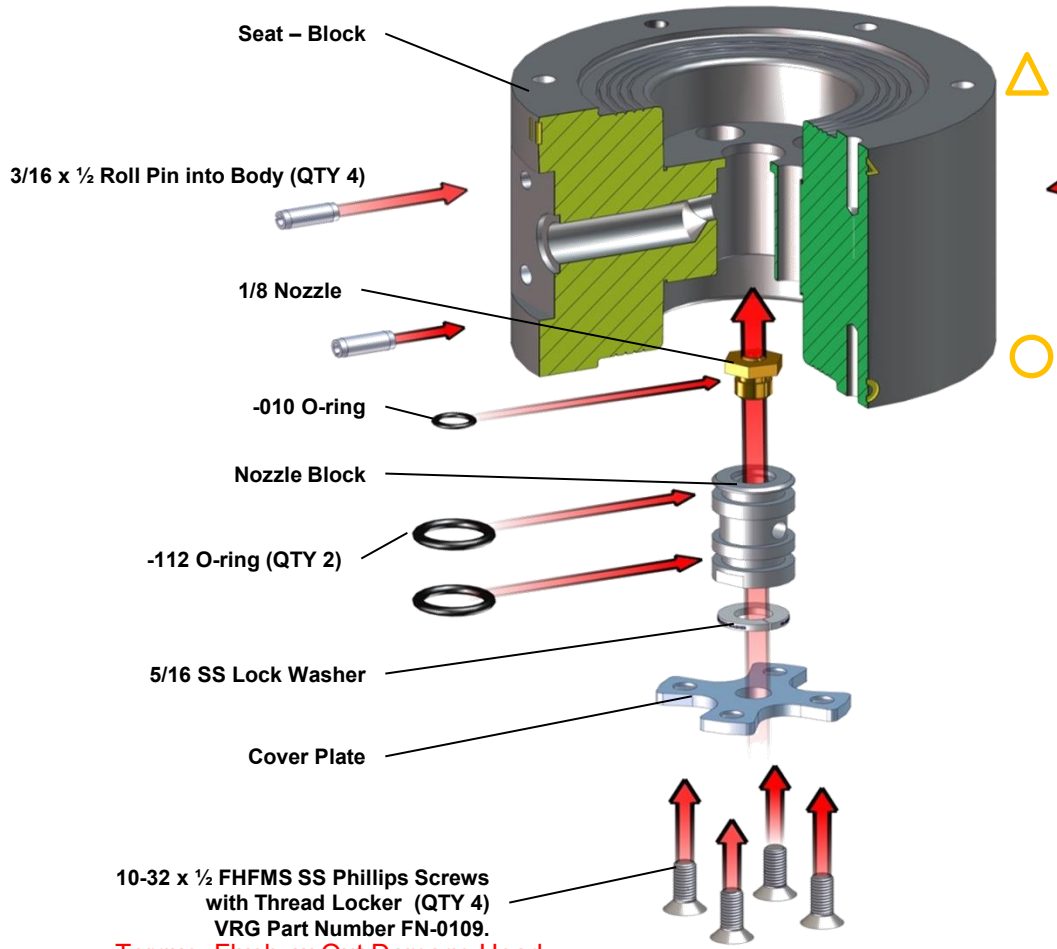




VPC-DA-SN Pilot Blank Assembly Instructions

REV 120325 - UPDATE FASTENER TORQUE SPECS

Install Nozzle Block into Seat Block Assembly

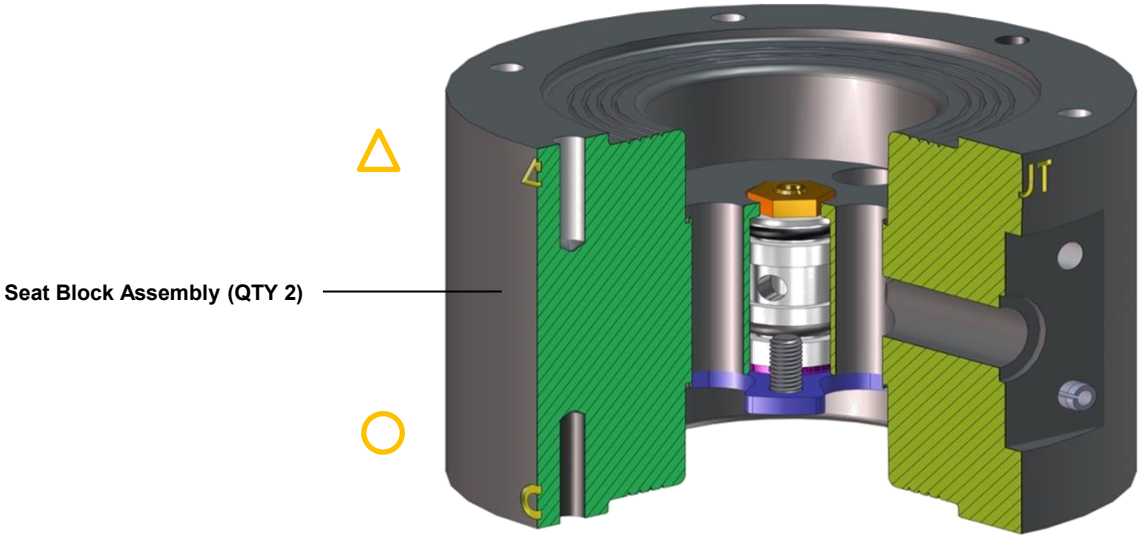


Instructions:

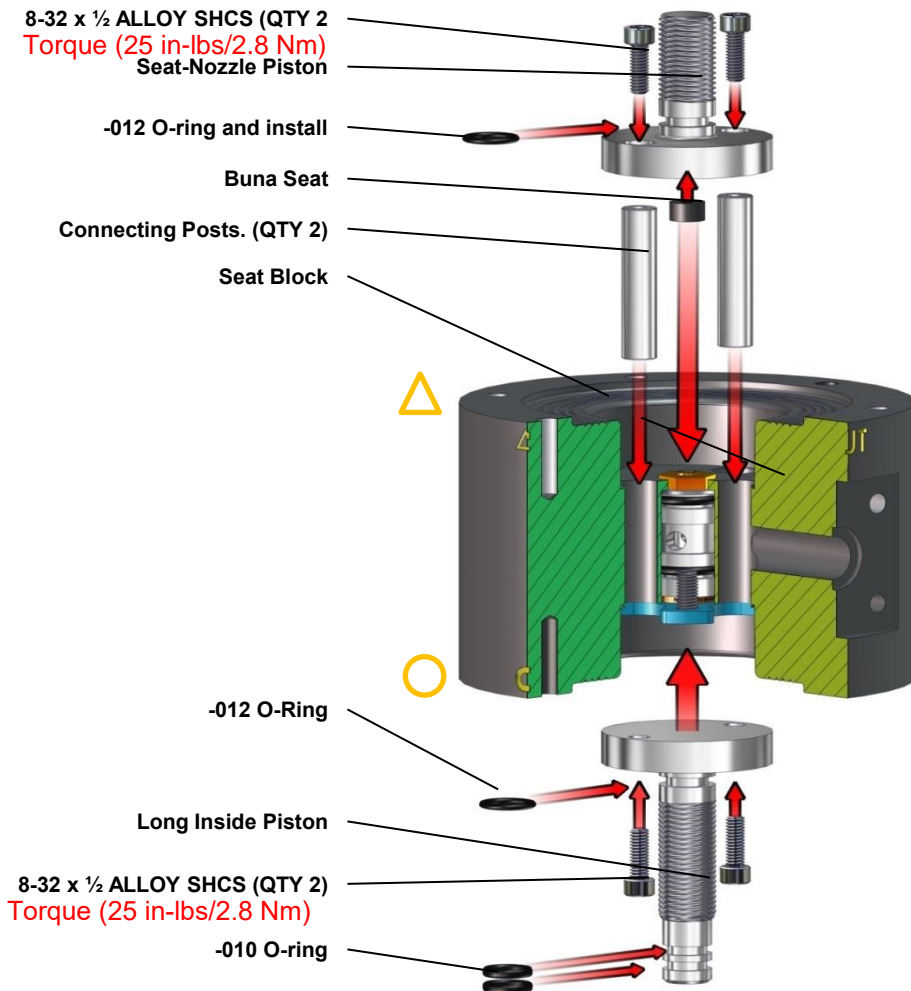
1. Insert 3/16 x 1/2 Roll Pins into Seat Block
2. Lubricate -010 O-ring and install on 1/8 Nozzle
3. Lubricate -112 O-rings and install on Nozzle Block
4. Combine Nozzle Block, 5/16 SS Lock Washer and Cover Plate and push assembly into bore of Body.
5. Insert 10-32 x 1/2 FHFMS SS Phillips Screws with Thread Locker into bottom of Body and tighten.

