



# SPECIAL ENGINEERING INSTRUCTIONS

DRAWN BY J. Saffin NO. II-PL-0010  
CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 1 OF 23  
APP. BY Sean Fay REVISION 0 RELEASE NO. 17-T-0202

REV.: F	ECN NO.: 20-01249	DRAWN: J. Saffin	CHK'D.: [Signature]	DATE: 16-DEC-20
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# INSTALLATION & OPERATION INSTRUCTIONS FOR BUCKLING PIN RELIEF VALVE TYPE BPCV

Sales Order No.: \_\_\_\_\_ Serial No.: \_\_\_\_\_

Size: \_\_\_\_\_ Tag No.: \_\_\_\_\_

Valve Assembly No.: \_\_\_\_\_

Created by: \_\_\_\_\_ Approved by: \_\_\_\_\_ Date: \_\_\_\_\_ Rev: \_\_\_\_\_



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## Buckling Pin Relief Valve Type BPCV



BPCV Valve Arrangement

### US & INTERNATIONAL PATENTS PENDING

**Danger:** BPCV's are intended to provide a pressure relief opening. This BPCV is designed to instantaneously open at a specified temperature and pressure, thereby relieving excess pressure or preventing excessive vacuum in a system.

**IT IS IMPERATIVE THAT THIS BPCV BE PROPERLY INSTALLED AND SAFELY VENTED IN ORDER TO AVOID BODILY INJURY, DAMAGE TO PROPERTY, POLLUTION AND LOSS OF PRODUCT.**

BS&B Pressure Safety Management, L.L.C supplies BPCV's selected by their customers which are manufactured in reliance upon information and specifications supplied by the customer. BS&B Pressure Safety Management, L.L.C shall not be liable for any damage resulting from improper installation, improper system design, unsafe venting, or other factors beyond BS&B Pressure Safety Management, L.L.C control.



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## SAFETY PRECAUTIONS:

- Warning:** Do not locate the BPCV where personnel will be exposed to released product and pressure through the BPCV.
- Warning:** Changes to operating conditions, particularly pressure and temperature, may impact the BPCV performance and should be reviewed and approved by BS&B Pressure Safety Management, L.L.C.
- Warning:** Valve does not contain any user serviceable parts. Contact BS&B Pressure Safety Management, LLC to schedule service. User removal of the stamped lead seals voids the valve warranty.
- Caution:** Provide adequate support for the piping and the connections to absorb recoil/reaction forces when the BPCV opens. If the discharge is free vented, a baffle plate may be mounted downstream of the outlet companion pipe flange with extra length studs to minimize recoil.
- Caution:** Do not locate the BPCV where it may be subjected to thermal shock. Review any concerns with BS&B Pressure Safety Management, L.L.C. before installation.
- Caution:** The BPCV valve should not be subjected to bending stresses such as those developed by misaligned piping, unsupported piping or improper torque application to companion flange. Mating flange faces shall be parallel to BPCV flanges.
- Caution:** Use of this Safety Device for other than the service conditions specified that was previously agreed with BS&B Pressure Safety Management, L.L.C shall void the warranty.
- Caution:** Corrosion and process conditions may cause deterioration and necessitate periodic inspection and/or replacement of component parts.
- Caution:** When the BPCV opens a pressure shock wave is generated. Take account of the affect this may have on the operating performance of downstream equipment.
- Caution:** External icing of pin arrangement may affect the valve response to overpressure, consult BS&B Pressure Safety Management, L.L.C regarding use of trace heating or other mitigation method.
- Caution:** When BPCV is fitted with a sensor, it is the user's responsibility to ensure that local electrical Standards are complied with.
- Caution:** BPCV will be shipped with a Protective Screen Cover installed over the pin cage. It is the customer's responsibility to ensure this cover is re-installed after removal for any maintenance activities or pin installation/removal. Images shown here typically do not include the Protective Screen Cover simply so the customer can better see the valve components.



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## I. BPCV VALVE HANDLING, LIFTING AND INSPECTION INSTRUCTIONS

### Handling Instructions

1. Never lift or move the valve assembly using the Pin Cage Top, Pin cage column or Valve seat (bore) as lifting points.
2. Never lift or move the valve assembly by using the Sensor, or other attached accessories.
3. Valve should be handled gently and any rough handling of the valve should be avoided which could disturb the Valve settings.

### Lifting Instructions

1. All BPCVs are provided with lifting points built-in into its Main body as shown in Figure 1. The lifting points are through holes mounted on the sides of the valve body.

**DO NOT LIFT THE BPCV BY ATTACHING LIFTING EQUIPMENT TO OTHER LOCATIONS – THIS MAY DAMAGE THE VALVE; BS&B SHALL NOT BE RESPONSIBLE FOR SUCH DAMAGE**

2. Shouldered eye bolts shall be used whenever the chain or sling is rigged at an angle from the axis of the bolt. The eye bolt must be screwed into the valve until the shoulder fits flat and tight against the surface of the load. To make sure the eye bolt will not be bent sideways, the chain or sling must be in the plane of the eye of the eyebolt. To ensure that the shoulder is firmly seated on the surface of the valve when the eye has been correctly aligned with the chain of sling, a metal washer of suitable size and shape may be used under the shoulder. It is recommended that forged steel material be used for eye bolts.
3. Do not use shoulderless eye bolts unless the hoist chain or sling is aligned with the axis of the bolt, so that it pulls in exactly the same direction as the shaft of the bolt. The bolt must be fully screwed into place to accept the valve load. If the chain or sling pulls at an angle to the axis of the eye bolt, the bolt may snap. It is recommended that forged steel material be used for eye bolts.
4. In any situation where there is doubt about the safety of using eye bolts, it is recommended that swivel hoist rings be used instead of eye bolts. Follow supplier recommendations in selecting and using these rings.
5. Never over-torque a lifting device. Never use a lifting device that has bad threads. Never use a lifting device that is corroded, cracked, bent, twisted, stretched, fatigued, undersized, or questionable.
6. Never step under a lifted load, or move a load over personnel.



