



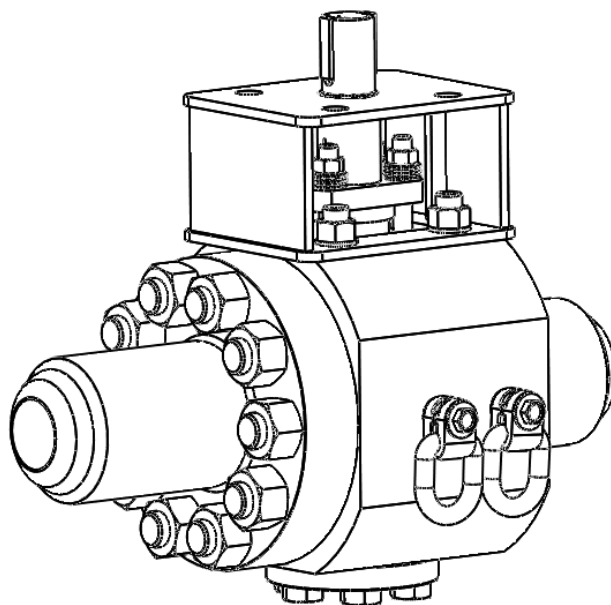
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Technology For The Professionals.

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Installation, Operation and Maintenance

JBFX 2-PC Floating Type Metal Seated Ball Valve



**VERSION: V 1.0
ISSUED DATE: 2024/03**



JBFX

2-PC Floating Type Metal Seat Ball Valve

Instructions for Installation, Operation and Maintenance

Contents



Notes prior to Use.....	3
Safety Notification:.....	4
Product Transportation/Storage/Maintenance.....	5
Storage & Maintenance	6
Notes prior to Operation	7
Sealing direction	7
Maintenance and Troubleshooting.....	11
Valve BOM	12
Position verify	14
Installation	15
Verify ball position.....	15
Valve installation in piping.....	15
Weld valve in place.....	16
Post weld heat treatment (PWHT)	16
Install heating blankets	16
Proper PWHT installation.....	16
STRESS RELIEVE THE WELDS.....	17
Verify operation	18
Valve insulation	18
Replace Stem Packing	19
Procedure of Disassembling.....	20
JBFX Disassembling/Assembling Procedure	20
Valve joint Bolt torque table (N-M)	22
Gland Bolt torque table (N-M)	23



Notes prior to Use

1. Read the instructions for installation, operation, maintenance carefully before operating the product.
2. Identify the warning banners and descriptions mentioned in this document.
3. Please put the instructions for installation, operation, maintenance in an easy access site in order for query in use.

Warning Banners



Banner	Description
	This indicates a dangerous situation. Slight or moderate injury might be resulted if it is not averted.
	Death or severe injury might be resulted if such potential dangerous situation is not averted.



Safety Notification:


Design engineers or product users identify basic product specifications and check the compliance of valve and installation equipment in order to guarantee safe use.

Prior to installation of valve, the compliance of operating conditions (temperature, pressure, fluid characteristics, ambient conditions, installation gauges etc.) with the service conditions set for valve has to be checked and identified.

	<p>Warning Do not get beyond the limitation indicated by valve specification or technical parameters, or otherwise, death or severe injury might be resulted.</p>
	<p>Caution Valve may be used indoors or outdoors. If it is exposed to atmospheric environment, erosion of valve has to be cared, or otherwise, slight or moderate injury might be resulted.</p>



Product Transportation/Storage/Maintenance

	Warning
	1. In moving or transportation, suitable tools have to be selected for correct equipment and accessories (sling, fastener, hook and so forth) in terms of size with consideration of individual weights of details in the package and the complete total weight.
	2. Ball valve lifting and handling should be operated by qualified operators. Inappropriate lifting would result in deformation or dropping of valve to damage the valve.
	3. Do not lift the valve using the suspending point or bracket arranged on cylinder to prevent from danger. 4. Do not use the lever of the manual valve to take or lift ball valve. In such a way, the lever of the manual valve would fractured or depart from the valve, such that damage or human injury might be resulted.

* The product has to be packed well to avoid unnecessary damage when transportation to and storage in warehouse. Particularly, the following precautionary measures have to be cared:

Transportation

1. The openings on two sides of the ball valve have to be protected well using appropriate sealing cover in order to guarantee clean interior of the valve and prevent foreign objects from entry.
2. The packaging has to guarantee safe transportation to storage site. As arrival to the storage site, please identify that the covering material or packing paper or wooden case keeps in a complete status.



