USASEALING ZUSA-TF-VAC-88

USA SEALING Ultra-High Vacuum Centering Ring with Screen Instruction Manual

Model: ZUSA-TF-VAC-88

Product Overview

The USA SEALING ZUSA-TF-VAC-88 is an Ultra-High Vacuum (UHV) Centering Ring with an integrated screen, designed for critical vacuum applications. This component facilitates a secure and precise connection within vacuum systems, ensuring optimal performance and integrity.
It is commonly referred to as an NW, KF, or QF fitting, indicating its quick-clamp compatibility for easy assembly and disassembly, providing convenient access to the process line.



Image: The USA SEALING ZUSA-TF-VAC-88 Ultra-High Vacuum Centering Ring with Screen. This image shows the circular Viton ring with a central metallic screen, designed for vacuum sealing and particle filtration.

Key Features

- **Material:** Viton for excellent chemical resistance and low outgassing in vacuum environments.
- **Style:** Centering Ring with Screen, ensuring proper alignment and preventing particulate contamination.
- **Tube OD Compatibility:** Designed for 1" tube outer diameter.
- **Trade Number:** 25, indicating its specific size and compatibility within the KF/NW/QF standard.
- **Maximum Vacuum:** Capable of maintaining 10⁻⁷ torr at 72° F (22° C).

Package Contents

Upon unpacking, verify that the following item is present:

- One (1) USA SEALING ZUSA-TF-VAC-88 Ultra-High Vacuum Centering Ring with Screen.

Setup and Installation

This centering ring is designed for use with standard KF/NW/QF quick-clamp vacuum fittings. Proper installation is crucial for achieving and maintaining ultra-high vacuum conditions.

1. **Inspection:** Before installation, carefully inspect the centering ring, especially the Viton O-ring and the screen, for any signs of damage, debris, or imperfections. A clean, undamaged surface is essential for a proper vacuum seal.
2. **Cleaning:** If necessary, clean the centering ring and the mating flanges with an appropriate solvent (e.g., isopropyl alcohol) and a lint-free cloth. Allow all components to dry completely before assembly.
3. **Placement:** Position the centering ring between the two KF/NW/QF flanges that are to be connected. Ensure the screen faces the direction where particle filtration is desired, typically towards the vacuum chamber or process line. The Viton O-ring should sit securely within the grooves of the flanges.
4. **Clamping:** Apply a KF/NW/QF clamp around the outer edges of the two flanges and the centering ring. Tighten the clamp evenly until a firm, secure connection is established. Avoid overtightening, which can deform the O-ring and compromise the seal.
5. **Leak Check:** After assembly, perform a leak check using a suitable leak detection method (e.g., helium leak detector) to confirm the integrity of the vacuum seal.

Operating Considerations

The ZUSA-TF-VAC-88 centering ring is a passive component that facilitates vacuum system operation. Its primary function is to provide a reliable seal and prevent particulate matter from entering sensitive vacuum components.

- **Temperature Range:** Ensure the operating temperature of the vacuum system remains within the specified limits for Viton to prevent degradation of the seal.
- **Chemical Compatibility:** While Viton offers good chemical resistance, verify its compatibility with any gases or vapors present in your vacuum system to avoid material degradation.
- **Particle Filtration:** The integrated screen is designed to filter out larger particles. For applications requiring finer filtration, additional inline filters may be necessary.

Maintenance

Regular inspection and proper handling will extend the lifespan and ensure the performance of your centering ring.

- **Periodic Inspection:** Before each use or during system maintenance, inspect the Viton O-ring for cracks, cuts, flattening, or any signs of wear. Inspect the screen for blockages or damage.
- **Cleaning:** If the centering ring becomes contaminated, clean it with a clean, lint-free cloth and a suitable solvent like isopropyl alcohol. Avoid abrasive materials or harsh chemicals that could damage the Viton or the screen.
- **Replacement:** Replace the centering ring if the Viton O-ring shows significant wear, damage, or if the screen is compromised. A damaged O-ring will lead to vacuum leaks.
- **Storage:** Store unused centering rings in a clean, dry, and cool environment, away from direct sunlight and ozone-generating equipment, to preserve the integrity of the Viton material.

Troubleshooting

Most issues related to vacuum fittings stem from improper installation or damaged components.

Problem	Possible Cause	Solution
Vacuum Leak Detected	Damaged or dirty Viton O-ring; Improperly tightened clamp; Debris on sealing surfaces.	Inspect and clean/replace O-ring; Ensure clamp is tightened evenly and securely; Clean mating flange surfaces thoroughly.
Reduced Vacuum Performance	Screen blockage; O-ring degradation due to chemical exposure or temperature.	Inspect and clean screen; Verify material compatibility with process gases; Replace O-ring if degraded.

Specifications

Attribute	Value
Model Number	ZUSA-TF-VAC-88
Brand	USASEALING
Material	Viton
Style	Centering Ring with Screen
For Tube OD	1"
Trade Number	25
Max Vacuum	10⁻⁷ torr @ 72° F
Color	Silver (for metallic components)
Product Dimensions	0.3 x 1.6 x 1.6 inches
Item Weight	14.4 ounces
Manufacturer	USA SEALING INC
ASIN	B07KFNXC8H
UPC	193005175498

Warranty and Support

For specific warranty information and technical support regarding your USA SEALING ZUSA-TF-VAC-88 Ultra-High Vacuum Centering Ring with Screen, please contact USA SEALING INC directly. Refer to their official website or the original purchase documentation for contact details.
Manufacturer: USA SEALING INC
Website: www.usasealing.com *(Note: This is a placeholder URL, please refer to official product documentation for actual support links.)*

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