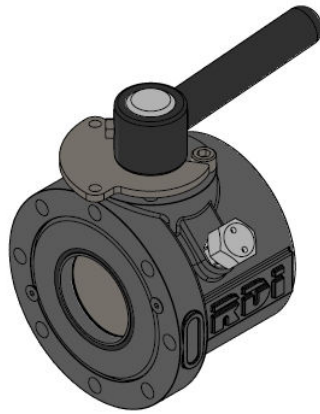


Red Deer Ironworks



3" Ball Valve Compact Maintenance Manual

Parts Covered: BV3INC, BV3INC3206

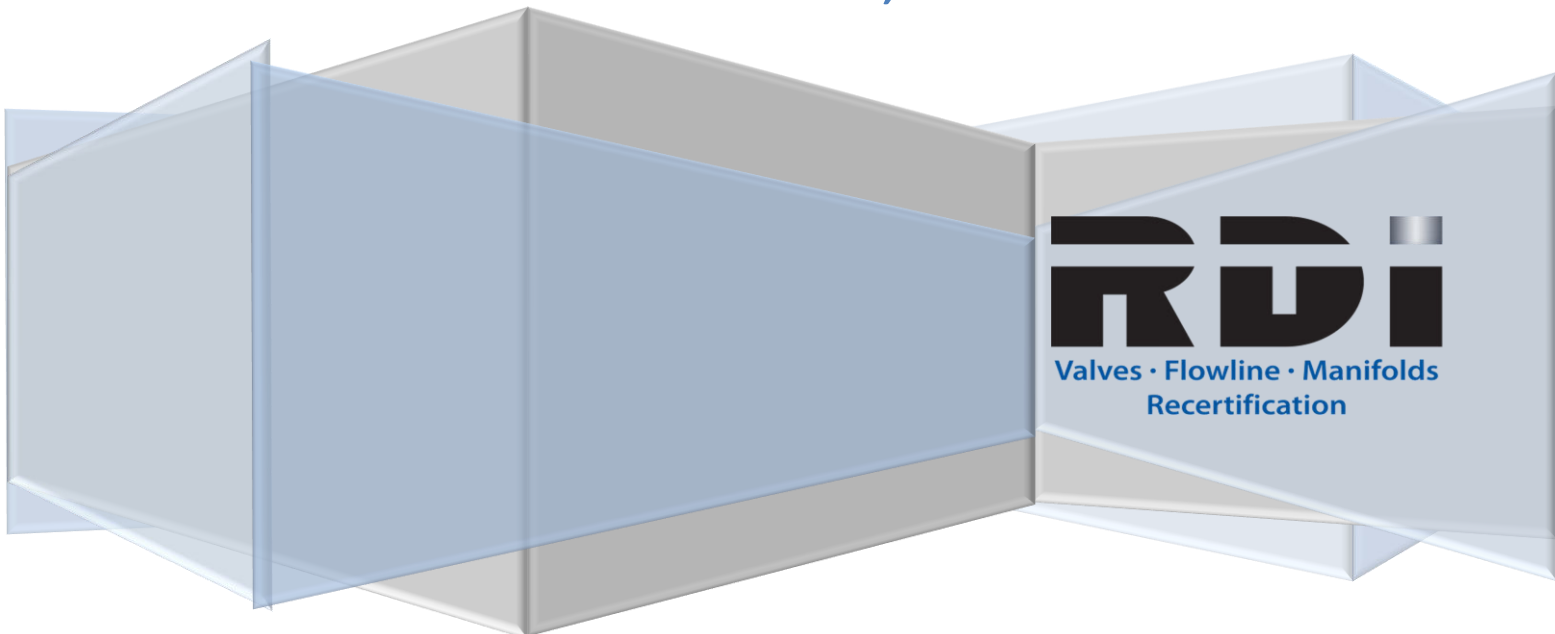