RECOMMENDED LUBRICANT: Mobilith SHC 220

10-32 x 1/2 FHFMS SS Phillips Screws with Thread Locker (QTY 4) VRG Part Number FN-0109.
Torque: Flush, w Out Damage Head



Install Pistons into Top Seat Block Assembly



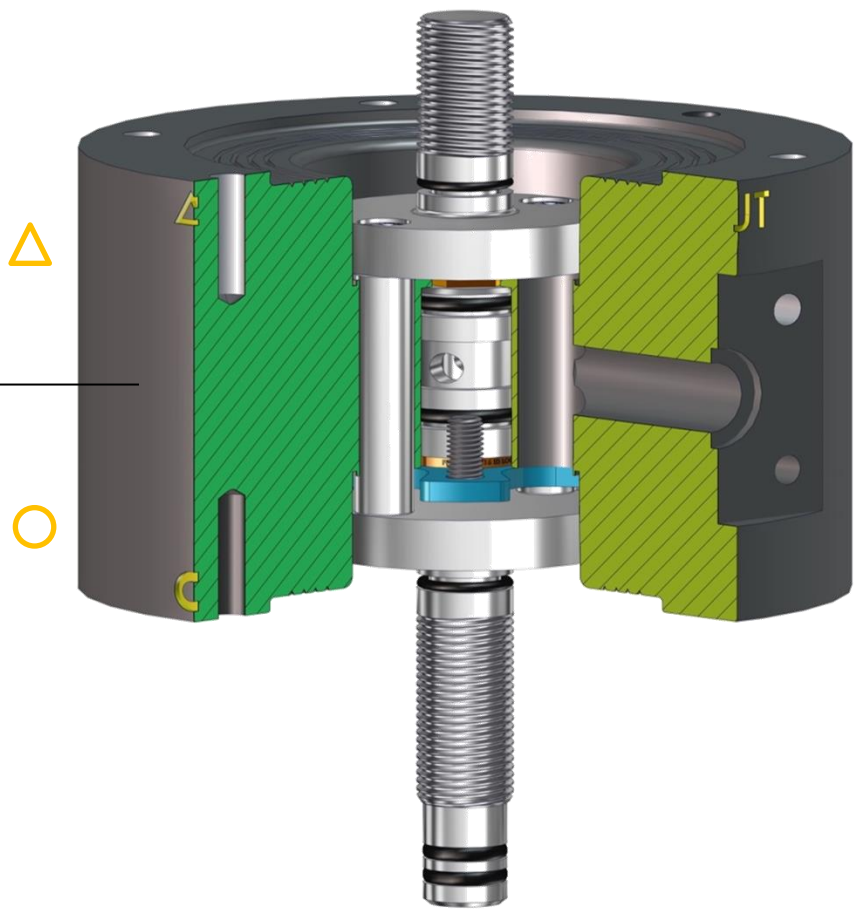
Instructions:

1. Lubricate -012 O-ring and install on Seat-Nozzle Piston
2. Insert Buna Seat into Seat-Nozzle Piston and press firmly so that it fully engages and is level with Piston surface.
3. Lubricate -010 O-rings and install on Long Inside Piston
4. Lubricate -012 O-ring and install on Long Inside Piston
5. Install 8-32 x 1/2 ALLOY SHCS through Seat-Nozzle Piston and install Connecting Posts. Insert assembly into Body.
6. Install 8-32 x 1/2 ALLOY SHCS through Long Inside Piston and tighten to Connecting Posts already inserted through block assembly.

Top Seat Block Assembly with Pistons Installed



TOP Seat Block Assembly with
Pistons (QTY 1)



Install -700 Diaphragms on Top Seat Block Assembly



Torque (120 in-lbs/13.6 Nm)

1/2-20 Machined Nut

Piston Washer-700

-700 Diaphragm

Piston Washer-700

Seat Nozzle Piston



Long Inside Piston

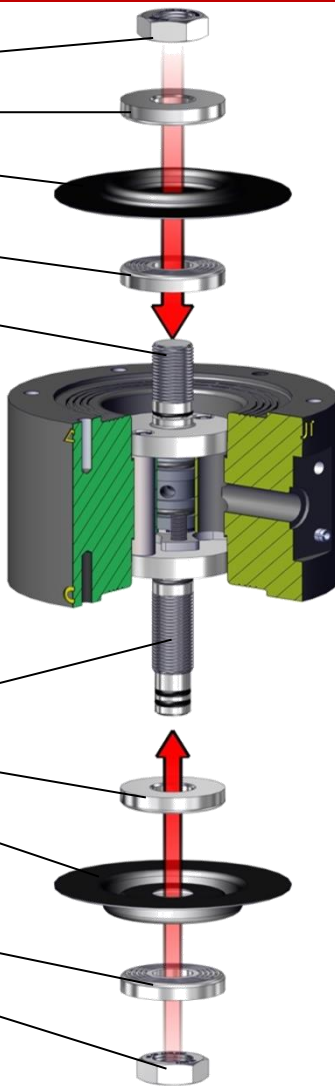
Piston Washer-700

-700 Diaphragm

Piston Washer-700

1/2-20 Machined Nut

Torque (120 in-lbs/13.6 Nm)



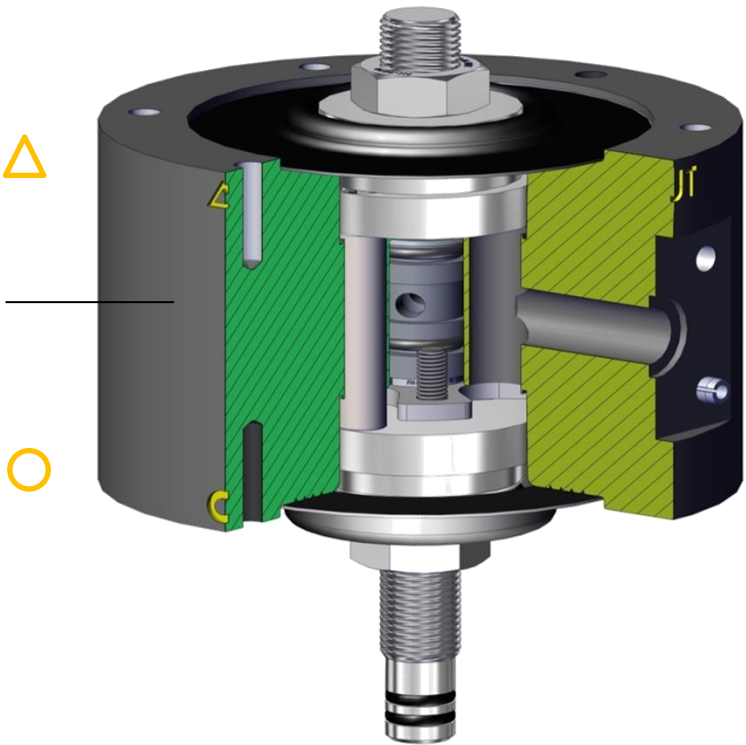
Instructions:

1. Apply Piston Washer-700 on Seat Nozzle Piston with serrations facing UP
2. Install -700 Diaphragm onto Seat Nozzle Piston with convolute facing UP
3. Install Piston Washer-700 on Seat Nozzle Piston with serrations facing DOWN
4. Install 1/2-20 Machined Nut onto Seat Nozzle Piston and torque to 120 in-lbs.
5. Apply Piston Washer-700 on Long Inside Piston with serrations facing DOWN
6. Install -700 Diaphragm onto Long Inside Piston with convolute facing DOWN
7. Apply Piston Washer-700 on Long Inside Piston with serrations facing UP
8. Install 1/2-20 SS Machined Nut onto Long Inside Piston and torque to 120 in-lbs.

