



**PIG BALL
VALVE
OPERATION
AND
MAINTENANCE
MANUAL**

Your Solution Partner
1978 - ∞



FEATURES	
DIMENSIONS	2" - 24"
CONNECTIONS TYPES	RF / RTJ
WORKING PRESSURE	CLASS 150 / 300 / 600 / 900 / 1500 / 2500 (PN 20 / 50 / 100 / 150 / 250 / 420)
WORKING TEMPERATURE	-29 °C .+180 °C / -46 °C .+180 °C
OPERATION	LEVER / GEAR BOX

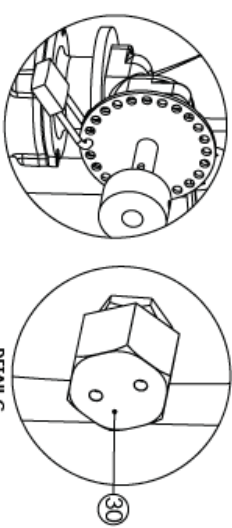
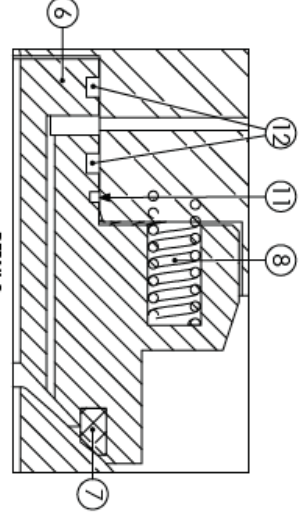
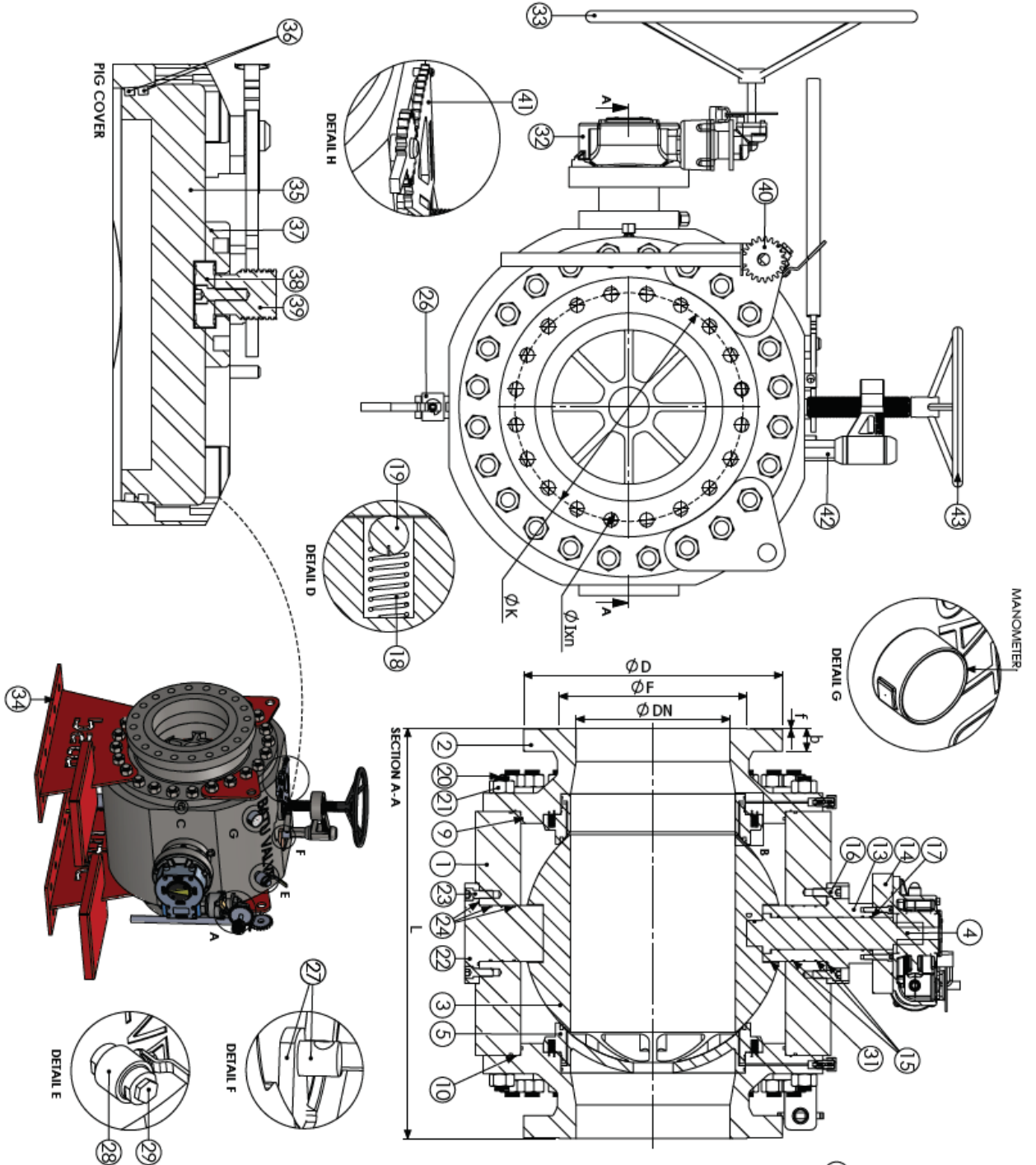
STANDARDS	
VALVES DESING	API 6D / ISO 17292 / ISO 14313 / ASME B 16.34
DIMENSIONS	BATUSAN SPECIAL
CONNECTIONS	ASME B 16.5
FIRE-SAFE	API 6FA / API 607 / ISO 10497
TESTING	API 6D / API 598 / ISO 14313
ISOLATION TYPE	DBB / DBB-1 / DBB-2

PIG BALL VALVES ADVANTAGES OVER TRADITIONAL PIG LAUNCHER SYSTEMS

Pig Ball Valve, normally consists of Pig Launching & Pig Receiving valve, is a device for loading and receiving cleaning pigs and detecting tools to clean the internal pipe periodically, and it is especially widely used in Oil & Gas pipeline industry. The field tested pig valve offers durability, reliability service for oil and gas applications to improve the piping transportation efficiency. It can be easily and safely used with most of the popular pig styles, either one-piece molded pigs or the spherical pigs that are intended for use in pig ball valves.