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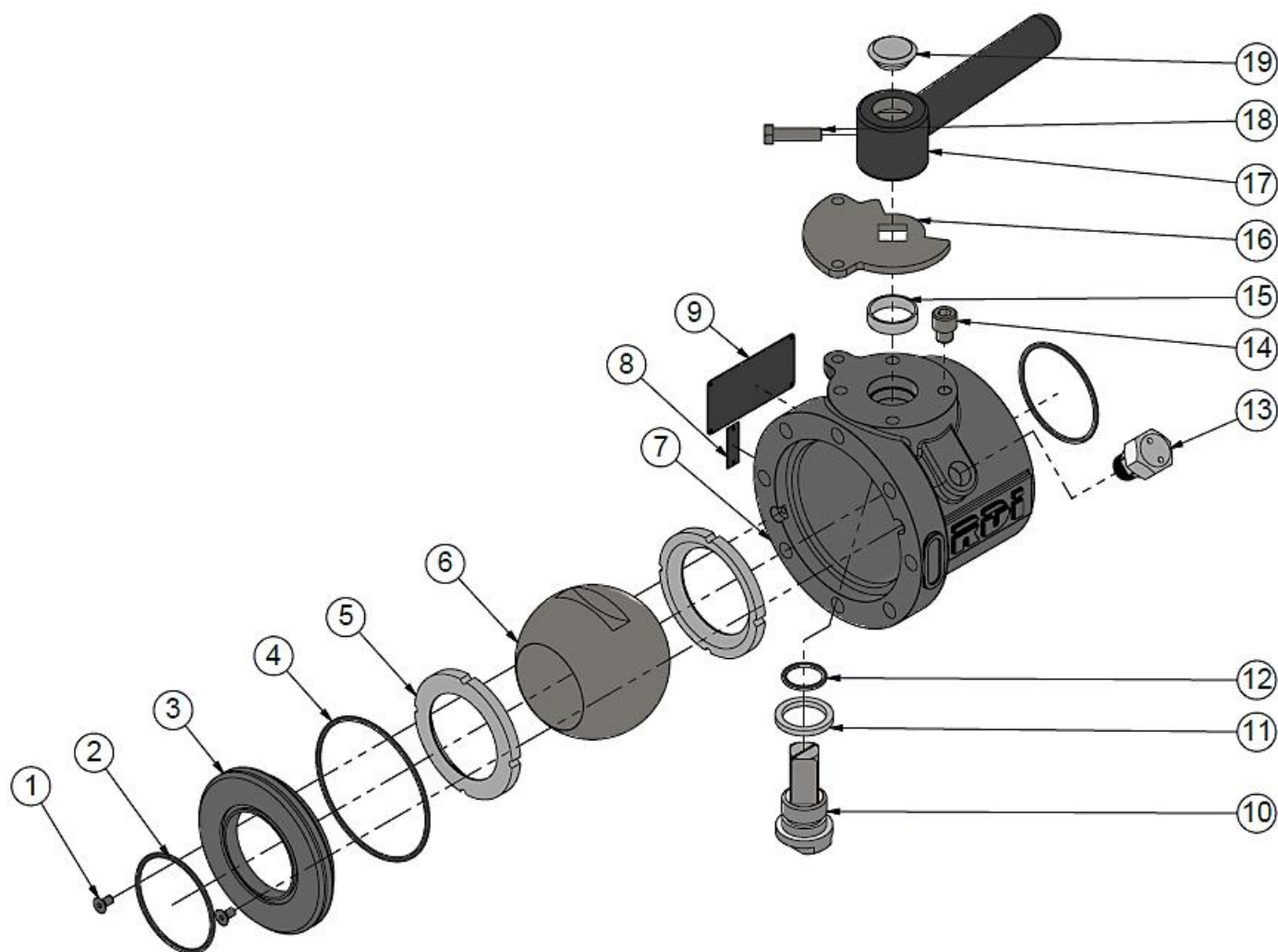
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RDI Sales & Service Centers **Error! Bookmark not defined.**

