

PRODUCT DESCRIPTION

- The CV-S is a poppet-type valve designed to allow product flow in one direction only.
- The poppet in the standard CV-S is spring-loaded to remain shut. It will only operate once the upstream or inlet pressure exceeds the tension on the spring—a physical state called “cracking pressure.”

For inquiries regarding check valve calculations, please contact our Service Department:
281.207.1887

SPECIFICATIONS

Products

Crude Oil and Other Liquids Compatible With the Materials of Construction

Materials of Construction

316/316L Stainless Steel, PTFE, FKM (Others Available)

Maximum Allowable Inlet Pressure

2160 psig (148.9 barg)

Temperature Range

-20 °F to 120 °F (-28.8 °C to 48.8 °C)

Spring Ranges

From 0 to 50 psig (0–3.4 barg)

Connections

Inlet: ¼" MNPT or FNPT

Outlet: ¼" MNPT or FNPT

Maintenance Schedule

Every 12 Months

Severe Service, Dirty Conditions,

Excessive Usage: More Frequently

The following procedures have been written for use with standard Welker® parts and equipment. Assemblies that have been modified might have additional requirements and specifications that are not listed in this document.

If you received a damaged CV-S Check Valve, please contact a Welker® representative immediately.

For all product inquiries, please contact our Service Department:
281.207.1887



INSTALLATION AND MAINTENANCE MANUAL

WELKER® CV-S CHECK VALVE

IOM-269 | REV. 0 | 02/11/2025



The installation, operation, and maintenance liability for this equipment becomes that of the purchaser at the time of receipt. Reading the instructions that comprise IOM-269 prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.



When sealing fittings with PTFE tape, refer to the proper sealing instructions for the brand used.

CV-S: INSTALLATION

Installing the CV-S Check Valve

1. Wrap the threads with PTFE tape.
2. Install the CV-S Check Valve in the line where single-direction flow is desired.
3. Install the inlet in the upstream direction (see *Flow direction* in *Figure 1*).
4. The CV-S is now installed and operational.

CV-S: MAINTENANCE

Before You Start

1. Prior to maintenance or disassembly of the unit, it is advisable to have a repair kit available in case of unexpected wear or faulty seals.
2. All maintenance and cleaning of the unit should be performed on a smooth, clean surface.
3. Welker® recommends having an adjustable wrench and seal pick available for use during maintenance.



New seals supplied in spare parts kits should be lightly lubricated before being installed to ease the installation of the seals and reduce the risk of damage when positioning them on parts. Wipe excess lubricant from the seals, because it might adversely affect analytical results.



For sample-exposed seals, Welker® recommends non-hydrocarbon-based lubricants such as Krytox®. For non-sample-exposed seals, Welker® recommends lubricants such as Molykote® 111.

Maintaining the CV-S Check Valve

1. Depressurize the line in which the CV-S Check Valve is installed.
2. Disconnect the upstream and downstream connections.
3. Unscrew the base from the body (*Figure 1*).
4. Inspect the seat for debris or scratches. Replace as necessary. **Debris or scratches on the seat will prevent positive shutoff of the relief.**
5. Remove the O-rings from the seat. Then wipe the seal grooves clean. Replace the O-rings on the seat.
6. Remove the poppet and spring from the body. Then examine the poppet for scratches and damage. Replace as necessary. **Debris or scratches on the poppet will prevent positive shutoff of the relief.**
7. Inspect the spring for scratches or damage. If scratches or damage are present, replace the spring.
8. Install the seat to the base.
9. Guide the poppet onto the seat.
10. Return the spring to the poppet.
11. Install the body to the base and hand-tighten firmly.
12. Maintenance is now complete and the CV-S Check Valve can be reinstalled. See *Installation*, above, for instructions on installing the CV-S Check Valve and returning it to operation.

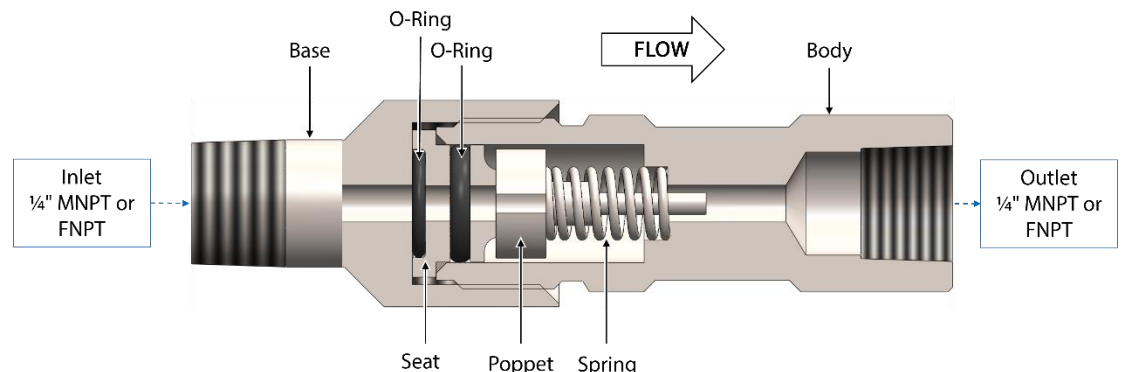


Figure 1: Welker® CV-S Check Valve Diagram

PRODUCT DESCRIPTION

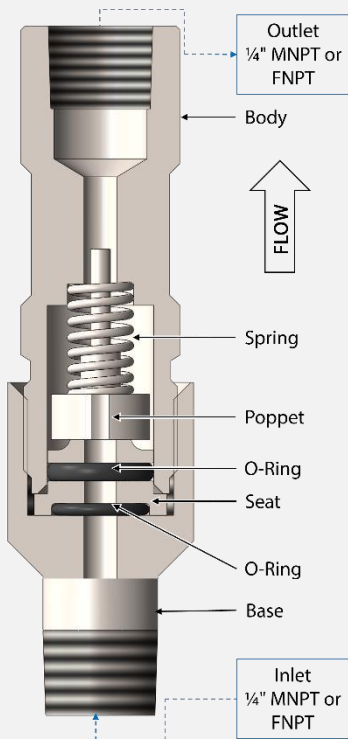
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Welker® CV-S
Check Valve Diagram



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IMPORTANT SAFETY INSTRUCTIONS

WELKER® CV-S CHECK VALVE

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BEFORE YOU BEGIN

Read These Instructions Completely and Carefully



NOTES emphasize information and/or provide additional information to assist the user.



CAUTION messages appear before procedures that could result in damage to equipment if not observed.



WARNING messages appear before procedures that could result in personal injury if not observed.

The instructions that comprise IOM-269 are intended to be used as basic setup and installation guidelines for the Welker® Check Valve, Model CV-S. The information in IOM-269 has been carefully checked for accuracy and is intended to be used as guidelines for the setup and installation of the Welker® equipment described in IOM-269. Correct setup, installation, and operation, however, are the responsibility of the end user. Welker® reserves the right to make changes to IOM-269 and all products in order to improve performance and reliability.

SAVE INSTRUCTIONS

Save these Safety instructions and the instructions that comprise IOM-269 for local inspectors' use.

OBSERVE

Observe all governing codes and ordinances.

NOTE TO INSTALLER

Leave these Safety instructions and the instructions that comprise IOM-269 with the end user.

NOTE TO END USER

Keep these Safety instructions and the instructions that comprise IOM-269 for future reference.

NATURE OF INSTALLATION

Installation of this check valve is of a mechanical nature.

INSTALLATION RESPONSIBILITY

Proper installation is the responsibility of the installer. Product failure due to improper installation is not covered under the warranty.



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