



JDV CONTROL VALVES CO., LTD.

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Installation, Operation and Maintenance V-Port Segment Control Valve

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JSB-F/JSB-M

V-Port Segment Control Valve

Instructions for Installation, Operation and Maintenance

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Overview

JSB Series V-segment valve is the segment ball with V-notch design for both regulating and shut-off services.

Features of the product comprise:

1. **1-PC Body design:** reducing the leakage.
2. **V-segment design:** providing the large and straight path giving a high Cv even in case of fibers or particles.
3. **Trunnion design:** self-lubricating bearings making the torque lighter and life cycle longer.
4. **V-Notch design:** V-notch in the segment offering a shearing function to allow fibrous mediums or slurries to pass without any obstruction.
5. **Optional seat design:** meeting many applications.
6. **Alternative hard faces:** satisfying numerous services.
7. **Wave spring:** Spring-loaded metal seat design providing a lower torque.
8. **Removable end-cap:** making the maintenance easier.
9. **Equal percentage flow characteristics.**
10. **Spline stem design:** reducing the deadband to optimizes the control performance.
11. **Alternative end connections:** Available in flangeless (wafer) or flanged connections.
12. **ISO 5211 mounting pad.**
13. **Anti-static design.**
14. **Anti-blowout stem design.**



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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.

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.



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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.

	Warning Do not get beyond the limitation indicated by valve specification or technical parameters, or otherwise, death or severe injury might be resulted.
	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.



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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. 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 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.
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* 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 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.



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Storage & Maintenance

Preserving of Packed 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 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 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 for Preparation of Installation

Please follow the following instruction guidelines to guarantee and prolong product life.

1. Please disassemble the pack (wooden case or pallet) carefully in order to prevent the product and cylinder and other components from damage.
2. Before installation, remove the seal from flange opening for the air pipeline containing air filter to clean the interior of the valve. Make sure the clearance of foreign object inside.
3. Make sure that the mark on the nameplate is compliant with service condition.
4. Make sure that the flow direction on the body meets the direction of equipment pressure.
5. Make sure that all screws and nuts are secured.
6. In valve installation, please use wrench and follow diagonal sequence (Figure 1) to lock screws in order to prevent flange from deformation.