Storage & Maintenance

Preserving of Packed Ball Valve

1. Protect the pack adequately to prevent the pack from damage.
2. There should be warning banners for packs to guarantee that the moving of product would not result in unnecessary damage, such as suspending center of gravity
3. Flange surface and channel opening have to be protected on the surfaces of two sides of the ball valve using adequate sealing patch or cover to guarantee clean interior in the valve and prevent foreign objects from entry.
4. If the used material of the valve is prone to rust, the flange surface and the channel opening have to be coated with antirust oil in order for preventing rust spots from appearing.
5. The storage site has to keep clean and dry.
6. Do not let the product to be exposed to wind/rain or to be sunned.
7. Please check preserving status regularly if the product is to be stored for a period of time.

Preserving of non-packed/unpacked ball valve

1. Please guarantee appropriate protection of the product in order to prevent it from damage.
2. In treating large valve, the product has to be fixed safely and stably. Suitable tools (bracket, hook, fastener, cable) should be used in transportation. In moving, balance has to be kept in order to prevent product from damage due to dropping or shaking in transportation process



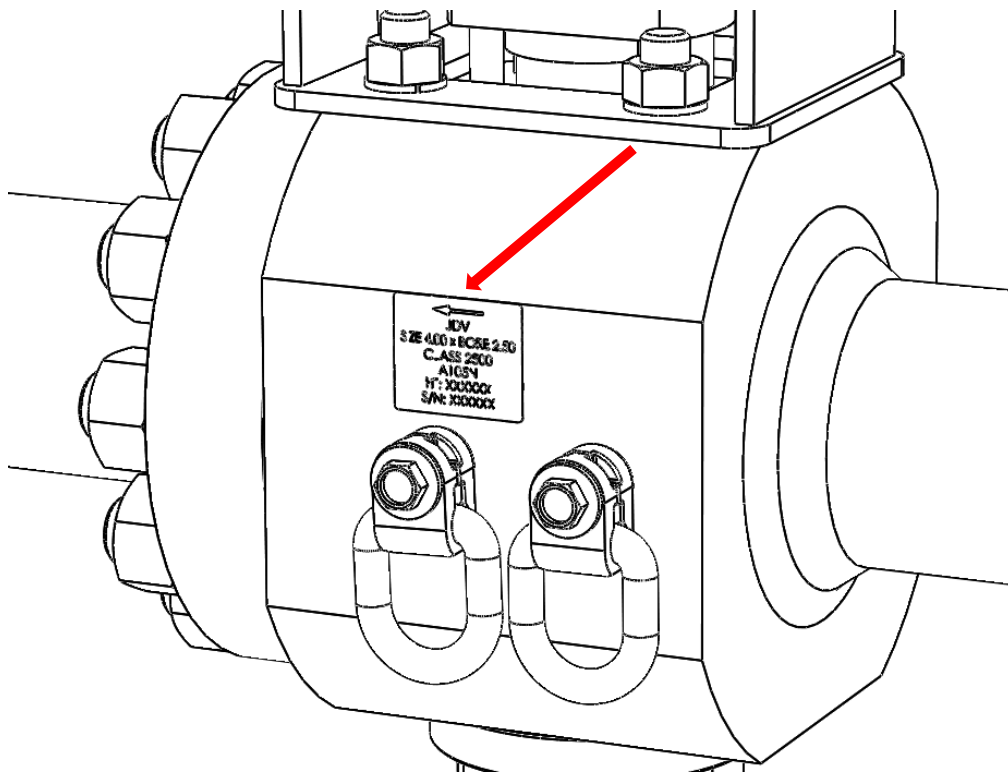
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Notes prior to Operation

Sealing direction

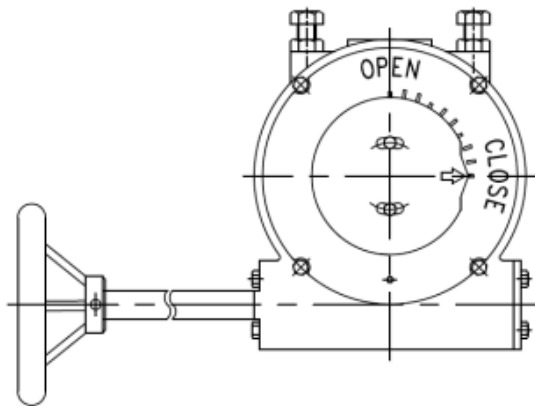
Valve has a single direction of sealing indicated by a flow arrow on the body.