BS&B SAFETY SYSTEMS, L.L.C.

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## Lifting method for BPCV Valves - DO'S

### Part List Identification

- Item 1 – BPCV Main Body
- Item 2 – Lifting Points in Main Body
- Item 3 – Eye Bolts at Lifting Points

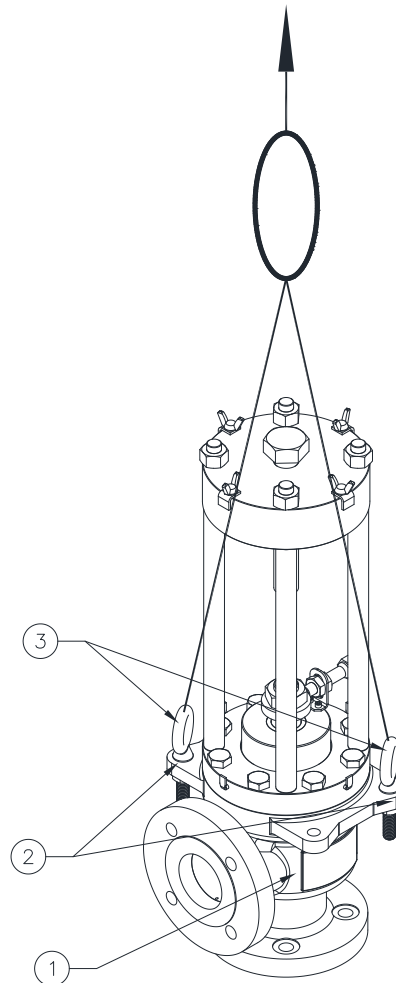


Figure 1: BPCV with Eye Bolts – DO's for smaller valves



BS&B SAFETY SYSTEMS, L.L.C.

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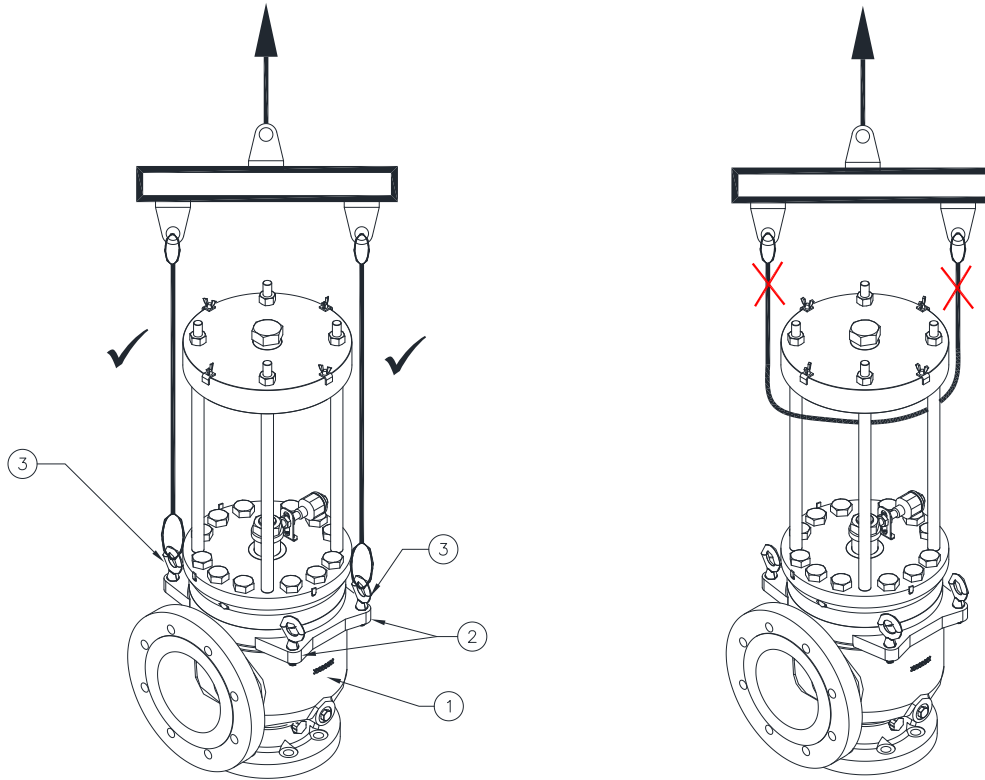


Figure 2: BPCV with Eye Bolts – DO's and DON'T's for lifting larger valves



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## Inspection of New BPCV Valve

1. Remove the protective screen cover by removing the wing nuts and brackets on top of the valve.
2. Inspect the new BPCV valve mating surfaces for foreign materials. Dirt or grit can cause the companion flange gaskets to not seal properly and leak.
3. Inspect the valve for physical damage. Damage to the valve could cause the valve to open at a pressure other than the rated pressure.
4. The BPCV inlet/outlet flange size and rating must match the size and rating of the companion flange.
5. A new BPCV will be fitted with a RED '**Shipping pin**', appropriately marked. Inspect the shipping pin for damage.
6. Follow Section IV below for new Buckling Pin installation instructions by removing "**Shipping Pin**".

## Check the installation conditions for the BPCV

1. Ensure that the flow path orientation of the installation matches that for which the BPCV was calibrated. The standard BPCV is designed for a vertical inlet and horizontal outlet configuration. Alternative orientation must be approved by BS&B Pressure Safety Management, L.L.C. Failure to notify BS&B Pressure Safety Management, L.L.C. and obtain approval before use may result in improper valve function.

## **BS&B SUPERVISORY SERVICES**

1. BS&B Pressure Safety Management, L.L.C recommends that its supervisory services are employed during BPCV Installation.