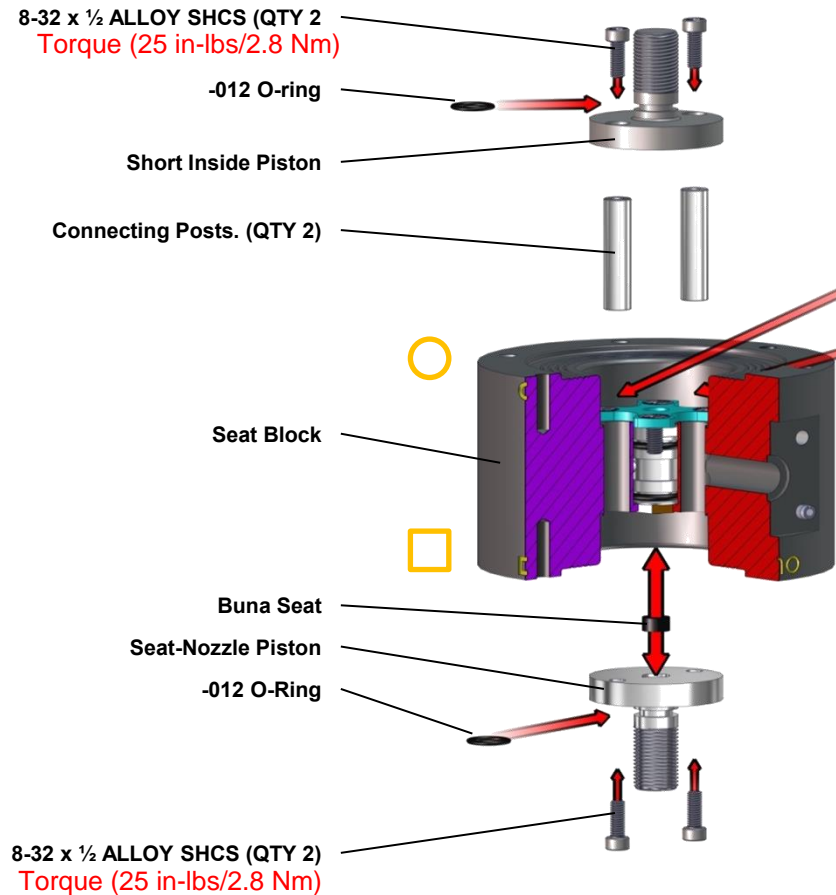
Top Seat Block Assembly with Diaphragms Installed



Top Seat Block Assembly with Diaphragms
Installed (QTY 1)



Install Pistons into Bottom Seat Block Assembly

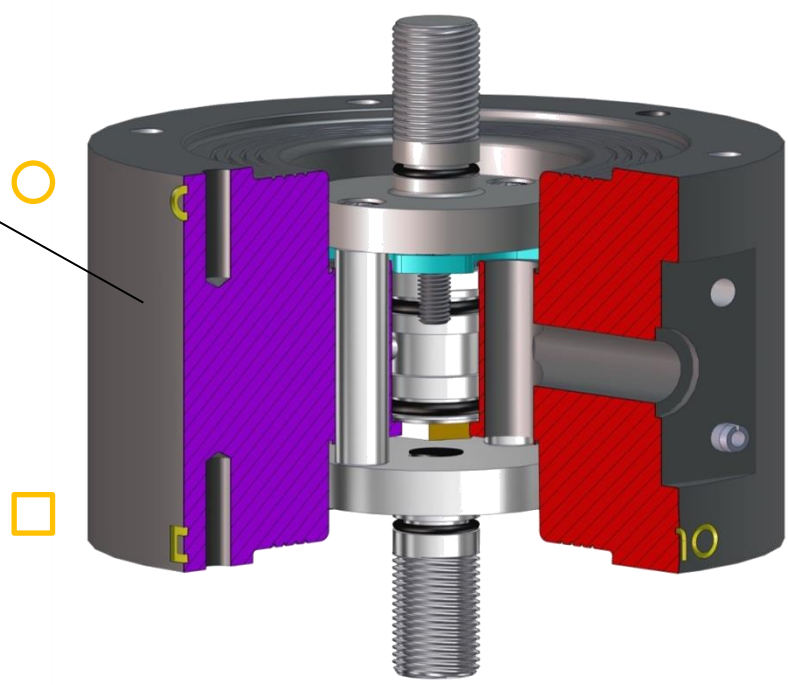


Instructions:

1. Lubricate -012 O-ring and install on Seat-Nozzle Piston
2. Insert Buna Seat into Seat-Nozzle Piston and press firmly so that it fully engages and is level with Piston surface.
3. Lubricate -012 O-ring and install on Short Inside Piston
4. Install 8-32 x 1/2 ALLOY SHCS through Seat-Nozzle Piston and install Connecting Posts. Insert assembly into Body.
5. Install 8-32 x 1/2 ALLOY SHCS through Short Inside Piston and tighten to Connecting Posts already inserted through block assembly.



Bottom Seat Block Assembly with
Pistons Installed (QTY 1)



Install -700 Diaphragms into Bottom Seat Block Assembly



Torque (120 in-lbs/13.6 Nm)

Inside Bearing Nut

Piston Washer-700

-700 Diaphragm

Piston Washer-700

Short Inside Piston

Seat Nozzle Piston

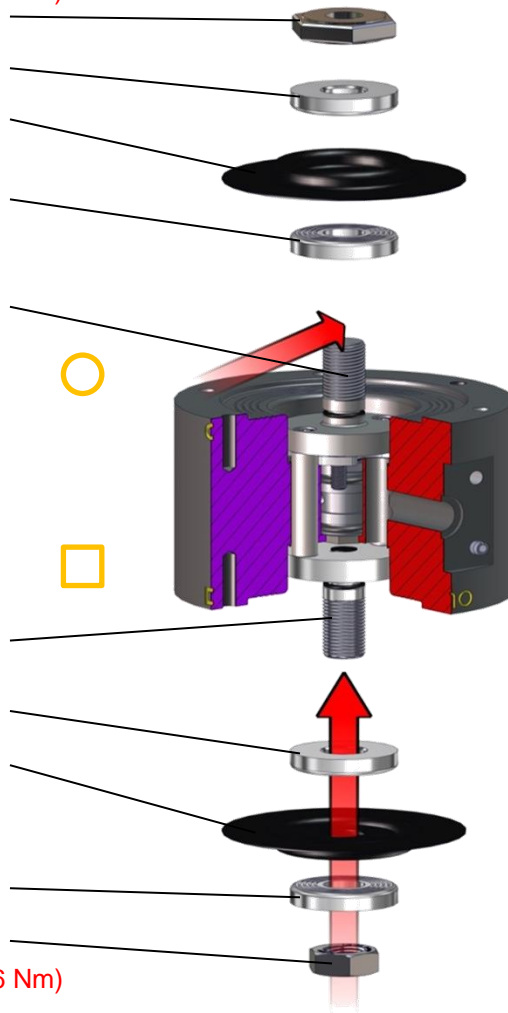
Piston Washer-700

-700 Diaphragm

Piston Washer-700

1/2-20 Machined Nut

Torque (120 in-lbs/13.6 Nm)



