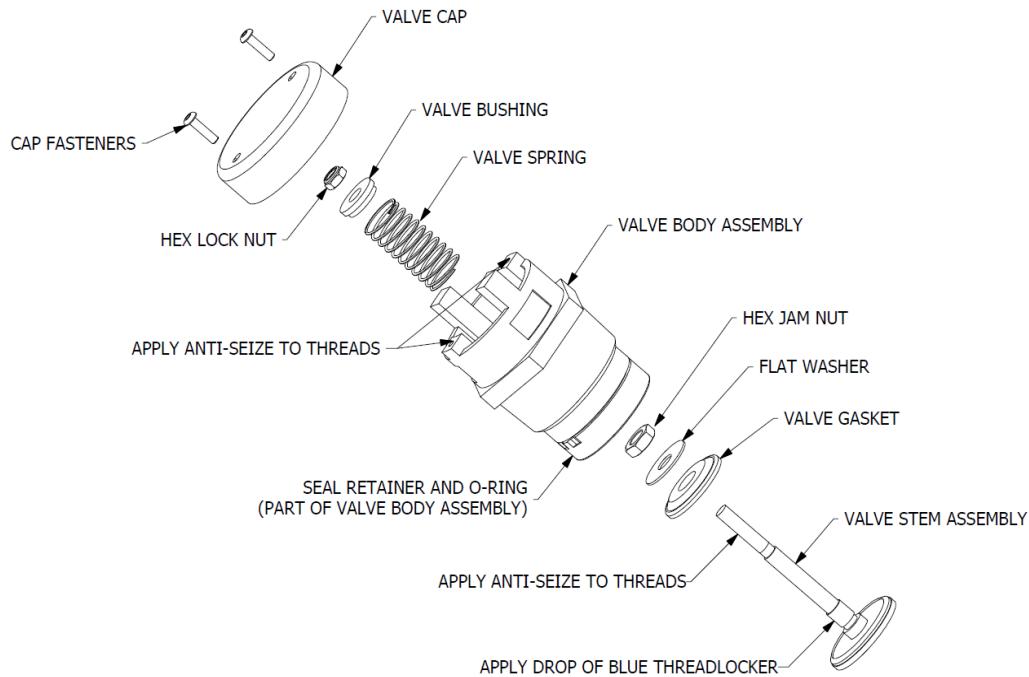


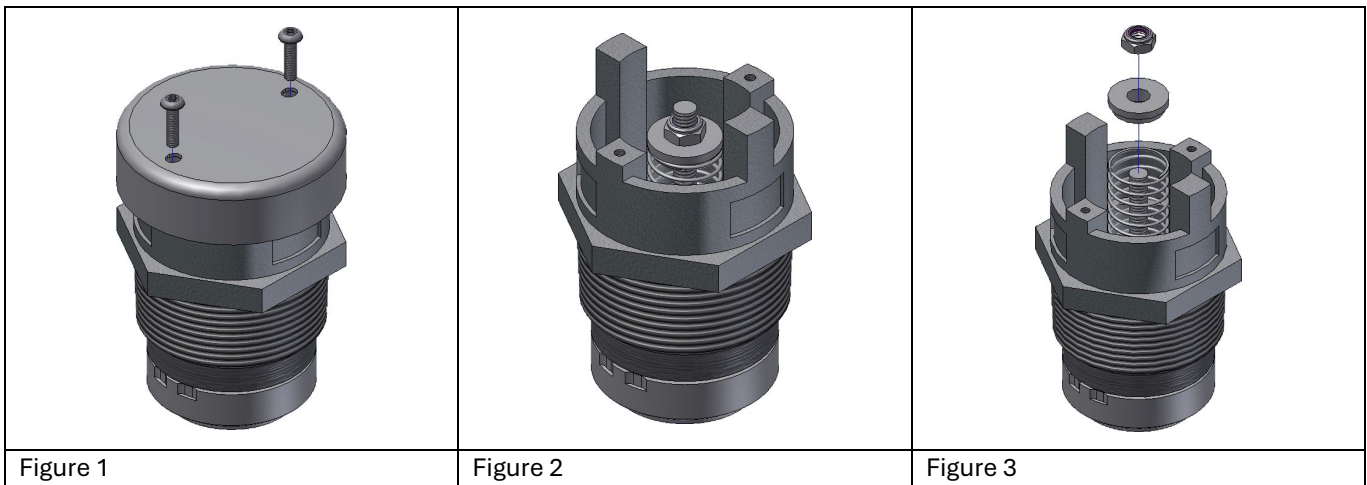
# SALCO ASSEMBLY INSTRUCTIONS FOR NON-CYCLING VACUUM RELIEF VALVE

## Vacuum Relief Valve Anatomy



## Valve Disassembly

1. Secure the valve in a suitable holding fixture.
2. Remove the cap fasteners. (Figure 1)
3. Remove the cap. (Figure 2)
4. Loosen top stem nut, relieving spring pressure, until completely removed.
5. Valve bushing and spring can now be removed. (Figure 3)



6. Valve stem can now be removed from the valve body (Figure 4)
7. Loosen and remove lower stem hex nut and flat washer. Note: 1 ½" vacuum relief valves do not require a flat washer above the gasket. (Figure 5)
8. Remove full face gasket from valve stem assembly by pulling in an upward motion. (Figure 5)
9. Inspect valve stem threads for any signs of damage or distortion, replace as necessary.
10. To remove the retainer, grind off the tack weld.
11. Unthread the seal retainer from the valve body (Figure 6)
12. Remove the Teflon encapsulated o-ring (Figure 6)
13. Clean and inspect all parts for signs of defects, marring or abuse. Replace if necessary. O-ring, gasket and fasteners must be replaced at time of inspection and rebuild.