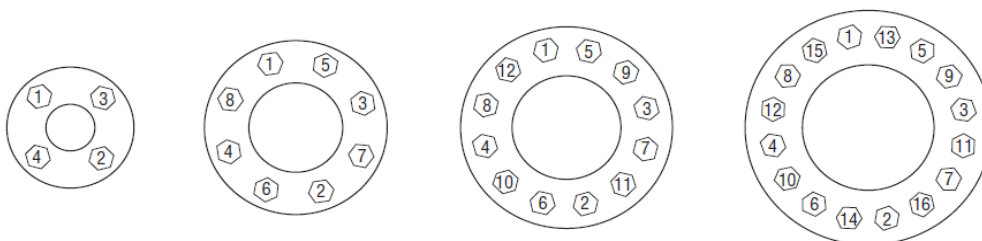


Figure 1

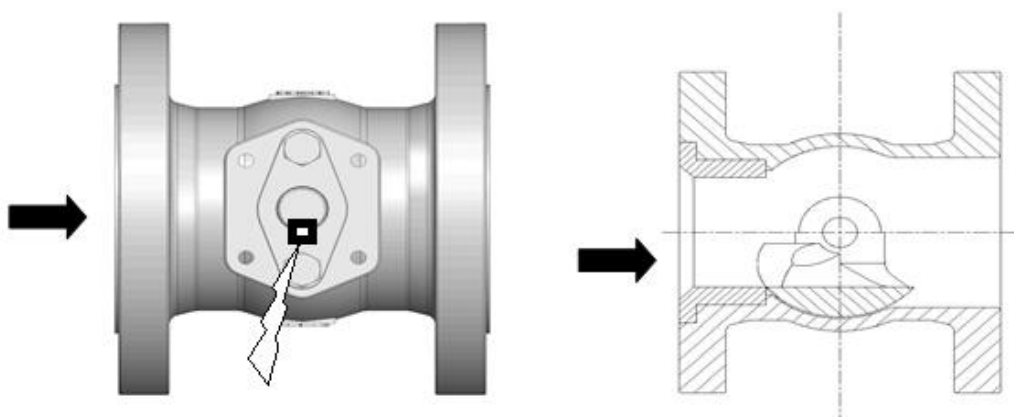


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Notes prior to Operation

1. Over or inadequate operation would damage handle or components, or result in indirect leakage.
2. Please identify that the opened or closed position of the valve is consistent with the key way direction on the stem, handle and channel.
see (Figure 1 、 2)



(Figure 2)

Key way of open position

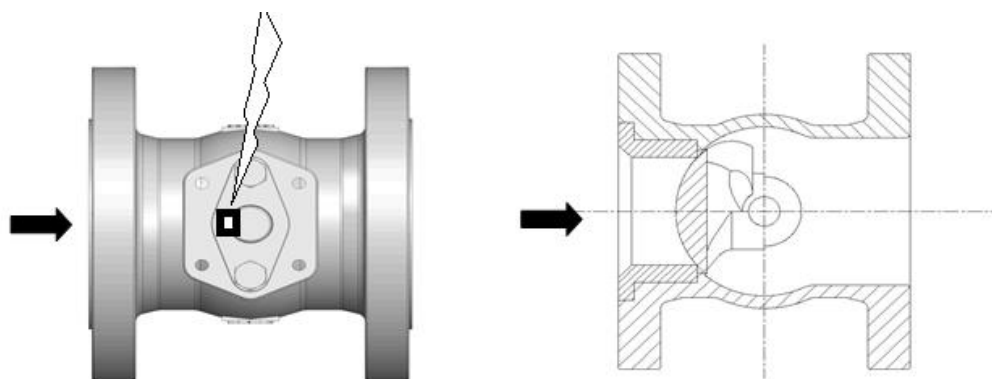


Figure 3

Key way of Close position



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Control valve

1. Please identify that the arrow on the gear box indicates the open position, the valve is in open status, the arrow points to closed position, and the valve is in closed status.
2. Over and inadequate operation would cause damage to components of valve or result in leakage.
3. Please operate according to the instructions in the user manual of the pneumatically manufacturer for the action valve to be opened or closed pneumatically.

Maintenance and Troubleshooting

Routine Maintenance

* Maintain routine maintenance and check to guarantee good operability.

Maintenance of gland

As the upper seal (stem) appears leakage, please fasten gland bolts uniformly until leakage stops.

	Forbidden: Please do not overturn the Segment more than 90 degree when operating the valve in order to avoid the Seat being scratched by the Segment. If this happens, please follow the Disassembling and Assembling instructions to remove the Cover and Seat, turn the Segment back to right position, then assemble the valve parts back.
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Troubleshooting

Area	Problem Description	Solutions
Internal Leaks	Leak at SEAT(6A)(6C)(6G)	1. Please check whether the surface of ball (2) 、 soft seat (6A) 、 metal seat (6C)(6G) has scratches or any damage 。 2. Replace the packing(6D)(6H) when the surface of ball and valve seat has not scratches or any damage. 3. Replace the ball (2) or soft seat (6A)/METAL SEAT (6C)(6G) when the surface of ball and valve seat have scratches or any damage. 4. Disassemble it each time, need to replace the packing (6D).
	Leak at the mouth of the stem	1. Fastening the gland bolts (14). 2. Replace the packing(12) 、 washer(10) 、 O-ring (18) , if leakage cannot stanch. 3. Disassemble it each time, need to replace the gland packing (12).
External Leaks	Leak at end cover(5)	1. Fastening the end cover bolts (17) 。 2. Replace the cover gasket(16) Or trunnion graphite washer(20) if leakage cannot stanch. 3. Disassemble it each time, need to replace the cover gasket (16).
	Leak at Extended bonnet(26)	1. Fastening the bonnet bolts (28) 。 2. Replace the packing(12) 、 washer(10) 、 bonnet Gasket (27) 。 3. Disassemble it each time, need to replace the gland packing (12) 、 bonnet Gasket (27).



