

PRODUCT DESCRIPTION

- Designed to protect instruments and regulators from overpressurization.
- Specifically designed to relieve high-capacity instruments in the 0–200 psig range.

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

SPECIFICATIONS

Materials of Construction

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

Maximum Allowable Inlet Pressure

3600 psig (248.2 barg)

Temperature Range

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

Temperature Range Might Vary Based on
Seal Material Selection

Spring Range Options

Up to 200 psig (0–13.7 barg)

Flow Rates

$C_v = 1.18$

Full Flow Accomplished at 150% Over Set
Pressure

Connections

Inlet: ¼" MNPT (Standard) or ⅜" MNPT

Outlet: Atmospheric, ¼" FNPT, ⅜" FNPT,
½" FNPT, ¾" FNPT, or 1" FNPT (Standard)

Approximate Dimensions

4½" x 1½" x 1½" (L x W x H)

Approximate Weight

1¼ lb

Maintenance Schedule

Every 12 Months

Severe Service, Dirty Conditions,

Excessive Usage: More Frequently

Options

Pre-Set Relief

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 RV-3 Relief Valve, please contact a Welker® representative immediately.

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281.207.1887



SETTING, TESTING, INSTALLATION, AND MAINTENANCE MANUAL

WELKER® RV-3 RELIEF VALVE

IOM-266 | 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-266 prior to installation and operation of this equipment is required for a full understanding of its application and performance prior to use.



To accurately set and test the RV-3 Relief Valve, a safe gas source, regulator, and pressure gauge are needed.

RV-3: SETTING, TESTING, AND INSTALLATION

Setting the RV-3 Relief Valve

1. Connect the regulator to a safe gas source.
2. Screw the spring adjuster of the relief valve clockwise to fully close the relief valve.
3. Install the relief valve to the regulator.
4. Set the regulator to the desired pressure. Then apply auxiliary gas through the regulator to the relief valve.
5. Use a straight-edge screwdriver to screw the RV-3's spring adjuster counterclockwise until pressure starts to relieve. A hissing sound will be audible.
6. Screw the RV-3's **spring adjuster clockwise until the hissing sound stops and the relief valve obtains a positive shutoff.**

Testing the RV-3 Relief Valve

7. Set the regulator to a pressure slightly below the relief valve set point. Then slowly increase the pressure of the regulator until it is slightly higher than the relief valve set point. A hissing sound should be audible.
8. Slowly decrease the pressure of the regulator until it is slightly below the relief valve set point. The hissing sound should stop as the relief valve reseats.
9. If the relief valve does not begin to relieve pressure or does not reseat, it might be necessary to repeat steps 4–6 to reset the relief valve.
10. If the relief valve is to be used with the regulator it was set with, reset the regulator to the desired point.

Installing the RV-3 Relief Valve

11. Either wrap the threads of the relief valve with PTFE tape or apply pipe dope to the threads.
12. Using a wrench, install the relief valve to the correct port on the instrument it will be relieving.
13. Installation is complete and the RV-3 is now operational.

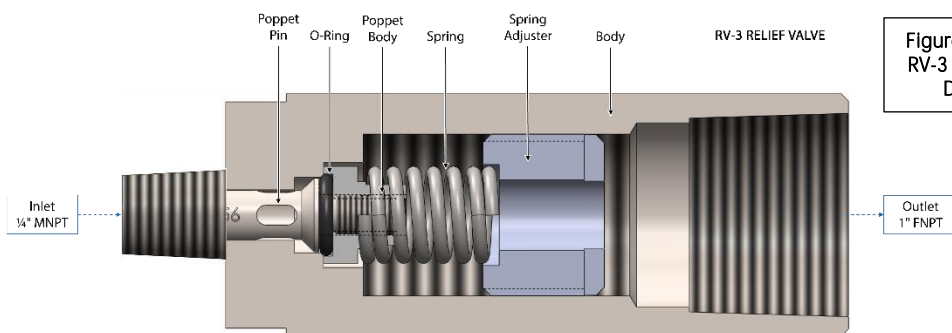


Figure 1: Welker® RV-3 Relief Valve Diagram

RV-3: 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.



Ensure that the poppet assembly is returned to the spring housing in the correct orientation.



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.

1. Isolate and depressurize the RV-3 from the supply source.
2. Remove the RV-3 from the supply.
3. Using a straight-edge screwdriver, unscrew the spring adjuster, thus removing the spring adjuster, spring, and poppet assembly from the body.
4. Inspect the spring. If the spring is in good condition, it can be reused.
5. Inspect the poppet for nicks and scratches. Replace as necessary.
6. Unscrew the poppet pin. Replace the O-ring (*Figure 7*).
7. Screw the poppet pin into the poppet body.
8. Return the poppet assembly and spring to the spring housing. Ensure that the poppet assembly is returned to the spring housing in the correct orientation.
9. Screw the spring adjuster into the spring housing.
10. The RV-3 is now ready to be reset and reinstalled.

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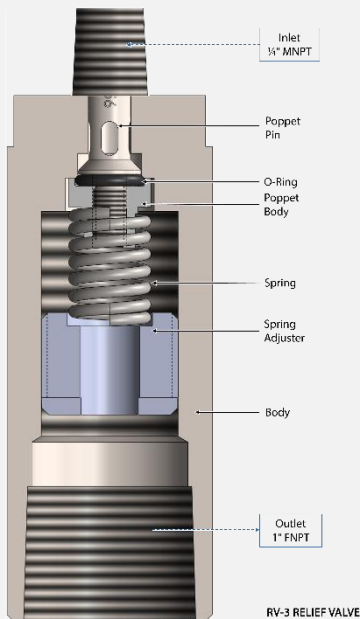
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Welker® RV-3
Relief Valve Diagram



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IMPORTANT SAFETY INSTRUCTIONS

WELKER® RV-3 RELIEF 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-266 are intended to be used as basic setup and installation guidelines for the Welker® Relief Valve, Model RV-3. The information in IOM-266 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-266. Correct setup, installation, and operation, however, are the responsibility of the end user. Welker® reserves the right to make changes to IOM-266 and all products in order to improve performance and reliability.

SAVE INSTRUCTIONS

Save these Safety instructions and the instructions that comprise IOM-266 for local inspectors' use.

OBSERVE

Observe all governing codes and ordinances.

NOTE TO INSTALLER

Leave these Safety instructions and the instructions that comprise IOM-266 with the end user.

NOTE TO END USER

Keep these Safety instructions and the instructions that comprise IOM-266 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.