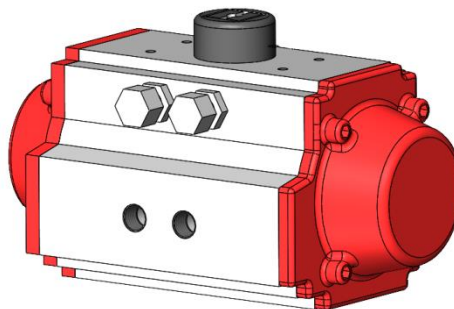
Manual Valve (Gear Operation)

1. Please identify when the arrow on the gear box indicates line in open position, the ball valve should be in open status; when the arrow is in the close position, the ball valve should be in closed status.
2. In gear operation, over and inadequate operation would cause damage to components of ball valve or result in leakage.



Pneumatic Ball Valve:



Please operate according to the instructions in the user manual of the cylinder manufacturer for the action valve to be opened or closed pneumatically.





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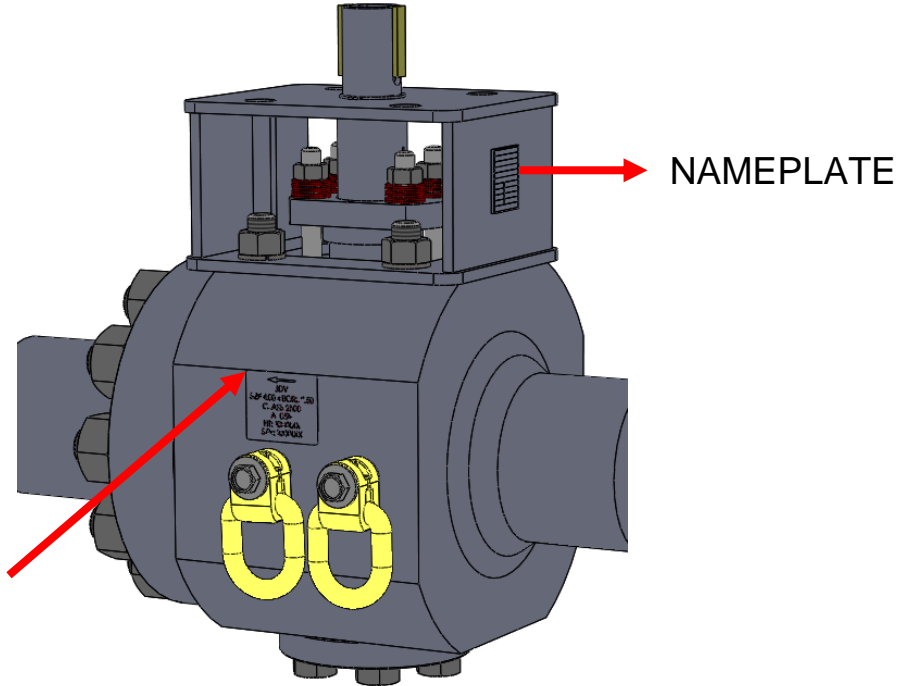
	<p>Warning</p> <p>Do not install valve for pressures or temperatures higher than rated pressure.</p>
	<p>Caution</p> <p>In certain conditions, proper operation may require the flow arrow be opposed to the line flow. Make sure that the high pressure end is positioned toward the highest pressure against the valve in the closed position.</p>



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Valve Information



INFORMATION LOCATIONS

Valve information is on both sides of the valve body and on the valve nameplate, located on the side of the mounting bracket.

VALVE NAMEPLATE INFORMATION

1. Brand Name / P-T Spec. B16.34LTD
2. MODEL
3. MAX. EATED PRESSURE
4. P-T INFORMATION
5. ENDS
6. SIZE
7. RATING
8. STEM
9. SEAT
10. NACE (If Applied)
11. BORE
12. BODY
13. BALL
- 14.S/N: SERIES NO.
15. MFG Location
- 16 MFG Date

1	JDV USA ⊕ B16.34LTD		
2	MODEL:		10
3	MAX. RATED PRESSURE		11
4			
5	ENDS:		12
6	SIZE:	BORE:	13
7	RATING:	BODY:	13
8	STEM:	BALL:	14
9	SEAT:	S/N:	14
15	MADE IN TAIWAN ⊕	MFG:	16



Maintenance and Troubleshooting

OPEN/CLOSE THE VALVE REGULARLY

Valves remain long time in open or close position is recommended to cycle once a while to ensure the valve operation.

TIGHTEN PACKING

Re-tighten the articulating packing gland after its first exposure to elevated pressure and temperature.

(See the Table 2)

CHECK THE PACKING GLAND

Packing gland should be checked periodically and adjusted if necessary.

LUBRICATION

JDV metal seated ball valves DO NOT require lubrication.