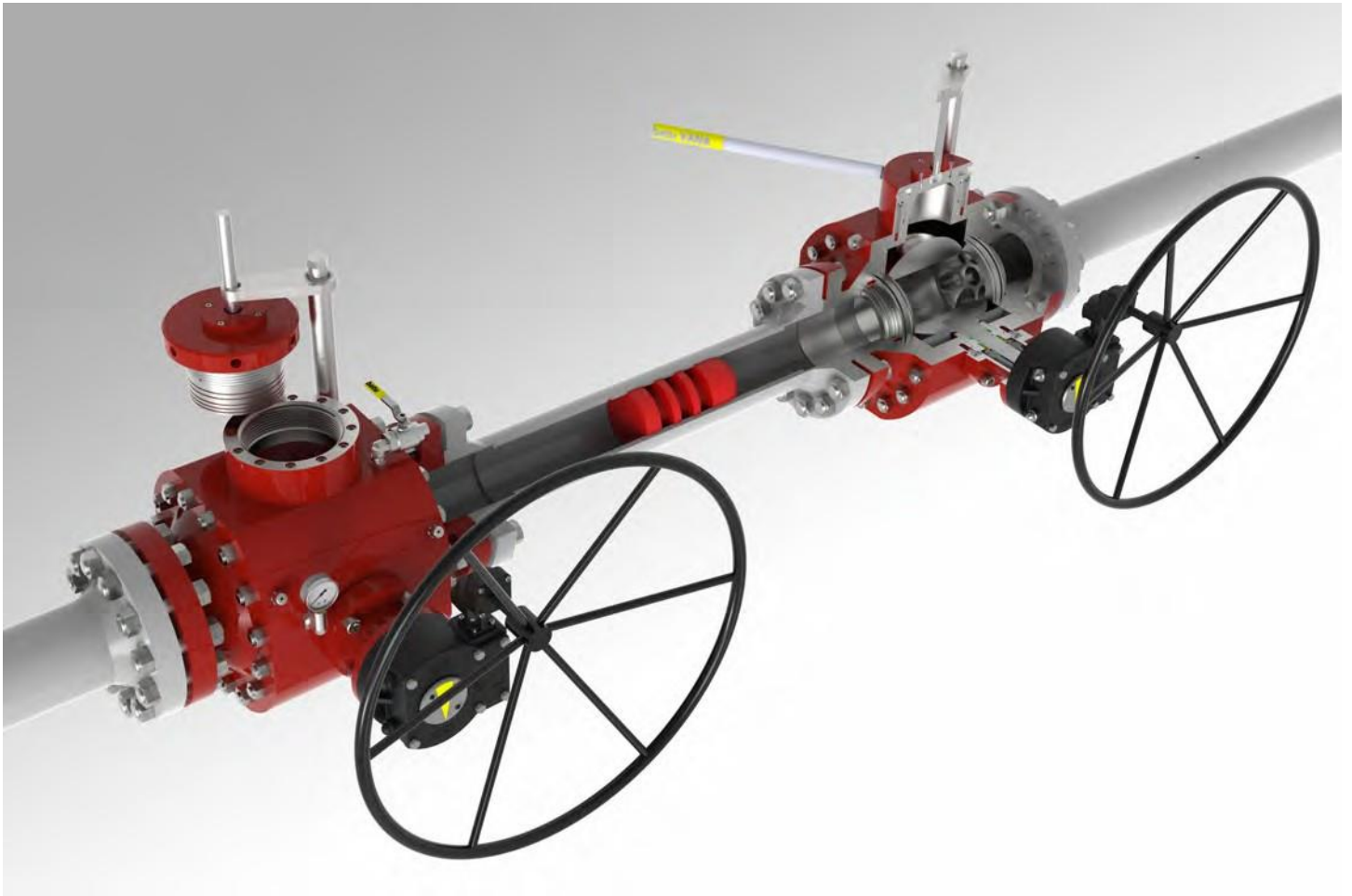
Pig Ball Valve advantages over the traditional barrell style pig launcher & receivers :

- Smaller Footprint reduces the space required for pigging facilities
- Simple configuration means a reduced requirement for infrastructre and decreases field construction time.
- Less Equipment and functionally simple design means fewer valves and controls to operate, minimizes training and maintenance costs.
- Built-in features means safer operations for operations personnel and less man power.
- Reduce emissions by more than %80 compared to traditional pig launching methods, saving the valuable medium.
- Overall Pig Ball Valves allows cost savings ranging between %25 to %60 over traditional pig launcher and receiver systems.