Figure 4



Figure 5

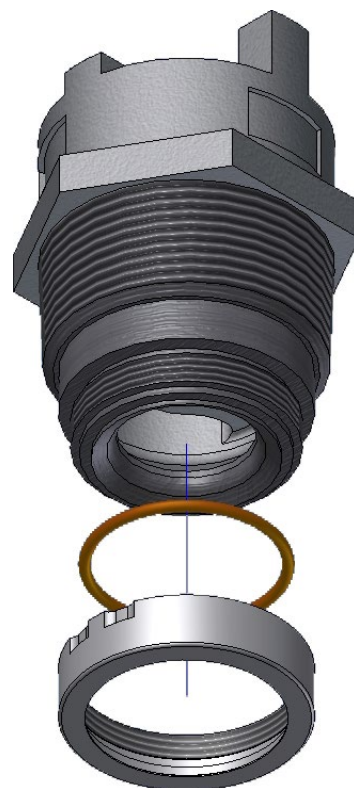


Figure 6

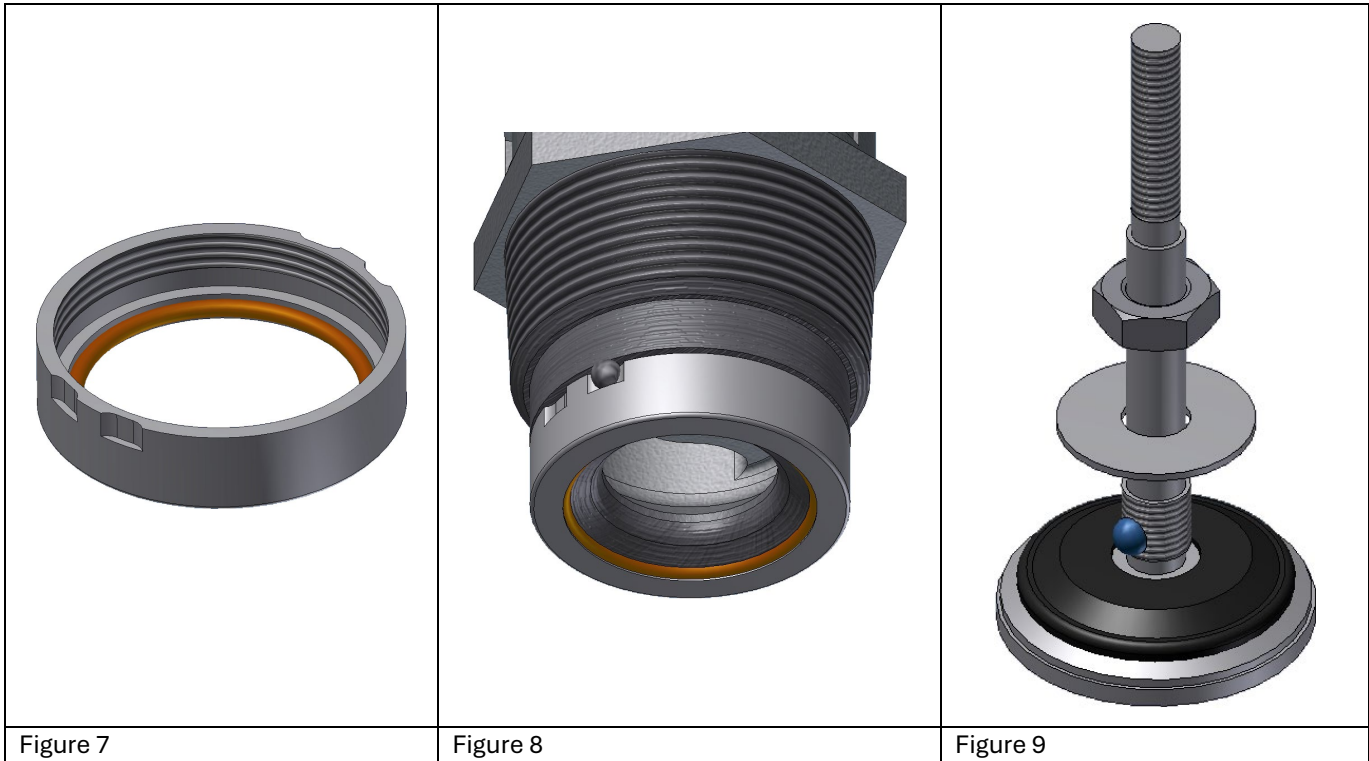
## Assembly and Testing

### Body Assembly

1. Carefully install the Teflon encapsulated o-ring into the seal retainer. (Figure 7)
2. Thread the seal retainer (with o-ring) onto the valve body. Care should be taken not to damage the o-ring when installing the retainer. (Figure 8)
3. Apply a 1/8" weld to the slotted area of the weld retainer in order to prevent the retainer from backing off. (Figure 8)

