

PRODUCT DESCRIPTION

- Needle-type valve designed for manual on/off flow applications for instrumentation.
- Ports have a globe design to reduce chilling due to the Joule-Thomson effect.
- Used with lighter, less-viscous liquids and with liquids and gases that have relatively low flow rates.

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

SPECIFICATIONS

Products

Gases and Liquids Compatible With the Materials of Construction

Materials of Construction

316/316L Stainless Steel, Aluminum (Handle),
PCTFE, FFKM
(Others Available)

Maximum Allowable Inlet Pressure

6000 psig (413.6 barg)

Temperature Range

-20 °F to 392 °F (-28.8 °C to 200 °C)

Seat

PCTFE (Standard), PTFE, PEEK

Volume

Flow Coefficient: $C_v = .182$

Connections

¼" NPT (MM, MF, FF Configurations Available)

Approximate Dimensions

2" x 1" x 2½" (L x W x H)
Others Available

Approximate Weight

½ lb

Maintenance Schedule

Every 6 Months
Severe Service, Dirty Conditions,
Excessive Usage: More Frequently

Options

Rupture Disc
Stainless Steel Handle
CE Compliance
NACE Compliance

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 NV-1 Instrument Valve, please contact a Welker® representative immediately.

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INSTALLATION, OPERATION, AND MAINTENANCE MANUAL

WELKER® NV-1 INSTRUMENT VALVE

IOM-270 | REV. 0 | 02/10/2025



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-270 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.

NV-1: INSTALLATION AND OPERATION

Installing the NV-1 Instrument Valve

1. Placement of your NV-1 Valve is likely on a larger product or system. Refer to relevant *Installation, Operation, and Maintenance (IOM) Manuals* for complete instructions on installing and operating your product or system.
2. Tighten the fittings on either the valve body or the application. Then seal the male fittings with PTFE tape by wrapping clockwise 1½ to 2 wraps only and NOT over the first thread or the end of the valve. Then check for leaks and repair as necessary.

Operating the NV-1 Instrument Valve

1. Exercise caution in opening and closing your NV-1 Valve. For example, before installing or removing the NV-1 Valve, ensure that your pipeline is depressurized. Severe damage to equipment and personnel could result if this caution is ignored.



The pipeline **MUST BE** depressurized prior to installing and/or removing your Welker® NV-1 Instrument Valve and/or any unit of which it is a part. Severe damage to equipment and personnel could result if this caution is ignored.

2. To open the valve, hand-turn it counterclockwise. To close the valve, hand-turn it clockwise until it is reasonably firmly shut.



NEVER use tools to tighten shut or open the NV-1. Hand-tighten only. Do NOT over-torque. At higher pressures, use only a reasonably firm grip. Excessive tightening can damage the seat (*Figure 1*).

NV-1: MAINTENANCE

1. **Depressurize the pipeline.** Severe damage to equipment and personnel could result if this caution is ignored.



- 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 instrument results.
- For sample-exposed seals, Welker® recommends non-hydrocarbon-based lubricants, such as Krytox®.
- For non-sample-exposed seals, Welker® recommends either non-hydrocarbon-based lubricants or silicone lubricants, such as Molykote® 111.

Maintaining the NV-1 Instrument Valve

2. Using an adjustable wrench, carefully loosen and remove the valve from the unit or system of which it is a part.
3. Using a ⅛ hex wrench, loosen the hex screw and remove the valve handle (*Figure 1*).
4. Using an adjustable wrench, loosen and remove the valve stem/bonnet assembly (*Figure 1*) from the body.
5. Use a seal pick to carefully pick the seat (*Figure 1*) and, if necessary, the retaining ring (not pictured), out of the body.
6. Replace the seat (*Figure 1*) and, if necessary, the retaining ring (not pictured).
7. Grasp the bottom of the valve stem. Then turn the bonnet clockwise until the valve stem comes out of the bottom of the bonnet.
8. Remove and replace the two small O-rings. Be careful not to overstretch, cut, tear, or twist the O-rings when rolling them over the end of the stem and into place.
9. Lightly lubricate the threads on the valve stem.
10. Remove and replace the large O-ring on the bonnet. Be careful not to overstretch, cut, tear, or twist the O-ring when rolling it over the threads and into place.
11. Slide the top of the valve stem back through the bottom of the bonnet.
12. Hand-turn the bonnet counterclockwise until it will no longer turn and the valve stem is all the way up. Failure to perform this step completely will likely result in a leak.
13. Thread the bonnet back into the valve body. Then carefully tighten with an adjustable wrench.
14. Place the valve handle back onto the valve stem, making sure the hex screw is aligned with the etched-out portion of the valve stem.
15. Place the valve back using the installation instructions above.

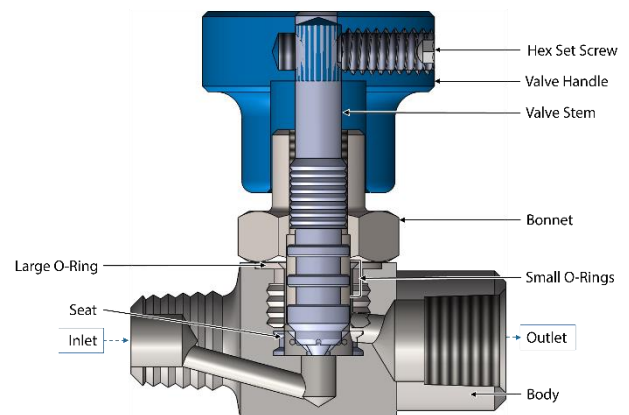


Figure 1: Welker® NV-1MF Instrument Valve Diagram

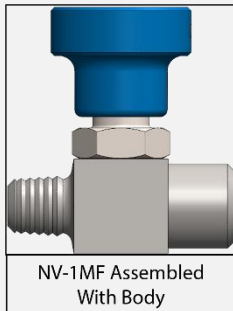
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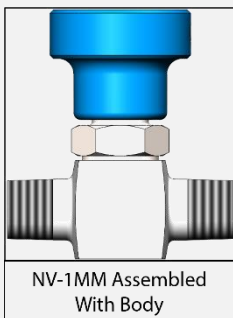
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Welker® NV-1
Instrument Valves



NV-1MF Assembled
With Body



NV-1MM Assembled
With Body

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IMPORTANT SAFETY INSTRUCTIONS WELKER® NV-1 INSTRUMENT VALVE IOM-270 | REV. 0 | 02/10/2025

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-270 are intended to be used as basic setup and installation guidelines for the Welker® Instrument Valve, Model NV-1. The information in IOM-270 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-270. Correct setup, installation, and operation, however, are the responsibility of the end user. Welker® reserves the right to make changes to IOM-270 and all products in order to improve performance and reliability.

SAVE INSTRUCTIONS

Save these Safety instructions and the instructions that comprise IOM-270 for local inspectors' use.

OBSERVE

Observe all governing codes and ordinances.

NOTE TO INSTALLER

Leave these Safety instructions and the instructions that comprise IOM-270 with the end user.

NOTE TO END USER

Keep these Safety instructions and the instructions that comprise IOM-270 for future reference.

NATURE OF INSTALLATION

Installation of this instrument 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.