BILL OF MATERIALS

ITEM NO	ITEM DESCRIPTION	MATERIAL
1	BODY	ASTM A105
2	COVER	ASTM A105
3	BALL	SS-420
4	STEM	SS-420
5	SEAT RETAINER-PIG CATCH	SS-420
6	SEAT RETAINER	SS-420
7	SEAT	RPTFE (%25 GLASS FILLER) INCONEL X-750
8	SEAT SPRING	SS-420
9	COVER SEAL	SS-420
10	BODY SEAL	316 SS+G-RAPHTITE+VITON
11	PIG OPERATOR	G-RAPHTITE
12	PIG SEAL	ASTM A105
13	BONNET FLANGE	ASTM A105
14	BONNET SEAL	VITON
15	BONNET BOLT	ASTM A193-Gr. B7
16	BONNET NUT	ASTM A194-Gr. 2H
17	ANTISTATIC SPRING	1.4301
18	ANTISTATIC BALL	ASTM A193-Gr. B7
19	STUD	ASTM A194-Gr. 2H
20	NUT	ASTM A193-Gr. B7
21	TRUNNION BOLT	ASTM A105
22	TRUNNION NUT	ASTM A193-Gr. B7
23	PIG SUPPORT GUIDE	VITON
24	PIG SUPPORT RING	SS 304
25	PIG SUPPORT RING BALL VALVE	316 SS+G-RAPHTITE+VITON
26	PIG SUPPORT RING BALL VALVE	316 SS+G-RAPHTITE+VITON
27	PIG SUPPORT RING BALL VALVE	316 SS+G-RAPHTITE+VITON
28	VEENT	ASTM A105
29	BLIND PLUG	ASTM A105
30	GREASER	ASTM A105
31	DRY BEARING	BRONZE
32	GEAR OP.	CARBON STEEL
33	WHEEL	CARBON STEEL
34	PIG COVER	ASTM A105
35	PIG COVER SEAL	VITON
36	PIG BONNET	ASTM A105
37	BUTRESS GEAR STEM PART	ASTM A105
38	BUTRESS GEAR STEM PART	ASTM A105
39	LEVER CONNECTION PART	ASTM A105
40	COGWHHEEL	CARBON STEEL
41	BEARING POST	ASTM A105
42	HAND WHEEL	CARBON STEEL
43	MANOMETER	



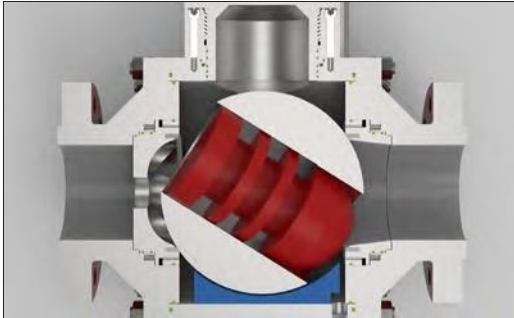
BATU PIG BALL VALVE ADVANTAGES OVER OTHER PIG BALL VALVES

Batu Pig Valves can be customizable to match customer requirements. Customizable face to face lengths, customizable ball sizes to accommodate different pigs or other special features can be implemented.

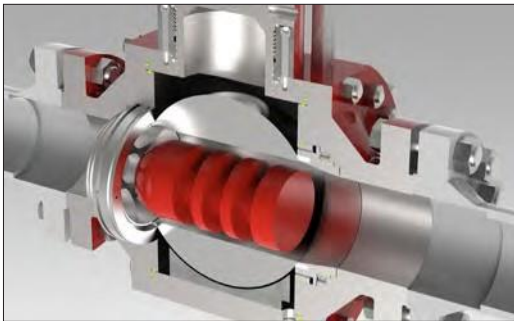
- Batu Pig Valves are CNC Machined from forged steel.
- Batu Pig Valves have oversized balls that accommodates longer pigs which allows wider range of pig selections.
- Batu Pig Valves have a guide implemented to restrain pinching of the pig and to avoid obstructing of the system during loading.
- Double Block and Bleed construction allows it to be used as a traditional block valve reducing the number of valves required in the pigging facility.
- Designed in accordance to NACE for sour service.
- Alternative materials are available for different conditions.
- All Batu Pig valves are equipped with ROTORK gearboxes
- Batu Pig valves are constructed with %100 European origin materials and %100 manufactured in Turkish facilities.



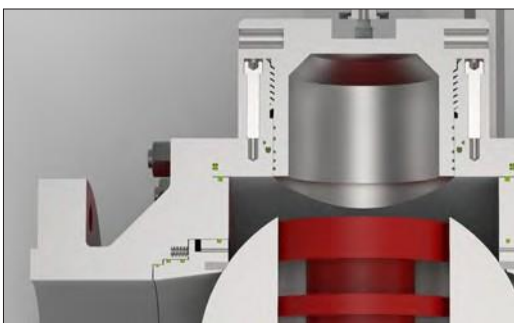
Batu Pig ball valves have a top pressure releasing valve, have a bottom liquid and debris drain valve and most importantly have a visibly placed manometer to observe inside pressure during operation for extra safety measures.



Batu Pig ball valves use a special guiding piece that ensures the pigs to not to be pinched during operation and provides smooth operation during use.