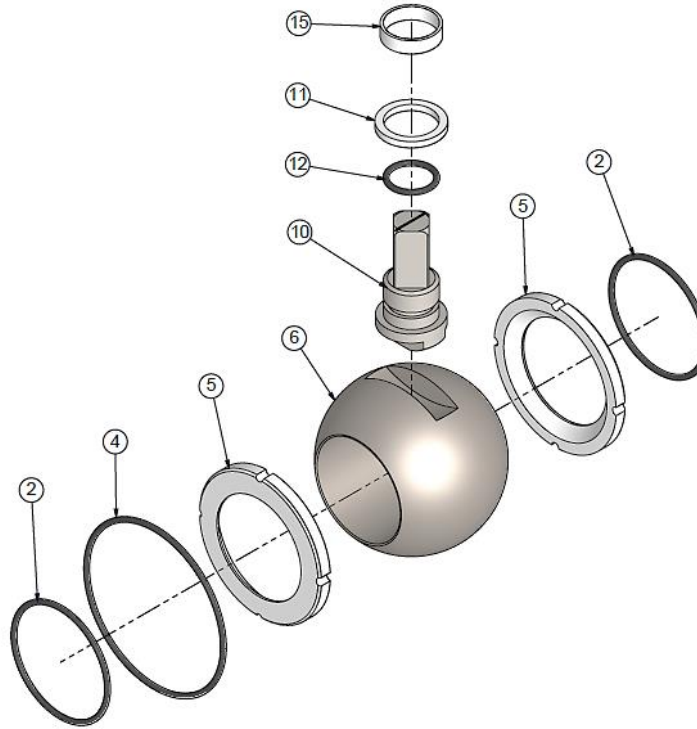
Exploded View - 3" Ball Valve Compact (BV3INC)



Parts Listing - 3" Ball Valve Compact (BV3INC)

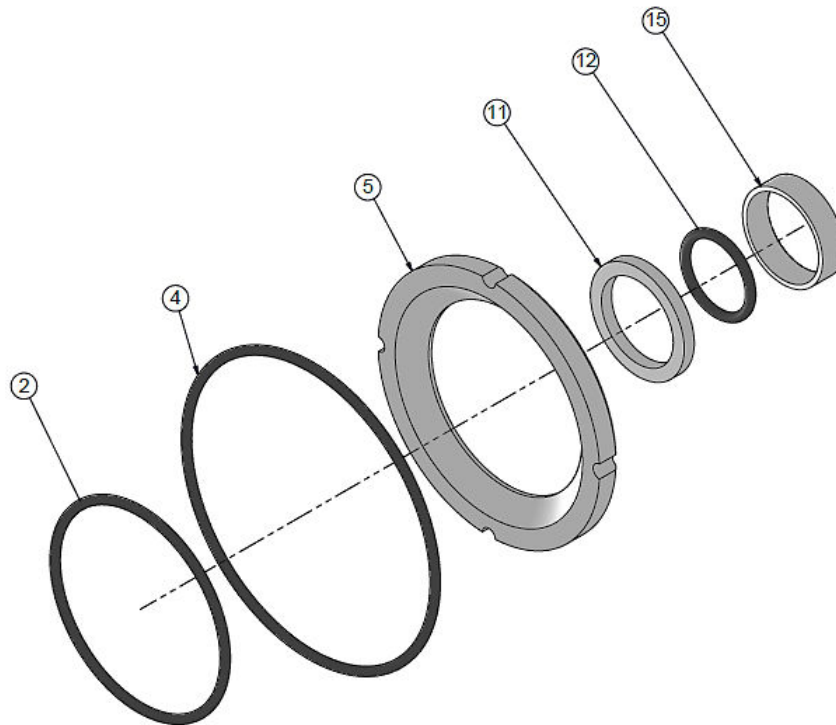
Item	Qty	Description	Part #
1	2	Countersunk Screw, Socket Head, Hex, 1/4-20 X 1/2 X 1/2 Thread Length	SCHCSCREW 0.25-20x0.5x0.5-HX-N
2	2	O-Ring 235	OR-N90-235
3	1	Seat Retainer	BV3INCRET
4	1	O-Ring 247	OR-N90-247
5	2	Seat	BV3INCSEAT
6	1	Ball	BV3INCBALL
7	1	Ball Valve Compact Body	BV3INC
8	1	Warning Plate	BVTAGW
9	1	Name Plate	BVTAG
10	1	Stem	BV3INCSTEM
11	1	Thrust Washer	BV3INCTWASHER
12	1	O-Ring 216	OR-N90-216
13	1	Body Grease Fitting 1/2 NPT with Venting Cap (GBH12-BGF)	SH-031
14	1	Cap Screw, Socket Head, Hex, 1/2-13 x 1/2 x 1/2 Thread Length	SHCS 0.5-13x1.5x1.5-N
15	1	Stem Washer	BV3INCSTWASHER
16	1	Stop Plate	BV3INCHDLSTOP
17	1	Handle	BV3INHANDLE
18	1	Hex Bolt, 3/8-16 x 1-1/2 x 1 Thread Length	HBOLT 0.3750-16x1.5x1-N
19	1	Handle Cap	BV3INHANDLECAP

