Swagelok

C and CA Series Check Valves
Springs, O-Rings, and Gaskets
Maintenance Instructions

Tools Required

Open-end Wrench		
Crow's Foot		
Valve	**Size in.**	**Part**
CA	5/8	
2C, 2C2, 2C4, 4C, 4C1, 4C2, 4C-VCR, 6C-MM	5/8	
4C4	3/4	
6C, 6C2, 6C4, 8C, 8C2, 8C-MM 10C-MM, 12C-MM	7/8	Inlet and outlet body hex
8C-VCR	15/16	
8C4	1 1/16	
12C, 12C2, 12C4	1 1/4	
16C	1 3/8	
12C-VCR, 16C2, 16C4, 16C-VCR	1 5/8	
CA	9/16	Center body hex

Hex Wrench		
Valve	**Size in.**	**Part**
CA	5/32	Locking screw, adjusting screw

Tools Required

Torque Wrench

Valve	Capable of:
CA	150 in.-lb (17.0 N·m)
2C, 4C, 6C-MM	100 in.-lb (11.3 N·m)
6C, 8C, 8C-MM, 10C-MM, 12C-MM	200 in.-lb (22.6 N·m)
12C, 16C	700 in.-lb (79.1 N·m)

⚠ **WARNING**
Before servicing any valve, you must
- depressurize system
- cycle valve
- purge valve

⚠ **WARNING**
Residual material may be left in the valve and system.

⚠ Do not scratch any internal surfaces while following these instructions. Valve performance could be affected.

Definition of Symbols

Discard
if replacing with new component

Lubricate
with system compatible lubricant

C Series Check Valves
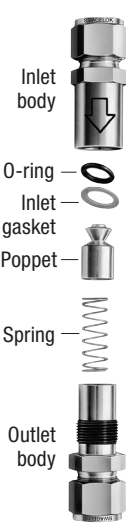
Spring Kit

Spring

Labels (2)
10 PSI

O-Ring Kit
O-ring

Gasket Kit
Inlet gasket

Exploded View

Inlet body
O-ring
Inlet gasket
Poppet
Spring
Outlet body

Disassembly

1.

Inlet body
Outlet body

2.

Inlet body   Existing gasket   Poppet   Existing spring   Outlet body
Existing O-ring

3. Make sure all components are clean.

Reassembly

1.

Inlet body   O-ring

2.

Poppet   Spring   Outlet body

3. Lubricate the top edge of the **poppet** where O-ring seats, except SC-11 cleaned valves.

Poppet

4. *Valves with gasket:* Lubricate **inlet gasket**, except SC-11 cleaned valves.

Inlet gasket

5. *6C, 8C, 10C series valves:* Place the flared portion of the **inlet gasket** facing the **nose of poppet**.

Nose of poppet   Inlet gasket
Flare

12C, 16C series valves: Place the **inlet gasket** on top of the O-ring in the **inlet body** bore.

Inlet body   Inlet gasket

6.

Inlet body   Outlet body

7. Tighten the **outlet body** according to torque values in table.

Inlet body   Outlet body
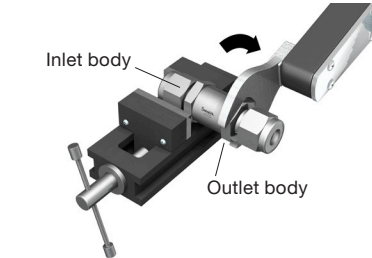
Valve	Valve Material	Torque Value in.-lb (N·m)
2C, 4C, 3C 6C-MM	All	100 (11.3)
6C, 8C, 8C-MM 10C-MM 12C-MM	Brass	150 (17.0)
	All other	200 (22.6)
12C 16C	Brass	350 (39.6)
	All other	700 (79.1)

⚠ There shoud be an external gap between body pieces. Do not overtighten.

8. Test product prior to installation in the system.

9. Attach the new label to the **inlet body**.

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10. Install the valve while holding the **hex** closest to the **valve end being installed**.