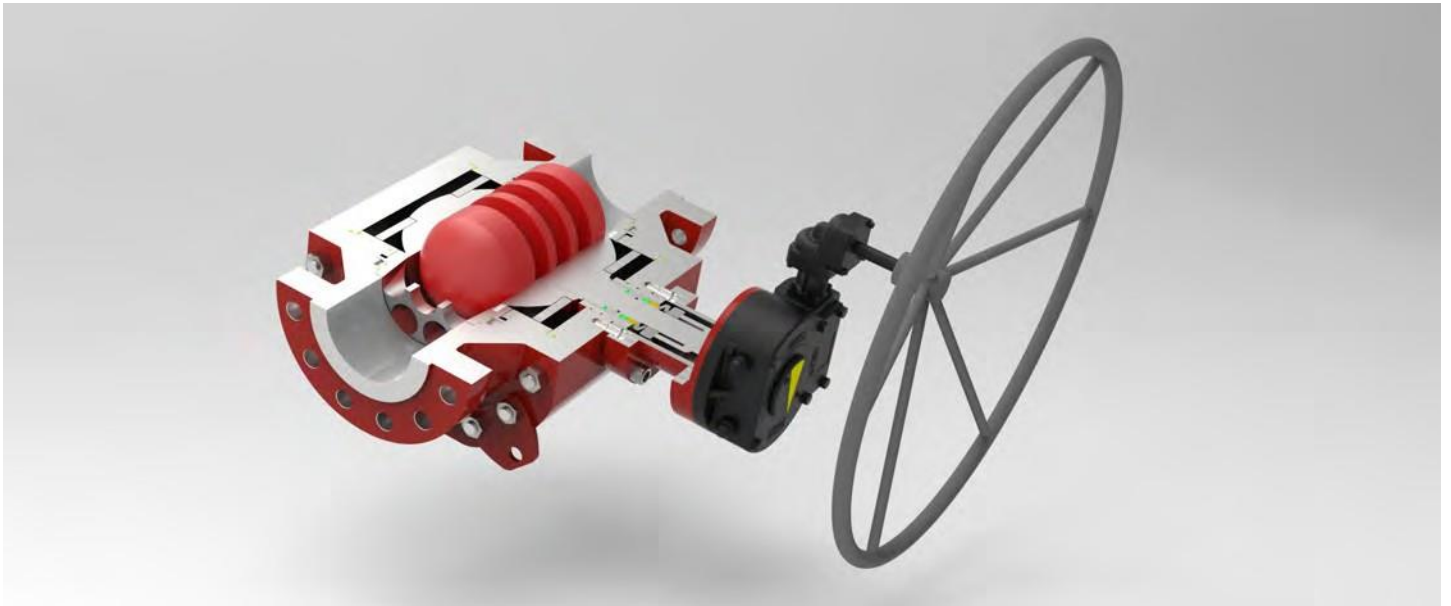
Grease injectors allow longer service life by allowing regular and easier service and can also be used for emergency sealant injection to seal leaks.



Extra safety measures are taken to make the Batu Pig Valves to be leak free.



Robust Cap design allows easy operation and leak free operation. sağlam kapak



Batu Valve is committed safety and quality. Our pig valves conform to the following design & testing standards:

API American Petroleum Institute

SPEC. 6D Specification for Pipeline Valves

SPEC. 6FA* Fire Test for Valves

STD. 607* Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats

STD. 598 Valve Inspection and Testing

SPEC. Q1 Specification for Quality Programs for the Petroleum and Natural Gas Industry

ANSI/ASME American National Standard Institute/American Society of Mechanical Engineers

B1.20.1 Pipe threads, general purpose

B16.5 Pipe flanges & flange fittings

B16.34 Valves - Flanged, Threaded and Welding End

B31.3 Process Piping

ISO International Organization for Standardization

ISO 9001 Quality Management Systems

ISO 15156 Materials for use in H₂S containing environments in oil & gas production

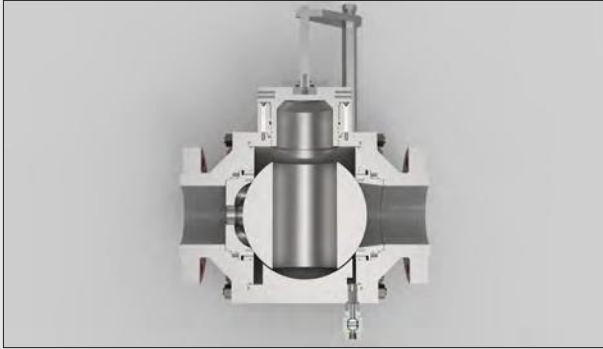
ISO 10497* Testing of valves - fire type-testing

NACE National Association of Corrosion Engineers

MR0175 Materials for use in H₂S containing environments in oil & gas production

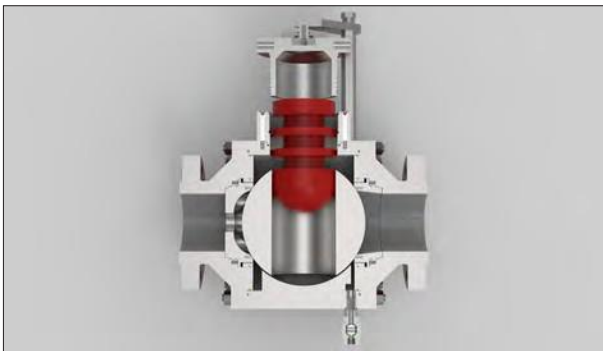
LAUNCHING THE SCRAPER PIG

Before opening any fittings or removing the closure make sure the ball is in the closed position. Caution must be used when opening any fittings or the closure. Venting gases or draining the valve may be hazardous and care must be taken not to pollute the ground or atmosphere. Use proper safety precautions. When opening all vent fittings and drains, make sure to do it slowly.



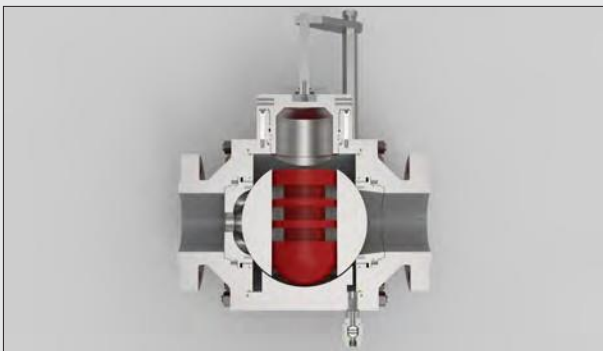
STEP 1

Close the pig valve to achieve positive shut off in both directions. Slowly vent the body cavity and watch the manometer to see the pressure drop to zero.