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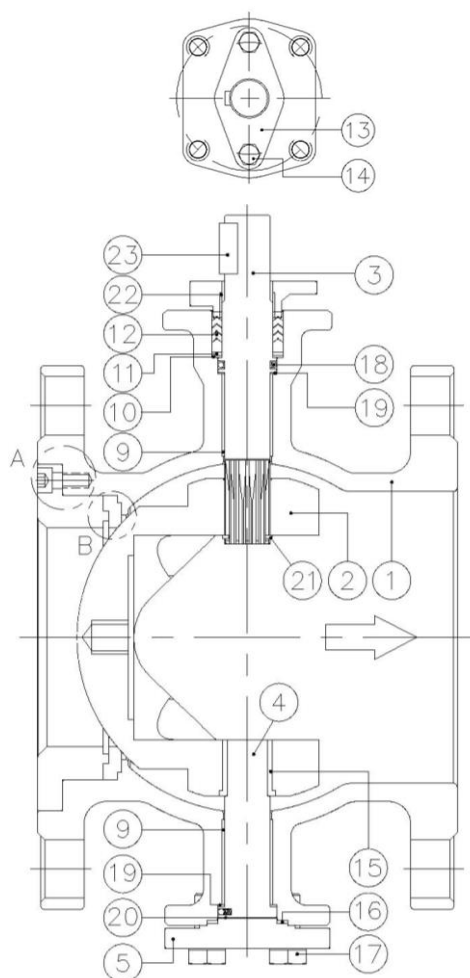


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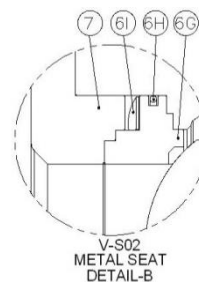
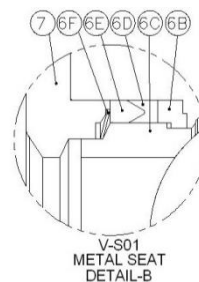
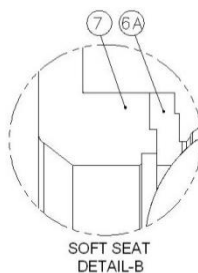
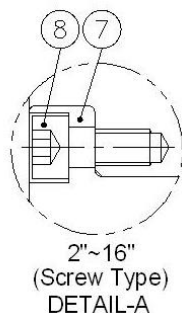
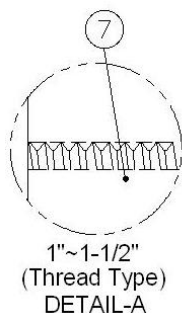
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JSB-F/ JSB-M Structure Diagram :

NO	PART
1	BODY
2	SEGMENT
3	STEM
4	SHAFT
5	END COVER
SOFT SEAT	6A SEAT
S01 METAL SEAT	6B SEAT SUPPORT
	6C SEAT
	6D PACKING
	6E SEAT GLAND
	6F SPRING
S02 METAL SEAT	6G SEAT
	6H O-RING
	6I SPRING
7	CAP
8	BOLT (1)
9	THURST BEARING
10	WASHER
11	WASHER
12	GLAND PACKING
13	GLAND
14	GLAND BOLT
15	SUPPORT (2)
16	COVER GASKET
17	COVER BOLT
18	STEM O-RING
19	WASHER
20	WASHER
21	C-CLIP
22	GLAND BEARING
23	PIN