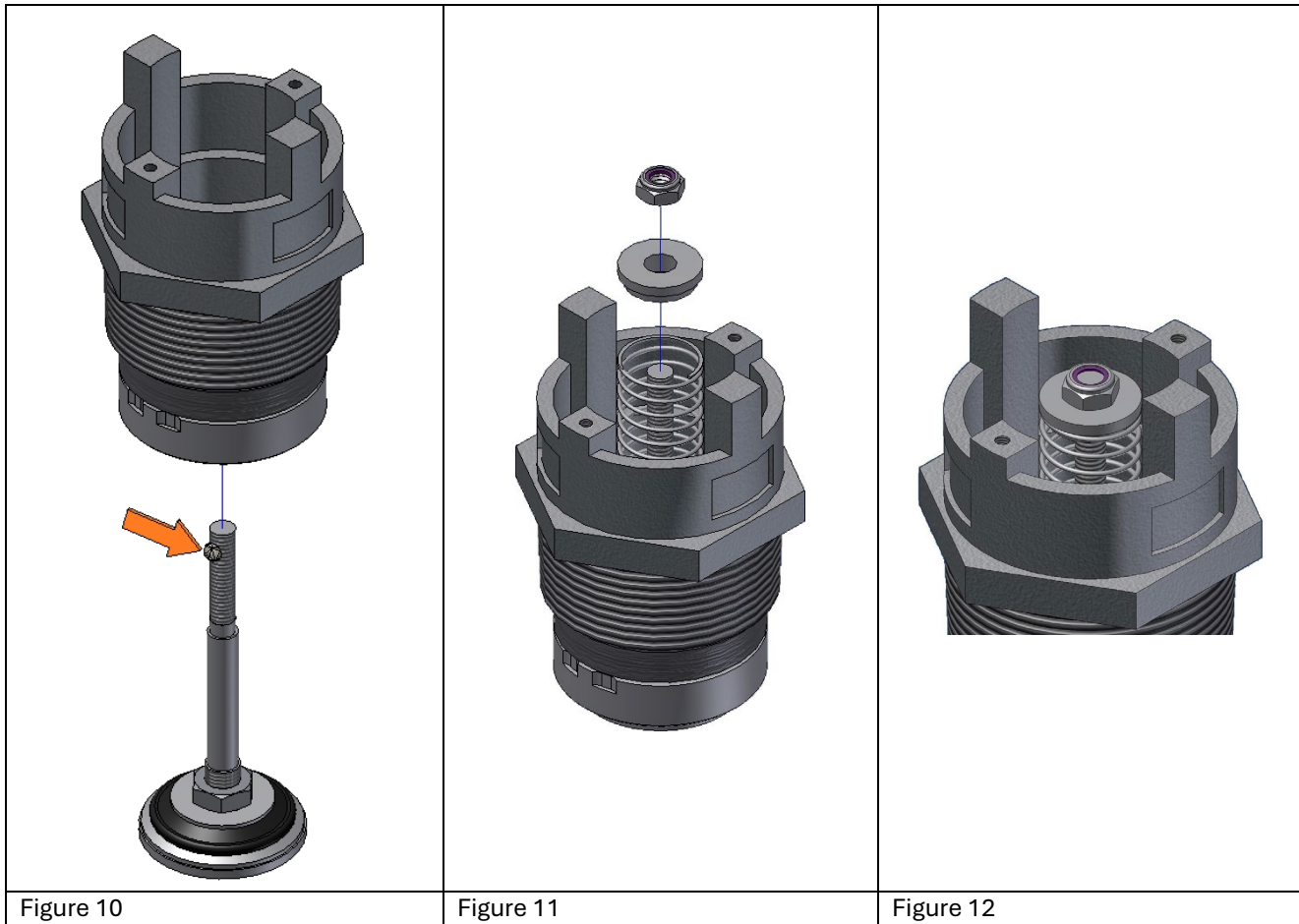
### Valve Stem Assembly

1. With the gasket oriented as shown in Figure 9, slide the gasket all the way down on the valve stem. Ensure the gasket is fully seated in the gasket holder recess.
2. Place the washer onto the stem over the gasket. Note: 1 1/2" vacuum relief valves do not require a washer above the gasket. (Figure 9)
3. Apply a drop of blue thread locker to the lower threaded area of the stem as shown in Figure 9.
4. Thread on the hex jam nut until it touches the washer or gasket and then turn an additional 1/4 revolution. (Figure 9)