ROUTINE MAINTENANCE

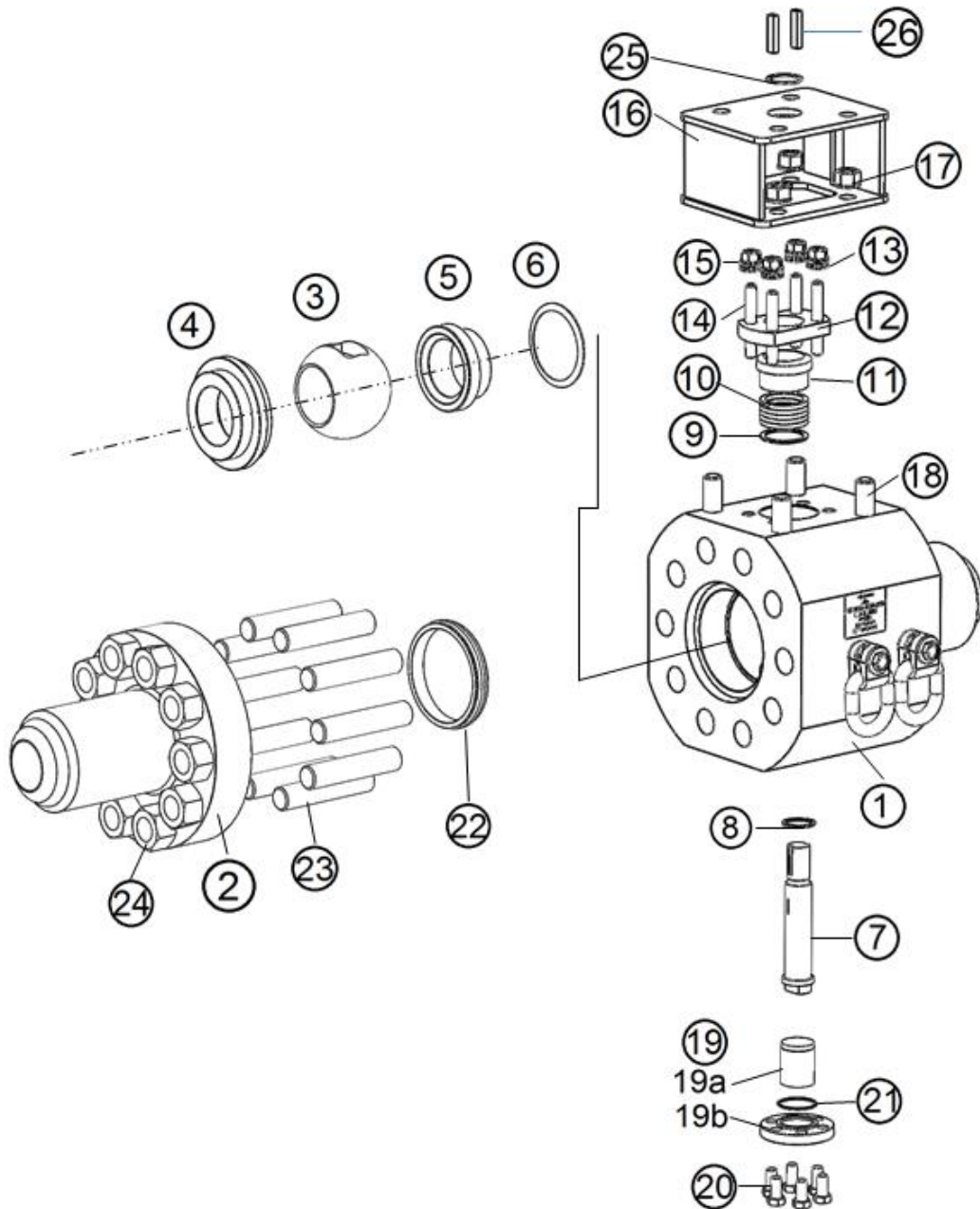
Keep the routine maintenance to ensure the best sealing function. If the upper seal (stem) appears leakage, please refer the torques in Table 2 to fasten gland bolts uniformly until leakage stops.



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Valve BOM





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ITEM	PARTS NAME
1	BODY
2	CAP
3	BALL
4	DOWNSTREAM SEAT
5	UPSTREAM SEAT
6	SEAT PRING(BELLEVILLE)
7	STEM
8	STEM RETAINER WASHER
9	PACKING RING
10	PACKING
11	PACKING FOLLOWER
12	GLAND FLANGE
13	BELLEVILLE WASHER
14	GLAND BOLT
15	GLAND NUT
16	MOUNTING RACKET
17 /18	BRACKET BOLT & NUT
19a	RETAINER STEM
19b	RETAINER COVER
20	RETAINER SCREW
21	RETAINER GASKET
22	BODY GASKET
23 / 24	BOLT / NUT
25	STEM SNAP RING