NOTES: (1)FOR SIZE 1-1/2" ABOVE
(2)FOR SIZE 2" ABOVE



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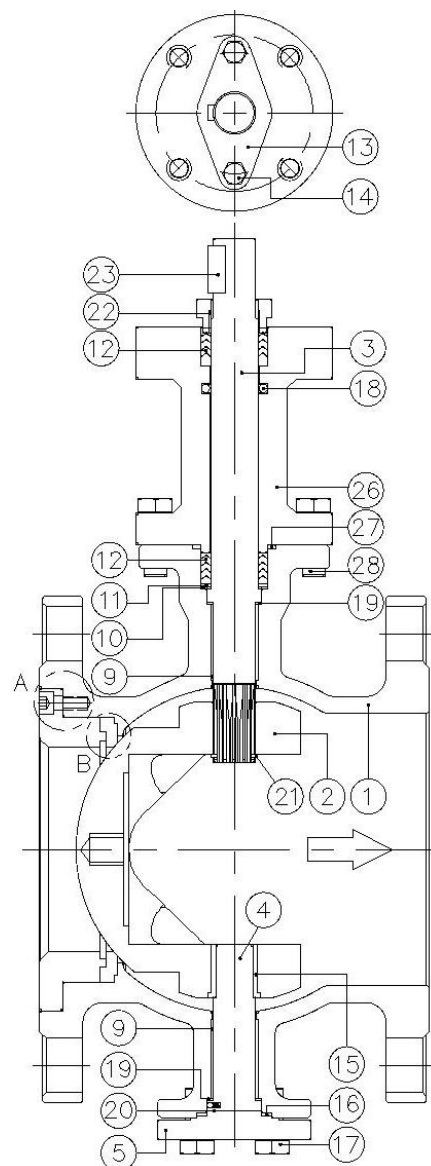


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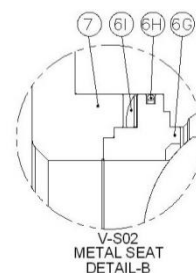
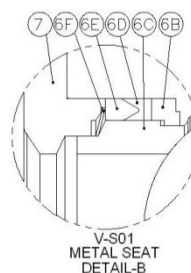
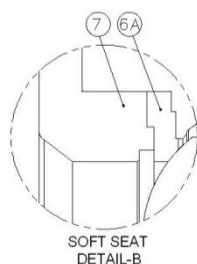
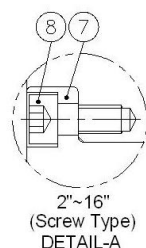
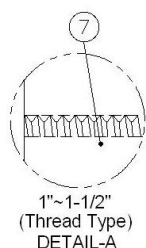
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JSB-F/ JSB-M EXTENDED Structure Diagram

NO	PART
1	BODY
2	SEGMENT
3	STEM
4	SHAFT
5	END COVER
SOFT SEAT	6A SEAT
S01 METAL SEAT	6B SEAT SUPPORT
	6C SEAT
	6D PACKING
	6E SEAT GLAND
	6F SPRING
S02 METAL SEAT	6G SEAT
	6H O-RING
	6I SPRING
7	CAP
8	BOLT (1)
9	THURST BEARING
10	WASHER
11	WASHER
12	GLAND PACKING
13	GLAND
14	GLAND BOLT
15	SUPPORT (2)
16	COVER GASKET
17	COVER BOLT
18	STEM O-RING
19	WASHER
20	WASHER
21	C-CLIP
22	GLAND BEARING
23	PIN
26	BONNET
27	BONNET GASKET
28	BONNET BOLT



NOTES: (1)FOR SIZE 1-1/2" ABOVE
(2)FOR SIZE 2" ABOVE



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Procedure of Disassembling and Assemblage

	Warning: 1. Prior to disassembling, the valve has to be at open position to guarantee full relief of pressure in ball chamber. 2. All harmful substances have to be guaranteed to be cleaned completely.
	Caution: 1. Disassembling product has to be operated by qualified operators. 2. Contact with JDV is recommended for maintaining and disassembling the product in order to avoid danger due to incorrect disassembling and assemblage.

Disassembly and Assembly notified:

1. When the valve is disassembled, the original seal may be adhered to the valve body (1) and parts. Before replacing the new seal, the sealing surface must be cleaned.
2. When the ball (2) is placed in the valve body (1), the valve stem (3) needs to be closed; otherwise it cannot be assembled and positioned.
3. Disassemble and assemble the valve. The key (23) is in the same direction as the ball surface (2) (figure 2, 3).