Major Repair Kit Parts Listing - 3" Ball Valve Compact (BV3INC)



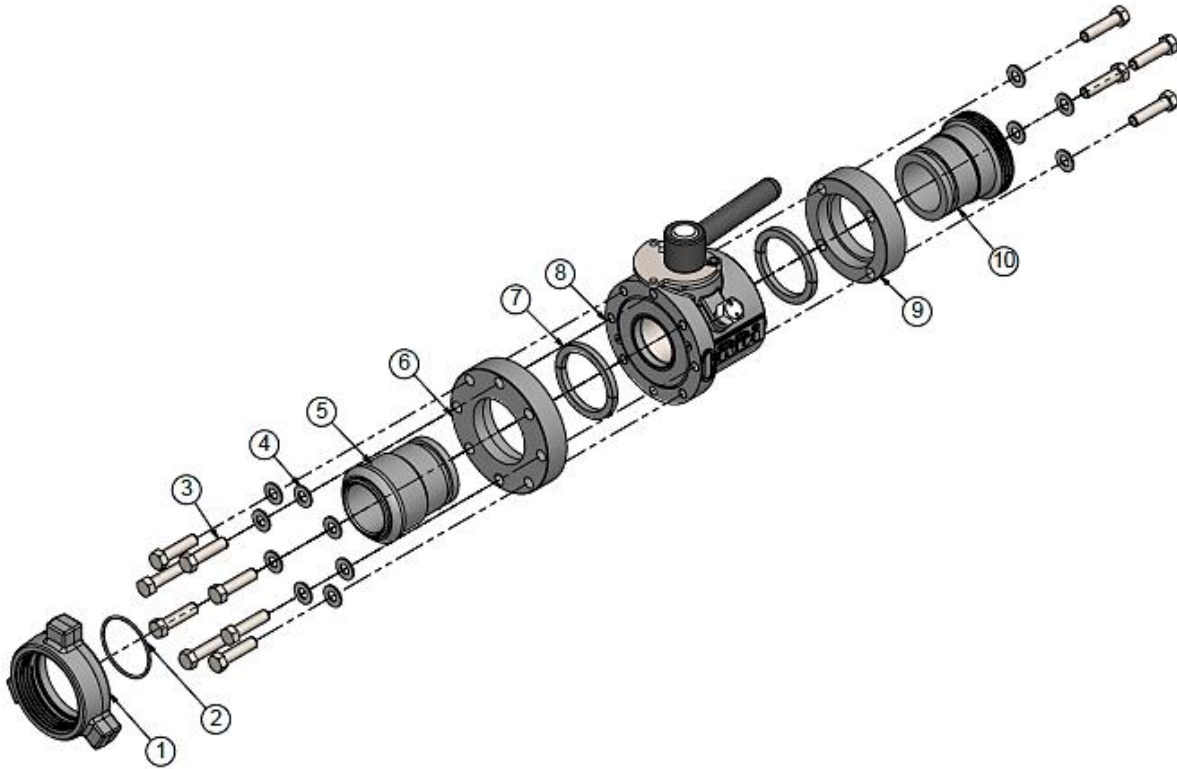
Item	Qty	Description	Part #
		Major Repair Kit	BVRK3INCMAJ
2	2	O-Ring 235	OR-N90-235
4	1	O-Ring 247	OR-N90-247
5	2	Seat	BV3INCSEAT
6	1	Ball	BV3INCBALL
10	1	Stem	BV3INCSTEM
11	1	Thrust Washer	BV3INCTWASHER
12	1	O-Ring 216	OR-N90-216
15	1	Stem Washer	BV3INCSWASHER