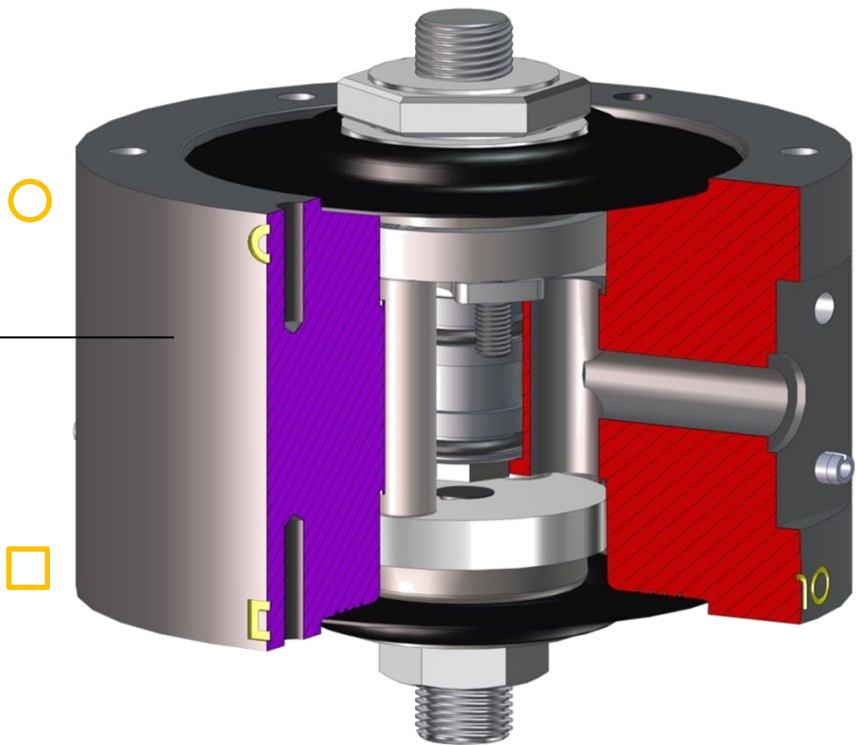
Instructions:

1. Apply Piston Washer-700 on Seat Nozzle Piston with serrations facing DOWN
2. Install -700 Diaphragm onto Seat Nozzle Piston with convolute facing DOWN
3. Install Piston Washer-700 on Seat Nozzle Piston with serrations facing UP
4. Install 1/2-20 Machined Nut onto Seat Nozzle Piston and torque to 120 in-lbs.
5. Apply Piston Washer-700 on Short Inside Piston with serrations facing UP
6. Install -700 Diaphragm onto Short Inside Piston with convolute facing UP
7. Apply Piston Washer-700 on Short Inside Piston with serrations facing DOWN
8. Install Inside Bearing Nut onto Short Inside Piston and torque to 120 in-lbs.

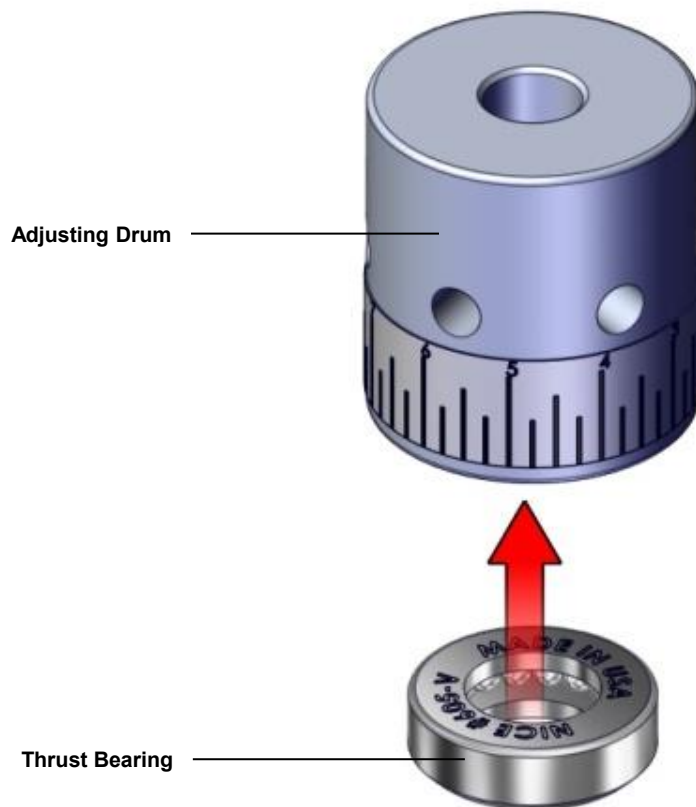
Bottom Seat Block Assembly with Diaphragms Installed



Bottom Seat Block Assembly with
Diaphragms Installed
(QTY 1)



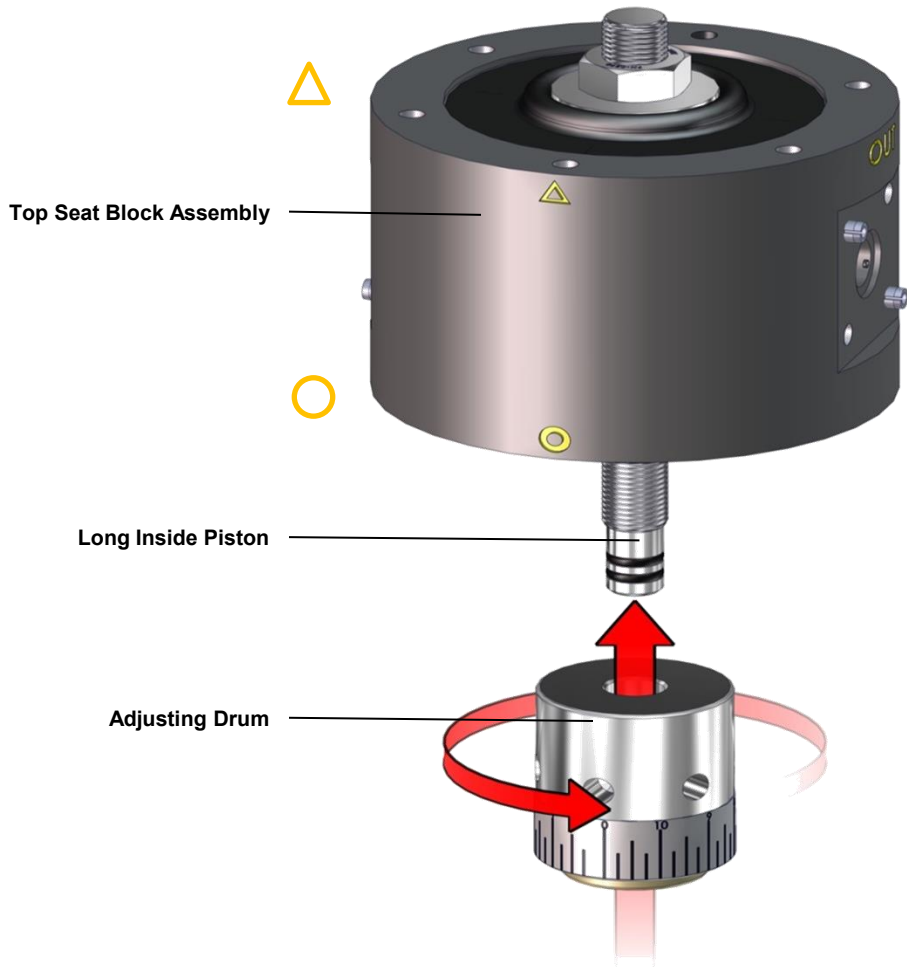
Install Thrust Bearing into Adjusting Drum



Instructions:

1. Press Thrust Bearing into Sensitivity Drum with stamped letters side first. Bearing case should fit snugly inside Adjusting Drum and bearing surface should face outward and rotate freely.
2. ATTENTION: The Thrust Bearing should fit completely down to inner surface of Adjusting Drum and should be level around perimeter to avoid slant or side load.
3. Lubricate inside threads of Adjusting Drum liberally

