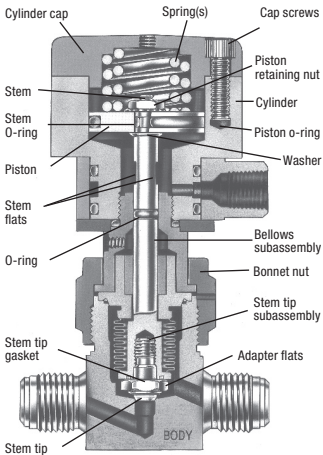


BN Series Pneumatically Actuated Bellows Valve (1 Series)

Bellows Subassembly & Stem Tip Subassembly Replacement Instructions



Normally closed (1c) model

Valve Disassembly – All Models

Note: Components should be replaced as necessary. Non-reusable components are identified and must be discarded.

1. Relieve system pressure and air actuator pressure prior to disassembly.
2. Remove three **cap screws** from **cylinder cap** with a 9/64 in. hex wrench and remove **cap**.

⚠ CAUTION, Normally Closed Models
When screws are removed, spring force may cause cylinder cap to “pop up”.
Remove **springs**, normally closed model.

3. Unscrew **bonnet nut** using 1 1/8 in. open-ended wrench.
4. Remove **air actuator subassembly** from valve **body**. (Air actuator subassembly consists of all parts less body.)
5. While holding a 3/8 in. open-ended wrench on **adapter flats**, unscrew **piston retaining nut** with 11/32 in. socket wrench.

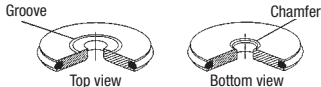
⚠ CAUTION, Normally Open Models
When piston retaining nut is removed, spring force may cause piston to “pop up”.

6. Remove **piston** and **piston O-ring**. Remove and discard **stem O-ring** and **washer**. Remove **spring**, normally open model.

7. Remove **bellows subassembly** from **air actuator subassembly**.
8. While holding a 3/16 in. open-ended wrench on **stem flats** of the **bellows subassembly**, unscrew **stem tip subassembly**.
9. Remove **stem tip gasket** from **bellows subassembly** and discard **gasket**.

Valve Reassembly – Normally Closed Models Only

1. Place new **stem tip gasket** into groove at bottom of **bellows subassembly**.
2. While holding a 3/16 in. open-ended wrench on **stem flats** of the **bellows subassembly**, thread **stem tip subassembly** into bottom of bellows subassembly and tighten to 35 in.·lb (4.0 N·m).
3. Lubricate **O-ring** on the **bellows subassembly** with silicone base lubricant.
4. Install **bellows subassembly** into **air actuator subassembly**.
5. Lubricate **cylinder bore** with silicone base lubricant.
6. Install **washer** over **stem** in the cylinder bore.
7. Lubricate **stem O-ring** with thin film of silicone-based lubricant. Install **stem O-ring** into groove on stem above **washer**.
8. Replace **piston O-ring** if it has been nicked or damaged during disassembly. If replacement is necessary, lubricate new **O-ring** with a thin film of silicone base lubricant prior to assembly.
9. With groove side of **piston** facing up and chamfer side of **piston** facing down, install **piston** on **stem** carefully sliding it over **stem O-ring**. (If piston has **no groove** and/or chamfer, either side may face down.)



10. While holding a 3/8 in. open-ended wrench on **adapter flats**, thread **piston retaining nut** onto **stem** and tighten to 25 in.·lb (2.8 N·m).
11. Install two **springs** into cylinder bore.
12. Assemble **cylinder cap** to **cylinder** with three **cap screws**. Tighten to 25 in.·lb (2.8 N·m).
13. Place complete **air actuator subassembly** into valve **body**. Keep **body** and **air actuator subassembly** in the vertical position through Step 14.
14. Push down on **air actuator subassembly** until **stem tip** seats in **body**. While holding down subassembly, thread **bonnet nut** onto **body**. Hold **body** and **air actuator subassembly** stationary, and tighten **bonnet nut** to 500 in.·lb (56.5 N·m).
15. Test valve and air actuator to ensure proper operation and seal integrity.

Valve Reassembly – Normally Open & Double Acting Models

1. Follow steps 1 through 5 for normally closed models.
2. Place **spring** into cylinder bore, normally open models.
3. Install **washer** over **stem** in the cylinder bore.
4. Follow steps 7 through 10 for normally closed models.
5. Before assembling **cylinder cap** to **cylinder**, place complete **air actuator assembly** into valve **body**. Keep **body** and **air actuator subassembly** in the vertical position through Step 6.
6. Push down on the **piston** within the **air actuator subassembly** until **stem tip** seats in **body**. While holding down subassembly, thread **bonnet nut** onto **body**. Hold **body** and **air actuator subassembly** stationary, and tighten **bonnet nut** to 500 in.·lb (56.5 N·m).
7. Assemble **cylinder cap** to **cylinder** with three **cap screws**. Tighten to 25 in.·lb (2.8 N·m).
8. Test valve and air actuator to ensure proper operation and seal integrity.

Translations available on
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