Minor Repair Kit Parts Listing - 3" Ball Valve Compact (BV3INC)



Item	Qty	Description	Part #
		Minor Repair Kit	BVRK3INCMIN
2	2	O-Ring 235	OR-N90-235
4	1	O-Ring 247	OR-N90-247
5	2	Seat	BV3INCSEAT
11	1	Thrust Washer	BV3INCTWASHER
12	1	O-Ring 216	OR-N90-216
15	1	Stem Washer	BV3INCSWASHER

Exploded View and Parts Listing - BV3INC3206



Item	Qty	Description	Part #
1	1	3in Fig 206 Wingnut	WN3206
2	1	O-Ring 236	OR-H80-236
3	12	Hex Bolt, 5/8-11 X 2-1/2 X 2-1/2 Thread Length	HBOLT 0.6250-11x2.5x2.5-N
4	12	Flat Washer, Narrow - 5/8"	FWN 0.625
5	1	3in Fig 206 Male Nipple	BV3INC3206M
6	1	Flange Ring	BV3INCFLGM
7	2	Half Ring Set	BV3INCRING
8	1	Ball Valve Compact - 3in 2,220psi Sour Service	BV3INC
9	1	Flange Ring	BV3INCFLGF
10	1	3in Fig 206 F Nipple	BV3INC3206F

For other end connections please contact Sales

Assembly Procedure

Pictorial – 3" Ball Valve Compact (BV3INC)

It is important that the workstation is clean and free of any contaminants such as metal shavings, dirt, etc. Do not sand or de-burr any items while at the assembly workstation.

Note: RDI-6430 (assembly grease) and Nikal (anti-seize compound) are used in this procedure. Use of grease other than that listed in this manual is not recommended as it may adversely affect the performance and functionality of the Ball Valve.

1. Clean and inspect all parts for any damage (i.e. dents, scratches, sharp edges and burrs), particularly on the sealing areas and threads prior to assembly.



2. Apply a liberal amount of **grease** into the bottom seal pocket of the **Ball Valve (BV) Body (#7)**. Coat the first **Seat (#5)** with **grease** then install it into the seal pocket of the **BV Body**.

Note: Ensure the **Seat** sits flush in the seal pocket of the **BV Body** with the concave side facing up.



3. Apply a liberal amount of **grease** on the **Stem (#10)** and **Thrust Washer (#11)**. Slide the **Thrust Washer** onto the **Stem** up against the shoulder.



4. Coat **O-Ring 216 (#12)** with **grease** then slide it onto the **Stem** into the groove.



5. Coat **Stem Washer (#15)** with **grease** then install it into the external pocket groove of the **BV Body**.



6. Insert the **Stem Assembly** into the "stem hole" of the **BV Body** until fully engaged.

Warning, do not use the **Ball** to seat the **Stem**, ensure the **Stem** is fully seated before installing the **Ball**.