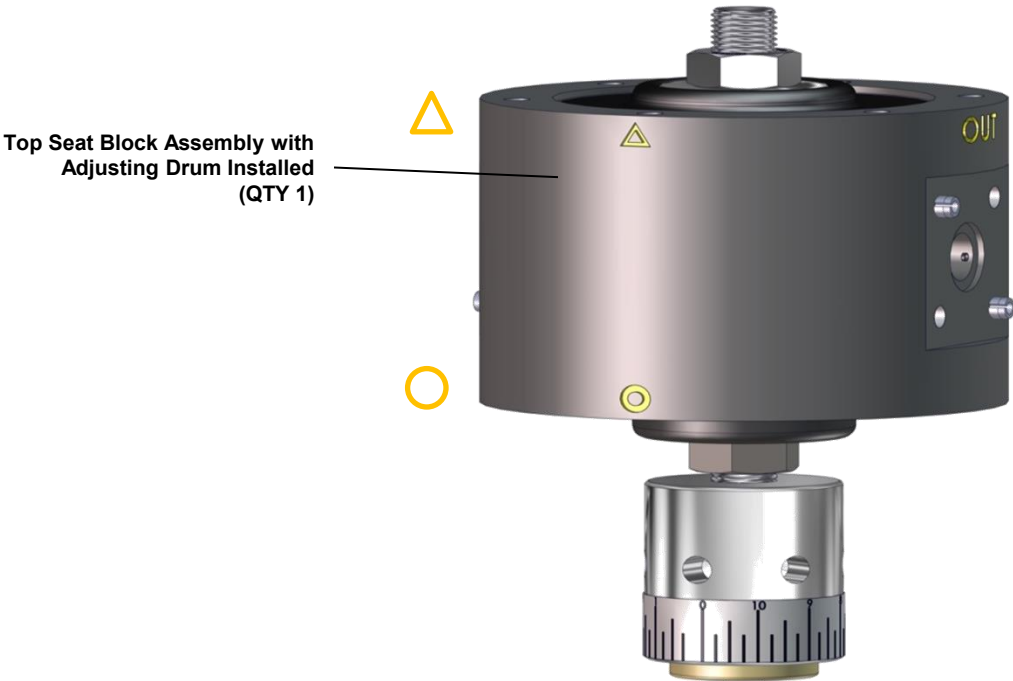
Install Adjusting Drum Onto Top Seat Block Assembly



Instructions:

1. Apply lubrication to Long Inside Piston
2. Install Adjusting Drum onto Top Seat Block Assembly by threading onto Long Inside Piston until it just bottoms out against ½-20 JAM Nut.
3. Rotate the Adjusting Drum so 1.5 turns of disengagement from Long Inside Piston

Top Seat Block Assembly with Adjusting Drum Installed

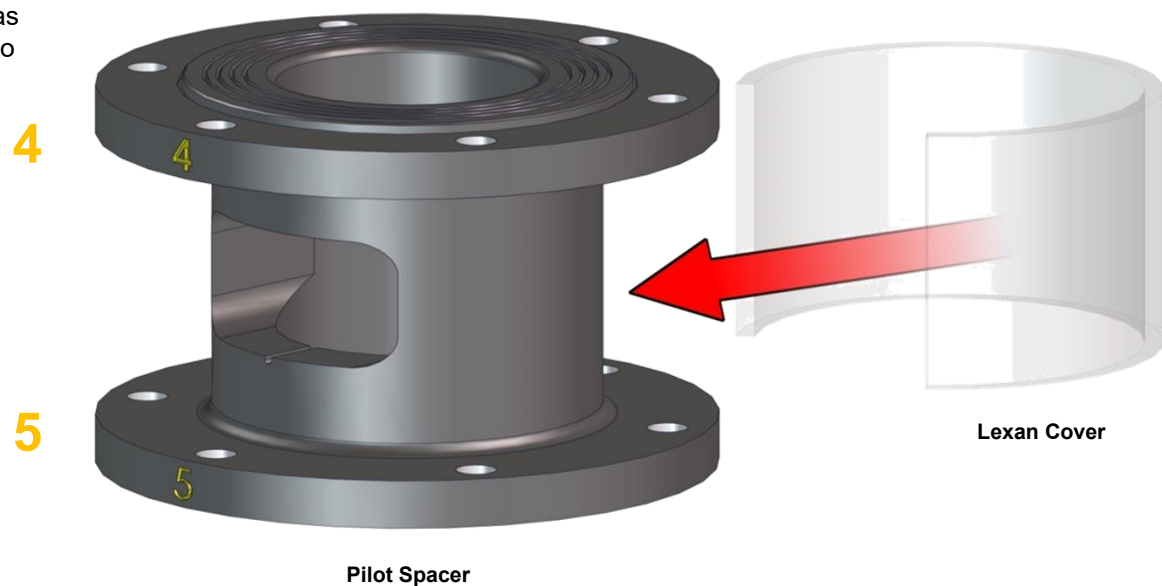


Install Lexan Spacer Cover onto Pilot Spacer

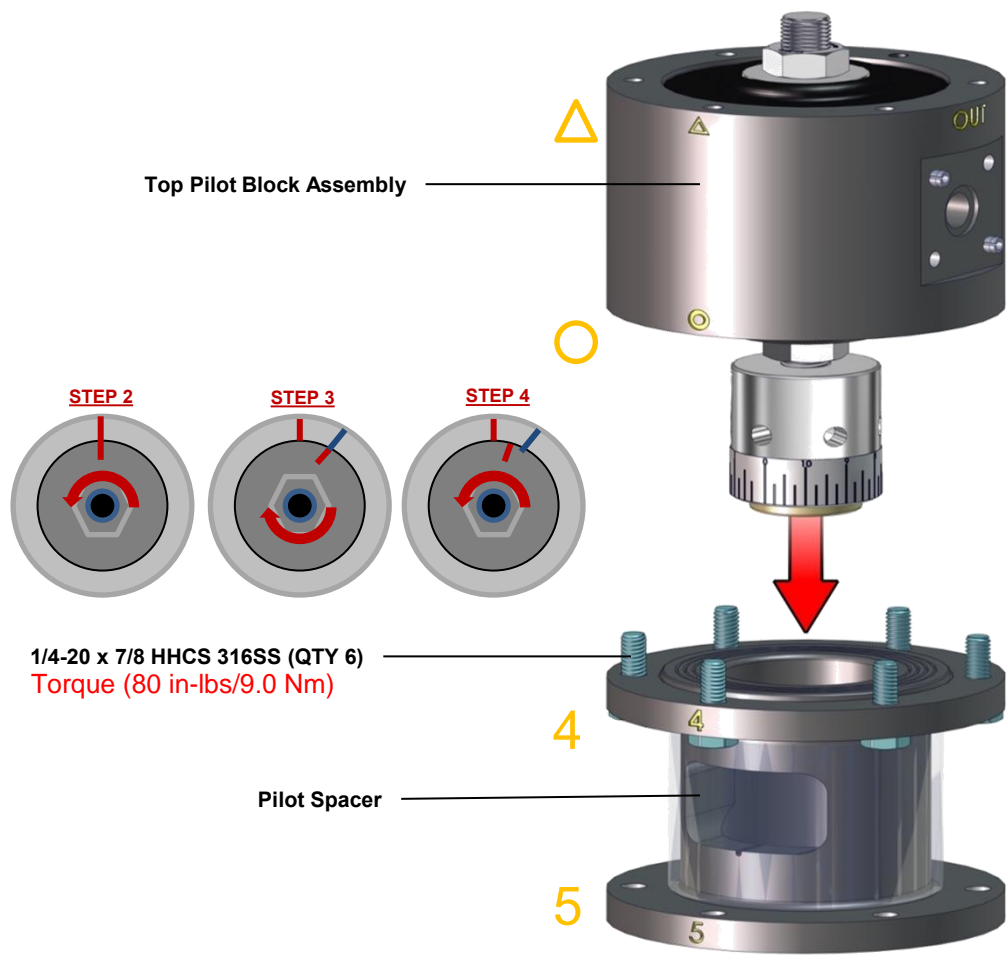


Instructions:

- 1. Install Lexan Spacer Cover onto Pilot Spacer as shown. Lexan Spacer Cover should “snap” into place without excessive force.