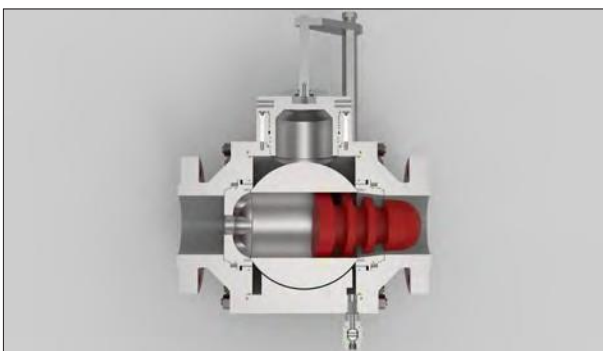
STEP 2

Remove the entry cap insert the pig into ball cavity.



STEP 3

Reinstall the entry cap. Close all bleed valves and pressure releasing valves.

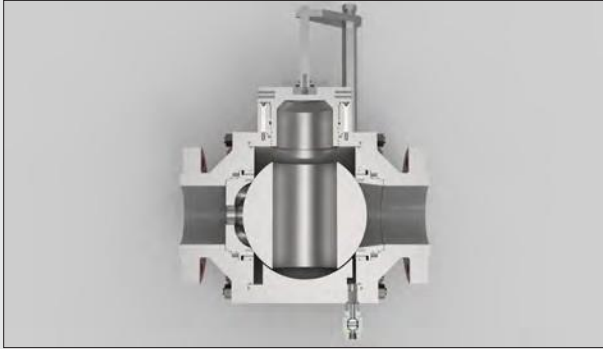


STEP 4

Open pig valve. Flow and pressure moves the pig downstream.

RECEIVING THE SCRAPER PIG

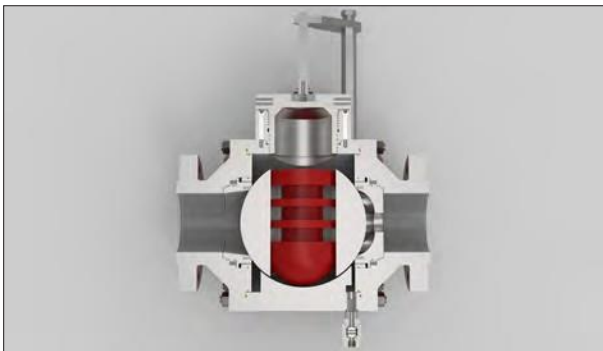
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STEP 1

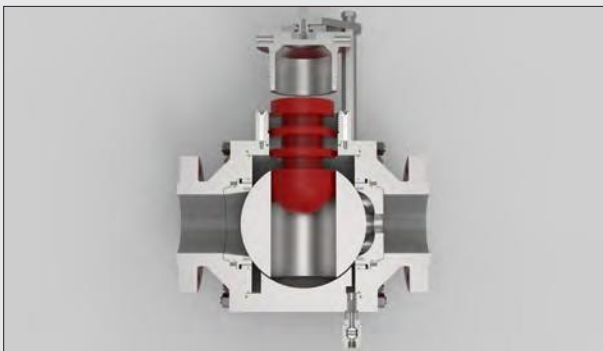
Receive the pig.

Slowly vent the body cavity and watch the manometer to see the pressure drop to zero.



STEP 2

Close the pig valve to achieve positive shut-off in both directions.



STEP 3

Remove the entry cap.

Remove the pig from the ball cavity. Open the drain plug and remove the debris.



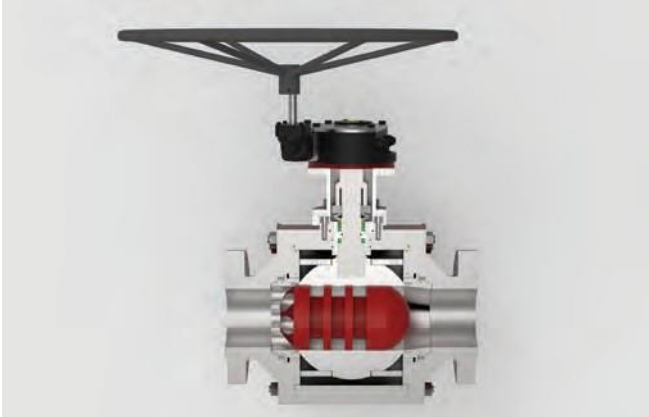
STEP 4

Reinstall the entry cap. Close all bleed valves.

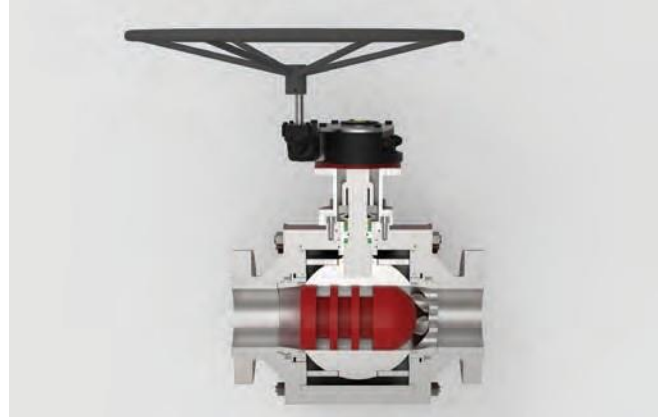
Open the pig valve into the flowing position.