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## II. BPCV INSTALLATION BETWEEN COMPANION FLANGES

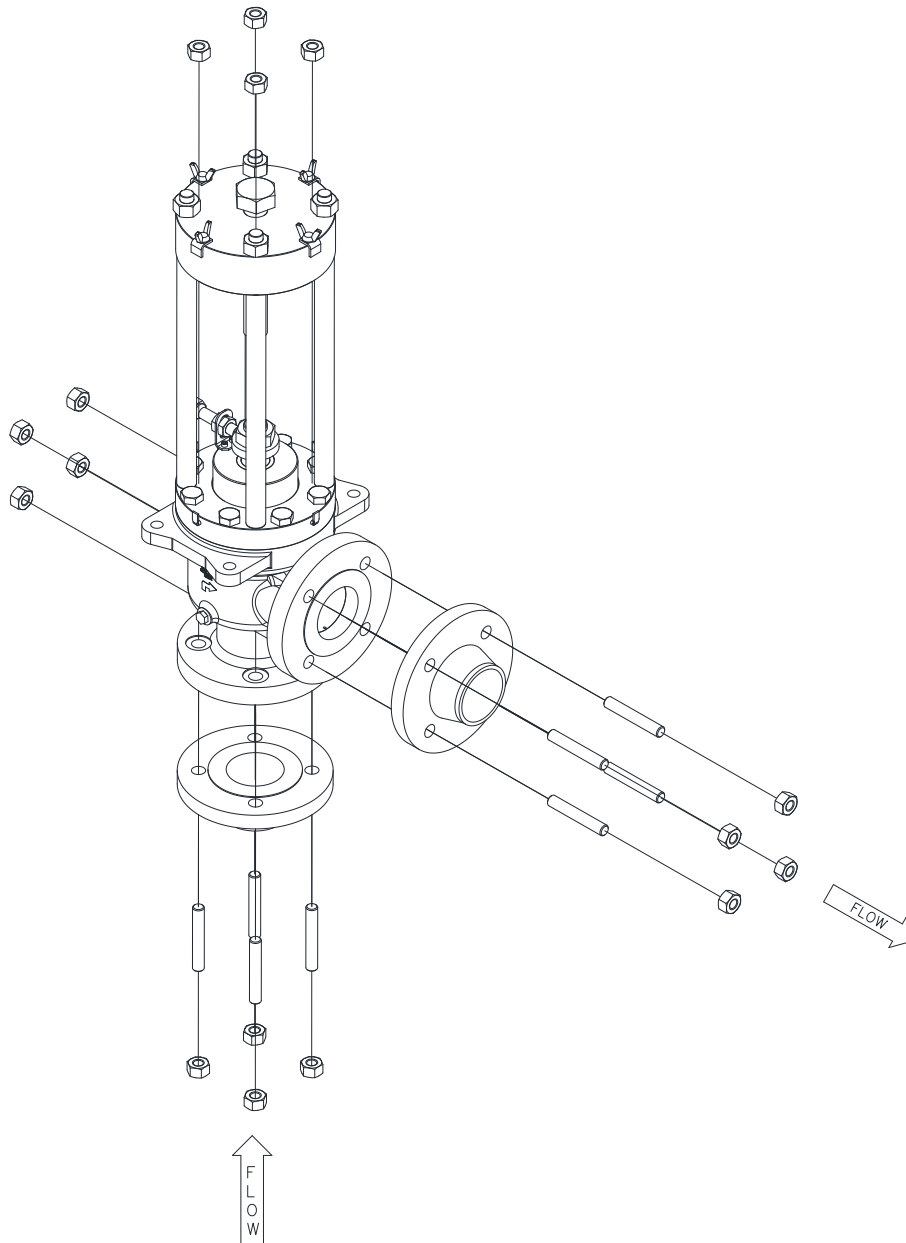


Figure 3: Typical Installation of BPCV between companion flanges.





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## BPCV Installation Procedure between Companion Flanges

**Note:** Safe and proper lifting procedures and practices shall be employed during installation of the BPCV valve.

1. The BPCV must be installed in a Vertical upright or horizontal configuration with flow at a 90 degree angle to inlet piping.
2. Place the BPCV valve body in between inlet and outlet companion flanges as shown in Figure 6 (outlet flange may not be applicable for free vent flow). Make certain that the flow arrow matches the flow direction of the piping system.
3. Install the companion flange gaskets. Ensure gaskets meet the required BS&B installation torque values shown in Table 1 for compressed fiber. If Flexitallic® or other gasket types are required, companion flange stud torque values must be approved by BS&B Pressure Safety Management, L.L.C. before use.
4. Install the studs with nuts. Tighten all nuts finger-tight before torquing. Even torque can be achieved by applying the torque in 1/3 increments of the desired final torque. The torque shall be applied in a crisscross pattern using a calibrated torque wrench.
  - a. **Compressed Fiber Gaskets** – Evenly torque the studs to the value listed in Table 1, using a calibrated torque wrench.
  - b. **Flexitallic® Type "CGI" Gasket Only** –Evenly torque the studs following the Flexitallic® installation instructions to the value listed in Table 2 using a calibrated torque wrench. Should the torque value in Table 2 differ from that recommended by Flexitallic®, consult BS&B before proceeding with installation.

**TABLE 1: BPCV VALVE COMPANION FLANGE TORQUE  
(COMPRESSED FIBER GASKETS)**

SIZE	COMPANION FLANGE	NUMBER OF STUDS	DIAMETER OF STUDS	MINIMUM LENGTH OF STUDS		STUD TORQUE	
				IN	MM	Ft.-Lbs	Nm
1	150	4	0.500	4.00	101.6	23	31
1-1/2	150	4	0.500	4.50	114.3	27	37
2	150	4	0.625	4.25	108.0	51	69
3	150	4	0.625	5.25	133.3	60	82
4	150	8	0.625	5.00	127.0	51	70
6	150	8	0.750	5.75	146.0	85	115
8	150	8	0.750	6.00	152.4	97	132
10	150	12	0.875	6.50	165.1	127	173
12	150	12	0.875	6.75	172.0	127	173
14	150	12	1.000	7.25	185.0	197	267



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**TABLE 2: BPCV VALVE COMPANION FLANGE TORQUE  
(Flexitallic® CGI GASKETS)**

SIZE	COMPANION FLANGE	NUMBER OF STUDS	DIAMETER OF STUDS	MINIMUM LENGTH OF STUDS		STUD TORQUE	
				IN	MM	Ft.-Lbs	Nm
1	150	4	0.5	4	101.6	45	61
1 1/2	150	4	0.5	4.5	114.3	45	61
2	150	4	0.625	4.25	108	90	122
3	150	4	0.625	5.25	133.3	90	122
4	150	8	0.625	5	127	90	122
6	150	8	0.75	5.75	146	150	203
8	150	8	0.75	6	152.4	150	203
10	150	12	0.875	6.5	165.1	240	325
12	150	12	0.875	6.75	172.0	240	325
14	150	12	1.000	7.25	185.0	368	498

**NOTE:** Torque values are based on the use of gaskets shown. Consult BS&B Pressure Safety Management, L.L.C. for flanges in other materials when suppliers recommend torque values higher than the BS&B Pressure Safety Management, L.L.C. recommended torque values and if gasket type differs from BS&B Pressure Safety Management, L.L.C. recommendation.

