. Do not remove access port O-ring.

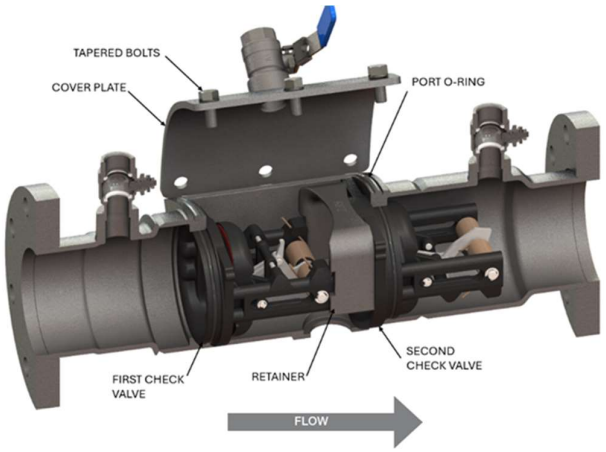

Figure 1: Primary Components of the DCV

Removing the Dual-action Check Modules

1. Remove the retainer from the body bore by lifting upwards through the access port.
2. Remove the First Check Module: Insert a flathead screwdriver between the inner valve body and the flange of the first check module. Carefully push the module in the downstream direction until it can be easily removed from the access port by hand.
3. Remove the Second Check Module: Insert a flathead screwdriver between the inner valve body and the flange of the second check module. Gently push the module in the upstream direction until it is loose enough to remove by hand through the access port.

Check Module Seal Servicing

If necessary, follow the following steps to service the check valve. Refer to components shown in Figures 2 and 3.

1. Use a #2 Phillips head screwdriver to remove tower screws from the check seat. The double torsion spring is captured and does not need to be retained during maintenance.
2. After removing the tower screws examine the elastomer disk and check seat for fouling or damage.
3. Should elastomer disk need replacement unscrew disk retainer screws and remove disk retainer. Carefully remove and replace elastomer disk. When replacing elastomer disk be certain that no air, water or debris is trapped in the clapper cavity behind the elastomer disk.

Installing Dual-action Check Modules

1. Before reinstalling the checks, check the O-ring and seals for debris and lubricate the O-ring with only a food grade or AS/NZS 4020 approved 100% silicone grease.
2. Refer to Figure 1 to ensure the correct order and orientation of the dual-action check modules before installing in the valve.
3. Insert second check module into access port with towers pointing downstream. Push the second check module by hand into valve body to its fully seated position.
4. Insert second check module into access port with towers pointing downstream. Push the second check module by hand into valve body to its fully seated position.
5. Be certain check modules are fully seated and check O-rings are NOT “fish mouthed” or damaged.
6. Insert the retainer into the body bore between the check modules. Ensure proper alignment to sit flush with the second check module and retain both check modules. If the retainer is difficult to insert, first ensure that the check valve modules are pushed fully into their seated positions.
7. Replace the cover onto the body, reassemble the six bolts and tapered washers and check they are securely tightened. Close the three test cocks.
8. Follow the Start Up Procedure section to resume operation.
4. Reverse the order of the above instructions to reassemble the check module. Ensure that:
   - The elastomer disk is flat in clapper cavity before tightening disk retainer screws.
   - The screws are not cross threaded or over tightened.

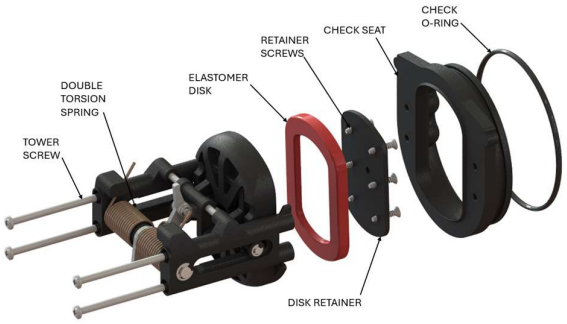

Figure 2: First Check (Tower Bosses and Spring Arms Face Up)

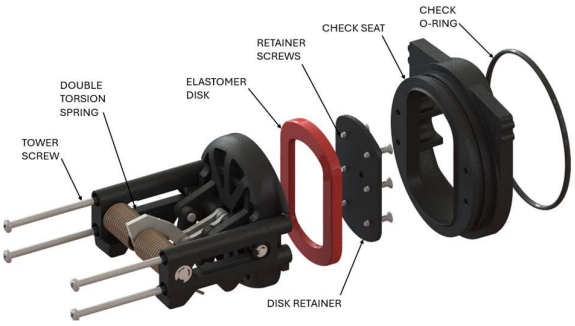

Figure 3: Second Check (Tower Bosses and Spring Arms Face Down

Troubleshooting

Troubleshooting and repairs of a backflow device should be performed by trained and authorised personnel only.

PROBLEM	CAUSE	SOLUTION
Valve exhibits high pressure drop	Fouled strainer	Clean strainer or replace.
	Valve size too small for required flow rate	Install proper size device based on flow requirements.
No water flows downstream of valve	Isolation valves are closed	Open isolation valves
	Valve installed backwards	Install valve in accordance with flow direction arrow
Valve does not test properly	Leaky downstream isolation valve	Clean or replace isolation valve
Valve quickly and repeatedly fouls following servicing	Debris in pipeline is too fine to be trapped by strainer.	Install finer mesh strainer element in the strainer and/or install additional strainer prior to the device.

007-SS DN65-150 Spare Parts

ORDER CODE	PRODUCT CODE	DESCRIPTION
61132277	007-009-SS-65-100CPS	**Access Port O-ring** for DN65-100
61132278	007-009-SS-150CPS	**Access Port O-ring** for DN150
61132282	007-SS-65-100CK1	**First check module** for DN65-100 RPZ device
61132283	007-SS-65-100CK2	**Second check module** for DN65-100 RPZ device
61132285	007-SS-150CK2	**First check module** for DN150 RPZ device
61132286	009-SS-150CK2	**Second check module** for DN150 RPZ device
61132289	007-009-SS-100-CVS	**Check module seal kit** for DN65-100
61132290	007-009-SS-150-CVS	**Check module seal kit** for DN150

Limited Warranty: Watts (the "Company") warrants each product to be free from defects in material and workmanship under normal usage for a period of one year from the date of delivery. In the event of such defects within the warranty period, the Company will, at its option, replace or recondition the product without charge.

THE WARRANTY SET FORTH HEREIN IS GIVEN EXPRESSLY AND IS THE ONLY WARRANTY GIVEN BY THE COMPANY WITH RESPECT TO THE PRODUCT. THE COMPANY MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE COMPANY HEREBY SPECIFICALLY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The remedy described in the first paragraph of this warranty shall constitute the sole and exclusive remedy for breach of warranty, and the Company shall not be responsible for any incidental, special or consequential damages, including without limitation, lost profits or the cost of repairing or replacing other property which is damaged if this product does not work properly, other costs resulting from labour charges, delays, vandalism, negligence, fouling caused by foreign material, damage from adverse water conditions, chemical, or any other circumstances over which the Company has no control. This warranty shall be invalidated by any abuse, misuse, misapplication, improper installation or improper maintenance or alteration of the product.