### Valve Assembly

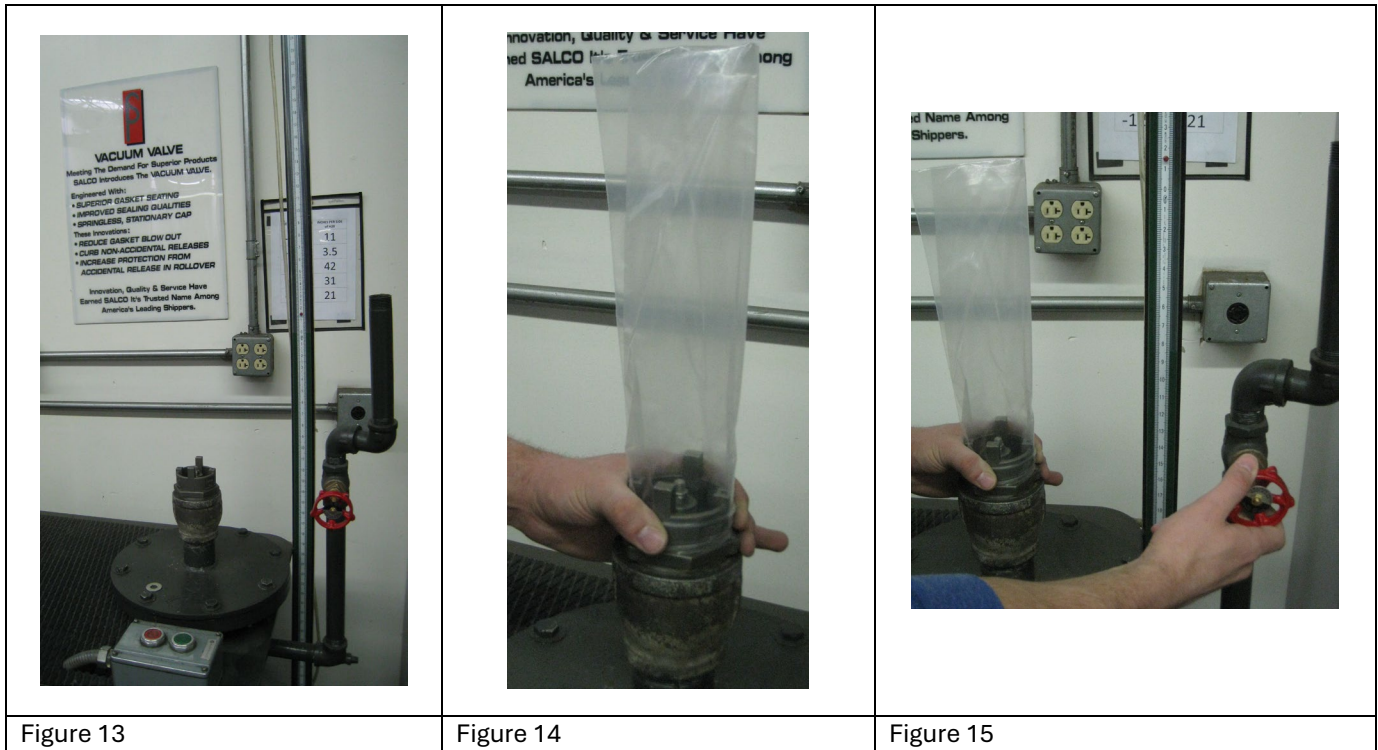
1. Verify that the valve body is clean and free of debris or dirt.
2. Install the stem assembly into the valve body from the underside. (Figure 10)
3. Apply a small amount of anti-seize to the top threads of the valve stem assembly. Location marked by arrow in Figure 10.
4. Install the spring by sliding over the valve stem from the top side of the valve. (Figure 11)
5. Apply the valve bushing. (Figure 11)
6. Apply the nylon lock nut and thread down until the lock nut engages. (Figure 12)
7. The valve is now ready for testing and setting.



## Valve Testing

NOTE: A manometer is needed in order to properly set and calibrate the vacuum relief valve to its prescribed setting. A mercury (Hg), water (H<sub>2</sub>O), or digital manometer may be used. Please note, the settings in these instructions are for H<sub>2</sub>O; if an Hg manometer is used, the values must be converted.

1. Install the valve onto the valve test station. (Figure 13)
2. Verify the gate valve on the test station is open.
3. Start the vacuum pump.
4. Verify what negative pressure you are trying to achieve and be sure the setting is converted to inches of H<sub>2</sub>O.
5. Place a clear plastic bag over the valve making sure the bag DOES NOT cover the pipe threads of the valve body. (Figure 14)