Recommended CGI stud torques are based on a design stress of 45,000 psi. If the applied torques are to exceed 50,000 psi stud stress, contact BS&B Pressure Safety Management, L.L.C. for engineering verification.

Recommended compressed fiber stud torques are derived from Klingsil® recommended gasket values for the ASME Section VIII Div 1, Mandatory Appendix 2 calculation.



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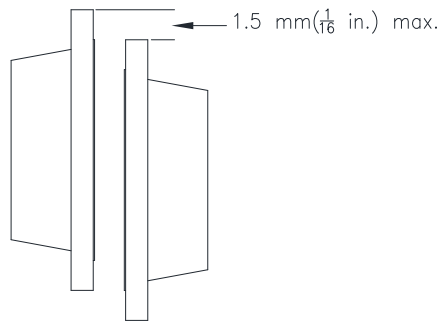
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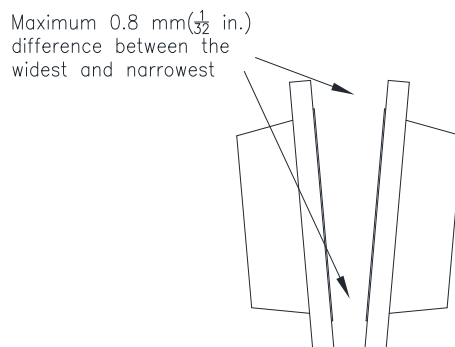
## III. GUIDELINES FOR FLANGE ALIGNMENT FOR VALVE INSTALLATION

Proper alignment of flange joint assembly is required for maximum seating surface contact, maximum opportunity for uniform gasket loading, and improves the effectiveness of all bolt tightening methods.

1. Out-of-tolerance conditions should be corrected before the Valve and the Gasket is installed to avoid damaging the gasket.
2. Proper alignment will result in the bolts passing through the flanges at right angles and the nuts resting against the flanges for proper tightening.
3. The following are the tolerance guidelines for flange joint assembling per Standards ASME B31.3(335.2.5 for Flanged Joint Assembly) and ASME PCC-1(E-2.4).
4. Assuming no external alignment devices are used to achieve proper flange alignment, the flanges alignments must meet a. thru d. as specified in ASME PCC-1(E.2.4).
  - a. **Centerline high/low** (Reference: ASME PCC-1 (E-2.4) – The alignment of the flanges shall be that the OD of the flanges are not misaligned more than 1/16" (.063") at any point. This shall be measured at four (4) locations around the flange OD. (see below figure).



- b. **Parallelism** (Reference: ASME PCC-1 (E-2.4) – The alignment of the flanges shall be as shown in figure below to meet the requirements of PCC-1 (E-2.4). This maximum difference shall be achieved when applying a force, no greater than 10% of the maximum torque or bolt load for any bolt.





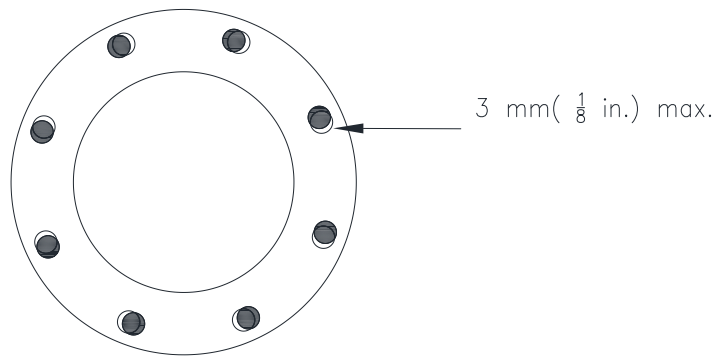
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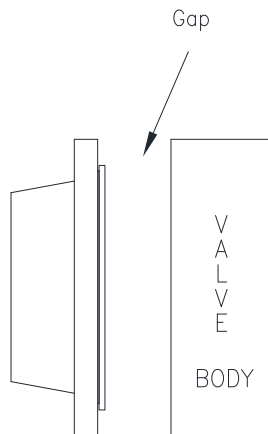
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- c. **Rotational two hole** (Reference: ASME PCC-1 (E-2.4) – The alignment of the flanges is such that the bolt holes align have a maximum misalignment with each other as shown in figure below.



- d. **Excessive Spacing or Gap** (Reference: ASME PCC-1 (E-2.4) – A condition where two flanges are separated by a distance greater than the two gasket thicknesses and will not come together when using less than 10% of the total target bolt torque or 20% of any single "target" bolt torque.





