

PRODUCT DESCRIPTION

- Designed to protect instruments and regulators from overpressurization.
- Can be used in hazardous and non-hazardous gas applications where venting to atmosphere is acceptable.
- Has a threaded NPT outlet port when venting of gases to safe areas is required.
- Designed to ASME standards.
- Has a low set pressure and high flow capacity while allowing no leakage from 70% to 90% of the set pressure.

SPECIFICATIONS

Materials of Construction

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

Maximum Allowable Inlet Pressure

500 psig (20 barg)

Temperature Range

-65 °F to 500 °F (-53 °C to 260 °C)

Spring Range Options

10–250 psig (0–17 barg)

Flow Rate

Up to 135 scfm

Connections

Inlet: ¼" FNPT

Outlet: ½" FNPT

Features

10% or 3 psig Overpressurization Relief Capacity
Adjustable
Lockable

Industry Standards

CE Compliant*

NACE Compliant

*Applies Only When Used on Welker® CE Equipment

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 Relief Valve, please contact a Welker® representative immediately.

For all product inquiries, please contact our Service Department:
281.207.1879



SETTING, TESTING, AND INSTALLATION MANUAL WELKER® RV-110V RELIEF VALVE IOM-259 | REV. 0 | 01/06/2025



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-259 prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.



To accurately test the RV-110V, a safe gas source, regulator, and pressure gauge are needed.

RV-110V: SETTING, TESTING, AND INSTALLATION

Setting the RV-110V

1. Connect the regulator to a safe gas source.
2. Connect the RV-110V to the regulator outlet.
3. **Use a ⅛" hex key to loosen the sealing hex nut and screw the adjustment screw counterclockwise to open the RV-110V.**
4. Apply auxiliary gas through the regulator to the RV-110V, and then set the regulator to the desired pressure.
5. **Slowly decrease the adjustment screw until a slight hissing sound is audible. This is the crack pressure.**
6. Adjust the set pressure accordingly.
7. Once the set pressure has been adjusted, repeat steps 4–6 to confirm the RV-110V has the appropriate set pressure.
8. Tighten the sealing hex nut to lock the adjustment screw into place.



Crack pressure occurs when relief valve inlet pressure is equal to 3 psig below set pressure or 10% below set pressure—whichever is greater (Table 1 and Table 2).

Testing the RV-110V

9. Set the regulator to a pressure slightly below the RV-110V crack pressure (Table 2). Then slowly increase the regulator's pressure until it is at the RV-110V crack pressure. A slight hissing sound should be audible.
10. **Slowly decrease the regulator's pressure until it is slightly below the RV-110V crack pressure.** The hissing sound should stop as the RV-110V reseats.
11. Repeat steps 4–6 to adjust the set pressure if the RV-110V does not relieve pressure or reseal.
12. **Slowly increase the regulator's pressure until it is at the relieving pressure (Table 2).** An audible pop should be heard as the RV-110V opens fully, and a pressure drop should be visible on the pressure gauge.
13. Reset the regulator to a pressure slightly below the crack pressure to verify that the RV-110V will reseal.
14. If the RV-110V is to be used with the regulator it was set with, reset the regulator to the desired point.

Table 1: Pressure Set Point Examples

Examples	Start-to-Leak (Crack) Pressure (3 psig or 10% Below Set Pressure, Whichever Is Greater)	Opening (Set) Pressure	Relieving Pressure (3 psig or 10% Above Set Pressure, Whichever Is Greater)
1	17 psig	20 psig	23 psig
2	135 psig	150 psig	165 psig

Installing the RV-110V

1. First, complete the RV-110V setting and testing instructions.
2. Welker® recommends installing a filter upstream of the RV-110V.
3. If desired, install a customer-supplied adjustment lock wire and/or tag to the RV-110V adjustment lock wire holes.
4. Wrap the threads of the instrument the RV-110V will be relieving with PTFE tape or apply pipe dope to the threads.
5. Using a wrench, install the RV-110V to the ¼" MNPT threads on the instrument it will be relieving.
6. Installation is complete and the RV-110V is now operational.

Table 2: Terms and Definitions

Term	Definition
Opening (Set) Pressure	The opening or set pressure is the equilibrium point between the crack pressure and the relieving pressure.
Start-to-Leak (Crack) Pressure	Crack pressure occurs when relief valve inlet pressure is equal to 3 psig below set pressure or 10% below set pressure—whichever is greater. A hissing sound might be audible.
Relieving Pressure	Relieving pressure occurs when relief valve inlet pressure is equal to 3 psig above set pressure or 10% above set pressure—whichever is greater.

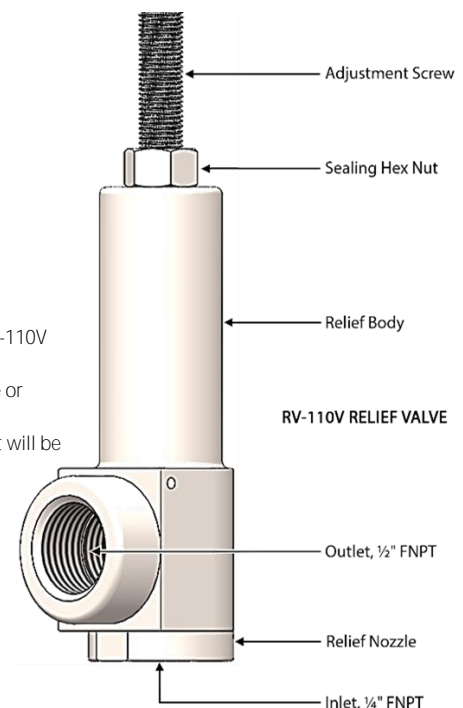


Figure 1: Welker® RV-110V Relief Valve Diagram

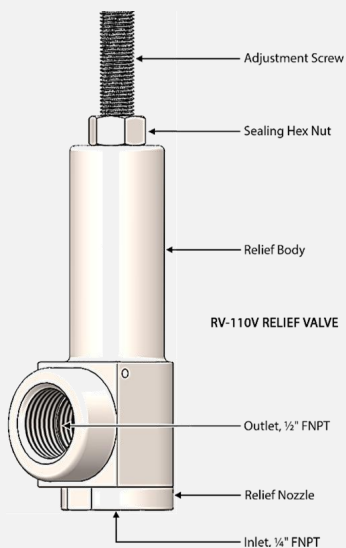
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Welker® RV-110V
Relief Valve Diagram



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IMPORTANT SAFETY INSTRUCTIONS WELKER® RV-110V RELIEF VALVE IOM-259 | REV. 0 | 01/06/2025

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-259 are intended to be used as basic setup and installation guidelines for the Welker® Relief Valve, Model RV-110V. The information in IOM-259 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-259. Correct setup, installation, and operation, however, are the responsibility of the end user. Welker® reserves the right to make changes to IOM-259 and all products in order to improve performance and reliability.

SAVE INSTRUCTIONS

Save these Safety instructions and the instructions that comprise IOM-259 for local inspectors' use.

OBSERVE

Observe all governing codes and ordinances.

NOTE TO INSTALLER

Leave these Safety instructions and the instructions that comprise IOM-259 with the end user.

NOTE TO END USER

Keep these Safety instructions and the instructions that comprise IOM-259 for future reference.

NATURE OF INSTALLATION

Installation of this relief 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.