6. While tightly holding the plastic bag, slowly close the test fixture valve until the plastic bag starts to collapse. (Figure 15)
7. Observe the manometer reading when the bag begins to collapse, this is the cracking pressure.
8. If necessary, adjust the nut to either increase or decrease spring pressure based on the required setting. Turning the nut clockwise increases vacuum setting; counterclockwise lowers vacuum setting.
9. Repeat steps 5 through 8 until the prescribed valve setting is reached.
10. Remove vacuum relief valve from the test station.



### Bubble Leak Test

1. Secure the vacuum relief valve in an appropriate test fixture.
2. Apply a regulated pressure of 2-3 psi
3. Utilize a 2-3 minute hold time
4. Fill body with an approved leak solution.
5. Utilize a 2 minute dwell time.
6. Observe for leaks.
7. If no leaks are observed, increase pressure to 15-20 psi for 2-3 minutes.
8. If no leaks are observed, valve is ready for final assembly.

### Final Assembly

1. Stamp valve body with serial number and gasket material designator.
2. Apply anti seize to the threaded cap holes for the cap fasteners. (Figure 16)
3. Apply the cap to the assembled valve. (Figure 17)
4. Apply the cap fasteners and tighten. (Figure 17)
5. Valve cap can now be marked per drawing. (Figure 18)
6. Place completed valve into a vacuum relief valve box with thread protector and label box with part number.