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## IV. BUCKLING PIN INSTALLATION INTO BPCV

### INSTALLATION OF BUCKLING PIN INTO PIN HOLDER AFTER VALVE HAS BEEN INSTALLED INTO PIPING SYSTEM

**Warning: BEFORE INSTALLING THE BUCKLING PIN IN THE BPCV, THE VALVE SHALL BE UNPRESSURIZED AND AT AMBIENT TEMPERATURE CONDITIONS**

#### PIN REPLACEMENT ORDERS:

1. Order replacement pins by lot number (shown on pin tag).

#### BEFORE YOU INSTALL THE BUCKLING PIN IN THE BPCV VALVE

##### Inspect the BPCV

1. Remove Protective Screen Cover (See Figure 4, Item 1).
2. Inspect the valve for damage. Damage to the valve could cause the valve to open at a pressure other than the rated pressure.
3. The valve assembly should be free of dirt, grime, grit and corrosion. Do not store foreign objects near the buckling pin.
4. For smaller valve with no pin installed, the plug should move up and down freely. If it does not, the valve may need cleaning or servicing.
5. The BPCV must not be machined or modified in any way.
6. The BPCV must be installed in a vertical upright or horizontal configuration. Any other orientation could affect valve performance and/or set pressure.
7. A new BPCV will be fitted with a RED "shipping pin", appropriately marked. Inspect the shipping pin for damage. Remove the "shipping pin" after installing the valve in service and install the new buckling pin with correct ID/Lot number and Serial Number in the pin tag.

##### Inspect the Buckling Pin

1. Inspect the buckling pin. Make sure the new pins have not been bent or damaged. Do not install a damaged buckling pin. Do not install an untagged buckling pin.
2. Do not machine or modify the buckling pin in any way. The buckling pins are precision manufactured components. Any alteration voids the warranty on this product.
3. Do not install anything other than the calibrated buckling pin that is specifically marked on its tag with matching ID/Lot number and Serial number that is stamped on the BPCV body tag. Replacement buckling pins can be ordered, by the ID/Lot Number and Serial number printed on the pin tag or body tag from BS&B.



# SPECIAL ENGINEERING INSTRUCTIONS

DRAWN BY J. Saffin NO. II-PL-0010  
 CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 14 OF 23  
 APP. BY Sean Jay REVISION 0 RELEASE NO. 17-T-0202

REV.: F	ECN NO.: 20-01249	DRAWN: J. Saffin	CHK'D.: [Signature]	DATE: 16-DEC-20
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## Removal of Shipping Pin (Item 4 of Figure 4)

1. **Caution: Do not perform any work when removing used buckling pins unless the system is unpressurized, "0 psig", upstream and downstream of the valve location. Failure to do this can cause bodily injury.**
2. Remove Protective Screen Cover (See Figure 4, Item 1).
3. The valve is in closed position with an inactivated Buckling Pin, "such as shipping pin", the Adjuster screw (Item 2 of Figure 4) need to be unscrewed counterclockwise until the shipping pin can be removed using the wrench size specified in the Table 3 below or by using the Reset Tool. Preserve the "Shipping pin", it will be used to reset the valve with new buckling pin after activation.

**TABLE 3: WRENCH SIZE BASED ON VALVE SIZE**

Valve Size	Adjuster Screw Size	Wrench Size
1"	0.75"	1 1/4"
1 1/2"	1"	1 5/8"
2"	1"	1 5/8"
3"	1.25"	1 13/16"
4"	1.25"	1 13/16"
6"	1.25"	1 13/16"
8"	1.625"	1 13/16"
10"	1.625"	1 13/16"
12"	2"	3 1/8"
14"	2"	3 1/8"

### **FAILURE TO REMOVE THE SHIPPING PIN CAN RESULT IN A HIGH ACTIVATION PRESSURE.**

4. It is recommended to unseat and reseat the Plug once prior to installation of new buckling pin. For smaller BPCV in order to unseat the valve, simply pull the plug upwards. The valve should unseat easily and move up and down freely. For larger BPCV line pressure can be used to unseat the Plug, it would be close to \_\_\_\_\_ psig with tolerance of +3 psig. If it does not unseat, the valve may need cleaning or servicing.



# SPECIAL ENGINEERING INSTRUCTIONS

DRAWN BY J. Saffin NO. II-PL-0010  
CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 15 OF 23  
APP. BY Sean Fay REVISION 0 RELEASE NO. 17-T-0202

REV.: F	ECN NO.: 20-01249	DRAWN: J. Saffin	CHK'D.: Bark	DATE: 16-DEC-20
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### Part List Identification

- Item 1 – Protective Screen (when fitted)
- Item 2 – Adjuster Screw
- Item 3 – Plug
- Item 4 – Shipping Pin

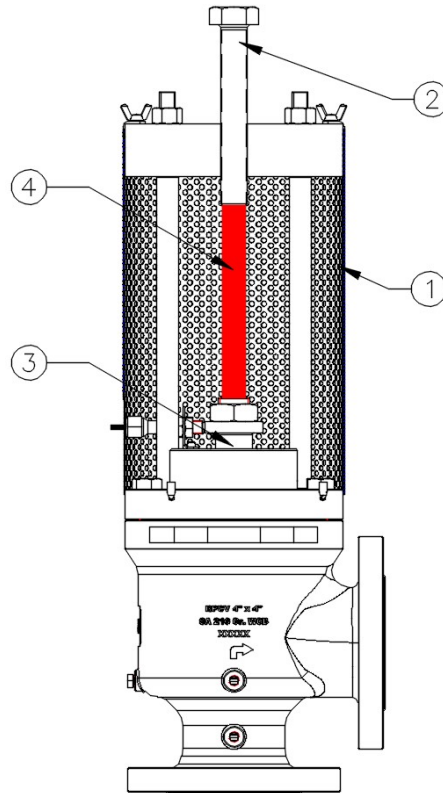


Figure 4: Removal of Shipping Pin

### Removal of Used Buckling Pin (Item 4 of Figure 5)

1. **Caution: Do not** perform any work when removing used buckling pin unless the system is unpressurized, "0 psig", upstream and downstream of the valve location. Failure to do this can cause bodily injury.
2. Remove Protective Screen Cover (See Figure 4, Item 1).