OPERATIONAL CONFIG

Left To Right Flow Direction / Operation From Left Side

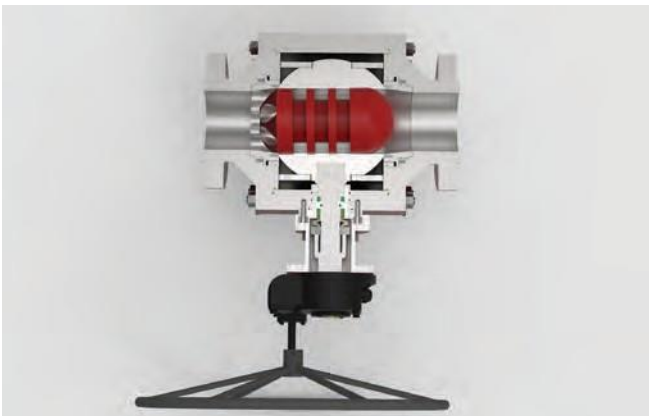


Launching pig ball valve with baffle

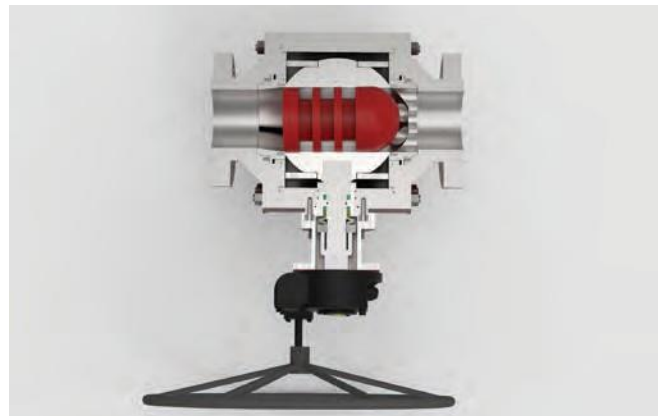


Receiving pig ball valve with baffle

Left To Right Flow Direction / Operation From Left Side



Launching pig ball valve with baffle



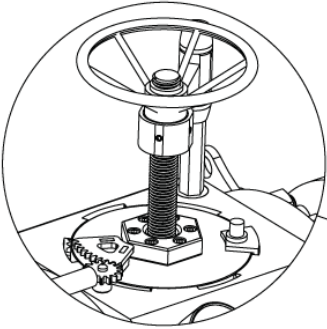
Receiving pig ball valve with baffle



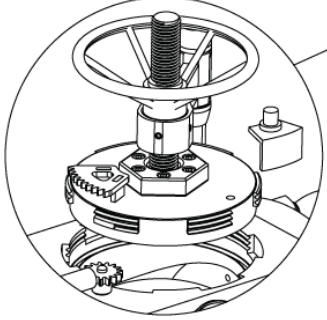
*** The Launcher and the receiver both comes with baffles. This way they can be used both in left side operational config or right side operational config.

QUICK OPENING CLOSURE

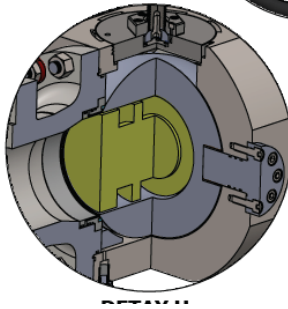
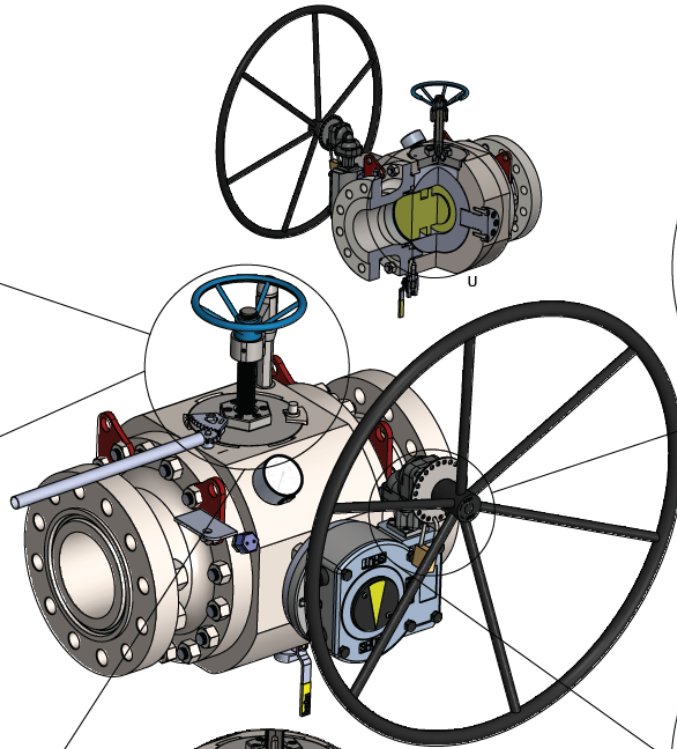
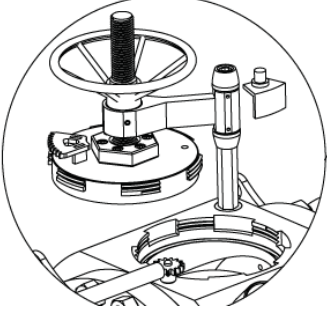
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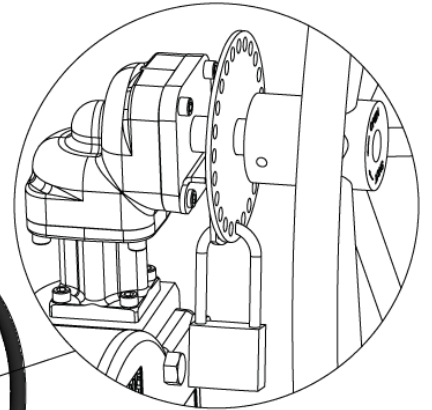
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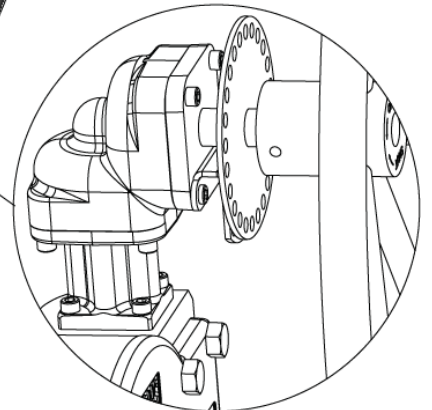
3