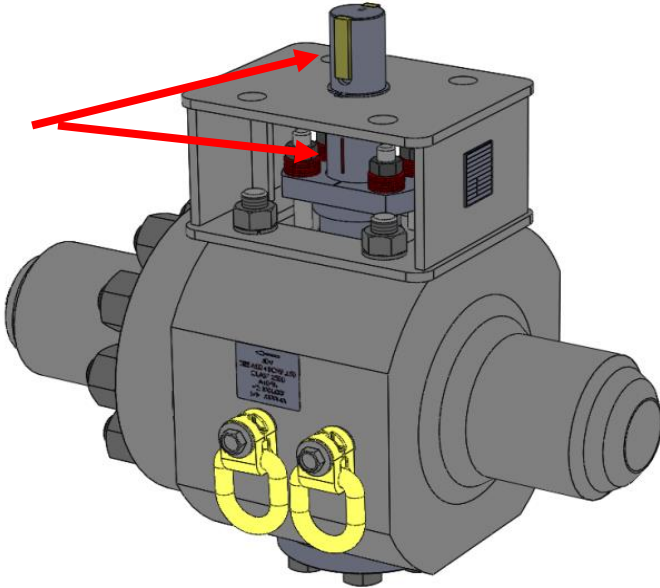


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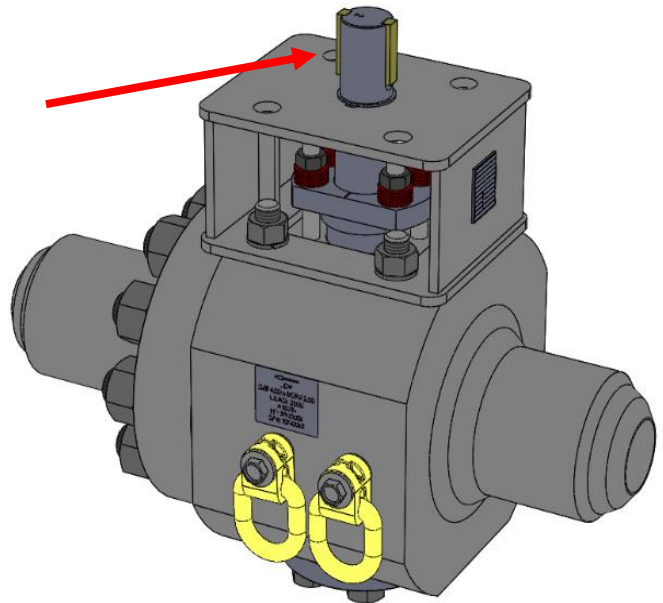
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Position verify

VERIFY OPERATING POSITION



CLOSE POSITON



OPEN POSITION



Misalignment of stops can result in valve under or over stroke causing a potential leak path.

THIS WILL AFFECT THE VALVE WARRANTY.



Installation

PREPARE VALVE ENDS

All procedures shown in this IOM are for socket weld ends.

WELD ENDS

Remove the blue plastic protective covers that were placed on valve ends when ex-factory.

Verify ball position

While looking in the bore, open and close the valve.

Verify that the ball position matches the lever position or actuator indicator.

For installation, the valve must be in OPEN position, to protect the ball from surface damage.

Valve installation in piping

Install the valve in piping by following the arrow direction of valve body.



Support or lift may be required, use lifting lugs or nylon straps around the valve body. **Do not** lift or support by the actuator alone.

JDV valves have a single direction of sealing that is indicated by the flow arrow on the body.

Note: In certain conditions, the valve may be installed in the flow arrow direction against with the line flow direction. Make sure that the “FLOW DIRECTION” is installed toward the higher pressure against the valve in the close position.



Always attach the welding ground strap to the same end being welded

Before welding, valve **must** be in the **OPEN** position to protect the ball from weld splatter and surface damage.

Do not allow the main valve body to reach a temperature hotter than 1100° F (593° C) during installation, welding or post weld heat treatment.

THIS WILL AFFECT THE VALVE WARRANTY.



Weld valve in place

Weld valve in place is according to **ASME B31.1** or **ASME B31.3** requirements.

Post weld heat treatment (PWHT)

Note: PWHT may not be required for all valves. Consult ASME B31.1 to determine whether PWHT is required.

Install heating blankets

Before heat treatment, install heating blankets as shown in the following section “PROPER PWHT INSTALLATION.”

Do not install heating blankets to the center section of the valve body (indicated by the dotted red outline), including the neck section of the vented area.



The valve body **must** always remain below 1100° F (593° C). Proper use and placement of heating blankets accomplish this.