# SPECIAL ENGINEERING INSTRUCTIONS

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CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 16 OF 23  
APP. BY Sean Jay REVISION 0 RELEASE NO. 17-T-0202

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## Part List Identification

- Item 1 – Adjuster Screw
- Item 2 – Plug
- Item 3 – Reset Tool
- Item 4 – Used Buckling Pin
- Item 5 – Main Body Lifting Points
- Item 6 – Sensor

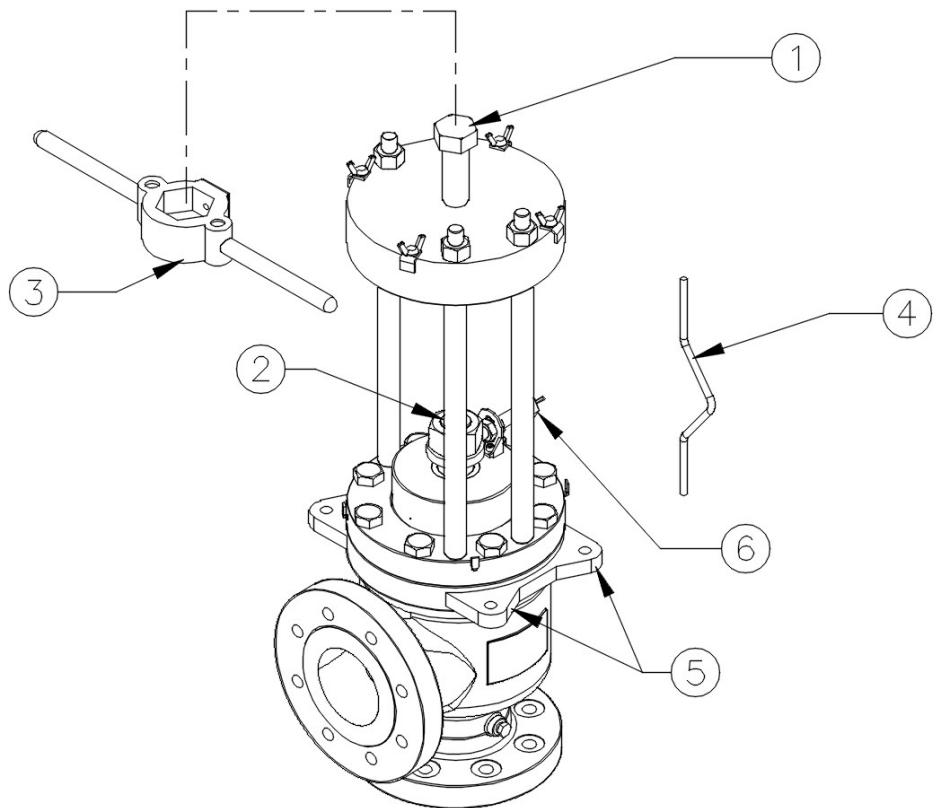


Figure 5: Removal of Used Buckling Pin

3. The valve is in open position with the used Buckling Pin as shown in Figure 6 below, remove the used Buckling Pin by unscrewing the Adjuster screw by placing Reset Tool (Item 3 of Figure 5) on the hexagonal head (Item 1 of Figure 5) until the used Buckling Pin can be removed.
4. To reseal the Plug (Item 2 of Figure 5) assemble the Shipping pin between the Adjuster Screw pin holder and Plug pin holders as shown in the Figure 6 with valve Plug in activated position. Lower the Adjuster Screw until the Shipping pin fixed firmly between the Adjuster Screw and the Plug.
5. Turn the Reset Tool until the Plug is fully re-seated.
6. Smaller BPCV Plug can be reseated manually by simply pressing down on the plug by hand.
7. If excessive force is required to reseal, then the reseating procedure should be stopped, and supervisory services of BS&B Pressure Safety Management, L.L.C. shall be contacted for assistance.



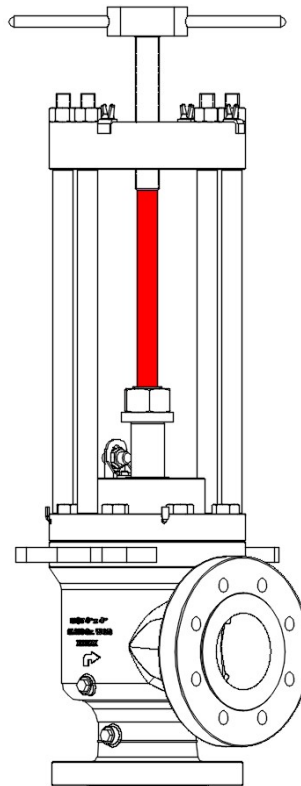


# SPECIAL ENGINEERING INSTRUCTIONS

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CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 17 OF 23  
APP. BY Sean Fay REVISION 0 RELEASE NO. 17-T-0202

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**Figure 6:** Installation of the Reset Arm Assembly

## Buckling Pin Installation (Refer Figure 8)

1. **Caution: Do not perform any work on the valve unless the system pressure is verified to be zero, "0 psig", upstream and downstream of the valve location. Failure to do this can cause bodily injury.**
2. **Ensure the valve is fully seated prior to installing the new buckling pin.** Make sure the distance between the Adjuster screw and Plug is at least the total length of the pin so that the pin can be installed unhindered between the Plug (Item 2) and Adjuster screw (Item 1). If more distance is required, unscrew the Adjuster screw by placing a wrench on the hexagonal head. Insert one end of a buckling pin (Item 3) into the hole of the plug.



# SPECIAL ENGINEERING INSTRUCTIONS

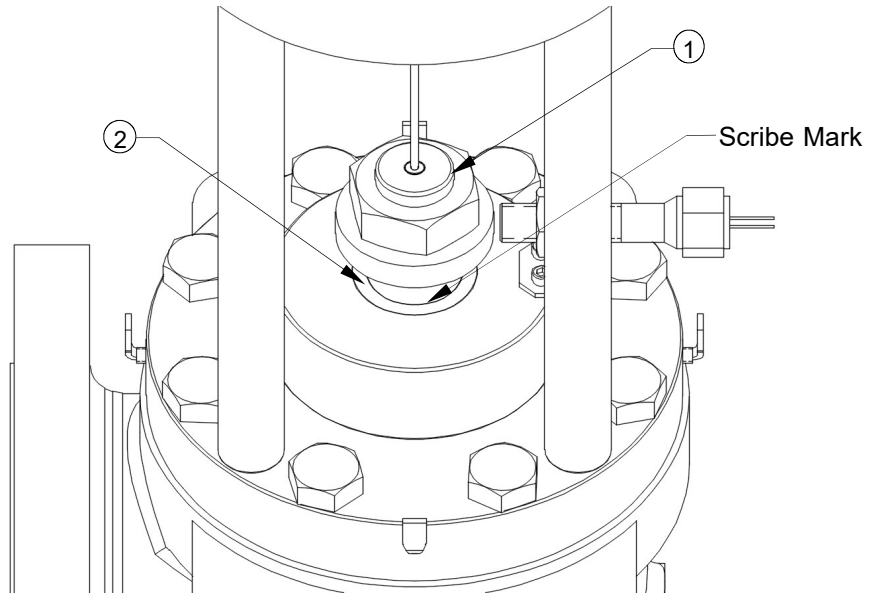
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CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 18 OF 23  
APP. BY Sean Jay REVISION 0 RELEASE NO. 17-T-0202