LOCK-CLOSE / OPEN

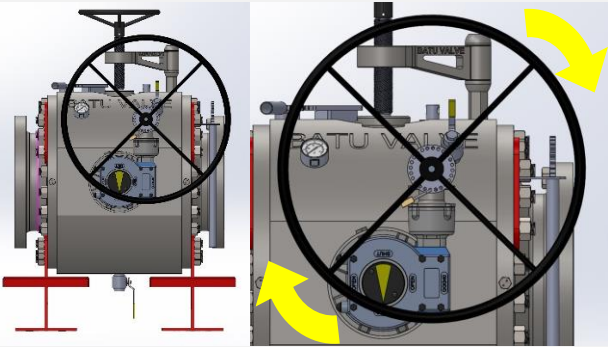


LOCKED



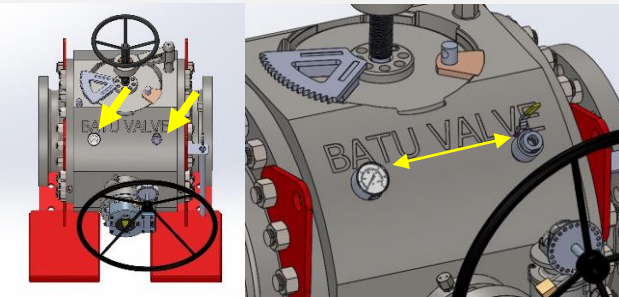
UNLOCKED

MAINTENANCE INSTRUCTION



STEP 1

Turn the valve to the closed position by turning the handwheel.

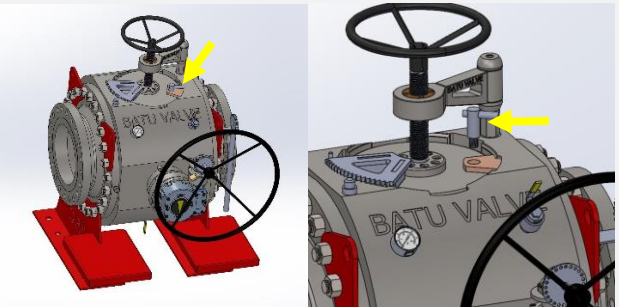


STEP 2

The pressure in the valve must be completely relieved.

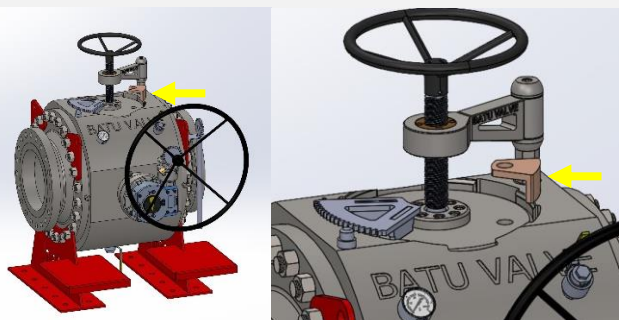
In order to release the pressure, the blind plug of the vent valve on the valve is removed and the pressure is released by opening the vent valve.

You can see from the manometer on the valve that the pressure is completely relieved.



STEP 3

Fully open the safety lock by turning it counterclockwise with the handle supplied with the valve. The safety lock is integrated into the locking mechanism.

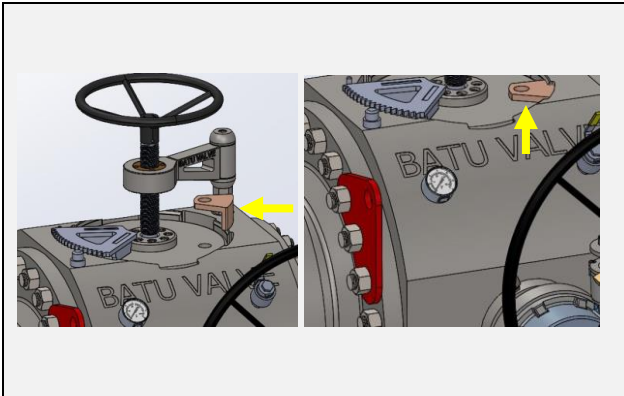


STEP 4

Remove the locking mechanism and open the Drain valve at the bottom of the Body and make sure that the valve is completely cleaned.