Valve end being installed
Hex
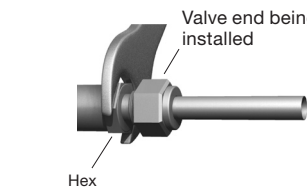
CA Series

Spring Kit
Spring

Label (2)
3 to 50 PSI

O-Ring Kit
O-ring

Gasket Kit
Inlet gasket
Outlet gasket

Exploded View

Inlet body
Inlet gasket
Insert
O-ring
Poppet
Spring
Center body
Locking screw
Adjusting screw
Outlet gasket
Outlet body

Disassembly

1. Loosen the **locking screw**.

Locking screw
Outlet body   Inlet body

2. Slide the hex wrench down into the **adjusting screw** and loosen.

Adjusting screw
Outlet body   Inlet body

Note: Do not remove the **locking screw** or the **adjusting screw**.

3. Remove the **inlet body** and **outlet body.**

Inlet body   Outlet body
Center body
Hold stationary.

4.

Inlet body   Existing inlet gasket   Existing outlet gasket   Outlet body

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5.

Insert   Poppet   Existing Spring   Center body
Existing O-ring   Inlet side   Outlet side

6. Make sure all components are clean.

Reassembly

1. Lubricate the **O-ring** and install it on the **insert**. *Note: PTFE O-rings require factory assembly.*

O-ring
Insert

2.

Insert with O-ring   Poppet   Spring   Center body
Inlet side   Outlet side

3.

Inlet body   Inlet gasket

4.

⚠ The inlet gasket is smaller than the outlet gasket.

4.

Inlet body   Center body

5.

Outlet gasket   Outlet body

6.

Center body   Outlet body

7. Tighten the **inlet body** then **outlet body** according to torque values in the table.

Inlet body   Center body
Hold stationary.

Center body
Hold stationary.
Outlet body

Valve Material	Torque Value in.-lb (N·m)
Brass	85 (9.6)
All other	150 (17.0)

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8. Turn the **adjusting screw** clockwise to increase the cracking pressure; counter-clockwise to decrease cracking pressure.

Adjusting screw
Outlet body   Inlet body

9. Slide the hex wrench back up into the **locking screw** and turn clockwise to lock.

Locking screw
Outlet body   Inlet body

10. Test the product prior to installation in the system.

11. Attach the new label to the **center body**.

12. Install the valve while holding the **hex** closest to the **valve end being installed**.

Valve end being installed
Hex

Translations available on **www.swagelok.com**
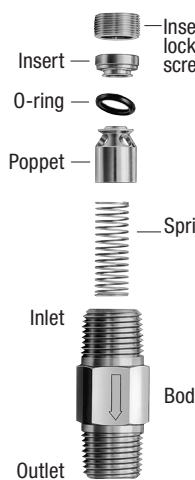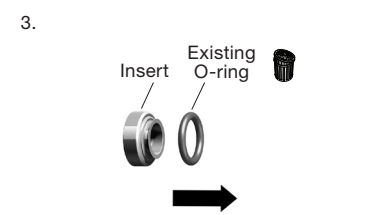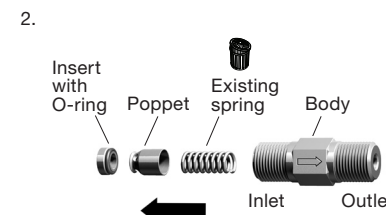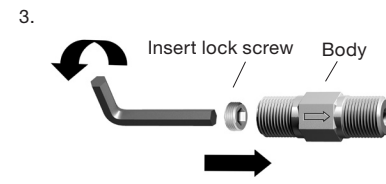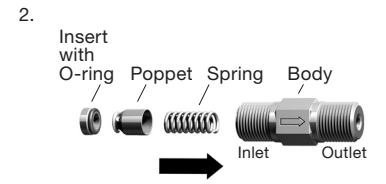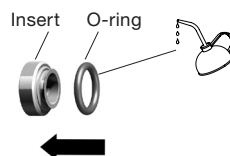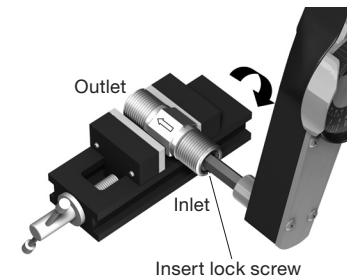
Swagelok