THIS WILL AFFECT THE VALVE WARRANTY

Proper PWHT installation

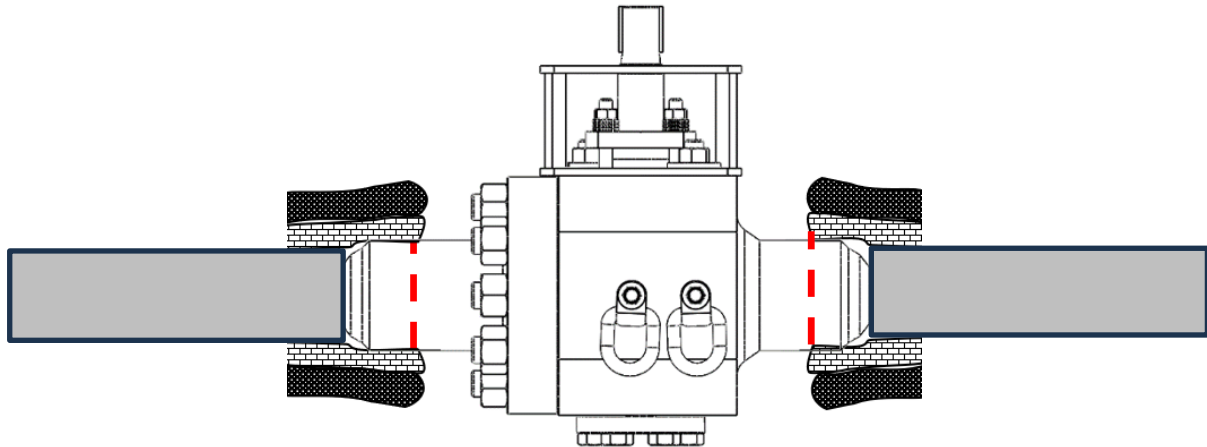
Install heating blankets, covered by proper insulation, as shown — **no gaps/no overlaps**. Heating blankets cover only weld areas. Blankets **should not cover** any part of the center section of the valve body. This will allow the **best** and **most effective** stress relieving in accordance with ASME B31.1, while **protecting** the ball and seat assembly from damage. If using a “snake” (sinuous coil heating element), make sure both ends of the valve are heated uniformly. An uninsulated loop in the middle will prevent proper heating. There are 4 possible solutions:

1. Insulate the loop only.
2. Use two separate snakes, one for each end.
3. Treat each end separately.
4. Avoid snakes. Best results are obtained with snug-fitting blankets, properly placed and insulated.

Note: Improper installations of heating blankets are shown in the following section.



IMPROPER PWHT INSTALLATION



Heating blanket is not installed properly.

Heating blanket needs to cover the machined outside diameter of the socket weld, as well as the weld and pipe areas, to provide enough heat for proper stress relief. Insufficient stress relief may result in damage, delay, and increased costs.

Heating blanket is too long.

When a single heating blanket is too long and is “tucked in” at the end, heating elements next to the pipe can easily be **damaged** by heat from the elements on top of them.

Heating blanket is applied to valve body.

The use of three heating blankets is definitely **not** how to do it. **Never** apply heat to the valve body. The center section of the valve body **must** remain uninsulated and unheated.

STRESS RELIEVE THE WELDS

See guidelines for stress relief in ASME B31.1.

PWHT temperatures are shown below.

Note: These guidelines may be substituted by customer’s special requirements or best-practice procedures.



PWHT Requirements per ASME B31.1 and B31.3

PWHT Requirements per ASME B31.1 and B31.3				
Material	Preheat (°F)	Holding Temp.	Holding time based on nominal Thickness	
			Up to 2"	Over 2"
A105	200	1100~1200	1 hrs; 15mins min.	2 hrs; Plus 15mins For each addition inch Over 2"
A182-F22	300	1300~1400		
A182-F91	-	1350~1375		

PWHT Notes:

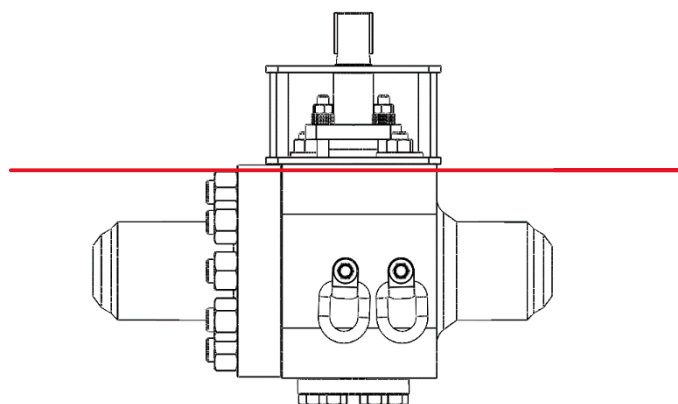
- 1 PWHT is not mandatory provided the nominal thickness is 0.75 inches (19 mm) or less and the minimum preheat temperature is applied when the nominal material thickness of either of the base metals exceeds 1 inch (25.4 mm).
- 2 PWHT is not mandatory provided the NPS is 4 or less, nominal material thickness is 0.5 inches (12.7 mm) or less, a specified carbon content of the material to be welded is 0.15% or less, and the minimum preheat temperature is maintained during welding.