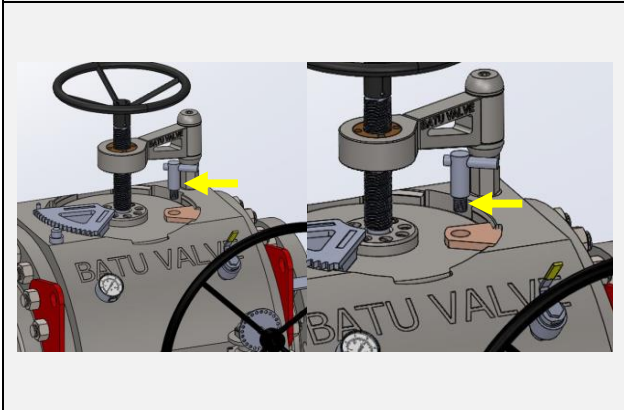
	<p>STEP 5</p> <p>Open the drain valve and make sure that the valve is completely cleaned.</p>
	<p>STEP 6</p> <p>Insert the On-Off lever on the side of the valve into the shaft on the body and make sure that the threads are engaged.</p>
	<p>STEP 7</p> <p>Turn the opening-closing lever clockwise so that the pig cover can be opened.</p>
	<p>STEP 8</p> <p>You can turn the flywheel at the top counterclockwise to open the lid securely.</p>

	<p>STEP 9</p> <p>Maintenance of the O-rings on the cover is of great vital importance. O-rings are checked carefully. If there is a wear, replace with a new O-ring. All sealing elements and machined surfaces must be checked to be clean by maintenance personnel. Cover O-rings and all machined surfaces must be lubricated with gress oil.</p>
	<p>STEP 10</p> <p>It must be ensured that the closing surfaces on the body are clean.</p> <p>All machined surfaces must be carefully lubricated with gress oil.</p>
	<p>STEP 11</p> <p>The quick-release lid is now ready to be closed. The staff should align the lid and start turning the flywheel clockwise.</p>
	<p>STEP 12</p> <p>Carefully return the cover to the closed position by turning the opening-closing lever counterclockwise.</p>



STEP 13

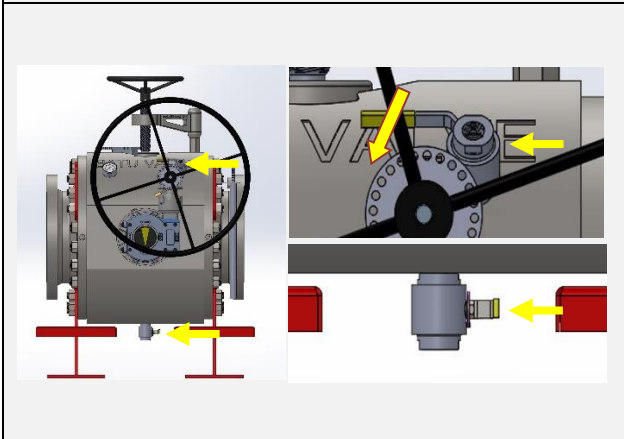
Insert the locking mechanism back into the slot.



STEP 14

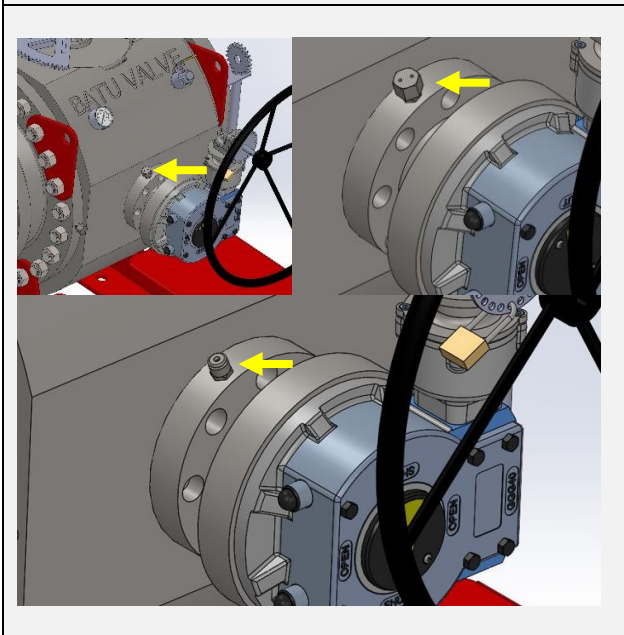
Carefully check the ventilation seal on the Safety Lock. Replace the worn gasket with a new one.

Insert the safety lock into the slot and turn it clockwise, tighten the safety lock with the help of the handle provided.



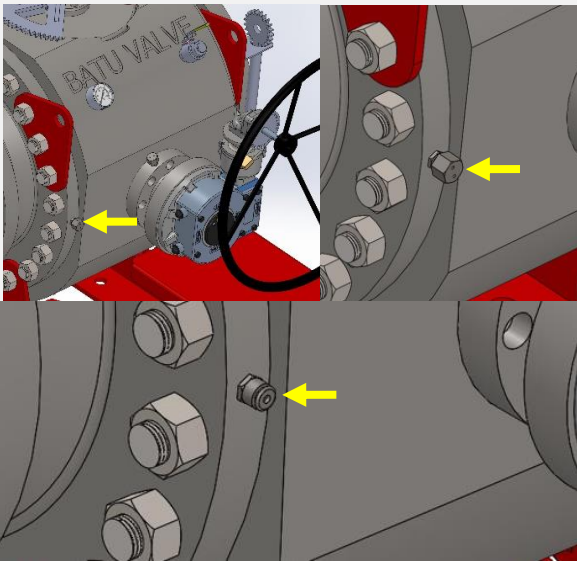
STEP 15

Turn Vent and Drain valves to closed position and install blind plugs.



STEP 16

You can lubricate the shaft by removing the housing of the lubrication nipple located in the throat of the valve.
 The drive shaft should be periodically lubricated once a year.
 We recommend that you choose the type of oil according to the environment in which the valve is used.
 After the lubrication process is finished, put the housing back in place to keep the nipple clean.

**STEP 17**

There are emergency sealing system nipples made of steel material on the covers on both sides of the valve.

BATUSAN has designed all of its valves as fully sealed so that no additional sealing material is required. However, foreign and solid materials that may be present in the installation may enter between the Sphere and Seat and damage the sealing surfaces. In such a case, the problem can be temporarily eliminated by using VALTEK sealing material.

The sealing material can be injected through the emergency sealing nipples located on both covers of the valve.