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## Part List Identification

- Item 1 – Plug
- Item 2 – Bushing



**Figure 7:** Plug scribe mark location at fully reseated

3. Lower the Adjuster screw and insert the other end of the pin into the hole of the adjuster screw. On the Low Pressure version of the BPCV (called the BPCV-LP), press down the piston pin while performing Step 4 to ensure proper valve operation.
4. Tighten the Adjuster screw until the Buckling pin is firmly seated without vertical movements in conjunction to the plug.  
**Warning: Extra tightening of the Adjuster screw against the buckling pin can change the specified valve set pressure. As a result, care must be taken to avoid excess tightening of Adjuster screw.**
5. Ensure the scribe mark as shown in Figure 7 above flush within 0.125" distance from Bushing top surface (Item 2 of Figure 7). If not, the Buckling Pin installation must be stopped and BPCV may require cleaning or servicing - shall contact BS&B Pressure Safety Management, L.L.C. for assistance.
6. The buckling pin is now installed and ready for use.
7. Install Protective Screen Cover (Item 4).



# SPECIAL ENGINEERING INSTRUCTIONS

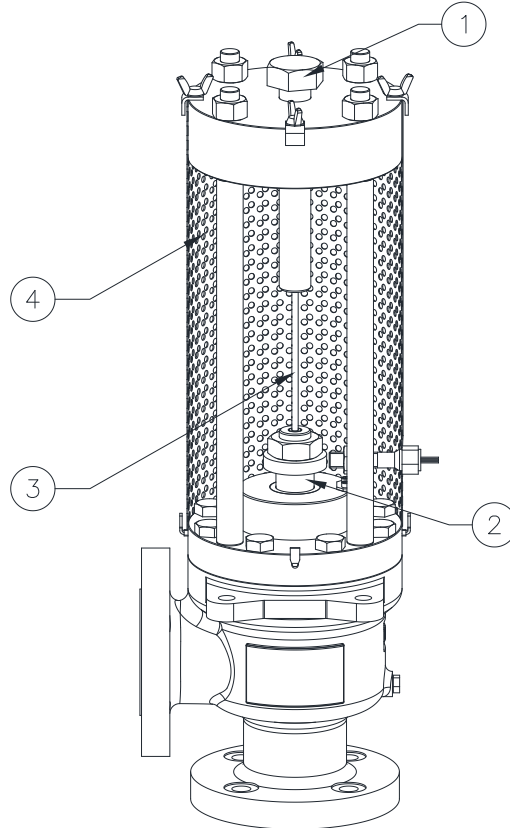
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CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 19 OF 23  
APP. BY Sean Jay REVISION 0 RELEASE NO. 17-T-0202

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### Part List Identification

- Item 1 – Adjuster Screw
- Item 2 – Plug
- Item 3 – Bucking Pin
- Item 4 – Protective Screen Cover



**Figure 8: New Buckling Pin Installation**



# SPECIAL ENGINEERING INSTRUCTIONS

DRAWN BY J. Saffin NO. II-PL-0010  
 CHK'D. BY Kumaravel DATE 10-APR-17 SHEET 20 OF 23  
 APP. BY Sean Jay REVISION 0 RELEASE NO. 17-T-0202

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## V. BPCV MAINTENANCE INSTRUCTIONS

In order to ensure proper operation of the BPCV valve throughout its life, basic valve operation must be checked periodically by following these maintenance procedures at a minimum of every 3 years.

- 1. Caution: Do not perform any work removing used buckling pins unless the system is unpressurized, "0 psig", upstream and downstream of the valve location. Failure to do this can cause bodily injury.**
2. Remove protective screen cover (See Figure 8, Item 4)
3. If the valve is in closed position with an inactivated buckling pin, "such as shipping pin", unscrew the Adjuster screw by placing a wrench on the hexagonal head until the shipping pin can be removed from the plug.

**FAILURE TO REMOVE THE SHIPPING PIN CAN RESULT IN A HIGH ACTIVATION PRESSURE.**

4. It is recommended to unseat and reseat the Plug once prior to installation of new buckling pin. For smaller BPCV in order to unseat the valve, simply pull the plug upwards. The valve should unseat easily and move up and down freely. For larger BPCV line pressure can be used to unseat the Plug, it would be close to \_\_\_\_\_ psig with tolerance of +3 psig. If it does not unseat, the valve may need cleaning or servicing.
5. Inspect the valve for physical damage. Damage to the valve could cause the valve to open at a pressure other than the rated pressure.
6. Ensure the pin holes of Plug and Adjuster screw are not damaged in any way. Wear and damage to the pin holes could cause the valve to open at a pressure other than rated pressure.
7. Drain ports are provided in the valve body upstream and downstream of the valve seat. These ports may be used to flush the valve body clean. Valve shall be flushed in an open condition.
8. After all maintenance and service items are completed, reinstall a buckling pin per the Buckling Pin Installation Instructions.

BS&B Supervisory Services are available to oversee maintenance procedures and checks. Contact BS&B Pressure Safety Management, LLC for more information. All service must be completed by BS&B Service Personnel. Replacement of the main valve seal will require BS&B Supervisory Services. Valve does not contain any user serviceable parts. Contact BS&B Pressure Safety Management, LLC to schedule service. User removal of the stamped lead seals voids the valve warranty."