Install Pilot Spacer onto Top Pilot Block Assembly

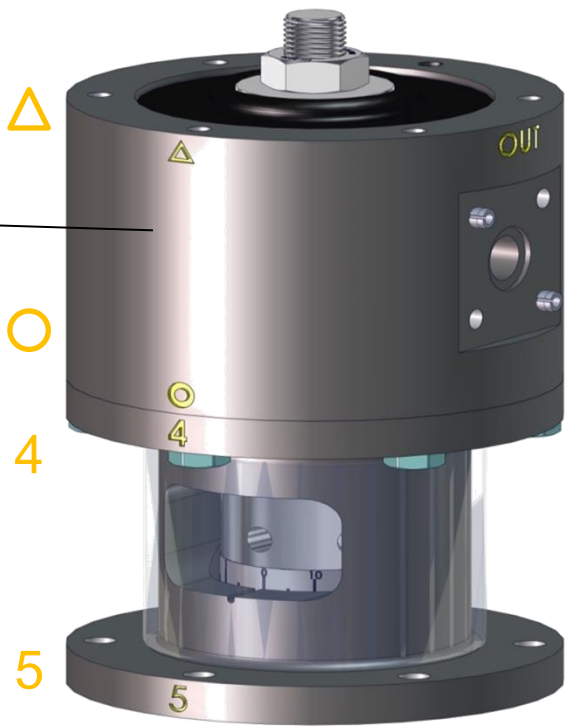


Instructions:

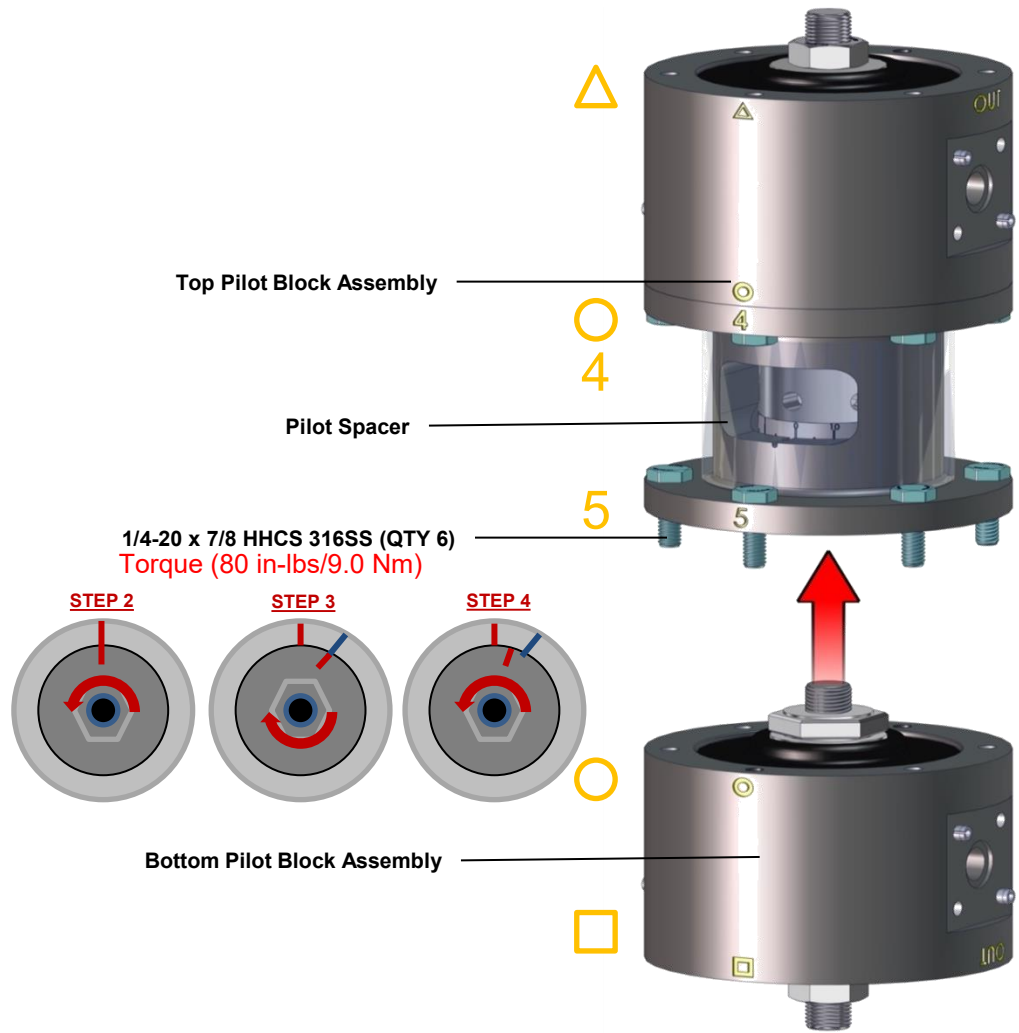
1. ATTENTION: Center Connecting Posts assemblies within Top Pilot Block Assembly as follows to avoid friction (rubbing):
2. Rotate diaphragm assemblies counterclockwise (CCW) until it stops & place a single pencil mark across the diaphragm and top surface of the Top Pilot Block Assembly.
3. Now Rotate diaphragm assemblies clockwise (CW) until it stops & place a single pencil mark extended from the first diaphragm mark across the top surface of the Top Pilot Block Assembly.
4. Now Rotate diaphragm assemblies counterclockwise (CCW) slightly until the single pencil mark on the diaphragm is approximately half way between the two (2) pencil marks on the top surface of the Top Pilot Block Assembly.
5. Keeping the diaphragms securely in centered positions, fasten the Top Pilot Block Assembly to the Pilot Spacer using 1/4-20 x 7/8 HHCS 316SS.
6. This will secure each diaphragm assembly and maintain it in "centered" position.
7. ATTENTION: Be certain to ALIGN VPC Identification Symbols appropriately as shown to ensure proper configuration.



Top Pilot Block Assembly with Pilot
Spacer Installed
(QTY 1)



Install Bottom Pilot Block Assembly

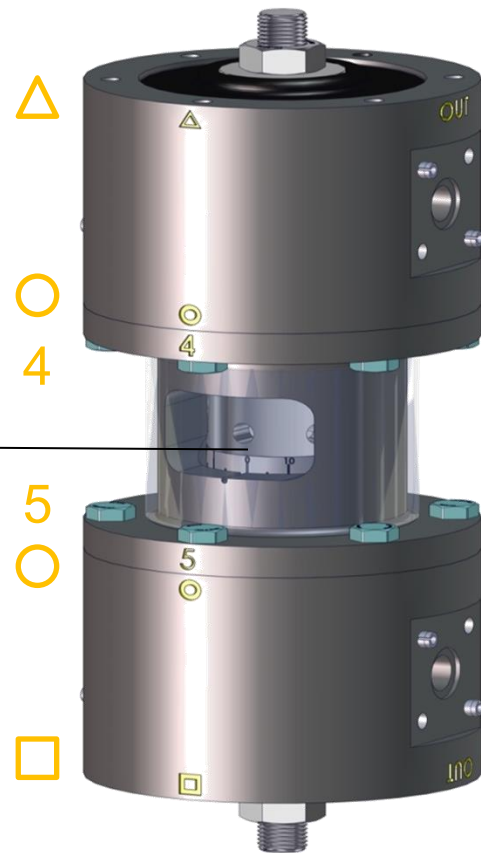


Instructions:

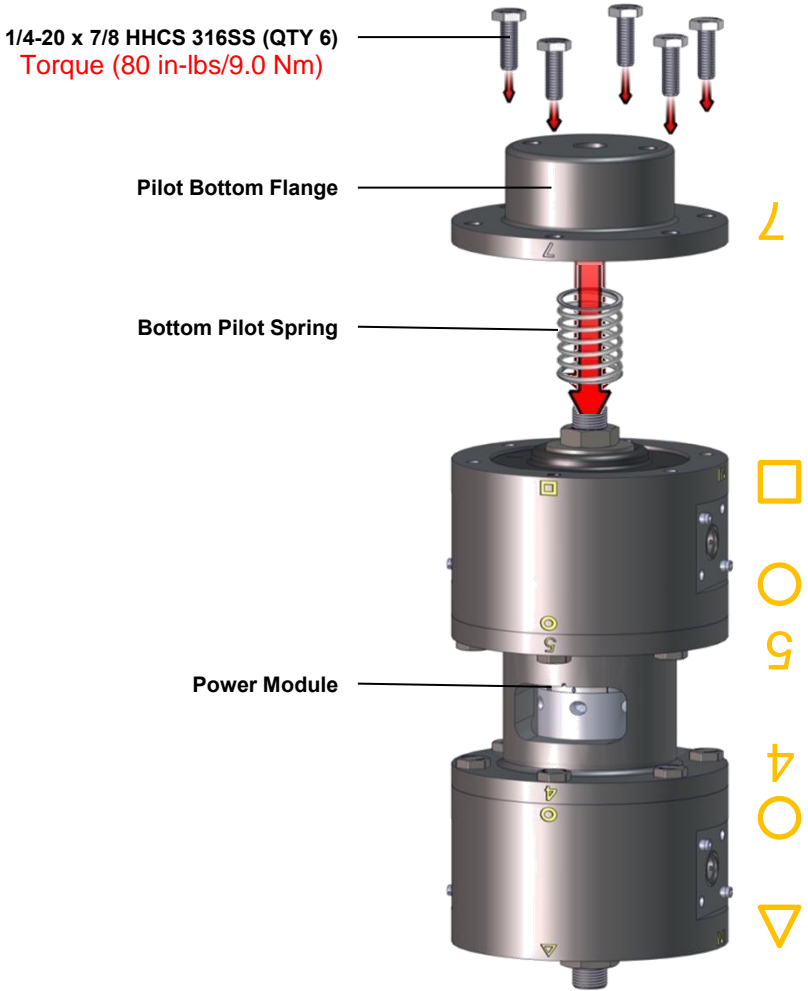
1. **ATTENTION:** Center Connecting Posts assemblies within Bottom Pilot Block Assemblies as follows to avoid friction (rubbing):
2. Rotate diaphragm assemblies counterclockwise (CCW) until it stops & place a single pencil mark across the diaphragm and top surface of the Bottom Pilot Block Assembly.
3. Now Rotate diaphragm assemblies clockwise (CW) until it stops & place a single pencil mark extended from the first diaphragm mark across the top surface of the Bottom Pilot Block Assembly.
4. Now Rotate diaphragm assemblies counterclockwise (CCW) slightly until the single pencil mark on the diaphragm is approximately half way between the two (2) pencil marks on the top surface of the Top Pilot Block Assembly.
5. Keeping the diaphragms securely in centered positions, fasten the Bottom Pilot Block Assembly to the Pilot Spacer using 1/4-20 x 7/8 HHCS 316SS.
6. This will secure each diaphragm assembly and maintain it in "centered" position.
7. **ATTENTION:** Be certain to ALIGN VPC Identification Symbols appropriately as shown to ensure proper configuration.