Verify operation

After installation, open and close the valve to ensure the smooth operation.
To operate, turn in **counter-clockwise to open** and **clockwise to close**.

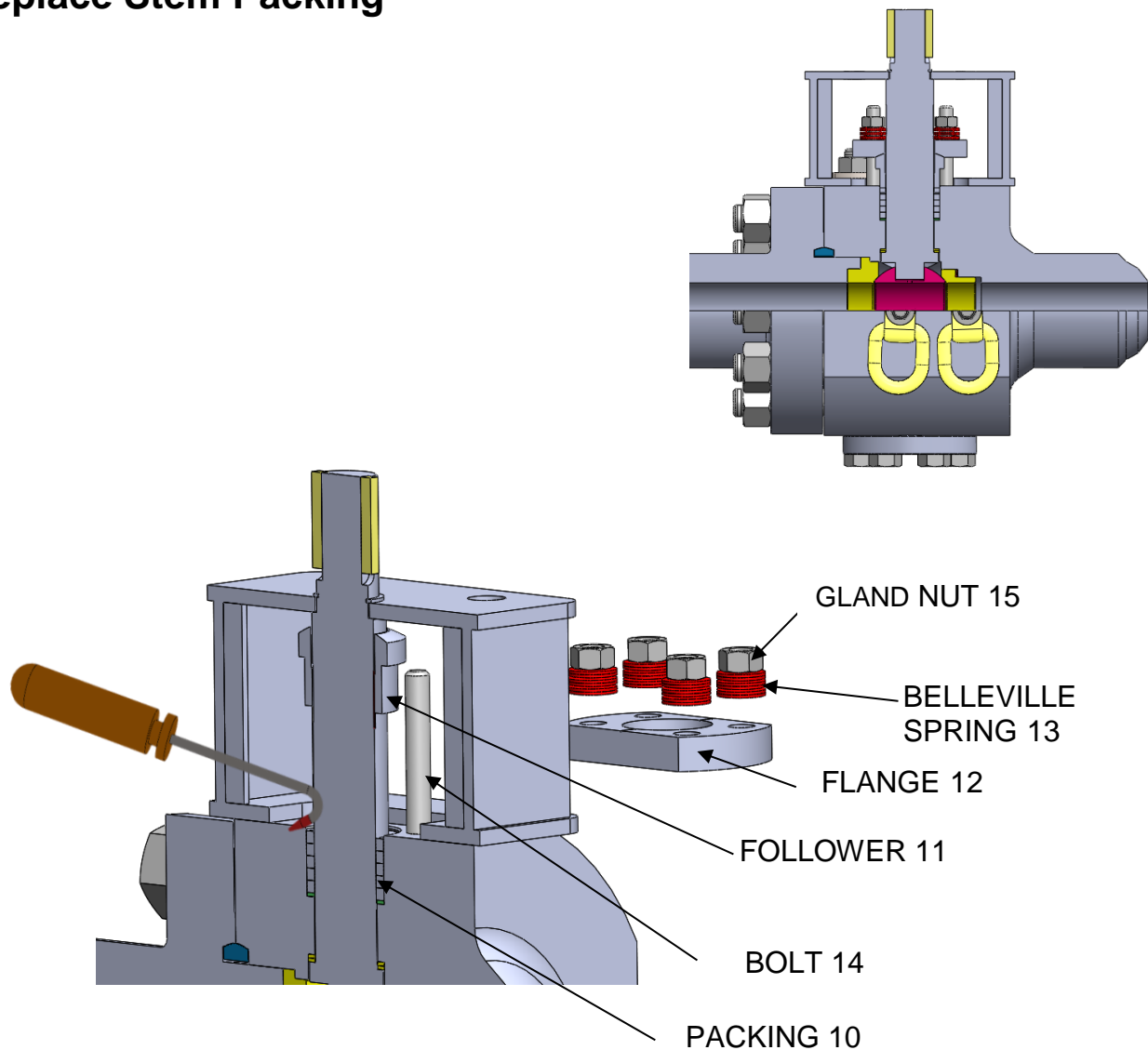
Valve insulation

Valve insulation should **not exceed** the bottom of the Bracket in order to keep the visibility of valve operation all the time, refer below picture.