CP and CPA Series Pipe-Ended Check Valves

Springs, O-Rings, and Gaskets Maintenance Instructions

Tools Required

Hex Wrench

Valve Series	Size in.	Part
4CPA	5/32	Locking screw, adjusting screw
8CPA	5/16	Locking screw, adjusting screw

Hex Bit Socket

Valve Series	Size in.	Part
4CP, 4CPA	3/16	Insert lock screw
8CP, 8CPA	3/8	Insert lock screw

Torque Wrench

Valve Series	Capable of:
4CP, 4CPA	85 in.·lb (9.6 N·m)
8CP, 8CPA	300 in.·lb (33.9 N·m)

⚠ **WARNING**
Before servicing any valve, you must
- depressurize system
- cycle valve
- purge valve

⚠ **WARNING**
Residual material may be left in the valve and system.

⚠ Do not scratch any internal surfaces while following these instructions. Valve performance could be affected.

Definition of Symbols

Discard
if replacing with new component

Lubricate
with system compatible lubricant

CP Series

Spring Kit

Spring

Label (2)
[25 PSI]

O-Ring Kit

0-ring

Exploded View

Insert lock screw
Insert
0-ring
Poppet
Spring
Inlet
Body
Outlet

Disassembly

1.

Body
Outlet
Insert lock screw
Inlet

2.

Insert with O-ring
Poppet
Existing spring
Body
Inlet
Outlet

3.

Insert
Existing O-ring
Insert lock screw

4. Make sure all components are clean.

Reassembly

1. Lubricate the **O-ring** and install it on the **insert**. *Note: PTFE O-rings require factory assembly.*

Insert
O-ring

2.

Insert with O-ring
Poppet
Spring
Body
Inlet
Outlet

3.

Insert lock screw
Body

4. Tighten the **insert lock screw** according to the table.

Outlet
Inlet
Insert lock screw
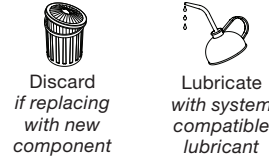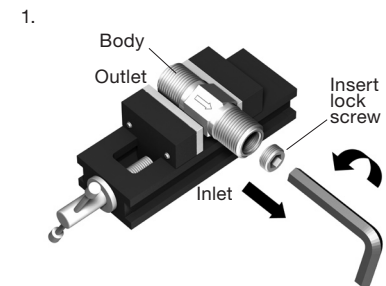
Valve Series	Valve Material	Torque Value in.·lb (N·m)
4CP	Brass	45 (5.1)
4CP	All other	85 (9.6)
8CP	Brass	100 (11.3)
8CP	All other	300 (33.9)

5. Test product prior to installation in the system.
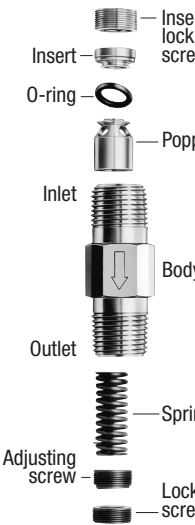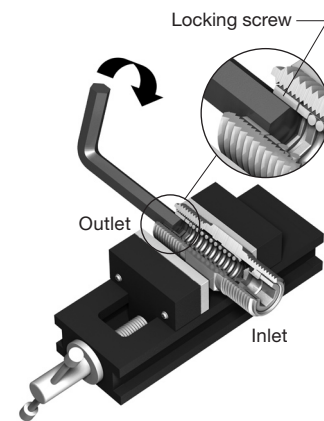6. Attach the new label to the **body** hex.
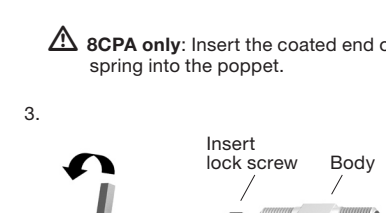
CPA Series