Power Module Assembly (QTY 1)



Install Pilot Bottom Flange onto Power Module Assembly



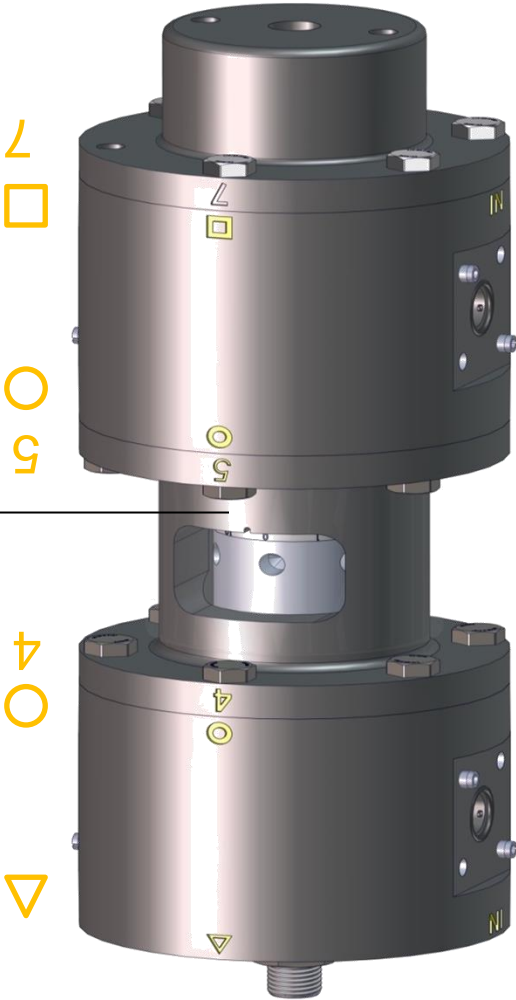
Instructions:

1. Flip the Power Module Assembly upside down and install Bottom Pilot Spring as shown onto threaded end of piston.
2. Lubricate Bottom Pilot Spring
3. Install Pilot Bottom Flange onto Power Module Assembly ensuring that Bottom Return Spring fits inside internal cavity of Pilot Bottom Flange.
4. Secure Pilot Bottom Flange with 1/4-20 x 7/8 HHCS 316SS.
5. ATTENTION: Be certain to ALIGN VPC Identification Symbols appropriately as shown to ensure proper configuration.

Power Module Assembly with Pilot Bottom Flange Installed



Power Module Assembly with Pilot
Bottom Flange Installed
(QTY 1)