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JSB-F / JSB-M Disassembling Procedure

* Rotate the ball (2) to the closed state.

1. Loosen the cover bolt (8) and remove the cover (7) from the body (1).

Note: under size 1-1/2", the design can be directly removed from the valve body (1) by loosening the cover (7).

1. seat removal:

* Soft seal: After the cover (7) is removed, the soft seat (6A) can be removed.

Metal seat:

S01-Metal seat set: Take out the spring (6F), seat gland (6E), metal seat (6C), packing (6D), seat support (6B).

S02-Metal seat Set: Remove the spring (6I), metal seat (6G), and O-ring (6H) in order.

* when remove the seats (6A), (6C), (6G), Please do not damage the sealing surface.

2. Remove the key (23), loosen the gland blot (14), and remove the gland (13).

3. Remove the c-clip (21) and remove the stem (3), washer (10), (11).

4. Loosen the end cover blot (17) and place the end cover (5), cover gasket (16), and the support shaft washer (20) is removed from the valve body (1).

5. Take out the support (4).

6. Remove the ball (2) from the downstream end. Do not damage the sealing surface.

JSB-F / JSB-M –EXTENDED Disassembling Procedure

1. Refer to JSB-F / JSB-M Product Structure Removal Steps 1~3.

Disassemble the cover and valve seat.

2. Use a clip to remove the retaining ring (21).

3. Loosen the extended bonnet blot (28).

4. Separate the extended bonnet (26) from the stem (3), gland packing (12), gasket, stem O-ring (18) and body (1). Remove the extended bonnet gasket (27). Take out the stem (3), washer(10) 、 (11).

5. Loosen the end cover screw (17) and place the end cover (5), end cover gasket (16) on the part in sequence.

6. Removed the washer (20) from the body (1).



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JSB-F /JSB-M Assemblage Procedure

- ※ Put the ball (2) into the body (1) from the downstream end. Please assemble it carefully and do not damage the sealing surface.
- 1. Assemble the ball bushing (15) into the shaft hole at the bottom of the ball (2). Before inserting into the valve body (1).
 - * over the size 2" have the Ball bushing (15) part.
- 2. Put the shaft (4) use a plastic hammer from the bottom up into the bottom of the ball (2).
- 3. Put the stem O-ring (18) into the stem (3) groove hole, and then place the stem (3) from the top down into the ball (2) with the plastic hammer.
- 4. Assemble the end cover part – washer (20), end cover gasket (16), end cover (5) into the valve. Tighten the end cover bolt (17).
- 5. Assemble the stem assembly - place the washer (10) (11), gland packing (12) into the body(1) . put the gland (13) and tighten the packing gland bolt (14).
- 6. Seat assembly
 - Soft seat : Put the seat (6A) and cap(7) into the body (1). Tighten the cap. metal seat:
 - S01-Metal seat: Assemble seat support (6B), packing (6D), seat gland (6E), metal seat (6C), spring (6F), cap (7) ,tighten the cap bolt (8)in the Body (1).
 - S02-Metal seat: Place the O-ring (6H) on the metal seat (6G) groove and then put the spring (6I) into the body (1), put the cap (7) behind the body (1), tighten the cover bolt (8).
- 7. Place the key (23) on the valve stem.
- 8. Finally, use the c- clip tool, set the c-clip(21) in the groove of the stem (3).
- 9. Confirm that the operation is smooth and complete the assembly rocedure.



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JSB-F / JSB-M –EXTENDED Assemblage Procedure

1. Refer to JSB-F / JSB-M Product Structure Removal Steps 1~7.
2. Place the extended bonnet gasket (27) through the stem (3) and place the body (1) in connection with the extended bonnet (26).
3. Assemble the extended bonnet (26) through the stem (3) and tighten the bonnet bolt (28).
4. Assemble the gland packing (12). Place the gland (13) and tighten the packing gland blot (14).
5. Place the key (23) on the stem.
6. Confirm that the operation is smooth and complete the assembly procedure.



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