Spring Kit

Spring

Label (2)
[50 to 150 PSI]

O-Ring Kit

0-ring

Exploded View

Insert lock screw
Insert
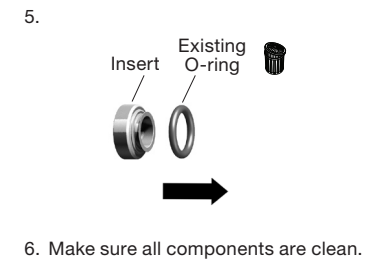0-ring
Poppet
Inlet
Body
Outlet
Spring
Adjusting screw
Locking screw

Disassembly

1. Loosen the **locking screw**.

Locking screw
Outlet
Inlet

2. Slide the hex wrench down into the **adjusting screw** and loosen.

Adjusting screw
Outlet
Inlet

3.

Body
Outlet
Insert lock screw
Inlet

4.

Insert
Poppet
Existing spring
Body
Inlet
Outlet

5.

Insert
Existing O-ring

6. Make sure all components are clean.

Reassembly

1. Lubricate the **O-ring** and install on the **insert**. *Note: PTFE O-rings require factory assembly.*

Insert
O-ring

2.

Insert with O-ring
Poppet
Spring
Body
Inlet
Outlet

⚠ **8CPA only**: Insert the coated end of spring into the poppet.

3.

Insert lock screw
Body
Inlet
Outlet

4. Tighten the **insert lock screw** according to the table.

Outlet
Inlet
Insert lock screw
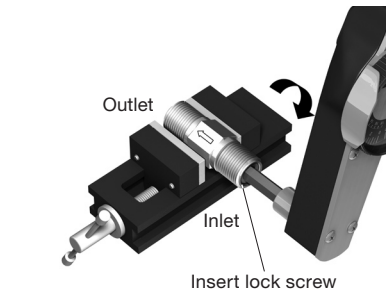
Valve Series	Valve Material	Torque Value in.·lb (N·m)
4CPA	Brass	45 (5.1)
4CPA	All other	85 (9.6)
8CPA	Brass	100 (11.3)
8CPA	All other	300 (33.9)

5. Turn the **adjusting screw** clockwise to increase the cracking pressure; counter-clockwise to decrease cracking pressure.

Adjusting screw
Outlet
Inlet

6. Slide the hex wrench back up into the **locking screw** and turn clockwise to lock.

Adjusting screw
Locking screw
Outlet
Inlet
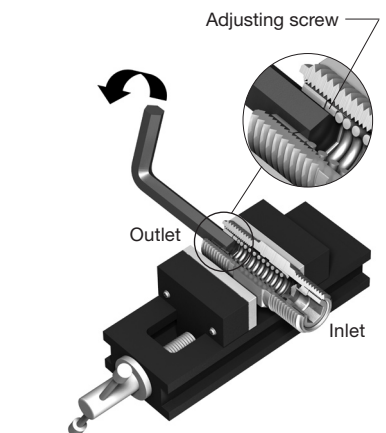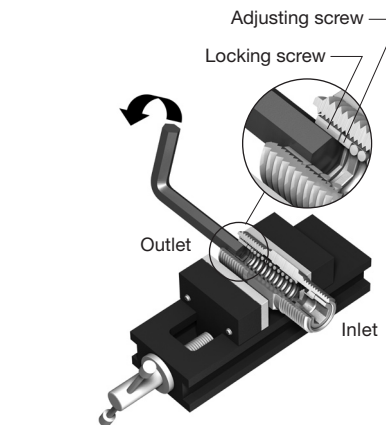
7. Test product prior to installation in the system.
8. Attach the new label to the **body** hex.