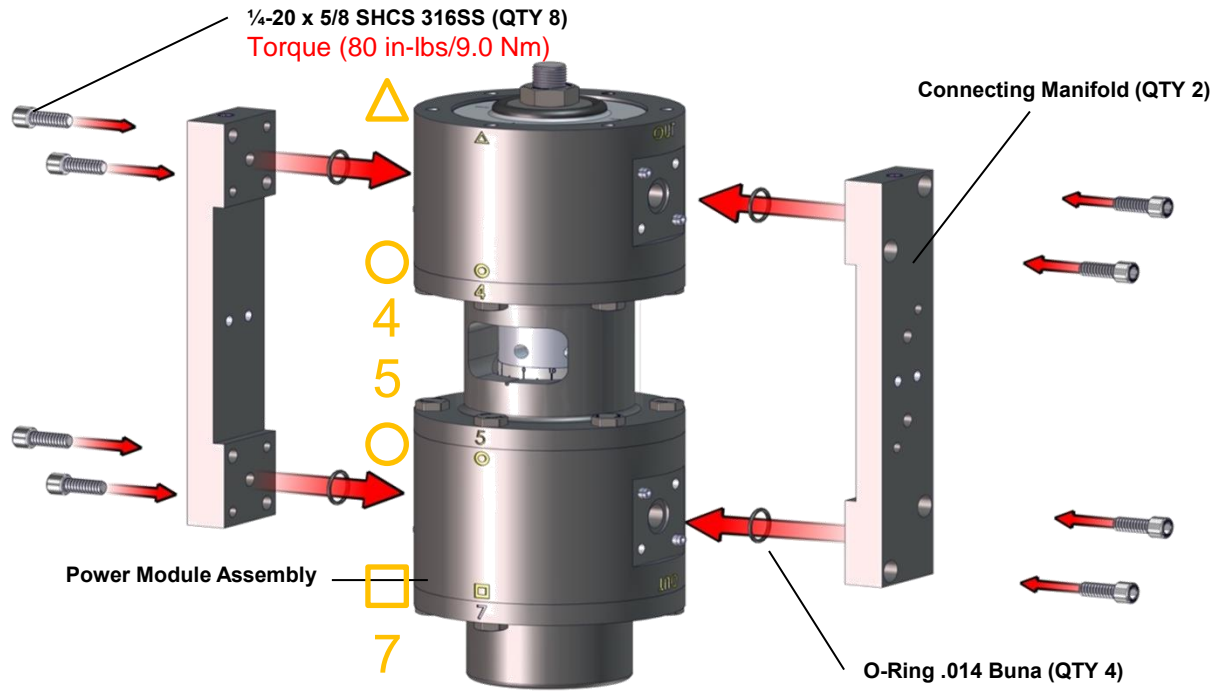


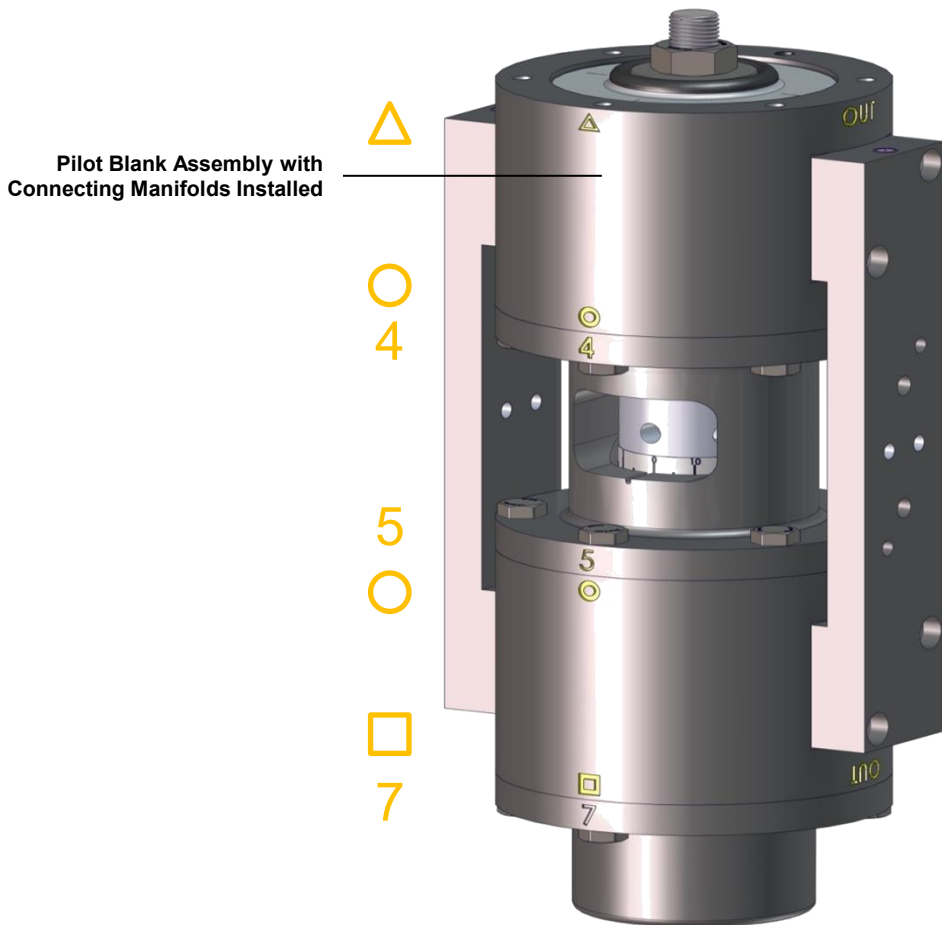
Install Connecting Manifolds to Power Module Assembly



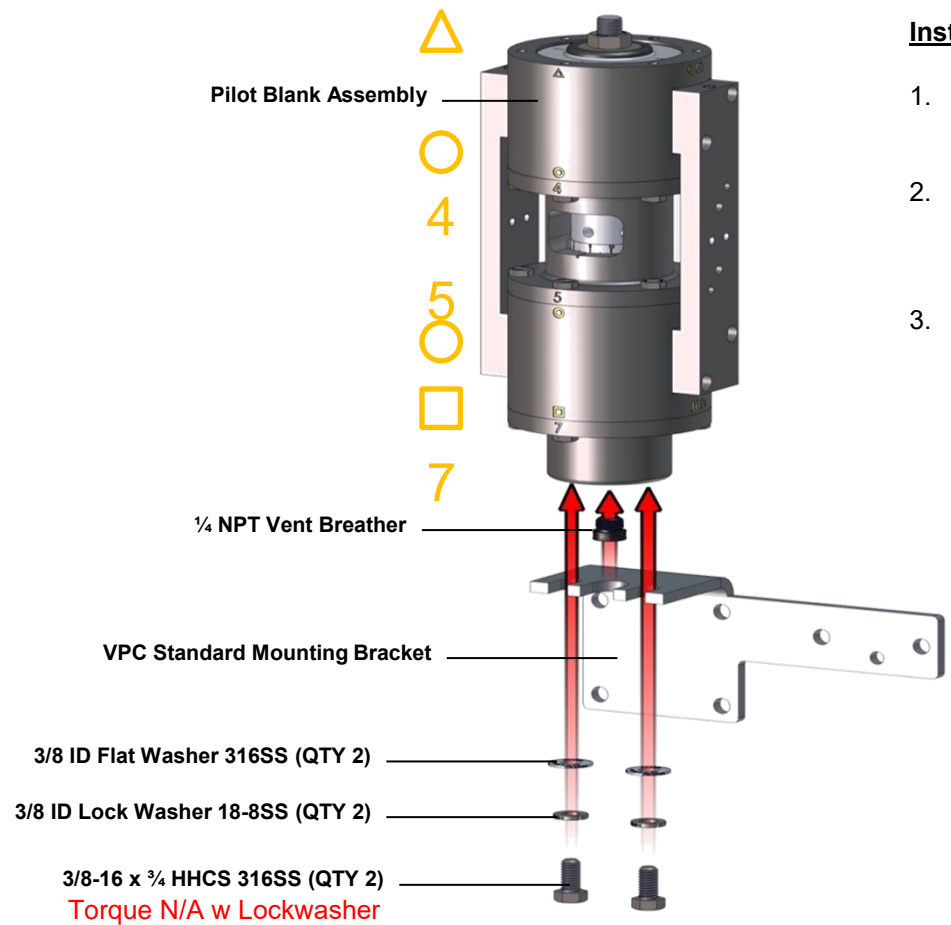
Instructions:

- 1. Apply thin film of lubricant to .014 O-Rings to facilitate assembly.
- 2. Adhere .014 O-Rings to cavities on either side of Power Module Assembly (QTY 4).
- 3. Install Connecting Manifolds (QTY 2) to Power Module Assembly using 1/4-20 5/8 SHCS (QTY 8).





Attach Pilot Blank Assembly to Mounting Bracket



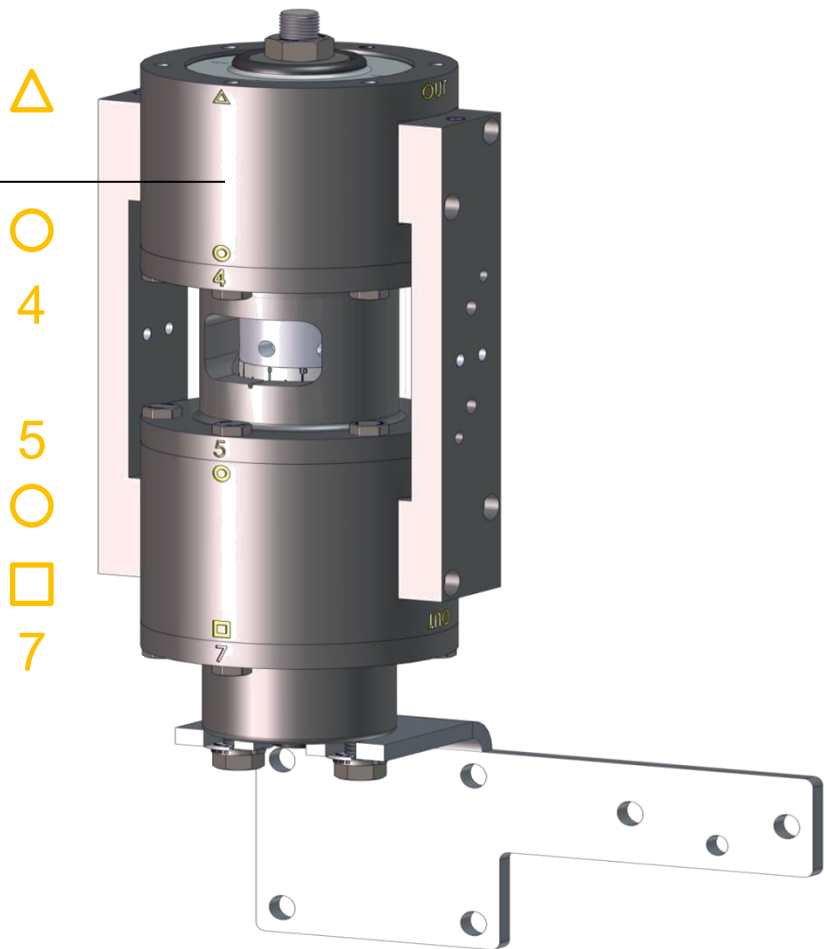
Instructions:

1. Install 1/4 NPT Vent Breather into NPT port on bottom of Pilot Blank Assembly.
2. Attach Pilot Blank Assembly to VPC Standard Mounting Bracket as shown using Flat Washers, Lock Washers and 3/8-16 x 3/4 HHCS.
3. Maintain Pilot Blank Assembly vertical position to ensure proper alignment of internal components

Pilot Blank Assembly Installed on Standard VPC Mounting Bracket



Pilot Blank Assembly Installed on
Standard VPC Mounting Bracket





Proceed to VPC-225-DA-SN

Proceed to VPC-700-DA-SN

Proceed to VPC-1500-DA-SN