Replace Stem Packing



1. Locate packing GLAND NUT (15). Turn nuts in counter clockwise to loosen and remove packing gland nuts.
2. Remove BOLT (14) to allow the access to the used packing rings.
3. Locate and slide upward the gland flange (12), BELLEVILLE SPRING (13) and FOLLOWER (11). Using a small pick, carefully remove the PACKING (10). The packing ring (9) at the bottom of the packing box should not be removed.
4. Refer the Table 1 for the torques of Packing Gland Stud - lbf-in (N-m)



Procedure of Disassembling

	<p>Warning:</p> <p>.</p> <ol style="list-style-type: none">1. Prior to disassembling, the valve has to be at half-open position to guarantee full relief of pressure in ball chamber.2. All harmful substances have to be guaranteed to be cleaned completely.
	<p>Caution:</p> <ol style="list-style-type: none">1. Disassembling product has to be operated by qualified operators.2. It is recommended to contact JDV for the product maintenance and disassembling in order to avoid danger caused by the incorrect disassembling and assembling.

JBFX Disassembling/Assembling Procedure

Note: Initiate by Turning the Ball to the Closed Position.

1. Disassemble the Bracket from the Valve Body.
Extract the stem snap ring (25) and key (26).
2. Dismantle the Gland and Stuffing System.
Loosen the bracket bolt (17) and disassemble the bracket (16) from the valve body (1).
3. Extract the Gland Flange and Gland Follower.
To loosen the gland nut (15), remove the BELLEVILLE SPRING (13) and nut (15).
4. Extract the Gland Flange and Gland Follower.
Remove the gland flange (12) and gland follower (11).
Remove the Retainer Components.



5. Disassemble the Cap from the Body.
Loosen the retainer screw (20), remove the retainer cover (19b) and gasket (21) from the body (1), and take out the support stem (19a).
6. Remove the Cap and Body Seal.
Loosen the bolt and nut (23/44) and disassemble the cap (2) from the body (1).
7. Extract the cap (2) and body seal (22).
Ensure the Ball Valve is in the Closed Position and Remove the Downstream Seat and Ball.
8. Confirm that the ball valve is in the closed position, and then remove the downstream seat (6) and ball (3).
9. Extract the Stem and Related Components.
Push the stem (7) downward and remove the STEM (7) and stem ring (8).
10. Use a small pick to carefully extract the PACKING (10).
11. Remove the Packing Ring.
12. Remove the Upstream Seat(5) and Seat Spring(6).
13. Take out the upstream seat (5) and seat spring (7).
14. Disassembly Procedure Completed.
15. Follow the above steps in reverse order to assemble the components.



Valve joint Bolt torque table (N-M)

A193-B7 / B16

BOLT SIZE			Lubricate oil Factor 0.13	Lubricate oil Factor 0.21
1	8	UNC	657	1,061
1-1/8	8	UN	963	1,556
1-1/4	8	UN	1,353	2,185
1-3/8	8	UN	1,834	2,963
1-1/2	8	UN	2,418	3,907
1-3/4	8	UN	3,934	6,355
2	8	UN	5,978	9,657
2-1/4	8	UN	8,630	13,941
2-1/2	8	UN	11,969	19,335
2-3/4	8	UN	16,074	25,965
3	8	UN	21,023	33,961

A193-B8M CL2

BOLT SIZE			Lubricate oil Factor 0.13	Lubricate oil Factor 0.21
1	8	UNC	598	966
1-1/8	8	UN	876	1,416
1-1/4	8	UN	1,230	1,988
1-3/8	8	UN	1,669	2,696
1-1/2	8	UN	2,200	3,554
1-3/4	8	UN	3,579	5,781
2	8	UN	5,439	8,785
2-1/4	8	UN	7,851	12,683
2-1/2	8	UN	10,889	17,589
2-3/4	8	UN	14,623	23,621
3	8	UN	19,125	30,895

(Table 1)



Gland Bolt torque table (N-M)

BOLT SIZE	Lubricate oil Factor 0.13	Lubricate oil Factor 0.13
M12x1.75	52	83
M14X2.0	83	133
M16x2.0	128	207
M20x2.5	250	404
M22x2.5	341	551
M24x3	432	698
M27x3	634	1,024
M30x3.5	859	1,388
M33x3.5	1,169	1,889
M36x4	1,502	2,427
M39x4	1,944	3,141
M42x4.5	2,405	3,886

(Table 2)