BS&B SAFETY SYSTEMS, L.L.C.

# SPECIAL ENGINEERING INSTRUCTIONS

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### Part List Identification

- Item 1 – BPCV
- Item 2 – Drain Plugs
- Item 3 – Inlet NPT Plugs

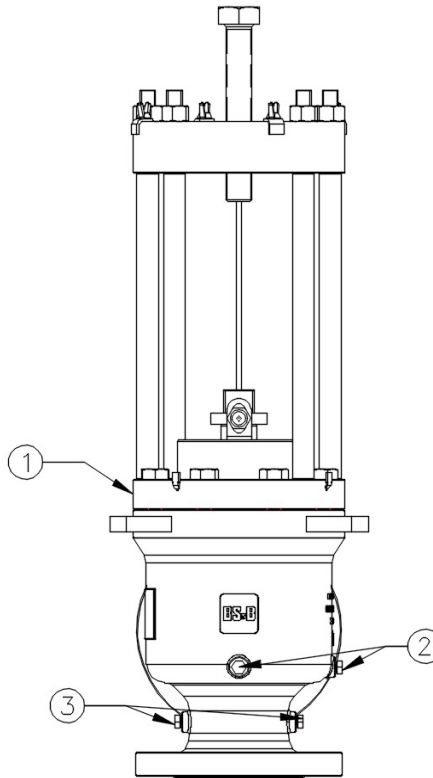


Figure 9: BPCV with drain plugs for cleaning



# SPECIAL ENGINEERING INSTRUCTIONS

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APP. BY Sean Jay REVISION 0 RELEASE NO. 17-T-0202

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## VI. BPCV PIPING INTEGRITY HYDROSTATIC TEST INSTRUCTIONS

**THIS TEST SHALL BE APPROVED BY BS&B PRESSURE SAFETY MANAGEMENT, L.L.C. AND TO USE ONLY BS&B SUPPLIED SHIPPING PIN.**

**FAILURE TO NOTIFY BS&B PRESSURE SAFETY MANAGEMENT, L.L.C OR TO USE BS&B SUPPLIED SHIPPING PIN MAY CAUSE BODILY INJURY AND MAY DAMAGE THE BPCV. BS&B SHALL NOT BE RESPONSIBLE FOR SUCH DAMAGE.**

- BPCV with Calibrated Pin installed:** Calibrated Buckling Pin should not be used for this test and should be removed. Remove the calibrated Buckling Pin by following Section IV of Pin installation section. Install the Shipping pin in place.
- BPCV with Shipping Pin installed (As shipped from BS&B):** BPCV can be tested as it is with shipping pin in place.
- The piping integrity hydrostatic pressure test shall be conducted with valve installed in the Piping system with Plug in closed position as shown in Figure 10 below.
- The piping integrity hydrostatic test pressure shall be **maximum of 415 psig**. This test can be carried out with any pressure lower than 415 psig.
- The piping integrity hydrostatic test must be tested without any air inside the valve inlet section. The air can be vented out through the NPT at the inlet section of the valve as shown as Item 5 in Figure 10.
- Test time shall be 10 minutes, if more than 10 minutes should consult BS&B.
  - The Hydrostatic test fluid shall be potable water containing a corrosion inhibitor.
  - The chloride content shall be less than 30 ppm.
- Acceptance Criteria:** There shall be no visible leakage around the NPTs (Item 5 of Figure 10) at Inlet section.
- The piping integrity hydrostatic test pressure, time length, gauge number, date of test performed shall be noted.
- All pressure gauges used in tests shall be calibrated against a standard dead weight tester or a calibrated master gauge not older than 12 months.

BS&B Supervisory Services are available to oversee piping integrity hydrostatic test procedures and checks. Contact BS&B Pressure Safety Management, LLC for more information. All service must be completed by BS&B Service Personnel. Replacement of the main valve seal will require BS&B Supervisory Services. Valve does not contain any user serviceable parts. Contact BS&B Pressure Safety Management, LLC to schedule service. User removal of the stamped lead seals voids the valve warranty."



# SPECIAL ENGINEERING INSTRUCTIONS

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### Part List Identification

- Item 1 – Protective Screen (when fitted)
- Item 2 – Adjuster Screw
- Item 3 – Plug
- Item 4 – Shipping Pin
- Item 5 – NPT

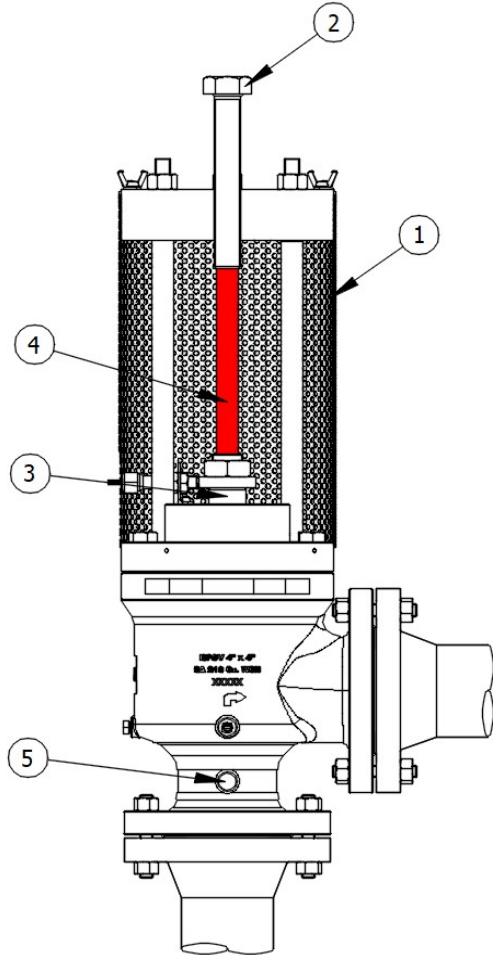


Figure 10: Piping Integrity Hydrostatic Test Set-up