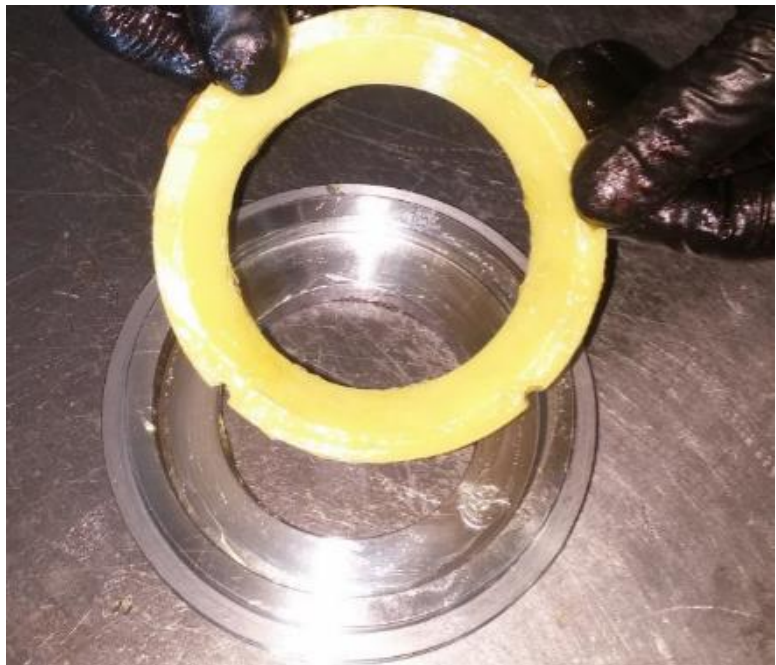


7. Coat the **Ball (#6)** with **grease**. Align the keyway of the **Ball** to the key of the **Stem** then slide it down against the bottom **Seat**.



8. Apply a liberal amount of **grease** on the seal pocket of the **Seat Retainer (#3)**. Coat the second **Seat** with **grease** then install it into the seal pocket of the **Seat Retainer**.

Note: Ensure the **Seat** sits flush in the seal pocket of the **Seat Retainer** with the concave side of the **Seat** facing up.



9. Coat **O-Ring 247 (#4)** with **grease** then install it into the groove on the **Seat Retainer**.



10. Apply a moderate amount of **grease** into the upper groove of the **BV Body** then install the **Seat Retainer Assembly**.



11. Apply **anti-seize compound** on the threads of the **Countersunk Screws (#1)** then thread them evenly into the **BV Body** to secure the **Seat Retainer**.

Note: Ensure the **Seat Retainer** is flush with the **BV Body**. Rotate the **Stem** at least twice to ensure free movement of the **BV Ball**.



12. Coat the two **O-Rings 235 (#2)** with **grease** then install them into the external groove of the **Seat Retainer** and into the bottom groove of the **BV Body**.



13. Apply **anti-seize compound** on the threads of the **Cap Screw (#14)** then thread it into the **bottom-left** threaded hole as shown.



14. Slide the **Stop Plate (#16)** onto the **Stem** in the position and orientation as shown.



15. Attach the **Handle (#17)** with the **Handle Cap (#19)** onto the **Stem** as shown.

Note: Ensure the open/closed positions of the **Ball Valve Handle** correspond to the open/closed positions of the **Ball Valve Ball**.



16. Secure the **Handle** with **Hex Bolt (#18)** and tighten it snugly.



17. Remove the Venting Cap of the **Body Grease Fitting (#13)** and apply 3-4 turns of Teflon tape on its 1/2 NPT threads. Thread the **Body Grease Fitting** into the side threaded hole of the **BV Body** and tighten it snugly.



- 18. Replace the Venting Cap of the Body Grease Fitting.**



Greasing Instructions

Ensure you have the most recent version of the RDI Greasing Instructions by visiting:

<https://rdironworks.com/products/plug-valves/>

or contact our sales team, toll-free:

1.855.973.4766

Grease Fitting ½ NPT

The image below is the Grease Fitting used on the RDI Ball Valves.



Tear-Down Procedure

WARNING: If the **Ball Valve Handle** is hard to cycle or turn and the **Ball Valve Ball** seems to be stuck or locked, there may be pressure trapped in the **Valve**, also known as “pressure locking”. If this happens, **DO NOT** continue to tear-down a **Pressure Locked Ball Valve**. (See Pressure Relieving Procedure for instructions).

Refer to the steps in the Assembly Procedure to tear-down the **Ball Valve**.

Thoroughly degrease and clean all parts that are disassembled. Check for any damage, replace as necessary.

Pressure Relieving Procedure

Pressure locking is caused by a rapid decrease in line pressure which traps fluid at the original line pressure. The trapped pressure causes a net upward force of the ball due to a differential in pressure area from top to bottom.

Best Practice for relieving trapped pressure in a **Ball Valve**. Connect the **Valve** and bring it to its last highest pressure. This will set the internal components in equilibrium and allow you to actuate the **Ball** while gradually decreasing the in-line pressure. This will ensure the **Ball** maintains freedom of rotation.

RDI Sales & Service Centers

For a list of our locations visit our website @
<https://rdironworks.com/contact-a-location-near-you/>.



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